



RADIO TEST REPORT

FCC ID : UDX-60093011
Equipment : 4x4 Wi-Fi 6 Access Point with External Antennas
Brand Name : Cisco
Model Name : MR46E-HW
Applicant : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Manufacturer : Cisco Systems, Inc.
170 West Tasman Drive, San Jose, CA 95134 USA
Standard : 47 CFR FCC Part 15.407

The product was received on Jun. 20, 2019, and testing was started from Jul. 03, 2019 and completed on Aug. 03, 2023. 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

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History of this test report

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

Page Number : 3 of 59
Issued Date : Oct. 06, 2023
Report Version : 01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	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	-
Note: Reference to Sporton Project No.: 960317				

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

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]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40), ax (HEW40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax (HEW80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	1, 2, 4TX
5.15-5.25GHz	802.11n HT20	20	1, 2, 4TX
5.15-5.25GHz	802.11n HT20-BF	20	2, 4TX
5.15-5.25GHz	802.11ac VHT20	20	1, 2, 4TX
5.15-5.25GHz	802.11ac VHT20-BF	20	2, 4TX
5.15-5.25GHz	802.11ax HEW20	20	1, 2, 4TX
5.15-5.25GHz	802.11ax HEW20-BF	20	2, 4TX
5.15-5.25GHz	802.11n HT40	40	1, 2, 4TX
5.15-5.25GHz	802.11n HT40-BF	40	2, 4TX
5.15-5.25GHz	802.11ac VHT40	40	1, 2, 4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	2, 4TX
5.15-5.25GHz	802.11ax HEW40	40	1, 2, 4TX
5.15-5.25GHz	802.11ax HEW40-BF	40	2, 4TX
5.15-5.25GHz	802.11ac VHT80	80	1, 2, 4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	2, 4TX
5.15-5.25GHz	802.11ax HEW80	80	1, 2, 4TX
5.15-5.25GHz	802.11ax HEW80-BF	80	2, 4TX
5.725-5.85GHz	802.11a	20	1, 2, 4TX
5.725-5.85GHz	802.11n HT20	20	1, 2, 4TX
5.725-5.85GHz	802.11n HT20-BF	20	2, 4TX
5.725-5.85GHz	802.11ac VHT20	20	1, 2, 4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	2, 4TX



Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11ax HEW20	20	1, 2, 4TX
5.725-5.85GHz	802.11ax HEW20-BF	20	2, 4TX
5.725-5.85GHz	802.11n HT40	40	1, 2, 4TX
5.725-5.85GHz	802.11n HT40-BF	40	2, 4TX
5.725-5.85GHz	802.11ac VHT40	40	1, 2, 4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	2, 4TX
5.725-5.85GHz	802.11ax HEW40	40	1, 2, 4TX
5.725-5.85GHz	802.11ax HEW40-BF	40	2, 4TX
5.725-5.85GHz	802.11ac VHT80	80	1, 2, 4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	2, 4TX
5.725-5.85GHz	802.11ax HEW80	80	1, 2, 4TX
5.725-5.85GHz	802.11ax HEW80-BF	80	2, 4TX

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 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 Antenna Information**

Set	Brand	Official Model Number	Antenna Type	Connector	Gain (dBi)
1	Cisco	MA-ANT-3-A6	Dipole antenna	RP-TNC	Note 1
2	Cisco	MA-ANT-3-B6	Dipole antenna	RP-TNC	
3	Cisco	MA-ANT-3-C6	Panel antenna	RP-TNC	
4	Cisco	MA-ANT-3-D6	Panel antenna	RP-TNC	
5	Cisco	MA-ANT-3-E6	Wide patch antenna	RP-TNC	
6	Cisco	MA-ANT-3-F6	Narrow patch antenna	RP-TNC	

Note1:

Radio 1 (2.4GHz)												
Set	Antenna Gain (dBi)				Cable Loss (dB)				True Gain (dBi)			
	Port 1	Port 2	Port 3	Port 4	Port 1	Port 2	Port 3	Port 4	Port 1	Port 2	Port 3	Port 4
1	3.80	3.80	3.80	3.80	1.01	0.41	0.41	1.00	2.79	3.39	3.39	2.80
2	3.00	3.00	3.00	3.00	1.01	0.41	0.41	1.00	1.99	2.59	2.59	2.00
3	4.90	4.90	4.90	4.90	1.01	0.41	0.41	1.00	3.89	4.49	4.49	3.90
4	2.90	2.90	2.90	2.90	1.01	0.41	0.41	1.00	1.89	2.49	2.49	1.90
5	7.00	7.00	7.00	7.00	1.01	0.41	0.41	1.00	5.99	6.59	6.59	6.00
6	11.20	11.20	11.20	11.20	1.01	0.41	0.41	1.00	10.19	10.79	10.79	10.20

Radio 2 (5GHz)												
Set	Antenna Gain (dBi)				Cable Loss (dB)				True Gain (dBi)			
	Port 1	Port 2	Port 3	Port 4	Port 1	Port 2	Port 3	Port 4	Port 1	Port 2	Port 3	Port 4
1	5.5	5.5	5.5	5.5	1.53	0.66	0.61	1.54	3.97	4.84	4.89	3.96
2	5.7	5.7	5.7	5.7	1.53	0.66	0.61	1.54	4.17	5.04	5.09	4.16
3	4.9	4.9	4.9	4.9	1.53	0.66	0.61	1.54	3.37	4.24	4.29	3.36
4	3.7	3.7	3.7	3.7	1.53	0.66	0.61	1.54	2.17	3.04	3.09	2.16
5	6.3	6.3	6.3	6.3	1.53	0.66	0.61	1.54	4.77	5.64	5.69	4.76
6	10.8	10.8	10.8	10.8	1.53	0.66	0.61	1.54	9.27	10.14	10.19	9.26



Radio 3 (2.4GHz + 5GHz)						
Set	Antenna Gain (dBi)		Cable Loss (dB)		True Gain (dBi)	
	Port 1		Port 1		Port 1	
	2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
1	3.80	5.50	0.68	1.09	3.12	4.41
2	3.00	5.70	0.68	1.09	2.32	4.61
3	4.90	4.90	0.68	1.09	4.22	3.81
4	2.90	3.70	0.68	1.09	2.22	2.61
5	7.00	6.30	0.68	1.09	6.32	5.21
6	11.20	10.80	0.68	1.09	10.52	9.71

Radio 4 (Bluetooth)			
Set	Antenna Gain (dBi)	Cable Loss (dB)	True Gain (dBi)
	Port 1	Port 1	Port 1
1	3.80	0.56	3.24
2	3.00	0.56	2.44
3	4.90	0.56	4.34
4	2.90	0.56	2.34
5	7.00	0.56	6.44
6	11.20	0.56	10.64

Note2: The above information was declared by manufacturer.

Note3: The EUT has six set antennas.

The EUT has four radios, Radio 1 supports WLAN 2.4GHz (802.11b/g/n/ax mode), Radio 2 supports WLAN 5GHz (802.11a/n/ac/ax mode), Radio 3 supports WLAN 2.4GHz + 5GHz (scanning radio) and Radio 4 supports Bluetooth function.

Set 1 and Set 2 antennas are the same type antennas, only the highest gain antennas Set 1 for 2.4GHz, Set 2 for 5GHz were tested.

Note 4: Directional gain information

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

Ex.

Directional Gain (NSS1) formula :

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

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

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

$$DG = 10 \log \left[\frac{(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2}{N_{ANT}} \right] \Rightarrow 10 \log \left[\frac{(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2}{N_{ANT}} \right]$$

Where ;

Antenna Set 1

2.4G G1= 2.79 dBi ; G2= 3.39 dBi ; G3= 3.39 dBi ; G4= 2.8 dBi ;

4TX DG= 9.12dBi ; 2TX DG= 6.11dBi

Antenna Set 2

5G G1= 4.17 dBi ; G2= 5.04 dBi ; G3= 5.09 dBi ; G4= 4.16 dBi ;

4TX DG= 10.65dBi ; 2TX DG= 7.63dBi

Antenna Set 3

2.4G G1= 3.89 dBi ; G2= 4.49 dBi ; G3= 4.49 dBi ; G4= 3.9 dBi ;

4TX DG= 10.22dBi ; 2TX DG= 7.21dBi

5G G1= 3.37 dBi ; G2= 4.24 dBi ; G3= 4.29 dBi ; G4= 3.36 dBi ;

4TX DG= 9.85dBi ; 2TX DG= 6.83dBi

Antenna Set 4

2.4G G1= 1.89 dBi ; G2= 2.49 dBi ; G3= 2.49 dBi ; G4= 1.9 dBi ;

4TX DG= 8.22dBi ; 2TX DG= 5.21dBi

5G G1= 2.17 dBi ; G2= 3.04 dBi ; G3= 3.09 dBi ; G4= 2.16 dBi ;

4TX DG= 8.65dBi ; 2TX DG= 5.63dBi



Antenna Set 5

2.4G G1= 5.99 dBi ; G2= 6.59 dBi ; G3= 6.59 dBi ; G4= 6 dBi ;

4TX DG= 12.32dBi ; 2TX DG= 9.31dBi

5G G1= 4.77 dBi ; G2= 5.64 dBi ; G3= 5.69 dBi ; G4= 4.76 dBi ;

4TX DG= 11.25dBi ; 2TX DG= 8.23dBi

Antenna Set 6

2.4G G1= 10.19 dBi ; G2= 10.79 dBi ; G3= 10.79 dBi ; G4= 10.2 dBi ;

4TX DG= 16.52dBi ; 2TX DG= 13.51dBi

5G G1= 9.27 dBi ; G2= 10.14 dBi ; G3= 10.19 dBi ; G4= 9.26 dBi ;

4TX DG= 15.75dBi ; 2TX DG= 12.73dBi

<For Radio 1 (2.4GHz Functions) and Radio 2 (5GHz Functions)>

For 1TX/4RX:

Only Port 1 can be use as transmitting antenna

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

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

For 2TX/4RX:

Only Port 1 and Port 2 can be use as transmitting antenna

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

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

For 4TX/4RX:

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

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

<For Radio 3 / 2.4GHz + 5GHz Functions>

Only Port 1 can be used as receiving antennas.

<For Radio 4 / Bluetooth Functions>

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

**1.1.3 Mode Test Duty Cycle****For Set 2, 5 and 6 antennas:****For 1T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.925	0.34	1.435m	1k
802.11ax HEW20	0.949	0.23	5.453m	300
802.11ax HEW40	0.958	0.19	5.456m	300
802.11ax HEW80	0.959	0.18	5.456m	300

For 2T1S Mode:

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.925	0.34	1.435m	1k
802.11ax HEW20	0.957	0.19	5.456m	300
802.11ax HEW20-BF	0.973	0.12	1.766m	1k
802.11ax HEW40	0.959	0.18	5.456m	300
802.11ax HEW40-BF	0.978	0.1	1.766m	1k
802.11ax HEW80	0.959	0.18	5.456m	300
802.11ax HEW80-BF	0.922	0.35	1.69m	1k

For 4T1S Mode:

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.925	0.34	1.435m	1k
802.11ax HEW20	0.95	0.22	5.455m	300
802.11ax HEW20-BF	0.859	0.66	1.768m	1k
802.11ax HEW40	0.961	0.17	5.455m	300
802.11ax HEW40-BF	0.925	0.34	1.81m	1k
802.11ax HEW80	0.954	0.2	5.453m	300
802.11ax HEW80-BF	0.921	0.36	1.693m	1k

For Set 3 and 4 antennas:**For 1T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.925	0.34	1.435m	1k
802.11ax HEW20	0.951	0.22	5.455m	300
802.11ax HEW40	0.963	0.16	5.455m	300
802.11ax HEW80	0.95	0.22	5.455m	300

**For 2T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.925	0.34	1.435m	1k
802.11ax HEW20	0.953	0.21	5.455m	300
802.11ax HEW20-BF	0.974	0.11	1.766m	1k
802.11ax HEW40	0.952	0.21	5.455m	300
802.11ax HEW40-BF	0.975	0.11	1.766m	1k
802.11ax HEW80	0.966	0.15	5.455m	300
802.11ax HEW80-BF	0.975	0.11	1.69m	1k

For 4T1S Mode:

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.924	0.34	1.435m	1k
802.11ax HEW20	0.95	0.22	5.455m	300
802.11ax HEW20-BF	0.979	0.09	1.766m	1k
802.11ax HEW40	0.949	0.23	5.455m	300
802.11ax HEW40-BF	0.956	0.2	1.765m	1k
802.11ax HEW80	0.95	0.22	5.455m	300
802.11ax HEW80-BF	0.963	0.16	1.69m	1k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter or PoE			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	For 802.11n/ax in 2.4GHz and 802.11n/ac/ax in 5GHz.			
Function	☐	Outdoor P2M	☒	Indoor P2M
	☐	Fixed P2P	☐	Client
	☒	Point-to-multipoint	☐	Point-to-point
TPC Function	☒	With TPC	☐	Without TPC
Channel Puncturing Function	☐	Supported	☒	Unsupported
Support RU	☒	Full RU	☐	Partial RU
Test Software Version	For Non-beamforming: QSPR (v5.0-00186) For beamforming: Telnet (6.1.7601)			

Note: The above information was declared by manufacturer.

1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01

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

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Serway Li	24.6~25 / 65~69	Jul. 18, 2019 ~ Aug. 13, 2019
	TH02-CB	Mason Chan	16.7~25 / 58~69	Jul. 26, 2023 ~ Aug. 03, 2023
Radiated<1GHz	03CH06-CB	Roy Mai	22.5~23.9 / 59~61	May 25, 2023 ~ May 26, 2023
Radiated>1GHz (For others channel)	03CH01-CB	Eason Chen	27.1~28.3 / 62~66	Jul. 03, 2019 ~ Jul. 30, 2019
Radiated>1GHz (For HEW40 / 5190MHz, HEW80 / 5210MHz) non-TX BF 4T1S antenna set 2, 3, 6	03CH04-CB	Gordon Hung	22~23 / 55~58	May 09, 2023 ~ May 23, 2023
AC Conduction	CO01-CB	Gray Lee	22~23 / 65~66	Jun. 13, 2023

Note: The tested sample of the AC Conduction, Radiated below 1GHz, Radiated above 1GHz 5190MHz non-TX BF 4T1S antenna set 2, 3, 6, RF Conducted (revised directional gain) test item were received on Sep. 22, 2022.



1.4 Measurement Uncertainty

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

Test date before Jun. 01, 2020

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

Test date before Jun. 01, 2023

Test Items	Uncertainty	Remark
Radiated Emission (9kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%

Test date after May 31, 2023

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

For Set 2 antennas / 1TX:

For Conducted measurement and Band Edge Emission test:

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	24.5
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	24.5
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	22.5
5230MHz	26.5
5755MHz	26
5795MHz	26.5
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	22.5
5775MHz	24

**For Set 2 antennas / 2TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	23.5
5200MHz	23.5
5240MHz	23
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5180MHz	24.5
5200MHz	24
5240MHz	24
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5190MHz	22.5
5230MHz	26
5755MHz	25.5
5795MHz	26
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5210MHz	22
5775MHz	23
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	25
5230MHz	25
5755MHz	25
5795MHz	25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	25
5775MHz	25

**For Set 2 antennas / 4TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	16.5
5200MHz	16.5
5240MHz	16.5
5745MHz	23
5785MHz	23
5825MHz	23
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	17.5
5200MHz	17.5
5240MHz	17.5
5745MHz	23
5785MHz	23
5825MHz	23
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	20.5
5230MHz	20.5
5755MHz	23
5795MHz	23
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	20
5775MHz	21.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	23
5200MHz	23
5240MHz	23
5745MHz	24
5785MHz	24
5825MHz	24
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	23
5230MHz	23
5755MHz	24
5795MHz	23
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	23
5775MHz	24

**For Radiated Emission:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	27
5230MHz	27
5755MHz	27
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	27
5775MHz	27
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	28
5200MHz	28
5240MHz	28
5745MHz	28
5785MHz	28
5825MHz	28
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	28
5230MHz	28
5755MHz	28
5795MHz	28
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	28
5775MHz	28

**For Set 3 antennas / 1TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	25
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	25.5
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	23
5230MHz	27
5755MHz	26.5
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	23
5775MHz	24.5

**For Set 3 antennas / 2TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	24.5
5200MHz	26
5240MHz	26
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5180MHz	23.5
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5190MHz	22.5
5230MHz	26
5755MHz	26
5795MHz	26.5
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5210MHz	21.5
5775MHz	24
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	25
5230MHz	25
5755MHz	25
5795MHz	25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	25
5775MHz	25

**For Set 3 antennas / 4TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	19
5200MHz	19
5240MHz	19
5745MHz	23.5
5785MHz	23.5
5825MHz	23.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	20
5200MHz	20
5240MHz	20.5
5745MHz	23.5
5785MHz	23.5
5825MHz	23.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	22.5
5230MHz	23
5755MHz	23
5795MHz	23
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	21
5775MHz	22
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	25
5230MHz	25
5755MHz	25
5795MHz	25
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	25
5775MHz	25

**For Radiated Emission:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	27
5230MHz	27
5755MHz	27
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	27
5775MHz	27
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	28
5200MHz	28
5240MHz	28
5745MHz	28
5785MHz	28
5825MHz	28
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	28
5230MHz	28
5755MHz	28
5795MHz	28
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	28
5775MHz	28

**For Set 4 antennas / 1TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	26
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	26
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	23.5
5230MHz	27
5755MHz	26.5
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	23
5775MHz	24.5

**For Set 4 antennas / 2TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	24
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5180MHz	24
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5190MHz	23
5230MHz	26
5755MHz	26
5795MHz	26.5
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5210MHz	22
5775MHz	24
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	25
5230MHz	25
5755MHz	25
5795MHz	25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	24
5775MHz	25

**For Set 4 antennas / 4TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	20
5200MHz	20
5240MHz	20.5
5745MHz	23.5
5785MHz	23.5
5825MHz	23.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	21
5200MHz	21
5240MHz	21
5745MHz	23.5
5785MHz	23.5
5825MHz	23.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	21.5
5230MHz	23
5755MHz	23
5795MHz	23
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	21.5
5775MHz	23
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	26
5200MHz	26
5240MHz	26
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	26
5230MHz	26
5755MHz	26
5795MHz	27
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	26
5775MHz	27

**For Radiated Emission:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	27
5230MHz	27
5755MHz	27
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	27
5775MHz	27
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	28
5200MHz	28
5240MHz	28
5745MHz	28
5785MHz	28
5825MHz	28
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	28
5230MHz	28
5755MHz	28
5795MHz	28
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	28
5775MHz	28

**For Set 5 antennas / 1TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	24.5
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	24.5
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	22.5
5230MHz	26.5
5755MHz	26
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	22
5775MHz	24

**For Set 5 antennas / 2TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	22.5
5200MHz	22.5
5240MHz	22
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5180MHz	23.5
5200MHz	23.5
5240MHz	23
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5190MHz	22
5230MHz	26
5755MHz	26
5795MHz	26
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5210MHz	21.5
5775MHz	23
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5745MHz	25
5785MHz	25
5825MHz	25
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	25
5230MHz	25
5755MHz	25
5795MHz	25
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	25
5775MHz	25

**For Set 5 antennas / 4TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	16
5200MHz	16
5240MHz	16
5745MHz	23
5785MHz	23
5825MHz	23
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	17
5200MHz	17
5240MHz	17
5745MHz	23
5785MHz	23
5825MHz	23
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	20
5230MHz	20
5755MHz	23
5795MHz	23
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	19.5
5775MHz	21.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	23
5200MHz	23
5240MHz	23
5745MHz	23
5785MHz	23
5825MHz	24
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	23
5230MHz	23
5755MHz	23
5795MHz	23
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	23
5775MHz	23

**For Radiated Emission:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	27
5230MHz	27
5755MHz	27
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	27
5775MHz	27
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	28
5200MHz	28
5240MHz	28
5745MHz	28
5785MHz	28
5825MHz	28
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	28
5230MHz	28
5755MHz	28
5795MHz	28
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	28
5775MHz	28

**For Set 6 antennas / 1TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	24
5200MHz	26
5240MHz	26
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_1TX	-
5180MHz	24
5200MHz	25.5
5240MHz	25.5
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_1TX	-
5190MHz	22
5230MHz	25
5755MHz	25.5
5795MHz	26
802.11ax HEW80_Nss1,(MCS0)_1TX	-
5210MHz	22
5775MHz	24

**For Set 6 antennas / 2TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	18.5
5200MHz	18.5
5240MHz	18
5745MHz	22
5785MHz	22
5825MHz	21.5
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5180MHz	19.5
5200MHz	19
5240MHz	19
5745MHz	22
5785MHz	22
5825MHz	22
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5190MHz	21
5230MHz	22
5755MHz	21.5
5795MHz	21.5
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5210MHz	20
5775MHz	22
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	22
5200MHz	22
5240MHz	22
5745MHz	22
5785MHz	22
5825MHz	22
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	21
5230MHz	21
5755MHz	22
5795MHz	22
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	21
5775MHz	21

**For Set 6 antennas / 4TX:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	12
5200MHz	12
5240MHz	12
5745MHz	18.5
5785MHz	18.5
5825MHz	18.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	12.5
5200MHz	12.5
5240MHz	12.5
5745MHz	18.5
5785MHz	18.5
5825MHz	18.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	15.5
5230MHz	15.5
5755MHz	18.5
5795MHz	18.5
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	16.5
5775MHz	18.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	18
5200MHz	18
5240MHz	18
5745MHz	18
5785MHz	18
5825MHz	19
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	18
5230MHz	18
5755MHz	18
5795MHz	19
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	18
5775MHz	18

**For Radiated Emission:**

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	27
5200MHz	27
5240MHz	27
5745MHz	27
5785MHz	27
5825MHz	27
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	27
5230MHz	27
5755MHz	27
5795MHz	27
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	27
5775MHz	27
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
5180MHz	30
5200MHz	30
5240MHz	30
5745MHz	30
5785MHz	30
5825MHz	30
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
5190MHz	30
5230MHz	30
5755MHz	30
5795MHz	30
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-
5210MHz	30
5775MHz	30

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Normal Link
1	EUT (Radio 1 + Radio 2 + Radio 3: 2.4GHz + Radio 4) + Adapter 1 + Set 6
2	EUT (Radio 1 + Radio 2 + Radio 3: 2.4GHz + Radio 4) + Adapter 2 + Set 6
Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~5 will follow this same test mode.	
3	EUT (Radio 1 + Radio 2 + Radio 3: 5GHz + Radio 4) + Adapter 2 + Set 6
4	EUT (Radio 1 + Radio 2 + Radio 3: 5GHz + Radio 4) + PoE 1 + Set 6
5	EUT (Radio 1 + Radio 2 + Radio 3: 5GHz + Radio 4) + PoE 2 + Set 6
For operating mode 5 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density
Test Condition	Conducted measurement at transmit chains
Test Mode	Refer to note
1	EUT (Radio 2) + Antenna Set 2
2	EUT (Radio 2) + Antenna Set 3
3	EUT (Radio 2) + Antenna Set 4
4	EUT (Radio 2) + Antenna Set 5
5	EUT (Radio 2) + Antenna Set 6



The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1. Aftering evaluating, EUT in X axis has been evaluated as the worst case. So the measurement will follow this same test configuration. 2. The EUT with antenna set 2, set 3 in Z axis, set 3 in Y axis, set 6 were performed the testing, EUT with antenna set 3 in Y axis has been evaluated as the worst case. So the measurement will follow this same test configuration. 3. The EUT with adapter 1~2 and PoE 1~2 were performed the testing, EUT with adapter 1 has been evaluated as the worst case. So the measurement will follow this same test configuration. 4. The radio 3 (2.4GHz/5GHz) of EUT were performed the testing, radio 3 (2.4GHz) of EUT has been evaluated as the worst case. So the measurement will follow this same test configuration.	
1	EUT in X axis (Radio 1 + Radio 2 + Radio 3: 2.4GHz + Radio 4) + Adapter 1 + Set 3 in Y axis



Operating Mode > 1GHz	CTX
After evaluating, the worst case axis was found as below. So the measurement will follow this same test configuration. For antenna set 3 and set 4: After evaluating, the worst case axis was found as below. So the measurement will follow this same test configuration. Antenna Set 2: For Radiated Emission: EUT in Z axis For Band Edge Emission: EUT in Z axis Antenna Set 3: For Radiated Emission: EUT in X axis + Antenna in Y axis For Band Edge Emission: EUT in X axis + Antenna in Y axis Antenna Set 4: For Radiated Emission: EUT in Z axis + Antenna in Z axis For Band Edge Emission: EUT in Z axis + Antenna in Z axis Antenna Set 5: For Radiated Emission: EUT in Z axis For Band Edge Emission: EUT in Z axis Antenna Set 6: For Radiated Emission: EUT in Z axis For Band Edge Emission: EUT in Z axis	
Test Mode	Refer to note

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
	The EUT was performed at X axis, Y axis and Z axis, the worst case was found as Unwanted Emissions above 1GHz. So the measurement will follow this same test configuration.
1	EUT in X axis: Radio 1 (WLAN 2.4GHz) + Radio 2 (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	EUT: Radio 1 (WLAN 2.4GHz) + Radio 2 (WLAN 5GHz) + Radio 4 (Bluetooth)
Refer to Sporton Test Report No.: FA960317-14 for Co-location RF Exposure Evaluation.	

Note1: For AC power-line conducted emissions, the higher gain antennas "Set 6 (Narrow patch antenna)" only was tested and recorded in the report.

Note2: The PoE below are for measurement only, would not be marketed.

PoE information as below:

Power	Brand	Model
PoE 1	CISCO	MA-INJ-5
PoE 2	CISCO	MA-INJ-4

Note3: Test Mode:

Test Mode								
Test Item	802.11a			802.11ax HEW20/40/80				
	1T1S	2T1S	4T1S	CDD 1T1S	CDD 2T1S	CDD 4T1S	TxBF 2T1S	TxBF 4T1S
Maximum Conducted Output Power	V	V	V	V	V	V	V	V
Emission Bandwidth	V	V	V	V	V	V	V	V
Peak Power Spectral Density	V	V	V	V	V	V	V	V
Radiated Emission	Cover by 4T1S Max setting	Cover by 4T1S Max setting	V	Cover by CDD 4T1S Max setting	Cover by CDD 4T1S Max setting	V	Cover by CDD 4T1S Max setting	V
Band Edge Emission	V	V	V	V	V	V	V	V

Note4: 802.11ax modulation and bandwidth are similar for 802.11n mode for 20MHz / 40MHz and 802.11ac mode for 20/40/80MHz, therefore investigated worst case to representative mode in test report.



2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

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

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet (6.1.7601).
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less than 98%.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	P/N	Rating
Adapter 1	CISCO	KSAS0361200250HU	-	Input: 100-240V, 50/60Hz, 1.0A Output: 12V, 2.5A
Adapter 2	CISCO	MA-PWR-30W-US	640-39010-A	Input: 100-240V, 50-60Hz, 0.8A Max. Output: 12V, 2.5A 30W
Other				
Wall-mounted rack*1				



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	2.5G LAN PC	DELL	T3400	N/A
B	2.4G NB	DELL	E6430	N/A
C	5G NB	DELL	E6430	N/A
D	Scan Radio (2.4G or 5G) NB	DELL	E6430	N/A
E	PoE 2	CISCO	MA-INJ-4	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB (LAN)	DELL	E6430	N/A
B	NB (WIFI 2.4G)	DELL	E6430	N/A
C	NB (WIFI 5G)	DELL	E6430	N/A
D	NB (WIFI Scan Radio 2.4G/5G)	DELL	E6430	N/A

For Radiated (above 1GHz) and RF Conducted:

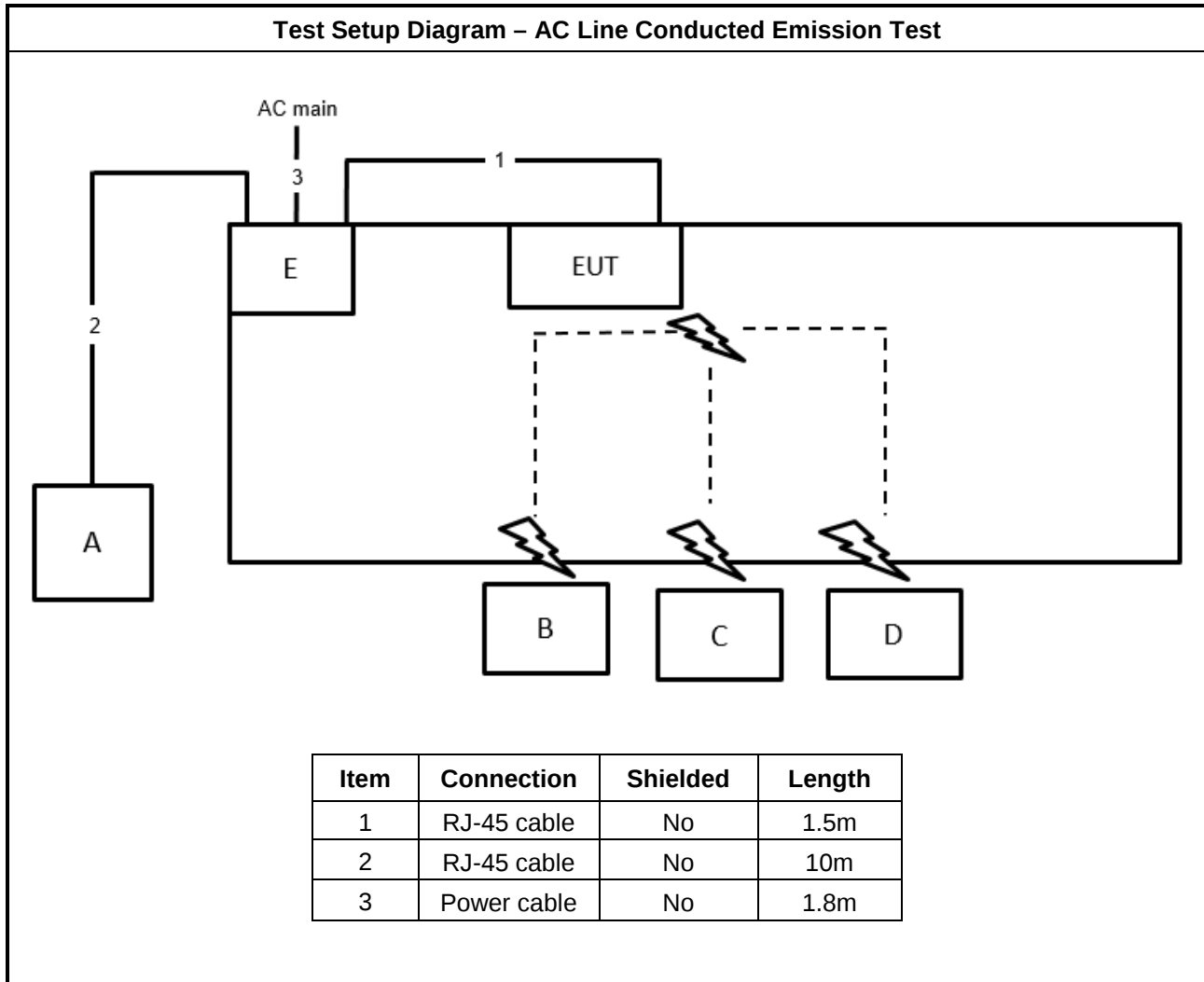
<For Non-beamforming mode>

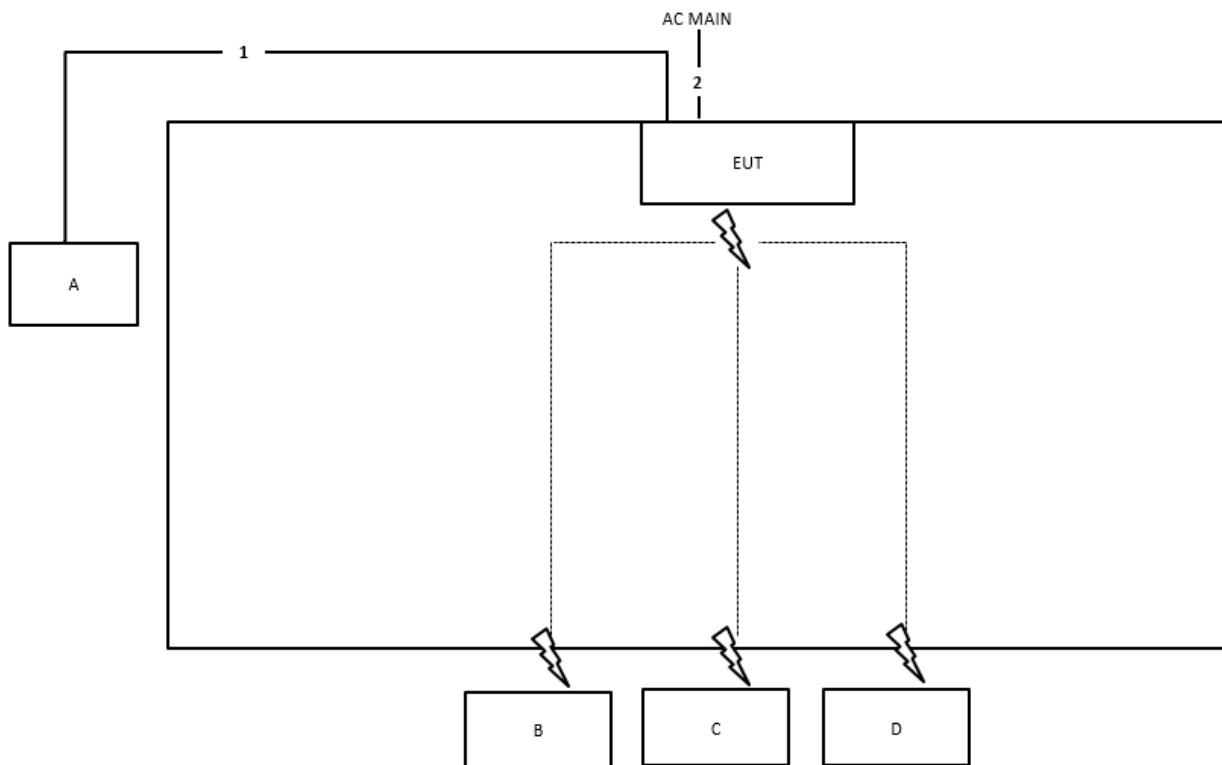
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

<For Beamforming mode>

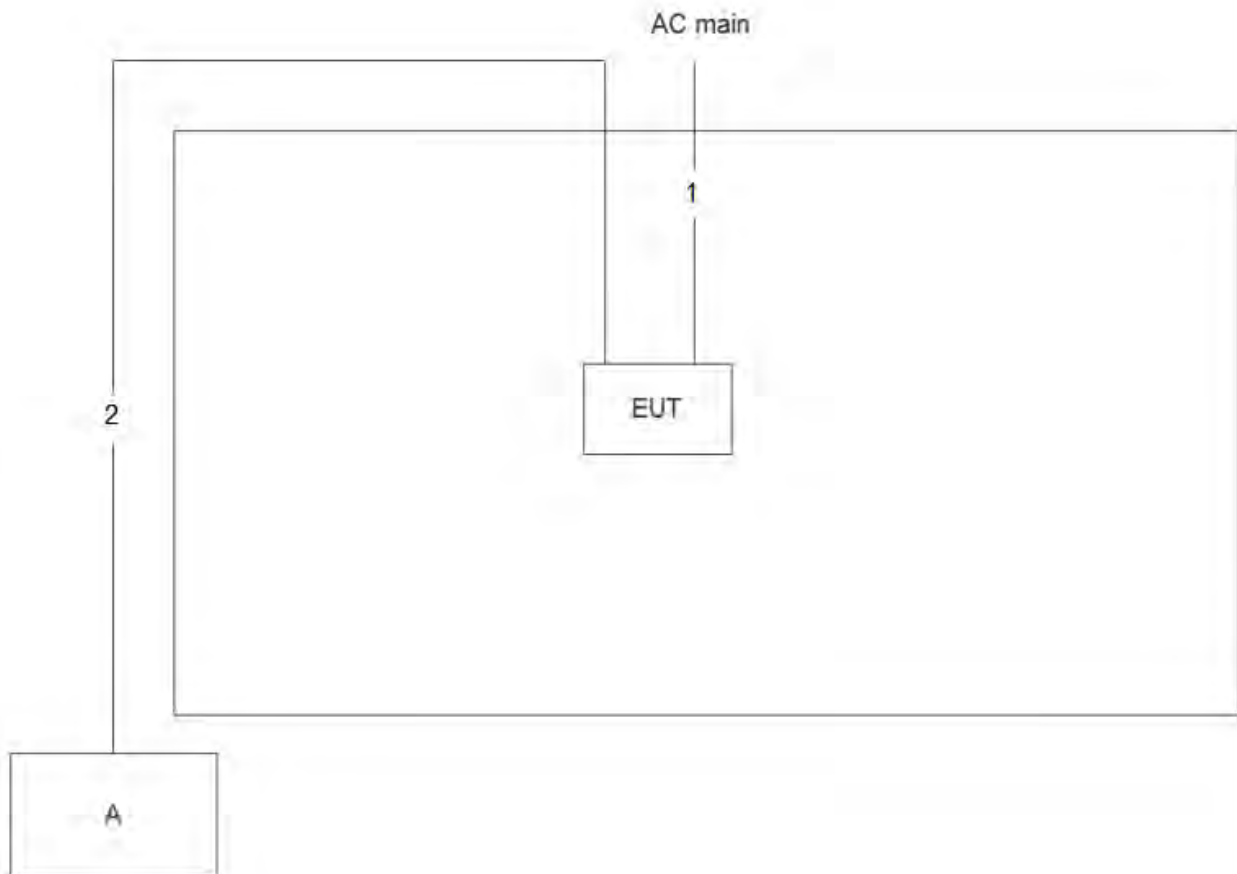
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Notebook	DELL	E4300	N/A
C	RX Device	CISCO	MR46E-HW	UDX-60093010

2.6 Test Setup Diagram

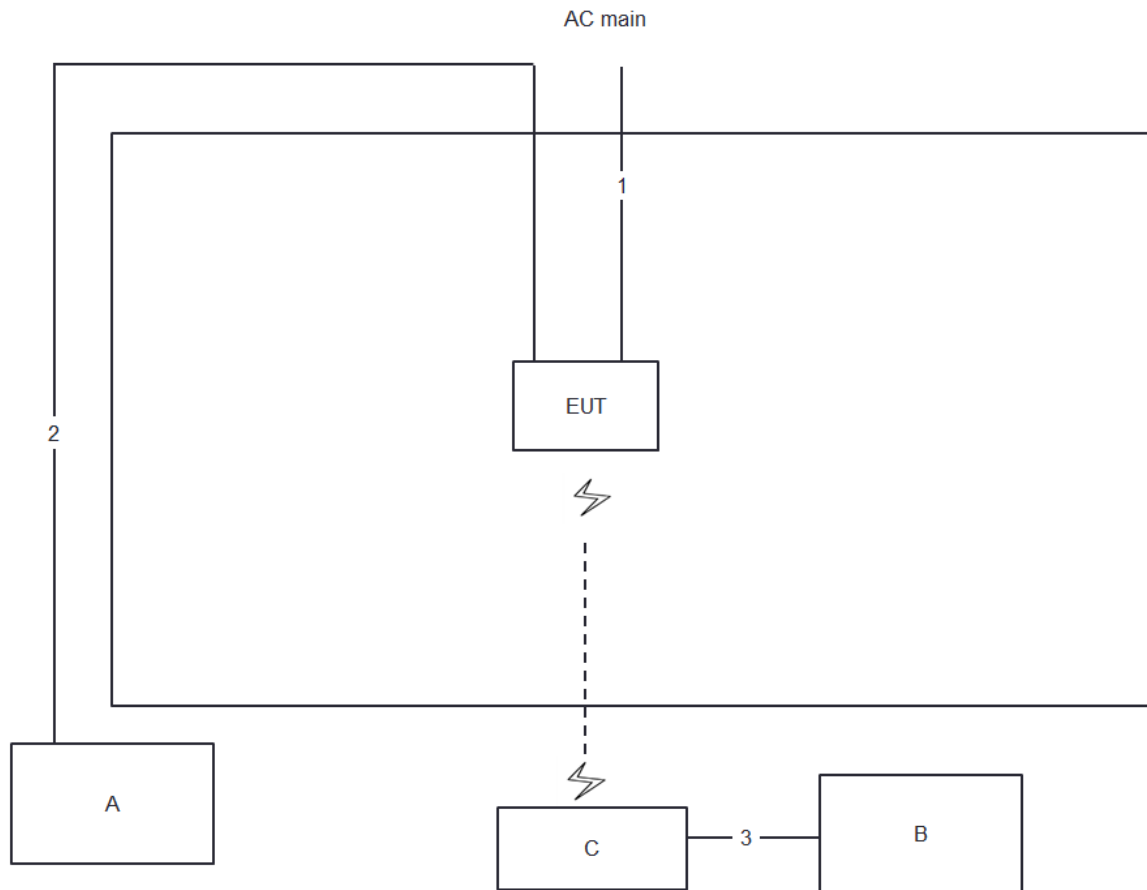


Test Setup Diagram - Radiated Test < 1GHz


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

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


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

Test Setup Diagram - Radiated Test > 1GHz / Beamforming mode


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

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.		

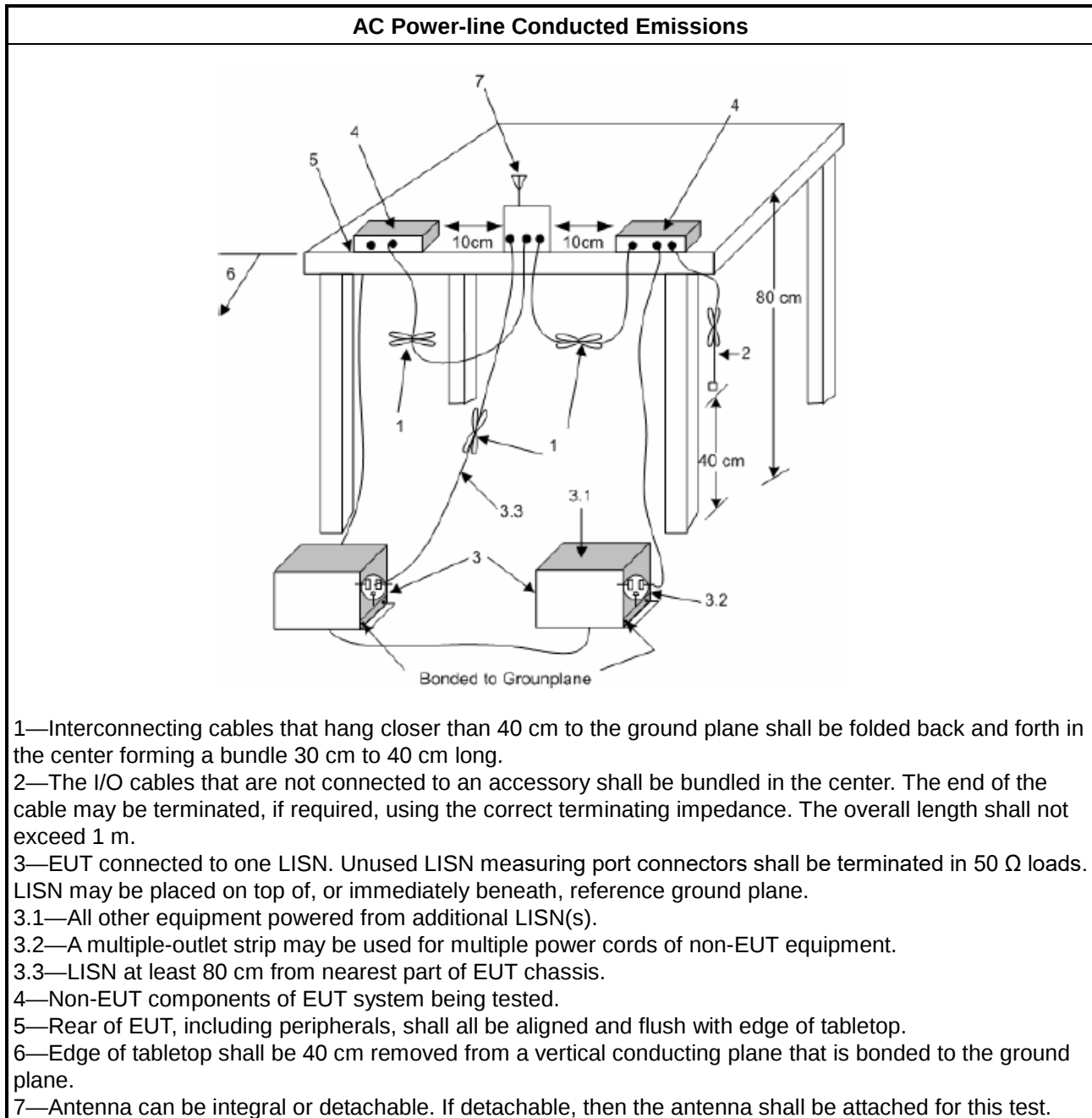
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
☒ 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	
UNII Devices	
☒	For the 5.15-5.25 GHz band, N/A
☐	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz.
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq 500\text{kHz}$.
LE-LAN Devices	
☐	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq 500\text{kHz}$.

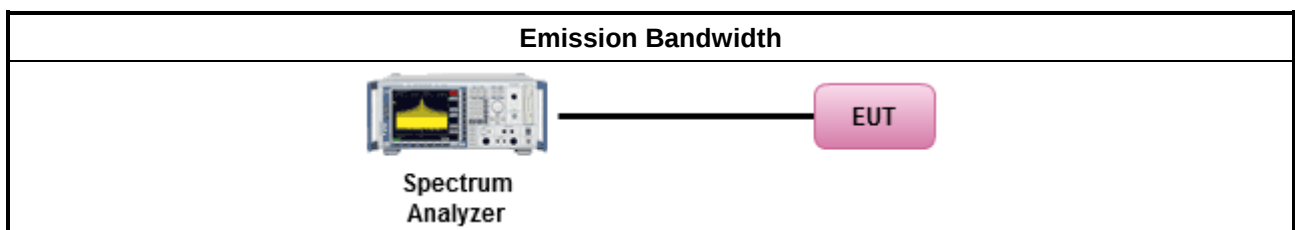
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement.
☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
☐	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] - Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ - Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$. - Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
☒ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

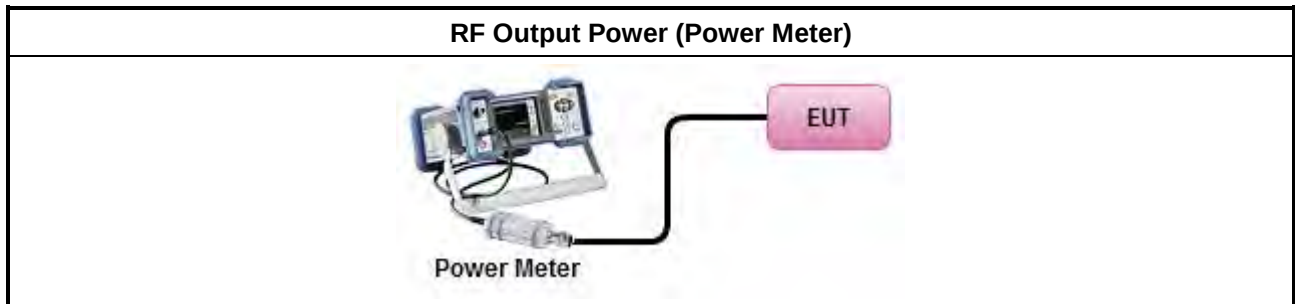
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Conducted Output Power	
	Average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	☒ Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).
For conducted measurement.	
	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ For the 5.15-5.25 GHz band:	
☐	- Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$. - Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$. - Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☐	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
☒ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
☐	e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
☐ For the 5.725-5.85 GHz band:	
☐	- Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

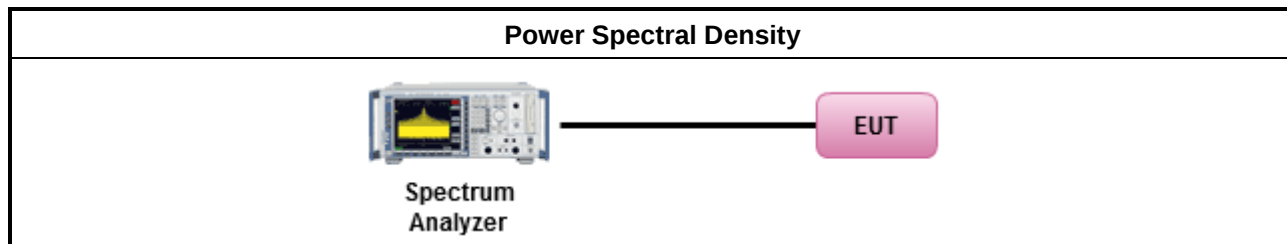
3.4.2 Measuring Instruments

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

**3.4.3 Test Procedures**

Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:	
☐	Refer as FCC KDB 789033 D02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
[duty cycle ≥ 98% or external video / power trigger]	
☒	Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).
☐	Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
duty cycle < 98% and average over on/off periods with duty factor	
☒	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below:	
☒	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
☐	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
☐	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$	

3.4.4 Test Setup



3.4.5 Test Result of Peak 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
☒ 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☐ 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
☒ 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of



linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

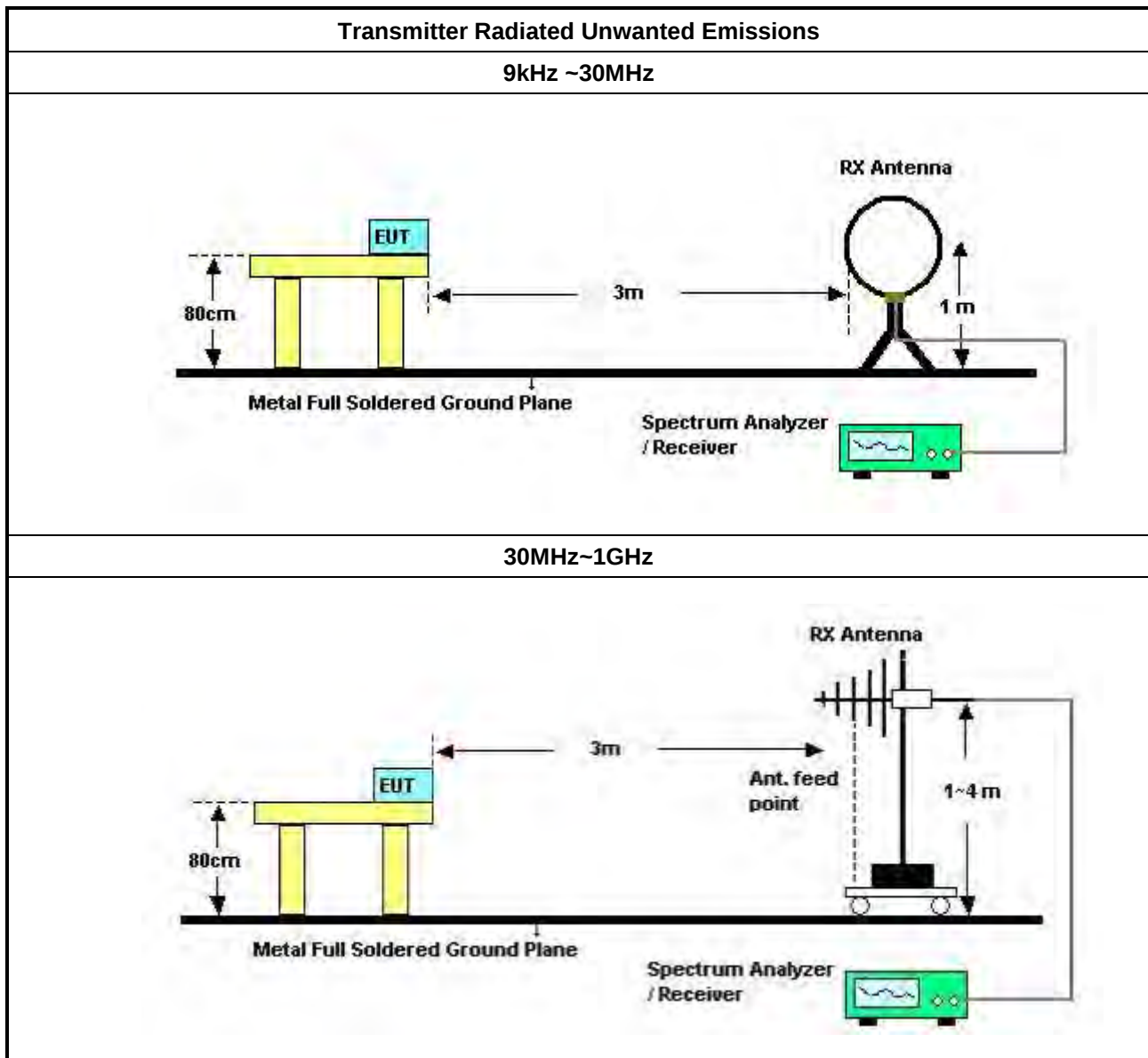
3.5.2 Measuring Instruments

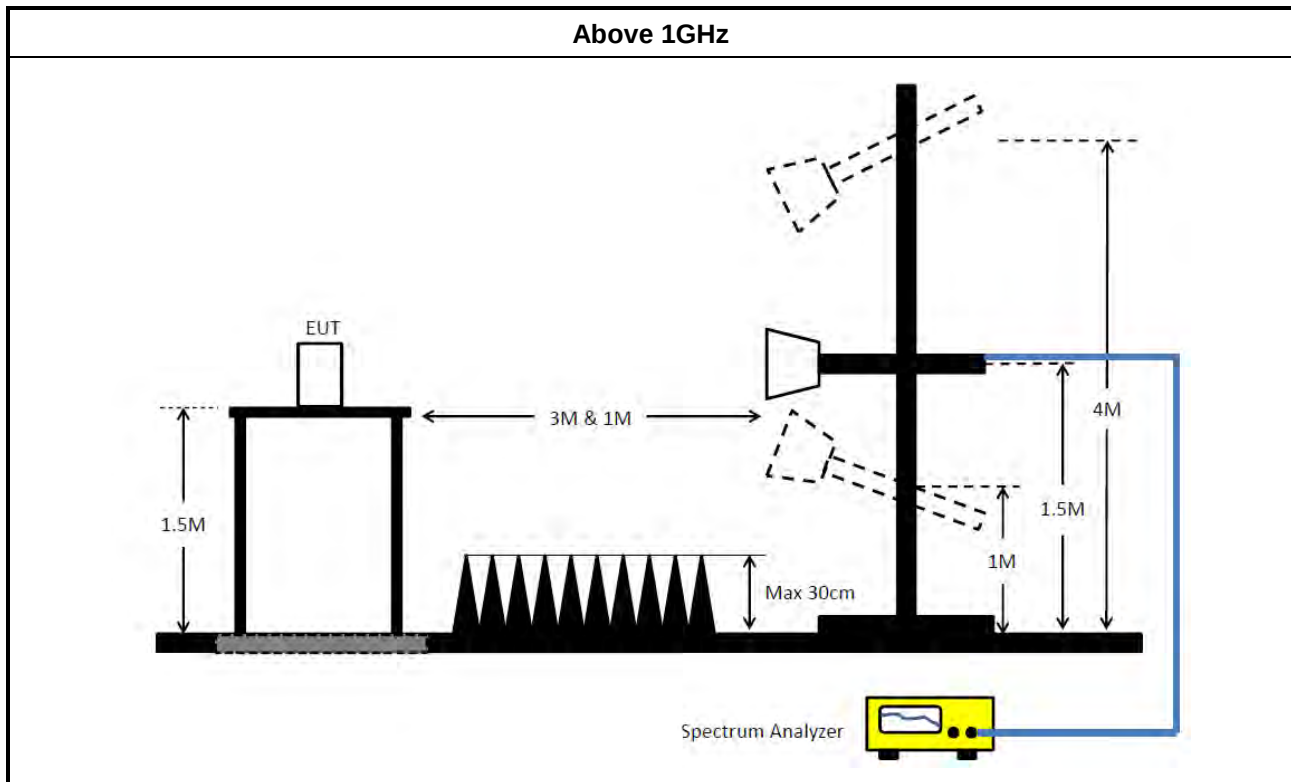
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).	
The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.
☐ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.	
For radiated measurement.	
	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
The any unwanted emissions level shall not exceed the fundamental emission level.	
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.5.4 Test Setup





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 amplified or 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	Feb. 20, 2023	Feb. 19, 2024	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz~100MHz	Feb. 16, 2023	Feb. 15, 2024	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 09, 2023	Feb. 08, 2024	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH06-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 04, 2022	Aug. 03, 2023	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 31, 2022	Jul. 30, 2023	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH06-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Dec. 21, 2022	Dec. 20, 2023	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-24+68	30MHz~1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 27, 2019	Jun. 26, 2020	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Jan. 31, 2019	Jan. 30, 2020	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH01-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. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 23, 2023	Feb. 22, 2024	Radiation (03CH04-CB)
Horn Antenna	ETS-Lindgren	3115	00143147	750MHz~18GHz	Oct. 12, 2022	Oct. 11, 2023	Radiation (03CH04-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz~26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH04-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 16, 2022	Nov. 15, 2023	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 21, 2023	Mar. 20, 2024	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH04-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH04-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH04-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 15, 2022	Aug. 14, 2023	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 17, 2022	Oct. 16, 2023	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 17, 2022	Oct. 16, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1 GHz ~26.5 GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (TH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Oct. 30, 2018	Oct. 29, 2019	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Sep. 03, 2018	Sep. 02, 2019	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Sep. 03, 2018	Sep. 02, 2019	Conducted (TH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

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

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



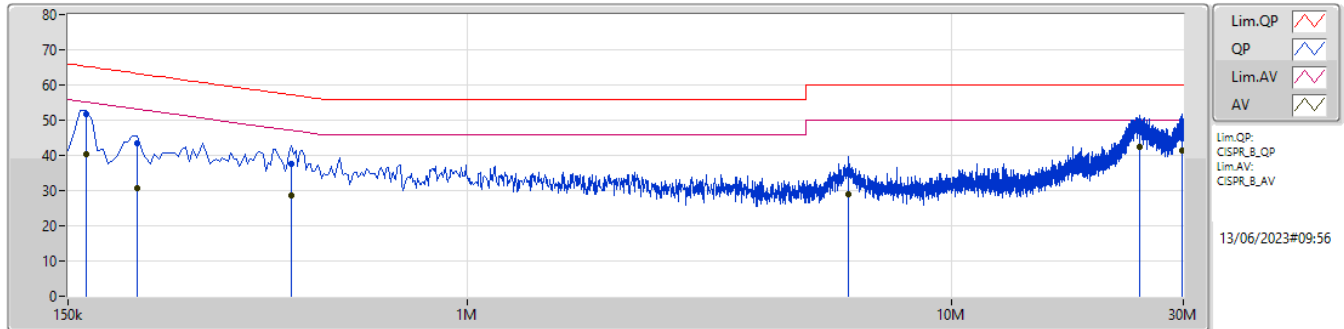
Conducted Emissions at Powerline

Appendix A

Summary

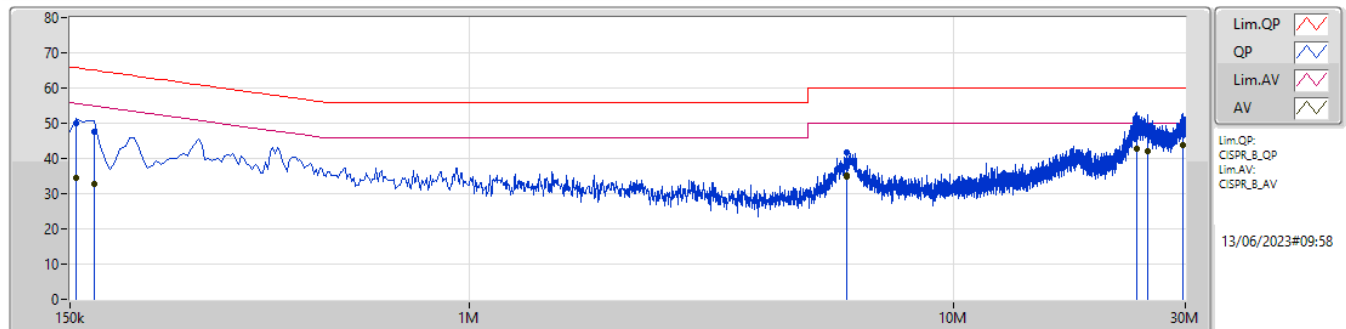
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 5	Pass	AV	29.634M	43.90	50.00	-6.10	Neutral

Mode 5



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	163.5k	51.64	65.27	-13.63	10.00	Line	-	41.64	0.09	0.04	9.87						
AV	163.5k	40.22	55.27	-15.05	10.00	Line	-	30.22	0.09	0.04	9.87						
QP	208.5k	43.46	63.27	-19.81	9.98	Line	-	33.48	0.08	0.04	9.86						
AV	208.5k	30.55	53.27	-22.72	9.98	Line	-	20.57	0.08	0.04	9.86						
QP	433.5k	37.48	57.19	-19.71	10.05	Line	-	27.43	0.09	0.06	9.90						
AV	433.5k	28.79	47.19	-18.40	10.05	Line	-	18.74	0.09	0.06	9.90						
QP	6.126M	35.79	60.00	-24.21	10.26	Line	-	25.53	0.21	0.13	9.92						
AV	6.126M	28.99	50.00	-21.01	10.26	Line	-	18.73	0.21	0.13	9.92						
QP	24.401M	48.31	60.00	-11.69	10.63	Line	-	37.68	0.31	0.27	10.05						
AV	24.401M	42.35	50.00	-7.65	10.63	Line	"Worst"	31.72	0.31	0.27	10.05						
QP	29.882M	48.29	60.00	-11.71	10.77	Line	-	37.52	0.33	0.34	10.10						
AV	29.882M	41.39	50.00	-8.61	10.77	Line	-	30.62	0.33	0.34	10.10						

Mode 5



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	154.5k	49.93	65.75	-15.82	9.98	Neutral	-	39.95	0.07	0.04	9.87						
AV	154.5k	34.65	55.75	-21.10	9.98	Neutral	-	24.67	0.07	0.04	9.87						
QP	168k	47.48	65.06	-17.58	9.98	Neutral	-	37.50	0.07	0.04	9.87						
AV	168k	32.68	55.06	-22.38	9.98	Neutral	-	22.70	0.07	0.04	9.87						
QP	6.018M	41.62	60.00	-18.38	10.22	Neutral	-	31.40	0.17	0.13	9.92						
AV	6.018M	35.02	50.00	-14.98	10.22	Neutral	-	24.80	0.17	0.13	9.92						
QP	6.018M	41.72	60.00	-18.28	10.22	Neutral	-	31.50	0.17	0.13	9.92						
AV	6.018M	34.91	50.00	-15.09	10.22	Neutral	-	24.69	0.17	0.13	9.92						
QP	23.829M	49.17	60.00	-10.83	10.65	Neutral	-	38.52	0.34	0.27	10.04						
AV	23.829M	42.61	50.00	-7.39	10.65	Neutral	-	31.96	0.34	0.27	10.04						
QP	25.134M	48.62	60.00	-11.38	10.68	Neutral	-	37.94	0.35	0.28	10.05						
AV	25.134M	41.98	50.00	-8.02	10.68	Neutral	-	31.30	0.35	0.28	10.05						
QP	29.634M	50.74	60.00	-9.26	10.85	Neutral	-	39.89	0.41	0.34	10.10						
AV	29.634M	43.90	50.00	-6.10	10.85	Neutral	"Worst"	33.05	0.41	0.34	10.10						

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)_1TX	39.99M	20.72M	20M7D1D	22.38M	16.522M
802.11ax HEW20_Nss1,(MCS0)_1TX	38.67M	19.85M	19M8D1D	23.01M	18.951M
802.11ax HEW40_Nss1,(MCS0)_1TX	72.3M	38.141M	38M1D1D	40.98M	37.781M
802.11ax HEW80_Nss1,(MCS0)_1TX	82.68M	77.001M	77M0D1D	82.68M	77.001M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	15.66M	17.871M	17M9D1D	15.36M	17.661M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.48M	19.19M	19M2D1D	17.97M	19.13M
802.11ax HEW40_Nss1,(MCS0)_1TX	38.1M	50.435M	50M4D1D	36.96M	40M
802.11ax HEW80_Nss1,(MCS0)_1TX	75.36M	77.121M	77M1D1D	75.36M	77.121M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

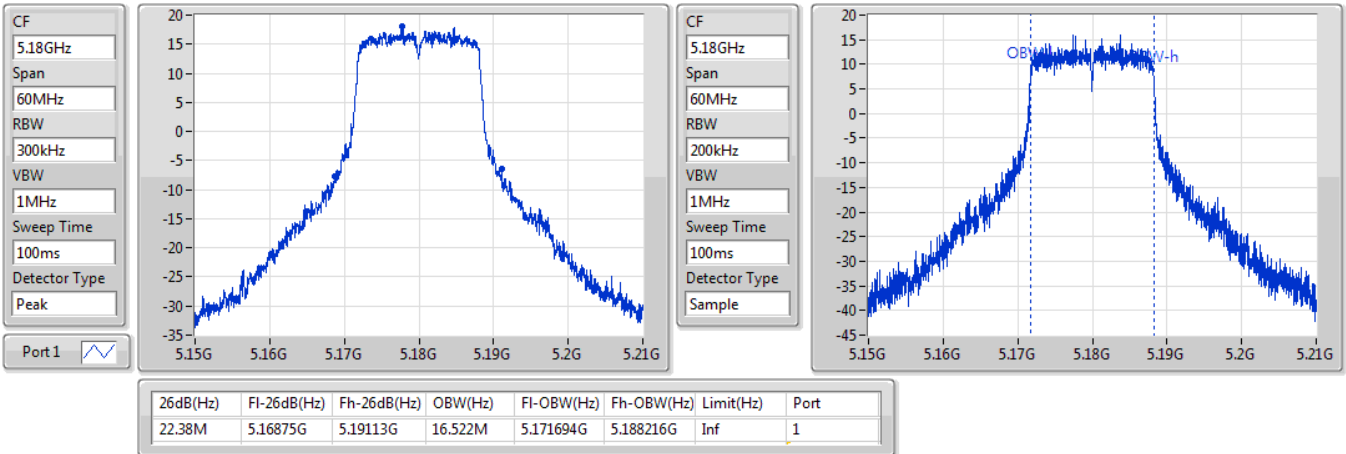
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	22.38M	16.522M
5200MHz	Pass	Inf	39.99M	20.72M
5240MHz	Pass	Inf	38.94M	19.76M
5745MHz	Pass	500k	15.42M	17.871M
5785MHz	Pass	500k	15.36M	17.841M
5825MHz	Pass	500k	15.66M	17.661M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	23.01M	18.951M
5200MHz	Pass	Inf	38.67M	19.85M
5240MHz	Pass	Inf	38.25M	19.55M
5745MHz	Pass	500k	18.24M	19.19M
5785MHz	Pass	500k	17.97M	19.13M
5825MHz	Pass	500k	18.48M	19.16M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	40.98M	37.781M
5230MHz	Pass	Inf	72.3M	38.141M
5755MHz	Pass	500k	36.96M	40M
5795MHz	Pass	500k	38.1M	50.435M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	82.68M	77.001M
5775MHz	Pass	500k	75.36M	77.121M

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

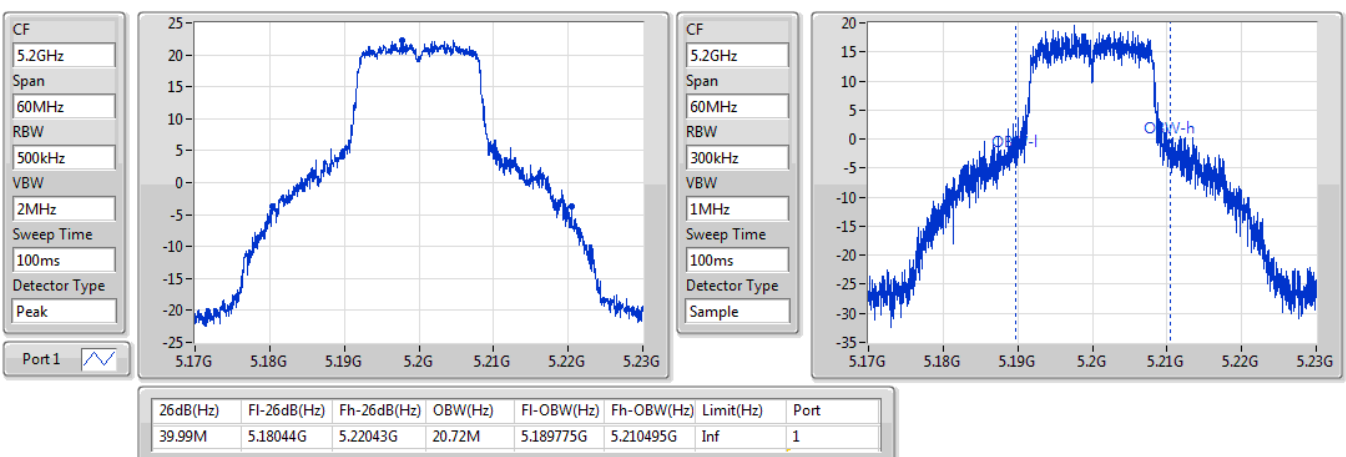
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

08/07/2019

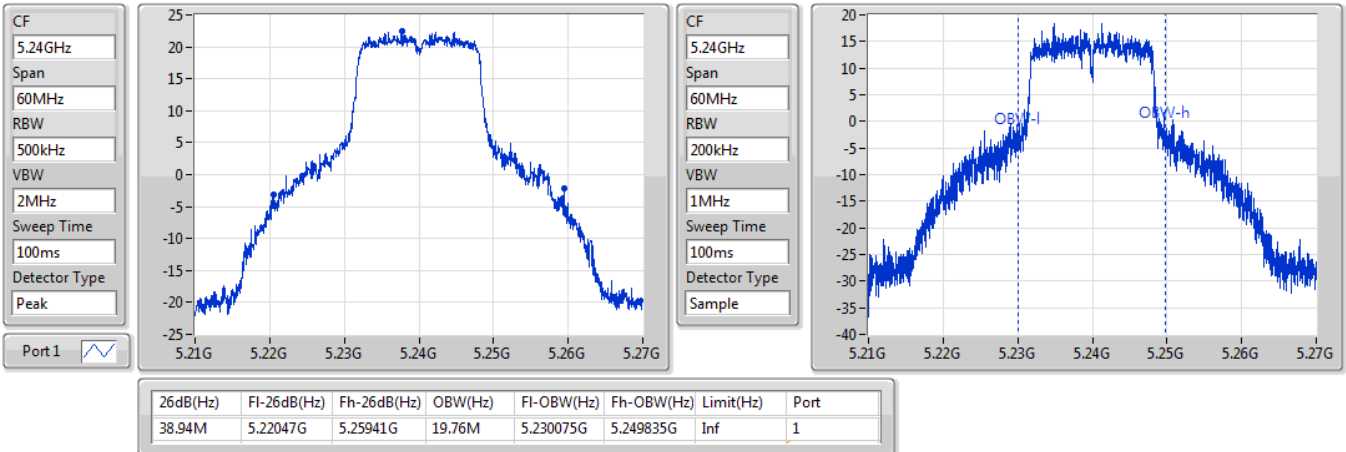

802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

08/07/2019

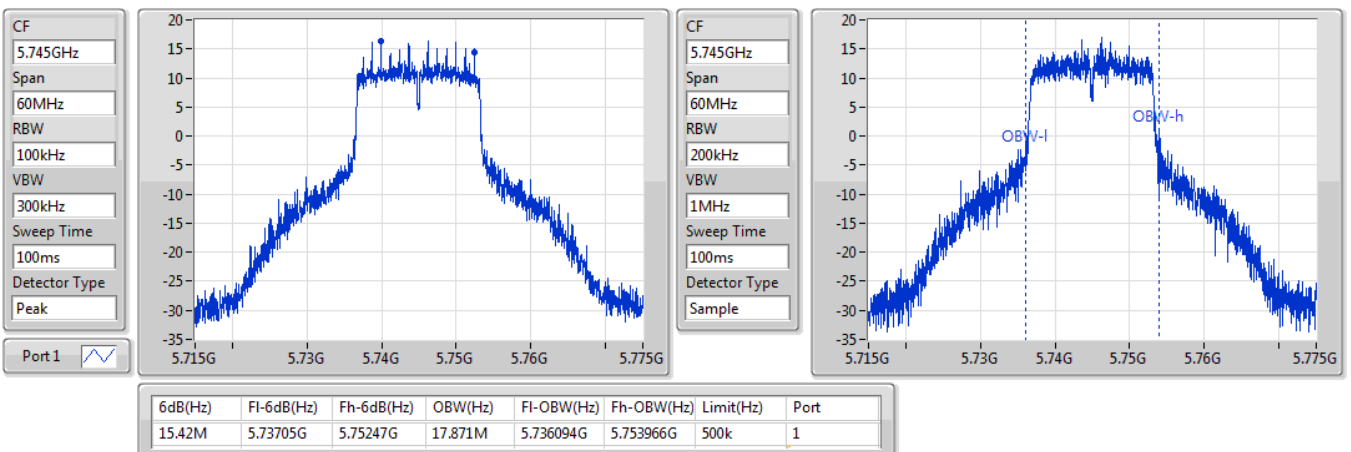


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

08/07/2019

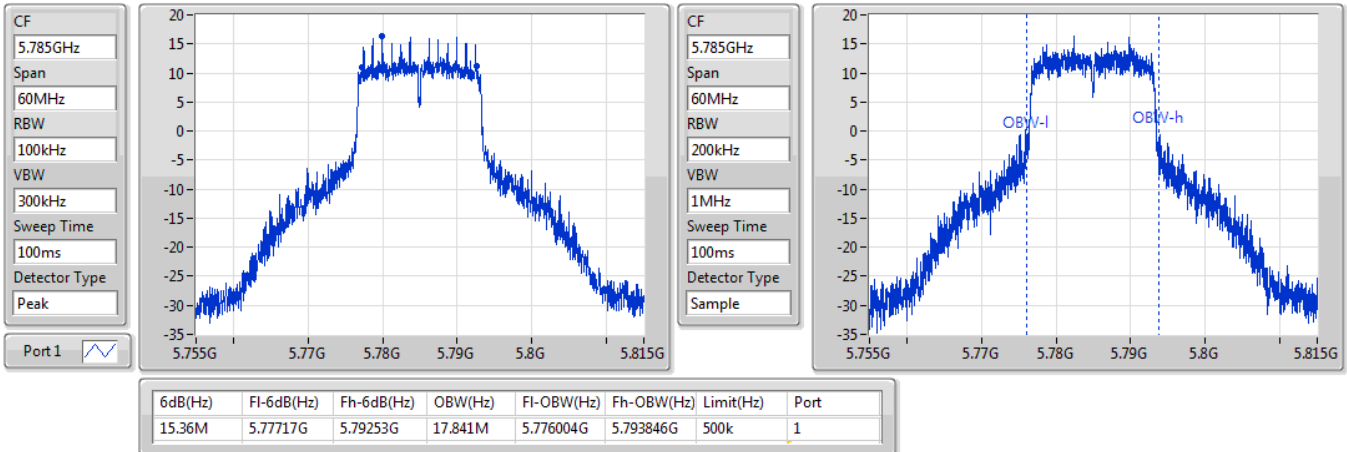

802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

08/07/2019

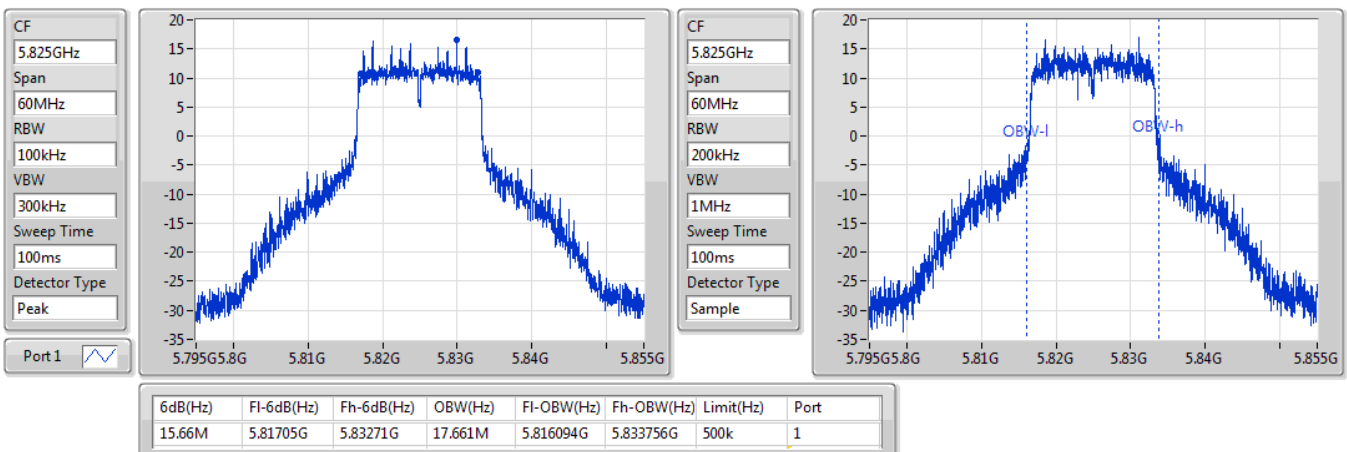


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

08/07/2019

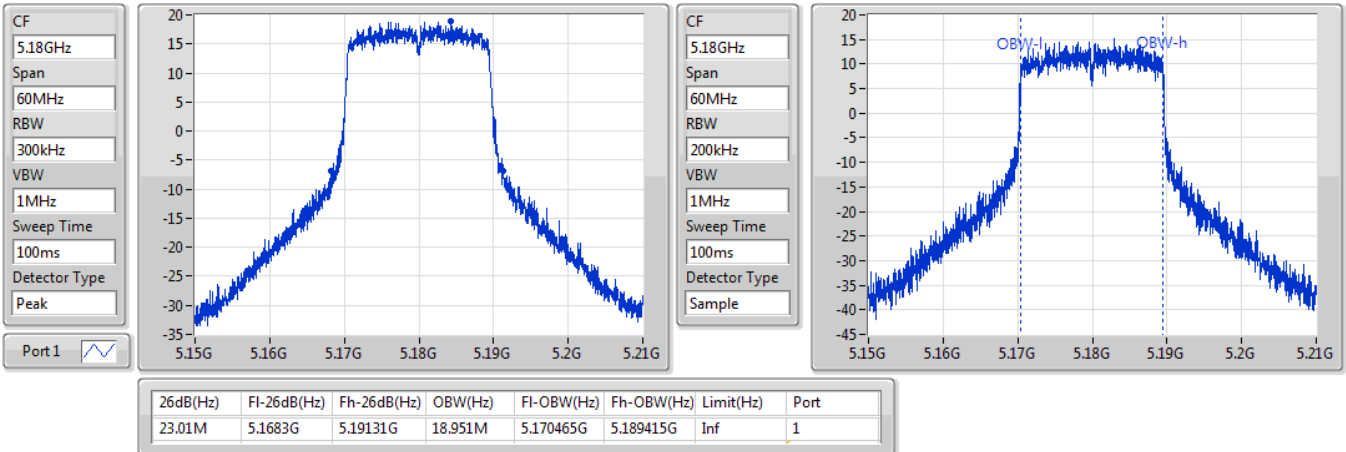

802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

08/07/2019

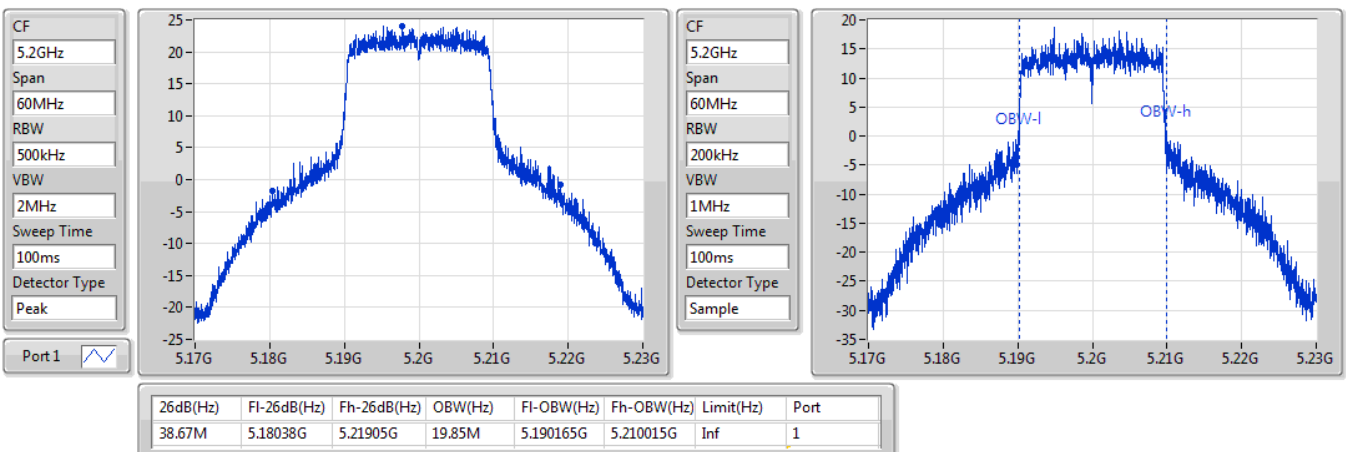


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5180MHz

08/07/2019

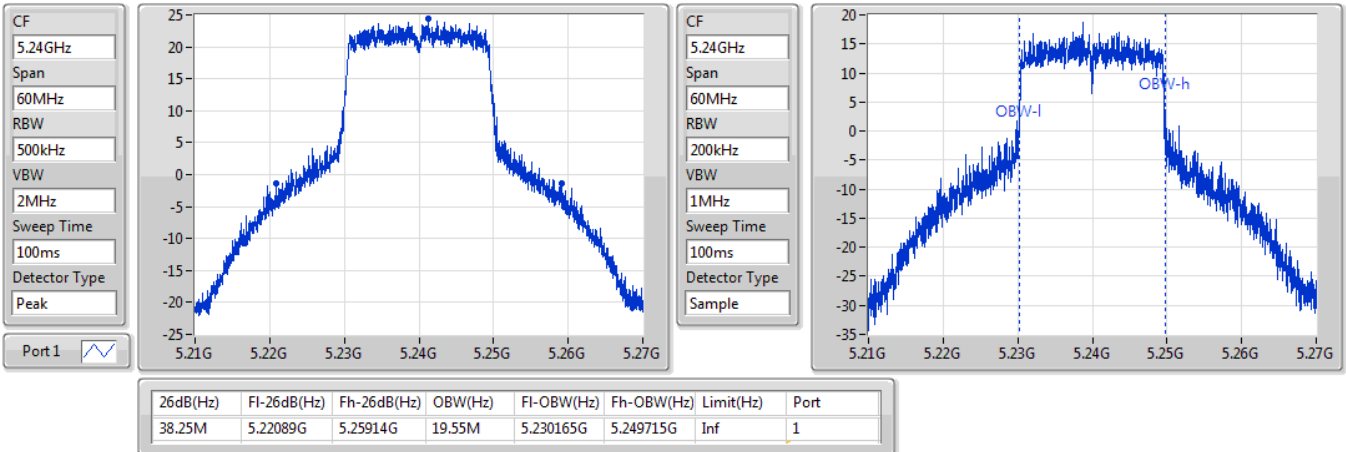

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5200MHz

08/07/2019

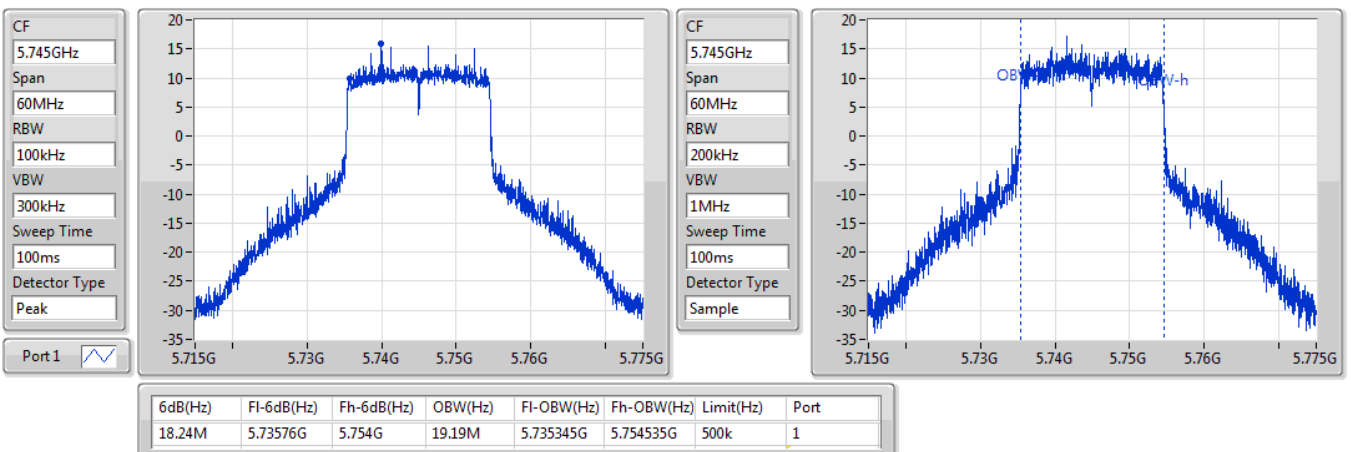


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

08/07/2019

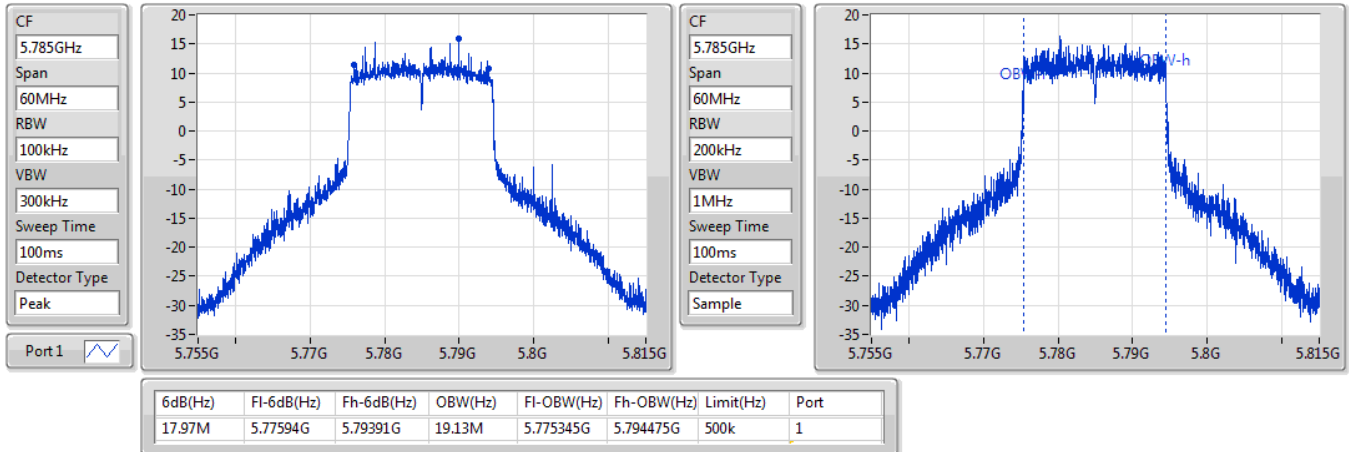

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

08/07/2019

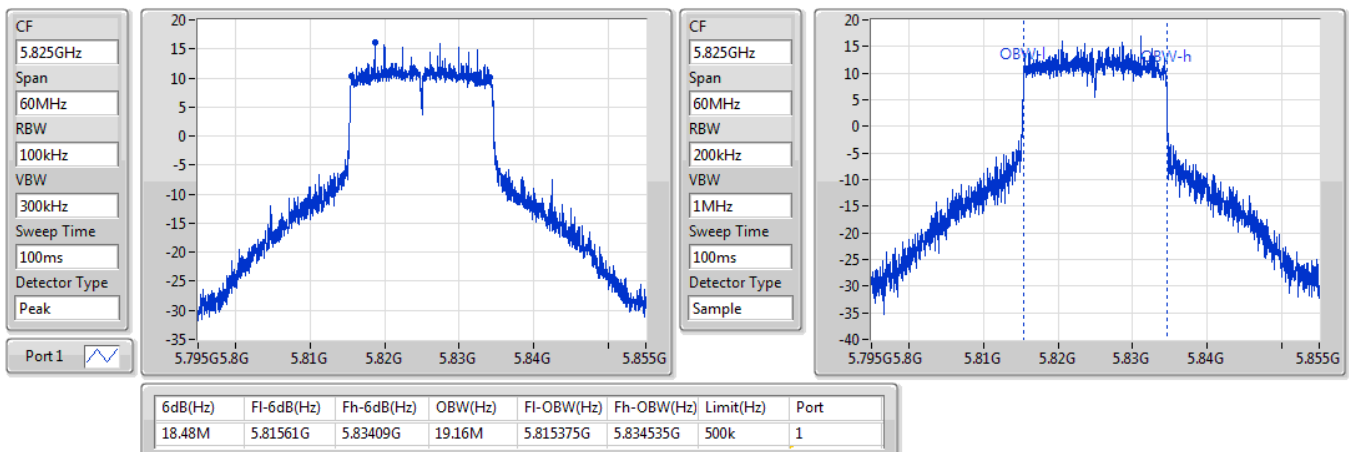


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5785MHz

08/07/2019

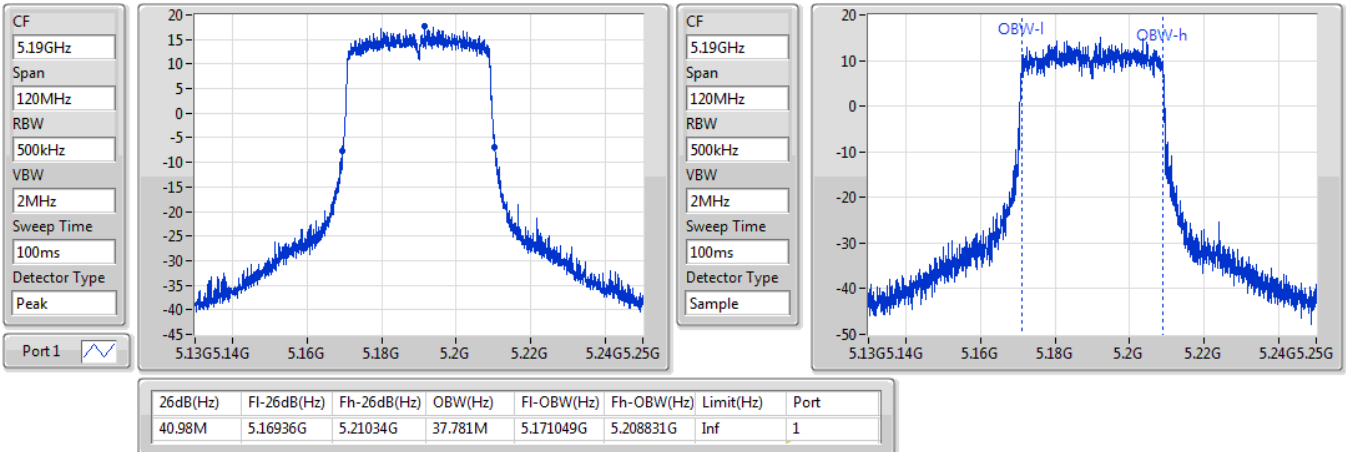

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5825MHz

08/07/2019

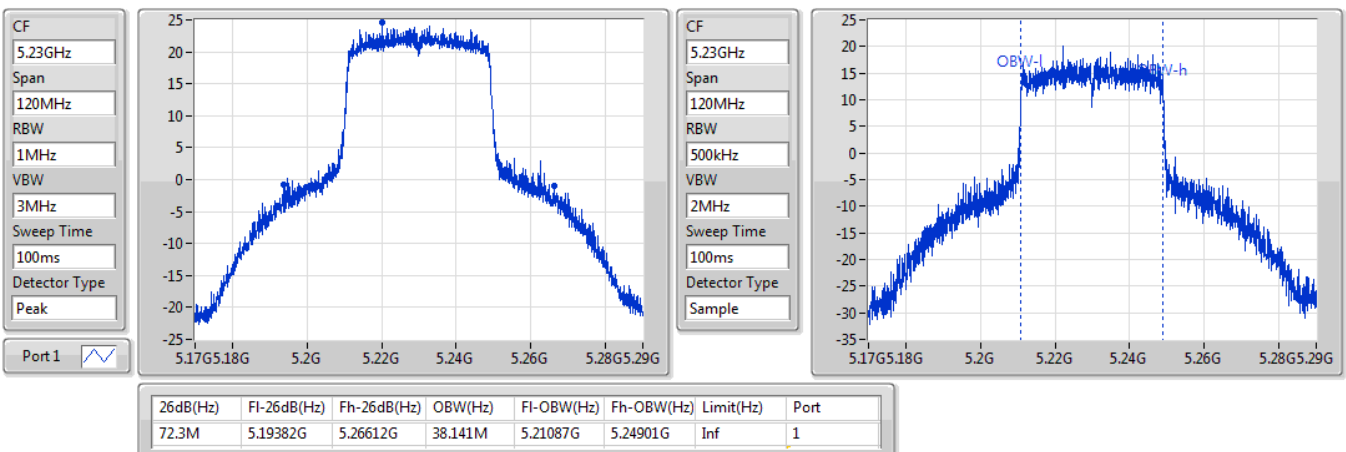


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5190MHz

08/07/2019

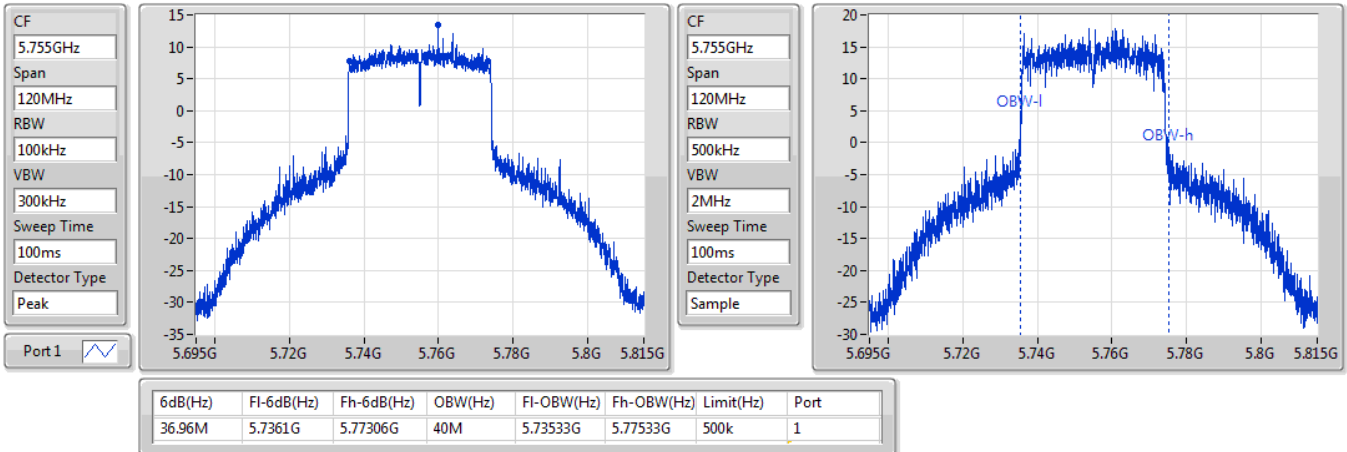

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5230MHz

08/07/2019

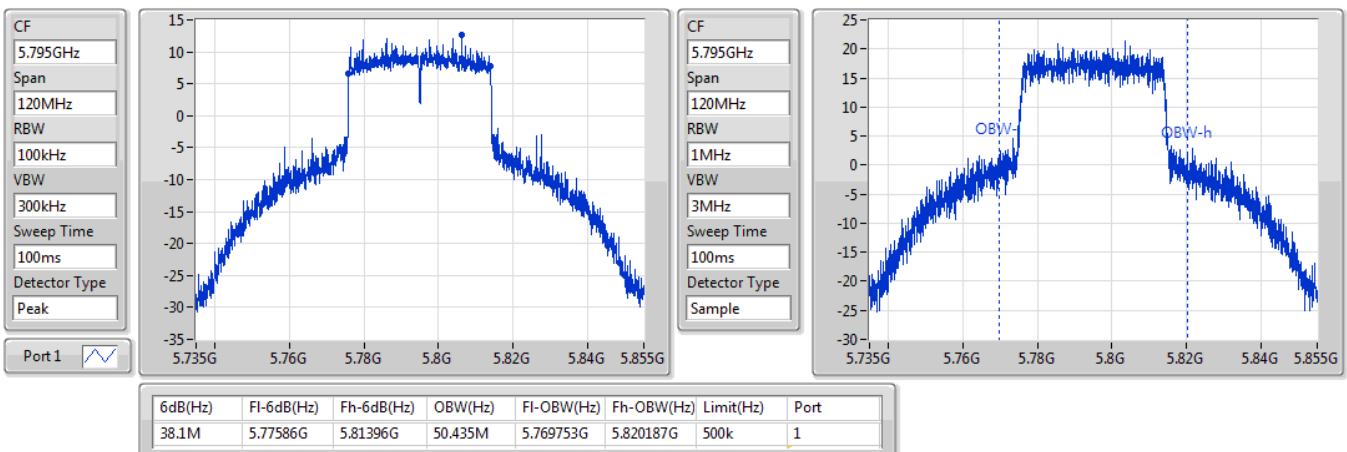


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5755MHz

08/07/2019

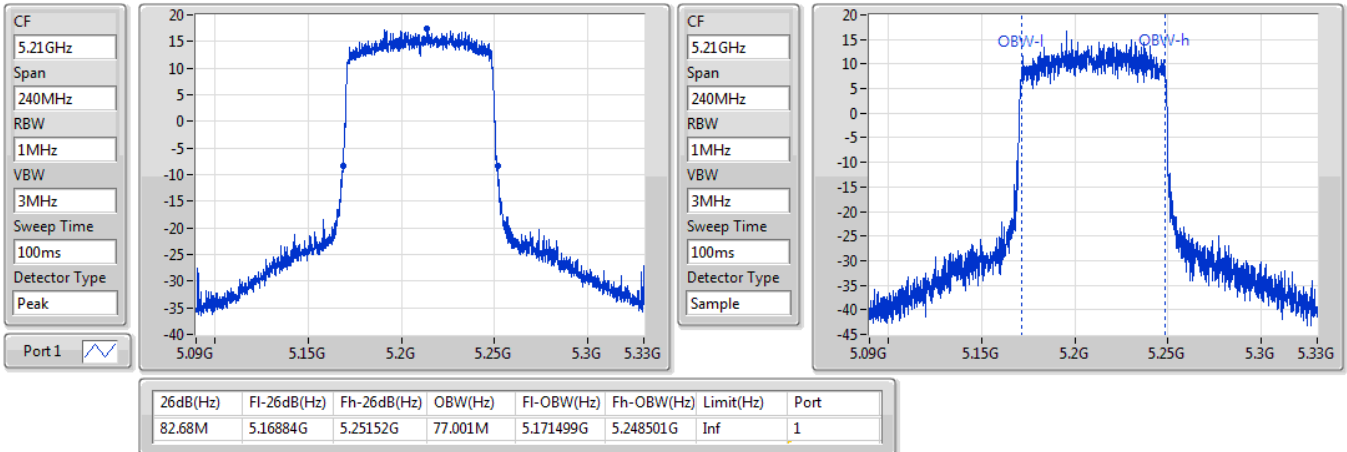

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5795MHz

08/07/2019

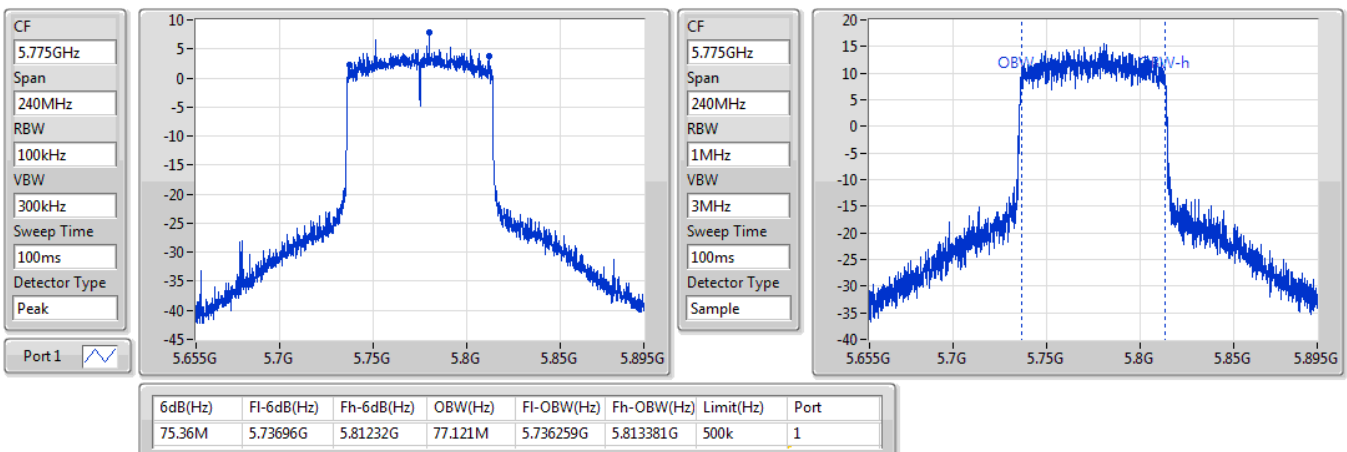


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5210MHz

08/07/2019


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5775MHz

08/07/2019



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)_2TX	21.45M	16.432M	16M4D1D	20.55M	16.372M
802.11ax HEW20_Nss1,(MCS0)_2TX	23.31M	18.981M	19M0D1D	21.75M	18.921M
802.11ax HEW40_Nss1,(MCS0)_2TX	55.8M	37.961M	38M0D1D	41.1M	37.601M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.56M	77.121M	77M1D1D	82.2M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.32M	19.82M	19M8D1D	15.15M	16.522M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.81M	19.37M	19M4D1D	17.52M	18.951M
802.11ax HEW40_Nss1,(MCS0)_2TX	38.04M	44.378M	44M4D1D	36.72M	38.261M
802.11ax HEW80_Nss1,(MCS0)_2TX	74.88M	77.241M	77M2D1D	69.36M	77.121M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

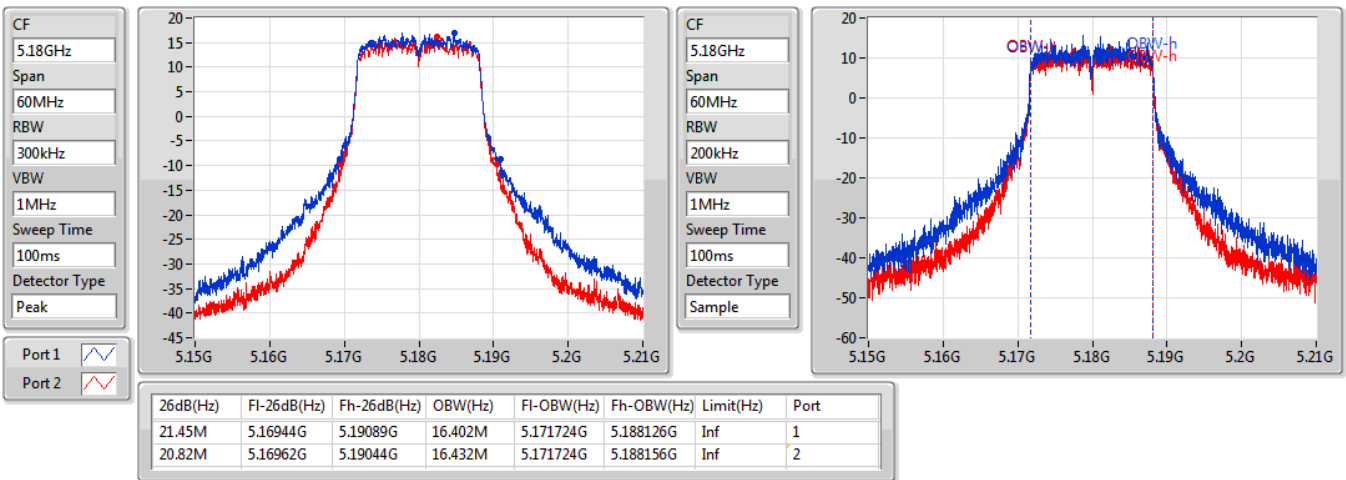
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.45M	16.402M	20.82M	16.432M
5200MHz	Pass	Inf	20.88M	16.432M	20.76M	16.432M
5240MHz	Pass	Inf	20.73M	16.372M	20.55M	16.432M
5745MHz	Pass	500k	15.6M	19.52M	16.29M	16.582M
5785MHz	Pass	500k	16.32M	19.82M	15.48M	16.522M
5825MHz	Pass	500k	15.15M	19.28M	15.42M	16.582M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	23.19M	18.951M	21.78M	18.921M
5200MHz	Pass	Inf	23.31M	18.981M	21.75M	18.921M
5240MHz	Pass	Inf	22.74M	18.921M	22.02M	18.951M
5745MHz	Pass	500k	18.57M	19.28M	17.61M	18.951M
5785MHz	Pass	500k	17.97M	19.37M	17.52M	18.951M
5825MHz	Pass	500k	18.81M	19.31M	17.97M	18.981M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	41.1M	37.601M	41.28M	37.721M
5230MHz	Pass	Inf	55.8M	37.961M	45M	37.841M
5755MHz	Pass	500k	36.72M	38.621M	38.04M	38.261M
5795MHz	Pass	500k	37.92M	44.378M	37.56M	39.4M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	82.56M	77.121M	82.2M	76.882M
5775MHz	Pass	500k	74.88M	77.121M	69.36M	77.241M

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

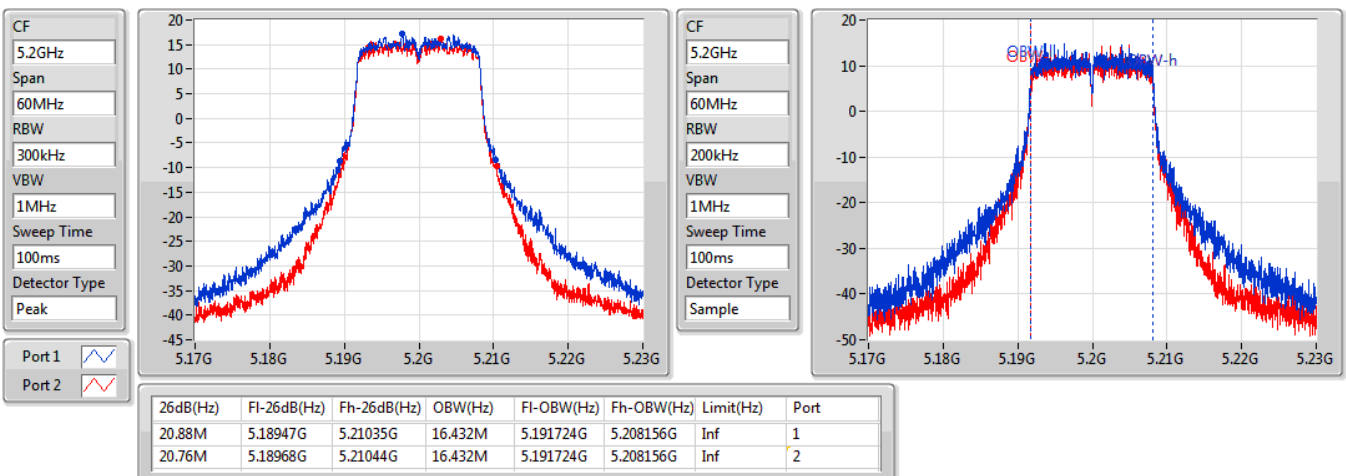
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX
EBW
5180MHz

09/07/2019


802.11a_Nss1,(6Mbps)_2TX
EBW
5200MHz

09/07/2019

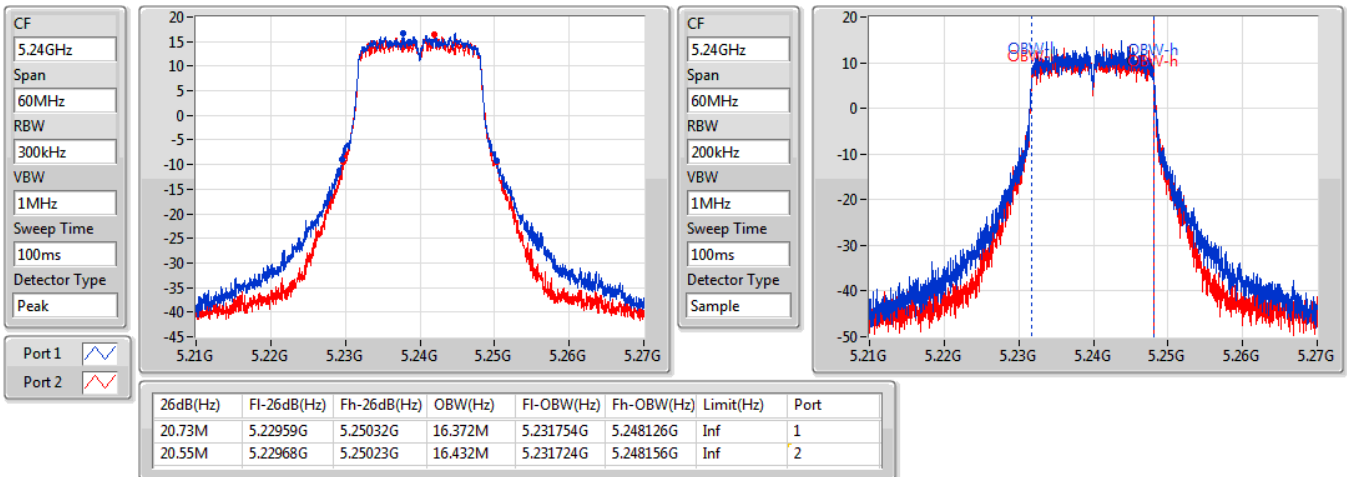


802.11a_Nss1,(6Mbps)_2TX

EBW

5240MHz

09/07/2019

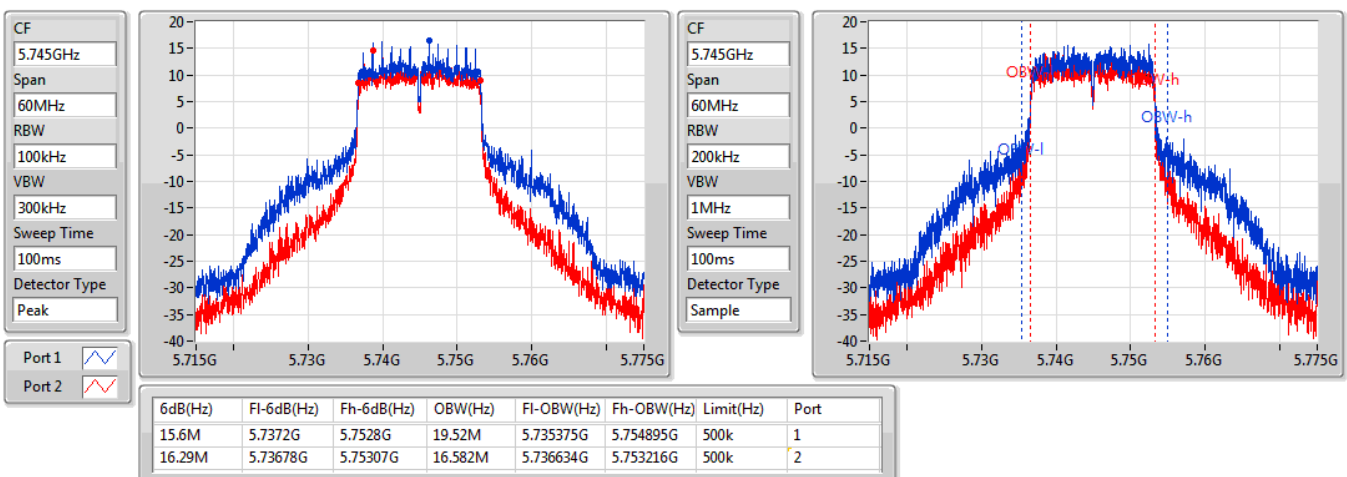


802.11a_Nss1,(6Mbps)_2TX

EBW

5745MHz

09/07/2019

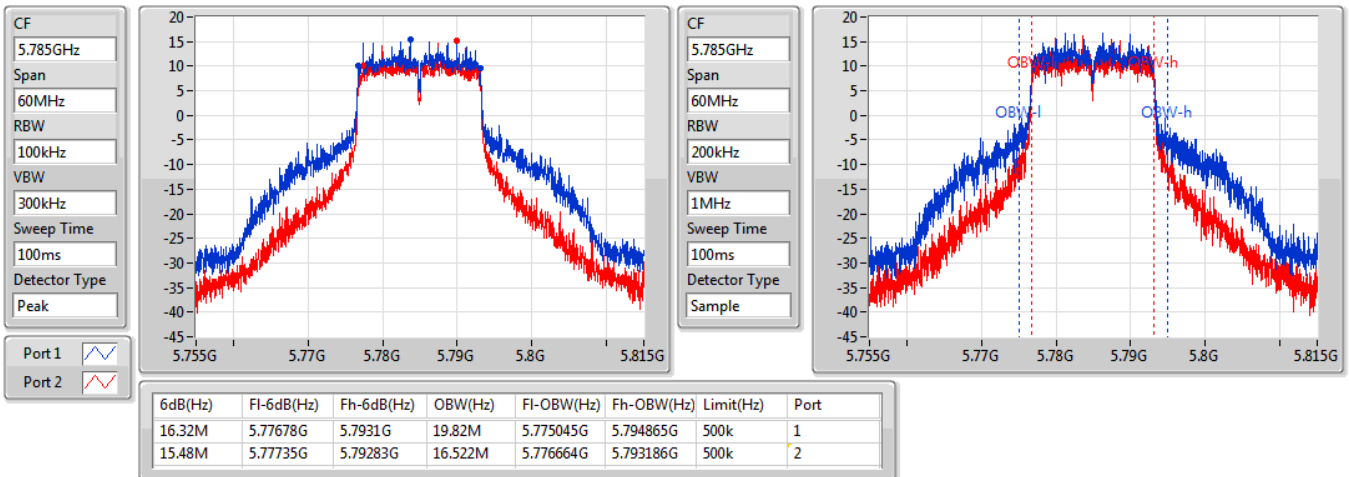


802.11a_Nss1,(6Mbps)_2TX

EBW

5785MHz

09/07/2019

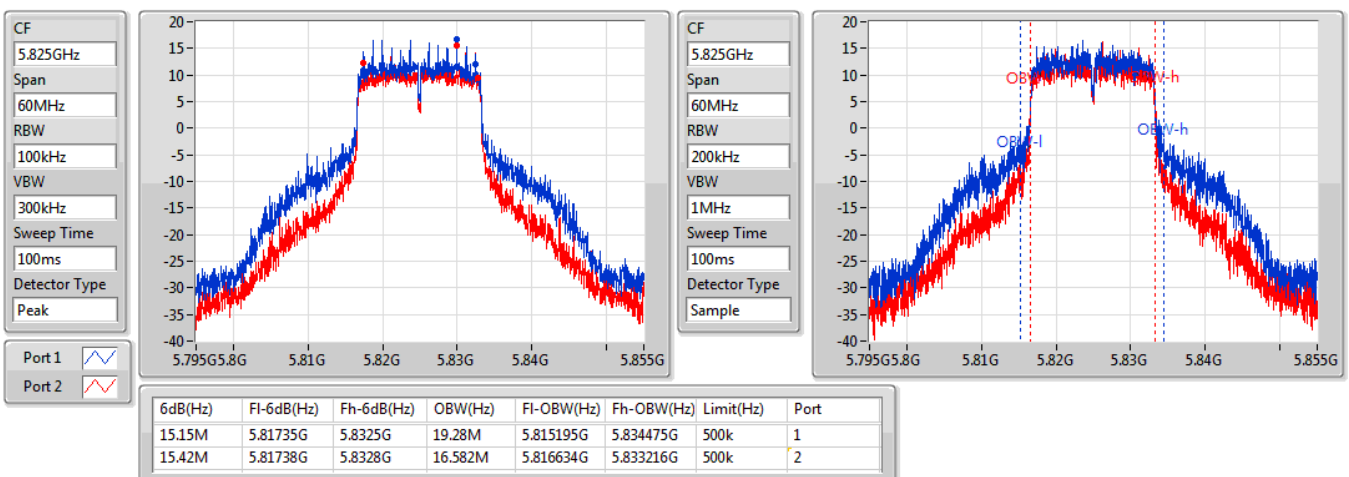


802.11a_Nss1,(6Mbps)_2TX

EBW

5825MHz

09/07/2019

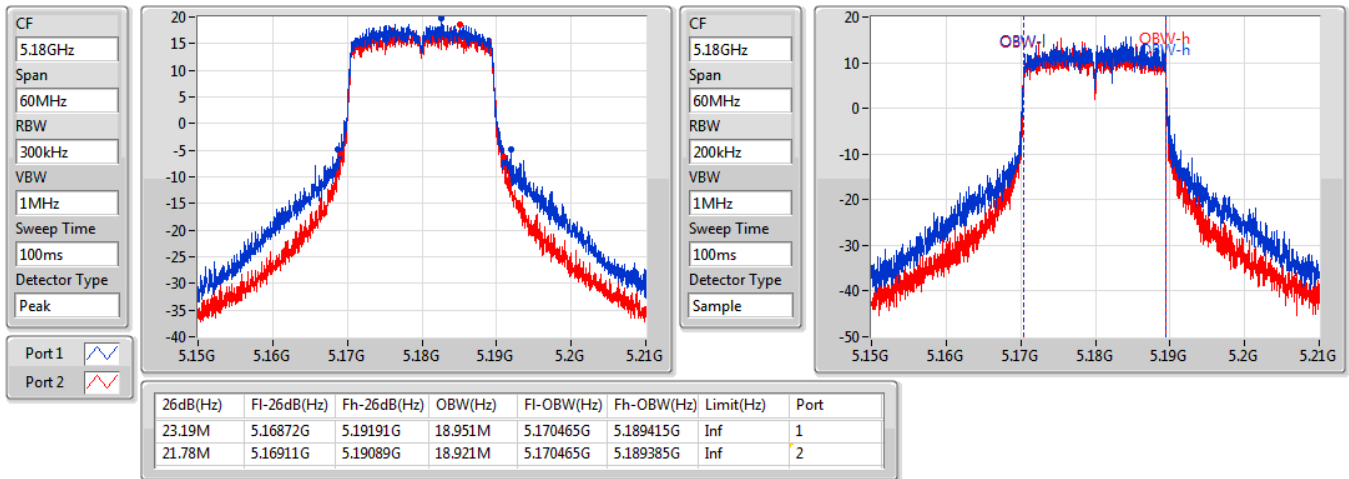


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5180MHz

09/07/2019

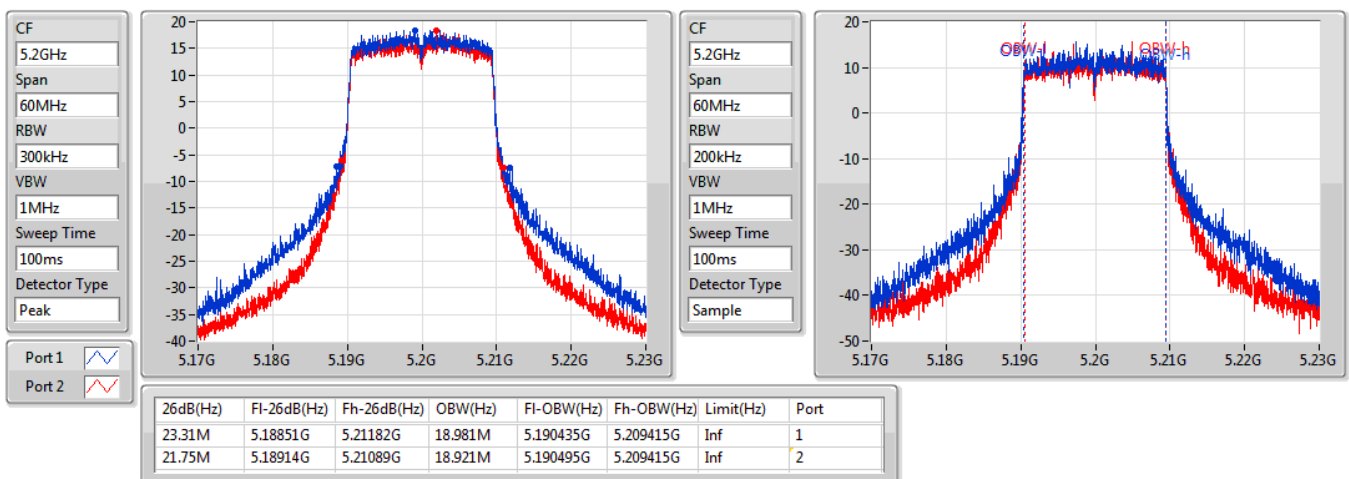


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

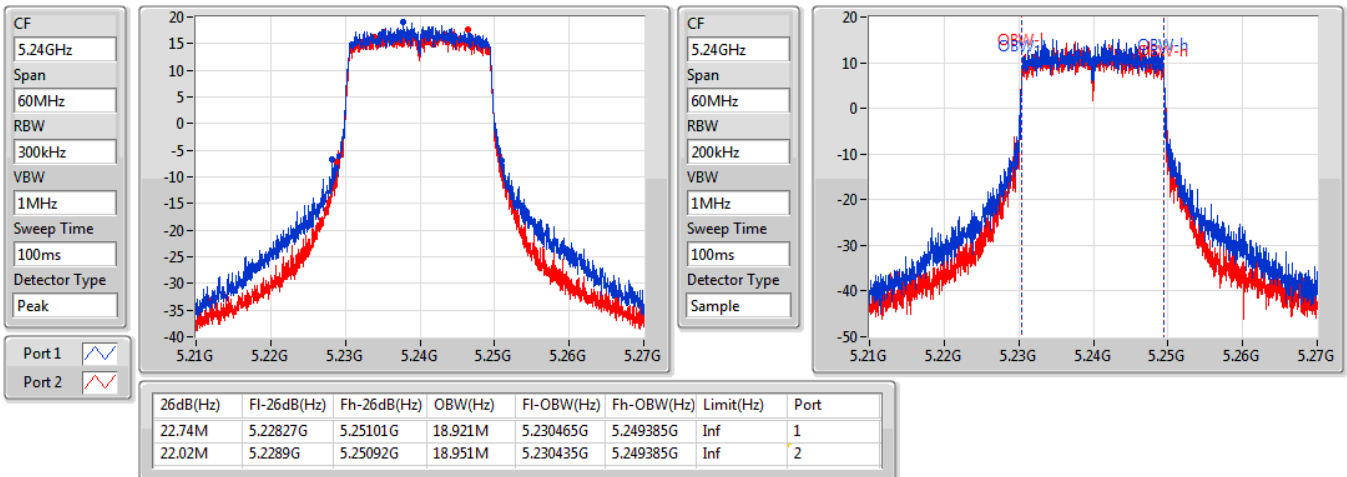
5200MHz

09/07/2019

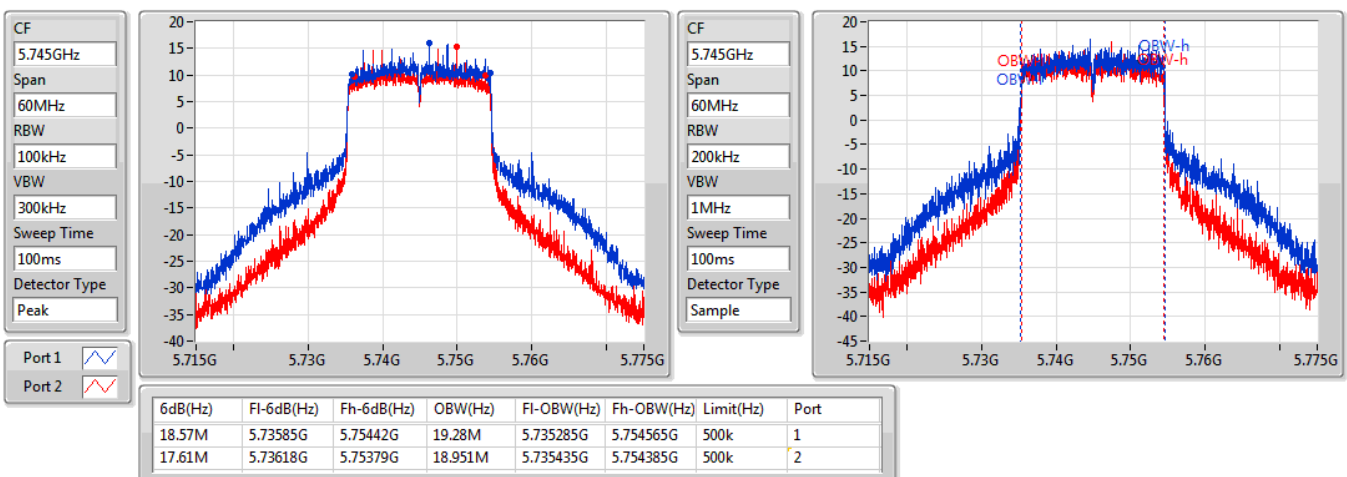


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5240MHz

09/07/2019


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5745MHz

09/07/2019

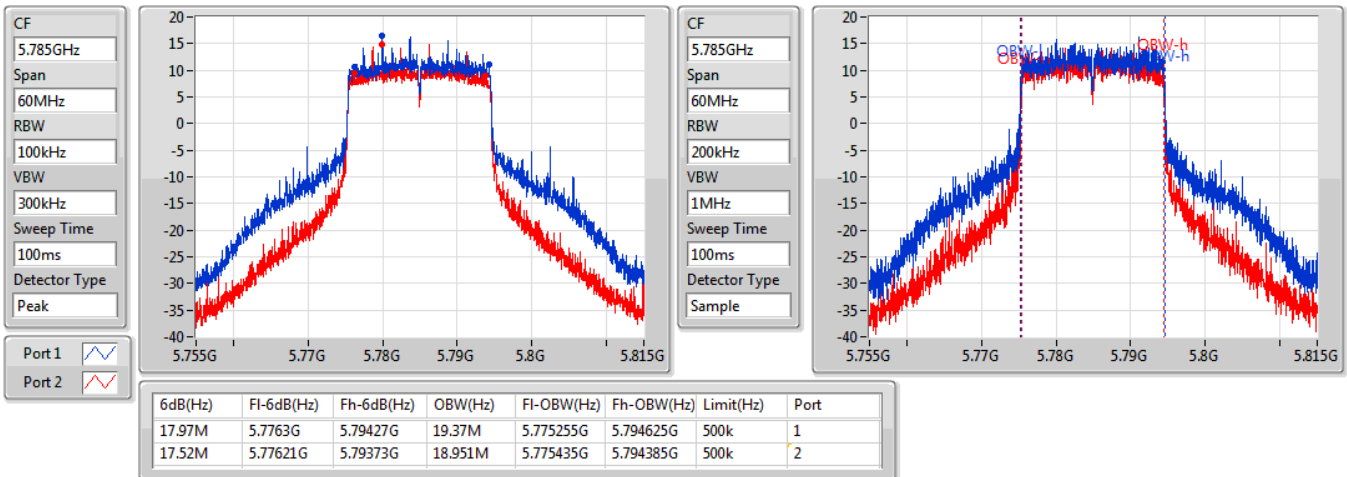


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

5785MHz

09/07/2019

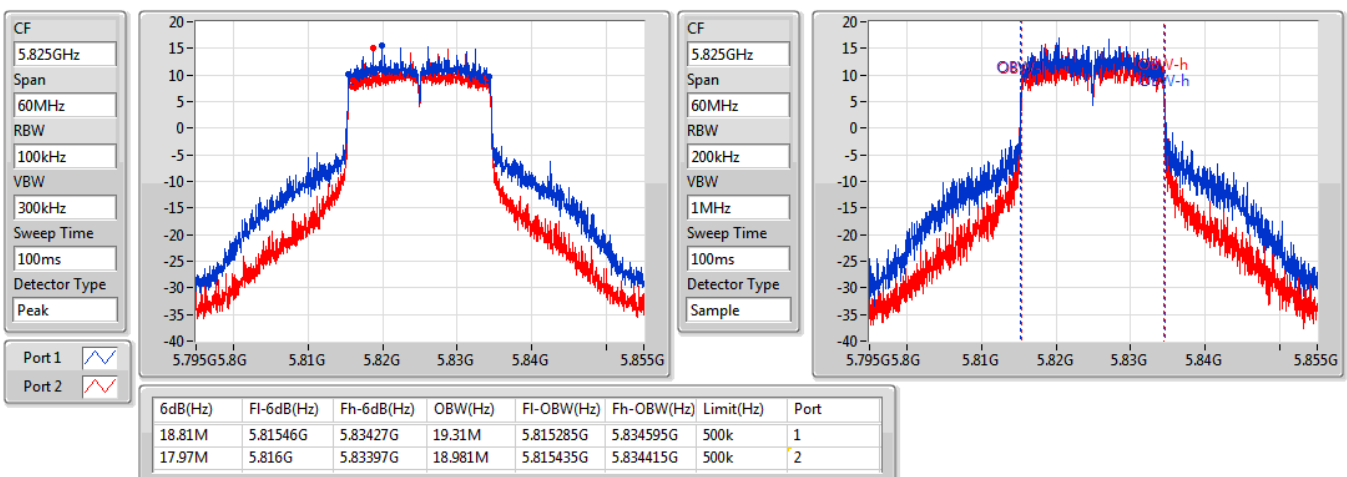


802.11ax HEW20_Nss1,(MCS0)_2TX

EBW

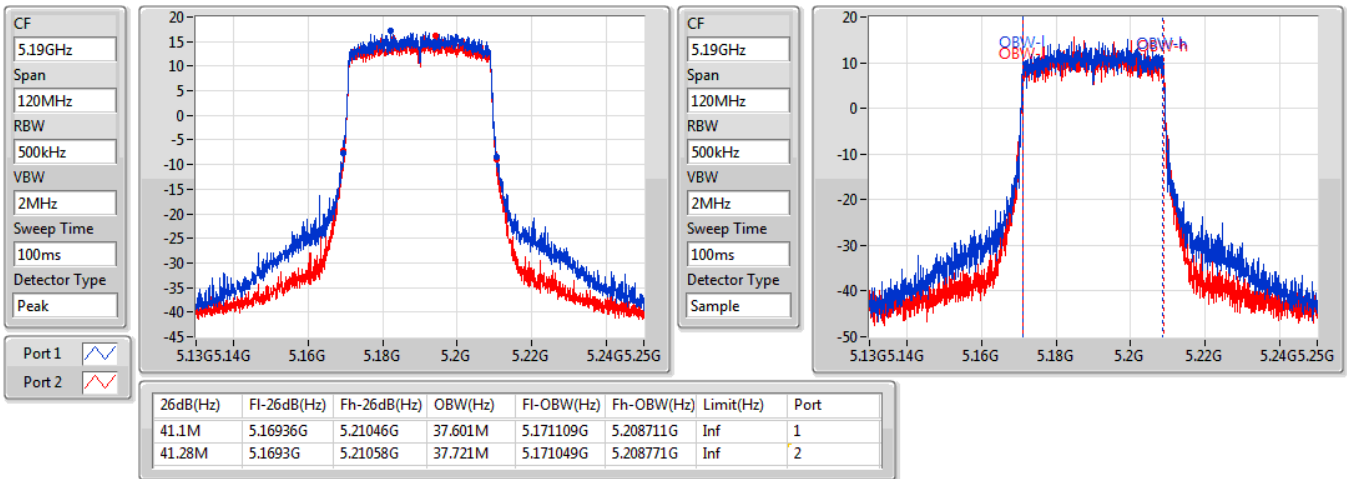
5825MHz

09/07/2019

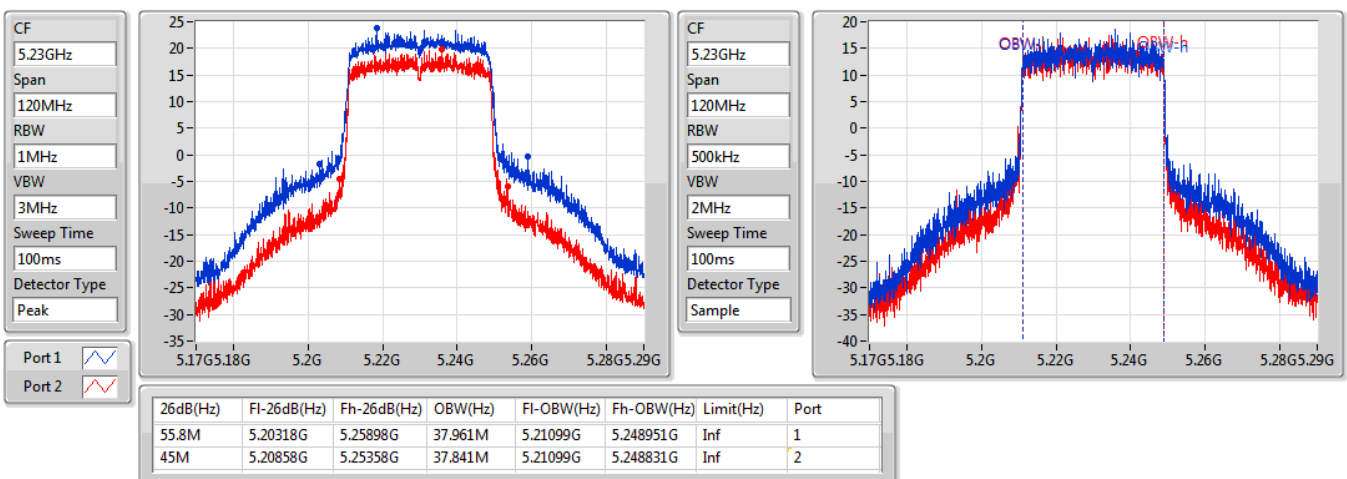


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5190MHz

09/07/2019


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5230MHz

09/07/2019

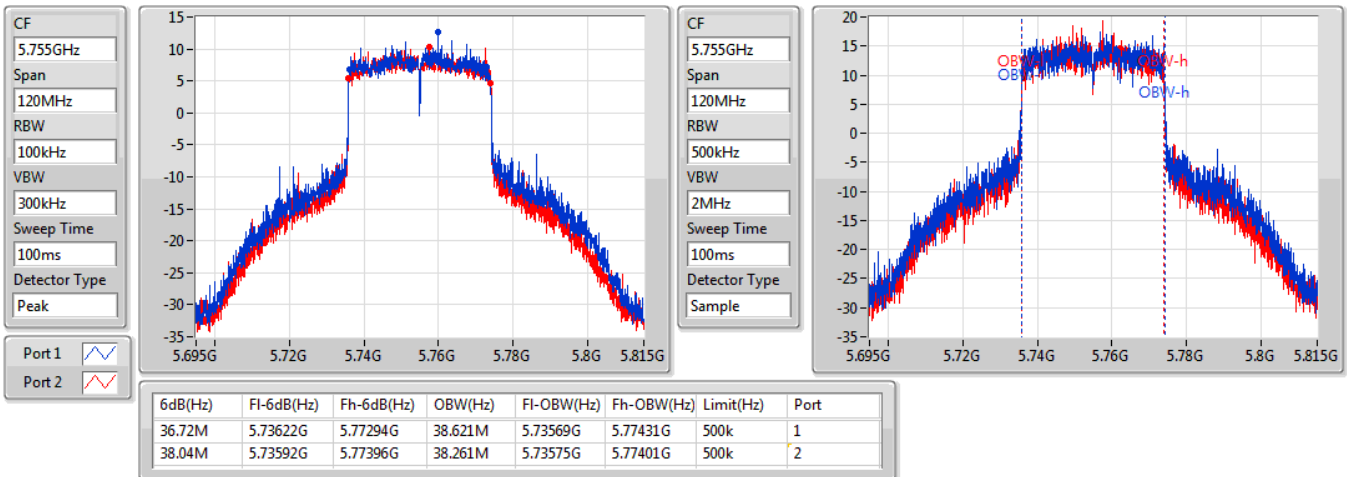


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5755MHz

09/07/2019

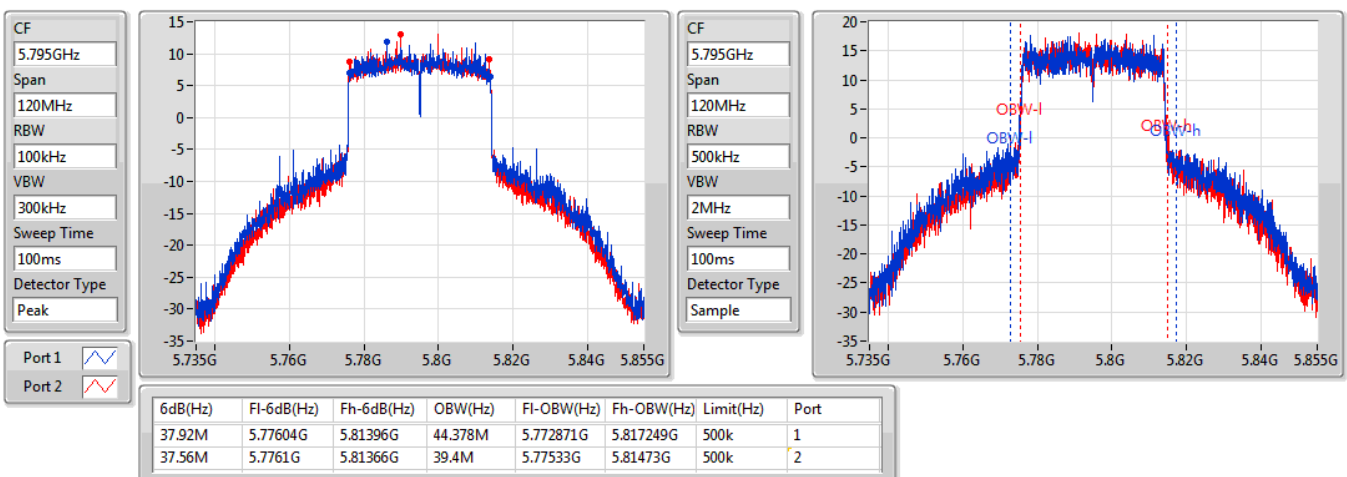


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5795MHz

09/07/2019

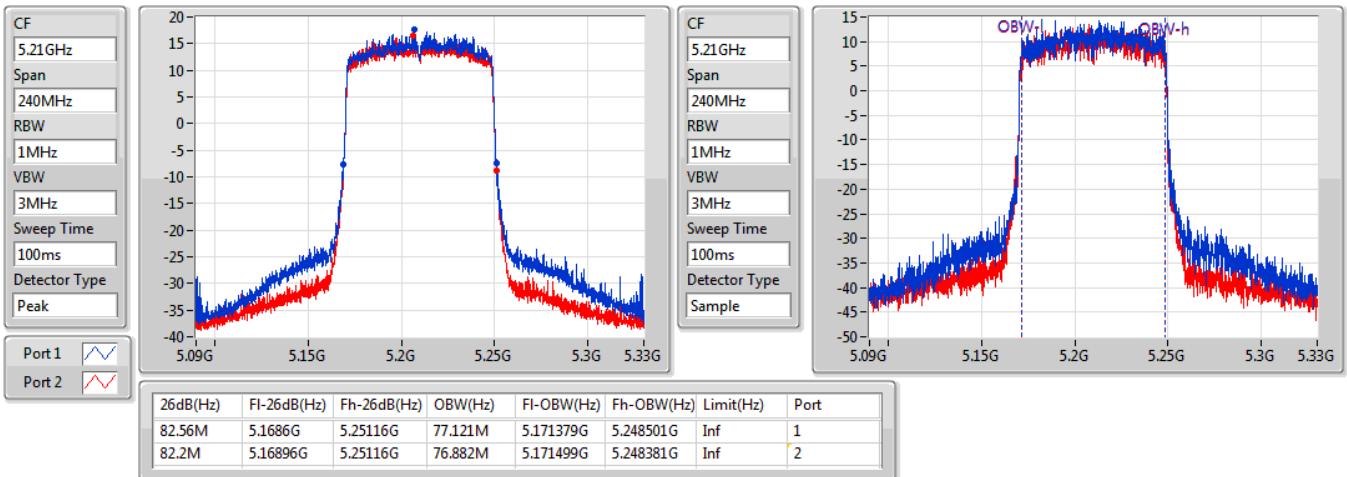


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5210MHz

09/07/2019

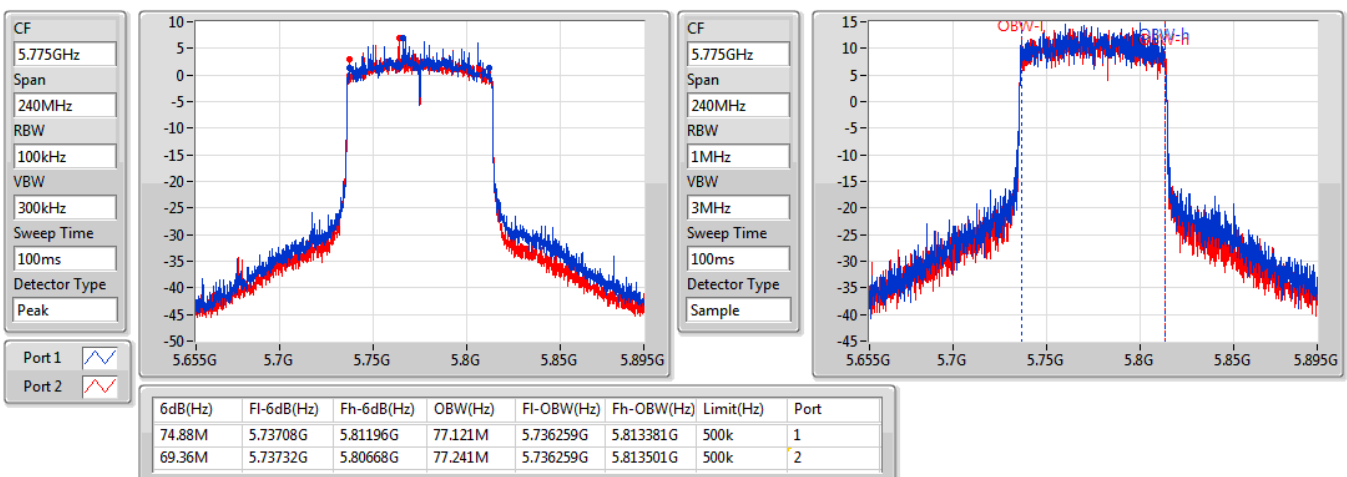


802.11ax HEW80_Nss1,(MCS0)_2TX

EBW

5775MHz

09/07/2019



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)_2TX	21.84M	18.921M	18M9D1D	21.27M	18.861M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	41.16M	37.721M	37M7D1D	40.32M	37.661M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	81.72M	77.04M	77M0D1D	81.24M	76.68M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	18.15M	18.921M	18M9D1D	17.04M	18.891M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.5M	37.721M	37M7D1D	36.24M	37.661M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	76.44M	78.12M	78M1D1D	58.56M	77.64M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

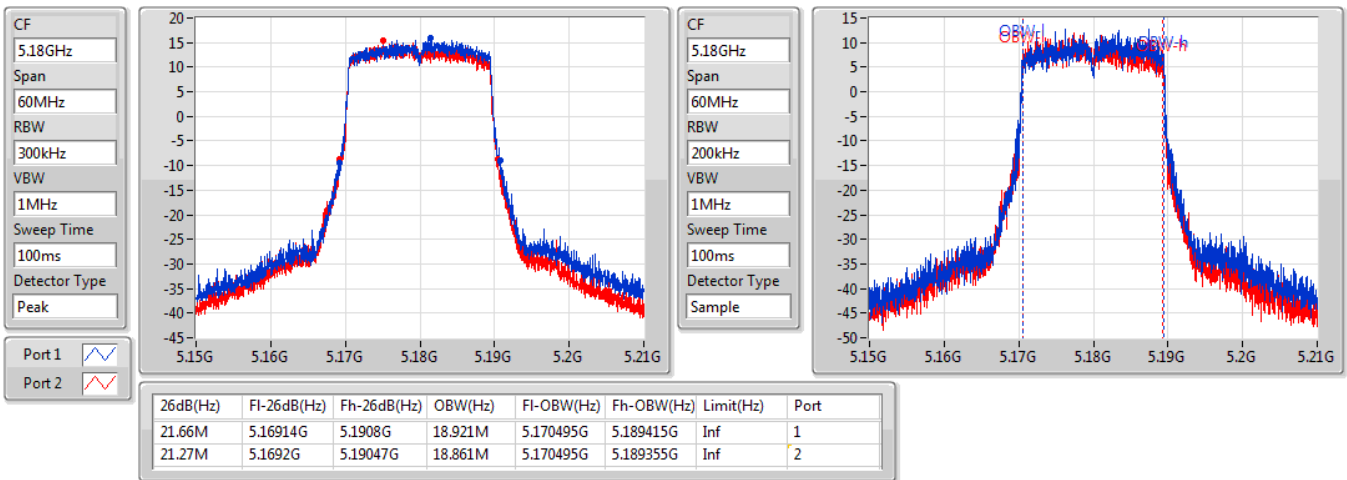
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.66M	18.921M	21.27M	18.861M
5200MHz	Pass	Inf	21.42M	18.891M	21.84M	18.921M
5240MHz	Pass	Inf	21.66M	18.891M	21.81M	18.891M
5745MHz	Pass	500k	17.7M	18.891M	17.49M	18.891M
5785MHz	Pass	500k	17.64M	18.921M	17.91M	18.891M
5825MHz	Pass	500k	17.04M	18.891M	18.15M	18.921M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	40.32M	37.661M	40.68M	37.721M
5230MHz	Pass	Inf	41.16M	37.661M	40.62M	37.721M
5755MHz	Pass	500k	36.42M	37.721M	37.5M	37.661M
5795MHz	Pass	500k	36.24M	37.661M	36.36M	37.661M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.72M	77.04M	81.24M	76.68M
5775MHz	Pass	500k	58.56M	77.64M	76.44M	78.12M

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

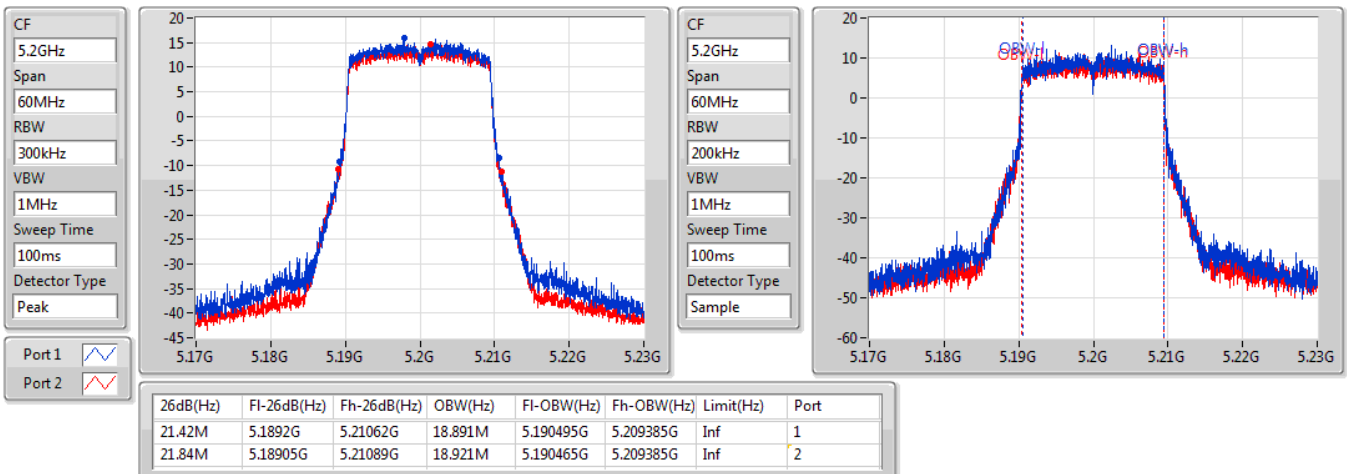
Port X-OBW = Port X 99% occupied bandwidth;

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5180MHz

10/07/2019

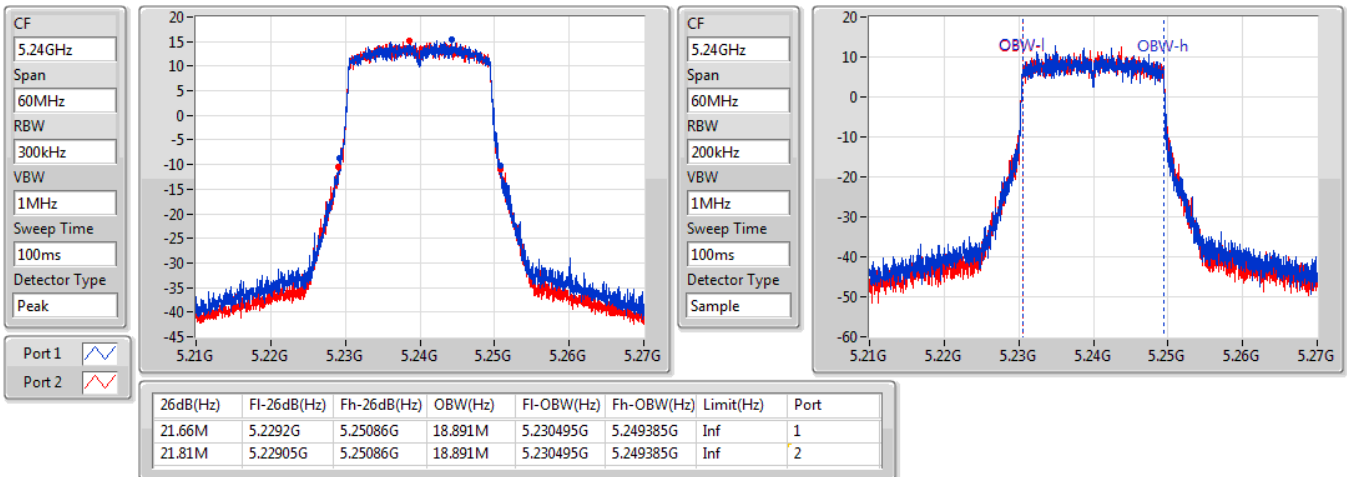

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5200MHz

10/07/2019

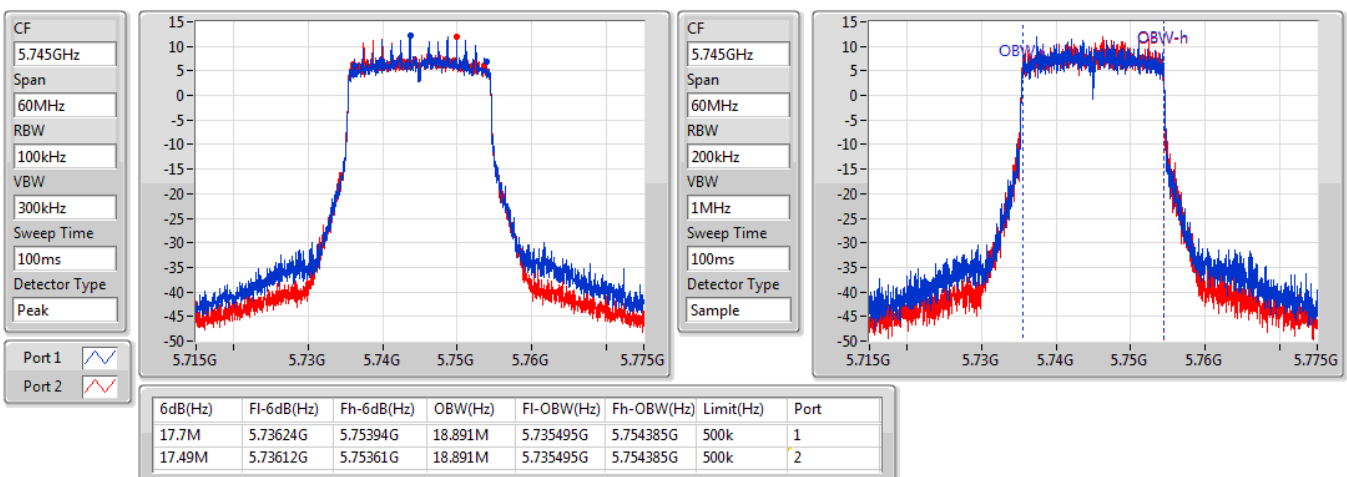


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5240MHz

10/07/2019

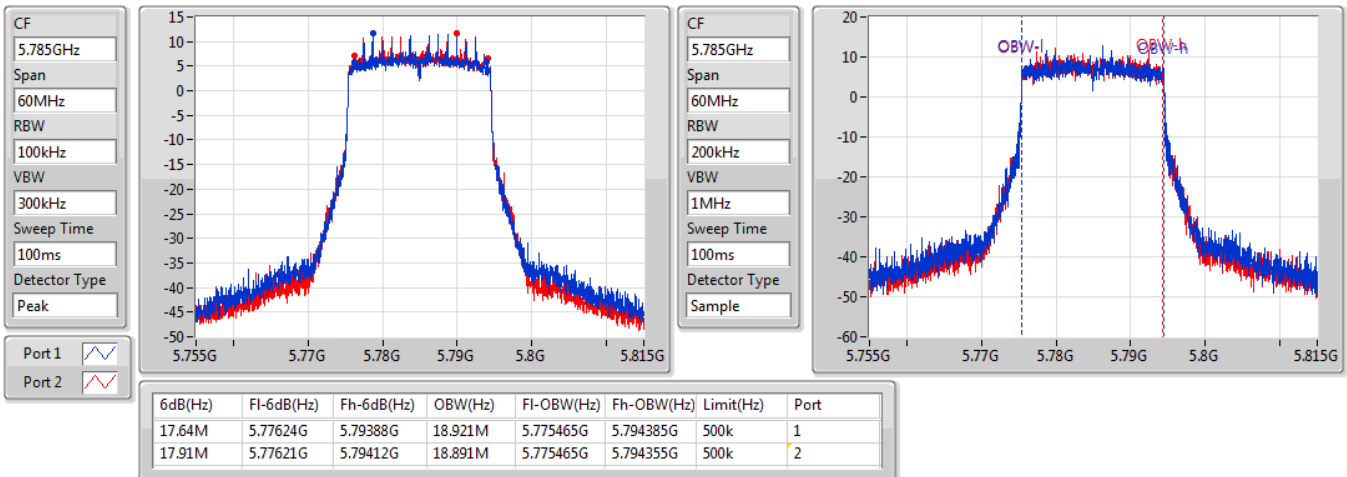

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5745MHz

10/07/2019

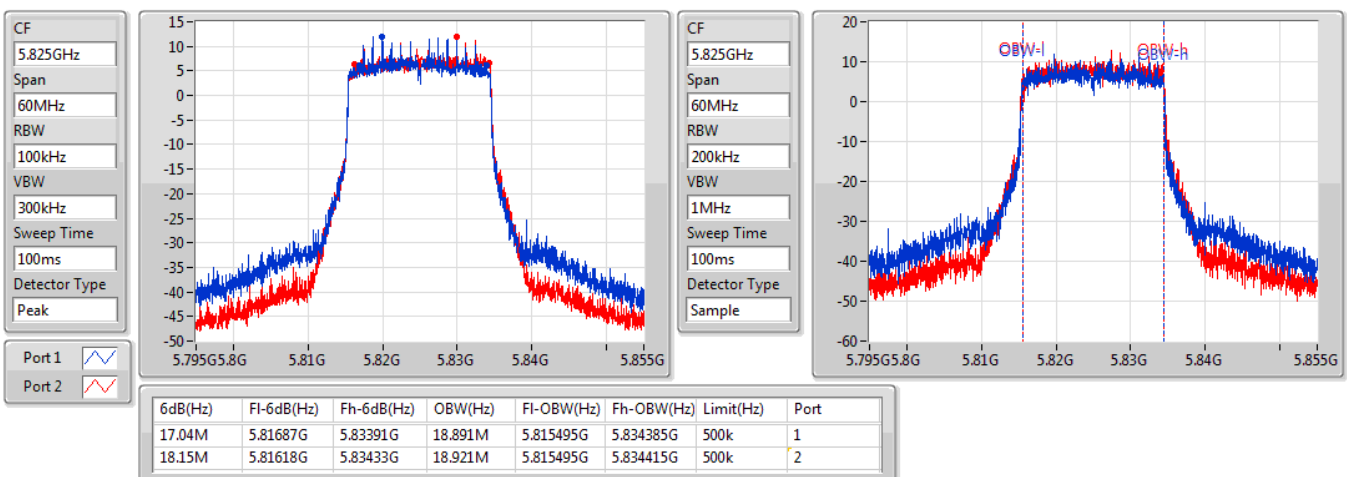


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5785MHz

10/07/2019


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5825MHz

10/07/2019

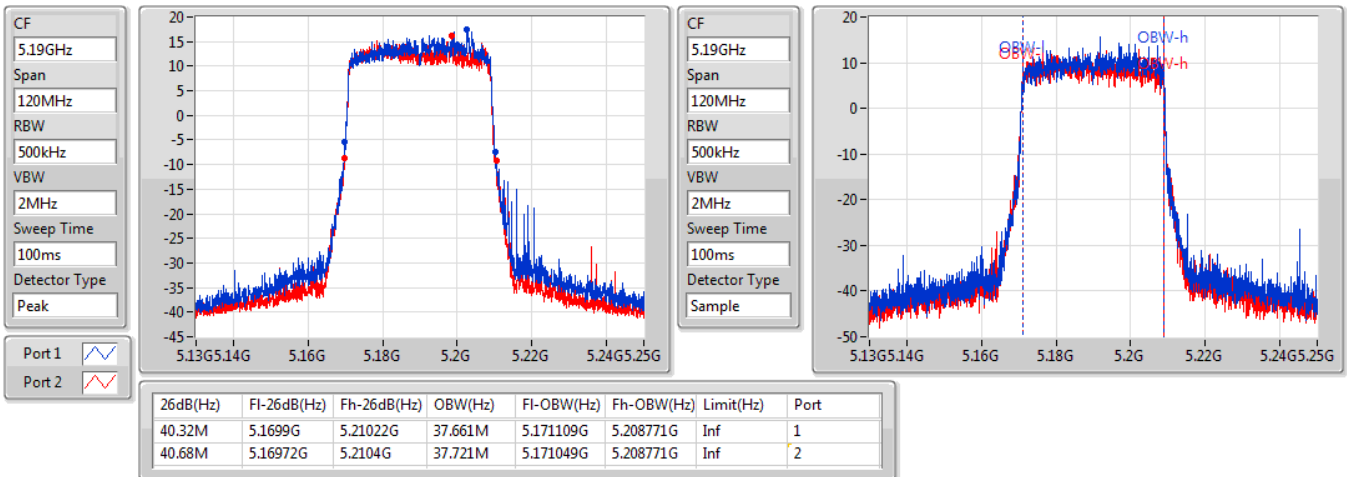


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5190MHz

10/07/2019

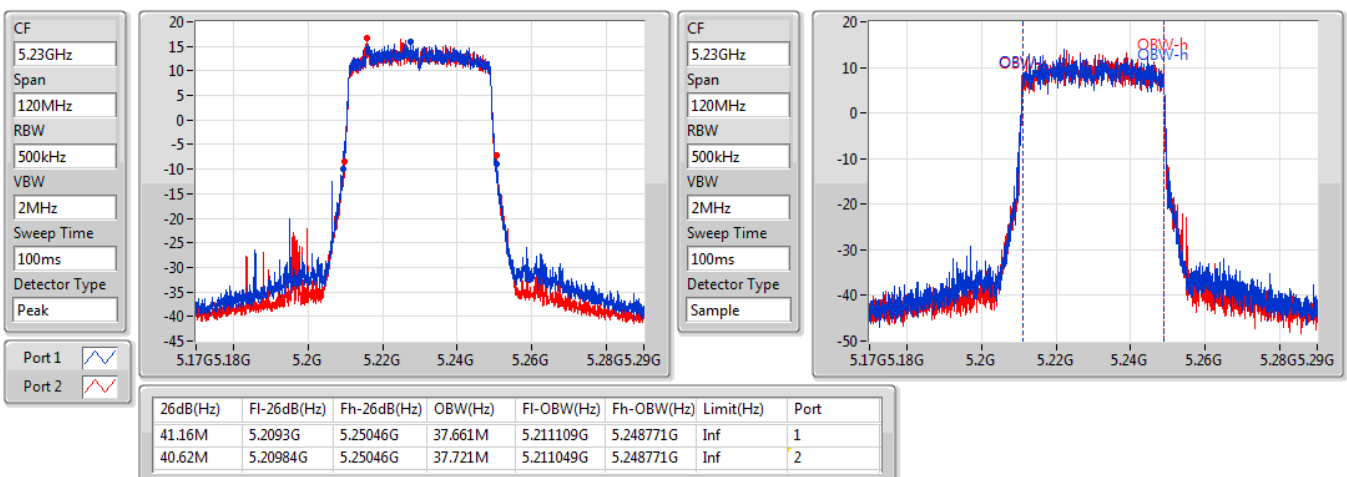


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

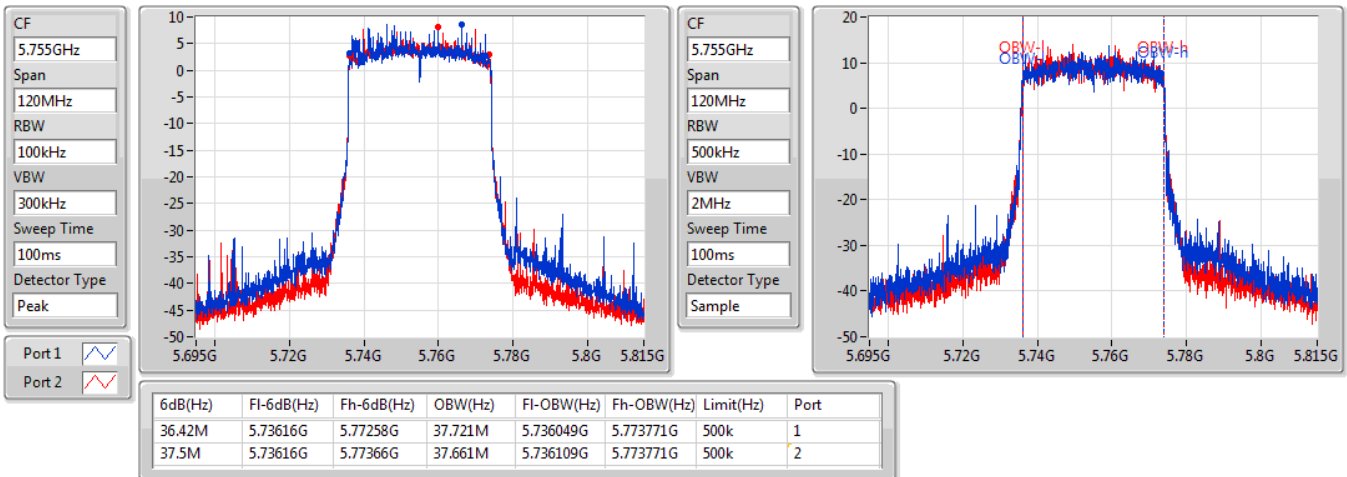
5230MHz

10/07/2019

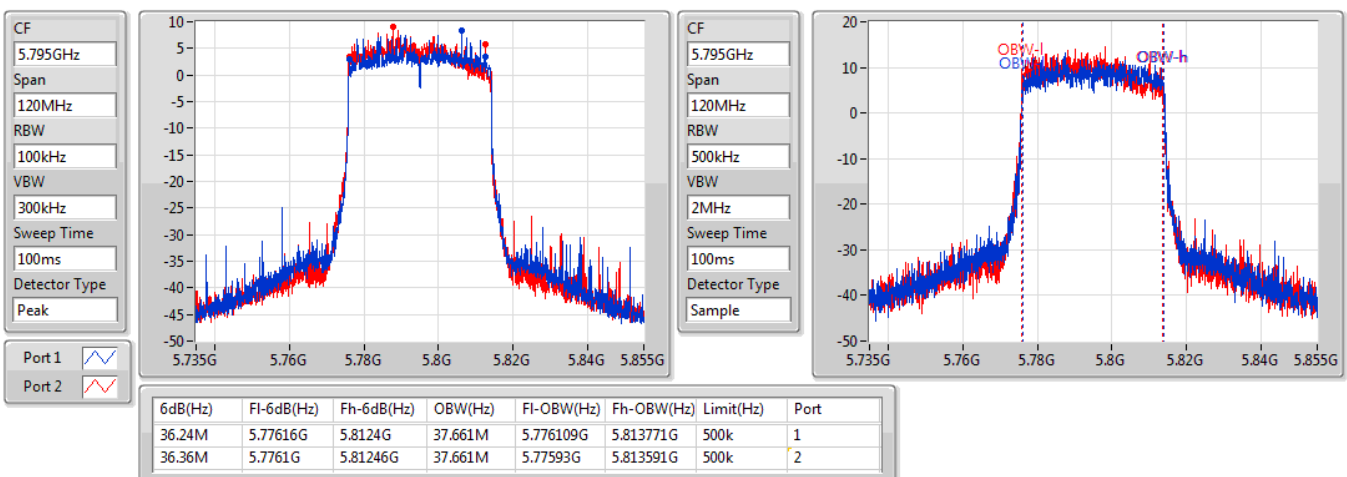


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5755MHz

10/07/2019

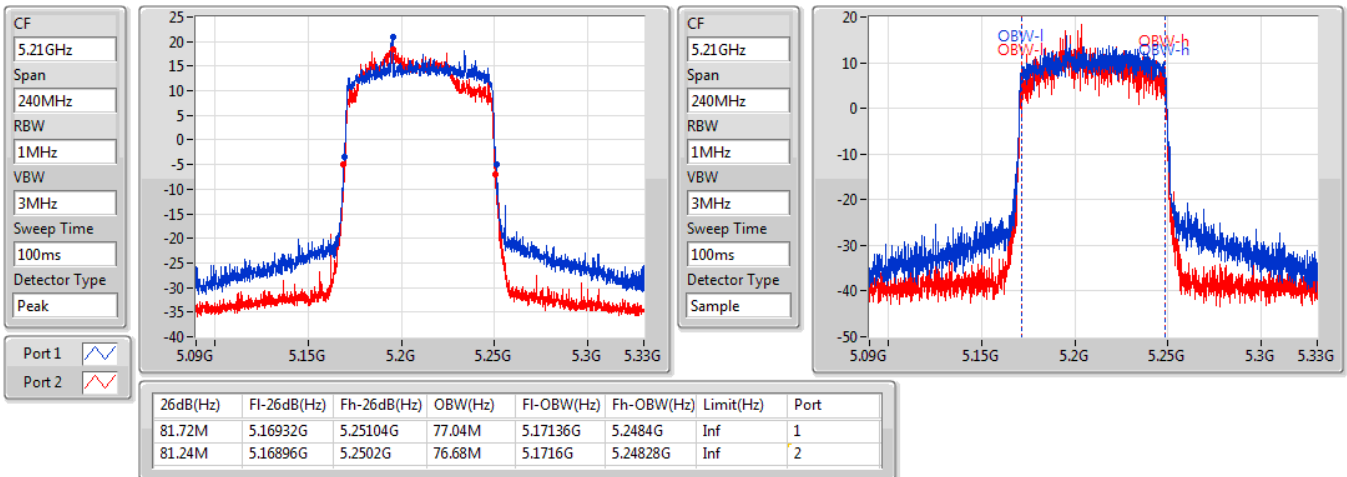

802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5795MHz

10/07/2019

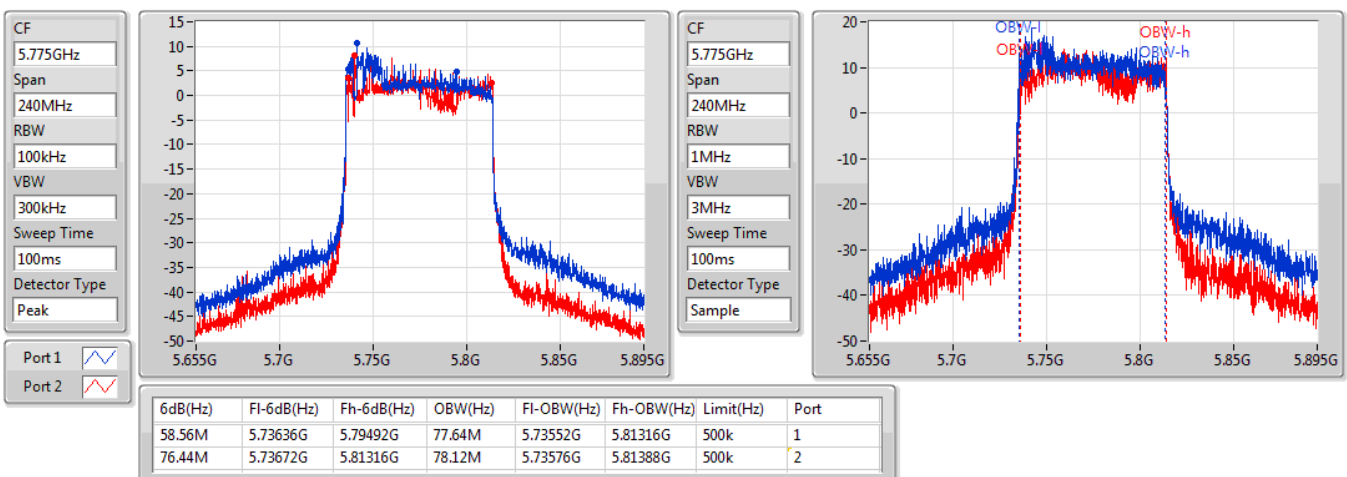


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5210MHz

17/07/2019


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5775MHz

17/07/2019



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)_4TX	20.88M	16.462M	16M5D1D	20.46M	16.342M
802.11ax HEW20_Nss1,(MCS0)_4TX	22.08M	18.921M	18M9D1D	21.57M	18.891M
802.11ax HEW40_Nss1,(MCS0)_4TX	41.46M	37.721M	37M7D1D	40.92M	37.601M
802.11ax HEW80_Nss1,(MCS0)_4TX	82.68M	77.121M	77M1D1D	82.08M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	15.9M	16.492M	16M5D1D	15.3M	16.342M
802.11ax HEW20_Nss1,(MCS0)_4TX	18.63M	19.01M	19M0D1D	17.43M	18.861M
802.11ax HEW40_Nss1,(MCS0)_4TX	37.74M	37.901M	37M9D1D	36.18M	37.661M
802.11ax HEW80_Nss1,(MCS0)_4TX	77.04M	77.241M	77M2D1D	71.4M	76.882M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

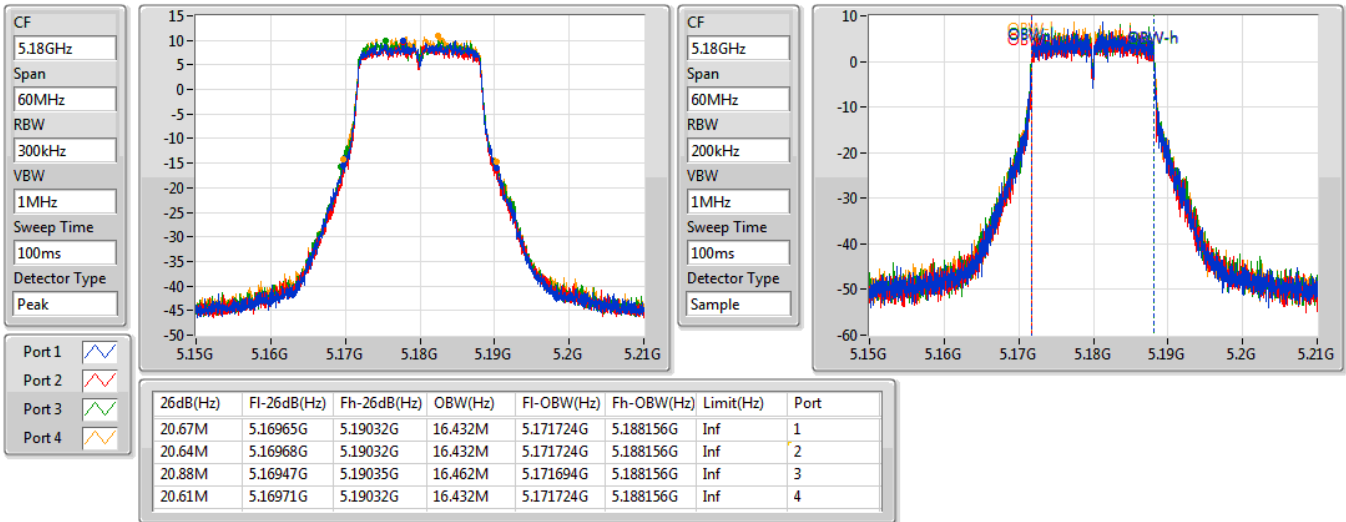
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	20.67M	16.432M	20.64M	16.432M	20.88M	16.462M	20.61M	16.432M
5200MHz	Pass	Inf	20.46M	16.342M	20.64M	16.402M	20.85M	16.402M	20.52M	16.402M
5240MHz	Pass	Inf	20.64M	16.402M	20.49M	16.342M	20.61M	16.432M	20.58M	16.402M
5745MHz	Pass	500k	15.78M	16.462M	15.87M	16.432M	15.78M	16.432M	15.3M	16.432M
5785MHz	Pass	500k	15.3M	16.342M	15.63M	16.432M	15.9M	16.462M	15.42M	16.462M
5825MHz	Pass	500k	15.3M	16.372M	15.42M	16.402M	15.3M	16.342M	15.75M	16.492M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	21.93M	18.921M	21.78M	18.921M	21.84M	18.891M	21.99M	18.921M
5200MHz	Pass	Inf	21.9M	18.921M	21.57M	18.921M	22.08M	18.921M	22.02M	18.921M
5240MHz	Pass	Inf	22.02M	18.921M	21.57M	18.921M	21.87M	18.921M	21.78M	18.921M
5745MHz	Pass	500k	18.24M	18.951M	18.06M	18.921M	18.63M	18.951M	17.46M	18.921M
5785MHz	Pass	500k	17.43M	18.861M	17.97M	18.921M	18.6M	19.01M	17.94M	18.951M
5825MHz	Pass	500k	17.58M	18.891M	18M	18.921M	18M	18.921M	18.33M	18.921M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	41.4M	37.721M	40.92M	37.721M	40.92M	37.601M	41.22M	37.661M
5230MHz	Pass	Inf	41.4M	37.721M	41.34M	37.721M	40.98M	37.661M	41.46M	37.721M
5755MHz	Pass	500k	37.62M	37.721M	37.74M	37.661M	37.68M	37.721M	37.68M	37.901M
5795MHz	Pass	500k	36.18M	37.661M	36.42M	37.661M	37.56M	37.721M	36.96M	37.901M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	82.32M	76.882M	82.68M	76.882M	82.08M	77.001M	82.2M	77.121M
5775MHz	Pass	500k	73.32M	76.882M	71.4M	77.001M	76.92M	77.001M	77.04M	77.241M

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

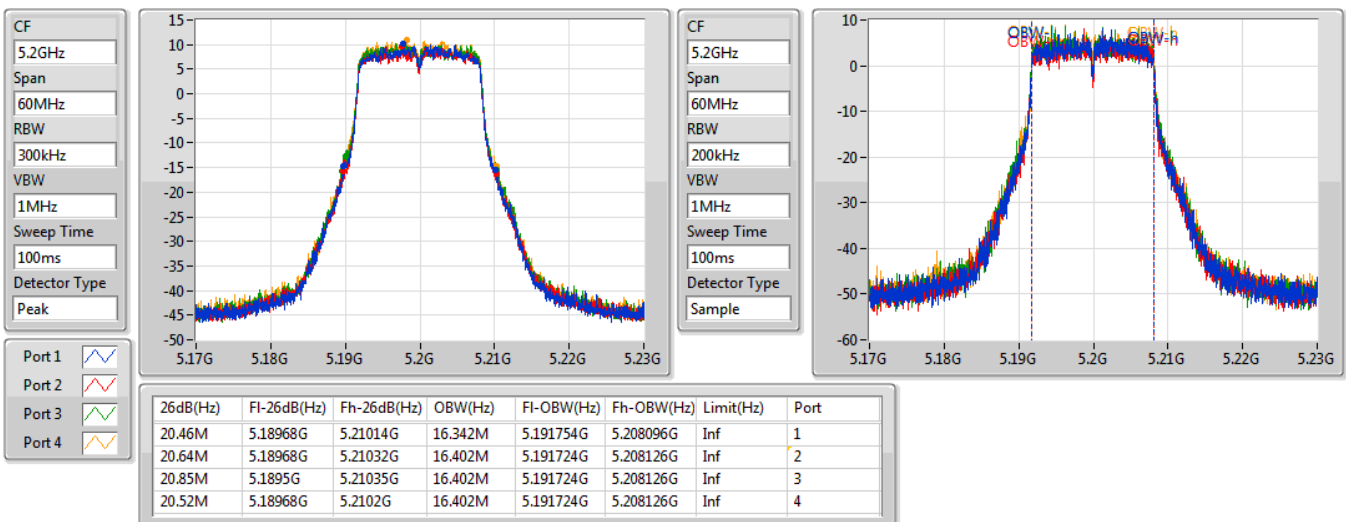
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX
EBW
5180MHz

09/07/2019

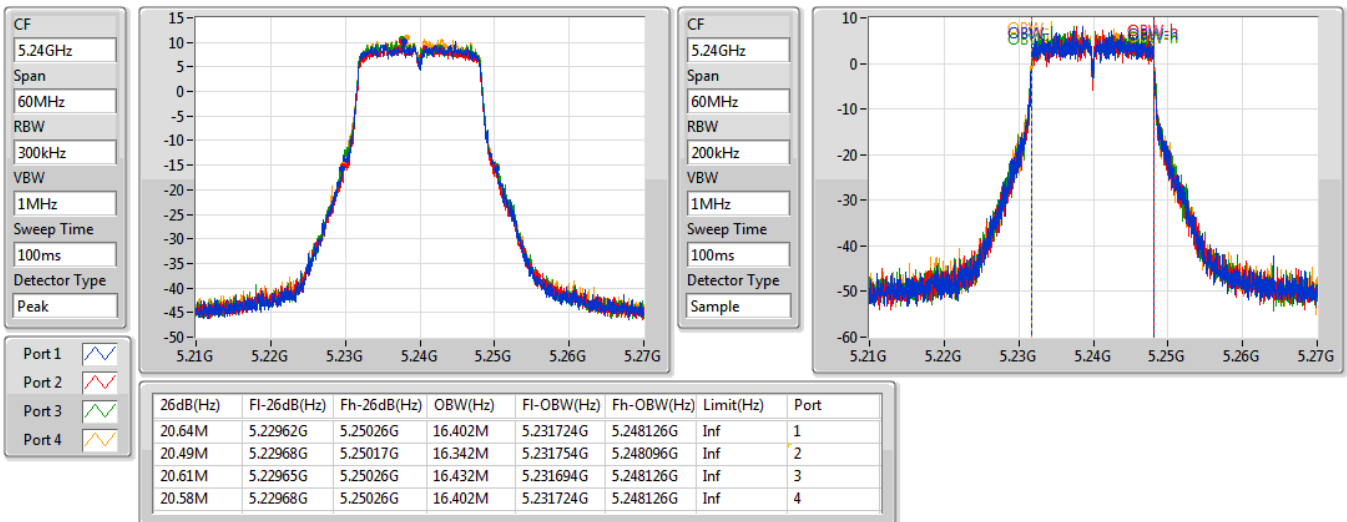

802.11a_Nss1,(6Mbps)_4TX
EBW
5200MHz

09/07/2019

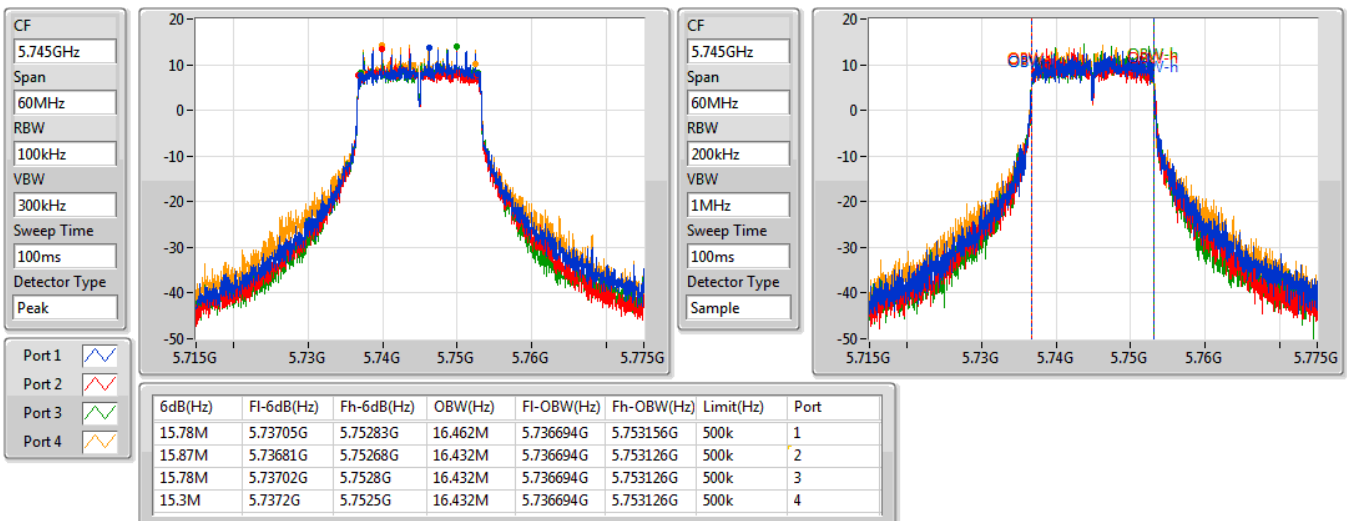


802.11a_Nss1,(6Mbps)_4TX
EBW
5240MHz

09/07/2019


802.11a_Nss1,(6Mbps)_4TX
EBW
5745MHz

09/07/2019

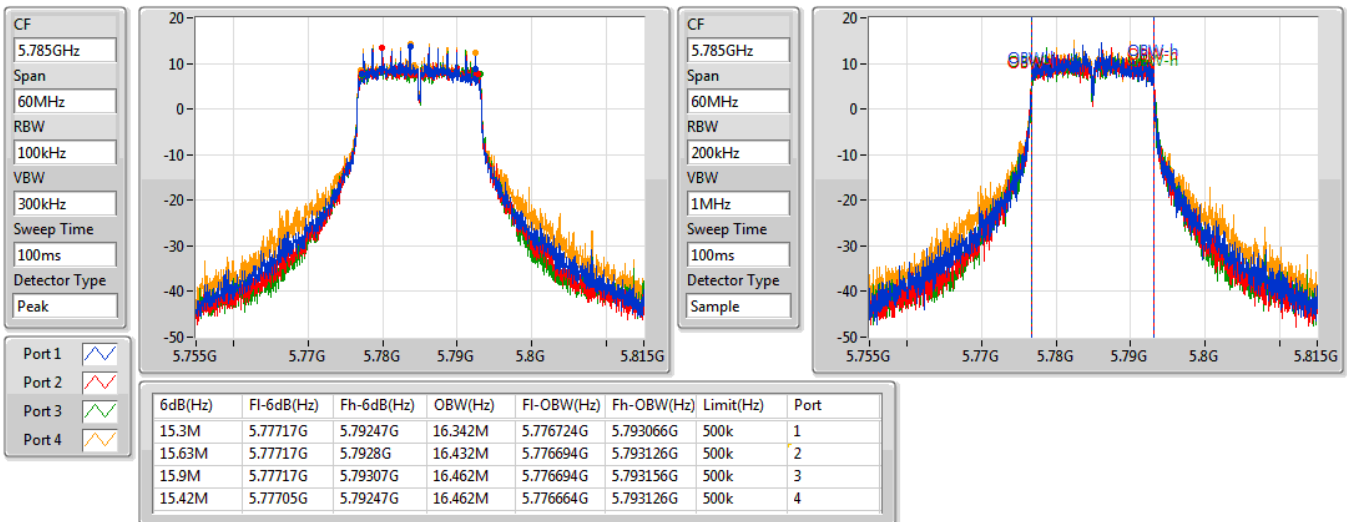


802.11a_Nss1,(6Mbps)_4TX

EBW

5785MHz

09/07/2019

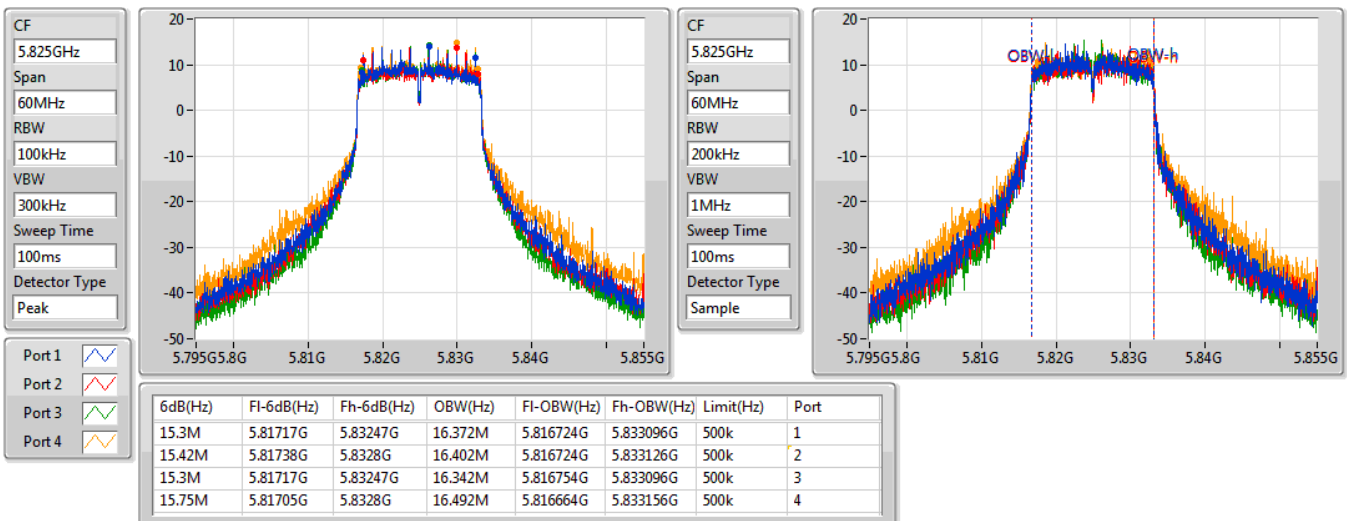


802.11a_Nss1,(6Mbps)_4TX

EBW

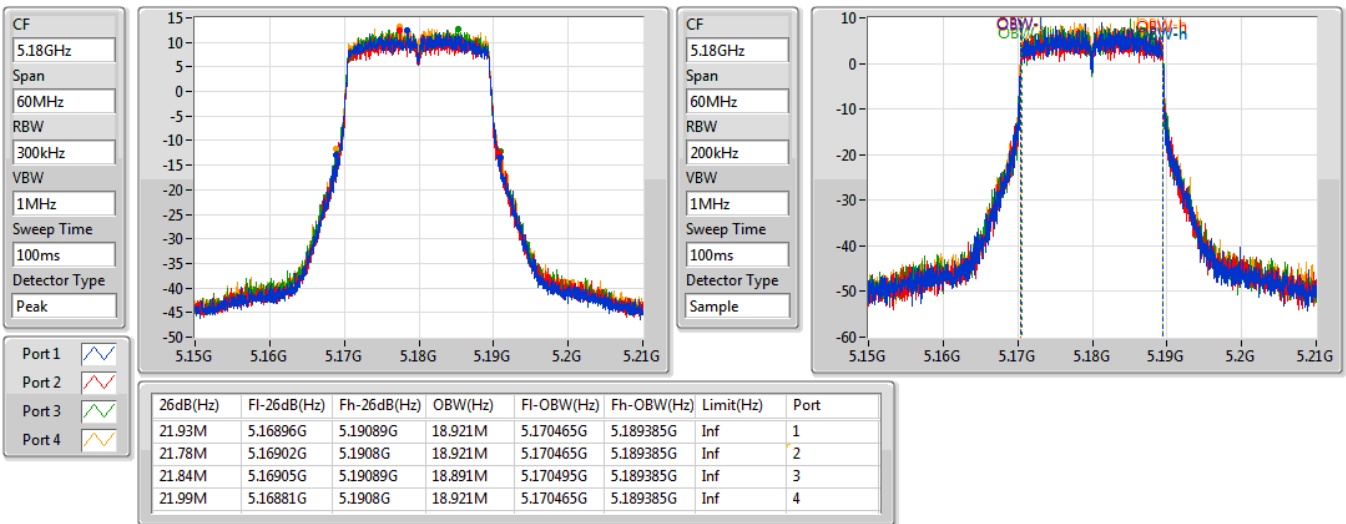
5825MHz

09/07/2019

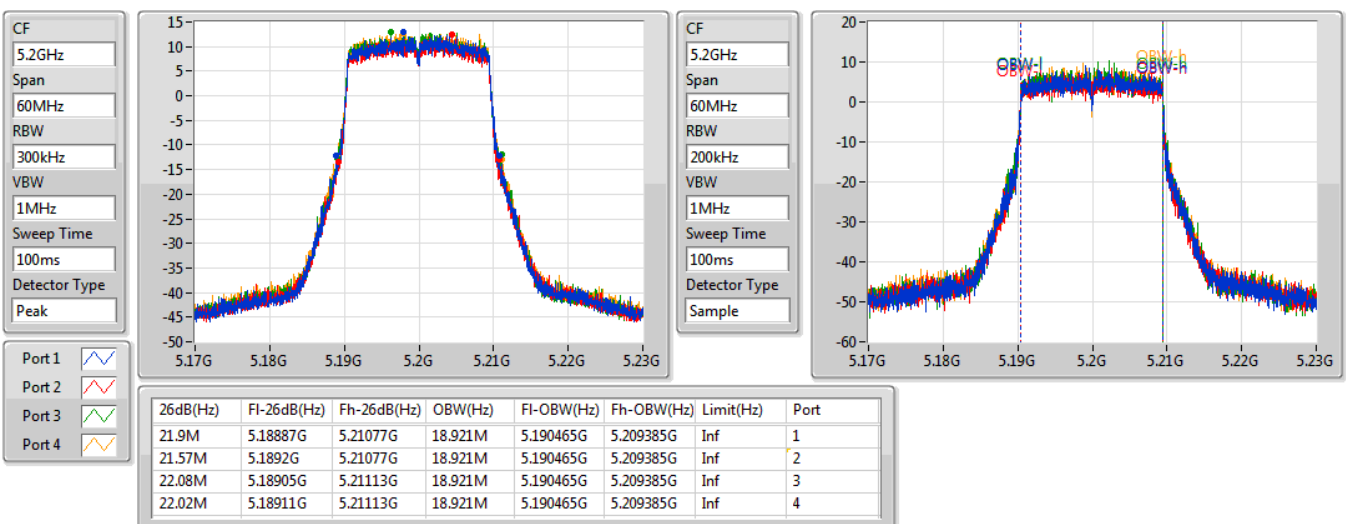


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5180MHz

09/07/2019

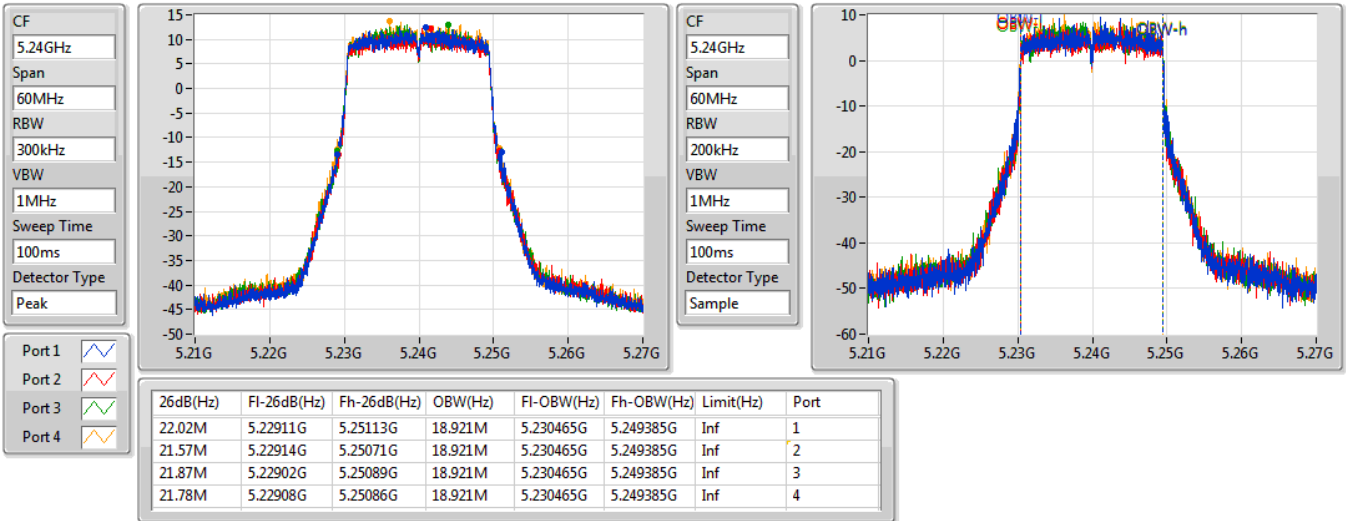

802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5200MHz

09/07/2019

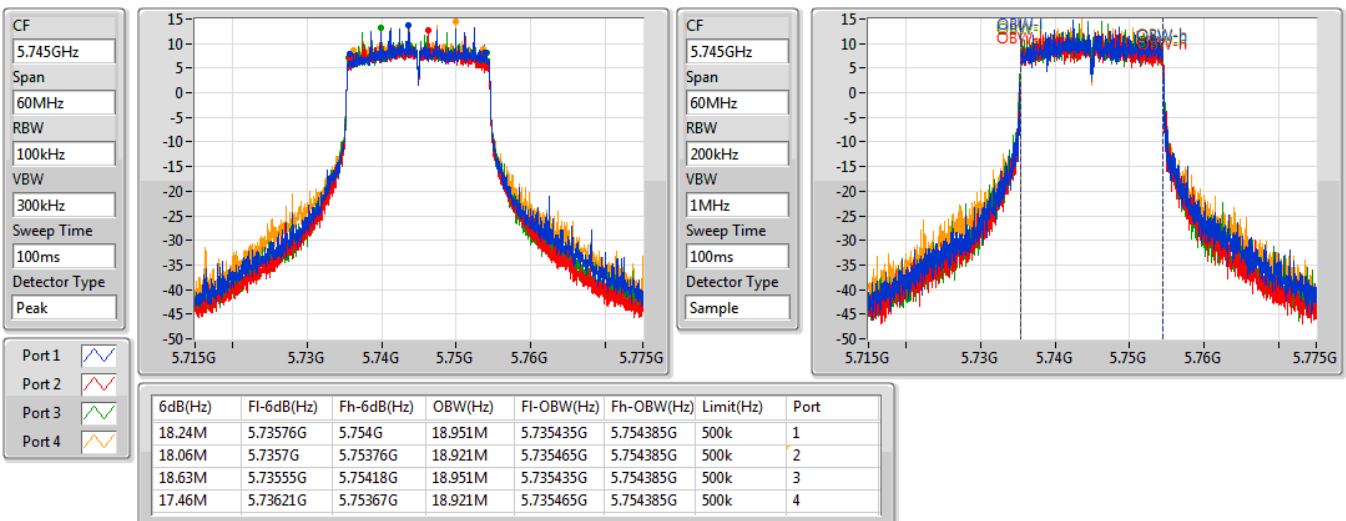


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5240MHz

09/07/2019


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
5745MHz

09/07/2019

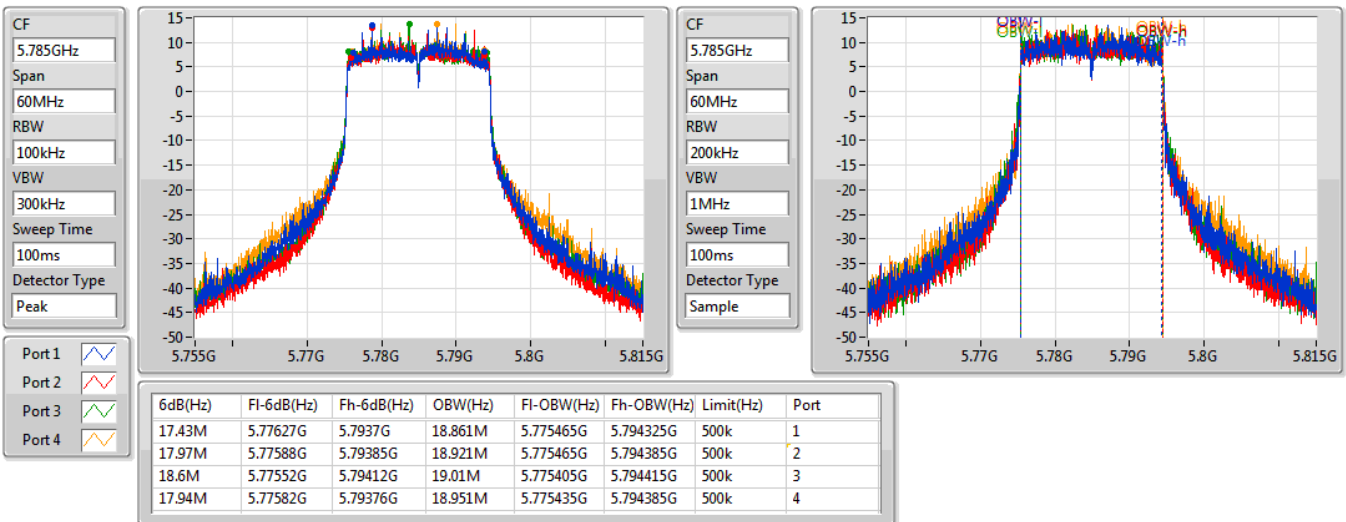


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

5785MHz

09/07/2019

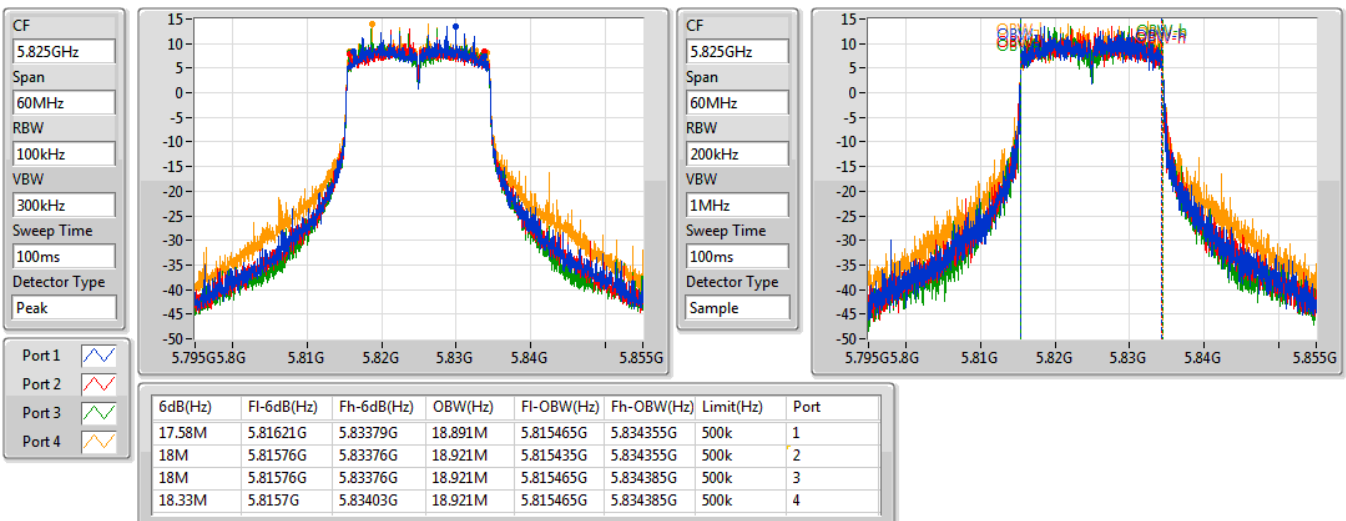


802.11ax HEW20_Nss1,(MCS0)_4TX

EBW

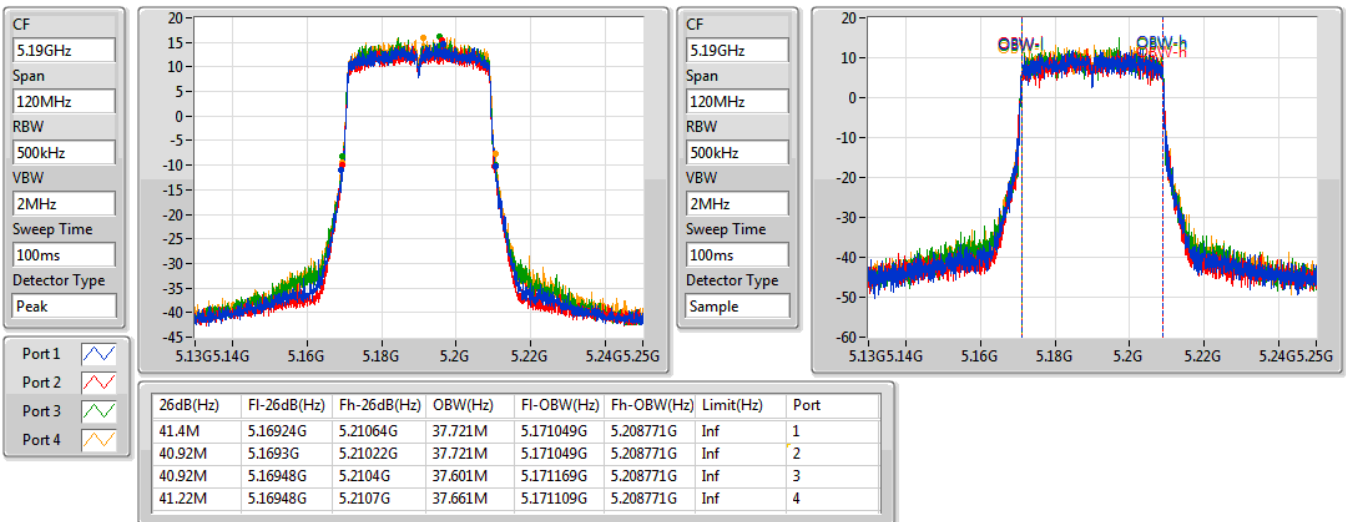
5825MHz

09/07/2019

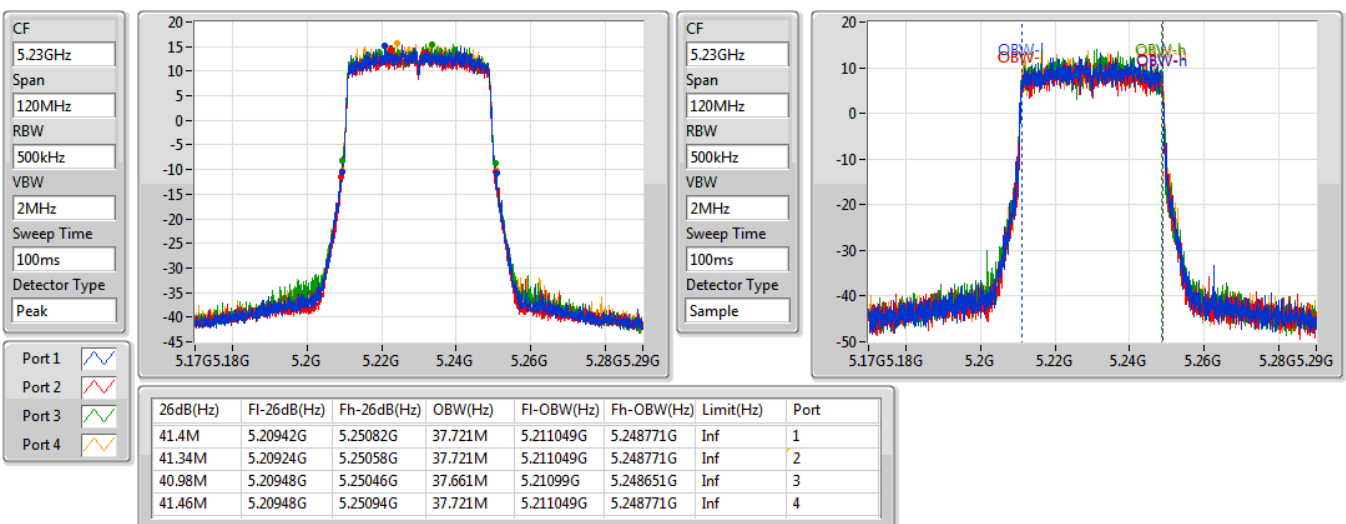


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5190MHz

09/07/2019

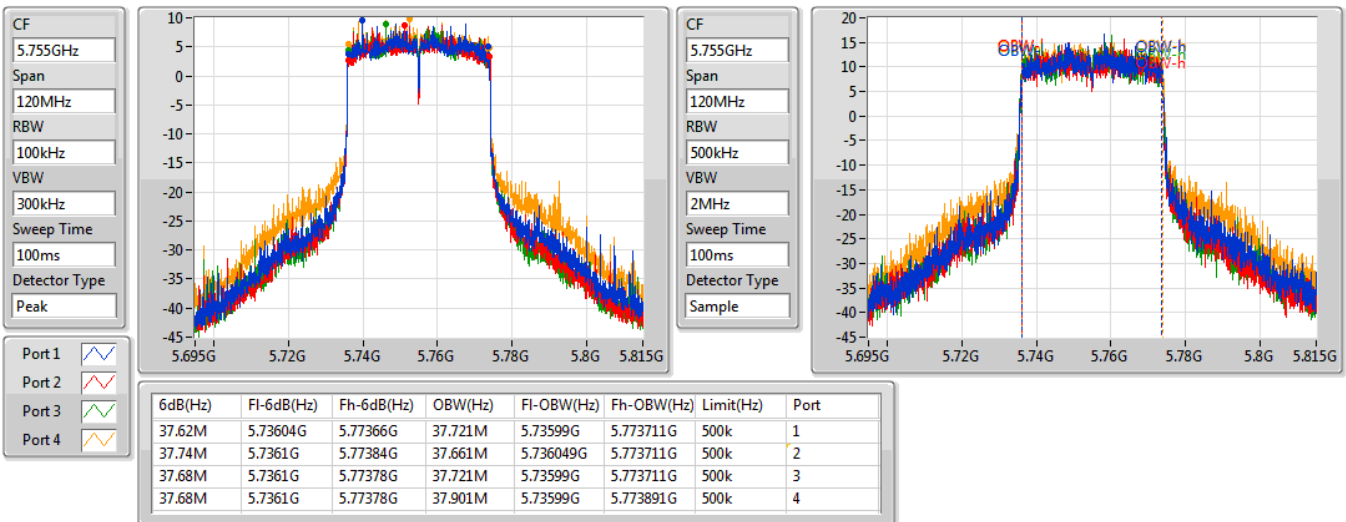

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5230MHz

09/07/2019

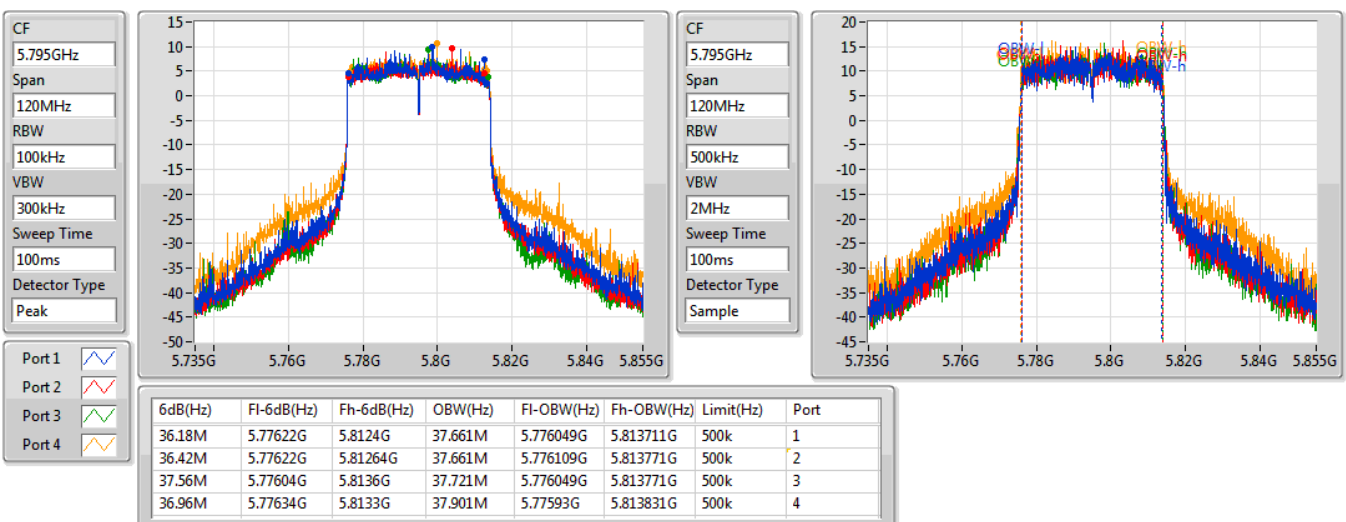


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5755MHz

09/07/2019

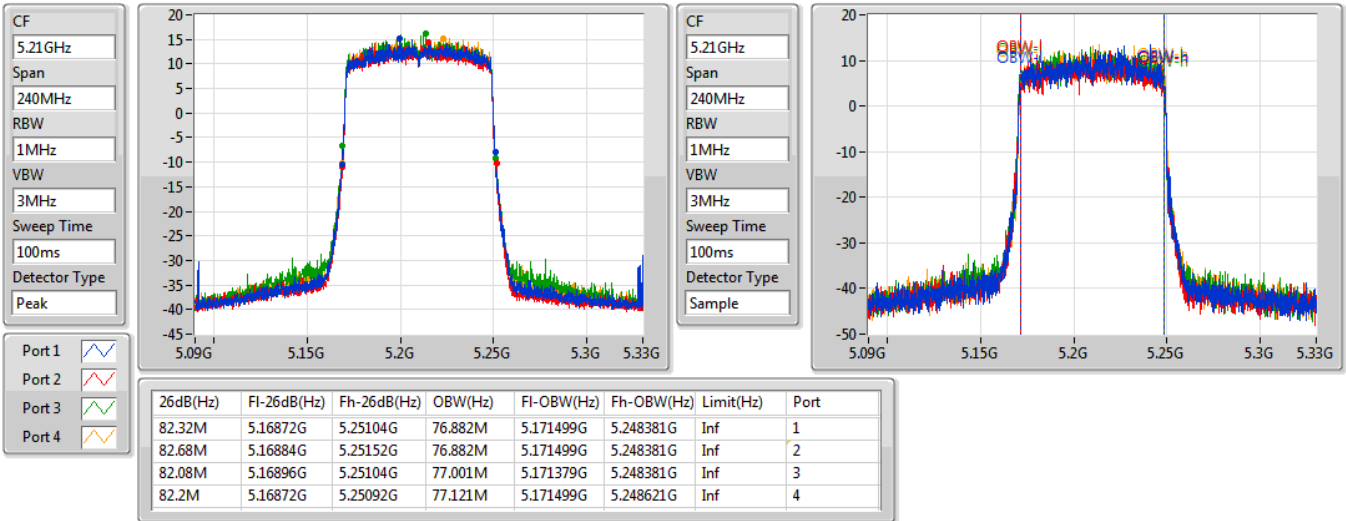

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
5795MHz

09/07/2019

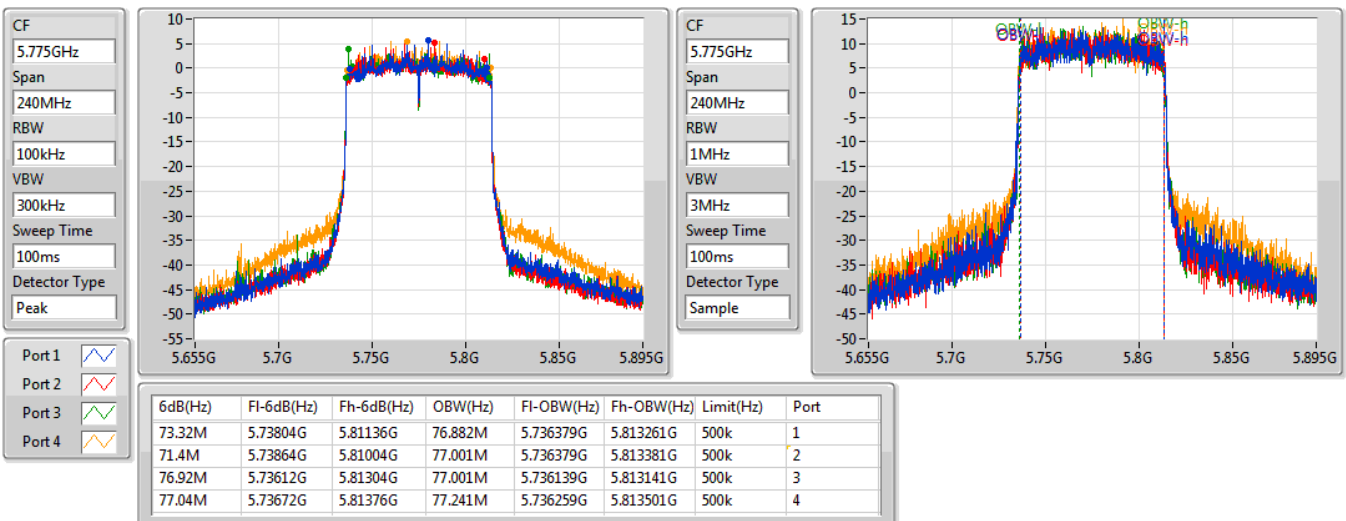


802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5210MHz

09/07/2019


802.11ax HEW80_Nss1,(MCS0)_4TX
EBW
5775MHz

09/07/2019



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)_4TX	22.2M	18.921M	18M9D1D	21.18M	18.831M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	41.34M	37.961M	38M0D1D	40.62M	37.541M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.24M	77.241M	77M2D1D	80.52M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	18.48M	18.921M	18M9D1D	17.25M	18.861M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	37.8M	37.781M	37M8D1D	28.74M	37.541M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	71.88M	77.361M	77M4D1D	62.88M	76.522M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

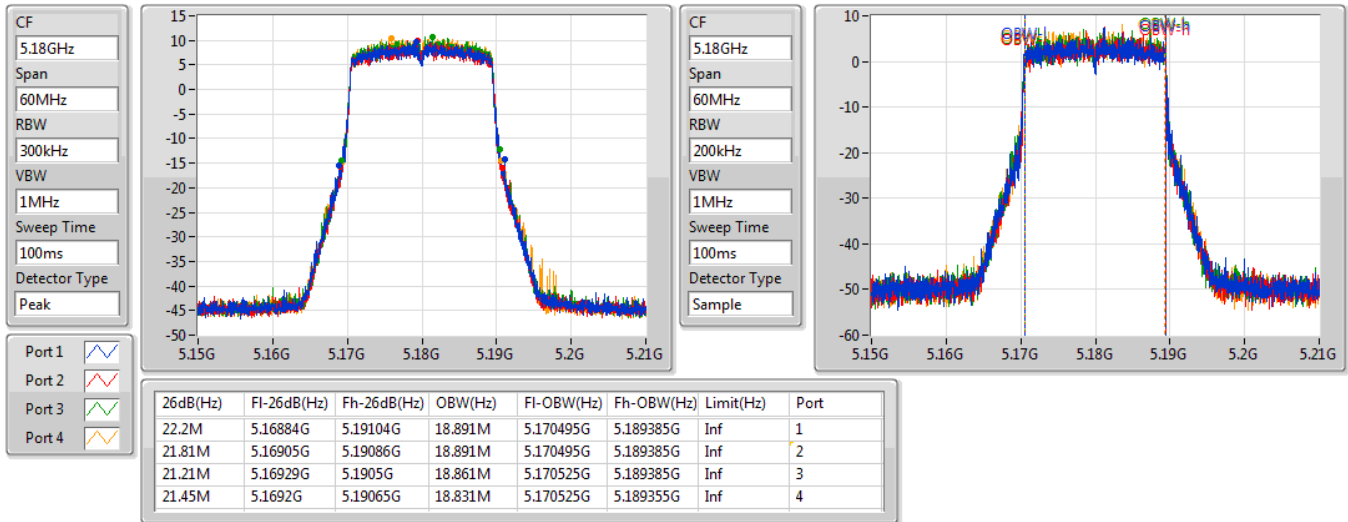
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	22.2M	18.891M	21.81M	18.891M	21.21M	18.861M	21.45M	18.831M
5200MHz	Pass	Inf	21.81M	18.861M	21.18M	18.861M	21.75M	18.891M	22.11M	18.921M
5240MHz	Pass	Inf	21.96M	18.861M	21.54M	18.921M	21.72M	18.921M	21.93M	18.861M
5745MHz	Pass	500k	18.48M	18.921M	17.91M	18.861M	18.36M	18.921M	18M	18.861M
5785MHz	Pass	500k	17.85M	18.861M	17.58M	18.891M	17.58M	18.861M	18.36M	18.891M
5825MHz	Pass	500k	17.25M	18.891M	17.94M	18.891M	17.76M	18.921M	18M	18.891M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	41.22M	37.721M	40.62M	37.541M	41.22M	37.661M	40.68M	37.601M
5230MHz	Pass	Inf	40.62M	37.661M	41.34M	37.961M	40.98M	37.721M	41.22M	37.661M
5755MHz	Pass	500k	37.62M	37.661M	33.78M	37.661M	37.8M	37.781M	37.14M	37.721M
5795MHz	Pass	500k	28.74M	37.661M	35.04M	37.541M	36.3M	37.781M	35.22M	37.721M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.76M	77.001M	81.24M	77.241M	80.52M	76.882M	81M	77.001M
5775MHz	Pass	500k	68.76M	77.001M	71.88M	76.522M	62.88M	77.001M	68.88M	77.361M

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

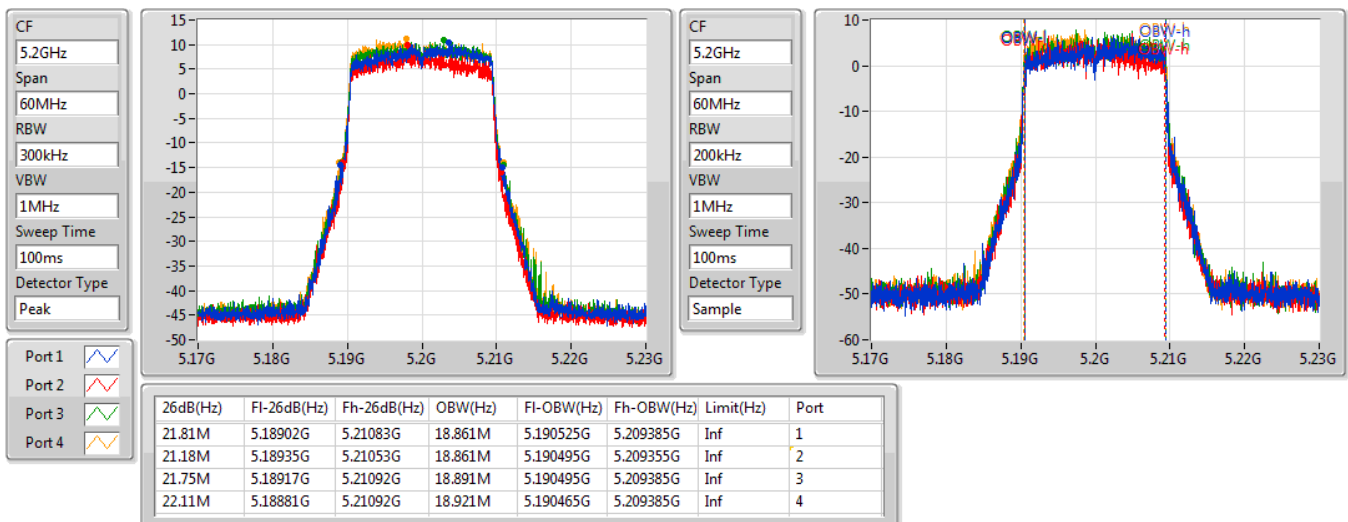
Port X-OBW = Port X 99% occupied bandwidth;

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5180MHz

22/07/2019

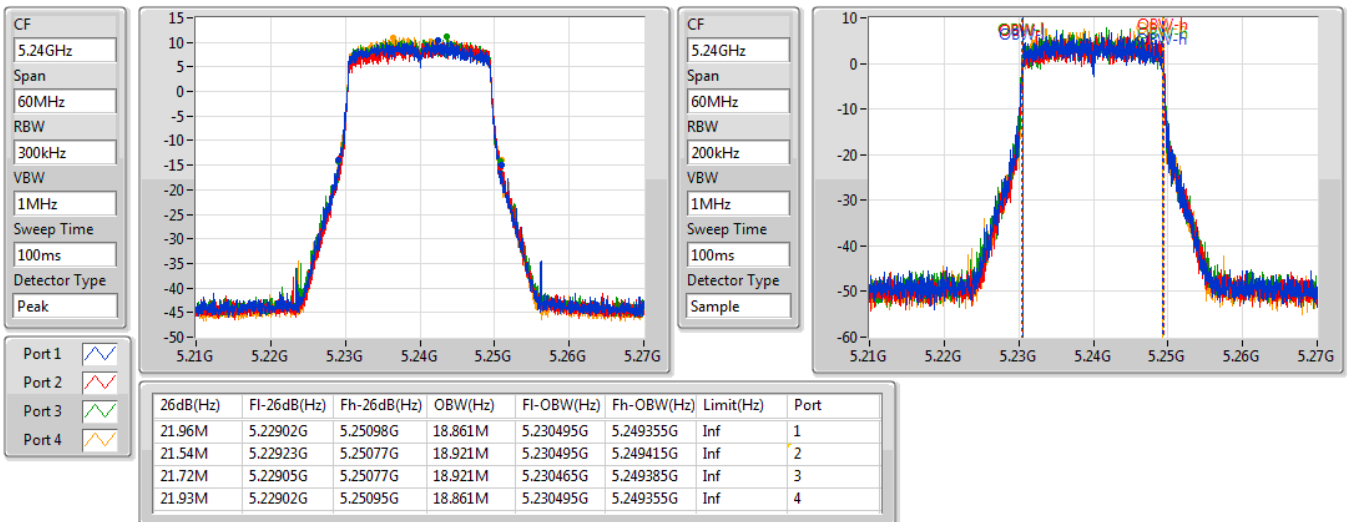

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5200MHz

22/07/2019

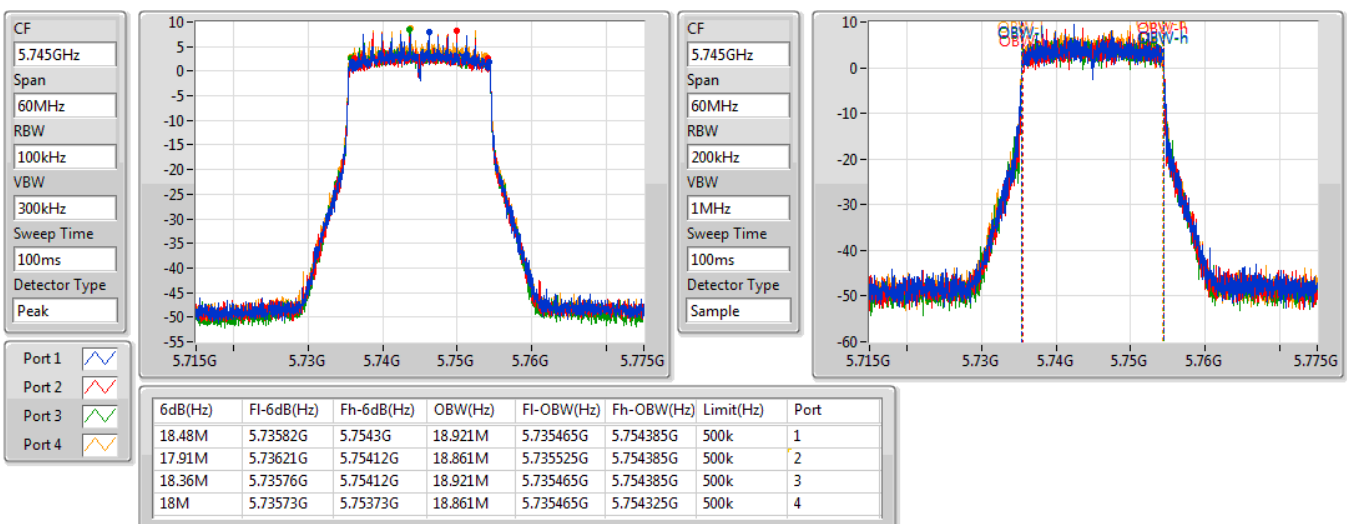


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5240MHz

22/07/2019


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
5745MHz

22/07/2019

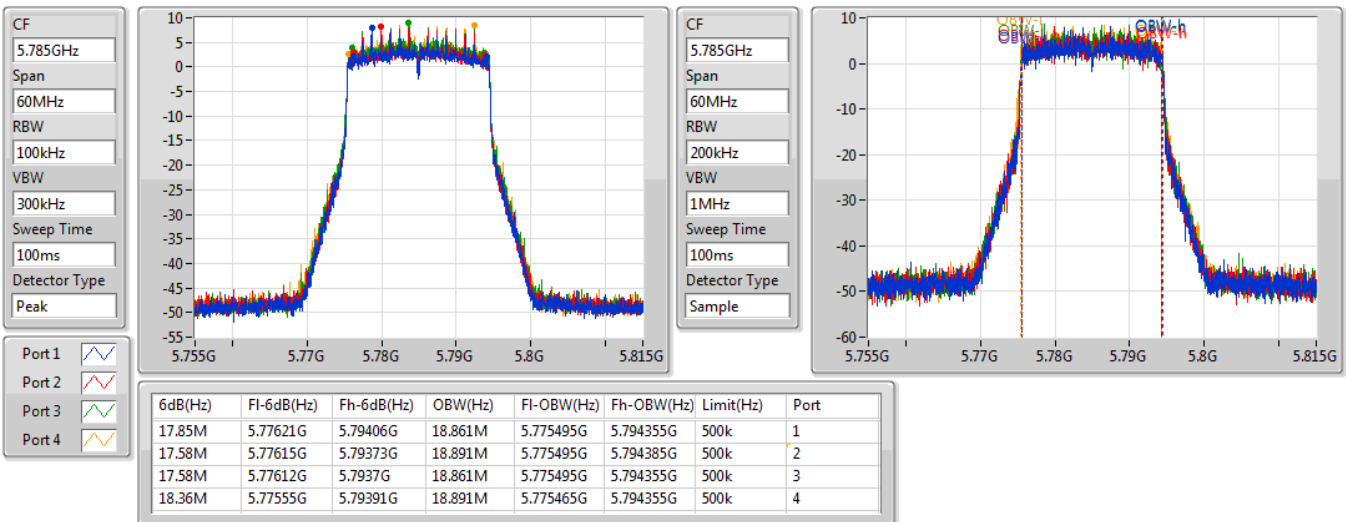


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

5785MHz

22/07/2019

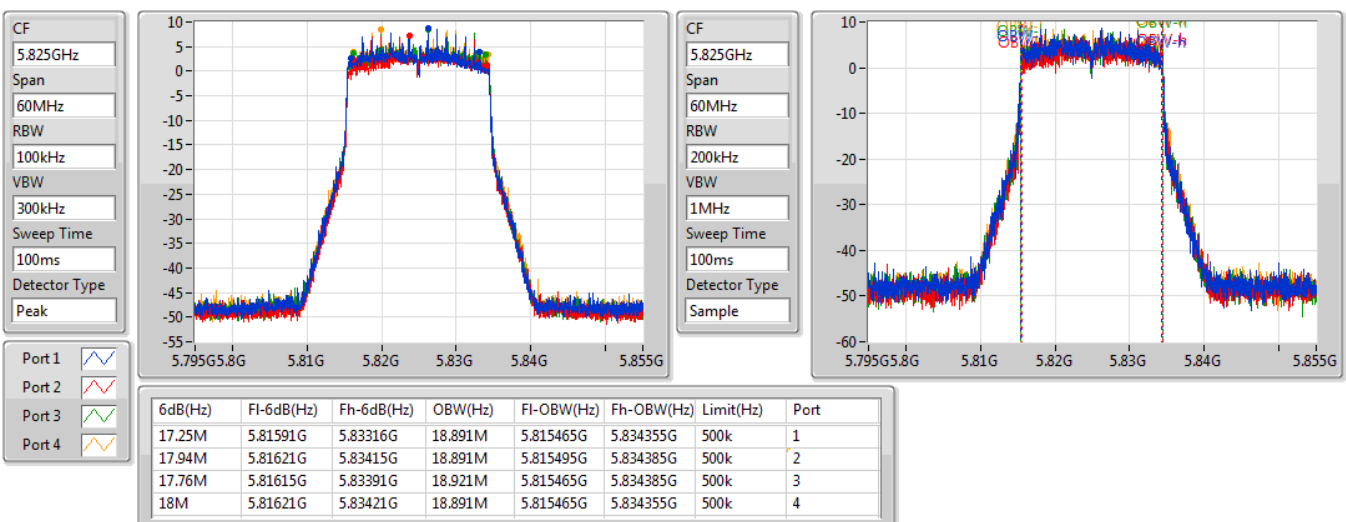


802.11ax HEW20-BF_Nss1,(MCS0)_4TX

EBW

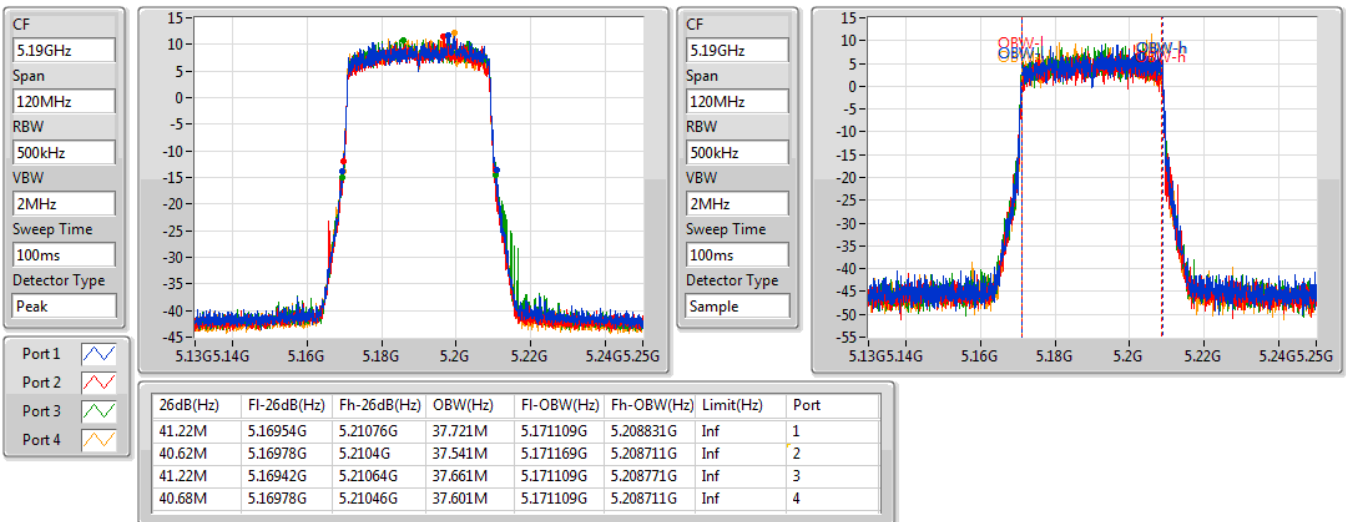
5825MHz

22/07/2019

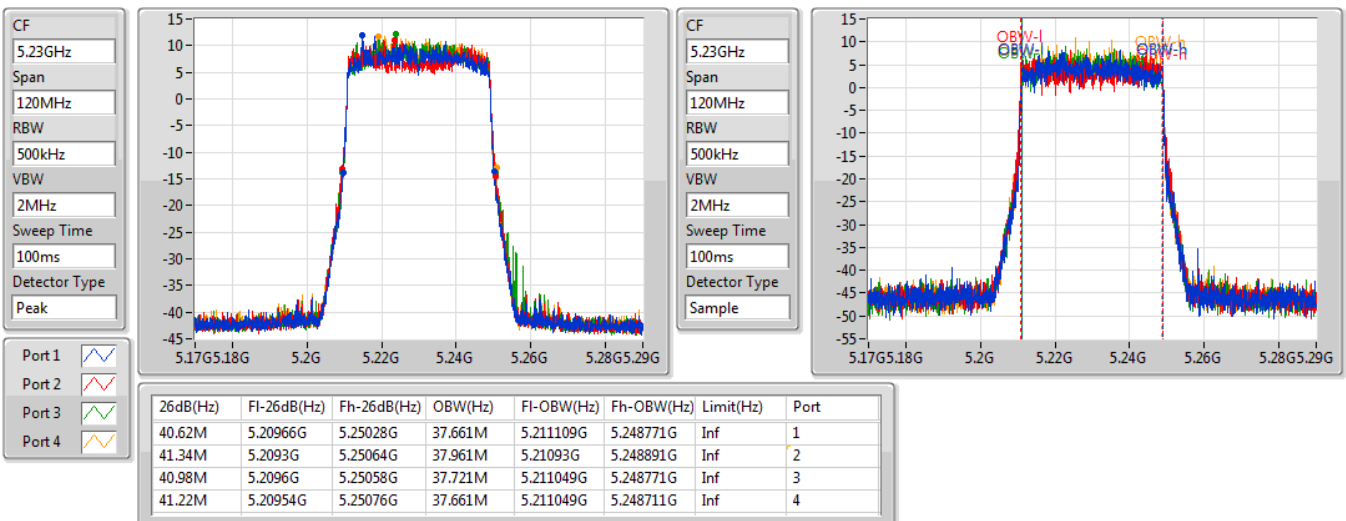


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5190MHz

22/07/2019

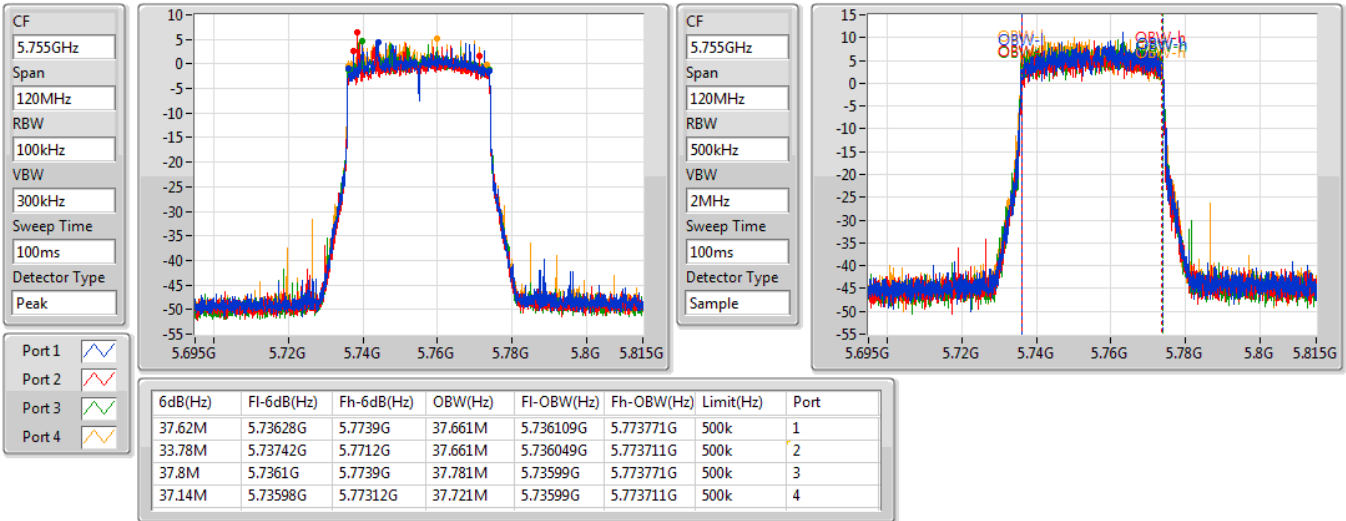

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5230MHz

22/07/2019

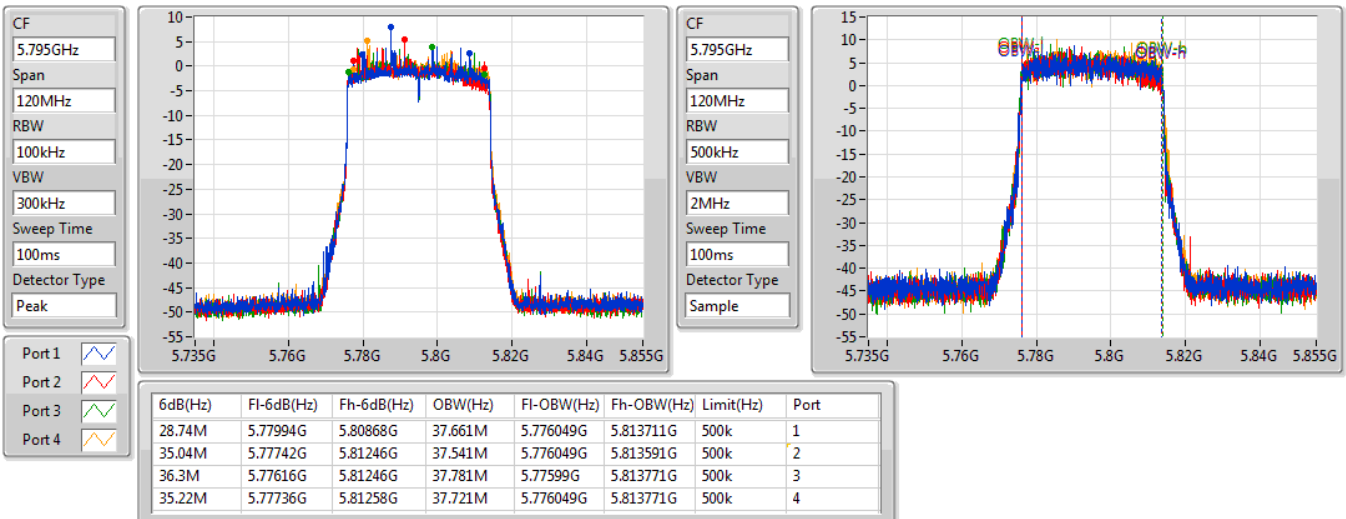


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5755MHz

22/07/2019

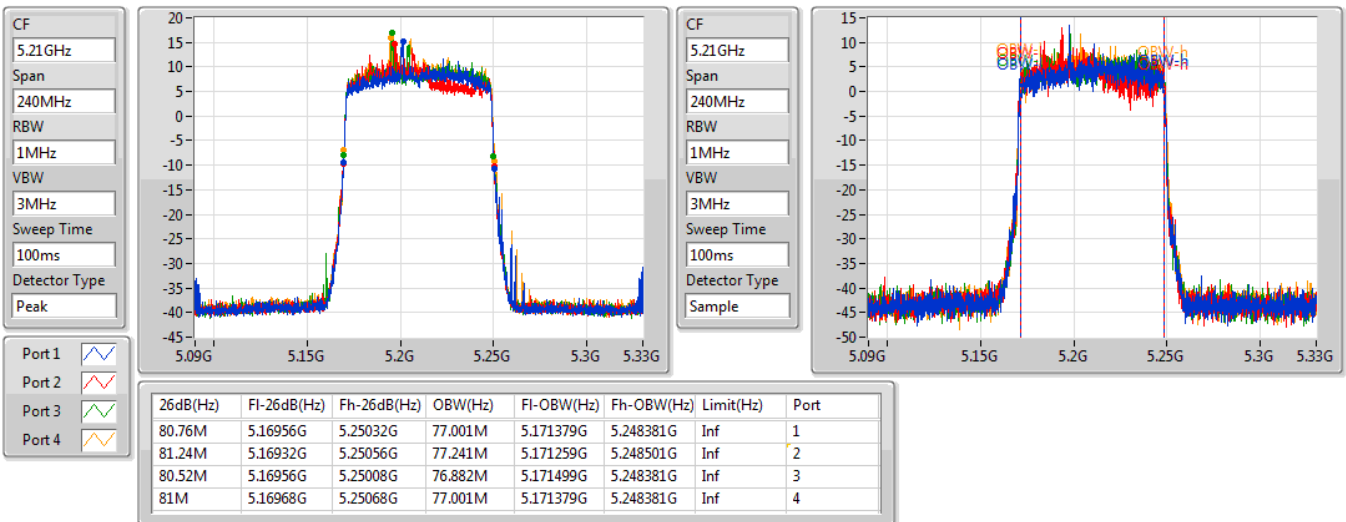

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
5795MHz

22/07/2019

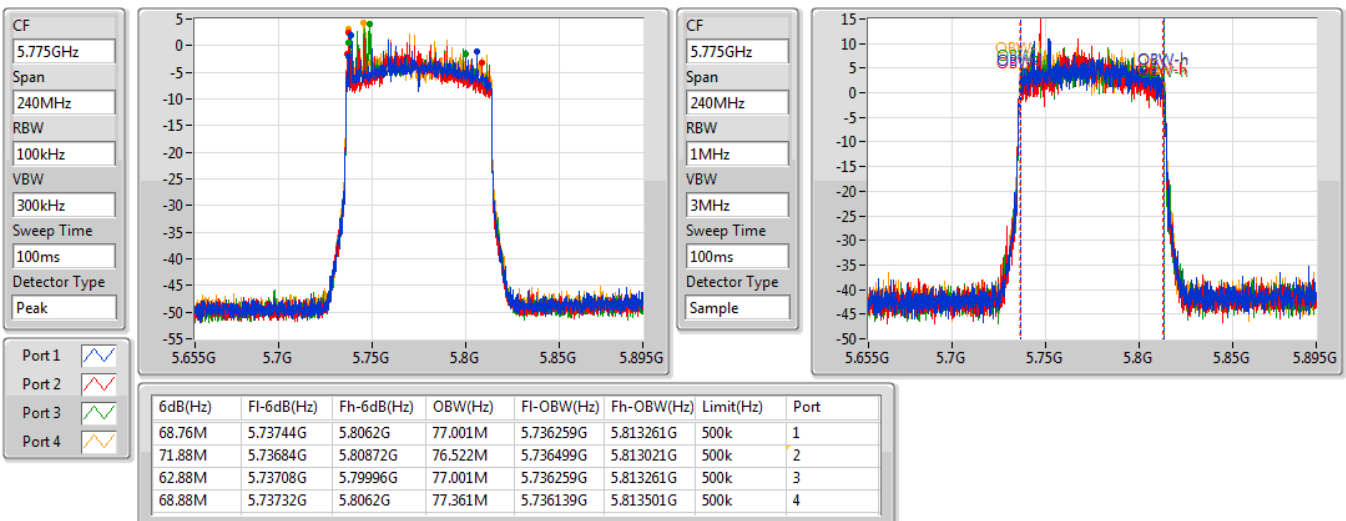


802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5210MHz

22/07/2019


802.11ax HEW80-BF_Nss1,(MCS0)_4TX
EBW
5775MHz

22/07/2019



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)_1TX	36.72M	19.16M	19M2D1D	22.17M	16.462M
802.11ax HEW20_Nss1,(MCS0)_1TX	34.44M	19.16M	19M2D1D	23.16M	18.951M
802.11ax HEW40_Nss1,(MCS0)_1TX	75.24M	38.261M	38M3D1D	41.58M	37.661M
802.11ax HEW80_Nss1,(MCS0)_1TX	82.2M	77.121M	77M1D1D	82.2M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.29M	17.751M	17M8D1D	15.75M	16.972M
802.11ax HEW20_Nss1,(MCS0)_1TX	18.3M	19.16M	19M2D1D	18M	19.13M
802.11ax HEW40_Nss1,(MCS0)_1TX	37.98M	54.753M	54M8D1D	37.8M	47.976M
802.11ax HEW80_Nss1,(MCS0)_1TX	71.64M	77.481M	77M5D1D	71.64M	77.481M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

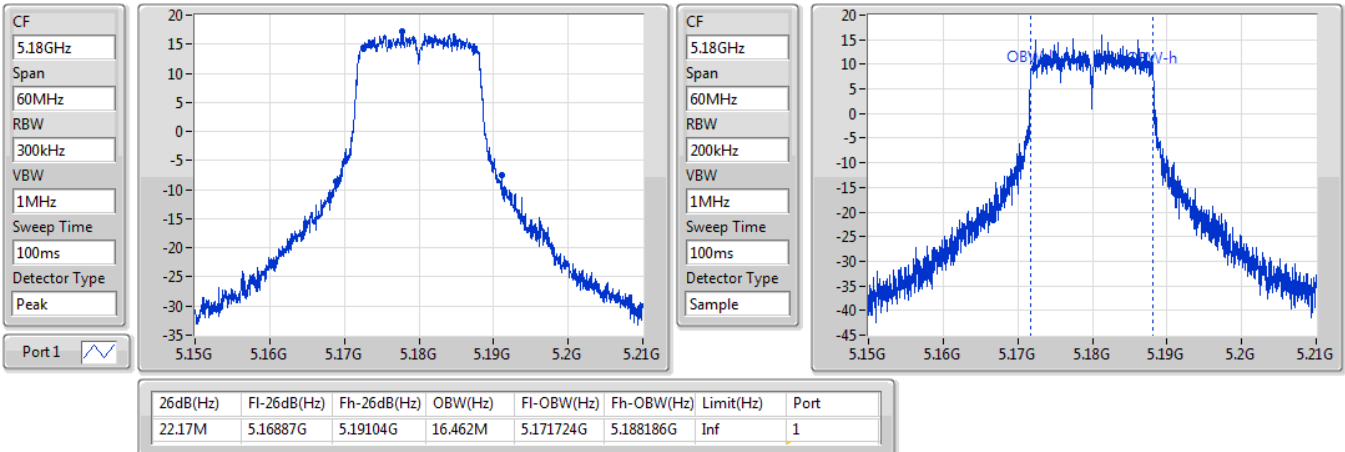
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	22.17M	16.462M
5200MHz	Pass	Inf	34.44M	17.571M
5240MHz	Pass	Inf	36.72M	19.16M
5745MHz	Pass	500k	16.29M	17.751M
5785MHz	Pass	500k	15.99M	16.972M
5825MHz	Pass	500k	15.75M	17.031M
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	23.16M	18.951M
5200MHz	Pass	Inf	33.54M	19.13M
5240MHz	Pass	Inf	34.44M	19.16M
5745MHz	Pass	500k	18.21M	19.16M
5785MHz	Pass	500k	18M	19.13M
5825MHz	Pass	500k	18.3M	19.13M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	41.58M	37.661M
5230MHz	Pass	Inf	75.24M	38.261M
5755MHz	Pass	500k	37.98M	47.976M
5795MHz	Pass	500k	37.8M	54.753M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	82.2M	77.121M
5775MHz	Pass	500k	71.64M	77.481M

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

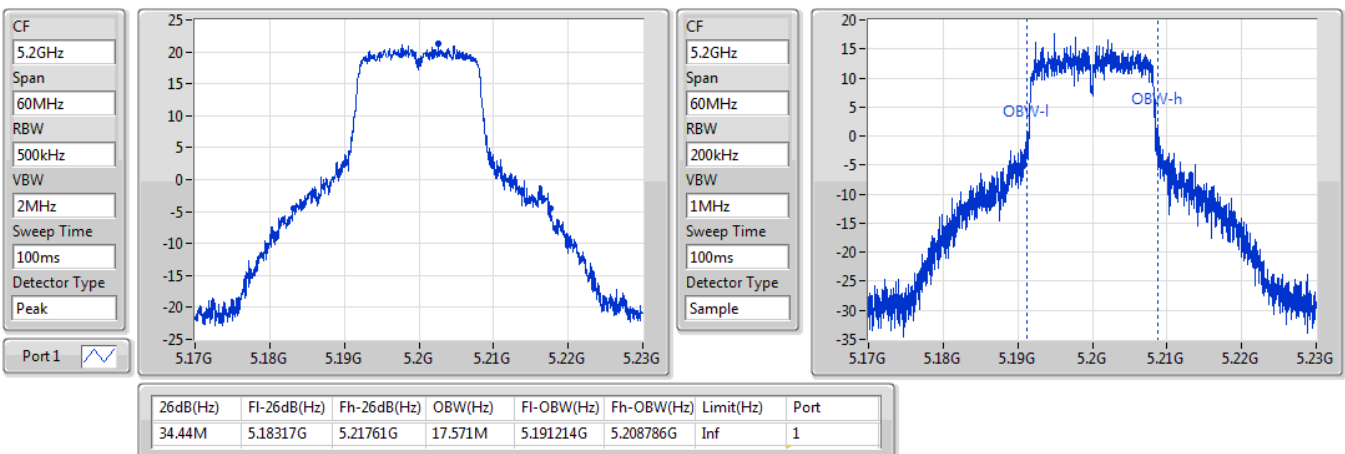
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

20/07/2019

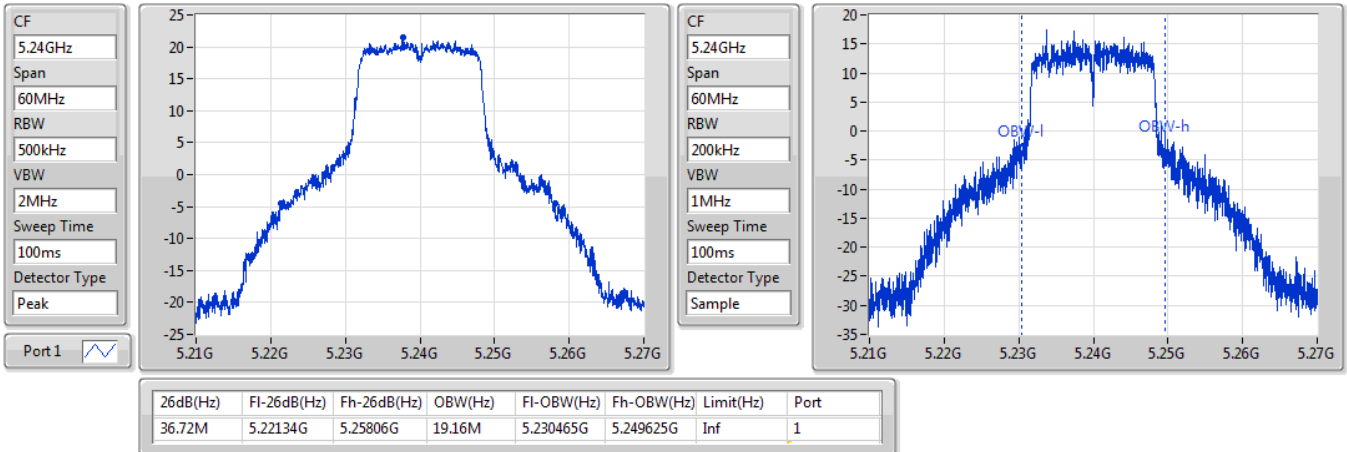

802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

20/07/2019

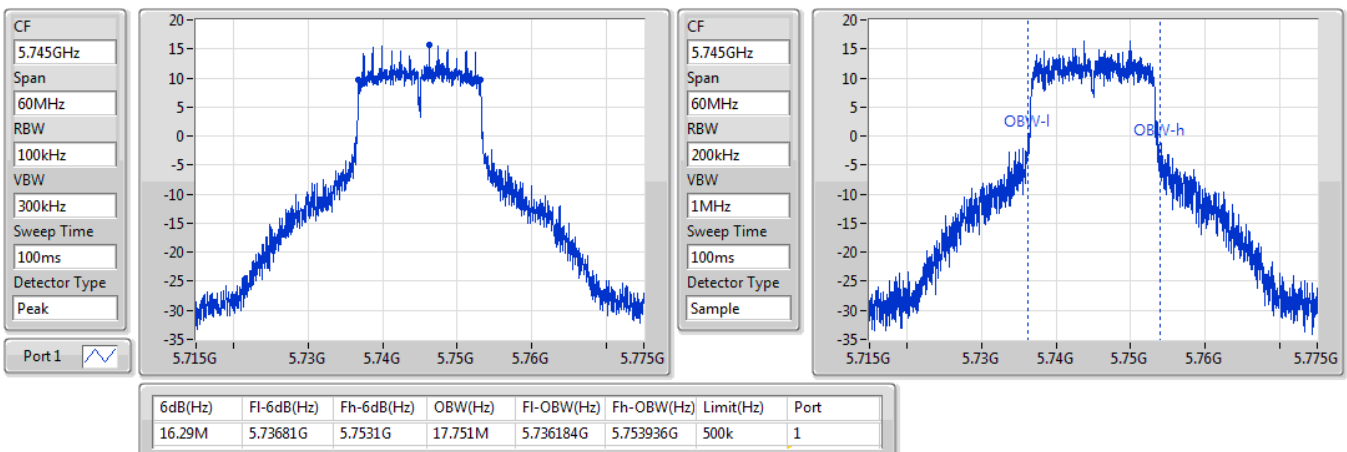


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

20/07/2019

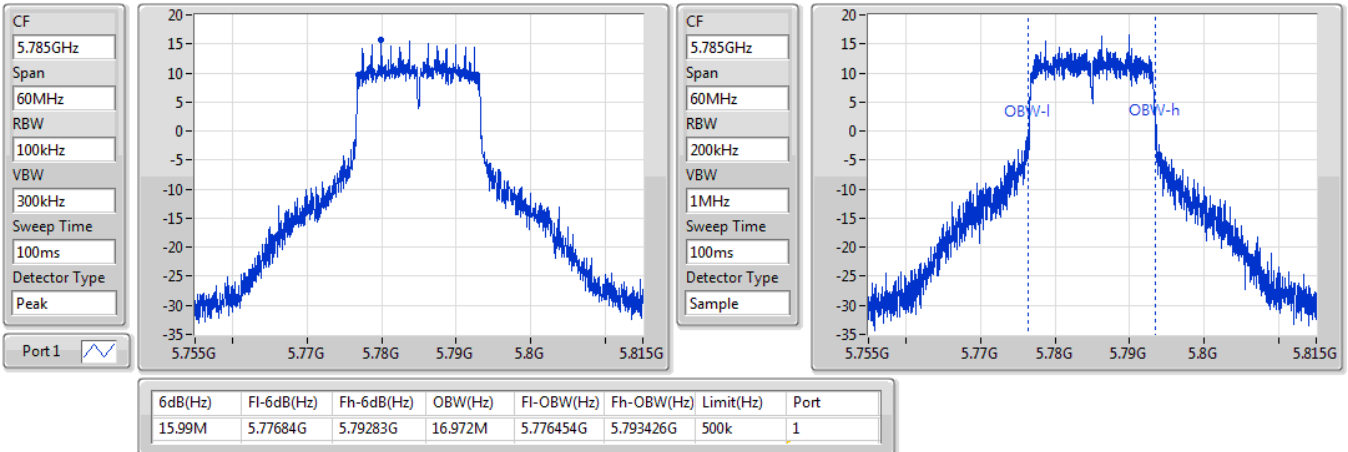

802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

20/07/2019

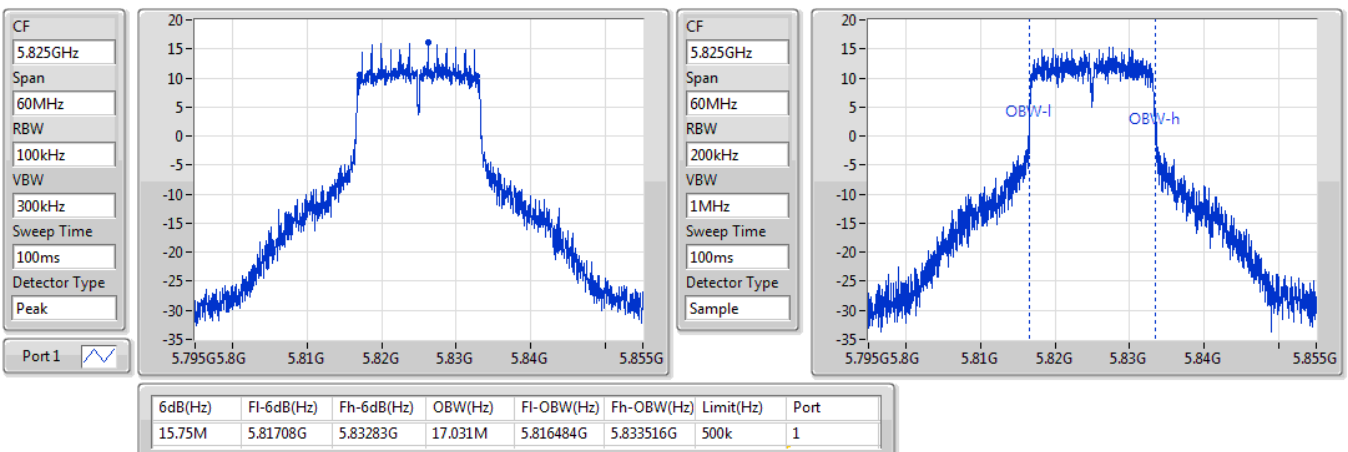


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

20/07/2019

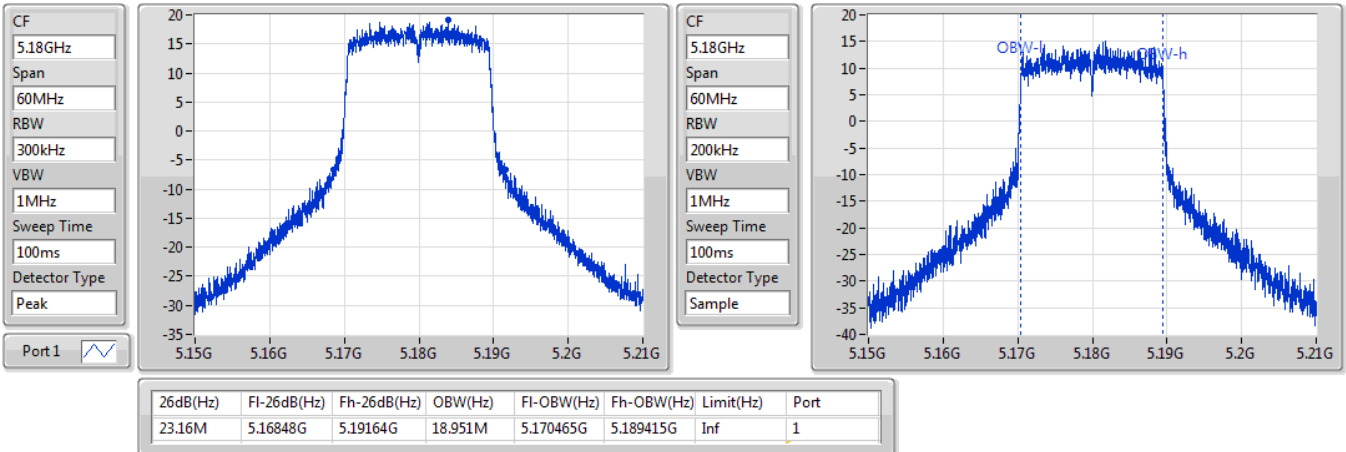

802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

20/07/2019

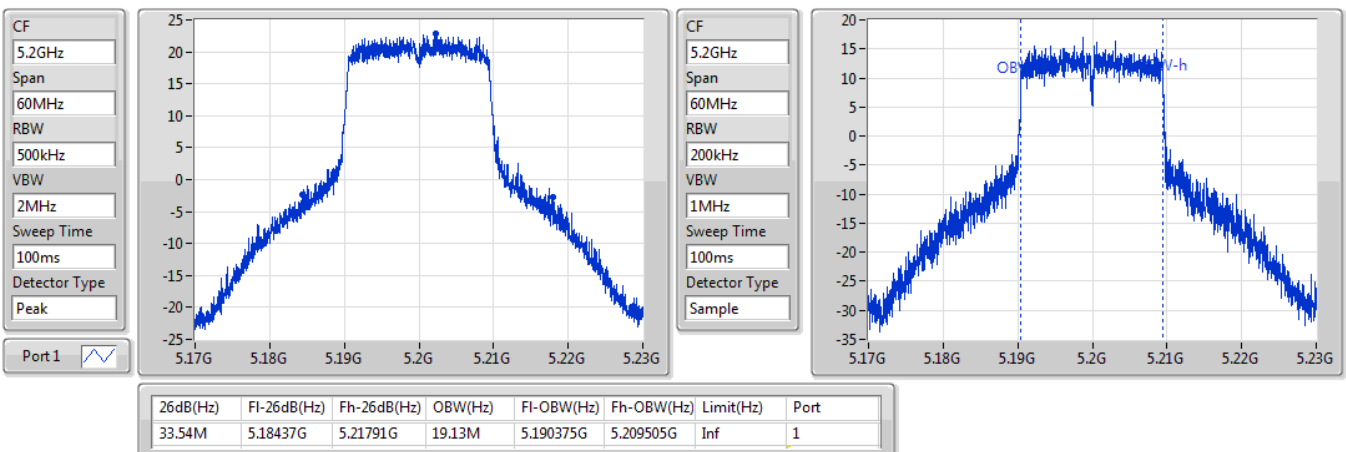


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5180MHz

20/07/2019

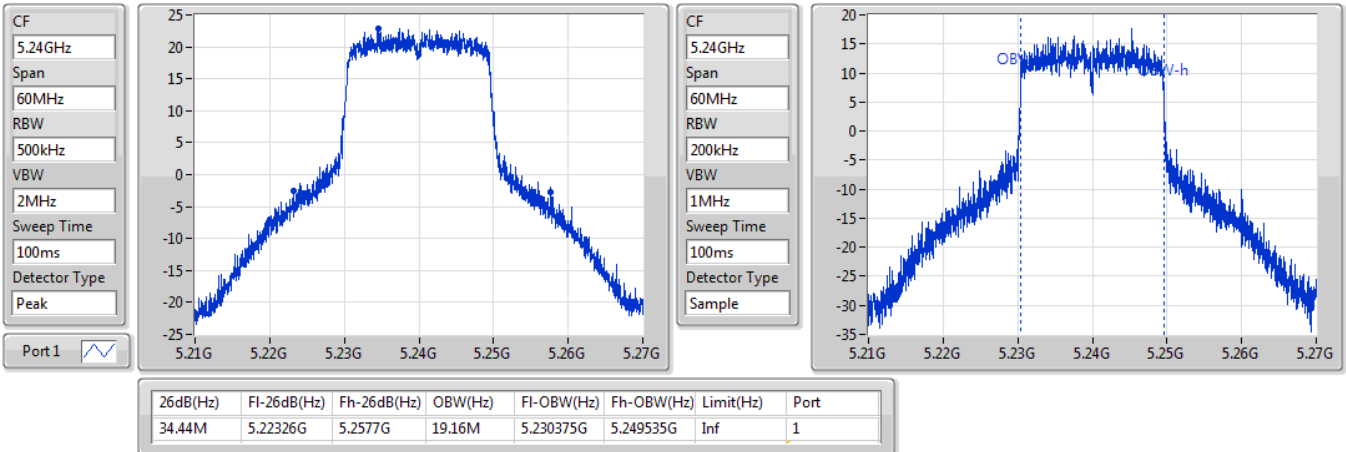

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5200MHz

20/07/2019

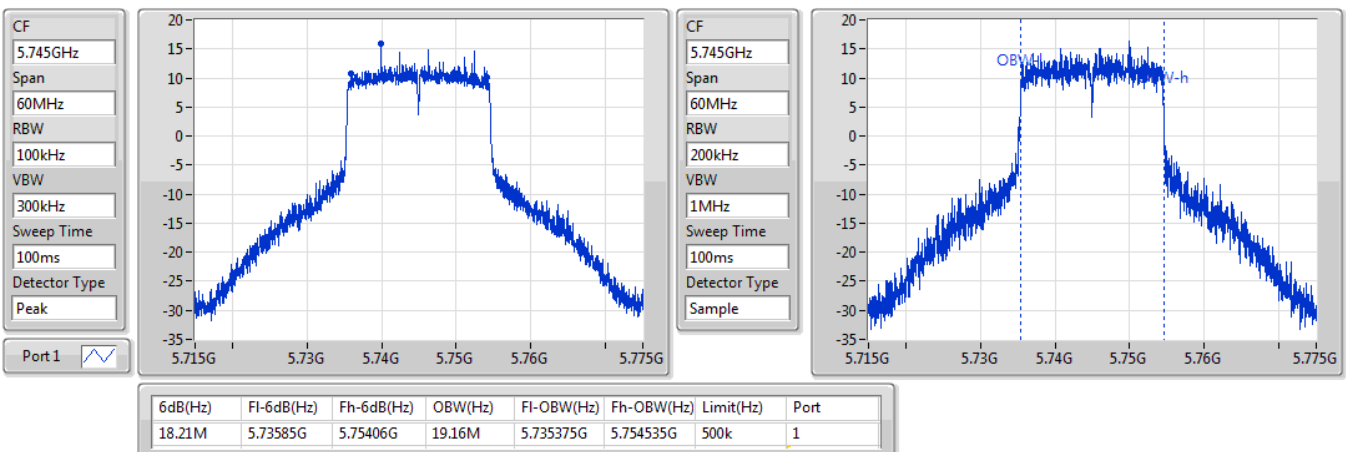


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5240MHz

20/07/2019

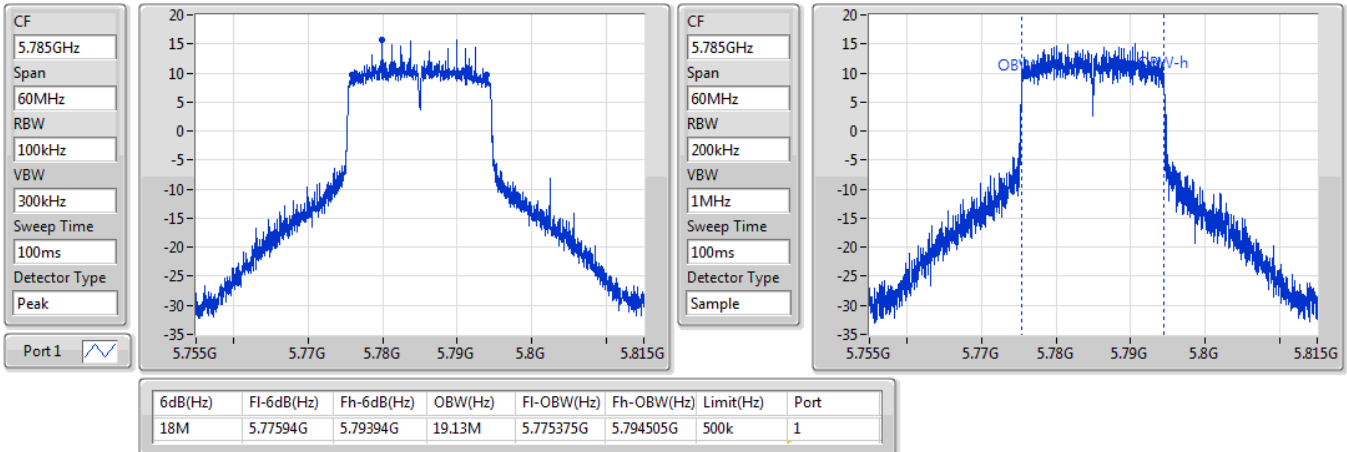

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5745MHz

20/07/2019

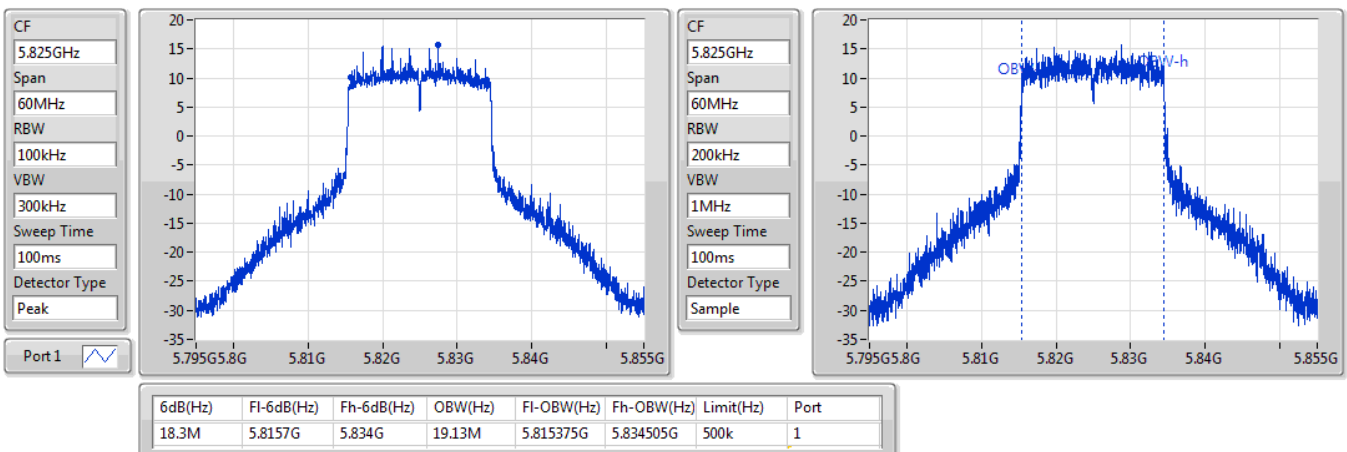


802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5785MHz

20/07/2019

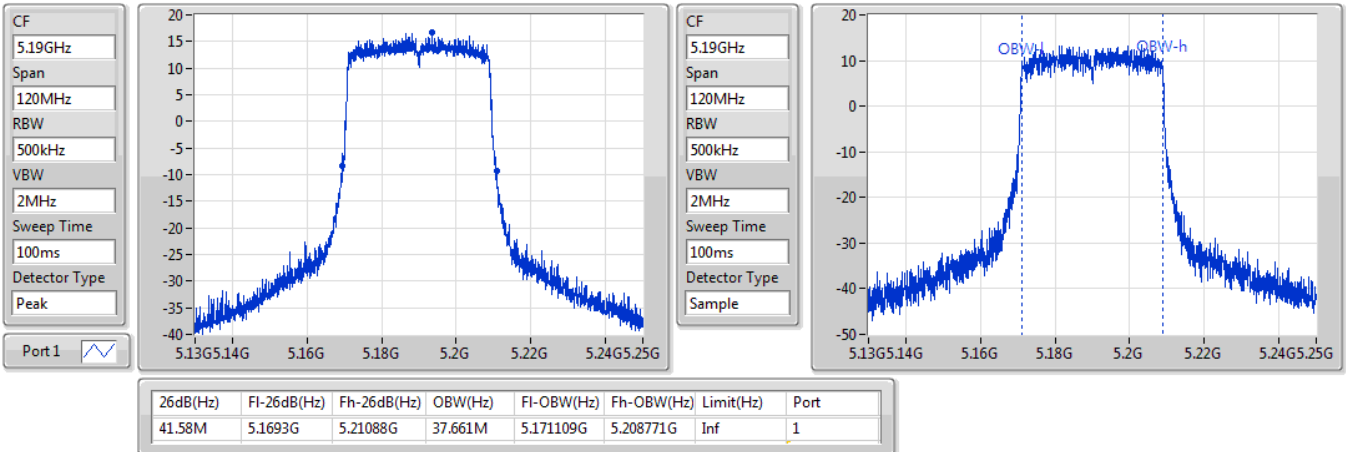

802.11ax HEW20_Nss1,(MCS0)_1TX
EBW
5825MHz

20/07/2019

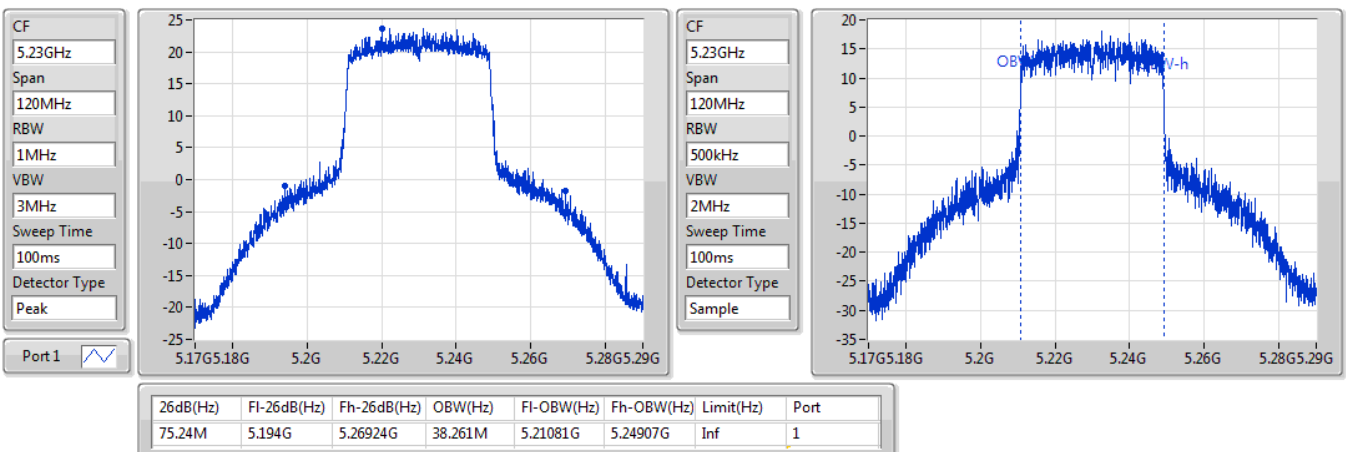


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5190MHz

20/07/2019

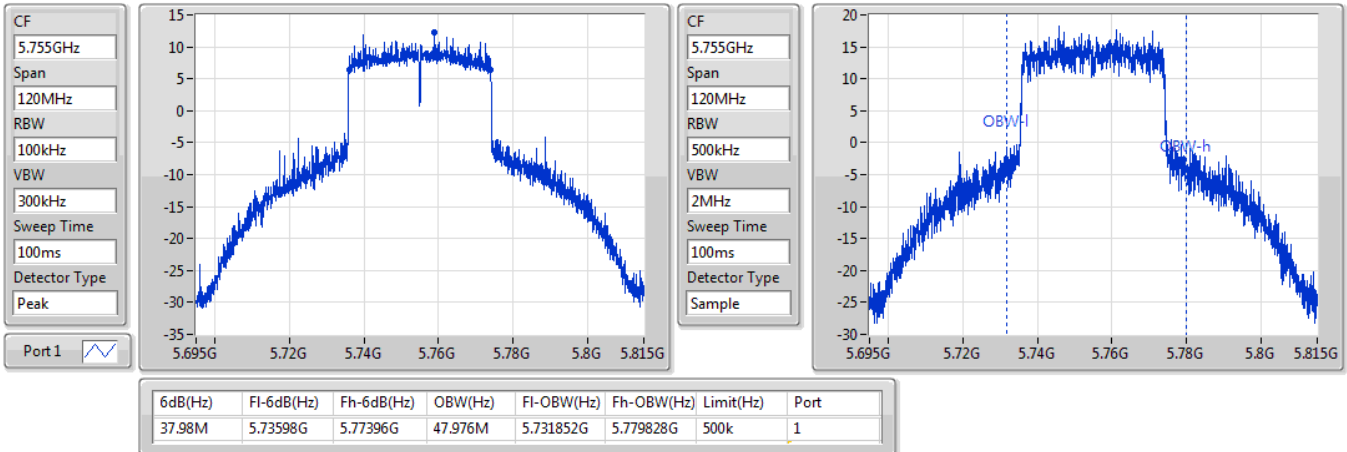

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5230MHz

20/07/2019

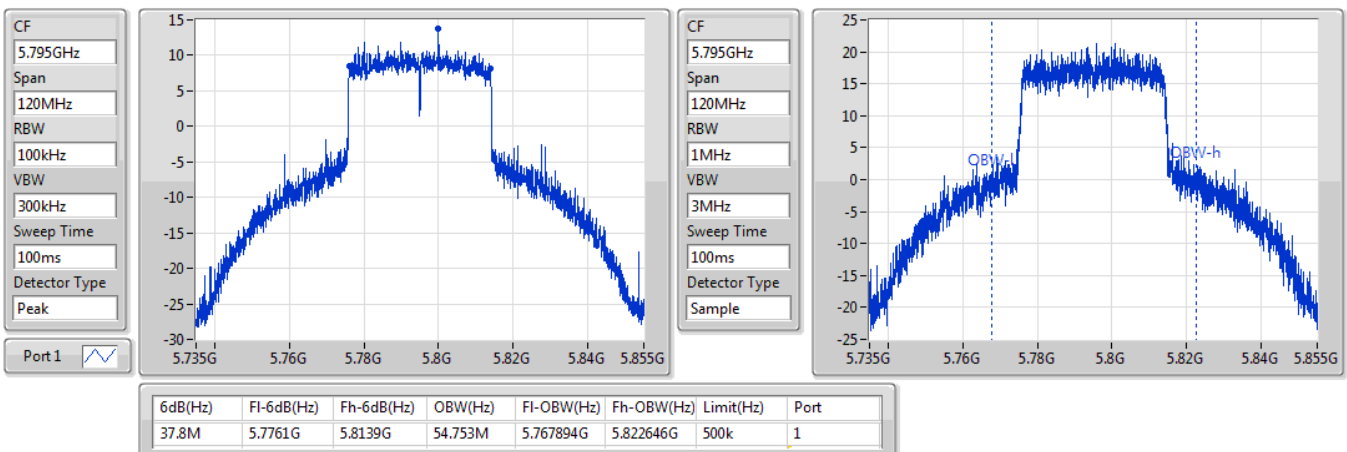


802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5755MHz

20/07/2019

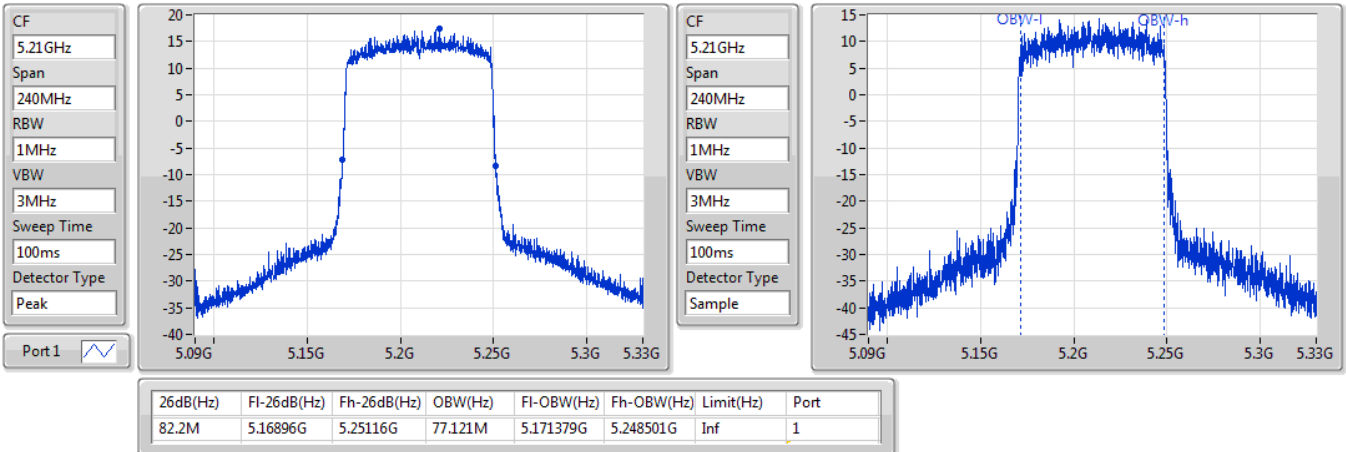

802.11ax HEW40_Nss1,(MCS0)_1TX
EBW
5795MHz

20/07/2019

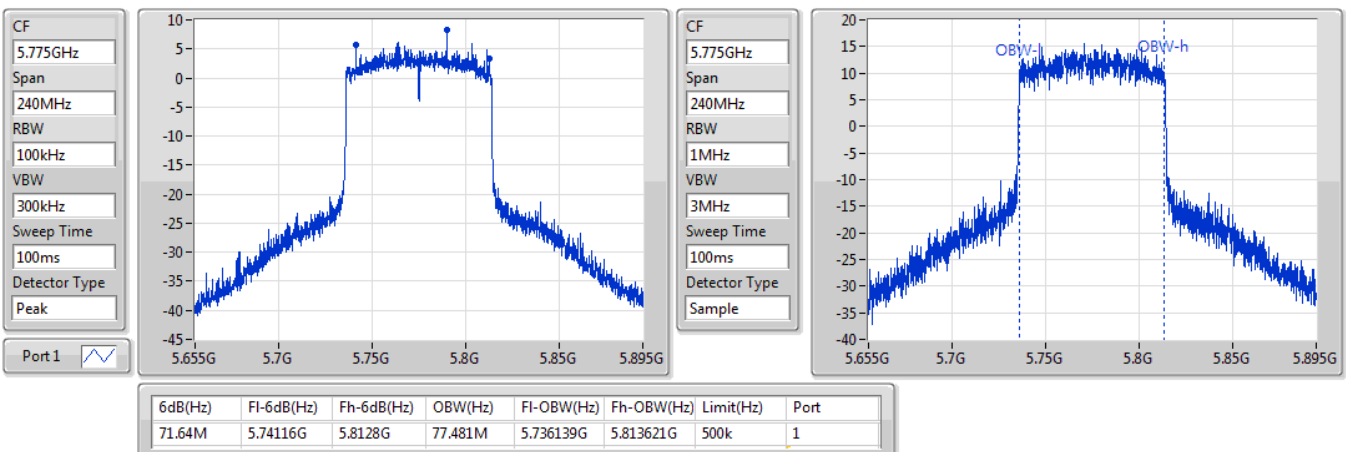


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5210MHz

20/07/2019


802.11ax HEW80_Nss1,(MCS0)_1TX
EBW
5775MHz

20/07/2019



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)_2TX	35.19M	17.661M	17M7D1D	21.09M	16.432M
802.11ax HEW20_Nss1,(MCS0)_2TX	38.28M	19.28M	19M3D1D	21.87M	18.891M
802.11ax HEW40_Nss1,(MCS0)_2TX	65.76M	37.901M	37M9D1D	40.92M	37.661M
802.11ax HEW80_Nss1,(MCS0)_2TX	82.08M	77.121M	77M1D1D	81.96M	77.001M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.29M	18.591M	18M6D1D	15.06M	16.462M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.39M	19.25M	19M2D1D	17.07M	18.921M
802.11ax HEW40_Nss1,(MCS0)_2TX	38.1M	49.715M	49M7D1D	37.5M	38.561M
802.11ax HEW80_Nss1,(MCS0)_2TX	77.28M	77.361M	77M4D1D	73.92M	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

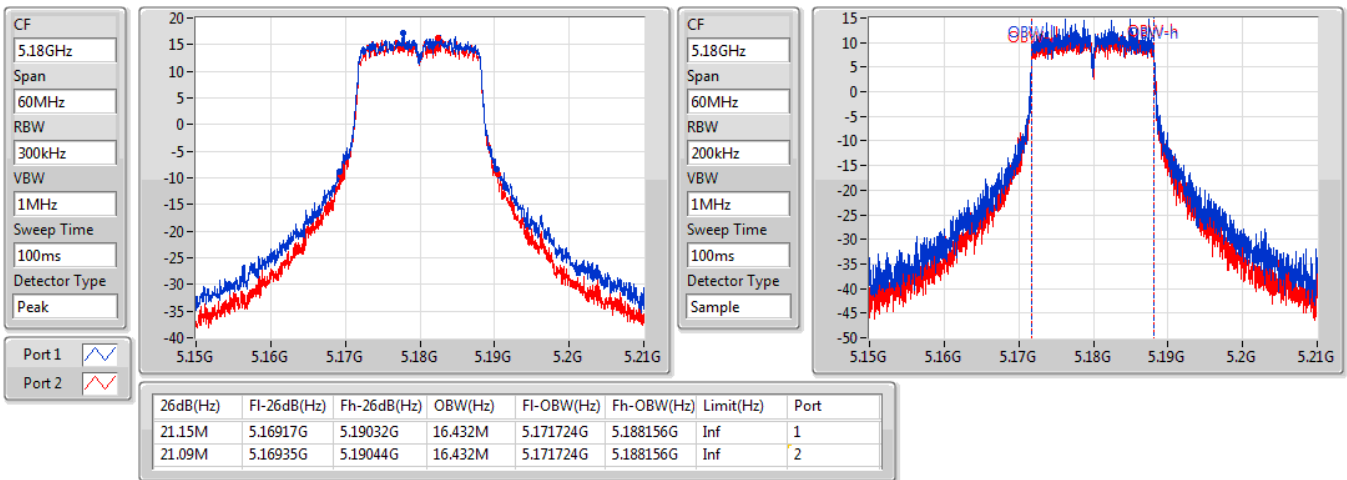
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.15M	16.432M	21.09M	16.432M
5200MHz	Pass	Inf	34.44M	17.601M	28.11M	16.642M
5240MHz	Pass	Inf	35.19M	17.661M	24M	16.552M
5745MHz	Pass	500k	16.29M	18.591M	15.6M	16.492M
5785MHz	Pass	500k	15.99M	17.301M	15.06M	16.462M
5825MHz	Pass	500k	15.3M	17.031M	15.42M	16.492M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.87M	18.891M	22.11M	18.891M
5200MHz	Pass	Inf	38.28M	19.28M	23.22M	18.891M
5240MHz	Pass	Inf	35.04M	19.25M	22.65M	18.981M
5745MHz	Pass	500k	18M	19.25M	17.94M	18.981M
5785MHz	Pass	500k	17.07M	19.1M	18.27M	18.921M
5825MHz	Pass	500k	18.39M	19.1M	17.43M	18.951M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	40.92M	37.721M	41.34M	37.661M
5230MHz	Pass	Inf	65.76M	37.901M	50.82M	37.841M
5755MHz	Pass	500k	37.5M	43.178M	38.1M	38.561M
5795MHz	Pass	500k	37.92M	49.715M	37.92M	44.678M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.96M	77.001M	82.08M	77.121M
5775MHz	Pass	500k	73.92M	77.241M	77.28M	77.361M

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

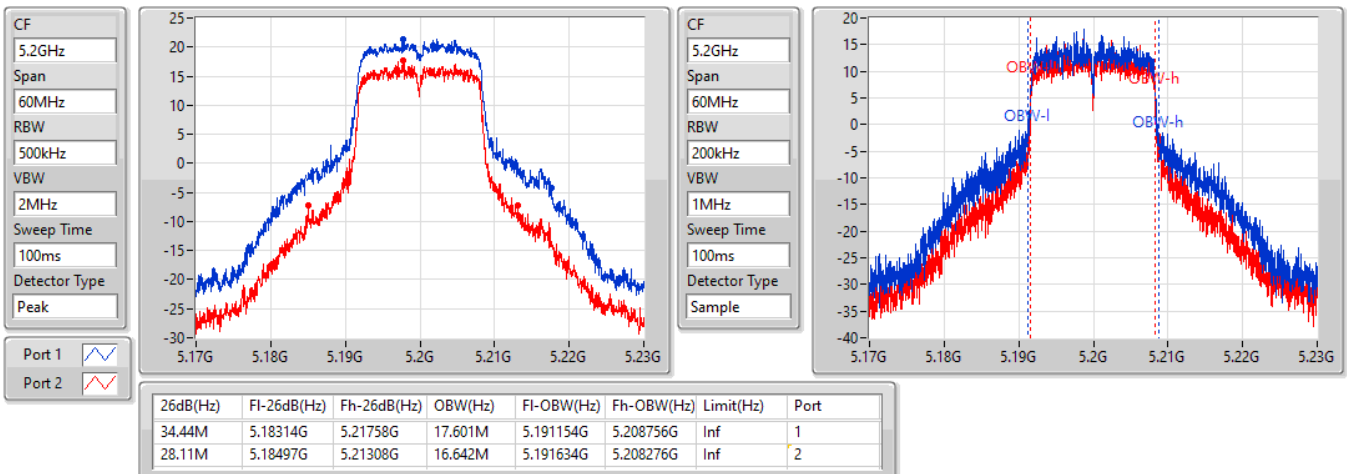
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_2TX
EBW
5180MHz

20/07/2019

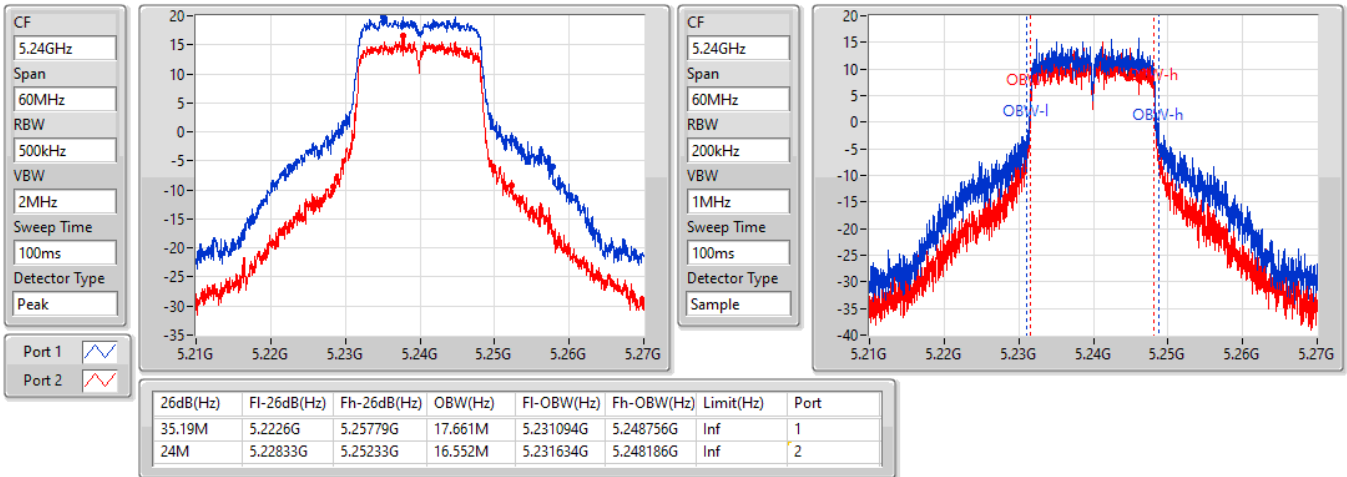

802.11a_Nss1,(6Mbps)_2TX
EBW
5200MHz

31/07/2023

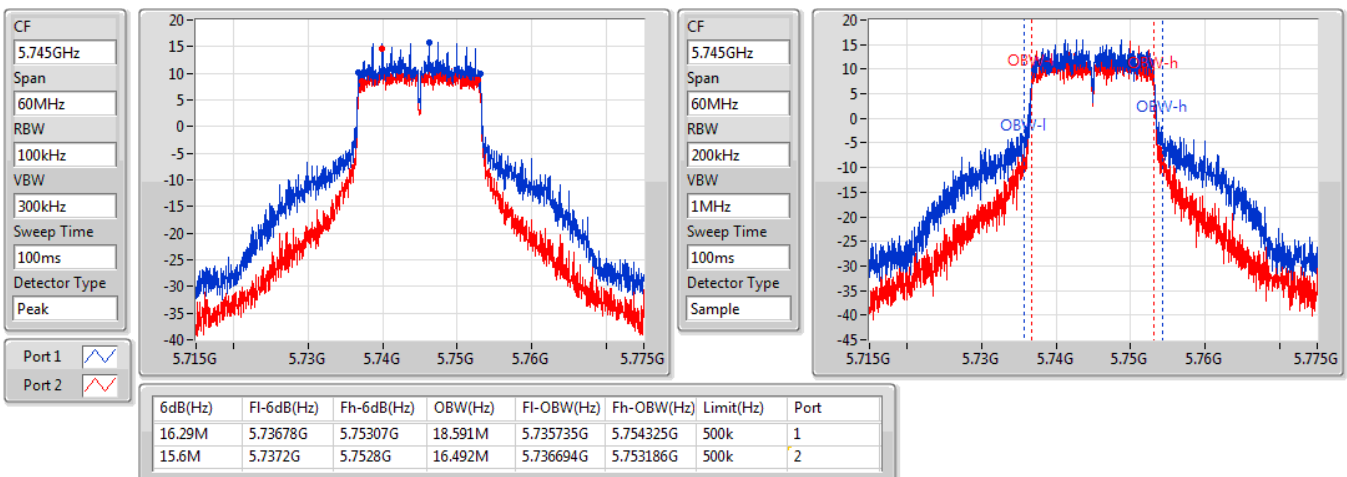


802.11a_Nss1,(6Mbps)_2TX
EBW
5240MHz

31/07/2023

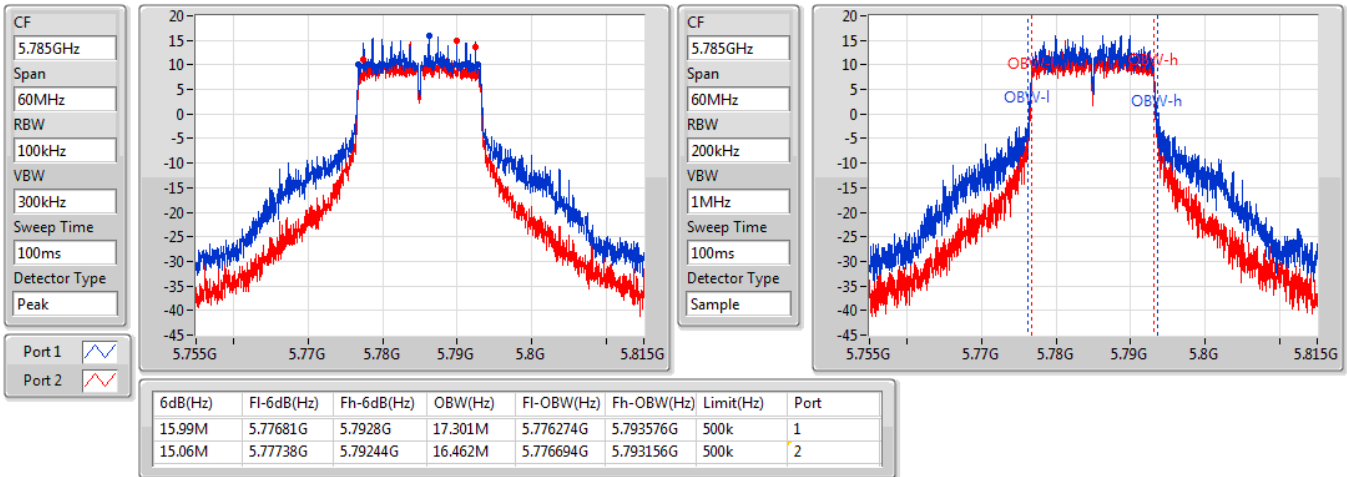

802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

20/07/2019

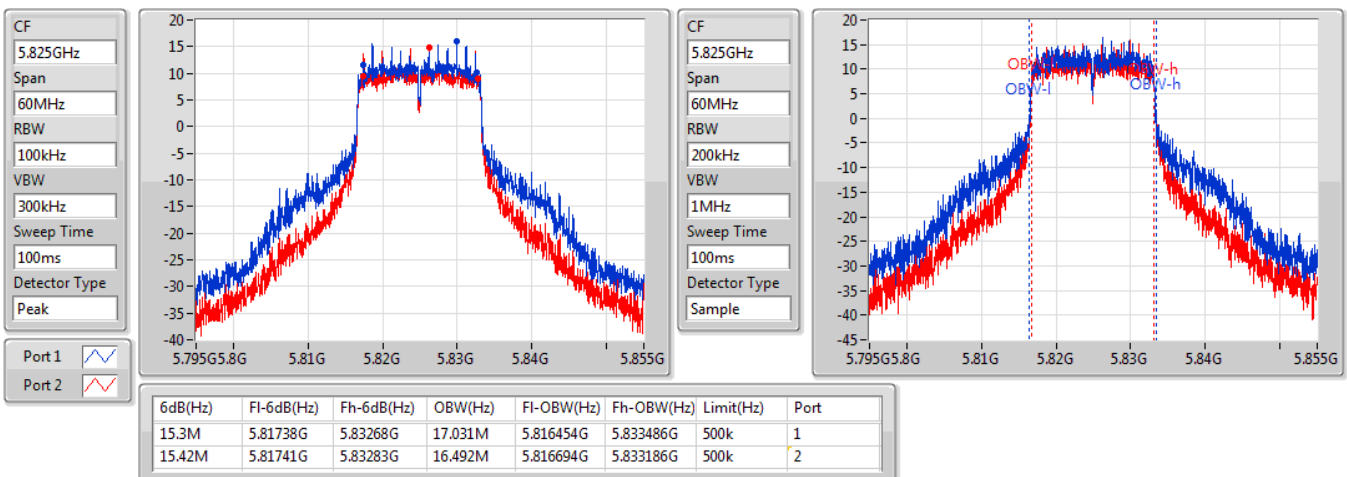


802.11a_Nss1,(6Mbps)_2TX
EBW
5785MHz

20/07/2019

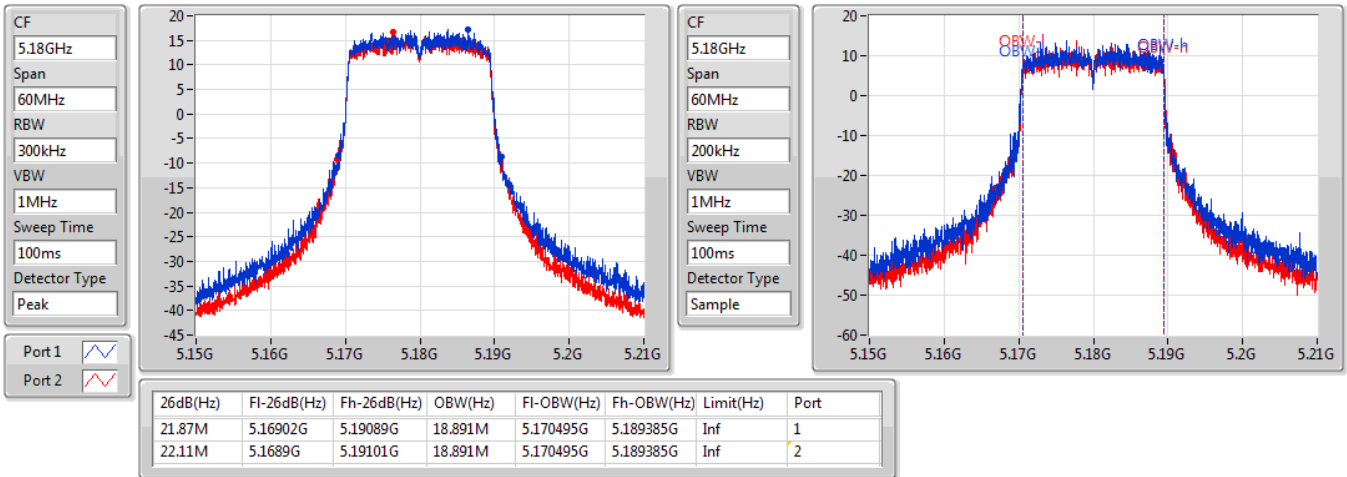

802.11a_Nss1,(6Mbps)_2TX
EBW
5825MHz

20/07/2019

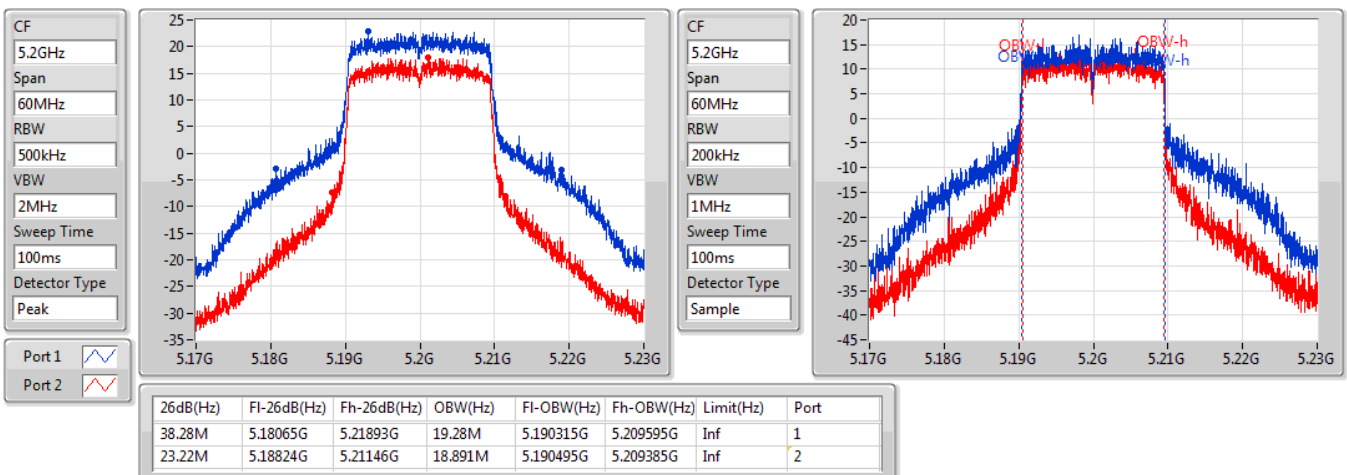


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5180MHz

20/07/2019

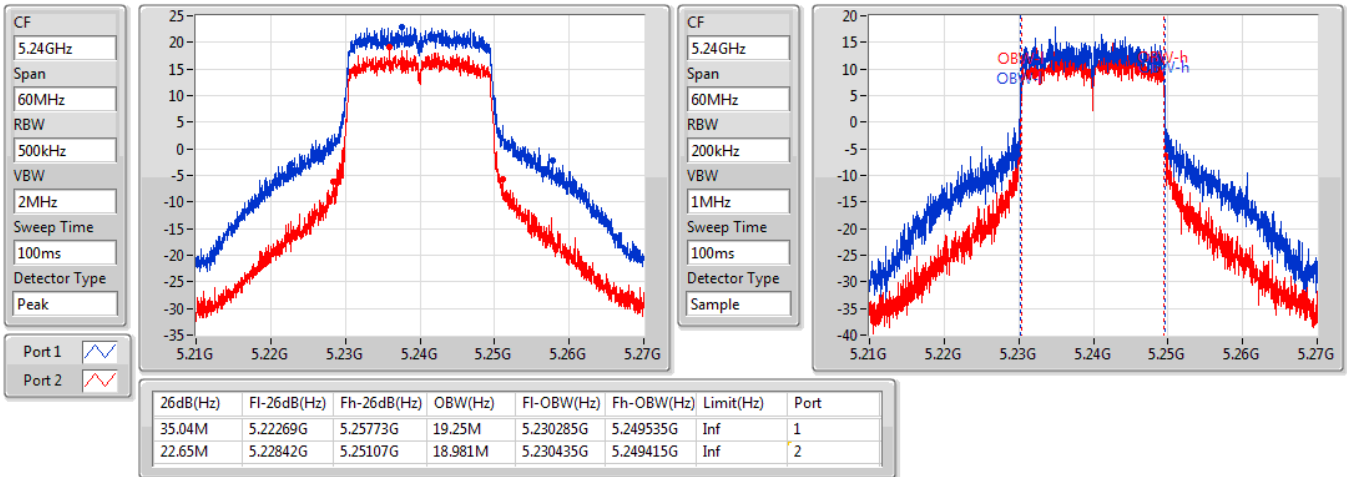

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5200MHz

20/07/2019

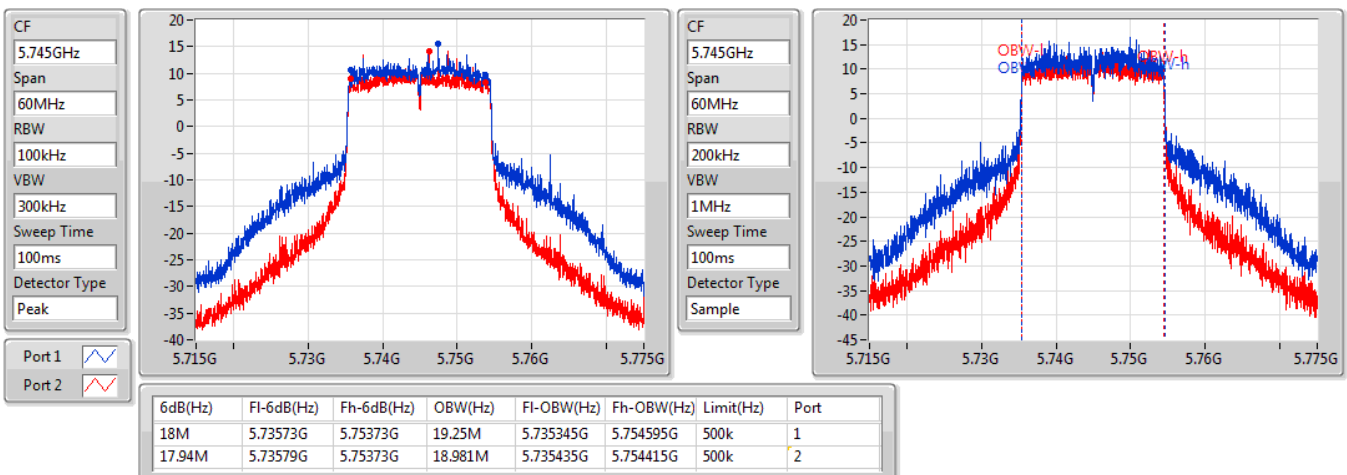


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5240MHz

20/07/2019

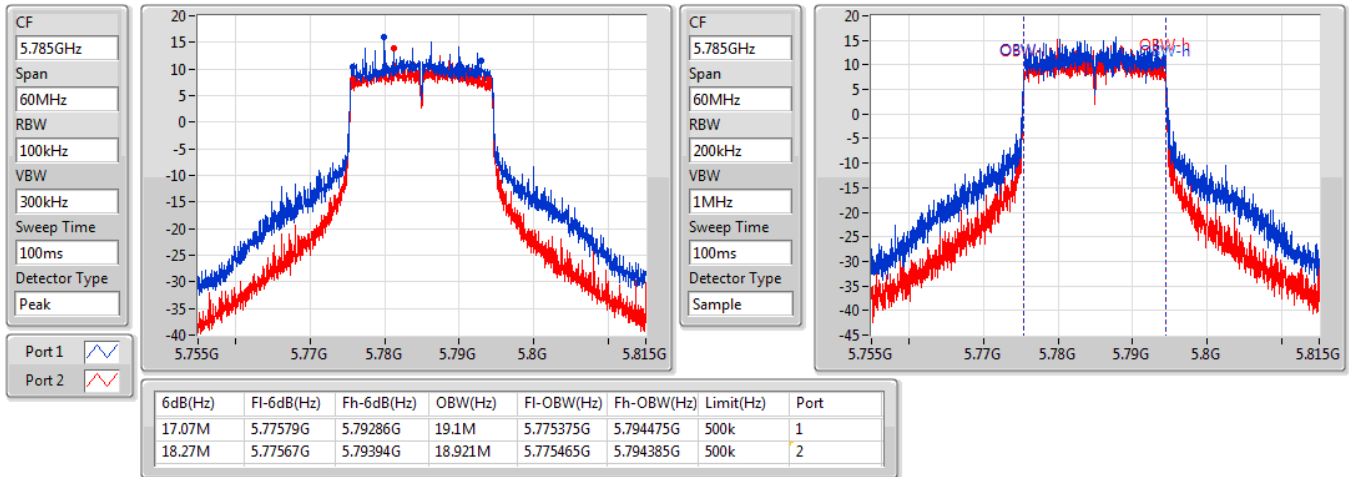

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5745MHz

20/07/2019

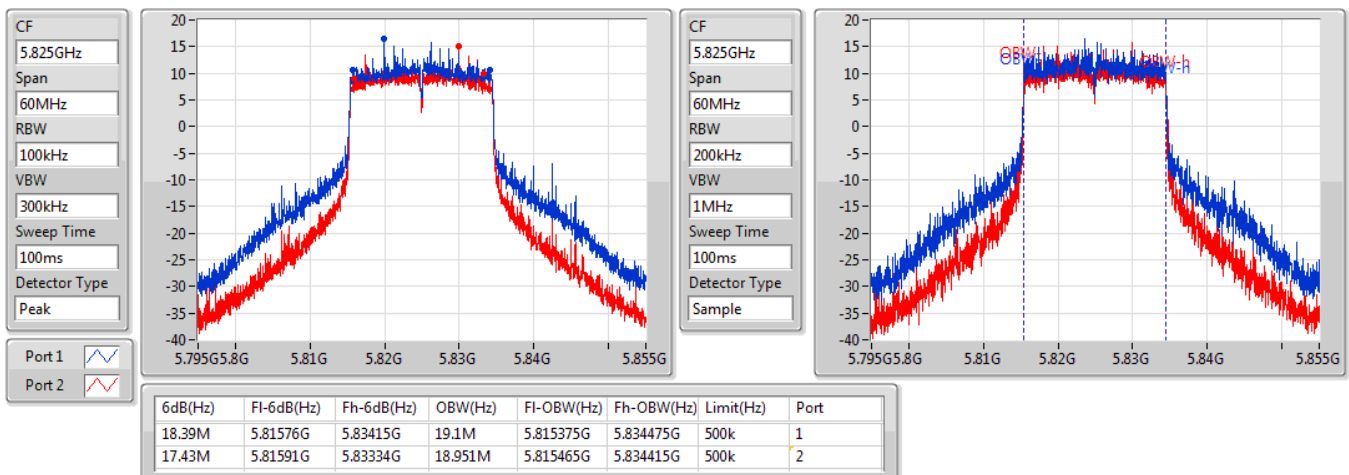


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5785MHz

20/07/2019


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5825MHz

20/07/2019

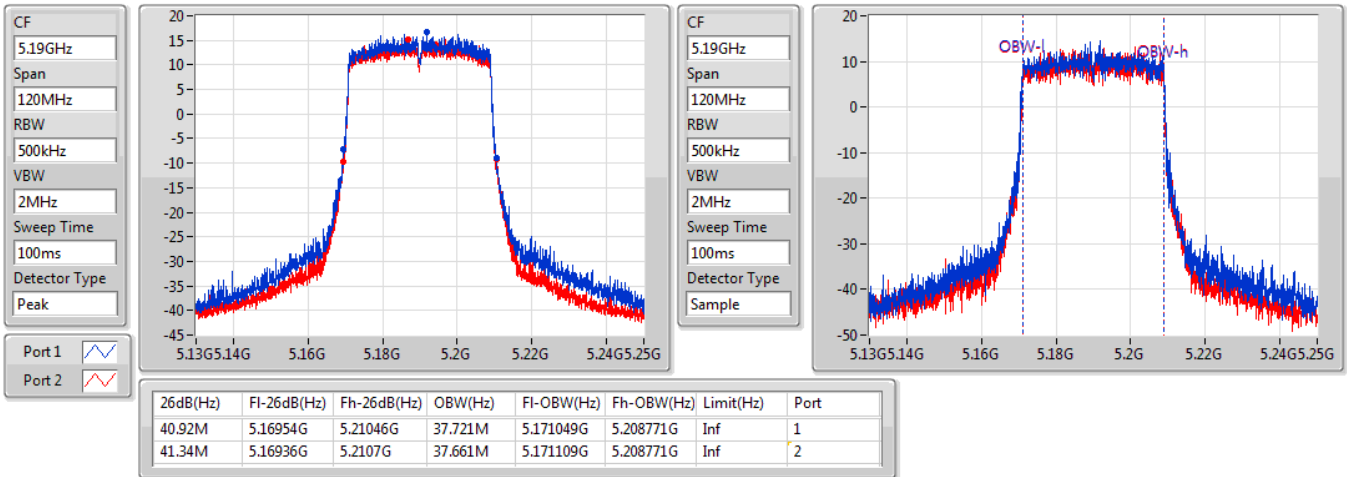


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

5190MHz

20/07/2019

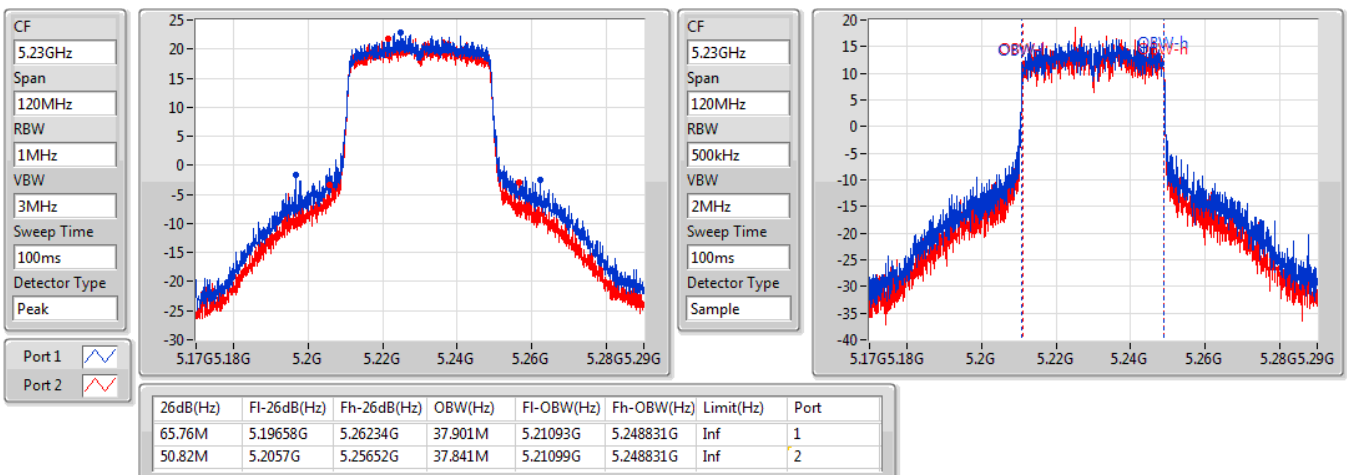


802.11ax HEW40_Nss1,(MCS0)_2TX

EBW

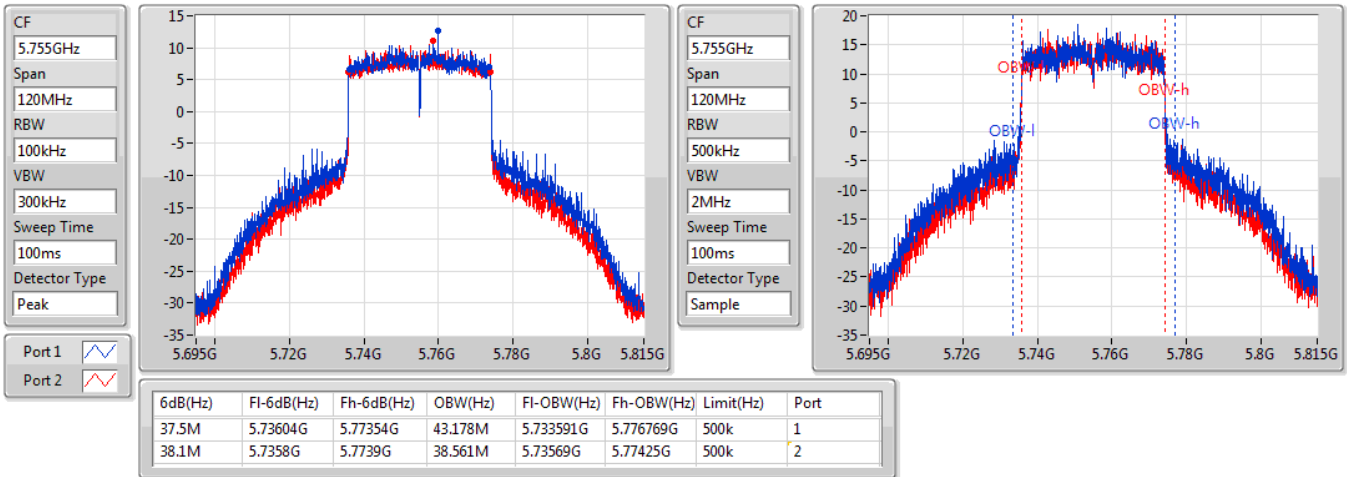
5230MHz

20/07/2019

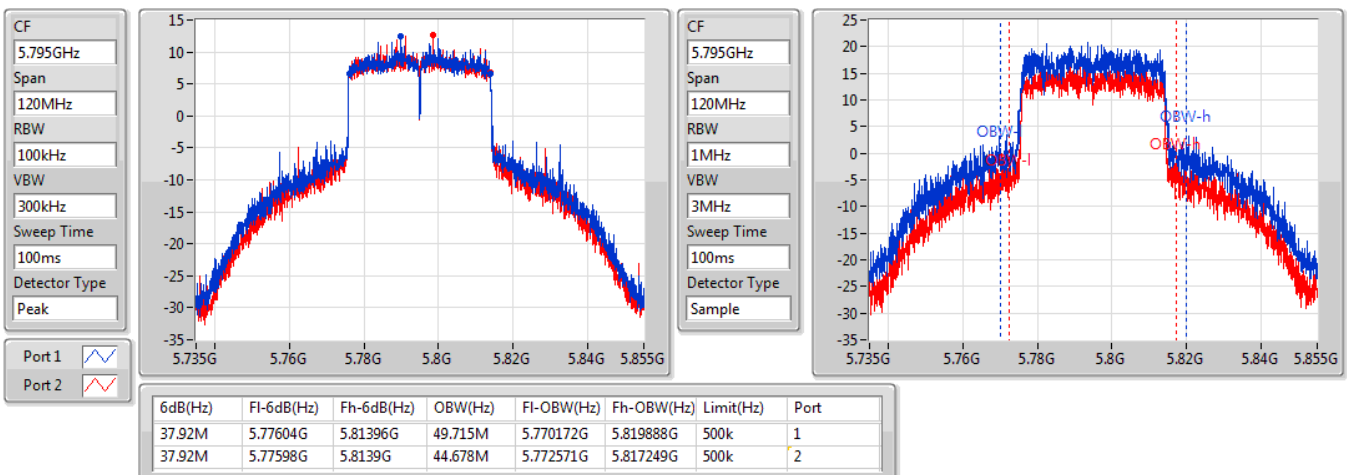


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5755MHz

20/07/2019

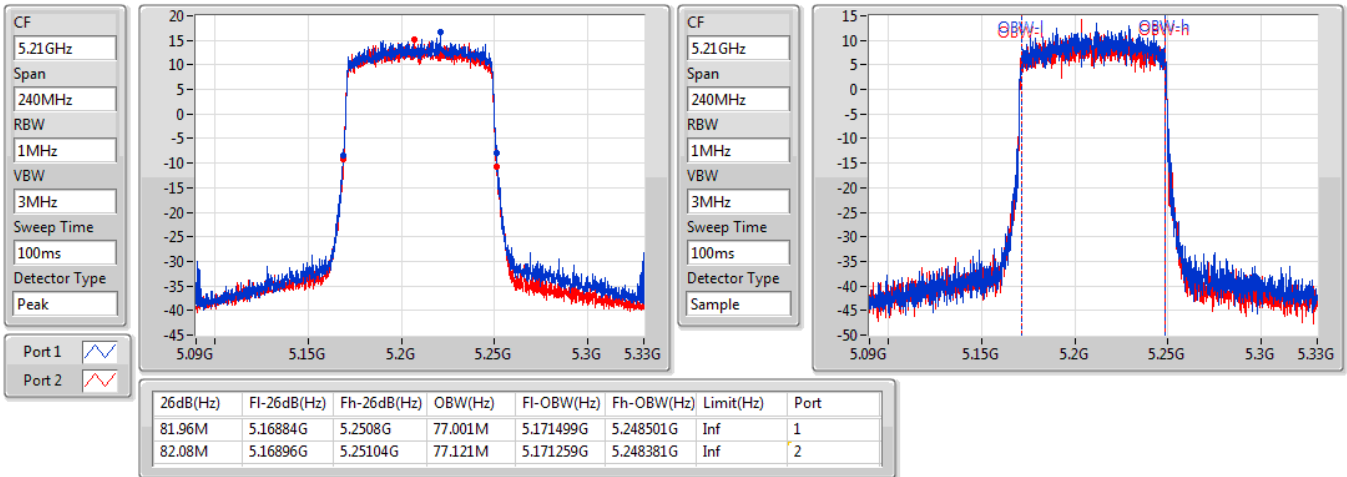

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5795MHz

20/07/2019

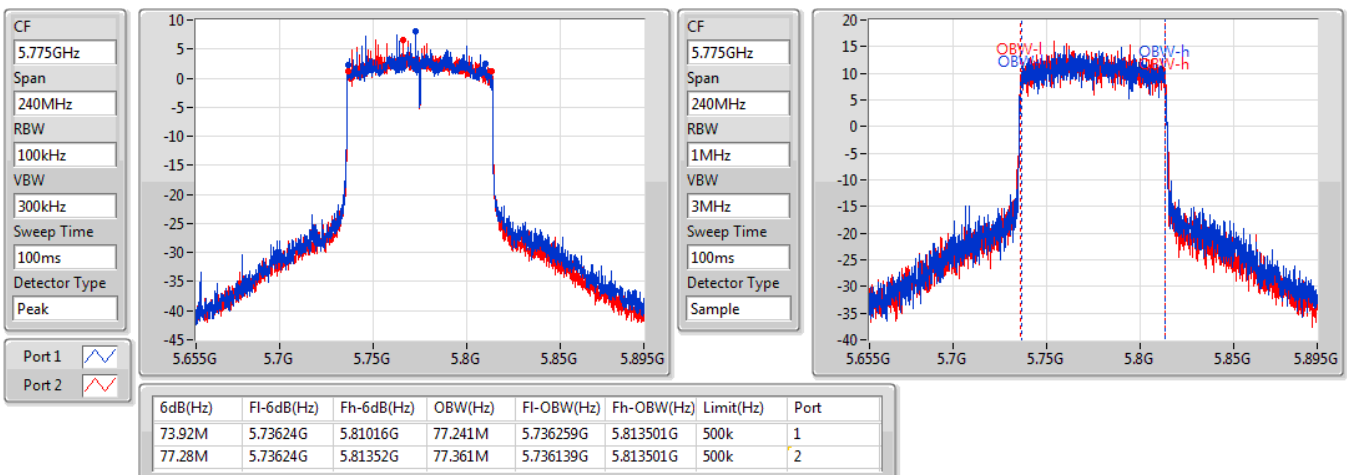


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5210MHz

20/07/2019


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5775MHz

20/07/2019



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)_2TX	21.96M	18.951M	19M0D1D	21.3M	18.831M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	41.04M	37.721M	37M7D1D	40.44M	37.601M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	81.12M	77.121M	77M1D1D	81M	76.882M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	18.33M	18.921M	18M9D1D	15.36M	18.861M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	37.2M	37.661M	37M7D1D	31.32M	37.601M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	72.48M	77.241M	77M2D1D	68.88M	76.522M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

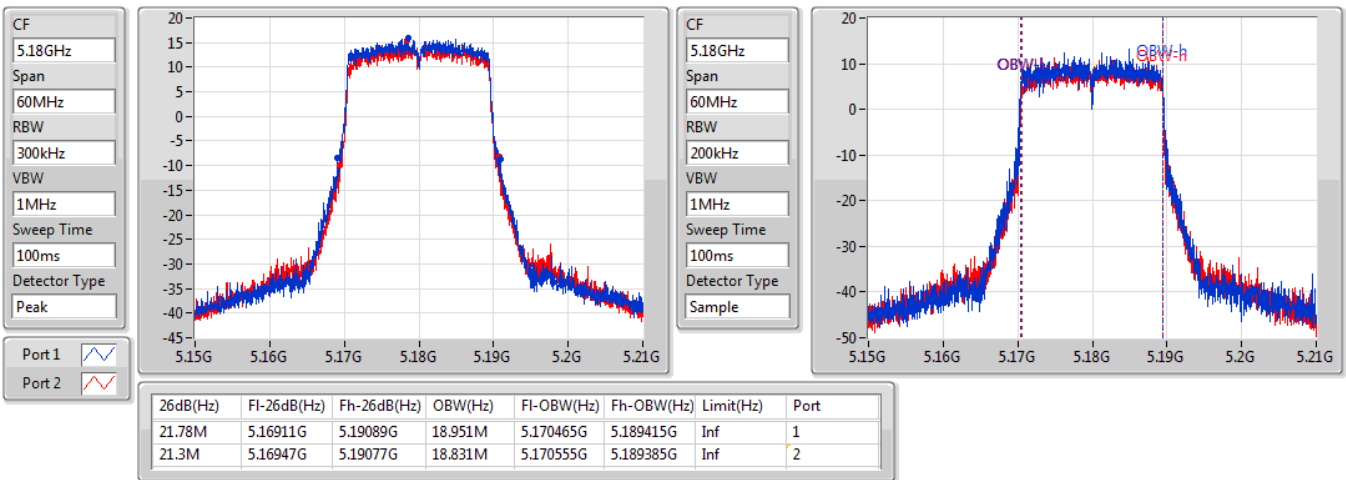
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.78M	18.951M	21.3M	18.831M
5200MHz	Pass	Inf	21.96M	18.891M	21.36M	18.891M
5240MHz	Pass	Inf	21.69M	18.891M	21.66M	18.921M
5745MHz	Pass	500k	18.12M	18.891M	18.12M	18.891M
5785MHz	Pass	500k	18.21M	18.861M	18.12M	18.861M
5825MHz	Pass	500k	15.36M	18.921M	18.33M	18.921M
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	41.04M	37.601M	40.62M	37.601M
5230MHz	Pass	Inf	40.44M	37.661M	40.5M	37.721M
5755MHz	Pass	500k	35.4M	37.661M	37.08M	37.661M
5795MHz	Pass	500k	37.2M	37.661M	31.32M	37.601M
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.12M	76.882M	81M	77.121M
5775MHz	Pass	500k	72.48M	77.241M	68.88M	76.522M

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

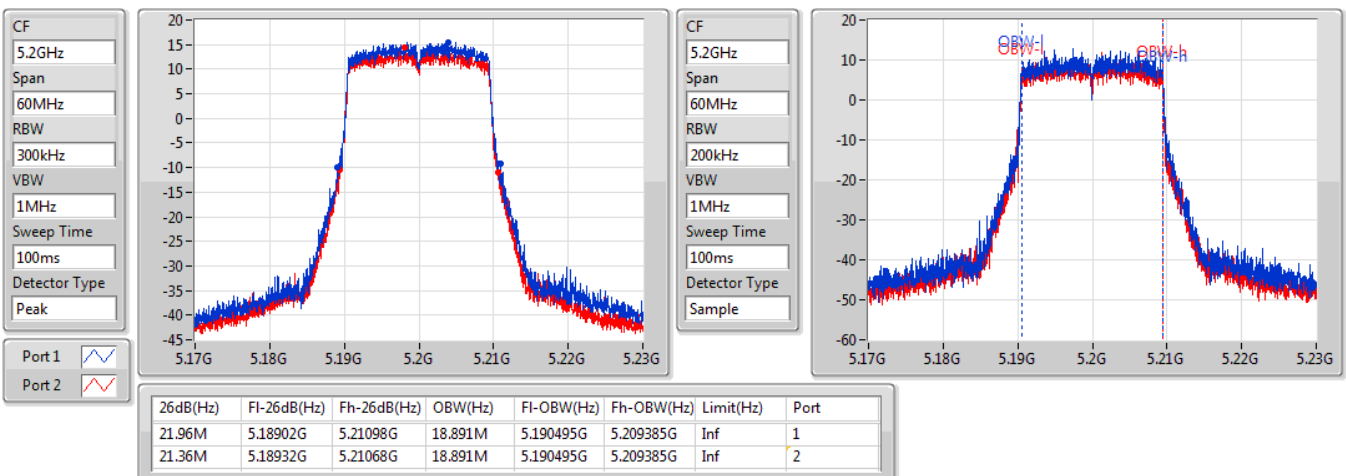
Port X-OBW = Port X 99% occupied bandwidth;

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5180MHz

22/07/2019

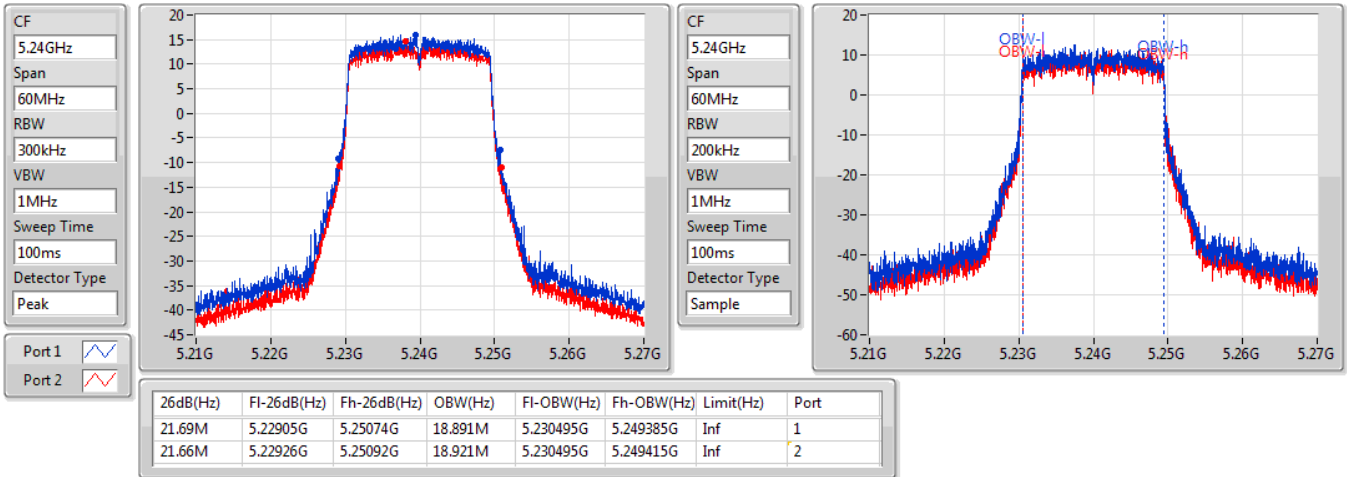

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5200MHz

22/07/2019

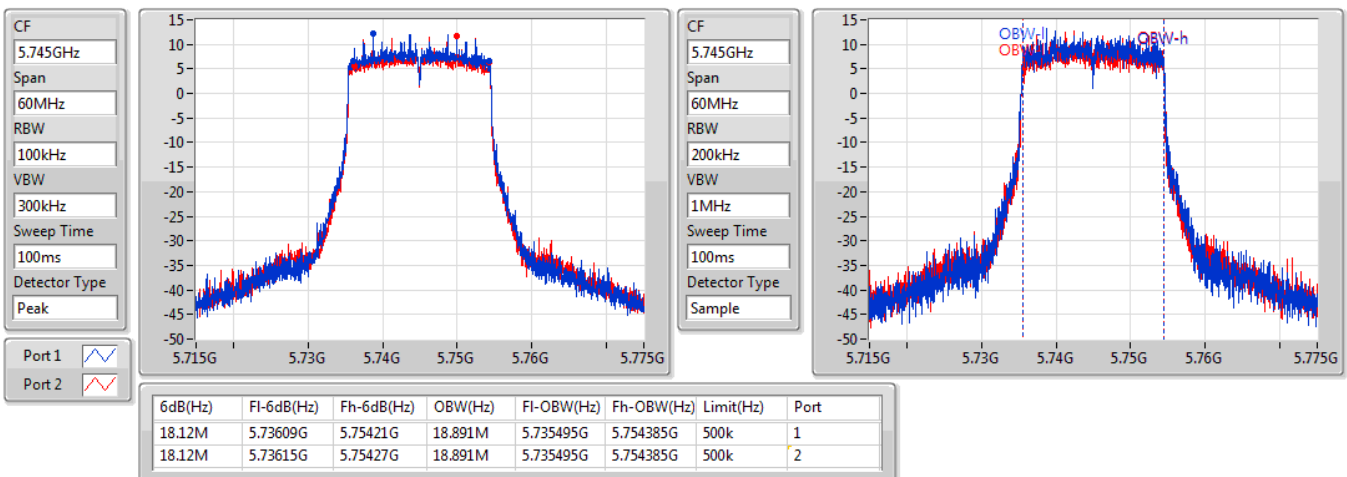


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5240MHz

22/07/2019

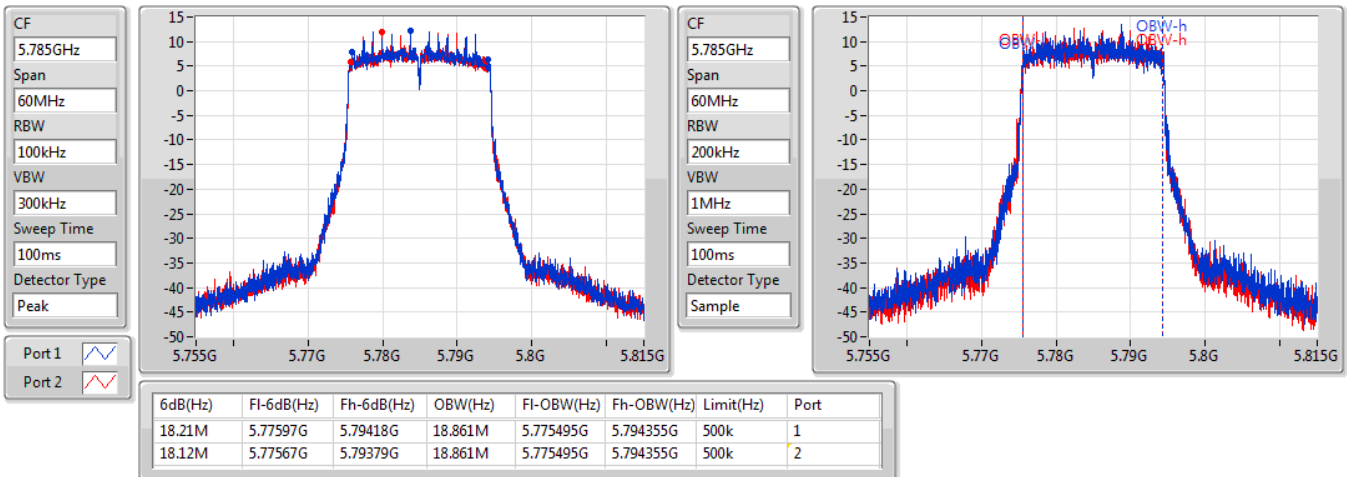

802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5745MHz

22/07/2019

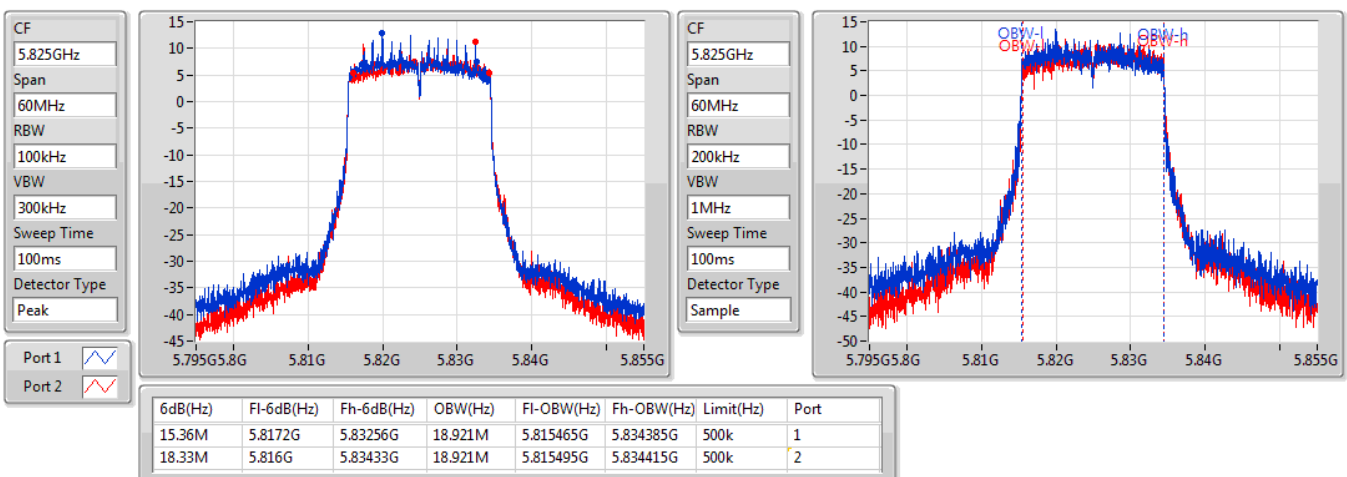


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5785MHz

22/07/2019


802.11ax HEW20-BF_Nss1,(MCS0)_2TX
EBW
5825MHz

22/07/2019

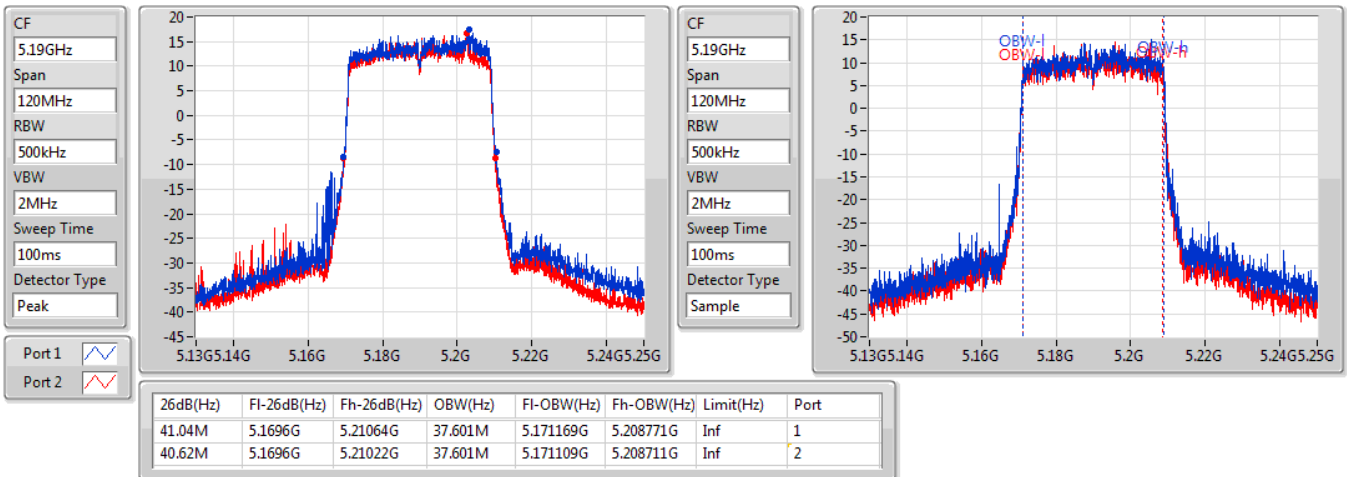


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

5190MHz

22/07/2019

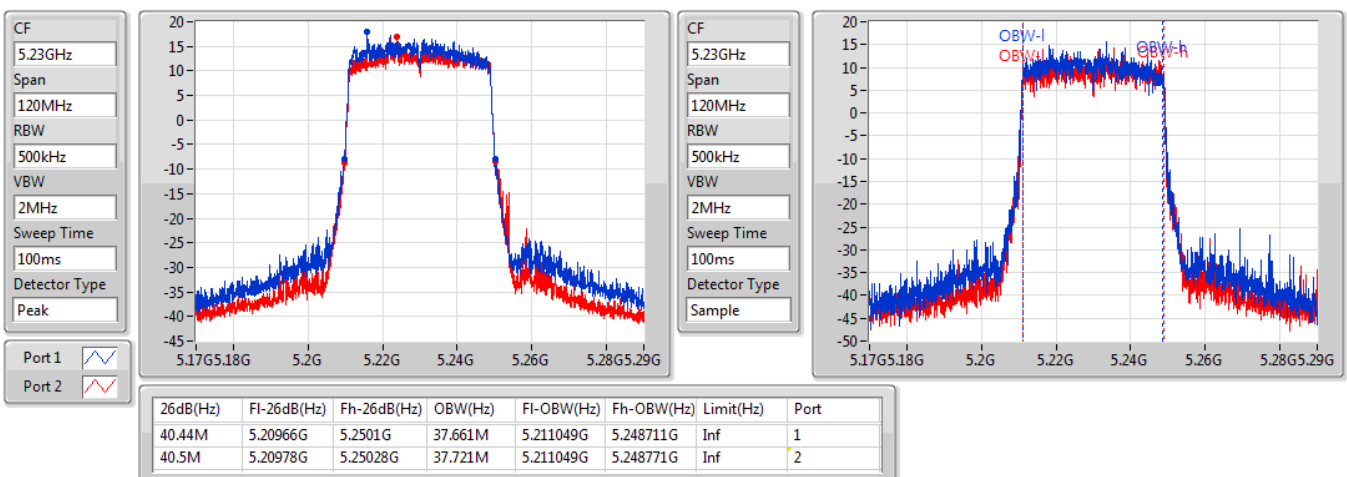


802.11ax HEW40-BF_Nss1,(MCS0)_2TX

EBW

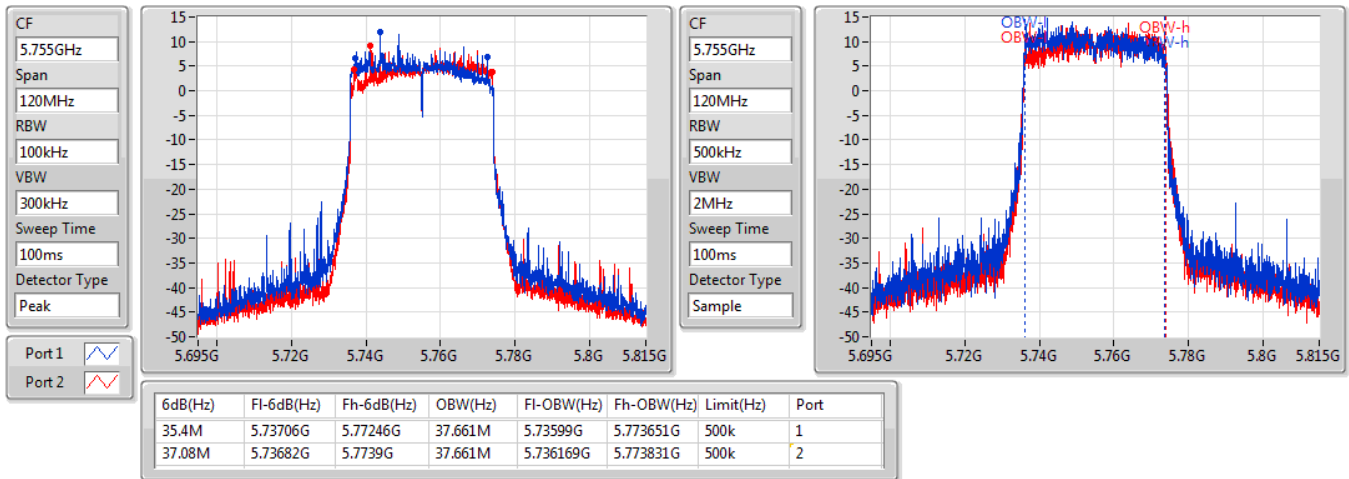
5230MHz

22/07/2019

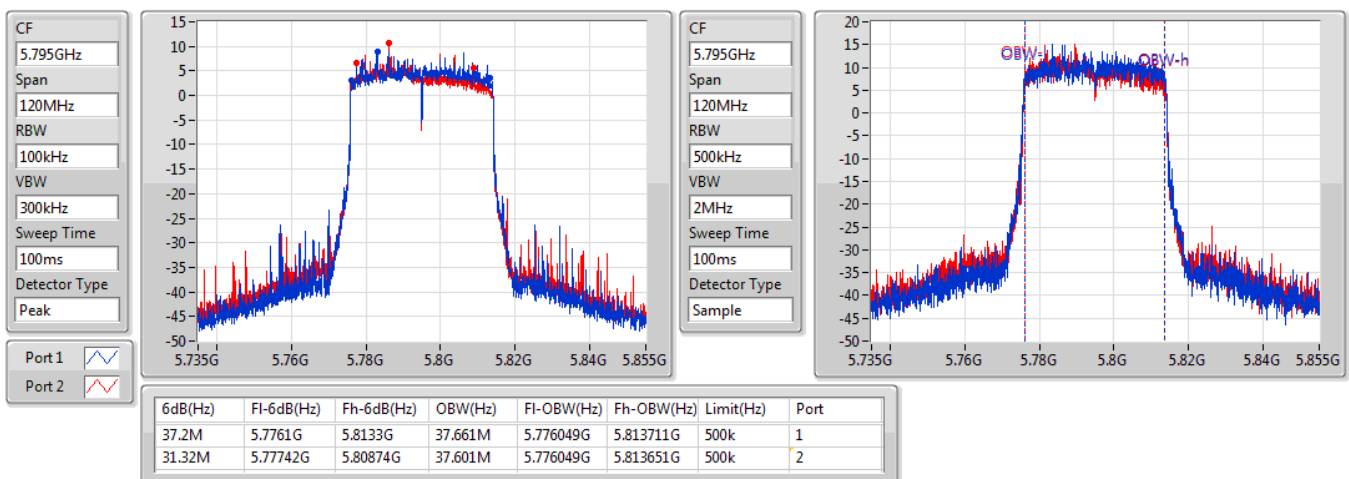


802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5755MHz

22/07/2019

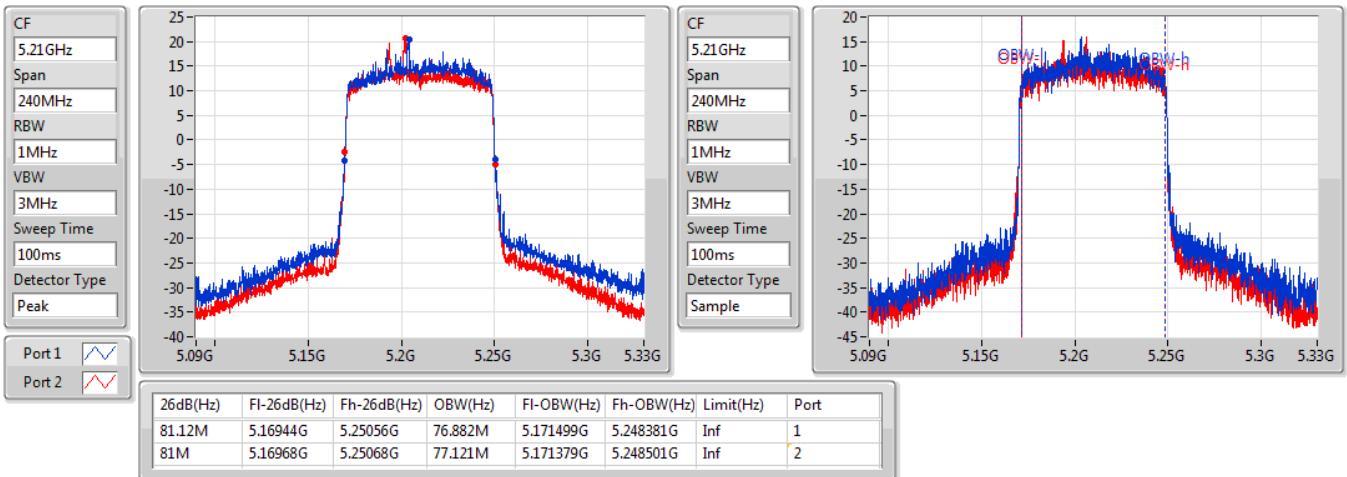

802.11ax HEW40-BF_Nss1,(MCS0)_2TX
EBW
5795MHz

22/07/2019

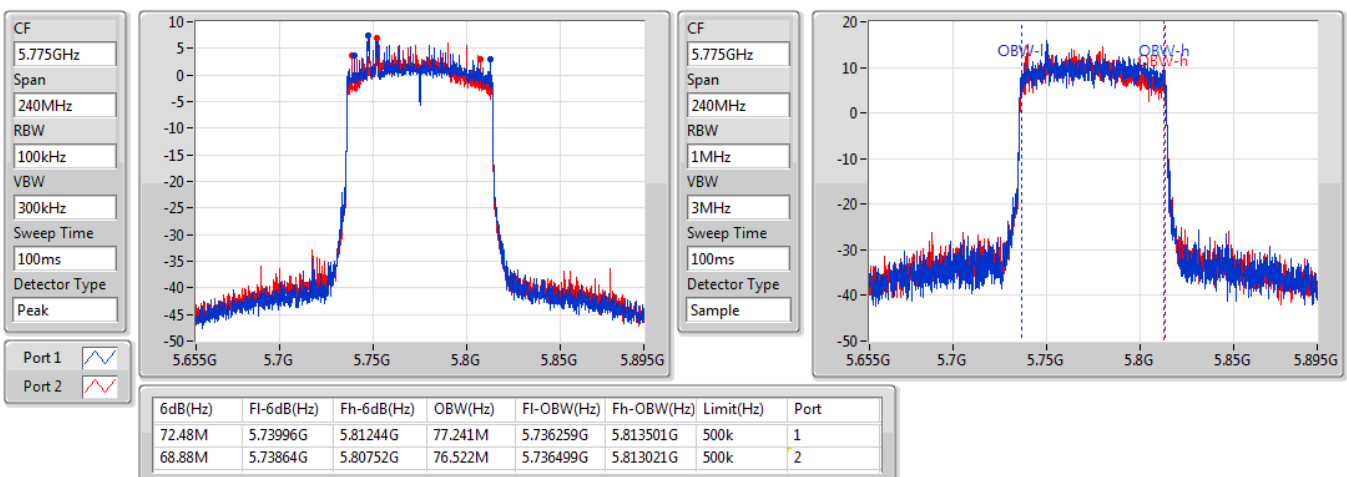


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5210MHz

22/07/2019


802.11ax HEW80-BF_Nss1,(MCS0)_2TX
EBW
5775MHz

22/07/2019



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)_4TX	20.7M	16.402M	16M4D1D	19.62M	16.342M
802.11ax HEW20_Nss1,(MCS0)_4TX	22.2M	18.951M	19M0D1D	21.24M	18.891M
802.11ax HEW40_Nss1,(MCS0)_4TX	41.46M	37.781M	37M8D1D	41.1M	37.661M
802.11ax HEW80_Nss1,(MCS0)_4TX	82.56M	77.241M	77M2D1D	81.96M	77.121M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	16.29M	16.492M	16M5D1D	15.09M	16.342M
802.11ax HEW20_Nss1,(MCS0)_4TX	18.66M	19.01M	19M0D1D	16.41M	18.891M
802.11ax HEW40_Nss1,(MCS0)_4TX	37.86M	37.781M	37M8D1D	36.36M	37.721M
802.11ax HEW80_Nss1,(MCS0)_4TX	76.92M	77.361M	77M4D1D	69M	77.001M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

Result

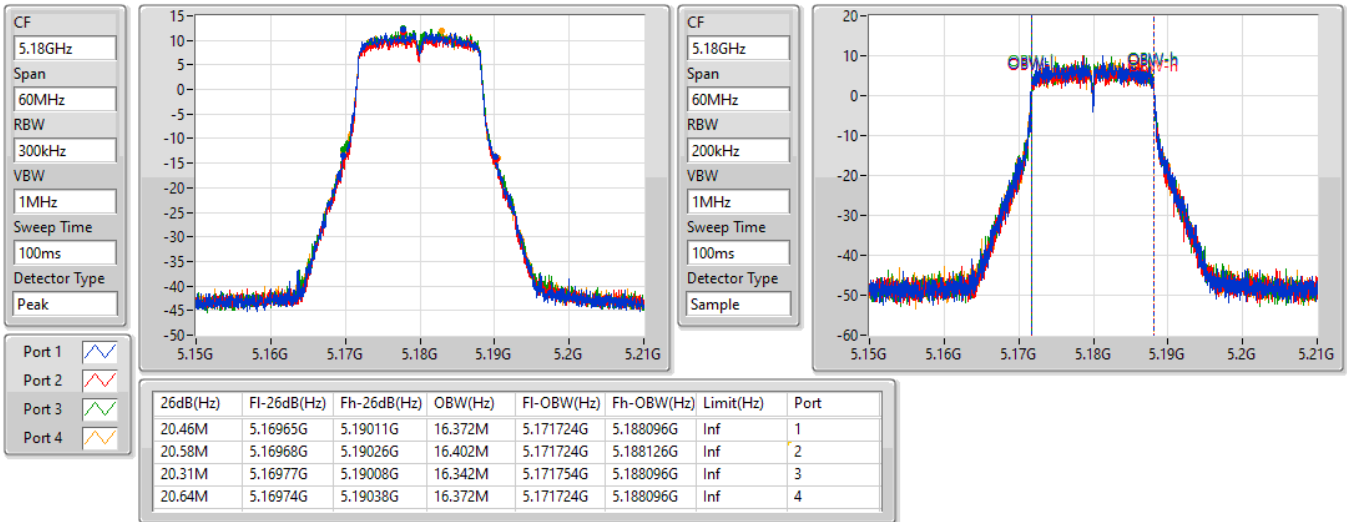
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	20.46M	16.372M	20.58M	16.402M	20.31M	16.342M	20.64M	16.372M
5200MHz	Pass	Inf	19.98M	16.342M	20.49M	16.402M	19.62M	16.372M	20.7M	16.402M
5240MHz	Pass	Inf	19.89M	16.372M	19.89M	16.372M	19.65M	16.372M	19.83M	16.402M
5745MHz	Pass	500k	15.3M	16.432M	16.02M	16.492M	15.42M	16.462M	16.23M	16.432M
5785MHz	Pass	500k	16.26M	16.462M	15.99M	16.432M	15.12M	16.372M	15.63M	16.402M
5825MHz	Pass	500k	16.26M	16.492M	15.3M	16.402M	15.09M	16.342M	16.29M	16.462M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	22.2M	18.921M	21.96M	18.921M	21.69M	18.891M	21.69M	18.921M
5200MHz	Pass	Inf	21.66M	18.921M	21.75M	18.891M	22.02M	18.951M	21.48M	18.921M
5240MHz	Pass	Inf	21.24M	18.891M	22.05M	18.921M	21.81M	18.921M	21.81M	18.951M
5745MHz	Pass	500k	17.28M	18.921M	18.54M	18.951M	16.41M	18.891M	18.66M	18.981M
5785MHz	Pass	500k	16.77M	18.891M	17.13M	18.951M	17.49M	18.921M	18.09M	18.981M
5825MHz	Pass	500k	18.42M	19.01M	17.01M	18.951M	18.63M	18.981M	18.57M	18.921M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	41.4M	37.781M	41.4M	37.781M	41.1M	37.721M	41.46M	37.661M
5230MHz	Pass	Inf	41.1M	37.721M	41.16M	37.721M	41.1M	37.661M	41.34M	37.661M
5755MHz	Pass	500k	37.44M	37.721M	36.36M	37.781M	37.56M	37.721M	37.14M	37.781M
5795MHz	Pass	500k	37.86M	37.721M	37.2M	37.721M	36.72M	37.781M	37.56M	37.721M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	82.32M	77.121M	82.56M	77.241M	82.32M	77.121M	81.96M	77.121M
5775MHz	Pass	500k	74.04M	77.001M	69M	77.121M	76.92M	77.001M	75.84M	77.361M

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

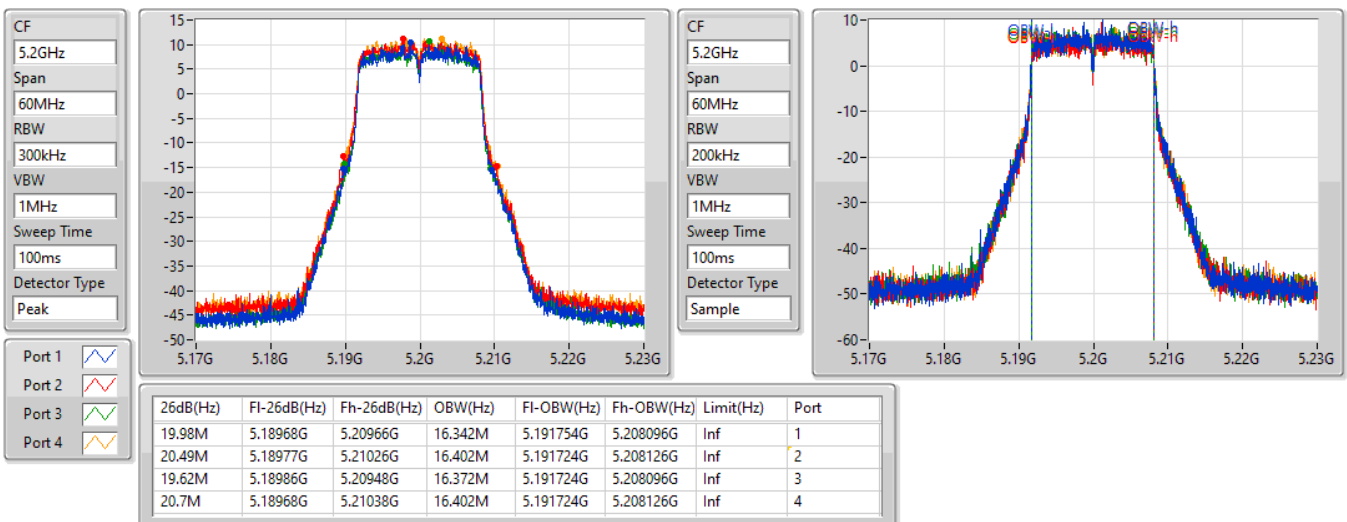
Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX
EBW
5180MHz

31/07/2023

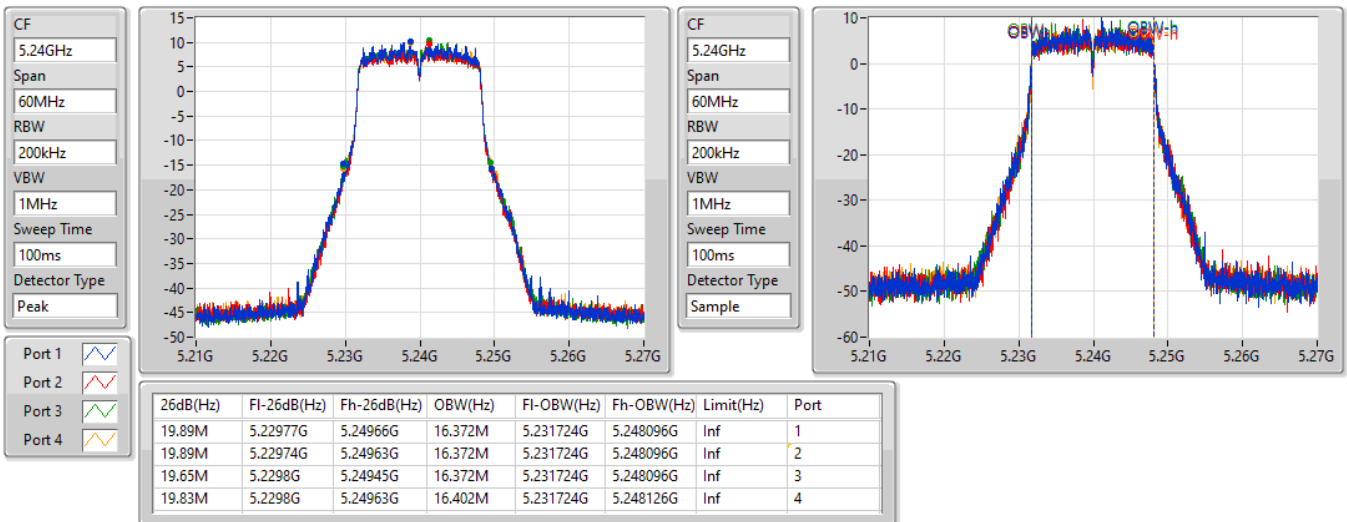

802.11a_Nss1,(6Mbps)_4TX
EBW
5200MHz

31/07/2023



802.11a_Nss1,(6Mbps)_4TX
EBW
5240MHz

31/07/2023


802.11a_Nss1,(6Mbps)_4TX
EBW
5745MHz

20/07/2019

