



# RADIO TEST REPORT

**FCC ID** : MSQ-RTAX2E01

**Equipment** : RT-AX89X Dual-band Wi-Fi Router

**Brand Name** : ASUS

**Model Name** : RT-AX89X

**Applicant** : ASUSTeK COMPUTER INC.  
1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan

**Manufacturer (1)** : Datamax Electronics (DongGuan) Co., Ltd.  
Niu Shan Foreign Economic Industrial Park, Dong Cheng District, Dong Guan City, Guang Dong, China

**Manufacturer (2)** : Lukisen Electronic Corp.  
3F.,No.236,Boai St., Shulin Dist.,New Taipei City 23845, Taiwan

**Manufacturer (3)** : Lih Rong Electronic Enterprise Co.,Ltd.  
No. 486, Sec. 1, Wanshou Road, Guishan District, Taoyuan City, Taiwan

**Manufacturer (4)** : ASKEY COMPUTER CORP.  
5F,NO.119,JIANKANG RD., ZHONGHE DIST.,NEW TAIPEI CITY 23585, TAIWAN, R.O.C.

**Standard** : 47 CFR FCC Part 15.407

The product was received on Jun. 09, 2021, and testing was started from Jun. 22, 2021 and completed on Oct. 09, 2021. 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 report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

  
Approved by: Sam Chen

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



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### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.3	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Output Power	PASS	-
3.4	15.407(a)	Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

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
5150-5250	a, n (HT20), ac (VHT20), ax (HEW20)	5180-5240	36-48 [4]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40), ax (HEW40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax (HEW80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	8
5.15-5.25GHz	802.11n HT20	20	8
5.15-5.25GHz	802.11n HT20-BF	20	8
5.15-5.25GHz	802.11ac VHT20	20	8
5.15-5.25GHz	802.11ac VHT20-BF	20	8
5.15-5.25GHz	802.11ax HEW20	20	8
5.15-5.25GHz	802.11ax HEW20-BF	20	8
5.15-5.25GHz	802.11n HT40	40	8
5.15-5.25GHz	802.11n HT40-BF	40	8
5.15-5.25GHz	802.11ac VHT40	40	8
5.15-5.25GHz	802.11ac VHT40-BF	40	8
5.15-5.25GHz	802.11ax HEW40	40	8
5.15-5.25GHz	802.11ax HEW40-BF	40	8
5.15-5.25GHz	802.11ac VHT80	80	8
5.15-5.25GHz	802.11ac VHT80-BF	80	8
5.15-5.25GHz	802.11ax HEW80	80	8
5.15-5.25GHz	802.11ax HEW80-BF	80	8
5.25-5.35GHz	802.11a	20	8



<b>Band</b>	<b>Mode</b>	<b>BWch (MHz)</b>	<b>Nant</b>
5.25-5.35GHz	802.11n HT20	20	8
5.25-5.35GHz	802.11n HT20-BF	20	8
5.25-5.35GHz	802.11ac VHT20	20	8
5.25-5.35GHz	802.11ac VHT20-BF	20	8
5.25-5.35GHz	802.11ax HEW20	20	8
5.25-5.35GHz	802.11ax HEW20-BF	20	8
5.25-5.35GHz	802.11n HT40	40	8
5.25-5.35GHz	802.11n HT40-BF	40	8
5.25-5.35GHz	802.11ac VHT40	40	8
5.25-5.35GHz	802.11ac VHT40-BF	40	8
5.25-5.35GHz	802.11ax HEW40	40	8
5.25-5.35GHz	802.11ax HEW40-BF	40	8
5.25-5.35GHz	802.11ac VHT80	80	8
5.25-5.35GHz	802.11ac VHT80-BF	80	8
5.25-5.35GHz	802.11ax HEW80	80	8
5.25-5.35GHz	802.11ax HEW80-BF	80	8
5.47-5.725GHz	802.11a	20	8
5.47-5.725GHz	802.11n HT20	20	8
5.47-5.725GHz	802.11n HT20-BF	20	8
5.47-5.725GHz	802.11ac VHT20	20	8
5.47-5.725GHz	802.11ac VHT20-BF	20	8
5.47-5.725GHz	802.11ax HEW20	20	8
5.47-5.725GHz	802.11ax HEW20-BF	20	8
5.47-5.725GHz	802.11n HT40	40	8
5.47-5.725GHz	802.11n HT40-BF	40	8
5.47-5.725GHz	802.11ac VHT40	40	8
5.47-5.725GHz	802.11ac VHT40-BF	40	8
5.47-5.725GHz	802.11ax HEW40	40	8
5.47-5.725GHz	802.11ax HEW40-BF	40	8
5.47-5.725GHz	802.11ac VHT80	80	8
5.47-5.725GHz	802.11ac VHT80-BF	80	8
5.47-5.725GHz	802.11ax HEW80	80	8
5.47-5.725GHz	802.11ax HEW80-BF	80	8
5.725-5.85GHz	802.11a	20	8
5.725-5.85GHz	802.11n HT20	20	8
5.725-5.85GHz	802.11n HT20-BF	20	8
5.725-5.85GHz	802.11ac VHT20	20	8
5.725-5.85GHz	802.11ac VHT20-BF	20	8
5.725-5.85GHz	802.11ax HEW20	20	8
5.725-5.85GHz	802.11ax HEW20-BF	20	8



<b>Band</b>	<b>Mode</b>	<b>BWch (MHz)</b>	<b>Nant</b>
5.725-5.85GHz	802.11n HT40	40	8
5.725-5.85GHz	802.11n HT40-BF	40	8
5.725-5.85GHz	802.11ac VHT40	40	8
5.725-5.85GHz	802.11ac VHT40-BF	40	8
5.725-5.85GHz	802.11ax HEW40	40	8
5.725-5.85GHz	802.11ax HEW40-BF	40	8
5.725-5.85GHz	802.11ac VHT80	80	8
5.725-5.85GHz	802.11ac VHT80-BF	80	8
5.725-5.85GHz	802.11ax HEW80	80	8
5.725-5.85GHz	802.11ax HEW80-BF	80	8

**Note:**

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

**1.1.2 Table for 80+80 MHz Mode**

<b>Type</b>	<b>Channel No.</b>	<b>Frequency</b>
1	42+58	5210+5290 MHz
2	106+122	5530+5610 MHz



**1.1.3 Antenna Information**

Ant.	2.4GHz Port	5GHz Port	Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	4	Whayu	C660-510457-A	Dipole	I-PEX	Note 1
2	3	3	Whayu	C660-510458-A	Dipole	I-PEX	
3	2	2	Whayu	C660-510459-A	Dipole	I-PEX	
4	-	8	Whayu	C660-510460-A	Dipole	I-PEX	
5	-	7	Whayu	C660-510461-A	Dipole	I-PEX	
6	-	6	Whayu	C660-510462-A	Dipole	I-PEX	
7	-	5	Whayu	C660-510463-A	Dipole	I-PEX	
8	4	-	Whayu	C660-510464-A	Dipole	I-PEX	
9	-	1	Whayu	C660-510465-A	PIFA	I-PEX	

Note 1:

Ant.	Gain (dBi)				
	2.4GHz	UNII 1	UNII 2A	UNII 2C	UNII 3
1	3.49	3.47	2.68	3.13	2.82
2	3.31	2.72	2.47	1.75	3.44
3	2.67	2.65	2.53	2.27	2.54
4	-	1.92	2.85	1.5	2.63
5	-	2.26	2.11	1.57	2.63
6	-	1.79	2.53	1.7	1.85
7	-	1.14	1.79	0.81	1.09
8	2.72	-	-	-	-
9	-	2.73	3.04	2.26	3.01

Ant.	Directional Gain (dBi)		
	2.4GHz		
	4T1S	4T2S	4T4S
1	5.77	3.49	1.3
2			
3			
4			





Ant.	Directional Gain (dBi)															
	5GHz															
	UNII 1				UNII 2A				UNII 2C				UNII 3			
	8T1S	8T2S	8T4S	8T8S	8T1S	8T2S	8T4S	8T8S	8T1S	8T2S	8T4S	8T8S	8T1S	8T2S	8T4S	8T8S
1																
2																
3																
4																
5	7.19	4.19	3.47	-0.03	7.61	4.61	3.04	-0.03	7.31	4.31	3.13	-0.47	7.04	4.04	3.44	0.37
6																
7																
9																

Note 2: The directional gain is measured which follows the procedure of KDB 662911 D03. The antenna report is provided in the operational description for this application.

**For 2.4GHz function:**

**For IEEE 802.11 b/g/n/VHT/ax mode (4TX/4RX)**

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

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

**For 5GHz function:**

**For IEEE 802.11a/n/ac/ax mode (8TX/8RX)**

Port 1 ~ Por 8 can be used as transmitting/receiving antenna.

Port 1 ~ Por 8 could transmit/receive simultaneously.



### 1.1.4 Test Duty Cycle

For 20/40/80 MHz

For 8T1S non beamforming mode

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.948	0.23	1.978m	1k
802.11ax HEW20	0.937	0.28	5.456m	300
802.11ax HEW40	0.957	0.19	5.456m	300
802.11ax HEW80	0.955	0.2	5.456m	300

For 8T1S beamforming mode

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ax HEW20-BF	0.928	0.32	1.766m	1k
802.11ax HEW40-BF	0.918	0.37	1.766m	1k
802.11ax HEW80-BF	0.905	0.43	1.69m	1k

For 8T2S beamforming mode

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ax HEW20-BF	0.912	0.4	1.783m	1k
802.11ax HEW40-BF	0.925	0.34	1.783m	1k
802.11ax HEW80-BF	0.927	0.33	1.913m	1k

For 8T4S beamforming mode

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ax HEW20-BF	0.918	0.37	1.814m	1k
802.11ax HEW40-BF	0.923	0.35	1.814m	1k
802.11ax HEW80-BF	0.917	0.38	1.941m	1k

For 80+80 MHz

For 8T1S beamforming mode

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ax HEW80+80-BF	0.838	0.77	1.89m	1k

Note:

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



**1.1.5 EUT Operational Condition**

<b>EUT Power Type</b>	From Power Adapter			
<b>Beamforming Function</b>	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
	The product has beamforming function for 11n/VHT/ax in 2.4GHz and 11n/11ac/11ax in 5GHz.			
<b>Weather Band</b>	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/>	Without 5600~5650MHz
<b>Function</b>	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
<b>TPC Function</b>	<input checked="" type="checkbox"/>	With TPC	<input type="checkbox"/>	Without TPC
<b>Test Software Version</b>	Non beamforming mode: QSPR V5.0-00188 Beamforming mode: DOS V 6.1.7601			

Note: The above information was declared by manufacturer.

**1.1.6 Table for EUT supports function**

<b>Function</b>	<b>Supports type</b>
AP Router	Master
Bridge	Slave without radar detection
Repeater	Master
Mesh	Master

Note: The AP Router (Master) mode has been tested and recorded in this test report.



### 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 D03 v01
- ◆ FCC KDB 412172 D01 v01r01
- ◆ FCC KDB 414788 D01 v01r01

### 1.3 Testing Location Information

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH01-CB	Owen Hsu	25-27 / 53-56	Jul. 03, 2021~Oct. 09, 2021
Radiated below 1GHz	03CH05-CB	Nyle Chang	23.5-24.6 / 55-59	Jun. 22, 2021~Sep. 28, 2021
Radiated above 1GHz		For co-location: Nyle Chang	23.9-24.8 / 55-58	Sep. 27, 2021
Radiated above 1GHz	03CH04-CB	For 8T1S and 80+80: Nyle Chang	24.3-25.4 / 55-58	Jun. 22, 2021~Sep. 28, 2021
Radiated above 1GHz	03CH06-CB	For 8T2S and 8T4S: Nyle Chang	23.9-26.1 / 55-58	
AC Conduction	CO01-CB	Peter Wu	23-24 / 49-51	Sep. 14, 2021



## 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.5 dB	Confidence levels of 95%
Bandwidth Measurement	0.9%	Confidence levels of 95%



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

For 20/40/80 MHz

For 8T1S non beamforming mode

Mode	Power Setting
802.11a_Nss1,(6Mbps)_8TX	-
5180MHz	18.5
5200MHz	18.5
5240MHz	18.5
5260MHz	12.5
5300MHz	12.5
5320MHz	12.5
5500MHz	13
5580MHz	12.5
5700MHz	13
5720MHz Straddle 5.47-5.725GHz	13.5
5720MHz Straddle 5.725-5.85GHz	13.5
5745MHz	19.5
5785MHz	19.5
5825MHz	20
802.11ax HEW20_Nss1,(MCS0)_8TX	-
5180MHz	19
5200MHz	19
5240MHz	19
5260MHz	12.5
5300MHz	12.5
5320MHz	12.5
5500MHz	13
5580MHz	13
5700MHz	13.5
5720MHz Straddle 5.47-5.725GHz	13.5
5720MHz Straddle 5.725-5.85GHz	13.5
5745MHz	19.5
5785MHz	19.5
5825MHz	20
802.11ax HEW40_Nss1,(MCS0)_8TX	-
5190MHz	16
5230MHz	19.5
5270MHz	13.5



<b>Mode</b>	<b>Power Setting</b>
5310MHz	13.5
5510MHz	13.5
5550MHz	13.5
5670MHz	14
5710MHz Straddle 5.47-5.725GHz	14.5
5710MHz Straddle 5.725-5.85GHz	14.5
5755MHz	20
5795MHz	20
802.11ax HEW80_Nss1,(MCS0)_8TX	-
5210MHz	17
5290MHz	14
5530MHz	13.5
5610MHz	13.5
5690MHz Straddle 5.47-5.725GHz	14.5
5690MHz Straddle 5.725-5.85GHz	14.5
5775MHz	20



**For 8T1S beamforming mode**

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	-
5180MHz	27
5200MHz	28
5240MHz	28
5260MHz	21
5300MHz	22
5320MHz	22
5500MHz	22
5580MHz	22
5700MHz	22
5720MHz Straddle 5.47-5.725GHz	22
5720MHz Straddle 5.725-5.85GHz	22
5745MHz	28
5785MHz	28
5825MHz	28
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	-
5190MHz	23
5230MHz	28
5270MHz	21
5310MHz	21
5510MHz	22
5550MHz	22
5670MHz	22
5710MHz Straddle 5.47-5.725GHz	23
5710MHz Straddle 5.725-5.85GHz	23
5755MHz	28
5795MHz	28
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	-
5210MHz	24
5290MHz	21
5530MHz	22
5610MHz	22
5690MHz Straddle 5.47-5.725GHz	23
5690MHz Straddle 5.725-5.85GHz	23
5775MHz	28





**For 8T2S beamforming mode**

Mode	Power Setting
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	-
5180MHz	29
5200MHz	29
5240MHz	29
5260MHz	23
5300MHz	23
5320MHz	23
5500MHz	23
5580MHz	23
5700MHz	23
5720MHz Straddle 5.47-5.725GHz	23
5720MHz Straddle 5.725-5.85GHz	23
5745MHz	29
5785MHz	29
5825MHz	29
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	-
5190MHz	27
5230MHz	29
5270MHz	23
5310MHz	23
5510MHz	23
5550MHz	23
5670MHz	23
5710MHz Straddle 5.47-5.725GHz	24
5710MHz Straddle 5.725-5.85GHz	24
5755MHz	29
5795MHz	29
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	-
5210MHz	26
5290MHz	23
5530MHz	23
5610MHz	23
5690MHz Straddle 5.47-5.725GHz	24
5690MHz Straddle 5.725-5.85GHz	24
5775MHz	29



**For 8T4S beamforming mode**

Mode	Power Setting
802.11ax HEW40-BF_Nss4,(MCS0)_8TX	-
5190MHz	27
5230MHz	28
802.11ax HEW80-BF_Nss4,(MCS0)_8TX	-
5210MHz	27

**For 80+80 MHz**

**For 8T1S beamforming mode**

Mode	Power Setting
802.11ax HEW80+80-BF_Nss1,(MCS0)_8TX	-
#5210MHz,5290MHz	25
802.11ax HEW80+80-BF_Nss1,(MCS0)_8TX	-
5210MHz,#5290MHz	25
802.11ax HEW80+80-BF_Nss2,(MCS0)_8TX	-
#5530MHz,#5610MHz	22

**Note:**

- ♦ 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.



## 2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	AC power-line conducted emissions
<b>Condition</b>	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
<b>Operating Mode</b>	Normal Link
1	AP Router - EUT + Adapter 1
2	AP Router - EUT + Adapter 2
3	AP Router - EUT + Adapter 3
For operating mode 3 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	Emission Bandwidth Maximum Output Power Power Spectral Density
<b>Test Condition</b>	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	Unwanted Emissions
<b>Test Condition</b>	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.
<b>Operating Mode &lt; 1GHz</b>	CTX The EUT was performed at X axis, Y axis and Z axis position for Unwanted Emissions above 1GHz test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT in Z axis_2.4GHz + Adapter 1
2	EUT in Z axis_2.4GHz + Adapter 2
3	EUT in Z axis_2.4GHz + Adapter 3
Mode 1 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT in Z axis_5GHz + Adapter 1
For operating mode 1 is the worst case and it was record in this test report.	
<b>Operating Mode &gt; 1GHz</b>	CTX The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT in Z axis_5GHz



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Appendix F for Radiated Emission Co-location.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz
Refer to Sporton Test Report No.: FA160707 for Co-location RF Exposure Evaluation.	

Note: The EUT can only use Z axis position.

### 2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

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

The program was executed as follows:

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

For Normal Link:

During the test, the EUT operation to normal function.



### 2.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	Rating	Remark
Adapter 1	DELTA	ADP-65DE B	INPUT: 100-240V, 1.5A, 50-60Hz OUTPUT: 19.0V, 3.42A, 65.0W	DC power cable, non shielded, 1.5m
Adapter 2	DELTA	ADP-65GD D	INPUT: 100-240V, 50-60Hz, 1.5A OUTPUT: 19.0V, 3.42A, 65.0W	DC power cable, non shielded, 1.6m
Adapter 3	AcBel	ADD011	INPUT: 100-240V, 1.7A, 50-60Hz OUTPUT: 19.5V, 3.33A, 65.0W MAX.	DC power cable, non shielded, 1.5m
Others				
US power cord*1, non shielded, 0.9m				
RJ-45 cable*1, Shieled, 1.5m				

### 2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	10G LAN PC	DELL	T3400	N/A
B	10G SFP PC	DELL	T3400	N/A
C	2.4G NB	DELL	E6430	N/A
D	5G NB	DELL	E6430	N/A
E	Flash disk3.0	Transcend	JetFlash-700	N/A
F	Flash disk3.0	Transcend	JetFlash-700	N/A
G	WAN NB	DELL	E6430	N/A
H	LAN1 NB	DELL	E6430	N/A
I	LAN8 NB	DELL	E6430	N/A

For Radiated (below 1GHz) and Radiated (above 1GHz) for non beamforming mode:

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



**For Radiated (above 1GHz): for beamforming mode:**

<b>Support Equipment</b>				
<b>No.</b>	<b>Equipment</b>	<b>Brand Name</b>	<b>Model Name</b>	<b>FCC ID</b>
A	Notebook	DELL	E4300	N/A
B	WLAN AP	ASUS	RT-AX89X 2.0	N/A
C	Notebook	DELL	E4300	N/A

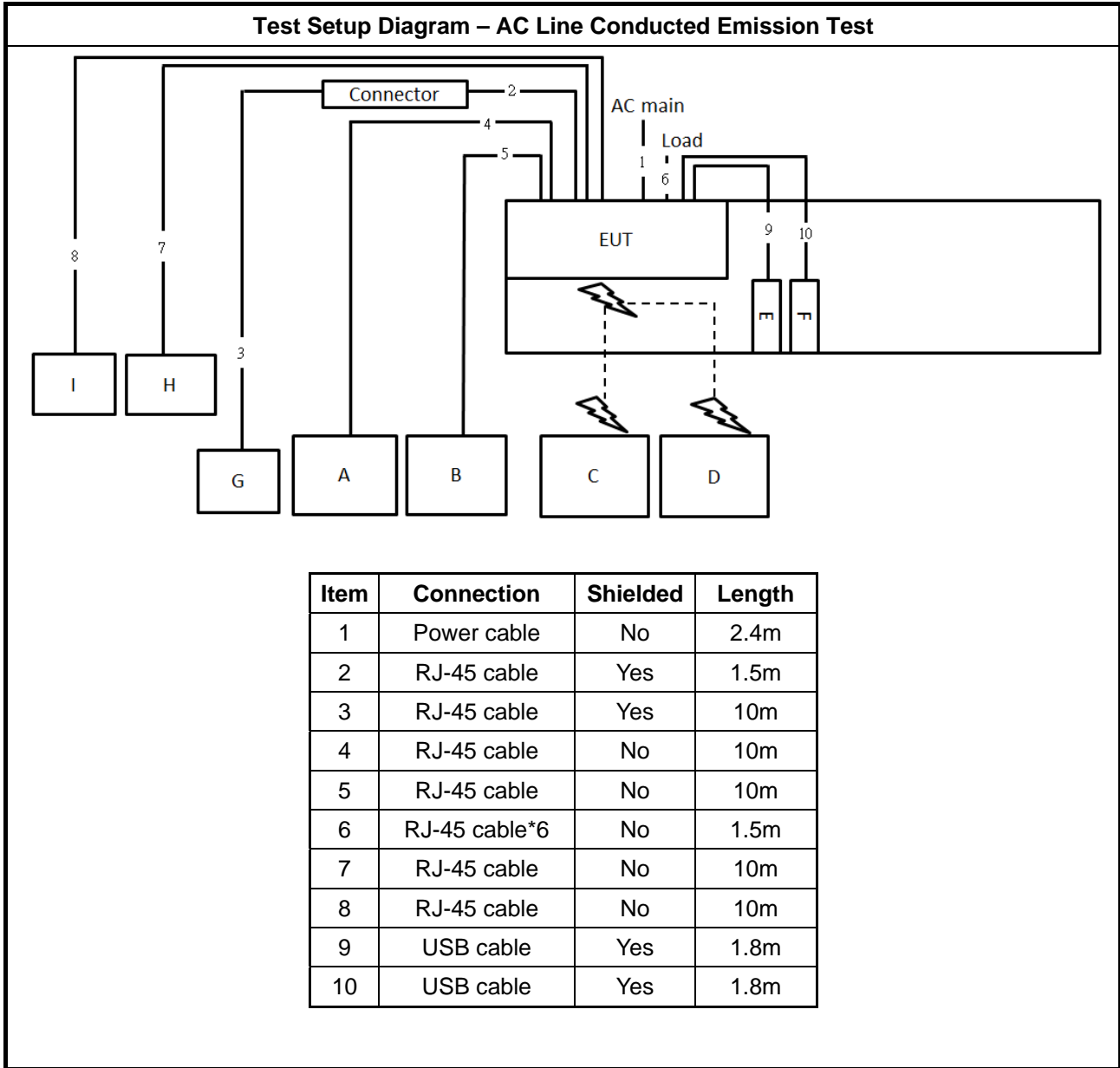
**For RF Conducted:  
For non beamforming mode**

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

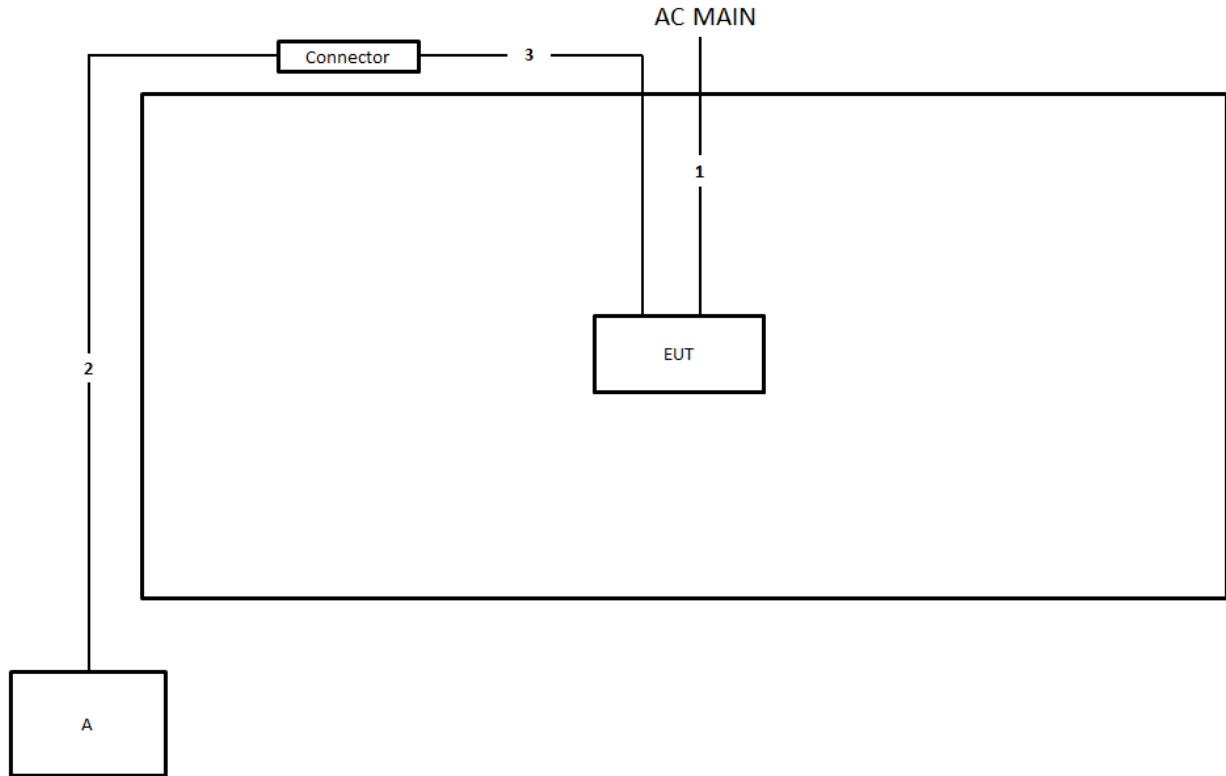
**For beamforming mode**

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

## 2.6 Test Setup Diagram

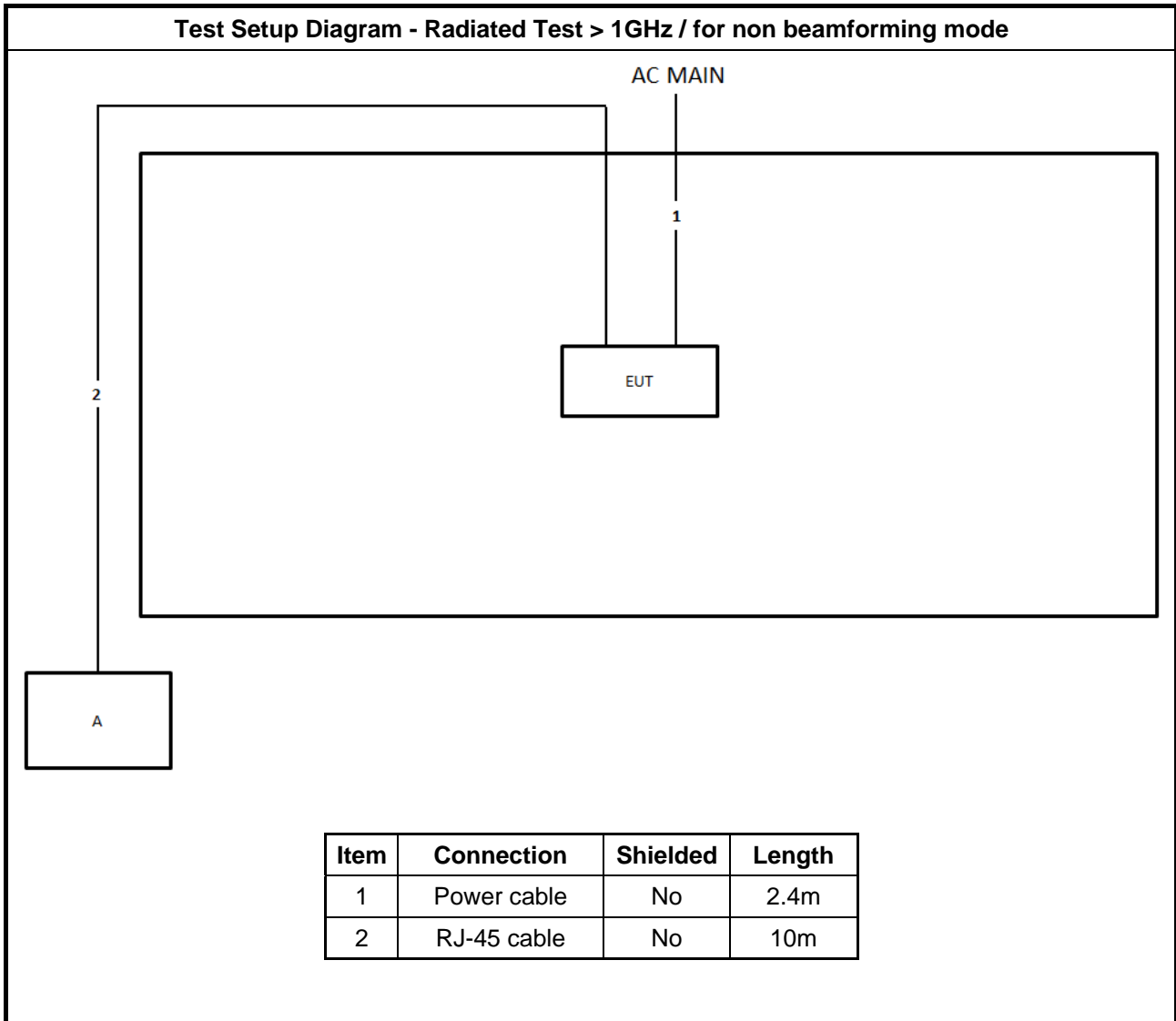


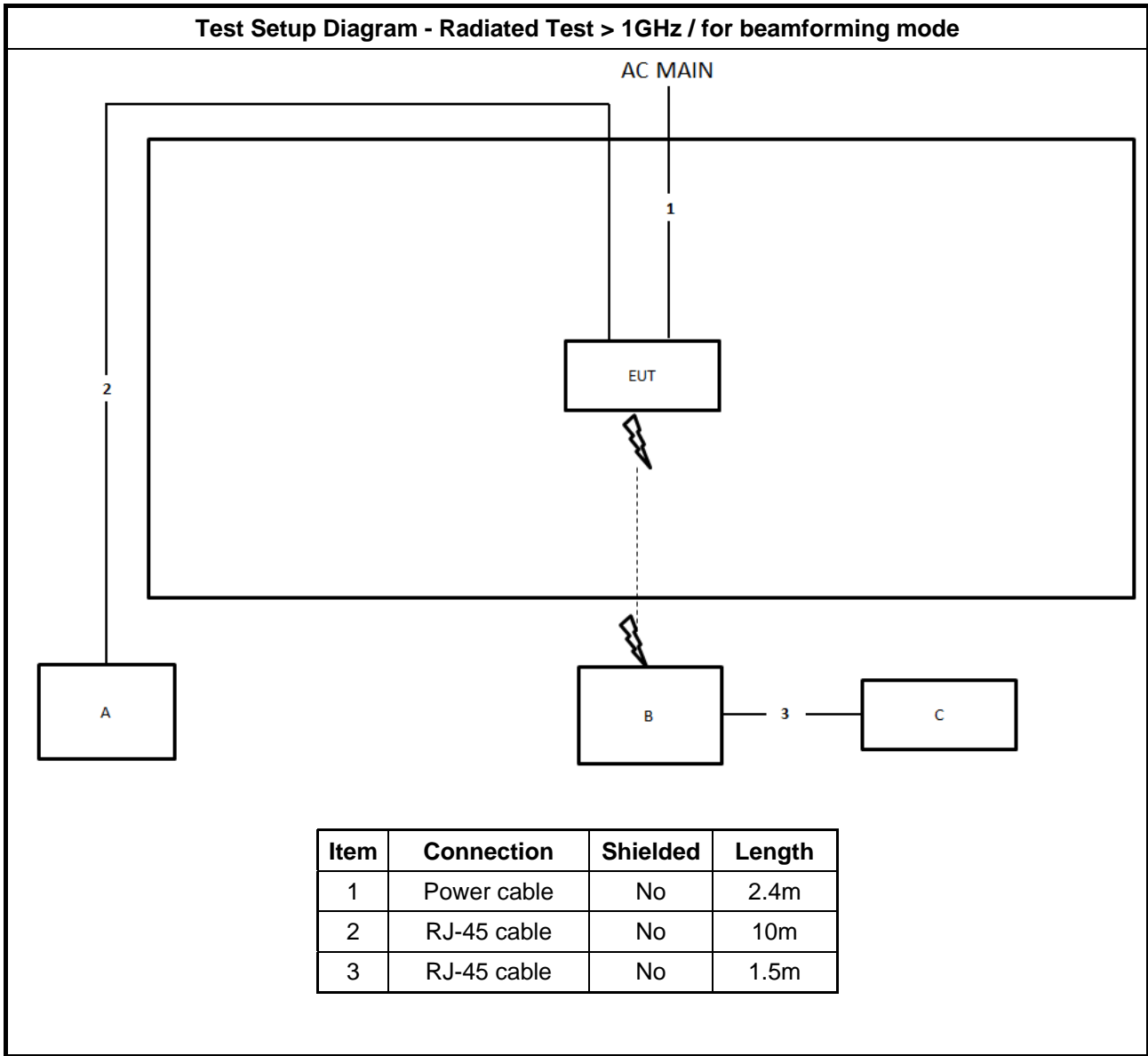
**Test Setup Diagram - Radiated Test < 1GHz**



Item	Connection	Shielded	Length
1	Power cable	No	2.4m
2	RJ-45 cable	No	10m
3	RJ-45 cable	Yes	1.5m









### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: \* Decreases with the logarithm of the frequency.

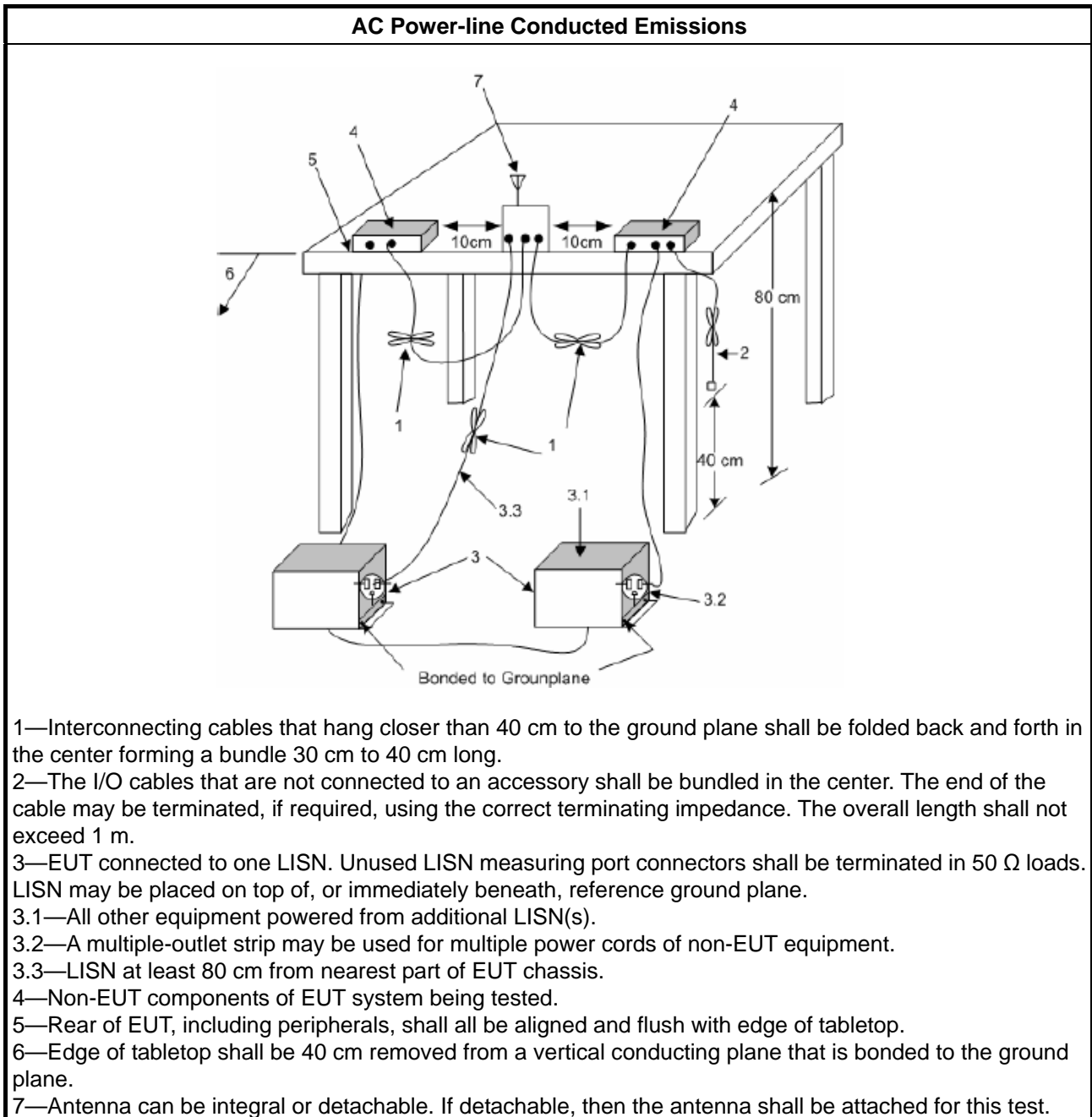
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

### 3.1.4 Test Setup



### 3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- b. Margin = -Limit + Level

### 3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

### 3.2 Emission Bandwidth

#### 3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.
<input type="checkbox"/>	For the 5.85-5.895 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.
<b>LE-LAN Devices</b>	
<input type="checkbox"/>	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.

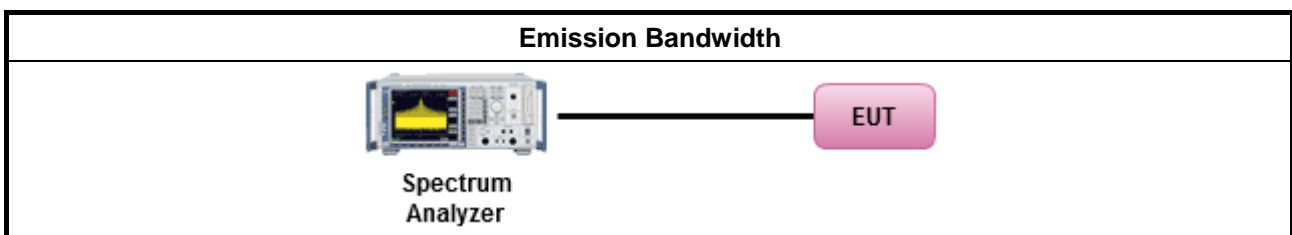
#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

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

#### 3.2.4 Test Setup



#### 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



### 3.3 Maximum Output Power

#### 3.3.1 Limit

Maximum Output Power Limit	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Outdoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>. e.i.r.p. at any elevation angle above 30 degrees <math>\leq 125mW</math> [21dBm]</li> <li>▪ Indoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math></li> <li>▪ Point-to-point AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 23)</math>.</li> <li>▪ Mobile or Portable Client: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 250 mW. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 24 - (G_{TX} - 6)</math>.</li> </ul>
<input checked="" type="checkbox"/> For the 5.25-5.35 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .	
<input checked="" type="checkbox"/> For the 5.47-5.725 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>
Maximum EIRP Limit	
<input type="checkbox"/> For the 5.85-5.895 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Indoor AP &amp; subordinate device <math>&lt; 36 \text{ dBm}</math></li> <li>▪ Client device <math>&lt; 30 \text{ dBm}</math></li> </ul>
<b>LE-LAN Devices</b>	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>

$P_{Out}$  = maximum conducted output power in dBm,  
 $G_{TX}$  = the maximum transmitting antenna directional gain in dBi.

### 3.3.2 Measuring Instruments

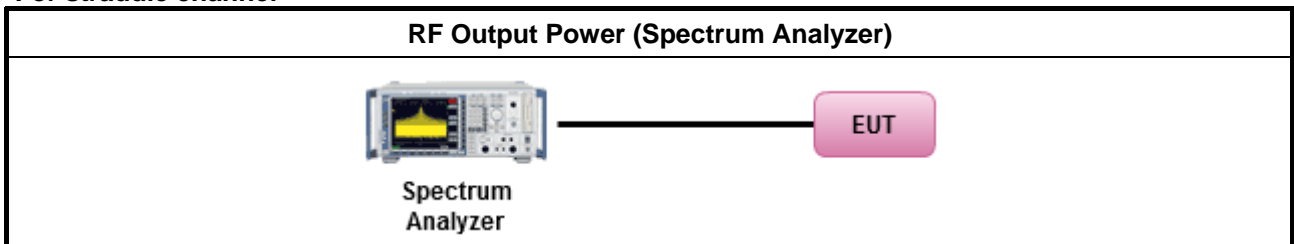
Refer a test equipment and calibration data table in this test report.

### 3.3.3 Test Procedures

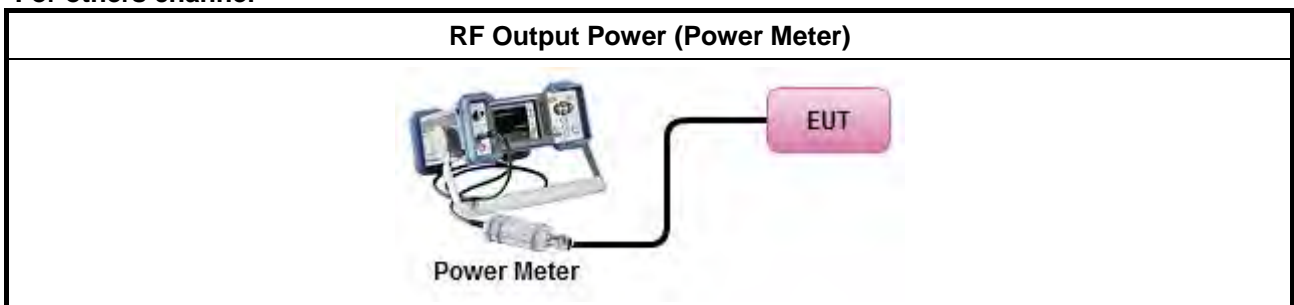
Test Method	
<ul style="list-style-type: none"> <li>Maximum Conducted Output Power</li> </ul>	
Average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> <li>For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
<ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP calculation could be following as methods:  <math>P_{total} = P_1 + P_2 + \dots + P_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>	

### 3.3.4 Test Setup

For straddle channel



For others channel



### 3.3.5 Test Result of Maximum Output Power

Refer as Appendix C



### 3.4 Power Spectral Density

#### 3.4.1 Limit

<b>Peak Power Spectral Density Limit</b>	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band:
	<ul style="list-style-type: none"> <li>▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 23)</math>.</li> <li>▪ Mobile or Portable Client: the peak power spectral density (PPSD) <math>\leq 11</math> dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 11 - (G_{TX} - 6)</math>.</li> </ul>
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$ .
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band:
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>
<b>EIRP Power Spectral Density Limit</b>	
<input type="checkbox"/>	For the 5.85-5.895 GHz band:
	<ul style="list-style-type: none"> <li>▪ Indoor AP &amp; subordinate device &lt; 20dBm/MHz</li> <li>▪ Client device &lt; 14dBm/MHz</li> </ul>
<b>LE-LAN Devices</b>	
<input type="checkbox"/>	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) $\leq 10$ dBm/MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.
	<ul style="list-style-type: none"> <li>▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where <math>\theta</math> is the angle above the local horizontal plane (of the Earth) as shown below:            -13 dBW/MHz for <math>0^\circ \leq \theta &lt; 8^\circ</math> ; <math>-13 - 0.716 (\theta - 8)</math> dBW/MHz for <math>8^\circ \leq \theta &lt; 40^\circ</math>            -35.9 - 1.22 (<math>\theta - 40</math>) dBW/MHz for <math>40^\circ \leq \theta \leq 45^\circ</math> ; -42 dBW/MHz for <math>\theta &gt; 45^\circ</math></li> </ul>
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.
<input type="checkbox"/>	For the 5.725-5.85 GHz band:
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>
<b>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</b>	





$G_{TX}$  = the maximum transmitting antenna directional gain in dBi.

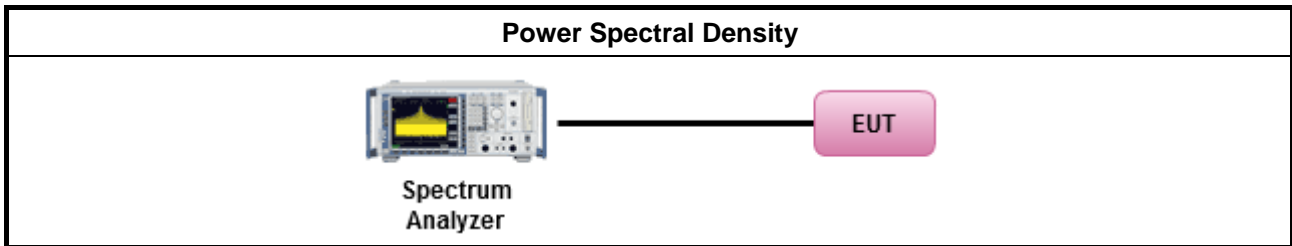
### 3.4.2 Measuring Instruments

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

### 3.4.3 Test Procedures

Test Method	
	<ul style="list-style-type: none"> <li>▪ 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:</li> </ul>
<input type="checkbox"/>	Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
	[duty cycle ≥ 98% or external video / power trigger]
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	<ul style="list-style-type: none"> <li>▪ For conducted measurement.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ If the EUT supports multiple transmit chains using options given below:</li> </ul>
<input checked="" type="checkbox"/>	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
<input type="checkbox"/>	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
<input type="checkbox"/>	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
	<ul style="list-style-type: none"> <li>▪ If multiple transmit chains, EIRP PPSD calculation could be following as methods:  <math>PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = PPSD_{total} + DG</math></li> </ul>

### 3.4.4 Test Setup



### 3.4.5 Test Result of Power Spectral Density

Refer as Appendix D



### 3.5 Unwanted Emissions

#### 3.5.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
<input checked="" type="checkbox"/> 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
<input type="checkbox"/> 5.85 - 5.895 GHz	(i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of - 7 dBm/MHz at or above 5.925 GHz. (ii) For a client device all emissions at or above 5.895 GHz shall not exceed an



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

**3.5.2 Measuring Instruments**

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

**3.5.3 Test Procedures**

Test Method													
	<ul style="list-style-type: none"> <li>▪ 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).</li> </ul>												
	<ul style="list-style-type: none"> <li>▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].</li> </ul>												
	<ul style="list-style-type: none"> <li>▪ For the transmitter unwanted emissions shall be measured using following options below:               <ul style="list-style-type: none"> <li>▪ Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.</li> <li>▪ Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.                   <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;"><input type="checkbox"/></td> <td>Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.</td> </tr> </table> </li> </ul> </li> </ul>	<input type="checkbox"/>	Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).	<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).	<input type="checkbox"/>	Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.	<input type="checkbox"/>	Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.	<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.	<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
<input type="checkbox"/>	Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).												
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).												
<input type="checkbox"/>	Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.												
<input type="checkbox"/>	Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.												
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.												
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.												
	<ul style="list-style-type: none"> <li>▪ For radiated measurement.               <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td> <ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul> </td> </tr> </table> </li> </ul>		<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>										
	<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>												
	<ul style="list-style-type: none"> <li>▪ The any unwanted emissions level shall not exceed the fundamental emission level.</li> </ul>												

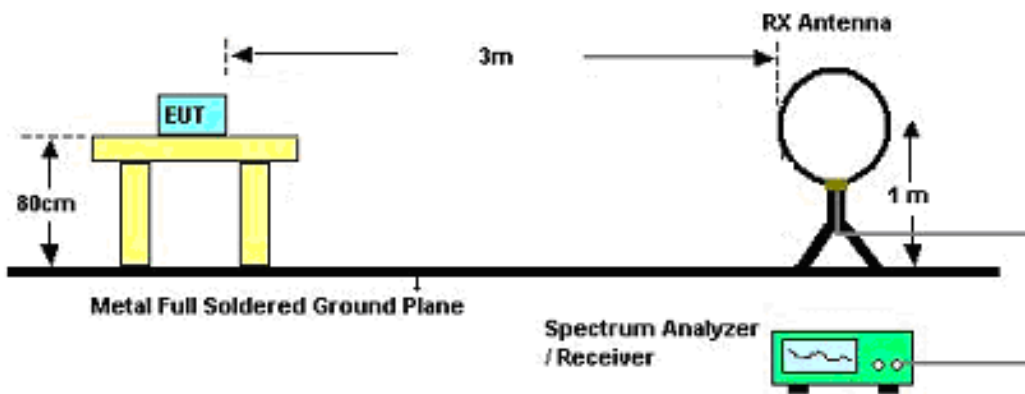
**Test Method**

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

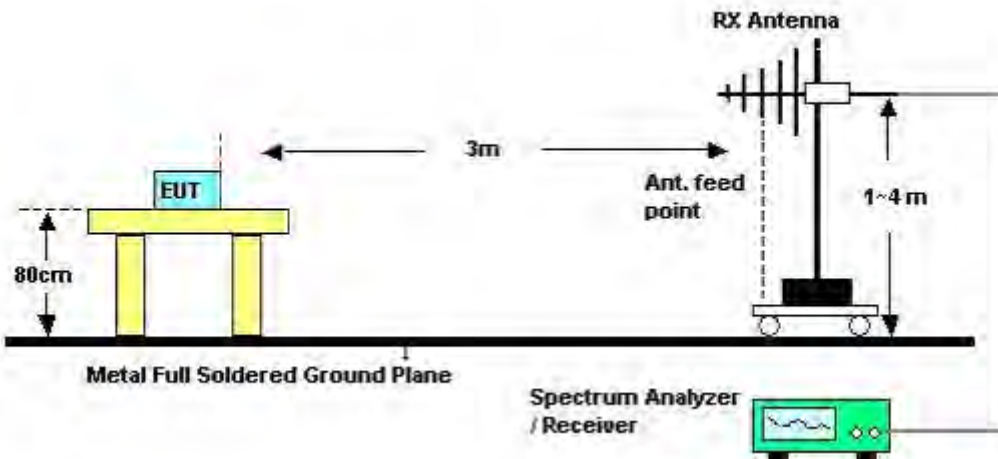
**3.5.4 Test Setup**

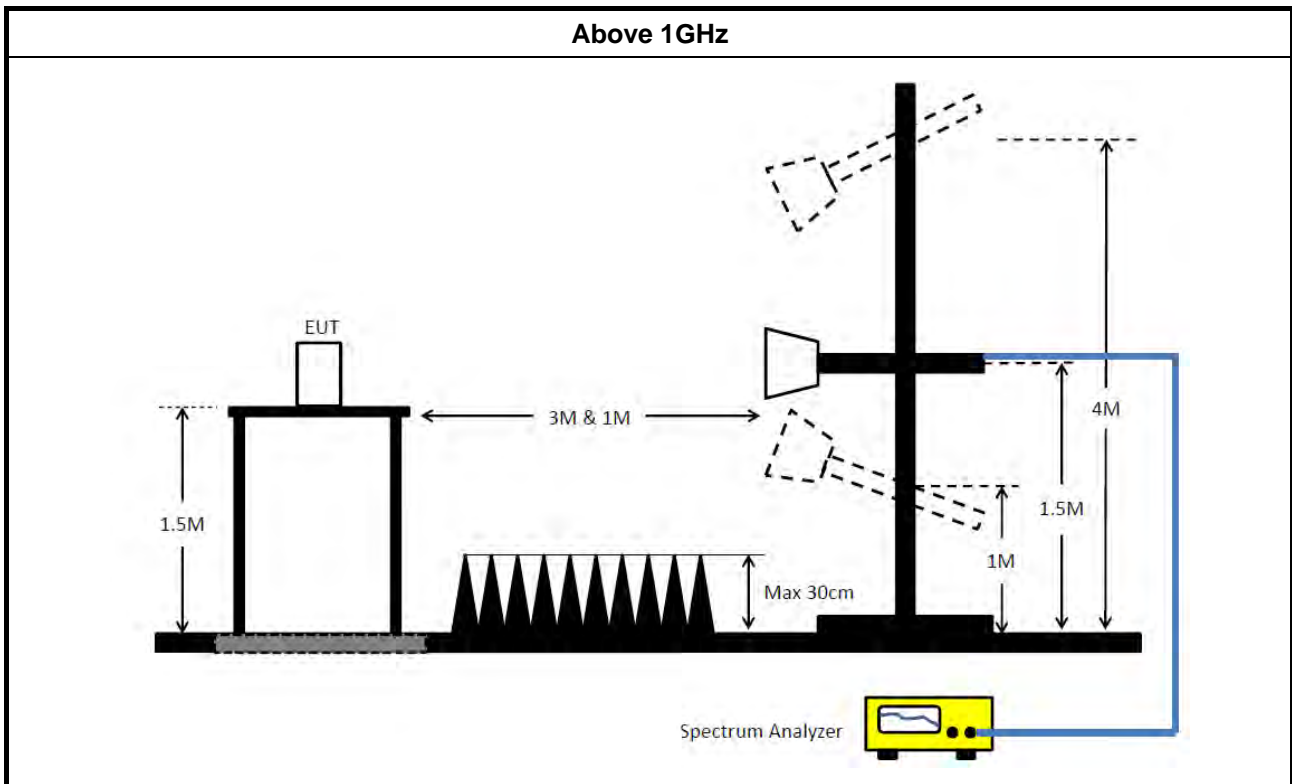
**Transmitter Radiated Unwanted Emissions**

**9kHz ~30MHz**



**30MHz~1GHz**





### 3.5.5 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.

### 3.5.6 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.

### 3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



## 4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 03, 2021	Mar. 02, 2022	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Jan. 06, 2021	Jan. 05, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Mar. 07, 2021	Mar. 06, 2022	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 30, 2021	Jan. 29, 2022	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 19, 2021	May 18, 2022	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 10, 2020	Aug. 09, 2021	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 2022	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH05-CB	1GHz ~18GHz 3m	Nov. 08, 2020	Nov. 07, 2021	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 26, 2021	Mar. 25, 2022	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120 D-1291	1GHz~18GHz	Sep. 29, 2020	Sep. 28, 2021	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz ~ 26.5GHz	Jul. 03, 2020	Jul. 02, 2021	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz ~ 26.5GHz	Jul. 02, 2021	Jul. 01, 2022	Radiation (03CH05-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH05-CB)
Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun.15, 2021	Jun. 14, 2022	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Nov. 10, 2020	Nov. 09, 2021	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 21, 2021	Jun. 20, 2022	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH04-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 25, 2021	Feb. 24, 2022	Radiation (03CH04-CB)
Horn Antenna	ETS · Lindgren	3115	00143147	750MHz~18GHz	Oct. 23, 2020	Oct. 22, 2021	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 08, 2020	Jul. 07, 2021	Radiation (03CH04-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 20, 2021	May 19, 2022	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz~26.5GHz	Jul. 12, 2021	Jul. 11, 2022	Radiation (03CH04-CB)
Amplifier	-	-	TF-130N-R1	18GHz ~ 40GHz	Jun.15, 2021	Jun. 14, 2022	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Feb. 19, 2021	Feb. 18, 2022	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Nov. 05, 2020	Nov. 04, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH04-CB)





Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH06-CB	1GHz ~18GHz 3m	Oct. 02, 2020	Oct. 01, 2021	Radiation (03CH06-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH06-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 18, 2021	Jun. 17, 2022	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	83017A	MY53270064	0.5GHz~26.5GHz	May 06, 2021	May 05, 2022	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 15, 2020	Dec. 14, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-05+24	1GHz~18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH06-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 21, 2021	May 20, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Feb. 23, 2021	Feb. 22, 2022	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

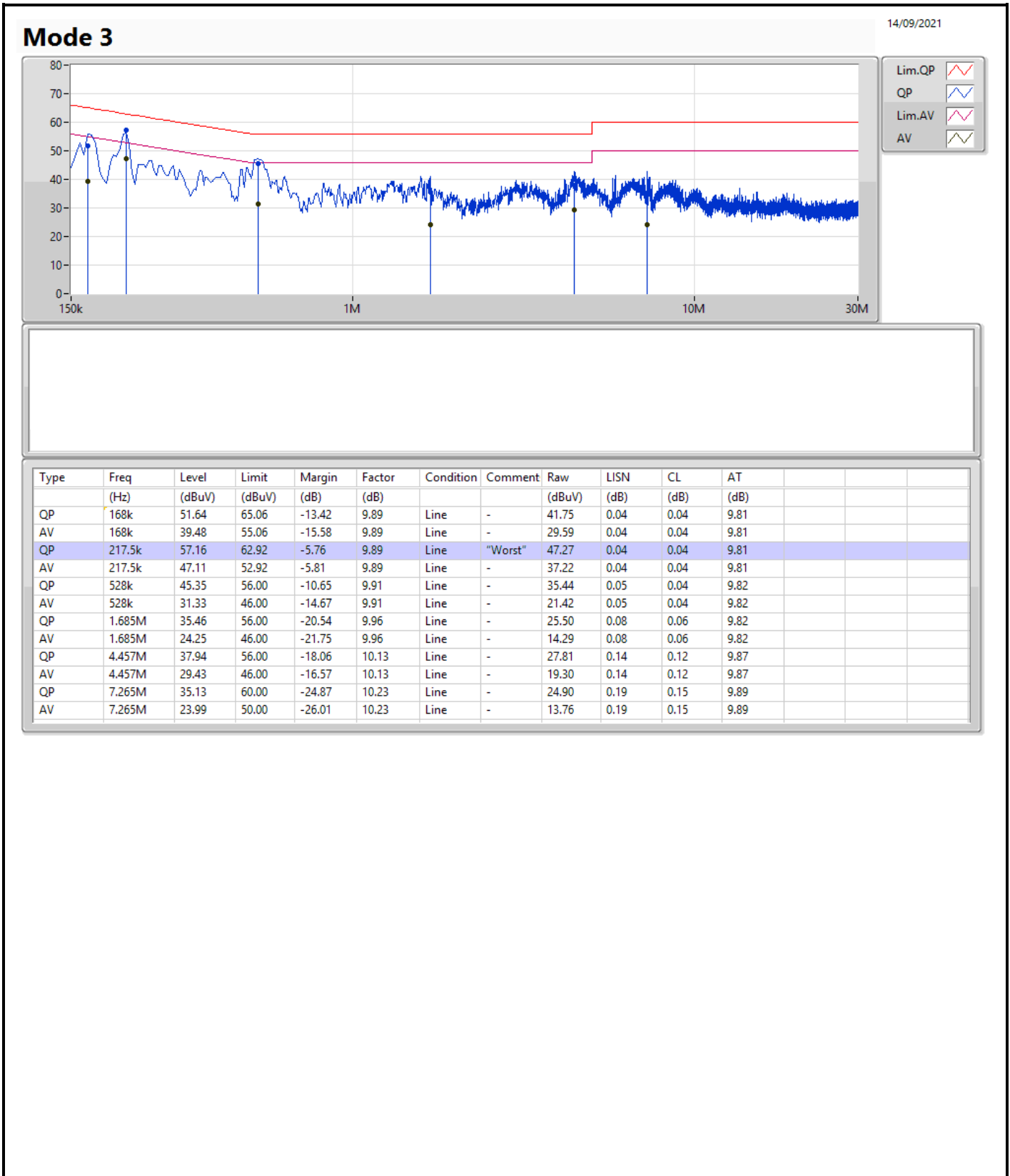
Note: Calibration Interval of instruments listed above is one year.

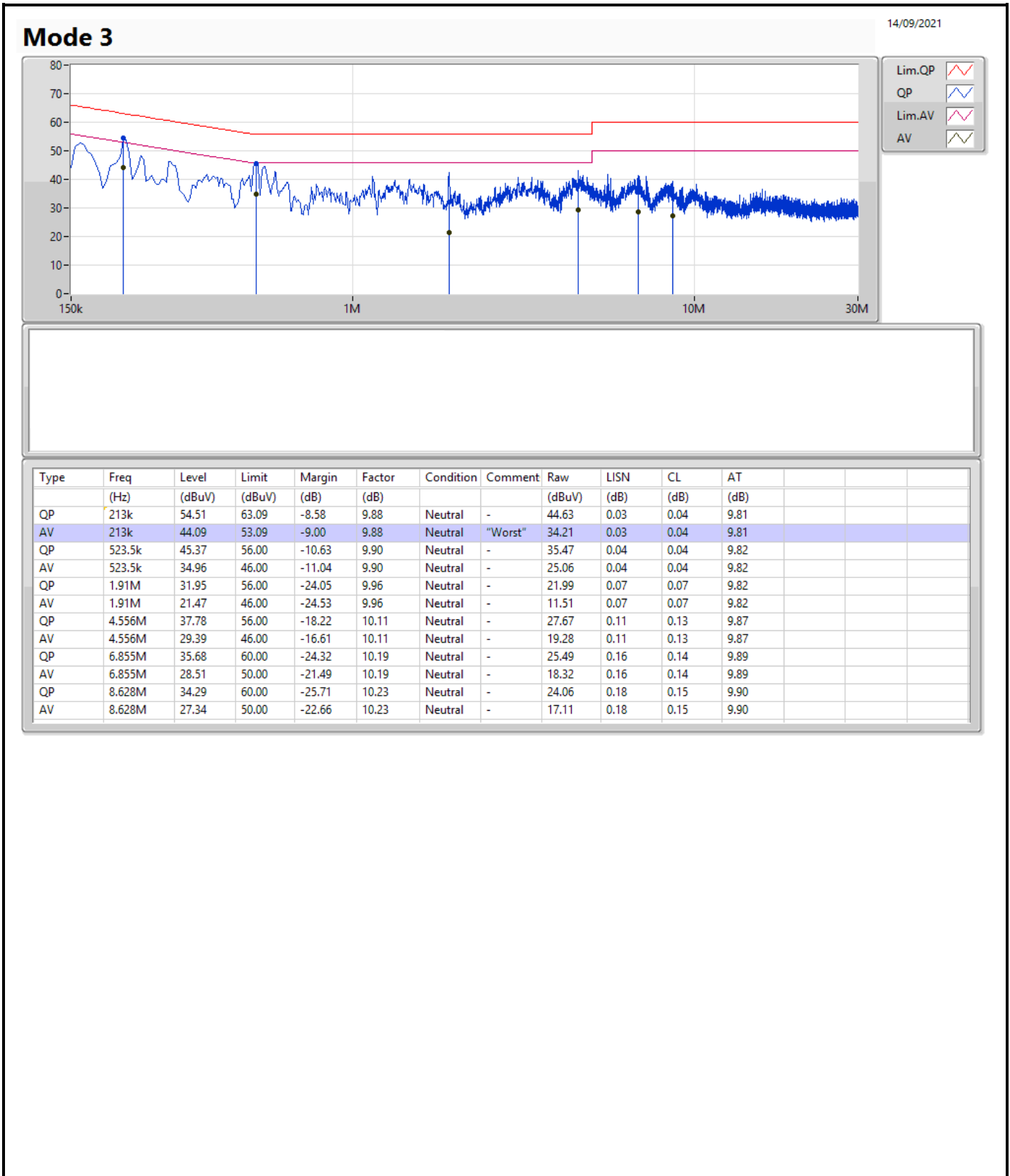
N.C.R. means Non-Calibration required.



**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	QP	217.5k	57.16	62.92	-5.76	Line





For 20/40/80MHz  
 For 8T1S non beamforming mode  
 Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	19.68M	16.462M	16M5D1D	19.29M	16.402M
802.11ax HEW20_Nss1,(MCS0)_8TX	21.54M	18.981M	19MOD1D	20.91M	18.891M
802.11ax HEW40_Nss1,(MCS0)_8TX	41.34M	37.961M	38MOD1D	40.56M	37.901M
802.11ax HEW80_Nss1,(MCS0)_8TX	82.8M	77.481M	77M5D1D	82.2M	77.361M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	19.65M	16.492M	16M5D1D	19.2M	16.402M
802.11ax HEW20_Nss1,(MCS0)_8TX	21.87M	18.981M	19MOD1D	20.94M	18.891M
802.11ax HEW40_Nss1,(MCS0)_8TX	41.4M	38.021M	38MOD1D	40.68M	37.841M
802.11ax HEW80_Nss1,(MCS0)_8TX	83.04M	77.601M	77M6D1D	81.84M	77.241M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	19.68M	16.432M	16M4D1D	14.565M	13.163M
802.11ax HEW20_Nss1,(MCS0)_8TX	21.57M	18.981M	19MOD1D	15.435M	14.423M
802.11ax HEW40_Nss1,(MCS0)_8TX	41.28M	38.081M	38M1D1D	35.35M	33.793M
802.11ax HEW80_Nss1,(MCS0)_8TX	82.8M	77.481M	77M5D1D	75.975M	73.163M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	16.35M	16.462M	16M5D1D	3.16M	3.458M
802.11ax HEW20_Nss1,(MCS0)_8TX	19.02M	18.981M	19MOD1D	4.24M	4.598M
802.11ax HEW40_Nss1,(MCS0)_8TX	38.04M	38.021M	38MOD1D	4.02M	4.158M
802.11ax HEW80_Nss1,(MCS0)_8TX	78.12M	77.481M	77M5D1D	4.02M	4.298M

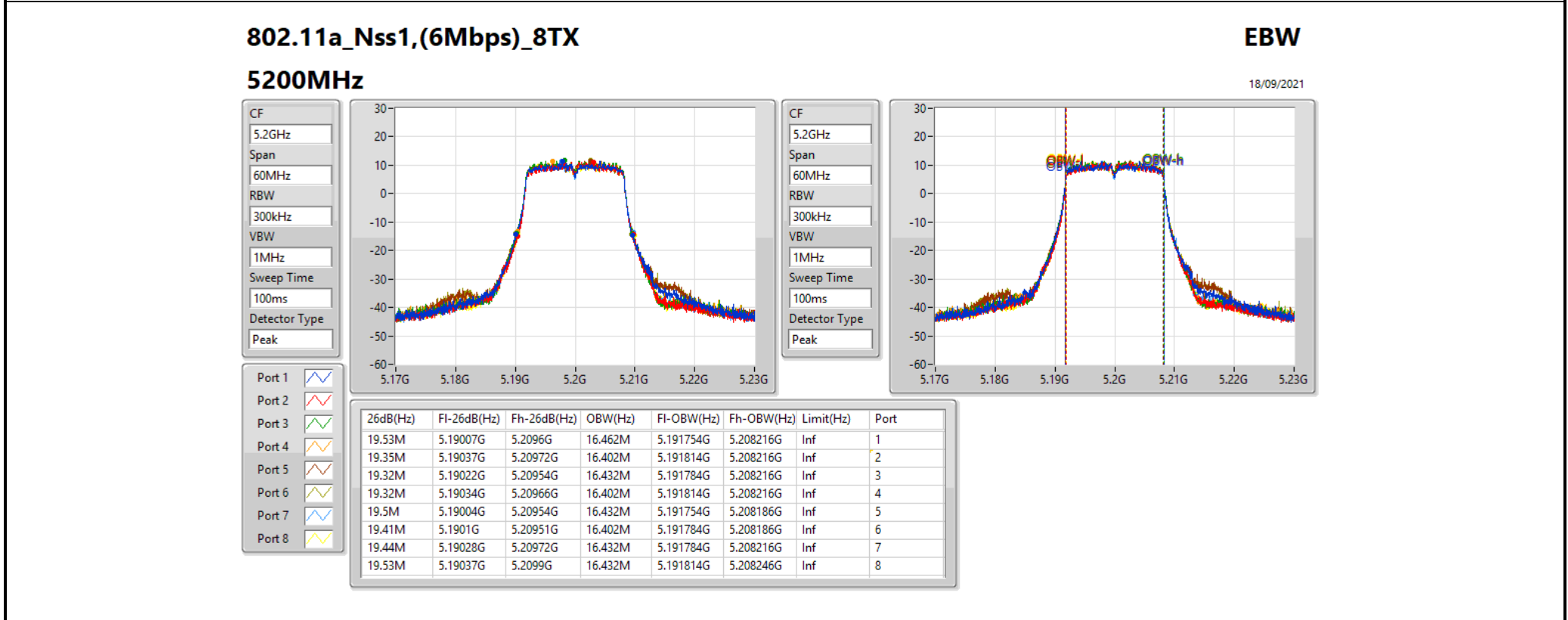
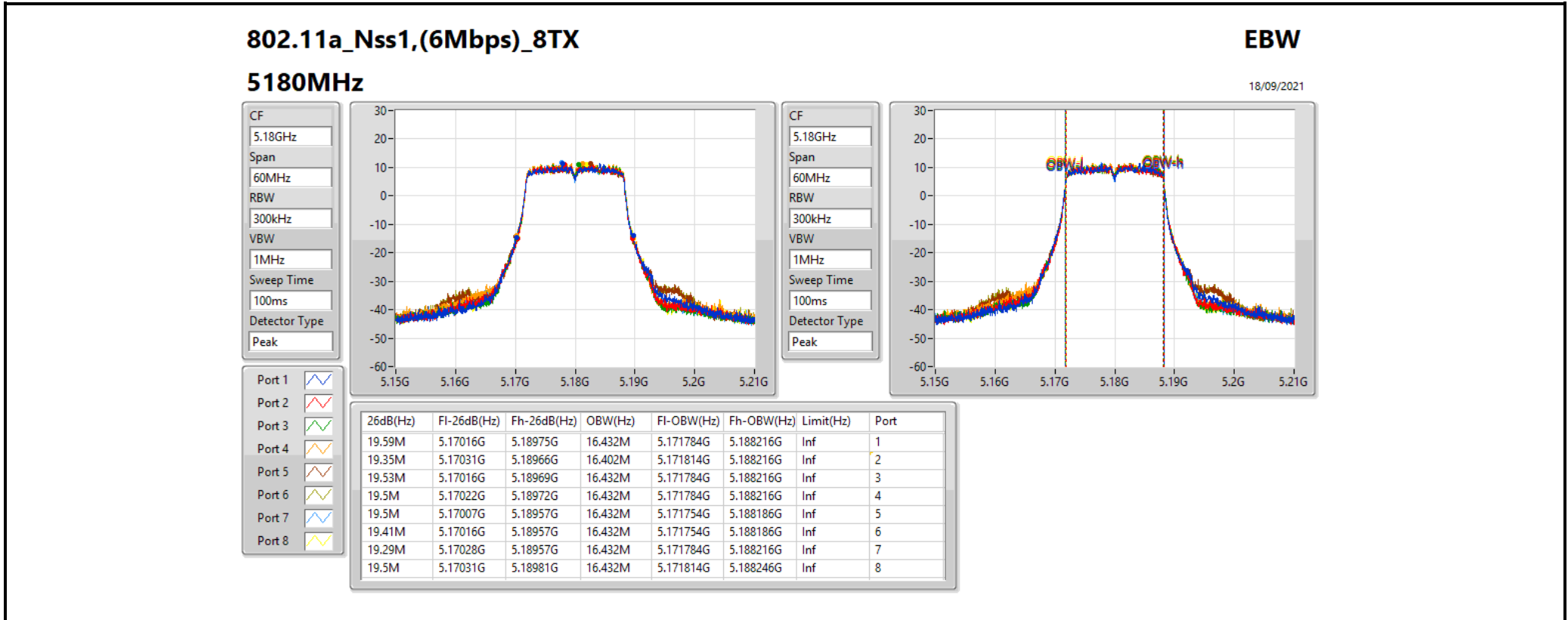
Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
 Max-OBW = Maximum 99% occupied bandwidth;  
 Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
 Min-OBW = Minimum 99% occupied bandwidth



Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11a_Nss1,(6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	19.59M	16.432M	19.35M	16.402M	19.53M	16.432M	19.5M	16.432M	19.5M	16.432M	19.41M	16.432M	19.29M	16.432M	19.5M	16.432M
5200MHz	Pass	Inf	19.53M	16.462M	19.35M	16.402M	19.32M	16.432M	19.32M	16.402M	19.5M	16.432M	19.41M	16.402M	19.44M	16.432M	19.53M	16.432M
5240MHz	Pass	Inf	19.68M	16.432M	19.29M	16.432M	19.41M	16.432M	19.35M	16.402M	19.59M	16.462M	19.56M	16.462M	19.38M	16.432M	19.35M	16.402M
5260MHz	Pass	Inf	19.53M	16.462M	19.32M	16.402M	19.44M	16.432M	19.38M	16.432M	19.44M	16.432M	19.59M	16.432M	19.35M	16.462M	19.32M	16.432M
5300MHz	Pass	Inf	19.65M	16.462M	19.38M	16.402M	19.41M	16.432M	19.38M	16.432M	19.65M	16.492M	19.65M	16.492M	19.38M	16.462M	19.53M	16.402M
5320MHz	Pass	Inf	19.5M	16.462M	19.35M	16.402M	19.53M	16.432M	19.23M	16.432M	19.2M	16.402M	19.41M	16.402M	19.26M	16.432M	19.38M	16.432M
5500MHz	Pass	Inf	19.32M	16.432M	19.35M	16.432M	19.5M	16.432M	19.47M	16.402M	19.56M	16.432M	19.56M	16.432M	19.38M	16.432M	19.41M	16.432M
5580MHz	Pass	Inf	19.53M	16.432M	19.29M	16.402M	19.56M	16.432M	19.38M	16.432M	19.44M	16.402M	19.26M	16.432M	19.47M	16.432M	19.41M	16.432M
5700MHz	Pass	Inf	19.47M	16.432M	19.35M	16.432M	19.68M	16.432M	19.32M	16.402M	19.29M	16.432M	19.44M	16.402M	19.38M	16.432M	19.5M	16.402M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	14.7M	13.223M	14.7M	13.193M	14.715M	13.238M	14.595M	13.208M	14.565M	13.163M	14.58M	13.178M	14.595M	13.223M	14.685M	13.193M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.16M	3.478M	3.18M	3.498M	3.18M	3.458M	3.16M	3.478M	3.16M	3.498M	3.16M	3.498M	3.16M	3.478M	3.16M	3.498M
5745MHz	Pass	500k	16.29M	16.432M	16.32M	16.402M	16.35M	16.432M	16.32M	16.402M	16.32M	16.462M	16.32M	16.462M	16.32M	16.432M	16.32M	16.432M
5785MHz	Pass	500k	16.32M	16.432M	16.32M	16.402M	16.32M	16.432M	16.32M	16.432M	16.32M	16.432M	16.32M	16.432M	16.32M	16.432M	16.32M	16.432M
5825MHz	Pass	500k	16.32M	16.432M	16.32M	16.432M	16.32M	16.462M	16.32M	16.432M	16.29M	16.372M	16.32M	16.372M	16.29M	16.432M	16.32M	16.432M
802.11ax HEW20_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	21.48M	18.921M	21.09M	18.921M	21.27M	18.921M	21.39M	18.921M	21.12M	18.891M	21.45M	18.951M	21.09M	18.921M	21.21M	18.951M
5200MHz	Pass	Inf	21.42M	18.951M	21.39M	18.921M	21.03M	18.921M	21.3M	18.891M	21.24M	18.951M	21.42M	18.981M	21.45M	18.891M	21.36M	18.951M
5240MHz	Pass	Inf	21.42M	18.921M	21.09M	18.891M	21.45M	18.951M	21.12M	18.951M	20.91M	18.891M	21.33M	18.951M	21.54M	18.951M	21.27M	18.921M
5260MHz	Pass	Inf	21.3M	18.921M	21.21M	18.891M	21.3M	18.921M	21.48M	18.921M	21.33M	18.951M	21.75M	18.951M	21.45M	18.921M	21.27M	18.921M
5300MHz	Pass	Inf	21.63M	18.951M	21.27M	18.921M	21.27M	18.921M	20.94M	18.921M	21.45M	18.951M	21.87M	18.981M	21.51M	18.951M	21.21M	18.921M
5320MHz	Pass	Inf	21.54M	18.951M	21.24M	18.951M	21.45M	18.981M	21.12M	18.921M	21.45M	18.981M	21.42M	18.981M	21.51M	18.951M	21.21M	18.921M
5500MHz	Pass	Inf	21.24M	18.921M	21.27M	18.921M	21.21M	18.921M	21.21M	18.921M	21.3M	18.921M	21.15M	18.921M	21.33M	18.921M	21.24M	18.921M
5580MHz	Pass	Inf	21.36M	18.981M	21.54M	18.951M	21.09M	18.921M	21.03M	18.921M	21.45M	18.951M	21.57M	18.951M	21.27M	18.951M	21.06M	18.951M
5700MHz	Pass	Inf	21.09M	18.891M	21.3M	18.891M	21.27M	18.951M	21.33M	18.921M	21.21M	18.951M	21.27M	18.951M	21.21M	18.921M	21.33M	18.921M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.615M	14.438M	15.54M	14.423M	15.435M	14.453M	15.555M	14.438M	15.735M	14.438M	15.6M	14.468M	15.48M	14.423M	15.465M	14.438M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.618M	4.52M	4.598M	4.52M	4.618M	4.44M	4.618M	4.42M	4.638M	4.24M	4.638M	4.5M	4.618M	4.48M	4.618M
5745MHz	Pass	500k	18.78M	18.921M	19.02M	18.981M	18.9M	18.921M	18.72M	18.921M	18.78M	18.891M	18.9M	18.921M	18.96M	18.951M	18.96M	18.951M
5785MHz	Pass	500k	18.9M	18.951M	18.66M	18.921M	18.75M	18.921M	18.9M	18.891M	18.93M	18.951M	18.96M	18.951M	18.87M	18.921M	18.84M	18.921M
5825MHz	Pass	500k	18.81M	18.951M	18.93M	18.921M	18.81M	18.891M	18.84M	18.921M	18.54M	18.921M	18.48M	18.891M	18.96M	18.951M	18.81M	18.921M
802.11ax HEW40_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.98M	37.961M	40.92M	37.901M	40.92M	37.961M	40.98M	37.961M	40.62M	37.961M	40.98M	37.961M	40.98M	37.901M	41.22M	37.961M
5230MHz	Pass	Inf	40.86M	37.901M	41.34M	37.901M	40.56M	37.961M	40.98M	37.961M	40.8M	37.901M	40.74M	37.961M	40.8M	37.961M	41.22M	37.901M
5270MHz	Pass	Inf	41.22M	37.961M	41.16M	37.961M	41.28M	37.961M	41.4M	37.961M	41.1M	37.961M	41.04M	37.901M	40.92M	37.901M	40.98M	37.901M
5310MHz	Pass	Inf	41.1M	38.021M	41.16M	37.961M	40.98M	37.901M	40.68M	37.841M	40.8M	37.901M	40.8M	37.901M	41.28M	37.961M	41.16M	37.961M
5510MHz	Pass	Inf	40.92M	37.961M	41.16M	37.961M	40.62M	37.901M	41.1M	37.901M	40.98M	38.021M	40.74M	38.021M	40.74M	37.781M	41.22M	37.901M
5550MHz	Pass	Inf	41.1M	38.021M	40.62M	37.901M	40.92M	38.021M	40.92M	37.961M	41.04M	38.081M	40.74M	38.021M	40.98M	37.901M	40.98M	37.901M
5670MHz	Pass	Inf	41.28M	37.961M	40.86M	37.961M	41.22M	37.961M	40.44M	37.841M	41.04M	37.961M	40.98M	38.081M	40.8M	38.021M	41.16M	37.961M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.665M	33.828M	35.665M	33.793M	35.35M	33.793M	35.42M	33.828M	35.525M	33.863M	35.42M	33.793M	35.595M	33.863M	35.56M	33.898M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.08M	4.178M	4.12M	4.198M	4.14M	4.178M	4.12M	4.198M	4.08M	4.218M	4.02M	4.178M	4.1M	4.158M	4.02M	4.198M
5755MHz	Pass	500k	37.5M	37.901M	37.62M	37.841M	37.98M	37.961M	37.98M	37.901M	37.56M	37.901M	37.74M	37.961M	37.8M	37.901M	37.92M	37.901M
5795MHz	Pass	500k	38.04M	38.021M	37.68M	37.901M	37.98M	37.961M	37.92M	37.961M	37.5M	37.901M	37.32M	37.901M	36.48M	37.841M	37.86M	37.901M
802.11ax HEW80_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	82.44M	77.361M	82.32M	77.481M	82.8M	77.361M	82.44M	77.361M	82.32M	77.481M	82.2M	77.361M	82.32M	77.361M	82.56M	77.481M
5290MHz	Pass	Inf	82.8M	77.361M	82.44M	77.361M	83.04M	77.601M	82.44M	77.241M	81.96M	77.361M	81.84M	77.241M	82.56M	77.241M	82.2M	77.481M
5530MHz	Pass	Inf	82.32M	77.241M	82.32M	77.361M	82.44M	77.361M	82.68M	77.361M	82.32M	77.361M	81.84M	77.481M	81.96M	77.001M	82.32M	77.361M
5610MHz	Pass	Inf	82.44M	77.241M	82.08M	77.241M	82.56M	77.241M	82.44M	77.361M	82.2M	77.361M	82.8M	77.361M	81.96M	77.481M	81.84M	77.361M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.35M	73.238M	76.425M	73.238M	76.35M	73.313M	75.975M	73.238M	75.975M	73.163M	76.275M	73.163M	76.2M	73.388M	76.35M	73.238M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.02M	4.298M	4.12M	4.318M	4.04M	4.298M	4.04M	4.298M	4.06M	4.298M	4.08M	4.318M	4.06M	4.298M	4.02M	4.298M
5775MHz	Pass	500k	77.64M	77.361M	76.2M	77.241M	77.16M	77.361M	78.12M	77.481M	77.16M	77.241M	77.28M	77.361M	77.52M	77.241M	76.92M	77.241M

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



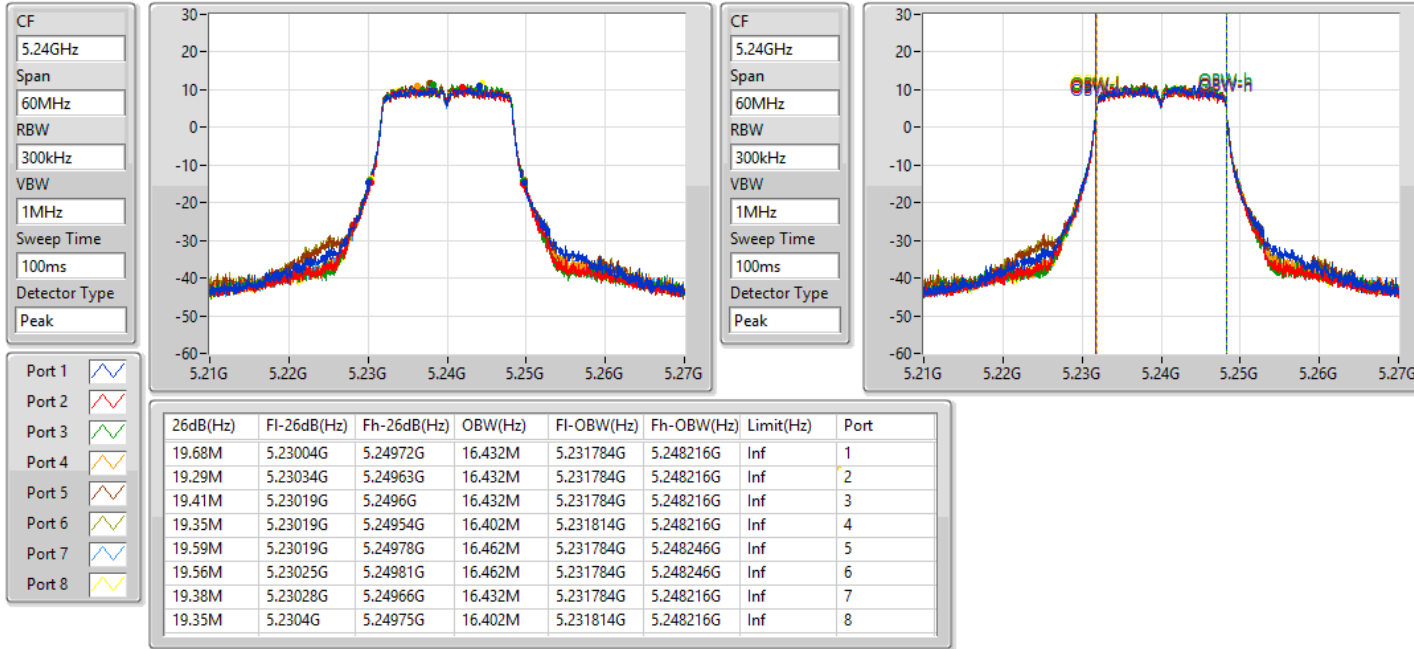


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5240MHz

18/09/2021

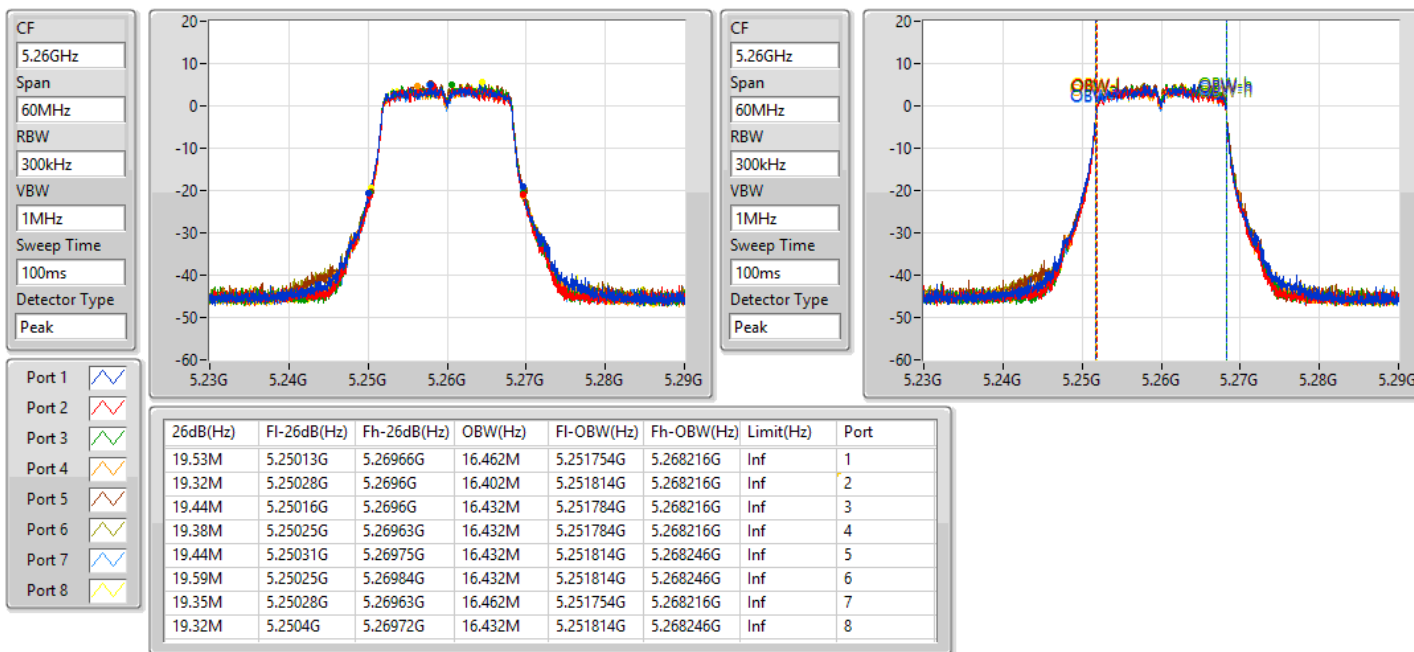


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5260MHz

18/09/2021

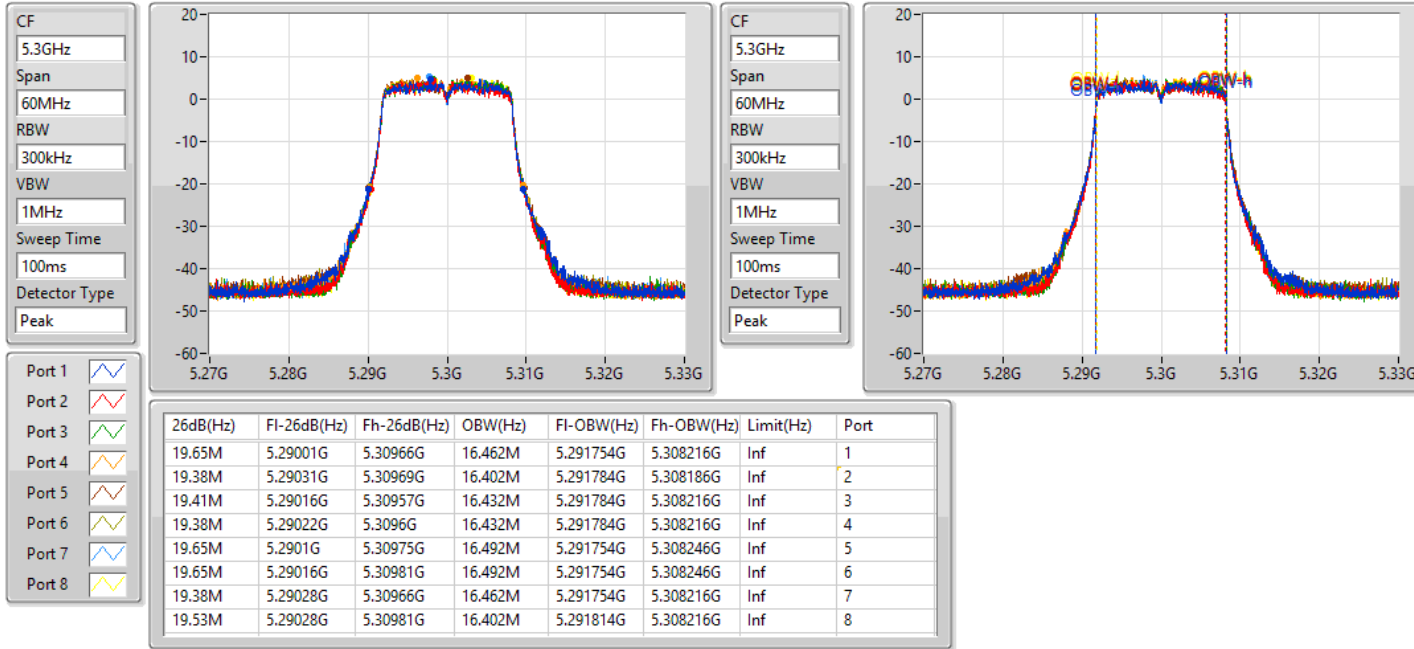


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5300MHz

18/09/2021

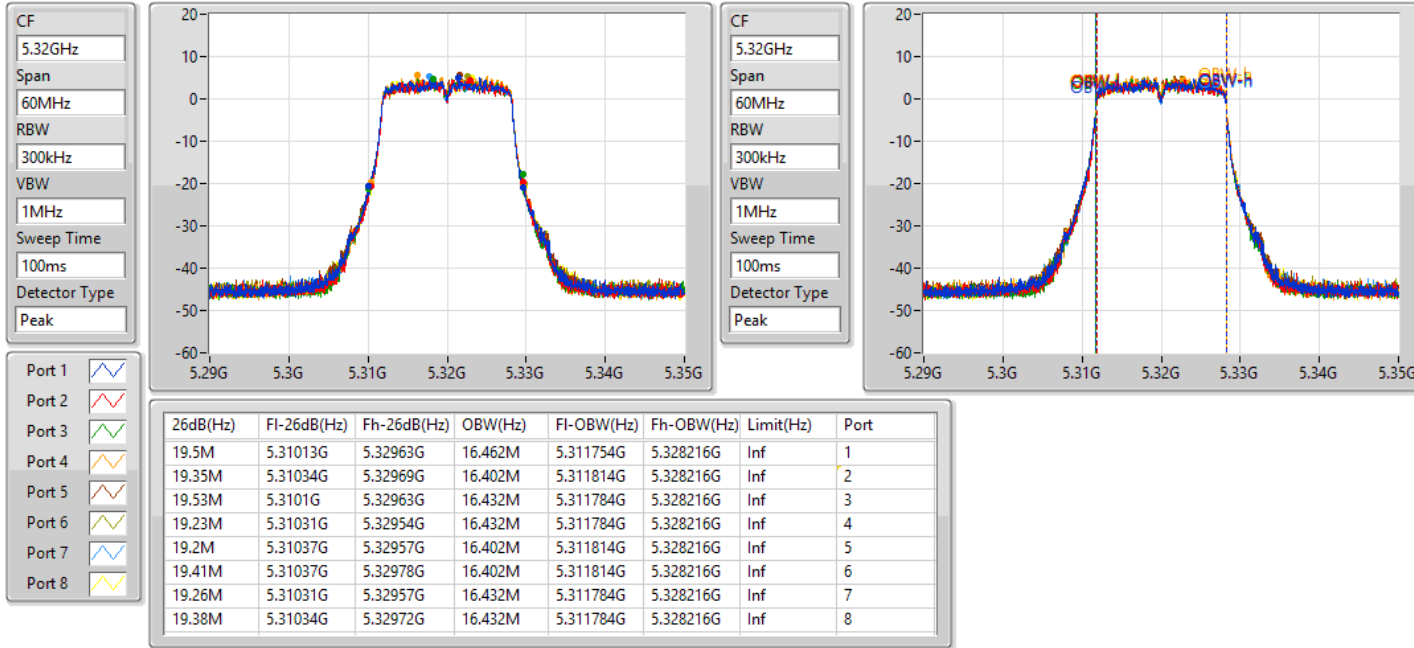


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5320MHz

18/09/2021

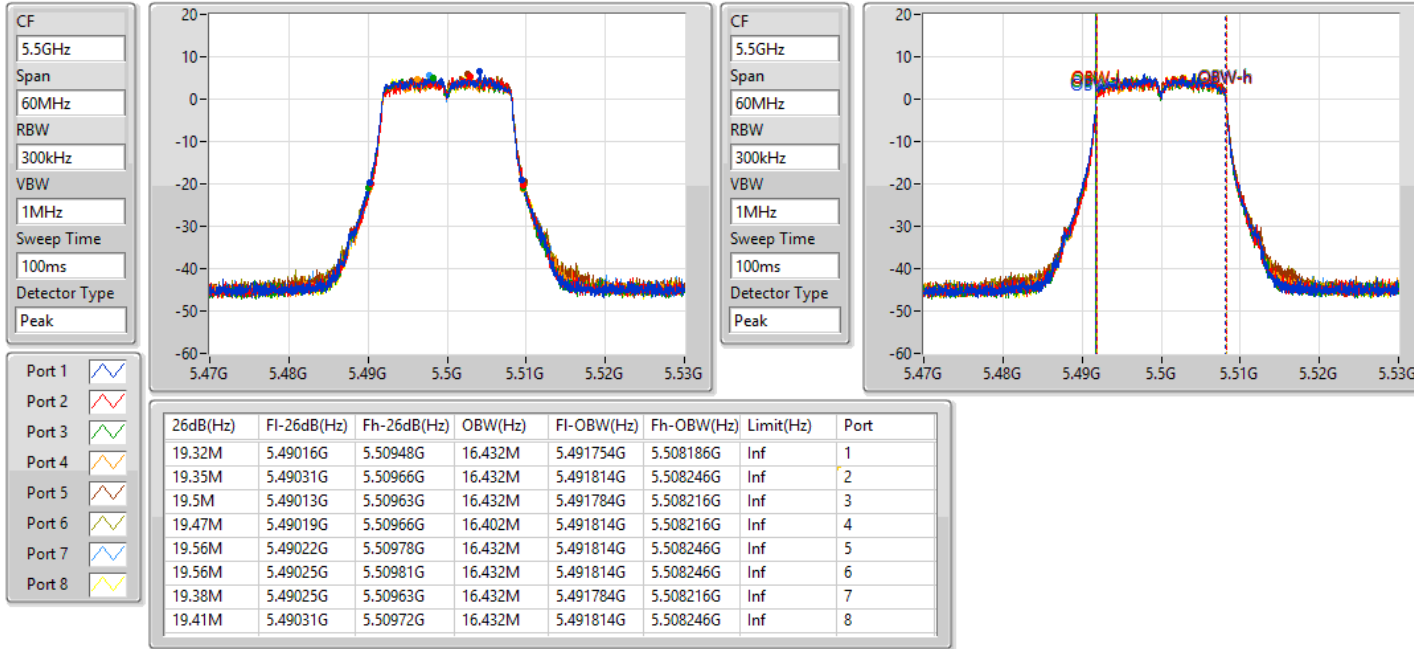


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5500MHz

18/09/2021

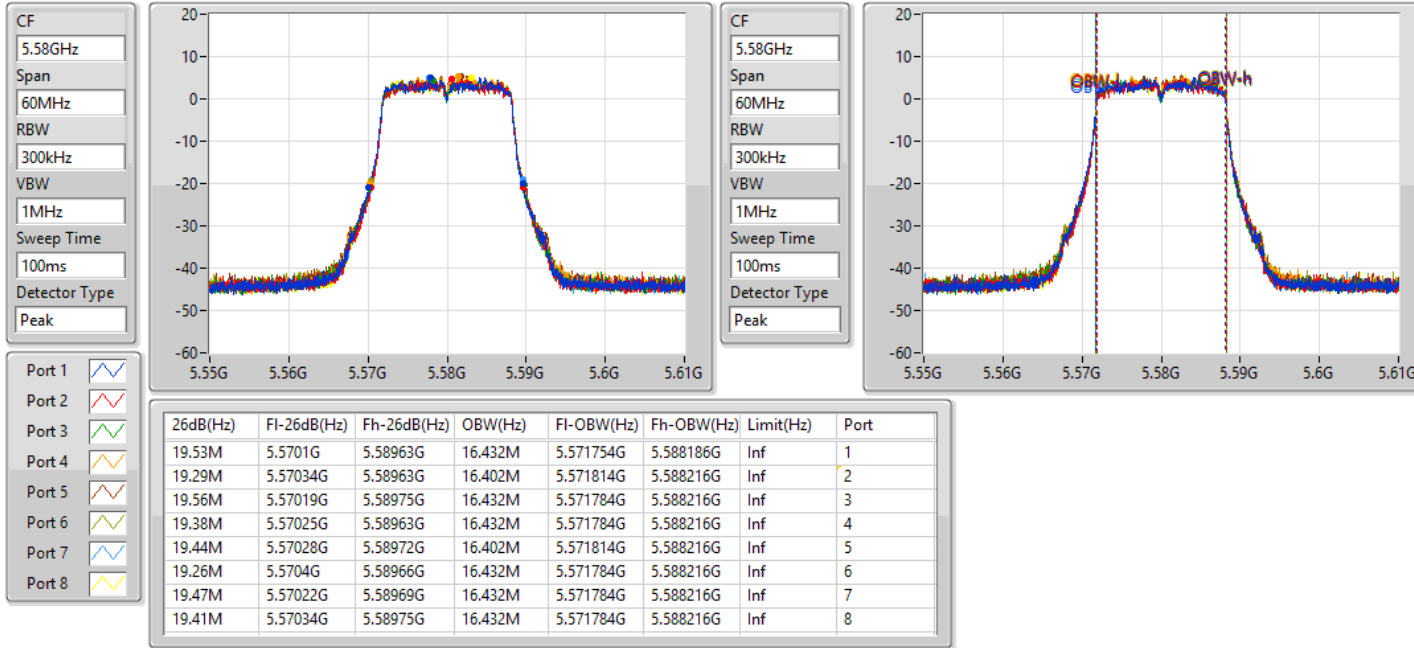


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5580MHz

18/09/2021

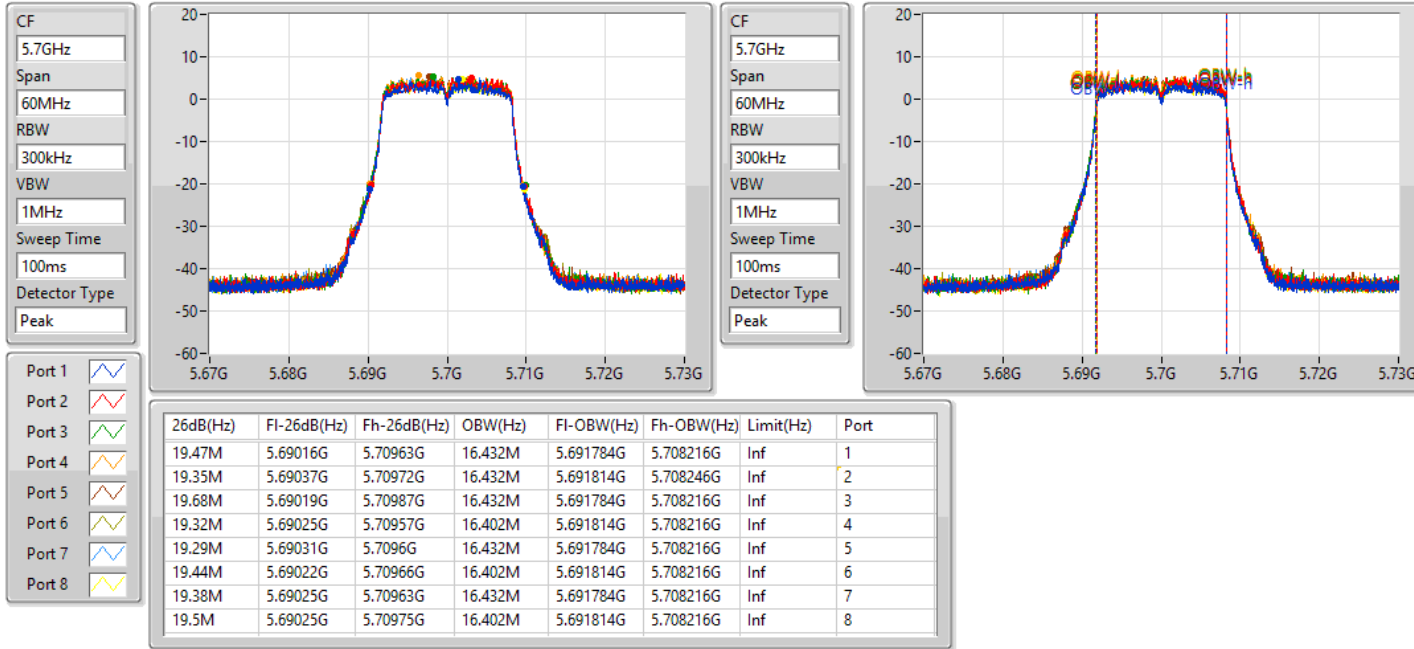


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5700MHz

18/09/2021

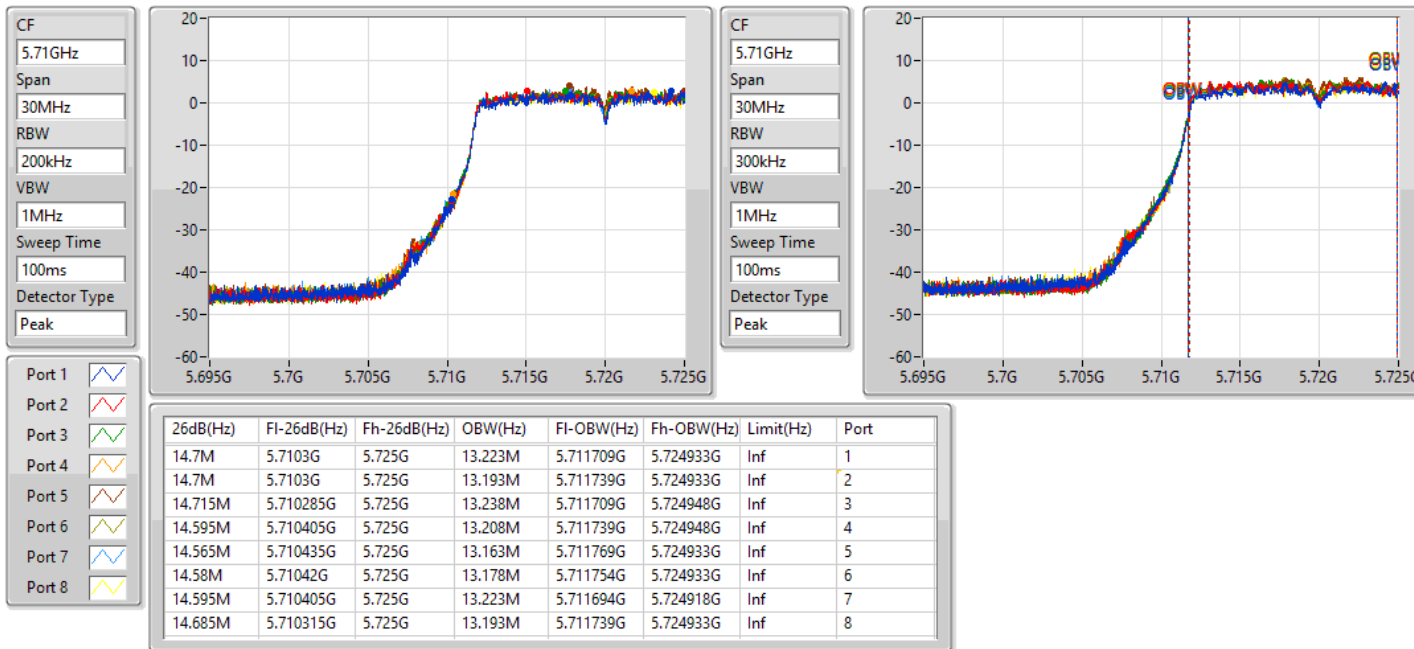


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5720MHz Straddle 5.47-5.725GHz

18/09/2021

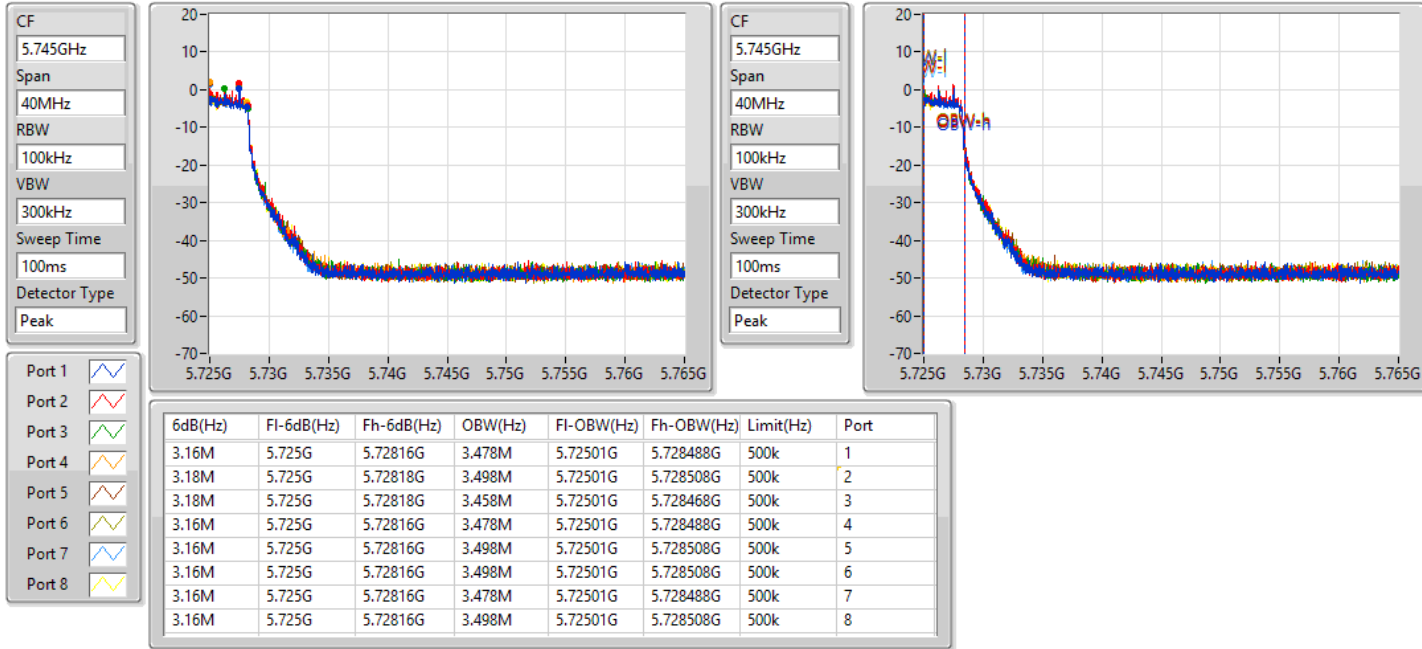


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5720MHz Straddle 5.725-5.85GHz

18/09/2021

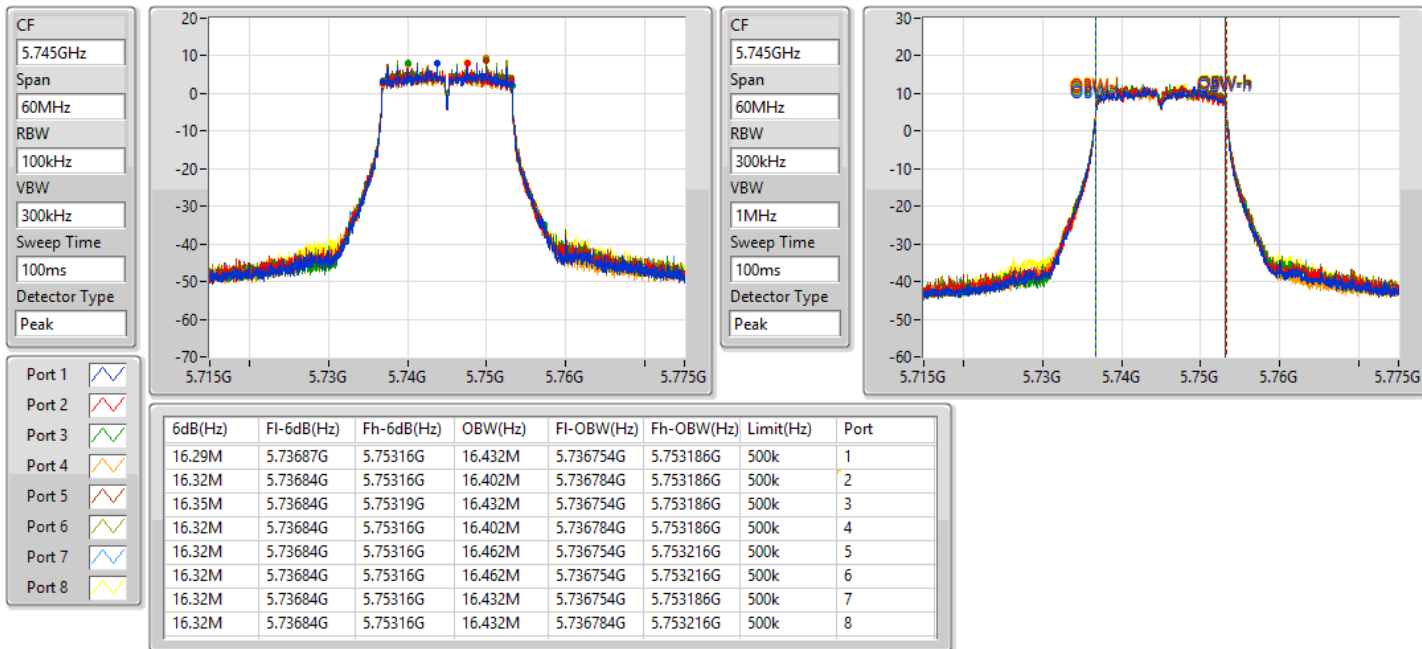


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5745MHz

18/09/2021

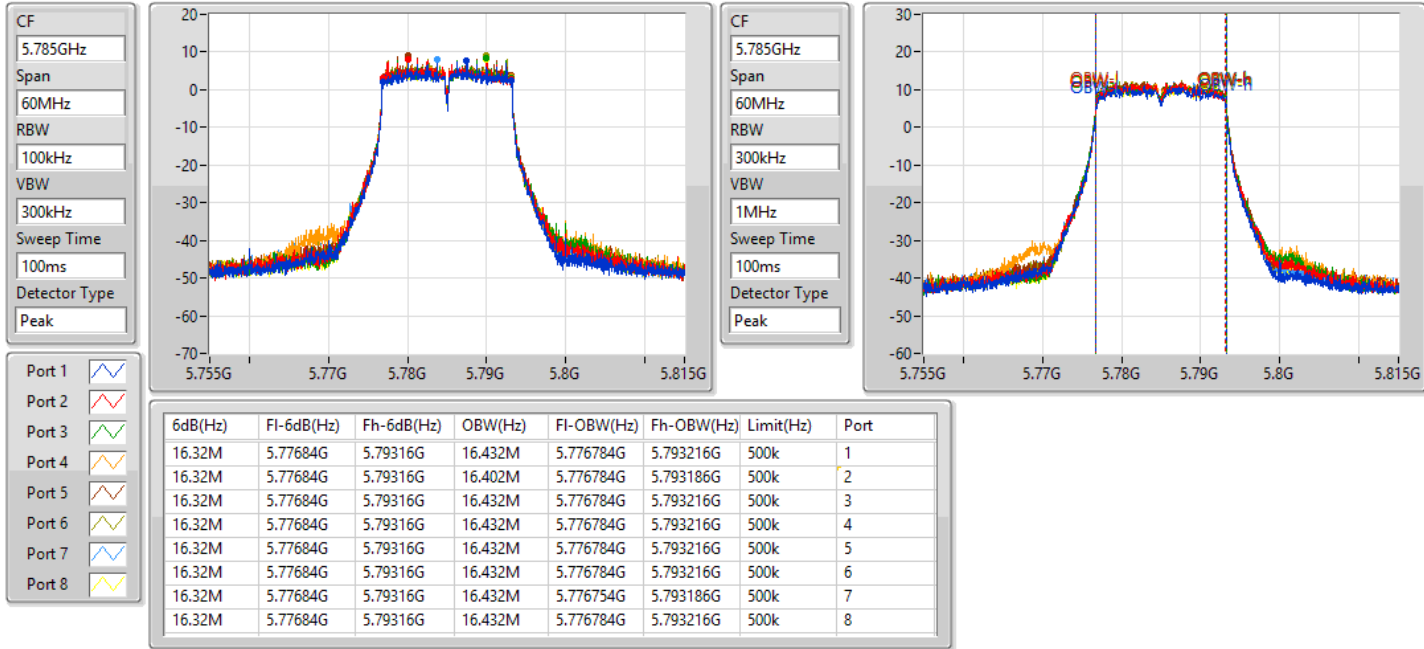


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5785MHz

18/09/2021

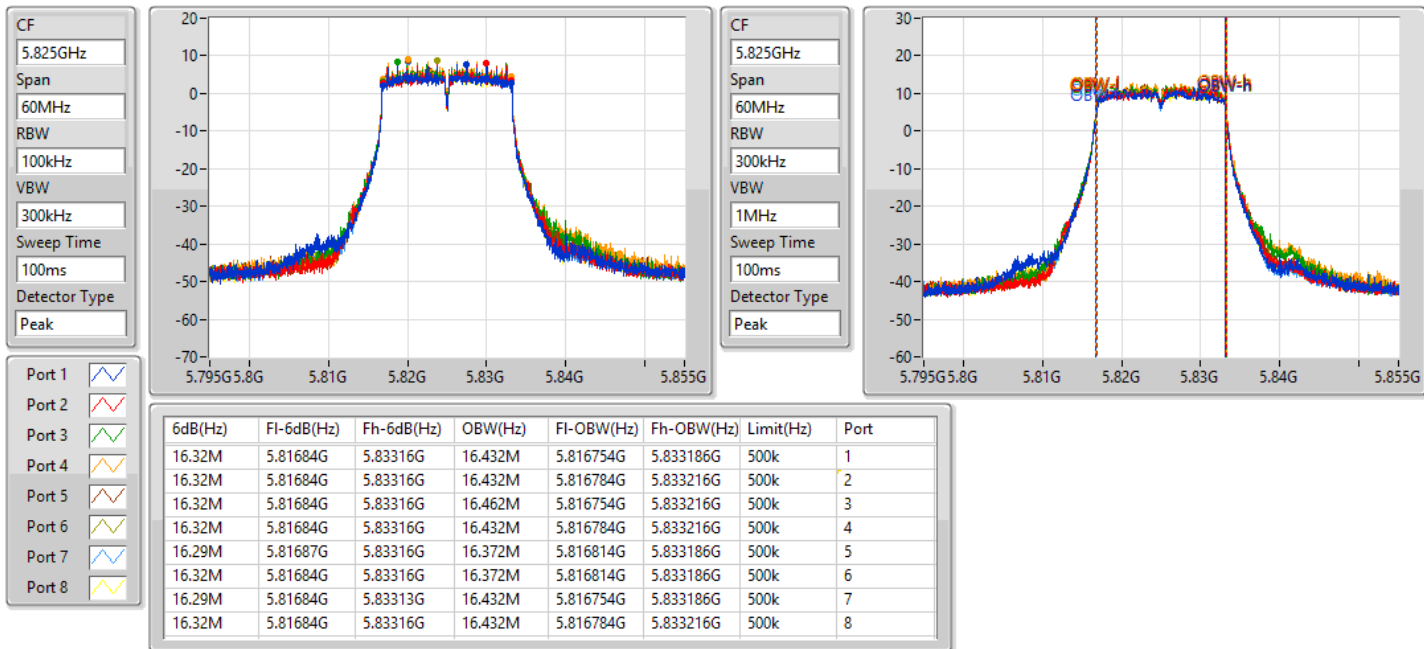


802.11a\_Nss1,(6Mbps)\_8TX

EBW

5825MHz

18/09/2021



802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5180MHz

18/09/2021



802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5200MHz

18/09/2021

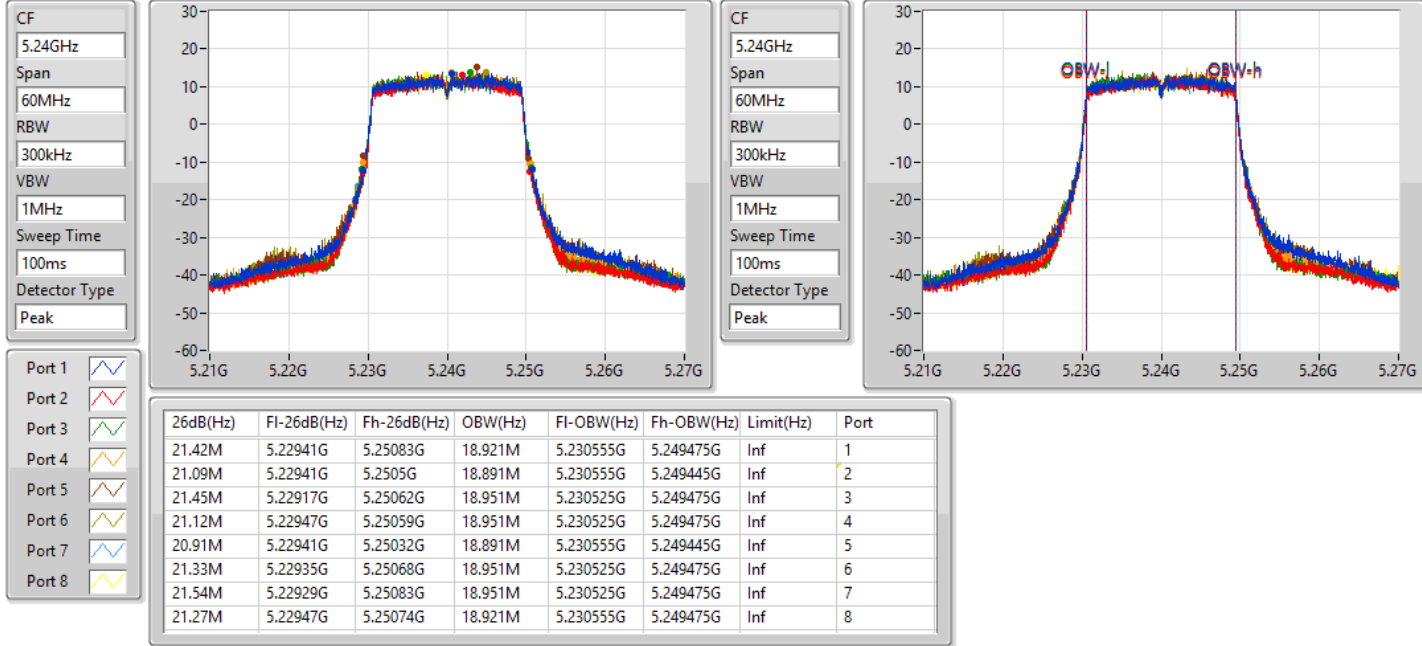


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5240MHz

18/09/2021

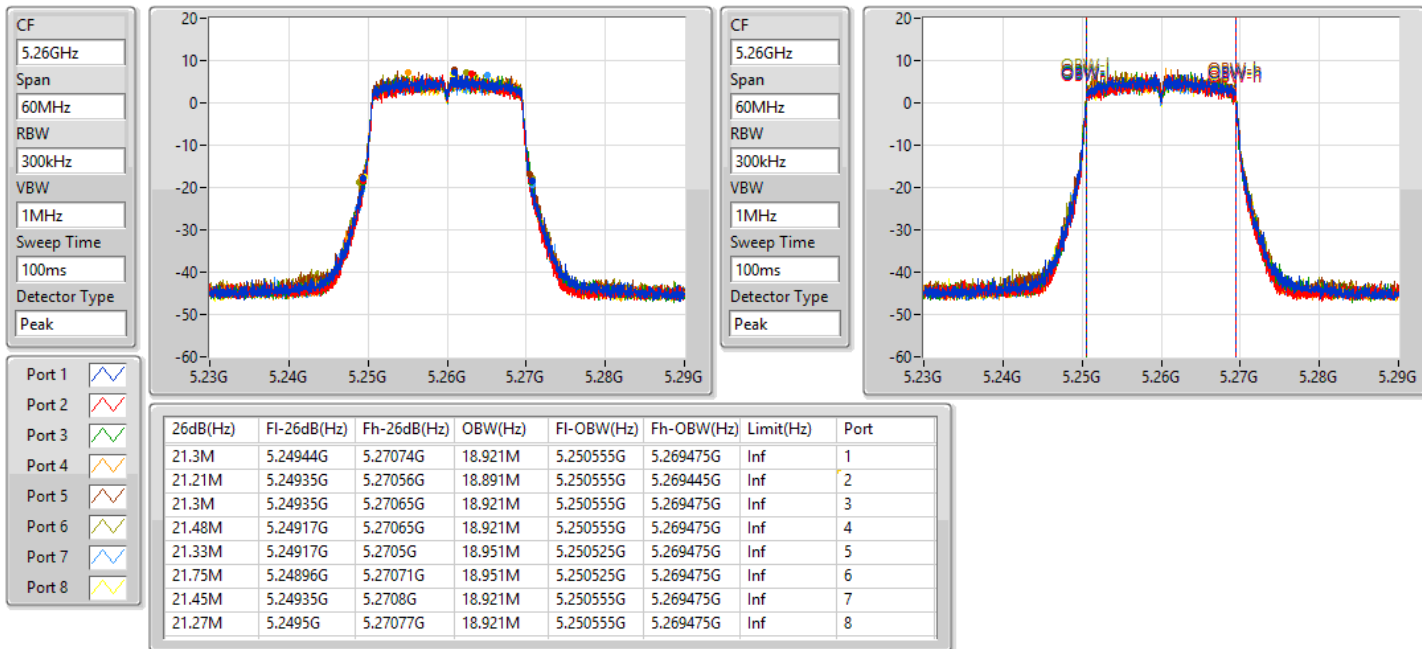


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5260MHz

18/09/2021



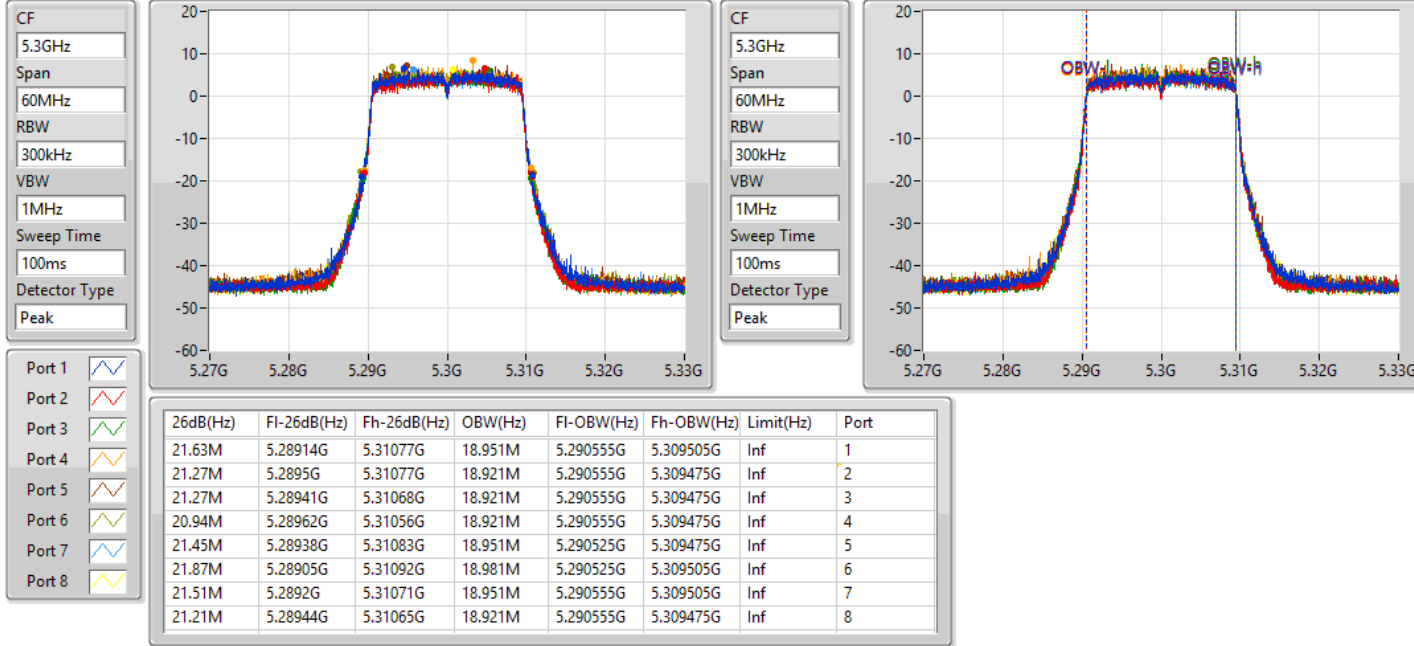


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5300MHz

18/09/2021

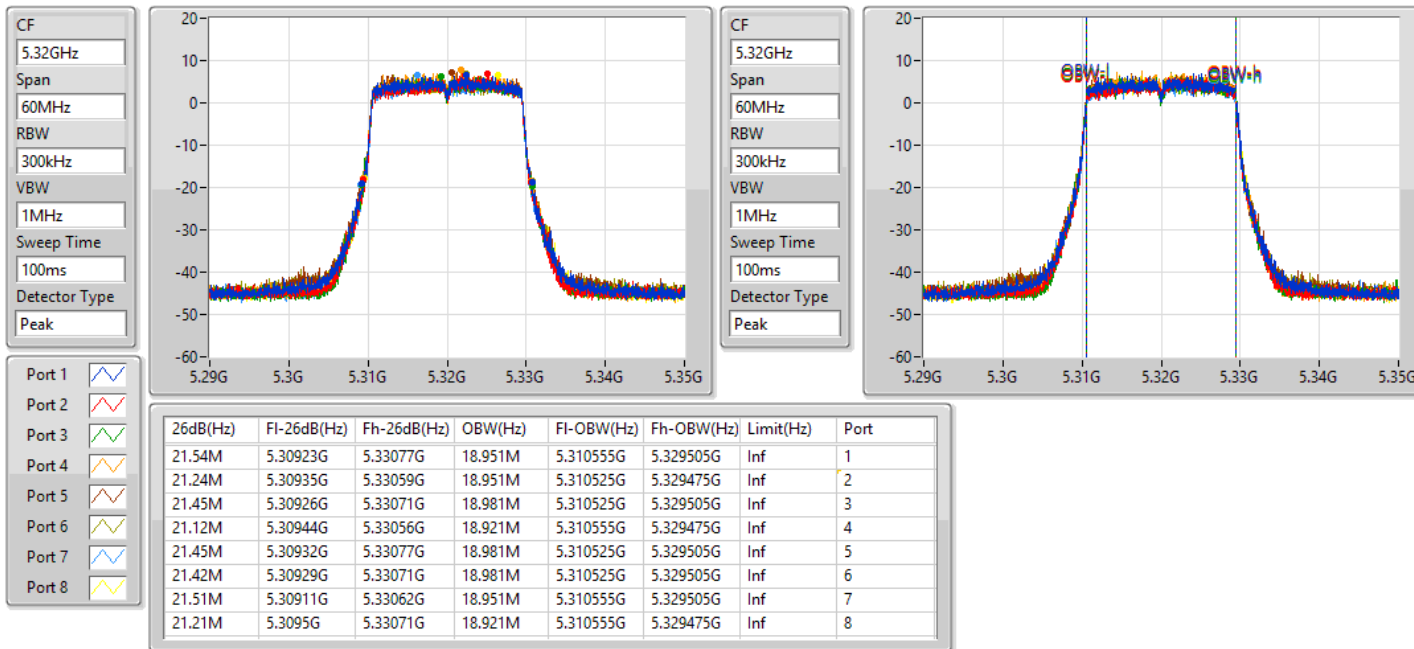


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5320MHz

18/09/2021

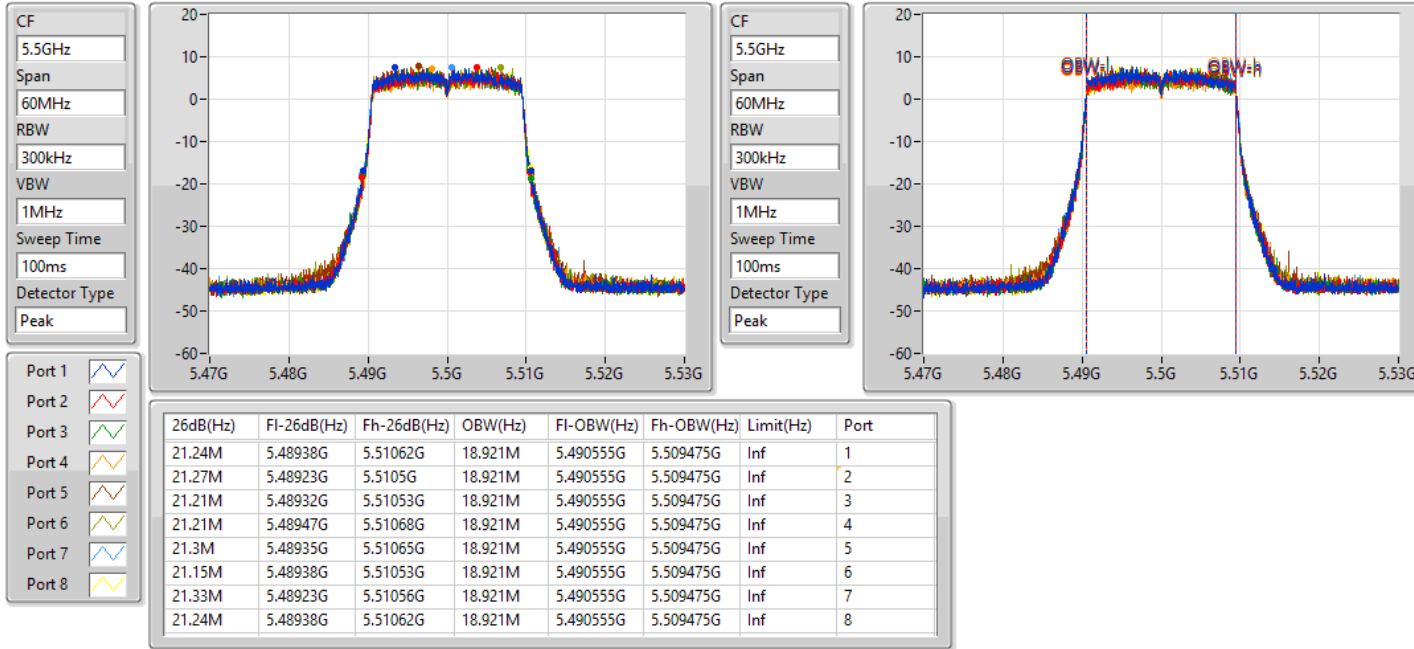


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5500MHz

18/09/2021

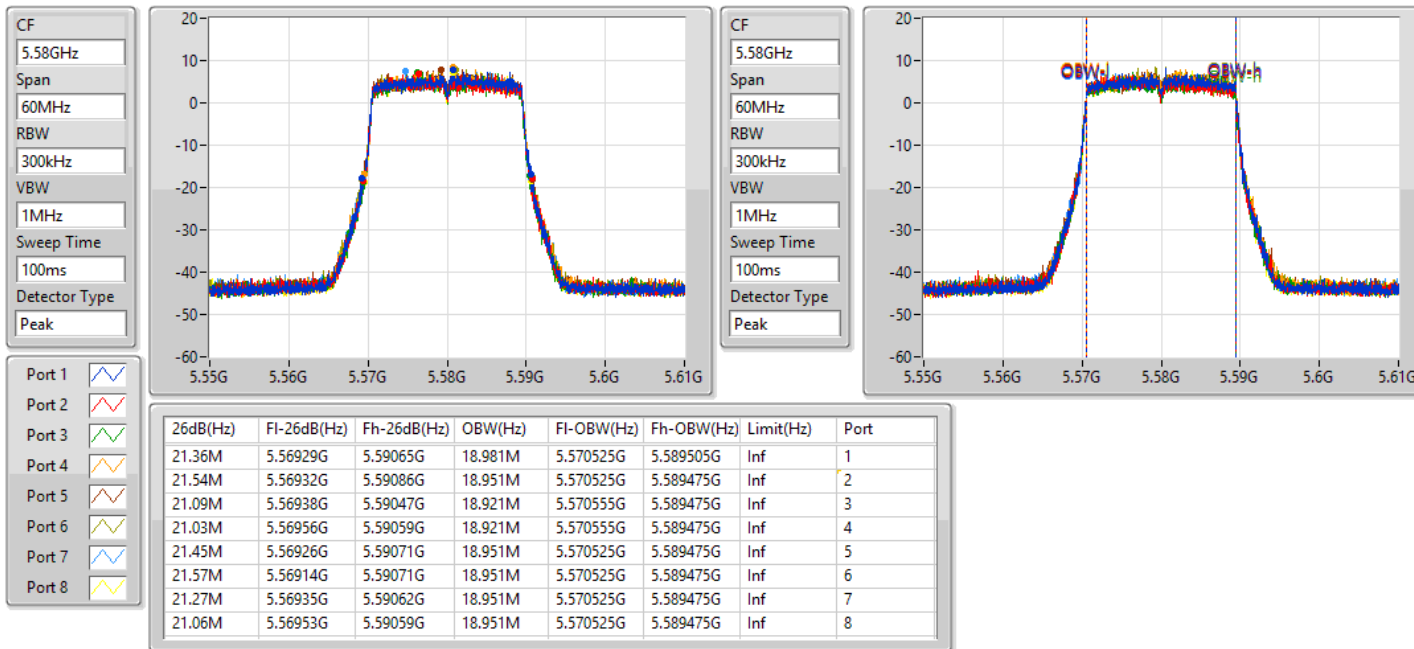


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5580MHz

18/09/2021



802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5700MHz

18/09/2021

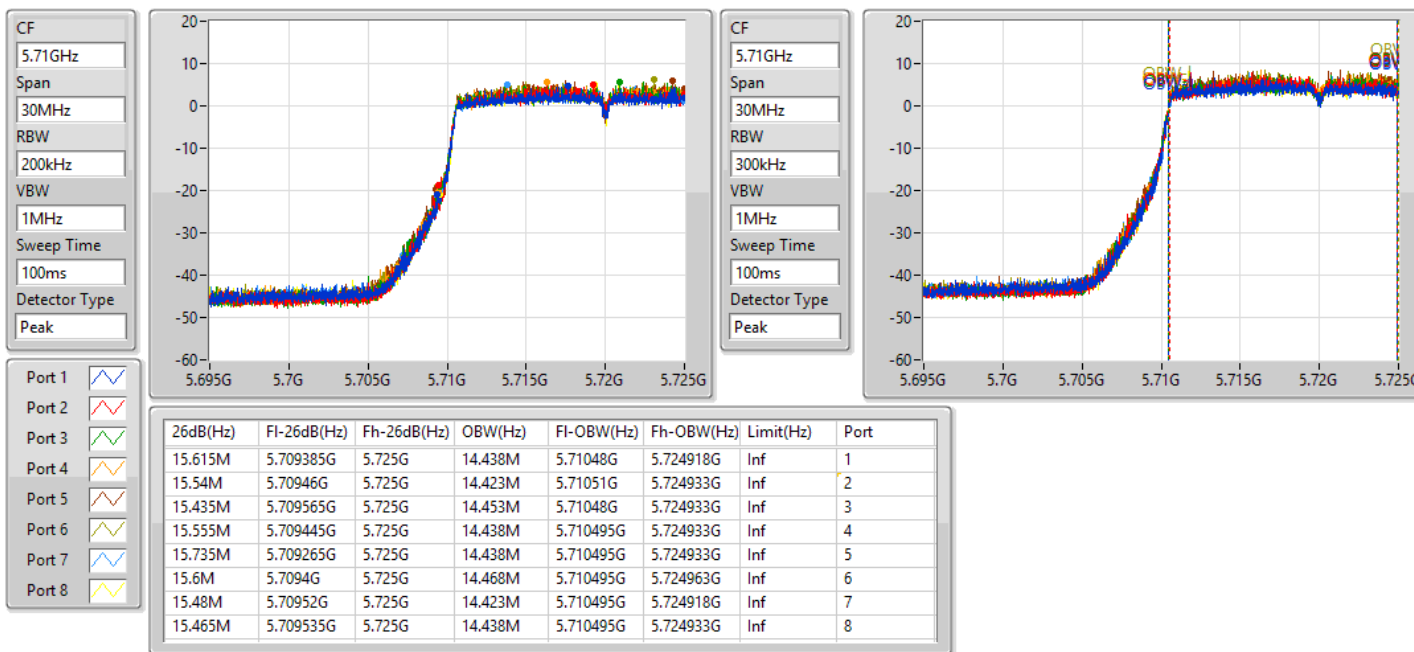


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5720MHz Straddle 5.47-5.725GHz

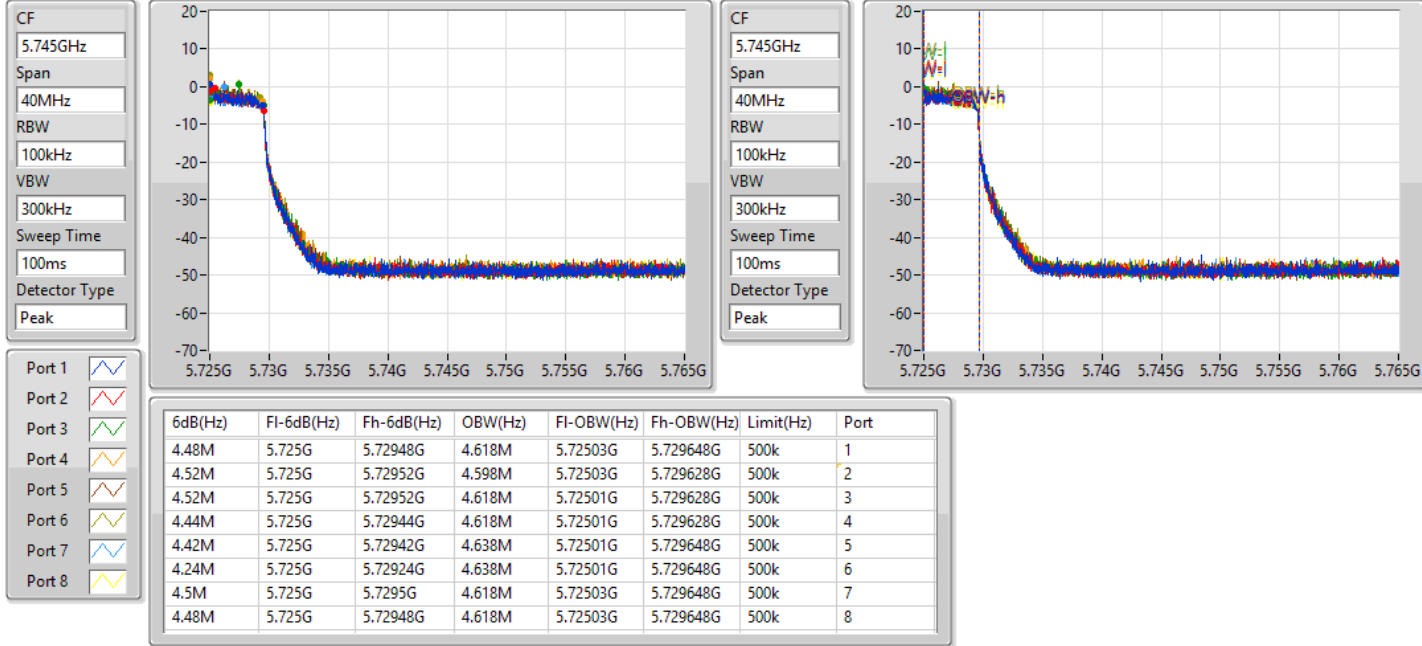
18/09/2021



**802.11ax HEW20\_Nss1,(MCS0)\_8TX**  
**5720MHz Straddle 5.725-5.85GHz**

EBW

18/09/2021

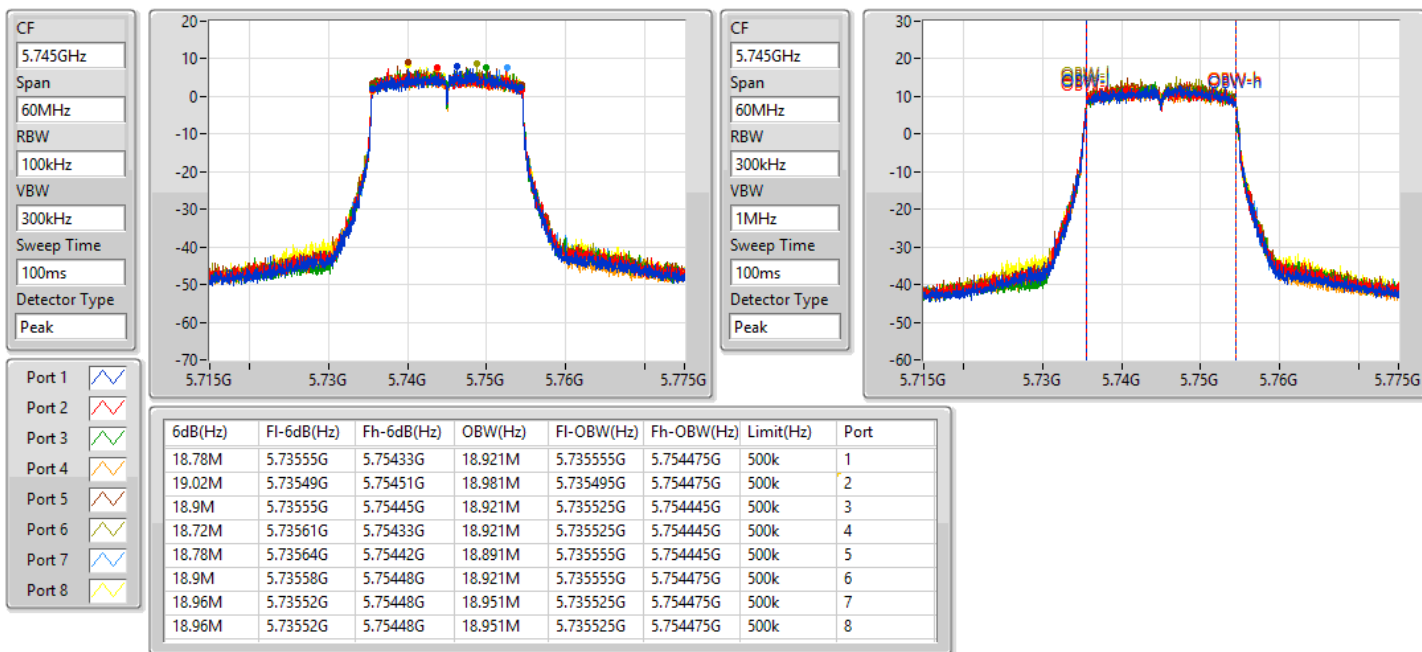


**802.11ax HEW20\_Nss1,(MCS0)\_8TX**

EBW

**5745MHz**

18/09/2021

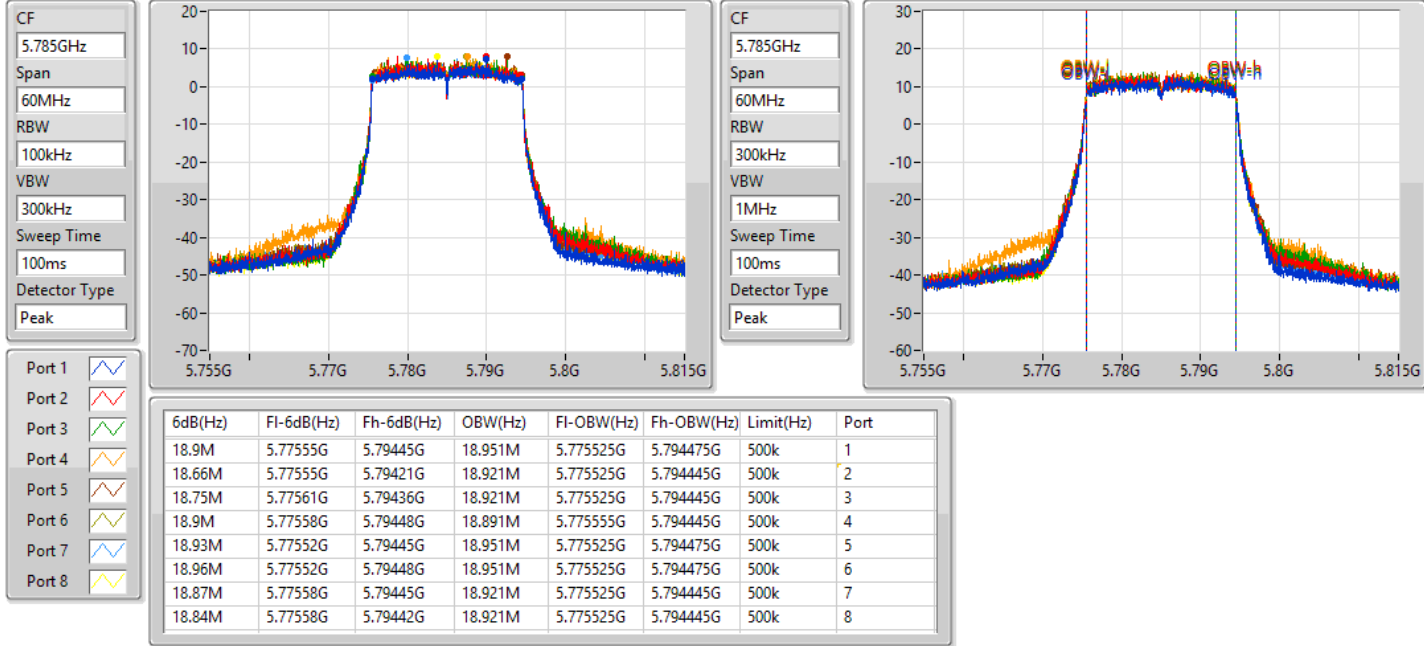


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5785MHz

18/09/2021

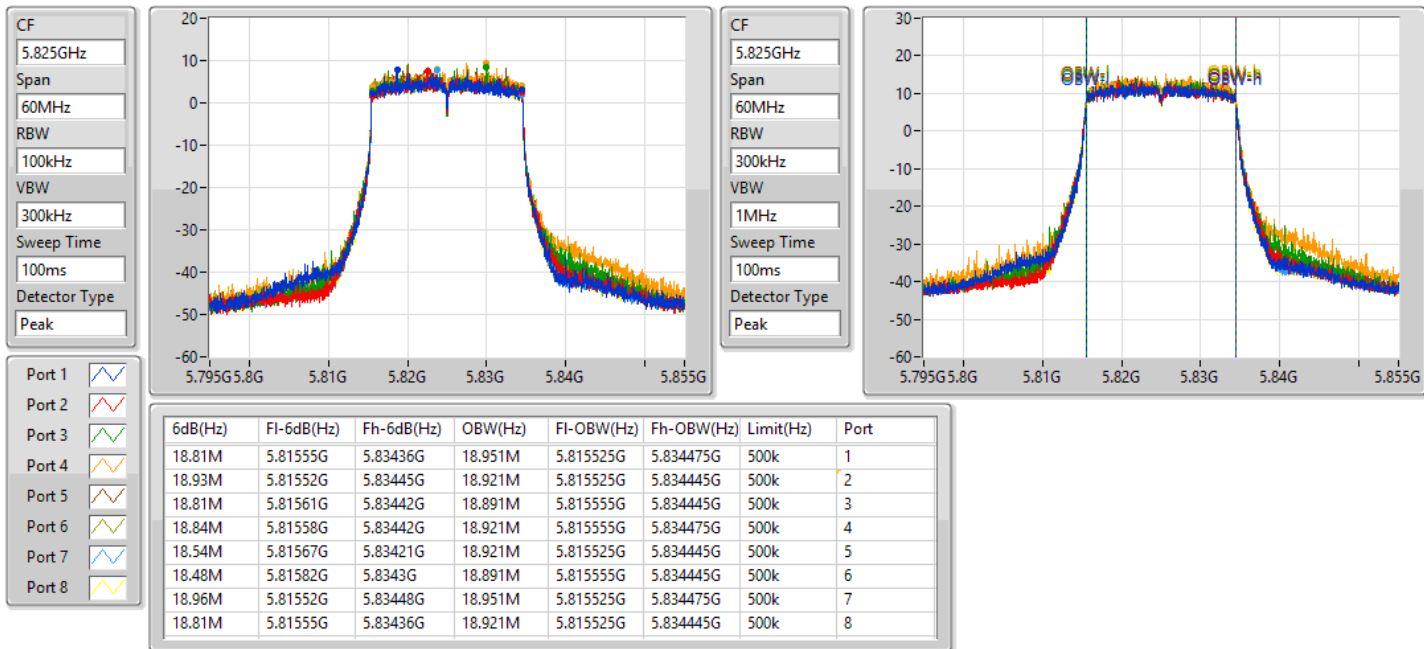


802.11ax HEW20\_Nss1,(MCS0)\_8TX

EBW

5825MHz

18/09/2021

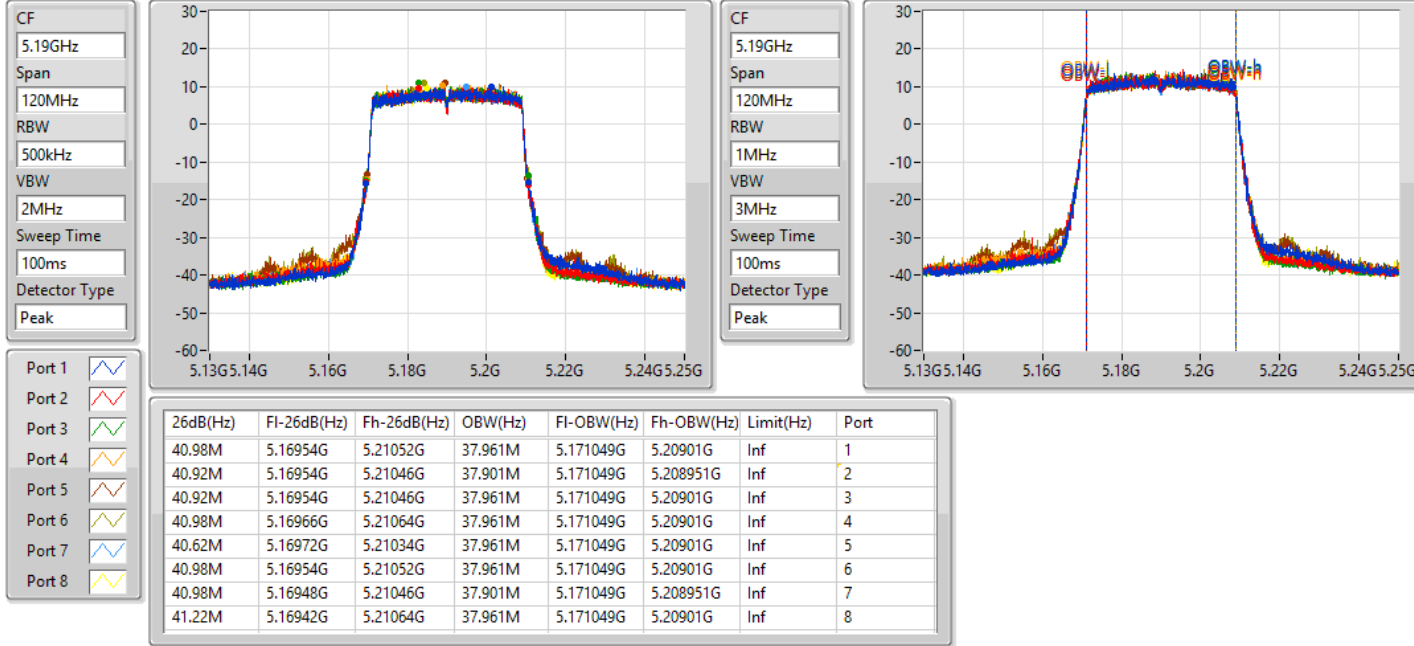


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5190MHz

18/09/2021

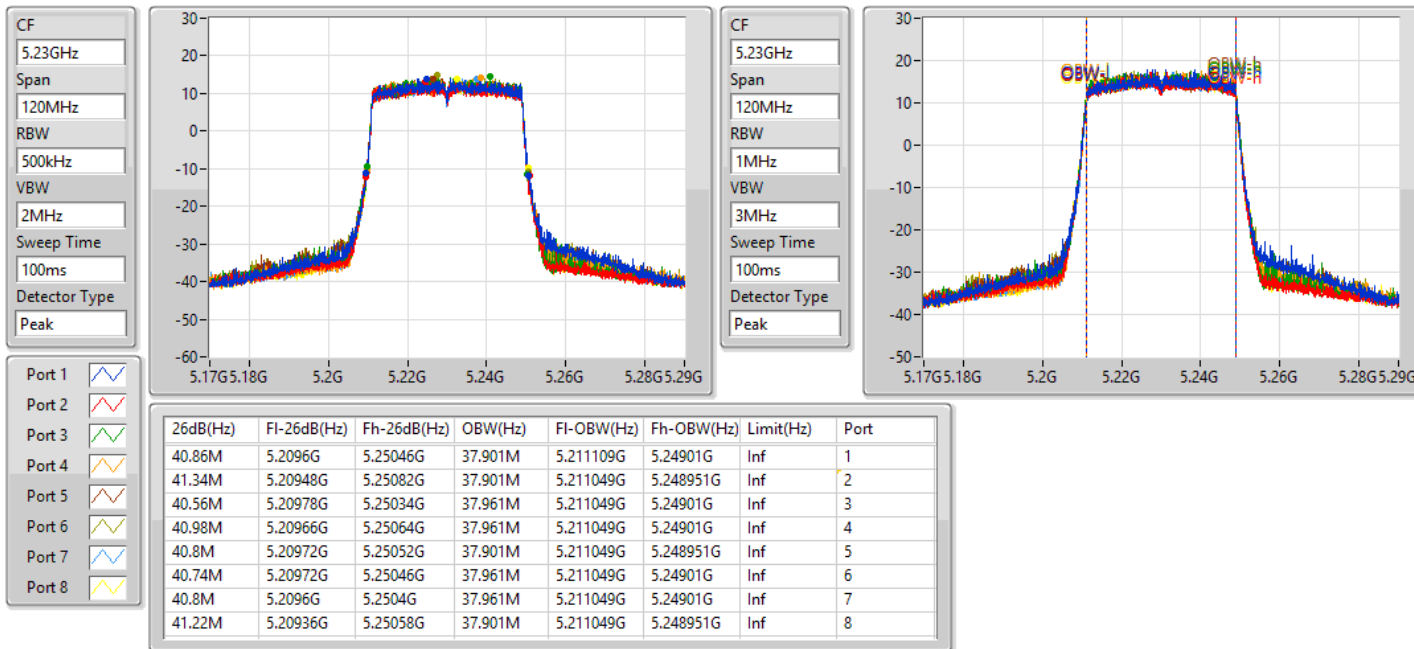


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5230MHz

18/09/2021

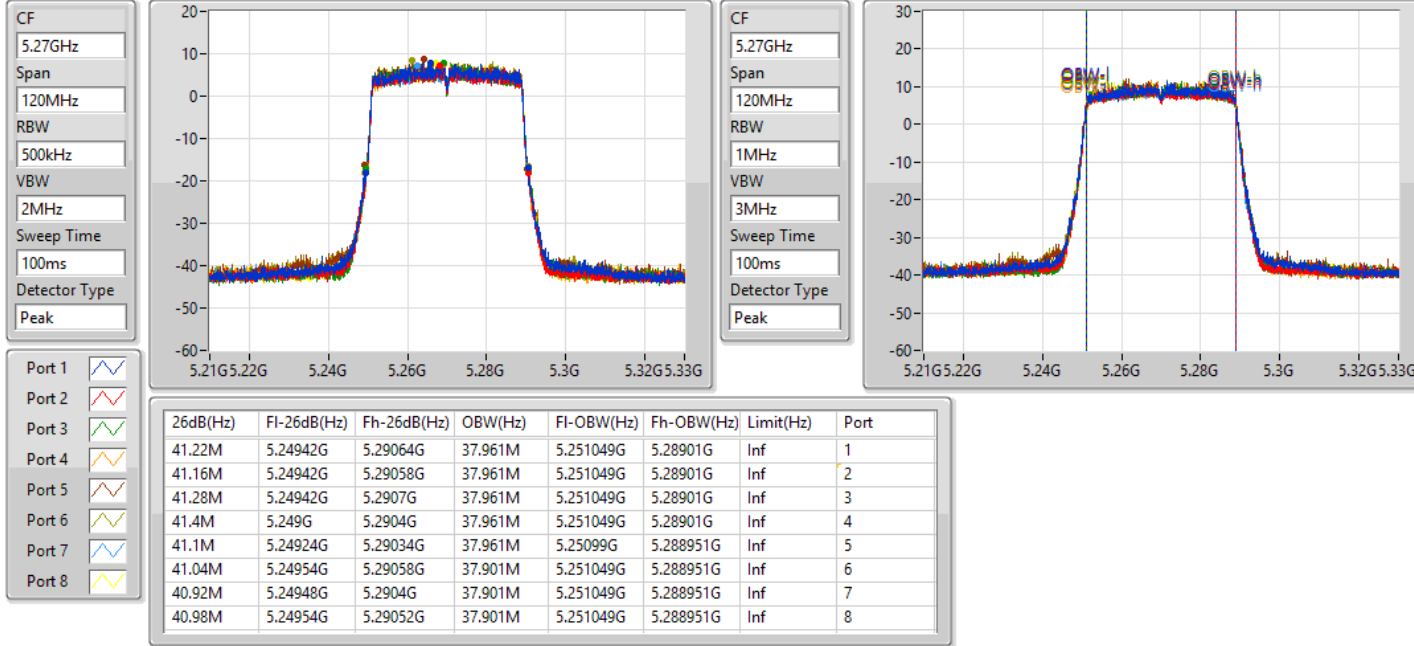


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5270MHz

19/09/2021

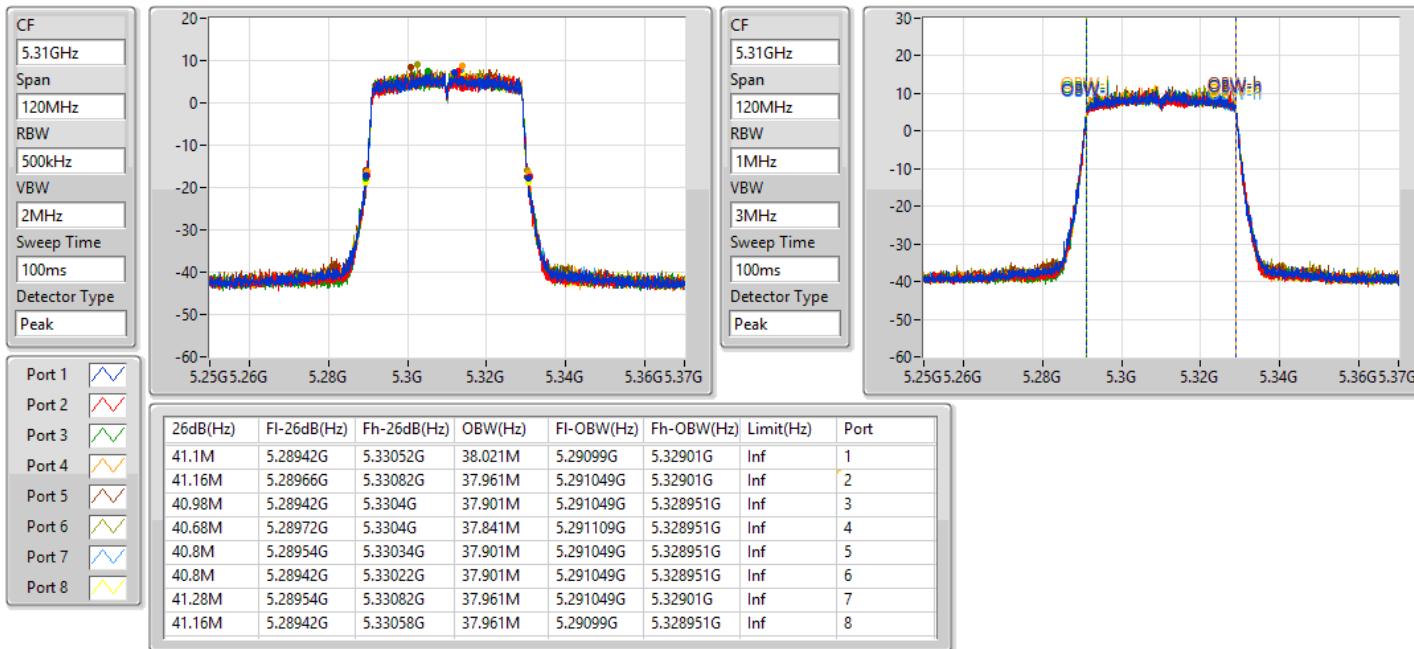


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5310MHz

19/09/2021

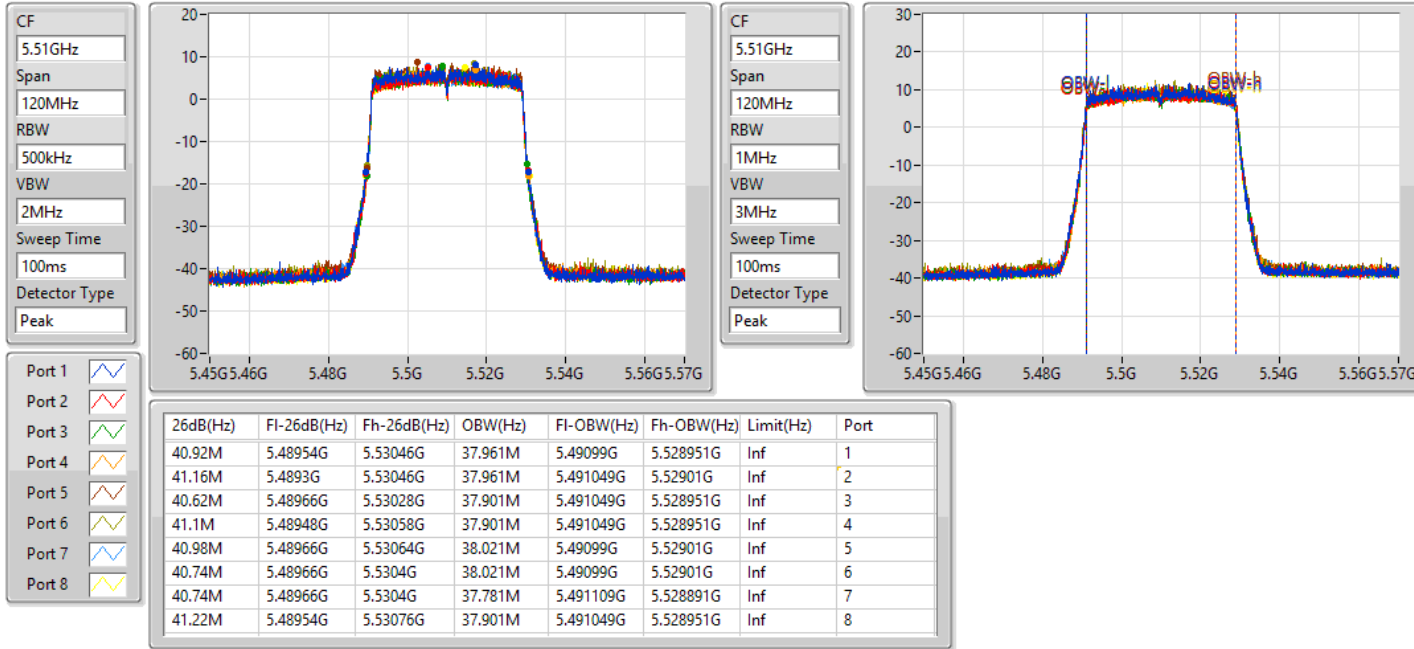


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5510MHz

19/09/2021

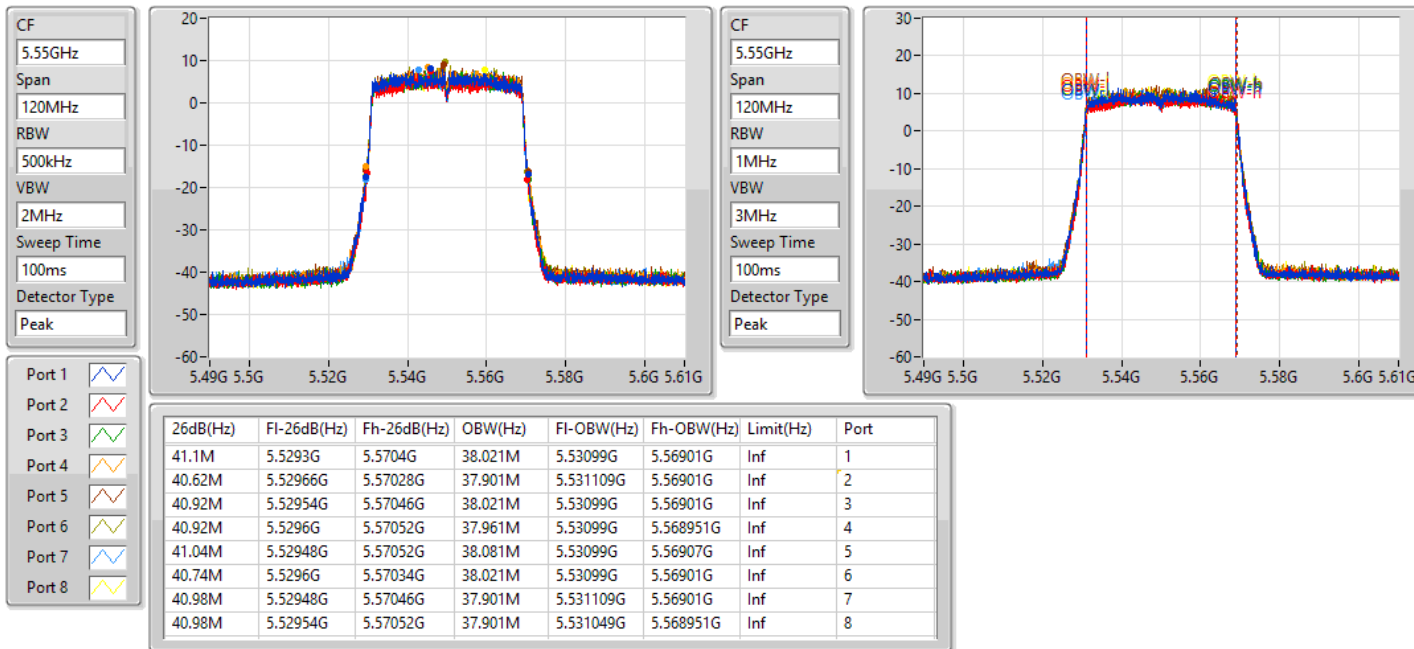


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5550MHz

19/09/2021





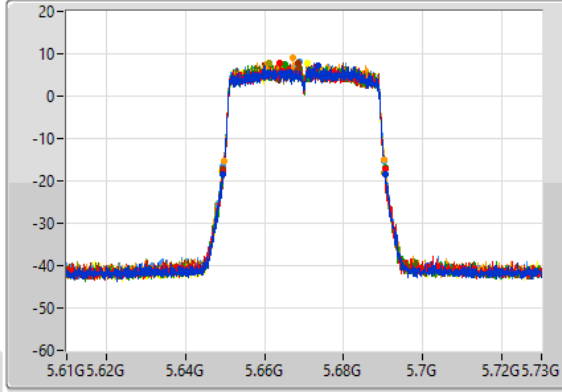
802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

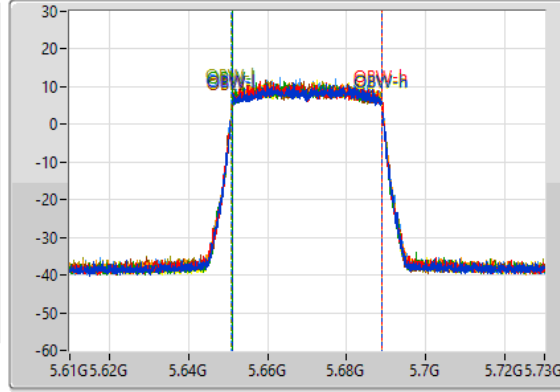
5670MHz

19/09/2021

CF  
5.67GHz  
Span  
120MHz  
RBW  
500kHz  
VBW  
2MHz  
Sweep Time  
100ms  
Detector Type  
Peak



CF  
5.67GHz  
Span  
120MHz  
RBW  
1MHz  
VBW  
3MHz  
Sweep Time  
100ms  
Detector Type  
Peak



- Port 1
- Port 2
- Port 3
- Port 4
- Port 5
- Port 6
- Port 7
- Port 8

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
41.28M	5.64936G	5.69064G	37.961M	5.65099G	5.688951G	Inf	1
40.86M	5.64954G	5.6904G	37.961M	5.65099G	5.688951G	Inf	2
41.22M	5.6493G	5.69052G	37.961M	5.65099G	5.688951G	Inf	3
40.44M	5.64978G	5.69022G	37.841M	5.651049G	5.688891G	Inf	4
41.04M	5.64948G	5.69052G	37.961M	5.65099G	5.688951G	Inf	5
40.98M	5.64936G	5.69034G	38.081M	5.65093G	5.68901G	Inf	6
40.8M	5.64954G	5.69034G	38.021M	5.65093G	5.688951G	Inf	7
41.16M	5.64924G	5.6904G	37.961M	5.65099G	5.688951G	Inf	8

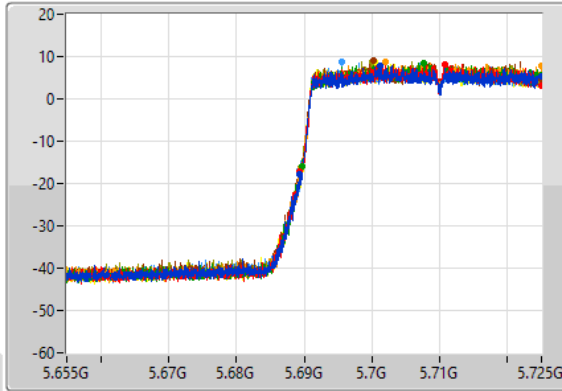
802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

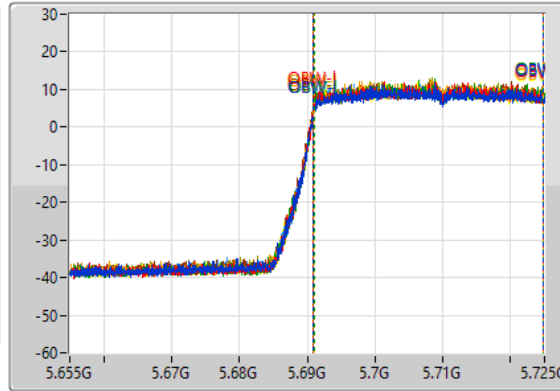
5710MHz Straddle 5.47-5.725GHz

19/09/2021

CF  
5.69GHz  
Span  
70MHz  
RBW  
500kHz  
VBW  
2MHz  
Sweep Time  
100ms  
Detector Type  
Peak



CF  
5.69GHz  
Span  
70MHz  
RBW  
1MHz  
VBW  
3MHz  
Sweep Time  
100ms  
Detector Type  
Peak



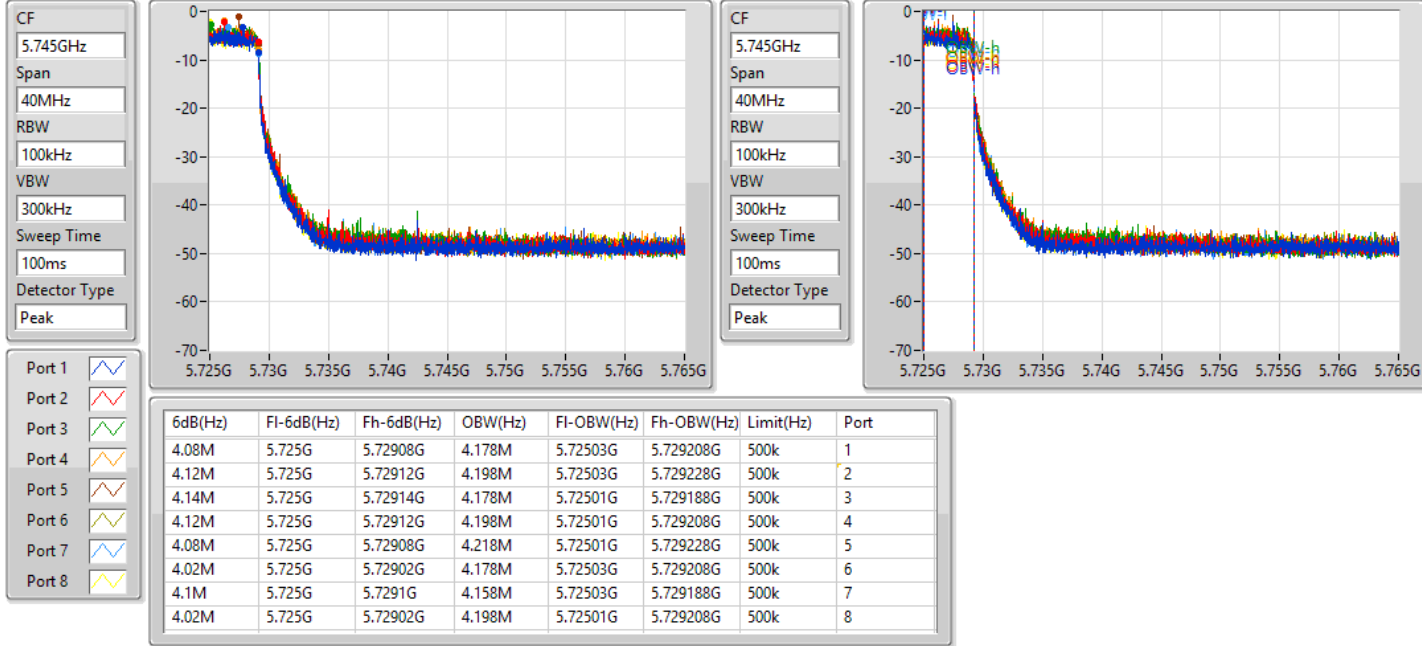
- Port 1
- Port 2
- Port 3
- Port 4
- Port 5
- Port 6
- Port 7
- Port 8

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.665M	5.689335G	5.725G	33.828M	5.690945G	5.724773G	Inf	1
35.665M	5.689335G	5.725G	33.793M	5.690945G	5.724738G	Inf	2
35.35M	5.68965G	5.725G	33.793M	5.691014G	5.724808G	Inf	3
35.42M	5.68958G	5.725G	33.828M	5.69098G	5.724808G	Inf	4
35.525M	5.689475G	5.725G	33.863M	5.69091G	5.724773G	Inf	5
35.42M	5.68958G	5.725G	33.793M	5.690945G	5.724738G	Inf	6
35.595M	5.689405G	5.725G	33.863M	5.690945G	5.724808G	Inf	7
35.56M	5.68944G	5.725G	33.898M	5.69091G	5.724808G	Inf	8

**802.11ax HEW40\_Nss1,(MCS0)\_8TX**  
**5710MHz Straddle 5.725-5.85GHz**

EBW

19/09/2021

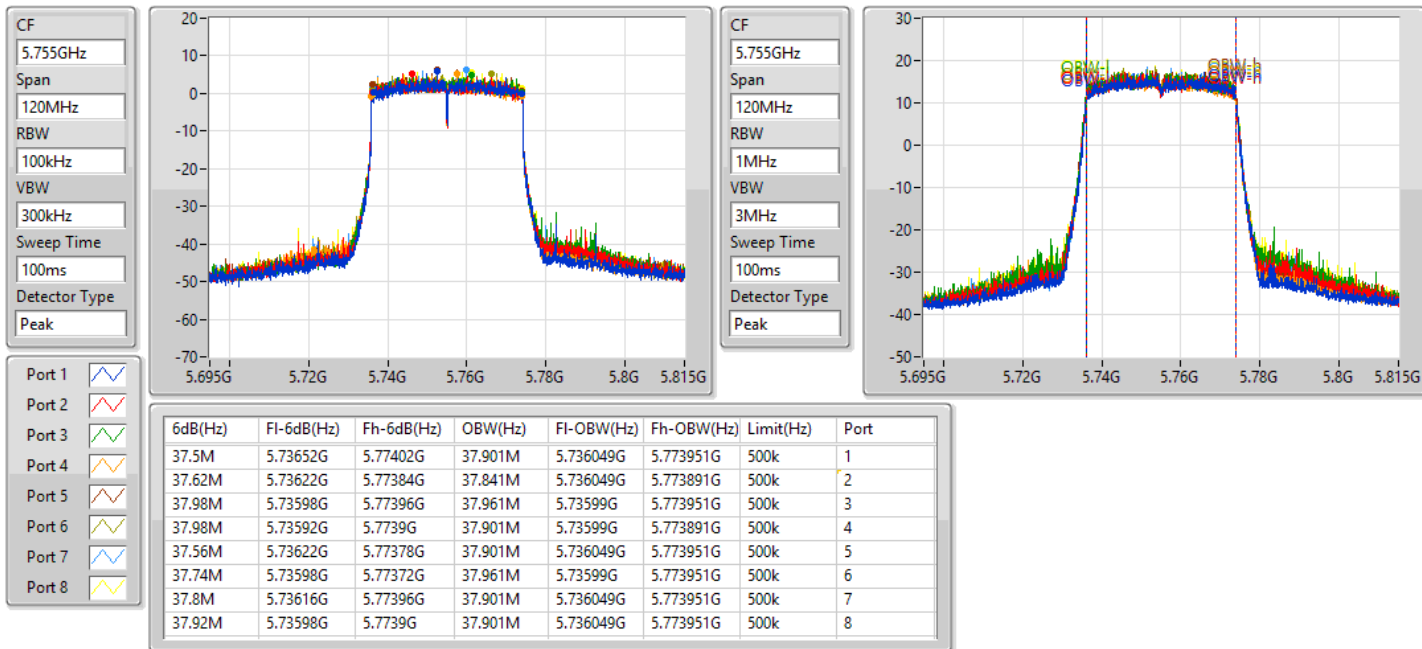


**802.11ax HEW40\_Nss1,(MCS0)\_8TX**

EBW

**5755MHz**

19/09/2021

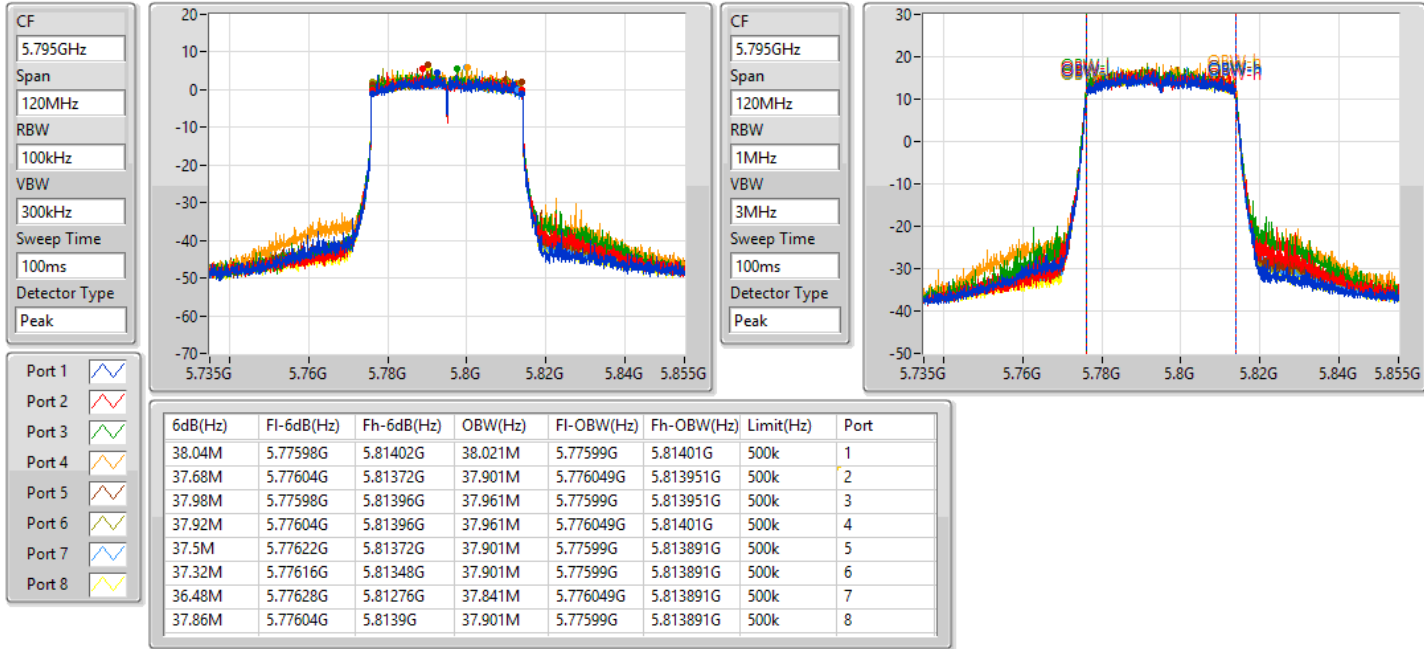


802.11ax HEW40\_Nss1,(MCS0)\_8TX

EBW

5795MHz

19/09/2021



802.11ax HEW80\_Nss1,(MCS0)\_8TX

EBW

5210MHz

19/09/2021

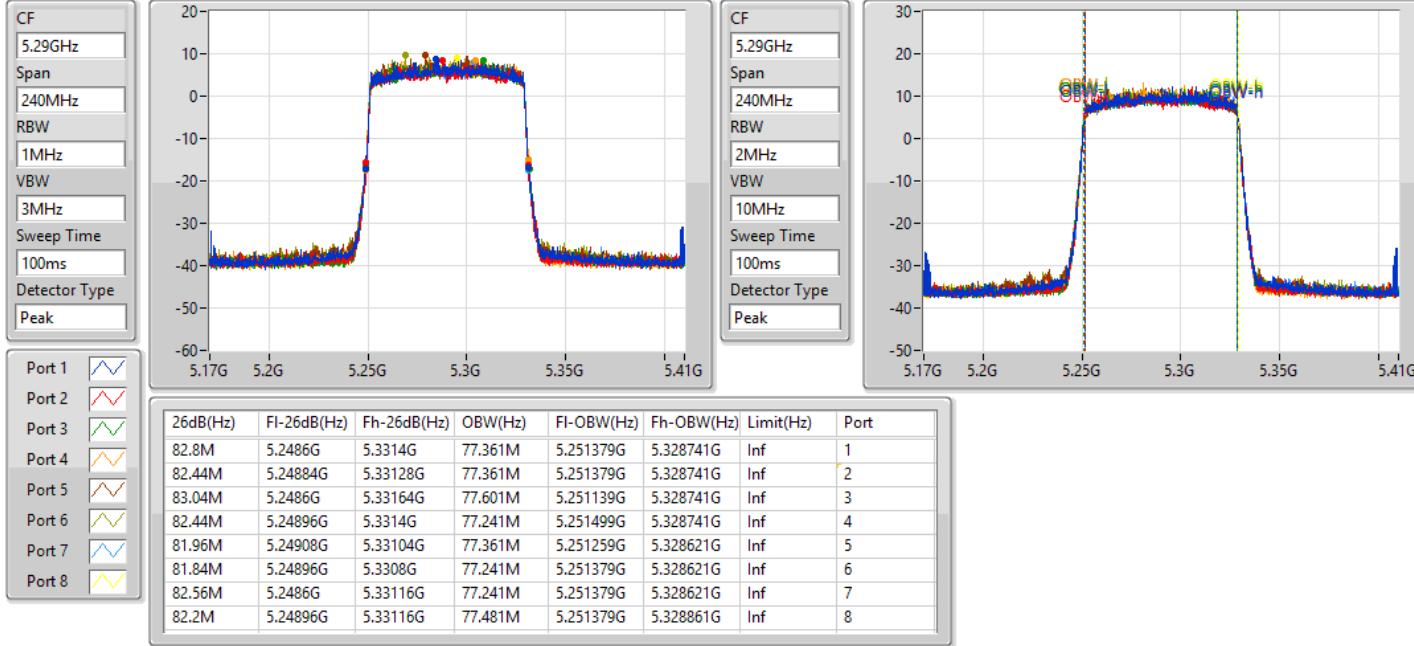


802.11ax HEW80\_Nss1,(MCS0)\_8TX

EBW

5290MHz

19/09/2021



802.11ax HEW80\_Nss1,(MCS0)\_8TX

EBW

5530MHz

19/09/2021

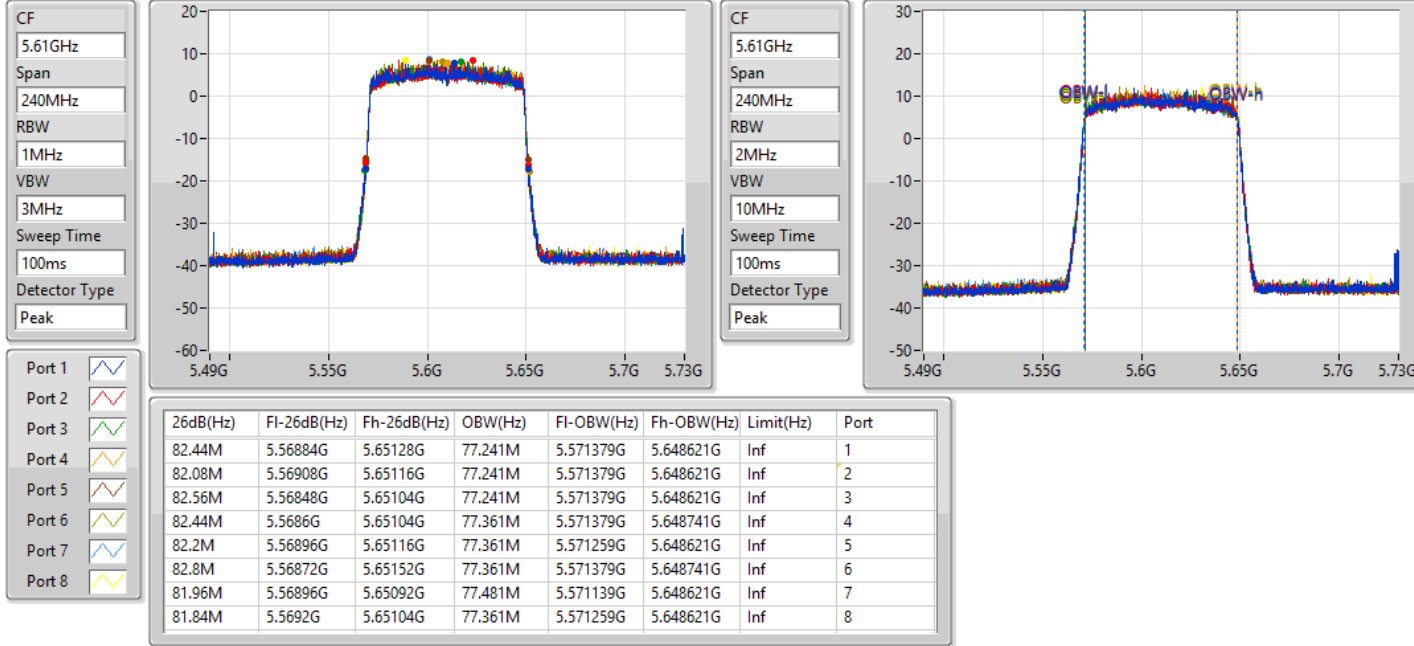


802.11ax HEW80\_Nss1,(MCS0)\_8TX

EBW

5610MHz

19/09/2021

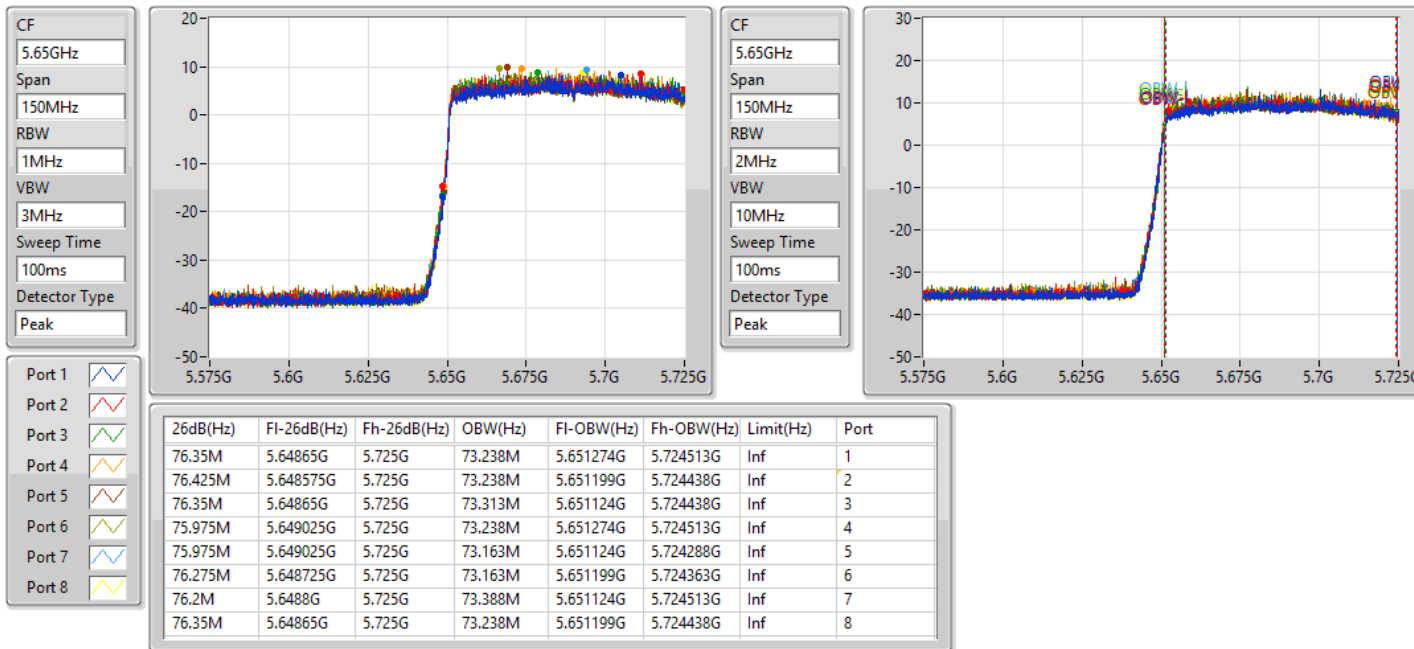


802.11ax HEW80\_Nss1,(MCS0)\_8TX

EBW

5690MHz Straddle 5.47-5.725GHz

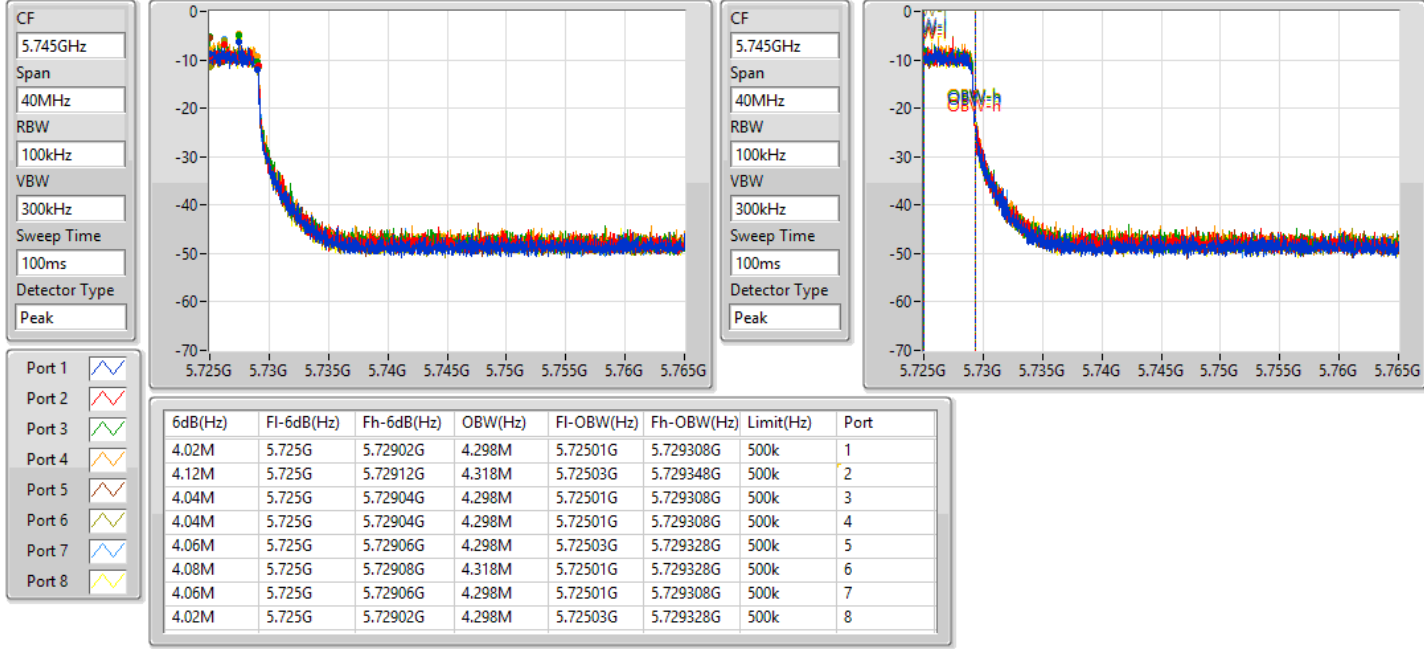
19/09/2021



**802.11ax HEW80\_Nss1,(MCS0)\_8TX**  
**5690MHz Straddle 5.725-5.85GHz**

EBW

19/09/2021



**802.11ax HEW80\_Nss1,(MCS0)\_8TX**

EBW

**5775MHz**

19/09/2021



For 8T1S beamforming mode  
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	21.57M	18.981M	19MOD1D	21.03M	18.891M
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	45.48M	38.441M	38M4D1D	40.14M	37.781M
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	85.56M	78.441M	78M4D1D	81.12M	77.001M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	21.57M	18.951M	19MOD1D	21M	18.891M
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	41.34M	38.021M	38MOD1D	40.62M	37.901M
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	82.56M	77.361M	77M4D1D	82.08M	77.121M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	21.51M	18.951M	19MOD1D	15.435M	14.438M
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	41.64M	38.081M	38M1D1D	35.42M	33.793M
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	82.8M	77.481M	77M5D1D	76.05M	73.163M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	18.96M	18.951M	19MOD1D	4.4M	4.598M
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	38.04M	38.021M	38MOD1D	4M	4.178M
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	77.64M	77.481M	77M5D1D	3.98M	4.258M

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



Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	21.57M	18.951M	21.03M	18.951M	21.27M	18.921M	21.15M	18.891M	21.18M	18.951M	21.15M	18.921M	21.36M	18.951M	21.27M	18.951M
5200MHz	Pass	Inf	21.18M	18.921M	21.27M	18.951M	21.27M	18.951M	21.27M	18.921M	21.36M	18.951M	21.21M	18.921M	21.3M	18.951M	21.27M	18.981M
5240MHz	Pass	Inf	21.33M	18.951M	21.33M	18.921M	21.39M	18.921M	21.15M	18.951M	21.09M	18.951M	21.21M	18.921M	21.12M	18.891M	21.54M	18.951M
5260MHz	Pass	Inf	21.48M	18.951M	21.27M	18.921M	21.48M	18.951M	21M	18.951M	21.33M	18.921M	21.15M	18.921M	21.18M	18.951M	21.48M	18.951M
5300MHz	Pass	Inf	21.57M	18.921M	21.51M	18.951M	21.48M	18.921M	21.21M	18.921M	21.48M	18.951M	21.45M	18.951M	21.42M	18.921M	21.36M	18.951M
5320MHz	Pass	Inf	21.15M	18.921M	21.27M	18.891M	21.27M	18.921M	21.3M	18.951M	21.06M	18.951M	21.18M	18.951M	21.27M	18.951M	21.09M	18.891M
5500MHz	Pass	Inf	21.33M	18.951M	21.51M	18.921M	21.03M	18.951M	21.12M	18.921M	21.24M	18.951M	21.09M	18.921M	21.18M	18.891M	21.15M	18.951M
5580MHz	Pass	Inf	21.06M	18.921M	21.45M	18.921M	21.12M	18.891M	21.3M	18.951M	21.42M	18.951M	21.24M	18.951M	21.06M	18.891M	21M	18.951M
5700MHz	Pass	Inf	21.39M	18.921M	21.12M	18.921M	21.18M	18.951M	21.03M	18.921M	21.21M	18.891M	21.27M	18.921M	21.12M	18.951M	21.09M	18.891M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.555M	14.468M	15.54M	14.468M	15.435M	14.453M	15.63M	14.453M	15.525M	14.438M	15.66M	14.453M	15.78M	14.453M	15.45M	14.438M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.56M	4.638M	4.46M	4.618M	4.5M	4.598M	4.44M	4.598M	4.48M	4.598M	4.5M	4.618M	4.52M	4.618M	4.4M	4.618M
5745MHz	Pass	500k	18.93M	18.951M	18.87M	18.951M	18.9M	18.951M	18.93M	18.951M	18.87M	18.951M	18.81M	18.951M	18.57M	18.921M	18.9M	18.921M
5785MHz	Pass	500k	18.72M	18.921M	18.81M	18.921M	18.96M	18.951M	18.9M	18.951M	18.93M	18.951M	18.78M	18.921M	18.96M	18.951M	18.9M	18.921M
5825MHz	Pass	500k	18.87M	18.921M	18.6M	18.891M	18.84M	18.951M	18.96M	18.921M	18.9M	18.951M	18.84M	18.921M	18.93M	18.921M	18.81M	18.951M
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	43.26M	37.901M	44.34M	37.781M	41.76M	38.201M	45.48M	38.321M	41.64M	38.201M	40.8M	38.441M	41.34M	38.201M	40.14M	38.081M
5230MHz	Pass	Inf	40.98M	37.961M	41.4M	37.961M	40.86M	38.021M	40.86M	37.961M	41.22M	37.961M	41.04M	37.901M	40.92M	37.901M	40.74M	37.901M
5270MHz	Pass	Inf	41.22M	37.961M	41.1M	37.961M	40.92M	37.961M	40.74M	37.901M	40.92M	37.961M	40.86M	37.901M	40.92M	37.961M	40.98M	38.021M
5310MHz	Pass	Inf	40.92M	38.021M	40.92M	37.901M	41.04M	37.961M	40.68M	37.961M	40.92M	37.961M	40.62M	37.901M	40.86M	37.901M	41.34M	37.901M
5510MHz	Pass	Inf	41.04M	37.901M	40.92M	37.901M	40.68M	37.901M	40.98M	38.021M	40.8M	38.081M	41.04M	38.081M	40.92M	37.961M	40.8M	37.901M
5550MHz	Pass	Inf	41.1M	37.961M	40.8M	37.841M	40.68M	37.901M	41.28M	38.021M	40.92M	37.961M	41.64M	38.021M	41.22M	37.901M	40.8M	38.021M
5670MHz	Pass	Inf	41.28M	37.961M	40.8M	37.961M	40.68M	38.021M	40.92M	38.021M	40.92M	37.961M	41.04M	37.961M	40.86M	37.961M	40.92M	38.021M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.525M	33.828M	35.49M	33.863M	35.42M	33.863M	35.665M	33.793M	35.525M	33.828M	35.56M	33.793M	35.49M	33.828M	35.56M	33.863M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.08M	4.178M	4.14M	4.218M	4.1M	4.178M	4.1M	4.178M	4.14M	4.178M	4M	4.198M	4.02M	4.178M	4.08M	4.178M
5755MHz	Pass	500k	38.04M	37.901M	37.74M	37.841M	37.98M	37.961M	38.04M	38.021M	37.8M	37.901M	37.8M	37.961M	37.8M	37.901M	37.68M	38.021M
5795MHz	Pass	500k	37.68M	37.901M	37.62M	37.901M	37.86M	37.961M	37.74M	38.021M	37.8M	37.961M	37.62M	37.901M	37.74M	37.841M	37.92M	37.961M
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	85.44M	77.721M	84.84M	77.001M	83.04M	77.241M	85.56M	77.241M	85.32M	78.321M	81.12M	78.321M	85.2M	78.441M	85.2M	78.081M
5290MHz	Pass	Inf	82.32M	77.361M	82.56M	77.361M	82.44M	77.361M	82.2M	77.241M	82.2M	77.361M	82.08M	77.121M	82.2M	77.241M	82.08M	77.361M
5530MHz	Pass	Inf	82.32M	77.361M	82.2M	77.241M	82.44M	77.481M	82.2M	77.361M	82.44M	77.481M	81.84M	77.481M	81.96M	77.121M	82.8M	77.241M
5610MHz	Pass	Inf	82.44M	77.361M	82.44M	77.241M	82.32M	77.481M	81.84M	77.481M	82.56M	77.361M	82.2M	77.361M	82.08M	77.241M	82.08M	77.361M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.275M	73.163M	76.125M	73.313M	76.275M	73.163M	76.05M	73.163M	76.125M	73.238M	76.65M	73.163M	76.125M	73.238M	76.275M	73.238M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4M	4.298M	4.1M	4.318M	3.98M	4.298M	4.12M	4.258M	4.04M	4.358M	4M	4.298M	4.06M	4.298M	4.06M	4.318M
5775MHz	Pass	500k	76.32M	77.121M	76.08M	77.121M	74.28M	77.241M	77.52M	77.481M	77.64M	77.241M	77.52M	77.361M	76.08M	77.361M	77.4M	77.361M

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

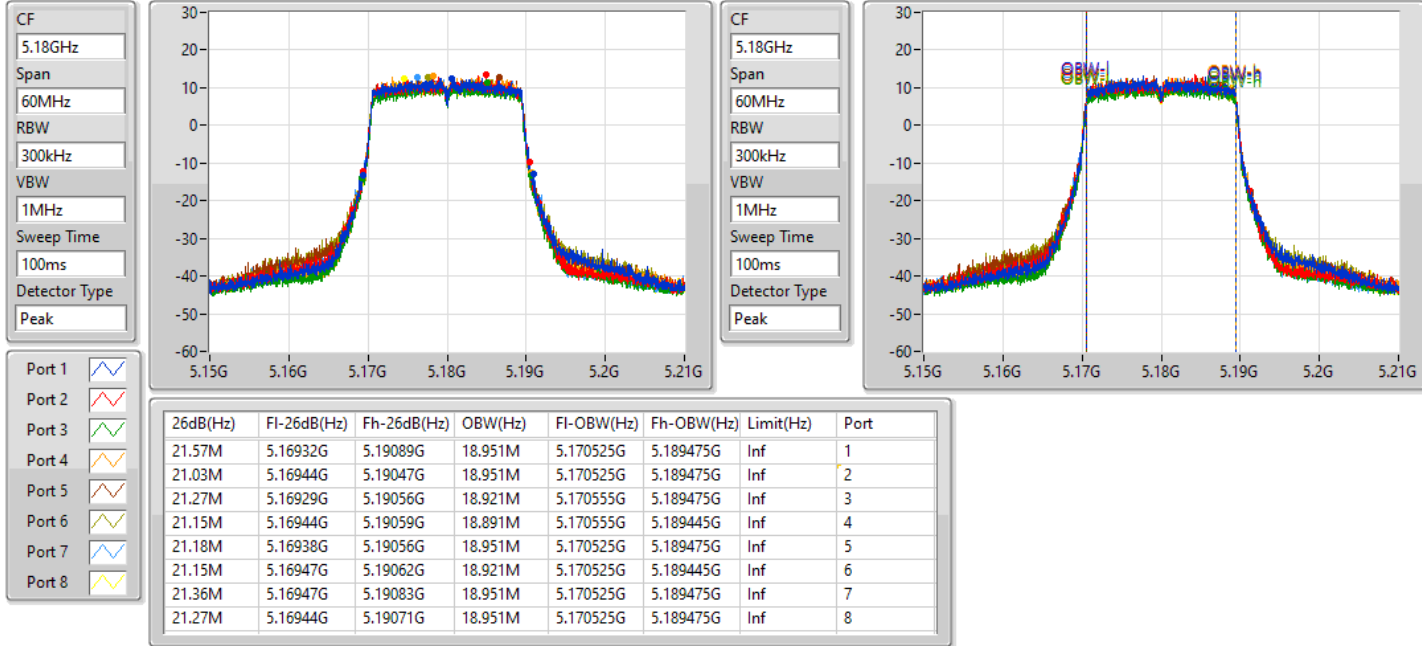


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5180MHz

13/09/2021

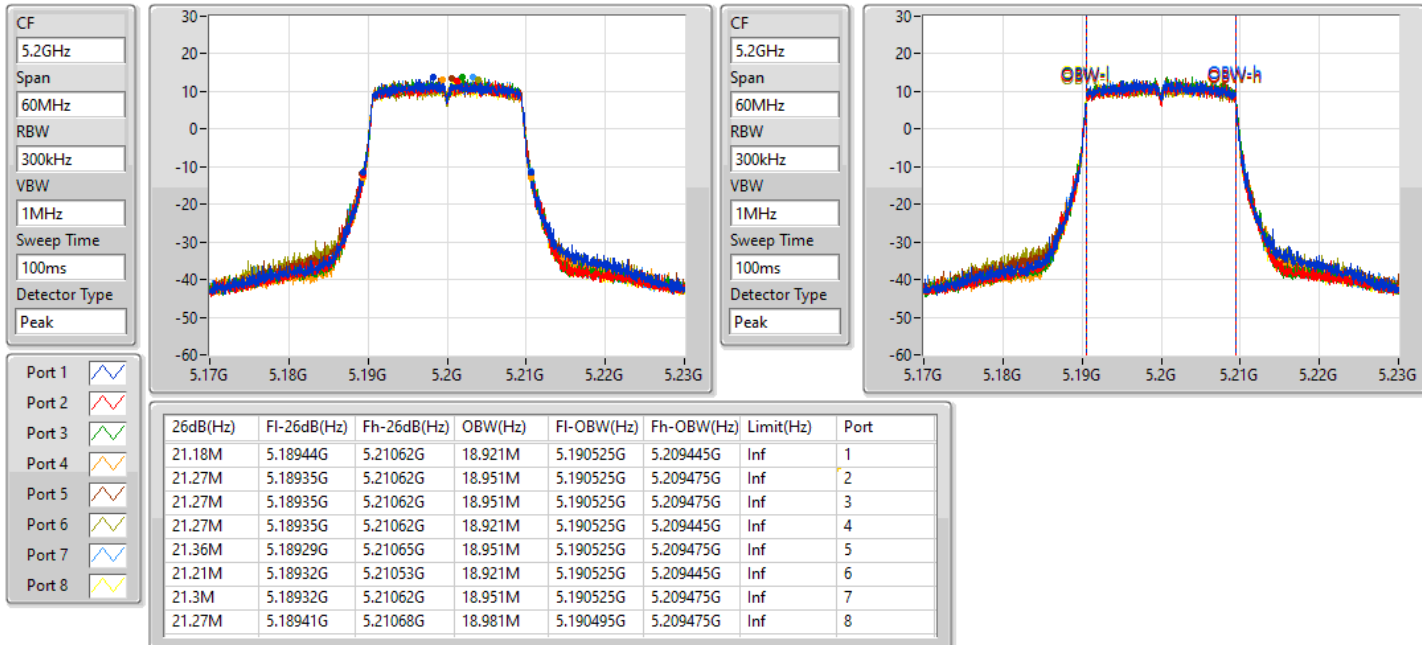


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5200MHz

13/09/2021

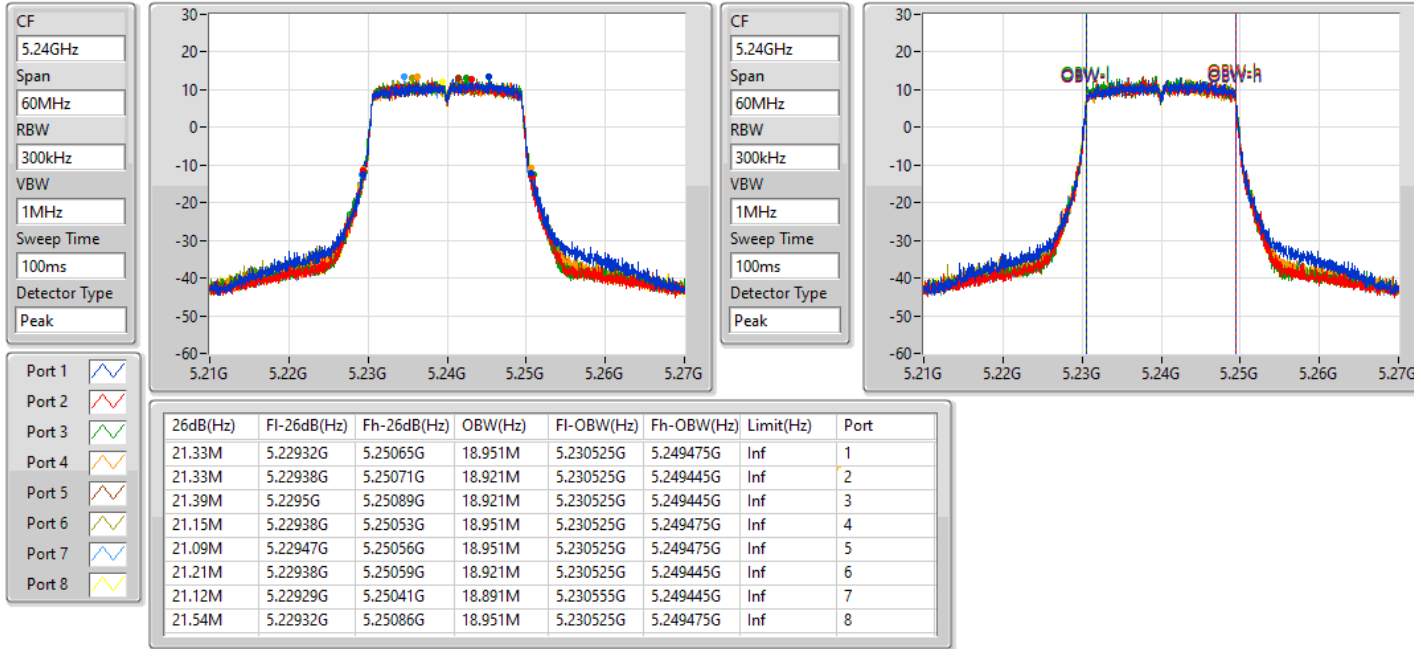


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5240MHz

13/09/2021

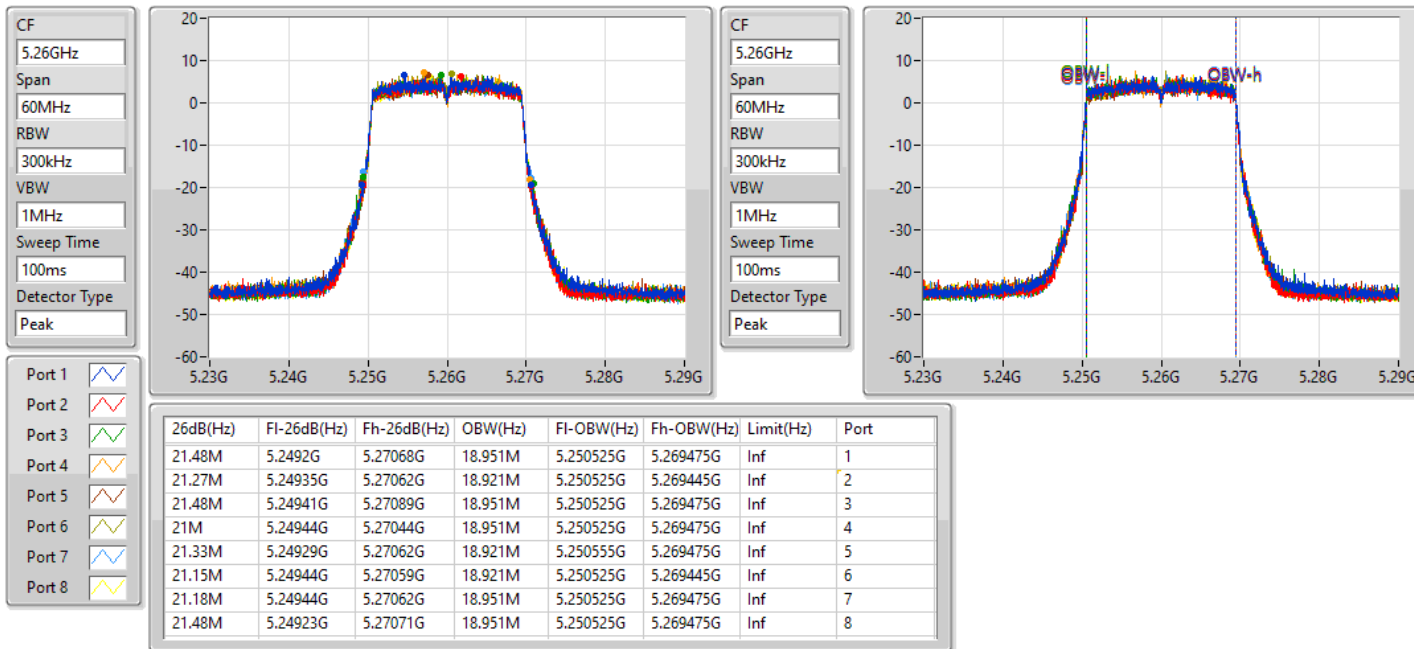


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5260MHz

13/09/2021



802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5300MHz

13/09/2021

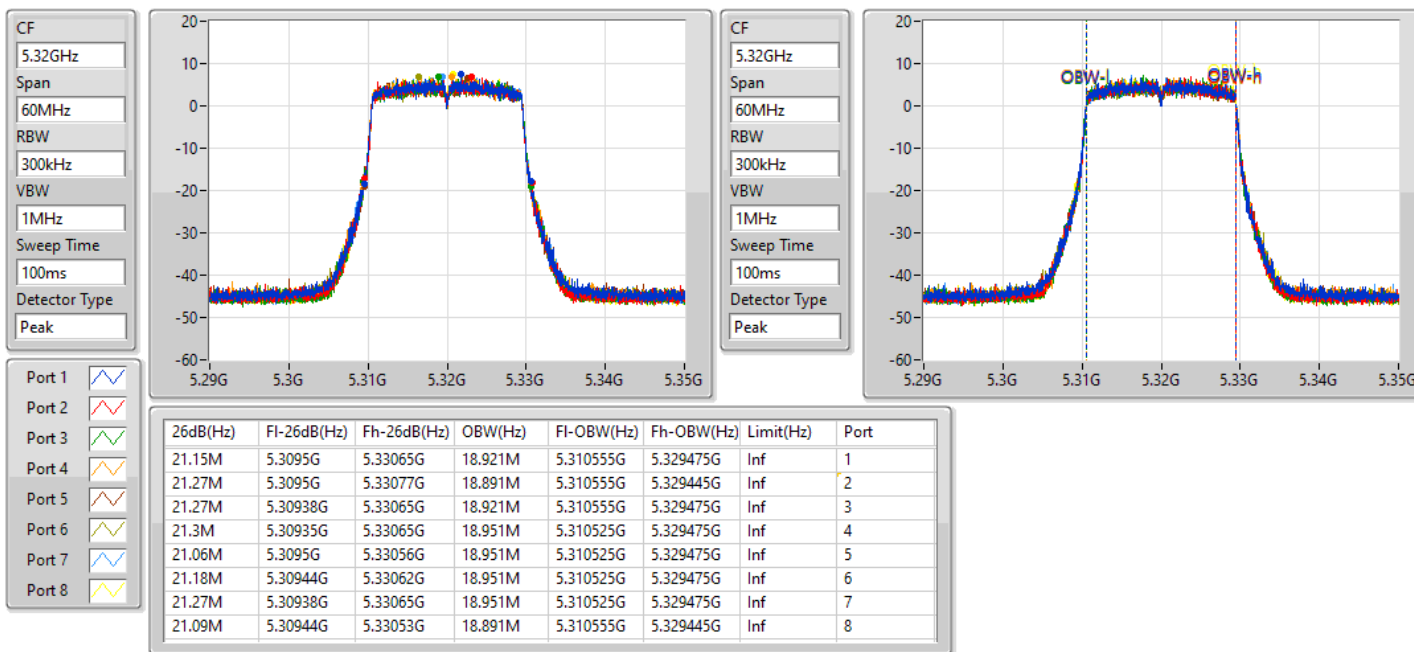


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5320MHz

13/09/2021

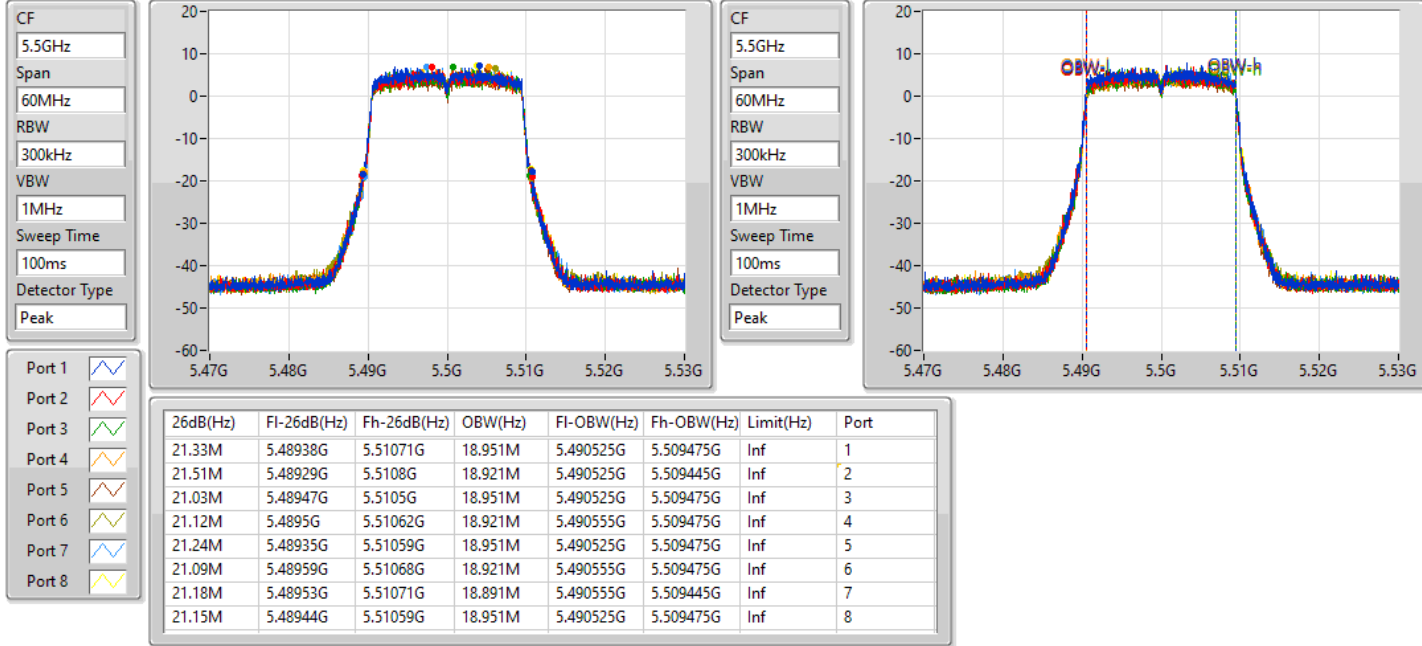


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5500MHz

13/09/2021

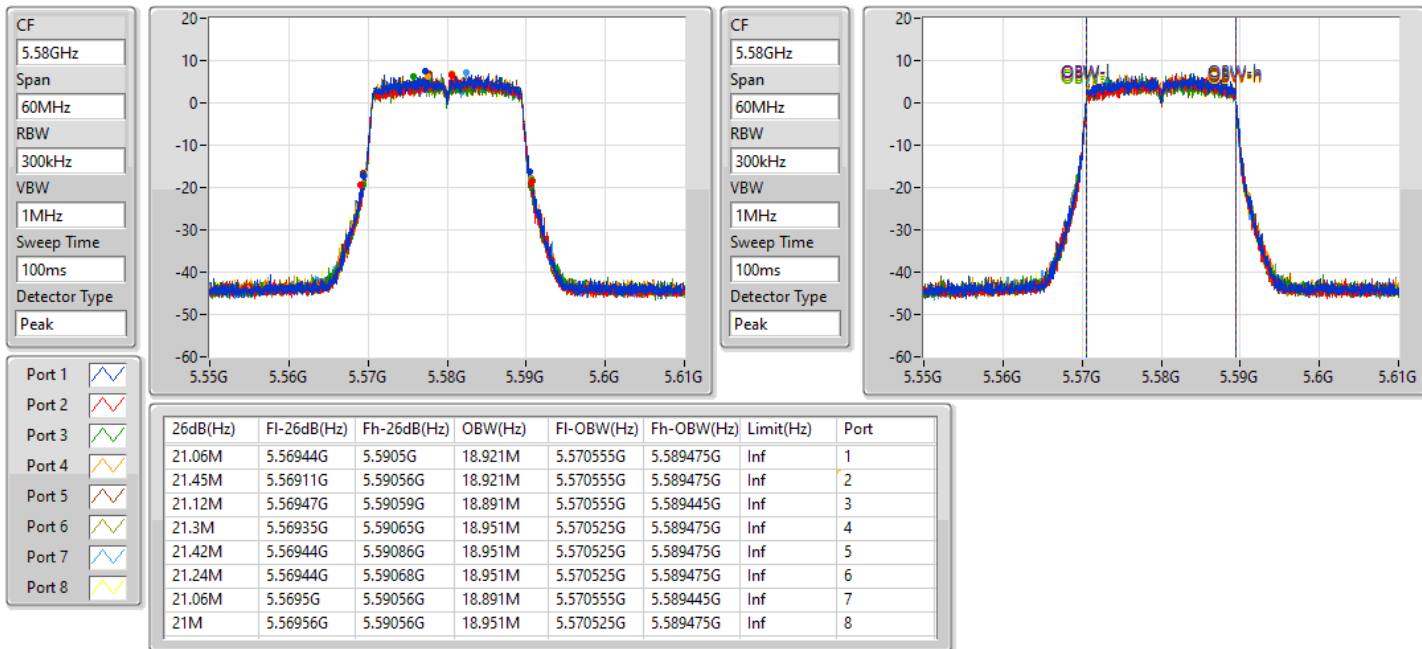


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5580MHz

13/09/2021

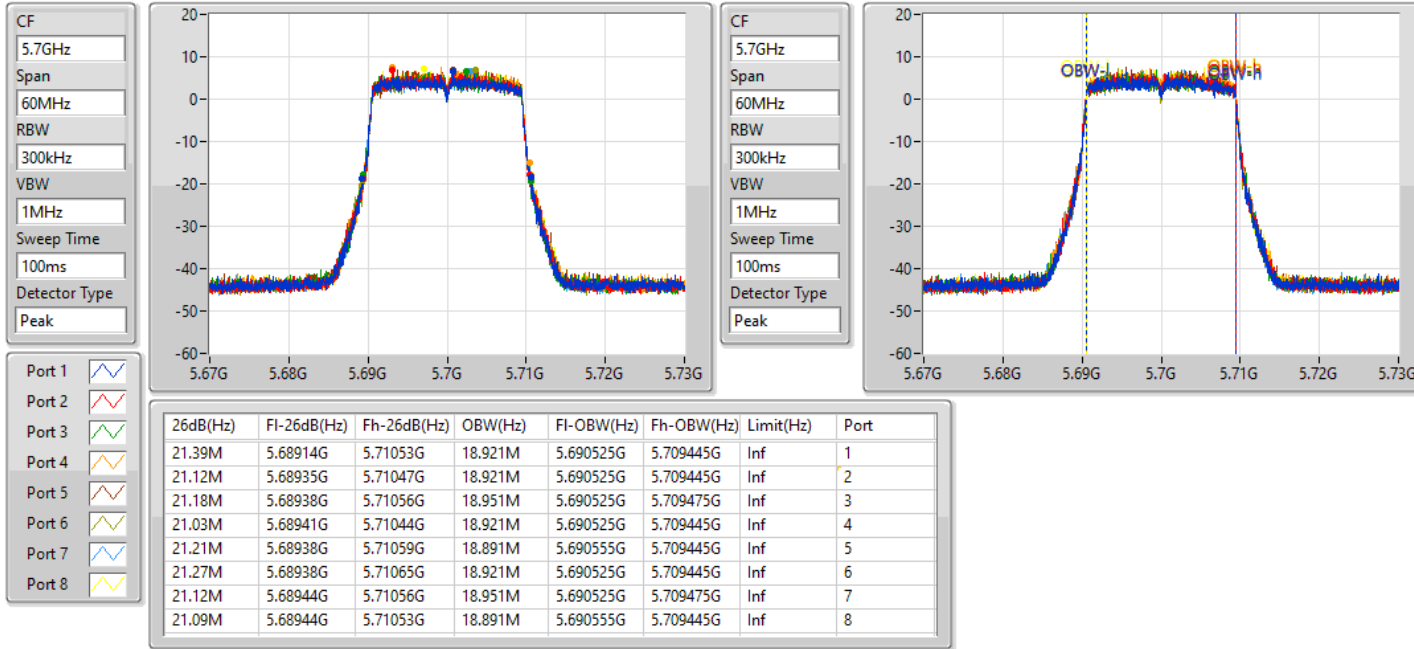


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5700MHz

13/09/2021

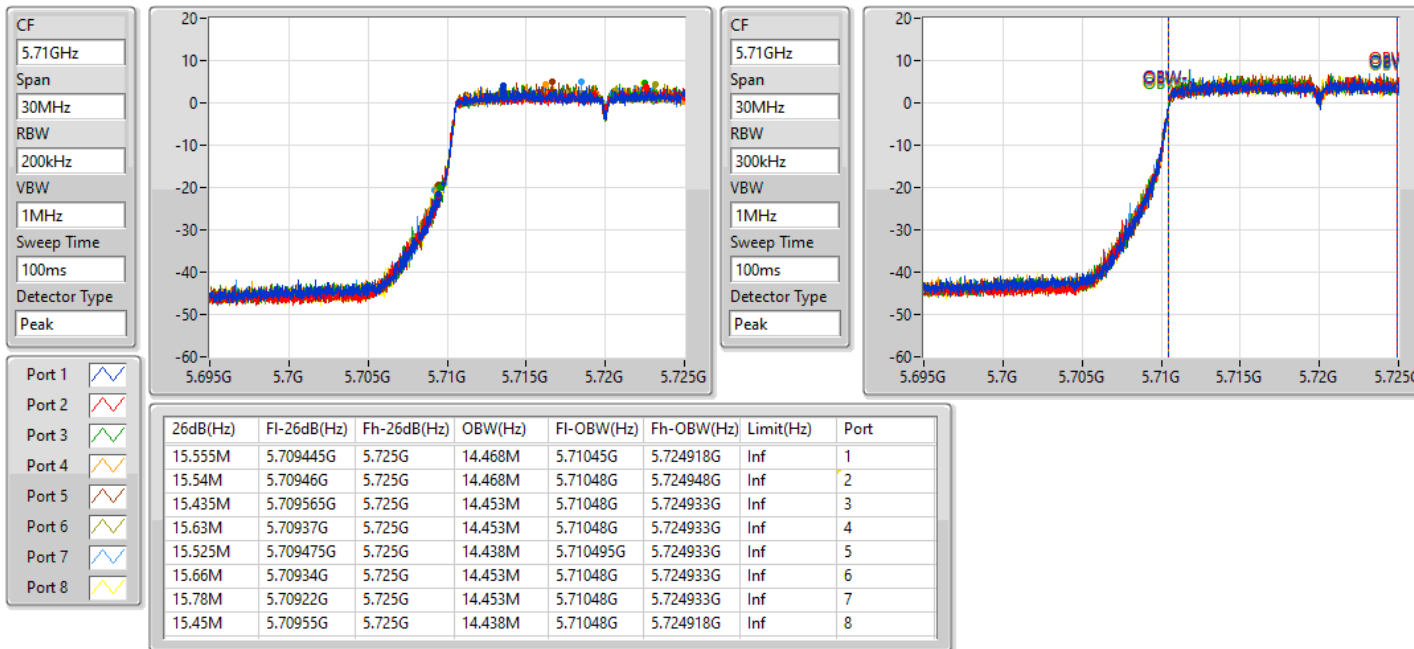


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5720MHz Straddle 5.47-5.725GHz

13/09/2021

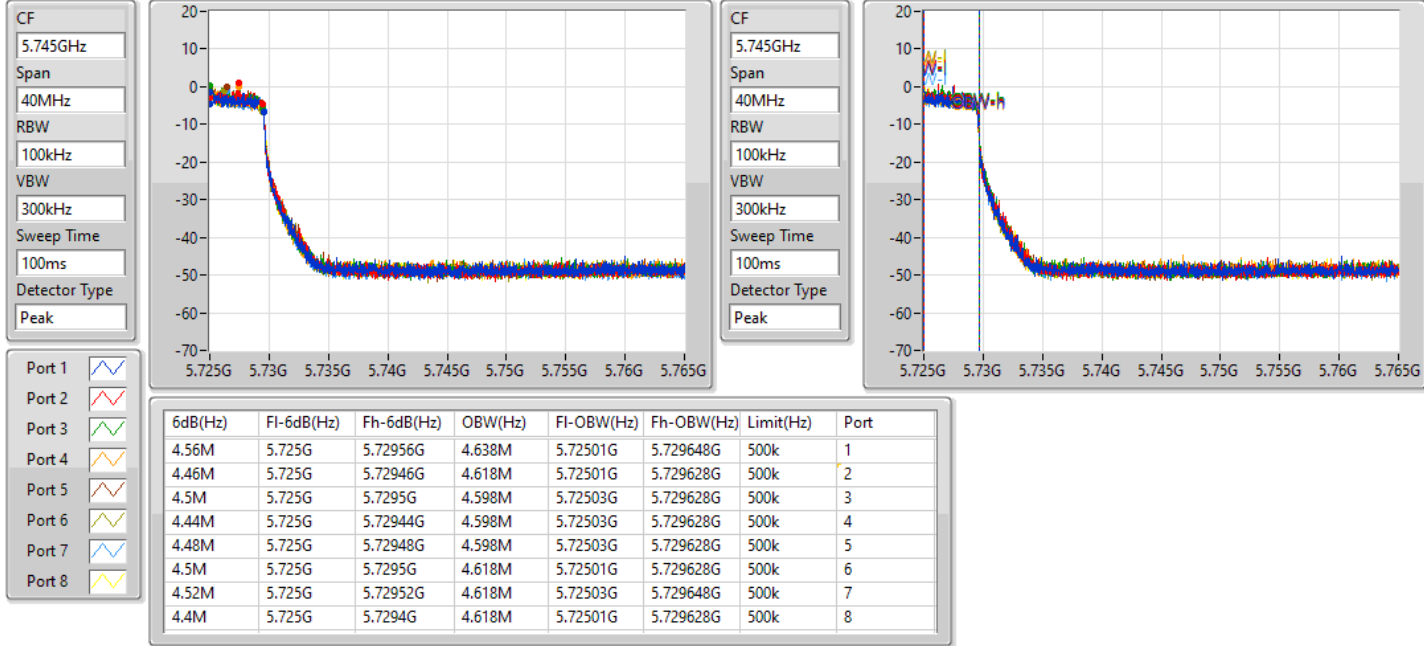


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5720MHz Straddle 5.725-5.85GHz

13/09/2021

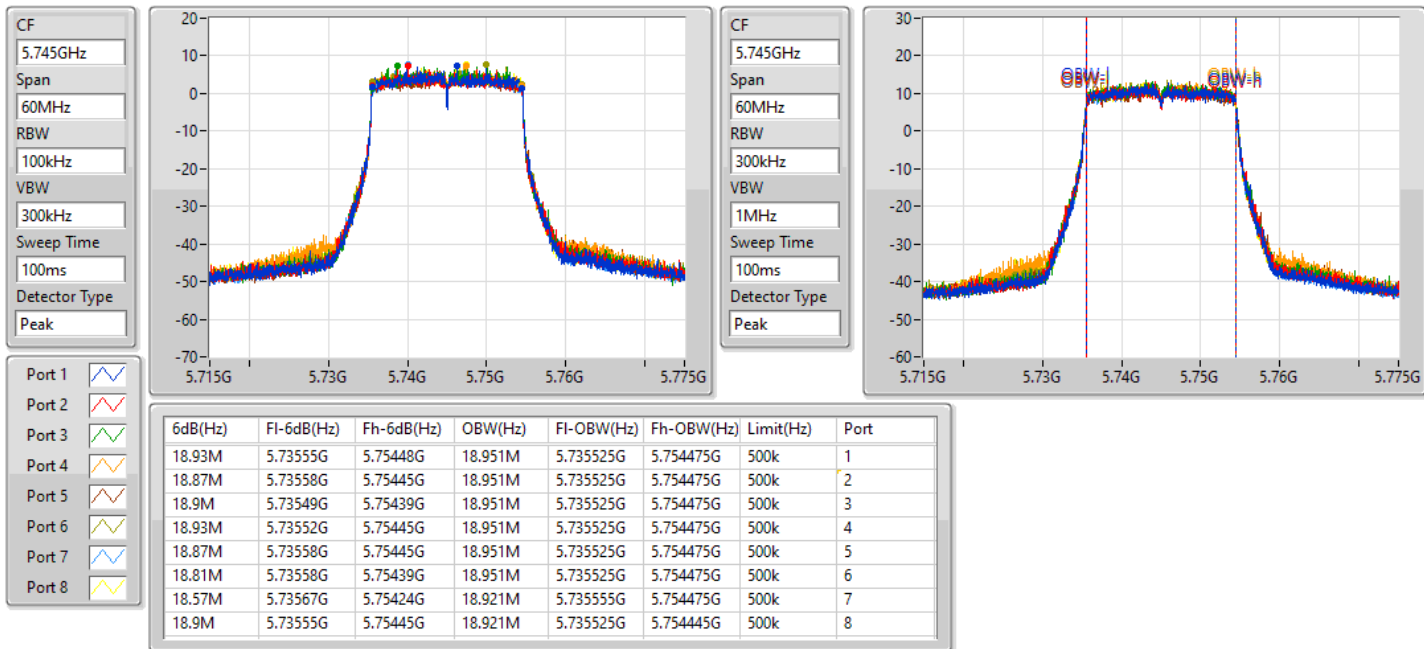


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5745MHz

13/09/2021

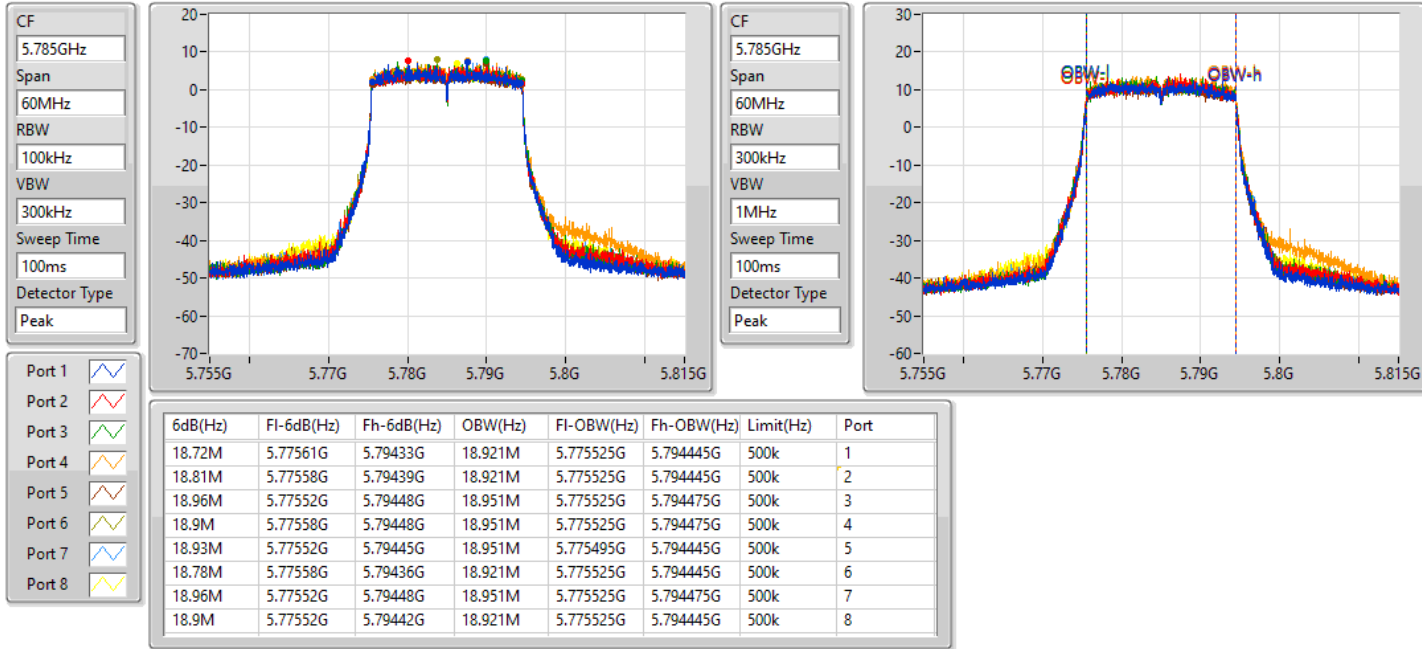


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5785MHz

13/09/2021

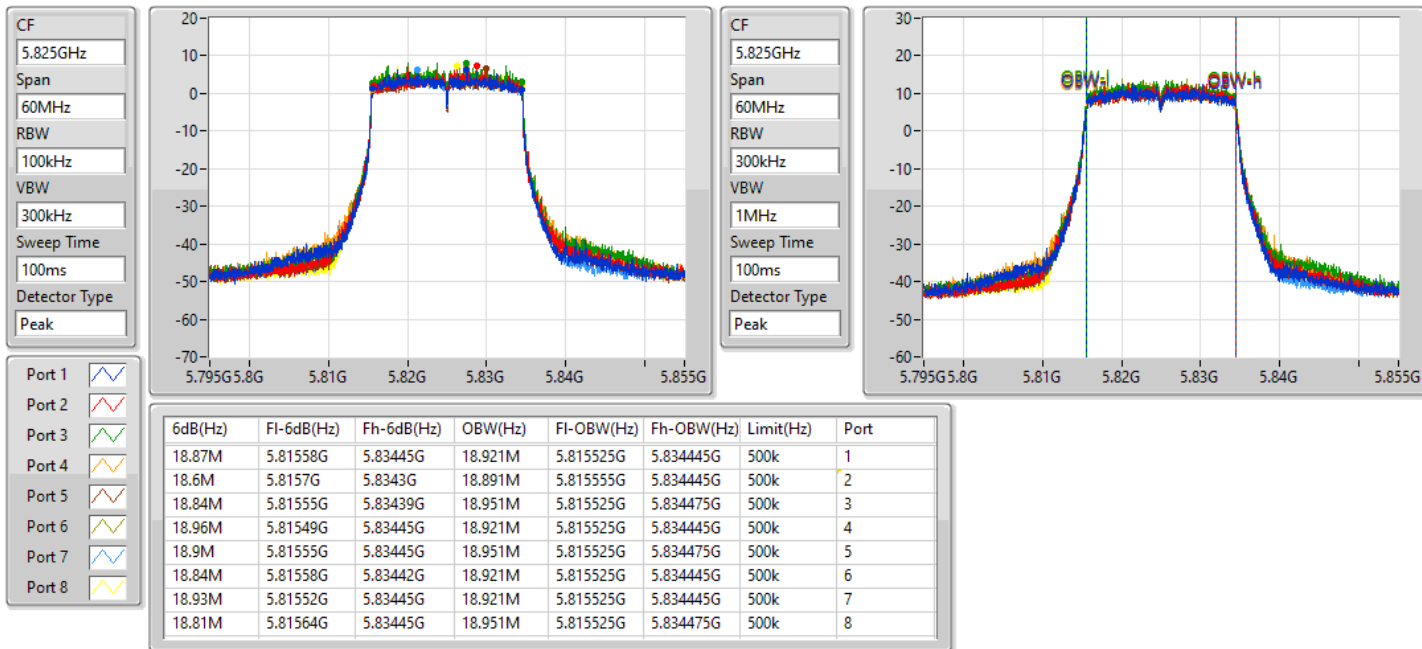


802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

EBW

5825MHz

13/09/2021

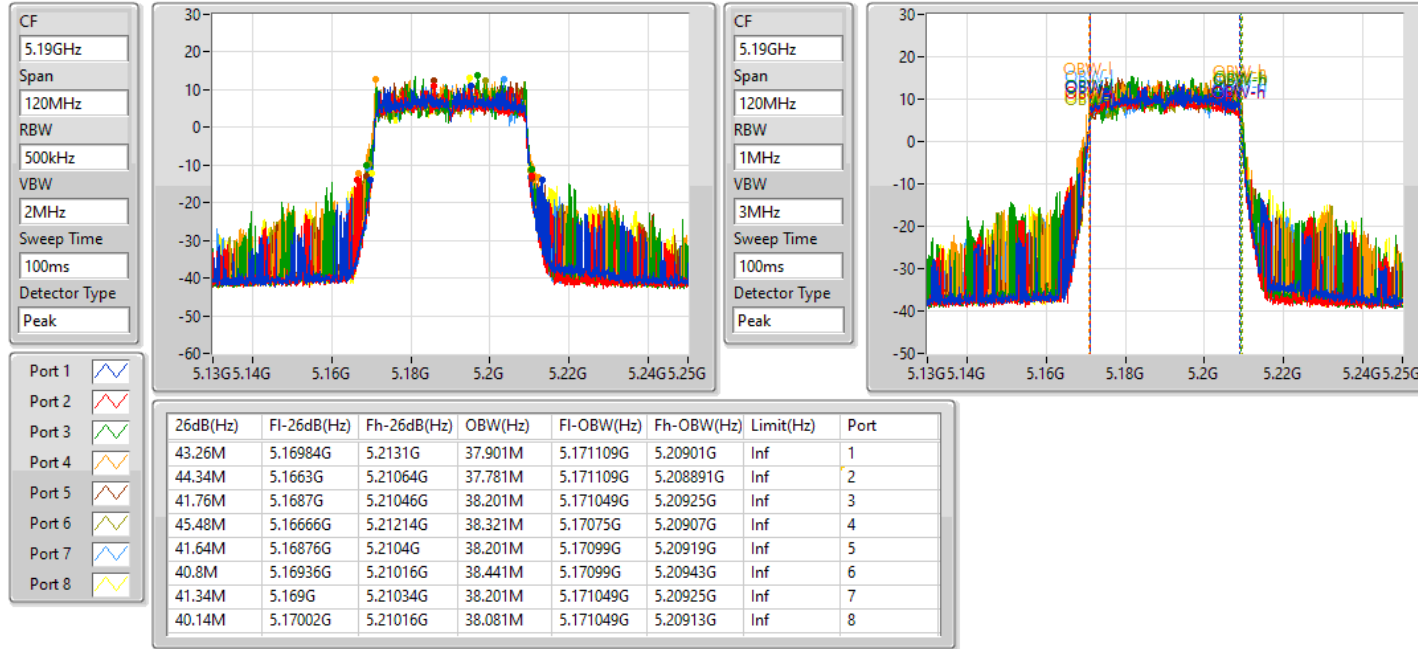


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5190MHz

19/07/2021

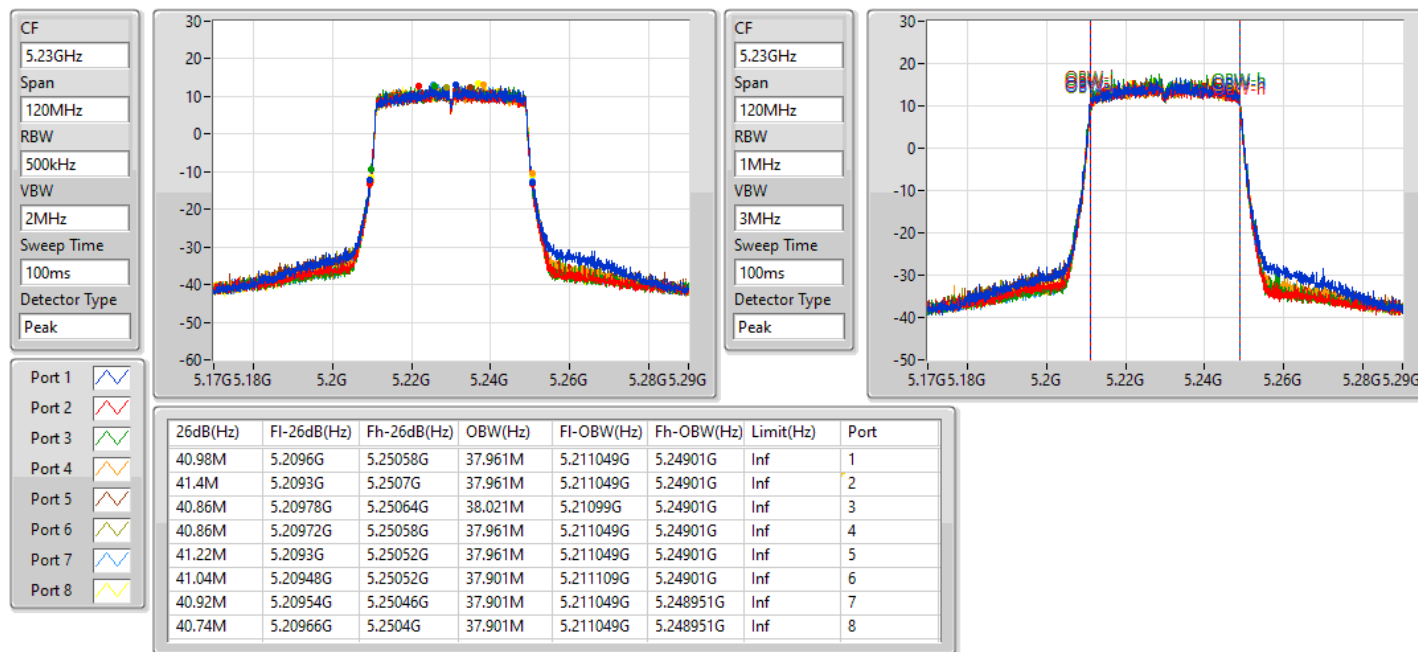


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5230MHz

13/09/2021



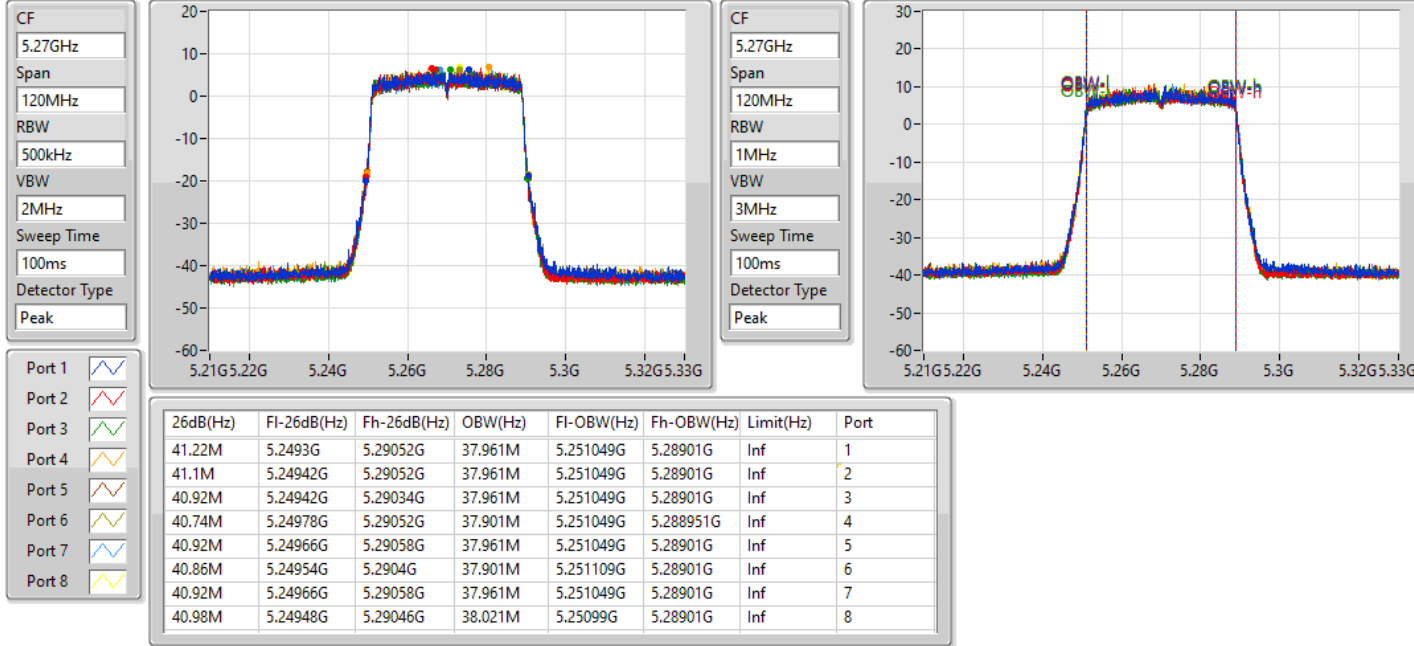


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5270MHz

13/09/2021



802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5310MHz

13/09/2021

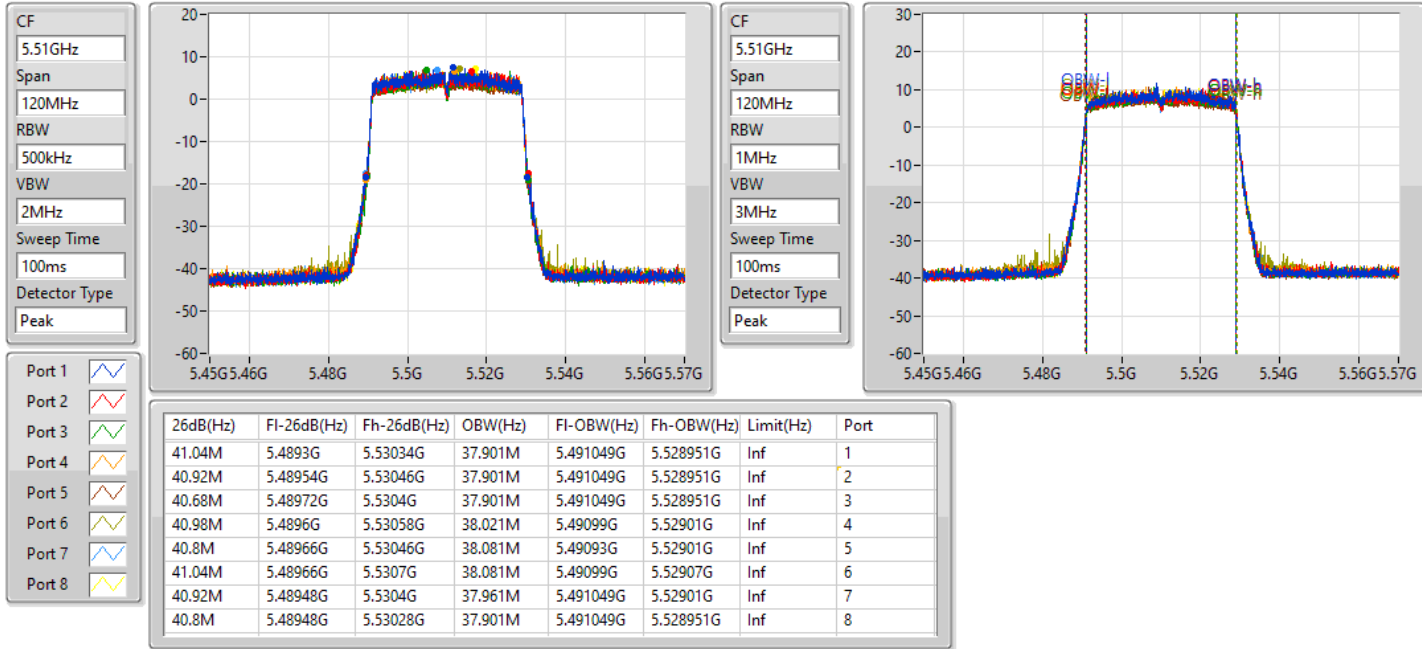


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5510MHz

13/09/2021

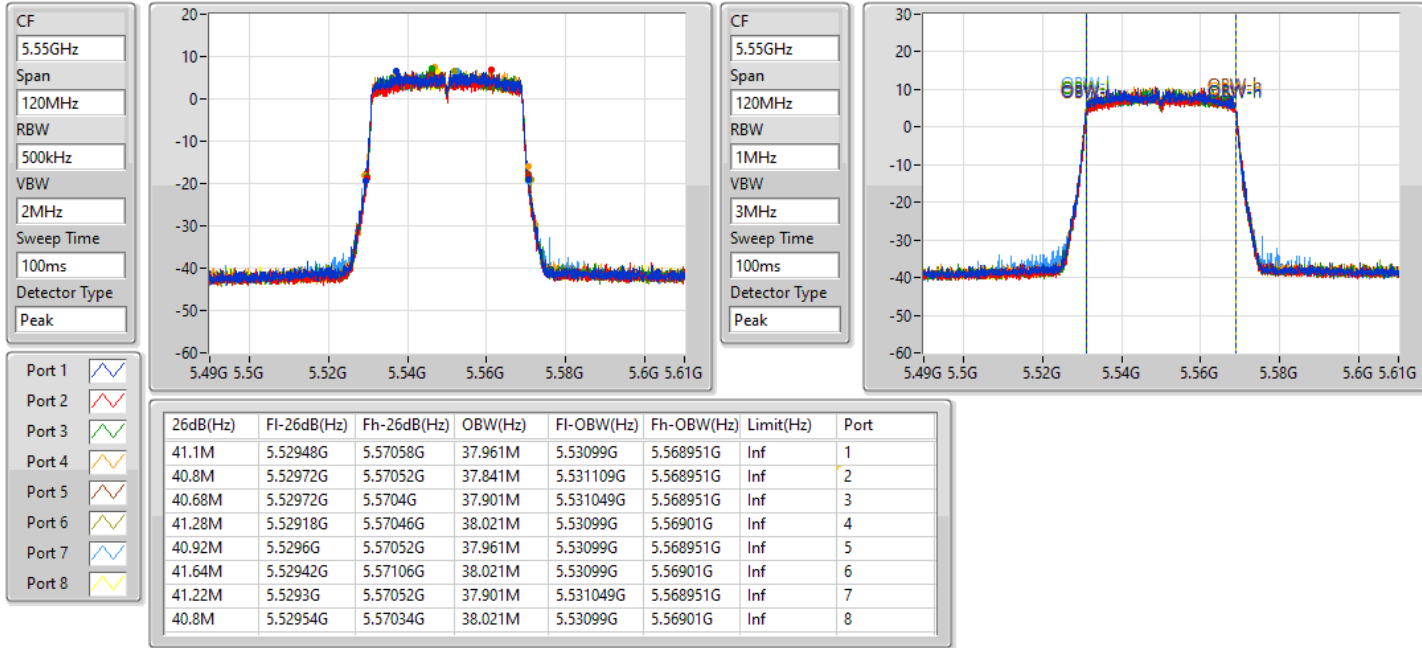


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5550MHz

13/09/2021



802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5670MHz

13/09/2021

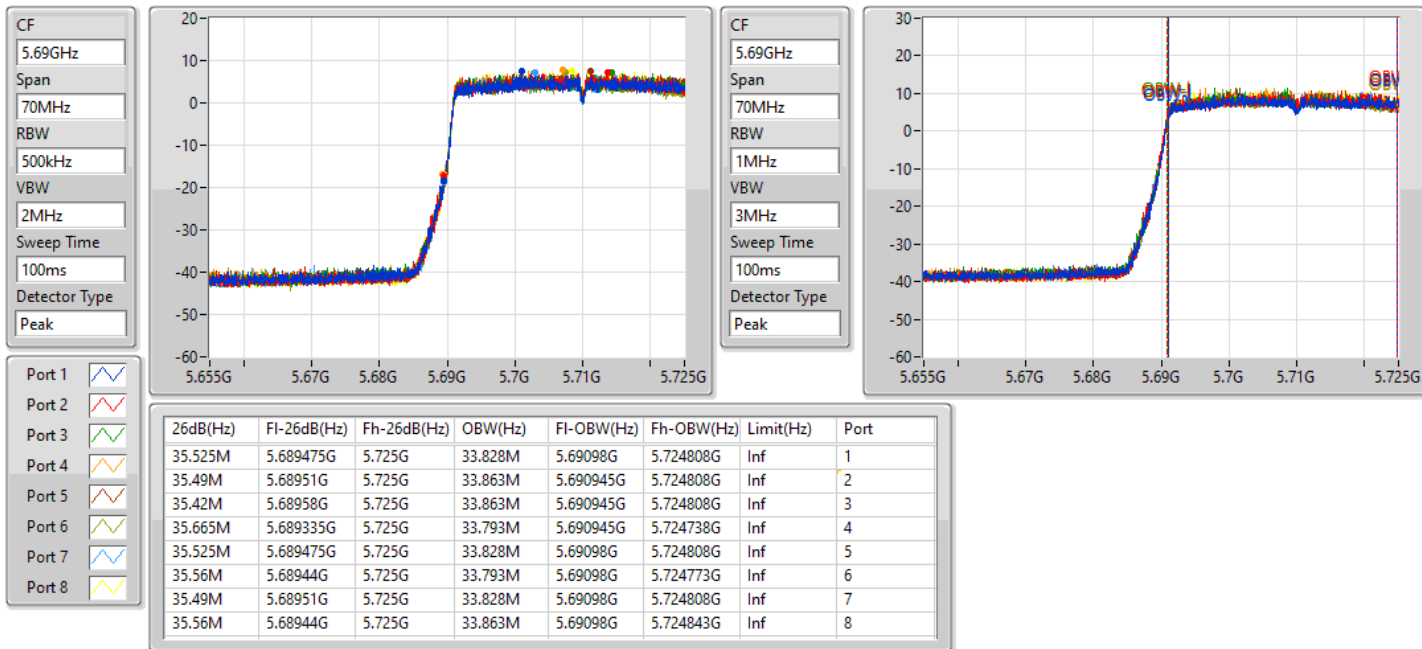


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5710MHz Straddle 5.47-5.725GHz

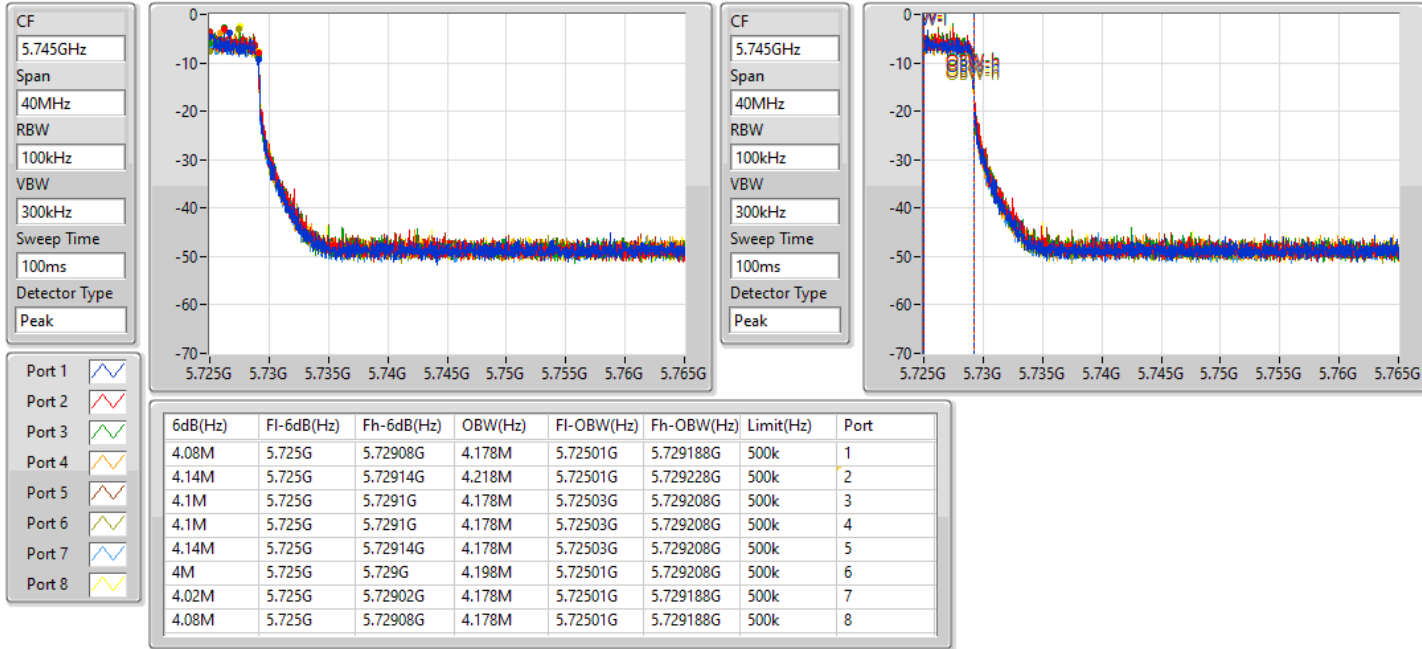
13/09/2021



**802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX**  
**5710MHz Straddle 5.725-5.85GHz**

EBW

13/09/2021

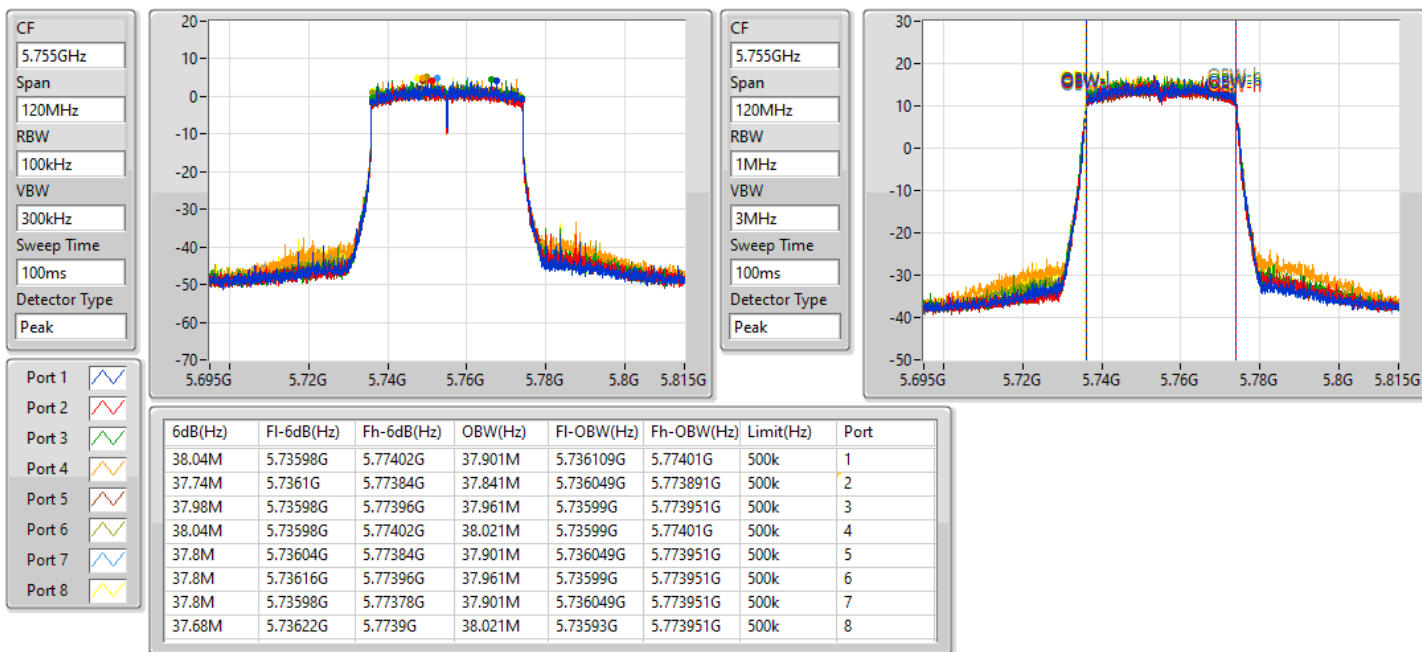


**802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX**

EBW

**5755MHz**

13/09/2021

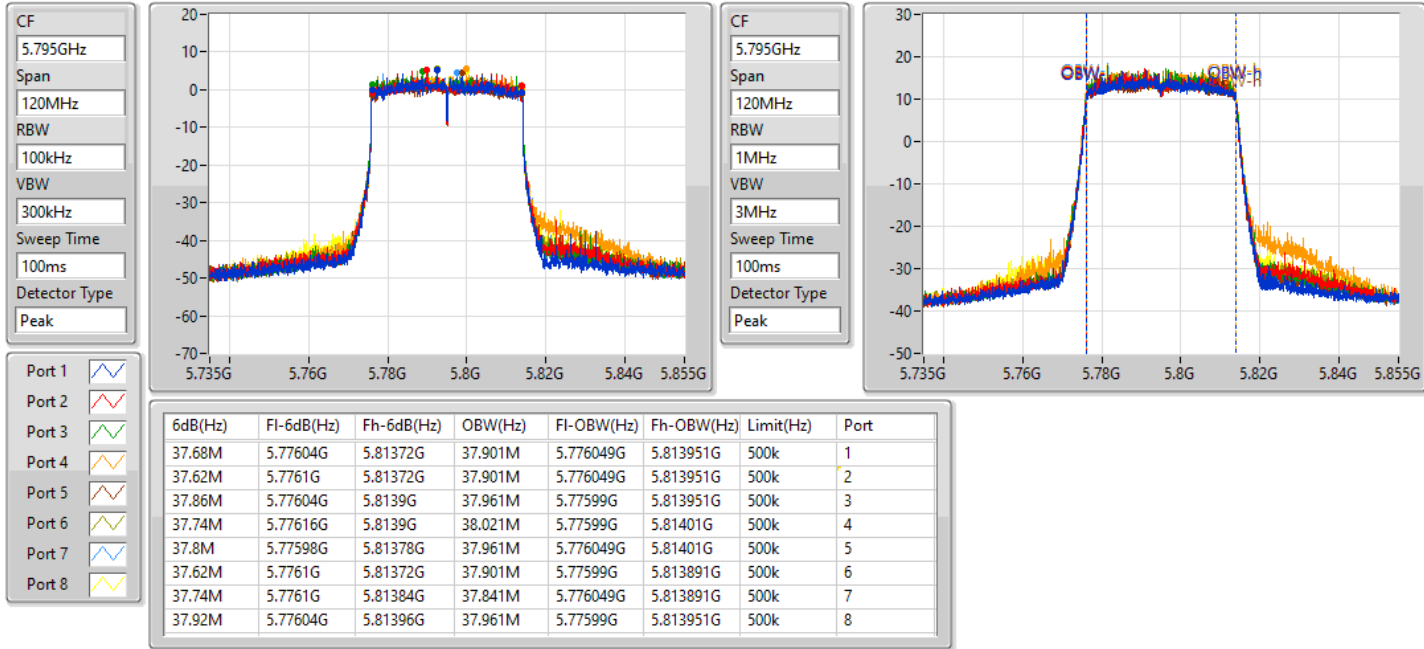


802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

EBW

5795MHz

13/09/2021

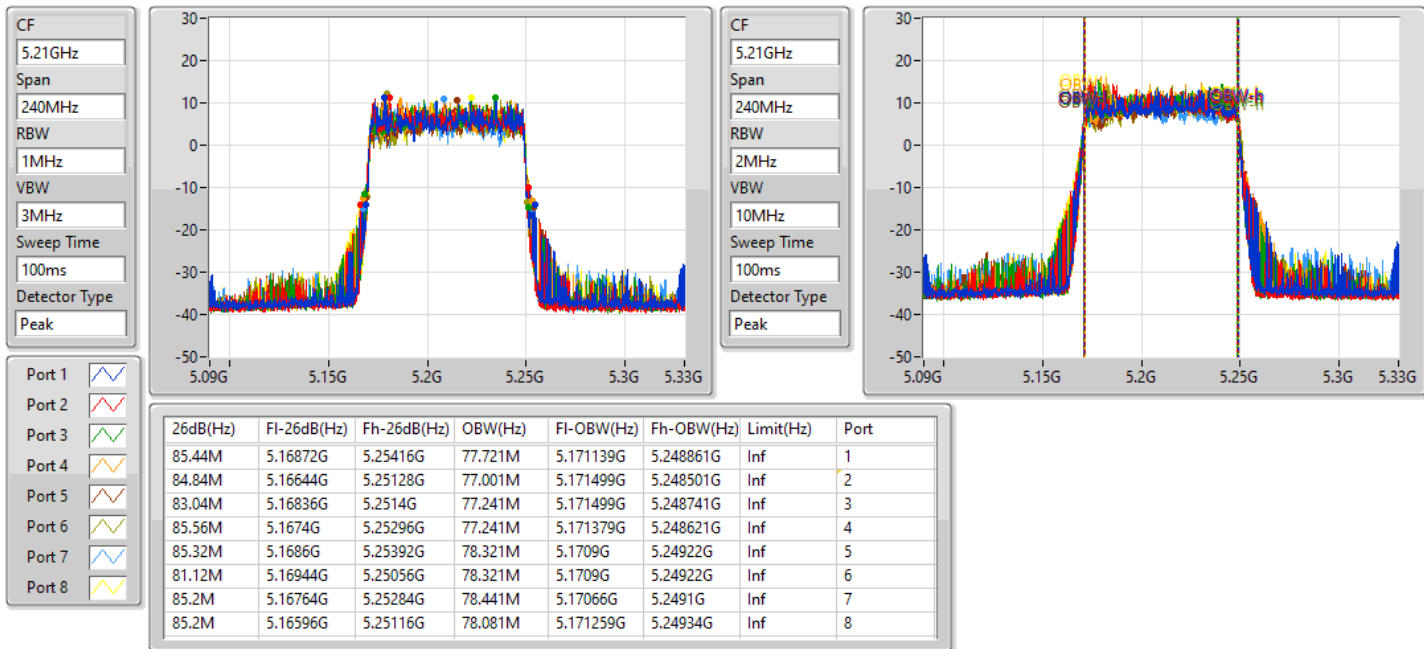


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5210MHz

19/07/2021

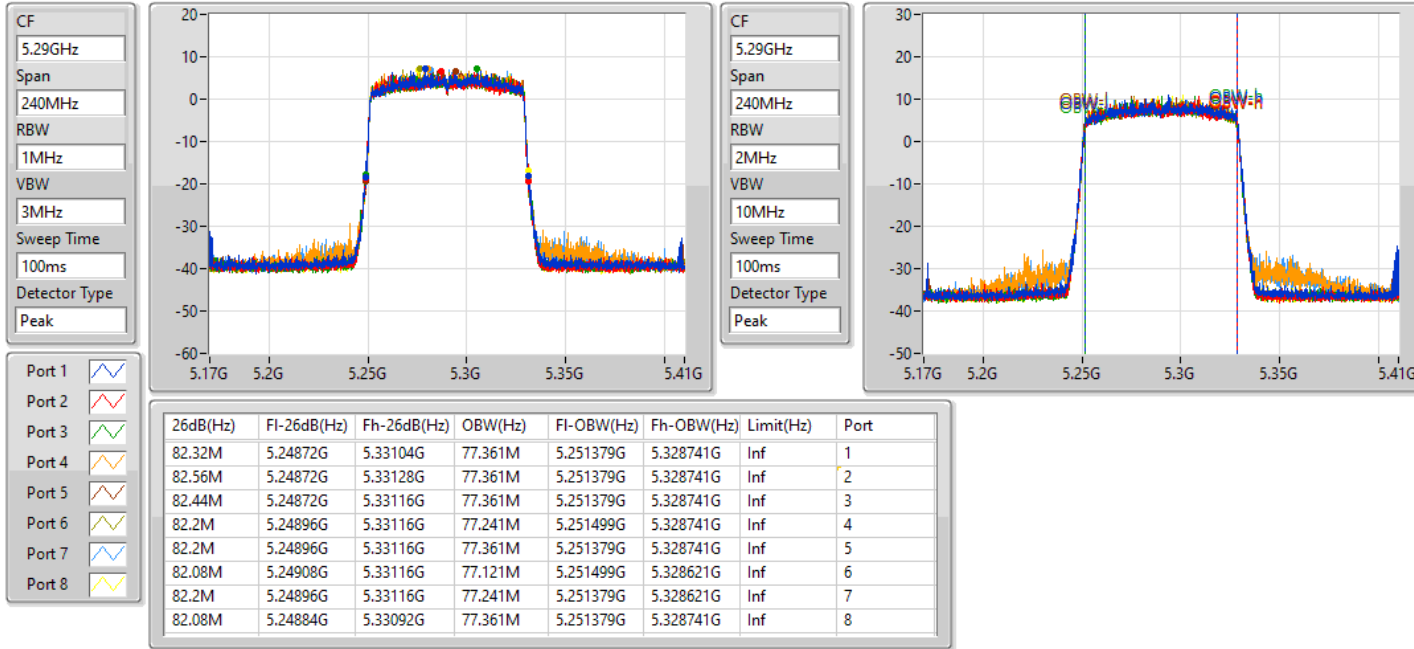


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5290MHz

13/09/2021

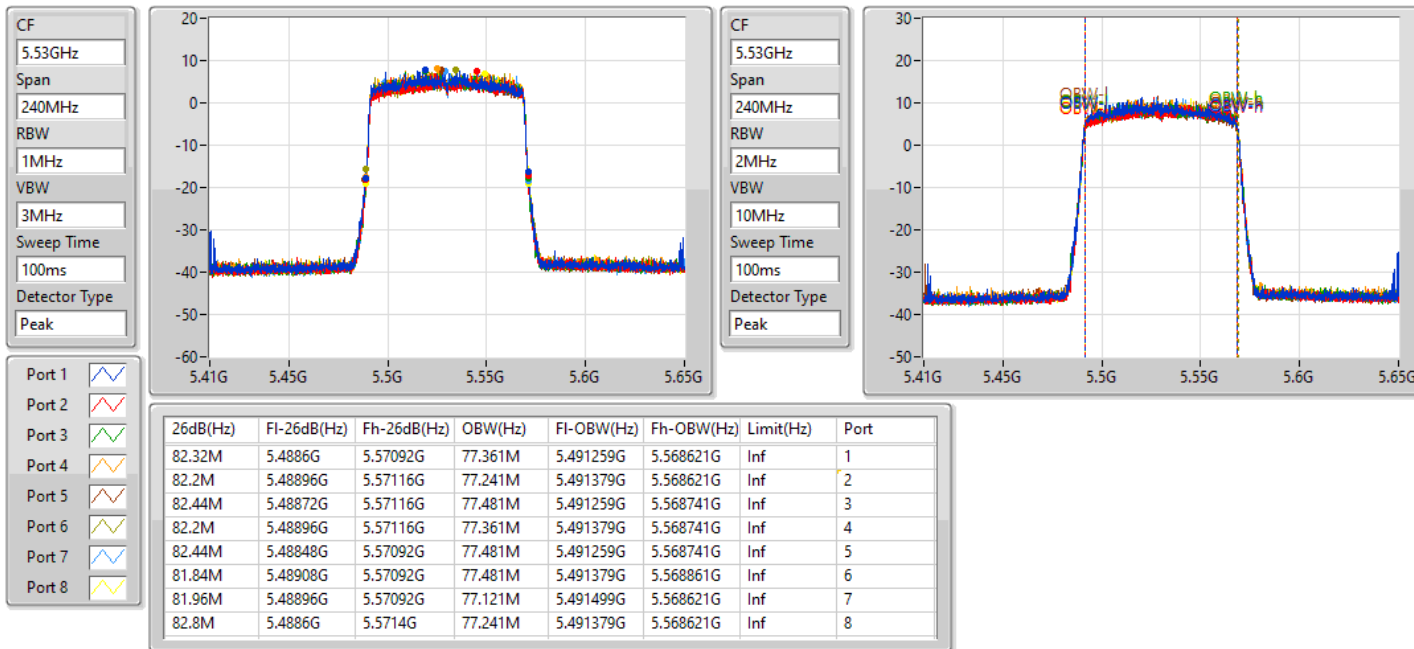


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5530MHz

13/09/2021

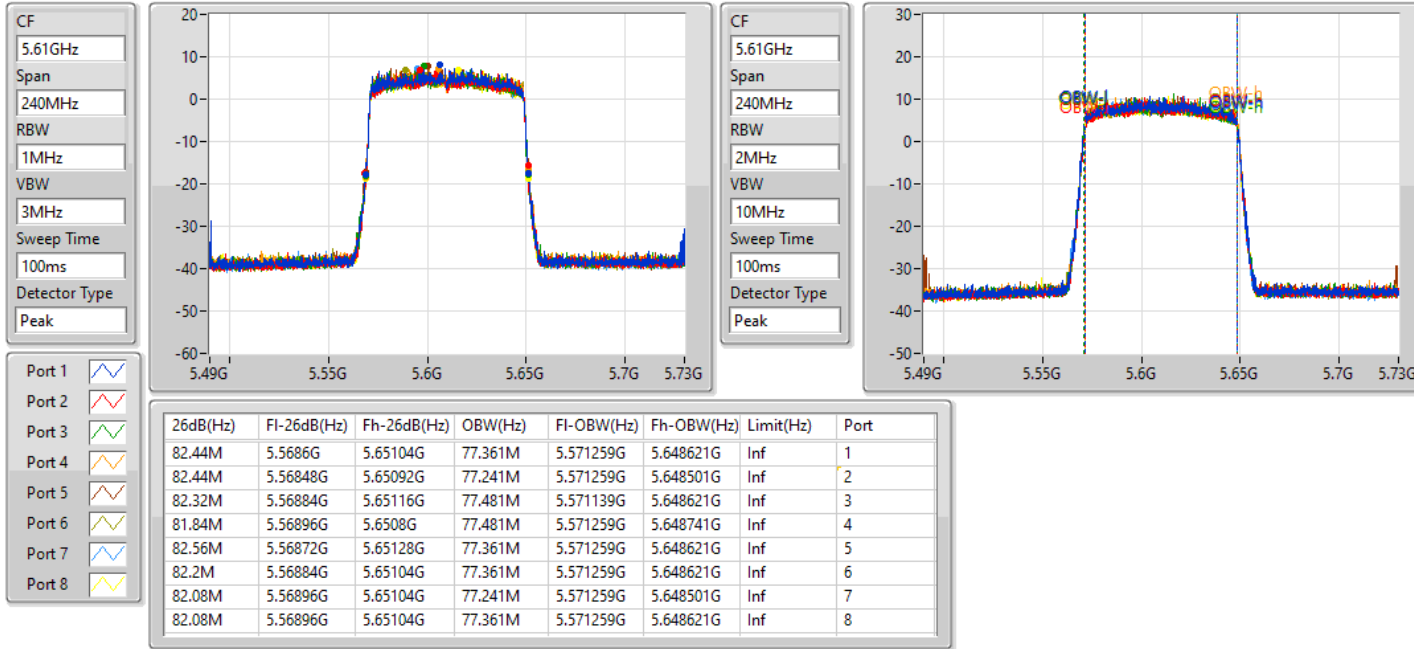


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5610MHz

13/09/2021

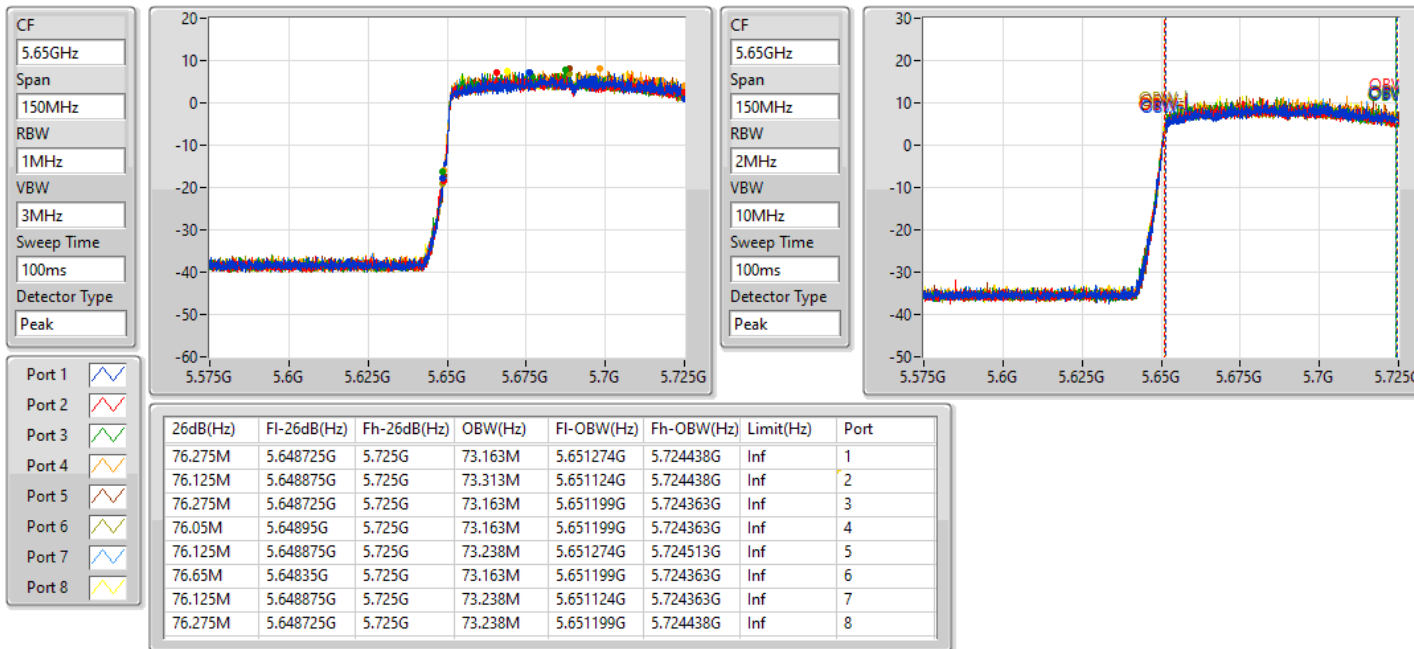


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5690MHz Straddle 5.47-5.725GHz

13/09/2021

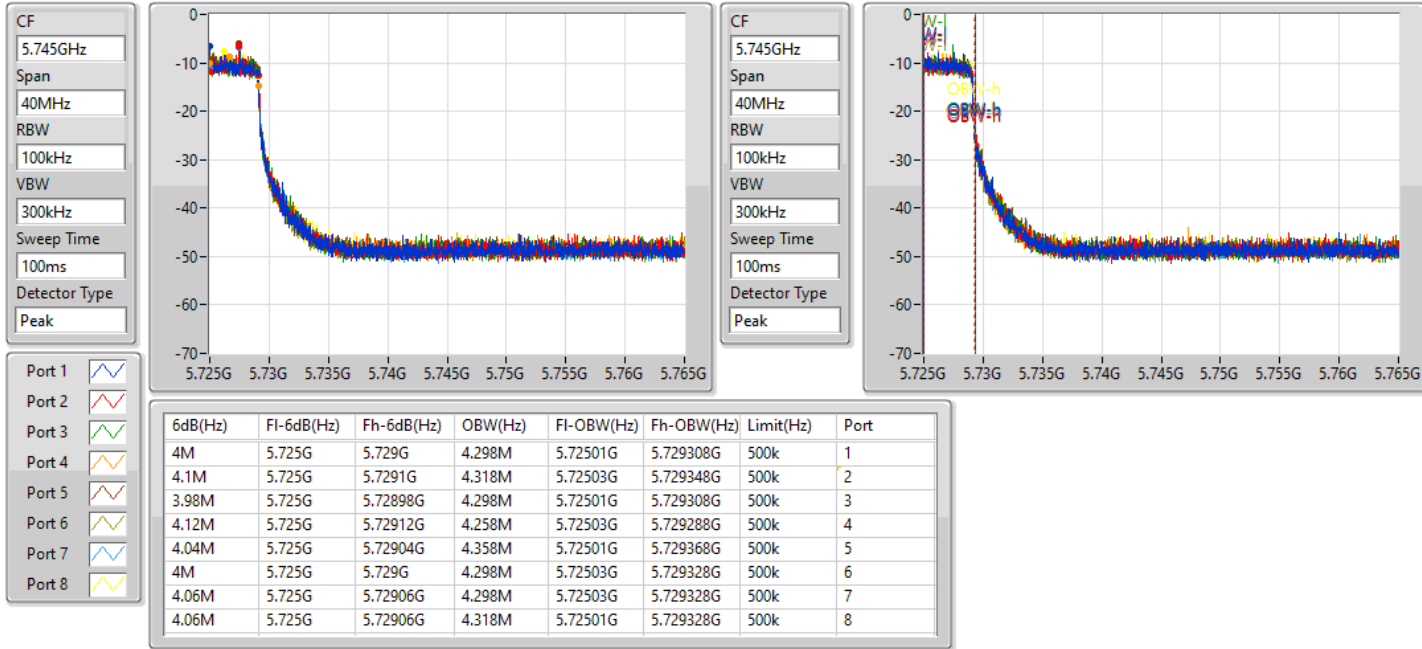


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5690MHz Straddle 5.725-5.85GHz

13/09/2021

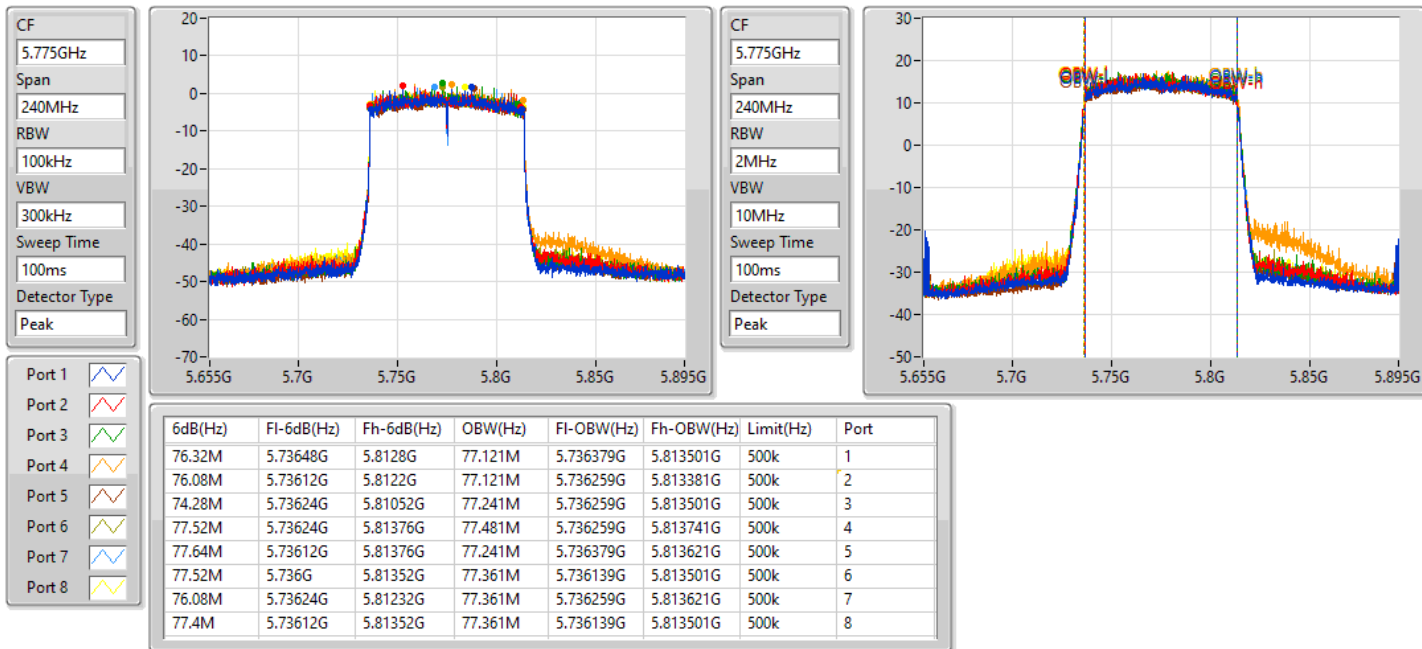


802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

EBW

5775MHz

13/09/2021





For 8T2S beamforming mode  
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	21.42M	19.01M	19M0D1D	20.58M	18.891M
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	41.88M	38.141M	38M1D1D	40.68M	37.661M
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	81.6M	77.361M	77M4D1D	80.52M	75.562M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	21.84M	19.04M	19M0D1D	21.06M	18.891M
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	41.4M	38.021M	38M0D1D	40.62M	37.841M
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	82.68M	77.481M	77M5D1D	82.08M	77.241M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	21.54M	19.04M	19M0D1D	15.36M	14.423M
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	41.4M	38.081M	38M1D1D	35.385M	33.758M
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	82.8M	77.721M	77M7D1D	75.825M	73.088M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	19.11M	19.01M	19M0D1D	4.46M	4.578M
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	38.1M	38.021M	38M0D1D	4.02M	4.158M
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	77.76M	77.601M	77M6D1D	3.78M	4.258M

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

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	21.06M	18.891M	21.24M	18.951M	21.24M	19.01M	21.24M	18.951M	21.24M	18.921M	21.18M	18.951M	21.12M	19.01M	21.36M	18.981M
5200MHz	Pass	Inf	21.21M	18.891M	21.27M	18.951M	21.36M	18.981M	21.09M	18.951M	21.15M	18.891M	20.97M	18.951M	21.06M	19.01M	21.18M	18.951M
5240MHz	Pass	Inf	21.21M	18.891M	21.09M	18.951M	21.42M	19.01M	21.3M	18.981M	21.18M	18.921M	20.58M	18.951M	21.15M	18.981M	21.27M	18.981M
5260MHz	Pass	Inf	21.24M	18.891M	21.21M	18.981M	21.42M	19.04M	21.27M	18.951M	21.36M	18.921M	21.24M	18.981M	21.21M	19.01M	21.3M	18.951M
5300MHz	Pass	Inf	21.3M	18.891M	21.33M	19.01M	21.3M	19.01M	21.15M	18.951M	21.06M	18.891M	21.24M	18.921M	21.21M	19.01M	21.15M	18.981M
5320MHz	Pass	Inf	21.6M	18.891M	21.42M	18.951M	21.3M	19.01M	21.45M	18.981M	21.84M	18.891M	21.15M	18.981M	21.36M	19.01M	21.21M	18.981M
5500MHz	Pass	Inf	21.18M	18.891M	21.03M	19.01M	21.06M	19.01M	21.12M	18.981M	21.21M	18.921M	21.21M	18.921M	21.09M	19.01M	21.54M	18.981M
5580MHz	Pass	Inf	21.12M	18.891M	21.15M	18.981M	21.3M	19.04M	21.15M	18.981M	21.42M	18.891M	21.03M	18.951M	21.15M	18.981M	21.54M	18.981M
5700MHz	Pass	Inf	21.27M	18.951M	21.18M	18.981M	21.18M	19.01M	21.21M	18.921M	21.27M	18.951M	21.18M	18.951M	21.24M	19.01M	21.39M	18.981M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.6M	14.453M	15.435M	14.438M	15.435M	14.468M	15.36M	14.468M	15.435M	14.423M	15.66M	14.438M	15.66M	14.468M	15.495M	14.468M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.5M	4.598M	4.52M	4.578M	4.56M	4.598M	4.46M	4.578M	4.5M	4.598M	4.52M	4.578M	4.48M	4.578M	4.52M	4.578M
5745MHz	Pass	500k	18.87M	18.891M	19.02M	18.981M	19.08M	19.01M	18.84M	18.951M	18.96M	18.891M	19.05M	18.951M	18.99M	18.981M	18.96M	18.951M
5785MHz	Pass	500k	18.99M	18.891M	19.02M	19.01M	19.05M	19.01M	18.99M	18.981M	18.66M	18.921M	18.96M	18.951M	19.02M	18.951M	18.99M	18.981M
5825MHz	Pass	500k	18.96M	18.921M	18.96M	18.951M	19.08M	19.01M	19.05M	18.981M	18.96M	18.921M	19.02M	18.981M	19.11M	18.981M	18.96M	18.951M
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.74M	37.661M	40.86M	37.781M	40.74M	38.081M	41.4M	37.961M	40.8M	37.721M	40.68M	37.661M	41.28M	37.961M	41.88M	38.141M
5230MHz	Pass	Inf	41.1M	37.961M	40.8M	37.841M	40.68M	37.961M	40.74M	37.961M	41.28M	38.021M	41.16M	38.021M	40.74M	37.901M	40.98M	37.901M
5270MHz	Pass	Inf	40.74M	37.901M	40.8M	37.961M	40.86M	37.961M	41.1M	37.961M	40.68M	37.961M	40.62M	38.021M	40.86M	37.841M	41.1M	37.901M
5310MHz	Pass	Inf	41.16M	37.901M	40.8M	37.901M	41.04M	37.961M	41.4M	37.901M	41.04M	37.961M	40.92M	38.021M	40.92M	37.961M	40.68M	37.901M
5510MHz	Pass	Inf	41.04M	37.961M	41.4M	37.961M	41.22M	37.901M	40.98M	37.961M	40.98M	38.021M	40.92M	38.021M	40.98M	37.841M	40.5M	37.901M
5550MHz	Pass	Inf	40.98M	38.021M	41.16M	37.901M	40.98M	37.901M	40.86M	37.961M	40.92M	37.961M	41.04M	38.081M	40.98M	37.901M	40.68M	37.901M
5670MHz	Pass	Inf	41.1M	37.901M	40.56M	37.901M	40.8M	37.841M	40.92M	37.961M	40.98M	37.961M	40.86M	38.021M	40.62M	37.961M	40.98M	37.901M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.63M	33.793M	35.42M	33.828M	35.49M	33.793M	35.385M	33.758M	35.42M	33.828M	35.525M	33.828M	35.49M	33.828M	35.49M	33.793M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	4.1M	4.178M	4.02M	4.198M	4.06M	4.158M	4.08M	4.178M	4.14M	4.158M	4.12M	4.158M	4.08M	4.158M	4.12M	4.178M
5755MHz	Pass	500k	38.1M	37.901M	37.98M	37.841M	37.74M	37.961M	38.04M	37.901M	37.98M	37.901M	38.04M	37.901M	37.68M	37.841M	37.98M	37.961M
5795MHz	Pass	500k	38.04M	37.901M	38.04M	37.841M	37.68M	37.901M	37.98M	37.961M	37.86M	38.021M	37.98M	37.961M	37.92M	37.841M	38.04M	37.901M
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	81.24M	77.001M	81.6M	75.802M	81.48M	77.241M	81.24M	77.361M	81.48M	77.361M	80.52M	75.562M	81.48M	77.361M	81.6M	77.001M
5290MHz	Pass	Inf	82.32M	77.481M	82.2M	77.361M	82.08M	77.361M	82.2M	77.241M	82.08M	77.481M	82.32M	77.241M	82.68M	77.361M	82.68M	77.361M
5530MHz	Pass	Inf	82.8M	77.361M	81.96M	77.361M	82.2M	77.361M	81.96M	77.361M	82.56M	77.601M	82.08M	77.721M	82.68M	77.241M	82.56M	77.361M
5610MHz	Pass	Inf	81.72M	77.361M	82.2M	77.121M	82.32M	77.241M	81.96M	77.241M	81.72M	77.481M	81.72M	77.481M	82.2M	77.121M	82.44M	77.241M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.05M	73.163M	76.275M	73.313M	76.05M	73.088M	76.125M	73.088M	76.35M	73.088M	76.125M	73.163M	76.125M	73.388M	75.825M	73.388M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	4.14M	4.278M	4.02M	4.258M	4.04M	4.278M	4.1M	4.298M	4.1M	4.258M	4.16M	4.298M	3.78M	4.258M	4.02M	4.278M
5775MHz	Pass	500k	77.52M	77.241M	77.28M	77.241M	77.76M	77.361M	77.64M	77.601M	77.4M	77.361M	77.64M	77.361M	76.2M	77.361M	77.04M	77.361M

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\_Nss2,(MCS0)\_8TX

EBW

5180MHz

14/09/2021

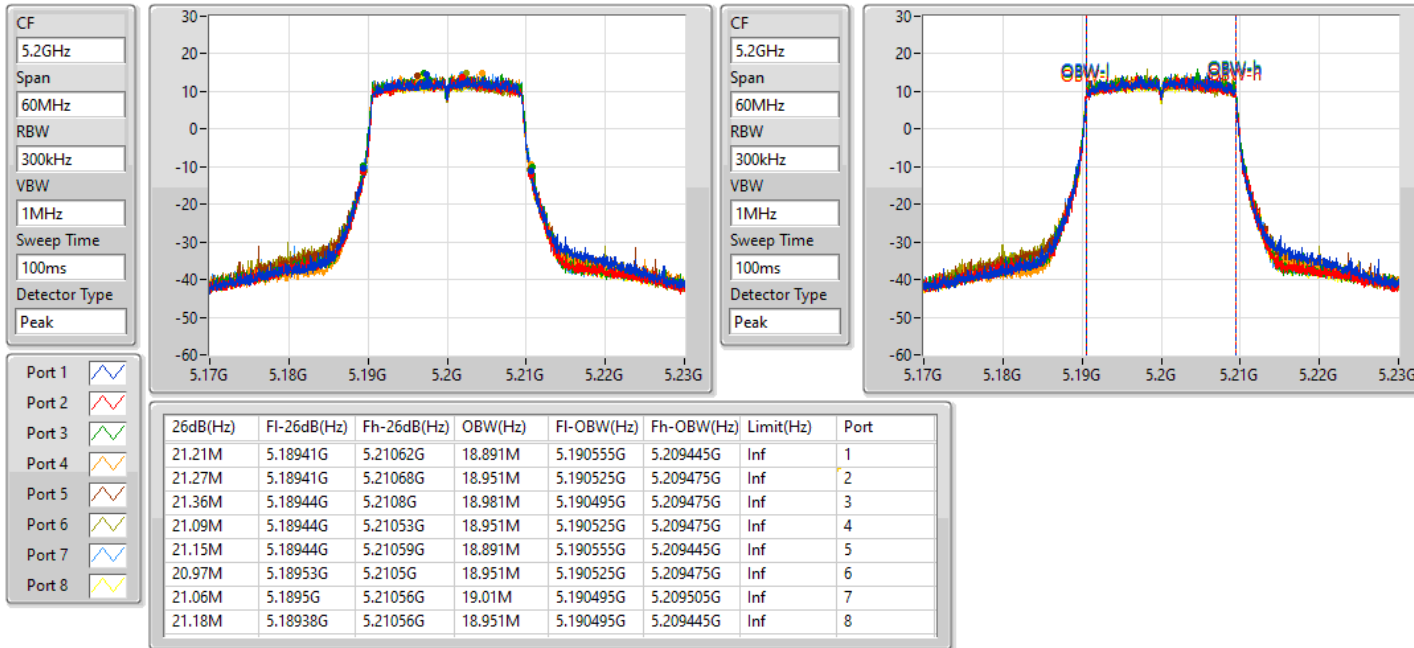


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5200MHz

14/09/2021



802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5240MHz

14/09/2021

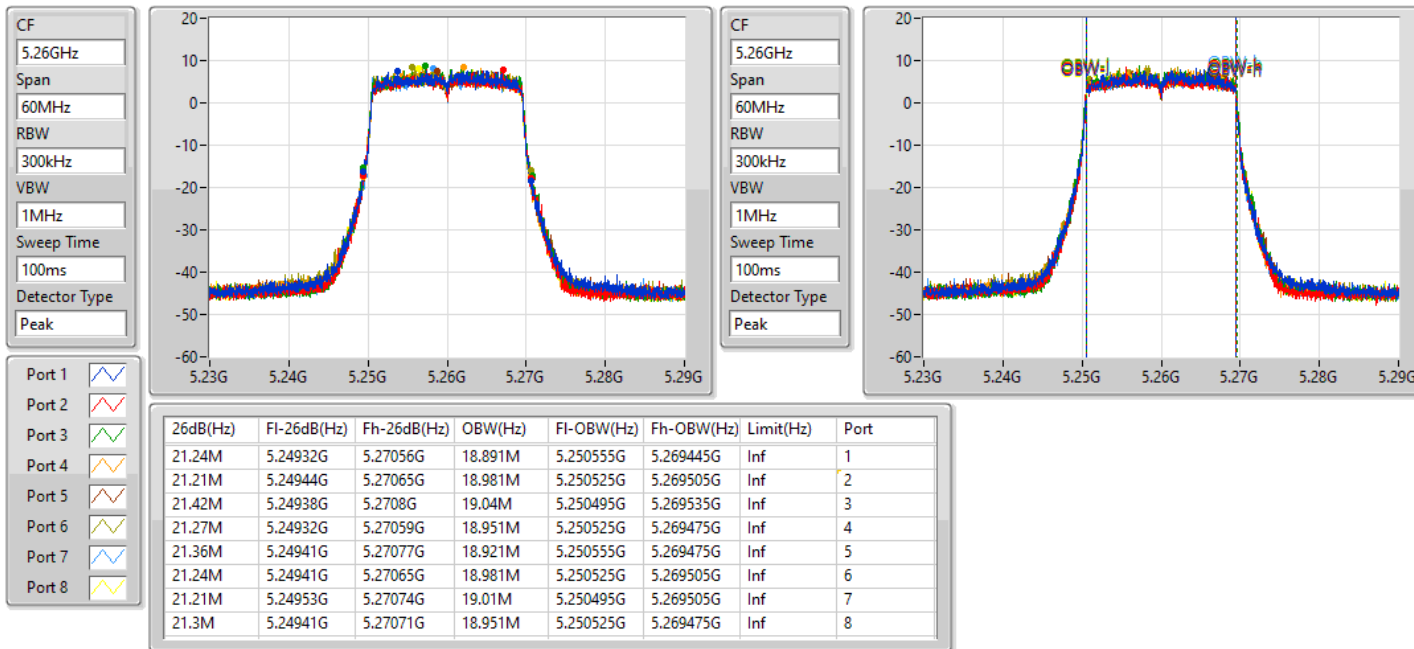


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5260MHz

14/09/2021



802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5300MHz

14/09/2021

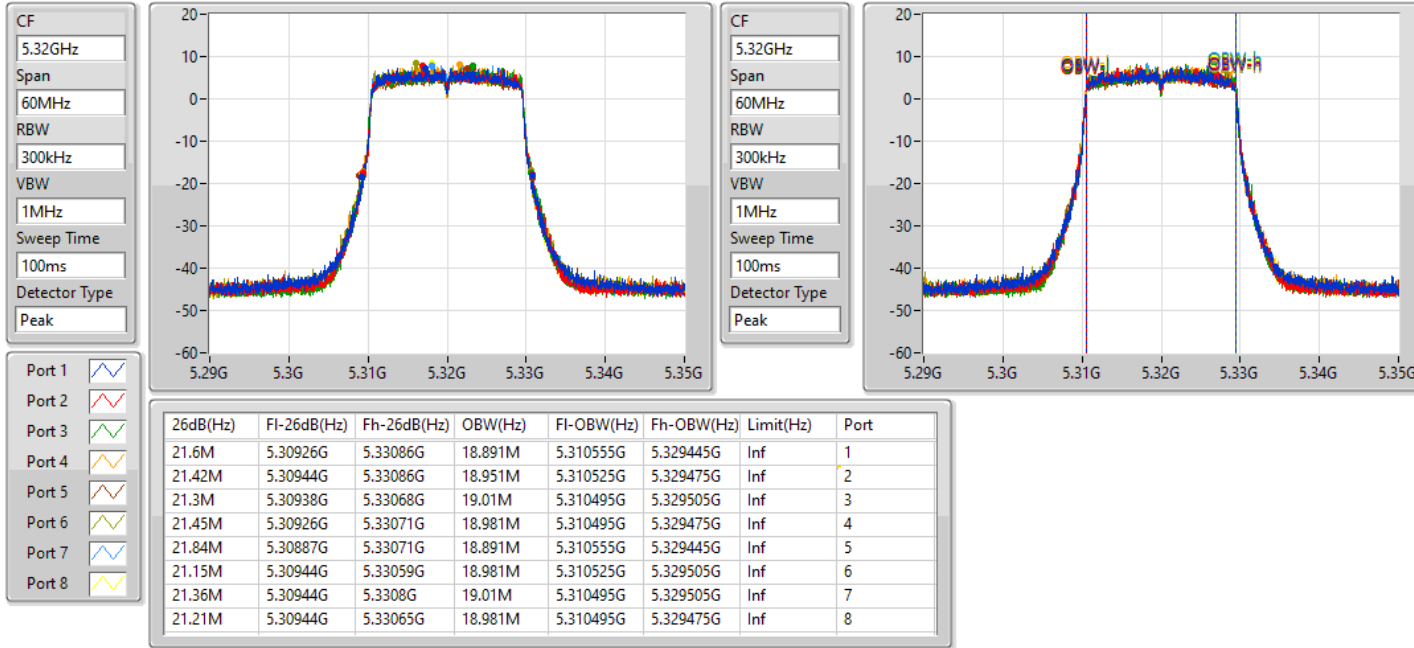


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5320MHz

14/09/2021



802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5500MHz

14/09/2021



802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5580MHz

14/09/2021

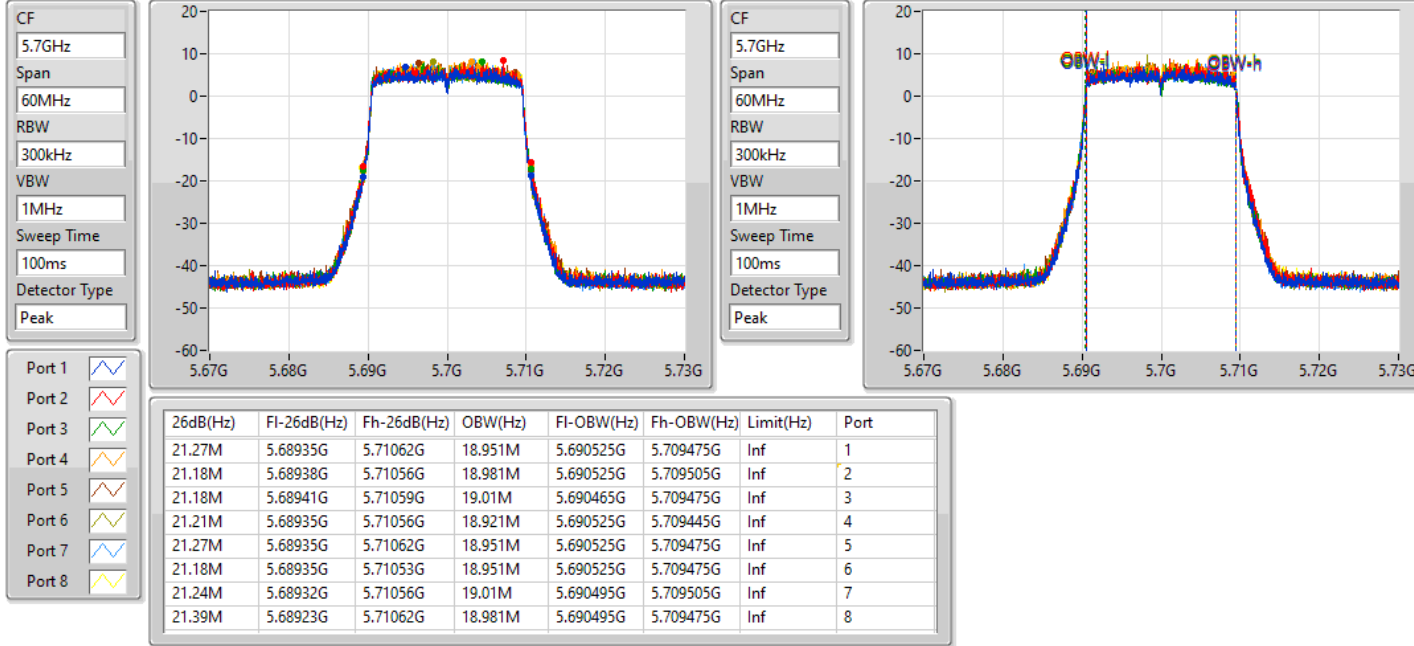


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5700MHz

14/09/2021

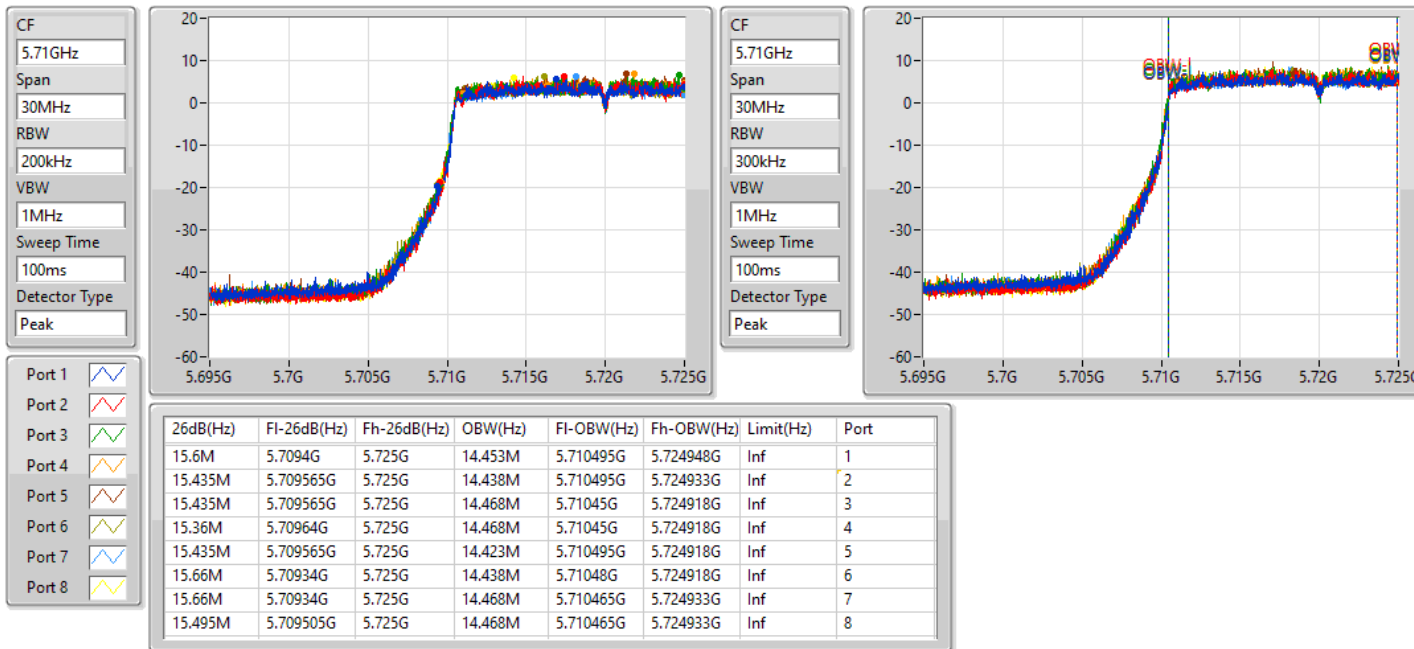


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5720MHz Straddle 5.47-5.725GHz

14/09/2021

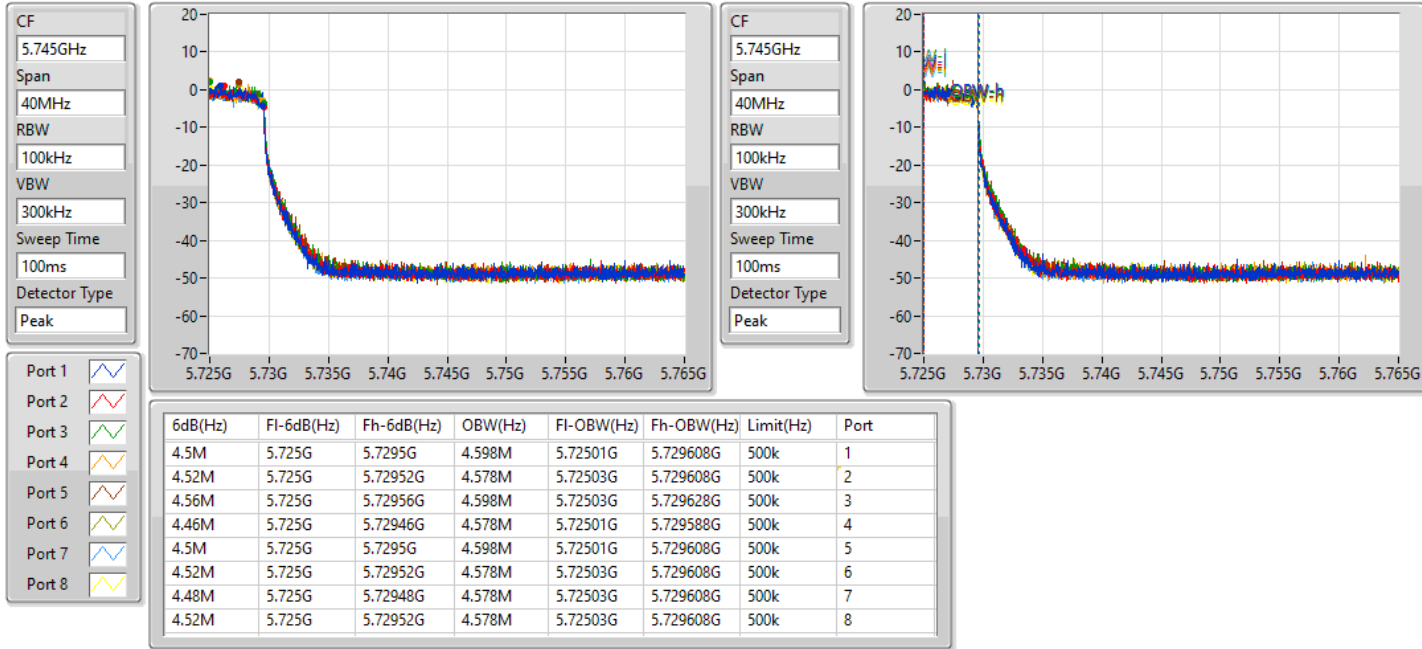


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5720MHz Straddle 5.725-5.85GHz

14/09/2021

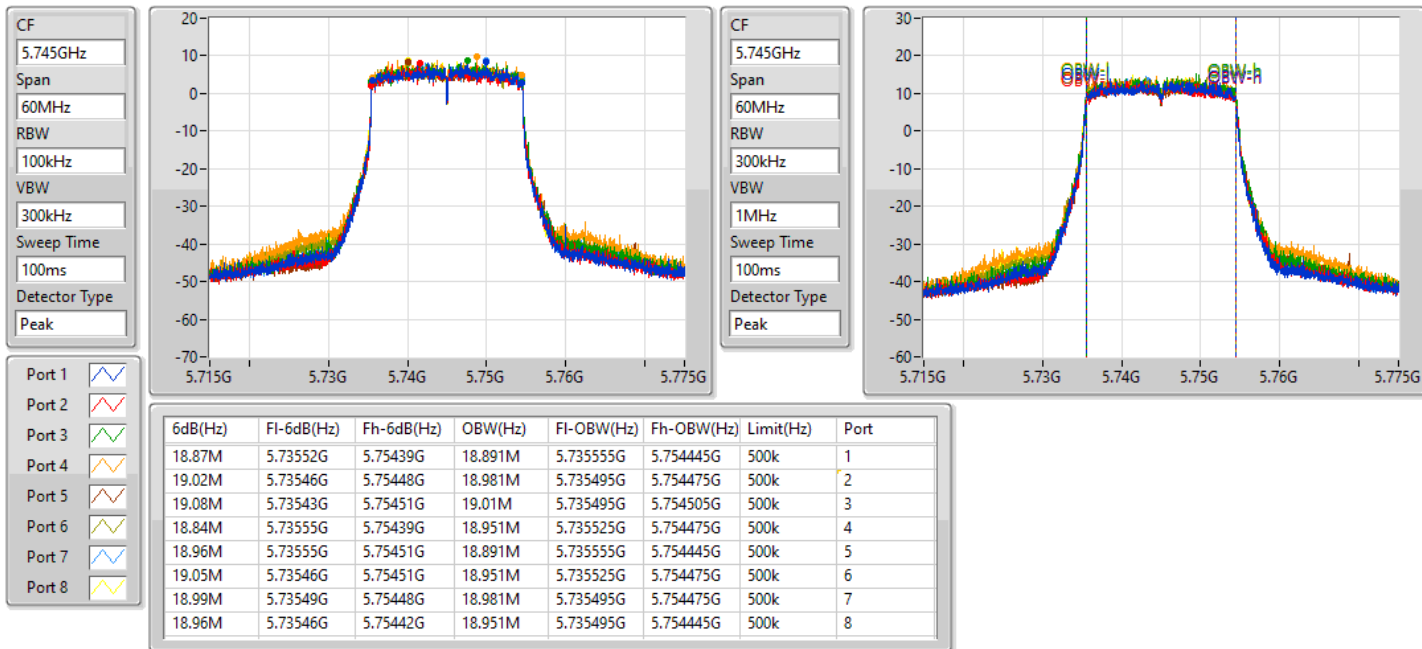


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5745MHz

14/09/2021



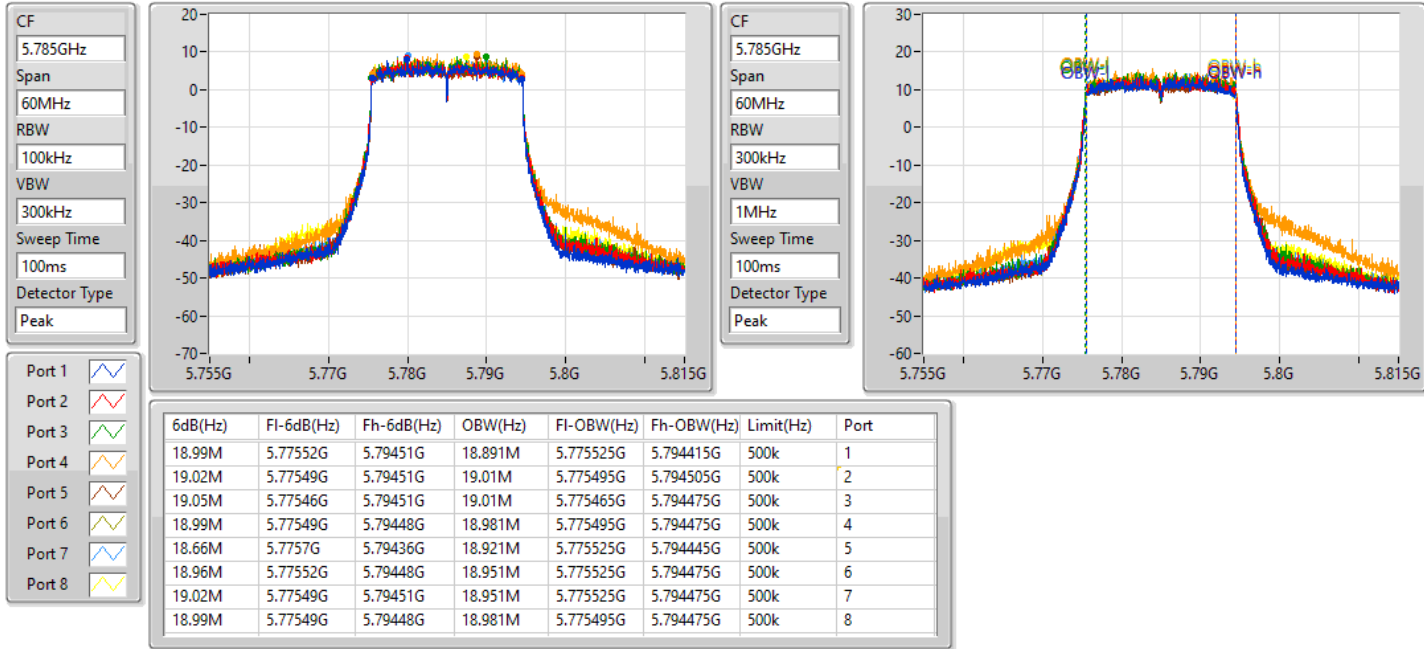


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5785MHz

14/09/2021

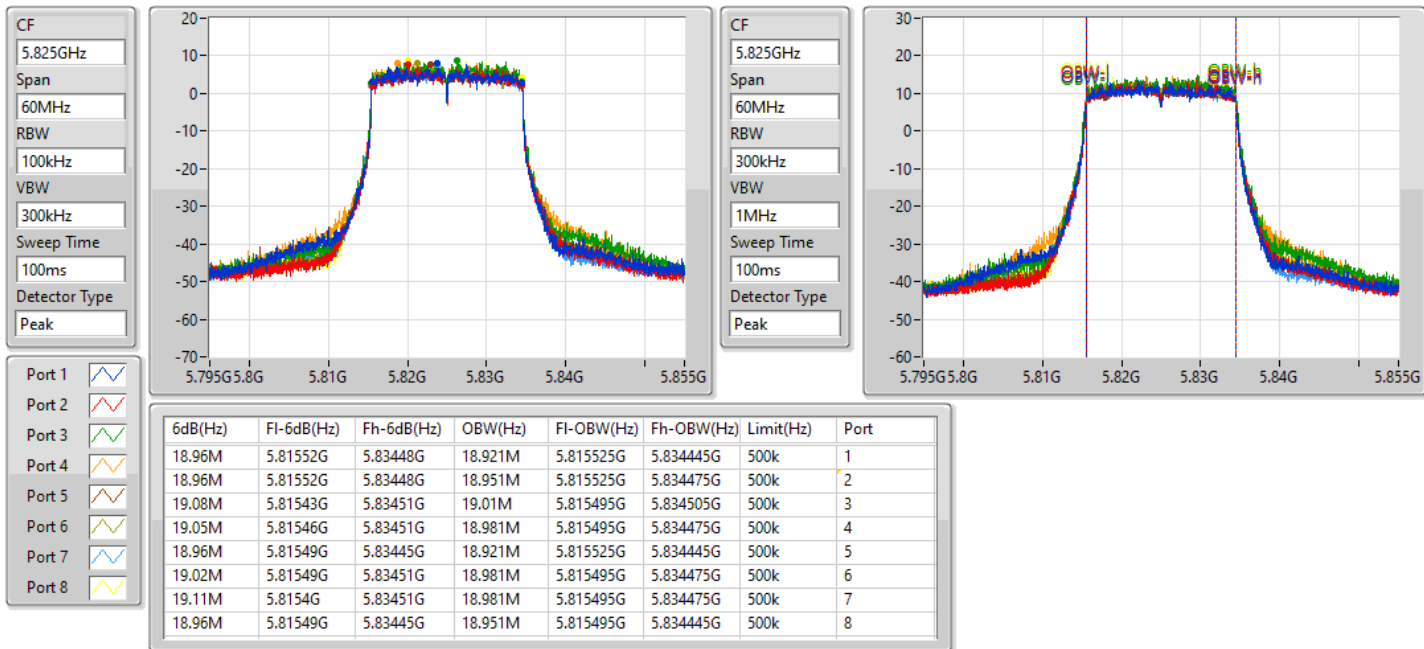


802.11ax HEW20-BF\_Nss2,(MCS0)\_8TX

EBW

5825MHz

14/09/2021

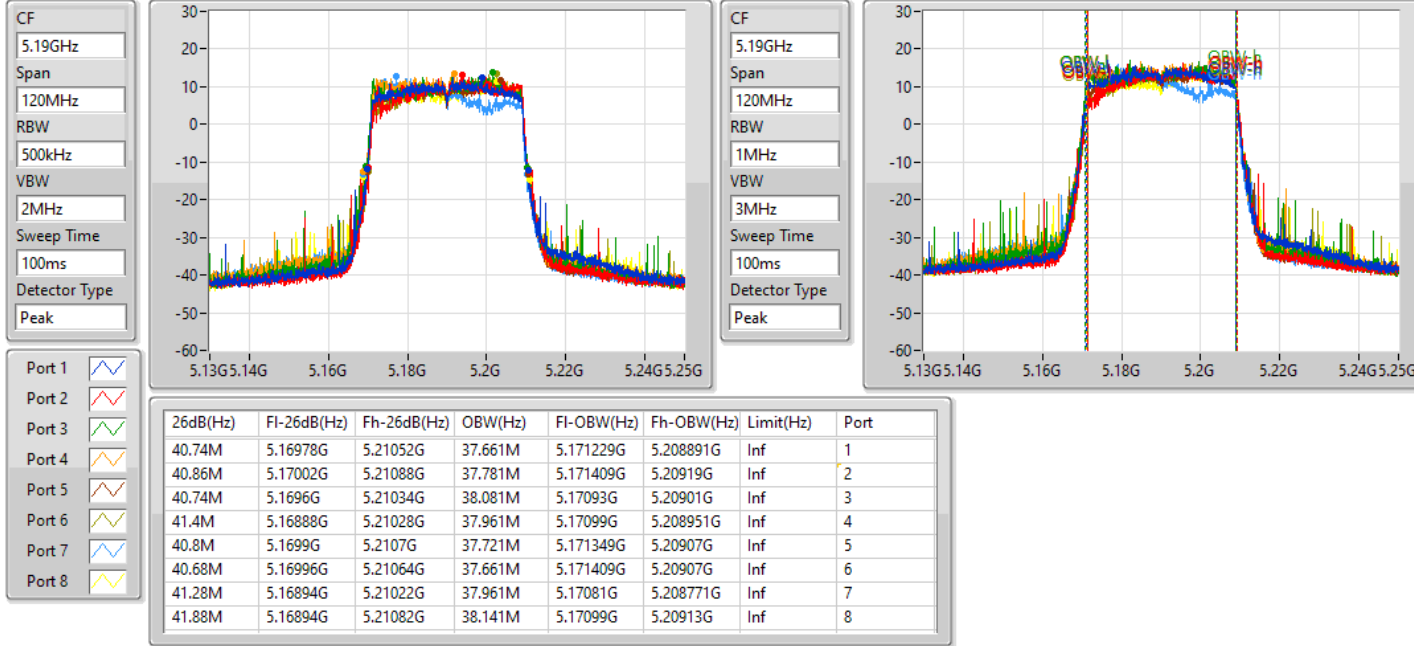


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5190MHz

04/08/2021

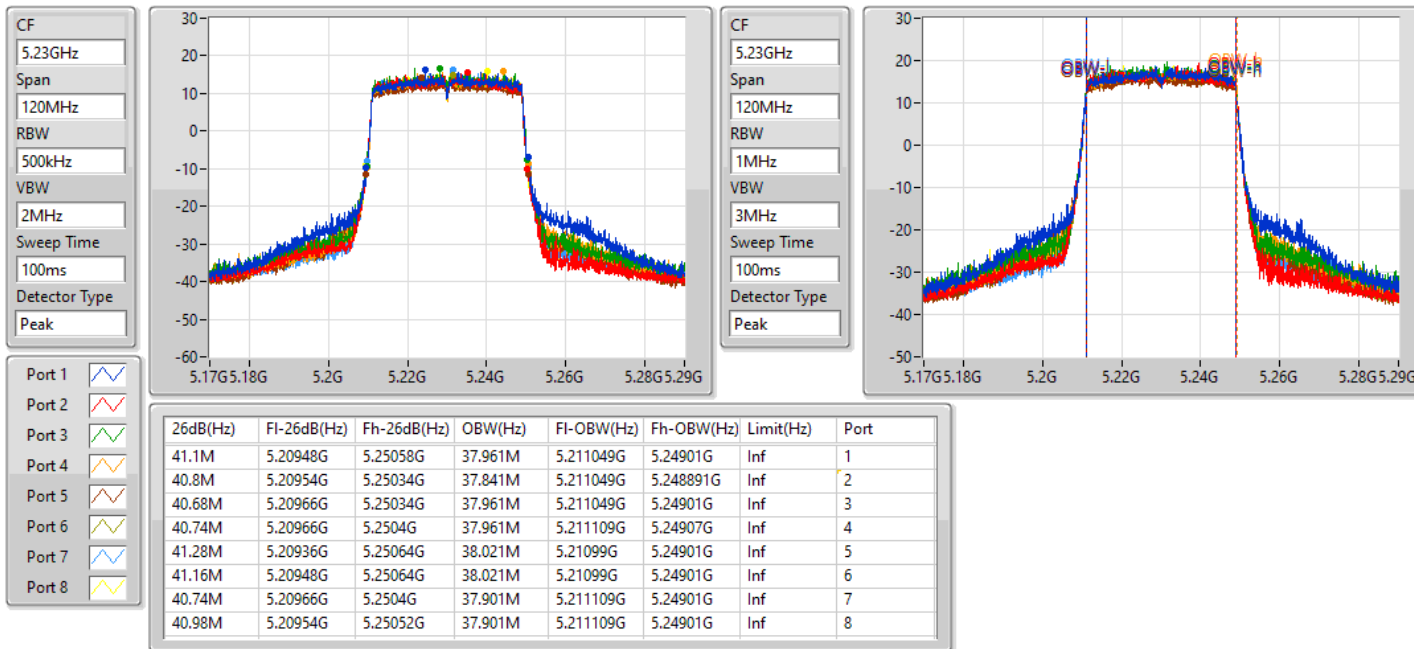


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5230MHz

14/09/2021

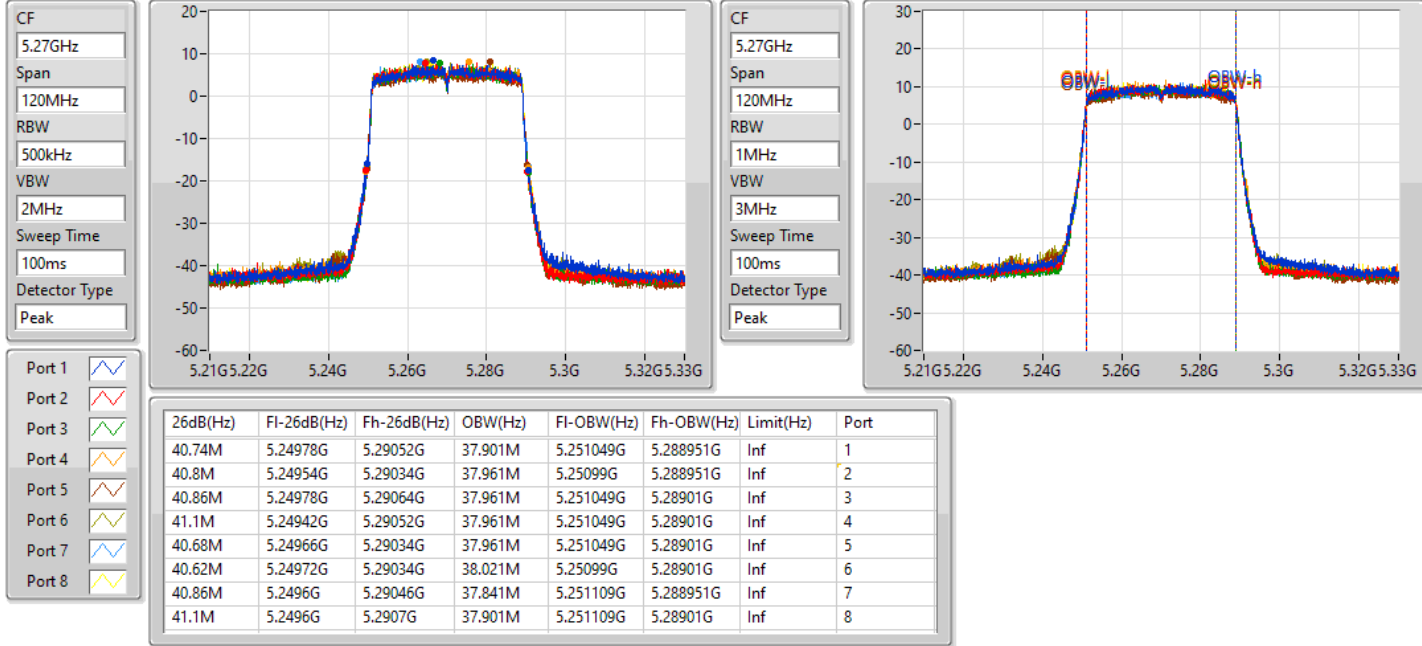


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5270MHz

14/09/2021

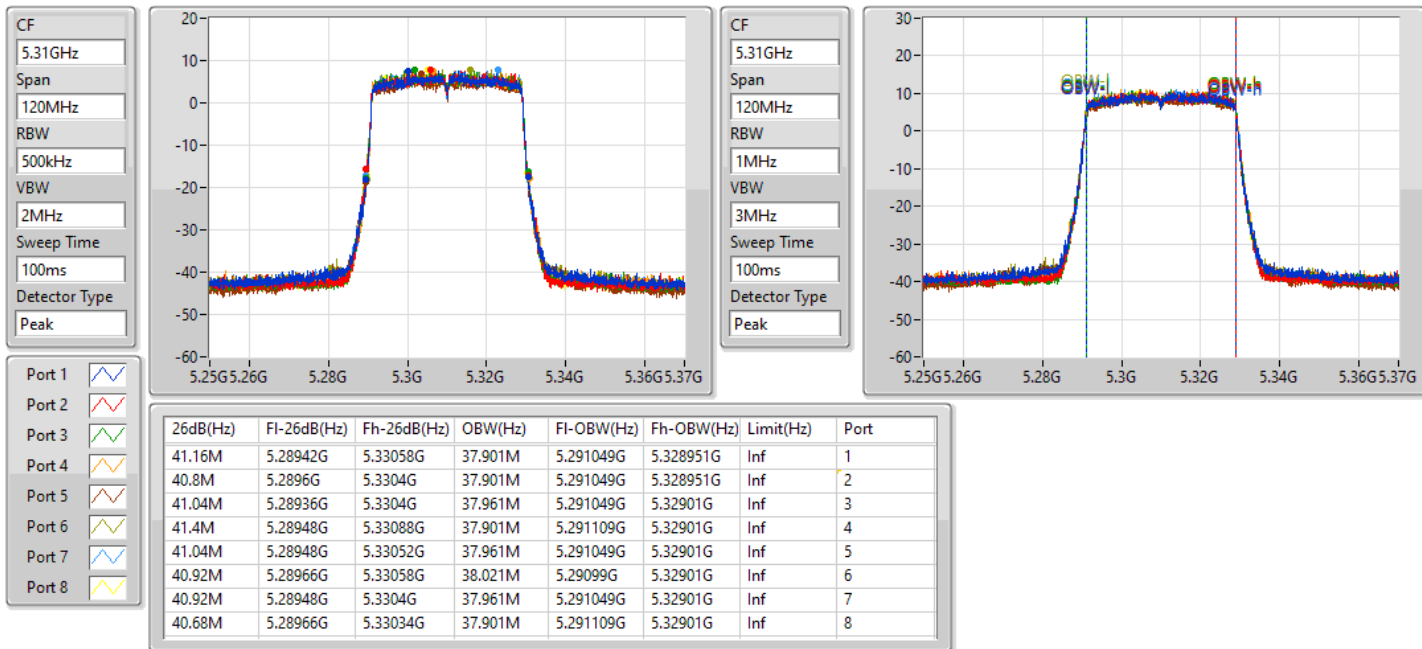


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5310MHz

14/09/2021

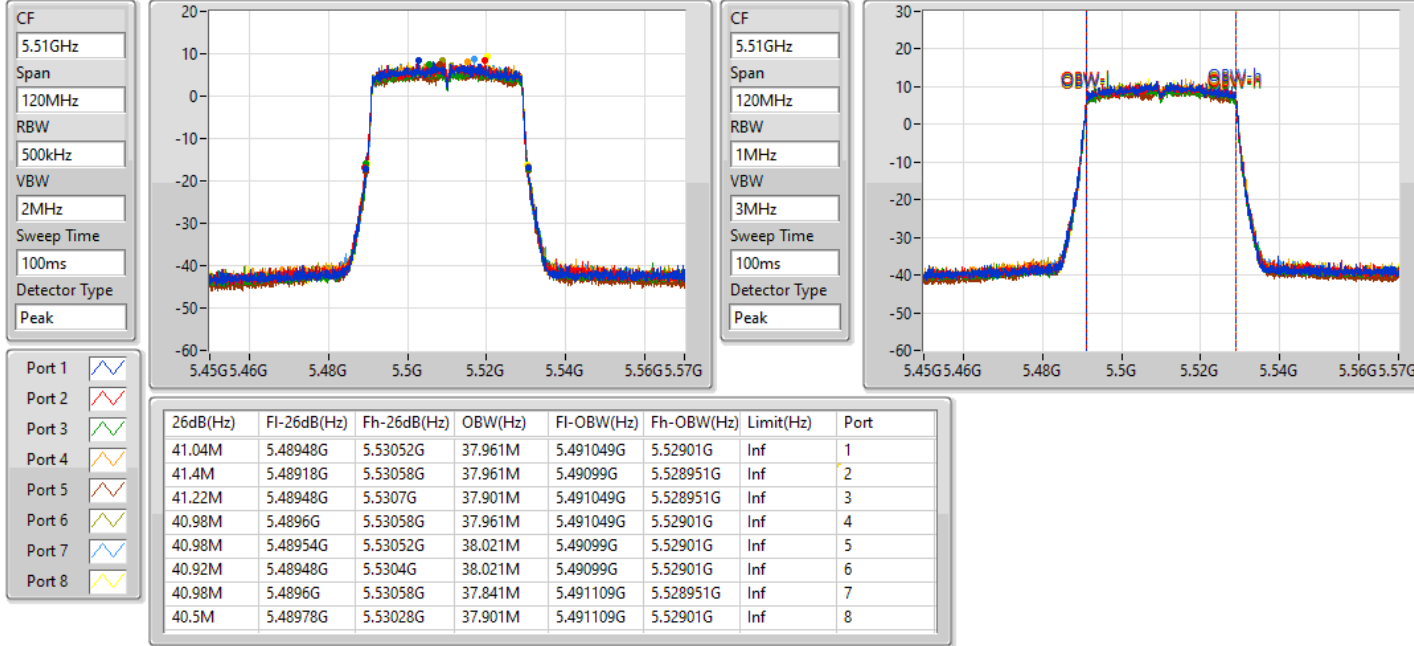


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5510MHz

14/09/2021

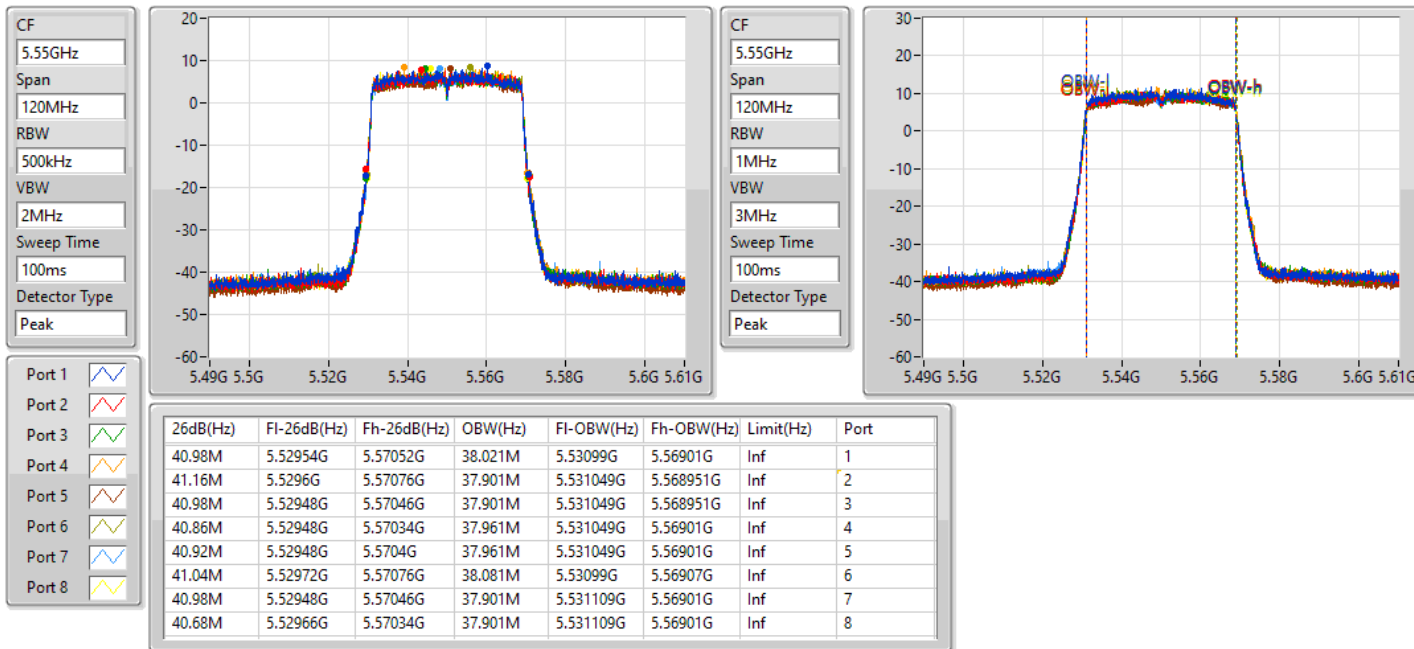


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5550MHz

14/09/2021

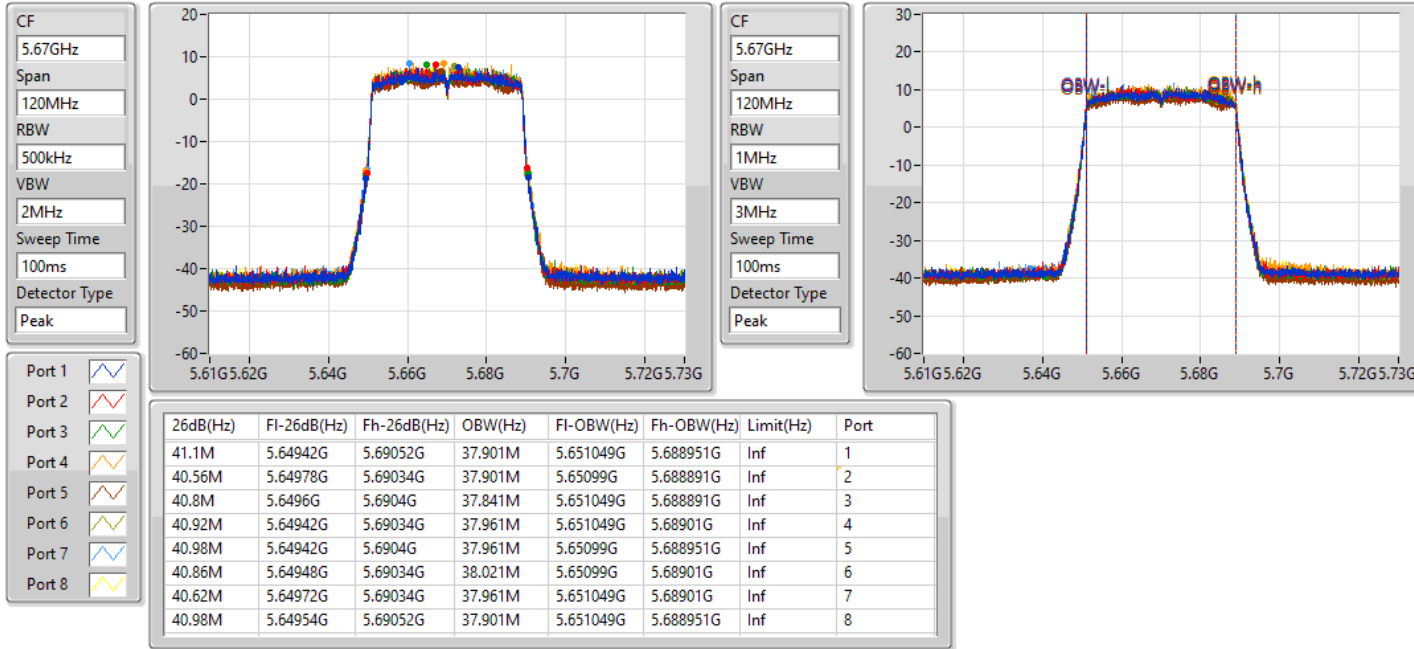


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5670MHz

14/09/2021

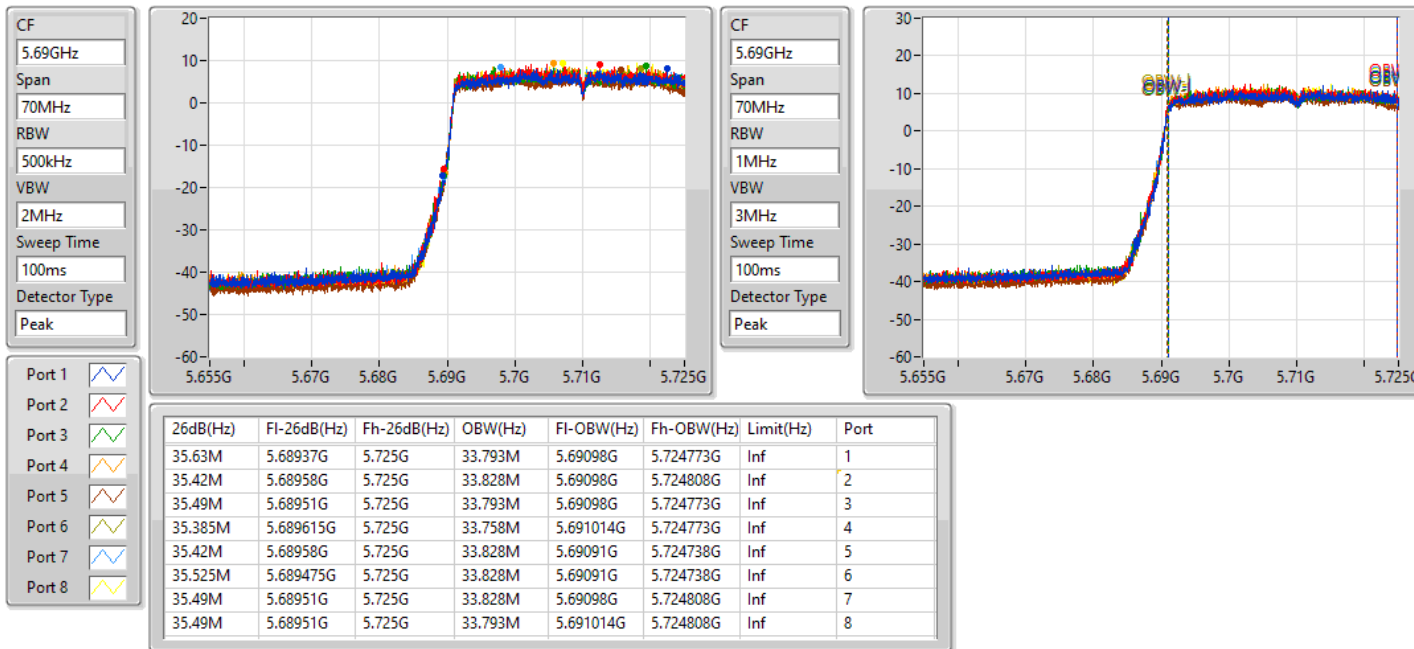


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5710MHz Straddle 5.47-5.725GHz

14/09/2021

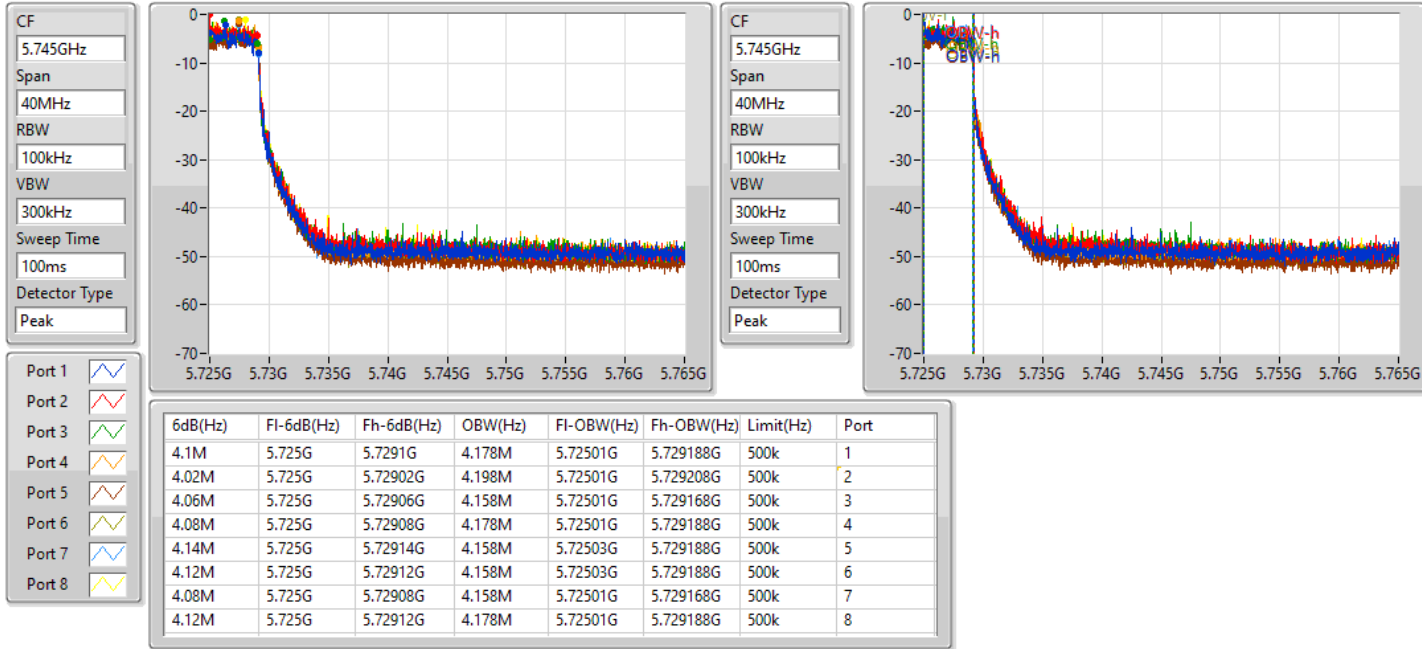


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5710MHz Straddle 5.725-5.85GHz

14/09/2021

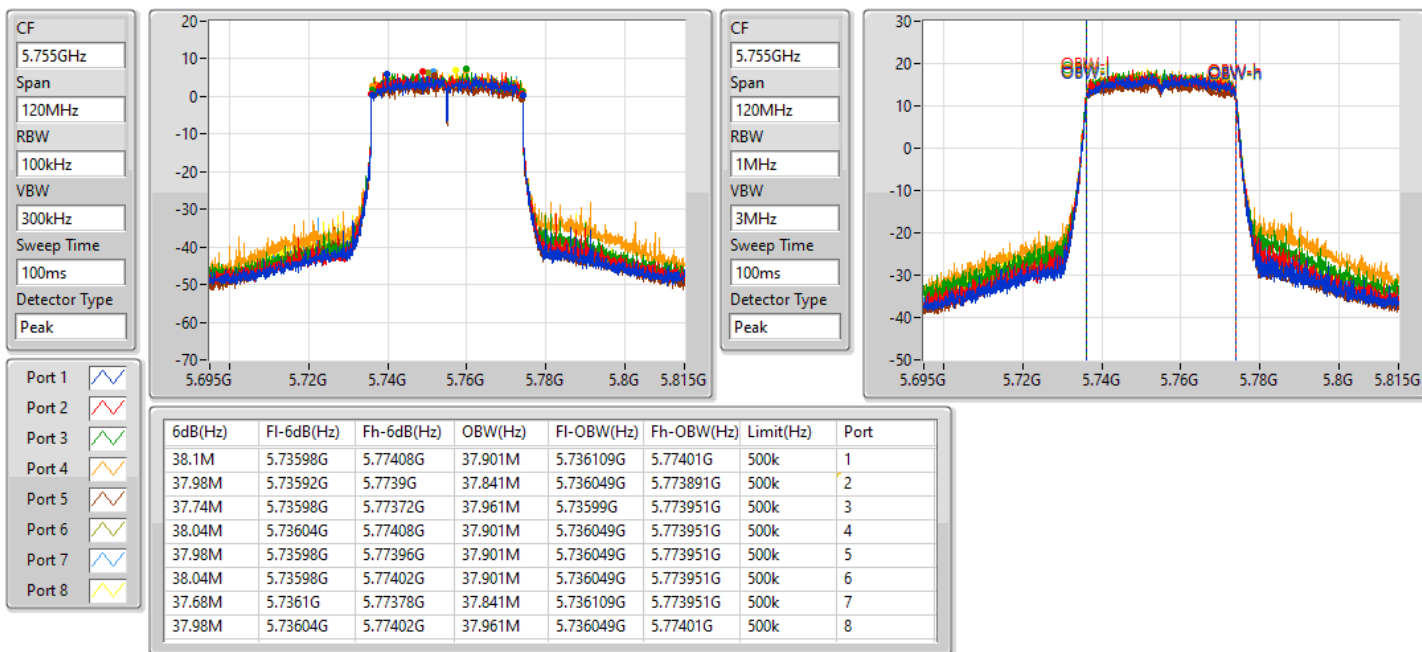


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5755MHz

14/09/2021

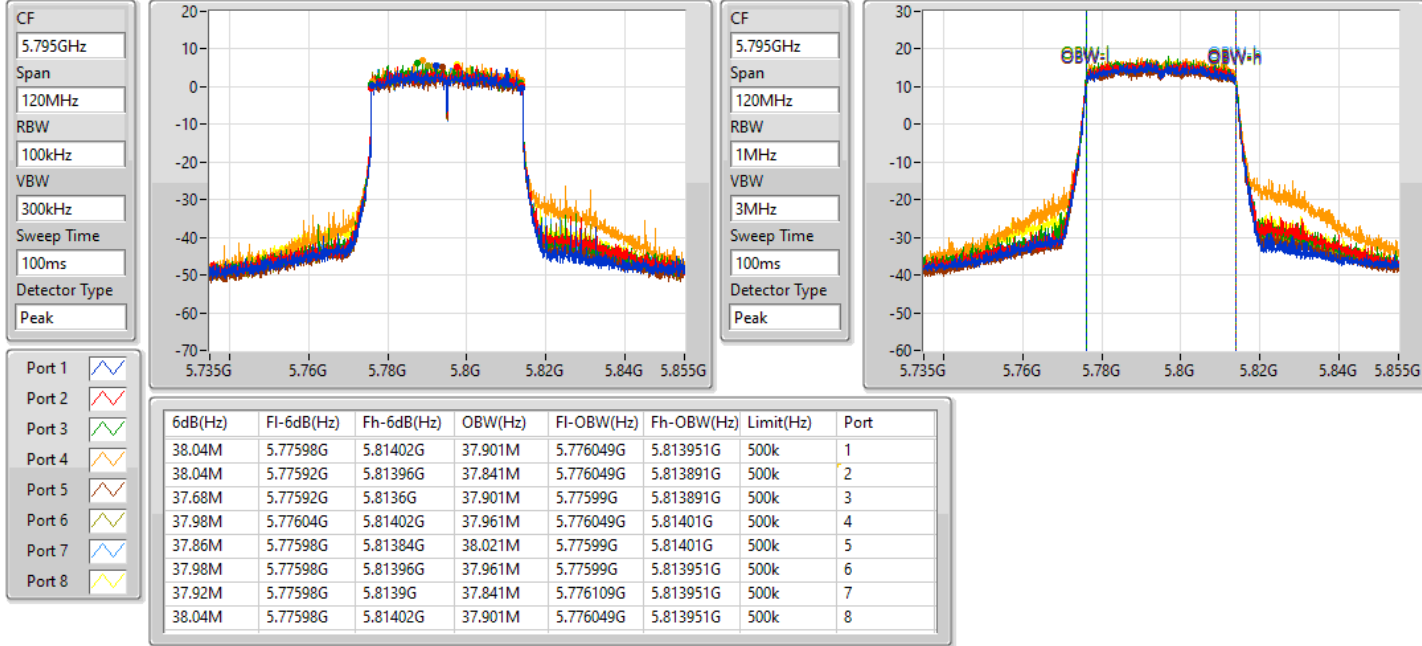


802.11ax HEW40-BF\_Nss2,(MCS0)\_8TX

EBW

5795MHz

14/09/2021

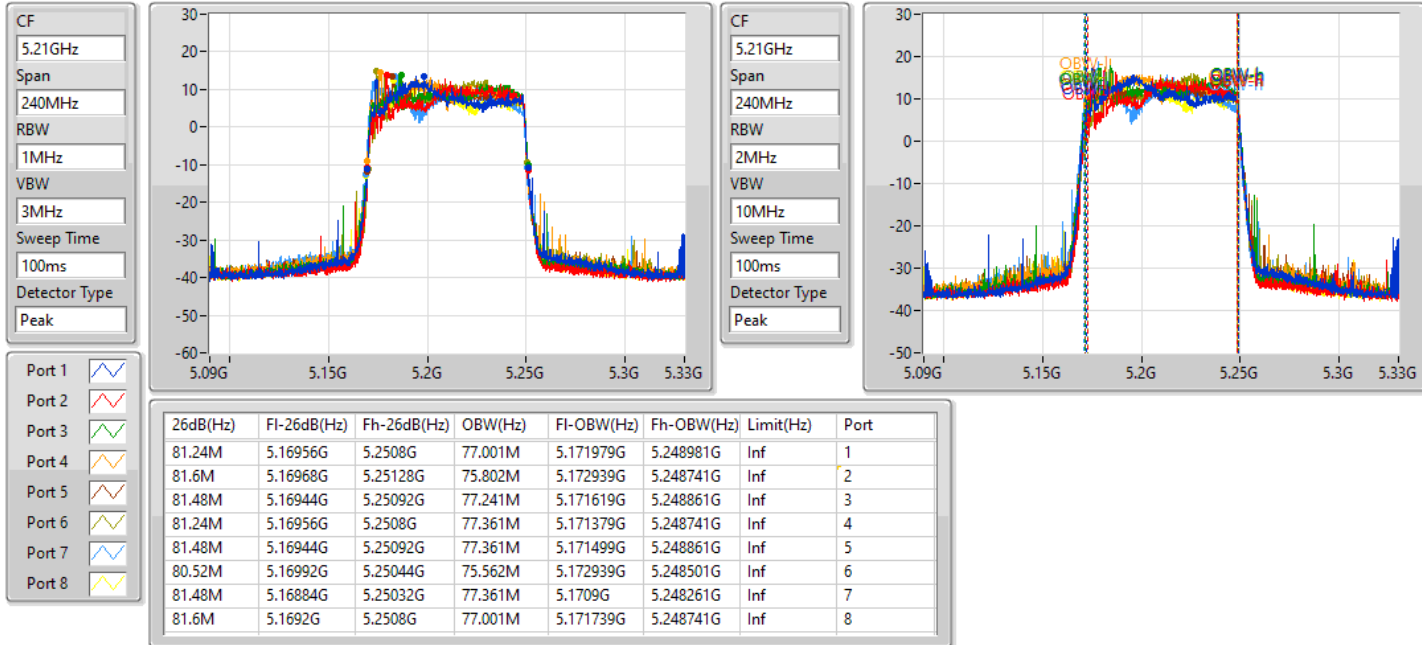


802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5210MHz

05/08/2021



802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5290MHz

14/09/2021

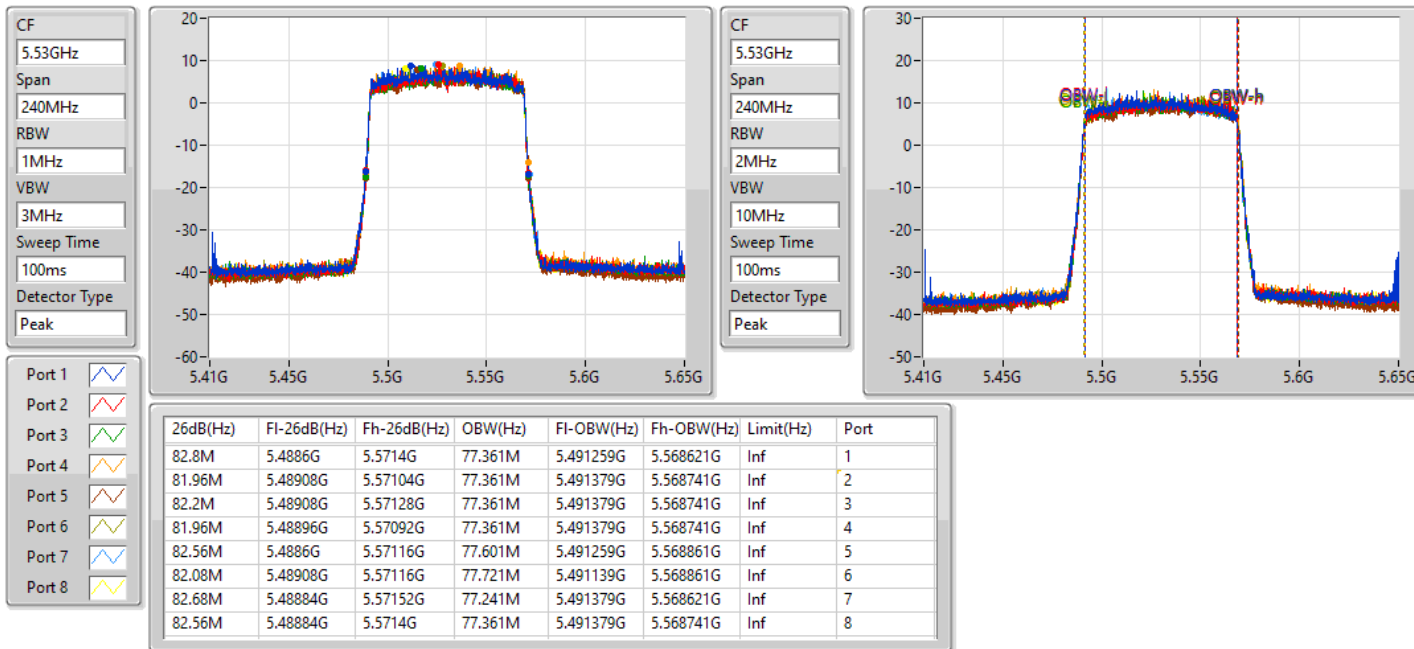


802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5530MHz

14/09/2021



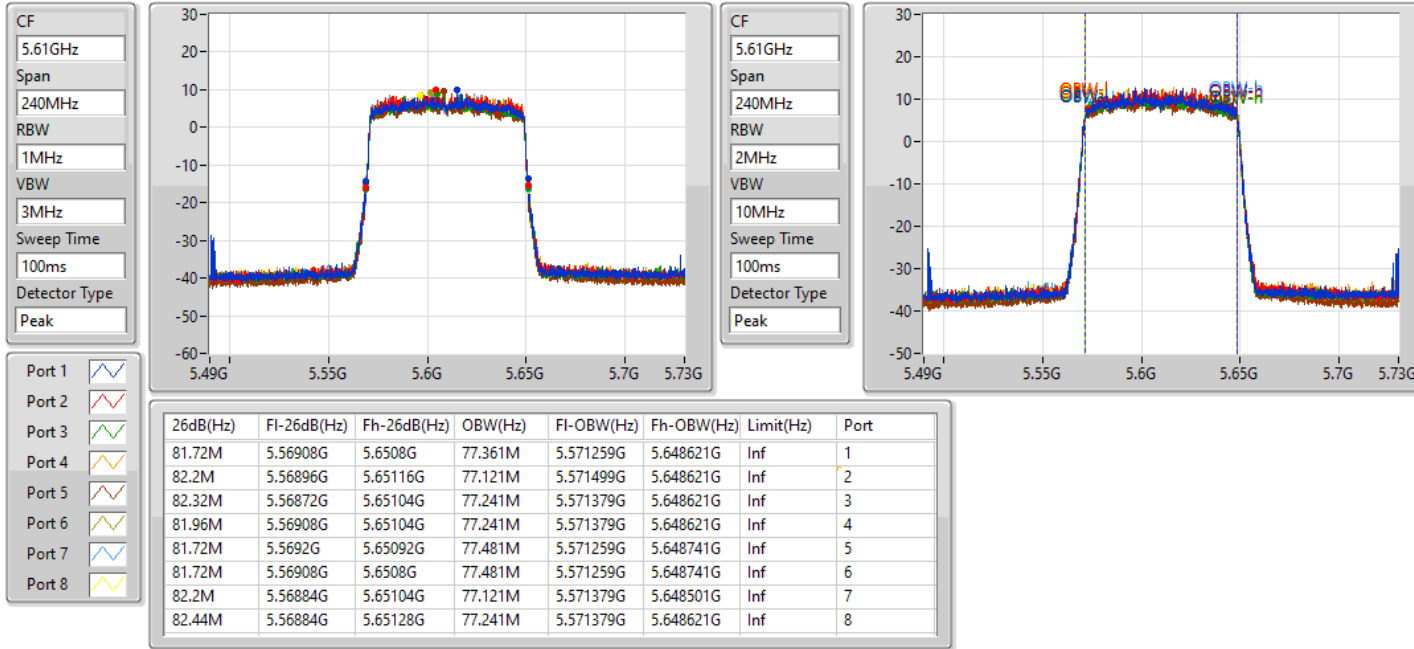


802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5610MHz

14/09/2021

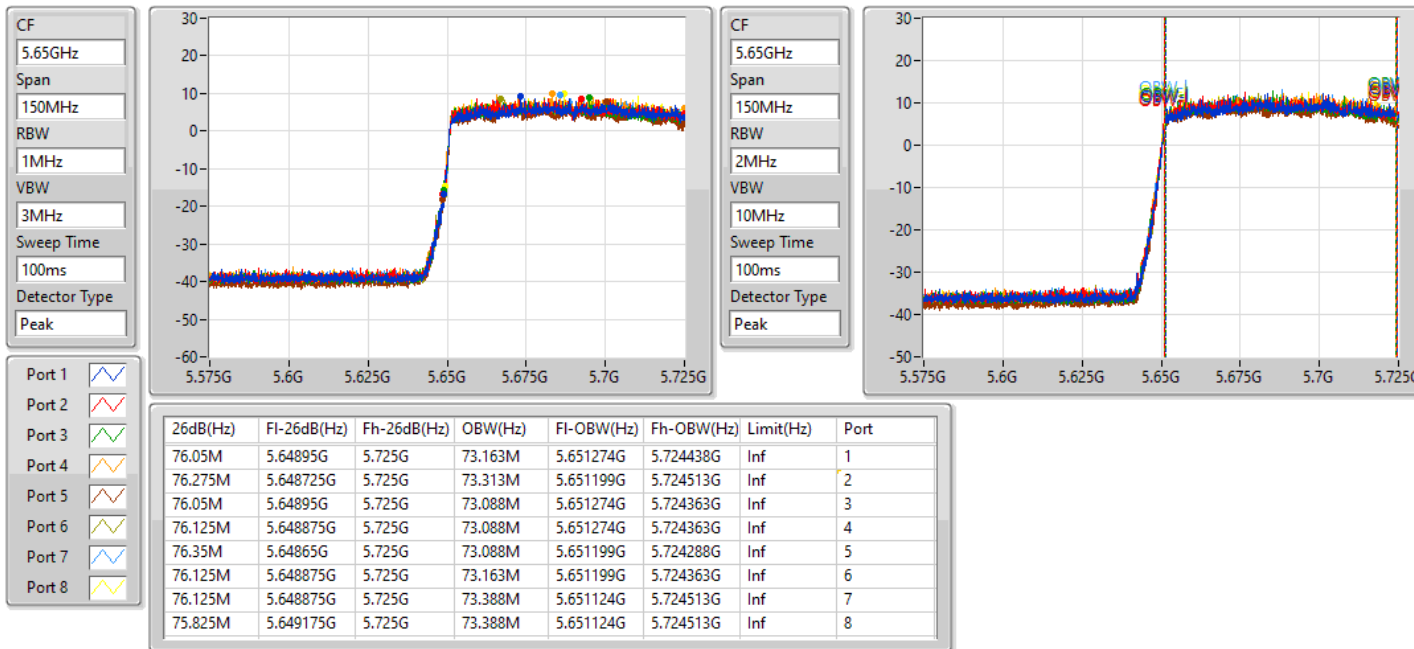


802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5690MHz Straddle 5.47-5.725GHz

14/09/2021

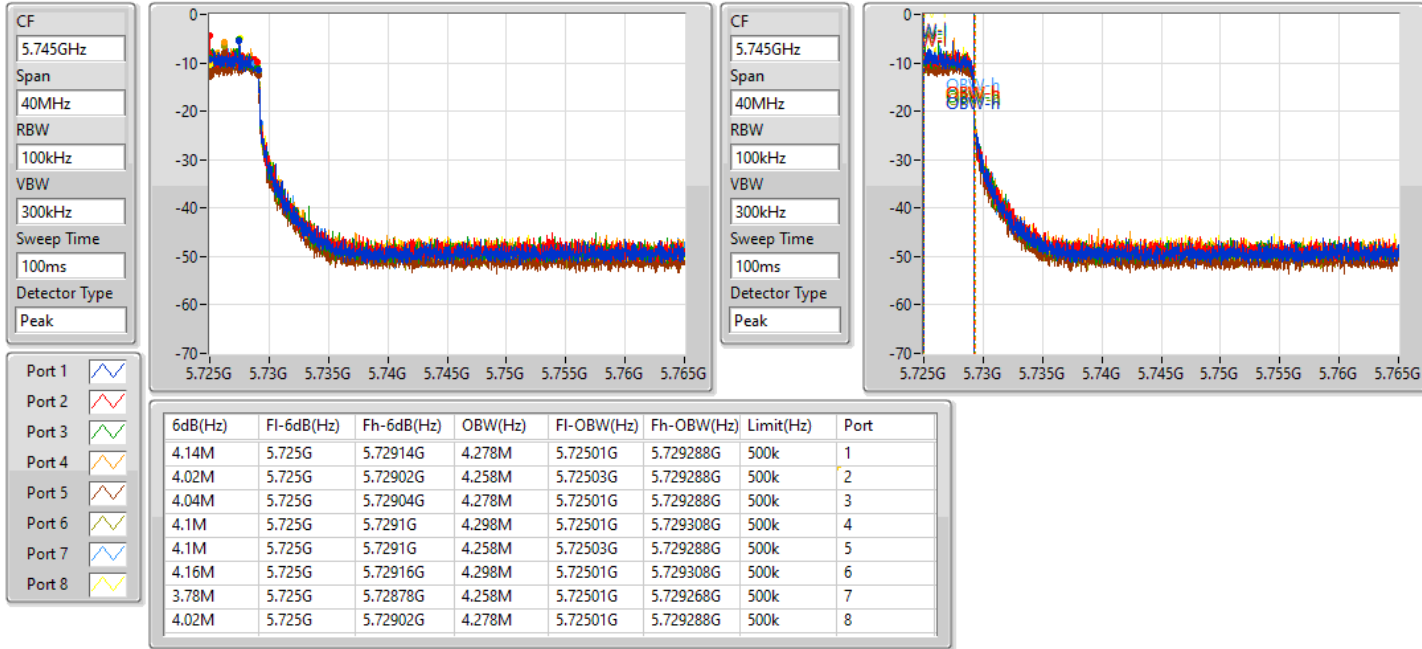


802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5690MHz Straddle 5.725-5.85GHz

14/09/2021

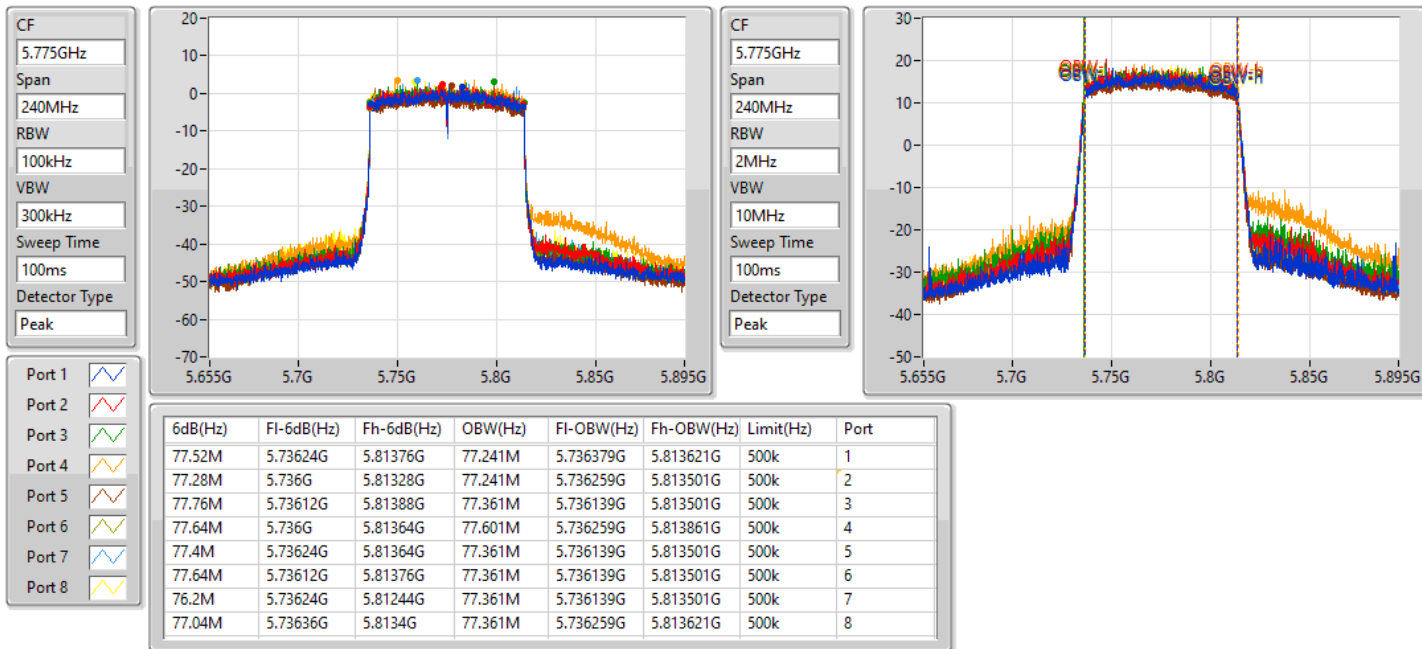


802.11ax HEW80-BF\_Nss2,(MCS0)\_8TX

EBW

5775MHz

14/09/2021





For 8T4S beamforming mode  
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW40-BF_Nss4,(MCSO)_8TX	41.4M	37.961M	38MOD1D	40.62M	37.841M
802.11ax HEW80-BF_Nss4,(MCSO)_8TX	82.92M	77.361M	77M4D1D	81.96M	77.241M

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

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11ax HEW40-BF_Nss4,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	41.04M	37.961M	40.8M	37.901M	40.74M	37.901M	40.98M	37.961M	40.74M	37.961M	40.74M	37.961M	41.16M	37.961M	41.1M	37.901M
5230MHz	Pass	Inf	40.62M	37.961M	41.04M	37.961M	40.98M	37.961M	41.4M	37.961M	41.22M	37.961M	41.04M	37.841M	41.16M	37.901M	40.92M	37.901M
802.11ax HEW80-BF_Nss4,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	82.2M	77.361M	82.92M	77.361M	82.92M	77.361M	82.2M	77.361M	82.2M	77.361M	81.96M	77.361M	82.32M	77.241M	82.2M	77.241M

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 HEW40-BF\_Nss4,(MCS0)\_8TX

EBW

5190MHz

20/09/2021

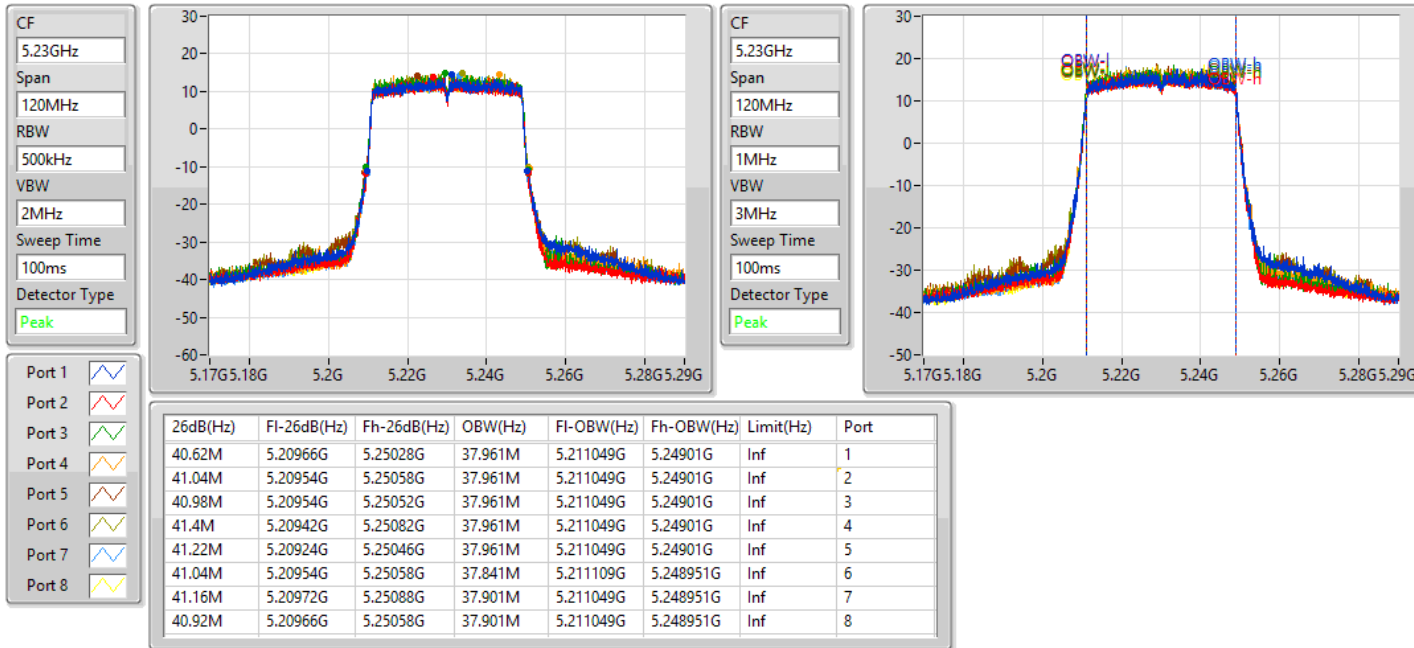


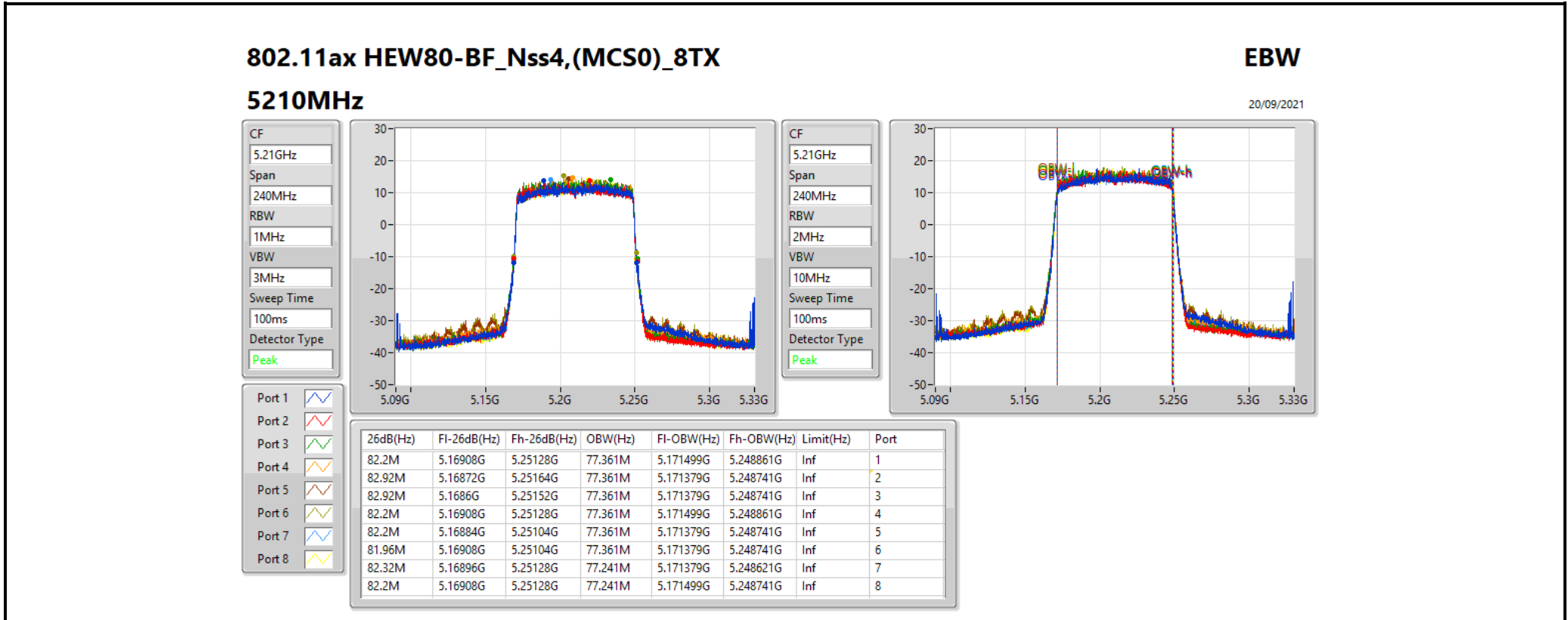
802.11ax HEW40-BF\_Nss4,(MCS0)\_8TX

EBW

5230MHz

20/09/2021







For 80+80MHz  
For 8T1S beamforming mode  
Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW80+80-BF_Nss1,(MCS0)_8TX	82.8M	77.481M	77M5D1D	82.32M	77.361M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW80+80-BF_Nss1,(MCS0)_8TX	82.44M	77.361M	77M4D1D	82.08M	77.241M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW80+80-BF_Nss2,(MCS0)_8TX	82.68M	77.481M	77M5D1D	81.6M	77.241M

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

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11ax HEW80+80-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5210MHz,5290MHz	Pass	Inf	82.8M	77.361M	82.44M	77.361M	82.32M	77.361M	82.44M	77.481M								
5210MHz,#5290MHz	Pass	Inf									82.08M	77.241M	82.44M	77.361M	82.32M	77.241M	82.44M	77.361M
802.11ax HEW80+80-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5530MHz,#5610MHz	Pass	Inf	82.56M	77.361M	81.6M	77.481M	82.44M	77.241M	81.6M	77.241M	81.84M	77.361M	82.68M	77.241M	82.32M	77.361M	82.32M	77.361M

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

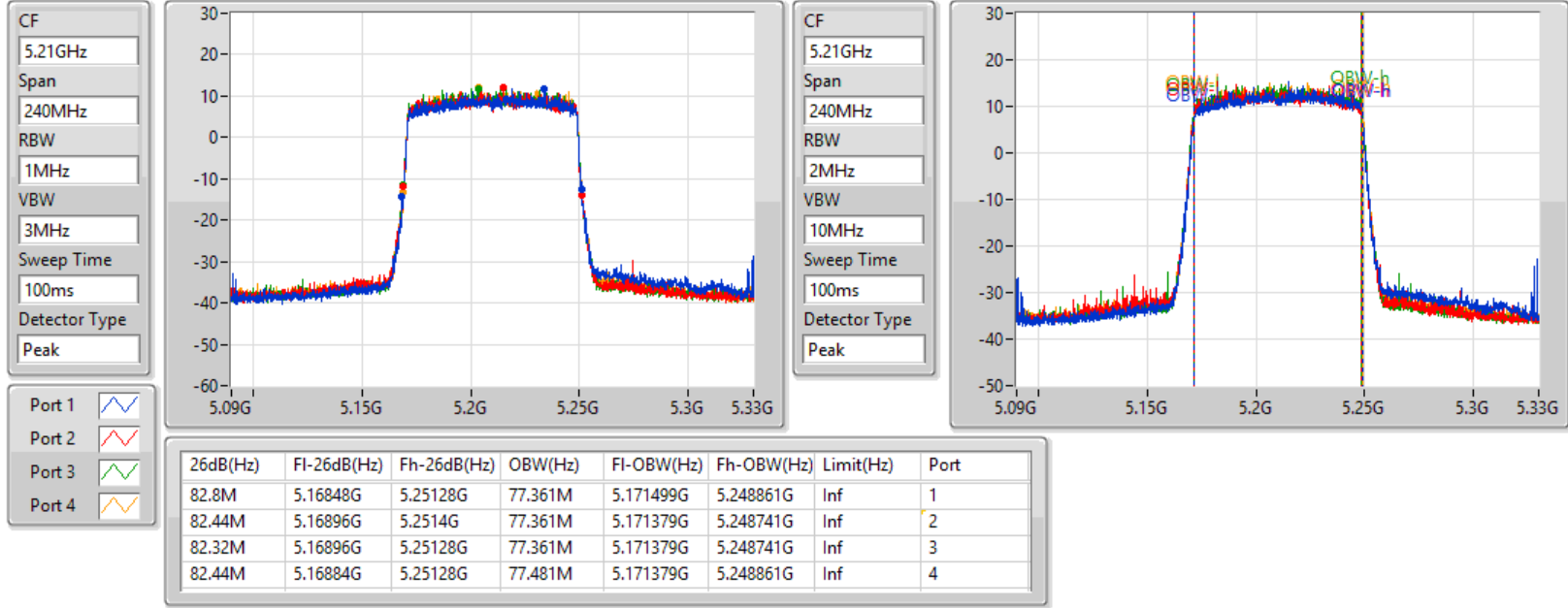


802.11ax HEW80+80-BF\_Nss1,(MCS0)\_8TX

EBW

#5210MHz,5290MHz

20/09/2021

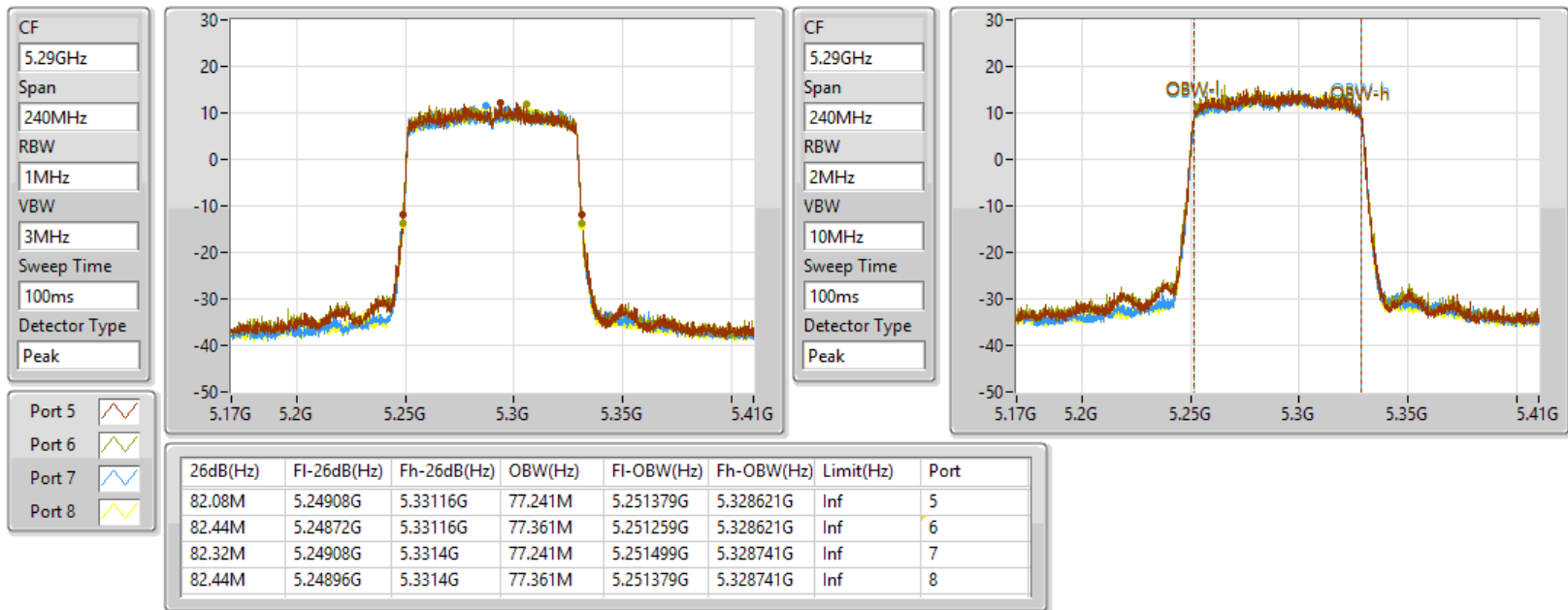


802.11ax HEW80+80-BF\_Nss1,(MCS0)\_8TX

EBW

5210MHz,#5290MHz

20/09/2021



802.11ax HEW80+80-BF\_Nss2,(MCS0)\_8TX

EBW

#5530MHz,#5610MHz

20/09/2021





For 20/40/80MHz  
For 8T1S non beamforming mode  
Summary

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_8TX	28.40	0.69183
802.11ax HEW20_Nss1,(MCS0)_8TX	29.18	0.82794
802.11ax HEW40_Nss1,(MCS0)_8TX	29.84	0.96383
802.11ax HEW80_Nss1,(MCS0)_8TX	26.69	0.46666
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_8TX	22.08	0.16144
802.11ax HEW20_Nss1,(MCS0)_8TX	22.39	0.17338
802.11ax HEW40_Nss1,(MCS0)_8TX	23.68	0.23335
802.11ax HEW80_Nss1,(MCS0)_8TX	23.96	0.24889
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_8TX	22.64	0.18365
802.11ax HEW20_Nss1,(MCS0)_8TX	23.02	0.20045
802.11ax HEW40_Nss1,(MCS0)_8TX	23.91	0.24604
802.11ax HEW80_Nss1,(MCS0)_8TX	23.66	0.23227
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_8TX	29.29	0.84918
802.11ax HEW20_Nss1,(MCS0)_8TX	29.53	0.89743
802.11ax HEW40_Nss1,(MCS0)_8TX	29.95	0.98855
802.11ax HEW80_Nss1,(MCS0)_8TX	29.91	0.97949



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Port 5 (dBm)	Port 6 (dBm)	Port 7 (dBm)	Port 8 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	6.47	19.27	19.24	19.34	19.37	19.41	19.49	19.34	19.21	28.37	29.53
5200MHz	Pass	6.47	19.34	19.28	19.40	19.63	19.44	19.56	19.10	19.17	28.40	29.53
5240MHz	Pass	6.47	19.13	19.09	19.41	19.25	19.43	19.49	18.77	19.18	28.26	29.53
5260MHz	Pass	6.04	13.14	12.75	12.89	12.78	13.19	13.41	13.14	13.02	22.08	23.82
5300MHz	Pass	6.04	12.97	12.44	12.80	13.21	13.31	13.29	12.77	12.97	22.01	23.83
5320MHz	Pass	6.04	12.93	12.82	12.91	13.30	13.22	13.15	12.63	13.04	22.04	23.79
5500MHz	Pass	6.13	13.86	13.40	13.33	13.01	13.97	13.86	13.72	13.66	22.64	23.73
5580MHz	Pass	6.13	13.13	12.96	12.82	13.47	13.32	13.29	13.01	12.94	22.15	23.72
5700MHz	Pass	6.13	12.56	13.35	13.48	13.75	13.46	13.35	13.36	12.83	22.31	23.72
5720MHz Straddle 5.47-5.725GHz	Pass	6.13	12.15	12.59	12.83	12.56	13.14	13.10	12.49	12.34	21.69	22.50
5720MHz Straddle 5.725-5.85GHz	Pass	6.44	5.78	6.45	6.32	6.06	6.24	6.29	5.98	5.98	15.17	29.56
5745MHz	Pass	6.44	19.86	20.02	20.03	19.86	20.19	20.44	20.12	20.25	29.13	29.56
5785MHz	Pass	6.44	19.52	19.96	20.08	20.13	20.73	20.83	20.06	19.74	29.18	29.56
5825MHz	Pass	6.44	19.55	19.84	20.42	20.88	20.67	20.69	19.94	19.92	29.29	29.56
802.11ax HEW20_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	6.47	19.94	19.90	20.17	20.34	19.96	20.05	20.01	19.97	29.08	29.53
5200MHz	Pass	6.47	20.02	19.84	20.35	20.38	20.17	20.46	20.01	19.92	29.18	29.53
5240MHz	Pass	6.47	19.93	19.73	20.11	19.99	20.30	20.34	19.87	19.92	29.06	29.53
5260MHz	Pass	6.04	13.56	12.93	13.26	13.15	13.76	13.93	13.05	13.11	22.39	23.94
5300MHz	Pass	6.04	13.15	12.75	13.01	13.20	13.78	13.81	13.10	13.22	22.30	23.94
5320MHz	Pass	6.04	13.25	12.97	13.19	13.47	13.40	13.16	12.92	13.13	22.22	23.94
5500MHz	Pass	6.13	13.13	13.67	13.53	13.34	14.17	14.21	13.72	13.91	22.76	23.85
5580MHz	Pass	6.13	13.97	13.42	13.31	14.24	13.81	14.19	13.84	13.72	22.85	23.85
5700MHz	Pass	6.13	13.25	13.97	14.27	14.49	14.22	14.15	13.84	13.56	23.02	23.85
5720MHz Straddle 5.47-5.725GHz	Pass	6.13	12.15	12.68	12.80	12.88	13.45	13.40	12.68	12.34	21.85	22.76
5720MHz Straddle 5.725-5.85GHz	Pass	6.44	6.83	6.72	7.19	7.37	7.88	7.92	6.63	6.88	16.23	29.56
5745MHz	Pass	6.44	19.96	19.93	20.05	19.81	20.36	20.55	20.07	20.38	29.18	29.56
5785MHz	Pass	6.44	19.62	20.19	20.27	20.66	20.57	20.69	20.02	19.99	29.30	29.56
5825MHz	Pass	6.44	19.87	19.98	20.37	21.25	21.05	21.02	20.14	20.05	29.53	29.56
802.11ax HEW40_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	3.47	17.14	17.05	17.35	17.01	17.18	16.93	17.11	16.89	26.12	30.00
5230MHz	Pass	3.47	20.81	20.36	21.09	20.93	20.93	21.14	20.52	20.64	29.84	30.00
5270MHz	Pass	3.04	14.83	14.43	14.63	14.49	14.93	14.84	14.41	14.62	23.68	23.98
5310MHz	Pass	3.04	14.59	14.14	14.52	14.88	14.96	14.86	14.38	14.45	23.64	23.98
5510MHz	Pass	3.13	14.81	14.56	14.53	14.47	15.03	15.07	14.65	14.52	23.74	23.98
5550MHz	Pass	3.13	14.90	14.08	14.44	15.07	14.93	15.09	14.44	14.73	23.75	23.98
5670MHz	Pass	3.13	14.59	14.71	14.81	15.24	14.73	14.90	15.23	14.79	23.91	23.98
5710MHz Straddle 5.47-5.725GHz	Pass	3.13	14.11	14.46	14.70	14.82	14.78	14.76	14.46	14.31	23.59	23.98
5710MHz Straddle 5.725-5.85GHz	Pass	3.44	3.63	4.22	4.59	4.72	4.58	4.56	4.18	3.90	13.34	30.00
5755MHz	Pass	3.44	20.79	20.62	21.05	21.46	20.52	21.01	20.89	20.93	29.95	30.00
5795MHz	Pass	3.44	20.68	20.86	21.14	21.55	20.93	20.71	20.79	20.52	29.94	30.00
802.11ax HEW80_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	3.47	17.57	17.81	17.62	17.57	17.77	17.52	17.68	17.75	26.69	30.00
5290MHz	Pass	3.04	14.83	15.07	15.04	15.39	14.80	14.70	14.97	14.58	23.96	23.98
5530MHz	Pass	3.13	14.93	14.22	14.49	14.84	14.87	14.64	14.63	14.32	23.66	23.98
5610MHz	Pass	3.13	14.71	14.36	14.52	14.71	14.96	14.28	14.85	13.95	23.58	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	3.13	14.11	14.34	14.51	14.87	14.47	14.51	14.72	14.28	23.51	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	3.44	-0.11	0.13	0.41	0.98	0.10	0.11	0.41	-0.22	9.27	30.00
5775MHz	Pass	3.44	20.54	20.64	21.05	21.58	20.91	20.96	20.87	20.35	29.91	30.00

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

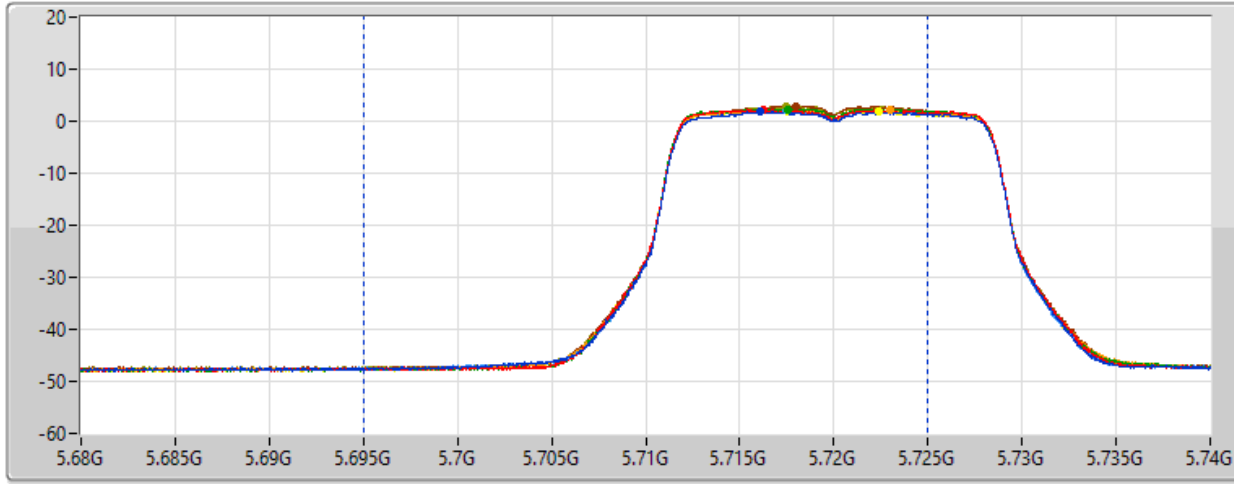
### 802.11a\_Nss1,(6Mbps)\_8TX

### AV Power

#### 5720MHz Straddle 5.47-5.725GHz\_TnomVnom

18/09/2021

CF  
5.71GHz  
Span  
60MHz  
RBW  
1MHz  
VBW  
3MHz  
Sweep Time  
20ms  
Detector Type  
RMS  
CP BW  
30MHz



Port 1  
Port 2  
Port 3  
Port 4  
Port 5  
Port 6  
Port 7  
Port 8

Sum=Total Power  
PX=Port X

Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
21.69	12.15	12.59	12.83	12.56	13.14	13.10	12.49	12.34

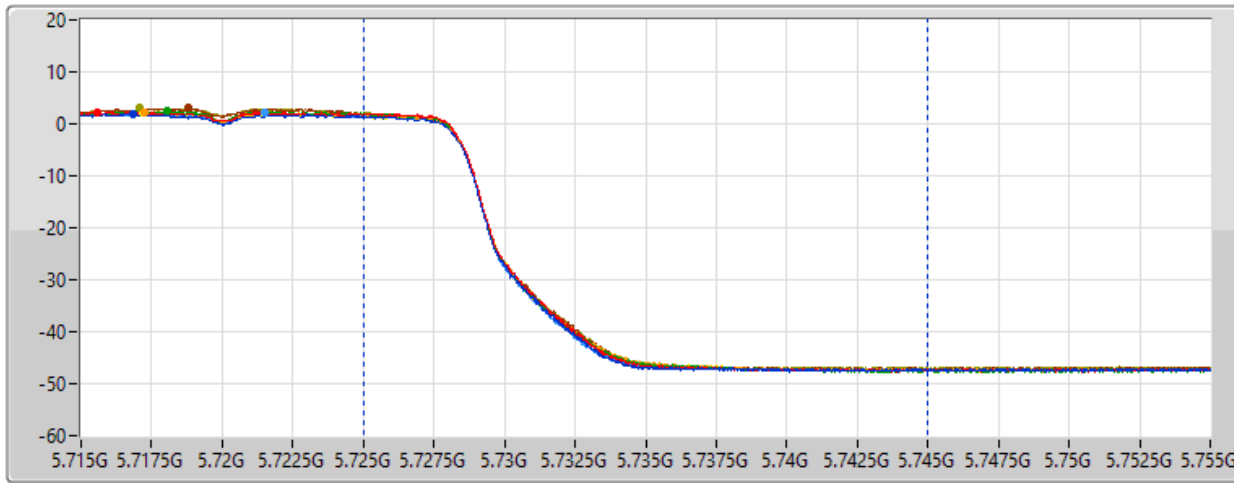
### 802.11a\_Nss1,(6Mbps)\_8TX

### AV Power

#### 5720MHz Straddle 5.725-5.85GHz\_TnomVnom

18/09/2021

CF  
5.735GHz  
Span  
40MHz  
RBW  
1MHz  
VBW  
3MHz  
Sweep Time  
20ms  
Detector Type  
RMS  
CP BW  
20MHz



Port 1  
Port 2  
Port 3  
Port 4  
Port 5  
Port 6  
Port 7  
Port 8

Sum=Total Power  
PX=Port X

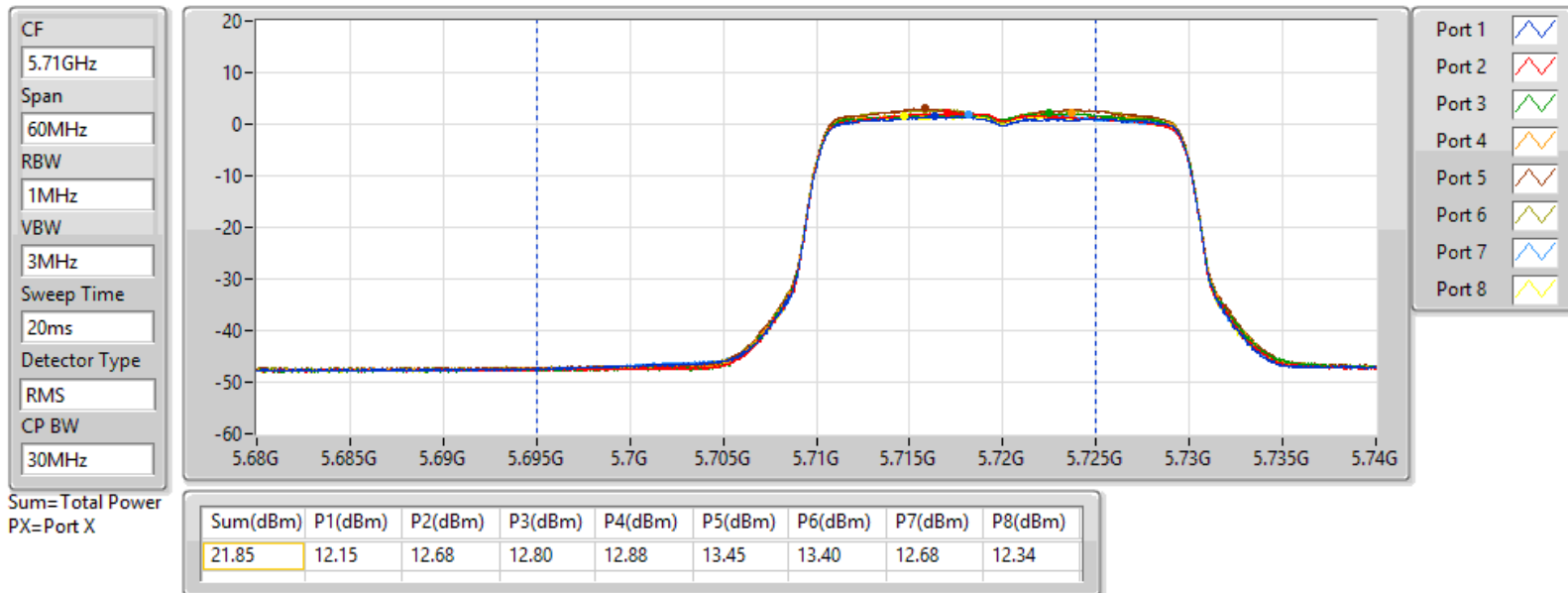
Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
15.17	5.78	6.45	6.32	6.06	6.24	6.29	5.98	5.98

### 802.11ax HEW20\_Nss1,(MCS0)\_8TX

### AV Power

#### 5720MHz Straddle 5.47-5.725GHz\_TnomVnom

18/09/2021

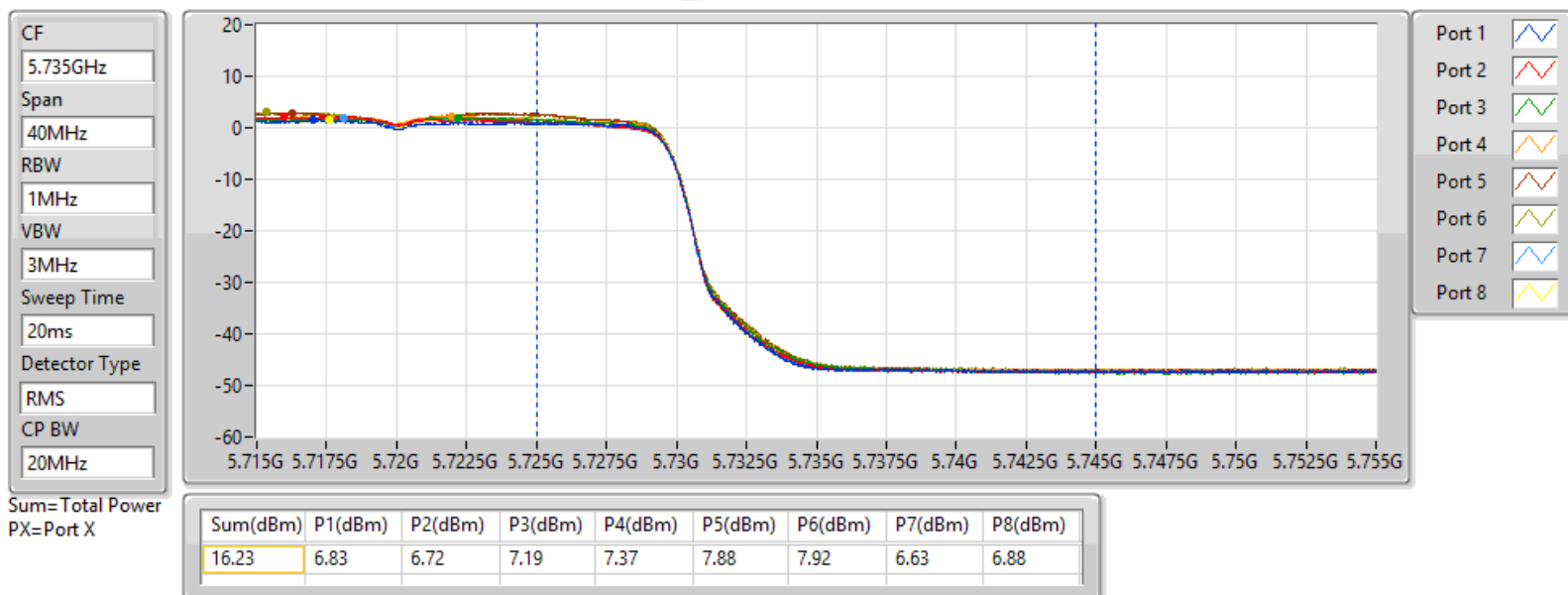


### 802.11ax HEW20\_Nss1,(MCS0)\_8TX

### AV Power

#### 5720MHz Straddle 5.725-5.85GHz\_TnomVnom

18/09/2021

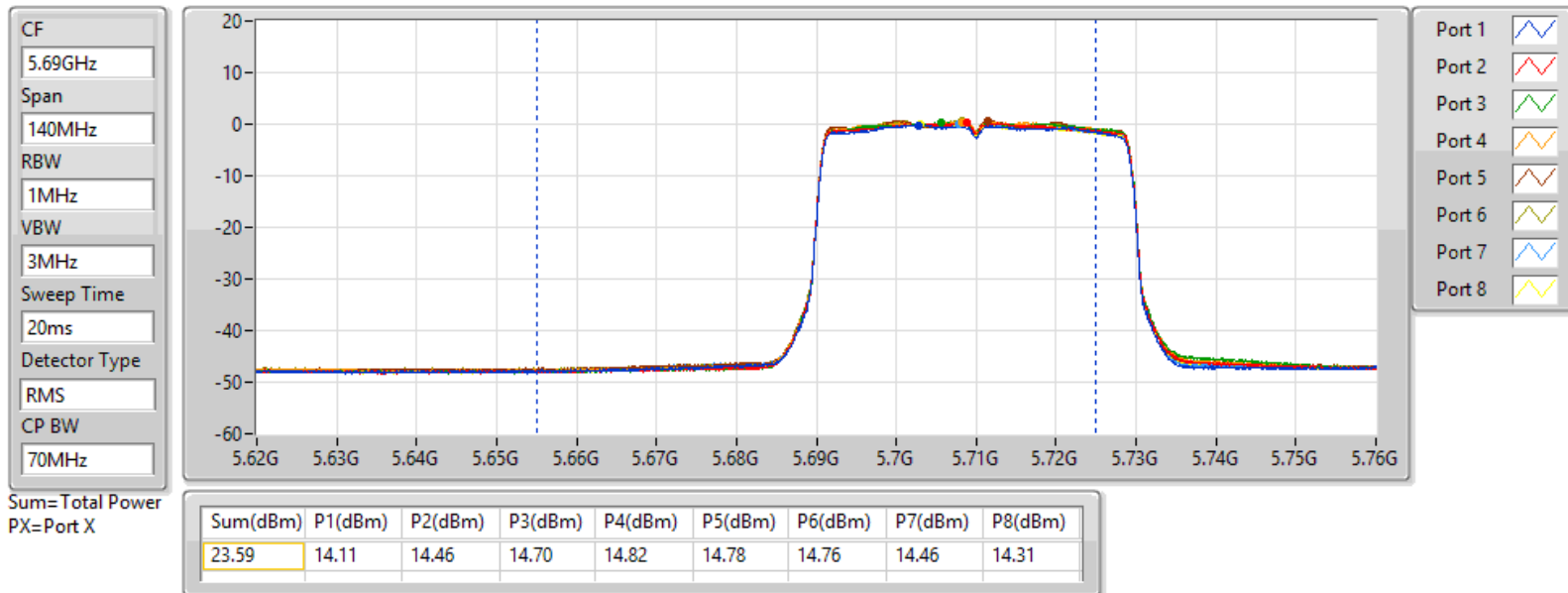


### 802.11ax HEW40\_Nss1,(MCS0)\_8TX

### AV Power

#### 5710MHz Straddle 5.47-5.725GHz\_TnomVnom

19/09/2021

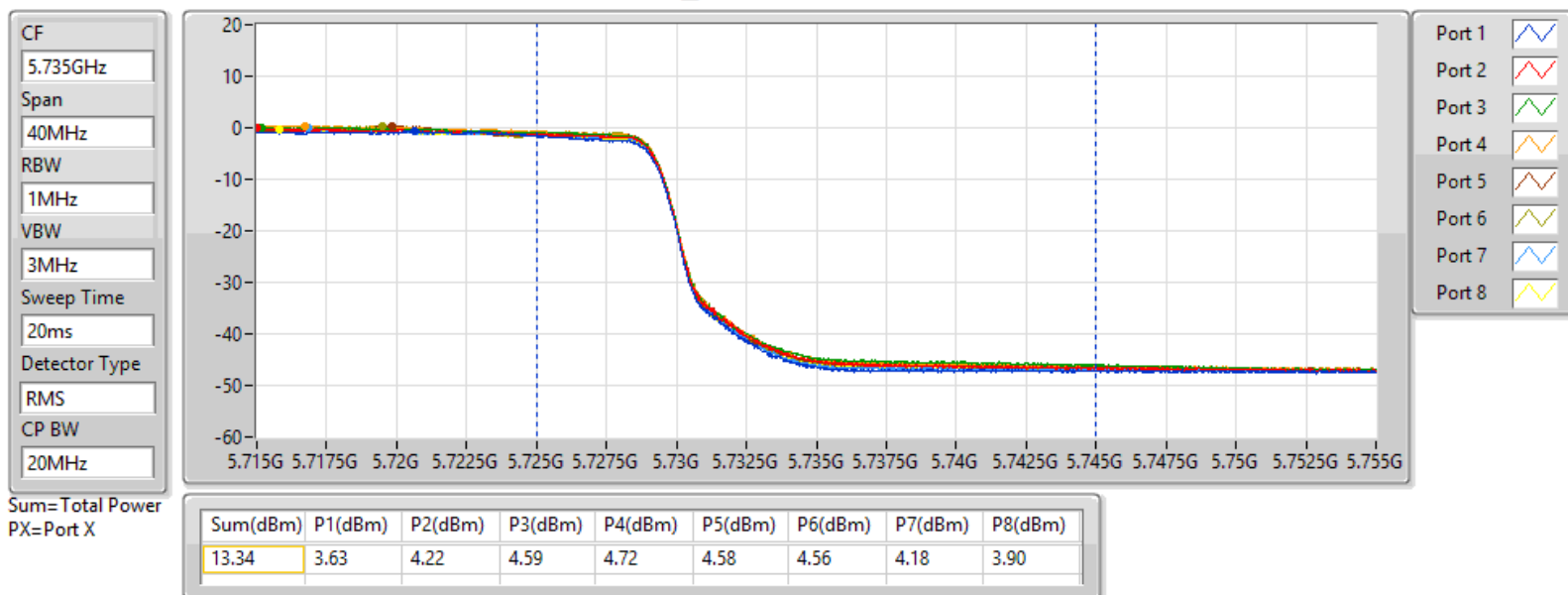


### 802.11ax HEW40\_Nss1,(MCS0)\_8TX

### AV Power

#### 5710MHz Straddle 5.725-5.85GHz\_TnomVnom

19/09/2021

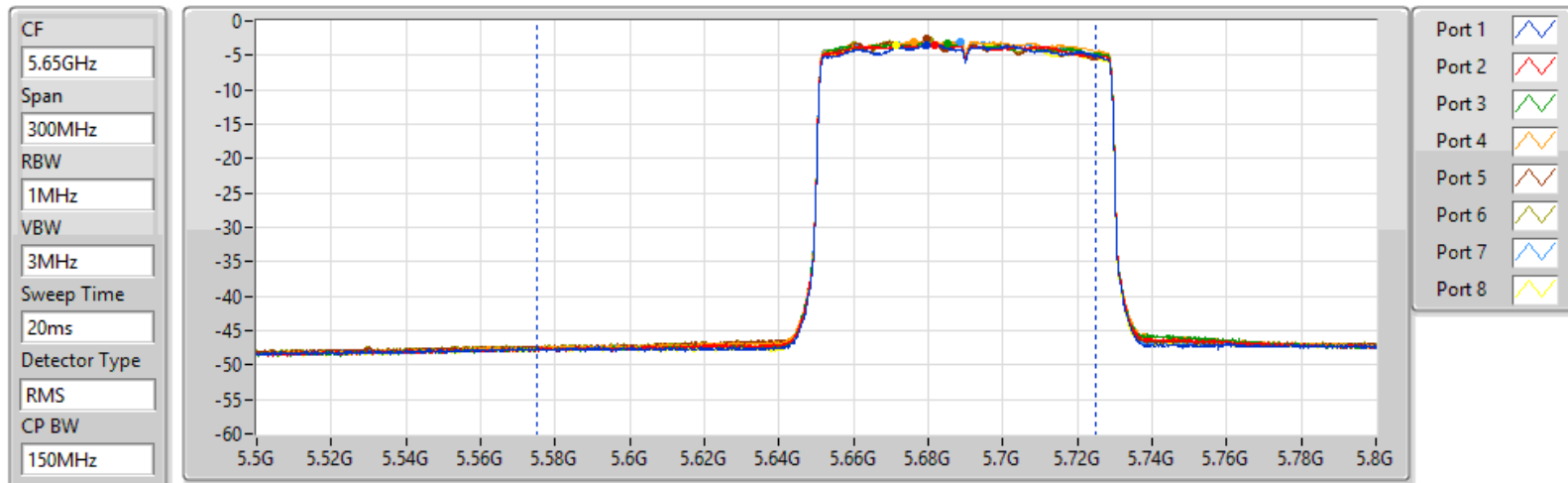


### 802.11ax HEW80\_Nss1,(MCS0)\_8TX

### AV Power

#### 5690MHz Straddle 5.47-5.725GHz\_TnomVnom

19/09/2021



Sum=Total Power  
PX=Port X

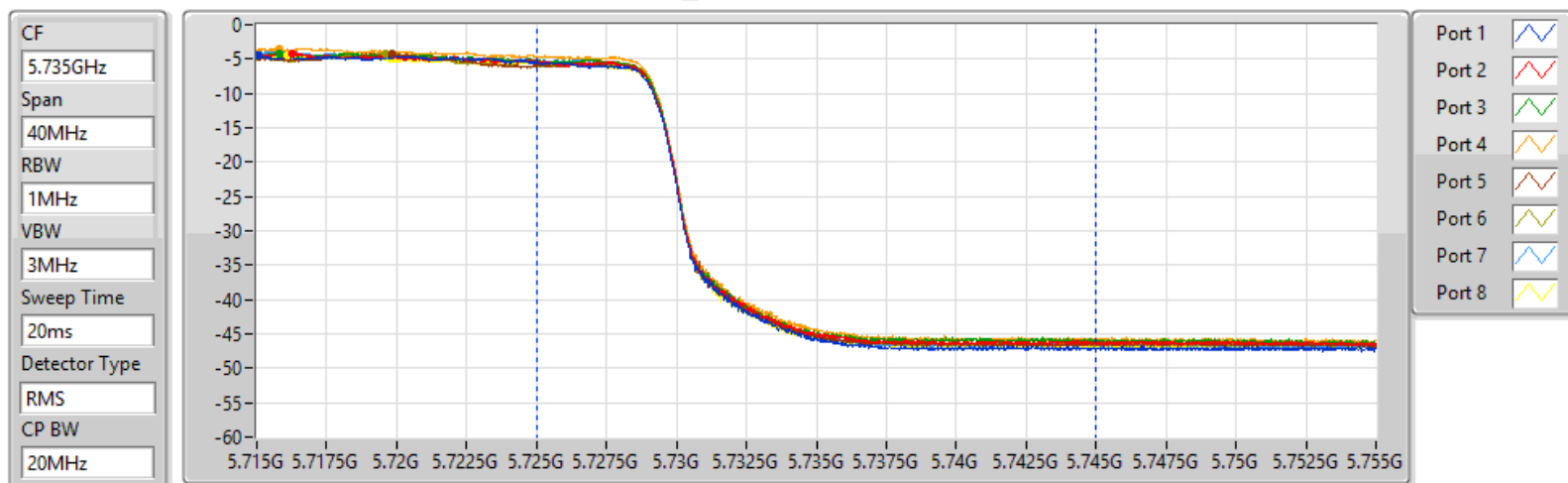
Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
23.51	14.11	14.34	14.51	14.87	14.47	14.51	14.72	14.28

### 802.11ax HEW80\_Nss1,(MCS0)\_8TX

### AV Power

#### 5690MHz Straddle 5.725-5.85GHz\_TnomVnom

19/09/2021



Sum=Total Power  
PX=Port X

Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
9.27	-0.11	0.13	0.41	0.98	0.10	0.11	0.41	-0.22





For 8T1S beamforming mode  
Summary

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	28.72	0.74473
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	28.73	0.74645
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	24.66	0.29242
5.25-5.35GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	22.31	0.17022
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	22.05	0.16032
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	21.92	0.15560
5.47-5.725GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	22.43	0.17498
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	22.59	0.18155
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	22.63	0.18323
5.725-5.85GHz	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	28.78	0.75509
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	28.84	0.76560
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	28.76	0.75162



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Port 5 (dBm)	Port 6 (dBm)	Port 7 (dBm)	Port 8 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	7.19	19.16	19.11	18.49	19.21	19.25	18.68	19.12	18.75	28.01	28.81
5200MHz	Pass	7.19	19.97	19.49	19.96	19.77	19.85	19.25	19.80	19.35	28.72	28.81
5240MHz	Pass	7.19	19.68	19.38	19.97	19.58	19.56	19.51	19.59	19.63	28.65	28.81
5260MHz	Pass	7.61	13.06	12.74	12.89	13.09	12.59	13.05	12.82	12.78	21.91	22.37
5300MHz	Pass	7.61	13.02	13.07	13.13	13.38	13.25	13.16	13.37	13.18	22.23	22.37
5320MHz	Pass	7.61	13.42	13.12	13.08	13.37	13.13	13.19	13.38	13.55	22.31	22.37
5500MHz	Pass	7.31	13.77	13.23	13.10	13.11	12.95	13.18	13.56	13.45	22.33	22.67
5580MHz	Pass	7.31	13.86	13.28	13.13	13.79	13.41	13.21	13.27	13.17	22.43	22.67
5700MHz	Pass	7.31	12.93	13.32	13.30	13.77	13.64	13.20	13.11	13.67	22.41	22.67
5720MHz Straddle 5.47-5.725GHz	Pass	7.31	11.94	12.07	12.23	12.20	12.34	12.05	12.05	12.09	21.15	21.58
5720MHz Straddle 5.725-5.85GHz	Pass	7.04	6.38	7.02	6.77	6.36	7.19	6.50	6.27	6.52	15.67	28.96
5745MHz	Pass	7.04	19.55	19.51	19.90	19.76	19.35	19.74	19.47	19.55	28.64	28.96
5785MHz	Pass	7.04	19.38	19.75	19.88	20.45	19.11	19.89	19.76	19.64	28.78	28.96
5825MHz	Pass	7.04	19.08	19.41	20.05	19.55	19.04	19.93	19.12	19.76	28.54	28.96
802.11ax HEW40-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	7.19	15.26	15.12	15.36	15.62	15.23	15.02	15.18	15.29	24.29	28.81
5230MHz	Pass	7.19	19.83	19.46	20.07	19.75	19.71	19.54	19.69	19.52	28.73	28.81
5270MHz	Pass	7.61	13.18	13.02	12.97	13.24	12.67	13.07	12.87	13.10	22.05	22.37
5310MHz	Pass	7.61	13.03	12.84	13.06	12.91	12.76	12.83	13.15	13.03	21.98	22.37
5510MHz	Pass	7.31	13.94	13.53	13.30	13.72	13.08	13.49	13.69	13.64	22.59	22.67
5550MHz	Pass	7.31	13.87	13.21	13.59	13.92	13.46	13.40	12.88	13.35	22.50	22.67
5670MHz	Pass	7.31	13.25	13.14	13.51	13.94	13.48	13.15	13.64	13.39	22.48	22.67
5710MHz Straddle 5.47-5.725GHz	Pass	7.31	13.29	13.46	13.56	13.80	13.75	13.25	13.30	13.85	22.57	22.67
5710MHz Straddle 5.725-5.85GHz	Pass	7.04	3.09	3.56	3.60	3.32	3.81	3.15	3.05	3.78	12.46	28.96
5755MHz	Pass	7.04	19.65	19.23	20.11	20.24	19.38	19.89	19.74	19.81	28.80	28.96
5795MHz	Pass	7.04	19.36	19.80	20.01	20.30	19.32	20.09	19.70	19.83	28.84	28.96
802.11ax HEW80-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	7.19	15.81	15.62	15.61	15.72	15.67	15.44	15.53	15.61	24.66	28.81
5290MHz	Pass	7.61	13.05	12.78	12.72	13.01	12.86	12.67	13.03	12.95	21.92	22.37
5530MHz	Pass	7.31	13.81	13.31	13.39	13.77	13.41	13.53	13.44	13.52	22.56	22.67
5610MHz	Pass	7.31	13.76	13.29	13.43	13.58	13.17	13.11	13.49	13.22	22.42	22.67
5690MHz Straddle 5.47-5.725GHz	Pass	7.31	13.37	13.34	13.63	14.13	13.72	13.24	13.51	13.76	22.63	22.67
5690MHz Straddle 5.725-5.85GHz	Pass	7.04	-0.97	-1.03	-0.86	-0.58	-0.42	-1.31	-1.10	-0.56	8.19	28.96
5775MHz	Pass	7.04	19.48	19.68	20.03	20.19	19.29	19.80	19.58	19.75	28.76	28.96

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

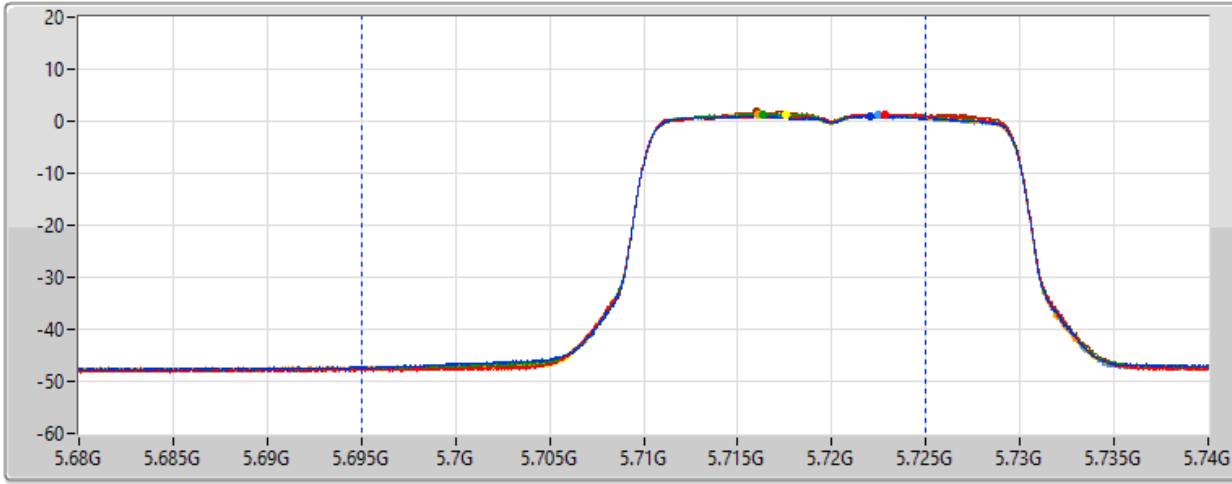
### 802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

### AV Power

#### 5720MHz Straddle 5.47-5.725GHz\_TnomVnom

13/09/2021

CF  
5.71GHz  
Span  
60MHz  
RBW  
1MHz  
VBW  
3MHz  
Sweep Time  
20ms  
Detector Type  
RMS  
CP BW  
30MHz



Port 1  
Port 2  
Port 3  
Port 4  
Port 5  
Port 6  
Port 7  
Port 8

Sum=Total Power  
PX=Port X

Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
21.15	11.94	12.07	12.23	12.20	12.34	12.05	12.05	12.09

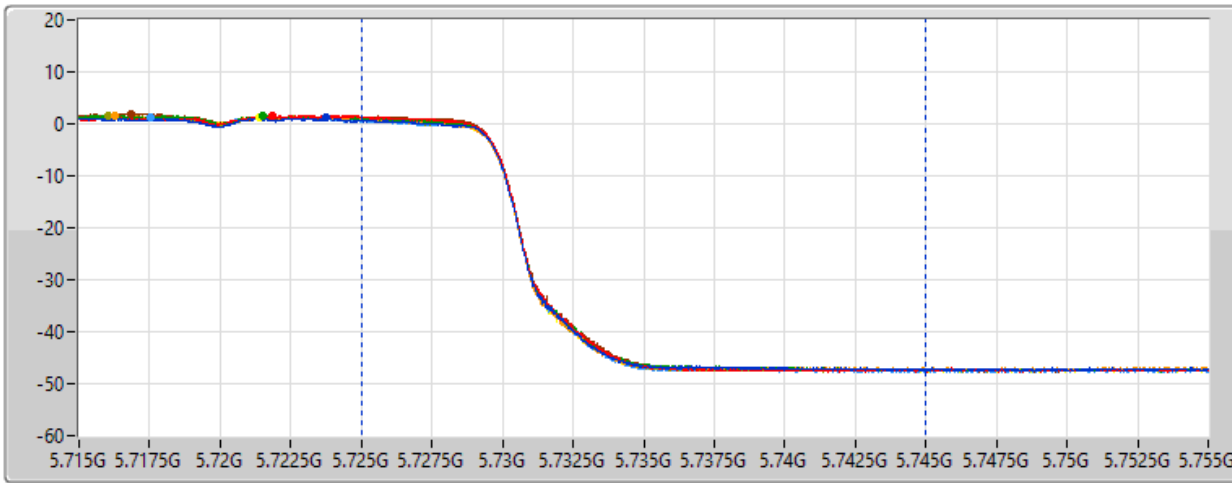
### 802.11ax HEW20-BF\_Nss1,(MCS0)\_8TX

### AV Power

#### 5720MHz Straddle 5.725-5.85GHz\_TnomVnom

13/09/2021

CF  
5.735GHz  
Span  
40MHz  
RBW  
1MHz  
VBW  
3MHz  
Sweep Time  
20ms  
Detector Type  
RMS  
CP BW  
20MHz



Port 1  
Port 2  
Port 3  
Port 4  
Port 5  
Port 6  
Port 7  
Port 8

Sum=Total Power  
PX=Port X

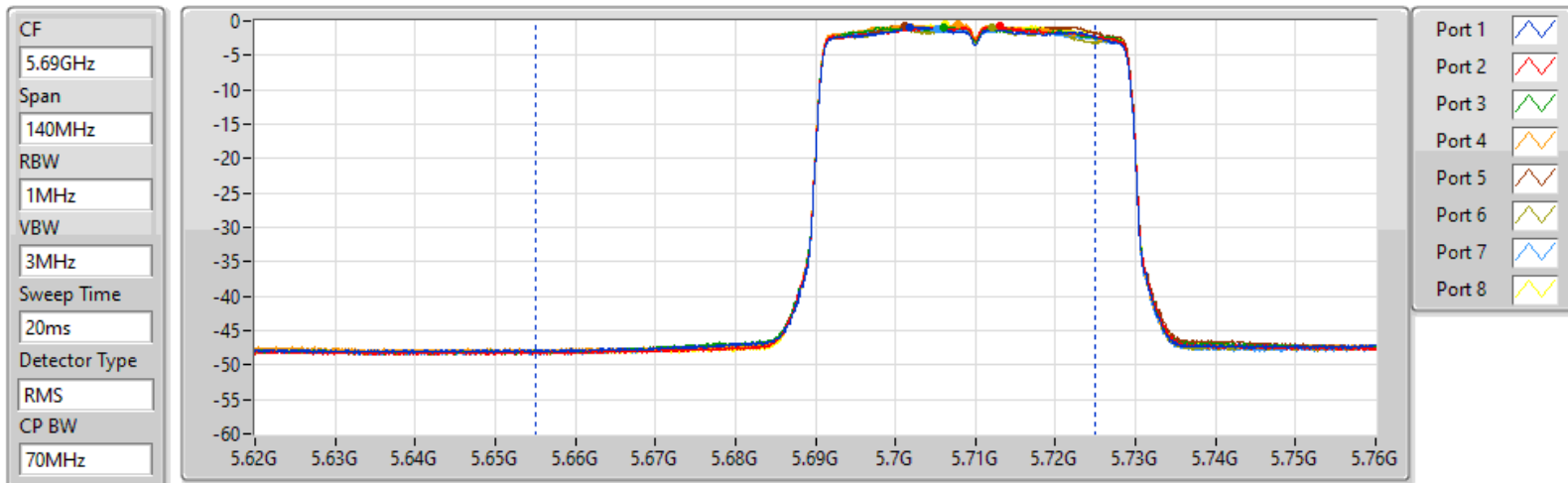
Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
15.67	6.38	7.02	6.77	6.36	7.19	6.50	6.27	6.52

### 802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

### AV Power

#### 5710MHz Straddle 5.47-5.725GHz\_TnomVnom

13/09/2021



Sum=Total Power  
PX=Port X

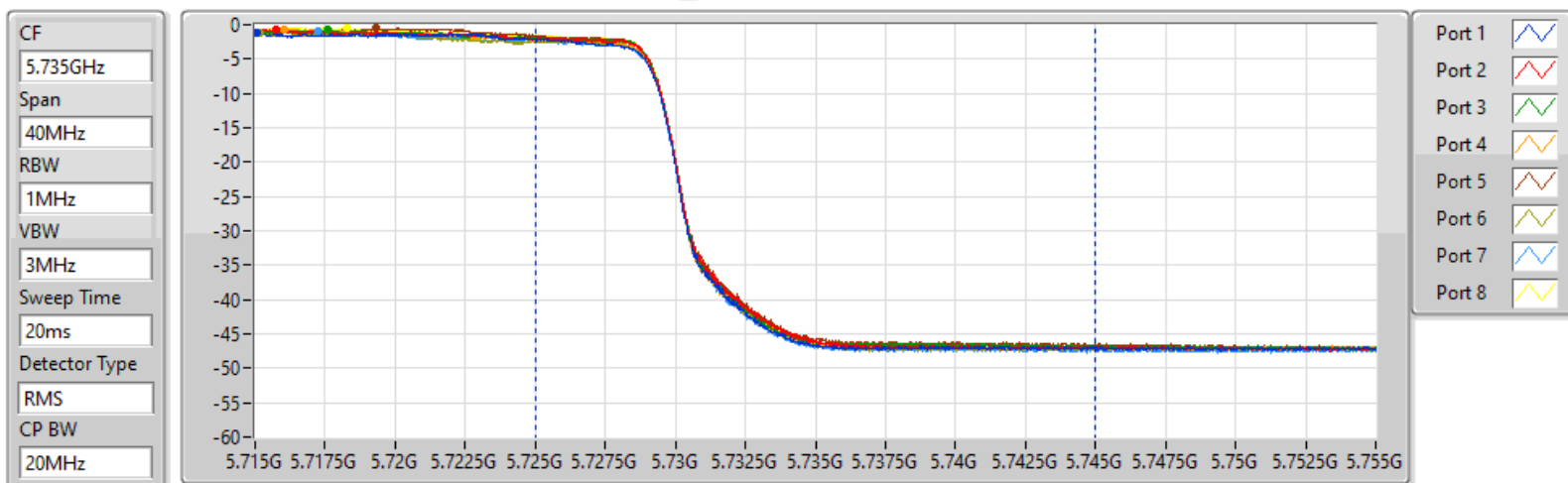
Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
22.57	13.29	13.46	13.56	13.80	13.75	13.25	13.30	13.85

### 802.11ax HEW40-BF\_Nss1,(MCS0)\_8TX

### AV Power

#### 5710MHz Straddle 5.725-5.85GHz\_TnomVnom

13/09/2021



Sum=Total Power  
PX=Port X

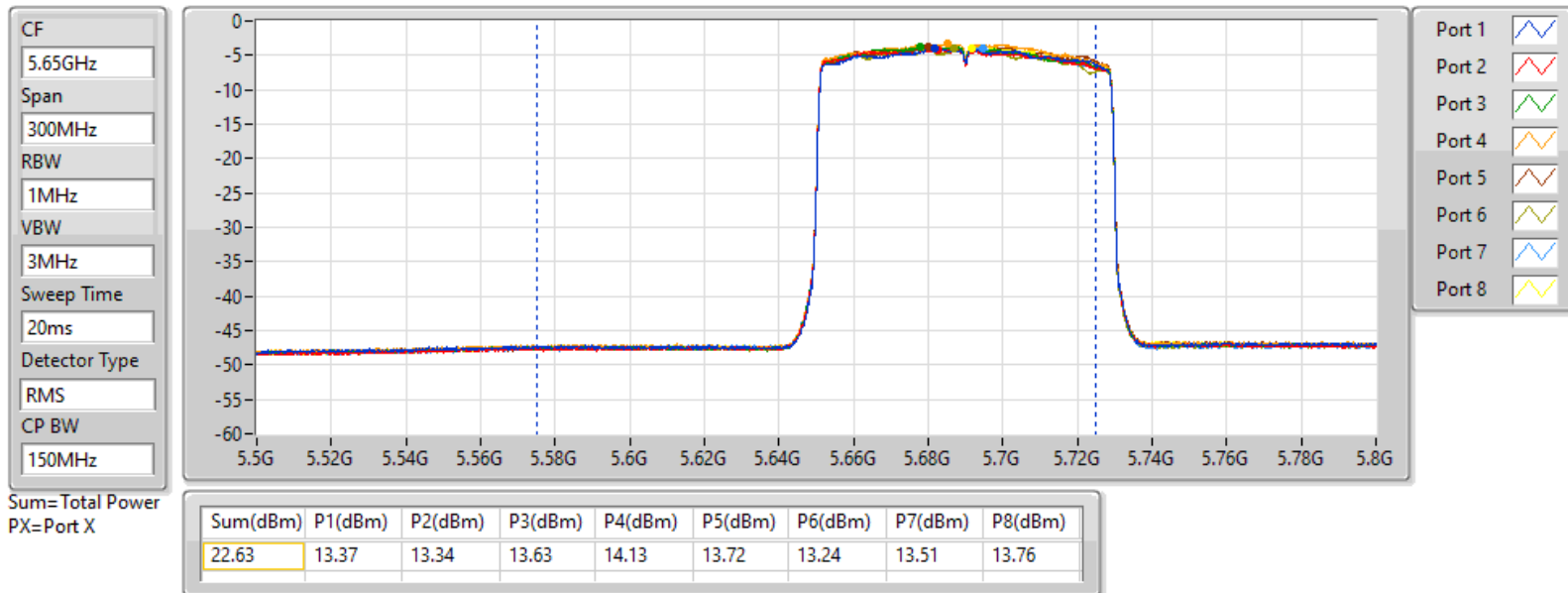
Sum(dBm)	P1(dBm)	P2(dBm)	P3(dBm)	P4(dBm)	P5(dBm)	P6(dBm)	P7(dBm)	P8(dBm)
12.46	3.09	3.56	3.60	3.32	3.81	3.15	3.05	3.78

### 802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

### AV Power

#### 5690MHz Straddle 5.47-5.725GHz\_TnomVnom

13/09/2021

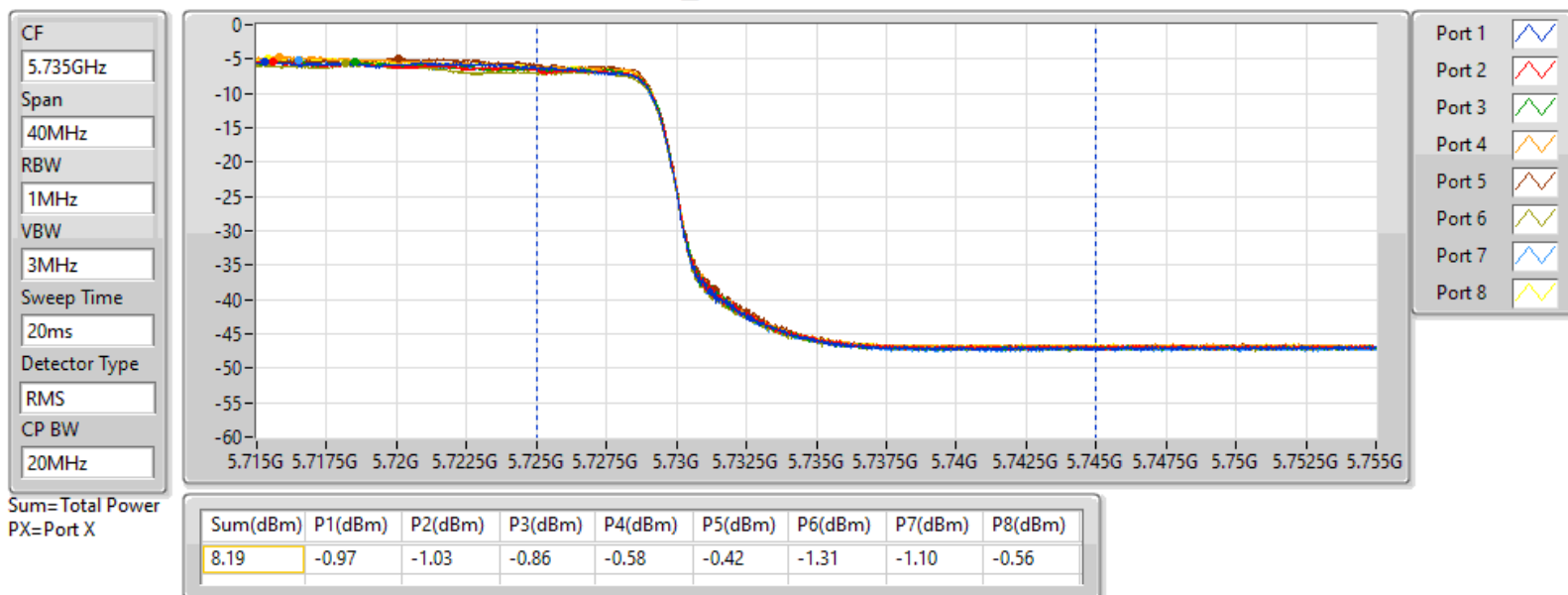


### 802.11ax HEW80-BF\_Nss1,(MCS0)\_8TX

### AV Power

#### 5690MHz Straddle 5.725-5.85GHz\_TnomVnom

13/09/2021





For 8T2S beamforming mode  
Summary

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	29.98	0.99541
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	29.53	0.89743
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	26.38	0.43451
5.25-5.35GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	23.81	0.24044
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	23.54	0.22594
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	23.51	0.22439
5.47-5.725GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	23.96	0.24889
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	23.90	0.24547
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	23.75	0.23714
5.725-5.85GHz	-	-
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	29.93	0.98401
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	29.52	0.89536
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	29.78	0.95060



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Port 5 (dBm)	Port 6 (dBm)	Port 7 (dBm)	Port 8 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ax HEW20-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	4.19	21.05	20.83	21.14	21.26	21.08	20.38	21.05	20.31	29.93	30.00
5200MHz	Pass	4.19	21.13	20.71	21.29	21.05	20.98	20.62	21.14	20.55	29.97	30.00
5240MHz	Pass	4.19	21.07	20.74	21.27	21.03	20.96	20.72	21.05	20.73	29.98	30.00
5260MHz	Pass	4.61	14.94	14.47	14.88	14.86	14.73	15.07	14.59	14.70	23.81	23.98
5300MHz	Pass	4.61	14.53	14.51	14.76	14.78	14.67	14.63	14.95	14.54	23.70	23.98
5320MHz	Pass	4.61	14.78	14.82	14.65	14.79	14.46	14.77	14.88	14.80	23.78	23.98
5500MHz	Pass	4.31	15.33	14.95	14.70	14.90	14.45	14.80	15.23	15.01	23.96	23.98
5580MHz	Pass	4.31	15.28	14.71	14.54	15.12	14.77	14.60	14.77	14.50	23.83	23.98
5700MHz	Pass	4.31	14.53	14.77	14.37	14.98	14.85	14.49	14.63	14.79	23.71	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	4.31	13.51	13.61	14.01	13.82	14.07	13.68	13.54	13.89	22.80	22.86
5720MHz Straddle 5.725-5.85GHz	Pass	4.04	8.35	8.07	8.72	8.08	8.51	8.21	7.85	8.16	17.28	30.00
5745MHz	Pass	4.04	20.46	20.29	21.11	21.16	20.38	20.87	20.74	20.85	29.77	30.00
5785MHz	Pass	4.04	20.44	20.70	21.16	21.64	20.24	20.96	20.90	20.97	29.93	30.00
5825MHz	Pass	4.04	20.24	20.37	21.42	20.74	20.26	20.85	20.63	20.83	29.71	30.00
802.11ax HEW40-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	4.19	18.88	18.13	17.90	19.57	17.87	18.60	18.06	17.75	27.42	30.00
5230MHz	Pass	4.19	20.70	20.71	21.00	20.63	19.18	20.18	20.66	20.70	29.53	30.00
5270MHz	Pass	4.61	14.73	14.55	14.46	14.77	13.93	14.58	14.24	14.61	23.52	23.98
5310MHz	Pass	4.61	14.53	14.56	14.54	14.70	13.96	14.58	14.59	14.58	23.54	23.98
5510MHz	Pass	4.31	15.00	14.94	14.32	14.79	13.98	14.85	14.78	14.65	23.71	23.98
5550MHz	Pass	4.31	14.89	14.22	14.55	15.06	14.19	14.58	14.48	14.36	23.58	23.98
5670MHz	Pass	4.31	14.39	14.50	14.78	14.94	13.53	14.51	14.55	14.58	23.52	23.98
5710MHz Straddle 5.47-5.725GHz	Pass	4.31	14.70	15.33	14.93	15.21	13.90	14.57	14.87	15.24	23.90	23.98
5710MHz Straddle 5.725-5.85GHz	Pass	4.04	4.22	5.17	5.08	4.89	3.53	4.35	4.62	4.87	13.65	30.00
5755MHz	Pass	4.04	20.54	20.72	21.10	21.14	19.20	19.94	20.41	20.44	29.51	30.00
5795MHz	Pass	4.04	20.53	20.68	20.71	21.33	19.44	20.12	20.46	20.42	29.52	30.00
802.11ax HEW80-BF_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	4.19	17.30	16.87	17.70	18.25	17.29	17.48	16.98	16.70	26.38	30.00
5290MHz	Pass	4.61	14.62	14.59	14.14	14.79	13.92	14.70	14.51	14.53	23.51	23.98
5530MHz	Pass	4.31	14.87	14.61	14.43	14.79	14.19	14.84	14.55	14.52	23.64	23.98
5610MHz	Pass	4.31	14.96	15.19	14.50	15.04	14.06	14.66	14.72	14.41	23.74	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	4.31	14.64	14.95	14.63	15.37	13.74	14.41	14.89	14.94	23.75	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	4.04	0.32	0.61	0.39	0.91	-1.13	-0.30	0.53	0.64	9.32	30.00
5775MHz	Pass	4.04	20.36	20.96	21.31	21.61	19.65	20.34	20.71	20.74	29.78	30.00

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