



FCC RADIO TEST REPORT

FCC ID : Z8H89FT0047
Equipment : ePMP 5GHz Force 300 CSM RADIO / ePMP 3000L 5GHz Access Point Radio
Brand Name : Cambium Networks
Model Name : ePMP 5GHz Force 300 CSM RADIO / ePMP 3000L 5GHz Access Point Radio
Applicant : Cambium Networks Inc.
3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Manufacturer : Cambium Networks Inc.
3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Standard : 47 CFR FCC Part 15.407

The product was received on Jan. 16, 2019, and testing was started from Jan. 16, 2019 and completed on Jan. 29, 2019. 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this variant 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: Sam Chen

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 Description5

1.1 Information.....5

1.2 Applicable Standards10

1.3 Testing Location Information.....10

1.4 Measurement Uncertainty10

2 Test Configuration of EUT11

2.1 Test Channel Mode11

2.2 The Worst Case Measurement Configuration.....14

2.3 EUT Operation during Test15

2.4 Accessories15

2.5 Support Equipment.....15

3 Transmitter Test Result16

3.1 Emission Bandwidth.....16

3.2 Maximum Conducted Output Power17

3.3 Peak Power Spectral Density.....19

3.4 Unwanted Emissions.....22

4 Test Equipment and Calibration Data26

Appendix A. Test Results of Emission Bandwidth

Appendix B. Test Results of Maximum Conducted Output Power

Appendix C. Test Results of Peak Power Spectral Density

Appendix D. Test Results of Unwanted Emissions

Appendix E. Test Photos

Photographs of EUT v01



History of this test report

Report No.	Version	Description	Issued Date
FR880825-02	01	Initial issue of report	Sep. 06, 2019



Summary of Test Result

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

Declaration of Conformity:

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

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Cindy Peng



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)
5250-5350	a, n (HT20), ac (VHT20)	5260-5320
5470-5725		5500-5720
5250-5350	ac (VHT80)	5290
5470-5725		5530-5690

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11a	20	2TX
5.25-5.35GHz	802.11n HT20	20	2TX
5.25-5.35GHz	802.11ac VHT20	20	2TX
5.25-5.35GHz	802.11ac VHT80	80	2TX
5.47-5.725GHz	802.11a	20	2TX
5.47-5.725GHz	802.11n HT20	20	2TX
5.47-5.725GHz	802.11ac VHT20	20	2TX
5.47-5.725GHz	802.11ac VHT80	80	2TX

Note:

- ♦ OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.



1.1.2 DFS Band Carrier Frequencies

There are two bandwidth systems.
For 20MHz bandwidth systems:

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	1	5260 MHz	8	5295 MHz
	2	5265 MHz	9	5300 MHz
	3	5270 MHz	10	5305 MHz
	4	5275 MHz	11	5310 MHz
	5	5280 MHz	12	5315 MHz
	6	5285 MHz	13	5320 MHz
	7	5290 MHz	-	-
5470~5725 MHz Band 3	1	5500 MHz	22	5605 MHz
	2	5505 MHz	23	5610 MHz
	3	5510 MHz	24	5615 MHz
	4	5515 MHz	25	5620 MHz
	5	5520 MHz	26	5625 MHz
	6	5525 MHz	27	5630 MHz
	7	5530 MHz	28	5635 MHz
	8	5535 MHz	29	5640 MHz
	9	5540 MHz	30	5645 MHz
	10	5545 MHz	31	5650 MHz
	11	5550 MHz	32	5655 MHz
	12	5555 MHz	33	5660 MHz
	13	5560 MHz	34	5665 MHz
	14	5565 MHz	35	5670 MHz
	15	5570 MHz	36	5675 MHz
	16	5575 MHz	37	5680 MHz
	17	5580 MHz	38	5685 MHz
	18	5585 MHz	39	5690 MHz
	19	5590 MHz	40	5695 MHz
	20	5595 MHz	41	5700 MHz
	21	5600 MHz	42	5720 MHz



For 80MHz bandwidth systems:

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	1	5290 MHz	-	-
5470~5725 MHz Band 3	1	5530 MHz	18	5615
	2	5535 MHz	19	5620
	3	5540 MHz	20	5625
	4	5545 MHz	21	5630
	5	5550 MHz	22	5635
	6	5555 MHz	23	5640
	7	5560 MHz	24	5645
	8	5565 MHz	25	5650
	9	5570 MHz	26	5655
	10	5575 MHz	27	5660
	11	5580 MHz	28	5665
	12	5585 MHz	29	5670
	13	5590 MHz	30	5675
	14	5595 MHz	31	5680
	15	5600 MHz	32	5685
	16	5605 MHz	33	5690
	17	5610 MHz	-	-

1.1.3 Antenna Information

Set	Ant.	Port	Brand	P/N	Type	Connector	Gain (dBi)
1	1	1	Cambium	C050900D007B	Dish	Reversed-SMA	25
		2	Cambium	C050900D007B	Dish	Reversed-SMA	25
Set	Ant.	Port	Brand	P/N	Type	Connector	Gain (dBi)
2	2	1	ANATEL	C050900D021	Array	Reversed-SMA	17
		2	ANATEL	C050900D021	Array	Reversed-SMA	17
Set	Ant.	Port	Brand	Model Name	Type	Connector	Gain (dBi)
3	3	1	ABRACON	APAMS-121	Dipole	Reversed-SMA	2
	4	2	ABRACON	APAMS-121	Dipole	Reversed-SMA	2

Note 1: The above information was declared by manufacturer.

Note 2: The EUT has three sets of antenna.

Note 3: Set 1 antenna has one antenna, and it has two connectors.

Note 4: Set 2 antenna has one antenna, and it has two connectors.

Note 5: Set 3 antenna contains two antennas, and the array gain is 0dBi.

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

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

Port 1 and Port 2 could transmit/receive simultaneously.



1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.974	0.11	20.029m	100
802.11ac VHT20	0.988	0.05	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT80	0.942	0.26	10.014m	100

Note:

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

1.1.5 EUT Operational Condition

EUT Power Type	From POE		
Beamforming Function	<input type="checkbox"/> With beamforming	<input checked="" type="checkbox"/>	Without beamforming
Function	<input checked="" type="checkbox"/> Outdoor P2M for Set 2 antenna and Set 3 antenna	<input type="checkbox"/>	Indoor P2M
	<input checked="" type="checkbox"/> Fixed P2P for Set 1 antenna and Set 3 antenna	<input type="checkbox"/>	Client
Communication Mode	<input type="checkbox"/> IP Based (Load Based)	<input checked="" type="checkbox"/>	Frame Based
Test Software Version	QRCT V3.0.187.0		

Note1: The above information was declared by manufacturer.

Note2: While frame-based mechanism is implemented, the test procedure is the same with regular IEEE 802.11a/n/ac devices.

1.1.6 Table for Multiple Listing

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

EUT	Equipment Name / Model Name	GPS Function	WIFI Filter Function
1	ePMP 5GHz Force 300 CSM RADIO	No	Yes
2	ePMP 3000L 5GHz Access Point Radio	Yes	Yes

From the above models, EUT 1 was selected as representative model for the test and its data was recorded in this report.



1.1.7 Table for Class III Change

This product is an extension of original one reported under Sporton project number: FR880825-01
Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding 5GHz band 2 and band 3 (5250~5350 MHz, 5470~5725 MHz) for this device, and it has the straddle channels (5690 MHz, 5720 MHz).	1. Emission Bandwidth. 2. Maximum Conducted Output Power. 3. Peak Power Spectral Density. 4. Unwanted Emissions Above 1GHz.
2. Adding slave without Radar mode in DFS Band.	Do not affect the test result.



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

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	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
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated Above 1GHz	03CH01-CB	Paul Chen	22°C / 54%	Jan. 21, 2019~Jan. 23, 2019
RF Conducted	TH01-CB	Owen Hsu	21°C / 53%	Jan. 16, 2019~Jan. 29, 2019

Test site Designation No. TW0006 with FCC
Test site registered number IC 4086B with Industry Canada.

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	1.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74 x10 ⁻⁸	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

For EUT 1 + Set 1 antenna:

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	0.5
5300MHz	0.5
5320MHz	0.5
5500MHz	0.5
5580MHz	0.5
5700MHz	0.5
5720MHz Straddle 5.47-5.725GHz	0.5
5720MHz Straddle 5.725-5.85GHz	0.5
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5260MHz	0.5
5300MHz	0.5
5320MHz	0.5
5500MHz	0.5
5580MHz	0.5
5700MHz	0.5
5720MHz Straddle 5.47-5.725GHz	0.5
5720MHz Straddle 5.725-5.85GHz	0.5
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5290MHz	0.5
5530MHz	0
5610MHz	0.5
5690MHz Straddle 5.47-5.725GHz	0.5
5690MHz Straddle 5.725-5.85GHz	0.5



For EUT 1 + Set 2 antenna:

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	8.5
5300MHz	8.5
5320MHz	8.5
5500MHz	10
5580MHz	10
5700MHz	10.5
5720MHz Straddle 5.47-5.725GHz	10.5
5720MHz Straddle 5.725-5.85GHz	10.5
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5260MHz	9
5300MHz	9
5320MHz	9
5500MHz	9.5
5580MHz	10
5700MHz	10.5
5720MHz Straddle 5.47-5.725GHz	10.5
5720MHz Straddle 5.725-5.85GHz	10.5
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5290MHz	8
5530MHz	9
5610MHz	10
5690MHz Straddle 5.47-5.725GHz	10.5
5690MHz Straddle 5.725-5.85GHz	10.5



For EUT 1 + Set 3 antenna:

Mode	Power Setting
802.11a_Nss1,(6Mbps)_2TX	-
5260MHz	21
5300MHz	21
5320MHz	21
5500MHz	21.5
5580MHz	21
5700MHz	21.5
5720MHz Straddle 5.47-5.725GHz	21
5720MHz Straddle 5.725-5.85GHz	21
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5260MHz	21.5
5300MHz	21.5
5320MHz	21
5500MHz	21
5580MHz	20.5
5700MHz	21
5720MHz Straddle 5.47-5.725GHz	21
5720MHz Straddle 5.725-5.85GHz	21
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5290MHz	20
5530MHz	20
5610MHz	21
5690MHz Straddle 5.47-5.725GHz	22
5690MHz Straddle 5.725-5.85GHz	22

Note:

- ♦ VHT20 cover HT20, due to same modulation. The power setting for 802.11n HT20 is the same or lower than 802.11ac VHT20.



2.2 The Worst Case Measurement Configuration

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
Operating Mode	
1	EUT 1 + Set 1 antenna
2	EUT 1 + Set 2 antenna
3	EUT 1 + Set 3 antenna

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	
The EUT was performed at X axis, Y axis and Z axis position. Radiated measurement of above 1GHz cabinet: The worst case was found at X axis, so the measurement will follow this same test configuration.	
1	CTX mode: EUT 1 X axis (cabinet)

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Conducted measurement at transmit chains
Operating Mode > 1GHz	
1	EUT 1 + Set 1 antenna
2	EUT 1 + Set 2 antenna
3	EUT 1 + Set 3 antenna

Note: The EUT was powered by PoE, and the PoE was for measurement only, would not be marked.

Equipment	Brand Name	Model Name	FCC ID
PoE	Cambium	NTE-P15-30IN	N/A



2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A

2.5 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	PoE	Cambium	NTE-P15-30IN	N/A
B	NB	DELL	E4300	N/A

3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

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

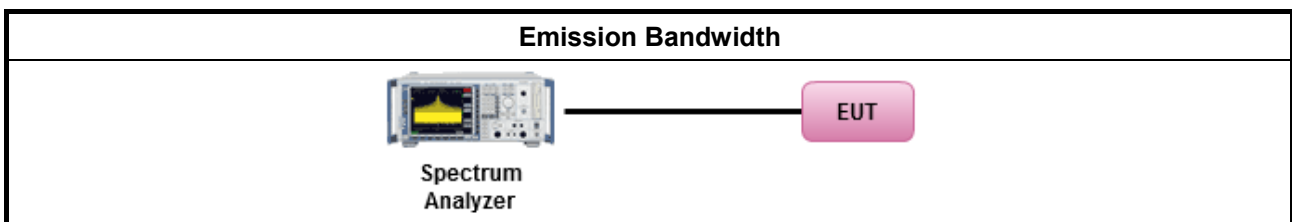
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method							
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;"><input checked="" type="checkbox"/></td> <td>Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.</td> </tr> </table> 		<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.	<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.						
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.						
<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.						

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ 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 $\leq 125mW$ [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 $P_{Out} = 24 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ 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	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

3.2.2 Measuring Instruments

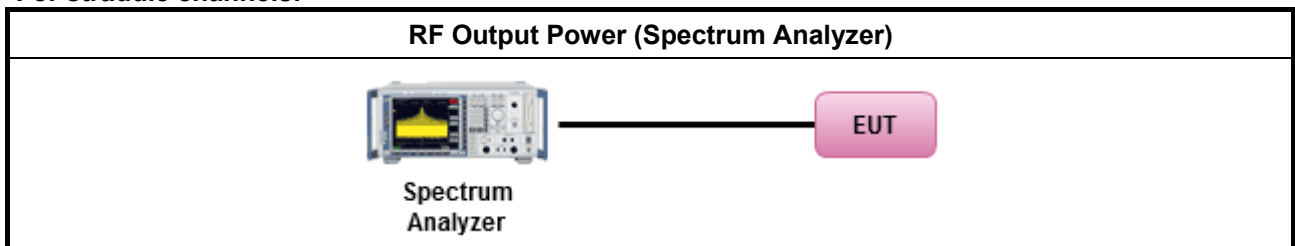
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

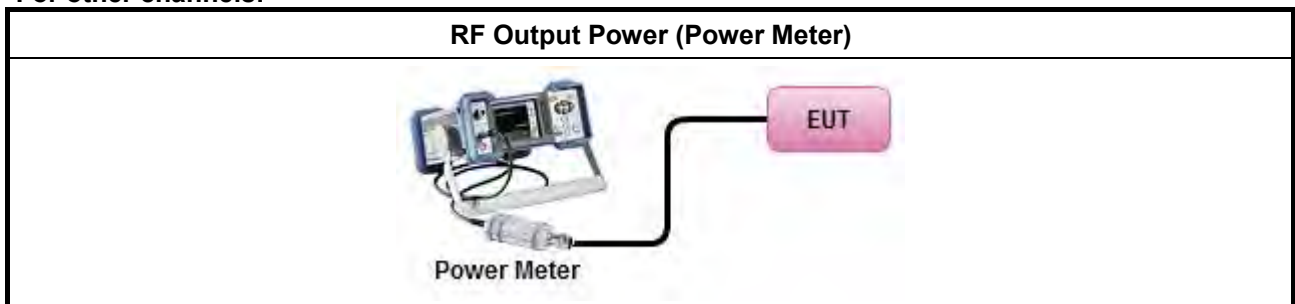
Test Method	
<ul style="list-style-type: none"> Maximum Conducted Output Power 	
Average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging) for straddle channels.
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter) for other channels.
<ul style="list-style-type: none"> For conducted measurement. 	
<ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> 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]) $EIRP_{total} = P_{total} + DG$ 	

3.2.4 Test Setup

For straddle channels:



For other channels:



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B



3.3 Peak Power Spectral Density

3.3.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input type="checkbox"/>	For the 5.15-5.25 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ 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 $PPSD = 11 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ 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	
<input type="checkbox"/>	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ 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 $0^\circ \leq \theta < 8^\circ$; $-13 - 0.716(\theta - 8)$ dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 $(\theta - 40)$ dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
<input type="checkbox"/>	For the 5.725-5.85 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ 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.
<p>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.</p>	

3.3.2 Measuring Instruments

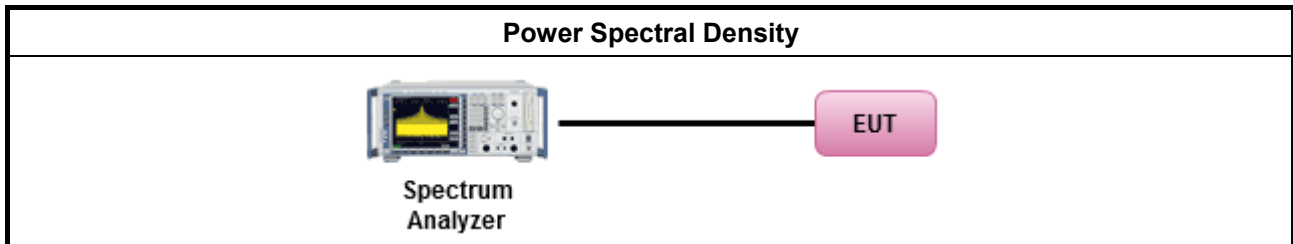
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Peak Power Spectral Density

Refer as Appendix C



3.4 Unwanted Emissions

3.4.1 Transmitter Unwanted Emissions Limit

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

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
<input type="checkbox"/> 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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



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

3.4.2 Measuring Instruments

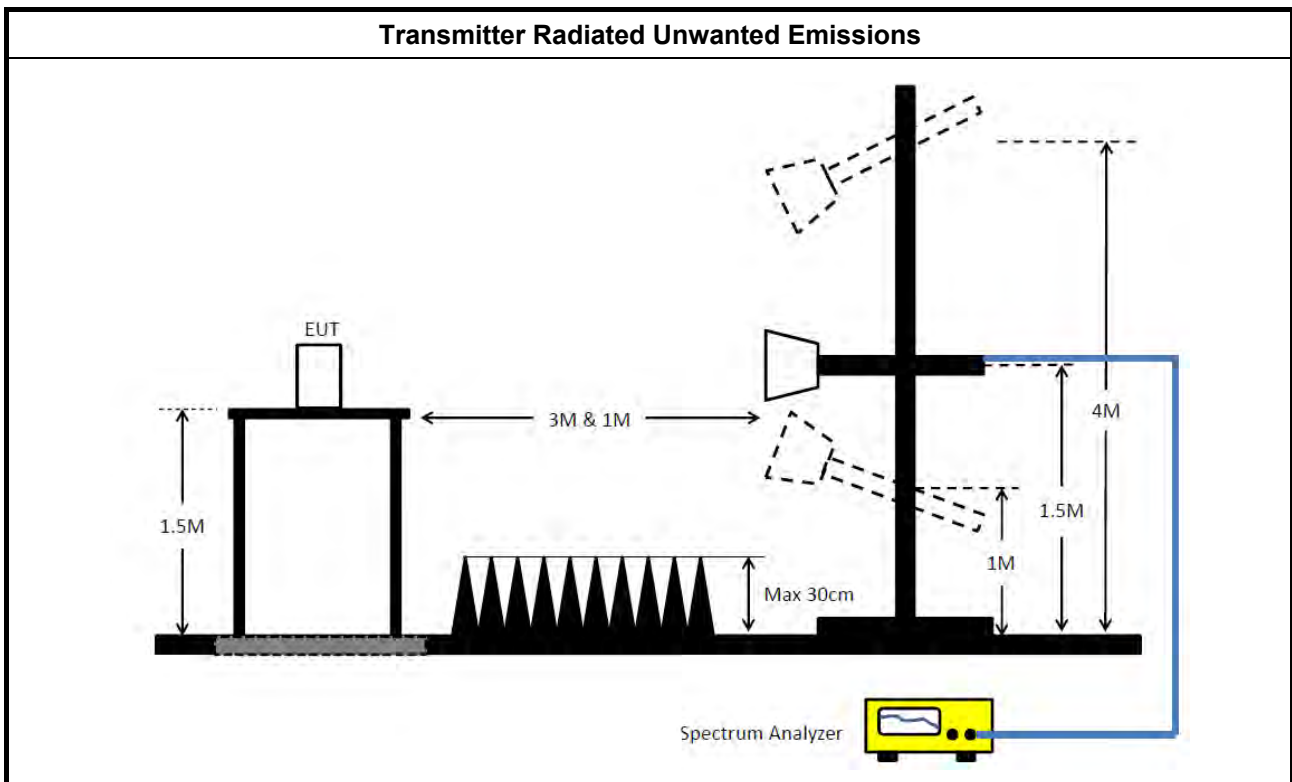
Refer a test equipment and calibration data table in this test report.

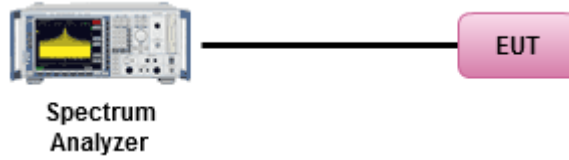
3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> 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). 	
<ul style="list-style-type: none"> The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. 	
<ul style="list-style-type: none"> For the transmitter unwanted emissions shall be measured using following options below: <ul style="list-style-type: none"> Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands. Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands. <ul style="list-style-type: none"> <input type="checkbox"/> Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging). <input checked="" type="checkbox"/> Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW). <input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time. <input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions. <input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit. <input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit. 	
<ul style="list-style-type: none"> For radiated measurement. <ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> The any unwanted emissions level shall not exceed the fundamental emission level. 	
<ul style="list-style-type: none"> All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported. 	

Test Method	
<ul style="list-style-type: none"> ▪ For conducted and cabinet radiation measurement, refer as FCC KDB 789033, clause G)3). 	
	<ul style="list-style-type: none"> ▪ For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding $10 \log(N)$ if the measurements are made relative to the in-band emissions on the individual outputs.
	<ul style="list-style-type: none"> ▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add $10 \log(N)$ dB
	<ul style="list-style-type: none"> ▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.4.4 Test Setup



Transmitter Conducted Unwanted Emissions**3.4.5 Measurement Results Calculation**

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.4.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170 252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A0231 0	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jun. 22, 2018	Jun. 21, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY5341000 1	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)

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



**For EUT 1 + Set 1 antenna:
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	19.1M	16.442M	16M4D1D	18.8M	16.392M
802.11ac VHT20_Nss1,(MCS0)_2TX	19.95M	17.666M	17M7D1D	19.775M	17.566M
802.11ac VHT80_Nss1,(MCS0)_2TX	83.4M	75.862M	75M9D1D	83.4M	75.762M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	19.1M	16.417M	16M4D1D	14.55M	13.223M
802.11ac VHT20_Nss1,(MCS0)_2TX	20.375M	17.641M	17M6D1D	15.06M	13.823M
802.11ac VHT80_Nss1,(MCS0)_2TX	84.4M	76.062M	76M1D1D	76.725M	72.564M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.14M	3.878M	3M88D1D	3.14M	3.658M
802.11ac VHT20_Nss1,(MCS0)_2TX	3.76M	4.238M	4M24D1D	3.76M	4.098M
802.11ac VHT80_Nss1,(MCS0)_2TX	3.14M	28.286M	28M3D1D	3.12M	27.986M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;



EBW Result

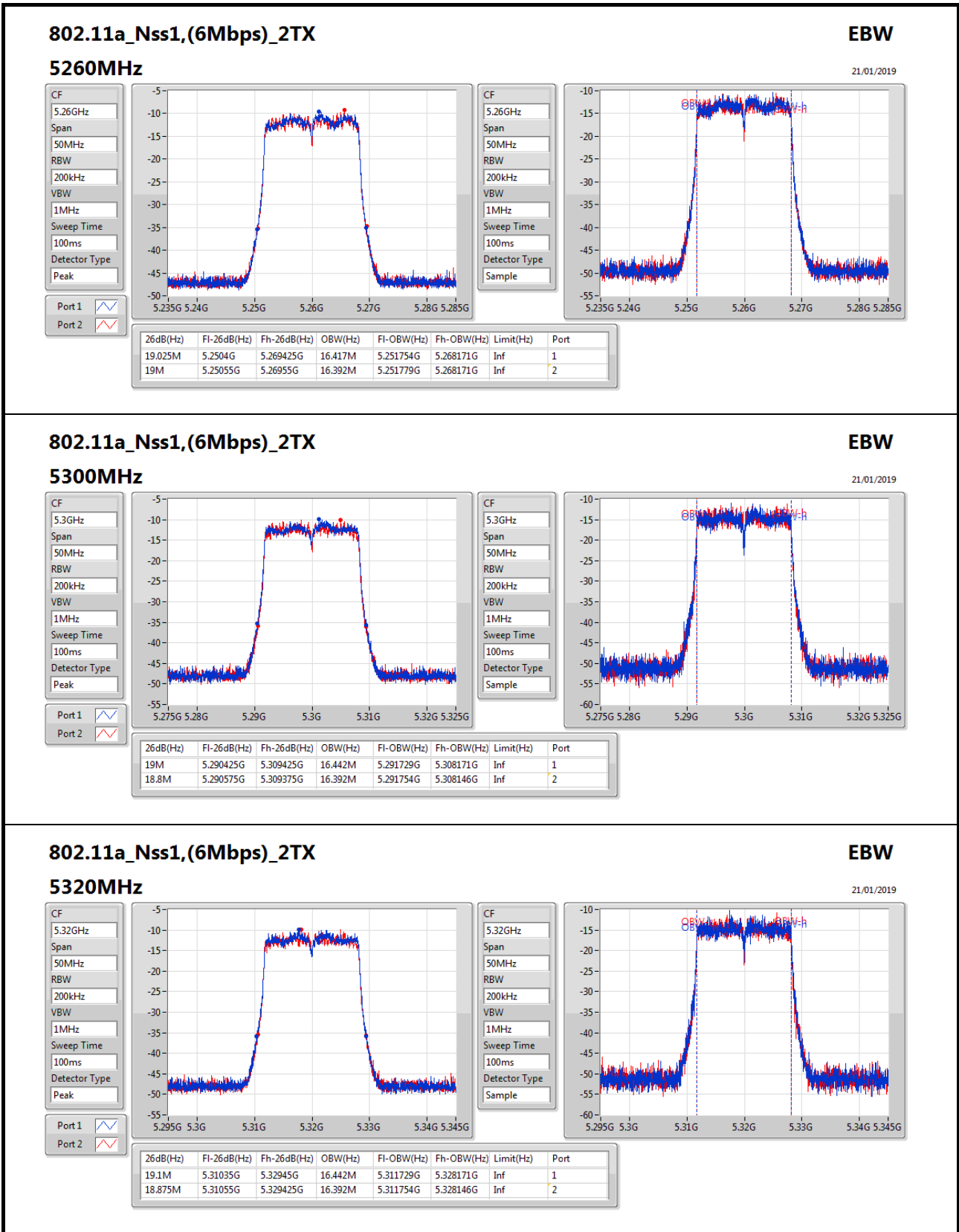
Appendix A

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	19.025M	16.417M	19M	16.392M
5300MHz	Pass	Inf	19M	16.442M	18.8M	16.392M
5320MHz	Pass	Inf	19.1M	16.442M	18.875M	16.392M
5500MHz	Pass	Inf	19.1M	16.392M	18.875M	16.417M
5580MHz	Pass	Inf	19.1M	16.417M	18.95M	16.417M
5700MHz	Pass	Inf	19.05M	16.417M	19.075M	16.417M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	14.625M	13.223M	14.55M	13.223M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.658M	3.14M	3.878M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	19.825M	17.641M	19.85M	17.641M
5300MHz	Pass	Inf	19.9M	17.641M	19.9M	17.616M
5320MHz	Pass	Inf	19.95M	17.666M	19.775M	17.566M
5500MHz	Pass	Inf	19.95M	17.616M	19.8M	17.616M
5580MHz	Pass	Inf	19.95M	17.616M	20M	17.566M
5700MHz	Pass	Inf	20.375M	17.616M	20.3M	17.641M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.06M	13.823M	15.105M	13.853M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	4.098M	3.76M	4.238M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	83.4M	75.762M	83.4M	75.862M
5530MHz	Pass	Inf	84M	76.062M	84.2M	76.062M
5610MHz	Pass	Inf	84.4M	75.862M	83.3M	75.862M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.95M	72.564M	76.725M	72.564M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	27.986M	3.12M	28.286M

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

CF: 5.32GHz

Span: 50MHz

RBW: 200kHz

VBW: 1MHz

Sweep Time: 100ms

Detector Type: Peak

Port 1:

Port 2:

CF: 5.32GHz

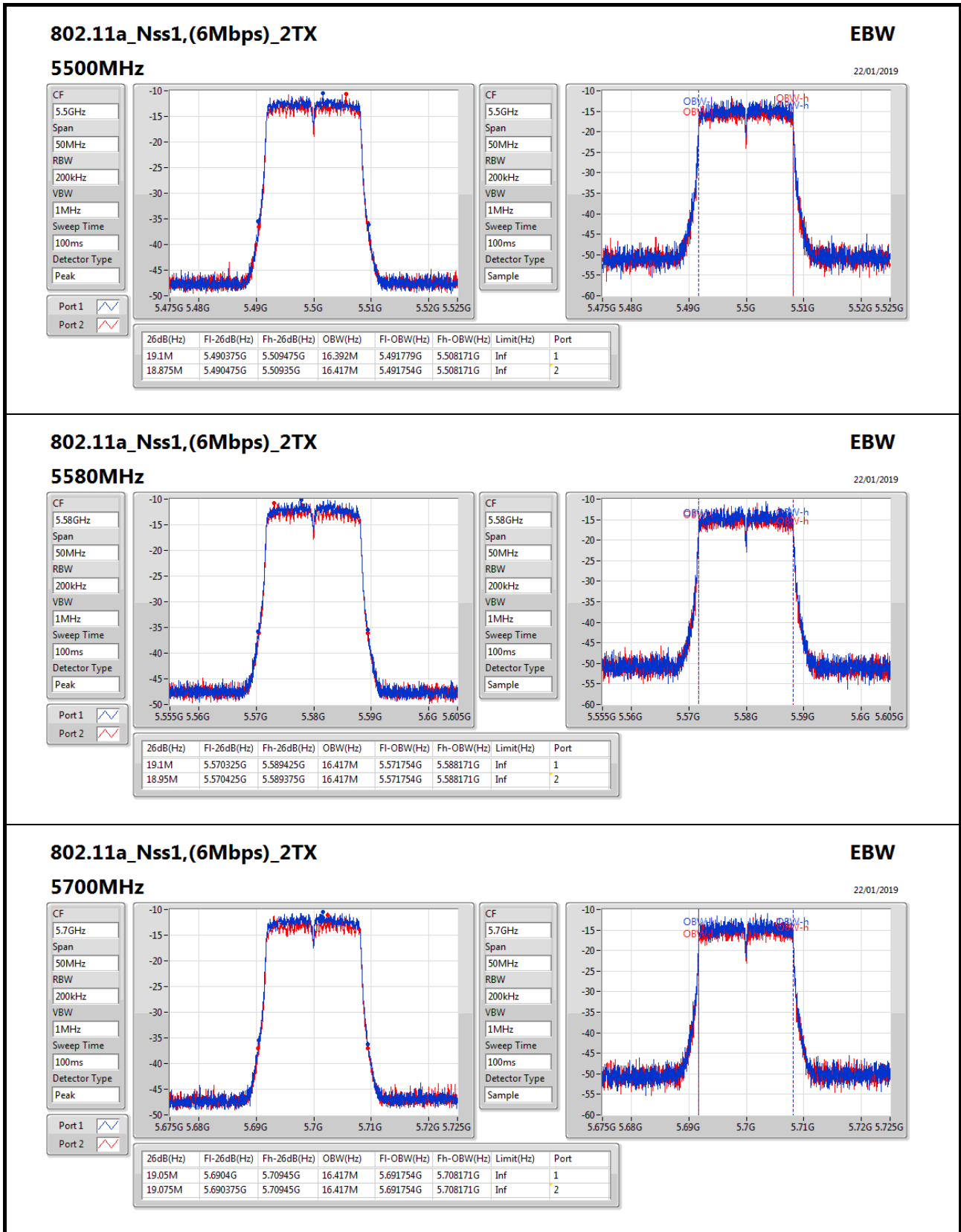
Span: 50MHz

RBW: 200kHz

VBW: 1MHz

Sweep Time: 100ms

Detector Type: Sample


802.11a_Nss1,(6Mbps)_2TX
EBW

22/01/2019

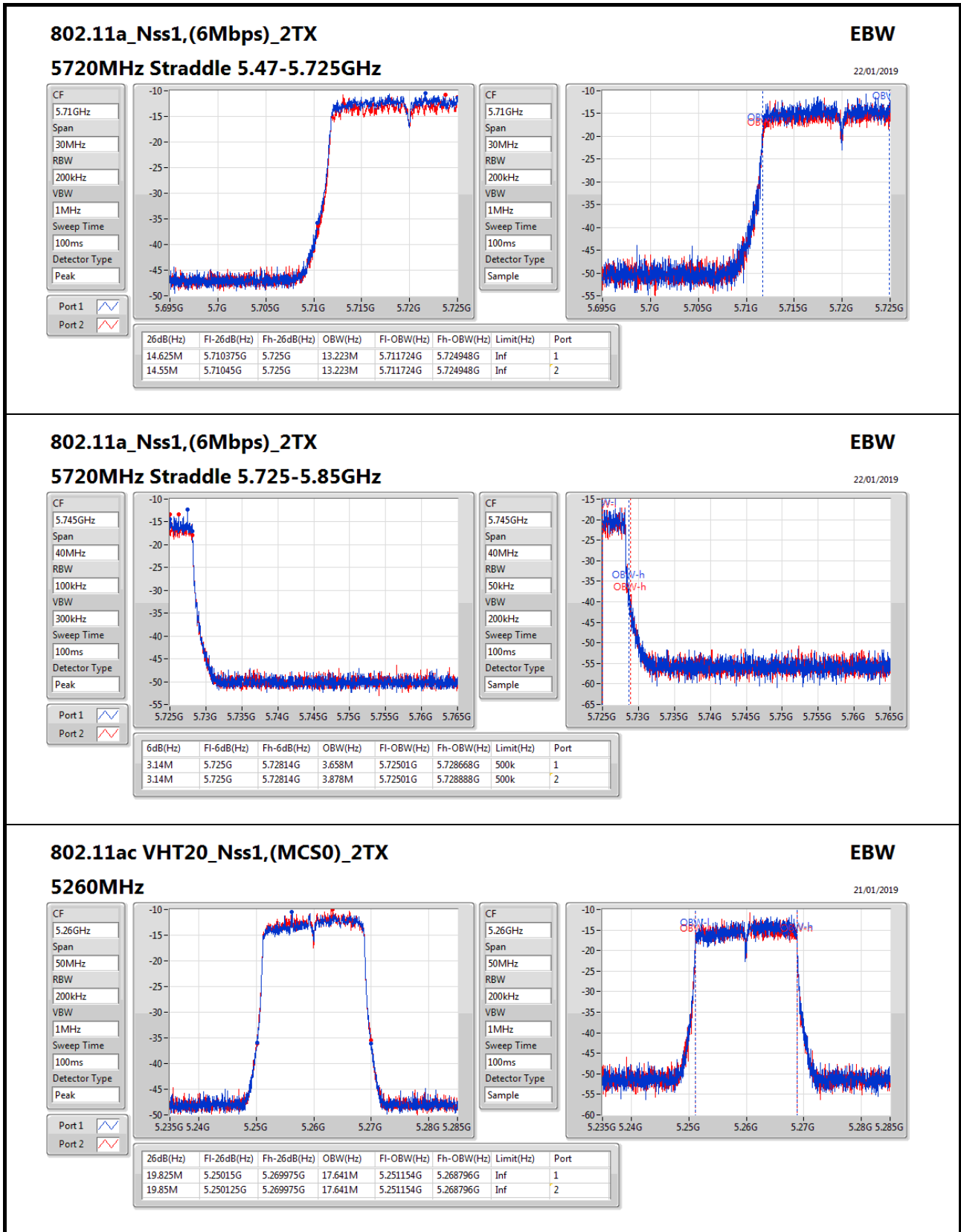
5700MHz

CF: 5.7GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Peak

Port 1:

Port 2:

CF: 5.7GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Sample



802.11ac VHT20_Nss1,(MCS0)_2TX

5260MHz

EBW

21/01/2019

CF: 5.26GHz

Span: 50MHz

RBW: 200kHz

VBW: 1MHz

Sweep Time: 100ms

Detector Type: Peak

Port 1:

Port 2:

CF: 5.26GHz

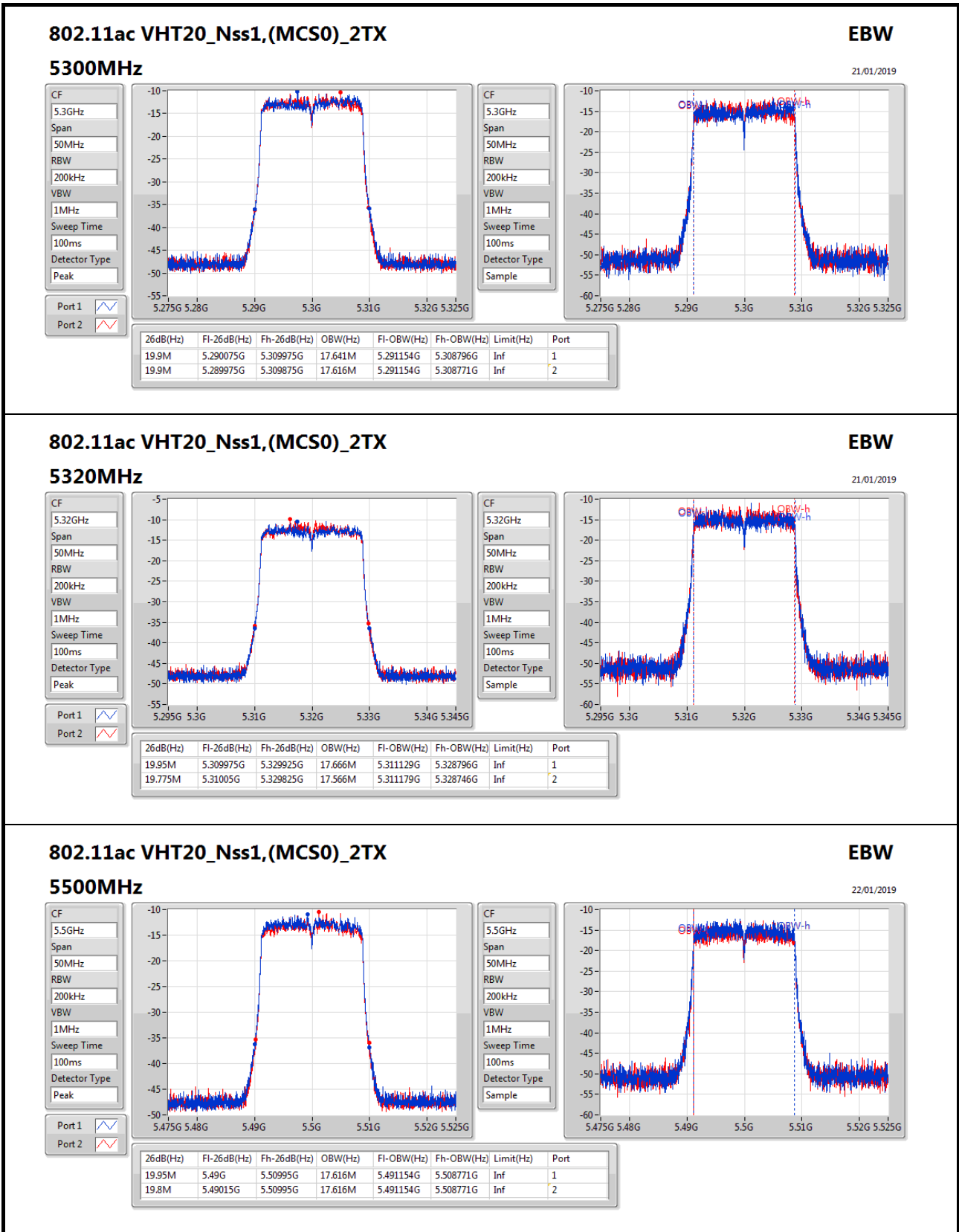
Span: 50MHz

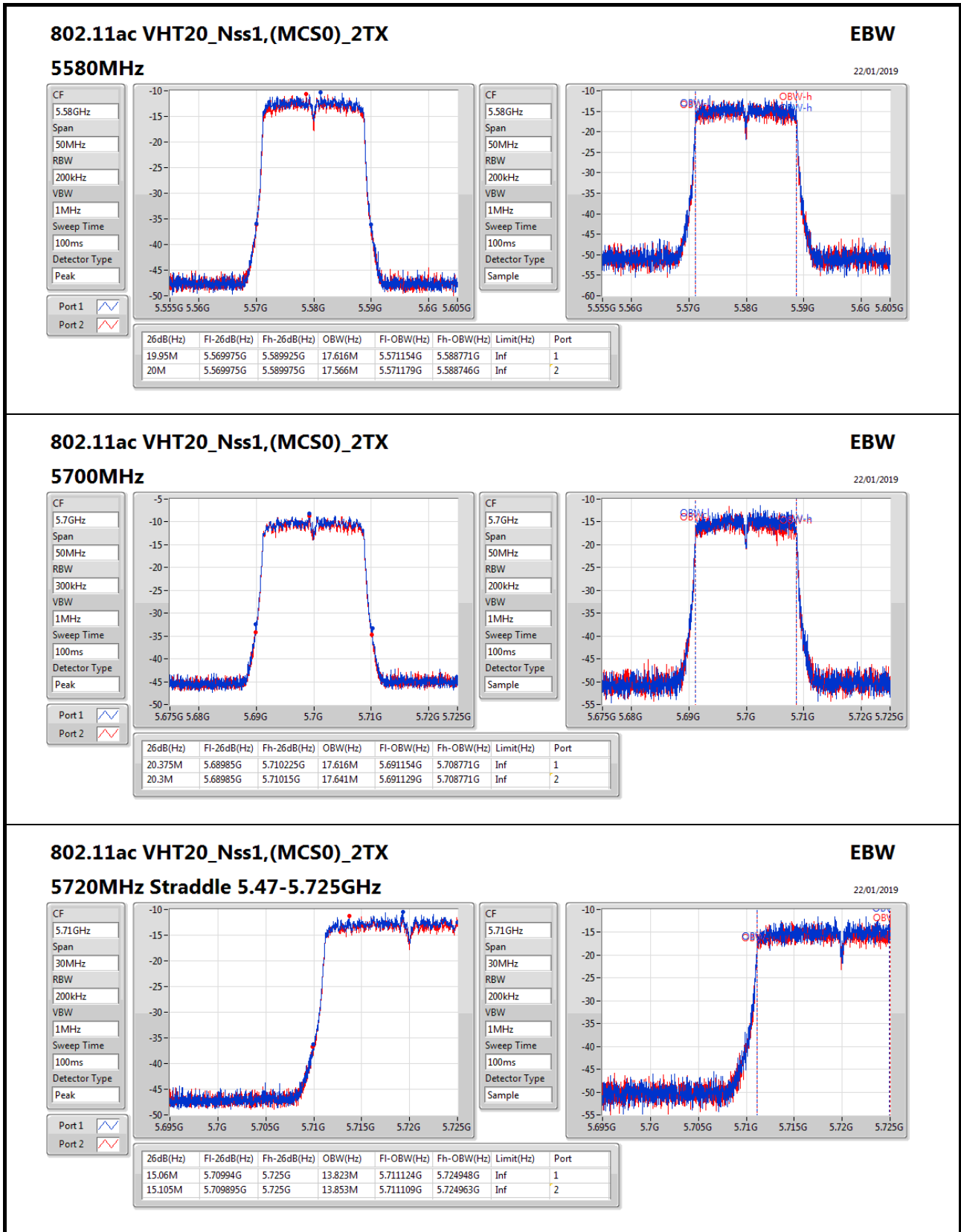
RBW: 200kHz

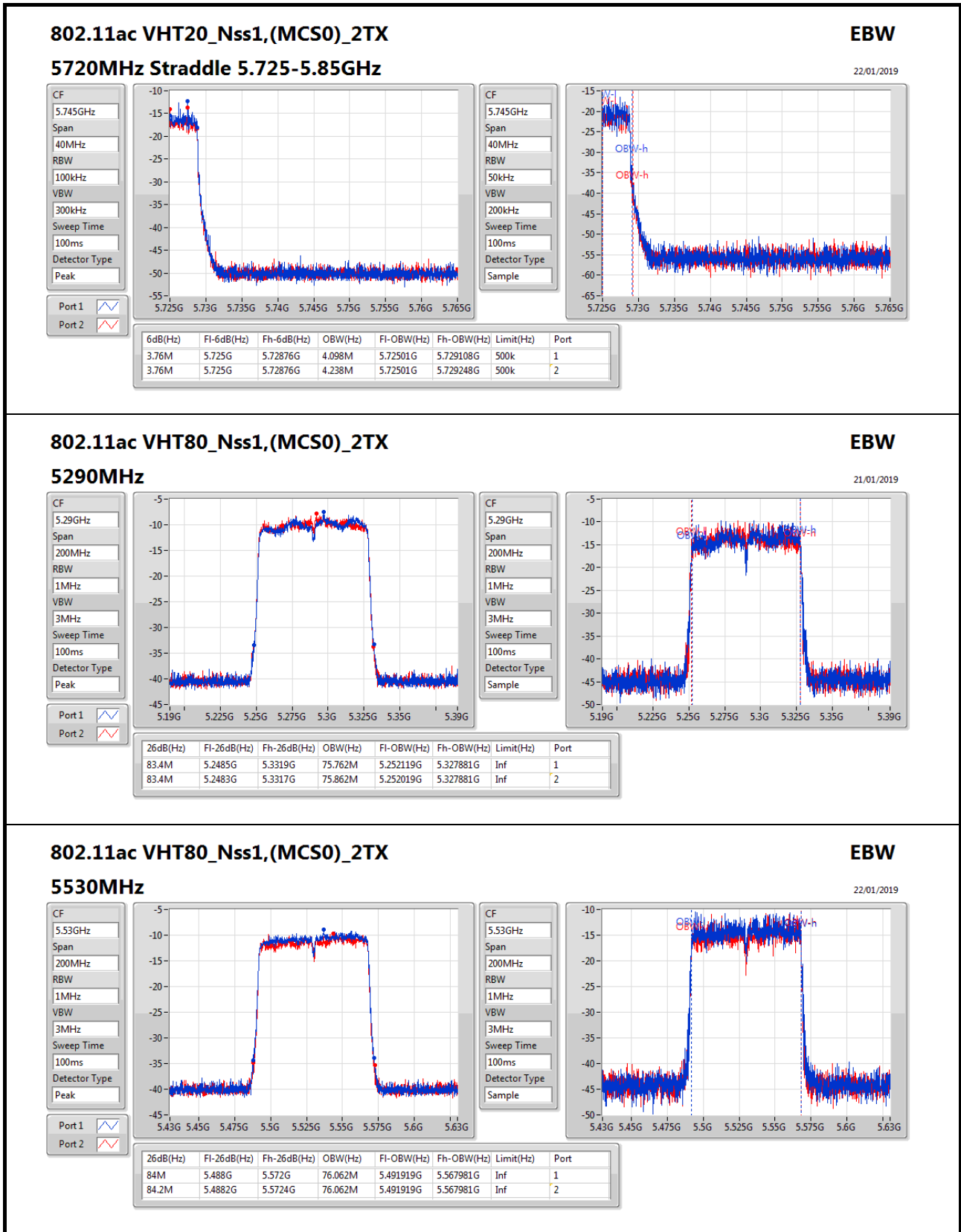
VBW: 1MHz

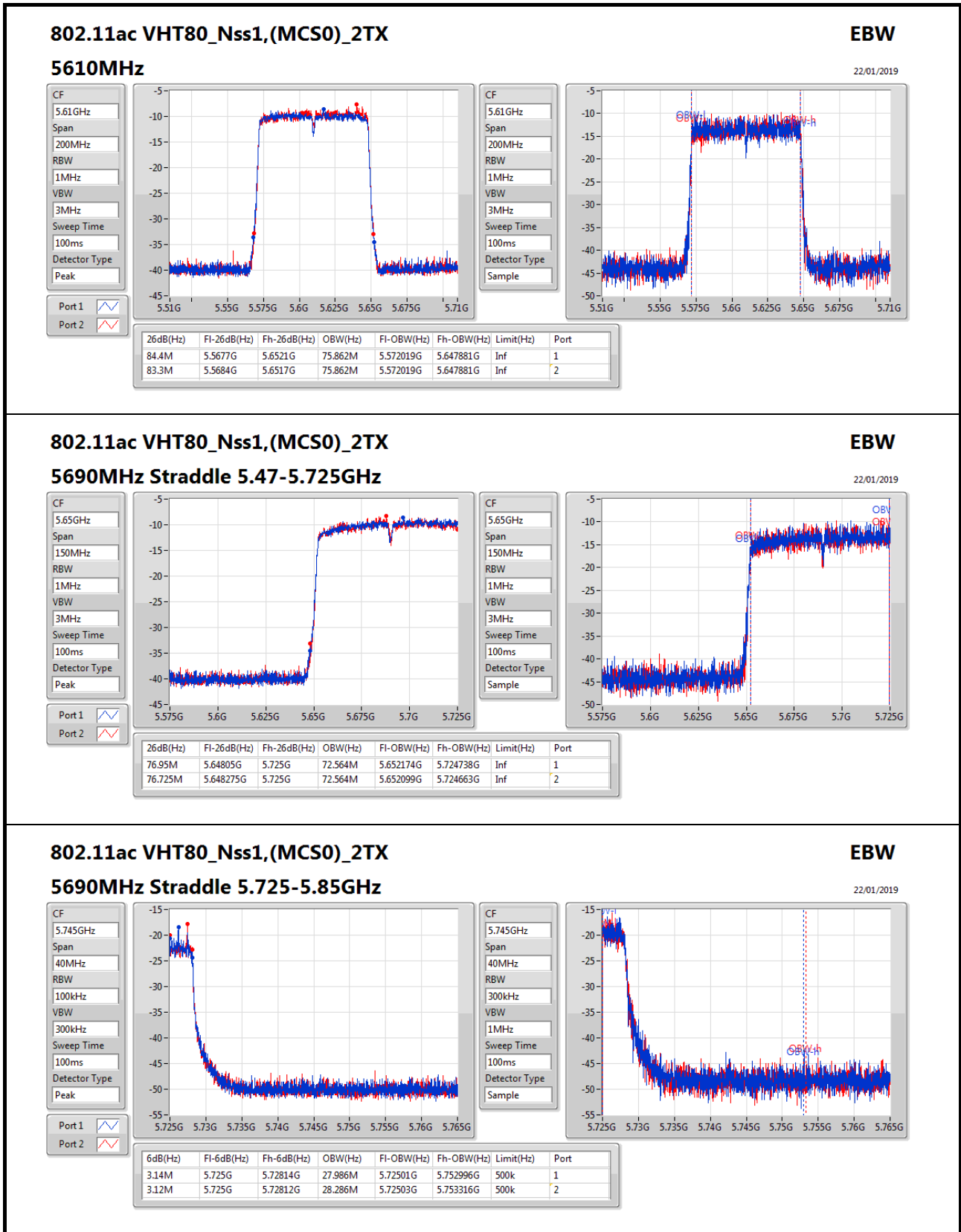
Sweep Time: 100ms

Detector Type: Sample











For EUT 1 + Set 2 antenna:

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	19M	16.442M	16M4D1D	18.75M	16.392M
802.11ac VHT20_Nss1,(MCS0)_2TX	19.925M	17.666M	17M7D1D	19.7M	17.566M
802.11ac VHT80_Nss1,(MCS0)_2TX	83.2M	75.762M	75M8D1D	83M	75.762M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	19.125M	16.417M	16M4D1D	14.52M	13.193M
802.11ac VHT20_Nss1,(MCS0)_2TX	19.975M	17.616M	17M6D1D	14.955M	13.823M
802.11ac VHT80_Nss1,(MCS0)_2TX	83.8M	75.862M	75M9D1D	76.2M	72.489M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.14M	3.398M	3M40D1D	3.14M	3.378M
802.11ac VHT20_Nss1,(MCS0)_2TX	3.78M	3.898M	3M90D1D	3.76M	3.878M
802.11ac VHT80_Nss1,(MCS0)_2TX	3.12M	3.978M	3M98D1D	3.12M	3.958M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;



EBW Result

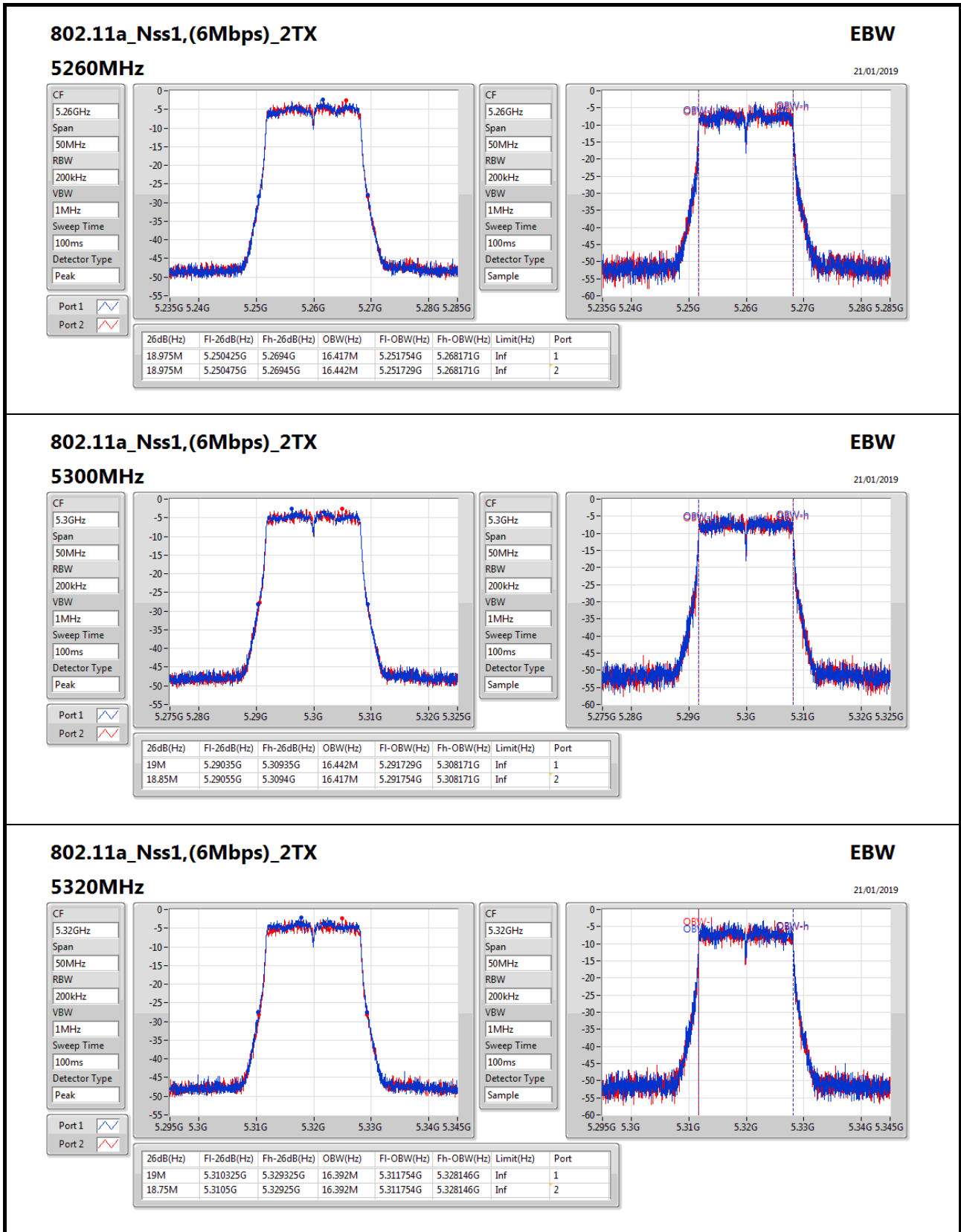
Appendix A

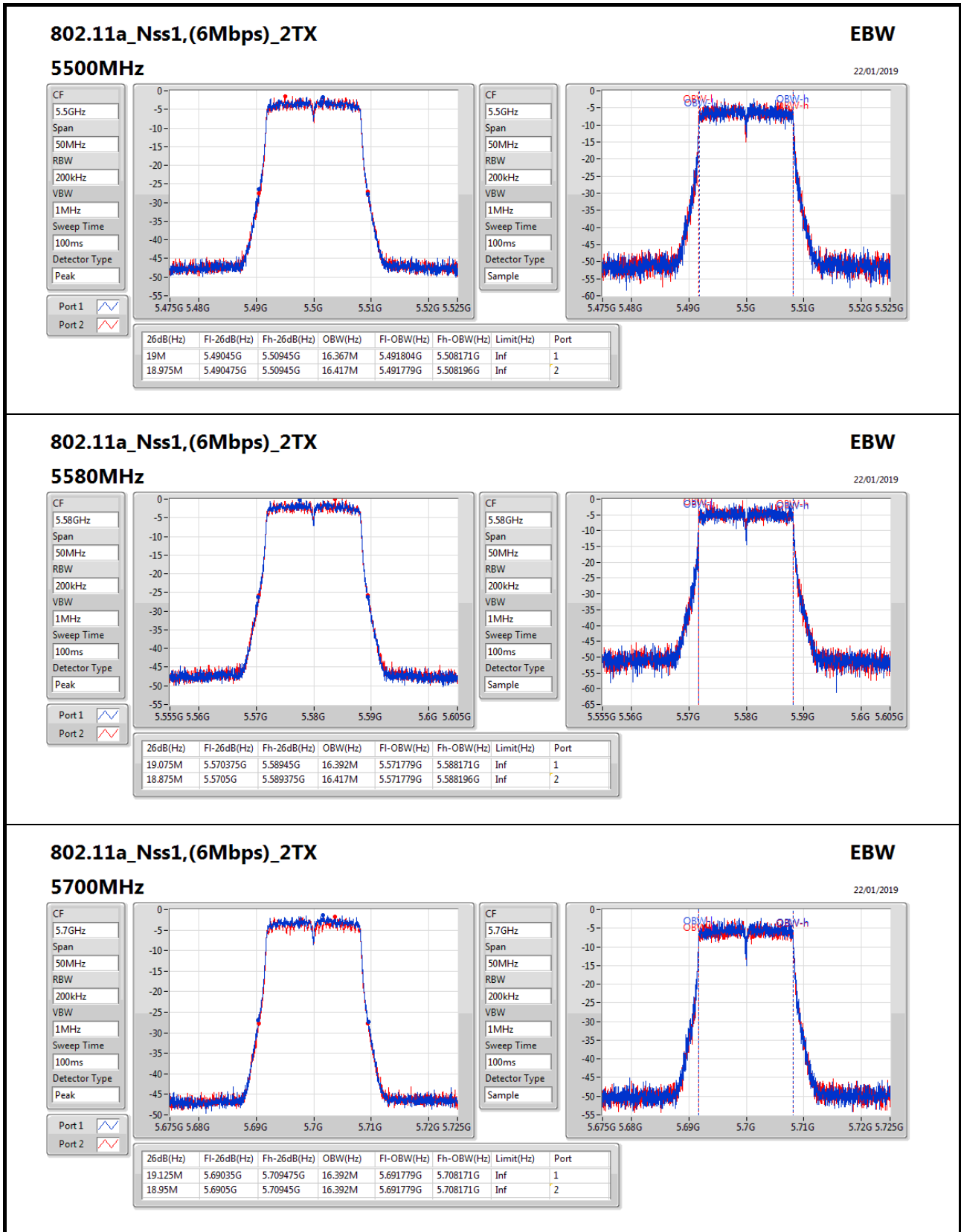
Result

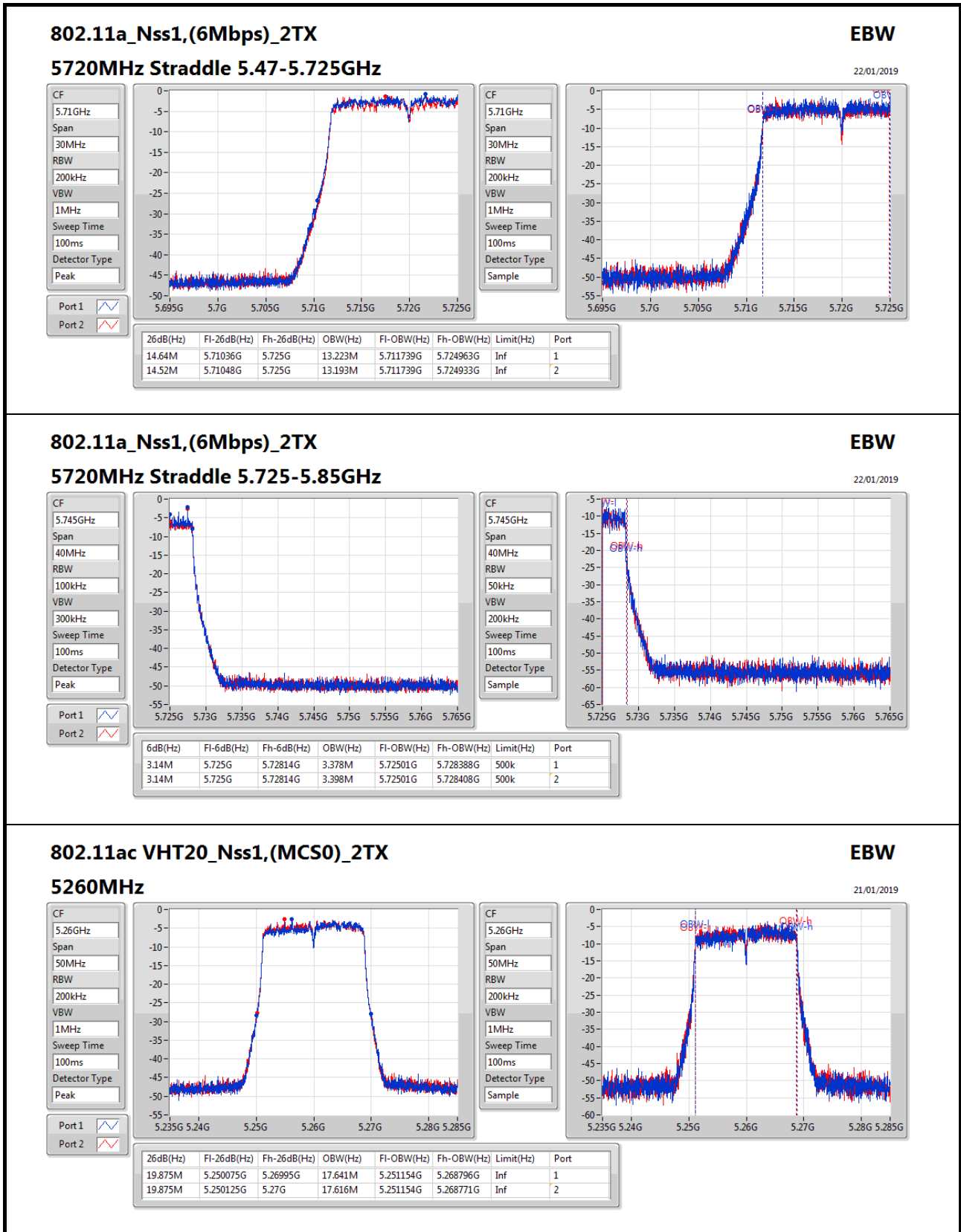
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	18.975M	16.417M	18.975M	16.442M
5300MHz	Pass	Inf	19M	16.442M	18.85M	16.417M
5320MHz	Pass	Inf	19M	16.392M	18.75M	16.392M
5500MHz	Pass	Inf	19M	16.367M	18.975M	16.417M
5580MHz	Pass	Inf	19.075M	16.392M	18.875M	16.417M
5700MHz	Pass	Inf	19.125M	16.392M	18.95M	16.392M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	14.64M	13.223M	14.52M	13.193M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.378M	3.14M	3.398M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	19.875M	17.641M	19.875M	17.616M
5300MHz	Pass	Inf	19.925M	17.666M	19.775M	17.591M
5320MHz	Pass	Inf	19.9M	17.616M	19.7M	17.566M
5500MHz	Pass	Inf	19.95M	17.616M	19.925M	17.591M
5580MHz	Pass	Inf	19.975M	17.591M	19.925M	17.616M
5700MHz	Pass	Inf	19.975M	17.616M	19.875M	17.616M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.06M	13.823M	14.955M	13.838M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	3.878M	3.78M	3.898M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	83M	75.762M	83.2M	75.762M
5530MHz	Pass	Inf	83.7M	75.862M	83.4M	75.762M
5610MHz	Pass	Inf	83.8M	75.762M	83.5M	75.862M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.8M	72.489M	76.2M	72.489M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	3.978M	3.12M	3.958M

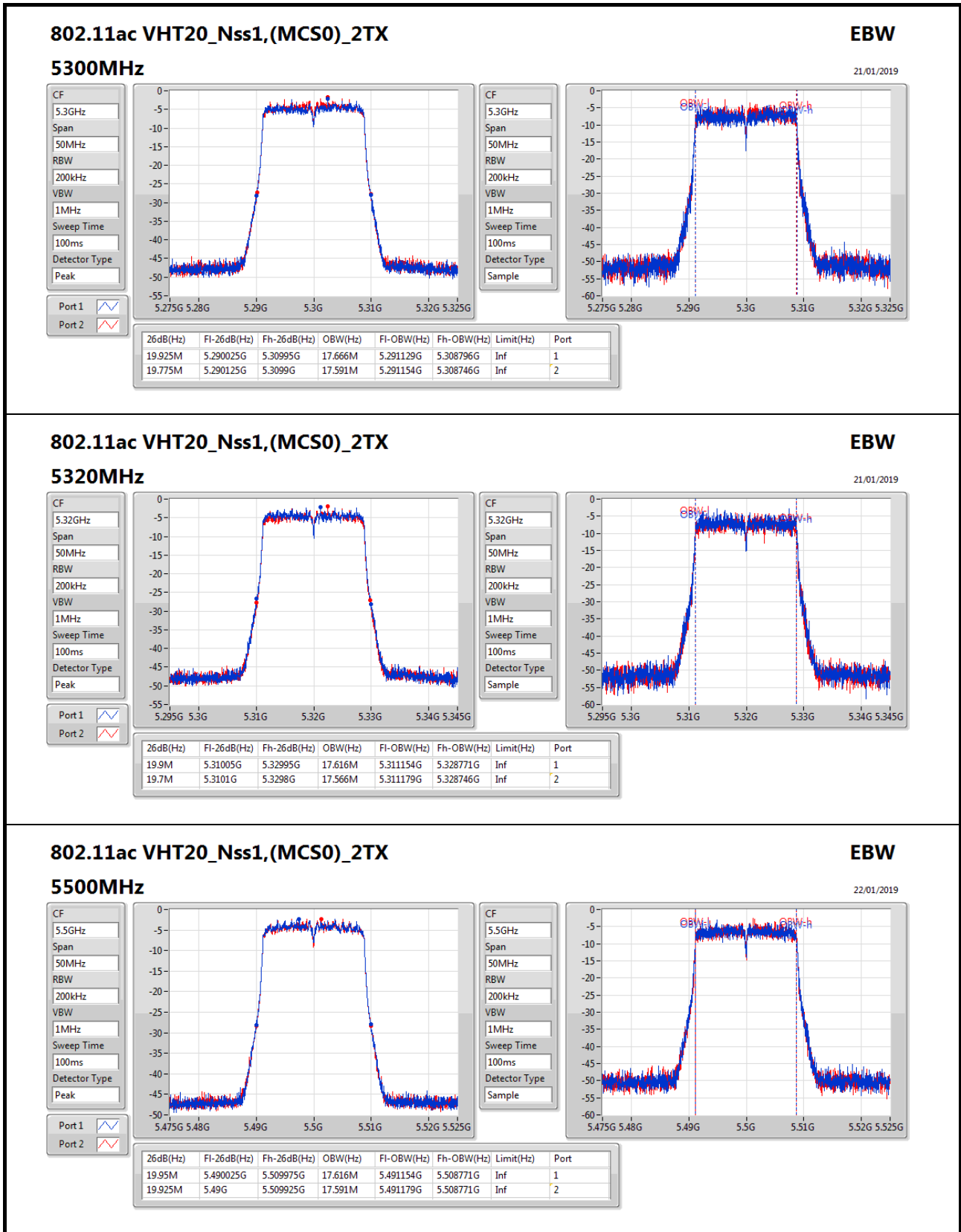
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

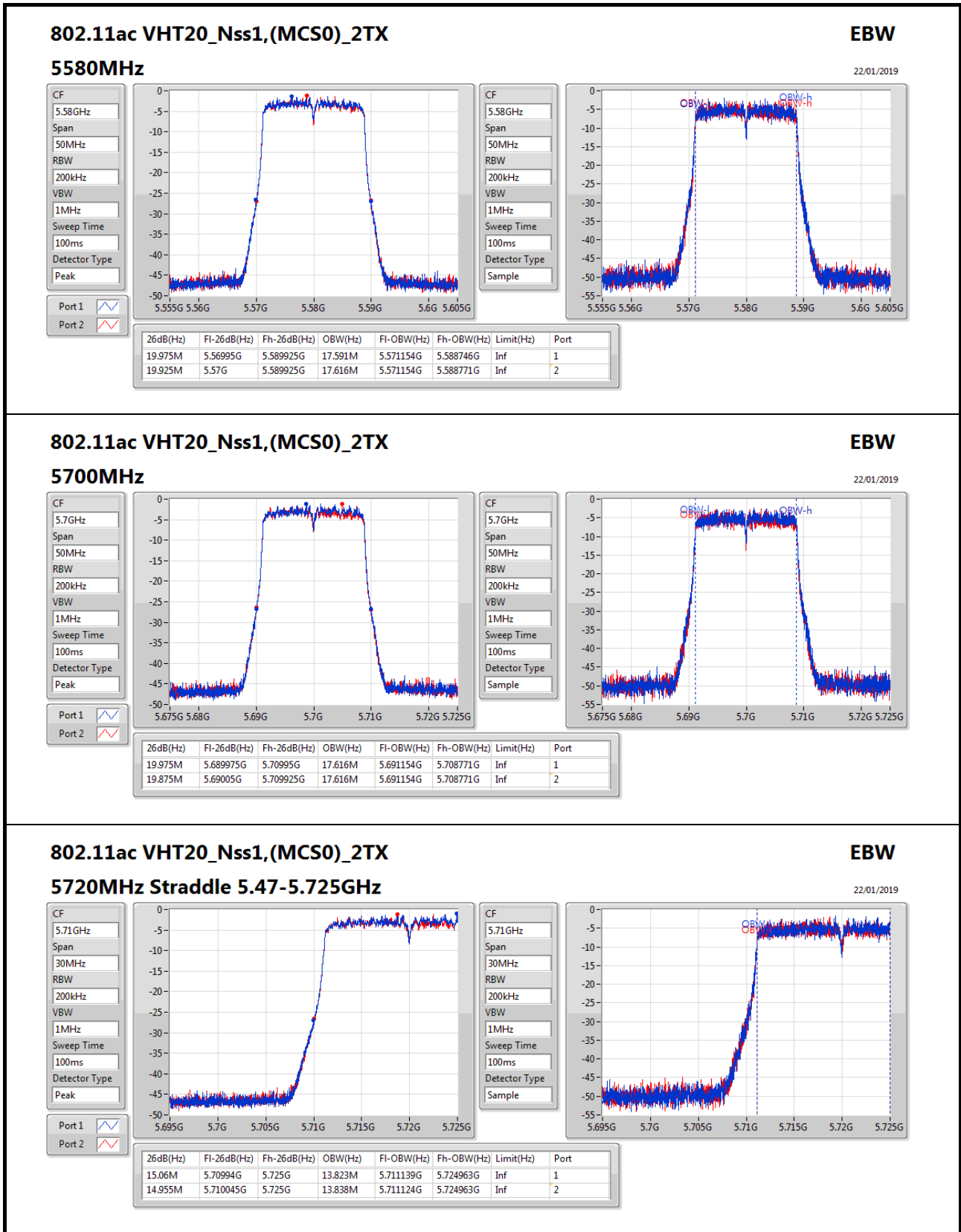
Port X-OBW = Port X 99% occupied bandwidth;

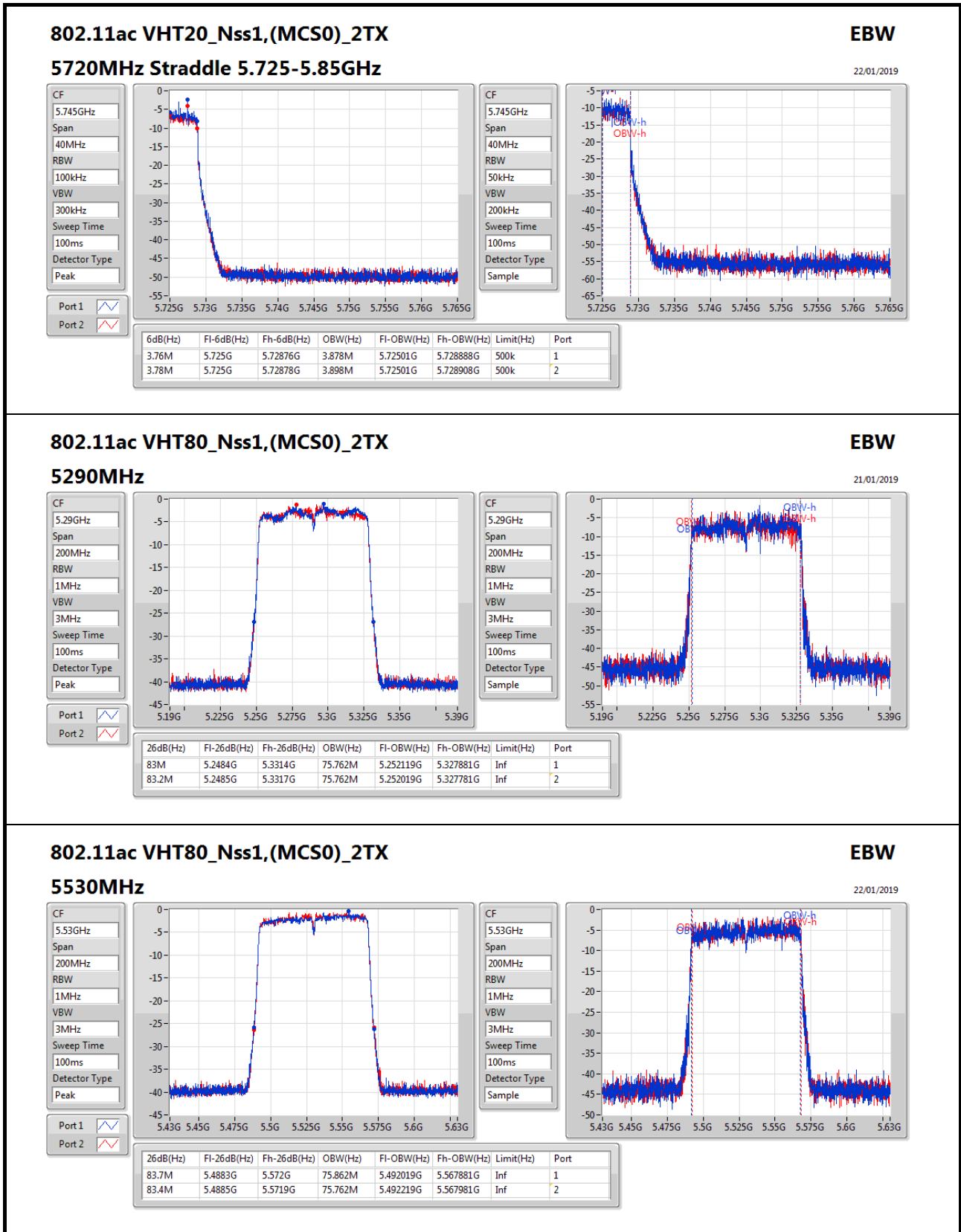


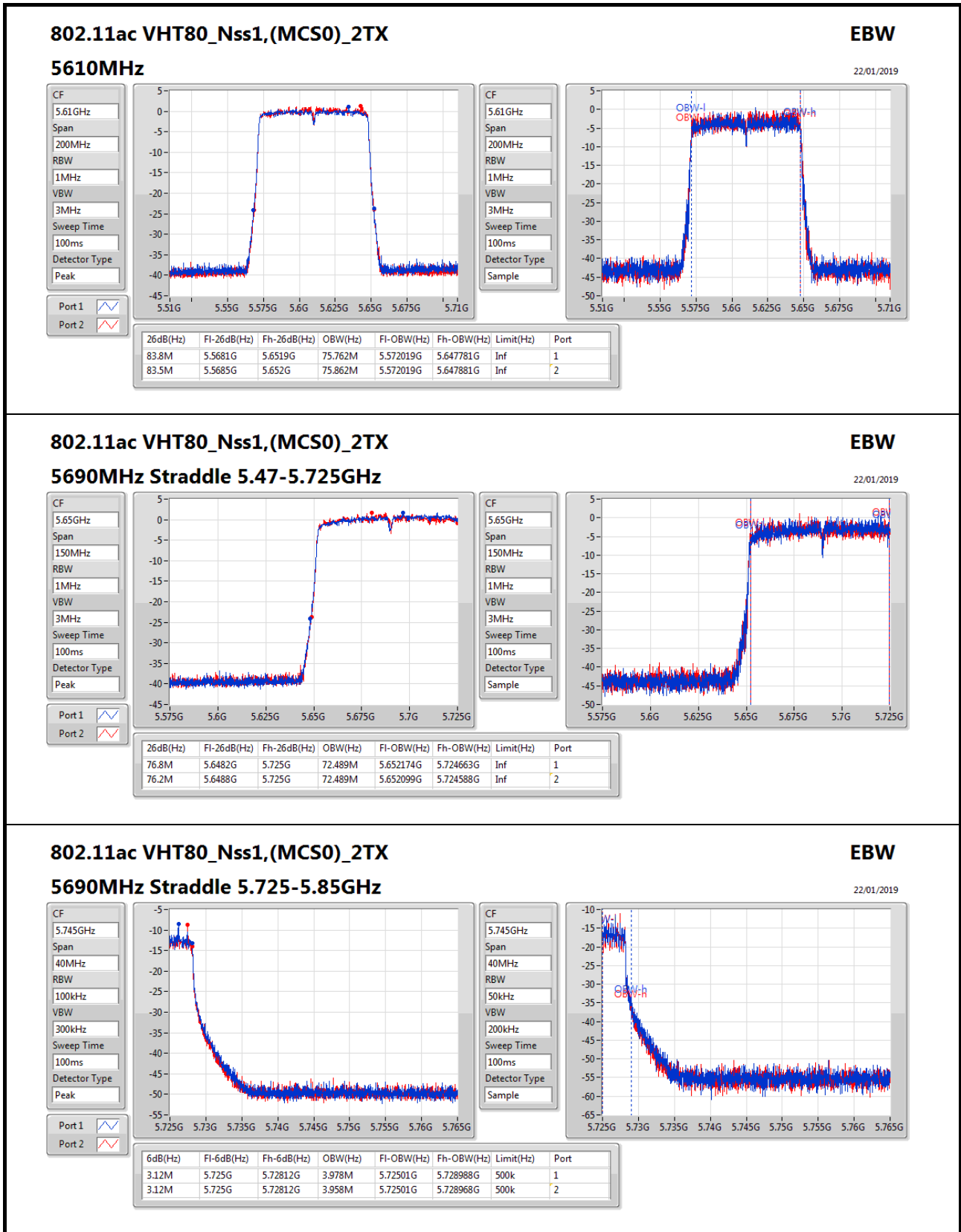














For EUT 1 + Set 3 antenna:

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	19.075M	16.417M	16M4D1D	18.875M	16.392M
802.11ac VHT20_Nss1,(MCS0)_2TX	19.975M	17.666M	17M7D1D	19.75M	17.591M
802.11ac VHT80_Nss1,(MCS0)_2TX	83.1M	75.662M	75M7D1D	83.1M	75.562M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	19.05M	16.417M	16M4D1D	14.535M	13.193M
802.11ac VHT20_Nss1,(MCS0)_2TX	20M	17.616M	17M6D1D	14.97M	13.823M
802.11ac VHT80_Nss1,(MCS0)_2TX	83.6M	75.862M	75M9D1D	76.425M	72.489M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	3.16M	3.358M	3M36D1D	3.12M	3.338M
802.11ac VHT20_Nss1,(MCS0)_2TX	3.74M	3.878M	3M88D1D	3.74M	3.878M
802.11ac VHT80_Nss1,(MCS0)_2TX	3.1M	4.578M	4M58D1D	3.1M	4.438M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;



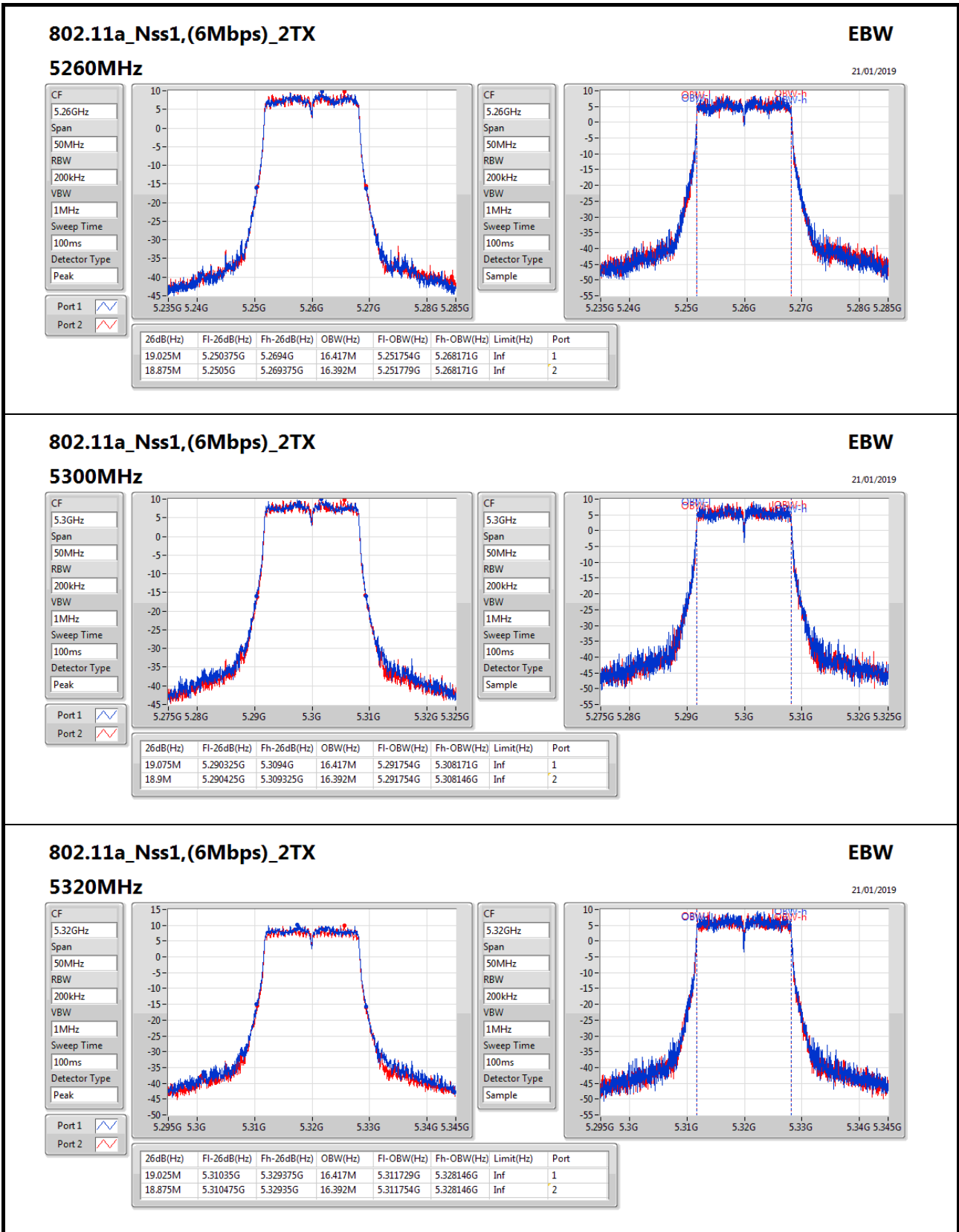
EBW Result

Appendix A

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	19.025M	16.417M	18.875M	16.392M
5300MHz	Pass	Inf	19.075M	16.417M	18.9M	16.392M
5320MHz	Pass	Inf	19.025M	16.417M	18.875M	16.392M
5500MHz	Pass	Inf	19.025M	16.392M	18.9M	16.392M
5580MHz	Pass	Inf	19.025M	16.392M	19M	16.392M
5700MHz	Pass	Inf	19.05M	16.367M	19M	16.417M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	14.535M	13.238M	14.625M	13.193M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.16M	3.338M	3.12M	3.358M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	19.775M	17.616M	19.975M	17.591M
5300MHz	Pass	Inf	19.975M	17.666M	19.75M	17.591M
5320MHz	Pass	Inf	19.925M	17.641M	19.875M	17.591M
5500MHz	Pass	Inf	19.8M	17.566M	19.925M	17.591M
5580MHz	Pass	Inf	19.85M	17.591M	20M	17.616M
5700MHz	Pass	Inf	19.825M	17.616M	19.9M	17.616M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.015M	13.823M	14.97M	13.823M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.74M	3.878M	3.74M	3.878M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	83.1M	75.562M	83.1M	75.662M
5530MHz	Pass	Inf	83.4M	75.862M	83.3M	75.662M
5610MHz	Pass	Inf	83.2M	75.662M	83.6M	75.762M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.425M	72.564M	76.8M	72.489M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.1M	4.438M	3.1M	4.578M

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

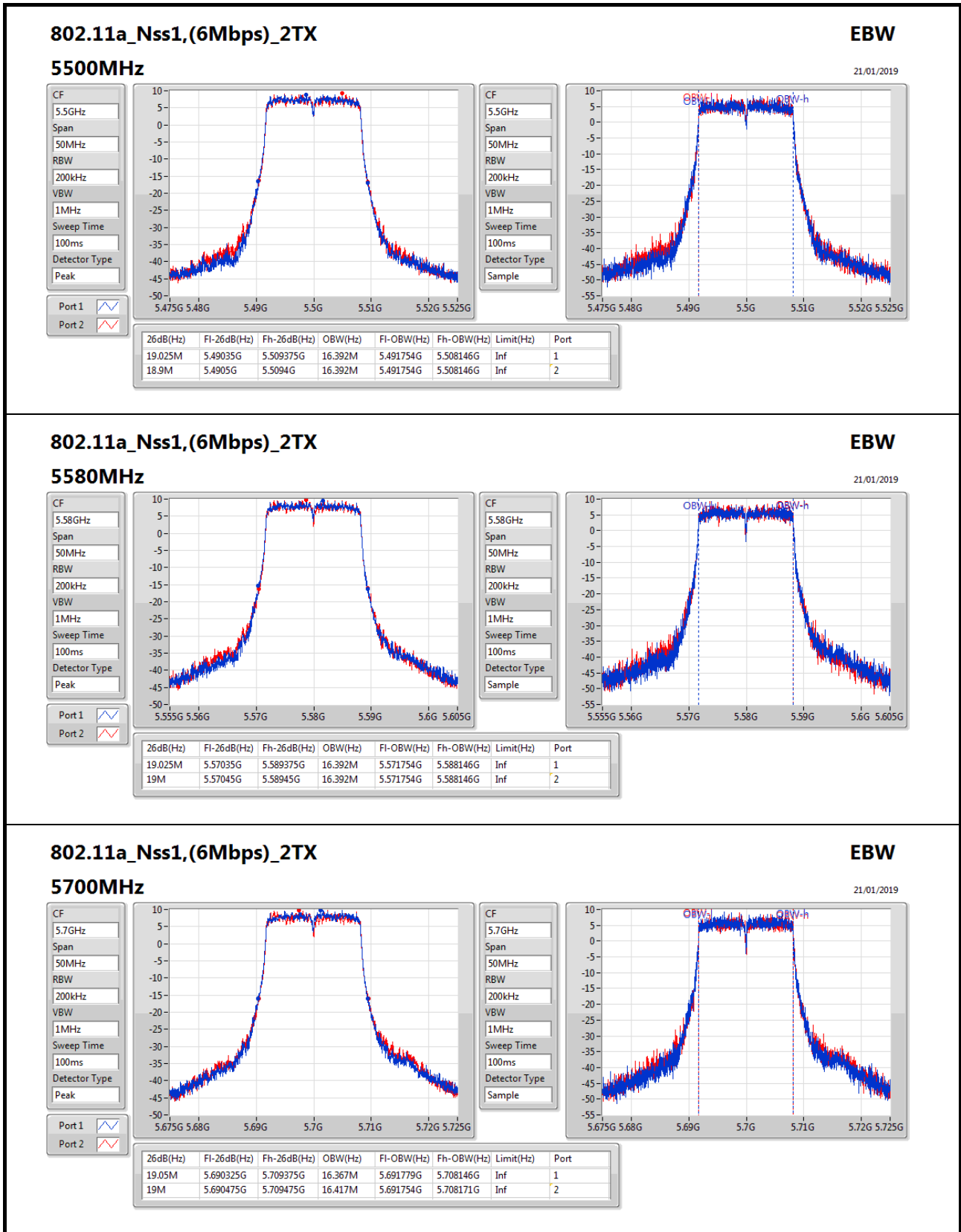
CF: 5.32GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Peak

Port 1:

Port 2:

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
19.025M	5.31035G	5.329375G	16.417M	5.311729G	5.328146G	Inf	1
18.875M	5.310475G	5.32935G	16.392M	5.311754G	5.328146G	Inf	2

CF: 5.32GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Sample


802.11a_Nss1,(6Mbps)_2TX
EBW

21/01/2019

5700MHz

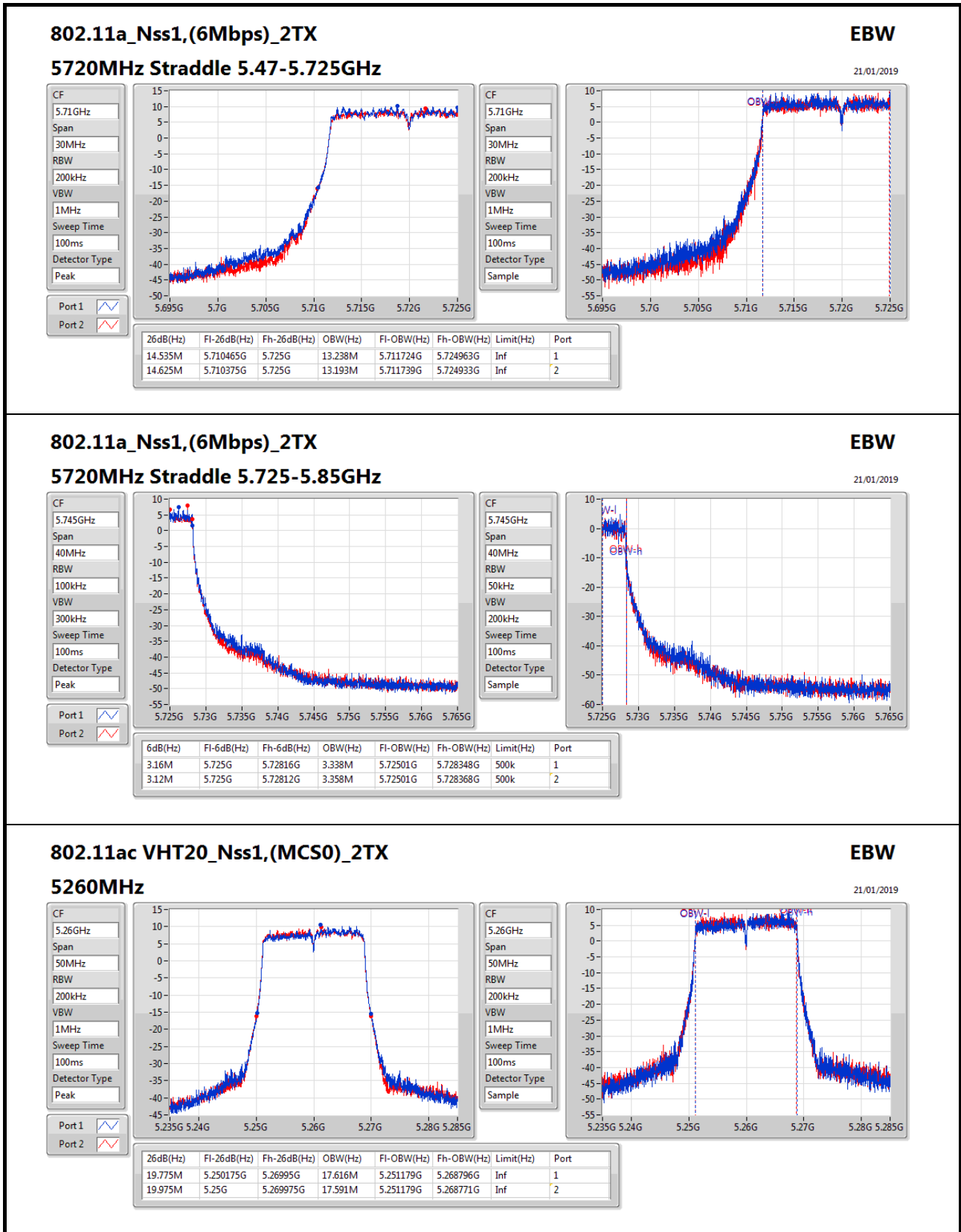
CF: 5.7GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Peak

Port 1:

Port 2:

CF: 5.7GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Sample

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
19.05M	5.690325G	5.709375G	16.367M	5.691779G	5.708146G	Inf	1
19M	5.690475G	5.709475G	16.417M	5.691754G	5.708171G	Inf	2



802.11ac VHT20_Nss1,(MCS0)_2TX

5260MHz

EBW
21/01/2019

CF: 5.26GHz
 Span: 50MHz
 RBW: 200kHz
 VBW: 1MHz
 Sweep Time: 100ms
 Detector Type: Peak

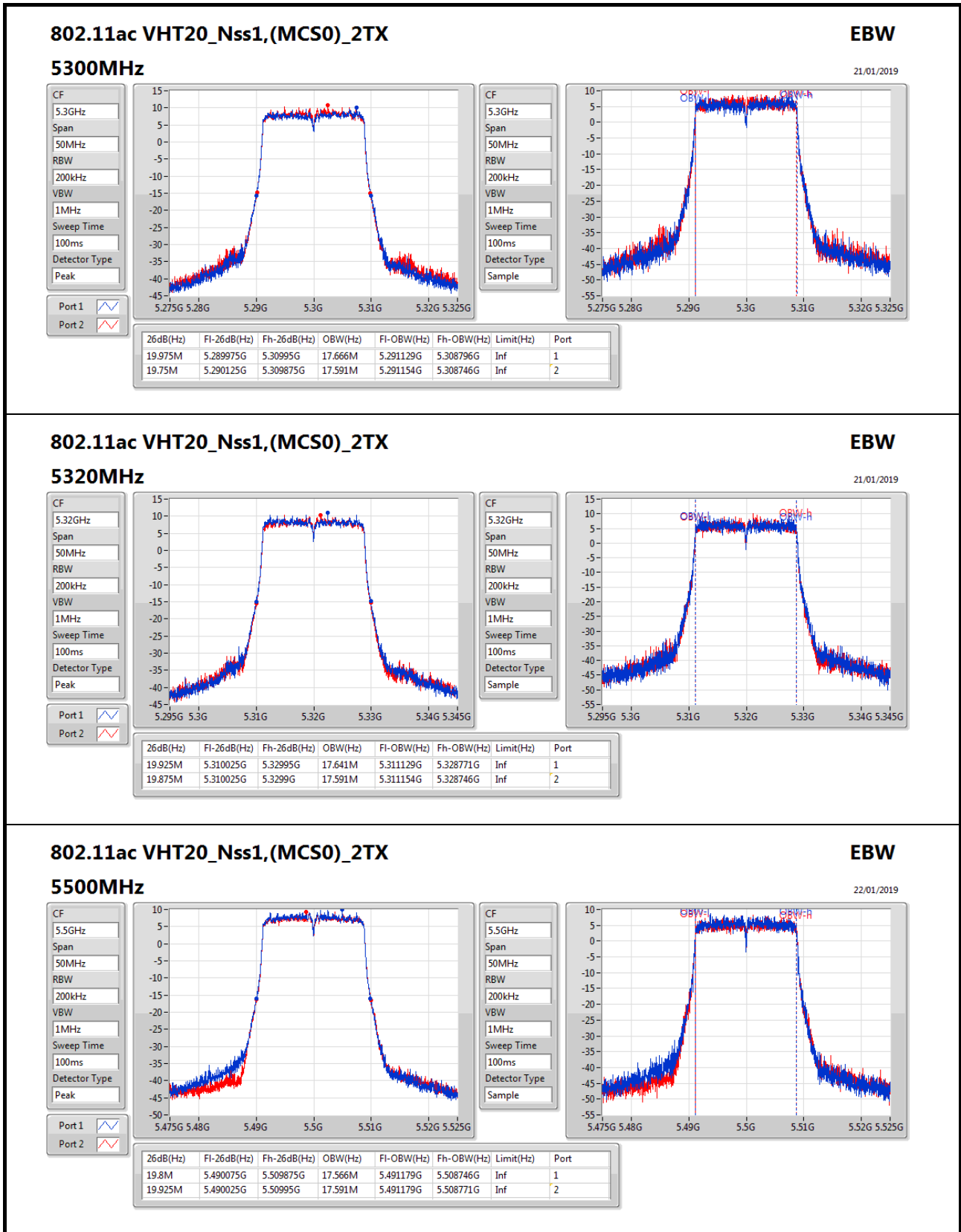
Port 1:

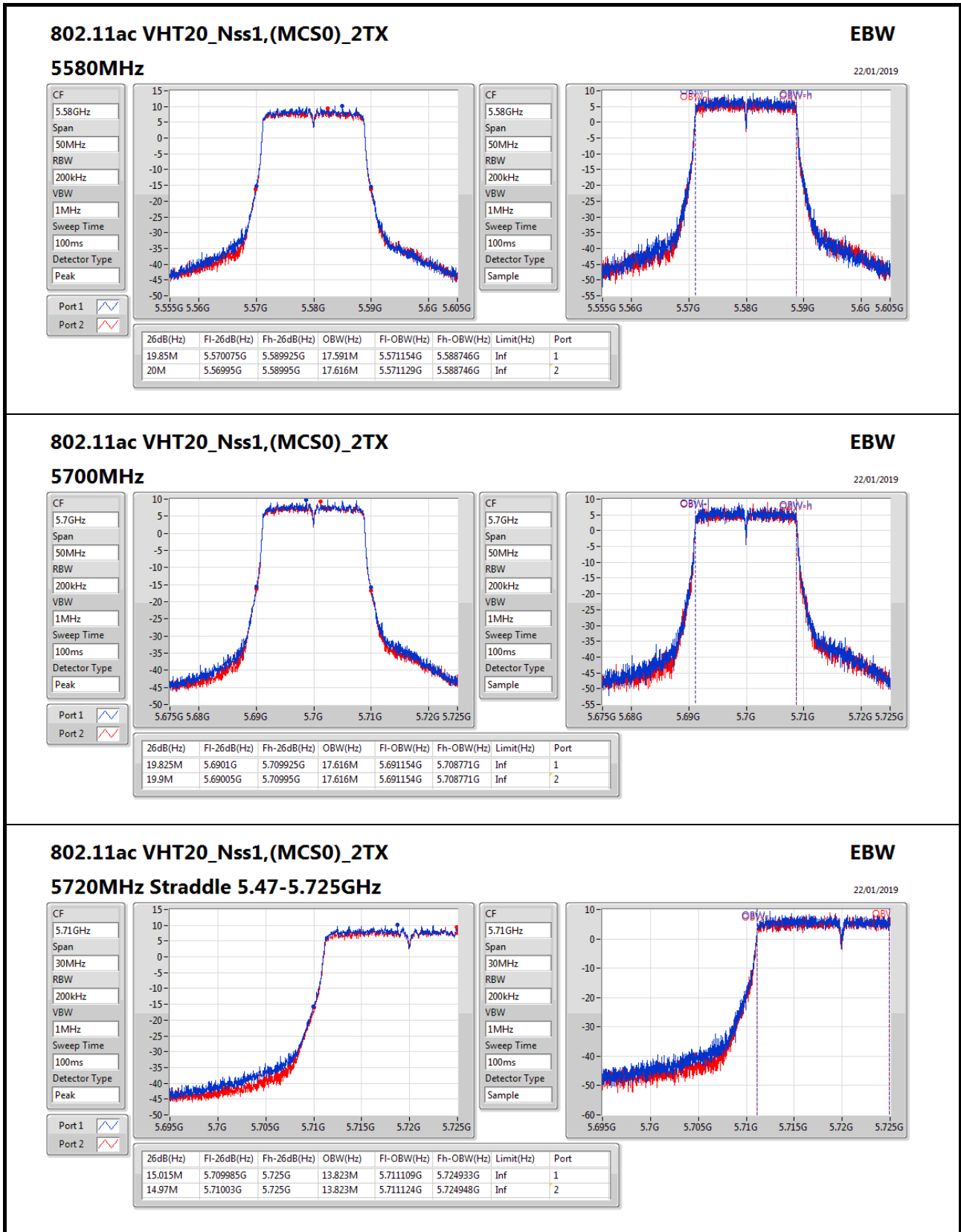
Port 2:

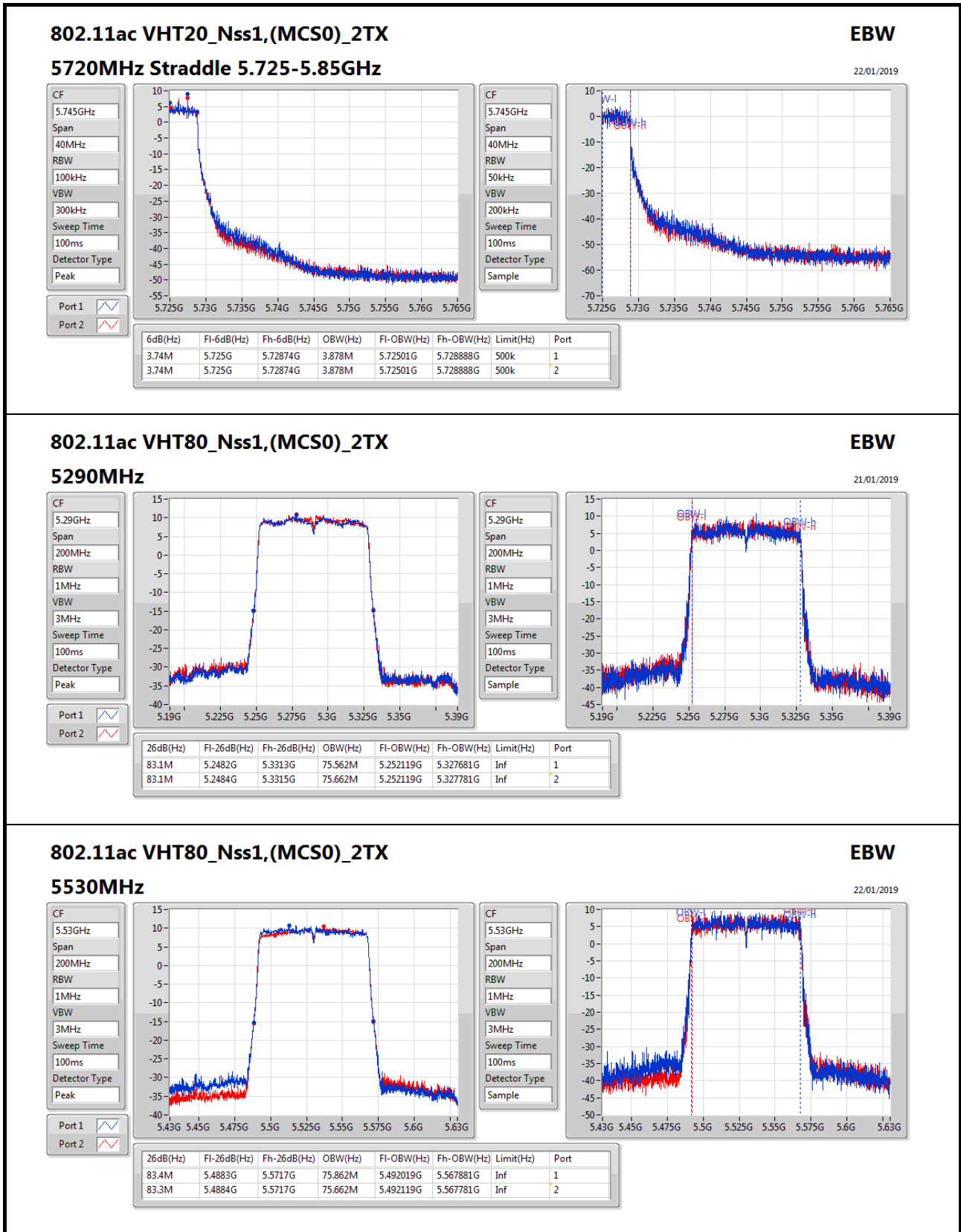
CF: 5.26GHz
 Span: 50MHz
 RBW: 200kHz
 VBW: 1MHz
 Sweep Time: 100ms
 Detector Type: Sample

Port 1:

Port 2:







802.11ac VHT80_Nss1,(MCS0)_2TX

5530MHz

EBW

22/01/2019

CF: 5.53GHz

Span: 200MHz

RBW: 1MHz

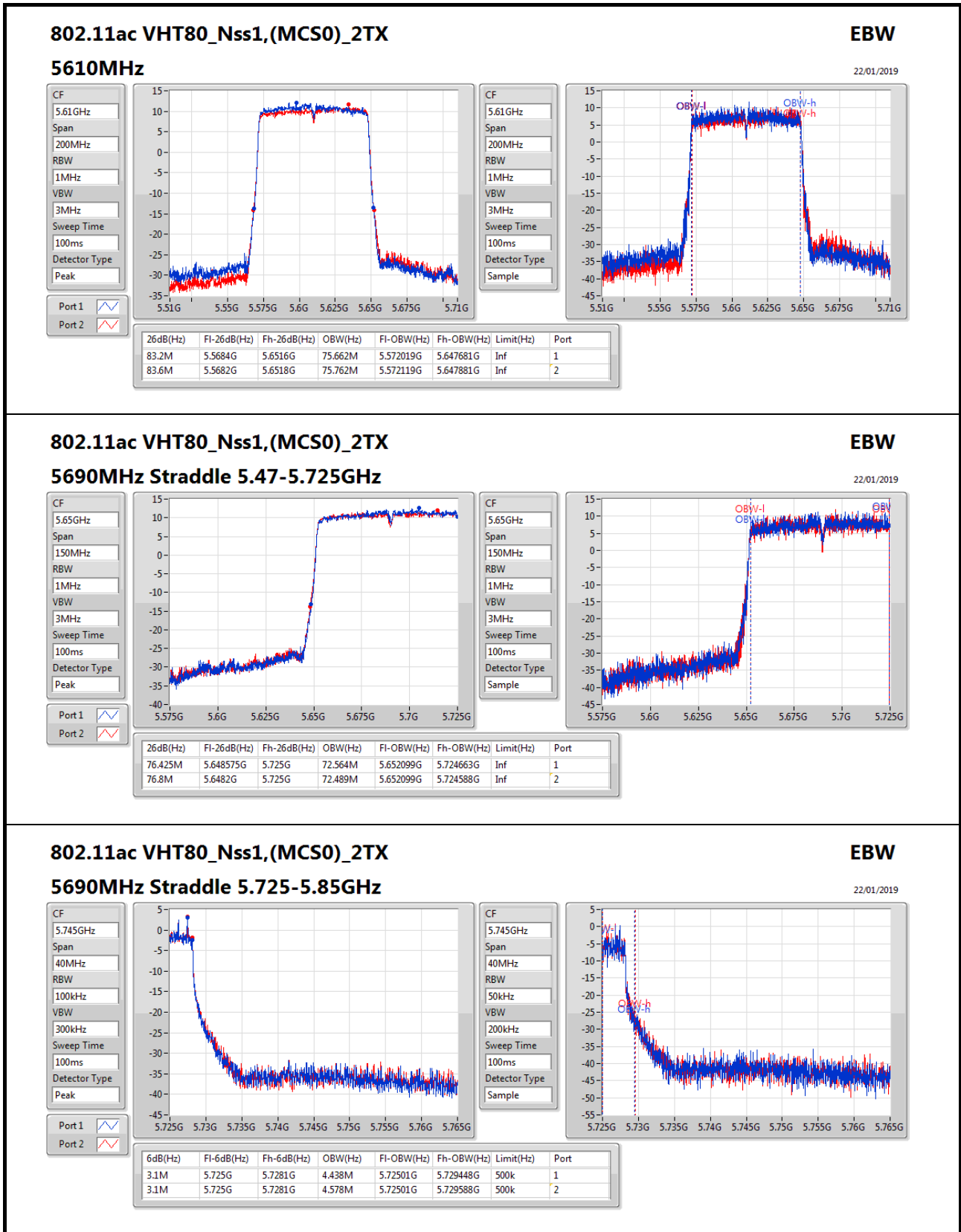
VBW: 3MHz

Sweep Time: 100ms

Detector Type: Peak

Port 1:

Port 2:





Power Result

Appendix B

For EUT 1 + Set 1 antenna: Summary

Mode	Total Power (dBm)	Total Power (W)
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	3.71	0.00235
802.11ac VHT20_Nss1,(MCS0)_2TX	3.63	0.00231
802.11ac VHT80_Nss1,(MCS0)_2TX	3.46	0.00222
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	3.42	0.00220
802.11ac VHT20_Nss1,(MCS0)_2TX	3.47	0.00222
802.11ac VHT80_Nss1,(MCS0)_2TX	3.50	0.00224
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	-4.53	0.00035
802.11ac VHT20_Nss1,(MCS0)_2TX	-4.13	0.00039
802.11ac VHT80_Nss1,(MCS0)_2TX	-10.73	0.00008



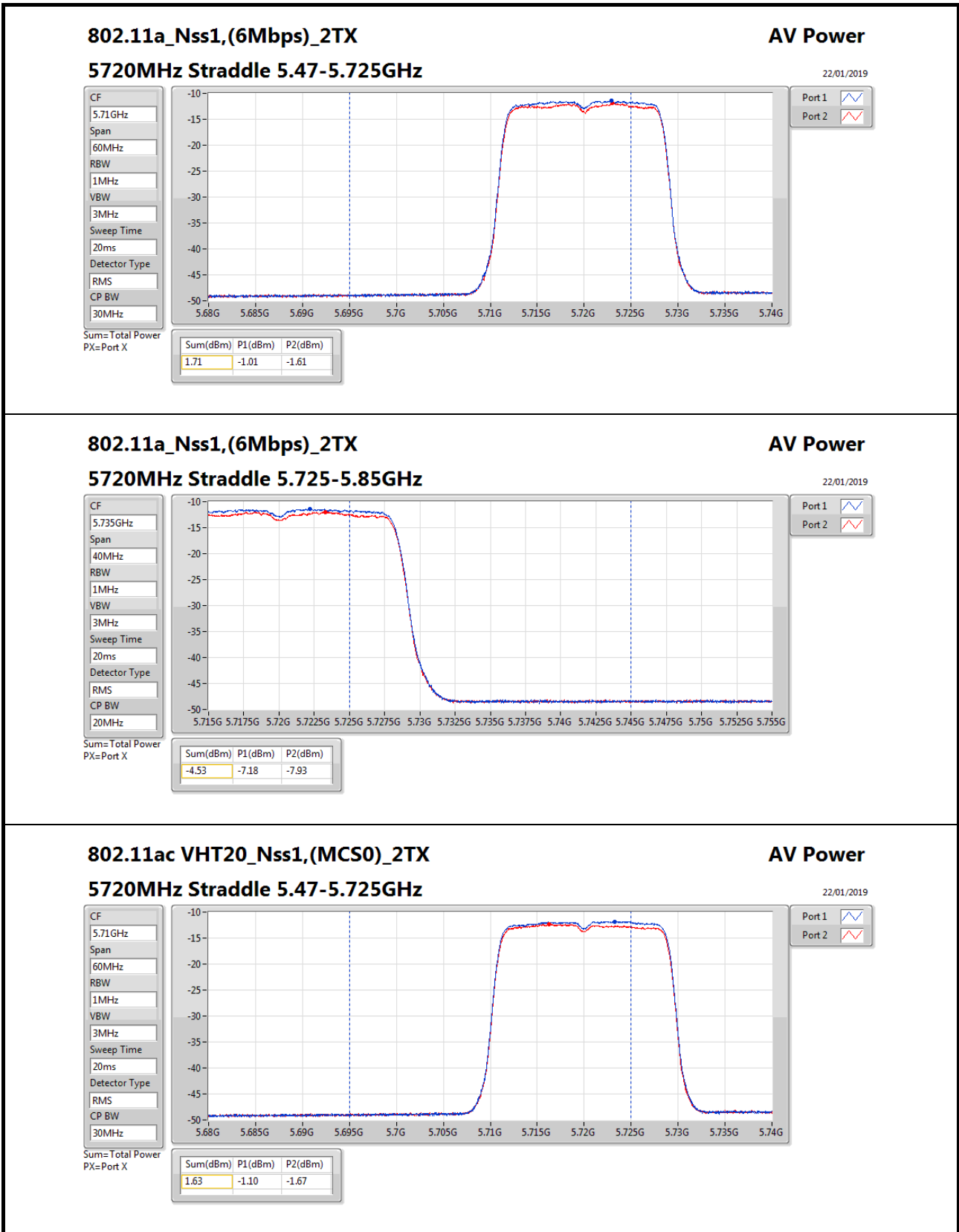
Power Result

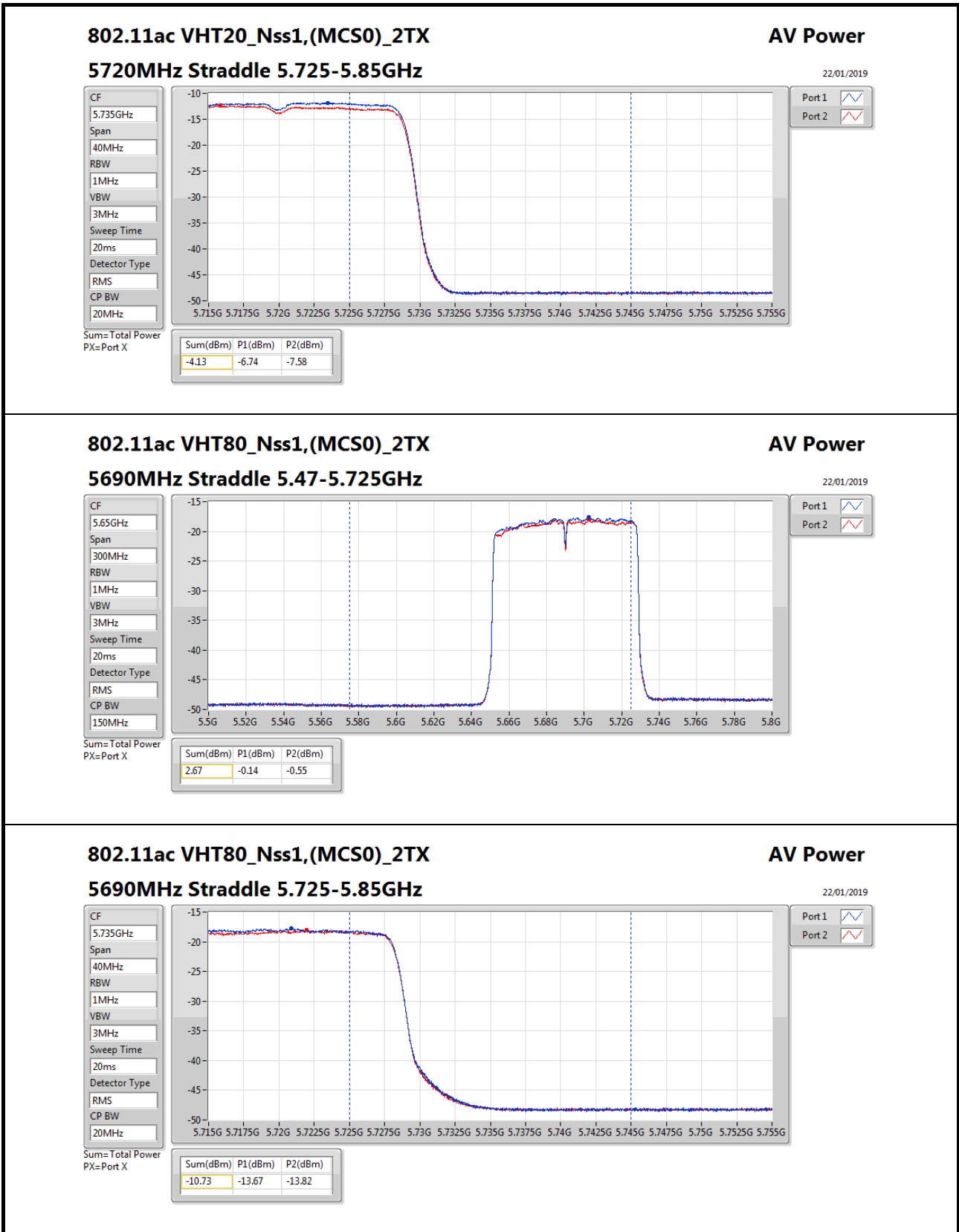
Appendix B

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	25.00	0.63	0.76	3.71	4.79
5300MHz	Pass	25.00	0.42	0.57	3.51	4.74
5320MHz	Pass	25.00	0.56	0.63	3.61	4.76
5500MHz	Pass	25.00	0.23	0.07	3.16	4.76
5580MHz	Pass	25.00	0.34	0.47	3.42	4.78
5700MHz	Pass	25.00	0.26	0.05	3.17	4.80
5720MHz Straddle 5.47-5.725GHz	Pass	25.00	-1.01	-1.61	1.71	3.63
5720MHz Straddle 5.725-5.85GHz	Pass	25.00	-7.18	-7.93	-4.53	30.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	25.00	0.48	0.75	3.63	4.97
5300MHz	Pass	25.00	0.39	0.56	3.49	4.98
5320MHz	Pass	25.00	0.30	0.69	3.51	4.96
5500MHz	Pass	25.00	0.36	0.02	3.20	4.97
5580MHz	Pass	25.00	0.63	0.28	3.47	4.98
5700MHz	Pass	25.00	0.37	0.04	3.22	4.98
5720MHz Straddle 5.47-5.725GHz	Pass	25.00	-1.10	-1.67	1.63	3.78
5720MHz Straddle 5.725-5.85GHz	Pass	25.00	-6.74	-7.58	-4.13	30.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	25.00	0.33	0.56	3.46	4.98
5530MHz	Pass	25.00	-0.21	-0.7	2.56	4.98
5610MHz	Pass	25.00	0.42	0.55	3.50	4.98
5690MHz Straddle 5.47-5.725GHz	Pass	25.00	-0.14	-0.55	2.67	4.98
5690MHz Straddle 5.725-5.85GHz	Pass	25.00	-13.67	-13.82	-10.73	30.00

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







Power Result

Appendix B

For EUT 1 + Set 2 antenna:

Summary

Mode	Total Power (dBm)	Total Power (W)
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	11.37	0.01371
802.11ac VHT20_Nss1,(MCS0)_2TX	11.80	0.01514
802.11ac VHT80_Nss1,(MCS0)_2TX	10.66	0.01164
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	12.74	0.01879
802.11ac VHT20_Nss1,(MCS0)_2TX	12.60	0.01820
802.11ac VHT80_Nss1,(MCS0)_2TX	12.79	0.01901
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	5.48	0.00353
802.11ac VHT20_Nss1,(MCS0)_2TX	5.95	0.00394
802.11ac VHT80_Nss1,(MCS0)_2TX	-0.76	0.00084



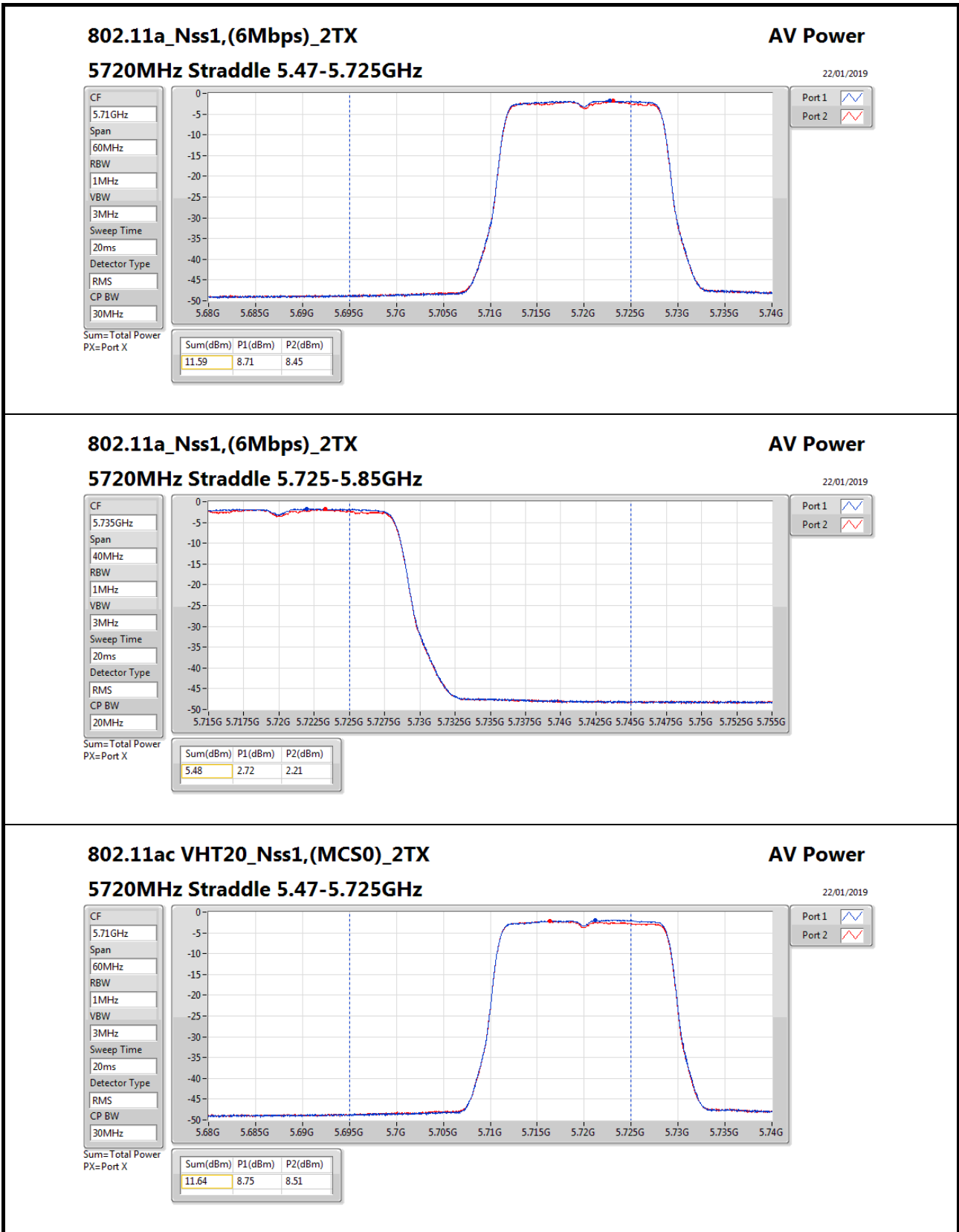
Power Result

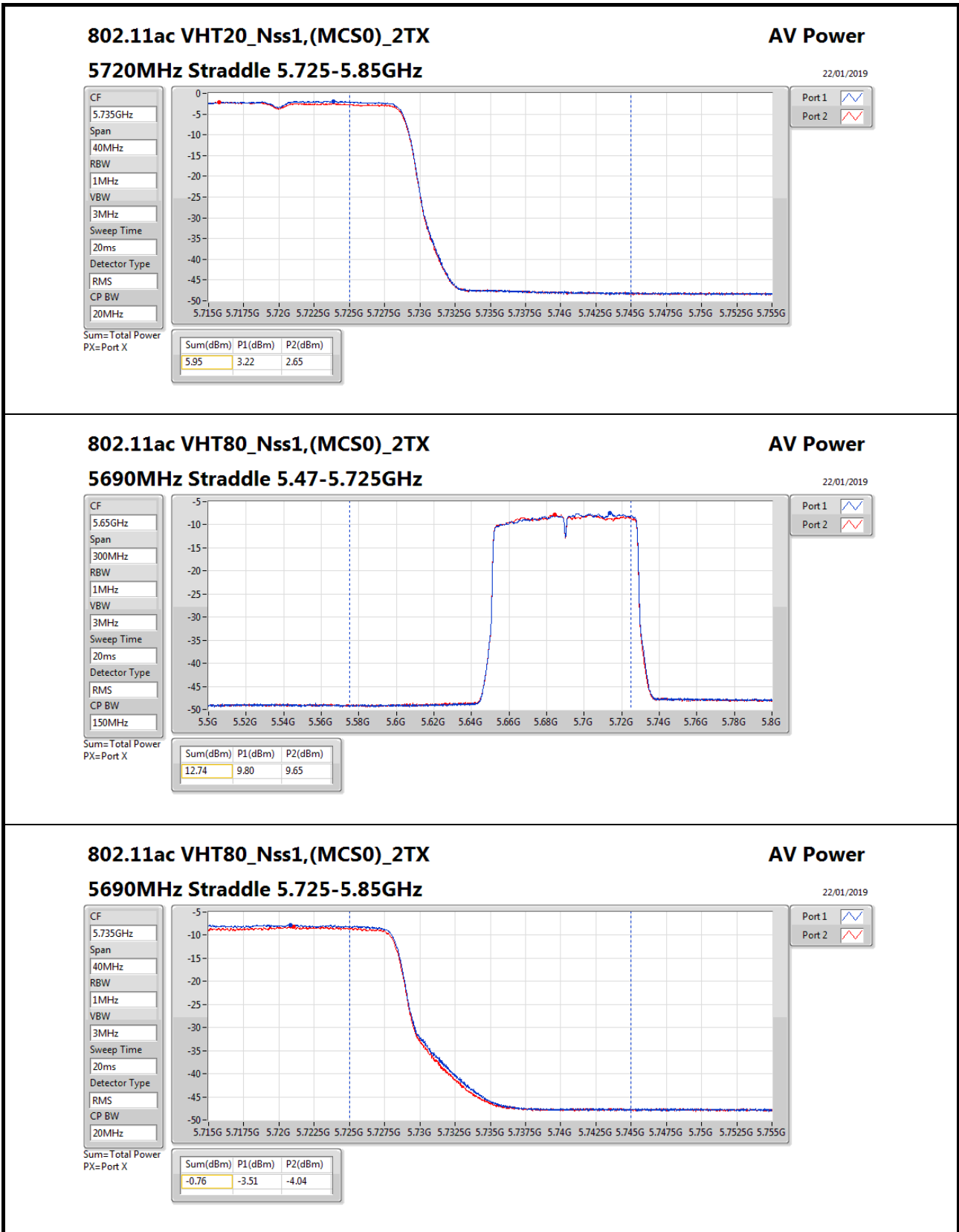
Appendix B

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	17.00	8.24	8.26	11.26	12.78
5300MHz	Pass	17.00	8.22	8.30	11.27	12.75
5320MHz	Pass	17.00	8.32	8.40	11.37	12.73
5500MHz	Pass	17.00	9.19	9.06	12.14	12.78
5580MHz	Pass	17.00	9.67	9.79	12.74	12.76
5700MHz	Pass	17.00	9.64	9.32	12.49	12.78
5720MHz Straddle 5.47-5.725GHz	Pass	17.00	8.71	8.45	11.59	11.62
5720MHz Straddle 5.725-5.85GHz	Pass	17.00	2.72	2.21	5.48	19.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	17.00	8.61	8.73	11.68	12.98
5300MHz	Pass	17.00	8.47	8.71	11.60	12.96
5320MHz	Pass	17.00	8.70	8.88	11.80	12.94
5500MHz	Pass	17.00	8.65	8.68	11.68	12.98
5580MHz	Pass	17.00	9.54	9.63	12.60	12.98
5700MHz	Pass	17.00	9.67	9.47	12.58	12.98
5720MHz Straddle 5.47-5.725GHz	Pass	17.00	8.75	8.51	11.64	11.75
5720MHz Straddle 5.725-5.85GHz	Pass	17.00	3.22	2.65	5.95	19.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	17.00	7.78	7.52	10.66	12.98
5530MHz	Pass	17.00	8.26	8.59	11.44	12.98
5610MHz	Pass	17.00	9.64	9.92	12.79	12.98
5690MHz Straddle 5.47-5.725GHz	Pass	17.00	9.80	9.65	12.74	12.98
5690MHz Straddle 5.725-5.85GHz	Pass	17.00	-3.51	-4.04	-0.76	19.00

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







Power Result

Appendix B

For EUT 1 + Set 3 antenna: Summary

Mode	Total Power (dBm)	Total Power (W)
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	23.73	0.23605
802.11ac VHT20_Nss1,(MCS0)_2TX	23.93	0.24717
802.11ac VHT80_Nss1,(MCS0)_2TX	22.52	0.17865
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	23.75	0.23714
802.11ac VHT20_Nss1,(MCS0)_2TX	23.57	0.22751
802.11ac VHT80_Nss1,(MCS0)_2TX	23.93	0.24717
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	16.23	0.04198
802.11ac VHT20_Nss1,(MCS0)_2TX	16.84	0.04831
802.11ac VHT80_Nss1,(MCS0)_2TX	10.32	0.01076



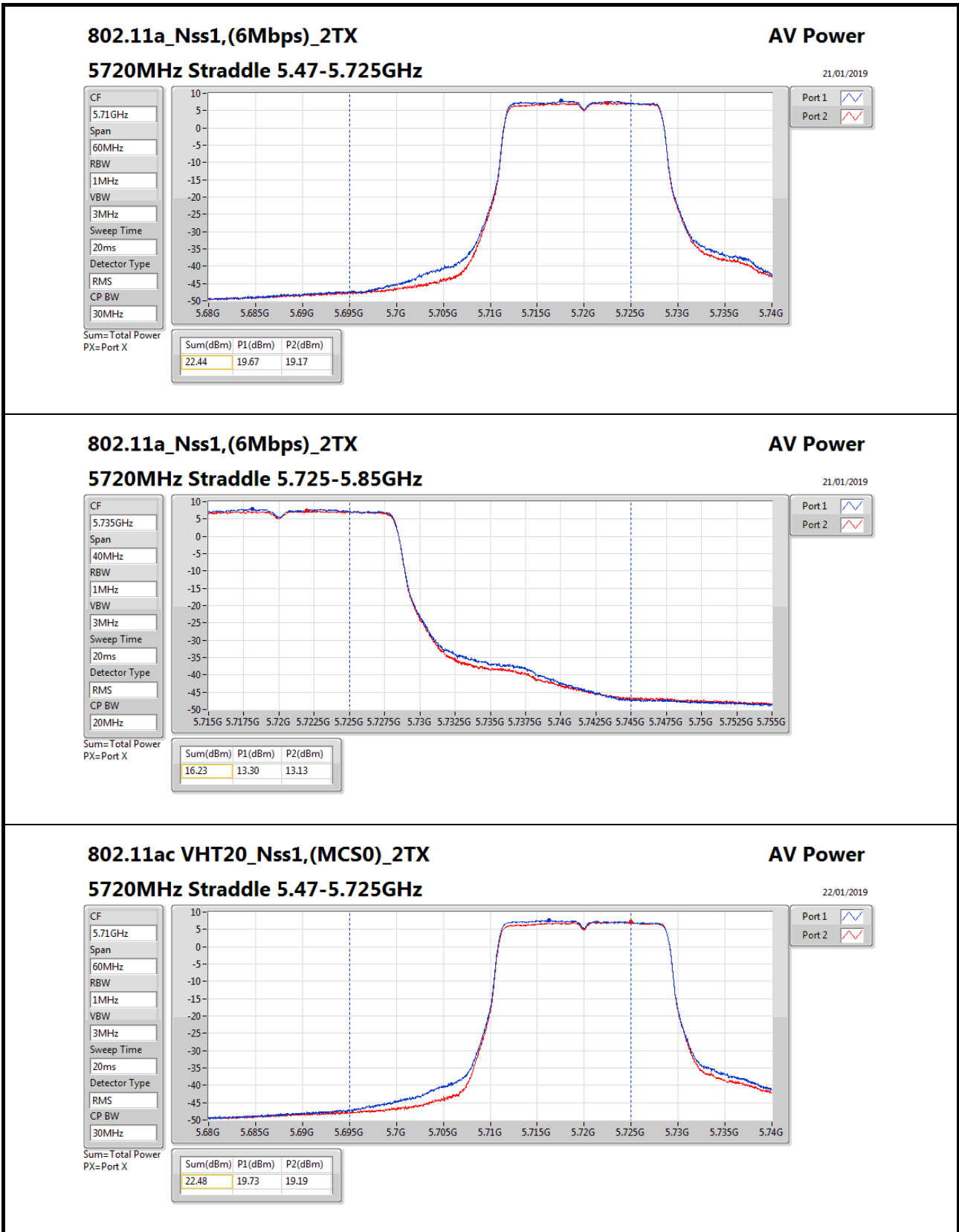
Power Result

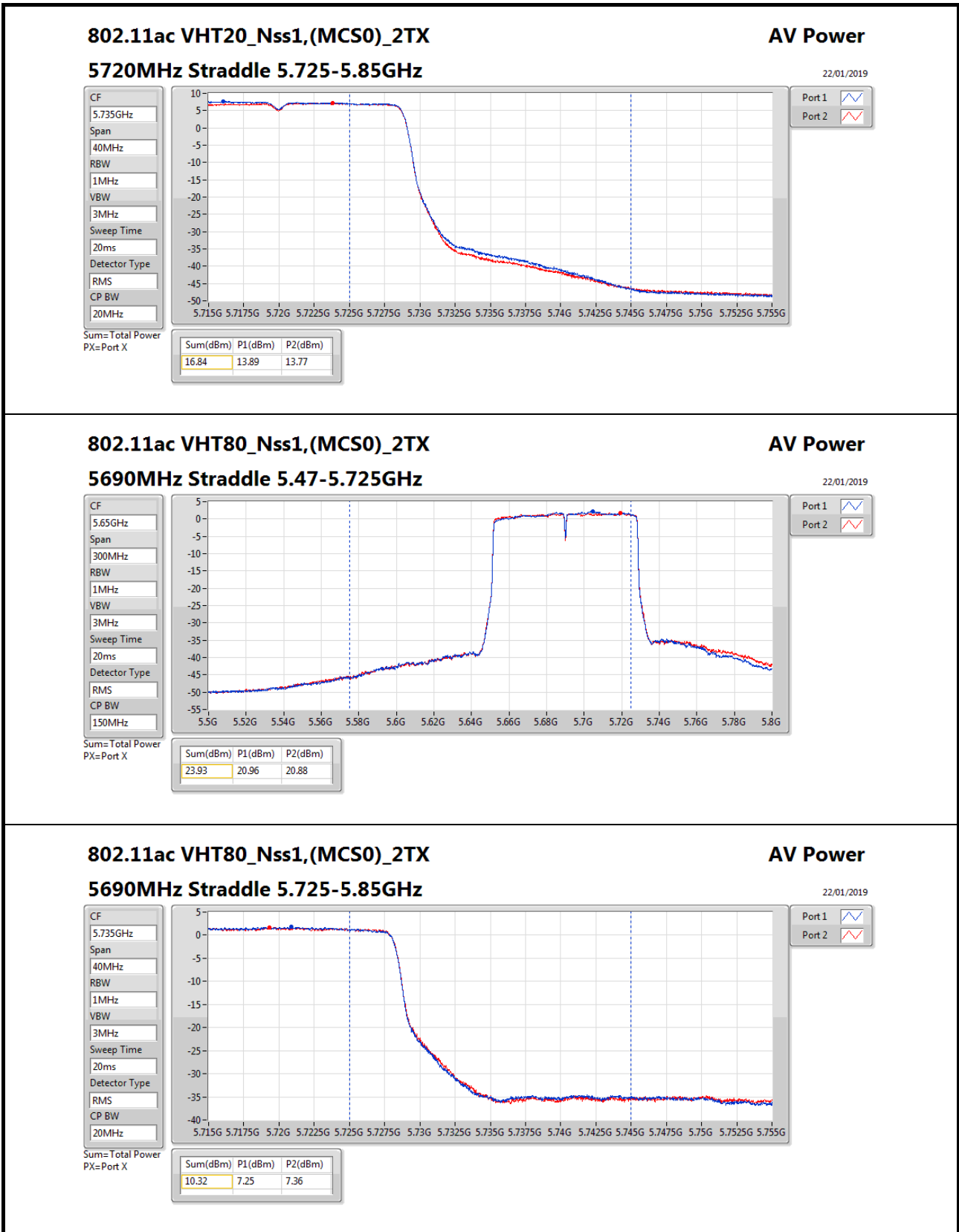
Appendix B

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	2.00	20.33	20.47	23.41	23.76
5300MHz	Pass	2.00	20.49	20.56	23.54	23.76
5320MHz	Pass	2.00	20.76	20.68	23.73	23.76
5500MHz	Pass	2.00	20.54	20.62	23.59	23.76
5580MHz	Pass	2.00	20.72	20.75	23.75	23.79
5700MHz	Pass	2.00	20.57	20.52	23.56	23.79
5720MHz Straddle 5.47-5.725GHz	Pass	2.00	19.67	19.17	22.44	22.62
5720MHz Straddle 5.725-5.85GHz	Pass	2.00	13.30	13.13	16.23	30.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	2.00	20.61	21.03	23.84	23.96
5300MHz	Pass	2.00	20.72	20.97	23.86	23.96
5320MHz	Pass	2.00	20.85	20.98	23.93	23.98
5500MHz	Pass	2.00	20.79	20.24	23.53	23.97
5580MHz	Pass	2.00	20.91	20.17	23.57	23.98
5700MHz	Pass	2.00	20.77	20.27	23.54	23.97
5720MHz Straddle 5.47-5.725GHz	Pass	2.00	19.73	19.19	22.48	22.75
5720MHz Straddle 5.725-5.85GHz	Pass	2.00	13.89	13.77	16.84	30.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	2.00	19.50	19.51	22.52	23.98
5530MHz	Pass	2.00	19.56	19.52	22.55	23.98
5610MHz	Pass	2.00	21.06	20.65	23.87	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	2.00	20.96	20.88	23.93	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	2.00	7.25	7.36	10.32	30.00

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







For EUT 1 + Set 1 antenna:
Summary

Mode	PD (dBm/RBW)
5.25-5.35GHz	-
802.11a_Nss1,(6Mbps)_2TX	-9.75
802.11ac VHT20_Nss1,(MCS0)_2TX	-9.83
802.11ac VHT80_Nss1,(MCS0)_2TX	-15.87
5.47-5.725GHz	-
802.11a_Nss1,(6Mbps)_2TX	-9.91
802.11ac VHT20_Nss1,(MCS0)_2TX	-10.01
802.11ac VHT80_Nss1,(MCS0)_2TX	-15.92
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_2TX	-12.16
802.11ac VHT20_Nss1,(MCS0)_2TX	-12.35
802.11ac VHT80_Nss1,(MCS0)_2TX	-18.19

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



PSD Result

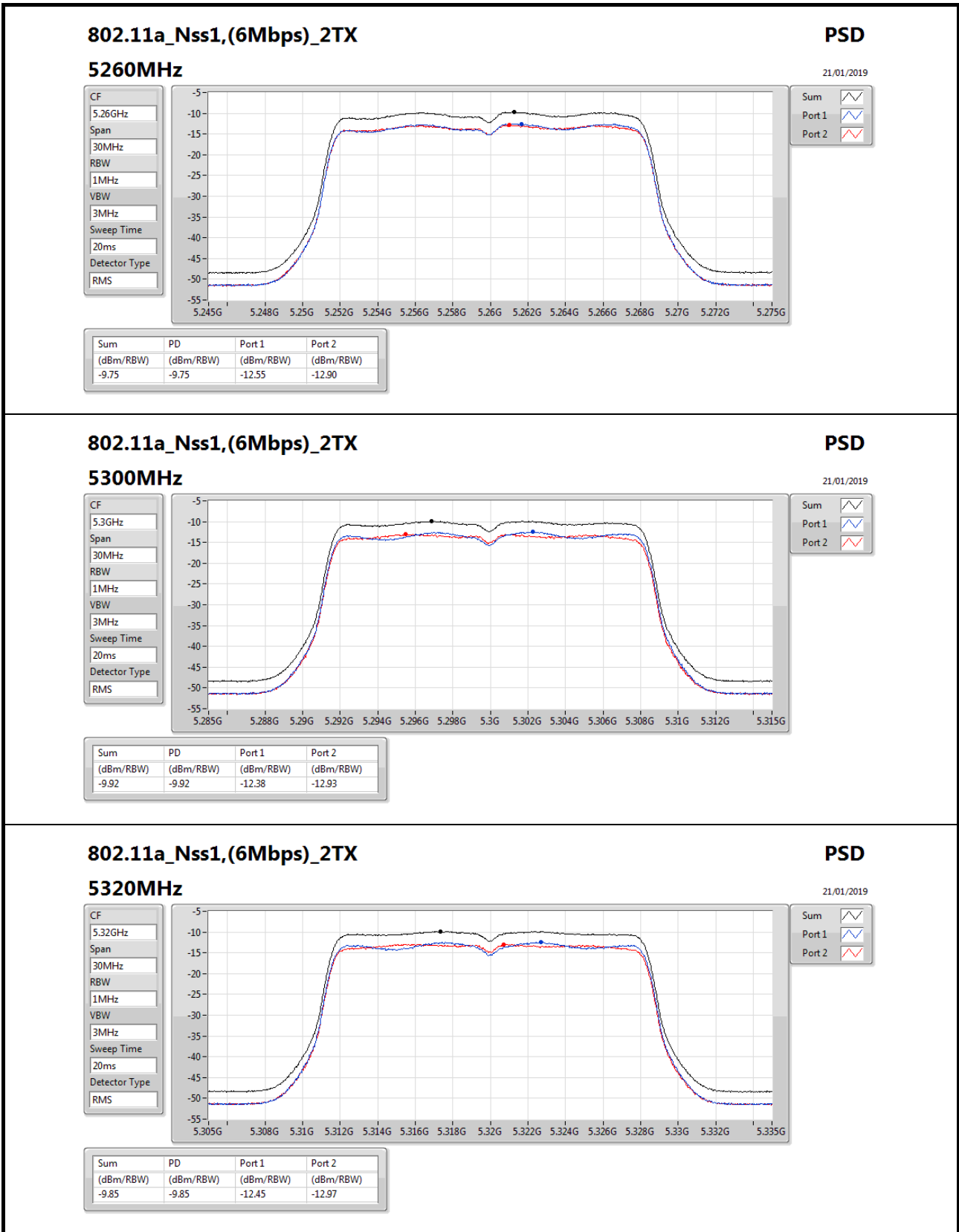
Appendix C

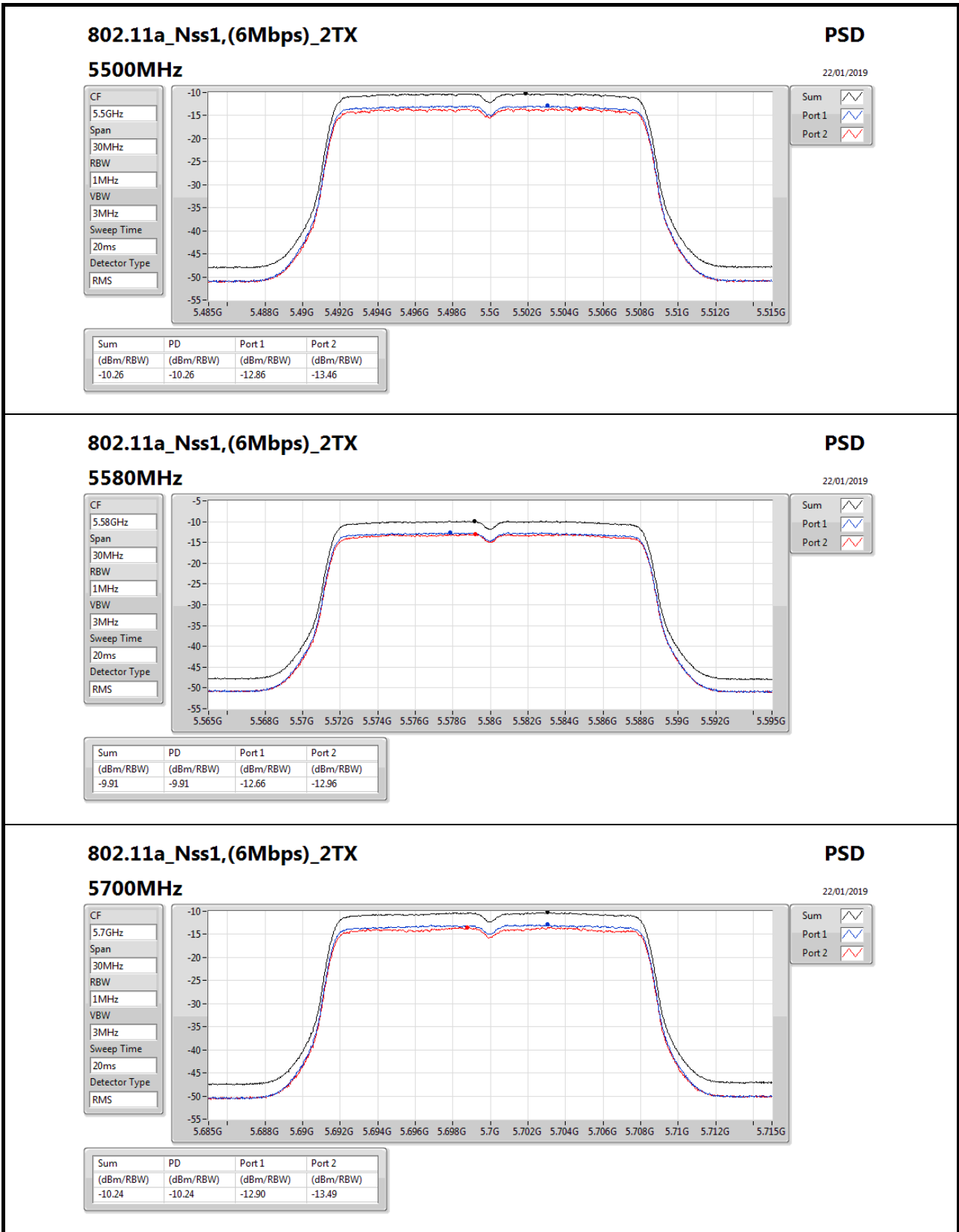
Result

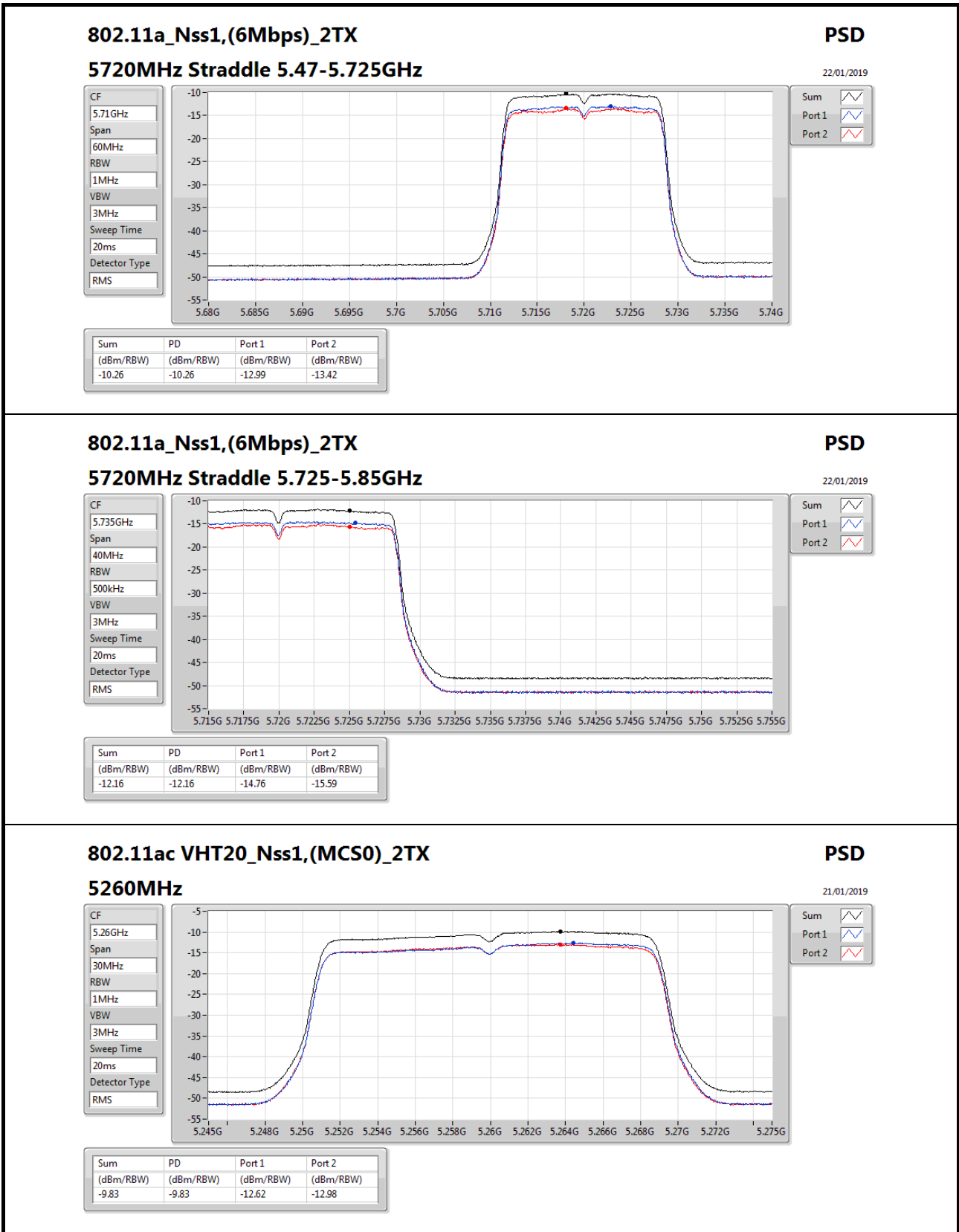
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	25.00	-12.55	-12.90	-9.75	-8.00
5300MHz	Pass	25.00	-12.38	-12.93	-9.92	-8.00
5320MHz	Pass	25.00	-12.45	-12.97	-9.85	-8.00
5500MHz	Pass	25.00	-12.86	-13.46	-10.26	-8.00
5580MHz	Pass	25.00	-12.66	-12.96	-9.91	-8.00
5700MHz	Pass	25.00	-12.90	-13.49	-10.24	-8.00
5720MHz Straddle 5.47-5.725GHz	Pass	25.00	-12.99	-13.42	-10.26	-8.00
5720MHz Straddle 5.725-5.85GHz	Pass	25.00	-14.76	-15.59	-12.16	30.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	25.00	-12.62	-12.98	-9.83	-8.00
5300MHz	Pass	25.00	-12.91	-12.78	-9.95	-8.00
5320MHz	Pass	25.00	-13.00	-12.49	-9.92	-8.00
5500MHz	Pass	25.00	-13.05	-13.51	-10.30	-8.00
5580MHz	Pass	25.00	-12.81	-13.17	-10.01	-8.00
5700MHz	Pass	25.00	-12.85	-13.40	-10.22	-8.00
5720MHz Straddle 5.47-5.725GHz	Pass	25.00	-13.24	-13.83	-10.63	-8.00
5720MHz Straddle 5.725-5.85GHz	Pass	25.00	-14.95	-15.80	-12.35	30.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	25.00	-18.64	-19.02	-15.87	-8.00
5530MHz	Pass	25.00	-19.27	-20.02	-16.69	-8.00
5610MHz	Pass	25.00	-18.86	-18.75	-15.92	-8.00
5690MHz Straddle 5.47-5.725GHz	Pass	25.00	-19.26	-19.33	-16.36	-8.00
5690MHz Straddle 5.725-5.85GHz	Pass	25.00	-21.17	-21.24	-18.19	30.00

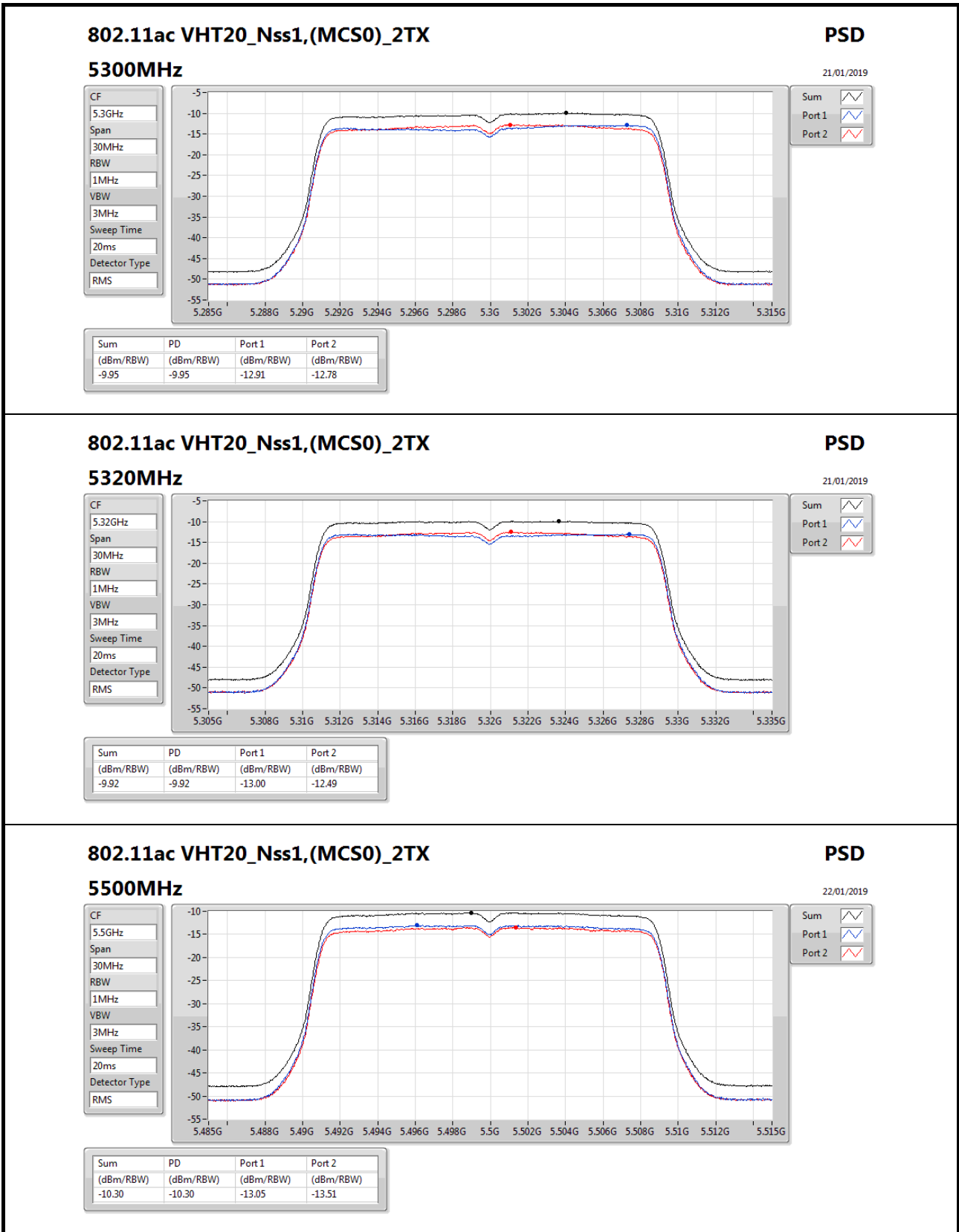
DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

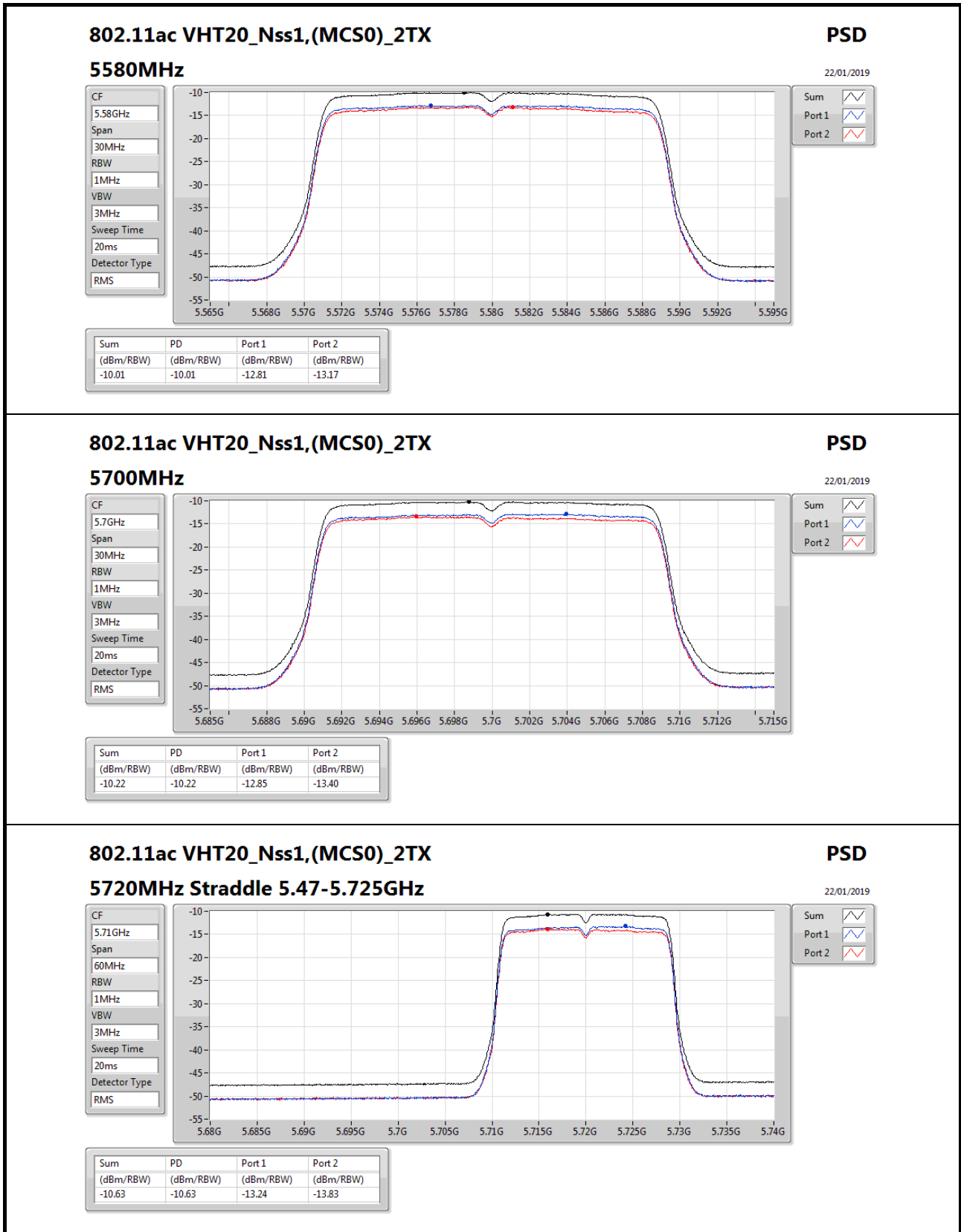
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;











802.11ac VHT20_Nss1,(MCS0)_2TX

5720MHz Straddle 5.47-5.725GHz

PSD

22/01/2019

CF
5.71GHz

Span
60MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

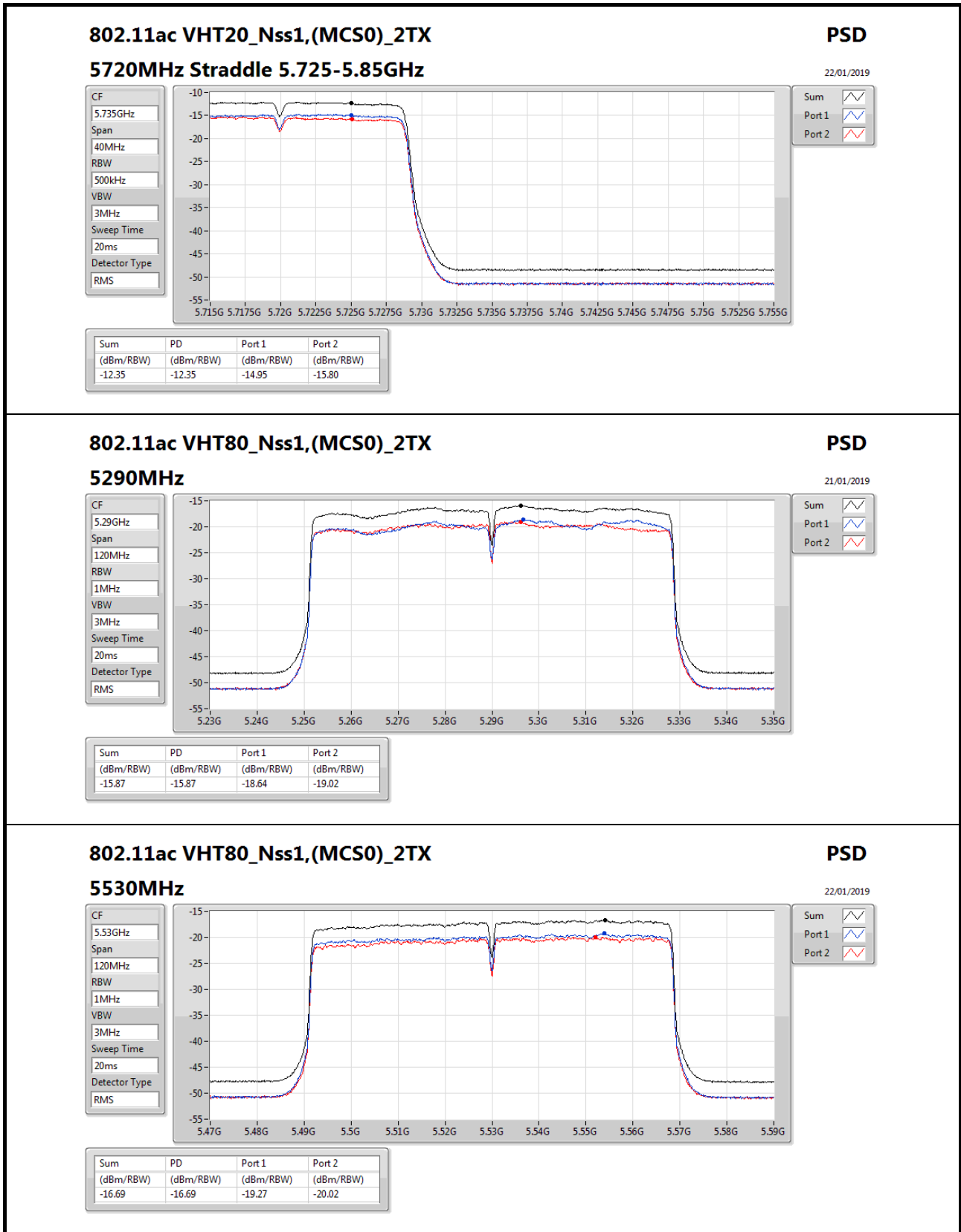
Detector Type
RMS



Sum

Port 1

Port 2



802.11ac VHT80_Nss1,(MCS0)_2TX

5530MHz

PSD

22/01/2019

CF
5.53GHz

Span
120MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

Detector Type
RMS

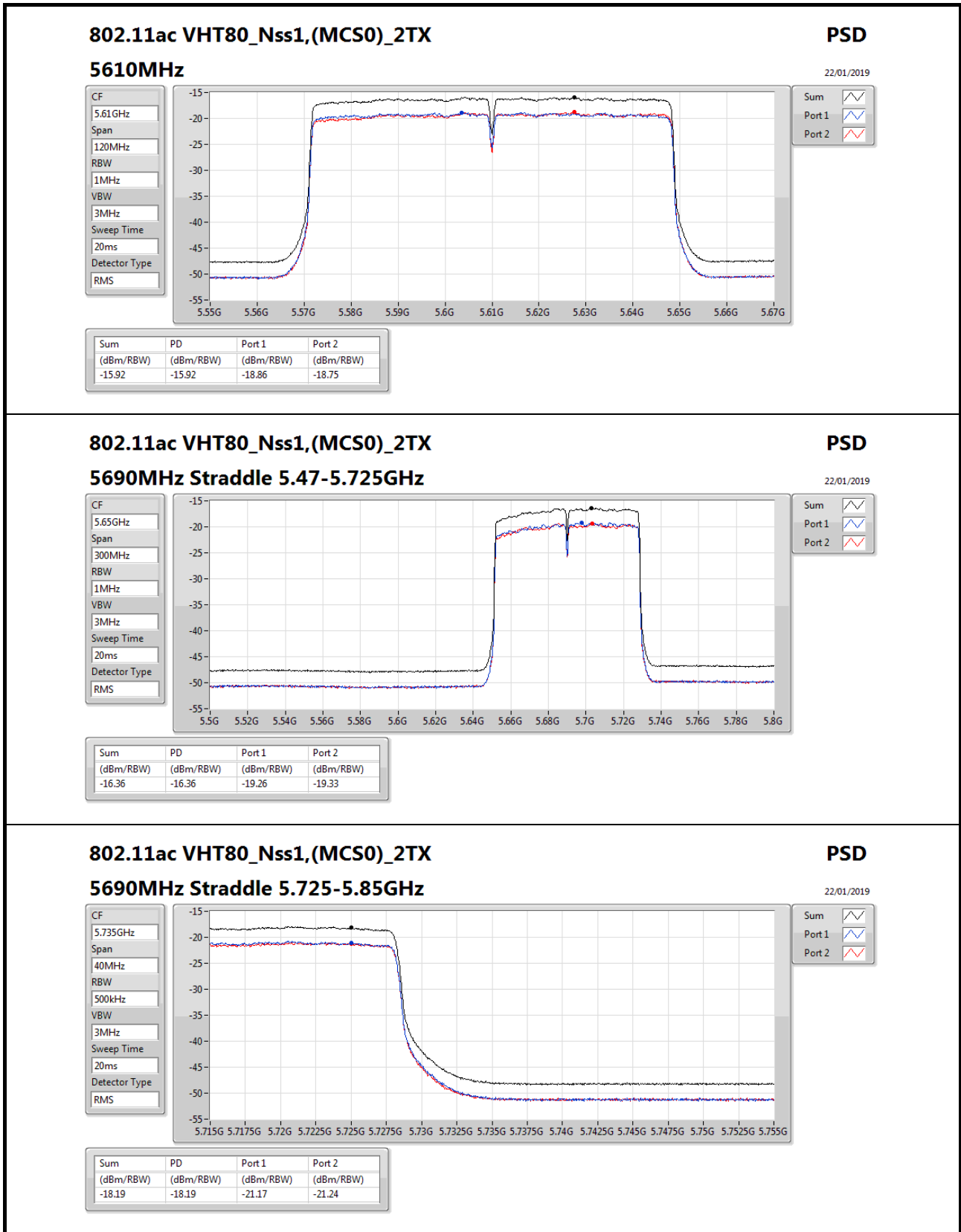


Sum 

Port 1 

Port 2 

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-16.69	-16.69	-19.27	-20.02



802.11ac VHT80_Nss1,(MCS0)_2TX

5690MHz Straddle 5.725-5.85GHz

PSD

22/01/2019

CF
5.735GHz

Span
40MHz

RBW
500kHz

VBW
3MHz

Sweep Time
20ms

Detector Type
RMS

Sum

Port 1

Port 2



For EUT 1 + Set 2 antenna:

Summary

Mode	PD (dBm/RBW)
5.25-5.35GHz	-
802.11a_Nss1,(6Mbps)_2TX	-1.68
802.11ac VHT20_Nss1,(MCS0)_2TX	-1.44
802.11ac VHT80_Nss1,(MCS0)_2TX	-8.83
5.47-5.725GHz	-
802.11a_Nss1,(6Mbps)_2TX	-0.30
802.11ac VHT20_Nss1,(MCS0)_2TX	-0.65
802.11ac VHT80_Nss1,(MCS0)_2TX	-6.34
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_2TX	-2.09
802.11ac VHT20_Nss1,(MCS0)_2TX	-2.36
802.11ac VHT80_Nss1,(MCS0)_2TX	-8.30

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



PSD Result

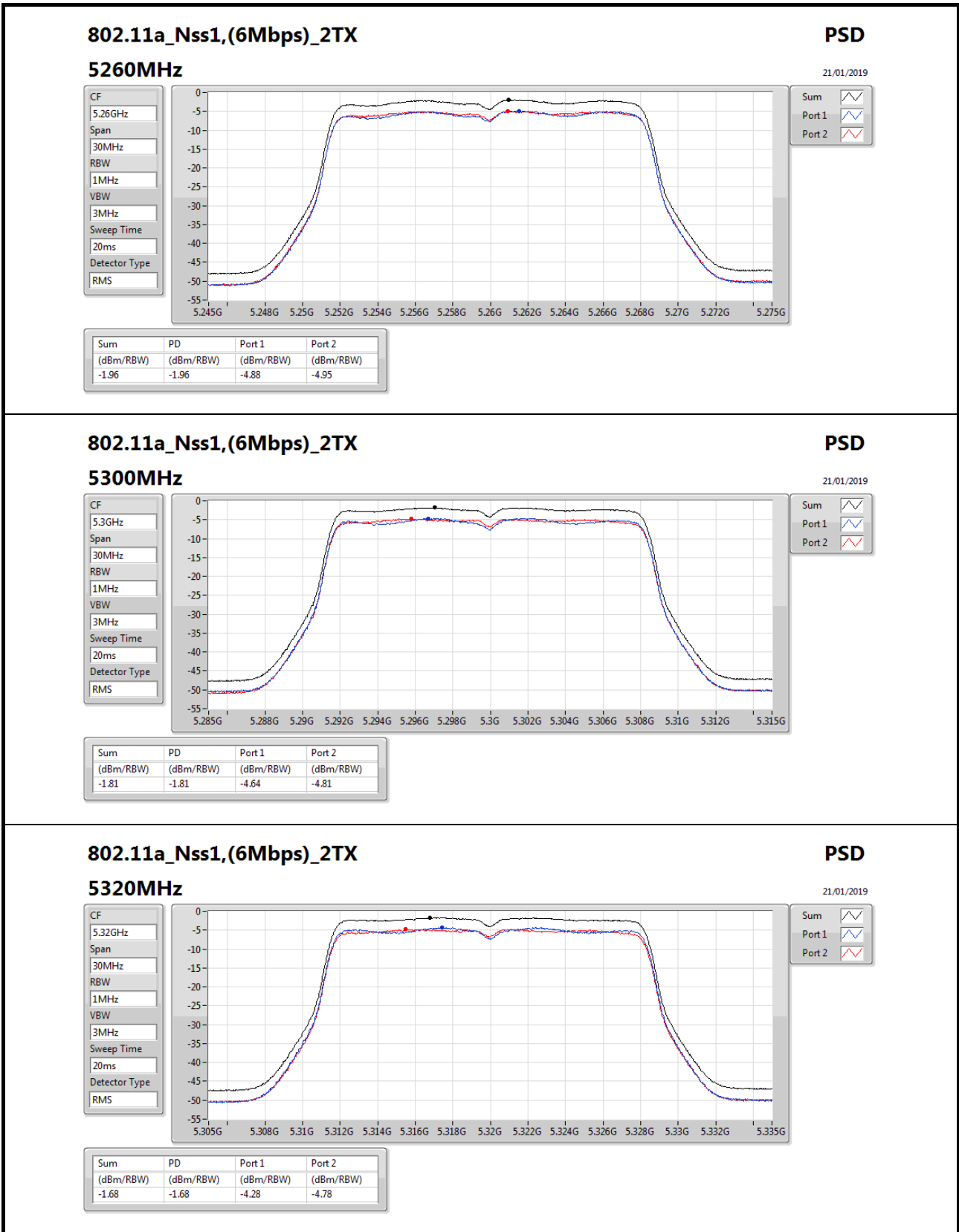
Appendix C

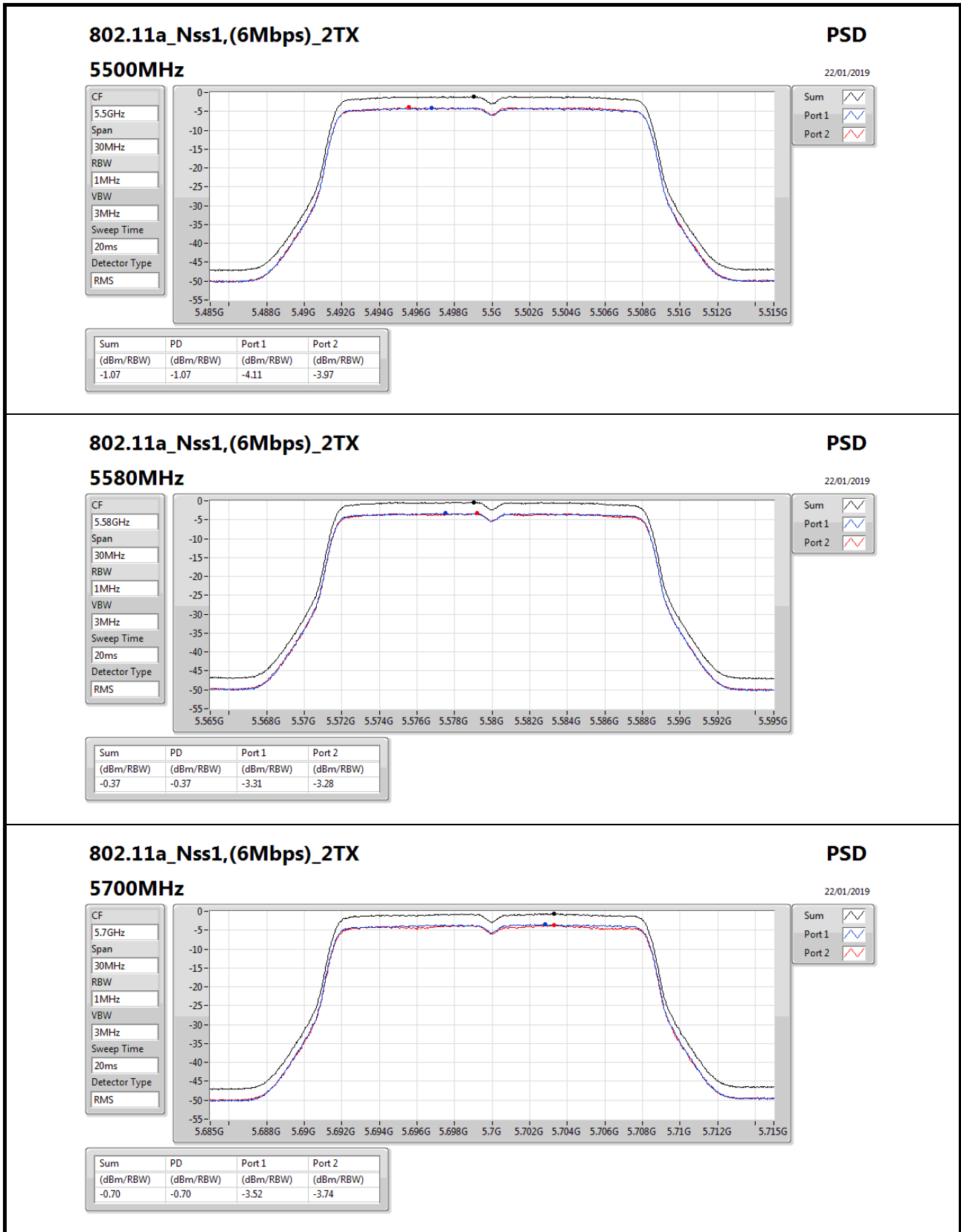
Result

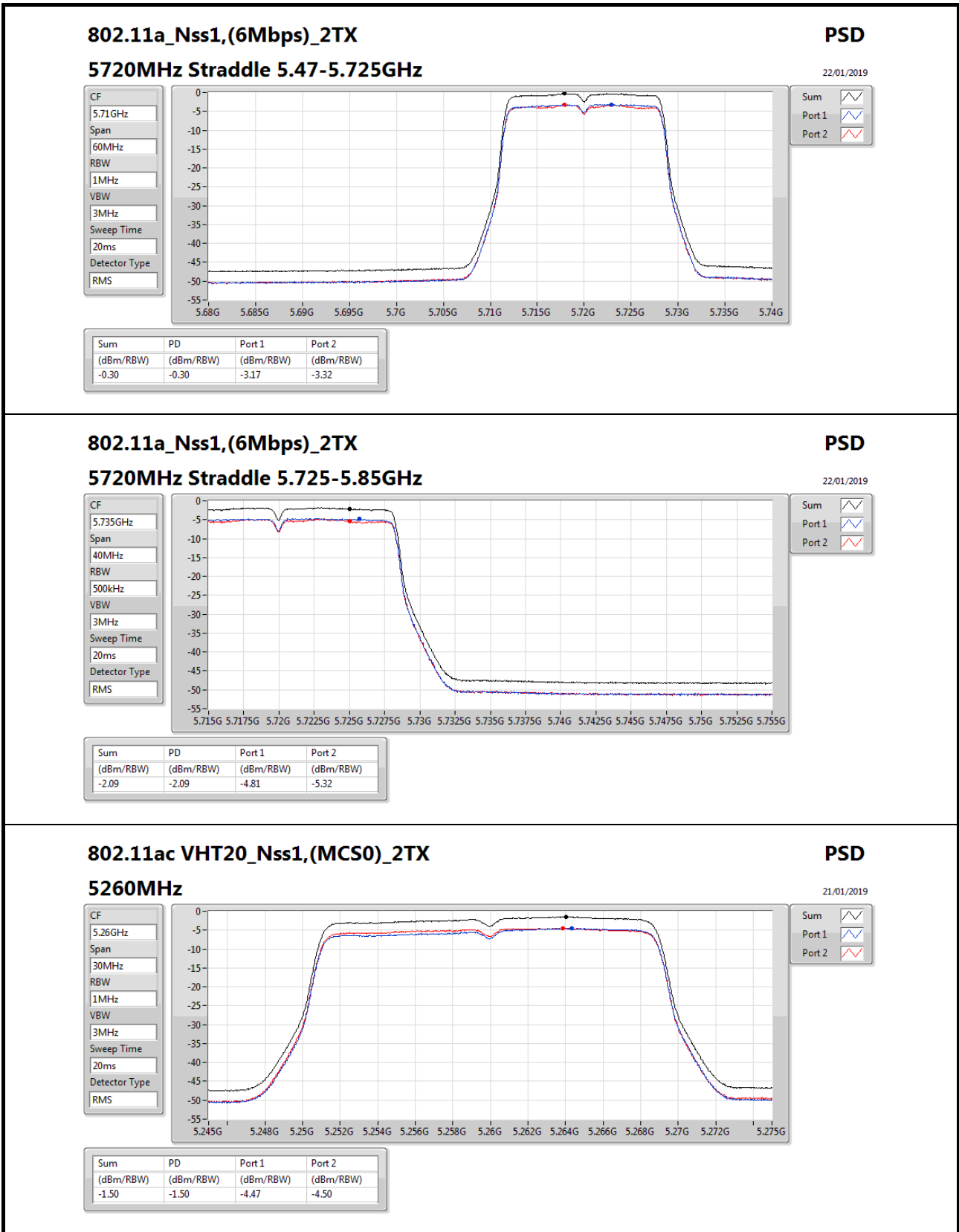
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	17.00	-4.88	-4.95	-1.96	0.00
5300MHz	Pass	17.00	-4.64	-4.81	-1.81	0.00
5320MHz	Pass	17.00	-4.28	-4.78	-1.68	0.00
5500MHz	Pass	17.00	-4.11	-3.97	-1.07	0.00
5580MHz	Pass	17.00	-3.31	-3.28	-0.37	0.00
5700MHz	Pass	17.00	-3.52	-3.74	-0.70	0.00
5720MHz Straddle 5.47-5.725GHz	Pass	17.00	-3.17	-3.32	-0.30	0.00
5720MHz Straddle 5.725-5.85GHz	Pass	17.00	-4.81	-5.32	-2.09	19.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	17.00	-4.47	-4.50	-1.50	0.00
5300MHz	Pass	17.00	-4.78	-4.28	-1.58	0.00
5320MHz	Pass	17.00	-4.41	-4.23	-1.44	0.00
5500MHz	Pass	17.00	-4.74	-4.54	-1.66	0.00
5580MHz	Pass	17.00	-3.72	-3.48	-0.66	0.00
5700MHz	Pass	17.00	-3.58	-3.73	-0.76	0.00
5720MHz Straddle 5.47-5.725GHz	Pass	17.00	-3.39	-3.70	-0.65	0.00
5720MHz Straddle 5.725-5.85GHz	Pass	17.00	-5.03	-5.66	-2.36	19.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	17.00	-11.59	-11.96	-8.83	0.00
5530MHz	Pass	17.00	-10.28	-10.39	-7.47	0.00
5610MHz	Pass	17.00	-9.46	-9.27	-6.39	0.00
5690MHz Straddle 5.47-5.725GHz	Pass	17.00	-9.18	-9.31	-6.34	0.00
5690MHz Straddle 5.725-5.85GHz	Pass	17.00	-11.01	-11.59	-8.30	19.00

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 Xpower density;







802.11ac VHT20_Nss1,(MCS0)_2TX

5260MHz

PSD

21/01/2019

CF
5.26GHz

Span
30MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

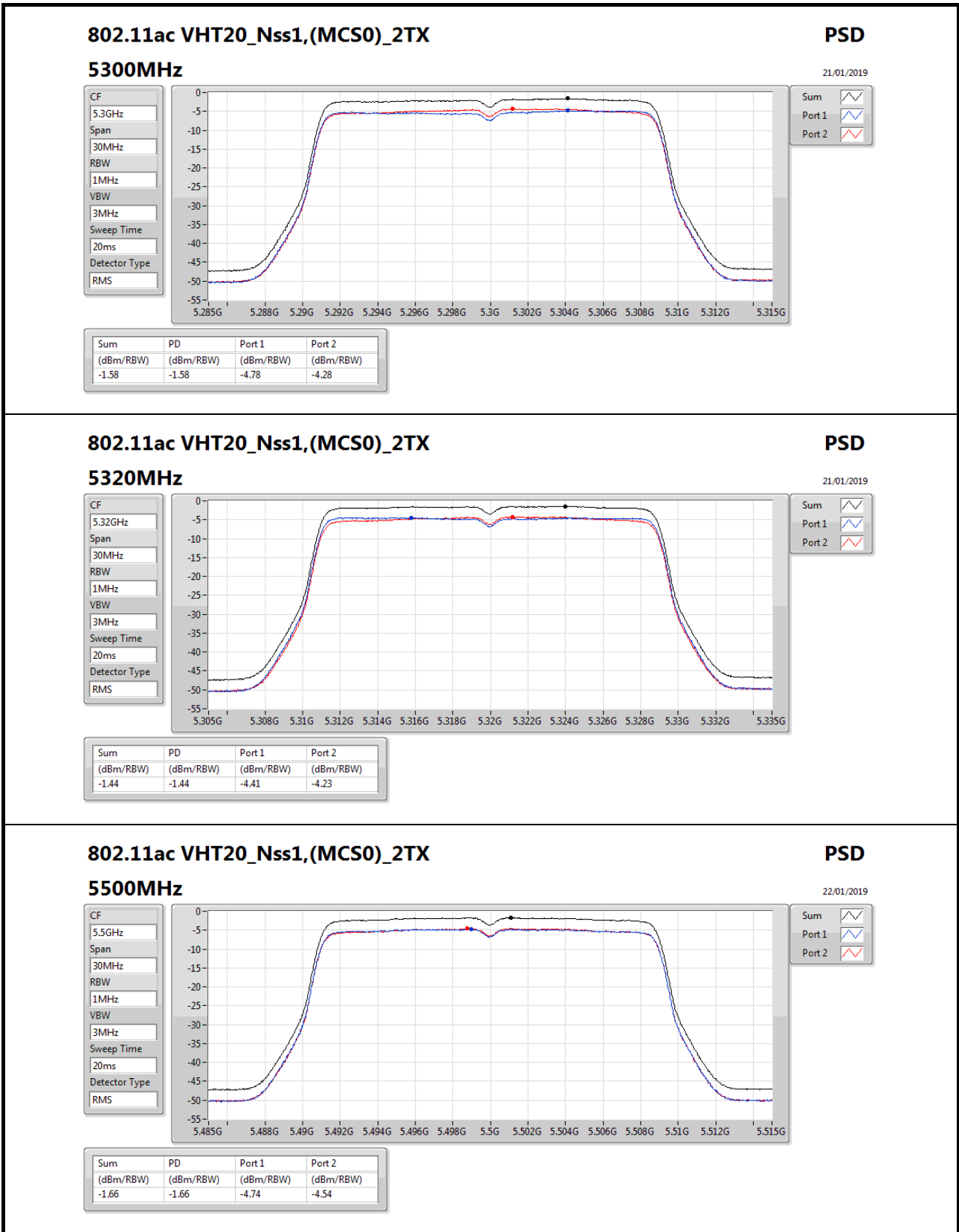
Detector Type
RMS



Sum 

Port 1 

Port 2 



802.11ac VHT20_Nss1,(MCS0)_2TX

5500MHz

PSD

22/01/2019

CF
5.5GHz

Span
30MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

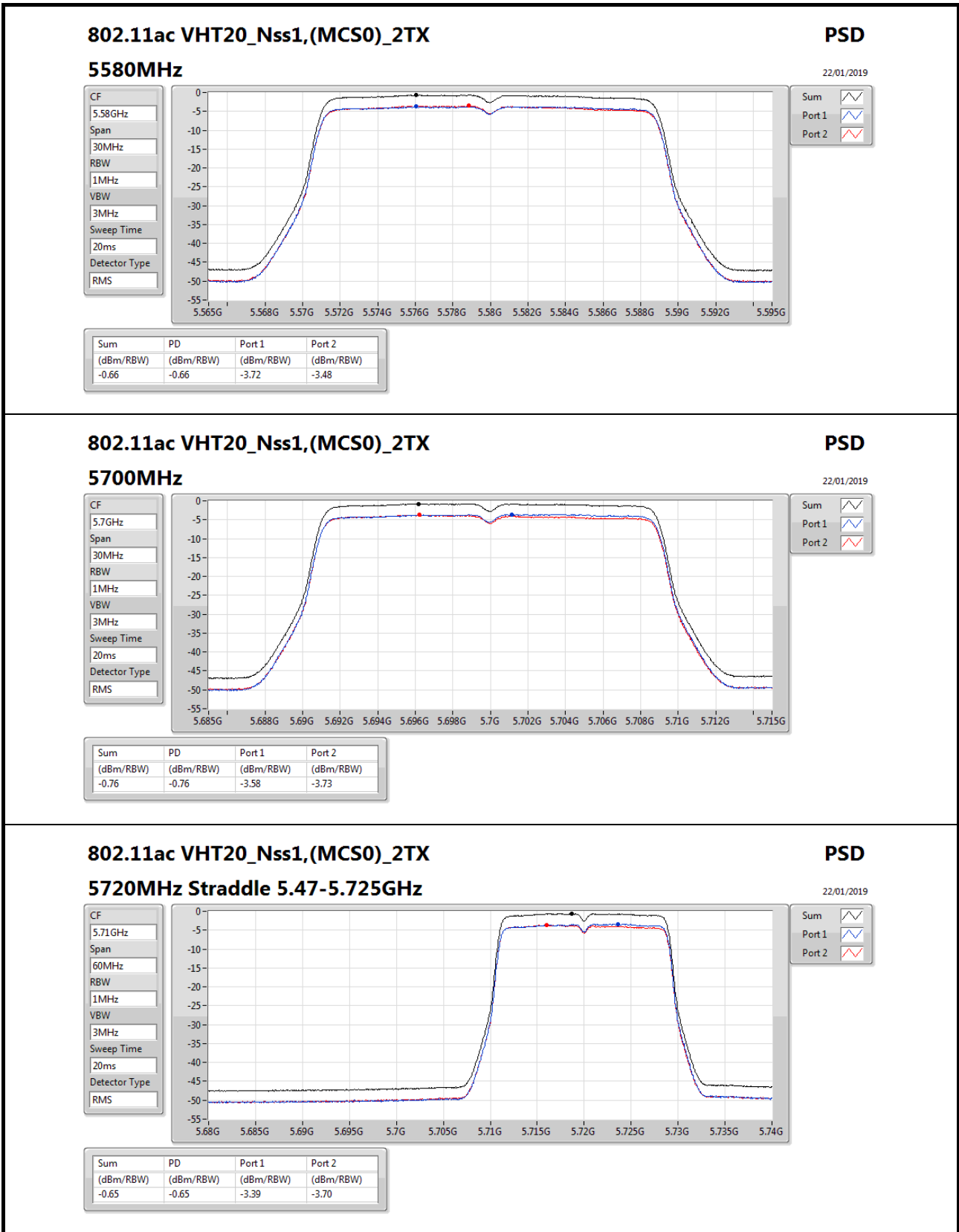
Detector Type
RMS

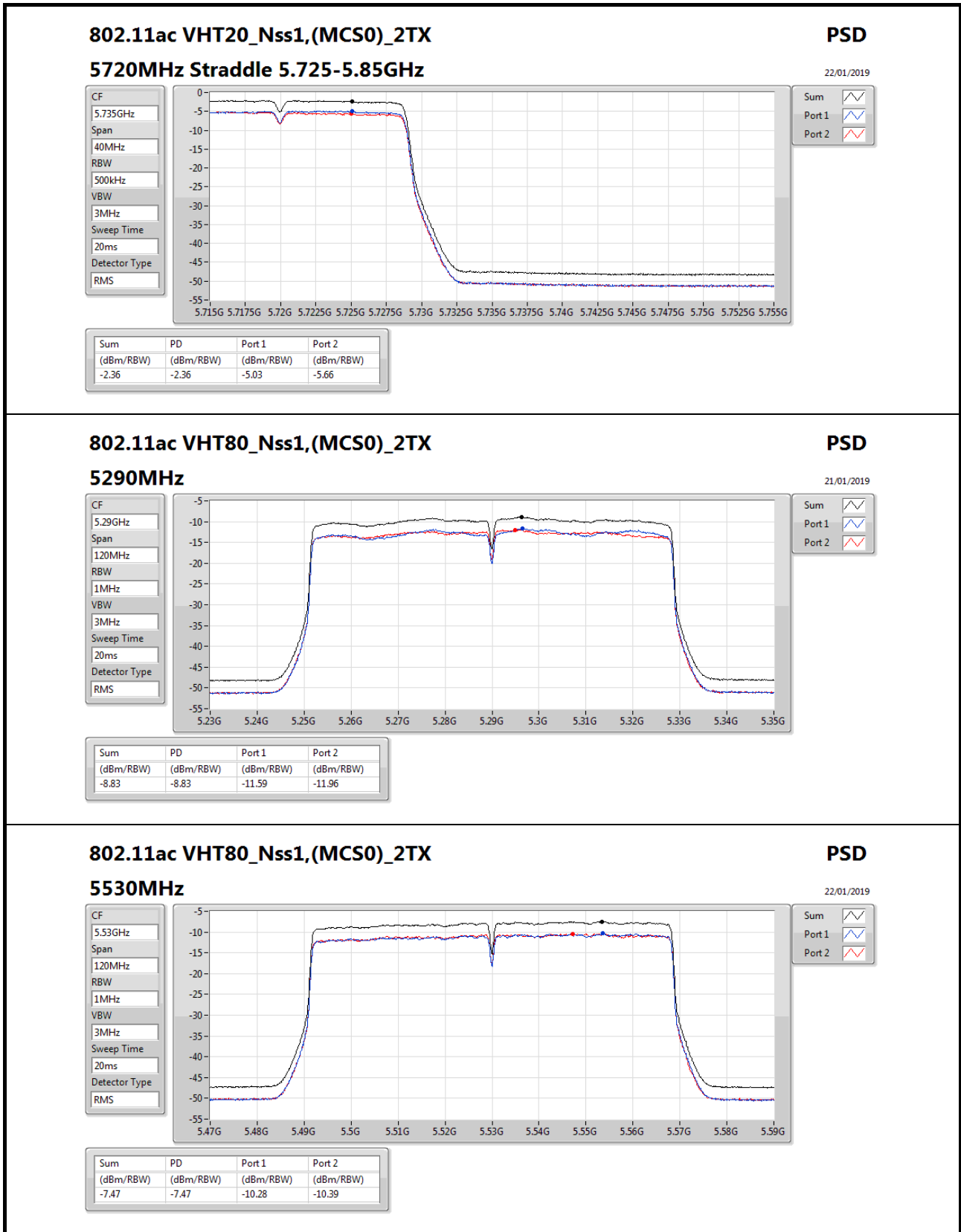


Sum 

Port 1 

Port 2 





802.11ac VHT80_Nss1,(MCS0)_2TX

5530MHz

PSD

22/01/2019

CF
5.53GHz

Span
120MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

Detector Type
RMS

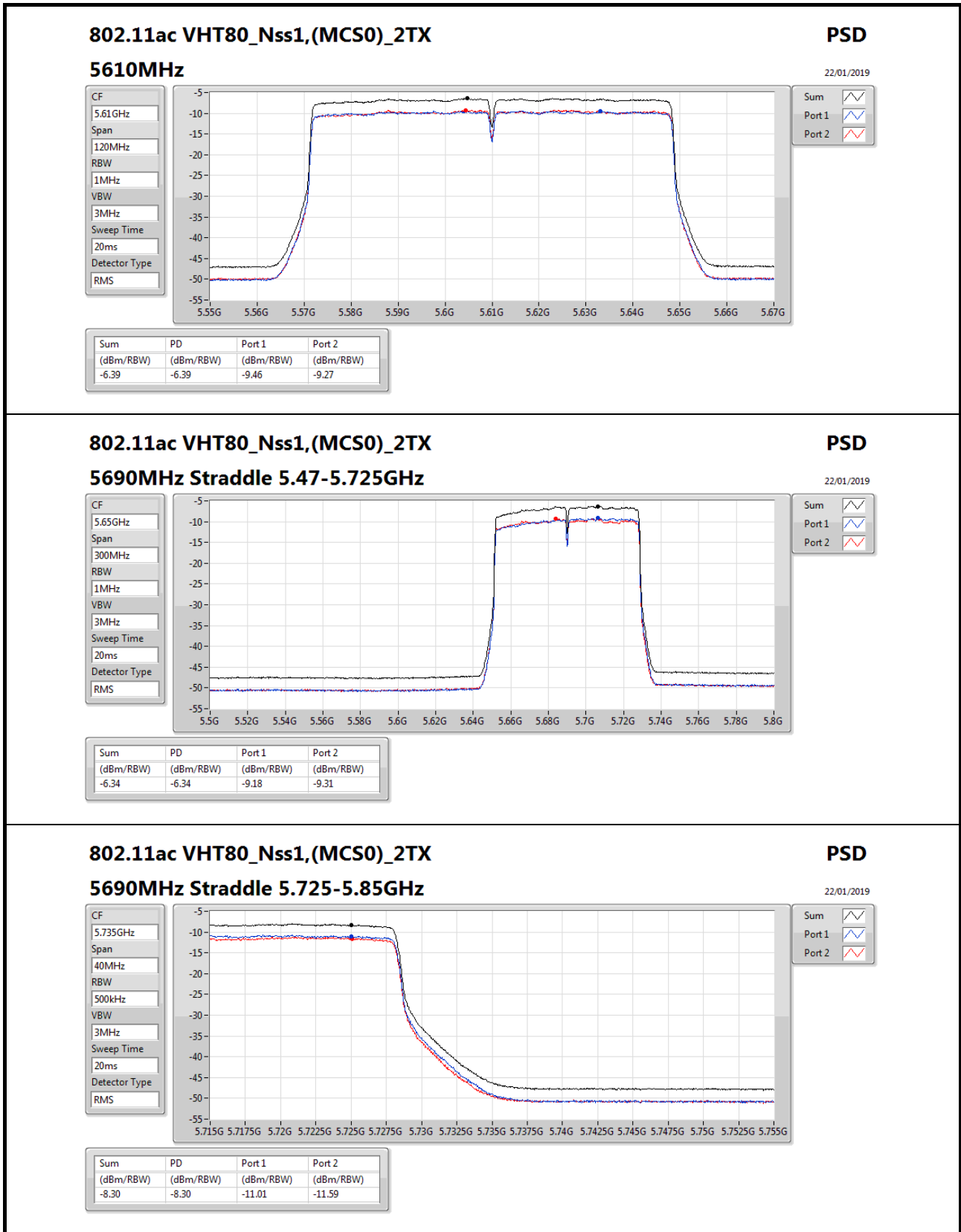


Sum 

Port 1 

Port 2 

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.47	-7.47	-10.28	-10.39



802.11ac VHT80_Nss1,(MCS0)_2TX

5690MHz Straddle 5.725-5.85GHz

PSD

22/01/2019

CF
5.735GHz

Span
40MHz

RBW
500kHz

VBW
3MHz

Sweep Time
20ms

Detector Type
RMS

Sum

Port 1

Port 2



For EUT 1 + Set 3 antenna:

Summary

Mode	PD (dBm/RBW)
5.25-5.35GHz	-
802.11a_Nss1,(6Mbps)_2TX	10.68
802.11ac VHT20_Nss1,(MCS0)_2TX	10.83
802.11ac VHT80_Nss1,(MCS0)_2TX	3.30
5.47-5.725GHz	-
802.11a_Nss1,(6Mbps)_2TX	10.42
802.11ac VHT20_Nss1,(MCS0)_2TX	10.18
802.11ac VHT80_Nss1,(MCS0)_2TX	4.80
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_2TX	8.61
802.11ac VHT20_Nss1,(MCS0)_2TX	8.53
802.11ac VHT80_Nss1,(MCS0)_2TX	2.75

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



PSD Result

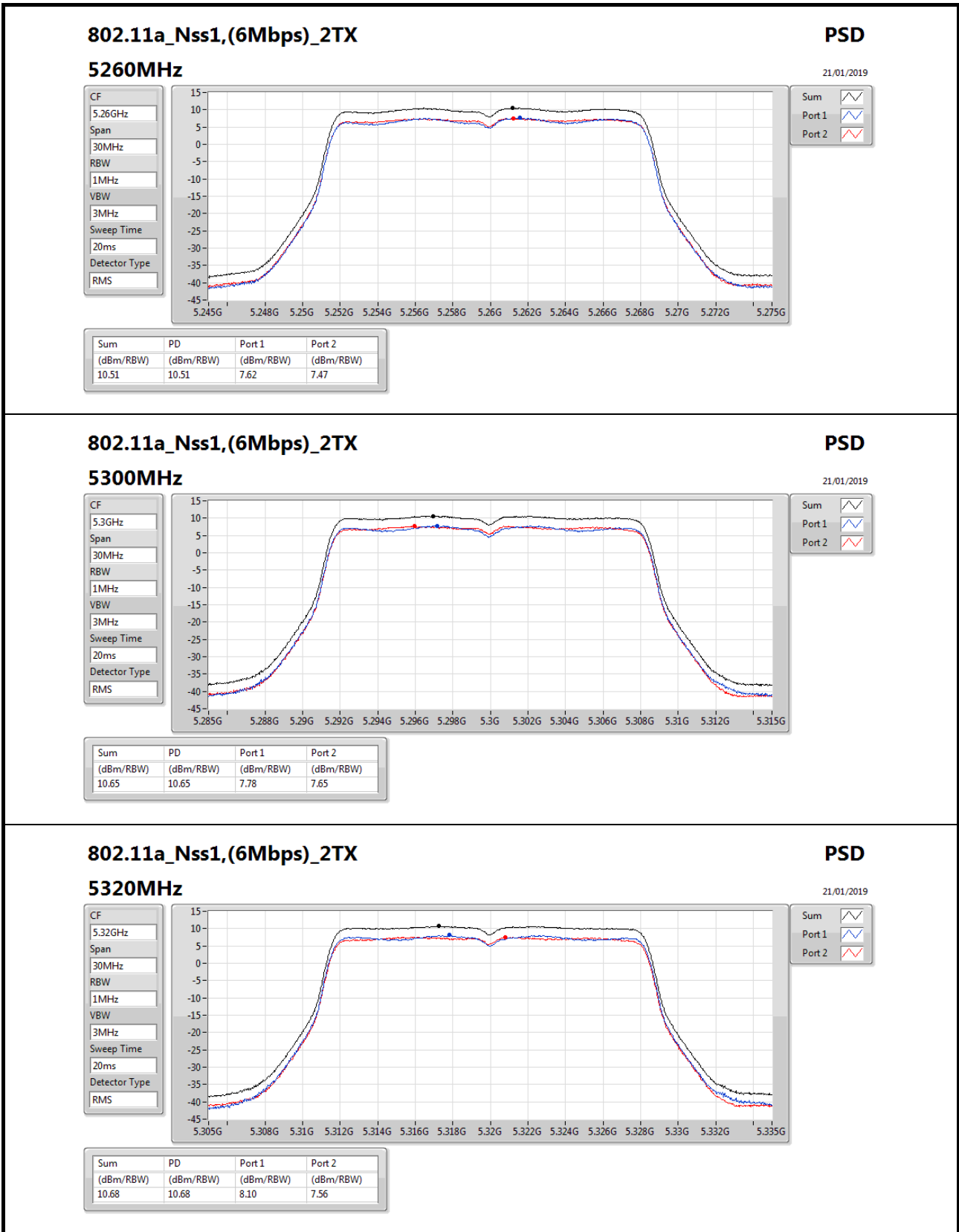
Appendix C

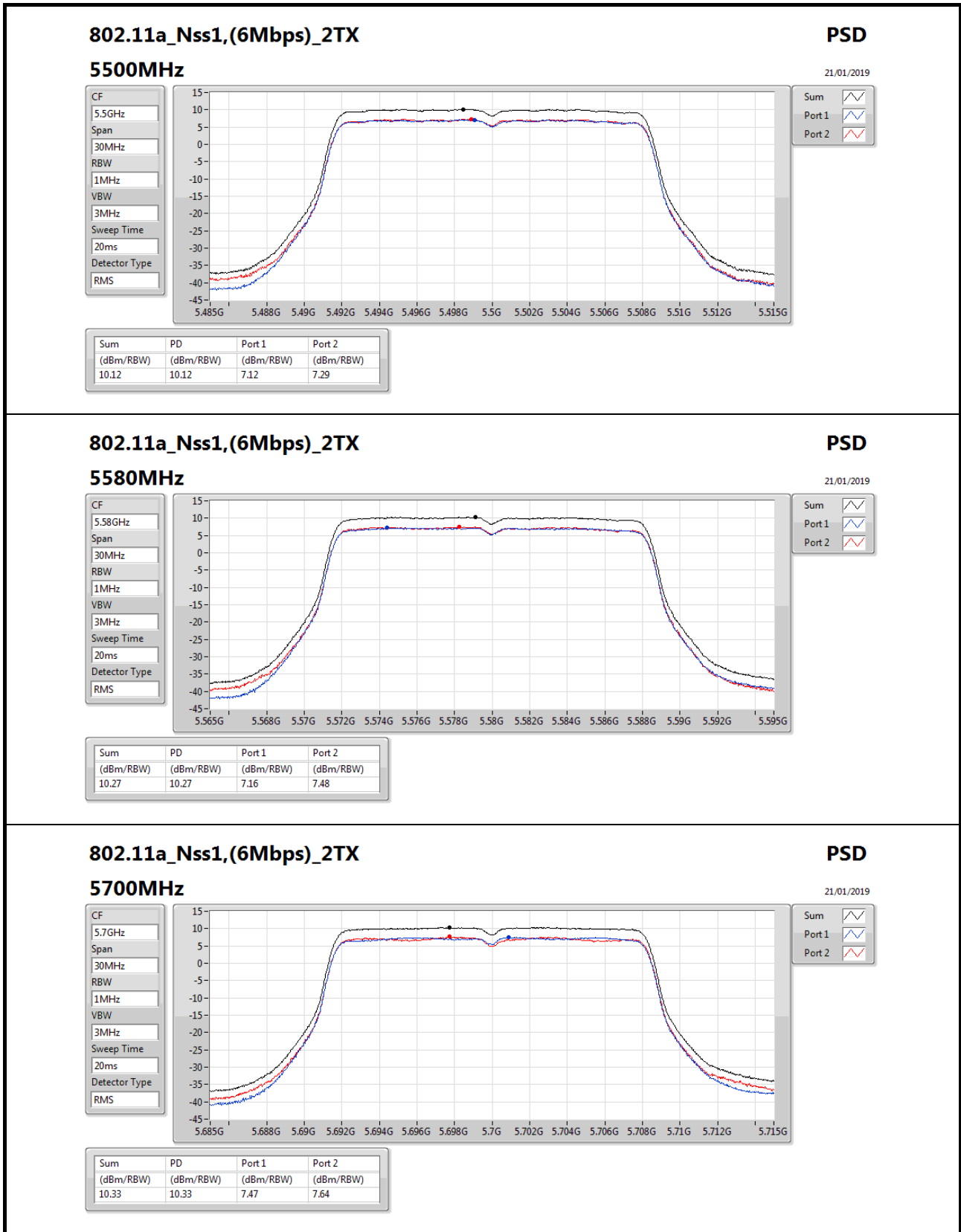
Result

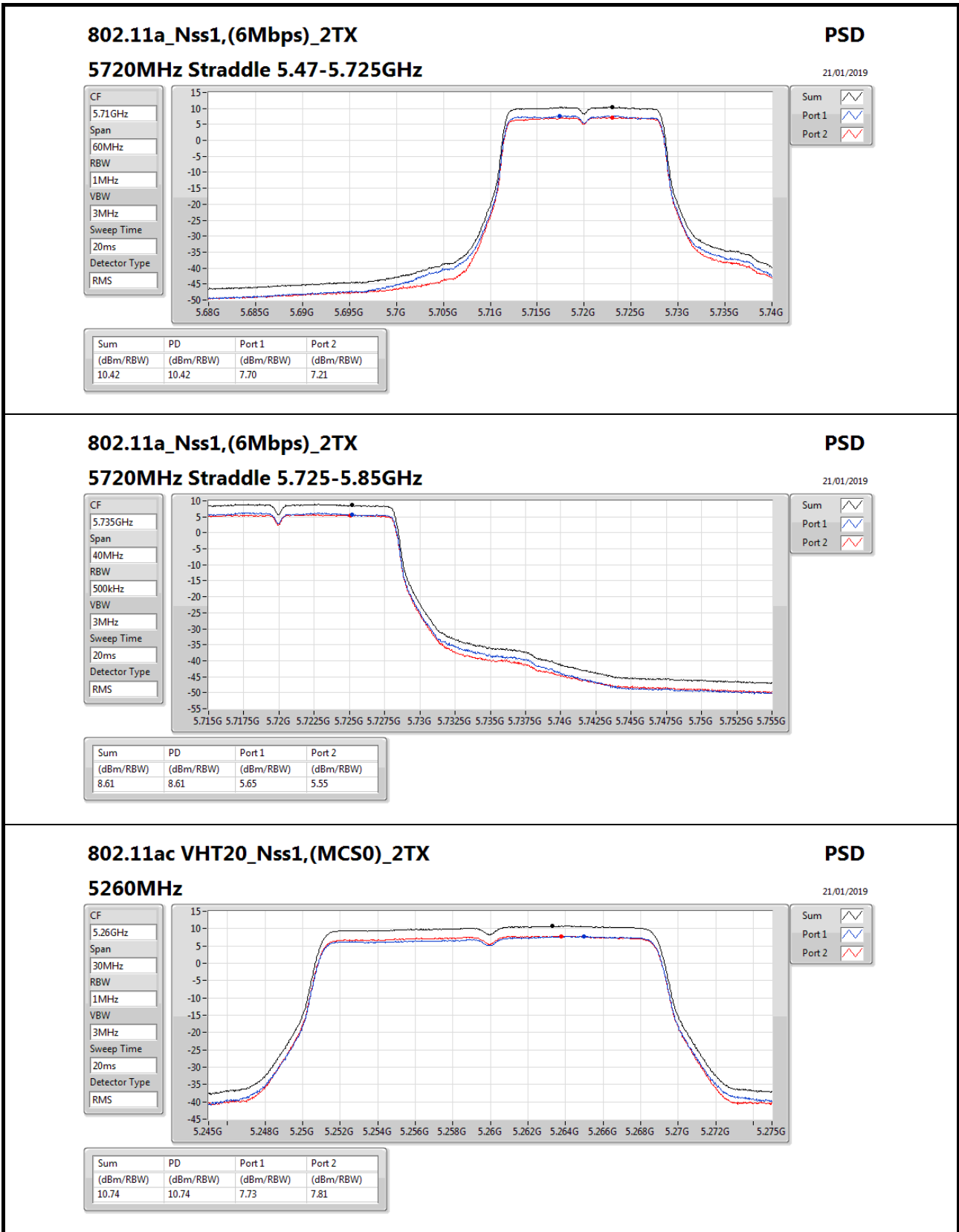
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5260MHz	Pass	2.00	7.62	7.47	10.51	11.00
5300MHz	Pass	2.00	7.78	7.65	10.65	11.00
5320MHz	Pass	2.00	8.10	7.56	10.68	11.00
5500MHz	Pass	2.00	7.12	7.29	10.12	11.00
5580MHz	Pass	2.00	7.16	7.48	10.27	11.00
5700MHz	Pass	2.00	7.47	7.64	10.33	11.00
5720MHz Straddle 5.47-5.725GHz	Pass	2.00	7.70	7.21	10.42	11.00
5720MHz Straddle 5.725-5.85GHz	Pass	2.00	5.65	5.55	8.61	30.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	2.00	7.73	7.81	10.74	11.00
5300MHz	Pass	2.00	7.49	7.99	10.69	11.00
5320MHz	Pass	2.00	7.84	8.10	10.83	11.00
5500MHz	Pass	2.00	7.42	6.96	10.15	11.00
5580MHz	Pass	2.00	7.21	6.42	9.82	11.00
5700MHz	Pass	2.00	7.17	6.70	9.83	11.00
5720MHz Straddle 5.47-5.725GHz	Pass	2.00	7.59	7.04	10.18	11.00
5720MHz Straddle 5.725-5.85GHz	Pass	2.00	5.54	5.49	8.53	30.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	2.00	0.43	0.43	3.30	11.00
5530MHz	Pass	2.00	0.12	0.28	3.00	11.00
5610MHz	Pass	2.00	1.74	1.20	4.25	11.00
5690MHz Straddle 5.47-5.725GHz	Pass	2.00	2.01	1.93	4.80	11.00
5690MHz Straddle 5.725-5.85GHz	Pass	2.00	-0.17	-0.22	2.75	30.00

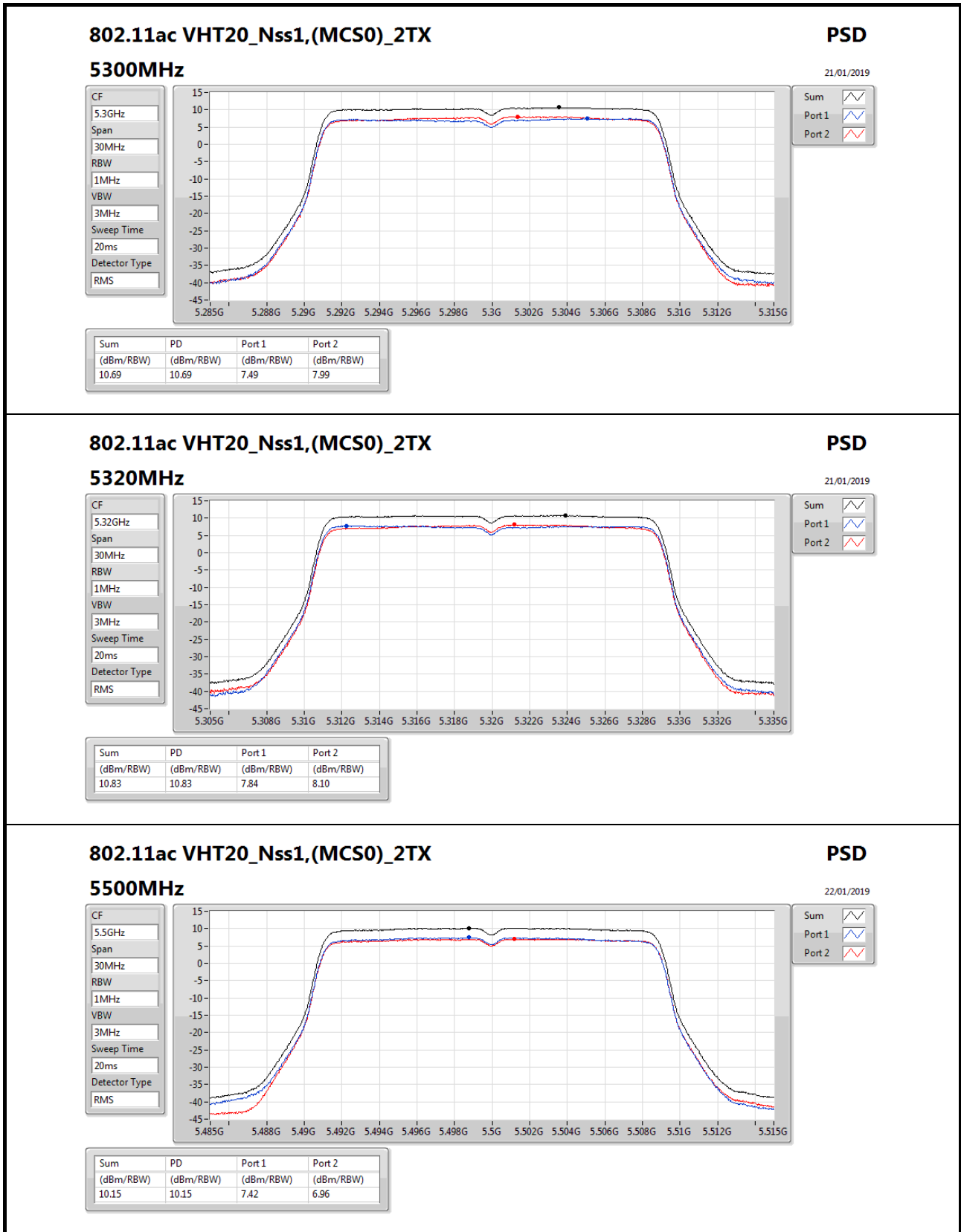
DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;









802.11ac VHT20_Nss1,(MCS0)_2TX

5500MHz

PSD

22/01/2019

CF
5.5GHz

Span
30MHz

RBW
1MHz

VBW
3MHz

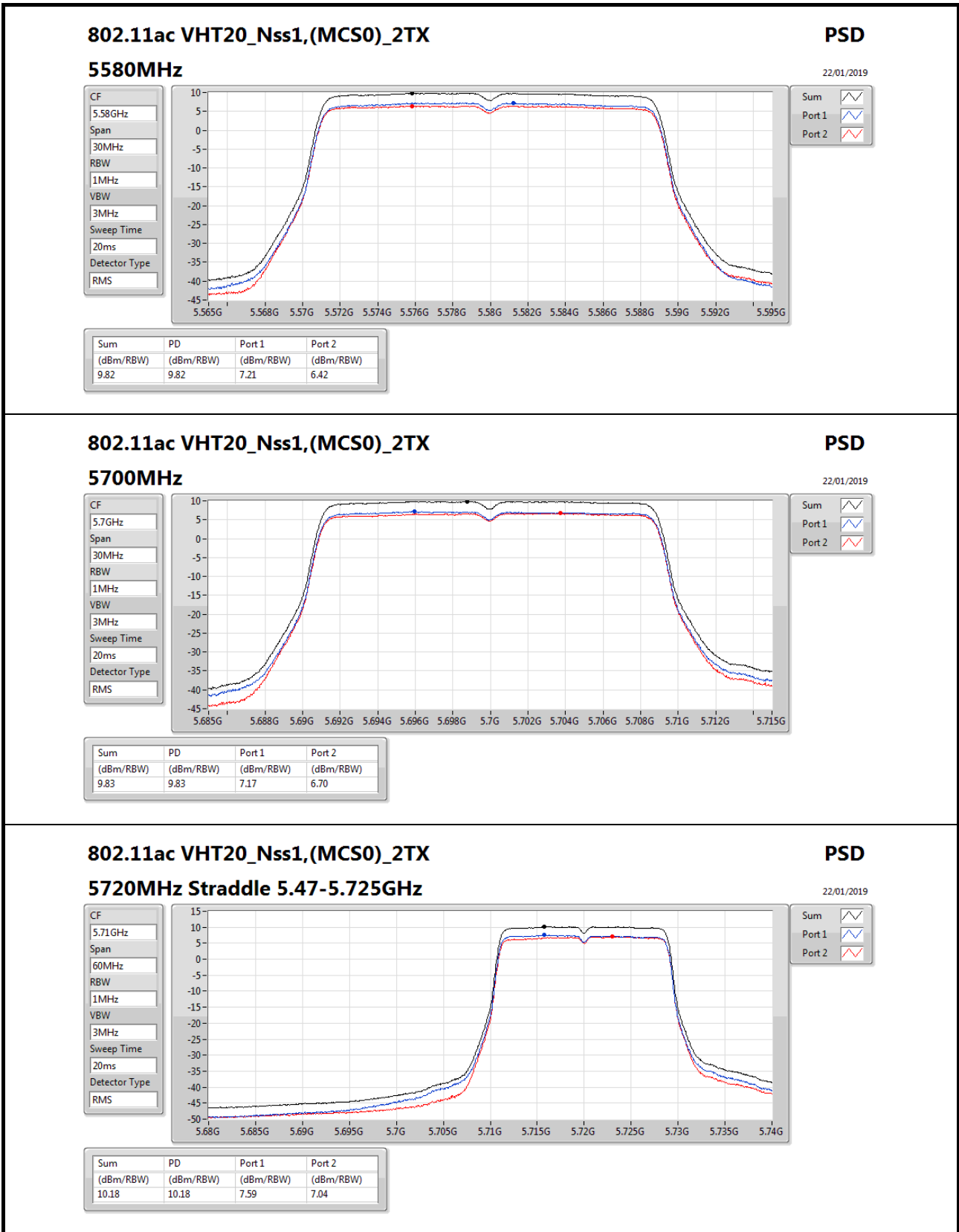
Sweep Time
20ms

Detector Type
RMS

Sum

Port 1

Port 2



802.11ac VHT20_Nss1,(MCS0)_2TX

5720MHz Straddle 5.47-5.725GHz

PSD

22/01/2019

CF
5.71GHz

Span
60MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

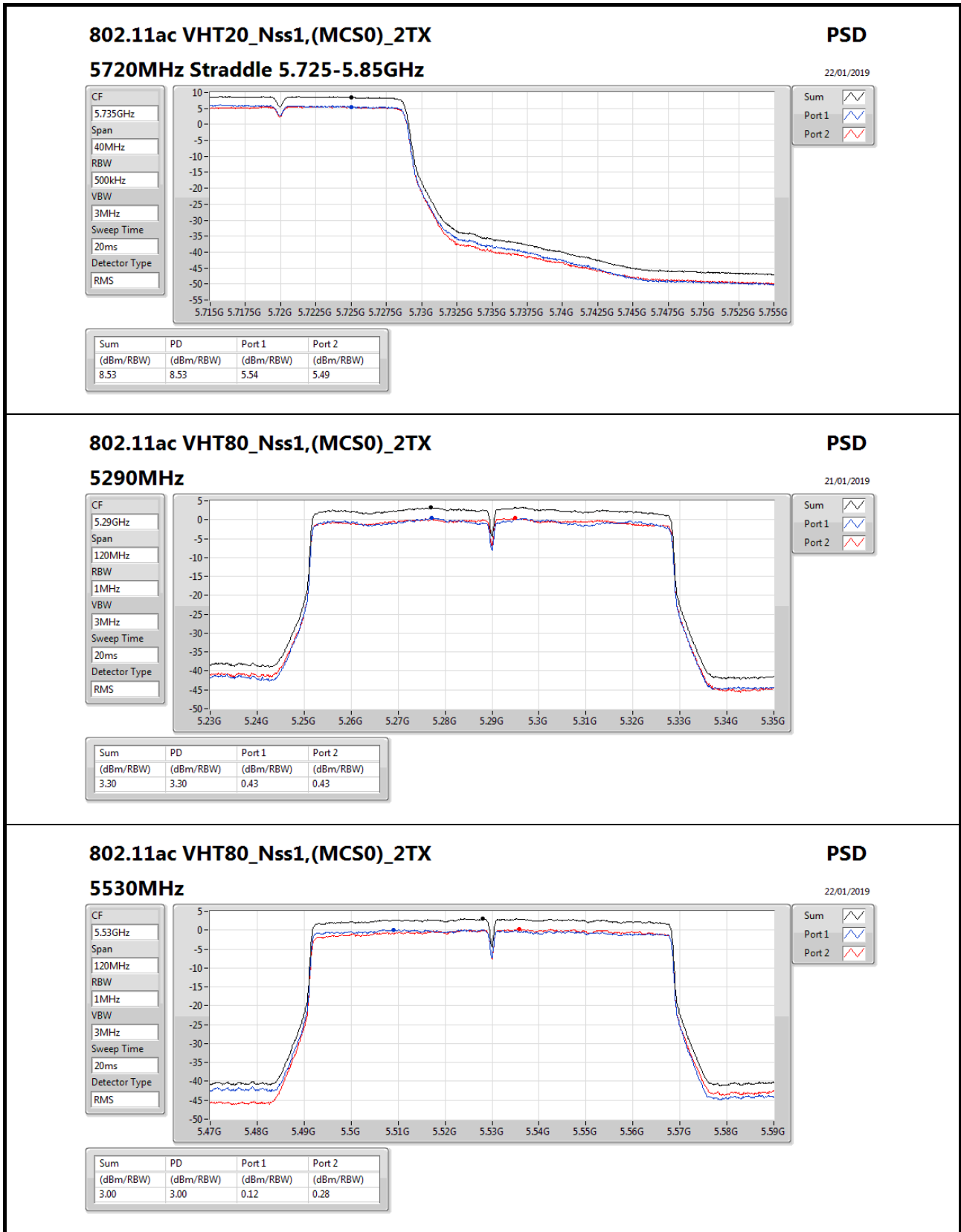
Detector Type
RMS



Sum 

Port 1 

Port 2 



802.11ac VHT80_Nss1,(MCS0)_2TX

5530MHz

PSD

22/01/2019

CF
5.53GHz

Span
120MHz

RBW
1MHz

VBW
3MHz

Sweep Time
20ms

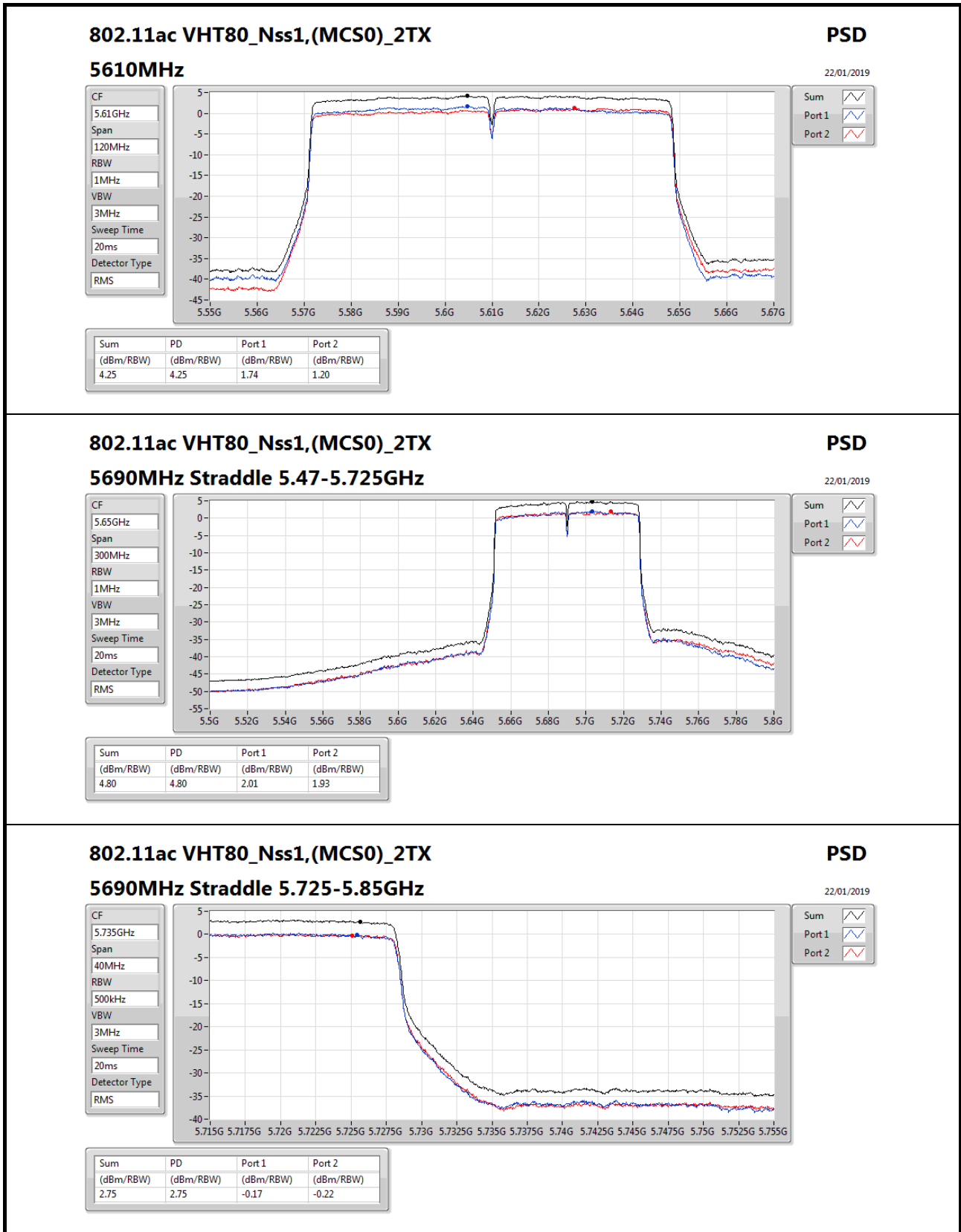
Detector Type
RMS



Sum 

Port 1 

Port 2 



802.11ac VHT80_Nss1,(MCS0)_2TX

5690MHz Straddle 5.725-5.85GHz

PSD

22/01/2019

CF
5.735GHz

Span
40MHz

RBW
500kHz

VBW
3MHz

Sweep Time
20ms

Detector Type
RMS

Sum

Port 1

Port 2



RSE TX above 1GHz Result

Appendix D.1

For Cabinet: Summary

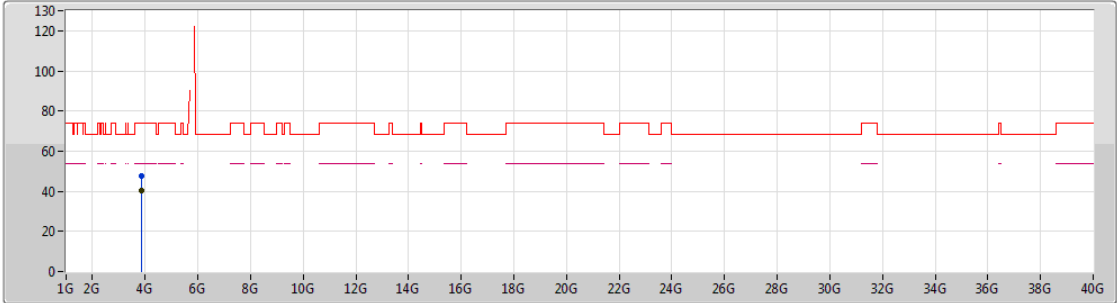
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	AV	3.85664G	40.39	54.00	-13.61	1.58	3	Vertical	314	1.23	-



802.11a_Nss1.(6Mbps)_2TX

26/01/2019

5785MHz_TX



Lim.PK
 PK
 Lim.AV
 AV

EUT_X_2TX
 Setting 27
 03-P-2
 FSP(100019)

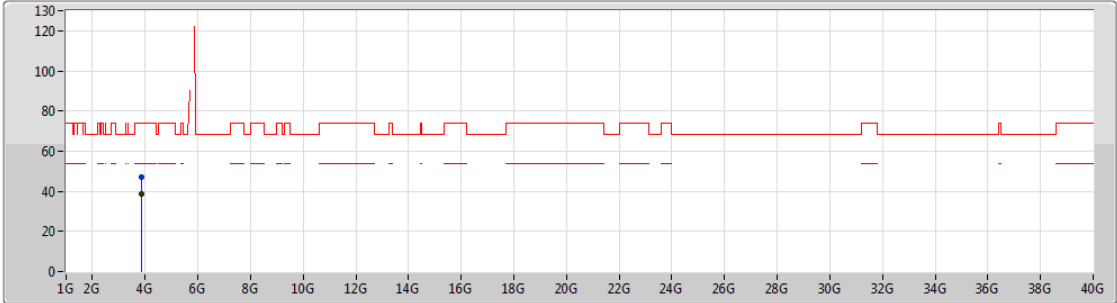
Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	3.85667G	47.83	74.00	-26.17	1.58	3	Vertical	314	1.23	-
AV	3.85664G	40.39	54.00	-13.61	1.58	3	Vertical	314	1.23	-



802.11a_Nss1,(6Mbps)_2TX

26/01/2019

5785MHz_TX



Lim.PK
 PK
 Lim.AV
 AV

EUT_X_2TX
 Setting 27
 03-P-2
 FSP(100019)

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	3.85674G	46.98	74.00	-27.02	1.58	3	Horizontal	60	1.09	-
AV	3.8567G	38.78	54.00	-15.22	1.58	3	Horizontal	60	1.09	-



For EUT 1 + Set 1 antenna:

For Conducted Spurious Emission and Conducted Bandedge (1GHz~8GHz)

Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Type	Freq (Hz)	DG (dBi)	P1 (dBm)	P2 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
5.25-5.35GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.54	-72.14	-66.25	-41.25	-41.20	-0.05
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.76	-71.58	-66.25	-41.25	-41.20	-0.05
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	5.35G	5.46G	1M	AV	5.35011G	25.00	-69.51	-69.68	-66.58	-41.58	-41.20	-0.38
5.47-5.725GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.14	-71.14	-66.38	-41.38	-41.20	-0.18
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.68	-72.39	-66.42	-41.42	-41.20	-0.22
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.14	-72.12	-66.68	-41.68	-41.20	-0.48

DG = Directional Gain;
 PX=Port X; Psum=P1+.P2+..PX



CSE Result

Appendix D.2

Result

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Type	Freq (Hz)	DG (dB)	P1 (dBm)	P2 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
802.11a_Nsst1_(6Mbps)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	1G	8G	1M	PK	6.64025G	25.00	-59.25	-59.69	-56.45	-31.45	-27.00	-4.45
5260MHz	Pass	1G	8G	1M	PK	5.09588G	25.00	-59.14	-60.13	-56.60	-31.60	-21.20	-10.40
5260MHz	Pass	1G	8G	1M	PK	5.788G	25.00	-60.82	-59.06	-56.84	-31.84	-27.00	-4.84
5260MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.54	-72.14	-66.25	-41.25	-41.20	-0.05
5260MHz	Pass	5.35G	5.46G	1M	AV	5.35165G	25.00	-70.22	-71.27	-67.70	-42.70	-41.20	-1.50
5260MHz	Pass	5.46G	8G	1M	AV	7.39262G	25.00	-72.47	-72.74	-69.59	-44.59	-41.20	-3.39
5300MHz	Pass	1G	8G	1M	PK	6.7435G	25.00	-58.10	-59.85	-55.88	-30.88	-27.00	-3.88
5300MHz	Pass	1G	8G	1M	PK	5.12038G	25.00	-60.68	-58.44	-56.41	-31.41	-21.20	-10.21
5300MHz	Pass	1G	8G	1M	PK	5.9175G	25.00	-62.06	-58.97	-57.24	-32.24	-27.00	-5.24
5300MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.67	-71.99	-66.30	-41.30	-41.20	-0.10
5300MHz	Pass	5.35G	5.46G	1M	AV	5.35066G	25.00	-69.97	-71.13	-67.50	-42.50	-41.20	-1.30
5300MHz	Pass	5.46G	8G	1M	AV	7.39866G	25.00	-72.67	-72.48	-69.56	-44.56	-41.20	-3.36
5320MHz	Pass	1G	8G	1M	PK	6.92813G	25.00	-61.24	-58.35	-56.55	-31.55	-27.00	-4.55
5320MHz	Pass	1G	8G	1M	PK	5.123G	25.00	-59.90	-59.67	-56.77	-31.77	-21.20	-10.57
5320MHz	Pass	1G	8G	1M	PK	5.91838G	25.00	-59.83	-60.47	-57.13	-32.13	-27.00	-5.13
5320MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.98	-71.73	-66.45	-41.45	-41.20	-0.25
5320MHz	Pass	5.35G	5.46G	1M	AV	5.35077G	25.00	-70.31	-69.59	-66.92	-41.92	-41.20	-0.72
5320MHz	Pass	5.46G	8G	1M	AV	7.40723G	25.00	-72.64	-72.63	-69.62	-44.62	-41.20	-3.42
5500MHz	Pass	1G	8G	1M	PK	5.46688G	25.00	-56.08	-60.33	-54.69	-29.69	-27.00	-2.69
5500MHz	Pass	1G	8G	1M	PK	5.3435G	25.00	-58.03	-61.11	-56.29	-31.29	-27.00	-4.29
5500MHz	Pass	1G	8G	1M	PK	5.77925G	25.00	-56.71	-61.19	-55.39	-30.39	-27.00	-3.39
5500MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.13	-72.52	-66.78	-41.78	-41.20	-0.58
5500MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-70.76	-72.13	-68.38	-43.38	-41.20	-2.18
5500MHz	Pass	5.35G	5.46G	1M	AV	5.42392G	25.00	-68.45	-71.53	-66.71	-41.71	-41.20	-0.51
5500MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-69.20	-71.17	-67.06	-42.06	-41.20	-0.86
5500MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-69.20	-71.17	-67.06	-42.06	-41.20	-0.86
5580MHz	Pass	1G	8G	1M	PK	5.87725G	25.00	-57.37	-59.87	-55.43	-30.43	-27.00	-3.43
5580MHz	Pass	1G	8G	1M	PK	5.23675G	25.00	-59.15	-61.31	-57.09	-32.09	-27.00	-5.09
5580MHz	Pass	1G	8G	1M	PK	5.4695G	25.00	-58.78	-59.69	-56.20	-31.20	-27.00	-4.20
5580MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.93	-72.52	-66.63	-41.63	-41.20	-0.43
5580MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-72.09	-72.02	-69.04	-44.04	-41.20	-2.84
5580MHz	Pass	5.35G	5.46G	1M	AV	5.42414G	25.00	-69.20	-71.32	-67.12	-42.12	-41.20	-0.92
5580MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.57	-71.59	-68.57	-43.57	-41.20	-2.37
5580MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.58	-71.28	-68.42	-43.42	-41.20	-2.22
5700MHz	Pass	1G	8G	1M	PK	5.97175G	25.00	-59.14	-55.41	-53.88	-28.88	-27.00	-1.88
5700MHz	Pass	1G	8G	1M	PK	5.28225G	25.00	-61.02	-58.04	-56.27	-31.27	-27.00	-4.27
5700MHz	Pass	1G	8G	1M	PK	5.46075G	25.00	-59.68	-60.84	-57.21	-32.21	-27.00	-5.21
5700MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.24	-71.42	-66.53	-41.53	-41.20	-0.33
5700MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-71.31	-71.13	-68.21	-43.21	-41.20	-2.01
5700MHz	Pass	5.35G	5.46G	1M	AV	5.42403G	25.00	-69.70	-70.52	-67.08	-42.08	-41.20	-0.88
5700MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.23	-71.19	-68.20	-43.20	-41.20	-2.00
5700MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.23	-71.19	-68.20	-43.20	-41.20	-2.00
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	6.0085G	25.00	-56.96	-58.07	-54.47	-29.47	-27.00	-2.47
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.36538G	25.00	-59.61	-59.13	-56.35	-31.35	-21.20	-10.15
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.46075G	25.00	-61.07	-58.80	-56.78	-31.78	-27.00	-4.78
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.977G	25.00	-58.53	-56.86	-54.60	-29.60	-27.00	-2.60
5720MHz Straddle 5.47-5.725GHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.14	-71.14	-66.38	-41.38	-41.20	-0.18
5720MHz Straddle 5.47-5.725GHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-71.49	-71.33	-68.40	-43.40	-41.20	-2.20
5720MHz Straddle 5.47-5.725GHz	Pass	5.35G	5.46G	1M	AV	5.42403G	25.00	-69.87	-70.38	-67.11	-42.11	-41.20	-0.91
5720MHz Straddle 5.47-5.725GHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.28	-71.14	-68.20	-43.20	-41.20	-2.00
5720MHz Straddle 5.47-5.725GHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.28	-71.14	-68.20	-43.20	-41.20	-2.00



CSE Result

Appendix D.2

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Type	Freq (Hz)	DG (dB)	P1 (dBm)	P2 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	1G	8G	1M	PK	6.6735G	25.00	-58.65	-60.53	-56.48	-31.48	-27.00	-4.48
5260MHz	Pass	1G	8G	1M	PK	5.12475G	25.00	-59.78	-59.98	-56.87	-31.87	-21.20	-10.67
5260MHz	Pass	1G	8G	1M	PK	5.98313G	25.00	-61.95	-59.05	-57.25	-32.25	-27.00	-5.25
5260MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.76	-71.58	-66.25	-41.25	-41.20	-0.05
5260MHz	Pass	5.35G	5.46G	1M	AV	5.35077G	25.00	-70.44	-70.34	-67.38	-42.38	-41.20	-1.18
5260MHz	Pass	5.46G	8G	1M	AV	7.3958G	25.00	-72.53	-72.81	-69.66	-44.66	-41.20	-3.46
5300MHz	Pass	1G	8G	1M	PK	5.75825G	25.00	-62.58	-57.36	-56.22	-31.22	-27.00	-4.22
5300MHz	Pass	1G	8G	1M	PK	5.14838G	25.00	-59.04	-60.96	-56.88	-31.88	-21.20	-10.68
5300MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.93	-71.51	-66.35	-41.35	-41.20	-0.15
5300MHz	Pass	5.35G	5.46G	1M	AV	5.35077G	25.00	-70.37	-69.80	-67.07	-42.07	-41.20	-0.87
5300MHz	Pass	5.46G	8G	1M	AV	7.40215G	25.00	-72.65	-72.53	-69.58	-44.58	-41.20	-3.38
5320MHz	Pass	1G	8G	1M	PK	6.99463G	25.00	-58.76	-59.73	-56.21	-31.21	-27.00	-4.21
5320MHz	Pass	1G	8G	1M	PK	5.1195G	25.00	-60.64	-58.82	-56.63	-31.63	-21.20	-10.43
5320MHz	Pass	1G	8G	1M	PK	5.914G	25.00	-63.02	-58.32	-57.05	-32.05	-27.00	-5.05
5320MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.90	-71.63	-66.37	-41.37	-41.20	-0.17
5320MHz	Pass	5.35G	5.46G	1M	AV	5.35143G	25.00	-70.37	-69.61	-66.96	-41.96	-41.20	-0.76
5320MHz	Pass	5.46G	8G	1M	AV	7.39866G	25.00	-72.76	-72.57	-69.65	-44.65	-41.20	-3.45
5500MHz	Pass	1G	8G	1M	PK	5.82213G	25.00	-57.43	-60.38	-55.65	-30.65	-27.00	-3.65
5500MHz	Pass	1G	8G	1M	PK	5.32425G	25.00	-58.11	-61.27	-56.40	-31.40	-27.00	-4.40
5500MHz	Pass	1G	8G	1M	PK	5.46688G	25.00	-56.92	-62.11	-55.77	-30.77	-27.00	-3.77
5500MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.68	-72.39	-66.42	-41.42	-41.20	-0.22
5500MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-70.75	-71.70	-68.19	-43.19	-41.20	-1.99
5500MHz	Pass	5.35G	5.46G	1M	AV	5.42403G	25.00	-68.06	-71.82	-66.53	-41.53	-41.20	-0.33
5500MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-69.23	-71.19	-67.09	-42.09	-41.20	-0.89
5500MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-69.23	-71.19	-67.09	-42.09	-41.20	-0.89
5580MHz	Pass	1G	8G	1M	PK	5.97088G	25.00	-59.26	-57.89	-55.51	-30.51	-27.00	-3.51
5580MHz	Pass	1G	8G	1M	PK	5.298G	25.00	-60.76	-60.35	-57.54	-32.54	-27.00	-5.54
5580MHz	Pass	1G	8G	1M	PK	5.46775G	25.00	-59.31	-61.80	-57.37	-32.37	-27.00	-5.37
5580MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-67.88	-72.57	-66.61	-41.61	-41.20	-0.41
5580MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-71.80	-72.04	-68.91	-43.91	-41.20	-2.71
5580MHz	Pass	5.35G	5.46G	1M	AV	5.42392G	25.00	-69.66	-71.22	-67.36	-42.36	-41.20	-1.16
5580MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.51	-71.69	-68.59	-43.59	-41.20	-2.39
5580MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.51	-71.69	-68.59	-43.59	-41.20	-2.39
5700MHz	Pass	1G	8G	1M	PK	6.02688G	25.00	-59.45	-57.21	-55.18	-30.18	-27.00	-3.18
5700MHz	Pass	1G	8G	1M	PK	5.32863G	25.00	-59.55	-60.19	-56.85	-31.85	-27.00	-4.85
5700MHz	Pass	1G	8G	1M	PK	5.46338G	25.00	-59.82	-60.84	-57.29	-32.29	-27.00	-5.29
5700MHz	Pass	1G	8G	1M	PK	5.92538G	25.00	-57.55	-59.31	-55.33	-30.33	-27.00	-3.33
5700MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.15	-71.88	-66.62	-41.62	-41.20	-0.42
5700MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-72.41	-72.07	-69.23	-44.23	-41.20	-3.03
5700MHz	Pass	5.35G	5.46G	1M	AV	5.42414G	25.00	-69.66	-71.63	-67.52	-42.52	-41.20	-1.32
5700MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.45	-72.15	-68.78	-43.78	-41.20	-2.58
5700MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.45	-72.15	-68.78	-43.78	-41.20	-2.58
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	6.03213G	25.00	-57.18	-59.61	-55.22	-30.22	-27.00	-3.22
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.37763G	25.00	-59.85	-61.02	-57.39	-32.39	-21.20	-11.19
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.4695G	25.00	-60.41	-61.76	-58.02	-33.02	-27.00	-6.02
5720MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.9035G	25.00	-59.62	-57.36	-55.33	-30.33	-27.00	-3.33
5720MHz Straddle 5.47-5.725GHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.42	-72.29	-66.93	-41.93	-41.20	-0.73
5720MHz Straddle 5.47-5.725GHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-71.92	-71.92	-68.91	-43.91	-41.20	-2.71
5720MHz Straddle 5.47-5.725GHz	Pass	5.35G	5.46G	1M	AV	5.42403G	25.00	-70.95	-71.24	-68.08	-43.08	-41.20	-1.88
5720MHz Straddle 5.47-5.725GHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.71	-72.06	-68.87	-43.87	-41.20	-2.67
5720MHz Straddle 5.47-5.725GHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.71	-72.06	-68.87	-43.87	-41.20	-2.67
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-

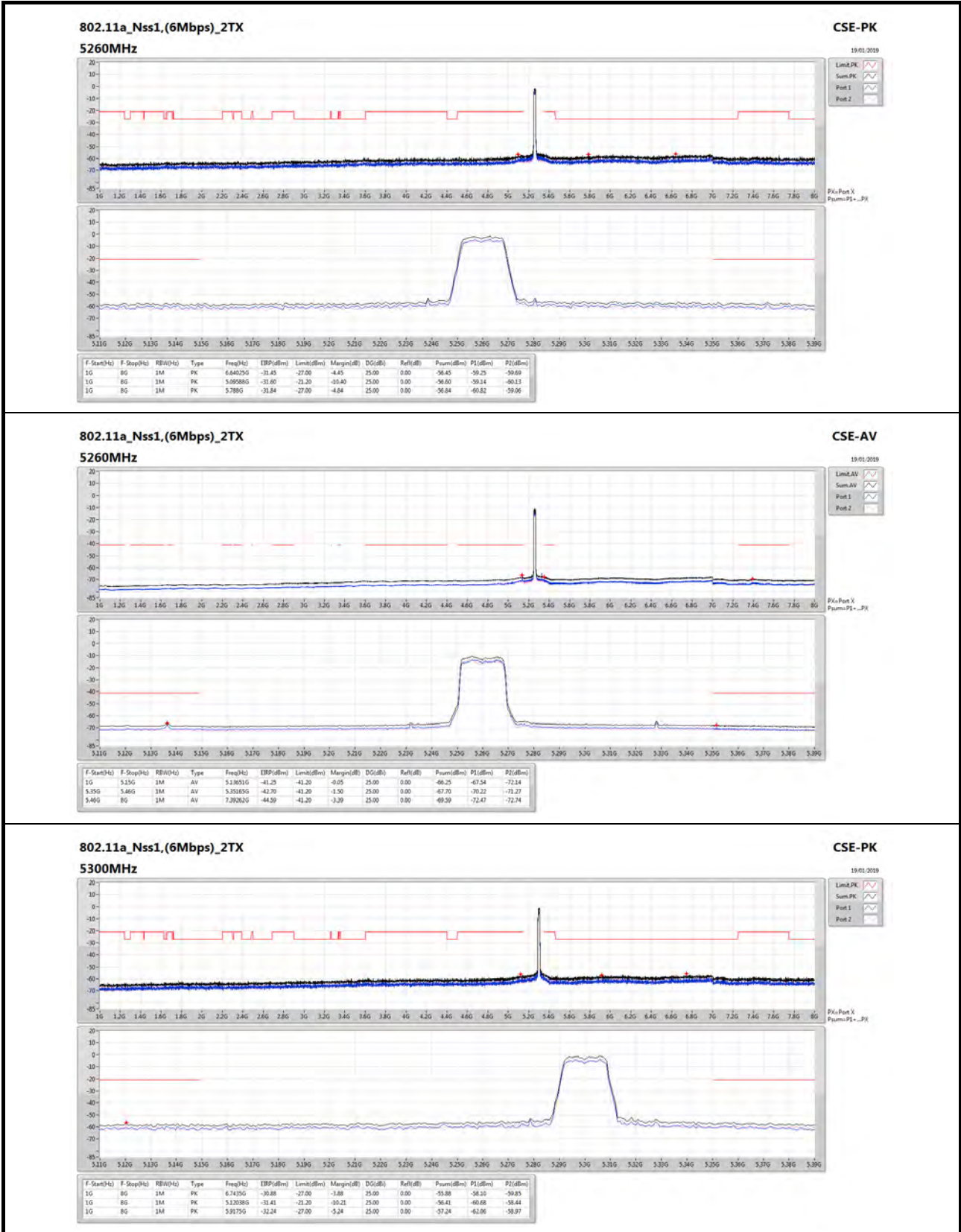


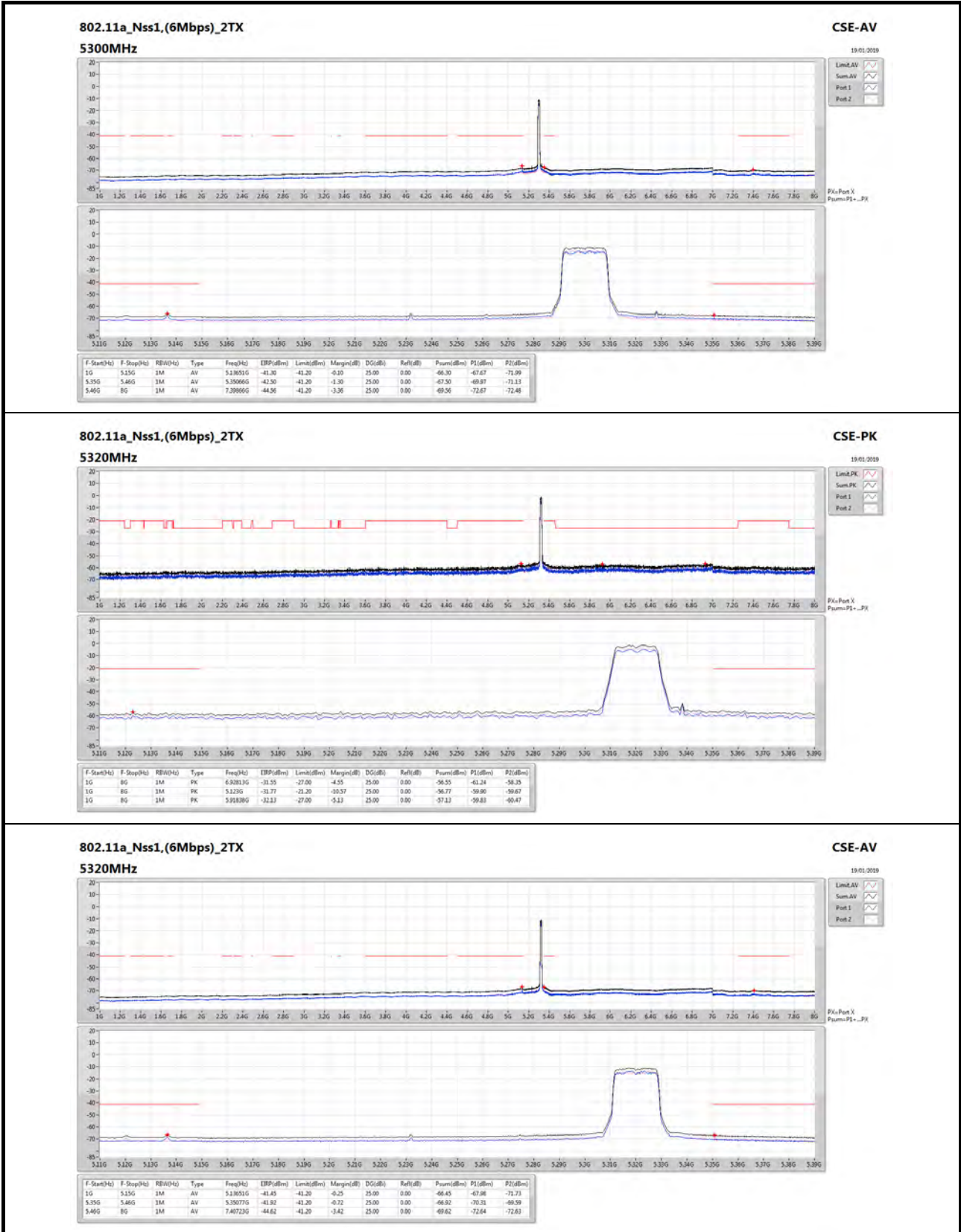
CSE Result

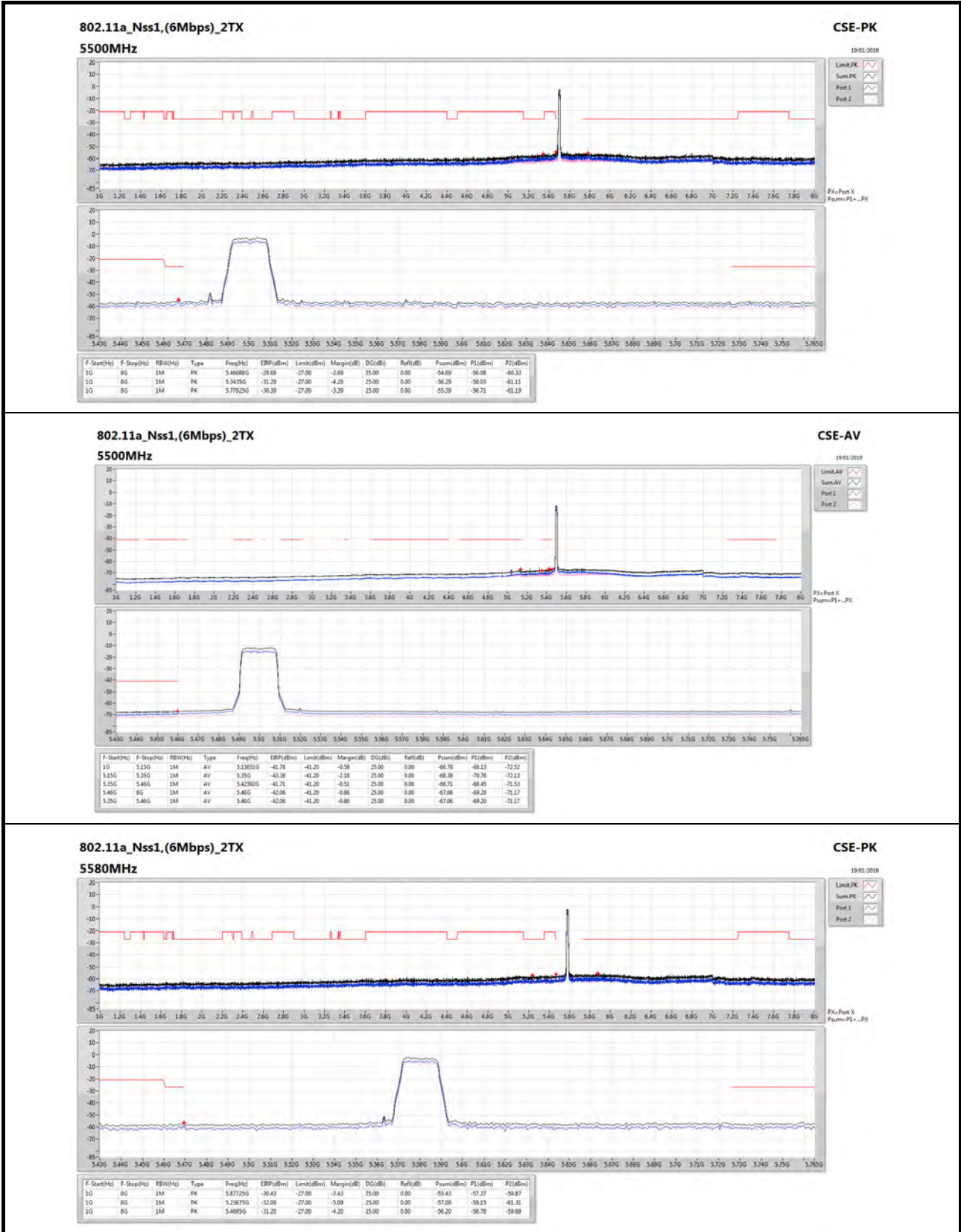
Appendix D.2

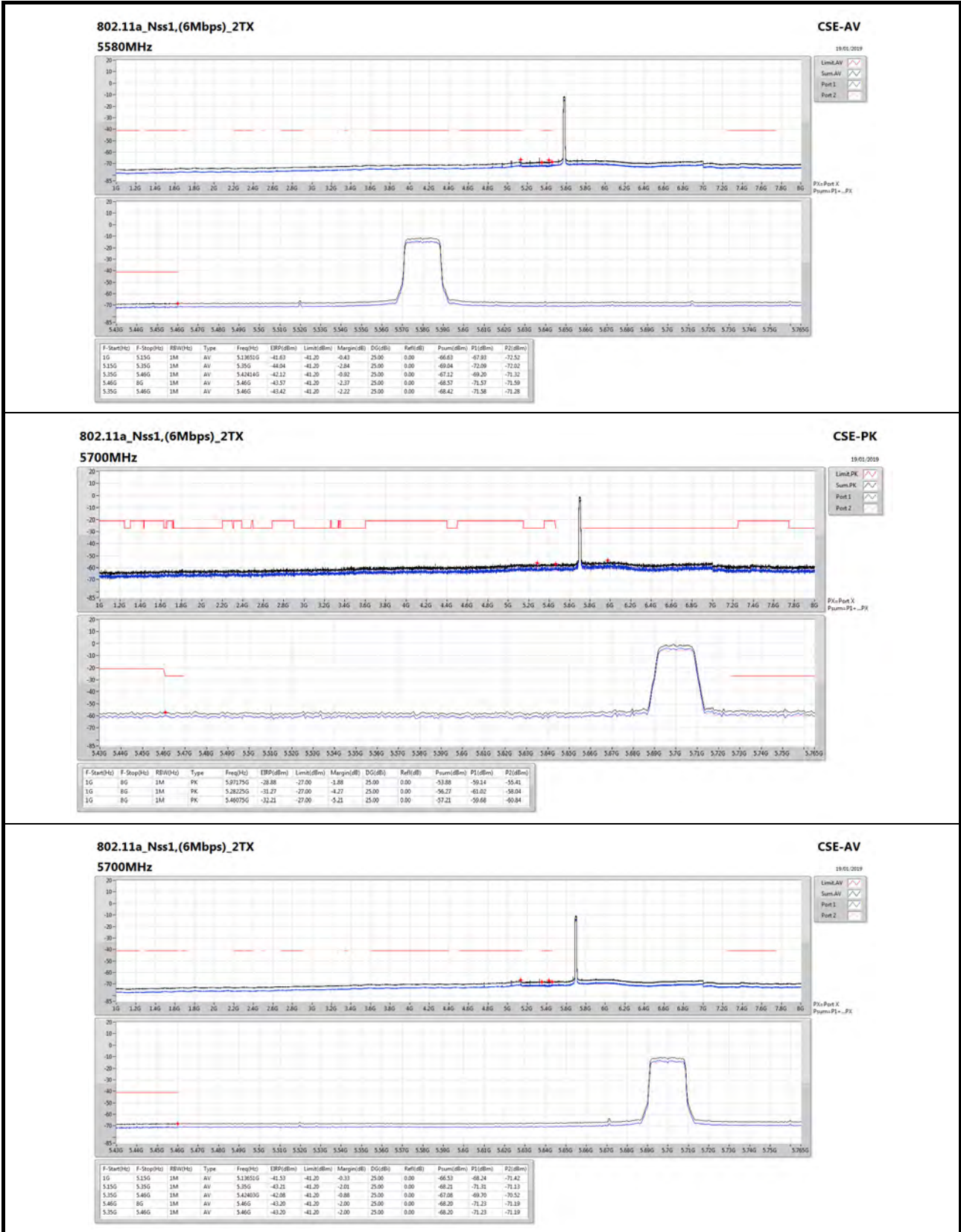
Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Type	Freq (Hz)	DG (dB)	P1 (dBm)	P2 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
5290MHz	Pass	1G	8G	1M	PK	6.94475G	25.00	-59.42	-58.97	-56.18	-31.18	-27.00	-4.18
5290MHz	Pass	1G	8G	1M	PK	5.1265G	25.00	-61.43	-59.65	-57.44	-32.44	-21.20	-11.24
5290MHz	Pass	1G	8G	1M	PK	5.88775G	25.00	-61.07	-59.22	-57.04	-32.04	-27.00	-5.04
5290MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-69.75	-72.11	-67.76	-42.76	-41.20	-1.56
5290MHz	Pass	5.35G	5.46G	1M	AV	5.35011G	25.00	-69.51	-69.68	-66.58	-41.58	-41.20	-0.38
5290MHz	Pass	5.46G	8G	1M	AV	7.39453G	25.00	-72.67	-72.75	-69.70	-44.70	-41.20	-3.50
5530MHz	Pass	1G	8G	1M	PK	5.72588G	25.00	-58.08	-60.29	-56.04	-31.04	-27.00	-4.04
5530MHz	Pass	1G	8G	1M	PK	5.29975G	25.00	-60.78	-59.77	-57.24	-32.24	-27.00	-5.24
5530MHz	Pass	1G	8G	1M	PK	5.46425G	25.00	-60.24	-58.82	-56.46	-31.46	-27.00	-4.46
5530MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-70.00	-72.34	-68.00	-43.00	-41.20	-1.80
5530MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-71.63	-71.95	-68.78	-43.78	-41.20	-2.58
5530MHz	Pass	5.35G	5.46G	1M	AV	5.45318G	25.00	-69.70	-70.05	-66.86	-41.86	-41.20	-0.66
5530MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-69.55	-70.42	-66.95	-41.95	-41.20	-0.75
5530MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-69.55	-70.42	-66.95	-41.95	-41.20	-0.75
5610MHz	Pass	1G	8G	1M	PK	5.72588G	25.00	-57.14	-57.60	-54.35	-29.35	-27.00	-2.35
5610MHz	Pass	1G	8G	1M	PK	5.19475G	25.00	-60.39	-60.50	-57.43	-32.43	-27.00	-5.43
5610MHz	Pass	1G	8G	1M	PK	5.46863G	25.00	-60.76	-59.72	-57.20	-32.20	-27.00	-5.20
5610MHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.33	-72.81	-67.01	-42.01	-41.20	-0.81
5610MHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-72.38	-72.33	-69.34	-44.34	-41.20	-3.14
5610MHz	Pass	5.35G	5.46G	1M	AV	5.42381G	25.00	-69.66	-71.24	-67.37	-42.37	-41.20	-1.17
5610MHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-70.74	-71.58	-68.13	-43.13	-41.20	-1.93
5610MHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-70.74	-71.58	-68.13	-43.13	-41.20	-1.93
5690MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.86763G	25.00	-58.88	-57.08	-54.88	-29.88	-27.00	-2.88
5690MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.44063G	25.00	-61.61	-58.64	-56.87	-31.87	-21.20	-10.67
5690MHz Straddle 5.47-5.725GHz	Pass	1G	8G	1M	PK	5.466G	25.00	-61.65	-59.04	-57.14	-32.14	-27.00	-5.14
5690MHz Straddle 5.47-5.725GHz	Pass	1G	5.15G	1M	AV	5.13651G	25.00	-68.14	-72.12	-66.68	-41.68	-41.20	-0.48
5690MHz Straddle 5.47-5.725GHz	Pass	5.15G	5.35G	1M	AV	5.35G	25.00	-72.14	-72.11	-69.11	-44.11	-41.20	-2.91
5690MHz Straddle 5.47-5.725GHz	Pass	5.35G	5.46G	1M	AV	5.42381G	25.00	-69.94	-71.51	-67.64	-42.64	-41.20	-1.44
5690MHz Straddle 5.47-5.725GHz	Pass	5.46G	8G	1M	AV	5.46G	25.00	-71.77	-71.92	-68.83	-43.83	-41.20	-2.63
5690MHz Straddle 5.47-5.725GHz	Pass	5.35G	5.46G	1M	AV	5.46G	25.00	-71.77	-71.92	-68.83	-43.83	-41.20	-2.63

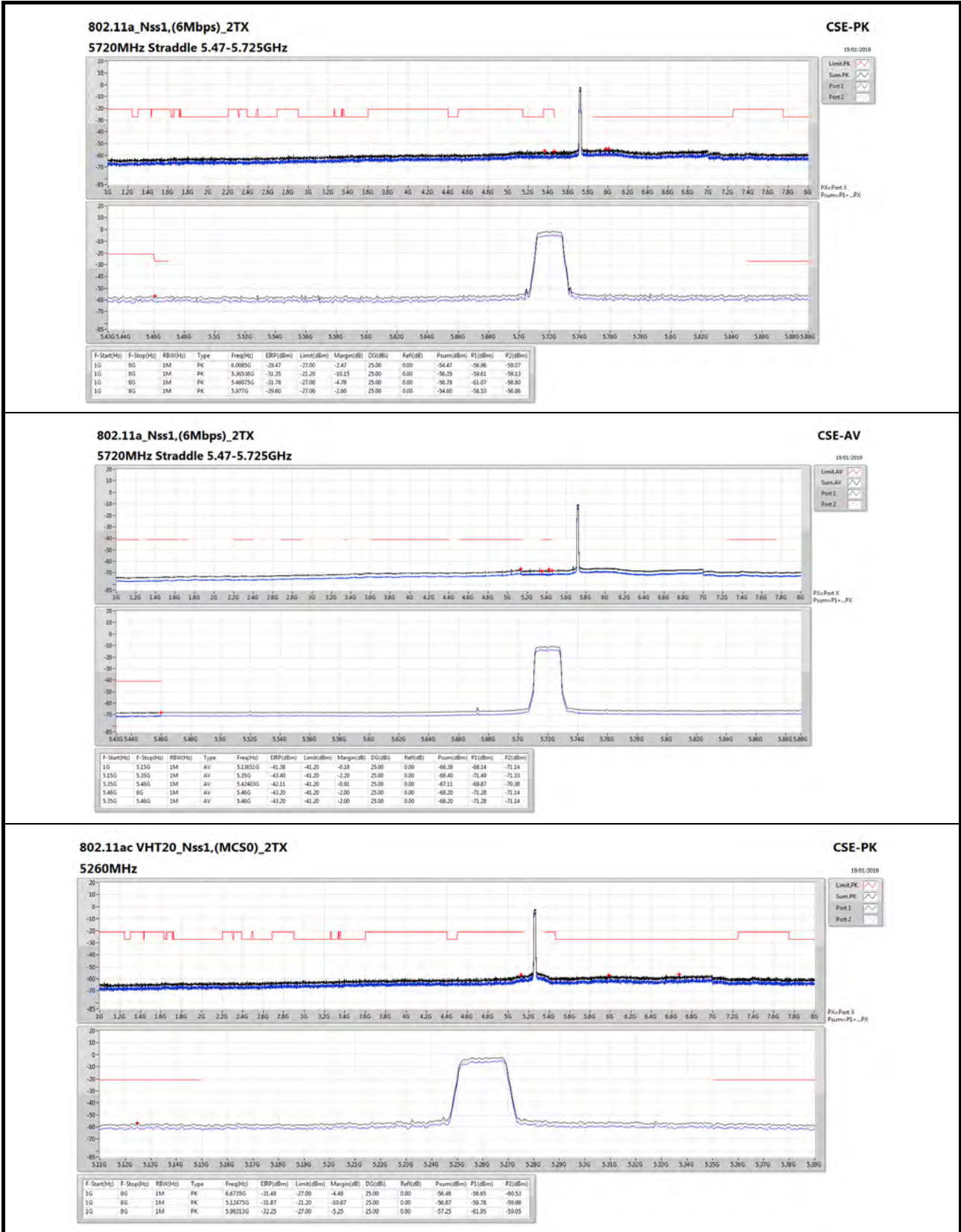
DG = Directional Gain;
 PX=Port X; Psum=P1+.P2+..PX

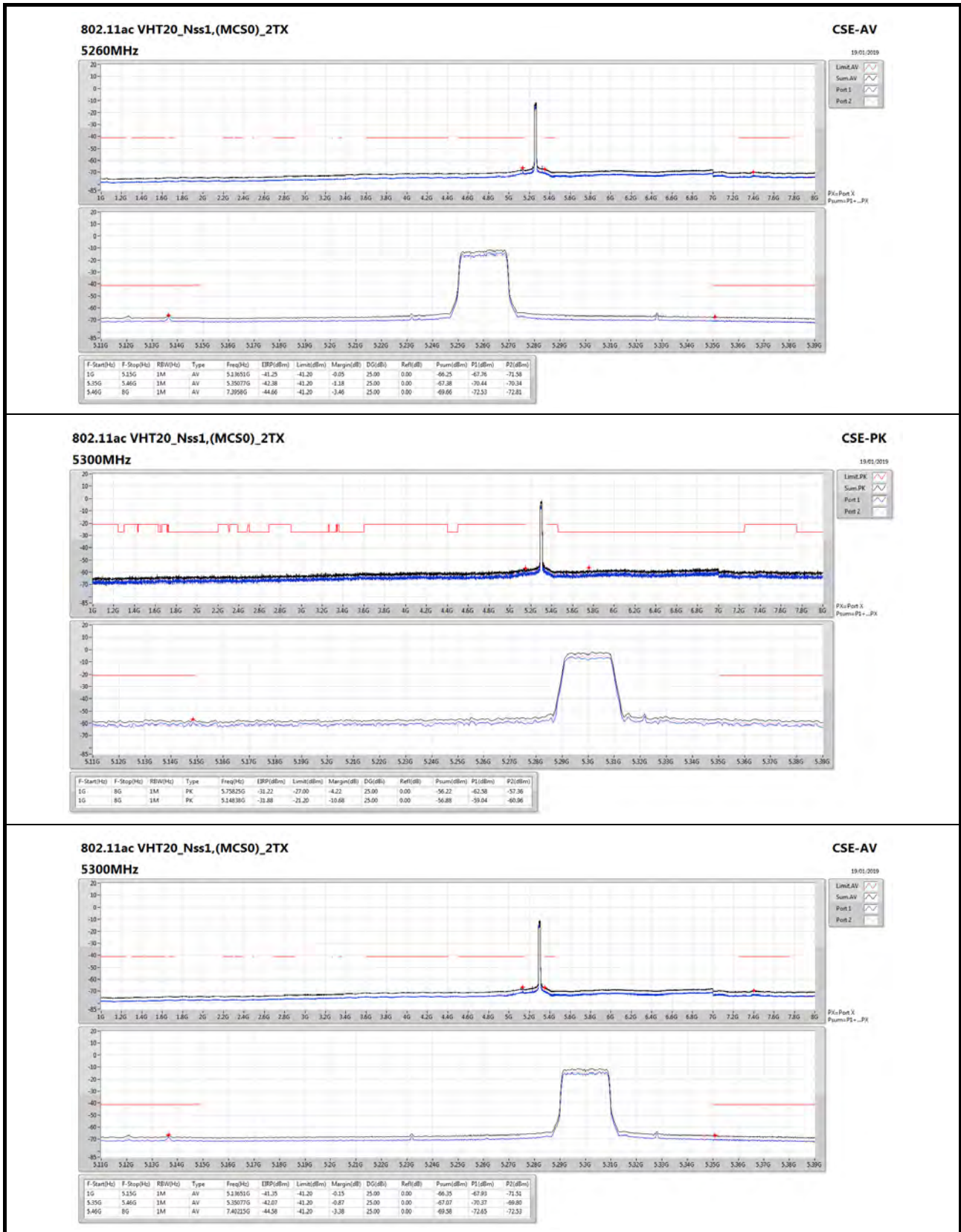


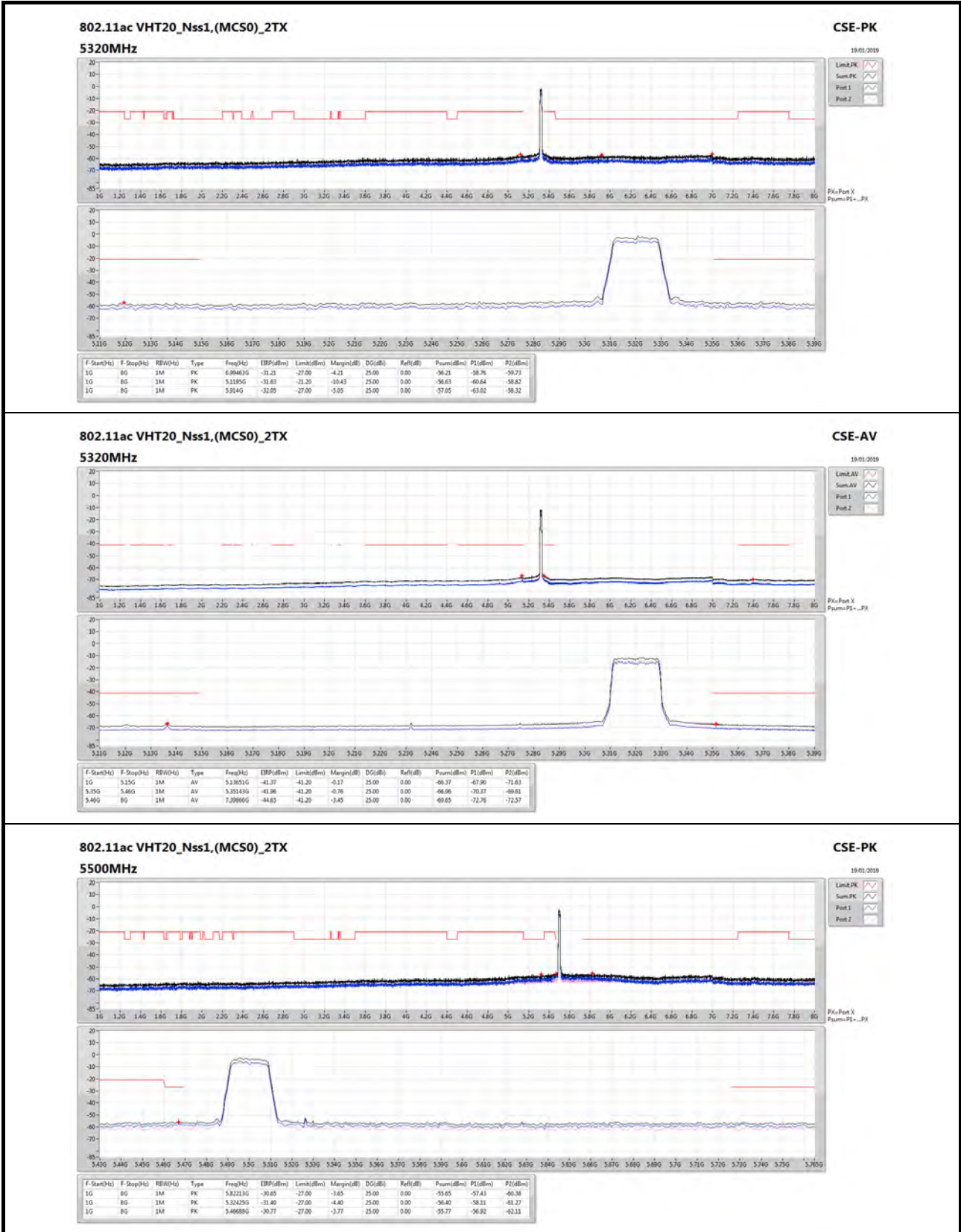


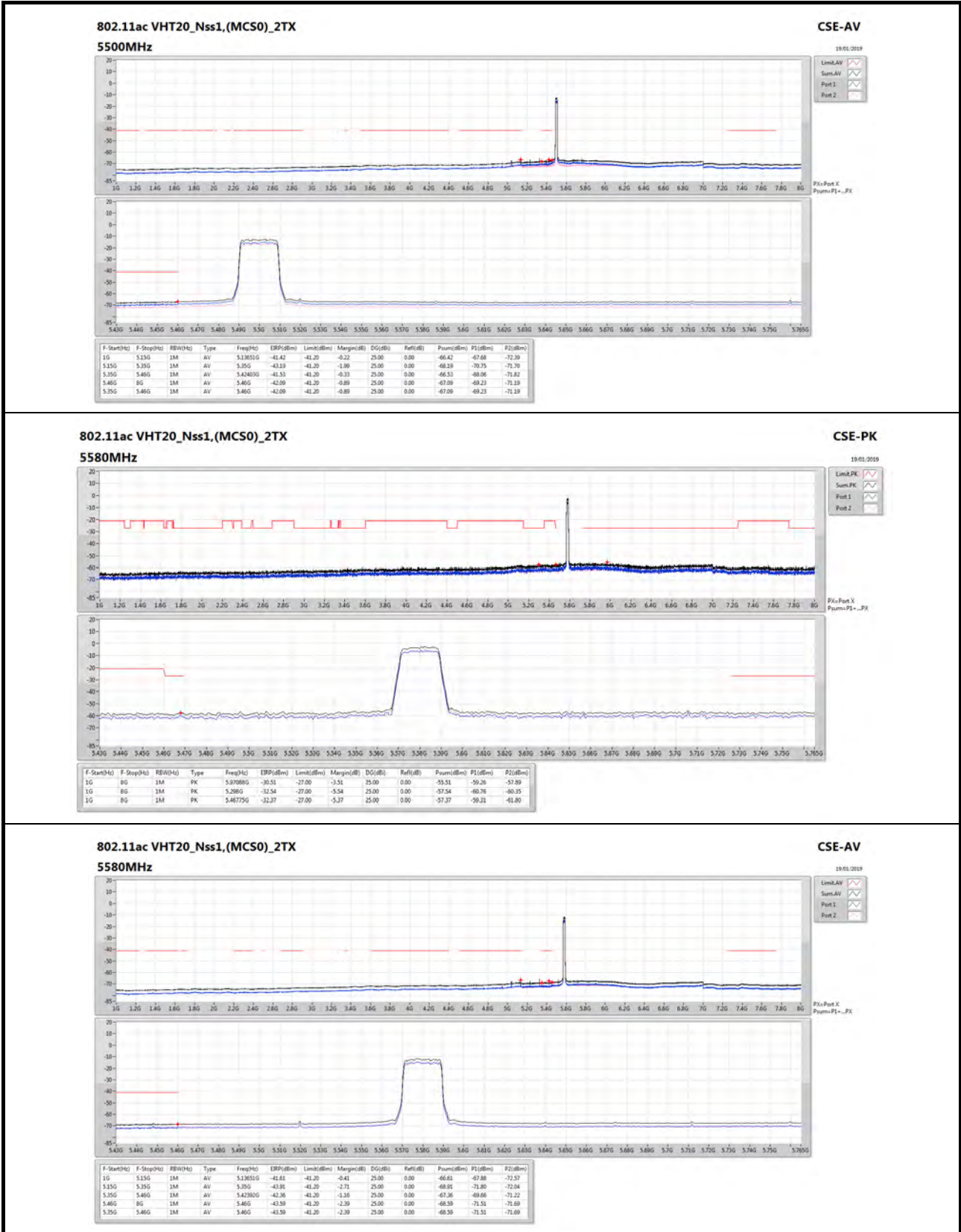


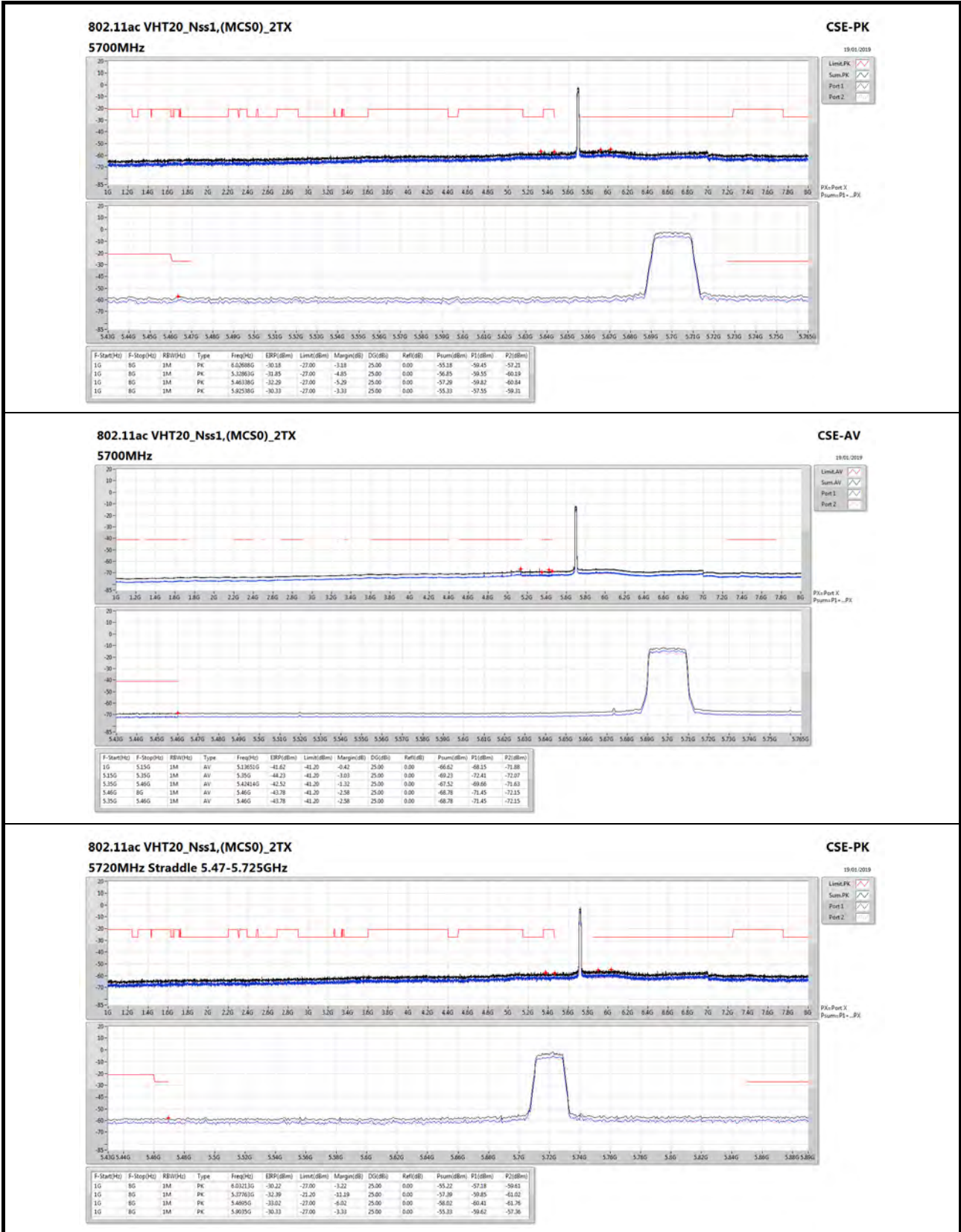


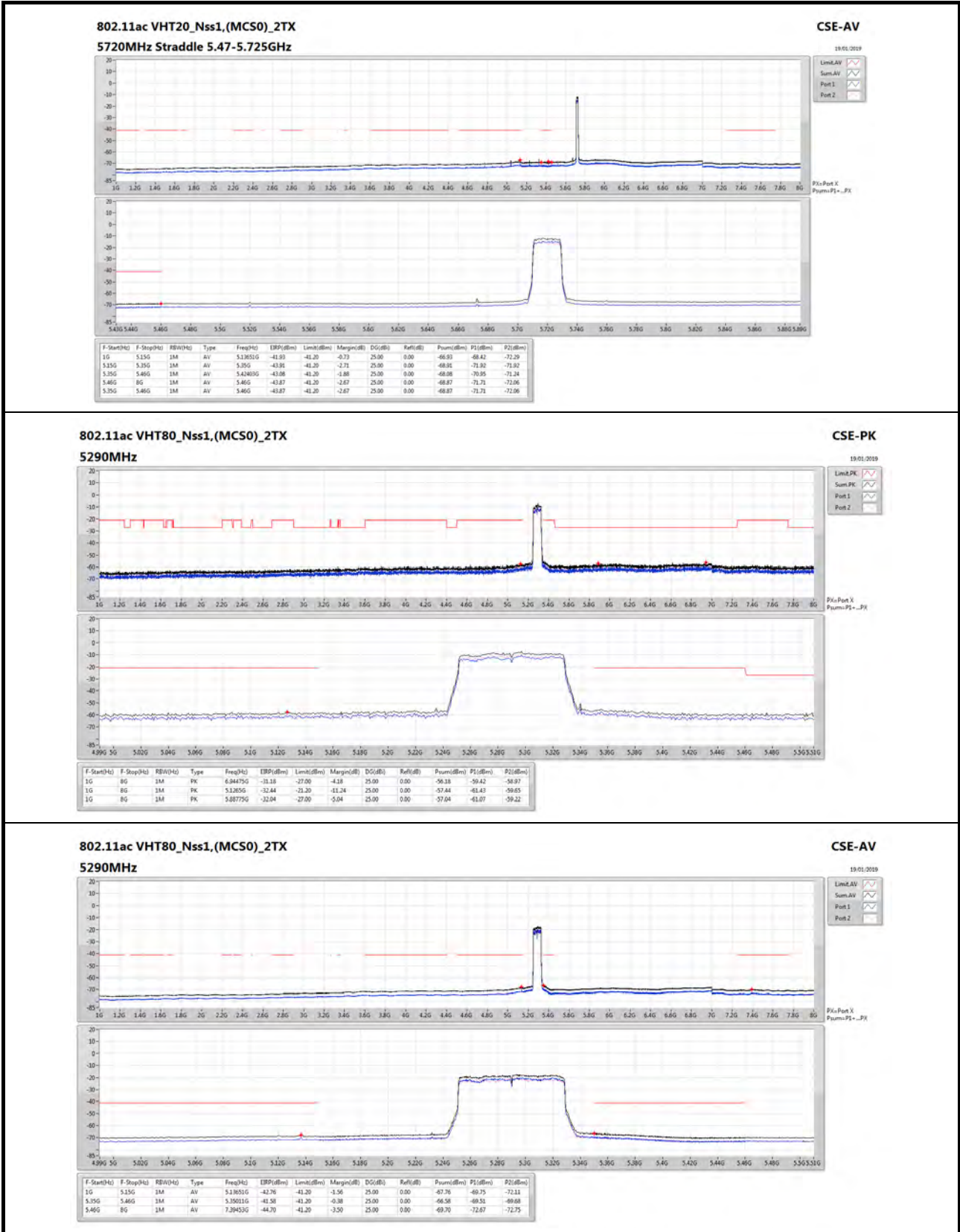


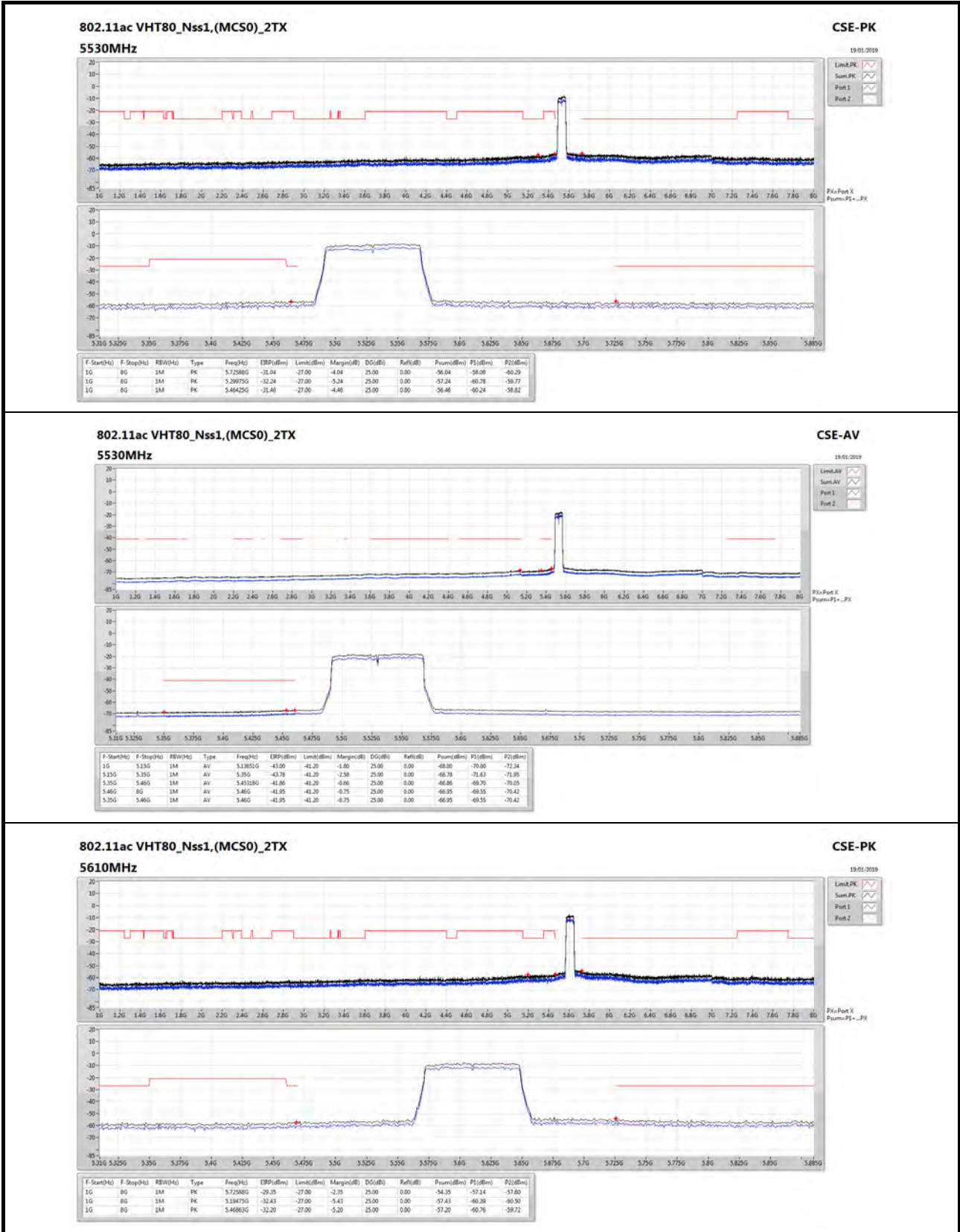


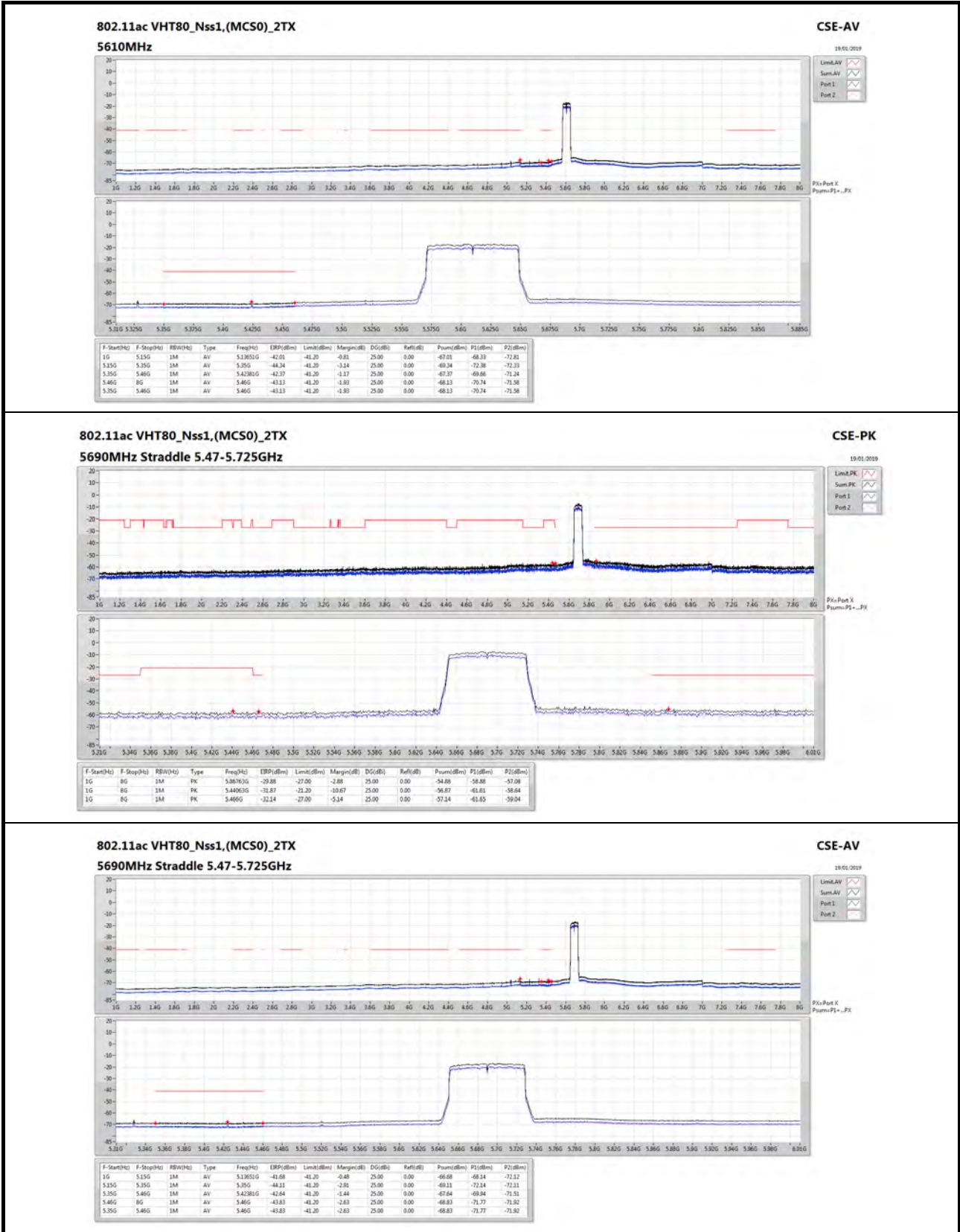














For Conducted Spurious Emission (8GHz~40GHz)

Summary

Mode	Result	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Type	Freq (Hz)	DG (dBi)	P1 (dBm)	P2 (dBm)	Psum (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
5.25-5.35GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	8G	40G	1M	AV	39.585G	25.00	-76.16	-75.74	-72.93	-47.93	-41.20	-6.73
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	8G	40G	1M	AV	39.598G	25.00	-76.10	-75.75	-72.91	-47.91	-41.20	-6.71
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	8G	40G	1M	AV	39.589G	25.00	-75.71	-75.90	-72.79	-47.79	-41.20	-6.59
5.47-5.725GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	8G	40G	1M	AV	39.594G	25.00	-76.01	-75.79	-72.89	-47.89	-41.20	-6.69
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	8G	40G	1M	AV	39.6G	25.00	-76.34	-75.64	-72.97	-47.97	-41.20	-6.77
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	8G	40G	1M	AV	39.61G	25.00	-75.89	-75.71	-72.79	-47.79	-41.20	-6.59

DG = Directional Gain;
 PX=Port X; Psum=P1+.P2+...PX