

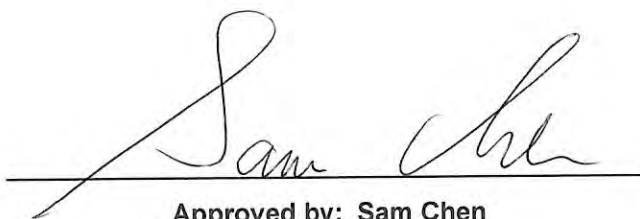


RADIO TEST REPORT

FCC ID : QXO-AP5050
Equipment : Access Point
Brand Name : Extreme Networks
Model Name : AP5050D
Applicant : Extreme Networks, Inc.
2121 RDU Center Drive Morrisville North Carolina
United States 27560
Manufacturer : Extreme Networks, Inc.
2121 RDU Center Drive Morrisville North Carolina
United States 27560
Standard : 47 CFR FCC Part 15.407

The product was received on Jun. 06, 2022, and testing was started from Jun. 06, 2022 and completed on Sep. 07, 2022. We, Sporton International Inc. Hsinchu 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 test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A12_1 Ver1.4

Page Number : 3 of 45
Issued Date : Dec. 12, 2022
Report Version : 01



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 Output Power	PASS	-
3.3	15.407(a)	Power Spectral Density	PASS	-
3.4	15.407(b)	Unwanted Emissions	PASS	-

Declaration of Conformity:

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

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: Viola Huang



1 General Description

1.1 Information

1.1.1 RF General Information

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

For Radio 2

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11a	20	1, 2, 4
5.25-5.35GHz	802.11n HT20	20	1, 2, 4
5.25-5.35GHz	802.11n HT20-BF	20	2, 4
5.25-5.35GHz	802.11ac VHT20	20	1, 2, 4
5.25-5.35GHz	802.11ac VHT20-BF	20	2, 4
5.25-5.35GHz	802.11ax HEW20	20	1, 2, 4
5.25-5.35GHz	802.11ax HEW20-BF	20	2, 4
5.25-5.35GHz	802.11n HT40	40	1, 2, 4
5.25-5.35GHz	802.11n HT40-BF	40	2, 4
5.25-5.35GHz	802.11ac VHT40	40	1, 2, 4
5.25-5.35GHz	802.11ac VHT40-BF	40	2, 4
5.25-5.35GHz	802.11ax HEW40	40	1, 2, 4
5.25-5.35GHz	802.11ax HEW40-BF	40	2, 4
5.25-5.35GHz	802.11ac VHT80	80	1, 2, 4
5.25-5.35GHz	802.11ac VHT80-BF	80	2, 4
5.25-5.35GHz	802.11ax HEW80	80	1, 2, 4
5.25-5.35GHz	802.11ax HEW80-BF	80	2, 4
5.15-5.35GHz	802.11ac VHT160	160	1, 2, 4
5.15-5.35GHz	802.11ac VHT160-BF	160	2, 4
5.15-5.35GHz	802.11ax HEW160	160	1, 2, 4
5.15-5.35GHz	802.11ax HEW160-BF	160	2, 4
5.47-5.725GHz	802.11a	20	1, 2, 4



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

For Scanning radio 1

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11a	20	2
5.25-5.35GHz	802.11n HT20	20	2
5.25-5.35GHz	802.11ac VHT20	20	2
5.25-5.35GHz	802.11ax HEW20	20	2
5.25-5.35GHz	802.11n HT40	40	2
5.25-5.35GHz	802.11ac VHT40	40	2
5.25-5.35GHz	802.11ax HEW40	40	2
5.25-5.35GHz	802.11ac VHT80	80	2
5.25-5.35GHz	802.11ax HEW80	80	2
5.47-5.725GHz	802.11a	20	2
5.47-5.725GHz	802.11n HT20	20	2
5.47-5.725GHz	802.11ac VHT20	20	2
5.47-5.725GHz	802.11ax HEW20	20	2
5.47-5.725GHz	802.11n HT40	40	2
5.47-5.725GHz	802.11ac VHT40	40	2
5.47-5.725GHz	802.11ax HEW40	40	2
5.47-5.725GHz	802.11ac VHT80	80	2



Band	Mode	BWch (MHz)	Nant
5.47-5.725GHz	802.11ax HEW80	80	2

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80, VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40, HEW80, HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Set	Ant.	Port				Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
		WLAN 2.4GHz (Radio 1) (Scanning Radio 1)	WLAN 5GHz (Radio 2)	WLAN 5GHz (Scanning Radio 1)	BT / IEEE802.15.4 (Radio 3)					
1	1	1	-	-	-	-	WNC	95XEAJ15.G62	Patch	I-PEX
	2	2	-	-	-	-	WNC	95XEAJ15.G62	Patch	I-PEX
	3	3	-	-	-	-	WNC	95XEAJ15.G63	Patch	I-PEX
	4	4	-	-	-	-	WNC	95XEAJ15.G63	Patch	I-PEX
2	5	1	-	-	-	-	WNC	95XEAJ15.G64	Patch	I-PEX
		2	-	-	-	-	WNC	95XEAJ15.G64	Patch	I-PEX
	6	3	-	-	-	-	WNC	95XEAJ15.G65	Patch	I-PEX
		4	-	-	-	-	WNC	95XEAJ15.G65	Patch	I-PEX
3	7	-	1	-	-	-	WNC	95XEAJ15.G70	Patch	I-PEX
	8	-	2	-	-	-	WNC	95XEAJ15.G70	Patch	I-PEX
	9	-	3	-	-	-	WNC	95XEAJ15.G71	Patch	I-PEX
	10	-	4	-	-	-	WNC	95XEAJ15.G71	Patch	I-PEX
4	11	-	1	-	-	-	WNC	95XEAJ15.G67	Patch	I-PEX
		-	2	-	-	-	WNC	95XEAJ15.G67	Patch	I-PEX
	12	-	3	-	-	-	WNC	95XEAJ15.G68	Patch	I-PEX
		-	4	-	-	-	WNC	95XEAJ15.G68	Patch	I-PEX
5	13	-	-	1	-	-	WNC	95XEAJ15.G69	Patch	I-PEX
		-	-	2	-	-	WNC	95XEAJ15.G69	Patch	I-PEX
6	14	-	-	-	-	-	WNC	95XEAJ15.G72	Patch	I-PEX
	15	-	-	-	-	-	WNC	95XEAJ15.G72	Patch	I-PEX
	16	-	-	-	-	-	WNC	95XEAJ15.G73	Patch	I-PEX
	17	-	-	-	-	-	WNC	95XEAJ15.G73	Patch	I-PEX
7	18	-	-	-	-	-	WNC	95XEAJ15.G61	Patch	I-PEX
		-	-	-	-	-	WNC	95XEAJ15.G61	Patch	I-PEX
	19	-	-	-	-	-	WNC	95XEAJ15.G66	Patch	I-PEX
		-	-	-	-	-	WNC	95XEAJ15.G66	Patch	I-PEX
8	20	-	-	-	-	-	WNC	95XEAJ15.GA8	Patch	I-PEX
		-	-	-	-	-	WNC	95XEAJ15.GA8	Patch	I-PEX
9	21	-	-	-	1	-	WNC	95XEAJ15.G74	PCB	I-PEX
10	22	-	-	-	-	1	WNC	95XEAJ15.G75	PCB	I-PEX

Note 1



Note 1:

Set	Ant.	Port	Antenna Gain (dBi)						Cable loss (dB)			Net Gain (dBi)		
			WLAN 2.4GHz (Radio 1)			WLAN 2.4GHz (Scanning Radio 1)			WLAN 2.4GHz (Radio 1) (Scanning Radio 1)			WLAN 2.4GHz (Radio 1) (Scanning Radio 1)		
			2412MHz	2442MHz	2472MHz	2412MHz	2442MHz	2472MHz	2412MHz	2442MHz	2472MHz	2412MHz	2442MHz	2472MHz
1	1	1	8.8	8.8	8.8	-	-	-	2.6	2.6	2.6	6.2	6.2	6.2
	2	2	8.8	8.8	8.8	-	-	-	3.0	3.0	3.0	5.8	5.8	5.8
	3	3	8.8	8.8	8.8	-	-	-	3.1	3.2	3.2	5.7	5.7	5.7
	4	4	8.8	8.8	8.8	-	-	-	4.3	4.3	4.4	4.5	4.5	4.4
2	5	1	6.2	6.2	6.2	6.2	6.2	6.2	2.6	2.6	2.6	3.6	3.6	3.6
		2	6.2	6.2	6.2	6.2	6.2	6.2	3.0	3.0	3.0	3.2	3.2	3.2
	6	3	6.2	6.2	6.2	6.2	6.2	6.2	4.0	4.0	4.0	2.2	2.2	2.2
		4	6.2	6.2	6.2	6.2	6.2	6.2	4.3	4.3	4.4	1.9	1.9	1.8

Set	Ant.	Port	Antenna Gain (dBi)								Cable loss (dB)								Net Gain (dBi)							
			WLAN 5GHz (Radio 2)				WLAN 5GHz (Scanning Radio 1)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Scanning Radio 1)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Scanning Radio 1)			
			UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 1	UNII 2A	UNII 2C	UNII 3
3	7	1	7.5	8.0	8.1	8.0	-	-	-	-	4.7	4.7	5.1	5.7	-	-	-	-	2.8	3.3	3.0	2.3	-	-	-	-
	8	2	7.5	8.0	8.1	8.0	-	-	-	-	4.3	4.3	5.2	4.7	-	-	-	-	3.2	3.7	2.9	3.3	-	-	-	-
	9	3	7.5	8.0	8.1	8.0	-	-	-	-	4.7	4.7	5.0	4.9	-	-	-	-	2.8	3.3	3.1	3.1	-	-	-	-
	10	4	7.5	8.0	8.1	8.0	-	-	-	-	4.7	4.7	5.6	5.4	-	-	-	-	2.8	3.3	2.5	2.6	-	-	-	-
4	11	1	5.8	6.2	6.3	6.7	-	-	-	-	4.6	4.6	5.6	6.2	-	-	-	-	1.2	1.6	0.7	0.5	-	-	-	-
		2	5.8	6.2	6.3	6.7	-	-	-	-	5.8	5.8	6.2	6.4	-	-	-	-	0	0.4	0.1	0.3	-	-	-	-
	12	3	5.8	6.2	6.3	6.7	-	-	-	-	4.8	4.8	4.9	5.0	-	-	-	-	1.0	1.4	1.4	1.7	-	-	-	-
		4	5.8	6.2	6.3	6.7	-	-	-	-	4.7	4.7	5.5	5.4	-	-	-	-	1.1	1.5	0.8	1.3	-	-	-	-
5	13	1	-	-	-	-	5.8	6.2	6.3	6.7	-	-	-	-	3.9	3.9	3.7	3.5	-	-	-	-	1.9	2.3	2.6	3.2
		2	-	-	-	-	5.8	6.2	6.3	6.7	-	-	-	-	5.0	5.0	3.9	3.9	-	-	-	-	0.8	1.2	2.4	2.8

Set	Ant.	Antenna Gain (dBi)	
		BT / IEEE802.15.4 (Radio 3)	GPS (Radio 4)
9	21	2.7	-
10	22	-	3

Note 2: The EUT has ten sets of antennas.

Note 3:

The antenna set 1, set 3, set 6 are used for 3dB Beam width (azimuth/elevation)-Narrow Beam: 30/70 degree.

The antenna set 2, set 4, set 7 are used for 3dB Beam width (azimuth/elevation)-Wide Beam: 70/70 degree.

Note 4: The EUT doesn't enable the 6GHz band.

Note 5: The antenna set 6~8 is 6GHz's antenna. Thus, the set 6~8 function doesn't enable it at this time.

Note 6: Directional gain information.

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$
BF	$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$	$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$Directional\ Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$$

$$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10$$

$$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

Where ;

$$G1 = 10 ; G2 = 10 ; G3 = 10 ; G4 = 10 ;$$

Set 1 and Set 3 antenna narrow band 30 degree

$$2.4G\ G1 = 6.2\ dBi ; G2 = 5.8\ dBi ; G3 = 5.7\ dBi ; G4 = 4.5\ dBi$$

$$2.4G\ 2T1S\ DG = 9.01\ dBi ; 2T2S\ DG = 6\ dBi ; 4T1S\ DG = 11.55\ dBi ; 4T4S\ DG = 5.55\ dBi ;$$

$$5G\ Band1\ G1 = 2.8\ dBi ; G2 = 3.2\ dBi ; G3 = 2.8\ dBi ; G4 = 2.8\ dBi$$

$$5G\ Band1\ 2T1S\ DG = 6.01\ dBi ; 2T2S\ DG = 3\ dBi ; 4T1S\ DG = 8.92\ dBi ; 4T4S\ DG = 2.90\ dBi ;$$

$$5G\ Band2\ G1 = 3.3\ dBi ; G2 = 3.7\ dBi ; G3 = 3.3\ dBi ; G4 = 3.3$$

$$5G\ Band2\ 2T1S\ DG = 6.46\ dBi ; 2T2S\ DG = 3.46\ dBi ; 4T1S\ DG = 9.30\ dBi ; 4T4S\ DG = 3.28\ dBi ;$$

$$5G\ Band3\ G1 = 3\ dBi ; G2 = 2.9\ dBi ; G3 = 3.1\ dBi ; G4 = 2.5$$

$$5G\ Band3\ 2T1S\ DG = 6.06\ dBi ; 2T2S\ DG = 3.06\ dBi ; 4T1S\ DG = 9.10\ dBi ; 4T4S\ DG = 3.08\ dBi ;$$

$$5G\ Band4\ G1 = 2.3\ dBi ; G2 = 3.3\ dBi ; G3 = 3.1\ dBi ; G4 = 2.6$$

$$5G\ Band4\ 2T1S\ DG = 5.82\ dBi ; 2T2S\ DG = 2.83\ dBi ; 4T1S\ DG = 8.85\ dBi ; 4T4S\ DG = 2.84\ dBi ;$$

**Set 2 and Set 4 antenna wide band 70 degree**

2.4G G1 = 3.6 dBi; G2 = 3.2 dBi; G3 = 2.2 dBi; G4 = 1.9 dBi

2.4G 2T1S DG= 9.01 dBi; 2T2S DG= 6 dBi; 4T1S DG= 11.55 dBi; 4T4S DG= 5.55 dBi;

5G Band1 G1 = 1.2 dBi; G2 = 0 dBi; G3 = 1 dBi; G4 = 1.1 dBi

5G Band1 2T1S DG= 3.63 dBi; 2T2S DG= 0.64 dBi; 4T1S DG= 6.86 dBi; 4T4S DG= 0.85 dBi;

5G Band2 G1 = 1.6 dBi; G2 = 0.4 dBi; G3 = 1.4 dBi; G4 = 1.5 dBi

5G Band2 2T1S DG= 4.03 dBi; 2T2S DG= 1.04 dBi; 4T1S DG= 7.26 dBi; 4T4S DG= 1.25 dBi;

5G Band3 G1 = 0.7 dBi; G2 = 0.1 dBi; G3 = 1.4 dBi; G4 = 0.8 dBi

5G Band3 2T1S DG= 3.42 dBi; 2T2S DG= 0.41 dBi; 4T1S DG= 6.78 dBi; 4T4S DG= 0.77 dBi;

5G Band4 G1 = 0.5 dBi; G2 = 0.3 dBi; G3 = 1.7 dBi; G4 = 1.3 dBi

5G Band4 2T1S DG= 3.41 dBi; 2T2S DG= 0.40 dBi; 4T1S DG= 6.99 dBi; 4T4S DG= 0.99 dBi;

Set 5 antenna scanning radio

5G Band1 G1 = 1.9 dBi; G2 = 0.8 dBi

5G Band1 2T1S DG= 4.38 dBi; 2T2S DG= 1.38 dBi

5G Band2 G1 = 2.3 dBi; G2 = 1.2 dBi

5G Band2 2T1S DG= 4.78 dBi; 2T2S DG= 1.78 dBi

5G Band3 G1 = 2.6 dBi; G2 = 2.4 dBi

5G Band3 2T1S DG= 5.51 dBi; 2T2S DG= 2.50 dBi

5G Band4 G1 = 3.2 dBi; G2 = 2.8 dBi

5G Band4 2T1S DG= 6.01 dBi; 2T2S DG= 3.00 dBi

**For Radio 1****For 2.4GHz:****For IEEE 802.11b/g/n/VHT/ax mode (1TX, 2TX, 4TX/4RX):****1TX**

Only Port 1 can be use as transmitting antenna.

2TX

Port 1, Port 2 can be use as transmitting antenna.

Port 1, Port 2 could transmitting simultaneously.

4TX

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

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

4RX

Port 1, Port 2, Port 3, Port 4 can be used as receiving antennas.

Port 1, Port 2, Port 3, Port 4 could receive simultaneously.

For Scanning Radio 1**For 2.4GHz:****For IEEE 802.11b/g/n/VHT/ax mode (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 5GHz UNII 1~3:**For IEEE 802.11a/n/ac/ax mode (2TX/2RX):**

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

Port 1, Port 2 could transmit/receive simultaneously.

For Radio 2**For 5GHz UNII 1~3:****For IEEE 802.11a/n/ac/ax mode (1TX, 2TX, 4TX/4RX):****1TX**

Only Port 1 can be use as transmitting antenna.

2TX

Port 1, Port 2 can be use as transmitting antenna.

Port 1, Port 2 could transmitting simultaneously.

4TX

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

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

4RX

Port 1, Port 2, Port 3, Port 4 can be used as receiving antennas.

Port 1, Port 2, Port 3, Port 4 could receive simultaneously.

For Radio 3**Bluetooth / IEEE802.15.4 (1TX):**

Only Port 1 can be used as transmitting antenna.

For Radio 4**GPS (1RX):**

Only Port 1 can be used as receiving antenna.

**1.1.3 Mode Test Duty Cycle****For Radio 2****For Set 3 antenna with narrow beam 30 degree****1T1S**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.954	0.2	2.068m	1k
802.11ax HEW20	0.983	0.07	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.968	0.14	782.5u	3k
802.11ax HEW80	0.942	0.26	415u	3k
802.11ax HEW160	0.897	0.47	237.5u	10k

2T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.954	0.2	2.068m	1k

2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.969	0.14	782.5u	3k
802.11ax HEW40	0.943	0.25	430u	3k
802.11ax HEW80	0.904	0.44	247.5u	10k
802.11ax HEW160	0.851	0.7	155u	10k

4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.95	0.22	2.068m	1k
802.11ax HEW20	0.983	0.07	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.968	0.14	782.5u	3k
802.11ax HEW80	0.94	0.27	415u	3k
802.11ax HEW160	0.897	0.47	237.5u	10k

4T4S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.944	0.25	437.5u	3k
802.11ax HEW40	0.906	0.43	261.25u	10k
802.11ax HEW80	0.864	0.63	170u	10k
802.11ax HEW160	0.821	0.86	125u	10k

For Set 4 antenna with wide beam 70 degree**1T1S**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.948	0.23	2.066m	1k
802.11ax HEW20	0.981	0.08	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.967	0.15	781.25u	3k
802.11ax HEW80	0.937	0.28	413.75u	3k
802.11ax HEW160	0.898	0.47	237.5u	10k

**2T1S**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.954	0.2	2.068m	1k

2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.969	0.14	782.5u	3k
802.11ax HEW40	0.943	0.25	430u	3k
802.11ax HEW80	0.904	0.44	247.5u	10k

4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.958	0.19	2.066m	1k
802.11ax HEW20	0.984	0.07	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.968	0.14	781.25u	3k
802.11ax HEW80	0.938	0.28	415u	3k
802.11ax HEW160	0.897	0.47	237.5u	10k

4T4S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.944	0.25	437.5u	3k
802.11ax HEW40	0.906	0.43	261.25u	10k
802.11ax HEW80	0.862	0.64	170u	10k
802.11ax HEW160	0.822	0.85	125u	10k

For Scanning radio 1**For Set 5 antenna with wide beam 70 degree****2T1S**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.951	0.22	2.068m	1k

2T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.968	0.14	782.5u	3k
802.11ax HEW40	0.944	0.25	430u	3k
802.11ax HEW80	0.906	0.43	247.5u	10k

Note:

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

**1.1.4 EUT Operational Condition**

EUT Power Type	From PoE			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for 11n/VHT/11ax in radio 1 2.4GHz, 11n/11ac/11ax in radio 2 5GHz.			
Weather Band	☒	With 5600~5650MHz	☐	Without 5600~5650MHz
Function	☒	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
	☒	Point-to-multipoint	☐	Point-to-point
TPC Function	☒	With TPC	☐	Without TPC
Channel Puncturing Function	☐	Supported	☒	Unsupported
Support RU	☒	Full RU	☐	Partial RU
Test Software Version	Mtool (v3.2.1.5)			

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT support function

Function
AP
Bridge
Mesh

Note1: For above table list, only AP mode was tested and recorded in this test.

Note2: The above information was declared by manufacturer.

1.1.6 Table for Radio function

Radio (R)	WLAN 2.4GHz	5GHz	Scanning radio (WLAN 2.4GHz 4TX / 5GHz 2TX)	Bluetooth / IEEE802.15.4	GPS
R1	V (AP, Bridge, Mesh)	-	V (AP, Bridge, Mesh for 2.4GHz, AP for 5GHz UNII 1~3)	-	-
R2	-	V (AP for UNII 1~3 / Bridge, Mesh for UNII 1, 3)	-	-	-
R3	-	-	-	V	-
R4	-	-	-	-	V

Note: The above information was declared by manufacturer.



1.1.7 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR251735AB

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

Modifications	Performance Checking
1. Add UNII 2A and UNII 2C (5250~5350MHz and 5470~5725MHz) for this device. 2. Add 160MHz for Radio 2.	1. Emission Bandwidth 2. Maximum Output Power 3. 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

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Caster Chang	25.6~26.1 / 65~69	Jun. 06, 2022~Sep. 07, 2022
Radiated above 1GHz	03CH01-CB	RJ Huang	24.1~26.1 / 60~65	Jun. 30, 2022~Sep. 03, 2022
	03CH03-CB		23.7~25.1 / 66~68	

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)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.2 dB	Confidence levels of 95%
Bandwidth Measurement	2.0 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

For Radio 2

For Set 3 antenna with narrow beam 30 degree

1T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5260MHz	95
5300MHz	94
5320MHz	85
5500MHz	90
5580MHz	92
5700MHz	69
5720MHz Straddle 5.47-5.725GHz	90
5720MHz Straddle 5.725-5.85GHz	90
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5260MHz	95
5300MHz	93
5320MHz	85
5500MHz	90
5580MHz	91
5700MHz	62
5720MHz Straddle 5.47-5.725GHz	88
5720MHz Straddle 5.725-5.85GHz	88
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5270MHz	88
5310MHz	74
5510MHz	81
5550MHz	89
5670MHz	76
5710MHz Straddle 5.47-5.725GHz	77
5710MHz Straddle 5.725-5.85GHz	77
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5290MHz	73
5530MHz	74
5610MHz	88
5690MHz Straddle 5.47-5.725GHz	85
5690MHz Straddle 5.725-5.85GHz	85
802.11ax HEW160_Nss1,(MCS0)_1TX	-



Mode	Power Setting
5250MHz Straddle 5.15-5.25GHz	64
5250MHz Straddle 5.25-5.35GHz	64
5570MHz	54

2T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	80
5300MHz	82
5320MHz	84
5500MHz	81
5580MHz	81
5700MHz	65
5720MHz Straddle 5.47-5.725GHz	86
5720MHz Straddle 5.725-5.85GHz	86

2T2S

Mode	Power Setting
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5260MHz	81
5300MHz	82
5320MHz	84
5500MHz	81
5580MHz	79
5700MHz	66
5720MHz Straddle 5.47-5.725GHz	83
5720MHz Straddle 5.725-5.85GHz	83
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5270MHz	81
5310MHz	79
5510MHz	75
5550MHz	79
5670MHz	74
5710MHz Straddle 5.47-5.725GHz	81
5710MHz Straddle 5.725-5.85GHz	81
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5290MHz	74
5530MHz	73
5610MHz	82
5690MHz Straddle 5.47-5.725GHz	85
5690MHz Straddle 5.725-5.85GHz	85
802.11ax HEW160_Nss2,(MCS0)_2TX	-



Mode	Power Setting
5250MHz Straddle 5.15-5.25GHz	61
5250MHz Straddle 5.25-5.35GHz	61
5570MHz	41

4T1S**for non beamforming mode**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	56
5300MHz	57
5320MHz	59
5500MHz	56
5580MHz	55
5700MHz	58
5720MHz Straddle 5.47-5.725GHz	59
5720MHz Straddle 5.725-5.85GHz	59
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	57
5300MHz	58
5320MHz	61
5500MHz	59
5580MHz	56
5700MHz	58
5720MHz Straddle 5.47-5.725GHz	61
5720MHz Straddle 5.725-5.85GHz	61
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	68
5310MHz	71
5510MHz	68
5550MHz	62
5670MHz	64
5710MHz Straddle 5.47-5.725GHz	71
5710MHz Straddle 5.725-5.85GHz	71
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	69
5530MHz	68
5610MHz	69
5690MHz Straddle 5.47-5.725GHz	72
5690MHz Straddle 5.725-5.85GHz	72
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	55



Mode	Power Setting
5250MHz Straddle 5.25-5.35GHz	55
5570MHz	42

for beamforming mode

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	55
5300MHz	55
5320MHz	58
5500MHz	56
5580MHz	53
5700MHz	56
5720MHz Straddle 5.47-5.725GHz	59
5720MHz Straddle 5.725-5.85GHz	59
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	55
5310MHz	57
5510MHz	55
5550MHz	53
5670MHz	56
5710MHz Straddle 5.47-5.725GHz	60
5710MHz Straddle 5.725-5.85GHz	60
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	55
5530MHz	55
5610MHz	56
5690MHz Straddle 5.47-5.725GHz	59
5690MHz Straddle 5.725-5.85GHz	59
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	55
5250MHz Straddle 5.25-5.35GHz	55
5570MHz	42

**4T4S**

Mode	Power Setting
802.11ax HEW20_Nss4,(MCS0)_4TX	-
5260MHz	68
5300MHz	69
5320MHz	72
5500MHz	69
5580MHz	66
5700MHz	62
5720MHz Straddle 5.47-5.725GHz	72
5720MHz Straddle 5.725-5.85GHz	72
802.11ax HEW40_Nss4,(MCS0)_4TX	-
5270MHz	69
5310MHz	71
5510MHz	69
5550MHz	66
5670MHz	69
5710MHz Straddle 5.47-5.725GHz	73
5710MHz Straddle 5.725-5.85GHz	73
802.11ax HEW80_Nss4,(MCS0)_4TX	-
5290MHz	70
5530MHz	67
5610MHz	69
5690MHz Straddle 5.47-5.725GHz	72
5690MHz Straddle 5.725-5.85GHz	72
802.11ax HEW160_Nss4,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	56
5250MHz Straddle 5.25-5.35GHz	56
5570MHz	43

**For Set 4 antenna with wide beam 70 degree
1T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5260MHz	96
5300MHz	95
5320MHz	96
5500MHz	94
5580MHz	85
5700MHz	80
5720MHz Straddle 5.47-5.725GHz	81
5720MHz Straddle 5.725-5.85GHz	81
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5260MHz	95
5300MHz	95
5320MHz	96
5500MHz	91
5580MHz	81
5700MHz	70
5720MHz Straddle 5.47-5.725GHz	75
5720MHz Straddle 5.725-5.85GHz	75
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5270MHz	95
5310MHz	88
5510MHz	76
5550MHz	89
5670MHz	85
5710MHz Straddle 5.47-5.725GHz	87
5710MHz Straddle 5.725-5.85GHz	87
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5290MHz	84
5530MHz	84
5610MHz	88
5690MHz Straddle 5.47-5.725GHz	86
5690MHz Straddle 5.725-5.85GHz	86
802.11ax HEW160_Nss1,(MCS0)_1TX	-
5250MHz Straddle 5.15-5.25GHz	78
5250MHz Straddle 5.25-5.35GHz	78
5570MHz	73

**2T1S**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	82
5300MHz	83
5320MHz	85
5500MHz	81
5580MHz	80
5700MHz	69
5720MHz Straddle 5.47-5.725GHz	86
5720MHz Straddle 5.725-5.85GHz	86

2T2S

Mode	Power Setting
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5260MHz	81
5300MHz	82
5320MHz	84
5500MHz	81
5580MHz	79
5700MHz	67
5720MHz Straddle 5.47-5.725GHz	86
5720MHz Straddle 5.725-5.85GHz	86
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5270MHz	81
5310MHz	81
5510MHz	81
5550MHz	79
5670MHz	80
5710MHz Straddle 5.47-5.725GHz	83
5710MHz Straddle 5.725-5.85GHz	83
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5290MHz	79
5530MHz	81
5610MHz	83
5690MHz Straddle 5.47-5.725GHz	84
5690MHz Straddle 5.725-5.85GHz	84
802.11ax HEW160_Nss2,(MCS0)_2TX	-
5250MHz Straddle 5.15-5.25GHz	65
5250MHz Straddle 5.25-5.35GHz	65
5570MHz	55

**4T1S
for non beamforming mode**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	64
5300MHz	65
5320MHz	68
5500MHz	67
5580MHz	65
5700MHz	69
5720MHz Straddle 5.47-5.725GHz	69
5720MHz Straddle 5.725-5.85GHz	69
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	66
5300MHz	66
5320MHz	69
5500MHz	68
5580MHz	65
5700MHz	65
5720MHz Straddle 5.47-5.725GHz	70
5720MHz Straddle 5.725-5.85GHz	70
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	69
5310MHz	71
5510MHz	68
5550MHz	66
5670MHz	68
5710MHz Straddle 5.47-5.725GHz	69
5710MHz Straddle 5.725-5.85GHz	69
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	70
5530MHz	68
5610MHz	69
5690MHz Straddle 5.47-5.725GHz	72
5690MHz Straddle 5.725-5.85GHz	72
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	60
5250MHz Straddle 5.25-5.35GHz	60
5570MHz	53

**for beamforming mode**

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	63
5300MHz	64
5320MHz	67
5500MHz	65
5580MHz	63
5700MHz	65
5720MHz Straddle 5.47-5.725GHz	54
5720MHz Straddle 5.725-5.85GHz	54
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	63
5310MHz	65
5510MHz	65
5550MHz	63
5670MHz	65
5710MHz Straddle 5.47-5.725GHz	69
5710MHz Straddle 5.725-5.85GHz	69
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	65
5530MHz	65
5610MHz	66
5690MHz Straddle 5.47-5.725GHz	69
5690MHz Straddle 5.725-5.85GHz	69
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	60
5250MHz Straddle 5.25-5.35GHz	60
5570MHz	53

**4T4S**

Mode	Power Setting
802.11ax HEW20_Nss4,(MCS0)_4TX	-
5260MHz	69
5300MHz	69
5320MHz	72
5500MHz	69
5580MHz	66
5700MHz	67
5720MHz Straddle 5.47-5.725GHz	73
5720MHz Straddle 5.725-5.85GHz	73
802.11ax HEW40_Nss4,(MCS0)_4TX	-
5270MHz	69
5310MHz	71
5510MHz	69
5550MHz	67
5670MHz	69
5710MHz Straddle 5.47-5.725GHz	74
5710MHz Straddle 5.725-5.85GHz	74
802.11ax HEW80_Nss4,(MCS0)_4TX	-
5290MHz	70
5530MHz	69
5610MHz	70
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
802.11ax HEW160_Nss4,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	59
5250MHz Straddle 5.25-5.35GHz	59
5570MHz	50



For Scanning radio 1
For Set 5 antenna with wide beam 70 degree
2T1S

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	83
5300MHz	84
5320MHz	80
5500MHz	82
5580MHz	84
5700MHz	64
5720MHz Straddle 5.47-5.725GHz	83
5720MHz Straddle 5.725-5.85GHz	83

2T2S

Mode	Power Setting
802.11ax HEW20_Nss2,(MCS0)_2TX	-
5260MHz	82
5300MHz	83
5320MHz	78
5500MHz	84
5580MHz	83
5700MHz	61
5720MHz Straddle 5.47-5.725GHz	81
5720MHz Straddle 5.725-5.85GHz	81
802.11ax HEW40_Nss2,(MCS0)_2TX	-
5270MHz	81
5310MHz	67
5510MHz	65
5550MHz	82
5670MHz	69
5710MHz Straddle 5.47-5.725GHz	83
5710MHz Straddle 5.725-5.85GHz	83
802.11ax HEW80_Nss2,(MCS0)_2TX	-
5290MHz	62
5530MHz	62
5610MHz	80
5690MHz Straddle 5.47-5.725GHz	82
5690MHz Straddle 5.725-5.85GHz	82

**Note:**

- ♦ Evaluated HEW20/HEW40/HEW80/HEW160 mode only due to the similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80/VHT160 mode are the same or lower than HEW20/HEW40/HEW80/HEW160.
- ♦ The EUT supports beamforming and CDD modes, and the CDD mode is the worst case. Therefore, all test items are evaluated in the report. The beamforming mode only evaluates the output power.

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Output Power Power Spectral Density
Test Condition	Conducted measurement at transmit chains
1	Refer to note 1 for detail operating mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode > 1GHz	CTX
	1. The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Y axis. So the measurement will follow this same test configuration. 2. Refer to note 1 for detail operating mode
1	EUT in Y axis_Set 3 antenna with 30 degree_R2_1T1S
2	EUT in Y axis_Set 3 antenna with 30 degree_R2_2T1S_2T2S
3	EUT in Y axis_Set 3 antenna with 30 degree_R2_4T1S
4	EUT in Y axis_Set 3 antenna with 30 degree_R2_4T4S
5	EUT in Y axis_Set 4 antenna with 70 degree_R2_1T1S
6	EUT in Y axis_Set 4 antenna with 70 degree_R2_2T1S_2T2S
7	EUT in Y axis_Set 4 antenna with 70 degree_R2_4T1S
8	EUT in Y axis_Set 4 antenna with 70 degree_R2_4T4S
9	EUT in Y axis_Set 5 antenna with 70 degree_Scanning R1_2T1S_2T2S



Note 1: Test Mode

Test Mode											
Test Item	802.11a					802.11ax HEW20/40/80/160					
	1T1S	2T1S	2T2S	4T1S	4T4S	1T1S	2T1S	2T2S	4T1S	TXBF 4T1S	4T4S
Maximum Conducted Output Power	V	V	-	V	-	V	Note2	V	V	V	V
Emission Bandwidth	V	V	-	V	-	V	Note2	V	V	-	V
Peak Power Spectral Density	V	V	-	V	-	V	Note2	V	V	-	V
Radiated Emission	V	V	-	V	-	V	Note2	V	V	-	V
Band Edge Emission	V	V	-	V	-	V	Note2	V	V	-	V

Note 2: 802.11ax HEW20/40/80/160 2T1S CDD mode was covered by 802.11ax HEW20/40/80/160 2T2S, due to
 $2T1S = \min(2T2S, (2T2S - (10 \cdot \log(2/1) - 2T2S) \text{ (worst case of PSD/BE/Harmonic) MARGIN}))$.

Note 3: The PoE and adapter are for measurement only, would not be marketed.

Their information as below:

Power	Brand	Model
PoE 1	Microsemi	PD-9501-10GC/AC
PoE 2	Microsemi	PD-9001GR/AT/AC

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

Accessories
Bracket*1
Sealing Collar*2

2.5 Support Equipment

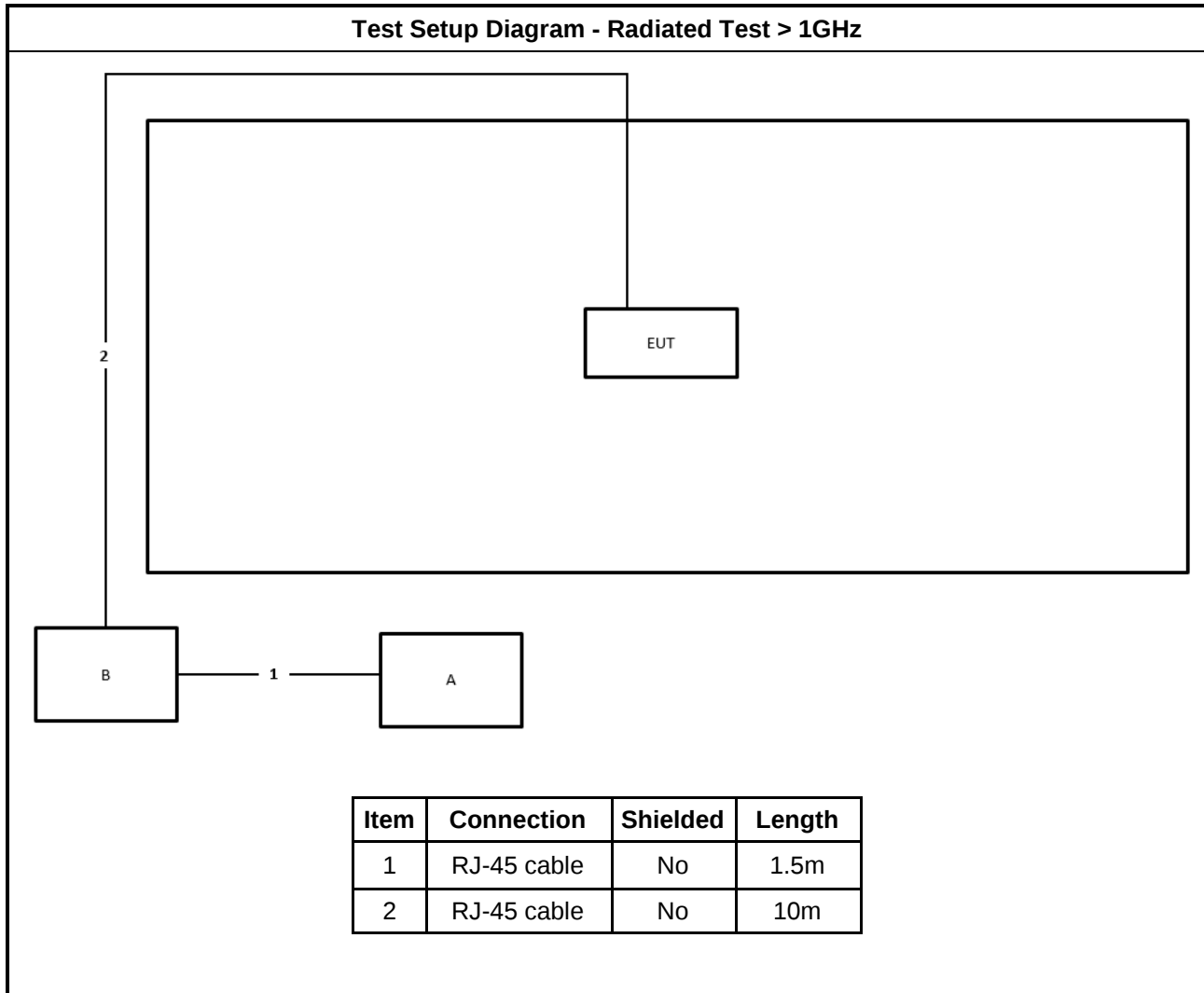
For Radiated (above 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	PoE 1	Microsemi	PD-9501-10GC/AC	N/A

For RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	PoE 2	Microsemi	PD-9001GR/AT/AC	N/A

2.6 Test Setup Diagram





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, 26 dB emission bandwidth ,N/A. 6 dB emission bandwidth $\geq$ 500kHz.
☐	For the 5.85-5.895 GHz band, 26 dB emission bandwidth ,N/A. 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.

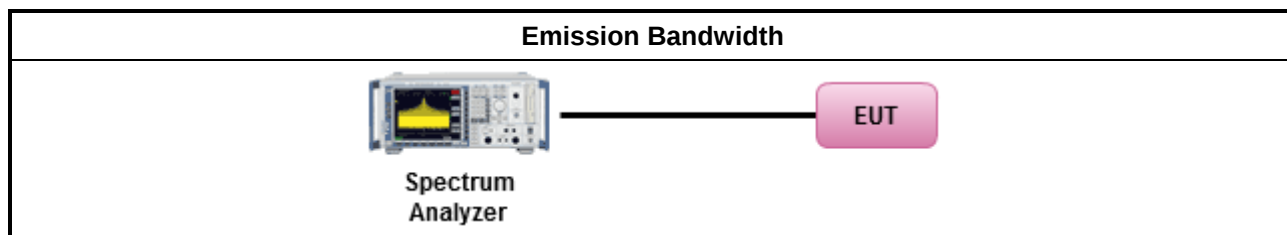
3.1.2 Measuring Instruments

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 D02, 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 Output Power

3.2.1 Limit

Maximum 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.
Maximum EIRP Limit	
☐ For the 5.85-5.895 GHz band:	
	- Indoor AP & subordinate device < 36 dBm - Client device < 30 dBm
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

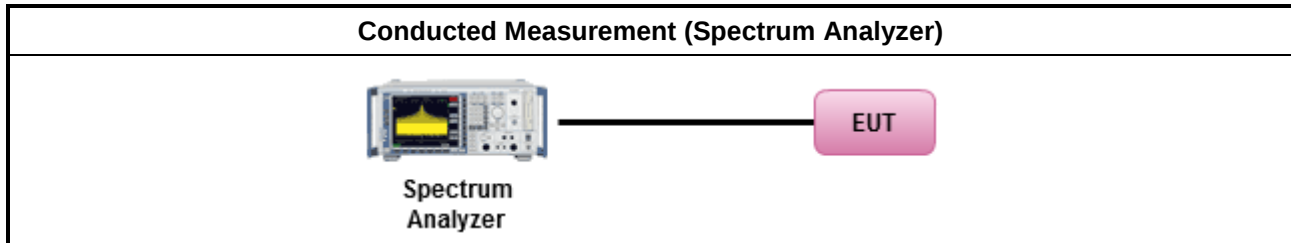
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

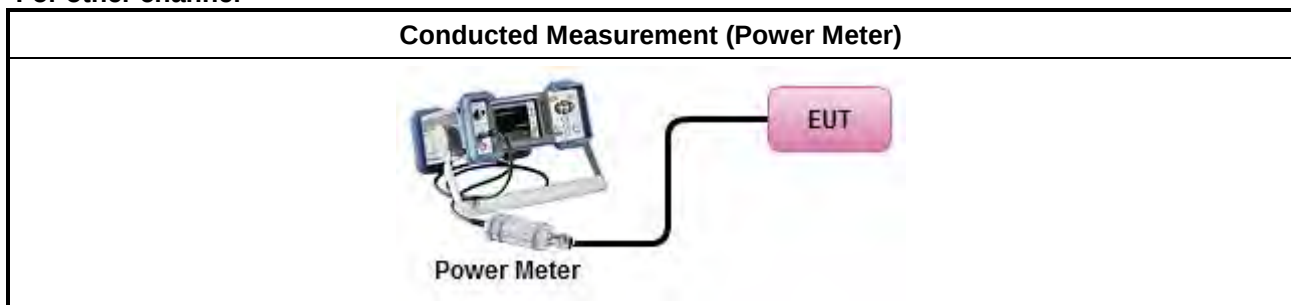
Test Method	
	Average over on/off periods with duty factor
☒	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
☒	Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).
☒	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]) $EIRP_{total} = P_{total} + DG$
☐	For radiated measurement.
	- Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing" - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz. - Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

3.2.4 Test Setup

For Straddle channel



For other channel



3.2.5 Test Result of Maximum Output Power

Refer as Appendix B



3.3 Power Spectral Density

3.3.1 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.
EIRP Power Spectral Density Limit	
☐ For the 5.85-5.895 GHz band:	
	- Indoor AP & subordinate device < 20dBm/MHz - Client device < 14dBm/MHz
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

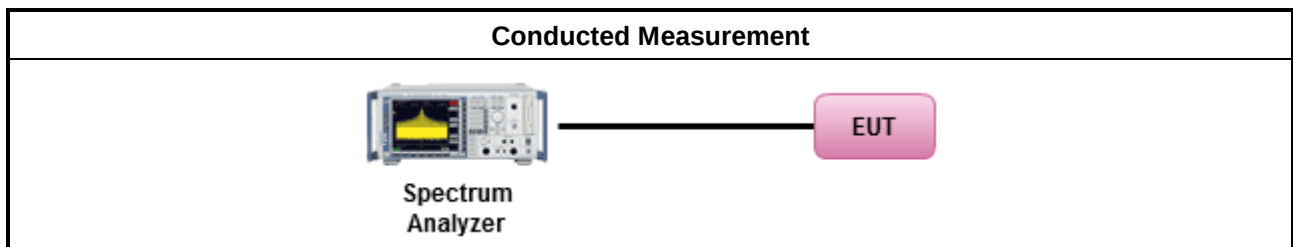
Refer a test equipment and calibration data table in this test report.

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 D02, 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 D02, clause E Method SA-1 (spectral trace averaging).
☐	Refer as FCC KDB 789033 D02, 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 D02, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033 D02, 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])	

Test Method	
	$EIRP_{total} = PPSD_{total} + DG$
☐	For radiated measurement.
	Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
	Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

3.3.4 Test Setup



3.3.5 Test Result of 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.
☐ 5.85 - 5.895 GHz	(i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of - 7 dBm/MHz at or above 5.925 GHz. (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an



	e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz. (iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/ MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.
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.

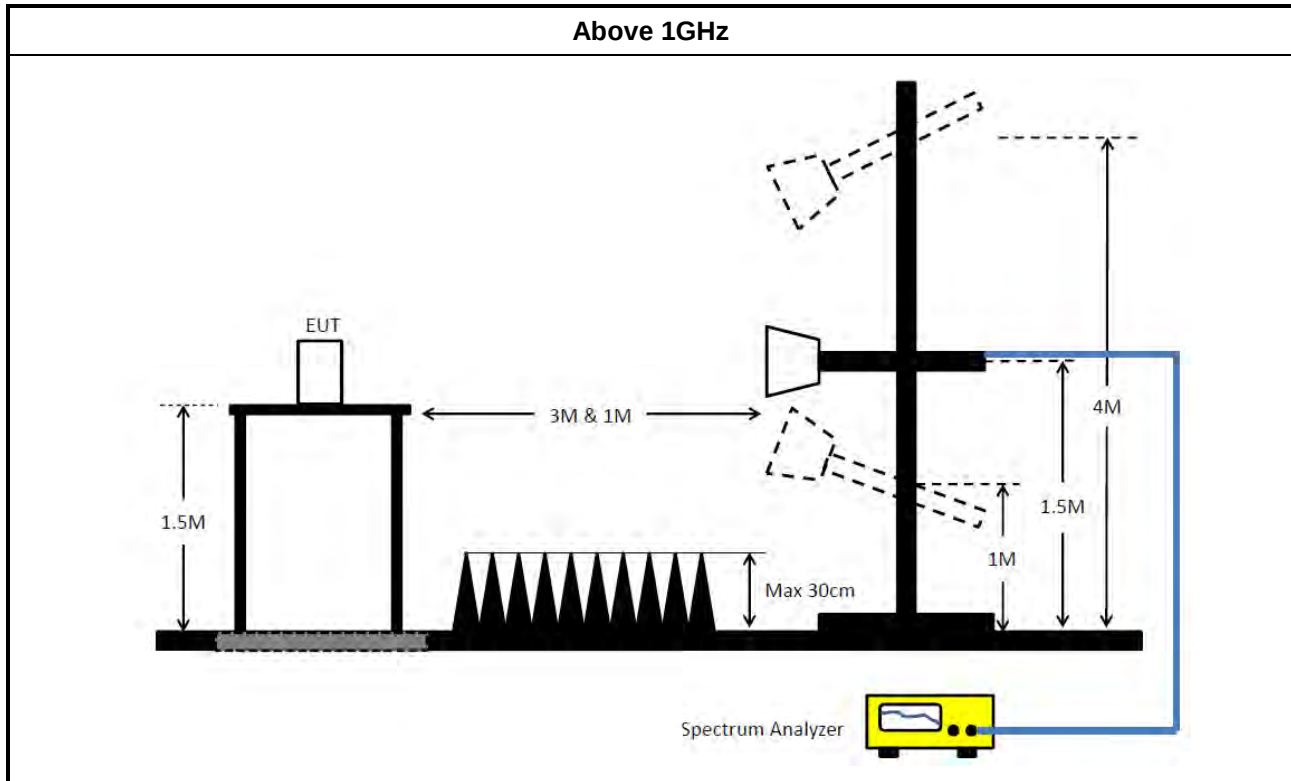
3.4.3 Test Procedures

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:	
For radiated measurement.	Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033 D02, 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 D02, clause G)5) measurement procedure peak limit.
The any unwanted emissions level shall not exceed the fundamental emission level.	☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.

Test Method

- 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 (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.4.6 Transmitter Unwanted Emissions (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.4.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGR EN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2021	Nov. 05, 2022	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH01-CB)
Horn Antenna	SCHWARZB ECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 05, 2022	Jul. 04, 2023	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 19, 2022	May 18, 2023	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH01-CB)
Pre-Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun. 21, 2022	Jun. 20, 2023	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 05, 2022	May 04, 2023	Radiation (03CH03-CB)
Horn Antenna	ETS-Lindgren	3115	6821	750MHz~18GHz	Jan. 21, 2022	Jan. 20, 2023	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH03-CB)
Horn Antenna	SCHWARZB ECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 05, 2022	Jul. 04, 2023	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jul. 02, 2021	Jul. 01, 2022	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH03-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun. 21, 2022	Jun. 20, 2023	Radiation (03CH03-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 26, 2022	Apr. 25, 2023	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Jan. 07, 2022	Jan. 06, 2023	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~40GHz	Aug. 22, 2021	Aug. 21, 2022	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1531344	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Aug. 22, 2021	Aug. 21, 2022	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1728002	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz ~18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1 GHz ~26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P1	1 GHz ~26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P2	1 GHz ~26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P3	1 GHz ~26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P4	1 GHz ~26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	SWI-03-P5	1 GHz ~26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)



RADIO TEST REPORT

Report No. : FR251735-01AA

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

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

N.C.R. means Non-Calibration required.

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_1TX	82.8M	78.281M	78M3D1D	82.8M	78.281M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	37.2M	18.771M	18M8D1D	24.72M	17.391M
802.11ax HEW20_Nss1,(MCS0)_1TX	40.05M	19.7M	19M7D1D	25.83M	19.28M
802.11ax HEW40_Nss1,(MCS0)_1TX	54.12M	38.261M	38M3D1D	48.96M	38.201M
802.11ax HEW80_Nss1,(MCS0)_1TX	88.56M	78.081M	78M1D1D	88.56M	78.081M
802.11ax HEW160_Nss1,(MCS0)_1TX	83.52M	78.521M	78M5D1D	83.52M	78.521M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	39.45M	19.43M	19M4D1D	22.11M	14.933M
802.11ax HEW20_Nss1,(MCS0)_1TX	41.91M	19.82M	19M8D1D	21.9M	14.888M
802.11ax HEW40_Nss1,(MCS0)_1TX	66.36M	38.921M	38M9D1D	36.085M	33.933M
802.11ax HEW80_Nss1,(MCS0)_1TX	146.04M	79.52M	79M5D1D	88.08M	74.213M
802.11ax HEW160_Nss1,(MCS0)_1TX	164.64M	156.642M	157MD1D	164.64M	156.642M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	3.14M	9.715M	9M72D1D	3.14M	9.715M
802.11ax HEW20_Nss1,(MCS0)_1TX	4.48M	9.475M	9M48D1D	4.48M	9.475M
802.11ax HEW40_Nss1,(MCS0)_1TX	4M	6.017M	6M02D1D	4M	6.017M
802.11ax HEW80_Nss1,(MCS0)_1TX	3.86M	32.124M	32M1D1D	3.86M	32.124M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Min-OBW = Minimum 99% occupied bandwidth

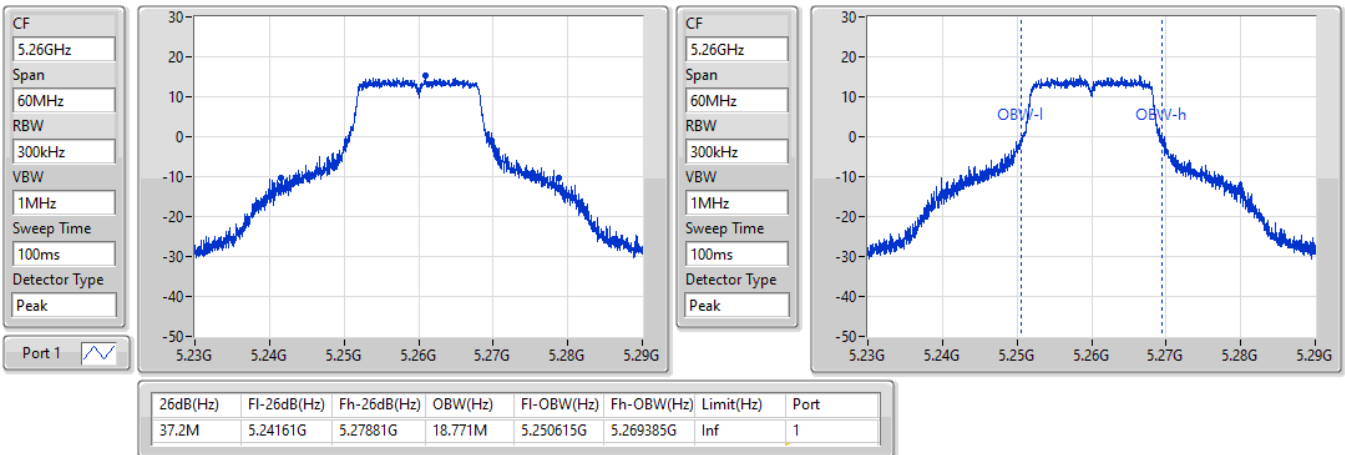
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5260MHz	Pass	Inf	37.2M	18.771M
5300MHz	Pass	Inf	35.67M	18.591M
5320MHz	Pass	Inf	24.72M	17.391M
5500MHz	Pass	Inf	29.79M	17.841M
5580MHz	Pass	Inf	39.45M	19.43M
5700MHz	Pass	Inf	22.11M	17.121M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	23.49M	14.933M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	9.715M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5260MHz	Pass	Inf	40.05M	19.7M
5300MHz	Pass	Inf	39.51M	19.61M
5320MHz	Pass	Inf	25.83M	19.28M
5500MHz	Pass	Inf	32.34M	19.34M
5580MHz	Pass	Inf	41.91M	19.82M
5700MHz	Pass	Inf	21.9M	19.1M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	25.2M	14.888M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	9.475M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5270MHz	Pass	Inf	54.12M	38.261M
5310MHz	Pass	Inf	48.96M	38.201M
5510MHz	Pass	Inf	49.08M	38.201M
5550MHz	Pass	Inf	66.36M	38.921M
5670MHz	Pass	Inf	43.14M	38.201M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	36.085M	33.933M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4M	6.017M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5290MHz	Pass	Inf	88.56M	78.081M
5530MHz	Pass	Inf	88.08M	77.961M
5610MHz	Pass	Inf	146.04M	79.52M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	99.9M	74.213M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.86M	32.124M
802.11ax HEW160_Nss1,(MCS0)_1TX	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.8M	78.281M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	83.52M	78.521M
5570MHz	Pass	Inf	164.64M	156.642M

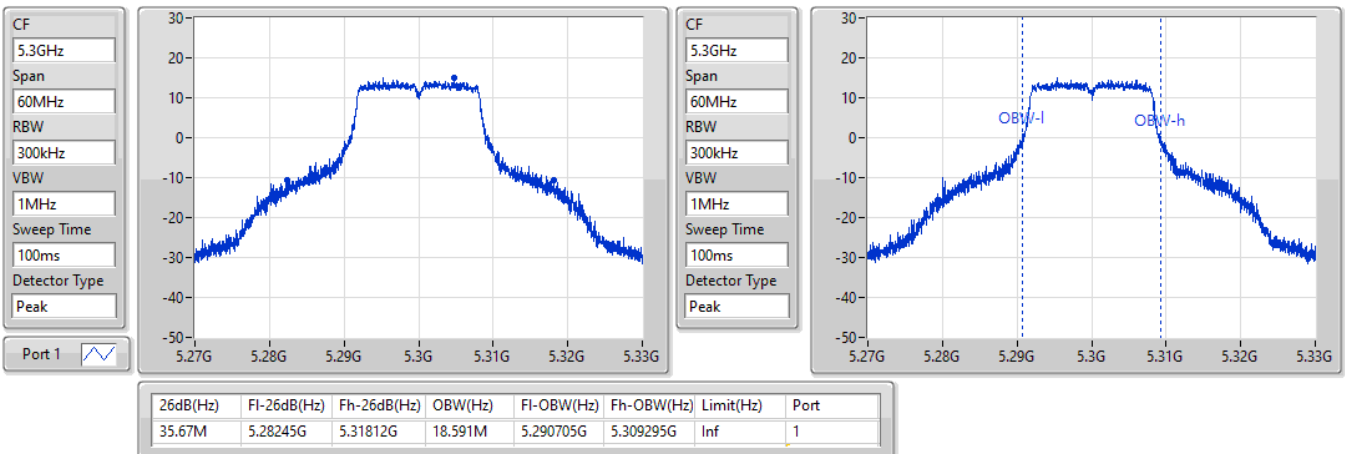
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_1TX
EBW
5260MHz

06/08/2022


802.11a_Nss1,(6Mbps)_1TX
EBW
5300MHz

06/08/2022

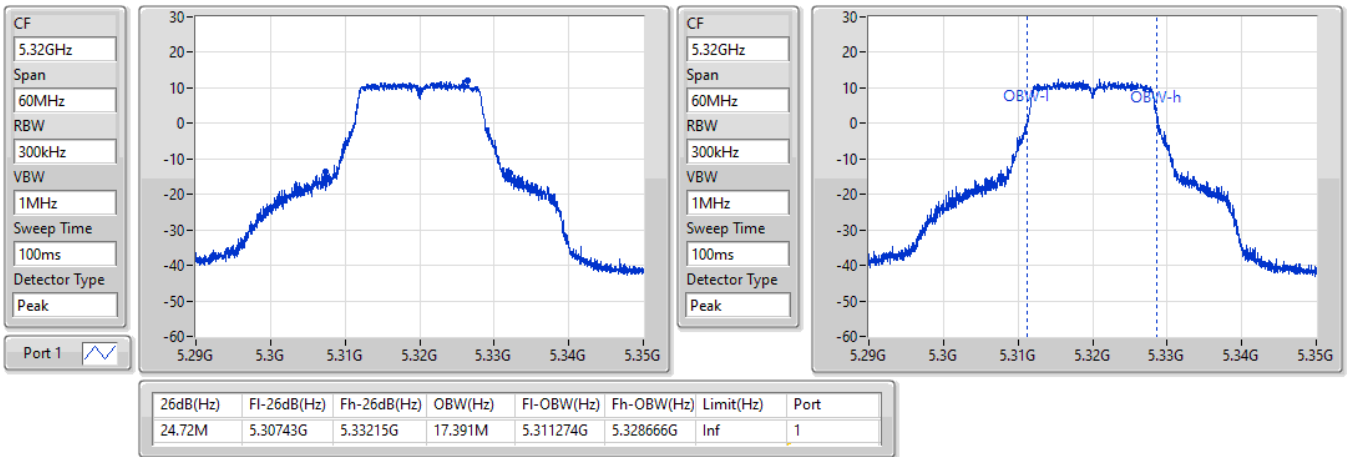


802.11a_Nss1,(6Mbps)_1TX

EBW

5320MHz

06/08/2022

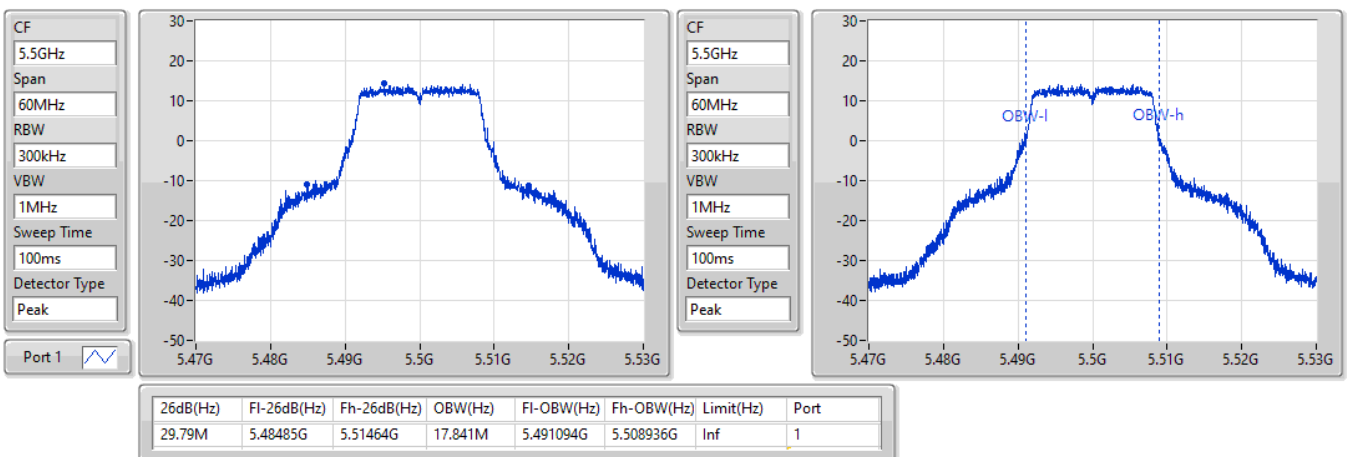


802.11a_Nss1,(6Mbps)_1TX

EBW

5500MHz

06/08/2022

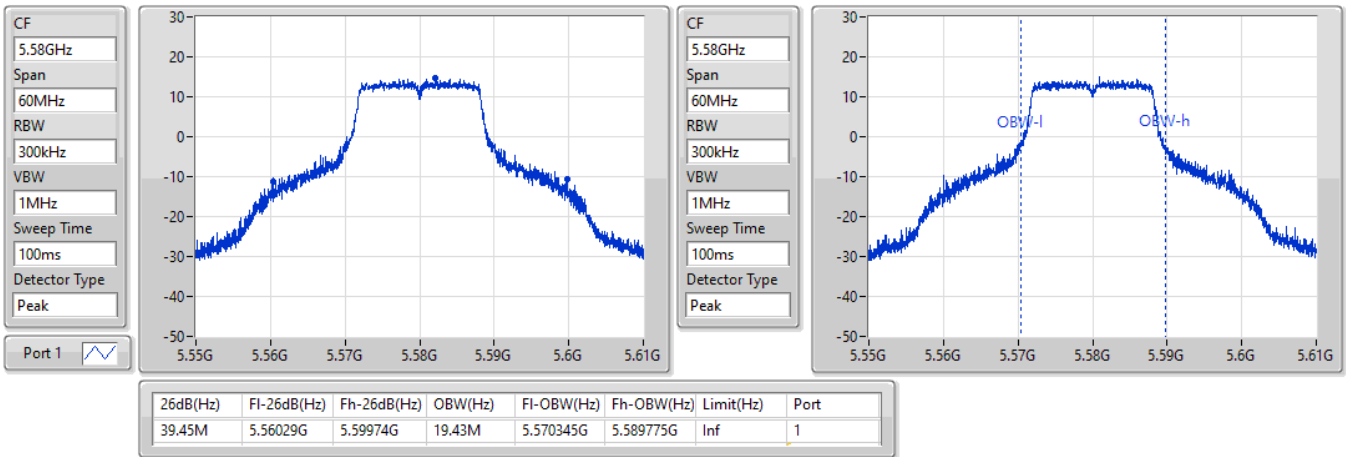


802.11a_Nss1,(6Mbps)_1TX

EBW

5580MHz

06/08/2022

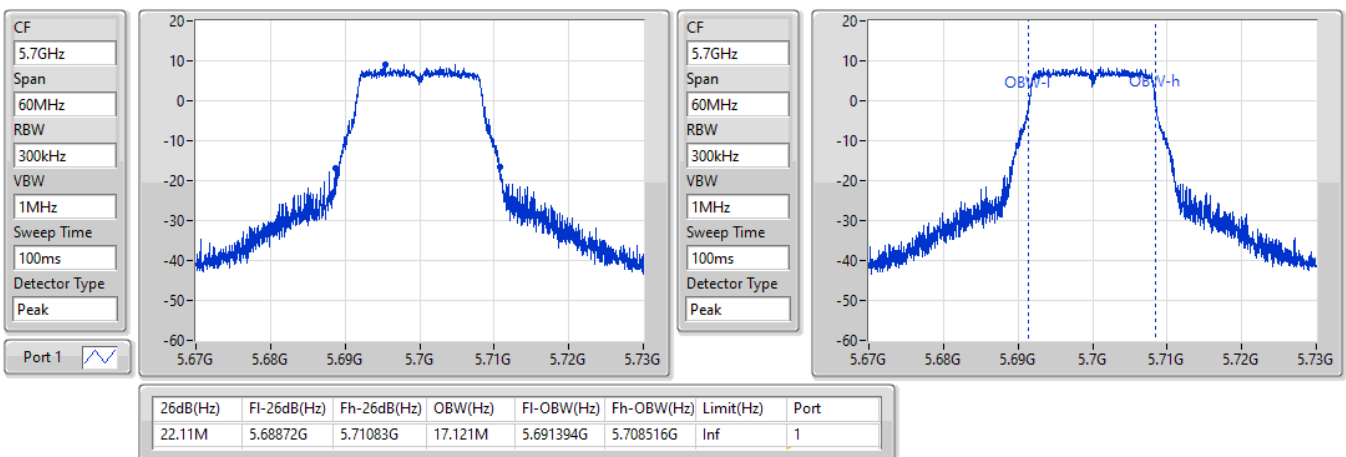


802.11a_Nss1,(6Mbps)_1TX

EBW

5700MHz

06/08/2022

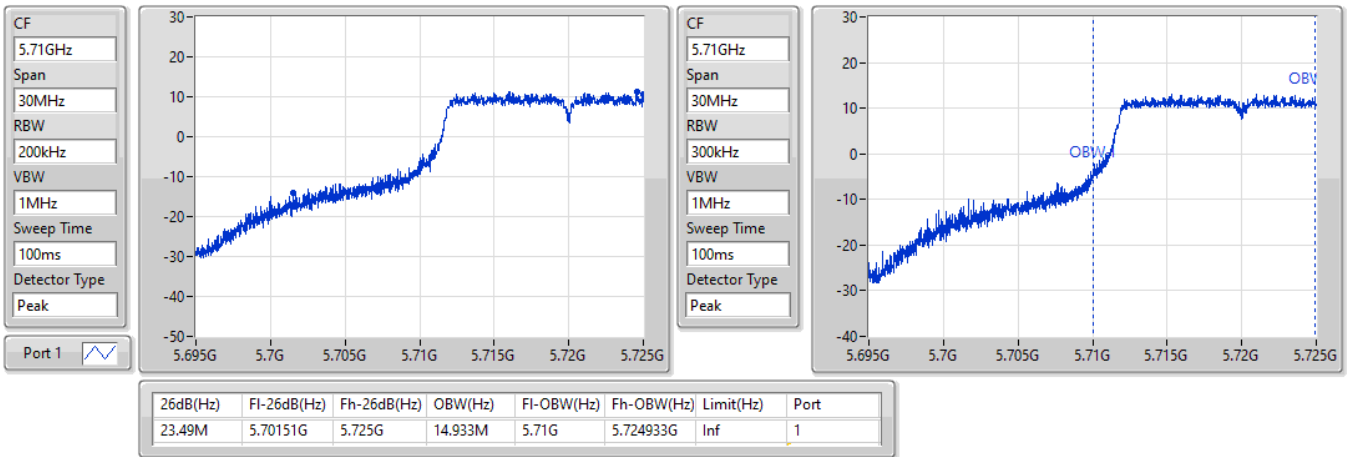


802.11a_Nss1,(6Mbps)_1TX

EBW

5720MHz Straddle 5.67-5.725GHz

05/09/2022

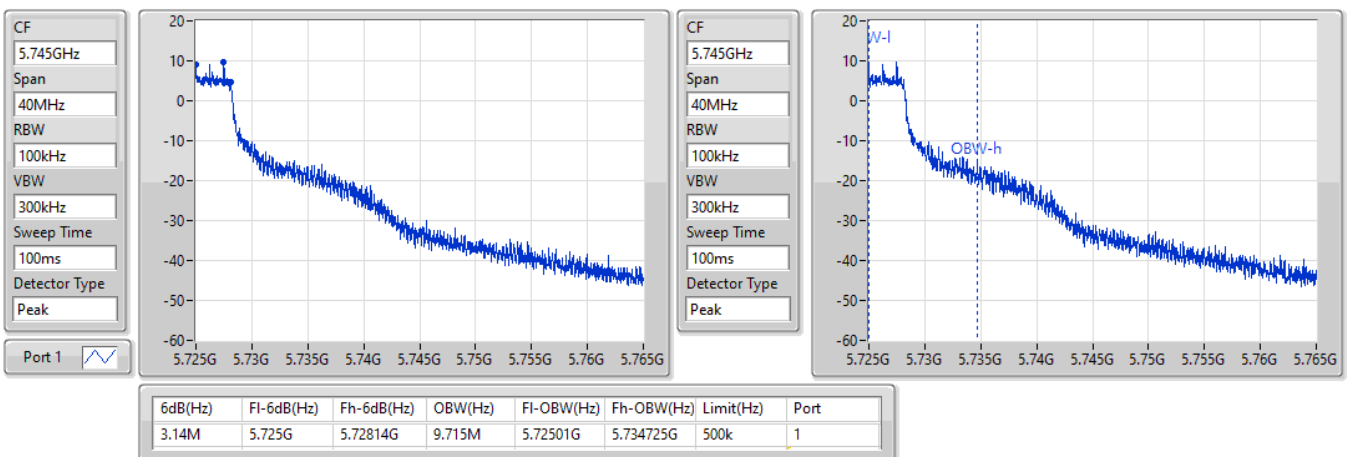


802.11a_Nss1,(6Mbps)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/09/2022

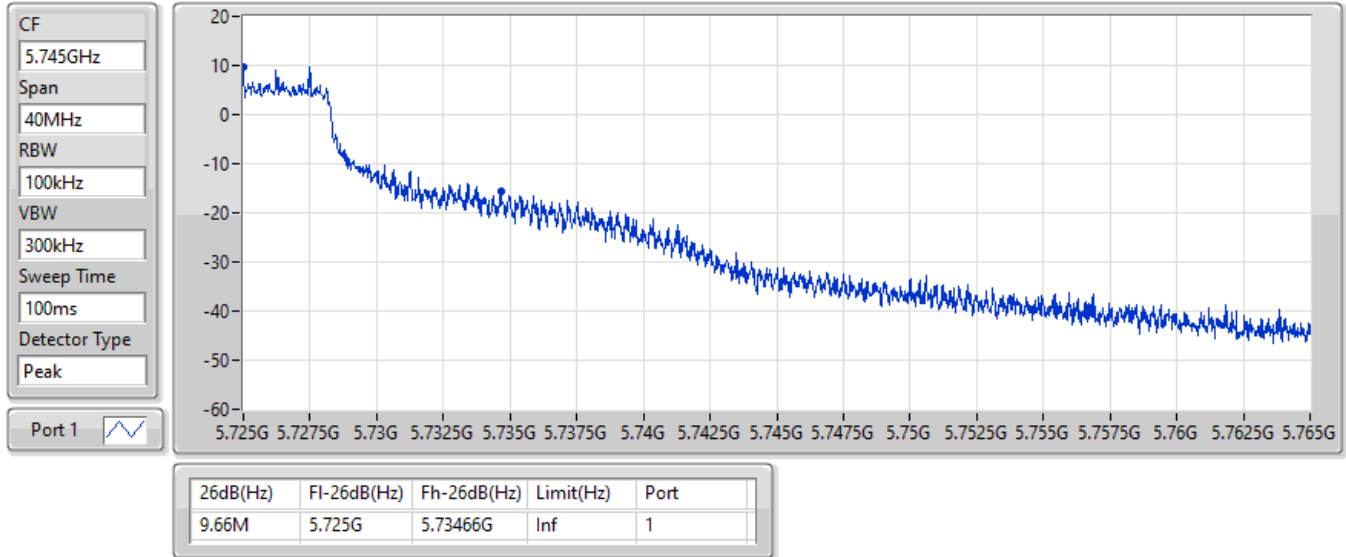


802.11a_Nss1,(6Mbps)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/09/2022

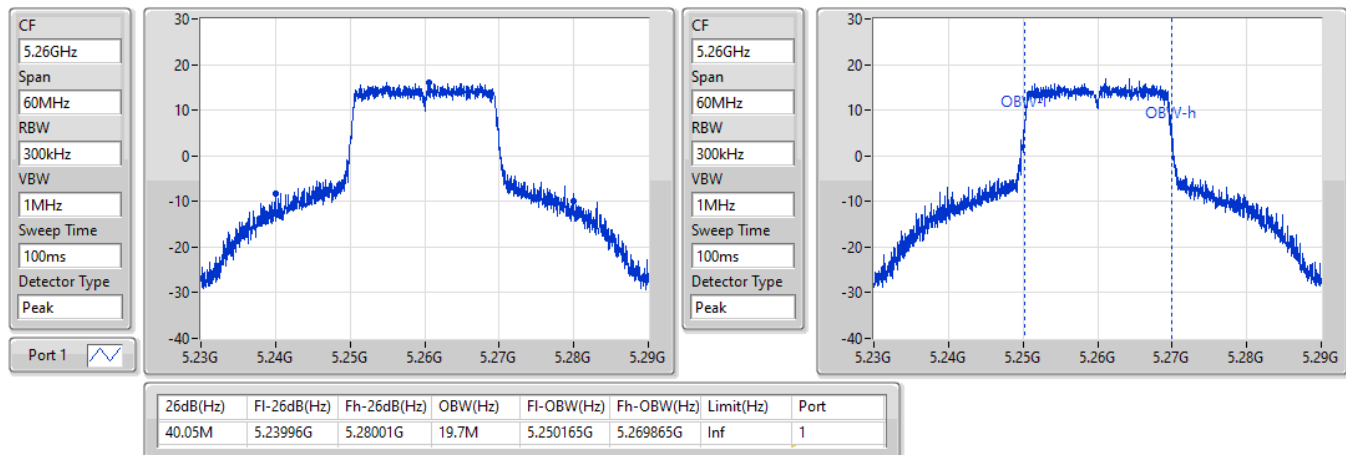


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5260MHz

06/08/2022

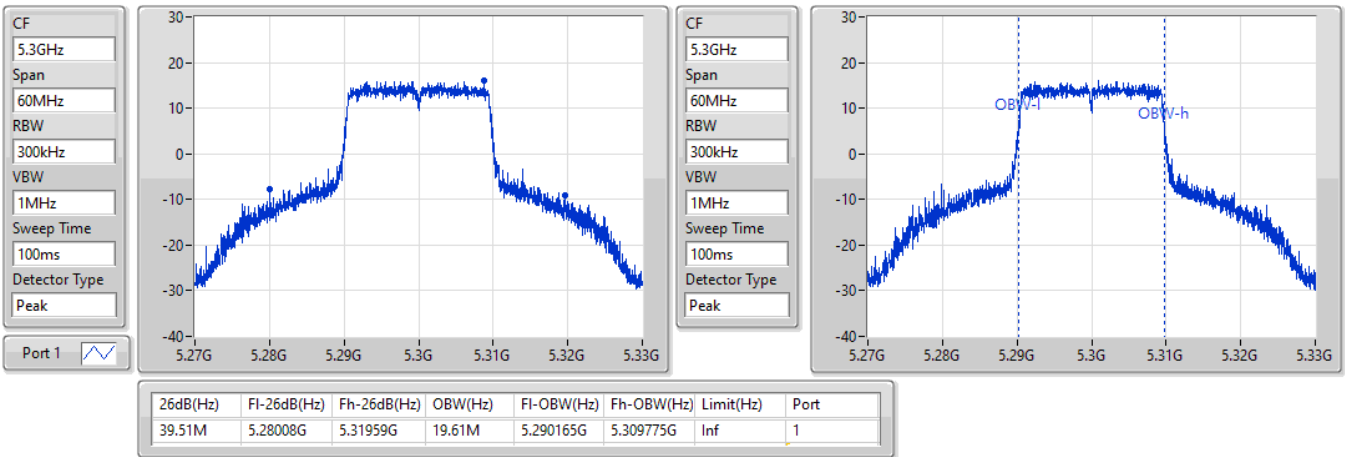


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5300MHz

06/08/2022

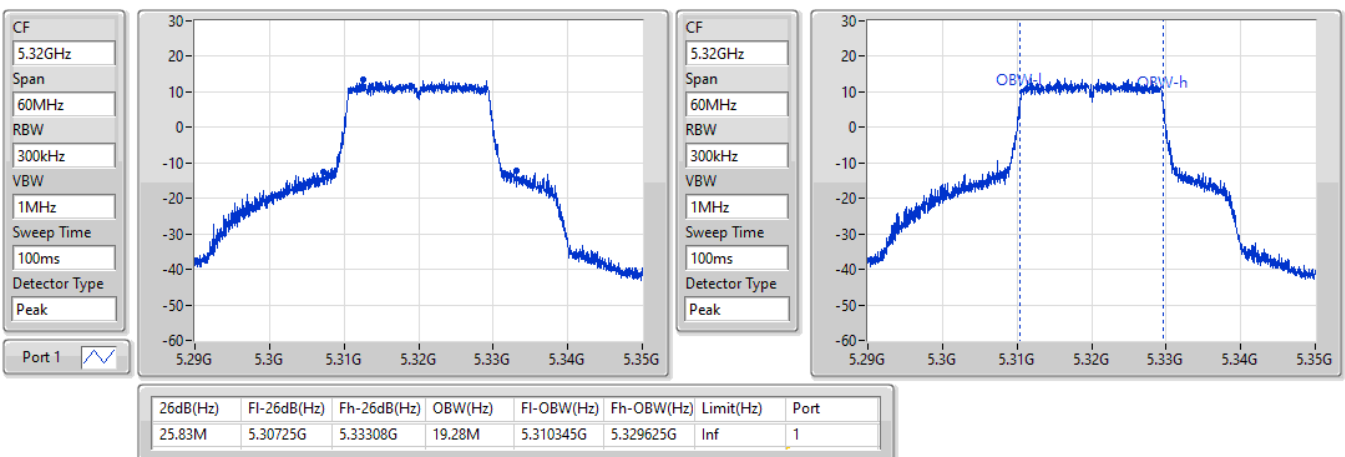


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5320MHz

06/08/2022

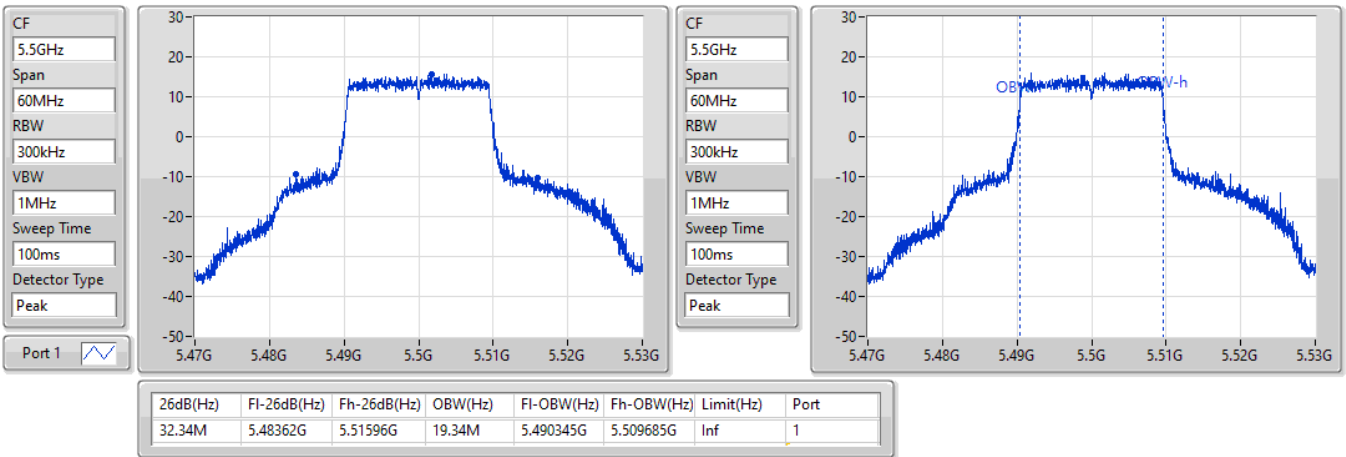


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5500MHz

06/08/2022

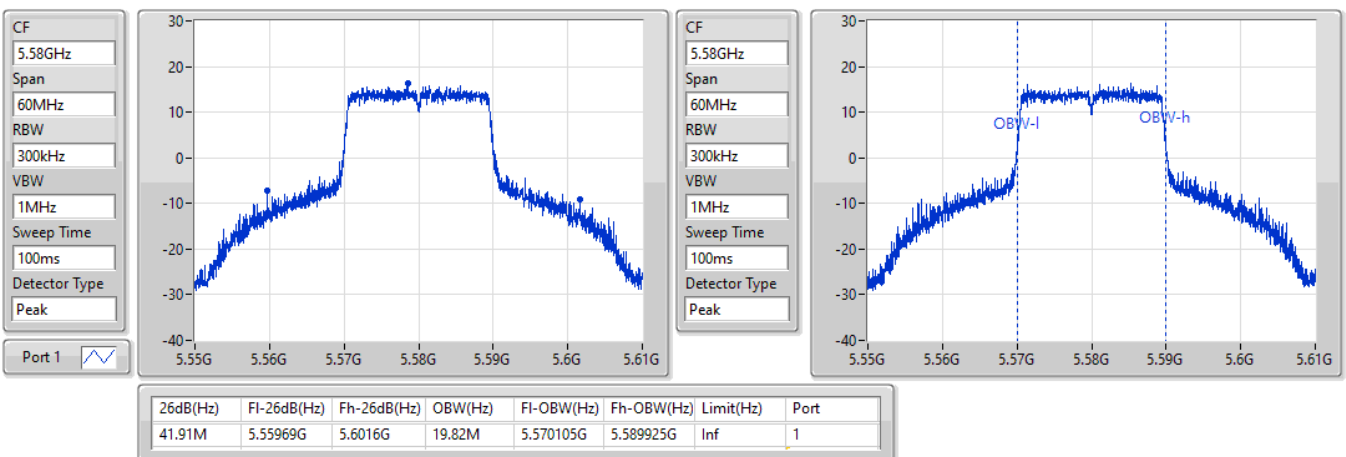


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5580MHz

06/08/2022

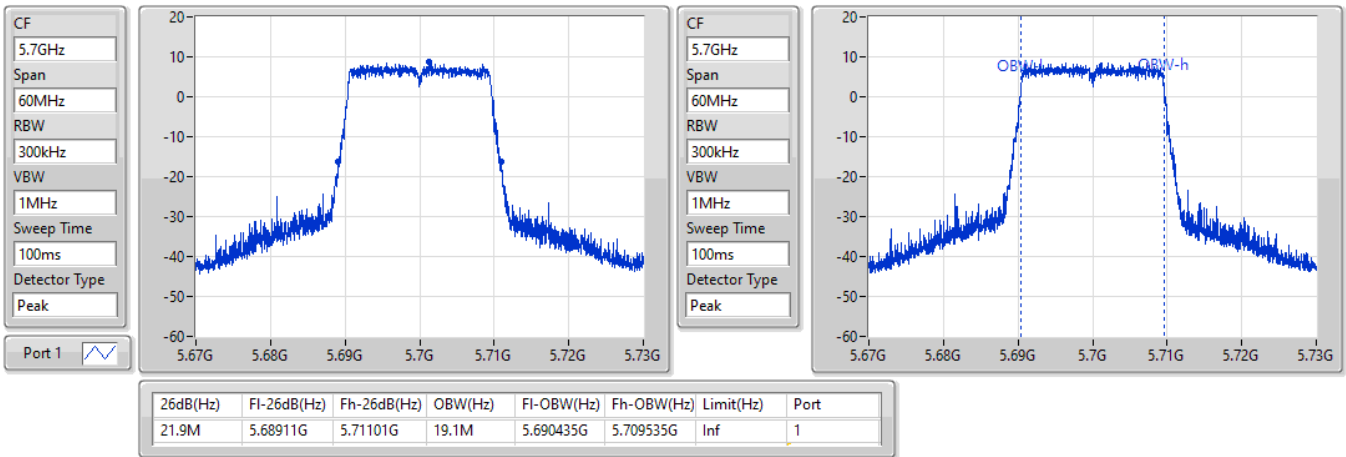


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5700MHz

06/08/2022

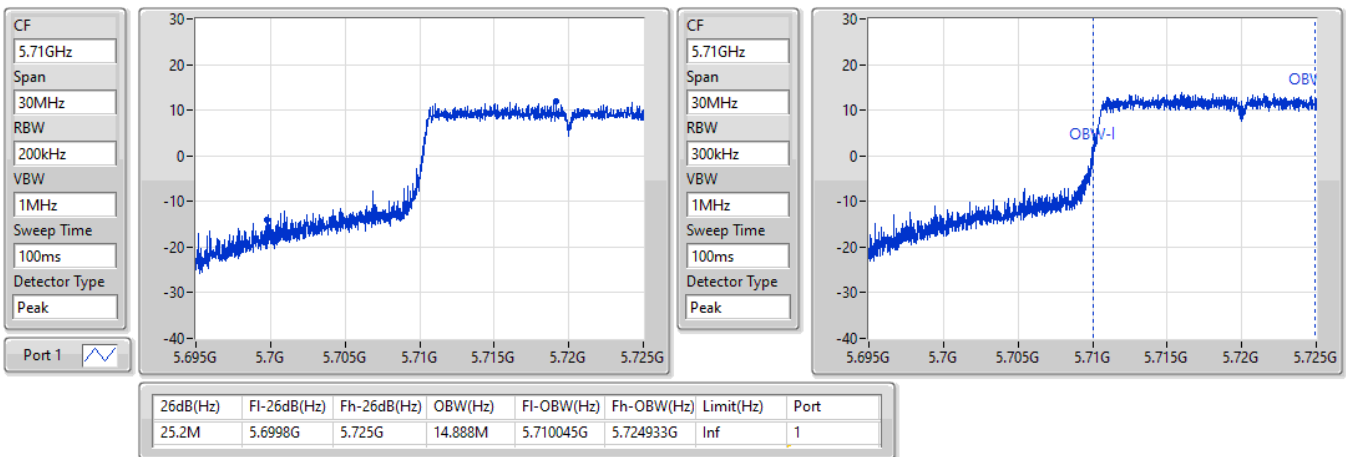


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5720MHz Straddle 5.47-5.725GHz

05/09/2022

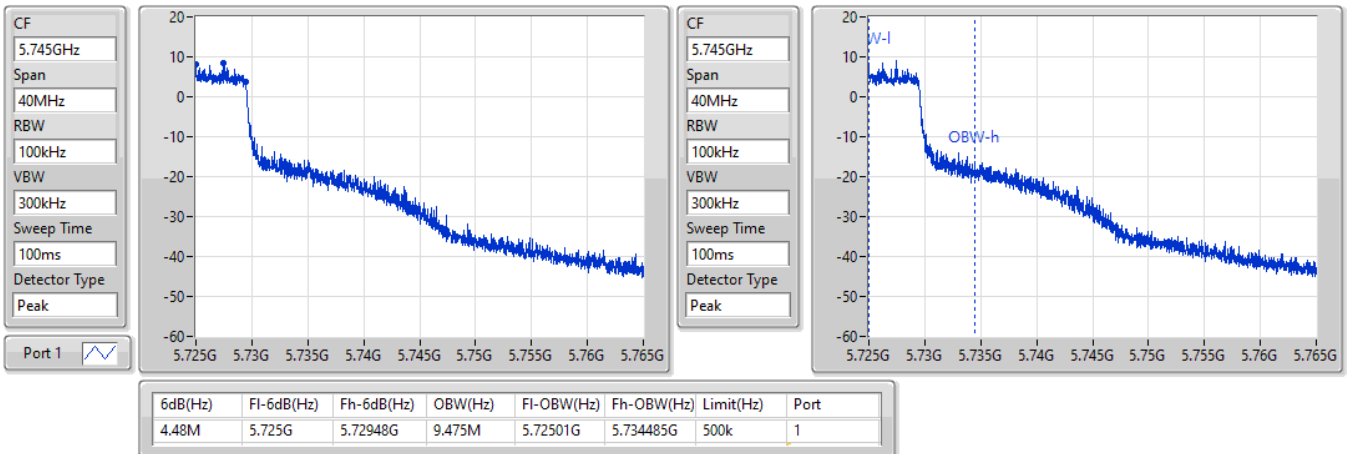


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/09/2022

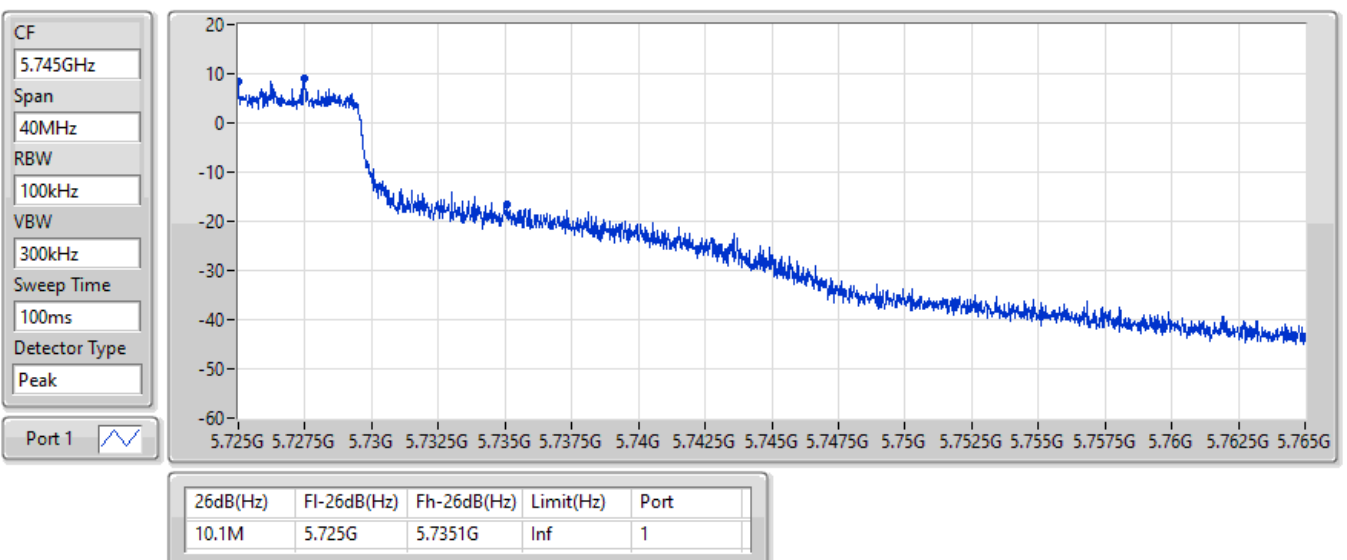


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/09/2022

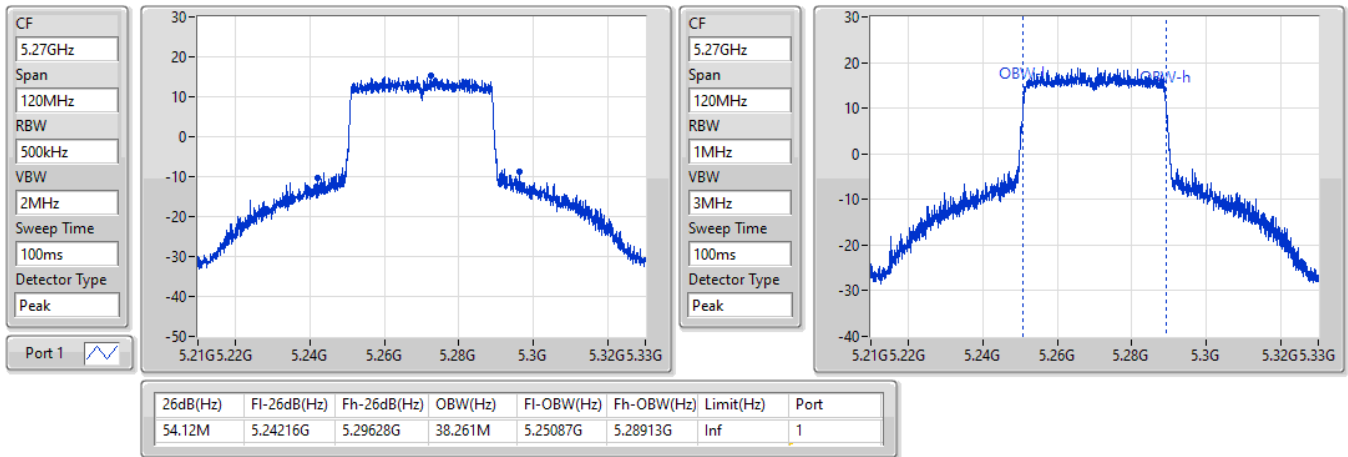


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5270MHz

06/08/2022

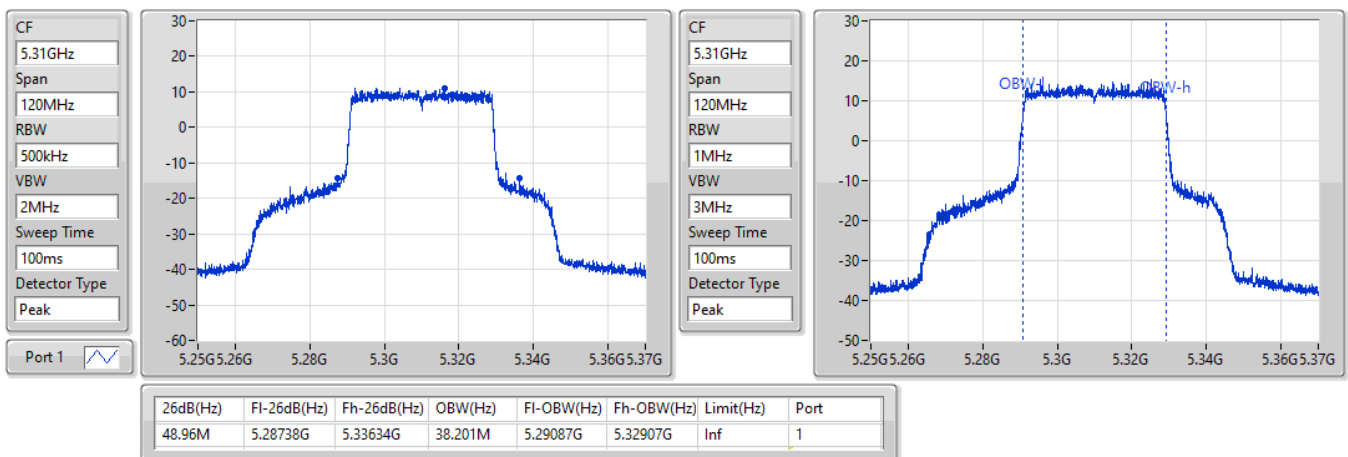


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5310MHz

06/08/2022

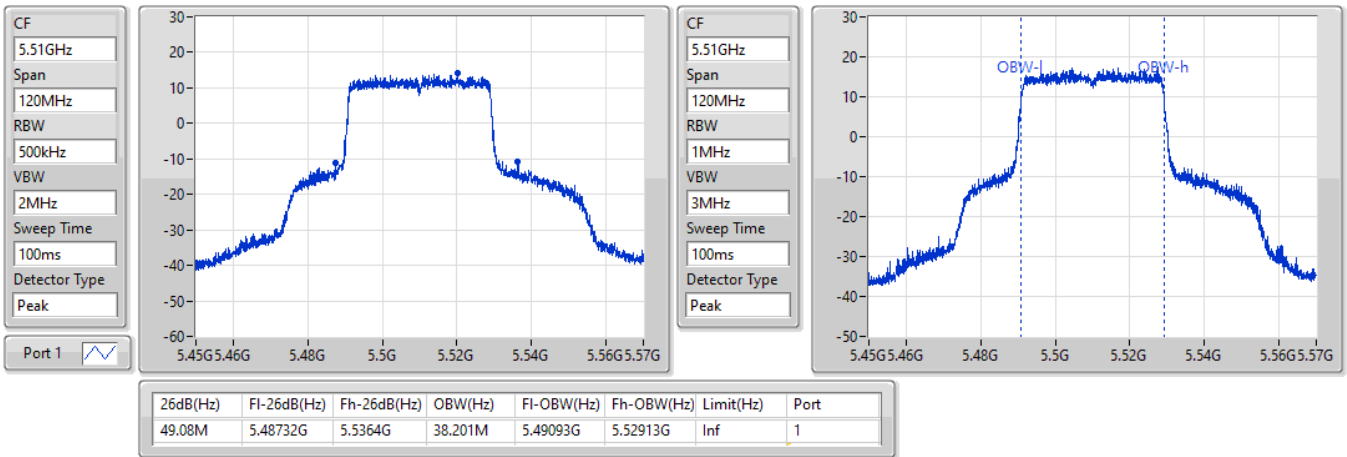


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5510MHz

06/08/2022

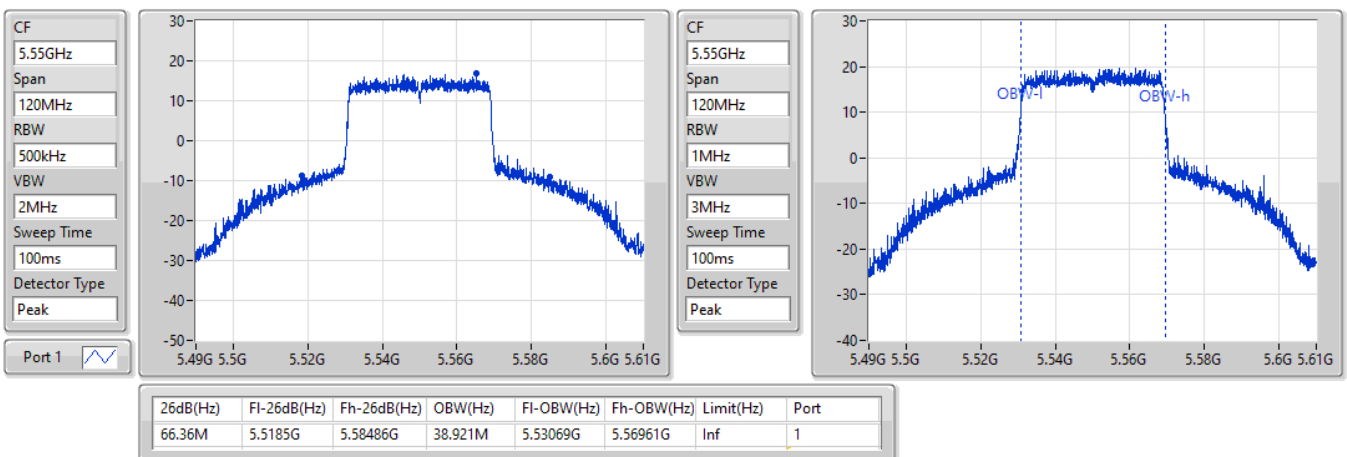


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5550MHz

06/08/2022

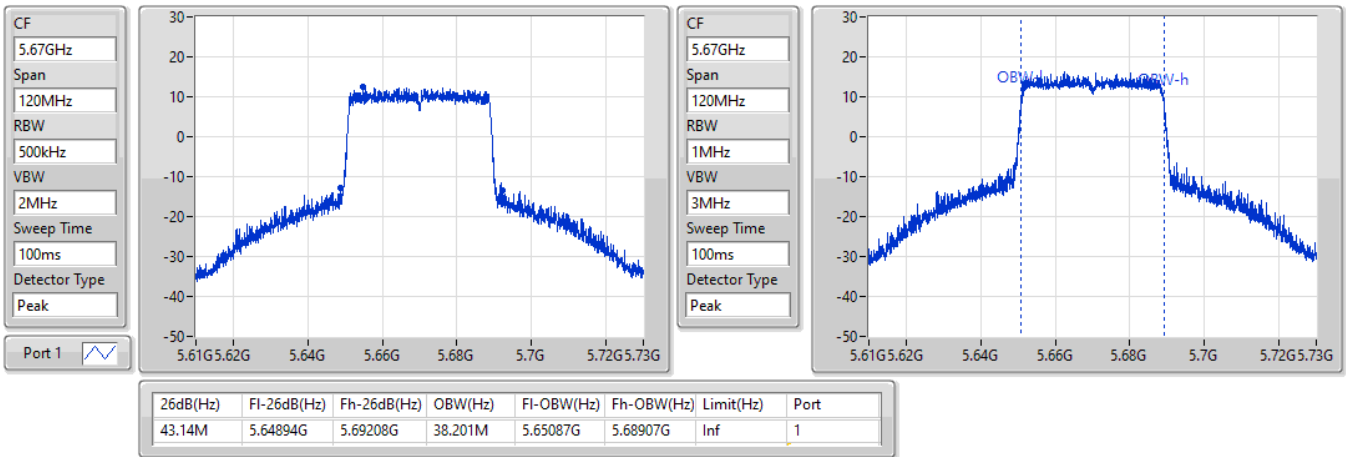


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5670MHz

06/08/2022

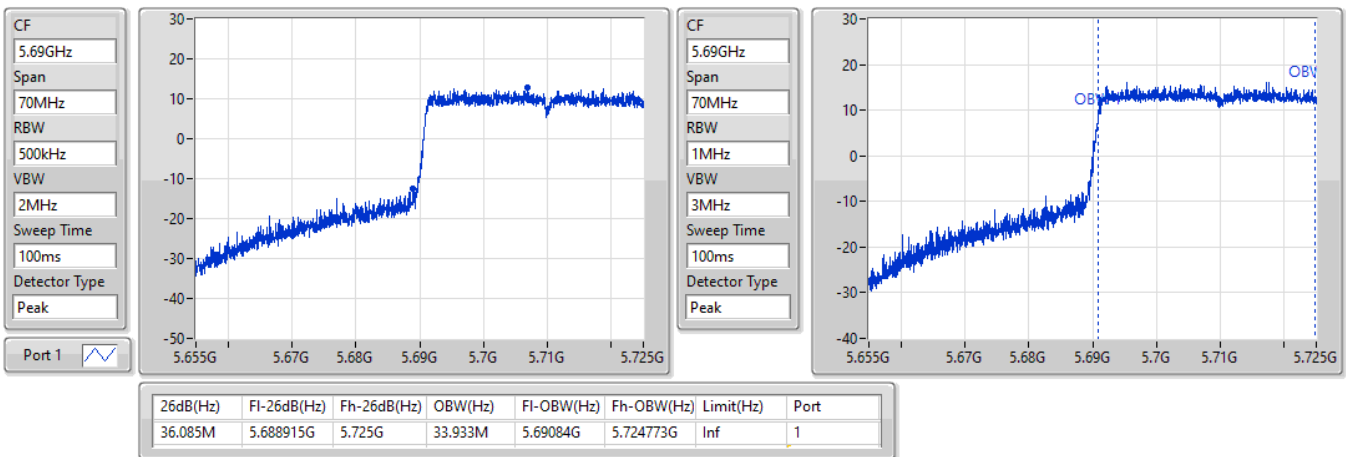


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5710MHz Straddle 5.47-5.725GHz

06/08/2022

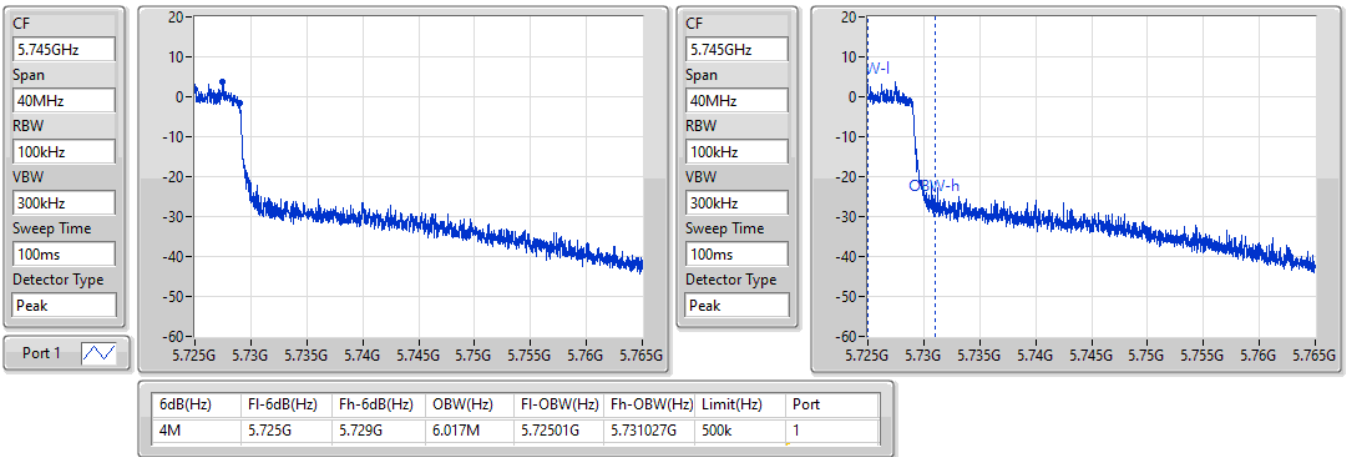


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5710MHz Straddle 5.725-5.85GHz

06/08/2022

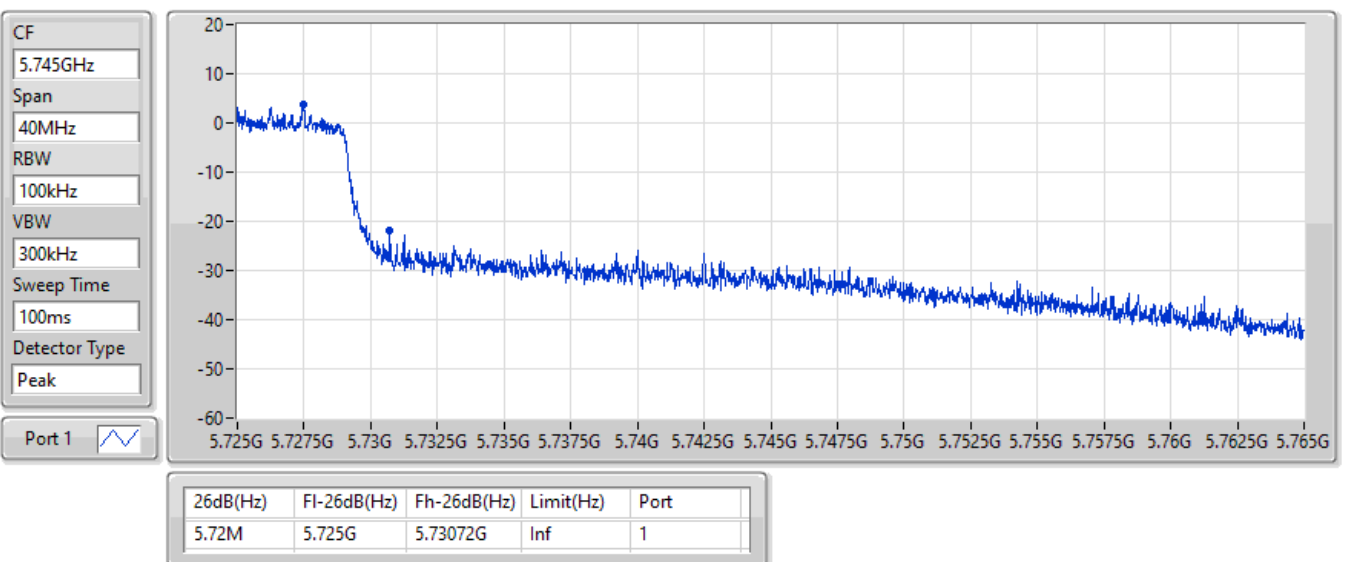


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5710MHz Straddle 5.725-5.85GHz

06/08/2022

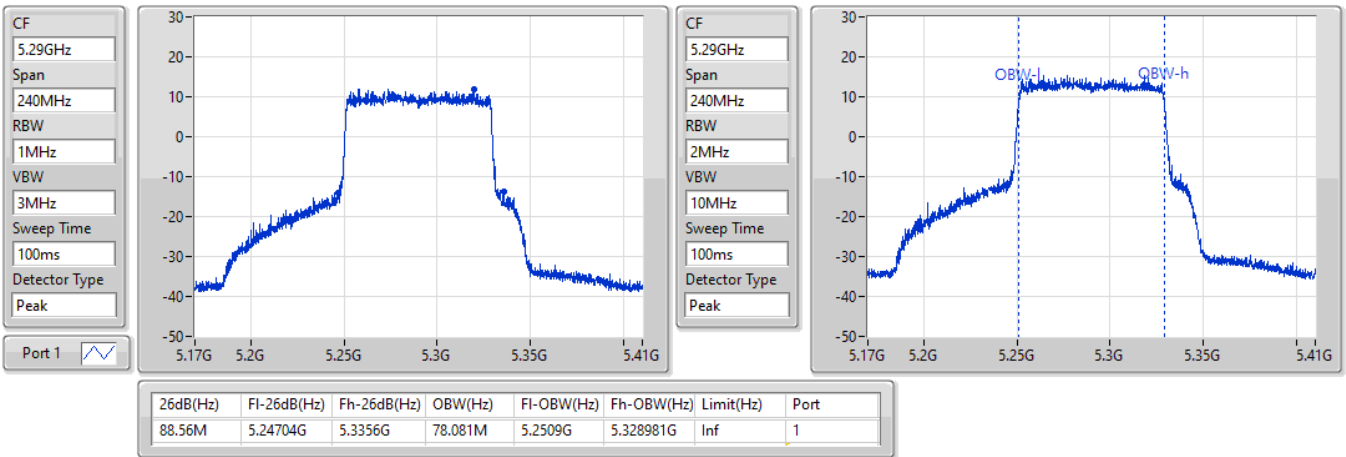


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5290MHz

06/08/2022

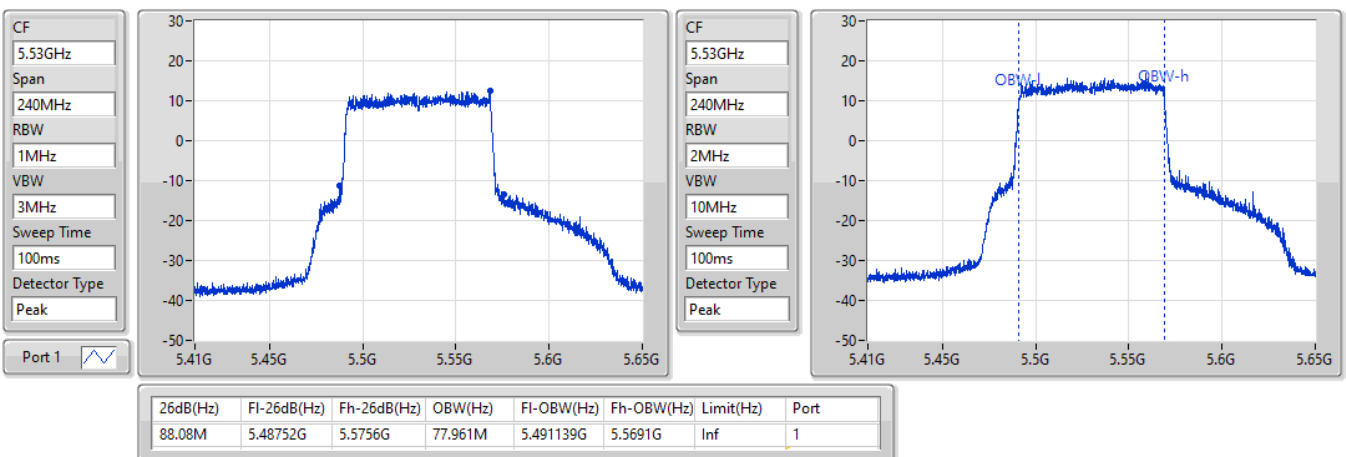


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5530MHz

06/08/2022

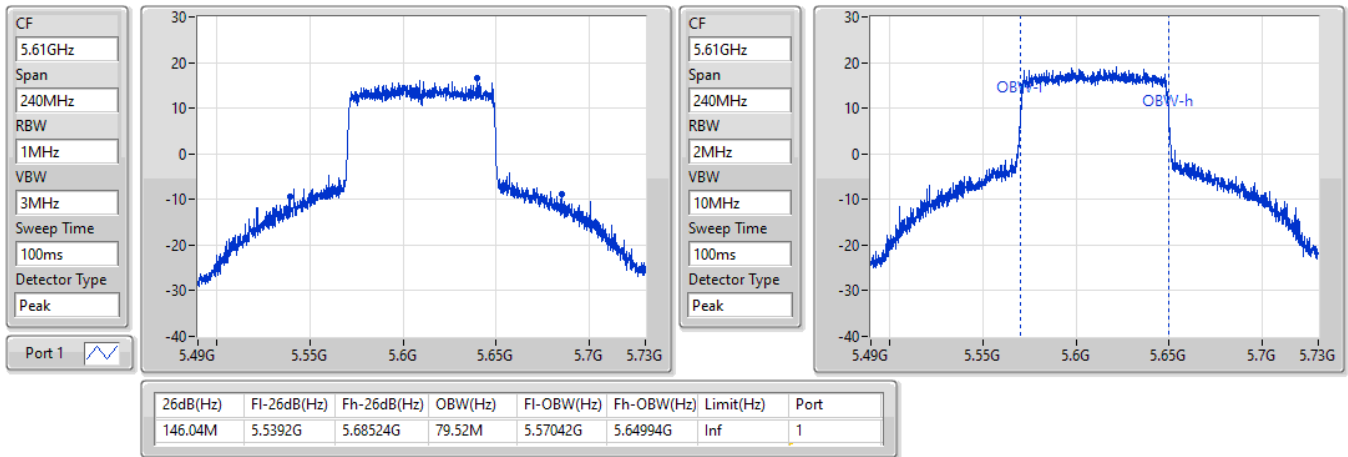


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5610MHz

06/08/2022

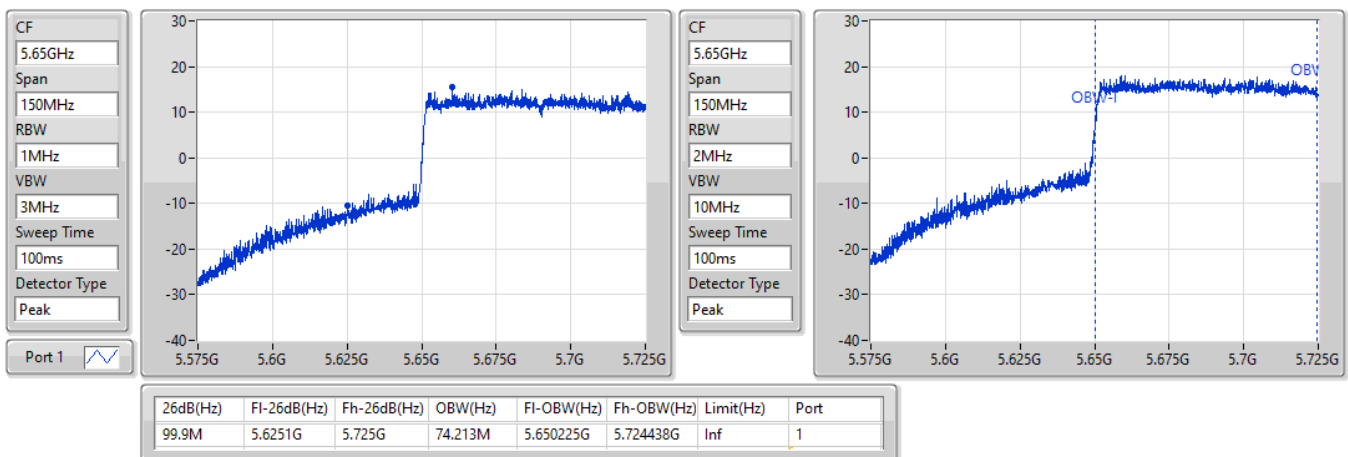


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5690MHz Straddle 5.47-5.725GHz

06/08/2022

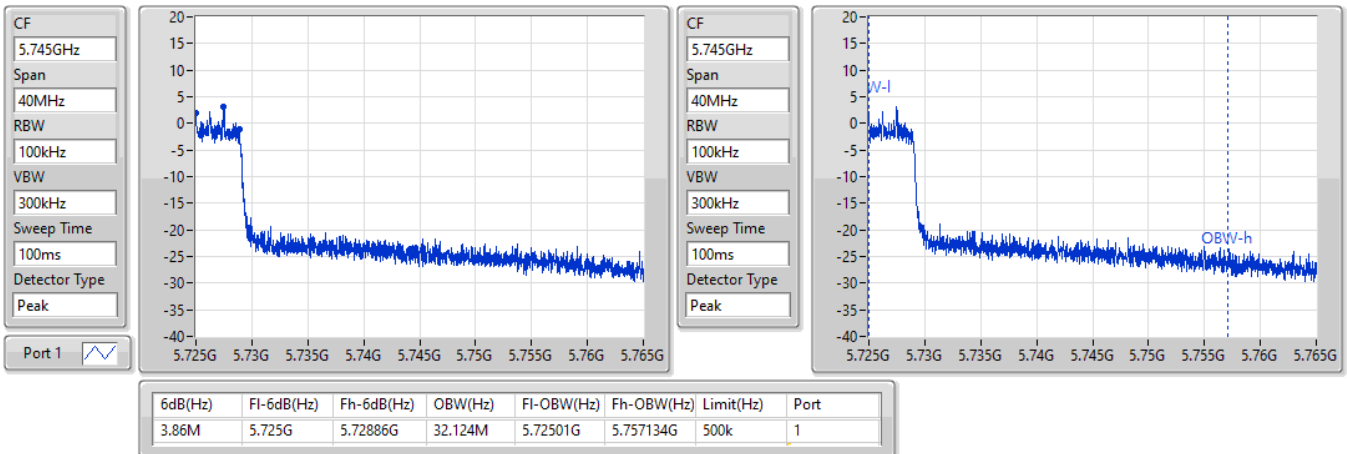


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5690MHz Straddle 5.725-5.85GHz

06/08/2022

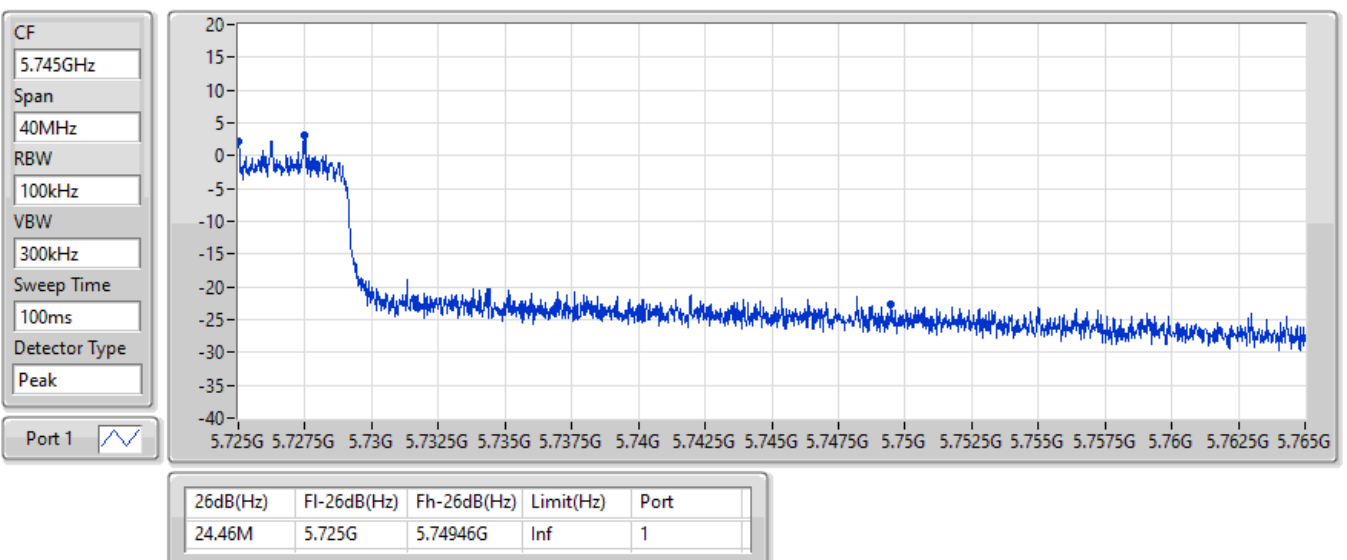


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5690MHz Straddle 5.725-5.85GHz

06/08/2022

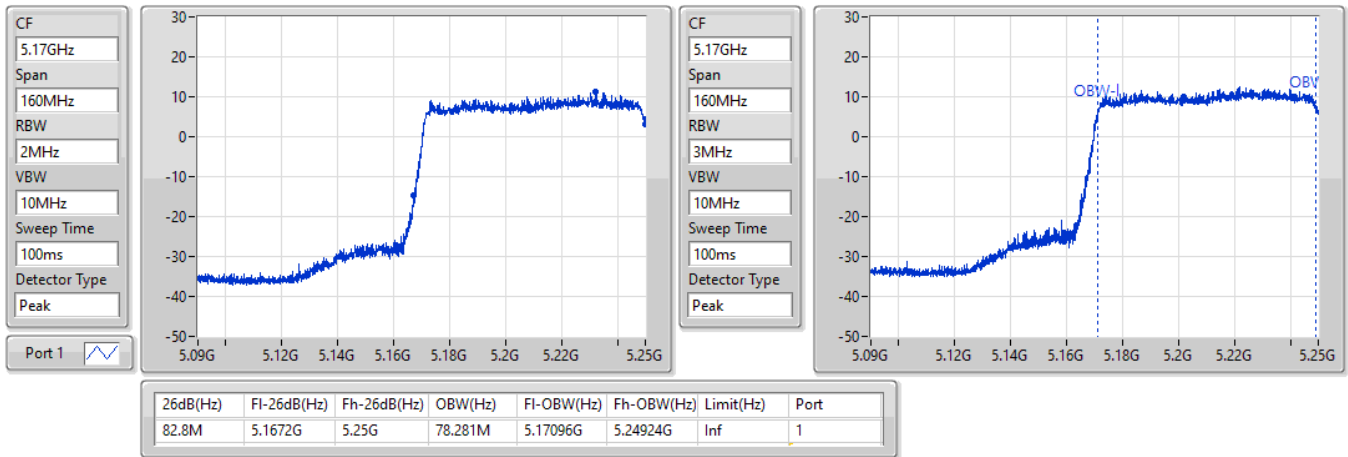


802.11ax HEW160_Nss1,(MCS0)_1TX

EBW

5250MHz Straddle 5.15-5.25GHz

06/08/2022

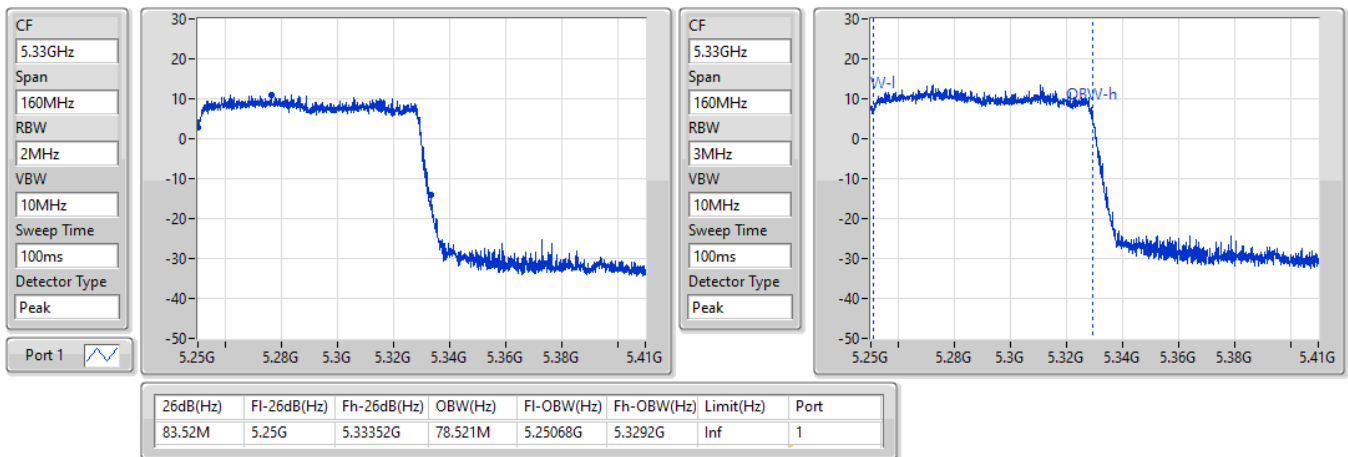


802.11ax HEW160_Nss1,(MCS0)_1TX

EBW

5250MHz Straddle 5.25-5.35GHz

06/08/2022

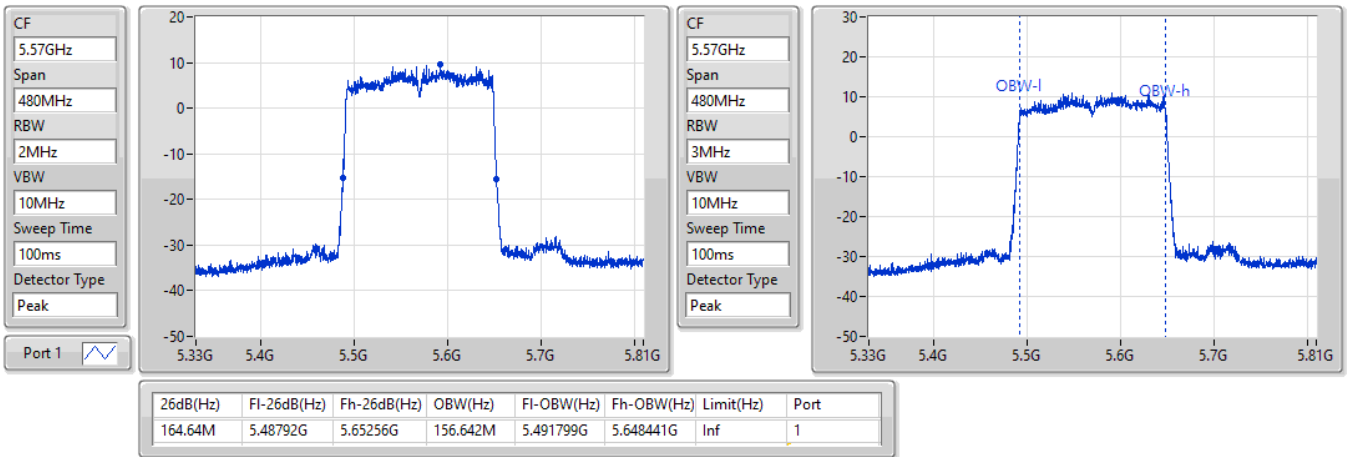


802.11ax HEW160_Nss1,(MCS0)_1TX

EBW

5570MHz

06/08/2022



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	27.39M	17.451M	17M5D1D	23.01M	17.151M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	28.68M	17.571M	17M6D1D	21.225M	14.318M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.14M	7.796M	7M80D1D	3.14M	6.997M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	23.19M	17.271M	25.59M	17.151M
5300MHz	Pass	Inf	23.01M	17.241M	24.93M	17.151M
5320MHz	Pass	Inf	24.87M	17.451M	27.39M	17.391M
5500MHz	Pass	Inf	26.49M	17.571M	27.45M	17.451M
5580MHz	Pass	Inf	28.68M	17.541M	27.96M	17.421M
5700MHz	Pass	Inf	21.48M	17.121M	21.45M	16.912M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	22.845M	14.318M	21.225M	14.363M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	6.997M	3.14M	7.796M

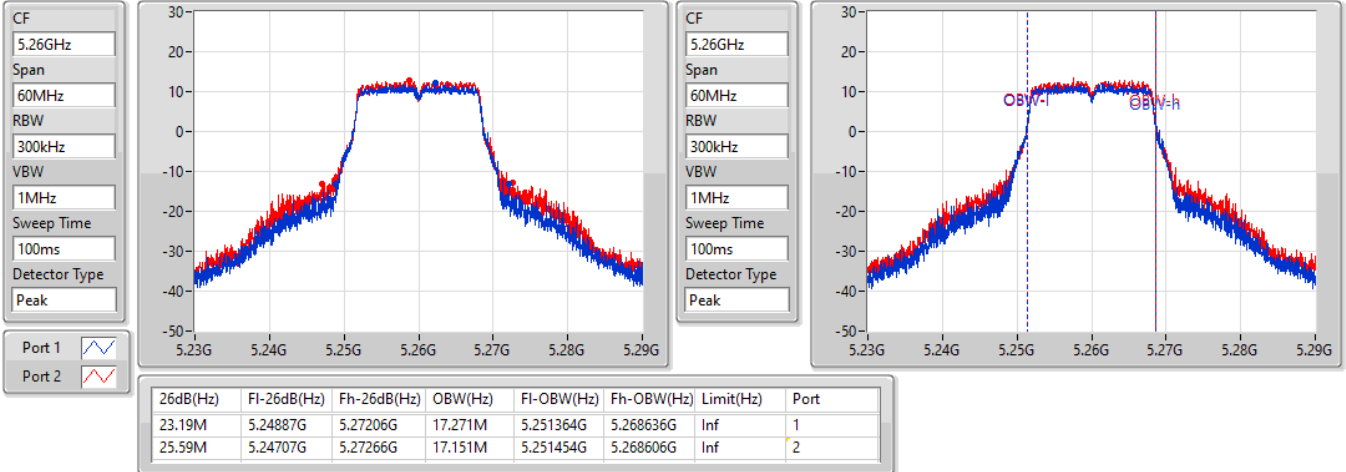
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_2TX

EBW

5260MHz

06/08/2022

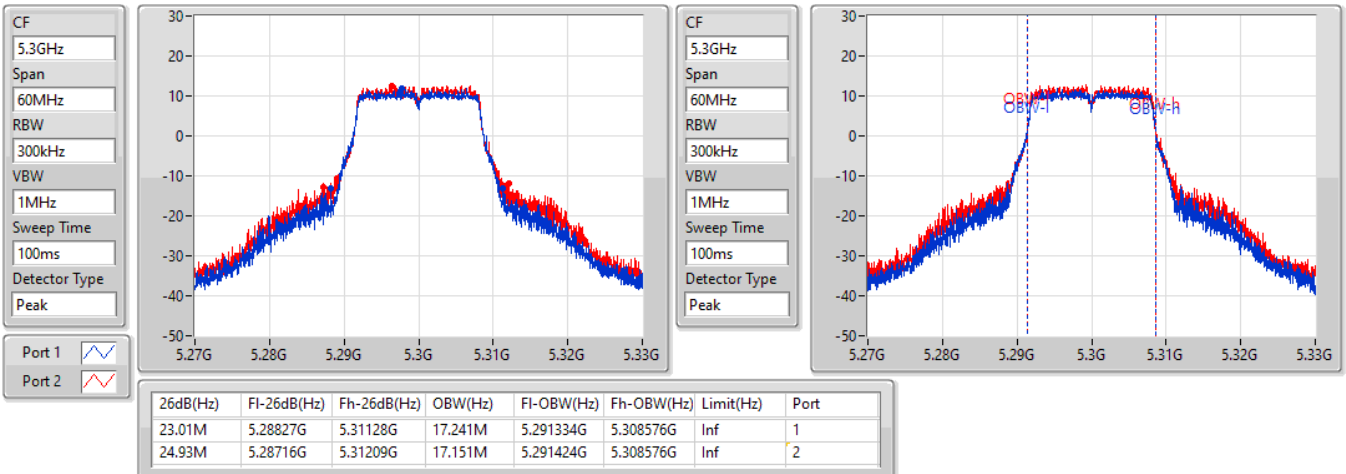


802.11a_Nss1,(6Mbps)_2TX

EBW

5300MHz

06/08/2022

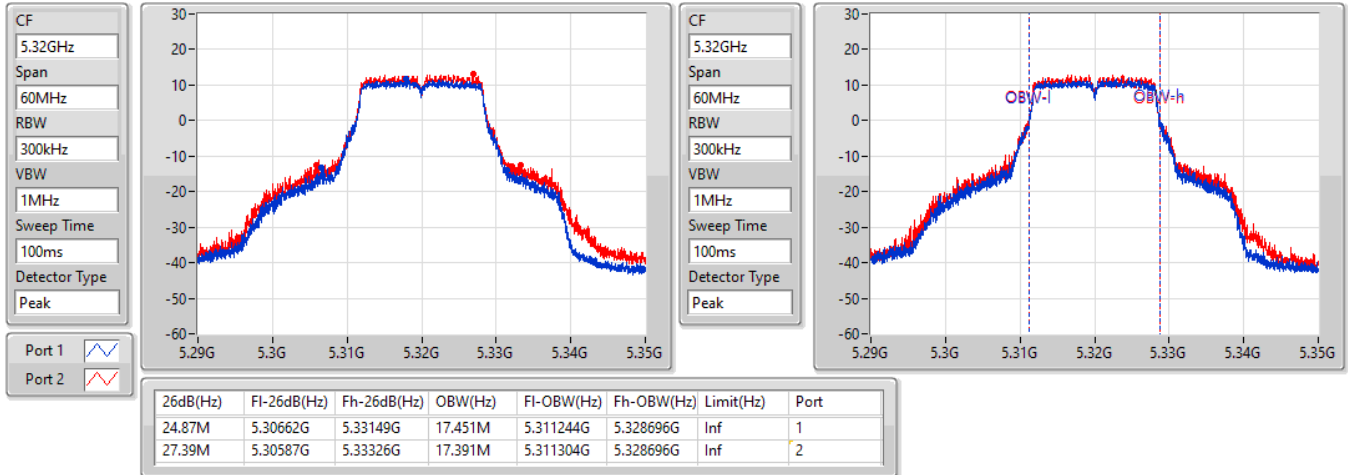


802.11a_Nss1,(6Mbps)_2TX

EBW

5320MHz

06/08/2022

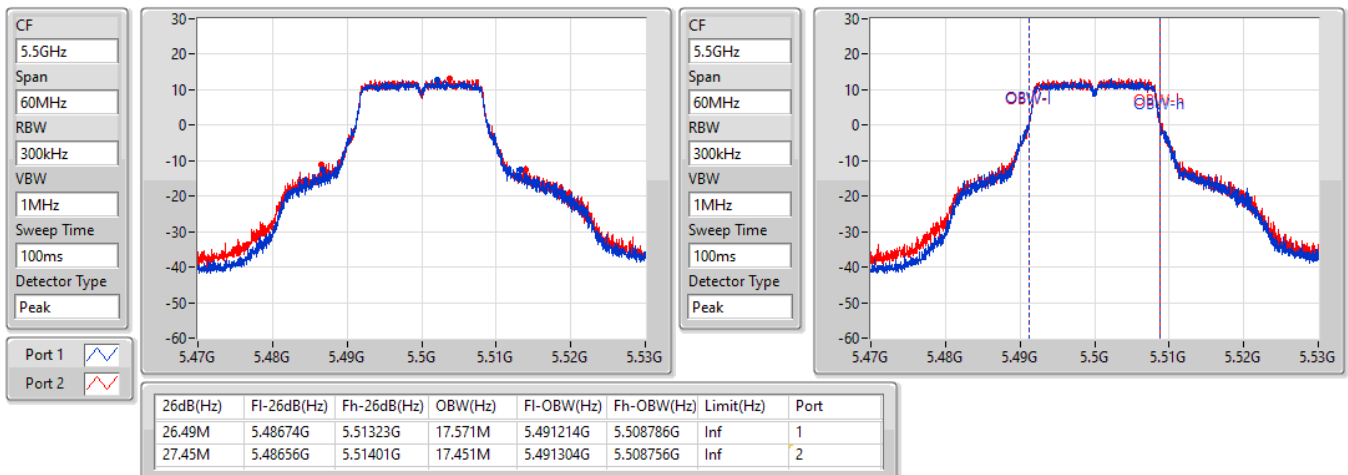


802.11a_Nss1,(6Mbps)_2TX

EBW

5500MHz

06/08/2022

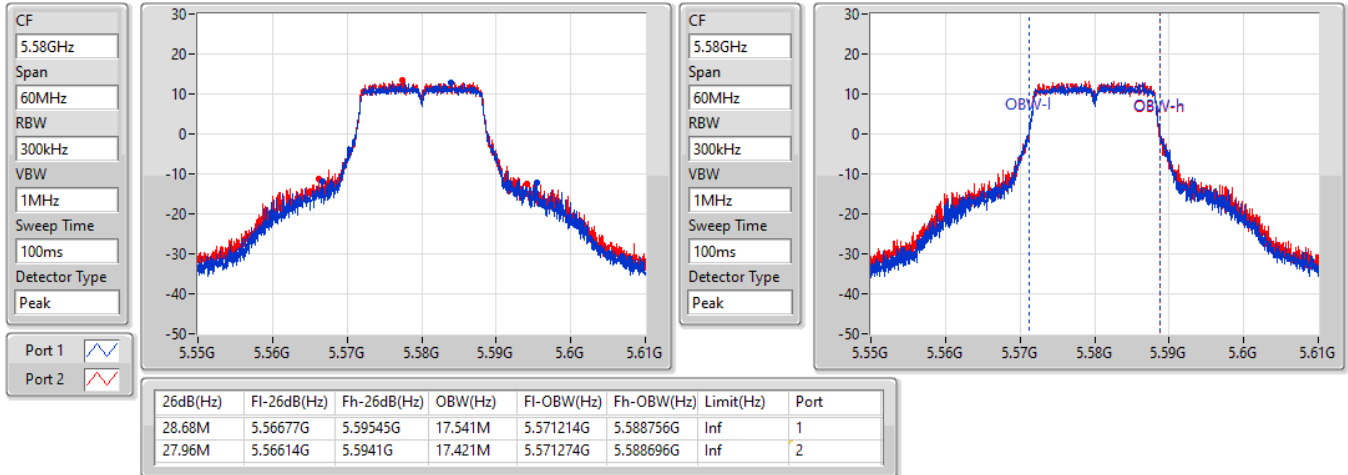


802.11a_Nss1,(6Mbps)_2TX

EBW

5580MHz

06/08/2022

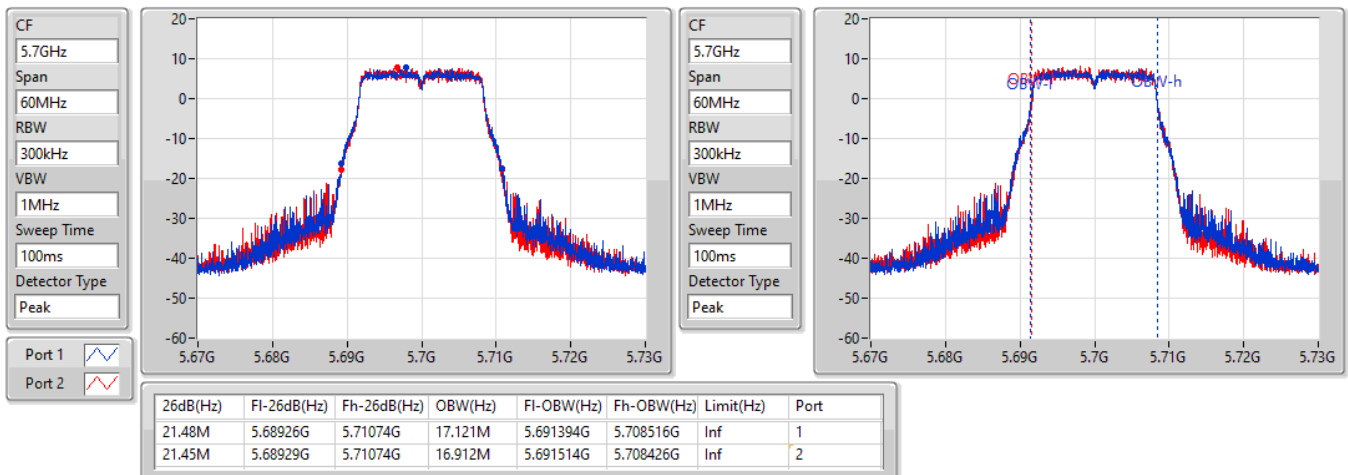


802.11a_Nss1,(6Mbps)_2TX

EBW

5700MHz

06/08/2022

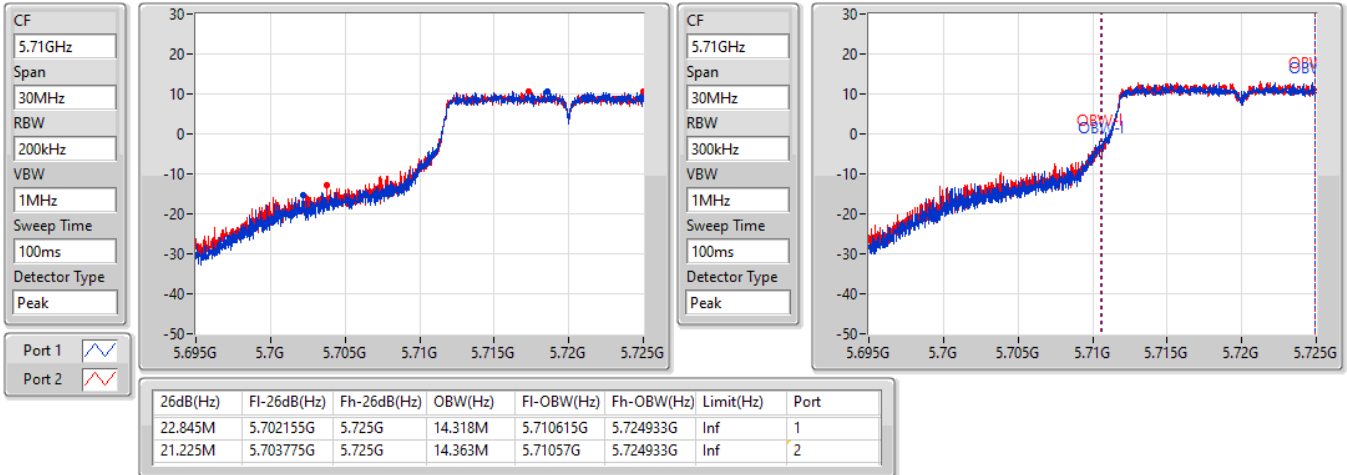


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.47-5.725GHz

06/08/2022

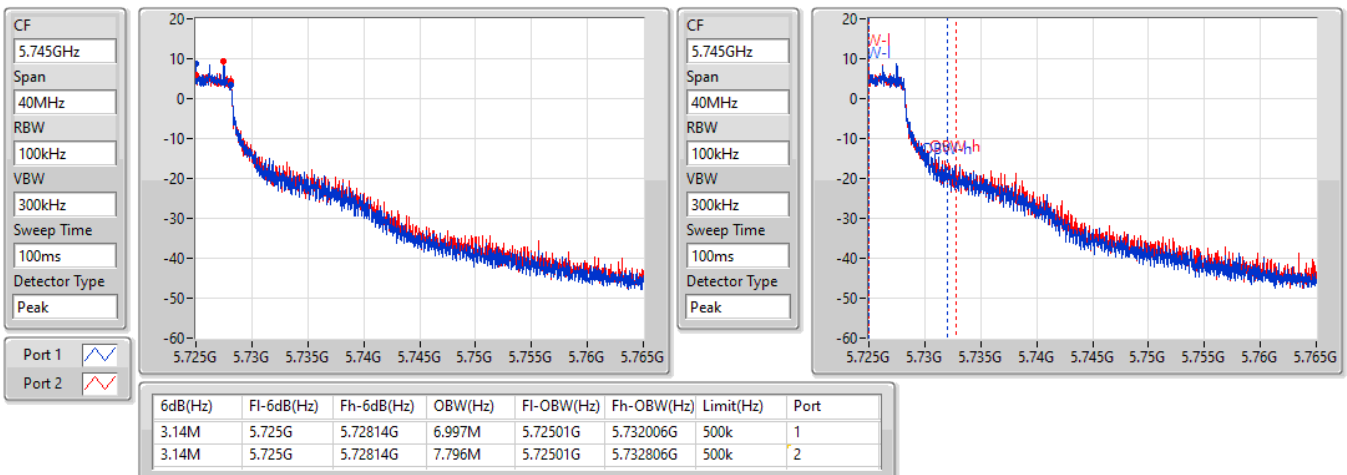


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

06/08/2022

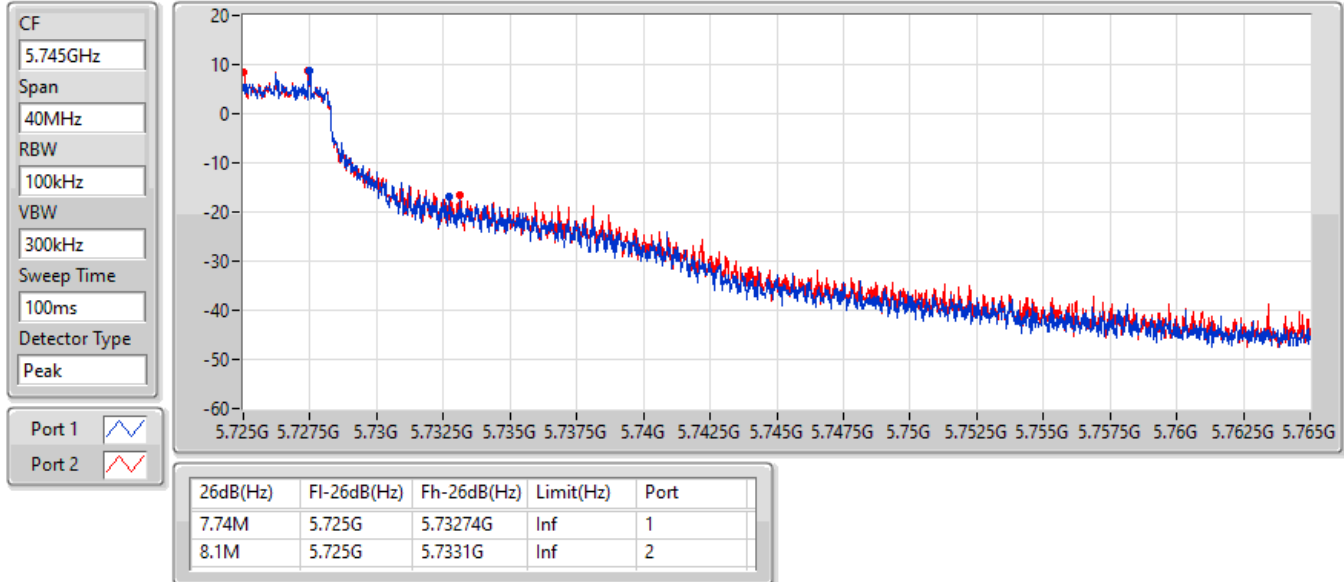


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

06/08/2022



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss2,(MCS0)_2TX	82.24M	78.361M	78M4D1D	82.16M	78.281M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	31.68M	19.28M	19M3D1D	26.28M	19.19M
802.11ax HEW40_Nss2,(MCS0)_2TX	45.3M	38.201M	38M2D1D	40.74M	38.081M
802.11ax HEW80_Nss2,(MCS0)_2TX	85.92M	77.961M	78M0D1D	84.72M	77.841M
802.11ax HEW160_Nss2,(MCS0)_2TX	83.28M	78.361M	78M4D1D	82.48M	78.281M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	33.21M	19.31M	19M3D1D	21.51M	14.708M
802.11ax HEW40_Nss2,(MCS0)_2TX	46.26M	38.201M	38M2D1D	41.88M	34.038M
802.11ax HEW80_Nss2,(MCS0)_2TX	109.95M	78.441M	78M4D1D	82.8M	74.363M
802.11ax HEW160_Nss2,(MCS0)_2TX	165.12M	156.642M	157MD1D	164.64M	156.402M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	4.48M	6.557M	6M56D1D	4.46M	5.457M
802.11ax HEW40_Nss2,(MCS0)_2TX	3.96M	16.692M	16M7D1D	3.88M	12.894M
802.11ax HEW80_Nss2,(MCS0)_2TX	3.84M	31.864M	31M9D1D	3.82M	31.264M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	26.76M	19.22M	26.28M	19.22M
5300MHz	Pass	Inf	31.68M	19.19M	29.55M	19.25M
5320MHz	Pass	Inf	26.73M	19.28M	29.97M	19.28M
5500MHz	Pass	Inf	27.63M	19.31M	26.55M	19.31M
5580MHz	Pass	Inf	26.94M	19.31M	33.21M	19.25M
5700MHz	Pass	Inf	22.08M	19.16M	21.72M	19.1M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	21.51M	14.708M	21.93M	14.708M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	5.457M	4.46M	6.557M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	40.74M	38.081M	45.3M	38.141M
5310MHz	Pass	Inf	41.58M	38.201M	45.18M	38.201M
5510MHz	Pass	Inf	46.26M	38.201M	44.16M	38.141M
5550MHz	Pass	Inf	41.88M	38.081M	44.76M	38.141M
5670MHz	Pass	Inf	42.6M	38.141M	44.64M	38.141M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	44.59M	34.038M	45.64M	34.143M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.96M	12.894M	3.88M	16.692M
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	84.72M	77.841M	85.92M	77.961M
5530MHz	Pass	Inf	85.2M	77.961M	82.8M	77.961M
5610MHz	Pass	Inf	101.28M	78.441M	87.48M	78.321M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	109.95M	74.438M	103.275M	74.363M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.84M	31.864M	3.82M	31.264M
802.11ax HEW160_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.24M	78.361M	82.16M	78.281M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	83.28M	78.281M	82.48M	78.361M
5570MHz	Pass	Inf	165.12M	156.642M	164.64M	156.402M

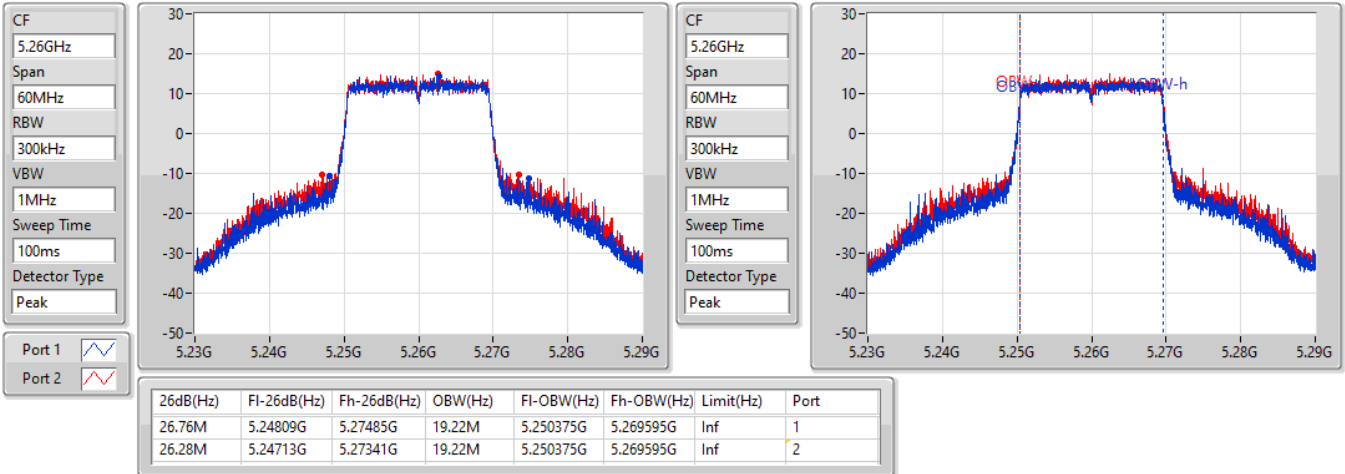
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5260MHz

04/08/2022

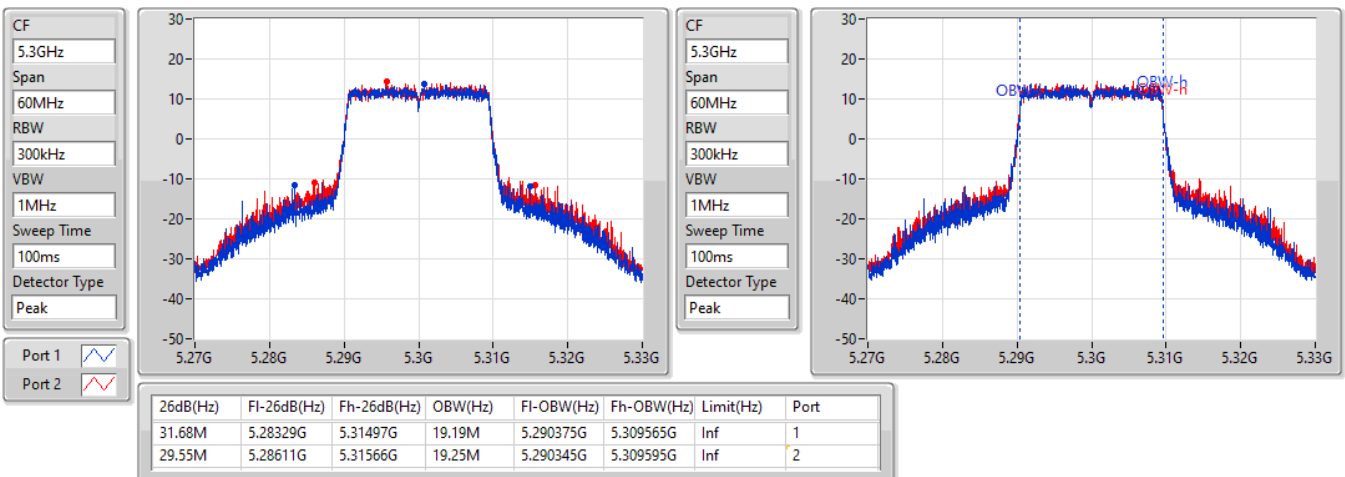


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5300MHz

04/08/2022

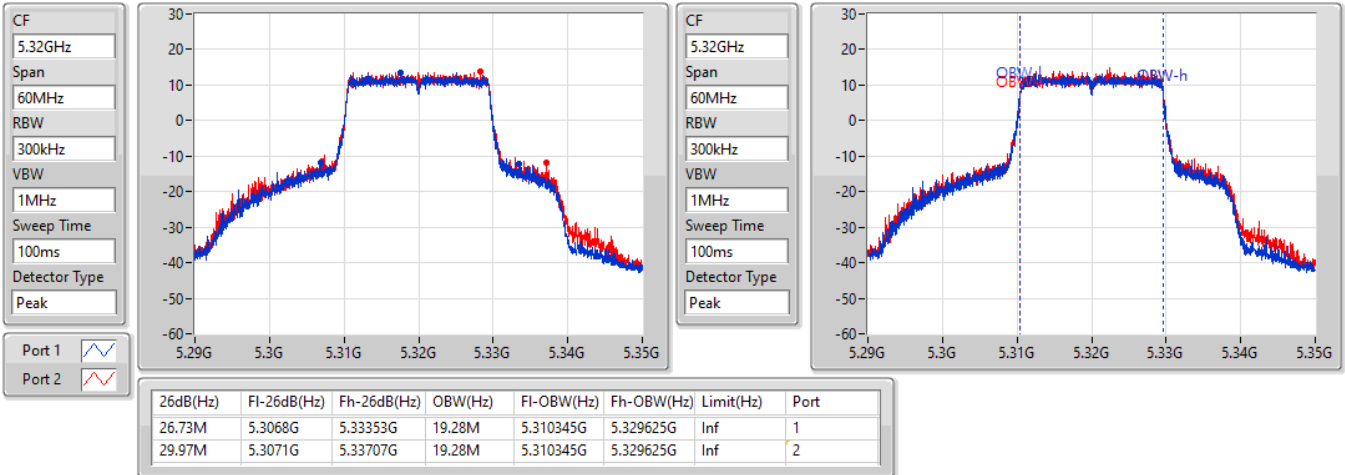


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5320MHz

04/08/2022

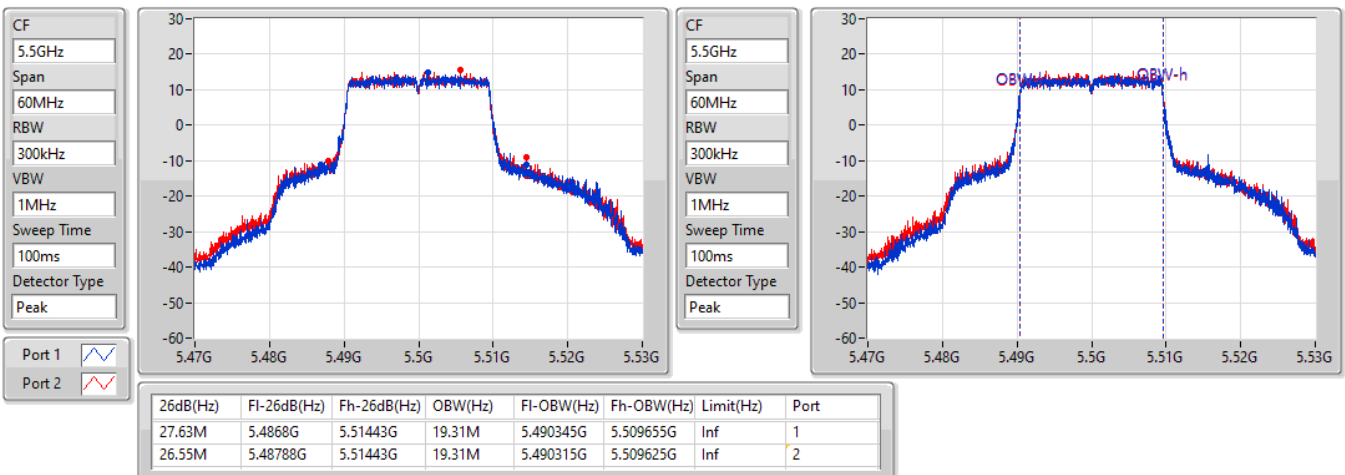


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5500MHz

04/08/2022

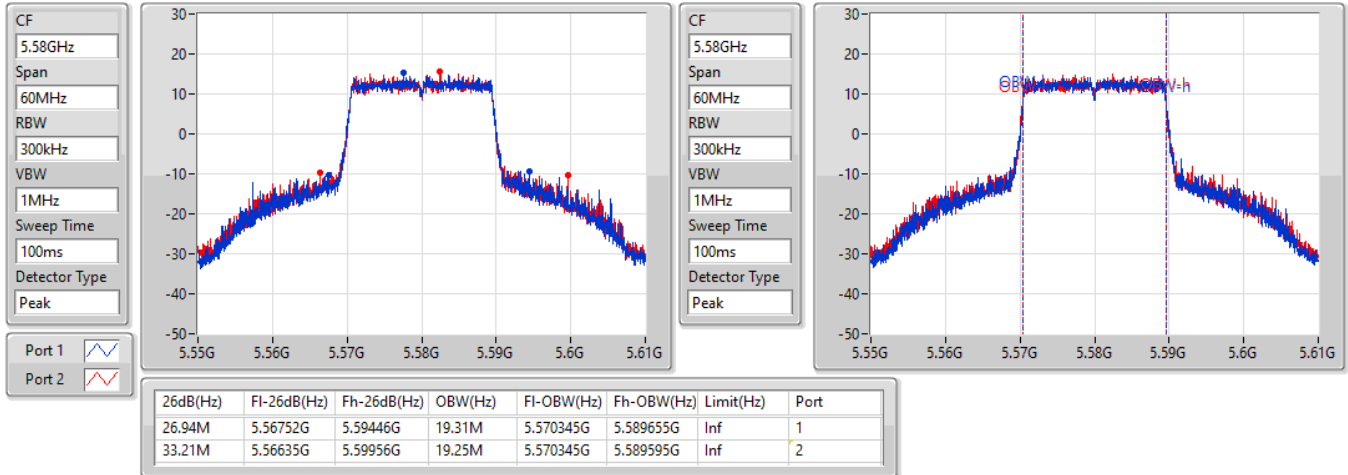


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5580MHz

04/08/2022

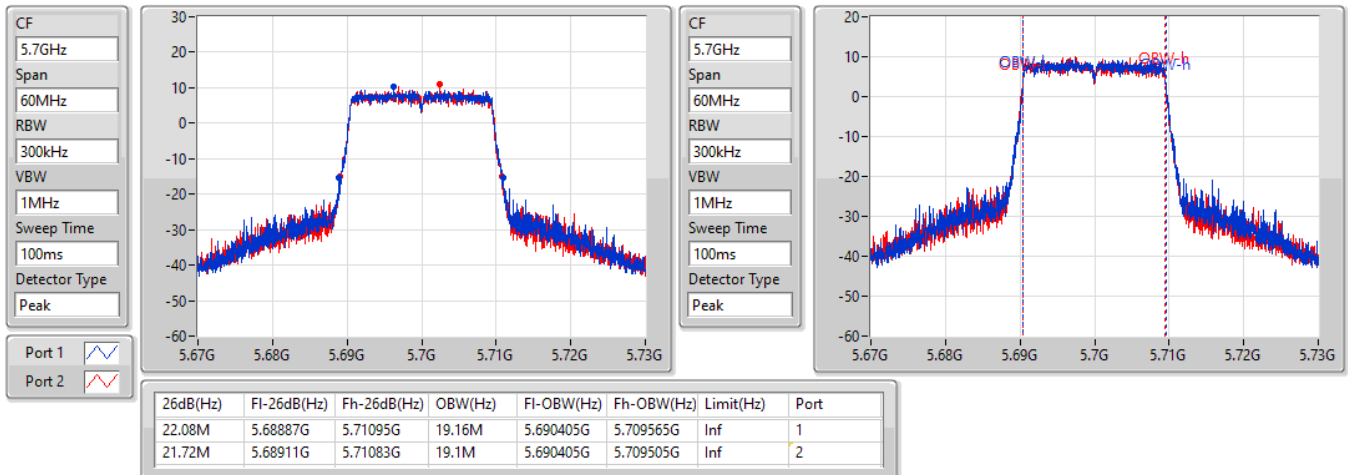


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

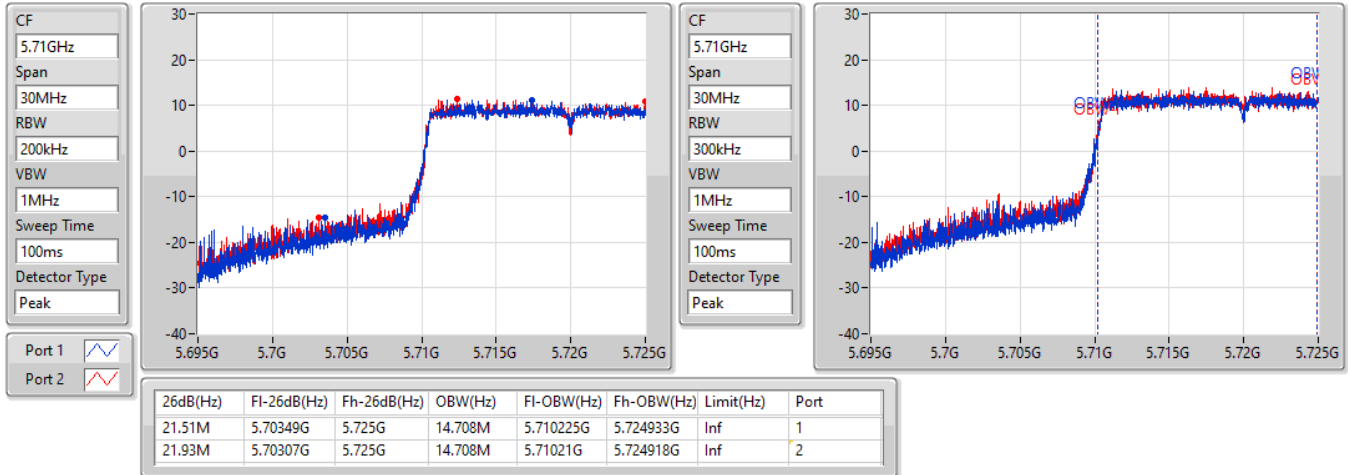
5700MHz

04/08/2022

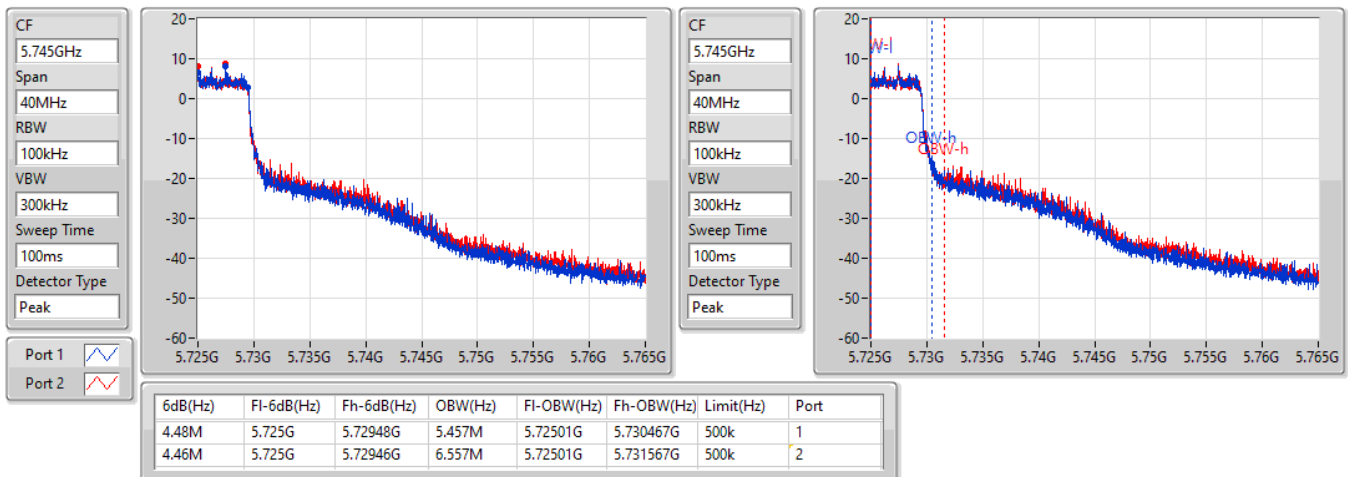


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5720MHz Straddle 5.47-5.725GHz

04/08/2022


802.11ax HEW20_Nss2,(MCS0)_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

04/08/2022

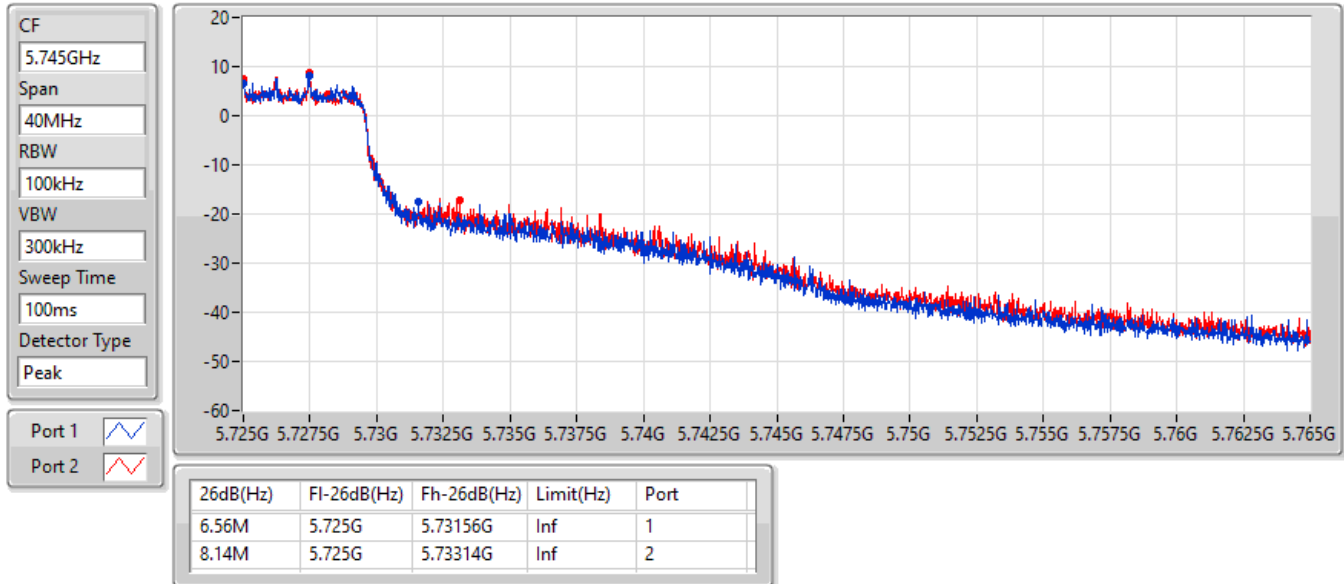


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

04/08/2022

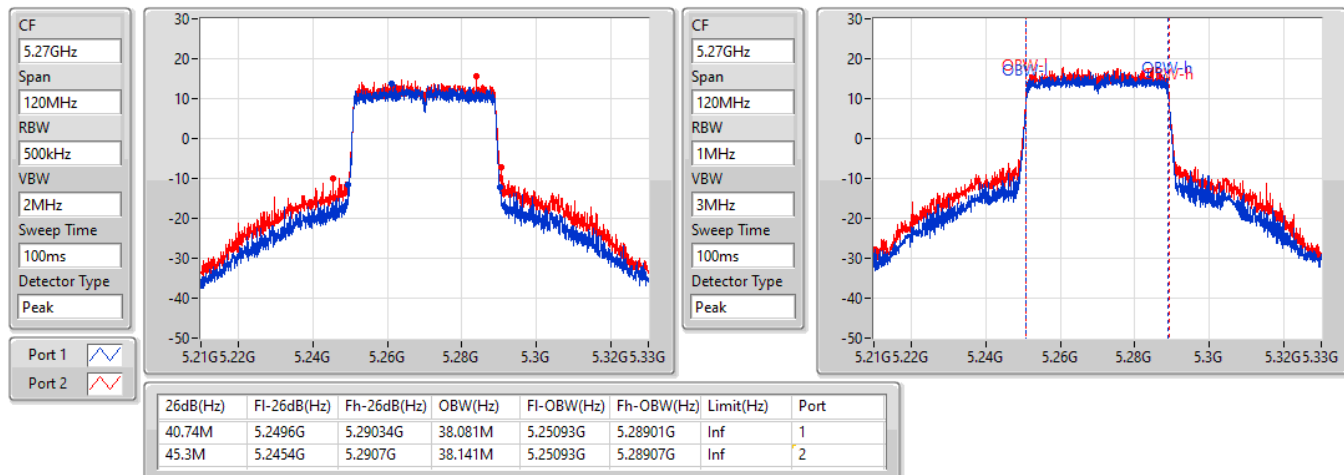


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5270MHz

04/08/2022

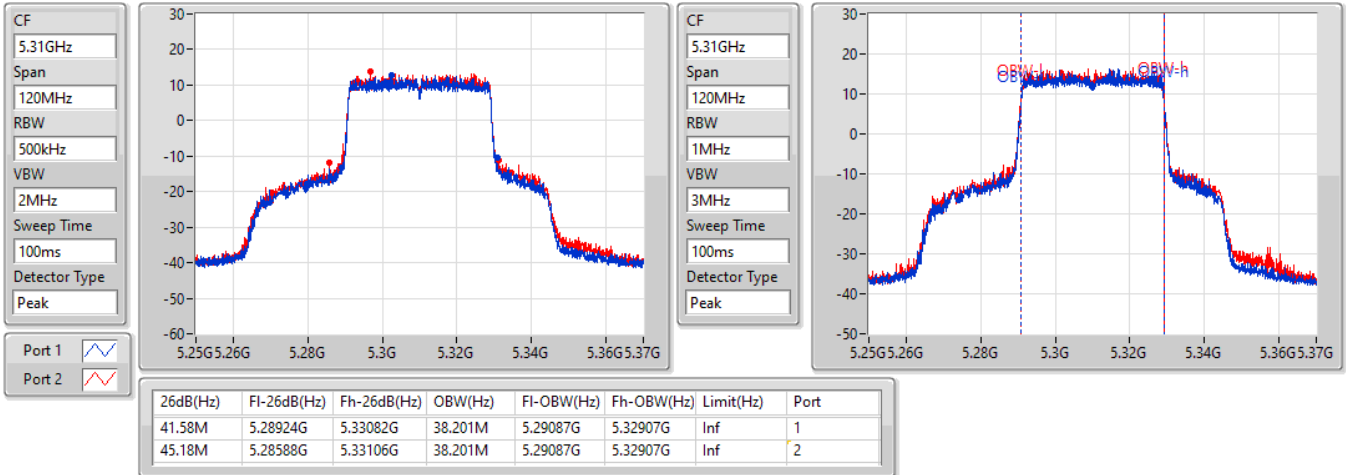


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5310MHz

04/08/2022

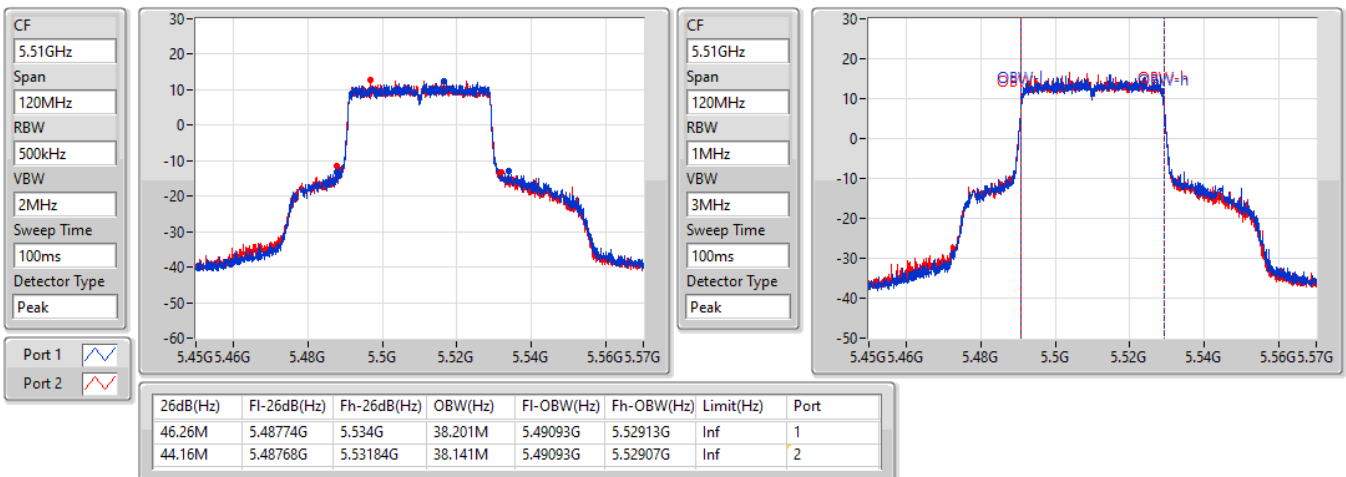


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5510MHz

04/08/2022

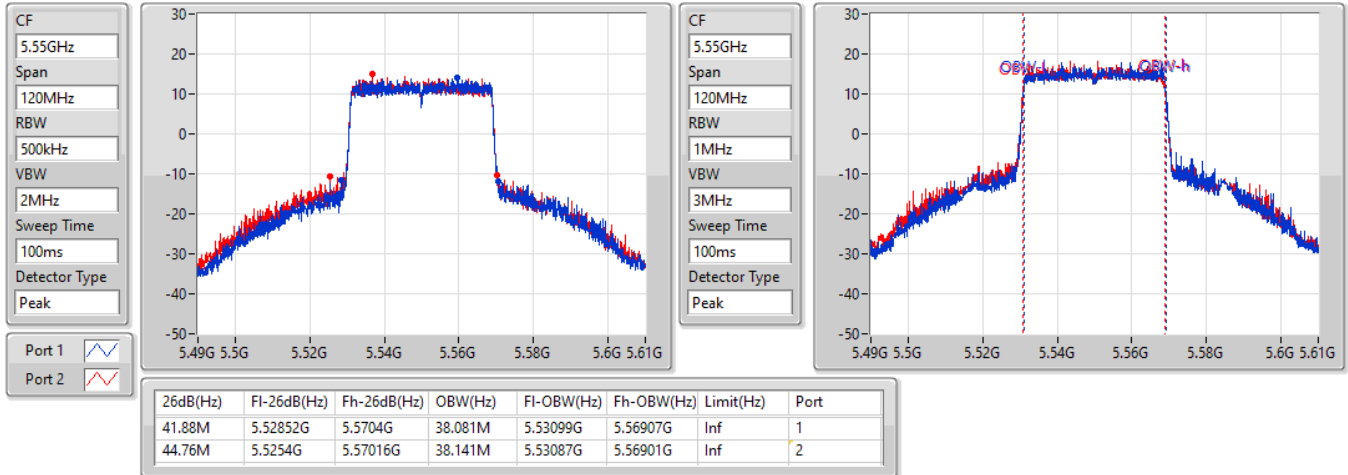


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5550MHz

04/08/2022

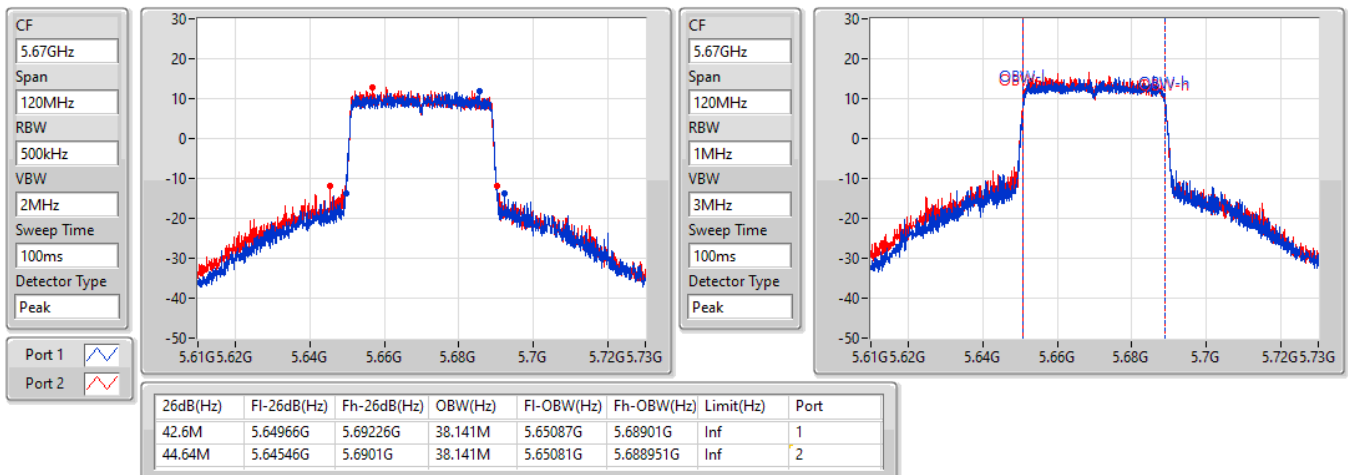


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5670MHz

04/08/2022

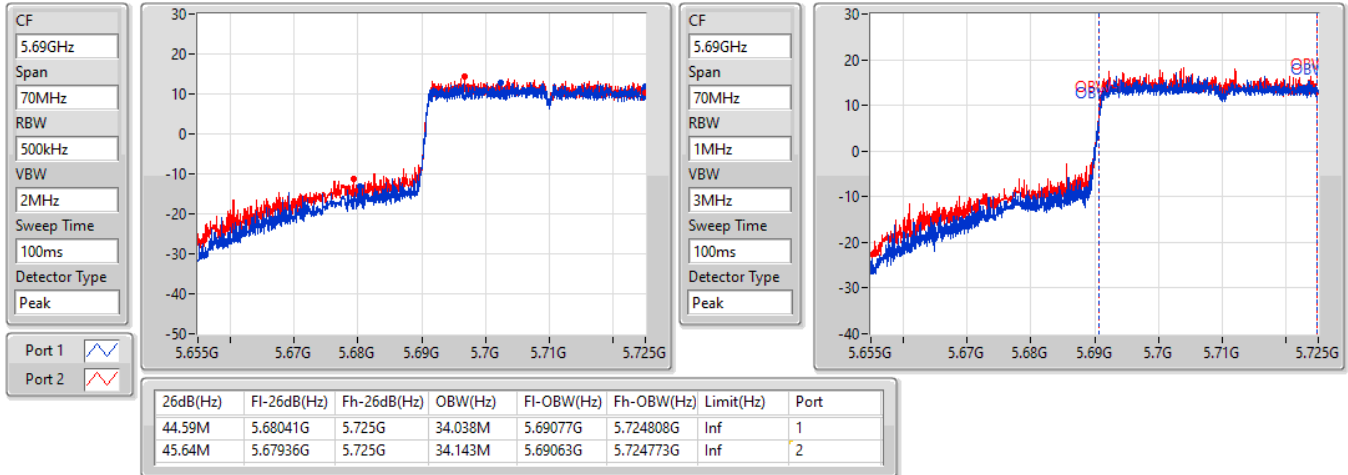


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5710MHz Straddle 5.47-5.725GHz

04/08/2022

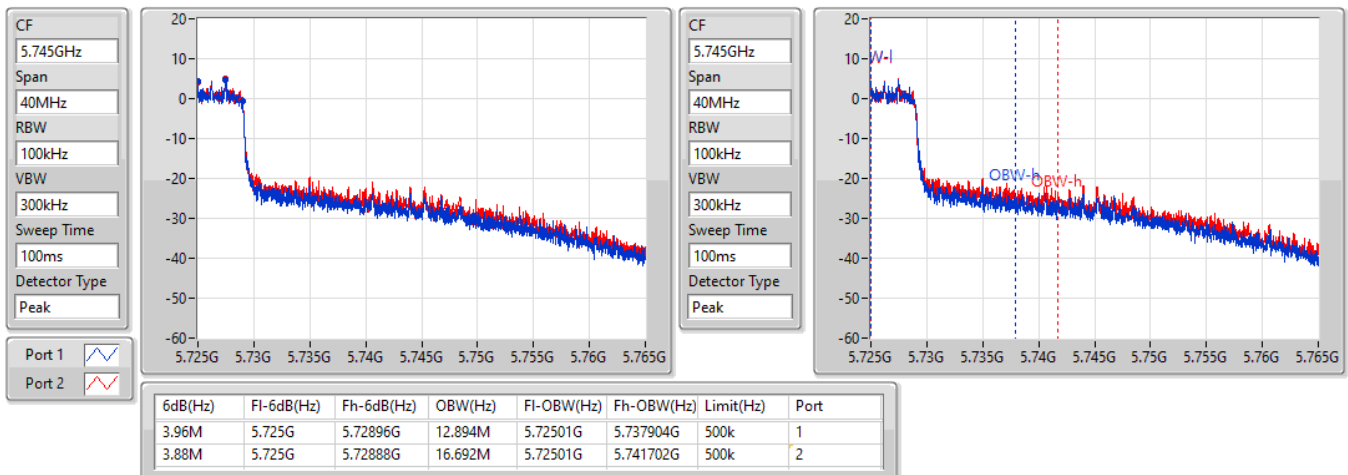


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

04/08/2022

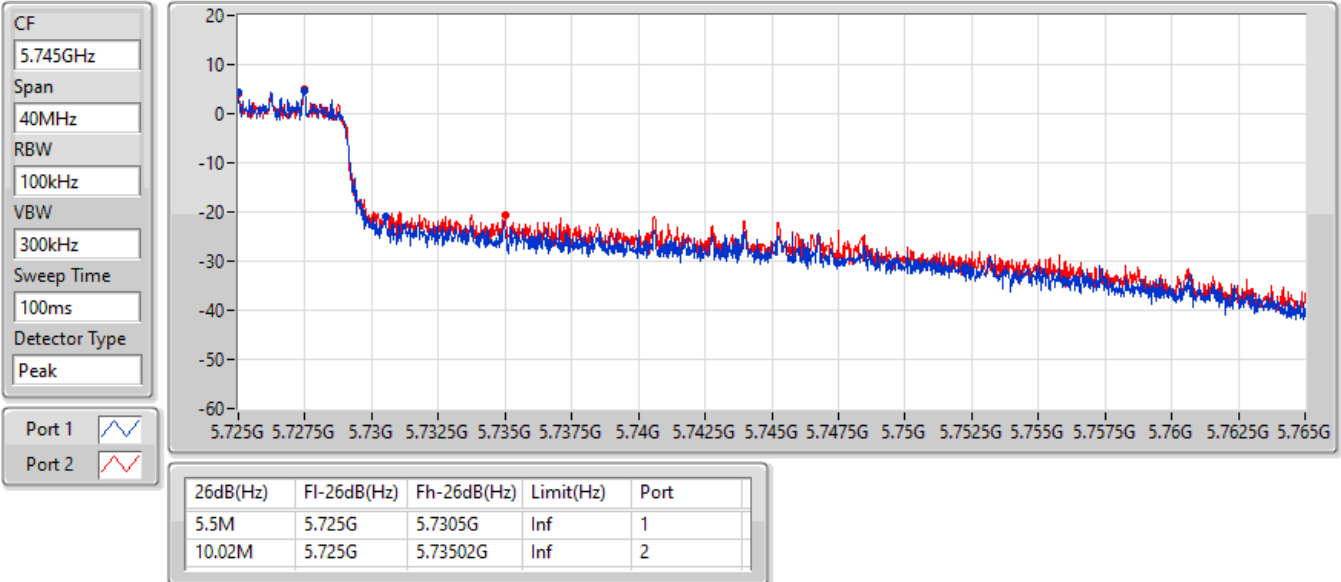


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

04/08/2022

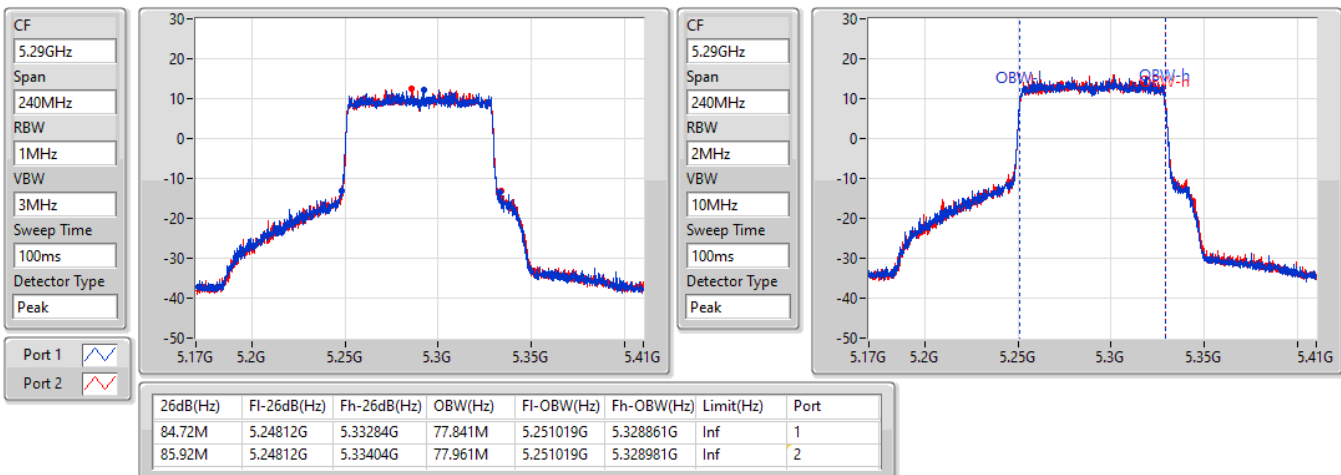


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5290MHz

04/08/2022

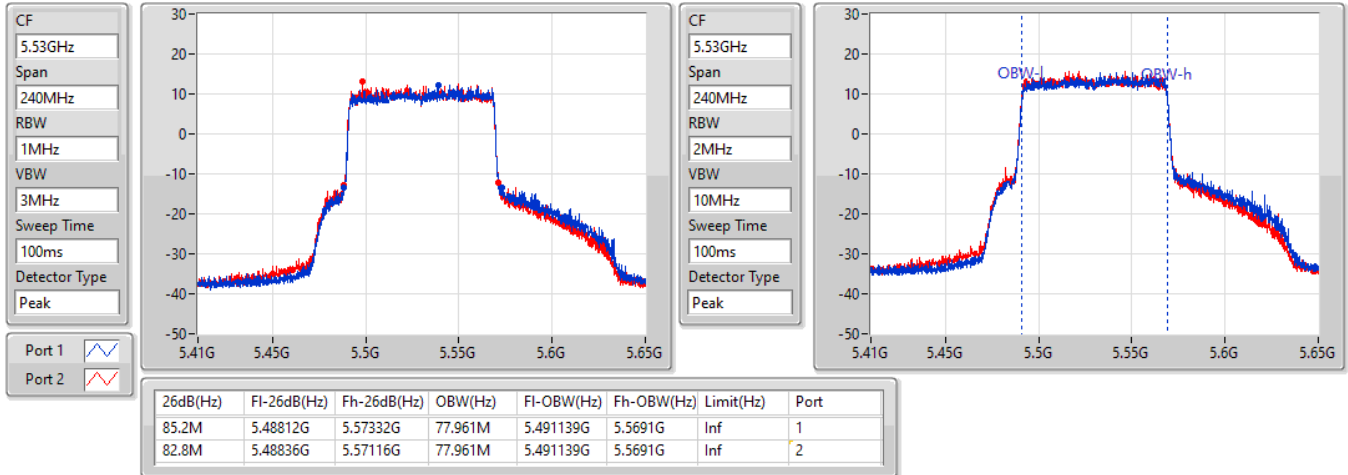


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5530MHz

04/08/2022

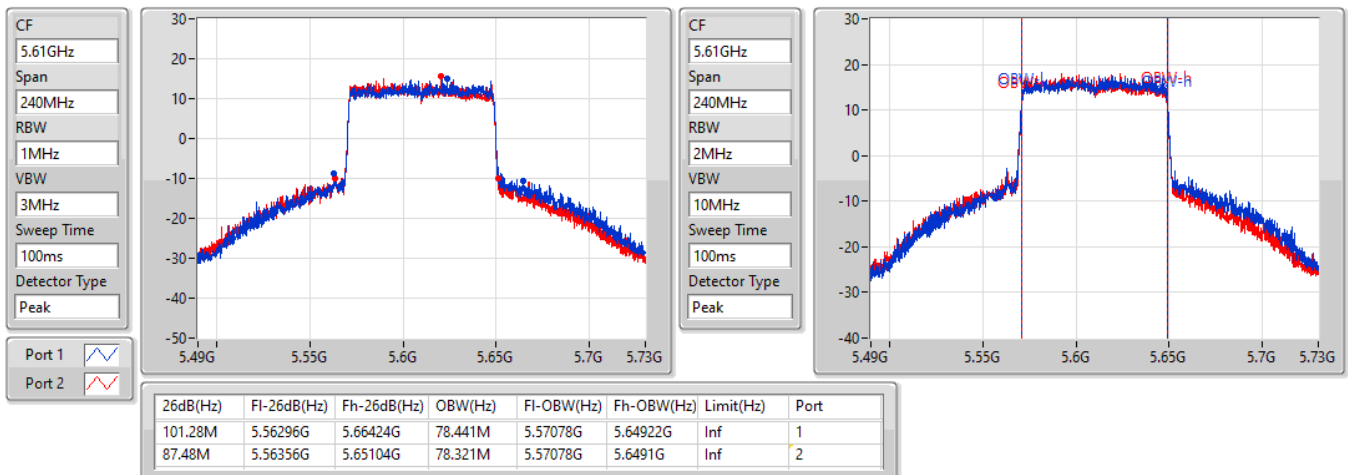


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5610MHz

04/08/2022

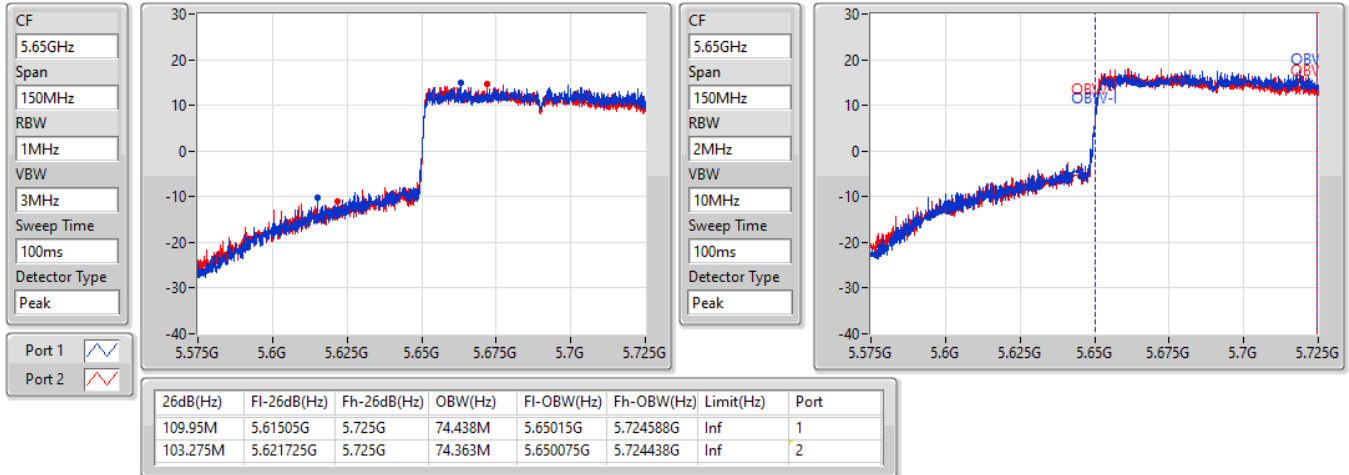


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5690MHz Straddle 5.47-5.725GHz

04/08/2022

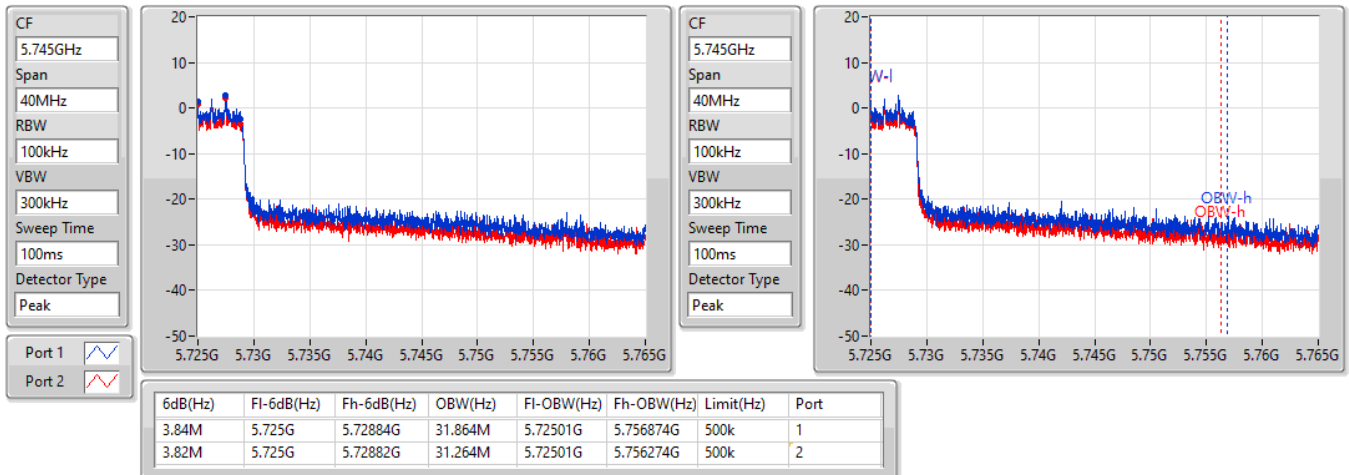


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

04/08/2022

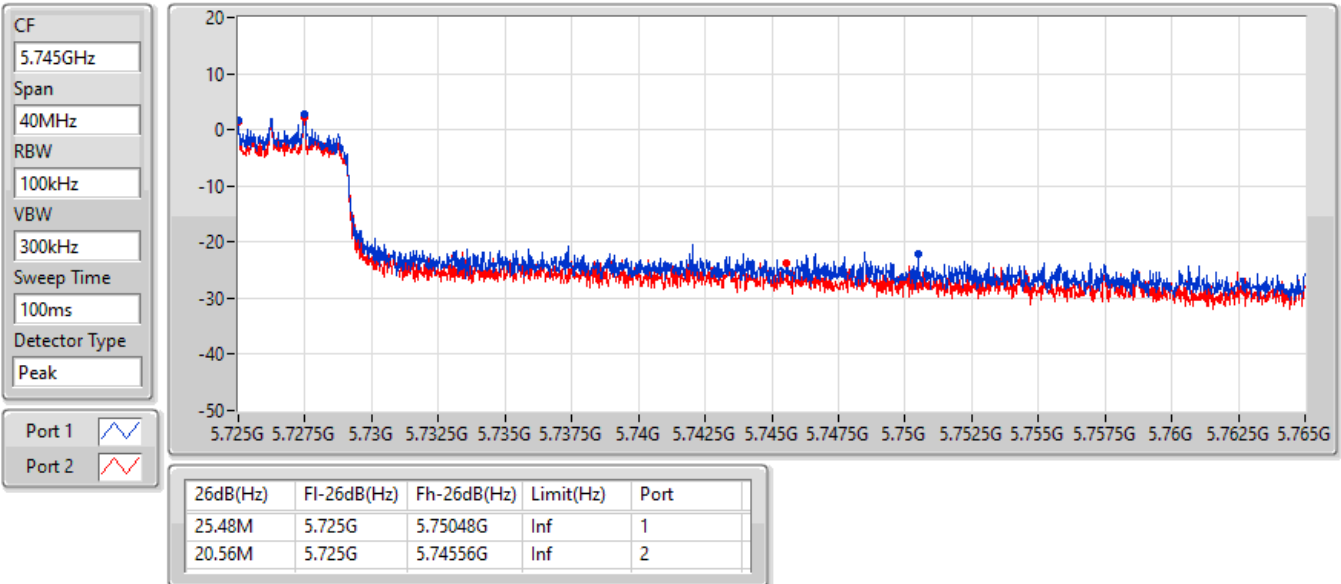


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

04/08/2022

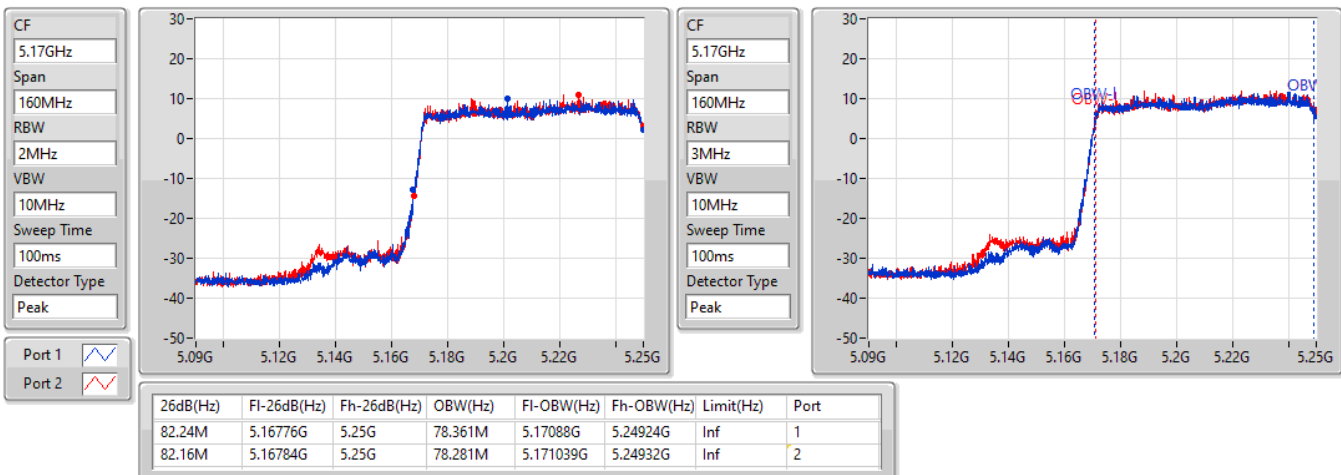


802.11ax HEW160_Nss2,(MCS0)_2TX

EBW

5250MHz Straddle 5.15-5.25GHz

04/08/2022

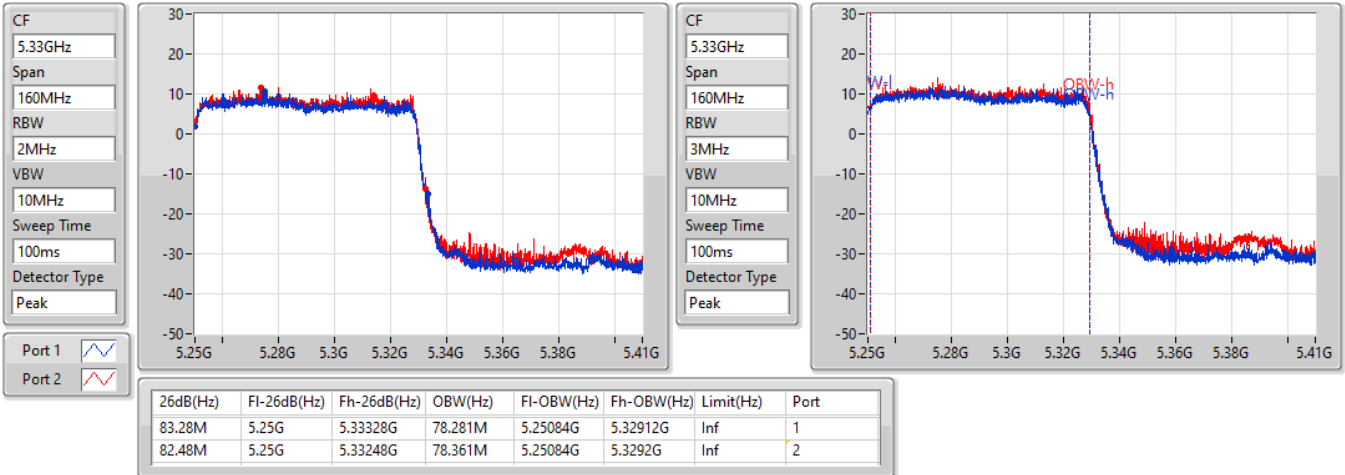


802.11ax HEW160_Nss2,(MCS0)_2TX

EBW

5250MHz Straddle 5.25-5.35GHz

04/08/2022

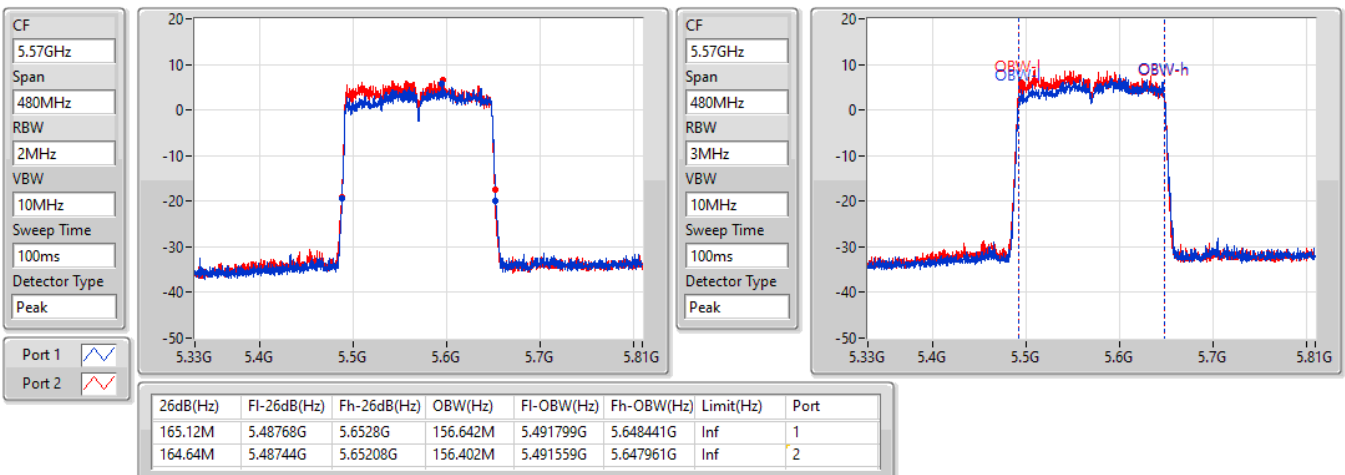


802.11ax HEW160_Nss2,(MCS0)_2TX

EBW

5570MHz

04/08/2022



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_4TX	82.88M	78.361M	78M4D1D	82.32M	78.201M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	25.29M	17.421M	17M4D1D	21.48M	16.942M
802.11ax HEW20_Nss1,(MCS0)_4TX	27.39M	19.25M	19M3D1D	21.54M	19.07M
802.11ax HEW40_Nss1,(MCS0)_4TX	44.82M	38.201M	38M2D1D	40.5M	37.901M
802.11ax HEW80_Nss1,(MCS0)_4TX	87.84M	77.961M	78M0D1D	83.4M	77.841M
802.11ax HEW160_Nss1,(MCS0)_4TX	83.28M	78.441M	78M4D1D	82.64M	78.281M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	26.16M	17.451M	17M5D1D	15.705M	13.508M
802.11ax HEW20_Nss1,(MCS0)_4TX	28.77M	19.31M	19M3D1D	15.825M	14.573M
802.11ax HEW40_Nss1,(MCS0)_4TX	47.04M	38.201M	38M2D1D	35.28M	33.828M
802.11ax HEW80_Nss1,(MCS0)_4TX	93.6M	78.201M	78M2D1D	75.9M	73.538M
802.11ax HEW160_Nss1,(MCS0)_4TX	165.6M	156.882M	157MD1D	164.88M	156.402M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	3.18M	4.218M	4M22D1D	3.14M	4.178M
802.11ax HEW20_Nss1,(MCS0)_4TX	4.52M	4.718M	4M72D1D	4.46M	4.678M
802.11ax HEW40_Nss1,(MCS0)_4TX	3.96M	4.258M	4M26D1D	3.86M	4.178M
802.11ax HEW80_Nss1,(MCS0)_4TX	3.92M	5.117M	5M12D1D	3.86M	4.298M

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	21.69M	17.091M	21.75M	17.061M	21.51M	17.031M	21.48M	16.942M
5300MHz	Pass	Inf	21.63M	17.091M	21.48M	17.091M	21.63M	17.001M	21.69M	16.942M
5320MHz	Pass	Inf	23.4M	17.421M	25.29M	17.421M	24.18M	17.391M	23.82M	17.361M
5500MHz	Pass	Inf	24.75M	17.451M	26.16M	17.391M	23.61M	17.361M	24M	17.331M
5580MHz	Pass	Inf	21.78M	17.091M	21.51M	17.061M	21.45M	16.942M	21.54M	16.972M
5700MHz	Pass	Inf	21.75M	17.121M	21.72M	17.091M	21.51M	16.942M	21.45M	17.001M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.9M	13.658M	15.78M	13.628M	15.705M	13.508M	15.855M	13.568M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	4.218M	3.14M	4.218M	3.18M	4.198M	3.14M	4.178M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.78M	19.1M	21.66M	19.07M	21.63M	19.13M	21.69M	19.13M
5300MHz	Pass	Inf	21.66M	19.13M	21.54M	19.1M	21.63M	19.1M	21.69M	19.07M
5320MHz	Pass	Inf	27.39M	19.25M	25.59M	19.25M	26.7M	19.25M	24.09M	19.25M
5500MHz	Pass	Inf	23.25M	19.31M	24.96M	19.22M	28.77M	19.28M	28.17M	19.31M
5580MHz	Pass	Inf	21.75M	19.1M	21.87M	19.13M	21.69M	19.13M	21.54M	19.1M
5700MHz	Pass	Inf	21.75M	19.16M	21.75M	19.1M	21.78M	19.16M	21.63M	19.1M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.87M	14.573M	15.9M	14.588M	15.855M	14.603M	15.825M	14.573M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.698M	4.46M	4.678M	4.48M	4.718M	4.52M	4.698M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.5M	37.901M	40.56M	37.961M	40.56M	38.021M	40.62M	37.961M
5310MHz	Pass	Inf	44.28M	38.141M	44.82M	38.201M	43.8M	38.201M	43.62M	38.201M
5510MHz	Pass	Inf	45.36M	38.141M	43.86M	38.201M	47.04M	38.201M	45.36M	38.201M
5550MHz	Pass	Inf	40.5M	37.961M	40.44M	37.961M	40.44M	37.961M	40.44M	37.841M
5670MHz	Pass	Inf	40.74M	37.961M	40.32M	37.961M	40.68M	37.901M	40.38M	38.021M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.455M	33.828M	35.56M	33.898M	35.28M	33.898M	35.49M	33.933M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.96M	4.218M	3.86M	4.218M	3.88M	4.178M	3.96M	4.258M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	87.84M	77.961M	87.36M	77.841M	86.28M	77.841M	83.4M	77.841M
5530MHz	Pass	Inf	93.6M	78.201M	87.96M	78.081M	84.36M	77.961M	85.08M	77.961M
5610MHz	Pass	Inf	81.72M	77.721M	81.72M	77.721M	81.96M	77.601M	81.96M	77.721M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.05M	73.613M	76.05M	73.538M	76.2M	73.613M	75.9M	73.613M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.92M	4.918M	3.86M	4.298M	3.92M	4.718M	3.86M	5.117M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.8M	78.281M	82.88M	78.361M	82.48M	78.281M	82.32M	78.201M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	82.96M	78.281M	83.12M	78.281M	82.64M	78.441M	83.28M	78.361M
5570MHz	Pass	Inf	165.12M	156.402M	165.6M	156.402M	164.88M	156.402M	165.12M	156.882M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss4,(MCS0)_4TX	82.56M	78.441M	78M4D1D	82.24M	78.361M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss4,(MCS0)_4TX	26.34M	19.28M	19M3D1D	21.36M	19.07M
802.11ax HEW40_Nss4,(MCS0)_4TX	49.2M	38.201M	38M2D1D	40.32M	38.021M
802.11ax HEW80_Nss4,(MCS0)_4TX	90.6M	77.961M	78M0D1D	84.48M	77.721M
802.11ax HEW160_Nss4,(MCS0)_4TX	82.72M	78.441M	78M4D1D	82.24M	78.201M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss4,(MCS0)_4TX	25.41M	19.28M	19M3D1D	15.78M	14.588M
802.11ax HEW40_Nss4,(MCS0)_4TX	49.56M	38.201M	38M2D1D	35.315M	33.898M
802.11ax HEW80_Nss4,(MCS0)_4TX	88.44M	77.961M	78M0D1D	75.9M	73.463M
802.11ax HEW160_Nss4,(MCS0)_4TX	165.36M	156.642M	157MD1D	164.4M	156.402M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss4,(MCS0)_4TX	4.46M	4.698M	4M70D1D	4.44M	4.678M
802.11ax HEW40_Nss4,(MCS0)_4TX	3.98M	4.498M	4M50D1D	3.86M	4.198M
802.11ax HEW80_Nss4,(MCS0)_4TX	3.94M	6.437M	6M44D1D	3.74M	4.498M

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)
802.11ax HEW20_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.81M	19.13M	21.75M	19.1M	21.6M	19.13M	21.57M	19.07M
5300MHz	Pass	Inf	21.78M	19.13M	21.36M	19.1M	21.63M	19.13M	21.42M	19.07M
5320MHz	Pass	Inf	25.95M	19.28M	25.35M	19.22M	26.34M	19.25M	26.31M	19.22M
5500MHz	Pass	Inf	25.41M	19.28M	22.17M	19.25M	25.17M	19.22M	24.78M	19.25M
5580MHz	Pass	Inf	21.75M	19.13M	21.57M	19.1M	21.72M	19.1M	21.69M	19.1M
5700MHz	Pass	Inf	21.78M	19.1M	21.51M	19.1M	21.39M	19.1M	21.66M	19.1M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.78M	14.618M	15.78M	14.603M	15.855M	14.603M	15.78M	14.588M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.46M	4.678M	4.44M	4.698M	4.44M	4.698M	4.44M	4.698M
802.11ax HEW40_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.32M	38.081M	40.5M	38.081M	40.98M	38.021M	41.34M	38.021M
5310MHz	Pass	Inf	43.68M	38.201M	42.3M	38.201M	49.2M	38.141M	46.26M	38.141M
5510MHz	Pass	Inf	45.18M	38.201M	41.58M	38.141M	49.56M	38.201M	44.52M	38.141M
5550MHz	Pass	Inf	40.8M	37.961M	40.38M	37.901M	40.44M	37.961M	40.56M	37.961M
5670MHz	Pass	Inf	40.38M	37.961M	40.38M	37.961M	40.38M	37.961M	40.38M	38.021M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.315M	33.898M	35.455M	33.933M	35.42M	33.968M	35.385M	33.898M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.98M	4.278M	3.88M	4.418M	3.86M	4.198M	3.92M	4.498M
802.11ax HEW80_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	84.96M	77.841M	84.48M	77.961M	89.4M	77.841M	90.6M	77.721M
5530MHz	Pass	Inf	86.88M	77.841M	87.6M	77.961M	88.44M	77.961M	86.76M	77.961M
5610MHz	Pass	Inf	81.96M	77.721M	81.36M	77.841M	81.96M	77.601M	82.08M	77.601M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.9M	73.463M	75.9M	73.688M	76.05M	73.688M	76.125M	73.538M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.94M	6.437M	3.84M	4.498M	3.74M	4.858M	3.82M	5.617M
802.11ax HEW160_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.4M	78.441M	82.24M	78.441M	82.48M	78.361M	82.56M	78.361M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	82.72M	78.361M	82.64M	78.441M	82.24M	78.281M	82.48M	78.201M
5570MHz	Pass	Inf	164.88M	156.402M	164.4M	156.642M	164.88M	156.402M	165.36M	156.402M

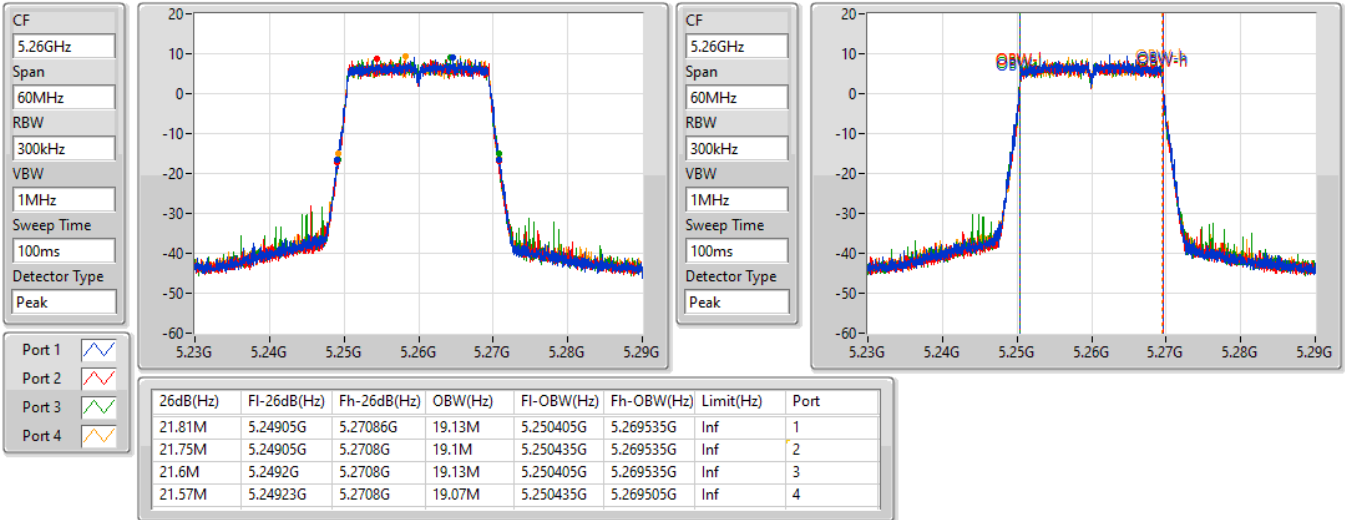
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5260MHz

03/08/2022

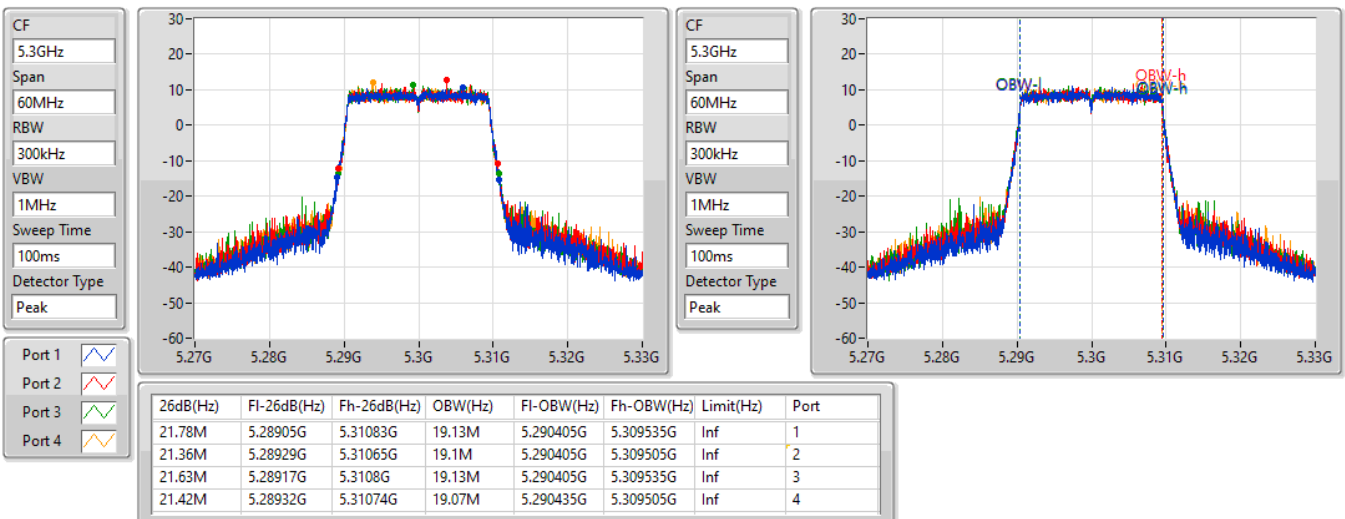


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5300MHz

03/08/2022

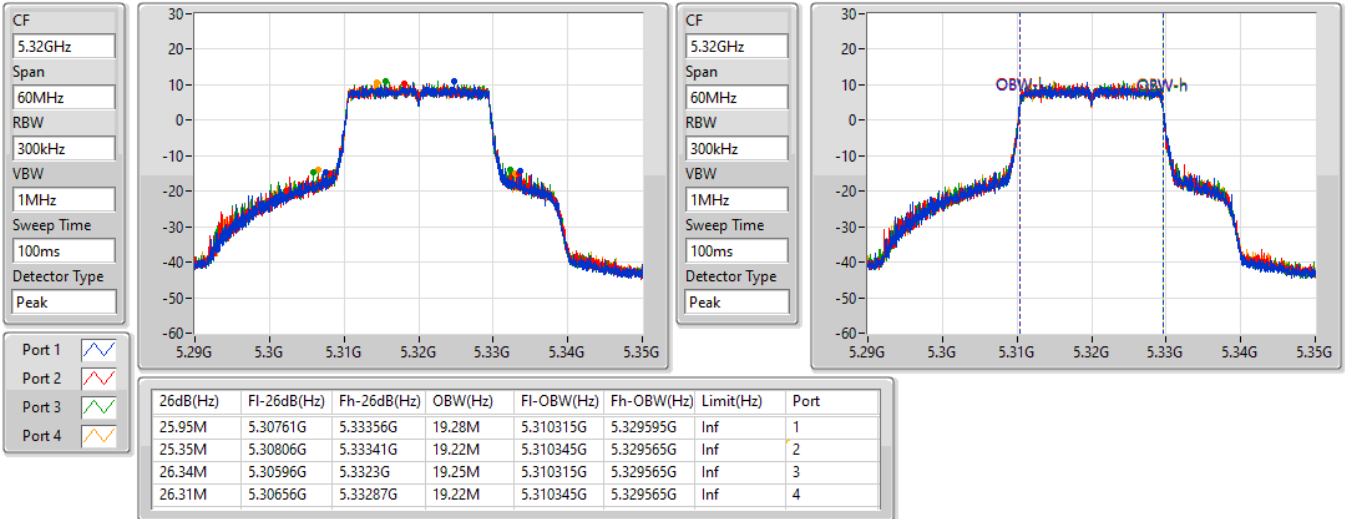


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5320MHz

03/08/2022

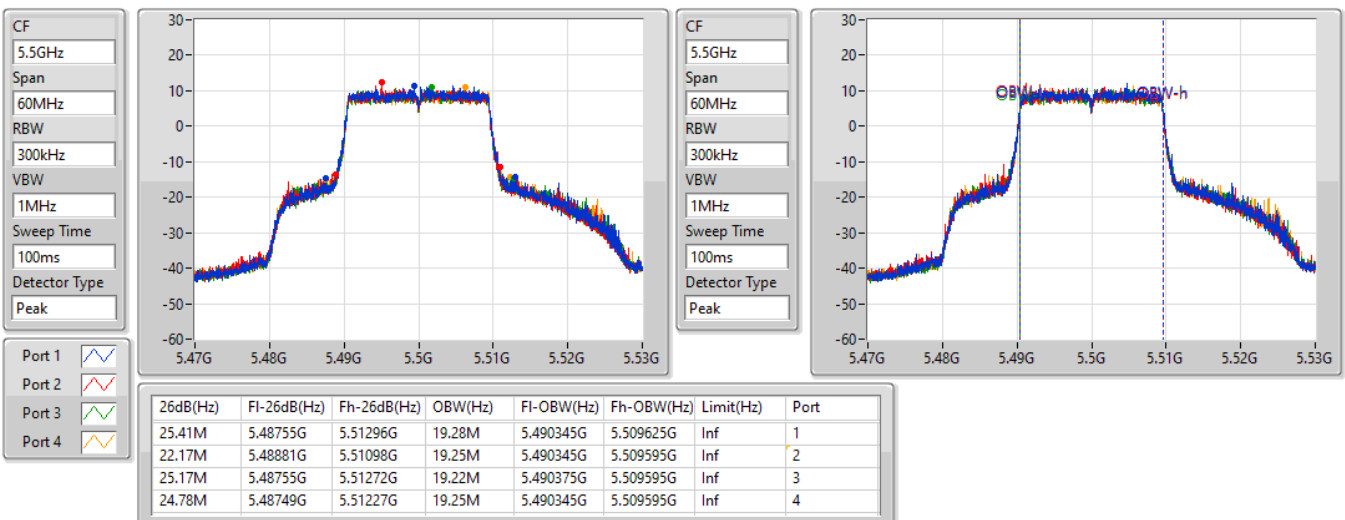


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5500MHz

03/08/2022

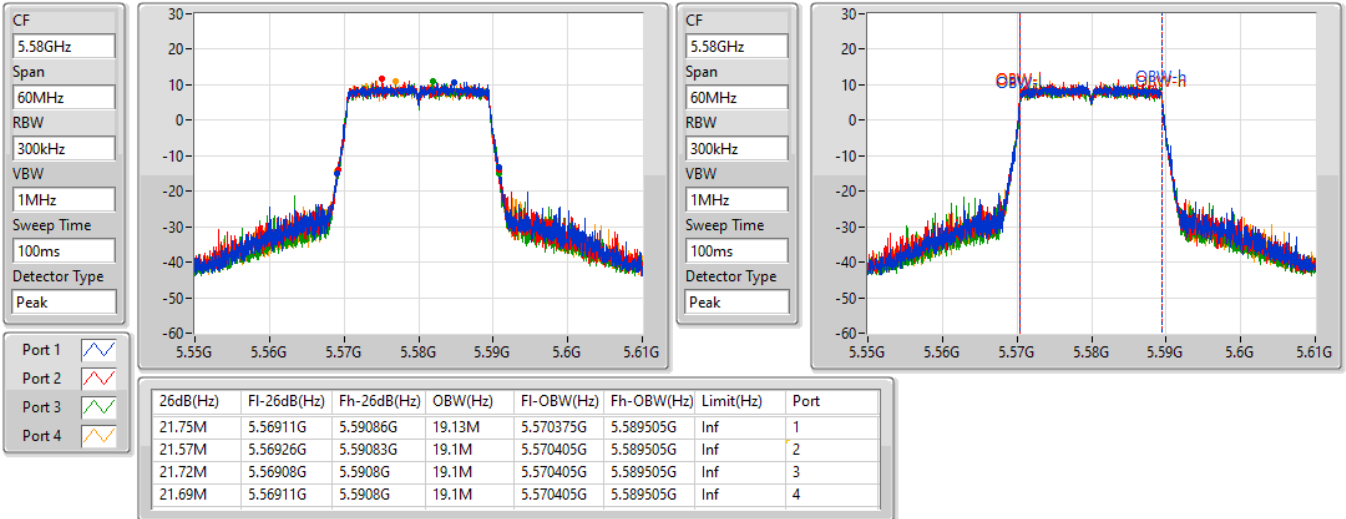


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5580MHz

03/08/2022

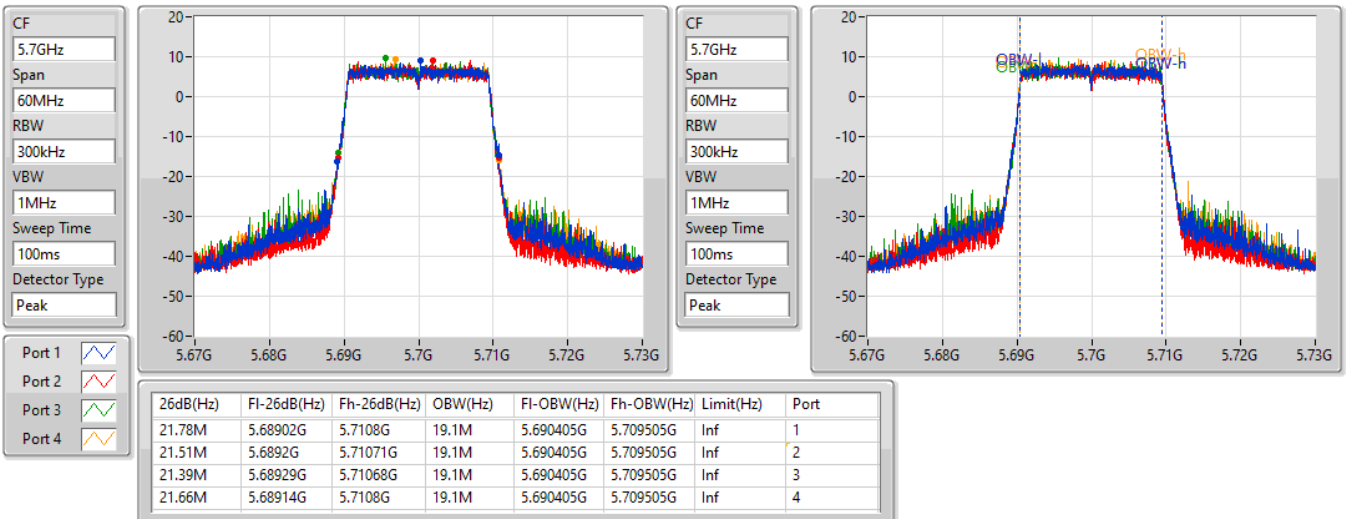


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5700MHz

03/08/2022

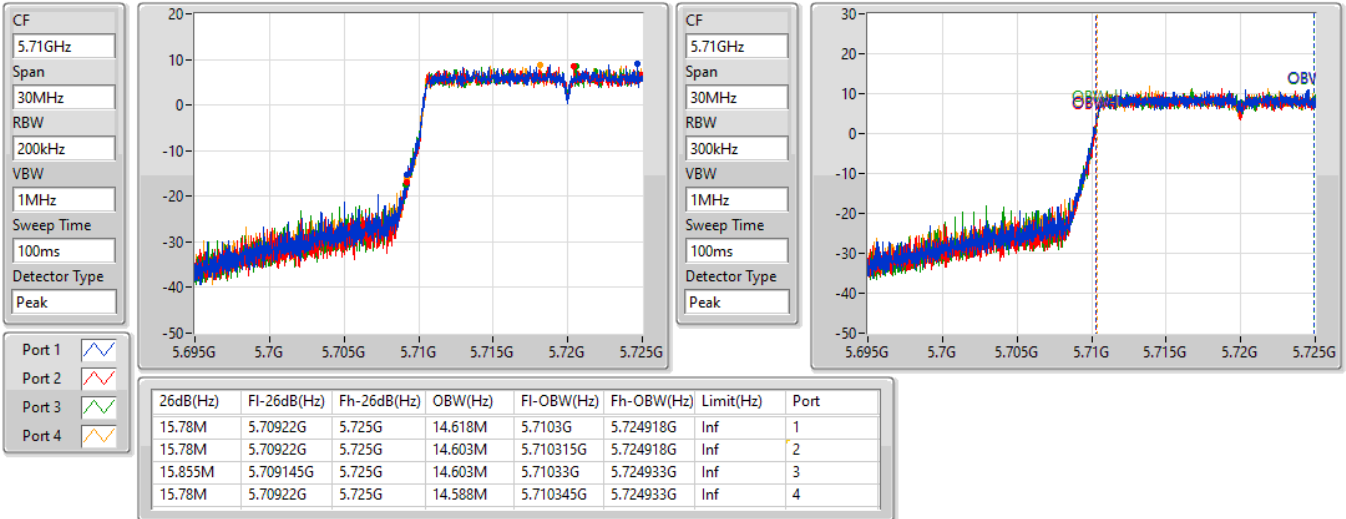


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5720MHz Straddle 5.47-5.725GHz

03/08/2022

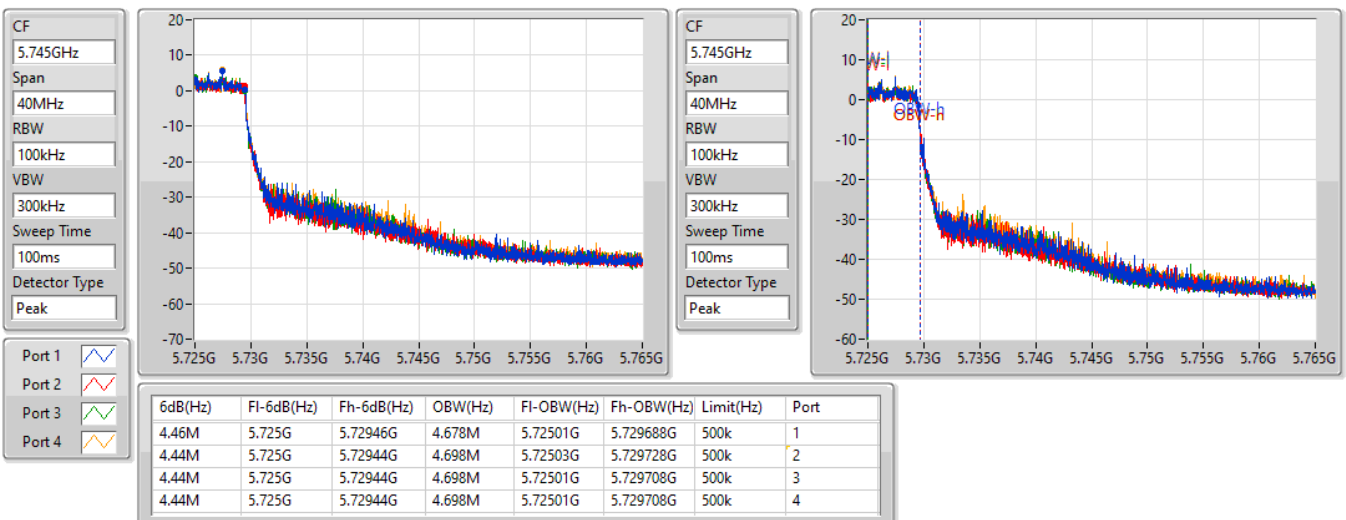


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

03/08/2022

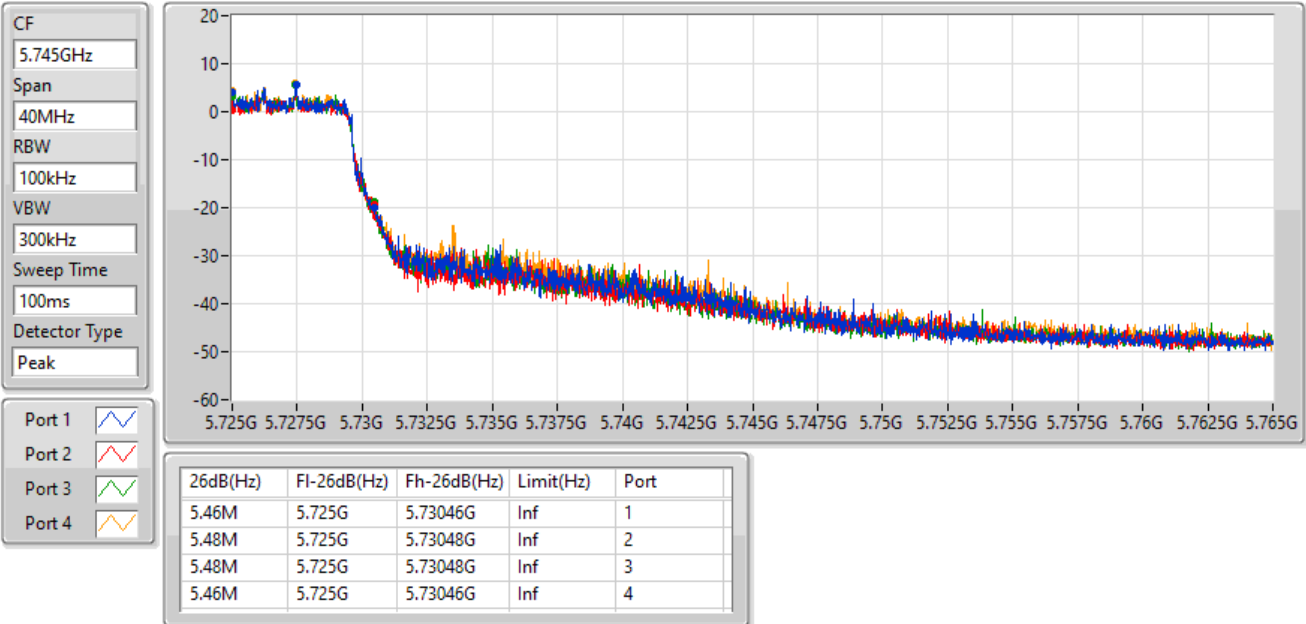


802.11ax HEW20_Nss4,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

03/08/2022

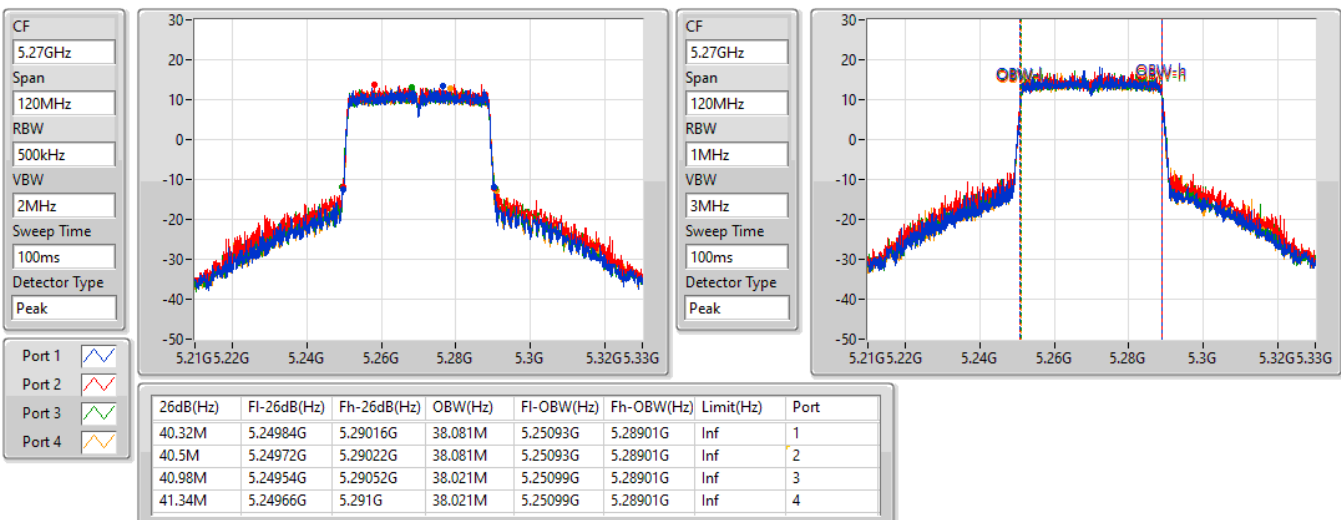


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5270MHz

03/08/2022

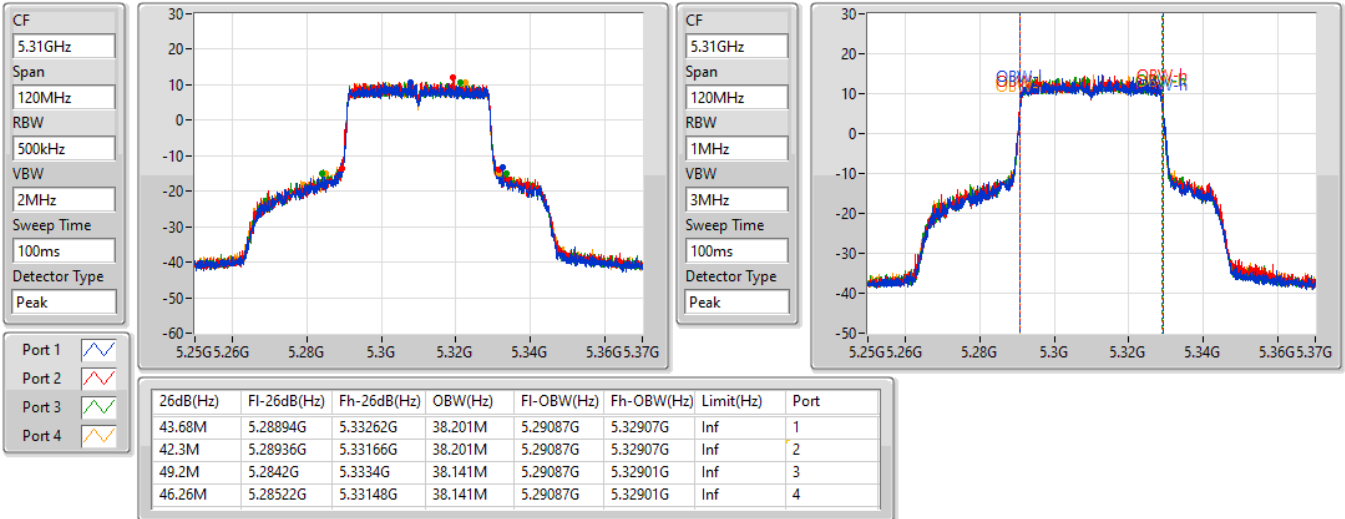


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5310MHz

03/08/2022

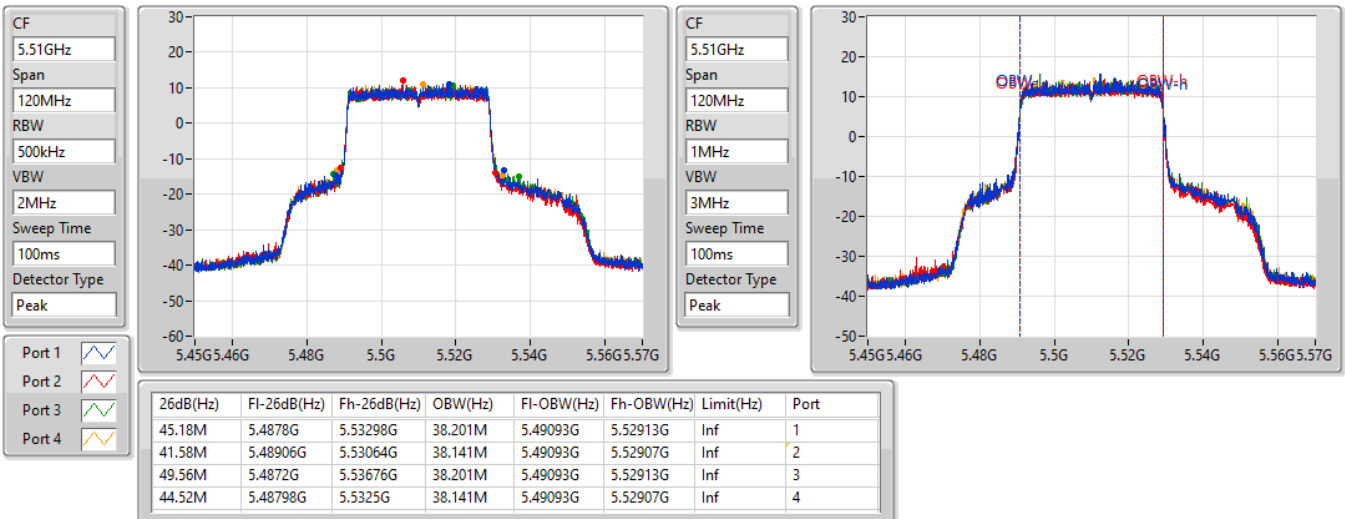


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5510MHz

03/08/2022

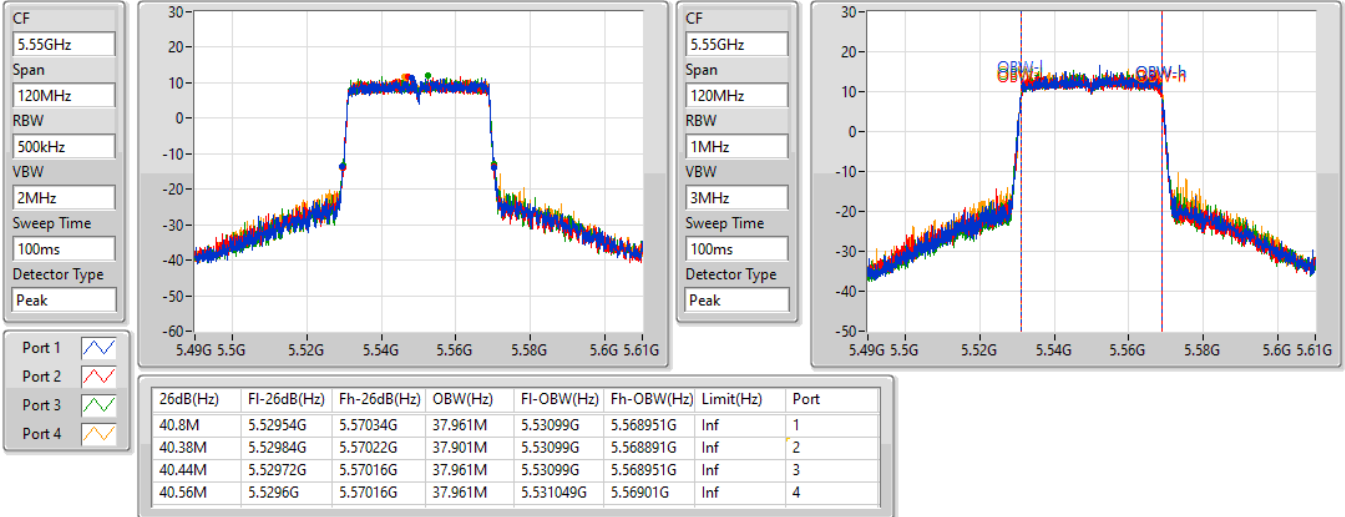


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5550MHz

03/08/2022

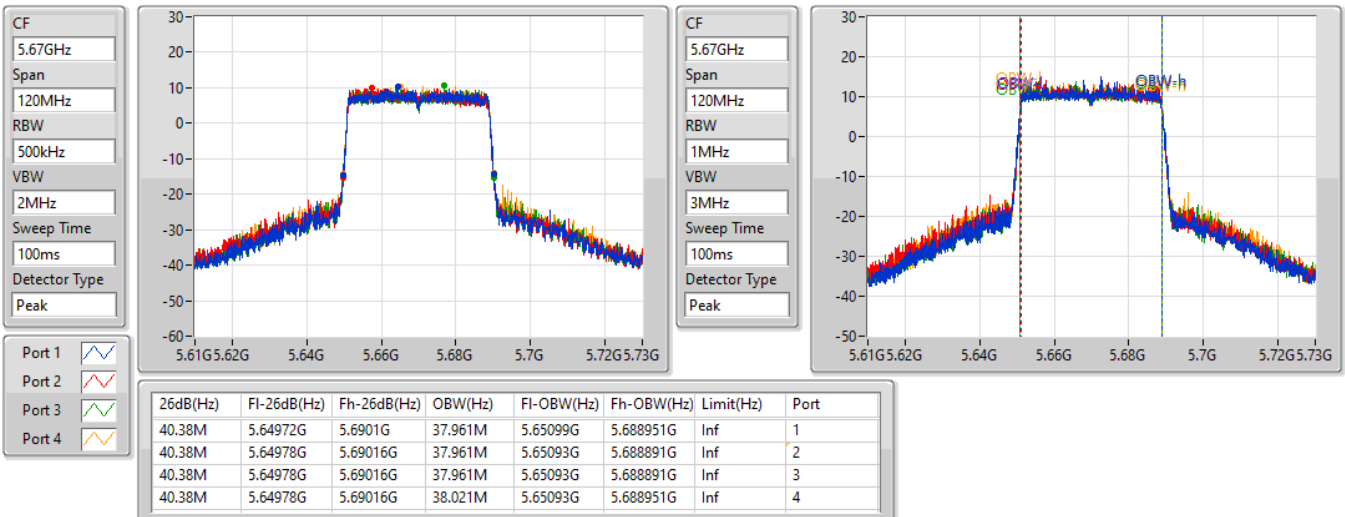


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5670MHz

03/08/2022

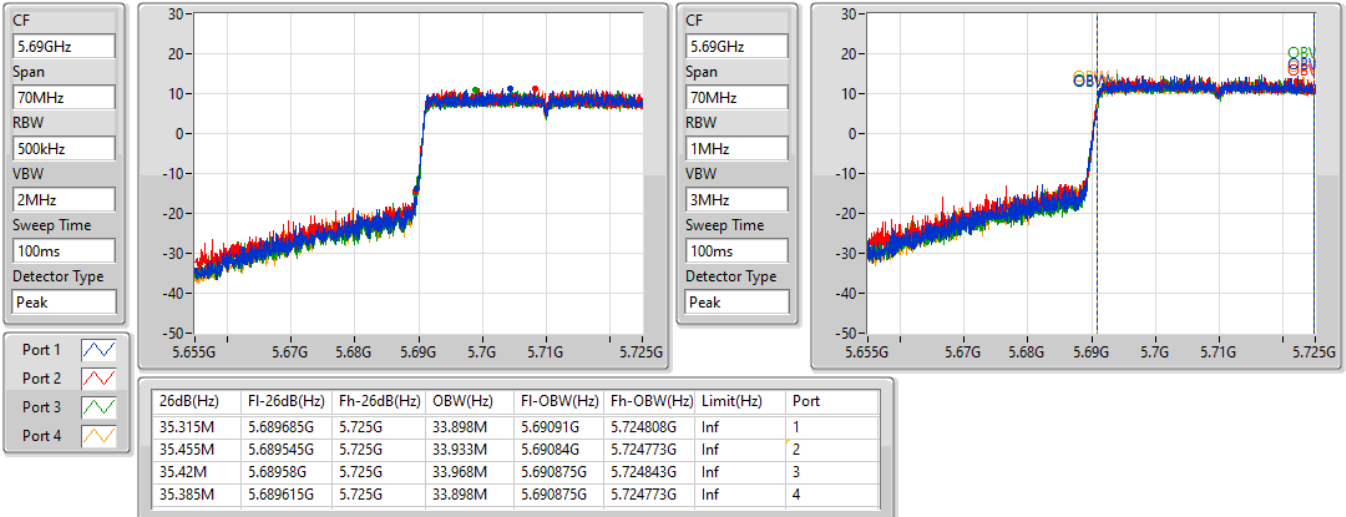


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5710MHz Straddle 5.47-5.725GHz

03/08/2022

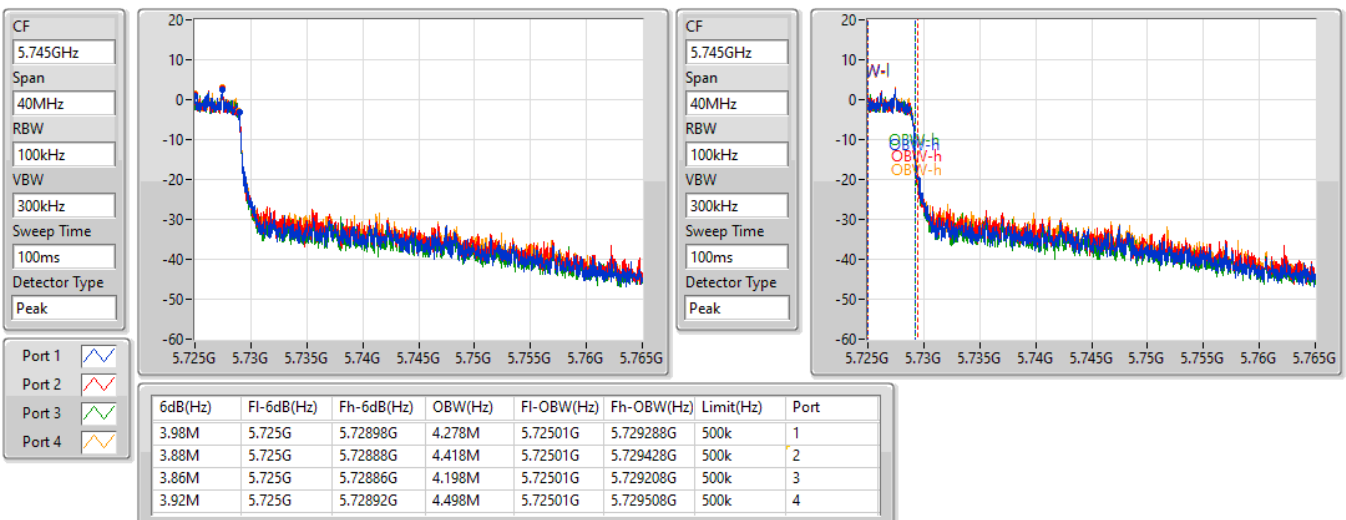


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

03/08/2022

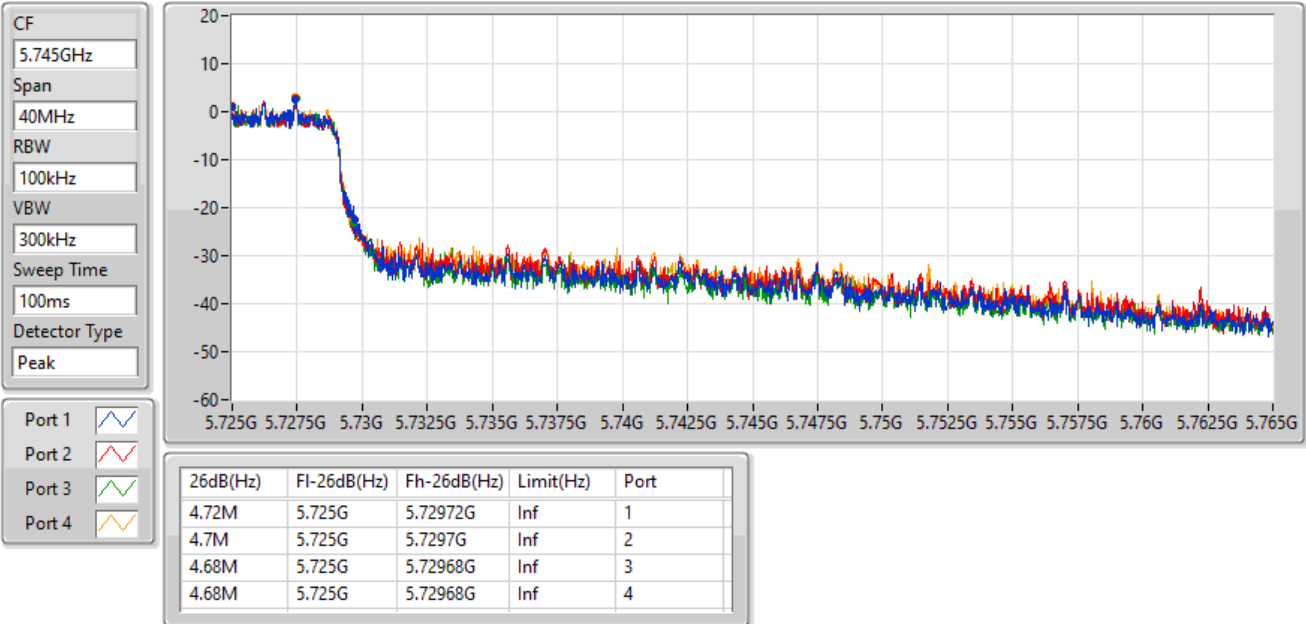


802.11ax HEW40_Nss4,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

03/08/2022

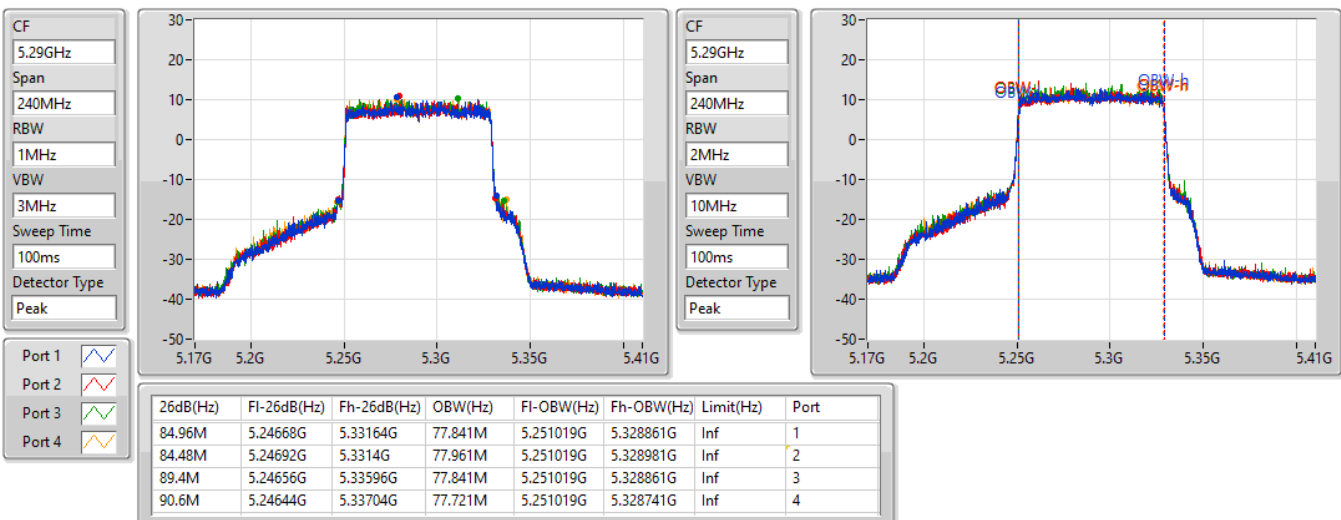


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5290MHz

03/08/2022

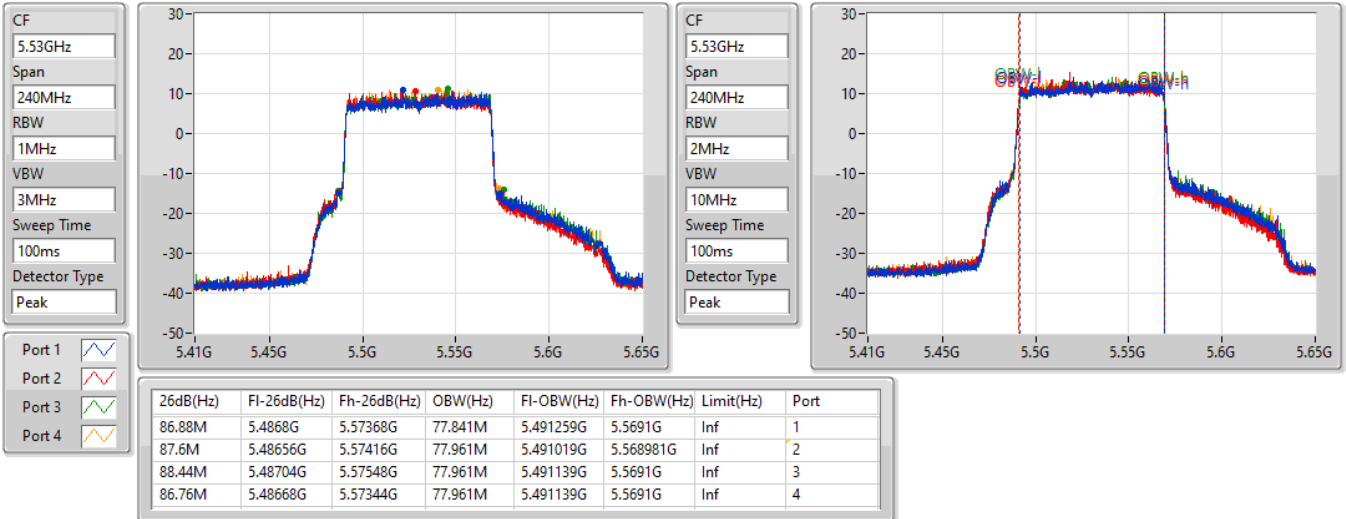


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5530MHz

03/08/2022

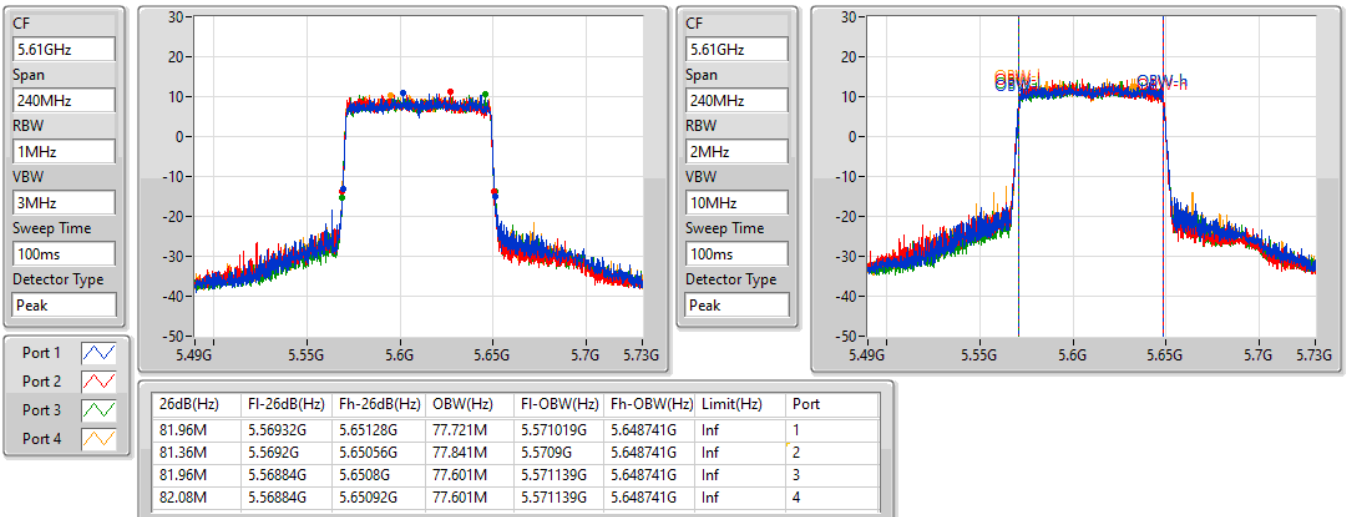


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5610MHz

03/08/2022

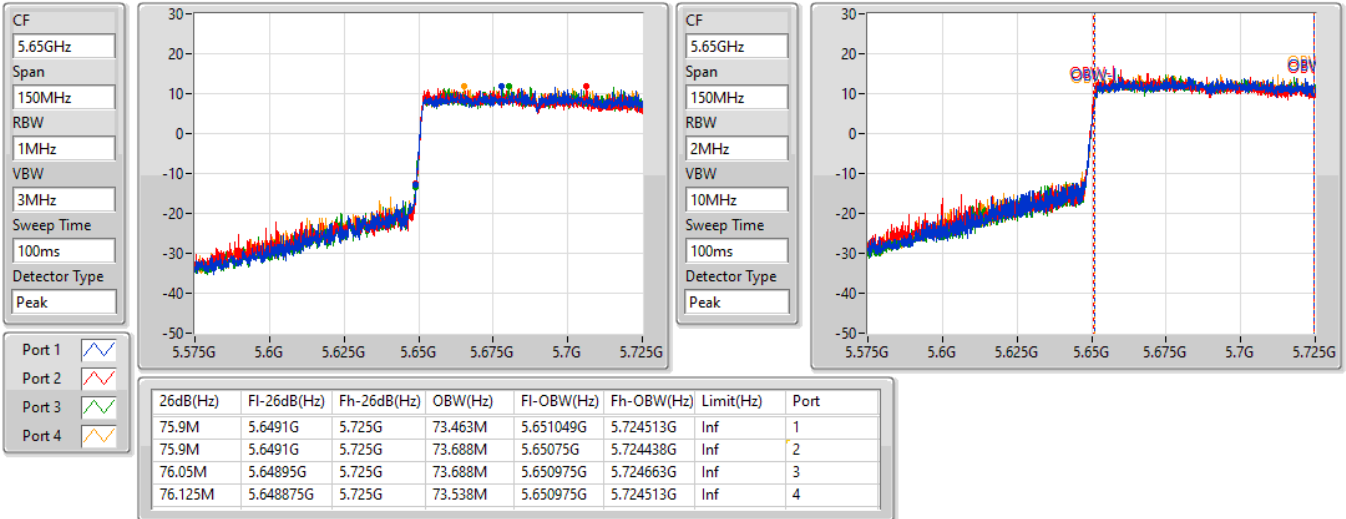


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5690MHz Straddle 5.47-5.725GHz

03/08/2022

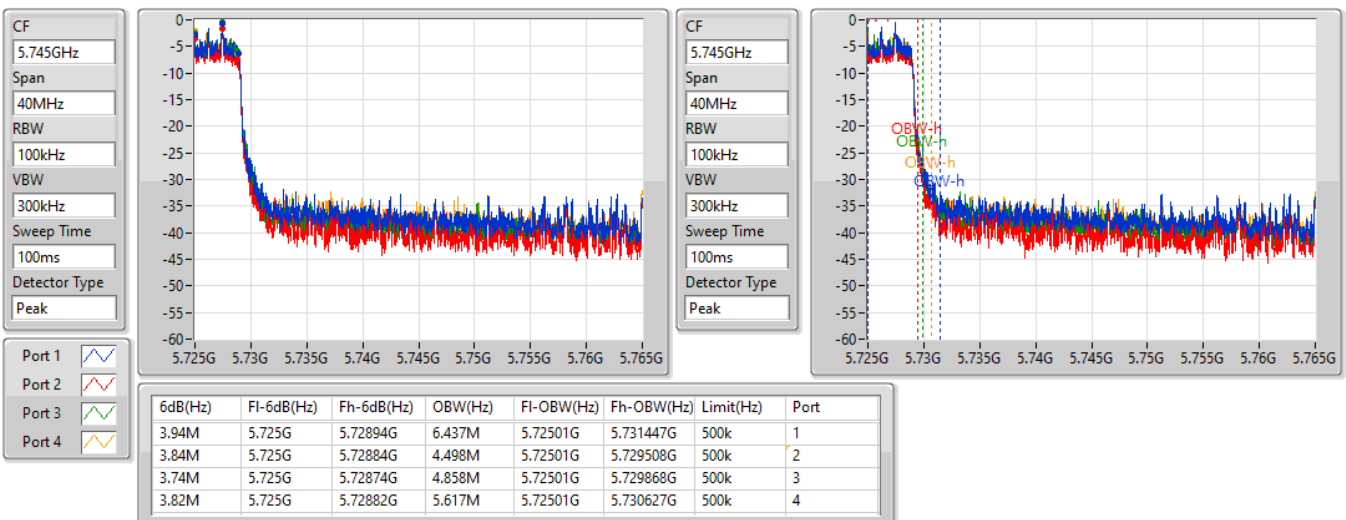


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5690MHz Straddle 5.725-5.85GHz

03/08/2022

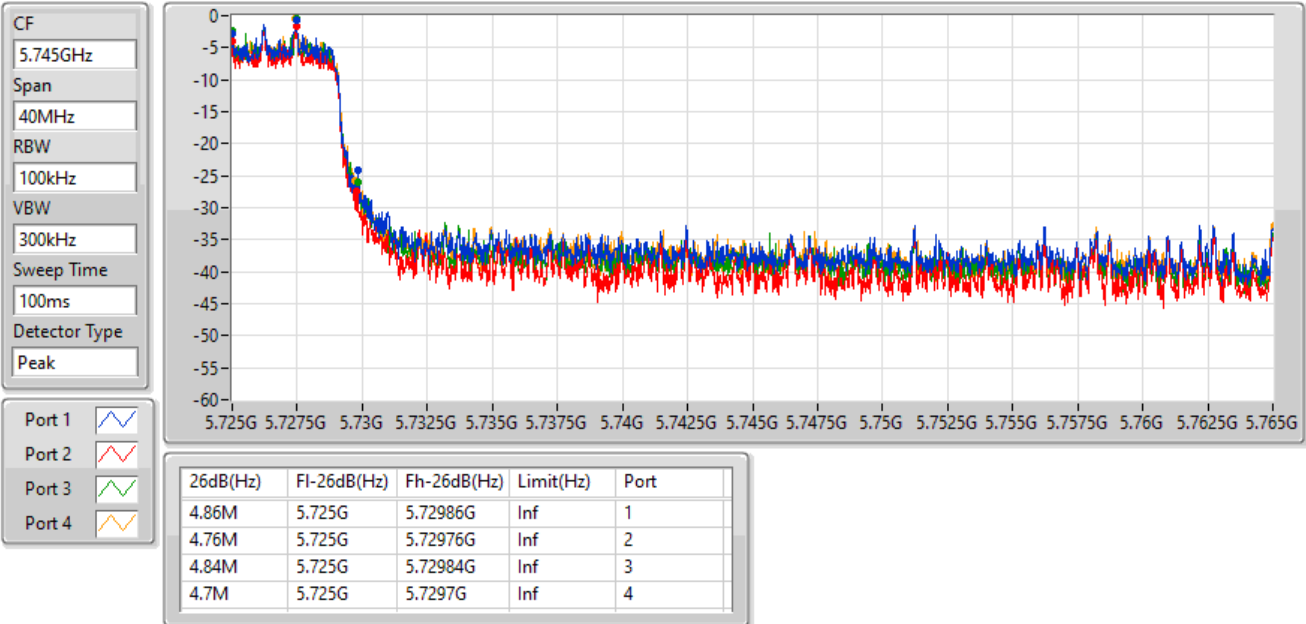


802.11ax HEW80_Nss4,(MCS0)_4TX

EBW

5690MHz Straddle 5.725-5.85GHz

03/08/2022

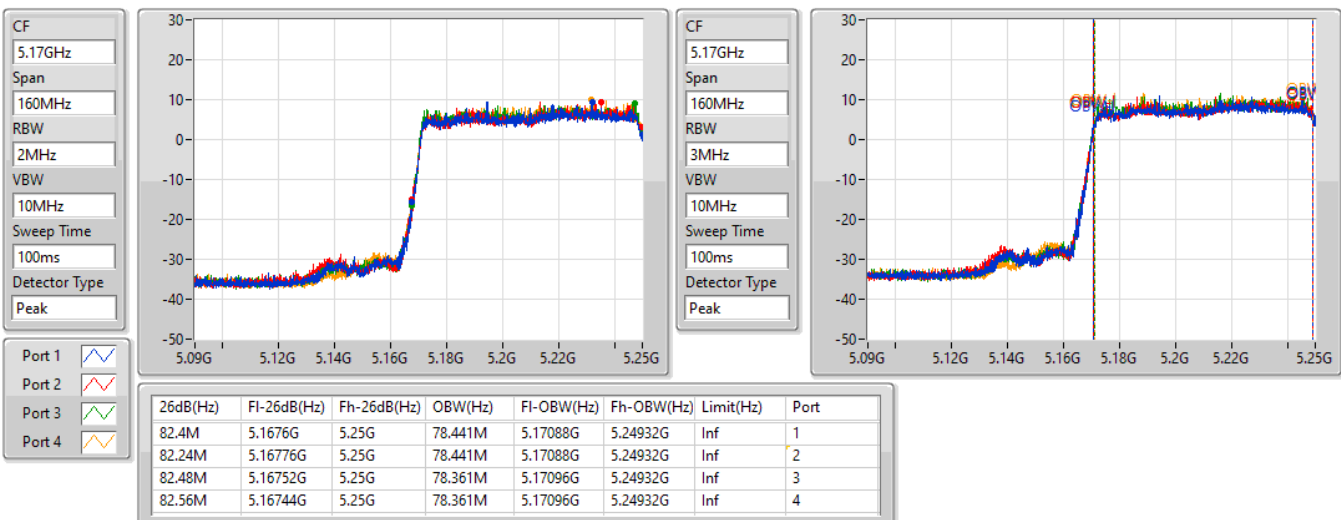


802.11ax HEW160_Nss4,(MCS0)_4TX

EBW

5250MHz Straddle 5.15-5.25GHz

03/08/2022

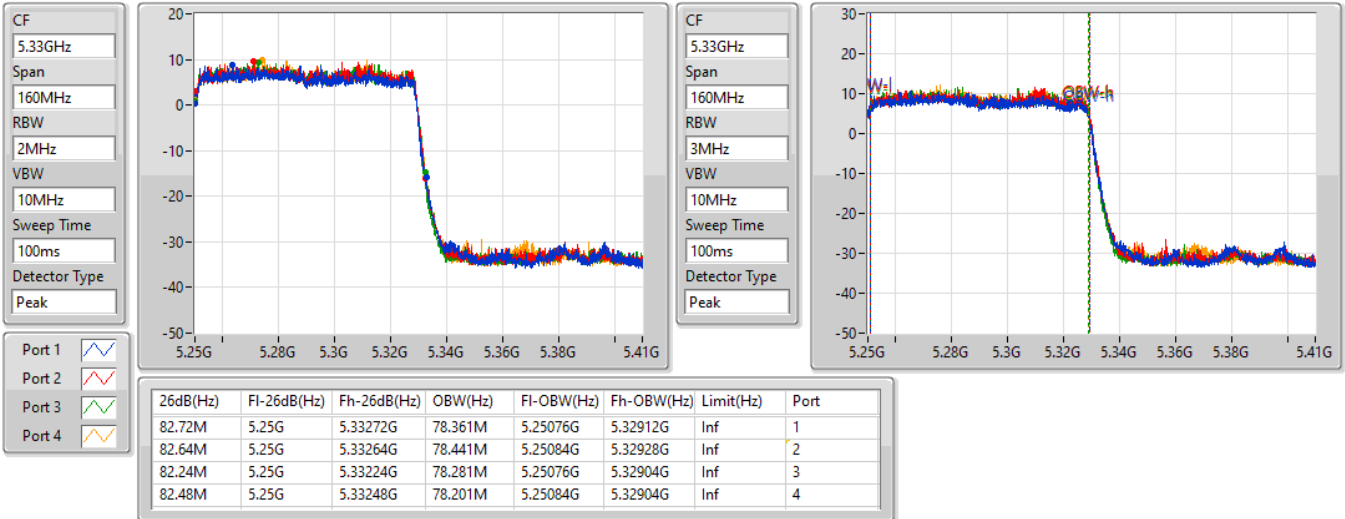


802.11ax HEW160_Nss4,(MCS0)_4TX

EBW

5250MHz Straddle 5.25-5.35GHz

03/08/2022

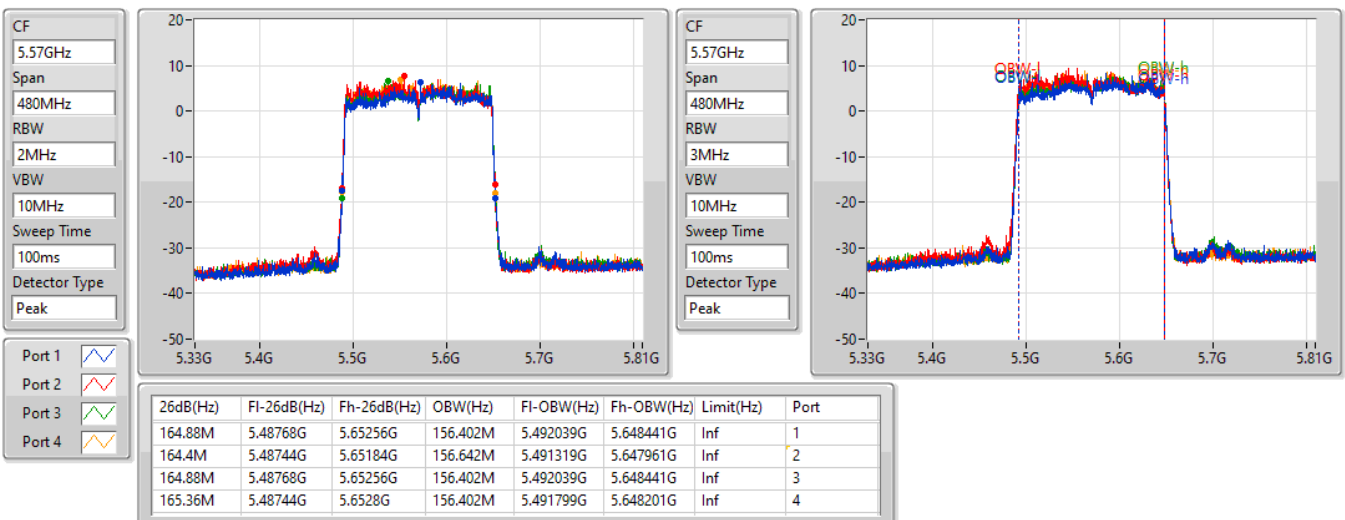


802.11ax HEW160_Nss4,(MCS0)_4TX

EBW

5570MHz

03/08/2022



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_1TX	82.8M	78.601M	78M6D1D	82.8M	78.601M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	40.08M	19.67M	19M7D1D	35.88M	18.531M
802.11ax HEW20_Nss1,(MCS0)_1TX	40.83M	19.88M	19M9D1D	36.48M	19.52M
802.11ax HEW40_Nss1,(MCS0)_1TX	79.74M	39.64M	39M6D1D	50.58M	38.321M
802.11ax HEW80_Nss1,(MCS0)_1TX	84.96M	77.841M	77M8D1D	84.96M	77.841M
802.11ax HEW160_Nss1,(MCS0)_1TX	82.48M	78.841M	78M8D1D	82.48M	78.841M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	36.45M	18.951M	19M0D1D	16.605M	13.883M
802.11ax HEW20_Nss1,(MCS0)_1TX	33.9M	19.43M	19M4D1D	15.915M	14.588M
802.11ax HEW40_Nss1,(MCS0)_1TX	78.48M	39.22M	39M2D1D	48.84M	34.703M
802.11ax HEW80_Nss1,(MCS0)_1TX	132.96M	79.52M	79M5D1D	91.32M	74.438M
802.11ax HEW160_Nss1,(MCS0)_1TX	164.88M	156.882M	157MD1D	164.88M	156.882M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	3.22M	4.958M	4M96D1D	3.22M	4.958M
802.11ax HEW20_Nss1,(MCS0)_1TX	4.48M	4.798M	4M80D1D	4.48M	4.798M
802.11ax HEW40_Nss1,(MCS0)_1TX	3.94M	21.689M	21M7D1D	3.94M	21.689M
802.11ax HEW80_Nss1,(MCS0)_1TX	3.96M	33.123M	33M1D1D	3.96M	33.123M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5260MHz	Pass	Inf	39.15M	19.67M
5300MHz	Pass	Inf	40.08M	19.55M
5320MHz	Pass	Inf	35.88M	18.531M
5500MHz	Pass	Inf	36.45M	18.951M
5580MHz	Pass	Inf	31.83M	17.691M
5700MHz	Pass	Inf	26.07M	17.421M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.605M	13.883M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.22M	4.958M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5260MHz	Pass	Inf	40.83M	19.79M
5300MHz	Pass	Inf	40.38M	19.88M
5320MHz	Pass	Inf	36.48M	19.52M
5500MHz	Pass	Inf	33.9M	19.43M
5580MHz	Pass	Inf	32.91M	19.28M
5700MHz	Pass	Inf	21.81M	19.13M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.915M	14.588M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.798M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5270MHz	Pass	Inf	79.74M	39.64M
5310MHz	Pass	Inf	50.58M	38.321M
5510MHz	Pass	Inf	48.84M	38.201M
5550MHz	Pass	Inf	78.48M	39.22M
5670MHz	Pass	Inf	67.8M	38.861M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	53.725M	34.703M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.94M	21.689M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5290MHz	Pass	Inf	84.96M	77.841M
5530MHz	Pass	Inf	91.32M	78.201M
5610MHz	Pass	Inf	132.96M	79.52M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	108.075M	74.438M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.96M	33.123M
802.11ax HEW160_Nss1,(MCS0)_1TX	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.8M	78.601M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	82.48M	78.841M
5570MHz	Pass	Inf	164.88M	156.882M

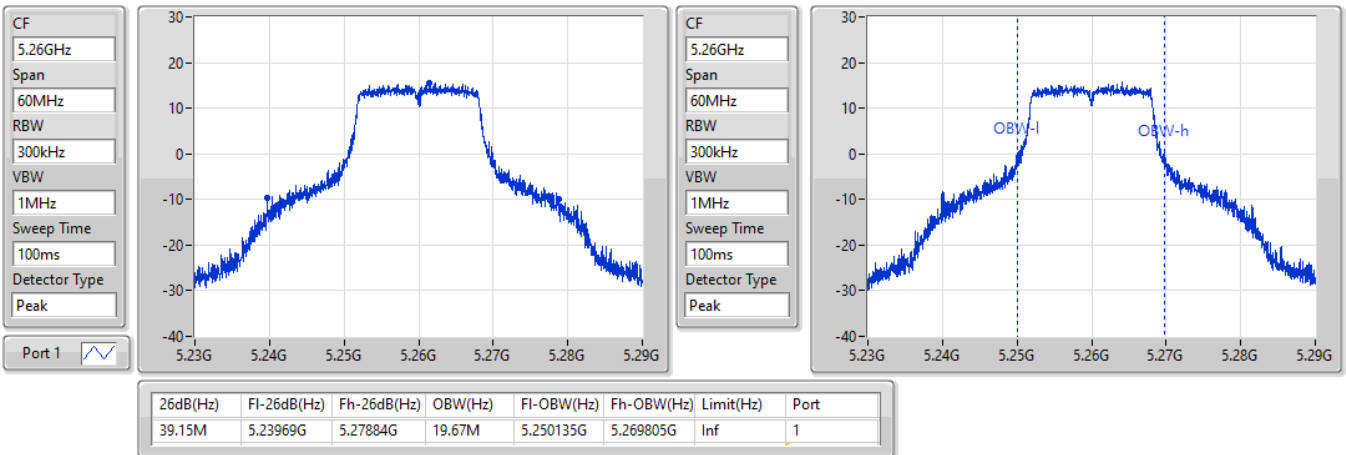
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_1TX

EBW

5260MHz

30/07/2022

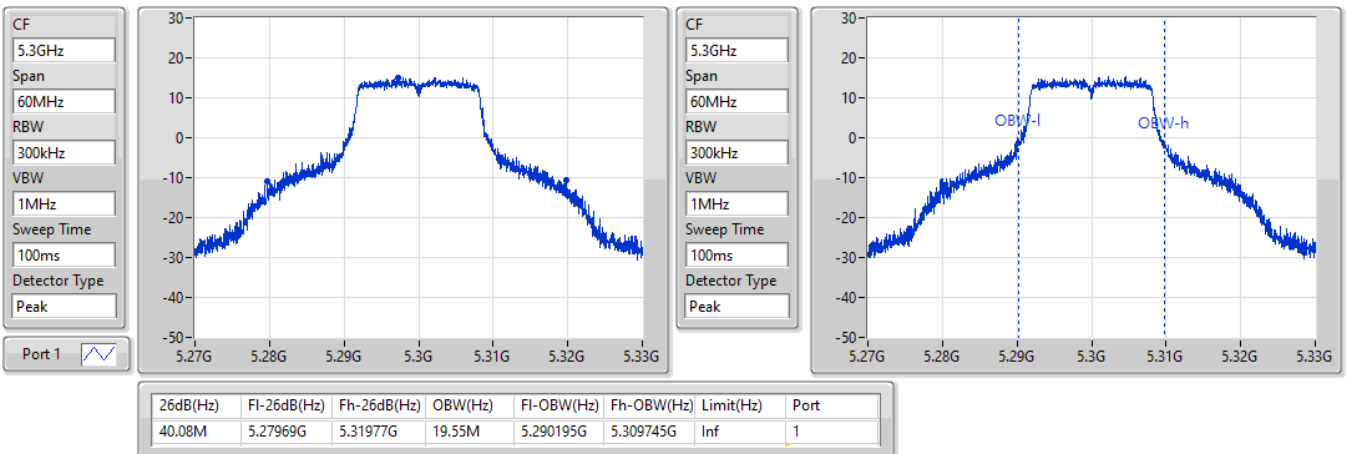


802.11a_Nss1,(6Mbps)_1TX

EBW

5300MHz

30/07/2022

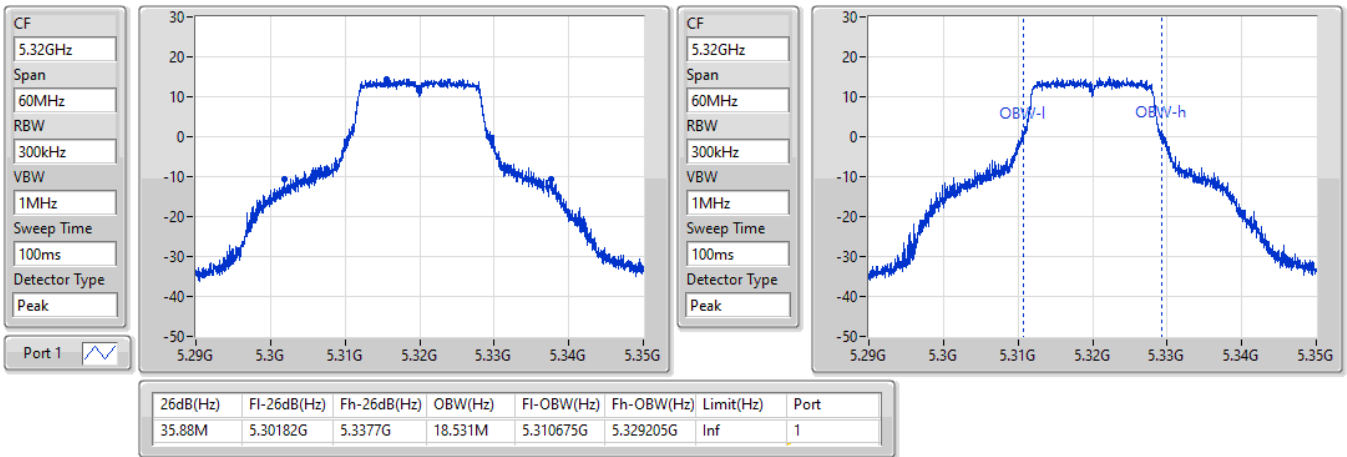


802.11a_Nss1,(6Mbps)_1TX

EBW

5320MHz

30/07/2022

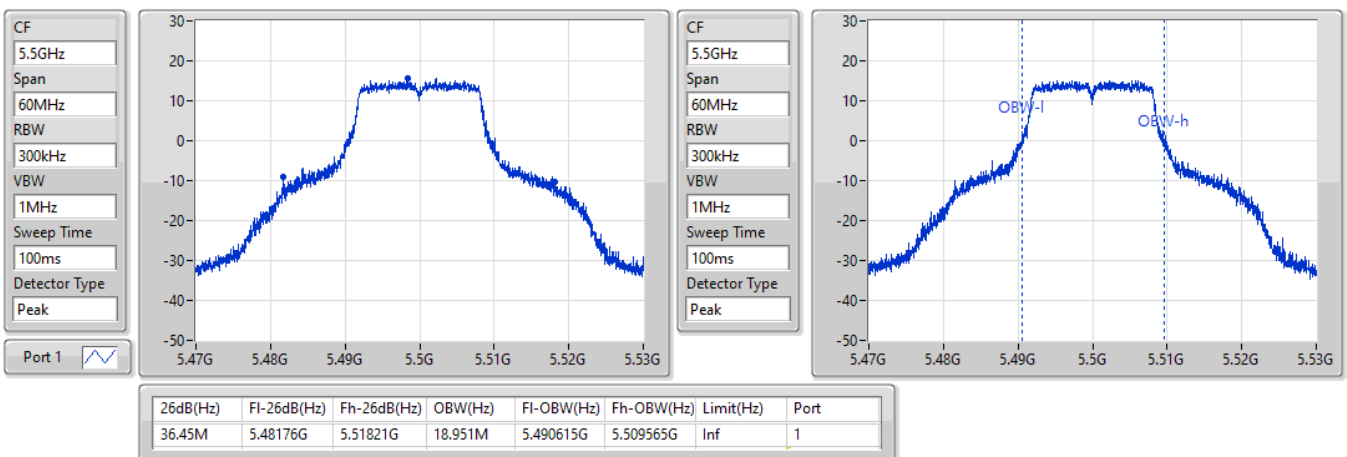


802.11a_Nss1,(6Mbps)_1TX

EBW

5500MHz

30/07/2022

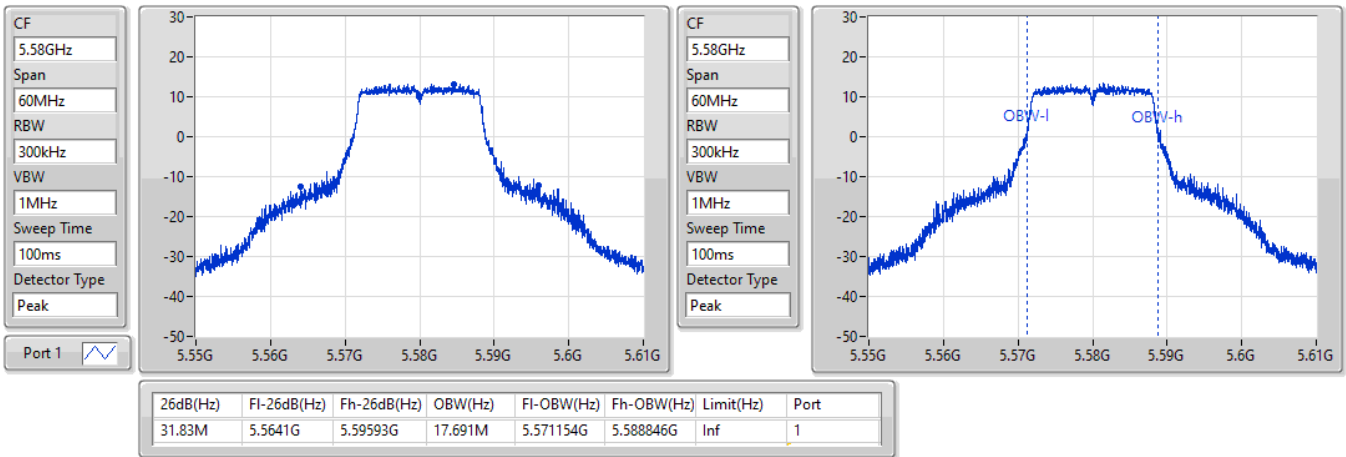


802.11a_Nss1,(6Mbps)_1TX

EBW

5580MHz

30/07/2022

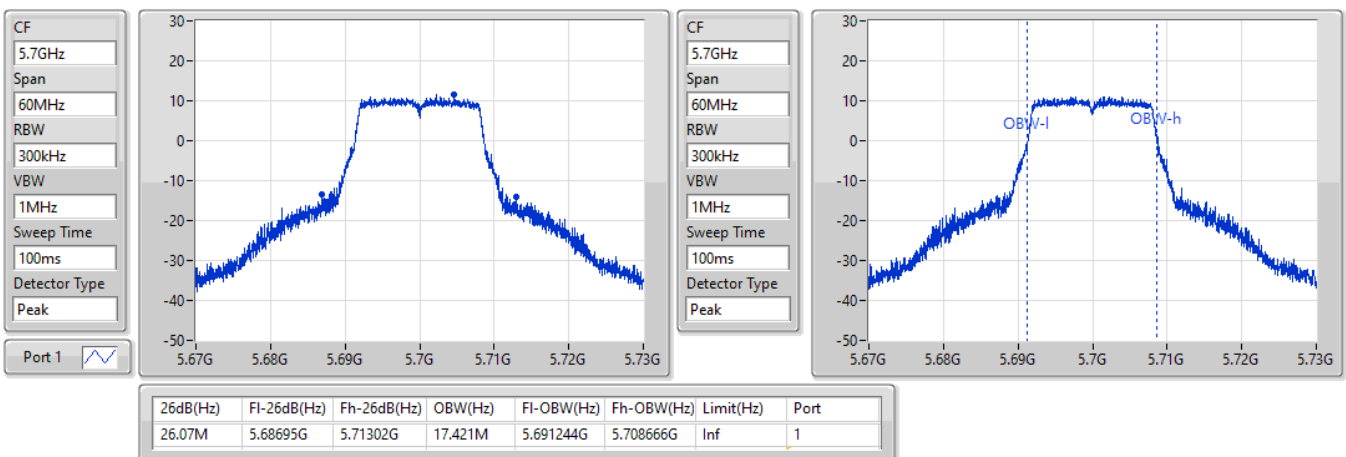


802.11a_Nss1,(6Mbps)_1TX

EBW

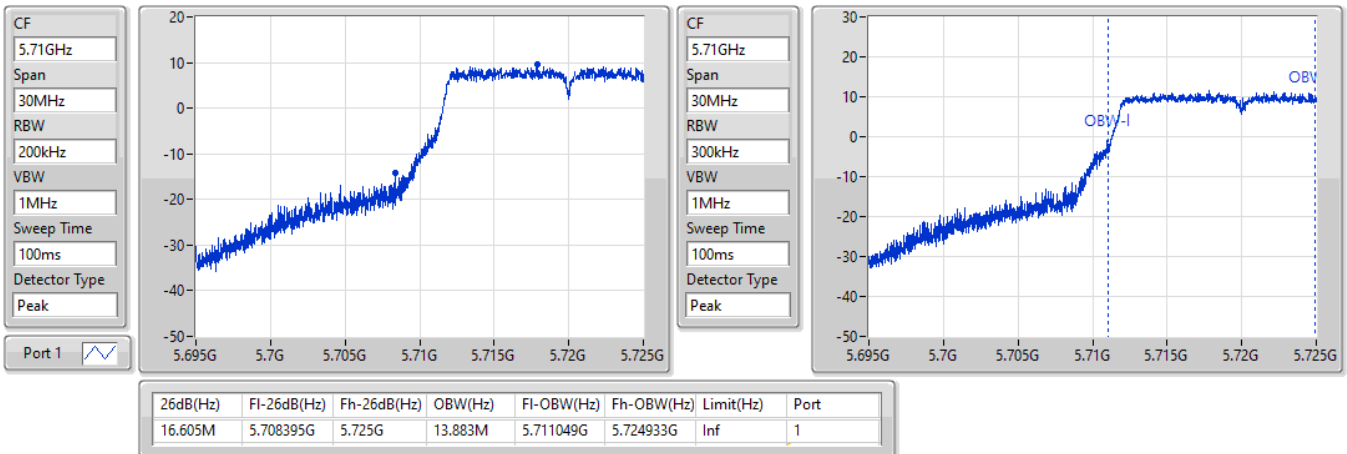
5700MHz

30/07/2022

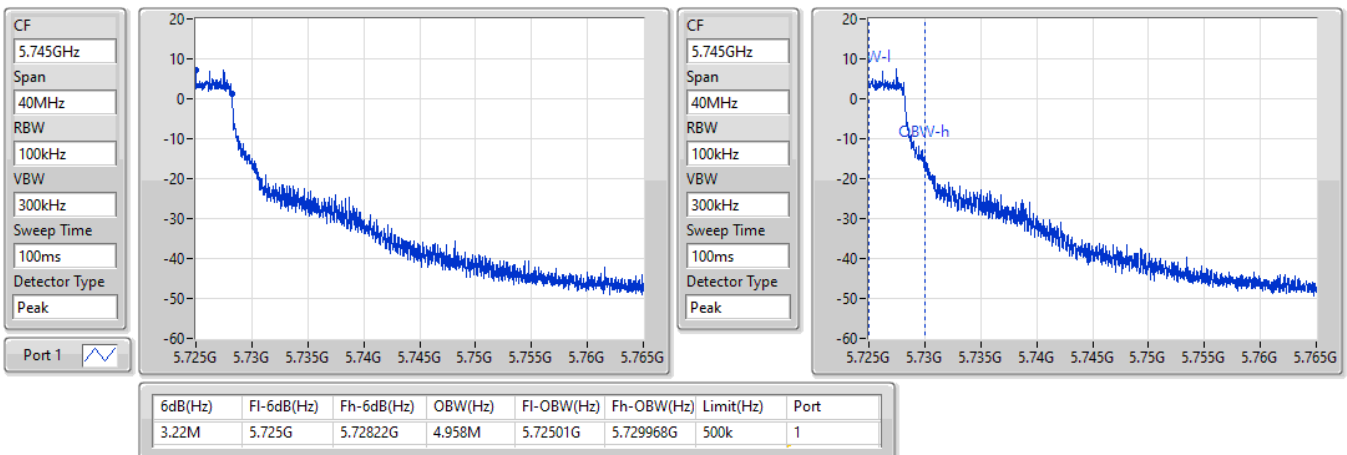


802.11a_Nss1,(6Mbps)_1TX
EBW
5720MHz Straddle 5.47-5.725GHz

30/07/2022


802.11a_Nss1,(6Mbps)_1TX
EBW
5720MHz Straddle 5.725-5.85GHz

30/07/2022

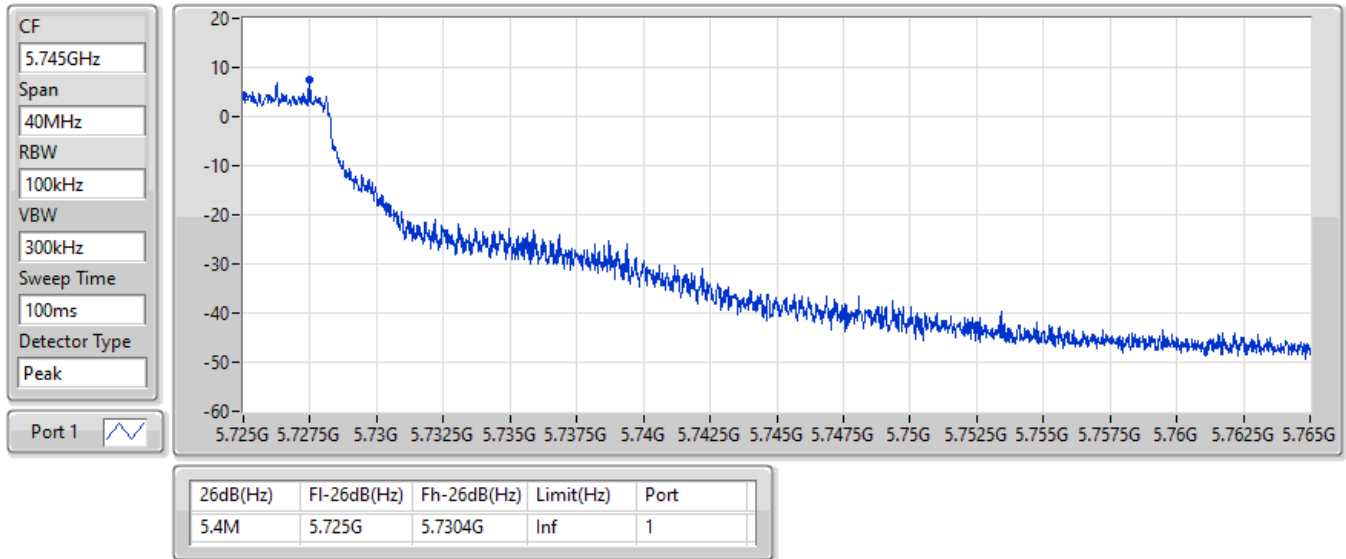


802.11a_Nss1,(6Mbps)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022

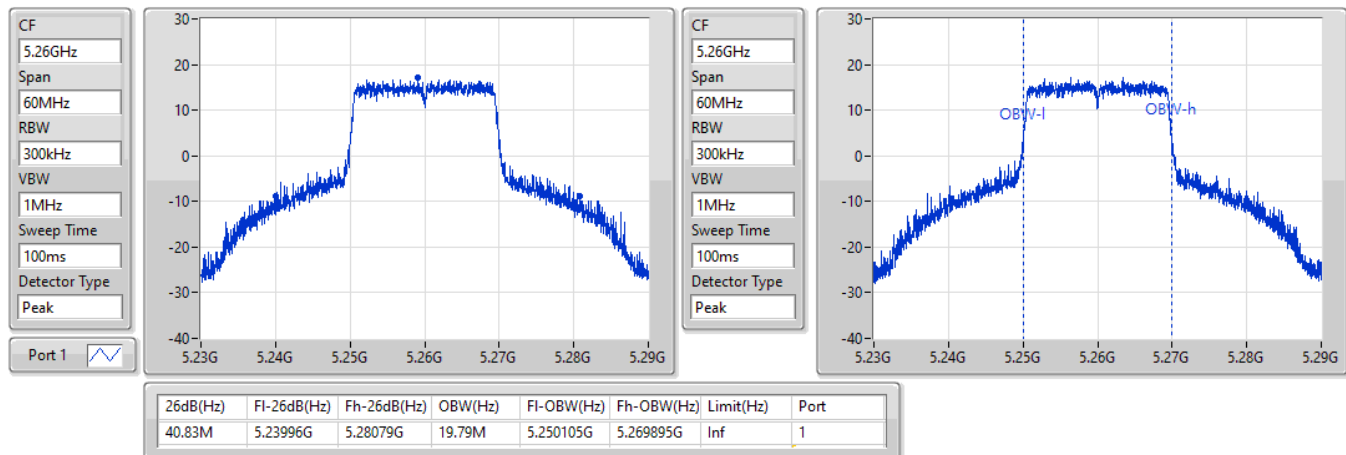


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5260MHz

30/07/2022

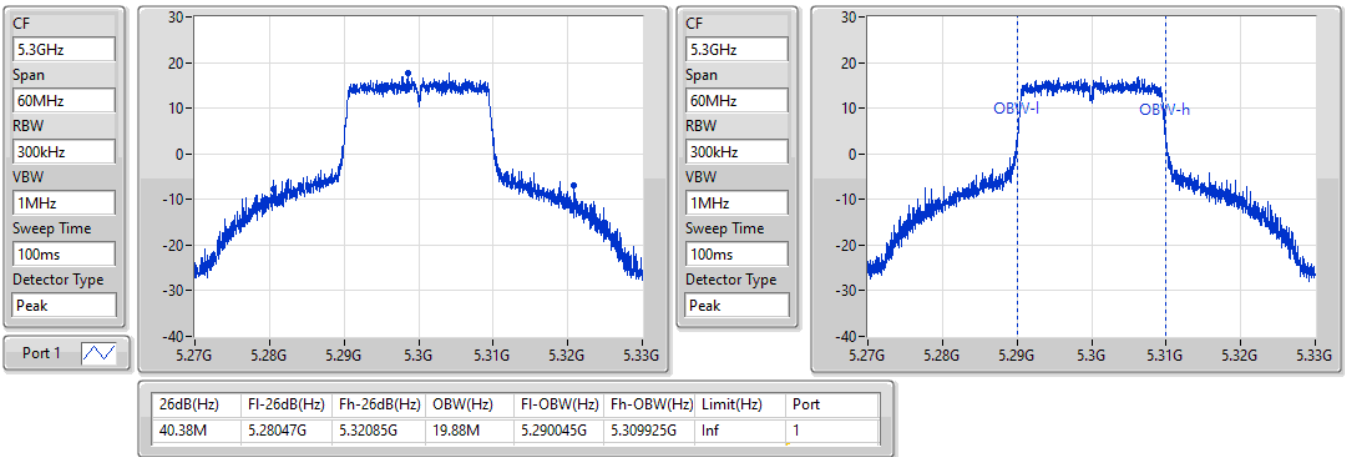


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5300MHz

30/07/2022

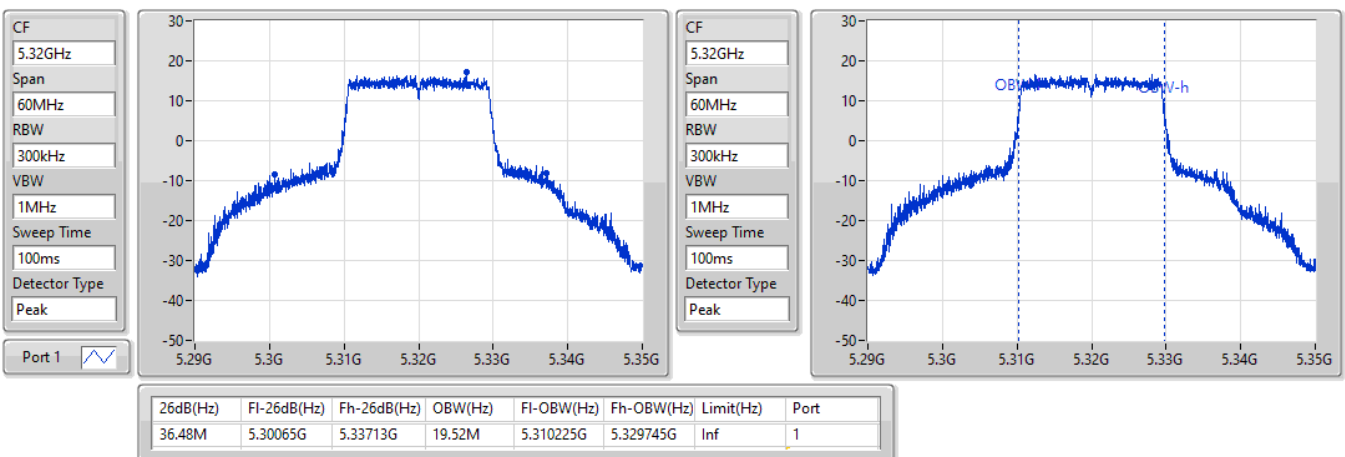


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5320MHz

30/07/2022

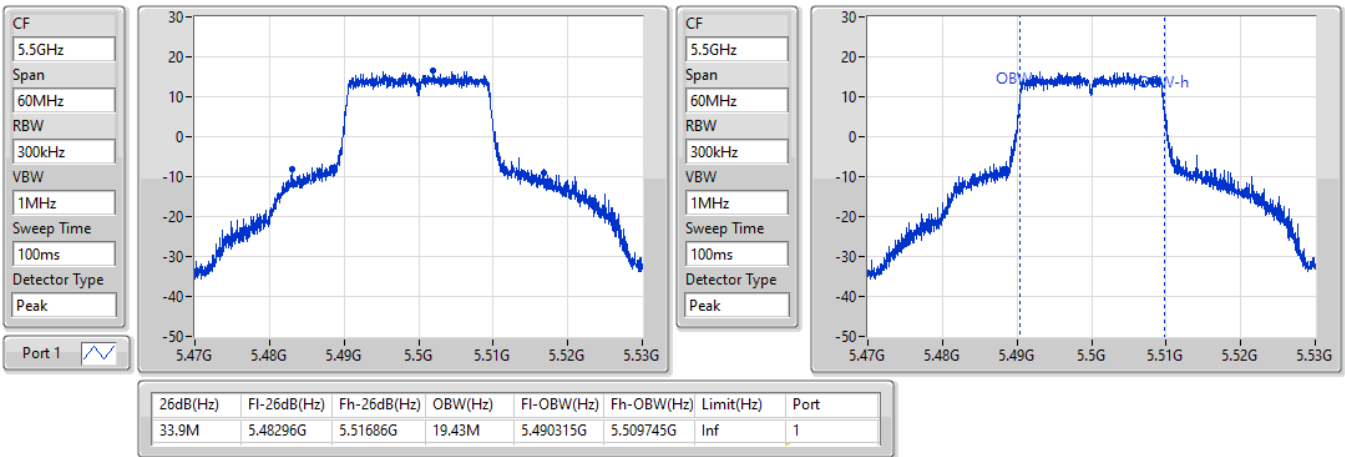


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5500MHz

30/07/2022

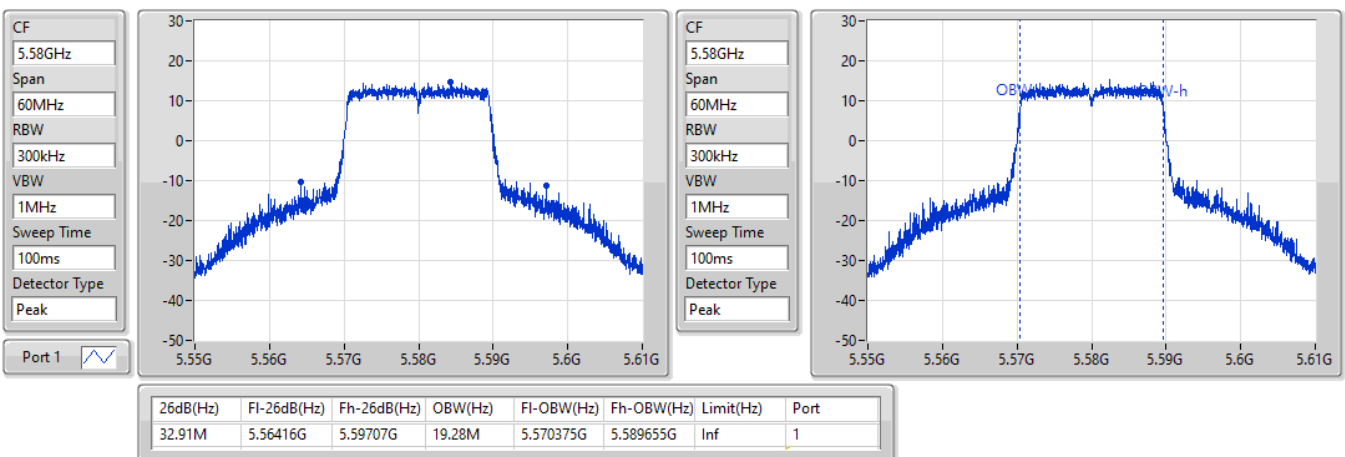


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5580MHz

30/07/2022

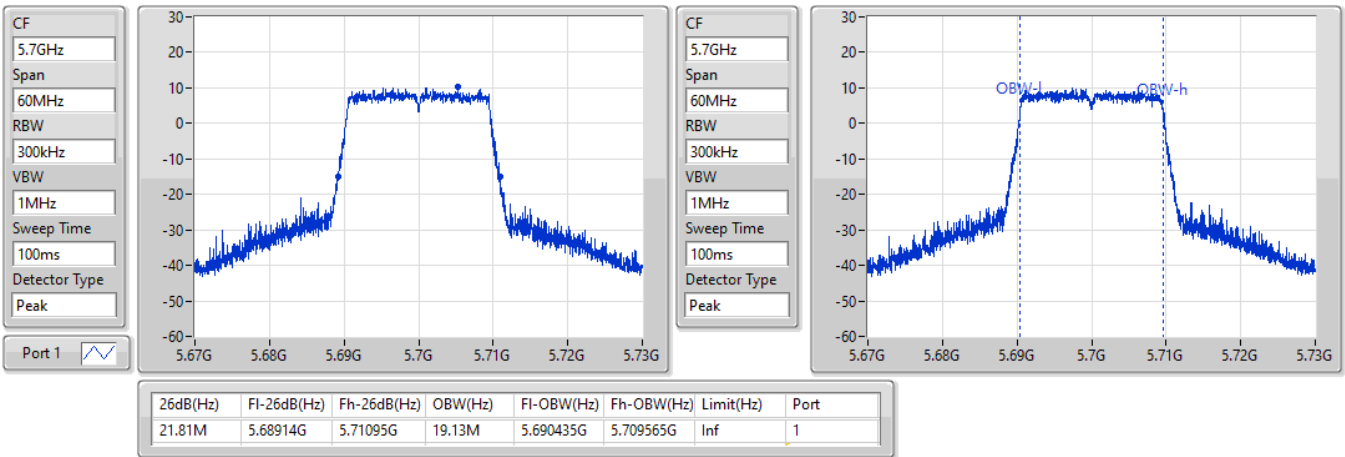


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5700MHz

30/07/2022

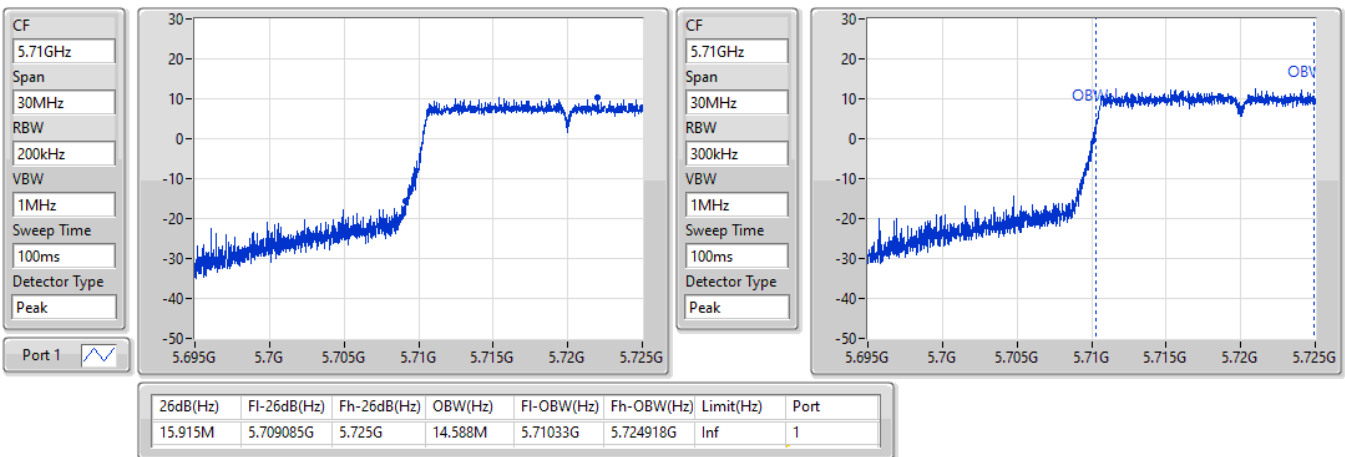


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5720MHz Straddle 5.47-5.725GHz

30/07/2022

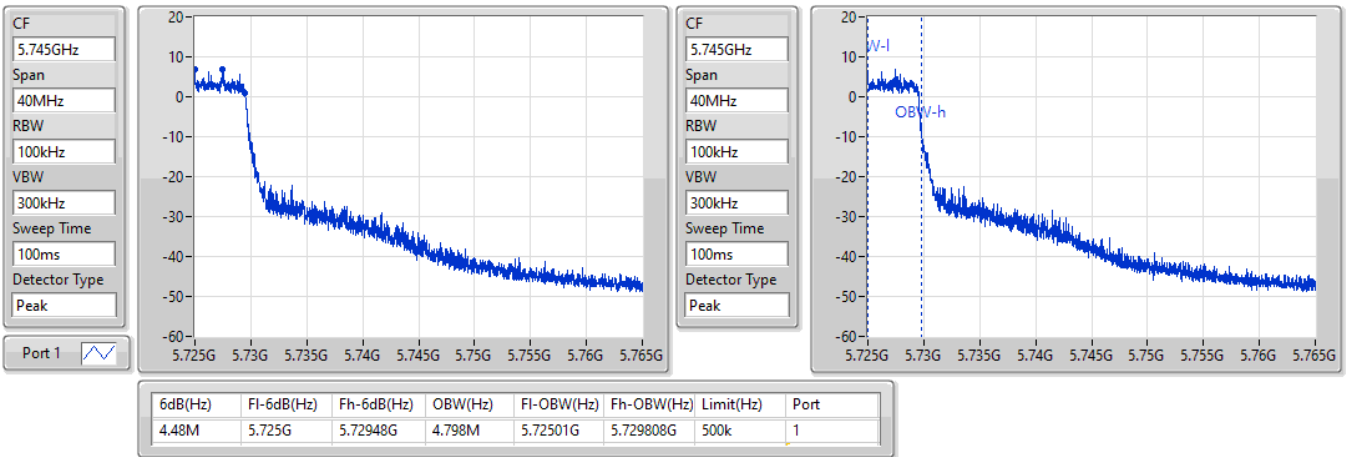


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022

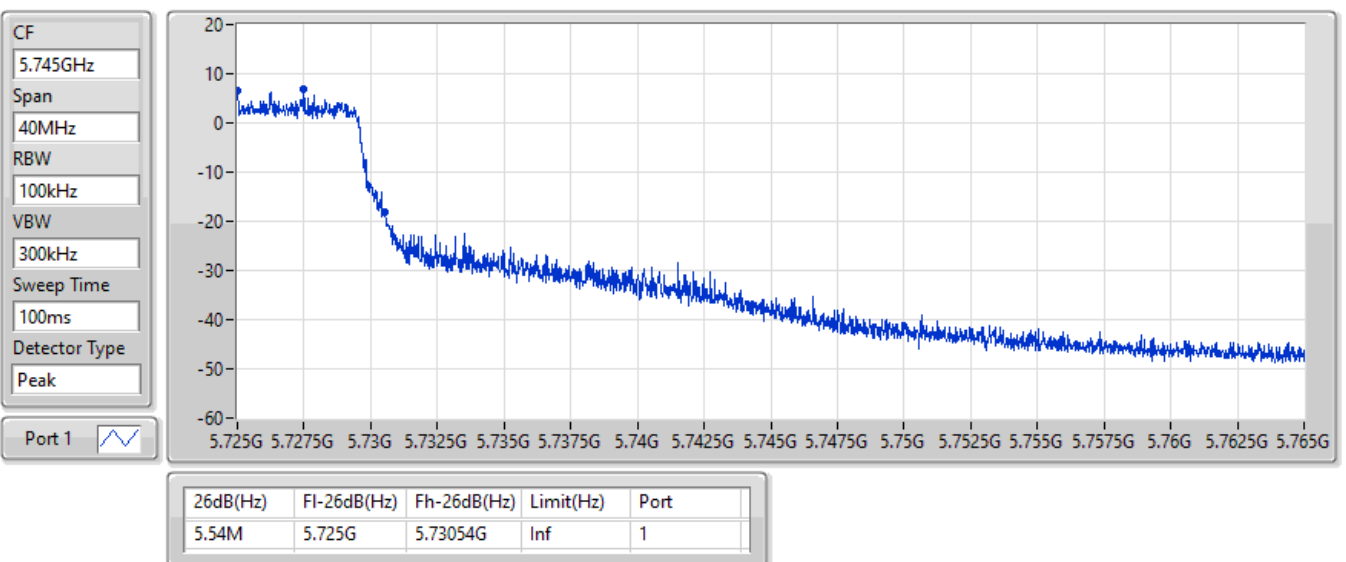


802.11ax HEW20_Nss1,(MCS0)_1TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022

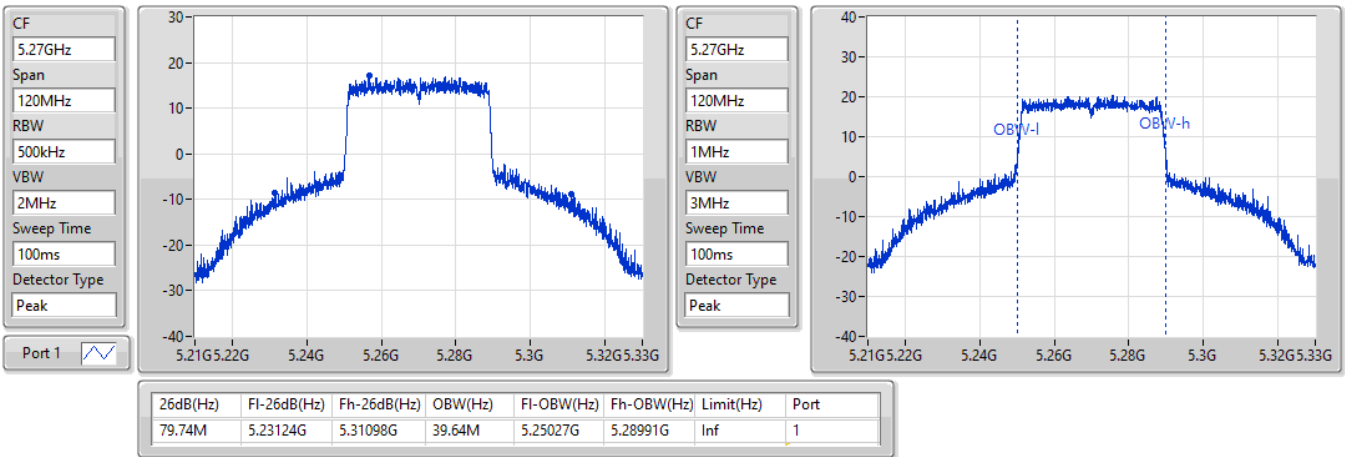


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5270MHz

30/07/2022

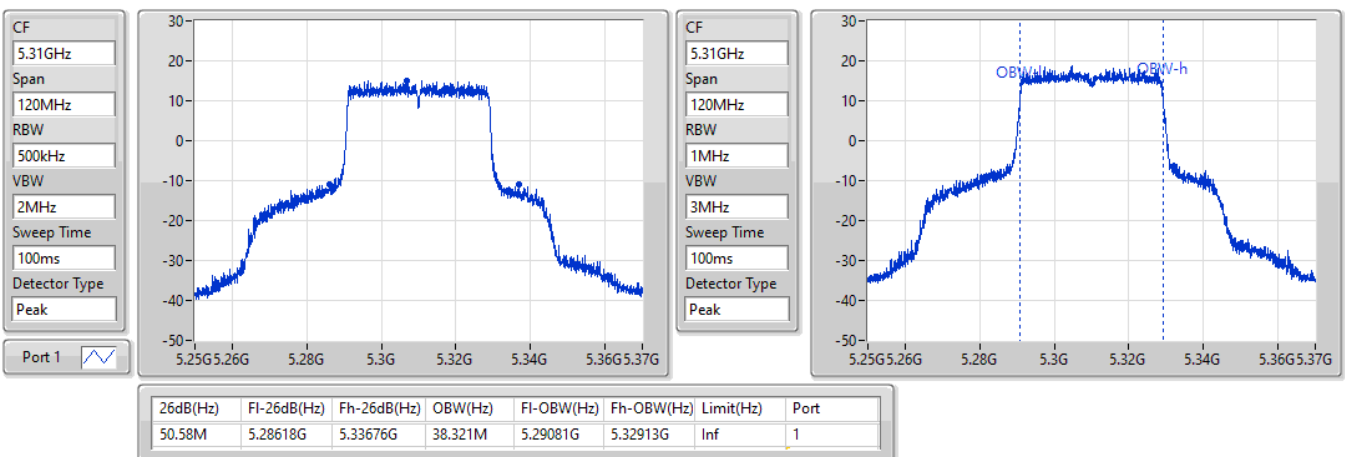


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5310MHz

30/07/2022

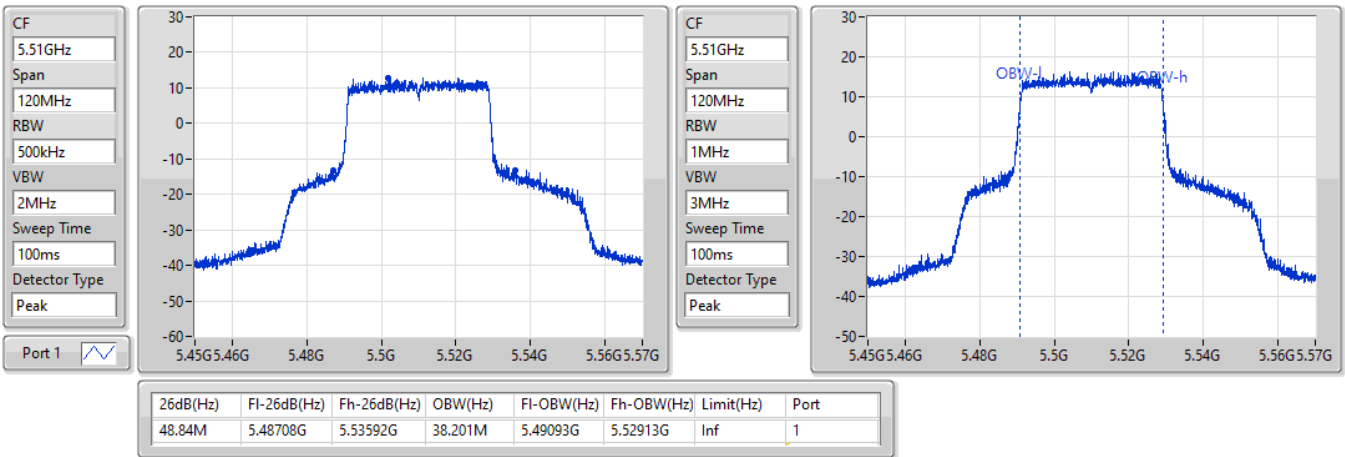


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5510MHz

30/07/2022

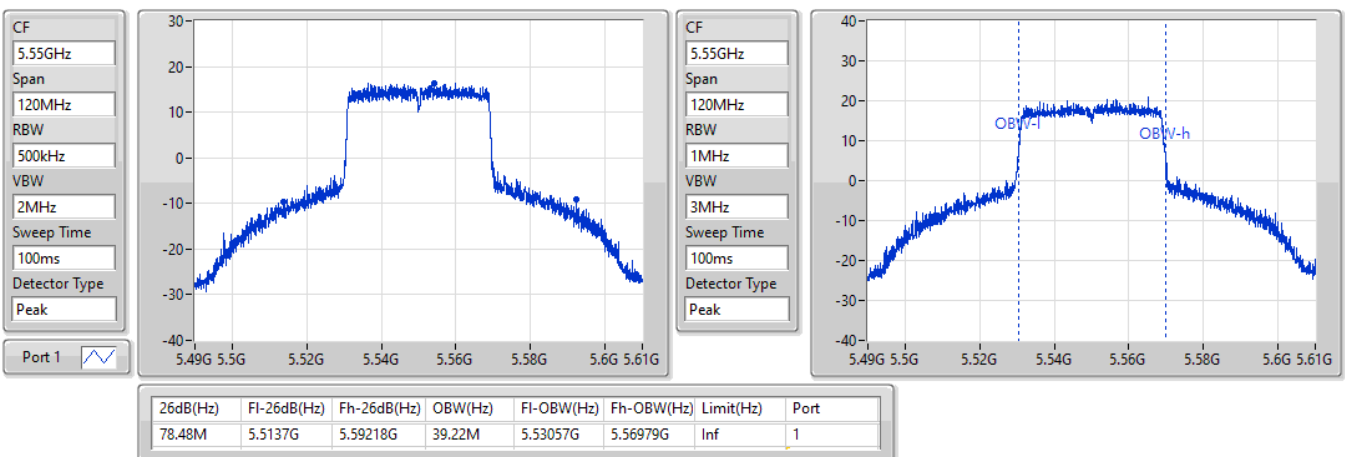


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5550MHz

30/07/2022

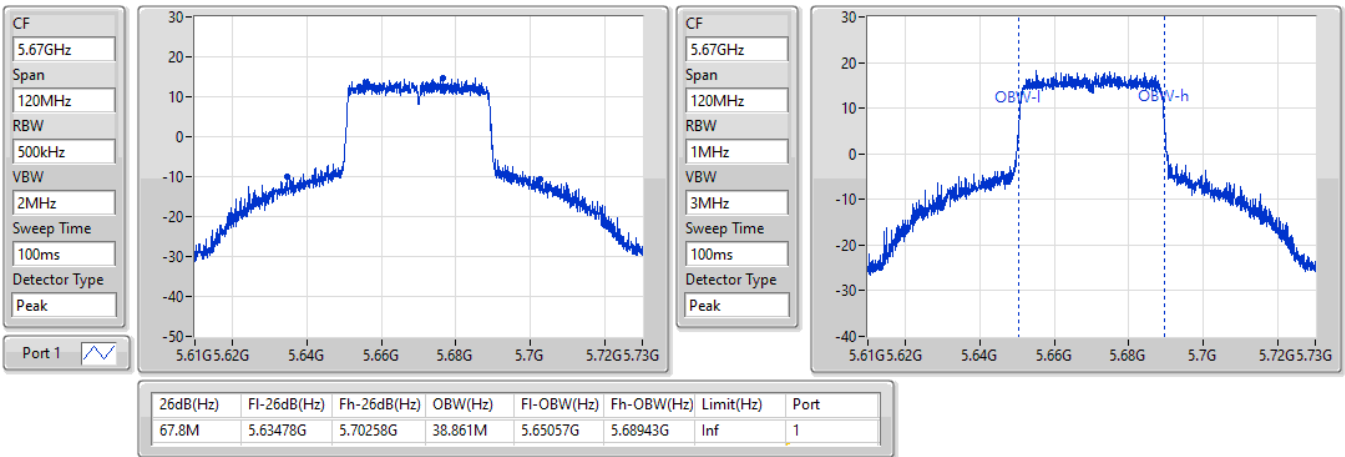


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5670MHz

30/07/2022

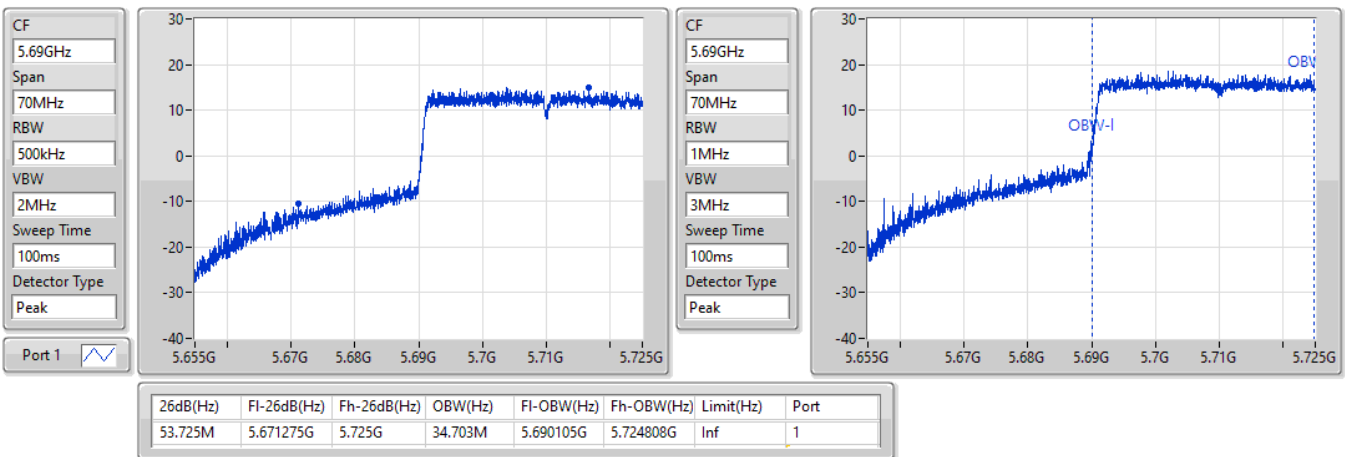


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5710MHz Straddle 5.47-5.725GHz

30/07/2022

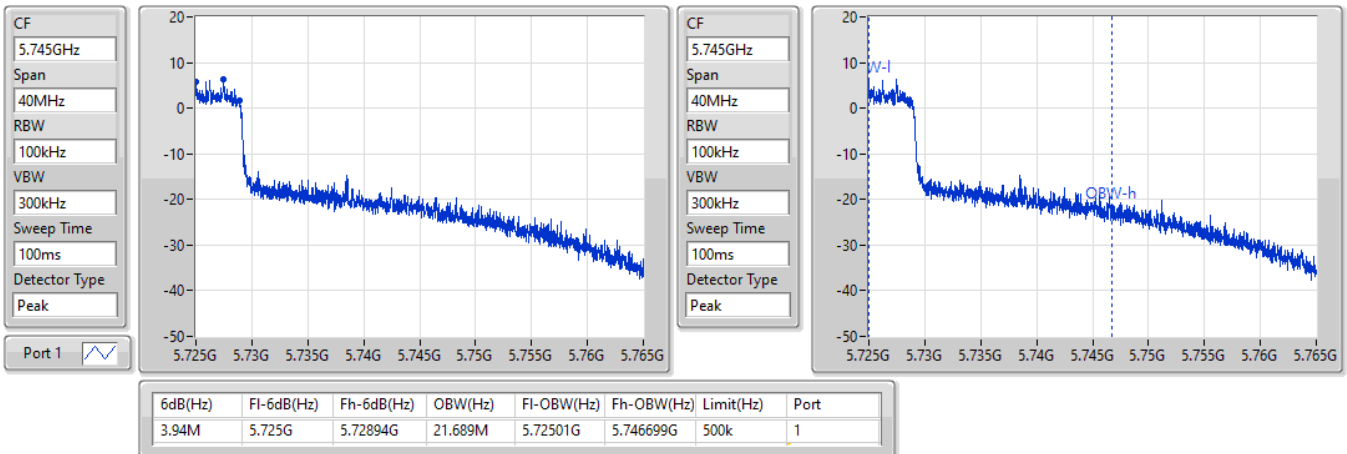


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5710MHz Straddle 5.725-5.85GHz

30/07/2022

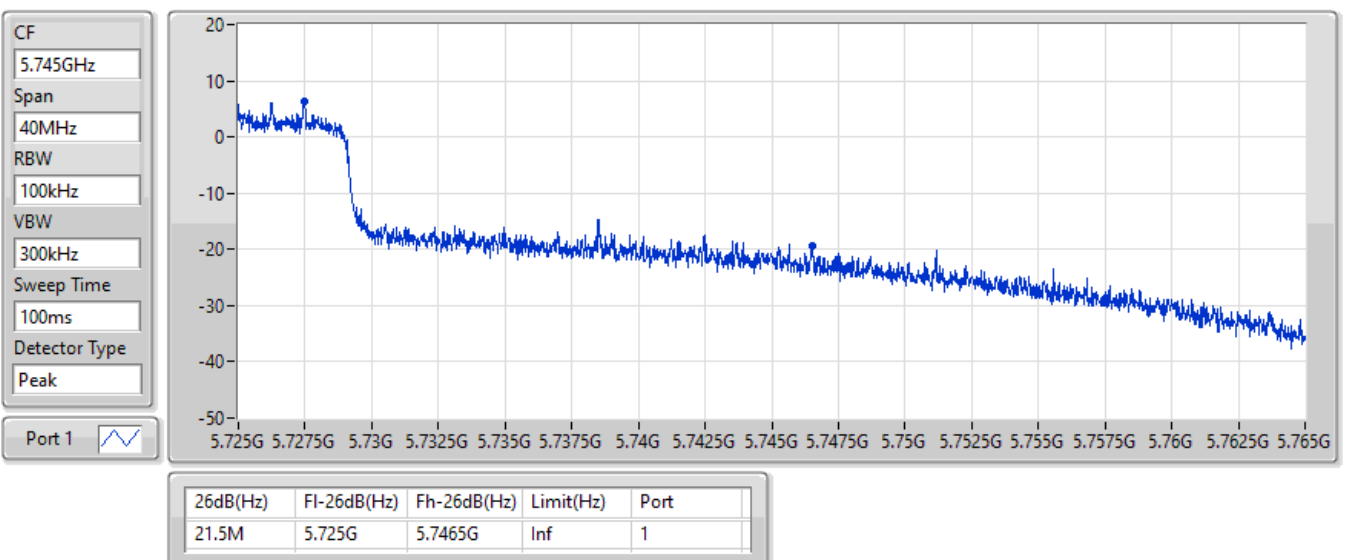


802.11ax HEW40_Nss1,(MCS0)_1TX

EBW

5710MHz Straddle 5.725-5.85GHz

30/07/2022

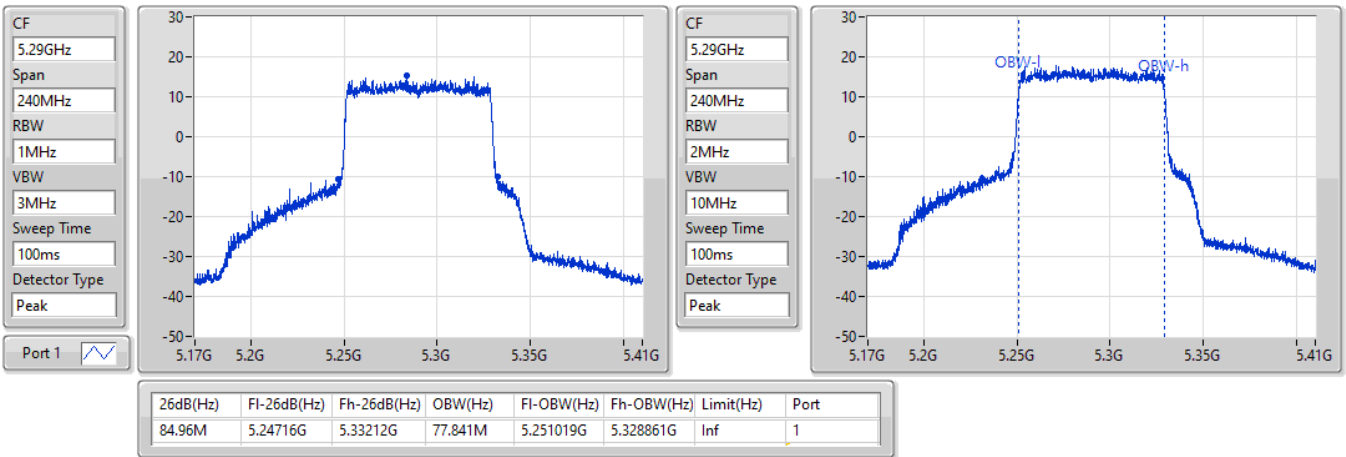


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5290MHz

30/07/2022

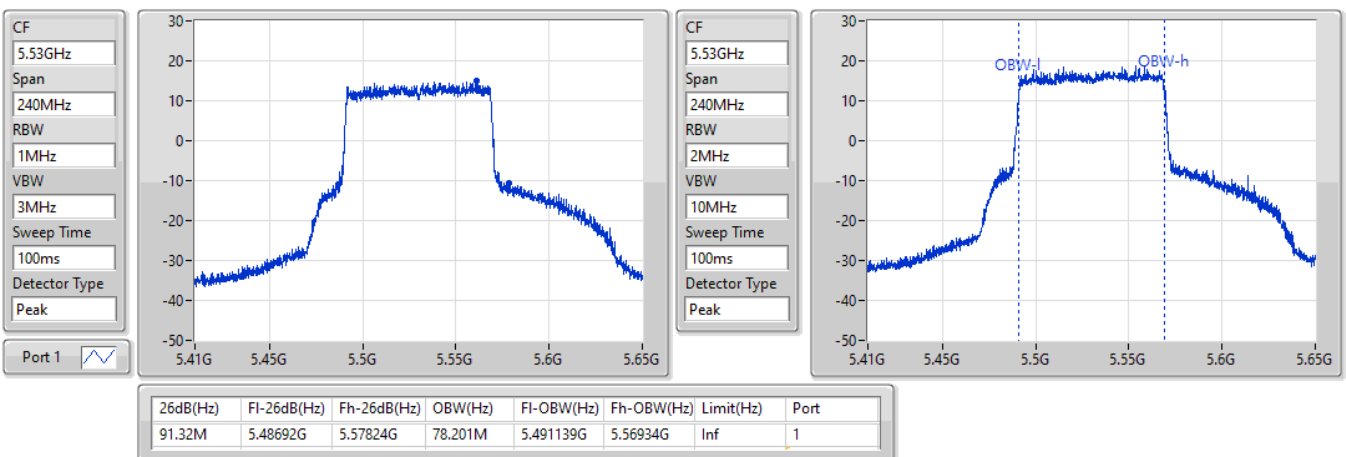


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5530MHz

30/07/2022

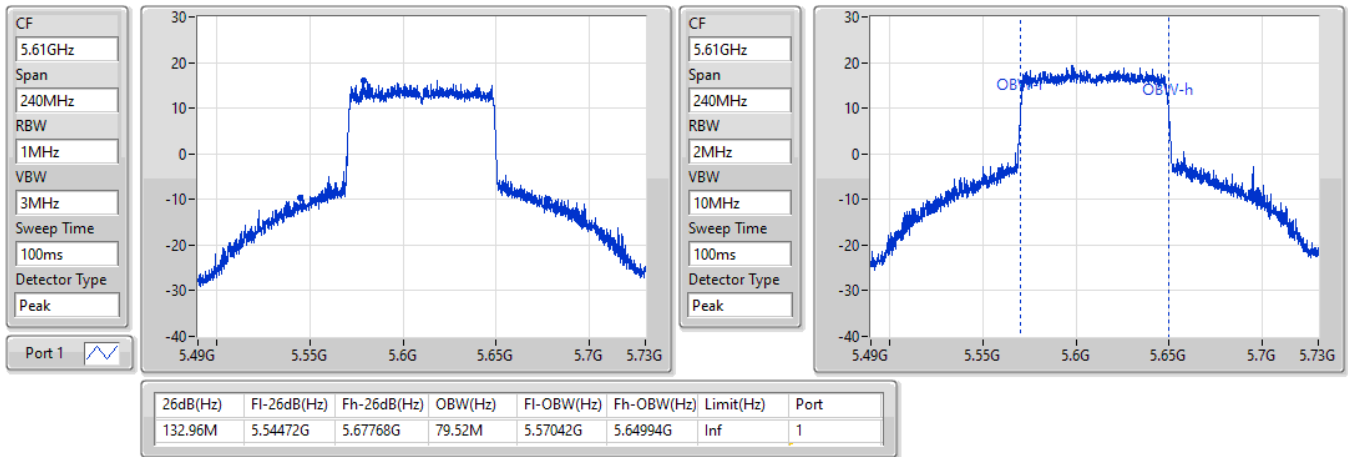


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5610MHz

30/07/2022

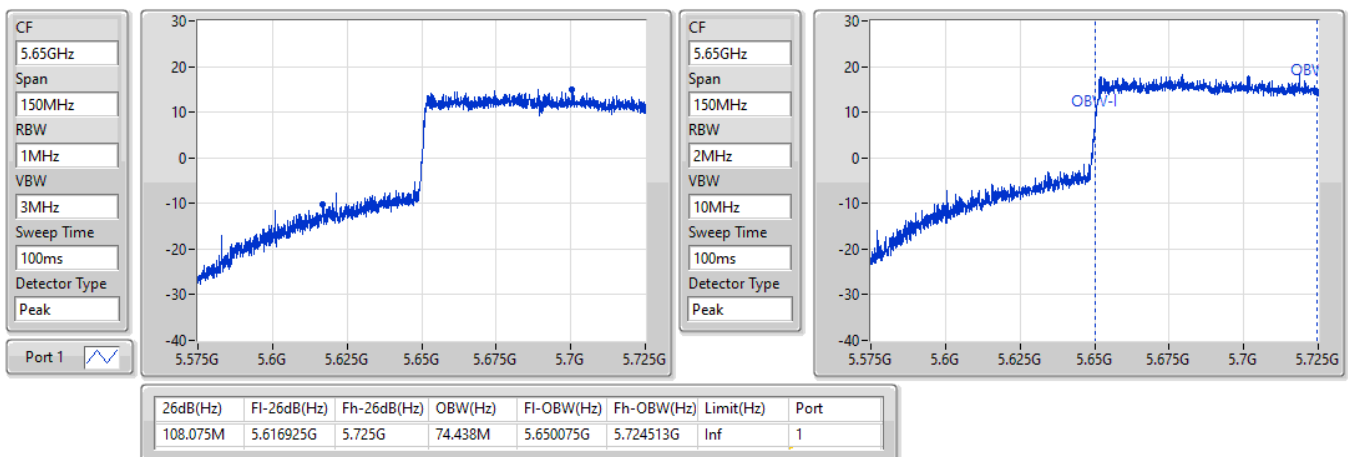


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5690MHz Straddle 5.47-5.725GHz

30/07/2022

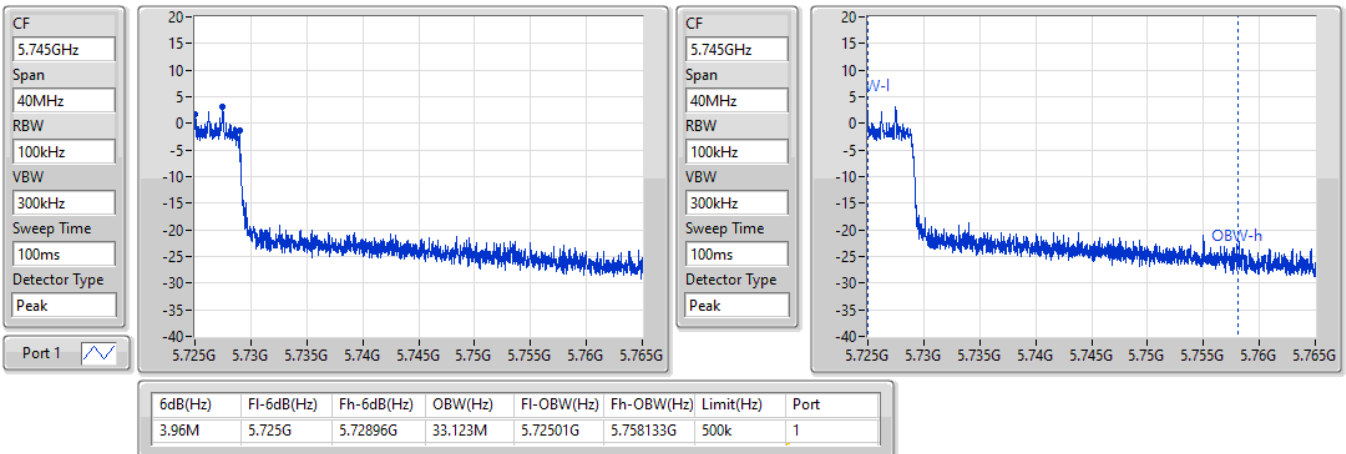


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5690MHz Straddle 5.725-5.85GHz

30/07/2022

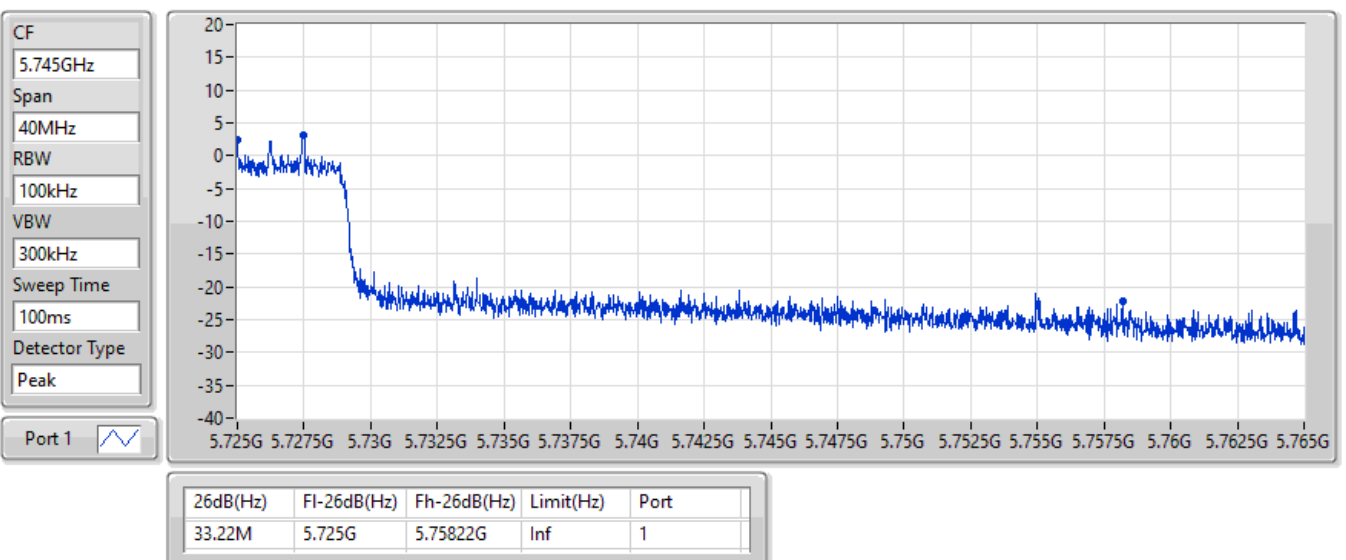


802.11ax HEW80_Nss1,(MCS0)_1TX

EBW

5690MHz Straddle 5.725-5.85GHz

30/07/2022

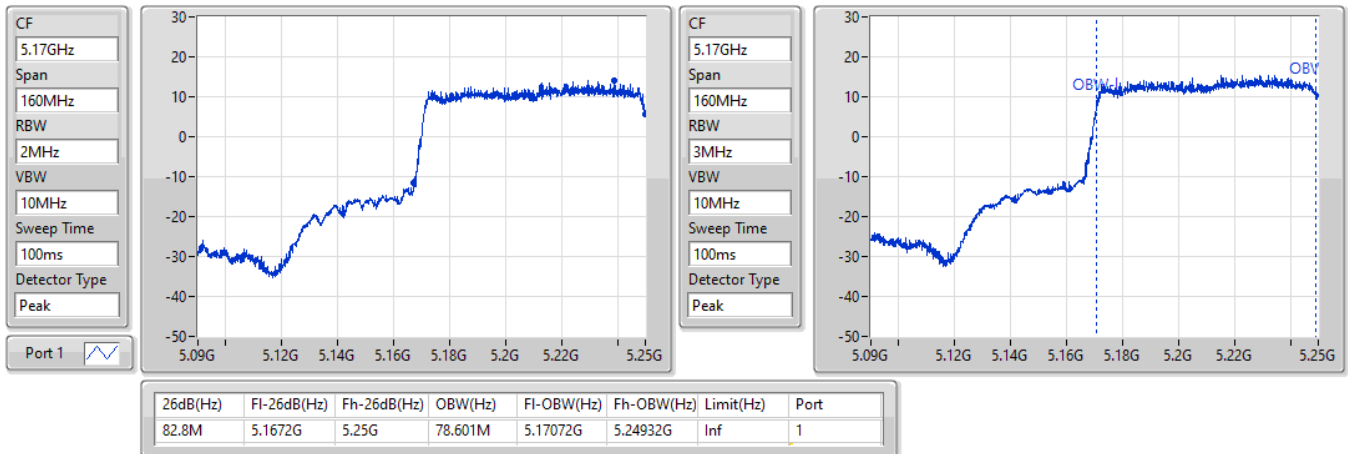


802.11ax HEW160_Nss1,(MCS0)_1TX

EBW

5250MHz Straddle 5.15-5.25GHz

30/07/2022

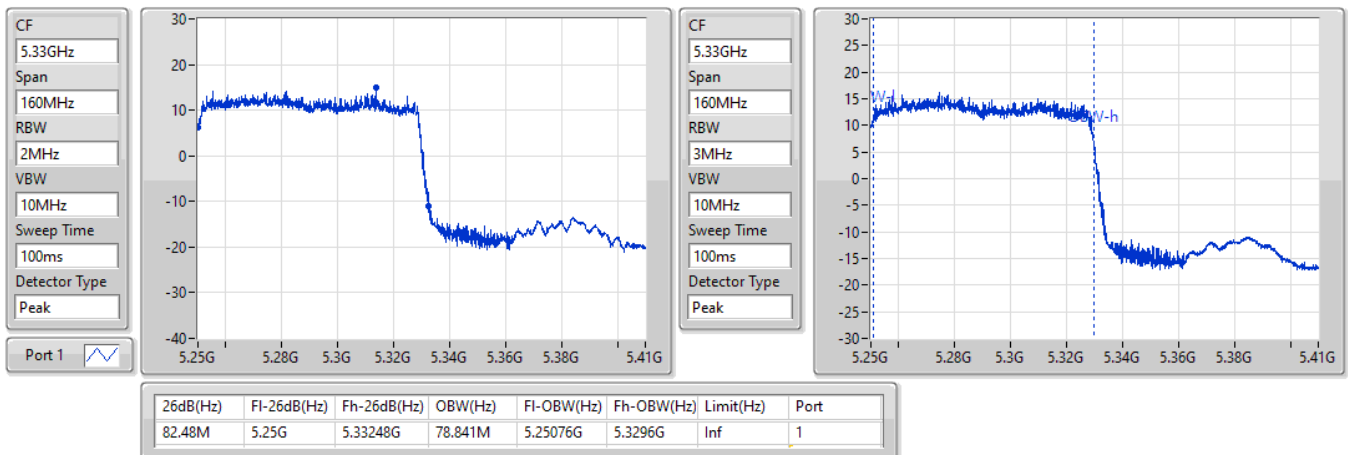


802.11ax HEW160_Nss1,(MCS0)_1TX

EBW

5250MHz Straddle 5.25-5.35GHz

30/07/2022

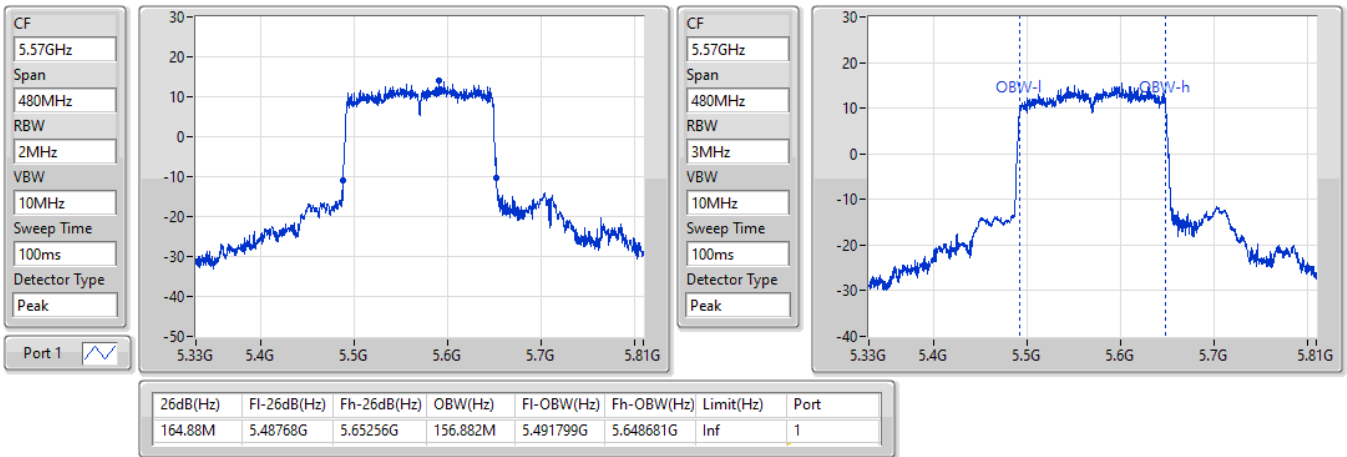


802.11ax HEW160_Nss1,(MCS0)_1TX

EBW

5570MHz

30/07/2022



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	27.24M	17.451M	17M5D1D	22.92M	17.091M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	26.55M	17.421M	17M4D1D	20.355M	14.228M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.16M	8.116M	8M12D1D	3.14M	7.456M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	22.92M	17.241M	25.02M	17.091M
5300MHz	Pass	Inf	23.16M	17.271M	27.24M	17.121M
5320MHz	Pass	Inf	23.88M	17.451M	26.97M	17.421M
5500MHz	Pass	Inf	24.3M	17.421M	23.31M	17.241M
5580MHz	Pass	Inf	25.11M	17.361M	26.55M	17.121M
5700MHz	Pass	Inf	21.72M	17.151M	21.66M	16.942M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	20.355M	14.228M	21.93M	14.228M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.16M	7.456M	3.14M	8.116M

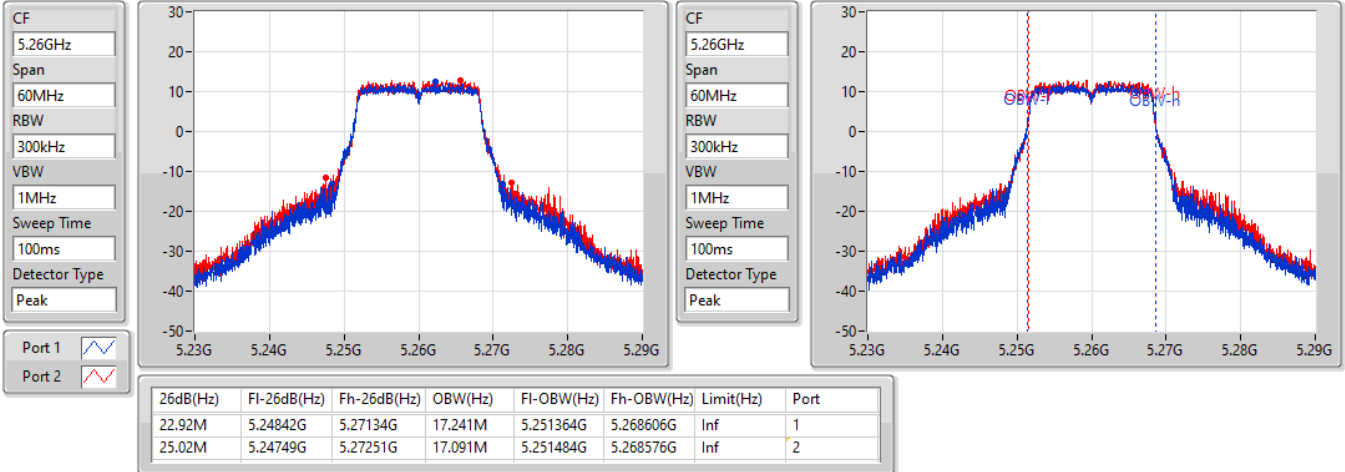
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_2TX

EBW

5260MHz

30/07/2022

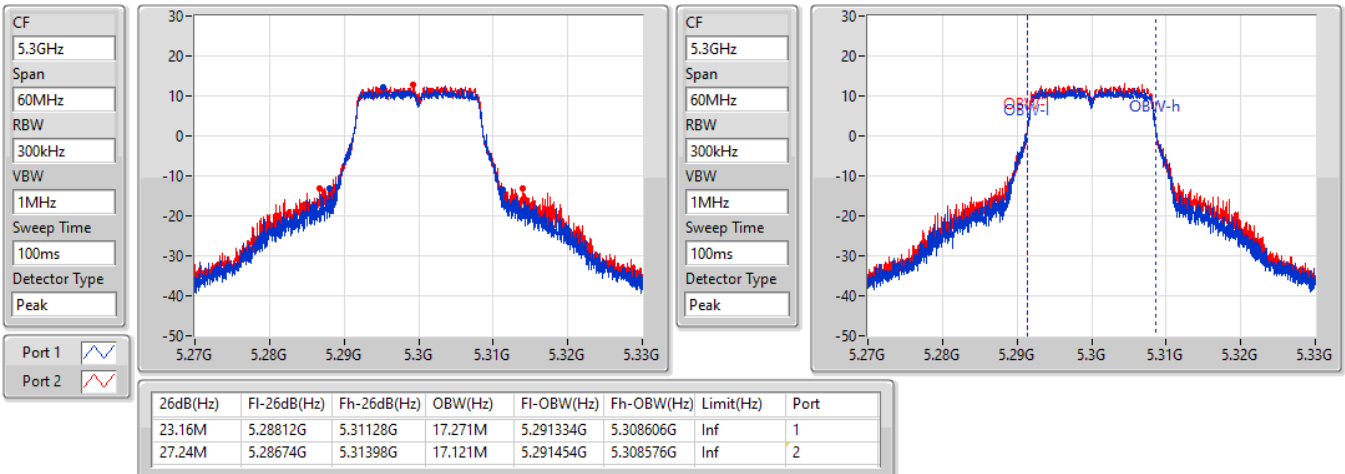


802.11a_Nss1,(6Mbps)_2TX

EBW

5300MHz

30/07/2022

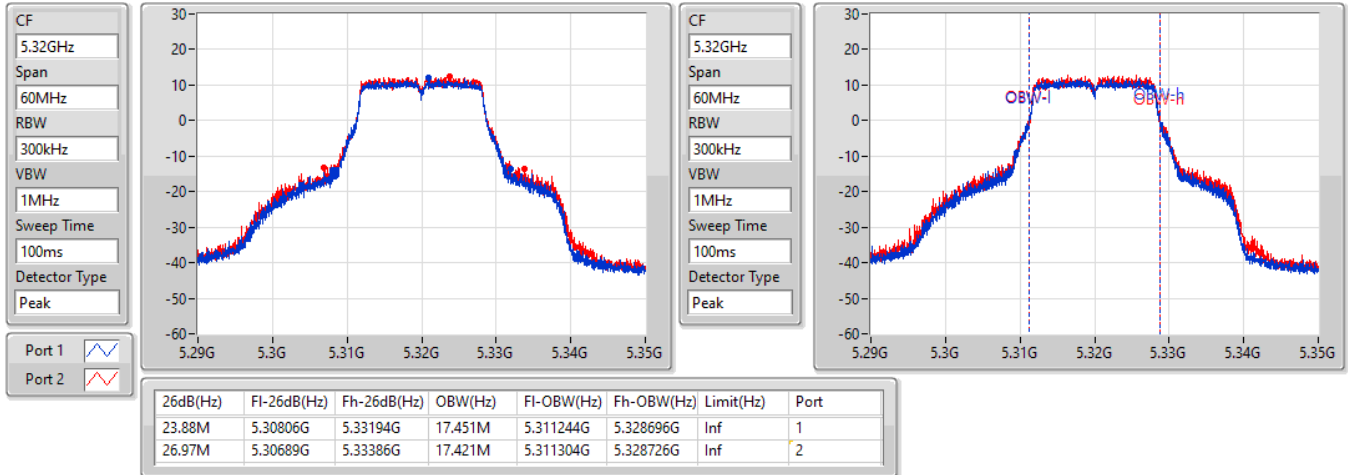


802.11a_Nss1,(6Mbps)_2TX

EBW

5320MHz

30/07/2022

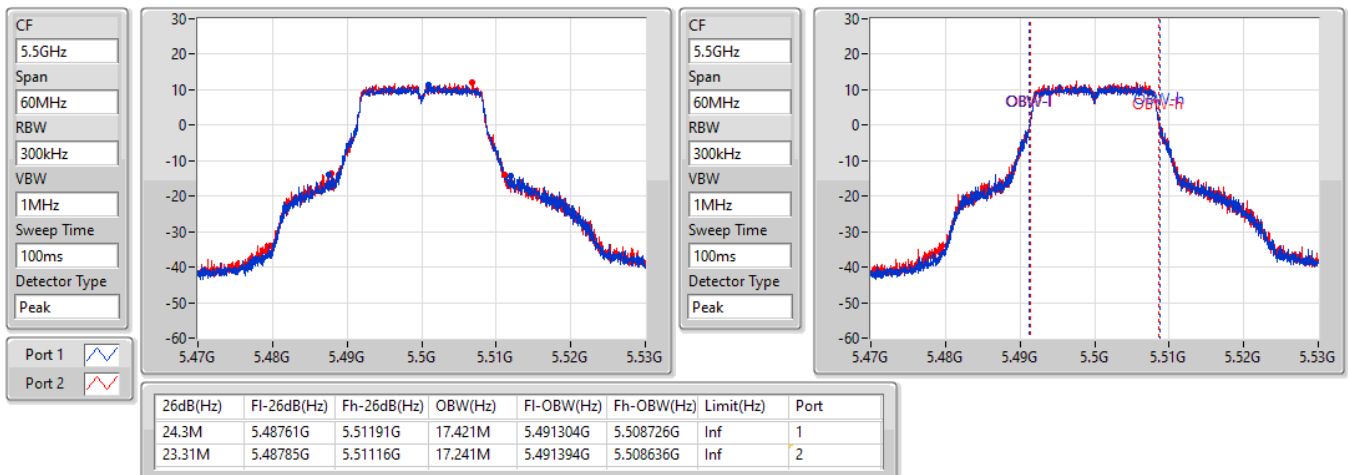


802.11a_Nss1,(6Mbps)_2TX

EBW

5500MHz

30/07/2022

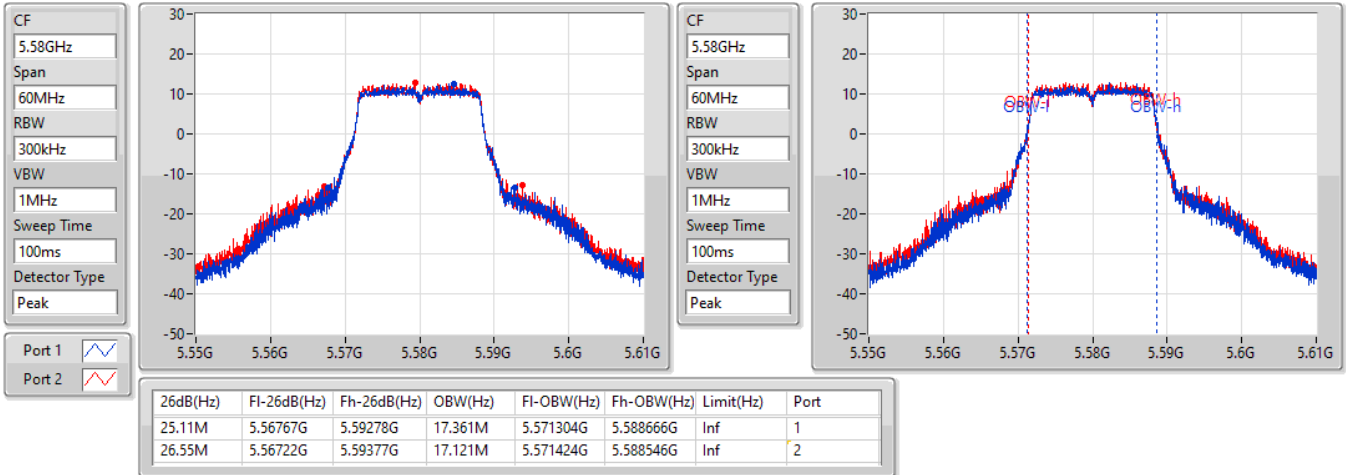


802.11a_Nss1,(6Mbps)_2TX

EBW

5580MHz

30/07/2022

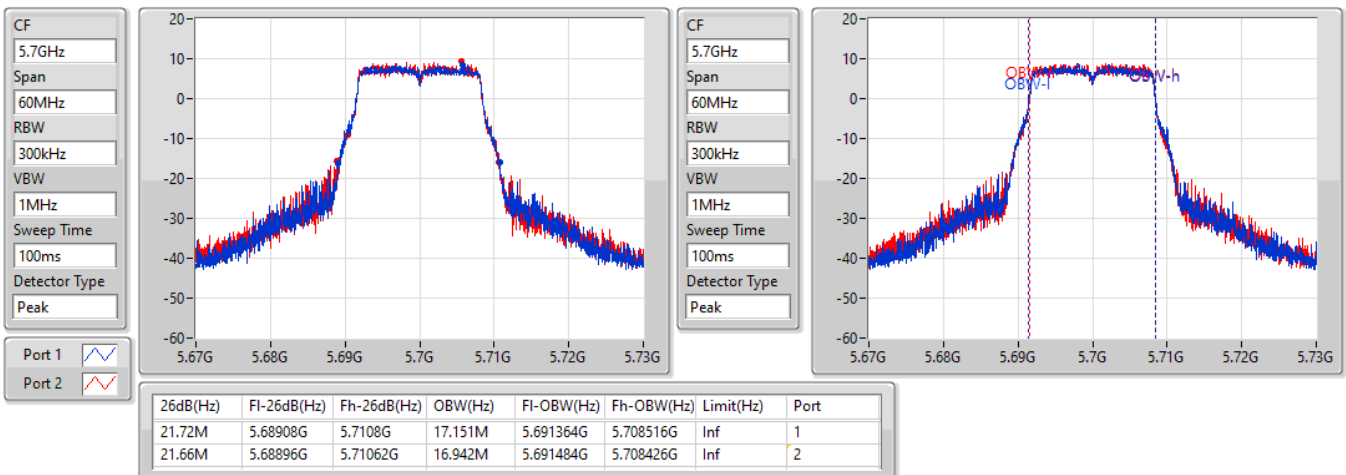


802.11a_Nss1,(6Mbps)_2TX

EBW

5700MHz

30/07/2022

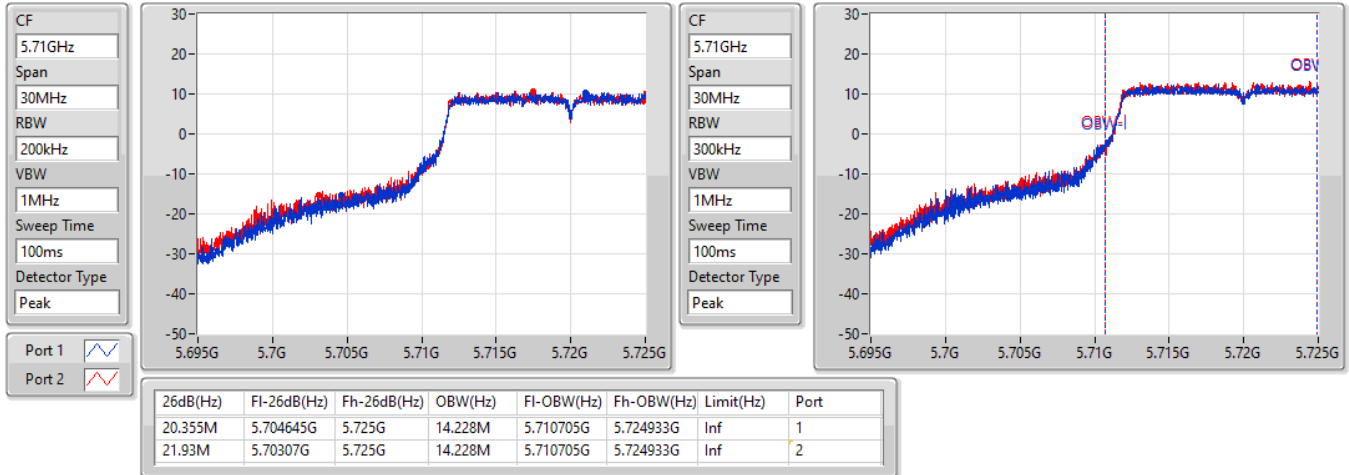


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.47-5.725GHz

30/07/2022

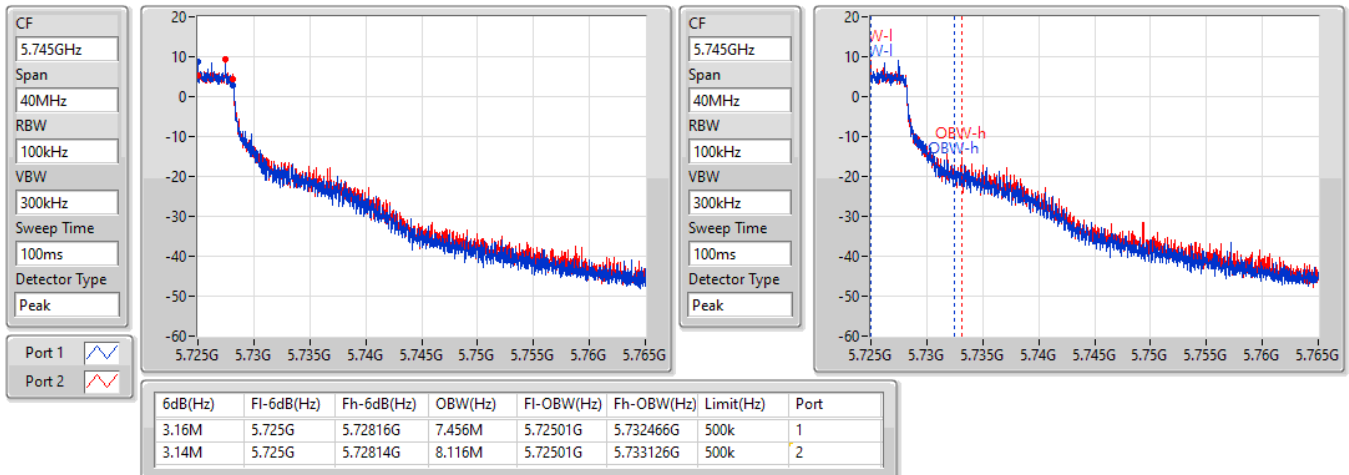


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022

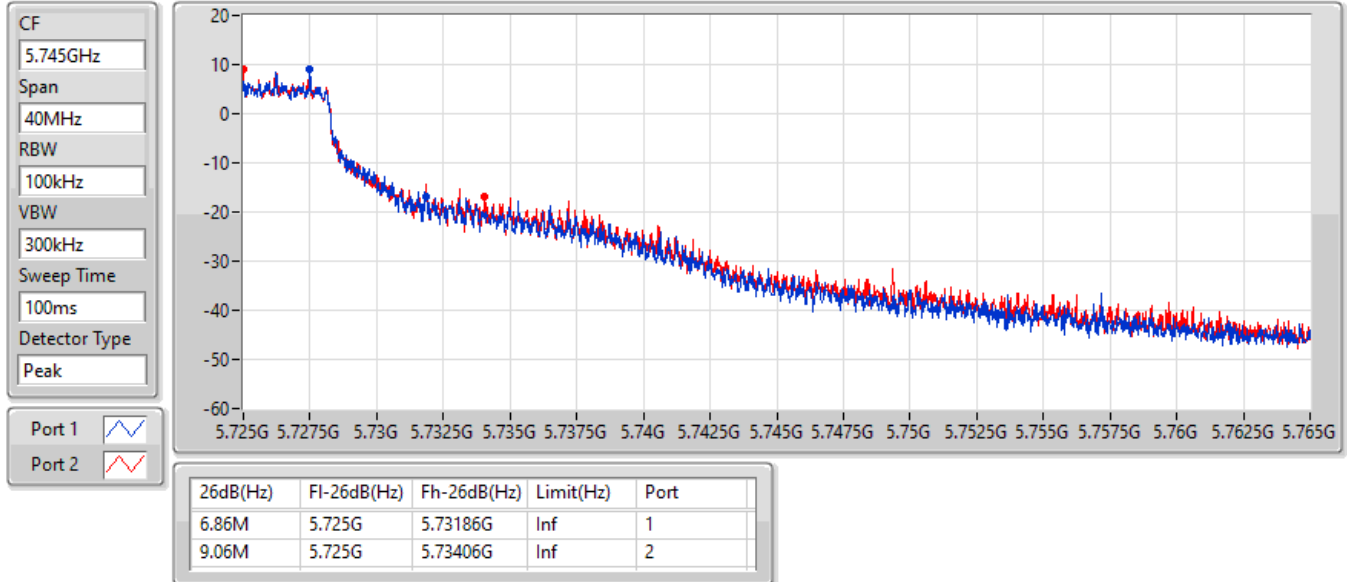


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss2,(MCS0)_2TX	82.56M	78.441M	78M4D1D	82.16M	78.361M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	28.62M	19.28M	19M3D1D	22.02M	19.16M
802.11ax HEW40_Nss2,(MCS0)_2TX	44.28M	38.261M	38M3D1D	40.74M	38.141M
802.11ax HEW80_Nss2,(MCS0)_2TX	86.88M	77.841M	77M8D1D	82.08M	77.841M
802.11ax HEW160_Nss2,(MCS0)_2TX	82.4M	78.361M	78M4D1D	82.24M	78.361M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	33.84M	19.31M	19M3D1D	21.51M	14.753M
802.11ax HEW40_Nss2,(MCS0)_2TX	68.58M	38.501M	38M5D1D	45.42M	34.178M
802.11ax HEW80_Nss2,(MCS0)_2TX	118.68M	78.441M	78M4D1D	82.8M	74.213M
802.11ax HEW160_Nss2,(MCS0)_2TX	165.12M	156.642M	157MD1D	164.4M	156.402M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	4.46M	8.896M	8M9D1D	4.44M	8.016M
802.11ax HEW40_Nss2,(MCS0)_2TX	3.94M	20.31M	20M3D1D	3.88M	16.612M
802.11ax HEW80_Nss2,(MCS0)_2TX	3.92M	31.064M	31M1D1D	3.76M	29.725M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
 Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	22.02M	19.16M	22.2M	19.19M
5300MHz	Pass	Inf	22.08M	19.16M	24M	19.22M
5320MHz	Pass	Inf	28.62M	19.28M	25.92M	19.28M
5500MHz	Pass	Inf	29.7M	19.28M	25.74M	19.28M
5580MHz	Pass	Inf	33.84M	19.25M	33.03M	19.31M
5700MHz	Pass	Inf	21.78M	19.13M	21.51M	19.13M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	22.08M	14.753M	23.025M	14.843M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.46M	8.016M	4.44M	8.896M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	40.74M	38.201M	44.28M	38.261M
5310MHz	Pass	Inf	43.74M	38.201M	42.9M	38.141M
5510MHz	Pass	Inf	45.9M	38.201M	45.42M	38.201M
5550MHz	Pass	Inf	47.16M	38.261M	52.02M	38.321M
5670MHz	Pass	Inf	51.96M	38.381M	68.58M	38.501M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	50.015M	34.178M	53.445M	34.668M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.94M	16.612M	3.88M	20.31M
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	86.88M	77.841M	82.08M	77.841M
5530MHz	Pass	Inf	82.8M	78.081M	89.52M	77.841M
5610MHz	Pass	Inf	118.68M	78.321M	94.44M	78.441M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	110.025M	74.213M	96.975M	74.363M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.92M	31.064M	3.76M	29.725M
802.11ax HEW160_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.56M	78.361M	82.16M	78.441M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	82.4M	78.361M	82.24M	78.361M
5570MHz	Pass	Inf	165.12M	156.402M	164.4M	156.642M

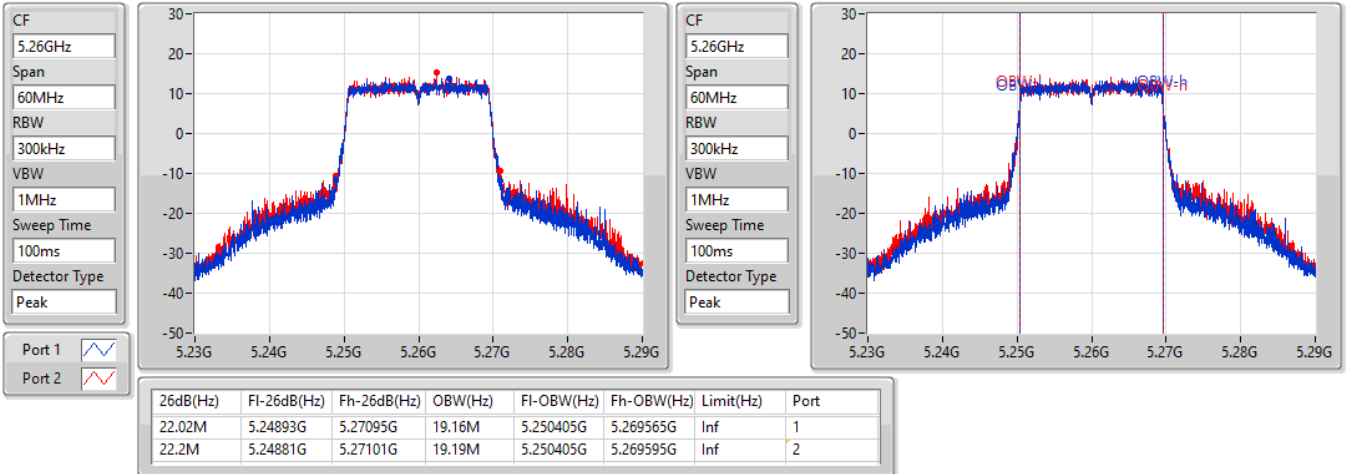
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5260MHz

30/07/2022

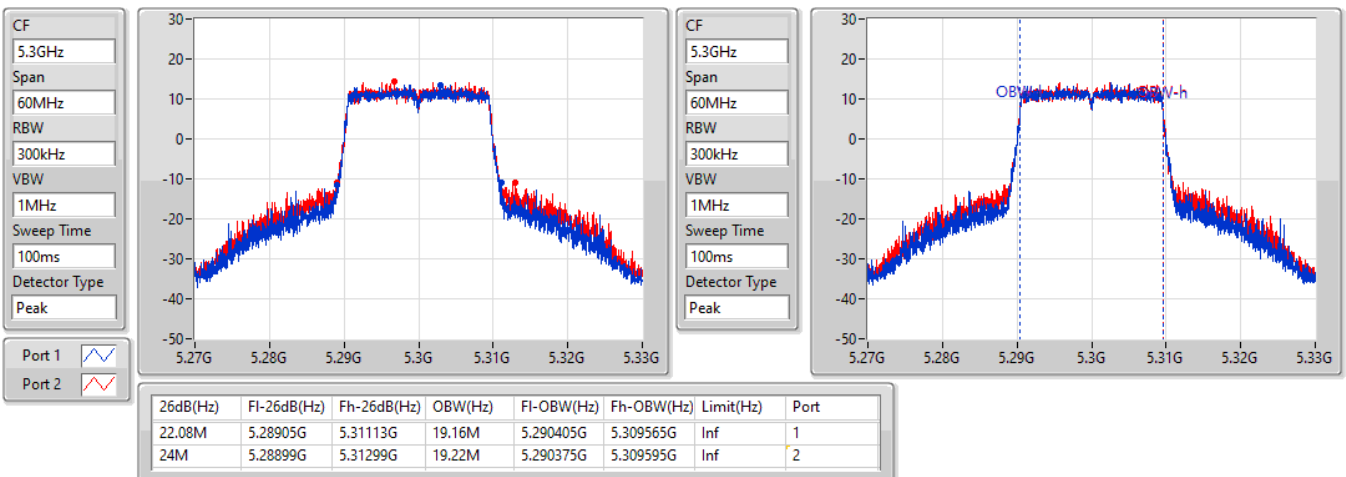


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5300MHz

30/07/2022

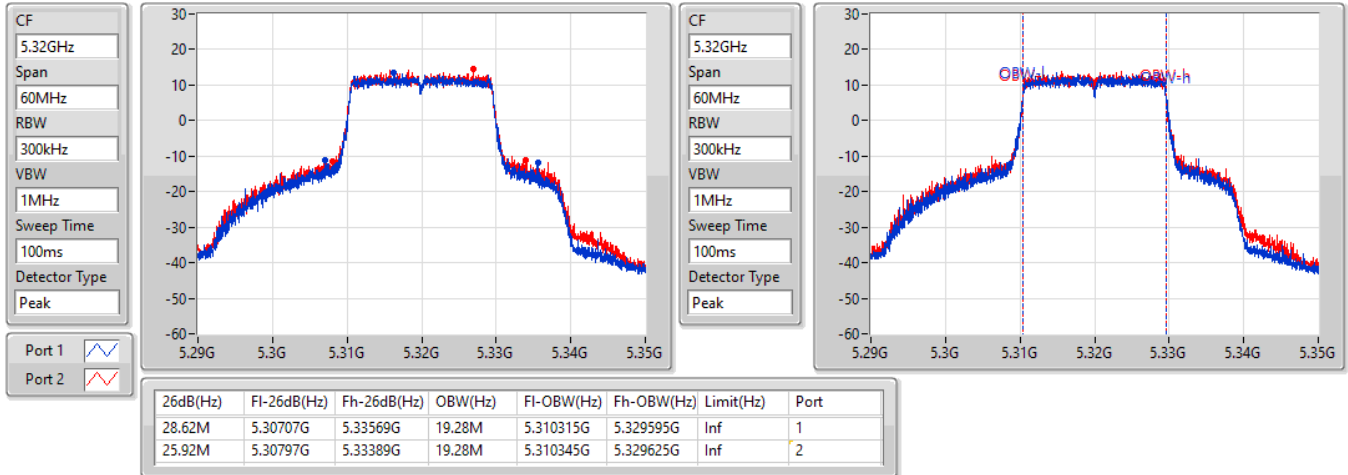


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5320MHz

30/07/2022

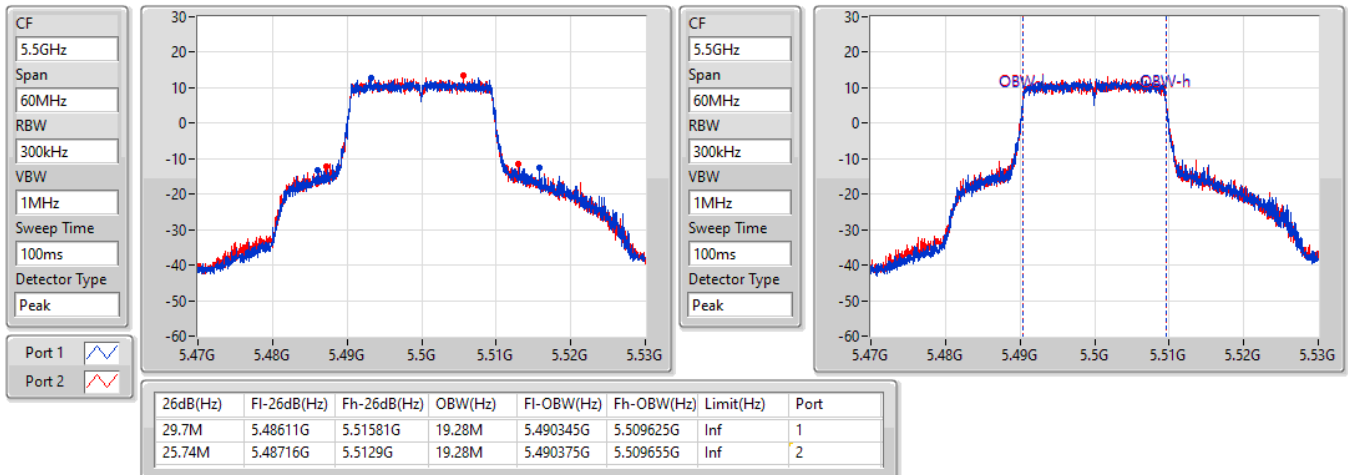


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5500MHz

30/07/2022

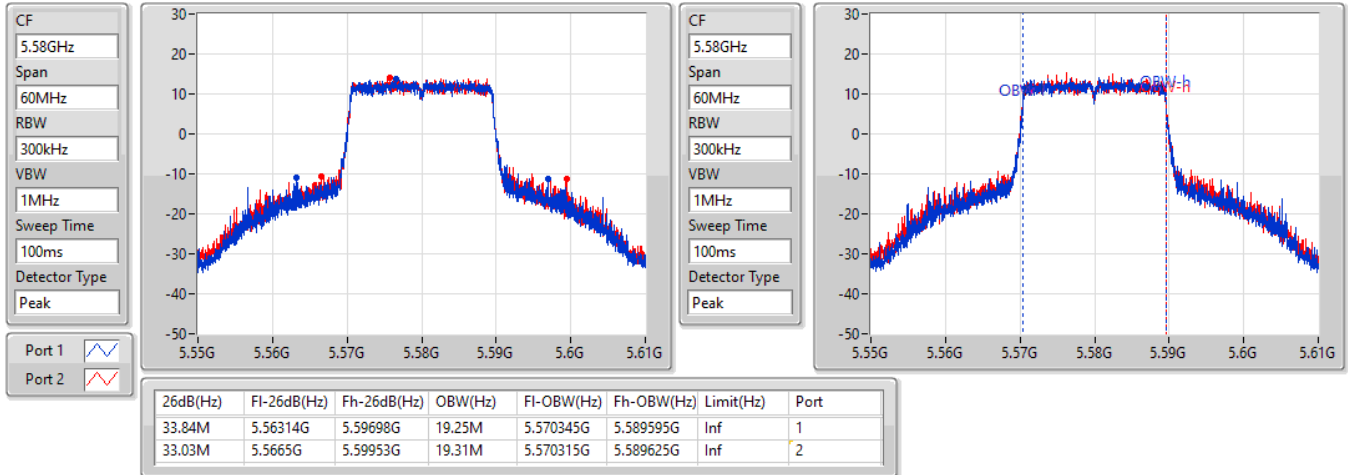


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5580MHz

30/07/2022

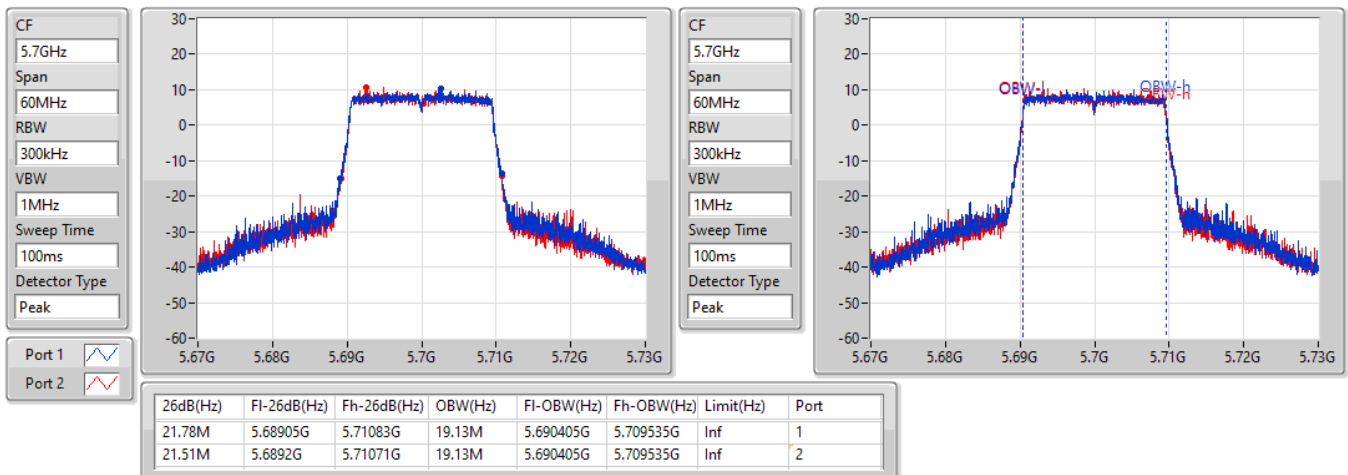


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5700MHz

30/07/2022

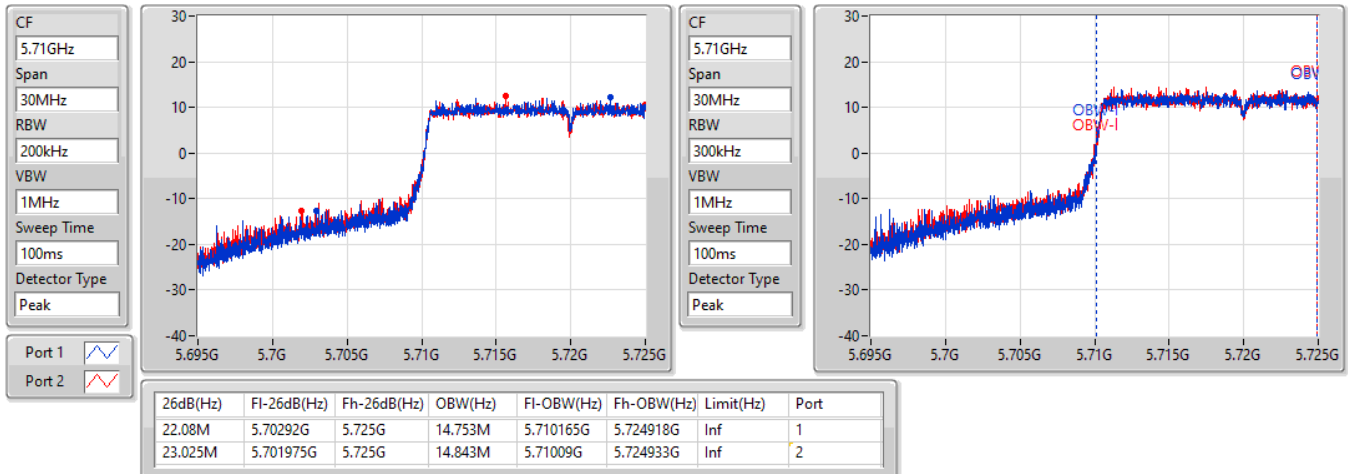


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5720MHz Straddle 5.47-5.725GHz

30/07/2022

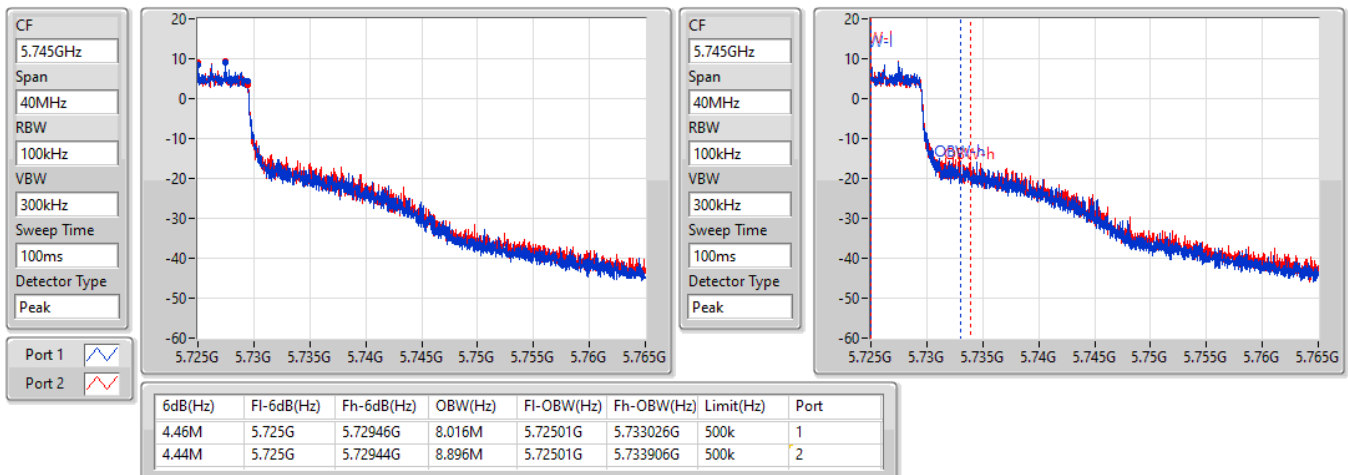


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022

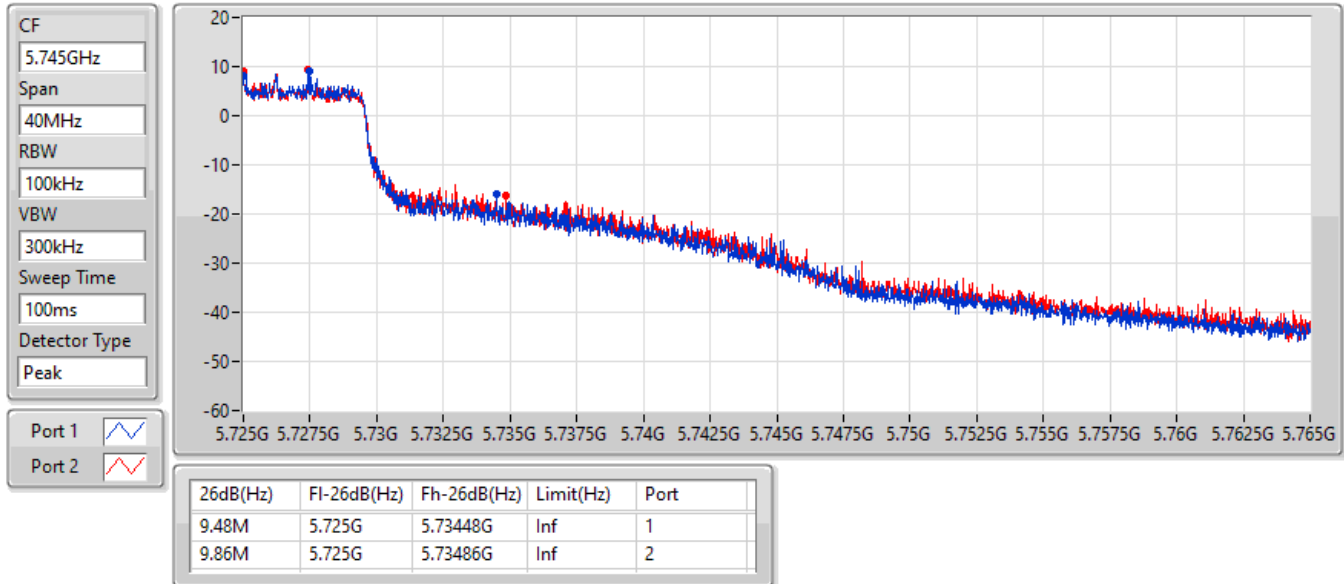


802.11ax HEW20_Nss2,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

30/07/2022

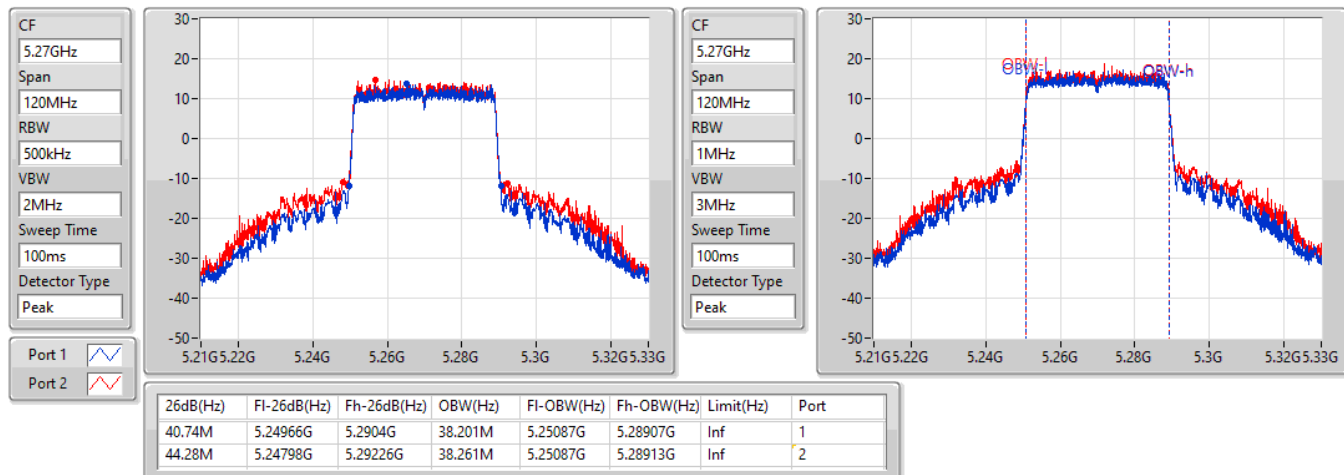


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5270MHz

30/07/2022

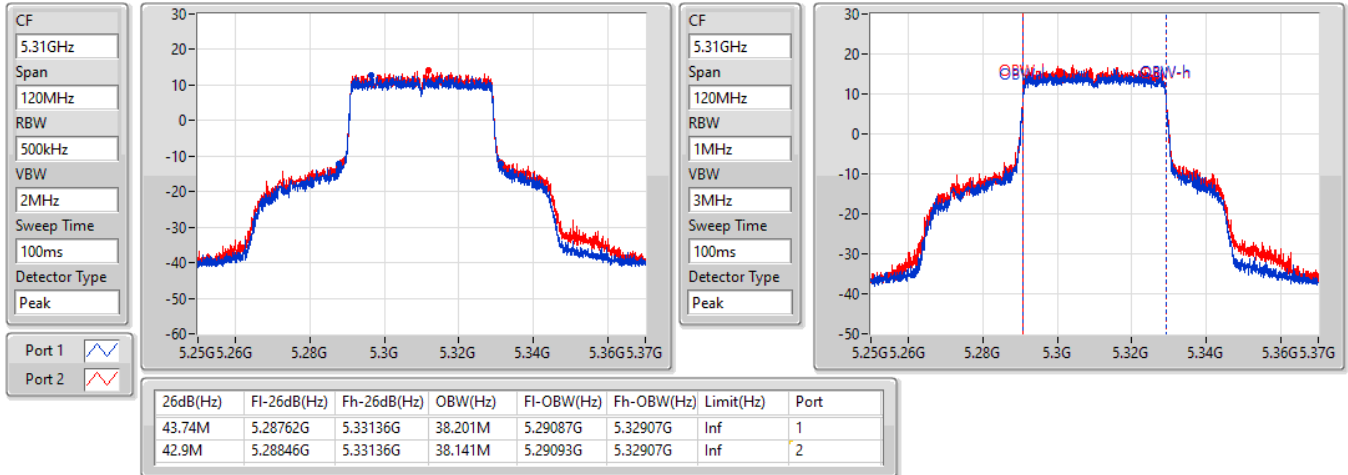


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5310MHz

30/07/2022

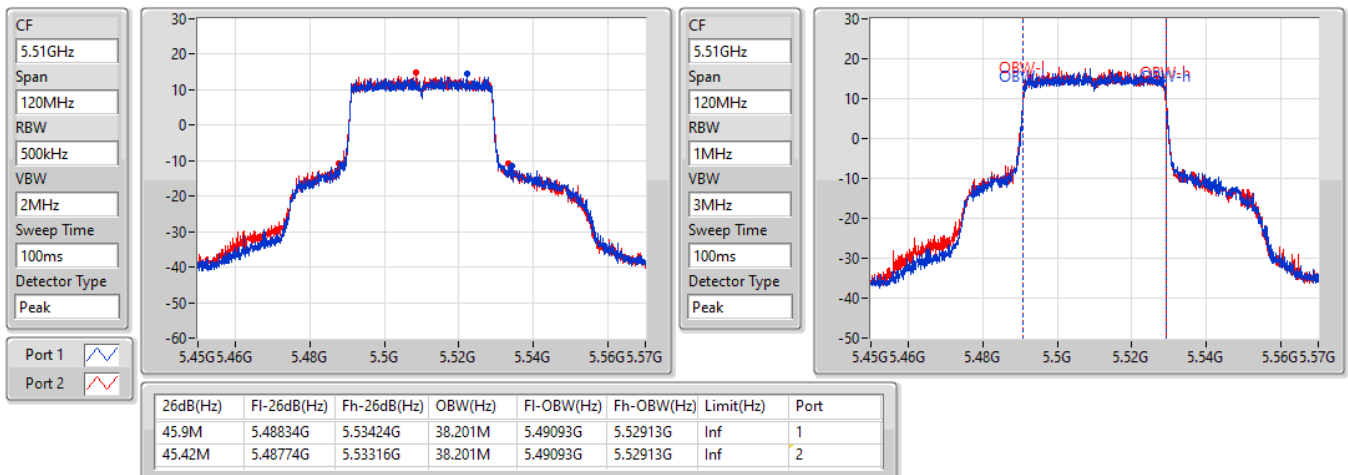


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5510MHz

30/07/2022

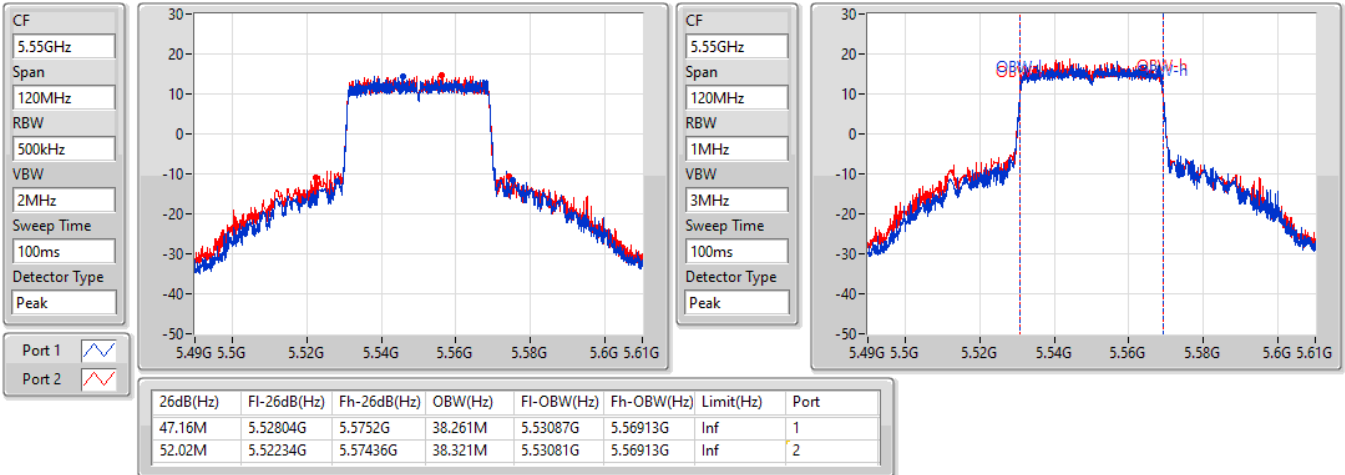


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5550MHz

30/07/2022

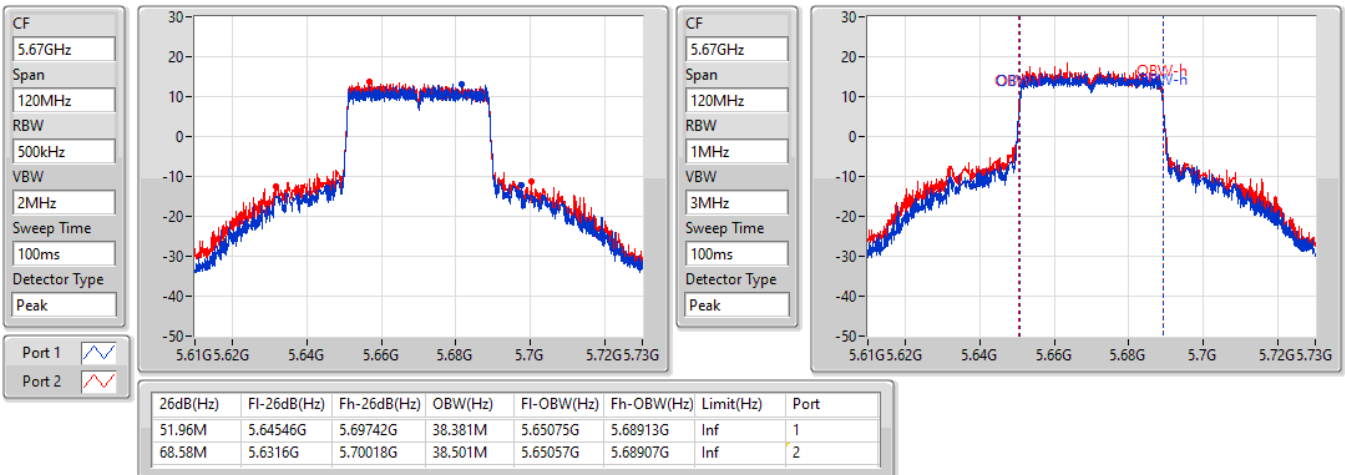


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

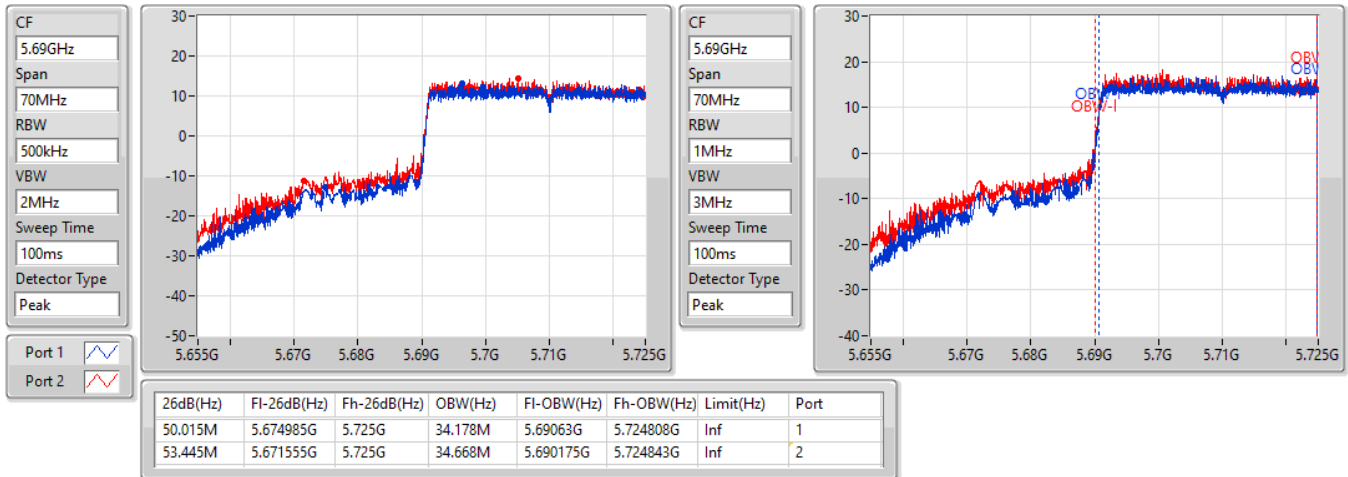
5670MHz

30/07/2022

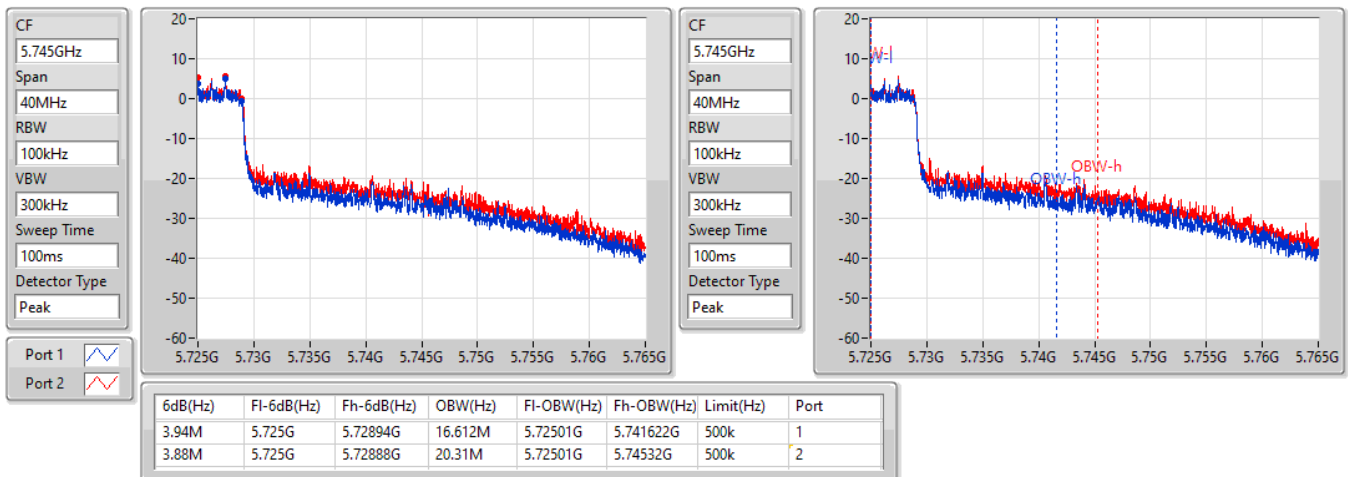


802.11ax HEW40_Nss2,(MCS0)_2TX
EBW
5710MHz Straddle 5.47-5.725GHz

30/07/2022


802.11ax HEW40_Nss2,(MCS0)_2TX
EBW
5710MHz Straddle 5.725-5.85GHz

30/07/2022

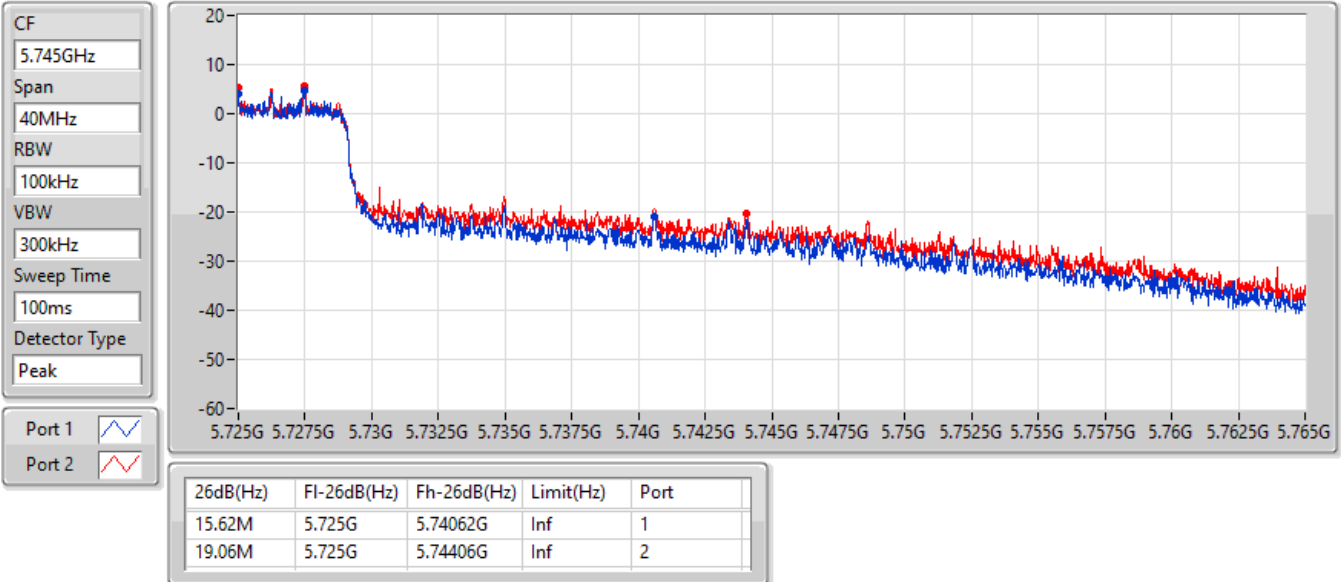


802.11ax HEW40_Nss2,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

30/07/2022

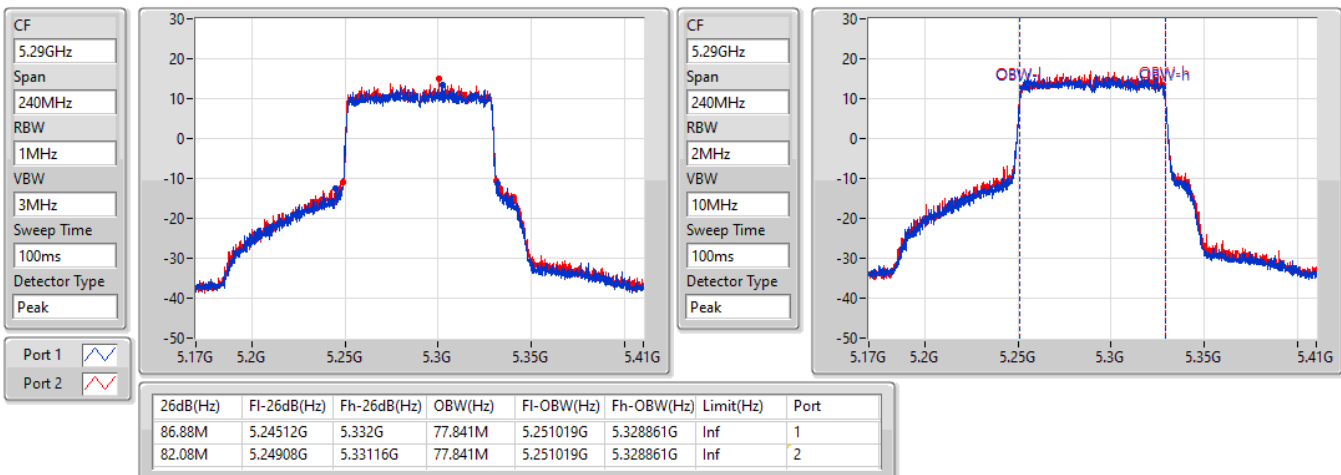


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5290MHz

30/07/2022

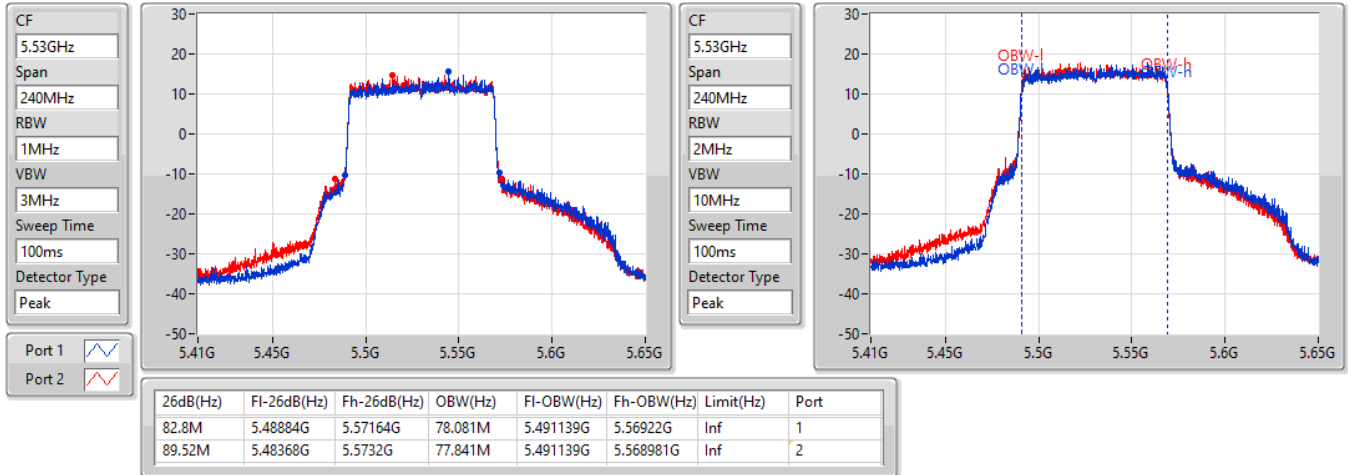


802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5530MHz

30/07/2022



802.11ax HEW80_Nss2,(MCS0)_2TX

EBW

5610MHz

30/07/2022

