

FCC Test Report

FCC ID : TVE-3417T0966
Equipment : Secured Wireless Access Point
Brand Name : FORTINET
Model Name : FortiAP 23JFxxxxxx, FAP-23JFxxxxxx,
FORTIAP-23JFxxxxxx
(where "x" can be "A-Z", or "0-9", or "-", or blank for
software purposes or marketing purposes only)
Applicant : Fortinet, Inc.
899 Kifer Road, Sunnyvale, CA 94086, USA
Manufacturer : Fortinet, Inc.
899 Kifer Road, Sunnyvale, CA 94086, USA
Standard : 47 CFR FCC Part 15.407

The product was received on Oct. 27, 2020, and testing was started from Nov. 03, 2020 and completed on Jan. 21, 2021. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Testing Applied Standards	11
1.3 Testing Location Information	11
1.4 Measurement Uncertainty	12
2 TEST CONFIGURATION OF EUT.....	13
2.1 Test Condition	13
2.2 Test Channel Mode	13
2.3 The Worst Case Measurement Configuration.....	17
2.4 Accessories	19
2.5 Support Equipment.....	19
2.6 Test Setup Diagram	20
3 TRANSMITTER TEST RESULT	24
3.1 AC Power-line Conducted Emissions	24
3.2 Emission Bandwidth	26
3.3 Maximum Conducted Output Power	27
3.4 Peak Power Spectral Density.....	29
3.5 Unwanted Emissions.....	31
4 TEST EQUIPMENT AND CALIBRATION DATA	35
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF EMISSION BANDWIDTH	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF PEAK POWER SPECTRAL DENSITY	
APPENDIX E. TEST RESULTS OF UNWANTED EMISSIONS	
APPENDIX F. TEST RESULTS OF RADIATED EMISSION CO-LOCATION	
APPENDIX G. TEST PHOTOS	
PHOTOGRAPHS OF EUT V01	



History of this test report

[illegible]

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 Conducted Output Power	PASS	-
3.4	15.407(a)	Peak Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

Declaration of Conformity:

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

Comments and explanations:

The EUT supports beamforming and CDD modes, and the CDD mode is the worse case. Therefore, all test items are evaluated in the report. The beamforming mode only evaluateds the output power.

Reviewed by: Sam Tsai

Report Producer: Debby Hung

1 General Description

1.1 Information

Radio	Function	Beamforming Mode
0	2.4G	Support
1	5G	Support
2	2.4G & 5G(Scanning Radio)	N/A
3	Bluetooth & Zigbee	N/A

1.1.1 RF General Information

Radio 1

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]

Radio 2

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

**Non-Beamforming
Radio 1**

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

Radio 2

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	1TX
5.725-5.85GHz	802.11a	20	1TX
5.15-5.25GHz	802.11n HT20	20	1TX
5.725-5.85GHz	802.11n HT20	20	1TX
5.15-5.25GHz	802.11n HT40	40	1TX
5.725-5.85GHz	802.11n HT40	40	1TX
5.15-5.25GHz	802.11ac VHT20	20	1TX
5.725-5.85GHz	802.11ac VHT20	20	1TX
5.15-5.25GHz	802.11ac VHT40	40	1TX
5.725-5.85GHz	802.11ac VHT40	40	1TX
5.15-5.25GHz	802.11ac VHT80	80	1TX
5.725-5.85GHz	802.11ac VHT80	80	1TX

**Beamforming
Radio 1**

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ax HEW20-BF	20	2TX
5.725-5.85GHz	802.11ax HEW20-BF	20	2TX
5.15-5.25GHz	802.11ax HEW40-BF	40	2TX
5.725-5.85GHz	802.11ax HEW40-BF	40	2TX
5.15-5.25GHz	802.11ax HEW80-BF	80	2TX
5.725-5.85GHz	802.11ax HEW80-BF	80	2TX

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

Ant.	Brand	Model Name	Antenna Type	Connector
1	Senao	5718A0566300	Dipole	I-PEX
2	Senao	5718A0567300	Dipole	I-PEX
3	Senao	5718A0568300	Dipole	I-PEX
4	Senao	5718A0569300	Dipole	I-PEX

Ant.	2.4GHz		5GHz		BTLE/Zigbee	Remark
	Antenna Gain(dBi)	Beamforming Gain(dBi)	Antenna Gain(dBi)	Beamforming Gain(dBi)	Antenna Gain(dBi)	
1	4.17	3.01	4.35	3.01	-	Radio 0,1
2	3.74		3.84		-	Radio 0,1
3	3.99	-	4.16	-	-	Radio 2
4	-	-	-	-	3.63	Radio 3

For 2.4 GHz function:

Radio 0

For IEEE 802.11b/g/n/VHT/ax mode (2TX/2RX)

Ant. 1 and Ant. 2 could transmit/receive simultaneously.

Radio 2

For IEEE 802.11b/g/n mode (1TX/1RX)

Ant. 3 could transmit/receive.

For 5 GHz function:

Radio 1

For IEEE 802.11a/n/VHT/ax mode (2TX/2RX)

Ant. 1 and Ant. 2 could transmit/receive simultaneously.

Radio 2

For IEEE 802.11a/n/ac mode (1TX/1RX)

Ant. 3 could transmit/receive.

For Bluetooth/Zigbee function:

Radio 3

For Bluetooth/Zigbee mode (1TX/1RX)

Only Ant. 4 can be used as transmitting/receiving.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From PoE / Adapter		
EUT Function	☐ Outdoor AP	☒ Indoor AP	
	☐ Fixed P2P AP	☐ Outdoor/Indoor Client	
Beamforming Function	☒ With beamforming	☐ Without beamforming	
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.: ...		
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.:		
☐	Other:		

1.1.4 Mode Test Duty Cycle

Non-Beamforming

Radio 1

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a_Nss1,(6Mbps)_2TX	0.939	0.27	1.977m	1k
802.11n HT20_Nss1,(MCS0)_2TX	0.95	0.22	5.43m	300
802.11n HT40_Nss1,(MCS0)_2TX	0.946	0.24	5.429m	300
802.11ac VHT20_Nss1,(MCS0)_2TX	0.964	0.16	5.429m	300
802.11ac VHT40_Nss1,(MCS0)_2TX	0.957	0.19	5.429m	300
802.11ac VHT80_Nss1,(MCS0)_2TX	0.861	0.65	5.429m	300
802.11ax HEW20_Nss1,(MCS0)_2TX	0.95	0.22	5.452m	300
802.11ax HEW40_Nss1,(MCS0)_2TX	0.934	0.3	5.452m	300
802.11ax HEW80_Nss1,(MCS0)_2TX	0.918	0.37	5.012m	300

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

Radio 2

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a_Nss1,(6Mbps)_1TX	0.966	0.15	2.03m	1k
802.11n HT20_Nss1,(MCS0)_1TX	0.966	0.15	1.889m	1k
802.11n HT40_Nss1,(MCS0)_1TX	0.928	0.32	929.062u	3k
802.11ac VHT20_Nss1,(MCS0)_1TX	0.962	0.17	1.897m	1k
802.11ac VHT40_Nss1,(MCS0)_1TX	0.925	0.34	937.5u	3k
802.11ac VHT80_Nss1,(MCS0)_1TX	0.857	0.67	457.5u	3k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.1.5 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Brand Name	Model Name	Description
FORTINET	FortiAP 23JFxxxxxx	All the models are identical, the difference model for difference brand served as marketing strategy.
	FAP-23JFxxxxxx	
	FORTIAP-23JFxxxxxx	

1.2 Testing Applied 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
- ♦ KDB 789033 D02 v02r01

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

- ♦ KDB 662911 D01 v02r01
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			
☐	Wen Shan	ADD : No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
		TEL : 886-3-318-0787	FAX : 886-3-318-0287
Test site Designation No. TW1097 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Edward	21.2~23.5°C / 59~63%	21/Nov/2020
RF Conducted	TH06-HY	Alan	20.1~26.9°C / 50~60%	05/Nov/2020~21/Jan/2021
Radiated	03CH02-HY	Daniel	20.7~26.1°C / 51~66%	03/Nov/2020~13/Jan/2021
Radiated (Co-location)	03CH02-HY	Daniel	20.3~25.8°C / 53~68%	18/Jan/2021

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software Version	QSPR V5.0-00188
-----------------------	-----------------

Non-Beamforming Radio 1

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	25
5200MHz	25.5
5240MHz	25
5745MHz	25.5
5785MHz	25
5825MHz	24.5
802.11n HT20_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	27
5240MHz	25.5
5745MHz	24.5
5785MHz	24.5
5825MHz	24
802.11n HT40_Nss1,(MCS0)_2TX	-
5190MHz	21.5
5230MHz	25.5
5755MHz	24
5795MHz	23.5
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	27
5240MHz	26



Mode	Power Setting
5745MHz	24.5
5785MHz	24.5
5825MHz	24
802.11ac VHT40_Nss1,(MCS0)_2TX	-
5190MHz	21.5
5230MHz	25.5
5755MHz	24
5795MHz	23.5
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5210MHz	20
5775MHz	19.5
802.11ax HEW20_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	27
5240MHz	26
5745MHz	24.5
5785MHz	24.5
5825MHz	24
802.11ax HEW40_Nss1,(MCS0)_2TX	-
5190MHz	21.5
5230MHz	25.5
5755MHz	24
5795MHz	23.5
802.11ax HEW80_Nss1,(MCS0)_2TX	-
5210MHz	20
5775MHz	19.5

**Radio 2**

Mode	Power Setting
802.11a_Nss1,(6Mbps)_1TX	-
5180MHz	18.5
5200MHz	20
5240MHz	20.5
5745MHz	20.5
5785MHz	20
5825MHz	20
802.11n HT20_Nss1,(MCS0)_1TX	-
5180MHz	18.5
5200MHz	20
5240MHz	20.5
5745MHz	20.5
5785MHz	20
5825MHz	20
802.11n HT40_Nss1,(MCS0)_1TX	-
5190MHz	17.5
5230MHz	22
5755MHz	21
5795MHz	20.5
802.11ac VHT20_Nss1,(MCS0)_1TX	-
5180MHz	18.5
5200MHz	20
5240MHz	20.5
5745MHz	20.5
5785MHz	20
5825MHz	20
802.11ac VHT40_Nss1,(MCS0)_1TX	-
5190MHz	17.5
5230MHz	22
5755MHz	21
5795MHz	20.5
802.11ac VHT80_Nss1,(MCS0)_1TX	-
5210MHz	16.5
5775MHz	20

Beamforming

Mode	Power Setting
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-
5180MHz	25
5200MHz	27
5240MHz	26
5745MHz	24.5
5785MHz	24.5
5825MHz	24
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-
5190MHz	21.5
5230MHz	25.5
5755MHz	24
5795MHz	23.5
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-
5210MHz	20
5775MHz	19.5

2.3 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
Operating Mode	CTX
1	Adapter mode
2	PoE mode

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

The Worst Case Mode for Following Conformance Tests			
Tests Item	Unwanted Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	Adapter mode		
2	PoE mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	CTX
1	Radio 0 :2.4G + Radio 1:5G
Refer to Appendix F for Radiated Emission Co-location.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	CTX
1	Radio 0:2.4G + Radio 1:5G + Radio 2:2.4G + Bluetooth
2	Radio 0:2.4G + Radio 1:5G + Radio 2:5G + Bluetooth
3	Radio 0:2.4G + Radio 1:5G + Radio 2:2.4G + Zigbee
4	Radio 0:2.4G + Radio 1:5G + Radio 2:5G + Zigbee
Refer to Sporton Test Report No.: FA002618 for Co-location RF Exposure Evaluation.	

2.4 Accessories

Accessories				
BRACKET WALL JACK	Brand Name	Enrack	Model Name	6002Ad953000

Reminder: Regarding to more detail and other information, please refer to user manual.

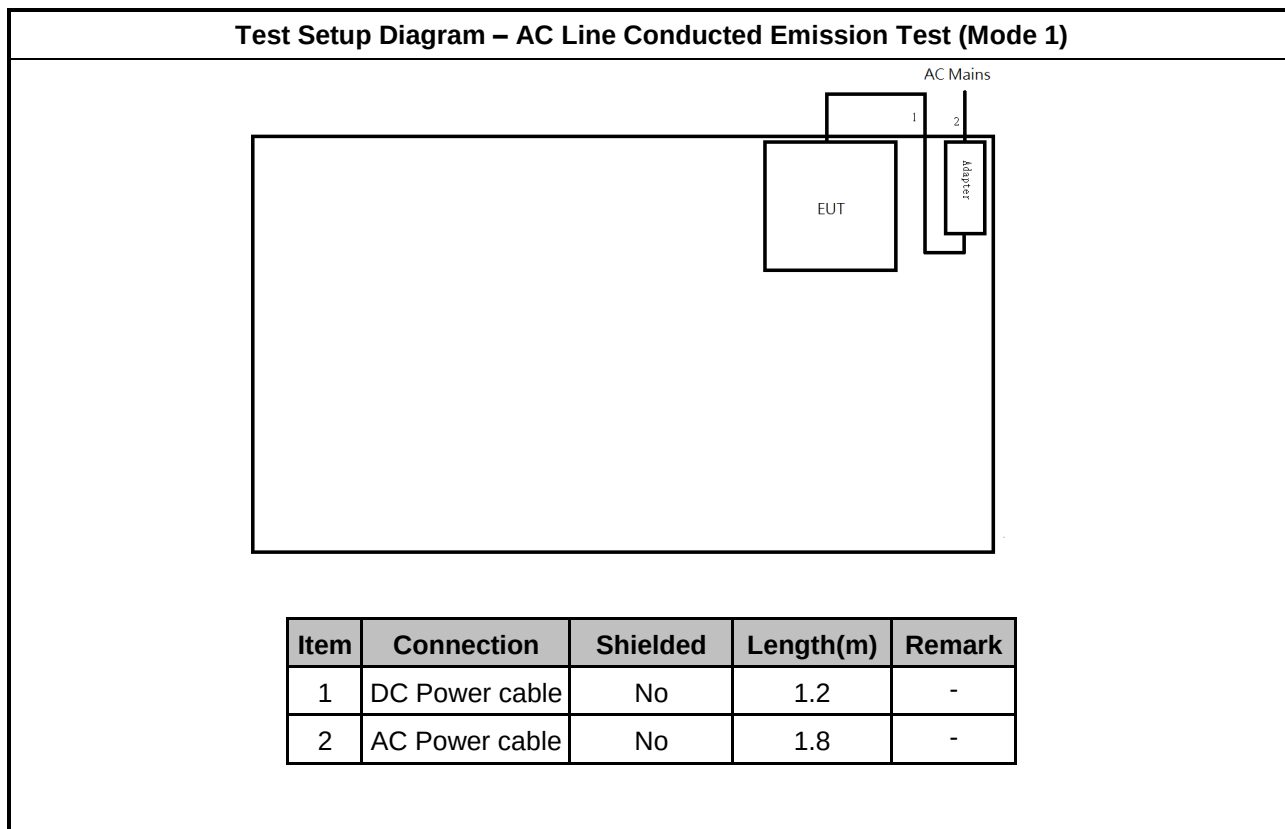
2.5 Support Equipment

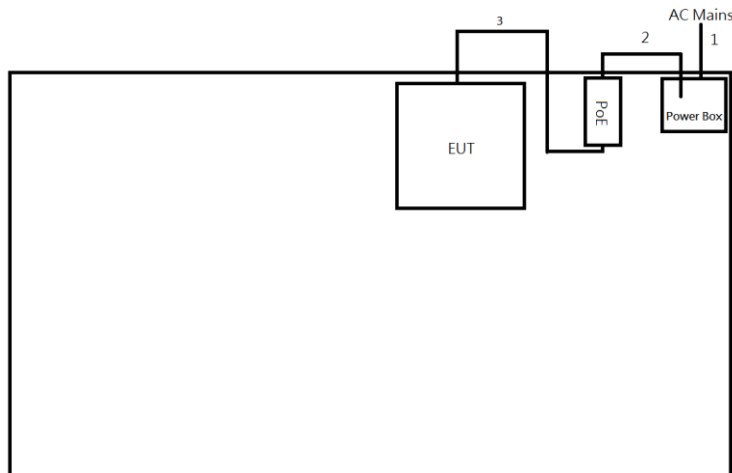
Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	RJ45 Cable	Power Sync	CAT-6E-10	-	-
2	Adapter	FSP	FSP065-DWAN3	-	Client provided
3	PoE	SENAO	EWS511AP_CE W/O DFS	-	Client provided
4	AC Power Cable	Power Sync	TPCPHN0006	-	-
5	AC Power Cable	Power Sync	PW-GPC180-3	-	-

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	RJ45 Cable	Power Sync	CAT-6E-10	-	-
2	Adapter	FSP	FSP065-DWAN3	-	Client provided
3	PoE	SENAO	EWS511AP_CE W/O DFS	-	Client provided
4	AC Power Cable	Power Sync	TPCPHN0006	-	-
5	AC Power Cable	Power Sync	PW-GPC180-3	-	-

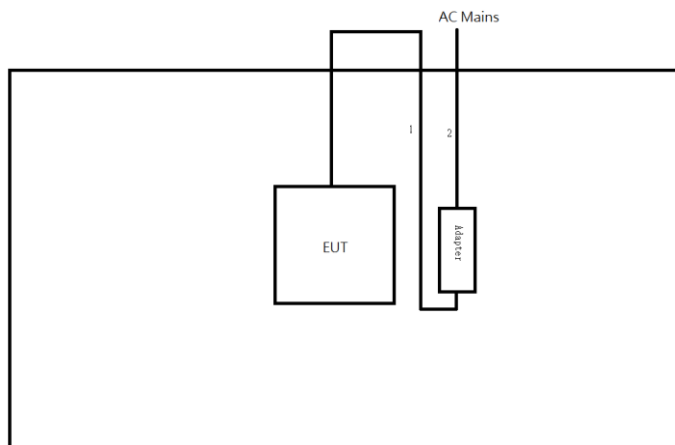
Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	AC Adapter	FSP	FSP065-DWAN3	-	-

2.6 Test Setup Diagram

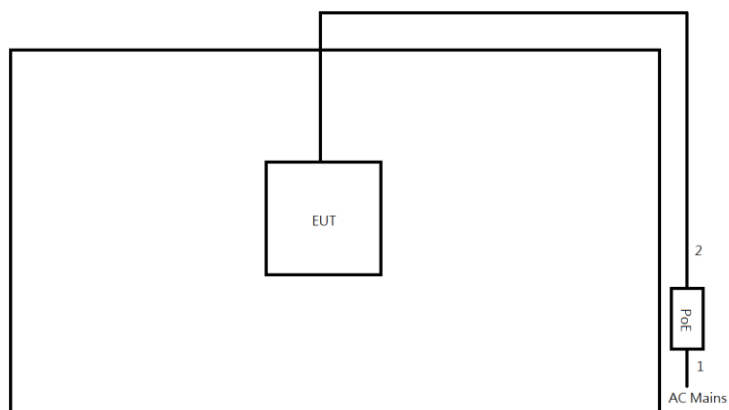


Test Setup Diagram – AC Line Conducted Emission Test (Mode 2)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.5	-
2	AC Power cable	No	0.63	-
3	RJ45 cable	No	10.0	-

Test Setup Diagram - Radiated Test (Mode 1)


Item	Connection	Shielded	Length(m)	Remark
1	DC Power cable	No	1.2	-
2	AC Power cable	No	1.8	-

Test Setup Diagram - Radiated Test (Mode 2)


Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	0.6	-
2	RJ45 cable	No	10.0	-

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

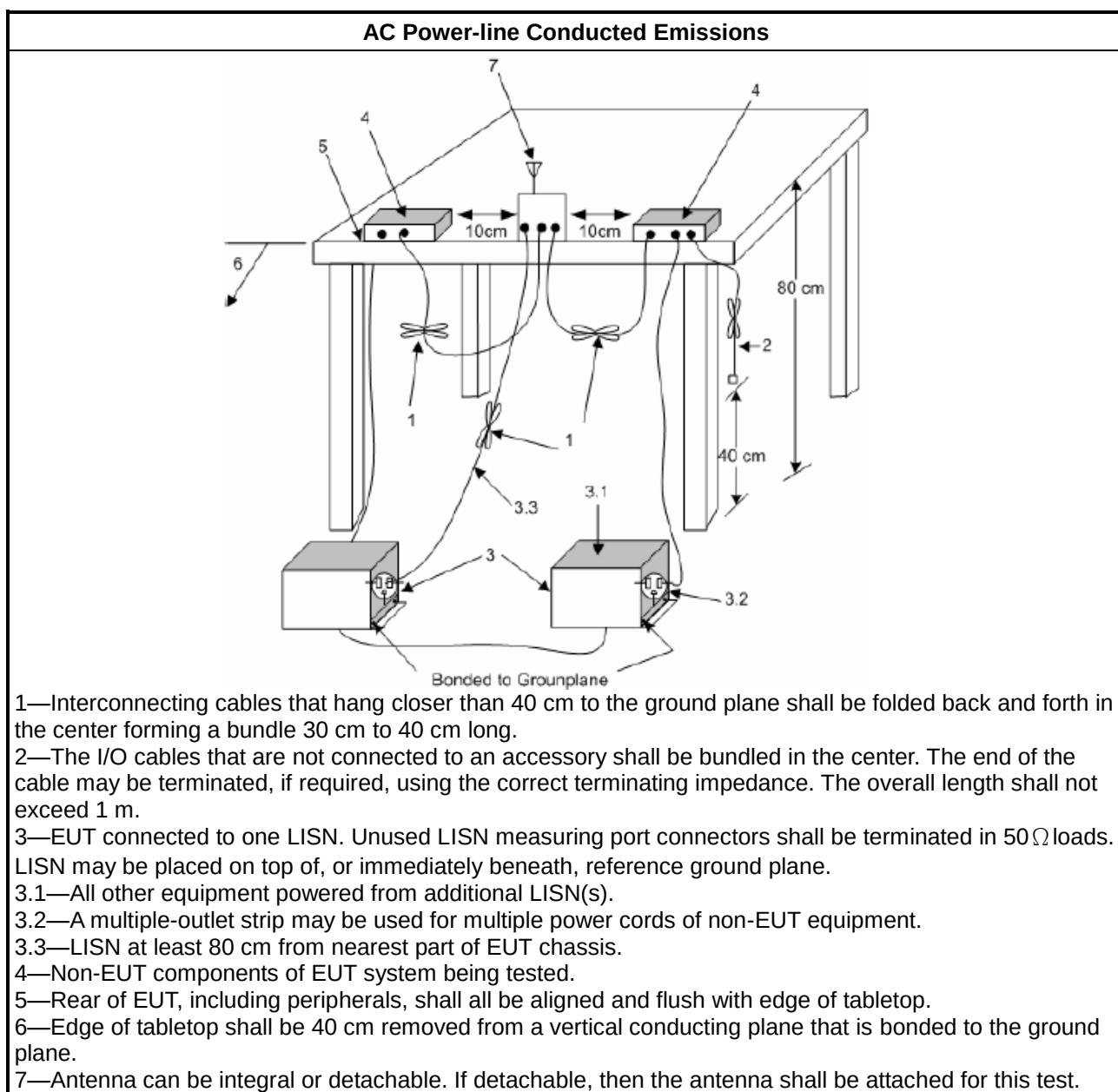
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup



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, N/A
☐	For the 5.47-5.725 GHz band, N/A
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth $\geq$ 500kHz.

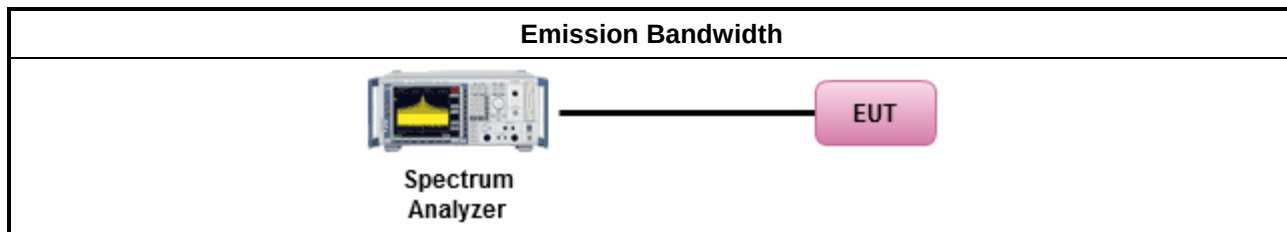
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as KDB 789033, clause C for EBW and clause D for OBW measurement.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
☐	Refer as IC RSS-Gen, clause 6.7 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.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

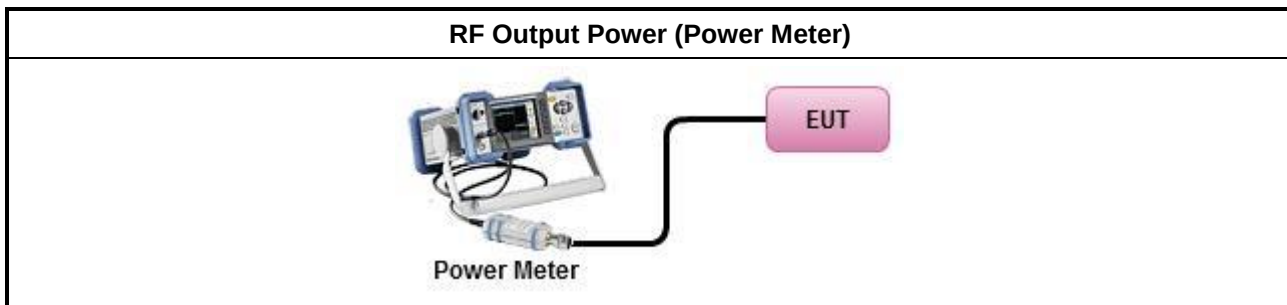
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Conducted Output Power	
	Duty cycle $\geq 98\%$
☐	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
	Duty cycle $< 98\%$
☐	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
☒	Refer as KDB 789033, clause E Method PM (using an RF average power meter).
For conducted measurement.	
	If the EUT supports multiple transmit chains using options given below: Refer as 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.
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.	

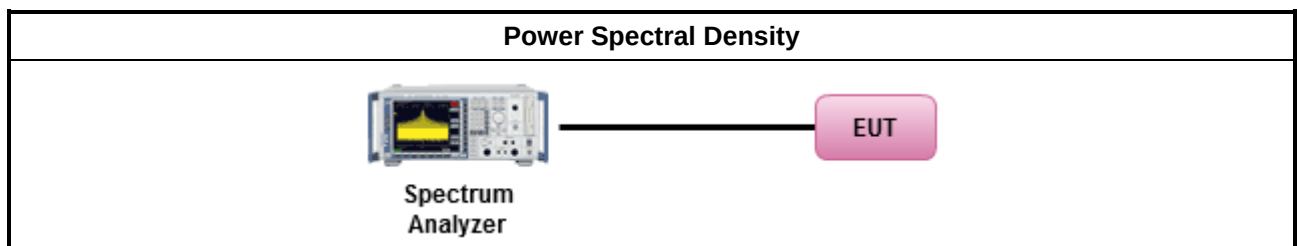
3.4.2 Measuring Instruments

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 KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth	
Duty cycle ≥ 98%	
☐ Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).	
Duty cycle < 98%	
☒ Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below:	
☐	Measure and sum the spectra across the outputs. Refer as 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.
☐	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 Radiated 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	5.650-5700 GHz: e.i.r.p. -27 ~ 10 dBm [68.2 ~ 105.2 dBuV/m@3m] 5.700-5720 GHz: e.i.r.p. 10 ~ 15.6 dBm [105.2 ~ 110.8 dBuV/m@3m] 5.720-5725 GHz: e.i.r.p. 15.6 ~ 27 dBm [110.8 ~ 122.2 dBuV/m@3m] 5.850-5.855 GHz: e.i.r.p. 27 ~ 15.6 dBm [122.2 ~ 110.8 dBuV/m@3m] 5.855-5.875 GHz: e.i.r.p. 15.6 ~ 10 dBm [110.8 ~ 105.2 dBuV/m@3m] 5.875-5.925 GHz: e.i.r.p. 10 ~ -27 dBm [105.2 ~ 68.2dBuV/m@3m] Other un-restricted band: e.i.r.p. -27 dBm [68.2 dBuV/m@3m]

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 $\geq$ 98 or duty factor].	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.
☒	Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.
☒	Refer as KDB 789033, clause G)5) (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.	

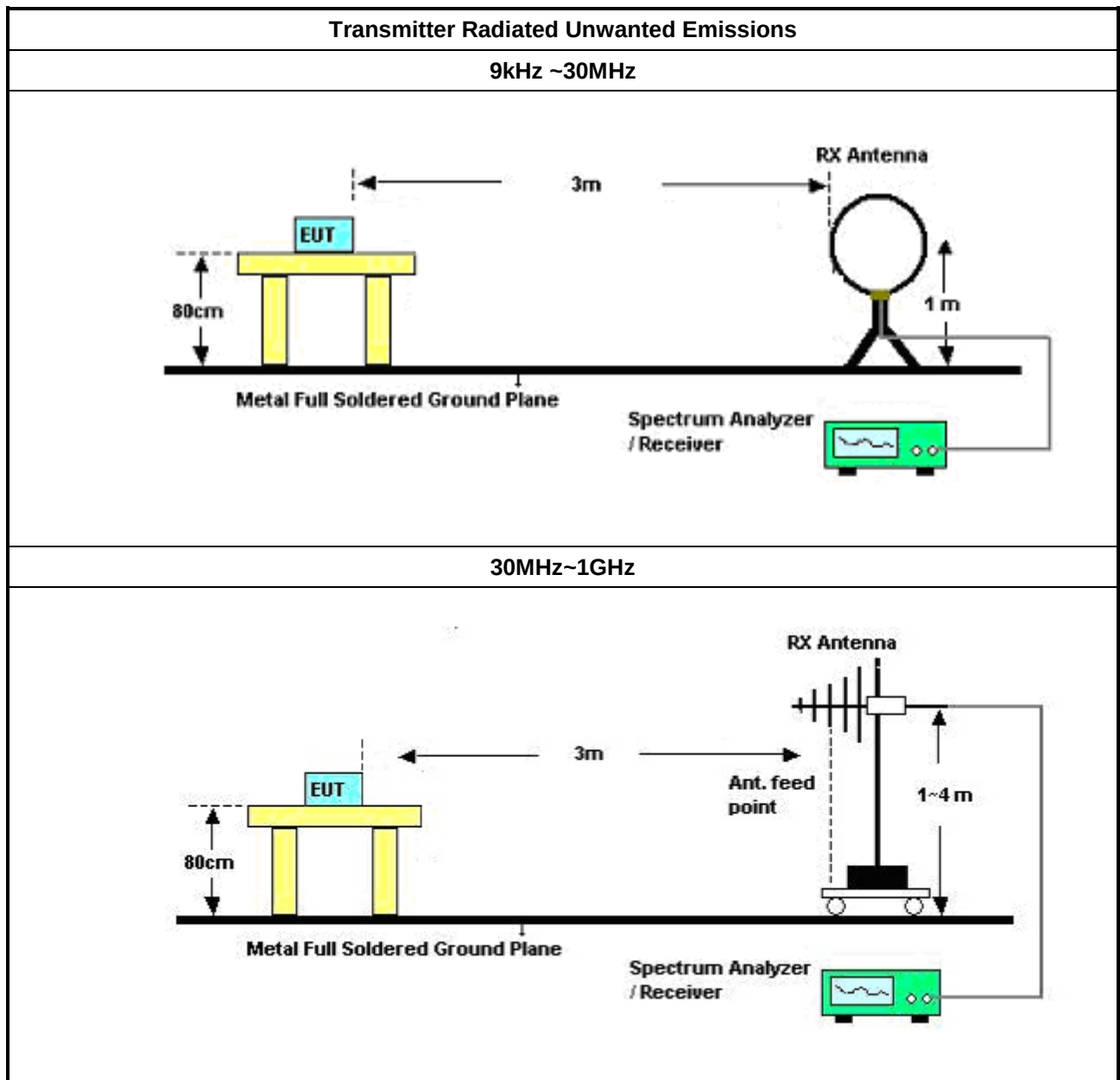
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

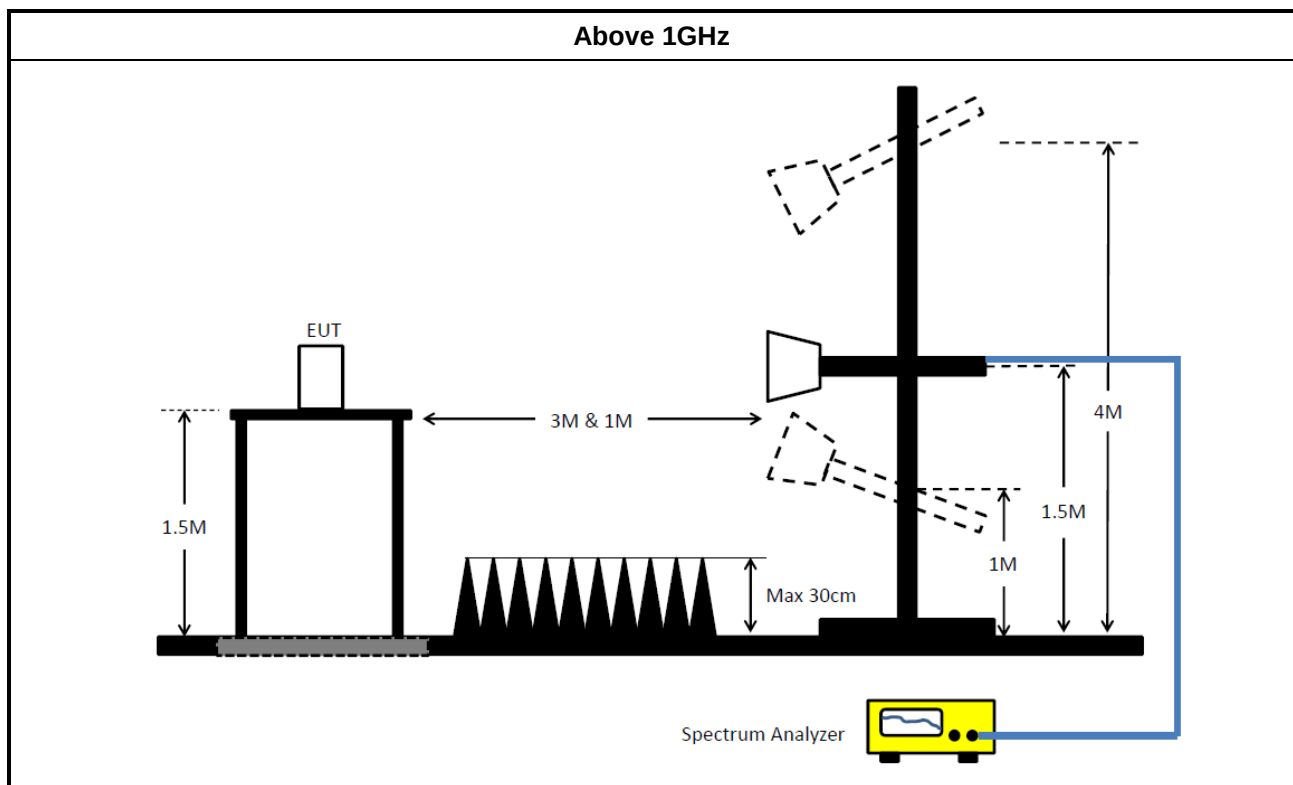
3.5.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.5.5 Test Setup





3.5.6 Transmitter Unwanted Emissions (Below 30MHz)

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

3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	11/Nov/2020	10/Nov/2021
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	31/Aug/2020	30/Aug/2021
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	21/Sep/2020	20/Sep/2021

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101029	10Hz~40GHz	19/Oct/2020	18/Oct/2021
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	20/Oct/2020	19/Oct/2022
Pulse Sensor	Anritsu	MA2411B	1027452	300MHz~40GHz	18/Mar/2020	17/Mar/2021
Power Meter	Anritsu	ML2495A	1124009	300MHz~40GHz	18/Mar/2020	17/Mar/2021

Instrument for Radiated Test – Co-location

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	02/Aug/2020	01/Aug/2021
Signal Analyzer	R&S	FSP40	100593	9kHz~40GHz	27/Feb/2020	26/Feb/2021
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~18GHz	23/Oct/2020	22/Oct/2021
Double Ridged Guide Horn Antenna	SCHWARZBEC	BBHA 9120 D	BBHA 9120 D 01543	1GHz~18GHz	09/Jun/2020	08/Jun/2021
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX104	805193/4+8051 92/4	1GHz~40GHz	08/Apr/2020	07/Apr/2021
Broadband Horn Antenna	SCHWARZBEC K	BBHA 9170	BBHA 9170221	18GHz~40GHz	13/Mar/2020	12/Mar/2021
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz~40GHz	10/Mar/2020	09/Mar/2021

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz~1GHz 3m	04/Aug/2020	03/Aug/2021
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	02/Aug/2020	01/Aug/2021
Signal Analyzer	R&S	FSP40	100593	9kHz~40GHz	27/Feb/2020	26/Feb/2021
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	30/Jun/2020	29/Jun/2021
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~18GHz	23/Oct/2020	22/Oct/2021
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	06/Sep/2020	05/Sep/2021
Double Ridged Guide Horn Antenna	SCHWARZBEC	BBHA 9120 D	BBHA 9120 D 01543	1GHz~18GHz	09/Jun/2020	08/Jun/2021
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz~30MHz	20/Jun/2020	19/Jun/2021
RF Cable-R03m	Jye Bao	RG142	CB017	30MHz~1GHz	25/Mar/2020	24/Mar/2021
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX1 04	805193/4+8051 92/4	1GHz~40GHz	08/Apr/2020	07/Apr/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	13/Mar/2020	12/Mar/2021
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz~40GHz	10/Mar/2020	09/Mar/2021
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	16/Mar/2020	15/Mar/2021
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	29/May/2020	28/May/2021



Conducted Emissions at Powerline_Non-Beamforming_Radio 1 Appendix A.1

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	458.702k	34.39	46.71	-12.32	Neutral
Mode 2	Pass	AV	481.211k	37.87	46.33	-8.46	Neutral

Mode Configure

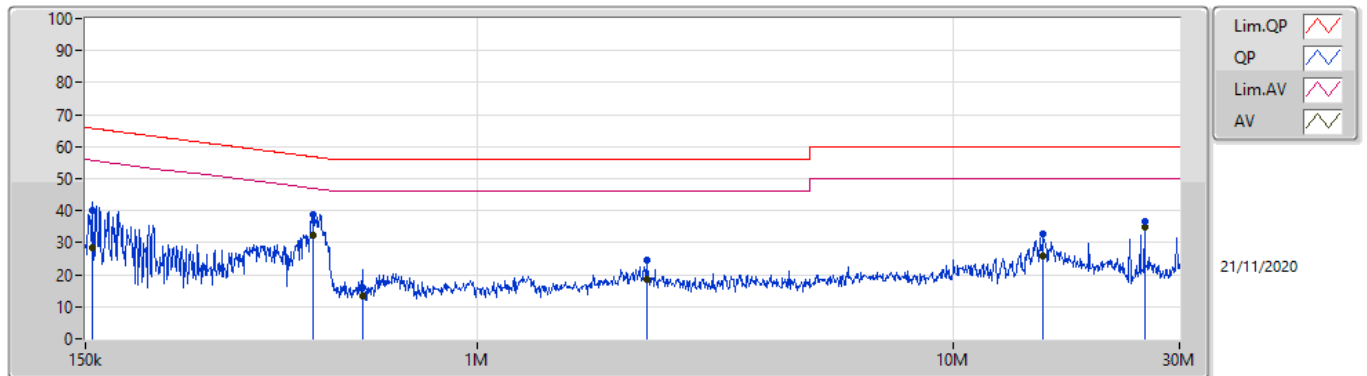
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	155.487k	40.17	65.69	-25.52	Line	-
Mode 1	Pass	AV	155.487k	28.45	55.69	-27.24	Line	-
Mode 1	Pass	QP	451.436k	38.81	56.84	-18.03	Line	-
Mode 1	Pass	AV	451.436k	32.15	46.84	-14.69	Line	"Worst"
Mode 1	Pass	QP	573.613k	16.13	56.00	-39.87	Line	-
Mode 1	Pass	AV	573.613k	13.27	46.00	-32.73	Line	-
Mode 1	Pass	QP	2.274M	24.39	56.00	-31.61	Line	-
Mode 1	Pass	AV	2.274M	18.67	46.00	-27.33	Line	-
Mode 1	Pass	QP	15.512M	32.96	60.00	-27.04	Line	-
Mode 1	Pass	AV	15.512M	25.98	50.00	-24.02	Line	-
Mode 1	Pass	QP	25.346M	36.76	60.00	-23.24	Line	-
Mode 1	Pass	AV	25.346M	34.78	50.00	-15.22	Line	-
Mode 1	Pass	QP	155.487k	42.35	65.69	-23.34	Neutral	-
Mode 1	Pass	AV	155.487k	29.38	55.69	-26.31	Neutral	-
Mode 1	Pass	QP	458.702k	41.30	56.71	-15.41	Neutral	-
Mode 1	Pass	AV	458.702k	34.39	46.71	-12.32	Neutral	"Worst"
Mode 1	Pass	QP	646.592k	21.96	56.00	-34.04	Neutral	-
Mode 1	Pass	AV	646.592k	17.03	46.00	-28.97	Neutral	-
Mode 1	Pass	QP	1.275M	20.84	56.00	-35.16	Neutral	-
Mode 1	Pass	AV	1.275M	16.67	46.00	-29.33	Neutral	-
Mode 1	Pass	QP	15.327M	34.57	60.00	-25.43	Neutral	-
Mode 1	Pass	AV	15.327M	27.24	50.00	-22.76	Neutral	-
Mode 1	Pass	QP	25.346M	37.31	60.00	-22.69	Neutral	-
Mode 1	Pass	AV	25.346M	35.49	50.00	-14.51	Neutral	-
Mode 2	Pass	QP	154.251k	50.50	65.77	-15.27	Line	-
Mode 2	Pass	AV	154.251k	36.09	55.77	-19.68	Line	-
Mode 2	Pass	QP	475.482k	43.68	56.42	-12.74	Line	-
Mode 2	Pass	AV	475.482k	37.75	46.42	-8.67	Line	"Worst"
Mode 2	Pass	QP	533.841k	33.99	56.00	-22.01	Line	-
Mode 2	Pass	AV	533.841k	27.93	46.00	-18.07	Line	-
Mode 2	Pass	QP	1.789M	34.84	56.00	-21.16	Line	-
Mode 2	Pass	AV	1.789M	30.20	46.00	-15.80	Line	-
Mode 2	Pass	QP	5.073M	31.80	60.00	-28.20	Line	-
Mode 2	Pass	AV	5.073M	26.70	50.00	-23.30	Line	-
Mode 2	Pass	QP	18.053M	37.79	60.00	-22.21	Line	-
Mode 2	Pass	AV	18.053M	35.27	50.00	-14.73	Line	-
Mode 2	Pass	QP	162.467k	49.64	65.33	-15.69	Neutral	-
Mode 2	Pass	AV	162.467k	33.91	55.33	-21.42	Neutral	-
Mode 2	Pass	QP	481.211k	43.53	56.33	-12.80	Neutral	-
Mode 2	Pass	AV	481.211k	37.87	46.33	-8.46	Neutral	"Worst"
Mode 2	Pass	QP	578.211k	33.90	56.00	-22.10	Neutral	-
Mode 2	Pass	AV	578.211k	28.83	46.00	-17.17	Neutral	-
Mode 2	Pass	QP	1.019M	32.58	56.00	-23.42	Neutral	-



Conducted Emissions at Powerline_Non-Beamforming_Radio 1 Appendix A.1

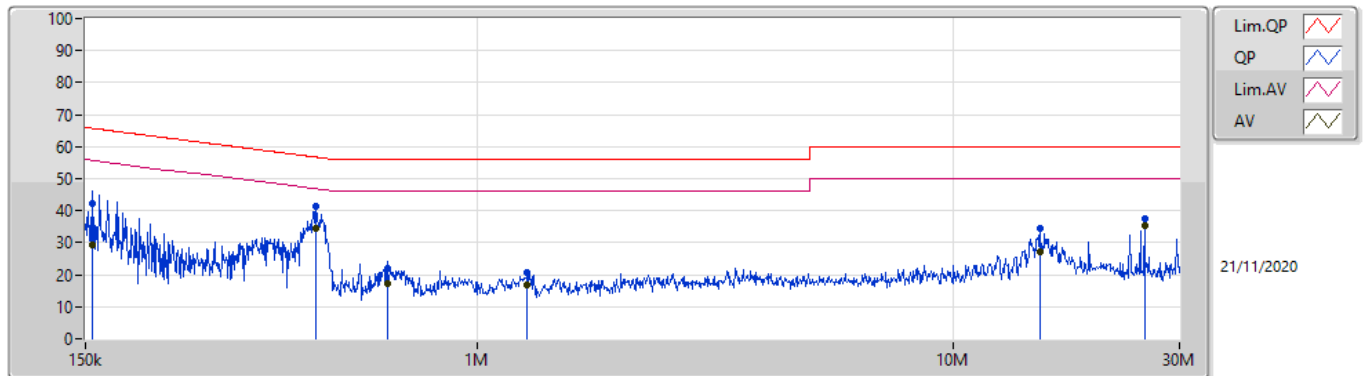
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 2	Pass	AV	1.019M	29.07	46.00	-16.93	Neutral	-
Mode 2	Pass	QP	3.472M	28.58	56.00	-27.42	Neutral	-
Mode 2	Pass	AV	3.472M	23.03	46.00	-22.97	Neutral	-
Mode 2	Pass	QP	18.053M	37.89	60.00	-22.11	Neutral	-
Mode 2	Pass	AV	18.053M	36.21	50.00	-13.79	Neutral	-

Conducted Emissions at Powerline_Mode 1



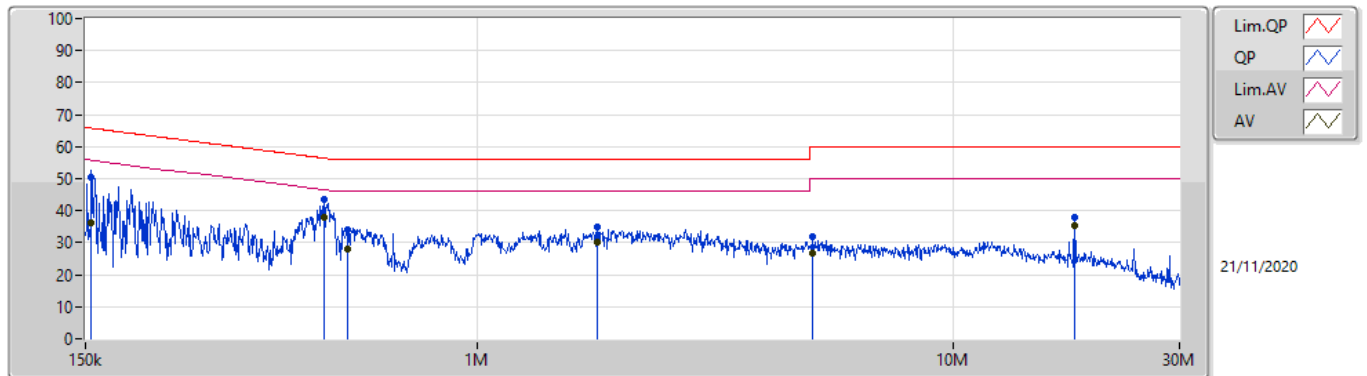
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	155.487k	40.17	65.69	-25.52	19.60	Line	-	20.57	9.69	0.01	9.90			
AV	155.487k	28.45	55.69	-27.24	19.60	Line	-	8.85	9.69	0.01	9.90			
QP	451.436k	38.81	56.84	-18.03	19.58	Line	-	19.23	9.67	0.02	9.89			
AV	451.436k	32.15	46.84	-14.69	19.58	Line	"Worst"	12.57	9.67	0.02	9.89			
QP	573.613k	16.13	56.00	-39.87	19.56	Line	-	-3.43	9.67	0.03	9.86			
AV	573.613k	13.27	46.00	-32.73	19.56	Line	-	-6.29	9.67	0.03	9.86			
QP	2.274M	24.39	56.00	-31.61	19.59	Line	-	4.80	9.68	0.09	9.82			
AV	2.274M	18.67	46.00	-27.33	19.59	Line	-	-0.92	9.68	0.09	9.82			
QP	15.512M	32.96	60.00	-27.04	19.84	Line	-	13.12	9.69	0.25	9.90			
AV	15.512M	25.98	50.00	-24.02	19.84	Line	-	6.14	9.69	0.25	9.90			
QP	25.346M	36.76	60.00	-23.24	19.84	Line	-	16.92	9.59	0.35	9.90			
AV	25.346M	34.78	50.00	-15.22	19.84	Line	-	14.94	9.59	0.35	9.90			

Conducted Emissions at Powerline_Mode 1



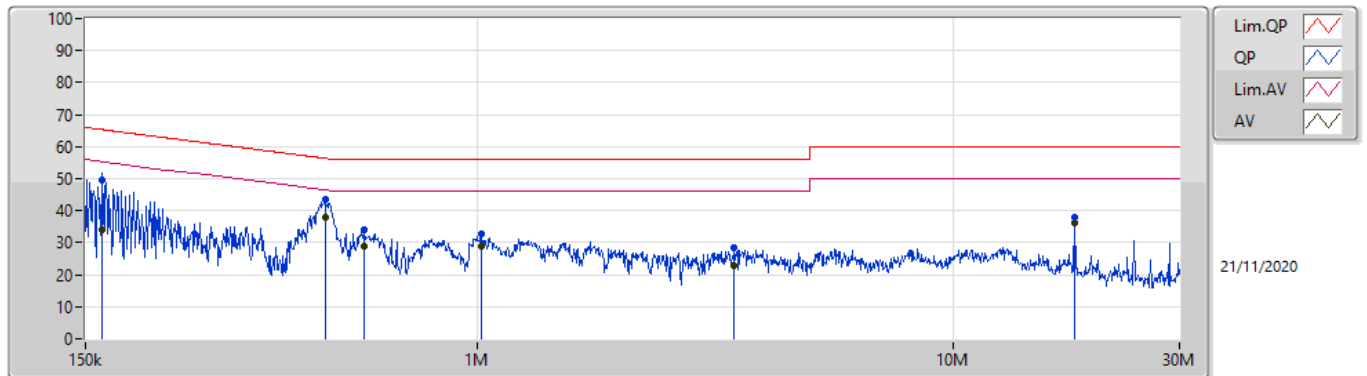
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	155.487k	42.35	65.69	-23.34	19.60	Neutral	-	22.75	9.69	0.01	9.90			
AV	155.487k	29.38	55.69	-26.31	19.60	Neutral	-	9.78	9.69	0.01	9.90			
QP	458.702k	41.30	56.71	-15.41	19.57	Neutral	-	21.73	9.67	0.02	9.88			
AV	458.702k	34.39	46.71	-12.32	19.57	Neutral	"Worst"	14.82	9.67	0.02	9.88			
QP	646.592k	21.96	56.00	-34.04	19.56	Neutral	-	2.40	9.67	0.04	9.85			
AV	646.592k	17.03	46.00	-28.97	19.56	Neutral	-	-2.53	9.67	0.04	9.85			
QP	1.275M	20.84	56.00	-35.16	19.53	Neutral	-	1.31	9.67	0.06	9.80			
AV	1.275M	16.67	46.00	-29.33	19.53	Neutral	-	-2.86	9.67	0.06	9.80			
QP	15.327M	34.57	60.00	-25.43	19.89	Neutral	-	14.68	9.74	0.25	9.90			
AV	15.327M	27.24	50.00	-22.76	19.89	Neutral	-	7.35	9.74	0.25	9.90			
QP	25.346M	37.31	60.00	-22.69	19.97	Neutral	-	17.34	9.72	0.35	9.90			
AV	25.346M	35.49	50.00	-14.51	19.97	Neutral	-	15.52	9.72	0.35	9.90			

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.251k	50.50	65.77	-15.27	19.60	Line	-	30.90	9.69	0.01	9.90			
AV	154.251k	36.09	55.77	-19.68	19.60	Line	-	16.49	9.69	0.01	9.90			
QP	475.482k	43.68	56.42	-12.74	19.58	Line	-	24.10	9.67	0.03	9.88			
AV	475.482k	37.75	46.42	-8.67	19.58	Line	"Worst"	18.17	9.67	0.03	9.88			
QP	533.841k	33.99	56.00	-22.01	19.57	Line	-	14.42	9.67	0.03	9.87			
AV	533.841k	27.93	46.00	-18.07	19.57	Line	-	8.36	9.67	0.03	9.87			
QP	1.789M	34.84	56.00	-21.16	19.56	Line	-	15.28	9.68	0.08	9.80			
AV	1.789M	30.20	46.00	-15.80	19.56	Line	-	10.64	9.68	0.08	9.80			
QP	5.073M	31.80	60.00	-28.20	19.74	Line	-	12.06	9.70	0.14	9.90			
AV	5.073M	26.70	50.00	-23.30	19.74	Line	-	6.96	9.70	0.14	9.90			
QP	18.053M	37.79	60.00	-22.21	19.86	Line	-	17.93	9.68	0.28	9.90			
AV	18.053M	35.27	50.00	-14.73	19.86	Line	-	15.41	9.68	0.28	9.90			

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	162.467k	49.64	65.33	-15.69	19.60	Neutral	-	30.04	9.69	0.01	9.90			
AV	162.467k	33.91	55.33	-21.42	19.60	Neutral	-	14.31	9.69	0.01	9.90			
QP	481.211k	43.53	56.33	-12.80	19.58	Neutral	-	23.95	9.67	0.03	9.88			
AV	481.211k	37.87	46.33	-8.46	19.58	Neutral	"Worst"	18.29	9.67	0.03	9.88			
QP	578.211k	33.90	56.00	-22.10	19.56	Neutral	-	14.34	9.67	0.03	9.86			
AV	578.211k	28.83	46.00	-17.17	19.56	Neutral	-	9.27	9.67	0.03	9.86			
QP	1.019M	32.58	56.00	-23.42	19.52	Neutral	-	13.06	9.67	0.05	9.80			
AV	1.019M	29.07	46.00	-16.93	19.52	Neutral	-	9.55	9.67	0.05	9.80			
QP	3.472M	28.58	56.00	-27.42	19.68	Neutral	-	8.90	9.69	0.11	9.88			
AV	3.472M	23.03	46.00	-22.97	19.68	Neutral	-	3.35	9.69	0.11	9.88			
QP	18.053M	37.89	60.00	-22.11	19.93	Neutral	-	17.96	9.75	0.28	9.90			
AV	18.053M	36.21	50.00	-13.79	19.93	Neutral	-	16.28	9.75	0.28	9.90			



Conducted Emissions at Powerline_Non-Beamforming_Radio 2 Appendix A.2

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	458.702k	34.41	46.71	-12.30	Neutral
Mode 2	Pass	AV	481.211k	38.08	46.33	-8.25	Line

Mode Configure

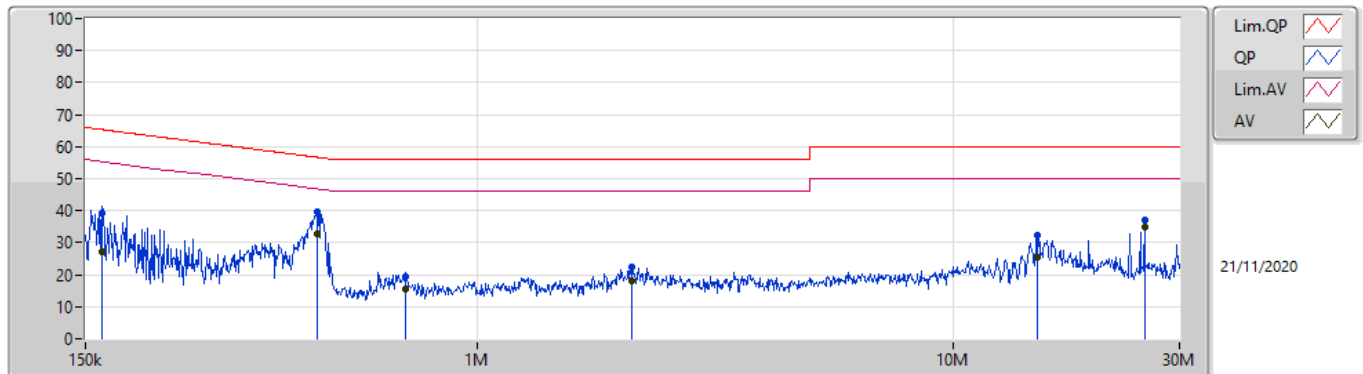
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	162.467k	39.22	65.33	-26.11	Line	-
Mode 1	Pass	AV	162.467k	27.21	55.33	-28.12	Line	-
Mode 1	Pass	QP	462.379k	39.87	56.65	-16.78	Line	-
Mode 1	Pass	AV	462.379k	32.67	46.65	-13.98	Line	"Worst"
Mode 1	Pass	QP	708.77k	19.51	56.00	-36.49	Line	-
Mode 1	Pass	AV	708.77k	15.44	46.00	-30.56	Line	-
Mode 1	Pass	QP	2.108M	22.32	56.00	-33.68	Line	-
Mode 1	Pass	AV	2.108M	18.11	46.00	-27.89	Line	-
Mode 1	Pass	QP	15.084M	32.51	60.00	-27.49	Line	-
Mode 1	Pass	AV	15.084M	25.26	50.00	-24.74	Line	-
Mode 1	Pass	QP	25.346M	36.89	60.00	-23.11	Line	-
Mode 1	Pass	AV	25.346M	35.07	50.00	-14.93	Line	-
Mode 1	Pass	QP	157.99k	42.10	65.56	-23.46	Neutral	-
Mode 1	Pass	AV	157.99k	29.15	55.56	-26.41	Neutral	-
Mode 1	Pass	QP	458.702k	41.31	56.71	-15.40	Neutral	-
Mode 1	Pass	AV	458.702k	34.41	46.71	-12.30	Neutral	"Worst"
Mode 1	Pass	QP	662.266k	22.35	56.00	-33.65	Neutral	-
Mode 1	Pass	AV	662.266k	17.66	46.00	-28.34	Neutral	-
Mode 1	Pass	QP	1.285M	20.57	56.00	-35.43	Neutral	-
Mode 1	Pass	AV	1.285M	16.01	46.00	-29.99	Neutral	-
Mode 1	Pass	QP	15.574M	34.28	60.00	-25.72	Neutral	-
Mode 1	Pass	AV	15.574M	27.16	50.00	-22.84	Neutral	-
Mode 1	Pass	QP	25.346M	37.36	60.00	-22.64	Neutral	-
Mode 1	Pass	AV	25.346M	35.74	50.00	-14.26	Neutral	-
Mode 2	Pass	QP	154.868k	50.14	65.73	-15.59	Line	-
Mode 2	Pass	AV	154.868k	35.86	55.73	-19.87	Line	-
Mode 2	Pass	QP	481.211k	43.82	56.33	-12.51	Line	-
Mode 2	Pass	AV	481.211k	38.08	46.33	-8.25	Line	"Worst"
Mode 2	Pass	QP	571.327k	35.80	56.00	-20.20	Line	-
Mode 2	Pass	AV	571.327k	31.49	46.00	-14.51	Line	-
Mode 2	Pass	QP	1.797M	35.07	56.00	-20.93	Line	-
Mode 2	Pass	AV	1.797M	30.09	46.00	-15.91	Line	-
Mode 2	Pass	QP	5.134M	31.80	60.00	-28.20	Line	-
Mode 2	Pass	AV	5.134M	26.92	50.00	-23.08	Line	-
Mode 2	Pass	QP	18.053M	38.37	60.00	-21.63	Line	-
Mode 2	Pass	AV	18.053M	36.41	50.00	-13.59	Line	-
Mode 2	Pass	QP	156.734k	50.13	65.64	-15.51	Neutral	-
Mode 2	Pass	AV	156.734k	35.58	55.64	-20.06	Neutral	-
Mode 2	Pass	QP	479.294k	43.51	56.34	-12.83	Neutral	-
Mode 2	Pass	AV	479.294k	37.63	46.34	-8.71	Neutral	"Worst"
Mode 2	Pass	QP	592.227k	34.03	56.00	-21.97	Neutral	-
Mode 2	Pass	AV	592.227k	30.17	46.00	-15.83	Neutral	-
Mode 2	Pass	QP	1.019M	32.65	56.00	-23.35	Neutral	-



Conducted Emissions at Powerline_Non-Beamforming_Radio 2 Appendix A.2

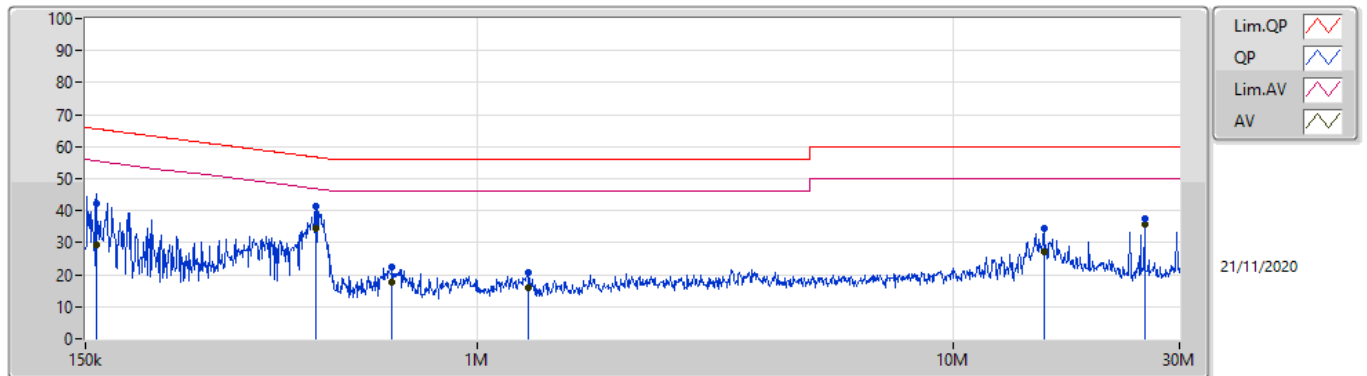
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 2	Pass	AV	1.019M	29.17	46.00	-16.83	Neutral	-
Mode 2	Pass	QP	3.701M	28.73	56.00	-27.27	Neutral	-
Mode 2	Pass	AV	3.701M	23.43	46.00	-22.57	Neutral	-
Mode 2	Pass	QP	18.053M	37.01	60.00	-22.99	Neutral	-
Mode 2	Pass	AV	18.053M	34.38	50.00	-15.62	Neutral	-

Conducted Emissions at Powerline_Mode 1



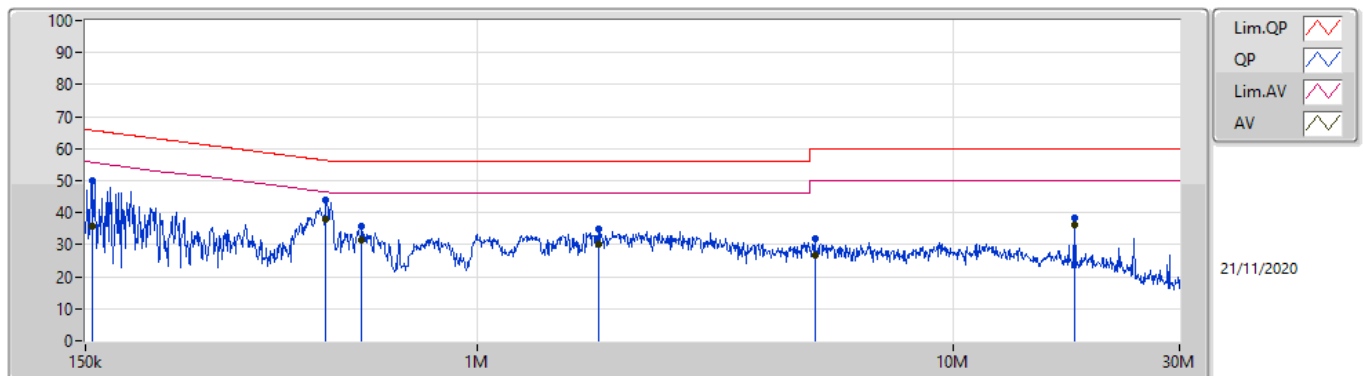
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	162.467k	39.22	65.33	-26.11	19.60	Line	-	19.62	9.69	0.01	9.90			
AV	162.467k	27.21	55.33	-28.12	19.60	Line	-	7.61	9.69	0.01	9.90			
QP	462.379k	39.87	56.65	-16.78	19.57	Line	-	20.30	9.67	0.02	9.88			
AV	462.379k	32.67	46.65	-13.98	19.57	Line	"Worst"	13.10	9.67	0.02	9.88			
QP	708.77k	19.51	56.00	-36.49	19.55	Line	-	-0.04	9.67	0.04	9.84			
AV	708.77k	15.44	46.00	-30.56	19.55	Line	-	-4.11	9.67	0.04	9.84			
QP	2.108M	22.32	56.00	-33.68	19.57	Line	-	2.75	9.68	0.08	9.81			
AV	2.108M	18.11	46.00	-27.89	19.57	Line	-	-1.46	9.68	0.08	9.81			
QP	15.084M	32.51	60.00	-27.49	19.84	Line	-	12.67	9.69	0.25	9.90			
AV	15.084M	25.26	50.00	-24.74	19.84	Line	-	5.42	9.69	0.25	9.90			
QP	25.346M	36.89	60.00	-23.11	19.84	Line	-	17.05	9.59	0.35	9.90			
AV	25.346M	35.07	50.00	-14.93	19.84	Line	-	15.23	9.59	0.35	9.90			

Conducted Emissions at Powerline_Mode 1



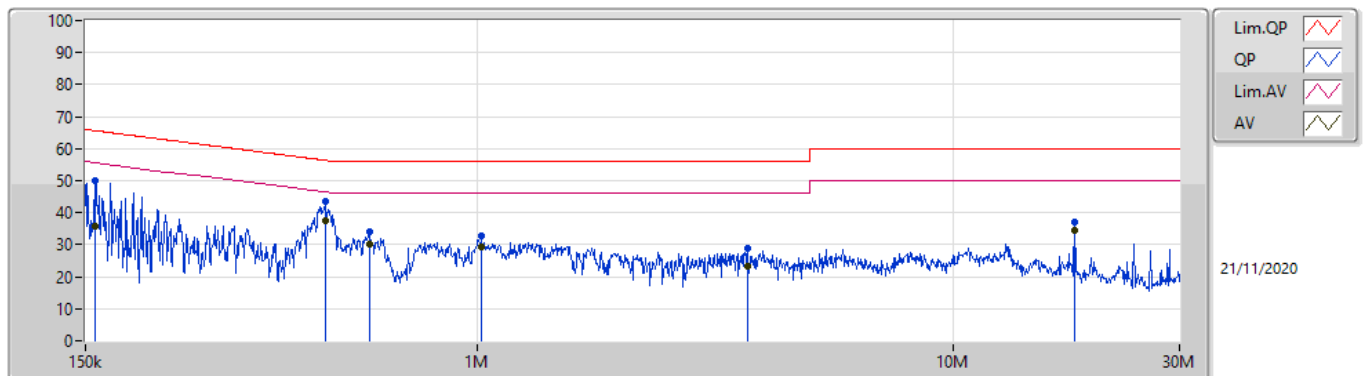
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	157.99k	42.10	65.56	-23.46	19.60	Neutral	-	22.50	9.69	0.01	9.90			
AV	157.99k	29.15	55.56	-26.41	19.60	Neutral	-	9.55	9.69	0.01	9.90			
QP	458.702k	41.31	56.71	-15.40	19.57	Neutral	-	21.74	9.67	0.02	9.88			
AV	458.702k	34.41	46.71	-12.30	19.57	Neutral	"Worst"	14.84	9.67	0.02	9.88			
QP	662.266k	22.35	56.00	-33.65	19.55	Neutral	-	2.80	9.67	0.04	9.84			
AV	662.266k	17.66	46.00	-28.34	19.55	Neutral	-	-1.89	9.67	0.04	9.84			
QP	1.285M	20.57	56.00	-35.43	19.53	Neutral	-	1.04	9.67	0.06	9.80			
AV	1.285M	16.01	46.00	-29.99	19.53	Neutral	-	-3.52	9.67	0.06	9.80			
QP	15.574M	34.28	60.00	-25.72	19.90	Neutral	-	14.38	9.74	0.26	9.90			
AV	15.574M	27.16	50.00	-22.84	19.90	Neutral	-	7.26	9.74	0.26	9.90			
QP	25.346M	37.36	60.00	-22.64	19.97	Neutral	-	17.39	9.72	0.35	9.90			
AV	25.346M	35.74	50.00	-14.26	19.97	Neutral	-	15.77	9.72	0.35	9.90			

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.868k	50.14	65.73	-15.59	19.60	Line	-	30.54	9.69	0.01	9.90			
AV	154.868k	35.86	55.73	-19.87	19.60	Line	-	16.26	9.69	0.01	9.90			
QP	481.211k	43.82	56.33	-12.51	19.58	Line	-	24.24	9.67	0.03	9.88			
AV	481.211k	38.08	46.33	-8.25	19.58	Line	"Worst"	18.50	9.67	0.03	9.88			
QP	571.327k	35.80	56.00	-20.20	19.56	Line	-	16.24	9.67	0.03	9.86			
AV	571.327k	31.49	46.00	-14.51	19.56	Line	-	11.93	9.67	0.03	9.86			
QP	1.797M	35.07	56.00	-20.93	19.56	Line	-	15.51	9.68	0.08	9.80			
AV	1.797M	30.09	46.00	-15.91	19.56	Line	-	10.53	9.68	0.08	9.80			
QP	5.134M	31.80	60.00	-28.20	19.74	Line	-	12.06	9.70	0.14	9.90			
AV	5.134M	26.92	50.00	-23.08	19.74	Line	-	7.18	9.70	0.14	9.90			
QP	18.053M	38.37	60.00	-21.63	19.86	Line	-	18.51	9.68	0.28	9.90			
AV	18.053M	36.41	50.00	-13.59	19.86	Line	-	16.55	9.68	0.28	9.90			

Conducted Emissions at Powerline_Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	156.734k	50.13	65.64	-15.51	19.60	Neutral	-	30.53	9.69	0.01	9.90			
AV	156.734k	35.58	55.64	-20.06	19.60	Neutral	-	15.98	9.69	0.01	9.90			
QP	479.294k	43.51	56.34	-12.83	19.58	Neutral	-	23.93	9.67	0.03	9.88			
AV	479.294k	37.63	46.34	-8.71	19.58	Neutral	"Worst"	18.05	9.67	0.03	9.88			
QP	592.227k	34.03	56.00	-21.97	19.56	Neutral	-	14.47	9.67	0.03	9.86			
AV	592.227k	30.17	46.00	-15.83	19.56	Neutral	-	10.61	9.67	0.03	9.86			
QP	1.019M	32.65	56.00	-23.35	19.52	Neutral	-	13.13	9.67	0.05	9.80			
AV	1.019M	29.17	46.00	-16.83	19.52	Neutral	-	9.65	9.67	0.05	9.80			
QP	3.701M	28.73	56.00	-27.27	19.70	Neutral	-	9.03	9.69	0.12	9.89			
AV	3.701M	23.43	46.00	-22.57	19.70	Neutral	-	3.73	9.69	0.12	9.89			
QP	18.053M	37.01	60.00	-22.99	19.93	Neutral	-	17.08	9.75	0.28	9.90			
AV	18.053M	34.38	50.00	-15.62	19.93	Neutral	-	14.45	9.75	0.28	9.90			



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	20.55M	16.402M	16M4D1D	19.71M	16.312M
802.11n HT20_Nss1,(MCS0)_2TX	21.84M	17.691M	17M7D1D	20.73M	17.571M
802.11n HT40_Nss1,(MCS0)_2TX	41.1M	36.462M	36M5D1D	40.62M	36.282M
802.11ac VHT20_Nss1,(MCS0)_2TX	25.14M	17.691M	17M7D1D	20.94M	17.541M
802.11ac VHT40_Nss1,(MCS0)_2TX	41.28M	36.342M	36M3D1D	40.08M	36.222M
802.11ac VHT80_Nss1,(MCS0)_2TX	82.08M	75.802M	75M8D1D	81.72M	75.682M
802.11ax HEW20_Nss1,(MCS0)_2TX	24.57M	19.01M	19M0D1D	21.15M	18.891M
802.11ax HEW40_Nss1,(MCS0)_2TX	41.22M	38.141M	38M1D1D	40.74M	37.901M
802.11ax HEW80_Nss1,(MCS0)_2TX	77.4M	67.766M	67M8D1D	77.28M	66.807M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.32M	17.571M	17M6D1D	15.09M	16.462M
802.11n HT20_Nss1,(MCS0)_2TX	17.25M	17.811M	17M8D1D	15.27M	17.631M
802.11n HT40_Nss1,(MCS0)_2TX	36.36M	36.642M	36M6D1D	35.1M	36.222M
802.11ac VHT20_Nss1,(MCS0)_2TX	17.55M	17.781M	17M8D1D	14.97M	17.571M
802.11ac VHT40_Nss1,(MCS0)_2TX	31.38M	36.642M	36M6D1D	27.72M	35.382M
802.11ac VHT80_Nss1,(MCS0)_2TX	71.28M	75.442M	75M4D1D	66.96M	75.322M
802.11ax HEW20_Nss1,(MCS0)_2TX	18.54M	19.07M	19M1D1D	17.88M	18.951M
802.11ax HEW40_Nss1,(MCS0)_2TX	37.8M	38.201M	38M2D1D	37.32M	37.781M
802.11ax HEW80_Nss1,(MCS0)_2TX	70.2M	76.642M	76M6D1D	63M	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

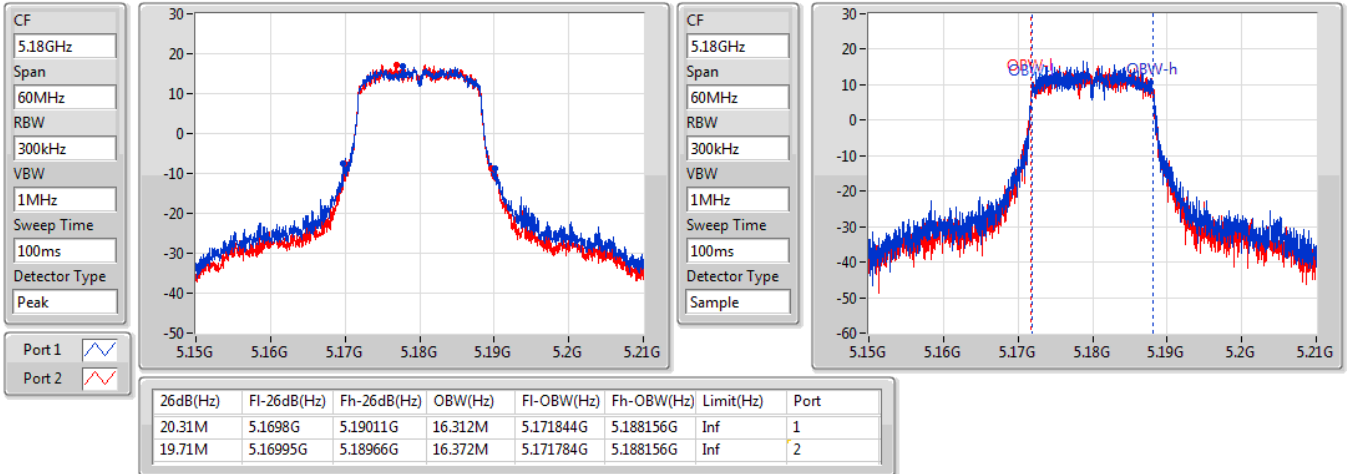
**Result**

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	20.31M	16.312M	19.71M	16.372M
5200MHz	Pass	Inf	20.43M	16.402M	20.49M	16.342M
5240MHz	Pass	Inf	20.55M	16.342M	20.28M	16.312M
5745MHz	Pass	500k	15.48M	16.492M	16.32M	17.571M
5785MHz	Pass	500k	15.96M	16.462M	15.99M	16.942M
5825MHz	Pass	500k	15.51M	16.462M	15.09M	16.852M
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.33M	17.691M	21.24M	17.661M
5200MHz	Pass	Inf	21.84M	17.691M	21.36M	17.691M
5240MHz	Pass	Inf	20.73M	17.571M	21.18M	17.601M
5745MHz	Pass	500k	15.9M	17.631M	17.25M	17.661M
5785MHz	Pass	500k	16.89M	17.661M	15.27M	17.811M
5825MHz	Pass	500k	16.05M	17.661M	16.77M	17.721M
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	41.04M	36.282M	40.62M	36.342M
5230MHz	Pass	Inf	41.1M	36.342M	40.62M	36.462M
5755MHz	Pass	500k	36.36M	36.222M	35.64M	36.642M
5795MHz	Pass	500k	35.1M	36.222M	35.64M	36.642M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.06M	17.601M	20.94M	17.541M
5200MHz	Pass	Inf	25.14M	17.691M	21.63M	17.601M
5240MHz	Pass	Inf	20.97M	17.601M	22.44M	17.661M
5745MHz	Pass	500k	15.39M	17.571M	16.26M	17.661M
5785MHz	Pass	500k	14.97M	17.631M	17.55M	17.751M
5825MHz	Pass	500k	17.55M	17.631M	17.07M	17.781M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	40.56M	36.222M	40.08M	36.222M
5230MHz	Pass	Inf	41.28M	36.282M	40.14M	36.342M
5755MHz	Pass	500k	31.38M	35.562M	30.36M	36.642M
5795MHz	Pass	500k	27.72M	35.382M	28.98M	36.342M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	82.08M	75.682M	81.72M	75.802M
5775MHz	Pass	500k	66.96M	75.442M	71.28M	75.322M
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.87M	18.951M	21.48M	18.951M
5200MHz	Pass	Inf	24.57M	18.951M	21.15M	18.891M
5240MHz	Pass	Inf	21.99M	19.01M	22.02M	18.951M
5745MHz	Pass	500k	18.48M	19.01M	18M	18.951M
5785MHz	Pass	500k	17.88M	18.951M	18.39M	19.04M
5825MHz	Pass	500k	18.45M	18.951M	18.54M	19.07M
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	41.04M	37.961M	41.16M	37.961M
5230MHz	Pass	Inf	41.22M	37.901M	40.74M	38.141M
5755MHz	Pass	500k	37.32M	37.781M	37.8M	38.081M
5795MHz	Pass	500k	37.8M	37.901M	37.38M	38.201M
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	77.4M	67.766M	77.28M	66.807M
5775MHz	Pass	500k	63M	76.642M	70.2M	76.522M

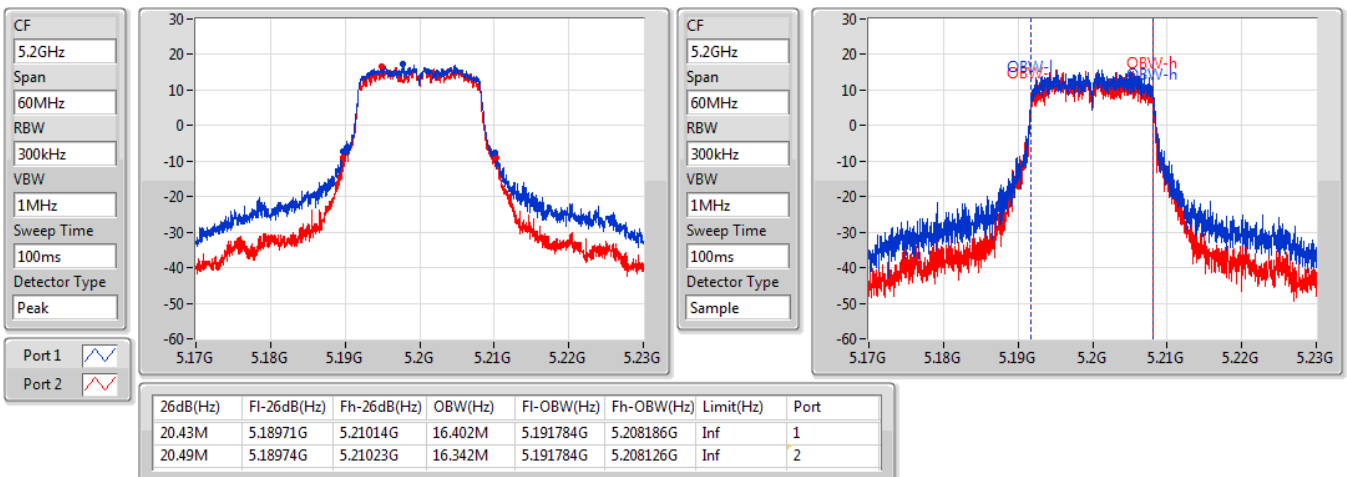
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_2TX
EBW
5180MHz

24/12/2020

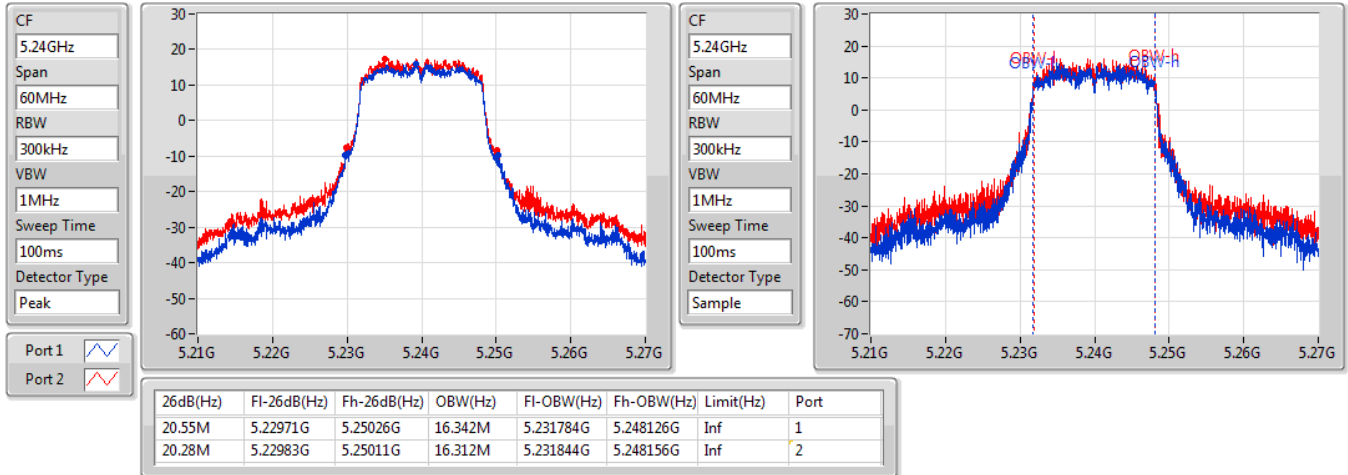

802.11a_Nss1,(6Mbps)_2TX
EBW
5200MHz

24/12/2020

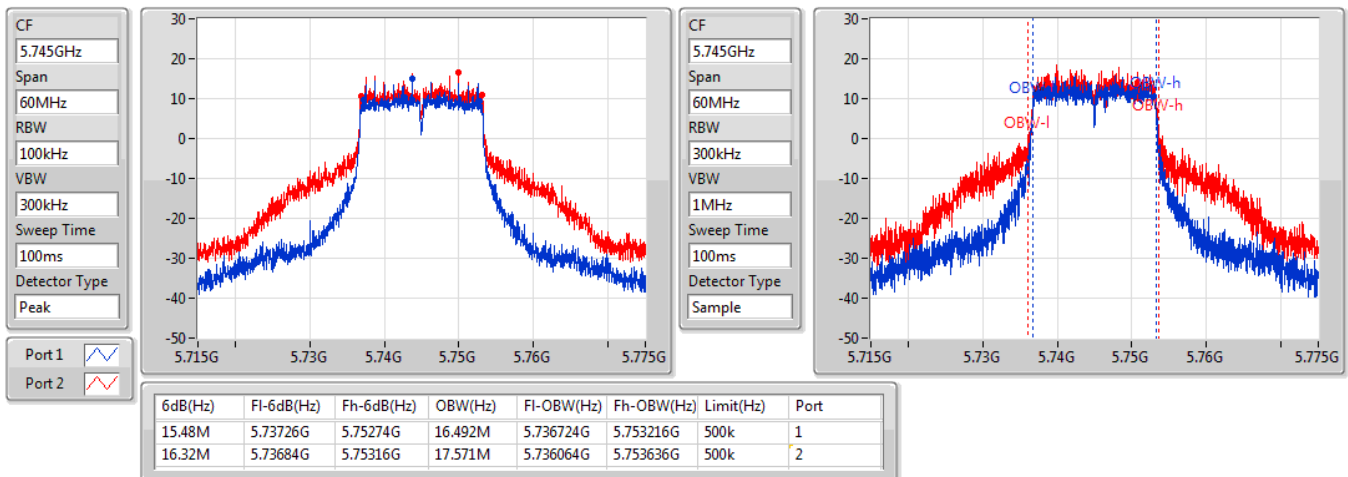


802.11a_Nss1,(6Mbps)_2TX
EBW
5240MHz

24/12/2020

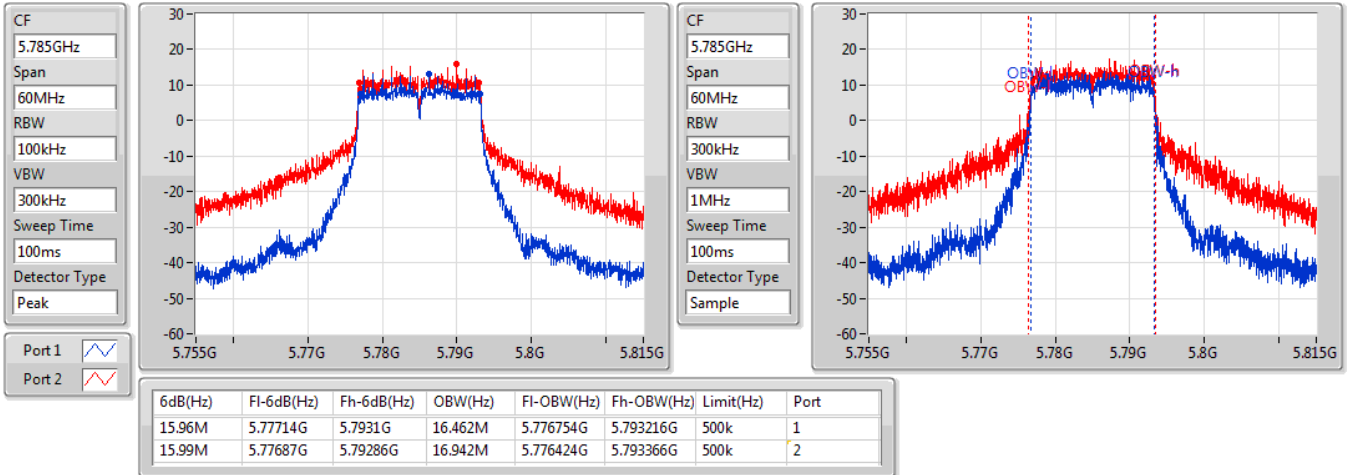

802.11a_Nss1,(6Mbps)_2TX
EBW
5745MHz

24/12/2020

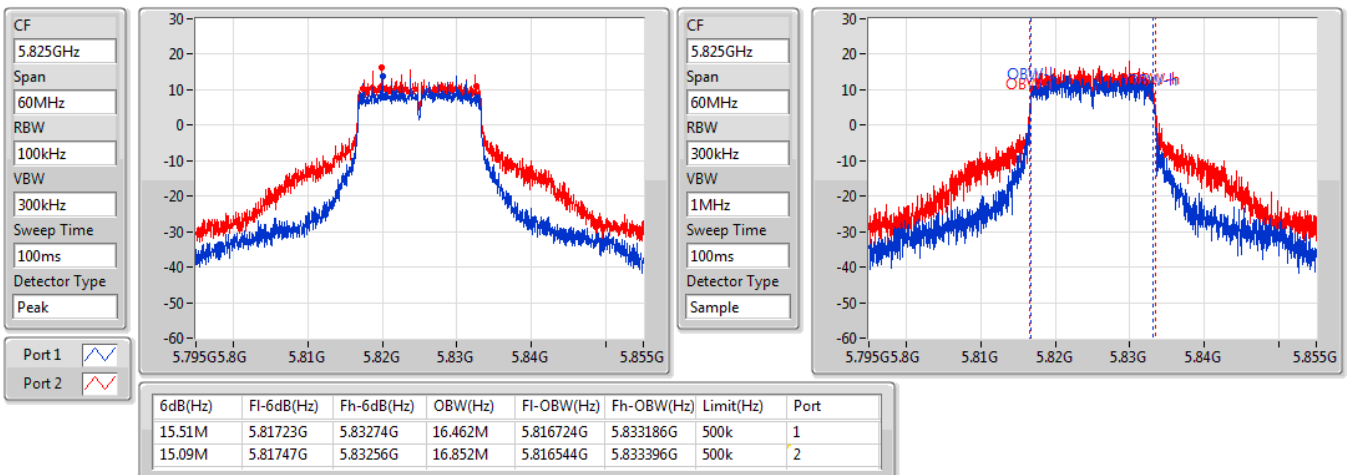


802.11a_Nss1,(6Mbps)_2TX
EBW
5785MHz

24/12/2020

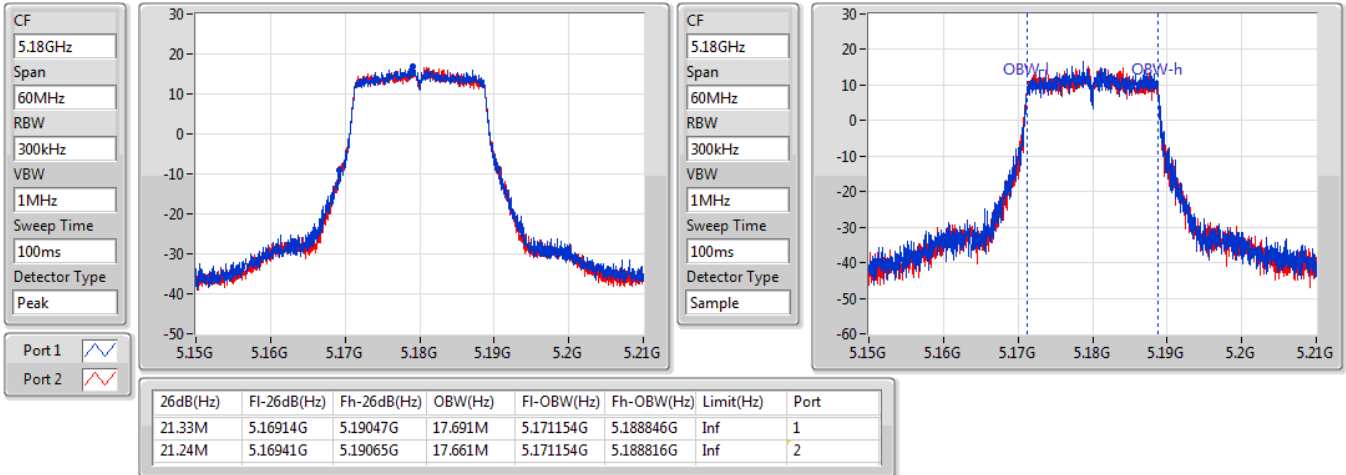

802.11a_Nss1,(6Mbps)_2TX
EBW
5825MHz

24/12/2020

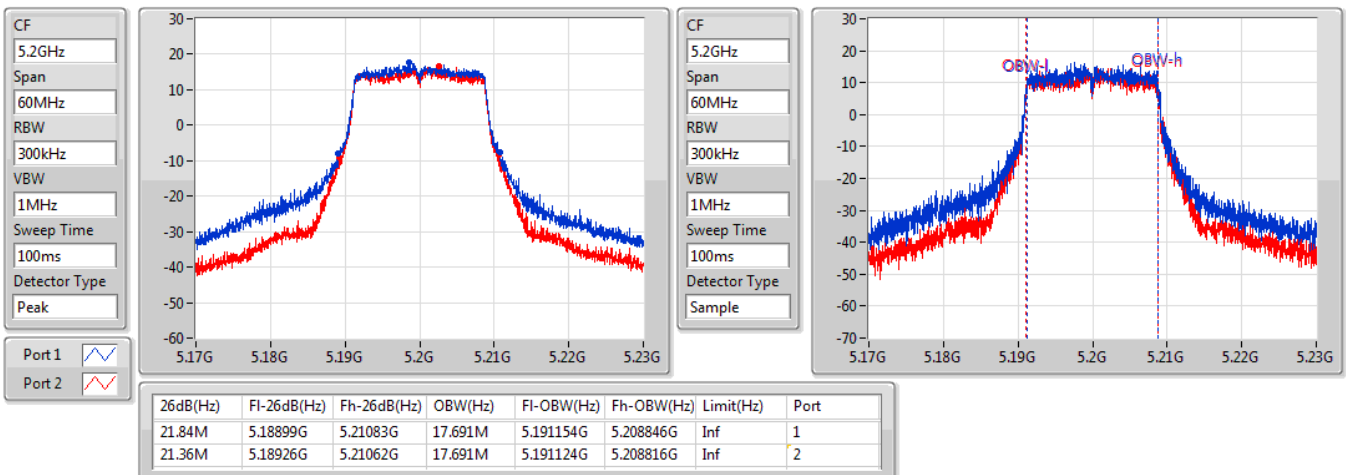


802.11n HT20_Nss1,(MCS0)_2TX
EBW
5180MHz

24/12/2020

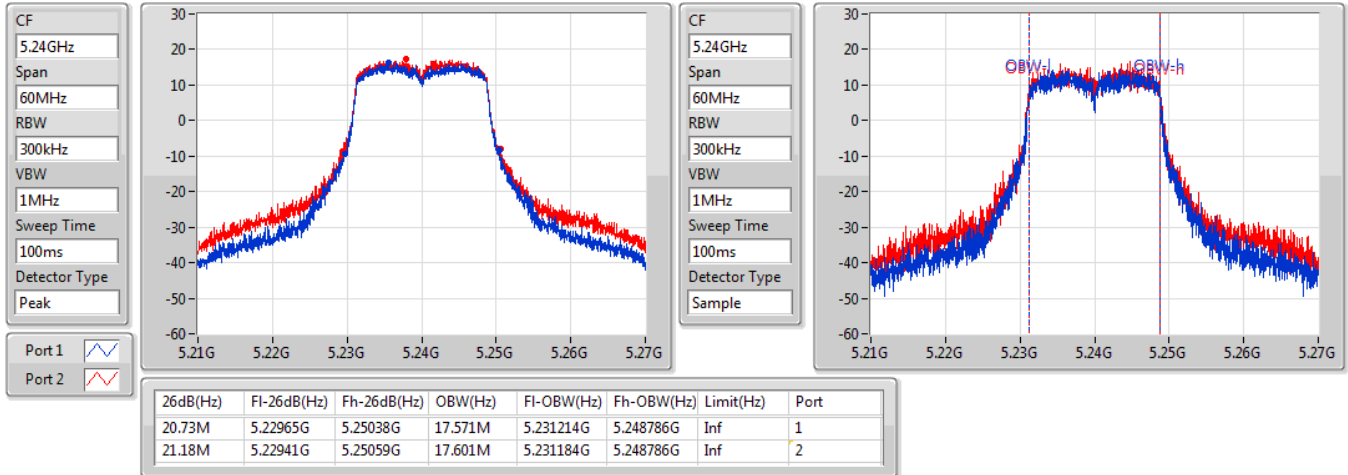

802.11n HT20_Nss1,(MCS0)_2TX
EBW
5200MHz

24/12/2020

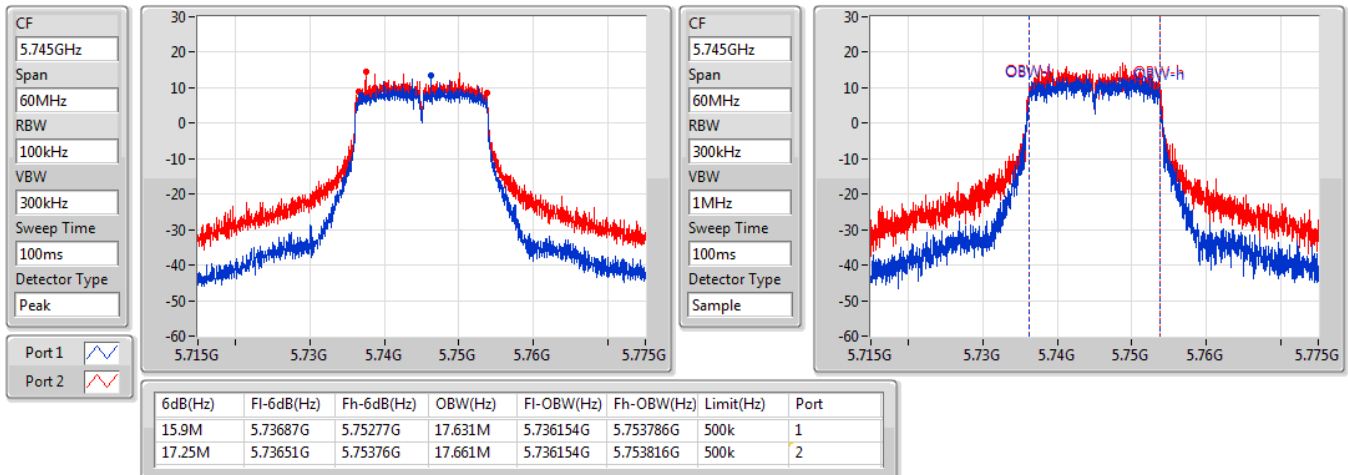


802.11n HT20_Nss1,(MCS0)_2TX
EBW
5240MHz

24/12/2020

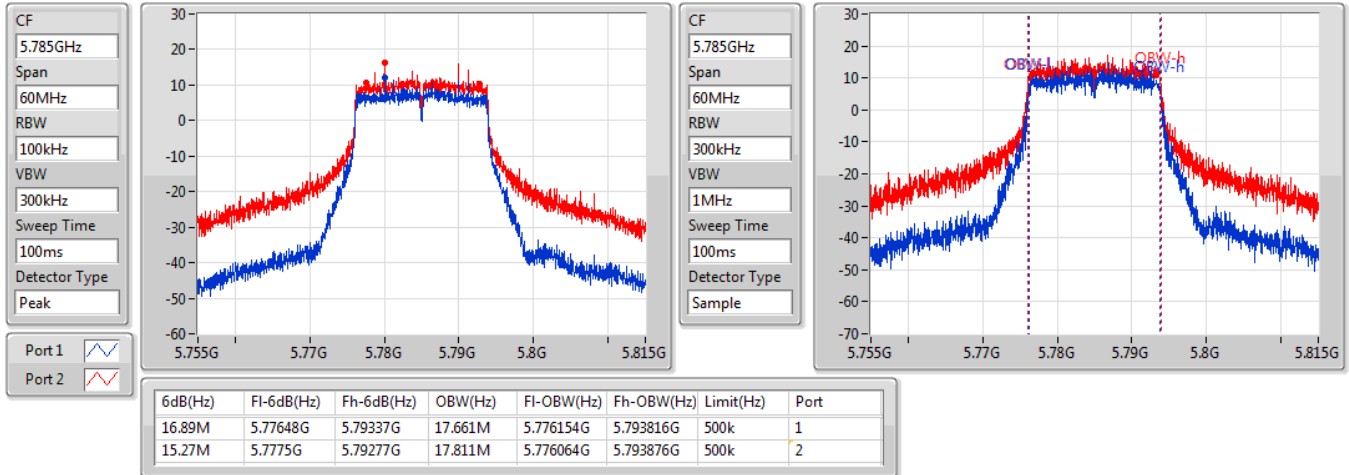

802.11n HT20_Nss1,(MCS0)_2TX
EBW
5745MHz

24/12/2020

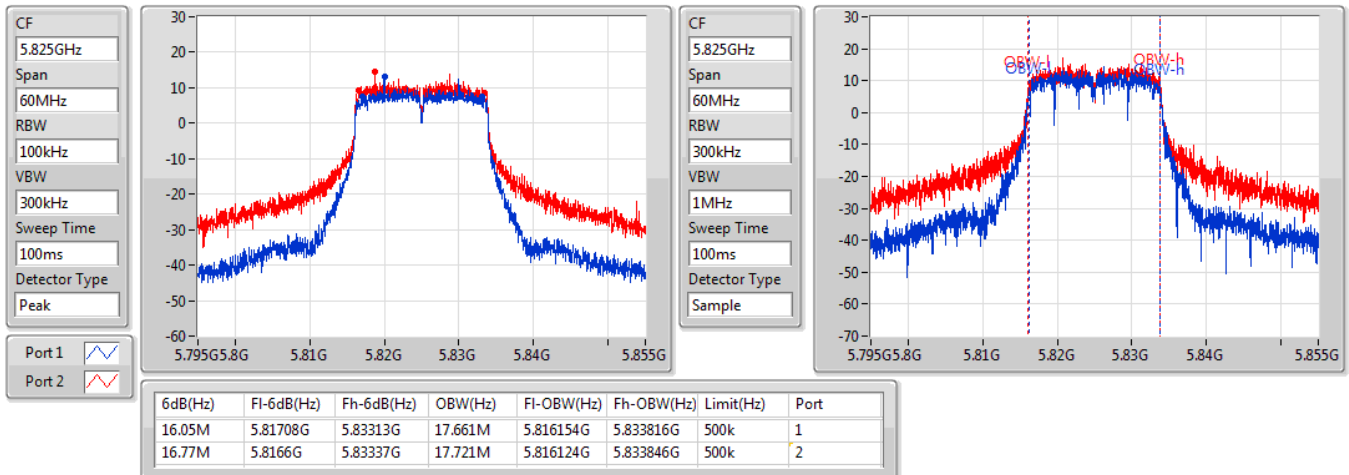


802.11n HT20_Nss1,(MCS0)_2TX
EBW
5785MHz

24/12/2020

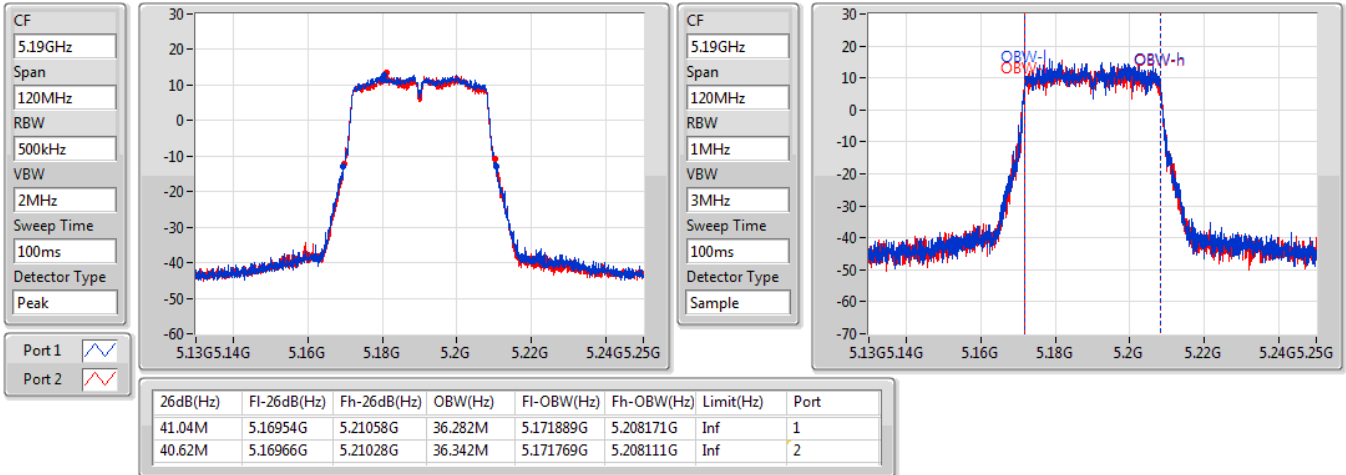

802.11n HT20_Nss1,(MCS0)_2TX
EBW
5825MHz

24/12/2020

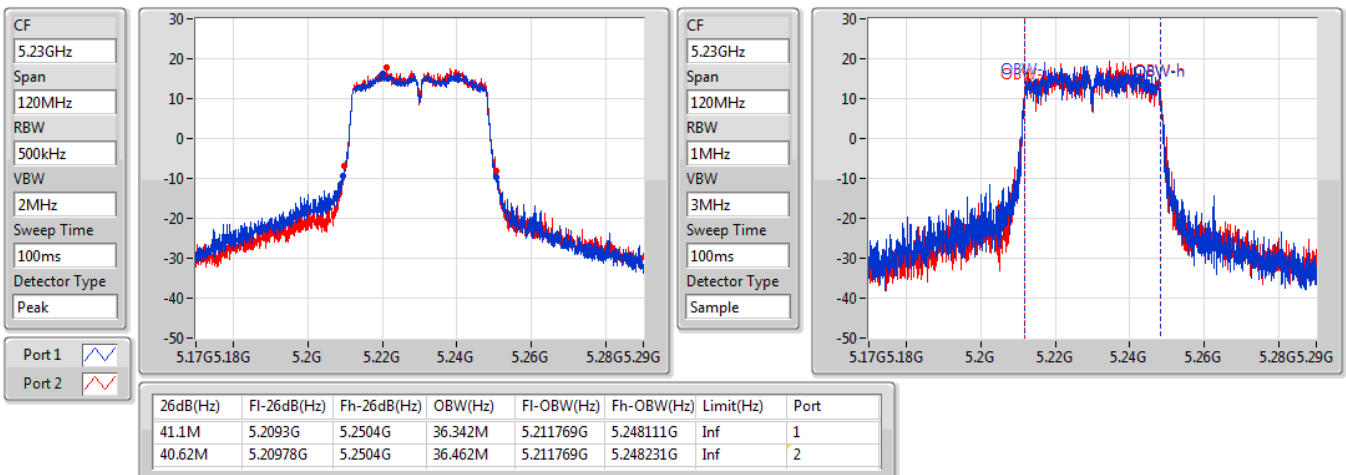


802.11n HT40_Nss1,(MCS0)_2TX
EBW
5190MHz

24/12/2020

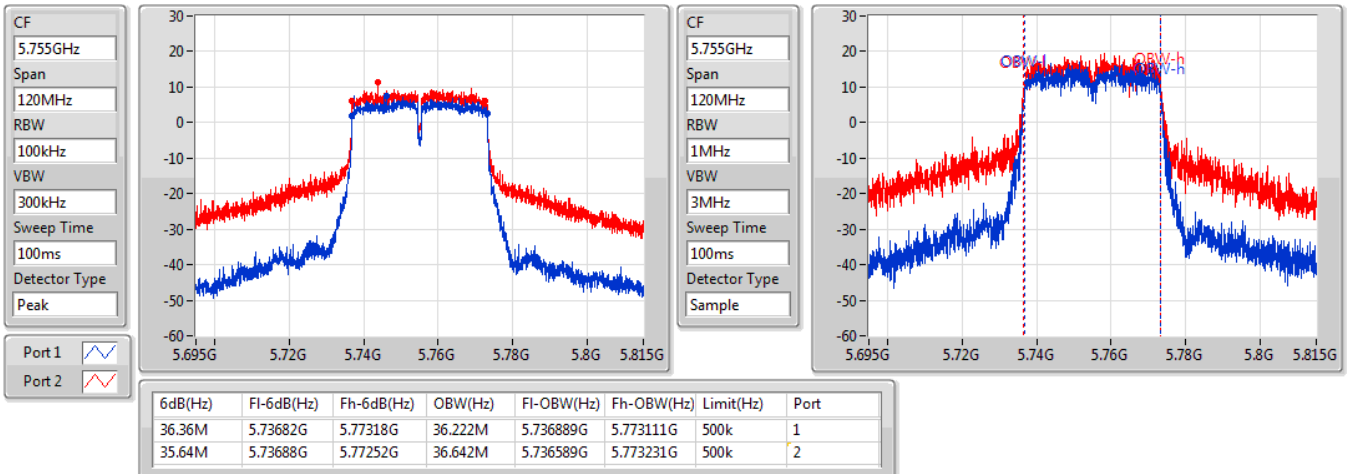

802.11n HT40_Nss1,(MCS0)_2TX
EBW
5230MHz

24/12/2020

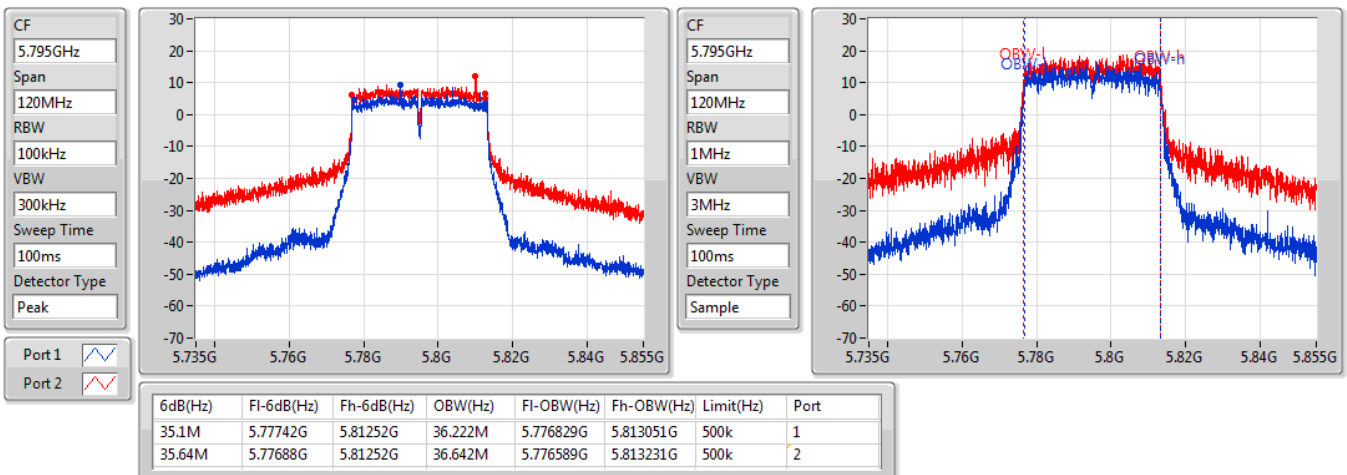


802.11n HT40_Nss1,(MCS0)_2TX
EBW
5755MHz

24/12/2020

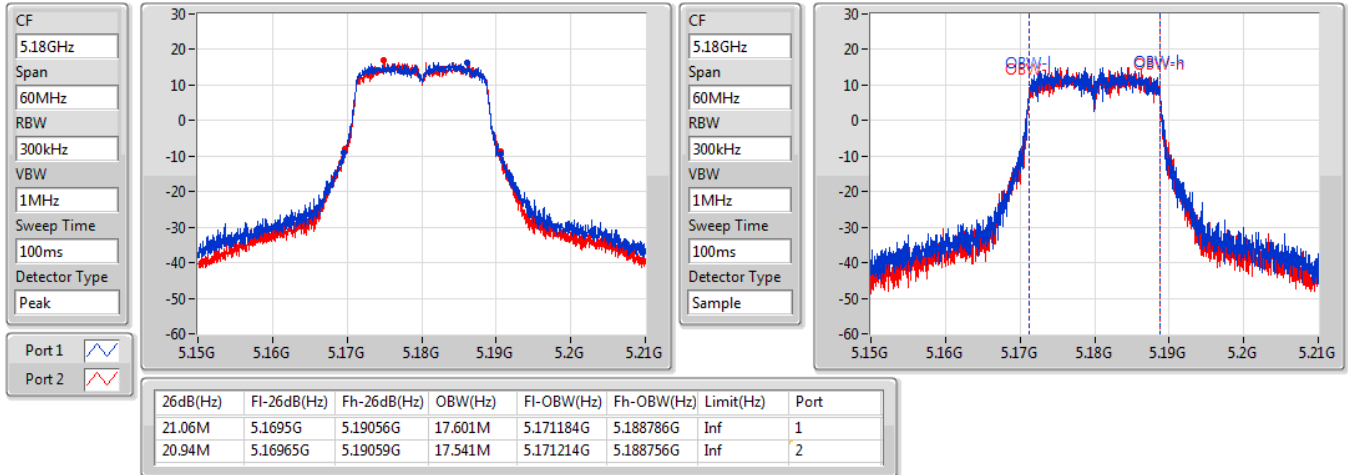

802.11n HT40_Nss1,(MCS0)_2TX
EBW
5795MHz

24/12/2020

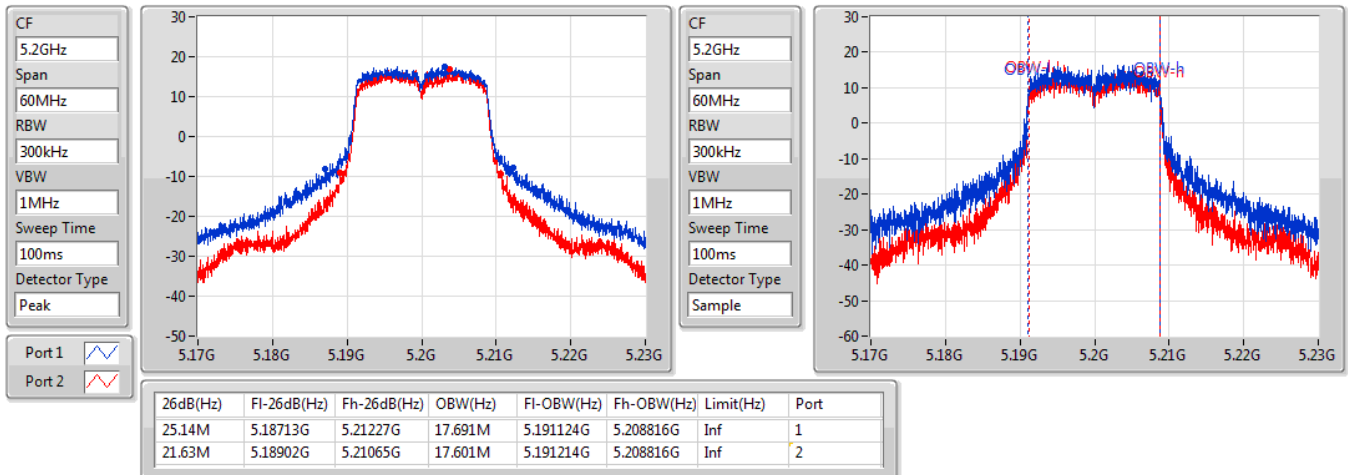


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5180MHz

24/12/2020

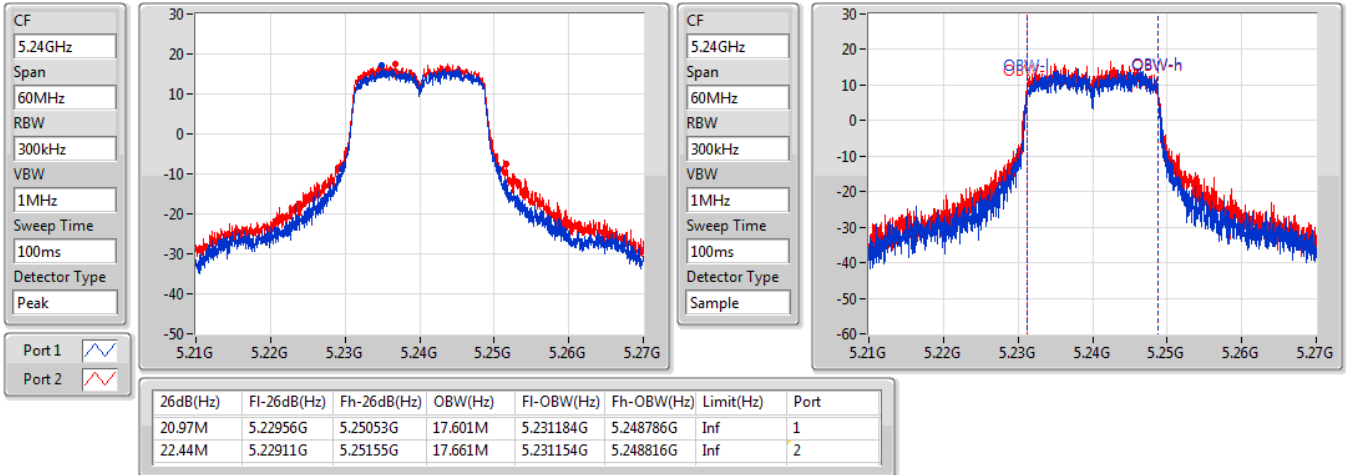

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5200MHz

24/12/2020

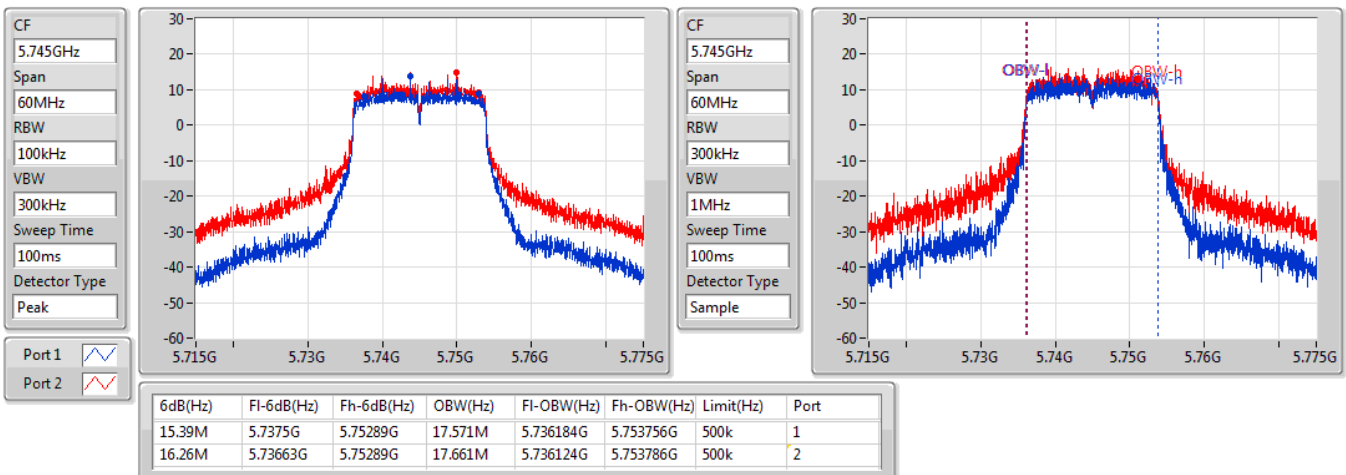


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5240MHz

24/12/2020

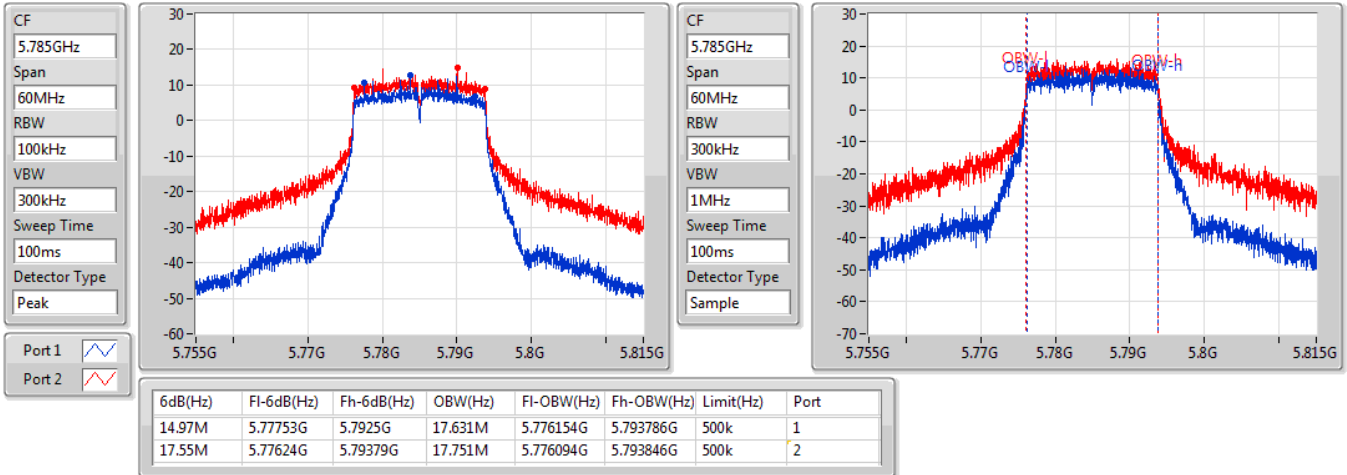

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5745MHz

24/12/2020

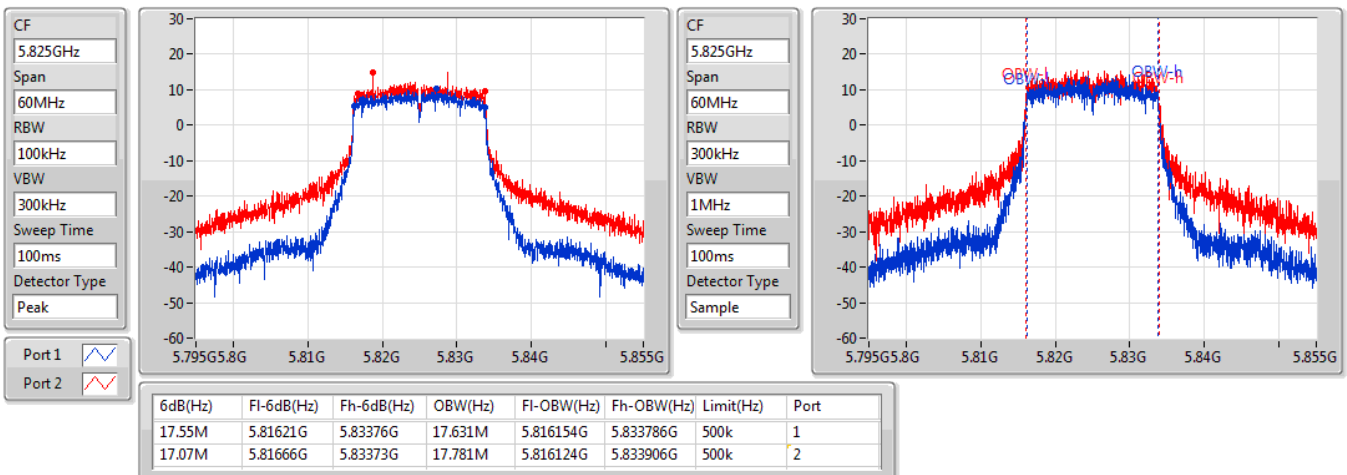


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5785MHz

24/12/2020

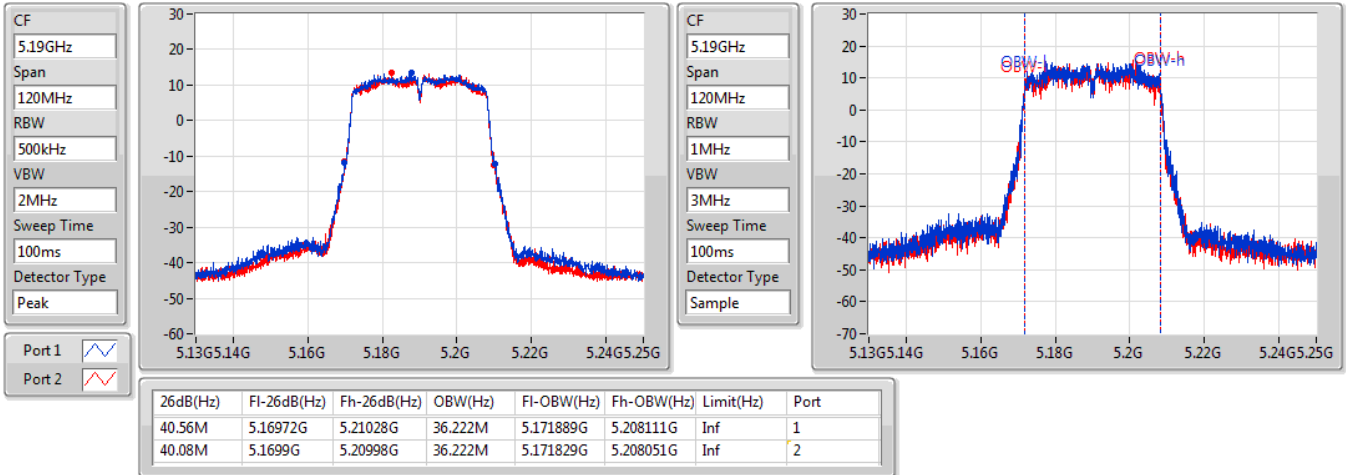

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5825MHz

24/12/2020

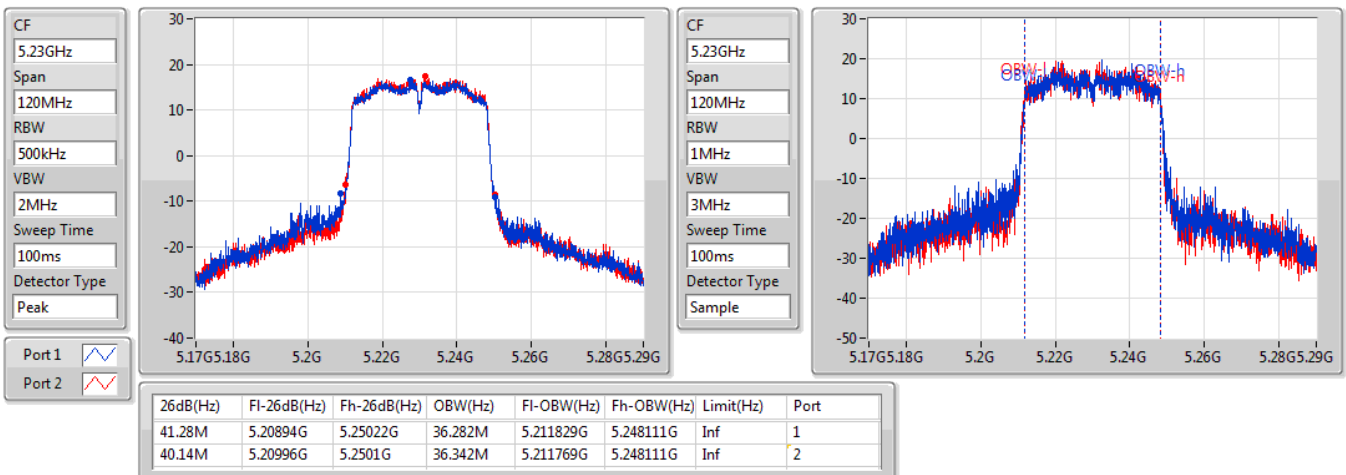


802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5190MHz

24/12/2020

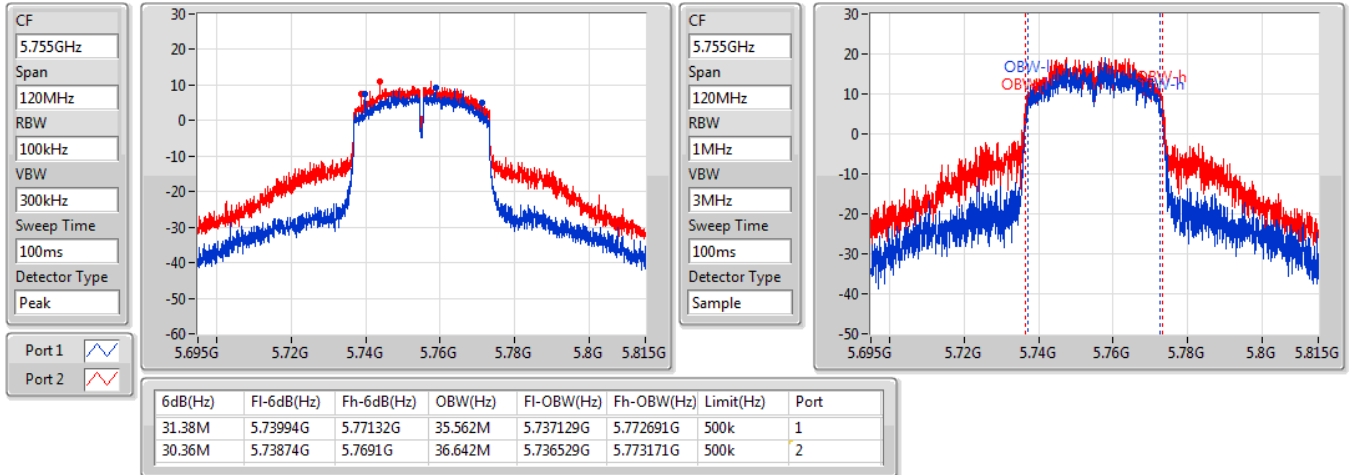

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5230MHz

24/12/2020

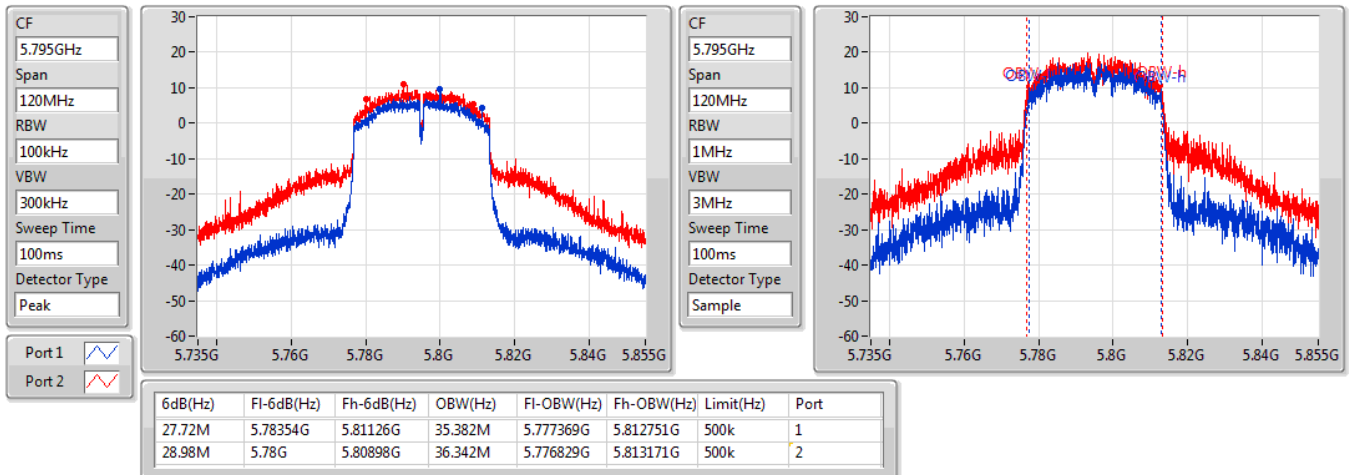


802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5755MHz

24/12/2020

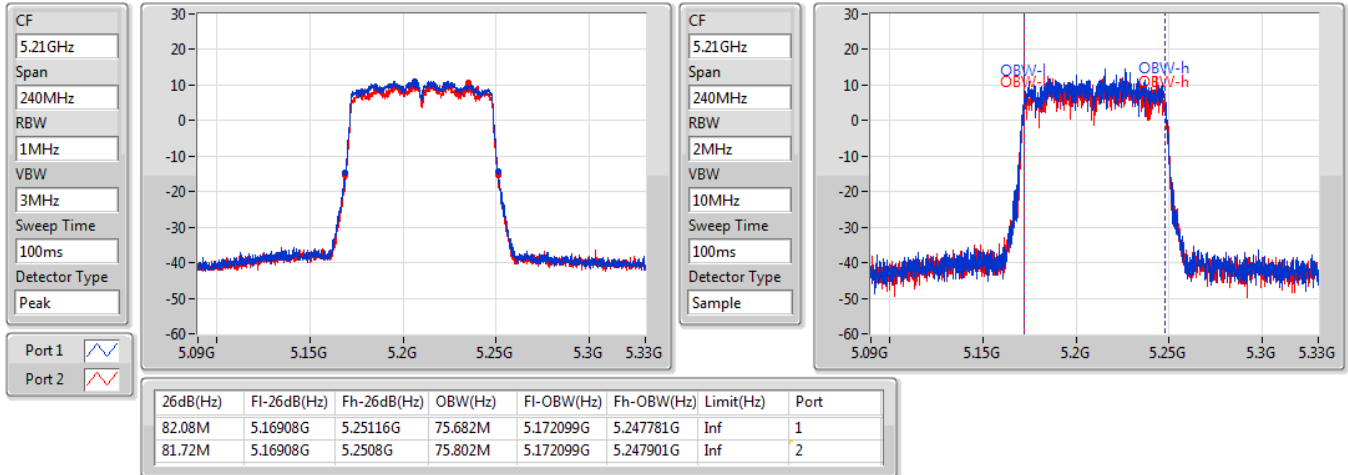

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5795MHz

24/12/2020

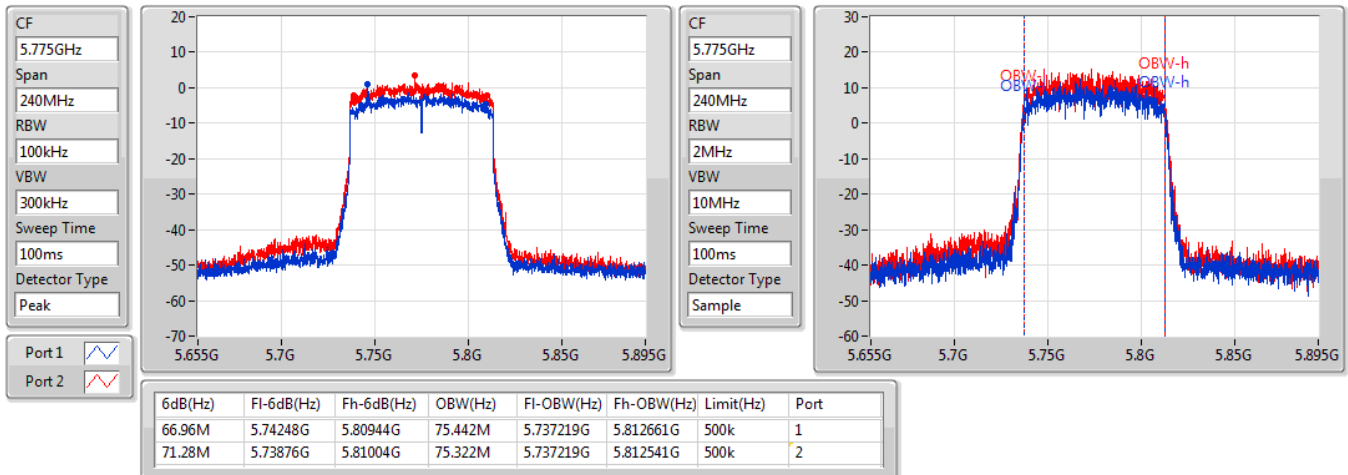


802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5210MHz

24/12/2020

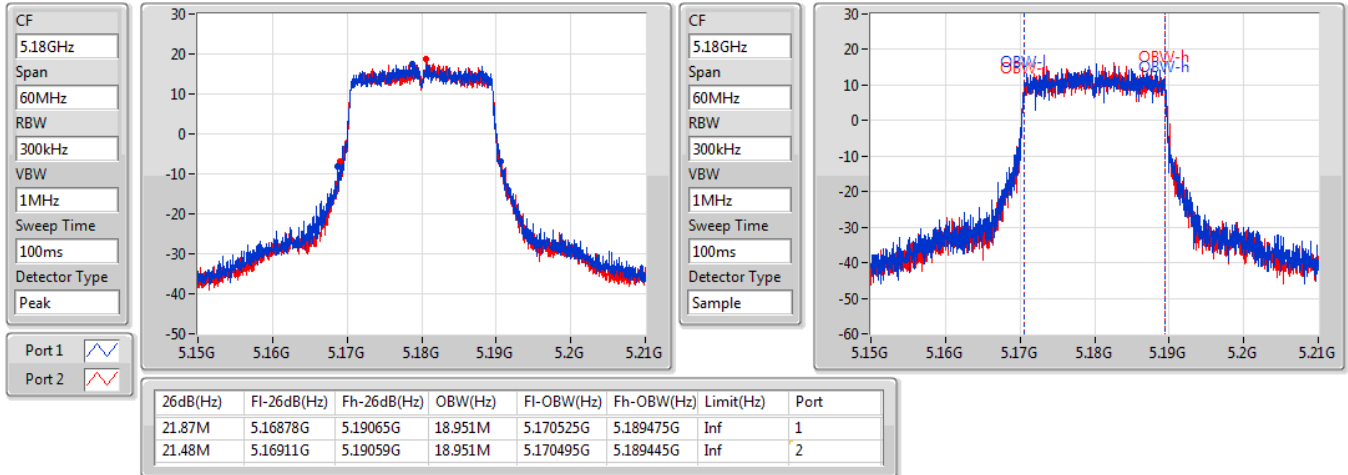

802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5775MHz

24/12/2020

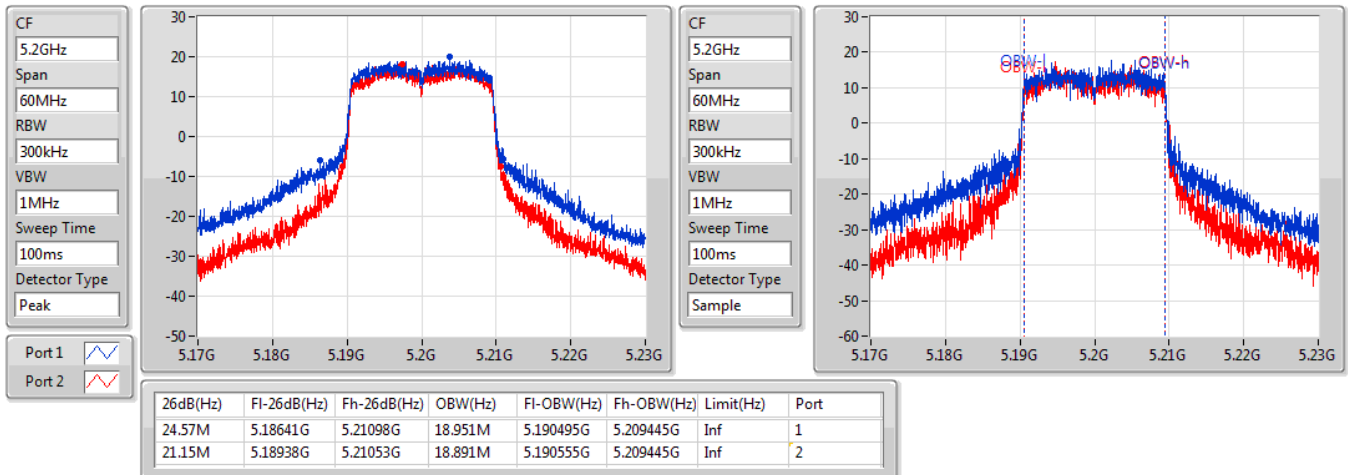


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5180MHz

24/12/2020

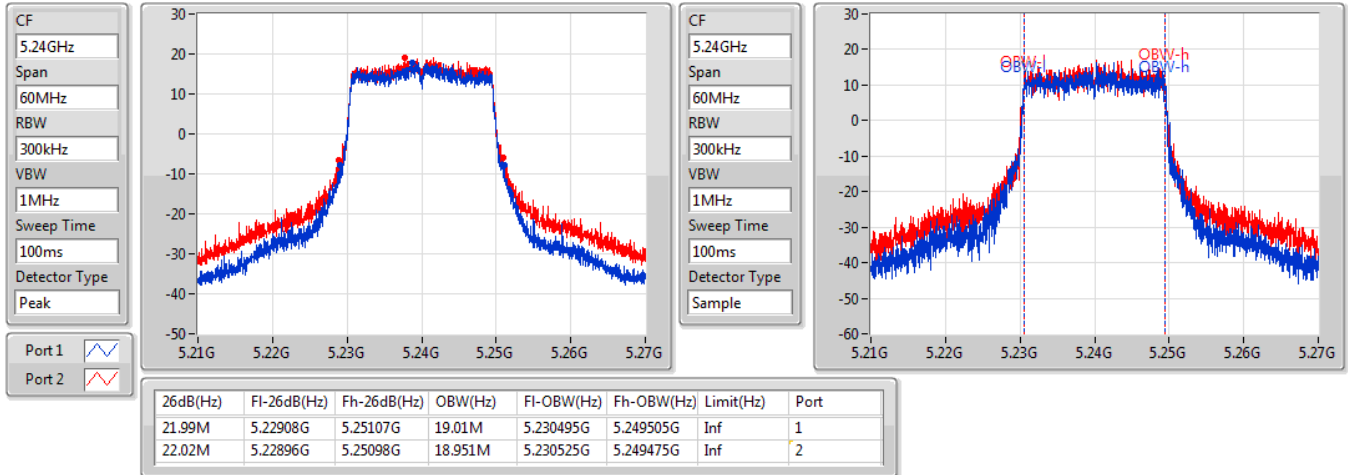

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5200MHz

24/12/2020

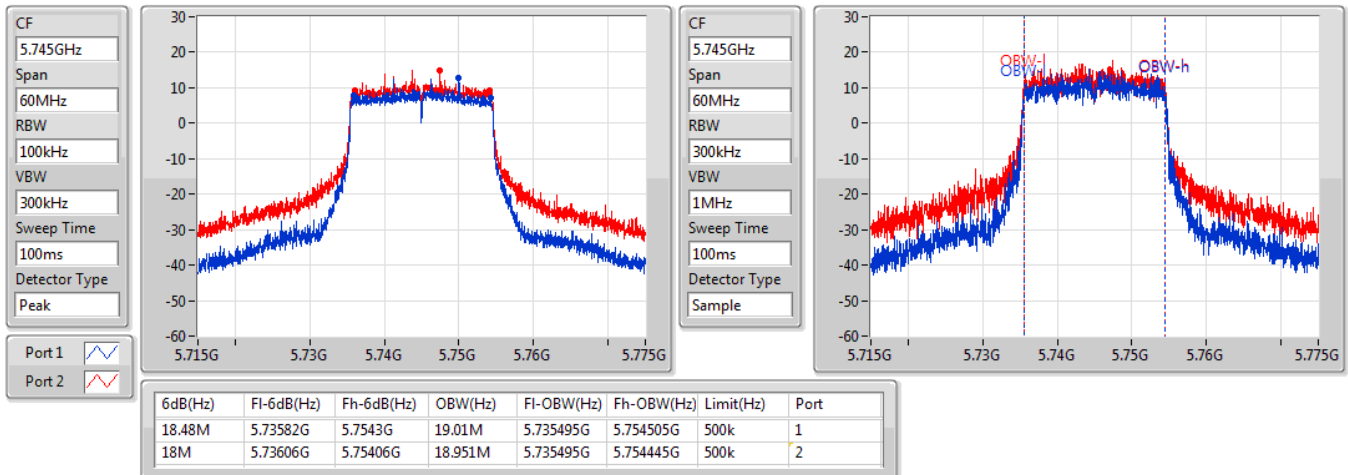


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5240MHz

24/12/2020

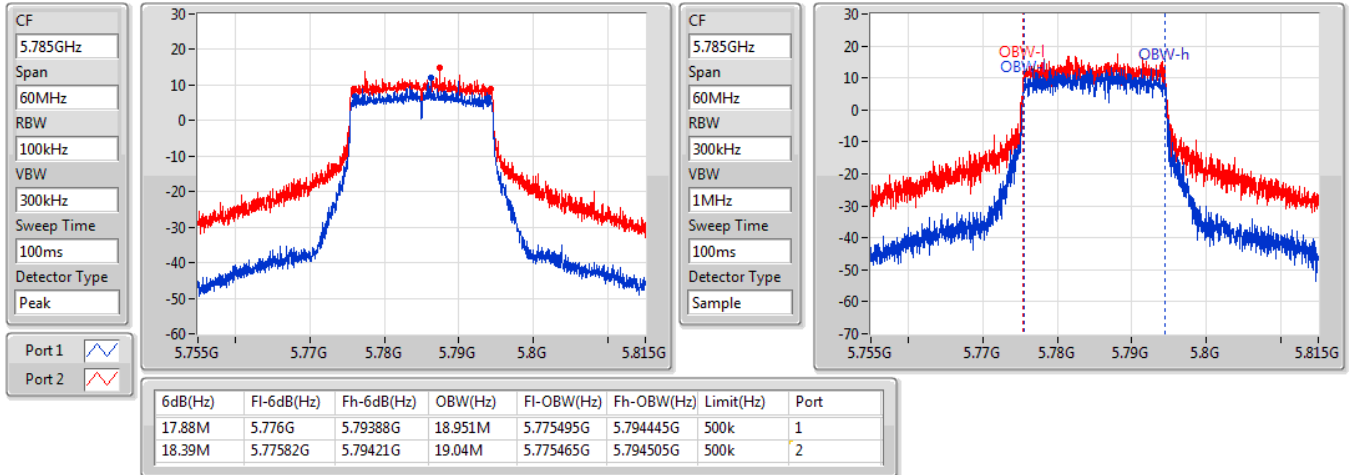

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5745MHz

24/12/2020

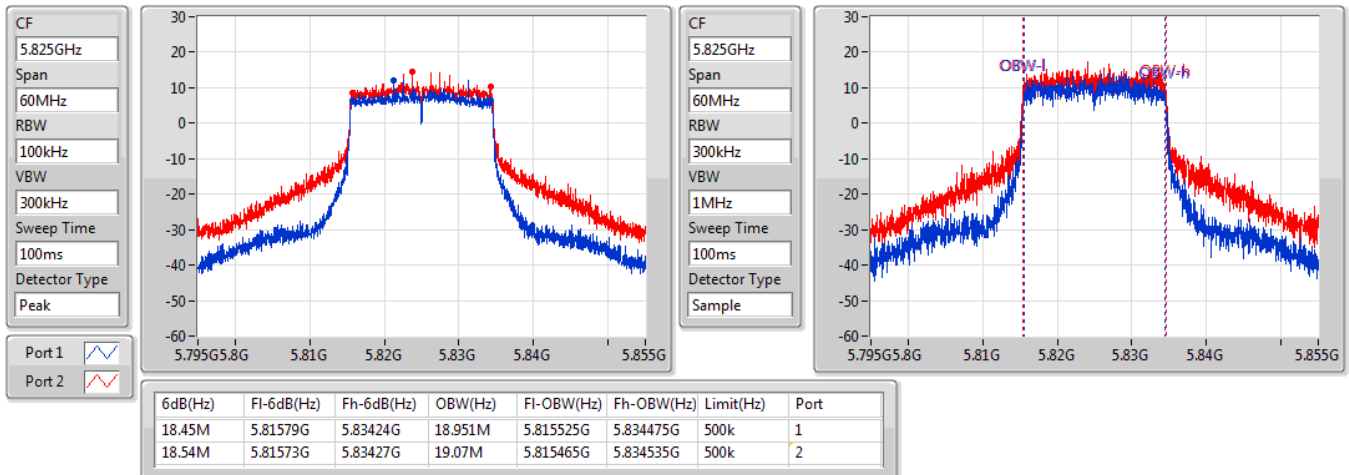


802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5785MHz

24/12/2020

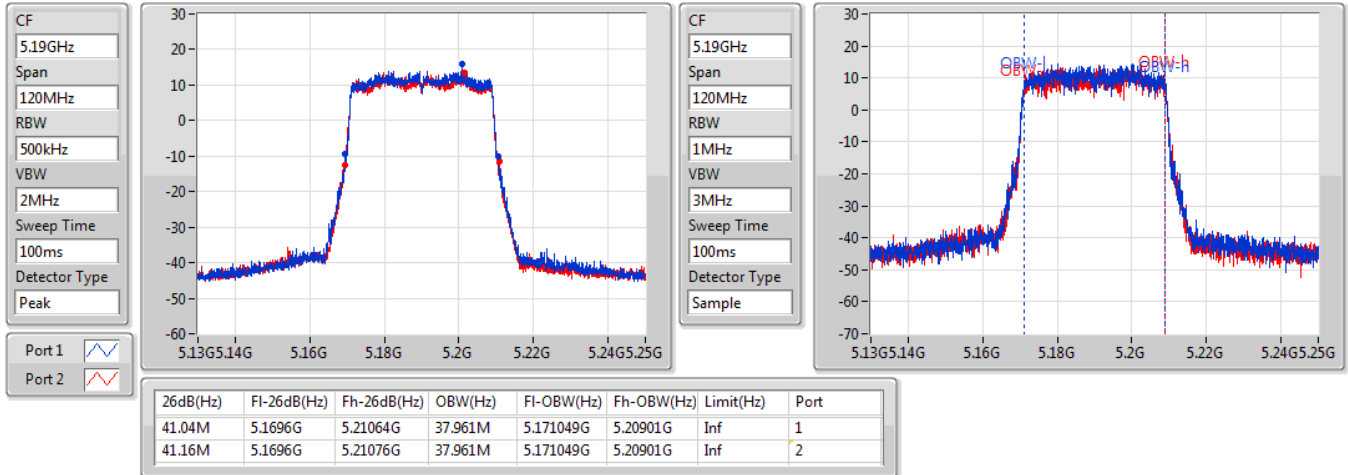

802.11ax HEW20_Nss1,(MCS0)_2TX
EBW
5825MHz

24/12/2020

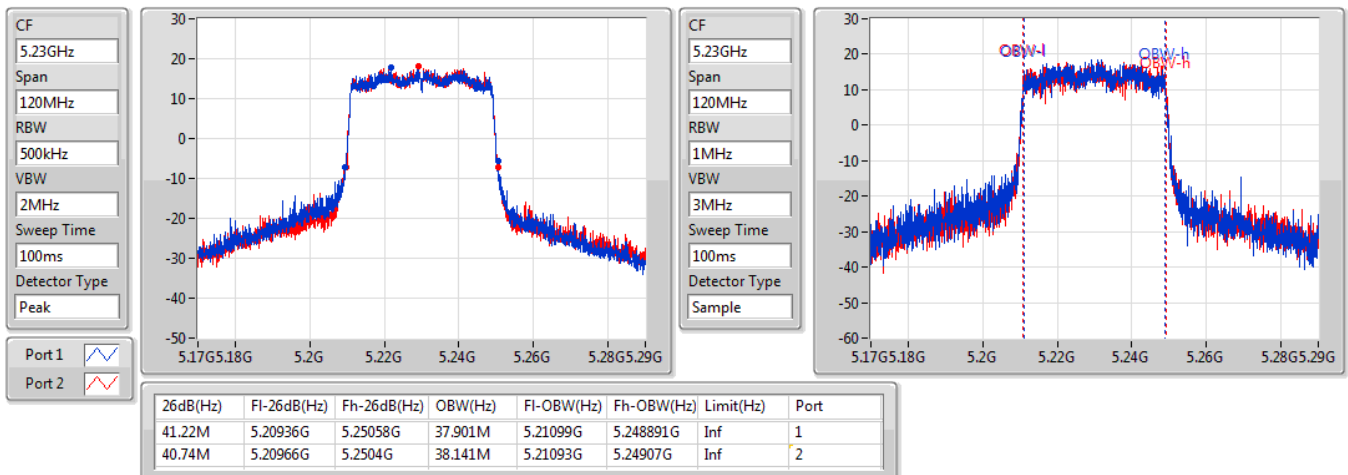


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5190MHz

24/12/2020

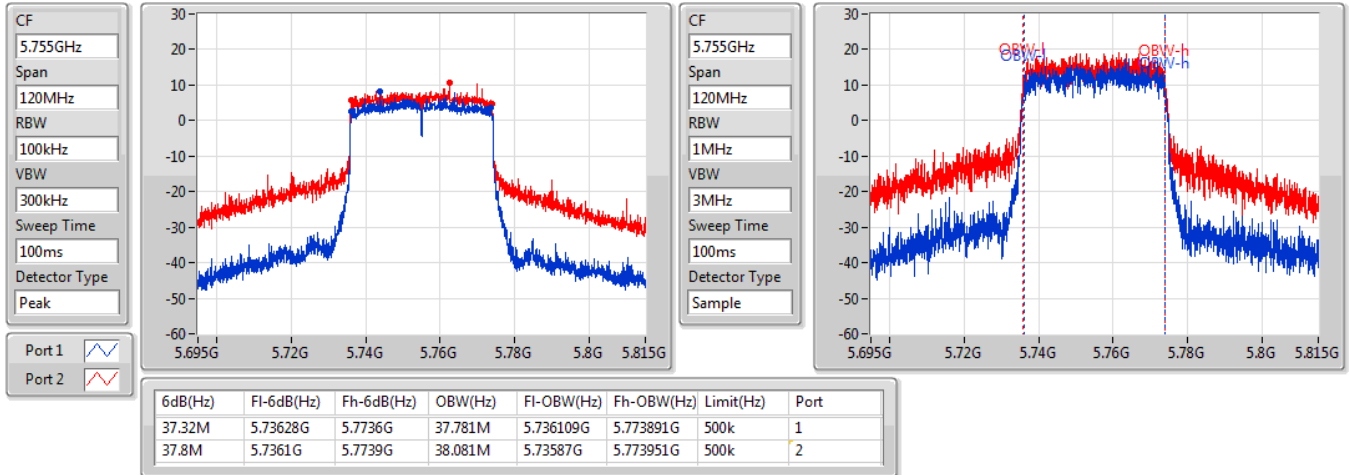

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5230MHz

24/12/2020

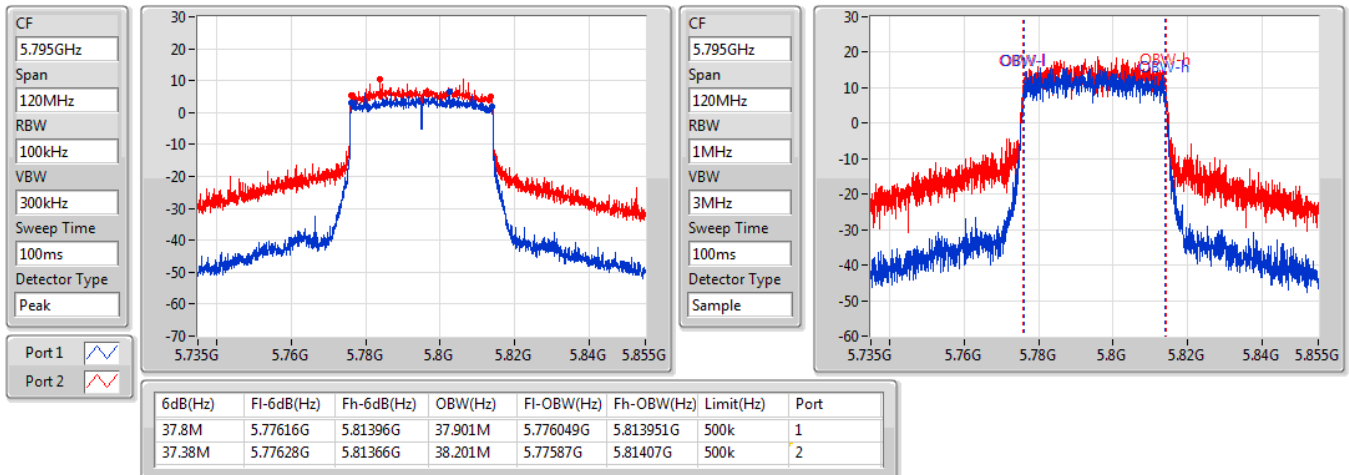


802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5755MHz

24/12/2020

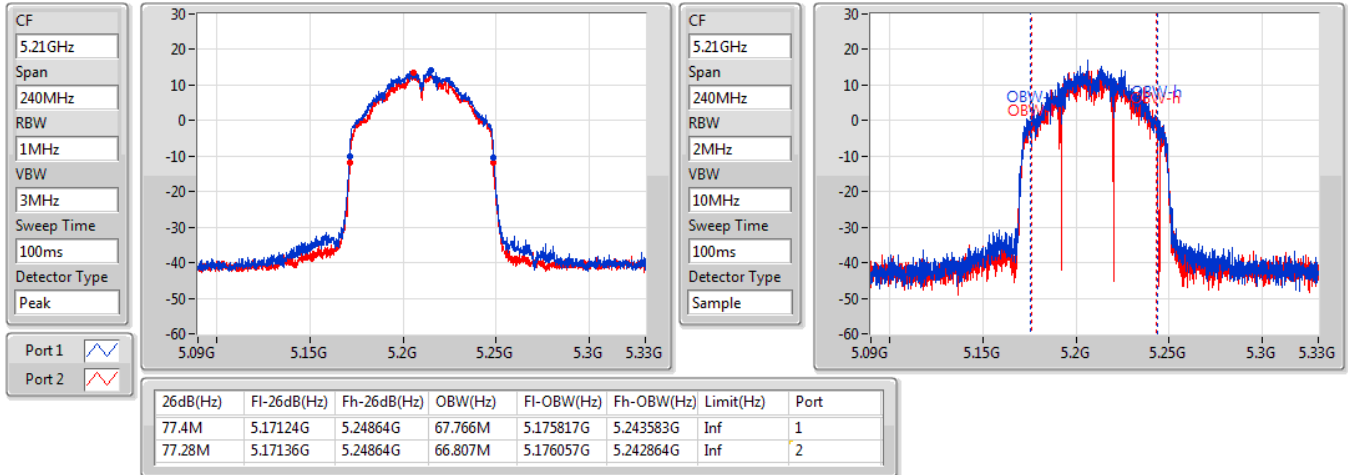

802.11ax HEW40_Nss1,(MCS0)_2TX
EBW
5795MHz

24/12/2020

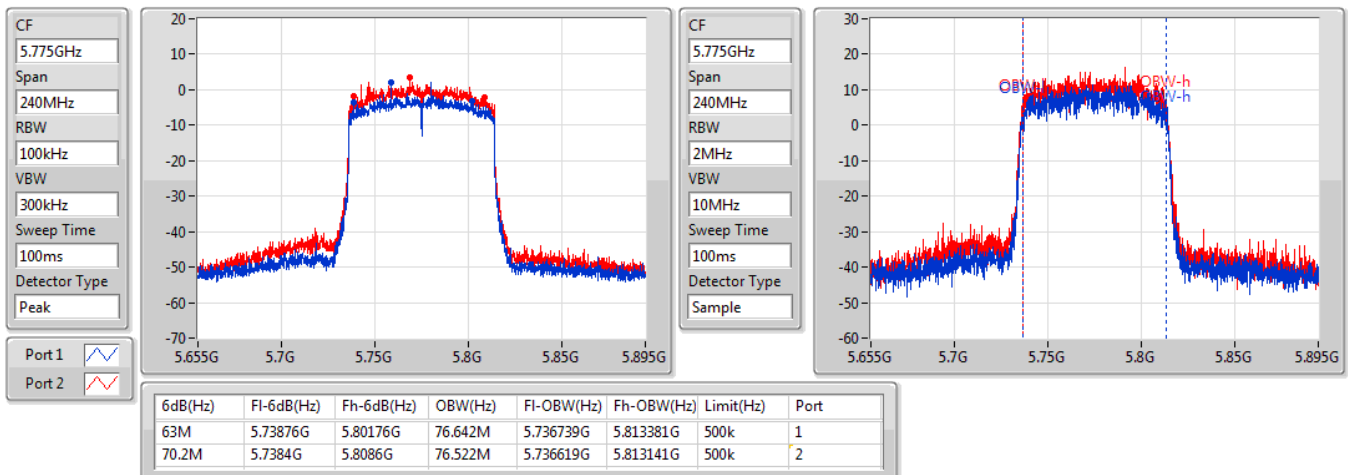


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5210MHz

24/12/2020


802.11ax HEW80_Nss1,(MCS0)_2TX
EBW
5775MHz

24/12/2020



**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	26.01M	16.768M	16M8D1D	24.96M	16.672M
802.11n HT20_Nss1,(MCS0)_1TX	25.86M	17.931M	17M9D1D	25.47M	17.901M
802.11n HT40_Nss1,(MCS0)_1TX	51.84M	36.762M	36M8D1D	47.82M	36.702M
802.11ac VHT20_Nss1,(MCS0)_1TX	26.73M	17.847M	17M8D1D	25.65M	17.799M
802.11ac VHT40_Nss1,(MCS0)_1TX	77.94M	37.181M	37M2D1D	49.8M	36.414M
802.11ac VHT80_Nss1,(MCS0)_1TX	98.04M	75.898M	75M9D1D	98.04M	75.898M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	16.32M	18.159M	18M2D1D	16.29M	16.72M
802.11n HT20_Nss1,(MCS0)_1TX	17.58M	18.561M	18M6D1D	16.92M	17.901M
802.11n HT40_Nss1,(MCS0)_1TX	36.3M	37.481M	37M5D1D	35.94M	36.882M
802.11ac VHT20_Nss1,(MCS0)_1TX	17.55M	18.639M	18M6D1D	17.16M	17.775M
802.11ac VHT40_Nss1,(MCS0)_1TX	36.06M	37.373M	37M4D1D	35.46M	36.558M
802.11ac VHT80_Nss1,(MCS0)_1TX	75.48M	76.282M	76M3D1D	75.48M	76.282M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth



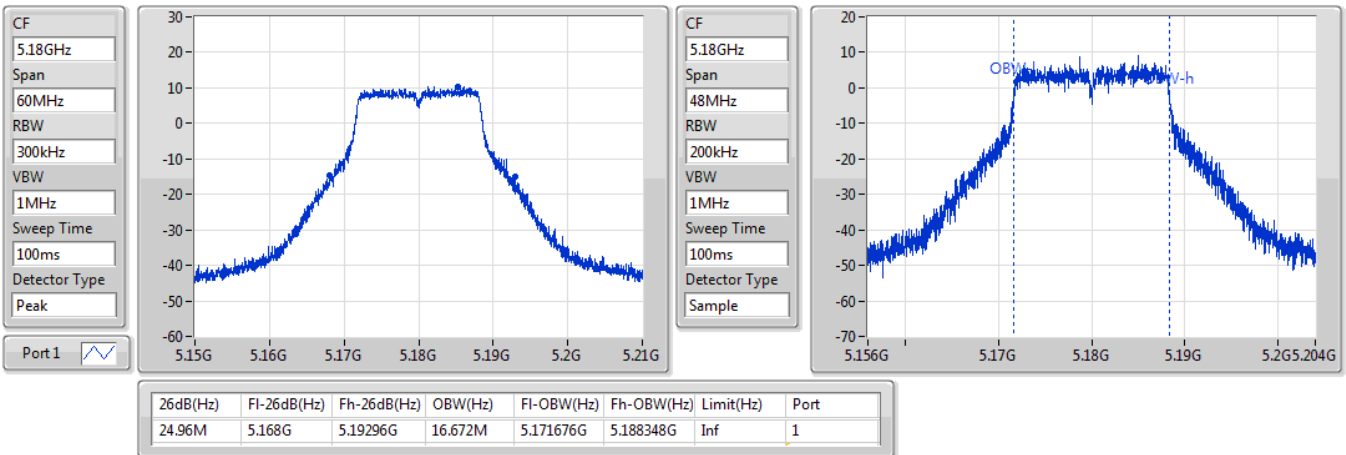
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5180MHz	Pass	Inf	24.96M	16.672M
5200MHz	Pass	Inf	25.95M	16.696M
5240MHz	Pass	Inf	26.01M	16.768M
5745MHz	Pass	500k	16.32M	18.159M
5785MHz	Pass	500k	16.29M	16.864M
5825MHz	Pass	500k	16.32M	16.72M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	25.59M	17.901M
5200MHz	Pass	Inf	25.47M	17.931M
5240MHz	Pass	Inf	25.86M	17.931M
5745MHz	Pass	500k	16.92M	18.561M
5785MHz	Pass	500k	17.58M	17.991M
5825MHz	Pass	500k	16.92M	17.901M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	47.82M	36.702M
5230MHz	Pass	Inf	51.84M	36.762M
5755MHz	Pass	500k	36.3M	37.481M
5795MHz	Pass	500k	35.94M	36.882M
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-
5180MHz	Pass	Inf	25.65M	17.823M
5200MHz	Pass	Inf	26.73M	17.799M
5240MHz	Pass	Inf	26.34M	17.847M
5745MHz	Pass	500k	17.55M	18.639M
5785MHz	Pass	500k	17.55M	17.967M
5825MHz	Pass	500k	17.16M	17.775M
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-
5190MHz	Pass	Inf	49.8M	36.414M
5230MHz	Pass	Inf	77.94M	37.181M
5755MHz	Pass	500k	36.06M	37.373M
5795MHz	Pass	500k	35.46M	36.558M
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-
5210MHz	Pass	Inf	98.04M	75.898M
5775MHz	Pass	500k	75.48M	76.282M

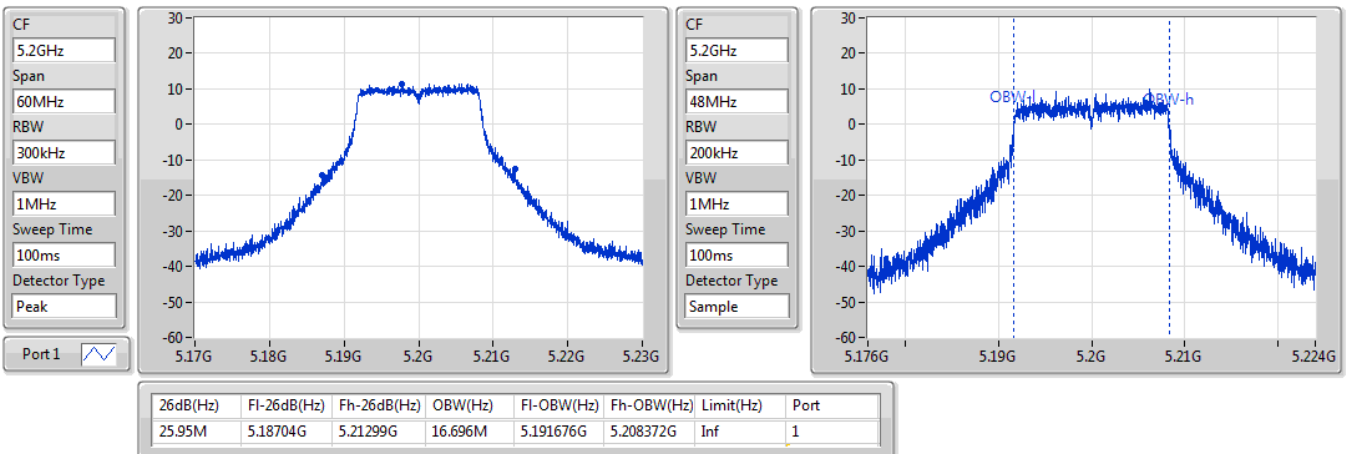
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port X 99% occupied bandwidth

802.11a_Nss1,(6Mbps)_1TX
EBW
5180MHz

11/11/2020

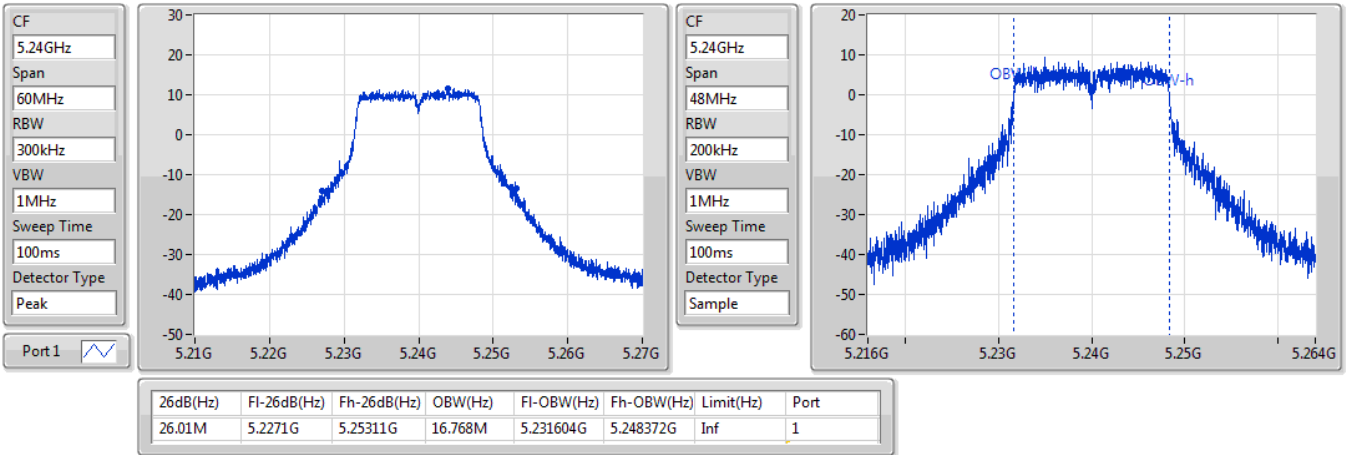

802.11a_Nss1,(6Mbps)_1TX
EBW
5200MHz

11/11/2020

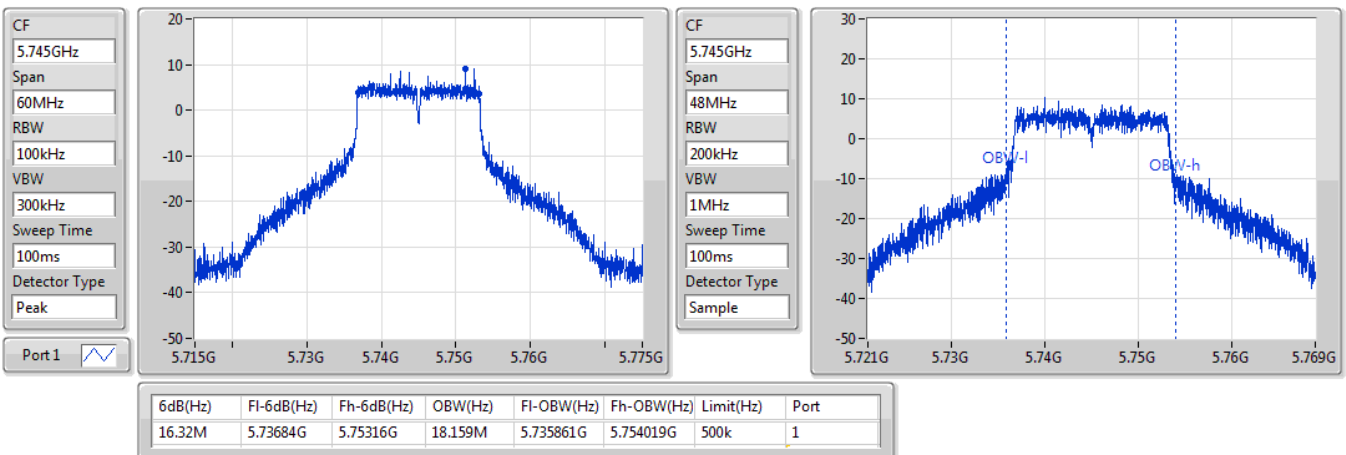


802.11a_Nss1,(6Mbps)_1TX
EBW
5240MHz

11/11/2020

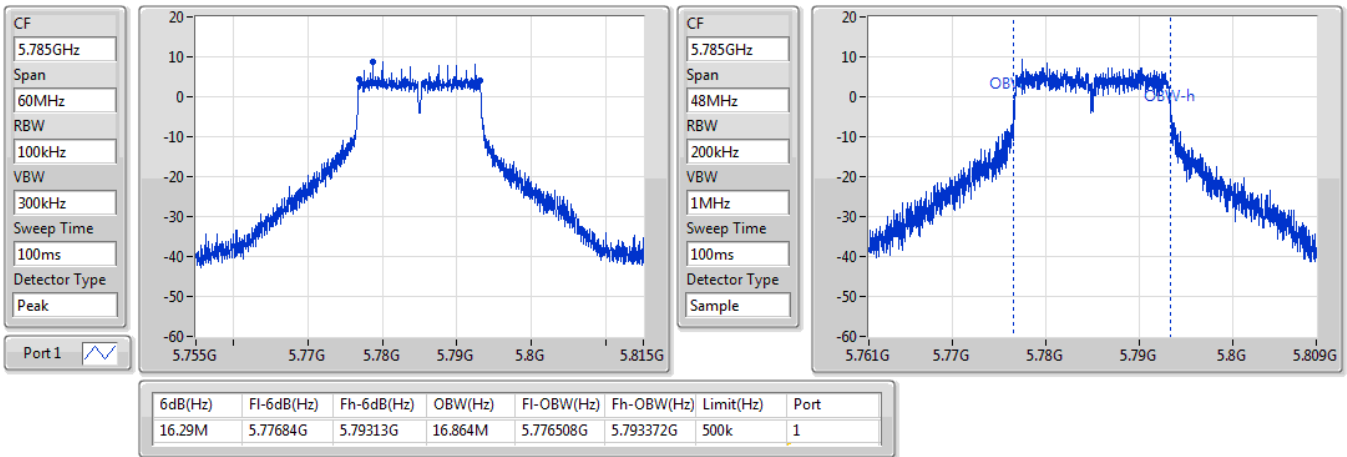

802.11a_Nss1,(6Mbps)_1TX
EBW
5745MHz

11/11/2020

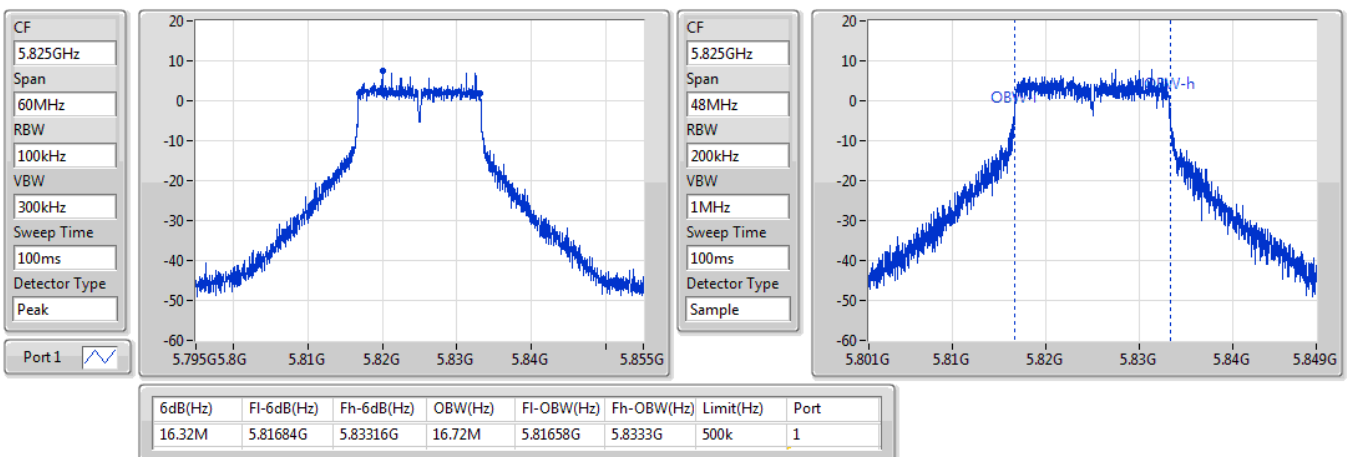


802.11a_Nss1,(6Mbps)_1TX
EBW
5785MHz

11/11/2020

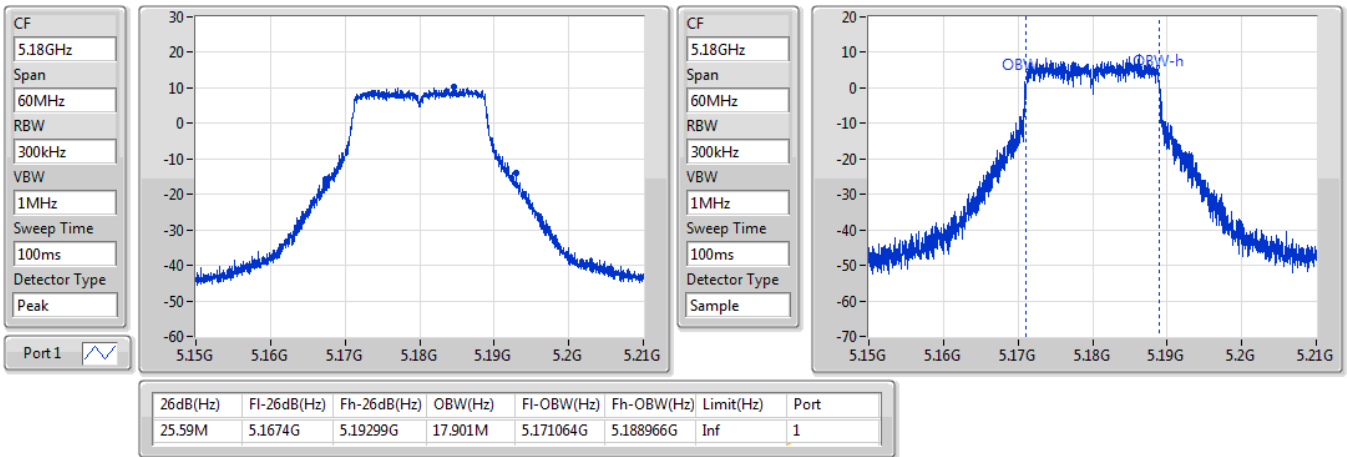

802.11a_Nss1,(6Mbps)_1TX
EBW
5825MHz

11/11/2020

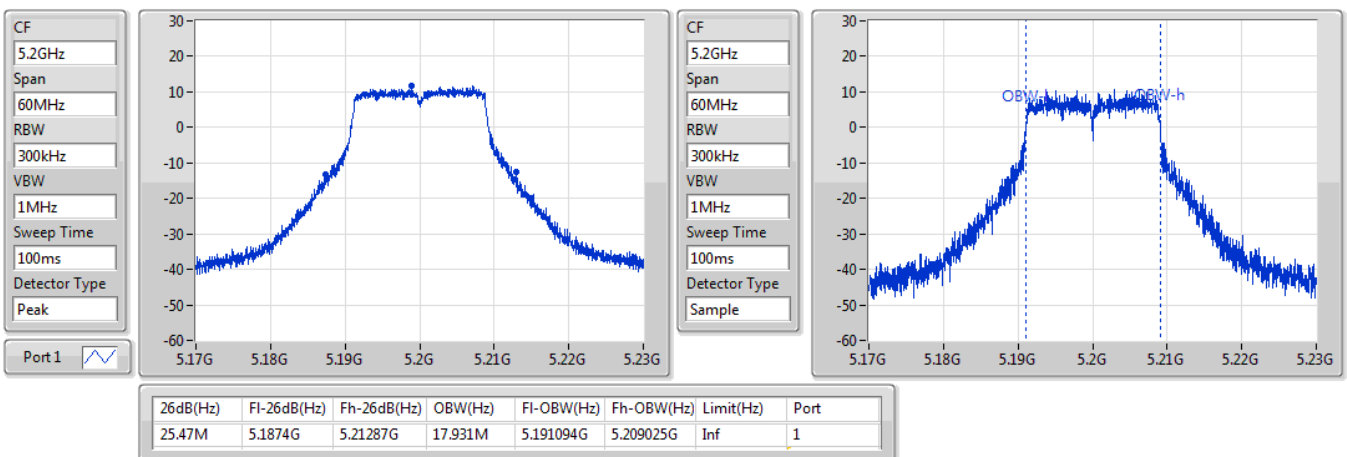


802.11n HT20_Nss1,(MCS0)_1TX
EBW
5180MHz

24/12/2020

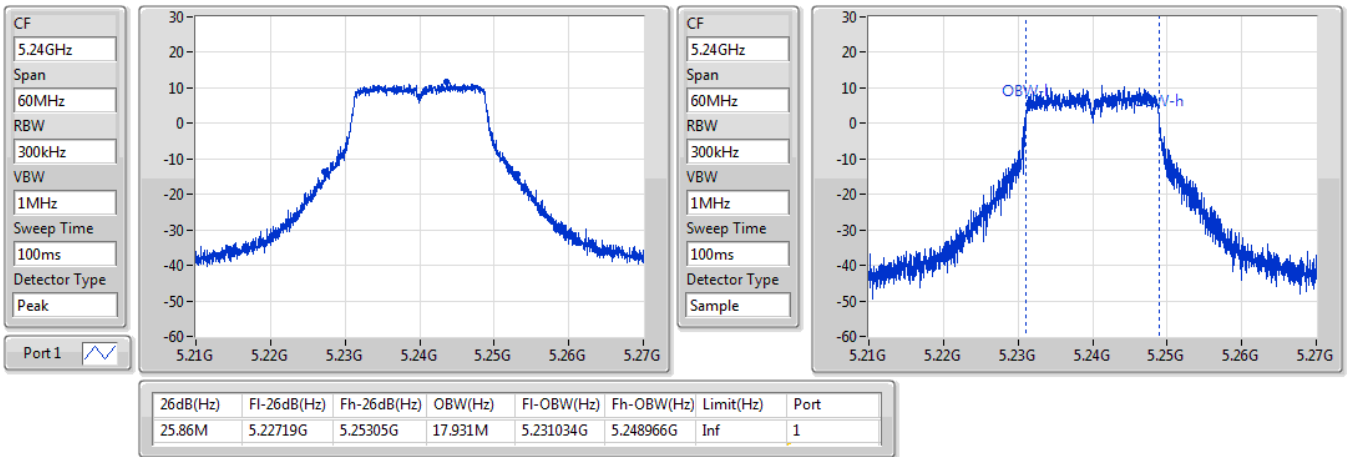

802.11n HT20_Nss1,(MCS0)_1TX
EBW
5200MHz

24/12/2020

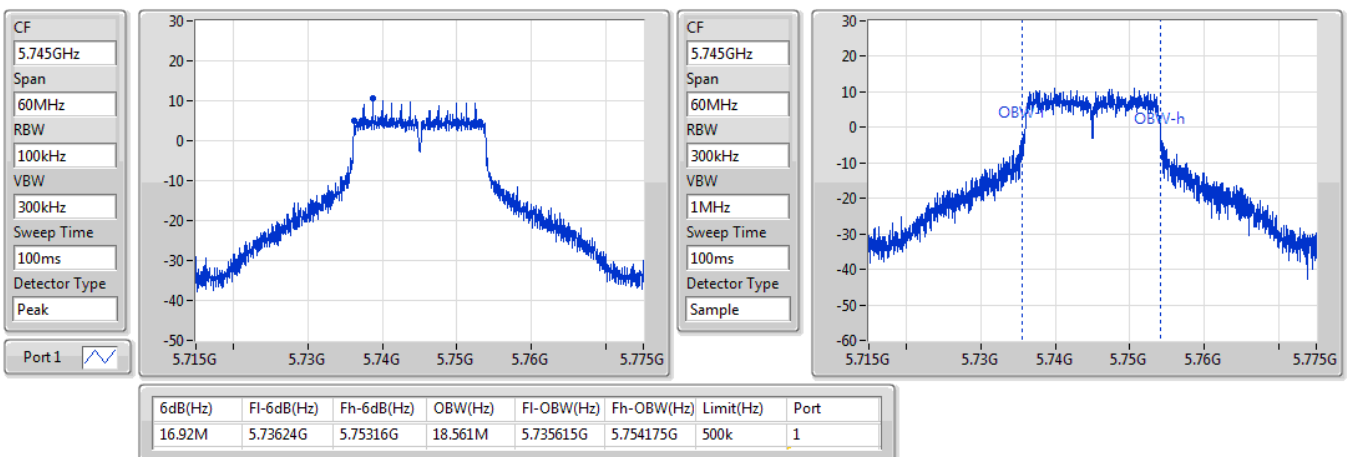


802.11n HT20_Nss1,(MCS0)_1TX
EBW
5240MHz

24/12/2020

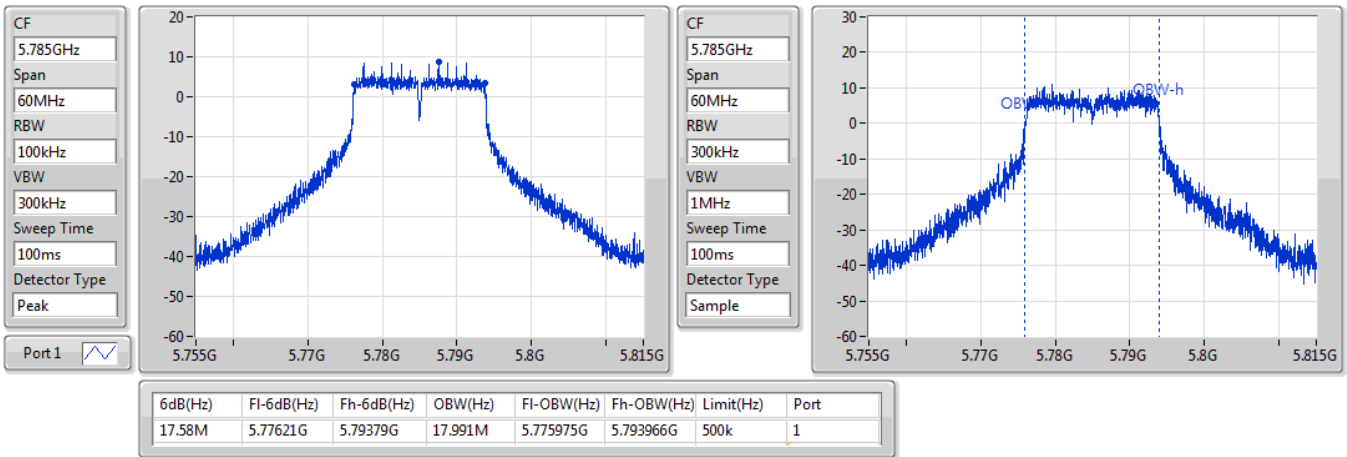

802.11n HT20_Nss1,(MCS0)_1TX
EBW
5745MHz

24/12/2020

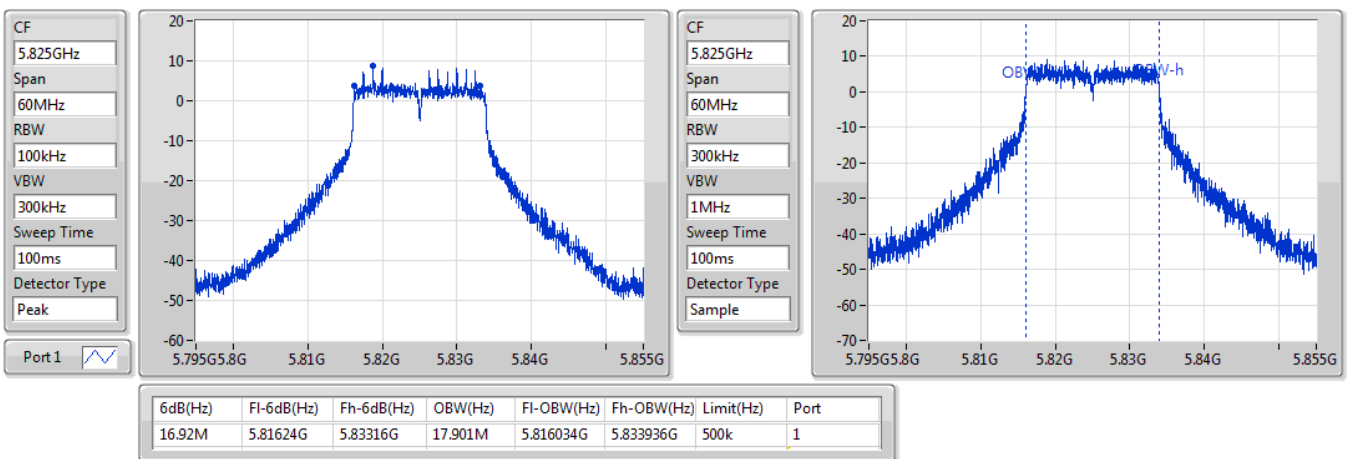


802.11n HT20_Nss1,(MCS0)_1TX
EBW
5785MHz

24/12/2020

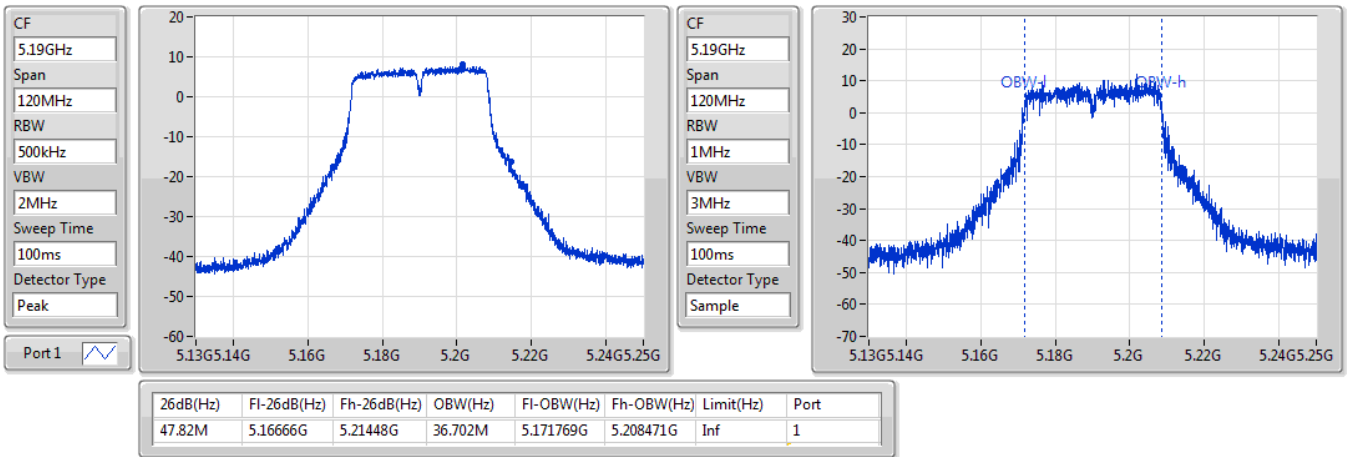

802.11n HT20_Nss1,(MCS0)_1TX
EBW
5825MHz

24/12/2020

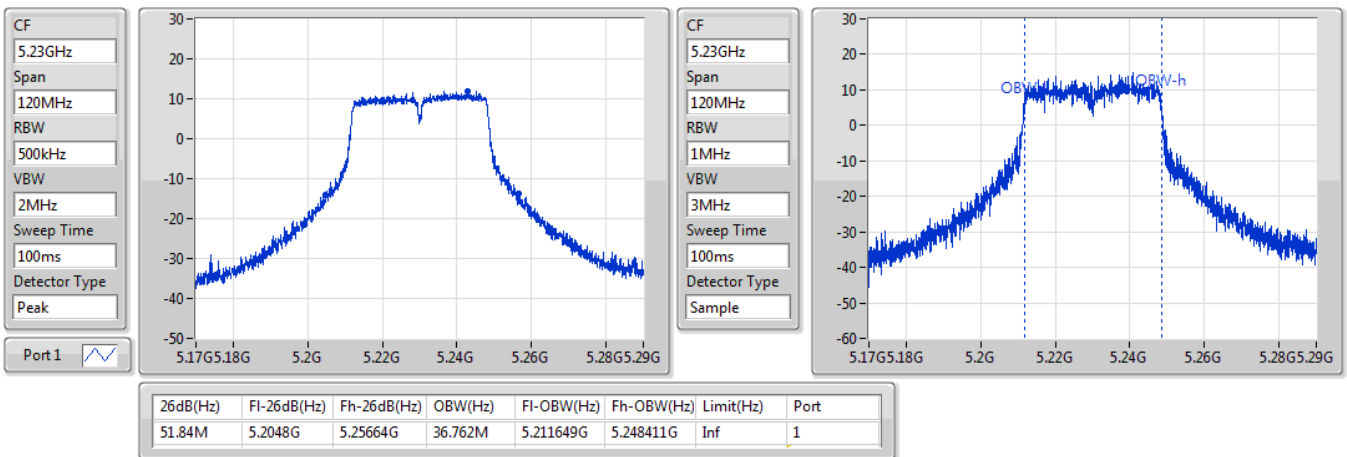


802.11n HT40_Nss1,(MCS0)_1TX
EBW
5190MHz

24/12/2020

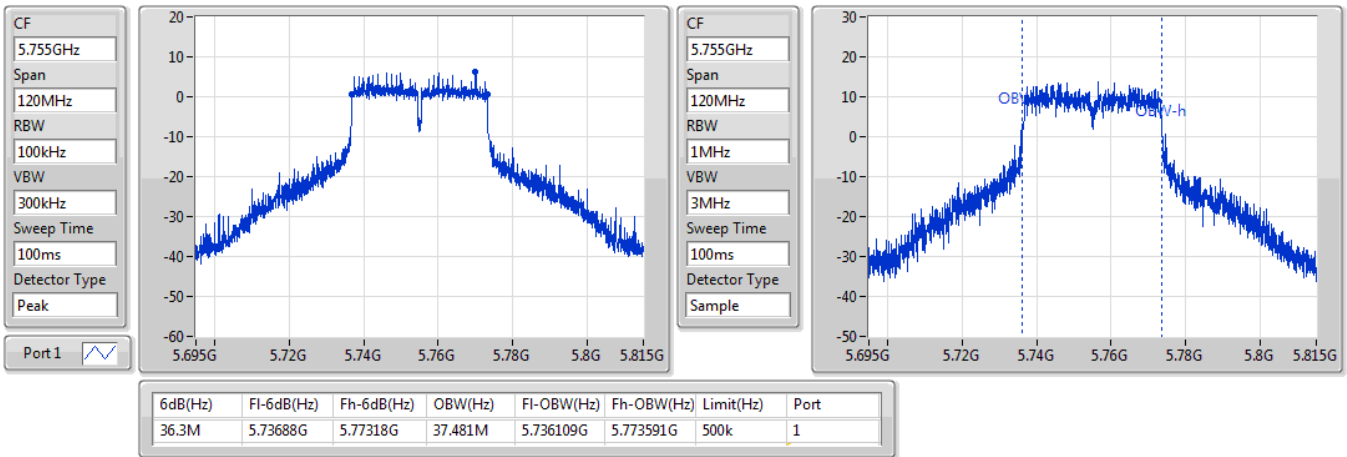

802.11n HT40_Nss1,(MCS0)_1TX
EBW
5230MHz

24/12/2020

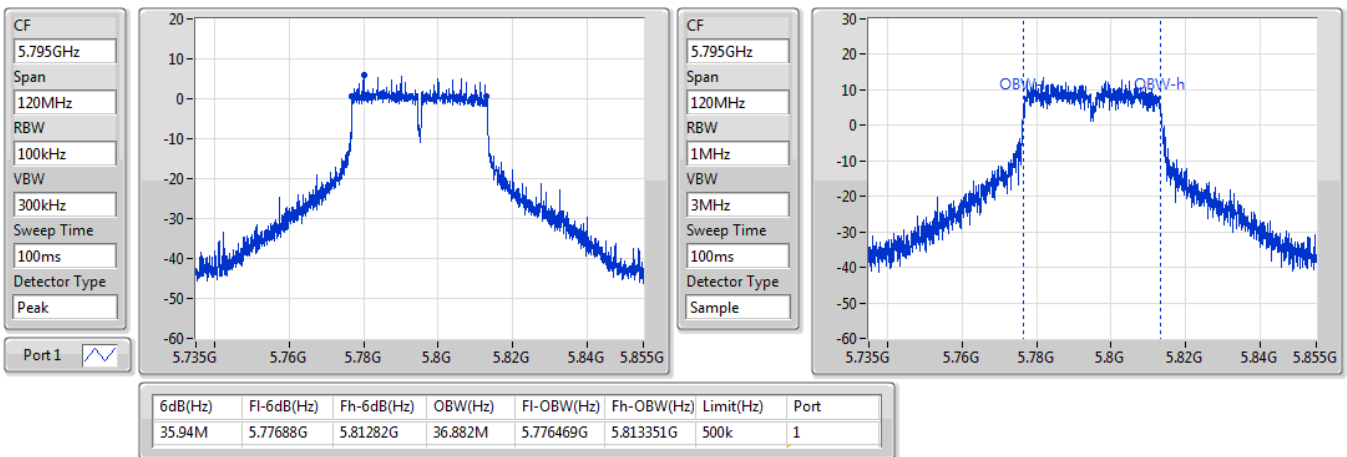


802.11n HT40_Nss1,(MCS0)_1TX
EBW
5755MHz

24/12/2020

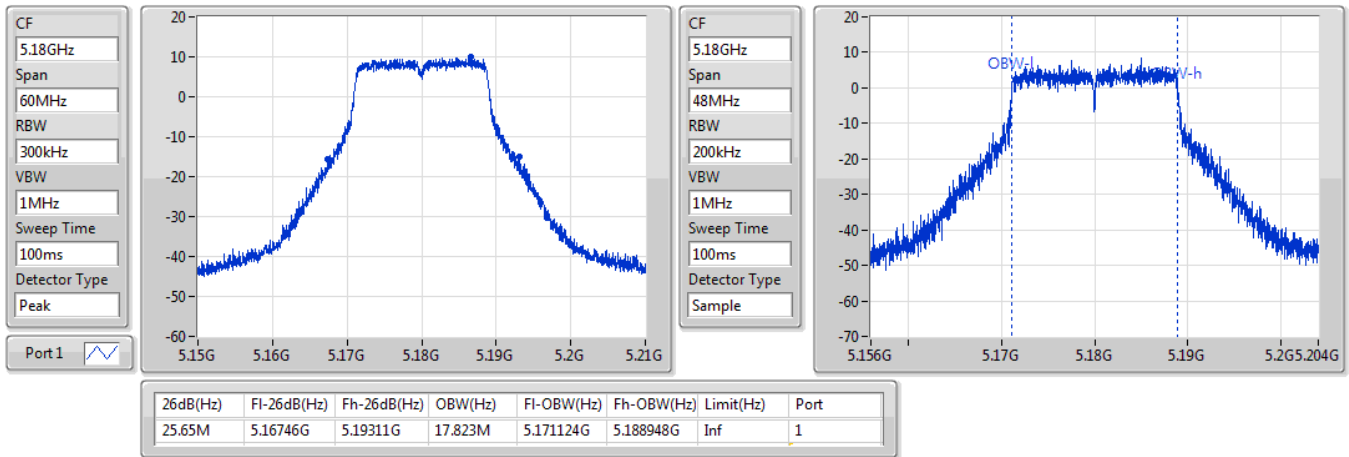

802.11n HT40_Nss1,(MCS0)_1TX
EBW
5795MHz

24/12/2020

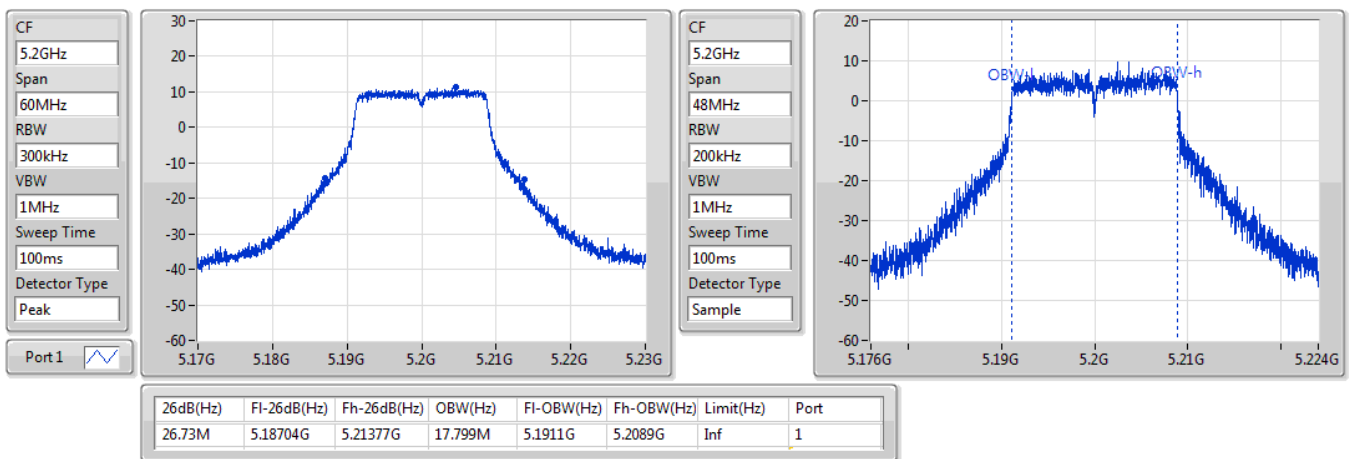


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5180MHz

11/11/2020

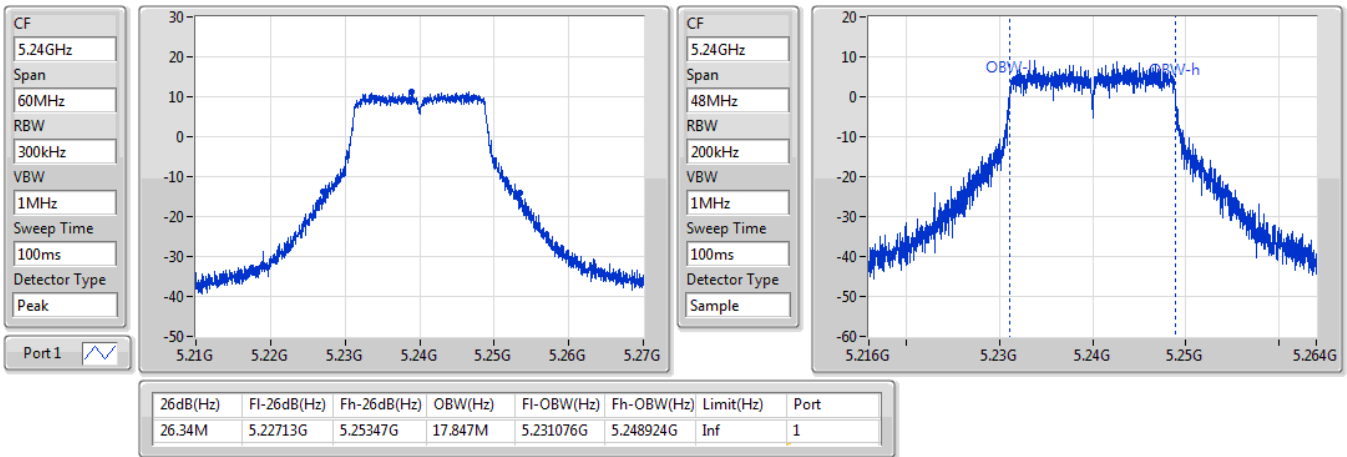

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5200MHz

11/11/2020

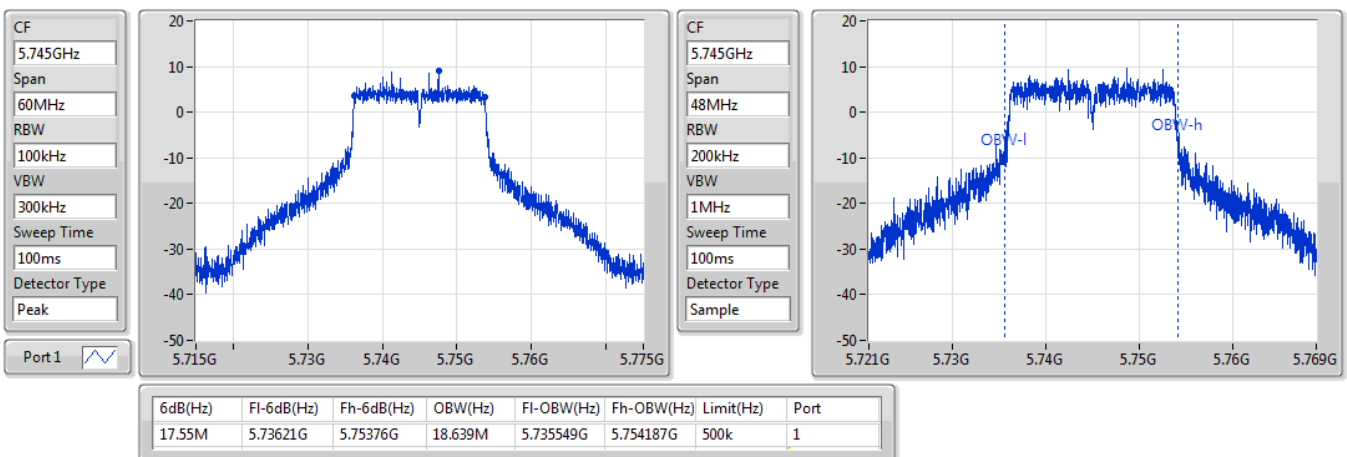


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5240MHz

11/11/2020

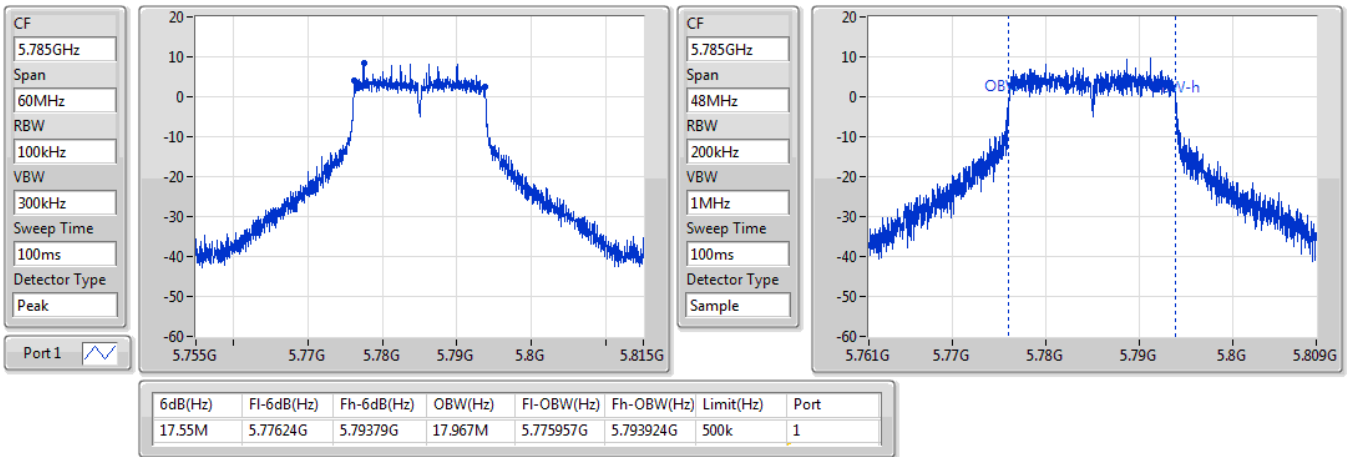

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5745MHz

11/11/2020

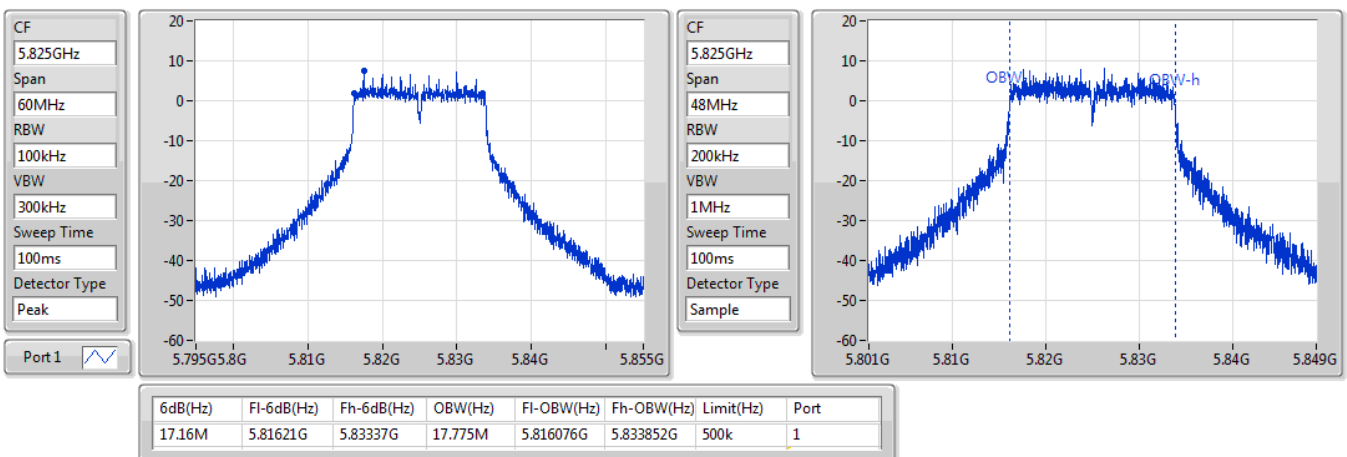


802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5785MHz

11/11/2020

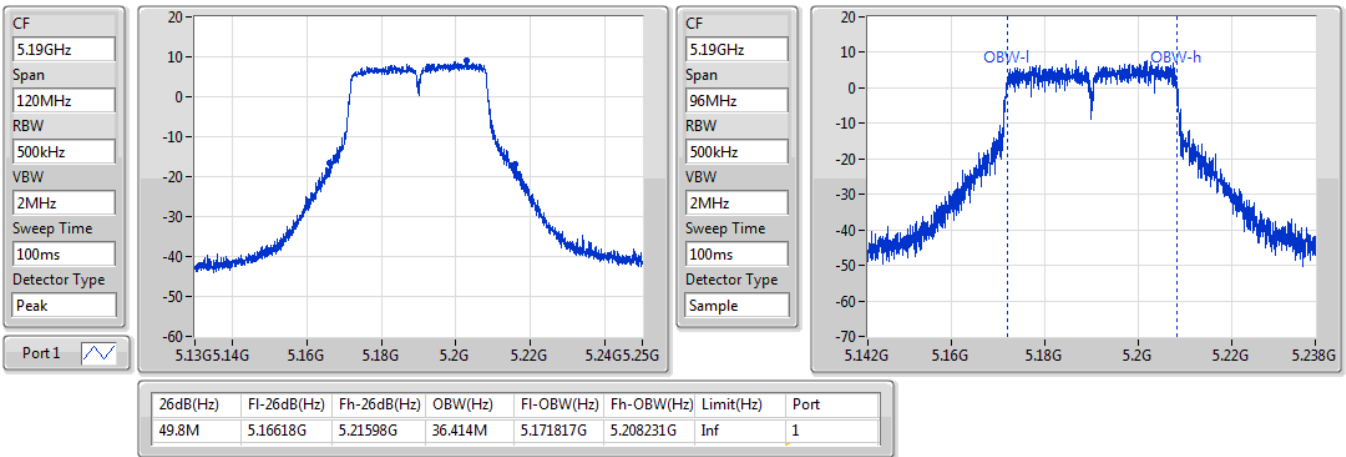

802.11ac VHT20_Nss1,(MCS0)_1TX
EBW
5825MHz

11/11/2020

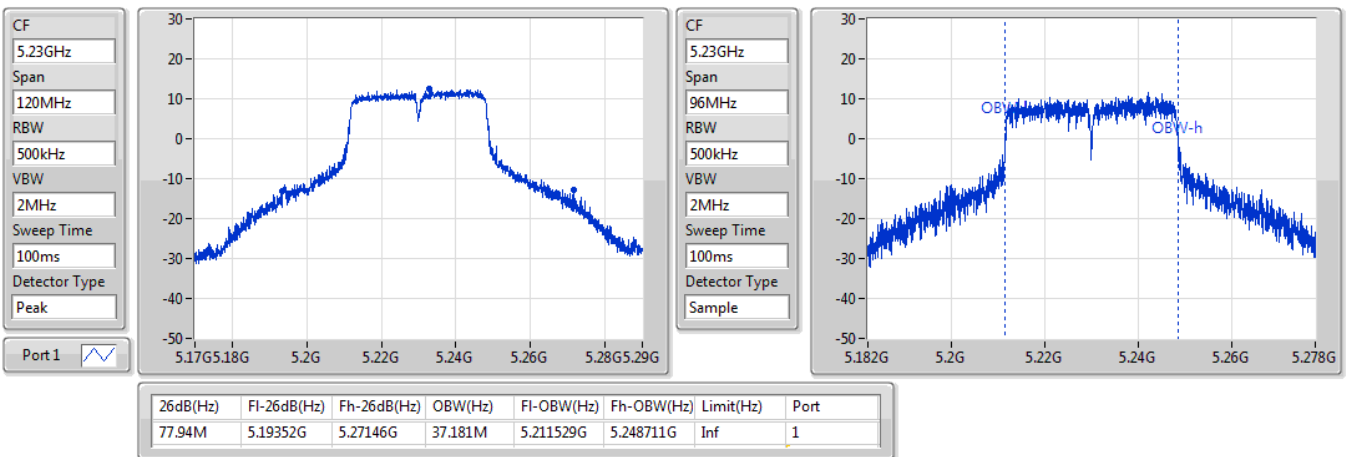


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5190MHz

11/11/2020

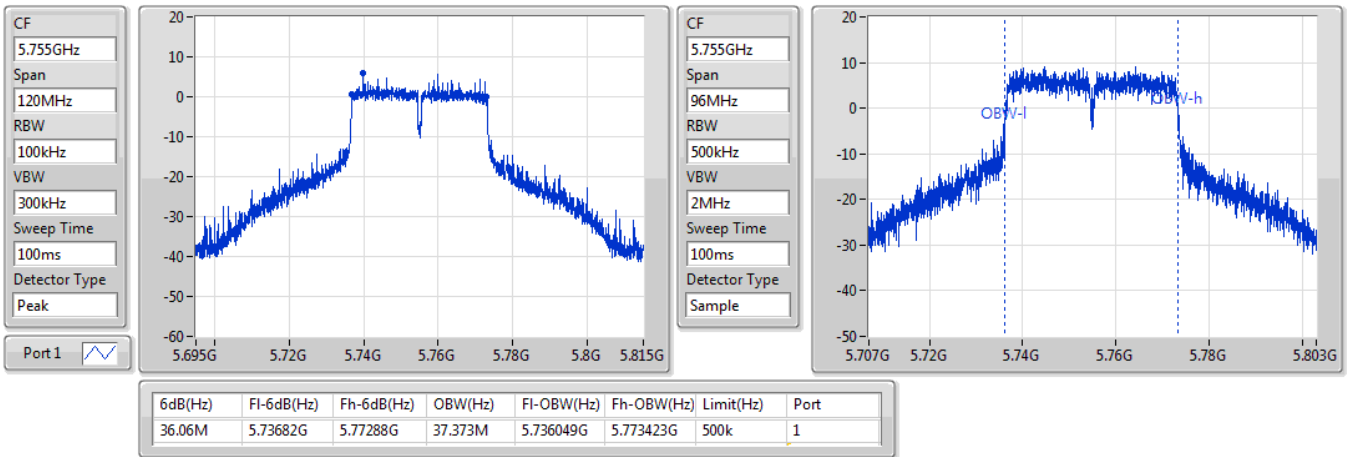

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5230MHz

11/11/2020

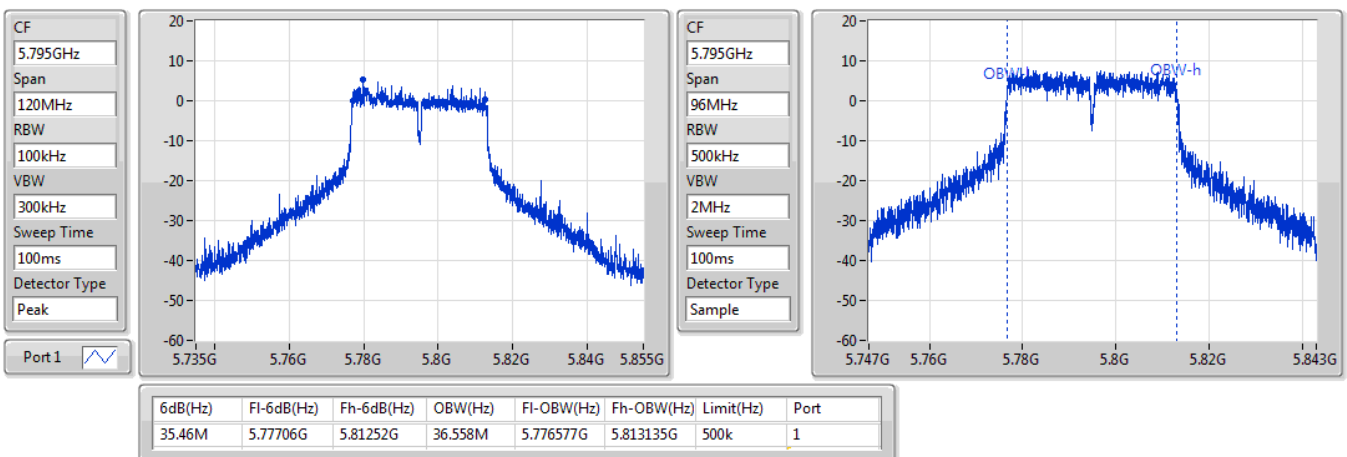


802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5755MHz

11/11/2020

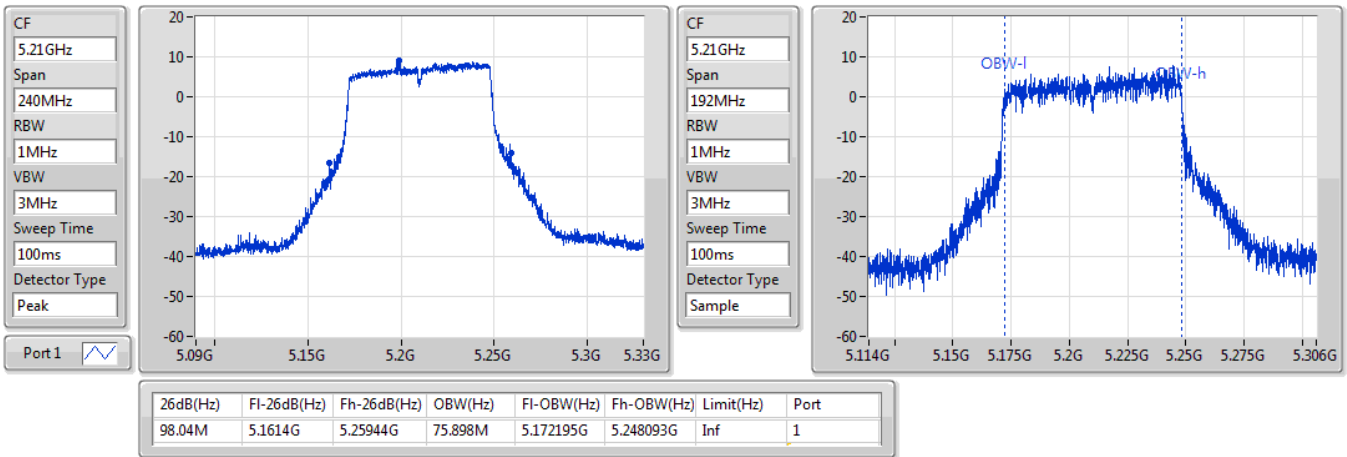

802.11ac VHT40_Nss1,(MCS0)_1TX
EBW
5795MHz

11/11/2020

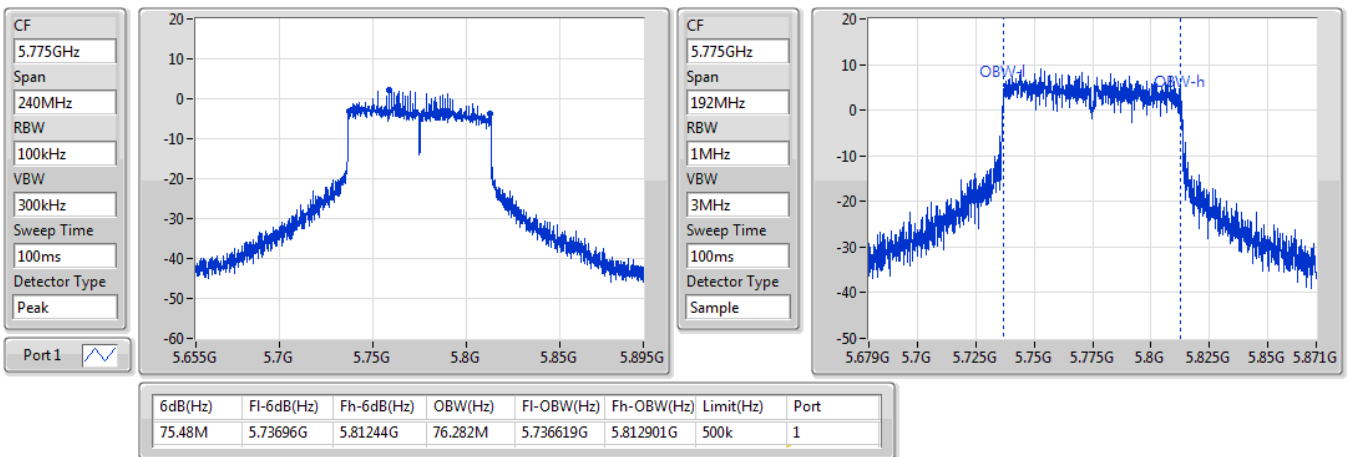


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5210MHz

11/11/2020


802.11ac VHT80_Nss1,(MCS0)_1TX
EBW
5775MHz

11/11/2020



**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	27.67	0.58479	32.02	1.59221
802.11n HT20_Nss1,(MCS0)_2TX	27.97	0.62661	32.32	1.70608
802.11n HT40_Nss1,(MCS0)_2TX	27.66	0.58345	32.01	1.58855
802.11ac VHT20_Nss1,(MCS0)_2TX	28.02	0.63387	32.37	1.72584
802.11ac VHT40_Nss1,(MCS0)_2TX	27.71	0.59020	32.06	1.60694
802.11ac VHT80_Nss1,(MCS0)_2TX	21.72	0.14859	26.07	0.40458
802.11ax HEW20_Nss1,(MCS0)_2TX	28.63	0.72946	32.98	1.98609
802.11ax HEW40_Nss1,(MCS0)_2TX	27.73	0.59293	32.08	1.61436
802.11ax HEW80_Nss1,(MCS0)_2TX	22.01	0.15885	26.36	0.43251
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	28.96	0.78705	33.31	2.14289
802.11n HT20_Nss1,(MCS0)_2TX	27.64	0.58076	31.99	1.58125
802.11n HT40_Nss1,(MCS0)_2TX	27.54	0.56754	31.89	1.54525
802.11ac VHT20_Nss1,(MCS0)_2TX	27.67	0.58479	32.02	1.59221
802.11ac VHT40_Nss1,(MCS0)_2TX	27.61	0.57677	31.96	1.57036
802.11ac VHT80_Nss1,(MCS0)_2TX	22.63	0.18323	26.98	0.49888
802.11ax HEW20_Nss1,(MCS0)_2TX	27.72	0.59156	32.07	1.61065
802.11ax HEW40_Nss1,(MCS0)_2TX	27.65	0.58210	32.00	1.58489
802.11ax HEW80_Nss1,(MCS0)_2TX	22.69	0.18578	27.04	0.50582



Average Power_Non-Beamforming_Radio 1

Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	4.35	24.82	24.50	27.67	30.00	32.02	36.00
5200MHz	Pass	4.35	25.29	23.93	27.67	30.00	32.02	36.00
5240MHz	Pass	4.35	24.08	25.10	27.63	30.00	31.98	36.00
5745MHz	Pass	4.35	25.01	26.72	28.96	30.00	33.31	36.00
5785MHz	Pass	4.35	23.76	26.40	28.29	30.00	32.64	36.00
5825MHz	Pass	4.35	24.11	26.12	28.24	30.00	32.59	36.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	4.35	24.03	23.94	27.00	30.00	31.35	36.00
5200MHz	Pass	4.35	25.49	24.36	27.97	30.00	32.32	36.00
5240MHz	Pass	4.35	24.04	25.29	27.72	30.00	32.07	36.00
5745MHz	Pass	4.35	23.65	25.43	27.64	30.00	31.99	36.00
5785MHz	Pass	4.35	22.86	25.58	27.44	30.00	31.79	36.00
5825MHz	Pass	4.35	23.17	25.03	27.21	30.00	31.56	36.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	4.35	21.28	20.65	23.99	30.00	28.34	36.00
5230MHz	Pass	4.35	24.63	24.66	27.66	30.00	32.01	36.00
5755MHz	Pass	4.35	23.37	25.44	27.54	30.00	31.89	36.00
5795MHz	Pass	4.35	22.81	24.78	26.92	30.00	31.27	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	4.35	24.28	24.07	27.19	30.00	31.54	36.00
5200MHz	Pass	4.35	23.79	24.64	27.25	30.00	31.60	36.00
5240MHz	Pass	4.35	24.45	25.50	28.02	30.00	32.37	36.00
5745MHz	Pass	4.35	23.73	25.42	27.67	30.00	32.02	36.00
5785MHz	Pass	4.35	22.84	25.61	27.45	30.00	31.80	36.00
5825MHz	Pass	4.35	23.12	25.10	27.23	30.00	31.58	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	4.35	21.30	20.66	24.00	30.00	28.35	36.00
5230MHz	Pass	4.35	24.62	24.78	27.71	30.00	32.06	36.00
5755MHz	Pass	4.35	23.39	25.55	27.61	30.00	31.96	36.00
5795MHz	Pass	4.35	22.71	24.87	26.93	30.00	31.28	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	4.35	19.21	18.14	21.72	30.00	26.07	36.00
5775MHz	Pass	4.35	18.09	20.75	22.63	30.00	26.98	36.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	4.35	24.33	24.16	27.26	30.00	31.61	36.00
5200MHz	Pass	4.35	26.26	24.86	28.63	30.00	32.98	36.00
5240MHz	Pass	4.35	24.57	25.50	28.07	30.00	32.42	36.00
5745MHz	Pass	4.35	23.64	25.57	27.72	30.00	32.07	36.00
5785MHz	Pass	4.35	22.68	25.75	27.49	30.00	31.84	36.00
5825MHz	Pass	4.35	23.08	25.29	27.33	30.00	31.68	36.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	4.35	21.36	20.66	24.03	30.00	28.38	36.00
5230MHz	Pass	4.35	24.53	24.90	27.73	30.00	32.08	36.00
5755MHz	Pass	4.35	23.25	25.69	27.65	30.00	32.00	36.00
5795MHz	Pass	4.35	22.34	25.23	27.03	30.00	31.38	36.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	4.35	19.62	18.27	22.01	30.00	26.36	36.00
5775MHz	Pass	4.35	18.03	20.87	22.69	30.00	27.04	36.00

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

**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	20.28	0.10666	24.44	0.27797
802.11n HT20_Nss1,(MCS0)_1TX	20.03	0.10069	24.19	0.26242
802.11n HT40_Nss1,(MCS0)_1TX	20.94	0.12417	25.10	0.32359
802.11ac VHT20_Nss1,(MCS0)_1TX	20.12	0.10280	24.28	0.26792
802.11ac VHT40_Nss1,(MCS0)_1TX	21.90	0.15488	26.06	0.40365
802.11ac VHT80_Nss1,(MCS0)_1TX	17.13	0.05164	21.29	0.13459
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	20.26	0.10617	24.42	0.27669
802.11n HT20_Nss1,(MCS0)_1TX	20.17	0.10399	24.33	0.27102
802.11n HT40_Nss1,(MCS0)_1TX	19.92	0.09817	24.08	0.25586
802.11ac VHT20_Nss1,(MCS0)_1TX	20.25	0.10593	24.41	0.27606
802.11ac VHT40_Nss1,(MCS0)_1TX	19.97	0.09931	24.13	0.25882
802.11ac VHT80_Nss1,(MCS0)_1TX	18.75	0.07499	22.91	0.19543



Average Power_Non-Beamforming_Radio 2

Appendix C.2

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-
5180MHz	Pass	4.16	18.95	18.95	30.00	23.11	36.00
5200MHz	Pass	4.16	20.02	20.02	30.00	24.18	36.00
5240MHz	Pass	4.16	20.28	20.28	30.00	24.44	36.00
5745MHz	Pass	4.16	20.26	20.26	30.00	24.42	36.00
5785MHz	Pass	4.16	19.52	19.52	30.00	23.68	36.00
5825MHz	Pass	4.16	18.39	18.39	30.00	22.55	36.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5180MHz	Pass	4.16	18.75	18.75	30.00	22.91	36.00
5200MHz	Pass	4.16	19.96	19.96	30.00	24.12	36.00
5240MHz	Pass	4.16	20.03	20.03	30.00	24.19	36.00
5745MHz	Pass	4.16	20.17	20.17	30.00	24.33	36.00
5785MHz	Pass	4.16	19.16	19.16	30.00	23.32	36.00
5825MHz	Pass	4.16	18.23	18.23	30.00	22.39	36.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5190MHz	Pass	4.16	17.41	17.41	30.00	21.57	36.00
5230MHz	Pass	4.16	20.94	20.94	30.00	25.10	36.00
5755MHz	Pass	4.16	19.92	19.92	30.00	24.08	36.00
5795MHz	Pass	4.16	18.92	18.92	30.00	23.08	36.00
802.11ac VHT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5180MHz	Pass	4.16	18.80	18.80	30.00	22.96	36.00
5200MHz	Pass	4.16	20.00	20.00	30.00	24.16	36.00
5240MHz	Pass	4.16	20.12	20.12	30.00	24.28	36.00
5745MHz	Pass	4.16	20.25	20.25	30.00	24.41	36.00
5785MHz	Pass	4.16	19.39	19.39	30.00	23.55	36.00
5825MHz	Pass	4.16	18.32	18.32	30.00	22.48	36.00
802.11ac VHT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5190MHz	Pass	4.16	18.27	18.27	30.00	22.43	36.00
5230MHz	Pass	4.16	21.90	21.90	30.00	26.06	36.00
5755MHz	Pass	4.16	19.97	19.97	30.00	24.13	36.00
5795MHz	Pass	4.16	19.00	19.00	30.00	23.16	36.00
802.11ac VHT80_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-
5210MHz	Pass	4.16	17.13	17.13	30.00	21.29	36.00
5775MHz	Pass	4.16	18.75	18.75	30.00	22.91	36.00

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

**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	28.63	0.72946	35.99	3.97192
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	27.73	0.59293	35.09	3.22849
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	22.01	0.15885	29.37	0.86497
5.725-5.85GHz	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	27.72	0.59156	35.08	3.22107
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	27.65	0.58210	35.01	3.16957
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	22.69	0.18578	30.05	1.01158



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	7.36	24.33	24.16	27.26	28.64	34.62	36.00
5200MHz	Pass	7.36	26.26	24.86	28.63	28.64	35.99	36.00
5240MHz	Pass	7.36	24.57	25.50	28.07	28.64	35.43	36.00
5745MHz	Pass	7.36	23.64	25.57	27.72	28.64	35.08	36.00
5785MHz	Pass	7.36	22.68	25.75	27.49	28.64	34.85	36.00
5825MHz	Pass	7.36	23.08	25.29	27.33	28.64	34.69	36.00
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	7.36	21.36	20.66	24.03	28.64	31.39	36.00
5230MHz	Pass	7.36	24.53	24.90	27.73	28.64	35.09	36.00
5755MHz	Pass	7.36	23.25	25.69	27.65	28.64	35.01	36.00
5795MHz	Pass	7.36	22.34	25.23	27.03	28.64	34.39	36.00
802.11ax HEW80-BF_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	7.36	19.62	18.27	22.01	28.64	29.37	36.00
5775MHz	Pass	7.36	18.03	20.87	22.69	28.64	30.05	36.00

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

**Summary**

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	15.45	22.81
802.11n HT20_Nss1,(MCS0)_2TX	15.51	22.87
802.11n HT40_Nss1,(MCS0)_2TX	12.99	20.35
802.11ac VHT20_Nss1,(MCS0)_2TX	15.49	22.85
802.11ac VHT40_Nss1,(MCS0)_2TX	13.00	20.36
802.11ac VHT80_Nss1,(MCS0)_2TX	3.47	10.83
802.11ax HEW20_Nss1,(MCS0)_2TX	15.60	22.96
802.11ax HEW40_Nss1,(MCS0)_2TX	12.23	19.59
802.11ax HEW80_Nss1,(MCS0)_2TX	5.85	13.21
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	14.97	22.33
802.11n HT20_Nss1,(MCS0)_2TX	13.52	20.88
802.11n HT40_Nss1,(MCS0)_2TX	11.13	18.49
802.11ac VHT20_Nss1,(MCS0)_2TX	13.38	20.74
802.11ac VHT40_Nss1,(MCS0)_2TX	11.42	18.78
802.11ac VHT80_Nss1,(MCS0)_2TX	2.64	10.00
802.11ax HEW20_Nss1,(MCS0)_2TX	12.86	20.22
802.11ax HEW40_Nss1,(MCS0)_2TX	9.95	17.31
802.11ax HEW80_Nss1,(MCS0)_2TX	2.72	10.08

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;



Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	7.36	12.68	12.58	15.43	15.64	22.79	23.00
5200MHz	Pass	7.36	12.98	12.01	15.30	15.64	22.66	23.00
5240MHz	Pass	7.36	12.03	13.05	15.45	15.64	22.81	23.00
5745MHz	Pass	7.36	10.95	12.86	14.97	28.64	22.33	36.00
5785MHz	Pass	7.36	9.70	12.33	14.18	28.64	21.54	36.00
5825MHz	Pass	7.36	9.98	12.19	14.08	28.64	21.44	36.00
802.11n HT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	7.36	11.98	12.22	14.89	15.64	22.25	23.00
5200MHz	Pass	7.36	12.79	11.89	15.26	15.64	22.62	23.00
5240MHz	Pass	7.36	12.10	12.95	15.51	15.64	22.87	23.00
5745MHz	Pass	7.36	9.67	11.43	13.52	28.64	20.88	36.00
5785MHz	Pass	7.36	8.69	11.50	13.23	28.64	20.59	36.00
5825MHz	Pass	7.36	9.22	11.08	13.07	28.64	20.43	36.00
802.11n HT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	7.36	6.43	5.95	8.98	15.64	16.34	23.00
5230MHz	Pass	7.36	9.81	10.21	12.99	15.64	20.35	23.00
5755MHz	Pass	7.36	6.81	9.21	11.13	28.64	18.49	36.00
5795MHz	Pass	7.36	6.39	8.79	10.59	28.64	17.95	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	7.36	12.25	11.98	14.88	15.64	22.24	23.00
5200MHz	Pass	7.36	13.07	12.16	15.49	15.64	22.85	23.00
5240MHz	Pass	7.36	11.95	13.05	15.43	15.64	22.79	23.00
5745MHz	Pass	7.36	9.46	11.31	13.38	28.64	20.74	36.00
5785MHz	Pass	7.36	8.56	11.59	13.24	28.64	20.60	36.00
5825MHz	Pass	7.36	9.31	11.20	13.19	28.64	20.55	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	7.36	6.56	6.15	9.15	15.64	16.51	23.00
5230MHz	Pass	7.36	9.86	10.15	13.00	15.64	20.36	23.00
5755MHz	Pass	7.36	7.39	9.41	11.42	28.64	18.78	36.00
5795MHz	Pass	7.36	6.80	9.22	11.04	28.64	18.40	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	7.36	0.91	0.12	3.47	15.64	10.83	23.00
5775MHz	Pass	7.36	-2.00	0.93	2.64	28.64	10.00	36.00
802.11ax HEW20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	7.36	11.59	11.39	14.31	15.64	21.67	23.00
5200MHz	Pass	7.36	13.14	12.25	15.60	15.64	22.96	23.00
5240MHz	Pass	7.36	12.06	12.79	15.36	15.64	22.72	23.00
5745MHz	Pass	7.36	8.84	10.85	12.86	28.64	20.22	36.00
5785MHz	Pass	7.36	8.22	10.98	12.73	28.64	20.09	36.00
5825MHz	Pass	7.36	8.56	10.69	12.60	28.64	19.96	36.00
802.11ax HEW40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	7.36	5.53	5.07	8.06	15.64	15.42	23.00
5230MHz	Pass	7.36	9.22	9.23	12.23	15.64	19.59	23.00
5755MHz	Pass	7.36	5.71	8.07	9.95	28.64	17.31	36.00
5795MHz	Pass	7.36	4.78	7.64	9.39	28.64	16.75	36.00
802.11ax HEW80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	7.36	3.36	2.32	5.85	15.64	13.21	23.00
5775MHz	Pass	7.36	-1.89	1.00	2.72	28.64	10.08	36.00

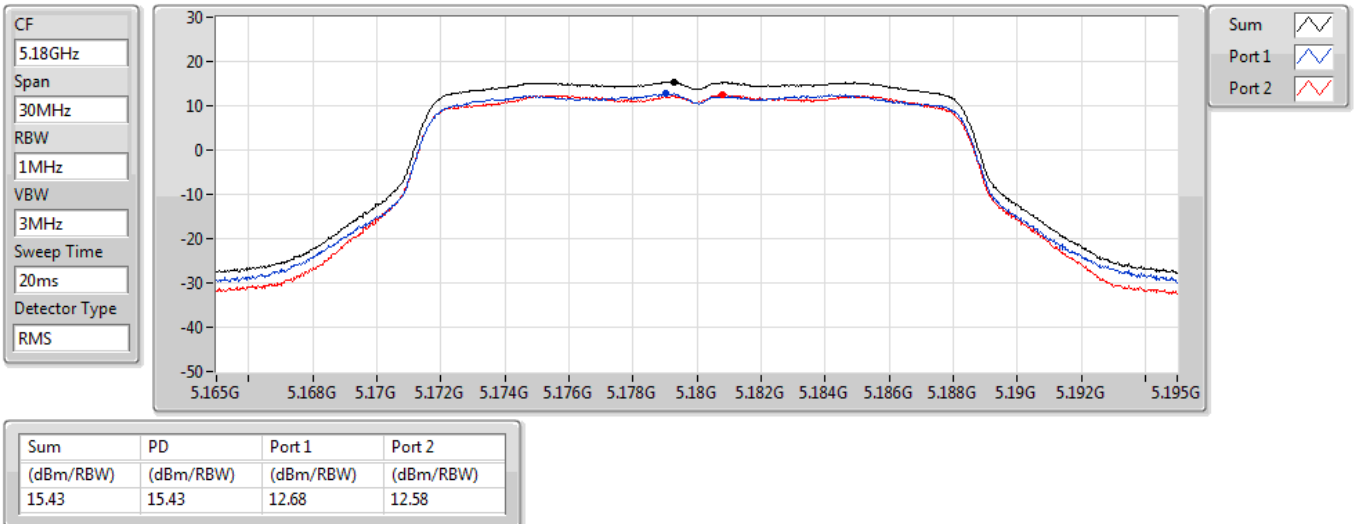
DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

802.11a_Nss1,(6Mbps)_2TX

PSD

5180MHz

24/12/2020

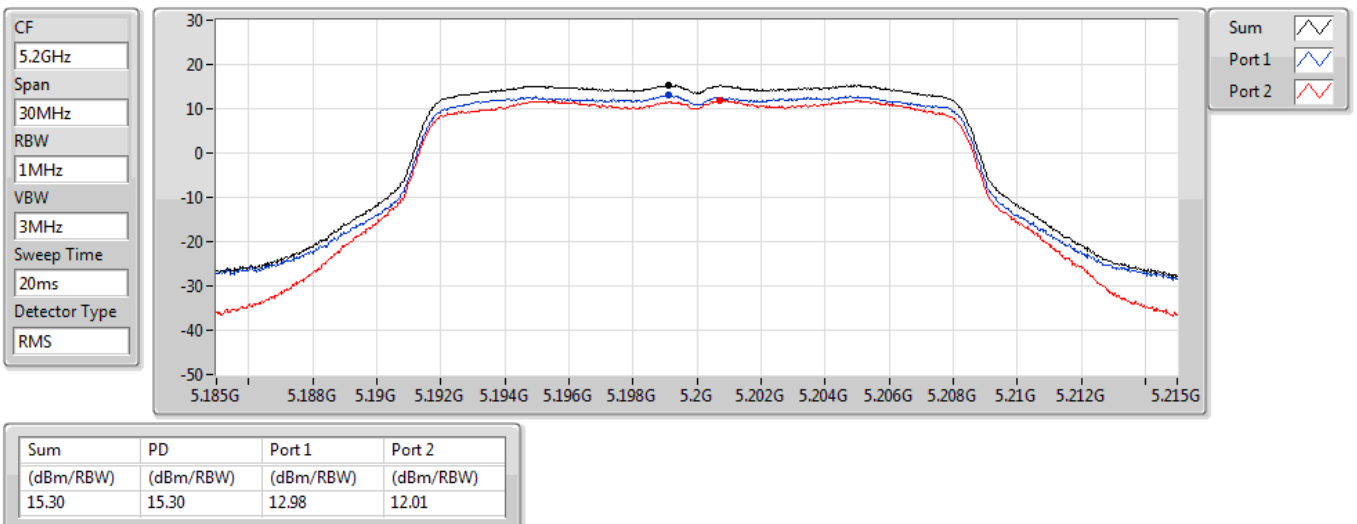


802.11a_Nss1,(6Mbps)_2TX

PSD

5200MHz

24/12/2020

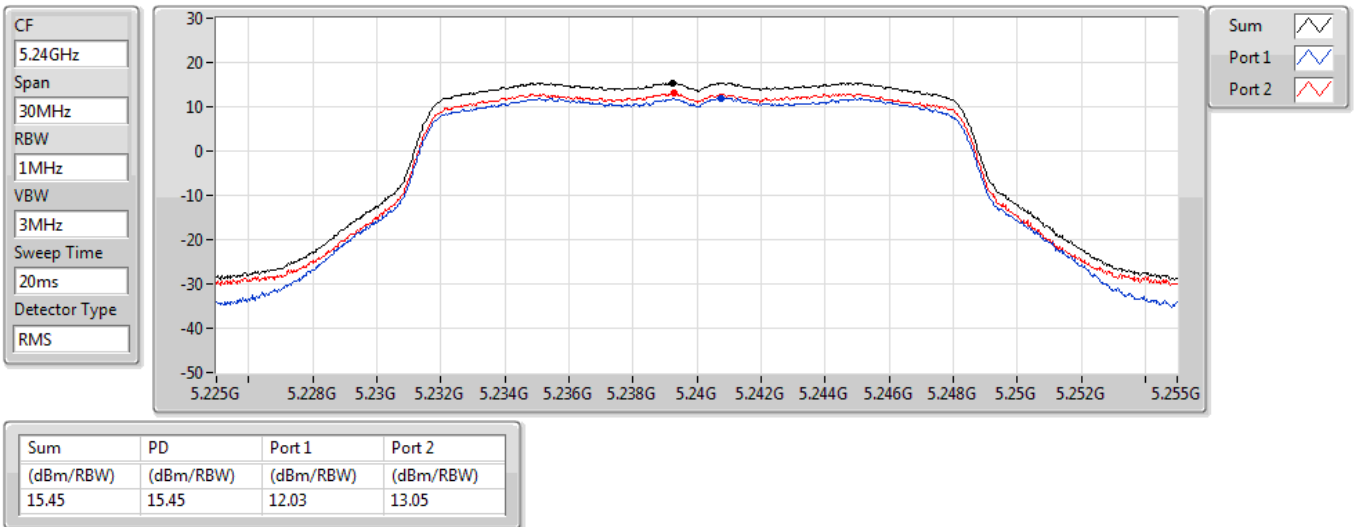


802.11a_Nss1,(6Mbps)_2TX

PSD

5240MHz

24/12/2020

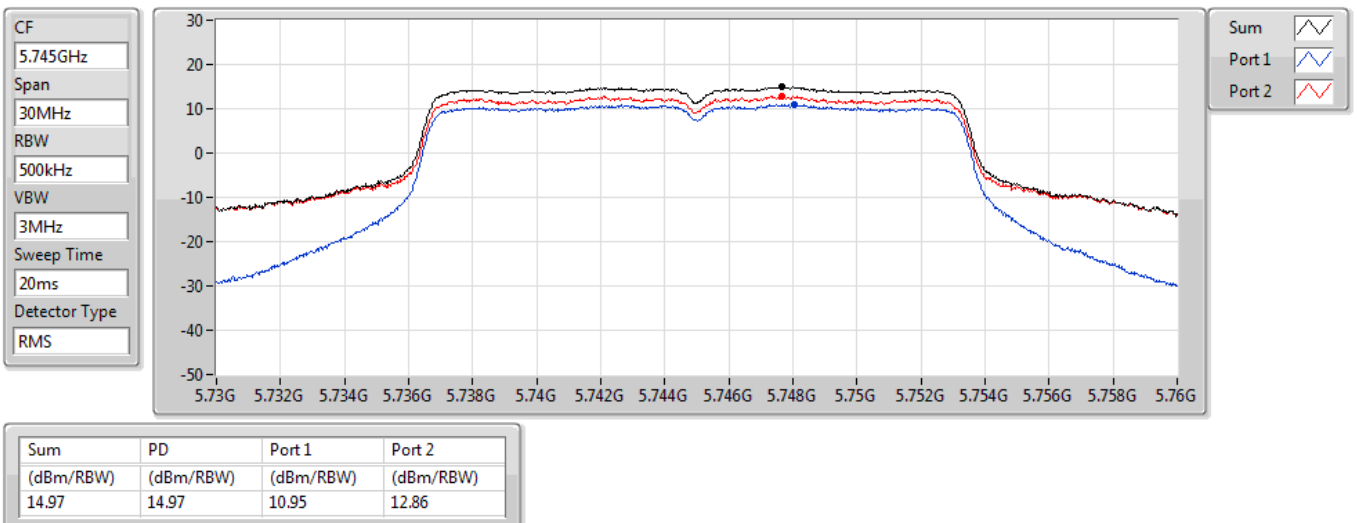


802.11a_Nss1,(6Mbps)_2TX

PSD

5745MHz

24/12/2020

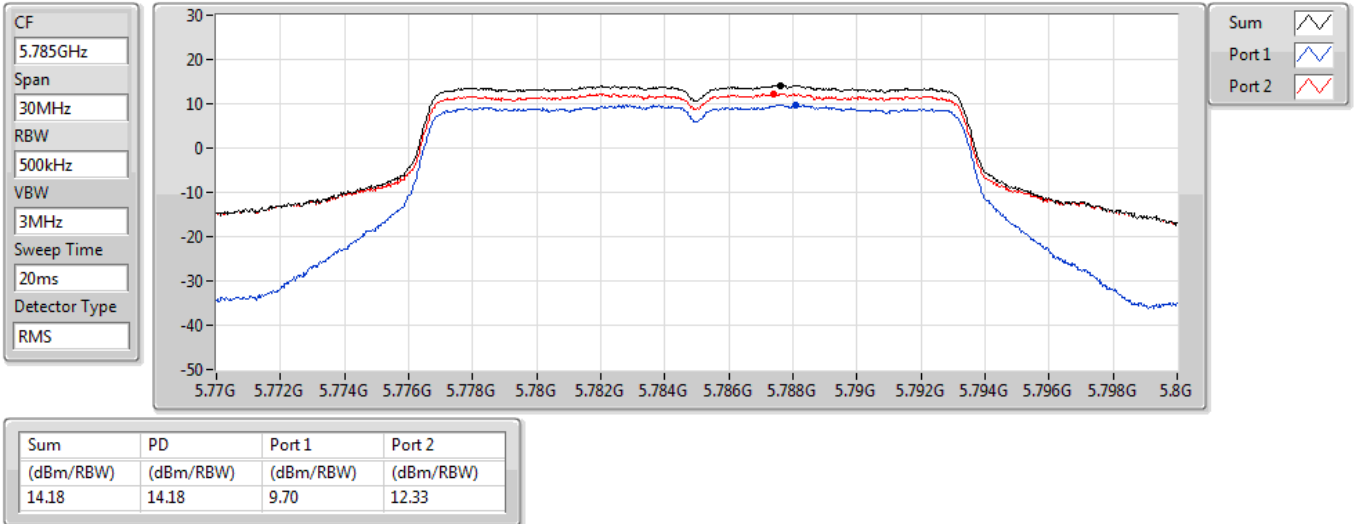


802.11a_Nss1,(6Mbps)_2TX

PSD

5785MHz

24/12/2020

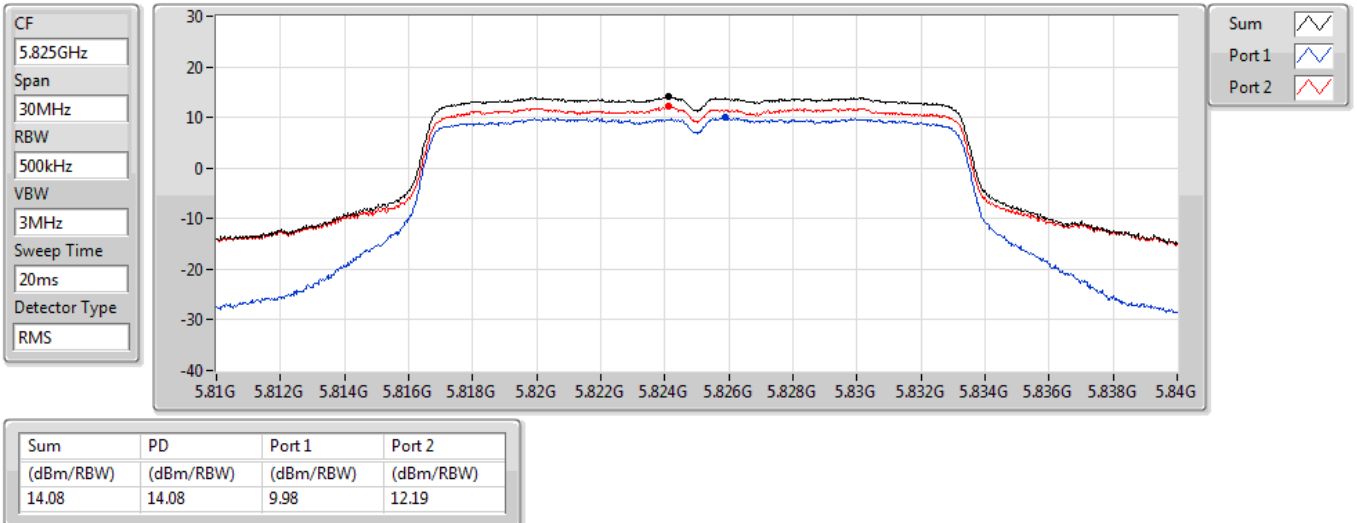


802.11a_Nss1,(6Mbps)_2TX

PSD

5825MHz

24/12/2020

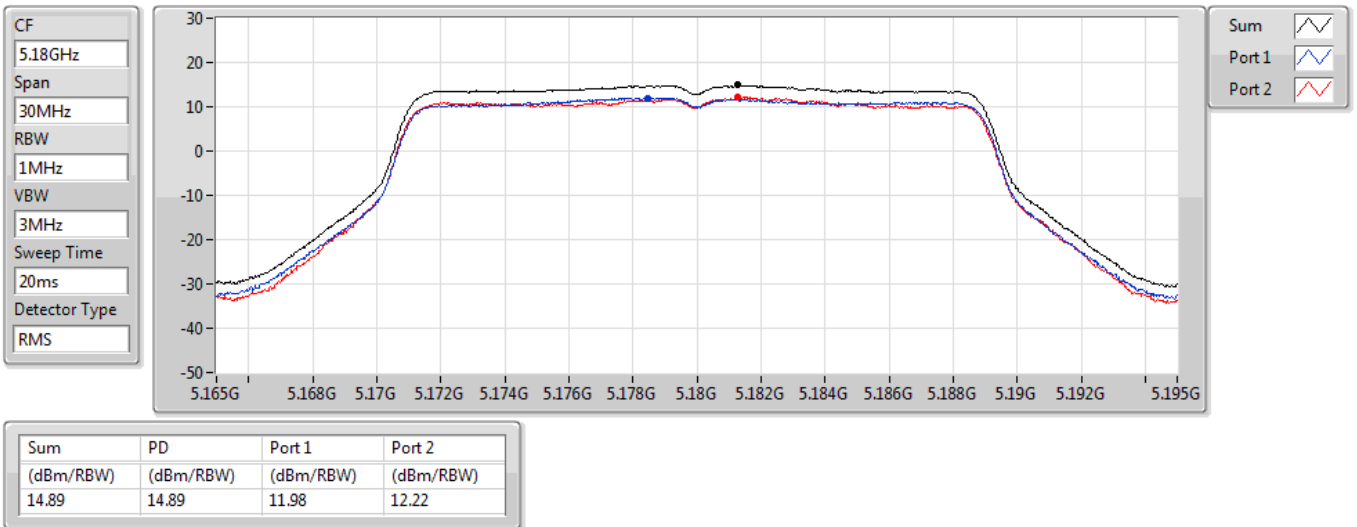


802.11n HT20_Nss1,(MCS0)_2TX

PSD

5180MHz

24/12/2020

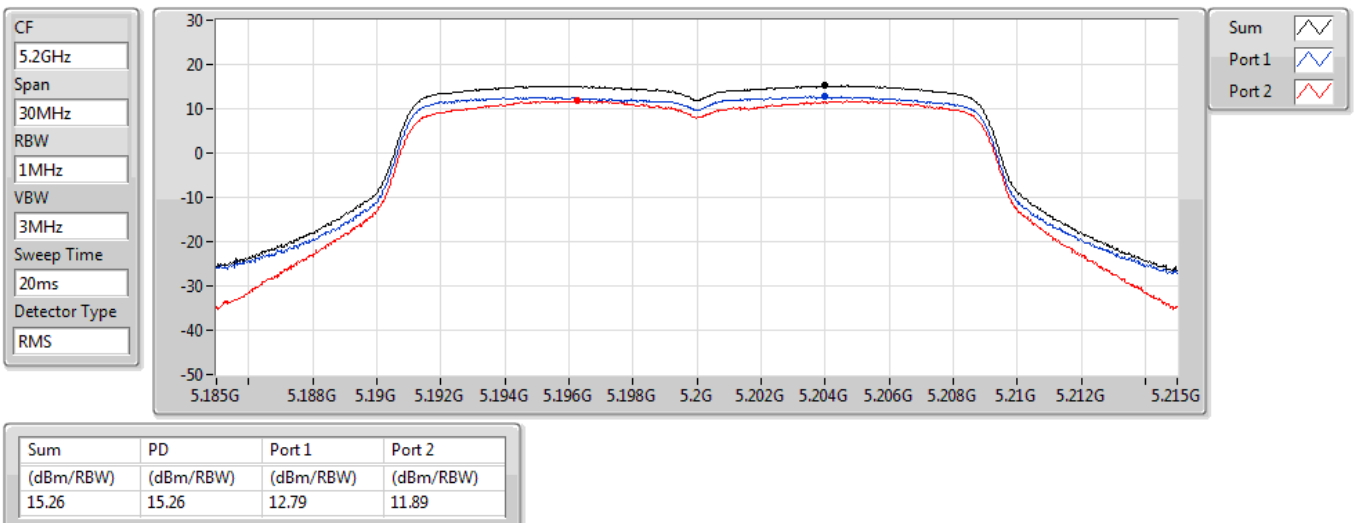


802.11n HT20_Nss1,(MCS0)_2TX

PSD

5200MHz

24/12/2020

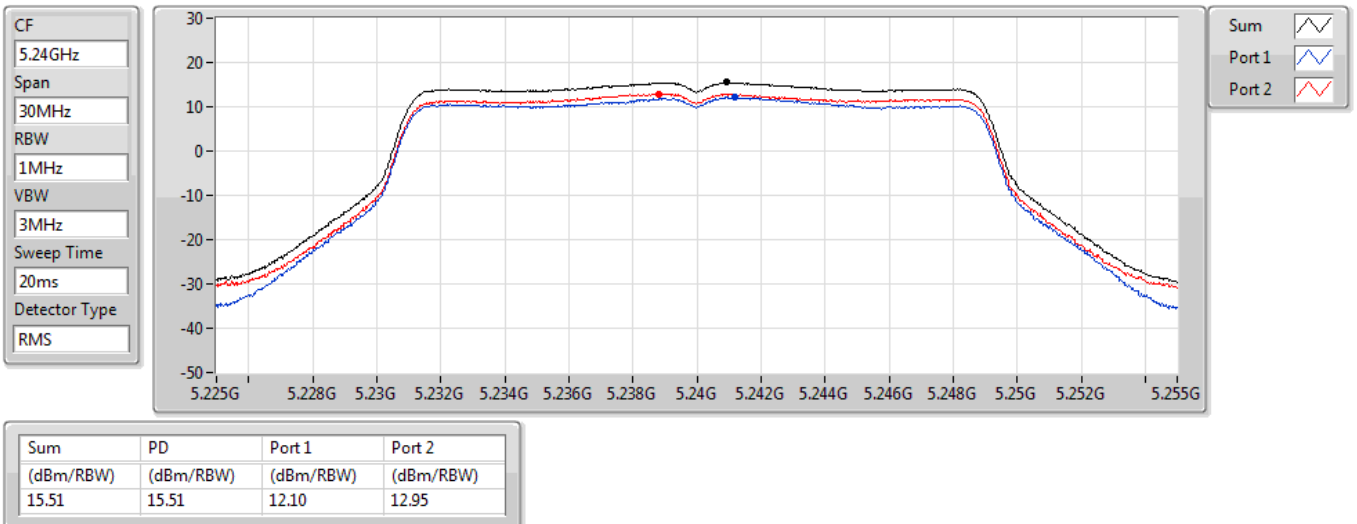


802.11n HT20_Nss1,(MCS0)_2TX

PSD

5240MHz

24/12/2020

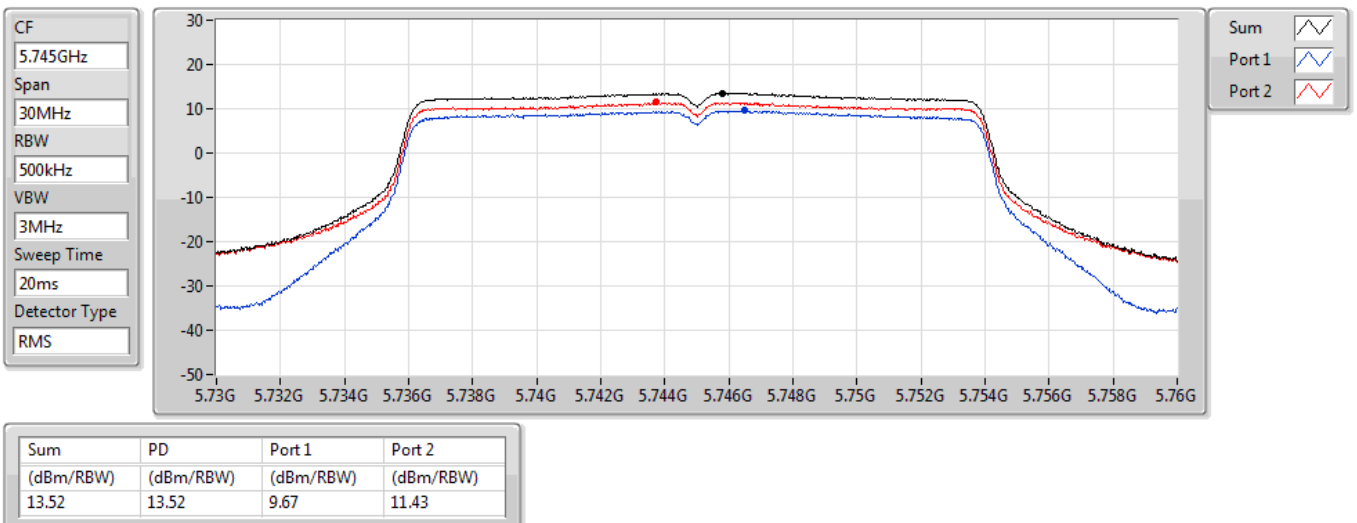


802.11n HT20_Nss1,(MCS0)_2TX

PSD

5745MHz

24/12/2020

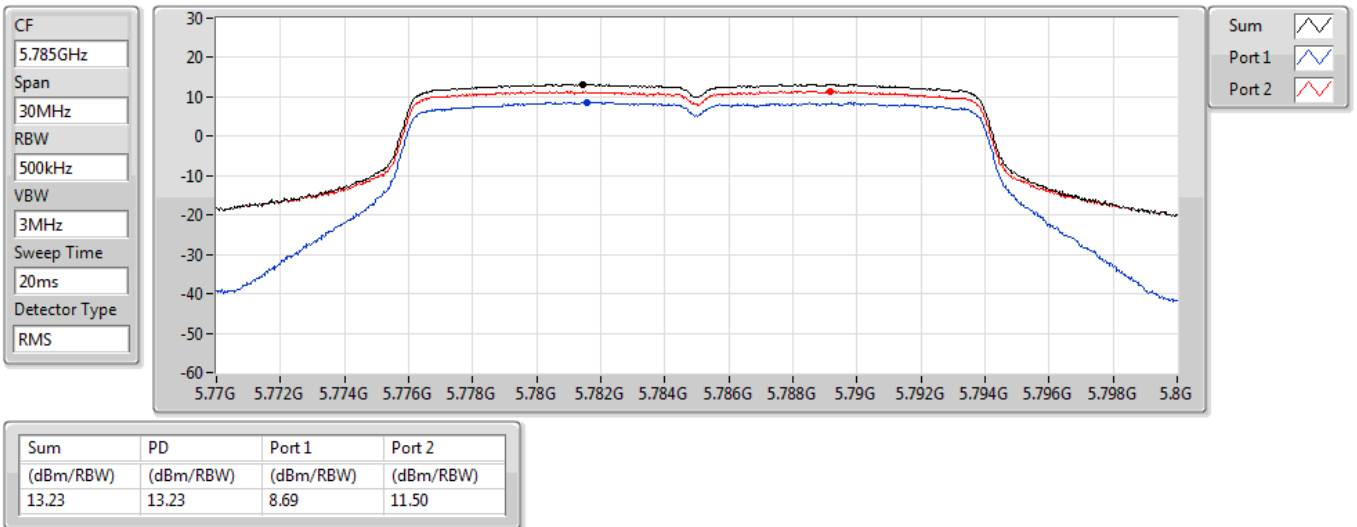


802.11n HT20_Nss1,(MCS0)_2TX

PSD

5785MHz

24/12/2020



802.11n HT20_Nss1,(MCS0)_2TX

PSD

5825MHz

24/12/2020

