



FCC RADIO TEST REPORT

FCC ID : 2ADZRBGW320
Equipment : BGW320-505 Wireless Integrated ONT Residential Gateway
Brand Name : Nokia
Model Name : BGW320-505
Applicant : Nokia Shanghai Bell Co. Ltd.
No. 388, Ningqiao Rd. Pilot Free Trade Zone Shanghai, China
201206
Manufacturer : Nokia Shanghai Bell Co. Ltd.
No. 388, Ningqiao Rd. Pilot Free Trade Zone Shanghai, China
201206
Standard : 47 CFR FCC Part 15.407

The product was received on Mar. 18, 2019, and testing was started from Jul. 20, 2019 and completed on Aug. 08, 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 variant 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: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB Ver1.0



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	15.407(a)	Emission Bandwidth	PASS	-
3.2	15.407(a)	Maximum Conducted Output Power	PASS	-
3.3	15.407(a)	Peak Power Spectral Density	PASS	-
3.4	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:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Vicky Huang



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5250-5350	a, n (HT20), ac (VHT20), ax (HEW20)	5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5250-5350	n (HT40), ac (VHT40), ax (HEW40)	5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5250-5350	ac (VHT80), ax (HEW80)	5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5150-5350	ac (VHT160), ax (HEW160)	5250	50 [1]
5470-5725		5570	114 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ac VHT160	160	1TX, 2TX, 3TX, 4TX
5.15-5.25GHz	802.11ac VHT160-BF	160	2TX, 3TX, 4TX
5.15-5.25GHz	802.11ax HEW160	160	1TX, 2TX, 3TX, 4TX
5.15-5.25GHz	802.11ax HEW160-BF	160	2TX, 3TX, 4TX
5.25-5.35GHz	802.11a	20	4TX
5.25-5.35GHz	802.11n HT20	20	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11n HT20-BF	20	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT20	20	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW20	20	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW20-BF	20	2TX, 3TX, 4TX
5.25-5.35GHz	802.11n HT40	40	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11n HT40-BF	40	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT40	40	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW40	40	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW40-BF	40	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT80	80	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW80	80	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW80-BF	80	2TX, 3TX, 4TX



Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11ac VHT160	160	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ac VHT160-BF	160	2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW160	160	1TX, 2TX, 3TX, 4TX
5.25-5.35GHz	802.11ax HEW160-BF	160	2TX, 3TX, 4TX
5.47-5.725GHz	802.11a	20	4TX
5.47-5.725GHz	802.11n HT20	20	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11n HT20-BF	20	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT20	20	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW20	20	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW20-BF	20	2TX, 3TX, 4TX
5.47-5.725GHz	802.11n HT40	40	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11n HT40-BF	40	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT40	40	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW40	40	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW40-BF	40	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT80	80	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW80	80	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW80-BF	80	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT160	160	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ac VHT160-BF	160	2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW160	160	1TX, 2TX, 3TX, 4TX
5.47-5.725GHz	802.11ax HEW160-BF	160	2TX, 3TX, 4TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.



1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Airgain	N2430ARJYW Rev A-PK1-L-G1X165BUR2	PCB	I-PEX	Note 1
2	Airgain	N2430ARHYN Rev A-PK1-L-Y1X140BUR2	PCB	I-PEX	
3	Airgain	N2435ARHYN Rev A-PK1-L-B1X155BU	PCB	I-PEX	
4	Airgain	N2420ARHYW Rev A-PK1-L-A1X195BU	PCB	I-PEX	
5	Airgain	N5X20QSYN Rev A-PK1-L-B50UR2	PCB	I-PEX	
6	Airgain	N5X20QSYE Rev A-PK1-L-A55UR2	PCB	I-PEX	
7	Airgain	N5X20QSYN Rev A-PK1-L-Y1X190BU	PCB	I-PEX	
8	Airgain	N5X20QSYE Rev A-PK1-L-G1X160BU	PCB	I-PEX	
9	Airgain	N5X20HGHC Rev A-PK1-L-R1X1058U	PCB	I-PEX	

Note 1:

Ant.	2.4GHz Port				5GHz Port				Gain (dBi) 1TX mode for output power, PSD CDD mode for output power				
	1TX	2TX	3TX	4TX	1TX	2TX	3TX	4TX	2.4GHz	5GHz Band 1	5GHz Band 2	5GHz Band 3	5GHz Band 4
	1TX	2TX	3TX	4TX	1TX	2TX	3TX	4TX	2.4GHz	5GHz Band 1	5GHz Band 2	5GHz Band 3	5GHz Band 4
1	4	4	4	4	1	1	1	1	4.9	5.8	6	-	-
2	3	3	3	3	2	2	2	2					
3	2	2	2	2	3	3	3	3					
4	1	1	1	1	4	4	4	4					
5	-	-	-	-	1	1	1	1	-	-	-	5.1	4.7
6	-	-	-	-	2	2	2	2					
7	-	-	-	-	3	3	3	3					
8	-	-	-	-	4	4	4	4					
9	-	-	-	-	RX only	-	-	-	-	3.9	3.4	4.6	4.2

Ant.	Gain (dBi) CDD mode for PSD Beamforming mode, SDM Mode for output power & PSD											
	2.4GHz				5GHz Band 1		5GHz Band 2		5GHz Band 3		5GHz Band 4	
	3T1S/ 3T2S	3T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S
	3T1S/ 3T2S	3T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S	4T1S/ 4T2S	4T3S
1	4.2	2.3	4.8	3.1	4.7	3.8	4.2	2.8	-	-	-	-
2												
3												
4												
5	-	-	-	-	-	-	-	-	5.1	4.3	5	3.8
6												
7												
8												
9	-	-	-	-	3.9	3.4	4.6	4.2				



Note 2: The above information was declared by manufacturer.

Note 3: The EUT has nine antennas.

Note 4:

For 2.4GHz function:

For IEEE 802.11b (1TX, 4TX/4RX):

For 1TX

Only Port 1 can be used as transmitting antenna.

For 4TX, 4RX

Port 1, Port 2, Port 3 and Port 4 can be use as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For IEEE 802.11g (4TX/4RX):

Port 1, Port 2, Pot 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Pot 3 and Port 4 could transmit/receive simultaneously.

For IEEE 802.11n/VHT/ax (1TX, 2TX, 3TX, 4TX/4RX):

For 1TX

The EUT supports all antennas with TX diversity functions.

At once time there is only one antenna port can transmitting RF signal

For 2TX

The EUT supports all antennas with TX diversity functions.

At once time there are only two antenna port can transmitting RF signal

For 3TX

The EUT supports all antennas with TX diversity functions.

At once time there are only three antenna port can transmitting RF signal

The Port 2, Port 3 and Port 4 generated the worst case, so it was selected to test and record in the report.

For 4TX, 4RX

Port 1, Port 2, Port 3 and Port 4 can be use as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a (4TX/4RX):

Port 1, Port 2, Pot 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Pot 3 and Port 4 could transmit/receive simultaneously.

For IEEE 802.11n/ac/ax (1TX, 2TX, 3TX, 4TX/4RX):

For 1TX

The EUT supports all antennas with TX diversity functions.

At once time there is only one antenna port can transmitting RF signal

For 2TX

The EUT supports all antennas with TX diversity functions.

At once time there are only two antenna port can transmitting RF signal

For 3TX

The EUT supports all antennas with TX diversity functions.

At once time there are only three antenna port can transmitting RF signal

For 4TX, 4RX

Port 1, Port 2, Port 3 and Port 4 can be use as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

For IEEE 802.11n/ac/ax (1RX):

Ant.9 can be use as receiving antenna only.

1.1.3 Mode Test Duty Cycle

<non-beamforming mode> 4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.953	0.21	2.068m	1k
802.11ac VHT20	0.986	0.06	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
802.11ac VHT40	0.972	0.12	955u	3k
802.11ac VHT80	0.943	0.25	462.5u	3k
802.11ac VHT160	0.901	0.45	255u	10k
802.11ax HEW20	0.979	0.09	1.49m	1k
802.11ax HEW40	0.962	0.17	782.5u	3k
802.11ax HEW80	0.931	0.31	415u	3k
802.11ax HEW160	0.762	1.18	235.625u	10k

<beamforming mode> 4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF	0.966	0.15	3.836m	300
802.11ac VHT40-BF	0.949	0.23	3.693m	300
802.11ac VHT80-BF	0.961	0.17	5.095m	300
802.11ac VHT160-BF	0.934	0.3	5.096m	300
802.11ax HEW20-BF	0.954	0.2	2.924m	1k
802.11ax HEW40-BF	0.926	0.33	4.335m	300
802.11ax HEW80-BF	0.92	0.36	4.85m	300
802.11ax HEW160-BF	0.978	0.1	5.19m	300

<non-beamforming mode> 4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT80	0.936	0.29	257.5u	10k
802.11ac VHT160	0.898	0.47	153.75u	10k
802.11ax HEW80	0.931	0.31	241.25u	10k
802.11ax HEW160	0.896	0.48	155u	10k

<beamforming mode> 4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT80-BF	0.929	0.32	257.971u	10k
802.11ac VHT160-BF	0.89	0.51	153.623u	10k
802.11ax HEW80-BF	0.928	0.32	240.58u	10k
802.11ax HEW160-BF	0.891	0.5	155.072u	10k

**<non-beamforming mode> 4T3S**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT80	0.916	0.38	193.75u	10k
802.11ac VHT160	0.886	0.53	138.75u	10k
802.11ax HEW80	0.916	0.38	197.5u	10k
802.11ax HEW160	0.875	0.58	126.25u	10k

<beamforming mode> 4T3S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT80-BF	0.912	0.4	192.5u	10k
802.11ac VHT160-BF	0.87	0.6	124.375u	10k
802.11ax HEW80-BF	0.914	0.39	195.625u	10k
802.11ax HEW160-BF	0.879	0.56	137.188u	10k

Note:

- ♦ DC is Duty Cycle.
- ♦ DCF is Duty Cycle Factor.

**1.1.4 EUT Operational Condition**

EUT Power Type	From Power Adapter			
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.			
Weather Band	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/>	Without 5600~5650MHz
Function	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
TPC Function	<input checked="" type="checkbox"/>	With TPC	<input type="checkbox"/>	Without TPC
Test Software Version	accessMTool v3.1.0.2 、Telnet v6.1.7601			

Note: The above information was declared by manufacturer.

1.1.5 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR912114AB

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding 5GHz band 2 and band 3 (5250~5350 MHz, 5470~5725 MHz) for this device. 2. Adding 160MHz.	1. Emission Bandwidth. 2. Maximum Conducted Output Power. 3. Peak Power Spectral Density. 4. Unwanted Emissions Radiated Emission >1GHz.



1.2 Applicable 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
- ♦ FCC KDB 789033 D02 v02r01
- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	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
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Owen Hsu	27.5~28.2°C / 62~66%	Aug. 05, 2019 ~ Aug. 08, 2019
Radiated	03CH04-CB	Welson Chen	26.2~27.9°C / 63~65%	Jul. 20, 2019 ~ Aug. 01, 2019

Test site Designation No. TW0006 with FCC

Test site registered number IC 4086D with Industry Canada.

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
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

<non-beamforming mode> 4T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	72
5300MHz	73
5320MHz	74
5500MHz	75
5580MHz	70
5700MHz	72
5720MHz Straddle 5.47-5.725GHz	71
5720MHz Straddle 5.725-5.85GHz	71
802.11ac VHT20_Nss1,(MCS0)_4TX	-
5260MHz	71
5300MHz	72
5320MHz	74
5500MHz	75
5580MHz	70
5700MHz	72
5720MHz Straddle 5.47-5.725GHz	73
5720MHz Straddle 5.725-5.85GHz	73
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5270MHz	71
5310MHz	73
5510MHz	72
5550MHz	72
5670MHz	72
5710MHz Straddle 5.47-5.725GHz	74
5710MHz Straddle 5.725-5.85GHz	74
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5290MHz	72
5530MHz	72
5610MHz	74
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
802.11ac VHT160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	62
5250MHz	62



Mode	Power Setting
5570MHz	67
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	70
5300MHz	71
5320MHz	73
5500MHz	74
5580MHz	69
5700MHz	65
5720MHz Straddle 5.47-5.725GHz	72
5720MHz Straddle 5.725-5.85GHz	72
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	70
5310MHz	72
5510MHz	73
5550MHz	71
5670MHz	71
5710MHz Straddle 5.47-5.725GHz	74
5710MHz Straddle 5.725-5.85GHz	74
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	71
5530MHz	71
5610MHz	73
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	61
5250MHz	61
5570MHz	65

**<beamforming mode> 4T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5260MHz	71
5300MHz	72
5320MHz	74
5500MHz	75
5580MHz	70
5700MHz	72
5720MHz Straddle 5.47-5.725GHz	73
5720MHz Straddle 5.725-5.85GHz	73
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5270MHz	71
5310MHz	73
5510MHz	68
5550MHz	72
5670MHz	72
5710MHz Straddle 5.47-5.725GHz	74
5710MHz Straddle 5.725-5.85GHz	74
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5290MHz	72
5530MHz	72
5610MHz	74
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	70
5250MHz	70
5570MHz	69
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	70
5300MHz	71
5320MHz	73
5500MHz	74
5580MHz	69
5700MHz	71
5720MHz Straddle 5.47-5.725GHz	72
5720MHz Straddle 5.725-5.85GHz	72
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	70
5310MHz	72



Mode	Power Setting
5510MHz	69
5550MHz	71
5670MHz	71
5710MHz Straddle 5.47-5.725GHz	74
5710MHz Straddle 5.725-5.85GHz	74
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	71
5530MHz	71
5610MHz	73
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	66
5250MHz	66
5570MHz	71

**<non-beamforming mode> 4T2S**

Mode	Power Setting
802.11ac VHT80_Nss2,(MCS0)_4TX	-
5530MHz	72
802.11ac VHT160_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	63
5250MHz Straddle 5.25-5.35GHz	63
5570MHz	64
802.11ax HEW80_Nss2,(MCS0)_4TX	-
5530MHz	71
802.11ax HEW160_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	60
5250MHz Straddle 5.25-5.35GHz	60
5570MHz	64

<beamforming mode> 4T2S

Mode	Power Setting
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-
5530MHz	72
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	71
5250MHz	71
5570MHz	71
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-
5530MHz	71
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	68
5250MHz	68
5570MHz	69

**<non-beamforming mode> 4T3S**

Mode	Power Setting
802.11ac VHT80_Nss3,(MCS0)_4TX	-
5530MHz	73
802.11ac VHT160_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	63
5250MHz Straddle 5.25-5.35GHz	63
5570MHz	65
802.11ax HEW80_Nss3,(MCS0)_4TX	-
5530MHz	72
802.11ax HEW160_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	60
5250MHz Straddle 5.25-5.35GHz	60
5570MHz	63

<beamforming mode> 4T3S

Mode	Power Setting
802.11ac VHT80-BF_Nss3,(MCS0)_4TX	-
5530MHz	73
802.11ac VHT160-BF_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	71
5250MHz	71
5570MHz	71
802.11ax HEW80-BF_Nss3,(MCS0)_4TX	-
5530MHz	72
802.11ax HEW160-BF_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	68
5250MHz	68
5570MHz	69

Note:

- ♦ VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.
- ♦ There are two modes of EUT, one is beamforming mode, and the other is Non-beamforming mode for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz, Beamforming mode and Non-beamforming mode has been test and record in this test report.

2.2 The Worst Case Measurement Configuration

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	EUT + 5GHz

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + 5GHz Band 1 、 Band 2 + 5GHz Band 3 、 Band 4
Refer to Sporton Test Report No.: FA912114-01 for Co-location RF Exposure Evaluation.	

Note: The EUT can only be used at Y axis position.



2.3 EUT Operation during Test

For CTX Mode:

Non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

During the test, the following programs under WIN 7 were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet.
3. Executed "LanTest20" to link with the remote workstation to transmit and receive packet by WLAN AP and transmit duty cycle no less than 98%.

2.4 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Adapter	DIRECTV	EPS48R0-16	Input: 120V~1.1A, 60Hz Output: 12V, 4A, 48W

2.5 Support Equipment

For Radiated and RF Conducted test:

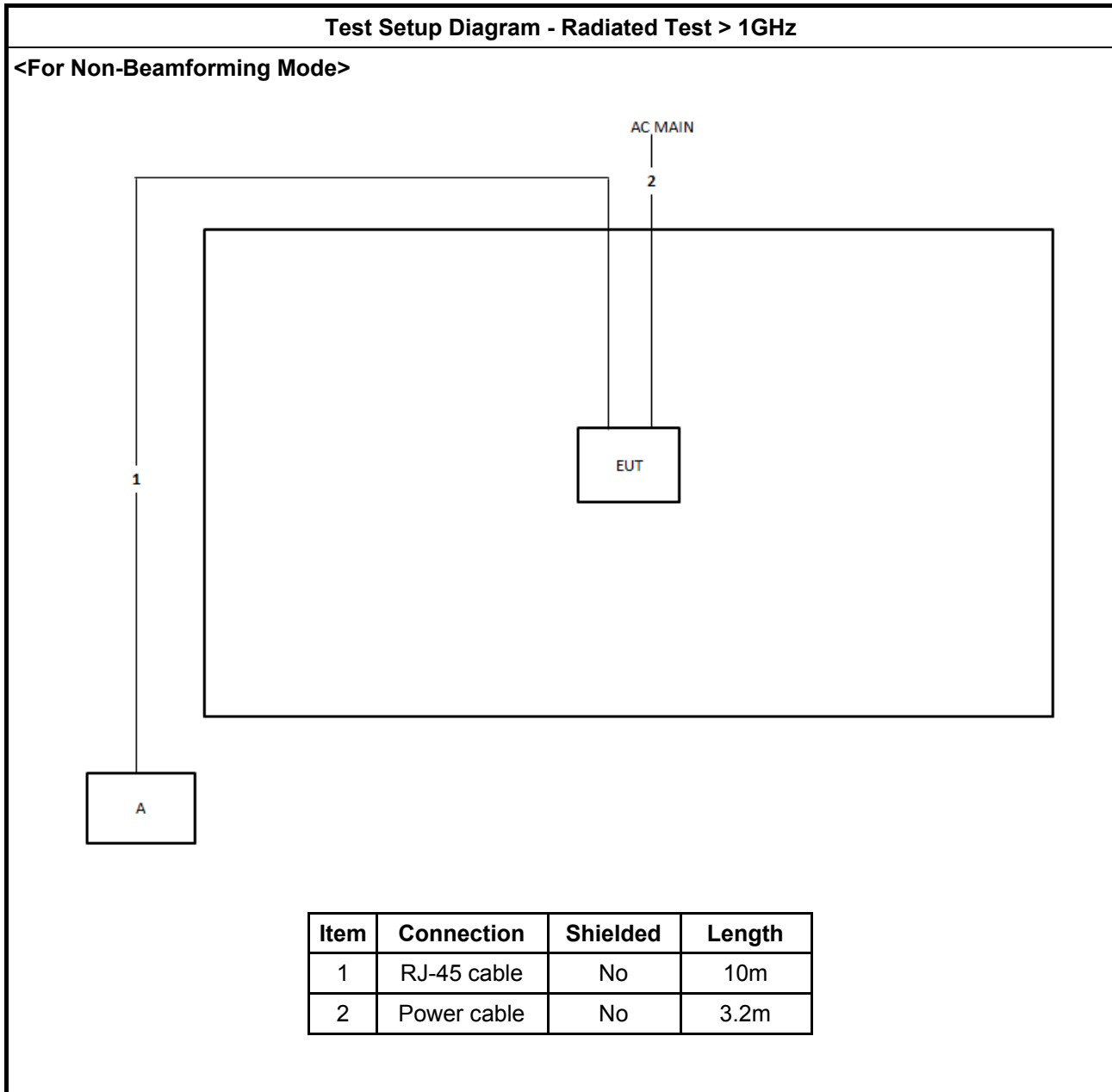
<non-beamforming mode>

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

<beamforming mode>

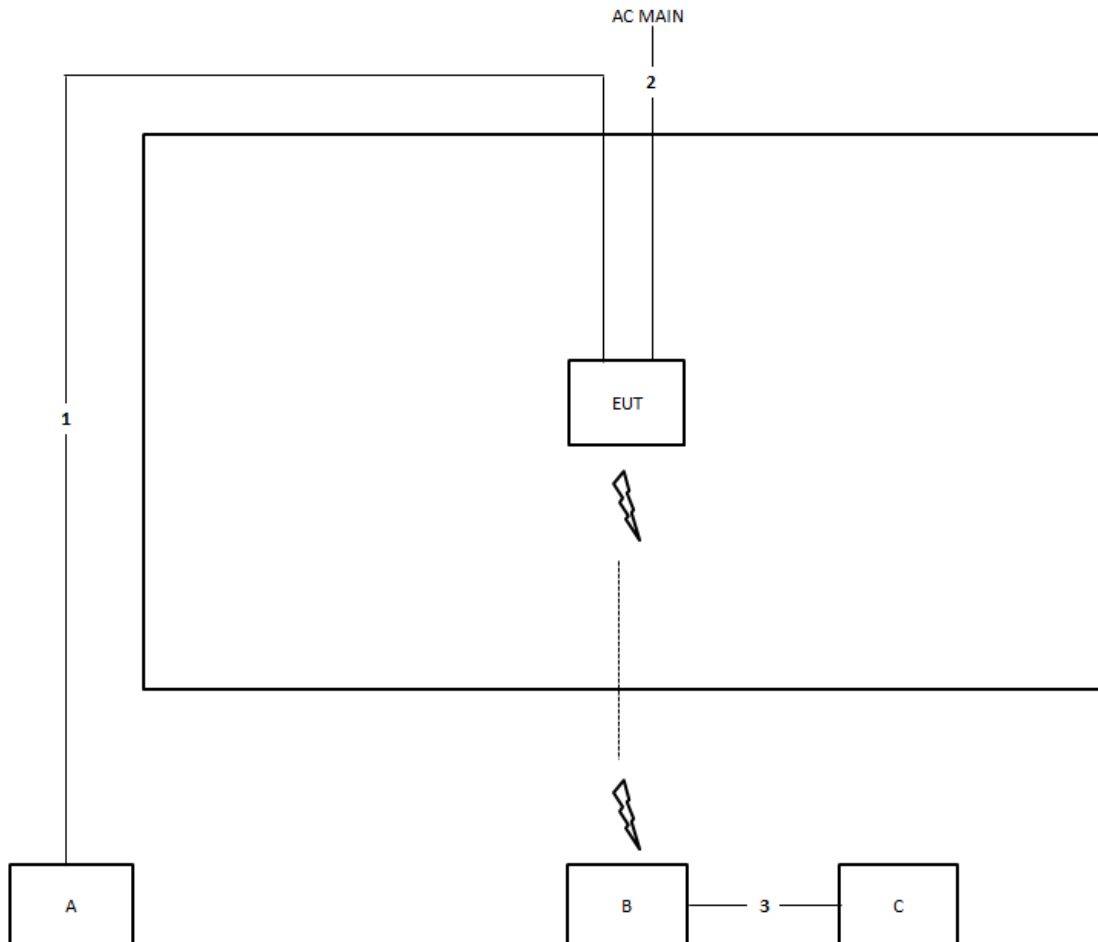
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	WLAN AP	ASUS	RT-AX88U	MSQ-RTAXHP00
C	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test > 1GHz

<For Beamforming Mode>



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	3.2m
3	RJ-45 cable	No	1.5m

3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.
LE-LAN Devices	
<input type="checkbox"/>	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.

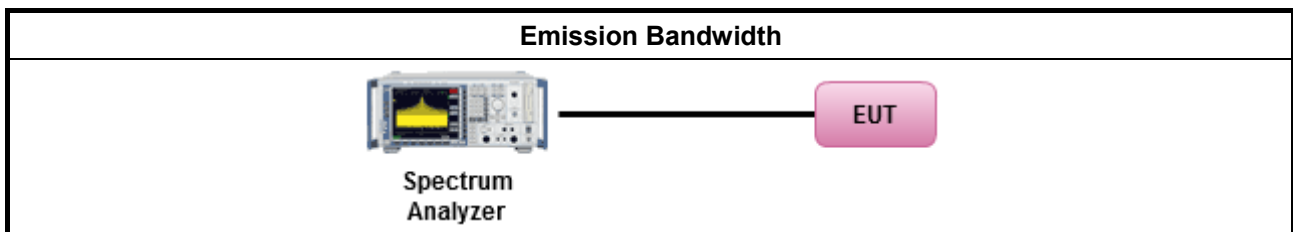
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below: 	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.1.4 Test Setup





3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none">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 $P_{Out} = 24 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> 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 $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> 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 $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none">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.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none">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.	

3.2.2 Measuring Instruments

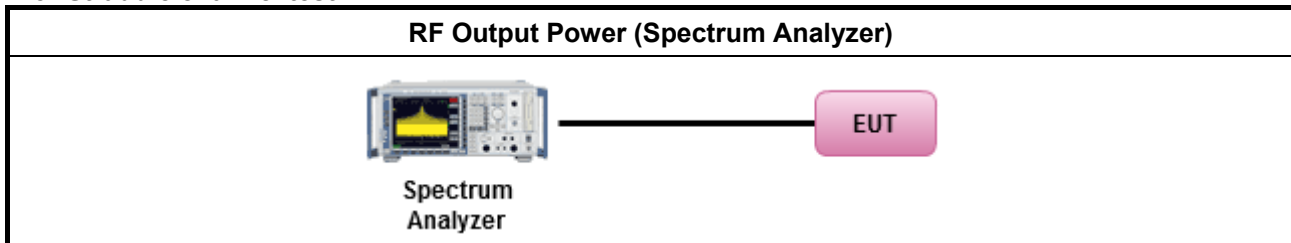
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

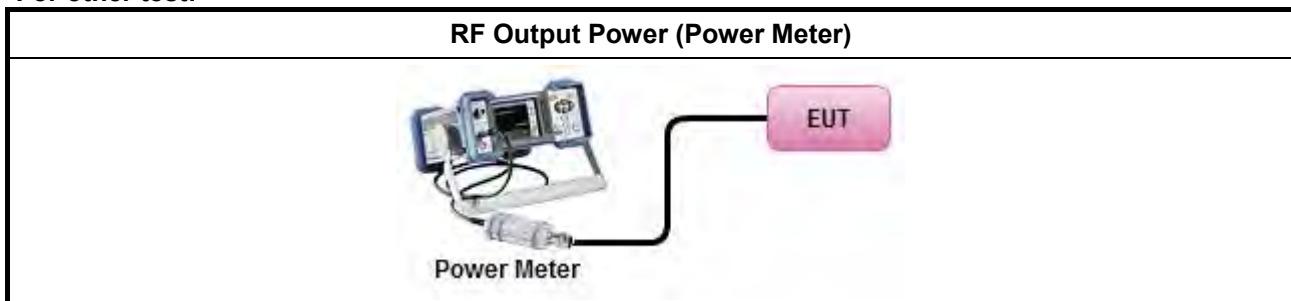
Test Method	
<ul style="list-style-type: none"> Maximum Conducted Output Power 	
	Average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> For conducted measurement. 	
<ul style="list-style-type: none"> If the EUT supports multiple transmit chains using options given below: Refer as FCC 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. 	
<ul style="list-style-type: none"> 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]) $EIRP_{total} = P_{total} + DG$ 	

3.2.4 Test Setup

For Straddle channel test:



For other test:



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B



3.3 Peak Power Spectral Density

3.3.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> 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 $PPSD = 11 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> 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.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
	<ul style="list-style-type: none"> e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

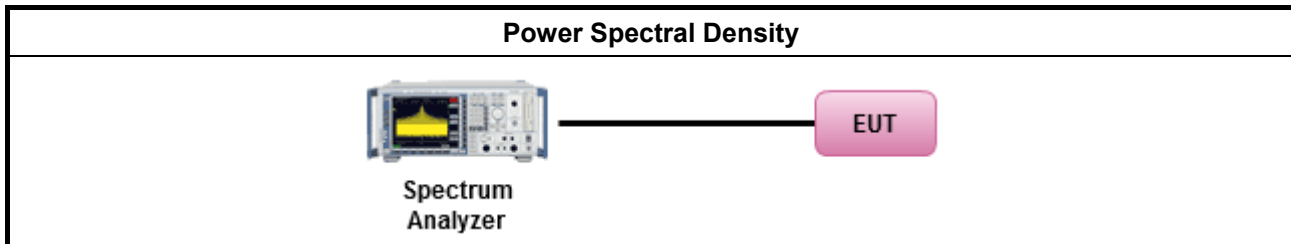
3.3.2 Measuring Instruments

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

**3.3.3 Test Procedures**

Test Method	
<ul style="list-style-type: none">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:	
<input type="checkbox"/>	Refer as FCC 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% or external video / power trigger]	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
duty cycle < 98% and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<ul style="list-style-type: none">For conducted measurement.	
<ul style="list-style-type: none">If the EUT supports multiple transmit chains using options given below:	
<input checked="" type="checkbox"/>	Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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.
<input type="checkbox"/>	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
<input type="checkbox"/>	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
<ul style="list-style-type: none">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]) $EIRP_{total} = PPSD_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Peak Power Spectral Density

Refer as Appendix C

3.4 Unwanted Emissions

3.4.1 Transmitter 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
<input checked="" type="checkbox"/> 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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).

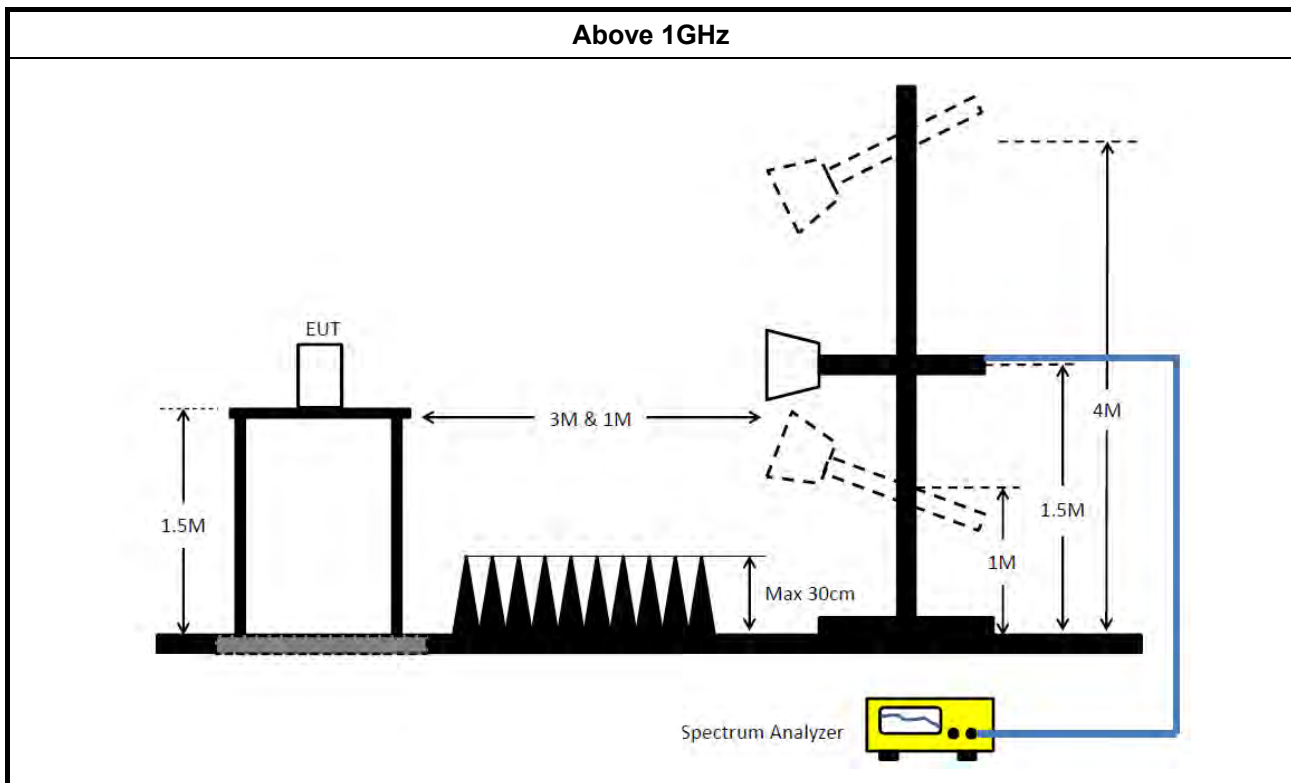
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none">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).	
<ul style="list-style-type: none">The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].	
<ul style="list-style-type: none">For the transmitter unwanted emissions shall be measured using following options below:	
	<ul style="list-style-type: none">Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	<ul style="list-style-type: none">Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
<input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.	
<ul style="list-style-type: none">For radiated measurement.	
	<ul style="list-style-type: none">Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	<ul style="list-style-type: none">Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	<ul style="list-style-type: none">Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
<ul style="list-style-type: none">The any unwanted emissions level shall not exceed the fundamental emission level.	
<ul style="list-style-type: none">All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.4.4 Test Setup



3.4.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.4.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	ETS • Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz – 26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

<non-beamforming mode> 4T1S Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT160_Nss1,(MCS0)_4TX	81.76M	75.802M	75M8D1D	80.72M	75.642M
802.11ax HEW160_Nss1,(MCS0)_4TX	81.04M	77.161M	77M2D1D	80.56M	76.922M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.66M	16.642M	16M6D1D	21.39M	16.522M
802.11ac VHT20_Nss1,(MCS0)_4TX	21.81M	17.781M	17M8D1D	21.51M	17.721M
802.11ac VHT40_Nss1,(MCS0)_4TX	40.2M	36.342M	36M3D1D	39.84M	36.162M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.96M	75.682M	75M7D1D	81.24M	75.562M
802.11ac VHT160_Nss1,(MCS0)_4TX	81.92M	75.642M	75M6D1D	80.56M	75.482M
802.11ax HEW20_Nss1,(MCS0)_4TX	21.78M	19.01M	19M0D1D	21.54M	18.951M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.14M	37.601M	37M6D1D	39.78M	37.421M
802.11ax HEW80_Nss1,(MCS0)_4TX	81.6M	77.121M	77M1D1D	81M	76.762M
802.11ax HEW160_Nss1,(MCS0)_4TX	81.44M	76.922M	76M9D1D	80.24M	76.762M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.72M	16.642M	16M6D1D	15.51M	13.298M
802.11ac VHT20_Nss1,(MCS0)_4TX	21.78M	17.781M	17M8D1D	15.675M	13.883M
802.11ac VHT40_Nss1,(MCS0)_4TX	40.2M	36.282M	36M3D1D	34.825M	32.989M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.96M	75.802M	75M8D1D	75.525M	72.489M
802.11ac VHT160_Nss1,(MCS0)_4TX	165.84M	154.003M	154MD1D	163.2M	153.043M
802.11ax HEW20_Nss1,(MCS0)_4TX	21.78M	19.04M	19M0D1D	15.615M	14.453M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.26M	37.601M	37M6D1D	34.86M	33.583M
802.11ax HEW80_Nss1,(MCS0)_4TX	81.72M	77.001M	77M0D1D	75.525M	72.939M
802.11ax HEW160_Nss1,(MCS0)_4TX	165.12M	154.963M	155MD1D	163.68M	154.003M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	3.16M	3.938M	3M94D1D	3.14M	3.898M
802.11ac VHT20_Nss1,(MCS0)_4TX	3.78M	4.298M	4M30D1D	3.76M	4.218M
802.11ac VHT40_Nss1,(MCS0)_4TX	3.14M	3.538M	3M54D1D	3.12M	3.478M
802.11ac VHT80_Nss1,(MCS0)_4TX	3.12M	3.578M	3M58D1D	3.12M	3.478M
802.11ax HEW20_Nss1,(MCS0)_4TX	4.48M	4.558M	4M56D1D	4.44M	4.518M
802.11ax HEW40_Nss1,(MCS0)_4TX	3.76M	4.058M	4M06D1D	3.56M	4.018M
802.11ax HEW80_Nss1,(MCS0)_4TX	3.74M	4.058M	4M06D1D	3.5M	4.038M

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	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.51M	16.582M	21.57M	16.582M	21.63M	16.642M	21.48M	16.522M
5300MHz	Pass	Inf	21.51M	16.552M	21.48M	16.612M	21.66M	16.612M	21.51M	16.582M
5320MHz	Pass	Inf	21.45M	16.612M	21.51M	16.582M	21.57M	16.612M	21.39M	16.582M
5500MHz	Pass	Inf	21.39M	16.612M	21.72M	16.582M	21.66M	16.612M	21.54M	16.582M
5580MHz	Pass	Inf	21.51M	16.582M	21.69M	16.582M	21.66M	16.612M	21.51M	16.582M
5700MHz	Pass	Inf	21.42M	16.582M	21.66M	16.642M	21.45M	16.582M	21.6M	16.552M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.51M	13.313M	15.63M	13.298M	15.675M	13.298M	15.54M	13.298M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.898M	3.16M	3.918M	3.16M	3.938M	3.14M	3.918M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.72M	17.751M	21.57M	17.781M	21.63M	17.751M	21.69M	17.781M
5300MHz	Pass	Inf	21.81M	17.781M	21.57M	17.781M	21.51M	17.781M	21.72M	17.751M
5320MHz	Pass	Inf	21.72M	17.781M	21.51M	17.751M	21.54M	17.781M	21.72M	17.721M
5500MHz	Pass	Inf	21.78M	17.781M	21.48M	17.721M	21.39M	17.751M	21.69M	17.781M
5580MHz	Pass	Inf	21.78M	17.781M	21.57M	17.781M	21.57M	17.781M	21.72M	17.781M
5700MHz	Pass	Inf	21.78M	17.721M	21.54M	17.721M	21.48M	17.781M	21.75M	17.781M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.675M	13.883M	15.675M	13.898M	15.705M	13.898M	15.72M	13.898M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	4.298M	3.78M	4.278M	3.76M	4.258M	3.76M	4.218M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.2M	36.342M	39.9M	36.222M	40.02M	36.282M	39.84M	36.162M
5310MHz	Pass	Inf	40.14M	36.222M	39.84M	36.282M	39.96M	36.282M	39.9M	36.282M
5510MHz	Pass	Inf	40.2M	36.222M	39.72M	36.162M	40.08M	36.222M	39.84M	36.282M
5550MHz	Pass	Inf	40.2M	36.282M	39.9M	36.222M	40.14M	36.222M	39.84M	36.222M
5670MHz	Pass	Inf	40.2M	36.222M	39.96M	36.222M	40.14M	36.282M	39.84M	36.222M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.21M	33.058M	34.825M	33.023M	35M	32.989M	34.86M	33.058M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	3.518M	3.14M	3.538M	3.14M	3.518M	3.14M	3.478M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.84M	75.562M	81.48M	75.682M	81.24M	75.562M	81.96M	75.562M
5530MHz	Pass	Inf	81.84M	75.682M	81.12M	75.562M	81.12M	75.442M	81.72M	75.562M
5610MHz	Pass	Inf	81.96M	75.802M	81.48M	75.682M	81.48M	75.682M	81.84M	75.682M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.125M	72.489M	75.525M	72.489M	75.9M	72.564M	75.825M	72.489M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	3.578M	3.12M	3.538M	3.12M	3.498M	3.12M	3.478M
802.11ac VHT160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.44M	75.722M	81.76M	75.802M	81.36M	75.642M	80.72M	75.722M
5250MHz	Pass	Inf	81.2M	75.482M	81.92M	75.642M	80.72M	75.482M	80.56M	75.482M
5570MHz	Pass	Inf	163.2M	153.283M	165.84M	153.763M	163.68M	153.043M	163.92M	154.003M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.69M	18.951M	21.6M	19.01M	21.72M	18.981M	21.66M	18.951M
5300MHz	Pass	Inf	21.69M	18.951M	21.63M	19.01M	21.63M	18.981M	21.78M	18.951M
5320MHz	Pass	Inf	21.66M	18.981M	21.54M	18.981M	21.75M	18.951M	21.72M	18.981M
5500MHz	Pass	Inf	21.75M	18.951M	21.57M	18.951M	21.6M	18.951M	21.78M	19.04M
5580MHz	Pass	Inf	21.69M	18.981M	21.36M	18.981M	21.75M	18.951M	21.72M	18.981M
5700MHz	Pass	Inf	21.72M	18.981M	21.45M	18.951M	21.75M	18.981M	21.75M	18.951M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.78M	14.453M	15.615M	14.468M	15.75M	14.483M	15.675M	14.498M

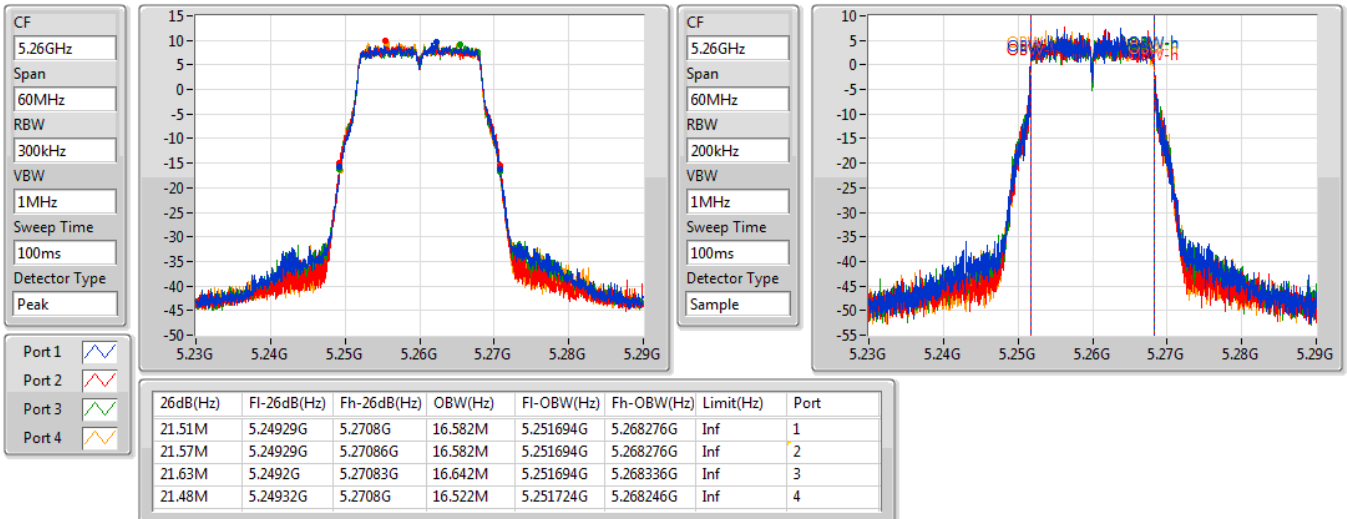
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.46M	4.518M	4.46M	4.558M	4.48M	4.518M	4.44M	4.538M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.08M	37.541M	39.78M	37.481M	39.84M	37.601M	40.02M	37.421M
5310MHz	Pass	Inf	40.14M	37.541M	39.78M	37.541M	39.96M	37.481M	40.02M	37.421M
5510MHz	Pass	Inf	40.14M	37.541M	39.78M	37.541M	40.02M	37.481M	39.96M	37.481M
5550MHz	Pass	Inf	40.26M	37.481M	39.84M	37.601M	40.02M	37.421M	40.2M	37.481M
5670MHz	Pass	Inf	40.26M	37.541M	39.84M	37.481M	39.96M	37.541M	40.02M	37.481M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.245M	33.688M	34.86M	33.618M	35M	33.688M	35.035M	33.583M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	4.058M	3.56M	4.018M	3.7M	4.038M	3.58M	4.038M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.6M	77.121M	81M	76.882M	81.12M	77.001M	81.48M	76.762M
5530MHz	Pass	Inf	81.24M	77.001M	81.24M	76.762M	81.12M	76.762M	81.72M	77.001M
5610MHz	Pass	Inf	81.24M	76.762M	81M	77.001M	81.48M	76.882M	81.72M	77.001M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.6M	72.939M	75.525M	73.013M	75.975M	72.939M	75.75M	73.088M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.54M	4.058M	3.56M	4.058M	3.5M	4.038M	3.74M	4.058M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.96M	76.922M	81.04M	77.161M	80.56M	76.922M	80.72M	77.081M
5250MHz	Pass	Inf	80.64M	76.762M	81.44M	76.762M	81.28M	76.922M	80.24M	76.922M
5570MHz	Pass	Inf	164.16M	154.003M	165.12M	154.723M	163.68M	154.483M	163.92M	154.963M

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

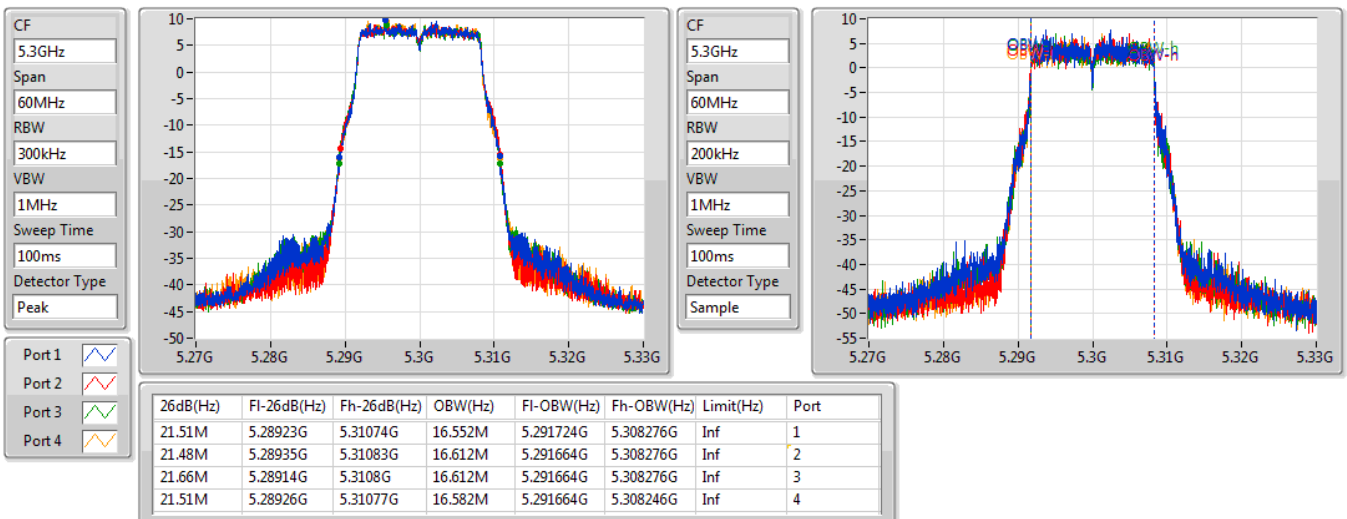
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX
EBW
5260MHz

30/07/2019

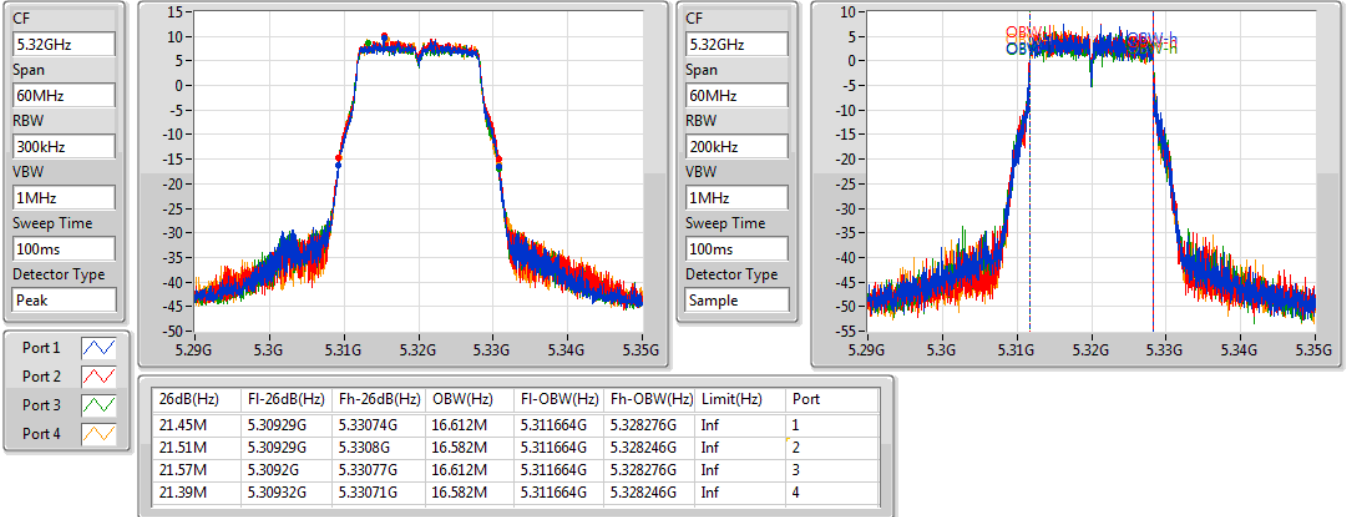

802.11a_Nss1,(6Mbps)_4TX
EBW
5300MHz

30/07/2019

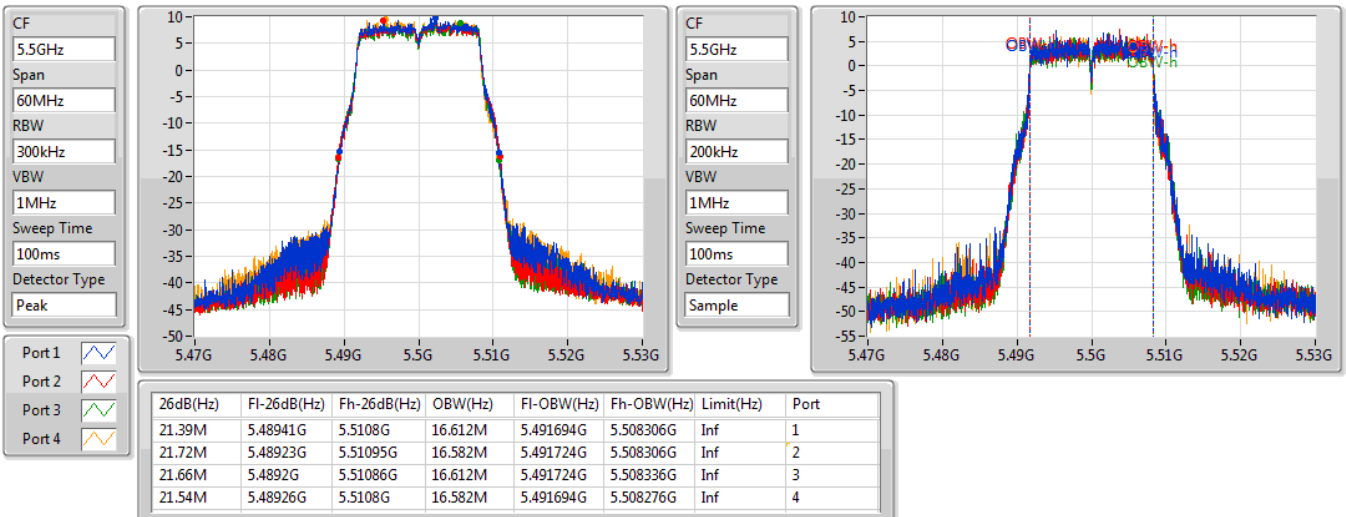


802.11a_Nss1,(6Mbps)_4TX
EBW
5320MHz

30/07/2019

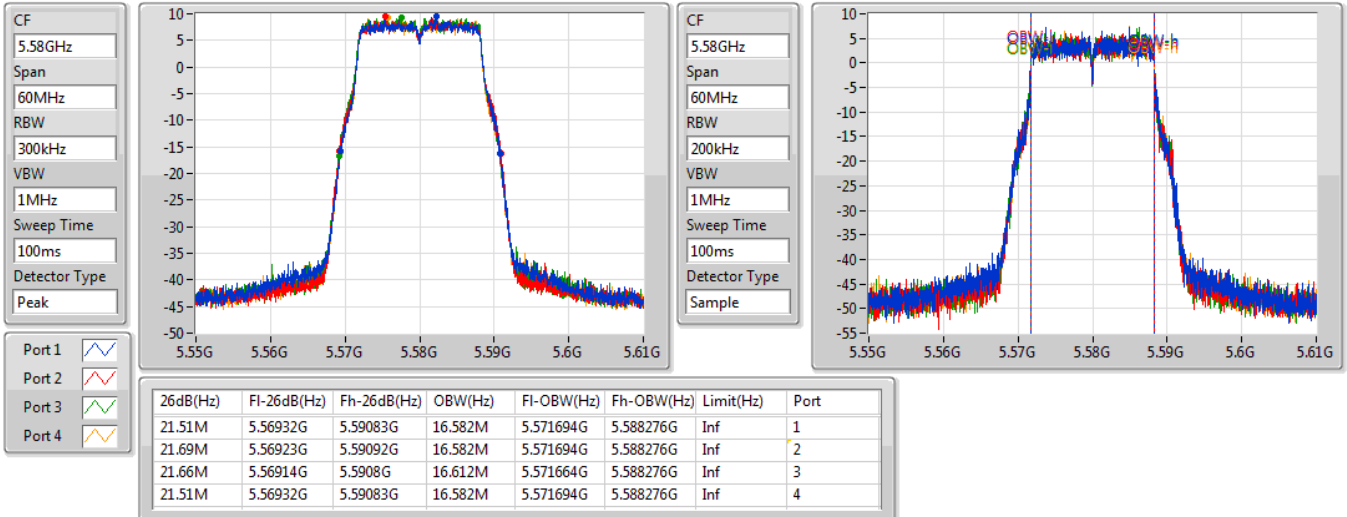

802.11a_Nss1,(6Mbps)_4TX
EBW
5500MHz

30/07/2019

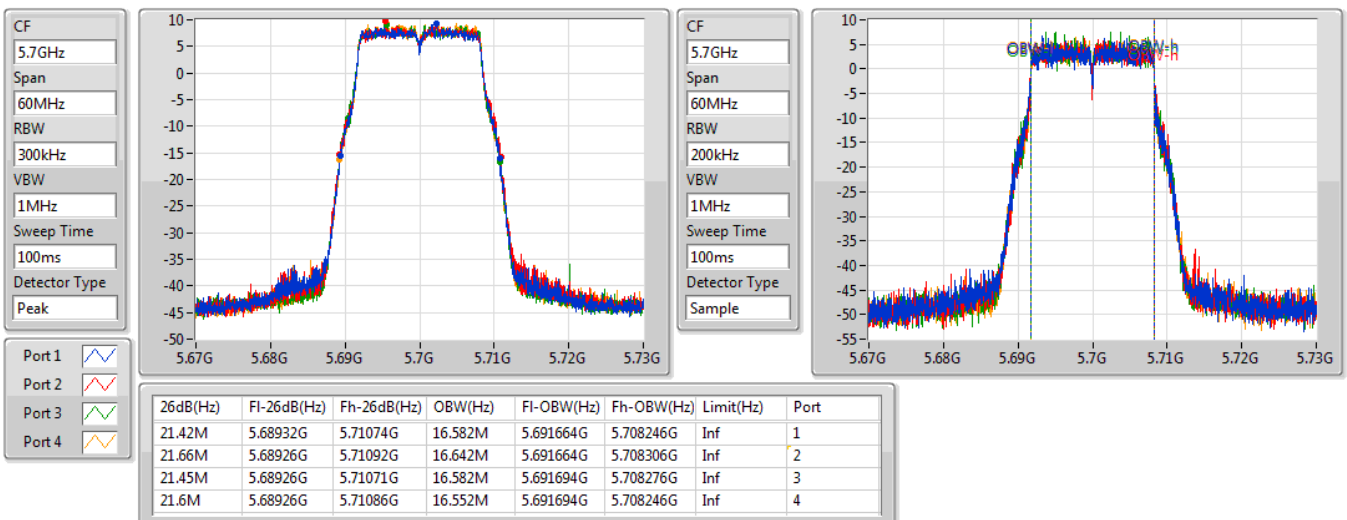


802.11a_Nss1,(6Mbps)_4TX
EBW
5580MHz

30/07/2019

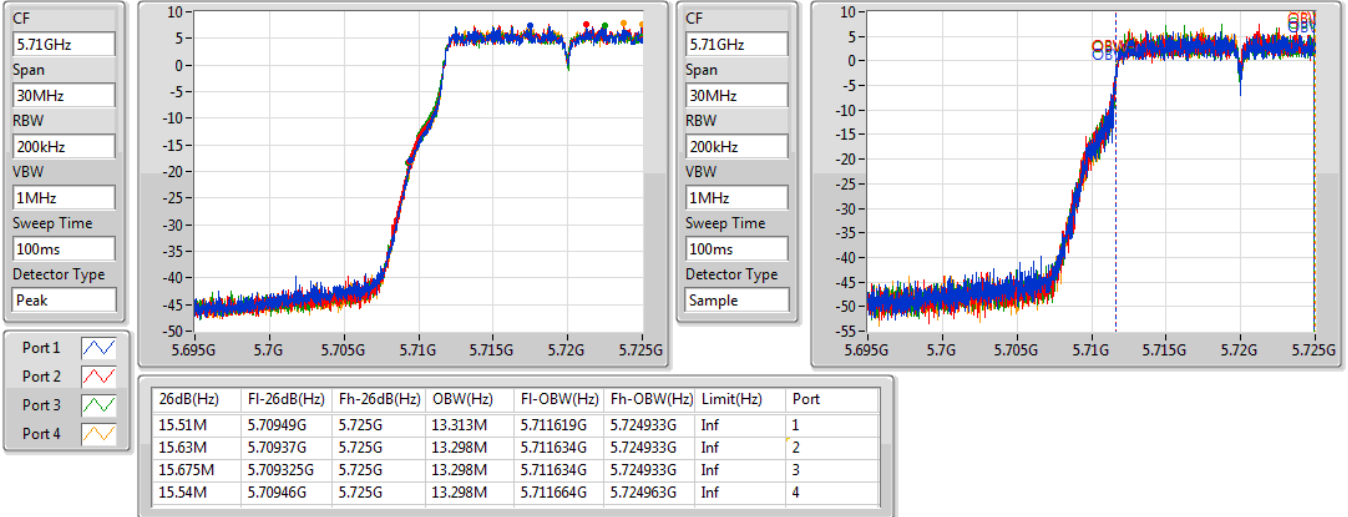

802.11a_Nss1,(6Mbps)_4TX
EBW
5700MHz

30/07/2019

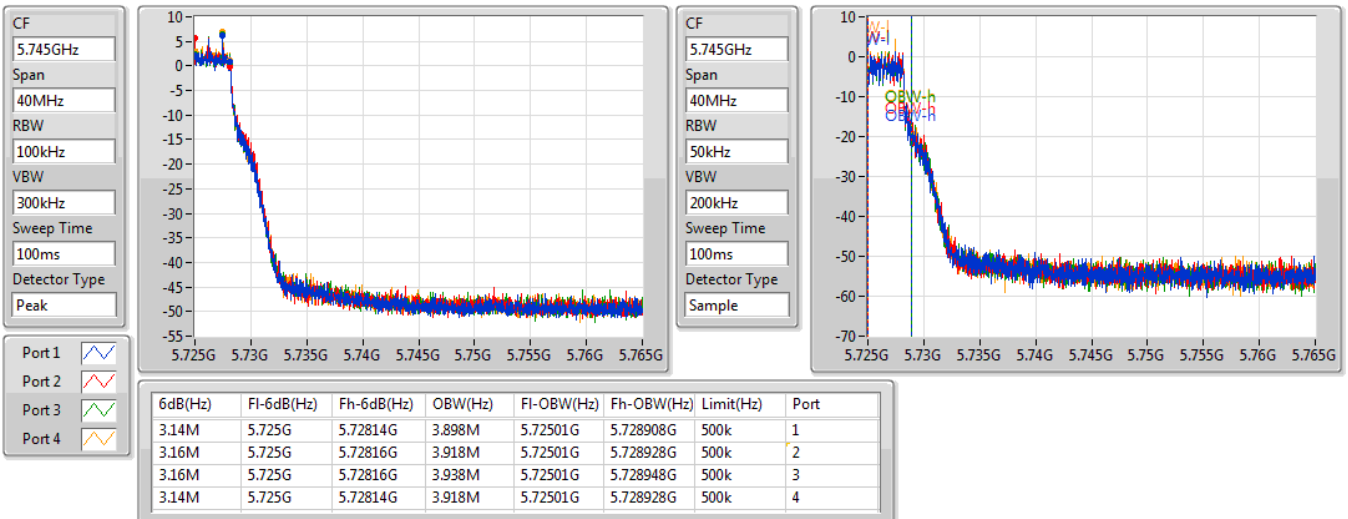


802.11a_Nss1,(6Mbps)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

30/07/2019

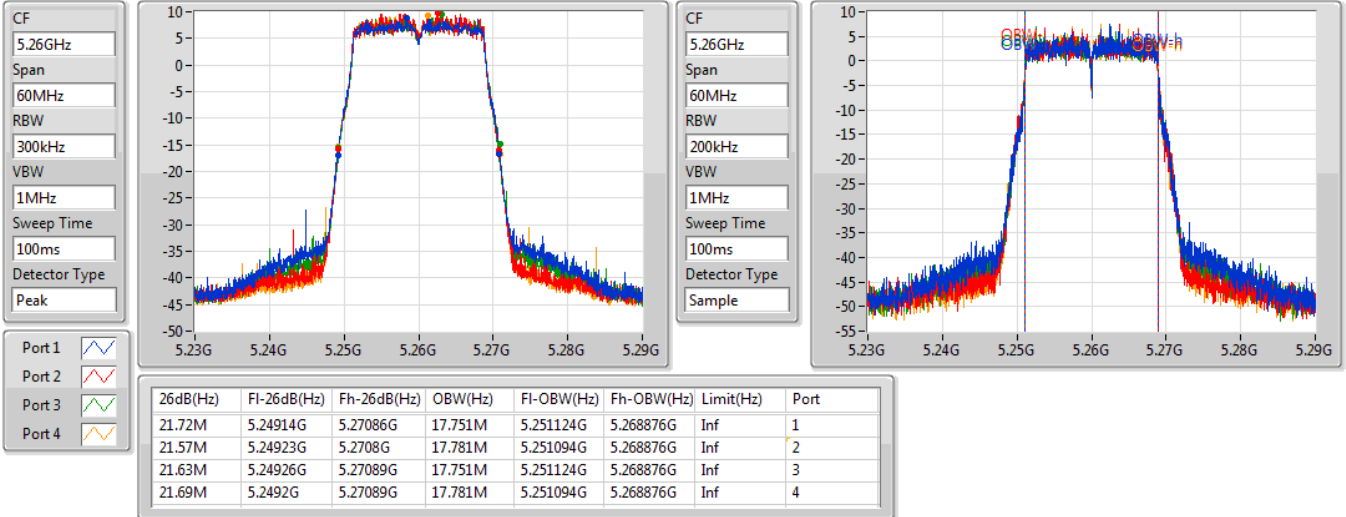

802.11a_Nss1,(6Mbps)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

30/07/2019

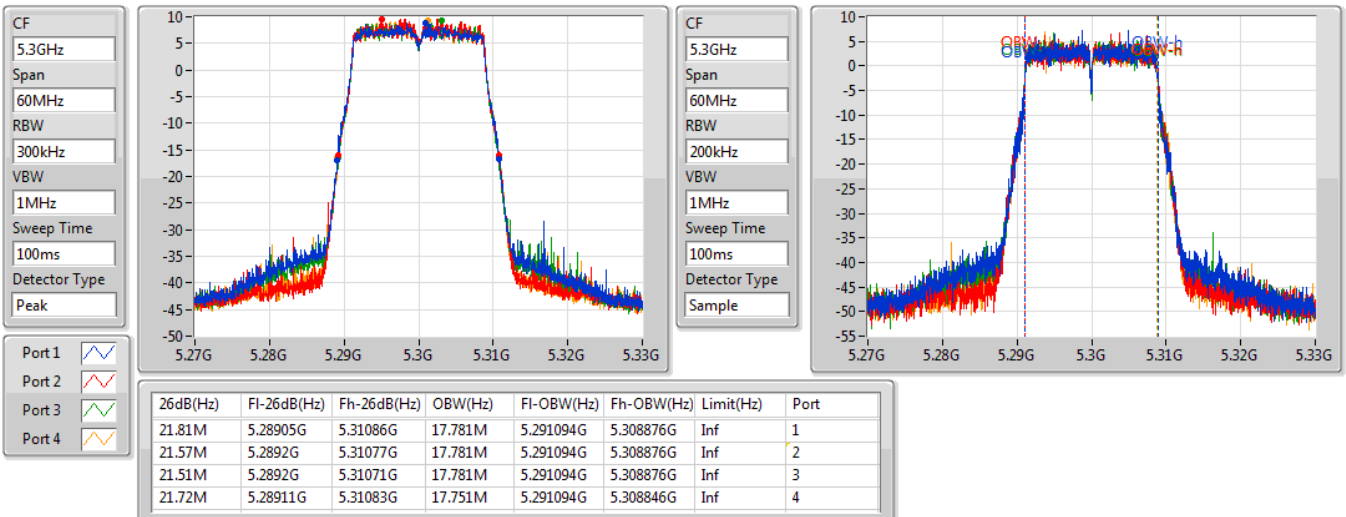


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5260MHz

30/07/2019

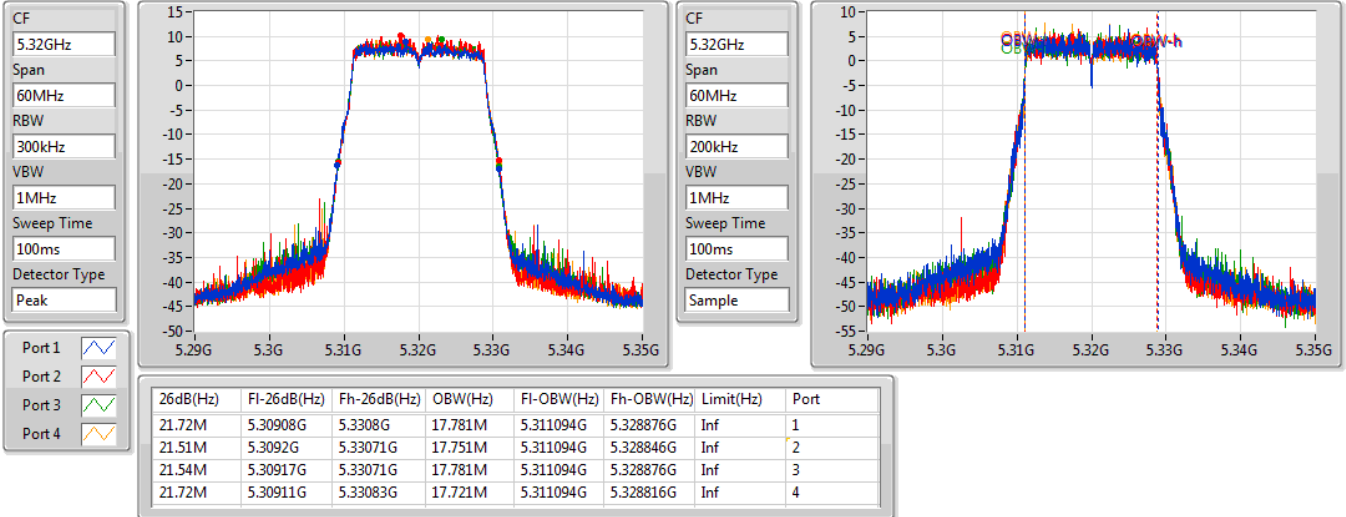

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5300MHz

30/07/2019

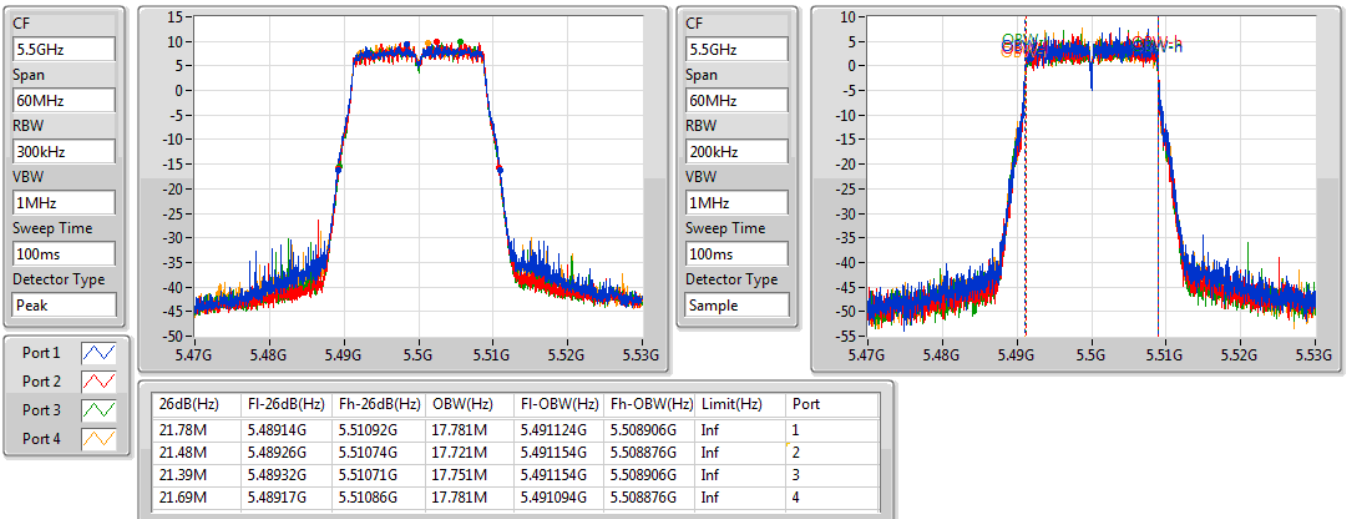


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5320MHz

30/07/2019

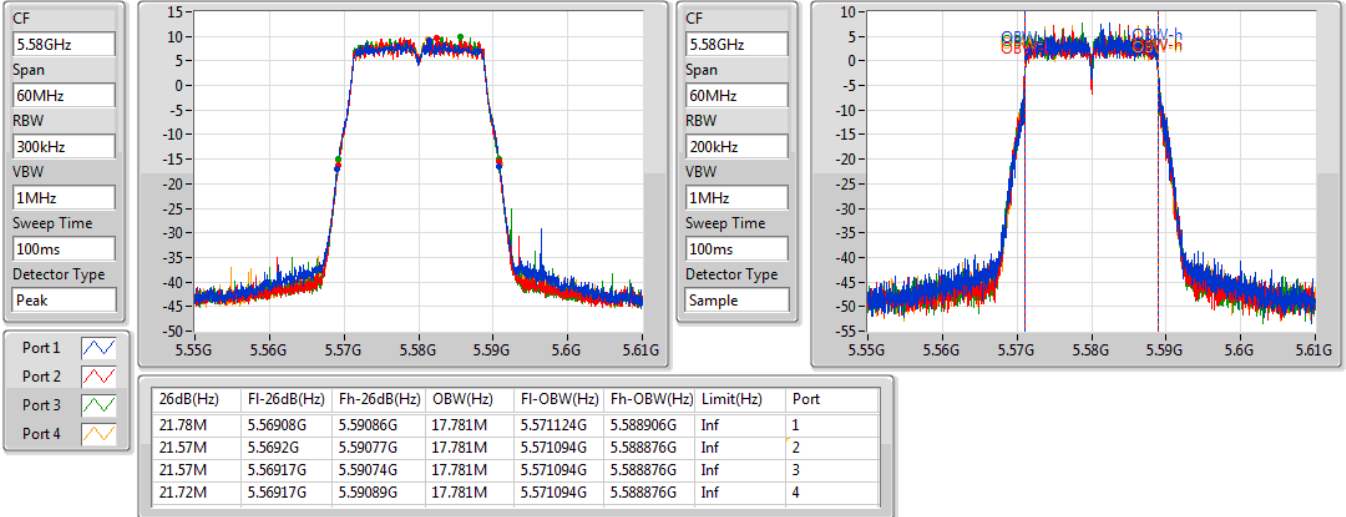

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5500MHz

30/07/2019

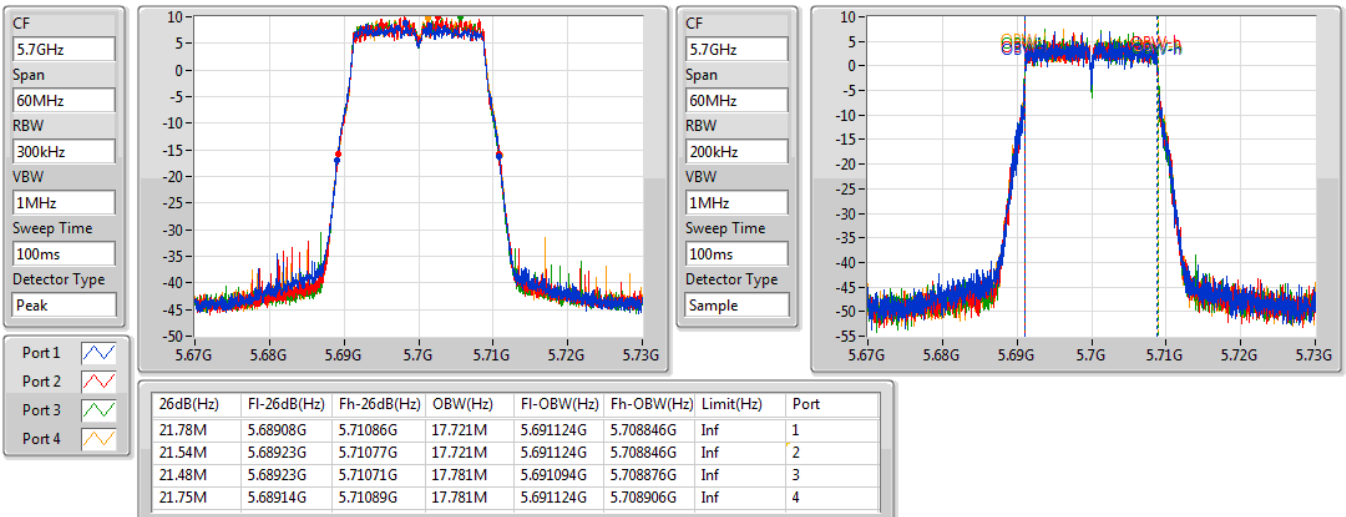


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5580MHz

30/07/2019

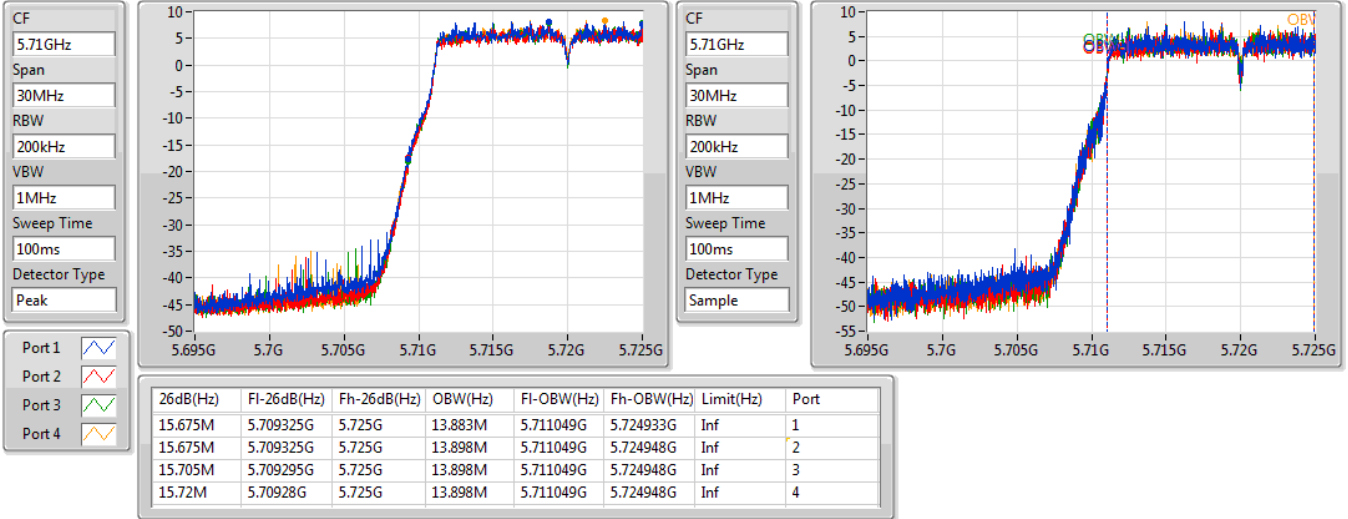

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5700MHz

30/07/2019

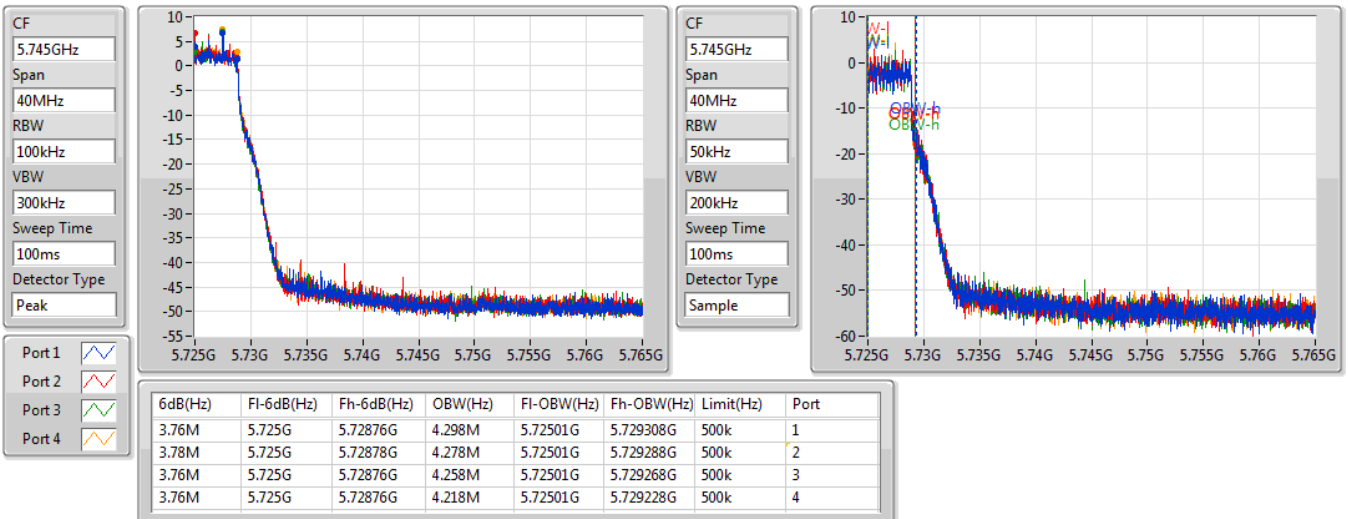


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

30/07/2019


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

30/07/2019

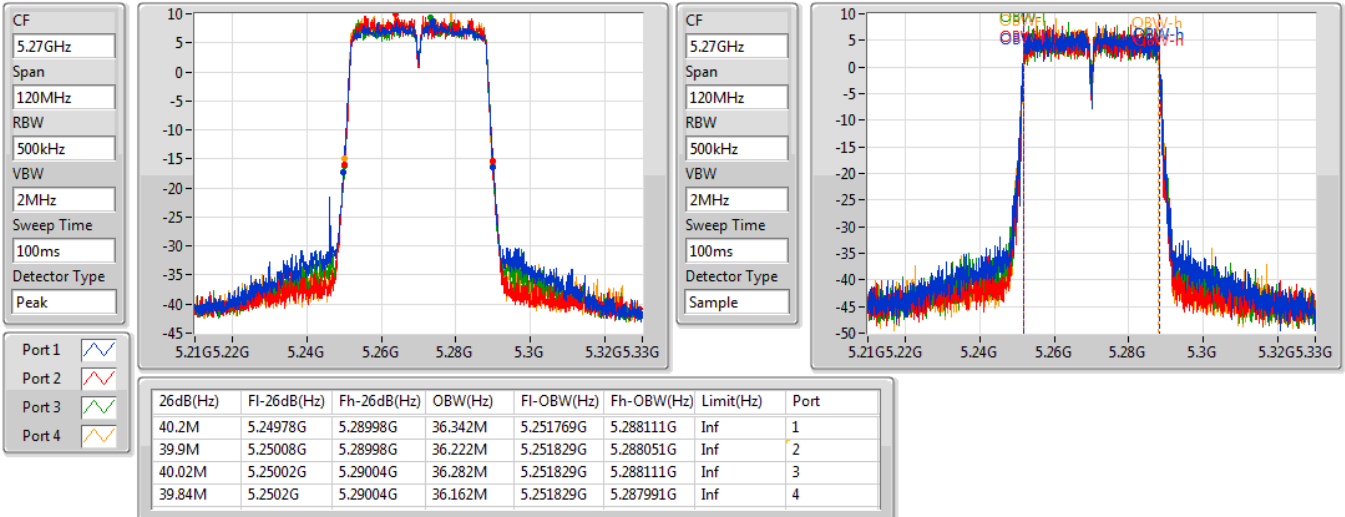


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5270MHz

30/07/2019

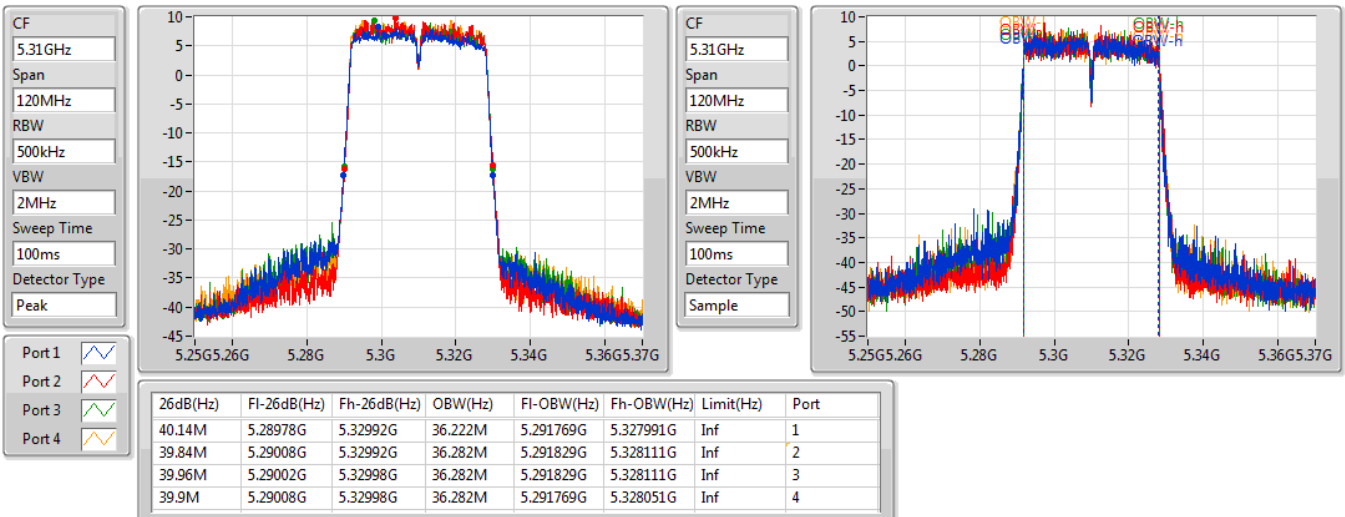


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5310MHz

30/07/2019

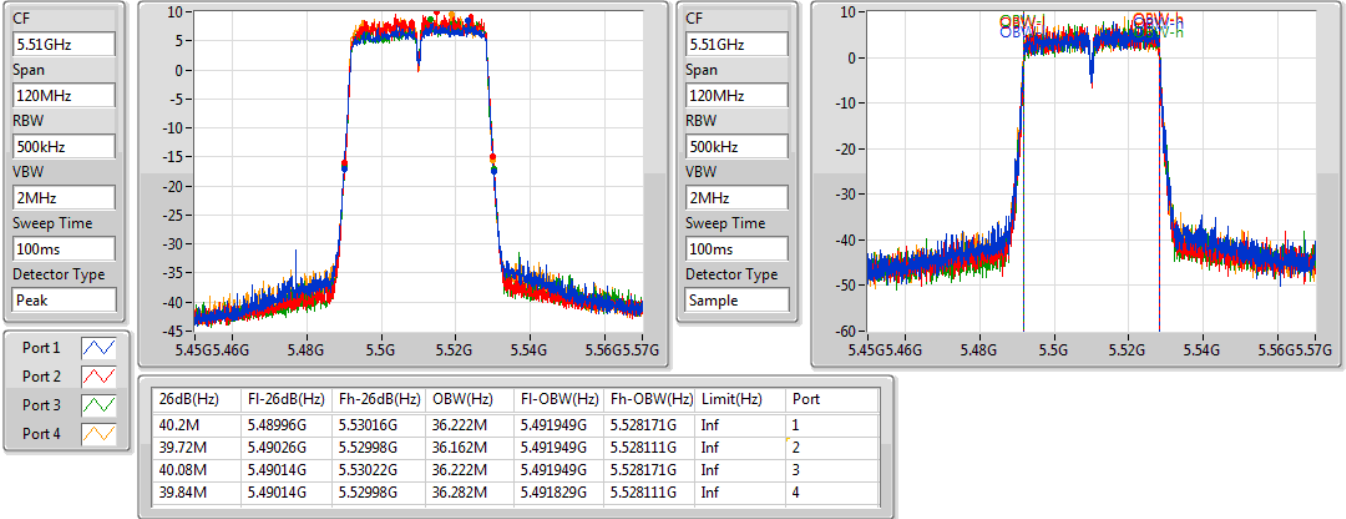


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5510MHz

30/07/2019

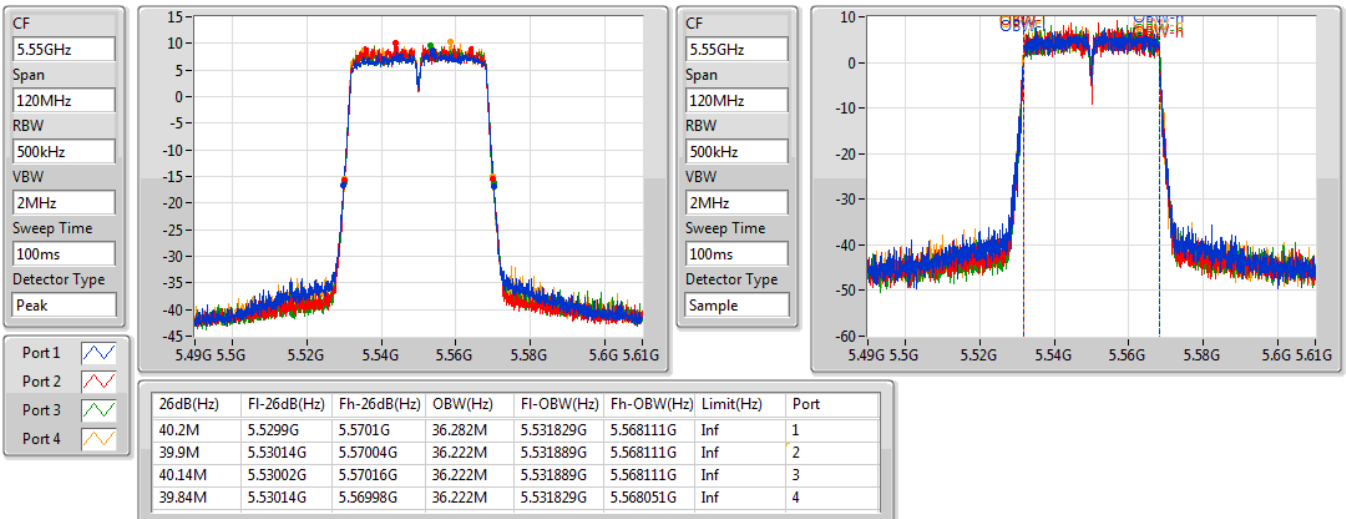


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5550MHz

30/07/2019

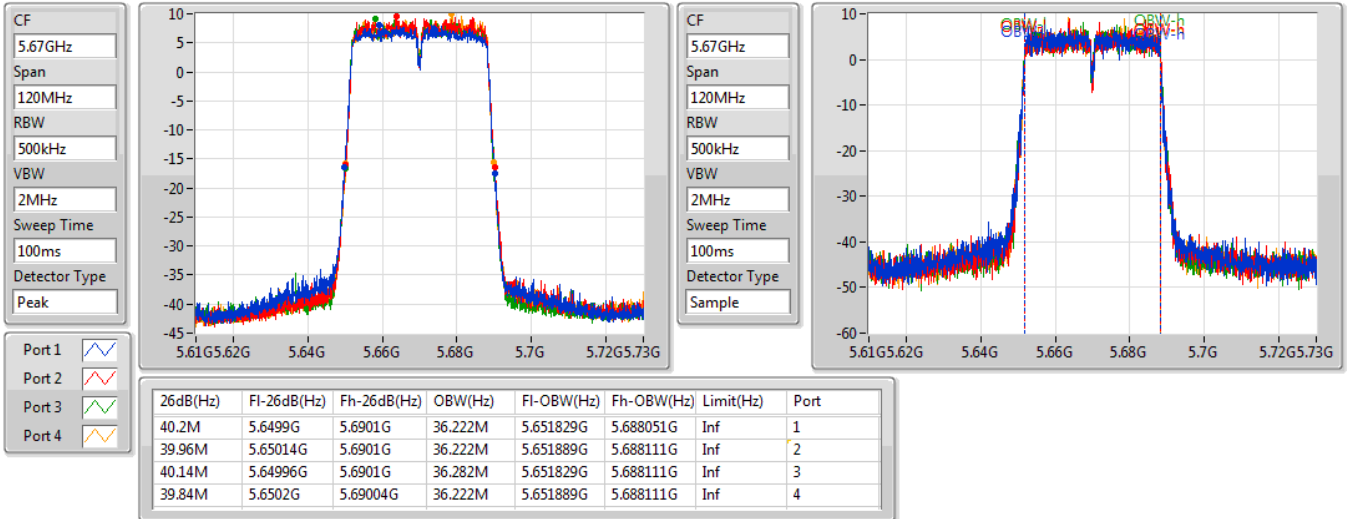


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

5670MHz

30/07/2019

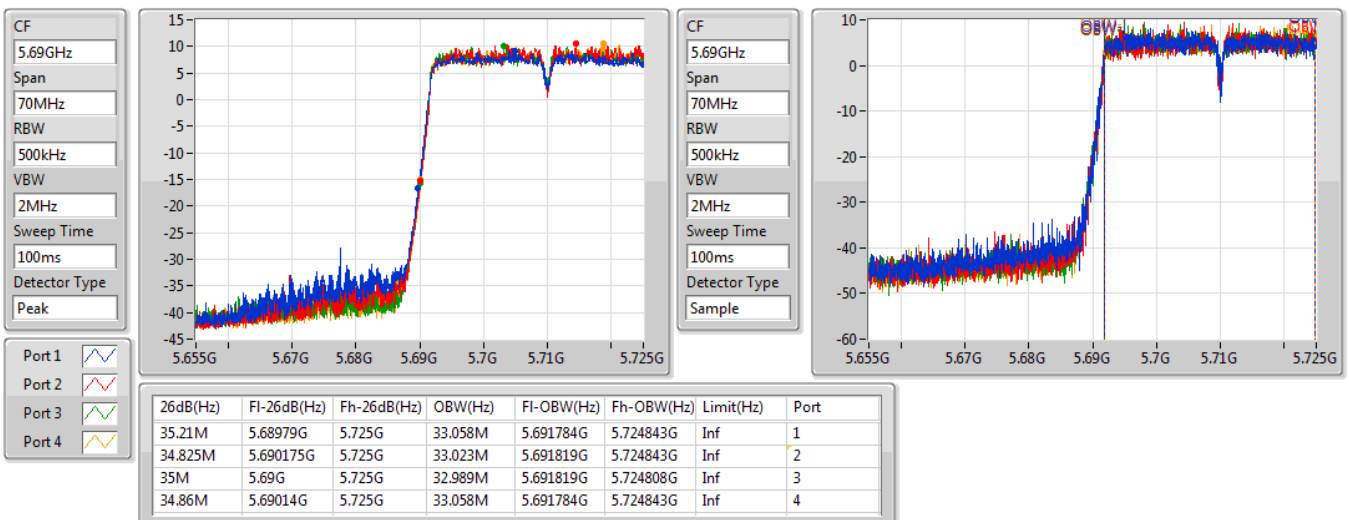


802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

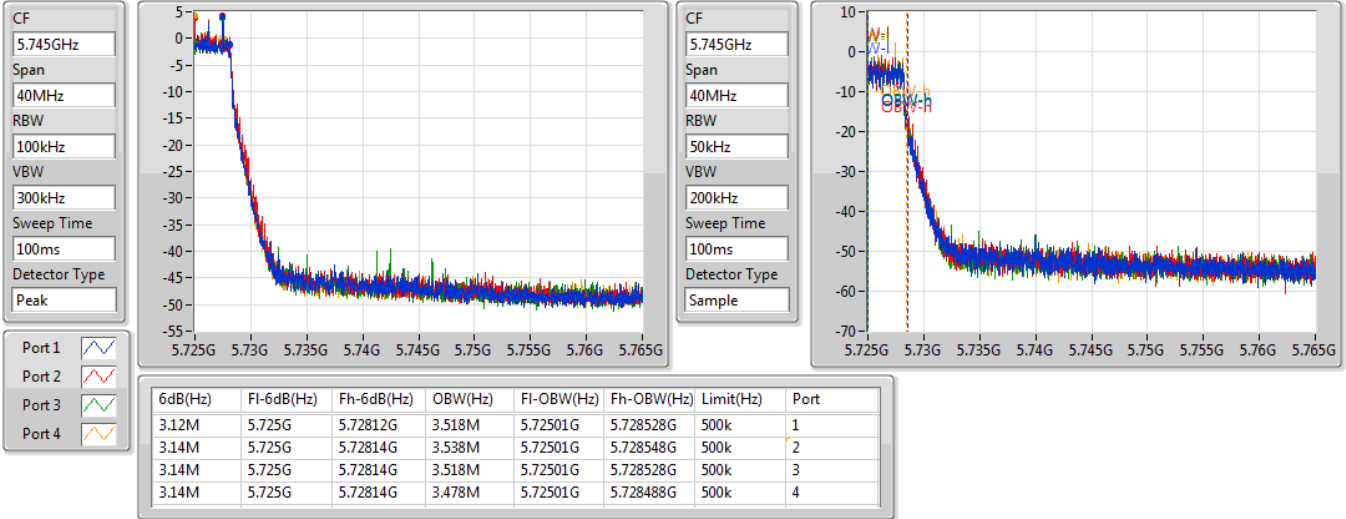
5710MHz Straddle 5.47-5.725GHz

30/07/2019

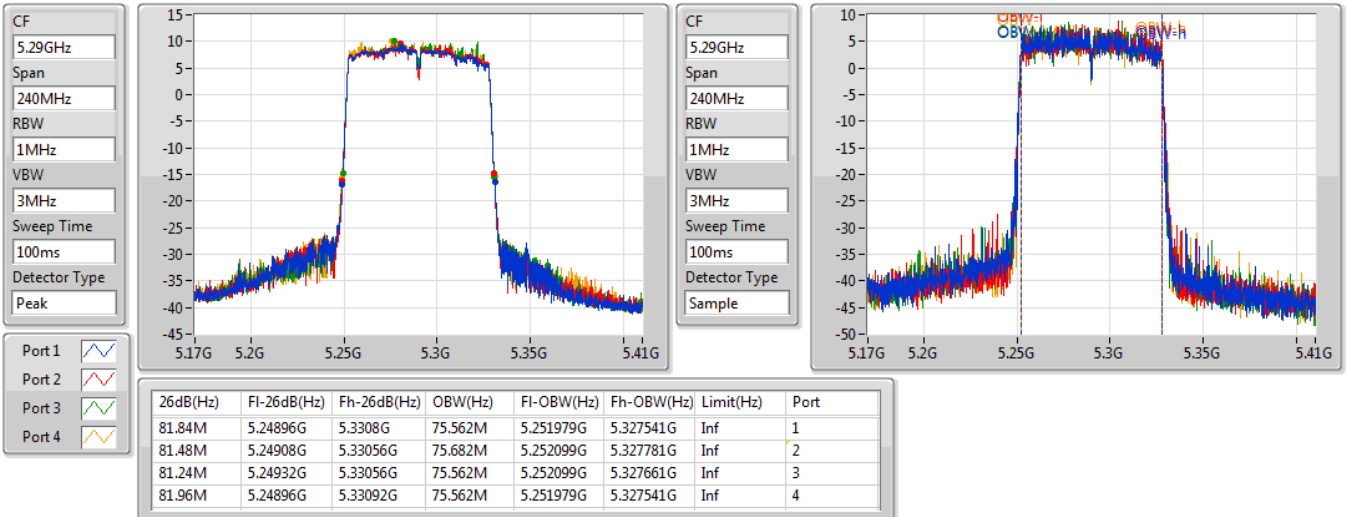


802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.725-5.85GHz

30/07/2019

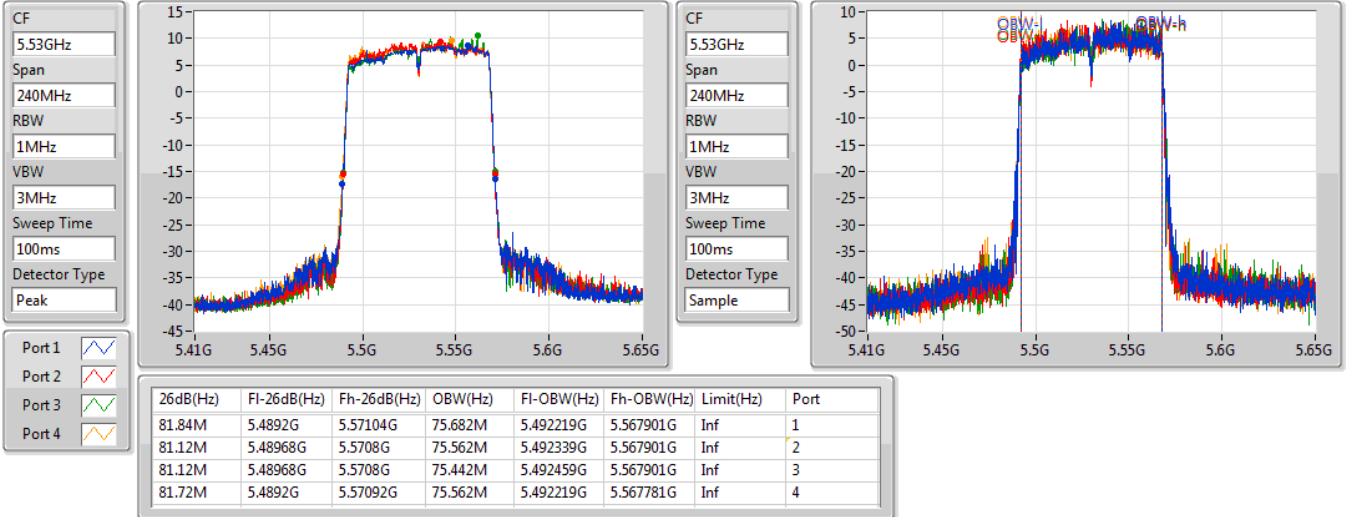

802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5290MHz

30/07/2019

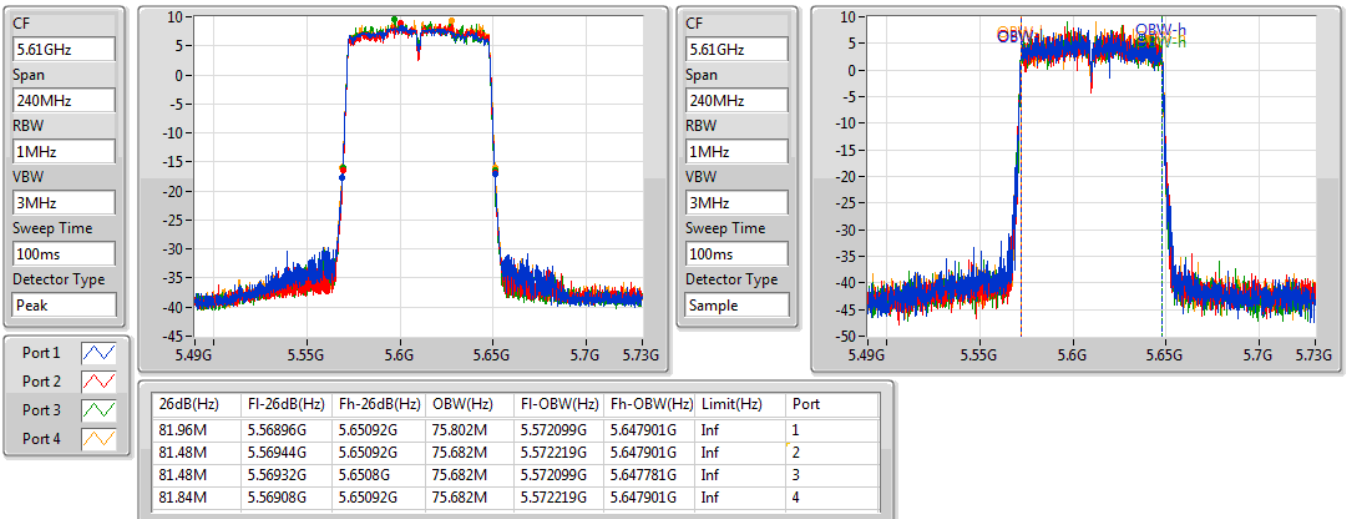


802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5530MHz

30/07/2019

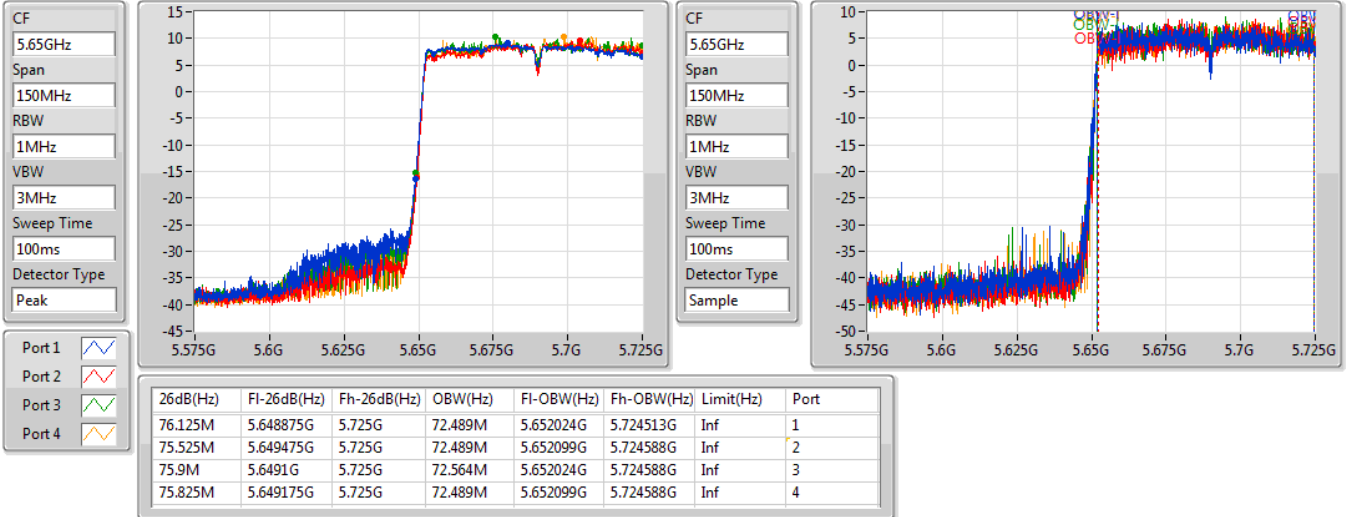

802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5610MHz

30/07/2019

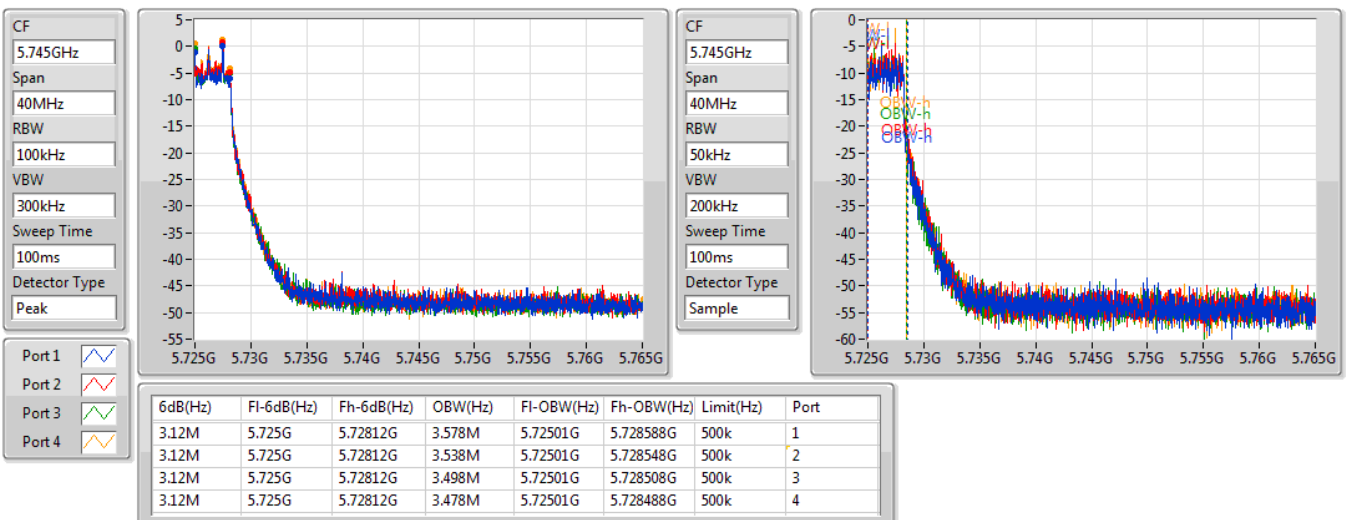


802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.47-5.725GHz

30/07/2019

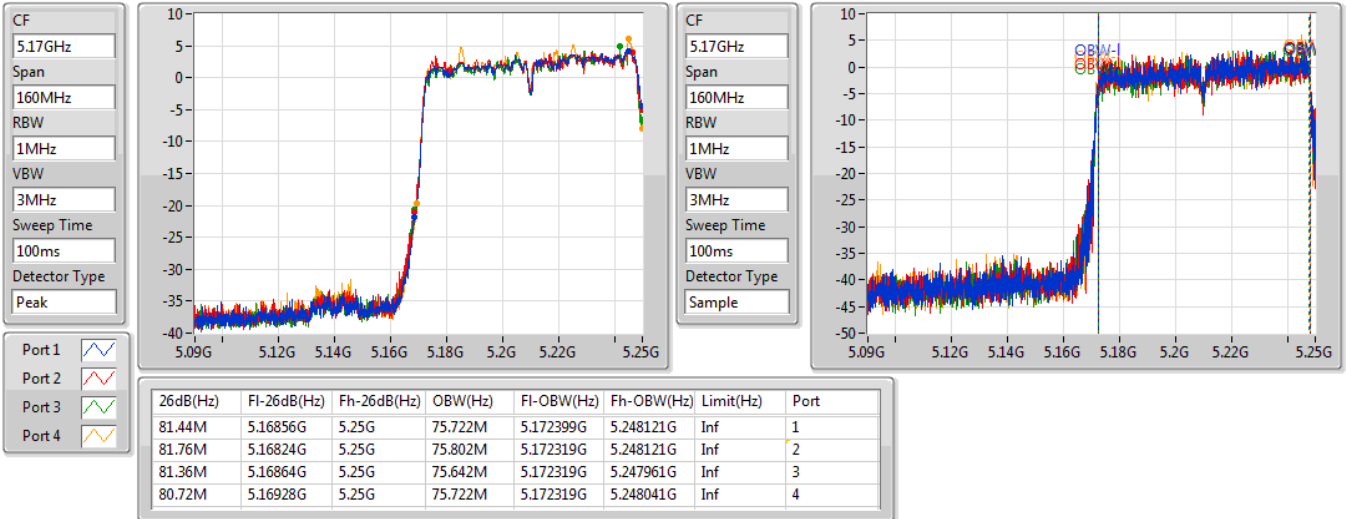

802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

30/07/2019

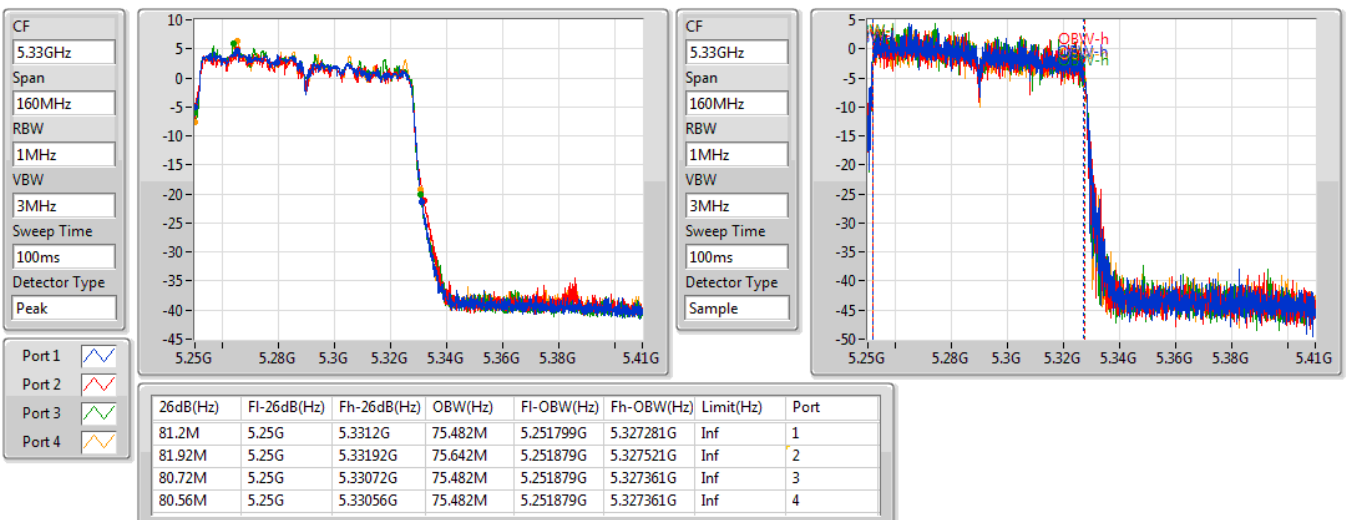


802.11ac VHT160_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

30/07/2019


802.11ac VHT160_Nss1,(MCS0)_4TX
EBW
5250MHz

30/07/2019

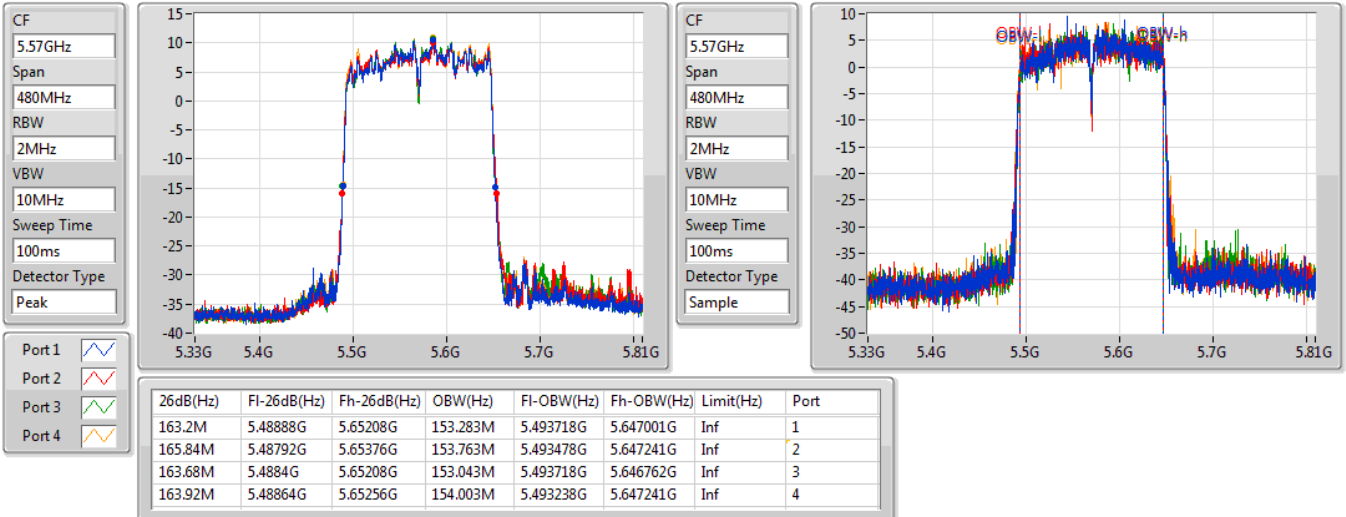


802.11ac VHT160_Nss1,(MCS0)_4TX

EBW

5570MHz

30/07/2019

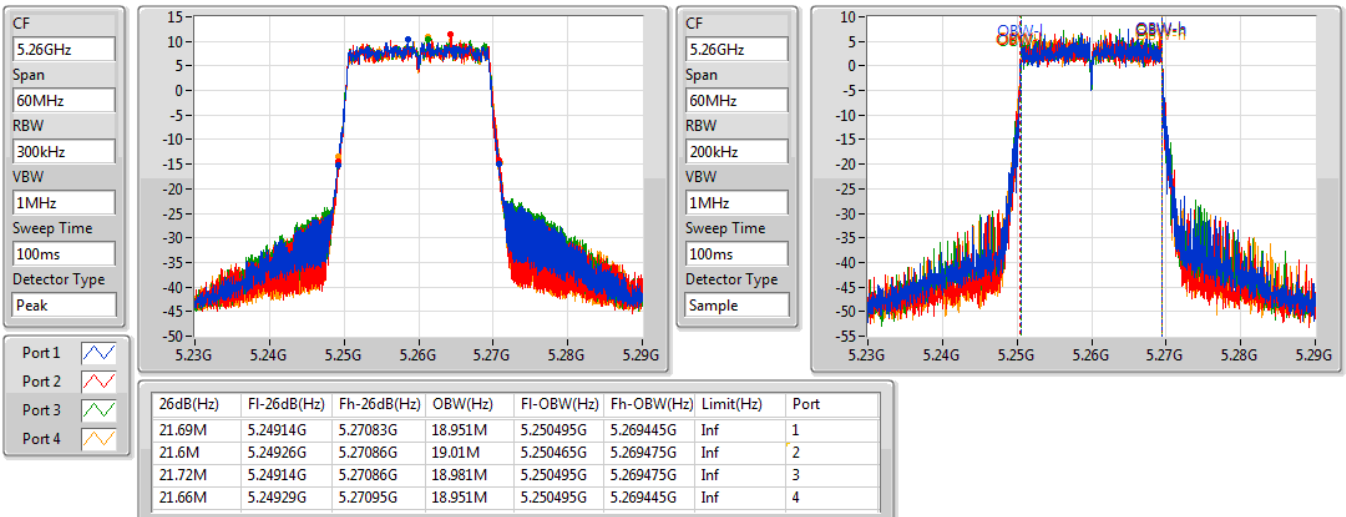


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5260MHz

30/07/2019

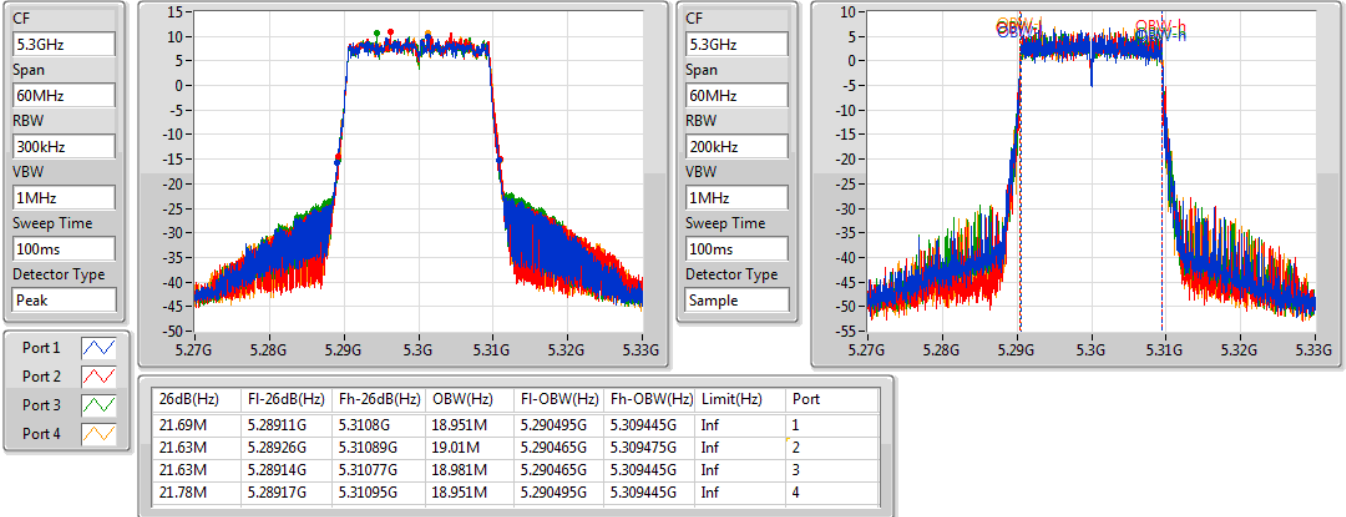


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5300MHz

30/07/2019

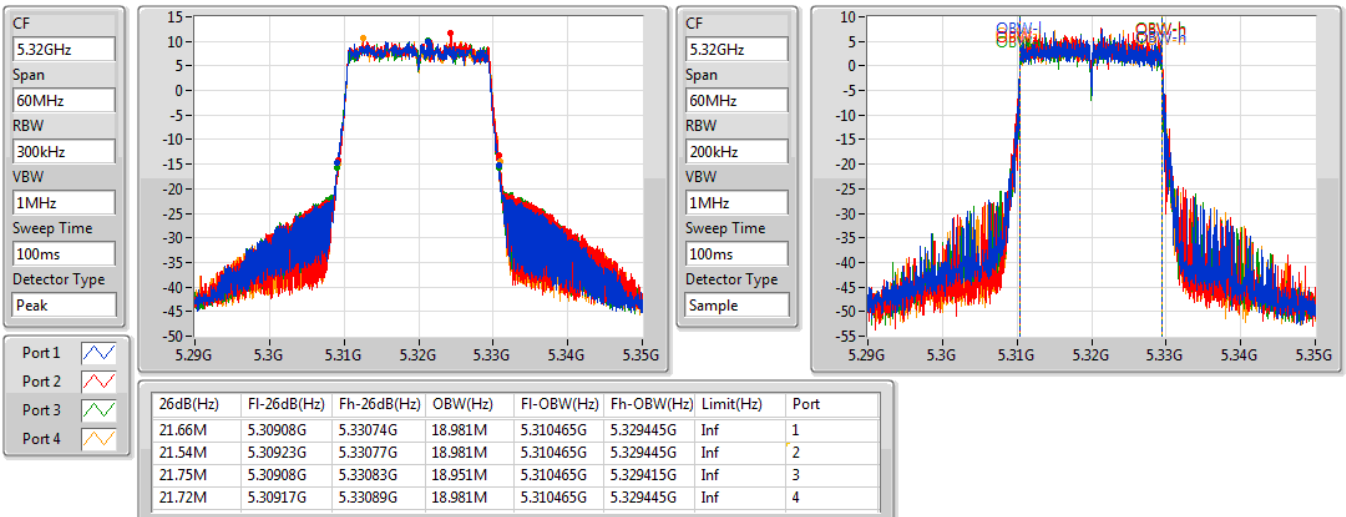


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5320MHz

30/07/2019

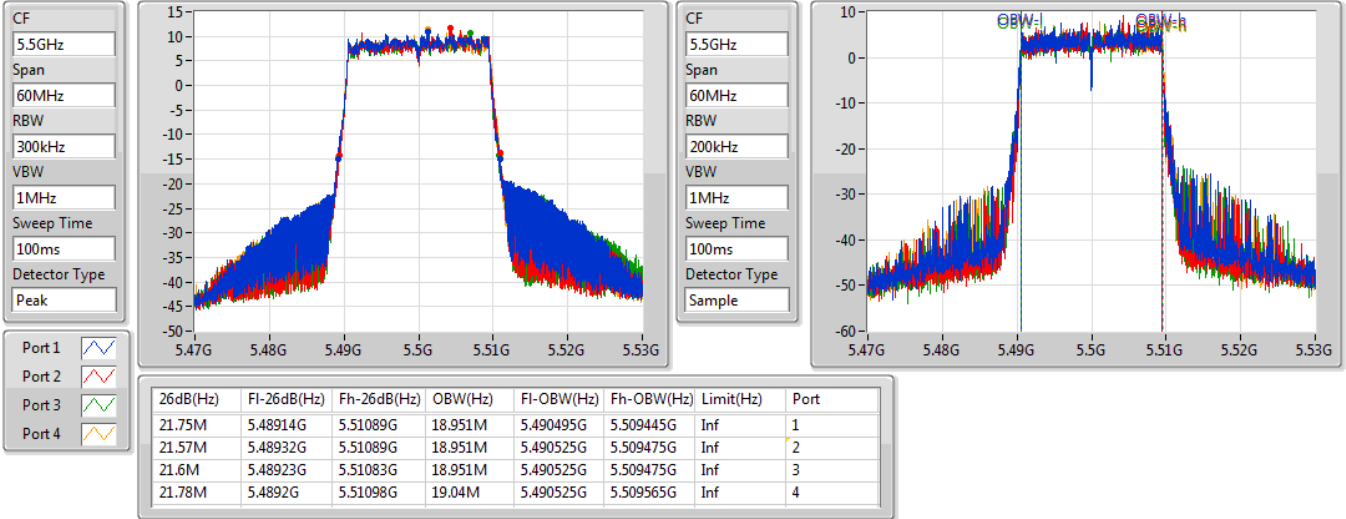


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5500MHz

30/07/2019

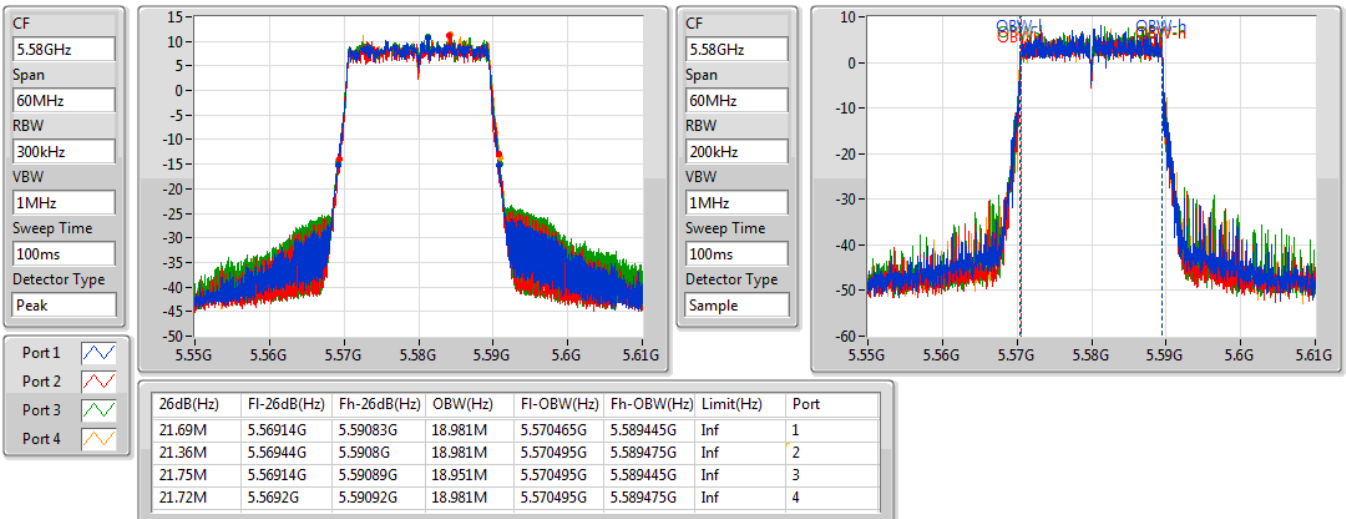


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5580MHz

30/07/2019

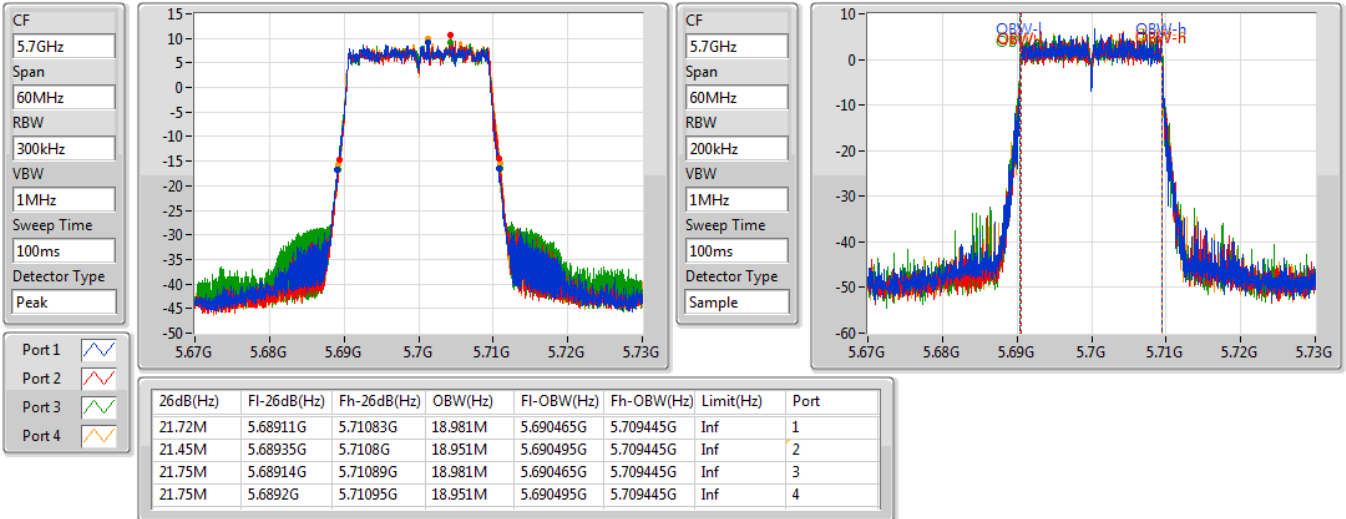


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5700MHz

30/07/2019

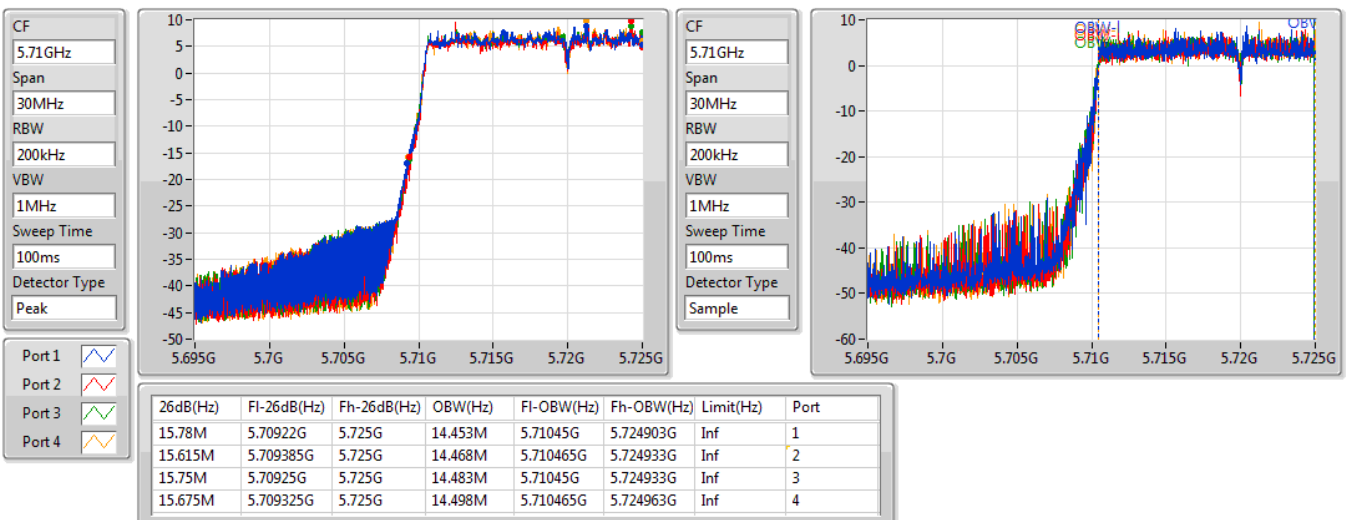


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.47-5.725GHz

30/07/2019

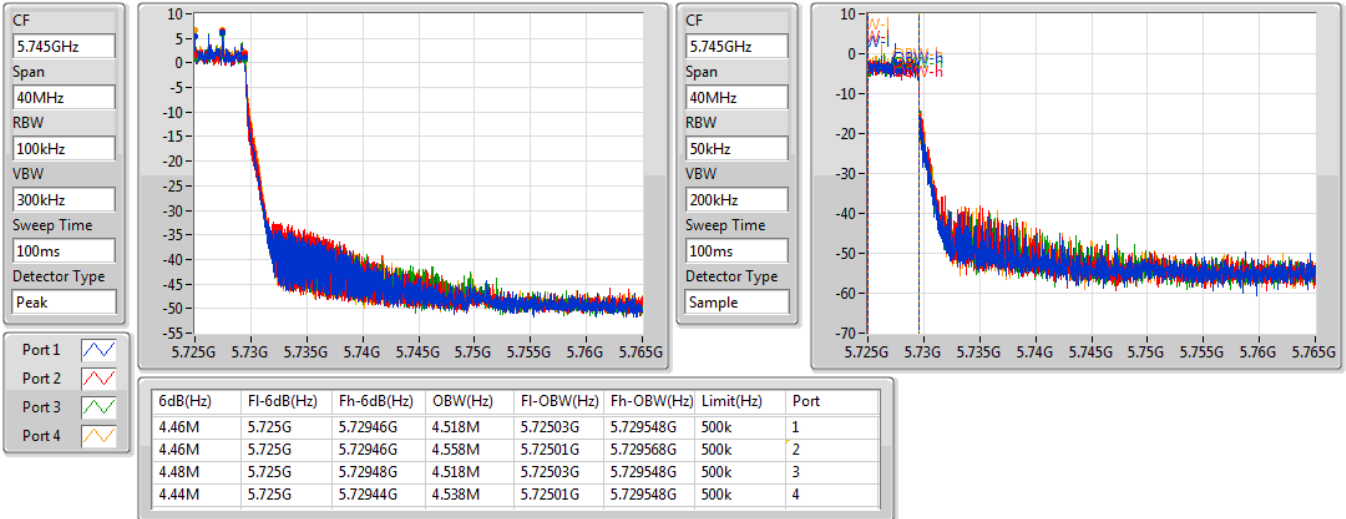


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2019

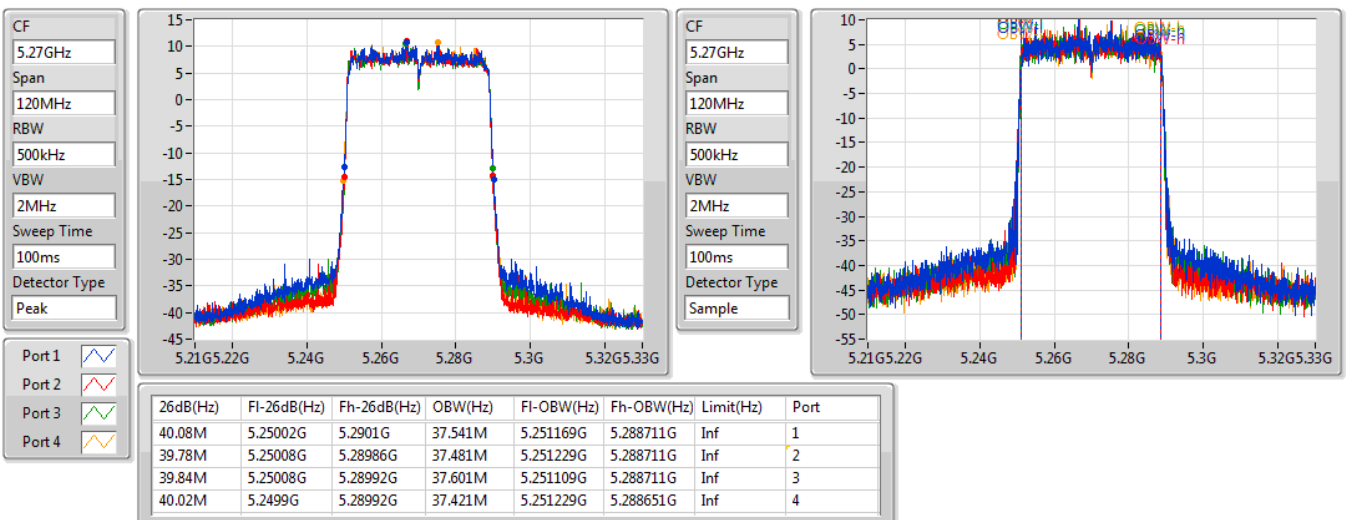


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5270MHz

30/07/2019

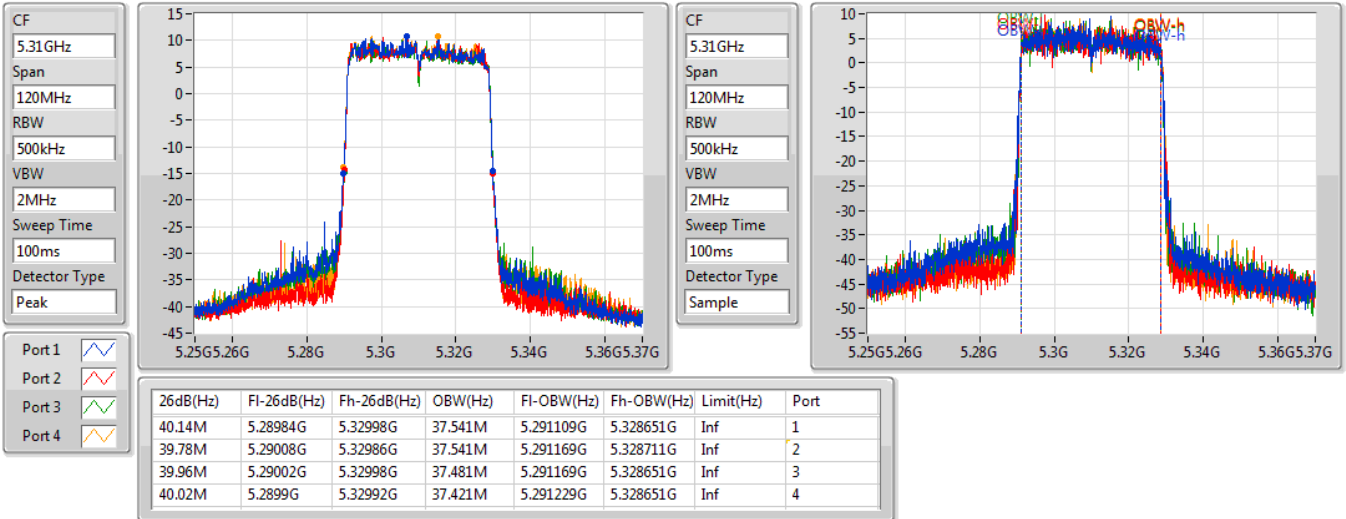


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5310MHz

30/07/2019

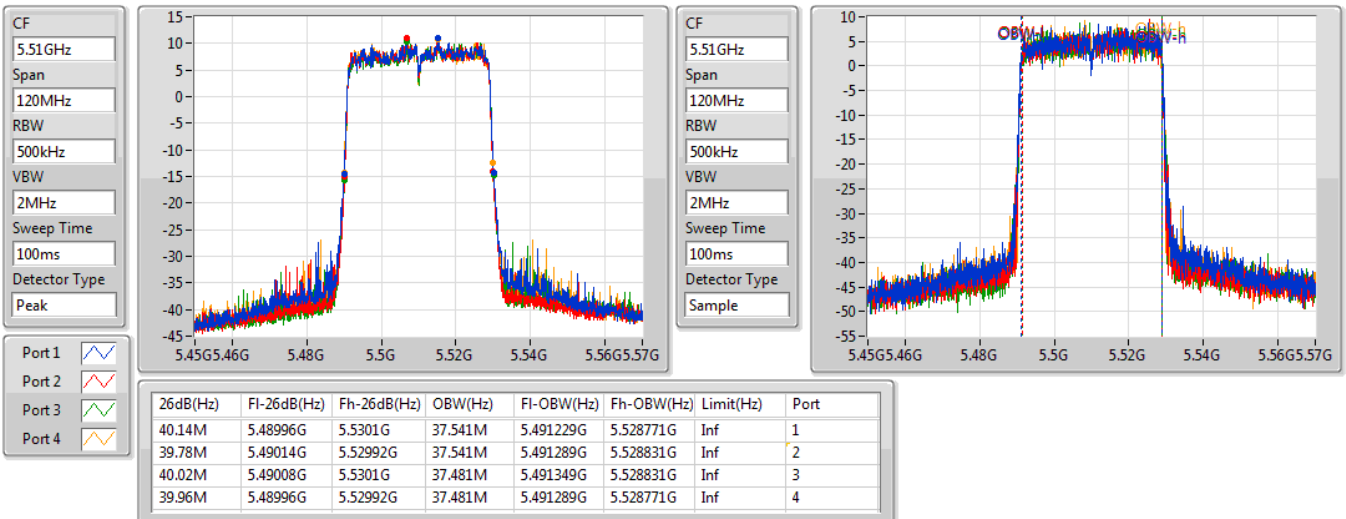


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5510MHz

30/07/2019

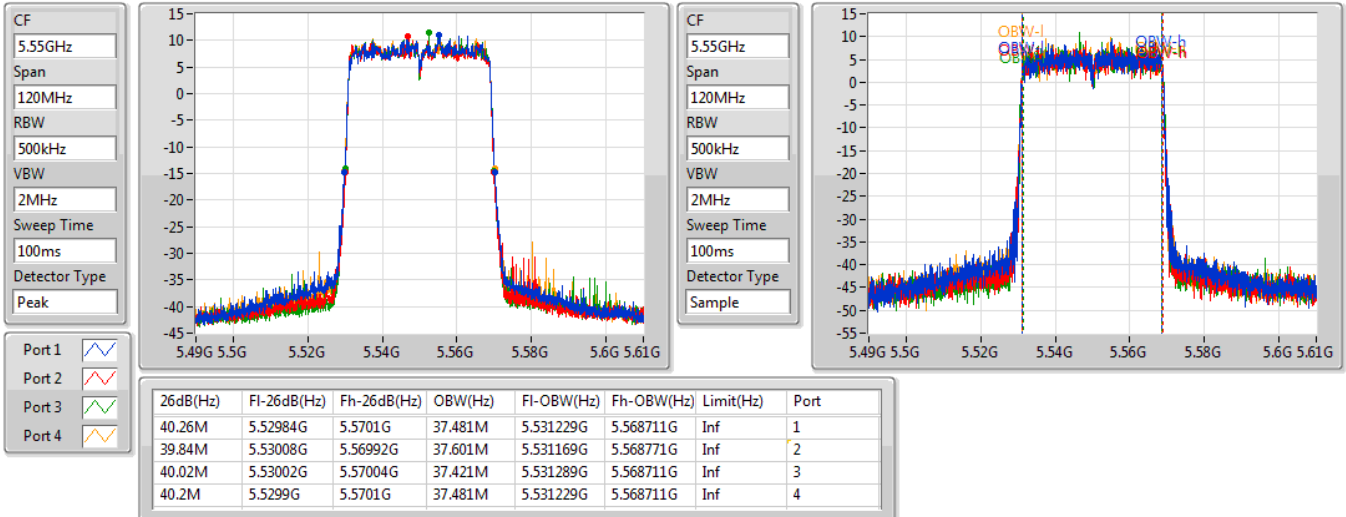


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5550MHz

30/07/2019

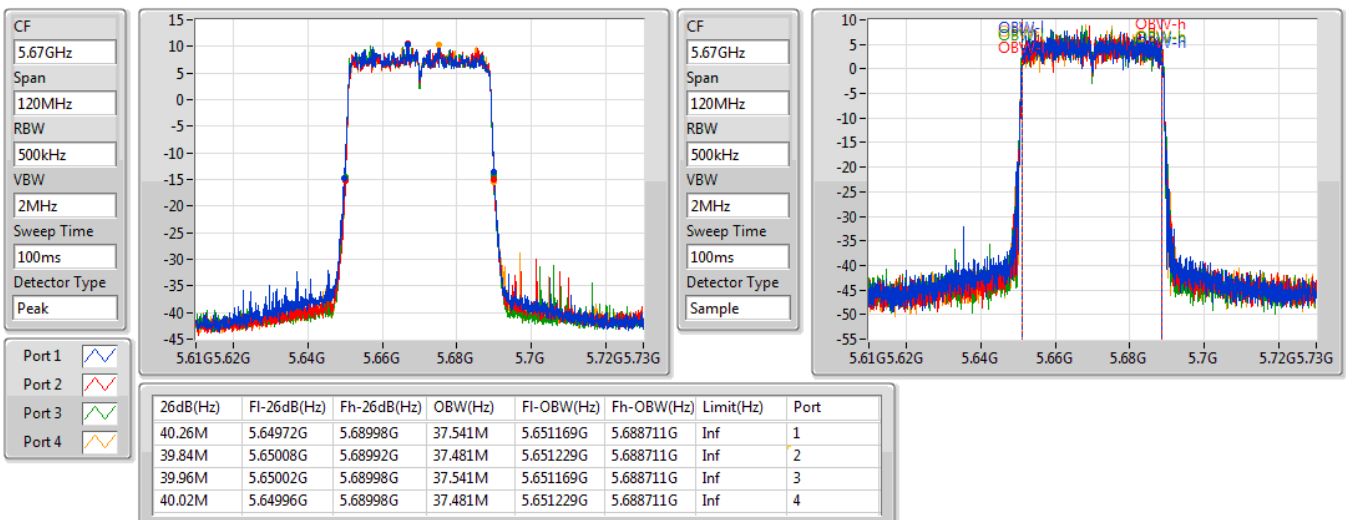


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

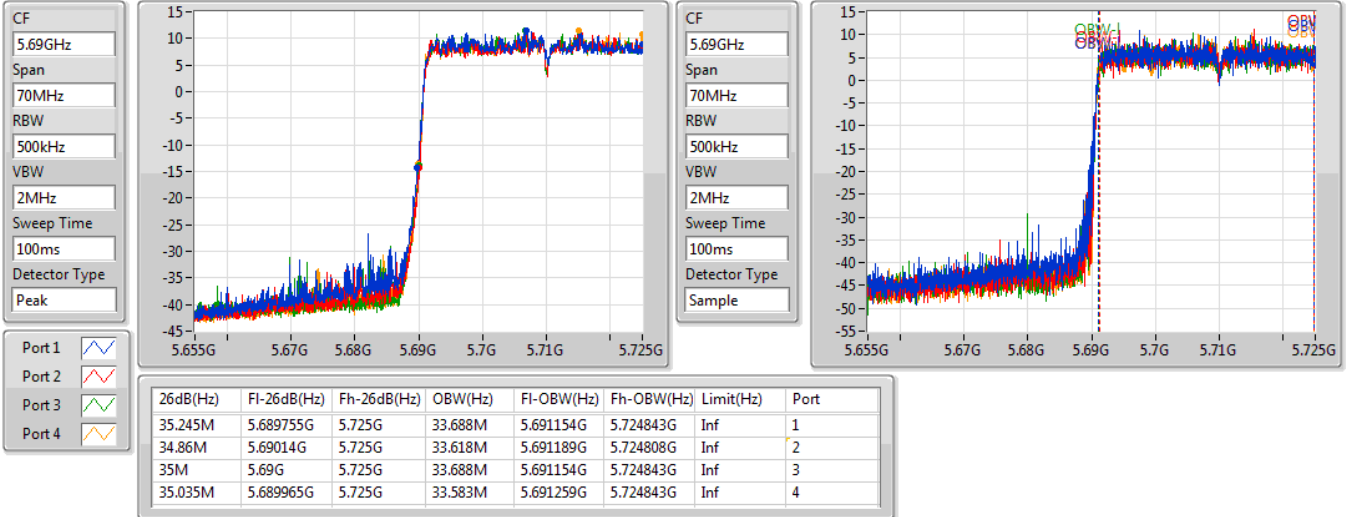
5670MHz

30/07/2019

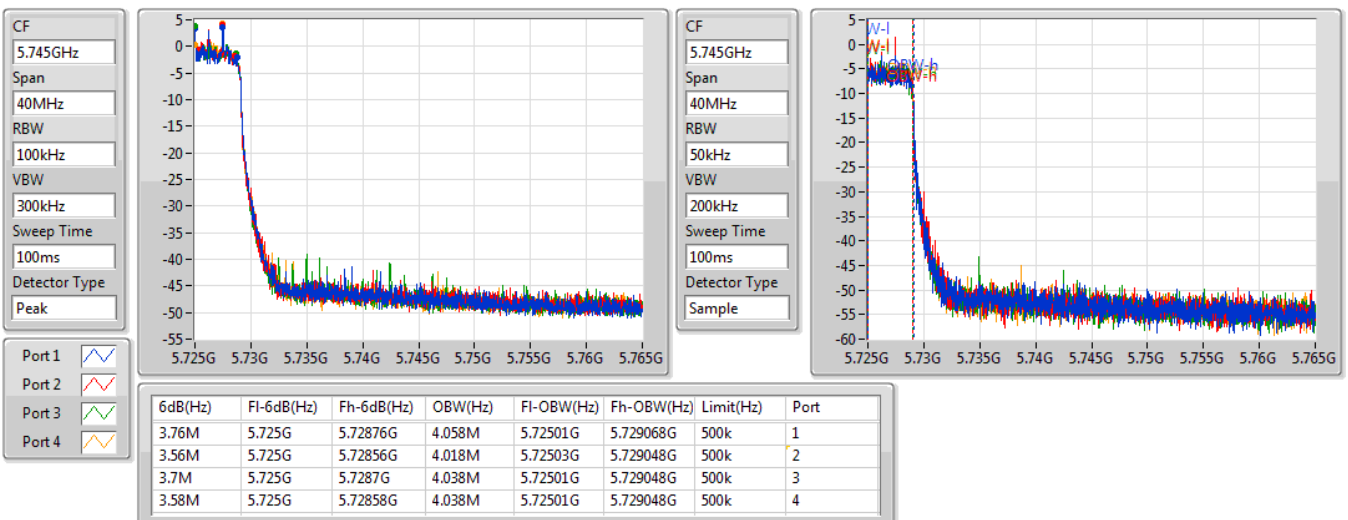


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.47-5.725GHz

30/07/2019


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.725-5.85GHz

30/07/2019

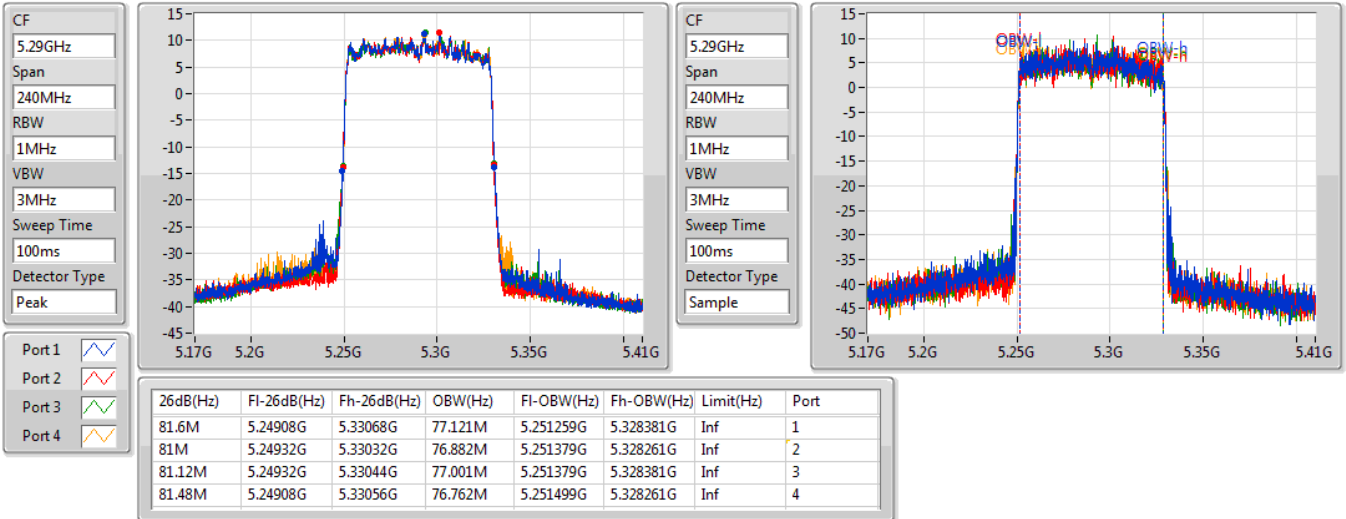


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5290MHz

31/07/2019

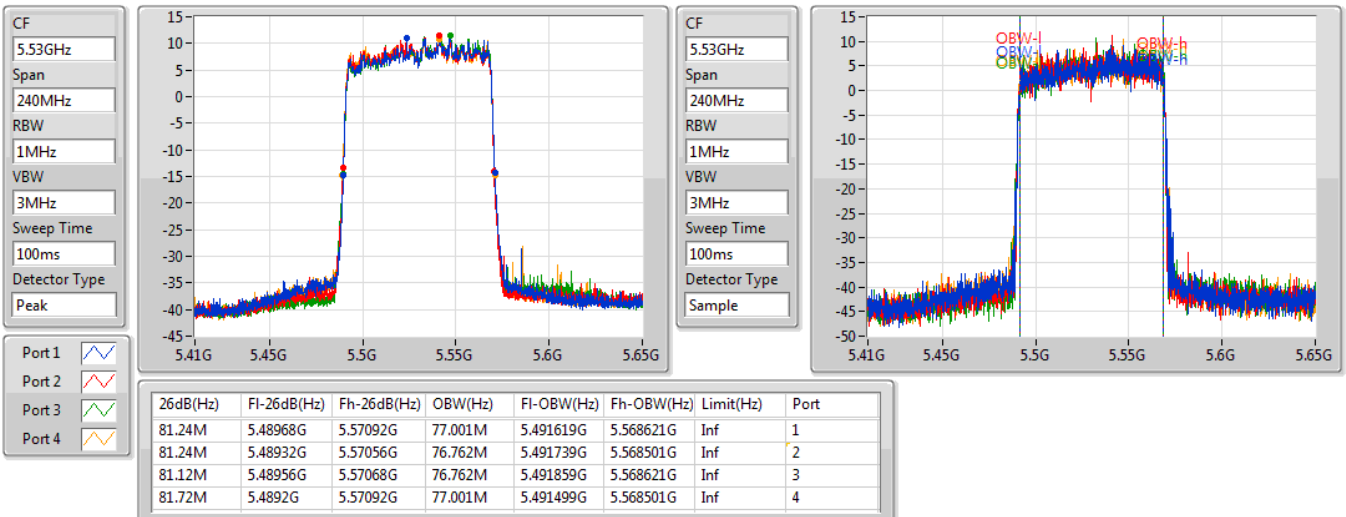


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5530MHz

31/07/2019

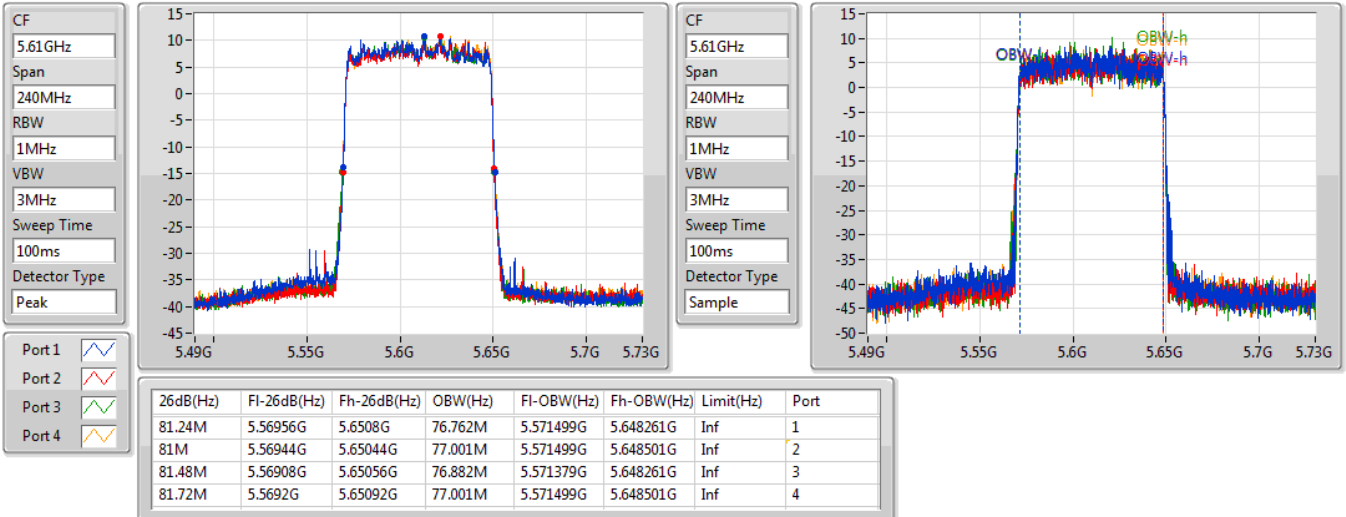


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5610MHz

31/07/2019

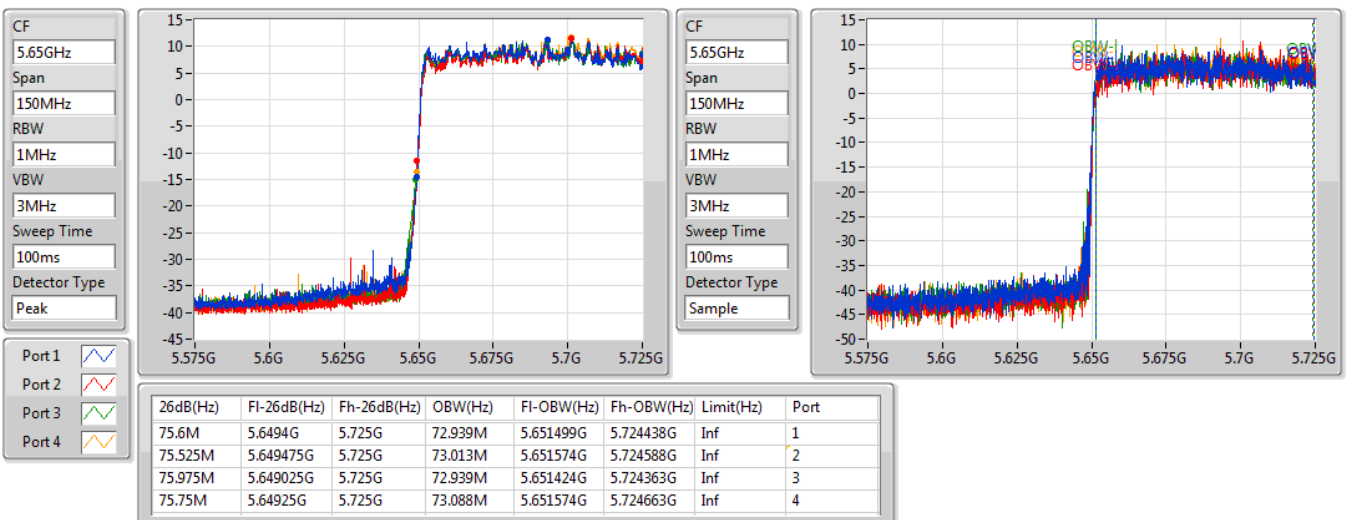


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

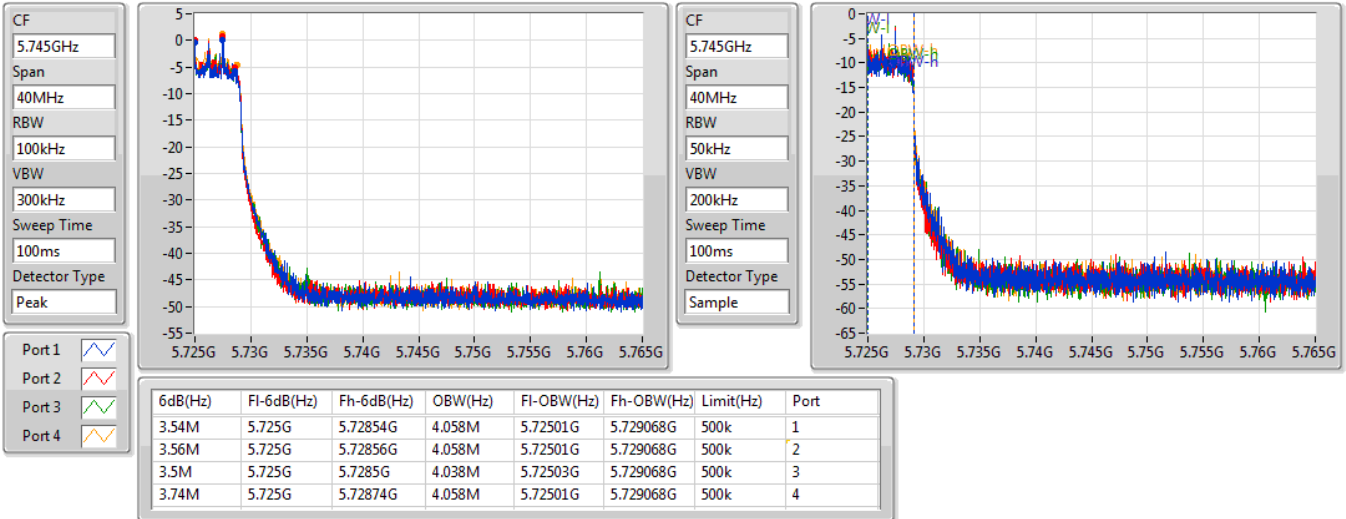
5690MHz Straddle 5.47-5.725GHz

31/07/2019

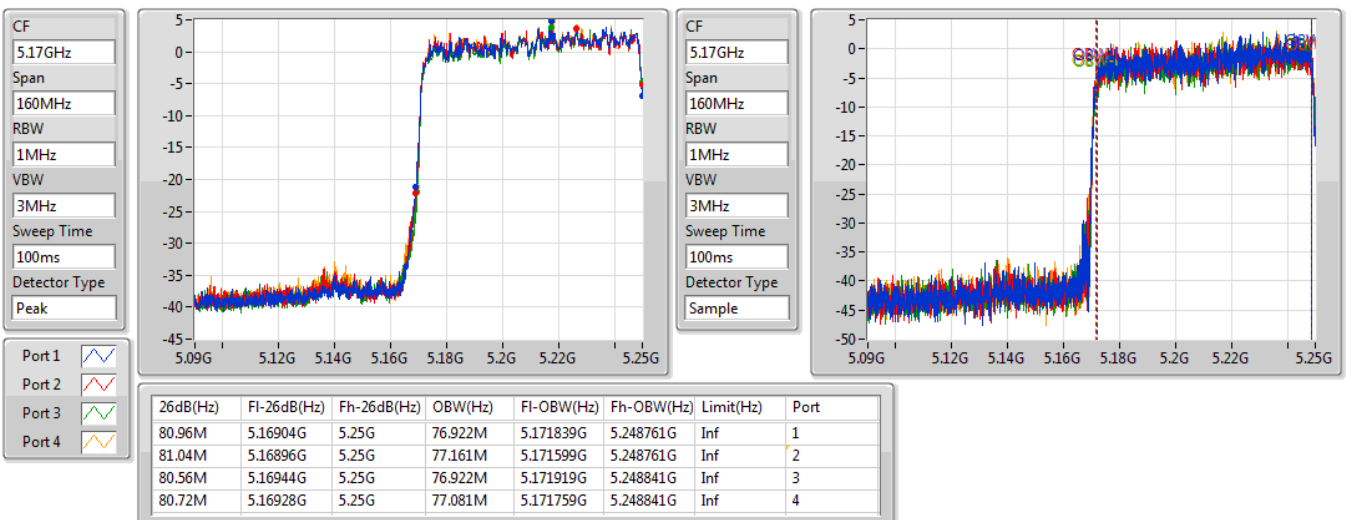


802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

31/07/2019


802.11ax HEW160_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

30/07/2019

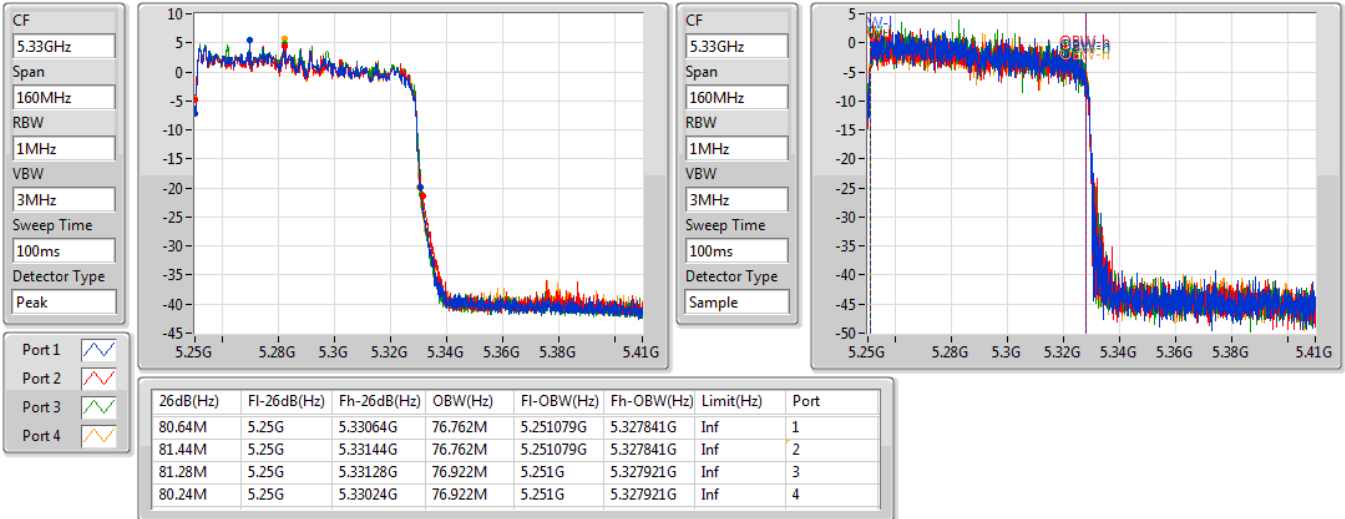


802.11ax HEW160_Nss1,(MCS0)_4TX

EBW

5250MHz

30/07/2019

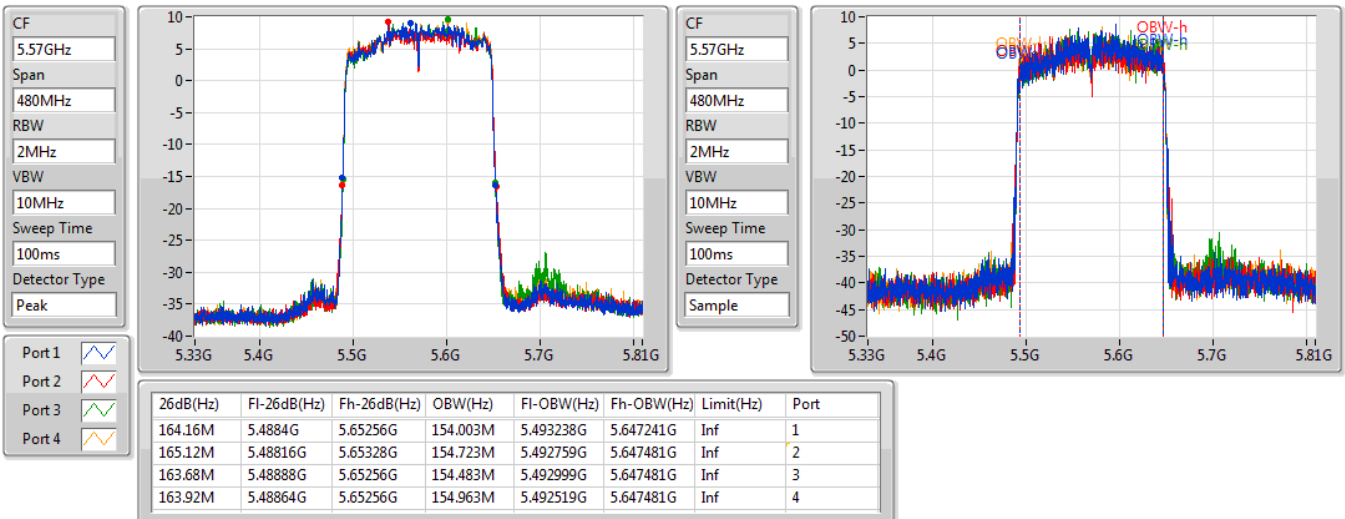


802.11ax HEW160_Nss1,(MCS0)_4TX

EBW

5570MHz

31/07/2019



<beamforming mode> 4T1S
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	81.76M	75.962M	76M0D1D	80.72M	75.642M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	80.96M	77.321M	77M3D1D	80.48M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	21.81M	17.841M	17M8D1D	21.54M	17.751M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	40.08M	36.282M	36M3D1D	39.54M	36.102M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	82.44M	75.682M	75M7D1D	80.88M	75.562M
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	82.32M	75.562M	75M6D1D	80.16M	75.482M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	21.9M	19.07M	19M1D1D	21.48M	18.951M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	40.2M	37.601M	37M6D1D	39.78M	37.481M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.96M	77.001M	77M0D1D	81.6M	76.882M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	81.04M	77.081M	77M1D1D	80.8M	76.762M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	21.84M	17.811M	17M8D1D	15.66M	13.883M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	40.2M	36.282M	36M3D1D	34.79M	32.954M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	81.96M	75.802M	75M8D1D	75.6M	72.414M
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	165.84M	154.243M	154MD1D	163.2M	153.283M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	21.78M	19.04M	19M0D1D	15.6M	14.453M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	40.2M	37.601M	37M6D1D	34.895M	33.583M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.72M	77.001M	77M0D1D	75.525M	72.864M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	165.12M	154.963M	155MD1D	163.44M	154.243M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	3.78M	4.338M	4M34D1D	3.76M	4.218M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	3.14M	3.578M	3M58D1D	3.14M	3.458M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	3.12M	3.558M	3M56D1D	3.1M	3.478M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	4.48M	4.558M	4M56D1D	4.46M	4.538M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	3.82M	4.058M	4M06D1D	3.56M	4.038M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	3.74M	4.058M	4M06D1D	3.54M	4.038M

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-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.72M	17.841M	21.69M	17.751M	21.54M	17.751M	21.66M	17.781M
5300MHz	Pass	Inf	21.72M	17.781M	21.57M	17.751M	21.6M	17.781M	21.78M	17.781M
5320MHz	Pass	Inf	21.63M	17.781M	21.57M	17.751M	21.6M	17.781M	21.81M	17.751M
5500MHz	Pass	Inf	21.81M	17.781M	21.66M	17.751M	21.48M	17.781M	21.69M	17.811M
5580MHz	Pass	Inf	21.78M	17.751M	21.6M	17.811M	21.51M	17.751M	21.72M	17.751M
5700MHz	Pass	Inf	21.84M	17.721M	21.66M	17.781M	21.54M	17.751M	21.75M	17.811M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.735M	13.883M	15.705M	13.898M	15.66M	13.913M	15.75M	13.898M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	4.298M	3.76M	4.338M	3.78M	4.218M	3.76M	4.258M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.08M	36.222M	39.96M	36.162M	39.54M	36.222M	39.72M	36.282M
5310MHz	Pass	Inf	40.08M	36.102M	39.84M	36.222M	39.66M	36.222M	39.72M	36.222M
5510MHz	Pass	Inf	40.2M	36.282M	39.96M	36.282M	39.96M	36.222M	39.84M	36.282M
5550MHz	Pass	Inf	40.2M	36.282M	40.02M	36.222M	40.02M	36.282M	39.9M	36.162M
5670MHz	Pass	Inf	40.14M	36.222M	40.02M	36.162M	40.02M	36.222M	39.78M	36.222M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.175M	32.954M	34.825M	32.989M	35.035M	32.989M	34.79M	33.023M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.498M	3.14M	3.578M	3.14M	3.498M	3.14M	3.458M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	82.44M	75.562M	81.72M	75.682M	80.88M	75.682M	81.48M	75.562M
5530MHz	Pass	Inf	81.84M	75.562M	81.24M	75.562M	80.88M	75.562M	81.84M	75.682M
5610MHz	Pass	Inf	81.96M	75.682M	81.6M	75.682M	81.72M	75.802M	81.72M	75.682M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.975M	72.414M	75.6M	72.414M	75.825M	72.639M	75.825M	72.414M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.1M	3.538M	3.12M	3.558M	3.12M	3.538M	3.12M	3.478M
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.76M	75.722M	81.68M	75.642M	81.12M	75.962M	80.72M	75.802M
5250MHz	Pass	Inf	81.12M	75.562M	82.32M	75.562M	81.04M	75.562M	80.16M	75.482M
5570MHz	Pass	Inf	163.2M	153.523M	165.84M	153.523M	163.2M	153.283M	163.92M	154.243M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.69M	18.981M	21.51M	19.01M	21.75M	19.01M	21.9M	19.01M
5300MHz	Pass	Inf	21.48M	18.951M	21.6M	19.04M	21.72M	19.01M	21.87M	18.981M
5320MHz	Pass	Inf	21.69M	18.981M	21.63M	19.01M	21.54M	19.07M	21.84M	19.01M
5500MHz	Pass	Inf	21.69M	18.981M	21.63M	18.951M	21.66M	18.981M	21.66M	18.981M
5580MHz	Pass	Inf	21.6M	19.04M	21.51M	19.01M	21.66M	18.981M	21.69M	18.951M
5700MHz	Pass	Inf	21.69M	18.981M	21.66M	18.981M	21.6M	18.951M	21.78M	18.981M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.765M	14.513M	15.6M	14.483M	15.765M	14.453M	15.675M	14.483M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.538M	4.48M	4.538M	4.46M	4.538M	4.46M	4.558M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	39.96M	37.601M	39.84M	37.541M	39.9M	37.541M	40.2M	37.541M
5310MHz	Pass	Inf	39.78M	37.541M	39.96M	37.601M	39.96M	37.601M	40.14M	37.481M
5510MHz	Pass	Inf	40.14M	37.541M	39.78M	37.481M	39.9M	37.541M	40.02M	37.541M
5550MHz	Pass	Inf	40.08M	37.601M	39.84M	37.541M	39.96M	37.601M	40.08M	37.541M
5670MHz	Pass	Inf	40.2M	37.541M	39.84M	37.481M	39.9M	37.481M	40.02M	37.541M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.21M	33.583M	34.895M	33.618M	34.93M	33.688M	35.07M	33.583M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.82M	4.038M	3.76M	4.038M	3.56M	4.058M	3.72M	4.038M

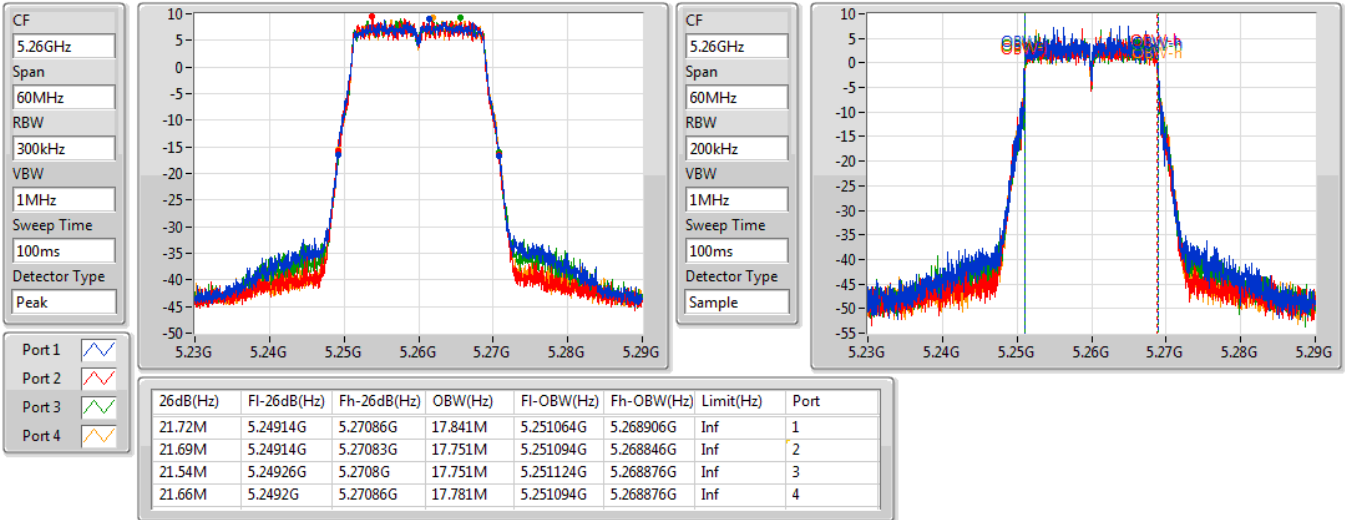
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.72M	77.001M	81.96M	76.882M	81.72M	77.001M	81.6M	77.001M
5530MHz	Pass	Inf	81.24M	76.762M	80.88M	76.882M	81.12M	76.762M	81.48M	76.882M
5610MHz	Pass	Inf	81.24M	76.762M	81.24M	77.001M	81.48M	76.762M	81.72M	77.001M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.675M	73.088M	75.525M	72.939M	75.975M	73.088M	75.75M	72.864M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.54M	4.058M	3.56M	4.058M	3.74M	4.038M	3.58M	4.058M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.48M	77.081M	80.56M	77.321M	80.96M	77.241M	80.8M	77.241M
5250MHz	Pass	Inf	80.8M	76.762M	81.04M	77.081M	80.8M	77.001M	80.88M	76.922M
5570MHz	Pass	Inf	163.44M	154.243M	165.12M	154.963M	163.92M	154.243M	163.68M	154.483M

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

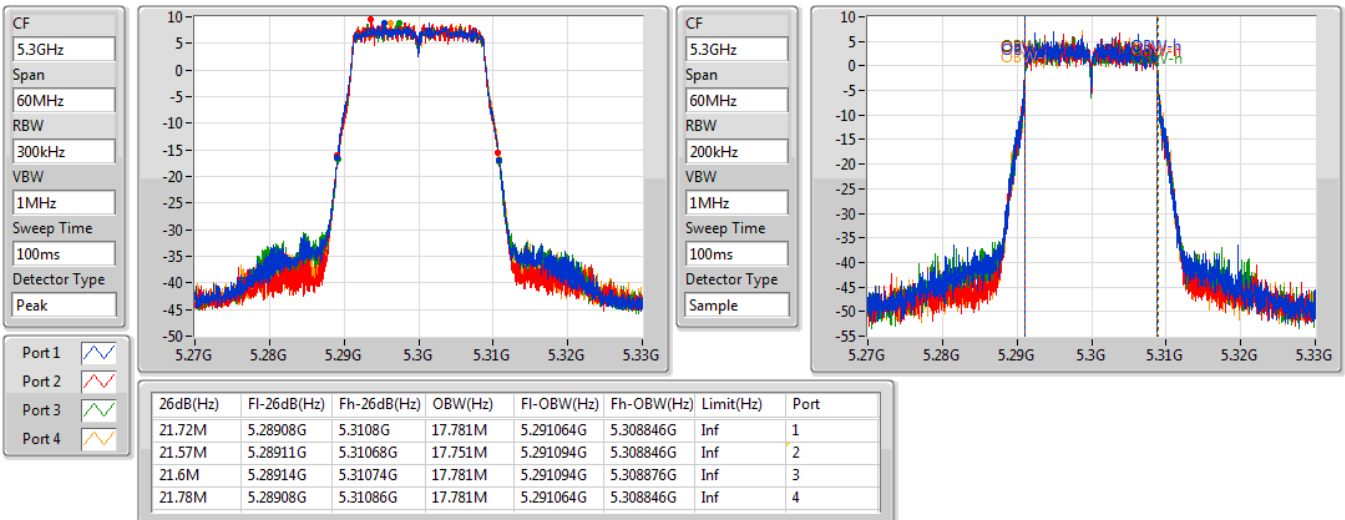
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5260MHz

29/07/2019


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5300MHz

29/07/2019

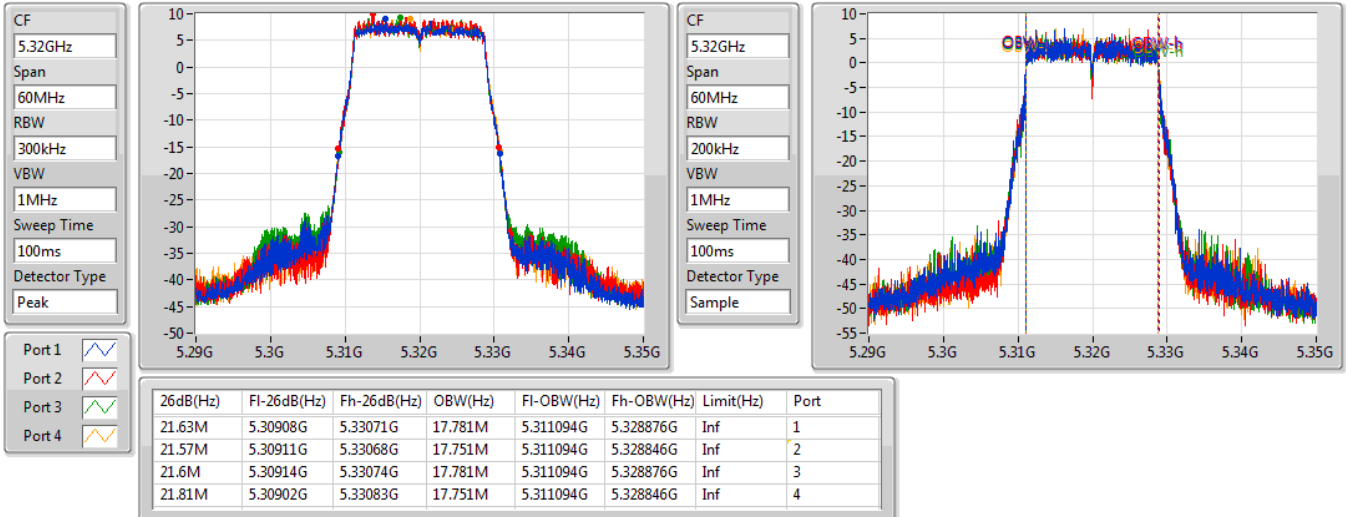


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5320MHz

29/07/2019

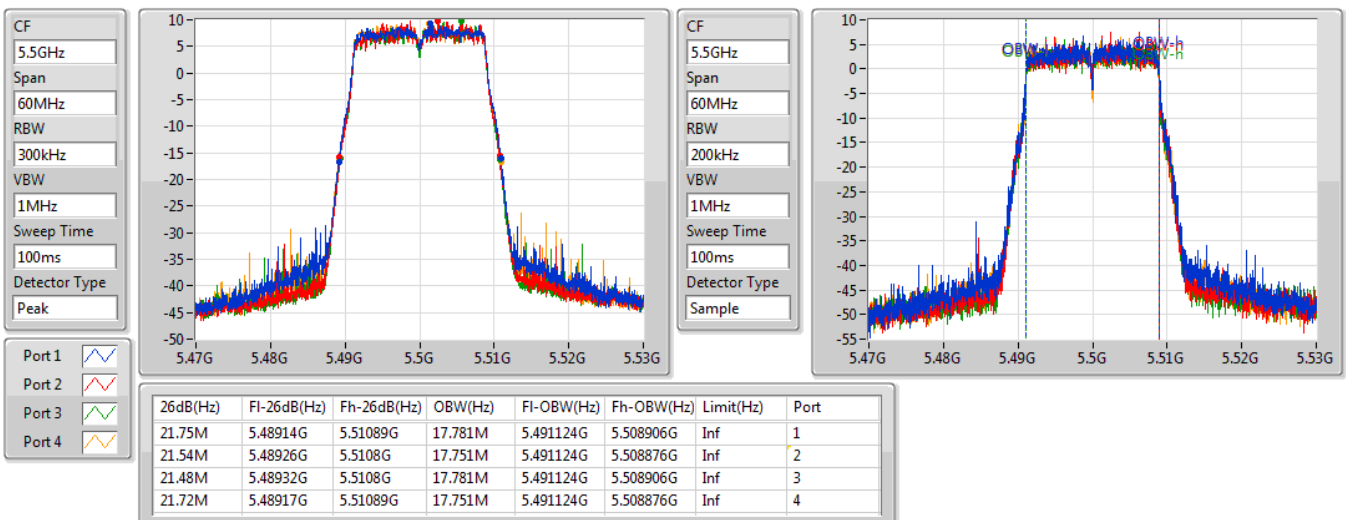


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

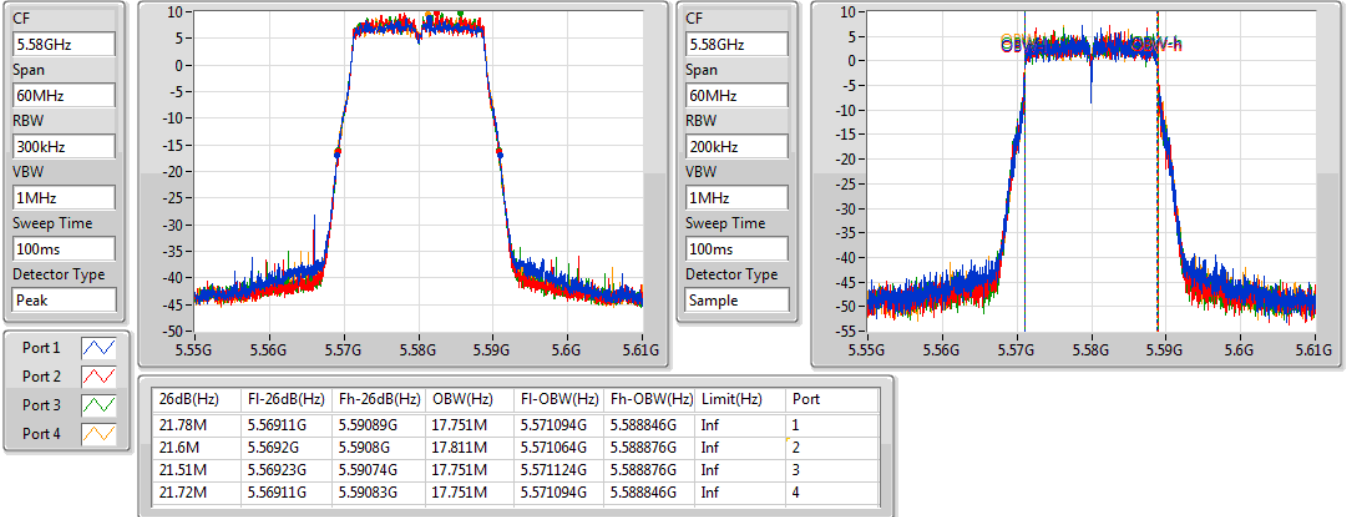
5500MHz

30/07/2019

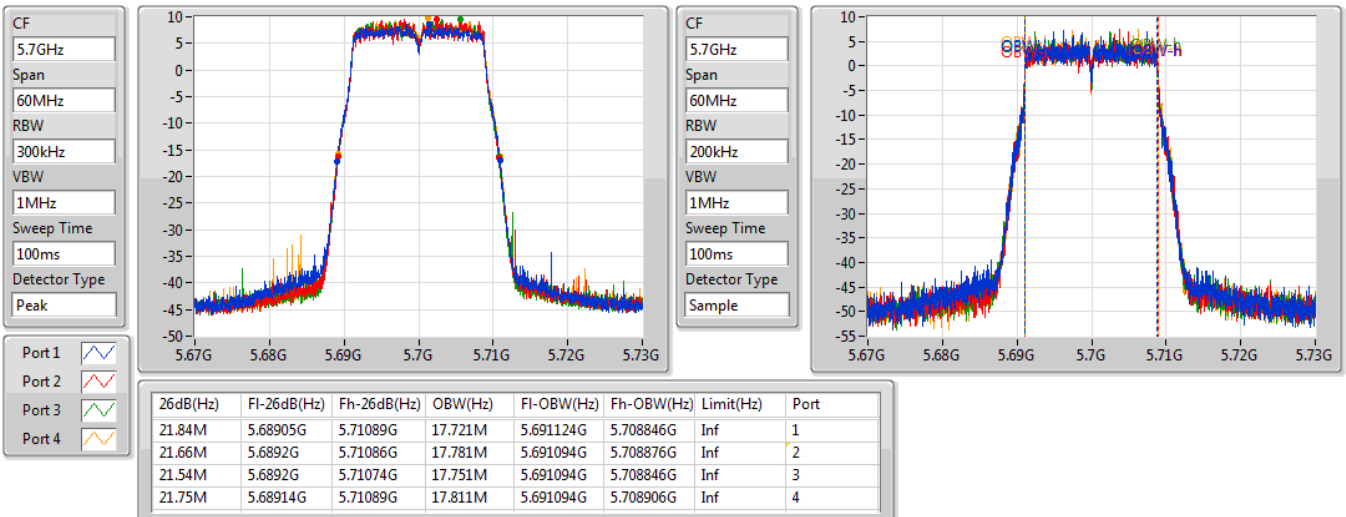


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5580MHz

29/07/2019

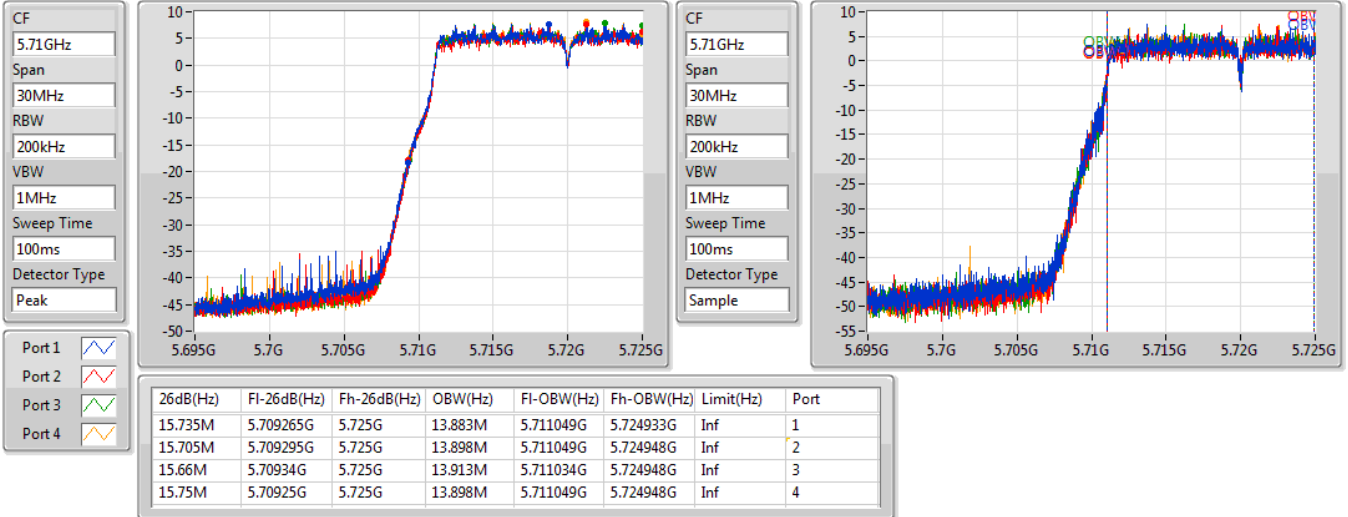

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5700MHz

30/07/2019

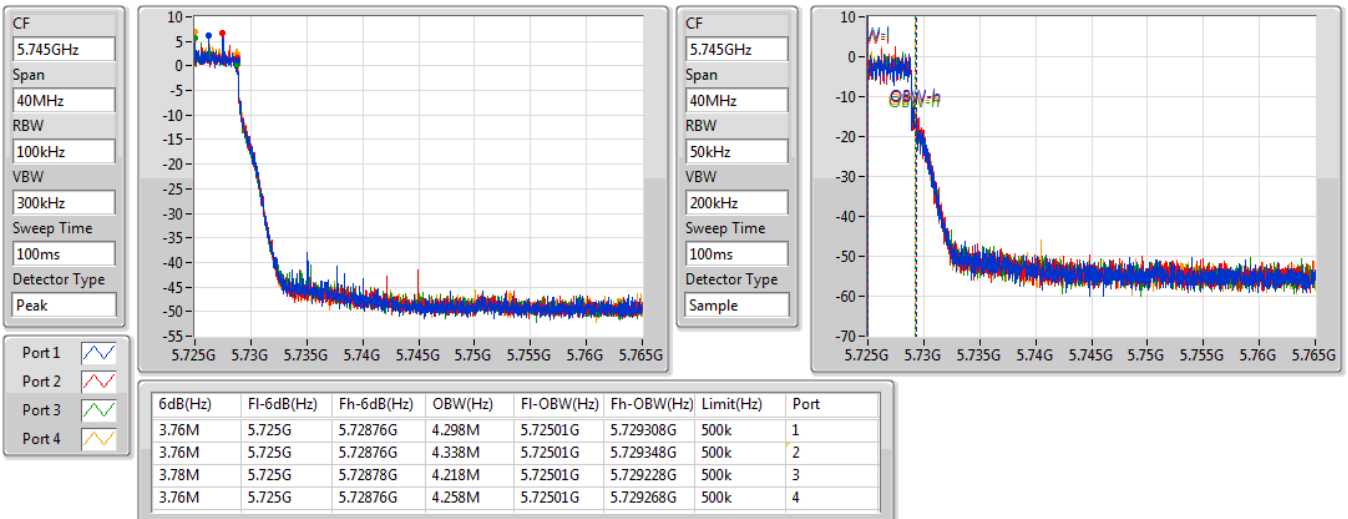


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

30/07/2019


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

30/07/2019

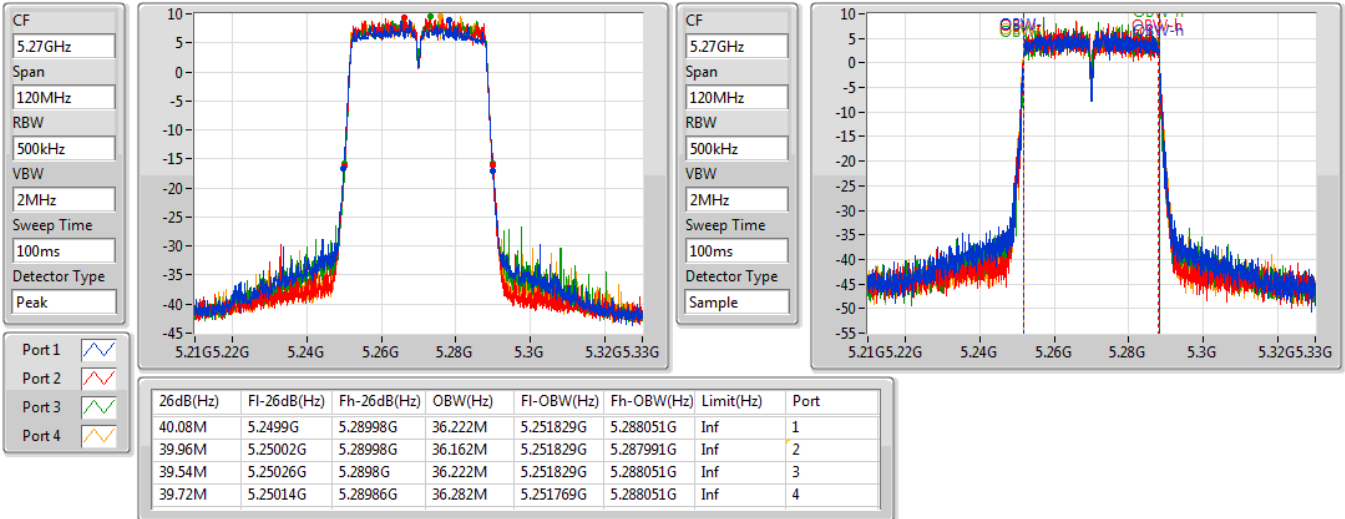


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

5270MHz

29/07/2019

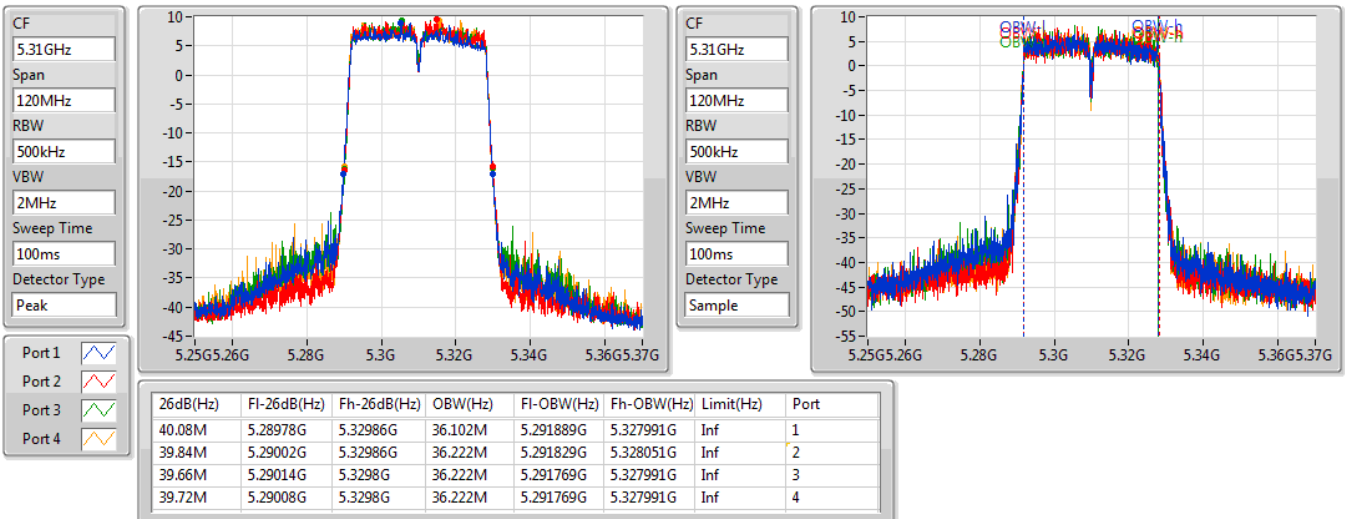


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

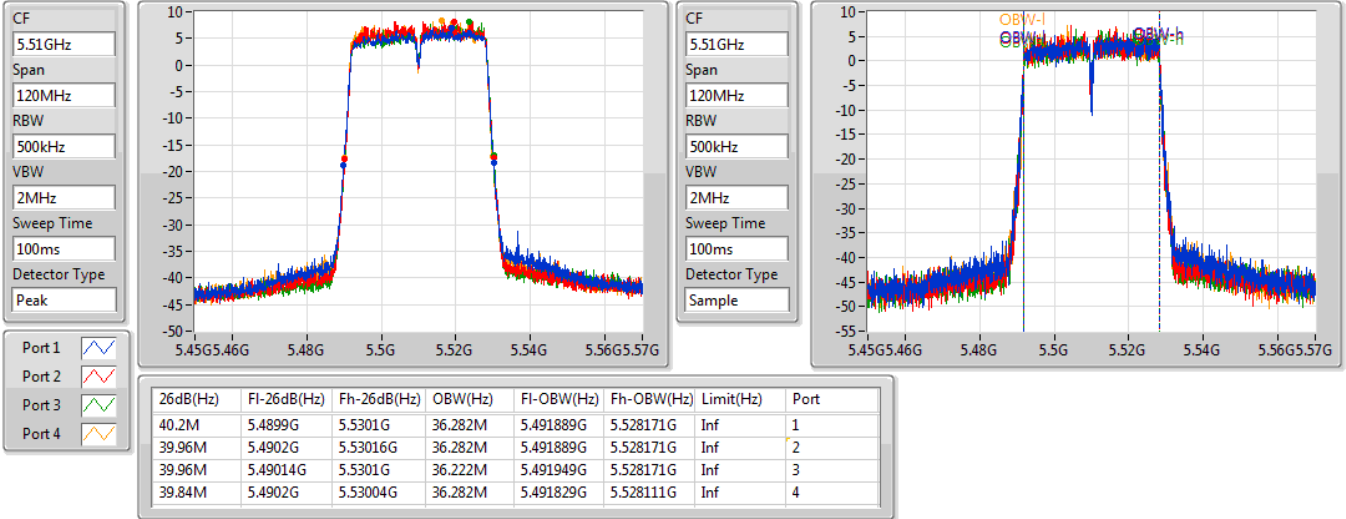
5310MHz

29/07/2019

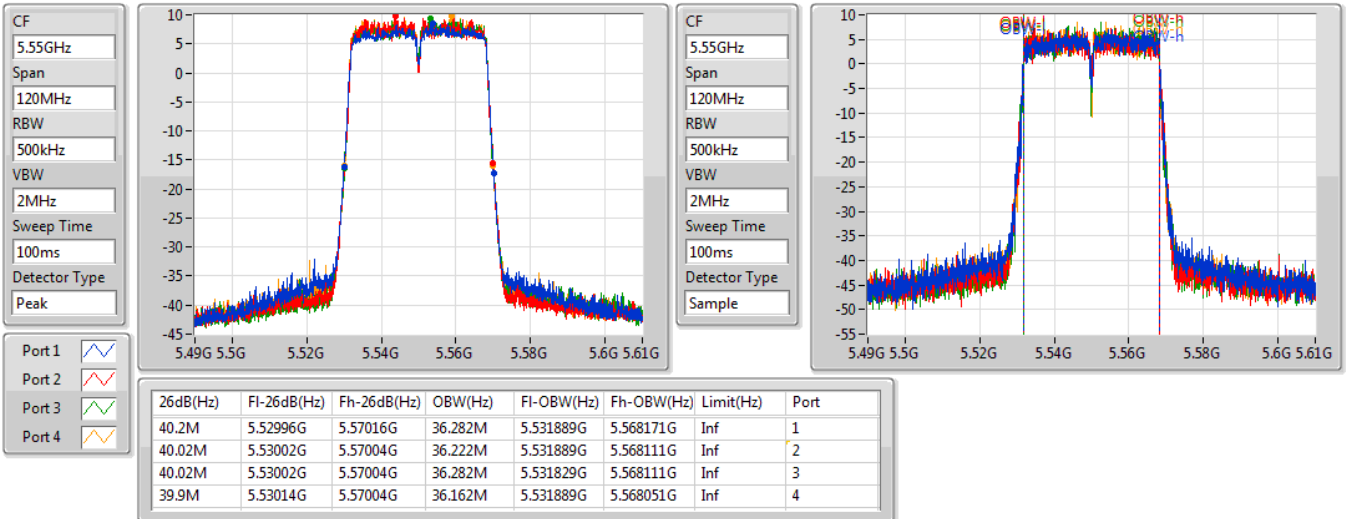


802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5510MHz

30/07/2019


802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5550MHz

30/07/2019

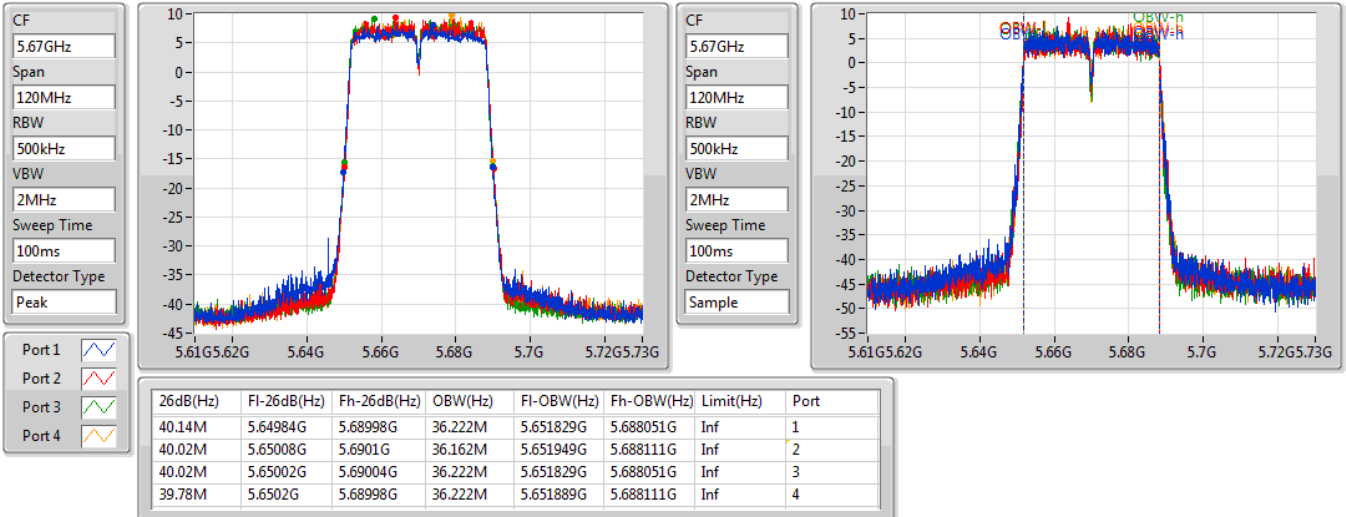


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

5670MHz

30/07/2019

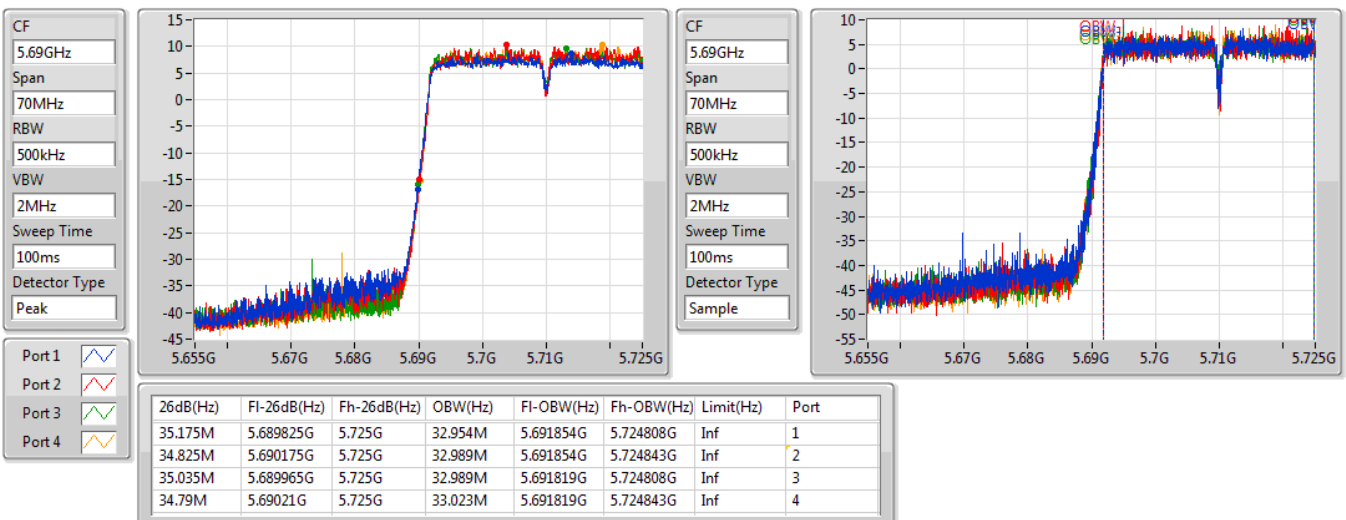


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.47-5.725GHz

30/07/2019

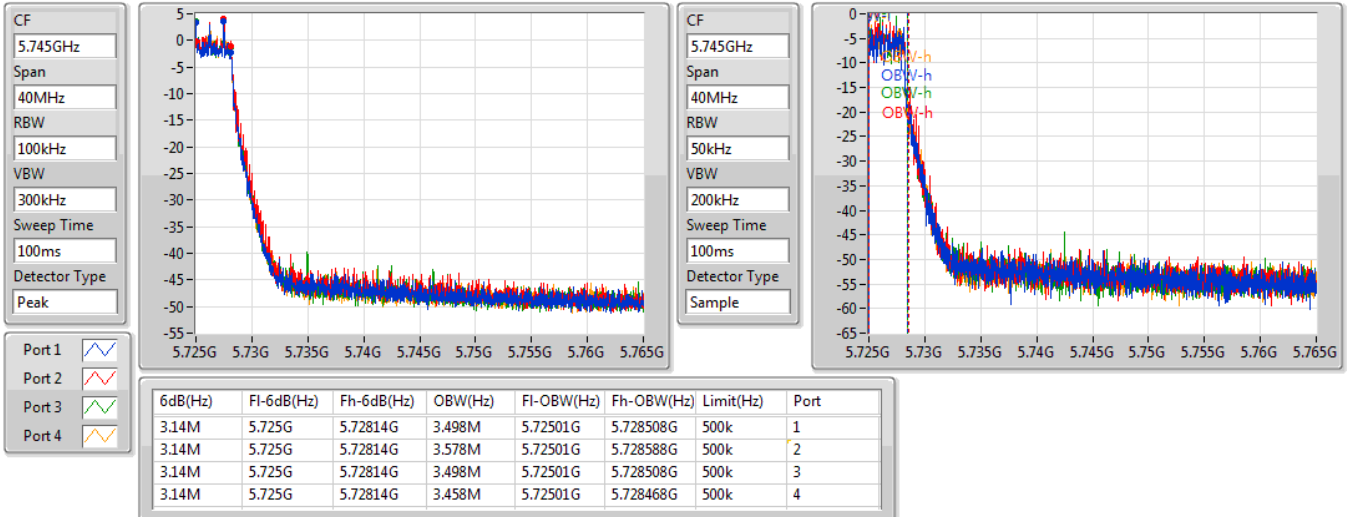


802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

30/07/2019

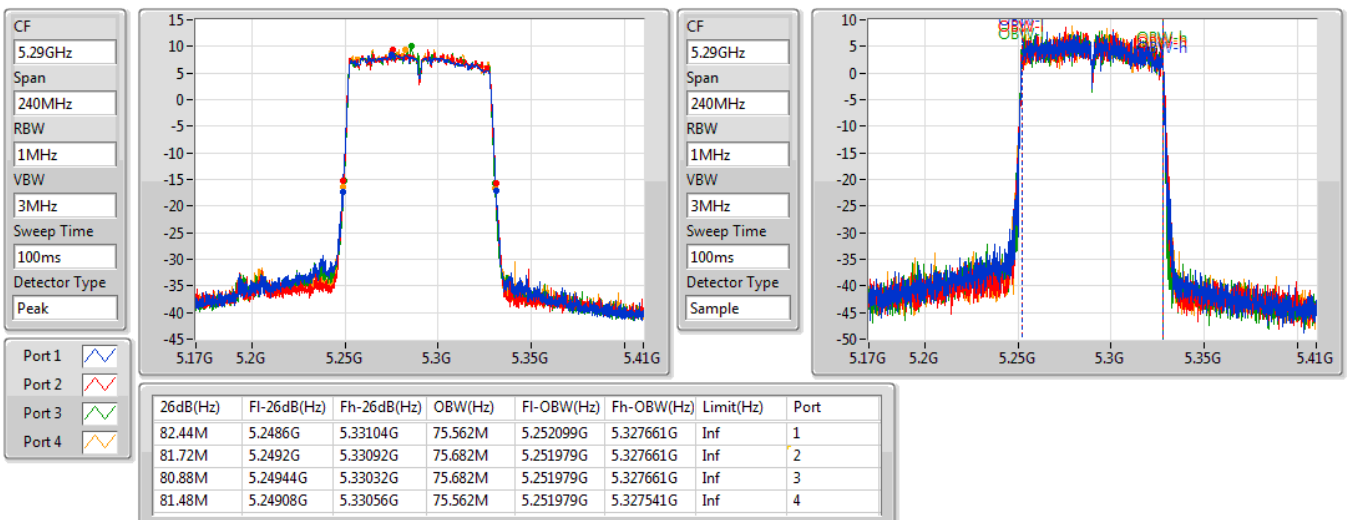


802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5290MHz

29/07/2019

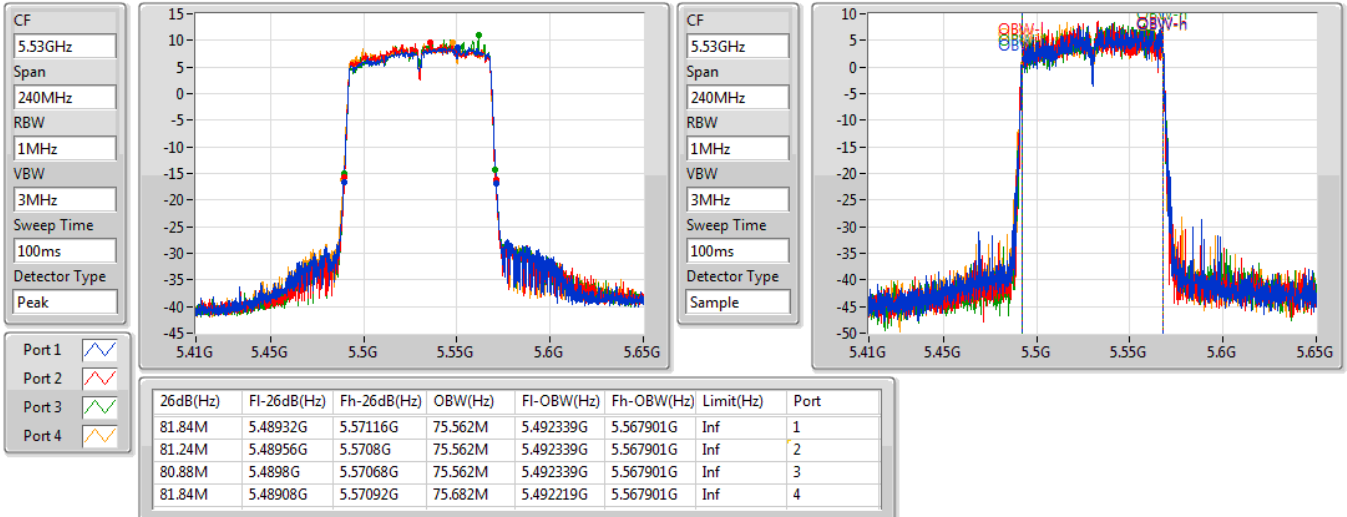


802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5530MHz

30/07/2019

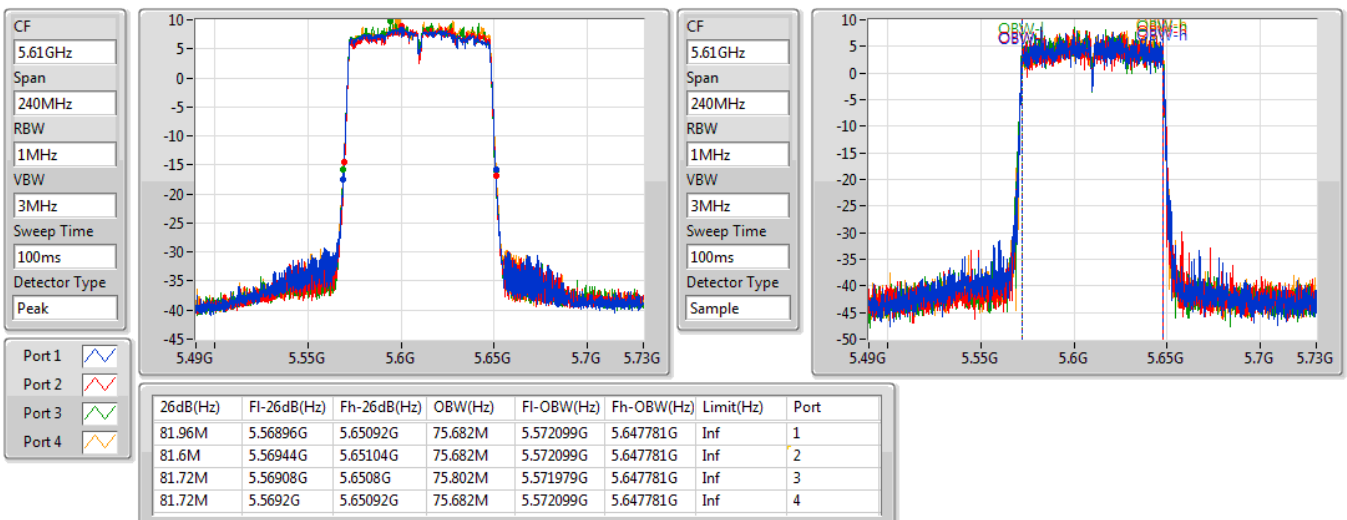


802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

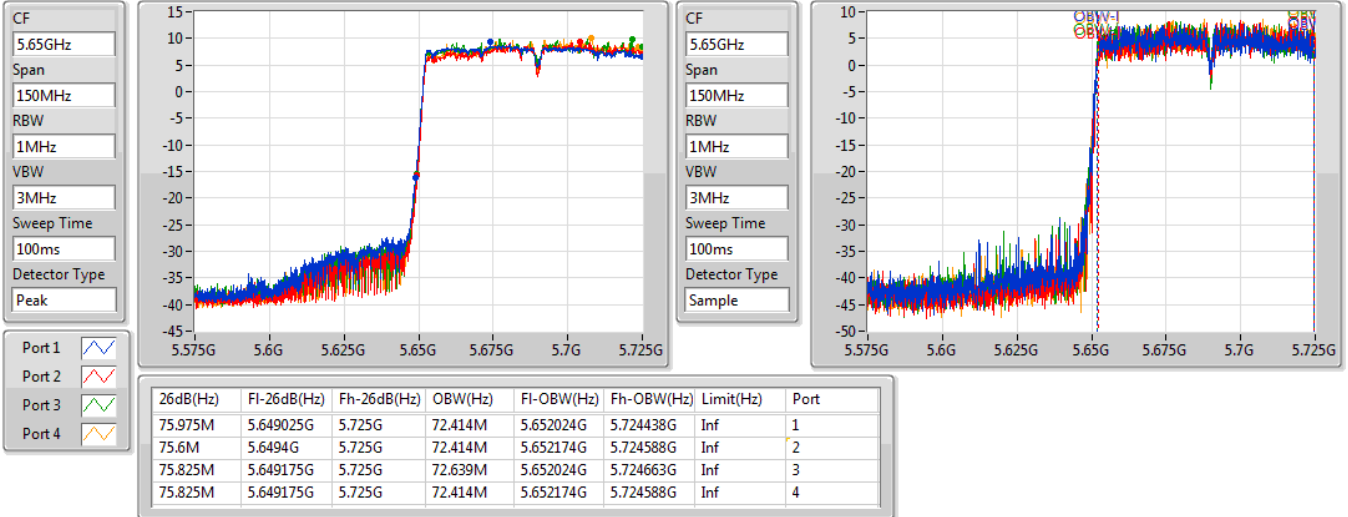
5610MHz

30/07/2019

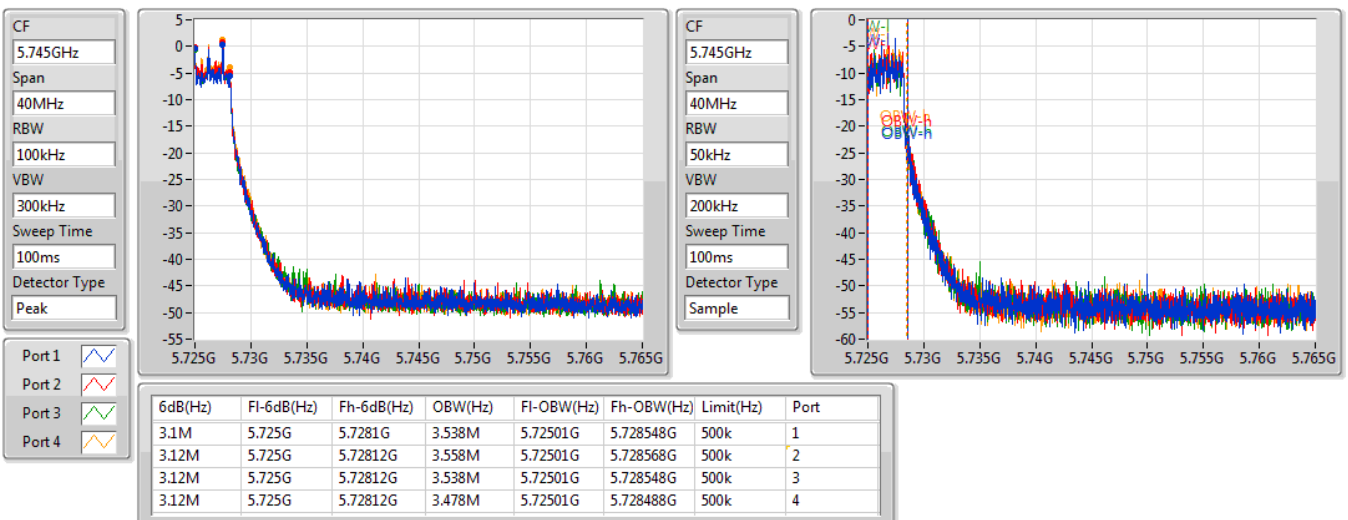


802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.47-5.725GHz

30/07/2019

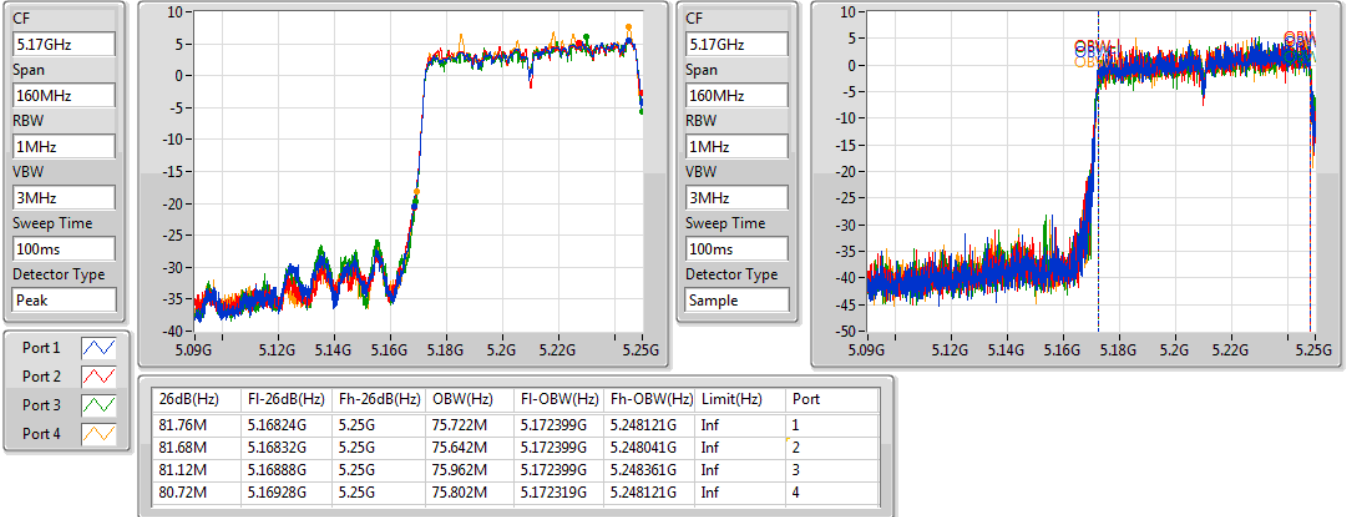

802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

30/07/2019

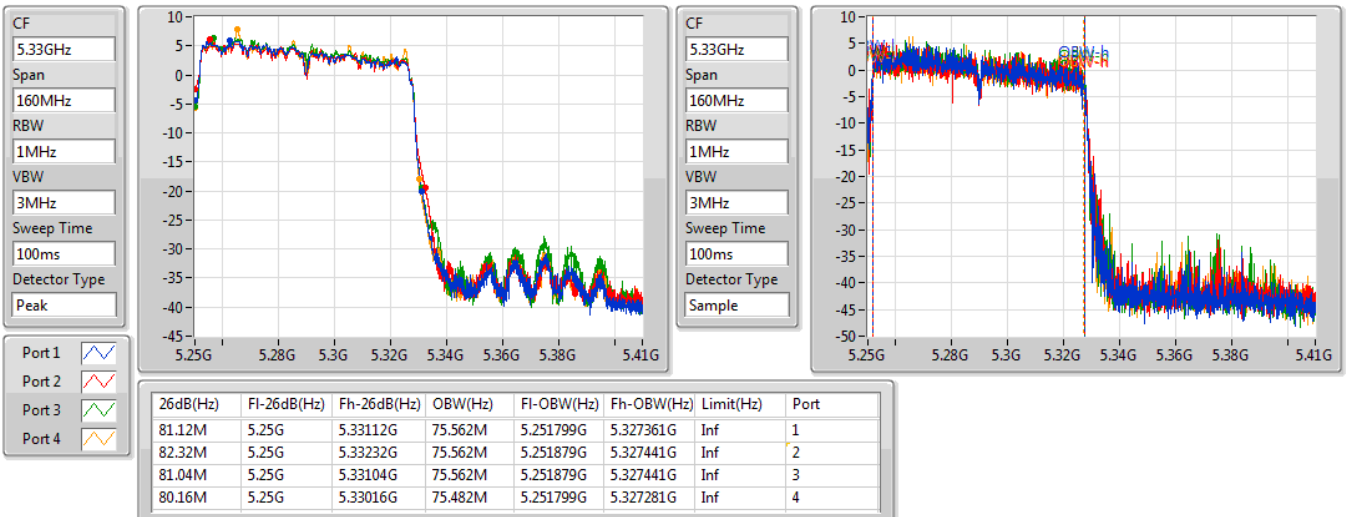


802.11ac VHT160-BF_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

29/07/2019

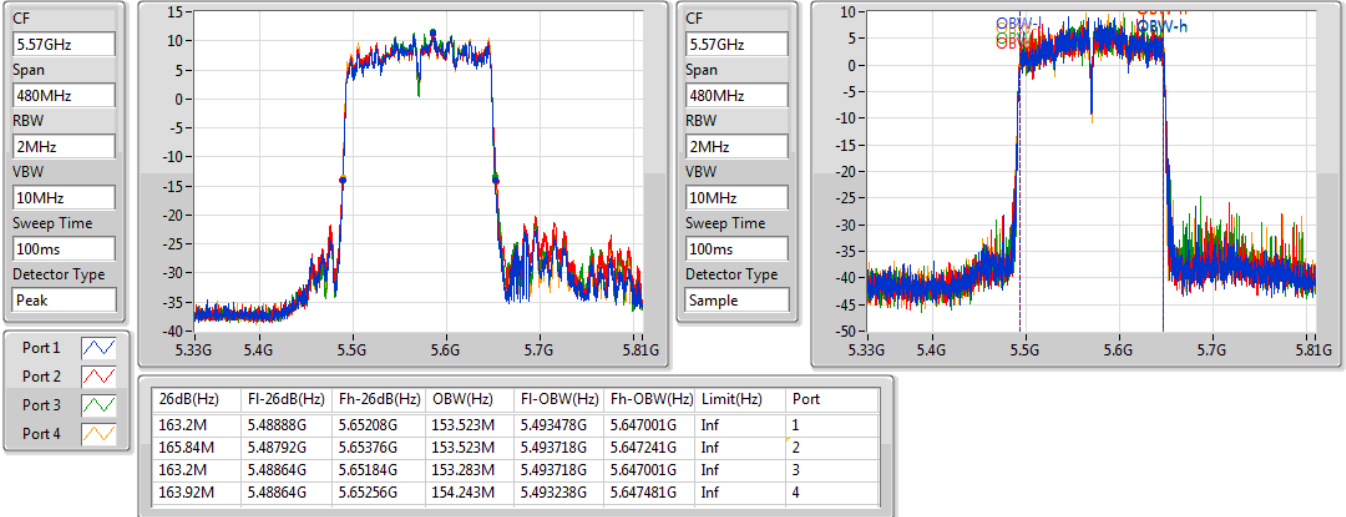

802.11ac VHT160-BF_Nss1,(MCS0)_4TX
EBW
5250MHz

29/07/2019

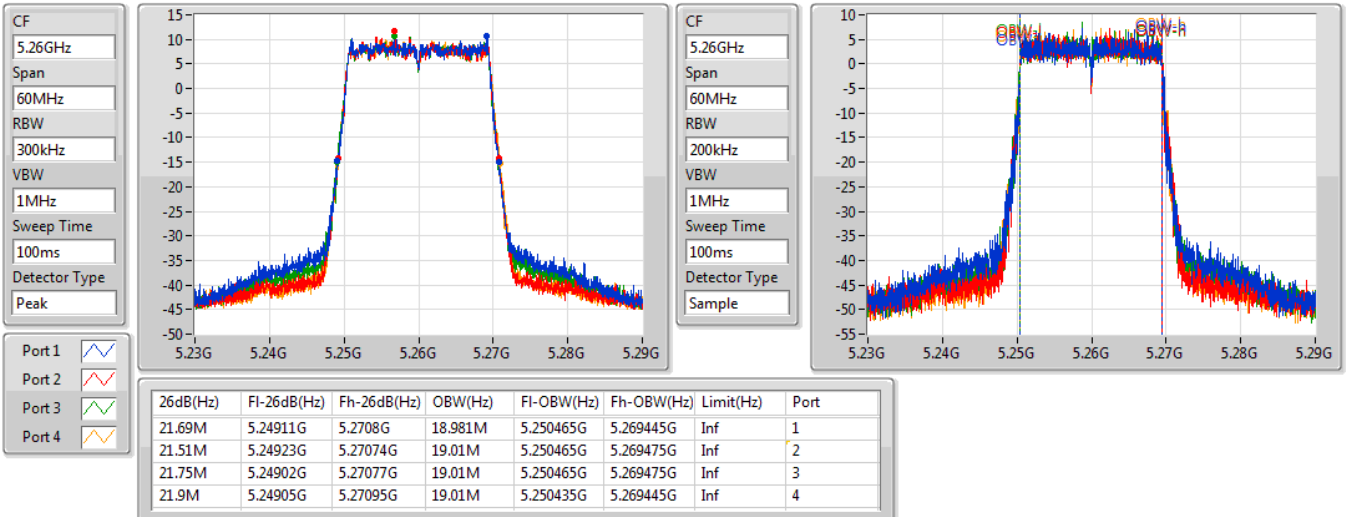


802.11ac VHT160-BF_Nss1,(MCS0)_4TX
EBW
5570MHz

30/07/2019


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5260MHz

29/07/2019

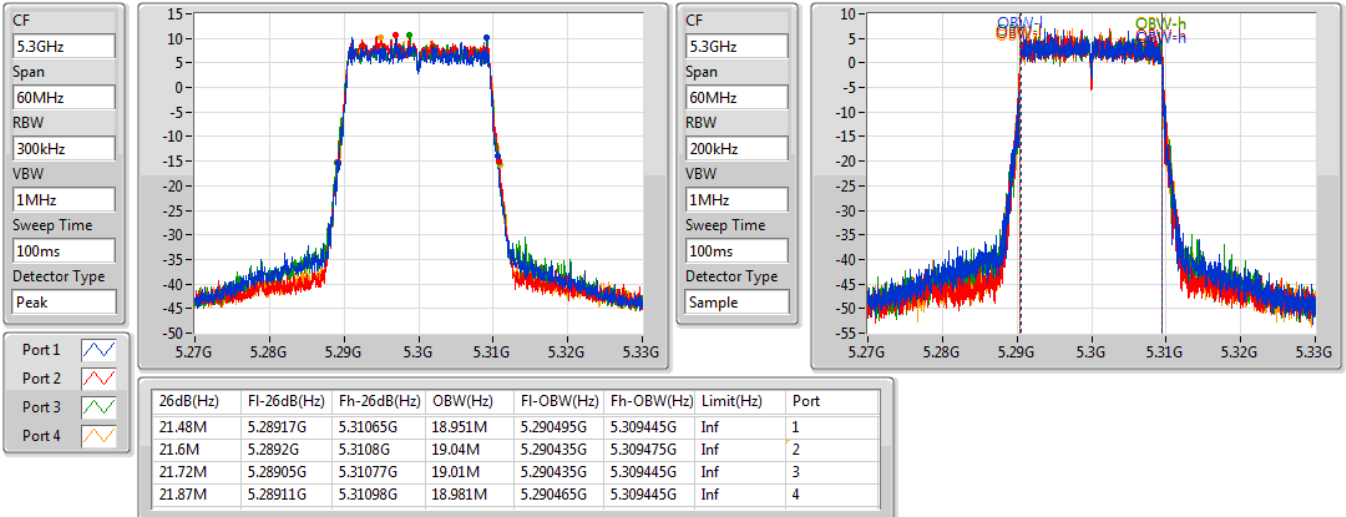


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5300MHz

29/07/2019

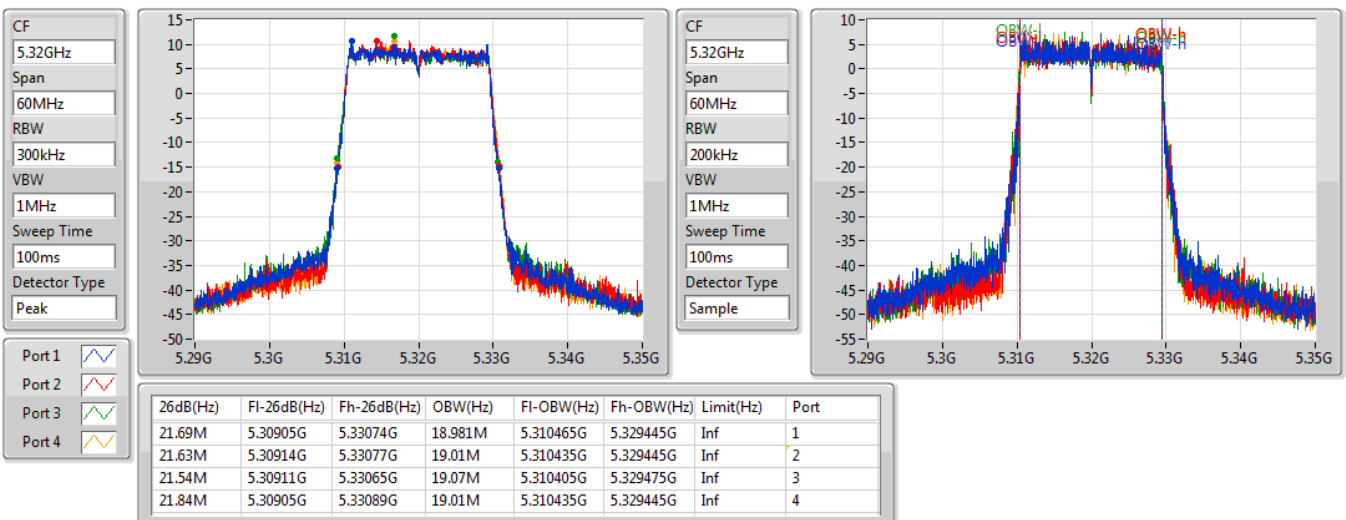


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5320MHz

29/07/2019

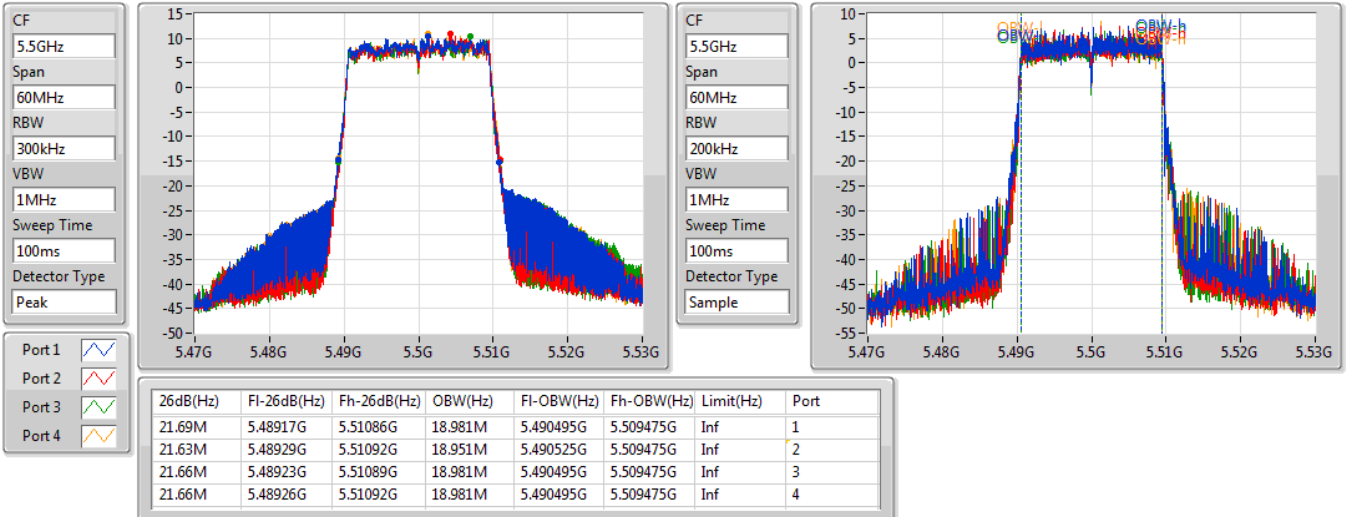


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5500MHz

30/07/2019

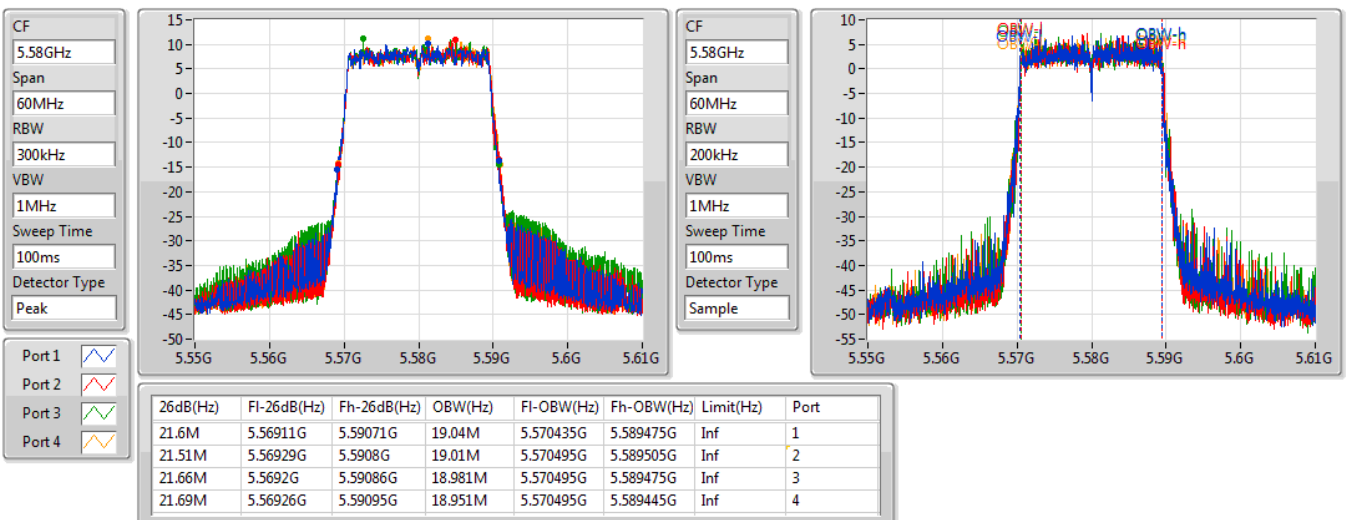


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5580MHz

30/07/2019

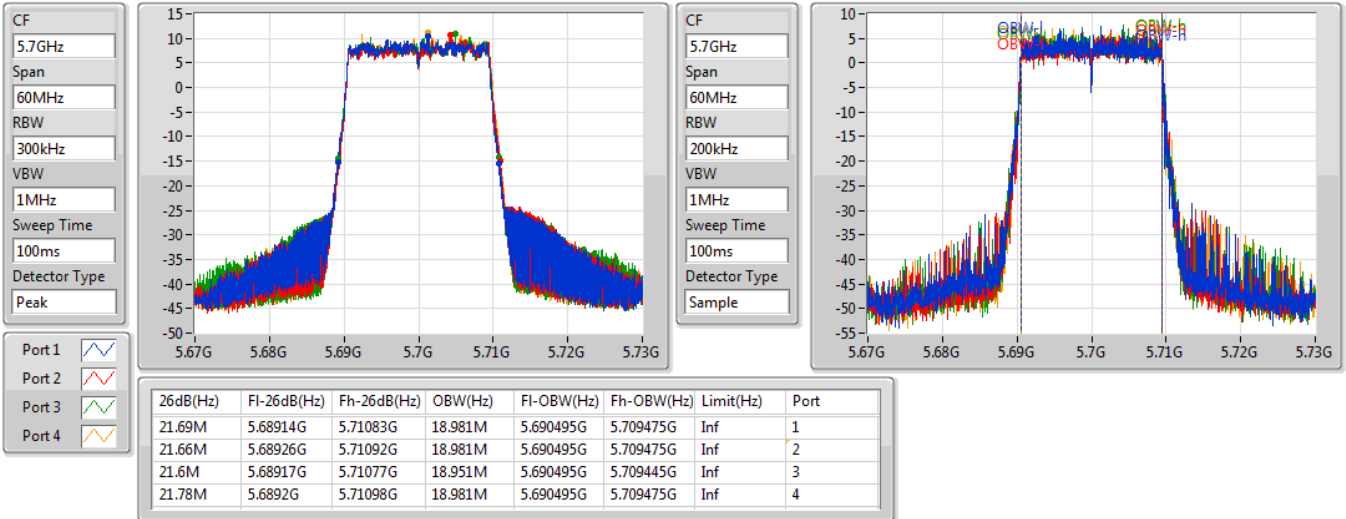


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5700MHz

30/07/2019

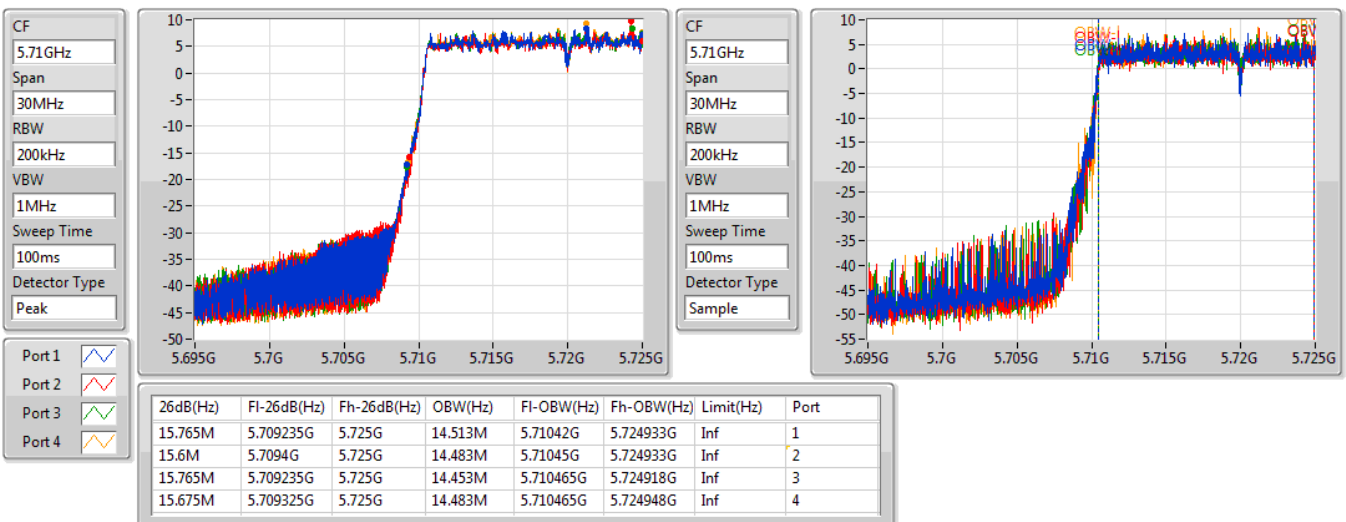


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.47-5.725GHz

30/07/2019

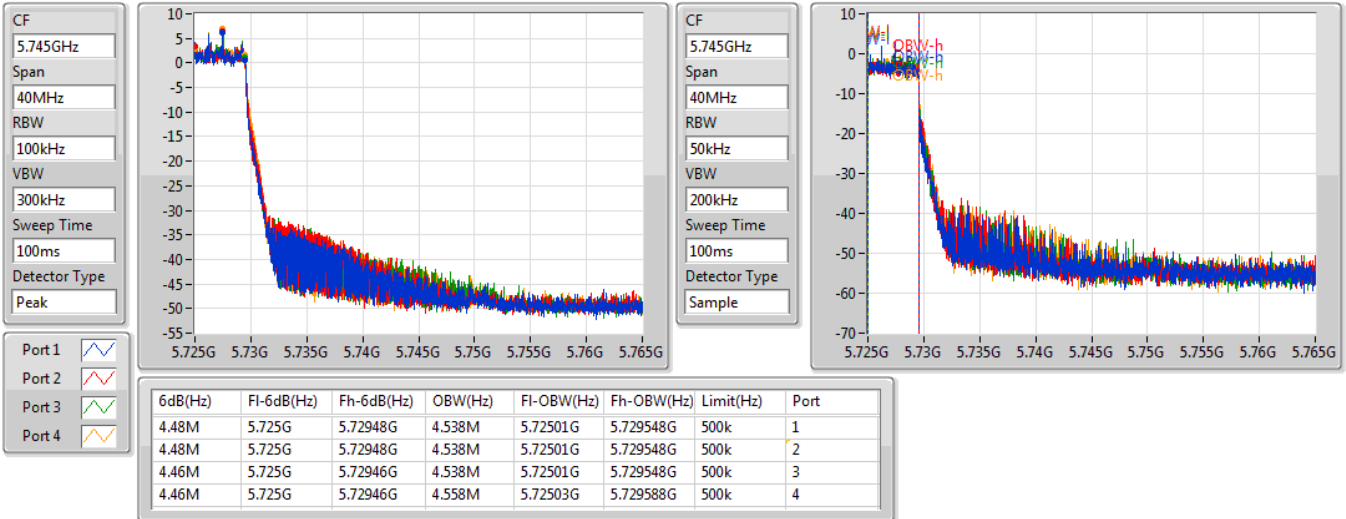


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2019

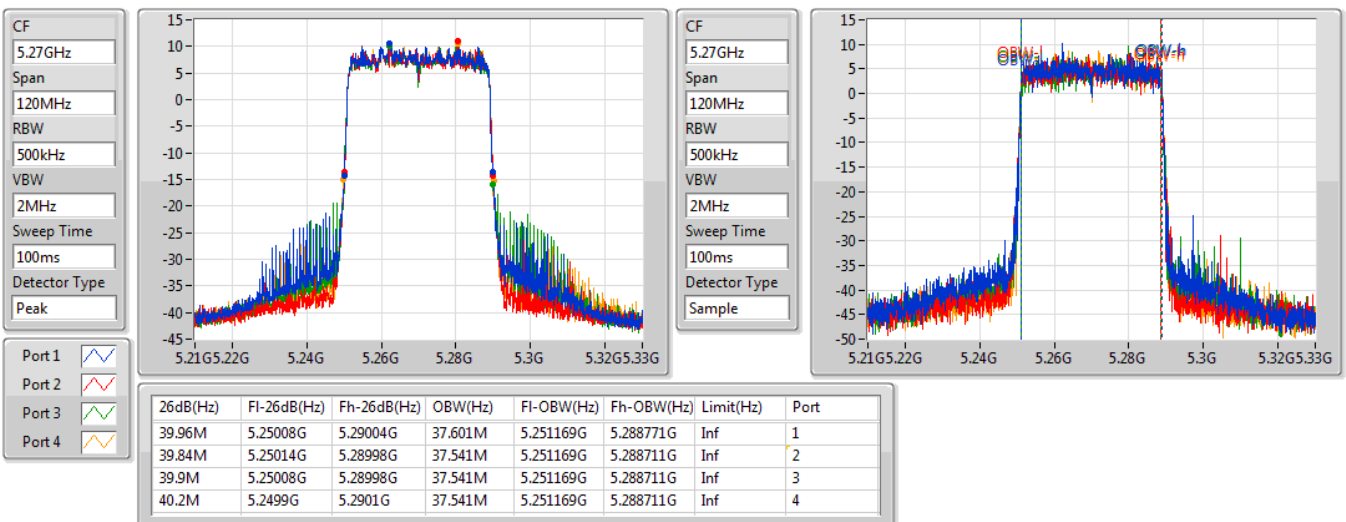


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5270MHz

29/07/2019

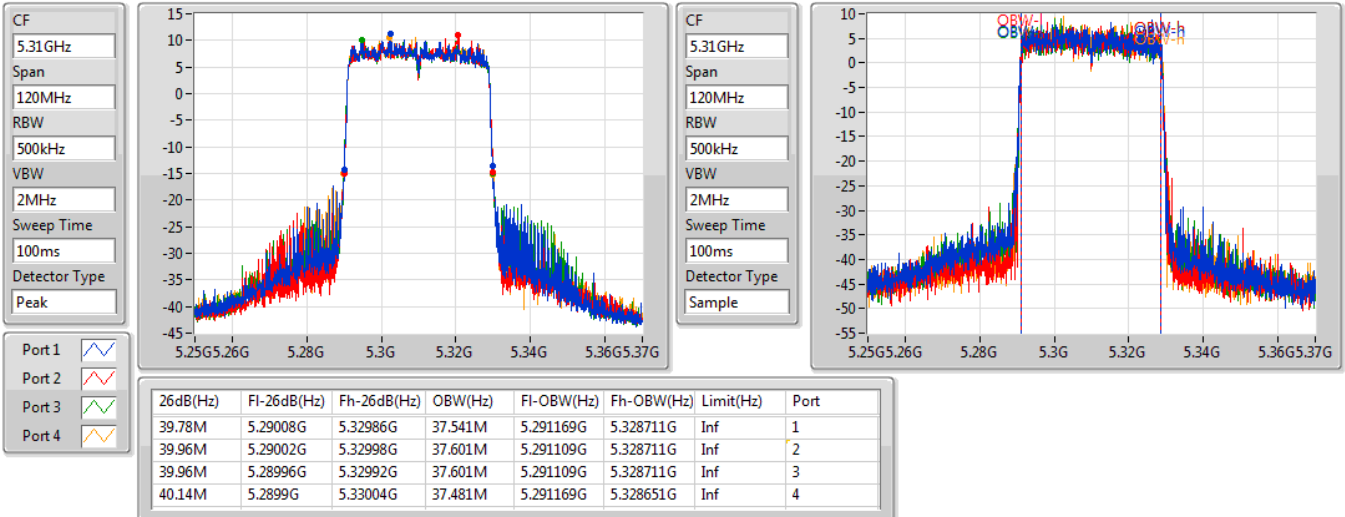


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5310MHz

29/07/2019

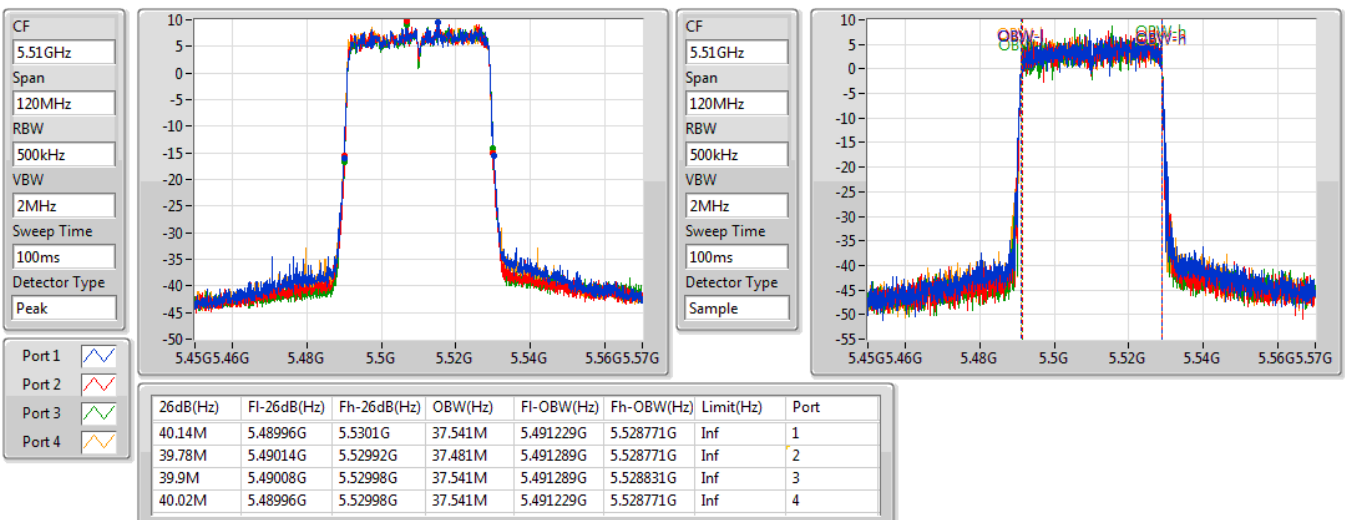


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5510MHz

30/07/2019

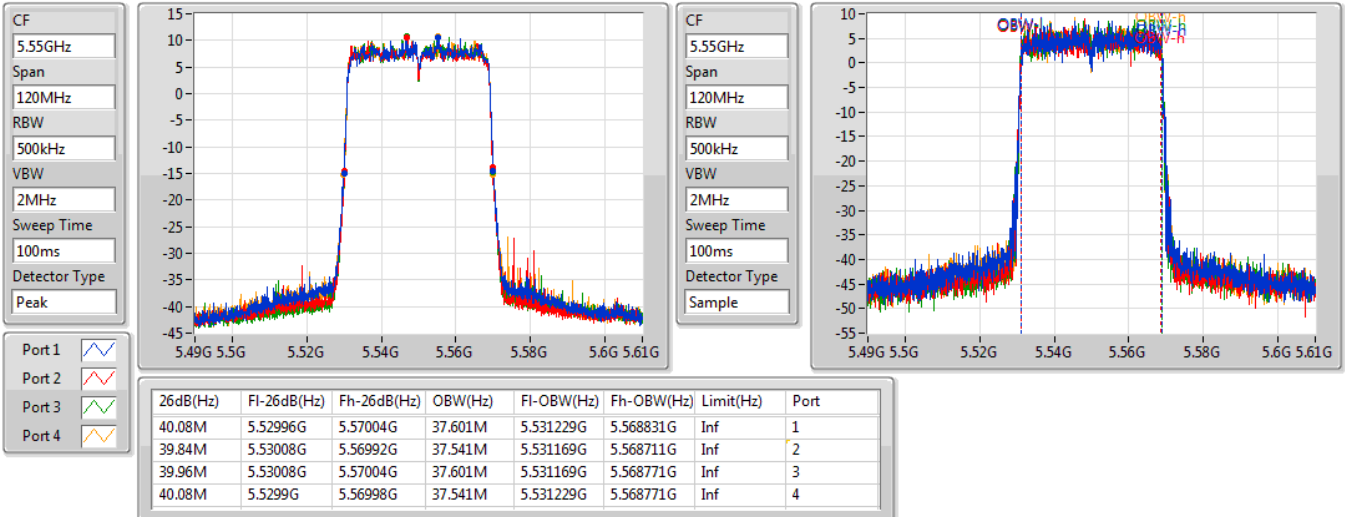


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5550MHz

30/07/2019

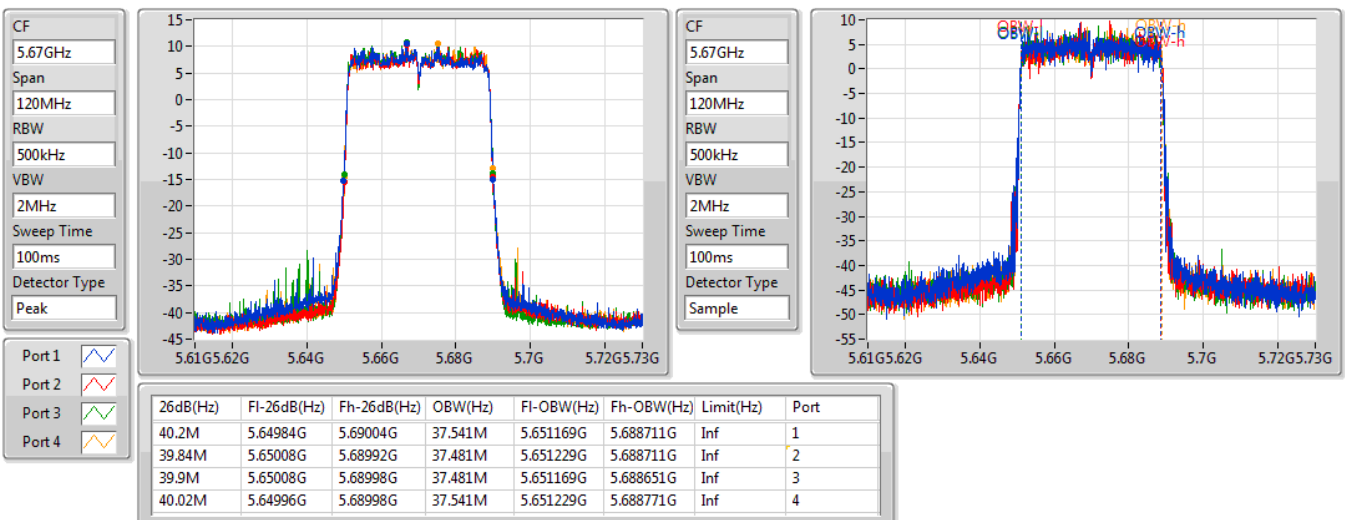


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5670MHz

30/07/2019

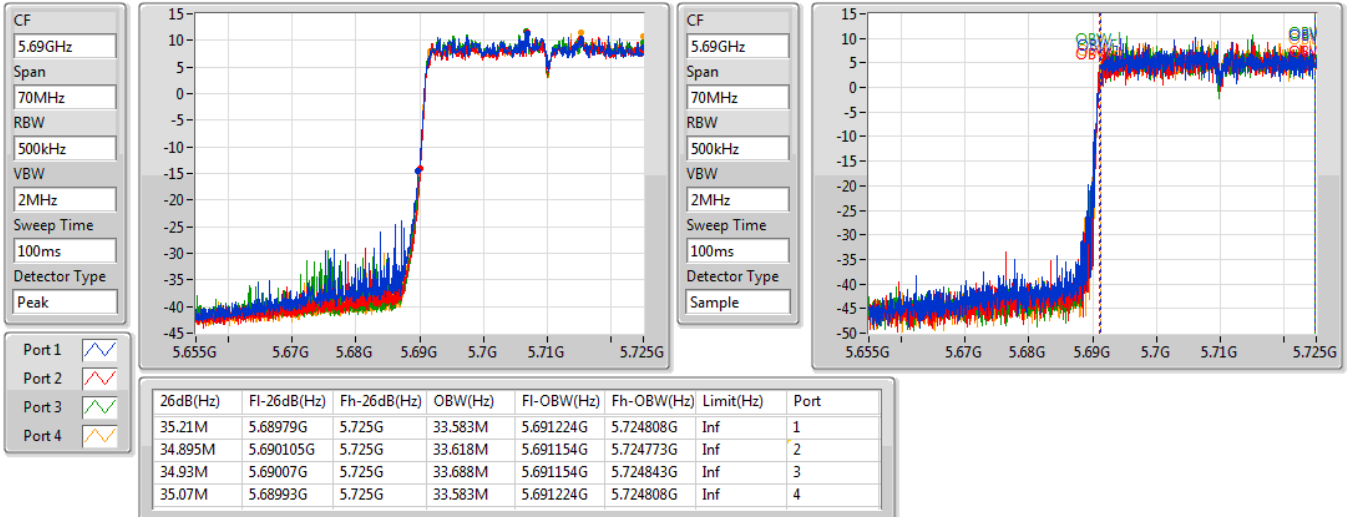


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.47-5.725GHz

30/07/2019

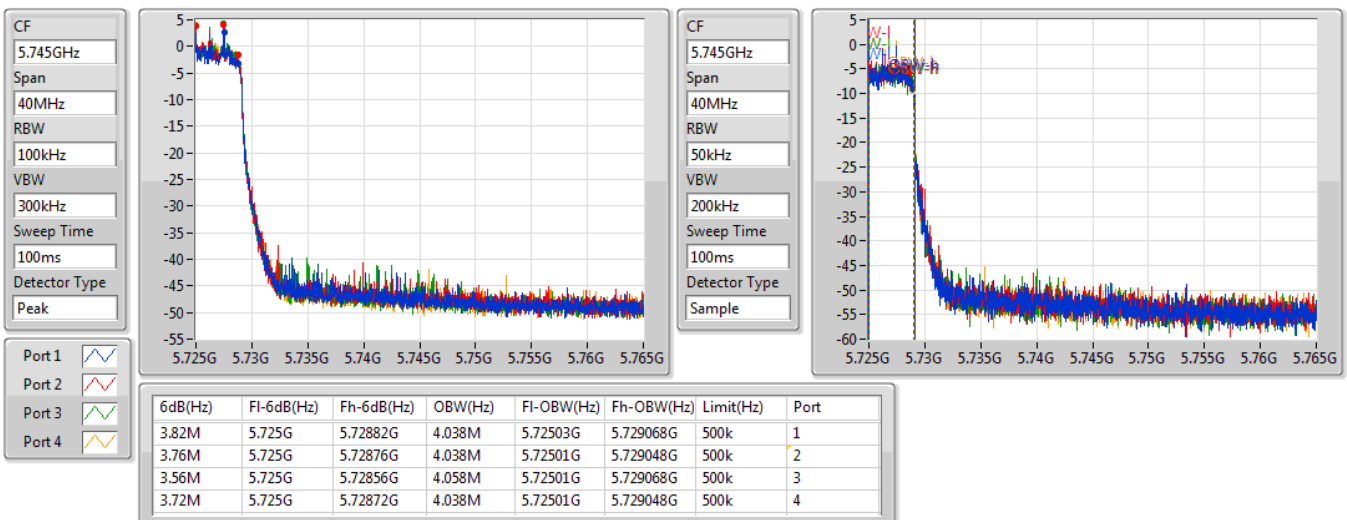


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

30/07/2019

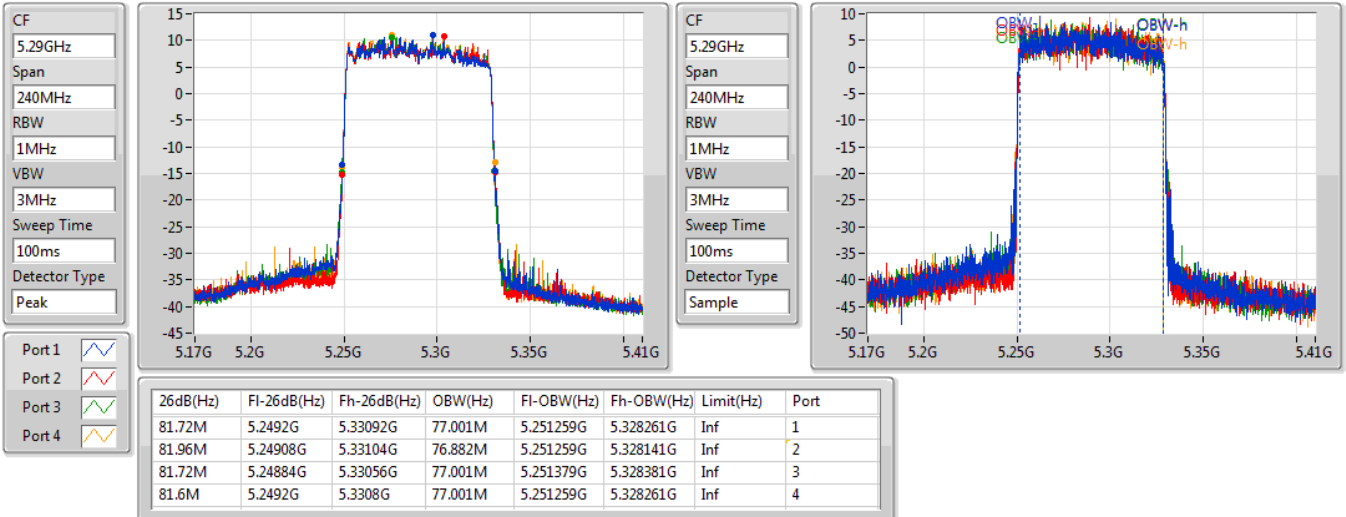


802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

5290MHz

29/07/2019

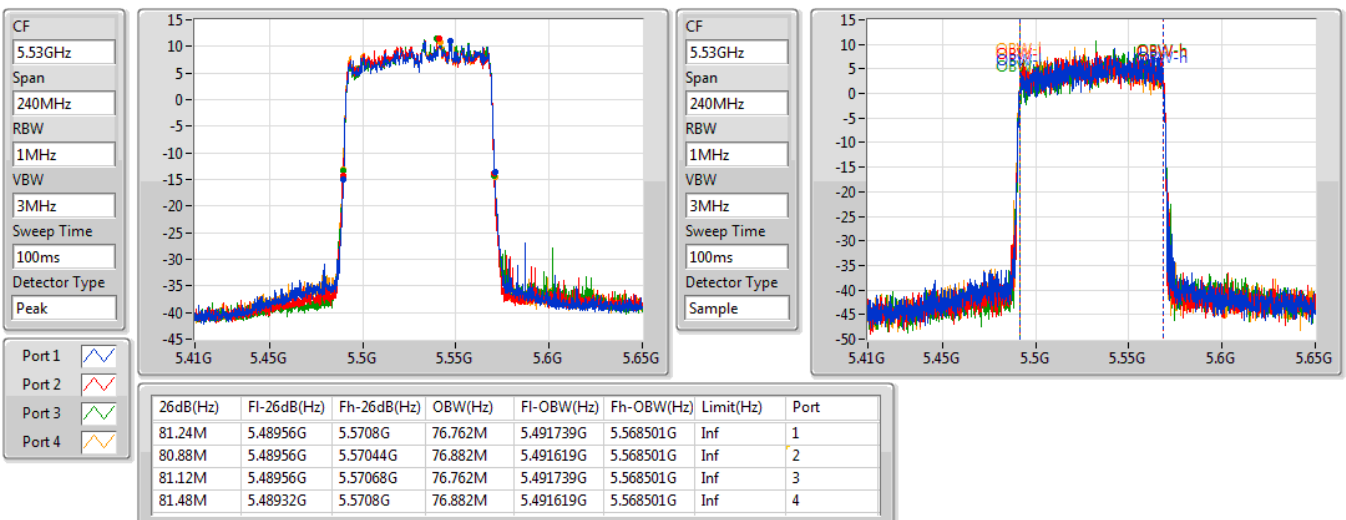


802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

5530MHz

30/07/2019

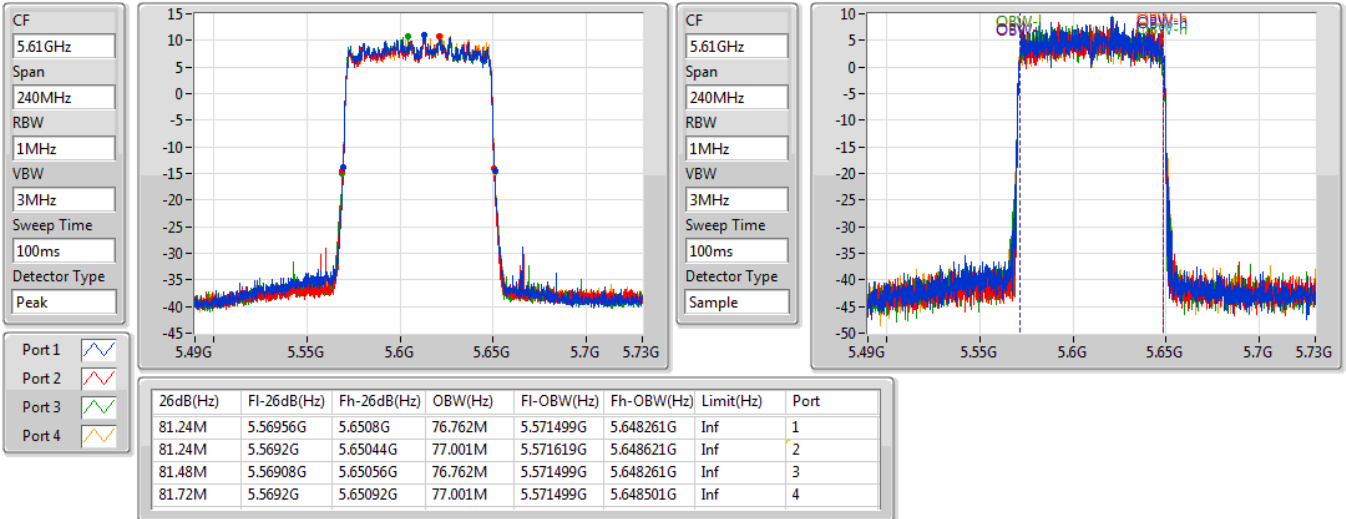


802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

5610MHz

30/07/2019

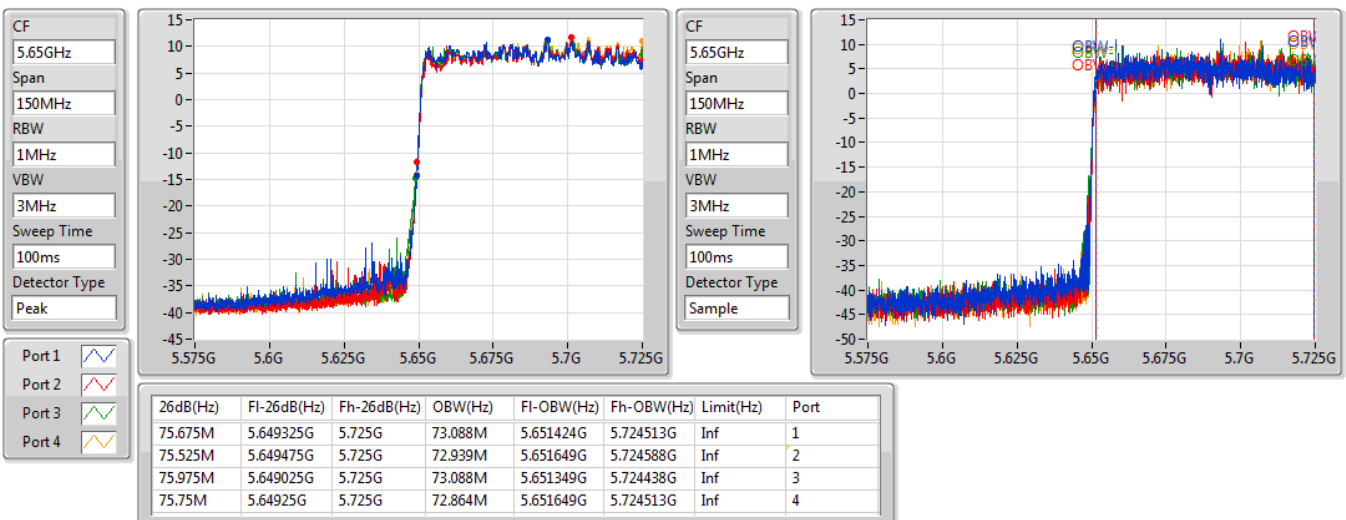


802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

5690MHz Straddle 5.47-5.725GHz

30/07/2019

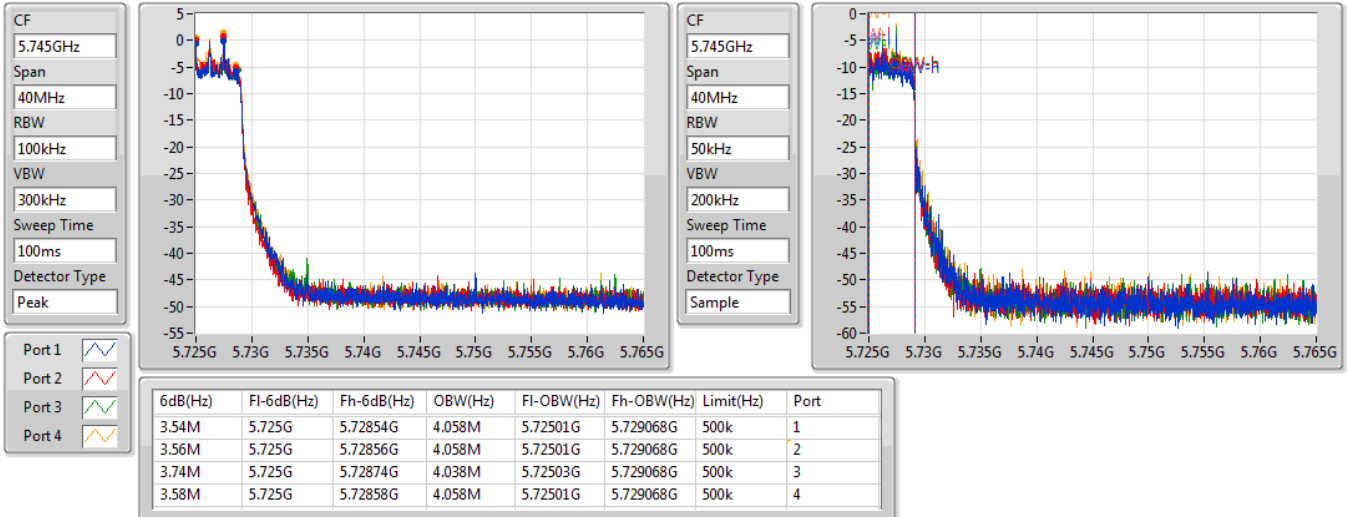


802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

5690MHz Straddle 5.725-5.85GHz

30/07/2019

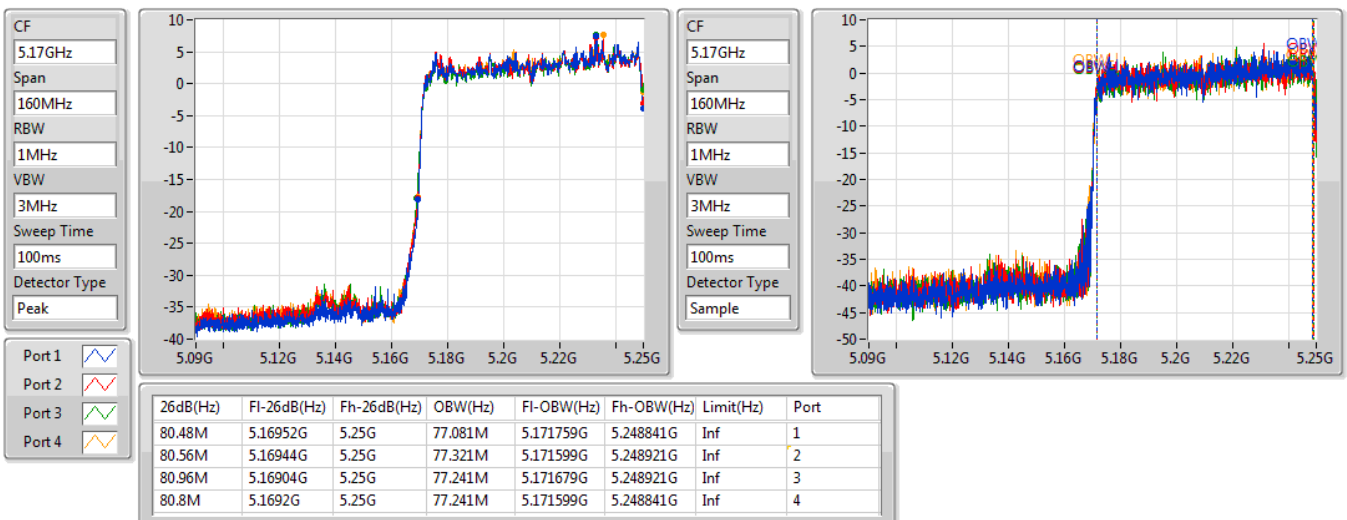


802.11ax HEW160-BF_Nss1,(MCS0)_4TX

EBW

5250MHz Straddle 5.15-5.25GHz

29/07/2019

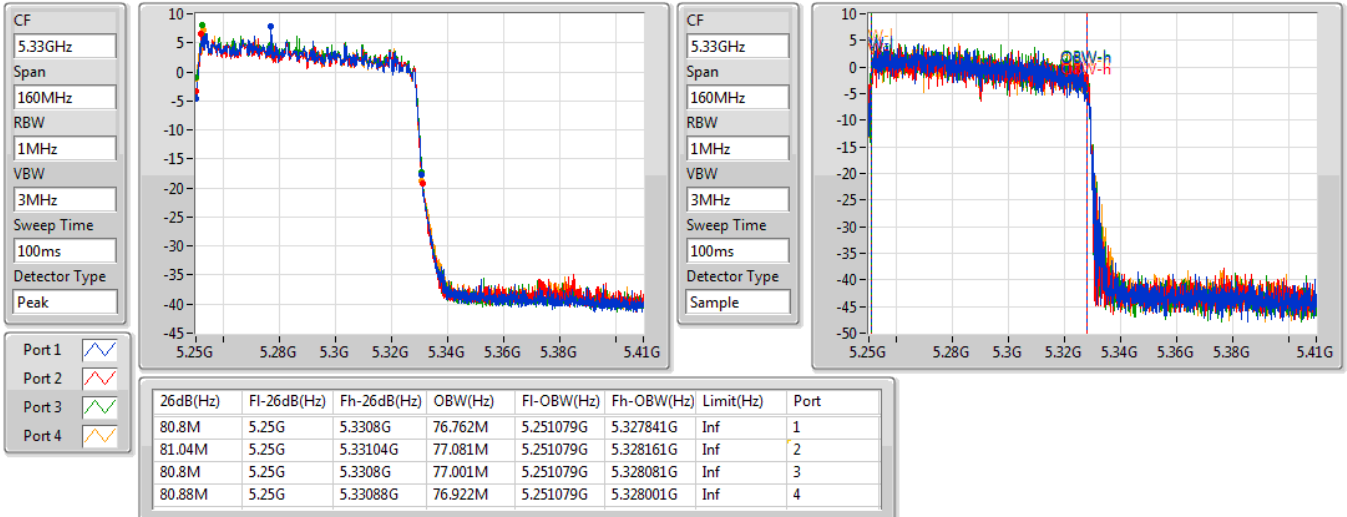


802.11ax HEW160-BF_Nss1,(MCS0)_4TX

EBW

5250MHz

29/07/2019

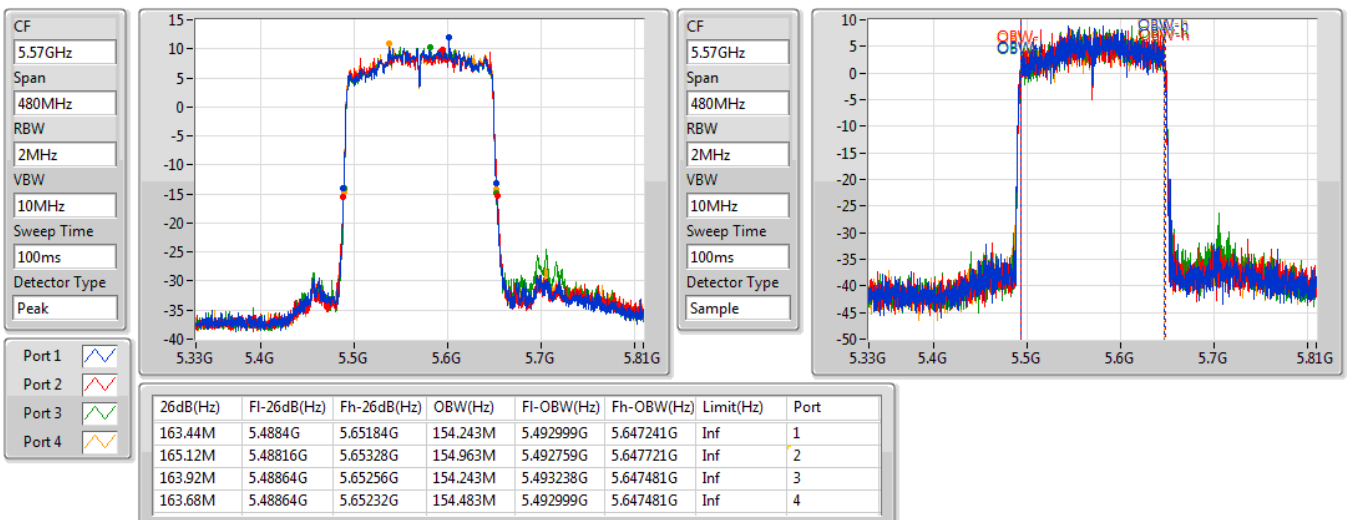


802.11ax HEW160-BF_Nss1,(MCS0)_4TX

EBW

5570MHz

30/07/2019



<non-beamforming mode> 4T2S
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT160_Nss2,(MCS0)_4TX	82M	75.722M	75M7D1D	81.52M	75.642M
802.11ax HEW160_Nss2,(MCS0)_4TX	81.36M	77.321M	77M3D1D	81.2M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT160_Nss2,(MCS0)_4TX	81.28M	75.562M	75M6D1D	80.88M	75.402M
802.11ax HEW160_Nss2,(MCS0)_4TX	81.44M	77.081M	77M1D1D	80.88M	76.842M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT80_Nss2,(MCS0)_4TX	81.96M	75.802M	75M8D1D	81.24M	75.442M
802.11ac VHT160_Nss2,(MCS0)_4TX	164.88M	154.243M	154MD1D	163.44M	153.283M
802.11ax HEW80_Nss2,(MCS0)_4TX	81.72M	76.882M	76M9D1D	81.24M	76.762M
802.11ax HEW160_Nss2,(MCS0)_4TX	165.6M	155.202M	155MD1D	163.2M	153.763M

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

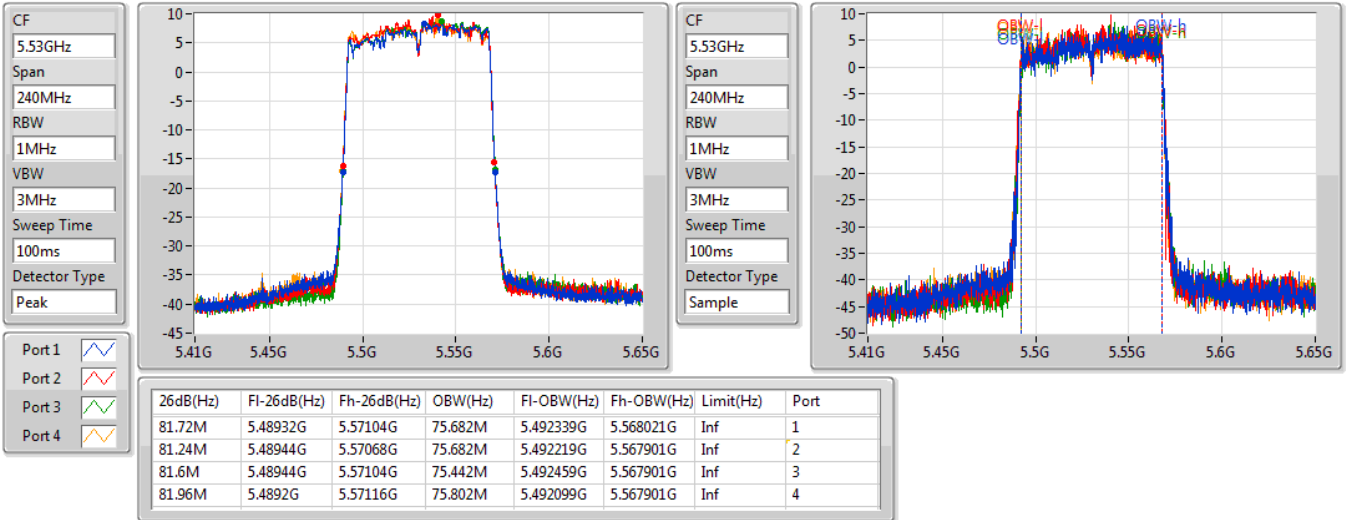
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.72M	75.682M	81.24M	75.682M	81.6M	75.442M	81.96M	75.802M
802.11ac VHT160_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82M	75.642M	81.92M	75.642M	81.76M	75.722M	81.52M	75.722M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.28M	75.482M	81.28M	75.562M	81.04M	75.562M	80.88M	75.402M
5570MHz	Pass	Inf	164.4M	153.523M	164.64M	153.763M	163.44M	153.283M	164.88M	154.243M
802.11ax HEW80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.24M	76.762M	81.36M	76.882M	81.36M	76.762M	81.72M	76.762M
802.11ax HEW160_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.36M	77.161M	81.36M	77.081M	81.36M	77.321M	81.2M	77.161M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.12M	76.922M	80.88M	77.081M	81.44M	76.842M	81.28M	76.922M
5570MHz	Pass	Inf	164.88M	154.243M	164.16M	154.963M	163.2M	153.763M	165.6M	155.202M

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

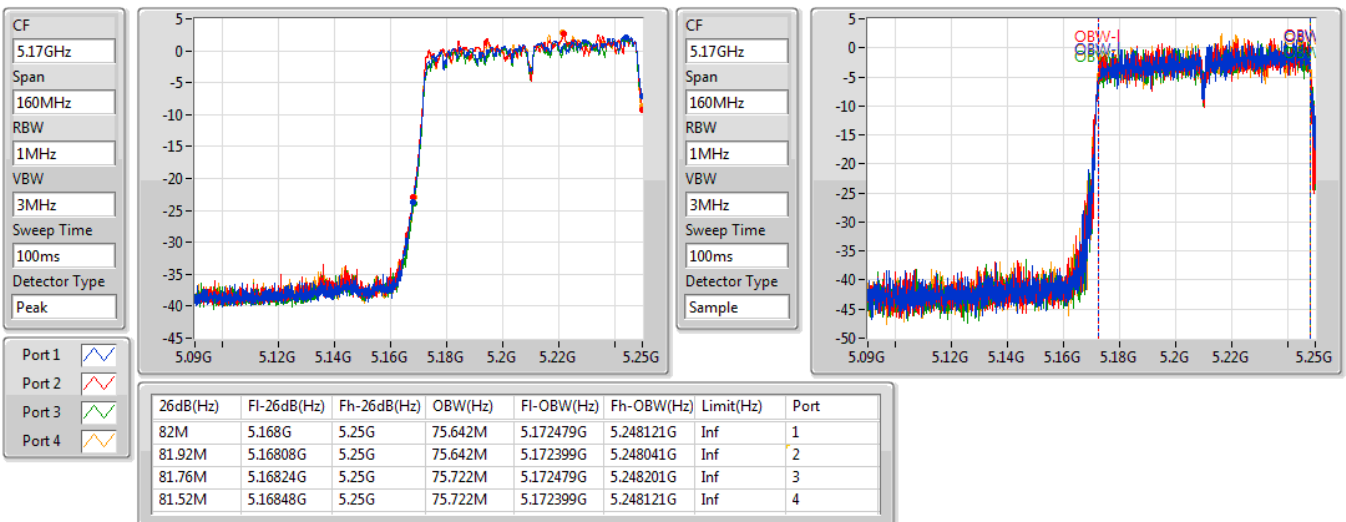
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80_Nss2,(MCS0)_4TX
EBW
5530MHz

31/07/2019

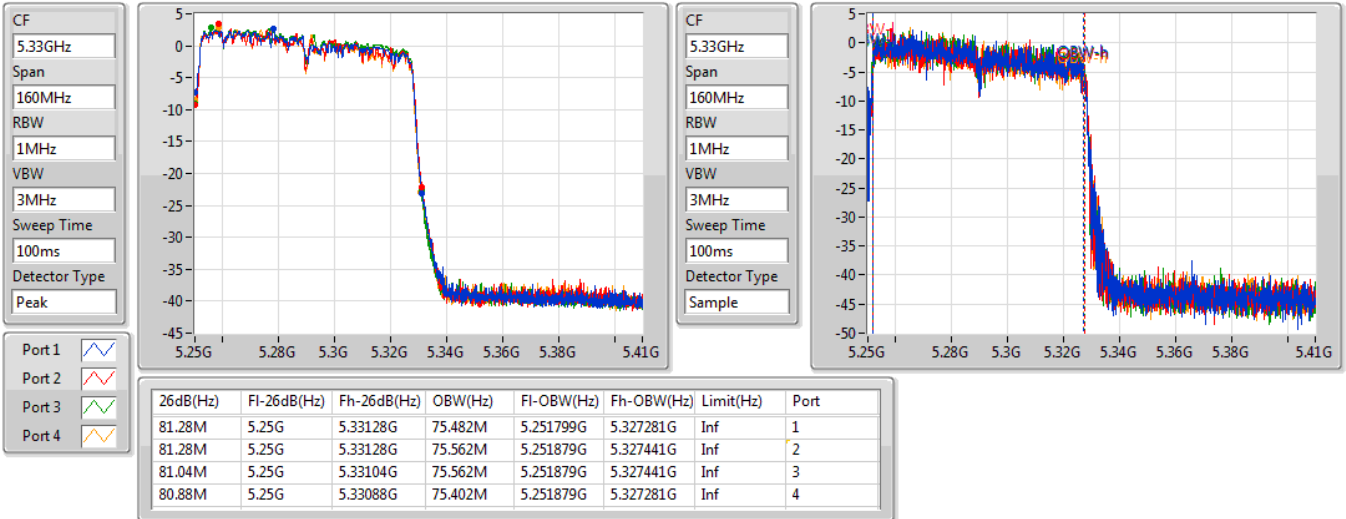

802.11ac VHT160_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

31/07/2019

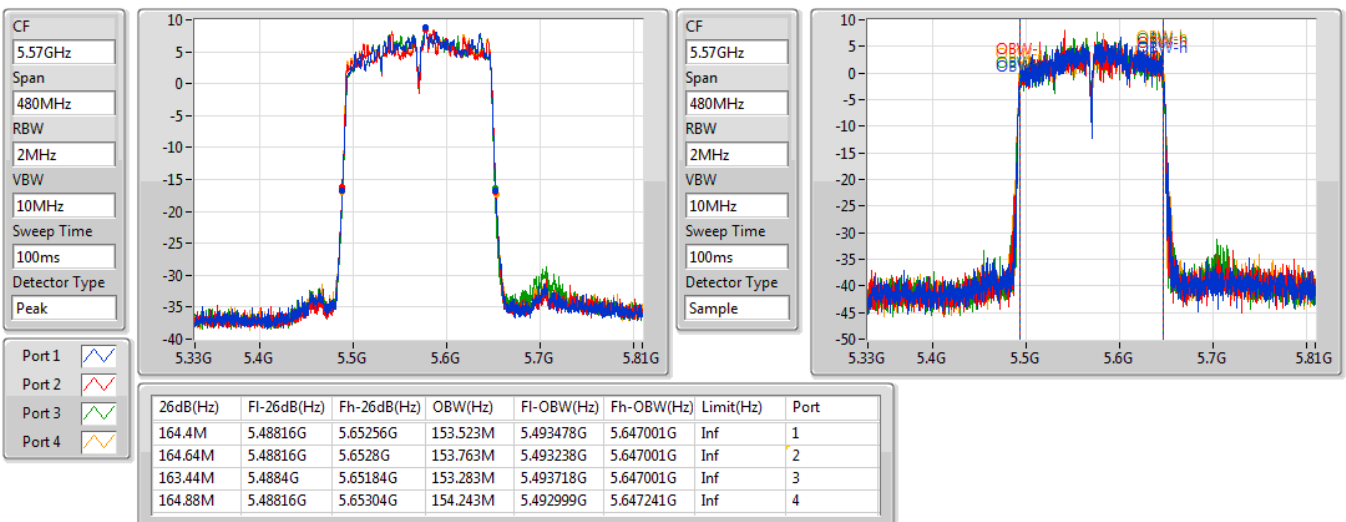


802.11ac VHT160_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

31/07/2019


802.11ac VHT160_Nss2,(MCS0)_4TX
EBW
5570MHz

31/07/2019

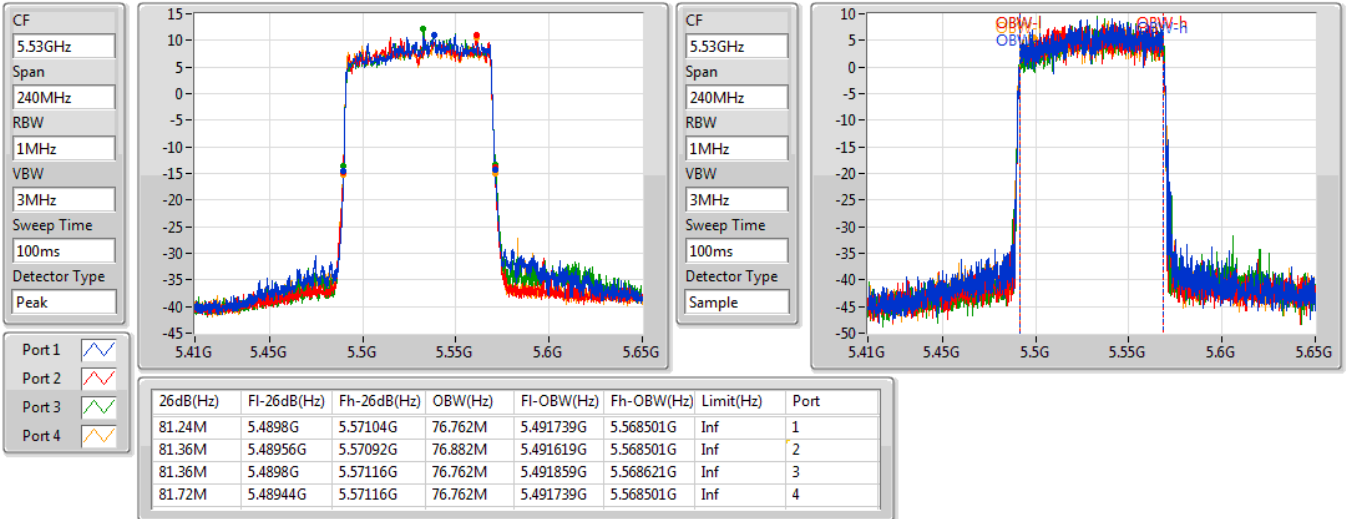


802.11ax HEW80_Nss2,(MCS0)_4TX

EBW

5530MHz

31/07/2019

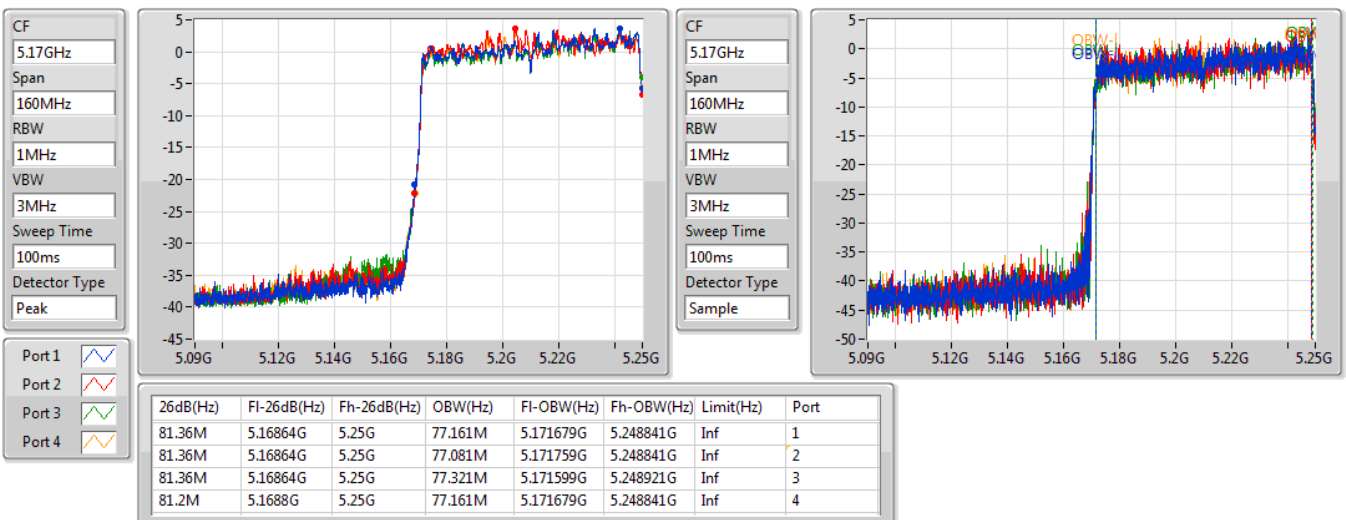


802.11ax HEW160_Nss2,(MCS0)_4TX

EBW

5250MHz Straddle 5.15-5.25GHz

31/07/2019

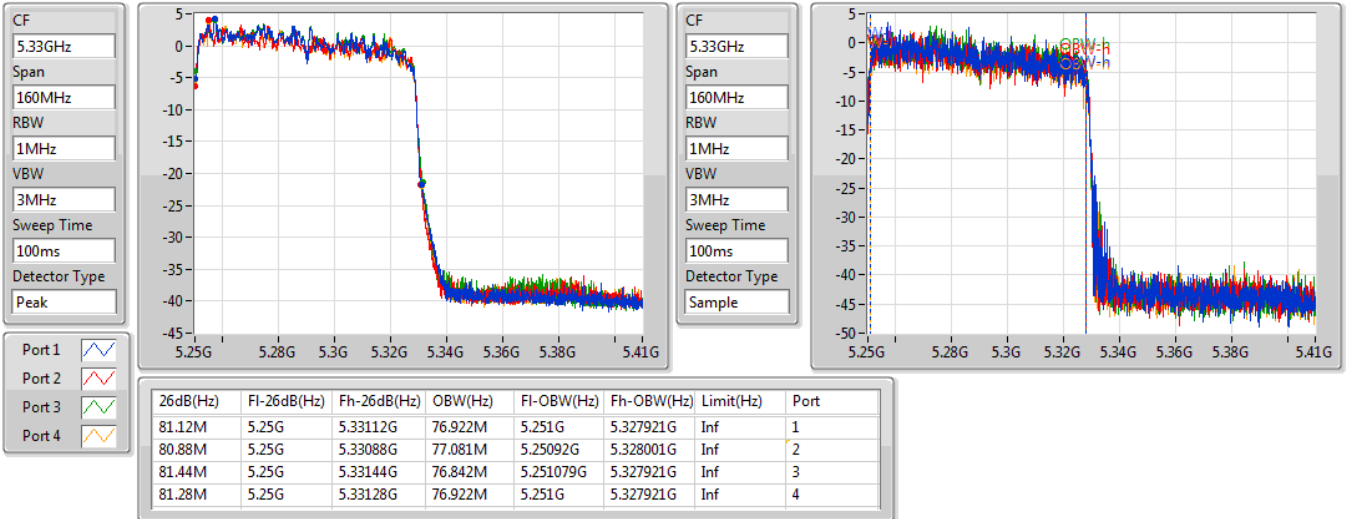


802.11ax HEW160_Nss2,(MCS0)_4TX

EBW

5250MHz Straddle 5.25-5.35GHz

31/07/2019

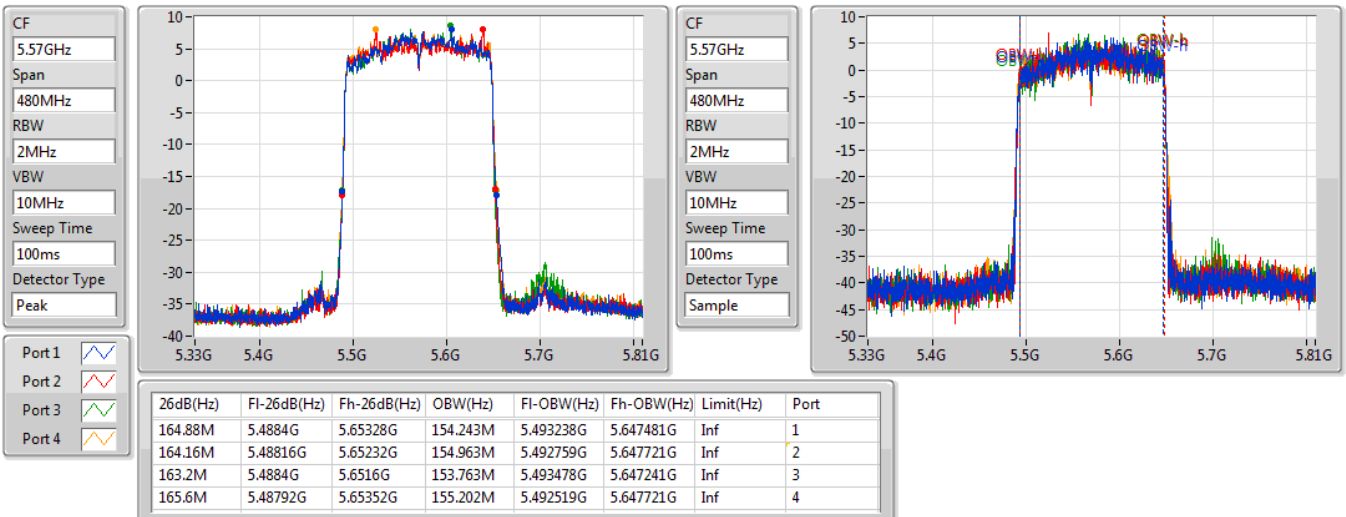


802.11ax HEW160_Nss2,(MCS0)_4TX

EBW

5570MHz

31/07/2019



<beamforming mode> 4T2S
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	81.92M	75.802M	75M8D1D	81.44M	75.642M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	81.52M	77.241M	77M2D1D	81.2M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	81.28M	75.642M	75M6D1D	80.72M	75.482M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	81.36M	76.922M	76M9D1D	80.56M	76.682M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	81.84M	75.802M	75M8D1D	81.24M	75.442M
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	165.12M	154.243M	154MD1D	163.44M	153.283M
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	81.48M	77.121M	77M1D1D	81.24M	76.762M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	164.88M	155.682M	156MD1D	164.4M	154.723M

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

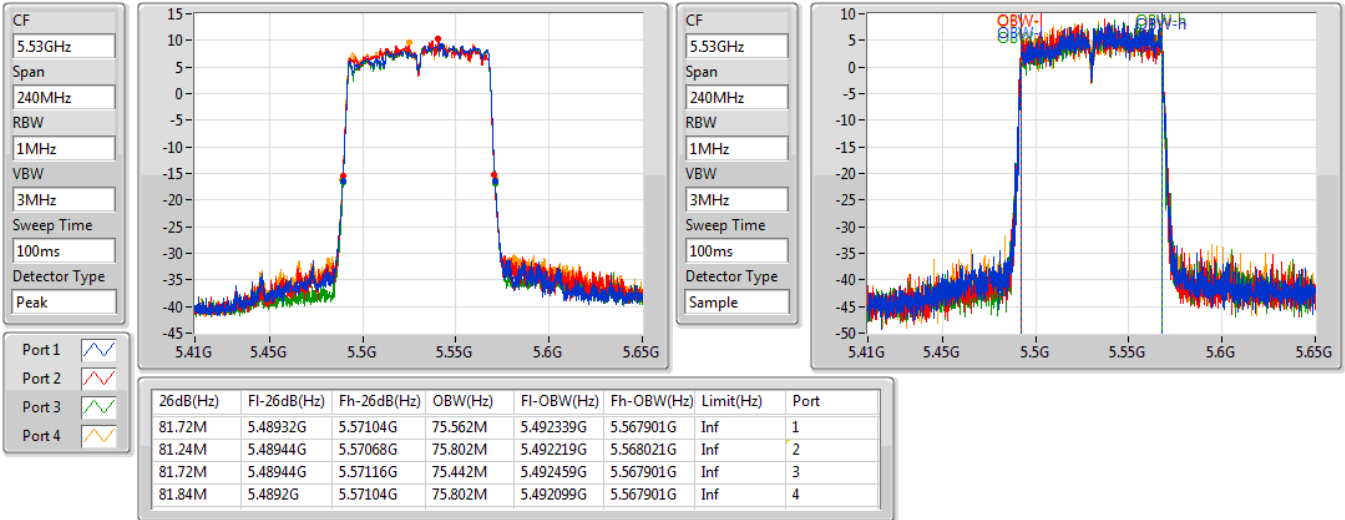
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.72M	75.562M	81.24M	75.802M	81.72M	75.442M	81.84M	75.802M
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.92M	75.722M	81.92M	75.642M	81.84M	75.722M	81.44M	75.802M
5250MHz	Pass	Inf	81.28M	75.642M	81.12M	75.562M	80.96M	75.562M	80.72M	75.482M
5570MHz	Pass	Inf	164.4M	153.283M	165.12M	154.003M	163.44M	153.283M	164.4M	154.243M
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.24M	77.001M	81.36M	76.882M	81.36M	76.762M	81.48M	77.121M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.52M	77.081M	81.28M	77.161M	81.44M	77.161M	81.2M	77.241M
5250MHz	Pass	Inf	80.88M	76.762M	81.04M	76.762M	80.56M	76.682M	81.36M	76.922M
5570MHz	Pass	Inf	164.4M	154.723M	164.4M	154.723M	164.64M	154.723M	164.88M	155.682M

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 VHT80-BF_Nss2,(MCS0)_4TX
EBW
5530MHz

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802.11ac VHT160-BF_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

29/07/2019

