



FCC Test Report

FCC ID : 2AGMRTRM9995G
Equipment : 802.11ac WiFi Radio Module
Brand Name : EVEREST™ Network Solutions
Model Name : TRM9995G
Applicant / Manufacturer : Tembo Systems, Inc.
2933 Bunker Hill lane, Suite 100, Santa Clara, CA 95054
U.S.A
Standard : 47 CFR FCC Part 15.407

The product was received on Mar. 20, 2018, and testing was started from Mar. 26, 2018 and completed on Apr. 03, 2018. We, SPORTON INTERTIONAL 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 INTERTIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERTIONAL INC. EMC & Wireless Communications Laboratory

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



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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 PHOTOS****PHOTOGRAPHS OF EUT V01**



History of this test report



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	-

Reviewed by: Sam Tsai

Report Producer: Ivy Yuan



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5700	100-140 [11]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5670	102-134 [5]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5610	106-122 [2]
5725-5850		5775	155 [1]

**Non-Beamforming**

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.25-5.35GHz	802.11a	20	4TX
5.47-5.725GHz	802.11a	20	4TX
5.725-5.85GHz	802.11a	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.25-5.35GHz	802.11ac VHT20	20	4TX
5.47-5.725GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.25-5.35GHz	802.11ac VHT40	40	4TX
5.47-5.725GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.25-5.35GHz	802.11ac VHT80	80	4TX
5.47-5.725GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX

Beamforming

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX



Note:

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

1.1.2 Antenna Information

Ant. Set	Brand Holder	Band	Model Name	Antenna Type	Connector	Gain (dBi)	TX Function	Host system Mode1
1	Tembo Systems Inc.	Band 1	PCA-000032-000X/ PCA-000024-000-X	Omni Antenna	I-PEX	Note	4TX/4RX	AP24I612
		Band 2	PCA-000032-000X/ PCA-000024-000-X					
		Band 3	PCA-000020-000-X					
		Band 4	PCA-000032-000X/ PCA-000025-000-X					
2								

Note:

Ant. Set	Band	Gain (dBi)	Matrix+Cable Loss	True Gain (dBi)	Array Gain
1	Band 1	6.25	3.2	3.05	4
1	Band 2	6.75	3.2	3.55	4
1	Band 3	6.40	1.5	4.9	4
2	Band 4	6.10	6.1	0	4

Remark: For more detailed features description, please refer to the specifications.



1.1.3 EUT Information

Identify EUT				
RF Chip	QCA9990			
Operational Condition				
EUT Power Type	From host system			
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
Weather Band	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/>	Without 5600~5650MHz
Type of EUT				
<input type="checkbox"/>	Stand-alone			
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)			
	Combined Equipment - Brand Name / Model No.: ...			
<input checked="" type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)			
	Host System - Brand Name / Model No.: EVEREST™ Network Solutions / AP24I612			
<input type="checkbox"/>	Other:			

1.1.4 Mode Test Duty Cycle

Non-Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.963	0.164	2.065m	1k
802.11ac VHT20	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	0.974	0.114	2.437m	1k
802.11ac VHT80	0.947	0.237	1.15m	1k

Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT20-BF	0.876	0.575	1.754m	1k
802.11ac VHT40-BF	0.912	0.4	1.756m	1k
802.11ac VHT80-BF	0.815	0.888	1.95m	1k



1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR650411-01

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Add New antennas	AC power-line conducted emissions Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Unwanted Emissions Simultaneous Transmission Analysis



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
- ◆ KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location				
<input checked="" 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	
Test site Designation No. TW1190 with FCC.				
<input type="checkbox"/>	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.				

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Kevin	22.2°C / 51.8%	Mar. 29, 2018
RF Conducted	TH06-HY	Tim	22.5°C / 65%	Mar. 26, 2018
Radiated	03CH03-HY	Andy	23.8°C / 62%	Apr. 03, 2018

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)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Condition

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



2.2 Test Channel Mode

Non-Beamforming

Test Software Version	QCARCT Ver 3.0.197.0
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Mode	PowerSetting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	20.5
5200MHz	21.5
5240MHz	21
5260MHz	17
5300MHz	17
5320MHz	17
5500MHz	15.5
5580MHz	15.5
5700MHz	15.5
5745MHz	26
5785MHz	26
5825MHz	26
802.11ac VHT20_Nss1,(MCS0)_4TX	-
5180MHz	21
5200MHz	22
5240MHz	21
5260MHz	17.5
5300MHz	17
5320MHz	17.5
5500MHz	16
5580MHz	15.5
5700MHz	15.5
5745MHz	26
5785MHz	26
5825MHz	26
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5190MHz	19
5230MHz	21
5270MHz	17



Mode	PowerSetting
5310MHz	17
5510MHz	16.5
5550MHz	17.5
5670MHz	17.5
5755MHz	26
5795MHz	26
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5210MHz	17.5
5290MHz	17
5530MHz	16.5
5610MHz	18
5775MHz	26

Beamforming

Test Software	Dos

Mode	PowerSetting
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5180MHz	25
5200MHz	25
5240MHz	25
5260MHz	25
5300MHz	25
5320MHz	25
5500MHz	22
5580MHz	22
5700MHz	22
5745MHz	25
5785MHz	25
5825MHz	25
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5190MHz	25
5230MHz	25
5270MHz	25
5310MHz	25



Mode	PowerSetting
5510MHz	21
5550MHz	21
5670MHz	21
5755MHz	25
5795MHz	25
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5210MHz	25
5290MHz	25
5530MHz	21
5610MHz	21
5775MHz	25



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 - Non BF
2	Adapter mode - BF

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						
Operating Mode > 1GHz	CTX						
Orthogonal Planes of EUT	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 5px;">X Plane</th> <th style="text-align: center; padding: 5px;">Y Plane</th> <th style="text-align: center; padding: 5px;">Z Plane</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 10px;"></td> <td style="text-align: center; padding: 10px;"></td> <td style="text-align: center; padding: 10px;"></td> </tr> </tbody> </table>	X Plane	Y Plane	Z Plane			
X Plane	Y Plane	Z Plane					
Worst Planes of EUT	V						

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	WLAN 5GHz

Refer to Sporton Test Report No.: FA831528-02 for Co-location RF Exposure Evaluation.



2.4 Support Equipment

Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	fixture	EVERESTTM Network Solutions	AP24I612	DoC
2	Adapter	DELTA	ADP-66CR B	-
3	Notebook	DELL	E5530	-
4	Notebook	DELL	E5530	-
5	Client	-	-	-

Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Notebook	DELL	E5410	DoC
4	Adapter for NB	DELL	HA65NM130	DoC
5	Client	-	-	-
6	fixture	EVERESTTM Network Solutions	AP24I612	-
7	Adapter	DELTA	ADP-66CR B	-

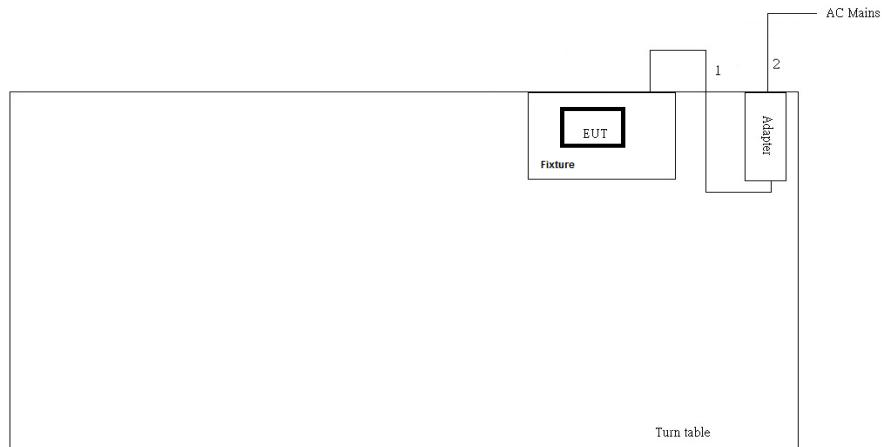
Note. Support equipment No.5, 6, 7 was provided by customer.

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	fixture	EVERESTTM Network Solutions	AP24I612	-
2	Adapter	DELTA	ADP-66CR B	-
3	Client	-	-	-
4	Notebook	DELL	E5410	-



2.5 Test Setup Diagram

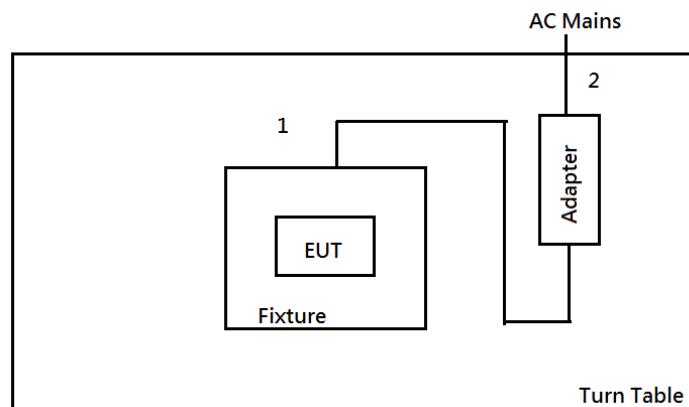
Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	DC Power Line	No	1.5	-
2	AC Power Line	No	1.5	-



Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	DC Power Line	No	1.5	-
2	AC Power Line	No	1.5	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

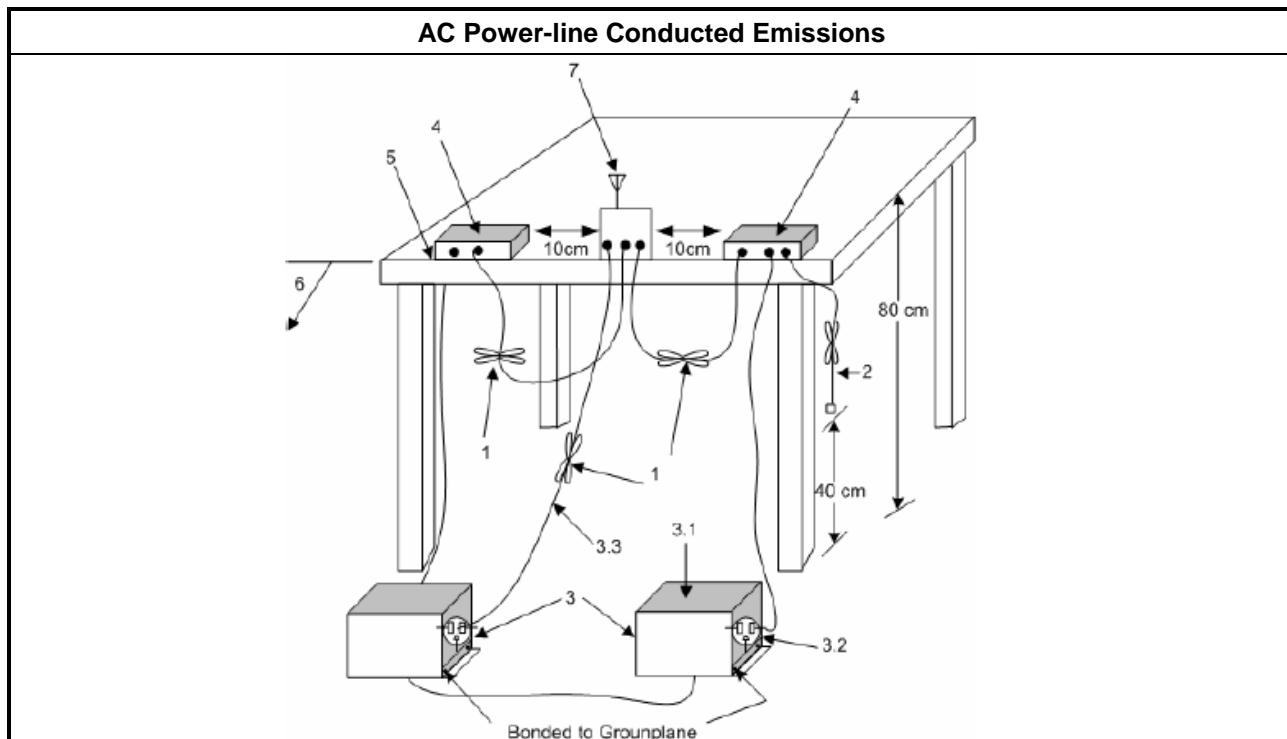
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 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	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band, N/A
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.

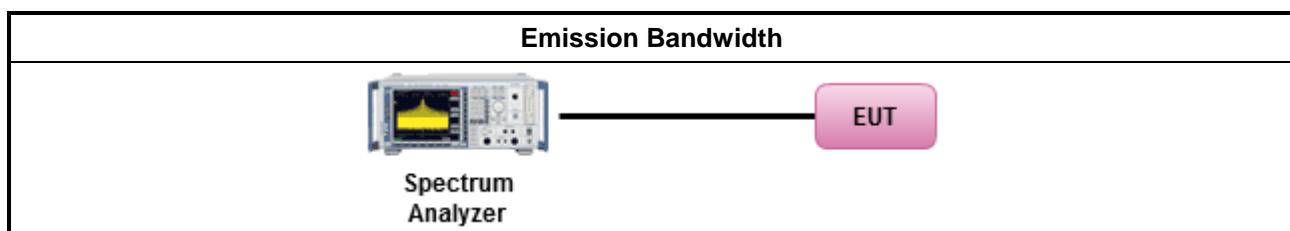
3.2.2 Measuring Instruments

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:	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
<input checked="" type="checkbox"/>	Refer as IC RSS-Gen, clause 6.6 for bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	<ul style="list-style-type: none">▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees $\leq 125\text{mW}$ [21dBm]▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, 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 $G_{TX} > 23 \text{ dBi}$, 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 $G_{TX} > 6 \text{ dBi}$, 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 $G_{TX} > 6 \text{ dBi}$, 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 $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	<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 $G_{TX} > 6 \text{ dBi}$, 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>P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	

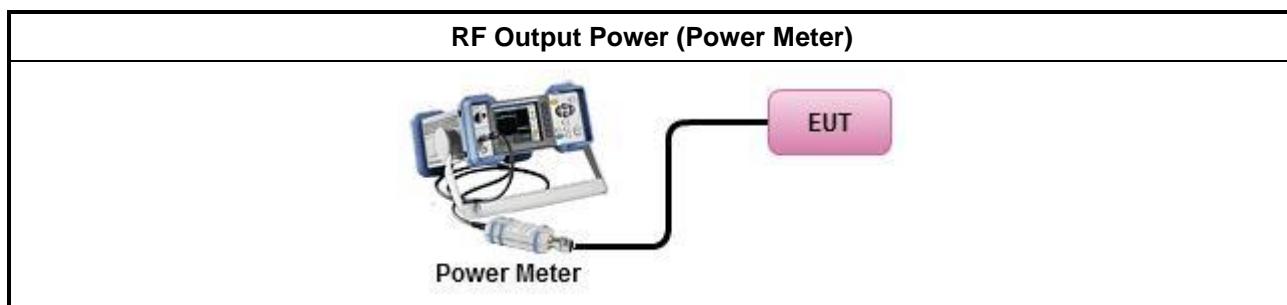
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
▪ Maximum Conducted Output Power	
Duty cycle ≥ 98%	<input type="checkbox"/> Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
Duty cycle < 98%	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> Refer as KDB 789033, clause E Method PM (using an RF average power meter).
▪ For conducted measurement.	
	<ul style="list-style-type: none">▪ 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	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	<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:	<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.
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

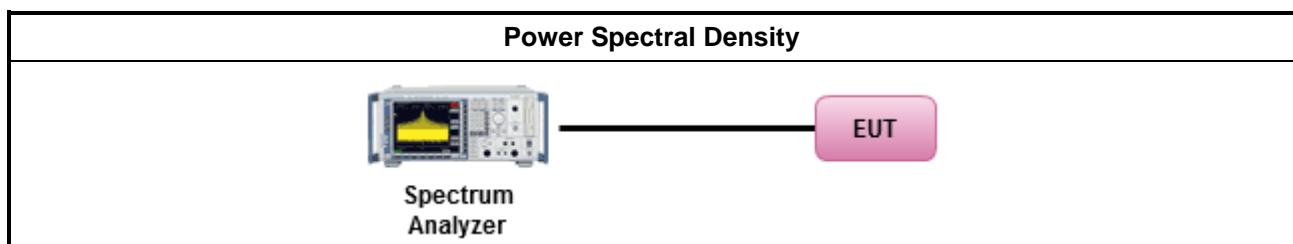
Refer a test equipment and calibration data table in this test report.



3.4.3 Test Procedures

Test Method	
<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 KDB 789033, F5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
	Duty cycle \geq 98%
	<input checked="" type="checkbox"/> Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
	Duty cycle < 98%
	<input checked="" type="checkbox"/> Refer as 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:
	<ul style="list-style-type: none">▪ Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PPSD). 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.
	<ul style="list-style-type: none">▪ If multiple transmit chains, EIRP PPSD calculation could be following as methods: $\text{PPSD}_{\text{total}} = \text{PPSD}_1 + \text{PPSD}_2 + \dots + \text{PPSD}_n$(calculated in linear unit [mW] and transfer to log unit [dBm]) $\text{EIRP}_{\text{total}} = \text{PPSD}_{\text{total}} + \text{DG}$

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 ~ 68.2 dBuV/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).



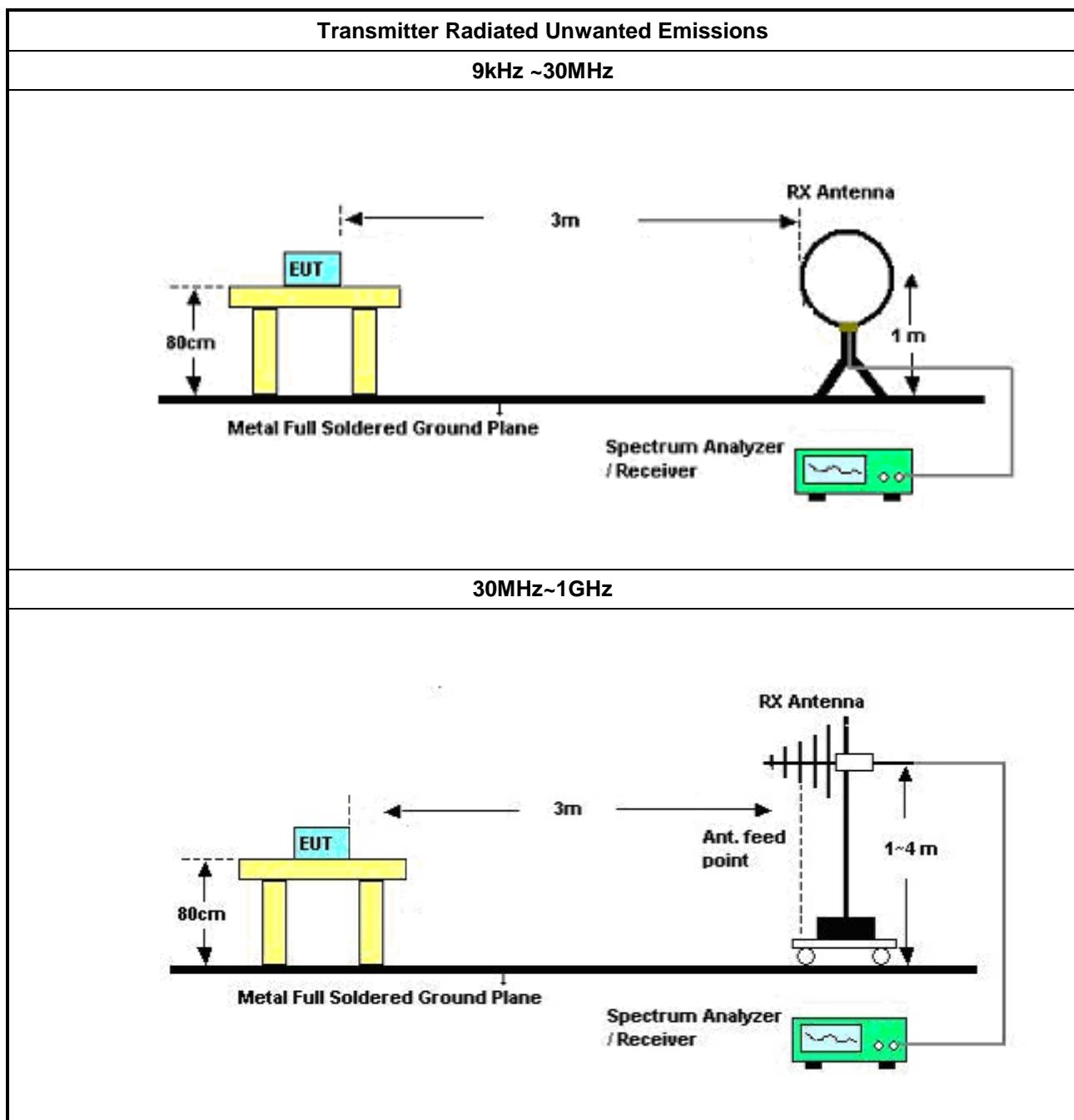
3.5.2 Measuring Instruments

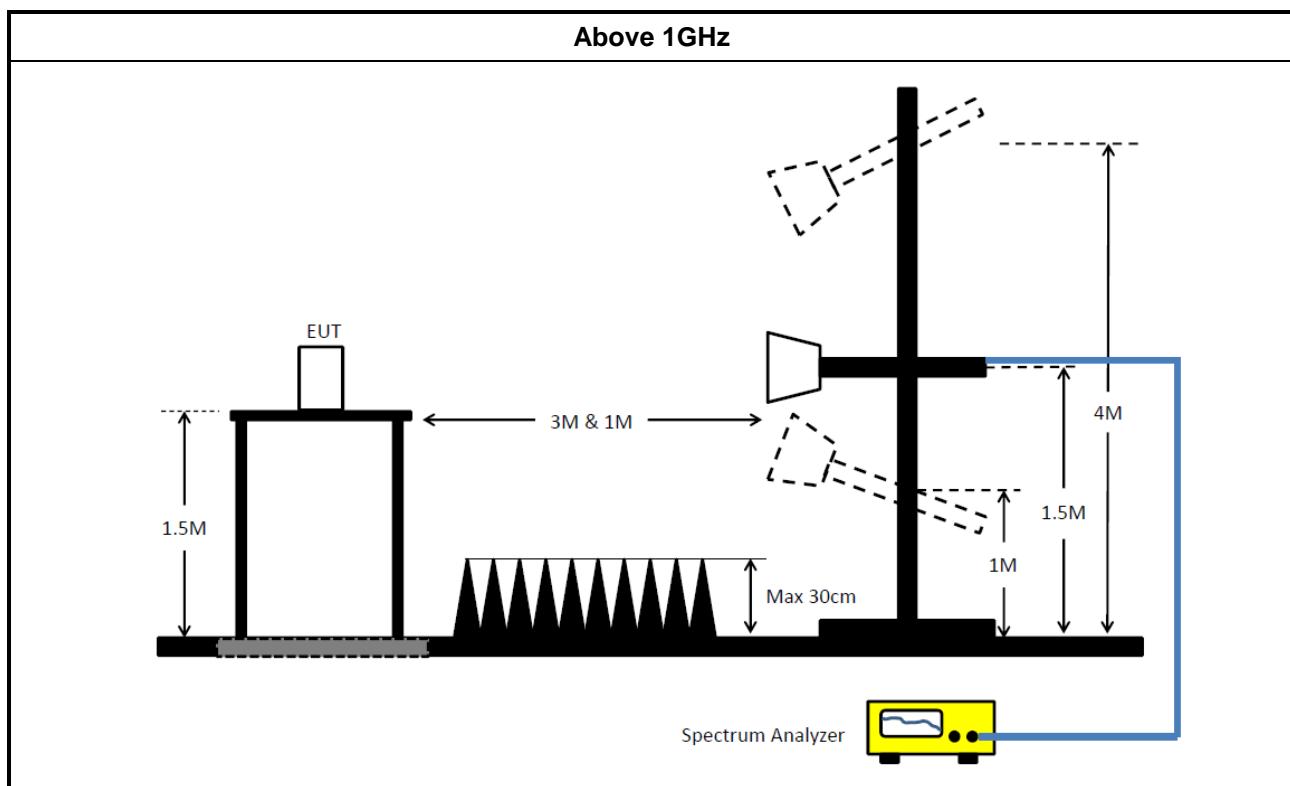
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
<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 \geq 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 KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.	
<ul style="list-style-type: none">▪ Refer as KDB 789033, clause G)1) for unwanted emissions into restricted bands.	
<ul style="list-style-type: none"><input checked="" type="checkbox"/> Refer as KDB 789033, G)6) Method VB (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW.	
<ul style="list-style-type: none"><input checked="" type="checkbox"/> Refer as KDB 789033, clause G)5) (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.	
<ul style="list-style-type: none">▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.	
<ul style="list-style-type: none">▪ 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.	

3.5.4 Test Setup





3.5.5 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.

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



3.6 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018

NCR : Non-Calibration Require

Instrument for Conducted Test - Non-Beamforming

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	9kHz~40GHz	29/Dec/2017	28/Dec/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	05/Feb/2018	04/Feb/2019
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	05/Feb/2018	04/Feb/2019
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12583/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10712/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018

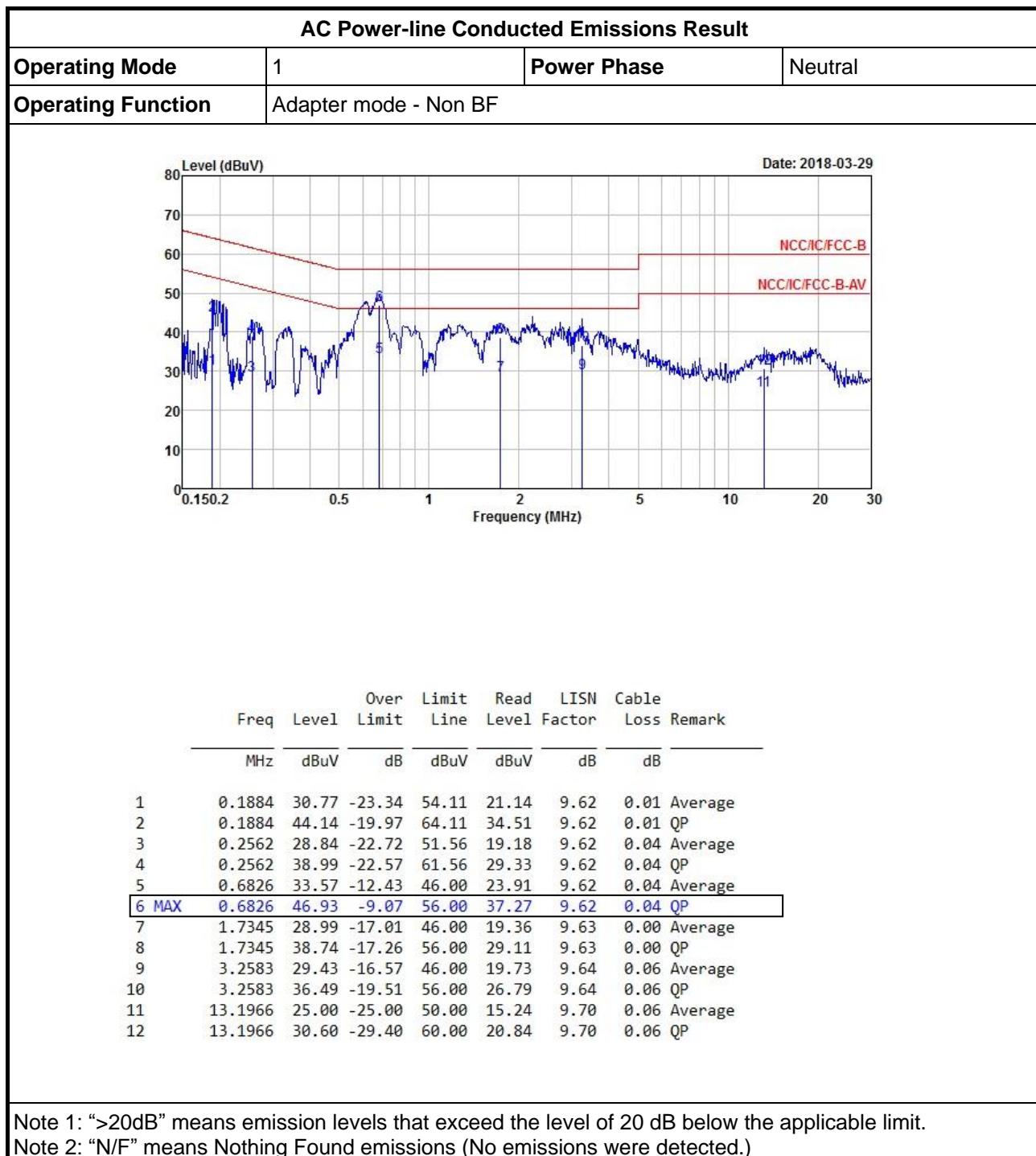


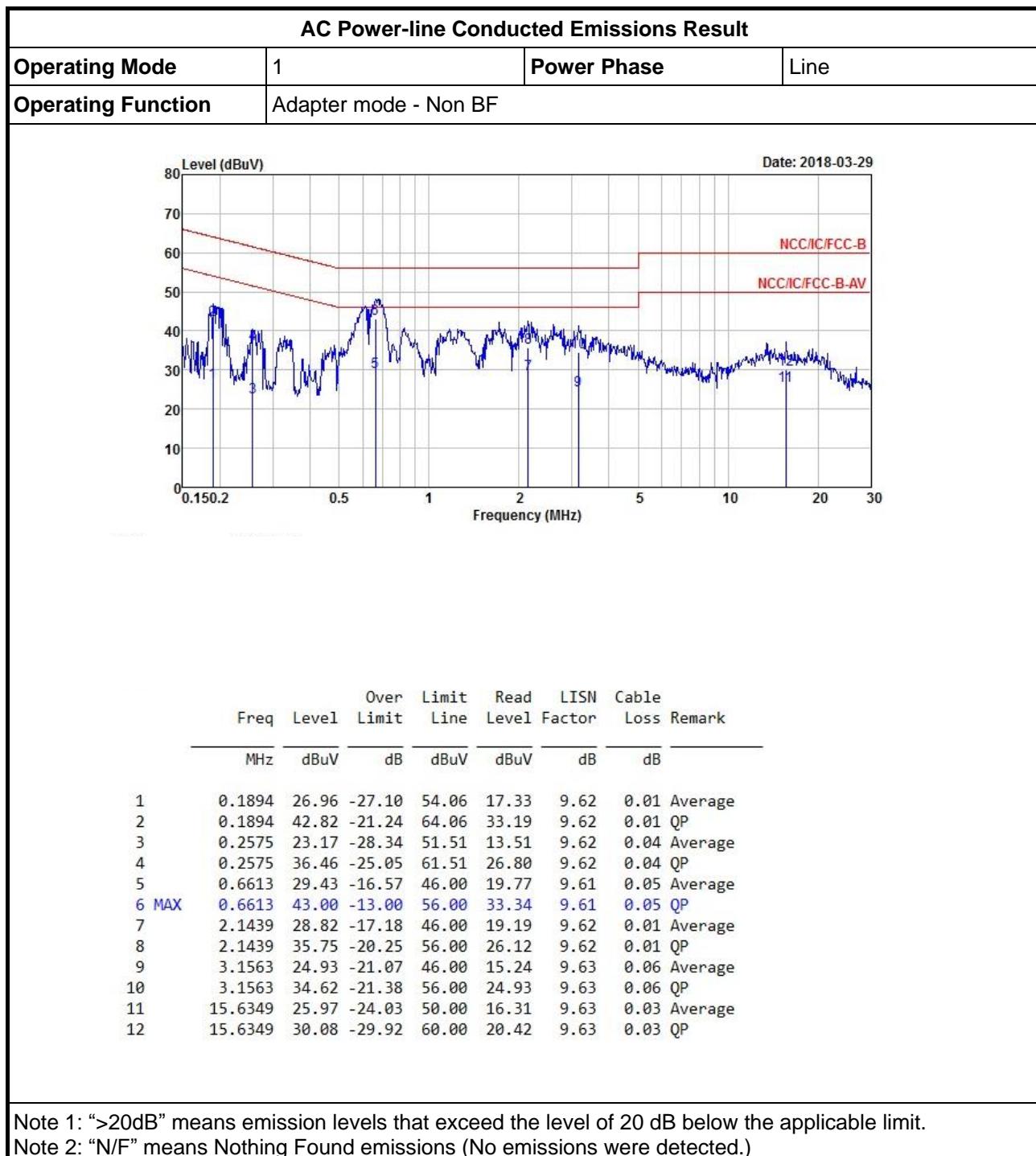
Instrument for Conducted Test - Beamforming

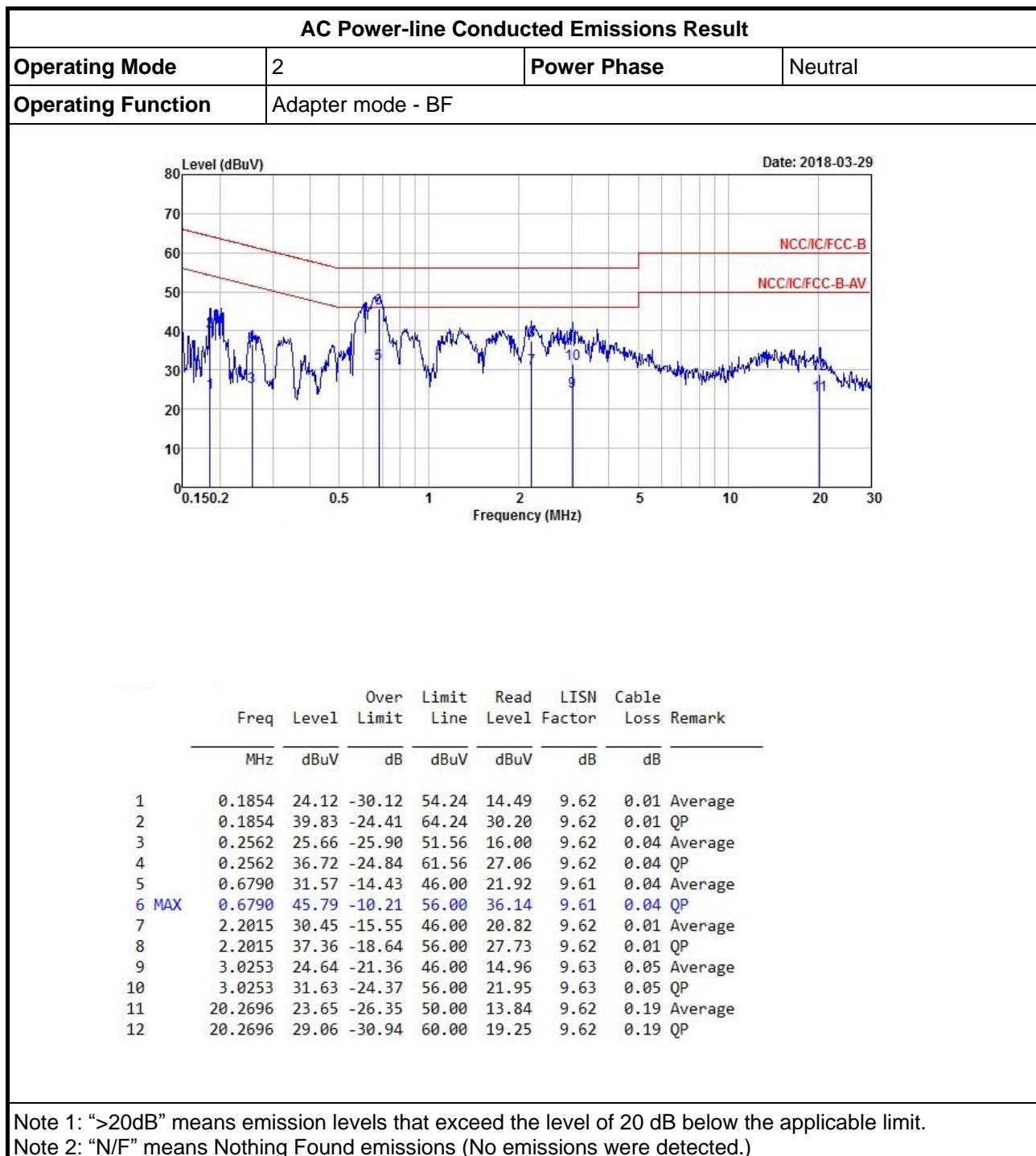
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101515	9kHz~40GHz	08/Dec/2017	07/Dec/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	10/May/2017	09/May/2018
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10712/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018

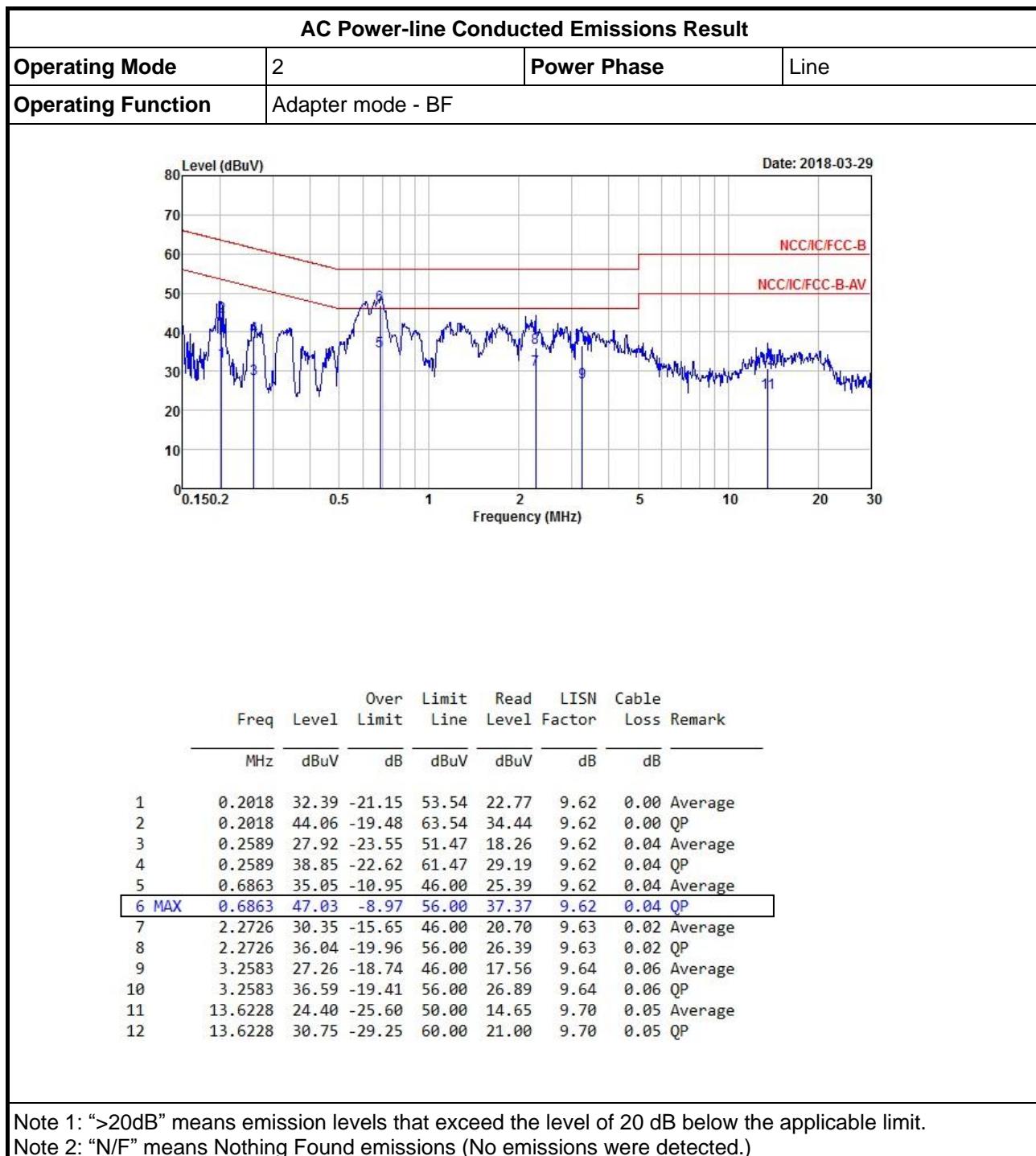
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	31/Oct/2017	30/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	01/Nov/2017	31/Oct/2018
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	19/Apr/2017	18/Apr/2018
Amplifier	Keysight	83017A	MY53270196	1GHz ~ 26.5GHz	31/Aug/2017	30/Aug/2018
Spectrum	R&S	FSV40	101500	9kHz ~ 40GHz	28/Jun/2017	27/Jun/2018
Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	26/Jan/2018	25/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX106	CB222	1GHz ~ 40GHz	26/Jan/2018	25/Jan/2019
Bilog Antenna	SCHAFFNER	CBL 6112B	22237	30MHz ~ 1GHz	08/Jul/2017	07/Jul/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	18GHz ~ 40GHz	09/Fe/ 2018	08/Fe/2019
Horn Antenna	SCHWARZBECK	BBHA9120D	1531	1GHz ~ 18GHz	25/Apr/ 2017	24/Apr/2018
Amplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2017	23/Aug/2018
Loop Antenna	TESEQ	HLA 6120	31244	9 kHz-30 MHz	16/Mar/2018	15/Mar/2019











Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	43.125M	26.637M	26M6D1D	21.025M	16.467M
802.11ac VHT20_Nss1,(MCS0)_4TX	46.35M	26.262M	26M3D1D	21.05M	17.641M
802.11ac VHT40_Nss1,(MCS0)_4TX	81.15M	39.23M	39M2D1D	39.2M	35.932M
802.11ac VHT80_Nss1,(MCS0)_4TX	83.6M	75.762M	75M8D1D	83.2M	75.662M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	19.775M	16.442M	16M4D1D	19M	16.392M
802.11ac VHT20_Nss1,(MCS0)_4TX	20.6M	17.641M	17M6D1D	20M	17.566M
802.11ac VHT40_Nss1,(MCS0)_4TX	39.95M	36.082M	36M1D1D	39.2M	35.882M
802.11ac VHT80_Nss1,(MCS0)_4TX	83.8M	75.762M	75M8D1D	83.1M	75.662M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	19.225M	16.442M	16M4D1D	18.75M	16.367M
802.11ac VHT20_Nss1,(MCS0)_4TX	20.6M	17.641M	17M6D1D	19.575M	17.566M
802.11ac VHT40_Nss1,(MCS0)_4TX	40.1M	36.032M	36M0D1D	39.2M	35.832M
802.11ac VHT80_Nss1,(MCS0)_4TX	84.2M	75.962M	76M0D1D	82.9M	75.562M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	15.675M	30.41M	30M4D1D	13.775M	27.386M
802.11ac VHT20_Nss1,(MCS0)_4TX	17.575M	30.135M	30M1D1D	13.825M	24.713M
802.11ac VHT40_Nss1,(MCS0)_4TX	35.3M	57.921M	57M9D1D	28.75M	49.325M
802.11ac VHT80_Nss1,(MCS0)_4TX	73.9M	84.558M	84M6D1D	67.8M	81.859M

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;

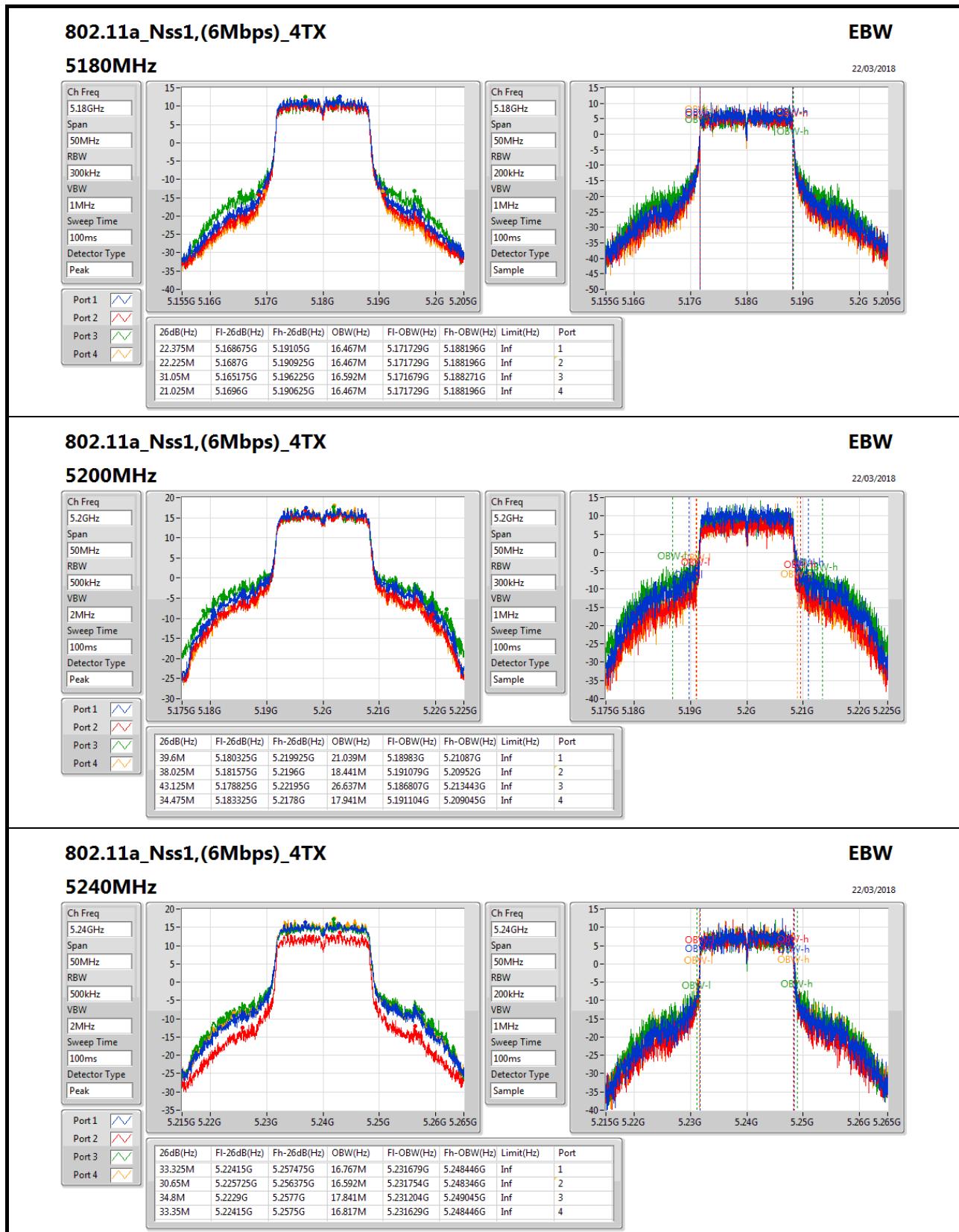


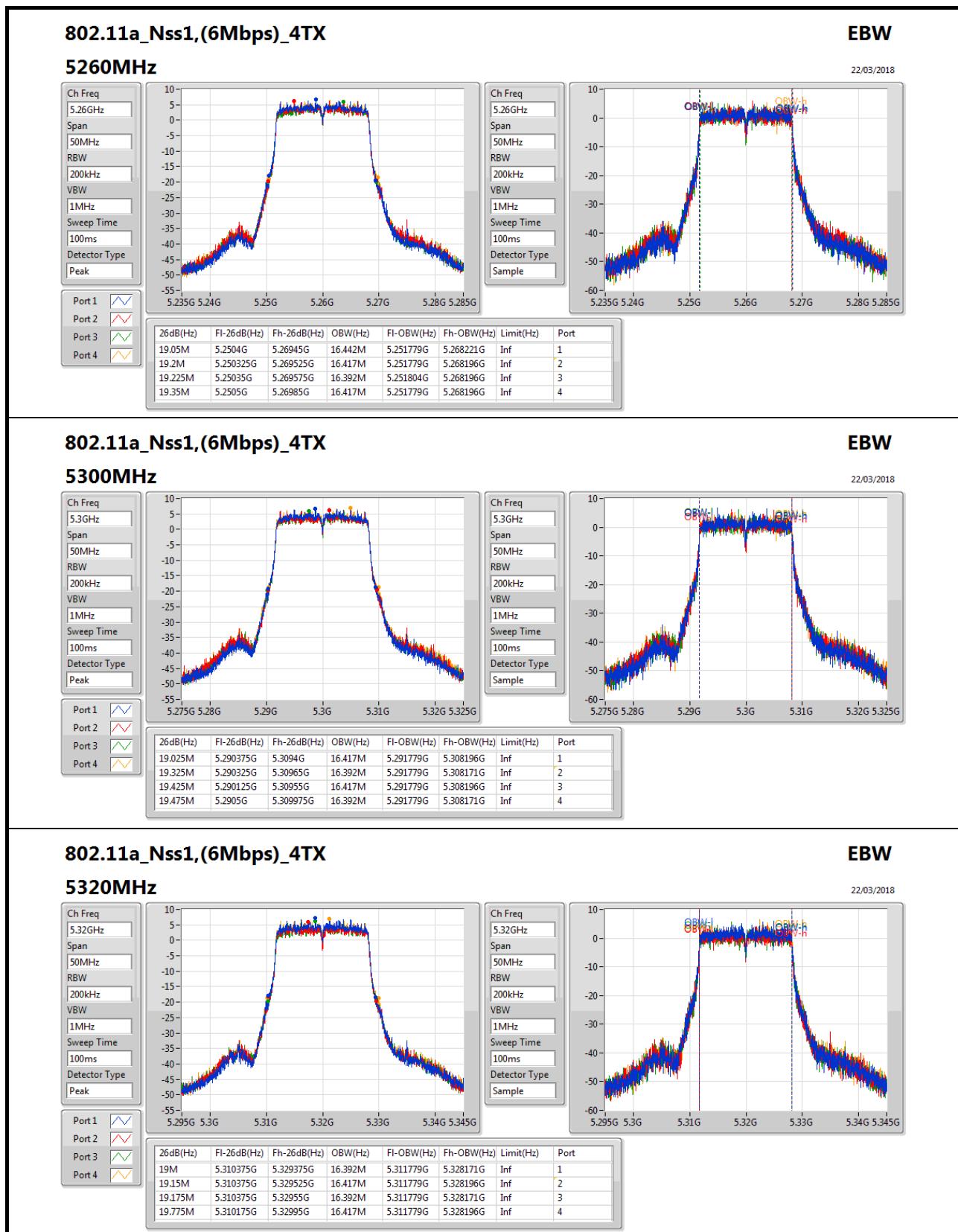
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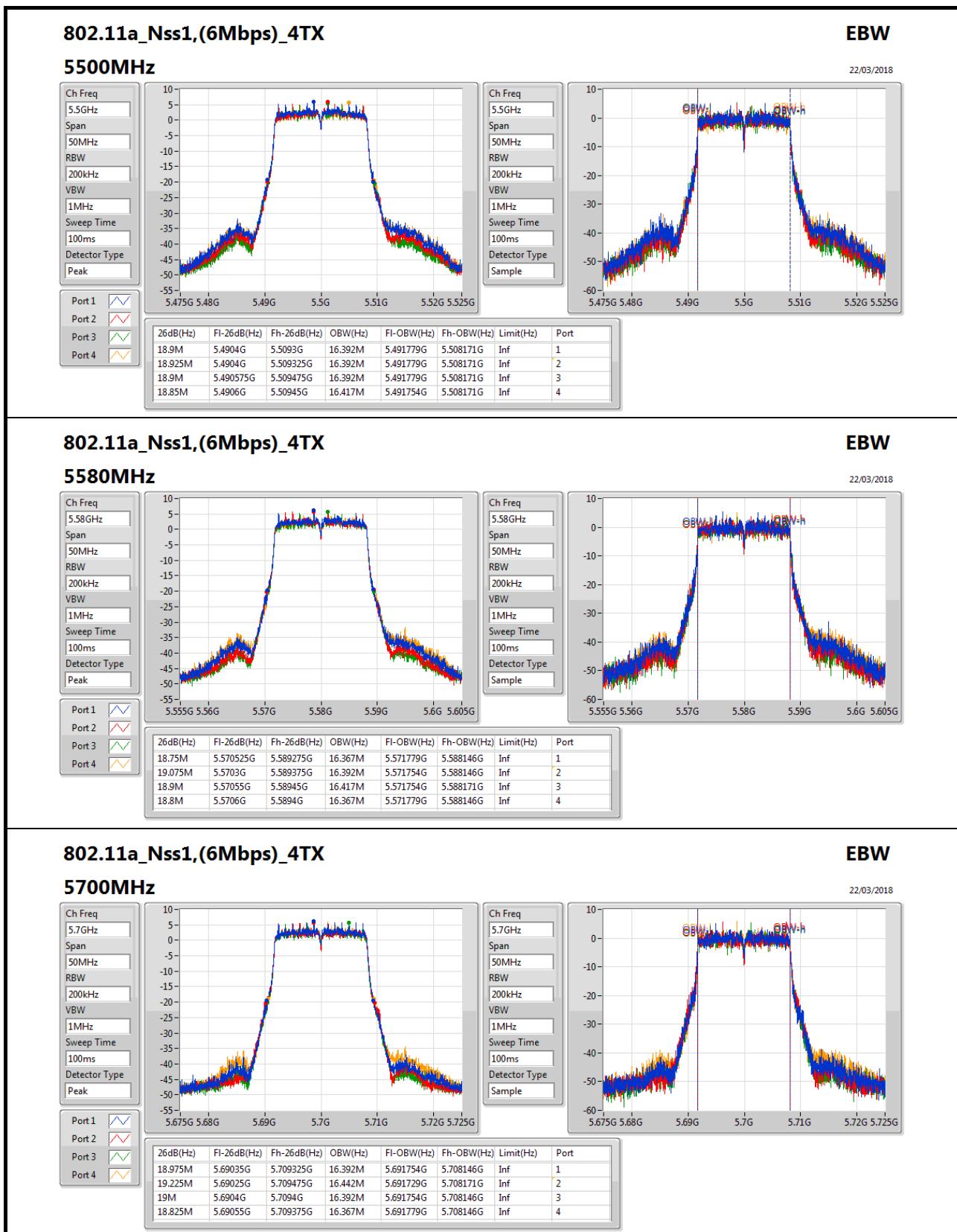
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	22.375M	16.467M	22.225M	16.467M	31.05M	16.592M	21.025M	16.467M
5200MHz_TnomVnom	Pass	Inf	39.6M	21.039M	38.025M	18.441M	43.125M	26.637M	34.475M	17.941M
5240MHz_TnomVnom	Pass	Inf	33.325M	16.767M	30.65M	16.592M	34.8M	17.841M	33.35M	16.817M
5260MHz_TnomVnom	Pass	Inf	19.05M	16.442M	19.2M	16.417M	19.225M	16.392M	19.35M	16.417M
5300MHz_TnomVnom	Pass	Inf	19.025M	16.417M	19.325M	16.392M	19.425M	16.417M	19.475M	16.392M
5320MHz_TnomVnom	Pass	Inf	19M	16.392M	19.15M	16.417M	19.175M	16.392M	19.775M	16.417M
5500MHz_TnomVnom	Pass	Inf	18.9M	16.392M	18.925M	16.392M	18.9M	16.392M	18.85M	16.417M
5580MHz_TnomVnom	Pass	Inf	18.75M	16.367M	19.075M	16.392M	18.9M	16.417M	18.8M	16.367M
5700MHz_TnomVnom	Pass	Inf	18.975M	16.392M	19.225M	16.442M	19M	16.392M	18.825M	16.367M
5745MHz_TnomVnom	Pass	500k	14.95M	30.36M	14.7M	30.41M	15.05M	29.26M	14.925M	29.41M
5785MHz_TnomVnom	Pass	500k	15.1M	27.886M	15.075M	27.636M	15.675M	28.036M	15.125M	27.386M
5825MHz_TnomVnom	Pass	500k	13.775M	29.535M	15.05M	28.986M	15.1M	30.06M	15.025M	29.235M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	21.7M	17.641M	21.625M	17.641M	27.825M	17.691M	21.05M	17.641M
5200MHz_TnomVnom	Pass	Inf	38.75M	18.641M	35.95M	18.191M	46.35M	26.262M	35.15M	17.916M
5240MHz_TnomVnom	Pass	Inf	28.25M	17.816M	26.45M	17.741M	35M	18.016M	31.275M	17.791M
5260MHz_TnomVnom	Pass	Inf	20.3M	17.591M	20.45M	17.591M	20.6M	17.616M	20.4M	17.566M
5300MHz_TnomVnom	Pass	Inf	20.5M	17.616M	20M	17.616M	20.45M	17.616M	20.325M	17.591M
5320MHz_TnomVnom	Pass	Inf	20.5M	17.566M	20.55M	17.641M	20.525M	17.591M	20.55M	17.616M
5500MHz_TnomVnom	Pass	Inf	19.625M	17.591M	19.575M	17.566M	20.375M	17.616M	19.9M	17.591M
5580MHz_TnomVnom	Pass	Inf	19.725M	17.591M	19.9M	17.641M	20.425M	17.616M	19.8M	17.591M
5700MHz_TnomVnom	Pass	Inf	20.2M	17.591M	20.6M	17.641M	20.475M	17.616M	20M	17.566M
5745MHz_TnomVnom	Pass	500k	15.1M	27.261M	15.025M	28.161M	13.825M	24.988M	15.25M	26.337M
5785MHz_TnomVnom	Pass	500k	15M	25.462M	16.9M	25.087M	14.95M	25.162M	17.575M	24.713M
5825MHz_TnomVnom	Pass	500k	17.5M	29.56M	17.55M	28.286M	15.65M	30.135M	14.95M	28.686M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	39.85M	35.932M	40.1M	35.932M	40M	36.082M	39.2M	35.982M
5230MHz_TnomVnom	Pass	Inf	76M	36.682M	69.25M	36.382M	81.15M	39.23M	71.15M	36.432M
5270MHz_TnomVnom	Pass	Inf	39.95M	35.882M	39.9M	35.982M	39.65M	35.982M	39.2M	35.982M
5310MHz_TnomVnom	Pass	Inf	39.9M	36.082M	39.85M	35.882M	39.6M	35.932M	39.25M	35.882M
5510MHz_TnomVnom	Pass	Inf	40.1M	35.882M	39.95M	35.932M	39.35M	35.932M	39.2M	35.932M
5550MHz_TnomVnom	Pass	Inf	40.05M	35.882M	40M	35.882M	39.3M	35.882M	39.25M	35.882M
5670MHz_TnomVnom	Pass	Inf	39.75M	35.932M	39.8M	35.832M	39.35M	35.882M	39.35M	36.032M
5755MHz_TnomVnom	Pass	500k	35.25M	52.774M	28.75M	53.823M	30.25M	49.325M	35.3M	49.925M
5795MHz_TnomVnom	Pass	500k	33.8M	55.272M	33.75M	54.823M	32.55M	57.921M	34.7M	55.372M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	83.3M	75.762M	83.5M	75.762M	83.6M	75.762M	83.2M	75.662M
5290MHz_TnomVnom	Pass	Inf	83.5M	75.762M	83.8M	75.762M	83.5M	75.662M	83.1M	75.762M
5530MHz_TnomVnom	Pass	Inf	83.6M	75.762M	83.7M	75.762M	83.5M	75.662M	84.2M	75.662M
5610MHz_TnomVnom	Pass	Inf	83.6M	75.962M	83.3M	75.562M	82.9M	75.762M	83.6M	75.962M
5775MHz_TnomVnom	Pass	500k	67.8M	83.358M	72.7M	84.558M	72.6M	83.858M	73.9M	81.859M

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

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







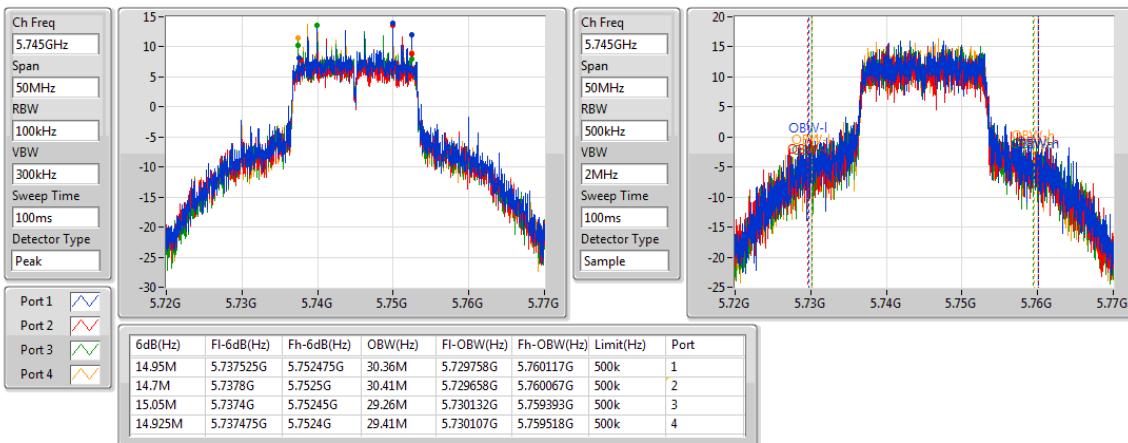


802.11a_Nss1,(6Mbps)_4TX

EBW

5745MHz

22/03/2018

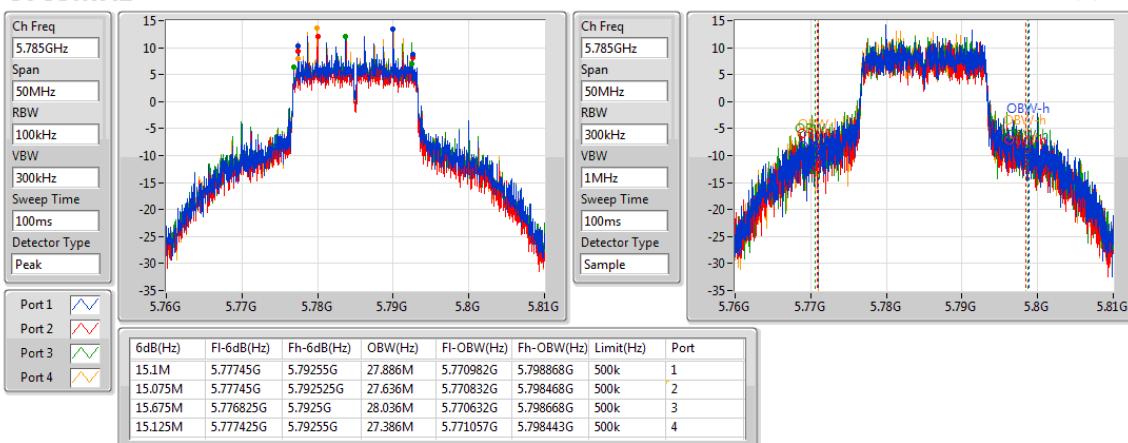


802.11a_Nss1,(6Mbps)_4TX

EBW

5785MHz

22/03/2018

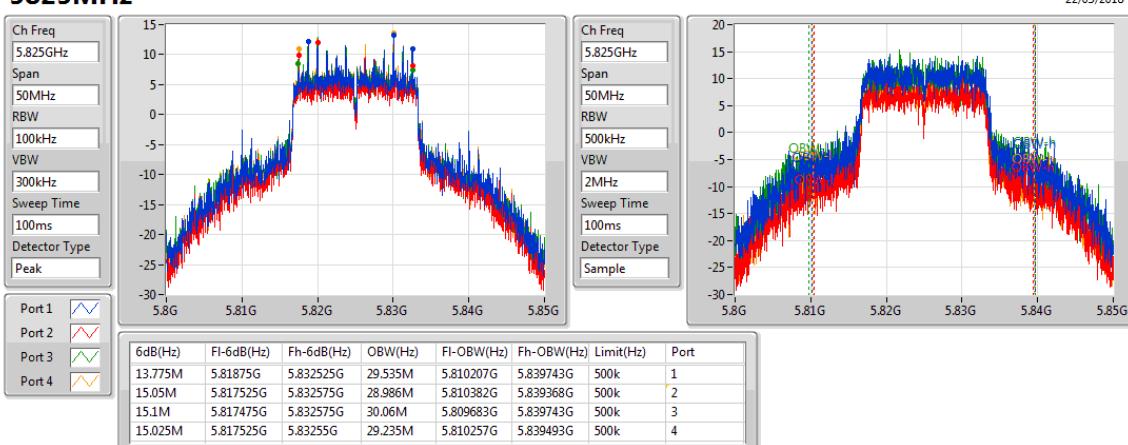


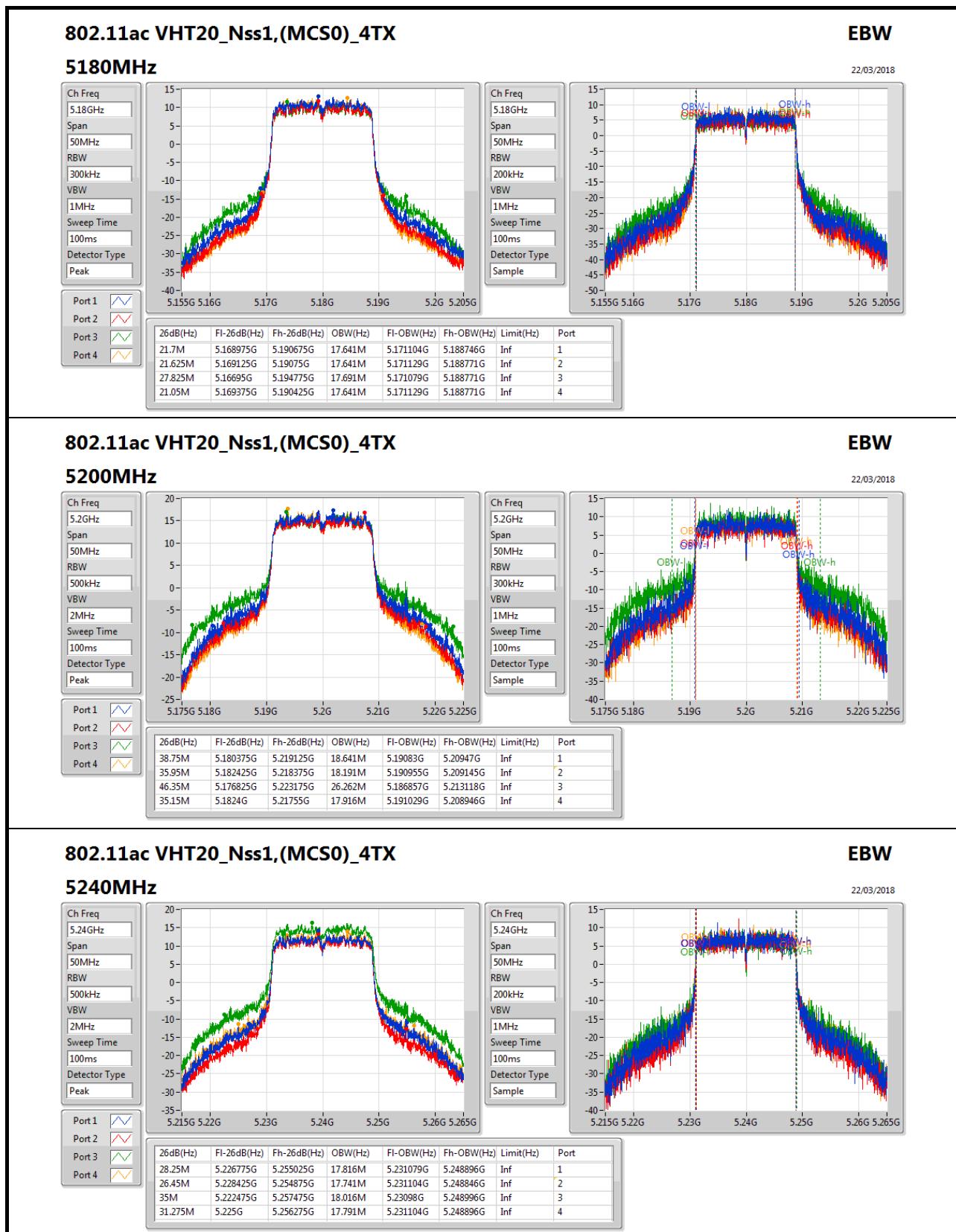
802.11a_Nss1,(6Mbps)_4TX

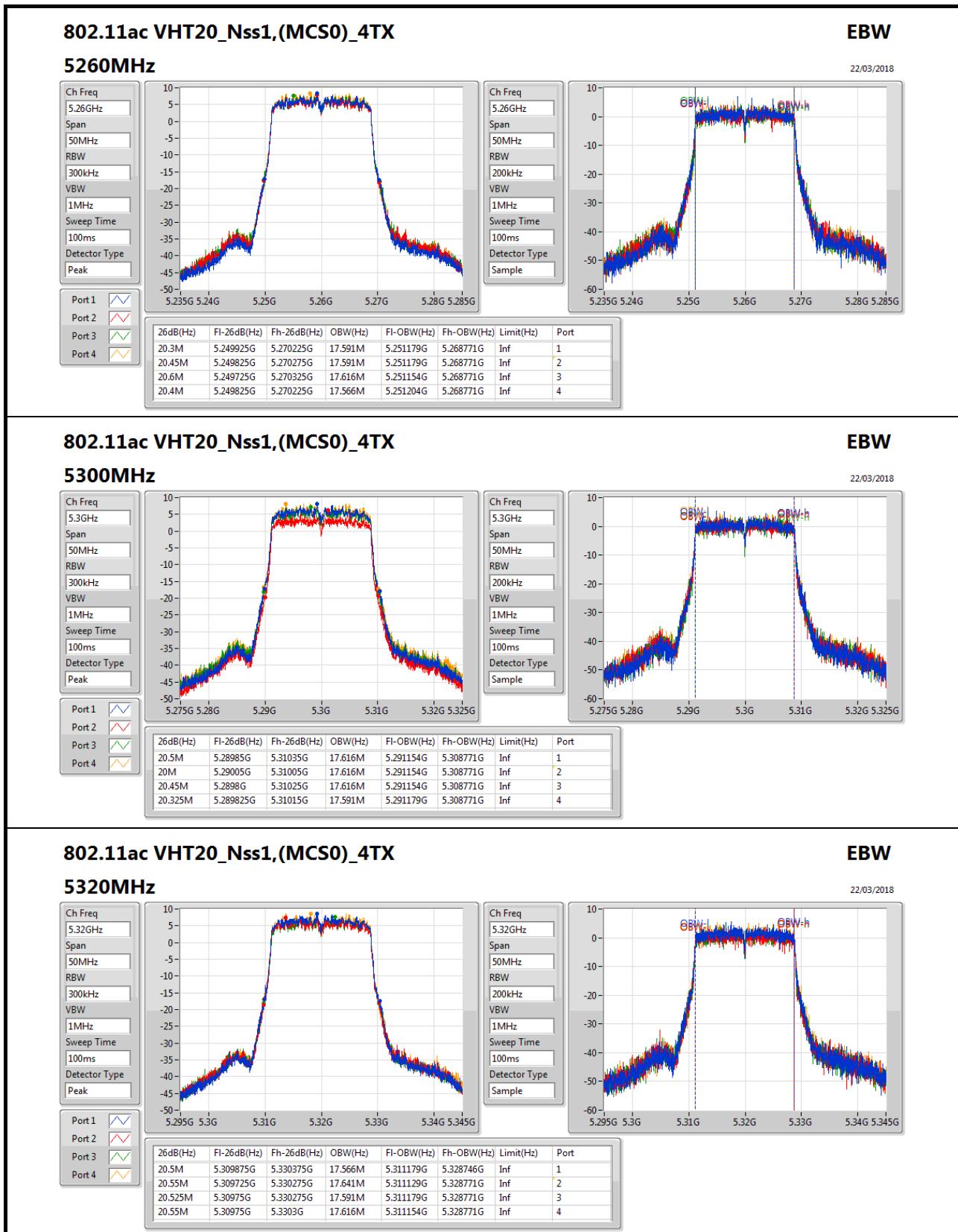
EBW

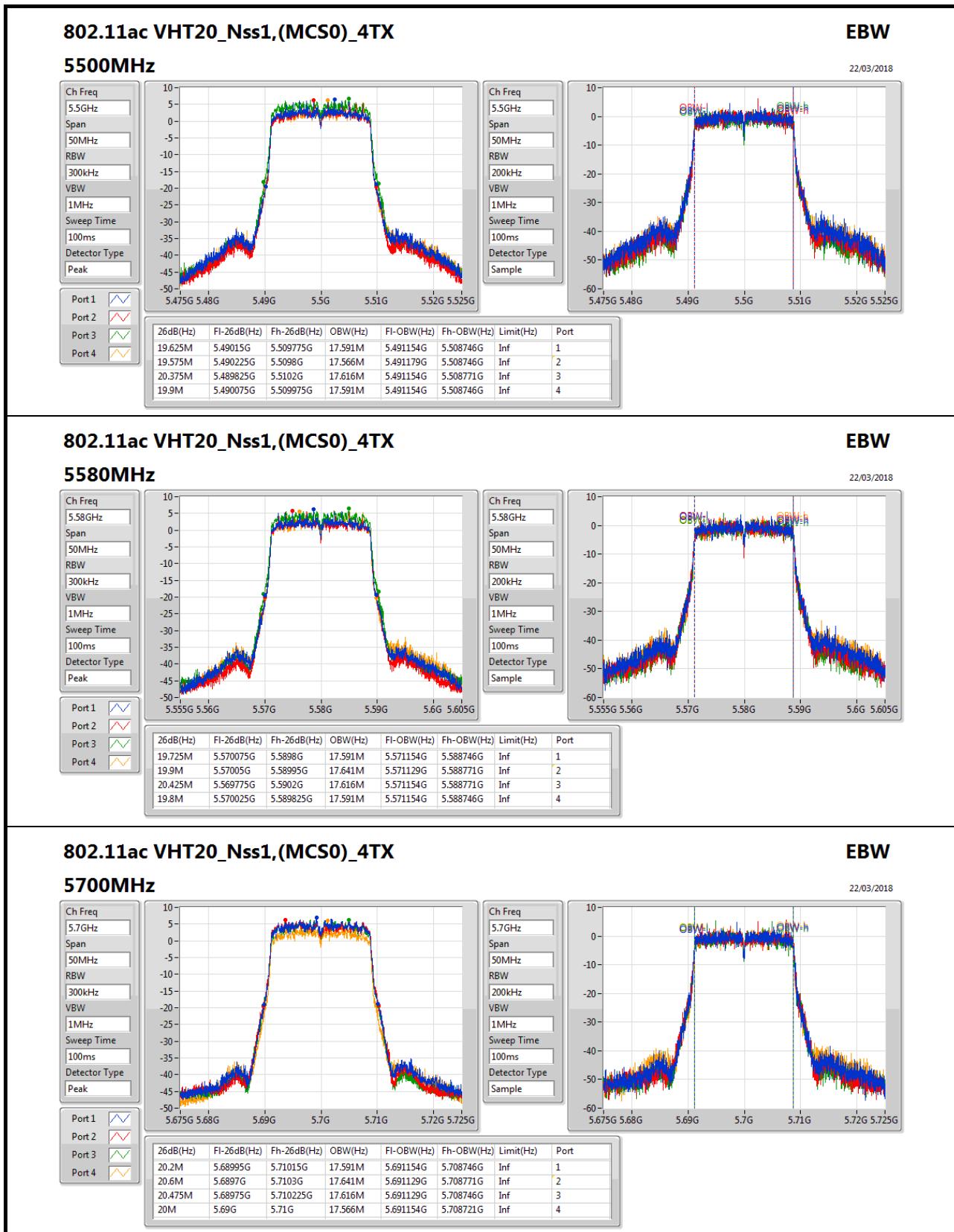
5825MHz

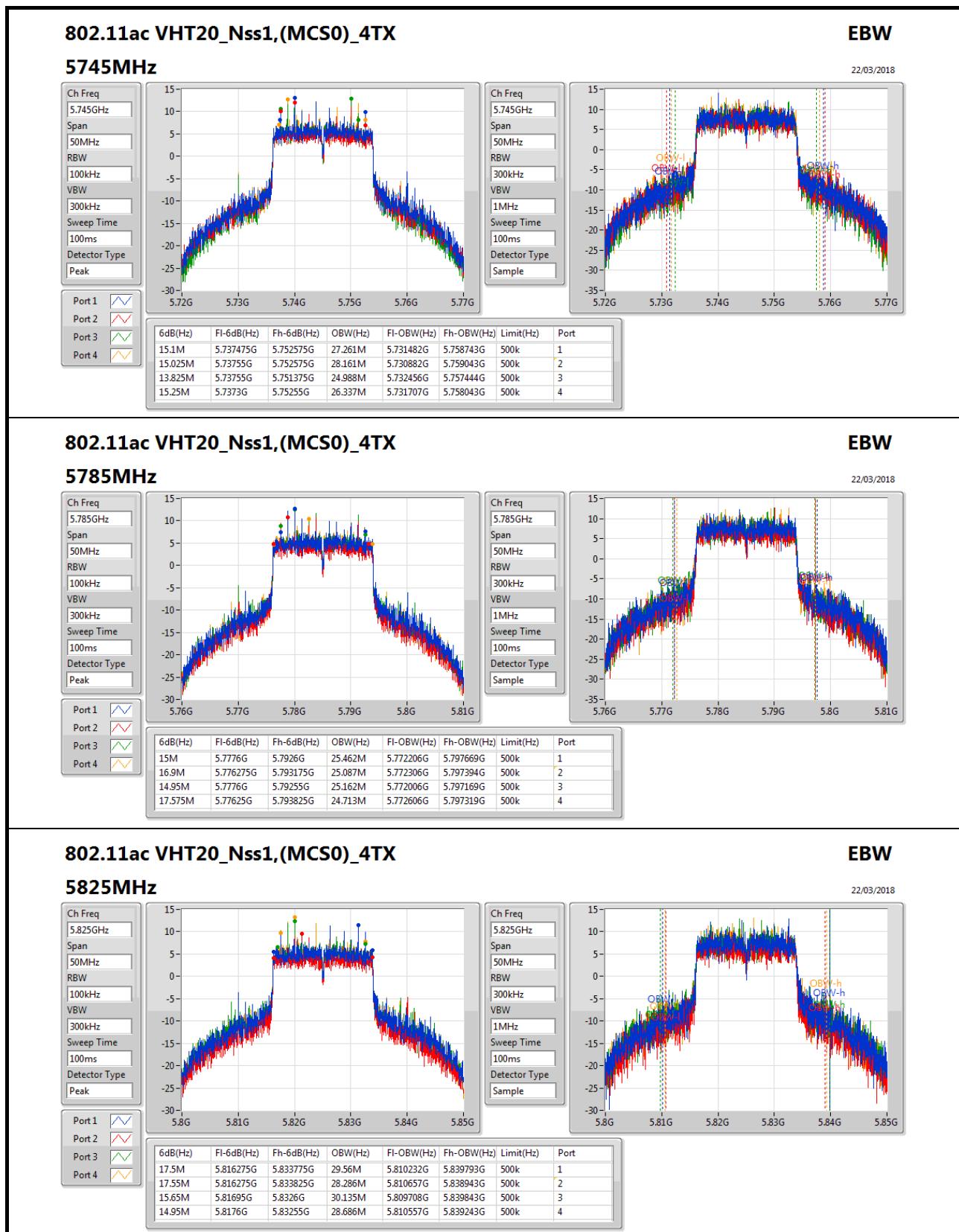
22/03/2018







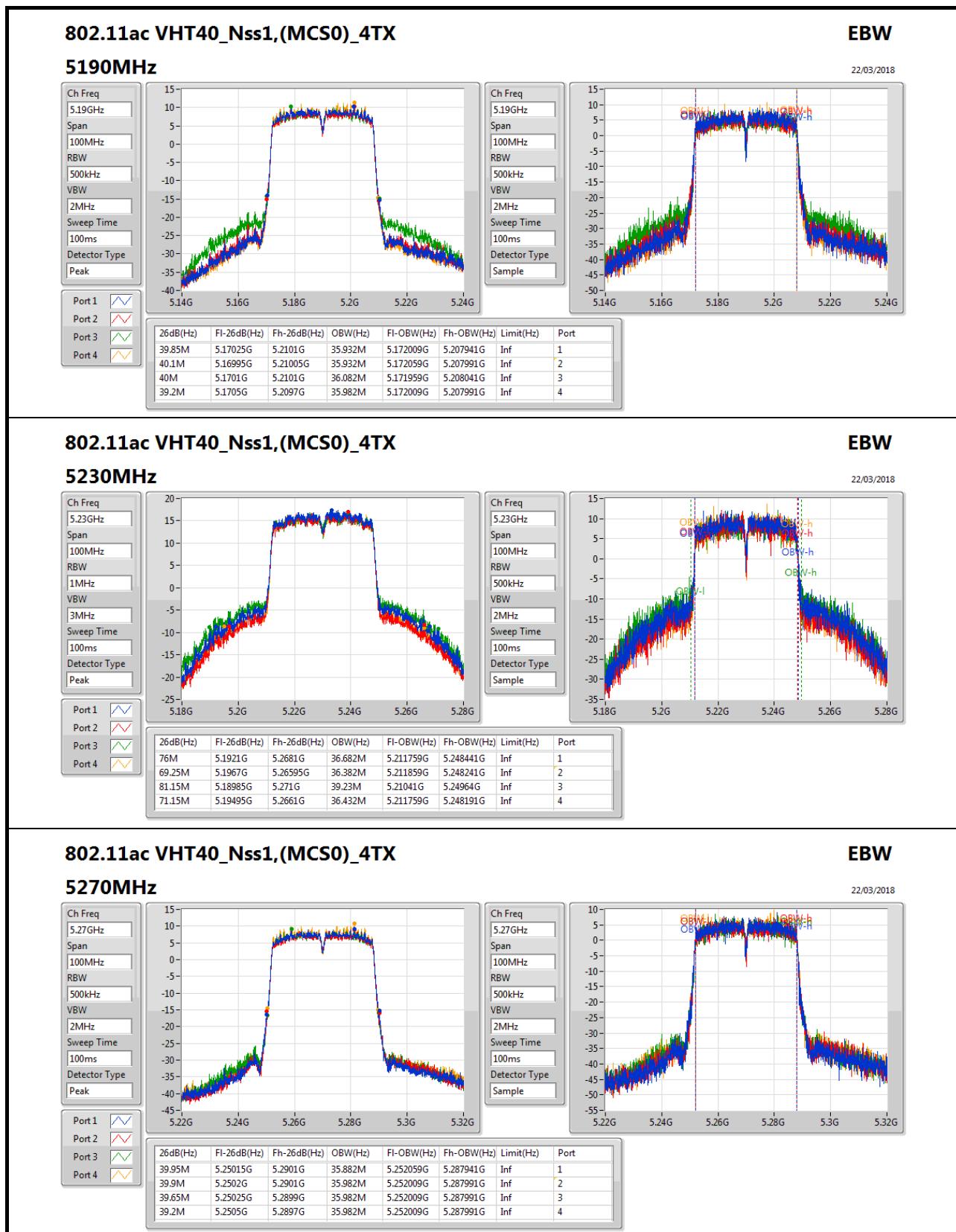


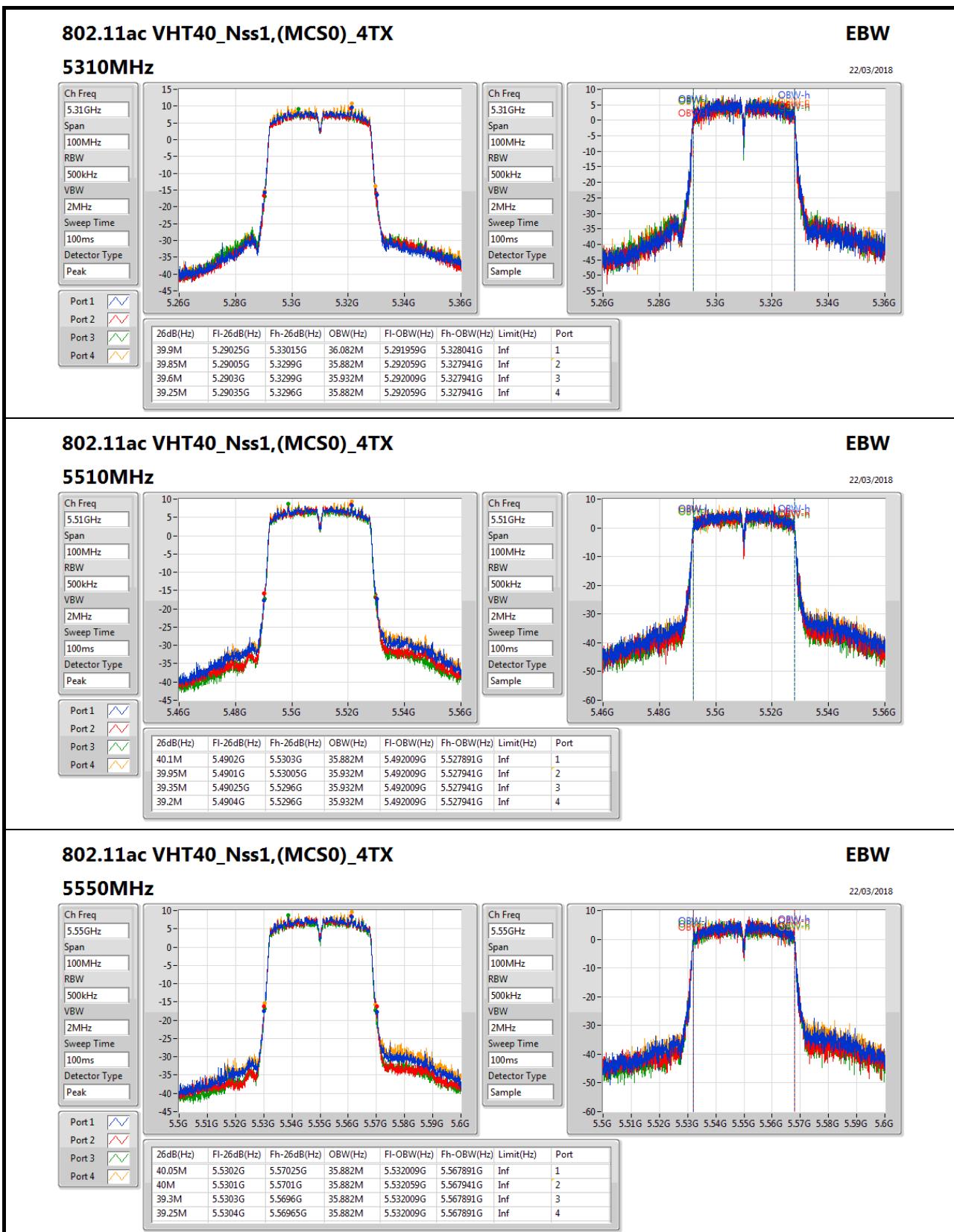


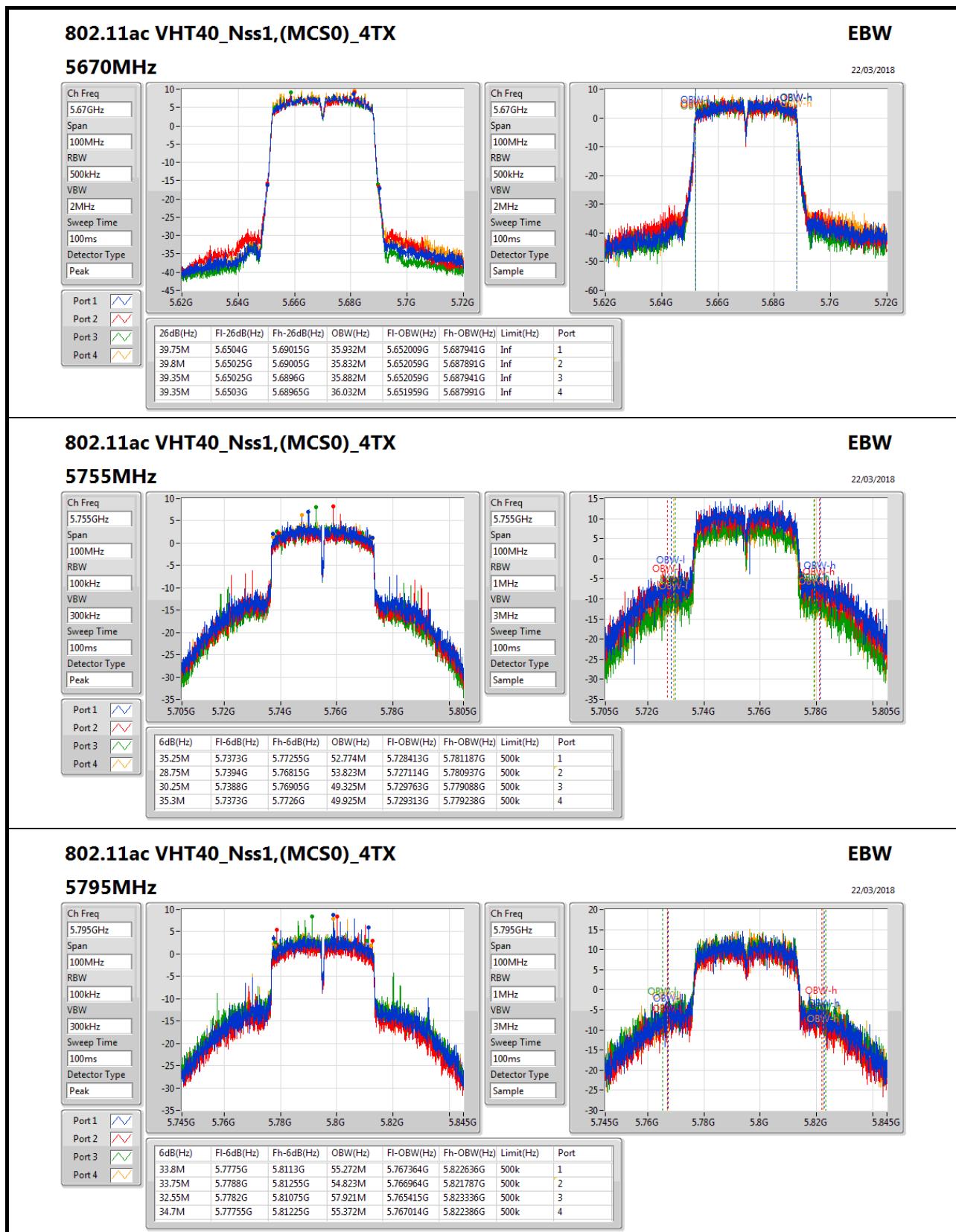


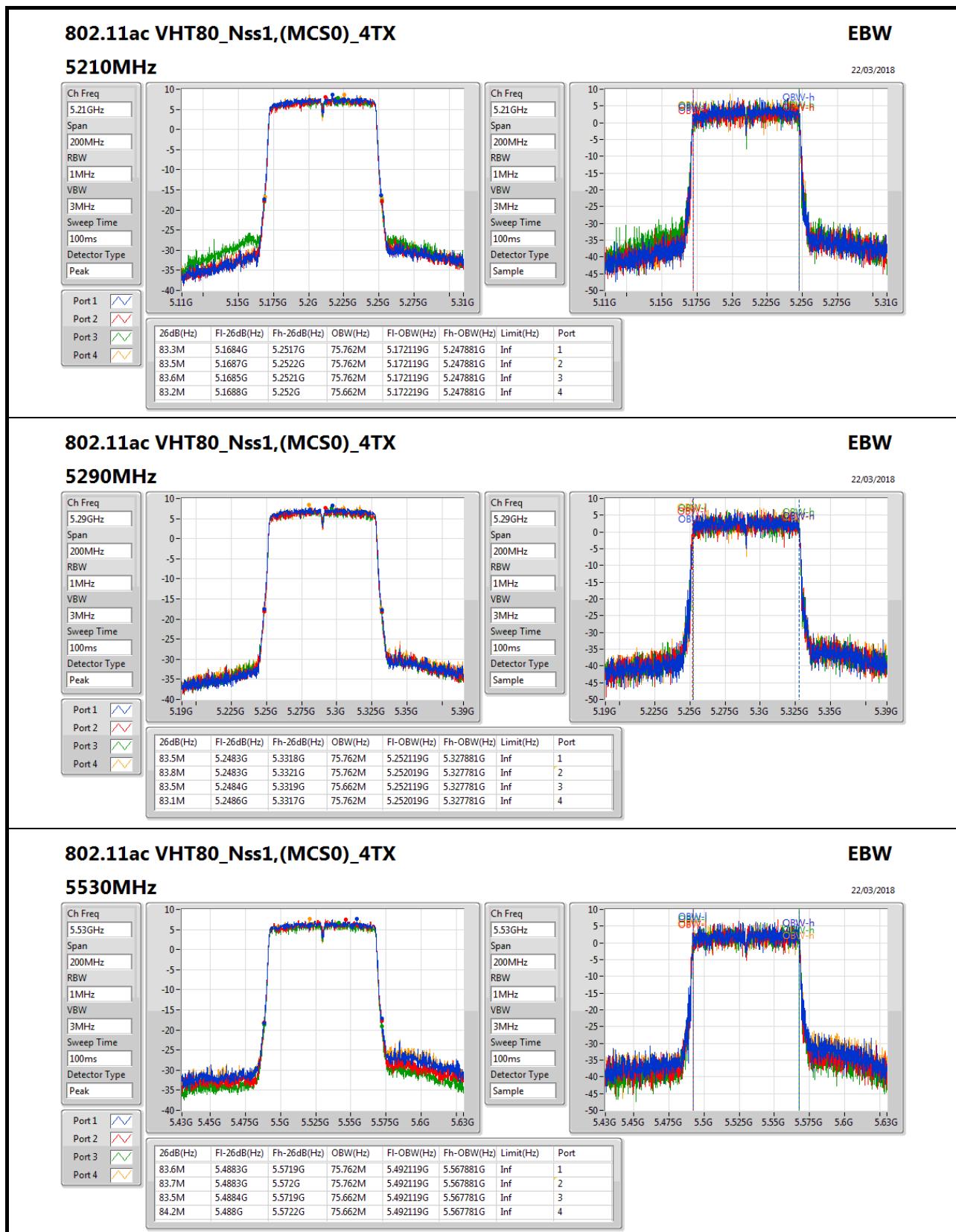
EBW Result – Non-Beamforming

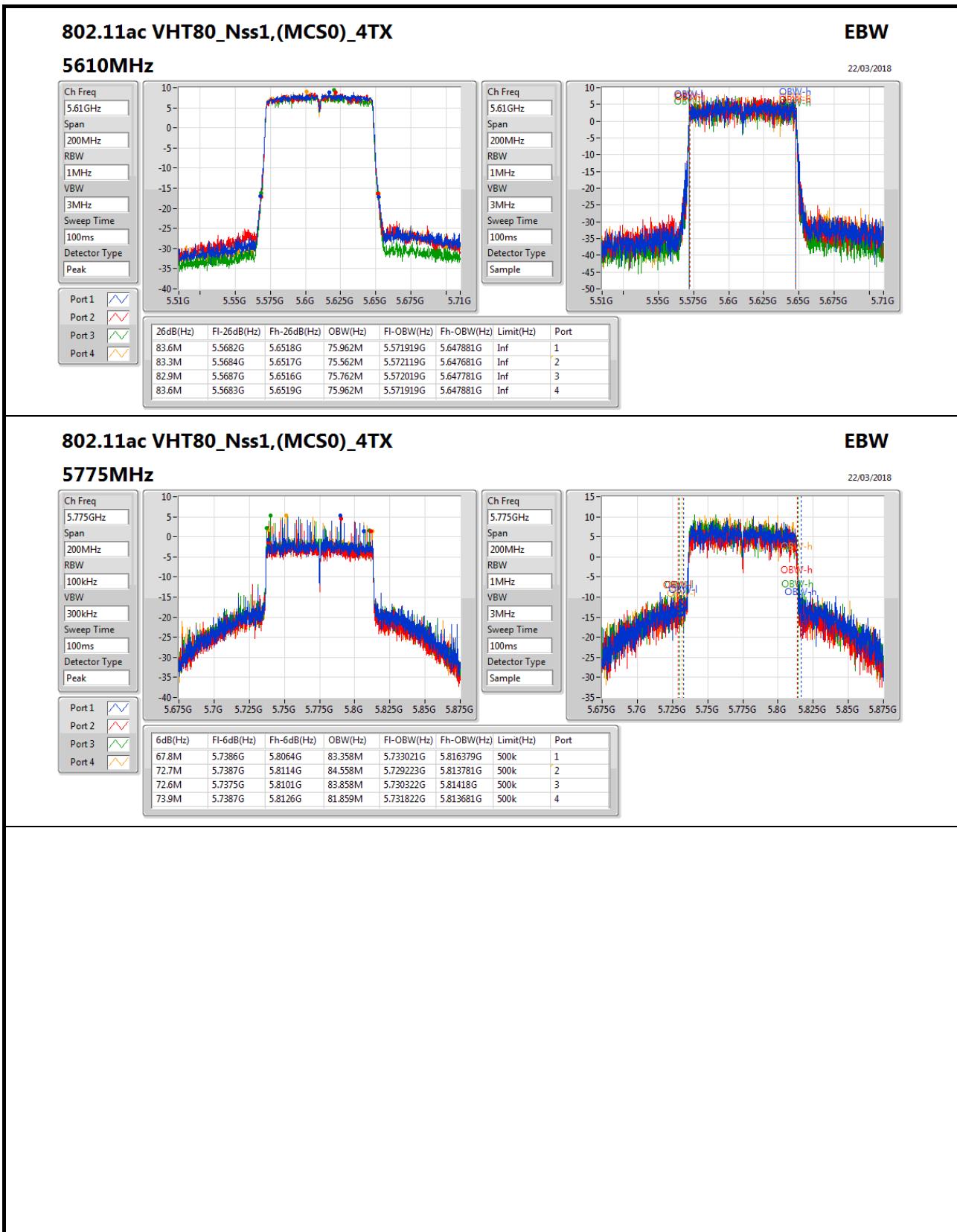
Appendix B.1













Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	21.075M	17.641M	17M6D1D	20.4M	17.566M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	41.25M	35.982M	36M0D1D	39.1M	35.882M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	133.3M	75.762M	75M8D1D	81.3M	75.662M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	20.8M	17.691M	17M7D1D	20.55M	17.566M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	39.55M	36.032M	36M0D1D	38.65M	35.832M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	85.1M	75.762M	75M8D1D	80.7M	75.562M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	20.675M	17.641M	17M6D1D	19.725M	17.566M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	39.8M	36.082M	36M1D1D	38.75M	35.832M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	88.3M	76.262M	76M3D1D	84.2M	75.962M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	16.825M	17.691M	17M7D1D	15.125M	17.566M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	33.85M	36.232M	36M2D1D	27.35M	35.832M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	75.1M	75.862M	75M9D1D	67.8M	75.562M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;



Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	Inf	20.625M	17.641M	20.525M	17.616M	20.775M	17.616M	20.75M	17.616M
5200MHz_TnomVnom	Pass	Inf	20.85M	17.641M	20.8M	17.616M	20.525M	17.616M	20.6M	17.616M
5240MHz_TnomVnom	Pass	Inf	21.075M	17.616M	20.4M	17.566M	20.75M	17.566M	20.5M	17.616M
5260MHz_TnomVnom	Pass	Inf	20.725M	17.616M	20.725M	17.616M	20.55M	17.566M	20.575M	17.616M
5300MHz_TnomVnom	Pass	Inf	20.8M	17.691M	20.575M	17.616M	20.625M	17.566M	20.8M	17.591M
5320MHz_TnomVnom	Pass	Inf	20.675M	17.591M	20.675M	17.591M	20.575M	17.566M	20.775M	17.641M
5500MHz_TnomVnom	Pass	Inf	19.925M	17.641M	19.85M	17.566M	19.725M	17.591M	19.9M	17.591M
5580MHz_TnomVnom	Pass	Inf	19.85M	17.641M	20.575M	17.616M	19.975M	17.591M	19.75M	17.591M
5700MHz_TnomVnom	Pass	Inf	20.6M	17.616M	20.675M	17.616M	19.875M	17.566M	20.4M	17.591M
5745MHz_TnomVnom	Pass	500k	15.95M	17.566M	15.825M	17.566M	16.25M	17.591M	16.825M	17.641M
5785MHz_TnomVnom	Pass	500k	15.25M	17.641M	15.85M	17.566M	16.65M	17.591M	15.85M	17.666M
5825MHz_TnomVnom	Pass	500k	15.125M	17.591M	15.6M	17.616M	16.125M	17.641M	15.875M	17.691M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	Inf	39.6M	35.982M	39.65M	35.982M	41.25M	35.932M	39.55M	35.982M
5230MHz_TnomVnom	Pass	Inf	40M	35.982M	39.15M	35.882M	39.35M	35.882M	39.1M	35.982M
5270MHz_TnomVnom	Pass	Inf	39.2M	35.982M	39.45M	35.882M	38.95M	35.832M	38.95M	35.982M
5310MHz_TnomVnom	Pass	Inf	39.55M	35.932M	39.3M	35.932M	38.65M	35.882M	39.05M	36.032M
5510MHz_TnomVnom	Pass	Inf	39M	36.082M	38.75M	35.982M	39.15M	35.832M	38.85M	35.982M
5550MHz_TnomVnom	Pass	Inf	39.8M	36.032M	39.5M	35.882M	39.1M	35.882M	38.75M	35.832M
5670MHz_TnomVnom	Pass	Inf	39.3M	35.982M	39.4M	35.932M	39.45M	35.882M	39.25M	35.882M
5755MHz_TnomVnom	Pass	500k	32.55M	35.932M	27.35M	35.832M	33.85M	36.232M	30.5M	35.982M
5795MHz_TnomVnom	Pass	500k	31.3M	35.932M	33.8M	35.882M	31.2M	36.082M	32.95M	36.132M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	Inf	98.8M	75.662M	81.3M	75.762M	133.3M	75.762M	95.5M	75.662M
5290MHz_TnomVnom	Pass	Inf	82.5M	75.562M	81.3M	75.662M	80.7M	75.762M	85.1M	75.662M
5530MHz_TnomVnom	Pass	Inf	85.8M	75.962M	87.5M	76.062M	85.5M	76.062M	88.3M	76.162M
5610MHz_TnomVnom	Pass	Inf	85.1M	76.162M	84.4M	76.162M	84.2M	76.162M	85.5M	76.262M
5775MHz_TnomVnom	Pass	500k	72M	75.862M	70M	75.762M	67.8M	75.562M	75.1M	75.762M

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;

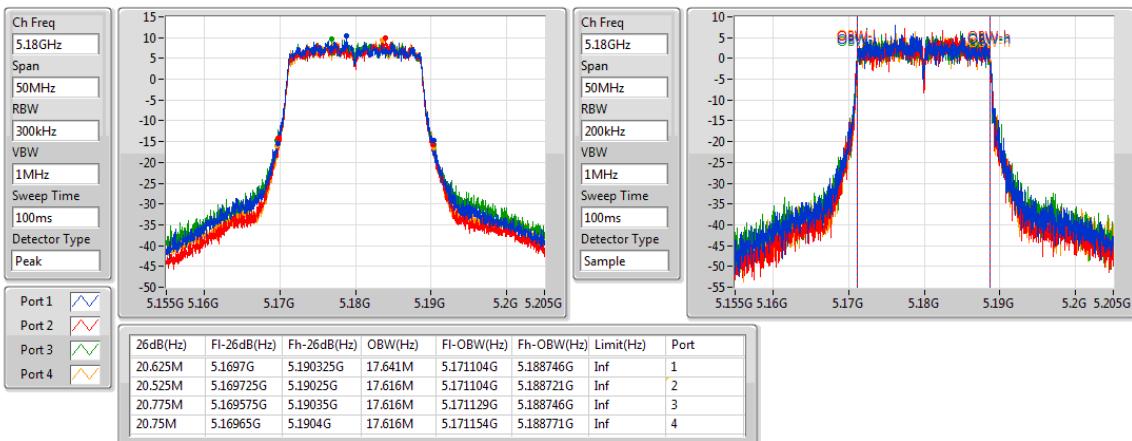


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5180MHz

26/03/2018

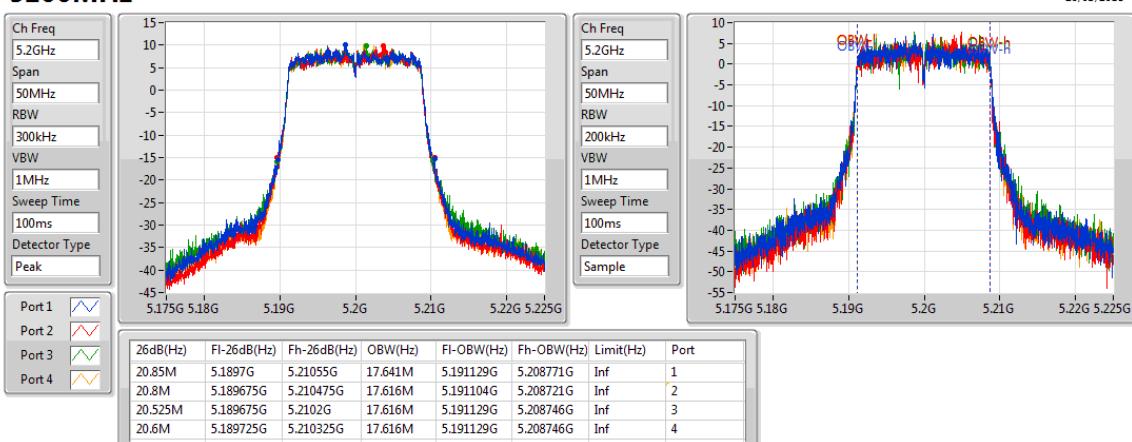


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5200MHz

26/03/2018

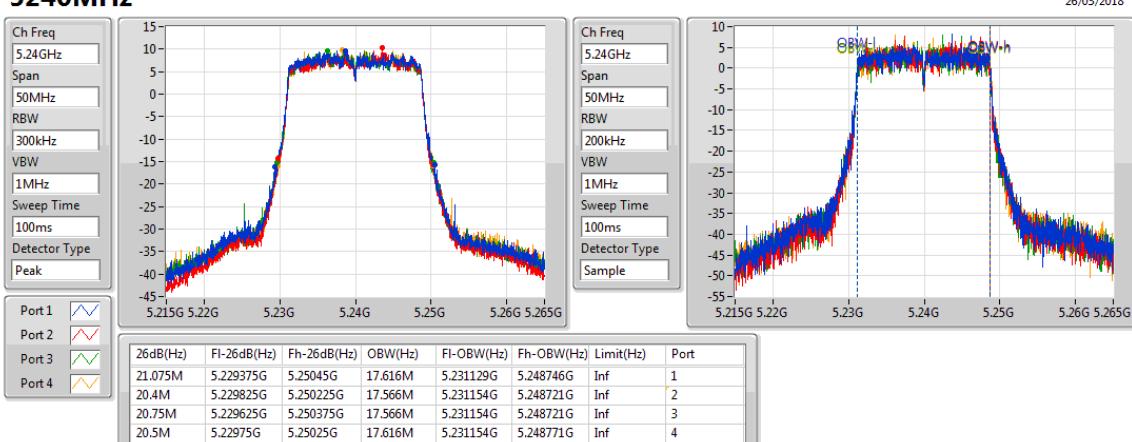


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5240MHz

26/03/2018



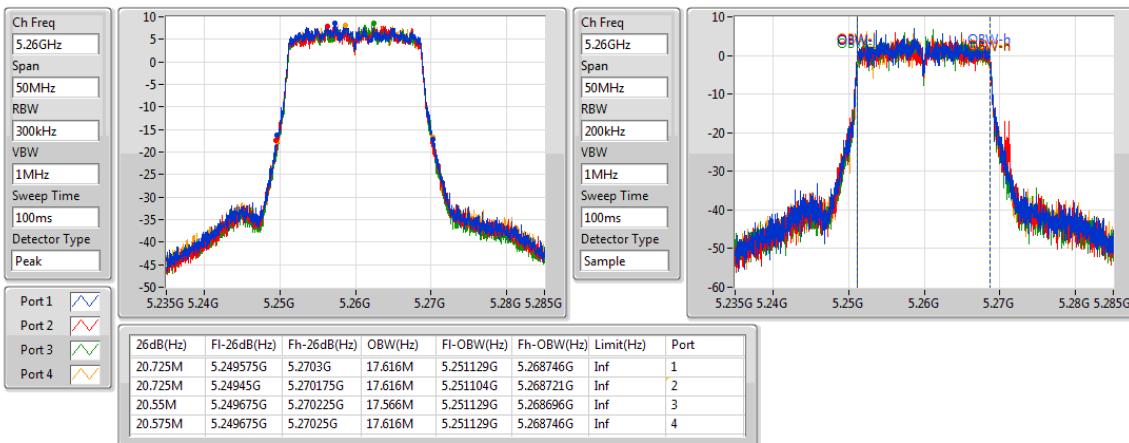


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5260MHz

26/03/2018

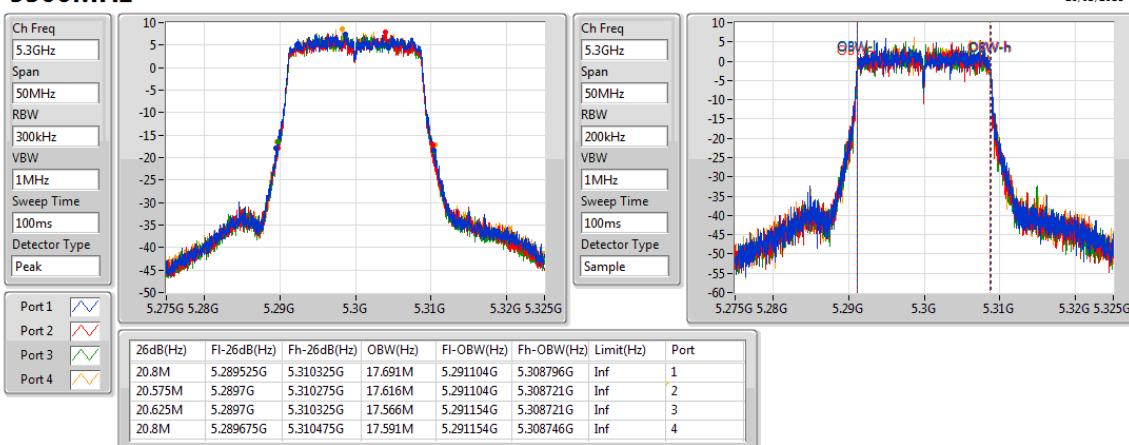


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5300MHz

26/03/2018

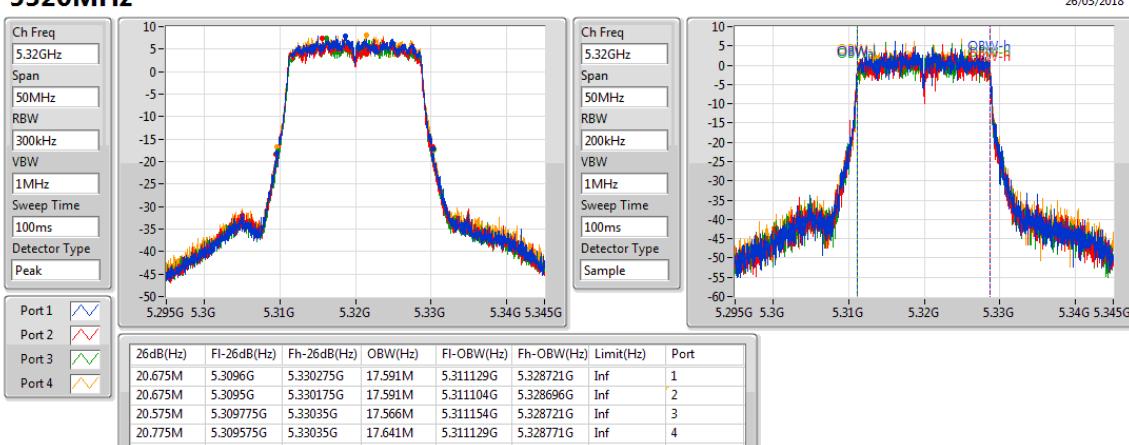


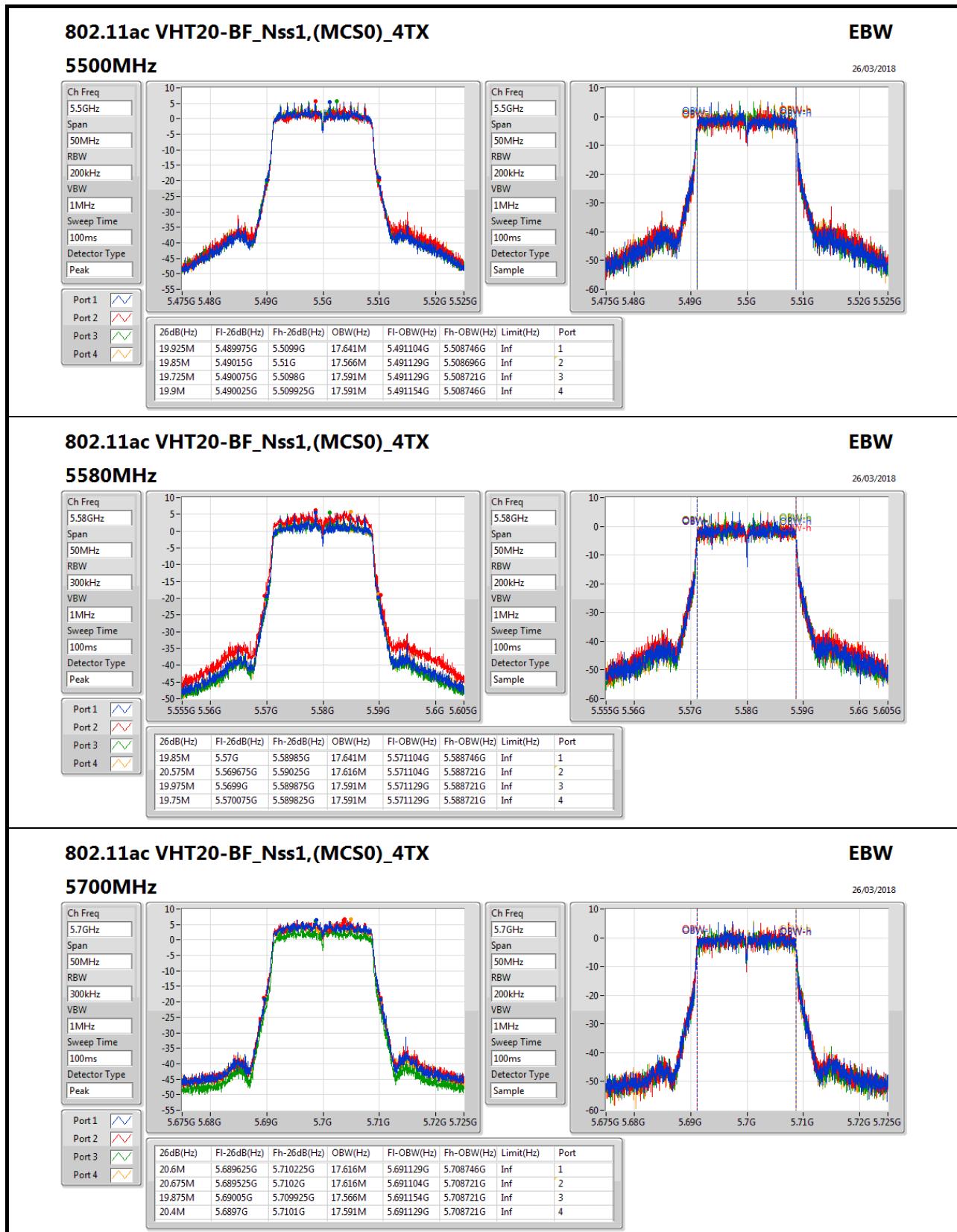
802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5320MHz

26/03/2018







EBW Result – Beamforming

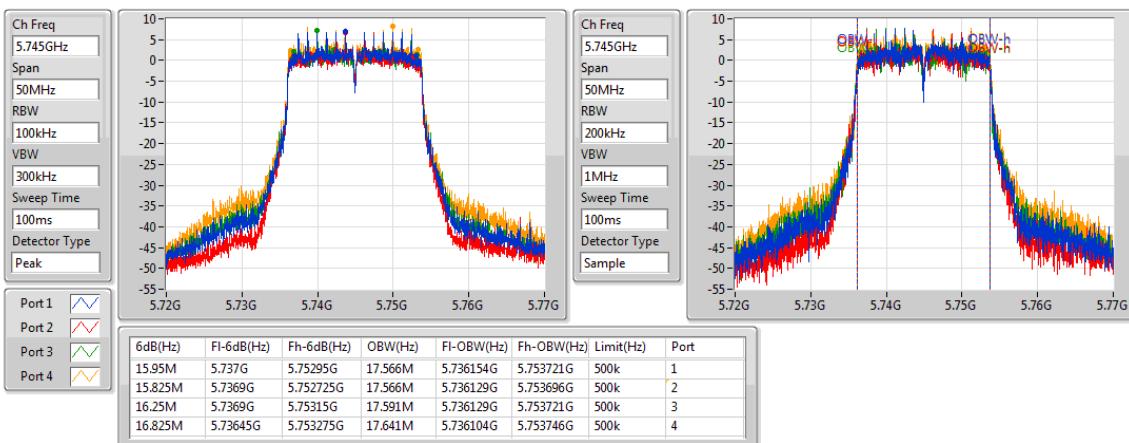
Appendix B.2

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5745MHz

26/03/2018

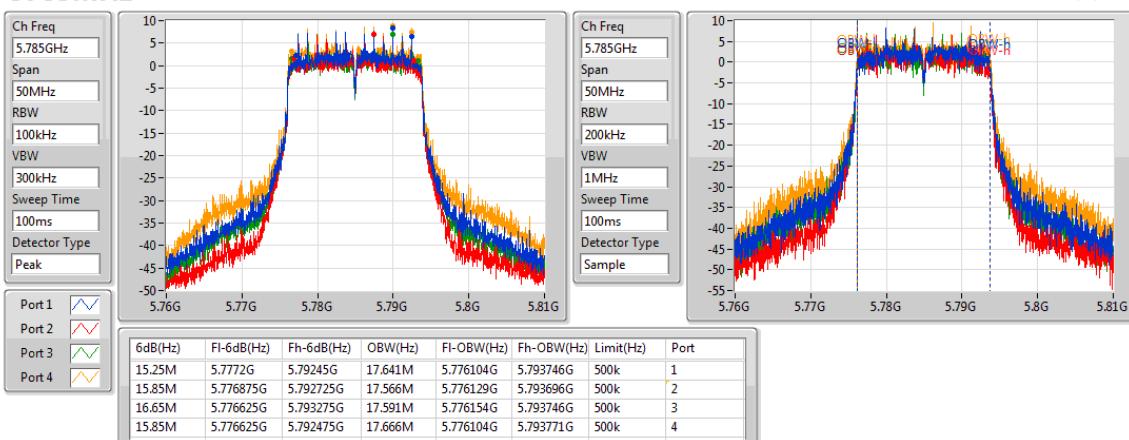


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5785MHz

26/03/2018

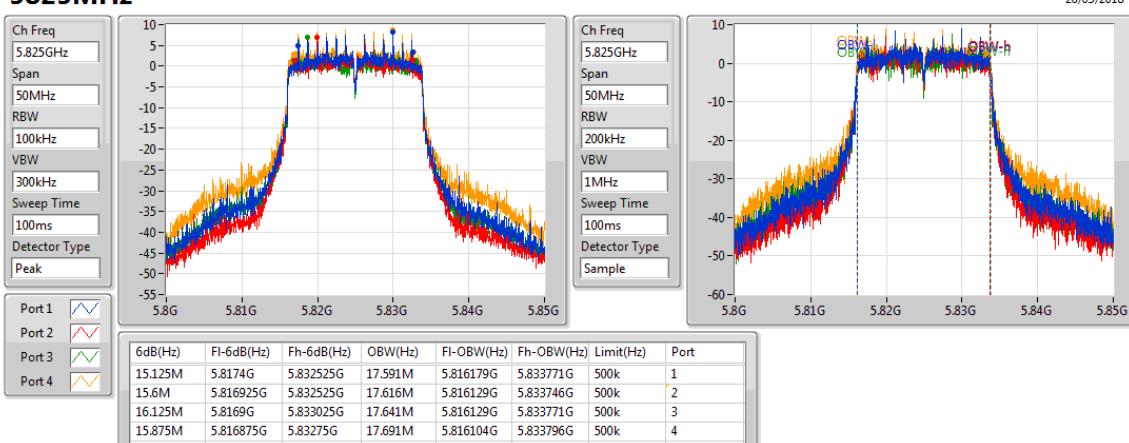


802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

5825MHz

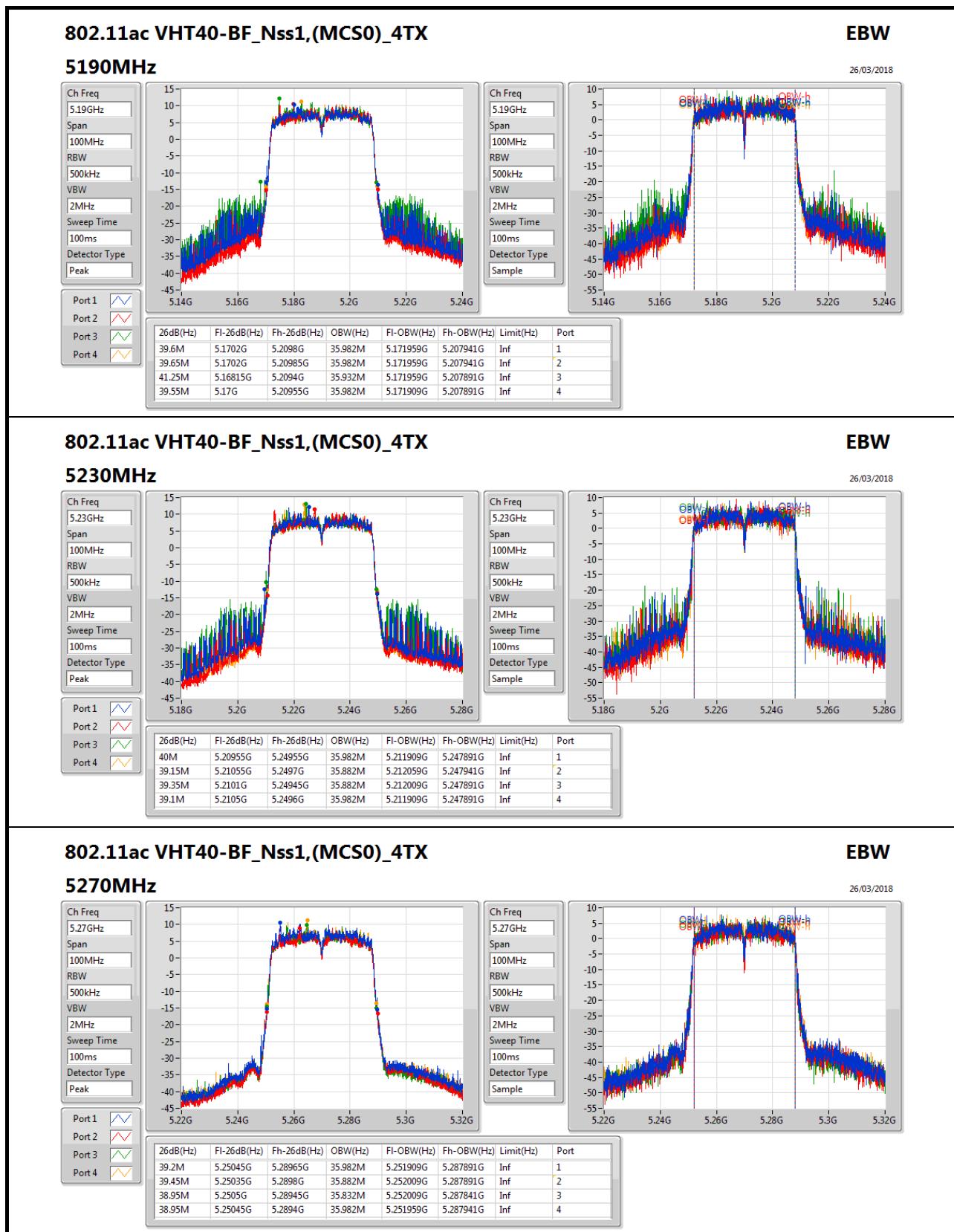
26/03/2018





EBW Result – Beamforming

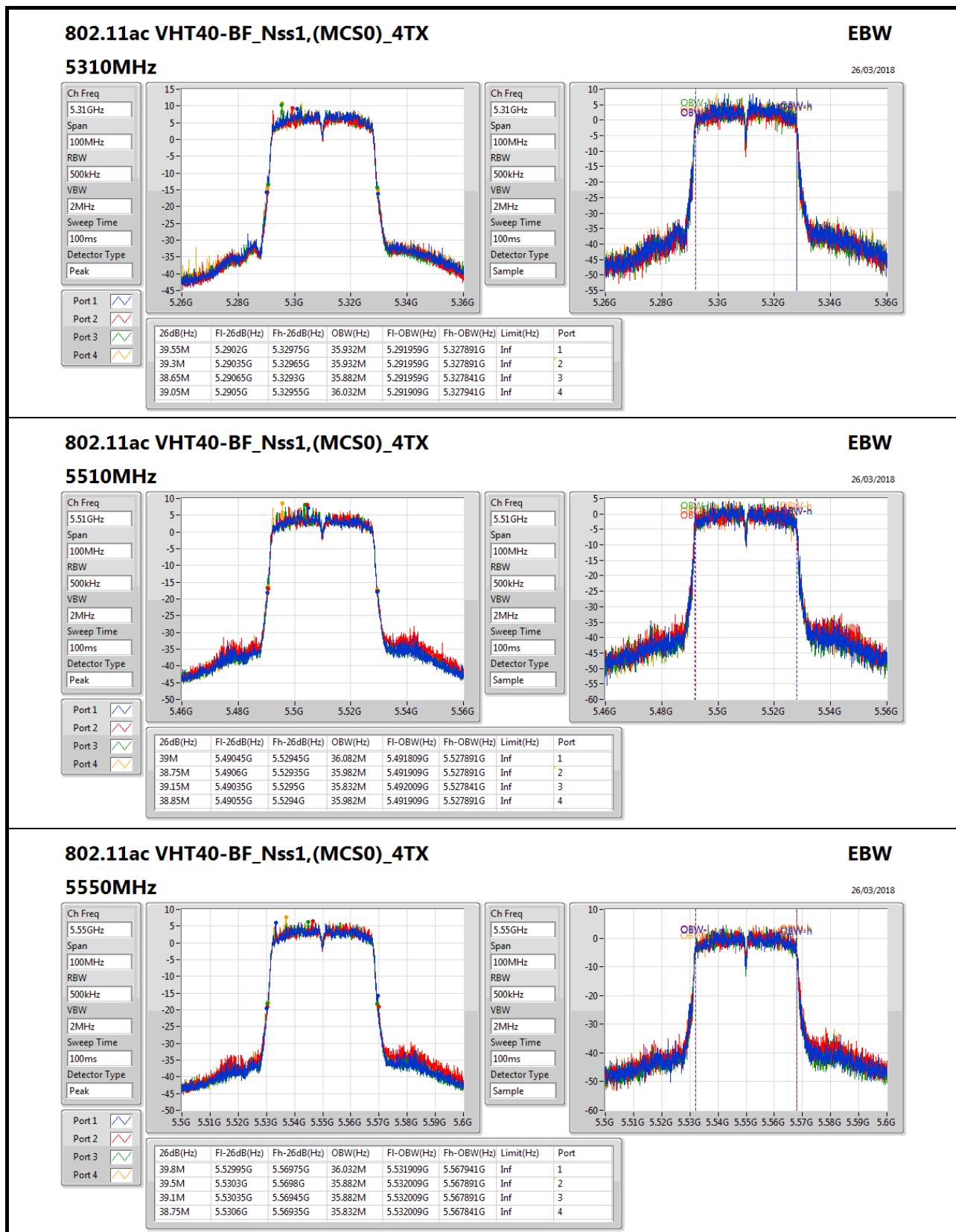
Appendix B.2





EBW Result – Beamforming

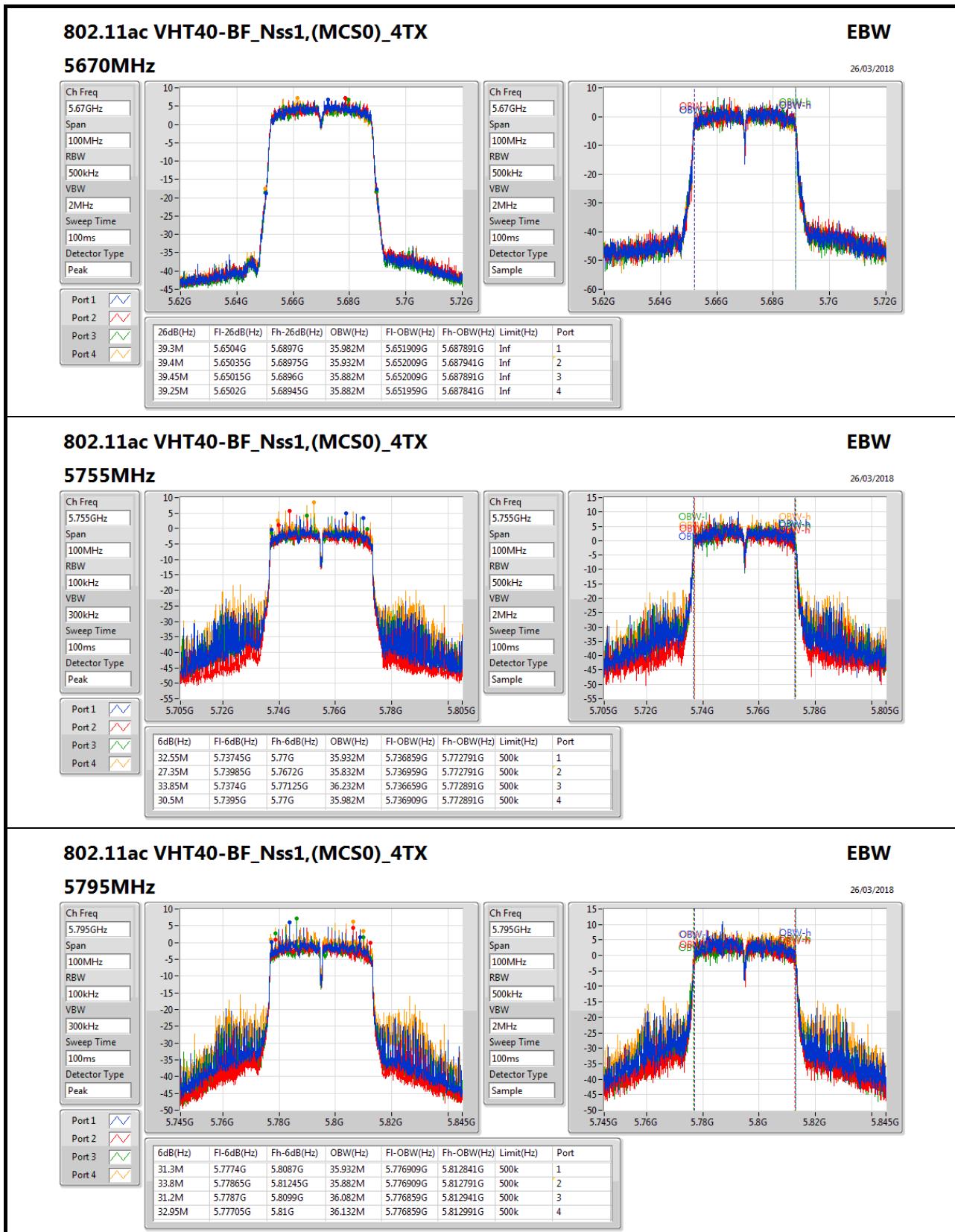
Appendix B.2

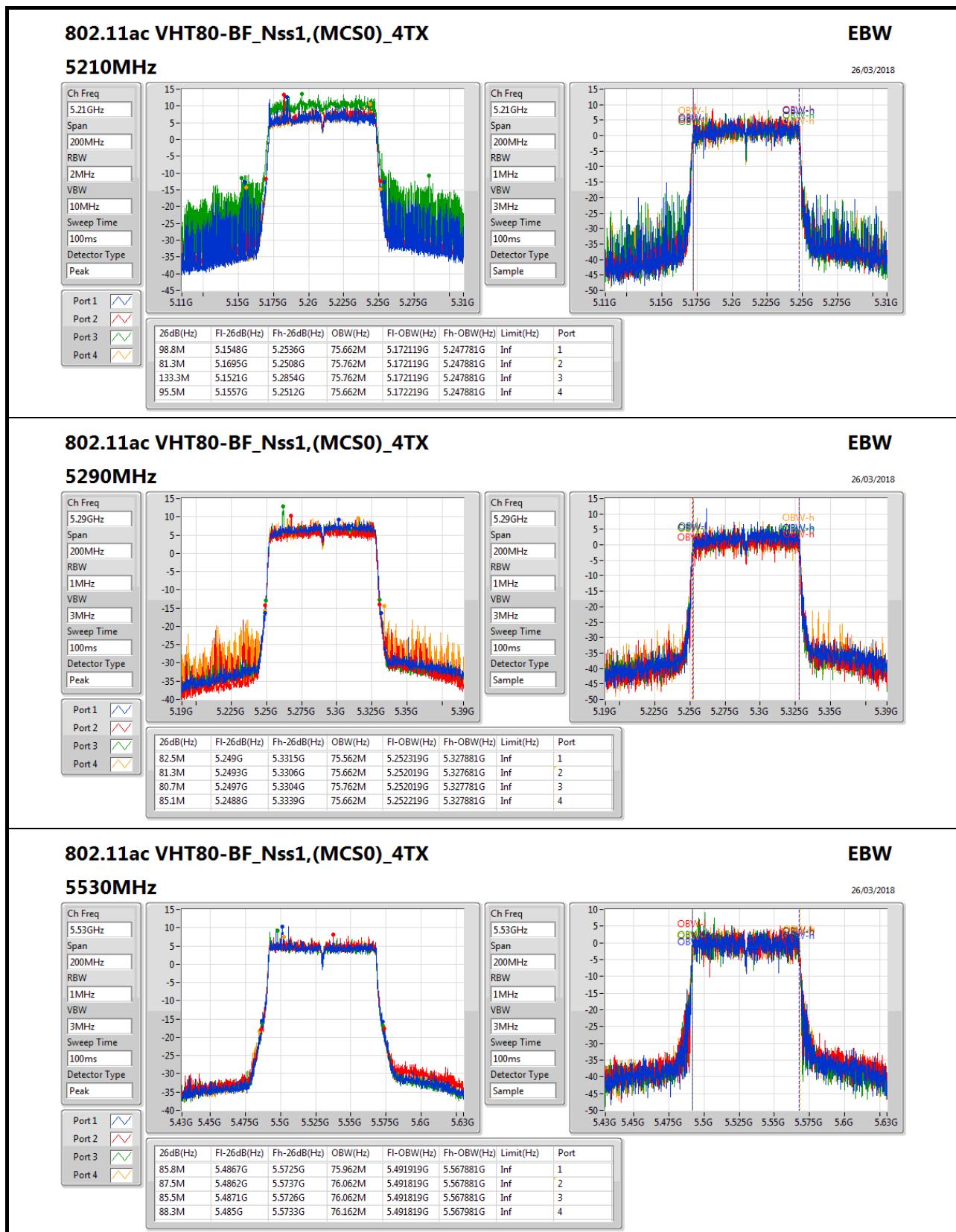




EBW Result – Beamforming

Appendix B.2





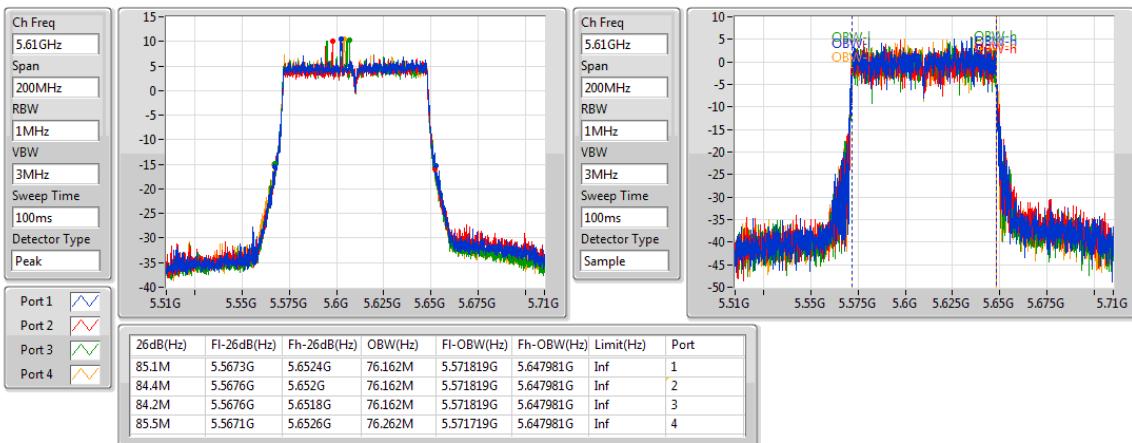


802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5610MHz

26/03/2018

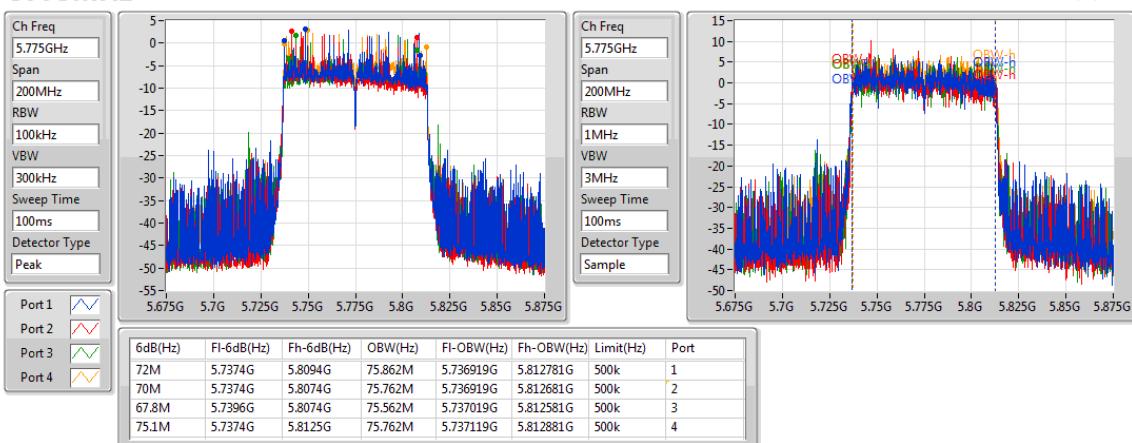


802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5775MHz

26/03/2018



**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	26.33	0.42954	29.38	0.86696
802.11ac VHT20_Nss1,(MCS0)_4TX	26.66	0.46345	29.71	0.93541
802.11ac VHT40_Nss1,(MCS0)_4TX	27.00	0.50119	30.05	1.01158
802.11ac VHT80_Nss1,(MCS0)_4TX	22.87	0.19364	25.92	0.39084
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	22.08	0.16144	25.63	0.36559
802.11ac VHT20_Nss1,(MCS0)_4TX	22.29	0.16943	25.84	0.38371
802.11ac VHT40_Nss1,(MCS0)_4TX	23.47	0.22233	27.02	0.50350
802.11ac VHT80_Nss1,(MCS0)_4TX	22.41	0.17418	25.96	0.39446
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	20.89	0.12274	25.79	0.37931
802.11ac VHT20_Nss1,(MCS0)_4TX	21.05	0.12735	25.95	0.39355
802.11ac VHT40_Nss1,(MCS0)_4TX	23.62	0.23014	28.52	0.71121
802.11ac VHT80_Nss1,(MCS0)_4TX	23.54	0.22594	28.44	0.69823
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	28.17	0.65615	28.17	0.65615
802.11ac VHT20_Nss1,(MCS0)_4TX	27.23	0.52845	27.23	0.52845
802.11ac VHT40_Nss1,(MCS0)_4TX	26.91	0.49091	26.91	0.49091
802.11ac VHT80_Nss1,(MCS0)_4TX	25.45	0.35075	25.45	0.35075



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	3.05	20.31	19.51	19.08	19.72	25.70	30.00	28.75	36.00
5200MHz_TnomVnom	Pass	3.05	20.23	20.41	20.38	20.21	26.33	30.00	29.38	36.00
5240MHz_TnomVnom	Pass	3.05	20.18	20.68	19.74	20.17	26.23	30.00	29.28	36.00
5260MHz_TnomVnom	Pass	3.55	16.16	15.76	15.72	16.26	22.00	23.80	25.55	29.80
5300MHz_TnomVnom	Pass	3.55	16.29	15.81	15.66	16.43	22.08	23.79	25.63	29.79
5320MHz_TnomVnom	Pass	3.55	16.44	15.52	15.54	16.45	22.03	23.79	25.58	29.79
5500MHz_TnomVnom	Pass	4.90	14.99	14.69	14.44	14.55	20.69	23.75	25.59	29.75
5580MHz_TnomVnom	Pass	4.90	15.08	14.87	14.59	14.92	20.89	23.73	25.79	29.73
5700MHz_TnomVnom	Pass	4.90	15.00	14.69	14.57	14.95	20.83	23.75	25.73	29.75
5745MHz_TnomVnom	Pass	0.00	22.37	21.64	22.10	22.45	28.17	30.00	28.17	36.00
5785MHz_TnomVnom	Pass	0.00	21.37	20.37	21.31	21.55	27.19	30.00	27.19	36.00
5825MHz_TnomVnom	Pass	0.00	21.23	19.95	21.18	21.41	27.00	30.00	27.00	36.00
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	3.05	20.04	19.27	19.30	19.80	25.64	30.00	28.69	36.00
5200MHz_TnomVnom	Pass	3.05	21.12	20.30	20.48	20.60	26.66	30.00	29.71	36.00
5240MHz_TnomVnom	Pass	3.05	20.01	20.54	20.78	20.08	26.38	30.00	29.43	36.00
5260MHz_TnomVnom	Pass	3.55	16.05	15.93	16.11	16.51	22.18	24.00	25.73	30.00
5300MHz_TnomVnom	Pass	3.55	16.07	15.53	15.44	16.23	21.85	24.00	25.40	30.00
5320MHz_TnomVnom	Pass	3.55	16.73	15.79	15.73	16.72	22.29	24.00	25.84	30.00
5500MHz_TnomVnom	Pass	4.90	15.32	15.02	14.88	14.90	21.05	23.92	25.95	29.92
5580MHz_TnomVnom	Pass	4.90	14.92	14.63	14.43	14.74	20.70	23.95	25.60	29.95
5700MHz_TnomVnom	Pass	4.90	14.76	14.48	14.39	14.80	20.63	24.00	25.53	30.00
5745MHz_TnomVnom	Pass	0.00	21.40	20.71	21.15	21.52	27.23	30.00	27.23	36.00
5785MHz_TnomVnom	Pass	0.00	20.94	19.90	20.85	21.12	26.75	30.00	26.75	36.00
5825MHz_TnomVnom	Pass	0.00	20.98	19.72	20.99	21.20	26.78	30.00	26.78	36.00
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	3.05	19.35	18.82	18.63	19.15	25.02	30.00	28.07	36.00
5230MHz_TnomVnom	Pass	3.05	21.49	20.33	20.88	21.13	27.00	30.00	30.05	36.00
5270MHz_TnomVnom	Pass	3.55	17.87	17.11	17.21	17.56	23.47	24.00	27.02	30.00
5310MHz_TnomVnom	Pass	3.55	17.67	17.18	17.17	17.66	23.45	24.00	27.00	30.00
5510MHz_TnomVnom	Pass	4.90	16.56	16.78	16.59	16.89	22.73	24.00	27.63	30.00
5550MHz_TnomVnom	Pass	4.90	17.81	17.67	17.18	17.55	23.58	24.00	28.48	30.00
5670MHz_TnomVnom	Pass	4.90	17.73	17.53	17.42	17.71	23.62	24.00	28.52	30.00
5755MHz_TnomVnom	Pass	0.00	21.17	20.39	20.75	21.18	26.91	30.00	26.91	36.00
5795MHz_TnomVnom	Pass	0.00	20.90	19.81	21.00	21.18	26.77	30.00	26.77	36.00
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	3.05	17.11	16.71	16.57	16.99	22.87	30.00	25.92	36.00
5290MHz_TnomVnom	Pass	3.55	16.66	16.19	16.04	16.63	22.41	24.00	25.96	30.00
5530MHz_TnomVnom	Pass	4.90	16.03	15.77	15.33	15.14	21.60	24.00	26.50	30.00
5610MHz_TnomVnom	Pass	4.90	17.74	17.61	17.25	17.45	23.54	24.00	28.44	30.00
5775MHz_TnomVnom	Pass	0.00	19.65	18.71	19.51	19.76	25.45	30.00	25.45	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	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	23.89	0.24491	30.94	1.24165
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	23.88	0.24434	30.93	1.23880
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	21.96	0.15704	29.01	0.79616
5.25-5.35GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	21.87	0.15382	29.42	0.87498
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	22.44	0.17539	29.99	0.99770
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	21.58	0.14388	29.13	0.81846
5.47-5.725GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	20.50	0.11220	29.40	0.87096
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	20.58	0.11429	29.48	0.88716
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	20.70	0.11749	29.60	0.91201
5.725-5.85GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	22.95	0.19724	26.95	0.49545
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	23.08	0.20324	27.08	0.51050
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	21.41	0.13836	25.41	0.34754



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	7.05	17.97	17.46	17.70	17.69	23.73	28.95	30.78	36.00
5200MHz_TnomVnom	Pass	7.05	17.96	17.84	17.87	17.80	23.89	28.95	30.94	36.00
5240MHz_TnomVnom	Pass	7.05	17.62	17.37	17.39	17.75	23.56	28.95	30.61	36.00
5260MHz_TnomVnom	Pass	7.55	16.04	15.55	15.69	16.08	21.87	22.45	29.42	30.00
5300MHz_TnomVnom	Pass	7.55	15.92	15.70	15.61	15.87	21.80	22.45	29.35	30.00
5320MHz_TnomVnom	Pass	7.55	15.81	15.04	15.34	16.23	21.65	22.45	29.20	30.00
5500MHz_TnomVnom	Pass	8.90	14.16	14.40	14.55	14.52	20.43	21.05	29.33	30.00
5580MHz_TnomVnom	Pass	8.90	14.22	14.48	14.43	14.68	20.48	21.06	29.38	30.00
5700MHz_TnomVnom	Pass	8.90	14.41	14.82	14.36	14.32	20.50	21.08	29.40	30.00
5745MHz_TnomVnom	Pass	4.00	16.66	16.01	16.30	17.69	22.73	30.00	26.73	36.00
5785MHz_TnomVnom	Pass	4.00	17.28	16.20	16.40	17.66	22.95	30.00	26.95	36.00
5825MHz_TnomVnom	Pass	4.00	16.77	16.17	15.84	17.63	22.68	30.00	26.68	36.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	7.05	17.82	17.70	17.80	18.12	23.88	28.95	30.93	36.00
5230MHz_TnomVnom	Pass	7.05	17.95	17.58	17.88	17.64	23.79	28.95	30.84	36.00
5270MHz_TnomVnom	Pass	7.55	16.78	15.98	16.25	16.64	22.44	22.45	29.99	30.00
5310MHz_TnomVnom	Pass	7.55	16.36	15.72	16.13	16.48	22.20	22.45	29.75	30.00
5510MHz_TnomVnom	Pass	8.90	14.09	14.09	14.35	14.41	20.26	21.10	29.16	30.00
5550MHz_TnomVnom	Pass	8.90	14.08	14.24	14.21	14.56	20.30	21.10	29.20	30.00
5670MHz_TnomVnom	Pass	8.90	14.72	14.66	14.39	14.47	20.58	21.10	29.48	30.00
5755MHz_TnomVnom	Pass	4.00	16.83	15.98	16.18	17.86	22.80	30.00	26.80	36.00
5795MHz_TnomVnom	Pass	4.00	17.01	16.46	16.30	18.21	23.08	30.00	27.08	36.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	7.05	15.68	15.83	15.96	16.26	21.96	28.95	29.01	36.00
5290MHz_TnomVnom	Pass	7.55	16.13	15.34	15.50	15.23	21.58	22.45	29.13	30.00
5530MHz_TnomVnom	Pass	8.90	14.64	14.68	14.66	14.74	20.70	21.10	29.60	30.00
5610MHz_TnomVnom	Pass	8.90	14.72	14.15	14.37	14.71	20.51	21.10	29.41	30.00
5775MHz_TnomVnom	Pass	4.00	15.03	14.71	15.03	16.55	21.41	30.00	25.41	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)_4TX	15.89	22.94
802.11ac VHT20_Nss1,(MCS0)_4TX	15.71	22.76
802.11ac VHT40_Nss1,(MCS0)_4TX	12.30	19.35
802.11ac VHT80_Nss1,(MCS0)_4TX	3.68	10.73
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	9.41	16.96
802.11ac VHT20_Nss1,(MCS0)_4TX	9.43	16.98
802.11ac VHT40_Nss1,(MCS0)_4TX	8.13	15.68
802.11ac VHT80_Nss1,(MCS0)_4TX	3.38	10.93
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	8.06	16.96
802.11ac VHT20_Nss1,(MCS0)_4TX	7.97	16.87
802.11ac VHT40_Nss1,(MCS0)_4TX	7.77	16.67
802.11ac VHT80_Nss1,(MCS0)_4TX	4.22	13.12
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	13.56	17.56
802.11ac VHT20_Nss1,(MCS0)_4TX	12.71	16.71
802.11ac VHT40_Nss1,(MCS0)_4TX	9.44	13.44
802.11ac VHT80_Nss1,(MCS0)_4TX	5.16	9.16

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



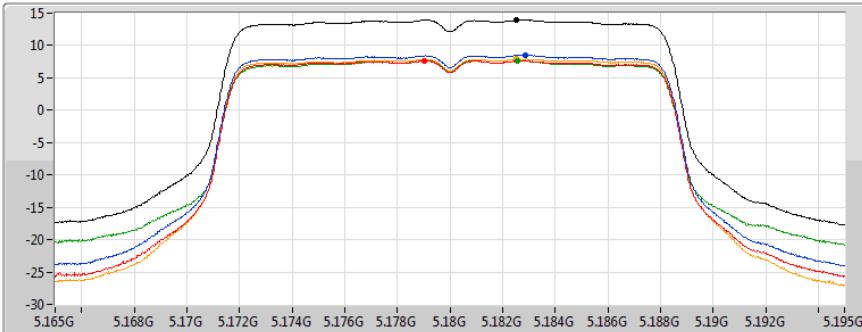
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	7.05	8.49	7.61	7.64	7.90	13.94	15.95	20.99	Inf
5200MHz_TnomVnom	Pass	7.05	10.37	9.62	9.69	9.85	15.89	15.95	22.94	Inf
5240MHz_TnomVnom	Pass	7.05	9.51	8.94	9.09	9.41	15.24	15.95	22.29	Inf
5260MHz_TnomVnom	Pass	7.55	3.51	3.01	3.10	3.48	9.26	9.45	16.81	Inf
5300MHz_TnomVnom	Pass	7.55	3.69	3.05	3.16	3.71	9.41	9.45	16.96	Inf
5320MHz_TnomVnom	Pass	7.55	3.79	2.77	2.91	3.70	9.30	9.45	16.85	Inf
5500MHz_TnomVnom	Pass	8.90	2.13	1.92	1.52	1.57	7.79	8.10	16.69	Inf
5580MHz_TnomVnom	Pass	8.90	2.35	2.05	1.77	2.12	7.96	8.10	16.86	Inf
5700MHz_TnomVnom	Pass	8.90	2.39	1.87	1.95	2.33	8.06	8.10	16.96	Inf
5745MHz_TnomVnom	Pass	4.00	7.91	7.05	7.63	7.73	13.56	30.00	17.56	Inf
5785MHz_TnomVnom	Pass	4.00	7.04	5.88	6.99	7.04	12.72	30.00	16.72	Inf
5825MHz_TnomVnom	Pass	4.00	6.79	5.35	6.81	6.83	12.46	30.00	16.46	Inf
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	7.05	8.65	7.72	7.74	8.25	13.76	15.95	20.81	Inf
5200MHz_TnomVnom	Pass	7.05	10.63	9.58	9.93	9.88	15.71	15.95	22.76	Inf
5240MHz_TnomVnom	Pass	7.05	9.65	9.04	9.29	9.61	15.02	15.95	22.07	Inf
5260MHz_TnomVnom	Pass	7.55	3.99	3.34	3.70	3.90	9.39	9.45	16.94	Inf
5300MHz_TnomVnom	Pass	7.55	3.94	3.10	3.01	3.64	9.18	9.45	16.73	Inf
5320MHz_TnomVnom	Pass	7.55	4.38	3.15	3.64	4.33	9.43	9.45	16.98	Inf
5500MHz_TnomVnom	Pass	8.90	2.69	2.45	2.07	2.31	7.97	8.10	16.87	Inf
5580MHz_TnomVnom	Pass	8.90	2.27	2.12	1.96	2.31	7.70	8.10	16.60	Inf
5700MHz_TnomVnom	Pass	8.90	2.26	2.31	2.20	2.62	7.82	8.10	16.72	Inf
5745MHz_TnomVnom	Pass	4.00	7.38	6.45	7.17	7.62	12.71	30.00	16.71	Inf
5785MHz_TnomVnom	Pass	4.00	6.81	5.70	6.90	7.03	12.25	30.00	16.25	Inf
5825MHz_TnomVnom	Pass	4.00	6.79	5.72	6.95	7.21	12.17	30.00	16.17	Inf
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	7.05	3.41	2.89	2.79	3.25	9.06	15.95	16.11	Inf
5230MHz_TnomVnom	Pass	7.05	6.70	6.09	6.07	6.32	12.30	15.95	19.35	Inf
5270MHz_TnomVnom	Pass	7.55	2.19	1.79	1.85	2.35	7.99	9.45	15.54	Inf
5310MHz_TnomVnom	Pass	7.55	2.38	2.02	1.75	2.44	8.13	9.45	15.68	Inf
5510MHz_TnomVnom	Pass	8.90	1.84	1.75	1.06	1.49	7.51	8.10	16.41	Inf
5550MHz_TnomVnom	Pass	8.90	1.94	1.87	1.12	1.59	7.54	8.10	16.44	Inf
5670MHz_TnomVnom	Pass	8.90	2.14	1.97	1.51	2.02	7.77	8.10	16.67	Inf
5755MHz_TnomVnom	Pass	4.00	3.72	3.03	3.35	3.73	9.44	30.00	13.44	Inf
5795MHz_TnomVnom	Pass	4.00	3.42	2.40	3.51	3.72	9.25	30.00	13.25	Inf
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	7.05	-1.93	-2.30	-2.54	-2.06	3.68	15.95	10.73	Inf
5290MHz_TnomVnom	Pass	7.55	-2.28	-2.64	-3.03	-2.23	3.38	9.45	10.93	Inf
5530MHz_TnomVnom	Pass	8.90	-2.89	-2.91	-3.52	-3.16	2.75	8.10	11.65	Inf
5610MHz_TnomVnom	Pass	8.90	-1.51	-1.42	-2.05	-1.69	4.22	8.10	13.12	Inf
5775MHz_TnomVnom	Pass	4.00	-0.84	-1.66	-0.47	-0.35	5.16	30.00	9.16	Inf

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;

802.11a_Nss1,(6Mbps)_4TX
5180MHz

Ch Freq
5.18GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

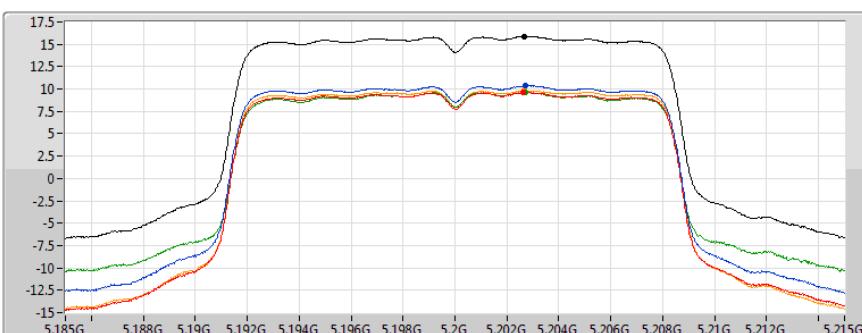

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

802.11a_Nss1,(6Mbps)_4TX
5200MHz

Ch Freq
5.2GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

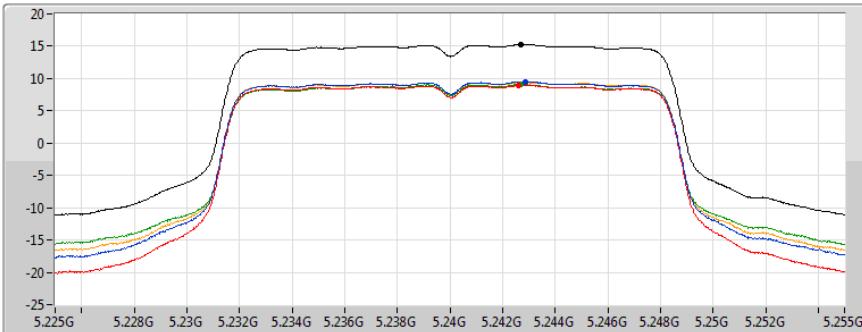

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

802.11a_Nss1,(6Mbps)_4TX
5240MHz

Ch Freq
5.24GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

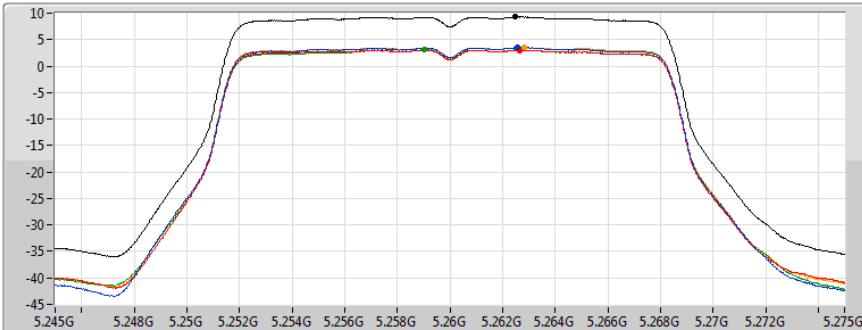

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

802.11a_Nss1,(6Mbps)_4TX
5260MHz

Ch Freq
5.26GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS


PSD

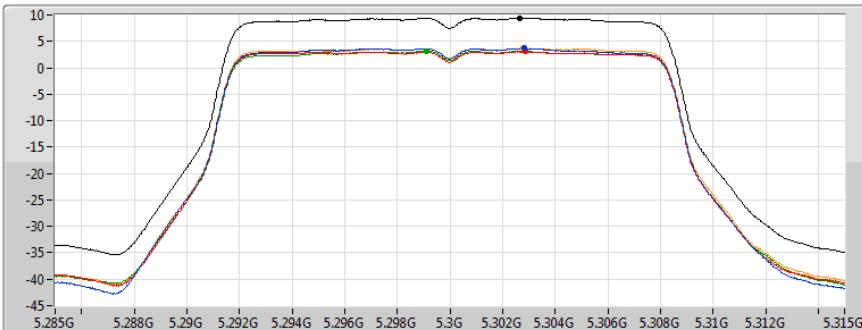
22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.26	9.26	3.51	3.01	3.10	3.48

802.11a_Nss1,(6Mbps)_4TX
5300MHz

Ch Freq
5.3GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS


PSD

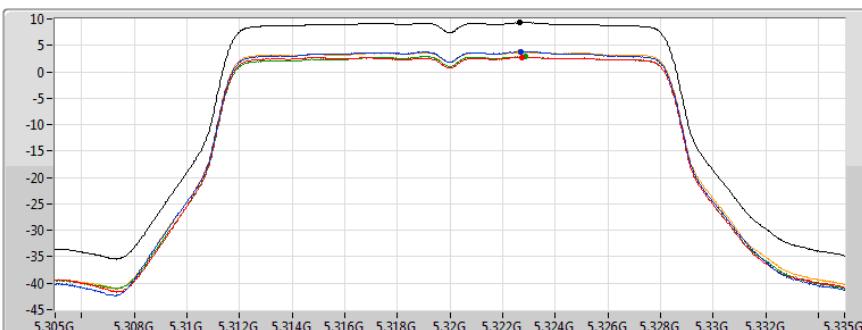
22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.41	9.41	3.69	3.05	3.16	3.71

802.11a_Nss1,(6Mbps)_4TX
5320MHz

Ch Freq
5.32GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

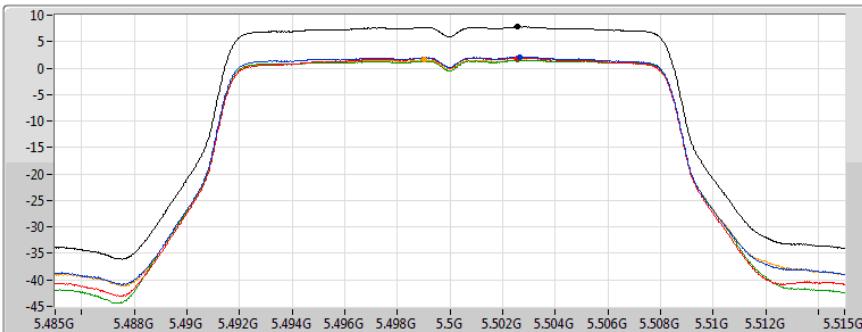

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.30	9.30	3.79	2.77	2.91	3.70

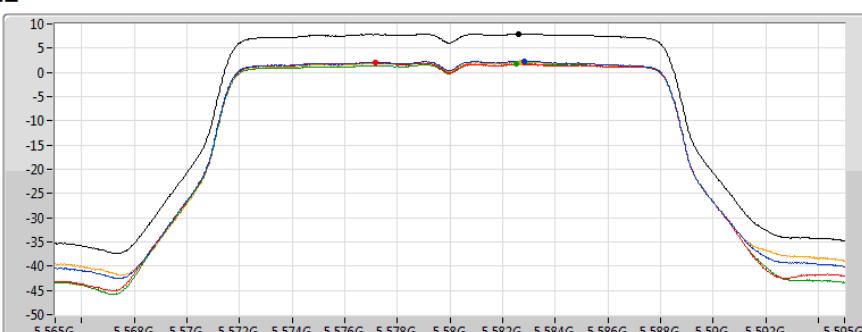
802.11a_Nss1,(6Mbps)_4TX
5500MHz

Ch Freq
5.5GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

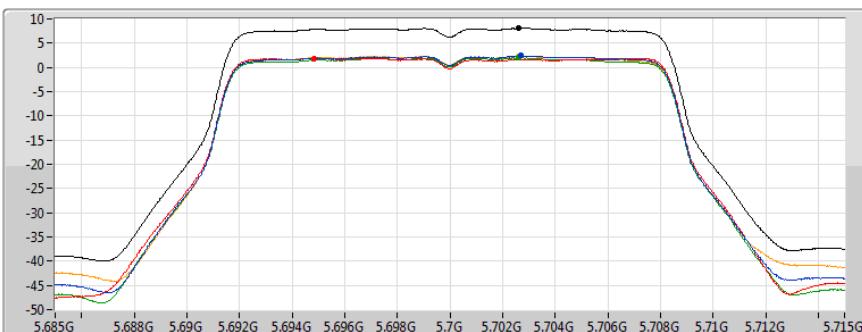
802.11a_Nss1,(6Mbps)_4TX
5580MHz

Ch Freq
5.58GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

PSD

22/03/2018

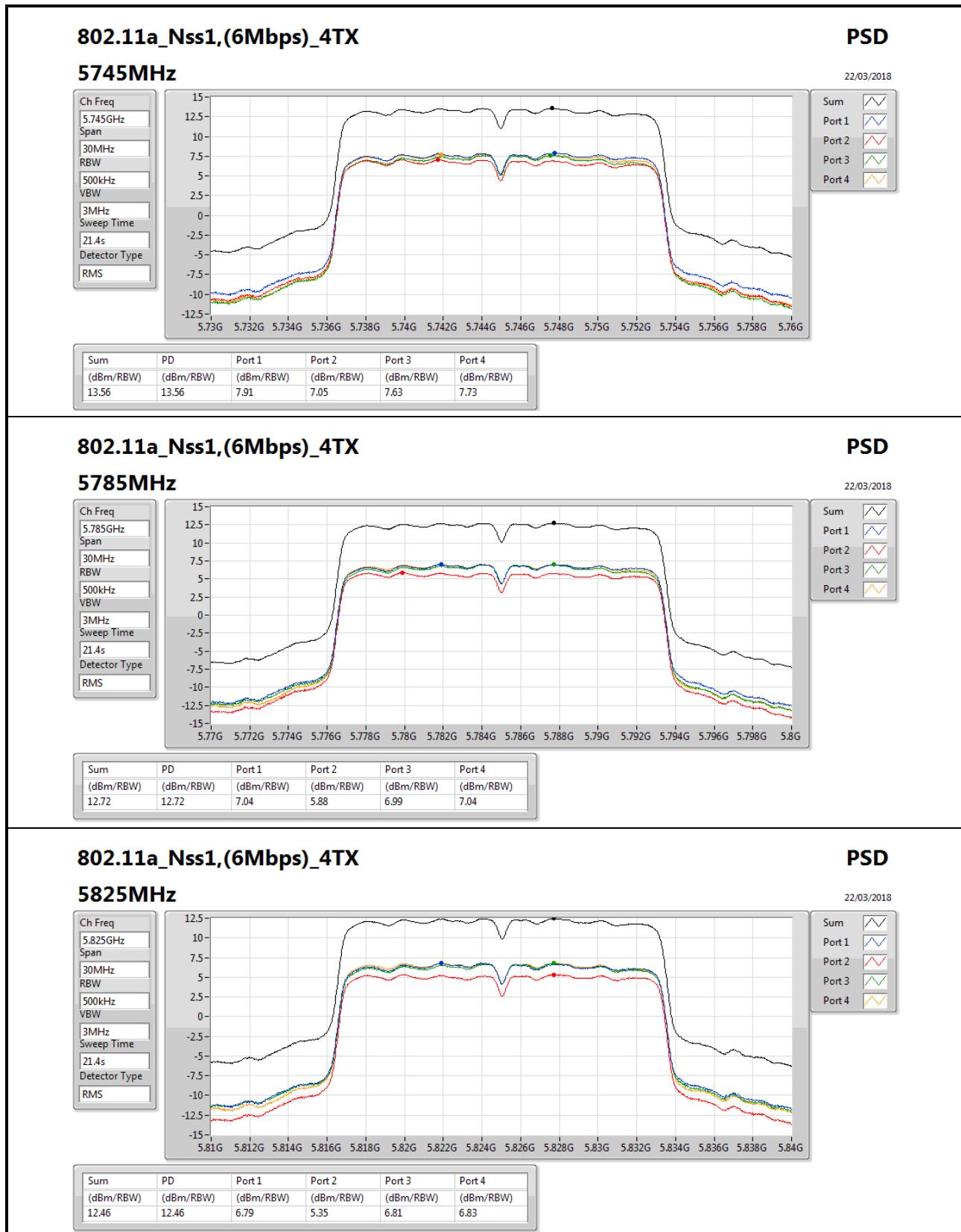
Sum
Port 1
Port 2
Port 3
Port 4

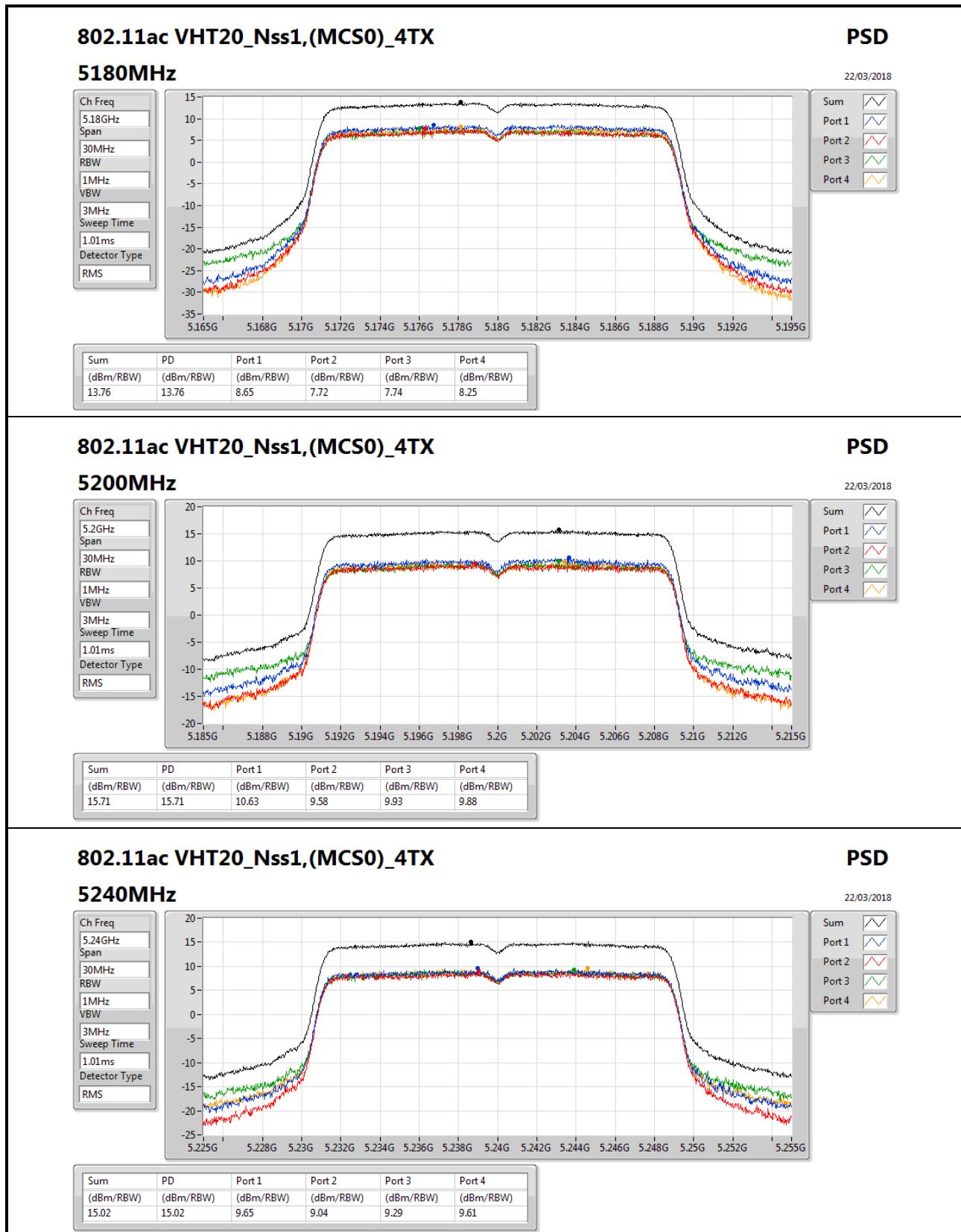
802.11a_Nss1,(6Mbps)_4TX
5700MHz

Ch Freq
5.7GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.4s
Detector Type
RMS

PSD

22/03/2018

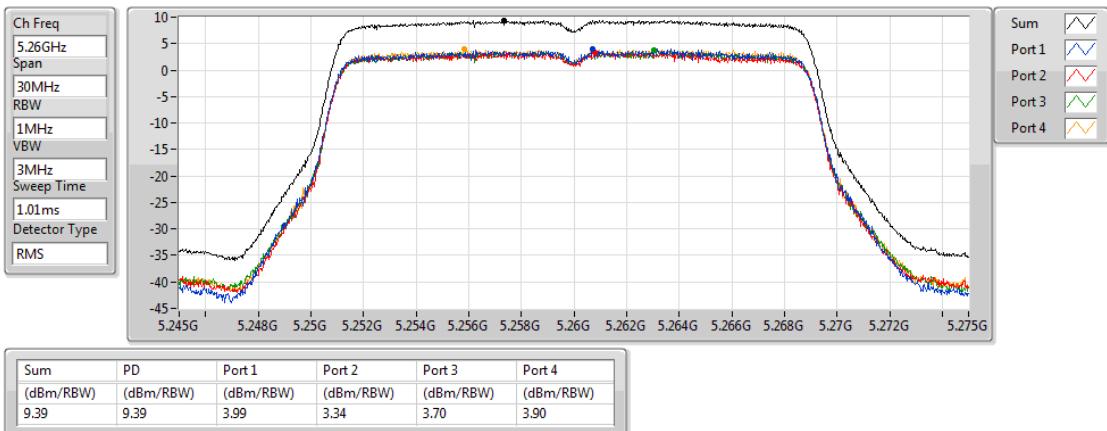
Sum
Port 1
Port 2
Port 3
Port 4



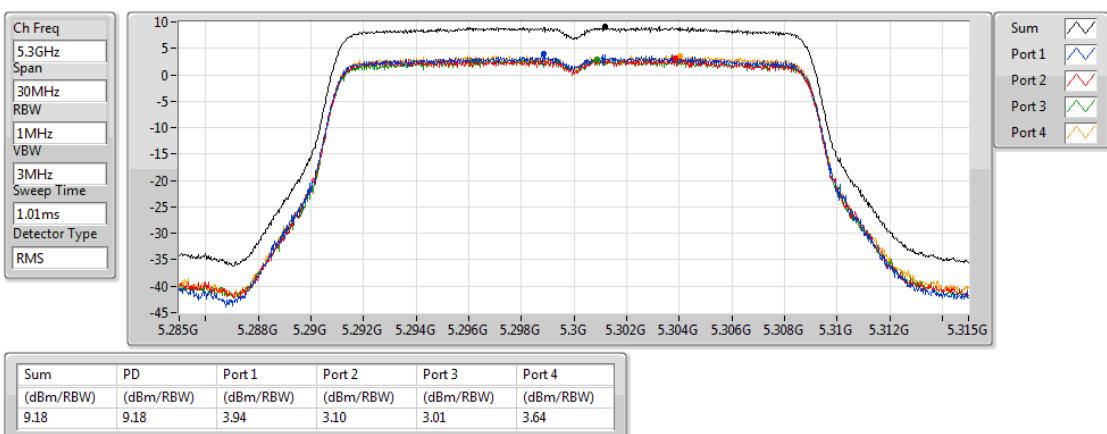


802.11ac VHT20_Nss1,(MCS0)_4TX
5260MHz
PSD

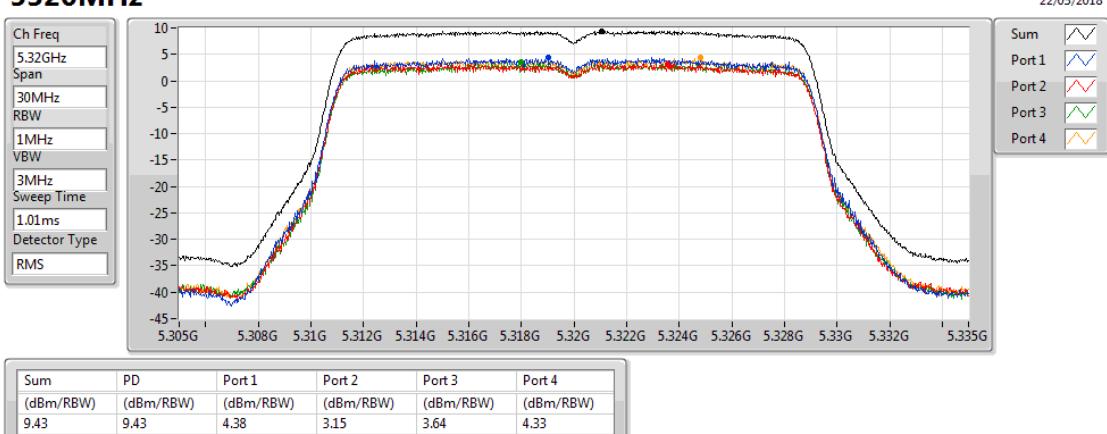
22/03/2018

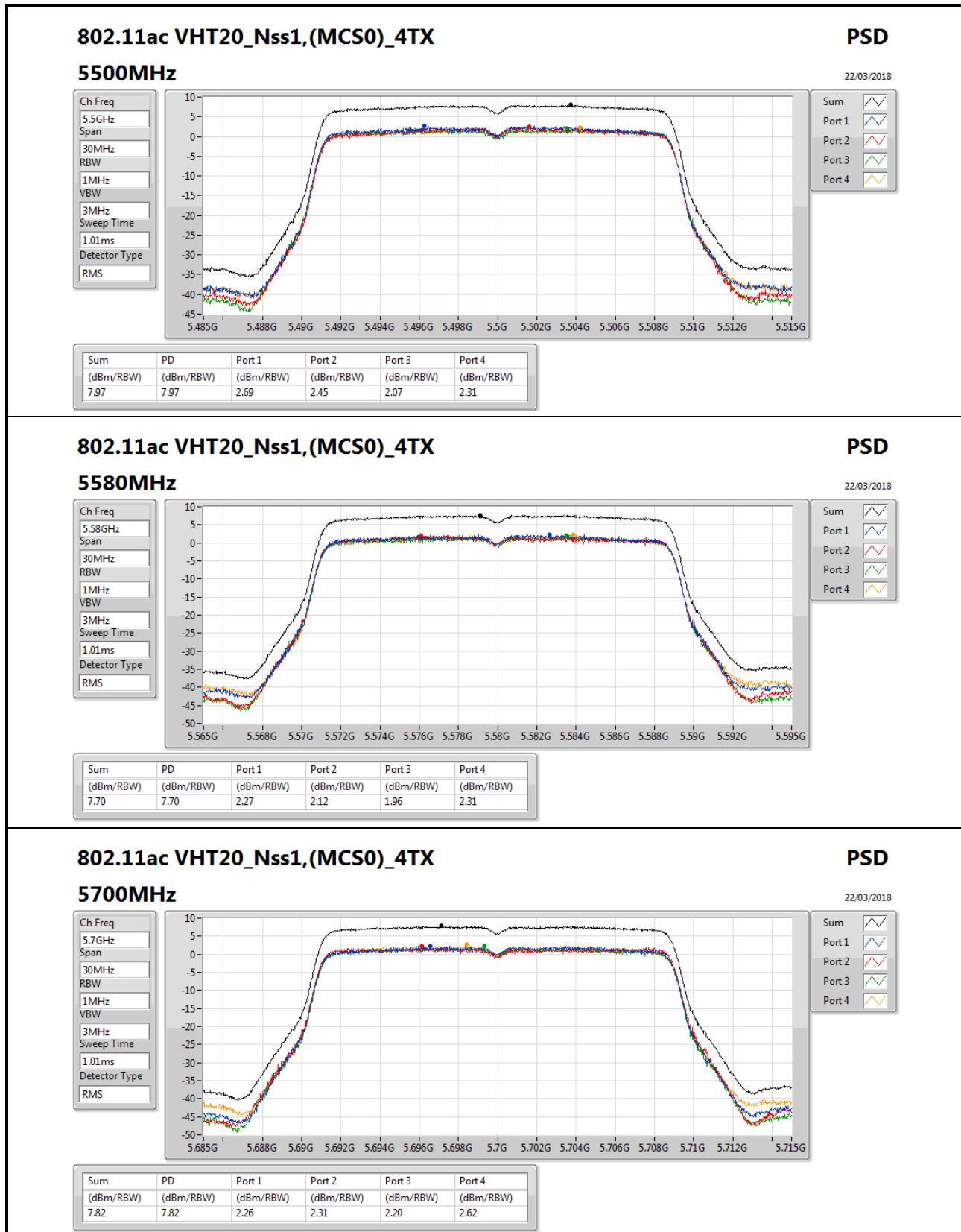

802.11ac VHT20_Nss1,(MCS0)_4TX
5300MHz
PSD

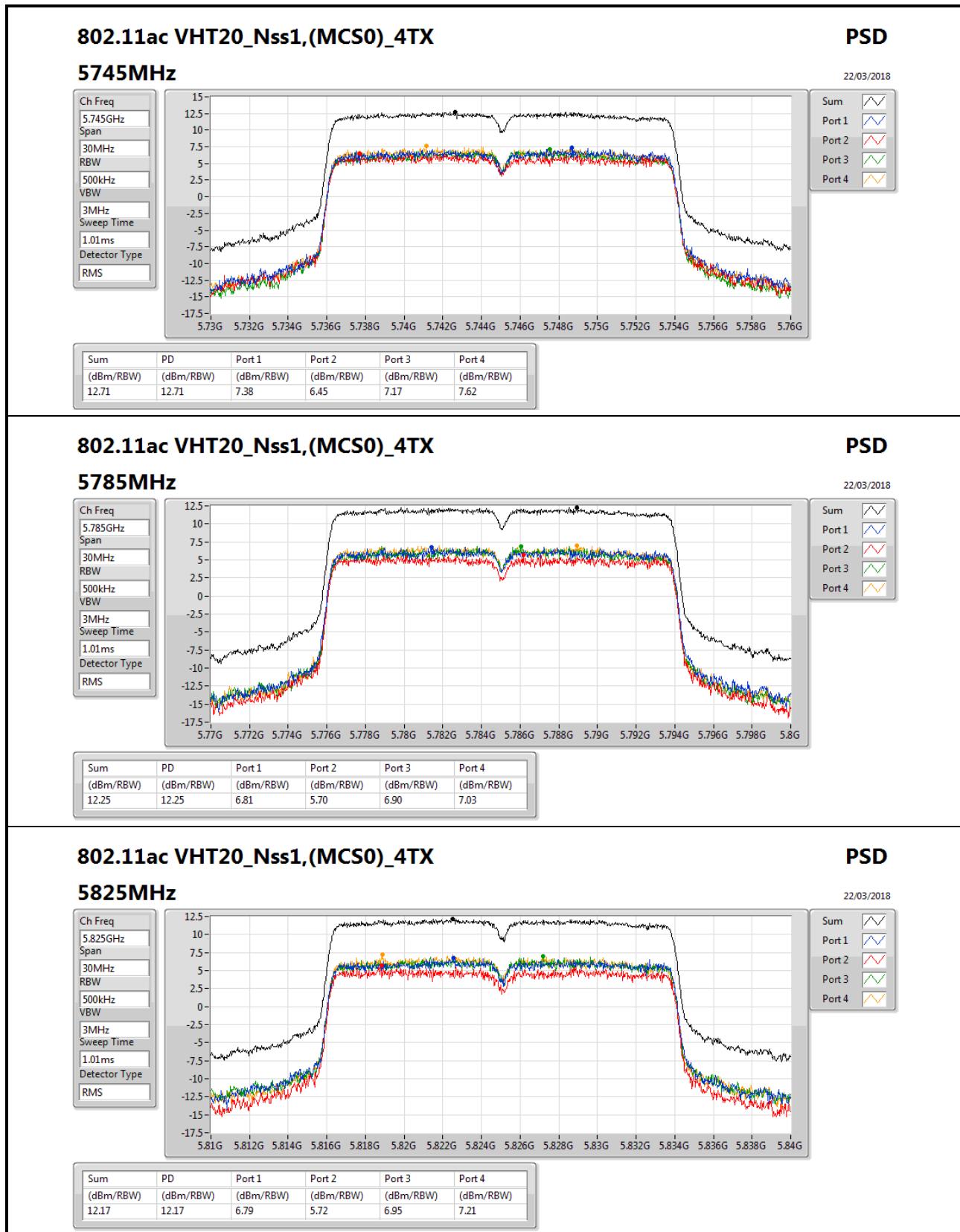
22/03/2018

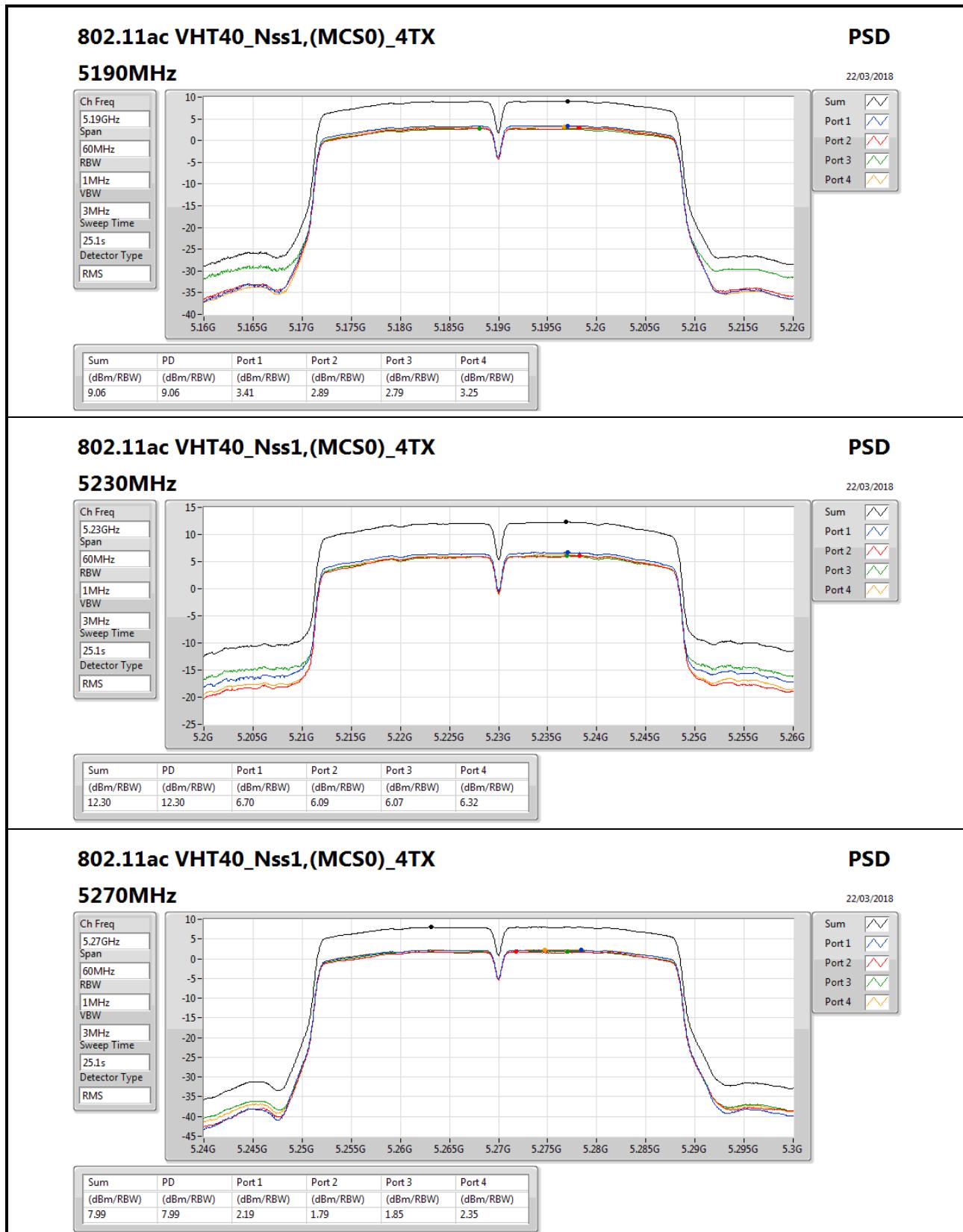

802.11ac VHT20_Nss1,(MCS0)_4TX
5320MHz
PSD

22/03/2018



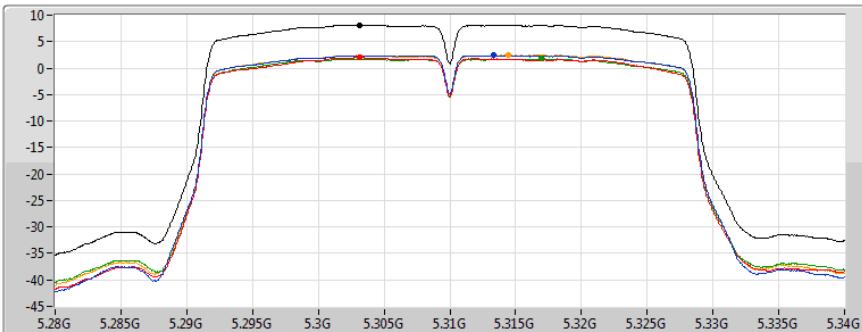






802.11ac VHT40_Nss1,(MCS0)_4TX
5310MHz

Ch Freq
5.31GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
25.1s
Detector Type
RMS

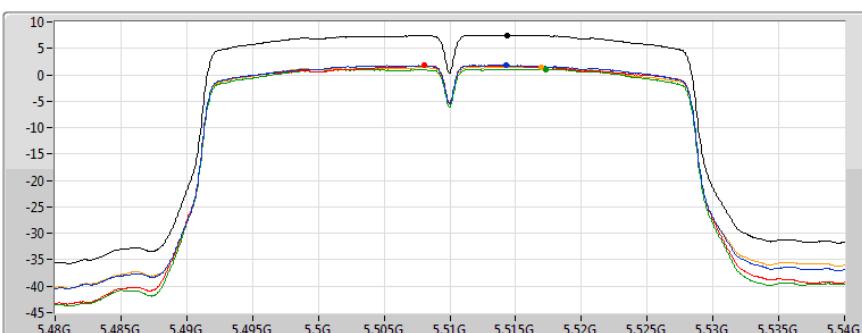

PSD

22/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

802.11ac VHT40_Nss1,(MCS0)_4TX
5510MHz

Ch Freq
5.51GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
25.1s
Detector Type
RMS

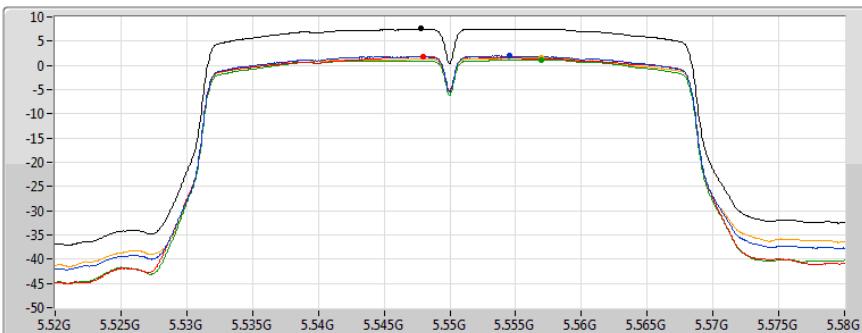

PSD

22/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

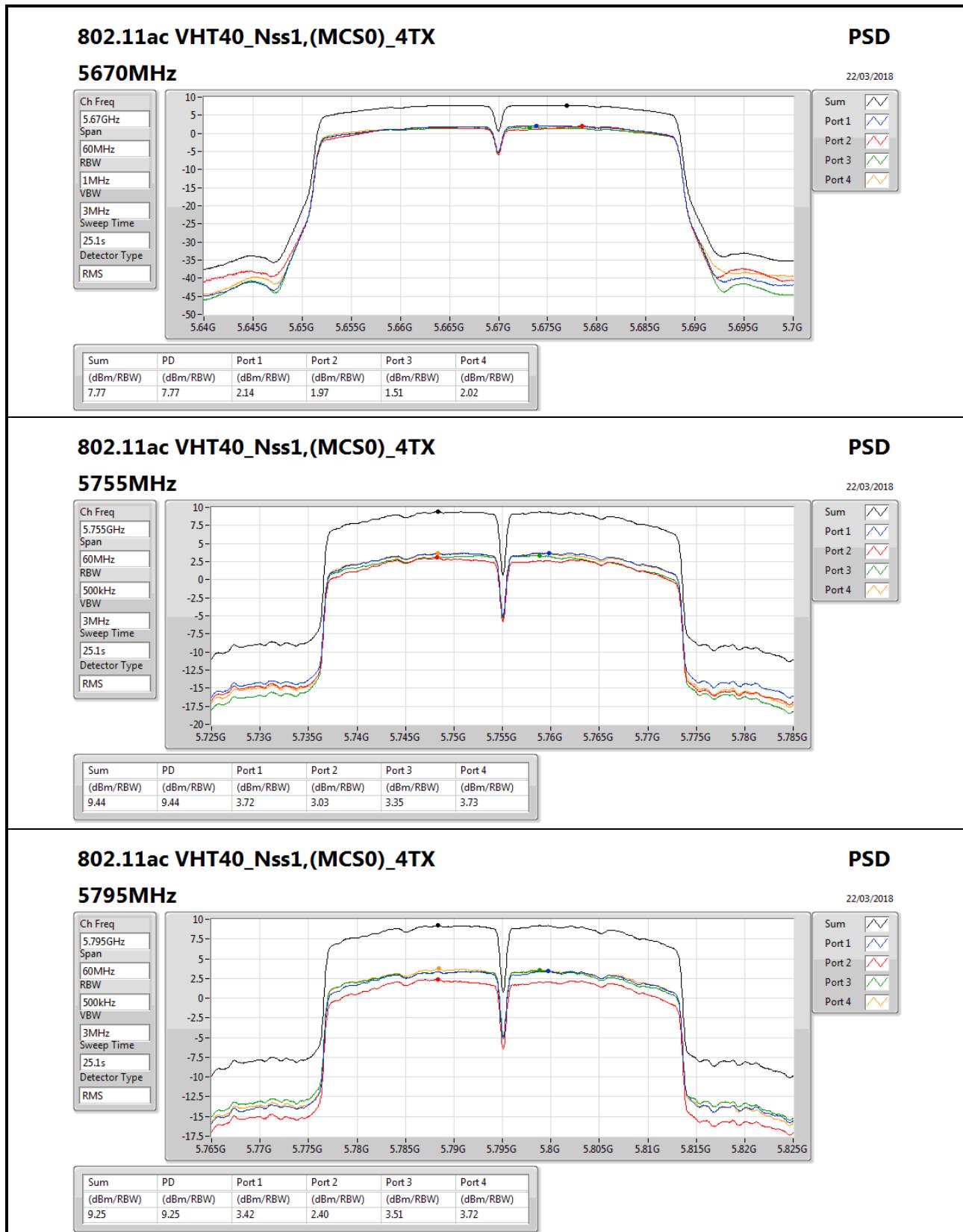
802.11ac VHT40_Nss1,(MCS0)_4TX
5550MHz

Ch Freq
5.55GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
25.1s
Detector Type
RMS


PSD

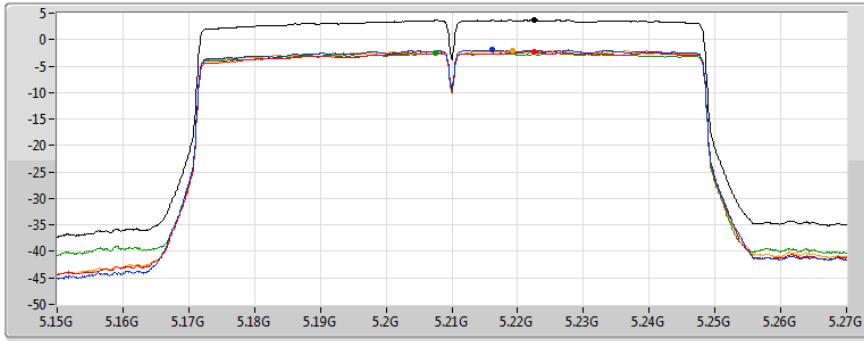
22/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

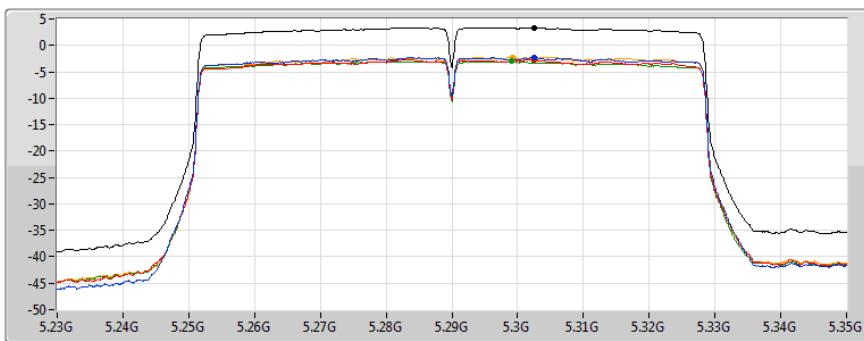


**802.11ac VHT80_Nss1,(MCS0)_4TX****5210MHz**

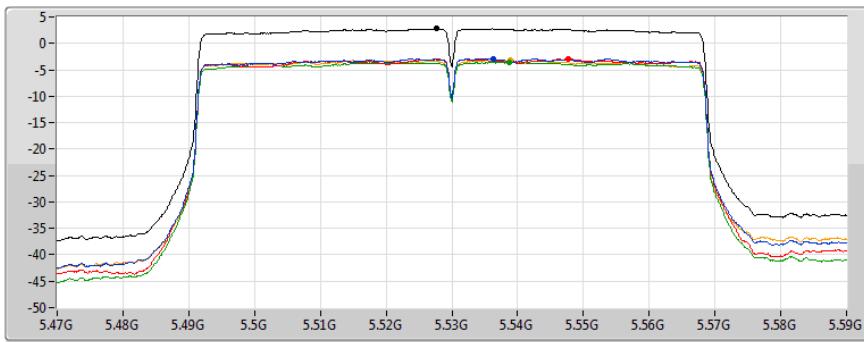
Ch Freq
5.21GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
12.2s
Detector Type
RMS

**PSD****802.11ac VHT80_Nss1,(MCS0)_4TX****5290MHz**

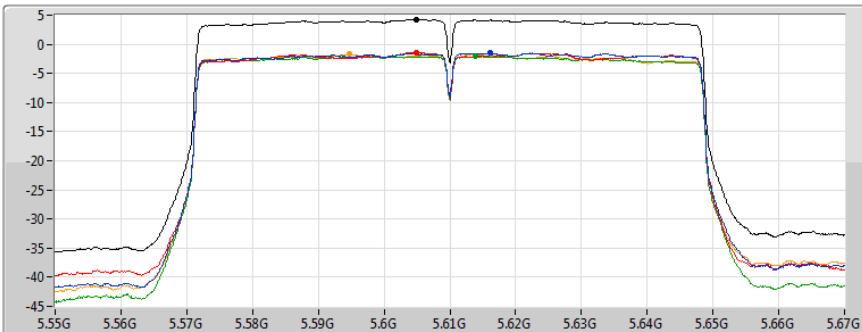
Ch Freq
5.29GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
12.2s
Detector Type
RMS

**PSD****802.11ac VHT80_Nss1,(MCS0)_4TX****5530MHz**

Ch Freq
5.53GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
12.2s
Detector Type
RMS

**PSD**

802.11ac VHT80_Nss1,(MCS0)_4TX
5610MHz

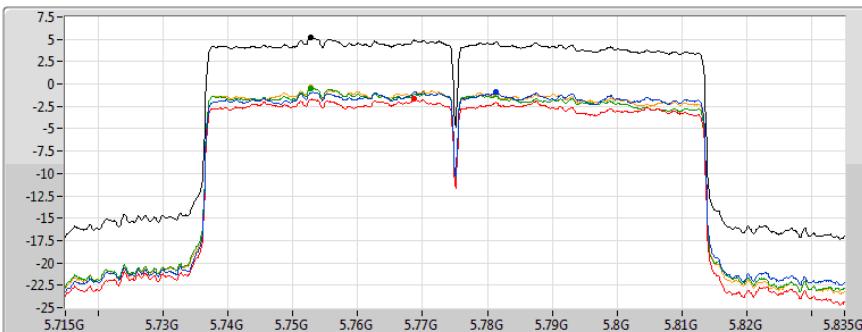
Ch Freq
5.61GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
12.2s
Detector Type
RMS

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.22	4.22	-1.51	-1.42	-2.05	-1.69

802.11ac VHT80_Nss1,(MCS0)_4TX
5775MHz

Ch Freq
5.775GHz
Span
120MHz
RBW
500kHz
VBW
3MHz
Sweep Time
12.2s
Detector Type
RMS

PSD

22/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.16	5.16	-0.84	-1.66	-0.47	-0.35

**Summary**

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	11.05	18.10
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	7.89	14.94
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	3.47	10.52
5.25-5.35GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	9.42	16.97
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	6.79	14.34
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	2.93	10.48
5.47-5.725GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	7.92	16.82
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	4.30	13.20
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	1.00	9.90
5.725-5.85GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	8.69	12.69
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	5.63	9.63
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	0.66	4.66

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



Result

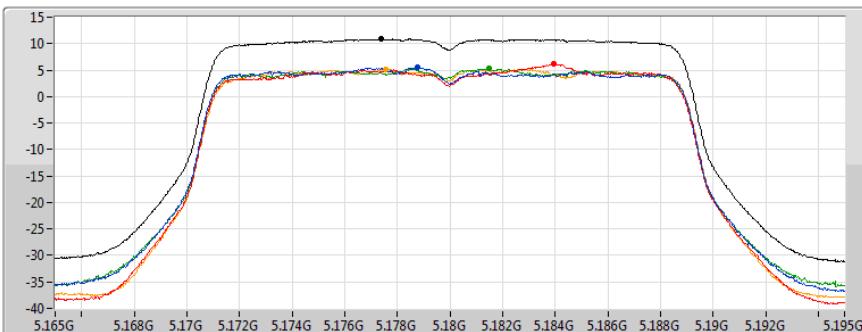
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	7.05	5.59	6.15	5.31	5.14	10.90	15.95	17.95	23.00
5200MHz_TnomVnom	Pass	7.05	5.71	6.09	5.45	5.45	10.86	15.95	17.91	23.00
5240MHz_TnomVnom	Pass	7.05	5.61	5.95	5.31	5.52	11.05	15.95	18.10	23.00
5260MHz_TnomVnom	Pass	7.55	4.38	4.44	3.69	3.82	9.42	9.45	16.97	17.00
5300MHz_TnomVnom	Pass	7.55	3.61	3.80	3.12	3.83	9.01	9.45	16.56	17.00
5320MHz_TnomVnom	Pass	7.55	4.22	3.68	2.94	3.90	9.07	9.45	16.62	17.00
5500MHz_TnomVnom	Pass	8.90	1.92	2.21	2.03	2.03	7.30	8.10	16.20	17.00
5580MHz_TnomVnom	Pass	8.90	2.82	2.32	2.03	2.09	7.92	8.10	16.82	17.00
5700MHz_TnomVnom	Pass	8.90	2.64	3.12	2.12	2.09	7.82	8.10	16.72	17.00
5745MHz_TnomVnom	Pass	4.00	3.20	2.51	2.48	3.89	8.44	30.00	12.44	36.00
5785MHz_TnomVnom	Pass	4.00	3.55	2.46	2.45	4.14	8.69	30.00	12.69	36.00
5825MHz_TnomVnom	Pass	4.00	3.08	2.18	2.03	3.60	8.36	30.00	12.36	36.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	7.05	2.84	2.42	2.57	2.47	7.89	15.95	14.94	23.00
5230MHz_TnomVnom	Pass	7.05	2.70	2.53	2.60	2.23	7.85	15.95	14.90	23.00
5270MHz_TnomVnom	Pass	7.55	1.75	1.17	1.14	0.96	6.79	9.45	14.34	17.00
5310MHz_TnomVnom	Pass	7.55	1.54	0.53	1.24	0.94	6.45	9.45	14.00	17.00
5510MHz_TnomVnom	Pass	8.90	-1.56	-1.52	-1.43	-1.37	3.89	8.10	12.79	17.00
5550MHz_TnomVnom	Pass	8.90	-1.51	-1.23	-1.19	-1.27	4.07	8.10	12.97	17.00
5670MHz_TnomVnom	Pass	8.90	-0.63	-1.16	-1.38	-0.59	4.30	8.10	13.20	17.00
5755MHz_TnomVnom	Pass	4.00	-0.35	-0.54	-0.62	1.34	5.24	30.00	9.24	36.00
5795MHz_TnomVnom	Pass	4.00	0.32	0.03	-0.46	1.52	5.63	30.00	9.63	36.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	7.05	-2.67	-1.69	-2.54	-2.44	3.47	15.95	10.52	23.00
5290MHz_TnomVnom	Pass	7.55	-2.64	-3.44	-2.42	-2.74	2.93	9.45	10.48	17.00
5530MHz_TnomVnom	Pass	8.90	-4.41	-4.55	-4.86	-4.89	1.00	8.10	9.90	17.00
5610MHz_TnomVnom	Pass	8.90	-4.47	-4.98	-5.43	-5.06	0.53	8.10	9.43	17.00
5775MHz_TnomVnom	Pass	4.00	-4.66	-5.14	-5.34	-4.33	0.66	30.00	4.66	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 Xpower density;

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
5180MHz

Ch Freq
5.18GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

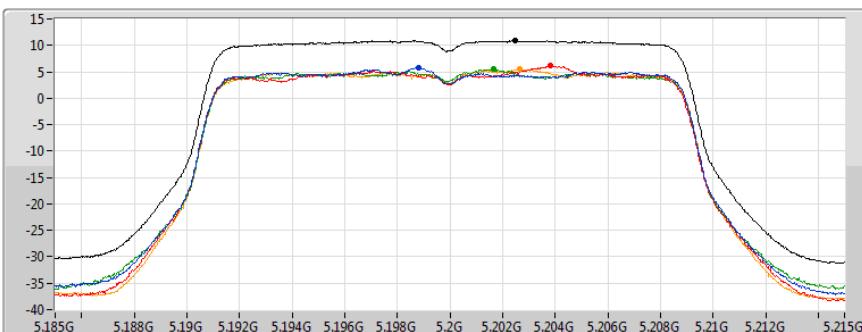

PSD

26/03/2018

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.90	10.90	5.59	6.15	5.31	5.14

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
5200MHz

Ch Freq
5.2GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

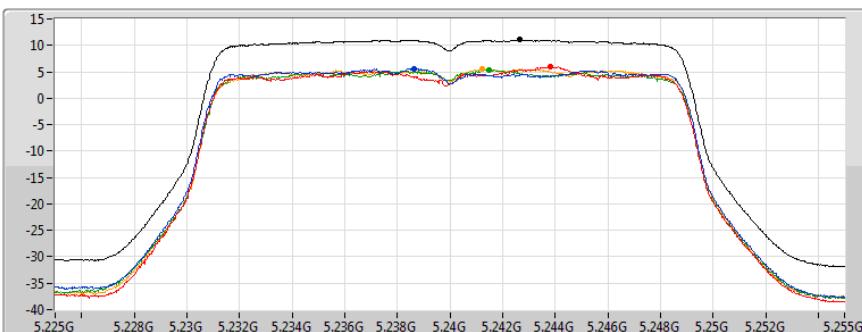

PSD

26/03/2018

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
10.86	10.86	5.71	6.09	5.45	5.45

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
5240MHz

Ch Freq
5.24GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

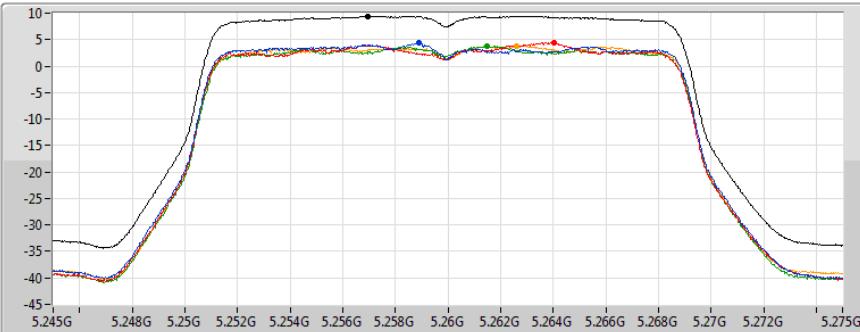

PSD

26/03/2018

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.05	11.05	5.61	5.95	5.31	5.52

**802.11ac VHT20-BF_Nss1,(MCS0)_4TX****5260MHz**

Ch Freq
5.26GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

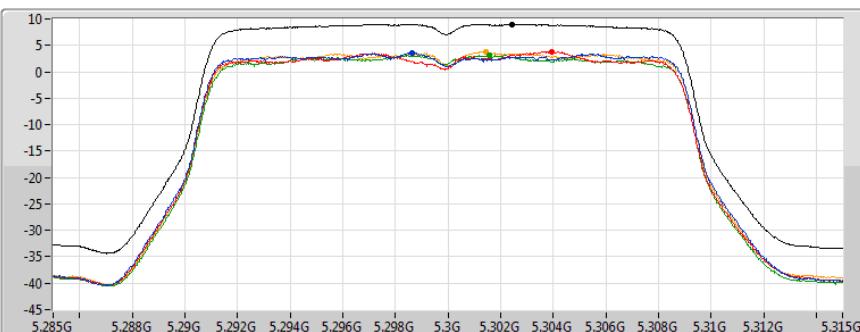
**PSD**

26/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

802.11ac VHT20-BF_Nss1,(MCS0)_4TX**5300MHz**

Ch Freq
5.3GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

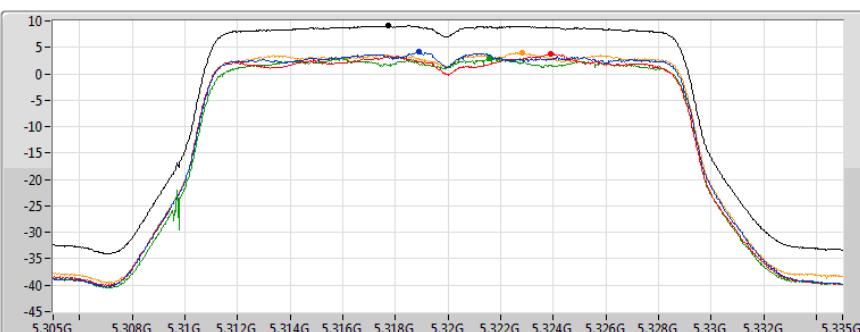
**PSD**

26/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

802.11ac VHT20-BF_Nss1,(MCS0)_4TX**5320MHz**

Ch Freq
5.32GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

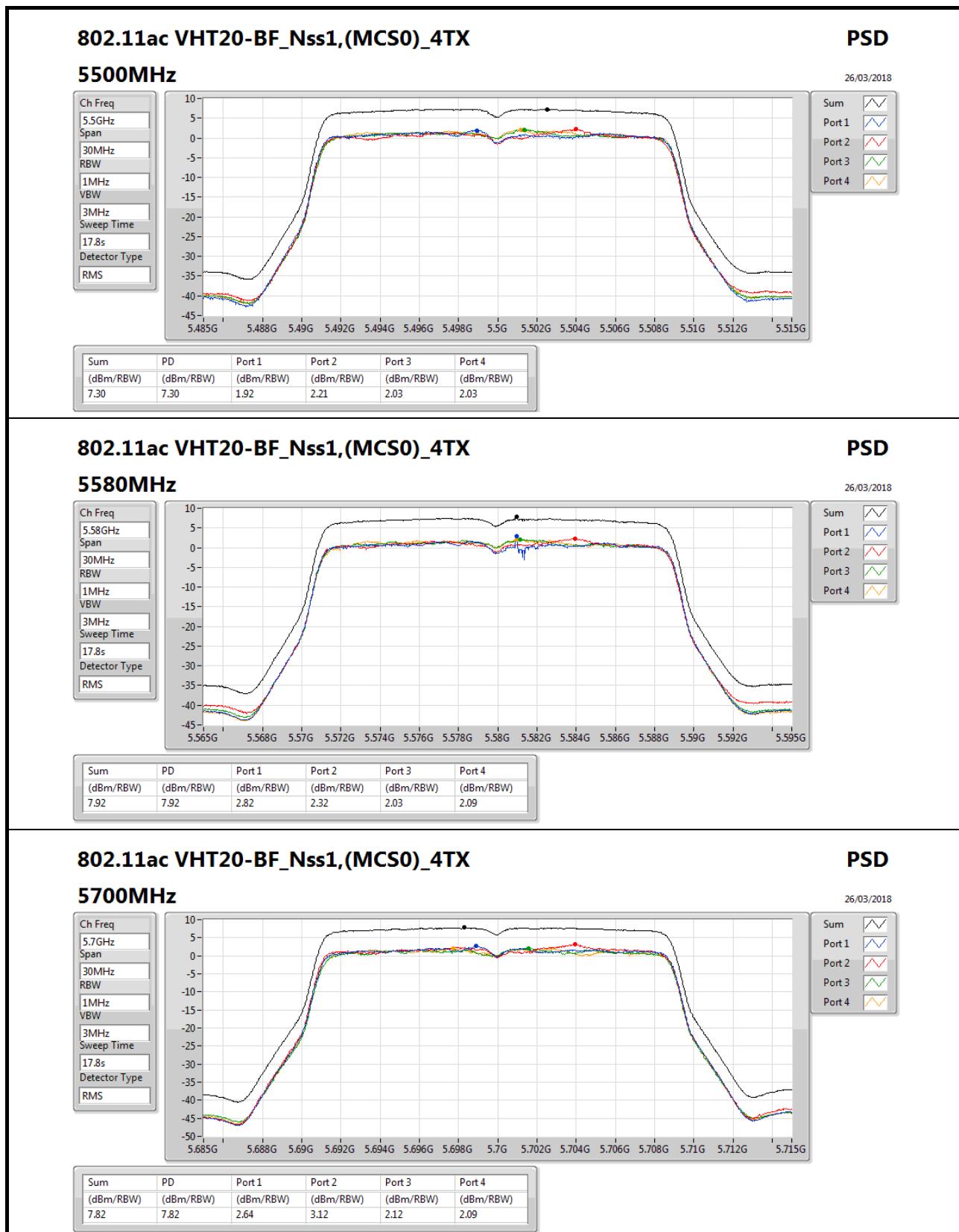
**PSD**

26/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

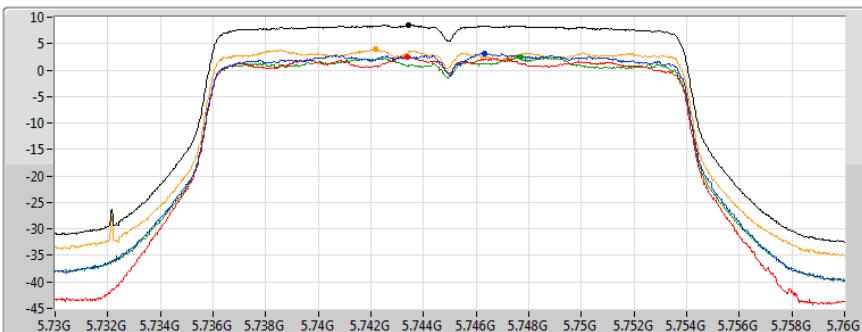
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)

9.07	9.07	4.22	3.68	2.94	3.90
------	------	------	------	------	------



802.11ac VHT20-BF_Nss1,(MCS0)_4TX
5745MHz

Ch Freq
5.745GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

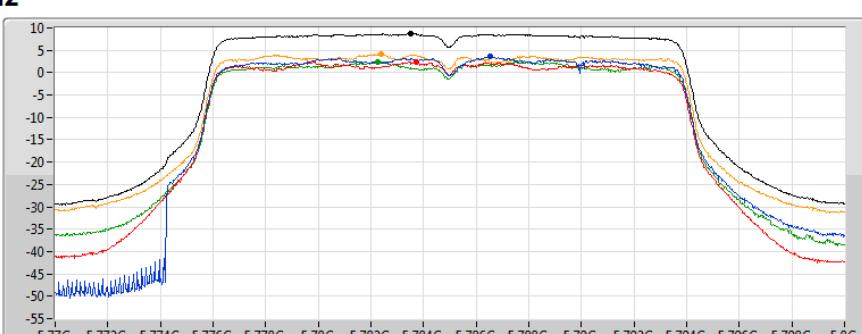

PSD

26/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
5785MHz

Ch Freq
5.785GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS

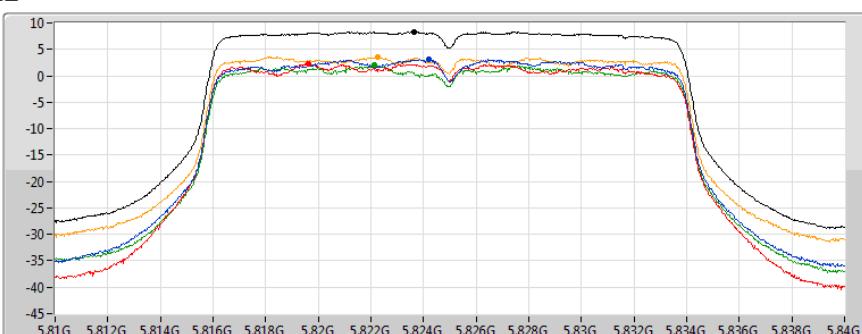

PSD

26/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

802.11ac VHT20-BF_Nss1,(MCS0)_4TX
5825MHz

Ch Freq
5.825GHz
Span
30MHz
RBW
500kHz
VBW
3MHz
Sweep Time
17.8s
Detector Type
RMS


PSD

26/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.44	8.44	3.20	2.51	2.48	3.89

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.69	8.69	3.55	2.46	2.45	4.14

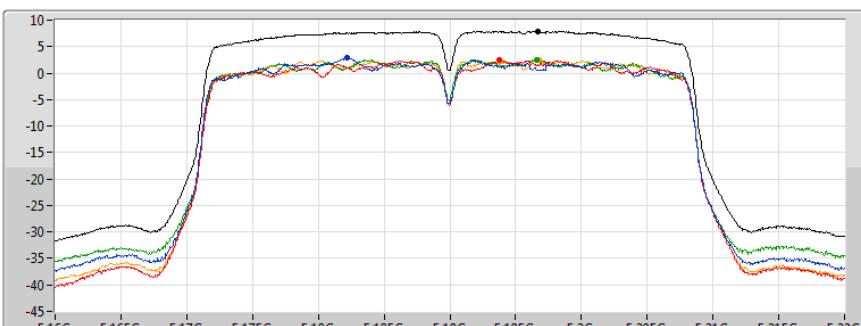
Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.36	8.36	3.08	2.18	2.03	3.60



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5190MHz

Ch Freq
5.19GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
18.6s
Detector Type
RMS



PSD

26/03/2018

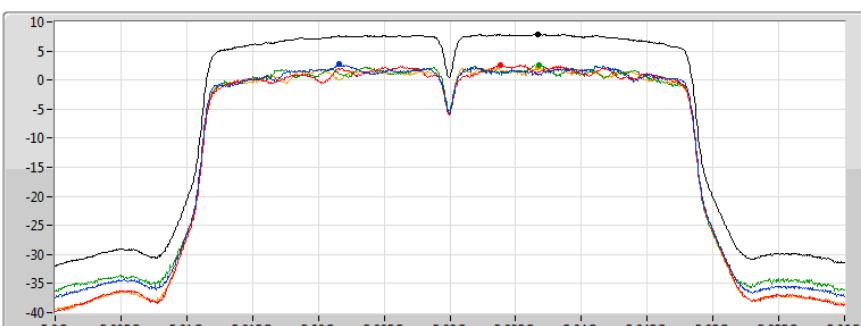
Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.89	7.89	2.84	2.42	2.57	2.47

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5230MHz

Ch Freq
5.23GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
18.6s
Detector Type
RMS



PSD

26/03/2018

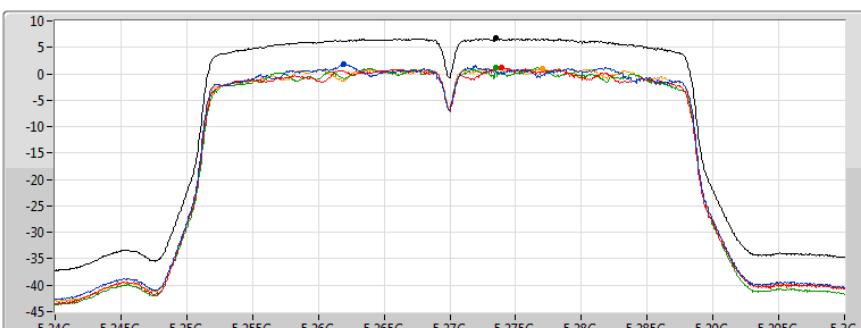
Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.85	7.85	2.70	2.53	2.60	2.23

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

5270MHz

Ch Freq
5.27GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
18.6s
Detector Type
RMS



PSD

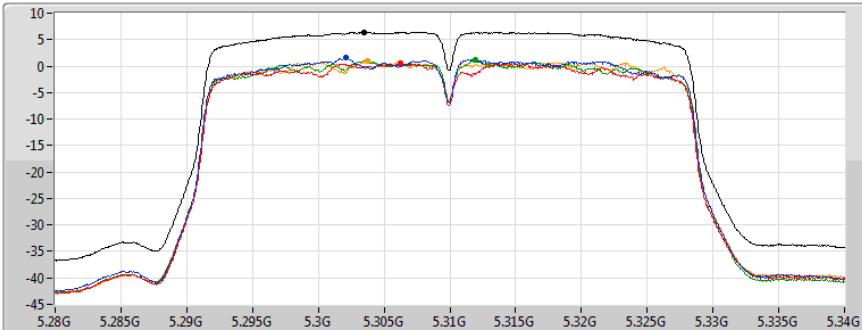
26/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.79	6.79	1.75	1.17	1.14	0.96

802.11ac VHT40-BF_Nss1,(MCS0)_4TX
5310MHz

Ch Freq
5.31GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
18.6s
Detector Type
RMS

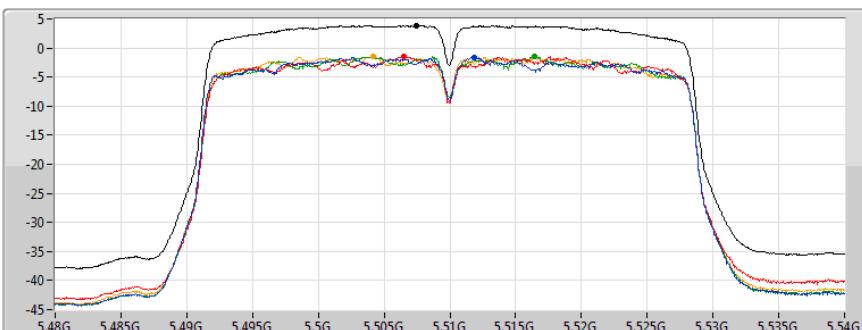

PSD

26/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

802.11ac VHT40-BF_Nss1,(MCS0)_4TX
5510MHz

Ch Freq
5.51GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
18.6s
Detector Type
RMS

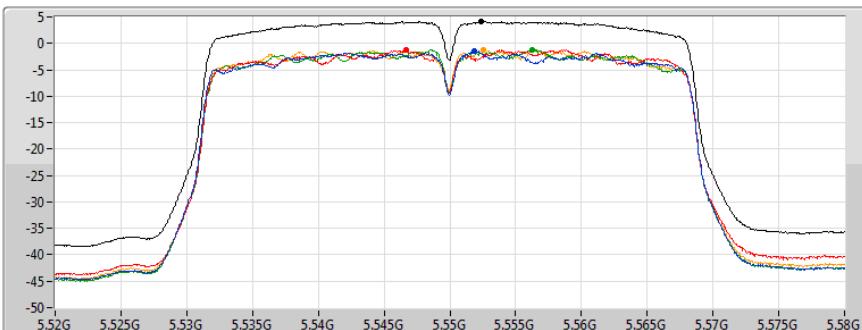

PSD

26/03/2018

Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\

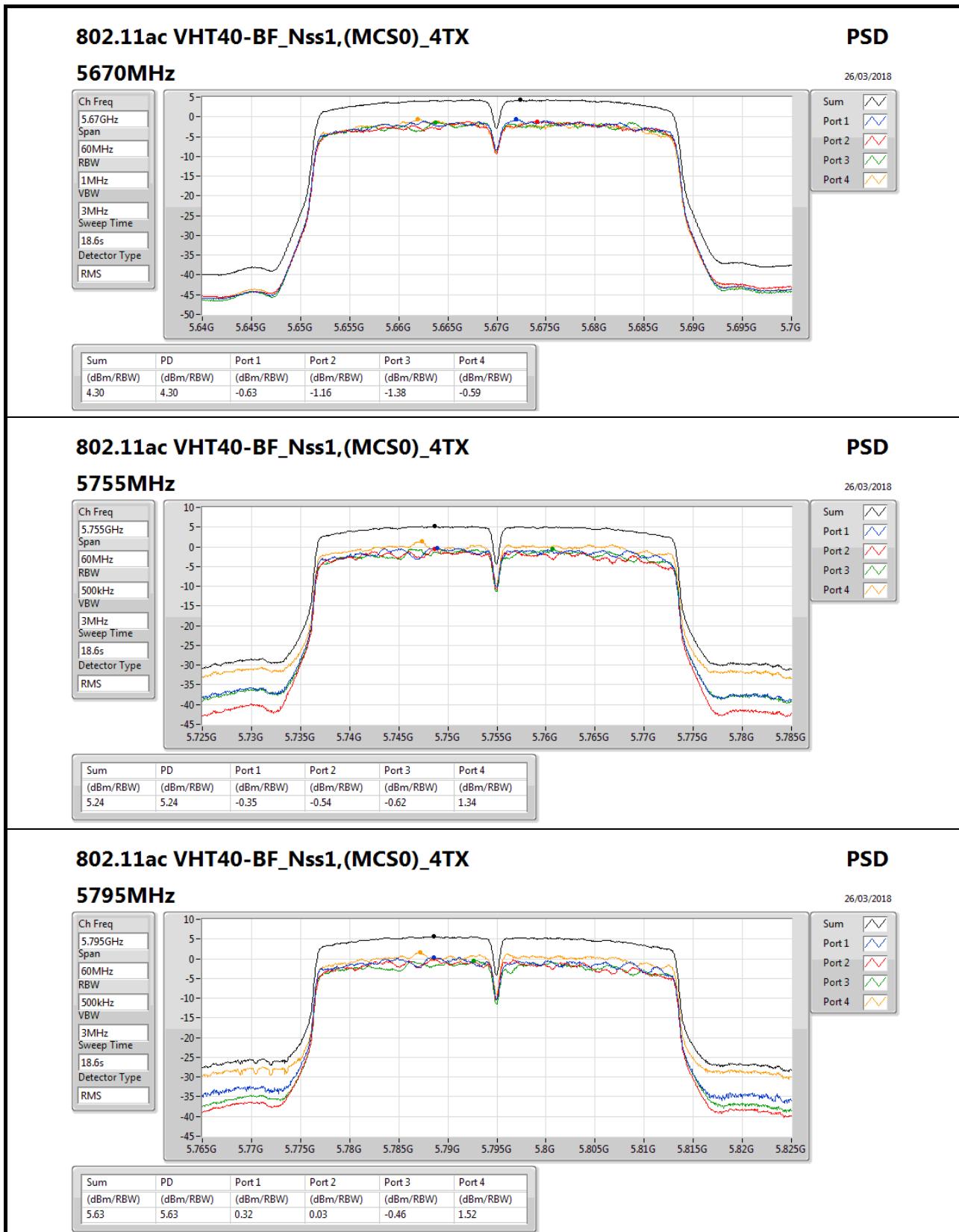
802.11ac VHT40-BF_Nss1,(MCS0)_4TX
5550MHz

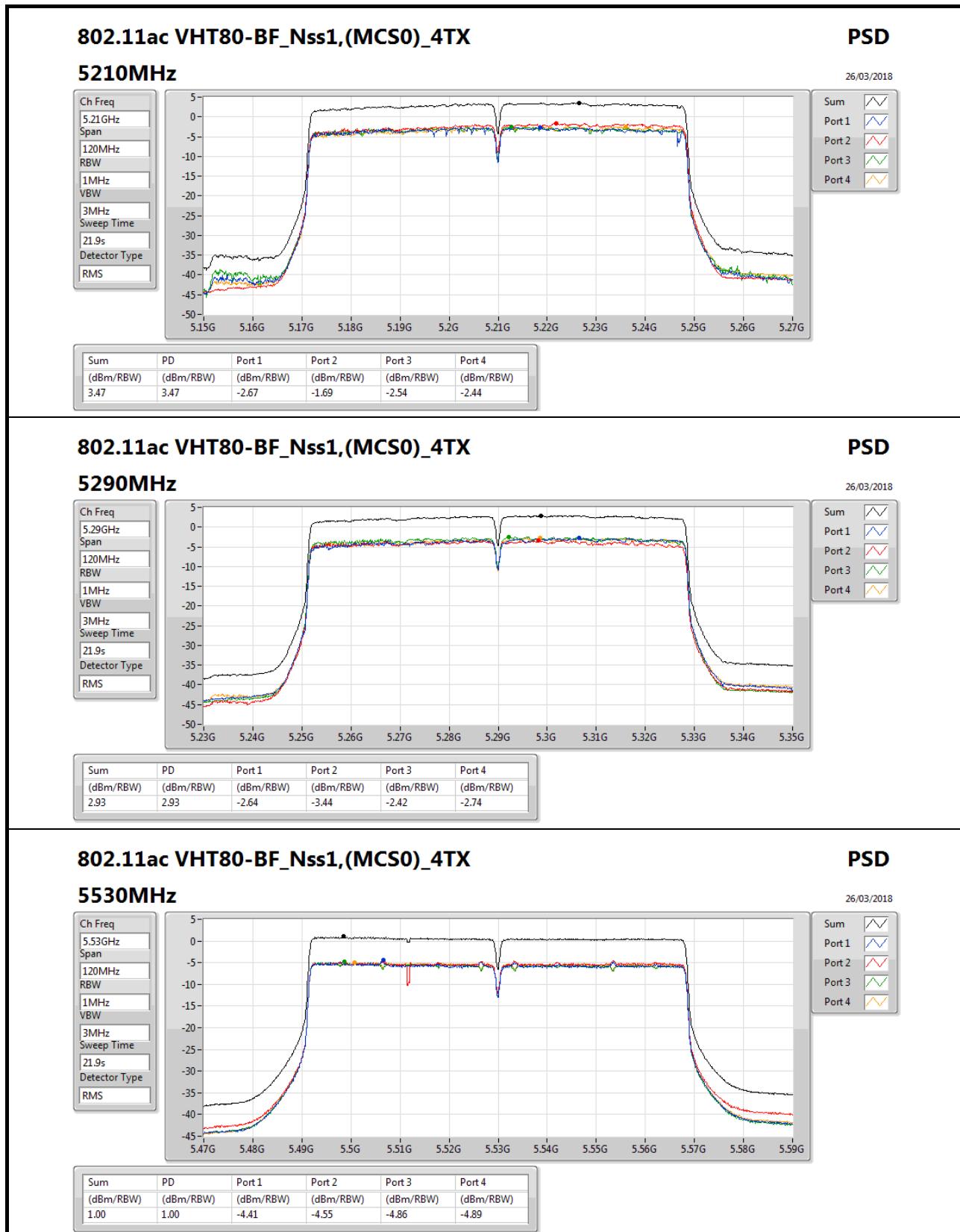
Ch Freq
5.55GHz
Span
60MHz
RBW
1MHz
VBW
3MHz
Sweep Time
18.6s
Detector Type
RMS


PSD

26/03/2018

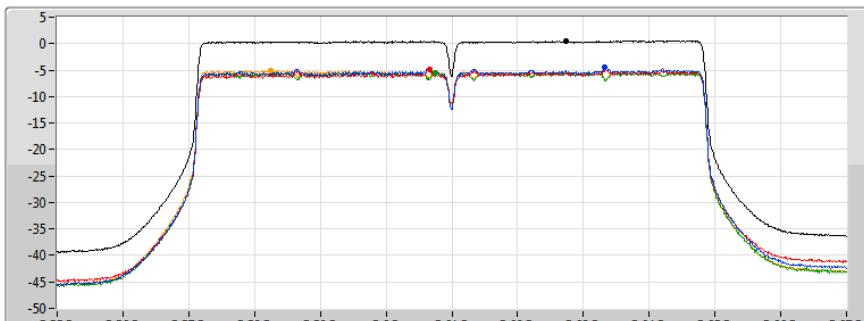
Sum	/\
Port 1	/\
Port 2	/\
Port 3	/\
Port 4	/\





**802.11ac VHT80-BF_Nss1,(MCS0)_4TX****5610MHz**

Ch Freq
5.61GHz
Span
120MHz
RBW
1MHz
VBW
3MHz
Sweep Time
21.9s
Detector Type
RMS

**PSD**

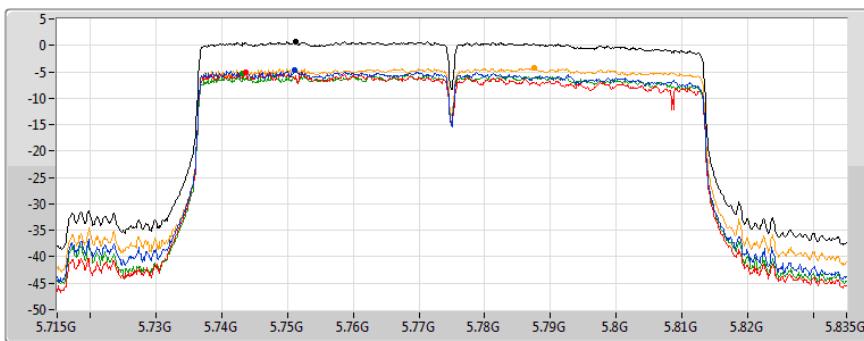
26/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.53	0.53	-4.47	-4.98	-5.43	-5.06

802.11ac VHT80-BF_Nss1,(MCS0)_4TX**5775MHz**

Ch Freq
5.775GHz
Span
120MHz
RBW
500kHz
VBW
3MHz
Sweep Time
21.9s
Detector Type
RMS

**PSD**

26/03/2018

Sum
Port 1
Port 2
Port 3
Port 4

Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
0.66	0.66	-4.66	-5.14	-5.34	-4.33

**Summary**

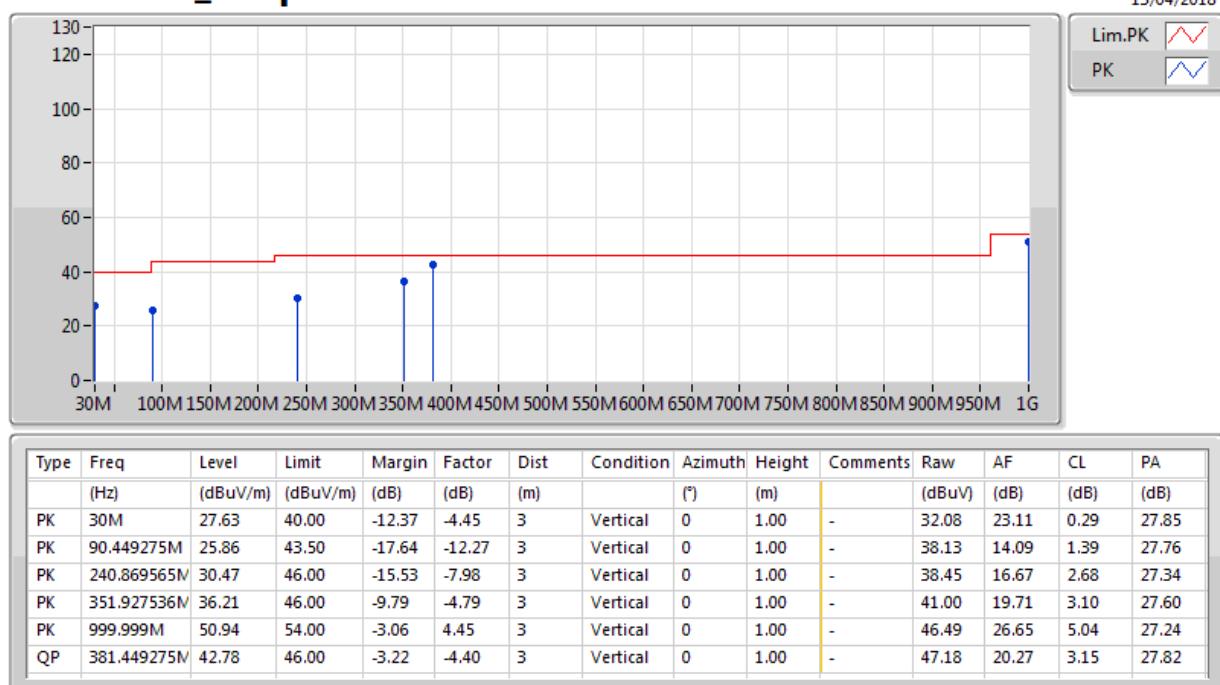
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	PK	440.492754M	43.00	46.00	-3.00	-3.08	3	Horizontal	360	1.00	-
5.47-5.725GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	QP	380.043478M	42.82	46.00	-3.18	-4.44	3	Vertical	0	1.42	-
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	QP	381.449275M	42.90	46.00	-3.10	-4.40	3	Vertical	19	1.46	-

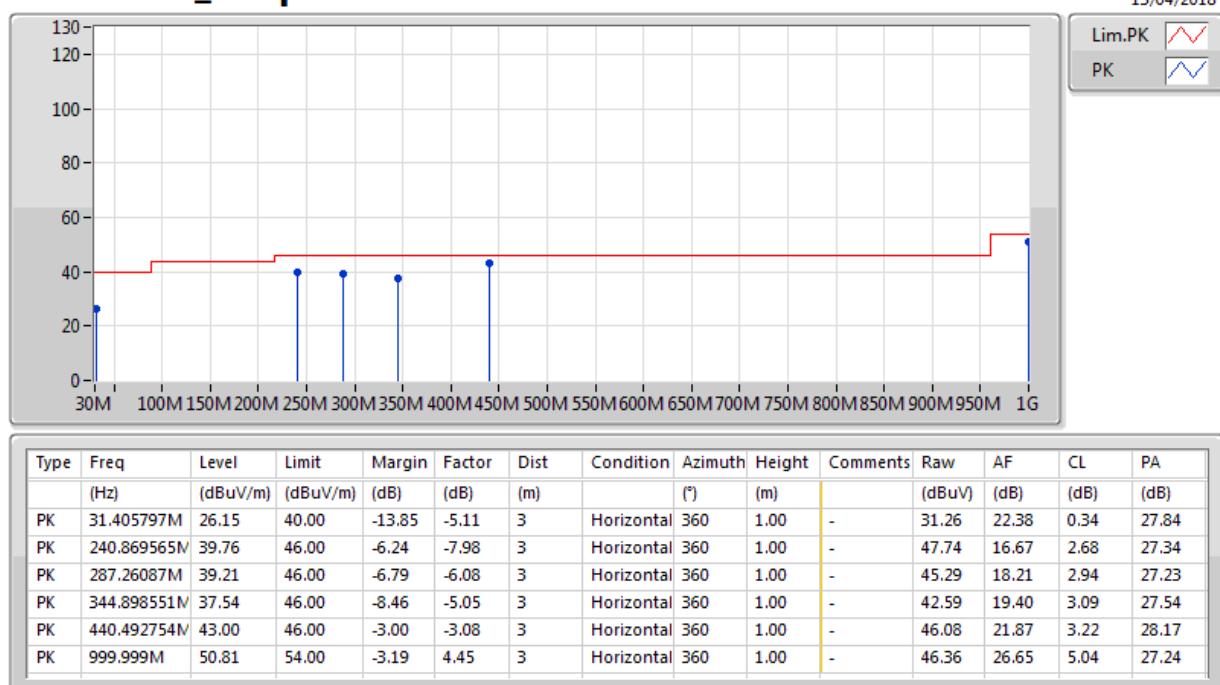
**Result**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	PK	31.405797M	26.15	40.00	-13.85	-5.11	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	240.869565M	39.76	46.00	-6.24	-7.98	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	287.26087M	39.21	46.00	-6.79	-6.08	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	344.898551M	37.54	46.00	-8.46	-5.05	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	440.492754M	43.00	46.00	-3.00	-3.08	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	999.999M	50.81	54.00	-3.19	4.45	3	Horizontal	360	1.00	-
5210MHz	Pass	PK	30M	27.63	40.00	-12.37	-4.45	3	Vertical	0	1.00	-
5210MHz	Pass	PK	90.449275M	25.86	43.50	-17.64	-12.27	3	Vertical	0	1.00	-
5210MHz	Pass	PK	240.869565M	30.47	46.00	-15.53	-7.98	3	Vertical	0	1.00	-
5210MHz	Pass	PK	351.927536M	36.21	46.00	-9.79	-4.79	3	Vertical	0	1.00	-
5210MHz	Pass	PK	999.999M	50.94	54.00	-3.06	4.45	3	Vertical	0	1.00	-
5210MHz	Pass	QP	381.449275M	42.78	46.00	-3.22	-4.40	3	Vertical	0	1.00	-
5530MHz	Pass	PK	31.405797M	25.15	40.00	-14.85	-5.11	3	Horizontal	360	1.00	-
5530MHz	Pass	PK	239.463768M	41.41	46.00	-4.59	-8.14	3	Horizontal	360	1.00	-
5530MHz	Pass	PK	288.666667M	38.35	46.00	-7.65	-6.04	3	Horizontal	360	1.00	-
5530MHz	Pass	PK	399.724638M	41.92	46.00	-4.08	-3.70	3	Horizontal	360	1.00	-
5530MHz	Pass	PK	440.492754M	42.40	46.00	-3.60	-3.08	3	Horizontal	360	1.00	-
5530MHz	Pass	PK	999.999M	49.31	54.00	-4.69	4.45	3	Horizontal	360	1.00	-
5530MHz	Pass	PK	30M	27.13	40.00	-12.87	-4.45	3	Vertical	0	1.00	-
5530MHz	Pass	PK	238.057971M	31.90	46.00	-14.10	-8.33	3	Vertical	0	1.00	-
5530MHz	Pass	PK	273.202899M	25.82	46.00	-20.18	-6.34	3	Vertical	0	1.00	-
5530MHz	Pass	PK	484.072464M	41.87	46.00	-4.13	-2.32	3	Vertical	0	1.00	-
5530MHz	Pass	PK	999.999M	50.44	54.00	-3.56	4.45	3	Vertical	0	1.00	-
5530MHz	Pass	QP	380.043478M	42.82	46.00	-3.18	-4.44	3	Vertical	0	1.42	-
5775MHz	Pass	PK	30M	25.22	40.00	-14.78	-4.45	3	Horizontal	360	1.00	-
5775MHz	Pass	PK	239.463768M	41.89	46.00	-4.11	-8.14	3	Horizontal	360	1.00	-
5775MHz	Pass	PK	288.666667M	38.26	46.00	-7.74	-6.04	3	Horizontal	360	1.00	-
5775MHz	Pass	PK	406.753623M	42.39	46.00	-3.61	-3.33	3	Horizontal	360	1.00	-
5775MHz	Pass	PK	791.942029M	42.41	46.00	-3.59	1.27	3	Horizontal	360	1.00	-
5775MHz	Pass	PK	999.999M	48.93	54.00	-5.07	4.45	3	Horizontal	360	1.00	-
5775MHz	Pass	PK	30M	28.26	40.00	-11.74	-4.45	3	Vertical	0	1.00	-
5775MHz	Pass	PK	200.101449M	24.36	43.50	-19.14	-10.63	3	Vertical	0	1.00	-
5775MHz	Pass	PK	239.463768M	31.39	46.00	-14.61	-8.14	3	Vertical	0	1.00	-
5775MHz	Pass	PK	457.362319M	42.89	46.00	-3.11	-2.81	3	Vertical	0	1.00	-
5775MHz	Pass	PK	999.999M	49.59	54.00	-4.41	4.45	3	Vertical	0	1.00	-
5775MHz	Pass	QP	381.449275M	42.90	46.00	-3.10	-4.40	3	Vertical	19	1.46	-

802.11ac VHT80_Nss1,(MCS0)_4TX

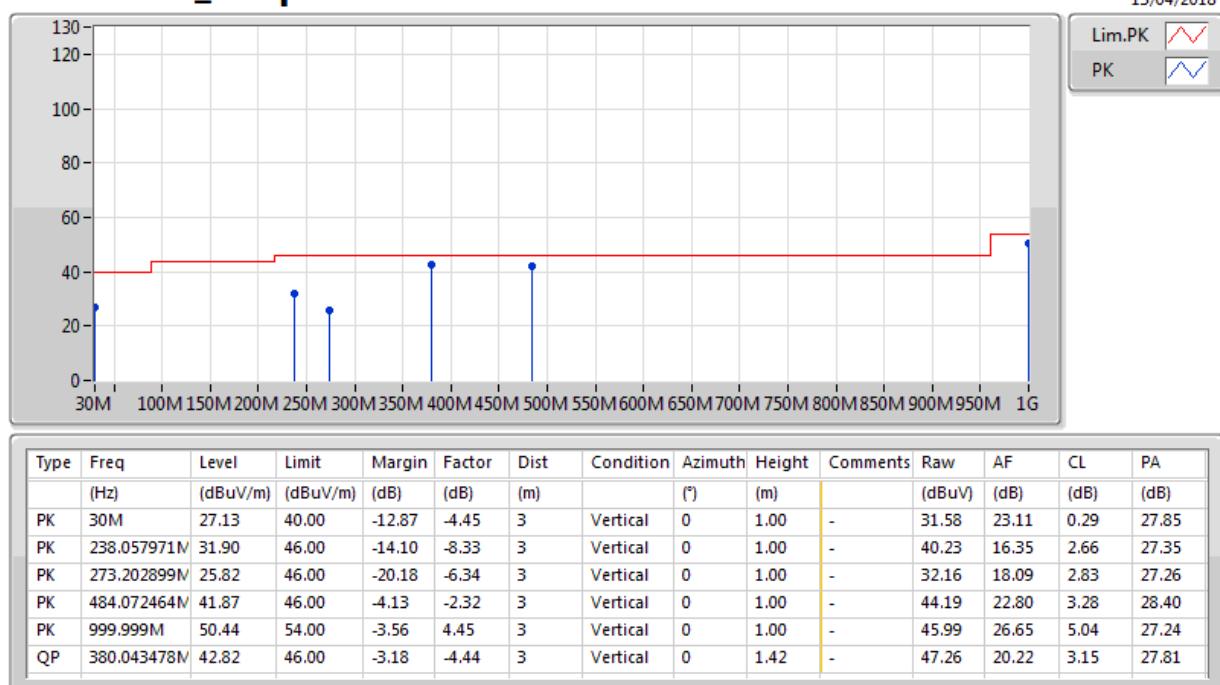
5210MHz_adapter

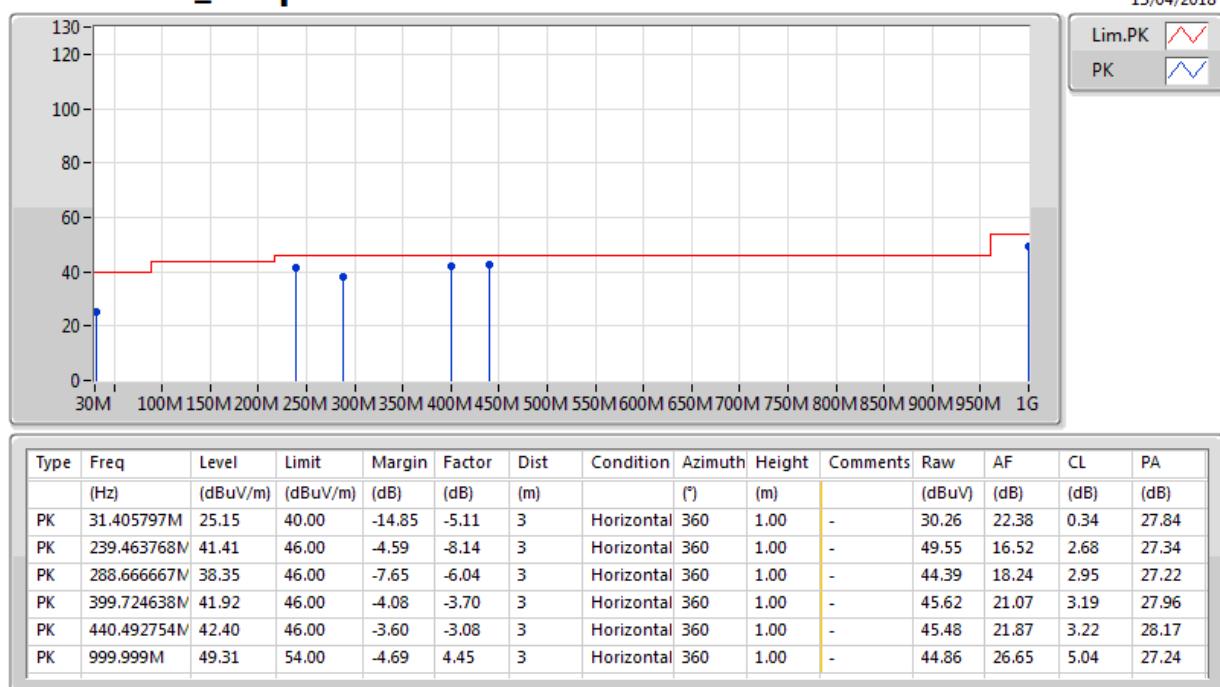


**802.11ac VHT80_Nss1,(MCS0)_4TX****5210MHz_adapter**

802.11ac VHT80_Nss1,(MCS0)_4TX

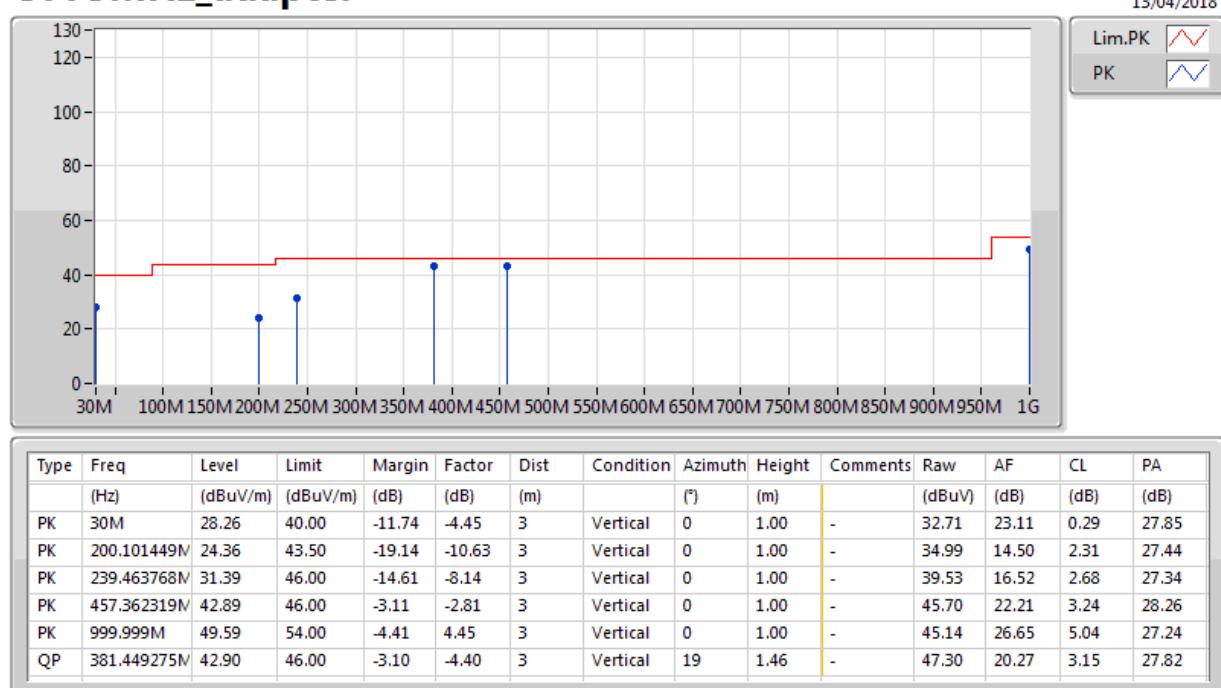
5530MHz_adapter



**802.11ac VHT80_Nss1,(MCS0)_4TX****5530MHz_adapter**

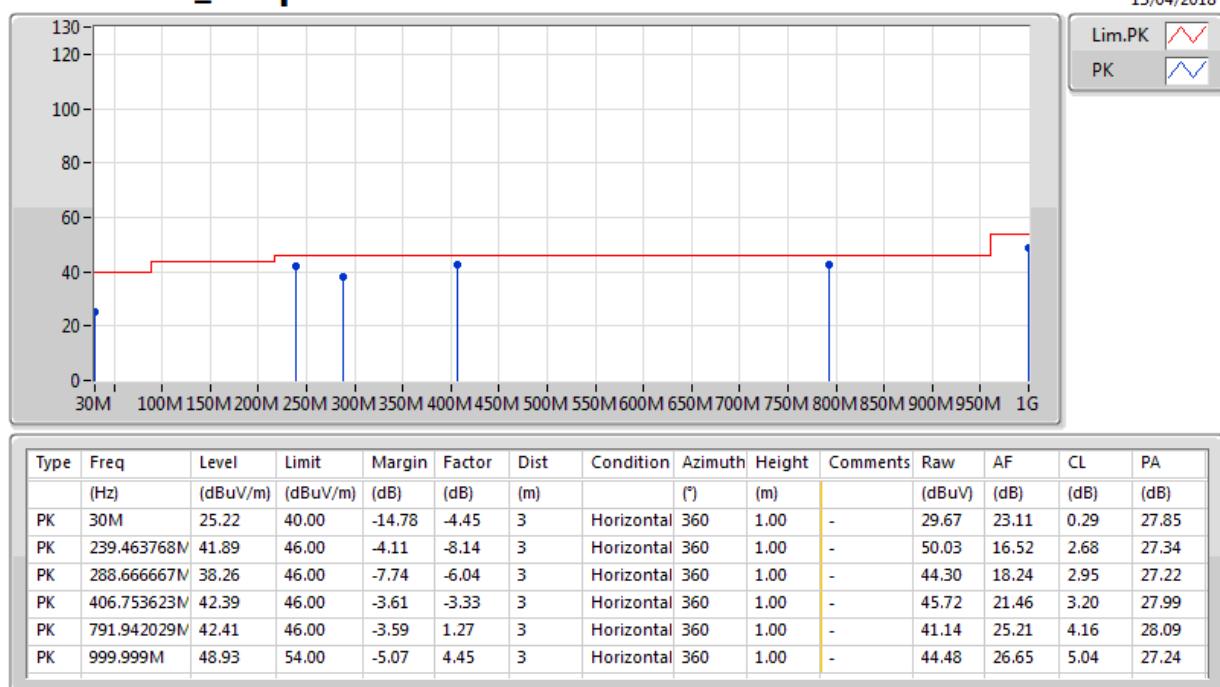
802.11ac VHT80_Nss1,(MCS0)_4TX

5775MHz_adapter



802.11ac VHT80_Nss1,(MCS0)_4TX

5775MHz_adapter



**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	Pass	AV	5.1468G	53.36	54.00	-0.64	3.75	3	Vertical	38	3.00	-
802.11ac VHT20_Nss1,(MCS0)_4TX	Pass	AV	5.149995G	53.58	54.00	-0.42	3.75	3	Horizontal	8	1.46	-
802.11ac VHT40_Nss1,(MCS0)_4TX	Pass	AV	5.1476G	53.47	54.00	-0.53	3.75	3	Vertical	36	1.48	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	AV	5.135G	52.64	54.00	-1.36	3.72	3	Vertical	37	1.40	-
5.25-5.35GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	Pass	AV	5.350005G	53.39	54.00	-0.61	4.08	3	Vertical	59	2.45	-
802.11ac VHT20_Nss1,(MCS0)_4TX	Pass	AV	5.3504G	53.86	54.00	-0.14	4.08	3	Vertical	57	1.72	-
802.11ac VHT40_Nss1,(MCS0)_4TX	Pass	AV	5.3616G	53.42	54.00	-0.58	4.09	3	Horizontal	1	1.50	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	AV	5.355G	53.84	54.00	-0.16	4.09	3	Horizontal	0	1.44	-
5.47-5.725GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	Pass	PK	5.4674G	68.07	68.20	-0.13	4.27	3	Vertical	4	1.57	-
802.11ac VHT20_Nss1,(MCS0)_4TX	Pass	PK	5.4684G	67.94	68.20	-0.26	4.27	3	Vertical	3	1.56	-
802.11ac VHT40_Nss1,(MCS0)_4TX	Pass	PK	5.4696G	67.99	68.20	-0.21	4.27	3	Vertical	29	1.67	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	PK	5.469G	68.10	68.20	-0.10	4.27	3	Vertical	26	1.67	-
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	Pass	AV	11.65G	44.99	54.00	-9.01	15.14	3	Horizontal	42	1.47	-
802.11ac VHT20_Nss1,(MCS0)_4TX	Pass	AV	11.64976G	45.97	54.00	-8.03	15.14	3	Horizontal	69	2.12	-
802.11ac VHT40_Nss1,(MCS0)_4TX	Pass	PK	5.6242G	57.18	68.20	-11.02	4.53	3	Vertical	333	2.73	-
802.11ac VHT80_Nss1,(MCS0)_4TX	Pass	PK	5.649G	59.24	68.20	-8.96	4.58	3	Horizontal	3	1.37	-