



RADIO TEST REPORT

FCC ID : Z8H89FT0073
Equipment : XE3-4TN Outdoor Wi-Fi 6e 4x4 Access Point with SDR
Brand Name : Cambium Networks
Model Name : XE3-4T
Applicant : Cambium Networks Inc.
3800 Golf Road Suite 360 Rolling Meadows IL United States 60008
Manufacturer : LITE-ON Technology Corp. Networking Plant
5F, No. 101, Neihuan N. Rd., Nanzih Dist., Kaohsiung City 811, Taiwan, R.O.C.
Standard : 47 CFR FCC Part 15.407

The product was received on Aug. 02, 2022, and testing was started from Aug. 02, 2022 and completed on Nov. 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.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Information.....	5
1.2 Applicable Standards	16
1.3 Testing Location Information	16
1.4 Measurement Uncertainty	16
2 Test Configuration of EUT	17
2.1 Test Channel Mode	17
2.2 The Worst Case Measurement Configuration	26
2.3 EUT Operation during Test	27
2.4 Accessories	27
2.5 Support Equipment.....	28
2.6 Test Setup Diagram	29
3 Transmitter Test Result	31
3.1 Emission Bandwidth	31
3.2 Maximum Output Power	33
3.3 Power Spectral Density	36
3.4 Unwanted Emissions.....	39
4 Test Equipment and Calibration Data	42
Appendix A. Test Results of Emission Bandwidth	
Appendix B. Test Results of Maximum Output Power	
Appendix C. Test Results of Power Spectral Density	
Appendix D. Test Results of Unwanted Emissions	
Appendix E. Test Photos	
Photographs of EUT v01	



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



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	-

Note: Reference to Sporton Project No.: 290202-01

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:

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. 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	2
5.25-5.35GHz	802.11n HT20	20	2
5.25-5.35GHz	802.11n HT20-BF	20	2
5.25-5.35GHz	802.11ac VHT20	20	2
5.25-5.35GHz	802.11ac VHT20-BF	20	2
5.25-5.35GHz	802.11ax HEW20	20	2
5.25-5.35GHz	802.11ax HEW20-BF	20	2
5.25-5.35GHz	802.11n HT40	40	2
5.25-5.35GHz	802.11n HT40-BF	40	2
5.25-5.35GHz	802.11ac VHT40	40	2
5.25-5.35GHz	802.11ac VHT40-BF	40	2
5.25-5.35GHz	802.11ax HEW40	40	2
5.25-5.35GHz	802.11ax HEW40-BF	40	2
5.25-5.35GHz	802.11ac VHT80	80	2
5.25-5.35GHz	802.11ac VHT80-BF	80	2
5.25-5.35GHz	802.11ax HEW80	80	2
5.25-5.35GHz	802.11ax HEW80-BF	80	2
5.47-5.725GHz	802.11a	20	2
5.47-5.725GHz	802.11n HT20	20	2
5.47-5.725GHz	802.11n HT20-BF	20	2
5.47-5.725GHz	802.11ac VHT20	20	2
5.47-5.725GHz	802.11ac VHT20-BF	20	2



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

For Radio 3

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



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

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ For Radio 2: VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ For Radio 2: HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ For Radio 3: VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ For Radio 3: HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

Note: The test results include 160MHz, but the certification doesn't include 160MHz.


1.1.2 Antenna Information

Set	Port					Brand Name	Part Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz (Radio 1)	WLAN 5GHz (Radio 2)	WLAN 5GHz (Radio 3)	BT (Radio 4)	GPS (Radio 5)					
1	1	1	2	-	-	LYNwave	ALX22X-121050-00	Dipole	N-Type	Note 1
	2	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
2	1	1	2	-	-	SmartAnt	SAA19-220130	Dipole	N-Type	
	2	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
3	-	-	2	-	-	LYNwave	OLX22X-127130-A	Patch	N-Type	
	-	-	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
4	1	-	-	-	-	EAHiSON	ANT-DIR15-2X2-2.4 G-01	Panel	N-Female	
	2	-	-	-	-					
5	-	1	2	-	-	KBT	ANT-DIR15-2X2-5.0 G-01	Panel	N-Female	
	-	2	4	-	-					
	-	-	1	-	-					
	-	-	3	-	-					
6	-	-	-	-	1	Cirocomm	03V0134913Z010T	Marine GPS	SMA	
7	-	-	-	1	-	INPAQ	RFPCA403422IMAB 702	PCB	I-PEX	



Note 1:

Set	Antenna Gain (dBi)				Cable loss (dB)				Net Gain (dBi)			
	WLAN 2.4GHz (Radio 1)	BT (Radio 4)	GPS (Radio 5)		WLAN 2.4GHz (Radio 1)	BT (Radio 4)	GPS (Radio 5)		WLAN 2.4GHz (Radio 1)	BT (Radio 4)	GPS (Radio 5)	
			1575.42 MHz	1602 MHz			1575.42 MHz	1602 MHz			1575.42 MHz	1602 MHz
1	4.4	-	-	-	-	-	-	-	4.4	-	-	-
2	3	-	-	-	-	-	-	-	3	-	-	-
4	18	-	-	-	0.77	-	-	-	17.23	-	-	-
6	-	-	3	4.5	-	-	-	-	-	-	3	4.5
7	-	3.73	-	-	-	-	-	-	-	3.73	-	-

Set	Antenna Gain (dBi)								Cable loss (dB)								Net Gain (dBi)							
	WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 3)				WLAN 5GHz (Radio 2)				WLAN 5GHz (Radio 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	UNII 1	UNII 2A	UNII 2C	UNII 3
1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	-	-	-	-	-	-	-	-	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
2	5	5	6	6	5	5	6	6	-	-	-	-	-	-	-	-	5	5	6	6	5	5	6	6
3	-	-	-	-	11	11	11	11	-	-	-	-	1.45	1.45	1.6	1.6	-	-	-	-	9.55	9.55	9.4	9.4
5	18	18	18	18	18	18	18	18	1.45	1.45	1.6	1.6	1.45	1.45	1.6	1.6	16.55	16.55	16.4	16.4	16.55	16.55	16.4	16.4

Note 2: The EUT has five sets of antenna for WLAN and one set of antenna for GPS and Bluetooth.

Note 3: The above information was declared by manufacturer.

Note 4: The antenna set 1 and set 2 are the same antenna type, only the highest gain antenna (antenna set 1 for 2.4GHz and 5GHz UNII 1~2A, antenna set 2 for 5GHz UNII 2C~3) were selected to test and record in this report.

Note 5: Polarization of antenna set 3: 2*Horizontal, 2*Vertical. so array gain only adds 10log (2).

Polarization of antenna set 4: 1*Horizontal, 1*Vertical. so the array gain is 0dBi.

Polarization of antenna set 5: Radio 2: 1*Horizontal, 1*Vertical. so the array gain is 0dBi.

Radio 3: 2*Horizontal, 2*Vertical. so array gain only adds 10log (2).

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	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ant}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$$

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

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

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

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

Where ;

Antenna set 1

2.4G G1 = 4.4 dBi; G2 = 4.4 dBi ;DG = 4.4 dBi

5G Band1 G1 = 5.5 dBi; G2 = 5.5 dBi; G3 = 5.5 dBi; G4 = 5.5 dBi;DG = 5.5 dBi

5G Band2 G1 = 5.5 dBi; G2 = 5.5 dBi; G3 = 5.5 dBi; G4 = 5.5 dBi;DG = 5.5 dBi

2.4G DG = 7.41 dBi

For 2TX

Radio 2 5G Band1 DG = 8.51 dBi

Radio 2 5G Band2 DG = 8.51 dBi

For 4TX

Radio 3 5G Band1 DG = 11.52 dBi

Radio 3 5G Band2 DG = 11.52 dBi

Antenna set 2

5G Band3 G1 = 6 dBi; G2 = 6 dBi; G3 = 6 dBi; G4 = 6 dBi;DG = 6 dBi

5G Band4 G1 = 6 dBi; G2 = 6 dBi; G3 = 6 dBi; G4 = 6 dBi;DG = 6 dBi

For 2TX

Radio 2 5G Band3 DG = 9.01 dBi

Radio 2 5G Band4 DG = 9.01 dBi

For 4TX

Radio 3 5G Band3 DG = 12.02 dBi

Radio 3 5G Band4 DG = 12.02 dBi

**Antenna set 3(Cross-Polarized Antenna)**

5G Band1 G1 = 9.55 dBi; G2 = 9.55 dBi; G3 = 9.55 dBi; G4 = 9.55 dBi; DG = 9.55 dBi

5G Band2 G1 = 9.55 dBi; G2 = 9.55 dBi; G3 = 9.55 dBi; G4 = 9.55 dBi; DG = 9.55 dBi

5G Band3 G1 = 9.4 dBi; G2 = 9.4 dBi; G3 = 9.4 dBi; G4 = 9.4 dBi; DG = 9.4 dBi

5G Band4 G1 = 9.4 dBi; G2 = 9.4 dBi; G3 = 9.4 dBi; G4 = 9.4 dBi; DG = 9.4 dBi

Radio 3 5G Band1 DG = 12.56 dBi

Radio 3 5G Band2 DG = 12.56 dBi

Radio 3 5G Band3 DG = 12.41 dBi

Radio 3 5G Band4 DG = 12.41 dBi

Antenna set 4(Cross-Polarized Antenna)

2.4G G1 = 17.23 dBi; G2 = 17.23 dBi

DG = 17.23 dBi

Antenna set 5(Cross-Polarized Antenna)

5G Band1 G1 = 16.55 dBi; G2 = 16.55 dBi; G3 = 16.55 dBi; G4 = 16.55 dBi; DG = 16.55 dBi

5G Band2 G1 = 16.55 dBi; G2 = 16.55 dBi; G3 = 16.55 dBi; G4 = 16.55 dBi; DG = 16.55 dBi

5G Band3 G1 = 16.4 dBi; G2 = 16.4 dBi; G3 = 16.4 dBi; G4 = 16.4 dBi; DG = 16.4 dBi

5G Band4 G1 = 16.4 dBi; G2 = 16.4 dBi; G3 = 16.4 dBi; G4 = 16.4 dBi; DG = 16.4 dBi

For 2TX

Radio 2 5G Band1 DG = 16.55 dBi

Radio 2 5G Band2 DG = 16.55 dBi

Radio 2 5G Band3 DG = 16.40 dBi

Radio 2 5G Band4 DG = 16.40 dBi

For 4TX

Radio 3 5G Band1 DG = 19.56 dBi

Radio 3 5G Band2 DG = 19.56 dBi

Radio 3 5G Band3 DG = 19.41 dBi

Radio 3 5G Band4 DG = 19.41 dBi

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

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

Port 1 and Port 2 could transmit/receive simultaneously.

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

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

Port 1 and Port 2 could transmit/receive simultaneously.

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

Only Port 1 can be used as transmitting/receiving antenna.

For Radio 5**GPS (1RX):**

Only Port 1 can be used as receiving antenna.

**1.1.3 Mode Test Duty Cycle****For Radio 2****For antenna set 1 for UNII 2A and antenna set 2 for UNII 2C**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.931	0.31	1.435m	1k
802.11ax HEW20	0.954	0.2	5.448m	300
802.11ax HEW20-BF	0.942	0.26	5.446m	300
802.11ax HEW40	0.956	0.2	5.448m	300
802.11ax HEW40-BF	0.954	0.2	5.446m	300
802.11ax HEW80	0.958	0.19	5.448m	300
802.11ax HEW80-BF	0.94	0.27	5.446m	300

For antenna set 5

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.927	0.33	1.435m	1k
802.11ax HEW20	0.961	0.17	5.448m	300
802.11ax HEW20-BF	0.944	0.25	5.446m	300
802.11ax HEW40	0.954	0.2	5.448m	300
802.11ax HEW40-BF	0.952	0.21	5.448m	300
802.11ax HEW80	0.953	0.21	5.448m	300
802.11ax HEW80-BF	0.934	0.3	5.448m	300

For Radio 3**For antenna set 1 for UNII 2A and antenna set 2 for UNII 2C**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.933	0.3	1.435m	1k
802.11ax HEW20	0.927	0.33	5.448m	300
802.11ax HEW20-BF	0.951	0.22	1.995m	1k
802.11ax HEW40	0.883	0.54	5.447m	300
802.11ax HEW40-BF	0.918	0.37	1.821m	1k
802.11ax HEW80	0.951	0.22	5.447m	300
802.11ax HEW80-BF	0.966	0.15	1.949m	1k
802.11ax HEW160	0.947	0.24	5.447m	300
802.11ax HEW160-BF	0.864	0.63	3.933m	300

**For antenna set 3**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.925	0.34	1.435m	1k
802.11ax HEW20	0.921	0.36	5.448m	300
802.11ax HEW20-BF	0.832	0.8	3.982m	300
802.11ax HEW40	0.925	0.34	5.448m	300
802.11ax HEW40-BF	0.845	0.73	3.491m	300
802.11ax HEW80	0.924	0.34	5.448m	300
802.11ax HEW80-BF	0.923	0.35	1.955m	1k
802.11ax HEW160	0.911	0.4	5.448m	300
802.11ax HEW160-BF	0.926	0.33	1.958m	1k

For antenna set 5

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.914	0.39	1.435m	1k
802.11ax HEW20	0.926	0.33	5.448m	300
802.11ax HEW20-BF	0.964	0.16	1.78m	1k
802.11ax HEW40	0.937	0.28	5.448m	300
802.11ax HEW40-BF	0.978	0.1	1.828m	1k
802.11ax HEW80	0.941	0.26	5.448m	300
802.11ax HEW80-BF	0.923	0.35	1.955m	1k
802.11ax HEW160	0.937	0.28	5.448m	300
802.11ax HEW160-BF	0.93	0.32	1.955m	1k

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 and radio 3 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	QSPR_v5.0-00199			

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT support function

Function	Support Band
Mesh Base	2.4GHz/5GHz UNII 1~3
Mesh Client (Not pure client)	5GHz UNII 2A, 2C

Note: The above information was declared by manufacturer.

1.1.6 Table for Radio function

Radio (R)	WLAN 2.4GHz	5GHz	Bluetooth	GPS
R1	V	-	-	-
R2	-	V (20/40/80MHz)	-	-
R3	-	V (20/40/80/160MHz)	-	-
R4	-	-	V	-
R5	-	-	-	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: FR290202AB.

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 3.	1. Emission Bandwidth 2. Maximum Output Power 3. Power Spectral Density 4. Unwanted Emissions above 1GHz
3. Add Mesh Client mode (Not pure client). 4. Remove AP and bridge mode. 5. Change EUT function to "Mesh Base" from "Mesh"	Do not have to retest assessed.

Note: For items 2: After evaluating, the manufacturer designated the test mode.



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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Owen Hsu	23.5~24.1 / 61~65	Aug. 05, 2022~Oct. 14, 2022
Radiated above 1GHz	03CH01-CB	Simmon Cheng	23~23.9 / 55~58	Aug. 02, 2022~Nov. 07, 2022
	03CH02-CB	Simmon Cheng	22.4~24.3 / 56~59	Aug. 02, 2022~Nov. 07, 2022

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 antenna set 1 for UNII 2A and antenna set 2 for UNII 2C

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	18.5
5300MHz	18
5320MHz	18
5500MHz	19
5580MHz	18
5700MHz	18.5
5720MHz Straddle 5.47-5.725GHz	18.5
5720MHz Straddle 5.725-5.85GHz	18.5
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5260MHz	19.5
5300MHz	19.5
5320MHz	19.5
5500MHz	20
5580MHz	19
5700MHz	19.5
5720MHz Straddle 5.47-5.725GHz	19.5
5720MHz Straddle 5.725-5.85GHz	19.5
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5270MHz	21.5
5310MHz	21.5
5510MHz	21.5
5550MHz	21.5
5670MHz	21
5710MHz Straddle 5.47-5.725GHz	22
5710MHz Straddle 5.725-5.85GHz	22
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5290MHz	21.5
5530MHz	19.5
5610MHz	21.5
5690MHz Straddle 5.47-5.725GHz	22
5690MHz Straddle 5.725-5.85GHz	22
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5260MHz	23



Mode	Power Setting
5300MHz	23
5320MHz	23
5500MHz	23
5580MHz	22
5700MHz	23
5720MHz Straddle 5.47-5.725GHz	23
5720MHz Straddle 5.725-5.85GHz	23
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5270MHz	22
5310MHz	22
5510MHz	22
5550MHz	22
5670MHz	19
5710MHz Straddle 5.47-5.725GHz	23
5710MHz Straddle 5.725-5.85GHz	23
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5290MHz	23
5530MHz	22
5610MHz	22
5690MHz Straddle 5.47-5.725GHz	22
5690MHz Straddle 5.725-5.85GHz	22

For antenna set 5

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	11.5
5300MHz	11.5
5320MHz	11.5
5500MHz	12
5580MHz	11.5
5700MHz	11.5
5720MHz Straddle 5.47-5.725GHz	11
5720MHz Straddle 5.725-5.85GHz	11
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5260MHz	12
5300MHz	12
5320MHz	12
5500MHz	13
5580MHz	12
5700MHz	12
5720MHz Straddle 5.47-5.725GHz	12



Mode	Power Setting
5720MHz Straddle 5.725-5.85GHz	12
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5270MHz	12
5310MHz	12
5510MHz	13
5550MHz	12
5670MHz	11.5
5710MHz Straddle 5.47-5.725GHz	12
5710MHz Straddle 5.725-5.85GHz	12
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5290MHz	12.5
5530MHz	12.5
5610MHz	12
5690MHz Straddle 5.47-5.725GHz	12
5690MHz Straddle 5.725-5.85GHz	12
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5260MHz	15
5300MHz	15
5320MHz	15
5500MHz	15
5580MHz	15
5700MHz	15
5720MHz Straddle 5.47-5.725GHz	15
5720MHz Straddle 5.725-5.85GHz	15
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5270MHz	15
5310MHz	15
5510MHz	15
5550MHz	15
5670MHz	14
5710MHz Straddle 5.47-5.725GHz	15
5710MHz Straddle 5.725-5.85GHz	15
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5290MHz	15
5530MHz	15
5610MHz	14
5690MHz Straddle 5.47-5.725GHz	15
5690MHz Straddle 5.725-5.85GHz	15

**For Radio 3****For antenna set 1 for UNII 2A and antenna set 2 for UNII 2C**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	12
5300MHz	12
5320MHz	12
5500MHz	12.5
5580MHz	12.5
5700MHz	12
5720MHz Straddle 5.47-5.725GHz	12
5720MHz Straddle 5.725-5.85GHz	12
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	12
5300MHz	12
5320MHz	12
5500MHz	12.5
5580MHz	12.5
5700MHz	12
5720MHz Straddle 5.47-5.725GHz	12
5720MHz Straddle 5.725-5.85GHz	12
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	15
5310MHz	15
5510MHz	15.5
5550MHz	15
5670MHz	14.5
5710MHz Straddle 5.47-5.725GHz	14.5
5710MHz Straddle 5.725-5.85GHz	14.5
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	15
5530MHz	16
5610MHz	18
5690MHz Straddle 5.47-5.725GHz	18
5690MHz Straddle 5.725-5.85GHz	18
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	14.5
5250MHz Straddle 5.25-5.35GHz	14.5
5570MHz	15.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	20



Mode	Power Setting
5300MHz	20
5320MHz	20
5500MHz	19
5580MHz	19
5700MHz	19
5720MHz Straddle 5.47-5.725GHz	19
5720MHz Straddle 5.725-5.85GHz	19
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	20
5310MHz	20
5510MHz	19
5550MHz	19
5670MHz	18
5710MHz Straddle 5.47-5.725GHz	18
5710MHz Straddle 5.725-5.85GHz	18
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	19
5530MHz	18
5610MHz	18
5690MHz Straddle 5.47-5.725GHz	18
5690MHz Straddle 5.725-5.85GHz	18
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	17
5250MHz Straddle 5.25-5.35GHz	17
5570MHz	19

**For antenna set 3**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	12
5300MHz	12
5320MHz	12
5500MHz	12
5580MHz	12
5700MHz	11.5
5720MHz Straddle 5.47-5.725GHz	11.5
5720MHz Straddle 5.725-5.85GHz	11.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	11.5
5300MHz	12
5320MHz	12
5500MHz	12
5580MHz	12.5
5700MHz	12
5720MHz Straddle 5.47-5.725GHz	11.5
5720MHz Straddle 5.725-5.85GHz	11.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	15
5310MHz	15
5510MHz	15
5550MHz	15
5670MHz	14.5
5710MHz Straddle 5.47-5.725GHz	14.5
5710MHz Straddle 5.725-5.85GHz	14.5
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	15
5530MHz	15
5610MHz	15
5690MHz Straddle 5.47-5.725GHz	15
5690MHz Straddle 5.725-5.85GHz	15
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	15
5250MHz Straddle 5.25-5.35GHz	15
5570MHz	15.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	17
5300MHz	17



Mode	Power Setting
5320MHz	17
5500MHz	18
5580MHz	18
5700MHz	18
5720MHz Straddle 5.47-5.725GHz	17
5720MHz Straddle 5.725-5.85GHz	17
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	18
5310MHz	18
5510MHz	18
5550MHz	18
5670MHz	18
5710MHz Straddle 5.47-5.725GHz	18
5710MHz Straddle 5.725-5.85GHz	18
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	18
5530MHz	18
5610MHz	18
5690MHz Straddle 5.47-5.725GHz	18
5690MHz Straddle 5.725-5.85GHz	18
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	18
5250MHz Straddle 5.25-5.35GHz	18
5570MHz	19

**For antenna set 5**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	6
5300MHz	6
5320MHz	6
5500MHz	6.5
5580MHz	6.5
5700MHz	5.5
5720MHz Straddle 5.47-5.725GHz	6
5720MHz Straddle 5.725-5.85GHz	6
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	6
5300MHz	6
5320MHz	6
5500MHz	6.5
5580MHz	6.5
5700MHz	6
5720MHz Straddle 5.47-5.725GHz	6
5720MHz Straddle 5.725-5.85GHz	6
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	9
5310MHz	9
5510MHz	9
5550MHz	9.5
5670MHz	8.5
5710MHz Straddle 5.47-5.725GHz	9
5710MHz Straddle 5.725-5.85GHz	9
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	9
5530MHz	9
5610MHz	9
5690MHz Straddle 5.47-5.725GHz	9
5690MHz Straddle 5.725-5.85GHz	9
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	12
5250MHz Straddle 5.25-5.35GHz	12
5570MHz	9.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5260MHz	12
5300MHz	12



Mode	Power Setting
5320MHz	12
5500MHz	11
5580MHz	11
5700MHz	11
5720MHz Straddle 5.47-5.725GHz	11
5720MHz Straddle 5.725-5.85GHz	11
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5270MHz	12
5310MHz	12
5510MHz	11
5550MHz	11
5670MHz	11
5710MHz Straddle 5.47-5.725GHz	12
5710MHz Straddle 5.725-5.85GHz	12
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5290MHz	12
5530MHz	11
5610MHz	11
5690MHz Straddle 5.47-5.725GHz	11
5690MHz Straddle 5.725-5.85GHz	11
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	15
5250MHz Straddle 5.25-5.35GHz	15
5570MHz	12

Note:

- ♦ For Radio 2: Evaluated HEW20/HEW40/HEW80 mode only, due to similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80 mode are the same or lower than HEW20/HEW40/HEW80.
- ♦ For Radio 3: Evaluated HEW20/HEW40/HEW80/HEW160 mode only, due to similar modulation. The power setting of HT20/HT40/VHT20/VHT40/VHT80/VHT160 mode are the same or lower than HEW20/HEW40/HEW80/HEW160.

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	EUT 1_R2 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C
2	EUT 1_R2 + Antenna set 5
3	EUT 1_R3 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C
4	EUT 1_R3 + Antenna set 3
5	EUT 1_R3 + Antenna set 5

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode > 1GHz	CTX
	The EUT was performed at the X axis, Y axis, and Z axis position, and the worst case axis was found and listed below. So the measurement will follow this same test configuration.
1	EUT 1 in X axis_R2 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C
2	EUT 1 in Y axis_R2 + Antenna set 5
3	EUT 1 in X axis_R3 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C
4	EUT 1 in Y axis_R3 + Antenna set 3
5	EUT 1 in Y axis_R3 + Antenna set 5

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	R1 (2.4G + antenna set 1) + R2 (5G + antenna set 2) + R3 (5G + antenna set 2) + R4 (Bluetooth + antenna set 7)
2	R1 (2.4G + antenna set 4) + R2 (5G + antenna set 5) + R3 (5G + antenna set 5) + R4 (Bluetooth + antenna set 7)
3	R1 (2.4G + antenna set 4) + R2 (5G + antenna set 5) + R3 (5G + antenna set 3) + R4 (Bluetooth + antenna set 7)
Refer to Sporton Test Report No.: FA322335 for Co-location RF Exposure Evaluation.	



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

Their information as below:

Power	Brand	Model
PoE	Cambium	NET-P60-56IN

2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

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

The program was executed as follows:

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

2.4 Accessories

Accessories
Bracket 1*1 (Only for EUT 1~EUT 2 use)
Bracket 2*1 (Only for Antenna Set 3 use)
Bracket 3*1 (Only for Antenna Set 4 use)
Bracket 4*1 (Only for Antenna Set 5 use)
Antenna cable*6 (Only for Antenna Set 3~5 use)
Sealing collar*1



2.5 Support Equipment

For Radiated (above 1GHz):

For non beamforming mode

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	PoE	Cambium	NET-P60-56IN	N/A

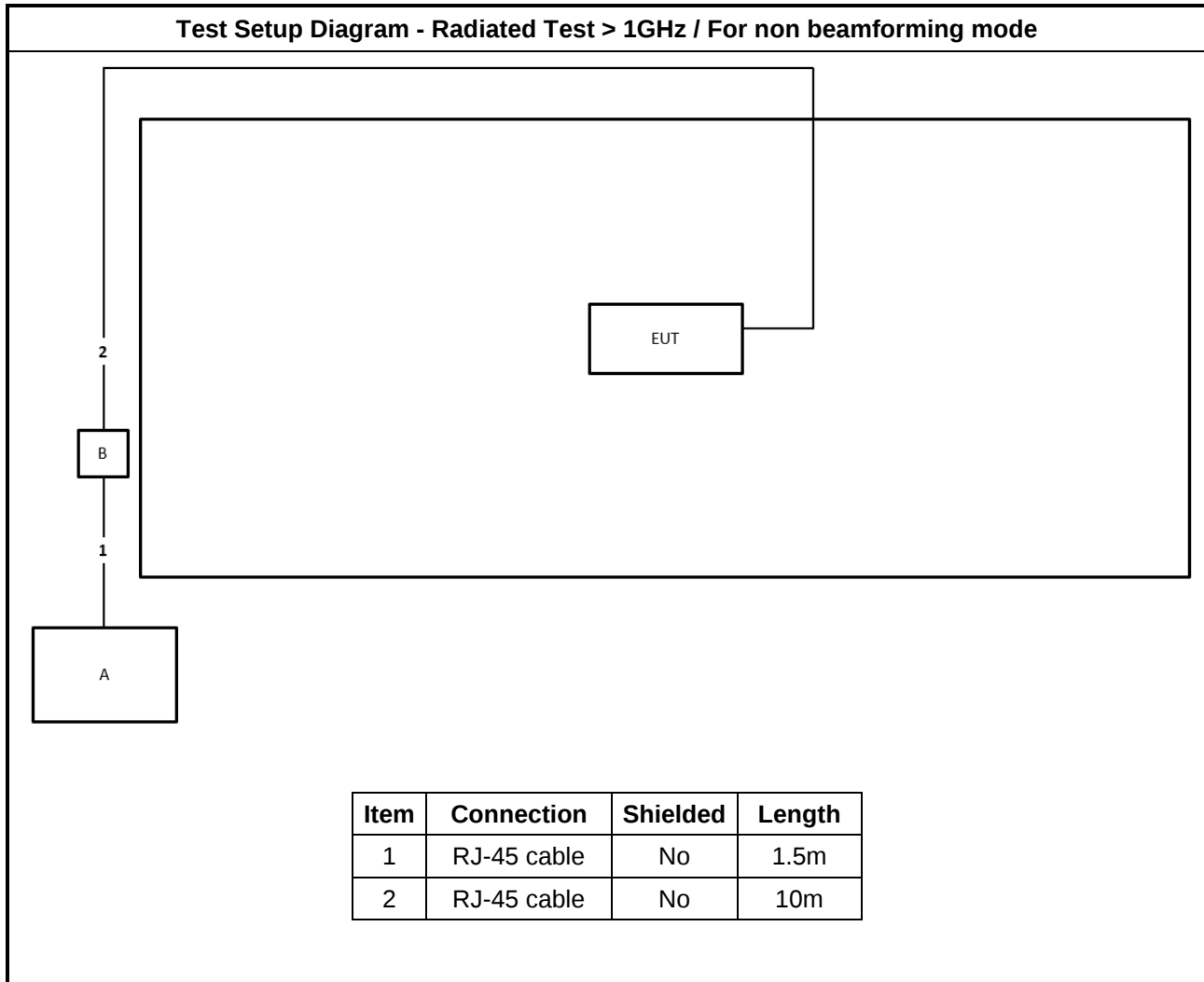
For beamforming mode

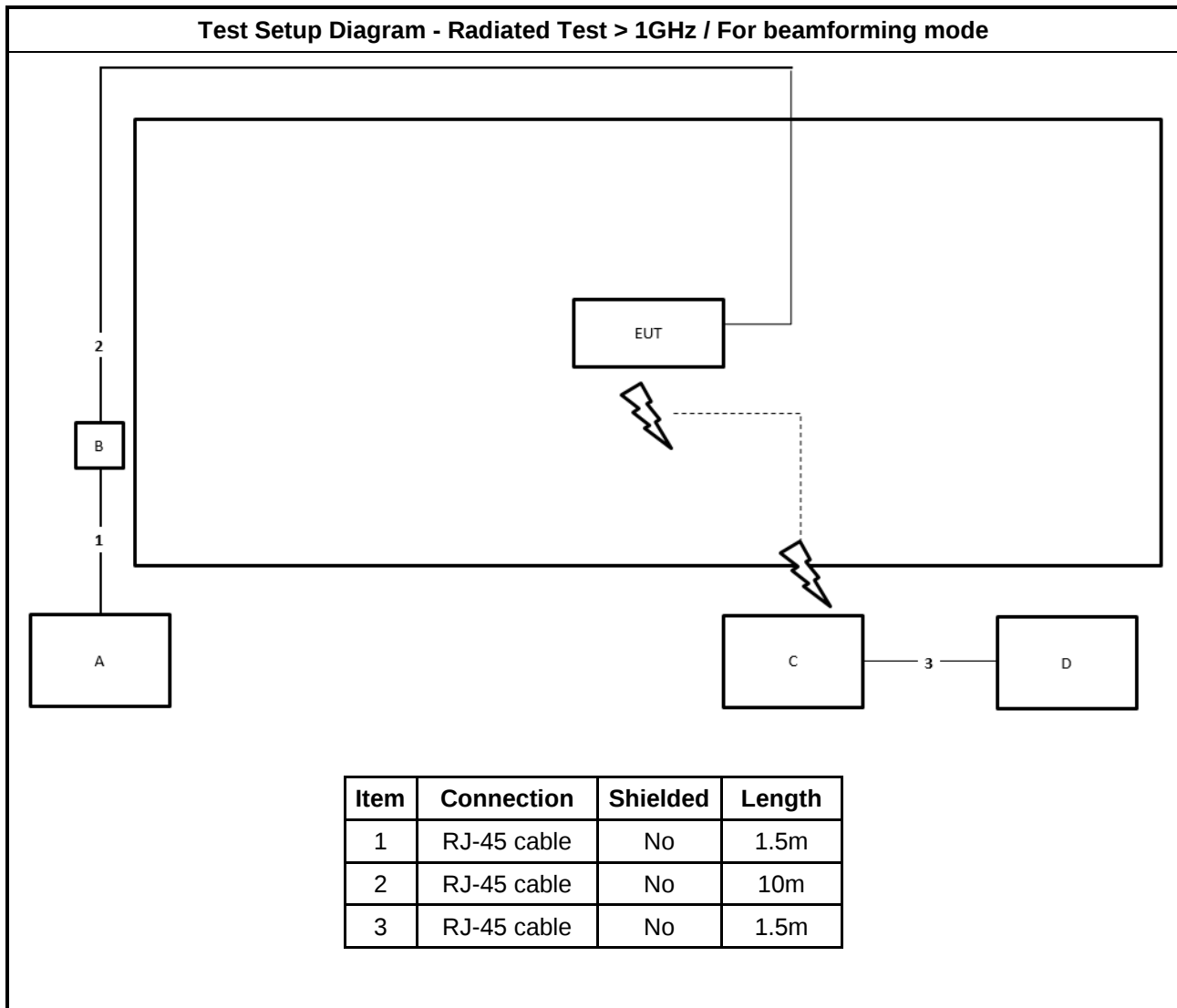
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	PoE	Cambium	NET-P60-56IN	N/A
C	Client	Cambium Networks	CB-EX3-4TN	N/A
D	NB	DELL	E4300	N/A

For RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	PoE	Cambium	NET-P60-56IN	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test > 1GHz / For beamforming mode




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 ≥ 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 ≥ 500kHz.

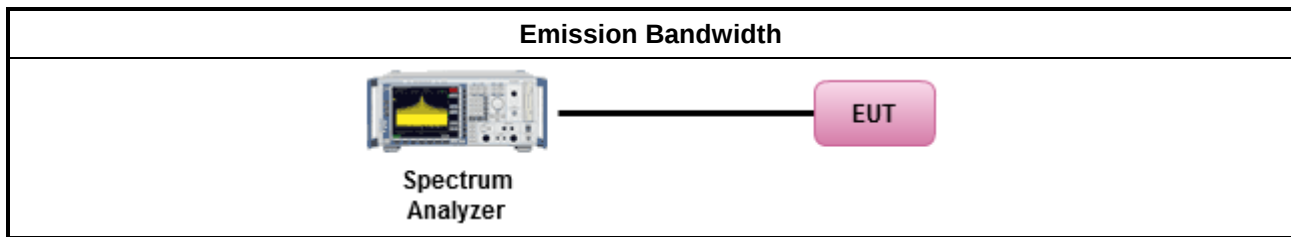
3.1.2 Measuring Instruments

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.
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

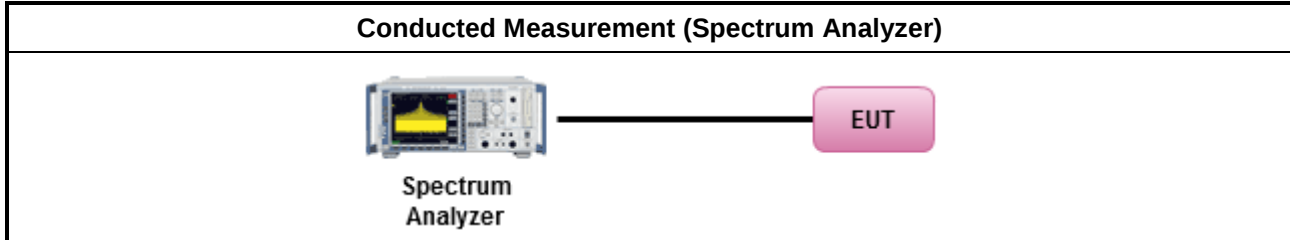
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

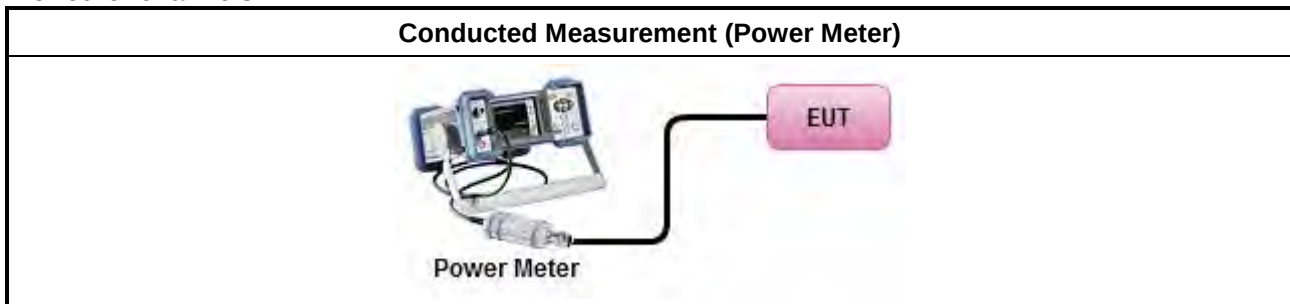
Test Method	
	Average over on/off periods with duty factor
☒	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty 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 channels



For other channels



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.
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

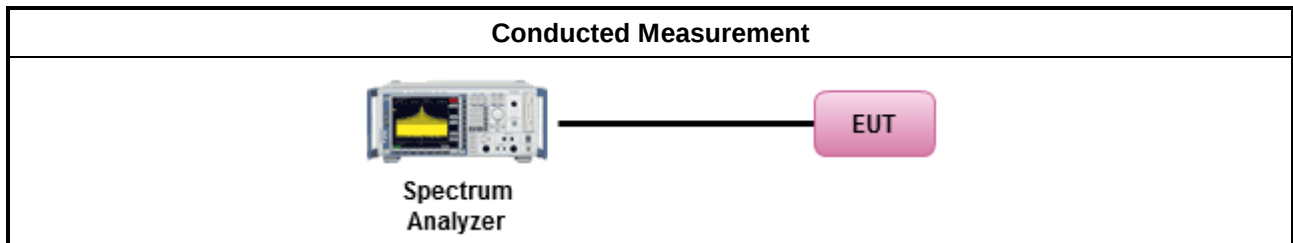
Refer a test equipment and calibration data table in this test report.

**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, F5) 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]) $EIRP_{total} = PPSD_{total} + DG$	
☐ 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.	

Test Method	
	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.

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).

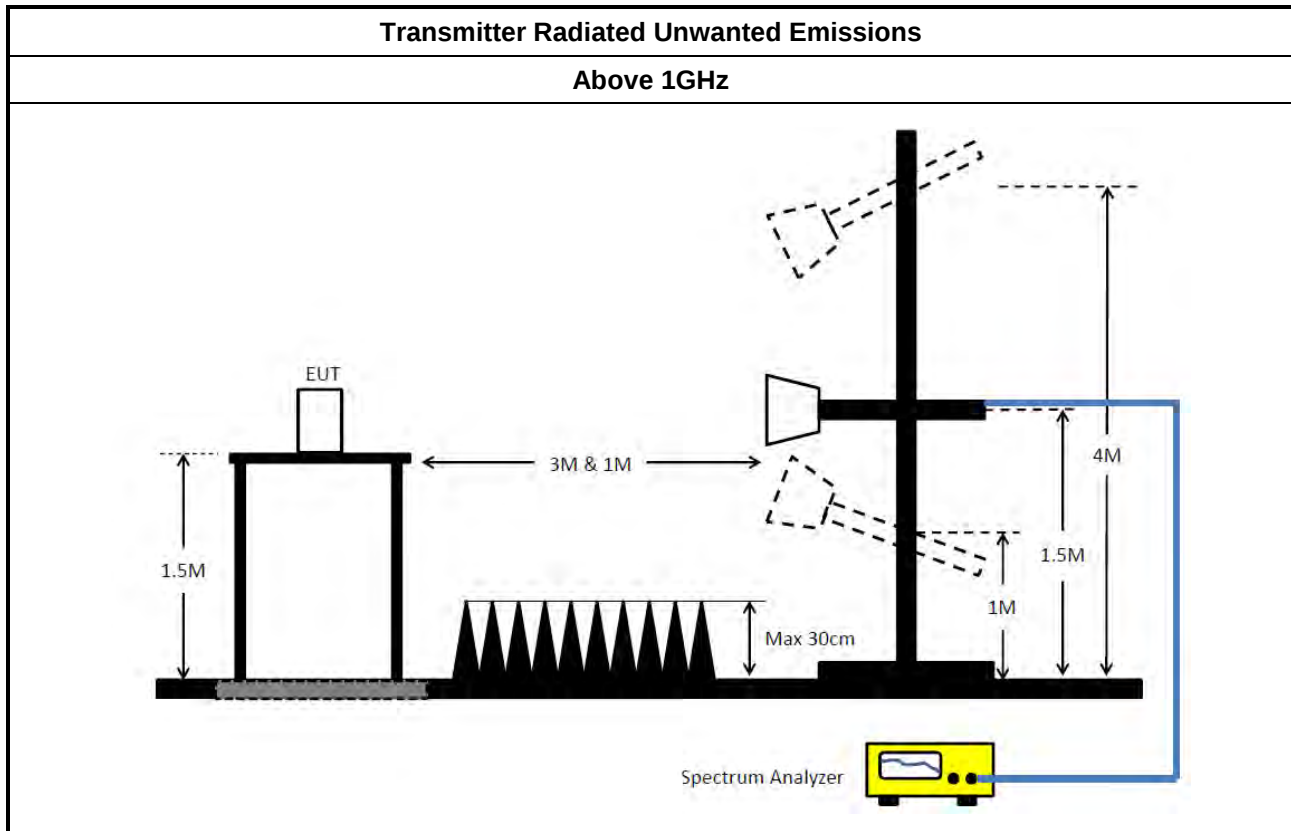
3.4.2 Measuring Instruments

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 ≥ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
	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.
☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.	
For radiated measurement.	
	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
The any unwanted emissions level shall not exceed the fundamental emission level.	
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.4.4 Test Setup



3.4.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (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
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2021	Nov. 05, 2022	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBECK	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-HG	1864479	18GHz ~ 40GHz	Jul. 20, 2022	Jul. 19, 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	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	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)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	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	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 26, 2022	Mar. 25, 2023	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 19, 2022	Apr. 18, 2023	Radiation (03CH02-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 05, 2022	Jul. 04, 2023	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH02-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 20, 2022	Jul. 19, 2023	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSP	100593	9kHz~40GHz	Apr. 08, 2022	Apr. 07, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 04, 2021	Oct. 03, 2022	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Jan. 07, 2022	Jan. 06, 2023	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1531344	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	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-11	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	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-12	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	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-13	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	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-14	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	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. 03, 2022	Oct. 02, 2023	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)



RADIO TEST REPORT

Report No. : FR322335

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	SWI-03-P5	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH03-CB)
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.



EBW_R2 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C_Non beamforming mode

Appendix A.1

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	20.64M	16.447M	16M4D1D	20.34M	16.434M
802.11ax HEW20_Nss1,(MCS0)_2TX	22.11M	18.958M	19M0D1D	21.48M	18.915M
802.11ax HEW40_Nss1,(MCS0)_2TX	41.46M	37.899M	37M9D1D	40.8M	37.851M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.8M	77.324M	77M3D1D	82.44M	77.244M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	20.76M	16.452M	16M5D1D	15.075M	13.205M
802.11ax HEW20_Nss1,(MCS0)_2TX	21.84M	18.954M	19M0D1D	15.795M	14.443M
802.11ax HEW40_Nss1,(MCS0)_2TX	41.34M	37.943M	37M9D1D	35.42M	33.779M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.68M	77.276M	77M3D1D	76.125M	73.146M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.14M	3.742M	3M74D1D	3.14M	3.688M
802.11ax HEW20_Nss1,(MCS0)_2TX	4.24M	4.64M	4M64D1D	4.08M	4.634M
802.11ax HEW40_Nss1,(MCS0)_2TX	4.14M	4.231M	4M23D1D	4.02M	4.192M
802.11ax HEW80_Nss1,(MCS0)_2TX	4.04M	4.329M	4M33D1D	4.02M	4.314M

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



**EBW_R2 + Antenna set 1 for UNII 2A + Antenna set 2 for
UNII 2C_Non beamforming mode**

Appendix A.1

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	20.58M	16.446M	20.46M	16.434M
5300MHz	Pass	Inf	20.58M	16.447M	20.34M	16.438M
5320MHz	Pass	Inf	20.55M	16.443M	20.64M	16.445M
5500MHz	Pass	Inf	20.58M	16.451M	20.76M	16.43M
5580MHz	Pass	Inf	20.55M	16.441M	20.67M	16.429M
5700MHz	Pass	Inf	20.52M	16.452M	20.58M	16.443M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.24M	13.205M	15.075M	13.21M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.742M	3.14M	3.688M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	21.84M	18.958M	21.63M	18.923M
5300MHz	Pass	Inf	21.48M	18.946M	21.63M	18.915M
5320MHz	Pass	Inf	21.54M	18.932M	22.11M	18.934M
5500MHz	Pass	Inf	21.39M	18.93M	21.84M	18.945M
5580MHz	Pass	Inf	21.6M	18.918M	21.75M	18.94M
5700MHz	Pass	Inf	21.54M	18.954M	21.69M	18.935M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.795M	14.449M	15.87M	14.443M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.24M	4.64M	4.08M	4.634M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	41.46M	37.899M	40.8M	37.851M
5310MHz	Pass	Inf	41.16M	37.858M	41.34M	37.893M
5510MHz	Pass	Inf	40.98M	37.833M	41.34M	37.911M
5550MHz	Pass	Inf	40.68M	37.867M	40.8M	37.943M
5670MHz	Pass	Inf	41.1M	37.875M	41.16M	37.912M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.84M	33.779M	35.42M	33.791M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.02M	4.192M	4.14M	4.231M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	82.8M	77.324M	82.44M	77.244M
5530MHz	Pass	Inf	82.68M	77.188M	81.96M	77.176M
5610MHz	Pass	Inf	82.2M	77.276M	82.56M	77.232M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.125M	73.352M	76.125M	73.146M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.02M	4.329M	4.04M	4.314M

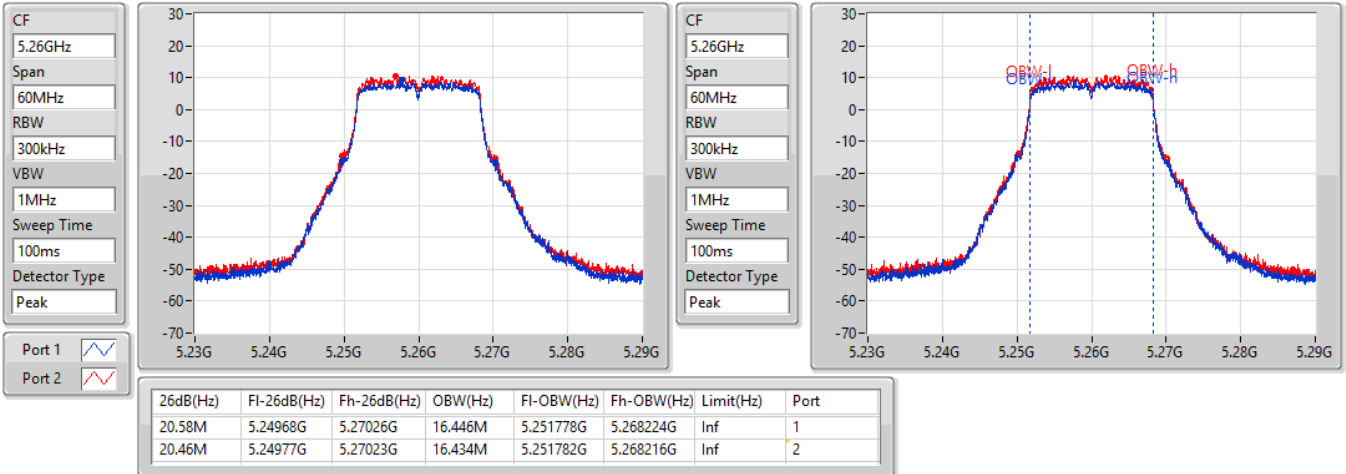
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_2TX

EBW

5260MHz

05/08/2022

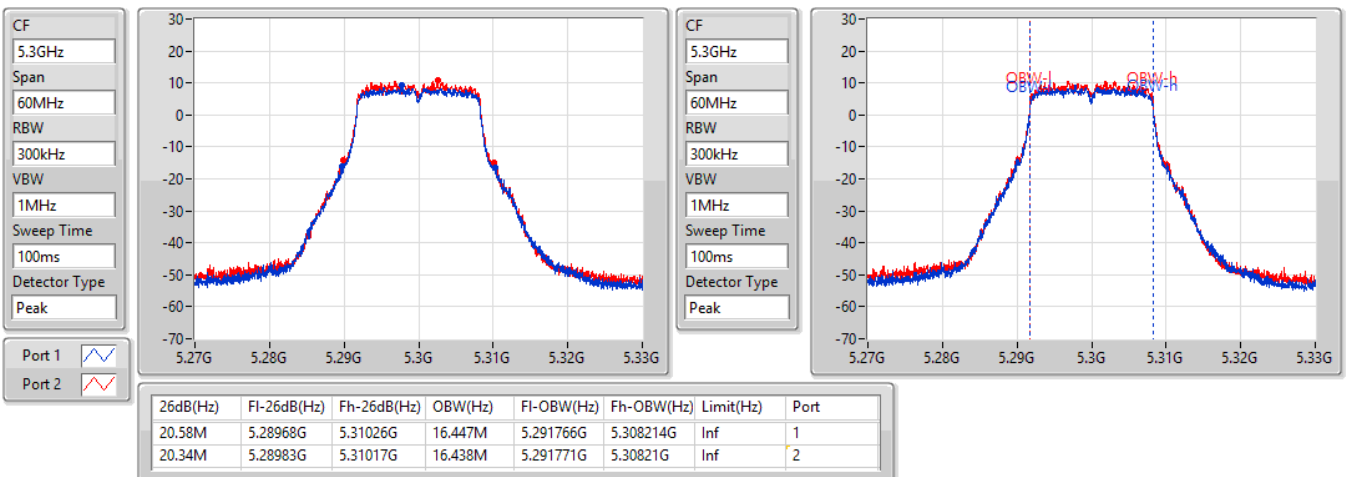


802.11a_Nss1,(6Mbps)_2TX

EBW

5300MHz

05/08/2022

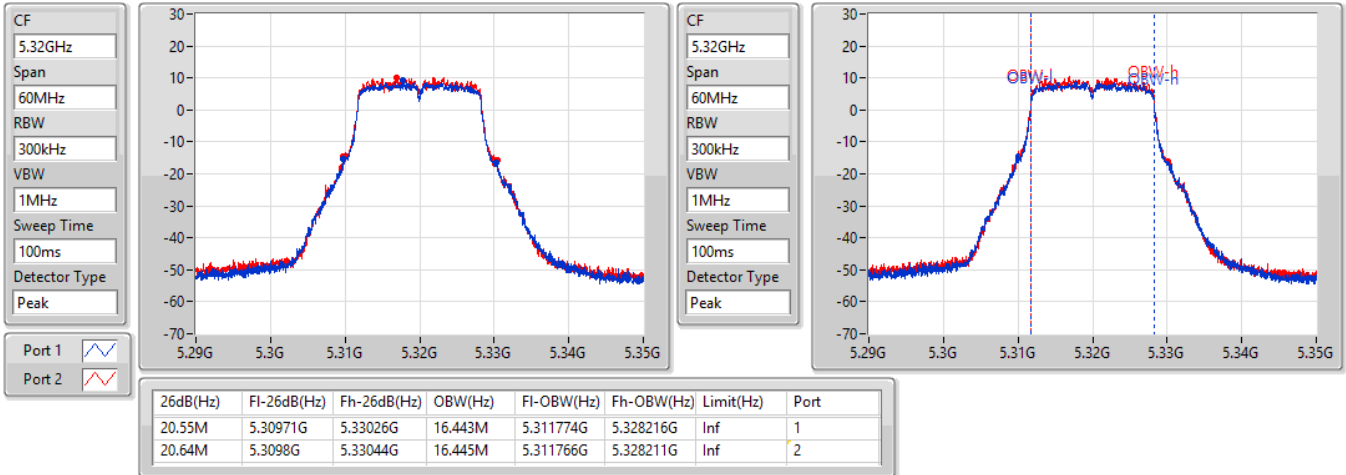


802.11a_Nss1,(6Mbps)_2TX

EBW

5320MHz

05/08/2022

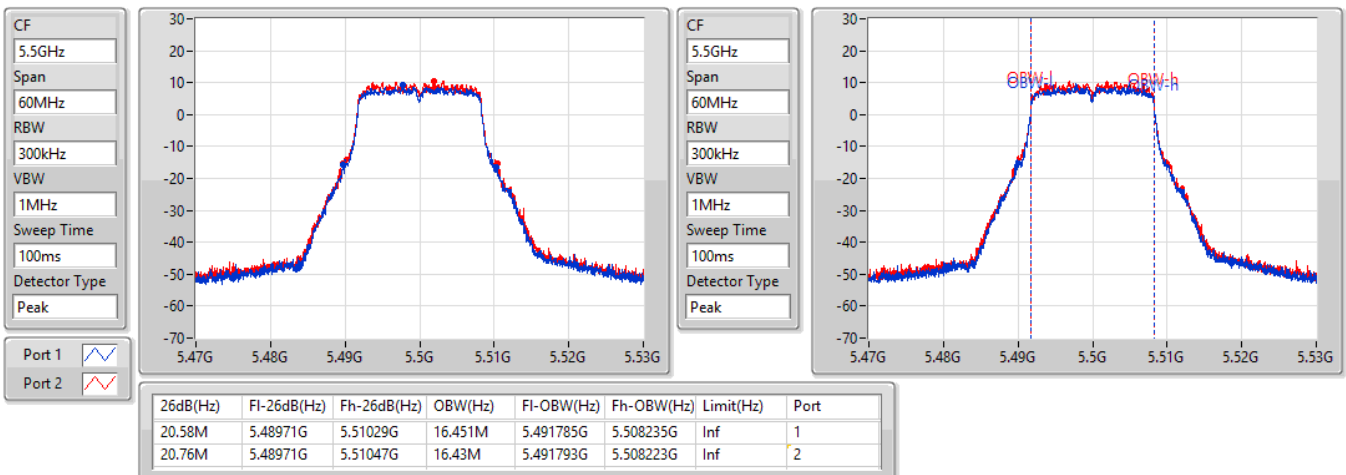


802.11a_Nss1,(6Mbps)_2TX

EBW

5500MHz

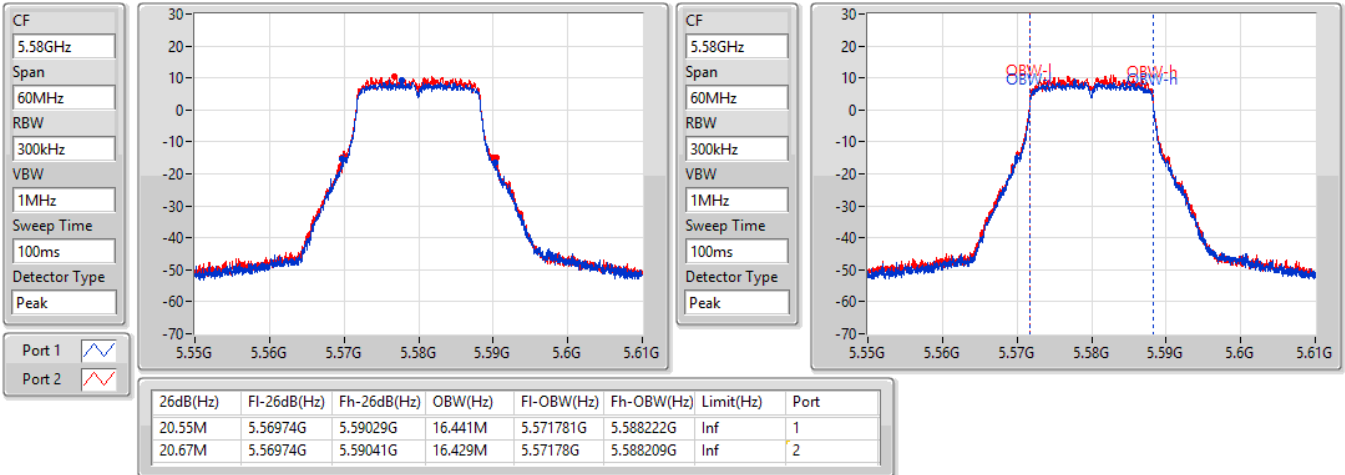
05/08/2022



802.11a_Nss1,(6Mbps)_2TX

5580MHz

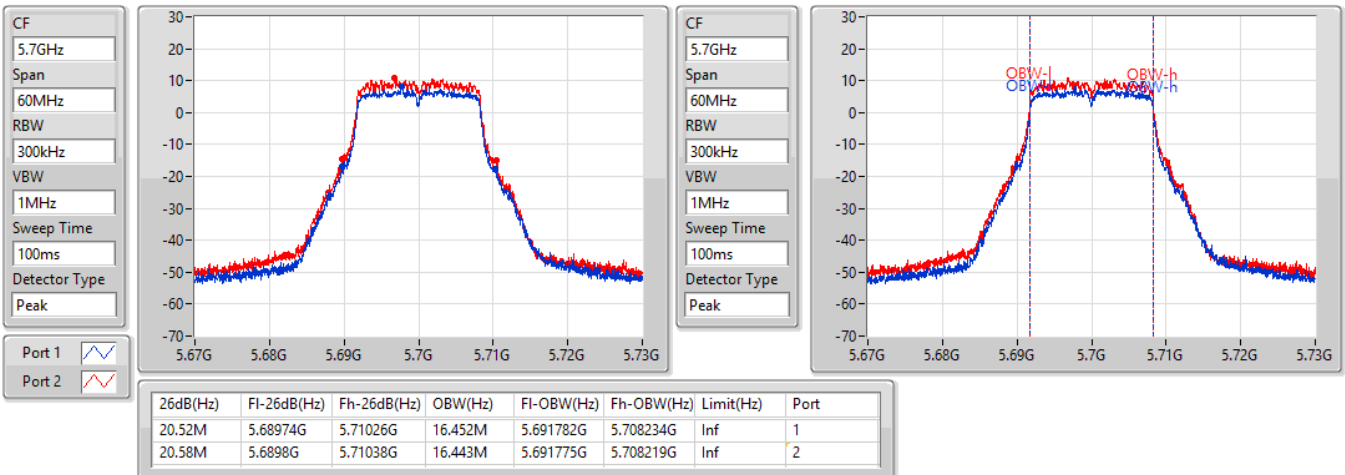
05/08/2022



802.11a_Nss1,(6Mbps)_2TX

5700MHz

05/08/2022

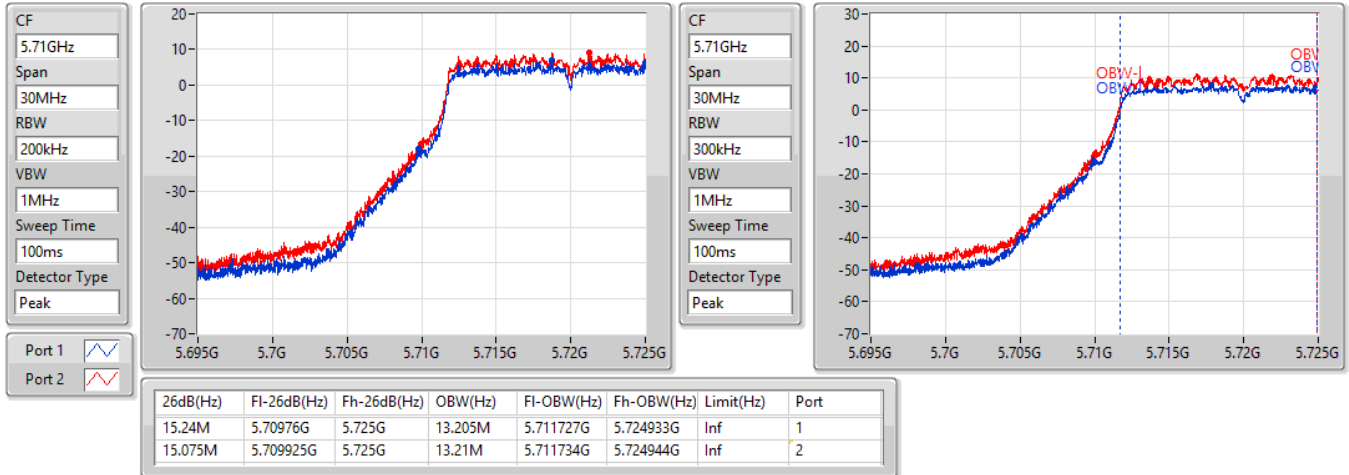


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.47-5.725GHz

05/08/2022

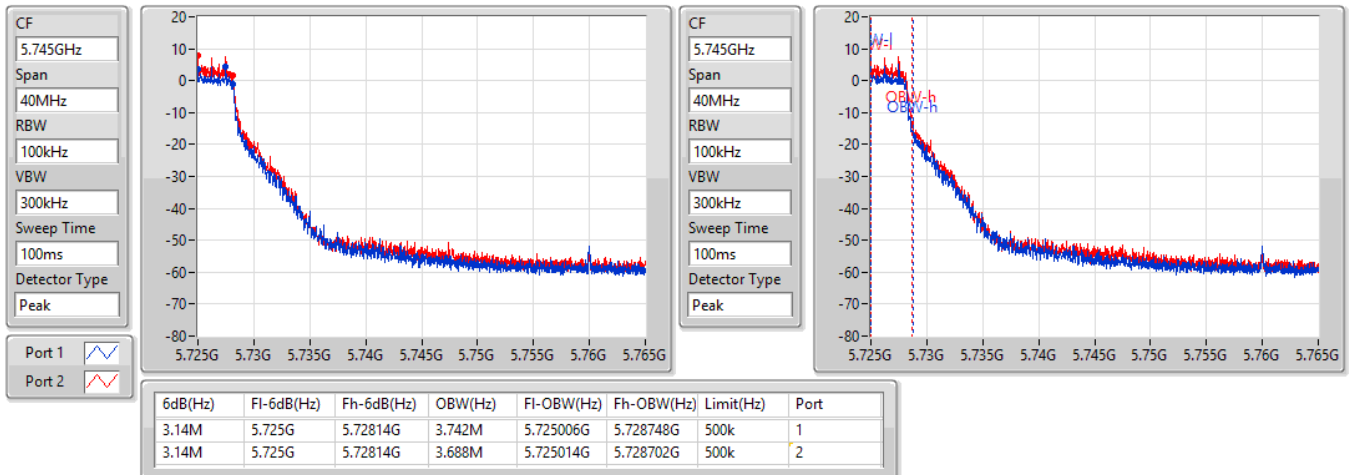


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/08/2022

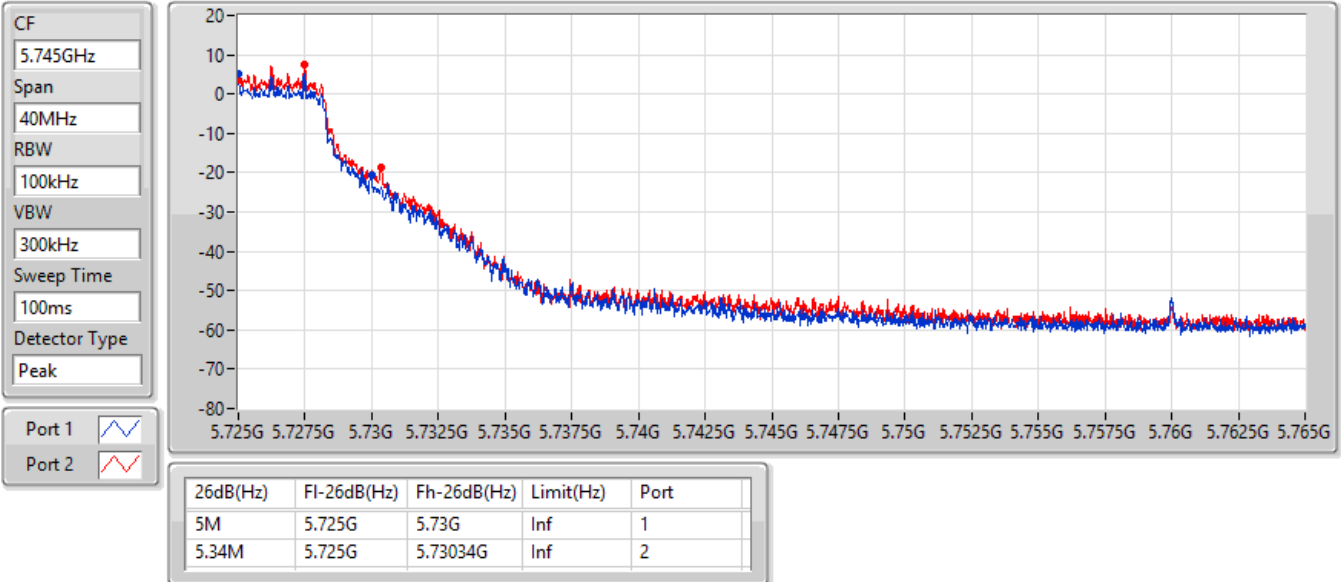


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/08/2022

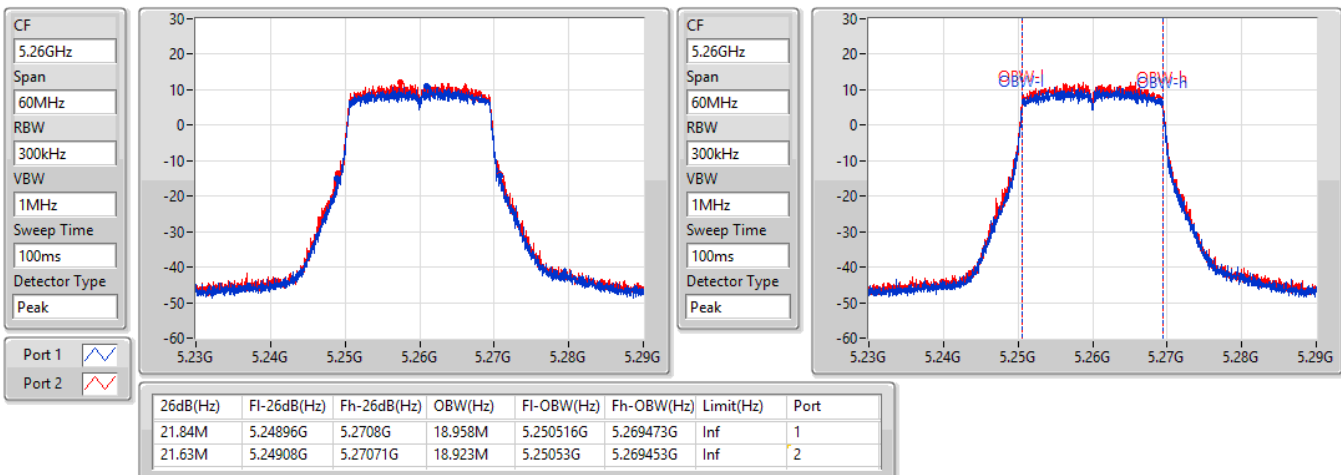


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5260MHz

05/08/2022

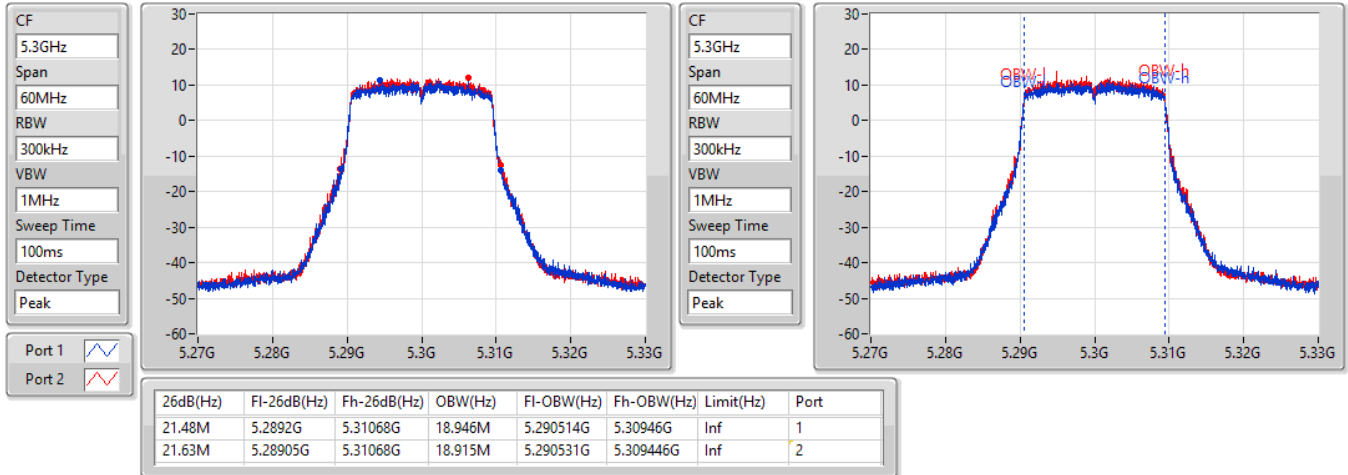


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5300MHz

05/08/2022

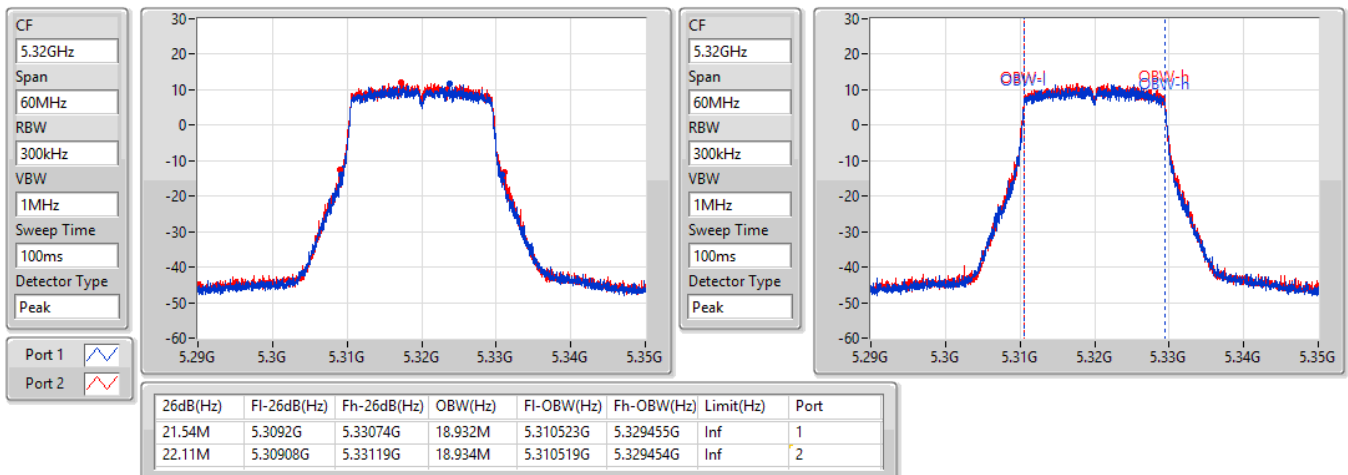


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5320MHz

05/08/2022

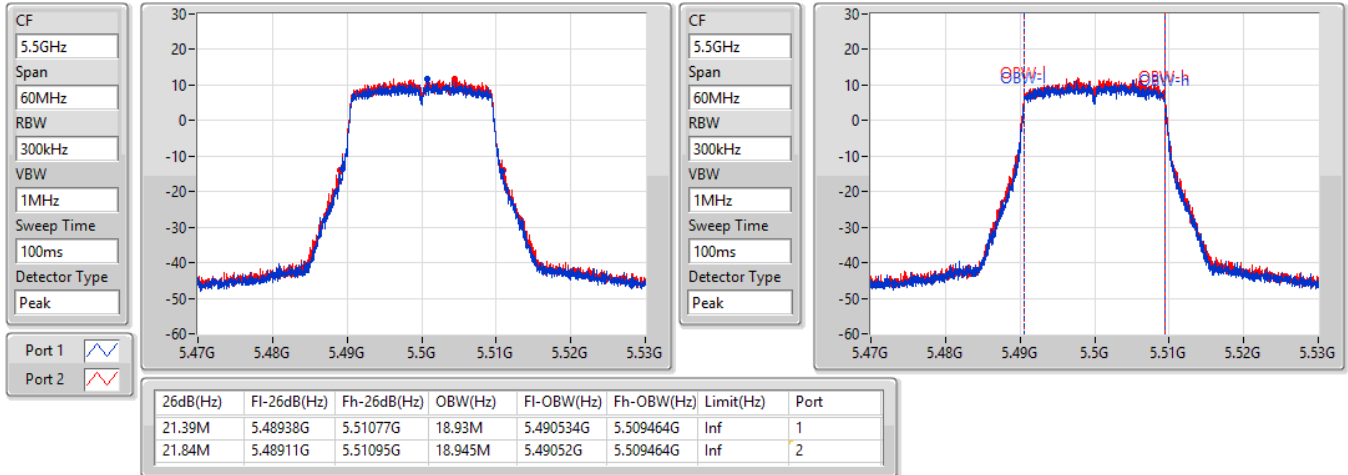


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5500MHz

05/08/2022

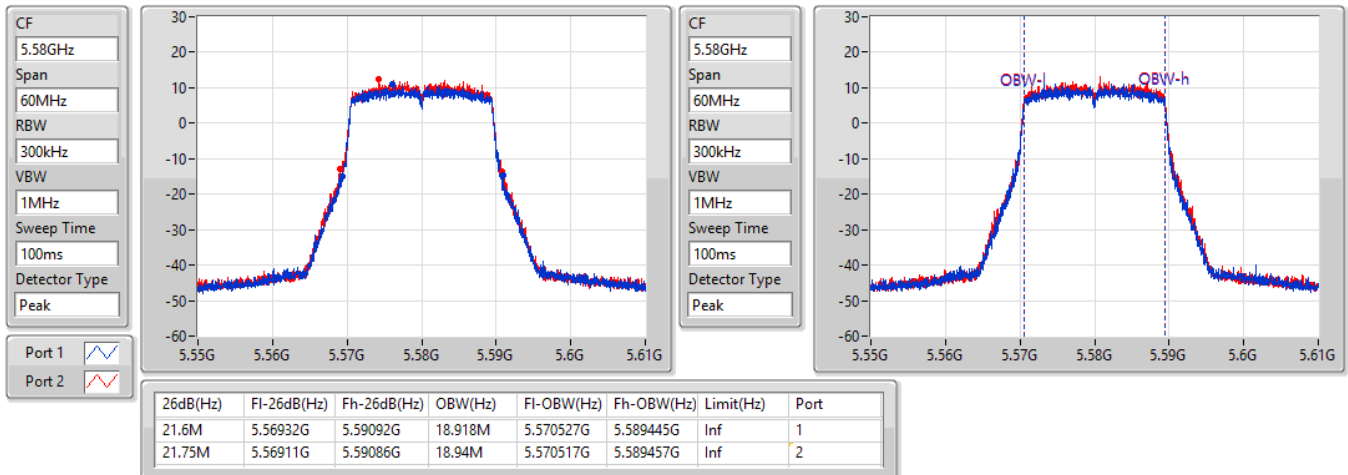


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5580MHz

05/08/2022

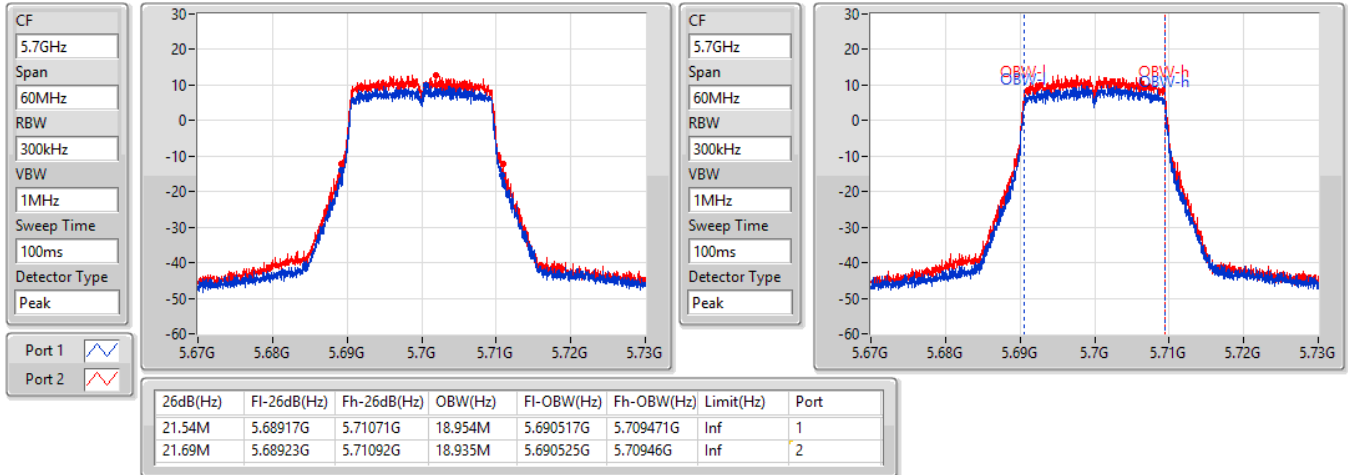


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5700MHz

05/08/2022

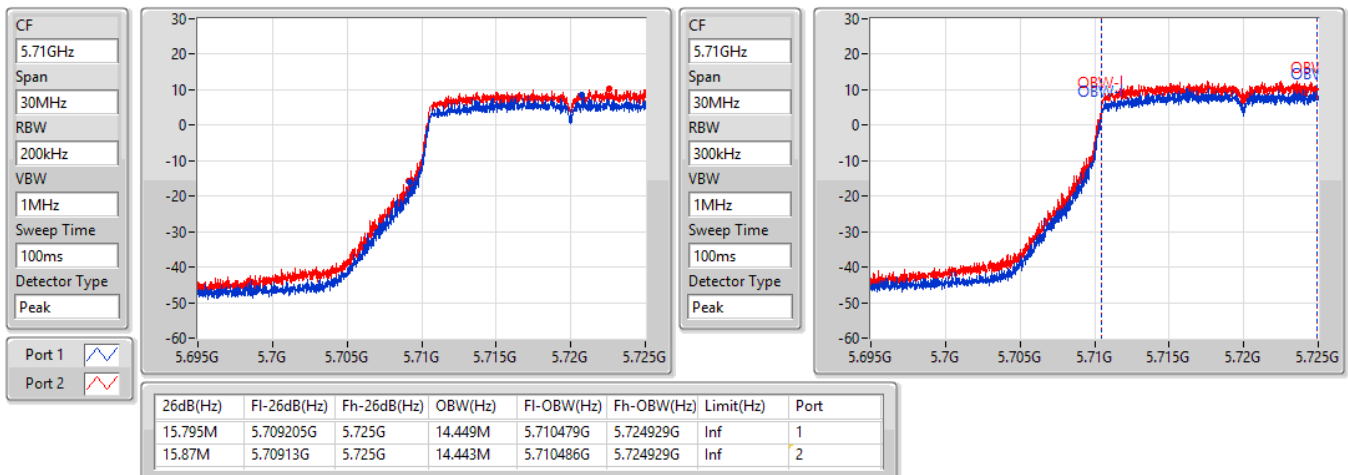


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.47-5.725GHz

05/08/2022

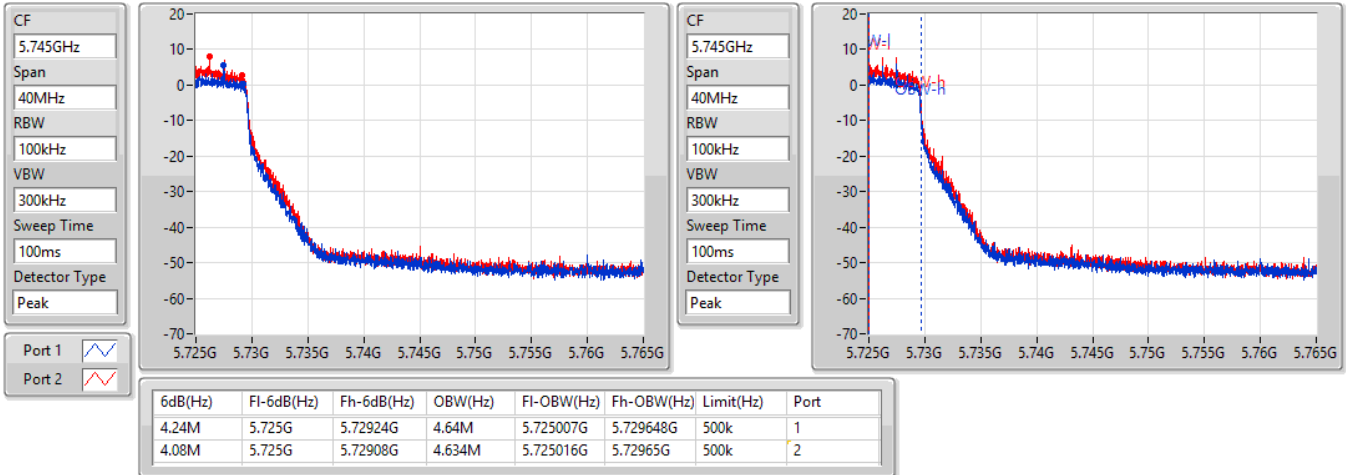


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/08/2022

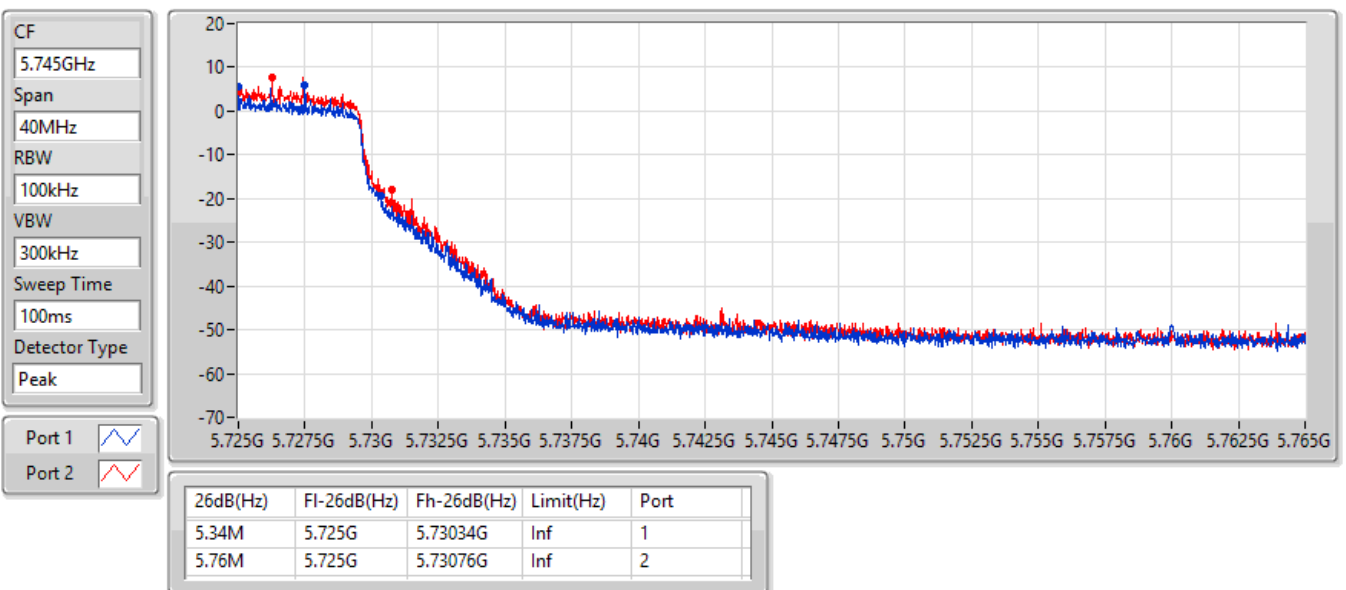


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

05/08/2022

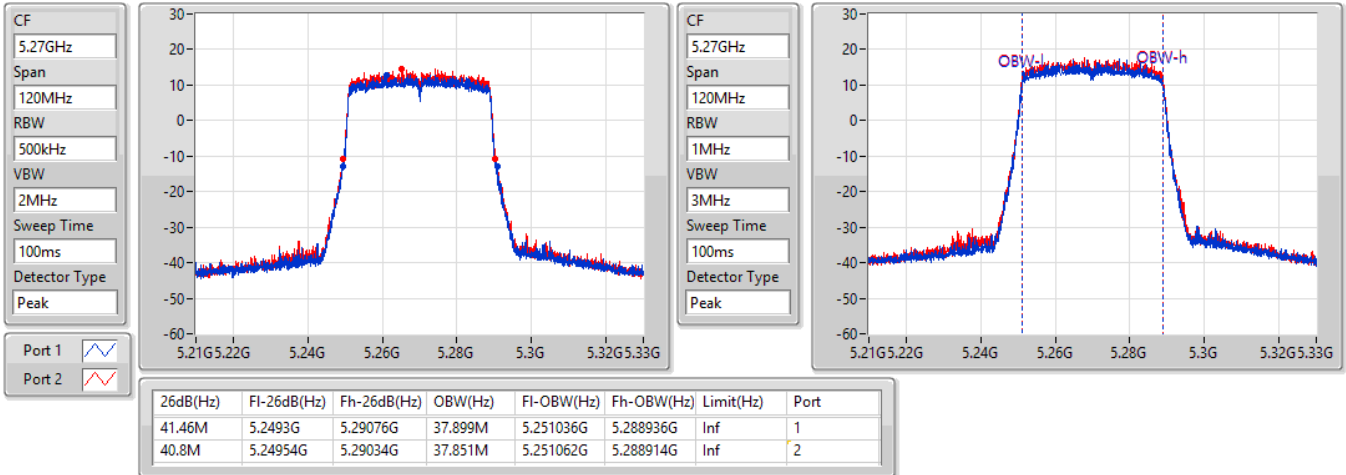


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5270MHz

05/08/2022

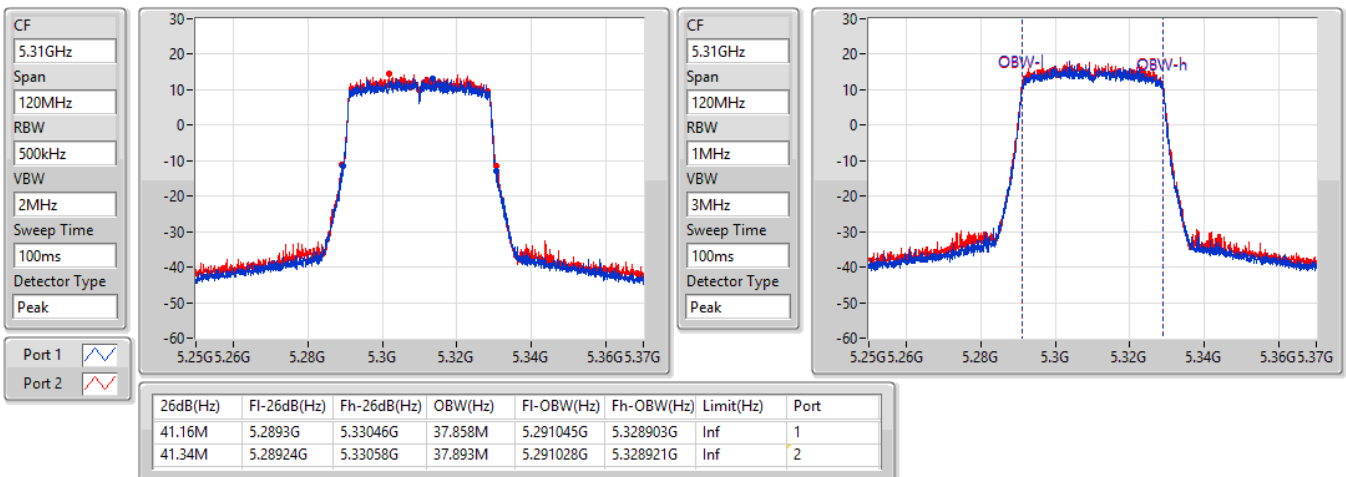


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5310MHz

05/08/2022

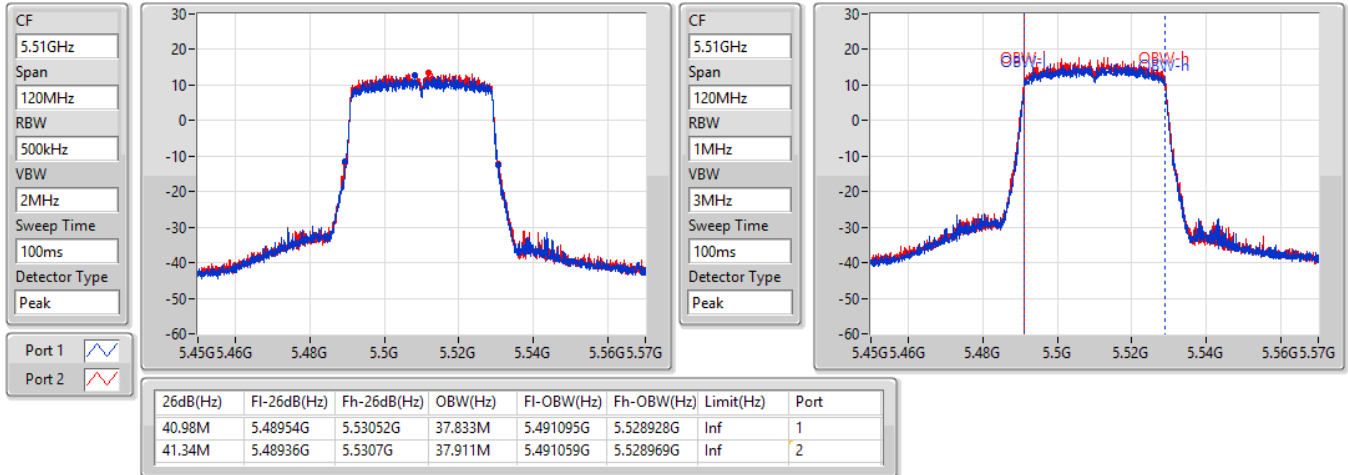


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5510MHz

05/08/2022

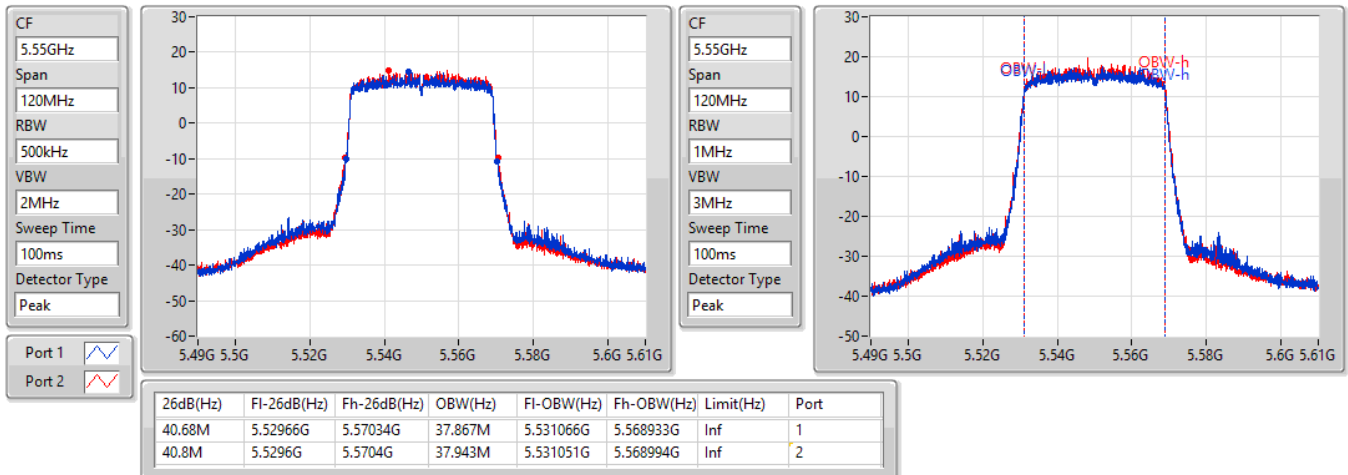


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5550MHz

05/08/2022

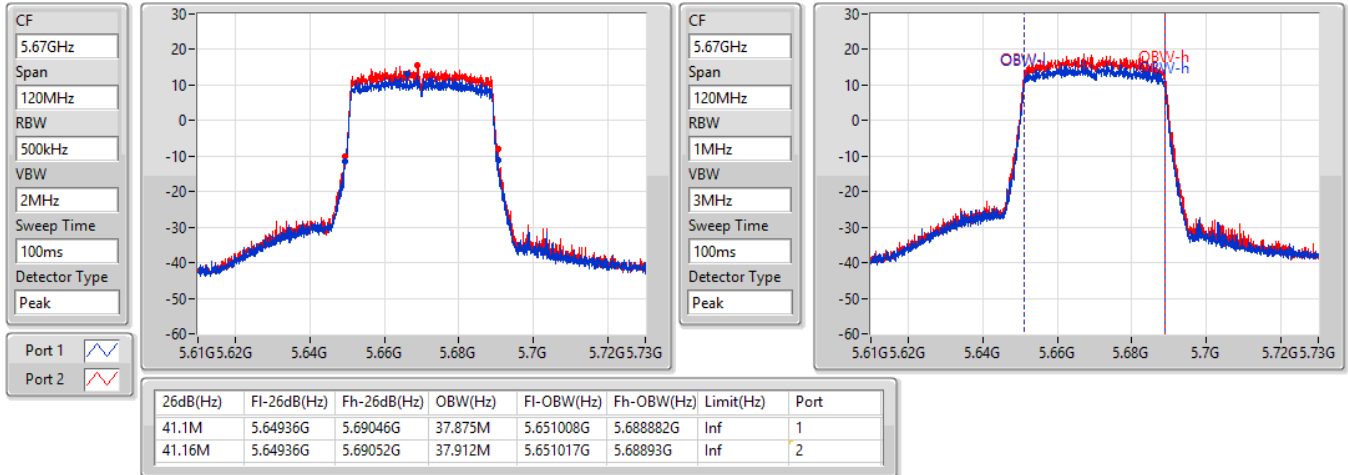


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5670MHz

05/08/2022

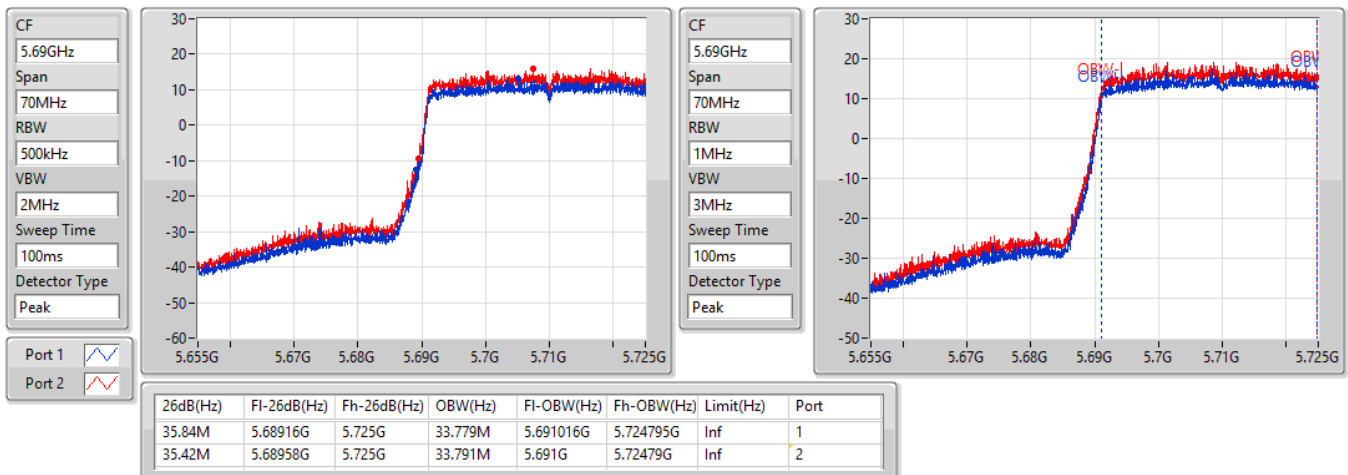


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.47-5.725GHz

05/08/2022

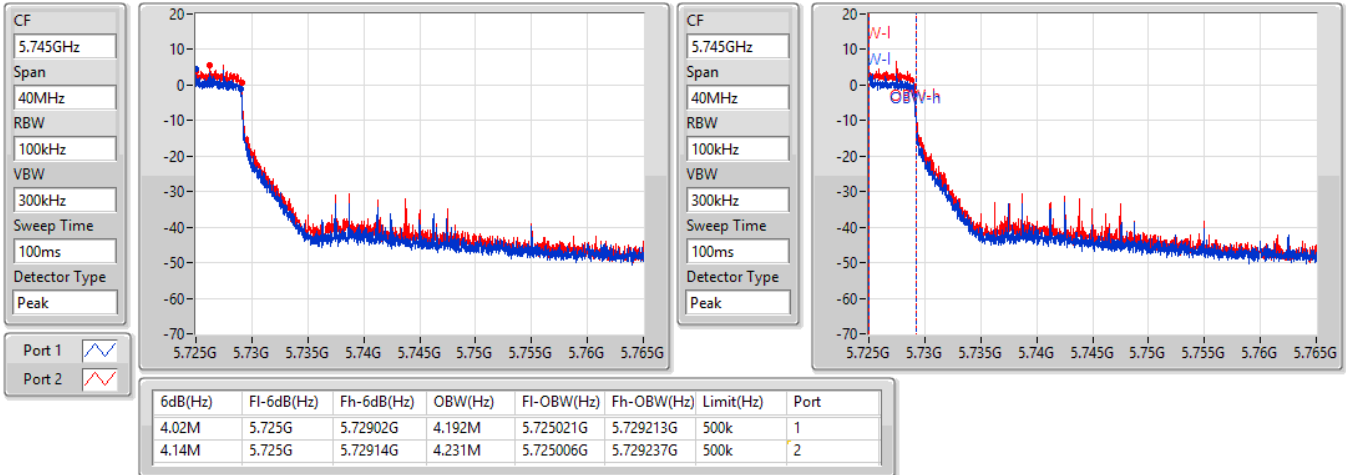


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

05/08/2022

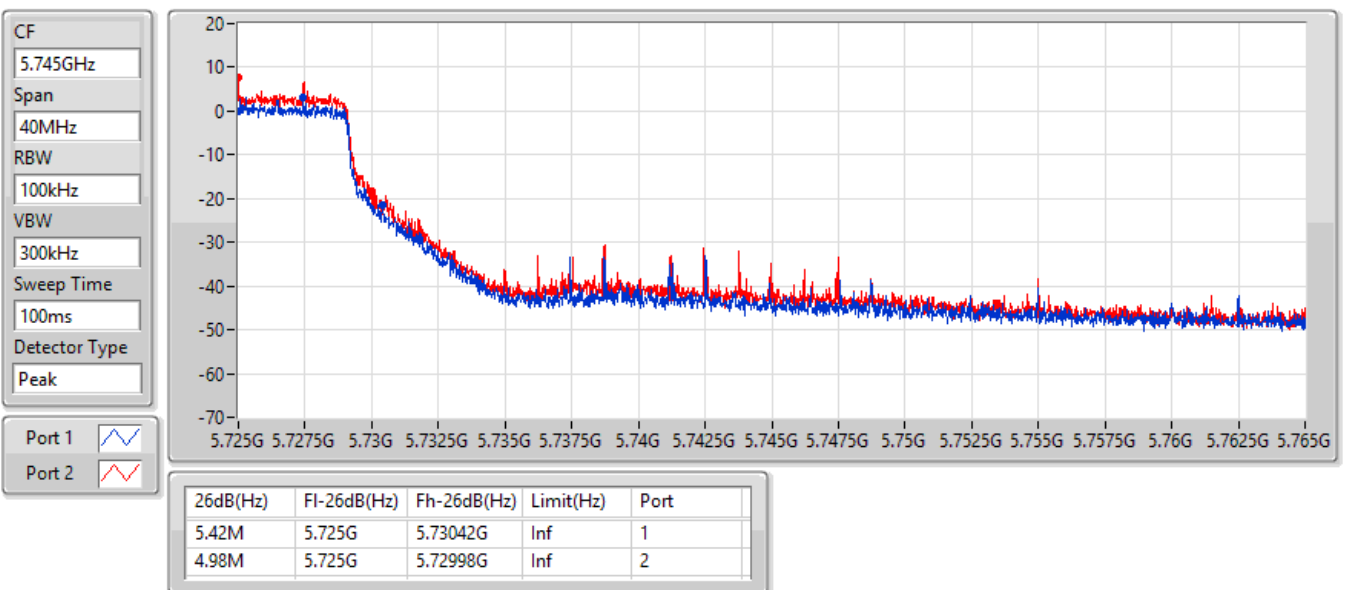


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

05/08/2022

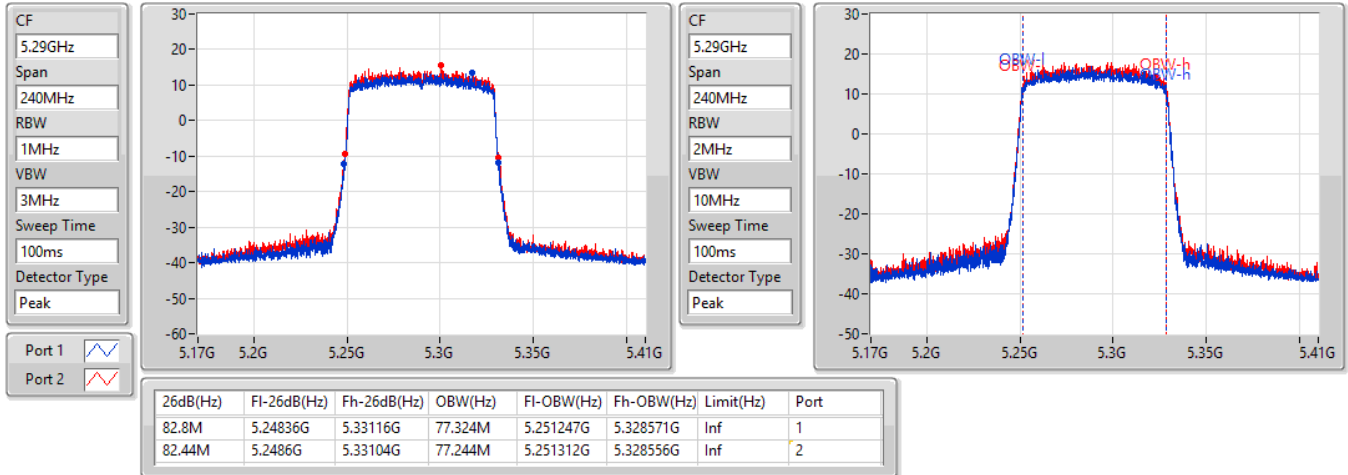


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5290MHz

05/08/2022

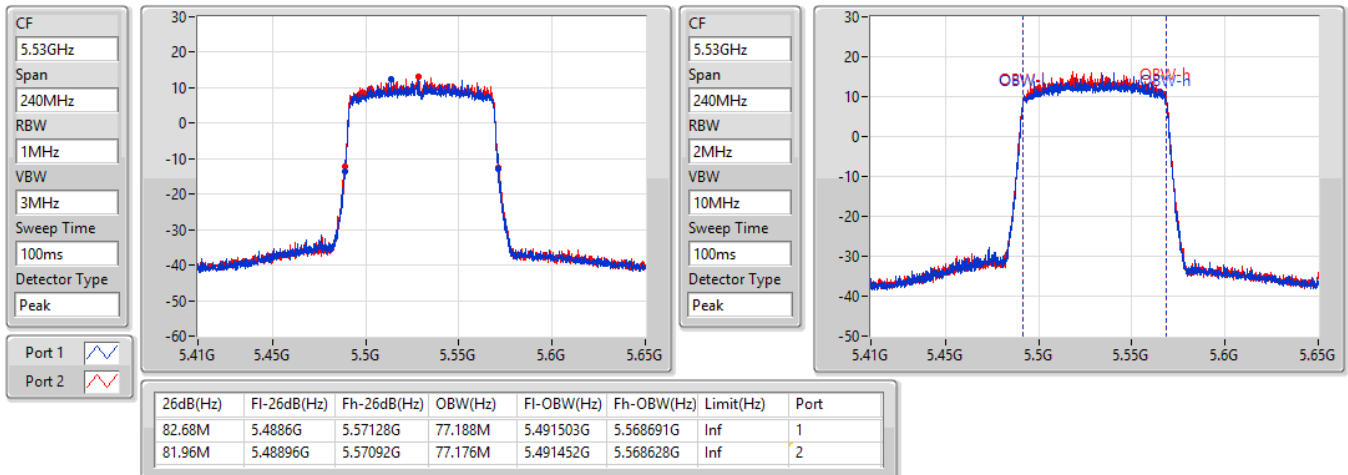


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5530MHz

05/08/2022

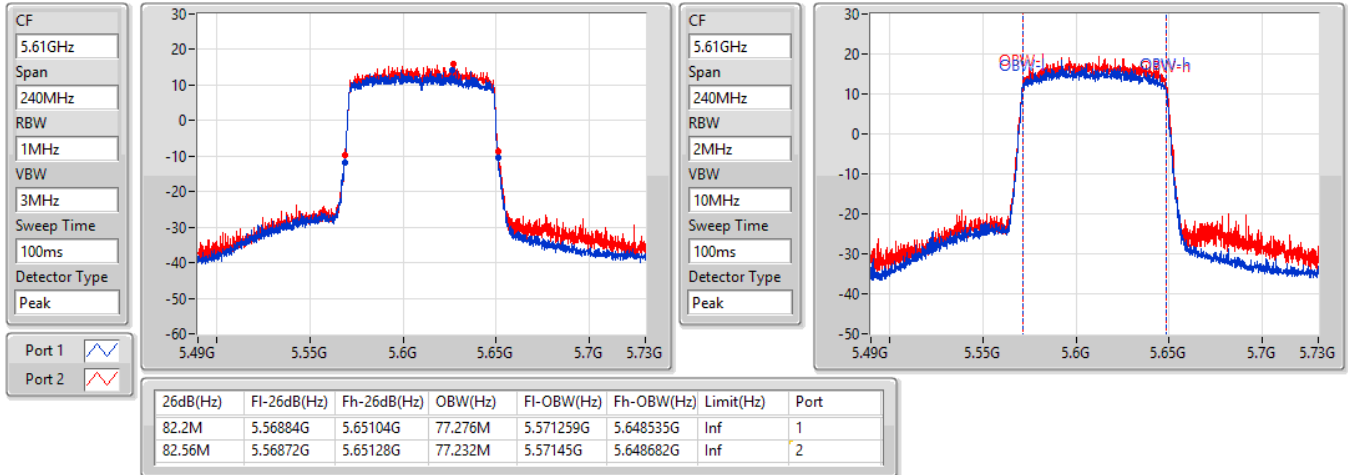


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5610MHz

05/08/2022

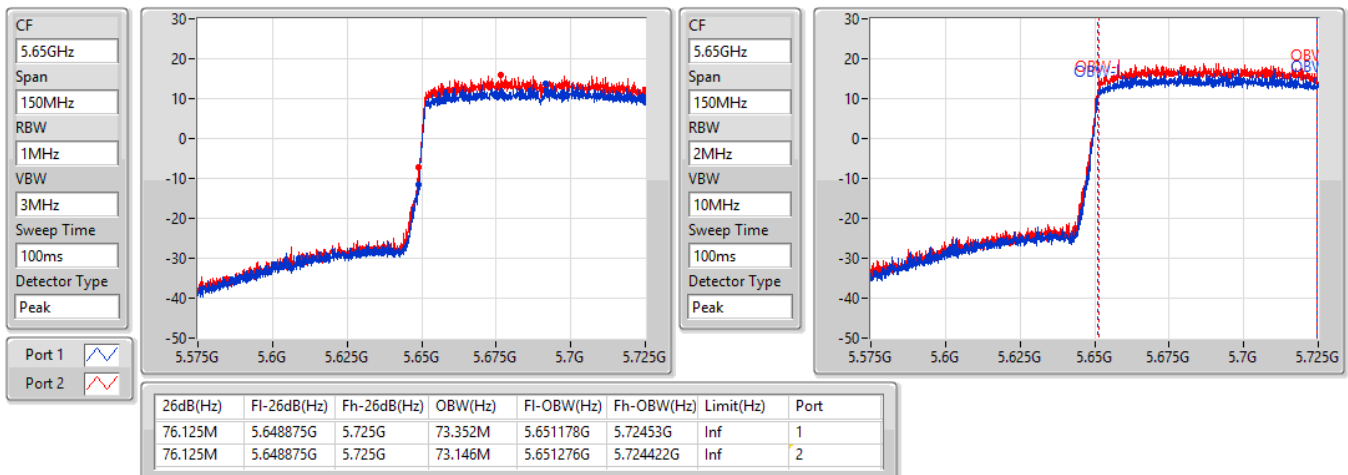


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.47-5.725GHz

05/08/2022

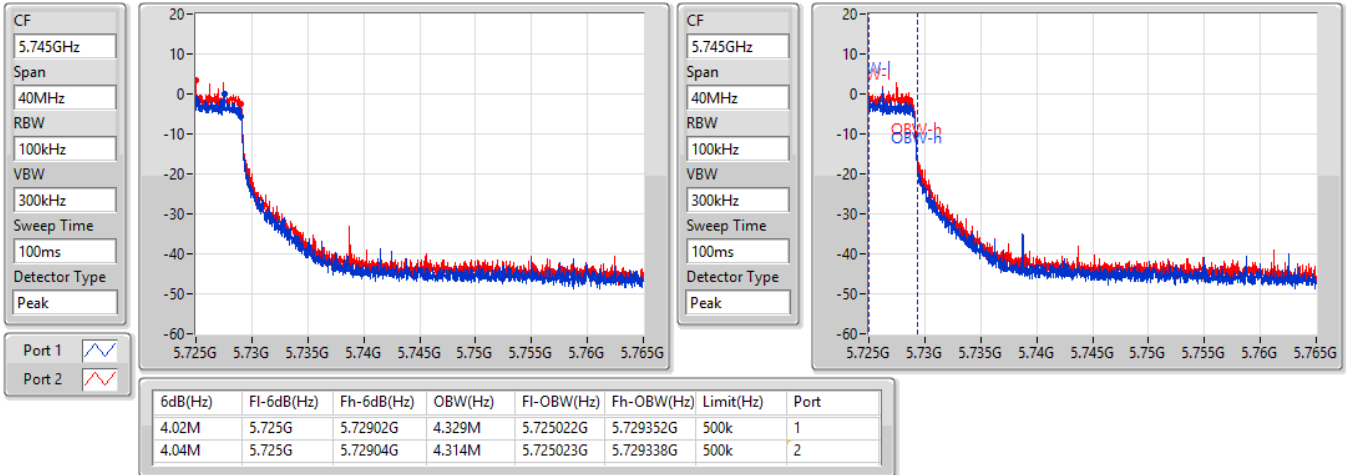


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

05/08/2022

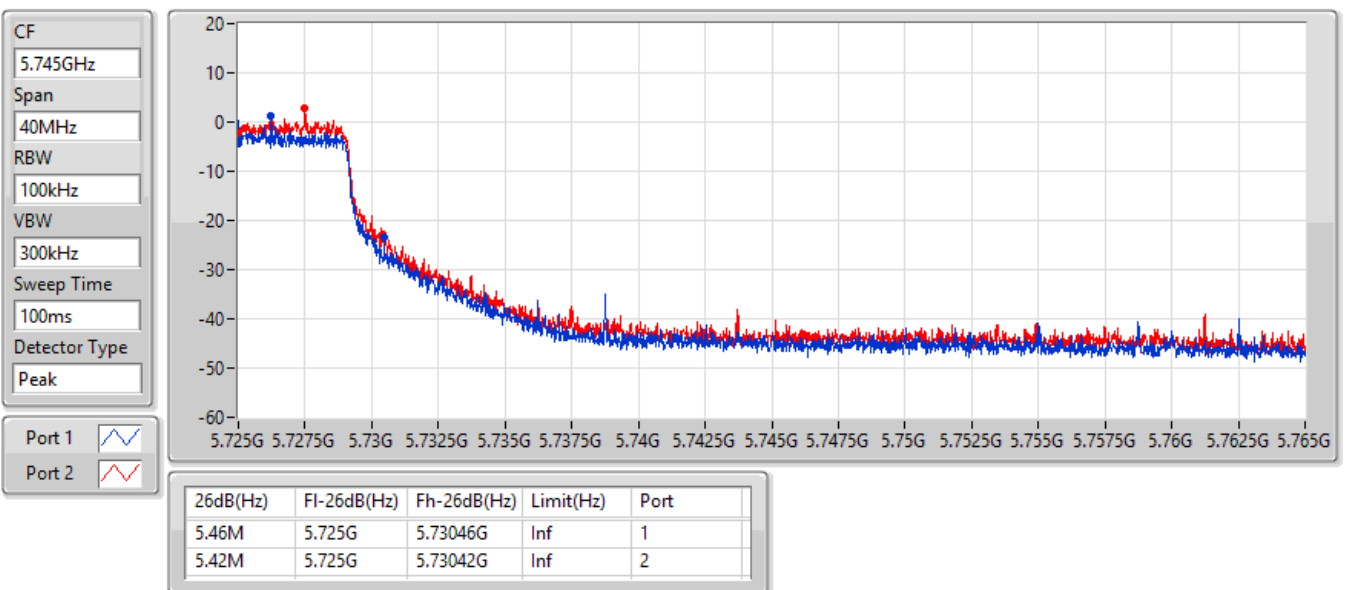


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

05/08/2022





EBW_R2 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C_Beamforming mode

Appendix A.2

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	22.14M	18.961M	19M0D1D	21.39M	18.91M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	41.28M	37.898M	37M9D1D	40.8M	37.831M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	82.32M	77.247M	77M2D1D	82.08M	77.212M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	22.02M	18.951M	19M0D1D	15.915M	14.462M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	41.46M	37.9M	37M9D1D	35.49M	33.781M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	82.68M	77.224M	77M2D1D	76.05M	73.075M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	4.4M	4.636M	4M64D1D	4.32M	4.628M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	4.06M	4.205M	4M21D1D	3.98M	4.189M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	4.04M	4.322M	4M32D1D	4.04M	4.3M

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-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	21.54M	18.941M	21.39M	18.922M
5300MHz	Pass	Inf	21.48M	18.91M	21.57M	18.961M
5320MHz	Pass	Inf	22.14M	18.936M	21.72M	18.921M
5500MHz	Pass	Inf	21.42M	18.939M	21.39M	18.92M
5580MHz	Pass	Inf	21.84M	18.944M	22.02M	18.951M
5700MHz	Pass	Inf	21.54M	18.941M	21.72M	18.925M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.915M	14.47M	15.975M	14.462M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.32M	4.636M	4.4M	4.628M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	40.86M	37.868M	41.28M	37.831M
5310MHz	Pass	Inf	41.04M	37.869M	40.8M	37.898M
5510MHz	Pass	Inf	40.92M	37.863M	41.46M	37.857M
5550MHz	Pass	Inf	41.34M	37.895M	41.04M	37.848M
5670MHz	Pass	Inf	40.68M	37.9M	41.16M	37.823M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.63M	33.79M	35.49M	33.781M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.06M	4.205M	3.98M	4.189M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	82.32M	77.247M	82.08M	77.212M
5530MHz	Pass	Inf	82.56M	77.191M	82.68M	77.181M
5610MHz	Pass	Inf	81.96M	77.125M	82.08M	77.224M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.05M	73.211M	76.5M	73.075M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.04M	4.322M	4.04M	4.3M

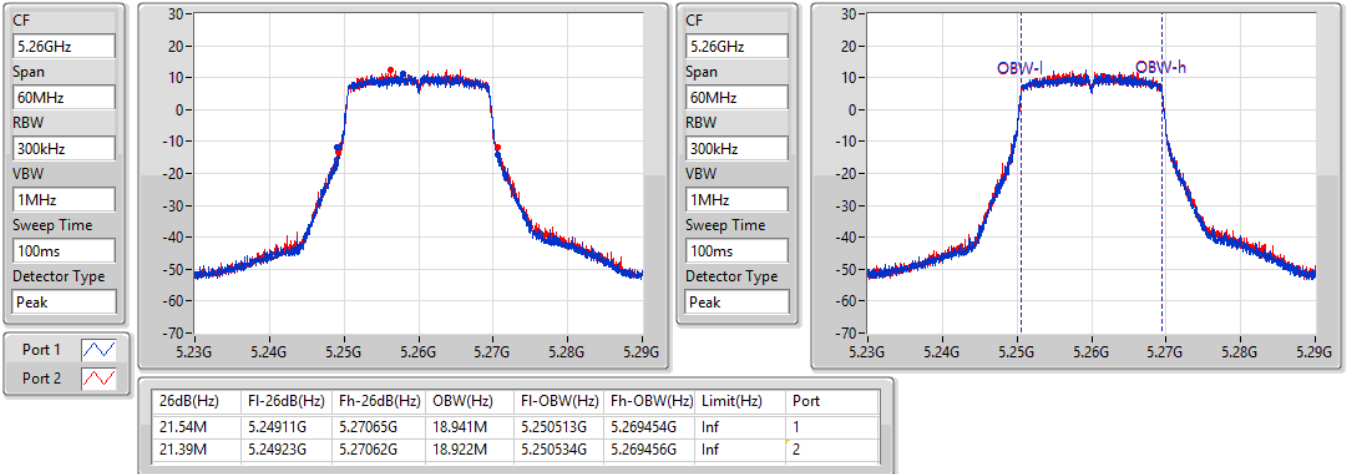
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5260MHz

03/10/2022

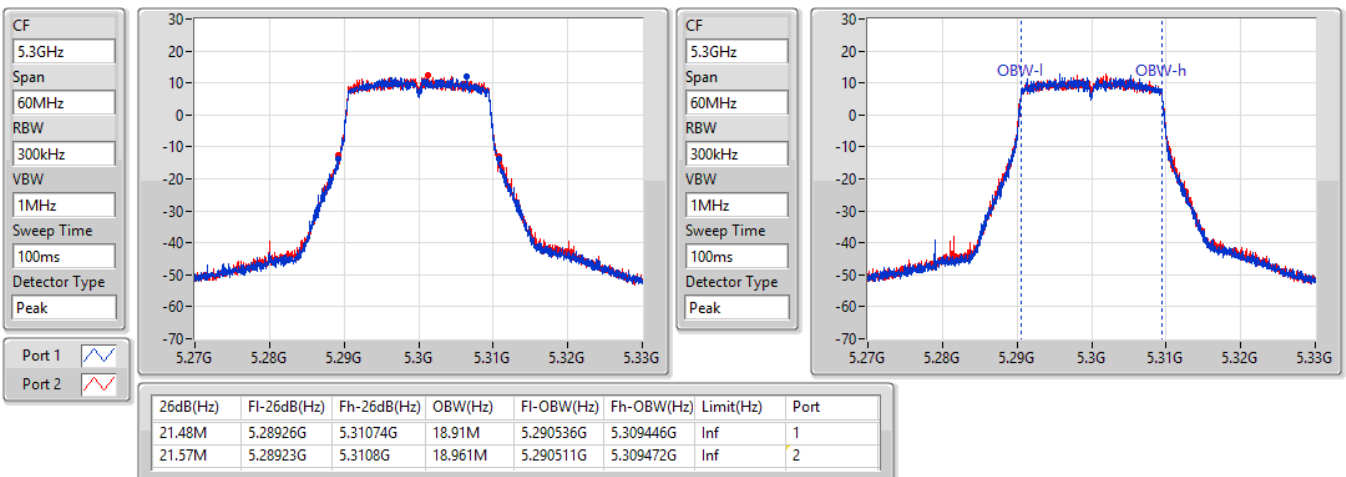


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5300MHz

03/10/2022

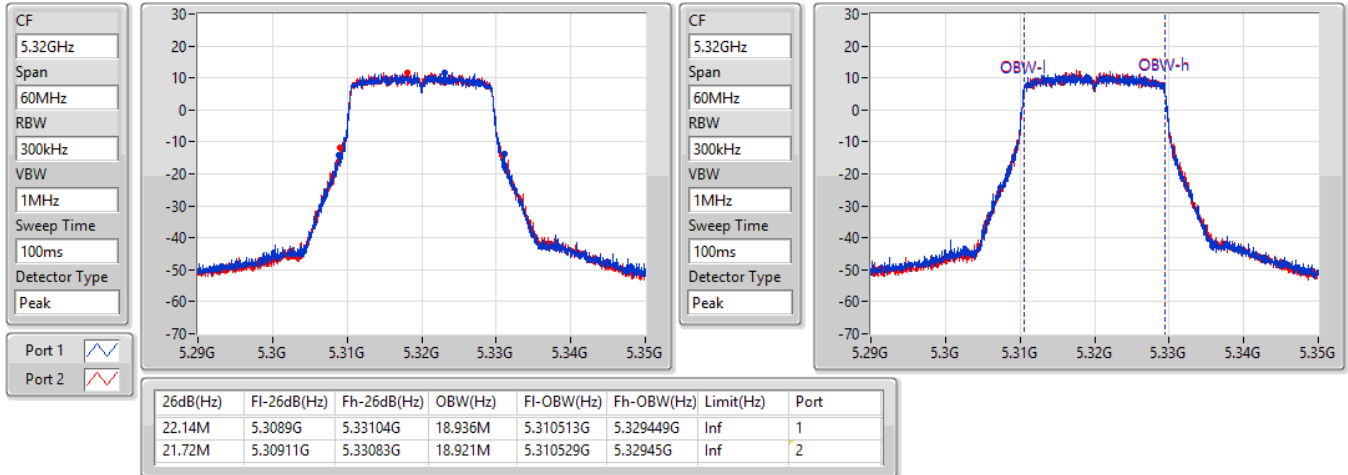


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5320MHz

03/10/2022

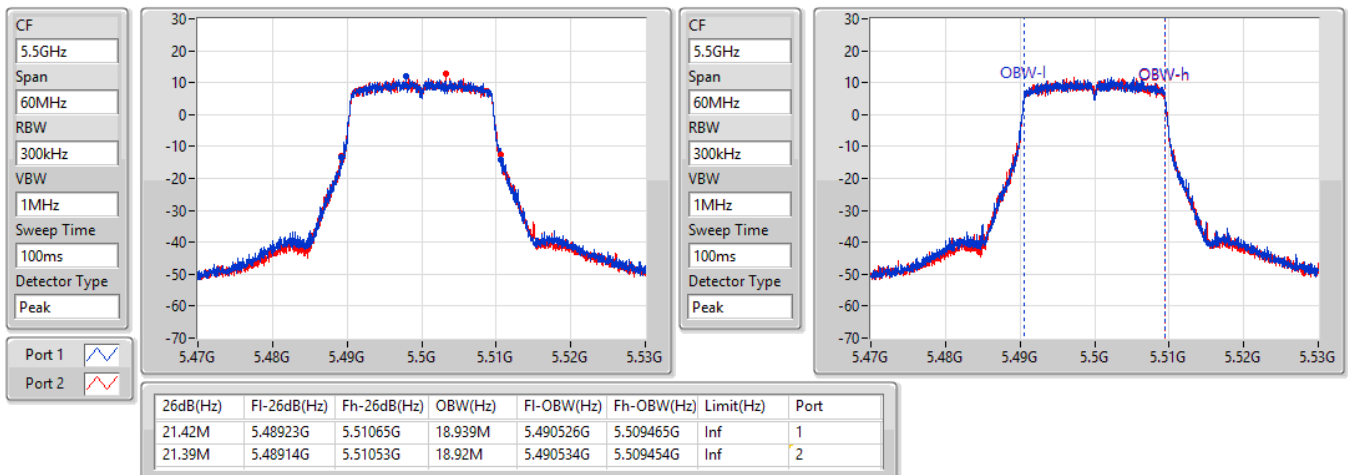


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5500MHz

03/10/2022

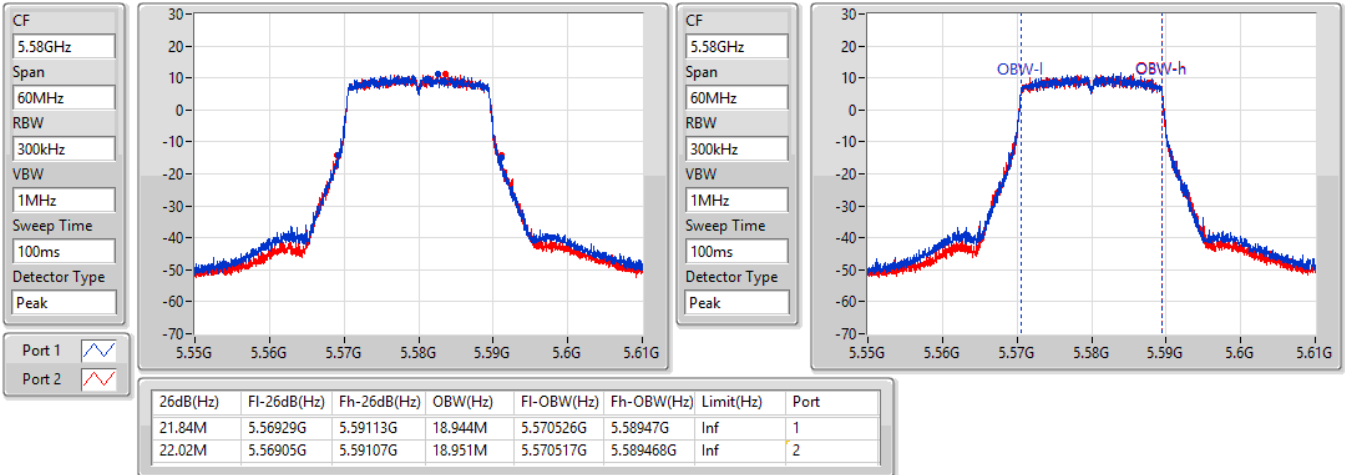


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5580MHz

03/10/2022

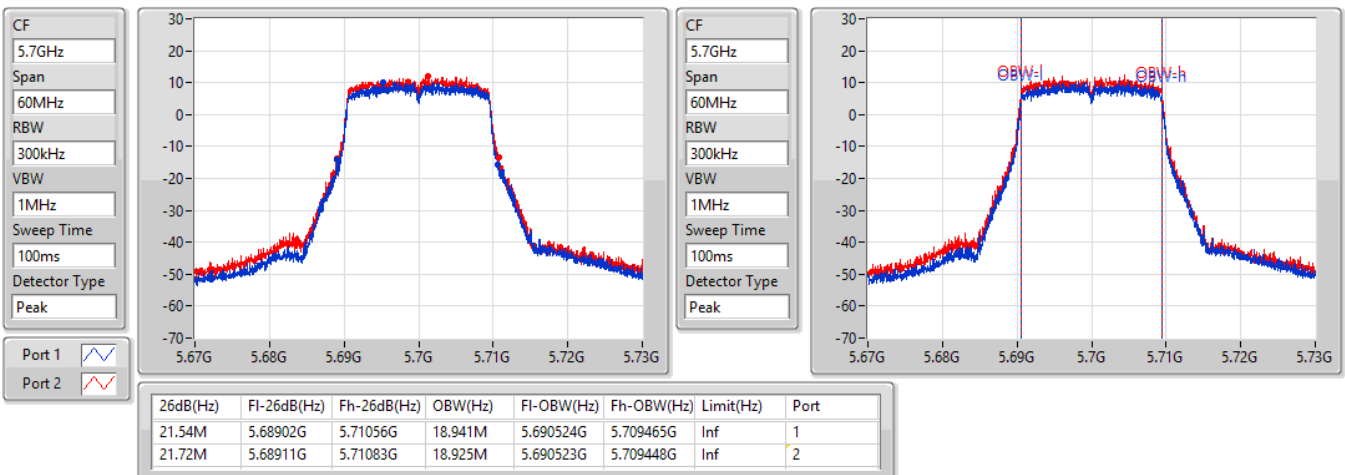


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5700MHz

03/10/2022

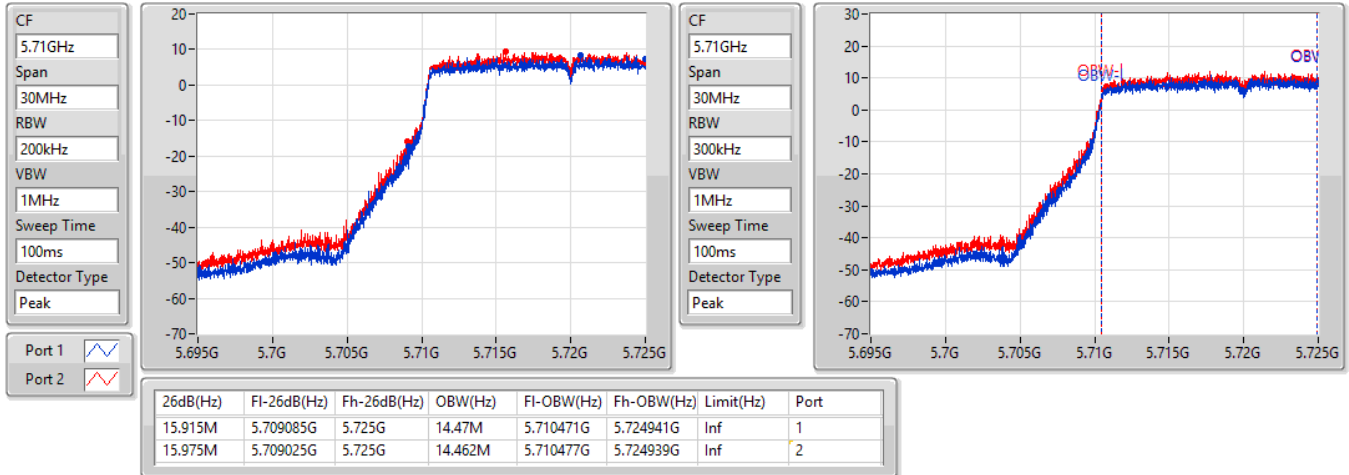


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.47-5.725GHz

03/10/2022

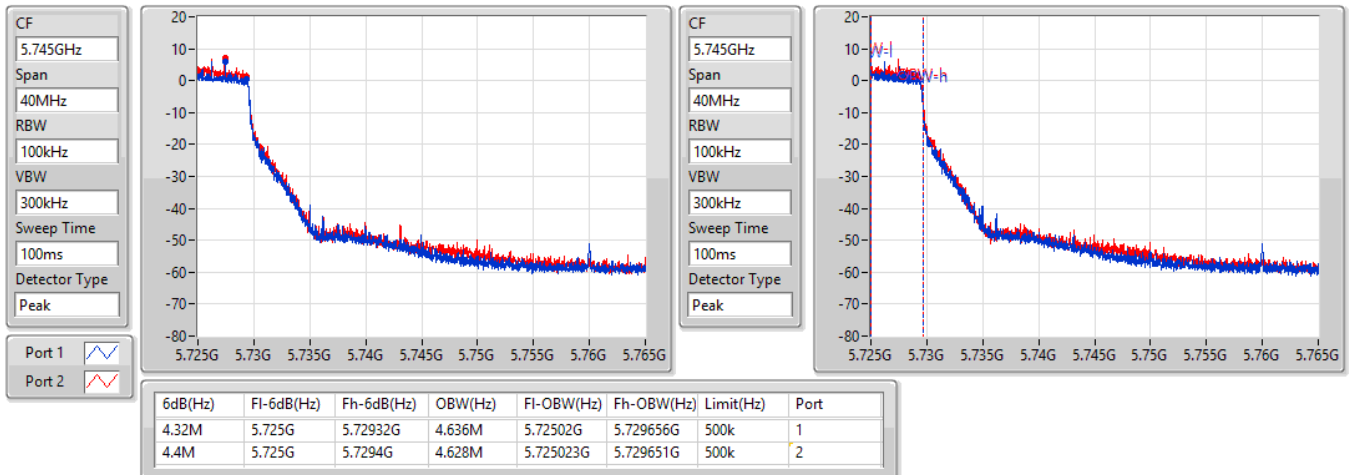


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

03/10/2022

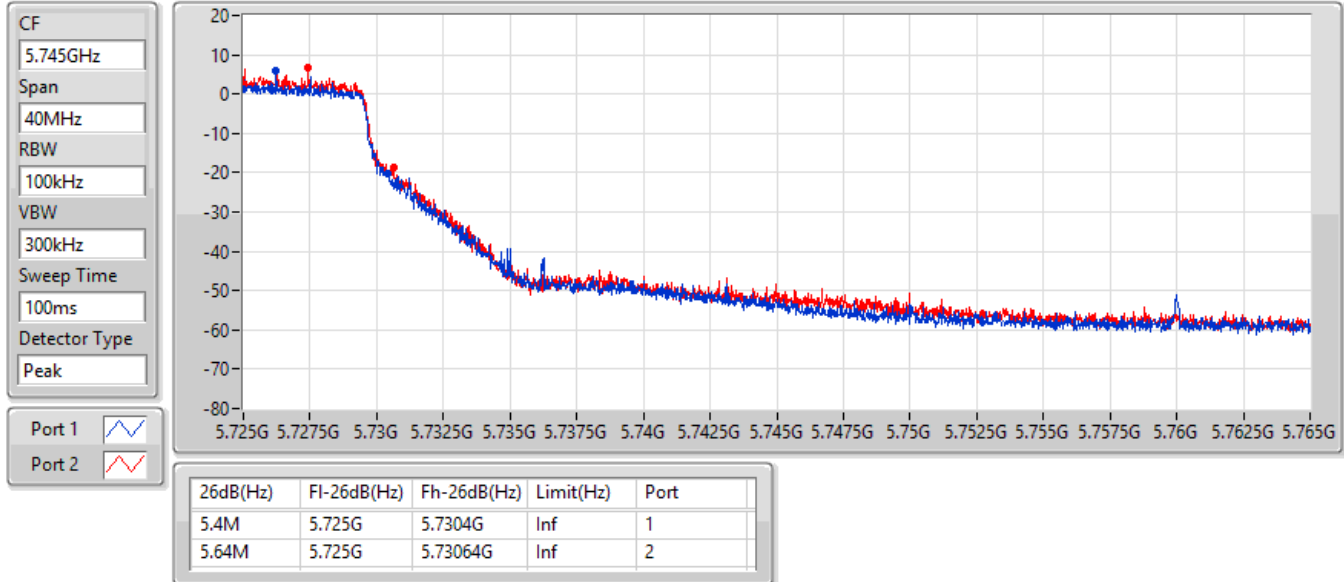


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

03/10/2022

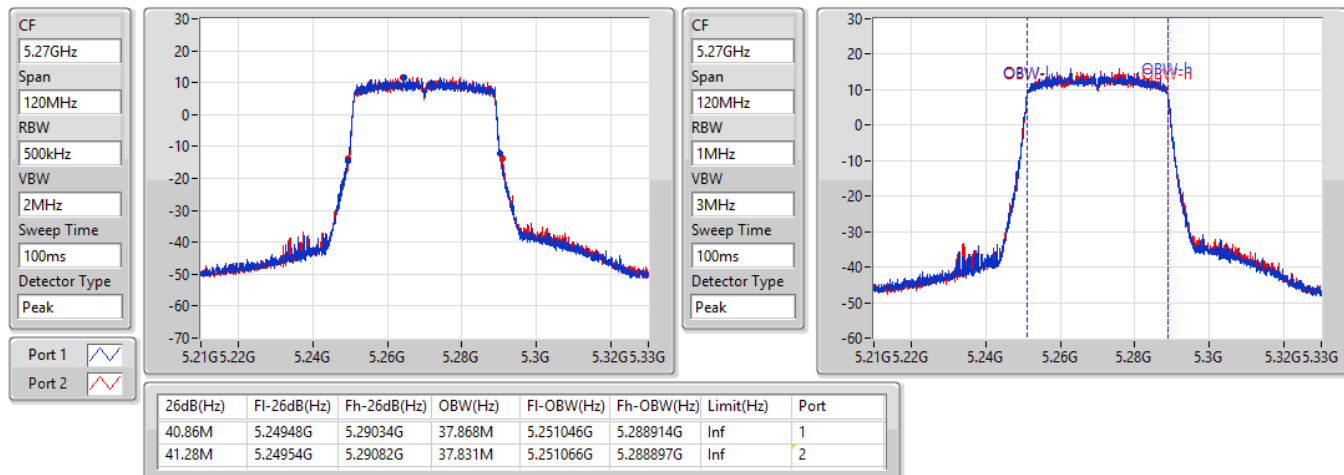


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5270MHz

03/10/2022

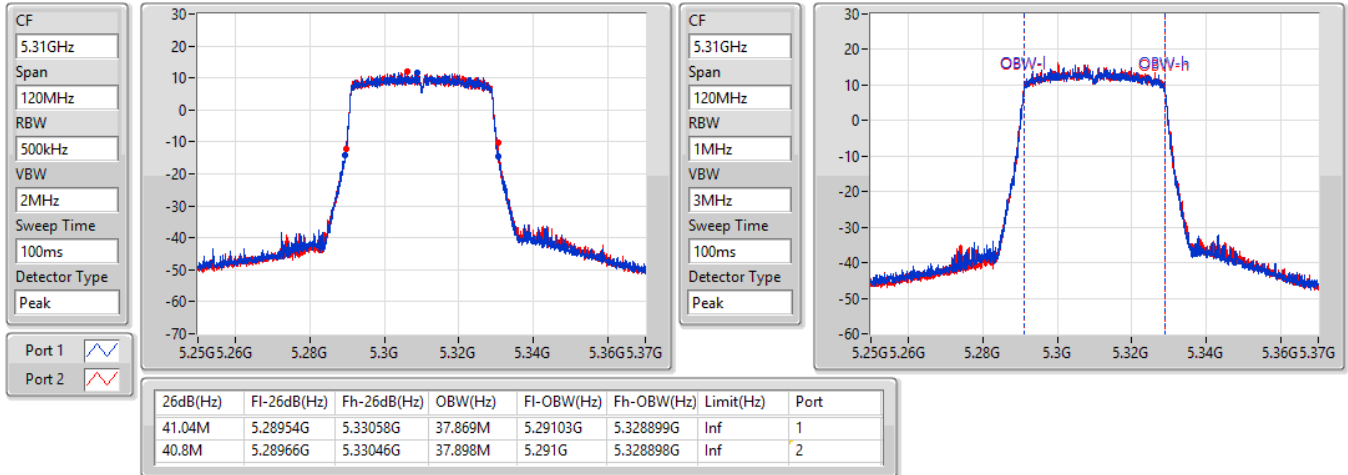


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5310MHz

03/10/2022

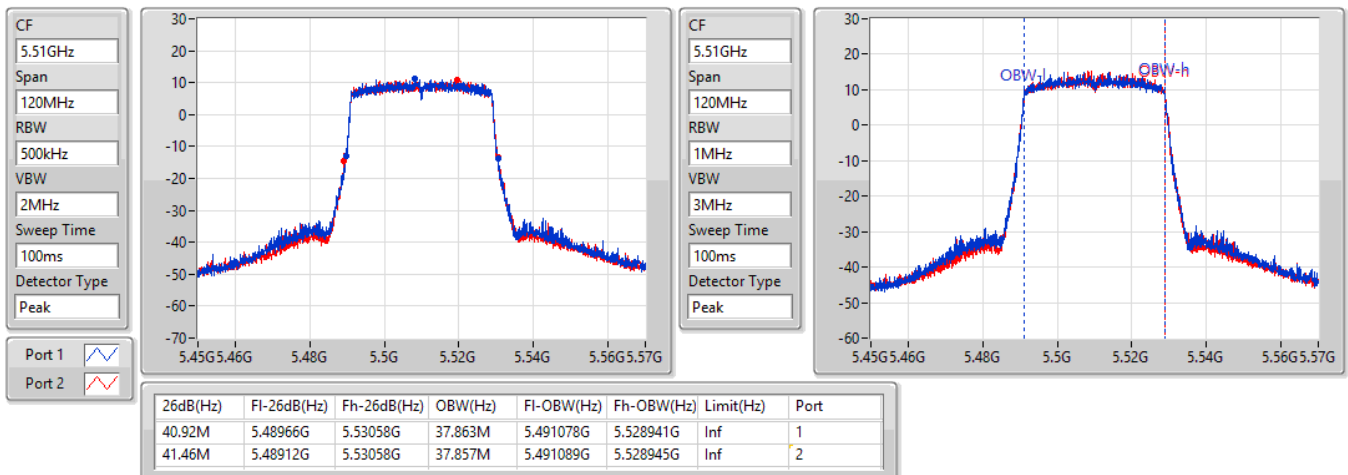


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5510MHz

03/10/2022

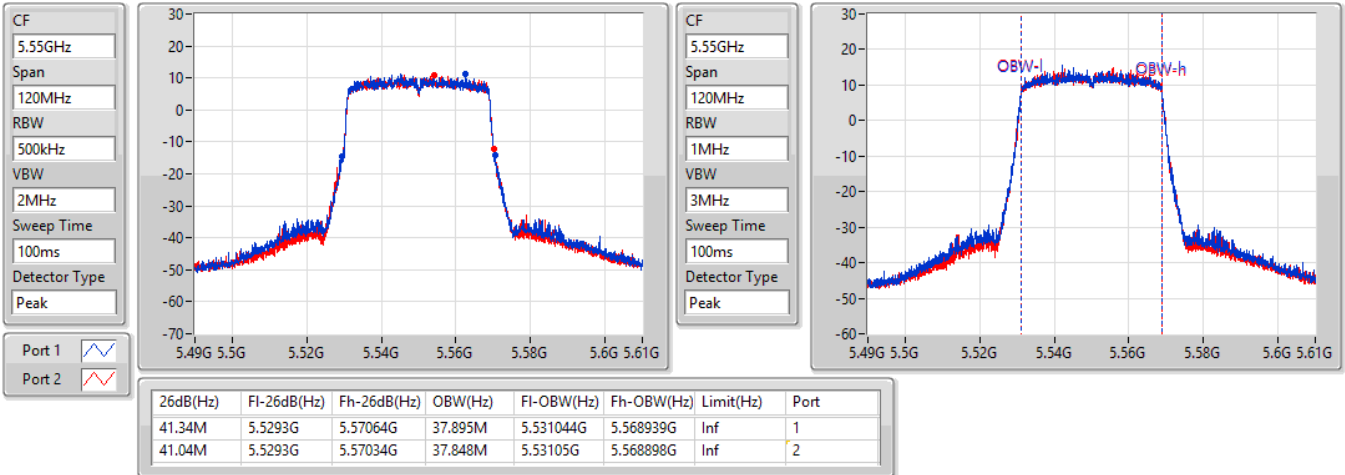


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5550MHz

03/10/2022

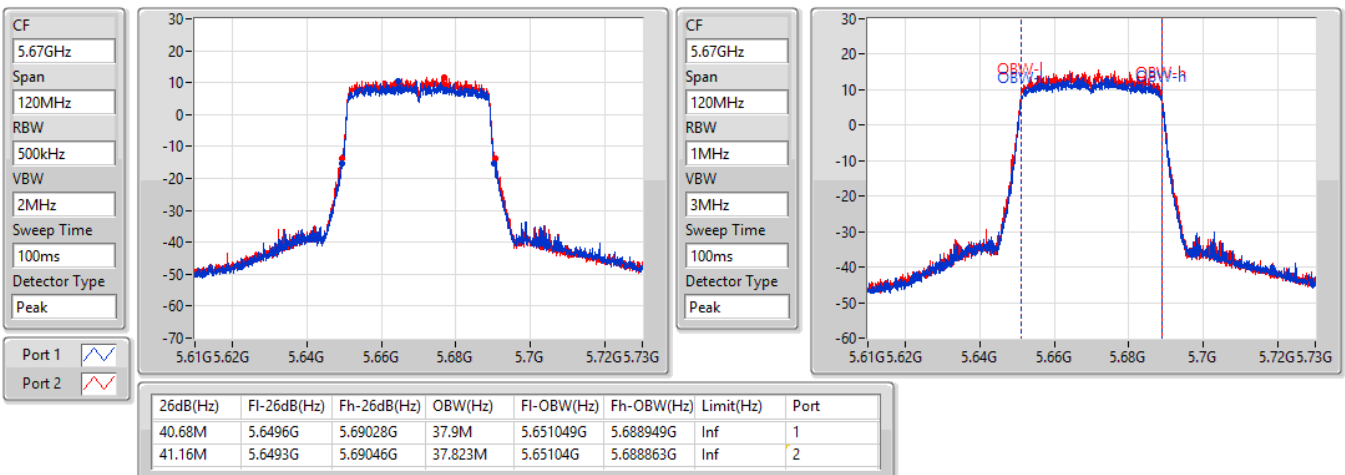


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5670MHz

03/10/2022

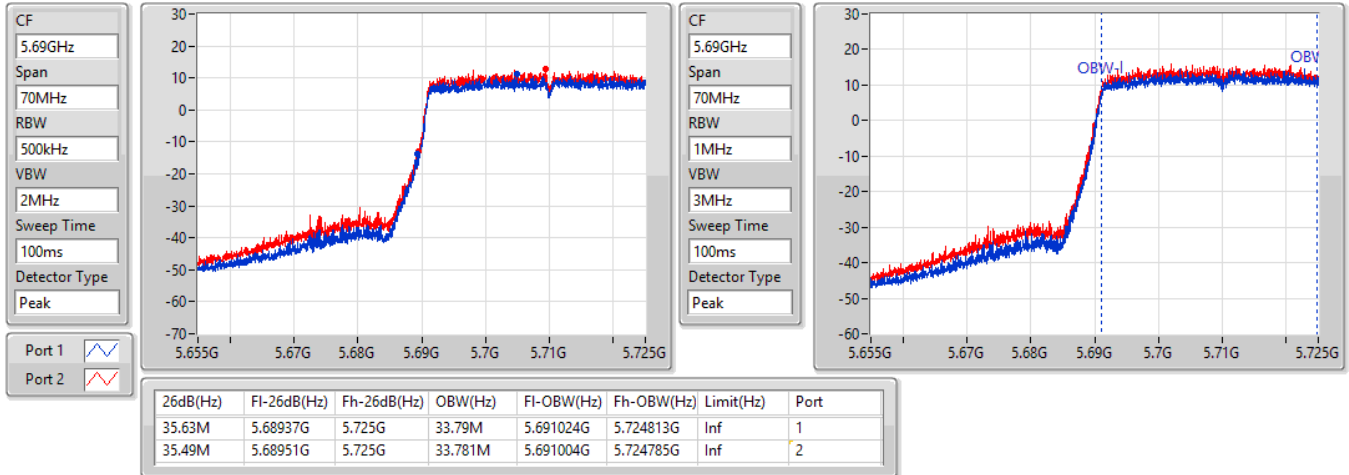


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.47-5.725GHz

03/10/2022

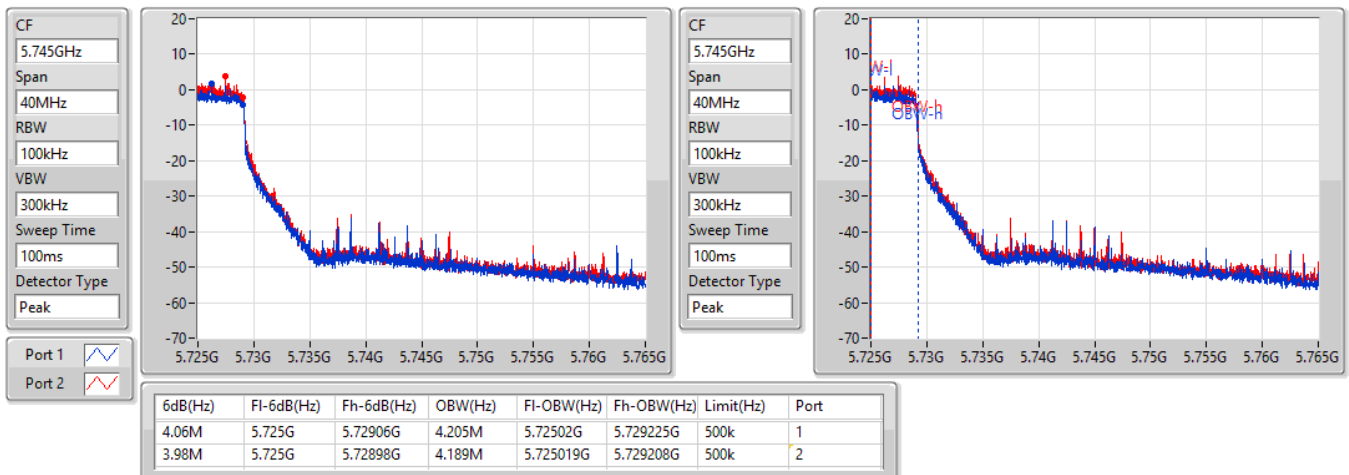


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

03/10/2022

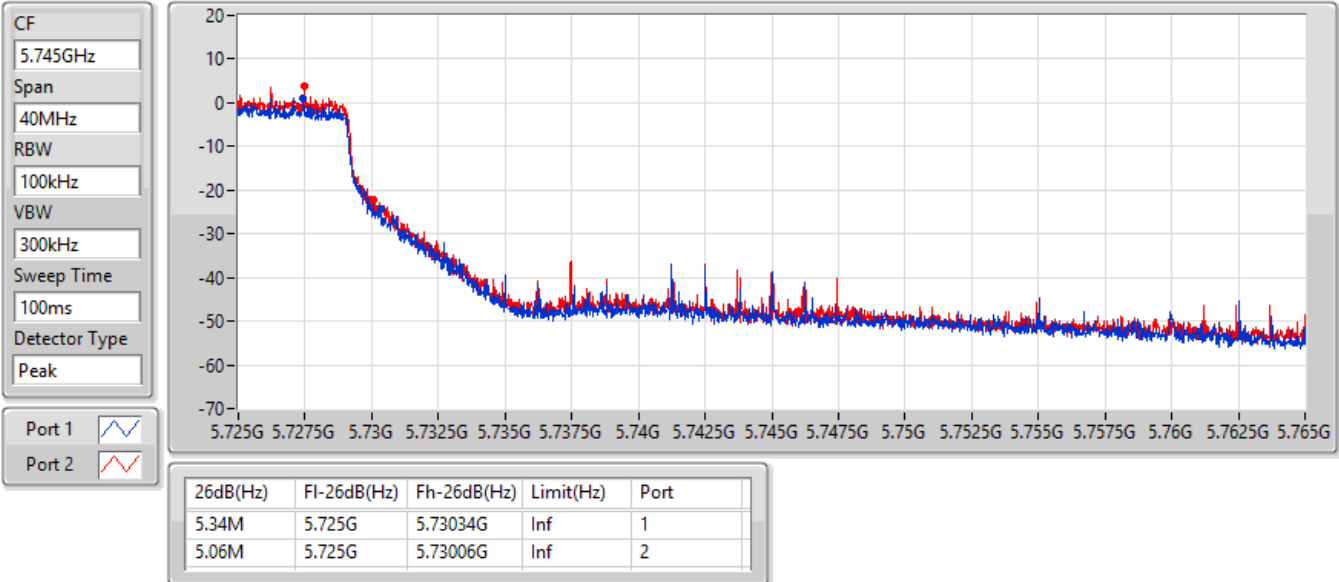


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

03/10/2022

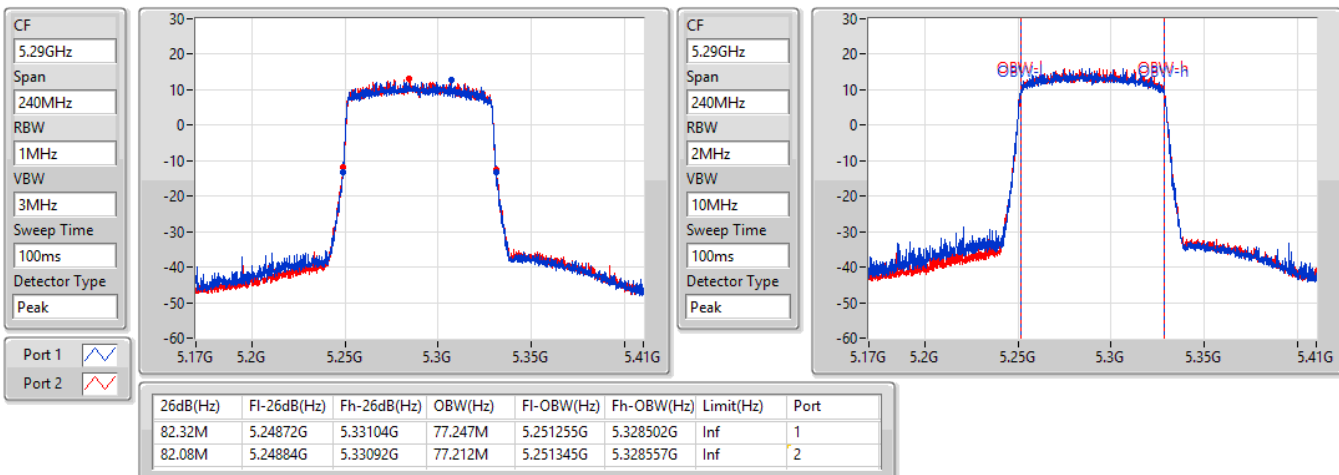


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5290MHz

03/10/2022

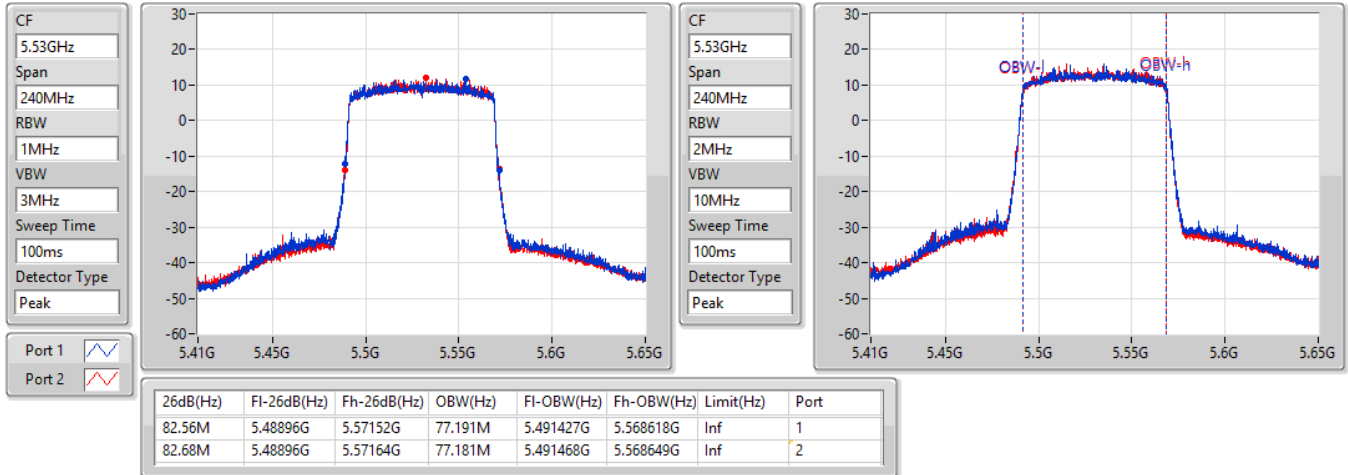


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5530MHz

03/10/2022

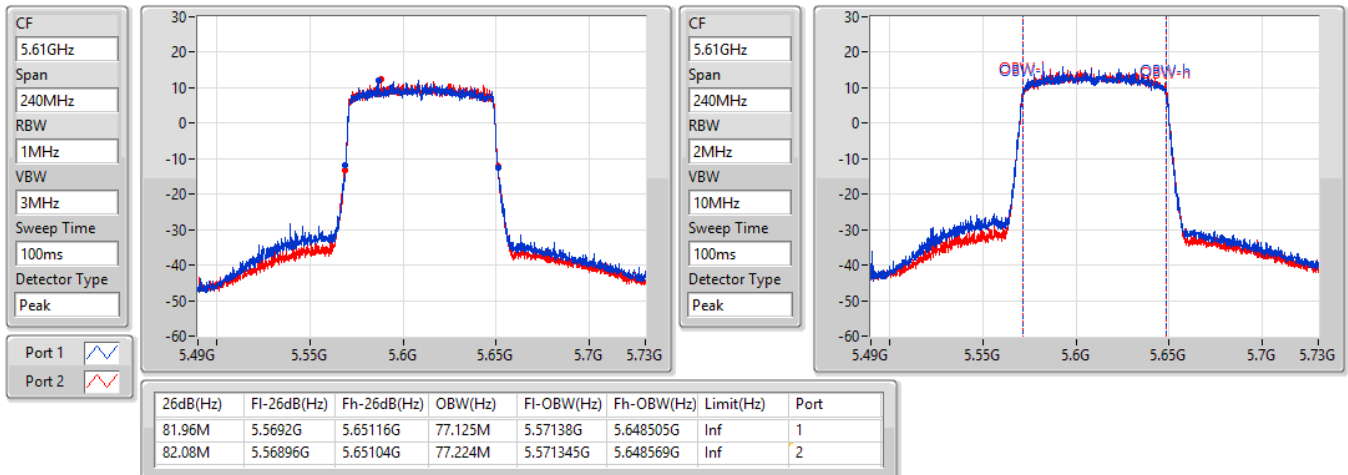


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5610MHz

03/10/2022

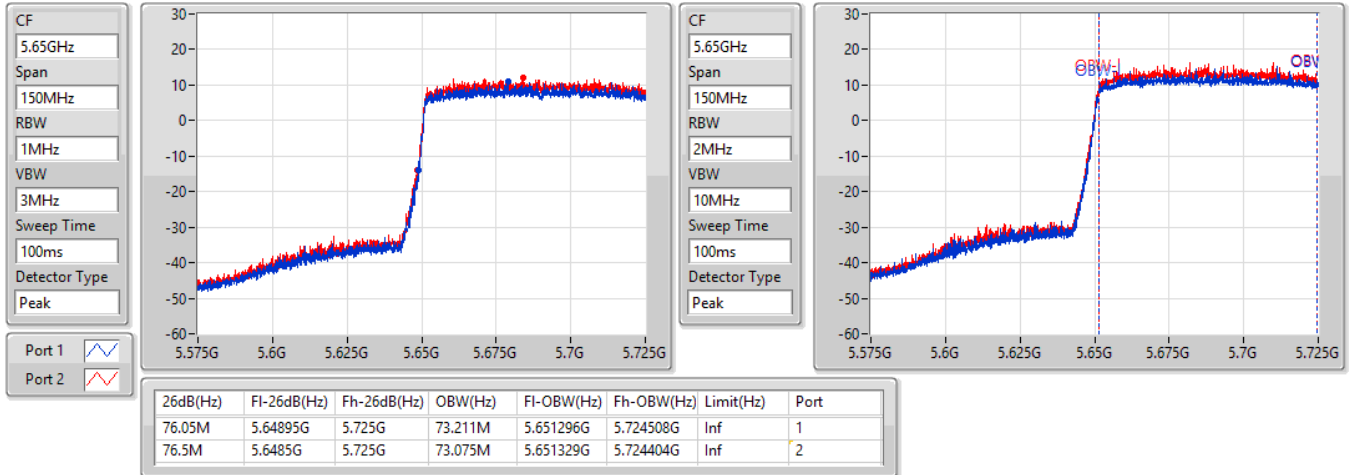


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.47-5.725GHz

03/10/2022

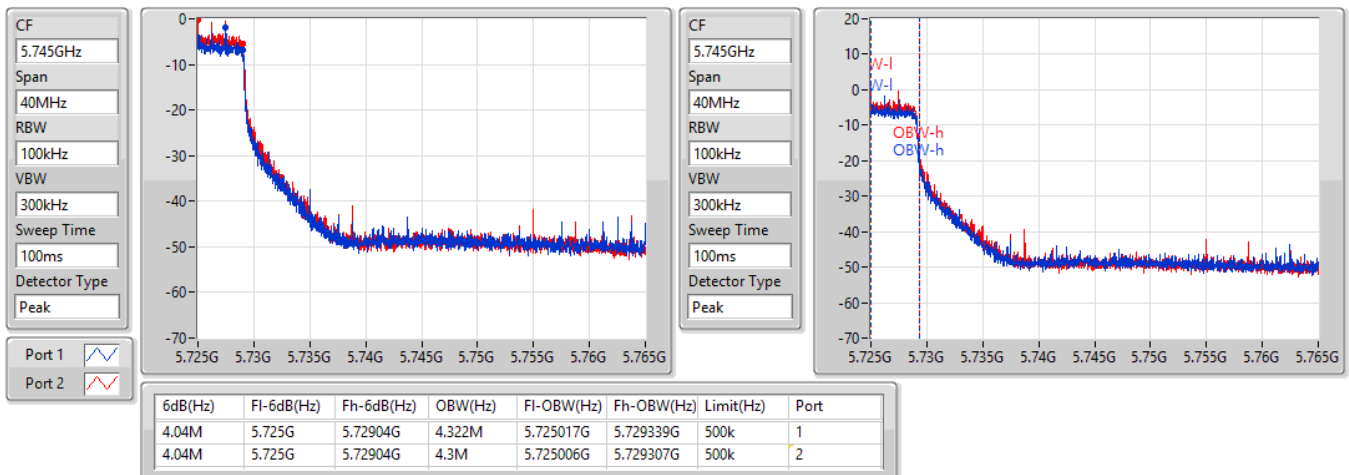


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

03/10/2022

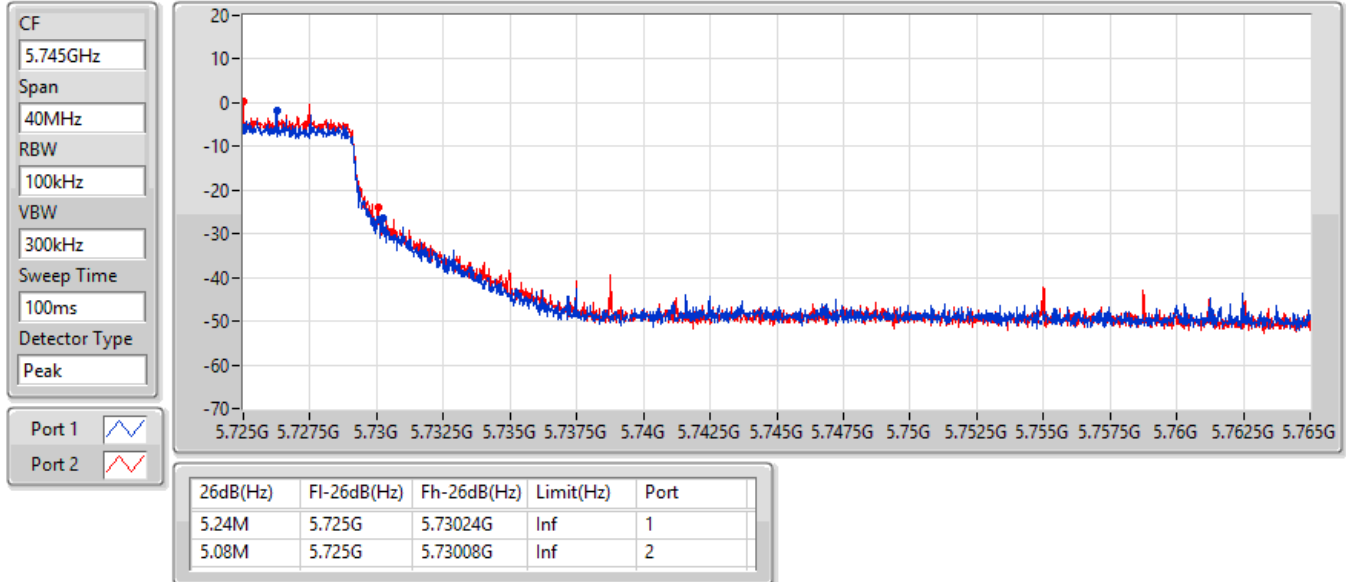


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

03/10/2022



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	20.7M	16.432M	16M4D1D	20.46M	16.432M
802.11ax HEW20_Nss1,(MCS0)_2TX	22.29M	18.951M	19M0D1D	21.54M	18.921M
802.11ax HEW40_Nss1,(MCS0)_2TX	41.16M	37.961M	38M0D1D	40.74M	37.841M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.8M	77.241M	77M2D1D	82.2M	77.241M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	20.67M	16.462M	16M5D1D	15.075M	13.208M
802.11ax HEW20_Nss1,(MCS0)_2TX	21.84M	18.951M	19M0D1D	15.705M	14.453M
802.11ax HEW40_Nss1,(MCS0)_2TX	41.52M	37.901M	37M9D1D	35.385M	33.793M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.68M	77.361M	77M4D1D	75.975M	73.238M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.14M	3.818M	3M82D1D	3.14M	3.798M
802.11ax HEW20_Nss1,(MCS0)_2TX	4.34M	4.658M	4M66D1D	4.06M	4.638M
802.11ax HEW40_Nss1,(MCS0)_2TX	4.08M	4.338M	4M34D1D	3.9M	4.278M
802.11ax HEW80_Nss1,(MCS0)_2TX	4.04M	4.678M	4M68D1D	3.98M	4.518M

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

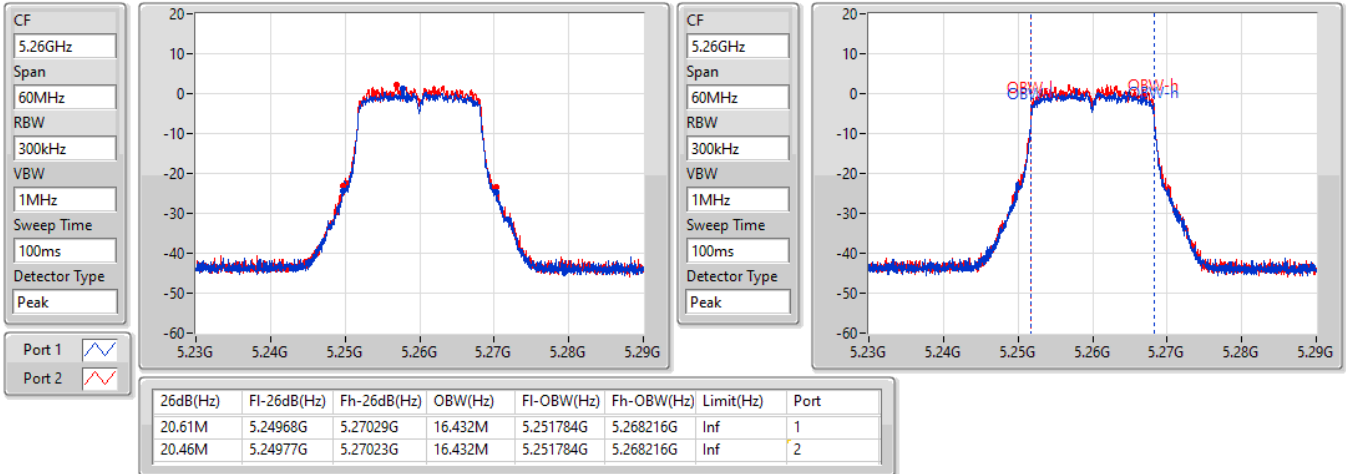
Result

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	20.61M	16.432M	20.46M	16.432M
5300MHz	Pass	Inf	20.46M	16.432M	20.67M	16.432M
5320MHz	Pass	Inf	20.64M	16.432M	20.7M	16.432M
5500MHz	Pass	Inf	20.49M	16.462M	20.64M	16.432M
5580MHz	Pass	Inf	20.58M	16.432M	20.64M	16.432M
5700MHz	Pass	Inf	20.67M	16.462M	20.67M	16.432M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.21M	13.208M	15.075M	13.208M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.818M	3.14M	3.798M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	21.9M	18.921M	22.29M	18.921M
5300MHz	Pass	Inf	21.72M	18.921M	21.6M	18.951M
5320MHz	Pass	Inf	21.54M	18.921M	21.69M	18.921M
5500MHz	Pass	Inf	21.84M	18.951M	21.72M	18.951M
5580MHz	Pass	Inf	21.75M	18.921M	21.39M	18.921M
5700MHz	Pass	Inf	21.3M	18.921M	21.54M	18.951M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.87M	14.453M	15.705M	14.453M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.34M	4.658M	4.06M	4.638M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	40.98M	37.901M	40.74M	37.841M
5310MHz	Pass	Inf	41.16M	37.901M	40.8M	37.961M
5510MHz	Pass	Inf	41.52M	37.901M	41.1M	37.901M
5550MHz	Pass	Inf	41.04M	37.901M	40.68M	37.901M
5670MHz	Pass	Inf	40.68M	37.901M	40.68M	37.901M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.385M	33.793M	35.63M	33.793M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.9M	4.338M	4.08M	4.278M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	82.2M	77.241M	82.8M	77.241M
5530MHz	Pass	Inf	81.72M	77.241M	82.68M	77.241M
5610MHz	Pass	Inf	82.44M	77.121M	82.08M	77.361M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.125M	73.238M	75.975M	73.238M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.98M	4.678M	4.04M	4.518M

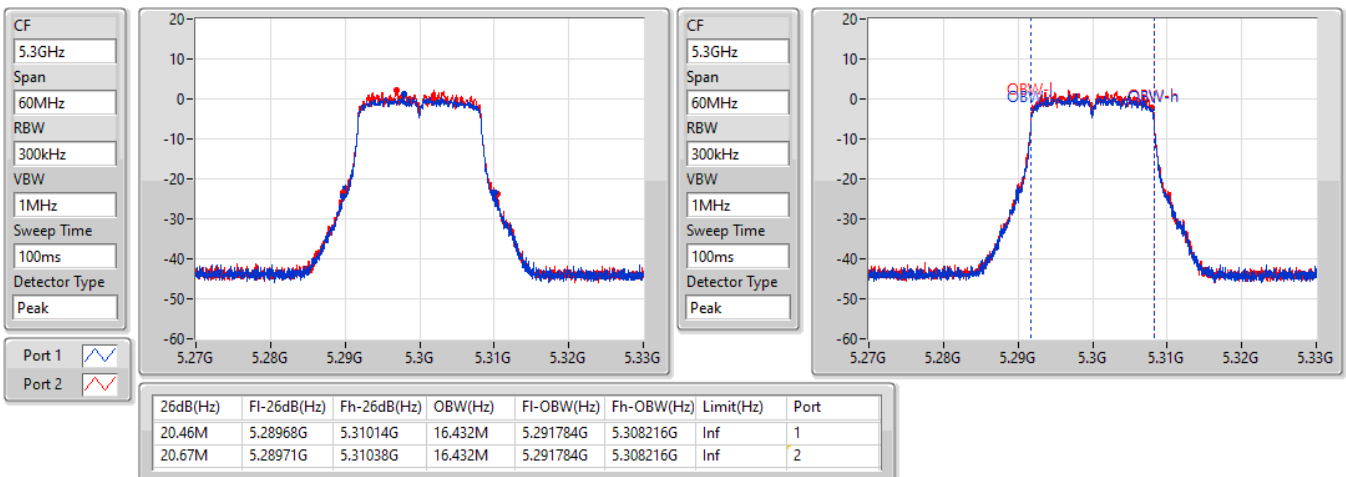
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_2TX
EBW
5260MHz

12/09/2022

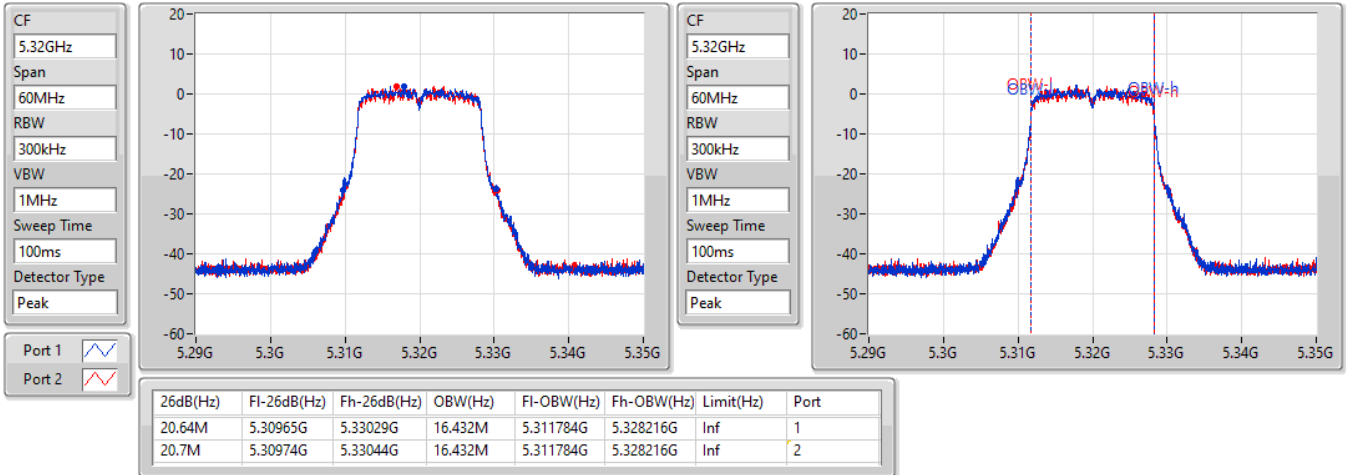

802.11a_Nss1,(6Mbps)_2TX
EBW
5300MHz

12/09/2022

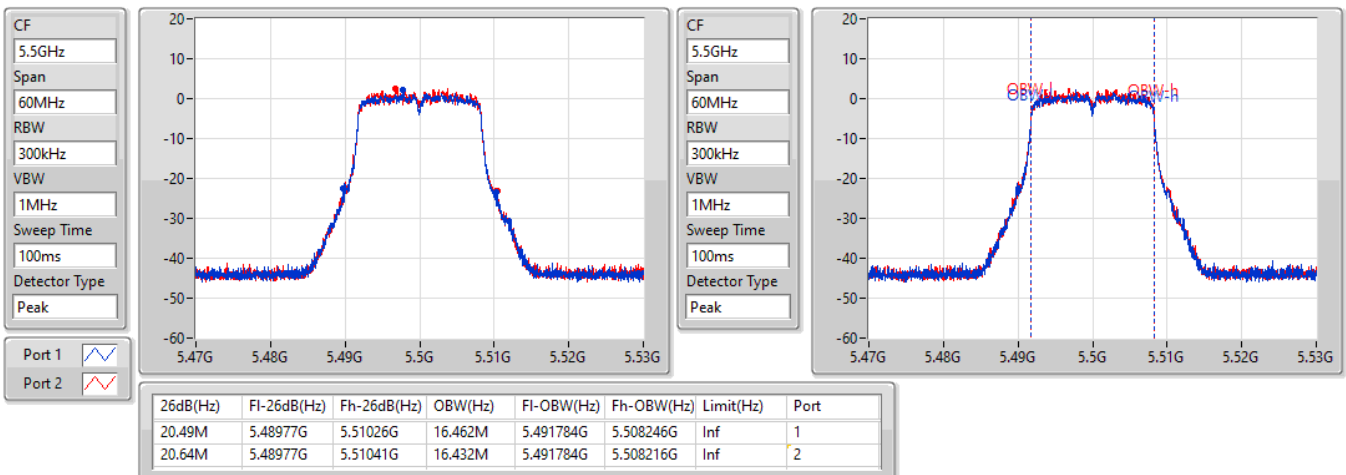


802.11a_Nss1,(6Mbps)_2TX
EBW
5320MHz

12/09/2022

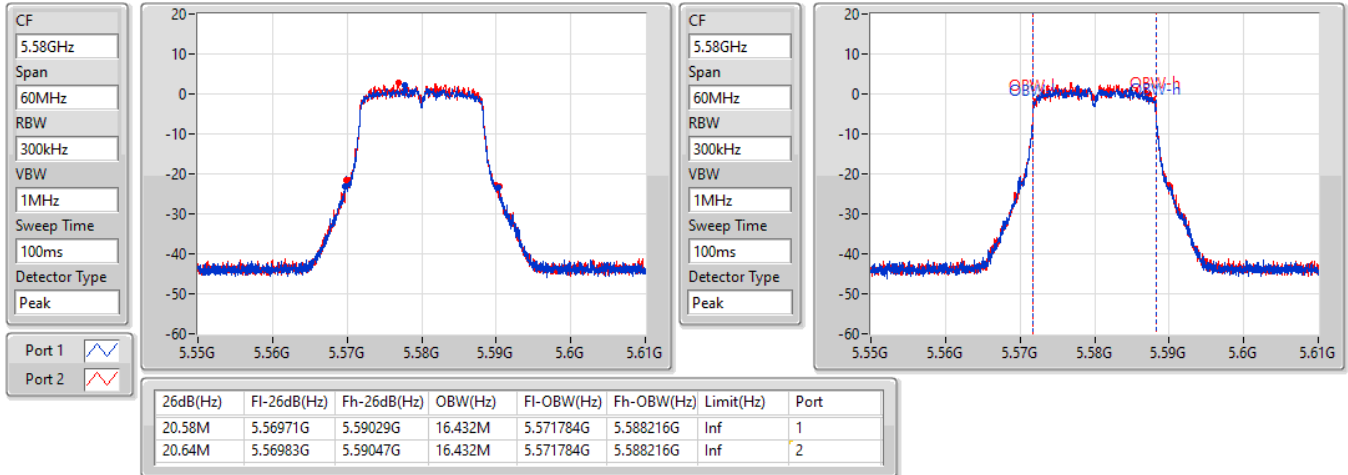

802.11a_Nss1,(6Mbps)_2TX
EBW
5500MHz

12/09/2022

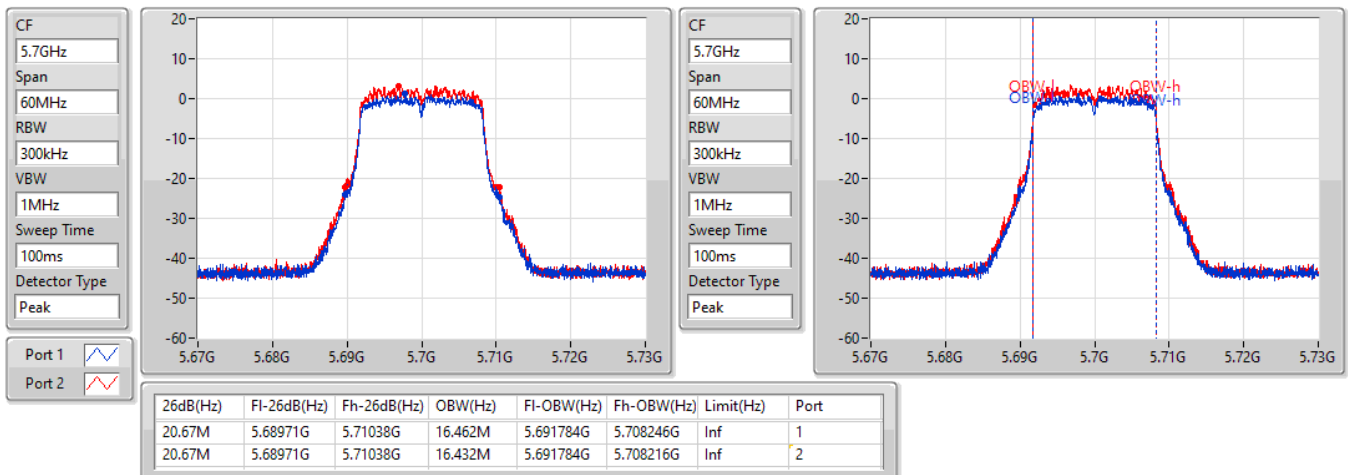


802.11a_Nss1,(6Mbps)_2TX
EBW
5580MHz

12/09/2022

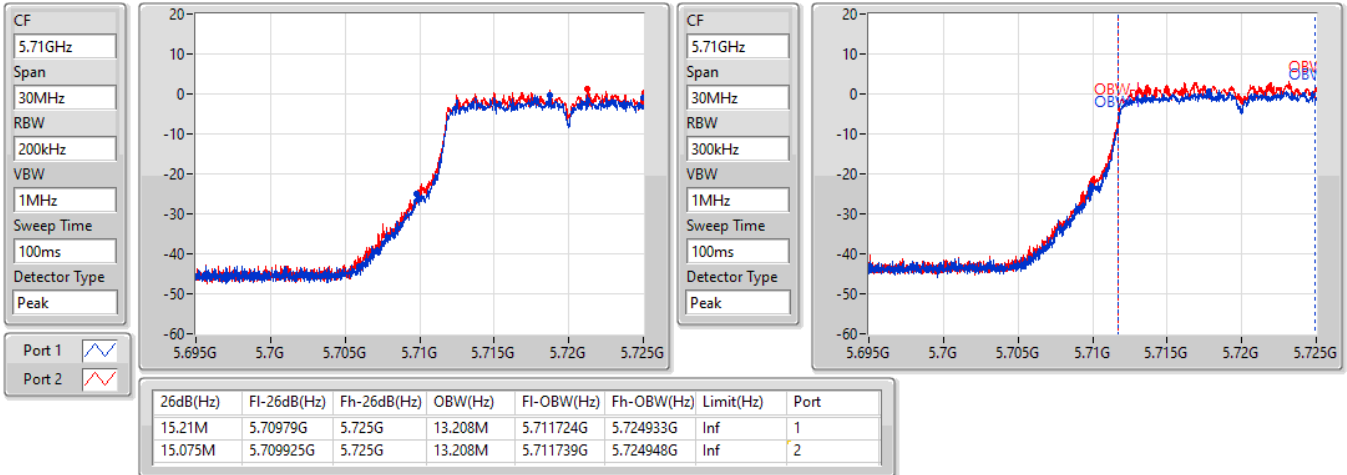

802.11a_Nss1,(6Mbps)_2TX
EBW
5700MHz

12/09/2022

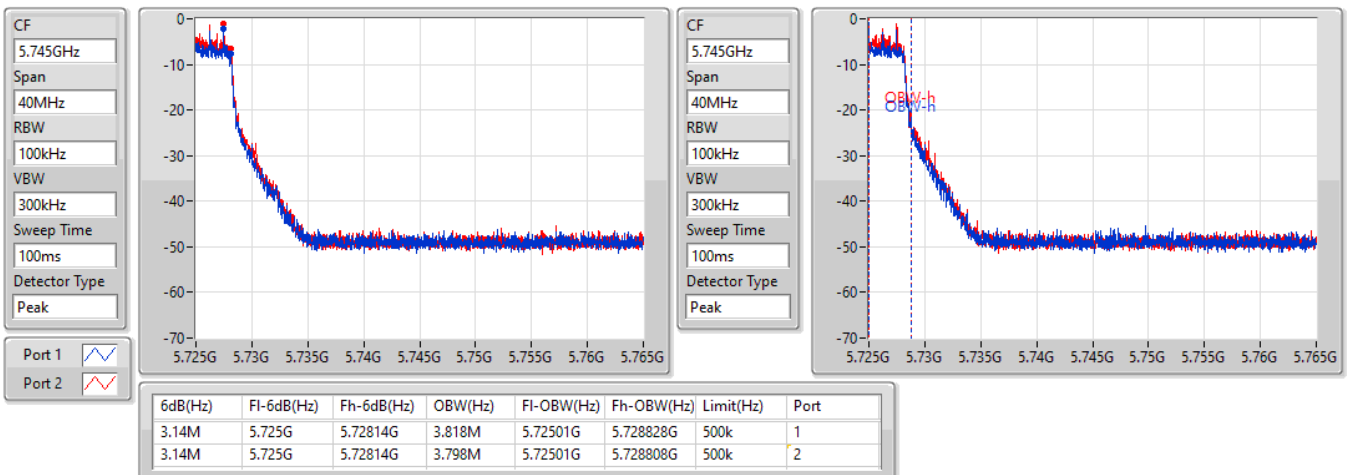


802.11a_Nss1,(6Mbps)_2TX
EBW
5720MHz Straddle 5.47-5.725GHz

12/09/2022


802.11a_Nss1,(6Mbps)_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

12/09/2022

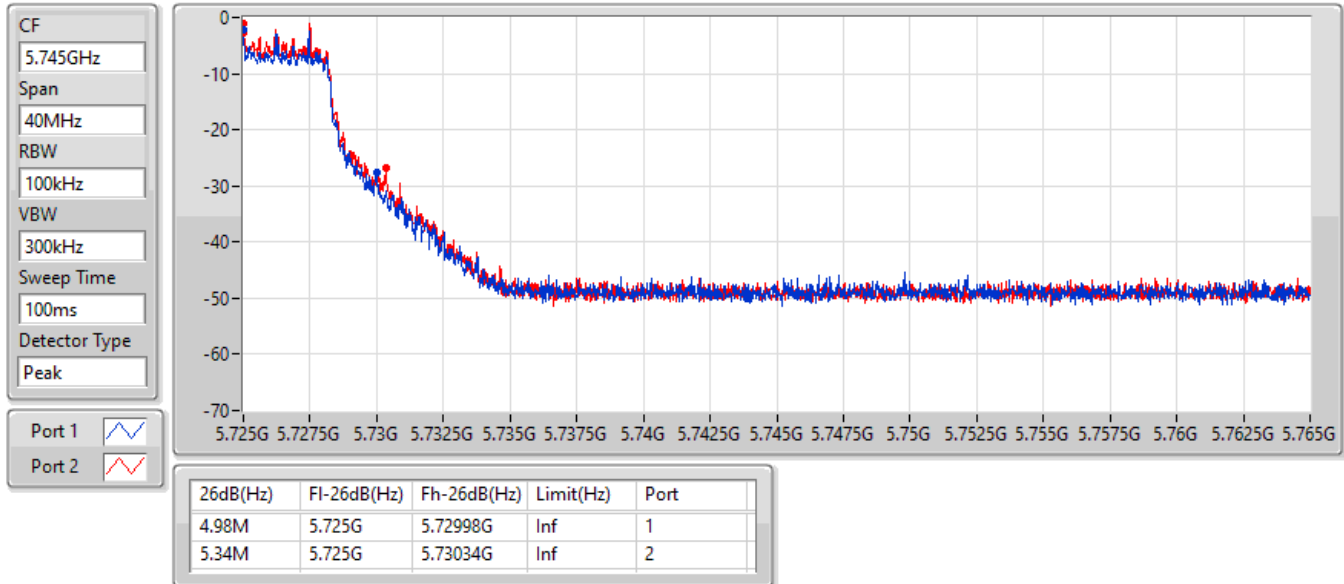


802.11a_Nss1,(6Mbps)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

12/09/2022

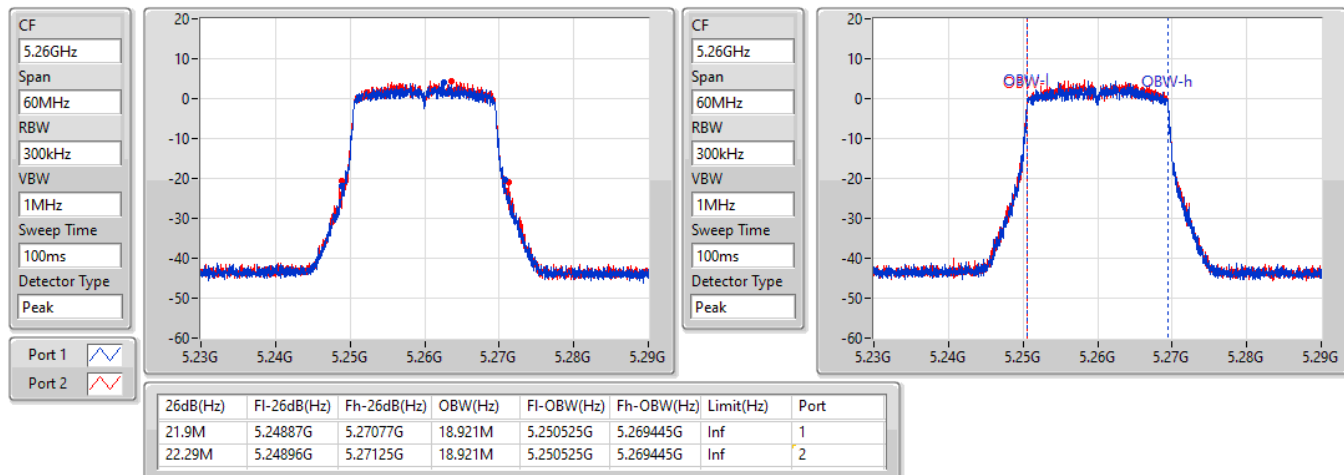


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

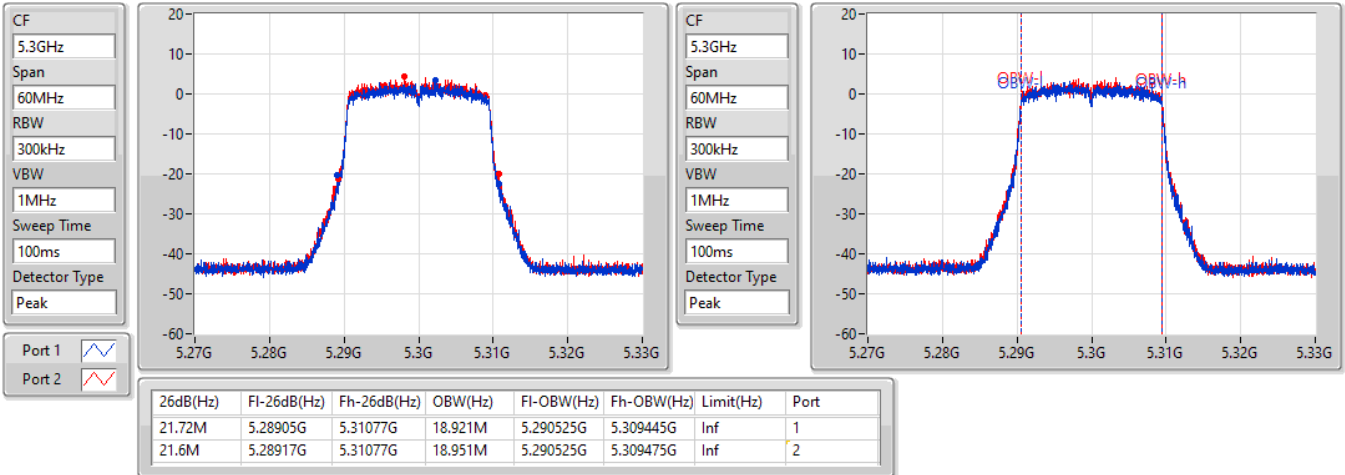
5260MHz

12/09/2022

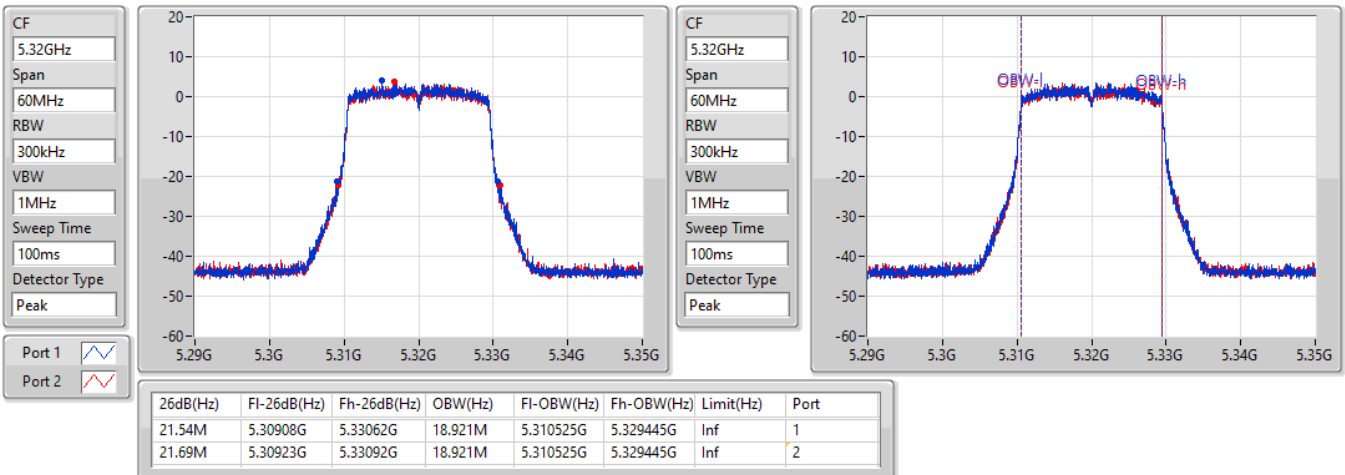


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5300MHz

12/09/2022

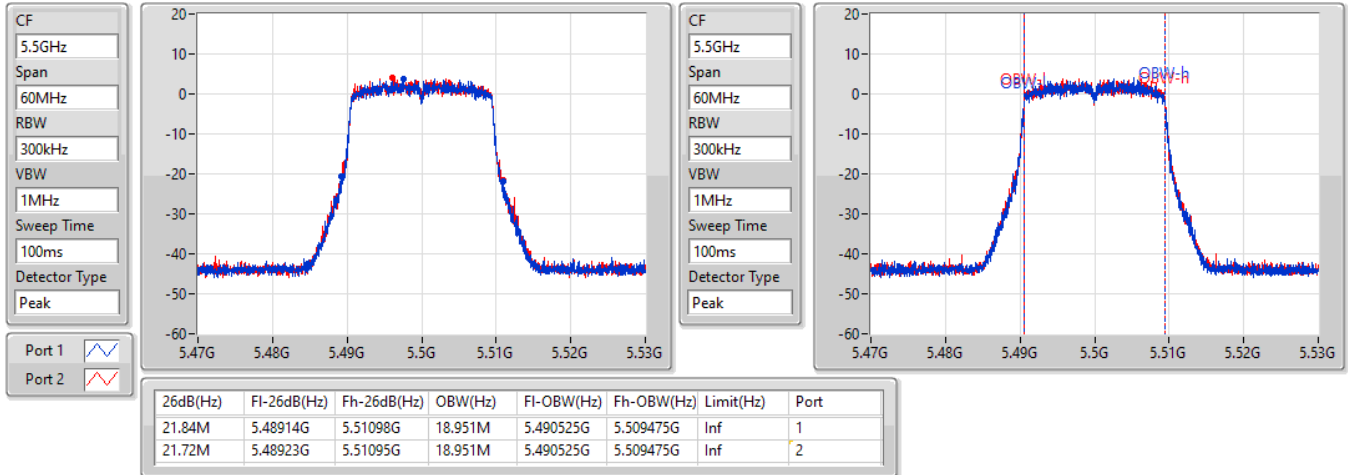

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5320MHz

12/09/2022

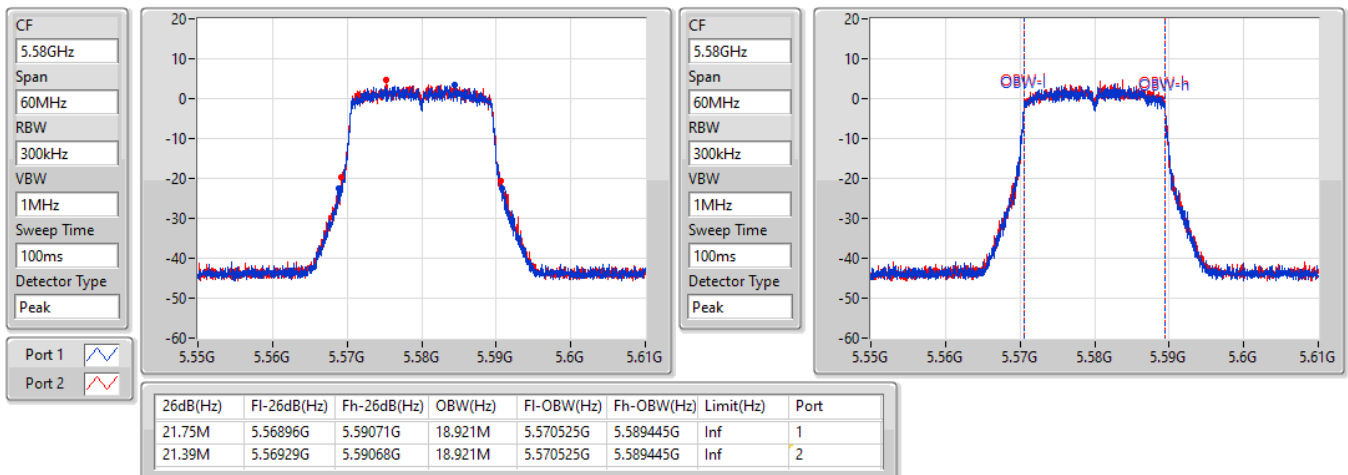


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5500MHz

12/09/2022

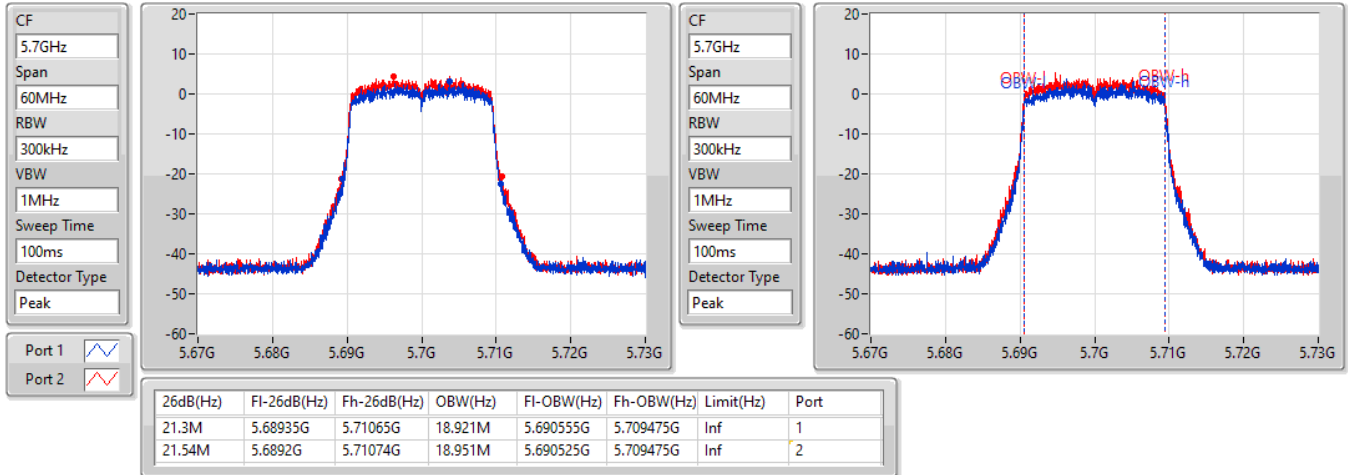

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5580MHz

12/09/2022

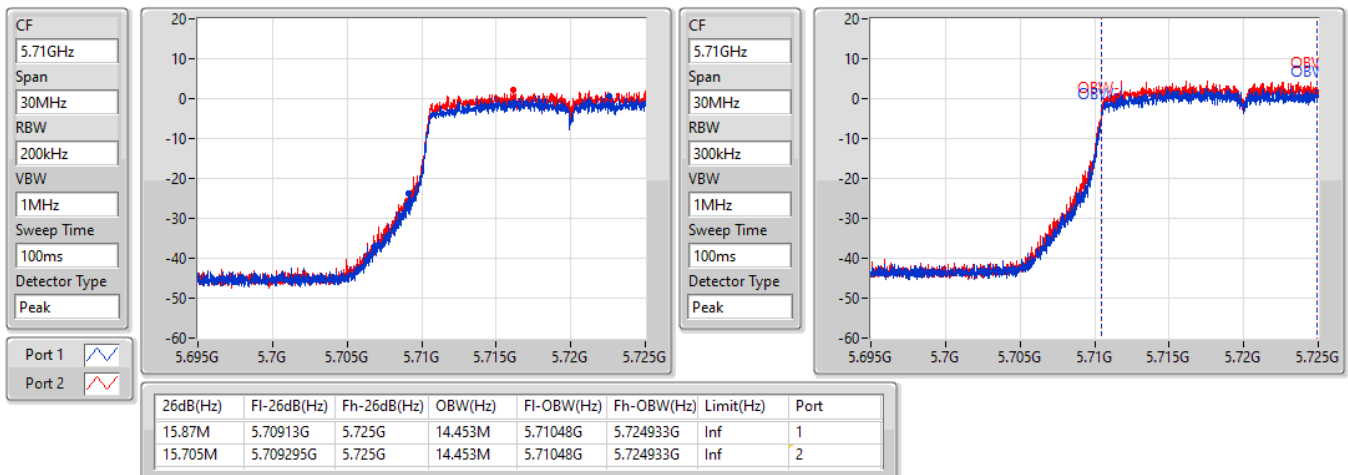


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5700MHz

12/09/2022

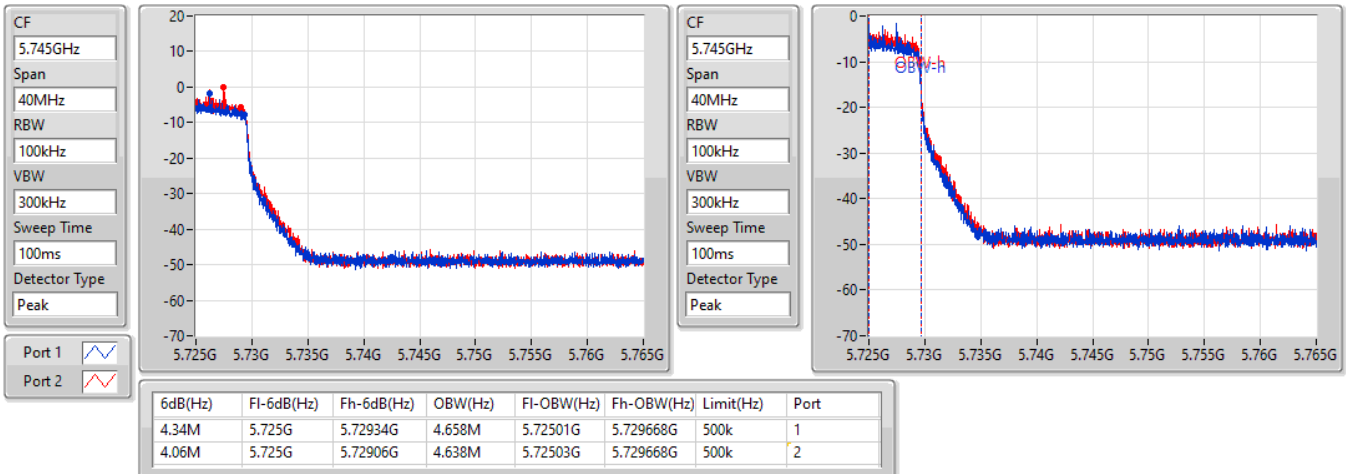

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.47-5.725GHz

12/09/2022

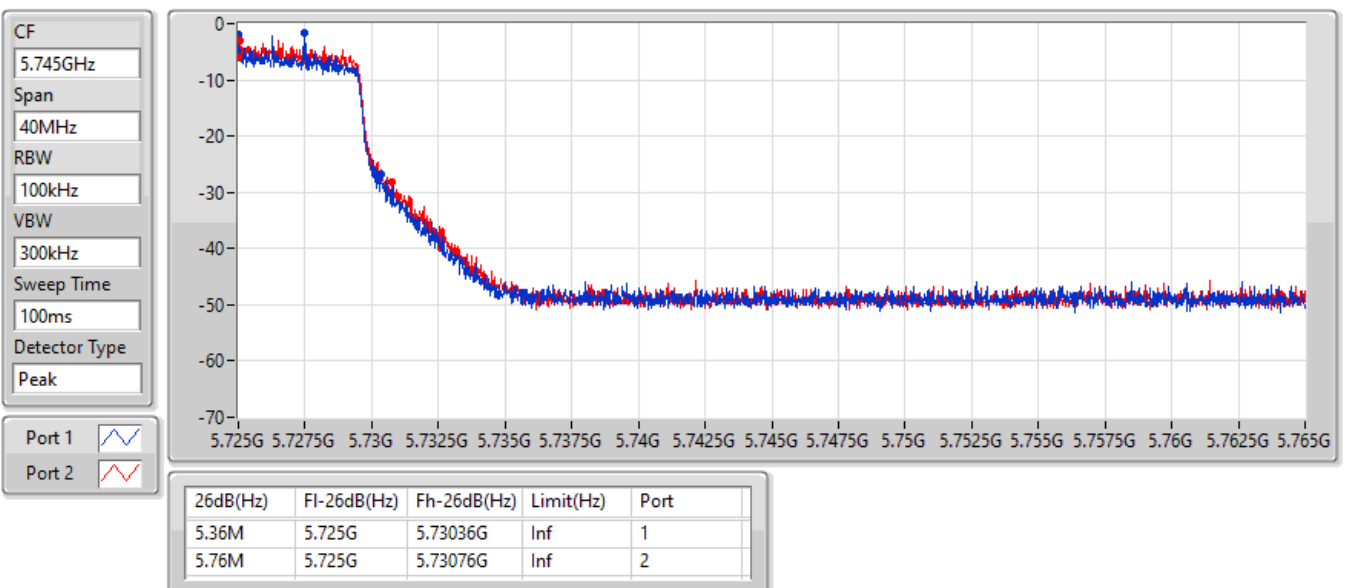


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

12/09/2022

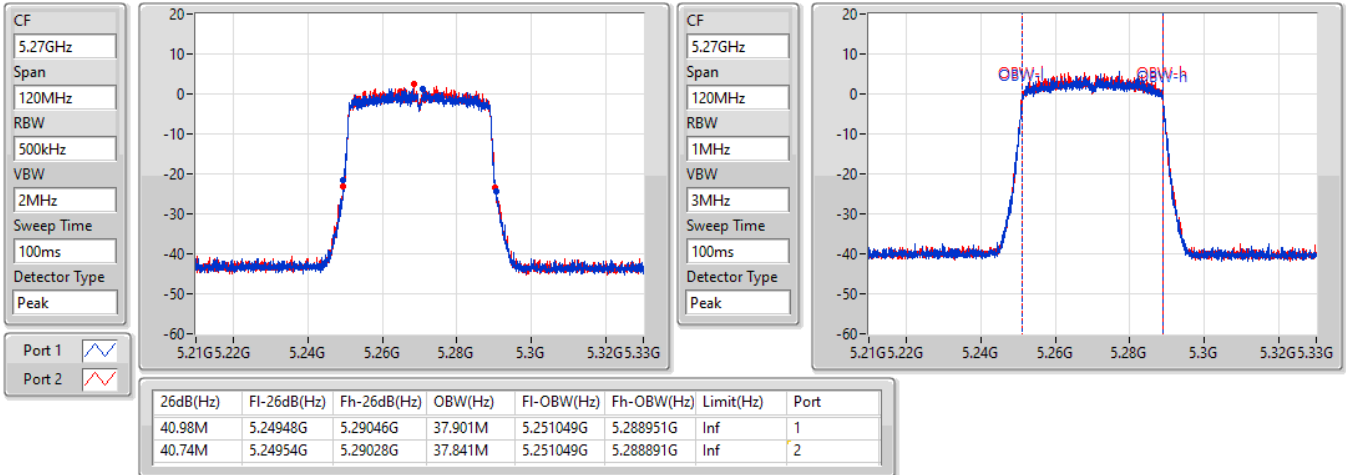

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

12/09/2022

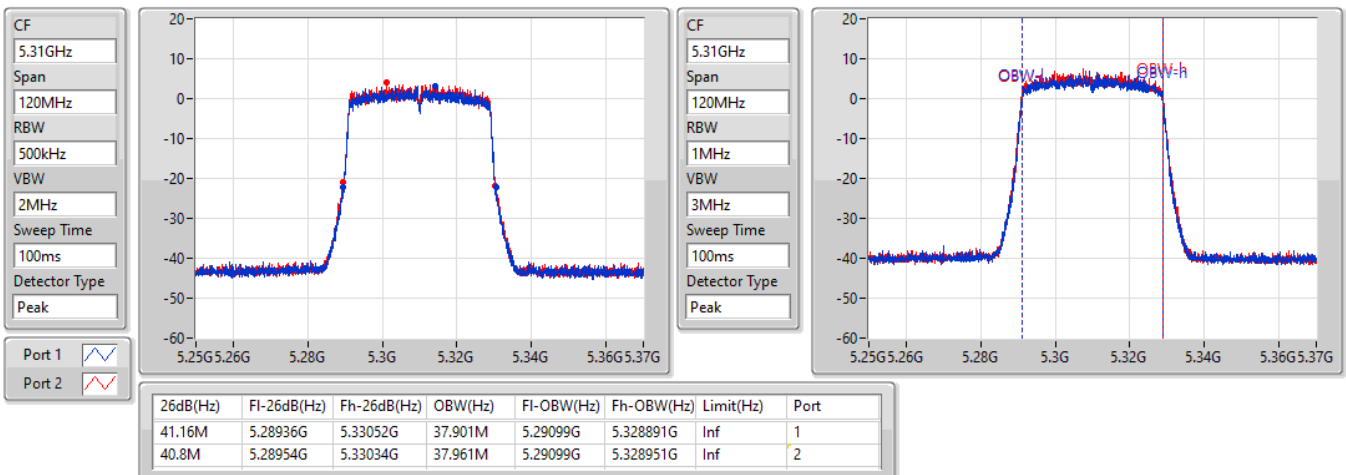


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5270MHz

07/09/2022

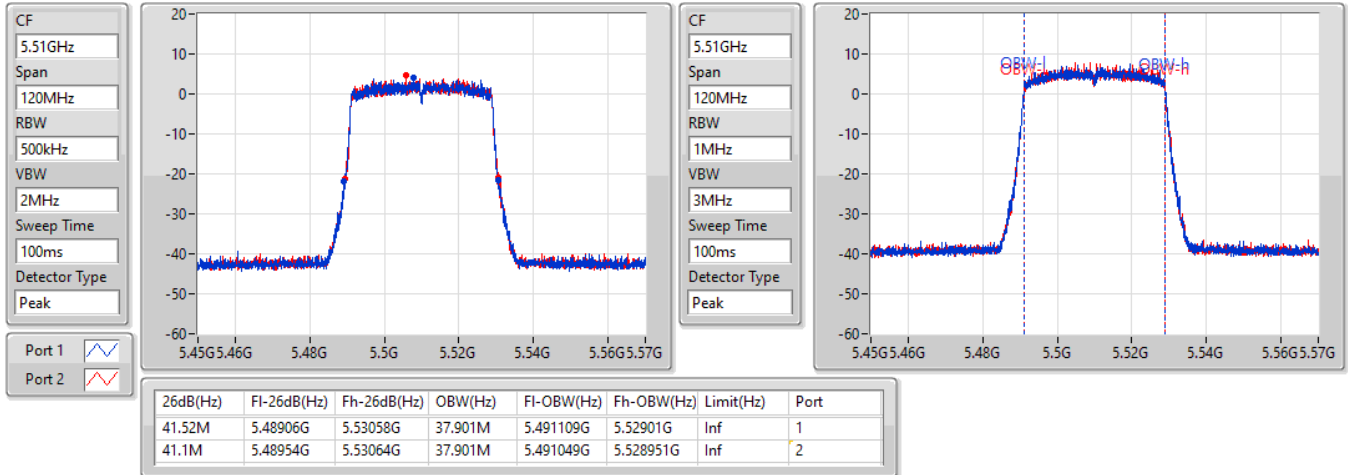

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5310MHz

07/09/2022

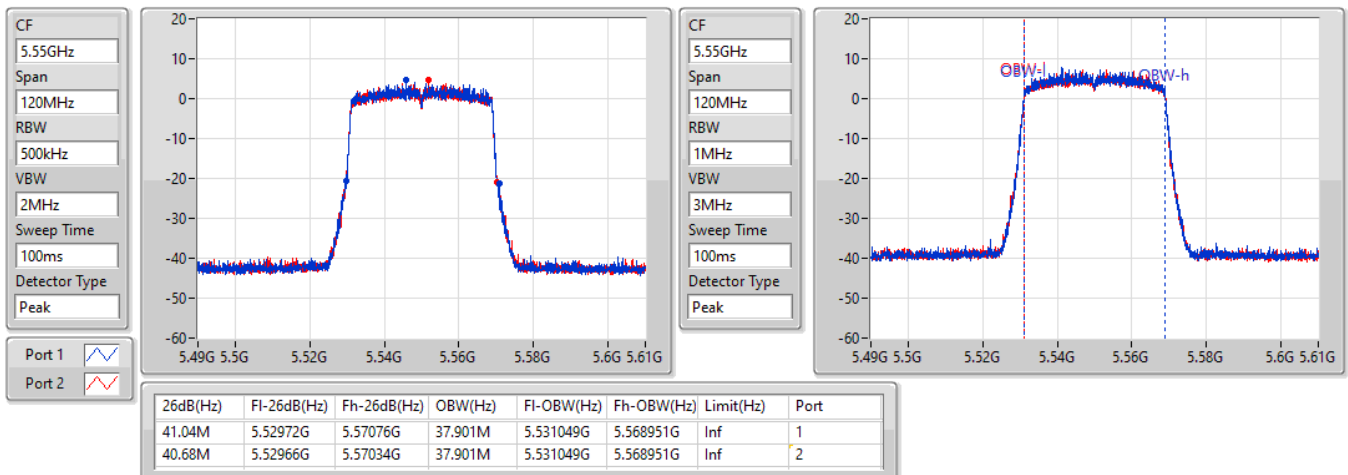


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5510MHz

07/09/2022

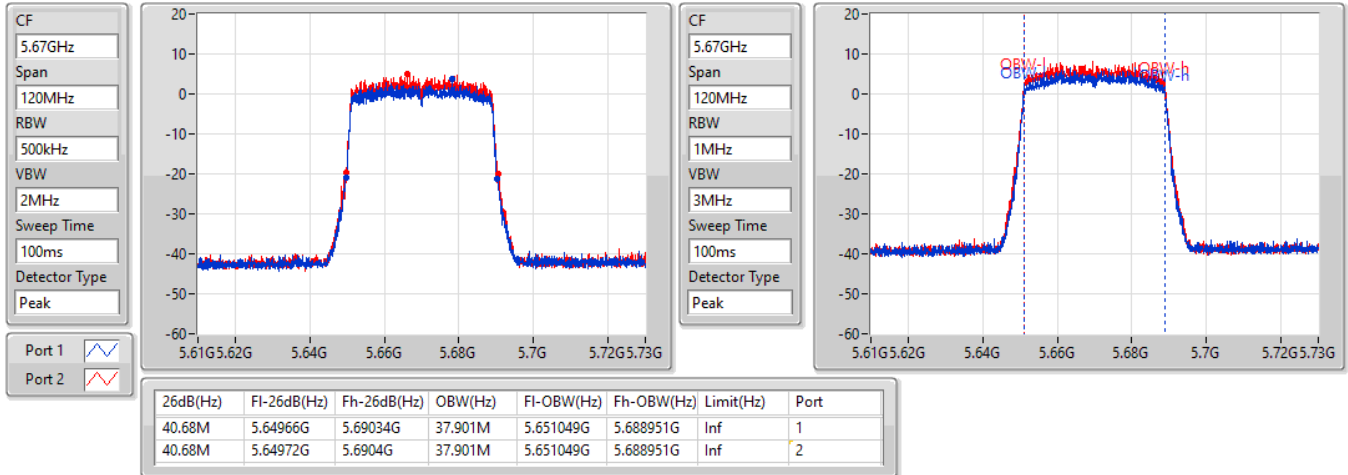

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5550MHz

07/09/2022

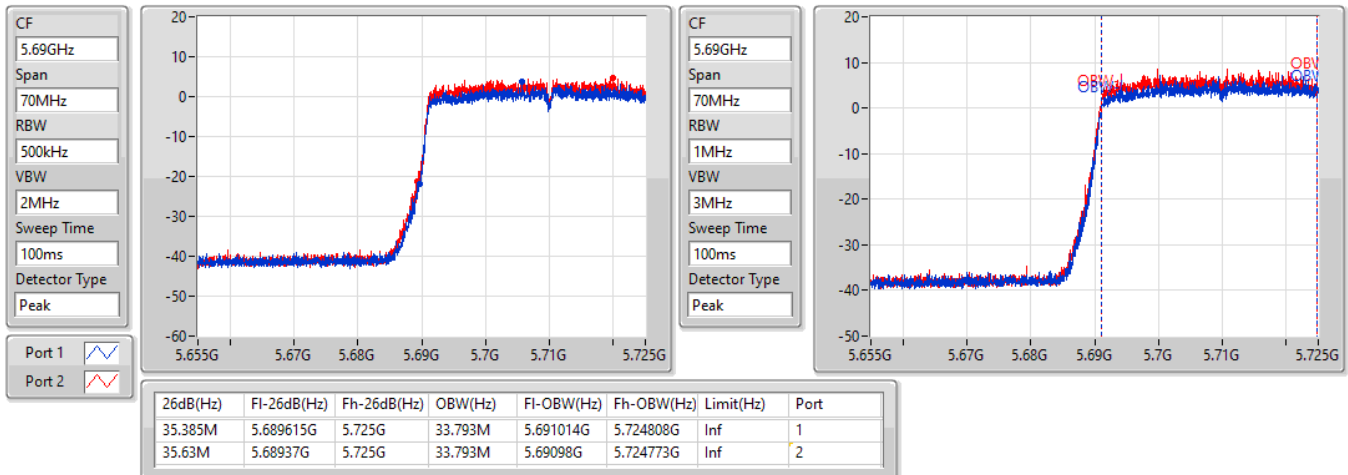


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5670MHz

07/09/2022

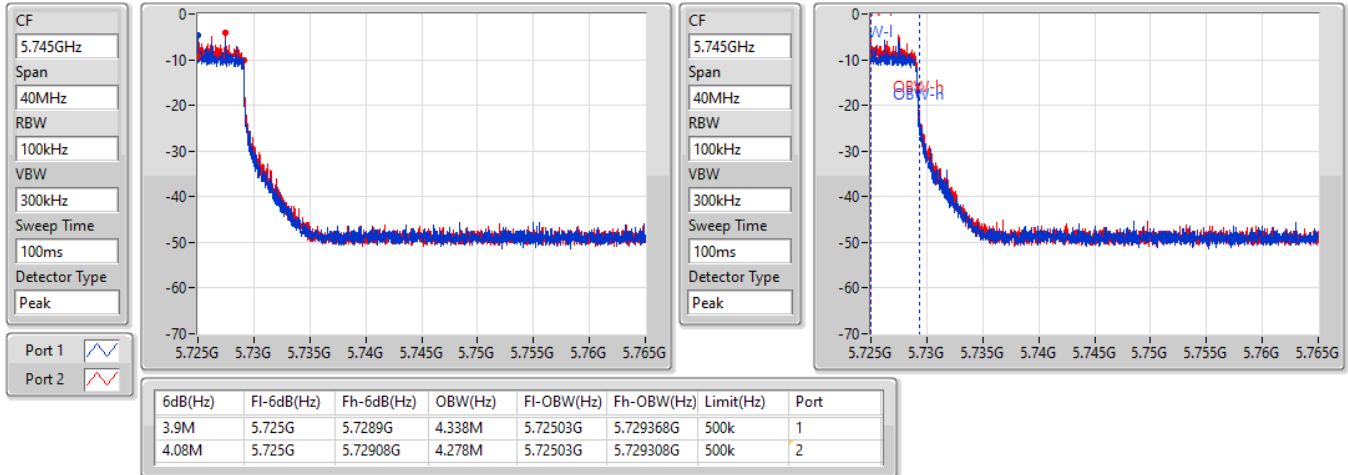

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.47-5.725GHz

12/09/2022

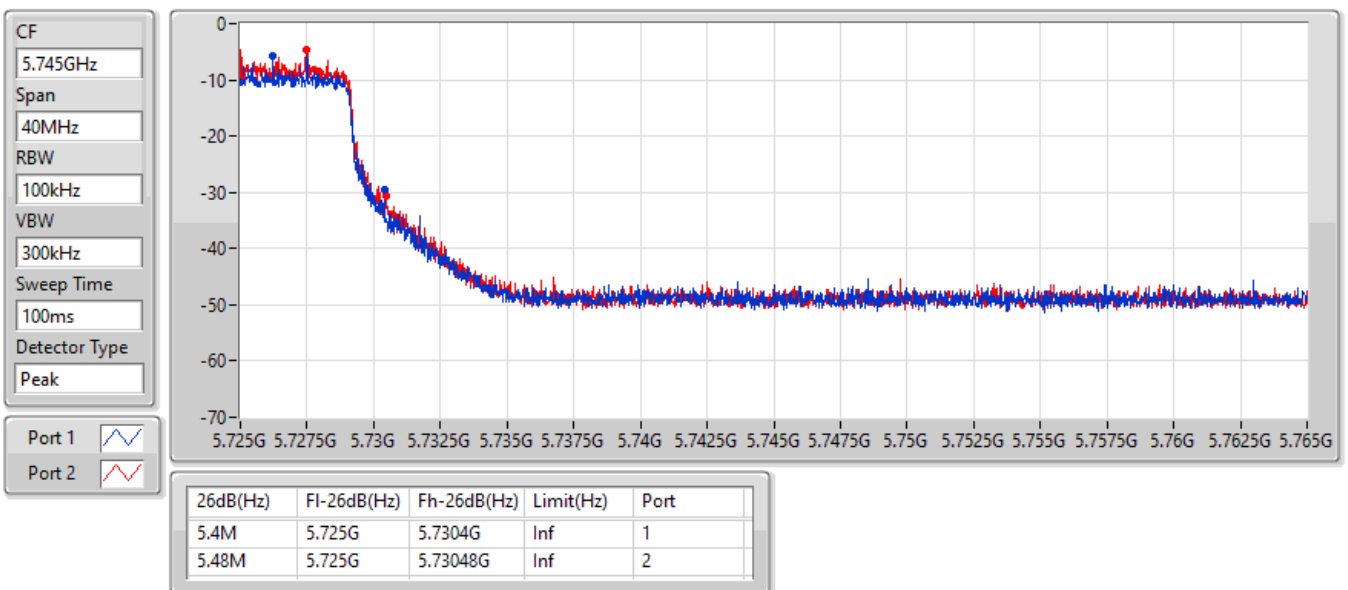


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.725-5.85GHz

12/09/2022

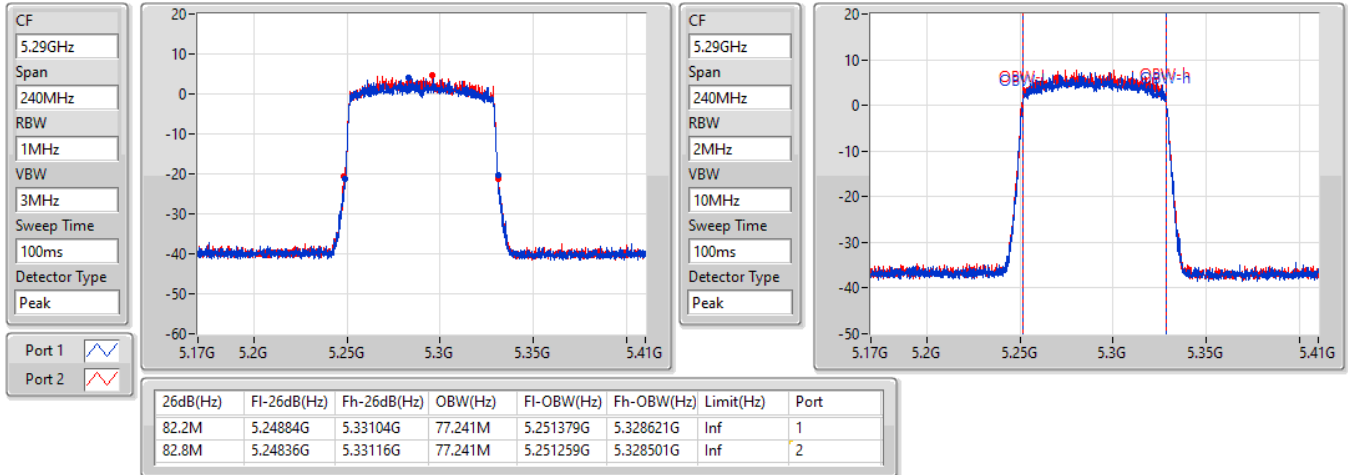

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.725-5.85GHz

12/09/2022

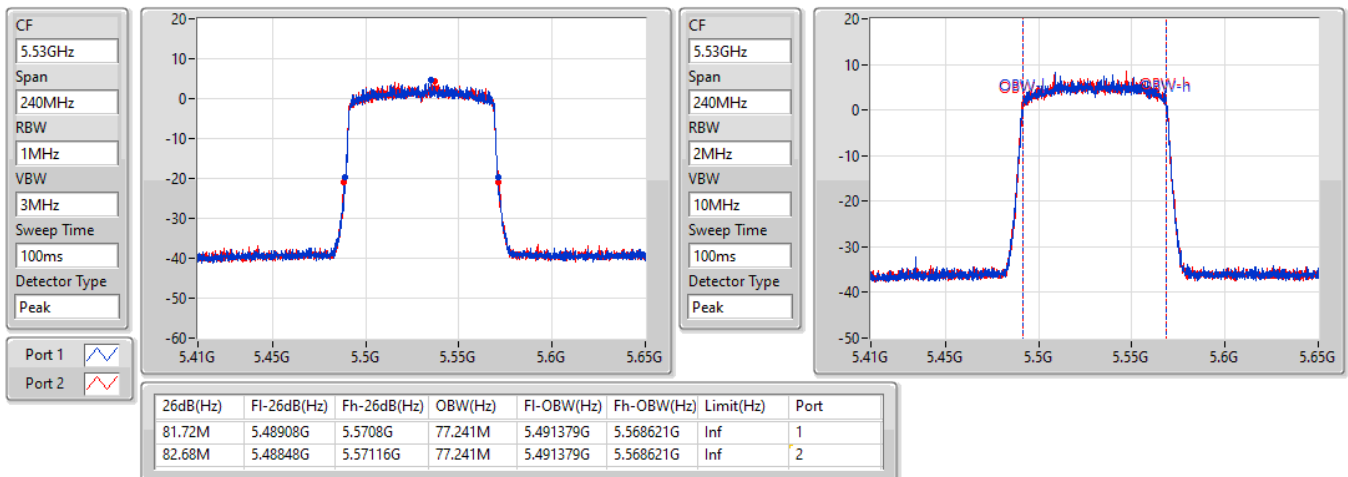


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5290MHz

07/09/2022

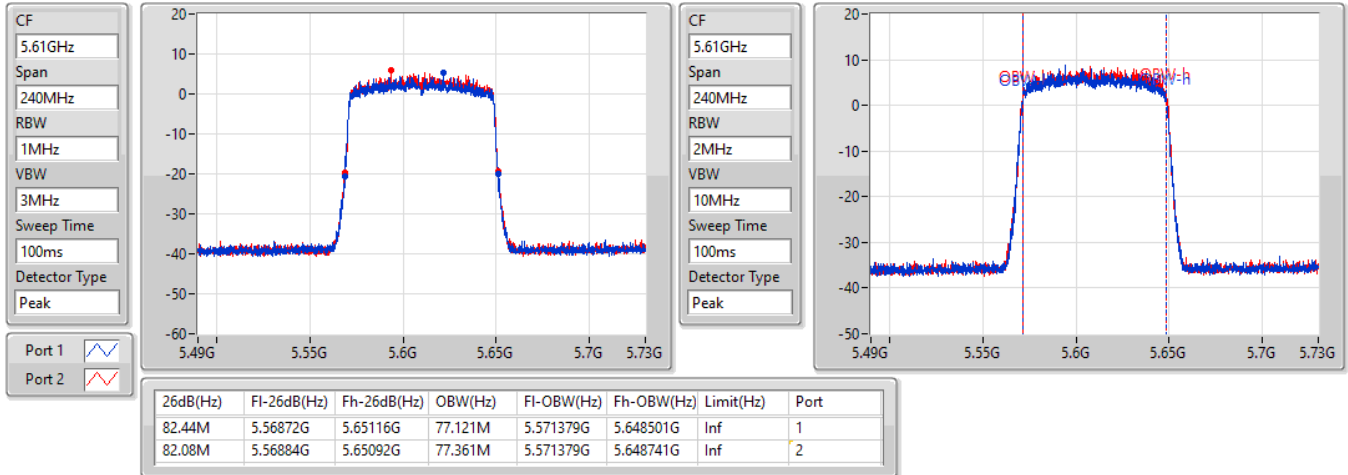

802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5530MHz

07/09/2022

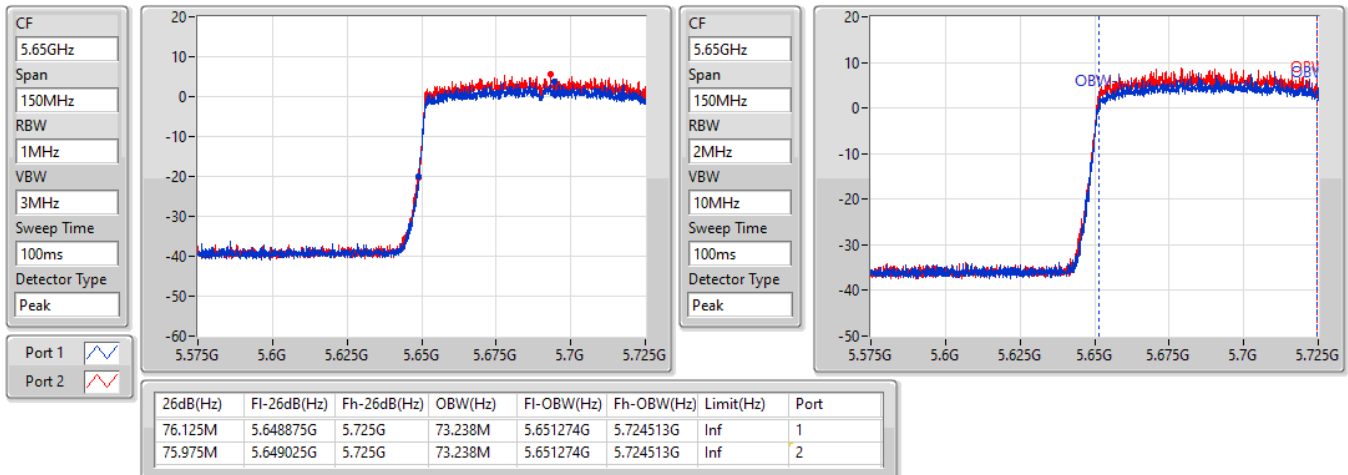


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5610MHz

07/09/2022

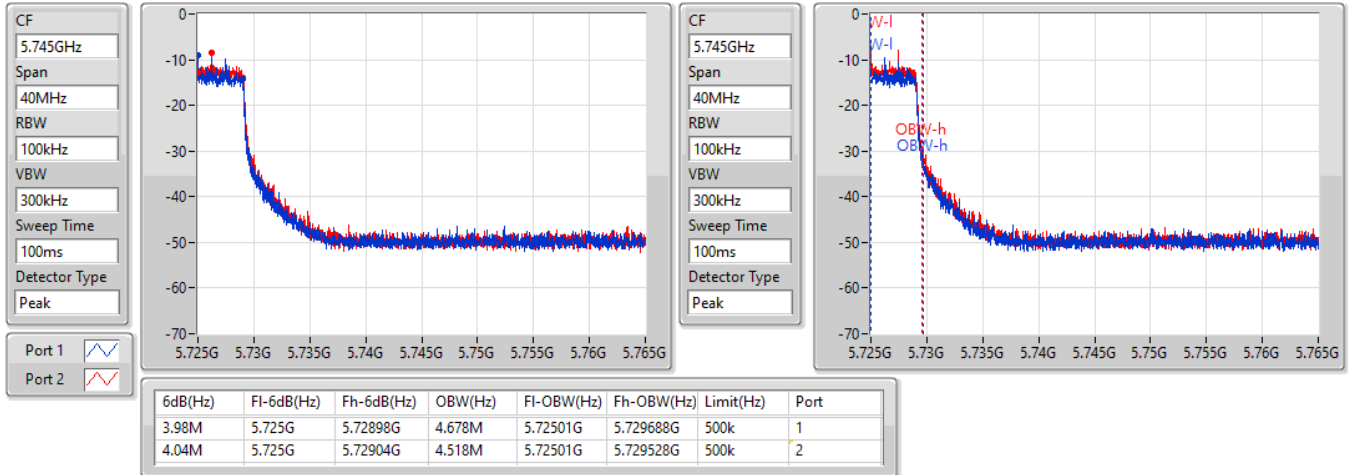

802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.47-5.725GHz

07/09/2022

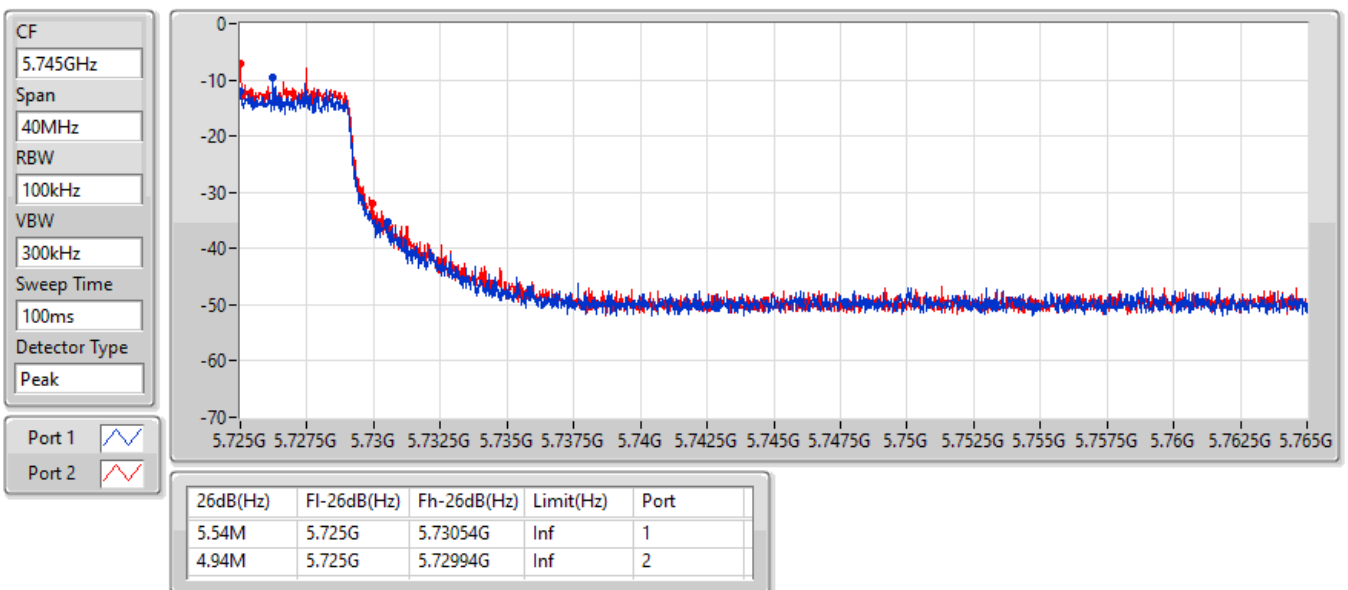


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.725-5.85GHz

07/09/2022


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.725-5.85GHz

07/09/2022



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	22.17M	18.952M	19M0D1D	21.3M	18.921M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	41.28M	37.891M	37M9D1D	40.68M	37.863M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	82.56M	77.154M	77M2D1D	82.2M	77.101M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	21.81M	18.96M	19M0D1D	15.705M	14.439M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	41.4M	37.905M	37M9D1D	35.385M	33.795M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	82.32M	77.279M	77M3D1D	75.975M	73.111M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	4.44M	4.643M	4M64D1D	4.32M	4.637M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	4.14M	4.233M	4M23D1D	3.98M	4.216M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	4.04M	4.324M	4M32D1D	4M	4.282M

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

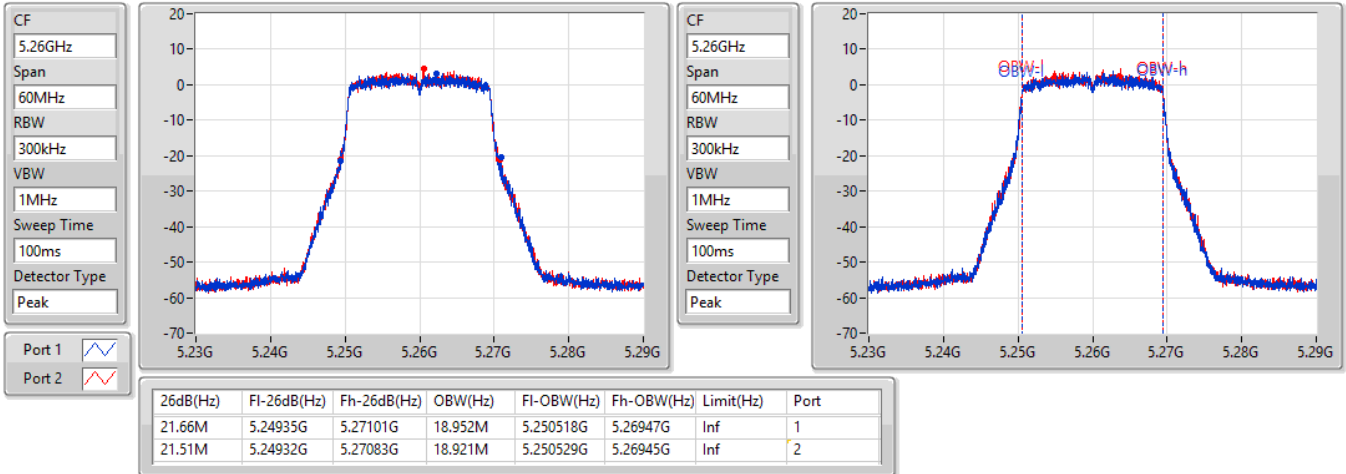
Result

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-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	21.66M	18.952M	21.51M	18.921M
5300MHz	Pass	Inf	21.3M	18.934M	21.54M	18.926M
5320MHz	Pass	Inf	22.17M	18.931M	21.51M	18.921M
5500MHz	Pass	Inf	21.36M	18.96M	21.39M	18.928M
5580MHz	Pass	Inf	21.36M	18.929M	21.63M	18.91M
5700MHz	Pass	Inf	21.81M	18.915M	21.51M	18.919M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.705M	14.459M	15.795M	14.439M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.44M	4.637M	4.32M	4.643M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	40.68M	37.891M	40.98M	37.869M
5310MHz	Pass	Inf	41.28M	37.881M	40.98M	37.863M
5510MHz	Pass	Inf	41.16M	37.83M	41.4M	37.857M
5550MHz	Pass	Inf	41.04M	37.905M	40.98M	37.889M
5670MHz	Pass	Inf	40.74M	37.854M	40.62M	37.806M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.385M	33.795M	35.77M	33.806M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.98M	4.216M	4.14M	4.233M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	82.56M	77.101M	82.2M	77.154M
5530MHz	Pass	Inf	82.32M	77.21M	82.32M	77.23M
5610MHz	Pass	Inf	82.2M	77.279M	82.08M	77.268M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.975M	73.188M	76.2M	73.111M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.04M	4.324M	4M	4.282M

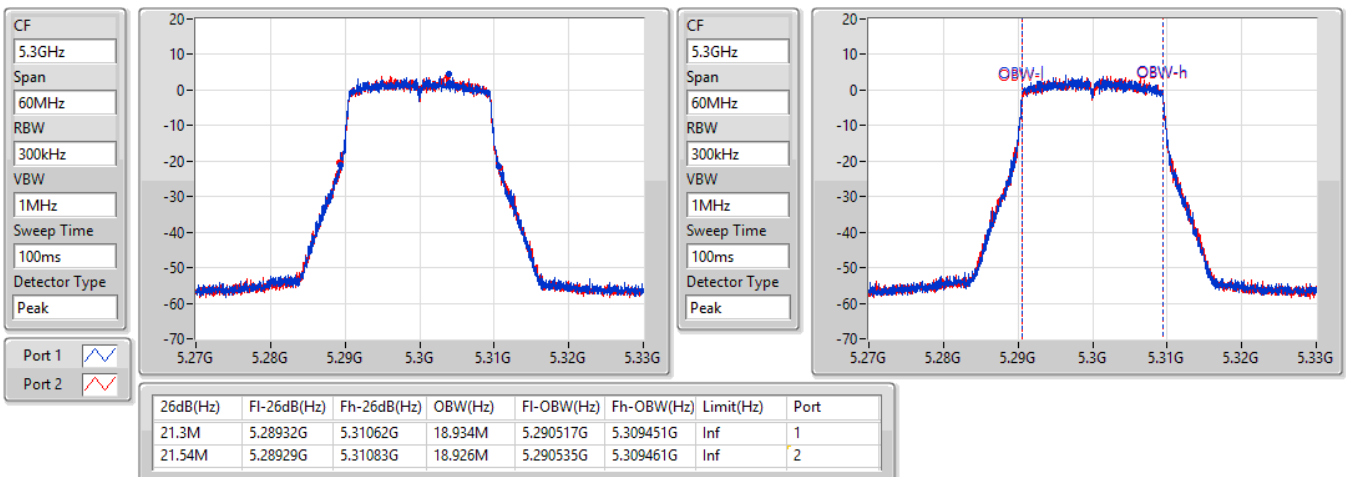
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5260MHz

03/10/2022

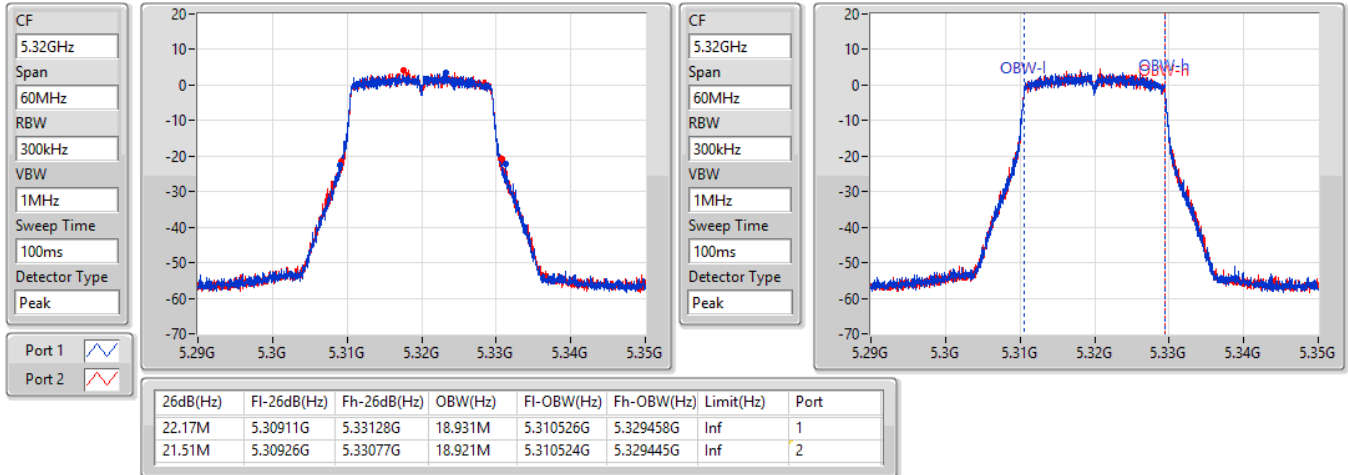

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5300MHz

03/10/2022

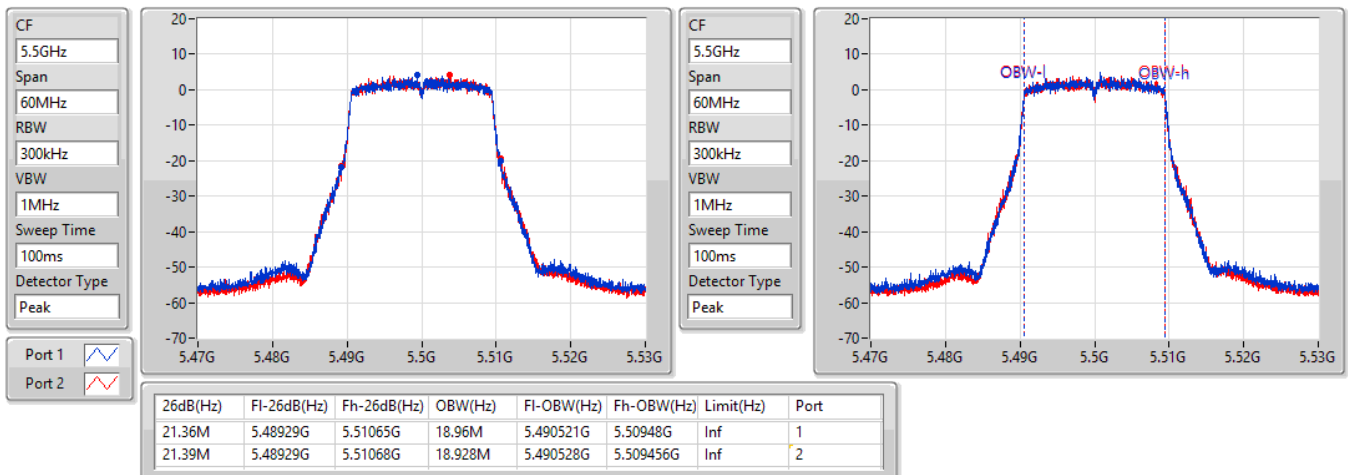


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5320MHz

03/10/2022

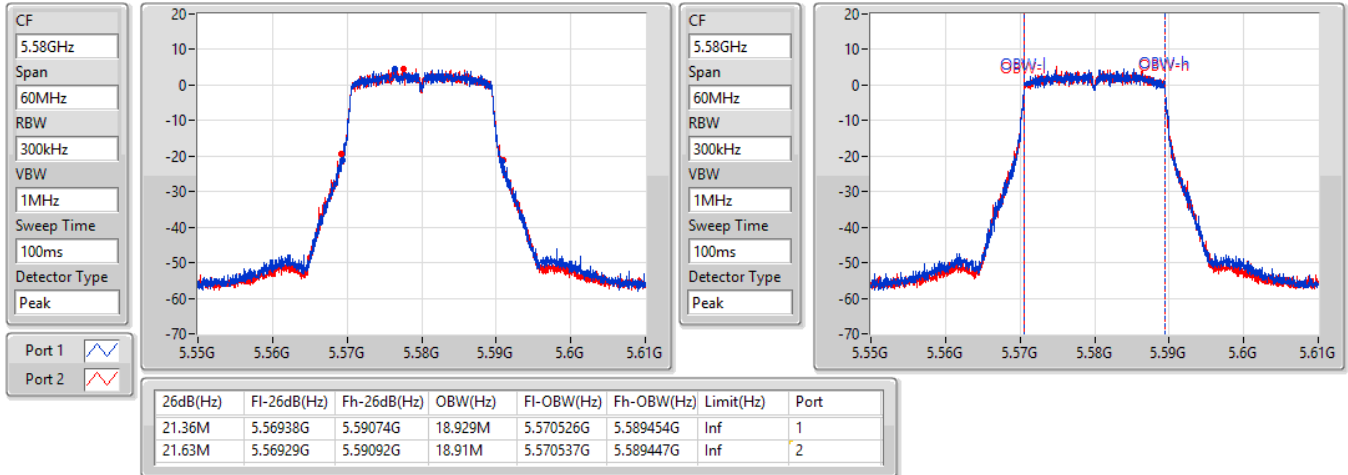

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5500MHz

03/10/2022

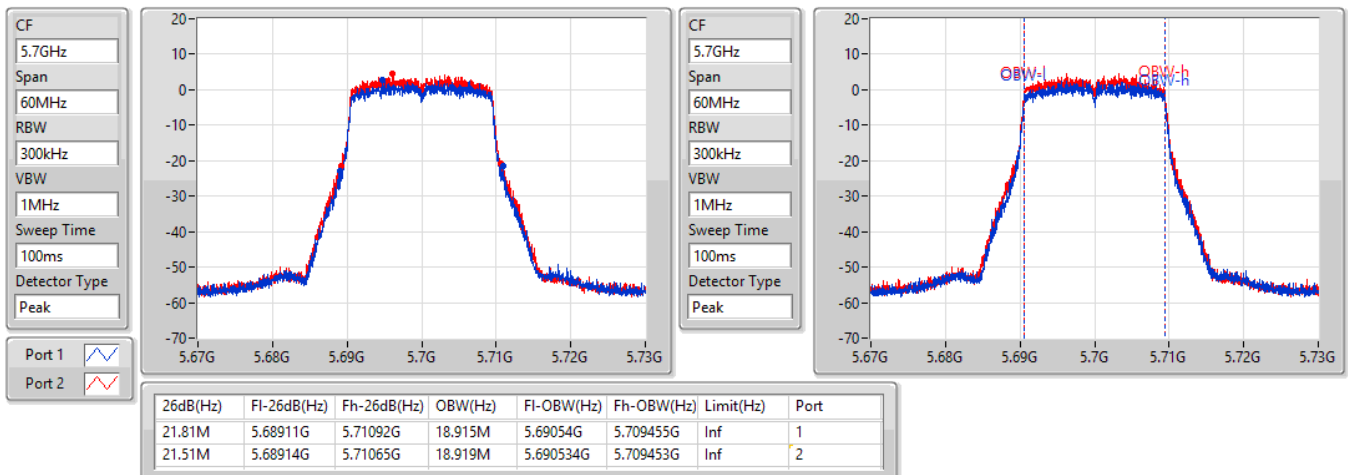


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5580MHz

03/10/2022

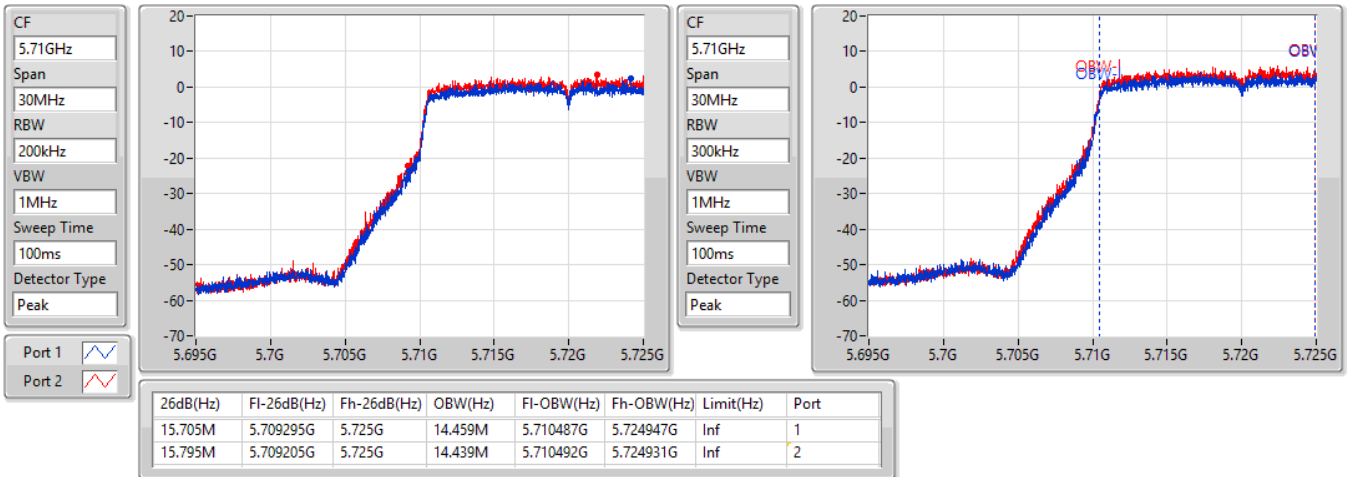

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5700MHz

03/10/2022

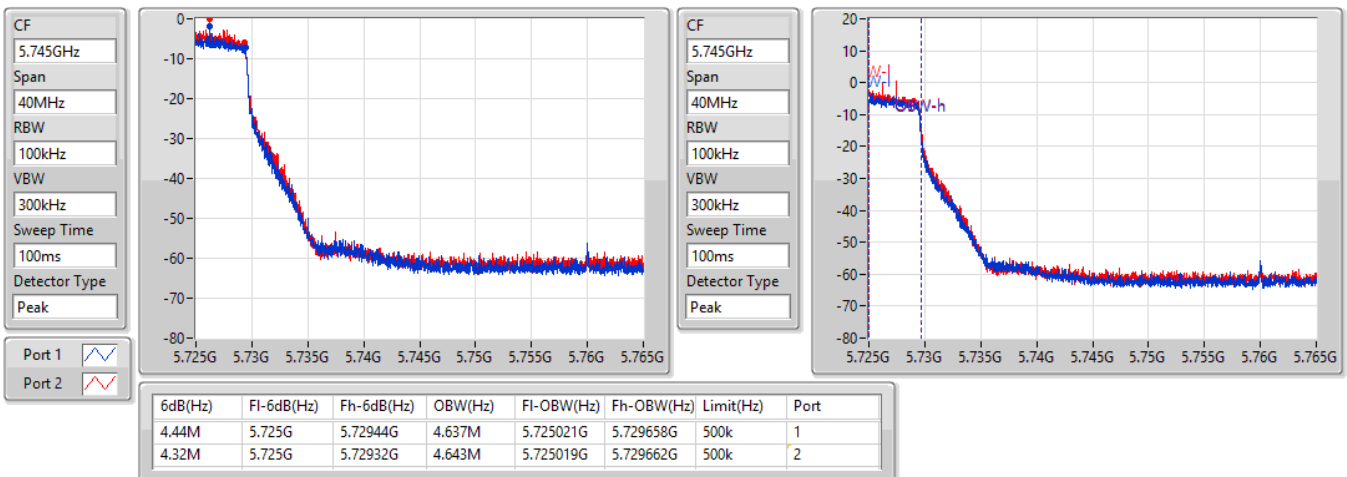


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.47-5.725GHz

03/10/2022


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

03/10/2022

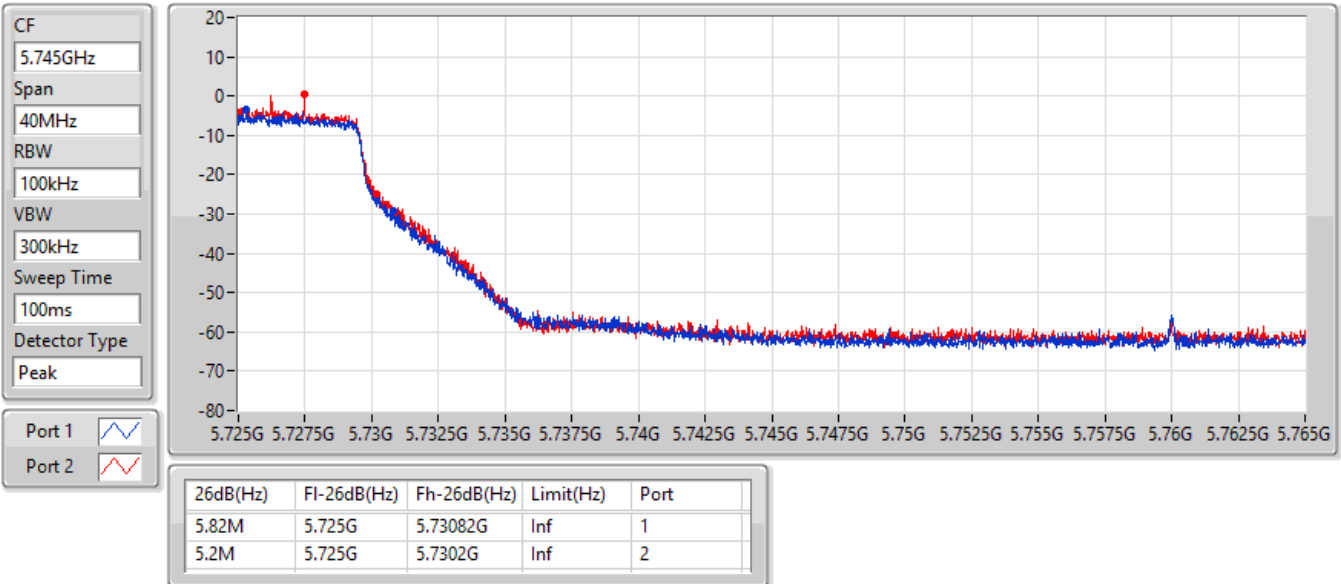


802.11ax HEW20-BF_Nss1,(MCS0)_2TX

EBW

5720MHz Straddle 5.725-5.85GHz

03/10/2022

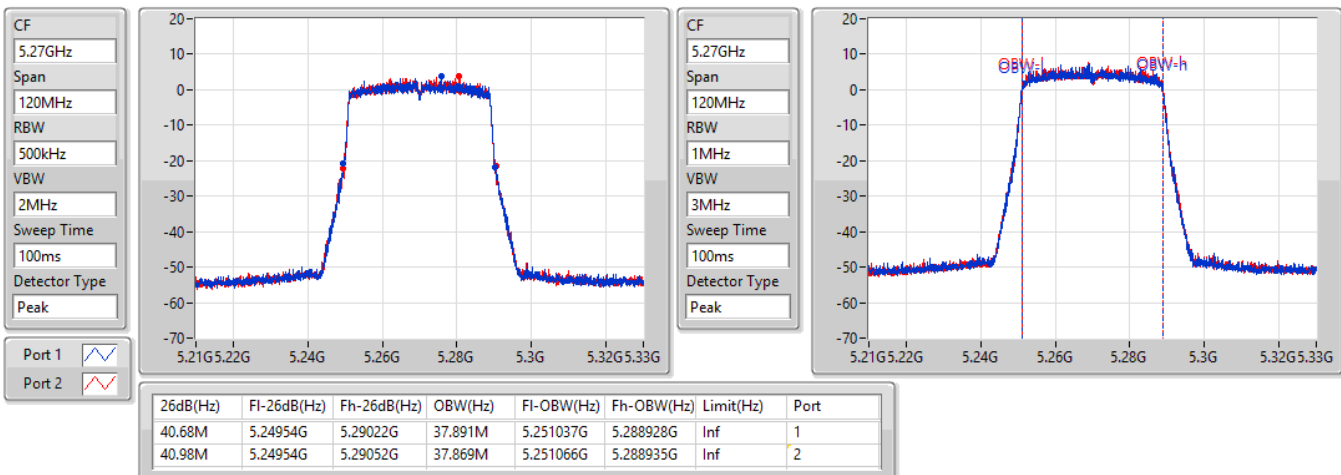


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

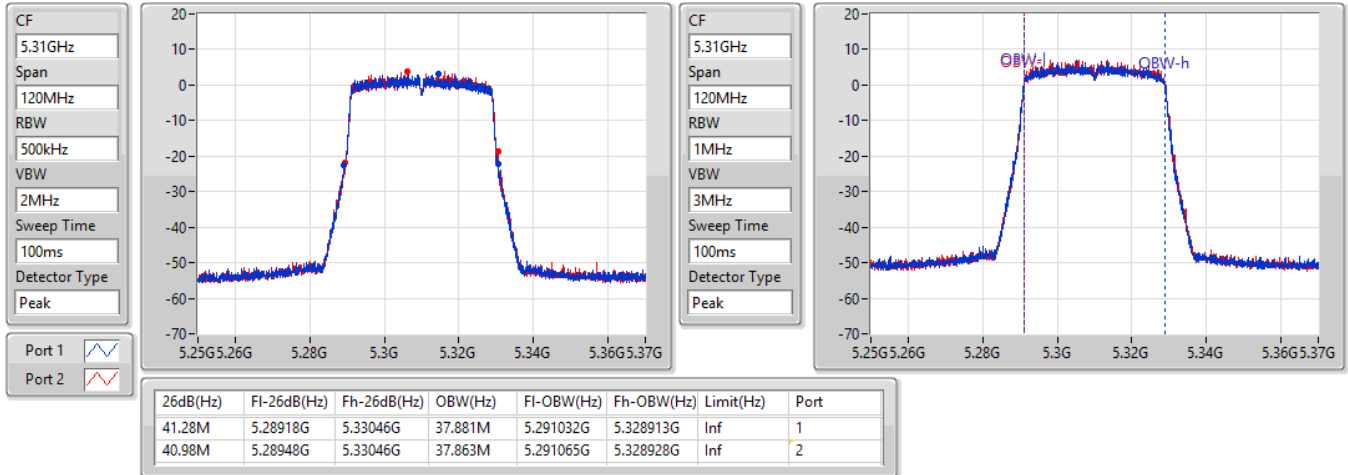
5270MHz

03/10/2022

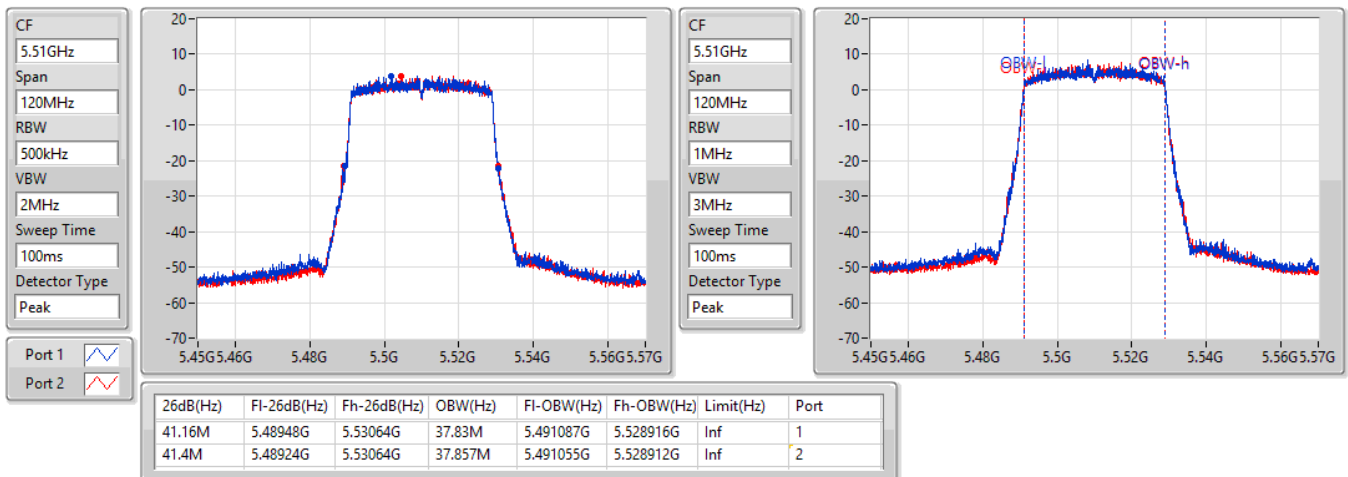


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5310MHz

03/10/2022

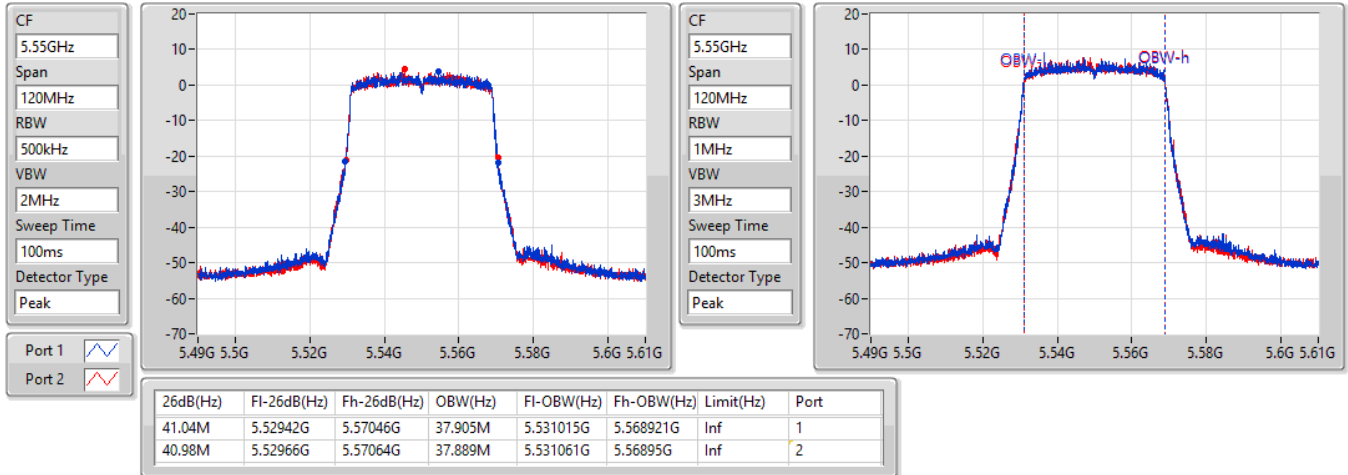

802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5510MHz

03/10/2022

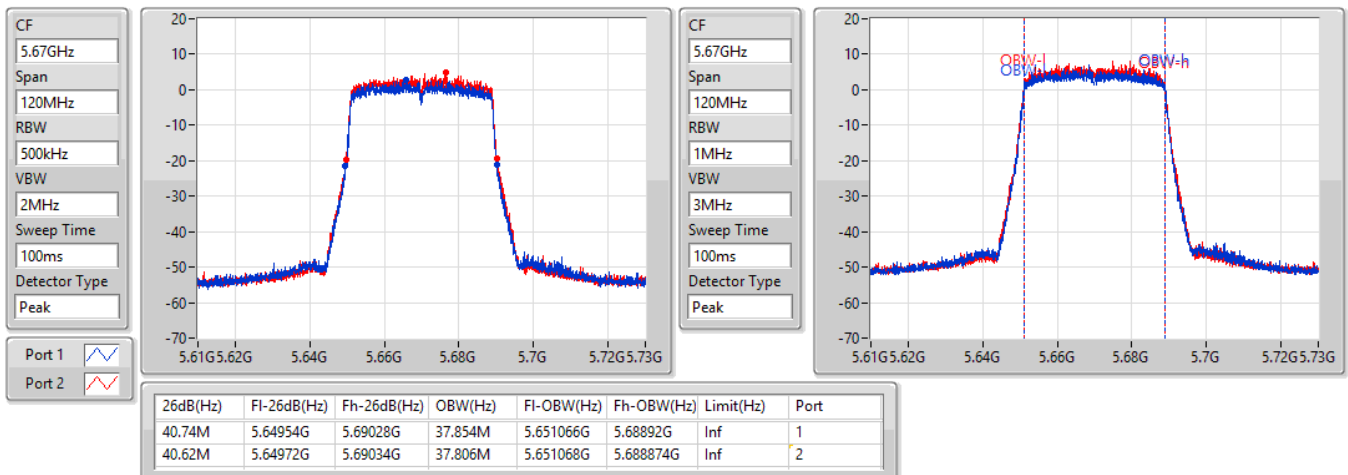


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5550MHz

03/10/2022

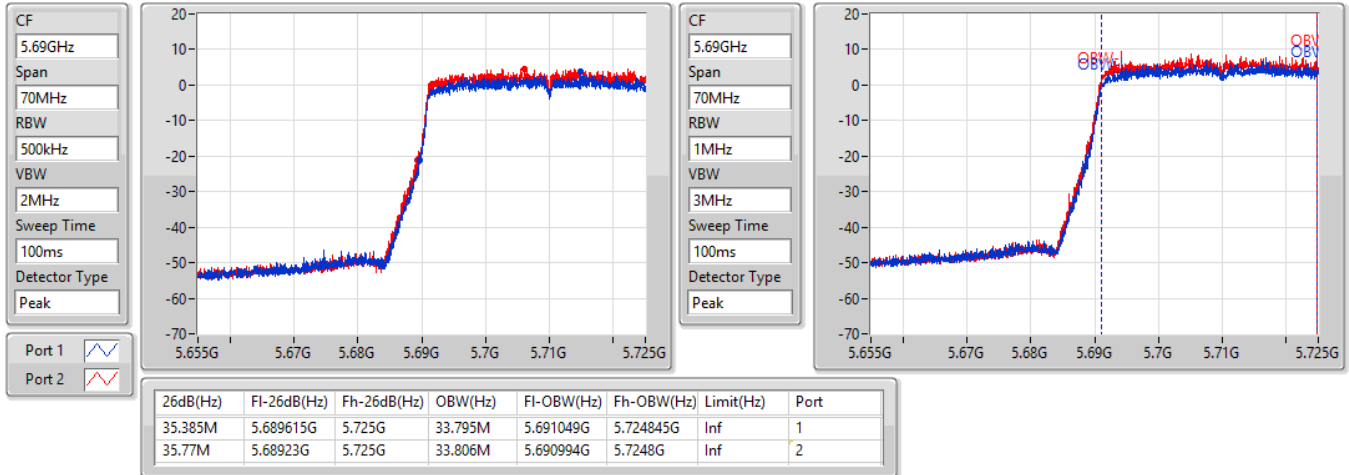

802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5670MHz

03/10/2022

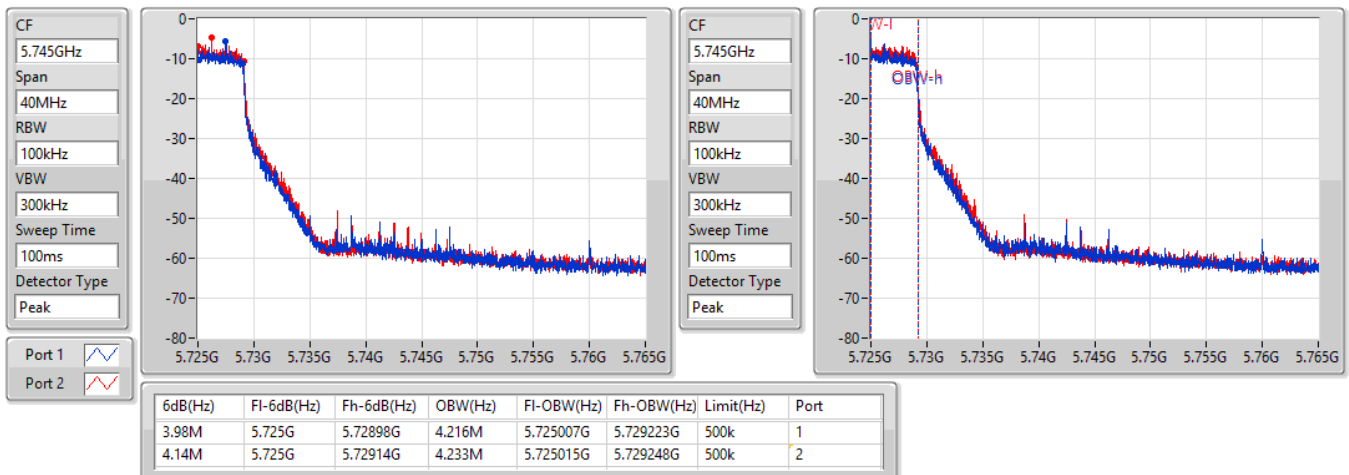


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.47-5.725GHz

03/10/2022


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.725-5.85GHz

03/10/2022

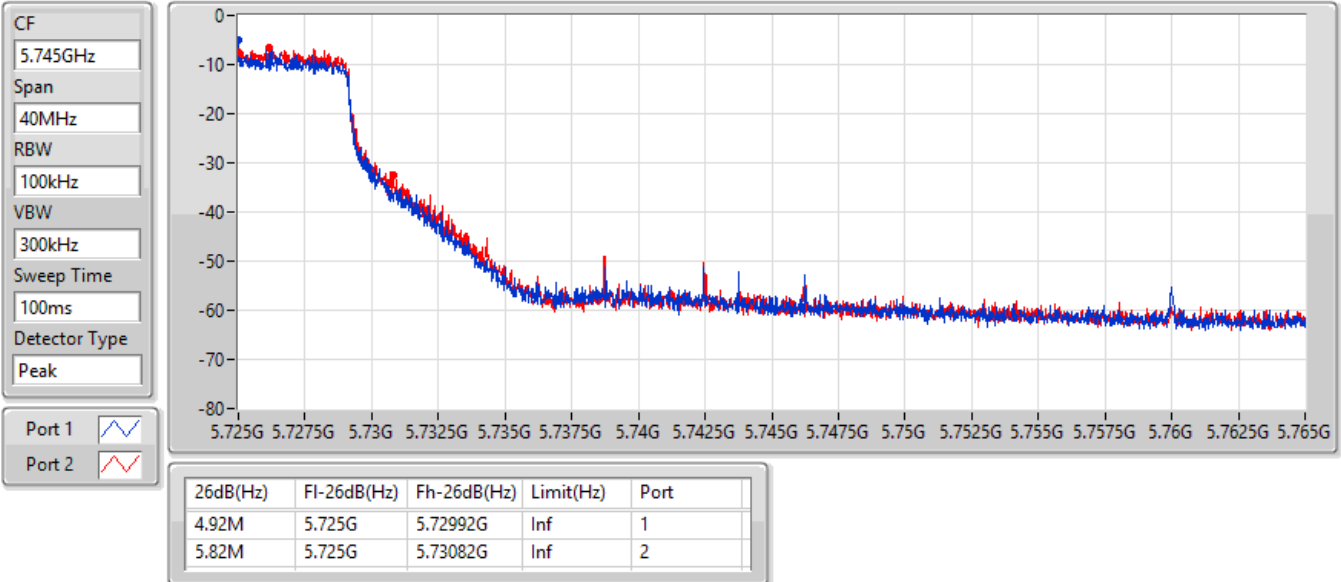


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5710MHz Straddle 5.725-5.85GHz

03/10/2022

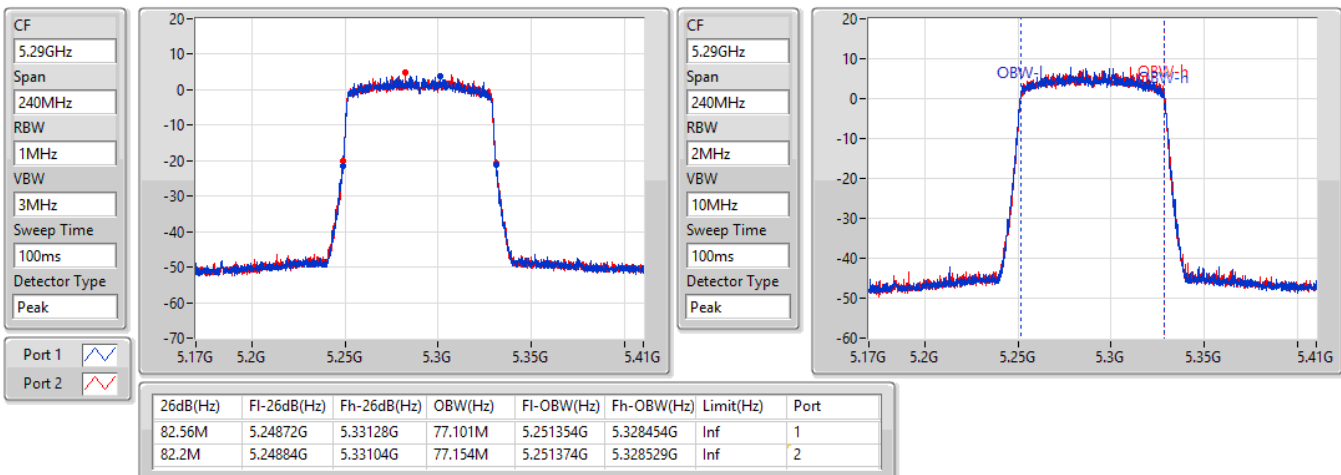


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

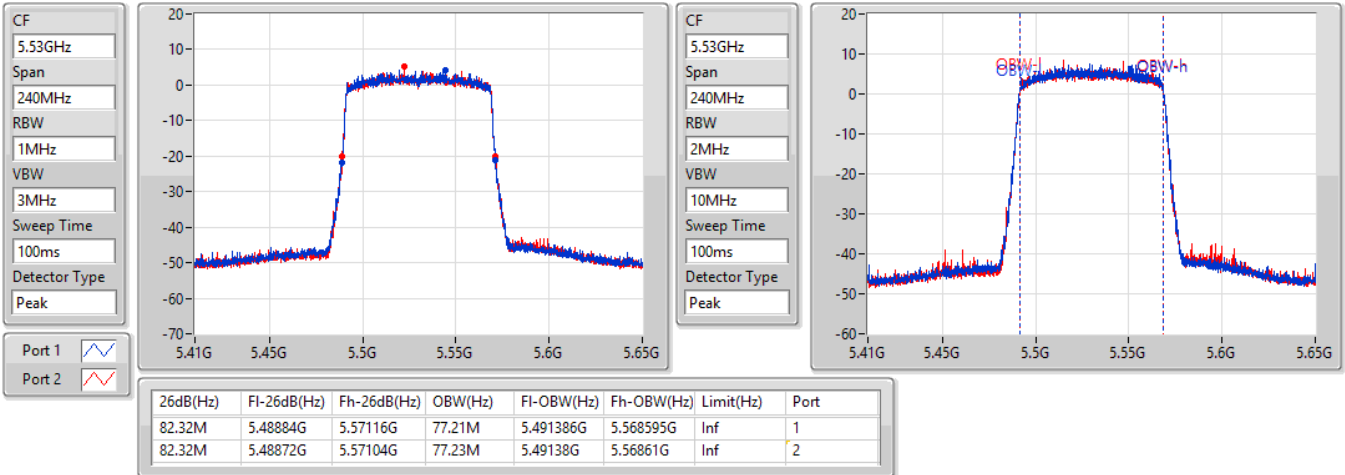
5290MHz

03/10/2022

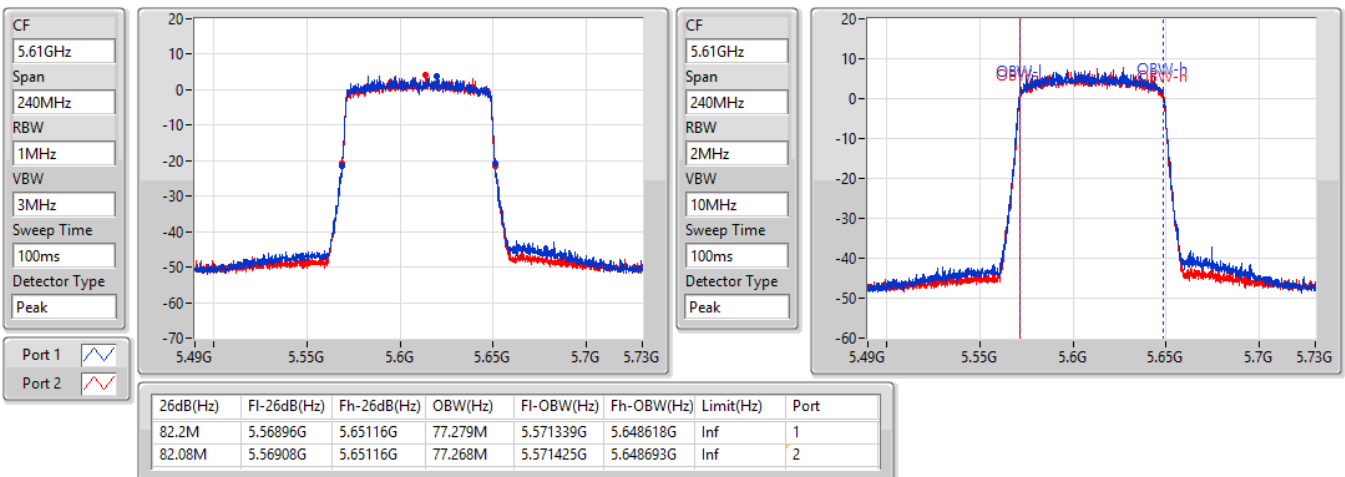


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5530MHz

03/10/2022

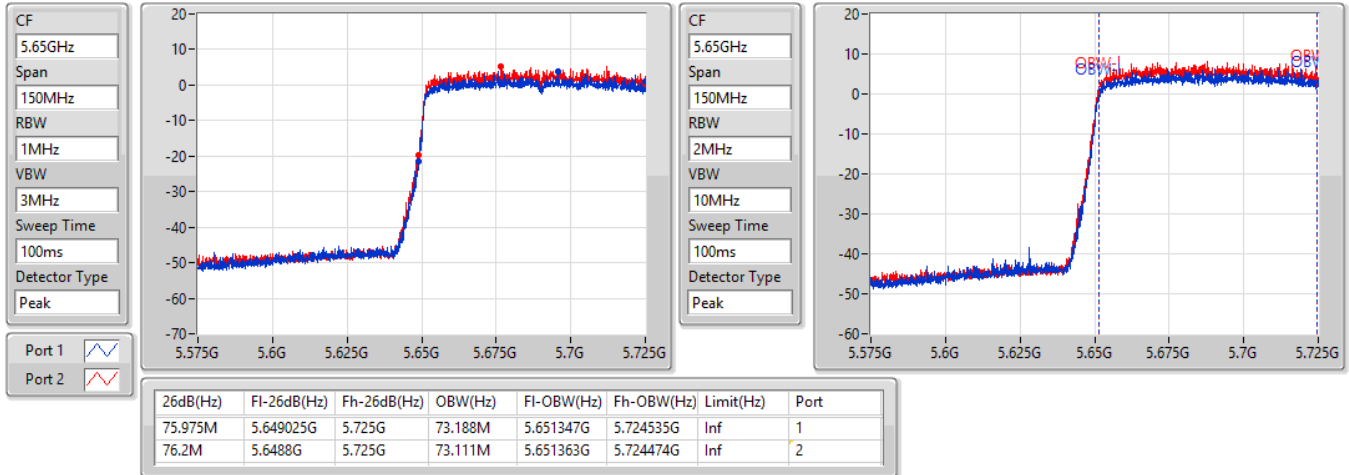

802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5610MHz

03/10/2022

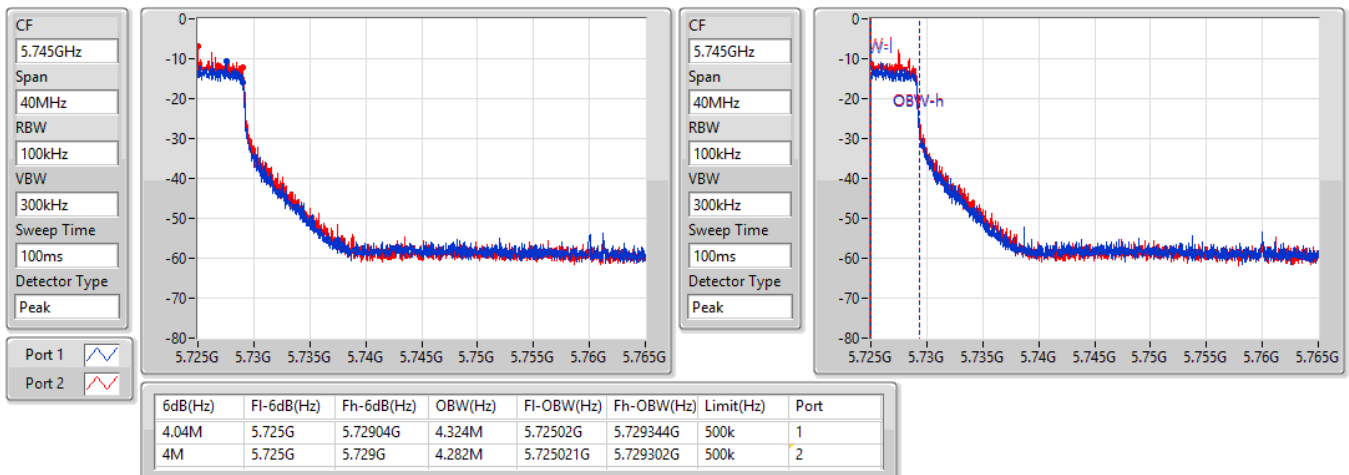


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.47-5.725GHz

03/10/2022


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.725-5.85GHz

03/10/2022

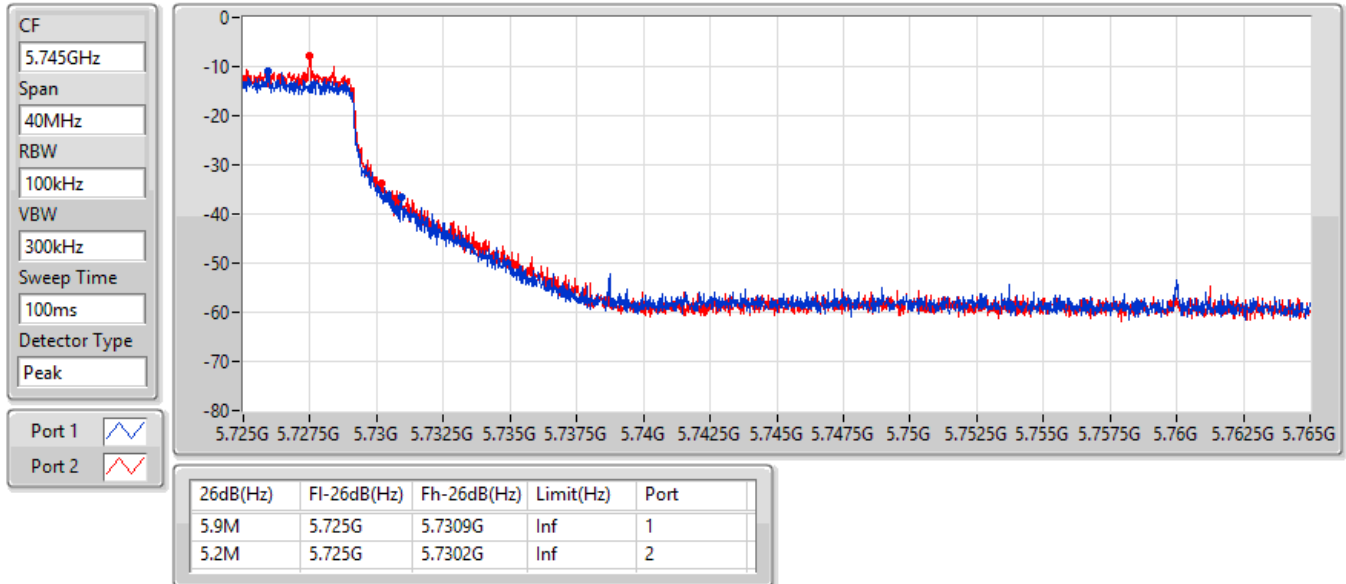


802.11ax HEW80-BF_Nss1,(MCS0)_2TX

EBW

5690MHz Straddle 5.725-5.85GHz

03/10/2022





EBW_R3 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C_Non beamforming mode

Appendix A.5

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	82.4M	78.008M	78M0D1D	82M	77.768M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	20.76M	16.668M	16M7D1D	20.16M	16.623M
802.11ax HEW20_Nss1,(MCS0)_4TX	22.14M	19.151M	19M2D1D	21.6M	19.089M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.5M	37.806M	37M8D1D	40.14M	37.708M
802.11ax HEW80_Nss1,(MCS0)_4TX	82.44M	77.339M	77M3D1D	81.6M	77.103M
802.11ax HEW160_Nss1,(MCS0)_4TX	82.96M	77.839M	77M8D1D	82.16M	77.764M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.03M	16.694M	16M7D1D	15.135M	13.356M
802.11ax HEW20_Nss1,(MCS0)_4TX	22.11M	19.159M	19M2D1D	15.75M	14.558M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.5M	37.869M	37M9D1D	35.14M	33.744M
802.11ax HEW80_Nss1,(MCS0)_4TX	82.56M	77.551M	77M6D1D	76.05M	73.256M
802.11ax HEW160_Nss1,(MCS0)_4TX	164.64M	154.917M	155MD1D	164.16M	154.793M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	3.16M	3.569M	3M57D1D	3.16M	3.534M
802.11ax HEW20_Nss1,(MCS0)_4TX	4.5M	4.621M	4M62D1D	4.48M	4.604M
802.11ax HEW40_Nss1,(MCS0)_4TX	4.1M	4.133M	4M13D1D	4.04M	4.111M
802.11ax HEW80_Nss1,(MCS0)_4TX	4.1M	4.352M	4M35D1D	4M	4.235M

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



**EBW_R3 + Antenna set 1 for UNII 2A + Antenna set 2 for
UNII 2C_Non beamforming mode**

Appendix A.5

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	20.49M	16.66M	20.16M	16.636M	20.49M	16.655M	20.46M	16.623M
5300MHz	Pass	Inf	20.61M	16.663M	20.25M	16.636M	20.52M	16.668M	20.52M	16.636M
5320MHz	Pass	Inf	20.19M	16.655M	20.76M	16.632M	20.52M	16.648M	20.55M	16.644M
5500MHz	Pass	Inf	20.22M	16.645M	21.03M	16.68M	20.64M	16.66M	20.52M	16.656M
5580MHz	Pass	Inf	20.4M	16.658M	20.76M	16.674M	20.52M	16.665M	20.61M	16.66M
5700MHz	Pass	Inf	20.19M	16.669M	20.58M	16.649M	20.61M	16.694M	20.55M	16.648M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.315M	13.373M	15.225M	13.356M	15.15M	13.381M	15.135M	13.373M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.16M	3.547M	3.16M	3.545M	3.16M	3.569M	3.16M	3.534M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.81M	19.141M	22.14M	19.151M	21.81M	19.116M	21.69M	19.11M
5300MHz	Pass	Inf	21.9M	19.149M	22.08M	19.141M	21.93M	19.116M	21.75M	19.103M
5320MHz	Pass	Inf	21.6M	19.15M	21.75M	19.148M	21.63M	19.114M	22.02M	19.089M
5500MHz	Pass	Inf	21.96M	19.159M	22.11M	19.142M	21.75M	19.103M	22.11M	19.089M
5580MHz	Pass	Inf	22.11M	19.139M	21.96M	19.107M	21.72M	19.117M	21.69M	19.099M
5700MHz	Pass	Inf	21.84M	19.105M	21.66M	19.067M	22.02M	19.086M	21.84M	19.088M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.005M	14.561M	15.885M	14.576M	15.96M	14.574M	15.75M	14.558M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.5M	4.618M	4.48M	4.604M	4.48M	4.621M	4.5M	4.607M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.26M	37.714M	40.44M	37.708M	40.26M	37.762M	40.44M	37.786M
5310MHz	Pass	Inf	40.44M	37.747M	40.5M	37.763M	40.14M	37.806M	40.32M	37.802M
5510MHz	Pass	Inf	40.26M	37.668M	40.38M	37.733M	40.5M	37.8M	40.32M	37.824M
5550MHz	Pass	Inf	40.2M	37.774M	40.32M	37.751M	40.32M	37.792M	40.5M	37.855M
5670MHz	Pass	Inf	40.02M	37.75M	40.32M	37.818M	40.5M	37.832M	40.38M	37.869M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.21M	33.744M	35.315M	33.773M	35.14M	33.777M	35.14M	33.78M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.04M	4.111M	4.1M	4.125M	4.06M	4.113M	4.06M	4.133M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	82.44M	77.286M	82.08M	77.103M	81.72M	77.284M	81.6M	77.339M
5530MHz	Pass	Inf	82.32M	77.086M	81.96M	77.143M	82.2M	77.36M	82.56M	77.344M
5610MHz	Pass	Inf	81.96M	77.344M	81.72M	77.347M	82.32M	77.449M	82.44M	77.551M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.5M	73.256M	76.2M	73.284M	76.35M	73.305M	76.05M	73.322M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.02M	4.235M	4.08M	4.271M	4M	4.3M	4.1M	4.352M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	82.32M	78.008M	82M	77.768M	82.4M	77.833M	82.16M	77.848M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	82.16M	77.764M	82.24M	77.767M	82.4M	77.839M	82.96M	77.795M
5570MHz	Pass	Inf	164.4M	154.836M	164.4M	154.793M	164.64M	154.917M	164.16M	154.881M

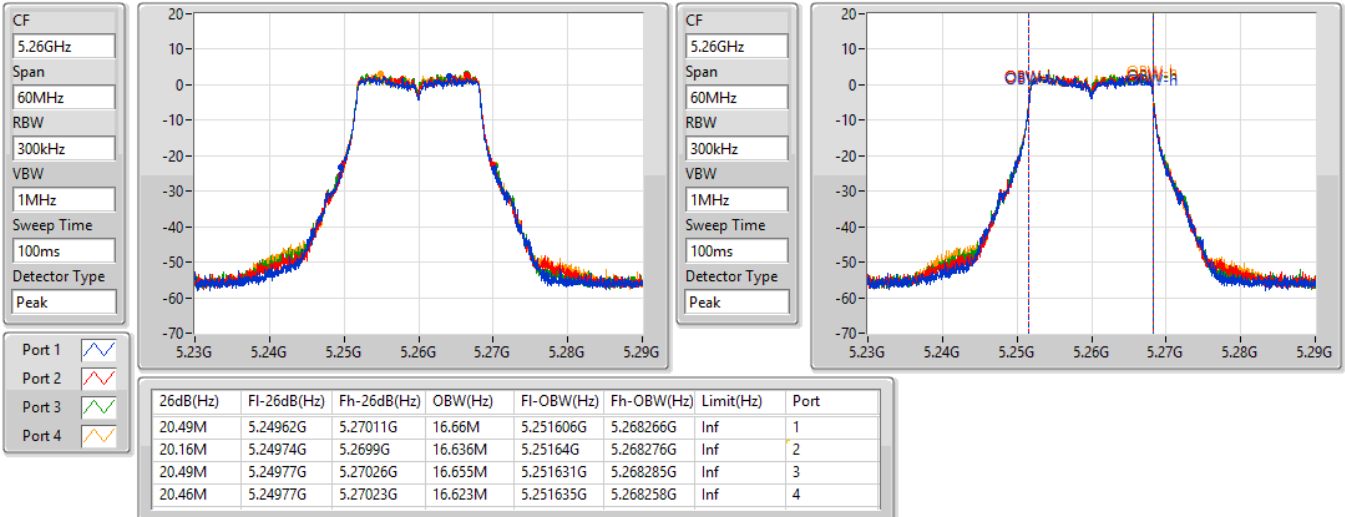
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_4TX

EBW

5260MHz

06/08/2022

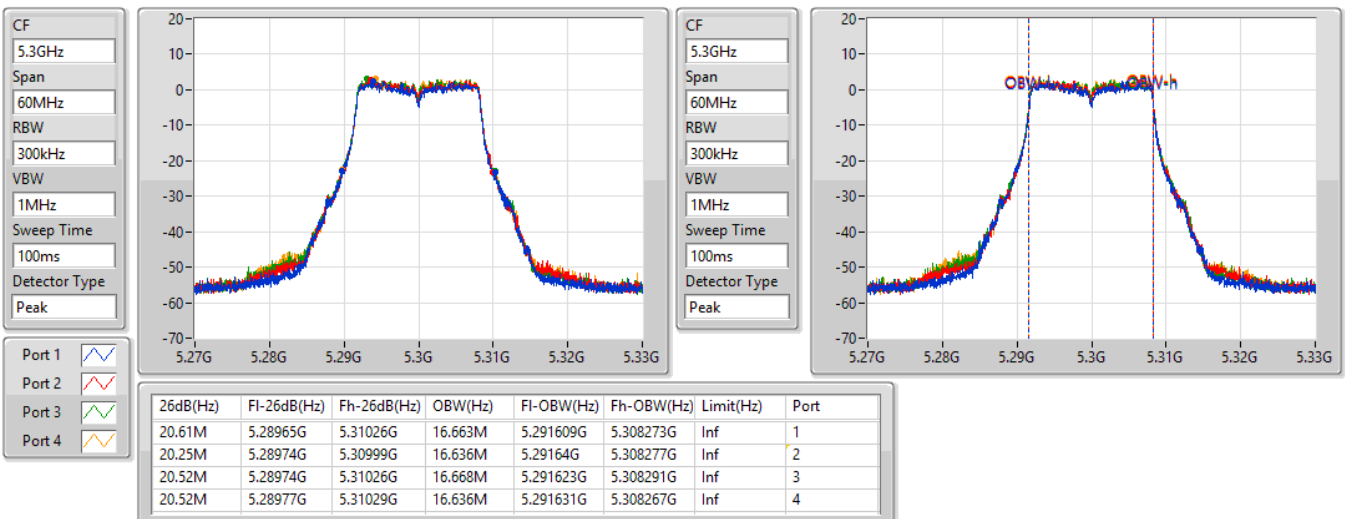


802.11a_Nss1,(6Mbps)_4TX

EBW

5300MHz

06/08/2022

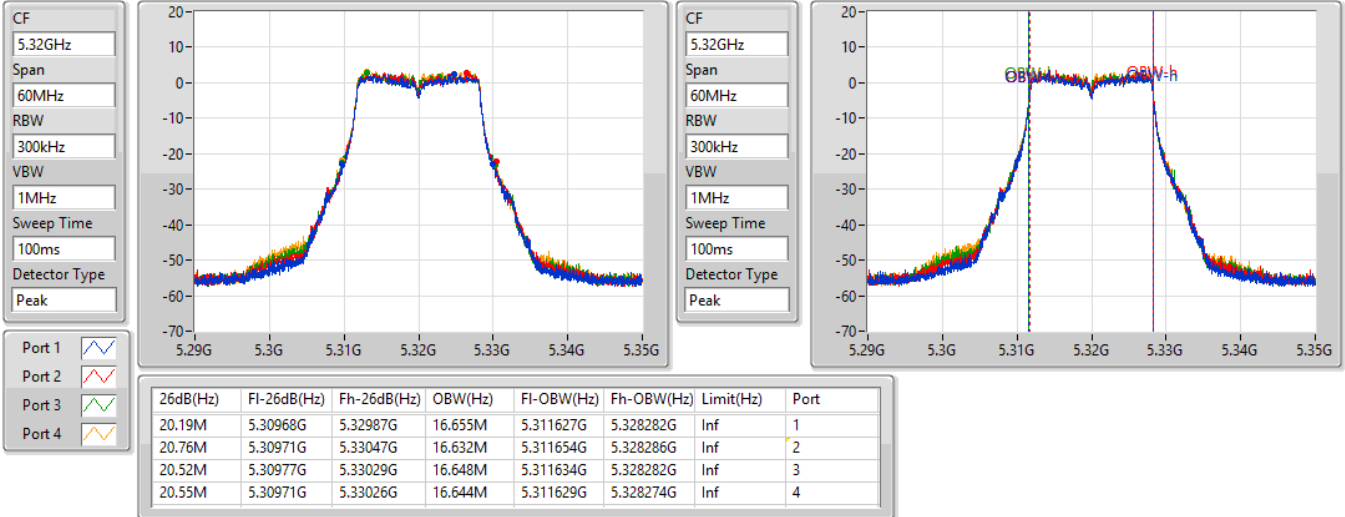


802.11a_Nss1,(6Mbps)_4TX

EBW

5320MHz

06/08/2022

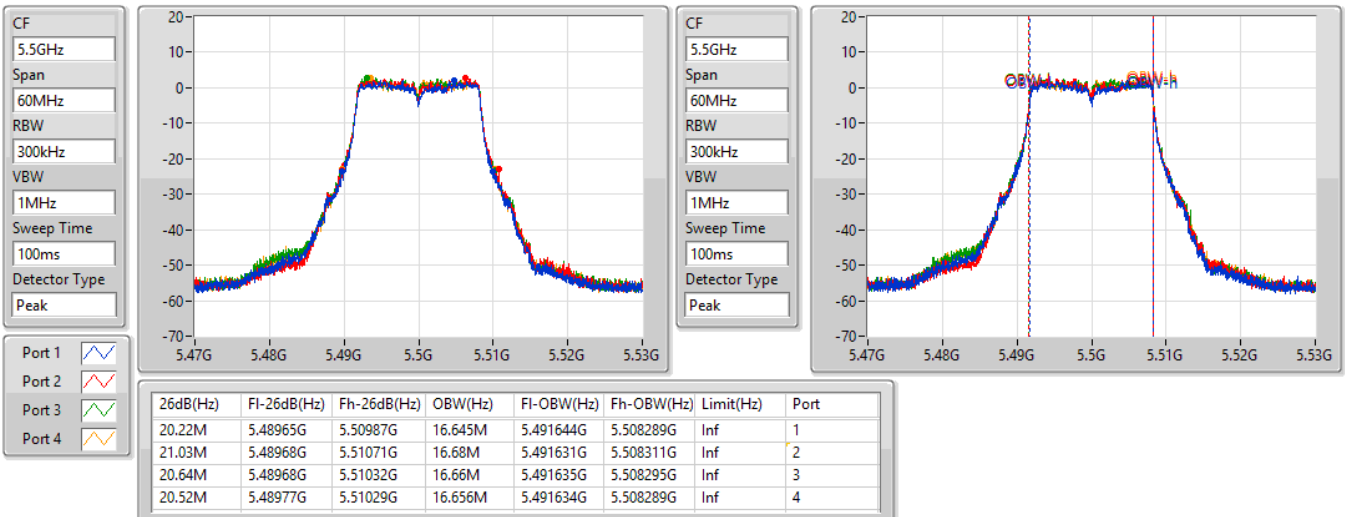


802.11a_Nss1,(6Mbps)_4TX

EBW

5500MHz

06/08/2022

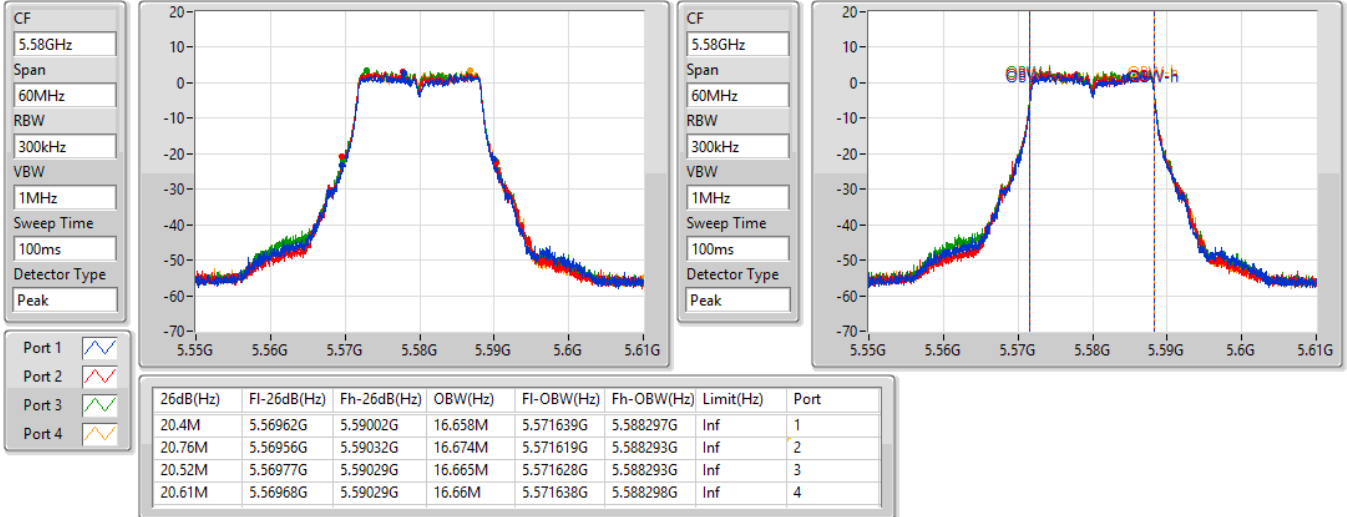


802.11a_Nss1,(6Mbps)_4TX

EBW

5580MHz

06/08/2022

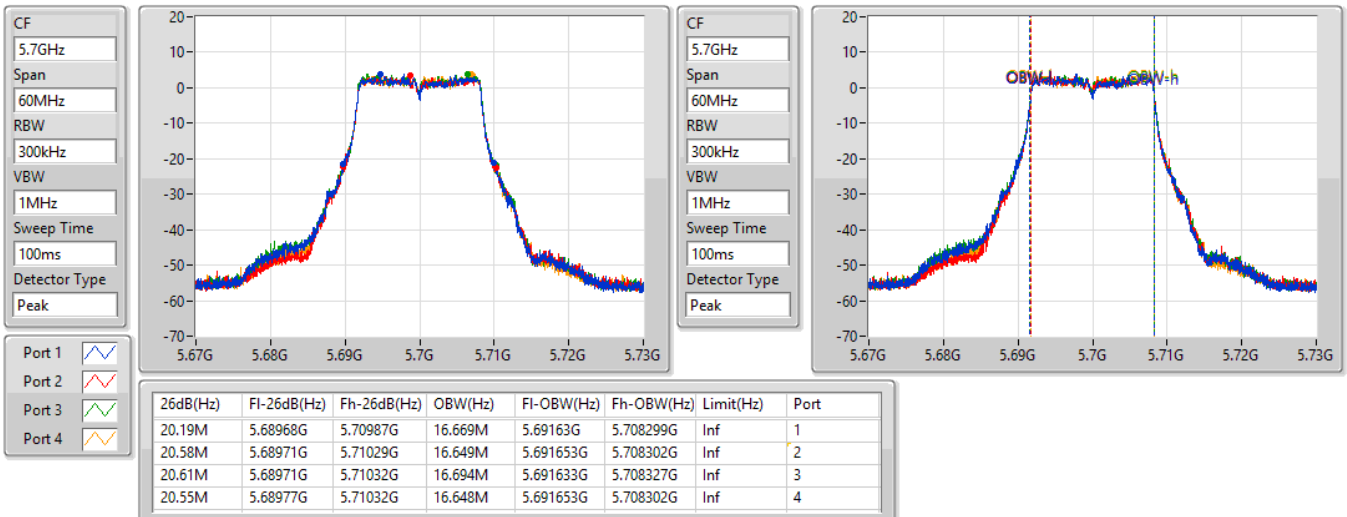


802.11a_Nss1,(6Mbps)_4TX

EBW

5700MHz

06/08/2022

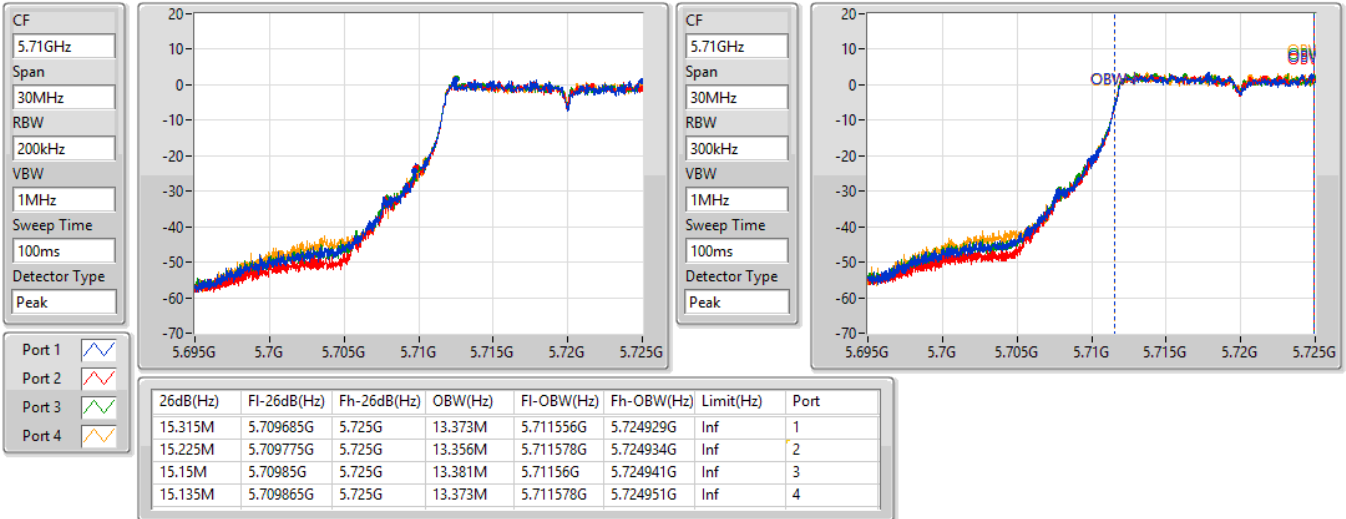


802.11a_Nss1,(6Mbps)_4TX

EBW

5720MHz Straddle 5.47-5.725GHz

06/08/2022

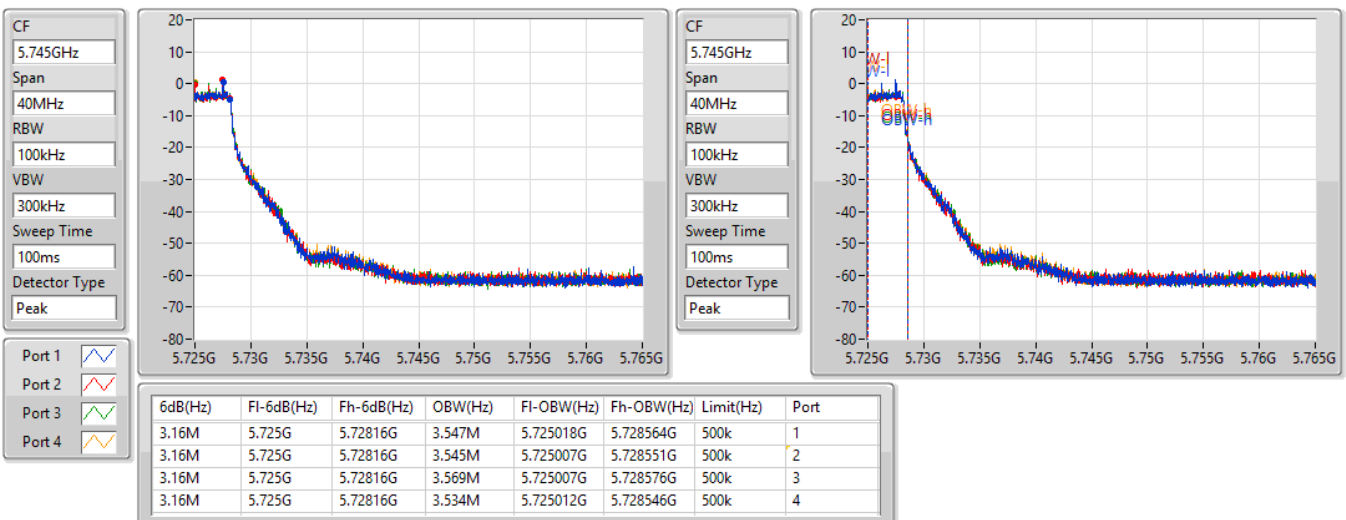


802.11a_Nss1,(6Mbps)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

06/08/2022

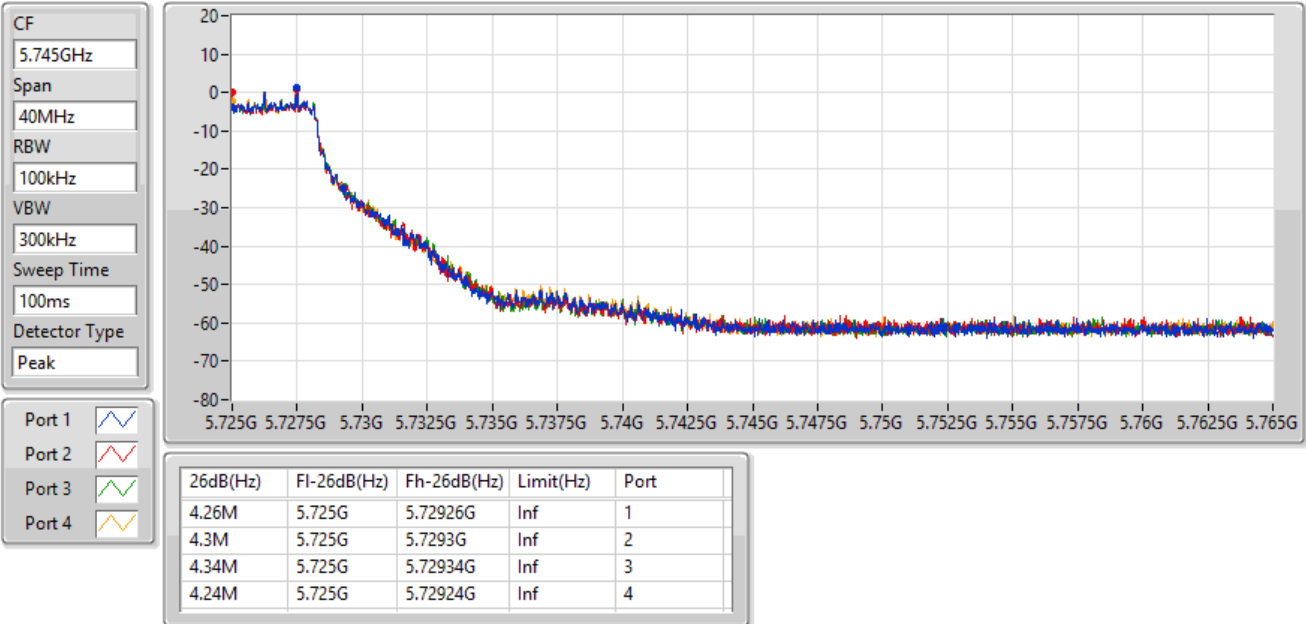


802.11a_Nss1,(6Mbps)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

06/08/2022

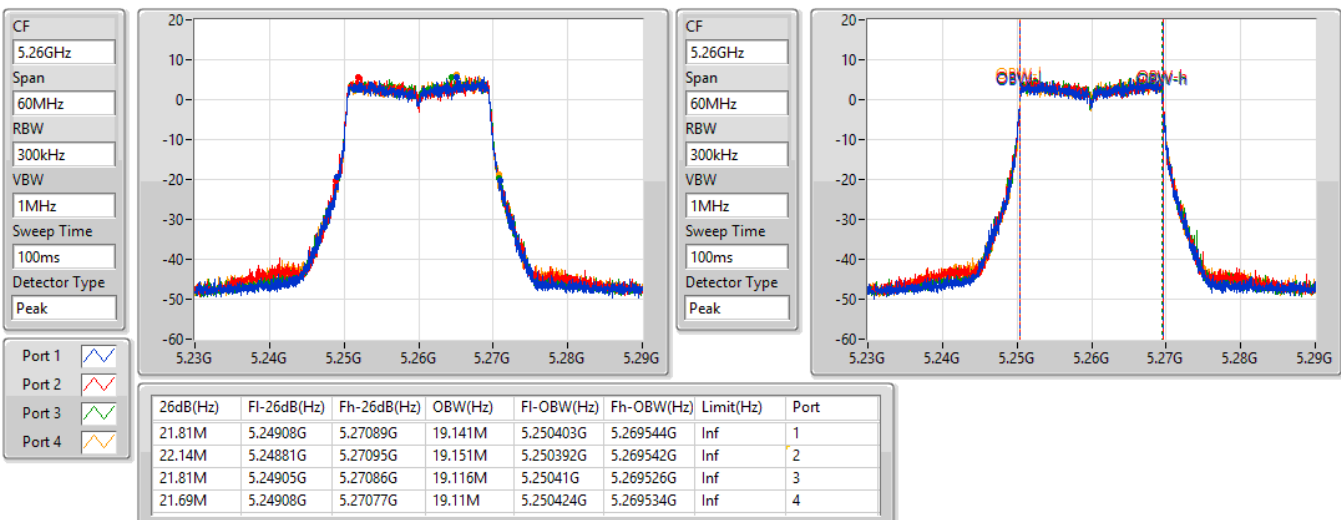


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5260MHz

06/08/2022

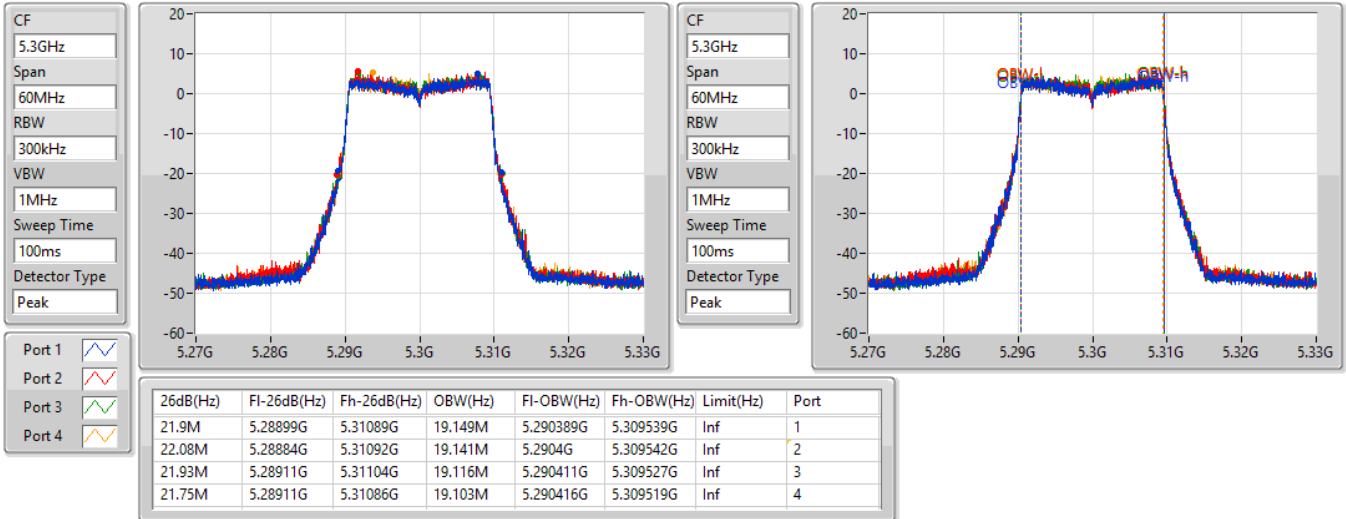


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5300MHz

06/08/2022

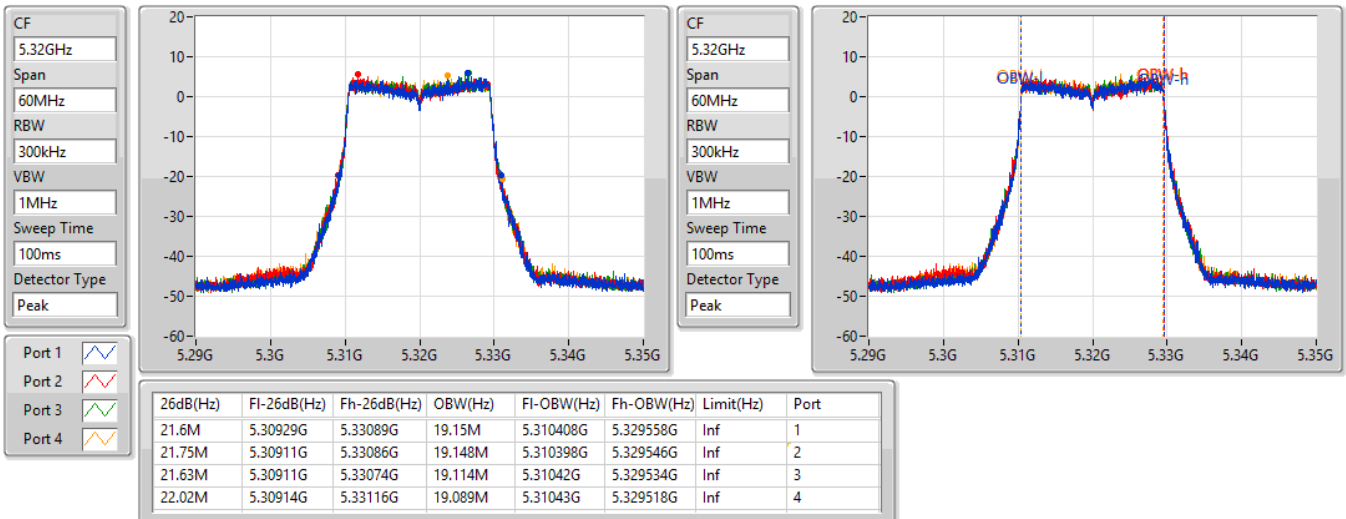


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5320MHz

06/08/2022

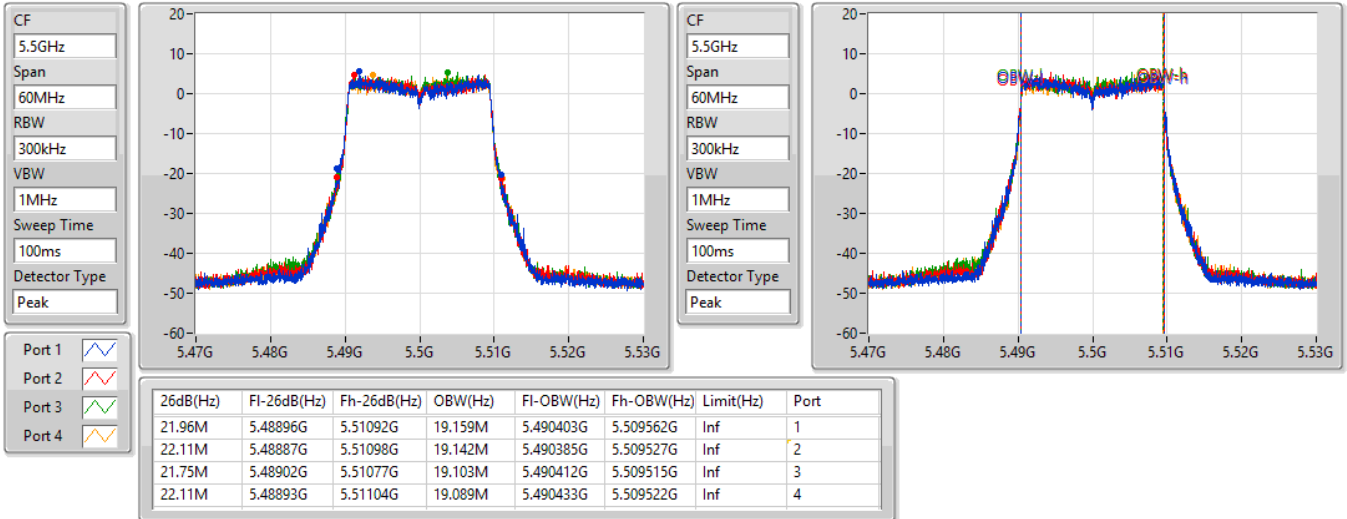


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5500MHz

06/08/2022

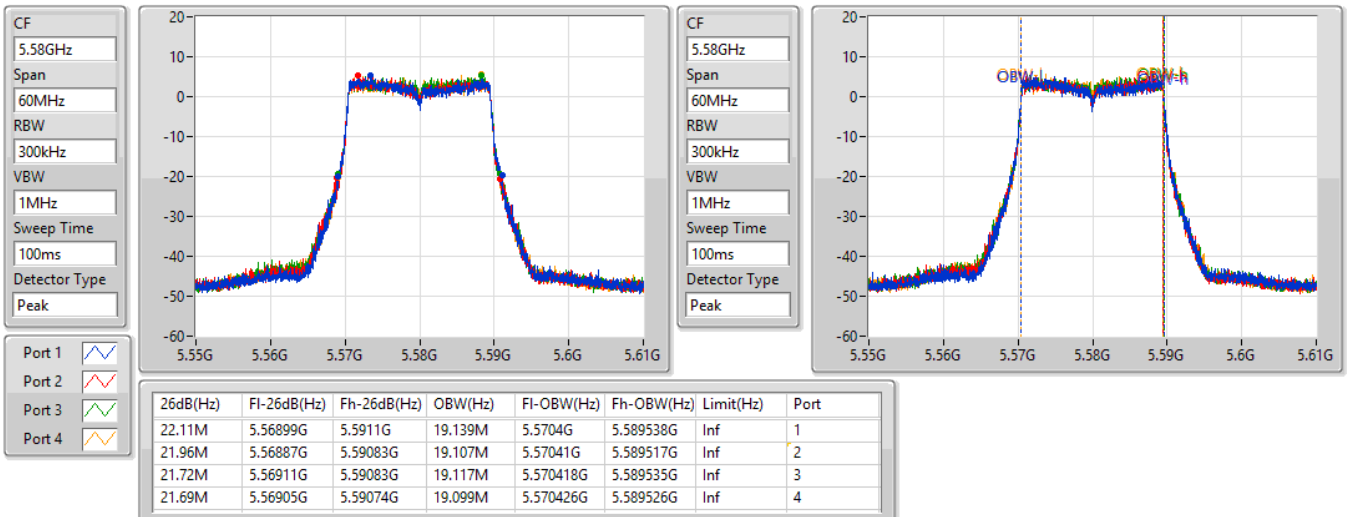


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5580MHz

06/08/2022

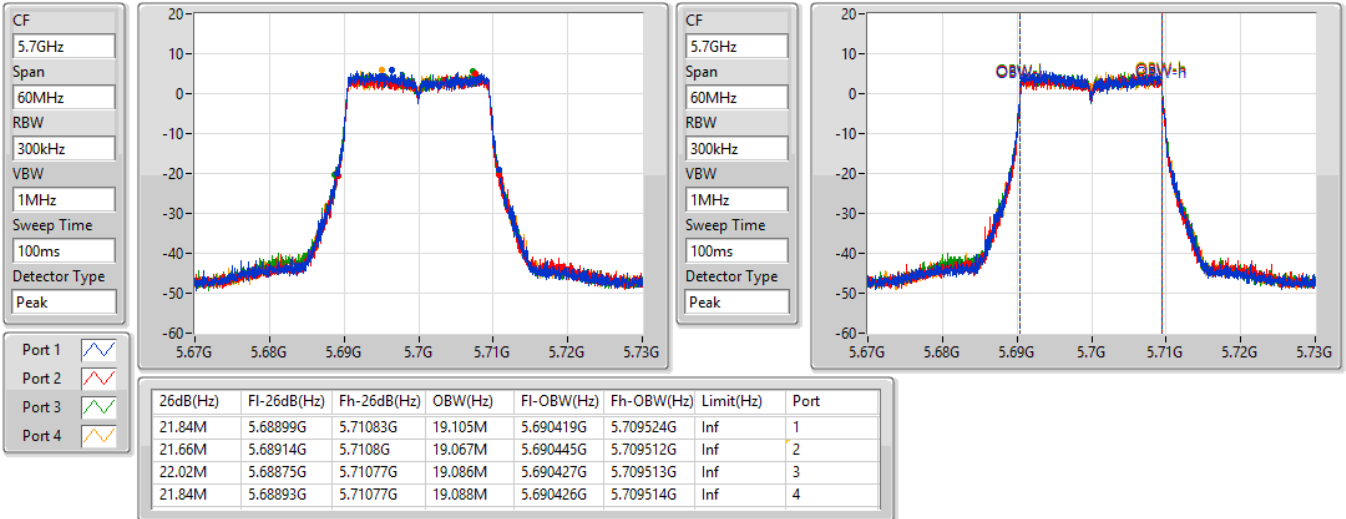


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5700MHz

06/08/2022

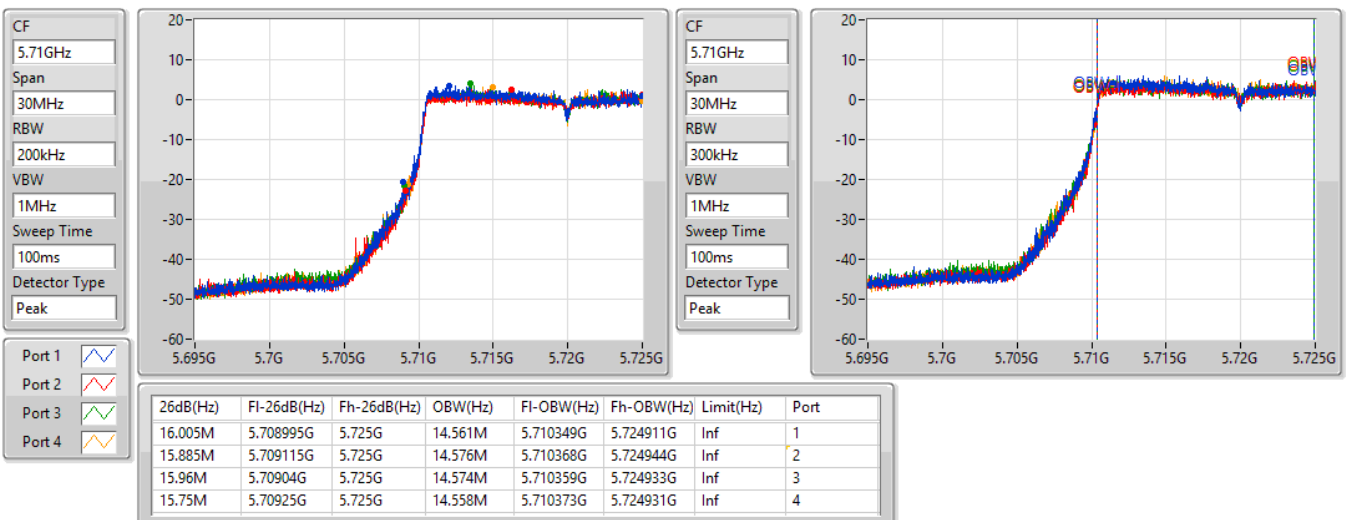


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.47-5.725GHz

06/08/2022

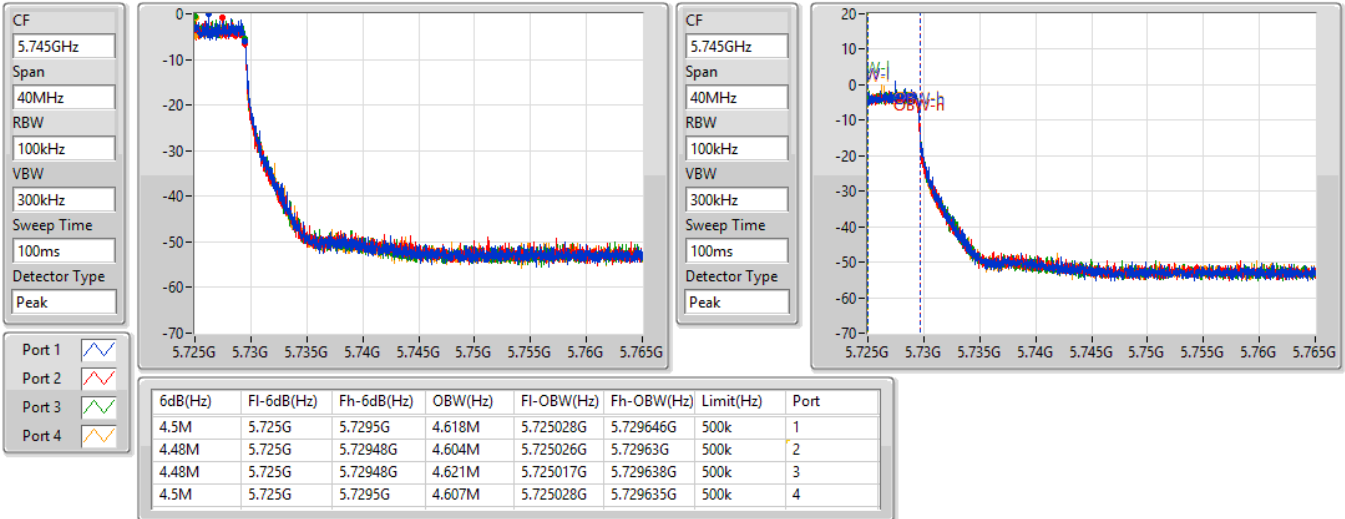


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

06/08/2022

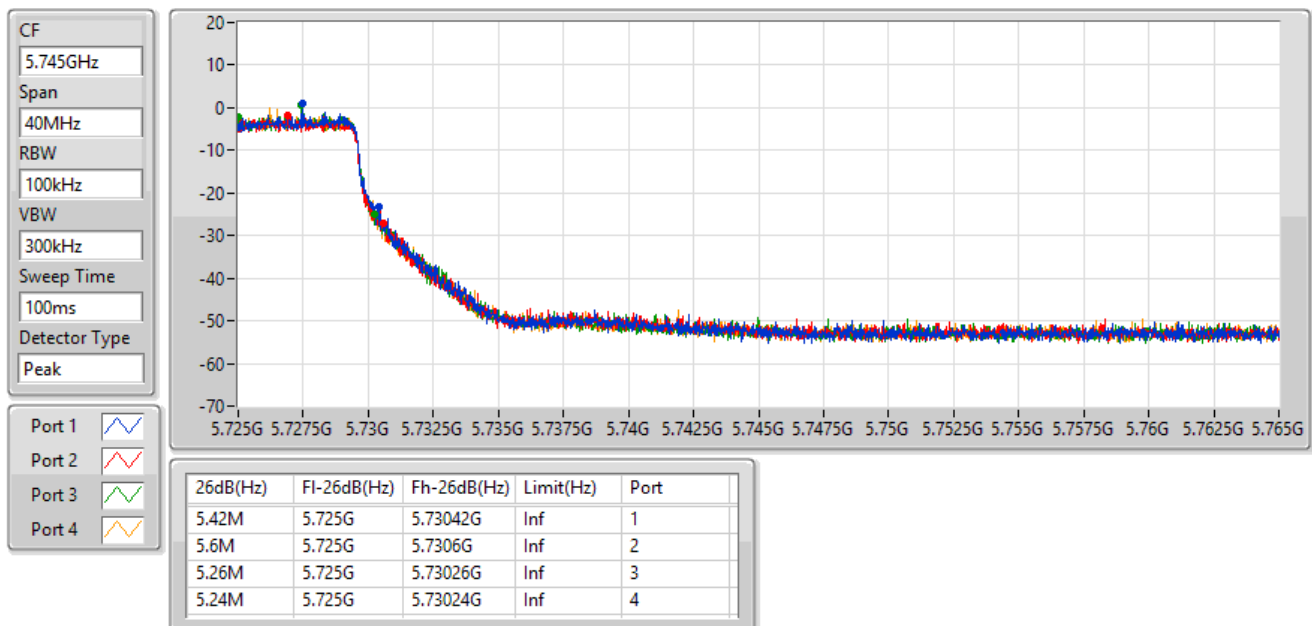


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

06/08/2022

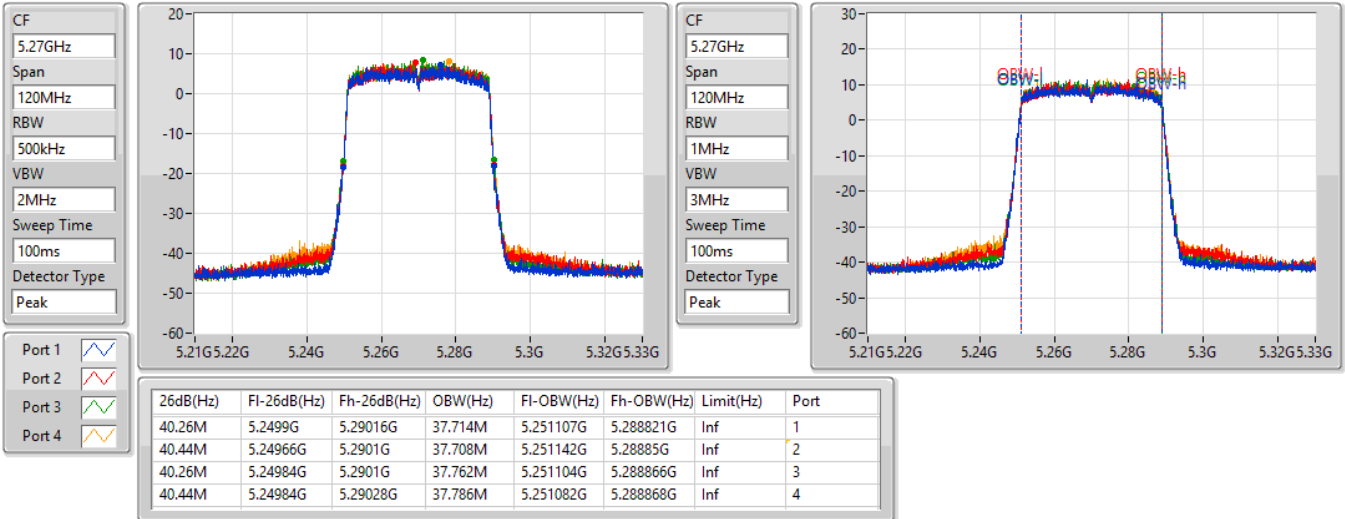


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5270MHz

06/08/2022

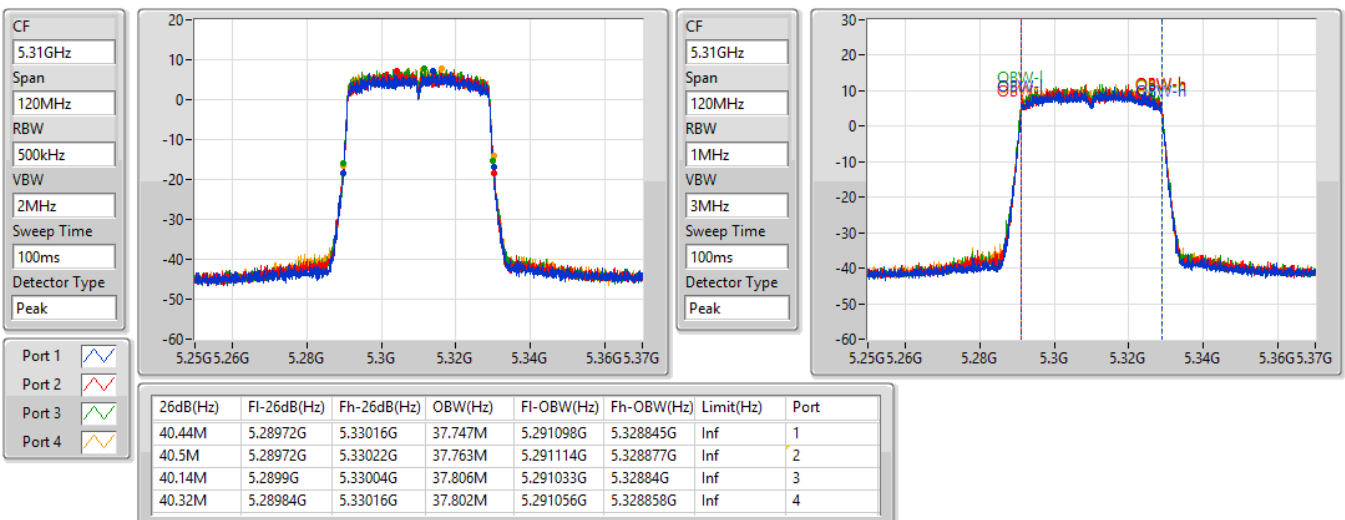


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5310MHz

06/08/2022

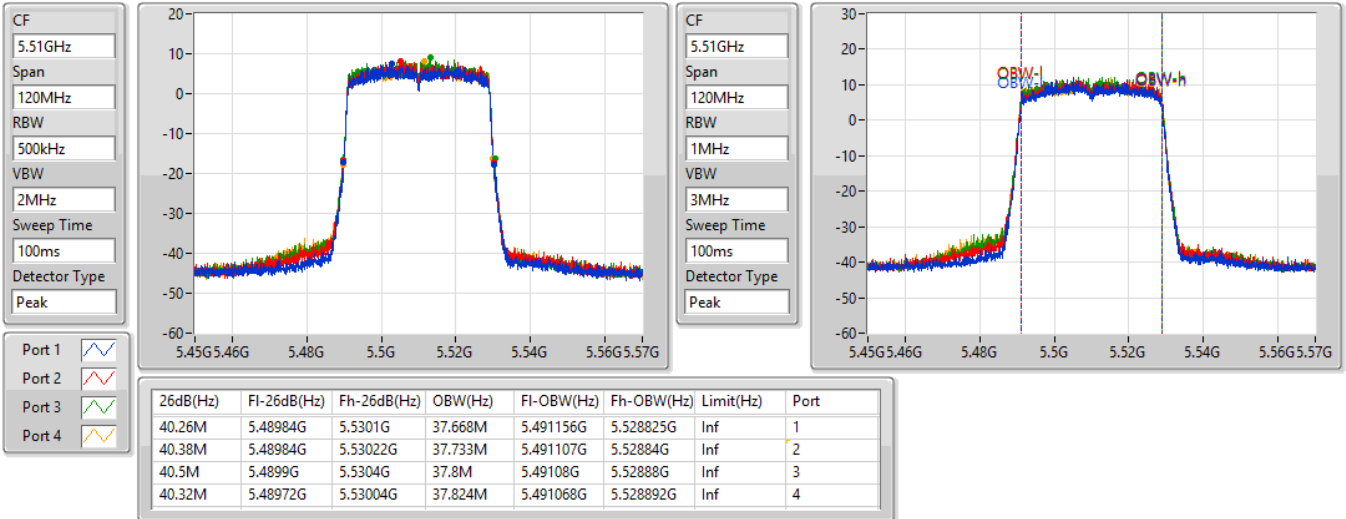


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5510MHz

06/08/2022

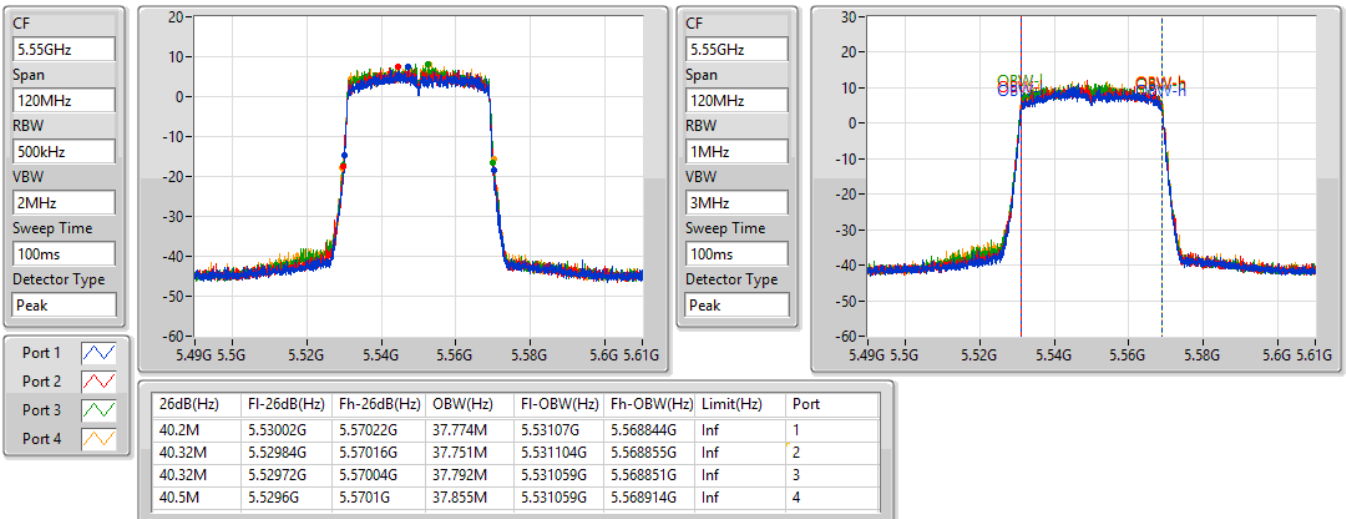


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5550MHz

06/08/2022

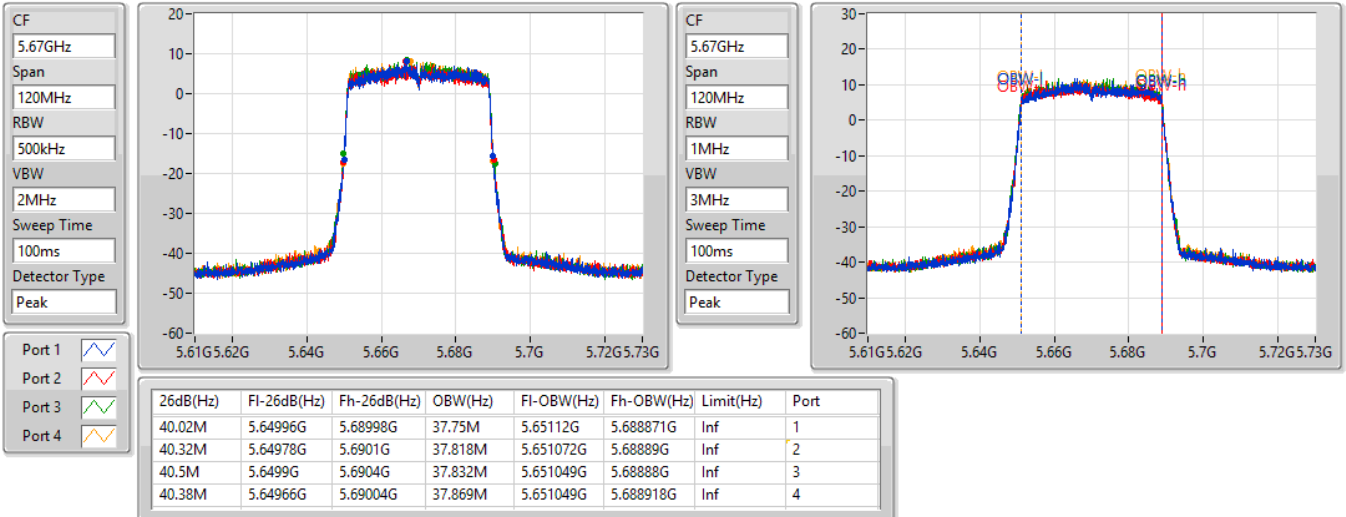


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5670MHz

06/08/2022

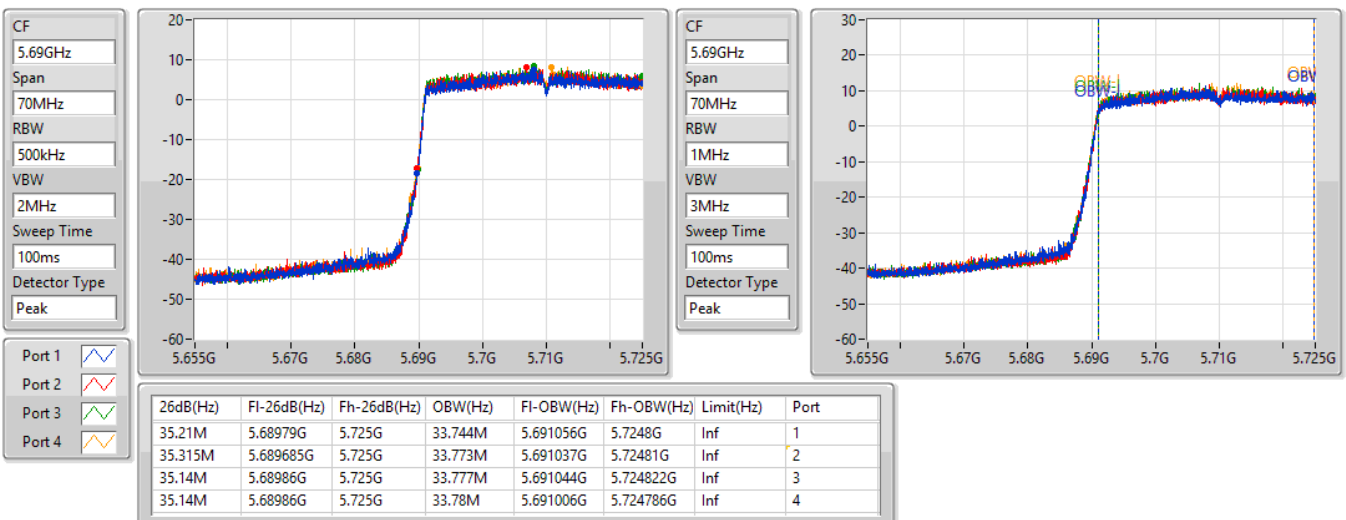


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.47-5.725GHz

06/08/2022

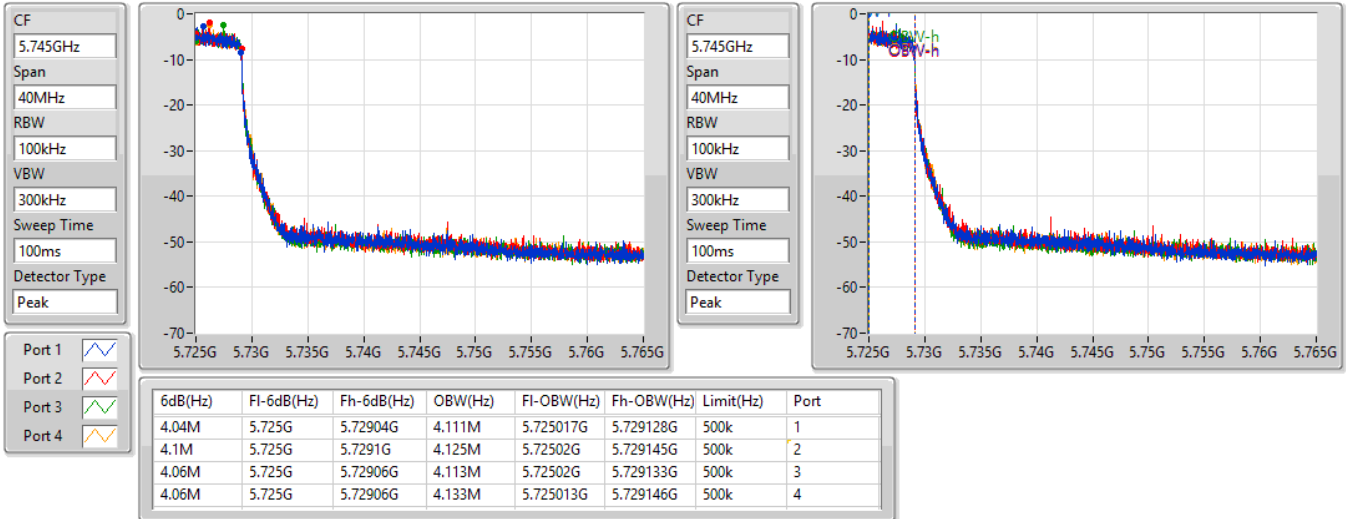


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

06/08/2022

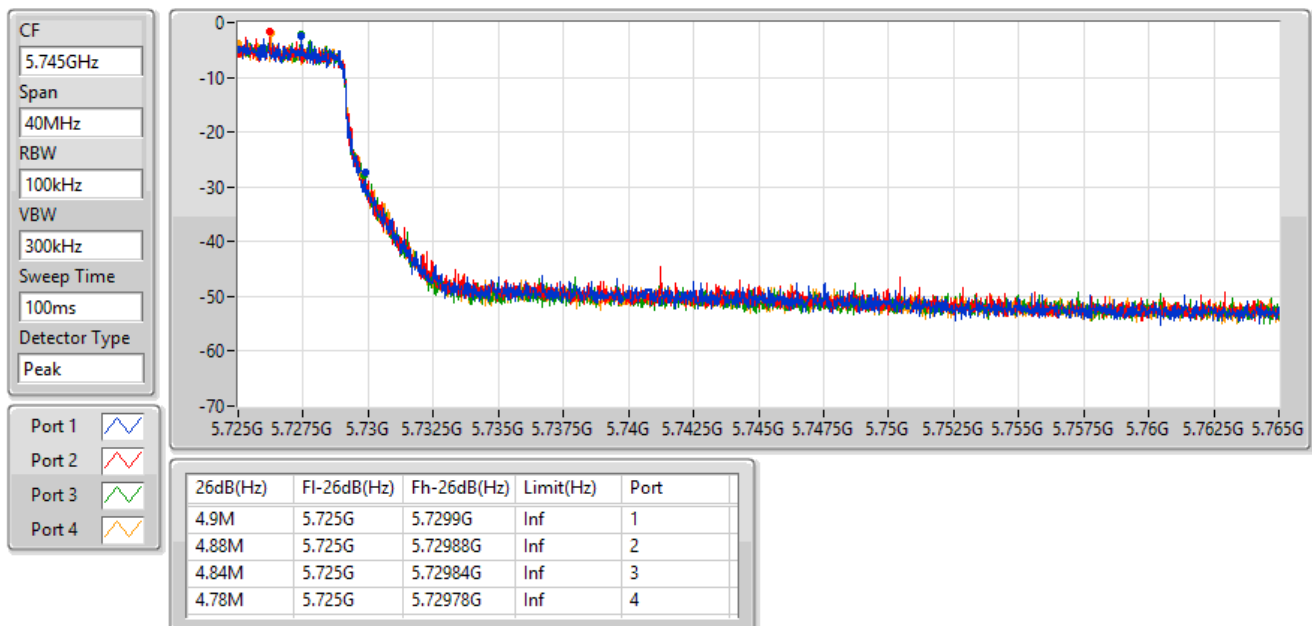


802.11ax HEW40_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

06/08/2022

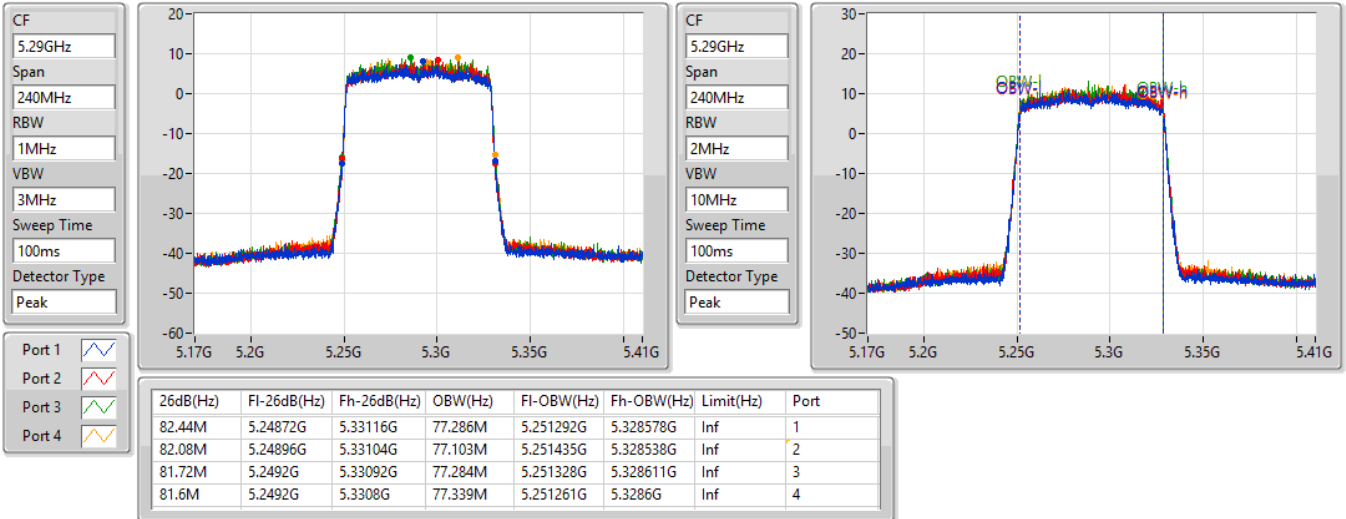


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5290MHz

06/08/2022

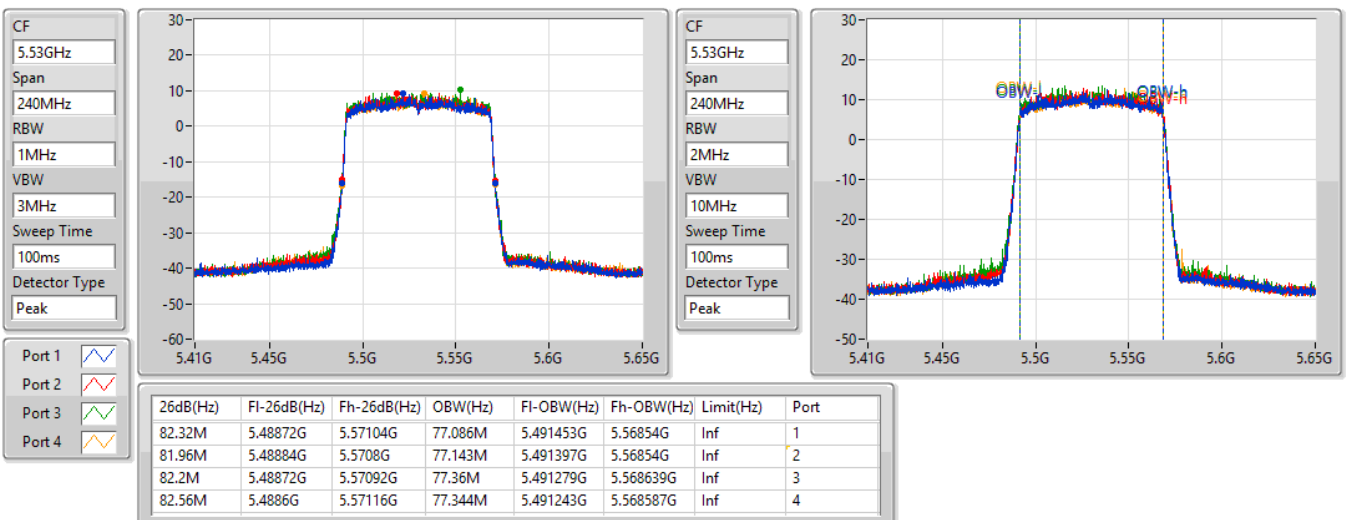


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5530MHz

06/08/2022

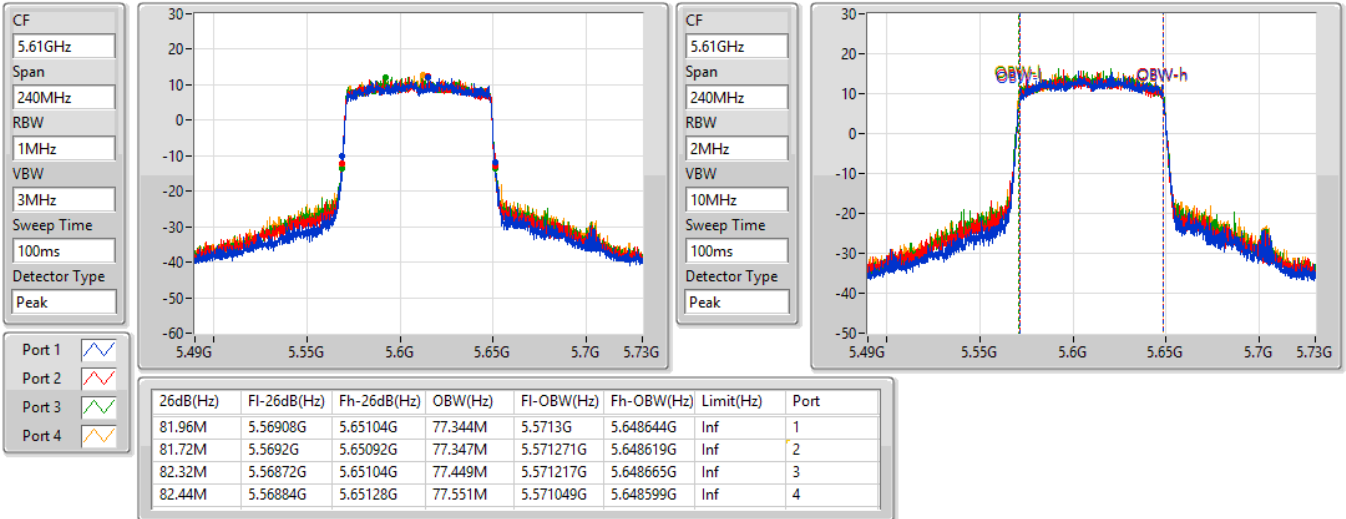


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5610MHz

06/08/2022

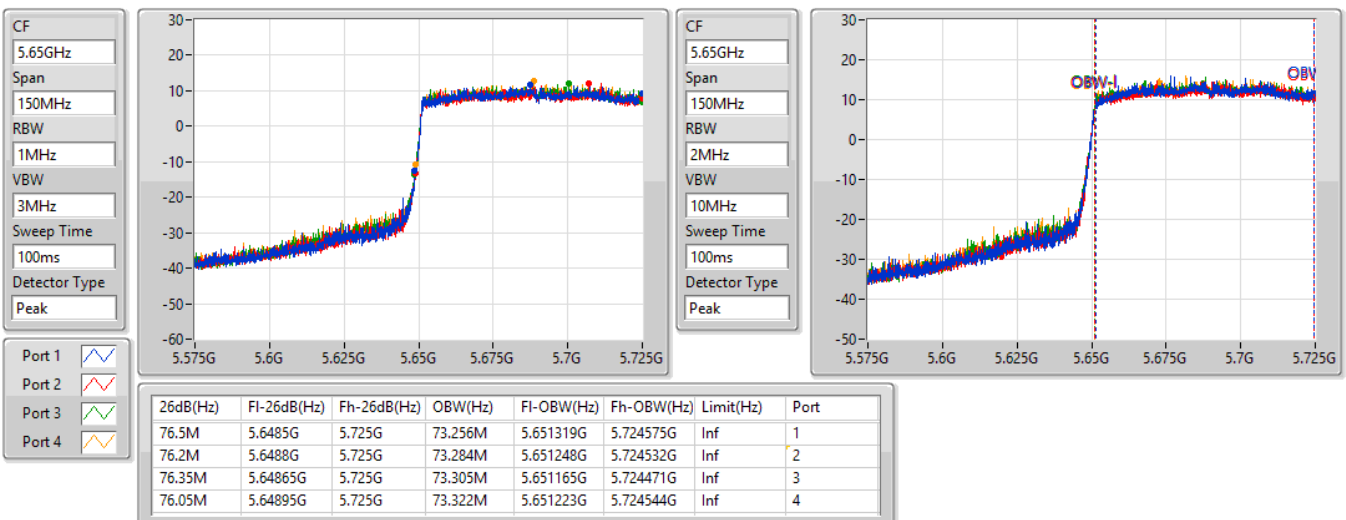


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5690MHz Straddle 5.47-5.725GHz

06/08/2022

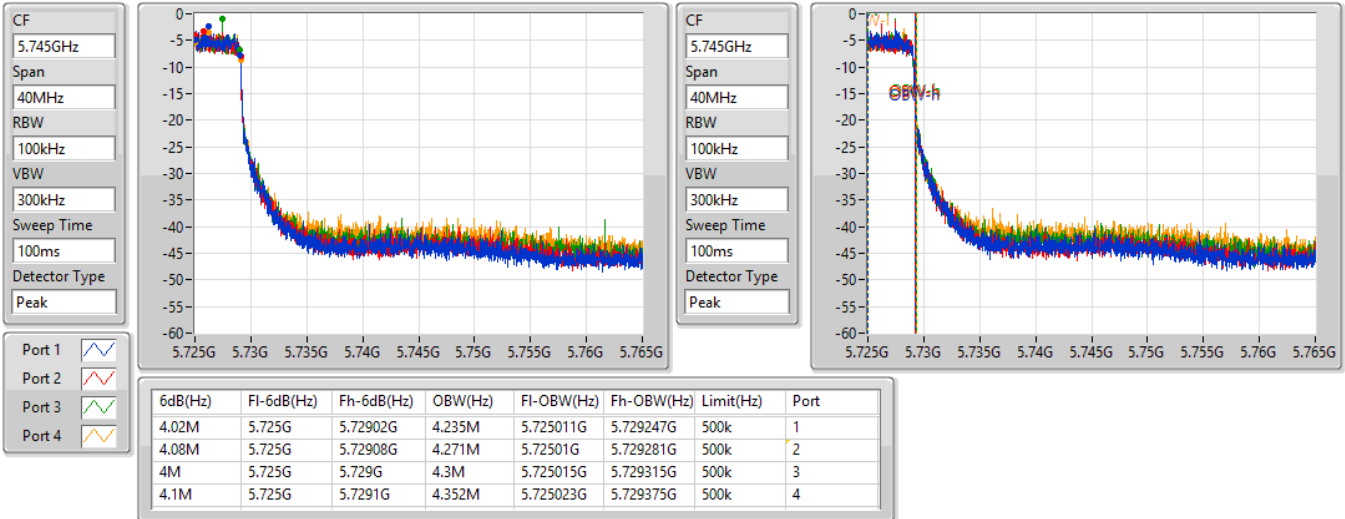


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5690MHz Straddle 5.725-5.85GHz

06/08/2022

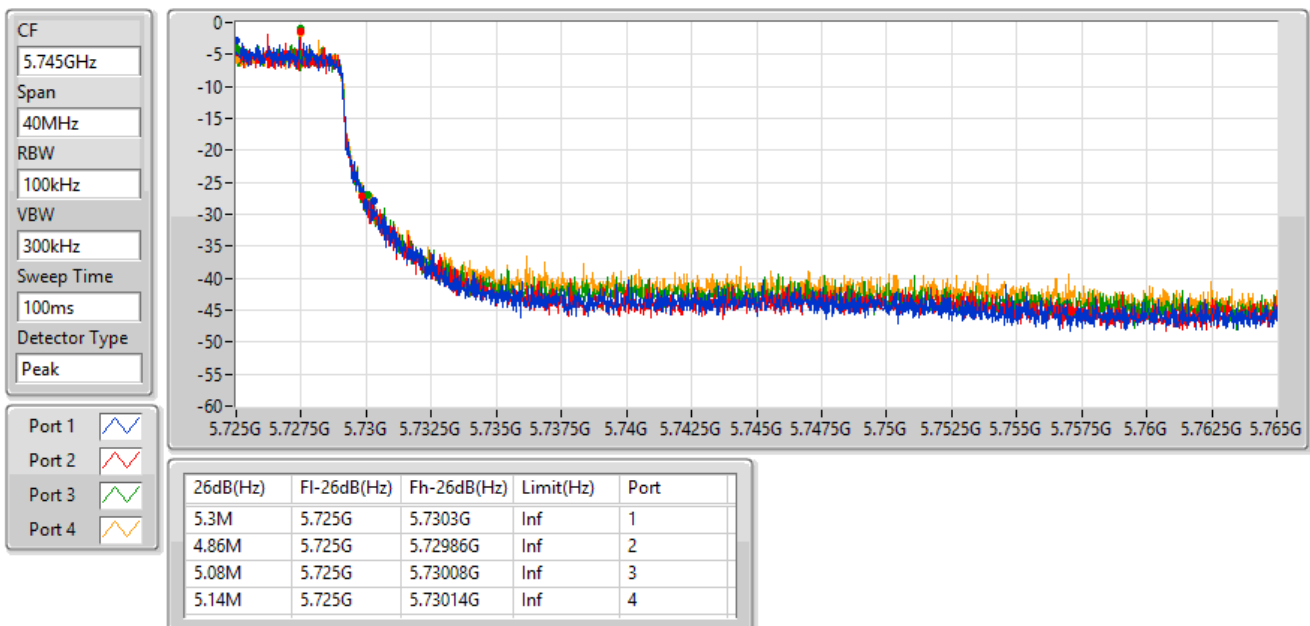


802.11ax HEW80_Nss1,(MCS0)_4TX

EBW

5690MHz Straddle 5.725-5.85GHz

06/08/2022

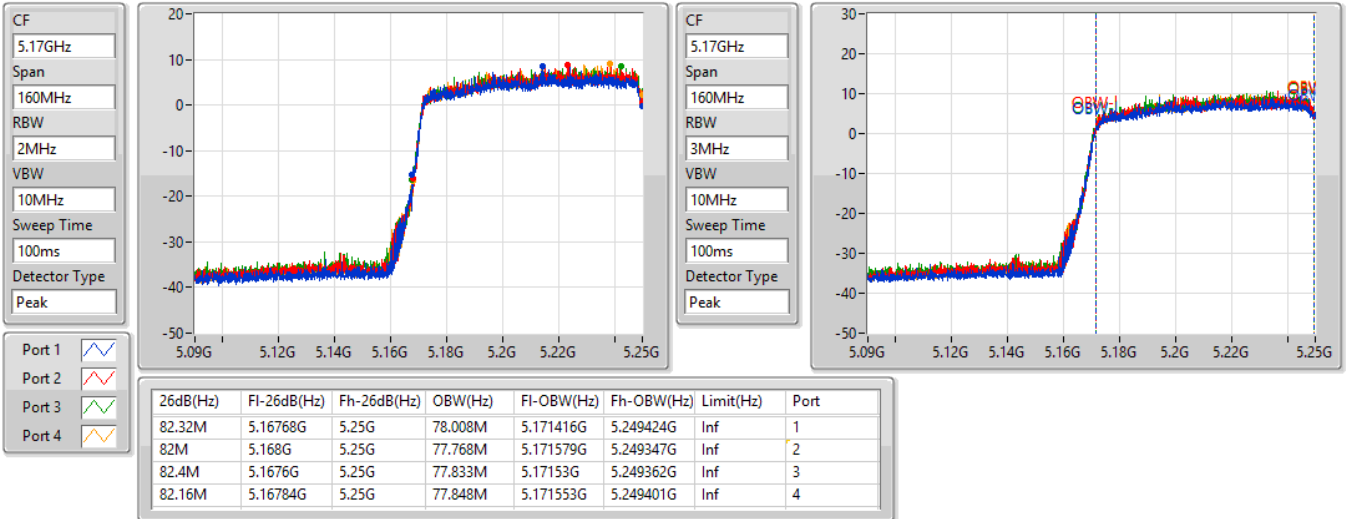


802.11ax HEW160_Nss1,(MCS0)_4TX

EBW

5250MHz Straddle 5.15-5.25GHz

06/08/2022

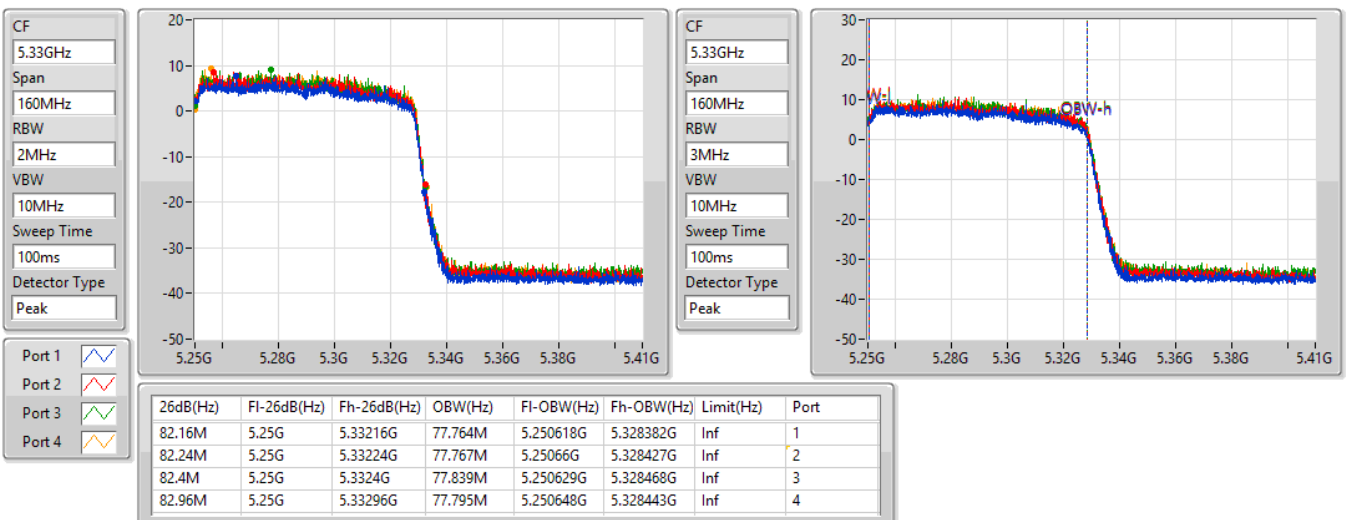


802.11ax HEW160_Nss1,(MCS0)_4TX

EBW

5250MHz Straddle 5.25-5.35GHz

06/08/2022

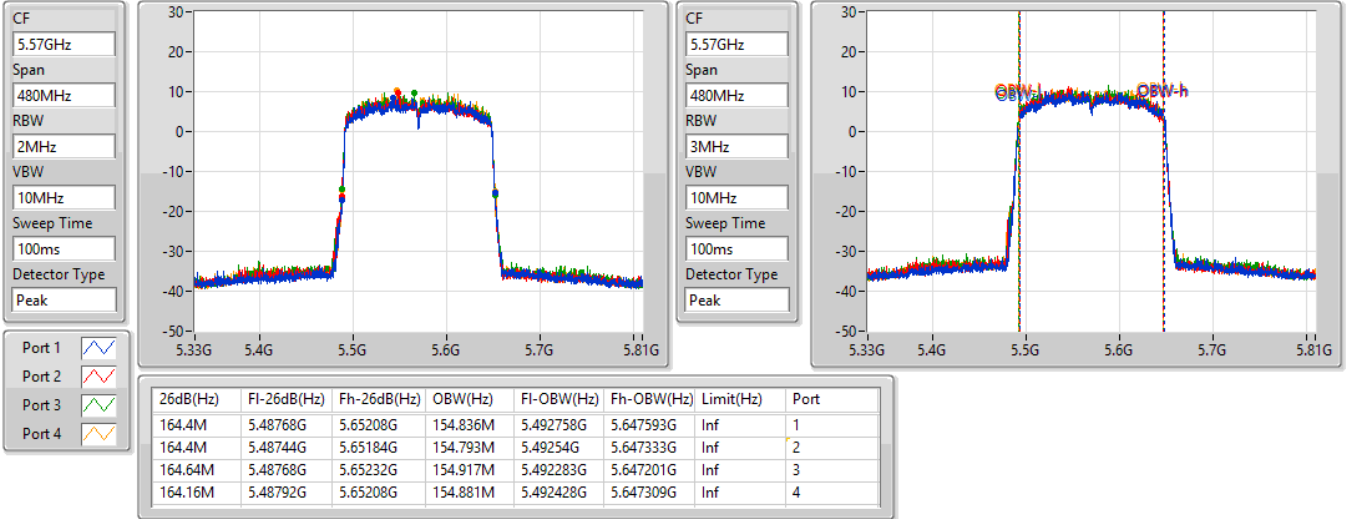


802.11ax HEW160_Nss1,(MCS0)_4TX

EBW

5570MHz

06/08/2022





EBW_R3 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C_Beamforming mode

Appendix A.6

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-BF_Nss1,(MCS0)_4TX	81.52M	79.32M	79M3D1D	80.8M	77.401M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	22.17M	19.16M	19M2D1D	20.64M	19.04M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	42.42M	37.901M	37M9D1D	40.68M	37.661M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	82.68M	77.601M	77M6D1D	81.36M	77.121M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	82.8M	78.201M	78M2D1D	82.08M	77.801M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	22.29M	19.16M	19M2D1D	15.945M	14.558M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	41.16M	37.901M	37M9D1D	35.315M	33.723M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.72M	77.481M	77M5D1D	75.525M	73.013M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	164.16M	156.162M	156MD1D	160.8M	154.723M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	4.5M	4.618M	4M62D1D	4.48M	4.598M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	4.04M	4.138M	4M14D1D	3.94M	4.138M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	4M	4.658M	4M66D1D	3.98M	4.198M

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



EBW_R3 + Antenna set 1 for UNII 2A + Antenna set 2 for UNII 2C_Beamforming mode

Appendix A.6

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-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	22.05M	19.07M	20.88M	19.07M	22.14M	19.13M	20.64M	19.1M
5300MHz	Pass	Inf	22.17M	19.13M	21.36M	19.1M	22.05M	19.07M	21.81M	19.07M
5320MHz	Pass	Inf	21.57M	19.04M	21.3M	19.16M	22.02M	19.07M	21.69M	19.13M
5500MHz	Pass	Inf	21.54M	19.1M	21.45M	19.1M	22.17M	19.1M	21.93M	19.1M
5580MHz	Pass	Inf	22.14M	19.07M	21.3M	19.16M	21.9M	19.13M	22.23M	19.1M
5700MHz	Pass	Inf	21.9M	19.13M	21.09M	19.07M	22.29M	19.1M	21.9M	19.07M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.02M	14.573M	16.02M	14.558M	15.945M	14.588M	16.08M	14.573M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.618M	4.5M	4.598M	4.5M	4.618M	4.48M	4.618M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	41.16M	37.661M	41.28M	37.781M	40.92M	37.781M	42.42M	37.901M
5310MHz	Pass	Inf	41.52M	37.781M	40.68M	37.781M	40.74M	37.721M	40.68M	37.901M
5510MHz	Pass	Inf	40.26M	37.721M	39.9M	37.781M	40.44M	37.781M	40.44M	37.721M
5550MHz	Pass	Inf	40.38M	37.781M	39.96M	37.601M	41.16M	37.841M	40.38M	37.901M
5670MHz	Pass	Inf	40.5M	37.901M	40.62M	37.841M	40.26M	37.781M	40.32M	37.721M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.385M	33.758M	35.455M	33.723M	35.35M	33.828M	35.315M	33.758M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.02M	4.138M	3.94M	4.138M	3.98M	4.138M	4.04M	4.138M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.36M	77.601M	82.2M	77.241M	81.84M	77.121M	82.68M	77.241M
5530MHz	Pass	Inf	81.12M	77.241M	80.76M	77.241M	81.6M	77.121M	81.36M	77.481M
5610MHz	Pass	Inf	81M	77.241M	81.36M	77.241M	81.72M	77.361M	81.36M	77.241M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.2M	73.013M	76.125M	73.238M	75.525M	73.088M	75.525M	73.313M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4M	4.218M	4M	4.198M	3.98M	4.658M	4M	4.318M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.52M	77.401M	81.2M	77.401M	81.04M	78.521M	80.8M	79.32M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	82.08M	77.961M	82.4M	77.801M	82.8M	78.201M	82.16M	78.121M
5570MHz	Pass	Inf	162.72M	155.202M	161.04M	156.162M	164.16M	155.202M	160.8M	154.723M

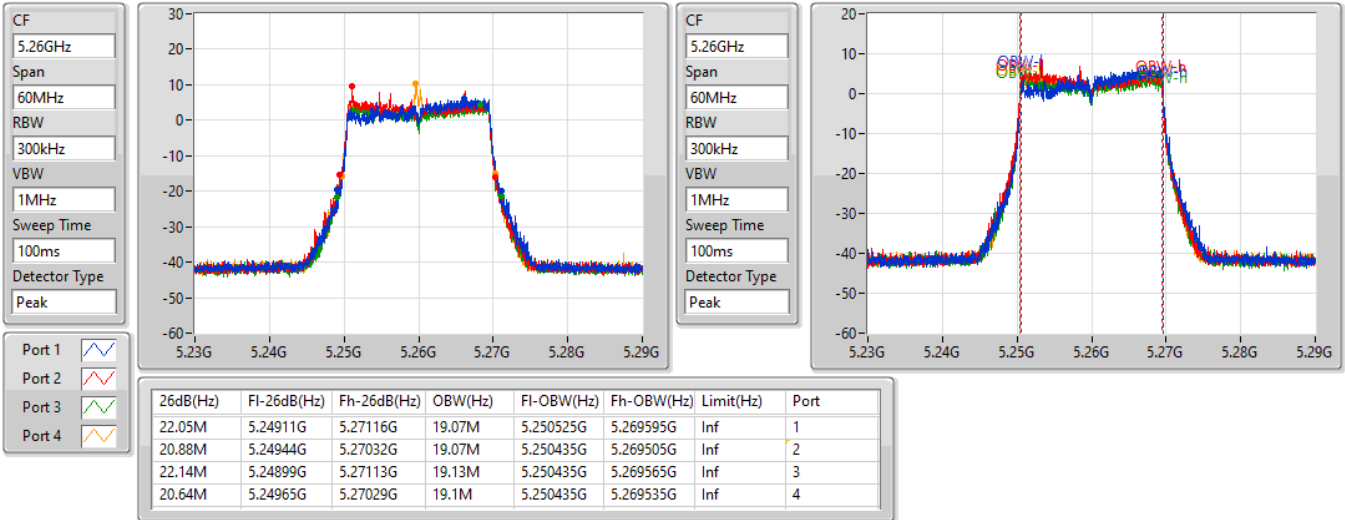
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5260MHz

14/09/2022

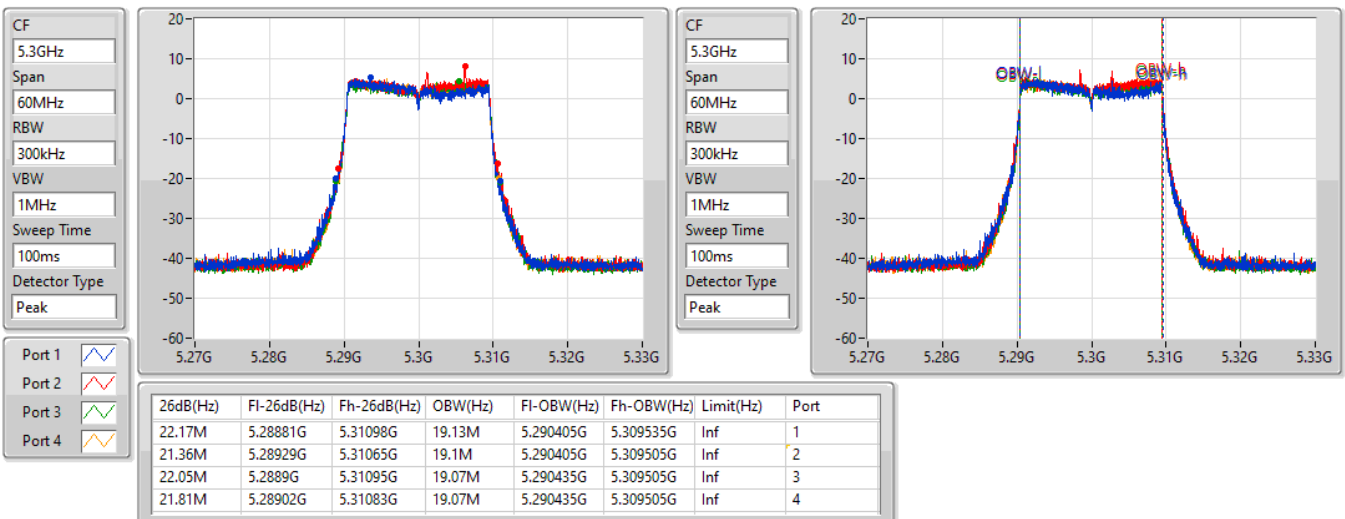


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5300MHz

14/09/2022

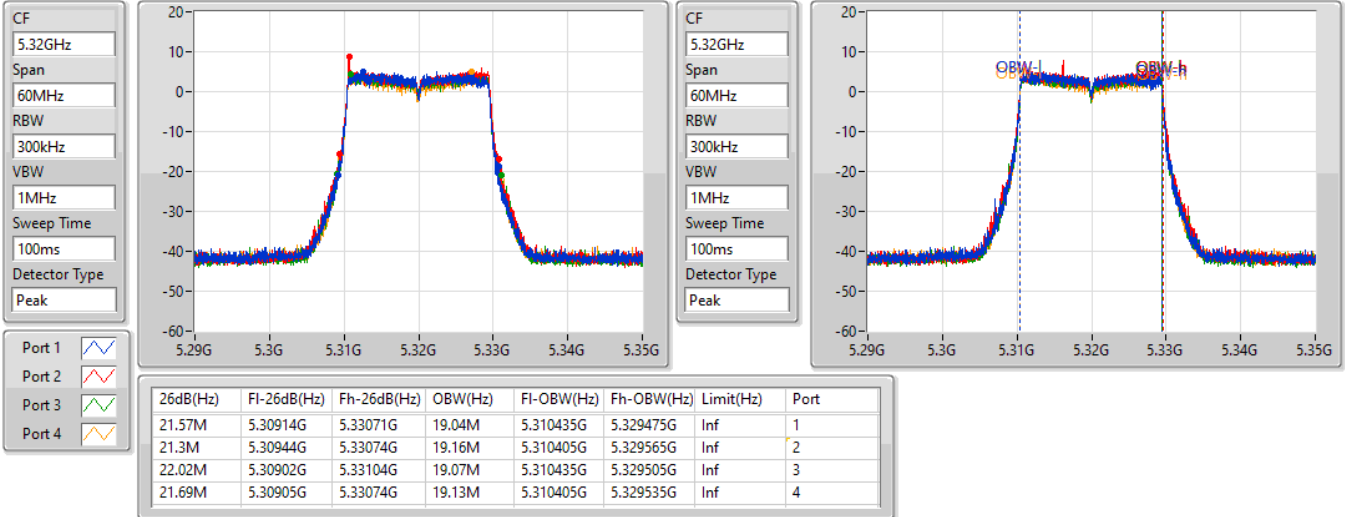


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5320MHz

14/09/2022

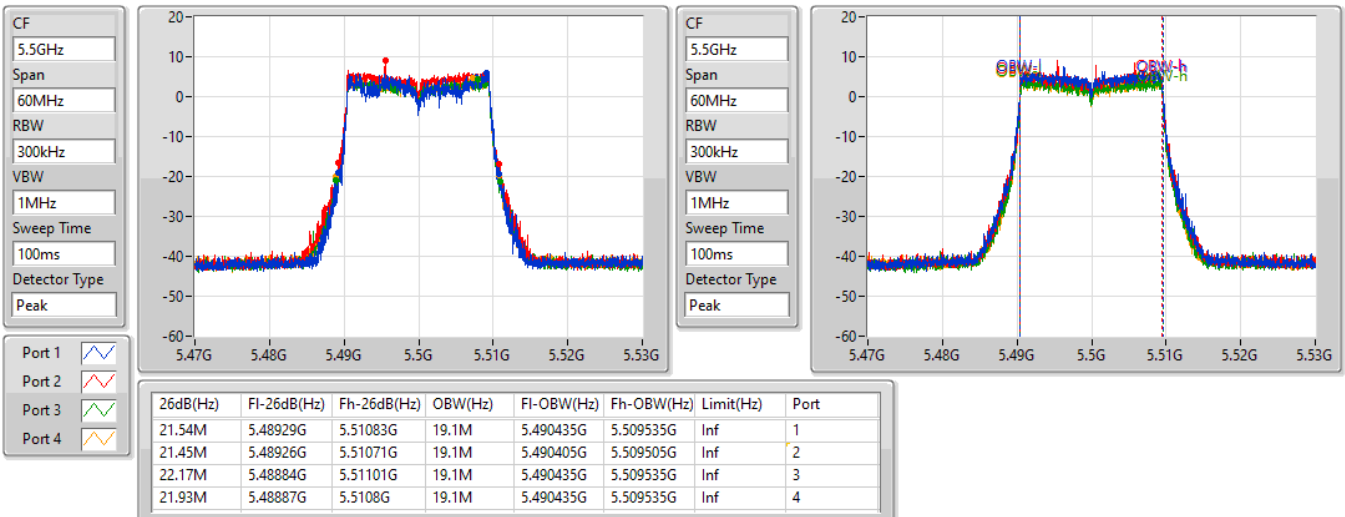


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5500MHz

14/09/2022

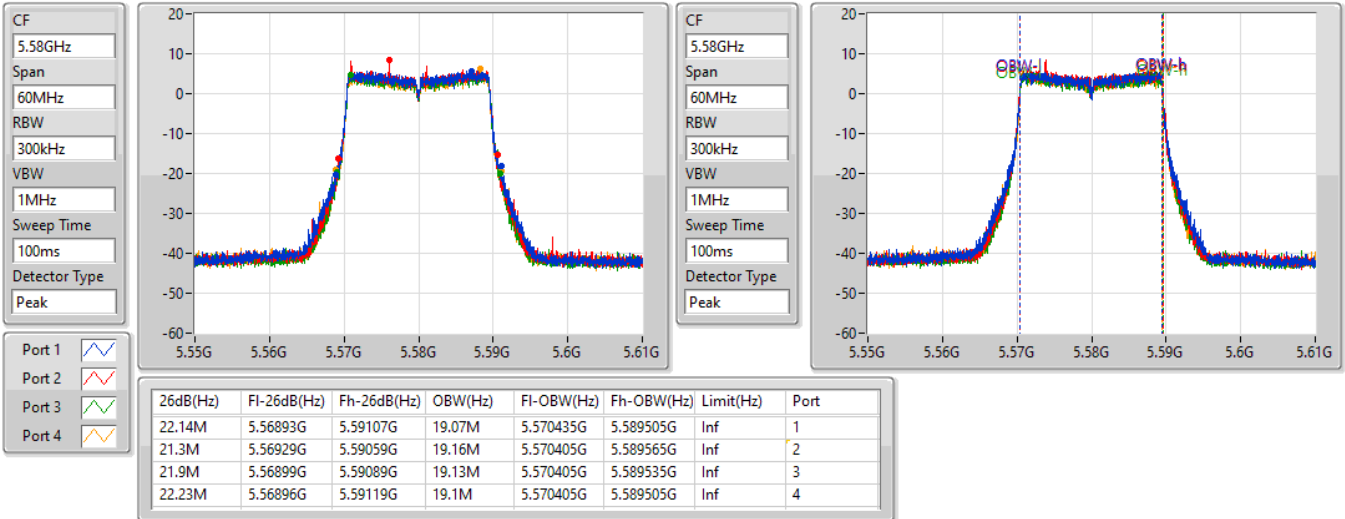


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5580MHz

14/09/2022

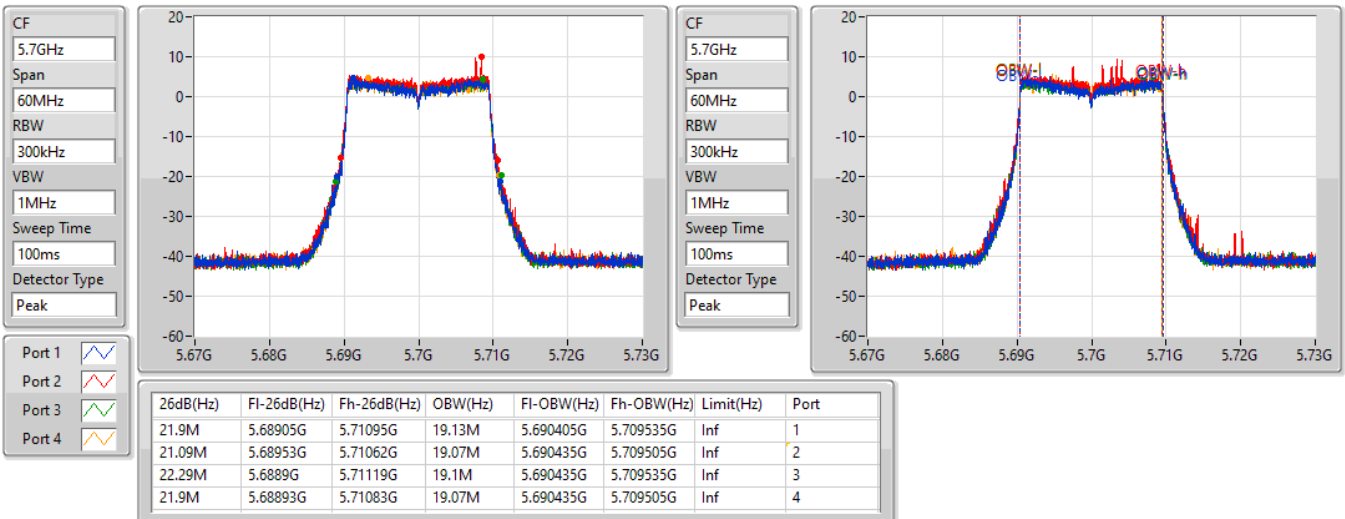


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5700MHz

14/09/2022

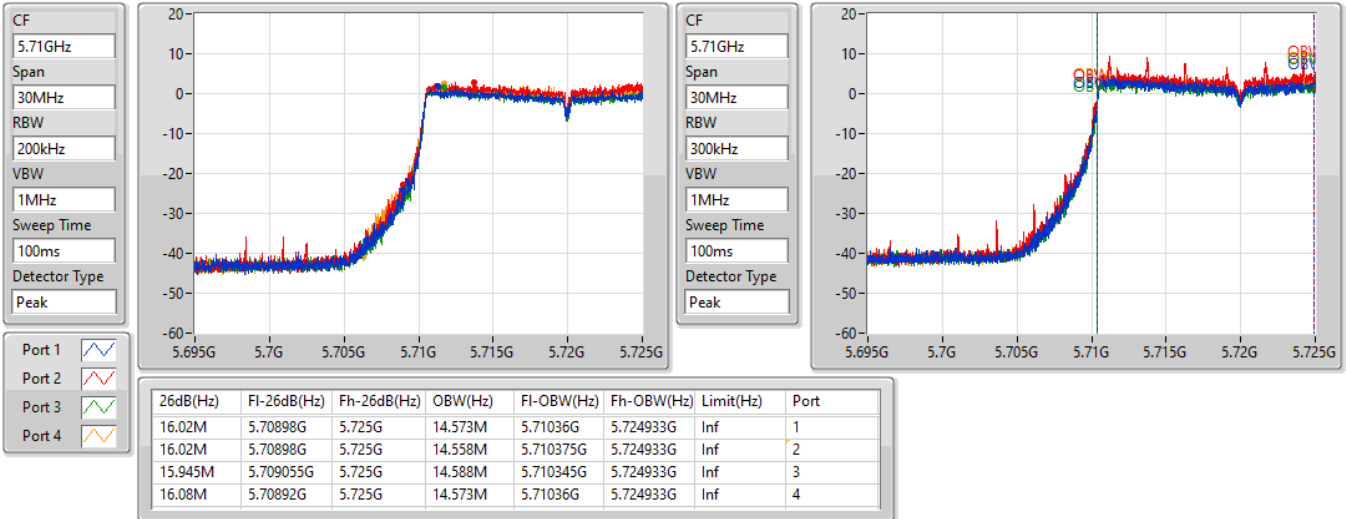


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.47-5.725GHz

14/09/2022

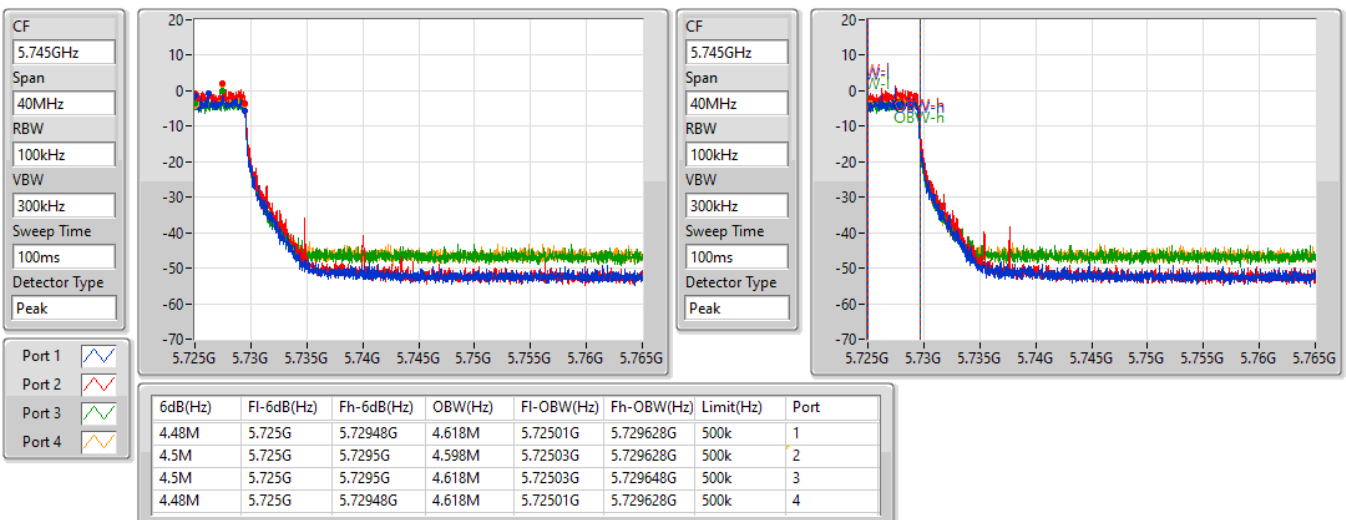


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

14/09/2022

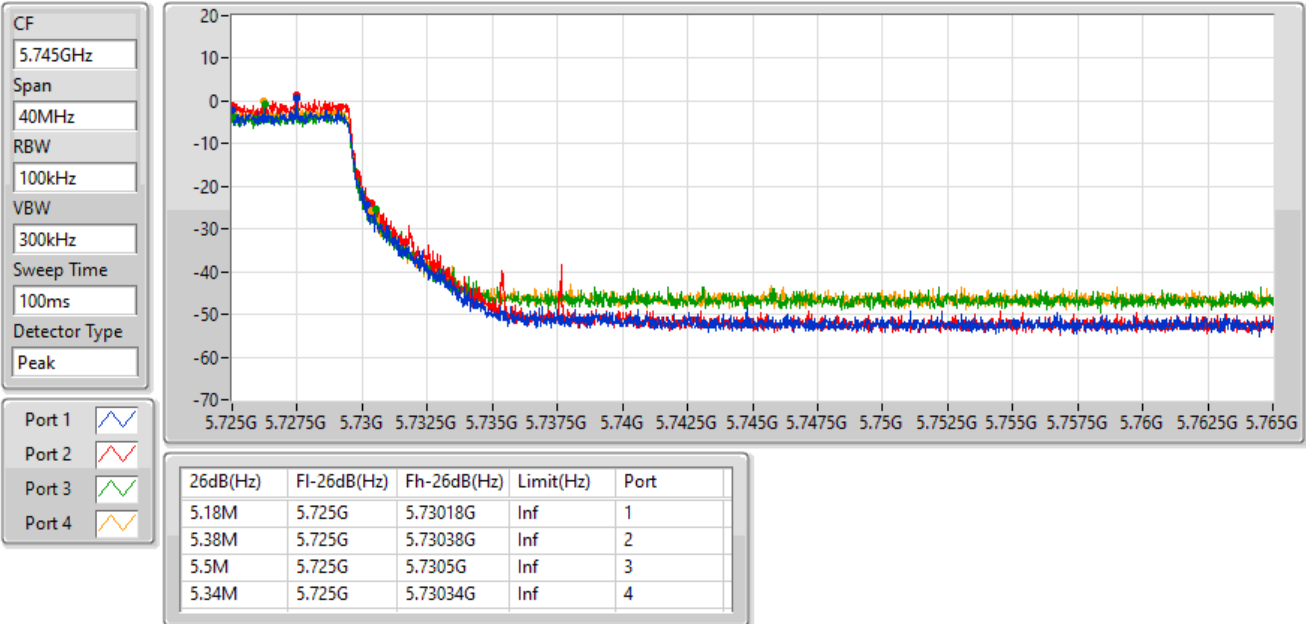


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5720MHz Straddle 5.725-5.85GHz

14/09/2022

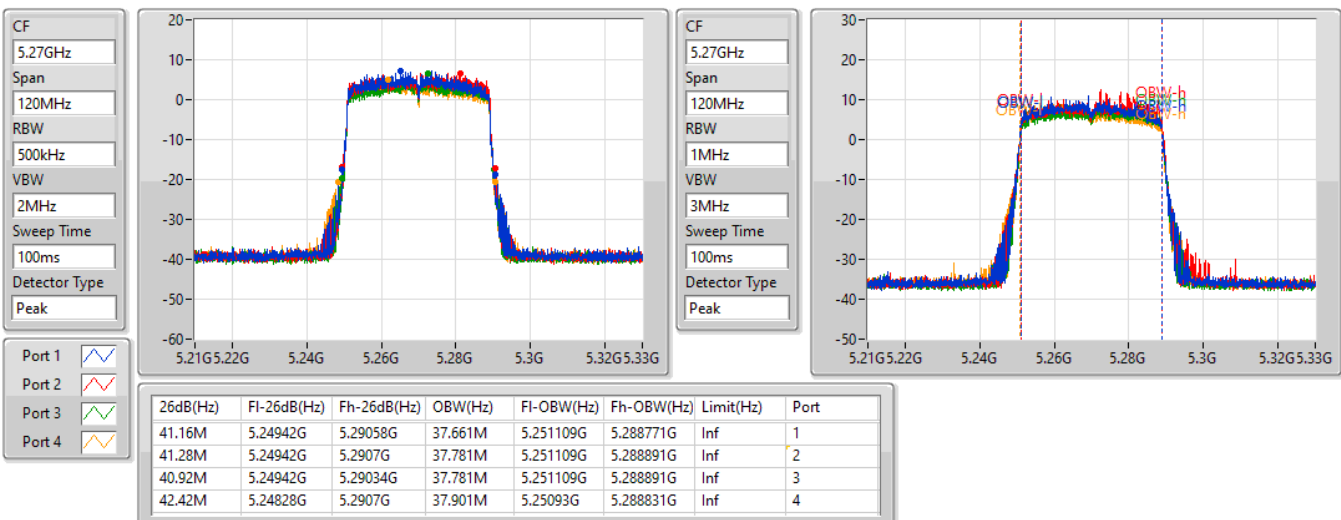


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5270MHz

14/09/2022

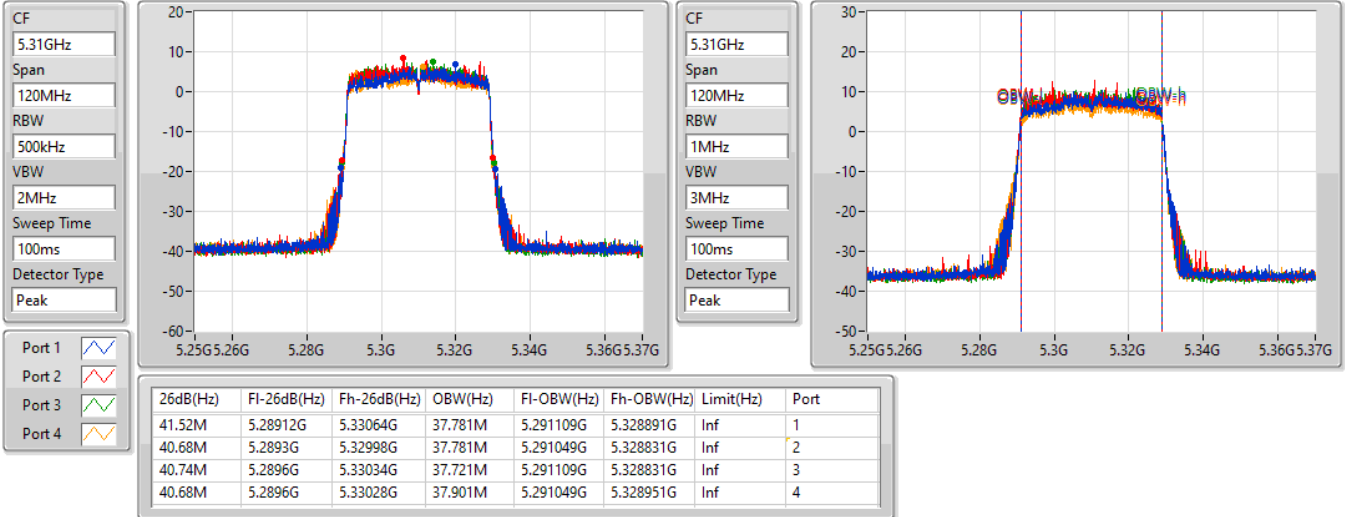


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5310MHz

14/09/2022

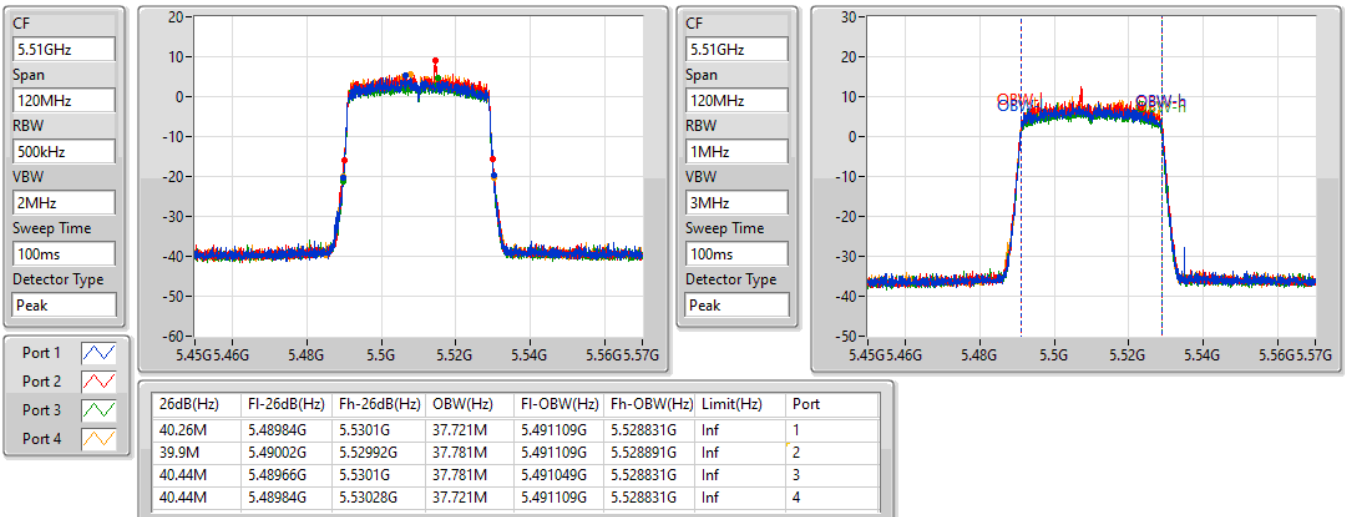


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5510MHz

14/09/2022

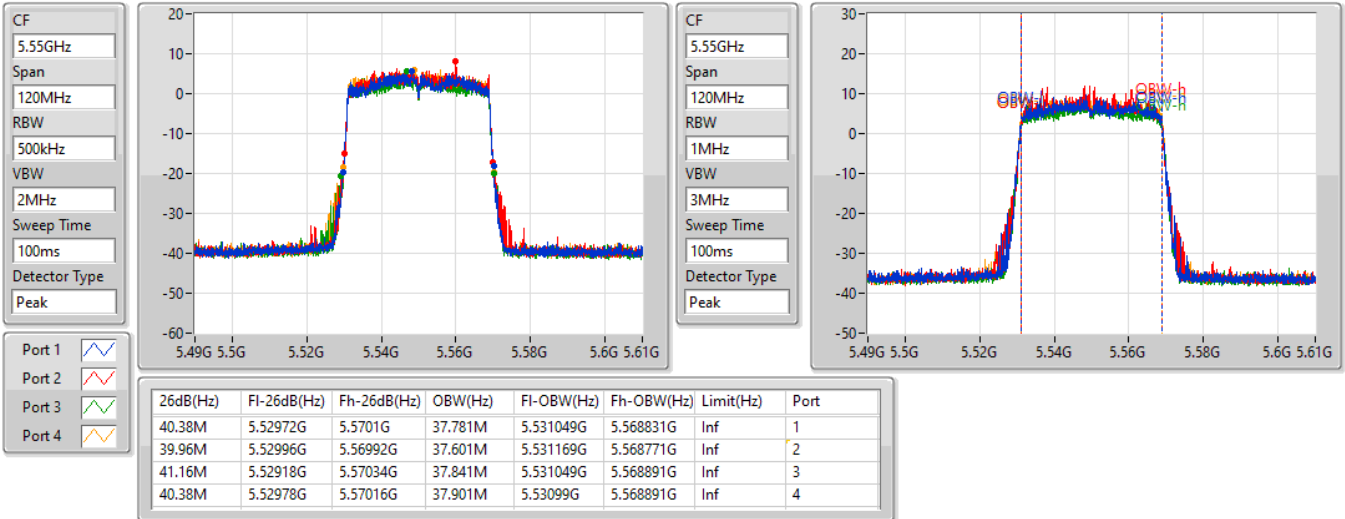


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5550MHz

14/09/2022

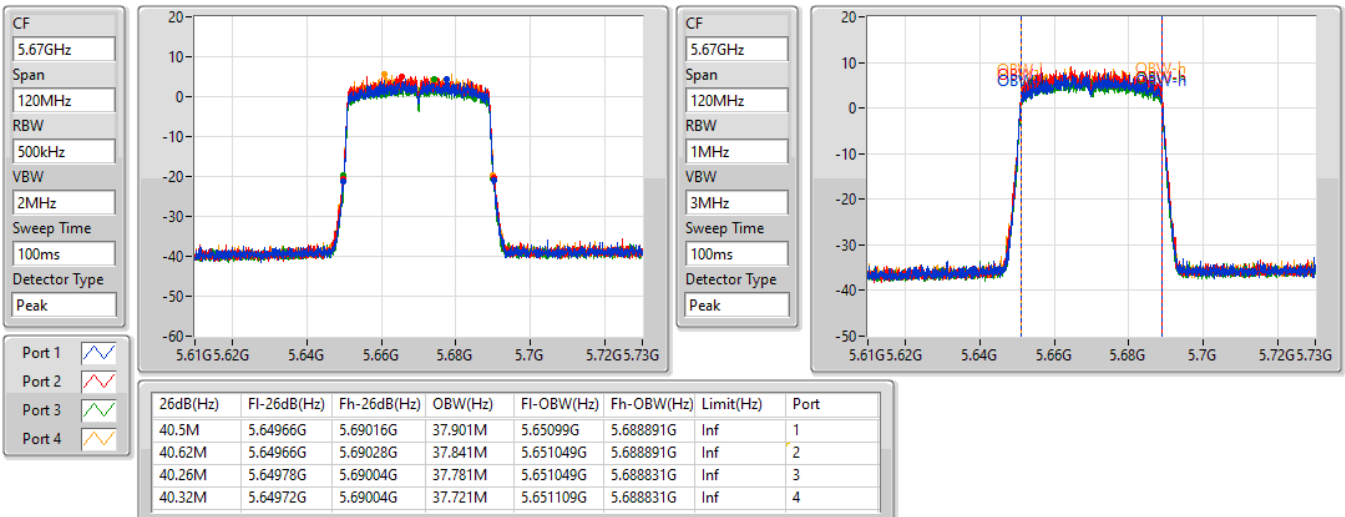


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5670MHz

14/09/2022

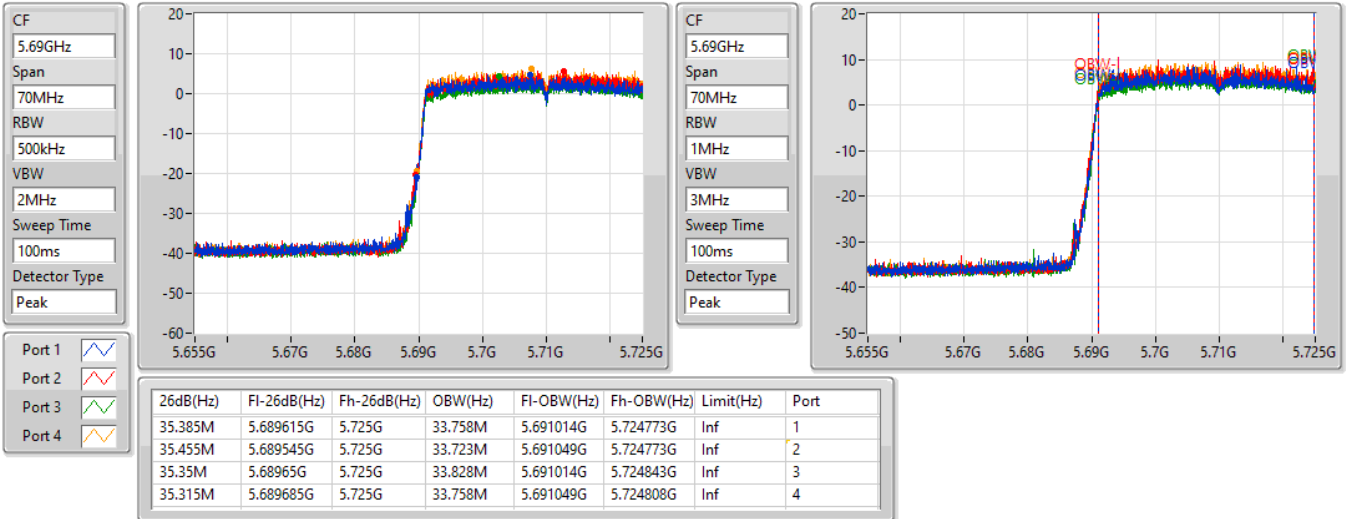


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.47-5.725GHz

14/09/2022

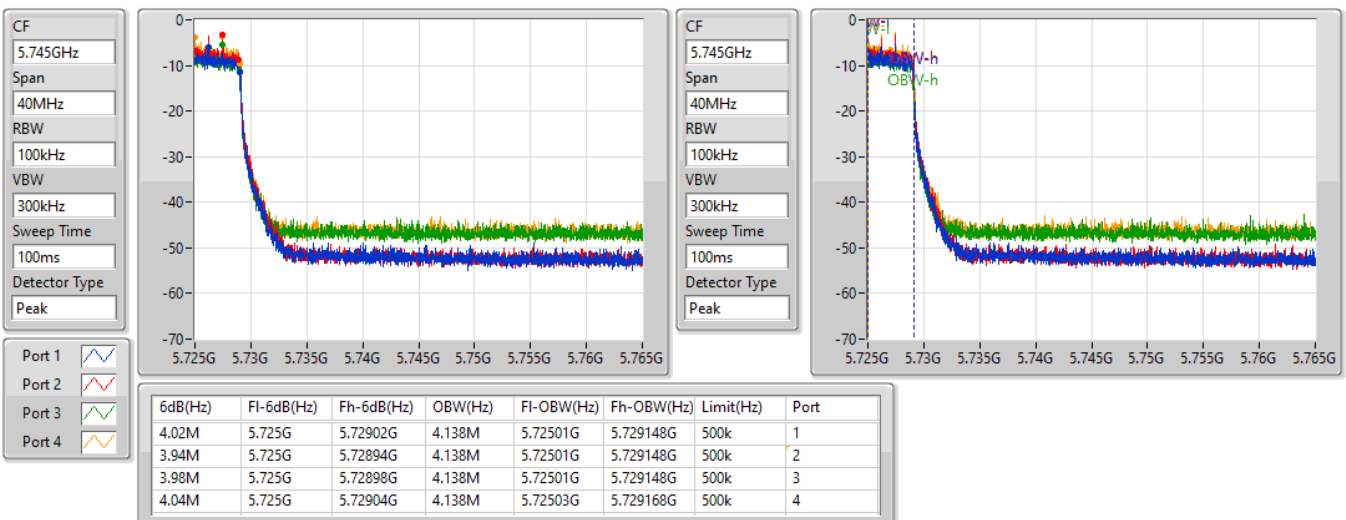


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

14/09/2022

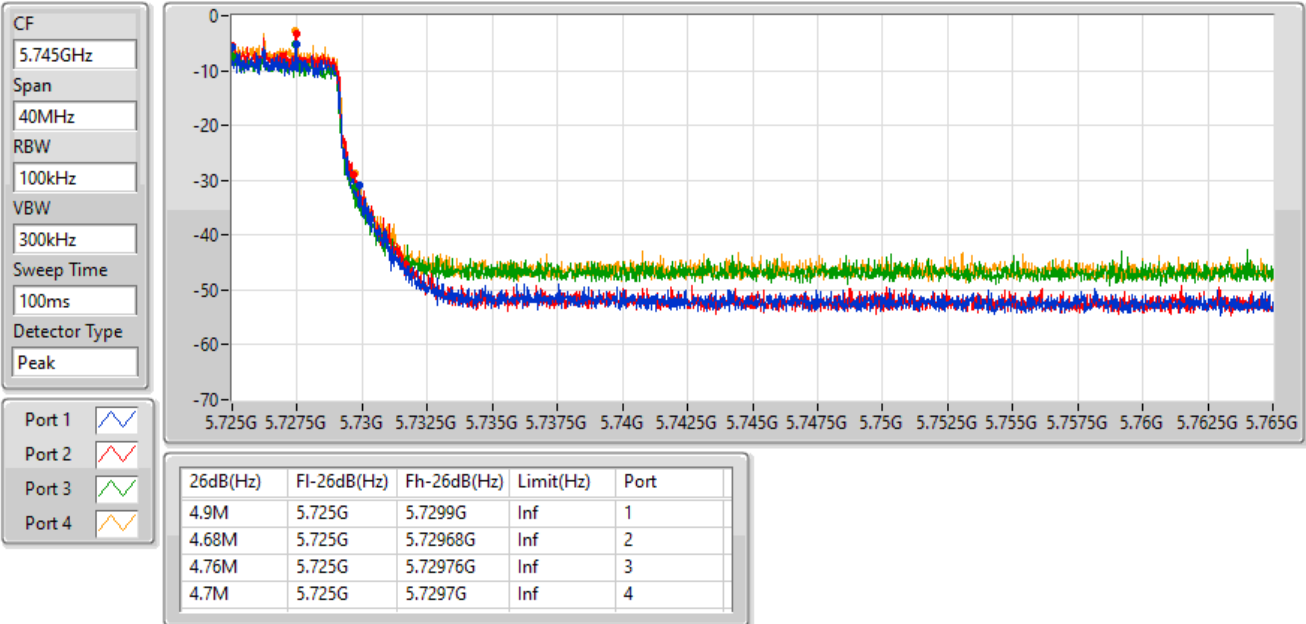


802.11ax HEW40-BF_Nss1,(MCS0)_4TX

EBW

5710MHz Straddle 5.725-5.85GHz

14/09/2022



802.11ax HEW80-BF_Nss1,(MCS0)_4TX

EBW

5290MHz

14/09/2022

