



FCC RADIO TEST REPORT

FCC ID : O6ZBGW320
Equipment : BGW320-500 Wireless Integrated ONT Residential Gateway
Brand Name : HUMAX
Model Name : BGW320-500
Applicant : Humax Co., Ltd.
HUMAX BLDG., 2, Yeongmun-ro Cheoin-gu Yongin-si,
Gyeonggi-do South Korea 17040
Manufacturer : Humax Co., Ltd.
HUMAX BLDG., 2, Yeongmun-ro Cheoin-gu Yongin-si,
Gyeonggi-do South Korea 17040
Standard : 47 CFR FCC Part 15.407

The product was received on Aug. 24, 2019, and testing was started from Aug. 24, 2019 and completed on Oct. 22, 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-A12_1 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: Cindy Peng



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
5.25-5.35GHz	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
5.15-5.35GHz	802.11ac VHT160	160	1TX, 2TX, 3TX, 4TX
5.15-5.35GHz	802.11ac VHT160-BF	160	2TX, 3TX, 4TX
5.15-5.35GHz	802.11ax HEW160	160	1TX, 2TX, 3TX, 4TX
5.15-5.35GHz	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



Band	Mode	BWch (MHz)	Nant
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	Type	Connector	Gain (dBi)
1	CALTRONICS	02102140-06811U1	PCB	I-PEX	Note 1
2	CALTRONICS	02102140-06811U1	PCB	I-PEX	
3	CALTRONICS	02102140-06811U1	PCB	I-PEX	
4	CALTRONICS	02102140-06811U1	PCB	I-PEX	
5	CALTRONICS	02102140-06811U1	PCB	I-PEX	
6	CALTRONICS	02102140-06811U1	PCB	I-PEX	
7	CALTRONICS	02102140-06811U1	PCB	I-PEX	
8	CALTRONICS	02102140-06811U1	PCB	I-PEX	
9	CALTRONICS	02102140-06811U1	PCB	I-PEX	

Note 1:

Ant.	2.4GHz Port				5GHz Band 1/2 Port				5GHz Band 3/4 Port				Gain (dBi)		
													1TX mode for output power, PSD CDD mode for output power		
	1TX	2TX	3TX	4TX	1TX	2TX	3TX	4TX	1TX	2TX	3TX	4TX	2.4GHz	5GHz Band 1/2	5GHz Band 3/4
1	1	1	1	1	4	4	4	4	-	-	-	-	3.70	4.10	-
2	2	2	2	2	3	3	3	3	-	-	-	-	3.90	4.60	-
3	3	3	3	3	2	2	2	2	-	-	-	-	3.70	4.10	-
4	4	4	-	4	1	1	1	1	-	-	-	-	4.10	4.60	-
5	-	-	-	-	-	-	-	-	1	1	1	1	-	-	5.30
6	-	-	-	-	-	-	-	-	2	2	2	2	-	-	6.00
7	-	-	-	-	-	-	-	-	3	3	3	3	-	-	5.30
8	-	-	-	-	-	-	-	-	4	4	4	4	-	-	5.50
9	-	-	-	-	RX only	-	-	-	RX only	-	-	-	-	5.50	5.50

Ant.	Gain (dBi)			
	CDD mode for PSD			
	Beamforming mode, SDM Mode for output power & PSD			
	2.4GHz		5GHz Band 1/2	5GHz Band 3/4
	3TX	4TX	4TX	4TX
1	4.99	5.88	6.09	-
2				
3				
4				
5	-	-	-	6.03
6				
7				
8				
9	-	-	5.50	5.50



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/1RX, 4TX/4RX):

For 1TX, 1RX

Only Port 1 can be used as transmitting antenna.

The EUT supports all antennas with RX diversity functions.

At once time there is only one antenna port can receiving 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 802.11g (4TX/4RX):

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

Port 1, Port 2, Port 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

Port 1, Port 2 and Port 3 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 5GHz function:

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

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

Port 1, Port 2, Port 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 1RX:

Ant. 9 can be use as receiving antenna only.

1.1.3 Mode Test Duty Cycle

<For 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)
802.11ax HEW20	0.982	0.08	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ac VHT40	0.972	0.12	953.75u	3k
802.11ax HEW40	0.965	0.15	773.75u	3k
802.11ac VHT80	0.943	0.25	461.25u	3k
802.11ax HEW80	0.93	0.32	402.5u	3k
802.11ac VHT160	0.895	0.48	252.25u	10k
802.11ax HEW160	0.88	0.56	232.5u	10k

4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT80	0.657	1.82	190u	10k
802.11ax HEW80	0.466	3.32	87.5u	10k
802.11ac VHT160	0.481	3.18	90u	10k
802.11ax HEW160	0.45	3.47	82.5u	10k

4T3S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20	0.833	0.79	482.5u	3k
802.11ax HEW20	0.56	2.52	128.75u	10k
802.11ac VHT40	0.729	1.37	265u	10k
802.11ax HEW40	0.516	2.87	106.25u	10k
802.11ac VHT80	0.604	2.19	150u	10k
802.11ax HEW80	0.496	3.05	96.25u	10k
802.11ac VHT160	0.509	2.93	102.5u	10k
802.11ax HEW160	0.484	3.15	92.5u	10k



<For beamforming mode>

4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF	0.964	0.16	3.9m	300
802.11ax HEW20-BF	0.938	0.28	2.995m	1k
802.11ac VHT40-BF	0.97	0.13	3.695m	300
802.11ax HEW40-BF	0.968	0.14	4.893m	300
802.11ac VHT80-BF	0.952	0.21	5.098m	300
802.11ax HEW80-BF	0.964	0.16	4.85m	300
802.11ac VHT160-BF	0.923	0.35	5.105m	300
802.11ax HEW160-BF	0.968	0.14	5.193m	300

4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF	0.975	0.11	3.838m	300
802.11ax HEW20-BF	0.935	0.29	4.365m	300
802.11ac VHT40-BF	0.957	0.19	4.609m	300
802.11ax HEW40-BF	0.957	0.19	4.413m	300
802.11ac VHT80-BF	0.907	0.42	5.101m	300
802.11ax HEW80-BF	0.946	0.24	4.853m	300
802.11ac VHT160-BF	0.964	0.16	6.97m	300
802.11ax HEW160-BF	0.882	0.55	5.37m	300

4T3S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT20-BF	0.98	0.09	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW20-BF	0.958	0.19	3.904m	300
802.11ac VHT40-BF	0.962	0.17	4.945m	300
802.11ax HEW40-BF	0.957	0.19	4.413m	300
802.11ac VHT80-BF	0.982	0.08	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW80-BF	0.978	0.1	7.78m	300
802.11ac VHT160-BF	0.941	0.26	5.253m	300
802.11ax HEW160-BF	0.957	0.19	5.33m	300

Note:

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

**1.1.4 EUT Operational Condition**

EUT Power Type	From power adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.			
Weather Band	☒	With 5600~5650MHz	☐	Without 5600~5650MHz
Function	☐	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
TPC Function	☒	With TPC	☐	Without TPC
Test Software Version	MTool 3.1.0.1 V17.10.77.15 ; Telnet			

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: FR981323AB

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 802.11ac 160MHz and 802.11ax 160MHz Mode.	1. Emission Bandwidth. 2. Maximum Conducted Output Power. 3. Peak Power Spectral Density. 4. Unwanted Emissions Above 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		
☐	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
☒	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	TH02-CB	Owen Hsu	24.7~25.6°C / 59~61%	Sep. 02, 2019~Sep. 11, 2019
Radiated	03CH04-CB	Justin Lin	24~25.3°C / 55~59%	Aug. 24, 2019~Oct. 22, 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

<For non-beamforming mode>

4T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	69
5300MHz	70
5320MHz	71
5500MHz	71
5580MHz	69
5700MHz	70
5720MHz Straddle 5.47-5.725GHz	69
5720MHz Straddle 5.725-5.85GHz	69
802.11ac VHT20_Nss1,(MCS0)_4TX	-
5260MHz	68
5300MHz	70
5320MHz	71
5500MHz	71
5580MHz	69
5700MHz	70
5720MHz Straddle 5.47-5.725GHz	71
5720MHz Straddle 5.725-5.85GHz	71
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5270MHz	71
5310MHz	72
5510MHz	71
5550MHz	70
5670MHz	71
5710MHz Straddle 5.47-5.725GHz	72
5710MHz Straddle 5.725-5.85GHz	72
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5290MHz	71
5530MHz	71
5610MHz	71
5690MHz Straddle 5.47-5.725GHz	71
5690MHz Straddle 5.725-5.85GHz	71
802.11ac VHT160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	56



Mode	Power Setting
5250MHz Straddle 5.25-5.35GHz	56
5570MHz	60
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	67
5300MHz	68
5320MHz	70
5500MHz	69
5580MHz	67
5700MHz	64
5720MHz Straddle 5.47-5.725GHz	69
5720MHz Straddle 5.725-5.85GHz	69
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	70
5310MHz	71
5510MHz	70
5550MHz	69
5670MHz	70
5710MHz Straddle 5.47-5.725GHz	71
5710MHz Straddle 5.725-5.85GHz	71
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	70
5530MHz	70
5610MHz	70
5690MHz Straddle 5.47-5.725GHz	70
5690MHz Straddle 5.725-5.85GHz	70
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	53
5250MHz Straddle 5.25-5.35GHz	53
5570MHz	60

**4T2S**

Mode	Power Setting
802.11ac VHT80_Nss2,(MCS0)_4TX	-
5530MHz	18
802.11ac VHT160_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	13
5250MHz Straddle 5.25-5.35GHz	13
5570MHz	14
802.11ax HEW80_Nss2,(MCS0)_4TX	-
5530MHz	17
802.11ax HEW160_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	13
5250MHz Straddle 5.25-5.35GHz	13
5570MHz	15

4T3S

Mode	Power Setting
802.11ac VHT80_Nss3,(MCS0)_4TX	-
5530MHz	18
802.11ac VHT160_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	13
5250MHz Straddle 5.25-5.35GHz	13
5570MHz	14
802.11ax HEW80_Nss3,(MCS0)_4TX	-
5530MHz	17
802.11ax HEW160_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	13
5250MHz Straddle 5.25-5.35GHz	13
5570MHz	15

**<For beamforming mode>****4T1S**

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5260MHz	68
5300MHz	70
5320MHz	71
5500MHz	71
5580MHz	69
5700MHz	70
5720MHz Straddle 5.47-5.725GHz	71
5720MHz Straddle 5.725-5.85GHz	71
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5270MHz	71
5310MHz	72
5510MHz	71
5550MHz	70
5670MHz	71
5710MHz Straddle 5.47-5.725GHz	72
5710MHz Straddle 5.725-5.85GHz	72
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5290MHz	71
5530MHz	71
5610MHz	71
5690MHz Straddle 5.47-5.725GHz	71
5690MHz Straddle 5.725-5.85GHz	71
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	62
5250MHz Straddle 5.25-5.35GHz	62
5570MHz	67
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	67
5300MHz	68
5320MHz	70
5500MHz	69
5580MHz	67
5700MHz	62
5720MHz Straddle 5.47-5.725GHz	69
5720MHz Straddle 5.725-5.85GHz	69
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	70



Mode	Power Setting
5310MHz	71
5510MHz	70
5550MHz	69
5670MHz	70
5710MHz Straddle 5.47-5.725GHz	71
5710MHz Straddle 5.725-5.85GHz	71
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	71
5530MHz	70
5610MHz	70
5690MHz Straddle 5.47-5.725GHz	70
5690MHz Straddle 5.725-5.85GHz	70
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	60
5250MHz Straddle 5.25-5.35GHz	60
5570MHz	65

**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	69
5250MHz Straddle 5.25-5.35GHz	69
5570MHz	68
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-
5530MHz	72
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	64
5250MHz Straddle 5.25-5.35GHz	64
5570MHz	67

4T3S

Mode	PowerSetting
802.11ac VHT80-BF_Nss3,(MCS0)_4TX	-
5530MHz	71
802.11ac VHT160-BF_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	70
5250MHz Straddle 5.25-5.35GHz	70
5570MHz	68
802.11ax HEW80-BF_Nss3,(MCS0)_4TX	-
5530MHz	71
802.11ax HEW160-BF_Nss3,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	64
5250MHz Straddle 5.25-5.35GHz	64
5570MHz	70

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz Band 1~2 + WLAN 5GHz Band 3~4
Refer to Sporton Test Report No.: FA981323-01 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:

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP 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 "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device 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 RF Conducted:

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

For Radiated:

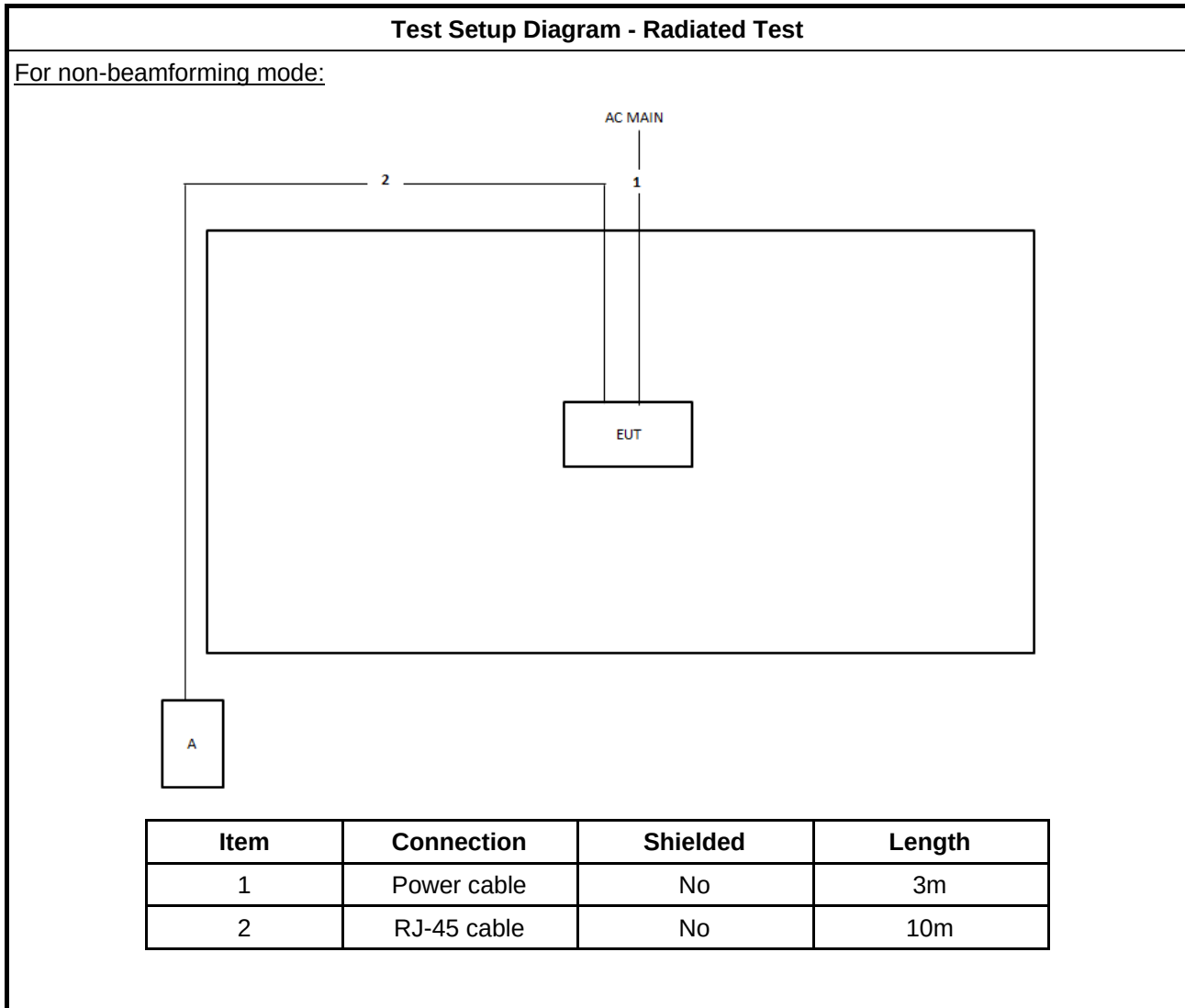
For non-beamforming mode:

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

For beamforming mode:

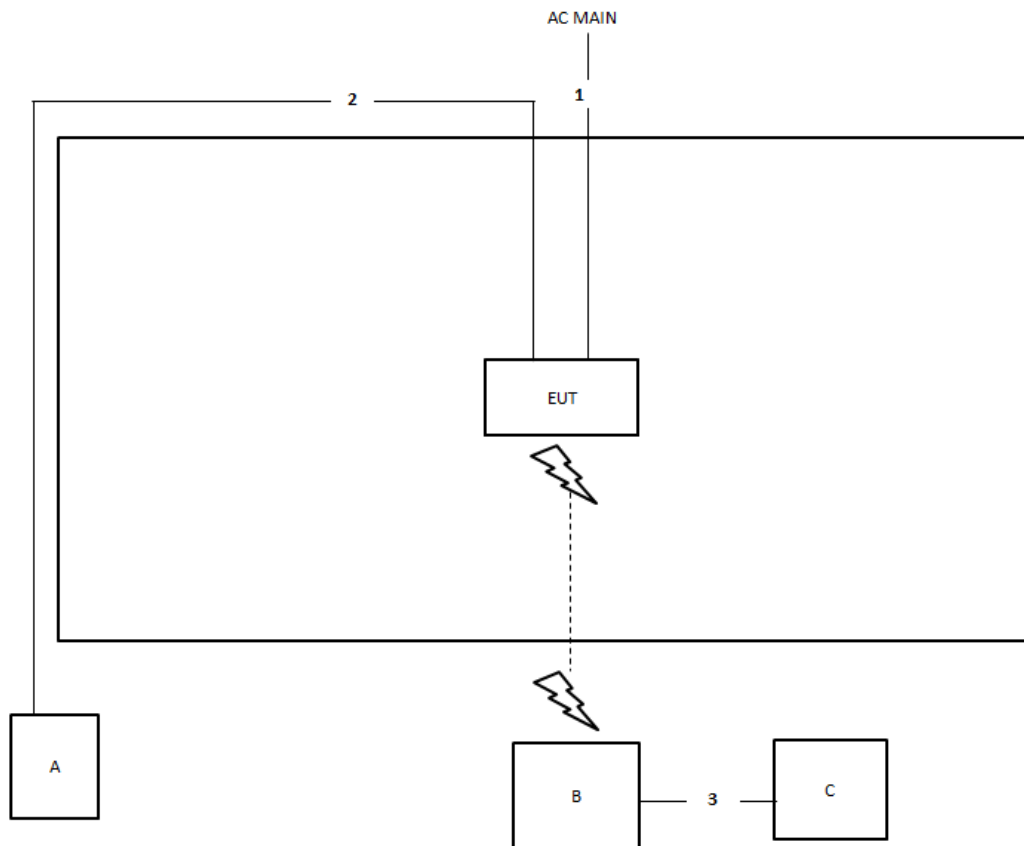
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	RX Device	ASUS	RT-AX88U	MSQ-RTAXHP00
C	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test

For beamforming mode:



Item	Connection	Shielded	Length
1	Power cable	No	3m
2	RJ-45 cable	No	10m
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	
☒	For the 5.15-5.25 GHz band, N/A
☒	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.
☒	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.
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.
LE-LAN Devices	
☐	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.
☐	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
☐	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
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.

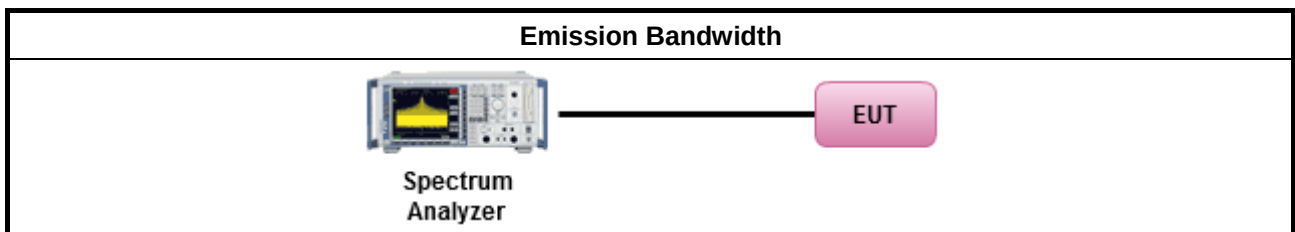
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method	
For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
☐	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	
☒	For the 5.15-5.25 GHz band:
☐	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒	For the 5.725-5.85 GHz band:
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐	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.
☐	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
☐	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
☐	For the 5.725-5.85 GHz band:
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

3.2.2 Measuring Instruments

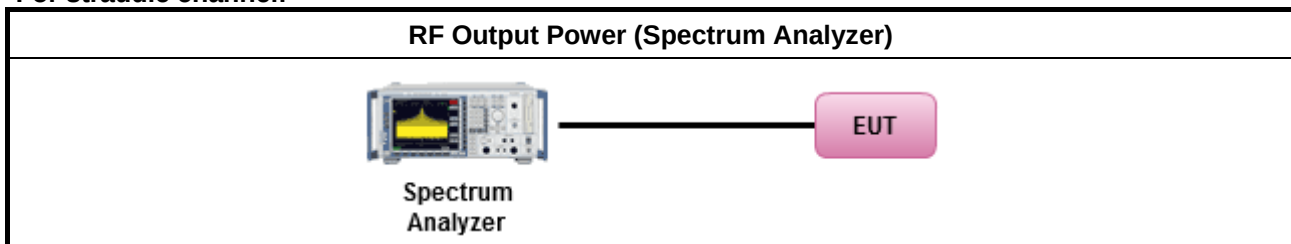
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

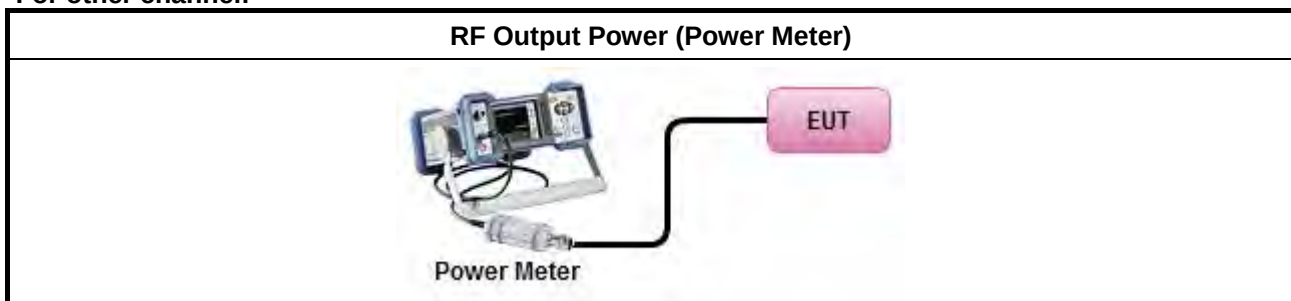
Test Method	
Maximum Conducted Output Power	
Average over on/off periods with duty factor	
☒	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging) for straddle channel.
☐	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off periods with duty factor	
☒	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter) for other channel.
For conducted measurement.	
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.	
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:



For other channel:



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	
☒ For the 5.15-5.25 GHz band:	
	- Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. - Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☒ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☒ For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐ For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
☐ For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
	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 $\theta > 45^\circ$
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
☐ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

3.3.2 Measuring Instruments

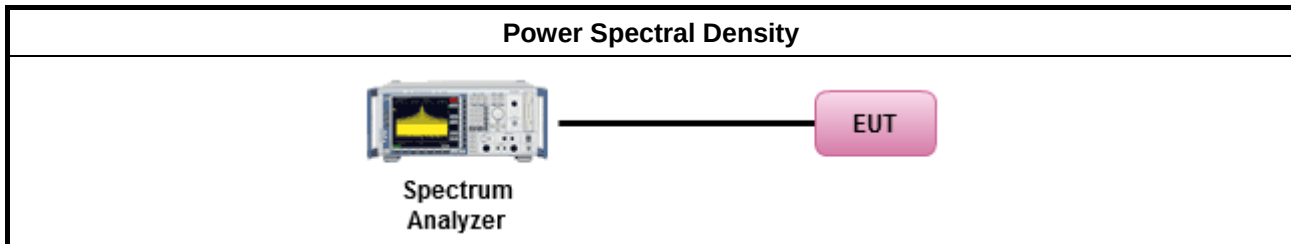
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:	
☐	Refer as 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]	
☒	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
☐	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	
☒	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below:	
☒	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.
☐	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,
☐	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.
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
☒ 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 5.725 - 5.85 GHz	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).

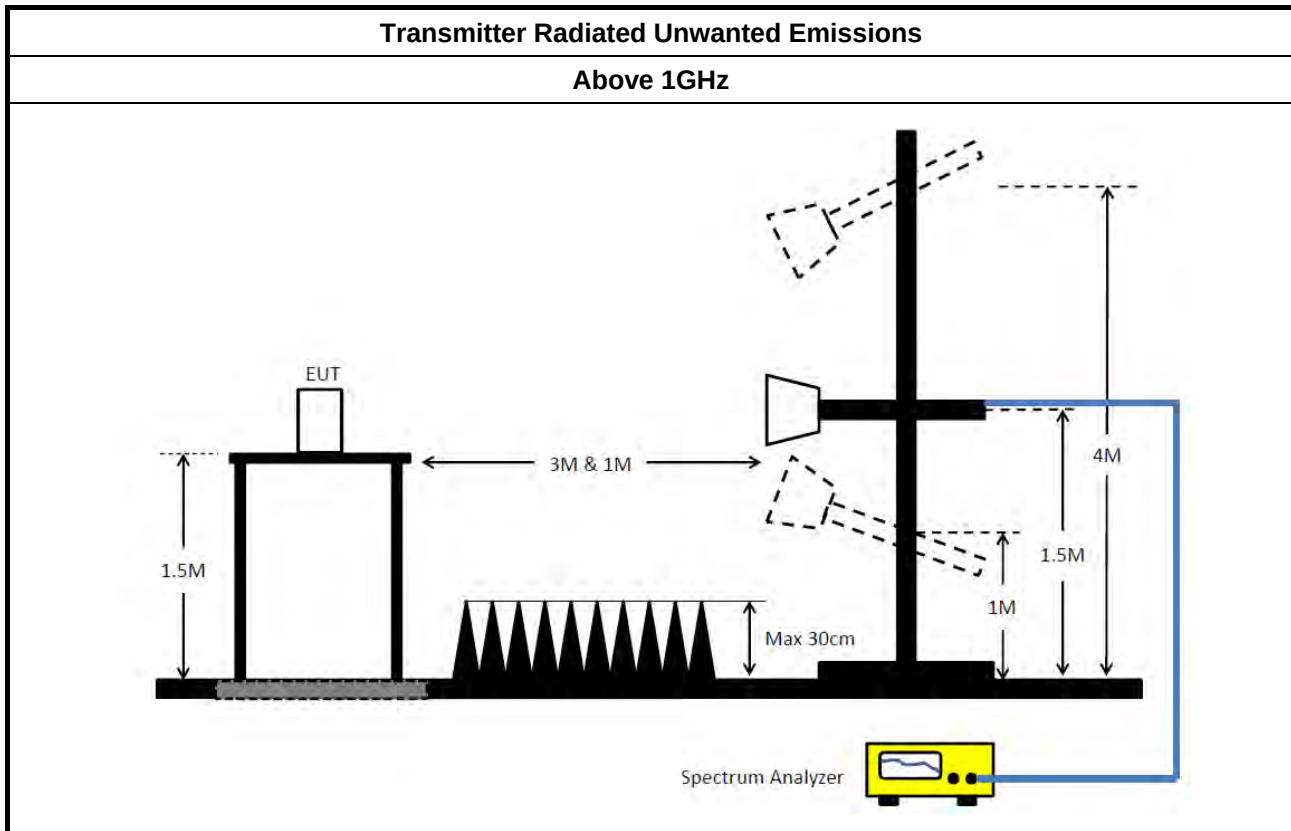
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.	
For radiated measurement.	
	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
The any unwanted emissions level shall not exceed the fundamental emission level.	
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.4.4 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	ETS • Lindgren	3115	00143147	750MHz~18GHz	Oct. 22, 2019	Oct. 21, 2020	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	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	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-21+22	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	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. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jul. 02, 2019	Jul. 01, 2020	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1531343	300MHz~40GHz	Jul. 31, 2019	Jul. 30, 2020	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1728001	300MHz~40GHz	Jul. 31, 2019	Jul. 30, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 24, 2018	Oct. 23, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)

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

<For 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	82.087M	75.747M	75M7D1D	81.159M	75.574M
802.11ax HEW160_Nss1,(MCS0)_4TX	81.159M	77.379M	77M4D1D	80.464M	76.941M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.652M	16.597M	16M6D1D	21.304M	16.43M
802.11ac VHT20_Nss1,(MCS0)_4TX	21.739M	17.777M	17M8D1D	21.304M	17.676M
802.11ac VHT40_Nss1,(MCS0)_4TX	40.348M	36.336M	36M3D1D	39.478M	36.074M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.739M	75.921M	75M9D1D	81.043M	75.601M
802.11ac VHT160_Nss1,(MCS0)_4TX	81.623M	75.834M	75M8D1D	80.464M	75.282M
802.11ax HEW20_Nss1,(MCS0)_4TX	22.174M	19.093M	19M1D1D	21.391M	18.834M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.174M	37.705M	37M7D1D	39.652M	37.463M
802.11ax HEW80_Nss1,(MCS0)_4TX	81.739M	77.335M	77M3D1D	81.043M	76.737M
802.11ax HEW160_Nss1,(MCS0)_4TX	81.159M	77.116M	77M1D1D	80.928M	76.706M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.652M	16.615M	16M6D1D	15.522M	13.221M
802.11ac VHT20_Nss1,(MCS0)_4TX	21.826M	17.847M	17M8D1D	15.652M	13.853M
802.11ac VHT40_Nss1,(MCS0)_4TX	40.348M	36.364M	36M4D1D	34.797M	32.935M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.739M	75.848M	75M8D1D	75.435M	72.403M
802.11ac VHT160_Nss1,(MCS0)_4TX	164.87M	154.839M	155MD1D	163.478M	153.335M
802.11ax HEW20_Nss1,(MCS0)_4TX	21.739M	19.03M	19MOD1D	15.652M	14.434M
802.11ax HEW40_Nss1,(MCS0)_4TX	40M	37.74M	37M7D1D	34.899M	33.587M
802.11ax HEW80_Nss1,(MCS0)_4TX	82.087M	77.619M	77M6D1D	75.87M	72.913M
802.11ax HEW160_Nss1,(MCS0)_4TX	164.87M	155.27M	155MD1D	163.478M	153.003M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	3.188M	3.959M	3M96D1D	3.188M	3.859M
802.11ac VHT20_Nss1,(MCS0)_4TX	3.884M	4.245M	4M25D1D	3.826M	4.131M
802.11ac VHT40_Nss1,(MCS0)_4TX	3.246M	3.635M	3M64D1D	3.188M	3.527M
802.11ac VHT80_Nss1,(MCS0)_4TX	3.188M	3.657M	3M66D1D	3.13M	3.513M
802.11ax HEW20_Nss1,(MCS0)_4TX	4.58M	4.599M	4M60D1D	4.464M	4.549M
802.11ax HEW40_Nss1,(MCS0)_4TX	3.884M	4.104M	4M10D1D	3.71M	4.09M
802.11ax HEW80_Nss1,(MCS0)_4TX	3.884M	4.104M	4M10D1D	3.768M	4.08M

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	21.391M	16.479M	21.478M	16.537M	21.565M	16.516M	21.478M	16.586M
5300MHz	Pass	Inf	21.478M	16.538M	21.478M	16.535M	21.478M	16.533M	21.478M	16.597M
5320MHz	Pass	Inf	21.391M	16.43M	21.304M	16.508M	21.652M	16.468M	21.478M	16.533M
5500MHz	Pass	Inf	21.304M	16.48M	21.565M	16.565M	21.565M	16.462M	21.391M	16.583M
5580MHz	Pass	Inf	21.304M	16.553M	21.478M	16.615M	21.652M	16.538M	21.304M	16.574M
5700MHz	Pass	Inf	21.304M	16.493M	21.565M	16.571M	21.565M	16.545M	21.304M	16.472M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.522M	13.26M	15.565M	13.332M	15.609M	13.231M	15.609M	13.221M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.188M	3.859M	3.188M	3.878M	3.188M	3.901M	3.188M	3.959M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.739M	17.774M	21.304M	17.721M	21.478M	17.746M	21.652M	17.676M
5300MHz	Pass	Inf	21.565M	17.702M	21.478M	17.764M	21.304M	17.725M	21.739M	17.731M
5320MHz	Pass	Inf	21.652M	17.728M	21.565M	17.777M	21.652M	17.757M	21.565M	17.766M
5500MHz	Pass	Inf	21.565M	17.686M	21.391M	17.757M	21.391M	17.722M	21.652M	17.797M
5580MHz	Pass	Inf	21.739M	17.745M	21.217M	17.77M	21.478M	17.847M	21.565M	17.766M
5700MHz	Pass	Inf	21.739M	17.747M	21.478M	17.804M	21.391M	17.705M	21.826M	17.747M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.652M	13.853M	15.739M	13.863M	15.696M	13.867M	15.739M	13.902M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.884M	4.245M	3.884M	4.213M	3.826M	4.131M	3.826M	4.199M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.348M	36.156M	39.826M	36.217M	40M	36.188M	39.826M	36.336M
5310MHz	Pass	Inf	40.174M	36.074M	39.652M	36.231M	39.478M	36.219M	39.826M	36.235M
5510MHz	Pass	Inf	40.174M	36.25M	39.652M	36.249M	40M	36.364M	40M	36.295M
5550MHz	Pass	Inf	40M	36.231M	39.826M	36.246M	39.652M	36.262M	39.826M	36.145M
5670MHz	Pass	Inf	40.348M	36.184M	39.826M	36.277M	39.826M	36.214M	39.652M	36.218M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.101M	33.038M	34.797M	32.935M	35M	32.947M	34.899M	32.965M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.188M	3.527M	3.246M	3.635M	3.188M	3.586M	3.188M	3.559M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.739M	75.601M	81.043M	75.655M	81.043M	75.921M	81.739M	75.619M
5530MHz	Pass	Inf	81.739M	75.658M	81.043M	75.64M	81.391M	75.55M	80.696M	75.538M
5610MHz	Pass	Inf	81.739M	75.314M	81.043M	75.848M	81.391M	75.516M	81.739M	75.274M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.087M	72.632M	75.652M	72.499M	75.435M	72.449M	75.87M	72.403M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.188M	3.657M	3.188M	3.579M	3.13M	3.625M	3.188M	3.513M
802.11ac VHT160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.159M	75.574M	81.391M	75.622M	82.087M	75.678M	81.159M	75.747M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.928M	75.452M	81.623M	75.834M	80.464M	75.282M	80.696M	75.771M
5570MHz	Pass	Inf	163.478M	153.896M	164.174M	153.335M	164.87M	154.269M	163.478M	154.839M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.565M	18.987M	21.652M	18.954M	21.652M	18.974M	21.391M	19.093M
5300MHz	Pass	Inf	21.478M	18.978M	21.478M	18.834M	21.565M	18.969M	21.739M	18.945M
5320MHz	Pass	Inf	22.174M	18.969M	21.652M	18.985M	21.565M	18.872M	21.478M	18.917M
5500MHz	Pass	Inf	21.652M	19.009M	21.652M	19.003M	21.652M	18.956M	21.217M	18.953M
5580MHz	Pass	Inf	21.565M	18.964M	21.478M	18.971M	21.565M	18.967M	21.652M	18.934M
5700MHz	Pass	Inf	21.739M	18.895M	21.304M	19.03M	21.478M	18.924M	21.652M	18.997M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.739M	14.469M	15.652M	14.434M	15.739M	14.531M	15.652M	14.487M

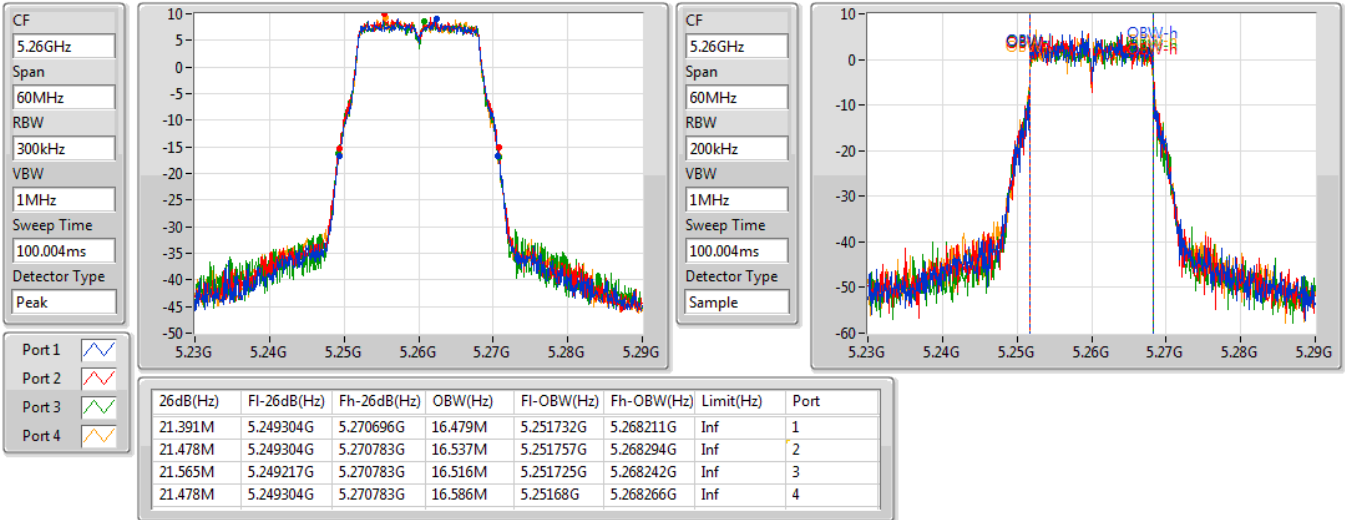
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.464M	4.549M	4.522M	4.59M	4.522M	4.592M	4.58M	4.599M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	39.652M	37.554M	39.652M	37.606M	40M	37.463M	40M	37.623M
5310MHz	Pass	Inf	40M	37.577M	39.652M	37.65M	39.652M	37.705M	40.174M	37.509M
5510MHz	Pass	Inf	40M	37.557M	39.826M	37.595M	40M	37.545M	39.826M	37.634M
5550MHz	Pass	Inf	40M	37.459M	39.826M	37.522M	40M	37.429M	39.826M	37.605M
5670MHz	Pass	Inf	40M	37.537M	39.826M	37.562M	40M	37.74M	39.826M	37.584M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35M	33.751M	34.899M	33.587M	35M	33.689M	35M	33.766M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.826M	4.09M	3.884M	4.094M	3.71M	4.104M	3.826M	4.101M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.739M	77.335M	81.739M	77.254M	81.739M	76.737M	81.043M	76.962M
5530MHz	Pass	Inf	82.087M	77.048M	82.087M	76.606M	81.739M	76.971M	81.739M	76.616M
5610MHz	Pass	Inf	82.087M	76.661M	81.739M	77.226M	81.739M	77.619M	81.391M	77.397M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.87M	73.079M	75.87M	73.19M	75.87M	72.913M	75.87M	73.534M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.884M	4.104M	3.826M	4.102M	3.884M	4.088M	3.768M	4.08M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.464M	77.087M	80.696M	77.379M	80.928M	76.941M	81.159M	77.33M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.159M	77.116M	80.928M	76.706M	80.928M	76.871M	81.159M	76.95M
5570MHz	Pass	Inf	164.174M	153.003M	164.174M	154.146M	164.87M	155.27M	163.478M	155.203M

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

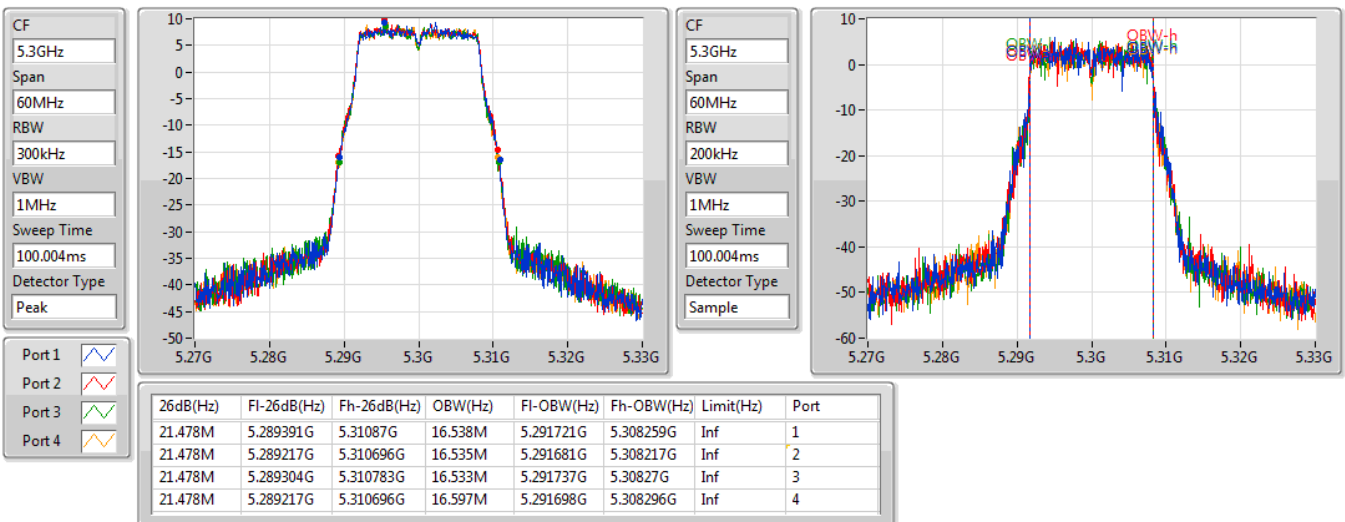
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX
EBW
5260MHz

03/09/2019

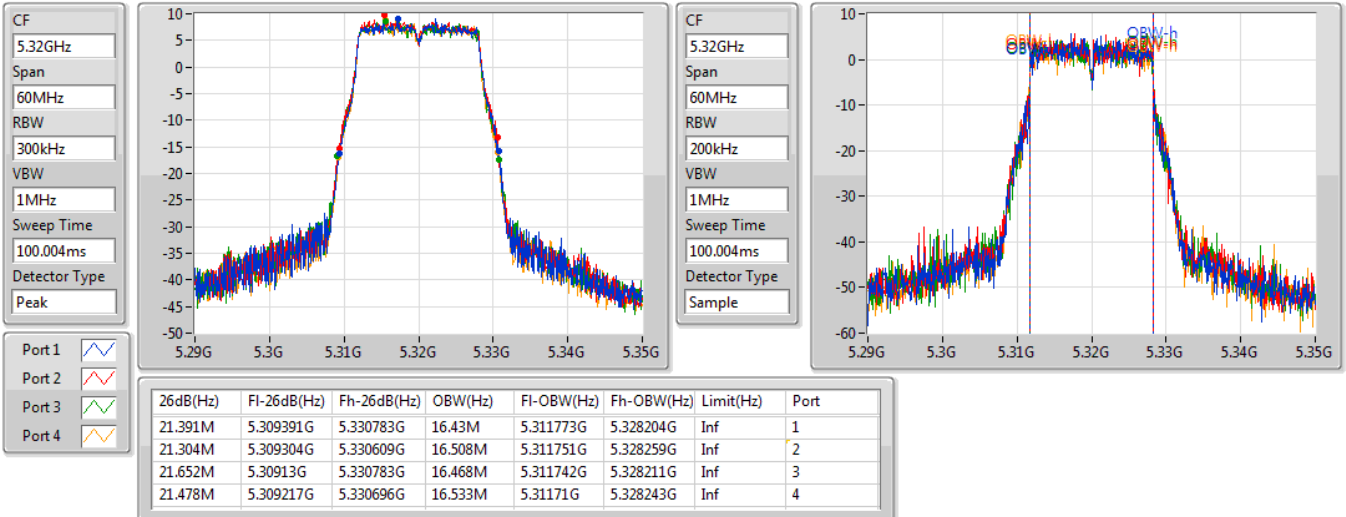

802.11a_Nss1,(6Mbps)_4TX
EBW
5300MHz

03/09/2019

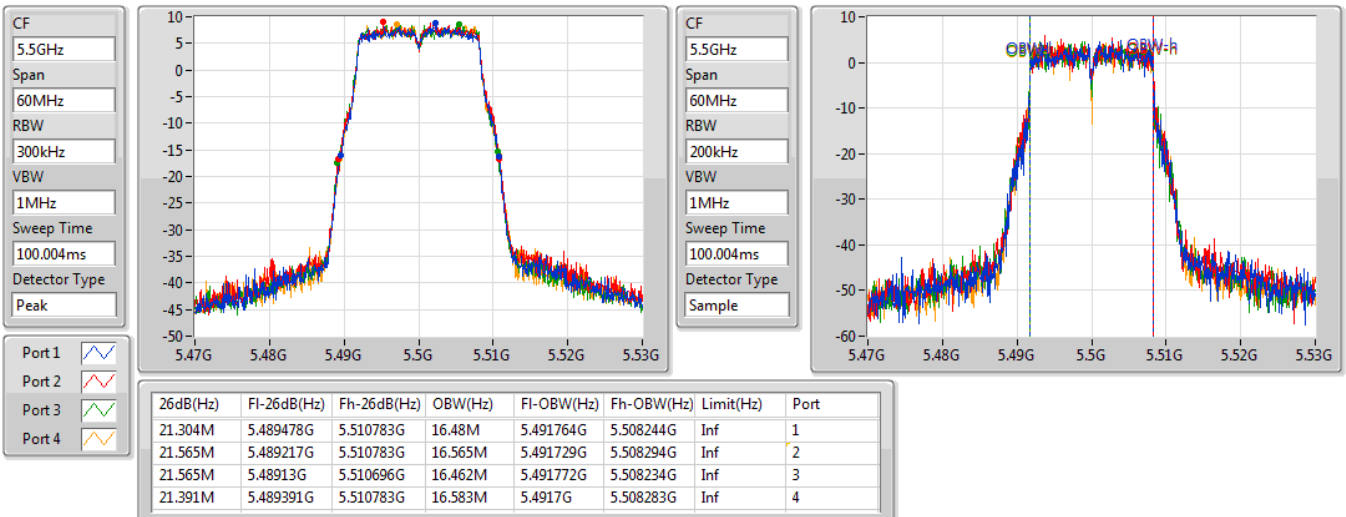


802.11a_Nss1,(6Mbps)_4TX
EBW
5320MHz

03/09/2019

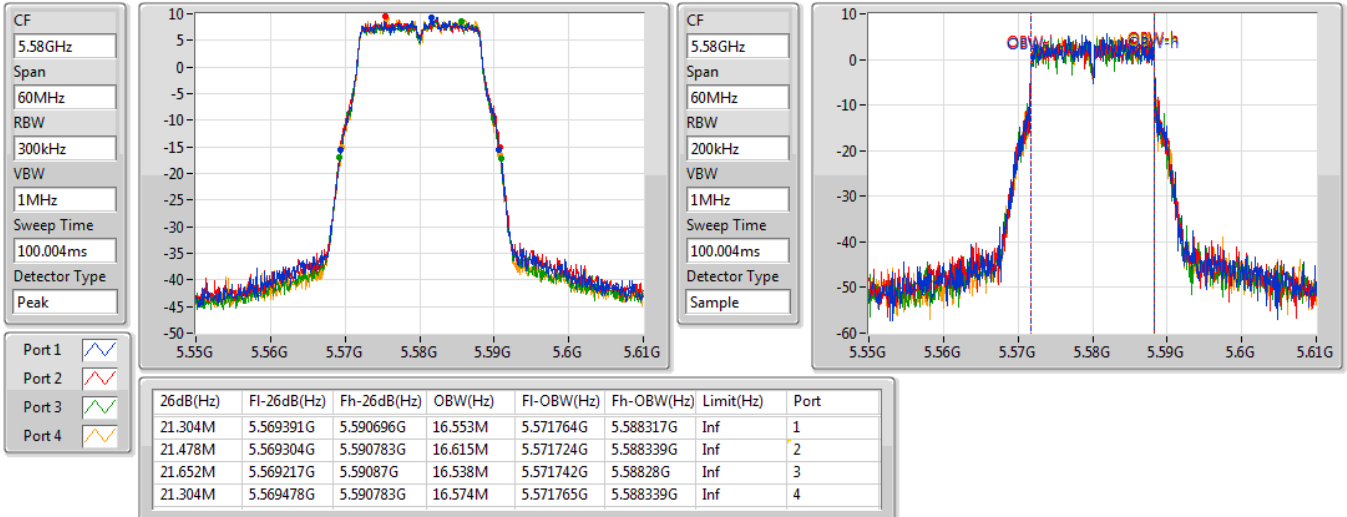

802.11a_Nss1,(6Mbps)_4TX
EBW
5500MHz

03/09/2019

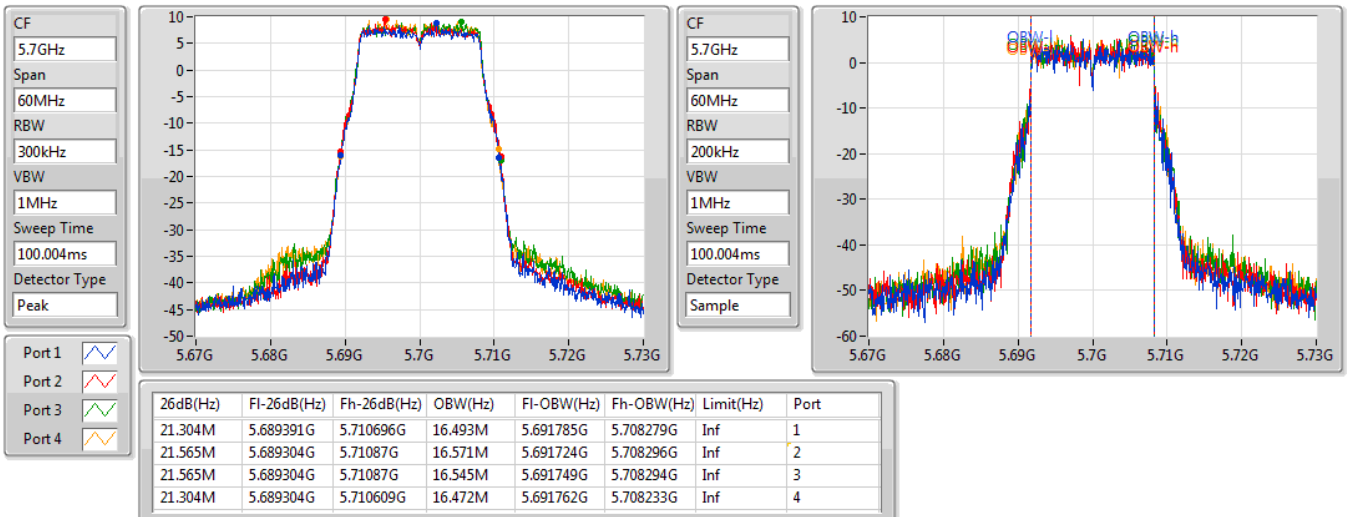


802.11a_Nss1,(6Mbps)_4TX
EBW
5580MHz

03/09/2019

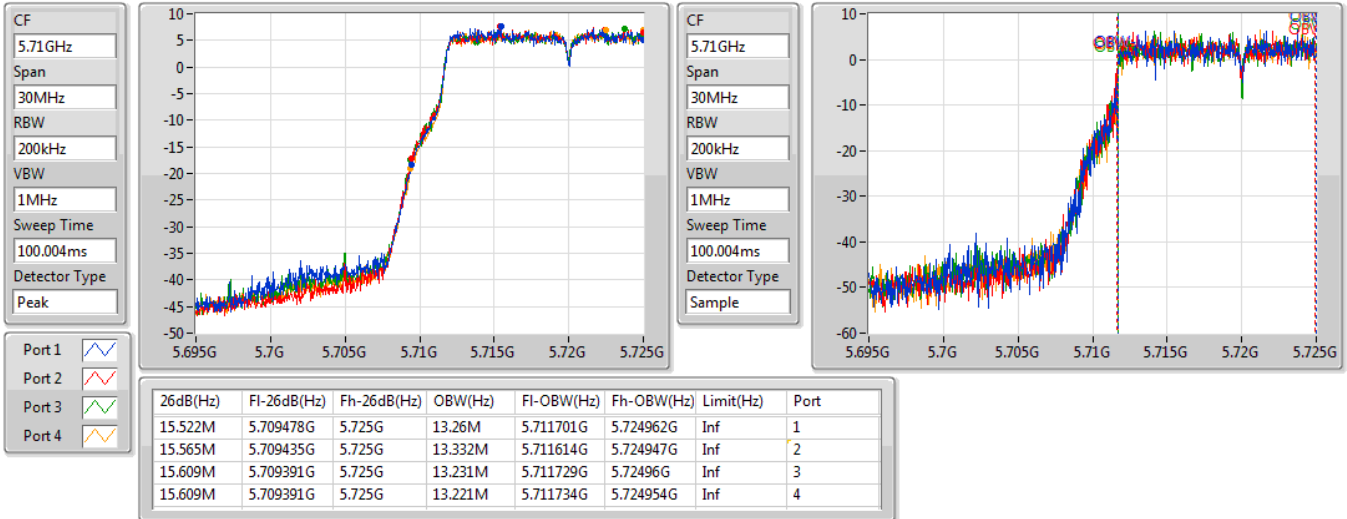

802.11a_Nss1,(6Mbps)_4TX
EBW
5700MHz

03/09/2019

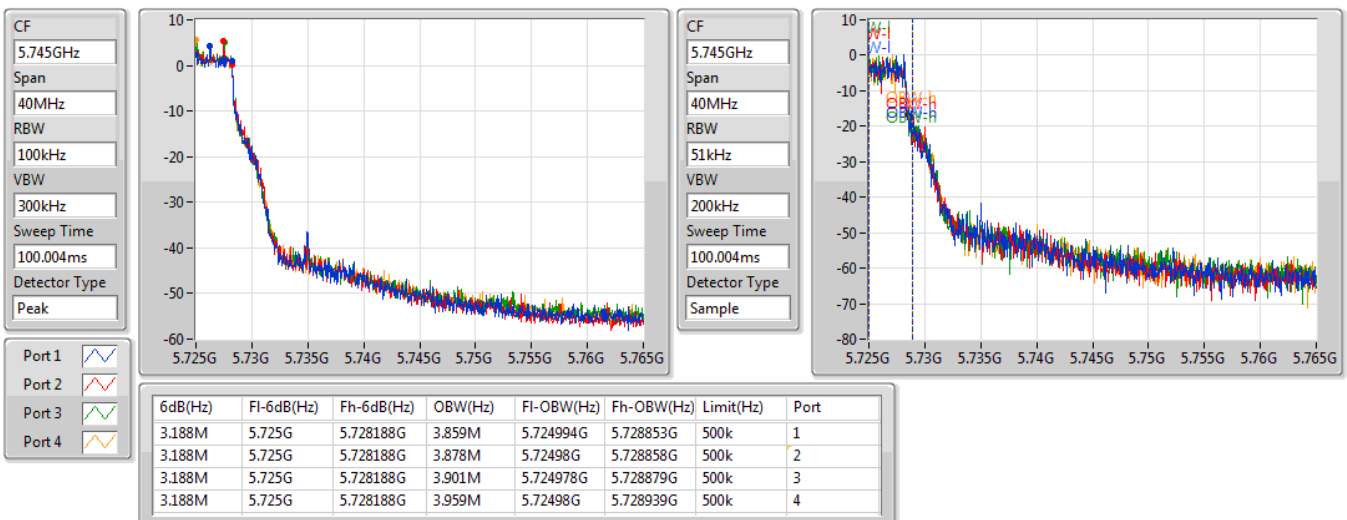


802.11a_Nss1,(6Mbps)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

03/09/2019

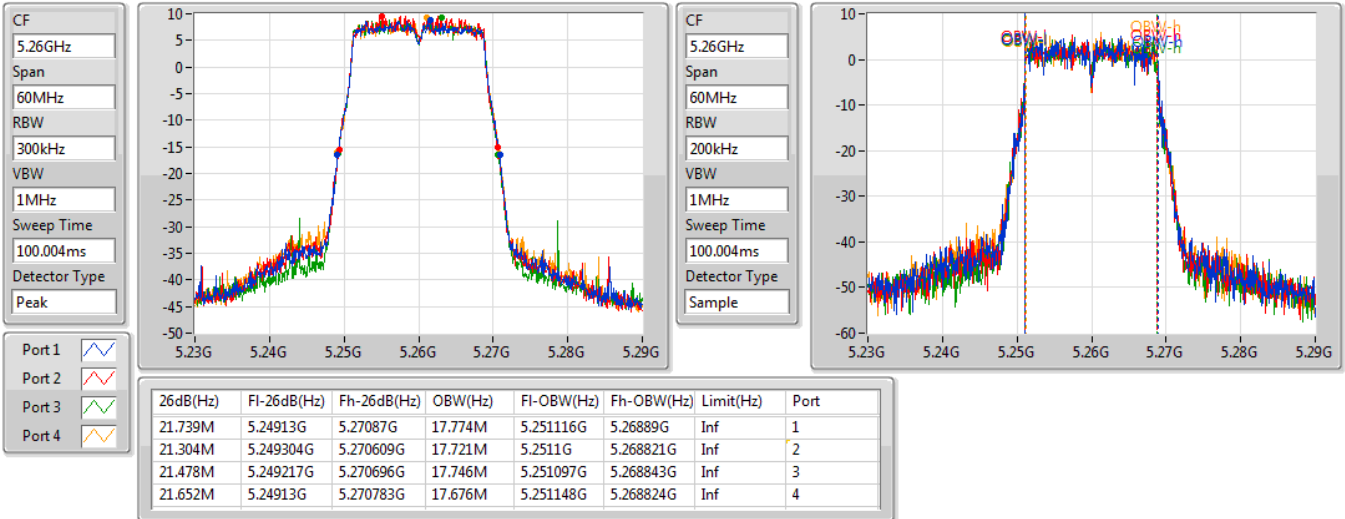

802.11a_Nss1,(6Mbps)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

03/09/2019

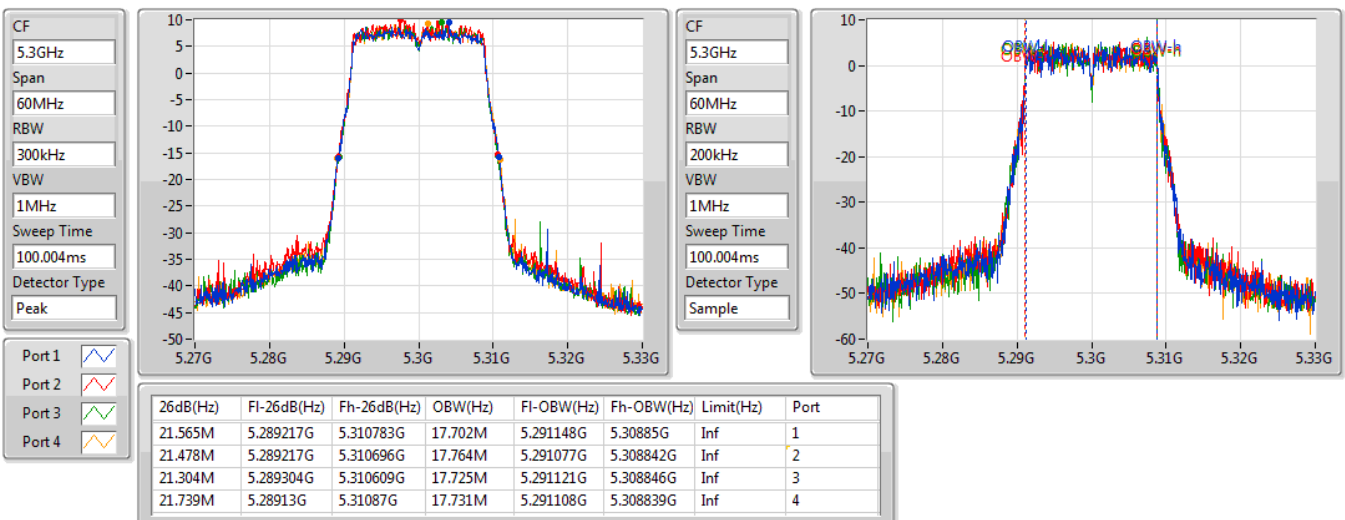


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5260MHz

03/09/2019

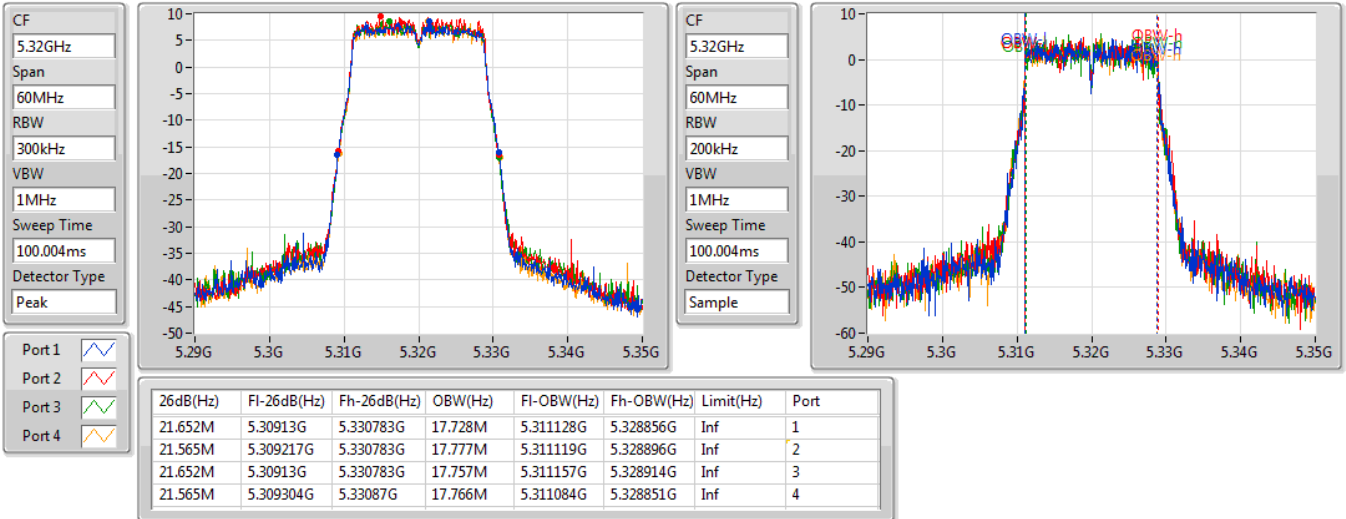

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5300MHz

03/09/2019

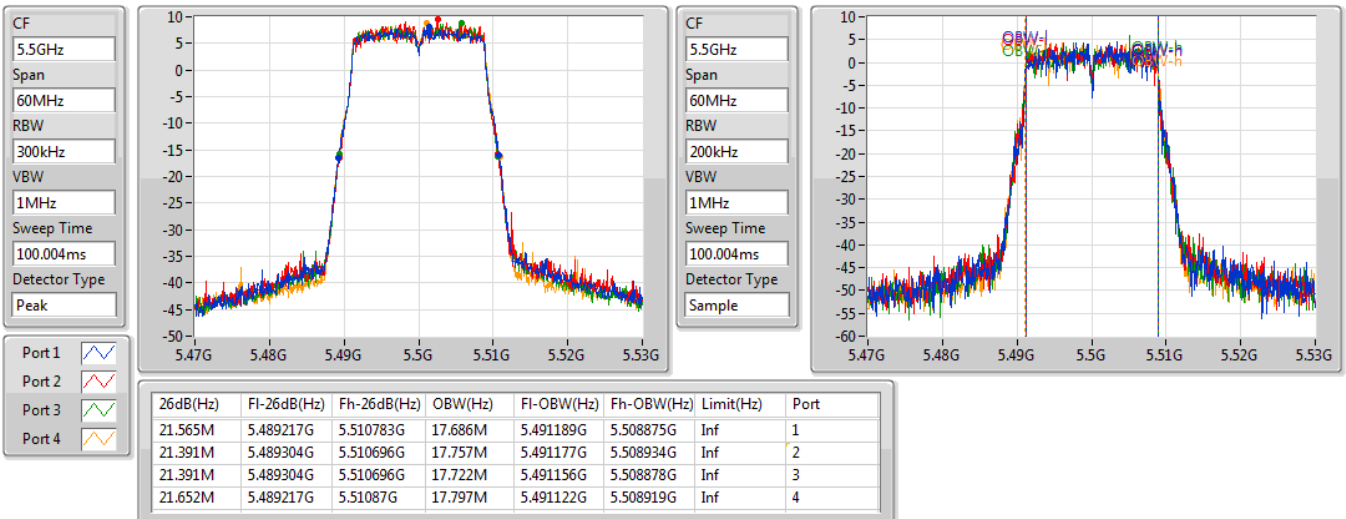


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5320MHz

03/09/2019

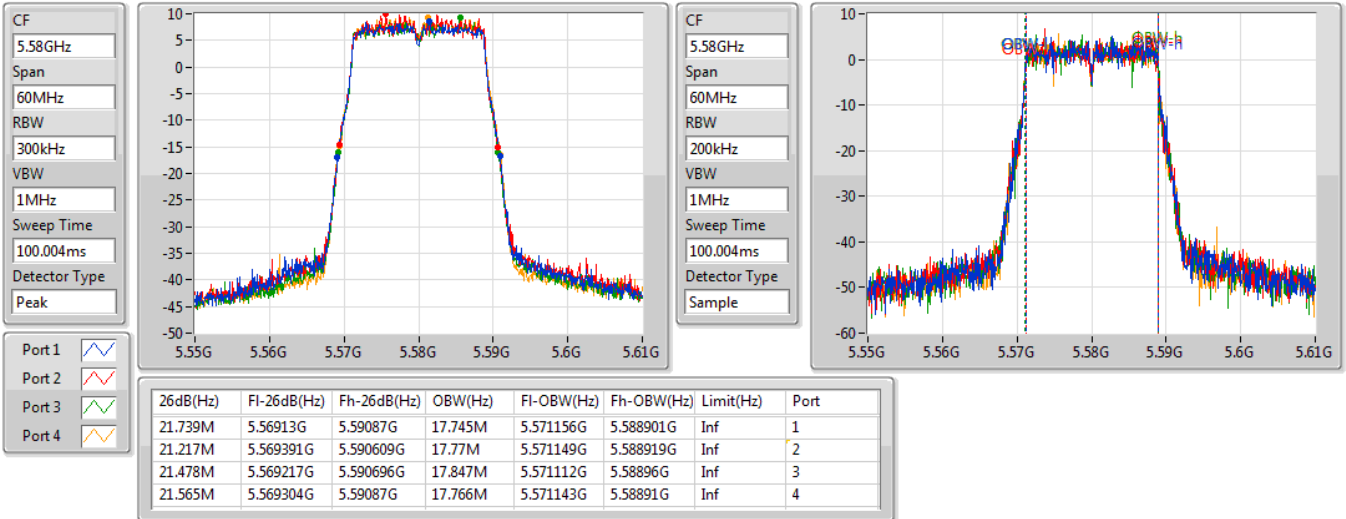

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5500MHz

03/09/2019

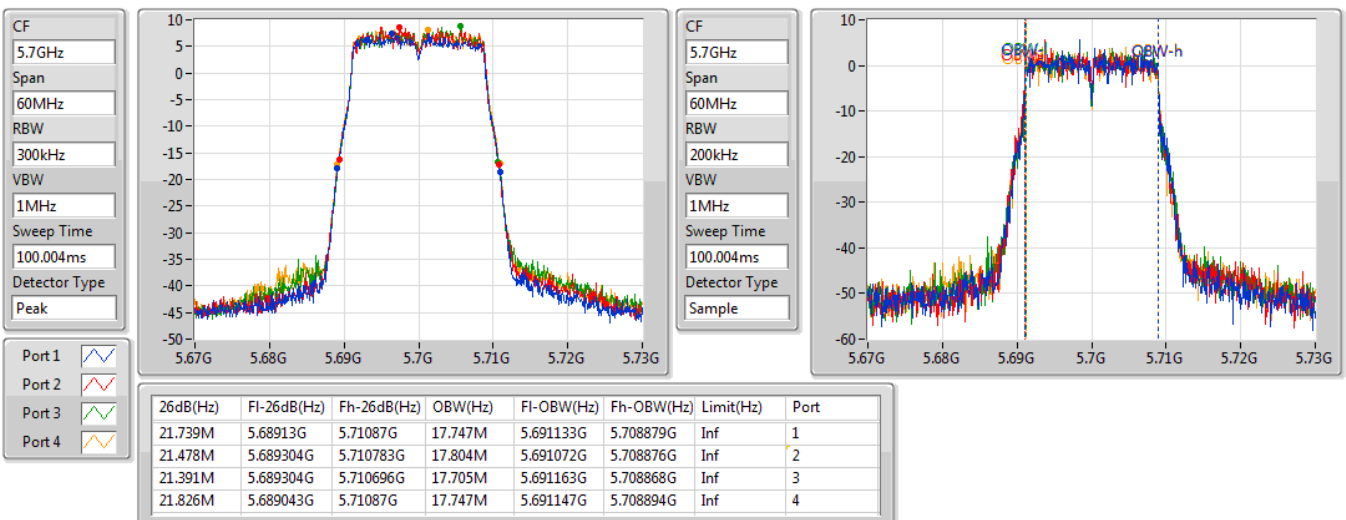


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5580MHz

03/09/2019

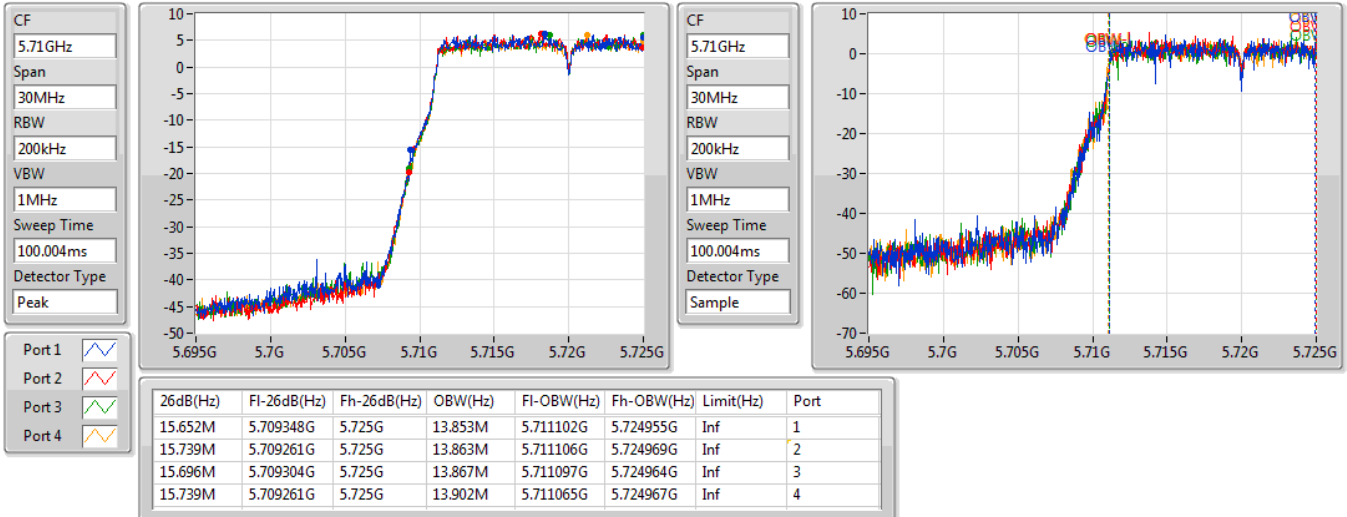

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5700MHz

03/09/2019

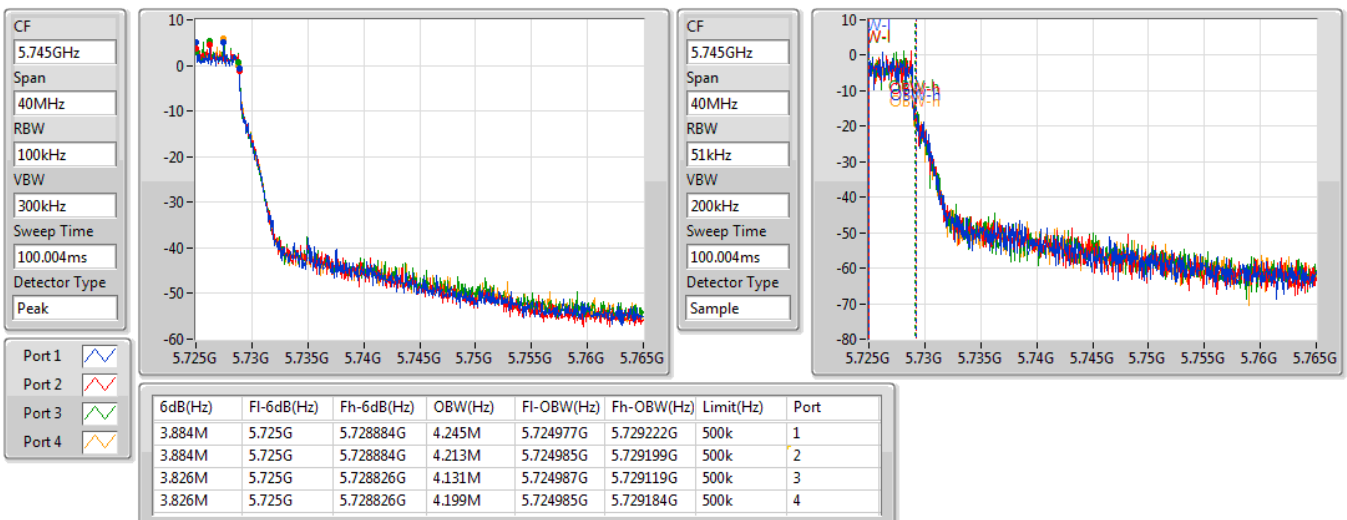


802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

03/09/2019

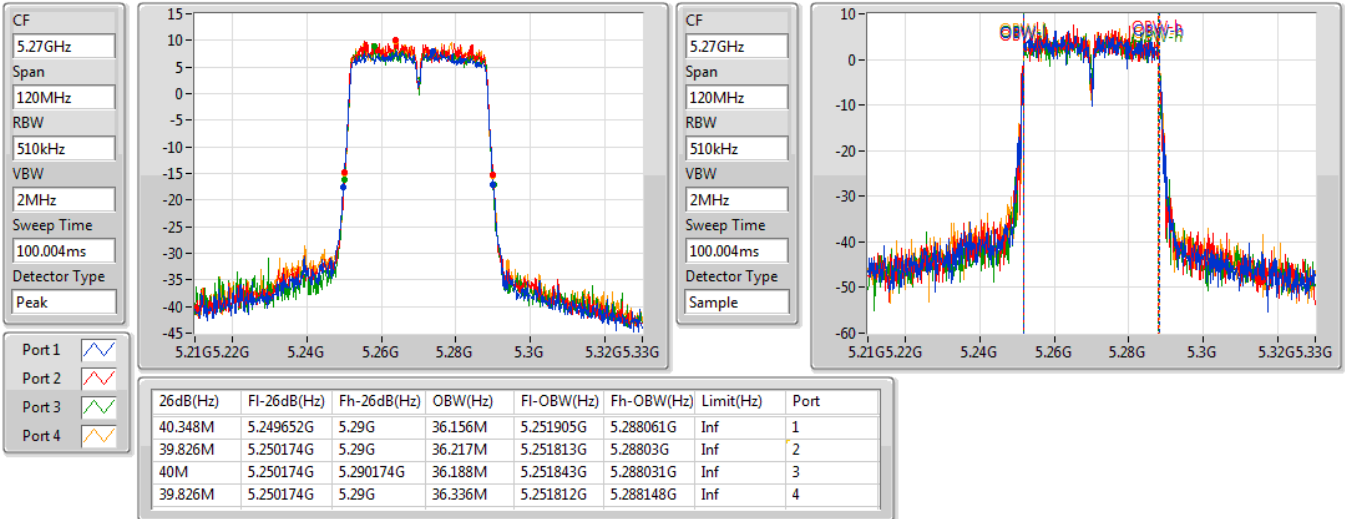

802.11ac VHT20_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

03/09/2019

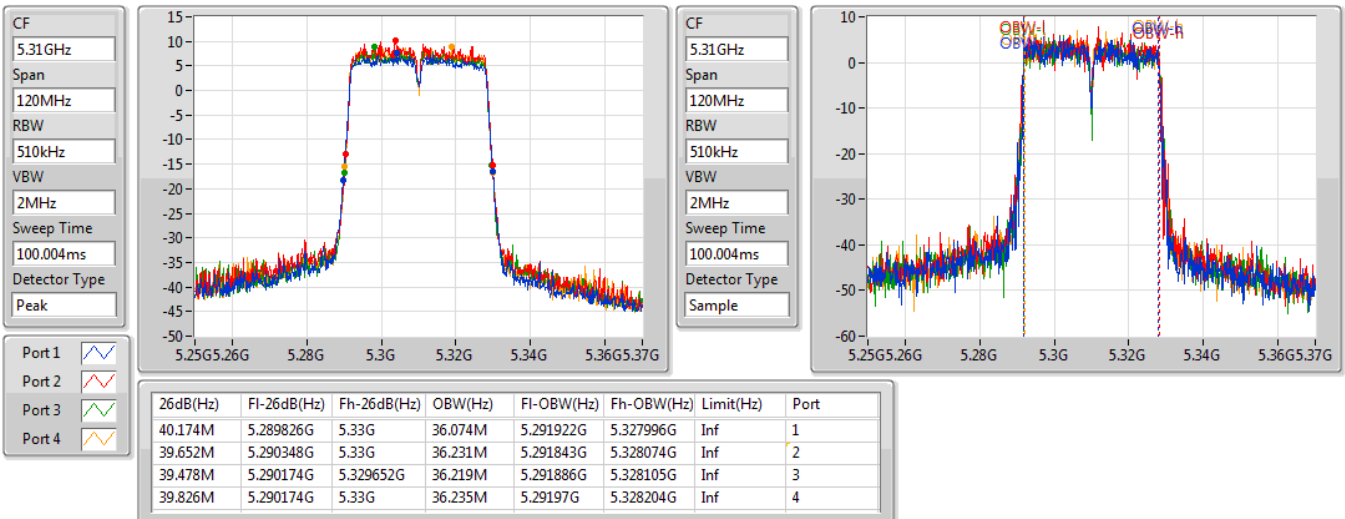


802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5270MHz

03/09/2019

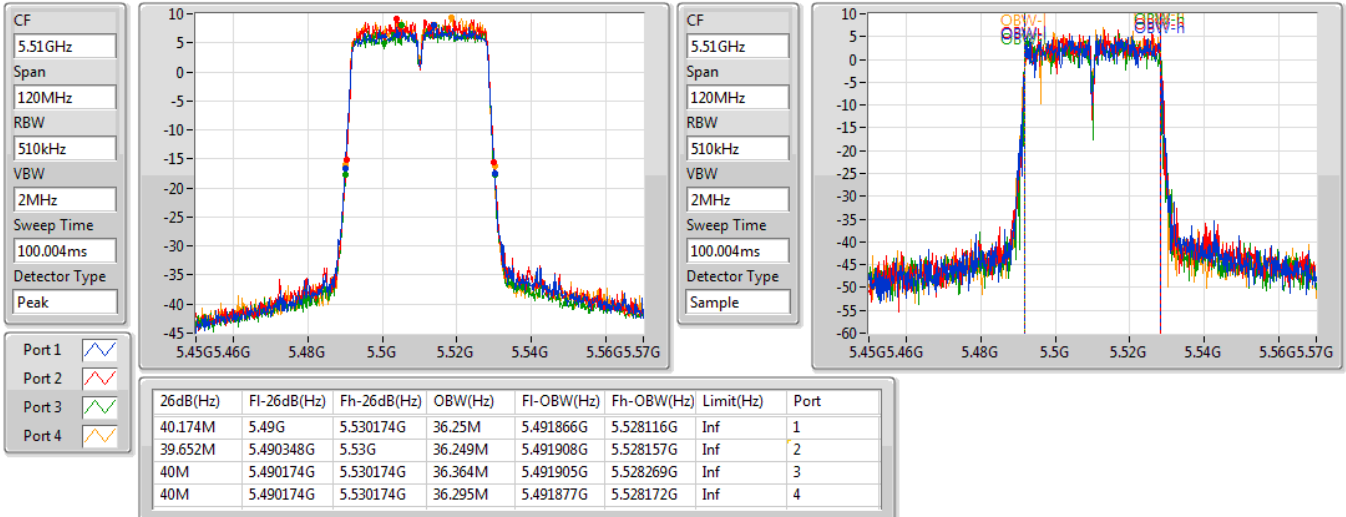

802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5310MHz

03/09/2019

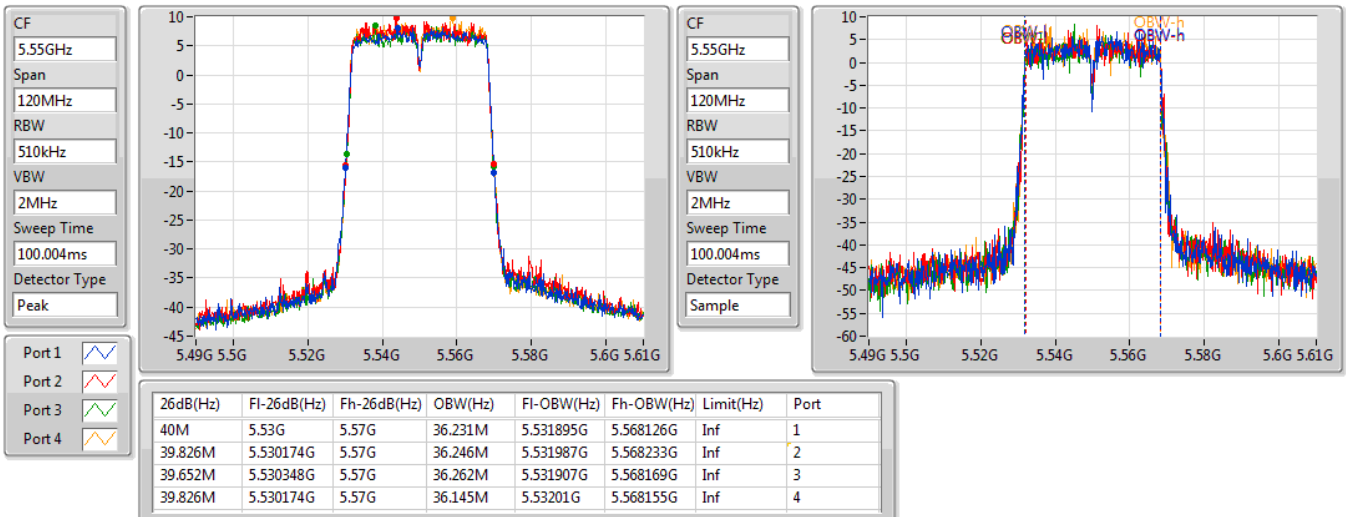


802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5510MHz

03/09/2019

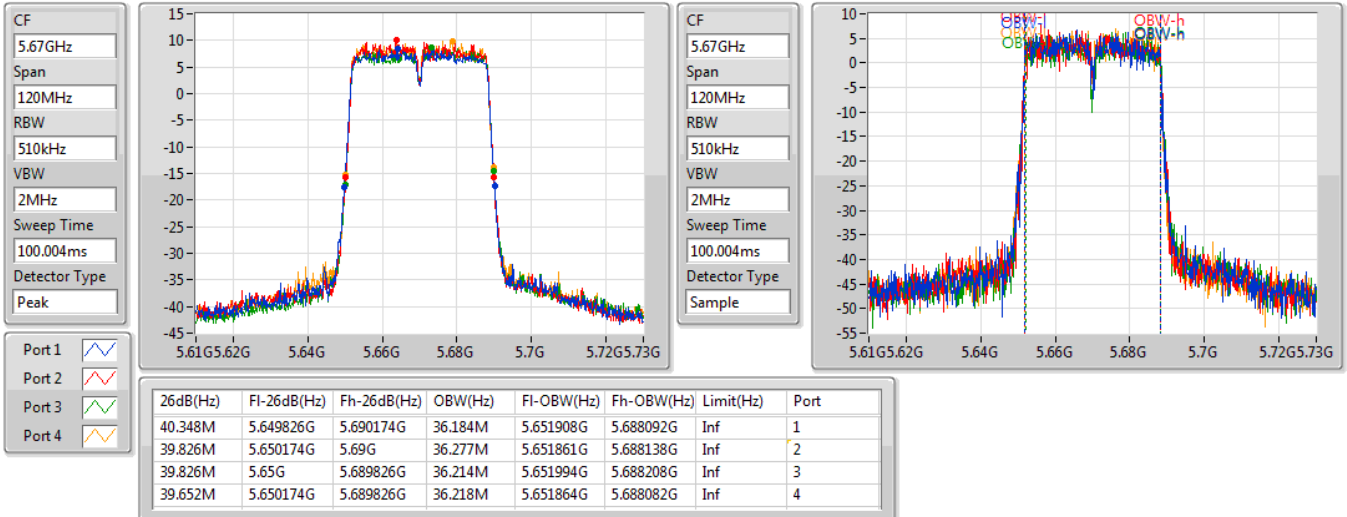

802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5550MHz

03/09/2019

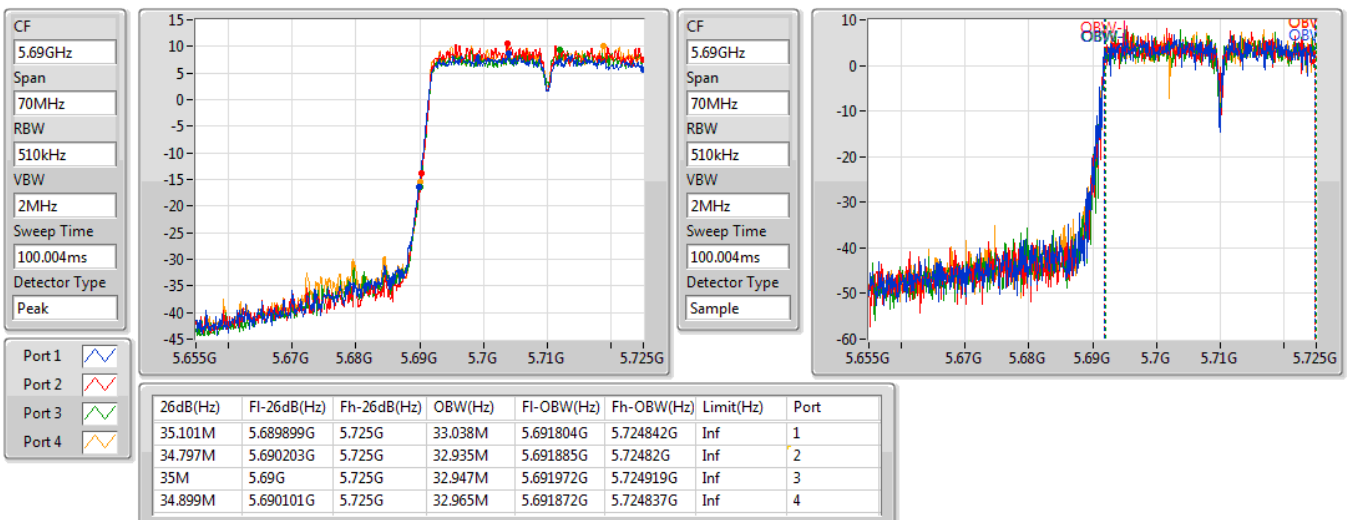


802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5670MHz

03/09/2019

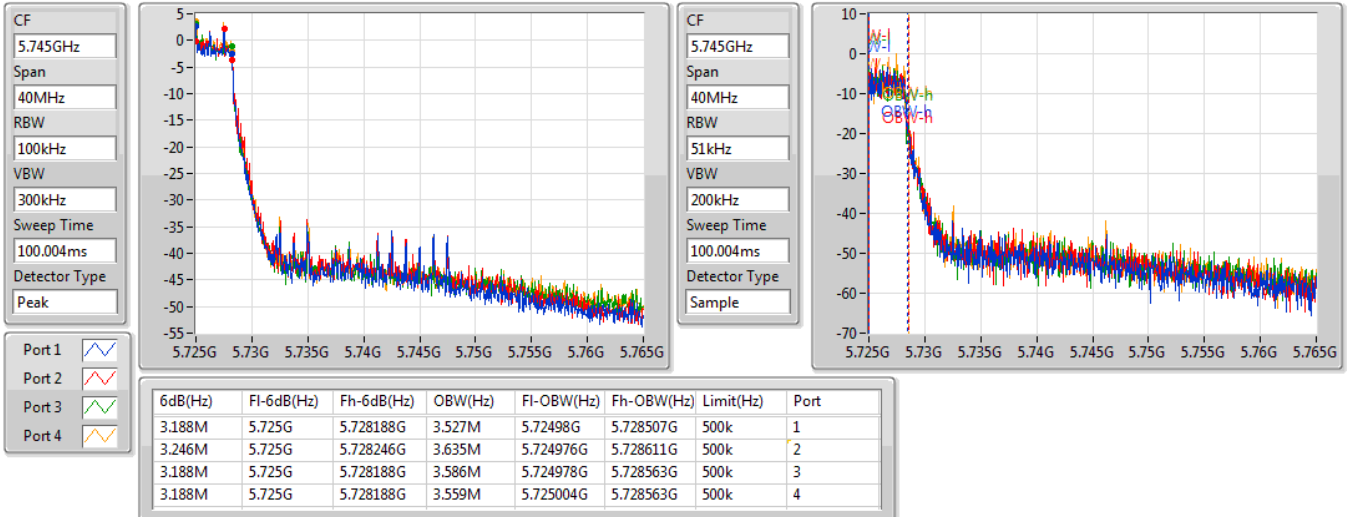

802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.47-5.725GHz

03/09/2019

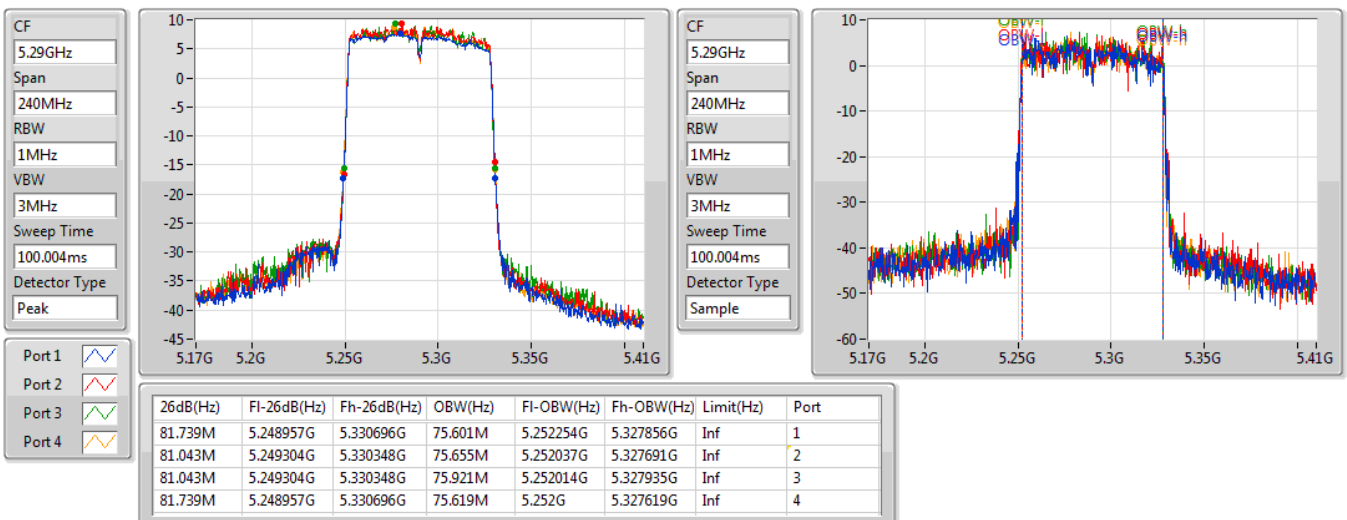


802.11ac VHT40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.725-5.85GHz

03/09/2019

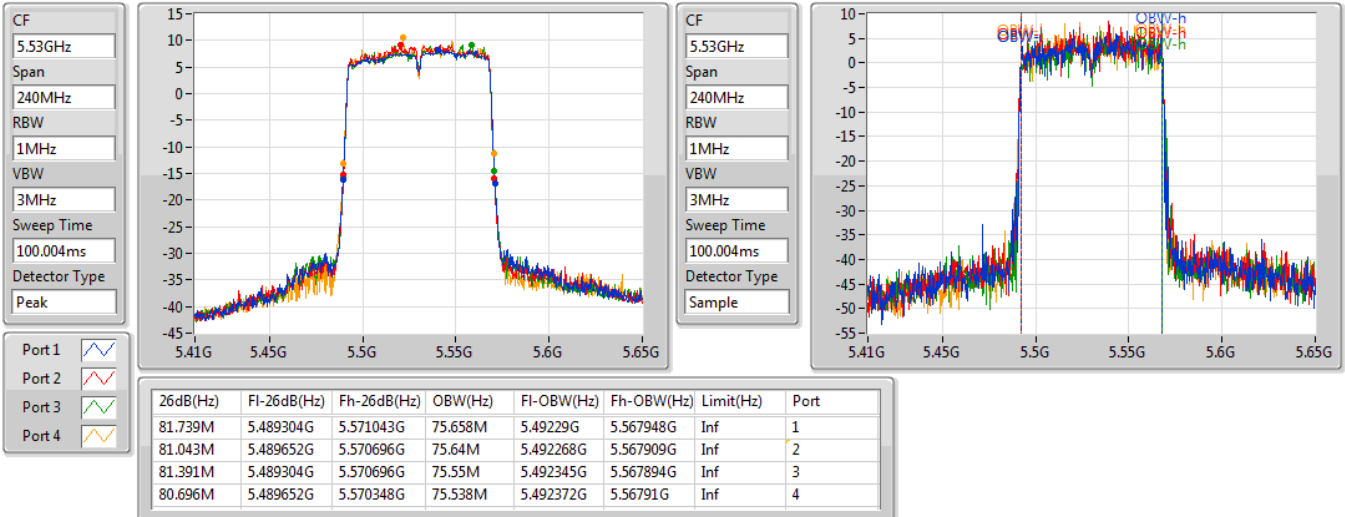

802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5290MHz

03/09/2019

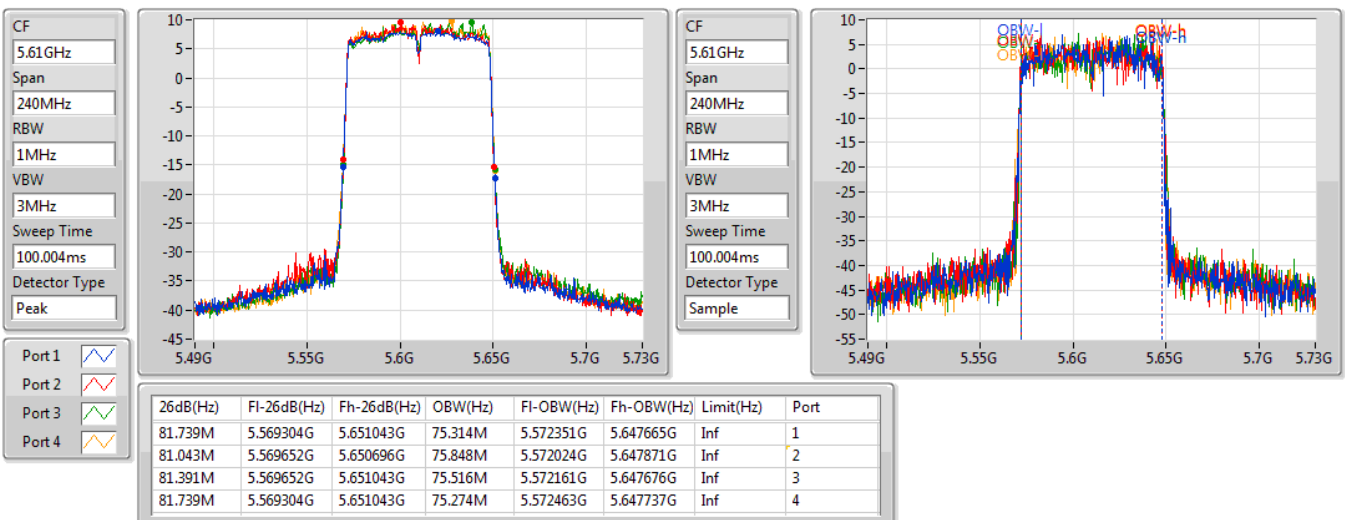


802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5530MHz

03/09/2019

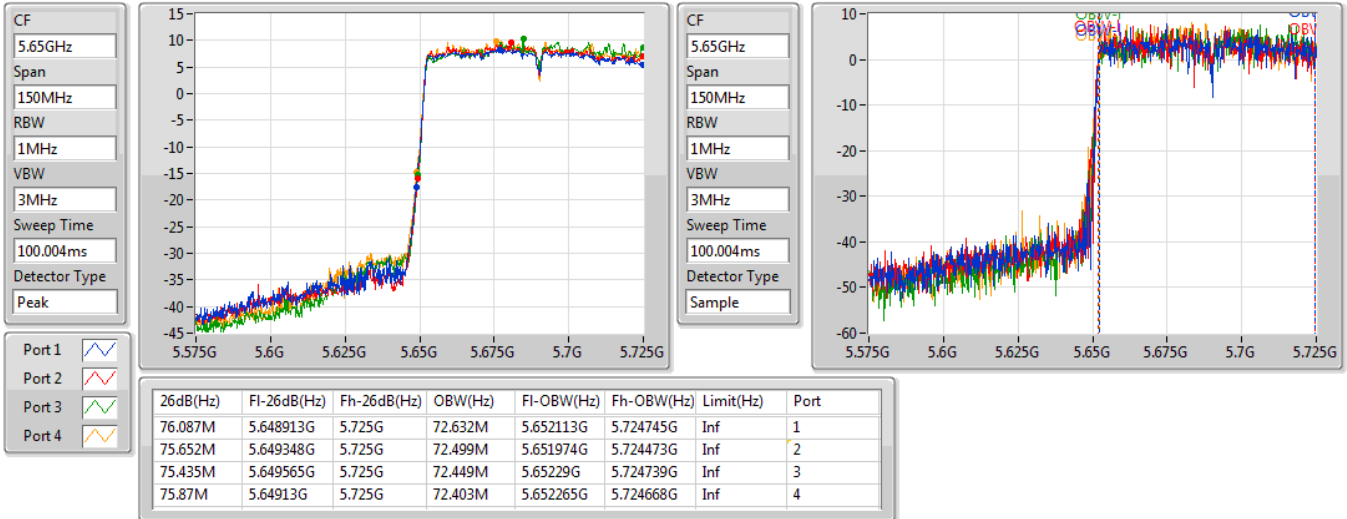

802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5610MHz

03/09/2019

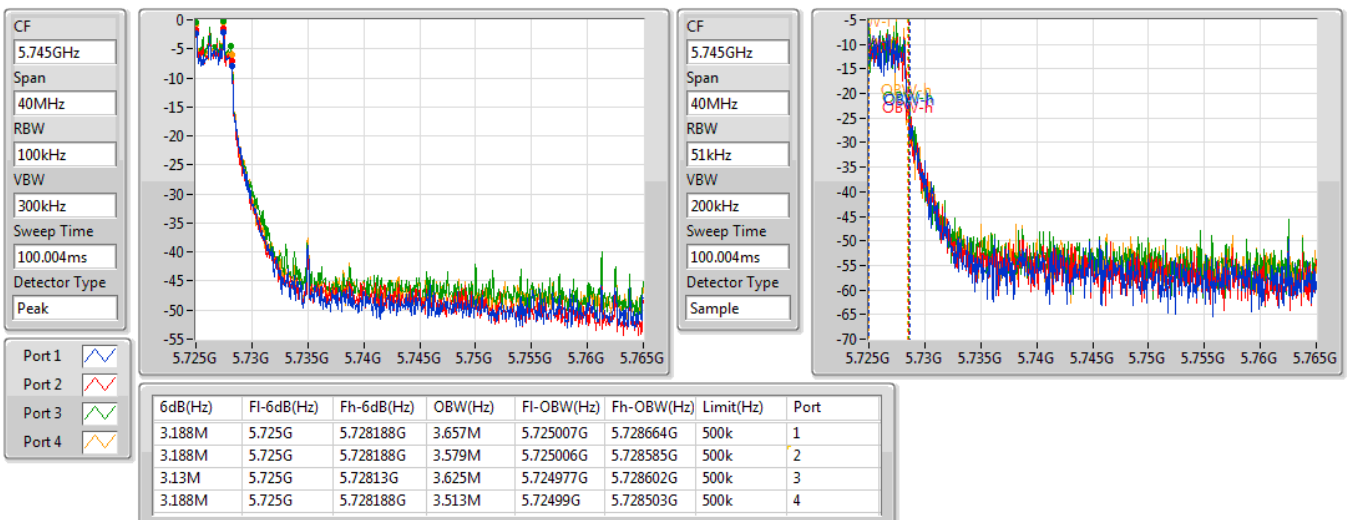


802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.47-5.725GHz

03/09/2019

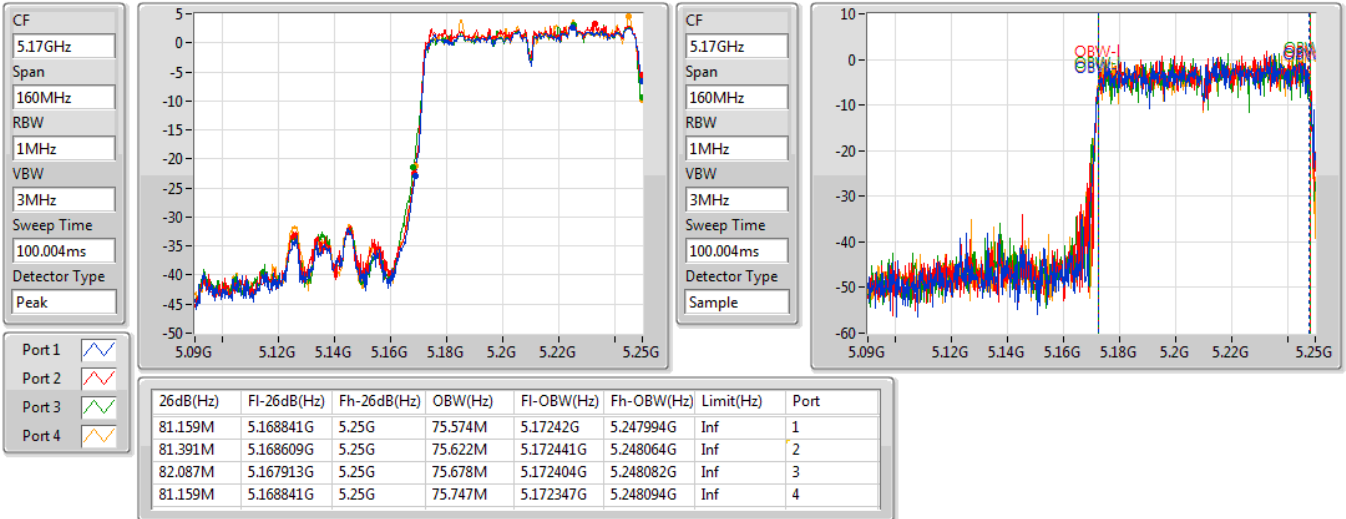

802.11ac VHT80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

03/09/2019

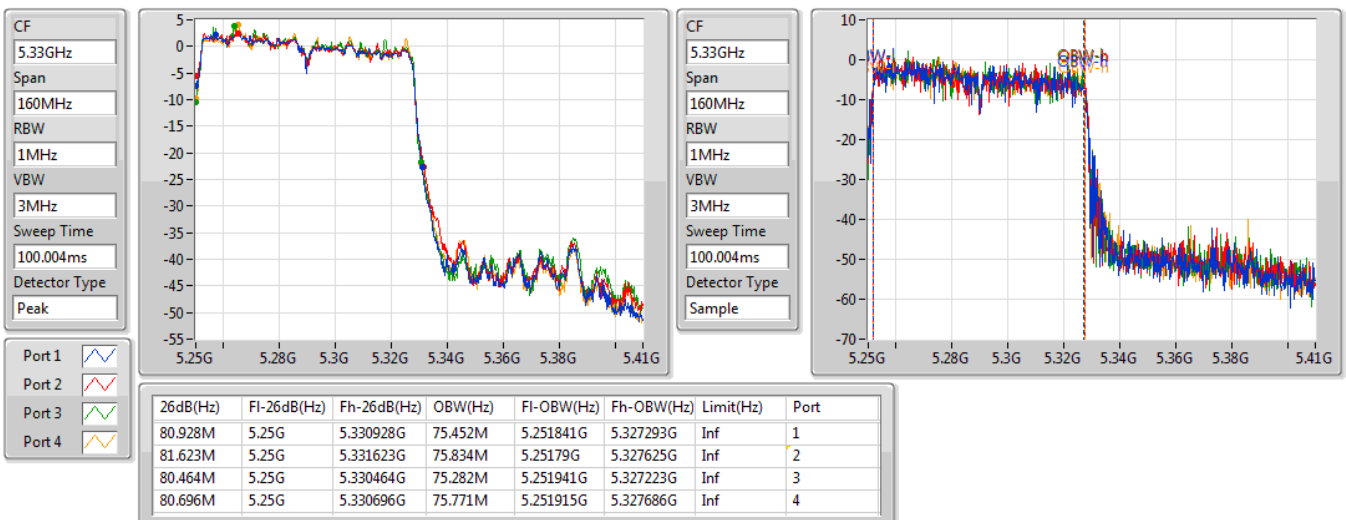


802.11ac VHT160_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

03/09/2019

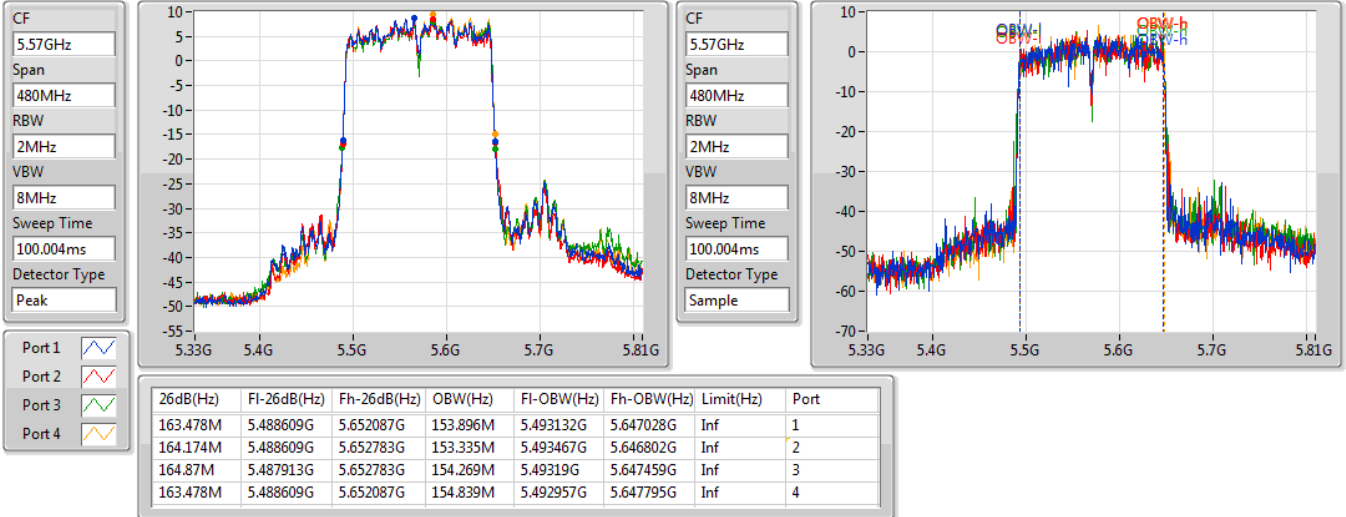

802.11ac VHT160_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

03/09/2019

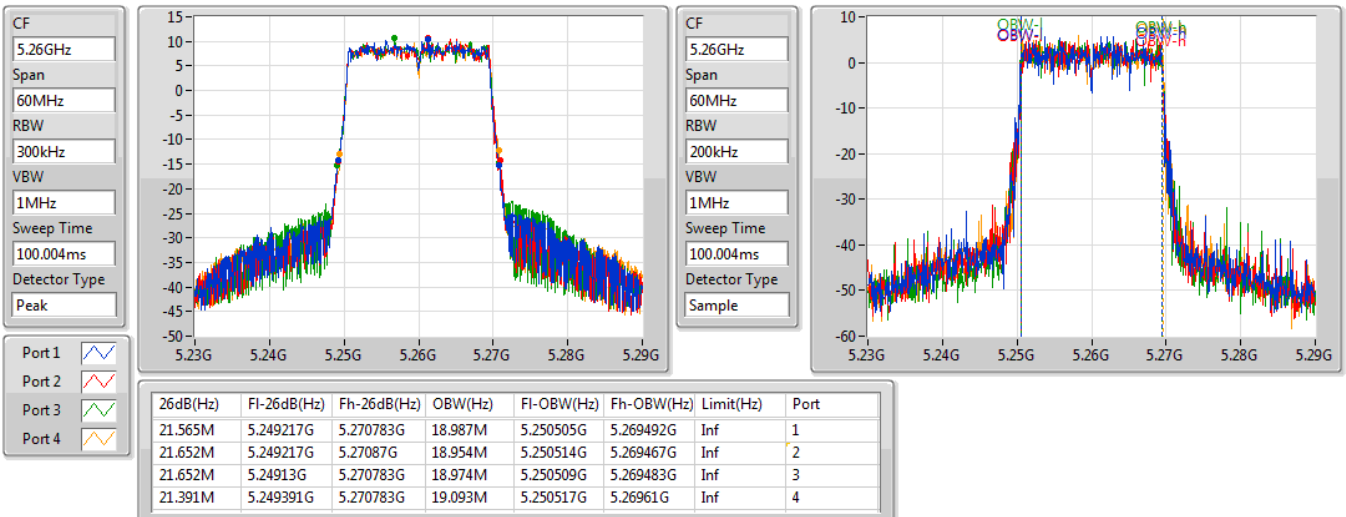


802.11ac VHT160_Nss1,(MCS0)_4TX
EBW
5570MHz

03/09/2019

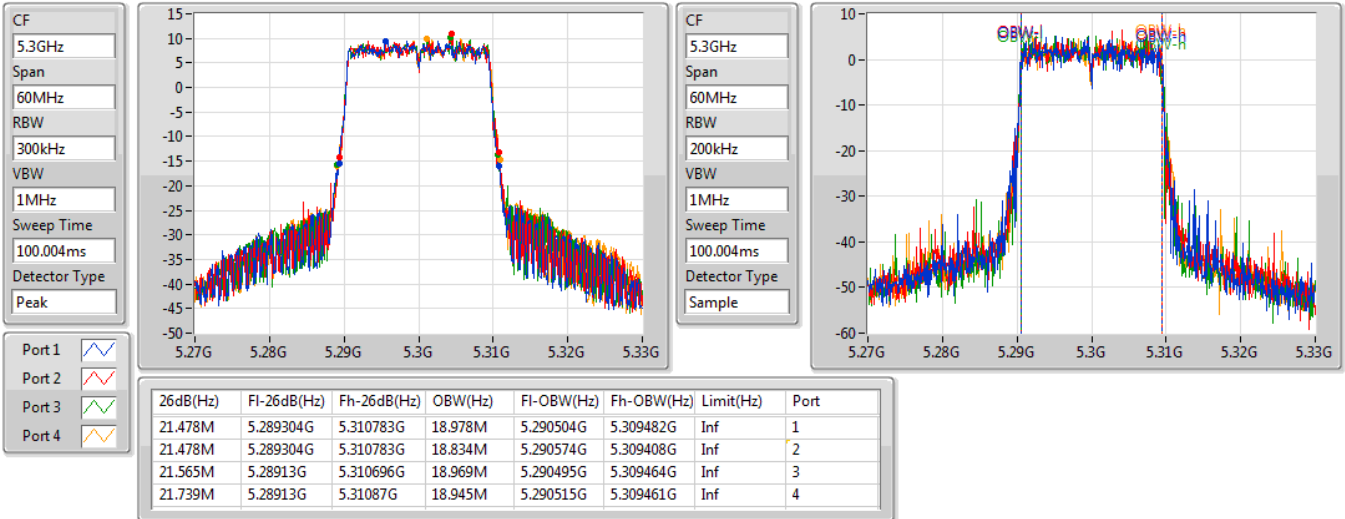

802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5260MHz

03/09/2019

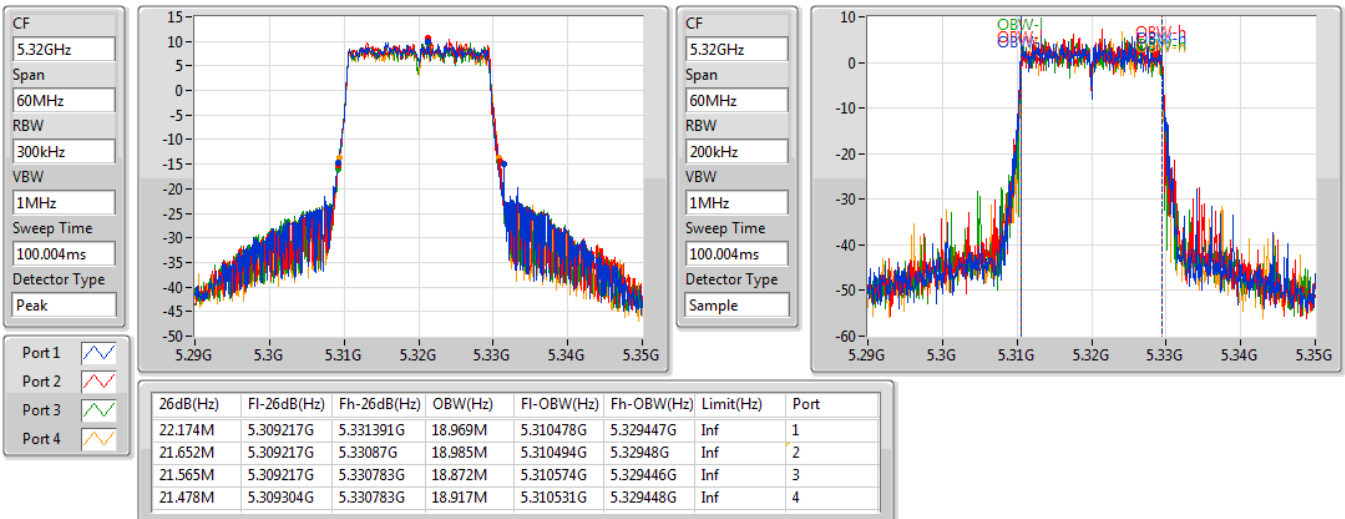


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5300MHz

03/09/2019

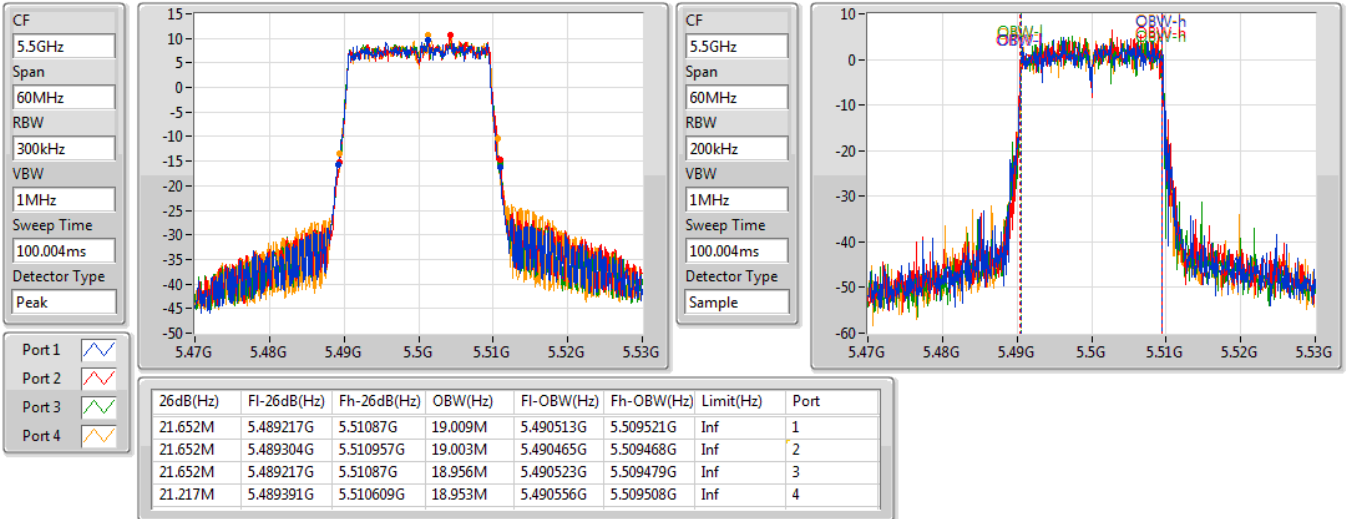

802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5320MHz

03/09/2019

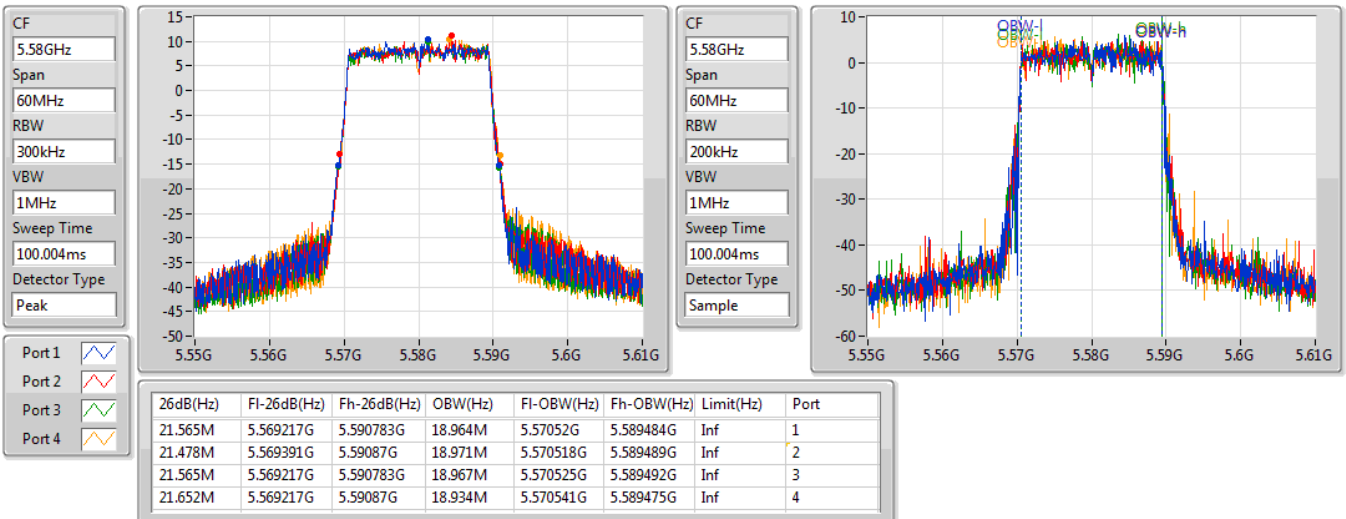


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5500MHz

03/09/2019

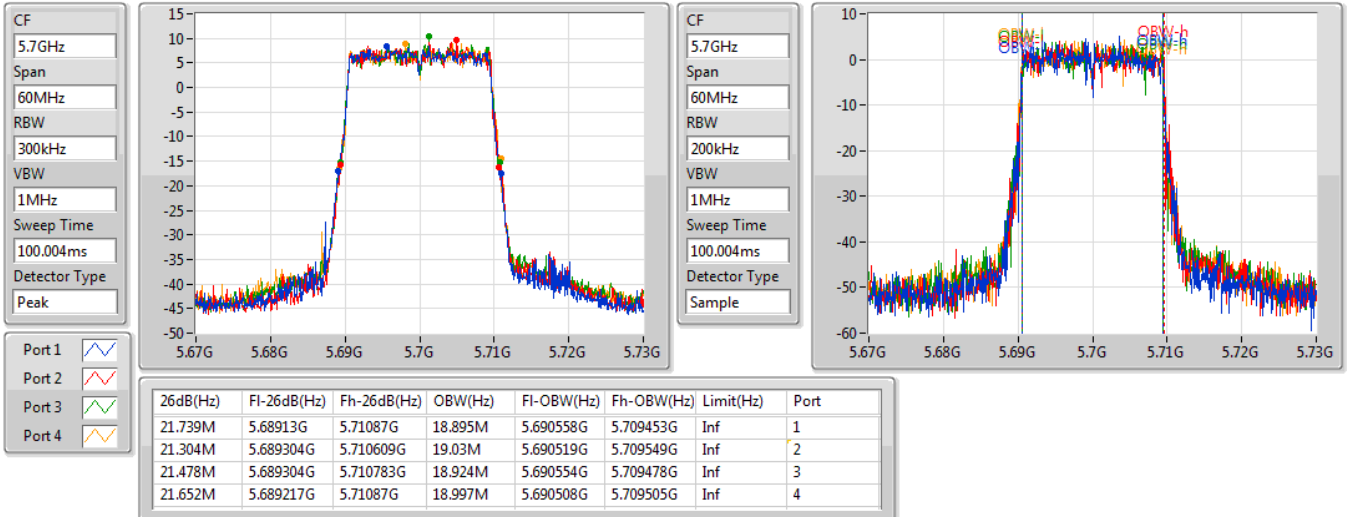

802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5580MHz

03/09/2019

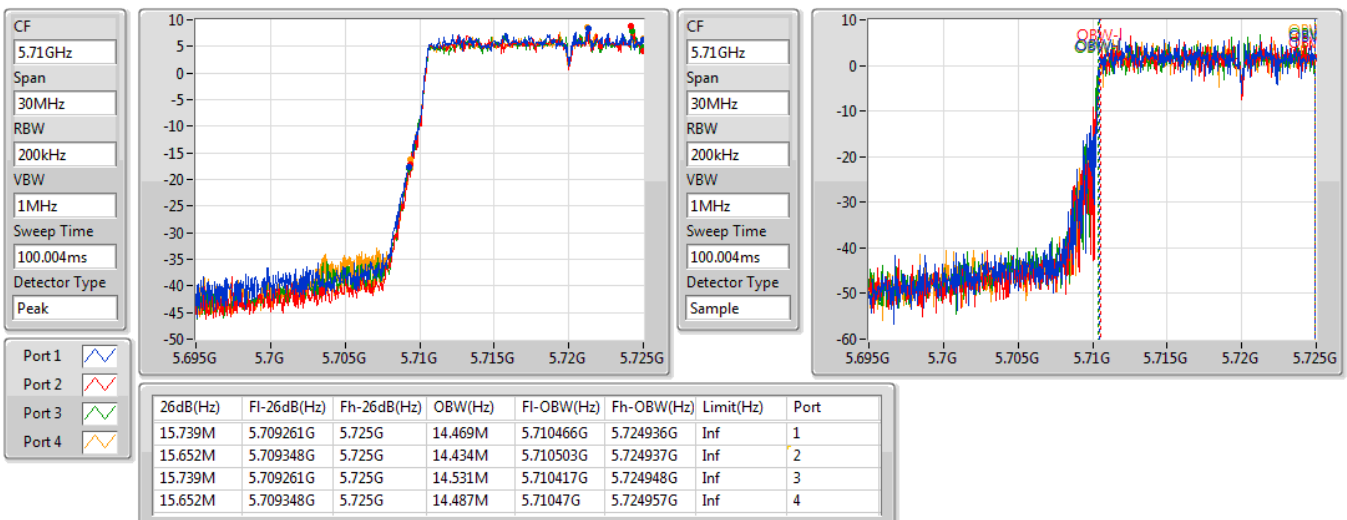


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5700MHz

03/09/2019

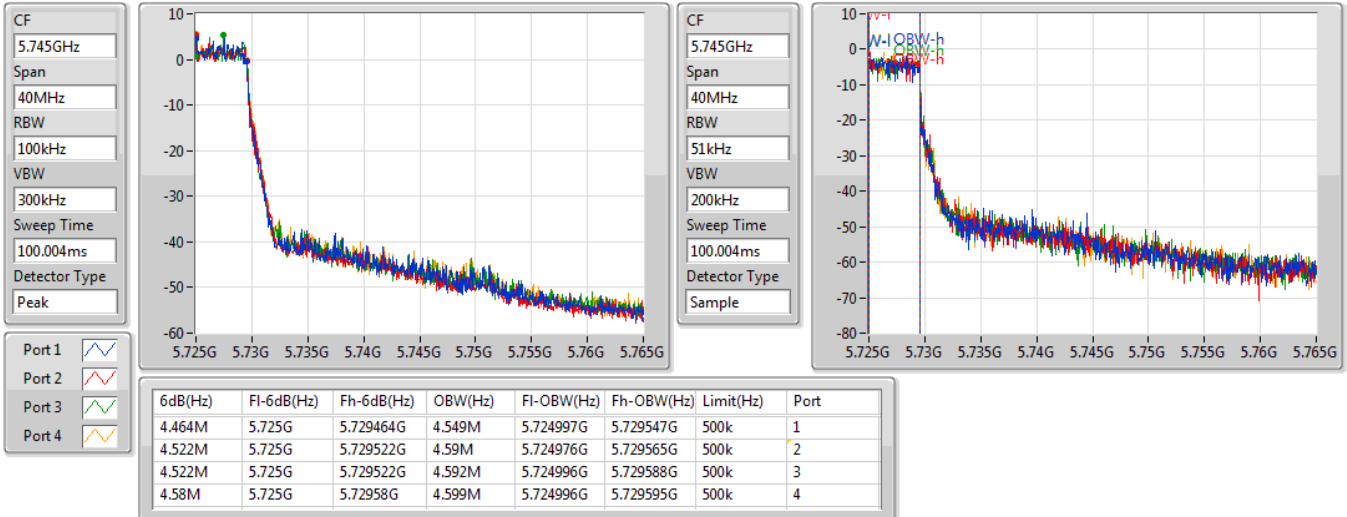

802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

03/09/2019

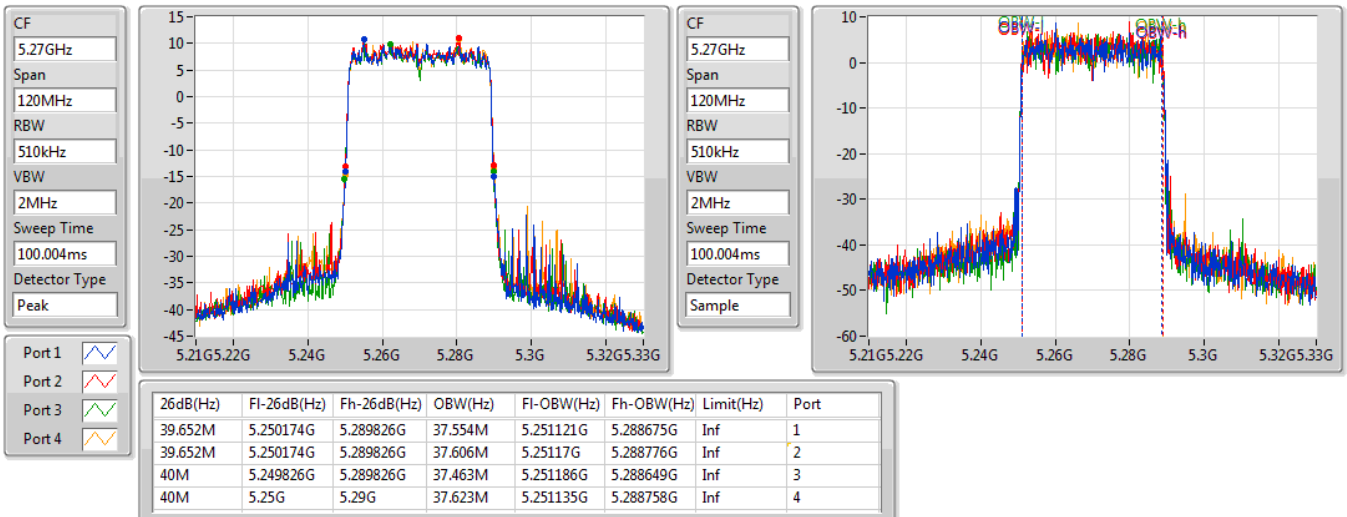


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

03/09/2019

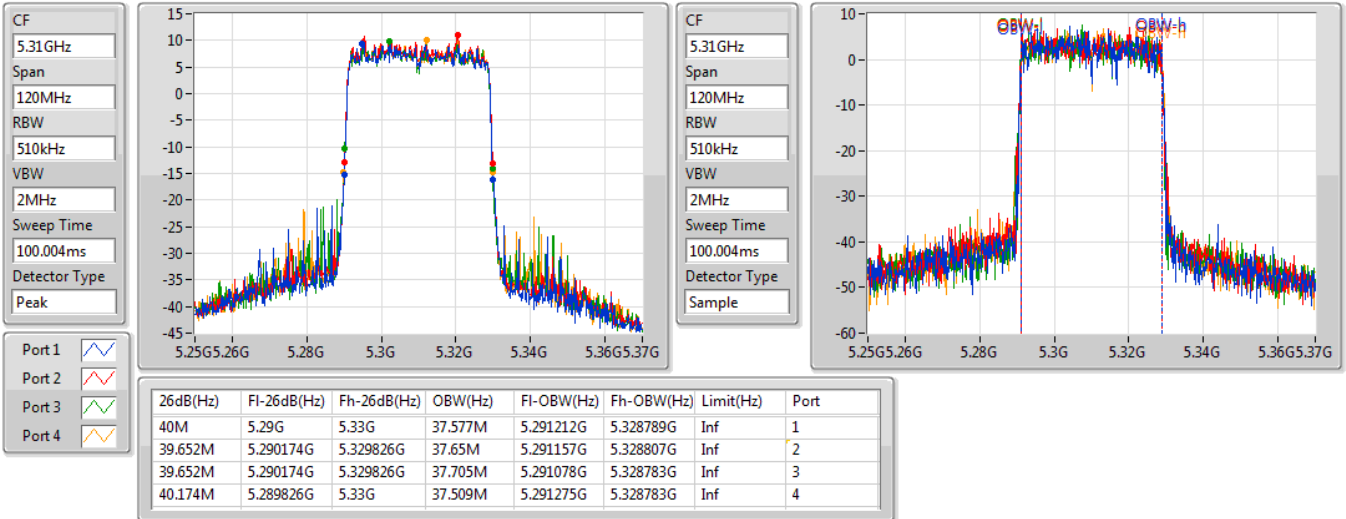

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5270MHz

03/09/2019

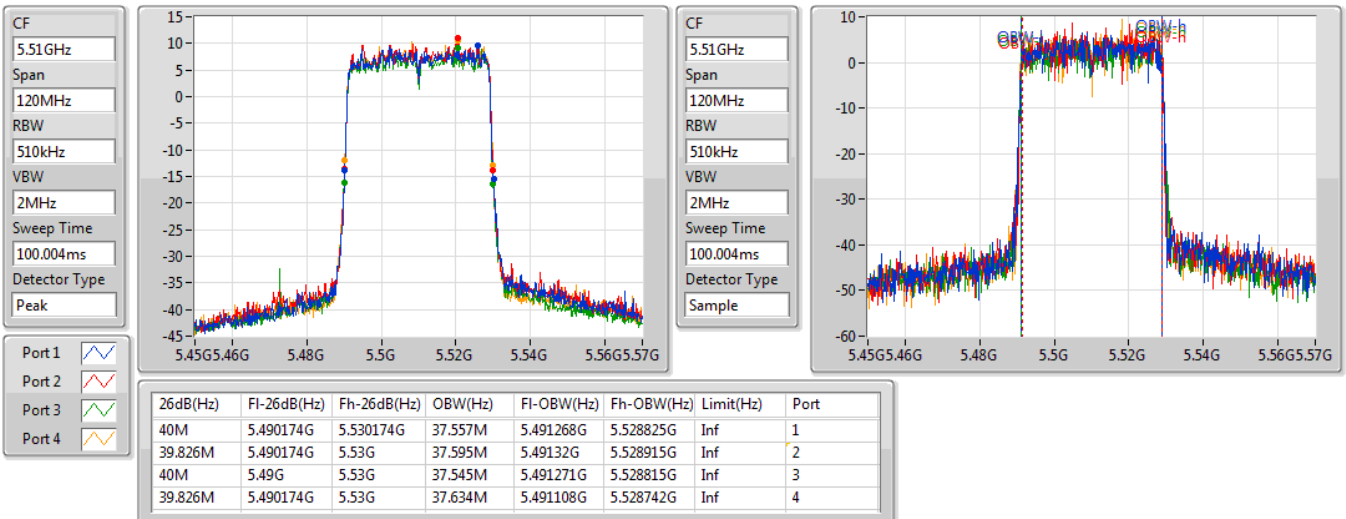


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5310MHz

03/09/2019

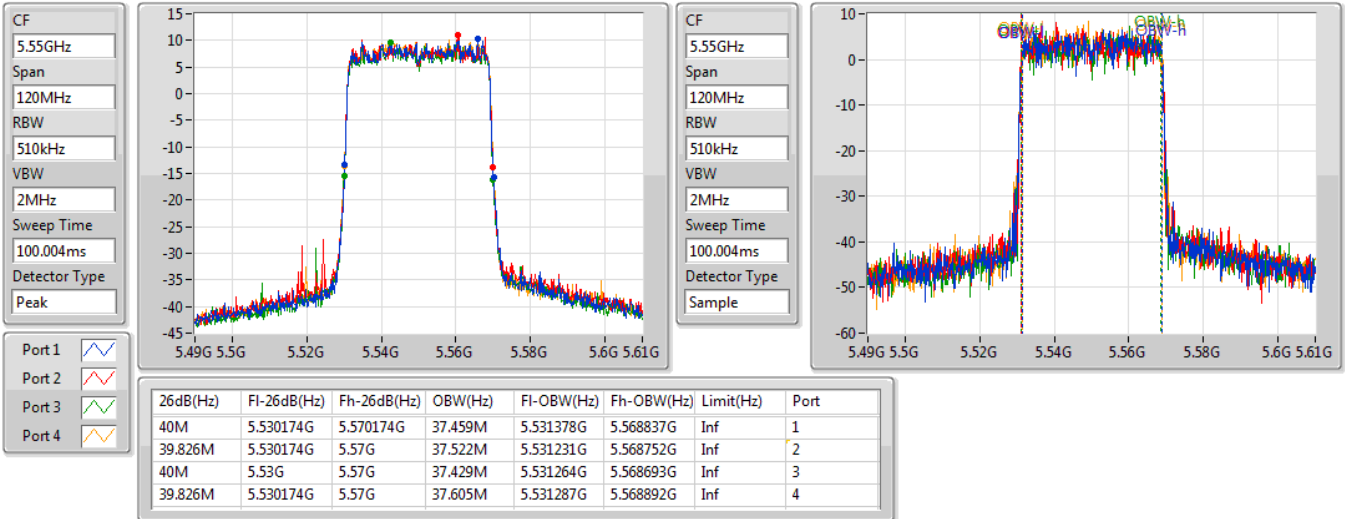

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5510MHz

03/09/2019

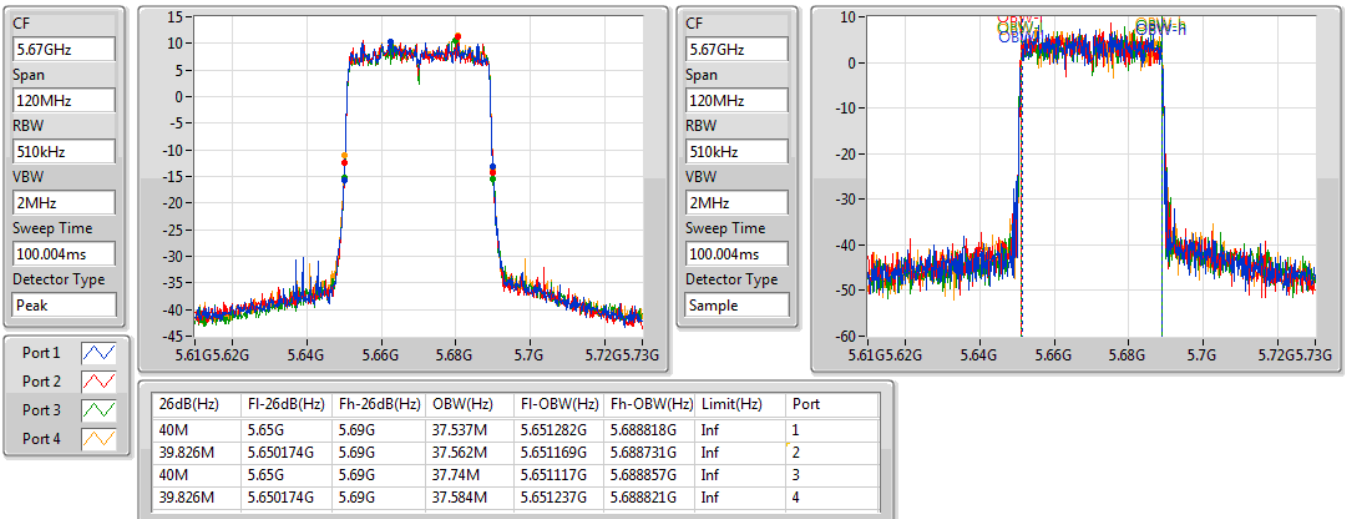


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5550MHz

03/09/2019

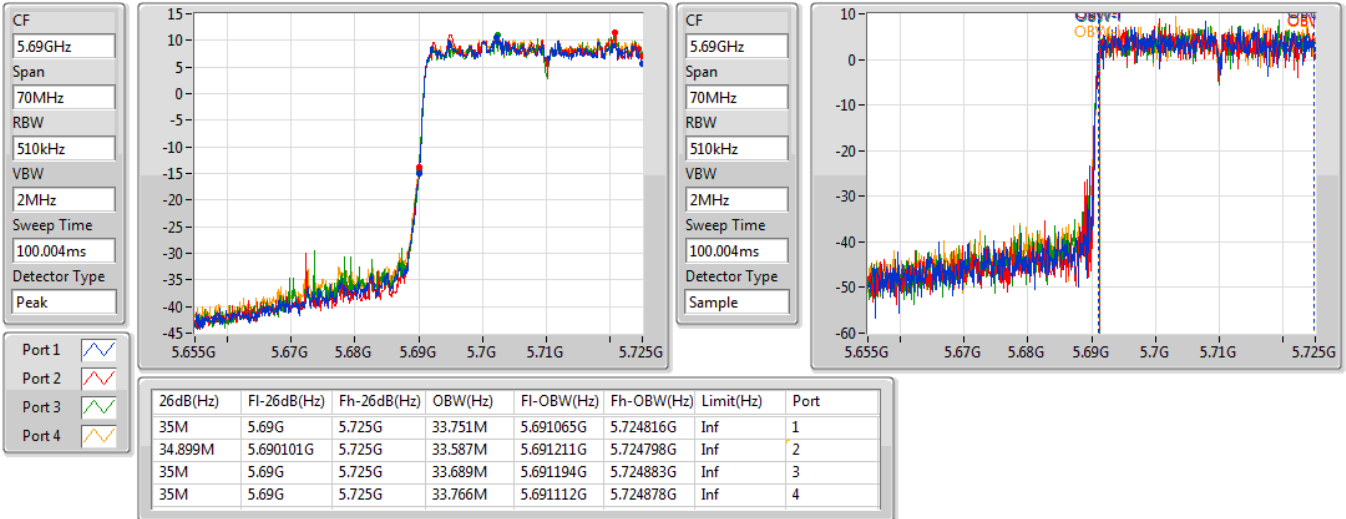

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5670MHz

03/09/2019

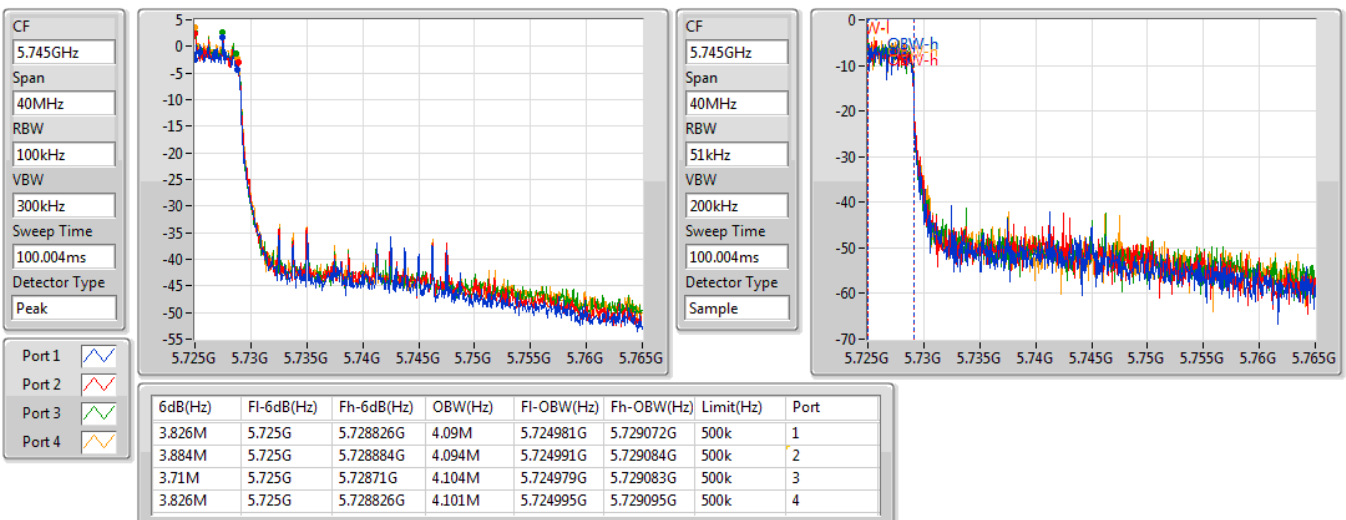


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.47-5.725GHz

03/09/2019

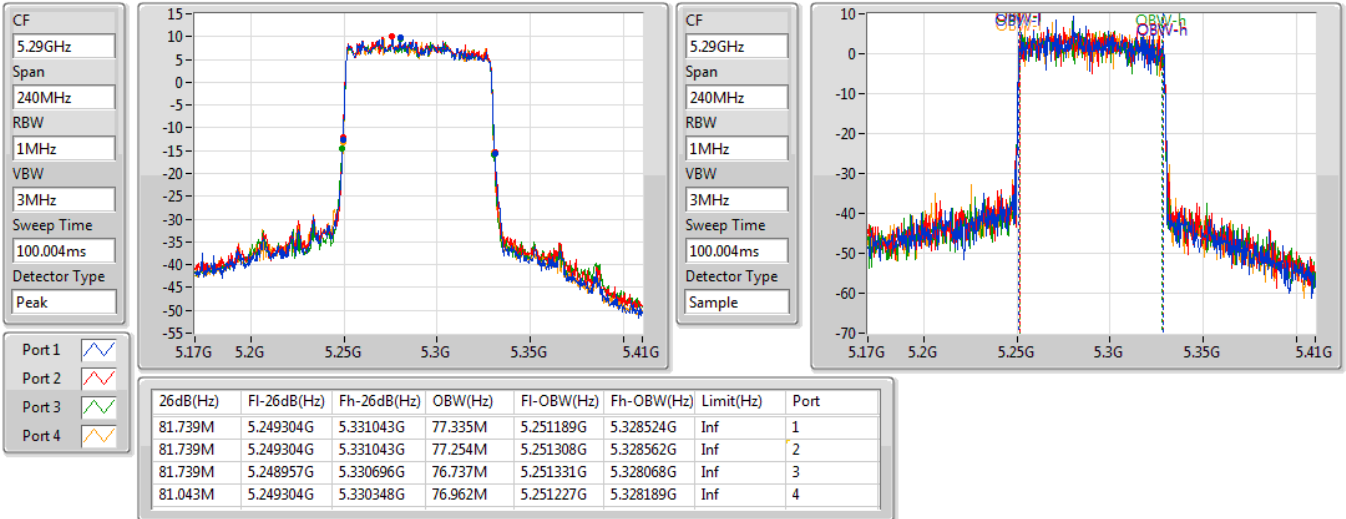

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.725-5.85GHz

03/09/2019

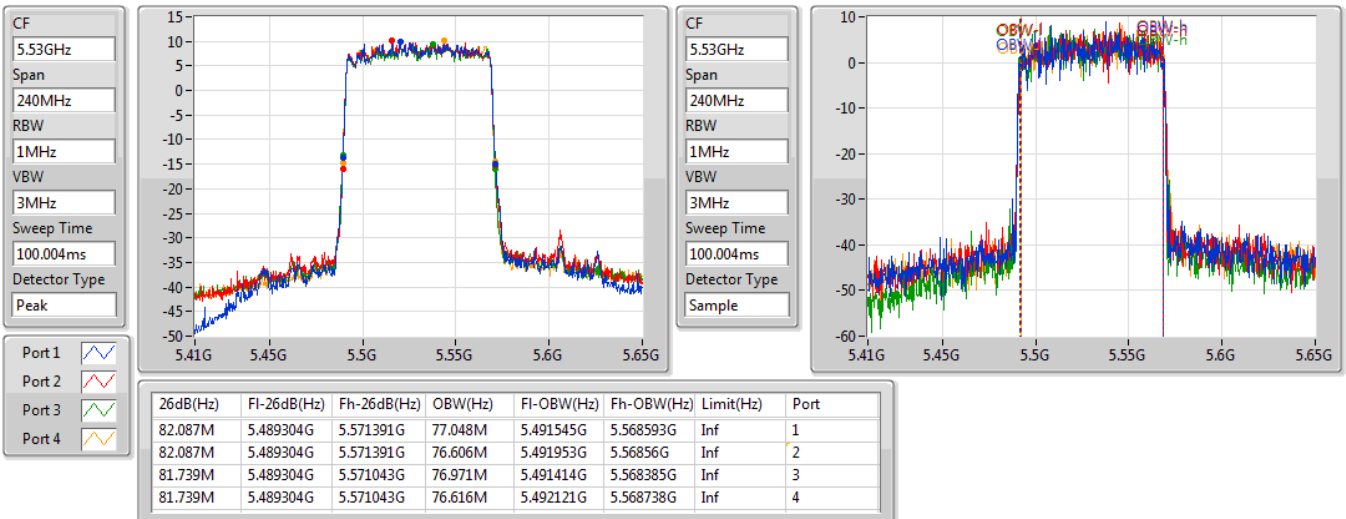


802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5290MHz

03/09/2019

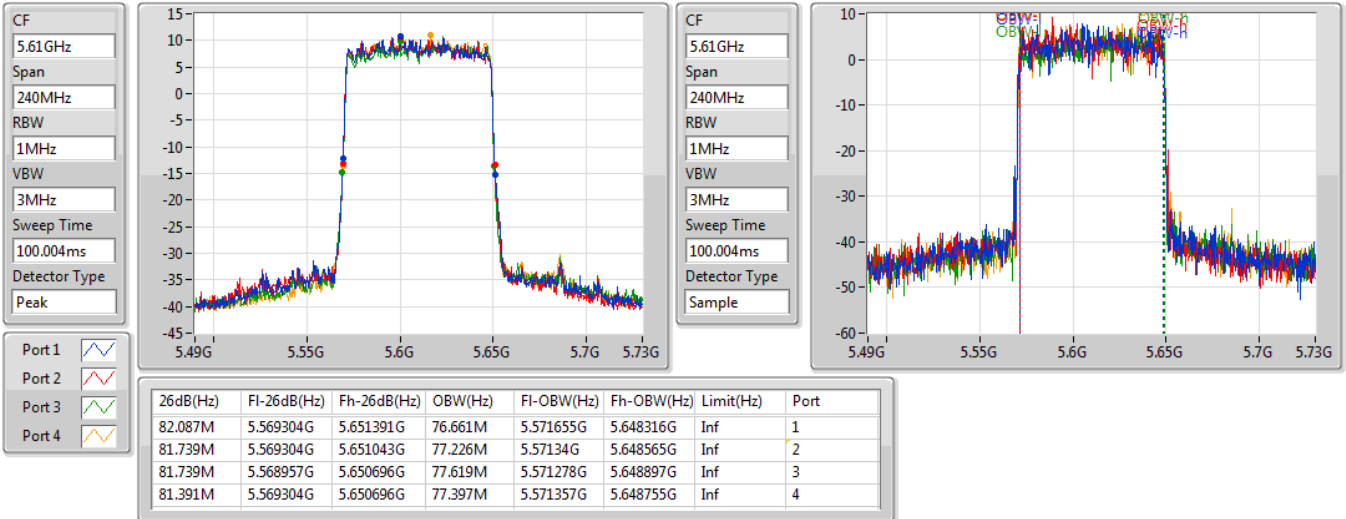

802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5530MHz

03/09/2019

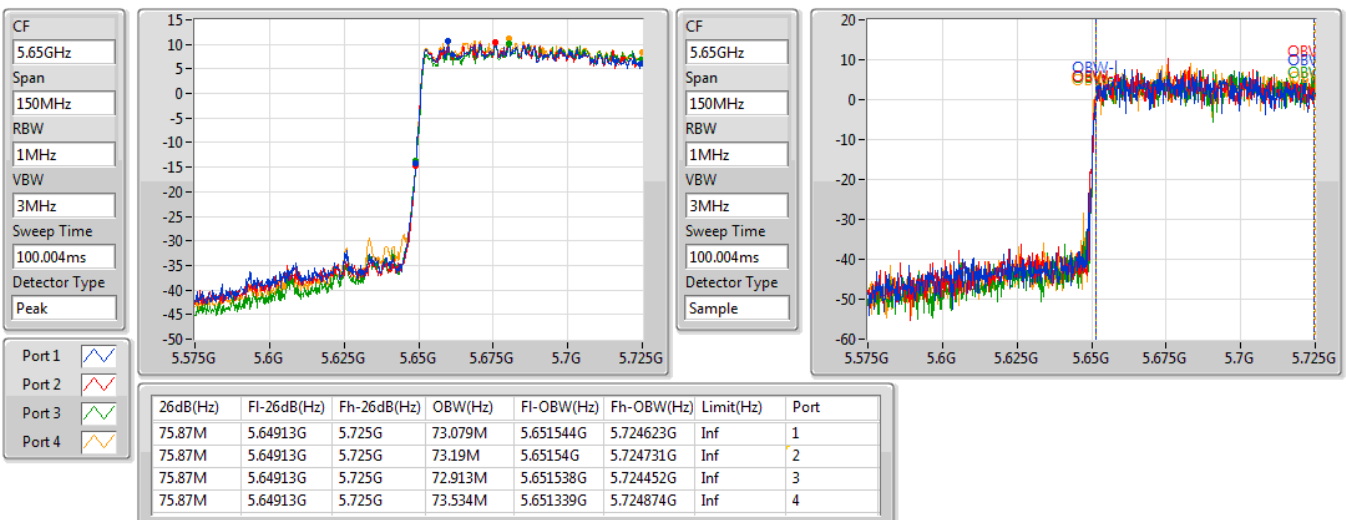


802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5610MHz

03/09/2019

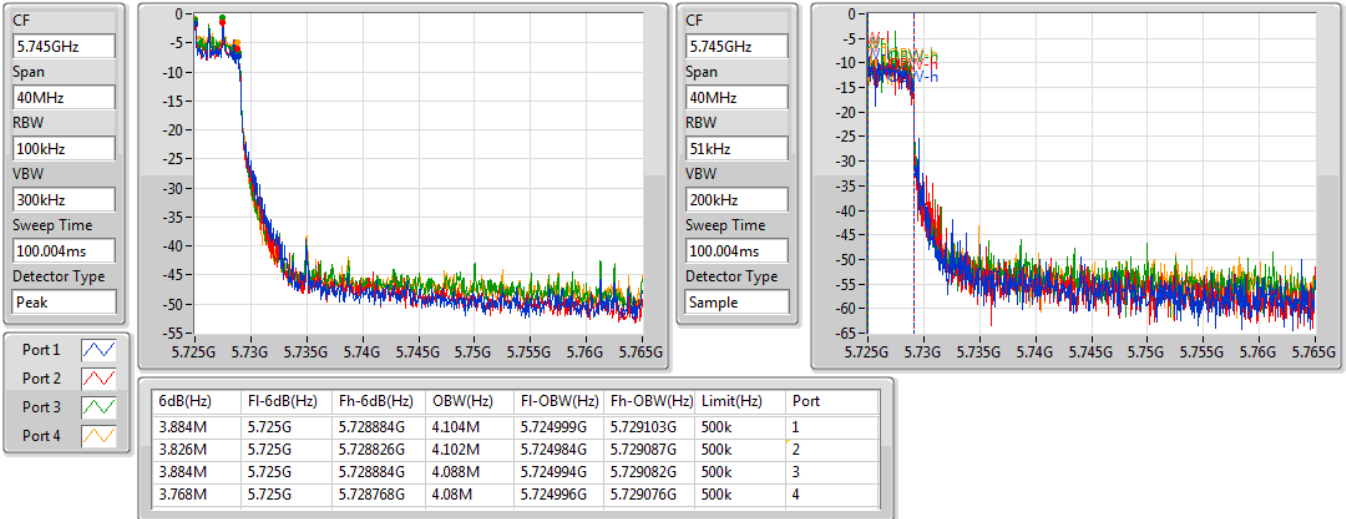

802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.47-5.725GHz

03/09/2019

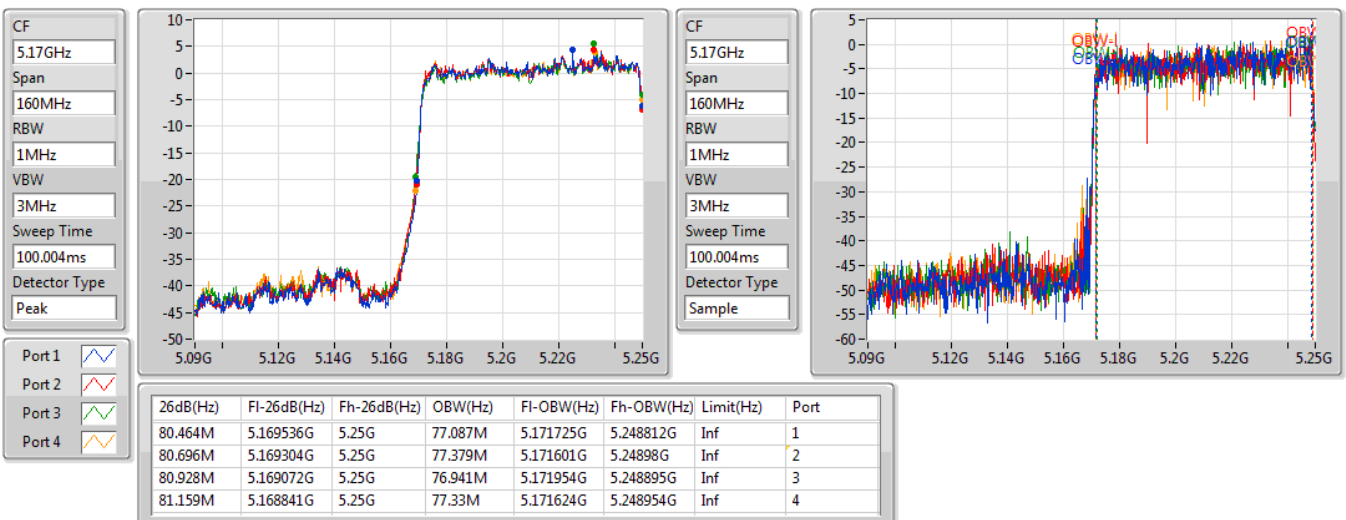


802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

03/09/2019

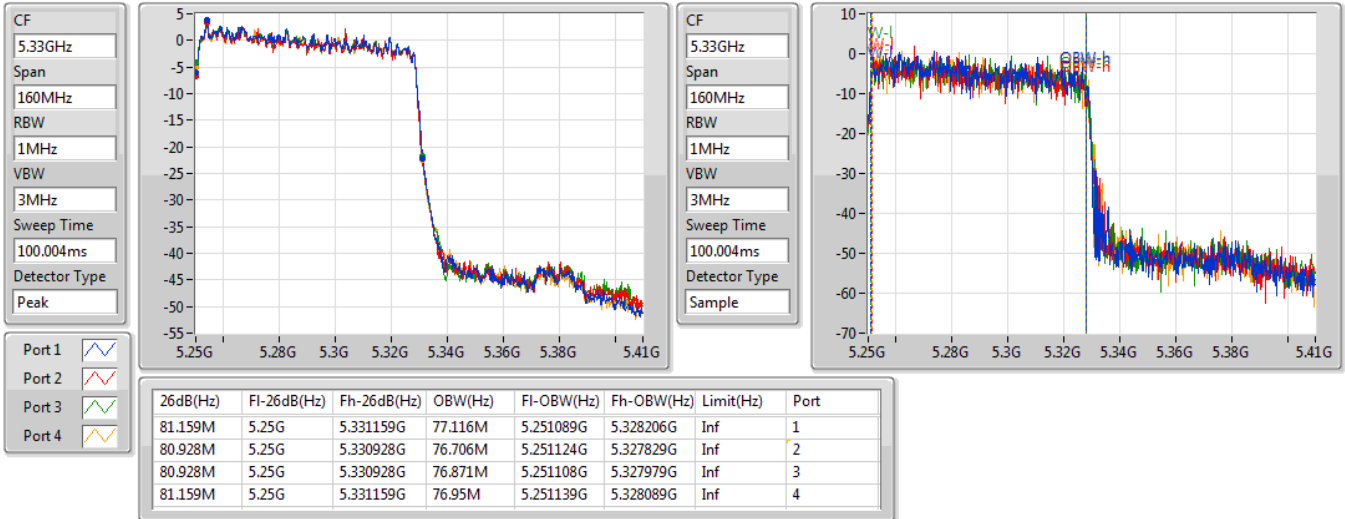

802.11ax HEW160_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

03/09/2019

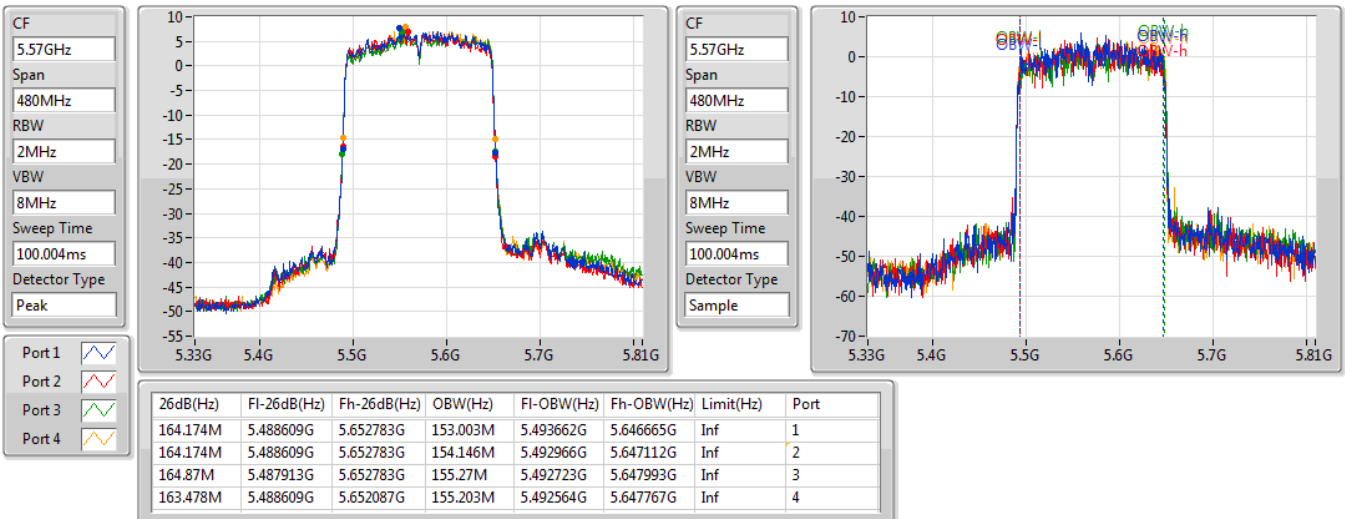


802.11ax HEW160_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

03/09/2019


802.11ax HEW160_Nss1,(MCS0)_4TX
EBW
5570MHz

03/09/2019



**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	82.783M	75.919M	75M9D1D	80.928M	75.586M
802.11ax HEW160_Nss2,(MCS0)_4TX	81.855M	77.454M	77M5D1D	80.696M	76.545M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT160_Nss2,(MCS0)_4TX	160M	75.752M	75M8D1D	80.464M	75.627M
802.11ax HEW160_Nss2,(MCS0)_4TX	80.696M	76.907M	76M9D1D	80.232M	76.729M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT80_Nss2,(MCS0)_4TX	82.087M	75.775M	75M8D1D	81.043M	75.485M
802.11ac VHT160_Nss2,(MCS0)_4TX	164.174M	154.003M	154MD1D	162.783M	153.503M
802.11ax HEW80_Nss2,(MCS0)_4TX	82.087M	77.171M	77M2D1D	81.043M	76.509M
802.11ax HEW160_Nss2,(MCS0)_4TX	164.174M	155.223M	155MD1D	163.478M	154.214M

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

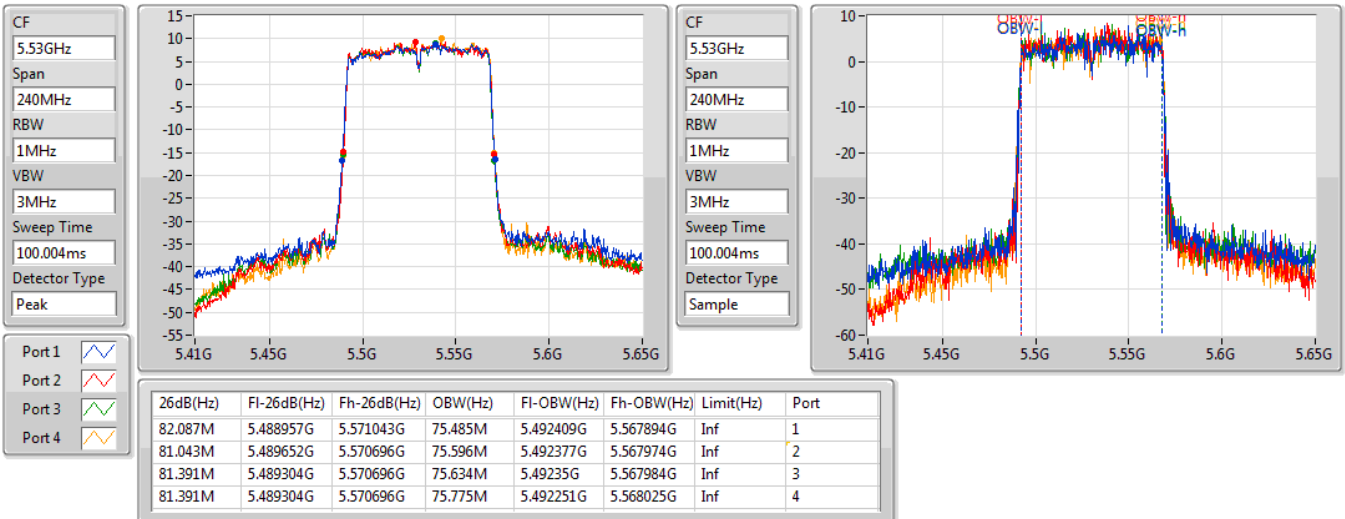
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	82.087M	75.485M	81.043M	75.596M	81.391M	75.634M	81.391M	75.775M
802.11ac VHT160_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.783M	75.712M	81.391M	75.831M	81.391M	75.919M	80.928M	75.586M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	160M	75.627M	80.464M	75.72M	80.696M	75.752M	80.928M	75.722M
5570MHz	Pass	Inf	164.174M	153.503M	162.783M	153.858M	163.478M	153.789M	163.478M	154.003M
802.11ax HEW80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.043M	76.995M	81.043M	76.509M	81.391M	76.512M	82.087M	77.171M
802.11ax HEW160_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.696M	76.545M	81.855M	77.072M	80.696M	76.817M	81.623M	77.454M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.464M	76.907M	80.232M	76.824M	80.464M	76.729M	80.696M	76.754M
5570MHz	Pass	Inf	164.174M	154.214M	163.478M	154.853M	163.478M	155.223M	164.174M	154.858M

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

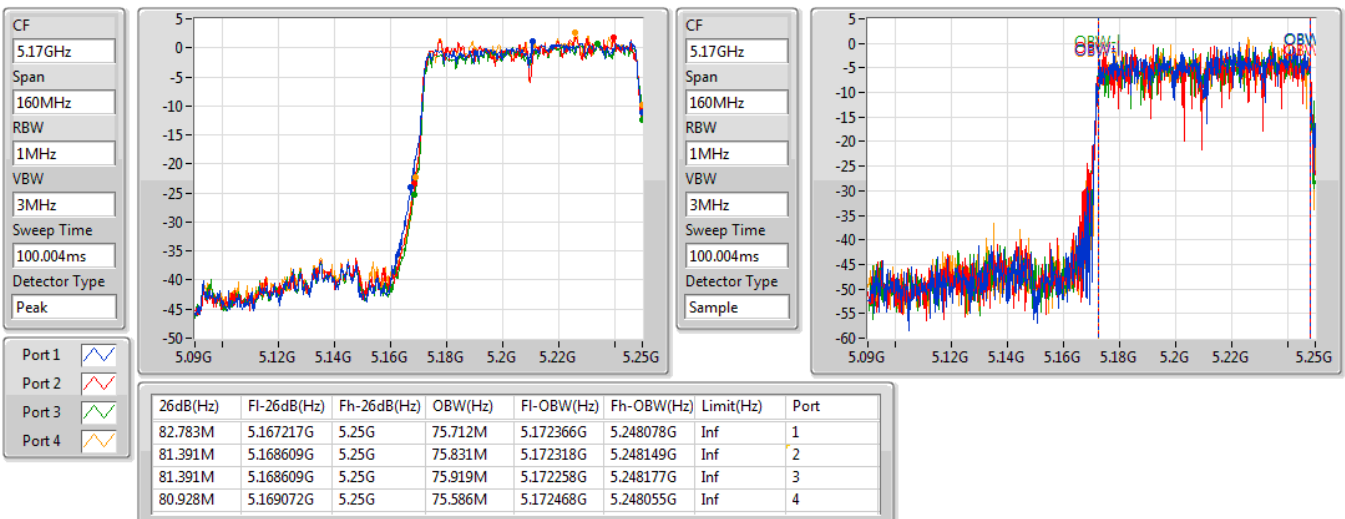
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80_Nss2,(MCS0)_4TX
EBW
5530MHz

04/09/2019

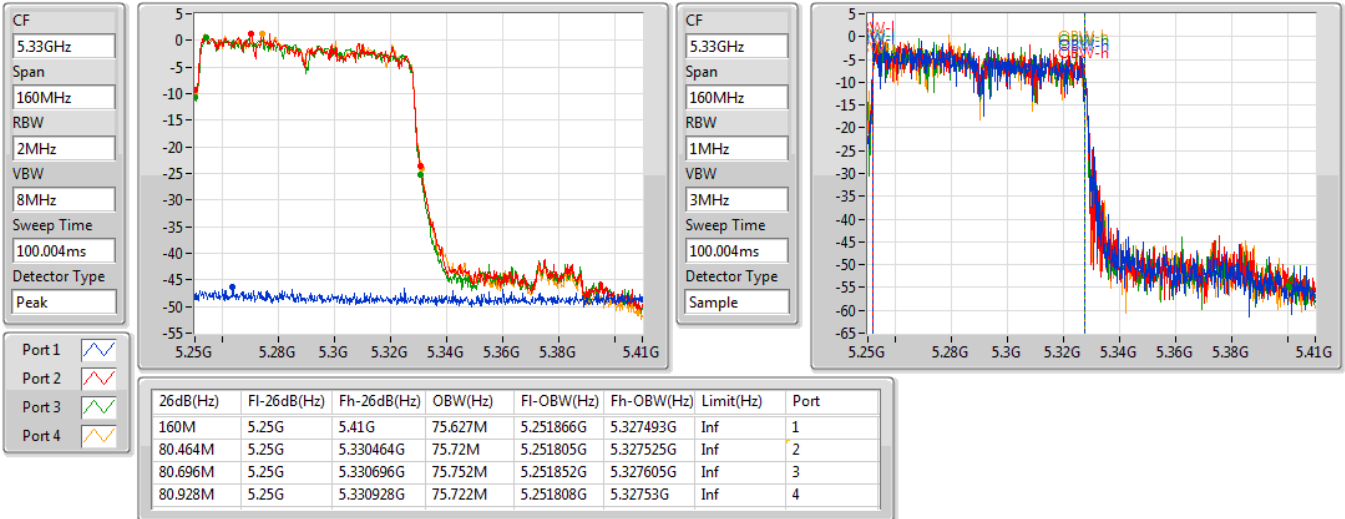

802.11ac VHT160_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

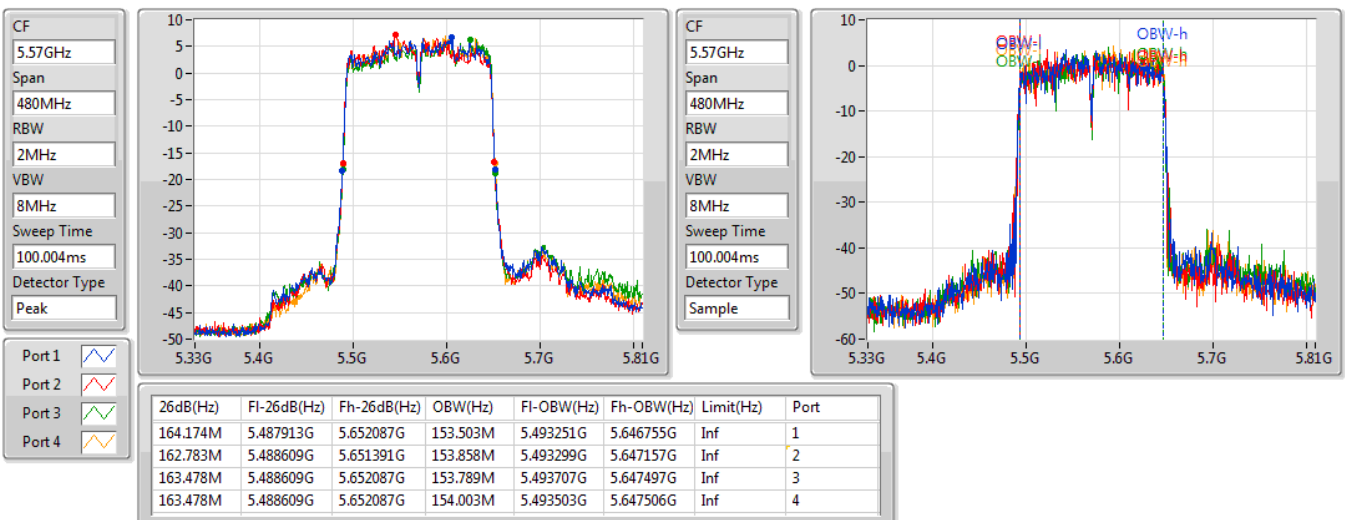


802.11ac VHT160_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019

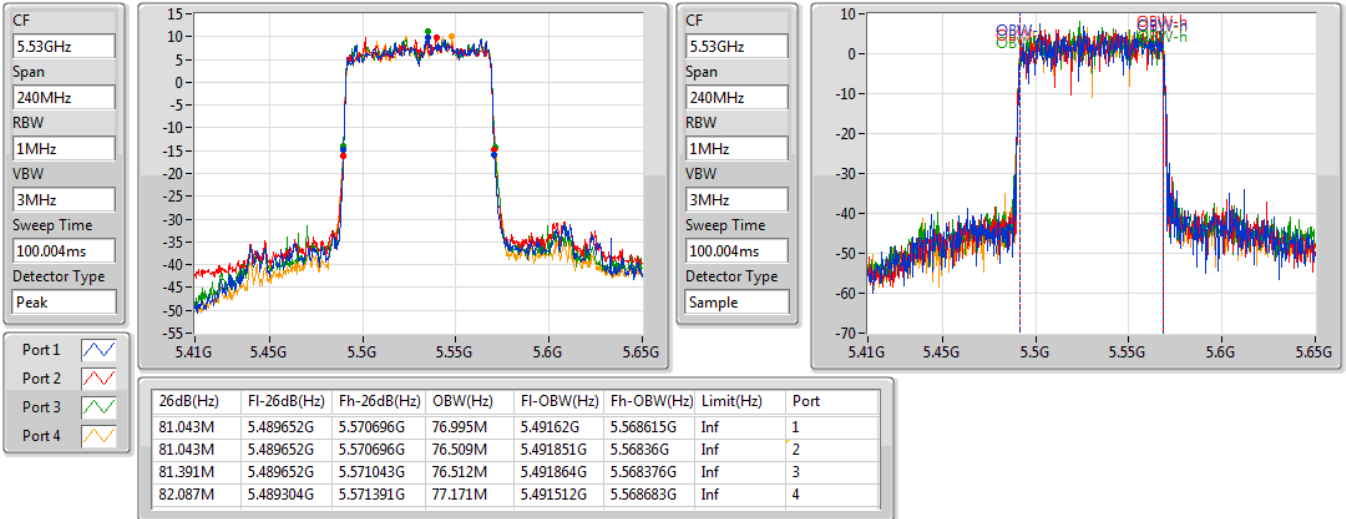

802.11ac VHT160_Nss2,(MCS0)_4TX
EBW
5570MHz

04/09/2019

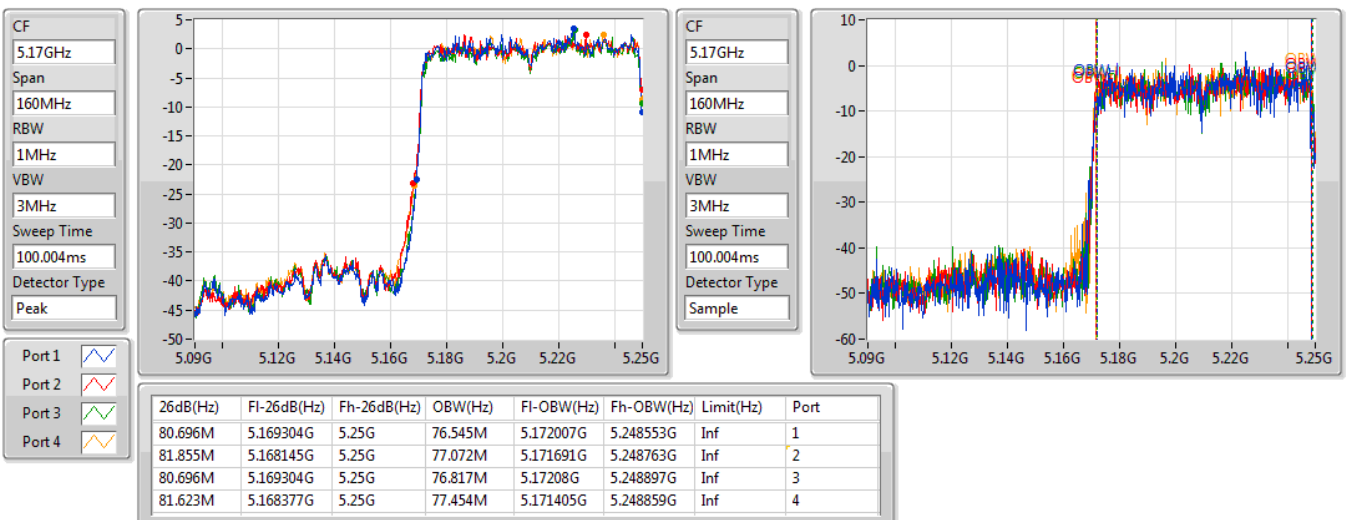


802.11ax HEW80_Nss2,(MCS0)_4TX
EBW
5530MHz

04/09/2019

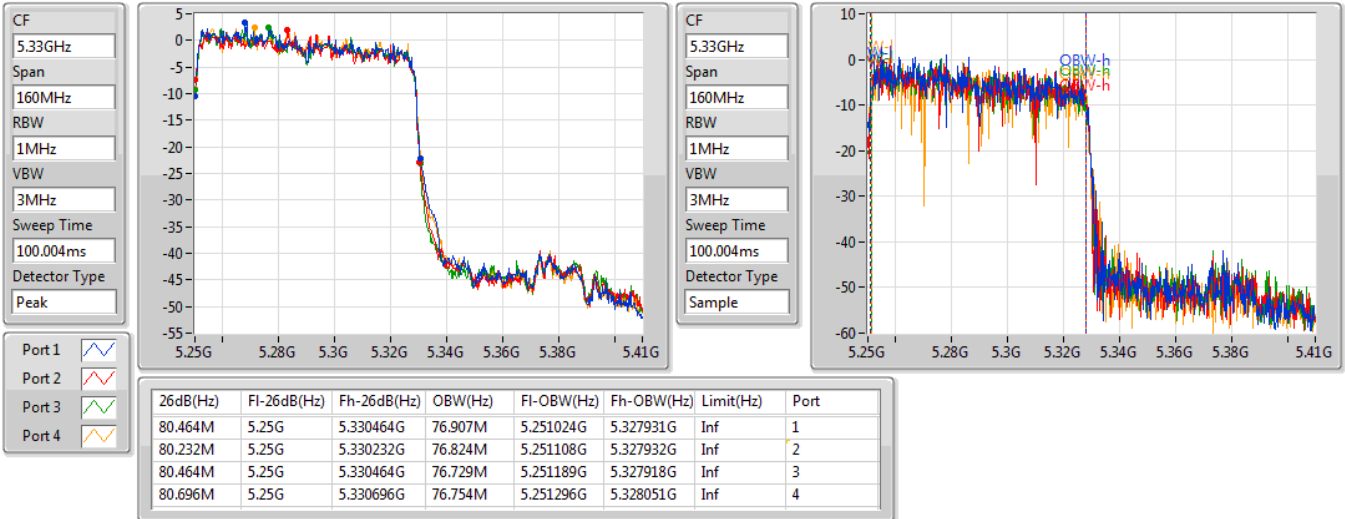

802.11ax HEW160_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

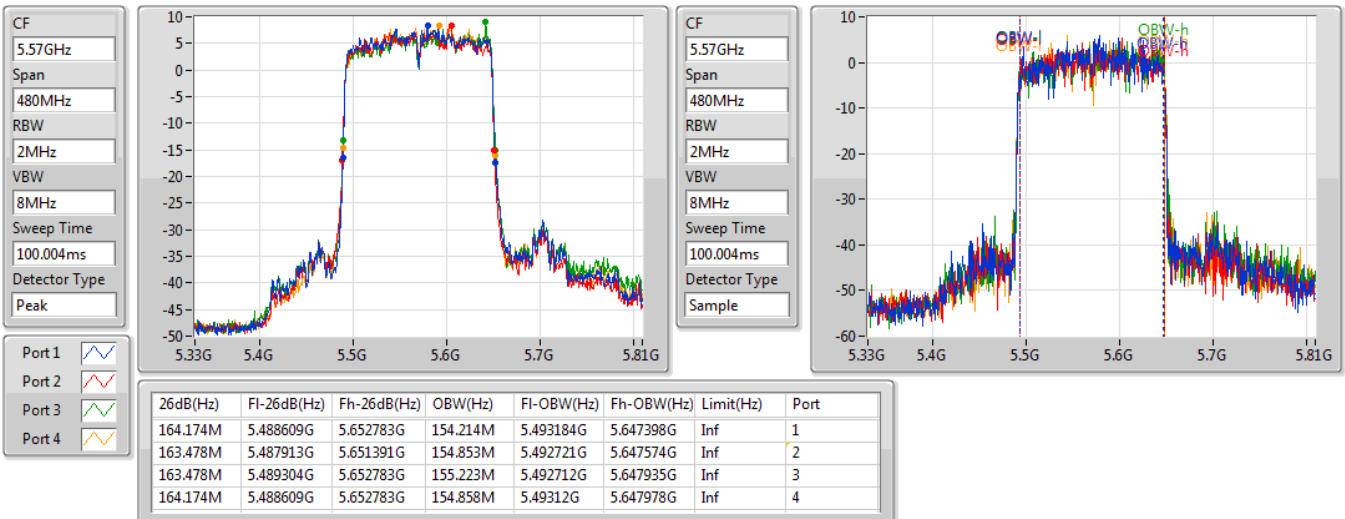


802.11ax HEW160_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019


802.11ax HEW160_Nss2,(MCS0)_4TX
EBW
5570MHz

04/09/2019



**4T3S
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_Nss3,(MCS0)_4TX	81.391M	75.954M	76M0D1D	80.928M	75.66M
802.11ax HEW160_Nss3,(MCS0)_4TX	81.391M	77.102M	77M1D1D	80.696M	76.759M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT160_Nss3,(MCS0)_4TX	81.159M	75.776M	75M8D1D	80.232M	75.348M
802.11ax HEW160_Nss3,(MCS0)_4TX	80.928M	77.042M	77M0D1D	80.464M	76.782M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT80_Nss3,(MCS0)_4TX	81.391M	76.06M	76M1D1D	80.348M	75.708M
802.11ac VHT160_Nss3,(MCS0)_4TX	164.174M	154.247M	154MD1D	163.478M	153.545M
802.11ax HEW80_Nss3,(MCS0)_4TX	81.739M	77.292M	77M3D1D	81.043M	76.79M
802.11ax HEW160_Nss3,(MCS0)_4TX	164.174M	154.833M	155MD1D	162.783M	153.895M

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

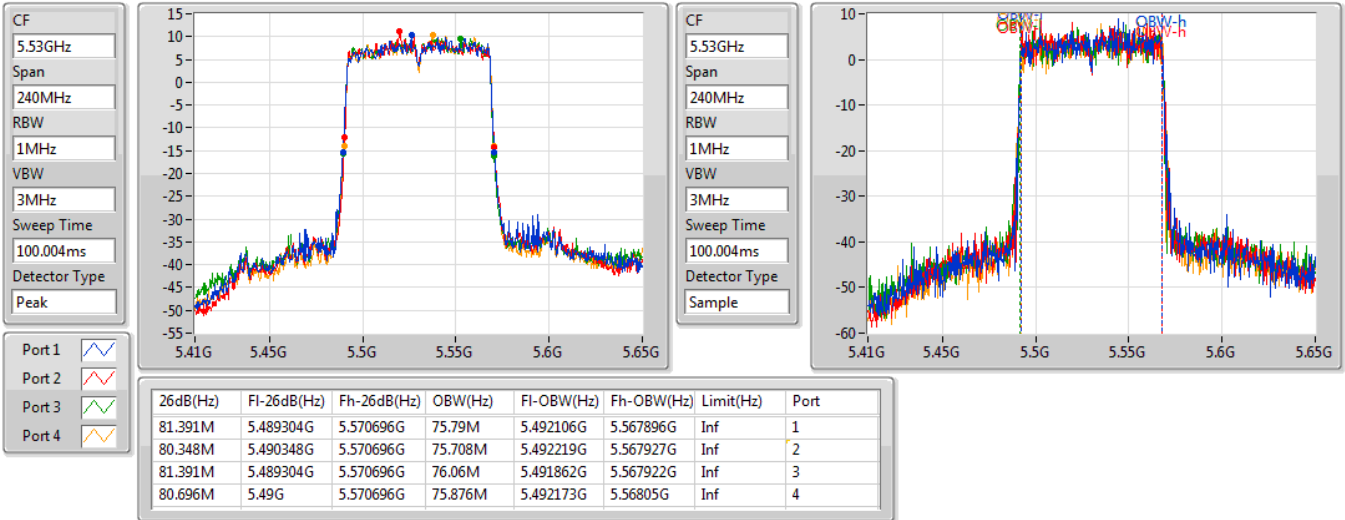
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT80_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.391M	75.79M	80.348M	75.708M	81.391M	76.06M	80.696M	75.876M
802.11ac VHT160_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.159M	75.66M	80.928M	75.769M	81.391M	75.768M	80.928M	75.954M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.928M	75.348M	80.232M	75.731M	80.928M	75.776M	81.159M	75.493M
5570MHz	Pass	Inf	164.174M	153.94M	163.478M	153.886M	164.174M	154.247M	164.174M	153.545M
802.11ax HEW80_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.391M	76.881M	81.739M	76.79M	81.043M	76.84M	81.043M	77.292M
802.11ax HEW160_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.696M	76.943M	81.391M	77.102M	80.696M	76.759M	80.696M	76.816M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.928M	76.913M	80.464M	77.042M	80.928M	76.782M	80.464M	76.946M
5570MHz	Pass	Inf	164.174M	154.601M	163.478M	154.583M	163.478M	154.833M	162.783M	153.895M

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

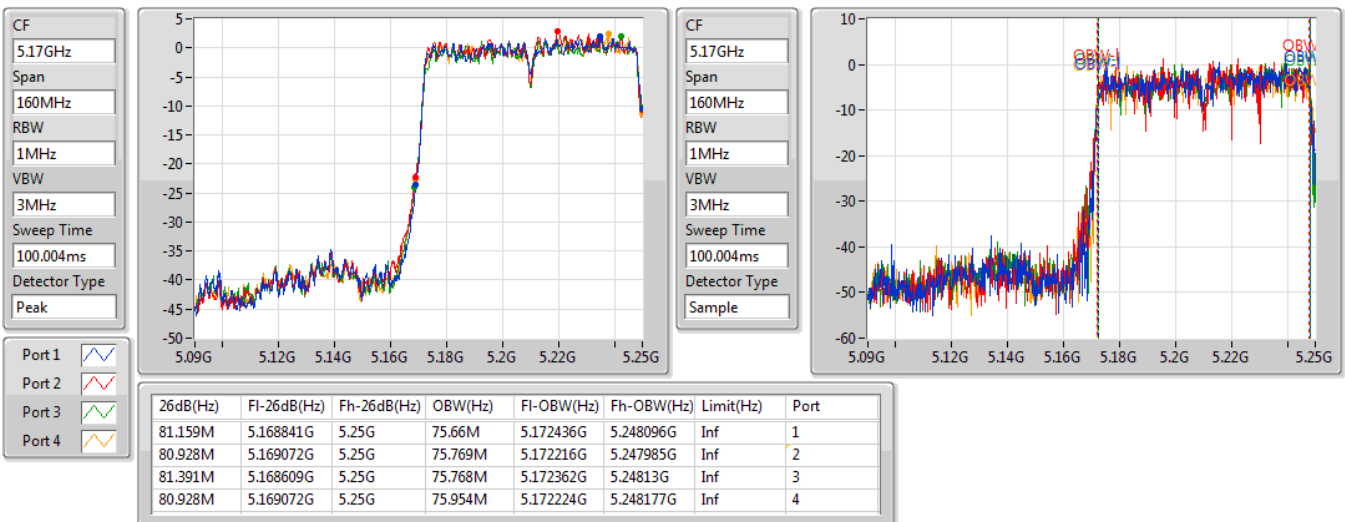
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80_Nss3,(MCS0)_4TX
EBW
5530MHz

04/09/2019

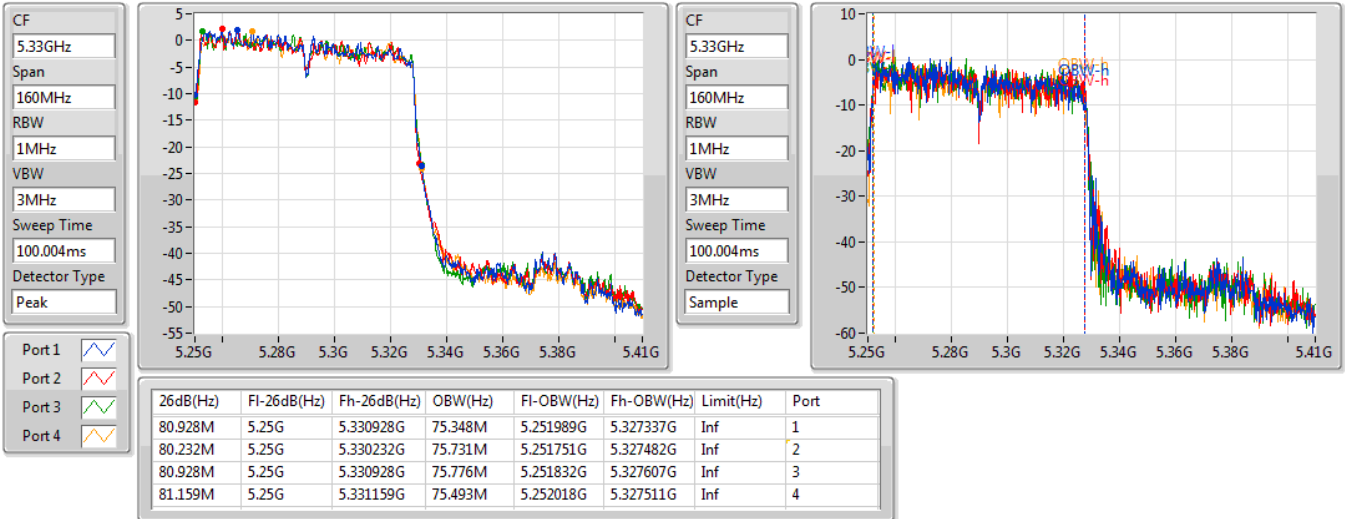

802.11ac VHT160_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

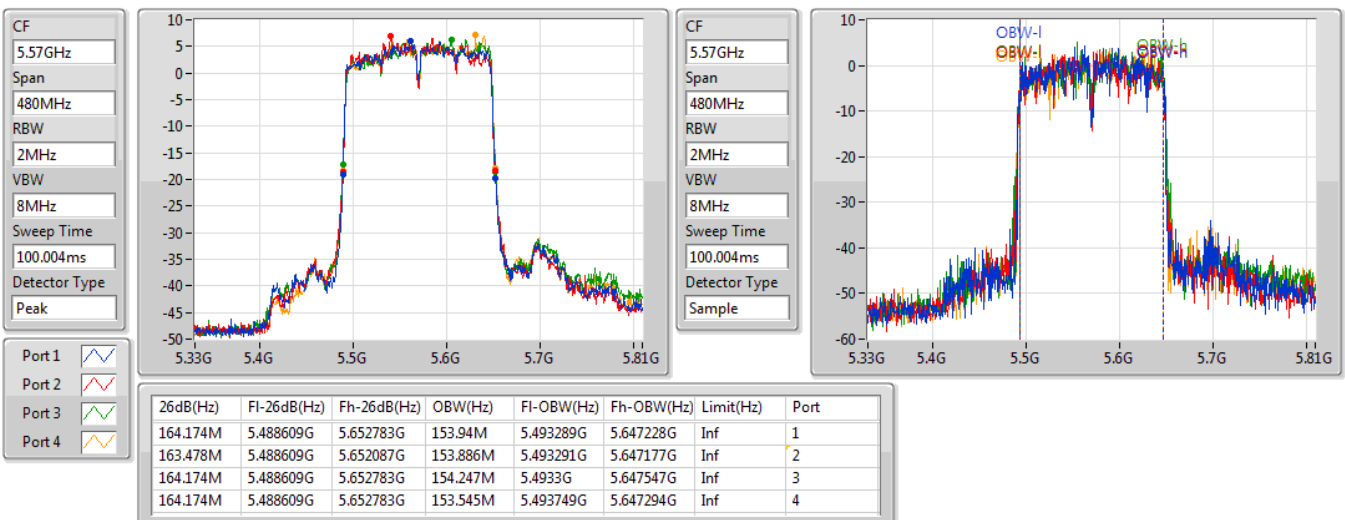


802.11ac VHT160_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019

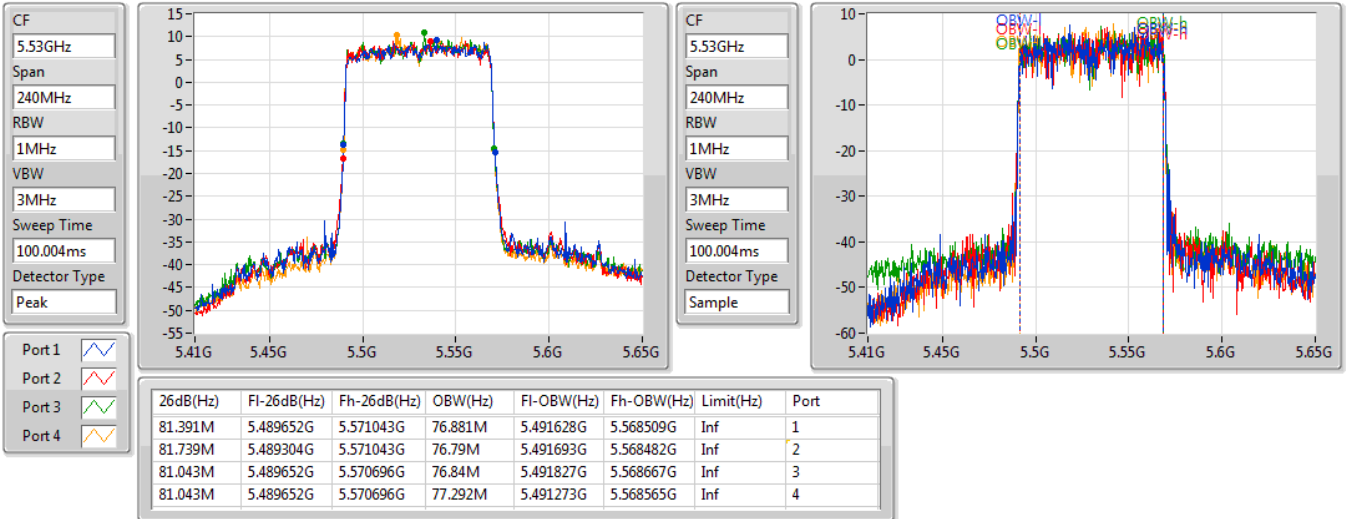

802.11ac VHT160_Nss3,(MCS0)_4TX
EBW
5570MHz

04/09/2019

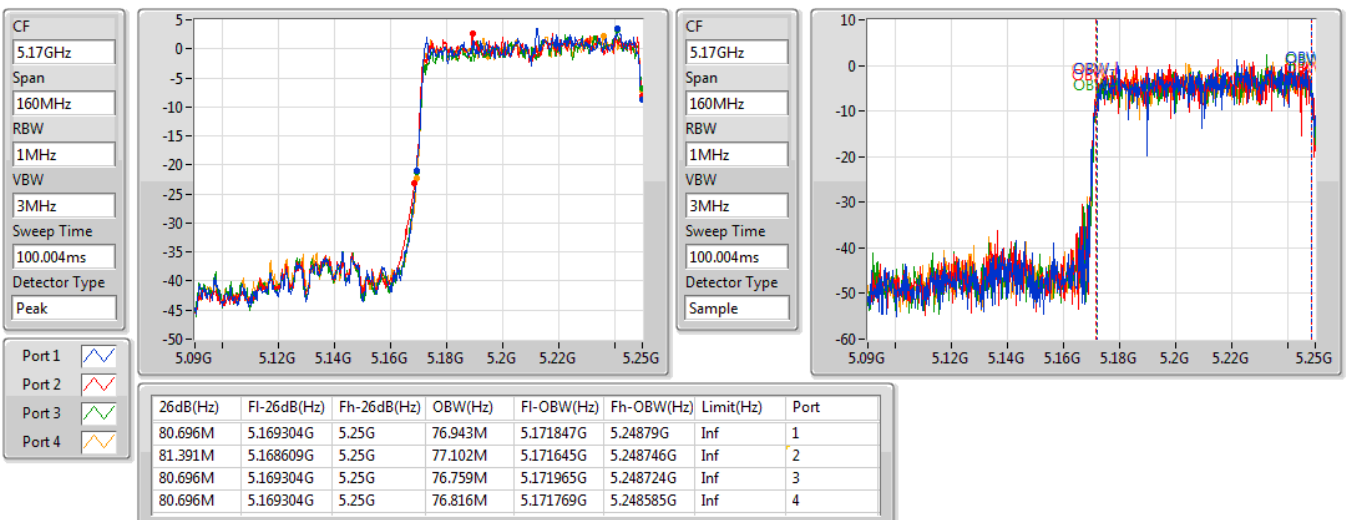


802.11ax HEW80_Nss3,(MCS0)_4TX
EBW
5530MHz

04/09/2019

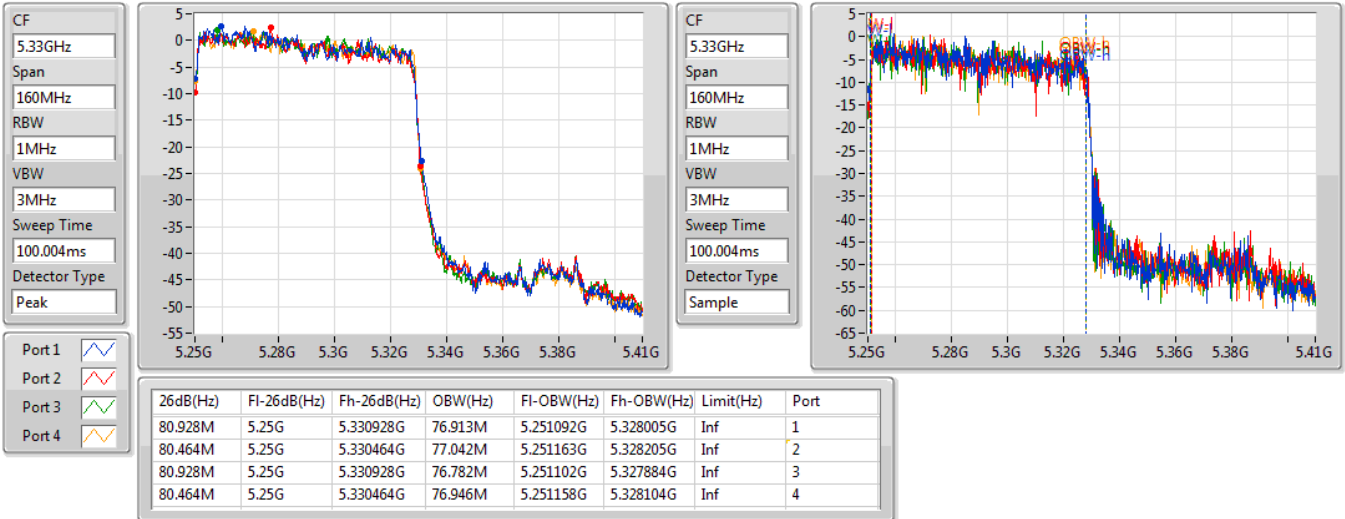

802.11ax HEW160_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

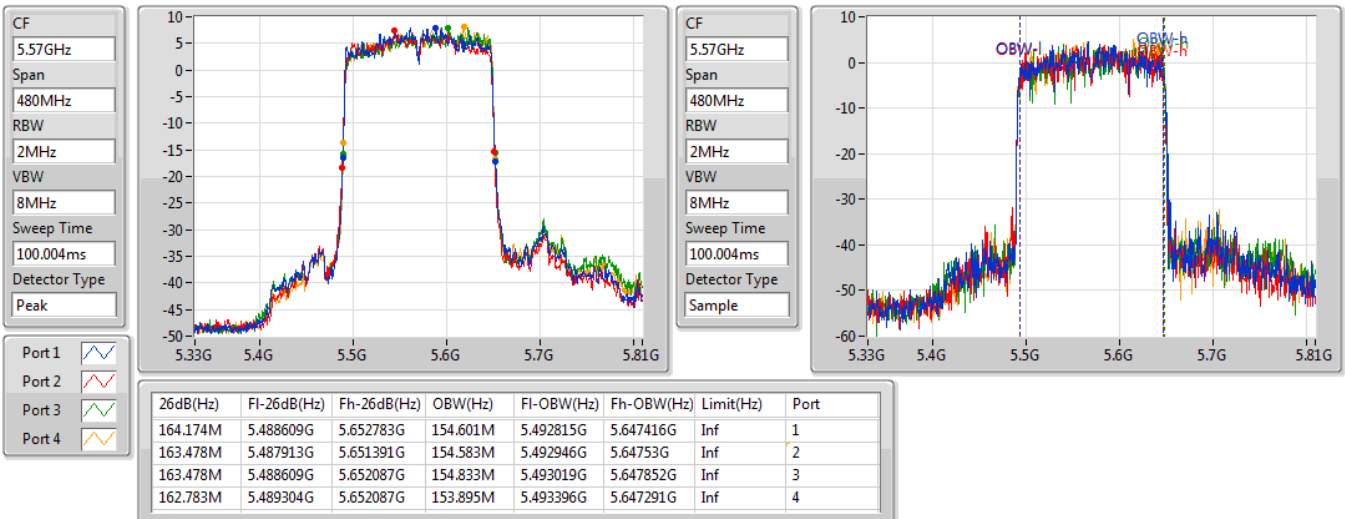


802.11ax HEW160_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019


802.11ax HEW160_Nss3,(MCS0)_4TX
EBW
5570MHz

04/09/2019



<For 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	81.855M	76.001M	76M0D1D	80.928M	75.463M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	81.159M	77.16M	77M2D1D	80.464M	76.819M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	21.652M	17.817M	17M8D1D	21.391M	17.7M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	40.174M	36.336M	36M3D1D	39.826M	36.153M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	81.739M	75.912M	75M9D1D	81.043M	75.613M
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	81.855M	75.764M	75M8D1D	80.464M	75.625M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	21.739M	18.99M	19M0D1D	21.217M	18.914M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	40M	37.632M	37M6D1D	39.826M	37.331M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.739M	77.212M	77M2D1D	81.043M	76.634M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	80.928M	77.434M	77M4D1D	80.928M	76.561M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	21.739M	17.812M	17M8D1D	15.696M	13.845M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	40.348M	36.323M	36M3D1D	34.797M	32.935M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	81.739M	75.87M	75M9D1D	75.652M	72.395M
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	164.87M	154.023M	154MD1D	163.478M	153.289M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	21.739M	18.979M	19M0D1D	15.652M	14.421M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	40M	37.68M	37M7D1D	34.797M	33.579M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	82.087M	77.453M	77M5D1D	75.652M	73.155M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	165.565M	155.601M	156MD1D	164.174M	153.517M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	3.826M	4.316M	4M32D1D	3.826M	4.206M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	3.188M	3.574M	3M57D1D	3.188M	3.509M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	3.188M	3.566M	3M57D1D	3.188M	3.425M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	4.522M	4.584M	4M58D1D	4.464M	4.565M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	3.884M	4.052M	4M05D1D	3.71M	3.994M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	3.826M	4.052M	4M05D1D	3.768M	4.052M

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	21.565M	17.726M	21.391M	17.723M	21.391M	17.756M	21.652M	17.72M
5300MHz	Pass	Inf	21.478M	17.778M	21.478M	17.772M	21.478M	17.817M	21.652M	17.748M
5320MHz	Pass	Inf	21.565M	17.7M	21.391M	17.808M	21.565M	17.725M	21.565M	17.768M
5500MHz	Pass	Inf	21.565M	17.73M	21.391M	17.812M	21.478M	17.735M	21.652M	17.784M
5580MHz	Pass	Inf	21.652M	17.75M	21.478M	17.707M	21.478M	17.758M	21.652M	17.717M
5700MHz	Pass	Inf	21.739M	17.688M	21.478M	17.753M	21.478M	17.678M	21.739M	17.738M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.783M	13.87M	15.696M	13.845M	15.696M	13.853M	15.783M	13.852M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.826M	4.316M	3.826M	4.206M	3.826M	4.232M	3.826M	4.21M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	39.826M	36.158M	40M	36.311M	39.826M	36.183M	39.826M	36.336M
5310MHz	Pass	Inf	40.174M	36.266M	40M	36.153M	39.826M	36.273M	39.826M	36.192M
5510MHz	Pass	Inf	40.174M	36.15M	39.826M	36.246M	40M	36.323M	39.652M	36.107M
5550MHz	Pass	Inf	40.348M	36.269M	39.304M	36.228M	39.652M	36.215M	39.826M	36.155M
5670MHz	Pass	Inf	39.826M	36.271M	39.478M	36.306M	39.652M	36.153M	39.652M	36.196M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.101M	32.978M	34.797M	33.01M	34.899M	32.935M	34.899M	32.94M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.188M	3.518M	3.188M	3.574M	3.188M	3.537M	3.188M	3.509M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.739M	75.744M	81.043M	75.912M	81.043M	75.682M	81.043M	75.613M
5530MHz	Pass	Inf	81.739M	75.641M	81.043M	75.518M	81.043M	75.567M	81.739M	75.592M
5610MHz	Pass	Inf	81.391M	75.87M	80.696M	75.435M	81.391M	75.447M	81.391M	75.773M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.87M	72.395M	75.652M	72.524M	75.652M	72.497M	76.087M	72.471M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.188M	3.499M	3.188M	3.566M	3.188M	3.427M	3.188M	3.425M
802.11ac VHT160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.159M	75.676M	81.391M	75.838M	81.855M	75.463M	80.928M	76.001M
5250MHz	Pass	Inf	80.928M	75.665M	81.855M	75.688M	80.696M	75.764M	80.464M	75.625M
5570MHz	Pass	Inf	163.478M	153.737M	164.174M	153.289M	164.87M	154.023M	163.478M	153.986M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.565M	18.979M	21.565M	18.914M	21.391M	18.95M	21.739M	18.934M
5300MHz	Pass	Inf	21.478M	18.987M	21.478M	18.962M	21.478M	18.972M	21.217M	18.99M
5320MHz	Pass	Inf	21.565M	18.933M	21.478M	18.949M	21.652M	18.961M	21.652M	18.966M
5500MHz	Pass	Inf	21.478M	18.979M	21.565M	18.956M	21.565M	18.923M	21.652M	18.956M
5580MHz	Pass	Inf	21.391M	18.947M	21.565M	18.869M	21.565M	18.951M	21.391M	18.918M
5700MHz	Pass	Inf	21.652M	18.92M	21.652M	18.957M	21.565M	18.962M	21.739M	18.921M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.783M	14.452M	15.652M	14.492M	15.739M	14.421M	15.652M	14.477M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.464M	4.579M	4.522M	4.583M	4.464M	4.565M	4.522M	4.584M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	39.826M	37.356M	39.826M	37.459M	39.826M	37.626M	40M	37.353M
5310MHz	Pass	Inf	40M	37.331M	39.826M	37.448M	39.826M	37.632M	39.826M	37.543M
5510MHz	Pass	Inf	40M	37.579M	39.826M	37.68M	39.826M	37.675M	39.826M	37.559M
5550MHz	Pass	Inf	39.826M	37.574M	39.826M	37.586M	40M	37.623M	39.826M	37.612M
5670MHz	Pass	Inf	40M	37.38M	39.826M	37.424M	40M	37.591M	40M	37.476M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	34.899M	33.579M	34.797M	33.727M	35.101M	33.649M	35M	33.69M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.768M	4.052M	3.884M	3.994M	3.71M	4.052M	3.71M	3.994M

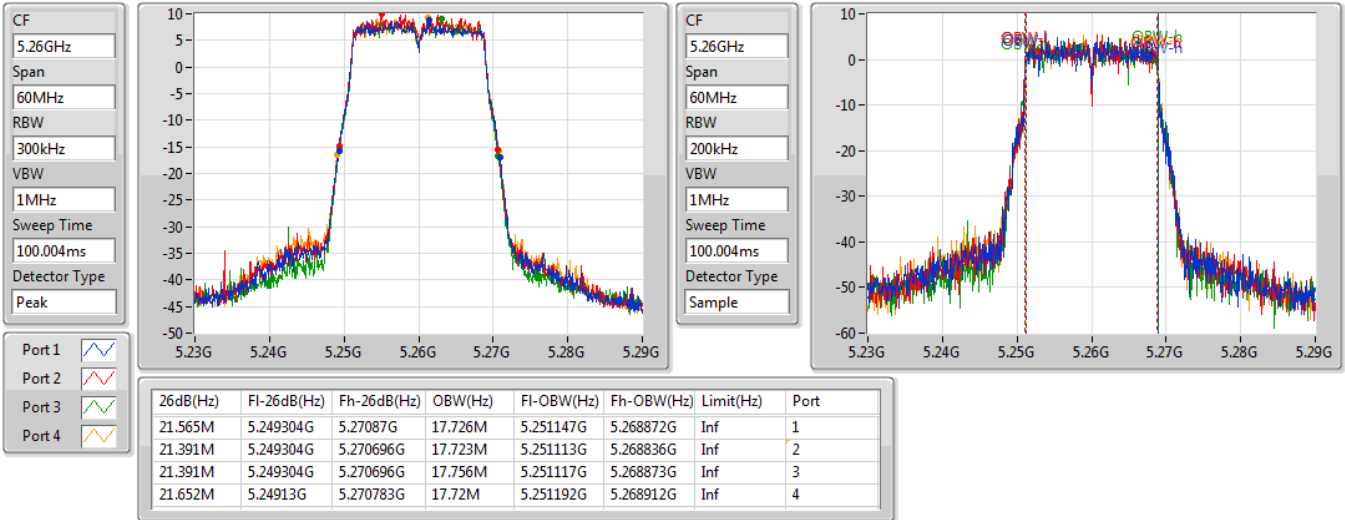
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.391M	76.634M	81.391M	77.212M	81.739M	77.134M	81.043M	77.081M
5530MHz	Pass	Inf	82.087M	76.411M	81.739M	76.411M	82.087M	77.453M	81.391M	77.453M
5610MHz	Pass	Inf	82.087M	77.106M	82.087M	77.106M	82.087M	77.106M	81.739M	76.758M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.87M	73.372M	75.87M	73.155M	76.087M	73.372M	75.652M	73.155M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.826M	4.052M	3.826M	4.052M	3.768M	4.052M	3.768M	4.052M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.464M	77.16M	80.464M	76.819M	81.159M	76.96M	80.928M	76.828M
5250MHz	Pass	Inf	80.928M	77.434M	80.928M	76.561M	80.928M	77.137M	80.928M	77.245M
5570MHz	Pass	Inf	164.174M	153.517M	164.87M	154.906M	165.565M	155.601M	164.87M	154.906M

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

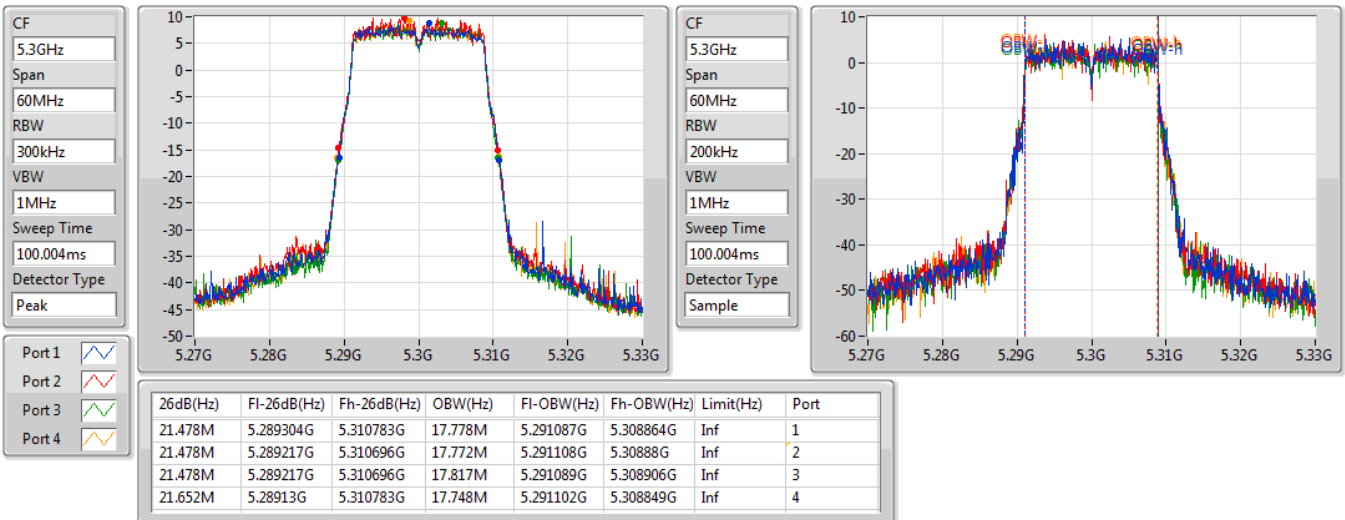
Port X-OBW = Port X 99% occupied bandwidth;

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

03/09/2019

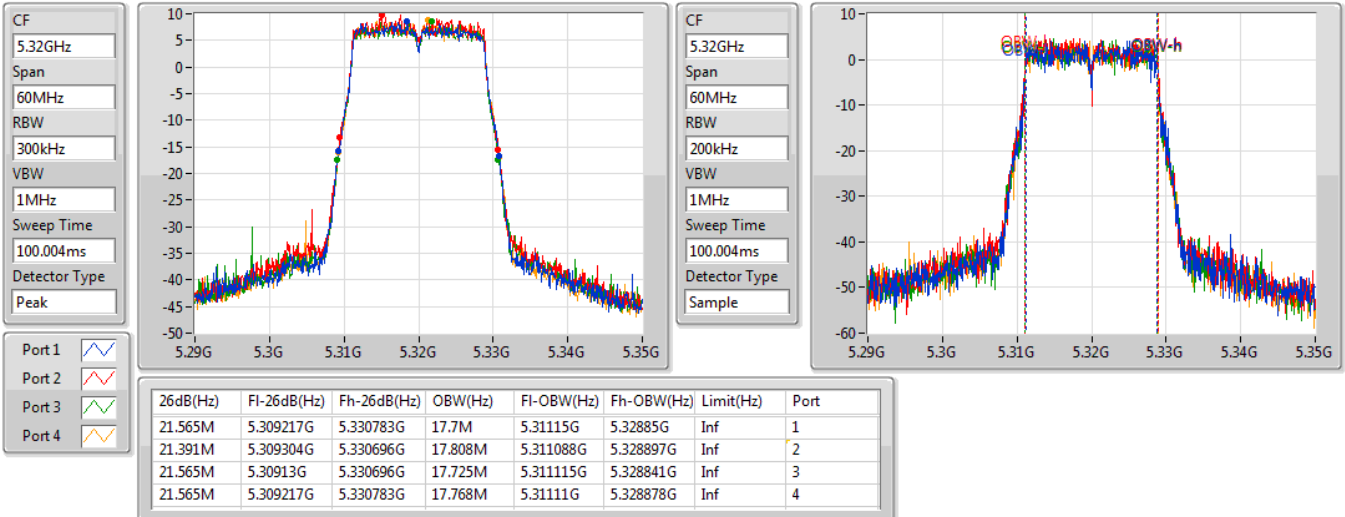

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5300MHz

03/09/2019

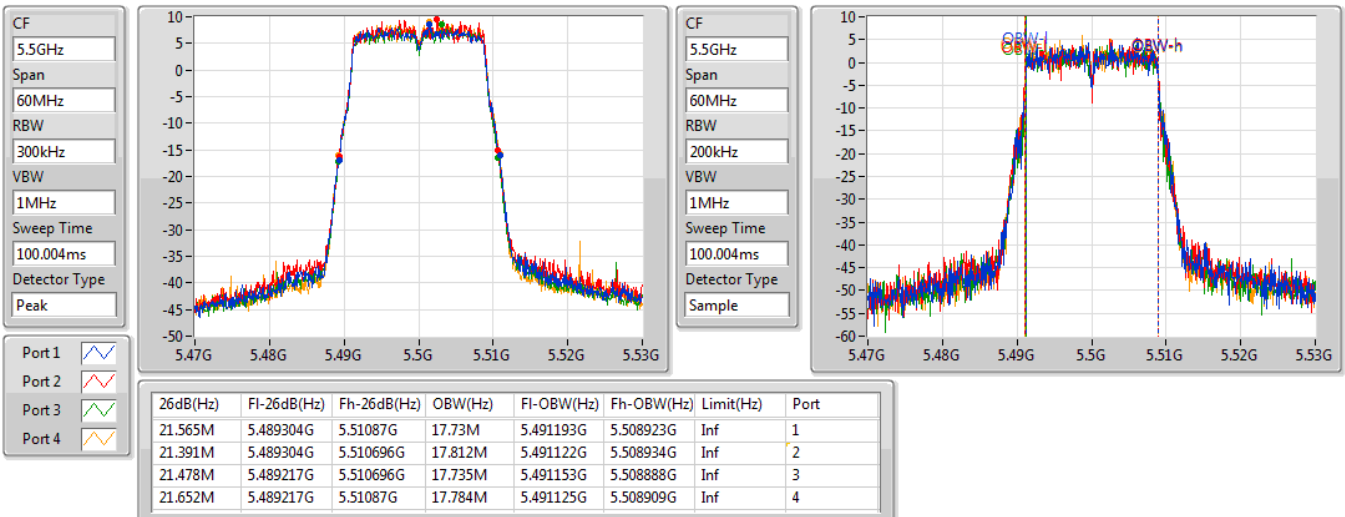


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5320MHz

03/09/2019

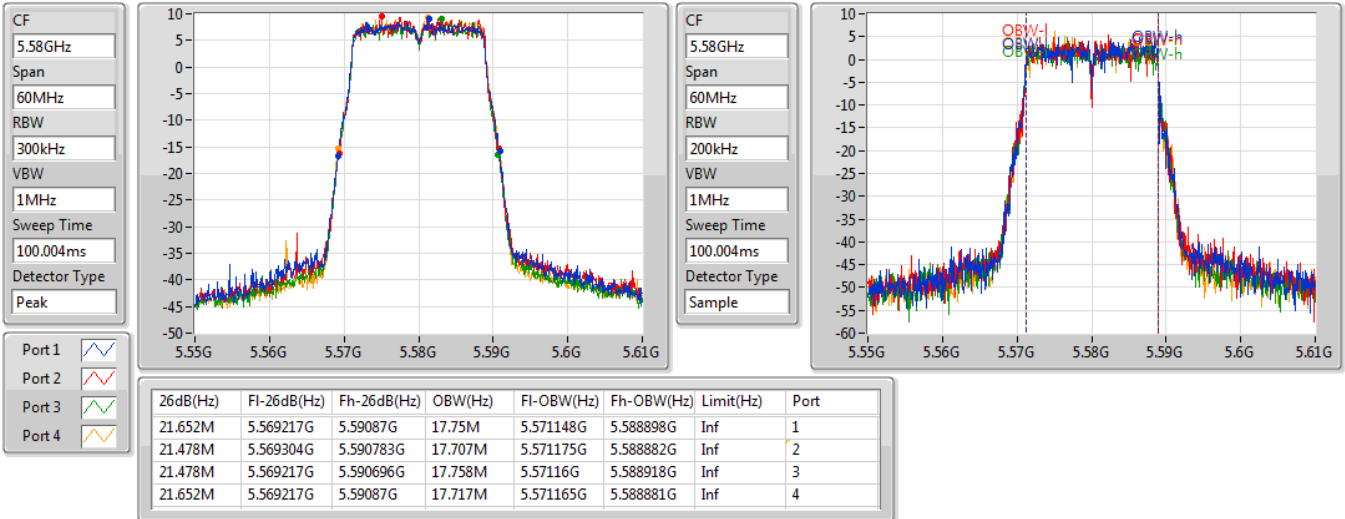

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5500MHz

04/09/2019

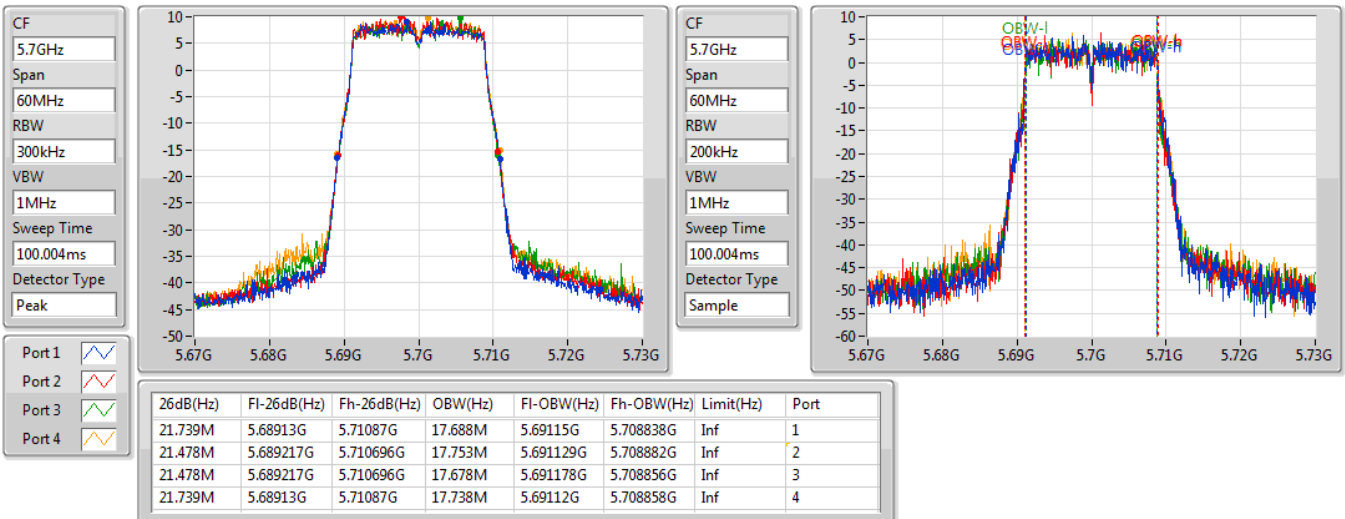


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5580MHz

04/09/2019

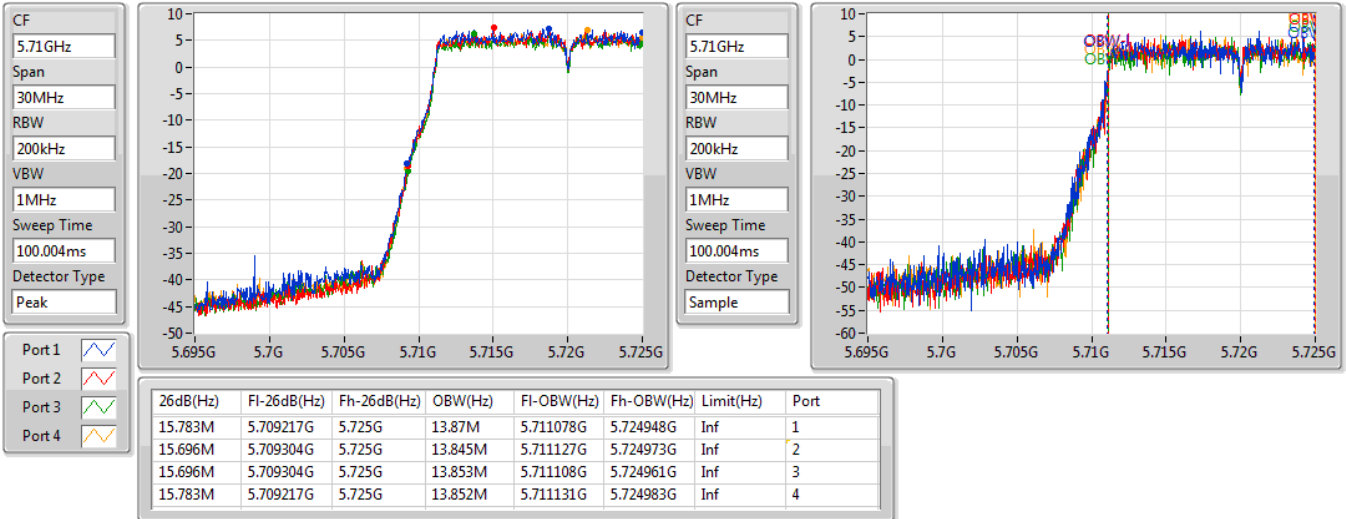

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5700MHz

04/09/2019

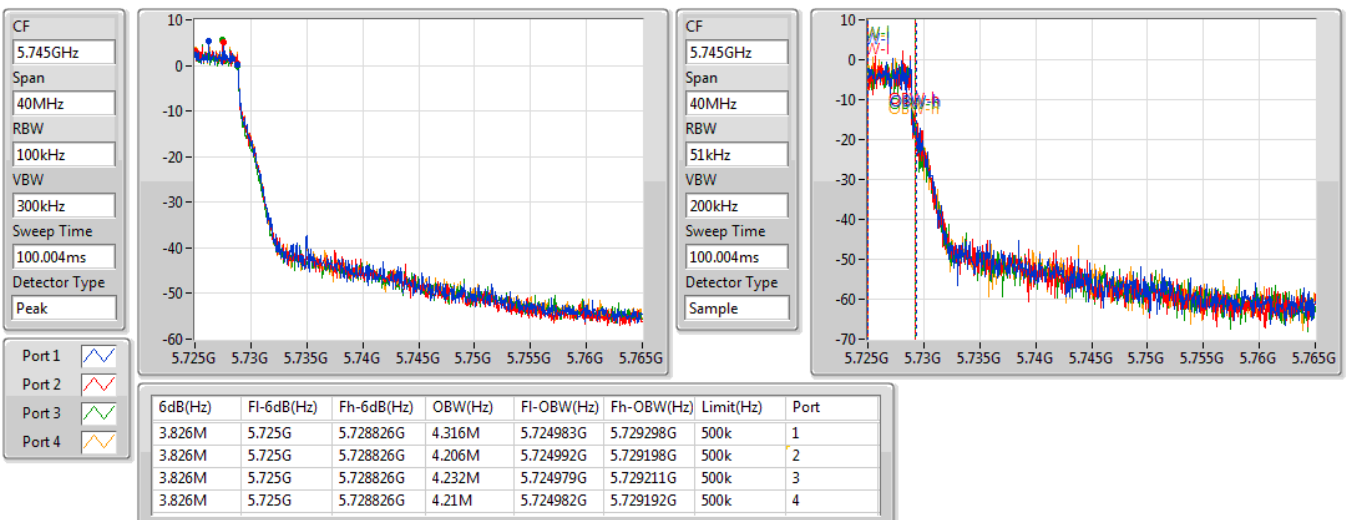


802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

04/09/2019

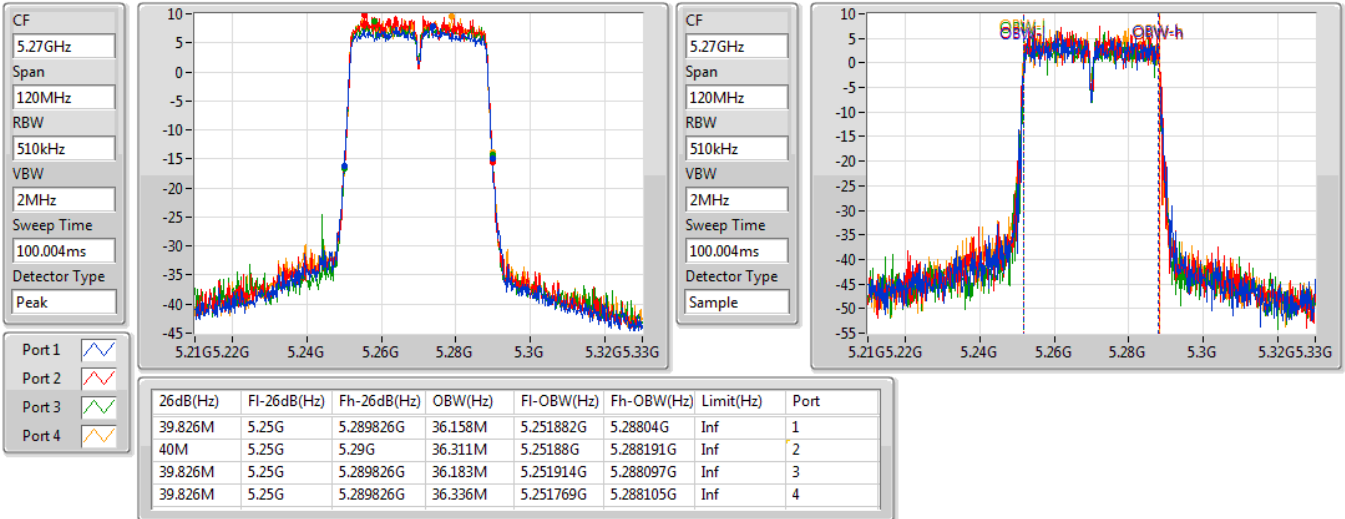

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

04/09/2019

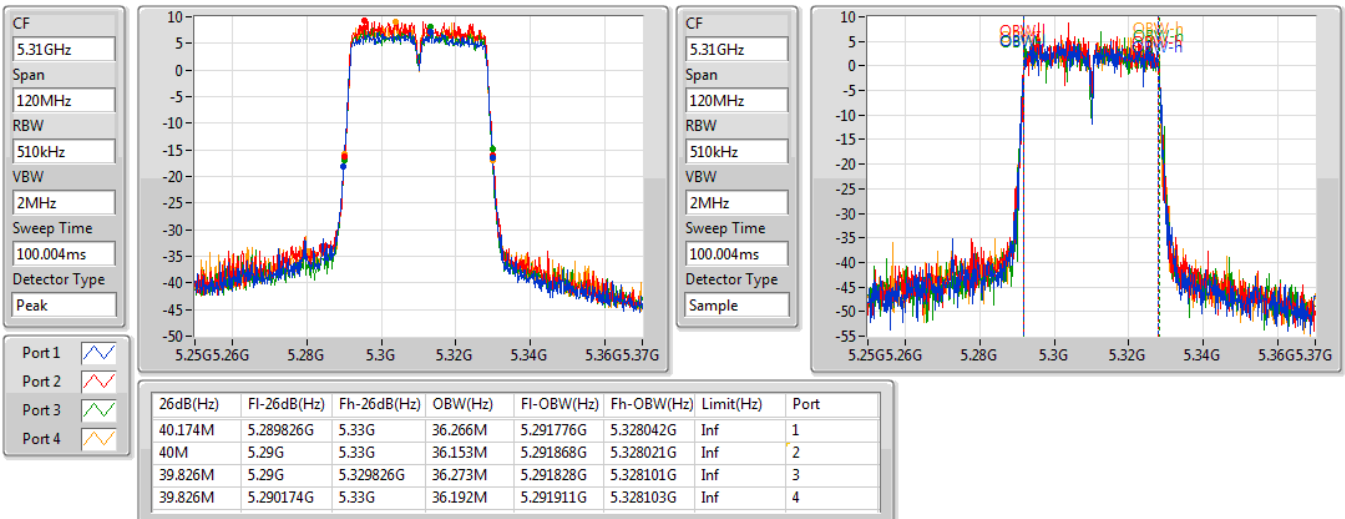


802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5270MHz

03/09/2019

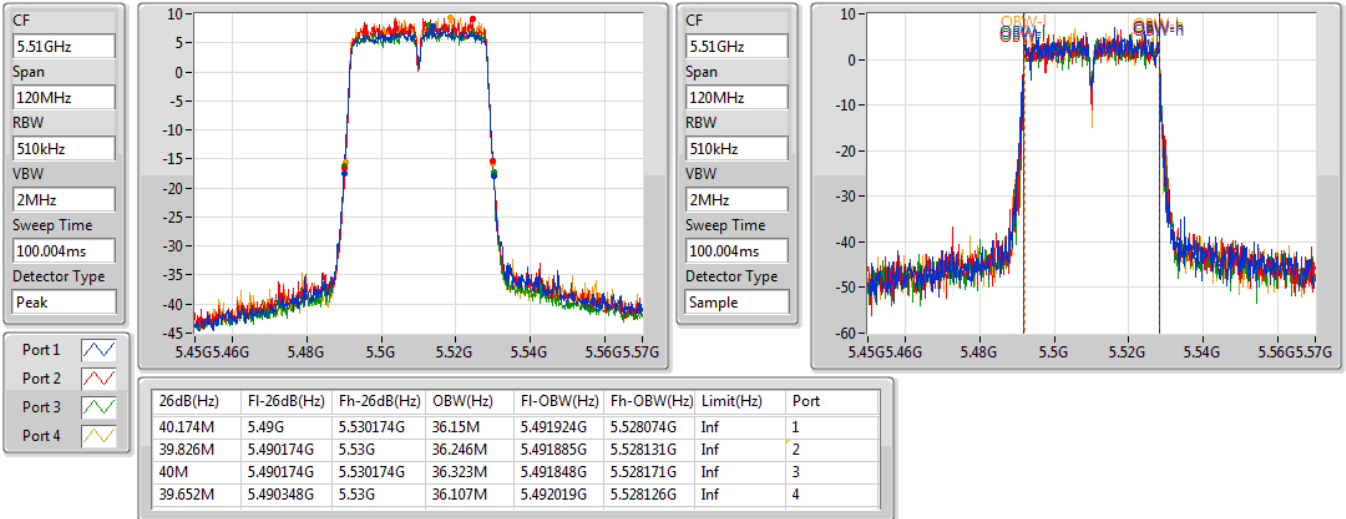

802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5310MHz

03/09/2019

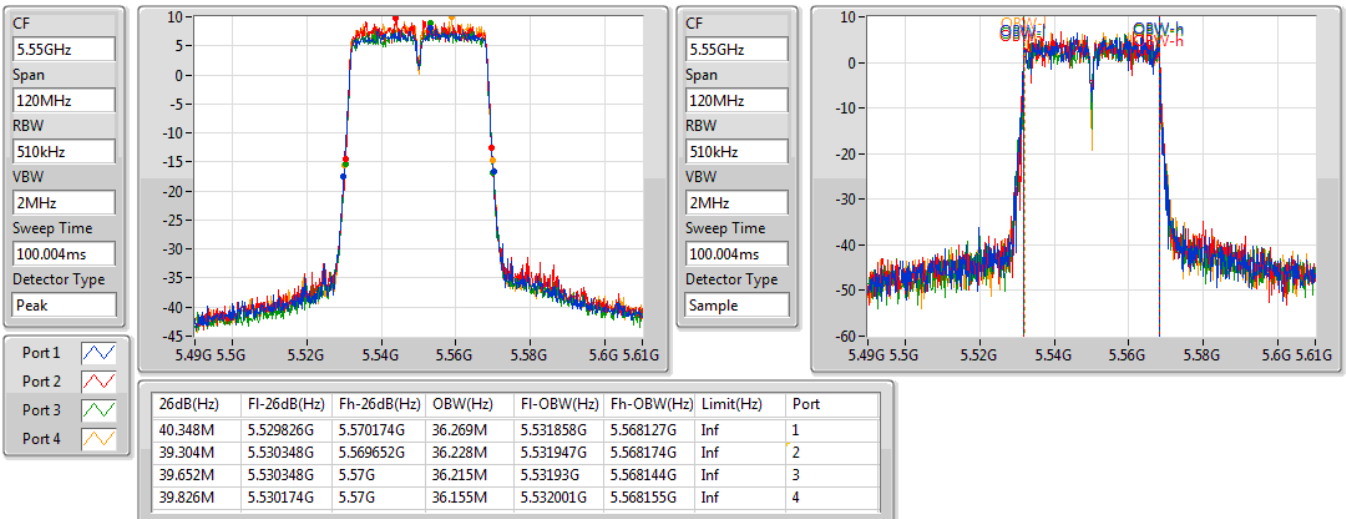


802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5510MHz

04/09/2019

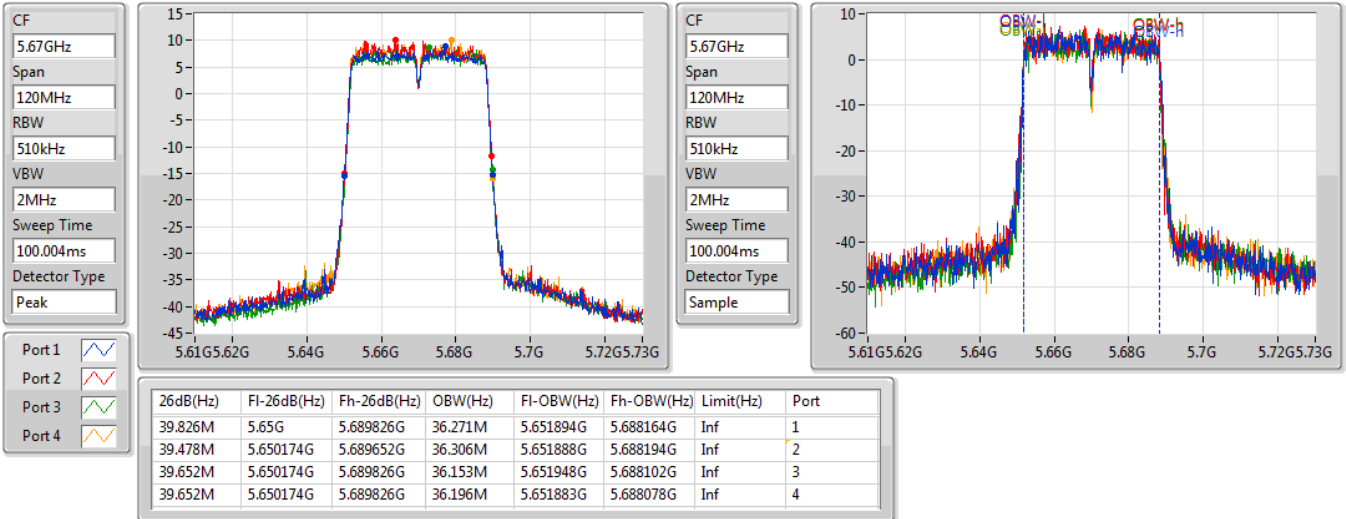

802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5550MHz

04/09/2019

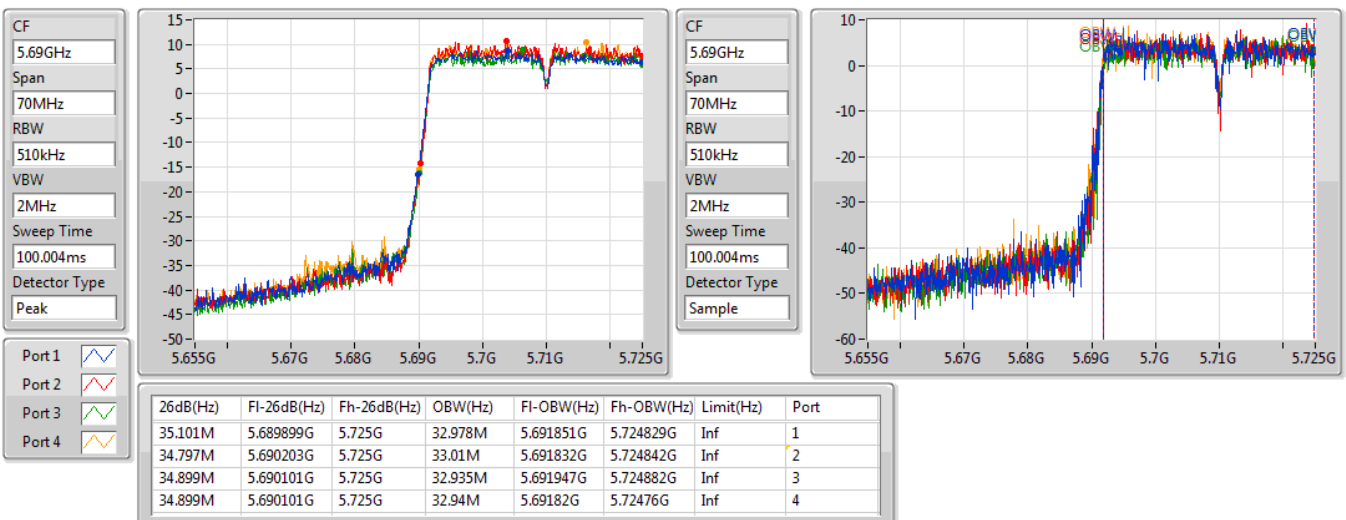


802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5670MHz

04/09/2019

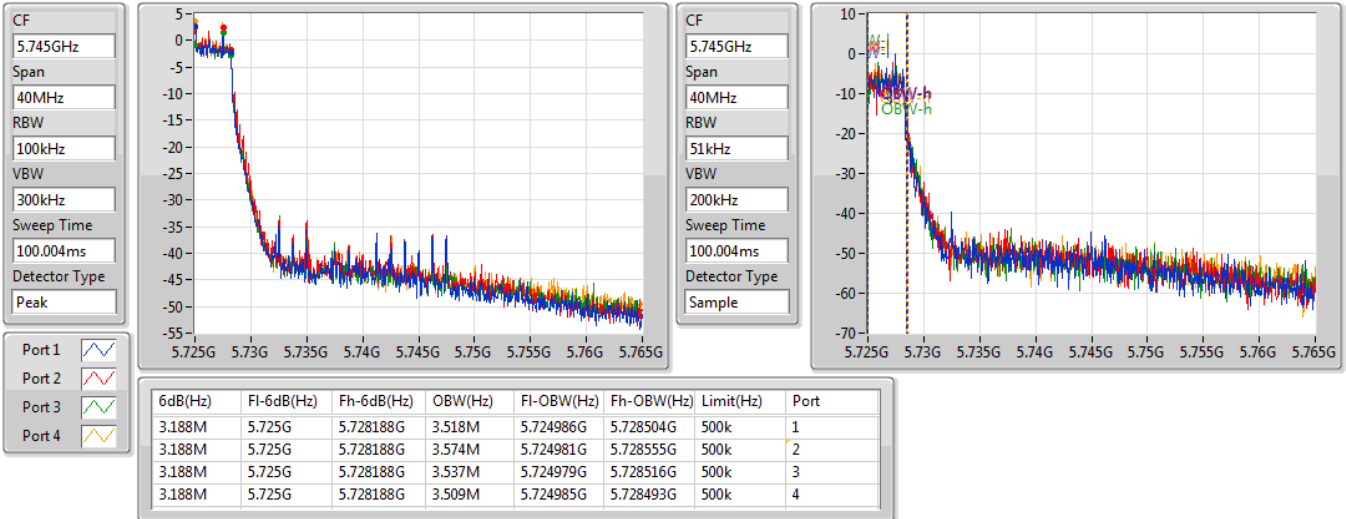

802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.47-5.725GHz

04/09/2019

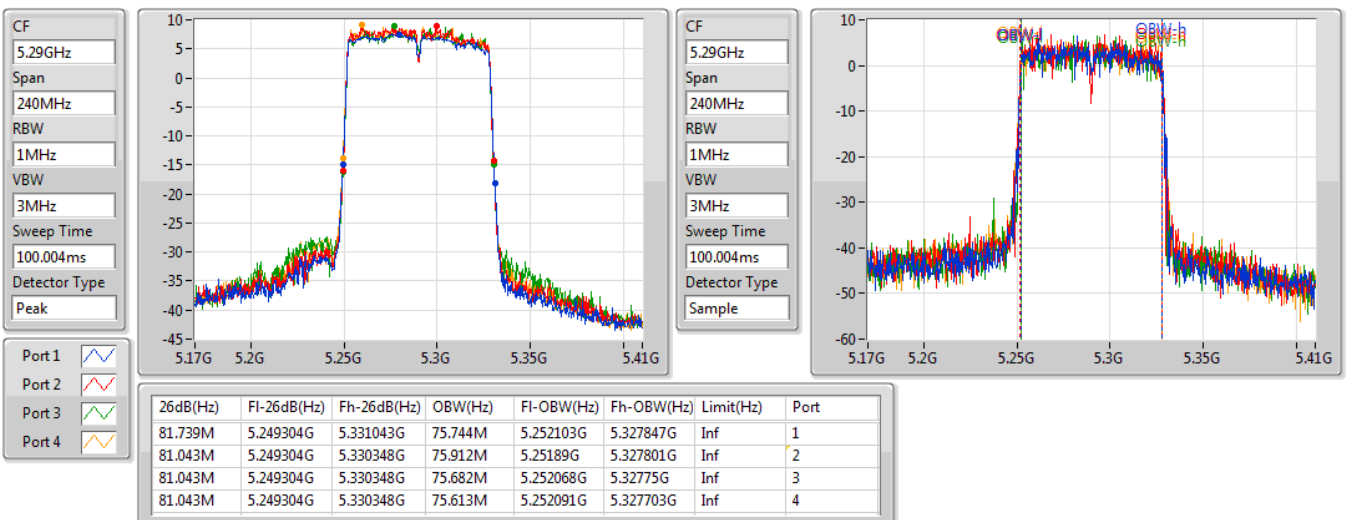


802.11ac VHT40-BF_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.725-5.85GHz

04/09/2019

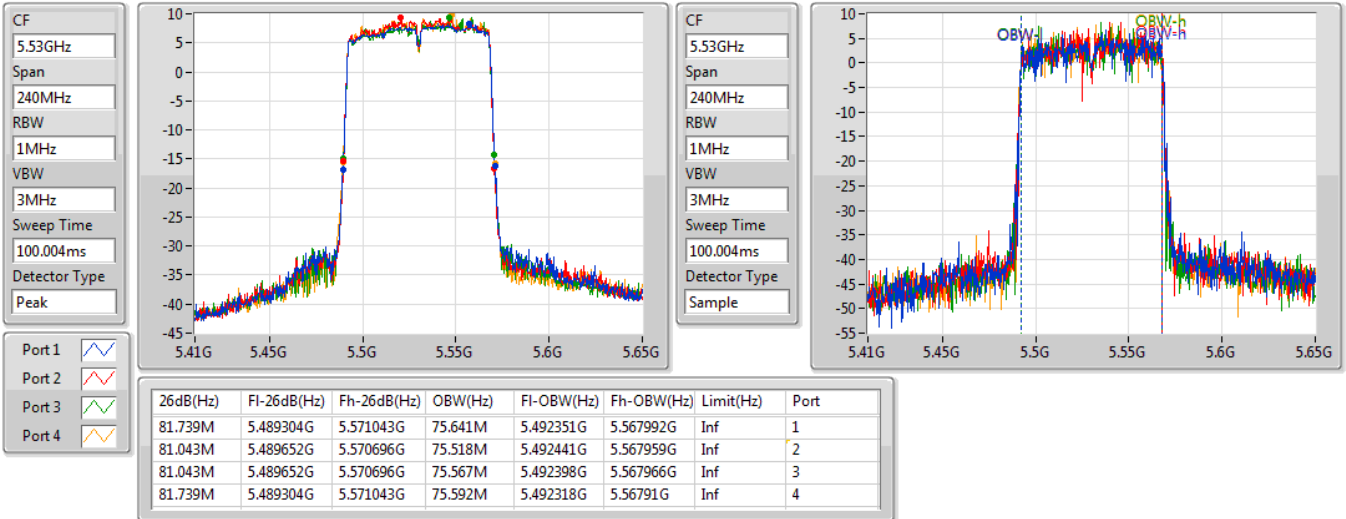

802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5290MHz

03/09/2019

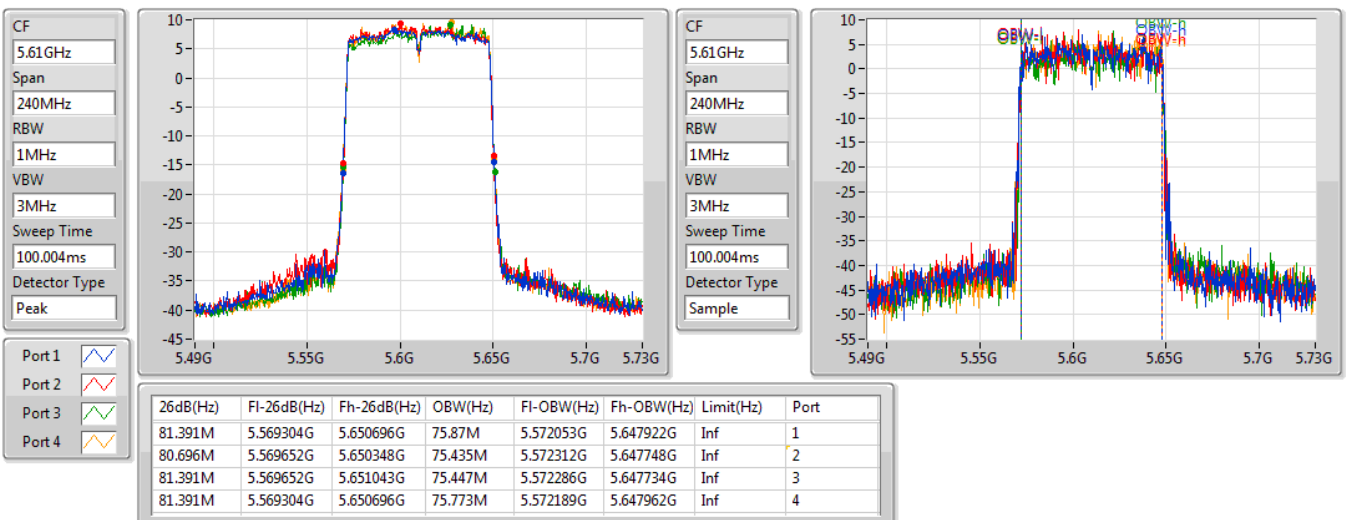


802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5530MHz

04/09/2019

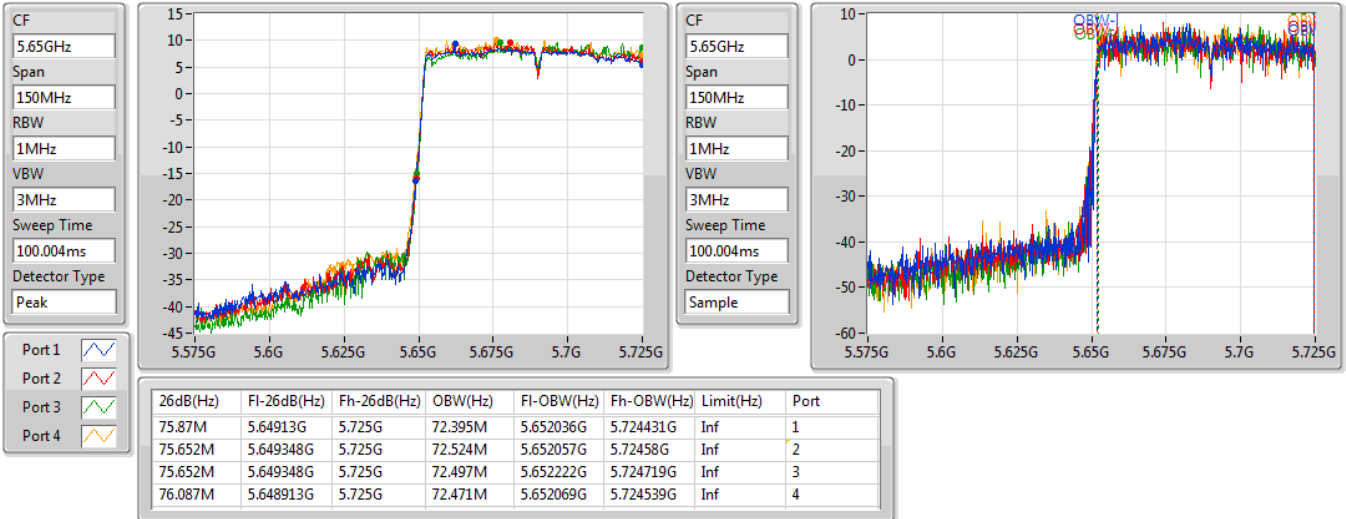

802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5610MHz

04/09/2019

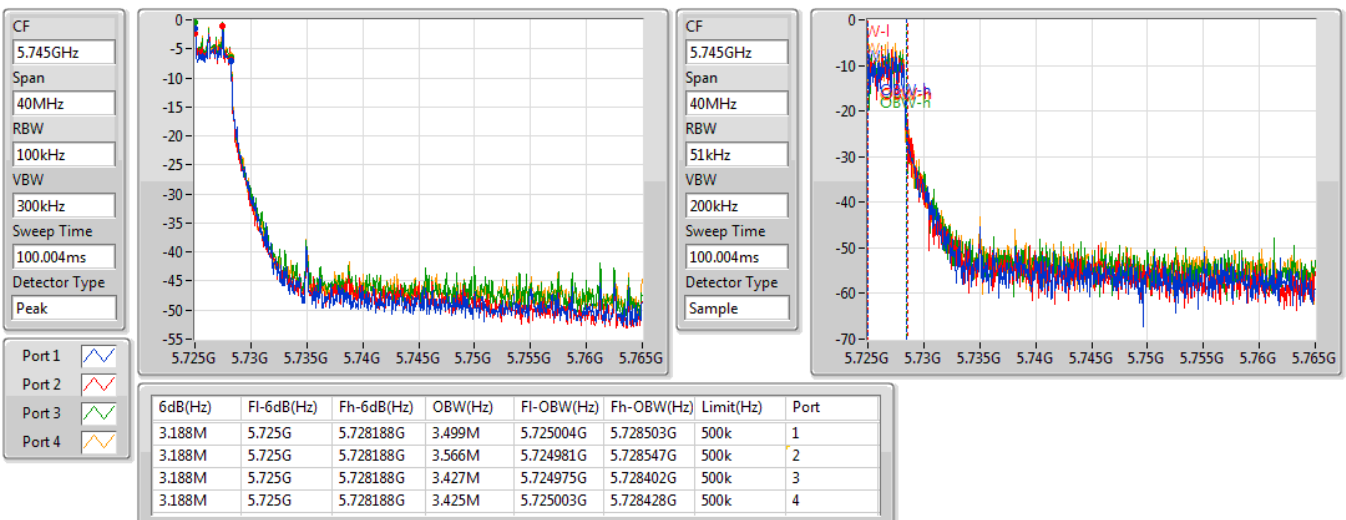


802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.47-5.725GHz

04/09/2019

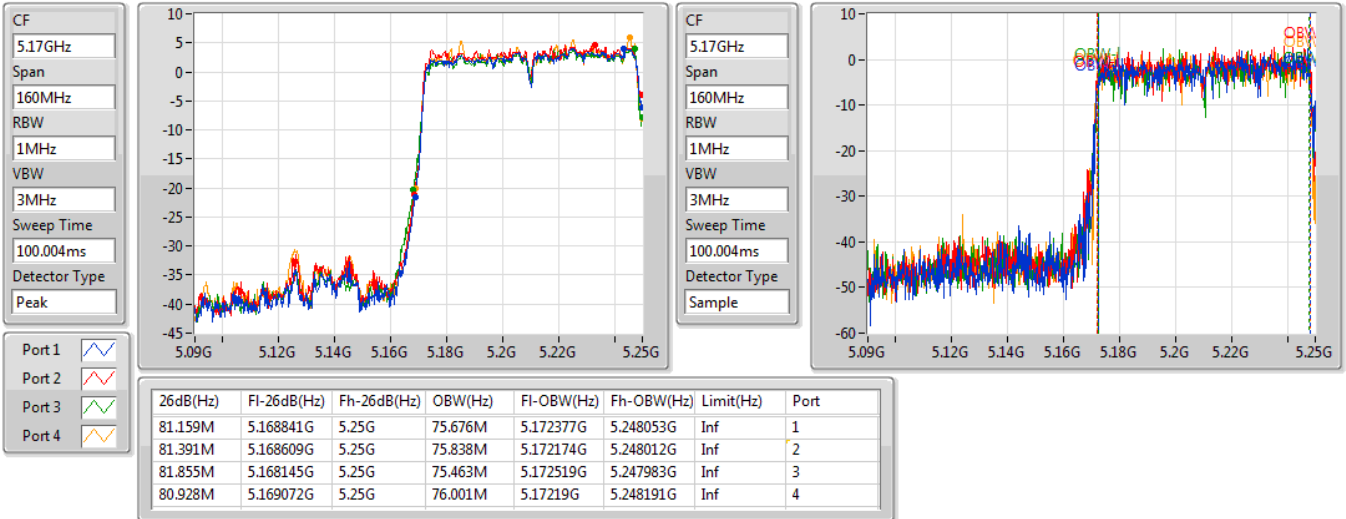

802.11ac VHT80-BF_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

04/09/2019

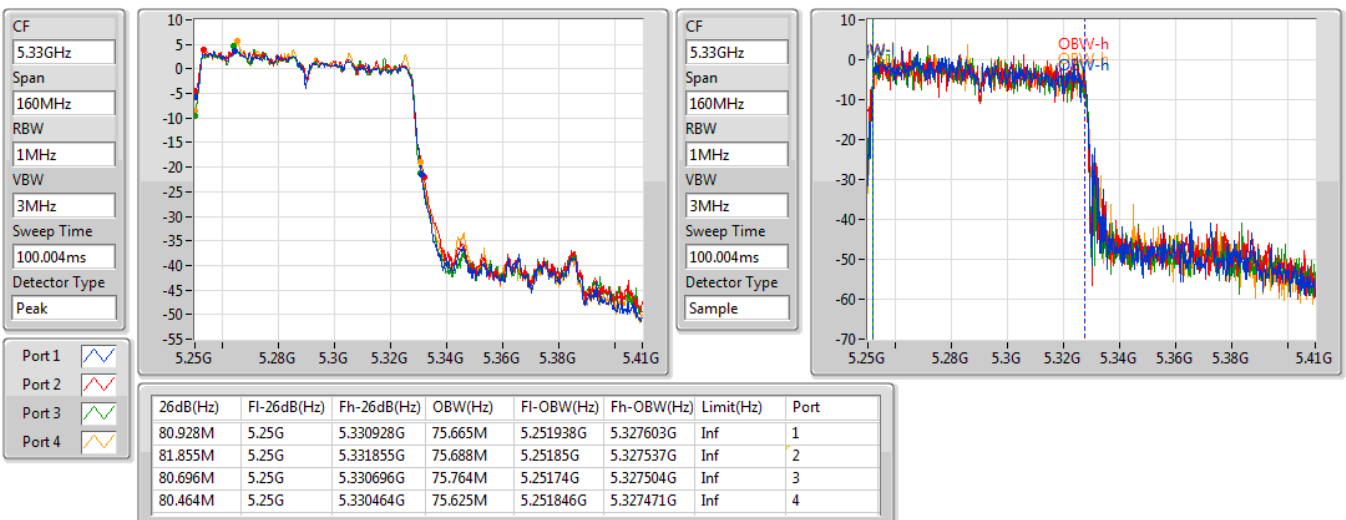


802.11ac VHT160-BF_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

03/09/2019

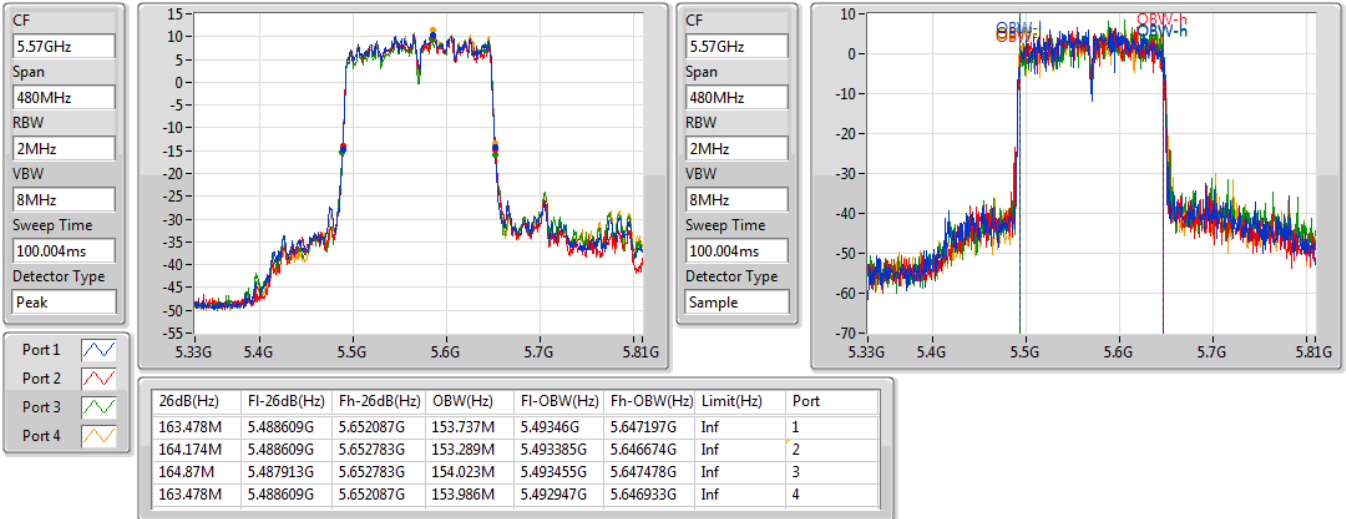

802.11ac VHT160-BF_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

03/09/2019

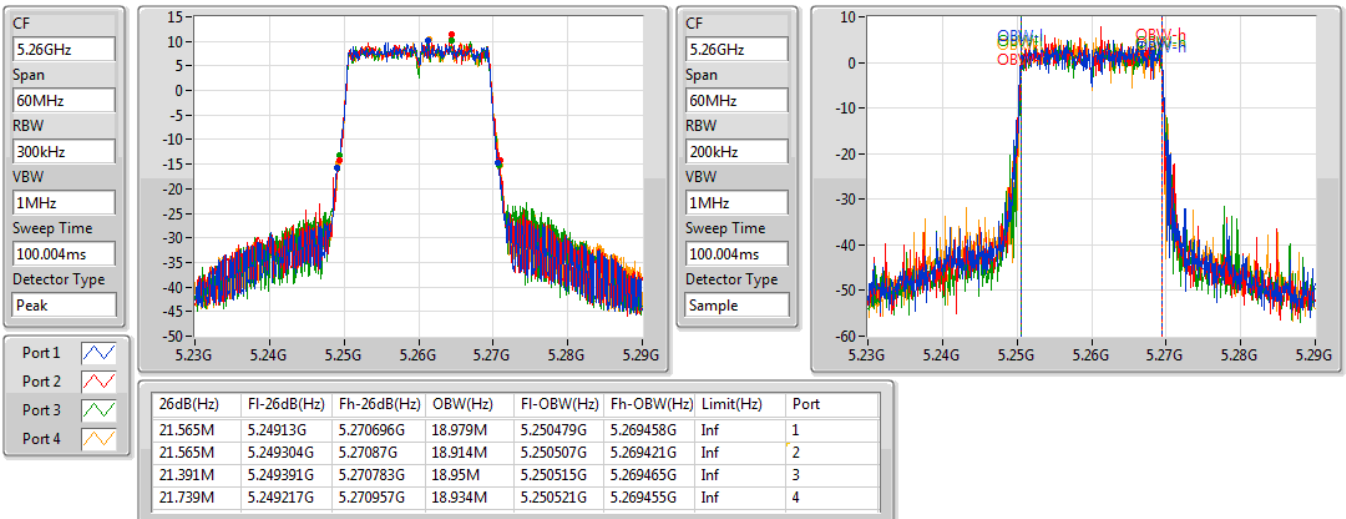


802.11ac VHT160-BF_Nss1,(MCS0)_4TX
EBW
5570MHz

04/09/2019

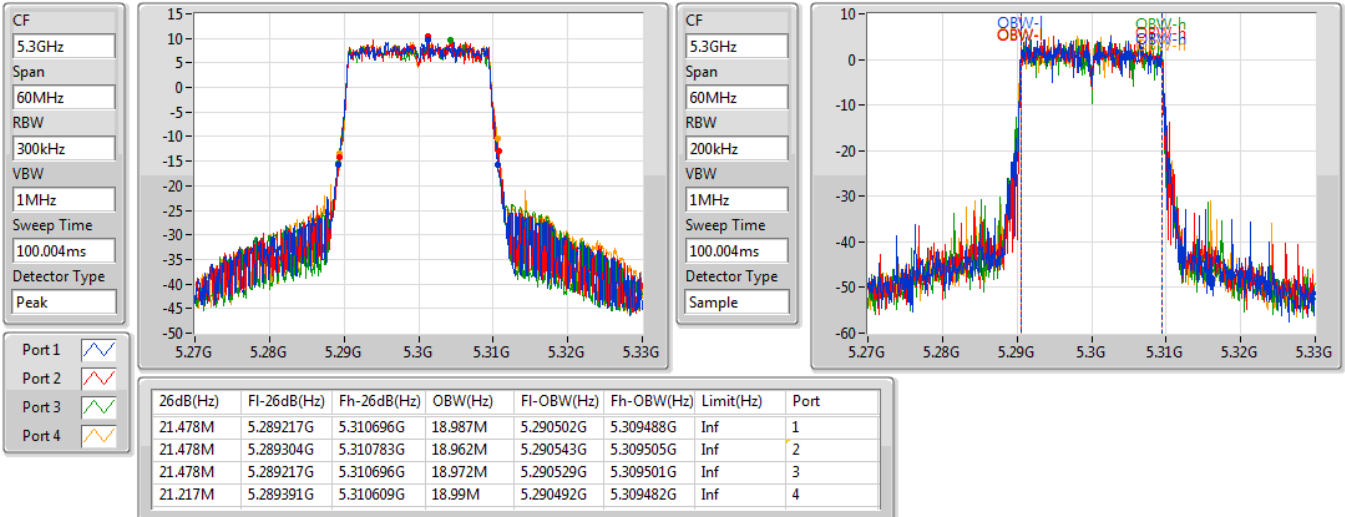

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5260MHz

03/09/2019

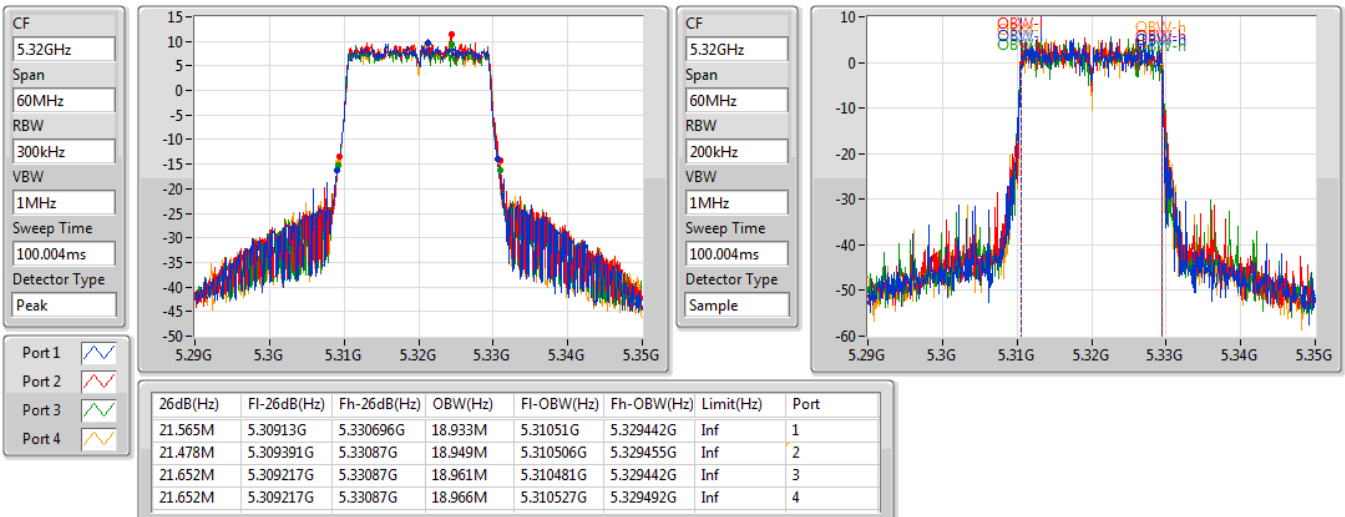


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5300MHz

03/09/2019

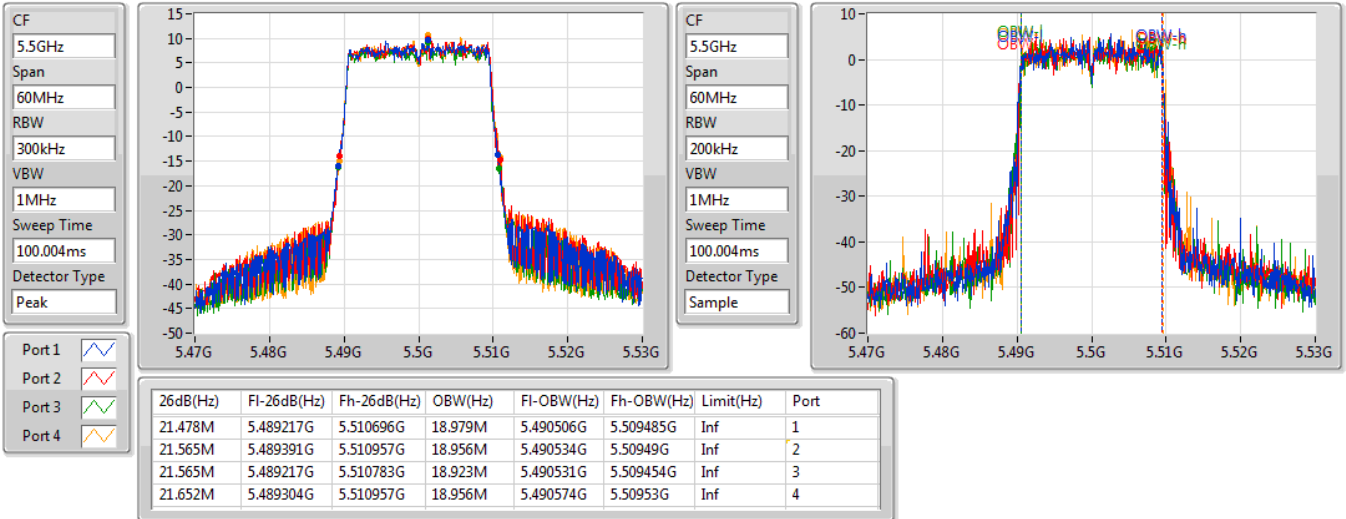

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5320MHz

03/09/2019

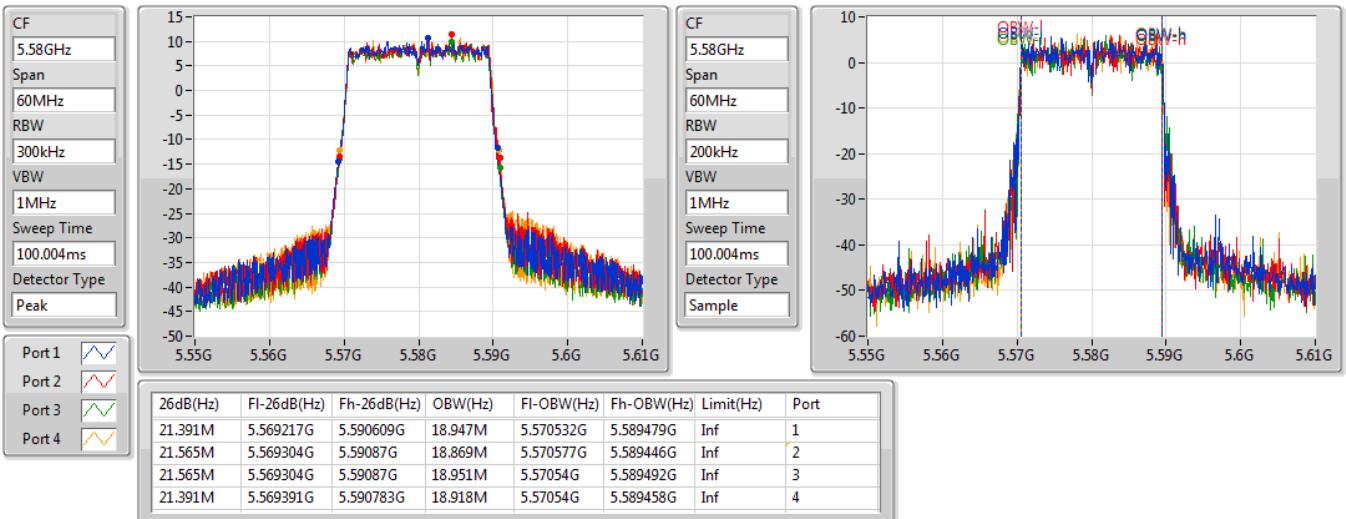


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5500MHz

04/09/2019

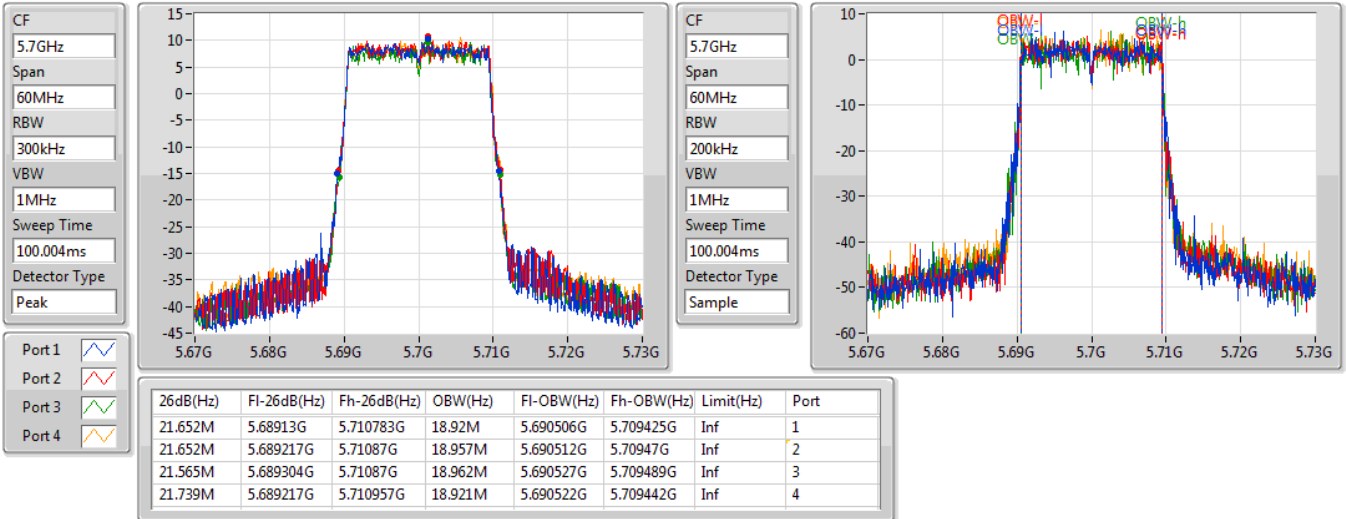

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5580MHz

04/09/2019

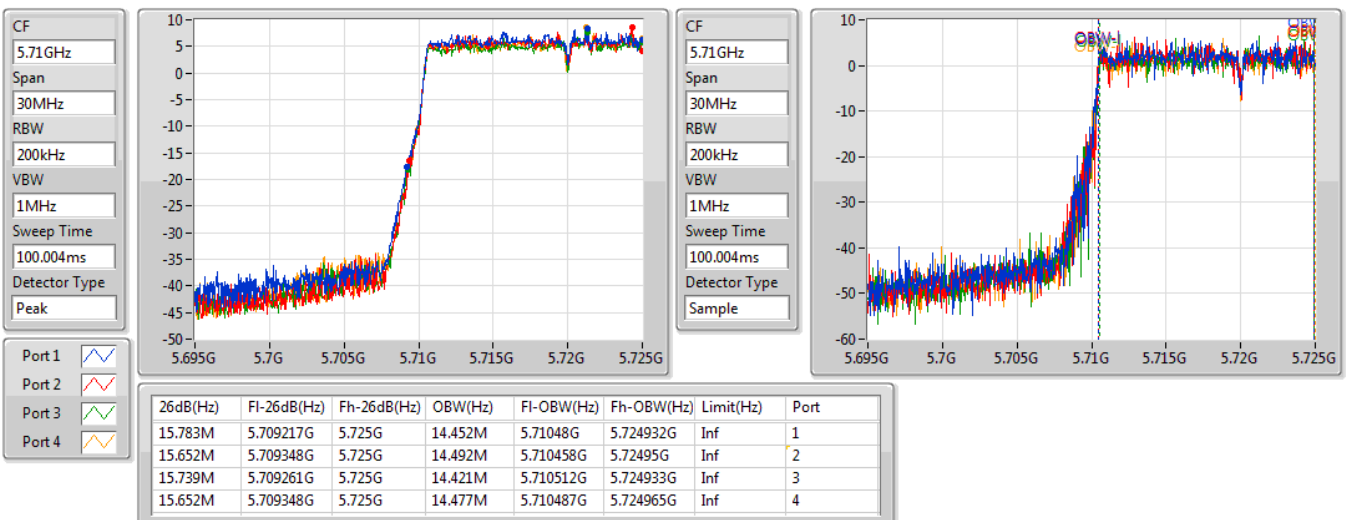


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5700MHz

04/09/2019

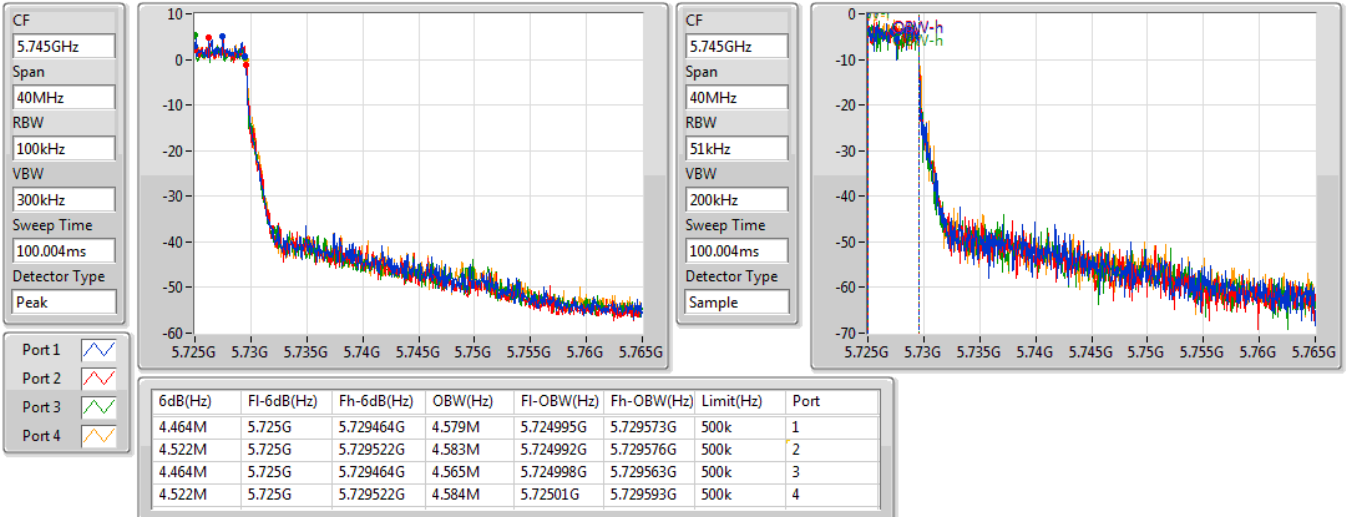

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.47-5.725GHz

04/09/2019

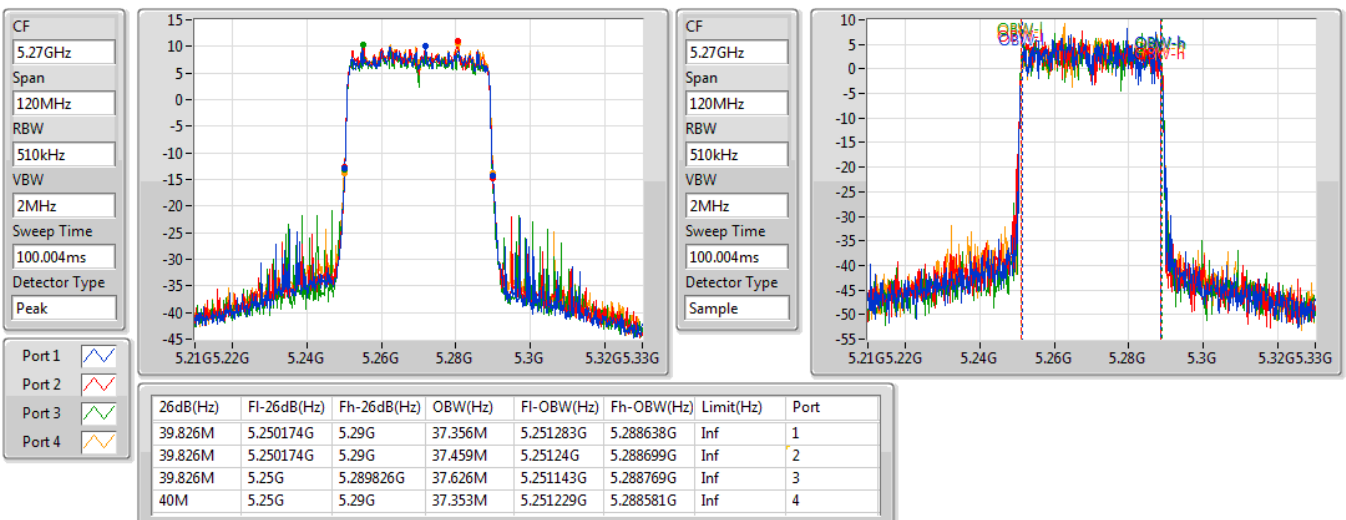


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5720MHz Straddle 5.725-5.85GHz

04/09/2019

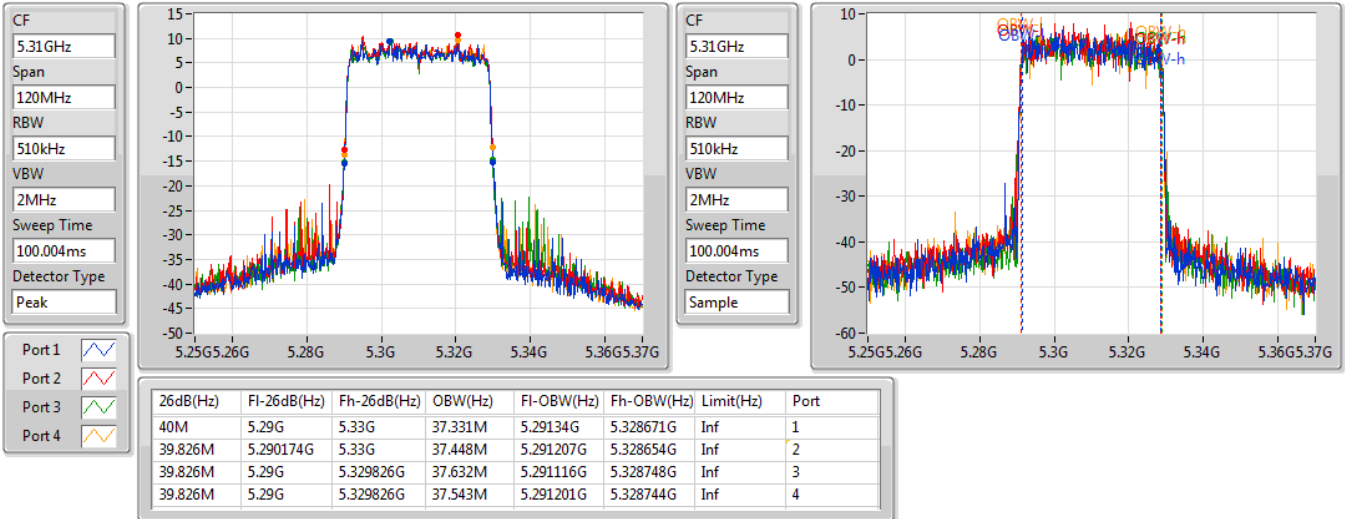

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5270MHz

03/09/2019

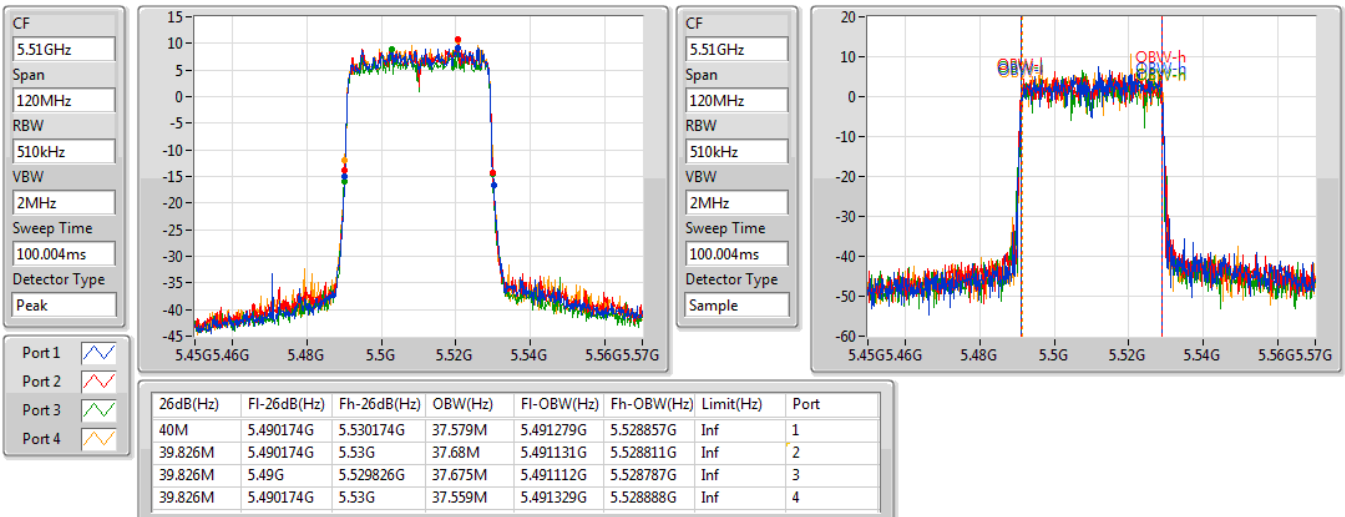


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5310MHz

03/09/2019

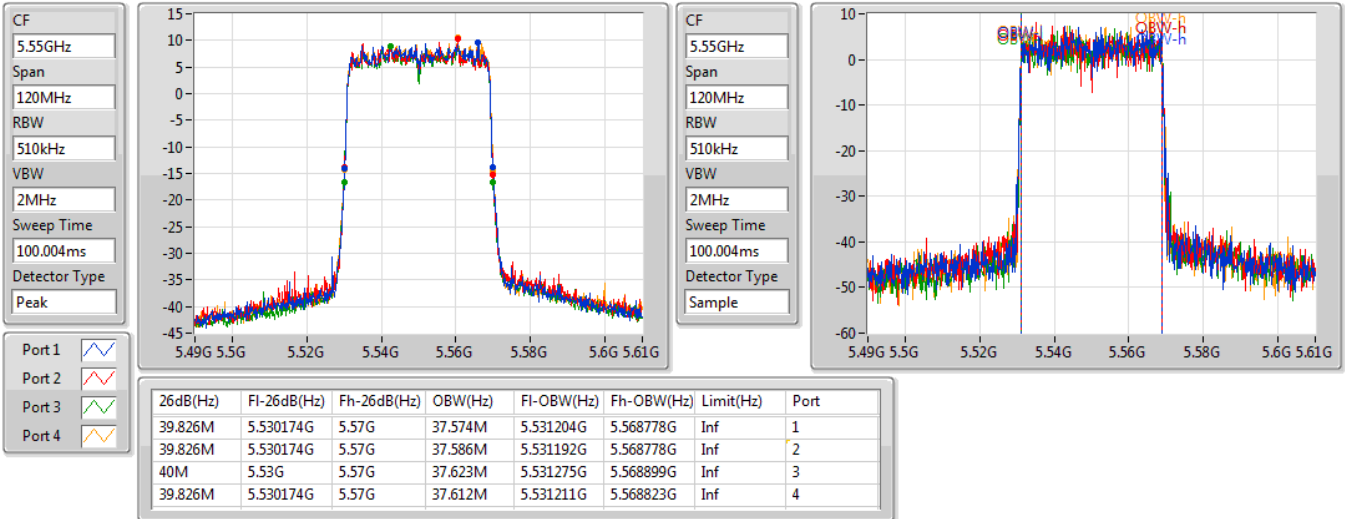

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5510MHz

04/09/2019

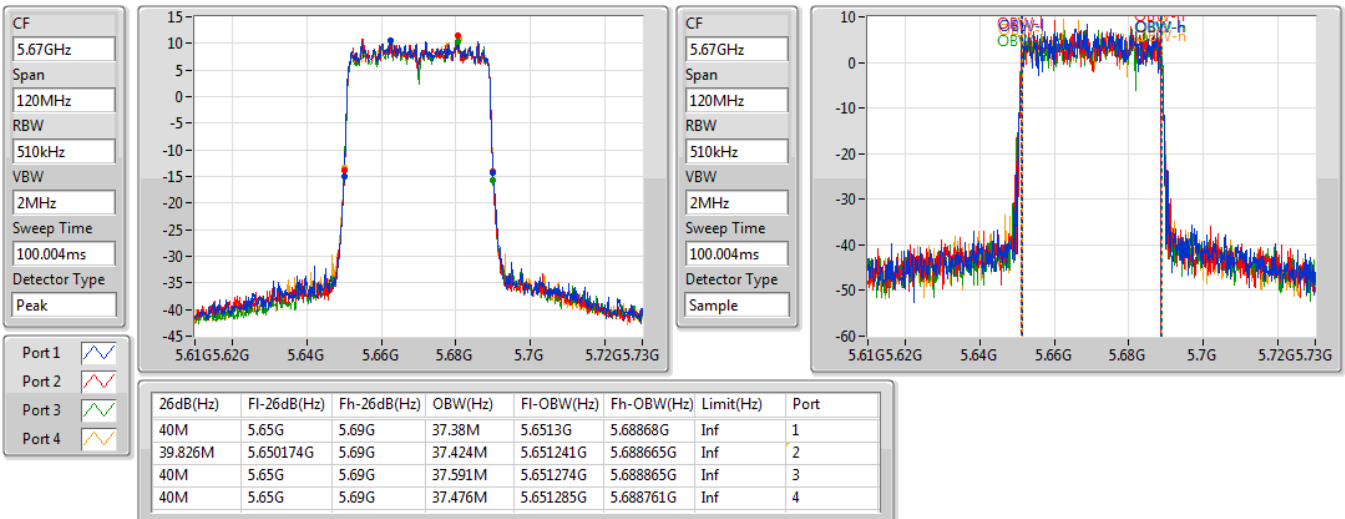


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5550MHz

04/09/2019

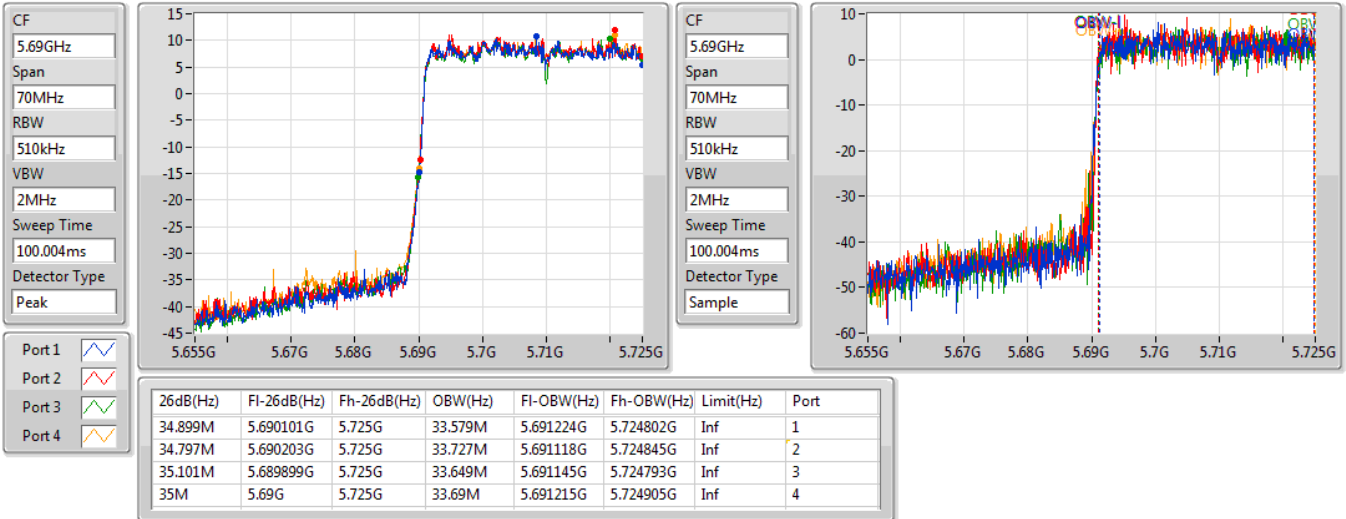

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5670MHz

04/09/2019

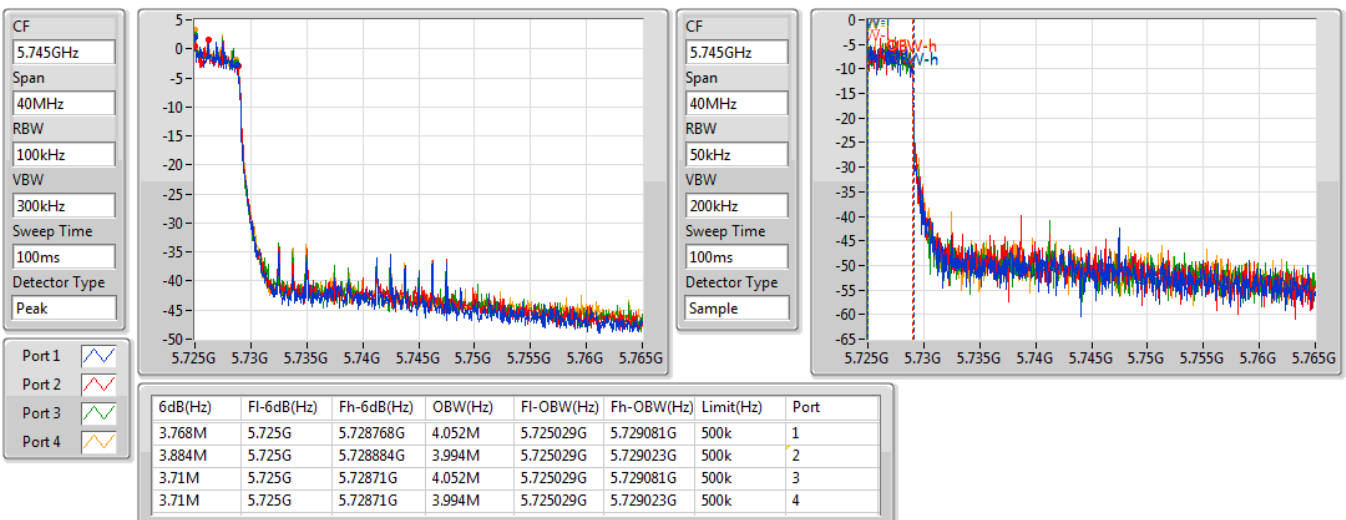


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.47-5.725GHz

04/09/2019

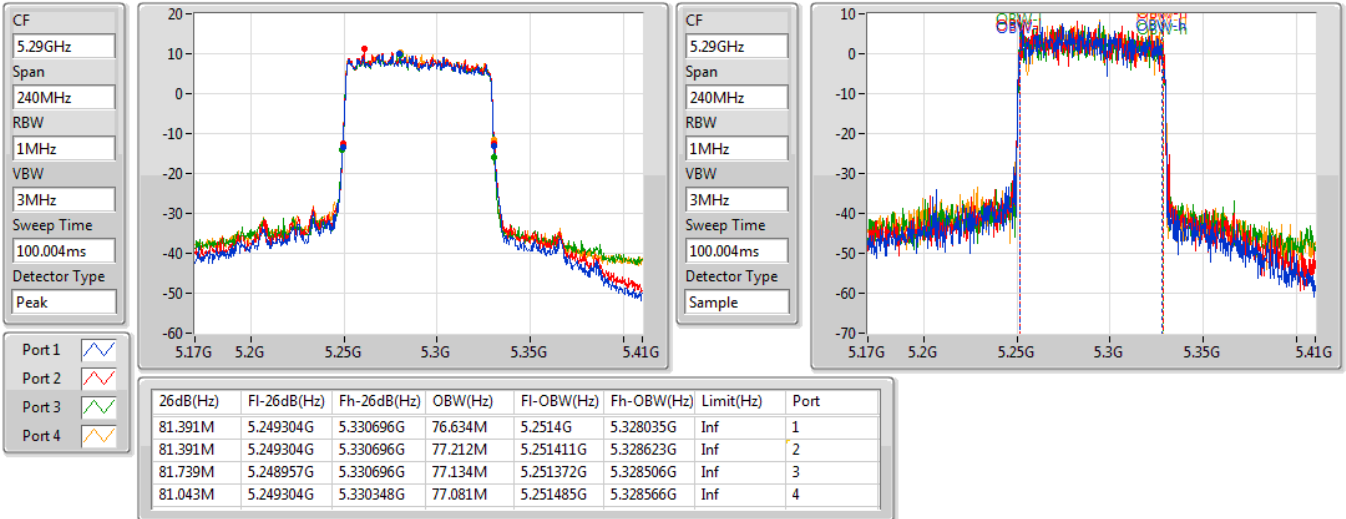

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5710MHz Straddle 5.725-5.85GHz

04/09/2019

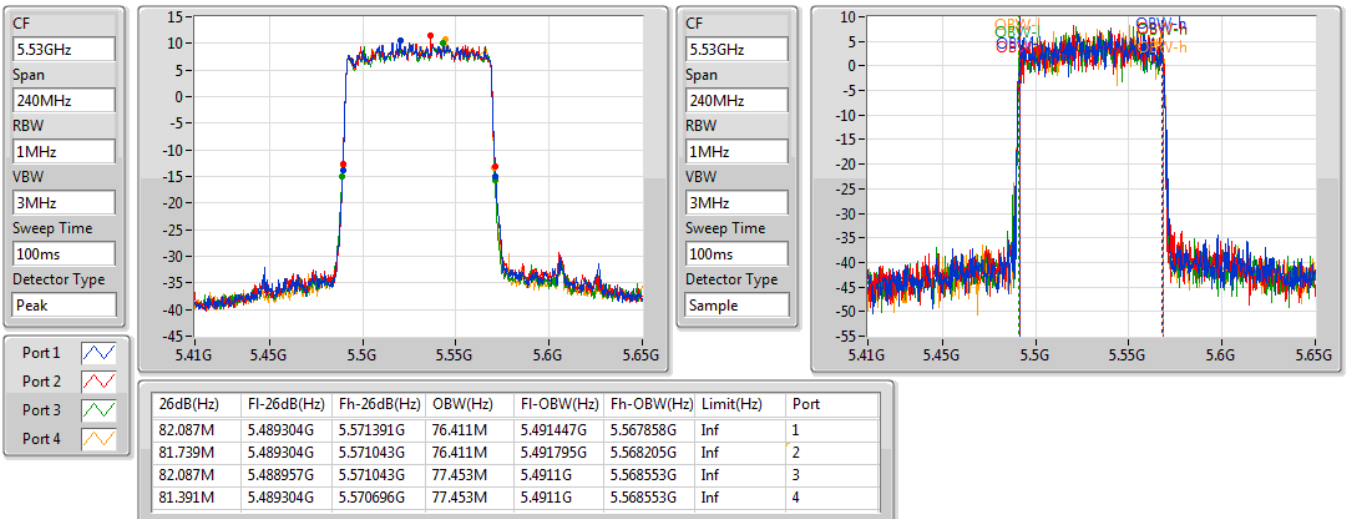


802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5290MHz

03/09/2019

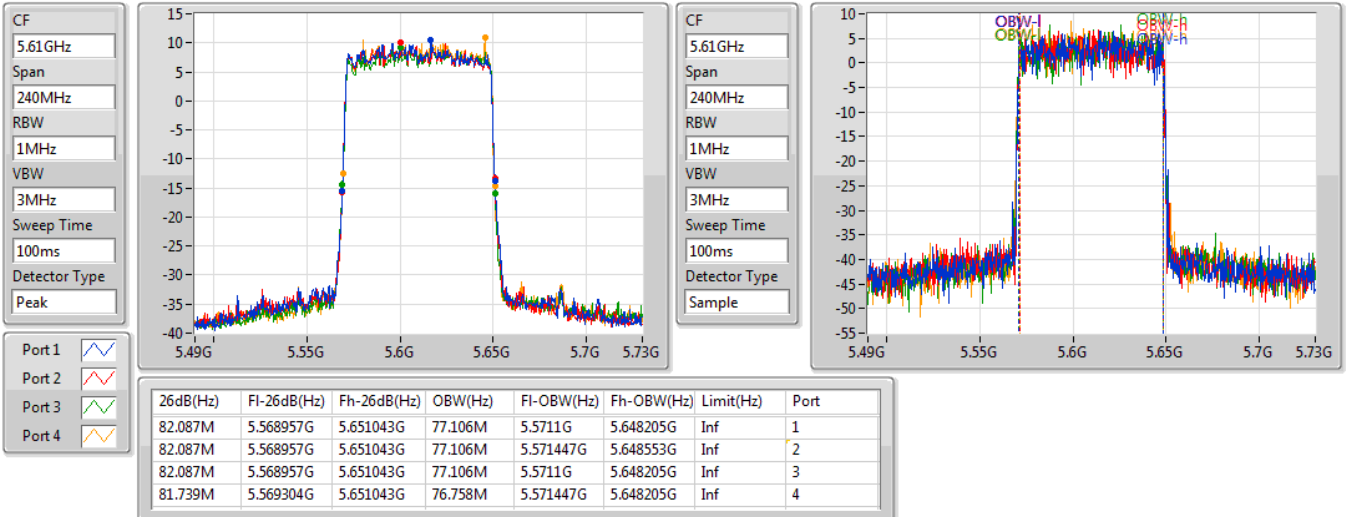

802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5530MHz

04/09/2019

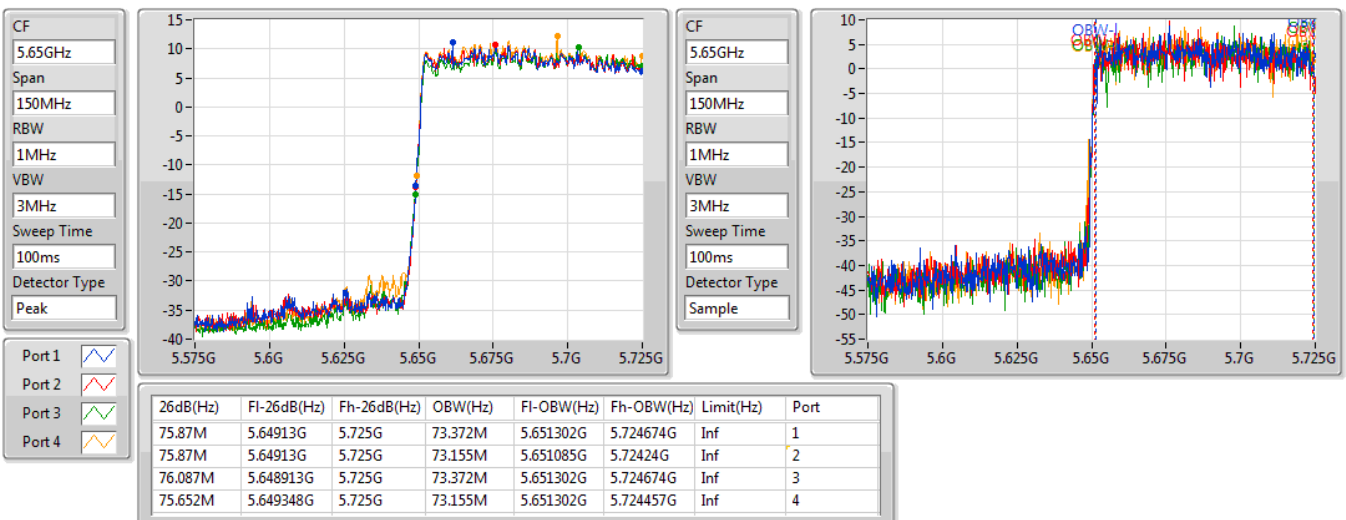


802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5610MHz

04/09/2019

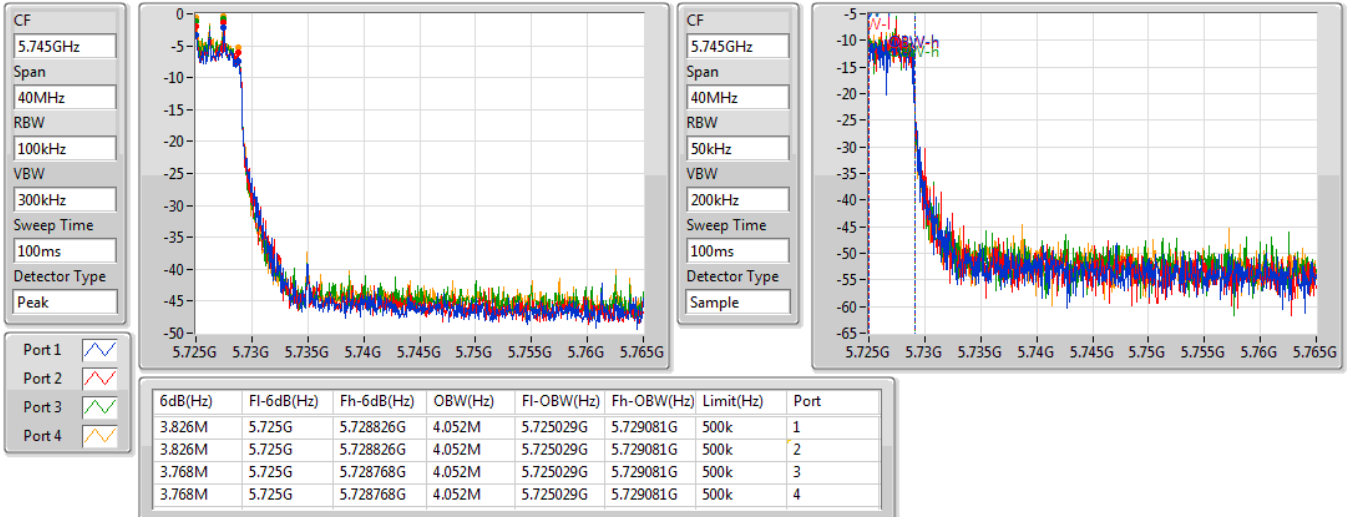

802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.47-5.725GHz

04/09/2019

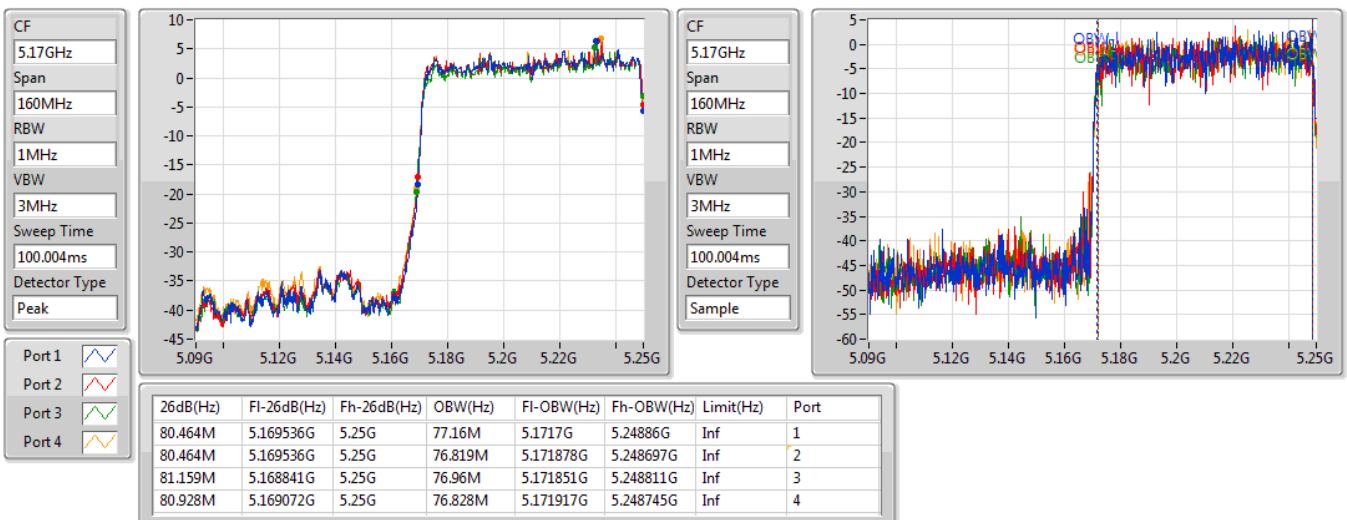


802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5690MHz Straddle 5.725-5.85GHz

04/09/2019

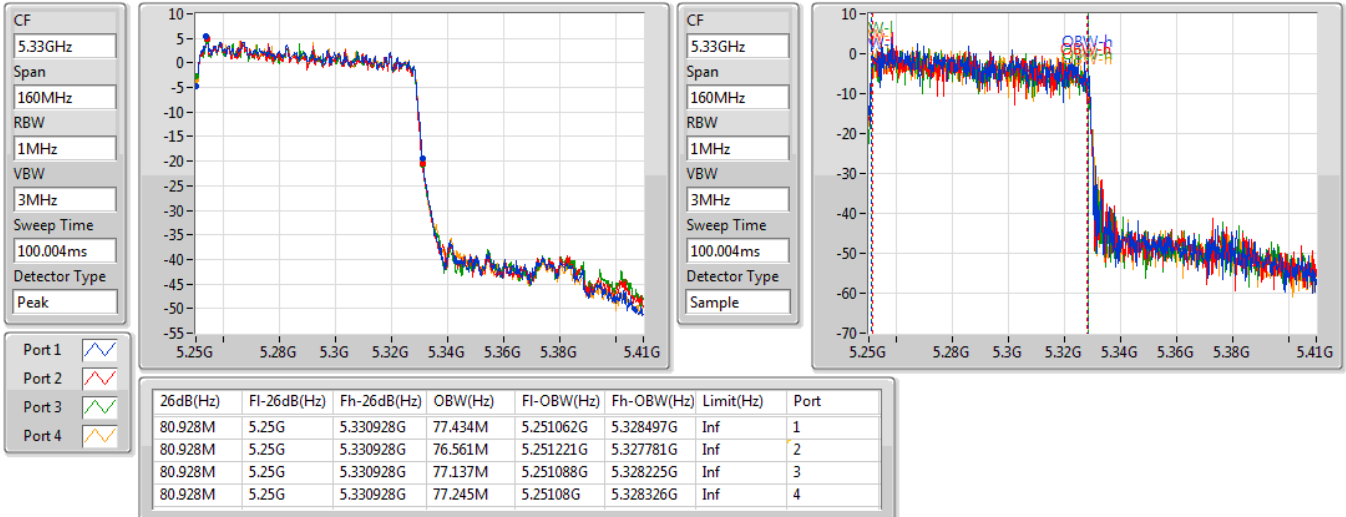

802.11ax HEW160-BF_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

03/09/2019

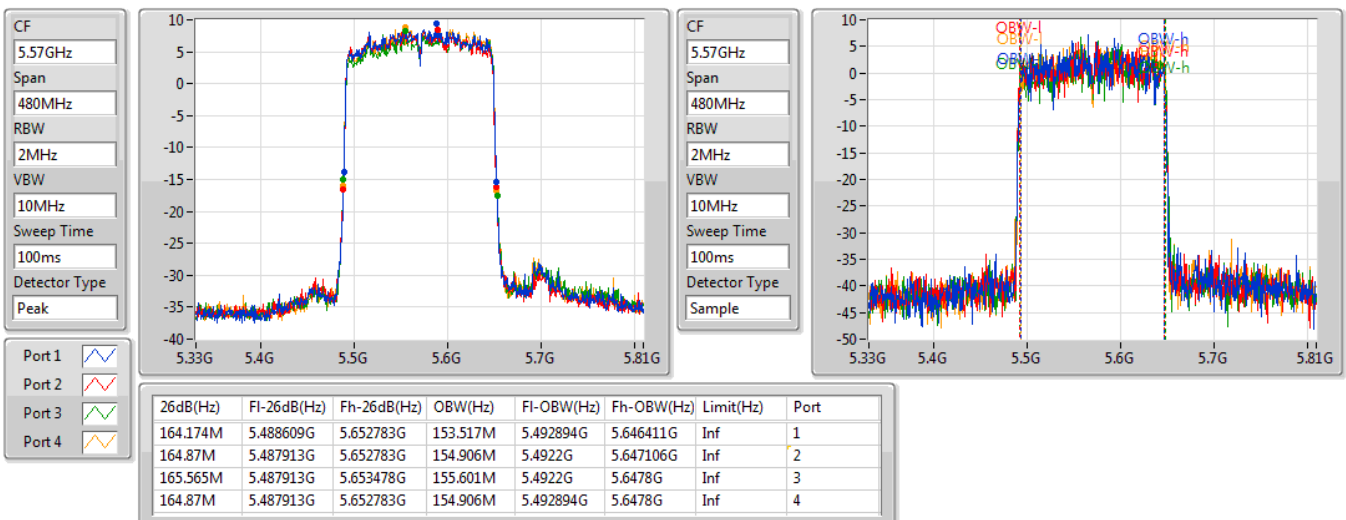


802.11ax HEW160-BF_Nss1,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

03/09/2019


802.11ax HEW160-BF_Nss1,(MCS0)_4TX
EBW
5570MHz

04/09/2019



**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	82.783M	75.85M	75M8D1D	80.928M	75.605M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	81.391M	77.16M	77M2D1D	80.696M	76.746M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	81.159M	75.739M	75M7D1D	80.464M	75.618M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	81.159M	77.001M	77M0D1D	80.232M	76.617M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	82.087M	75.868M	75M9D1D	81.043M	75.595M
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	164.174M	154.232M	154MD1D	162.783M	152.982M
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	81.739M	76.961M	77M0D1D	80.696M	76.606M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	164.87M	155.055M	155MD1D	162.783M	154.22M

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

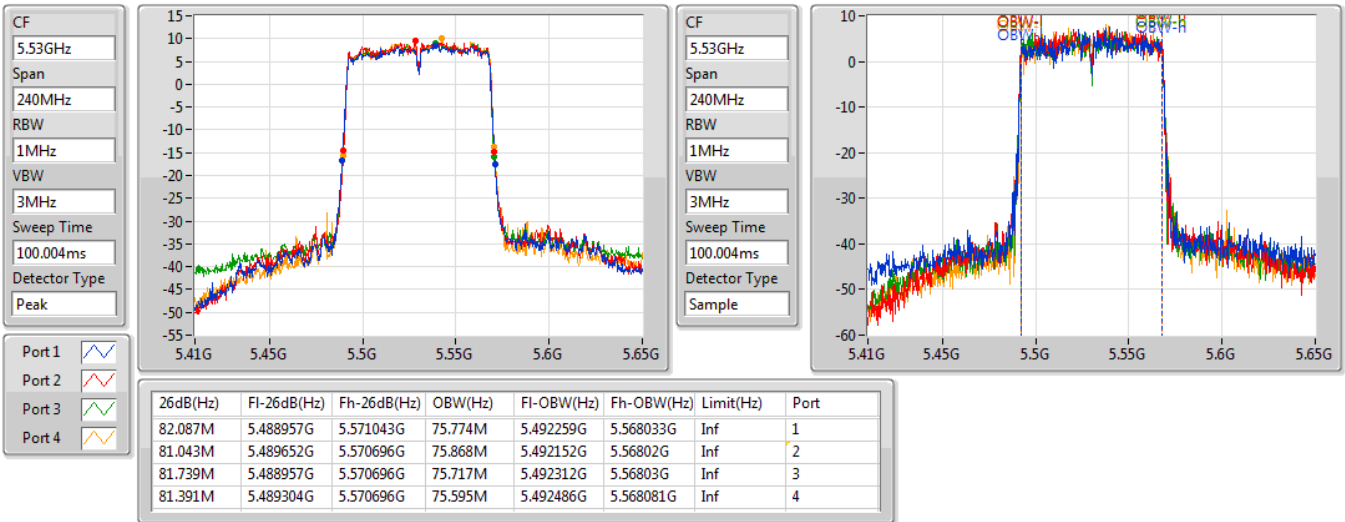
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	82.087M	75.774M	81.043M	75.868M	81.739M	75.717M	81.391M	75.595M
802.11ac VHT160-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.783M	75.85M	81.391M	75.831M	81.623M	75.629M	80.928M	75.605M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.159M	75.675M	80.696M	75.739M	80.464M	75.618M	80.928M	75.703M
5570MHz	Pass	Inf	164.174M	154.232M	162.783M	152.982M	163.478M	153.962M	164.174M	153.949M
802.11ax HEW80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.043M	76.606M	81.391M	76.961M	80.696M	76.67M	81.739M	76.942M
802.11ax HEW160-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.928M	76.746M	81.391M	77.16M	80.696M	76.769M	81.391M	77.017M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.464M	76.617M	80.232M	77.001M	80.232M	76.892M	81.159M	76.91M
5570MHz	Pass	Inf	164.174M	154.305M	162.783M	154.22M	163.478M	155.055M	164.87M	154.895M

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

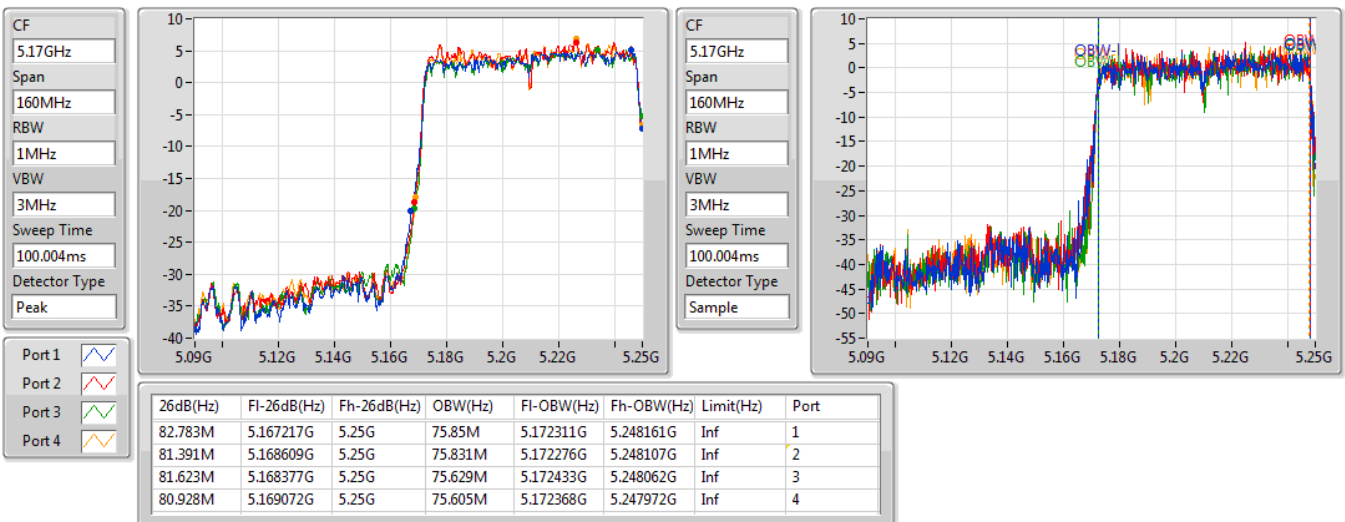
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80-BF_Nss2,(MCS0)_4TX
EBW
5530MHz

04/09/2019

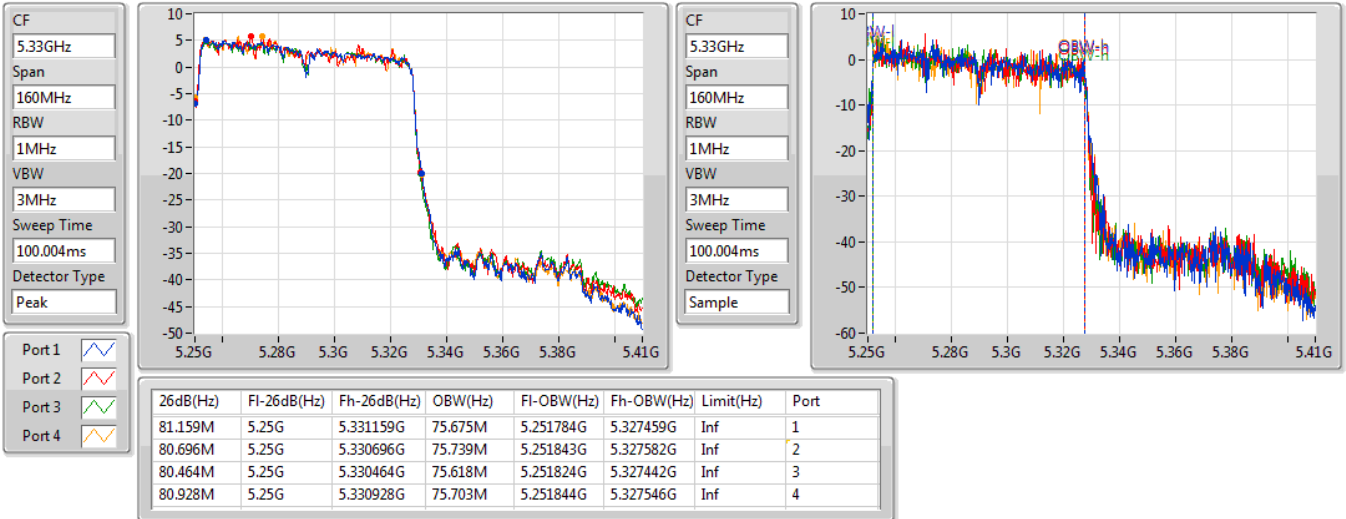

802.11ac VHT160-BF_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

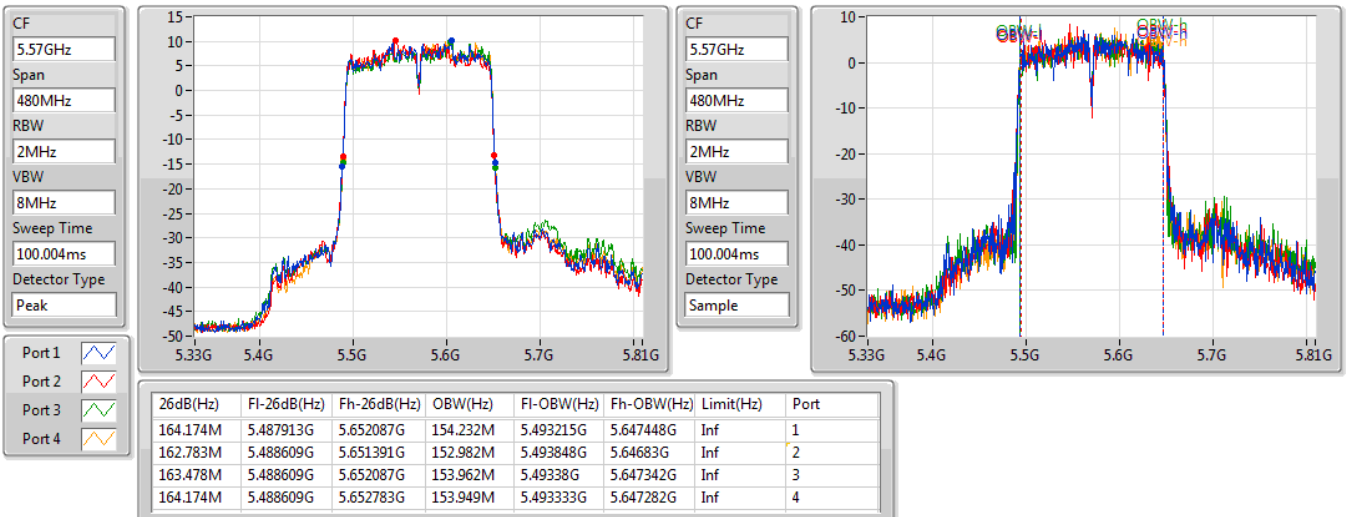


802.11ac VHT160-BF_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019

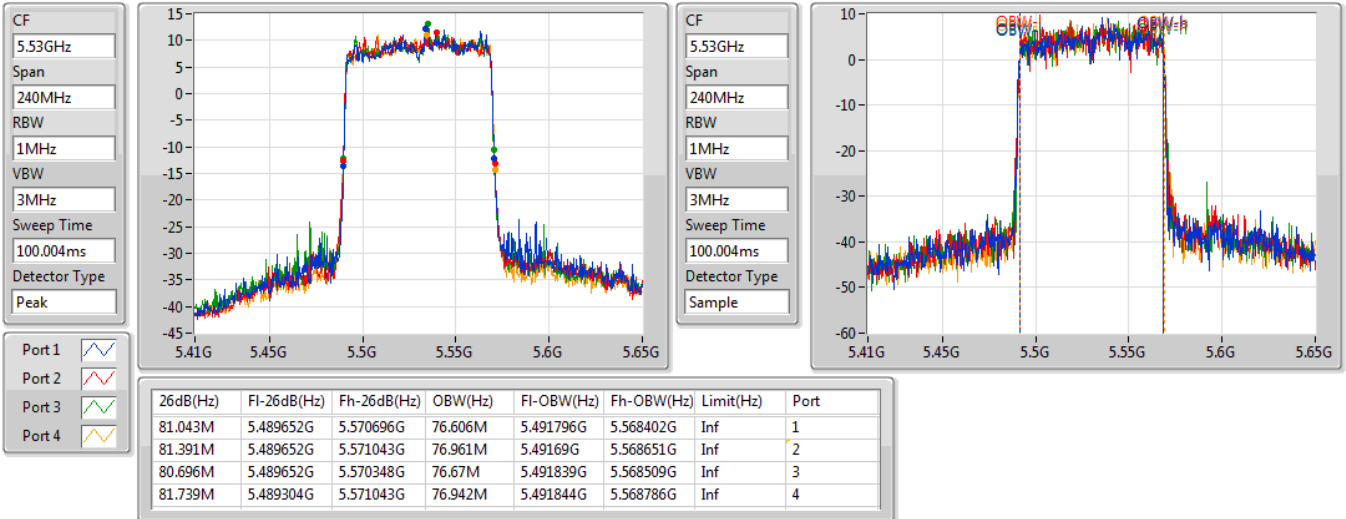

802.11ac VHT160-BF_Nss2,(MCS0)_4TX
EBW
5570MHz

04/09/2019

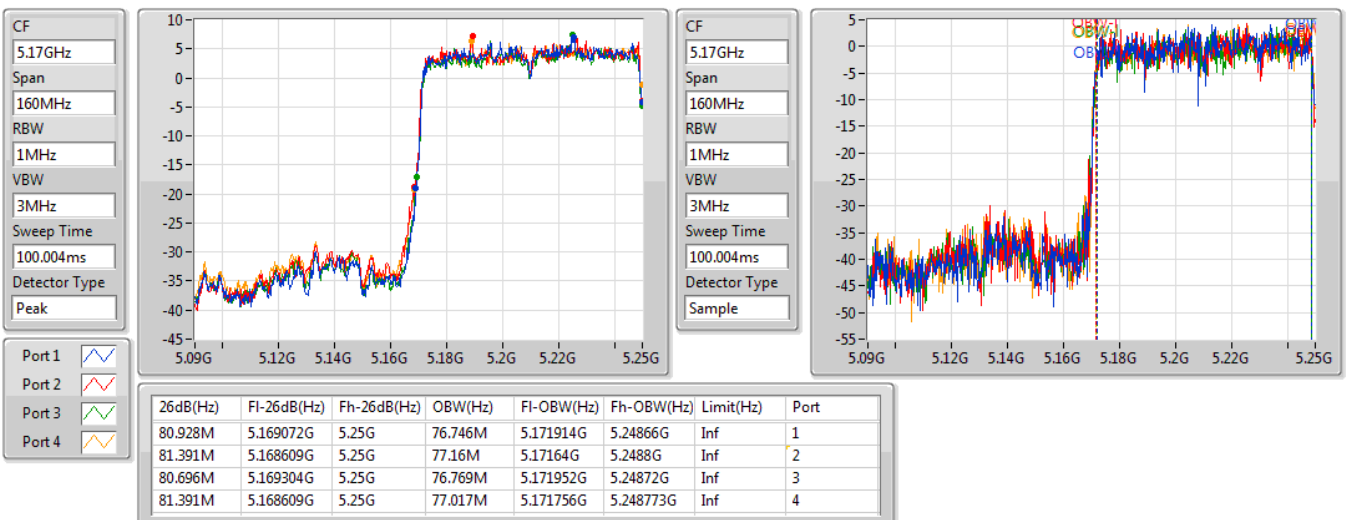


802.11ax HEW80-BF_Nss2,(MCS0)_4TX
EBW
5530MHz

04/09/2019

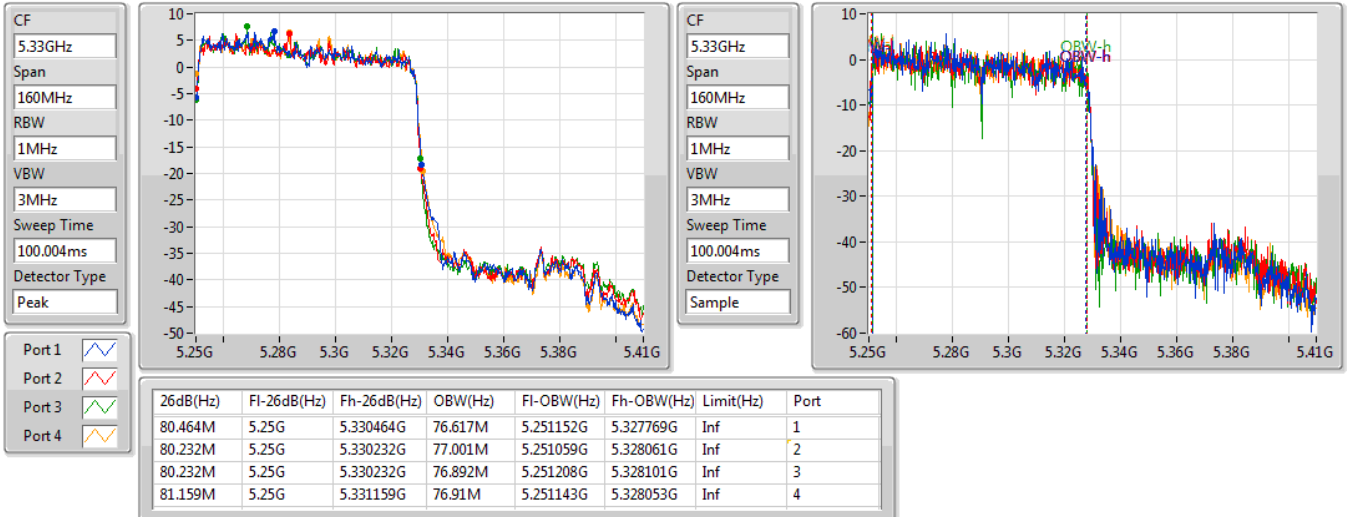

802.11ax HEW160-BF_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

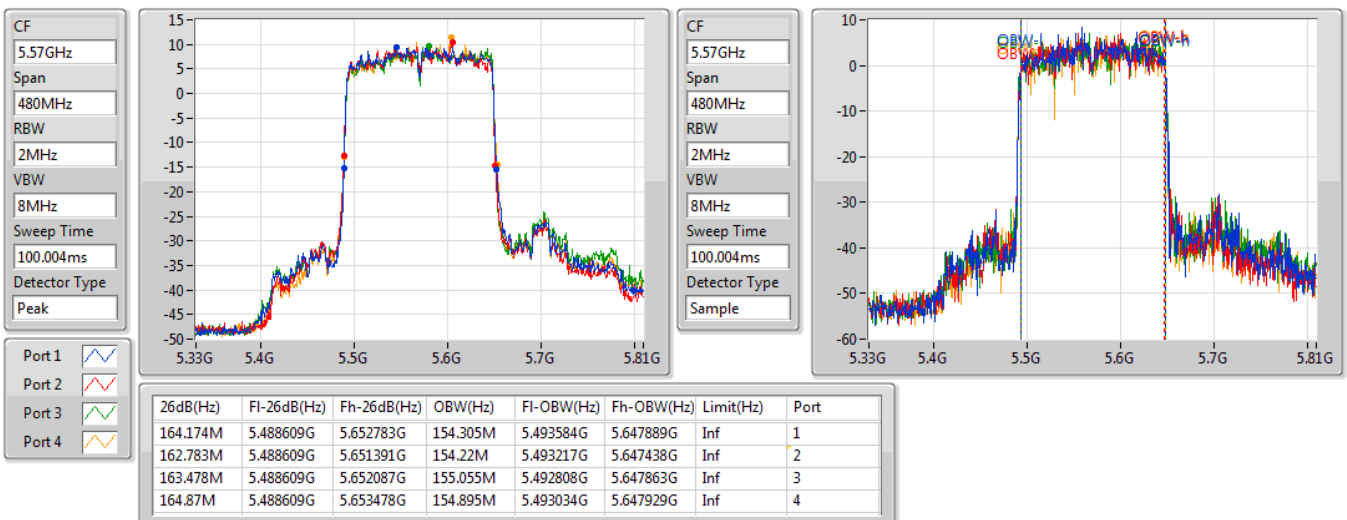


802.11ax HEW160-BF_Nss2,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019


802.11ax HEW160-BF_Nss2,(MCS0)_4TX
EBW
5570MHz

04/09/2019



**4T3S
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_Nss3,(MCS0)_4TX	81.391M	75.896M	75M9D1D	80.696M	75.283M
802.11ax HEW160-BF_Nss3,(MCS0)_4TX	81.159M	77.076M	77M1D1D	80.696M	76.851M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT160-BF_Nss3,(MCS0)_4TX	80.928M	75.814M	75M8D1D	80.232M	75.421M
802.11ax HEW160-BF_Nss3,(MCS0)_4TX	80.928M	77.067M	77M1D1D	80.464M	76.694M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT80-BF_Nss3,(MCS0)_4TX	81.391M	75.923M	75M9D1D	80.696M	75.547M
802.11ac VHT160-BF_Nss3,(MCS0)_4TX	164.87M	154.222M	154MD1D	163.478M	153.622M
802.11ax HEW80-BF_Nss3,(MCS0)_4TX	81.739M	76.943M	76M9D1D	81.043M	76.378M
802.11ax HEW160-BF_Nss3,(MCS0)_4TX	164.174M	155.595M	156MD1D	163.478M	154.439M

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

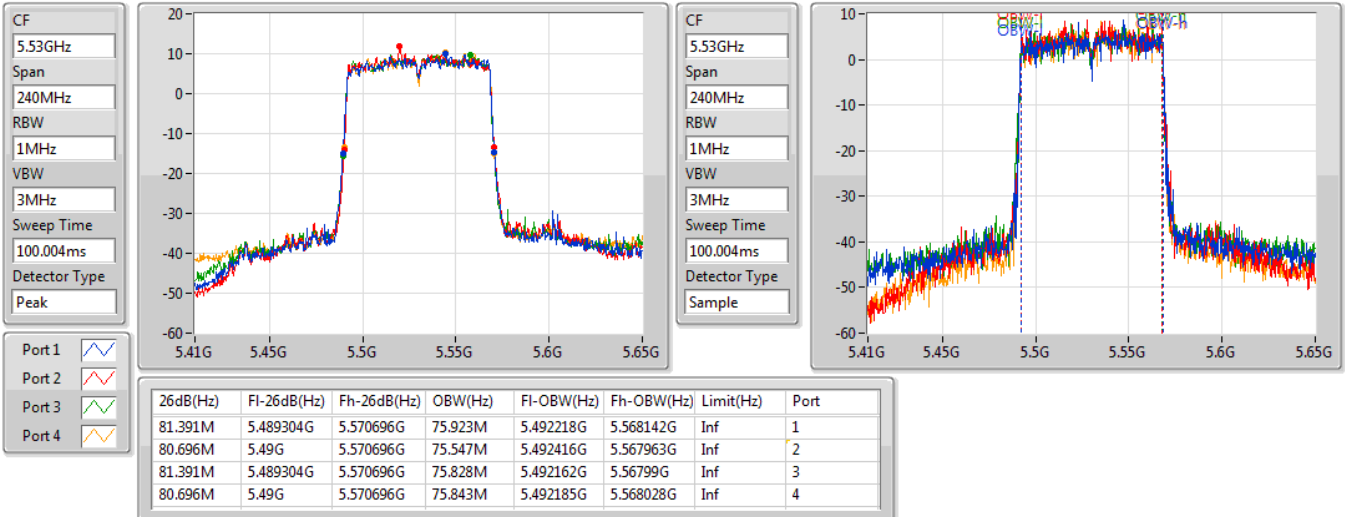
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT80-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.391M	75.923M	80.696M	75.547M	81.391M	75.828M	80.696M	75.843M
802.11ac VHT160-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.696M	75.665M	81.159M	75.896M	81.391M	75.65M	81.159M	75.283M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.928M	75.421M	80.232M	75.814M	80.928M	75.576M	80.928M	75.49M
5570MHz	Pass	Inf	163.478M	153.941M	163.478M	153.622M	164.87M	154.222M	164.174M	153.87M
802.11ax HEW80-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5530MHz	Pass	Inf	81.739M	76.378M	81.043M	76.943M	81.043M	76.878M	81.043M	76.606M
802.11ax HEW160-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.696M	76.851M	81.159M	77.016M	80.928M	76.908M	80.928M	77.076M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	80.928M	76.764M	80.696M	76.704M	80.928M	76.694M	80.464M	77.067M
5570MHz	Pass	Inf	164.174M	155.246M	163.478M	154.439M	163.478M	155.595M	163.478M	154.745M

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

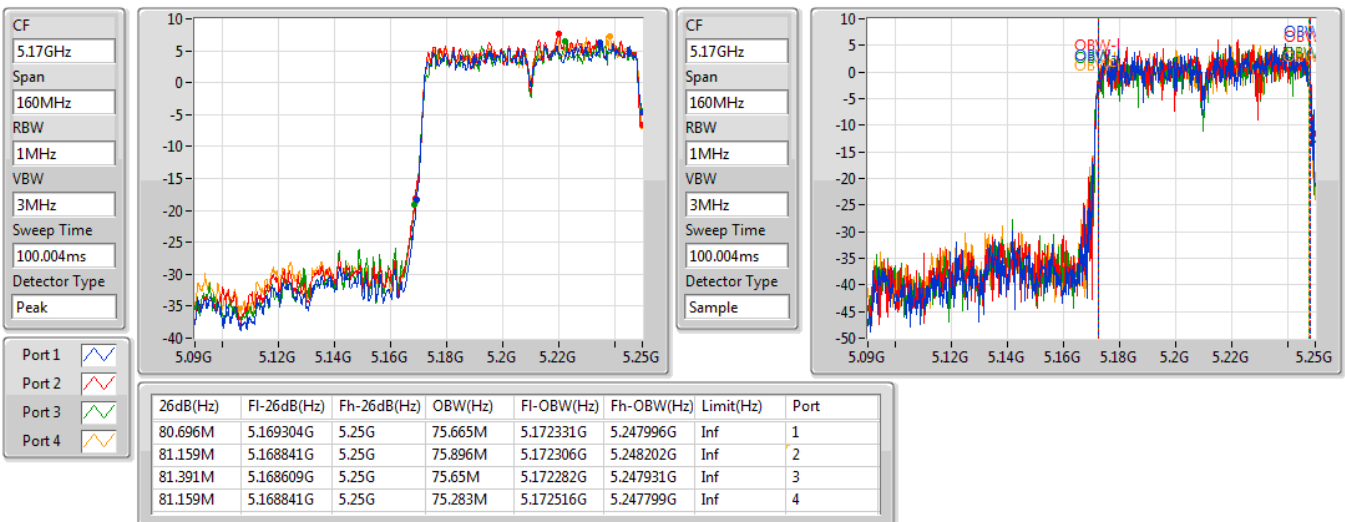
Port X-OBW = Port X 99% occupied bandwidth;

802.11ac VHT80-BF_Nss3,(MCS0)_4TX
EBW
5530MHz

04/09/2019

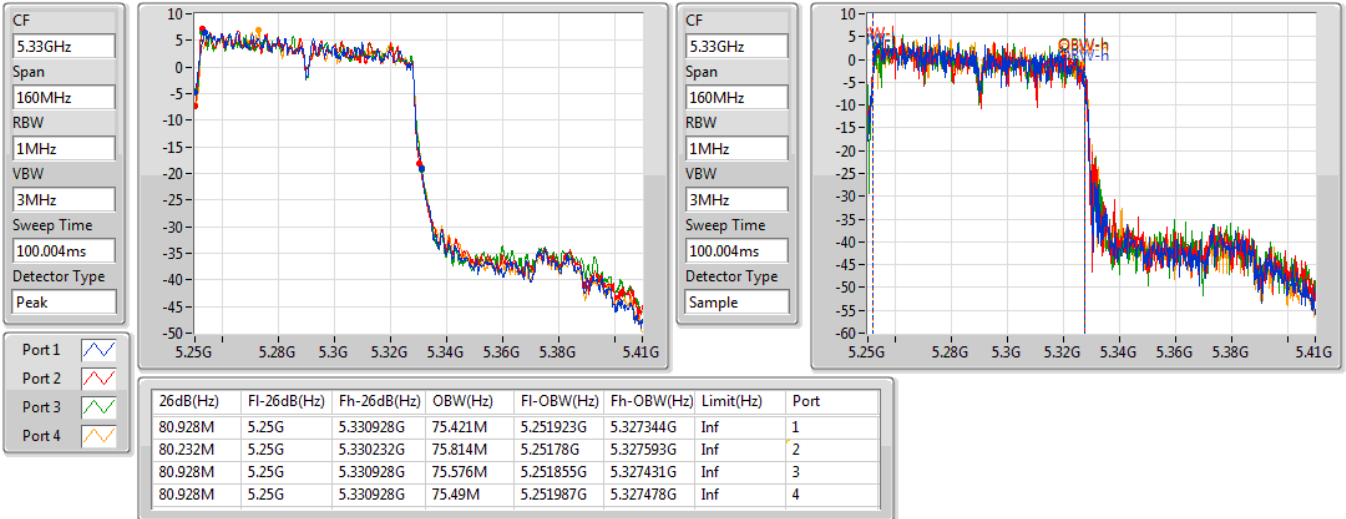

802.11ac VHT160-BF_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

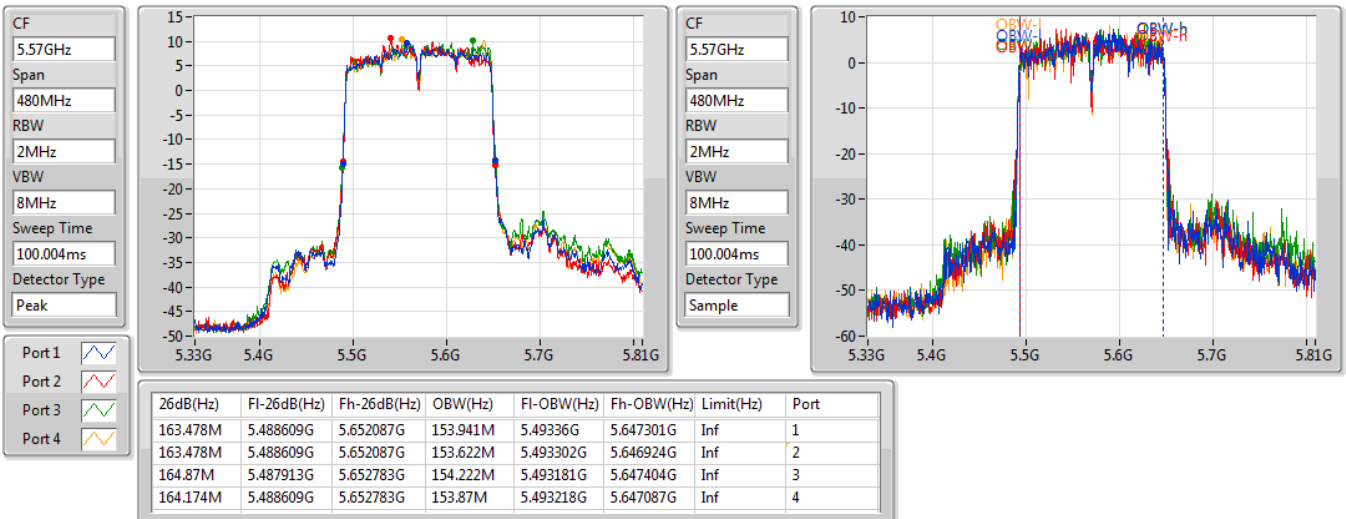


802.11ac VHT160-BF_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019

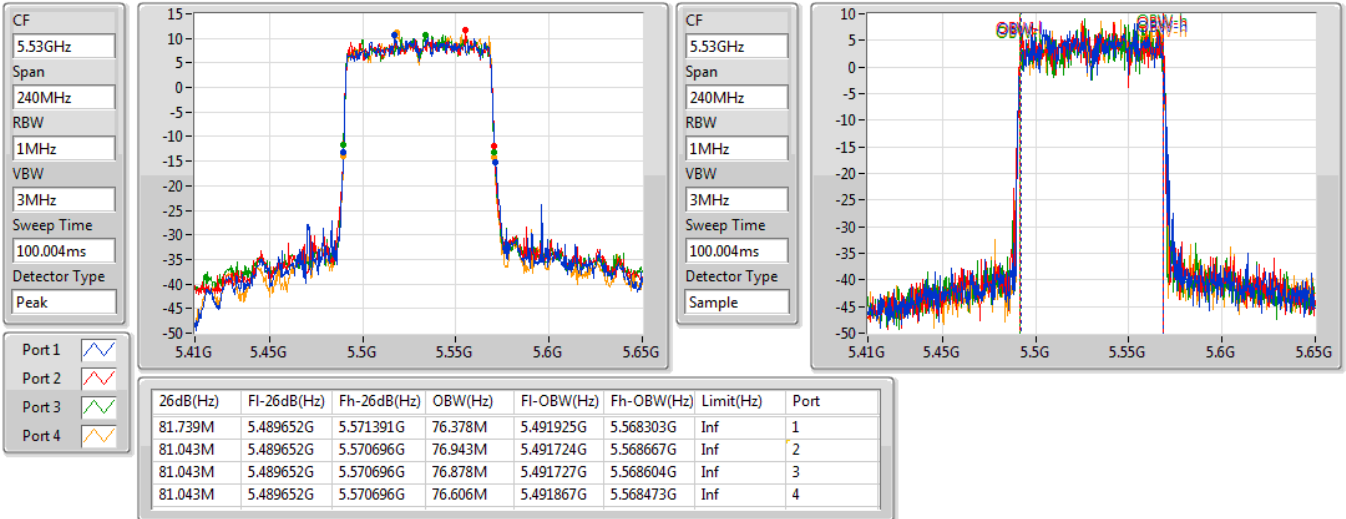

802.11ac VHT160-BF_Nss3,(MCS0)_4TX
EBW
5570MHz

04/09/2019

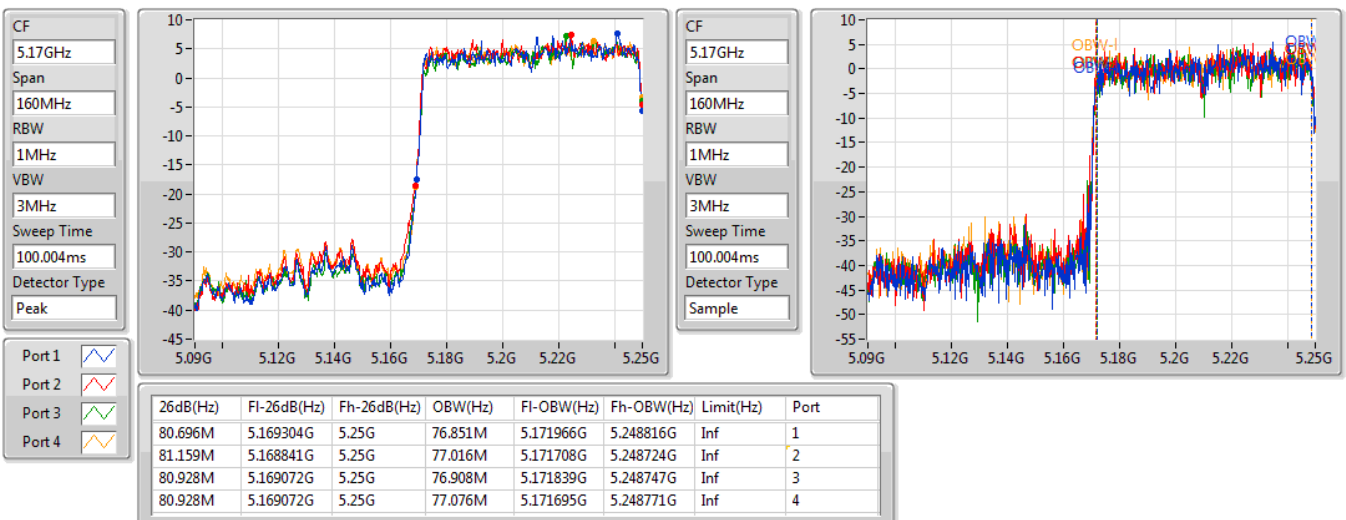


802.11ax HEW80-BF_Nss3,(MCS0)_4TX
EBW
5530MHz

04/09/2019

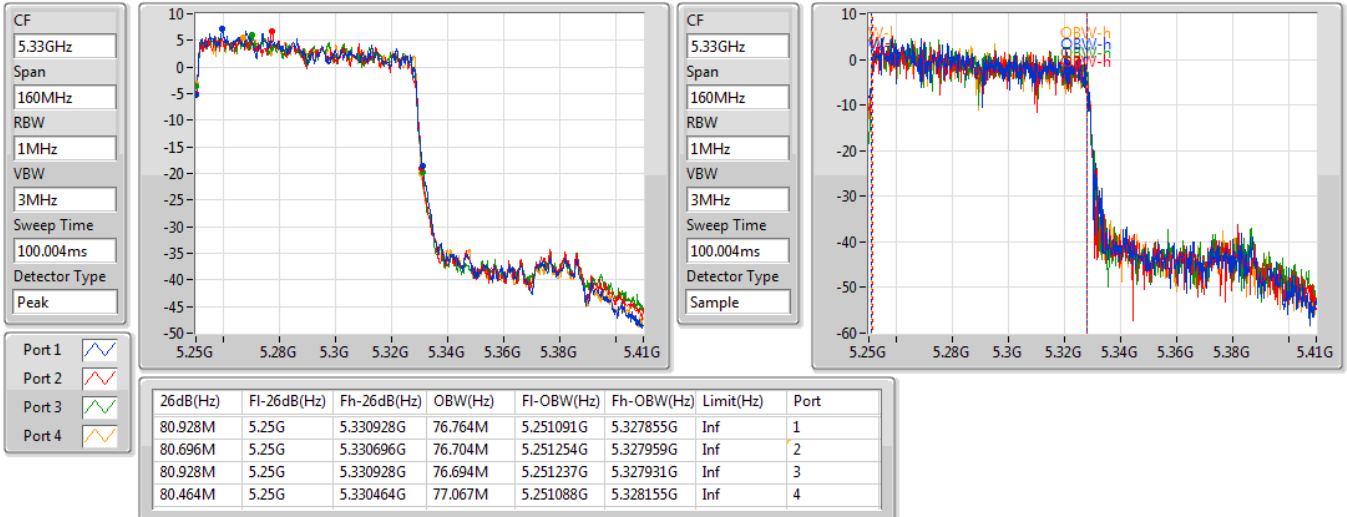

802.11ax HEW160-BF_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.15-5.25GHz

04/09/2019

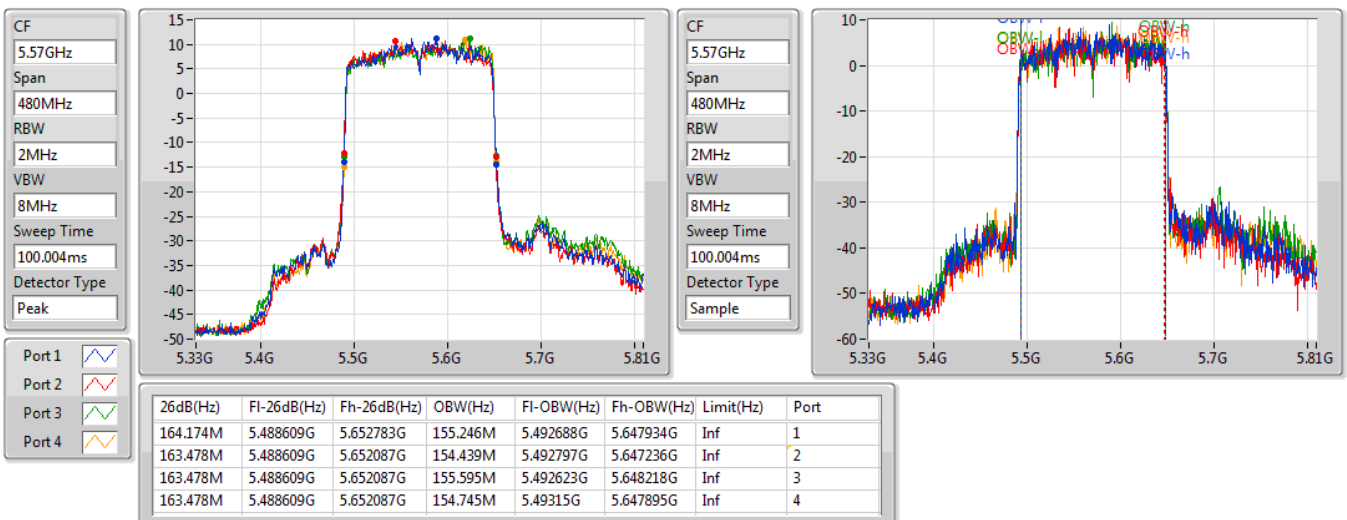


802.11ax HEW160-BF_Nss3,(MCS0)_4TX
EBW
5250MHz Straddle 5.25-5.35GHz

04/09/2019


802.11ax HEW160-BF_Nss3,(MCS0)_4TX
EBW
5570MHz

04/09/2019



<For non-beamforming mode>

4T1S

Summary

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11ac VHT160_Nss1,(MCS0)_4TX	17.04	0.05058
802.11ac HEW160_Nss1,(MCS0)_4TX	16.67	0.04645
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	23.86	0.24322
802.11ac VHT20_Nss1,(MCS0)_4TX	23.77	0.23823
802.11ac VHT40_Nss1,(MCS0)_4TX	23.86	0.24322
802.11ac VHT80_Nss1,(MCS0)_4TX	23.55	0.22646
802.11ac VHT160_Nss1,(MCS0)_4TX	16.57	0.04539
802.11ax HEW20_Nss1,(MCS0)_4TX	23.86	0.24322
802.11ax HEW40_Nss1,(MCS0)_4TX	23.86	0.24322
802.11ax HEW80_Nss1,(MCS0)_4TX	23.44	0.22080
802.11ax HEW160_Nss1,(MCS0)_4TX	16.15	0.04121
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	23.87	0.24378
802.11ac VHT20_Nss1,(MCS0)_4TX	23.86	0.24322
802.11ac VHT40_Nss1,(MCS0)_4TX	23.87	0.24378
802.11ac VHT80_Nss1,(MCS0)_4TX	23.82	0.24099
802.11ac VHT160_Nss1,(MCS0)_4TX	21.06	0.12764
802.11ax HEW20_Nss1,(MCS0)_4TX	23.81	0.24044
802.11ax HEW40_Nss1,(MCS0)_4TX	23.95	0.24831
802.11ax HEW80_Nss1,(MCS0)_4TX	23.85	0.24266
802.11ax HEW160_Nss1,(MCS0)_4TX	21.27	0.13397
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	16.52	0.04487
802.11ac VHT20_Nss1,(MCS0)_4TX	17.45	0.05559
802.11ac VHT40_Nss1,(MCS0)_4TX	13.66	0.02323
802.11ac VHT80_Nss1,(MCS0)_4TX	9.51	0.00893
802.11ax HEW20_Nss1,(MCS0)_4TX	17.71	0.05902
802.11ax HEW40_Nss1,(MCS0)_4TX	14.20	0.02630
802.11ax HEW80_Nss1,(MCS0)_4TX	10.21	0.01050

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5260MHz	Pass	4.60	17.80	17.96	17.70	17.52	23.77	23.98
5300MHz	Pass	4.60	17.78	18.04	17.74	17.78	23.86	23.98
5320MHz	Pass	4.60	17.71	18.12	17.70	17.59	23.81	23.98
5500MHz	Pass	6.00	17.71	17.82	17.99	17.89	23.87	23.98
5580MHz	Pass	6.00	17.99	17.82	17.56	18.00	23.87	23.98
5700MHz	Pass	6.00	17.19	17.48	17.81	17.83	23.61	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	6.00	16.55	16.71	16.56	16.70	22.65	22.91
5720MHz Straddle 5.725-5.85GHz	Pass	6.00	10.35	10.40	10.64	10.60	16.52	30.00
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5260MHz	Pass	4.60	17.83	17.70	17.74	17.67	23.76	23.98
5300MHz	Pass	4.60	17.74	18.02	17.70	17.54	23.77	23.98
5320MHz	Pass	4.60	17.58	18.20	17.54	17.61	23.76	23.98
5500MHz	Pass	6.00	17.78	17.74	17.70	18.06	23.84	23.98
5580MHz	Pass	6.00	17.81	17.92	17.43	18.15	23.86	23.98
5700MHz	Pass	6.00	17.58	17.59	17.68	17.54	23.62	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	6.00	16.69	16.87	16.93	16.83	22.85	22.95
5720MHz Straddle 5.725-5.85GHz	Pass	6.00	11.19	11.31	11.64	11.58	17.45	30.00
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5270MHz	Pass	4.60	17.66	18.01	17.56	18.09	23.86	23.98
5310MHz	Pass	4.60	17.69	17.92	17.59	17.62	23.73	23.98
5510MHz	Pass	6.00	17.60	17.66	17.42	17.98	23.69	23.98
5550MHz	Pass	6.00	17.80	17.71	17.35	17.98	23.74	23.98
5670MHz	Pass	6.00	17.85	17.79	17.37	18.08	23.80	23.98
5710MHz Straddle 5.47-5.725GHz	Pass	6.00	17.62	18.01	17.67	18.09	23.87	23.98
5710MHz Straddle 5.725-5.85GHz	Pass	6.00	7.19	7.52	7.69	8.10	13.66	30.00
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5290MHz	Pass	4.60	17.30	17.70	17.56	17.56	23.55	23.98
5530MHz	Pass	6.00	17.82	17.87	17.51	17.97	23.82	23.98
5610MHz	Pass	6.00	17.56	17.85	17.80	17.91	23.80	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	6.00	17.43	17.68	17.96	18.04	23.80	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	6.00	2.61	2.98	4.21	3.95	9.51	30.00
802.11ac VHT160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	4.60	11.11	11.23	10.86	10.86	17.04	30.00
5250MHz	Pass	4.60	10.63	10.47	10.71	10.37	16.57	23.98
5570MHz	Pass	6.00	15.30	14.90	14.80	15.15	21.06	23.98
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5260MHz	Pass	4.60	17.96	17.84	17.90	17.64	23.86	23.98
5300MHz	Pass	4.60	17.53	17.76	17.77	17.74	23.72	23.98
5320MHz	Pass	4.60	17.86	18.17	17.63	17.58	23.84	23.98
5500MHz	Pass	6.00	17.60	17.85	17.78	17.92	23.81	23.98
5580MHz	Pass	6.00	17.70	17.78	17.60	17.91	23.77	23.98
5700MHz	Pass	6.00	16.09	16.29	16.41	16.61	22.37	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	6.00	16.69	16.66	16.48	16.58	22.62	22.95



Average Power Result / Non-beamforming mode

Appendix B.1

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
5720MHz Straddle 5.725-5.85GHz	Pass	6.00	11.58	11.61	11.73	11.82	17.71	30.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5270MHz	Pass	4.60	17.72	18.13	17.70	17.79	23.86	23.98
5310MHz	Pass	4.60	17.59	17.85	17.63	17.68	23.71	23.98
5510MHz	Pass	6.00	17.72	17.97	17.21	17.87	23.72	23.98
5550MHz	Pass	6.00	17.78	17.81	17.40	18.11	23.80	23.98
5670MHz	Pass	6.00	17.89	17.80	17.76	17.63	23.79	23.98
5710MHz Straddle 5.47-5.725GHz	Pass	6.00	17.77	17.96	17.80	18.19	23.95	23.98
5710MHz Straddle 5.725-5.85GHz	Pass	6.00	7.63	7.98	8.37	8.65	14.20	30.00
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5290MHz	Pass	4.60	17.31	17.54	17.34	17.49	23.44	23.98
5530MHz	Pass	6.00	17.85	17.86	17.60	17.96	23.84	23.98
5610MHz	Pass	6.00	17.73	17.64	17.54	18.01	23.75	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	6.00	17.65	17.84	17.56	18.24	23.85	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	6.00	3.54	3.71	4.65	4.71	10.21	30.00
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	4.60	10.76	10.77	10.46	10.58	16.67	30.00
5250MHz	Pass	4.60	10.32	9.92	10.22	10.03	16.15	23.98
5570MHz	Pass	6.00	15.12	15.18	15.33	15.35	21.27	23.98

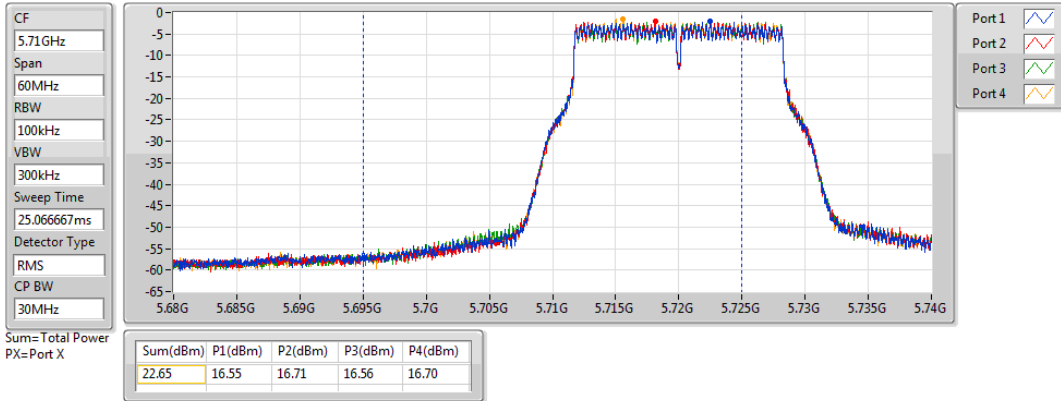
DG = Directional Gain; **Port X** = Port X output power

802.11a_Nss1,(6Mbps)_4TX

AV Power

5720MHz Straddle 5.47-5.725GHz

03/09/2019

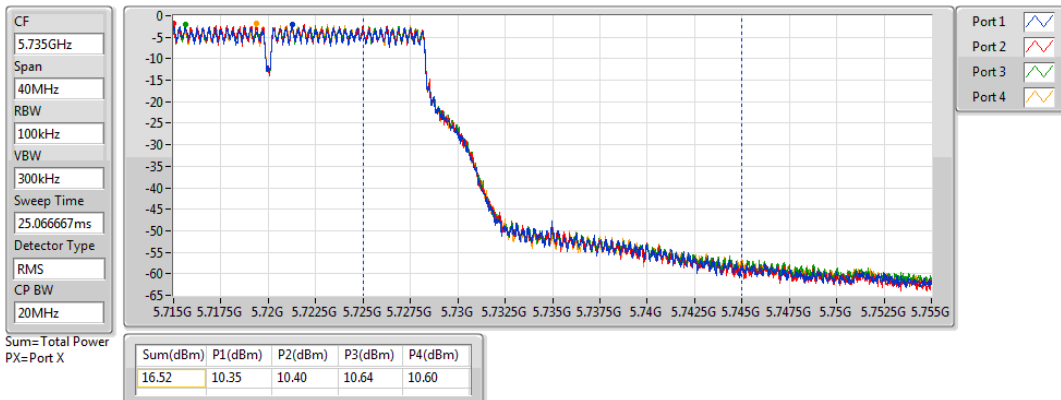


802.11a_Nss1,(6Mbps)_4TX

AV Power

5720MHz Straddle 5.725-5.85GHz

03/09/2019

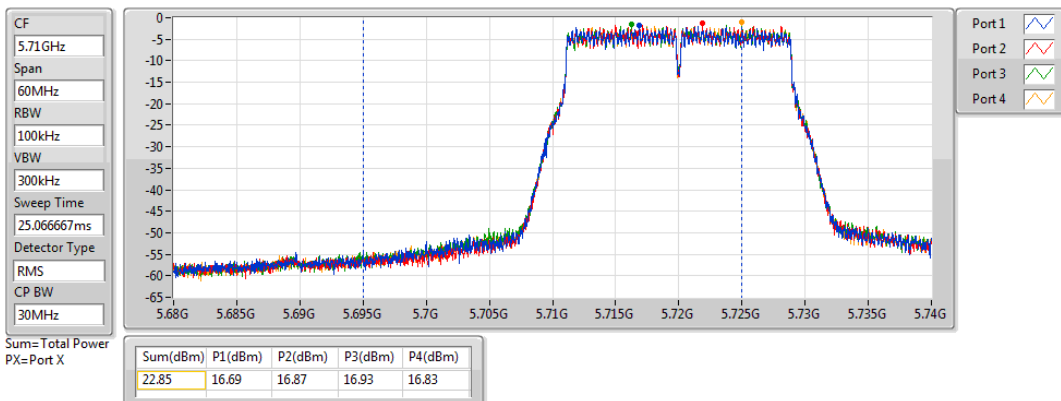


802.11ac VHT20_Nss1,(MCS0)_4TX

AV Power

5720MHz Straddle 5.47-5.725GHz

03/09/2019

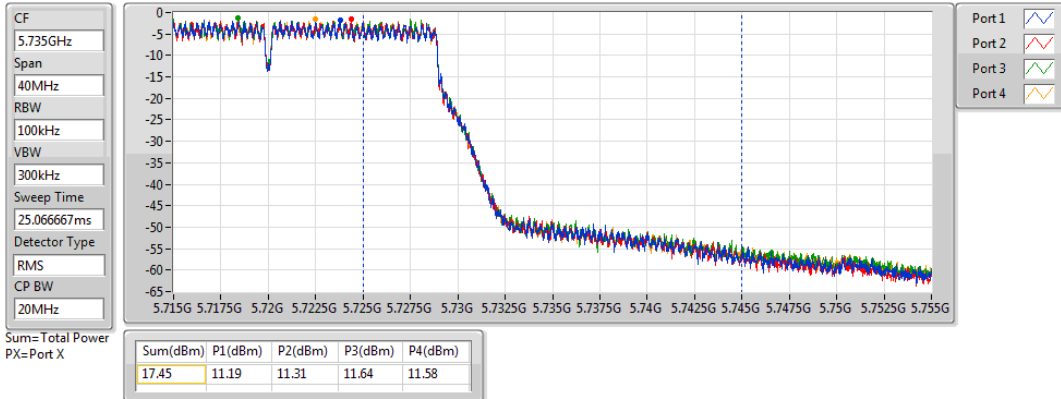


802.11ac VHT20_Nss1,(MCS0)_4TX

AV Power

5720MHz Straddle 5.725-5.85GHz

03/09/2019

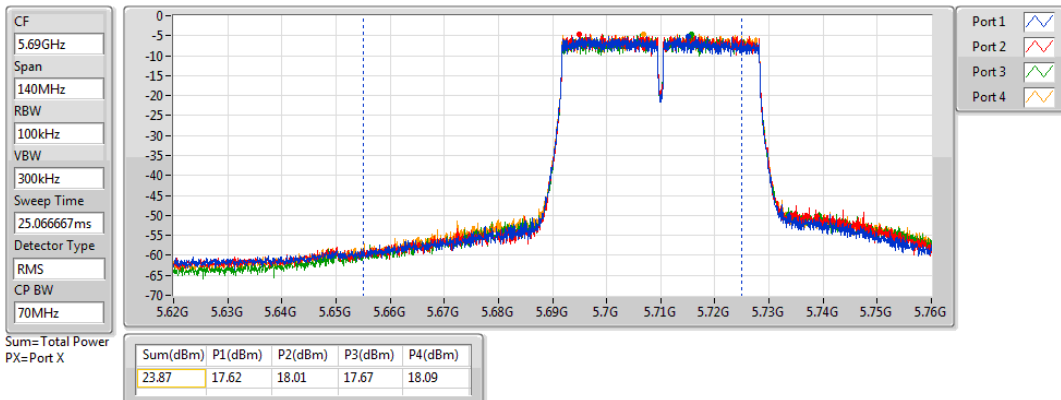


802.11ac VHT40_Nss1,(MCS0)_4TX

AV Power

5710MHz Straddle 5.47-5.725GHz

03/09/2019

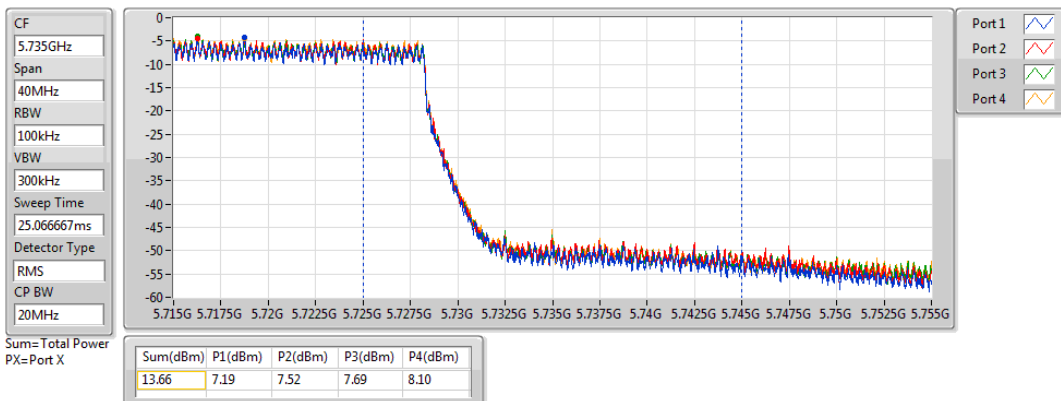


802.11ac VHT40_Nss1,(MCS0)_4TX

AV Power

5710MHz Straddle 5.725-5.85GHz

03/09/2019

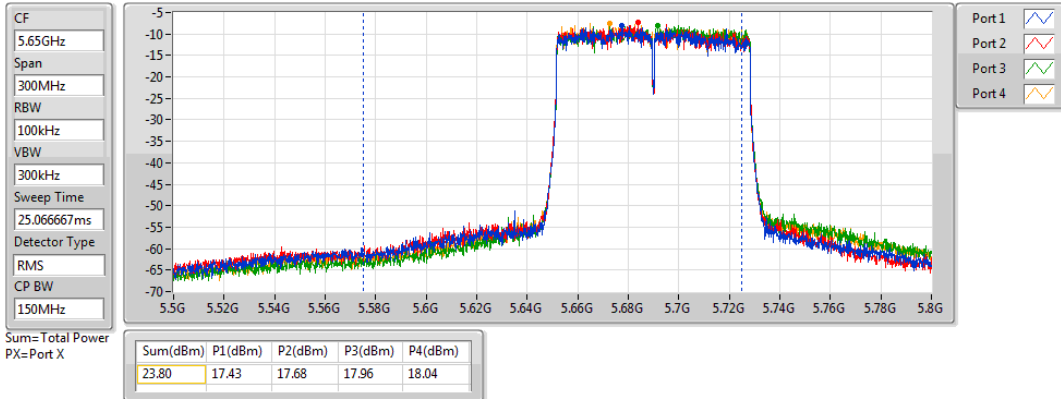


802.11ac VHT80_Nss1,(MCS0)_4TX

AV Power

5690MHz Straddle 5.47-5.725GHz

03/09/2019



802.11ac VHT80_Nss1,(MCS0)_4TX

AV Power

5690MHz Straddle 5.725-5.85GHz

03/09/2019

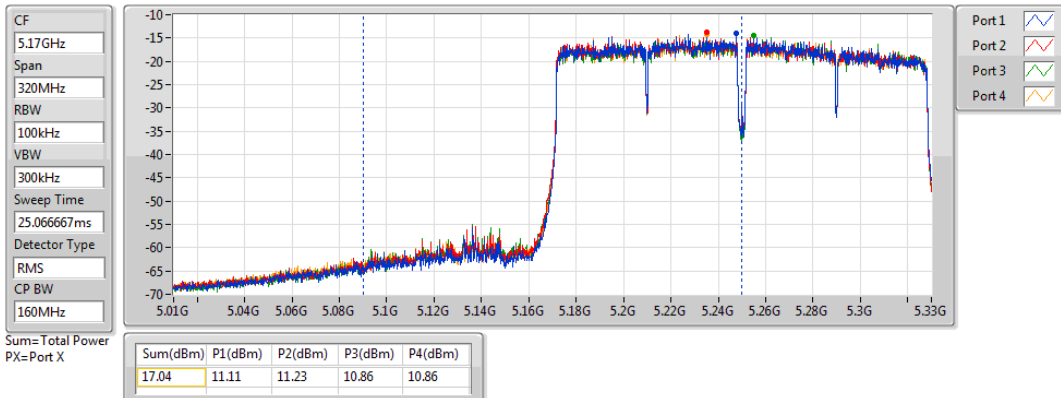


802.11ac VHT160_Nss1,(MCS0)_4TX

AV Power

5250MHz Straddle 5.15-5.25GHz

03/09/2019

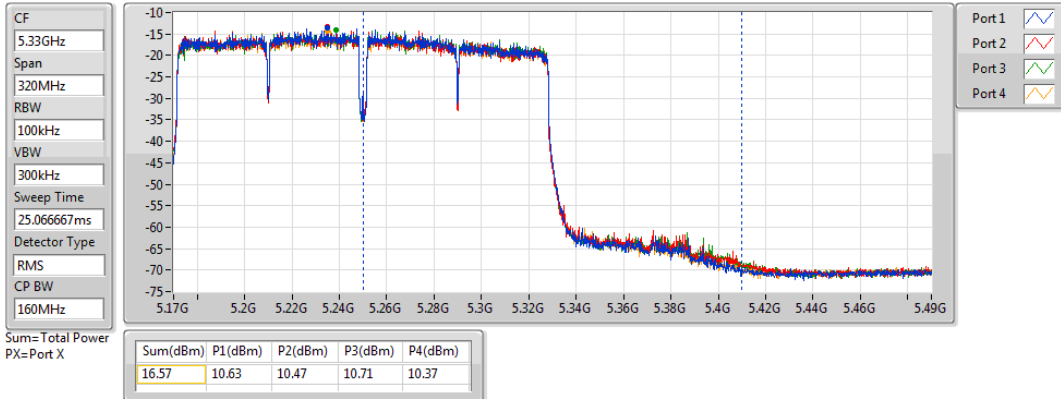


802.11ac VHT160_Nss1,(MCS0)_4TX

AV Power

5250MHz Straddle 5.25-5.35GHz

03/09/2019

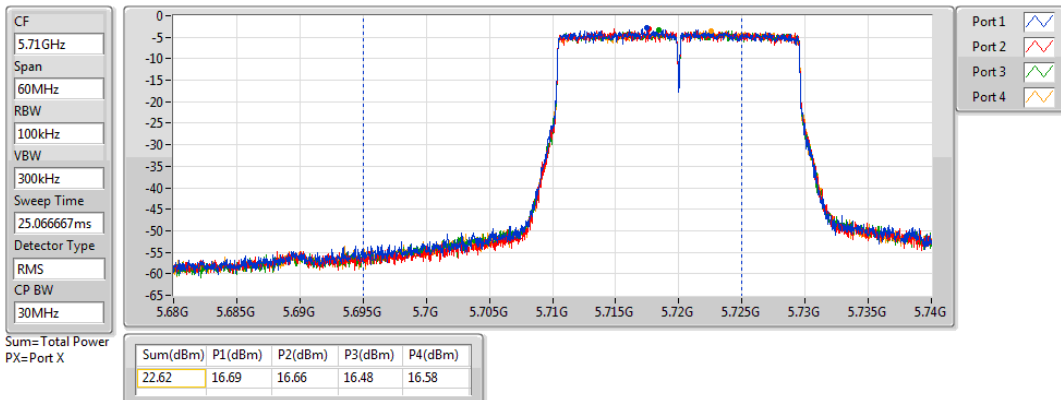


802.11ax HEW20_Nss1,(MCS0)_4TX

AV Power

5720MHz Straddle 5.47-5.725GHz

03/09/2019

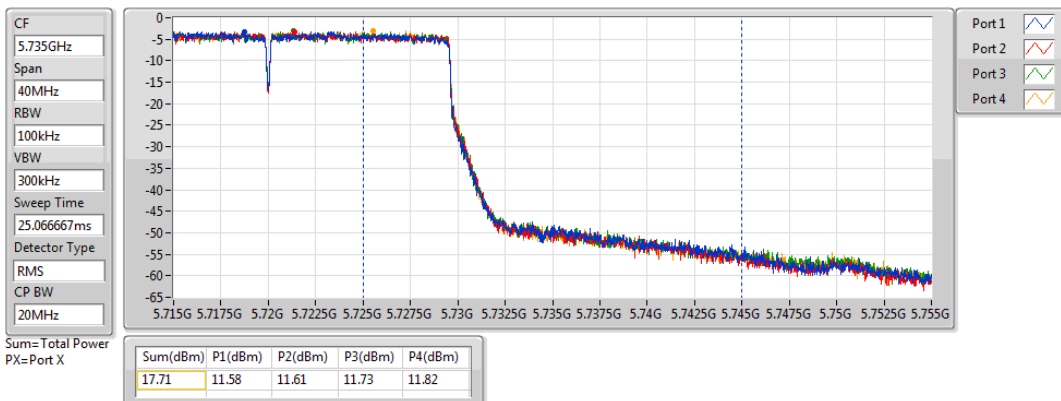


802.11ax HEW20_Nss1,(MCS0)_4TX

AV Power

5720MHz Straddle 5.725-5.85GHz

03/09/2019



802.11ax HEW40_Nss1,(MCS0)_4TX

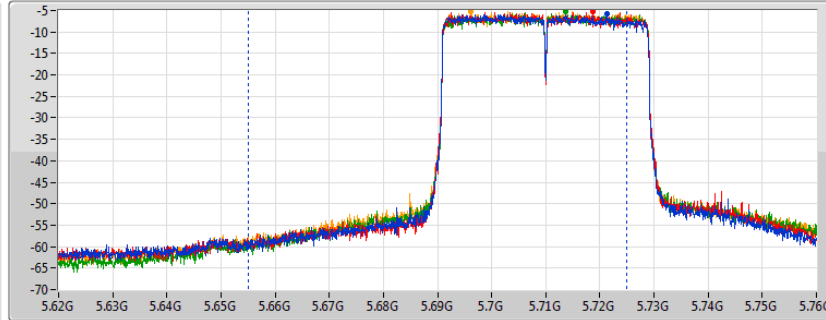
AV Power

5710MHz Straddle 5.47-5.725GHz

03/09/2019

CF
5.69GHz
Span
140MHz
RBW
100kHz
VBW
300kHz
Sweep Time
25.066667ms
Detector Type
RMS
CP BW
70MHz

Sum=Total Power
PX=Port X



Port 1
Port 2
Port 3
Port 4

Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)
23.95	17.77	17.96	17.80	18.19

802.11ax HEW40_Nss1,(MCS0)_4TX

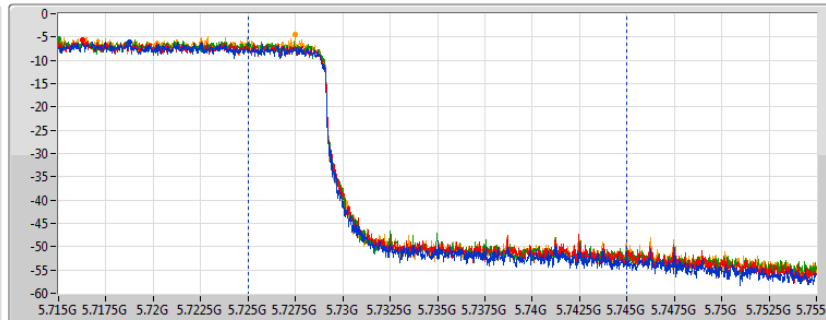
AV Power

5710MHz Straddle 5.725-5.85GHz

03/09/2019

CF
5.735GHz
Span
40MHz
RBW
100kHz
VBW
300kHz
Sweep Time
25.066667ms
Detector Type
RMS
CP BW
20MHz

Sum=Total Power
PX=Port X



Port 1
Port 2
Port 3
Port 4

Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)
14.20	7.63	7.98	8.37	8.65

802.11ax HEW80_Nss1,(MCS0)_4TX

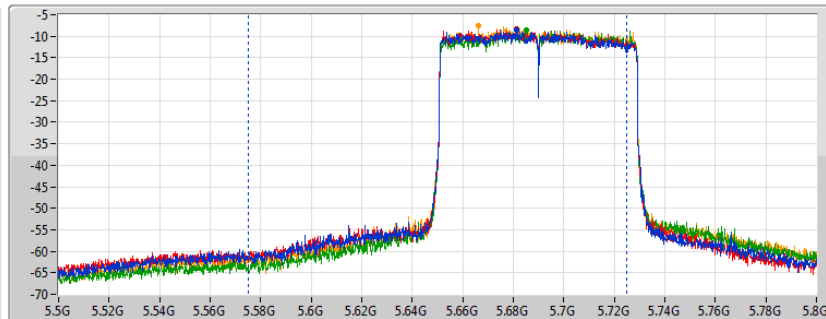
AV Power

5690MHz Straddle 5.47-5.725GHz

03/09/2019

CF
5.65GHz
Span
300MHz
RBW
100kHz
VBW
300kHz
Sweep Time
25.066667ms
Detector Type
RMS
CP BW
150MHz

Sum=Total Power
PX=Port X



Port 1
Port 2
Port 3
Port 4

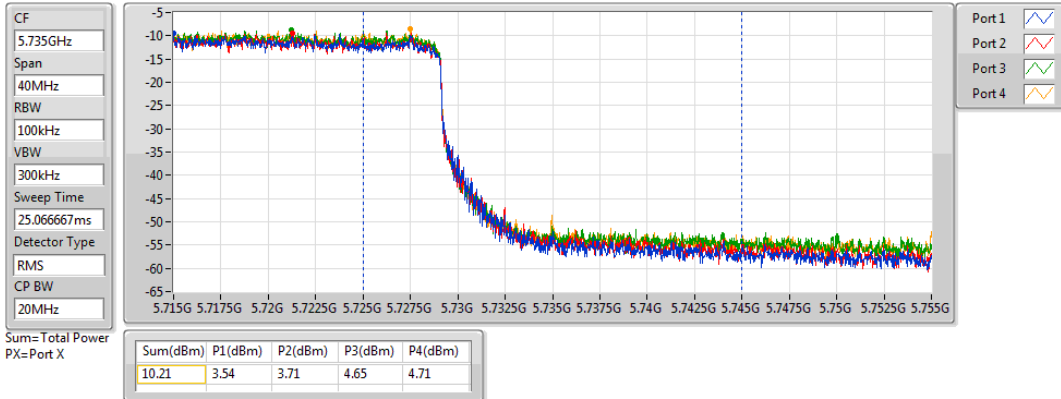
Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)
23.85	17.65	17.84	17.56	18.24

802.11ax HEW80_Nss1,(MCS0)_4TX

AV Power

5690MHz Straddle 5.725-5.85GHz

03/09/2019

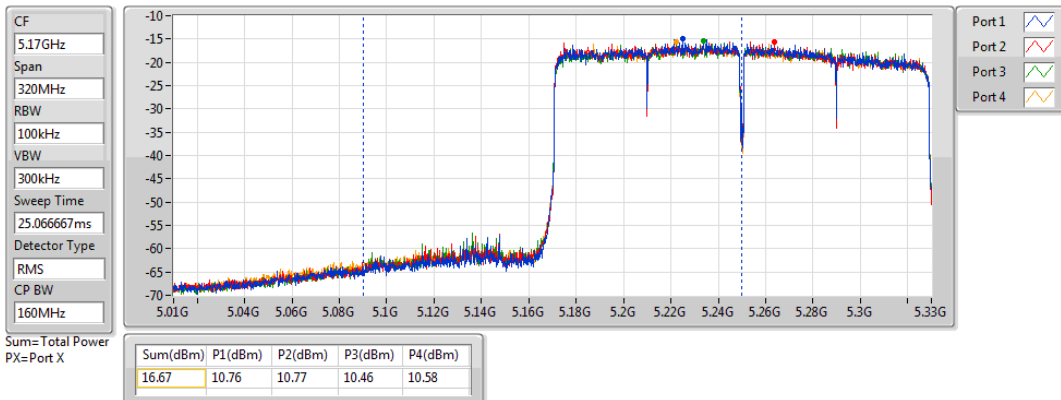


802.11ax HEW160_Nss1,(MCS0)_4TX

AV Power

5250MHz Straddle 5.15-5.25GHz

03/09/2019

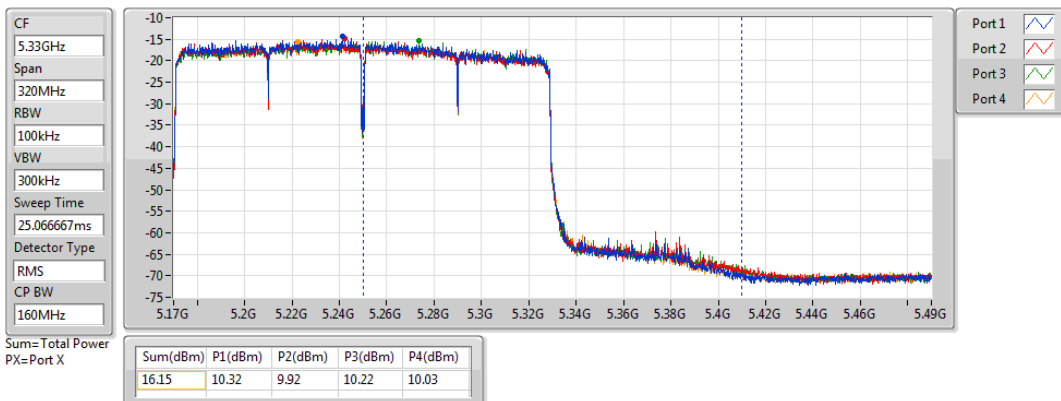


802.11ax HEW160_Nss1,(MCS0)_4TX

AV Power

5250MHz Straddle 5.25-5.35GHz

03/09/2019



**4T2S
Summary**

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11ac VHT160_Nss2,(MCS0)_4TX	16.87	0.04864
802.11ax HEW160_Nss2,(MCS0)_4TX	16.52	0.04487
5.25-5.35GHz	-	-
802.11ac VHT160_Nss2,(MCS0)_4TX	15.81	0.03811
802.11ax HEW160_Nss2,(MCS0)_4TX	15.53	0.03573
5.47-5.725GHz	-	-
802.11ac VHT80_Nss2,(MCS0)_4TX	23.69	0.23388
802.11ac VHT160_Nss2,(MCS0)_4TX	19.52	0.08954
802.11ax HEW80_Nss2,(MCS0)_4TX	22.94	0.19679
802.11ax HEW160_Nss2,(MCS0)_4TX	20.37	0.10889

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ac VHT80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5530MHz	Pass	6.00	17.65	17.62	17.71	17.68	23.69	23.98
802.11ac VHT160_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	4.60	11.09	10.78	10.60	10.90	16.87	30.00
5250MHz Straddle 5.25-5.35GHz	Pass	4.60	10.13	9.55	9.68	9.78	15.81	23.98
5570MHz	Pass	6.00	13.63	13.32	13.37	13.67	19.52	23.98
802.11ax HEW80_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5530MHz	Pass	6.00	16.86	16.89	17.13	16.81	22.94	23.98
802.11ax HEW160_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	4.60	10.60	10.59	10.25	10.55	16.52	30.00
5250MHz Straddle 5.25-5.35GHz	Pass	4.60	9.75	9.22	9.47	9.60	15.53	23.98
5570MHz	Pass	6.00	14.56	14.16	14.11	14.55	20.37	23.98

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