

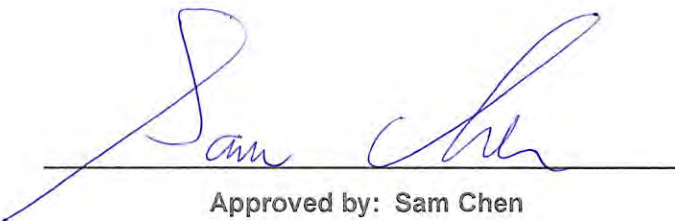


RADIO TEST REPORT

FCC ID : NKR-ATTC61W1
Equipment : Wireless Genie Mini
Brand Name : DirecTV
Model Name : C61W-400, C61WBP-400, C61WNC-400
Applicant : Wistron NeWeb Corporation
20 Park Avenue II Hsinchu Science Park Hsinchu,
308 Taiwan
Manufacturer : Wistron NeWeb Corporation
20 Park Avenue II Hsinchu Science Park Hsinchu,
308 Taiwan
Standard : 47 CFR FCC Part 15.407

The product was received on Feb. 11, 2017, and testing was started from Feb. 11, 2017 and completed on Jul. 15, 2023. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

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



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Photographs of EUT v01



History of this test report

Report No.	Version	Description	Issued Date
FR730747-01AB	01	Initial issue of report	Jul. 25, 2023



Summary of Test Result

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

Note: Reference to Sporton Project No.: 730747

Conformity Assessment Condition:

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

Disclaimer:

1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
2. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.

Reviewed by: Sam Chen**Report Producer: Viola Huang**



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]

For AP Router mode

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



Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11n HT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX

For Slave mode

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.15-5.25GHz	802.11n HT20	20	4TX
5.15-5.25GHz	802.11n HT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11n HT40	40	4TX
5.15-5.25GHz	802.11n HT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.25-5.35GHz	802.11a	20	4TX
5.25-5.35GHz	802.11n HT20	20	4TX
5.25-5.35GHz	802.11n HT20-BF	20	4TX
5.25-5.35GHz	802.11ac VHT20	20	4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	4TX
5.25-5.35GHz	802.11n HT40	40	4TX
5.25-5.35GHz	802.11n HT40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT40	40	4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT80	80	4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	4TX
5.47-5.725GHz	802.11a	20	4TX
5.47-5.725GHz	802.11n HT20	20	4TX
5.47-5.725GHz	802.11n HT20-BF	20	4TX
5.47-5.725GHz	802.11ac VHT20	20	4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	4TX



Band	Mode	BWch (MHz)	Nant
5.47-5.725GHz	802.11n HT40	40	4TX
5.47-5.725GHz	802.11n HT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT40	40	4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT80	80	4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11a	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11n HT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11n HT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT80	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.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	2	WNC	ANT1	PCB	N/A	Note 1
2	1	WNC	ANT2	PCB	N/A	
3	1	Airgain	N5X35BCMY	PIFA	I-PEX	
4	2	Airgain	N5X35BCHY	PIFA	I-PEX	
5	3	Airgain	N5X35BC2MY	PIFA	I-PEX	
6	4	Airgain	N5X35BC2MY	PIFA	I-PEX	

Note 1:

Ant.	Gain (dBi)						
	2.4GHz	2.45G	2.4835G	5.2GHz	5.3GHz	5.6GHz	5.785GHz
1	1.66	2.79	2.77	-	-	-	-
2	3.72	3.49	2.32	-	-	-	-
3	-	-	-	1.89	1.77	1.83	2.06
4	-	-	-	1.73	2.2	1.35	1.77
5	-	-	-	2.07	1.91	1.25	2.61
6	-	-	-	2.94	2.67	3.22	3.11
Items	Directional Gain (dBi)						
4T1S	-	-	-	4.53	4.63	4.42	6
4T2S	-	-	-	2.94	2.67	3.22	3.11
4T4S	-	-	-	2.94	2.67	3.22	3.11

Note 2: The above information (except gain) was declared by manufacturer.

Note 3: 2.4GHz, 5GHz UNII 1~UNII 3: Maximum Directional Gain following KDB662911 D03.

For 2.4GHz:

For IEEE802.15.4 (1TX/1RX)

The EUT supports the antenna with TX and RX diversity functions.

Both Port 1 and Port 2 support transmit and receive functions, but only one of them will be used at one time.

The Port 1 generated the worst case, so it was selected to test and record in the report.

For 5GHz UNII 1~UNII 3:

For IEEE 802.11a/n/ac (4TX/4RX)

Port 1~Port 4 can be used as transmitting/receiving antenna.

Port 1~Port 4 could transmit/receive simultaneously.



1.1.3 Mode Test Duty Cycle

For AP Router mode / 4T1S and 4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.986	0.061	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20-BF	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	0.956	0.195	940u	3k
802.11ac VHT40-BF	0.956	0.195	940u	3k
802.11ac VHT80	0.909	0.414	3.39m	300
802.11ac VHT80-BF	0.909	0.414	3.39m	300

For Slave mode / 4T1S and 4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.986	0.061	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20-BF	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	0.956	0.195	940u	3k
802.11ac VHT40-BF	0.956	0.195	940u	3k
802.11ac VHT80	0.909	0.414	3.39m	300
802.11ac VHT80-BF	0.909	0.414	3.39m	300

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter			
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
	The product has beamforming function for 11n/11ac in 5GHz.			
Weather Band	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/>	Without 5600~5650MHz
Function	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
TPC Function	<input checked="" type="checkbox"/>	With TPC	<input type="checkbox"/>	Without TPC
Channel Puncturing Function	<input type="checkbox"/>	Supported	<input checked="" type="checkbox"/>	Unsupported
Test Software Version	Tera Term Version 4.75			

Note: The above information was declared by manufacturer.



1.1.5 Table for Multiple Listing

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

Model Name	Description
C61W-400	All the models are identical, the different model names served as package different.
C61WBP-400	
C61WNC-400	

Note 1: From the above models, model: C61W-400 was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.1.6 EUT Support Function

Function	Supports Type	Supports band
AP	Master	5GHz UNII 1/3, RF4CE
Slave	Slave without Radar	5GHz UNII 1~3, RF4CE

Note: The EUT supports AP / Slave functions, only the Slave function was performed for AC power-line conducted emissions and Unwanted Emissions below 1GHz test, and it was based on manufacturer's request.



1.2 Applicable Standards

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

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

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

- ◆ FCC KDB 662911 D03 v01
- ◆ FCC KDB 412172 D01 v01r01
- ◆ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

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

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH02-CB	Ken Yeh	22.9~24 / 60~63	Jun. 14, 2023 ~ Jul. 18, 2023
Radiated below 1GHz	03CH05-CB	Black Lu	21.7~22.9 / 58~62	May 30, 2023 ~ Jul. 06, 2023
Radiated above 1GHz	03CH02-CB	Ederson Huang	20~21 / 55~58	Feb. 11, 2017 ~ Mar. 14, 2017 (for B1~B2, B4) and Jun. 21, 2023 ~ Jul. 15, 2023 (for B3)
	03CH05-CB		21.7~22.8 / 56~59	
AC Conduction	CO01-CB	Gray Lee	22~23 / 47~48	Jul. 07, 2023

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))

For test date before Apr. 08, 2020

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%

**Test date before Jun. 01, 2023**

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

Test date after May 31, 2023

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

For AP mode UNII 1 / 4T1S

Mode	Power Setting
802.11a_(6Mbps)_4TX	-
5180MHz	75
5200MHz	83
5240MHz	84
802.11ac VHT20_Nss1,(MCS0)_4TX	-
5180MHz	72
5200MHz	78
5240MHz	84
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5190MHz	63
5230MHz	83
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5210MHz	63
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5180MHz	74
5200MHz	80
5240MHz	84
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5190MHz	63
5230MHz	79
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5210MHz	60

For 4T2S

Mode	Power Setting
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-
5180MHz	74
5200MHz	84
5240MHz	84
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-
5190MHz	63
5230MHz	84
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-
5210MHz	62



For Slave mode UNII 1~3 and AP mode UNII 3 / 4T1S

Mode	Power Setting
802.11a_(6Mbps)_4TX	-
5180MHz	67
5200MHz	67
5240MHz	68
5260MHz	68
5300MHz	70
5320MHz	70
5500MHz	69
5580MHz	60
5700MHz	58
5720MHz Straddle 5.47-5.725GHz	69
5720MHz Straddle 5.725-5.85GHz	69
5745MHz	84
5785MHz	84
5825MHz	84
802.11ac VHT20_Nss1,(MCS0)_4TX	-
5180MHz	68
5200MHz	68
5240MHz	68
5260MHz	70
5300MHz	71
5320MHz	72
5500MHz	60
5580MHz	63
5700MHz	57
5720MHz Straddle 5.47-5.725GHz	72
5720MHz Straddle 5.725-5.85GHz	72
5745MHz	84
5785MHz	84
5825MHz	84
802.11ac VHT40_Nss1,(MCS0)_4TX	-
5190MHz	63
5230MHz	70
5270MHz	70
5310MHz	66
5510MHz	52
5550MHz	73
5670MHz	64
5710MHz Straddle 5.47-5.725GHz	76



Mode	Power Setting
5710MHz Straddle 5.725-5.85GHz	76
5755MHz	84
5795MHz	84
802.11ac VHT80_Nss1,(MCS0)_4TX	-
5210MHz	63
5290MHz	63
5530MHz	51
5610MHz	70
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
5775MHz	82
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-
5180MHz	65
5200MHz	65
5240MHz	66
5260MHz	67
5300MHz	67
5320MHz	67
5500MHz	62
5580MHz	65
5700MHz	55
5720MHz Straddle 5.47-5.725GHz	70
5720MHz Straddle 5.725-5.85GHz	70
5745MHz	84
5785MHz	84
5825MHz	84
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-
5190MHz	63
5230MHz	65
5270MHz	66
5310MHz	64
5510MHz	50
5550MHz	67
5670MHz	67
5710MHz Straddle 5.47-5.725GHz	72
5710MHz Straddle 5.725-5.85GHz	72
5755MHz	84
5795MHz	84
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-
5210MHz	60



Mode	Power Setting
5290MHz	65
5530MHz	50
5610MHz	67
5690MHz Straddle 5.47-5.725GHz	72
5690MHz Straddle 5.725-5.85GHz	72
5775MHz	78

For 4T2S

Mode	Power Setting
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-
5180MHz	71
5200MHz	71
5240MHz	71
5260MHz	71
5300MHz	71
5320MHz	71
5500MHz	64
5580MHz	68
5700MHz	63
5720MHz Straddle 5.47-5.725GHz	73
5720MHz Straddle 5.725-5.85GHz	73
5745MHz	84
5785MHz	84
5825MHz	84
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-
5190MHz	63
5230MHz	70
5270MHz	69
5310MHz	64
5510MHz	58
5550MHz	71
5670MHz	70
5710MHz Straddle 5.47-5.725GHz	74
5710MHz Straddle 5.725-5.85GHz	74
5755MHz	84
5795MHz	84
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-
5210MHz	62
5290MHz	65
5530MHz	56
5610MHz	72



Mode	Power Setting
5690MHz Straddle 5.47-5.725GHz	74
5690MHz Straddle 5.725-5.85GHz	74
5775MHz	80

Note:

- ♦ Evaluated VHT20/VHT40/VHT80 mode only due to the similar modulation. The power setting of HT20/HT40 mode are the same or lower than VHT20/VHT40.



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Normal Link (Slave mode) / CTX (RF4CE)
1	Normal Link_Slave mode_EUT + YPbPr mode + CTX_RF4CE
2	Normal Link_Slave mode_EUT + CVBS mode + CTX_RF4CE
For operating mode 2 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Output Power 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	Normal Link (Slave mode) / CTX (RF4CE) After evaluating, the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	Normal Link_Slave mode_EUT in Z axis + YPbPr mode + CTX_RF4CE
2	Normal Link_Slave mode_EUT in Z axis + CVBS mode + CTX_RF4CE
For operating mode 2 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX After evaluating, the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT in Z axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	RF4CE + WLAN 5GHz
Refer to Sporton Test Report No.: FA730747-01 for Co-location RF Exposure Evaluation.	



Note : The Adapter is for measurement only, would not be marketed.

Adapter information as below:

Power	Brand	Model
Adapter	DIRECTV	EPS10R4-08

2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

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

The program was executed as follows:

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

For Normal Link:

During the test, the EUT operation to normal function.



2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Load Device	NA	NA	N/A
B	TV1	SONY	KLV-32U300A	N/A
C	LCD Monitor	PHILIPS	288E2A/96	N/A
D	AP Router	VeriZon	FiOS-1100	N/A
E	NB	DELL	E6430	N/A
F	Adapter	DIRECTV	EPS10R4-08	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Load device	N/A	TV Simulator	N/A
B	WLAN AP	Verizon	Fios-G1100	N/A
C	Notebook	Lenovo	L440	N/A
D	LCD TV	SONY	KLV-26U300A	N/A
E	LCD TV	PHIPLIPS	HOMeP	N/A
F	Adapter	DIRECTV	EPS10R4-08	N/A

For Radiated (above 1GHz):

For non beamforming mode

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture	N/A	N/A	N/A
C	Adapter	DIRECTV	EPS10R-08	N/A



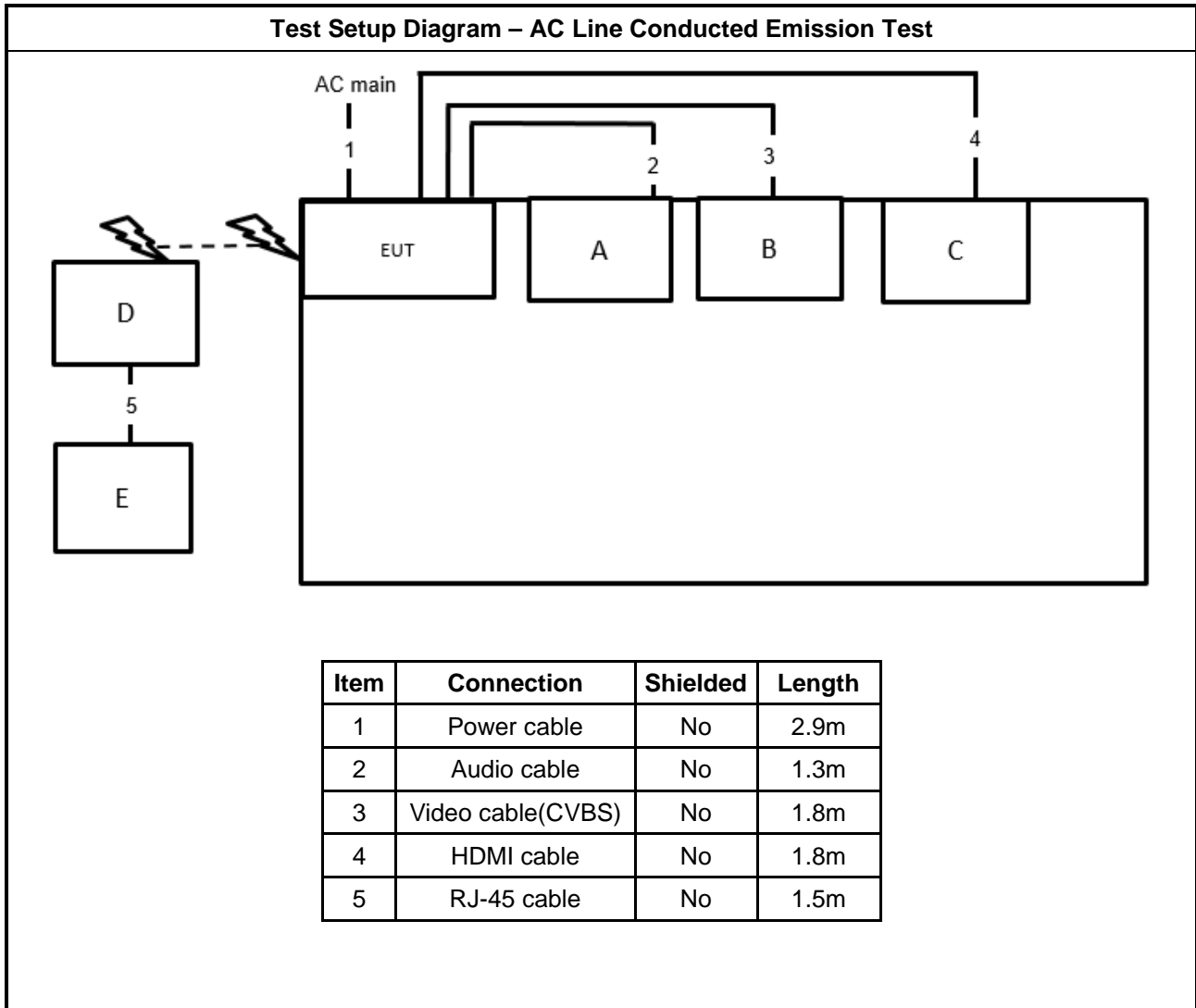
For beamforming mode

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Fixture	N/A	N/A	N/A
C	Notebook	DELL	E4300	N/A
D	RX Device	AT&T	C61W-400	NKR-ATTC61W
E	Adapter	DIRECTV	EPS10R4-08	N/A

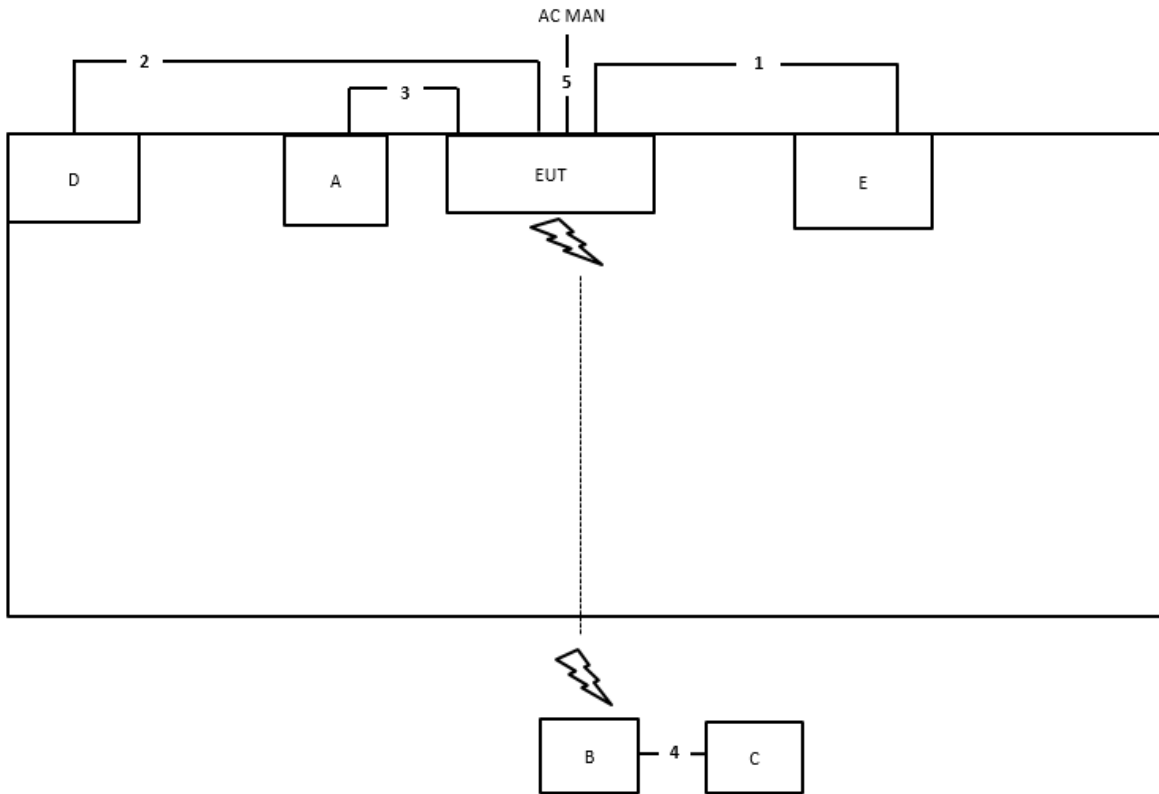
For RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	Adapter	DIRECTV	EPS10R-08	N/A

2.6 Test Setup Diagram

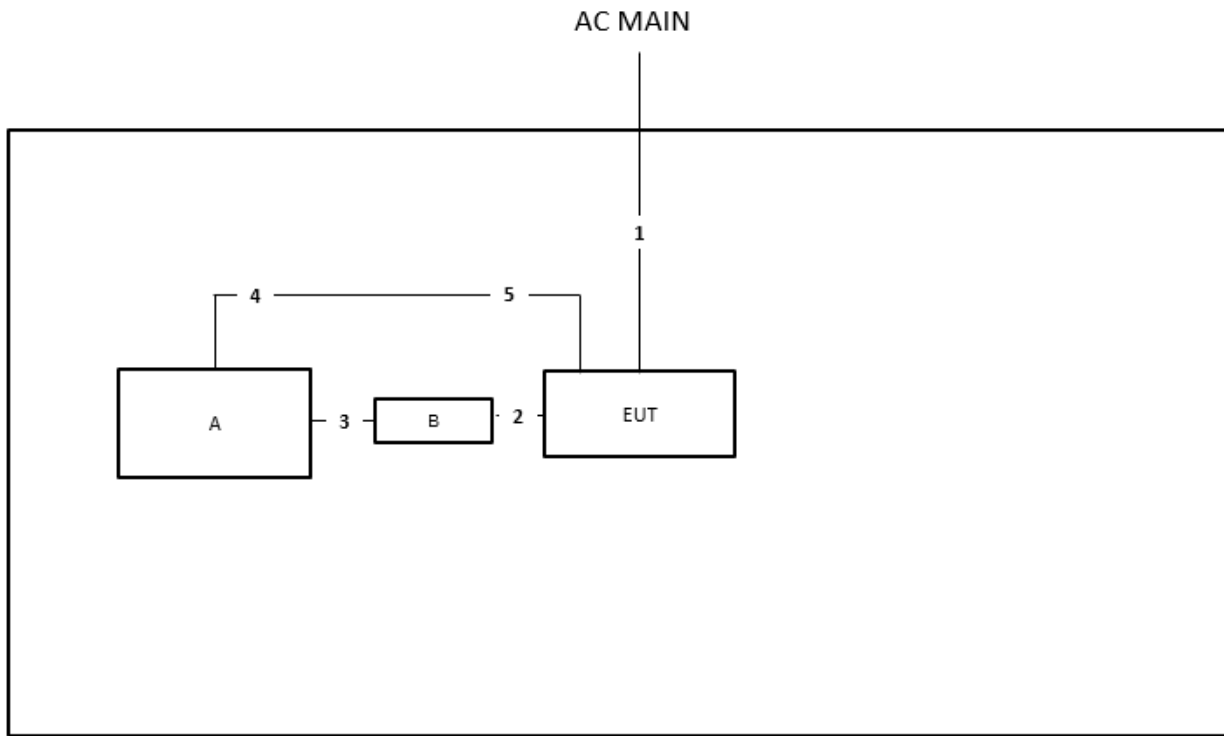


Test Setup Diagram - Radiated Test < 1GHz



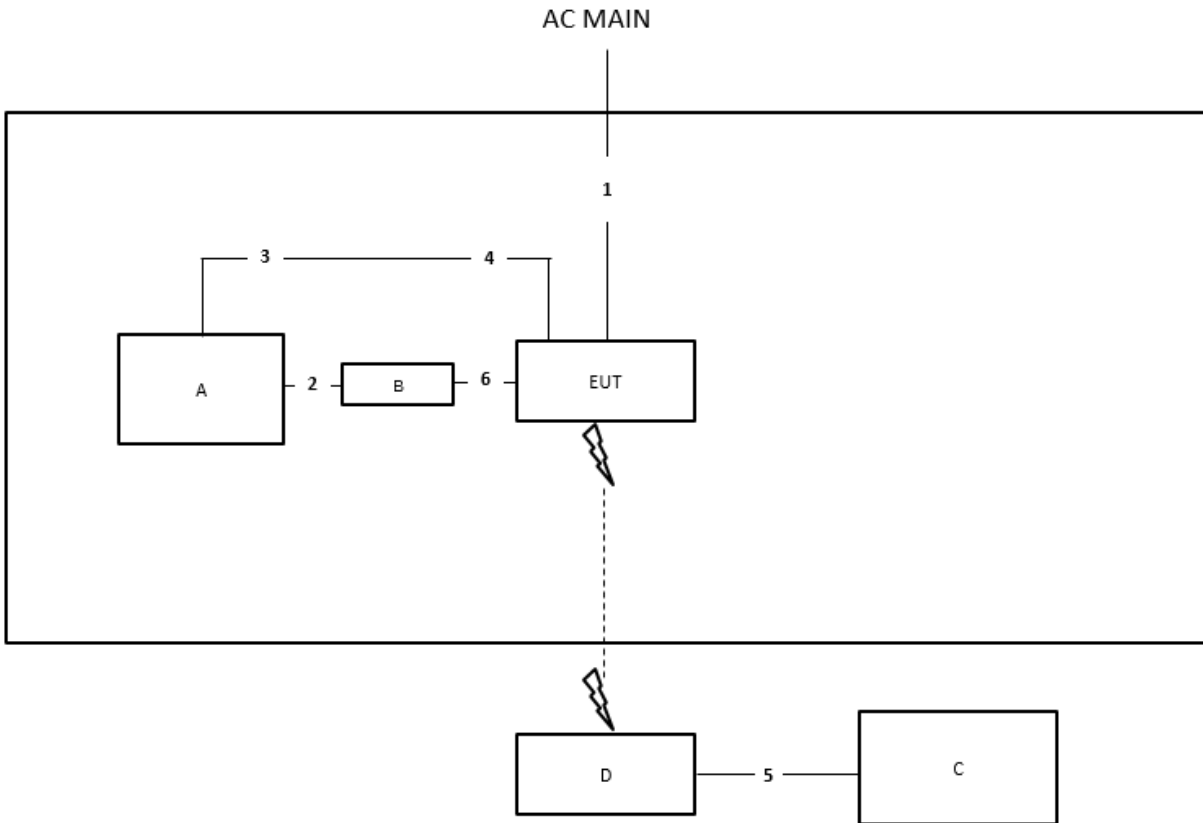
Item	Connection	Shielded	Length
1	DVT cable	Yes	1.7m
2	Componet video cable	Yes	1.7m
3	Audio cable	Yes	1.27m
4	RJ-45 cable	No	1.5m
5	Power cable	No	2.9m

Test Setup Diagram - Radiated Test > 1GHz / For non beamforming mode



Item	Connection	Shielded	Length
1	Power cable	No	2.9m
2	Console cable	No	0.15m
3	USB cable	Yes	0.3m
4	RJ-45 cable	No	0.3m
5	USB to RJ-45 cable	No	0.3m

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



Item	Connection	Shielded	Length
1	Power cable	No	2.9m
2	USB cable	No	0.3m
3	RJ-45 cable	No	0.3m
4	USB to RJ-45 cable	No	0.3m
5	RJ-45 cable	No	10m
6	Console cable	No	0.15m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

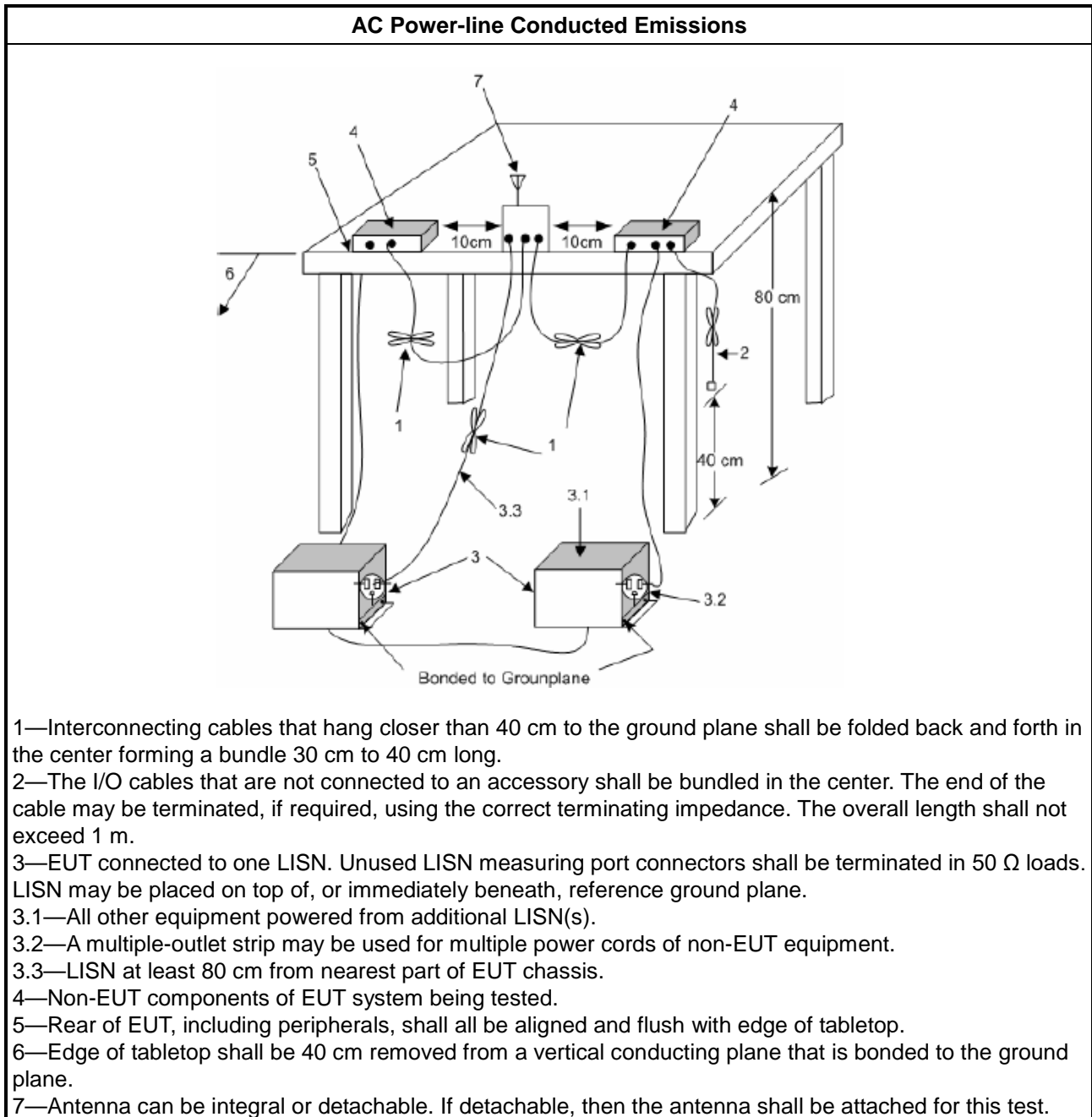
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Measurement Results Calculation

The measured Level is calculated using:

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

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

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

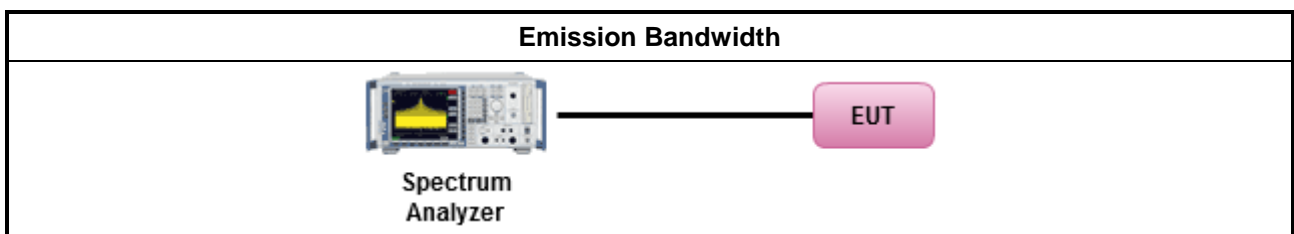
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method							
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px;"><input checked="" type="checkbox"/></td> <td>Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.</td> </tr> </table> 		<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement.	<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement.						
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.						
<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.						

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Output Power

3.3.1 Limit

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



3.3.2 Measuring Instruments

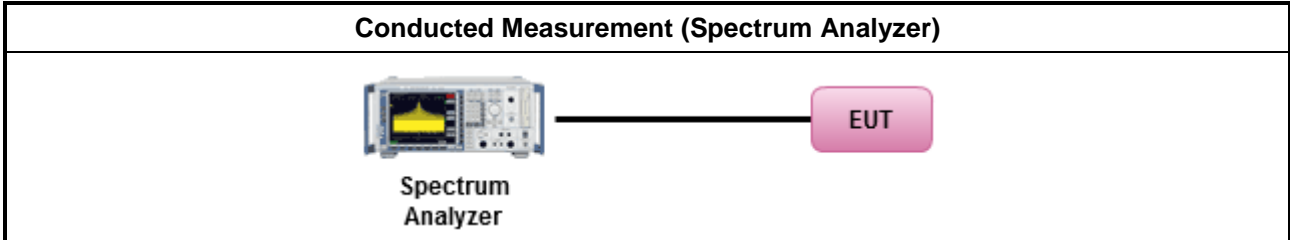
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

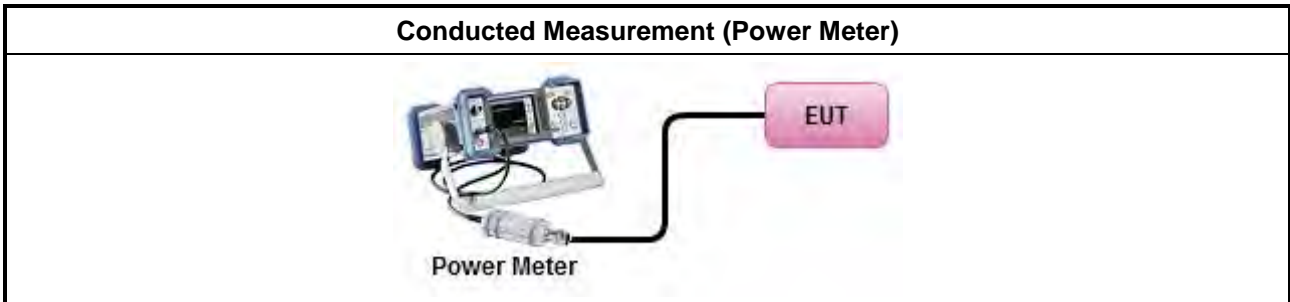
Test Method	
	Average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).
<input checked="" type="checkbox"/>	For conducted measurement.
	<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$
<input type="checkbox"/>	For radiated measurement.
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing" ▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz. ▪ Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

3.3.4 Test Setup

For Straddle channel



For Others channel



3.3.5 Test Result of Maximum Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Limit

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.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
	<ul style="list-style-type: none"> ▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 ($\theta-8$) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 ($\theta-40$) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> ▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$. ▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
<p>PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.</p>	



3.4.2 Measuring Instruments

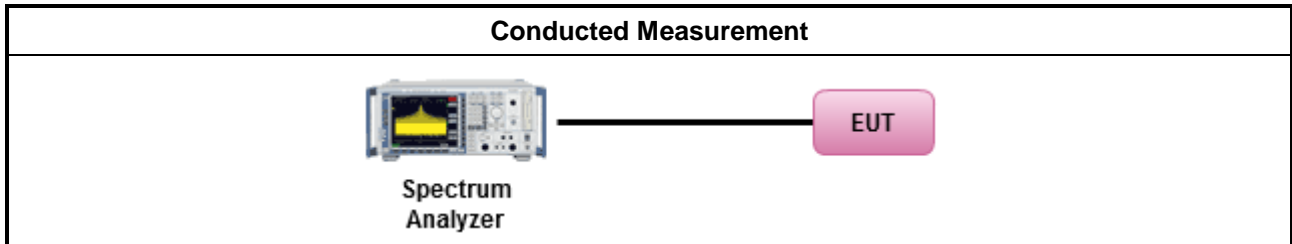
Refer a test equipment and calibration data table in this test report.

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 FCC KDB 789033 D02, F5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
[duty cycle ≥ 98% or external video / power trigger]	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
duty cycle < 98% and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<input checked="" type="checkbox"/> For conducted measurement.	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: 	
<input checked="" type="checkbox"/>	Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
<input type="checkbox"/>	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
<input type="checkbox"/>	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
<ul style="list-style-type: none"> ▪ If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$ 	
<input type="checkbox"/> For radiated measurement.	

Test Method	
	▪ Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"
	▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
	▪ Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D



3.5 Unwanted Emissions

3.5.1 Transmitter Unwanted Emissions Limit

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

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

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

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

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

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).

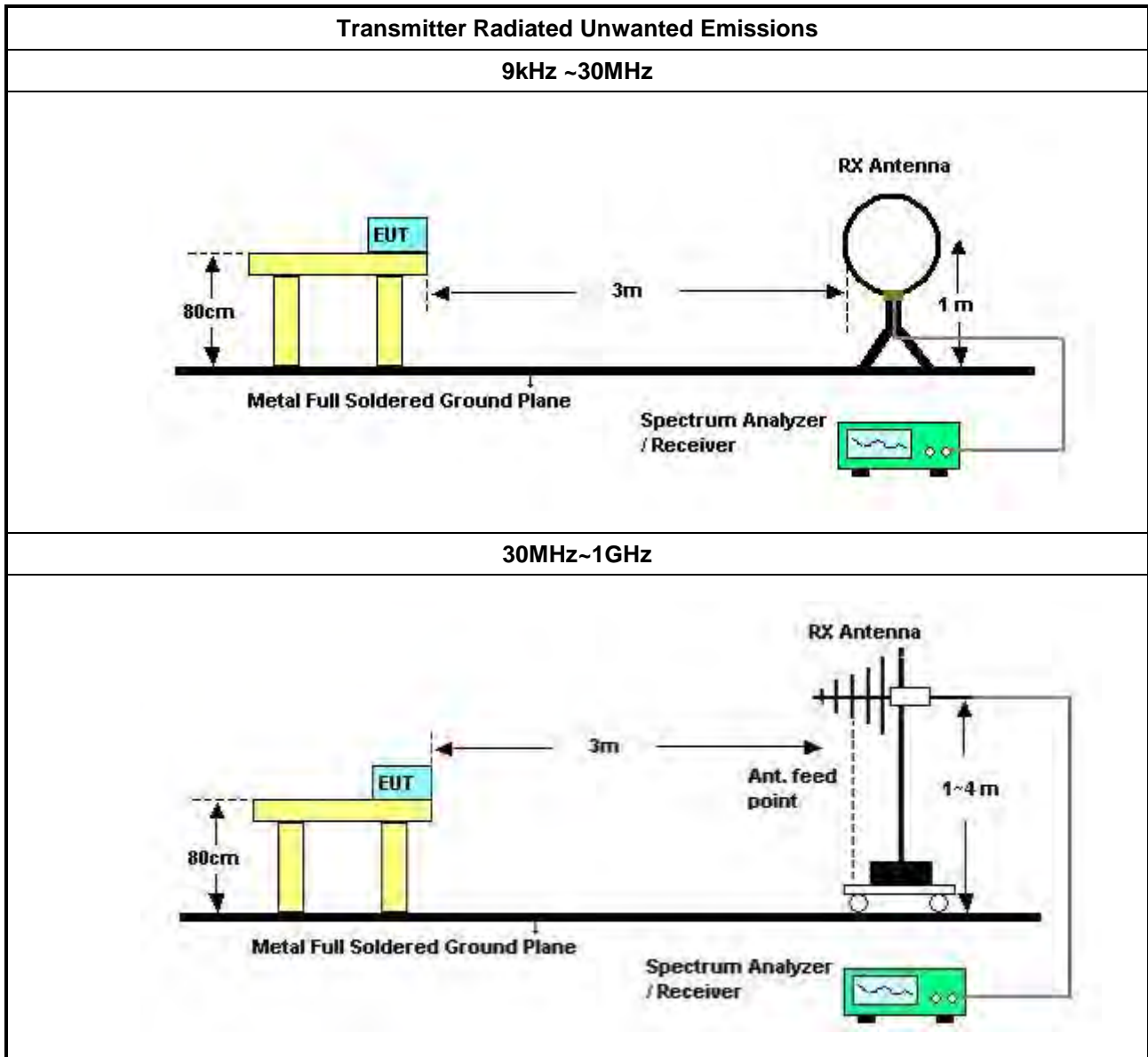
3.5.2 Measuring Instruments

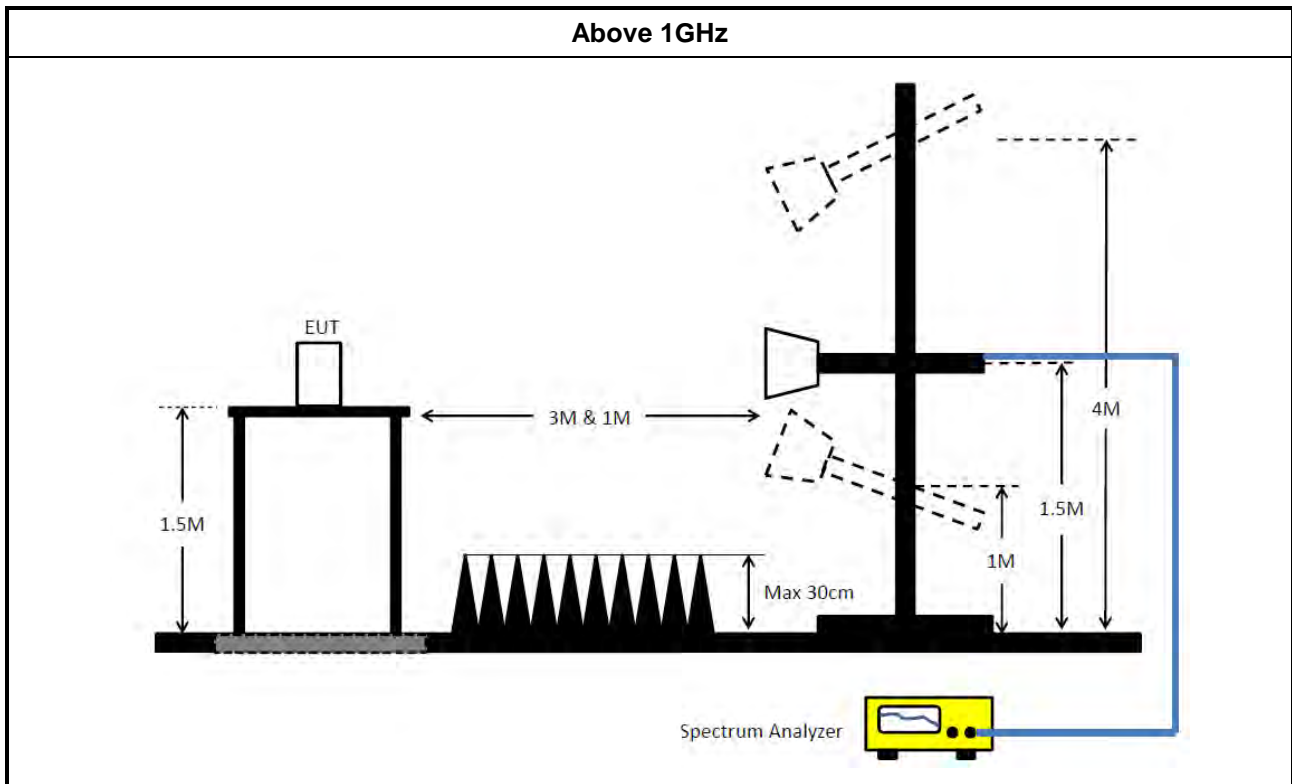
Refer a test equipment and calibration data table in this test report.

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 ≥ 98 or duty factor].
	<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands. ▪ Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
	<ul style="list-style-type: none"> ▪ For radiated measurement.
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m. ▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m. ▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
	<ul style="list-style-type: none"> ▪ The any unwanted emissions level shall not exceed the fundamental emission level.
	<ul style="list-style-type: none"> ▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.5.4 Test Setup





3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.5.6 Transmitter Unwanted Emissions (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Feb. 20, 2023	Feb. 19, 2024	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Feb. 16, 2023	Feb. 15, 2024	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO01-CB)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 09, 2023	Feb. 08, 2024	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 03, 2022	Aug. 02, 2023	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH05-CB	1GHz ~18GHz 3m	Nov. 06, 2022	Nov. 05, 2023	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 24, 2023	Mar. 23, 2024	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1291	1GHz~18GHz	Oct. 06, 2016	Oct. 05, 2017	Radiation (03CH05-CB)
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120 D-1291	1GHz~18GHz	Jun. 08, 2023	Jun. 07, 2024	Radiation (03CH05-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Jul. 24, 2017	Radiation (03CH05-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH05-CB)
Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 03, 2023	May 02, 2024	Radiation (03CH05-CB)
Amplifier	EM	EM101	060703	10MHz ~ 1GHz	Oct. 19, 2022	Oct. 18, 2023	Radiation (03CH05-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Apr. 07, 2016	Apr. 06, 2017	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz ~ 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC12630SE	980287	1GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH05-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Jun. 27, 2017	Radiation (03CH05-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 16, 2022	Nov. 15, 2023	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	May 05, 2016	May 04, 2017	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Apr. 18, 2023	Apr. 17, 2024	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH05-CB)
RF Cable-high	Woken	RG-402	High Cable-4	1GHz~18GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-28	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-04+28	1GHz~18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH05-CB)
RF Cable-high	Woken	RG-402	High Cable-04+23	30MHz~18GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH05-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH05-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH05-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH05-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 25, 2023	Mar. 24, 2024	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 25, 2016	Apr. 24, 2017	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 18, 2023	Apr. 17, 2024	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Jul. 24, 2017	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Aug. 09, 2016	Aug. 08, 2017	Radiation (03CH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH02-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Jun. 27, 2017	Radiation (03CH02-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 16, 2022	Nov. 15, 2023	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Apr. 13, 2016	Apr. 12, 2017	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Dec. 05, 2022	Dec. 04, 2023	Radiation (03CH02-CB)
High Cable	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)
High Cable	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 15, 2022	Aug. 14, 2023	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 17, 2022	Oct. 16, 2023	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 17, 2022	Oct. 16, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Switch	SPTCB	SP-SWI	SWI-02	1 GHz –26.5 GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

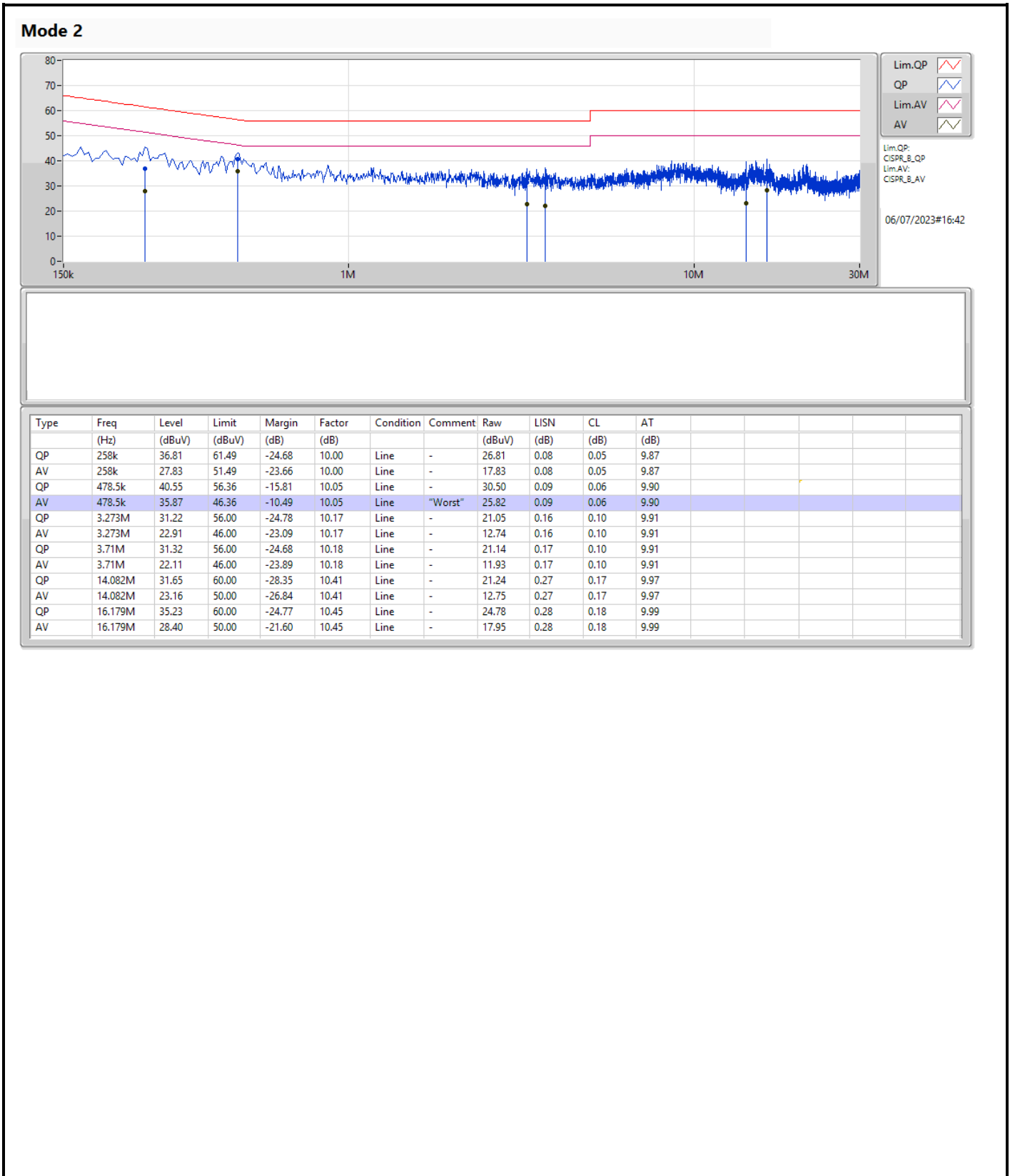
Note: Calibration Interval of instruments listed above is one year.

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

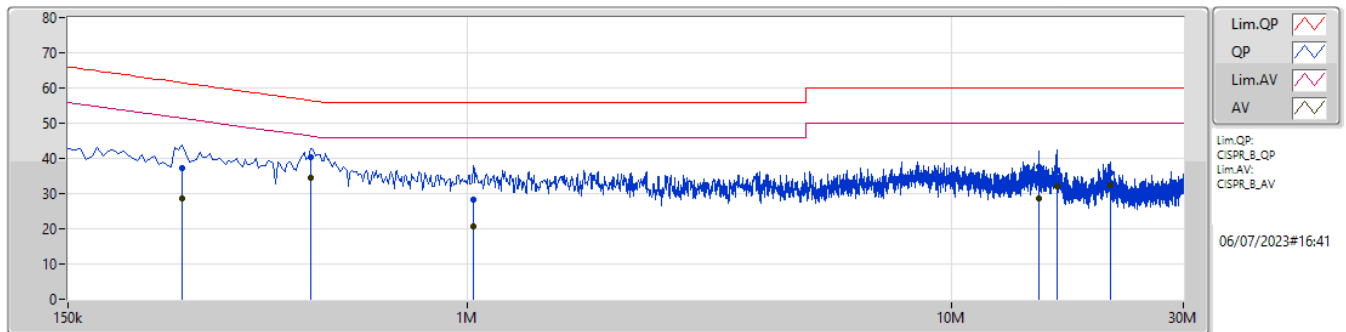


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 2	Pass	AV	478.5k	35.87	46.36	-10.49	Line



Mode 2



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	258k	37.11	61.49	-24.38	9.99	Neutral	-	27.12	0.07	0.05	9.87
AV	258k	28.64	51.49	-22.85	9.99	Neutral	-	18.65	0.07	0.05	9.87
QP	474k	40.41	56.44	-16.03	10.03	Neutral	-	30.38	0.07	0.06	9.90
AV	474k	34.46	46.44	-11.98	10.03	Neutral	"Worst"	24.43	0.07	0.06	9.90
QP	1.028M	28.15	56.00	-27.85	10.02	Neutral	-	18.13	0.08	0.04	9.90
AV	1.028M	20.52	46.00	-25.48	10.02	Neutral	-	10.50	0.08	0.04	9.90
QP	15.099M	37.48	60.00	-22.52	10.41	Neutral	-	27.07	0.26	0.17	9.98
AV	15.099M	28.61	50.00	-21.39	10.41	Neutral	-	18.20	0.26	0.17	9.98
QP	16.467M	36.48	60.00	-23.52	10.45	Neutral	-	26.03	0.27	0.19	9.99
AV	16.467M	32.14	50.00	-17.86	10.45	Neutral	-	21.69	0.27	0.19	9.99
QP	21.17M	35.90	60.00	-24.10	10.56	Neutral	-	25.34	0.30	0.24	10.02
AV	21.17M	32.54	50.00	-17.46	10.56	Neutral	-	21.98	0.30	0.24	10.02



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11a_(6Mbps)_4TX	-	-	-	-	-
5.15-5.25GHz	41.4M	18.966M	19M0D1D	24.75M	16.567M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	43.8M	19.74M	19M7D1D	27.475M	17.766M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	83.75M	36.682M	36M7D1D	40.1M	36.232M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.5M	75.262M	75M3D1D	80.8M	74.763M
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	39.575M	18.041M	18M0D1D	30.775M	17.791M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.2M	36.432M	36M4D1D	40M	36.182M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.6M	75.162M	75M2D1D	81.1M	74.963M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

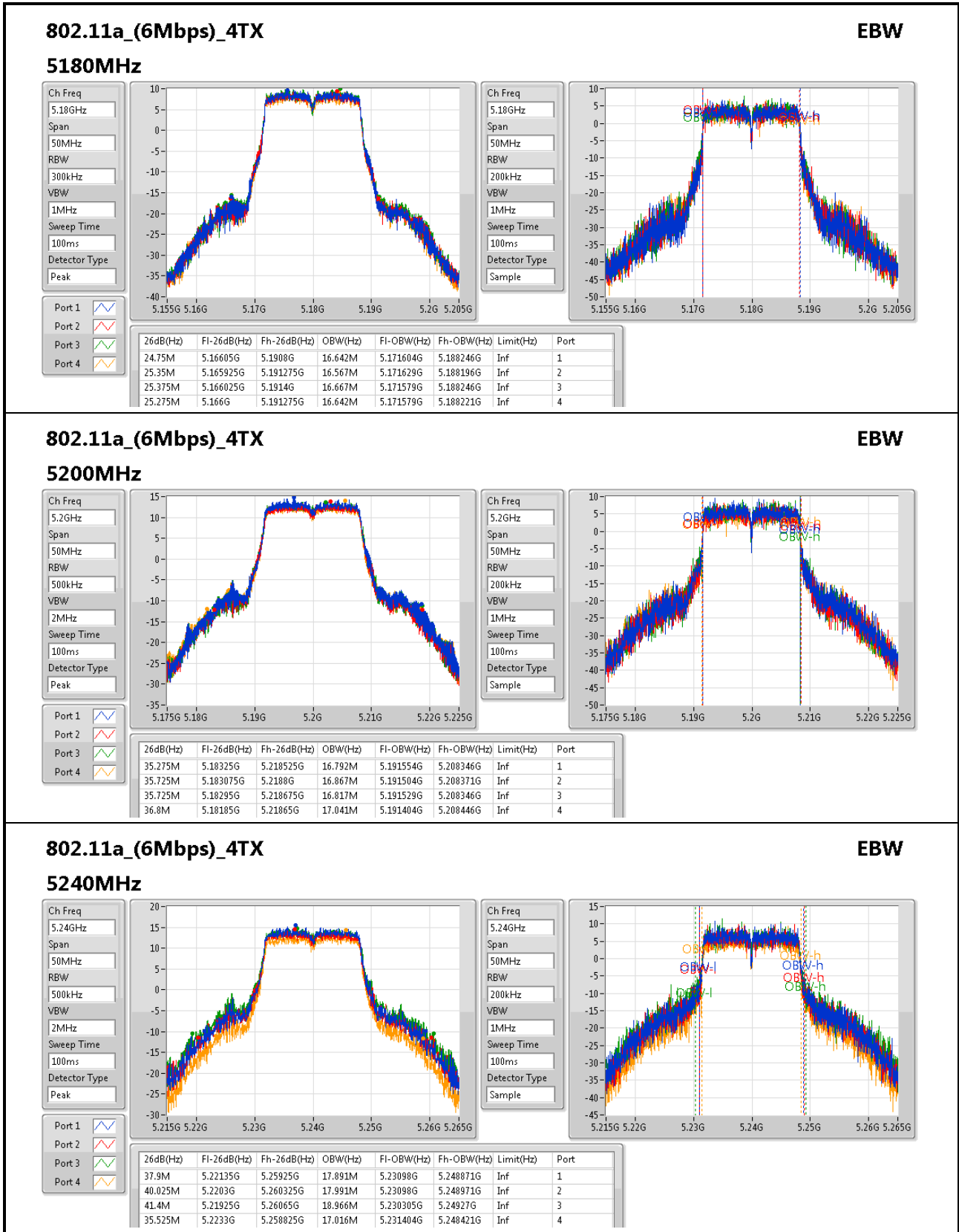


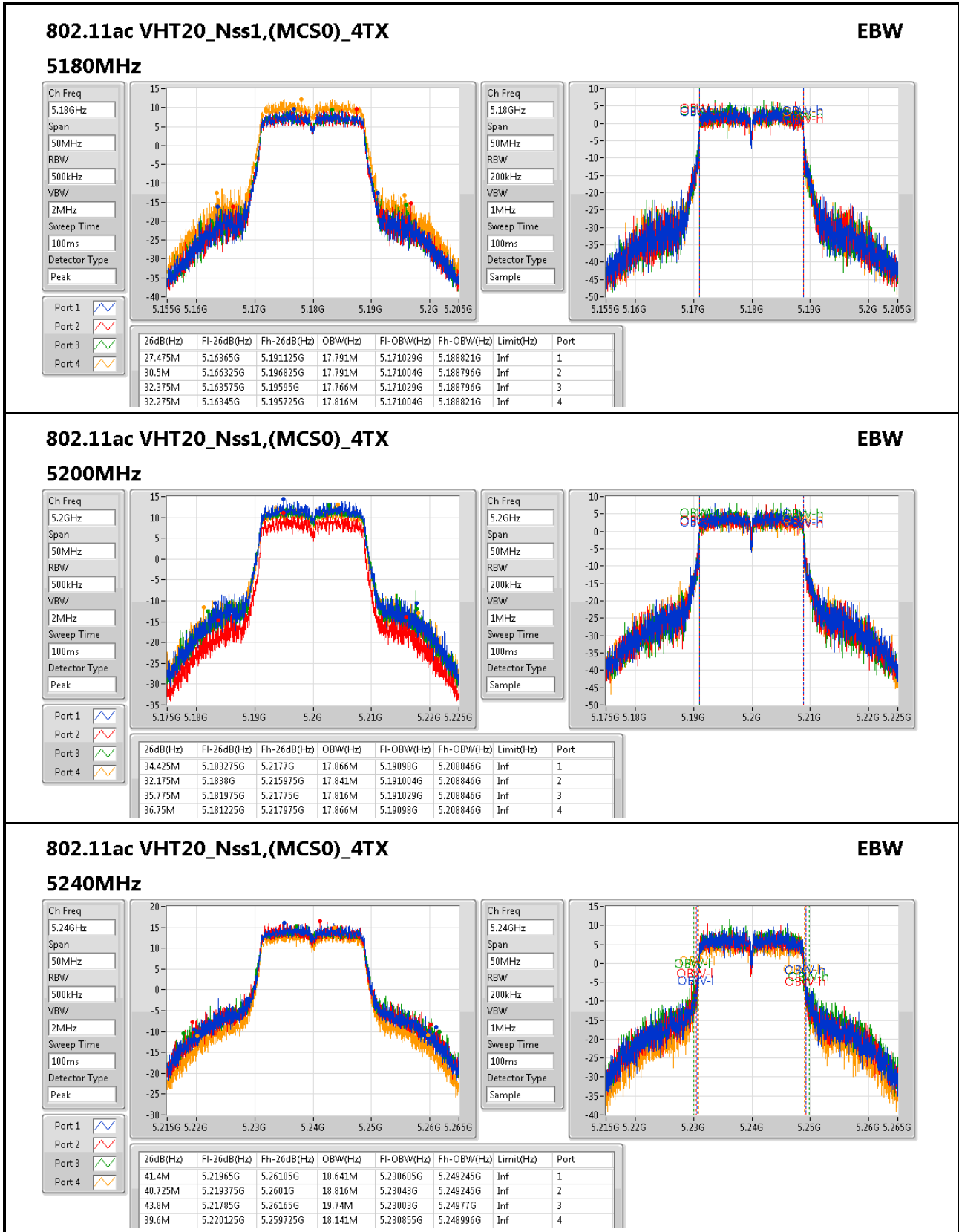
Result

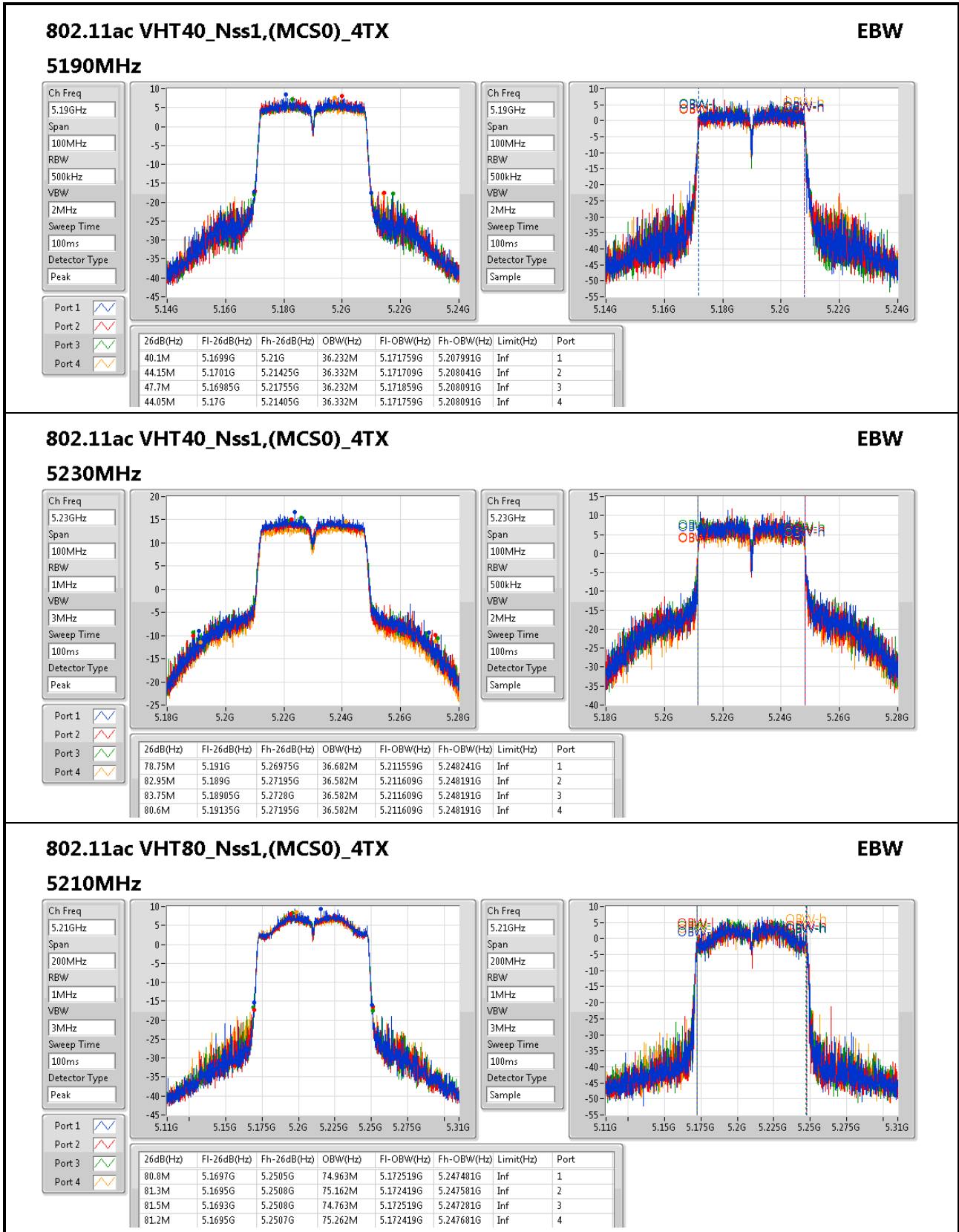
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	24.75M	16.642M	25.35M	16.567M	25.375M	16.667M	25.275M	16.642M
5200MHz	Pass	Inf	35.275M	16.792M	35.725M	16.867M	35.725M	16.817M	36.8M	17.041M
5240MHz	Pass	Inf	37.9M	17.891M	40.025M	17.991M	41.4M	18.966M	35.525M	17.016M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	27.475M	17.791M	30.5M	17.791M	32.375M	17.766M	32.275M	17.816M
5200MHz	Pass	Inf	34.425M	17.866M	32.175M	17.841M	35.775M	17.816M	36.75M	17.866M
5240MHz	Pass	Inf	41.4M	18.641M	40.725M	18.816M	43.8M	19.74M	39.6M	18.141M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.1M	36.232M	44.15M	36.332M	47.7M	36.232M	44.05M	36.332M
5230MHz	Pass	Inf	78.75M	36.682M	82.95M	36.582M	83.75M	36.582M	80.6M	36.582M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.8M	74.963M	81.3M	75.162M	81.5M	74.763M	81.2M	75.262M
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	30.775M	17.791M	31.7M	17.816M	33.325M	17.816M	31.4M	17.791M
5200MHz	Pass	Inf	36.2M	17.891M	36.675M	17.916M	38.525M	17.866M	36.9M	17.841M
5240MHz	Pass	Inf	36.975M	18.041M	38.475M	17.916M	39.575M	17.941M	37.725M	17.966M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40M	36.182M	40M	36.232M	40.35M	36.232M	40.65M	36.232M
5230MHz	Pass	Inf	73.65M	36.332M	77.05M	36.432M	81.2M	36.432M	74.75M	36.432M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	81.3M	74.963M	81.3M	75.062M	81.6M	75.162M	81.1M	74.963M

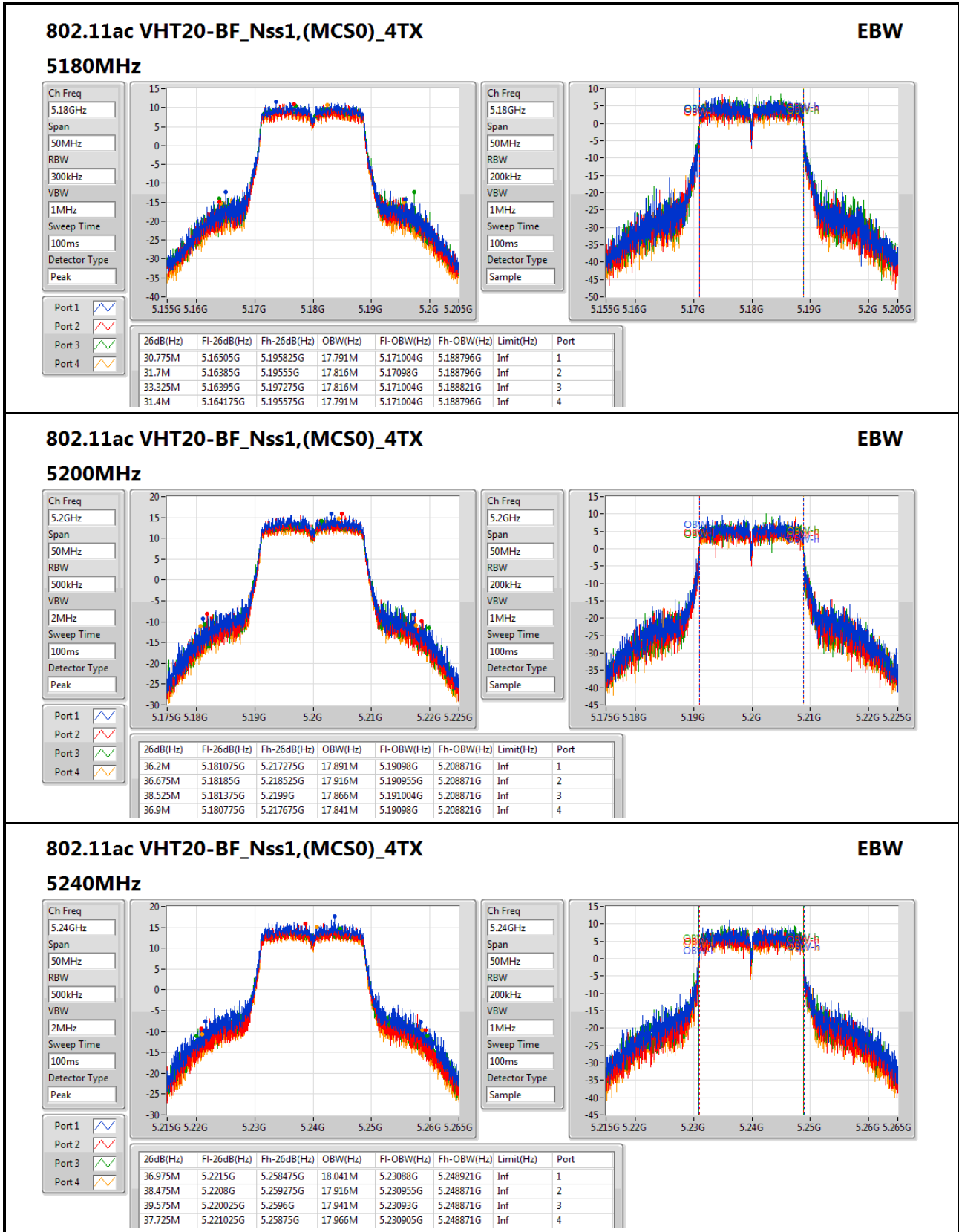
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

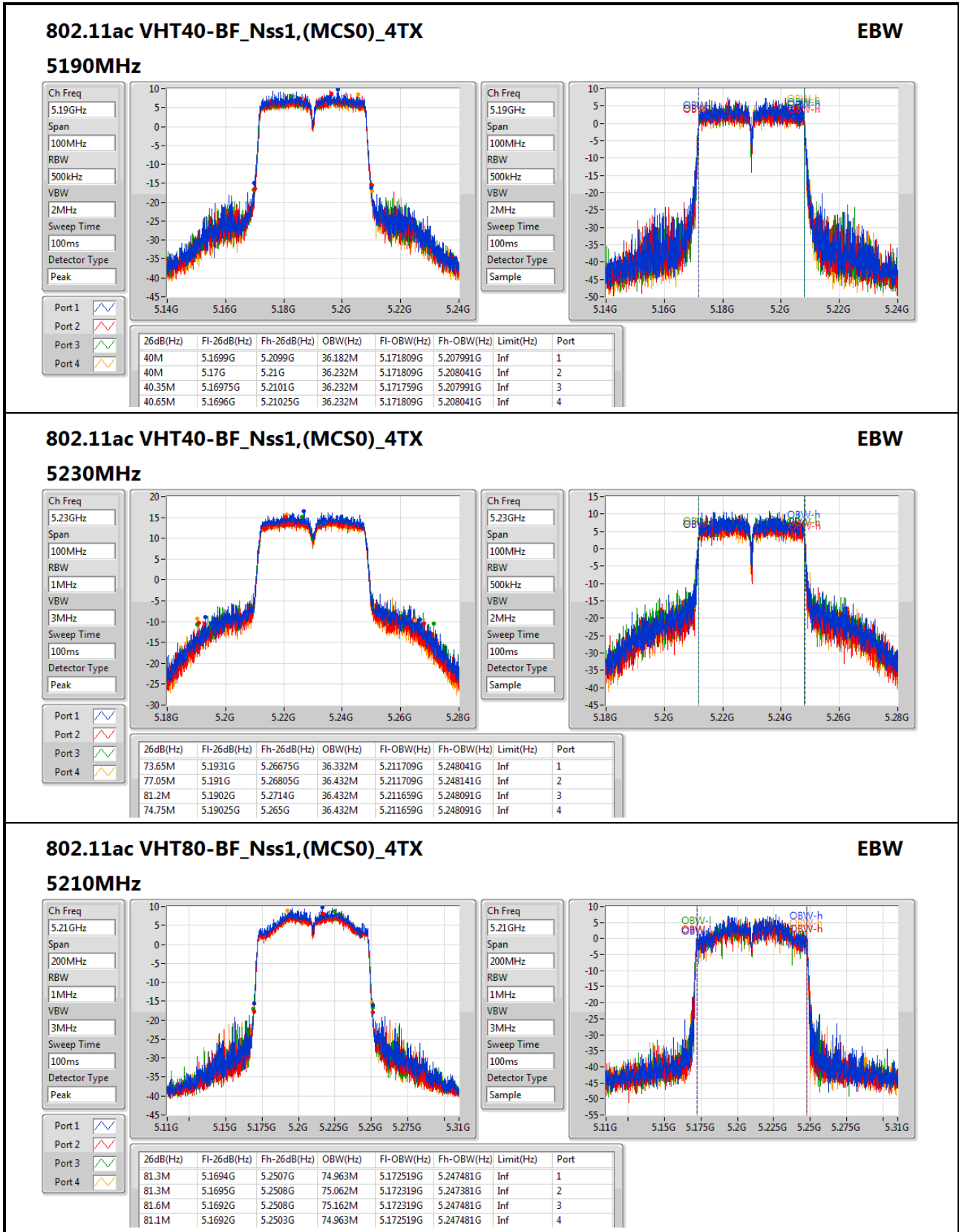
Port X-OBW = Port X 99% occupied bandwidth;













Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11ac VHT20-BF_Nss2,(MCS0)_4TX 5.15-5.25GHz	- 38.975M	- 18.041M	- 18M0D1D	- 23.925M	- 17.716M
802.11ac VHT40-BF_Nss2,(MCS0)_4TX 5.15-5.25GHz	- 85.2M	- 36.932M	- 36M9D1D	- 39.6M	- 36.082M
802.11ac VHT80-BF_Nss2,(MCS0)_4TX 5.15-5.25GHz	- 84.9M	- 75.562M	- 75M6D1D	- 80.3M	- 74.463M

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;

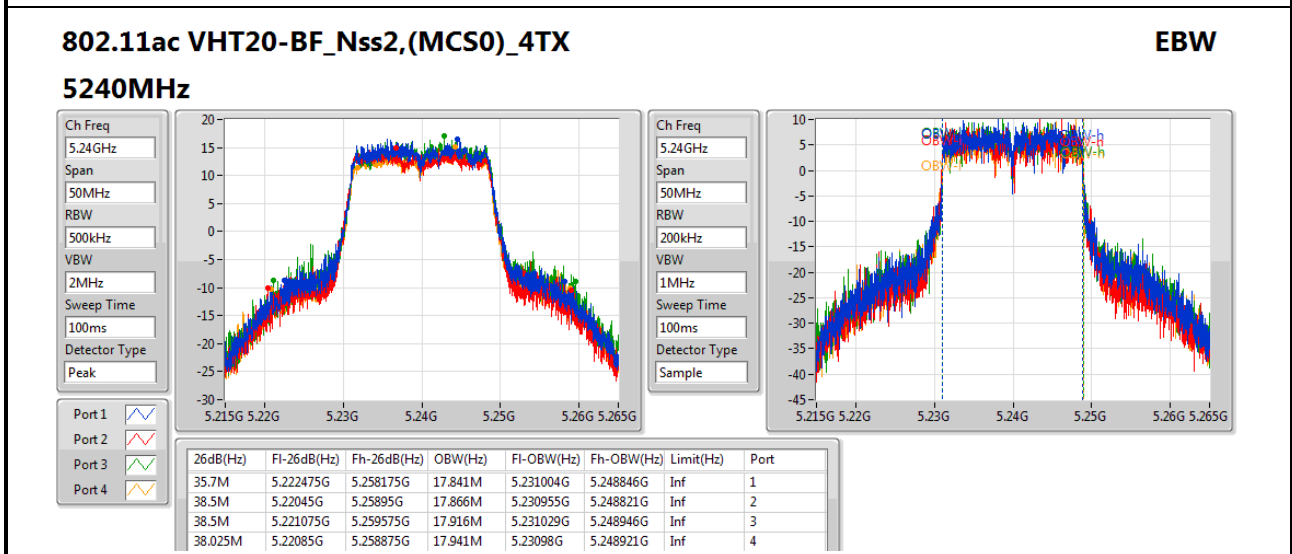
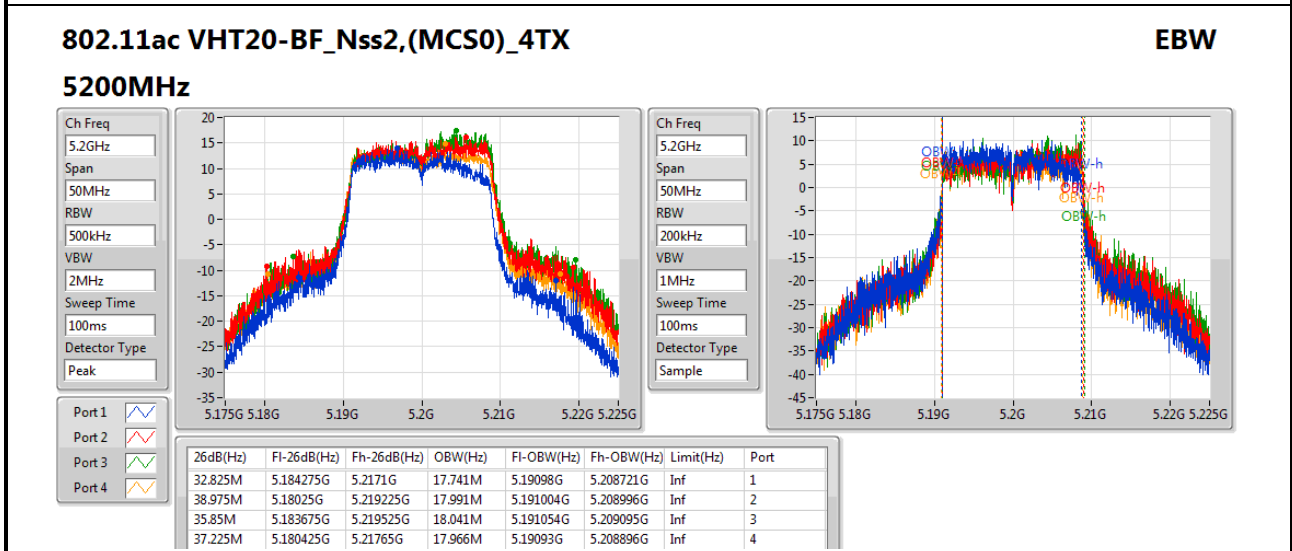
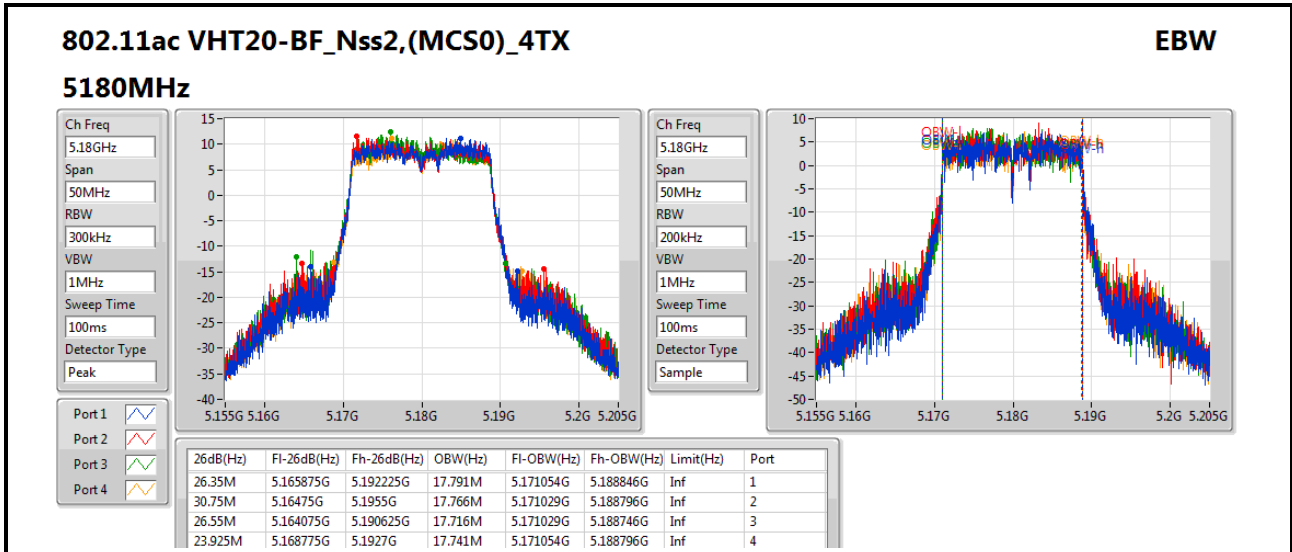


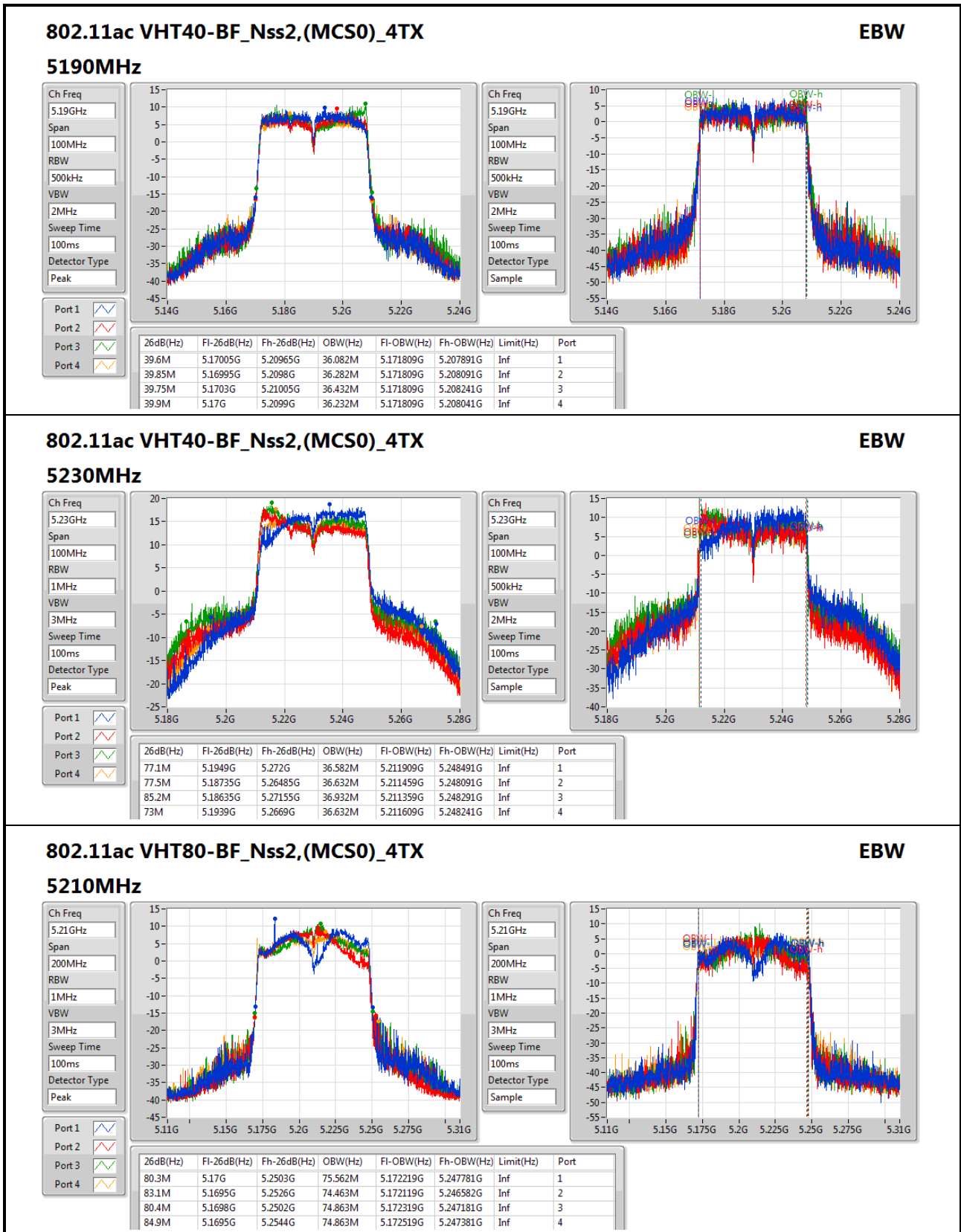
Result

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_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	26.35M	17.791M	30.75M	17.766M	26.55M	17.716M	23.925M	17.741M
5200MHz	Pass	Inf	32.825M	17.741M	38.975M	17.991M	35.85M	18.041M	37.225M	17.966M
5240MHz	Pass	Inf	35.7M	17.841M	38.5M	17.866M	38.5M	17.916M	38.025M	17.941M
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	39.6M	36.082M	39.85M	36.282M	39.75M	36.432M	39.9M	36.232M
5230MHz	Pass	Inf	77.1M	36.582M	77.5M	36.632M	85.2M	36.932M	73M	36.632M
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.3M	75.562M	83.1M	74.463M	80.4M	74.863M	84.9M	74.863M

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;







EBW Result For Slave mode UNII 1~3 and AP mode UNII 3_4T1S Appendix B.3

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11a_(6Mbps)_4TX	-	-	-	-	-
5.15-5.25GHz	41.4M	18.966M	19MOD1D	24.75M	16.567M
5.25-5.35GHz	21.95M	16.642M	16M6D1D	21.475M	16.517M
5.47-5.725GHz	25.65M	16.642M	16M6D1D	15.675M	13.313M
5.725-5.85GHz	16.35M	16.917M	16M9D1D	3.06M	3.898M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	43.8M	19.74M	19M7D1D	27.475M	17.766M
5.25-5.35GHz	33.925M	17.816M	17M8D1D	22.1M	17.741M
5.47-5.725GHz	30.475M	17.791M	17M8D1D	15.69M	13.943M
5.725-5.85GHz	17.6M	17.991M	18MOD1D	3.68M	4.218M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	83.75M	36.682M	36M7D1D	40.1M	36.232M
5.25-5.35GHz	69.9M	36.332M	36M3D1D	41.5M	36.232M
5.47-5.725GHz	70.8M	36.382M	36M4D1D	37.17M	33.058M
5.725-5.85GHz	36.35M	36.682M	36M7D1D	3.04M	3.958M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.5M	75.262M	75M3D1D	80.8M	74.763M
5.25-5.35GHz	84.8M	75.862M	75M9D1D	81.6M	75.662M
5.47-5.725GHz	118.2M	75.962M	76MOD1D	76.05M	72.489M
5.725-5.85GHz	76.3M	76.262M	76M3D1D	3.02M	5.297M
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	21.9M	17.791M	17M8D1D	21.475M	17.716M
5.25-5.35GHz	25.825M	17.791M	17M8D1D	21.5M	17.691M
5.47-5.725GHz	21.85M	17.791M	17M8D1D	15.96M	13.943M
5.725-5.85GHz	17.6M	17.991M	18MOD1D	3.68M	4.218M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	43.5M	36.332M	36M3D1D	39.75M	36.182M
5.25-5.35GHz	64.2M	36.332M	36M3D1D	39.75M	36.232M
5.47-5.725GHz	62.25M	36.382M	36M4D1D	35.28M	33.058M
5.725-5.85GHz	36.35M	36.682M	36M7D1D	3.04M	3.618M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	81.6M	75.162M	75M2D1D	81.1M	74.963M
5.25-5.35GHz	87.6M	75.962M	76MOD1D	81.3M	75.662M
5.47-5.725GHz	96.3M	75.862M	75M9D1D	75.75M	72.564M
5.725-5.85GHz	76.1M	76.062M	76M1D1D	3M	3.958M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;



EBW Result For Slave mode UNII 1~3 and AP mode UNII 3_4T1S Appendix B.3

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	24.75M	16.642M	25.35M	16.567M	25.375M	16.667M	25.275M	16.642M
5200MHz	Pass	Inf	35.275M	16.792M	35.725M	16.867M	35.725M	16.817M	36.8M	17.041M
5240MHz	Pass	Inf	37.9M	17.891M	40.025M	17.991M	41.4M	18.966M	35.525M	17.016M
5260MHz	Pass	Inf	21.75M	16.617M	21.475M	16.592M	21.825M	16.517M	21.85M	16.617M
5300MHz	Pass	Inf	21.725M	16.592M	21.575M	16.617M	21.825M	16.542M	21.725M	16.617M
5320MHz	Pass	Inf	21.95M	16.592M	21.475M	16.617M	21.65M	16.642M	21.925M	16.567M
5500MHz	Pass	Inf	25.65M	16.617M	21.625M	16.642M	21.6M	16.592M	21.6M	16.517M
5580MHz	Pass	Inf	21.525M	16.542M	21.5M	16.567M	21.525M	16.617M	21.375M	16.542M
5700MHz	Pass	Inf	21.35M	16.592M	21.4M	16.567M	21.55M	16.592M	21.325M	16.542M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.735M	13.373M	15.795M	13.373M	15.735M	13.328M	15.675M	13.313M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.08M	3.978M	3.06M	3.898M	3.08M	3.998M	3.1M	4.038M
5745MHz	Pass	500k	16.325M	16.792M	16.325M	16.817M	16.325M	16.917M	16.3M	16.767M
5785MHz	Pass	500k	16.35M	16.792M	16.325M	16.742M	16.325M	16.917M	16.325M	16.792M
5825MHz	Pass	500k	16.325M	16.667M	16.325M	16.667M	16.3M	16.842M	16.325M	16.692M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	27.475M	17.791M	30.5M	17.791M	32.375M	17.766M	32.275M	17.816M
5200MHz	Pass	Inf	34.425M	17.866M	32.175M	17.841M	35.775M	17.816M	36.75M	17.866M
5240MHz	Pass	Inf	41.4M	18.641M	40.725M	18.816M	43.8M	19.74M	39.6M	18.141M
5260MHz	Pass	Inf	28.7M	17.791M	22.85M	17.791M	29.15M	17.741M	22.1M	17.741M
5300MHz	Pass	Inf	30.525M	17.816M	22.2M	17.766M	30.4M	17.766M	27.875M	17.766M
5320MHz	Pass	Inf	33.925M	17.816M	22.475M	17.766M	26.25M	17.816M	33.35M	17.791M
5500MHz	Pass	Inf	27.425M	17.766M	26.725M	17.766M	30.475M	17.766M	28.425M	17.741M
5580MHz	Pass	Inf	21.55M	17.716M	21.55M	17.716M	21.8M	17.766M	21.75M	17.766M
5700MHz	Pass	Inf	21.675M	17.741M	21.45M	17.766M	22.025M	17.791M	21.5M	17.766M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.96M	13.988M	15.69M	13.958M	15.825M	13.958M	16.02M	13.943M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.7M	4.218M	3.68M	4.298M	3.78M	4.278M	3.72M	4.218M
5745MHz	Pass	500k	17.6M	17.966M	17.575M	17.891M	17.575M	17.991M	17.575M	17.916M
5785MHz	Pass	500k	17.6M	17.941M	17.575M	17.891M	17.575M	17.991M	17.575M	17.916M
5825MHz	Pass	500k	17.575M	17.866M	17.575M	17.816M	17.575M	17.941M	17.55M	17.891M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.1M	36.232M	44.15M	36.332M	47.7M	36.232M	44.05M	36.332M
5230MHz	Pass	Inf	78.75M	36.682M	82.95M	36.582M	83.75M	36.582M	80.6M	36.582M
5270MHz	Pass	Inf	68.05M	36.332M	41.85M	36.332M	69.9M	36.232M	61.5M	36.332M
5310MHz	Pass	Inf	41.5M	36.282M	41.95M	36.332M	53.15M	36.282M	60.7M	36.332M
5510MHz	Pass	Inf	40.6M	36.232M	40.05M	36.282M	41.95M	36.282M	40.15M	36.182M
5550MHz	Pass	Inf	65.2M	36.332M	64.45M	36.382M	70.8M	36.282M	61.25M	36.282M
5670MHz	Pass	Inf	49.6M	36.382M	42.35M	36.282M	67.4M	36.232M	46.2M	36.232M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	46.655M	33.058M	37.17M	33.058M	45.92M	33.093M	45.045M	33.128M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.06M	4.058M	3.08M	3.958M	3.08M	4.638M	3.04M	4.058M
5755MHz	Pass	500k	36.3M	36.532M	36.35M	36.532M	36.3M	36.682M	36.3M	36.532M
5795MHz	Pass	500k	36.3M	36.532M	36.35M	36.532M	36.25M	36.532M	36.35M	36.582M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-

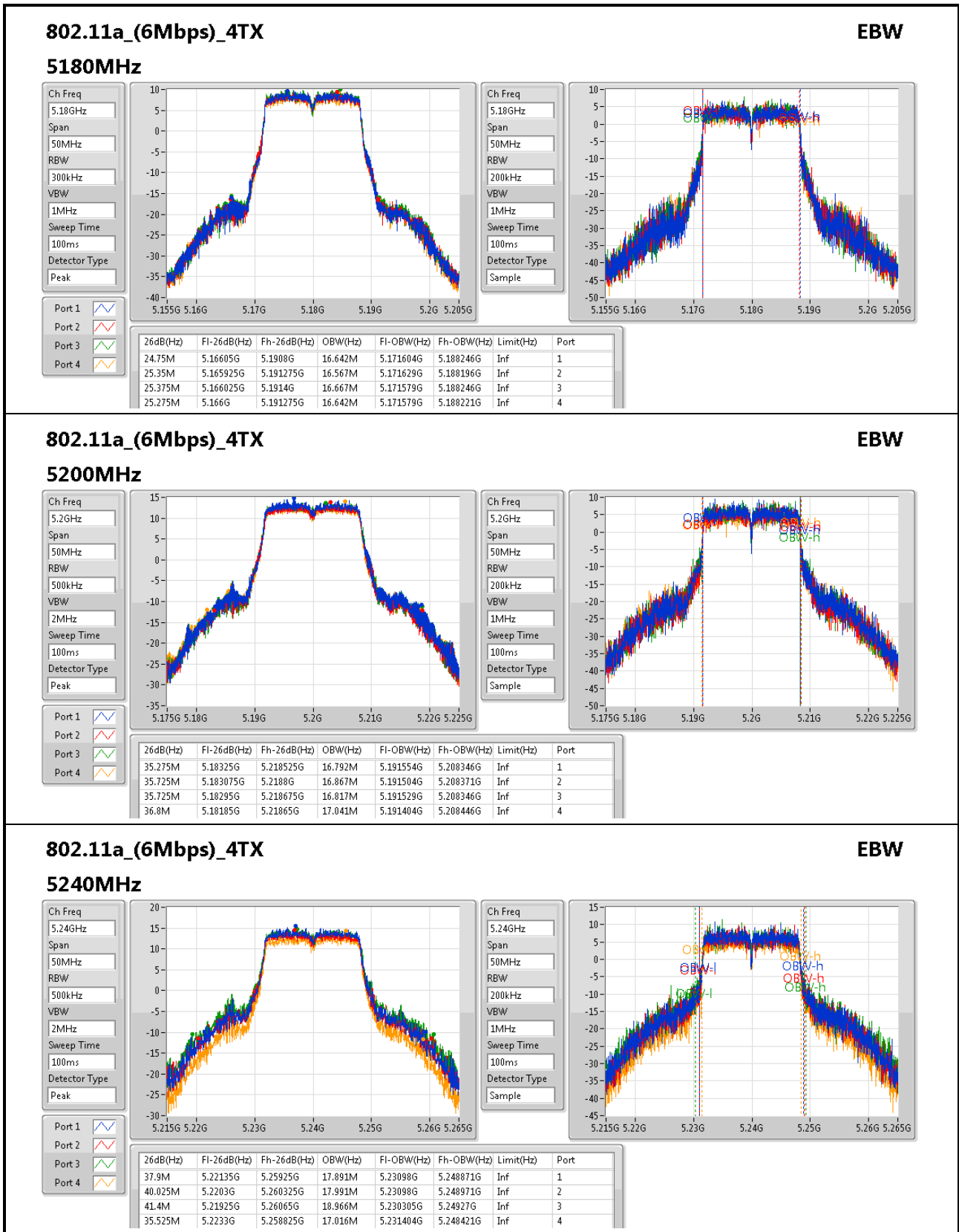


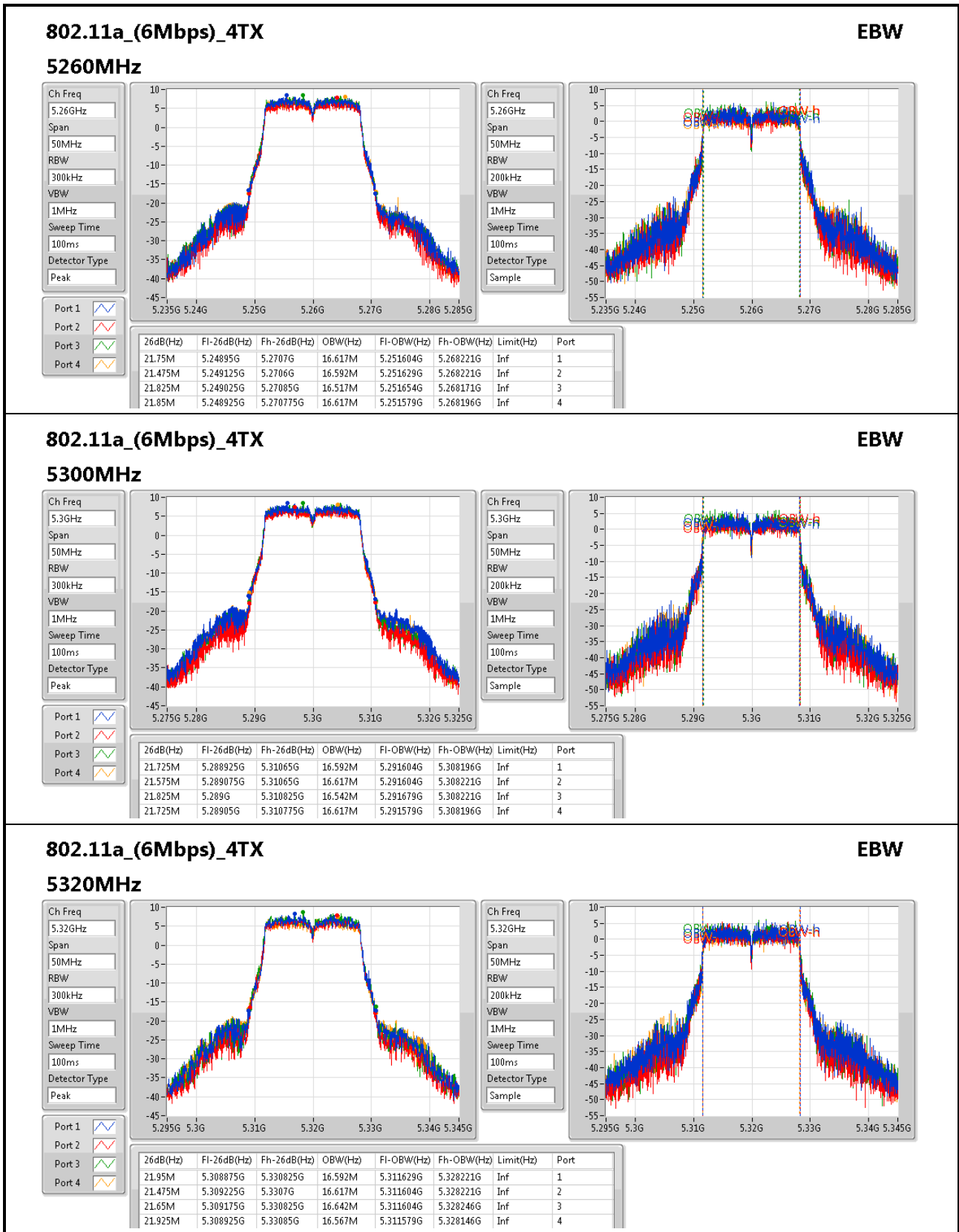
EBW Result For Slave mode UNII 1~3 and AP mode UNII 3_4T1S Appendix B.3

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)
5210MHz	Pass	Inf	80.8M	74.963M	81.3M	75.162M	81.5M	74.763M	81.2M	75.262M
5290MHz	Pass	Inf	83.2M	75.662M	81.8M	75.762M	84.8M	75.862M	81.6M	75.762M
5530MHz	Pass	Inf	81.7M	75.962M	81.6M	75.862M	81.9M	75.962M	81.3M	75.762M
5610MHz	Pass	Inf	97.6M	75.962M	114.4M	75.962M	118.2M	75.862M	84.8M	75.862M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	89.1M	72.564M	97.95M	72.489M	98.4M	72.714M	76.05M	72.639M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.06M	9.075M	3.08M	8.376M	3.02M	10.935M	3.08M	5.297M
5775MHz	Pass	500k	76.1M	76.262M	75.4M	76.062M	76.1M	75.962M	76.3M	76.162M
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	21.5M	17.741M	21.625M	17.716M	21.775M	17.766M	21.5M	17.766M
5200MHz	Pass	Inf	21.475M	17.766M	21.775M	17.766M	21.9M	17.791M	21.575M	17.766M
5240MHz	Pass	Inf	21.85M	17.766M	21.7M	17.716M	21.7M	17.766M	21.775M	17.741M
5260MHz	Pass	Inf	21.6M	17.766M	21.575M	17.741M	21.85M	17.791M	25.825M	17.741M
5300MHz	Pass	Inf	21.7M	17.741M	21.5M	17.766M	21.775M	17.766M	21.8M	17.741M
5320MHz	Pass	Inf	21.825M	17.766M	21.5M	17.716M	21.75M	17.691M	21.65M	17.741M
5500MHz	Pass	Inf	21.45M	17.766M	21.6M	17.766M	21.725M	17.741M	21.7M	17.741M
5580MHz	Pass	Inf	21.65M	17.766M	21.575M	17.741M	21.85M	17.791M	21.575M	17.716M
5700MHz	Pass	Inf	21.475M	17.741M	21.35M	17.741M	21.675M	17.741M	21.75M	17.791M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	19.965M	13.943M	16.035M	13.988M	15.96M	13.943M	16.005M	13.943M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.74M	4.218M	3.68M	4.218M	3.7M	4.258M	3.72M	4.258M
5745MHz	Pass	500k	17.575M	17.966M	17.575M	17.916M	17.575M	17.941M	17.55M	17.991M
5785MHz	Pass	500k	17.575M	17.916M	17.575M	17.941M	17.575M	17.941M	17.575M	17.941M
5825MHz	Pass	500k	17.575M	17.816M	17.6M	17.941M	17.55M	17.966M	17.575M	17.891M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40M	36.332M	39.75M	36.232M	43.5M	36.232M	39.9M	36.232M
5230MHz	Pass	Inf	40M	36.232M	40.05M	36.182M	40.25M	36.232M	40.1M	36.232M
5270MHz	Pass	Inf	39.85M	36.232M	39.95M	36.232M	64.2M	36.232M	39.85M	36.332M
5310MHz	Pass	Inf	40.05M	36.232M	39.75M	36.282M	48.65M	36.232M	39.85M	36.332M
5510MHz	Pass	Inf	39.5M	36.232M	39.5M	36.382M	40.2M	36.132M	39.85M	36.182M
5550MHz	Pass	Inf	46.65M	36.332M	39.95M	36.282M	62.25M	36.282M	40M	36.282M
5670MHz	Pass	Inf	40.05M	36.232M	47.8M	36.332M	58.9M	36.182M	39.9M	36.182M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	41.965M	33.058M	35.875M	33.093M	45.57M	33.058M	35.28M	33.163M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.06M	3.618M	3.16M	3.698M	3.04M	3.718M	3.04M	3.658M
5755MHz	Pass	500k	36.3M	36.682M	36.3M	36.632M	36.35M	36.582M	36.35M	36.432M
5795MHz	Pass	500k	36.3M	36.482M	36.35M	36.532M	36.35M	36.482M	36.35M	36.432M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	81.3M	74.963M	81.3M	75.062M	81.6M	75.162M	81.1M	74.963M
5290MHz	Pass	Inf	81.3M	75.662M	81.6M	75.862M	87.6M	75.962M	81.6M	75.962M
5530MHz	Pass	Inf	81.2M	75.762M	81.7M	75.762M	82.4M	75.862M	81.7M	75.762M
5610MHz	Pass	Inf	82.2M	75.862M	83.3M	75.762M	96.3M	75.862M	86.8M	75.862M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.75M	72.564M	90.225M	72.639M	86.925M	72.564M	77.925M	72.714M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3M	4.578M	3.06M	6.597M	3.06M	4.278M	3.06M	3.958M
5775MHz	Pass	500k	75.9M	75.962M	76.1M	76.062M	75.4M	75.862M	75.7M	75.862M

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

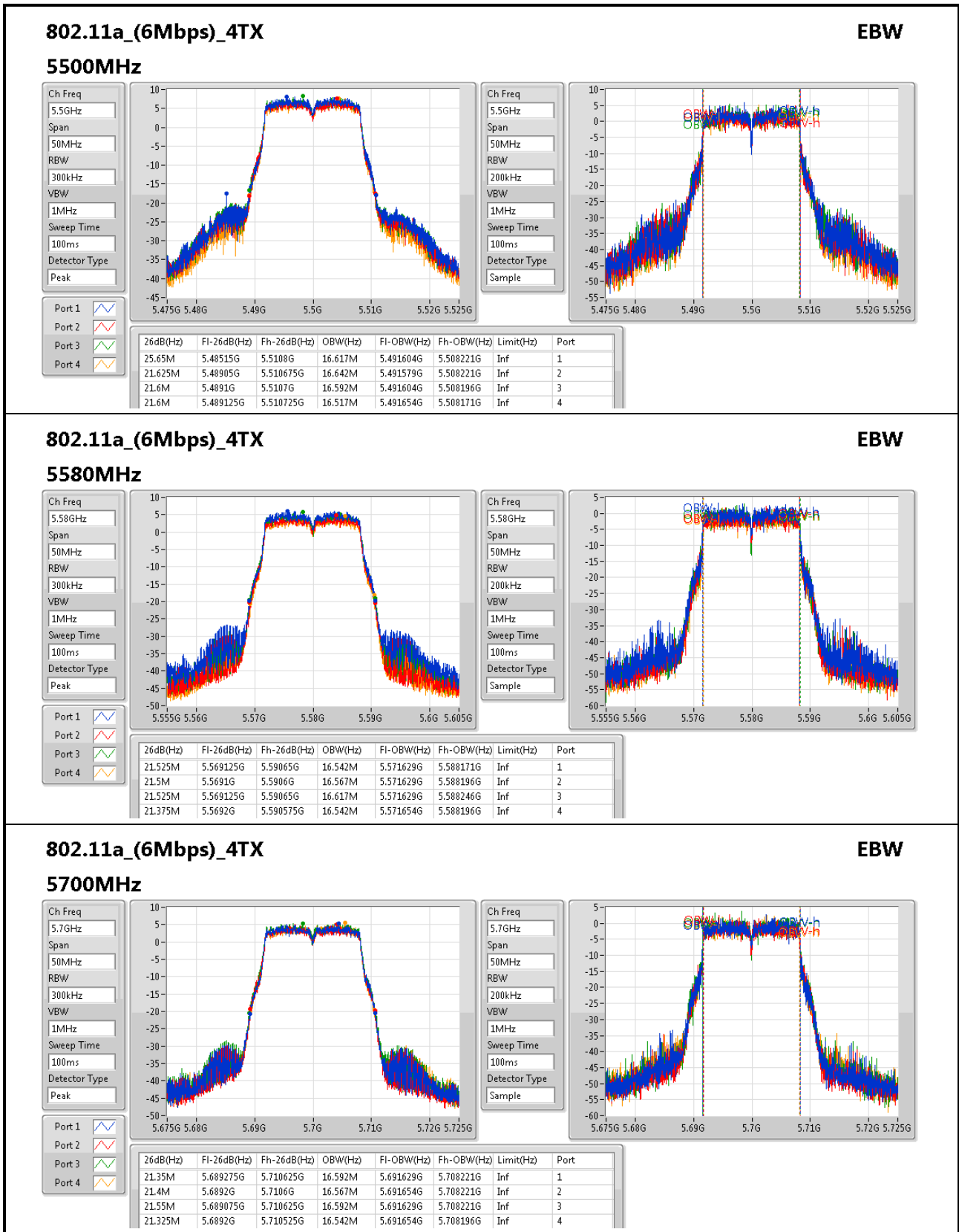
Port X-OBW = Port X 99% occupied bandwidth;

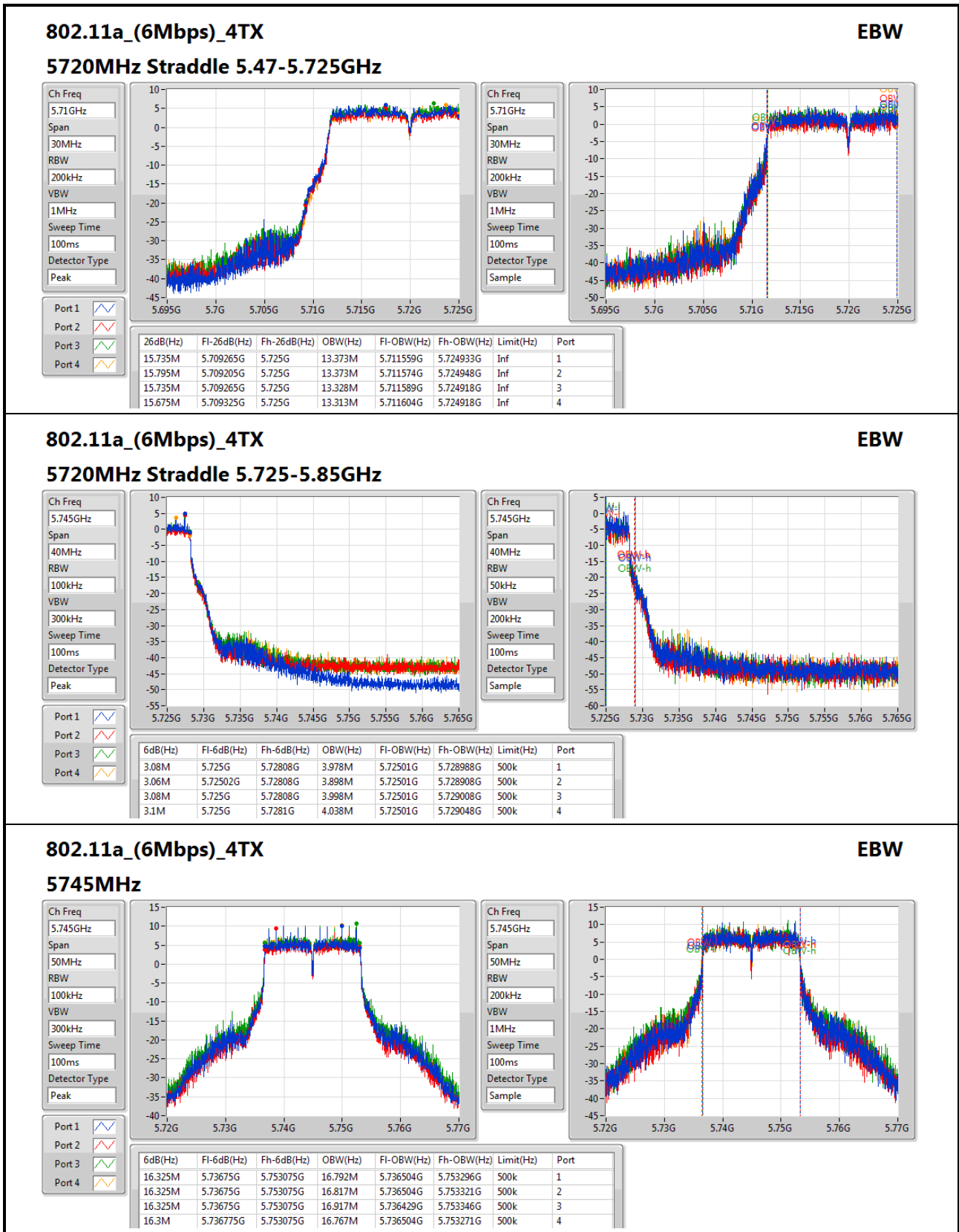


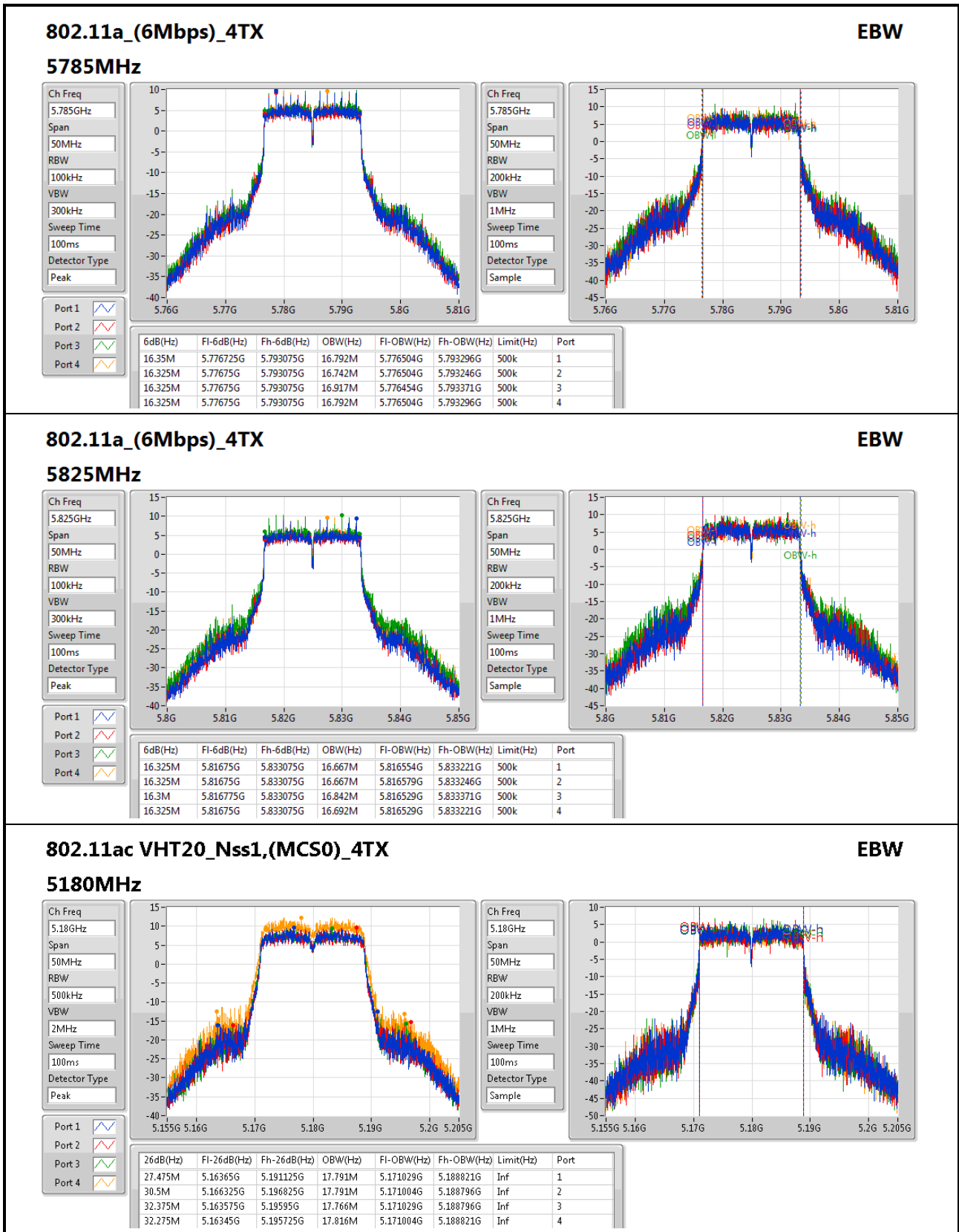

802.11a_(6Mbps)_4TX
EBW
5320MHz

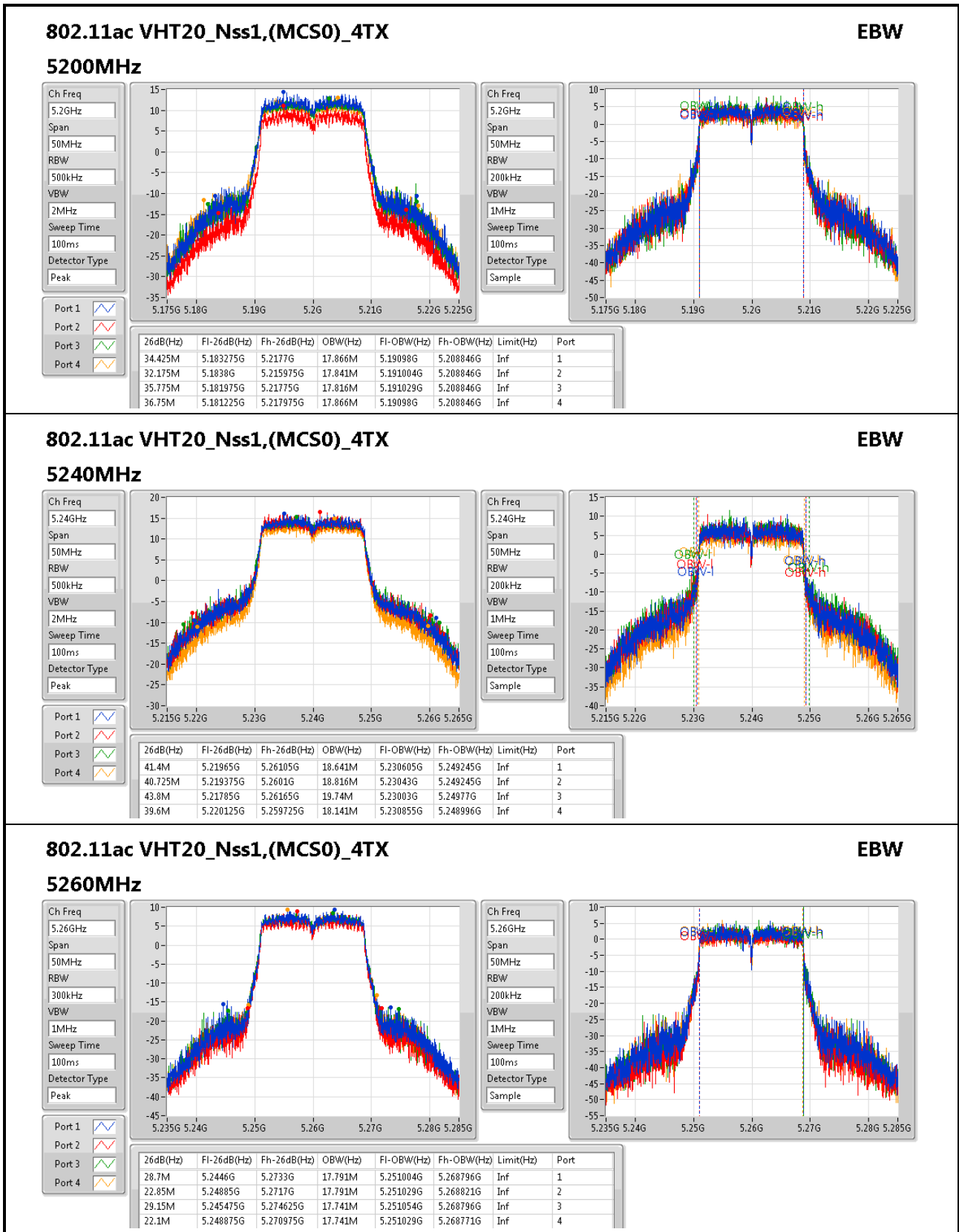
Ch Freq: 5.32GHz
Span: 50MHz
RBW: 300kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Peak

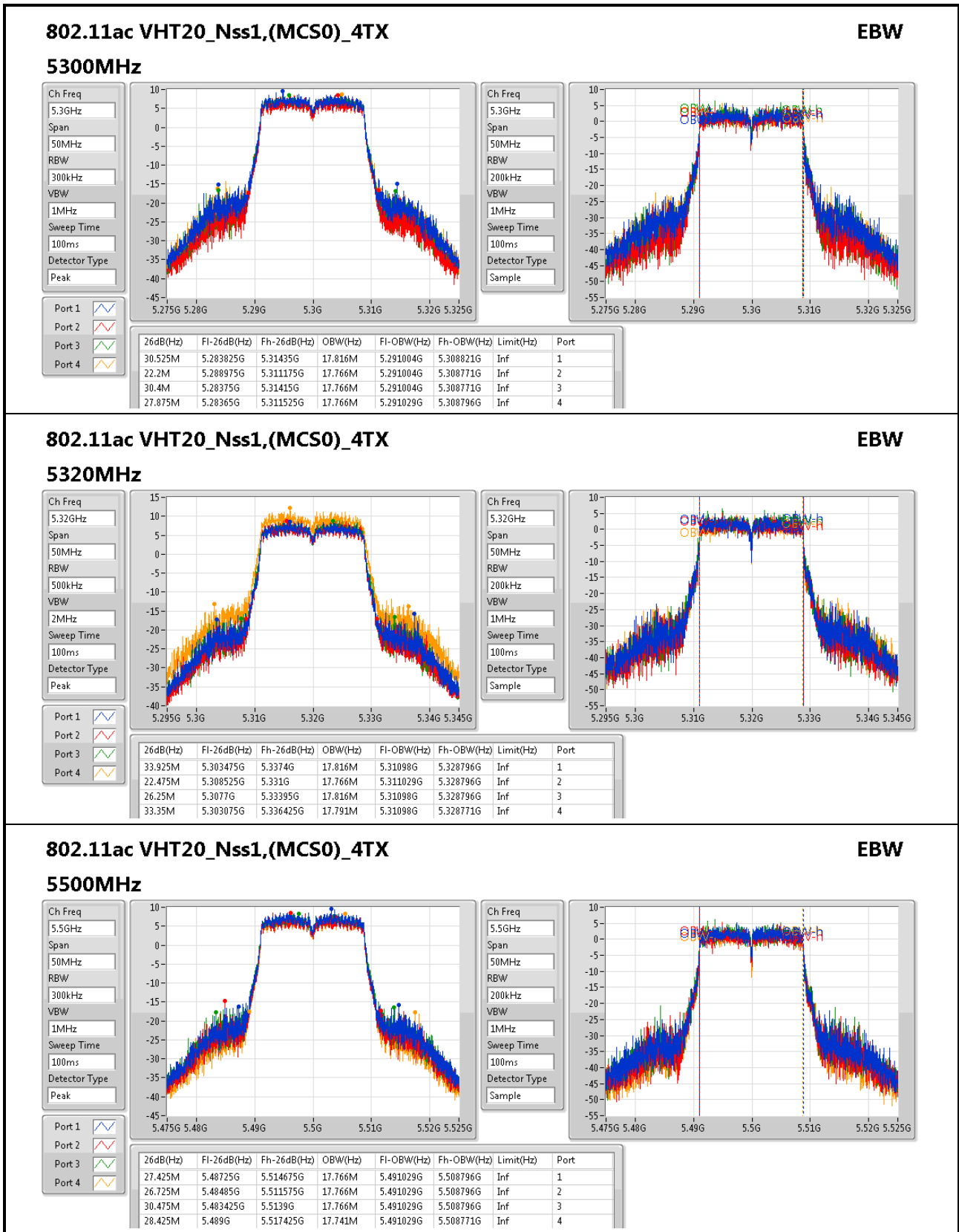
Ch Freq: 5.32GHz
Span: 50MHz
RBW: 200kHz
VBW: 1MHz
Sweep Time: 100ms
Detector Type: Sample

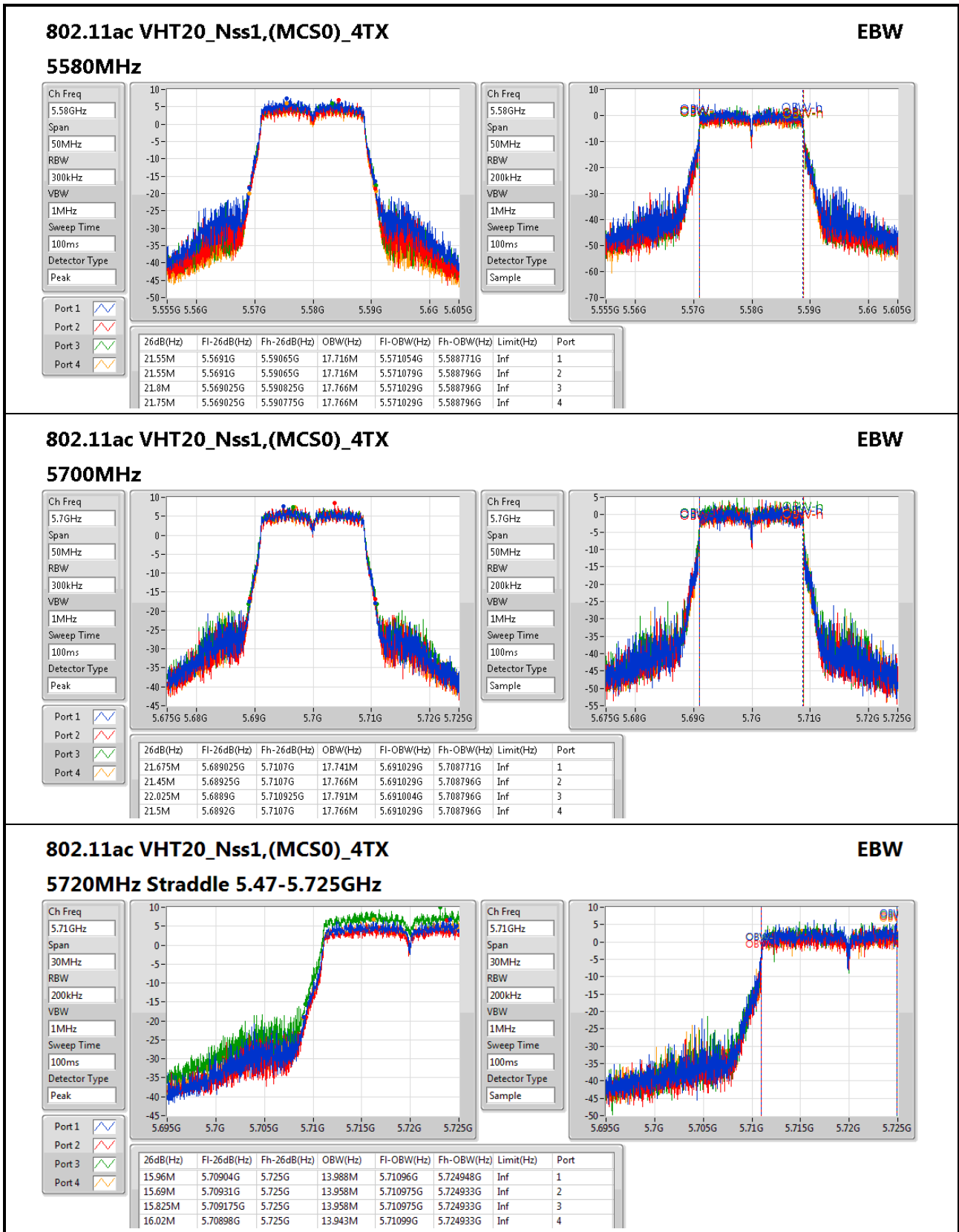


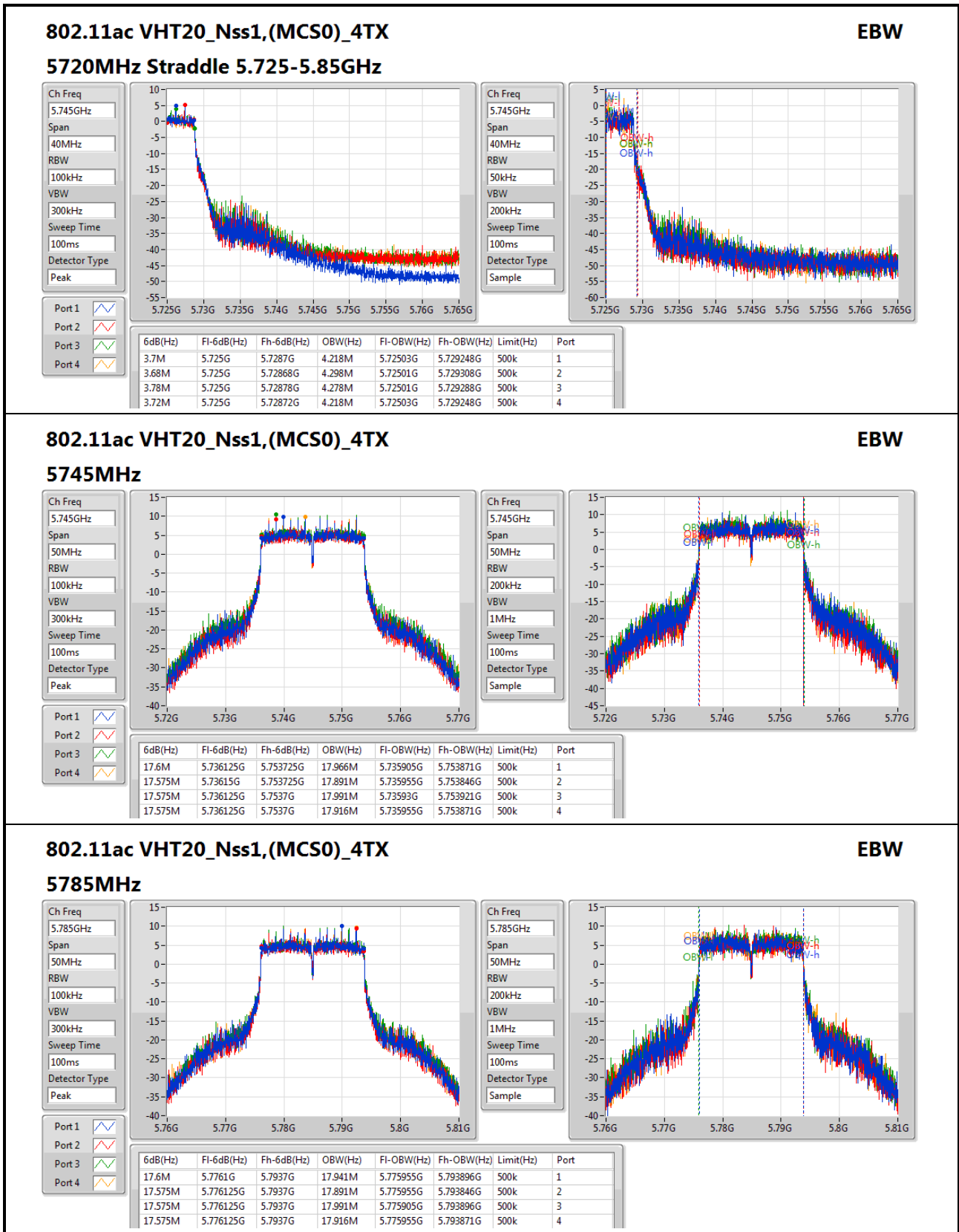


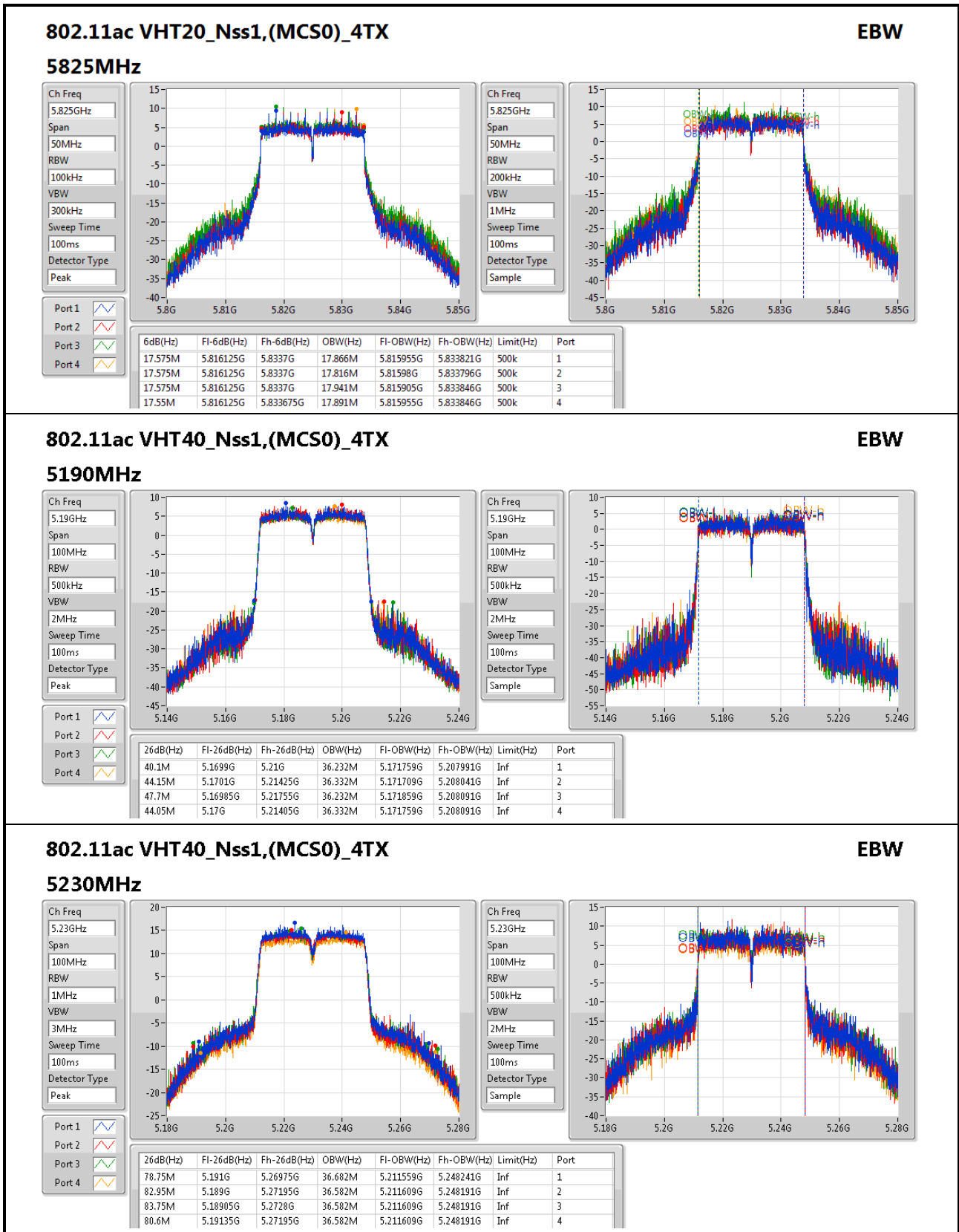


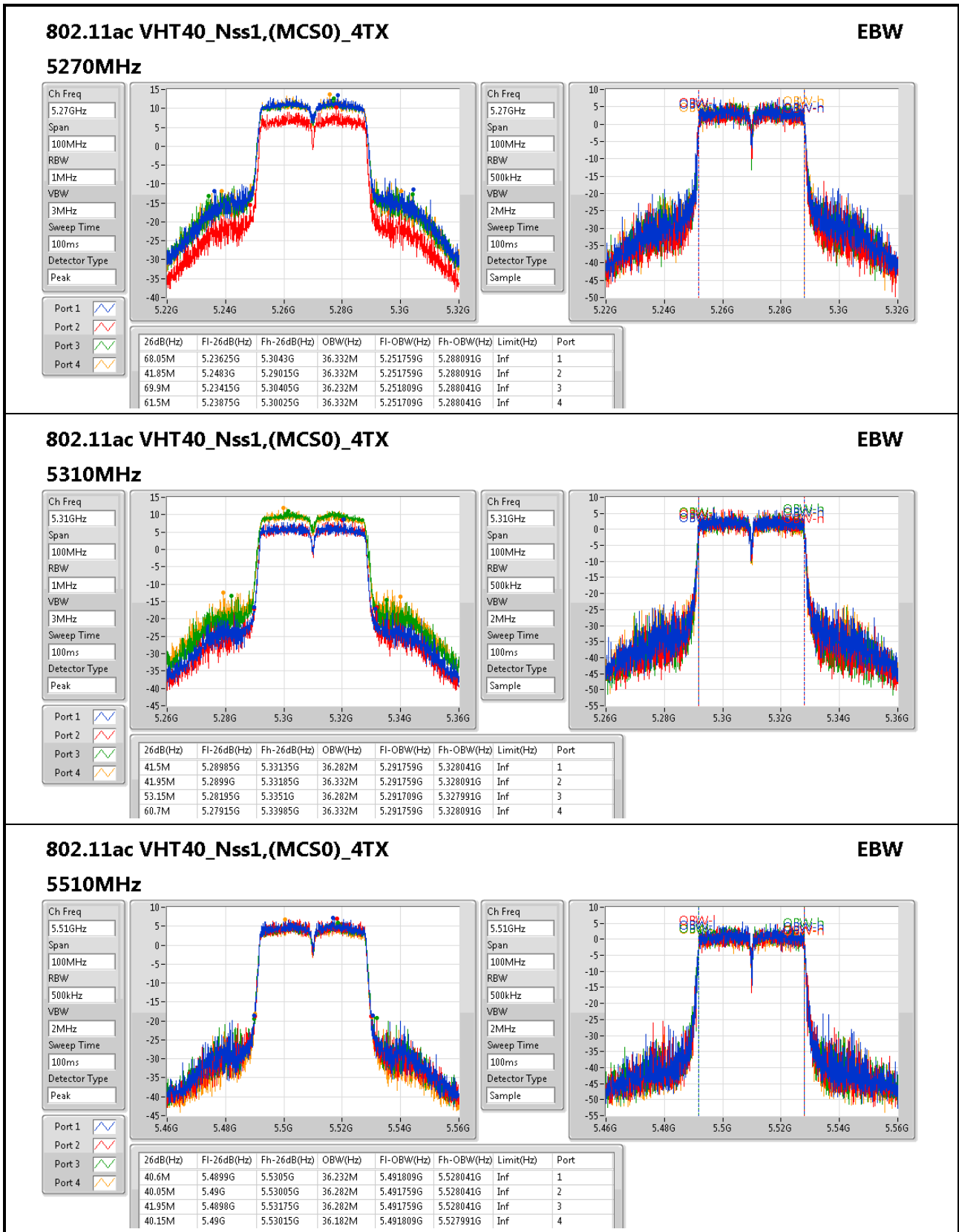


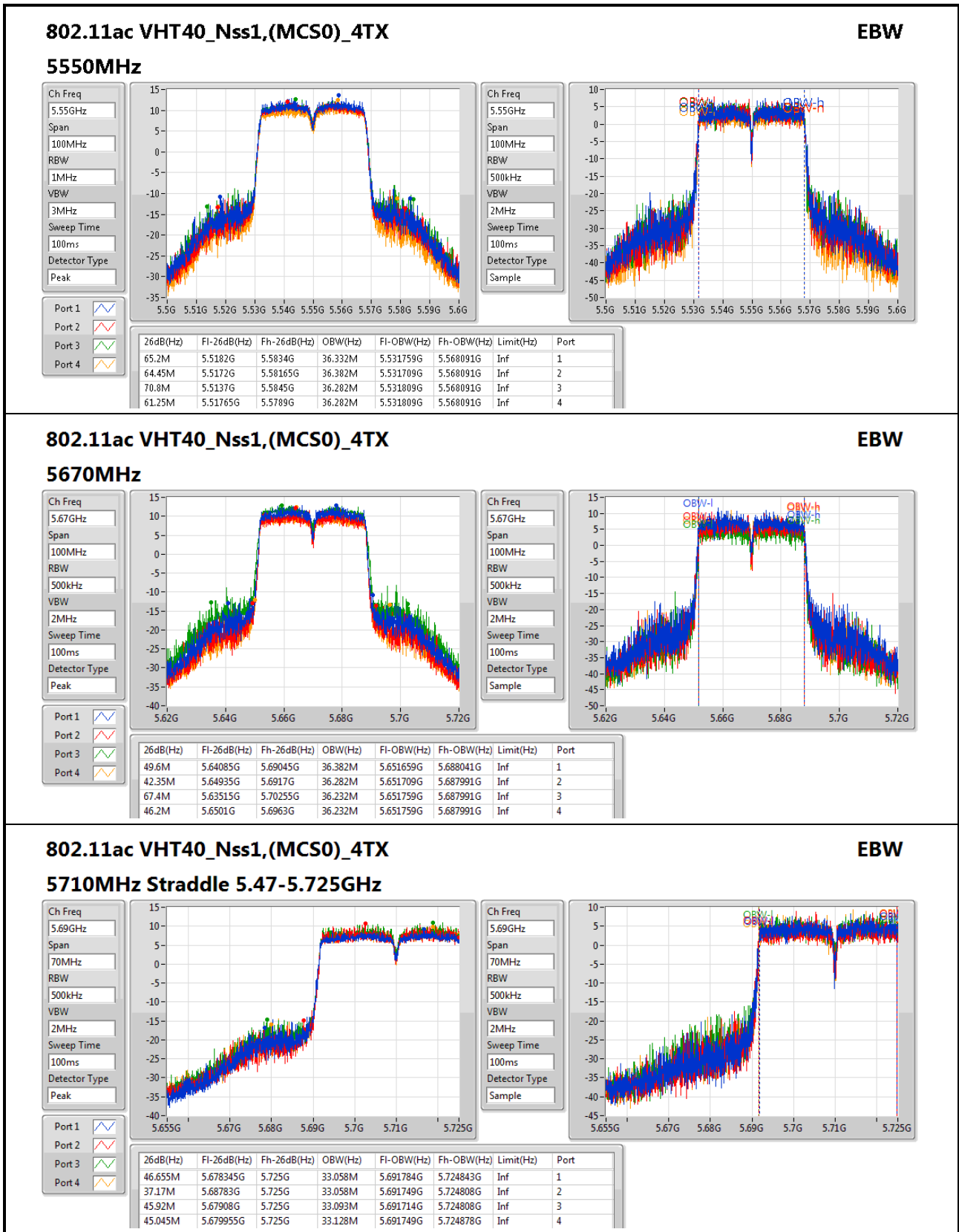


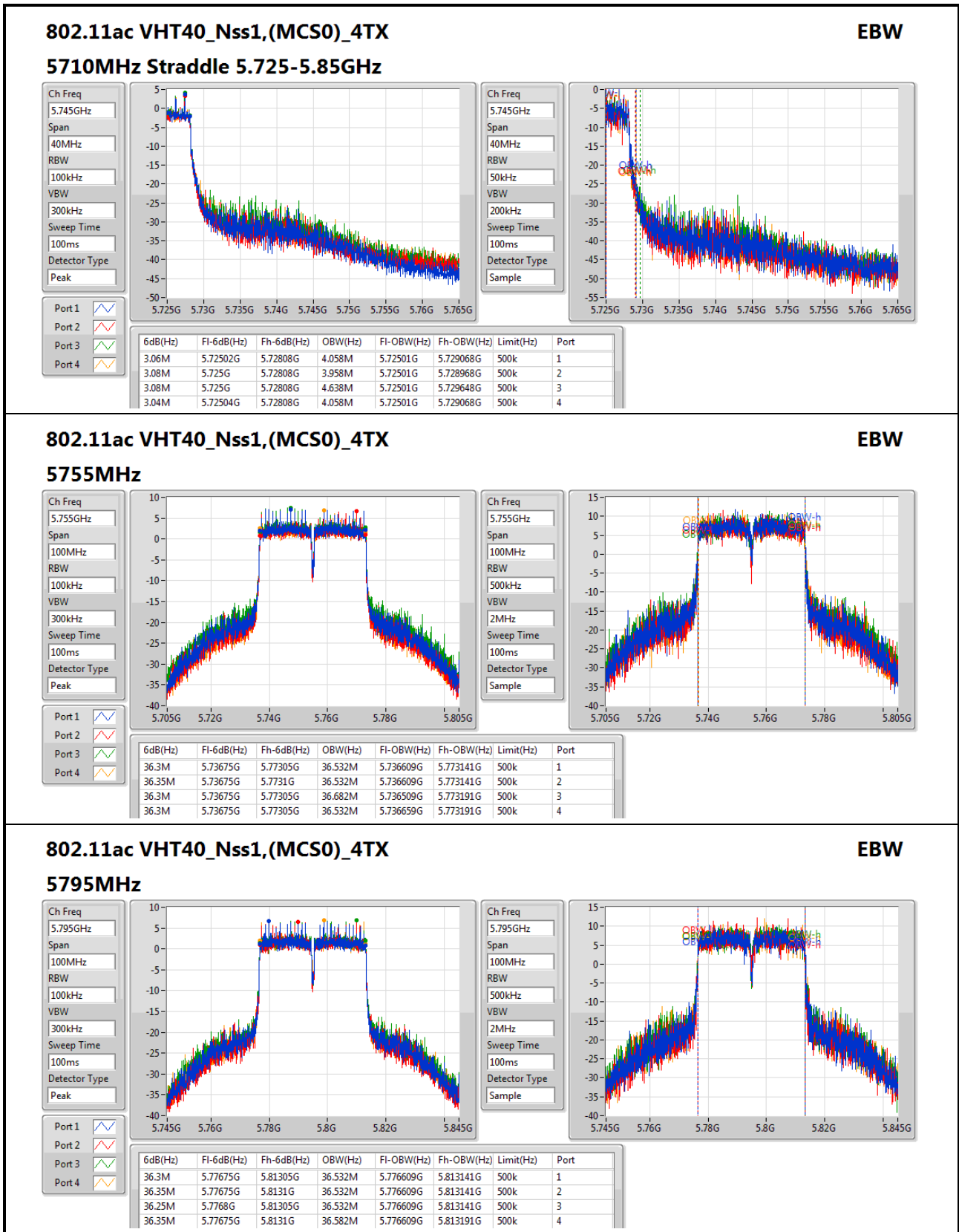


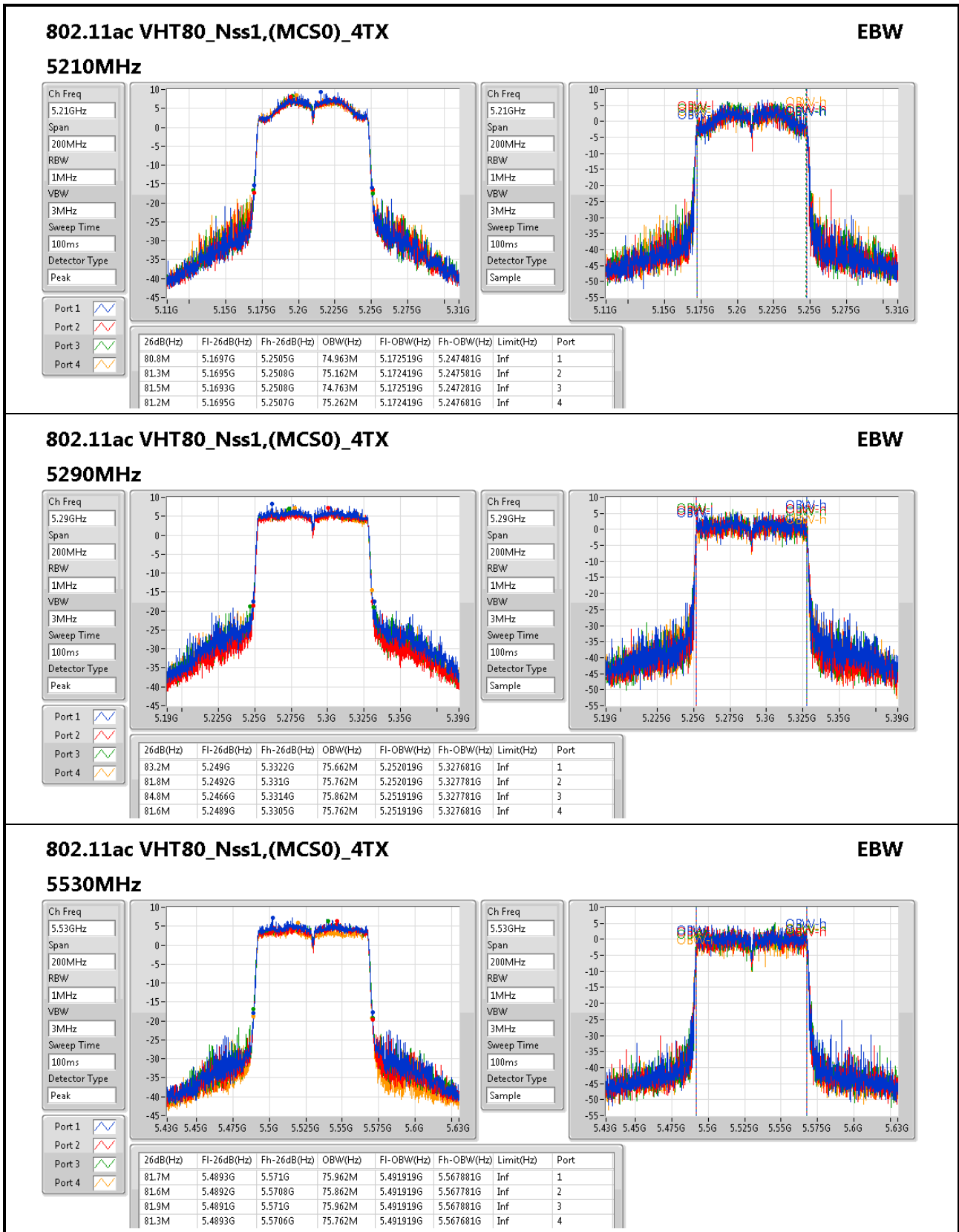


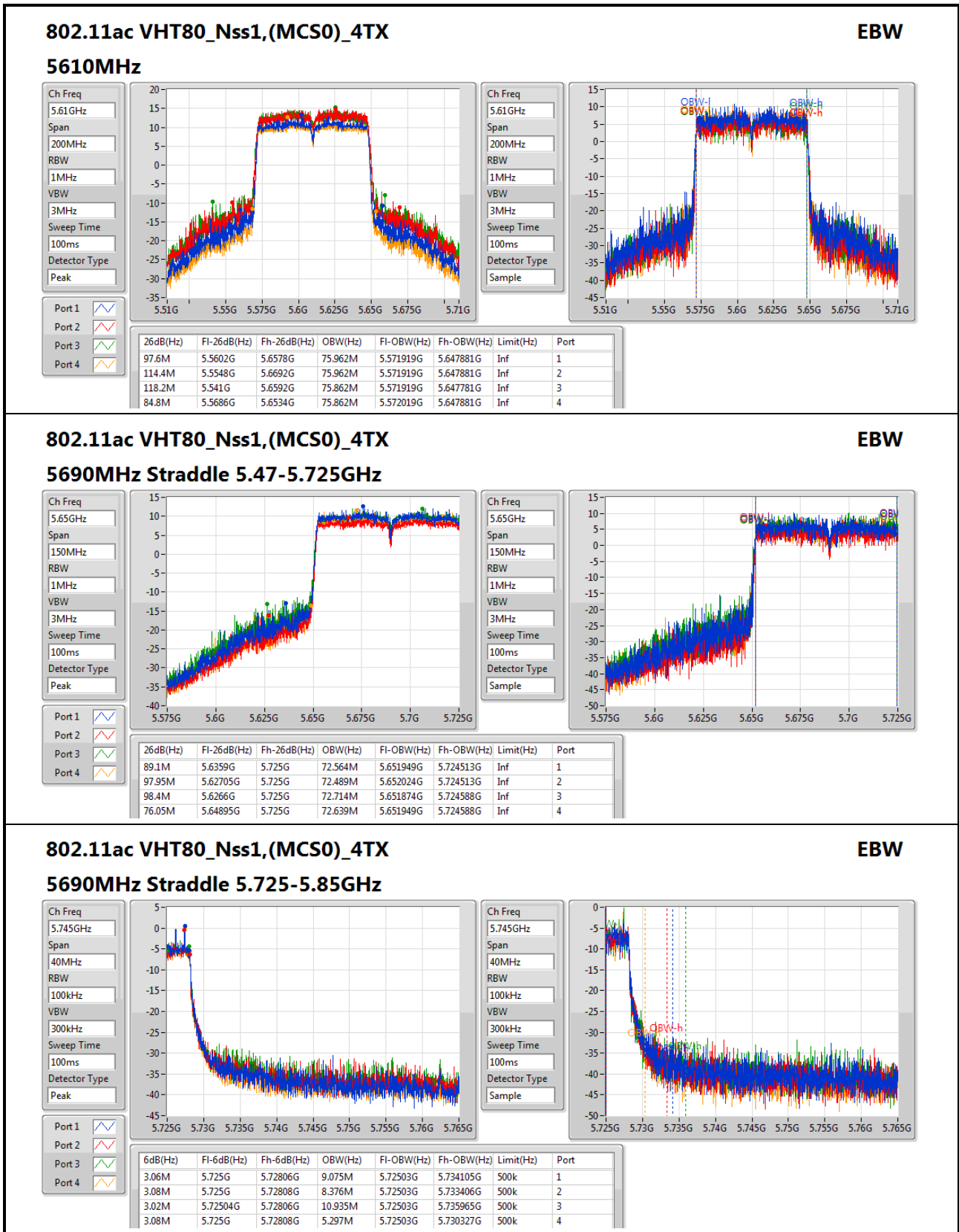


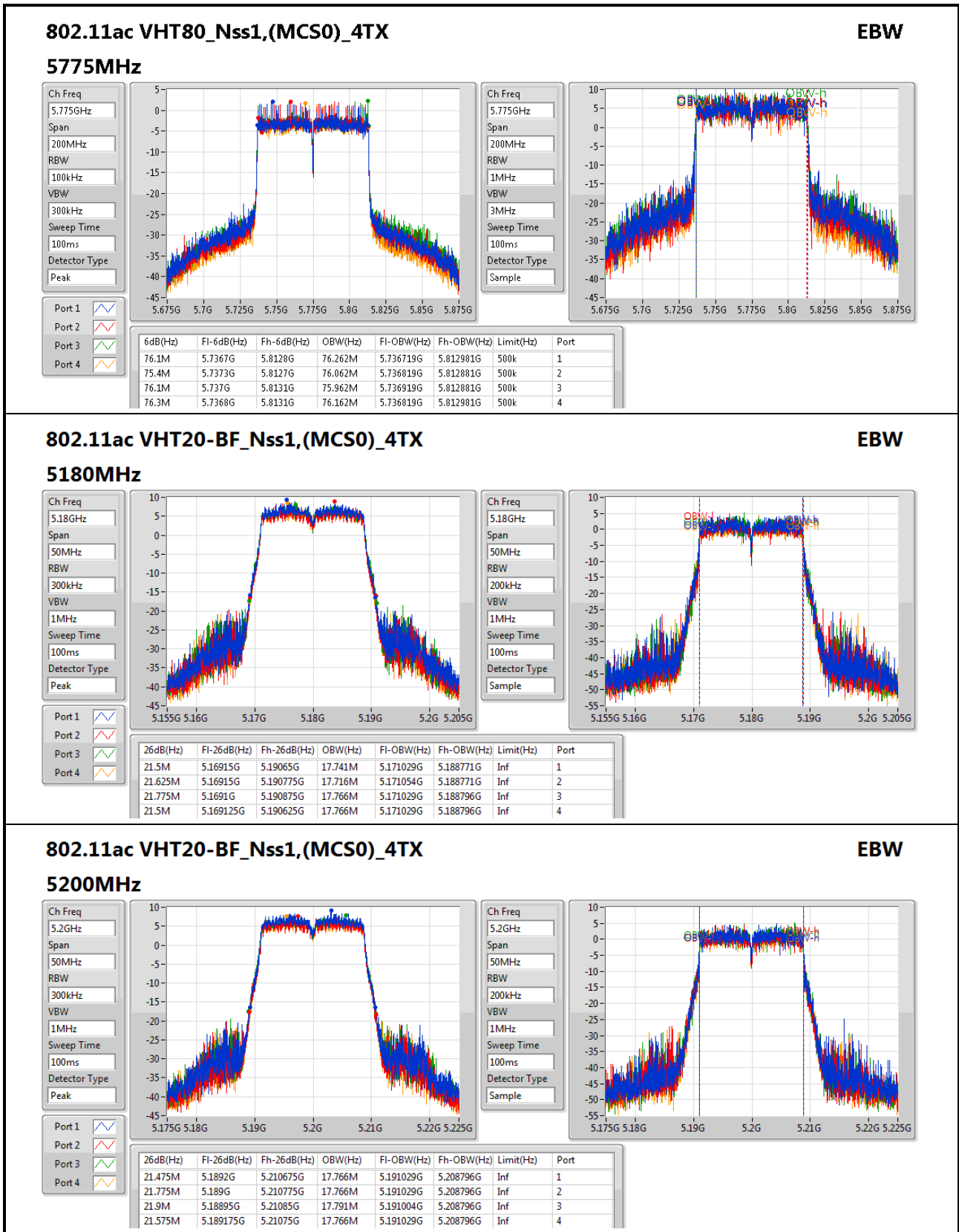


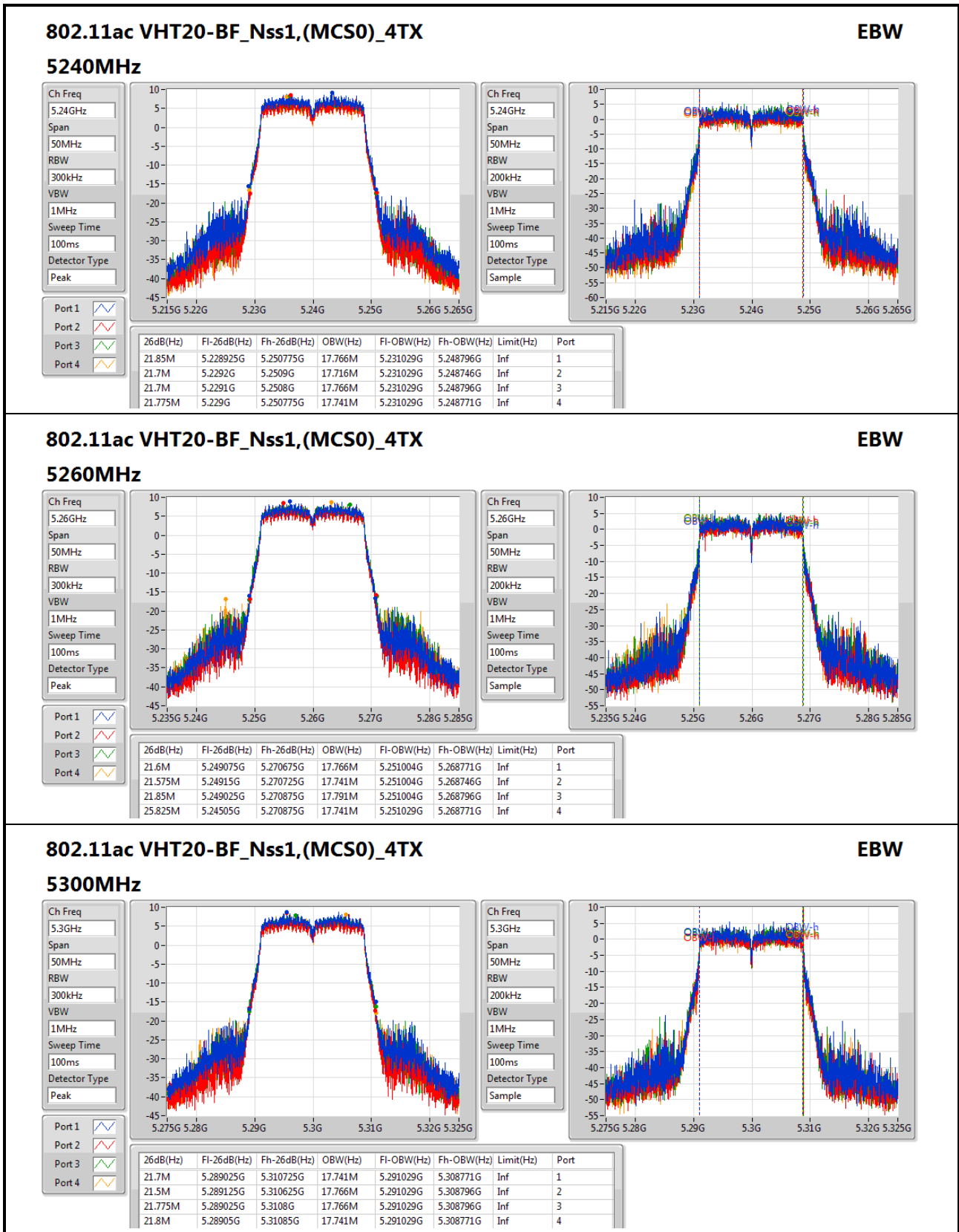


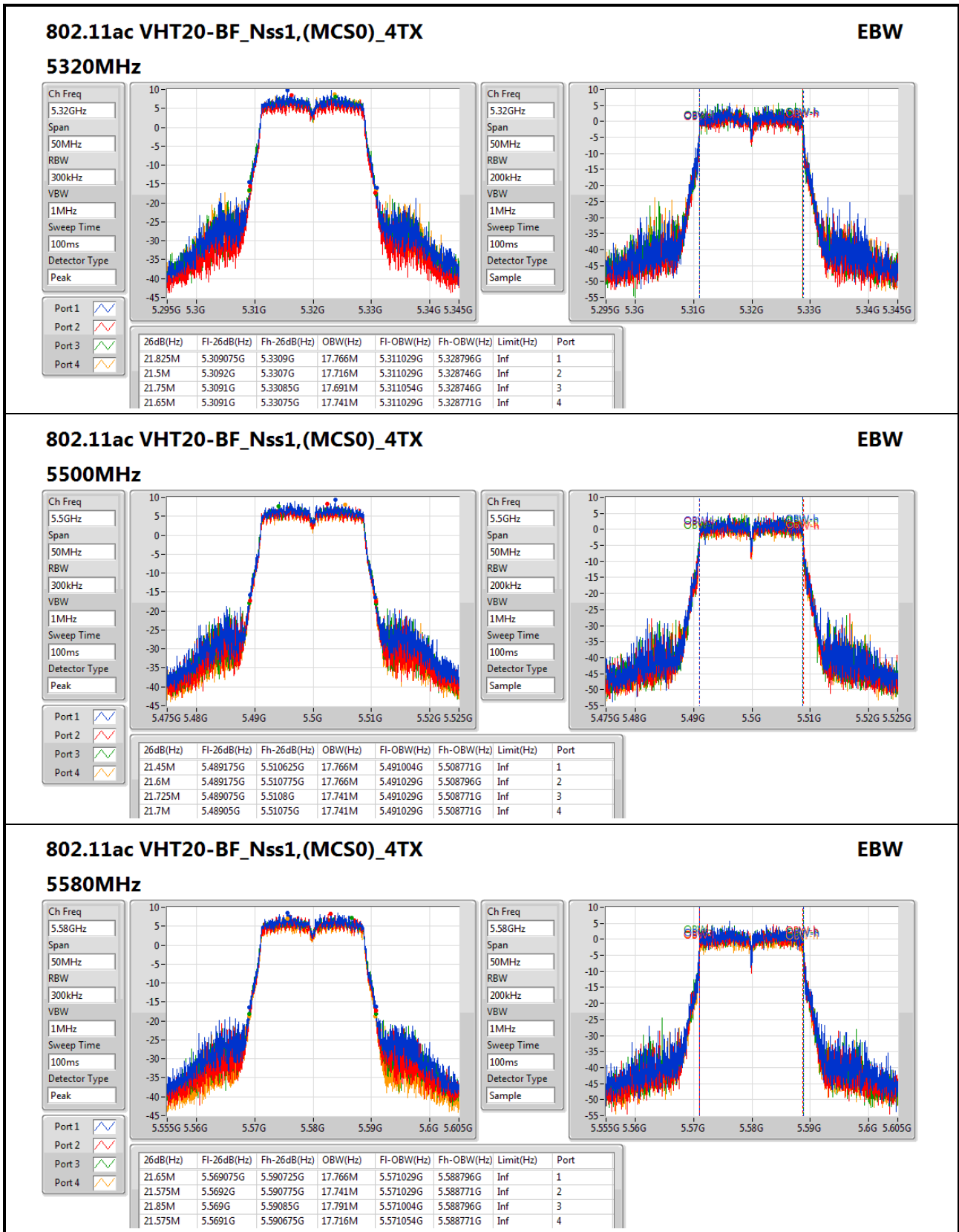


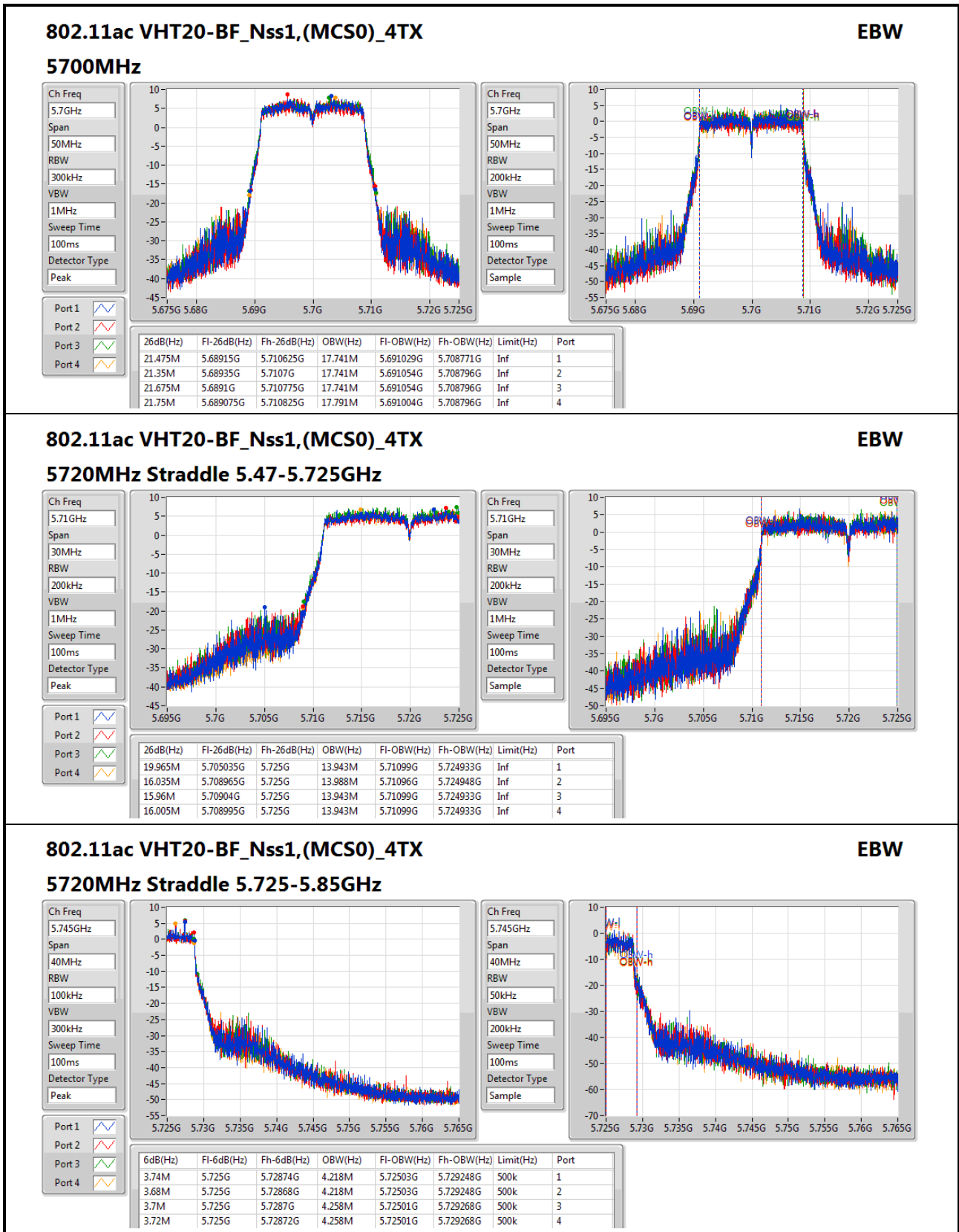


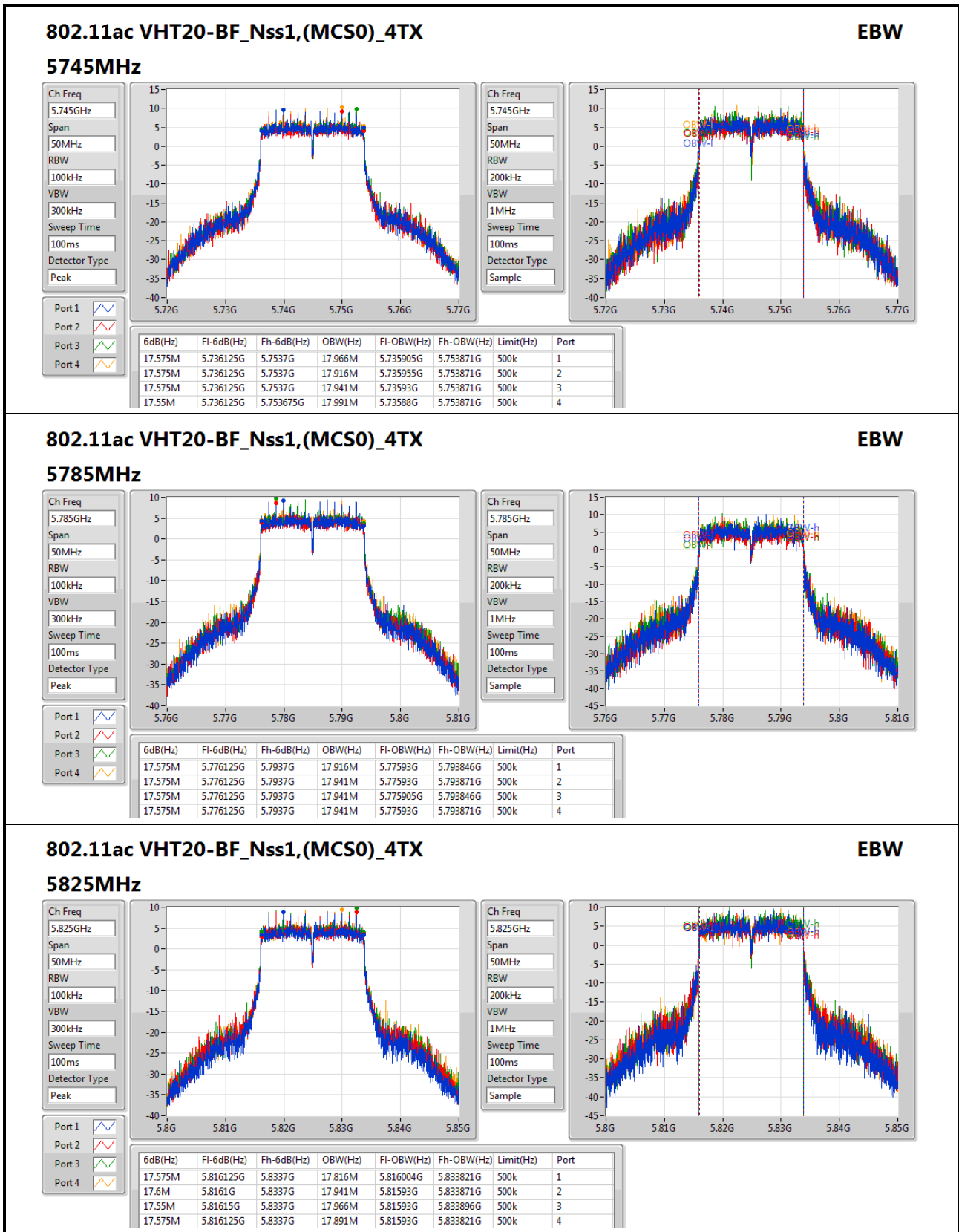


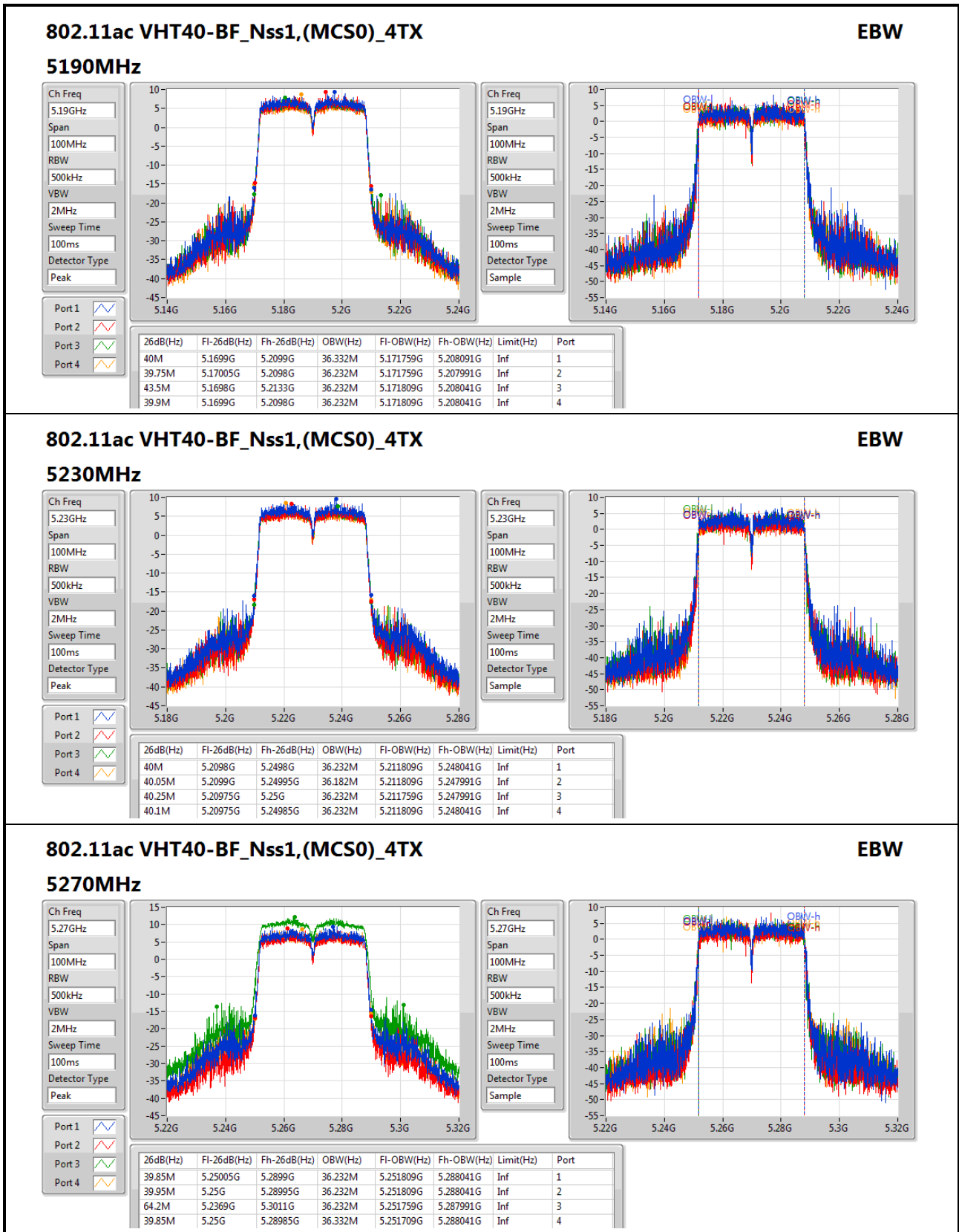


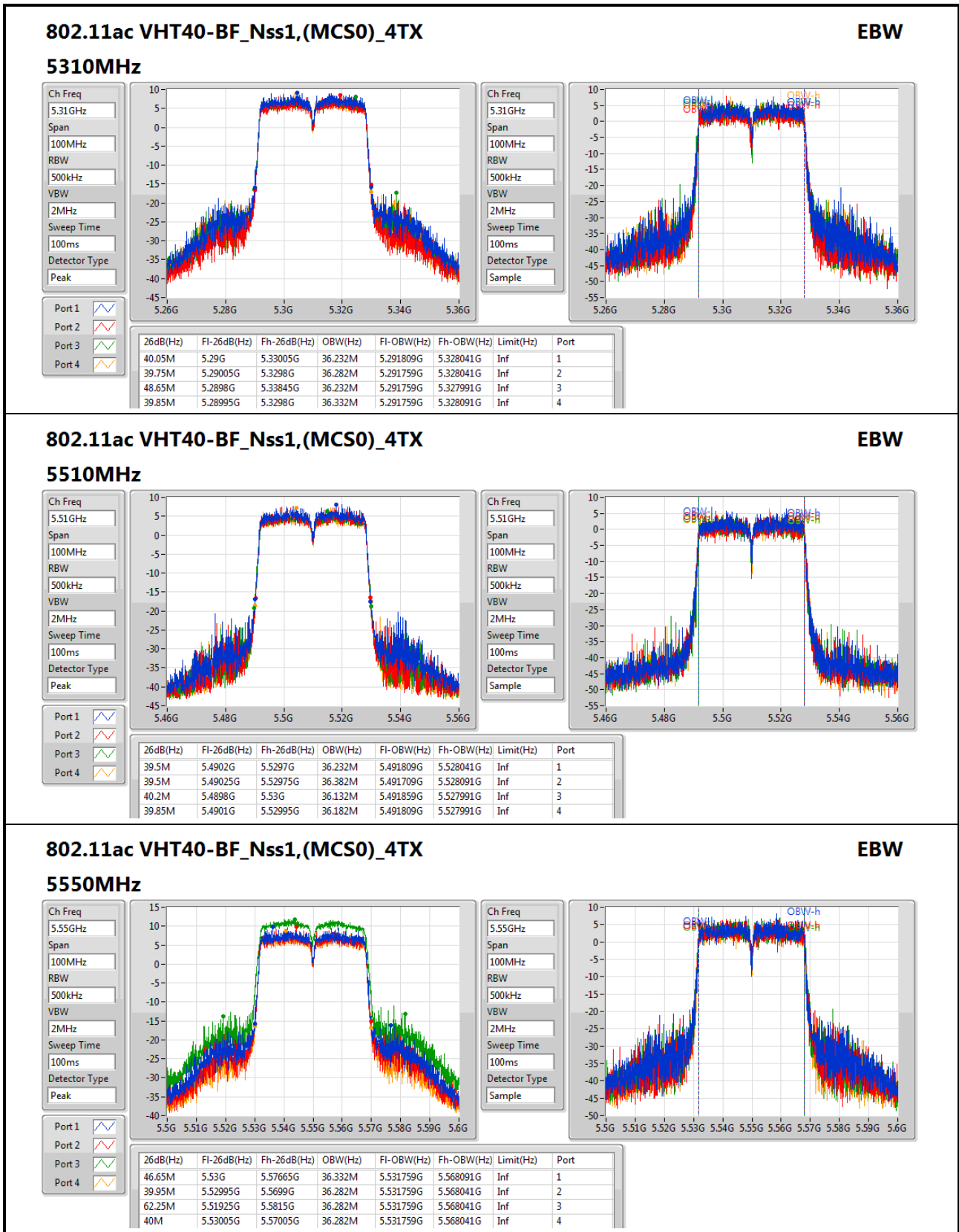


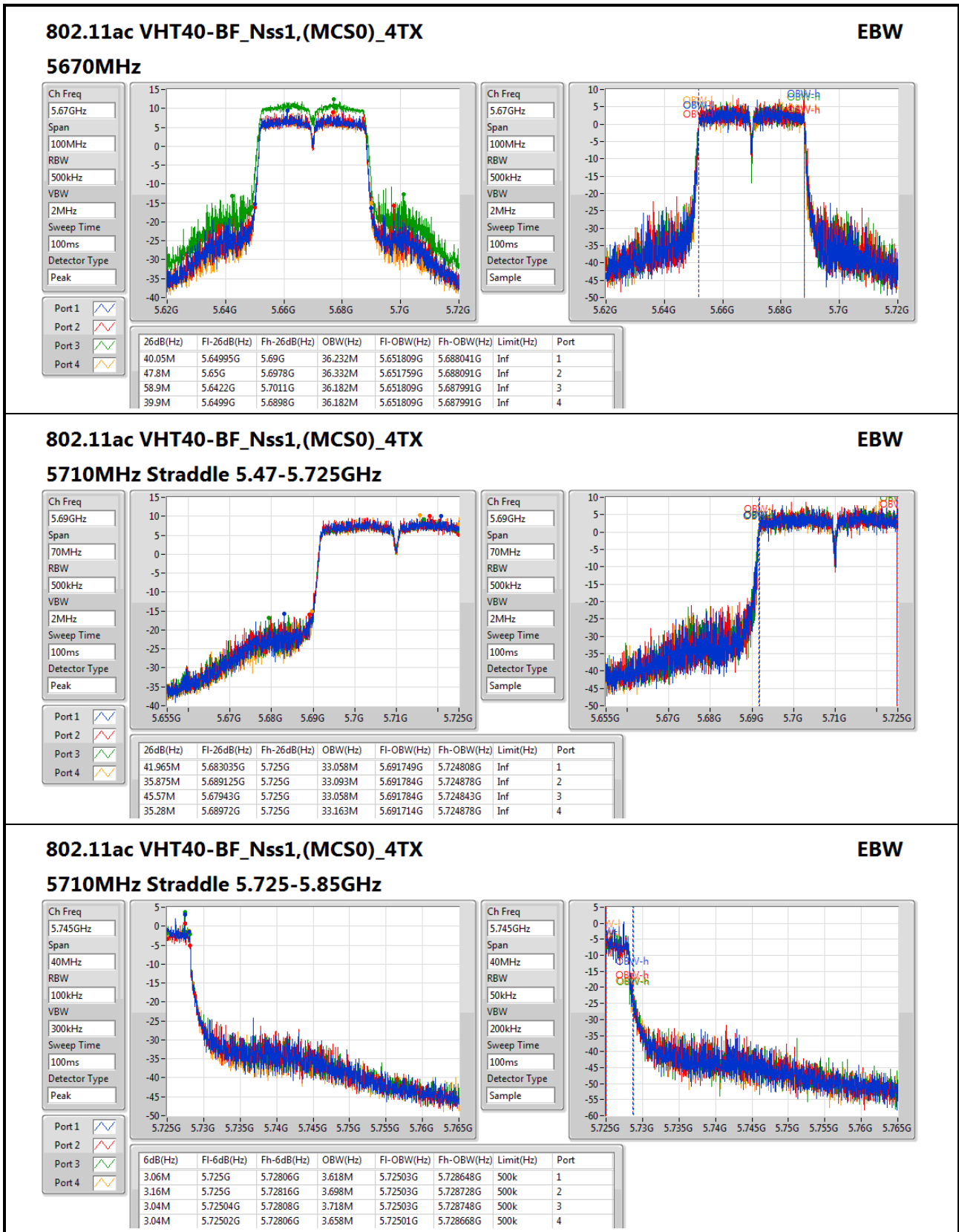


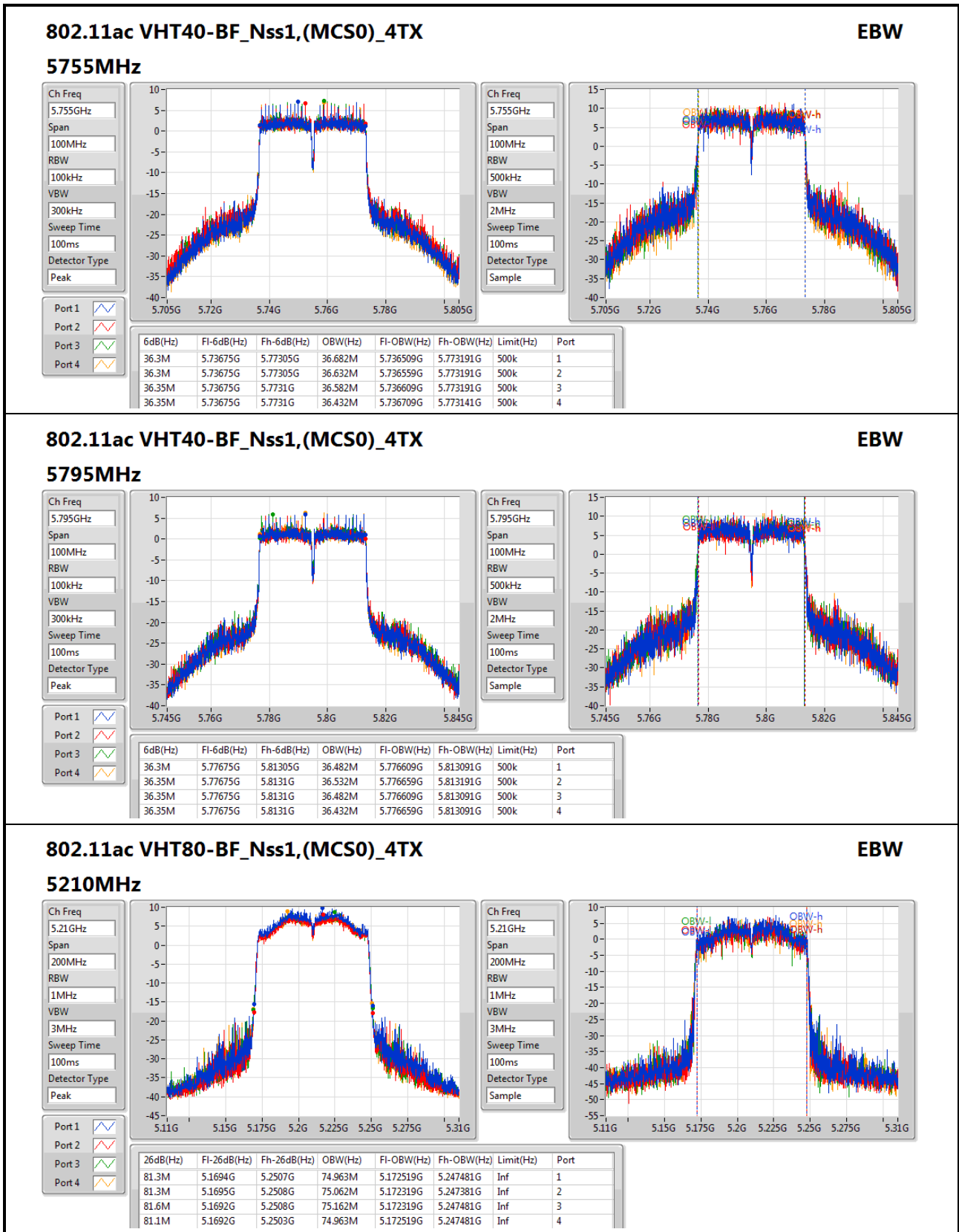


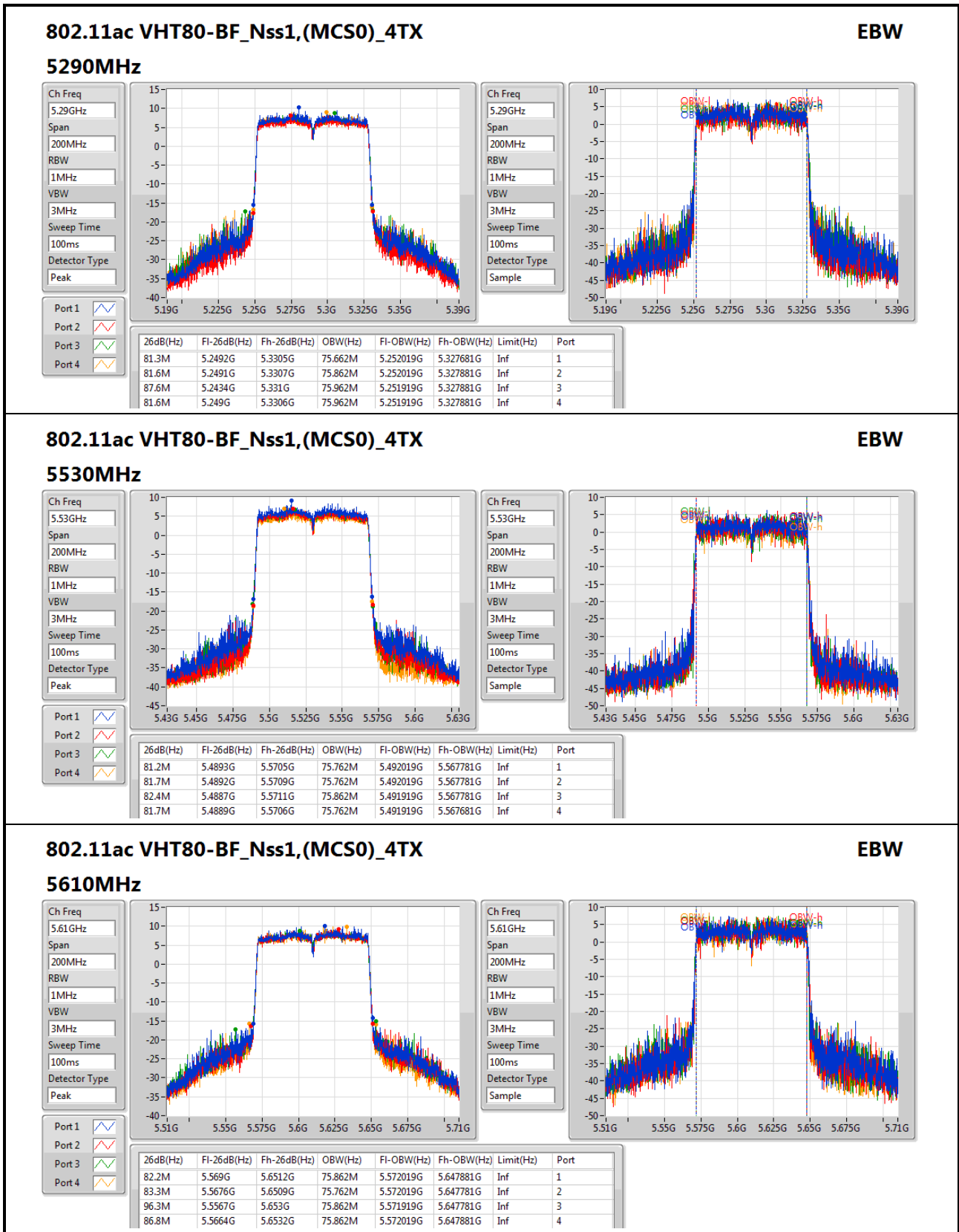


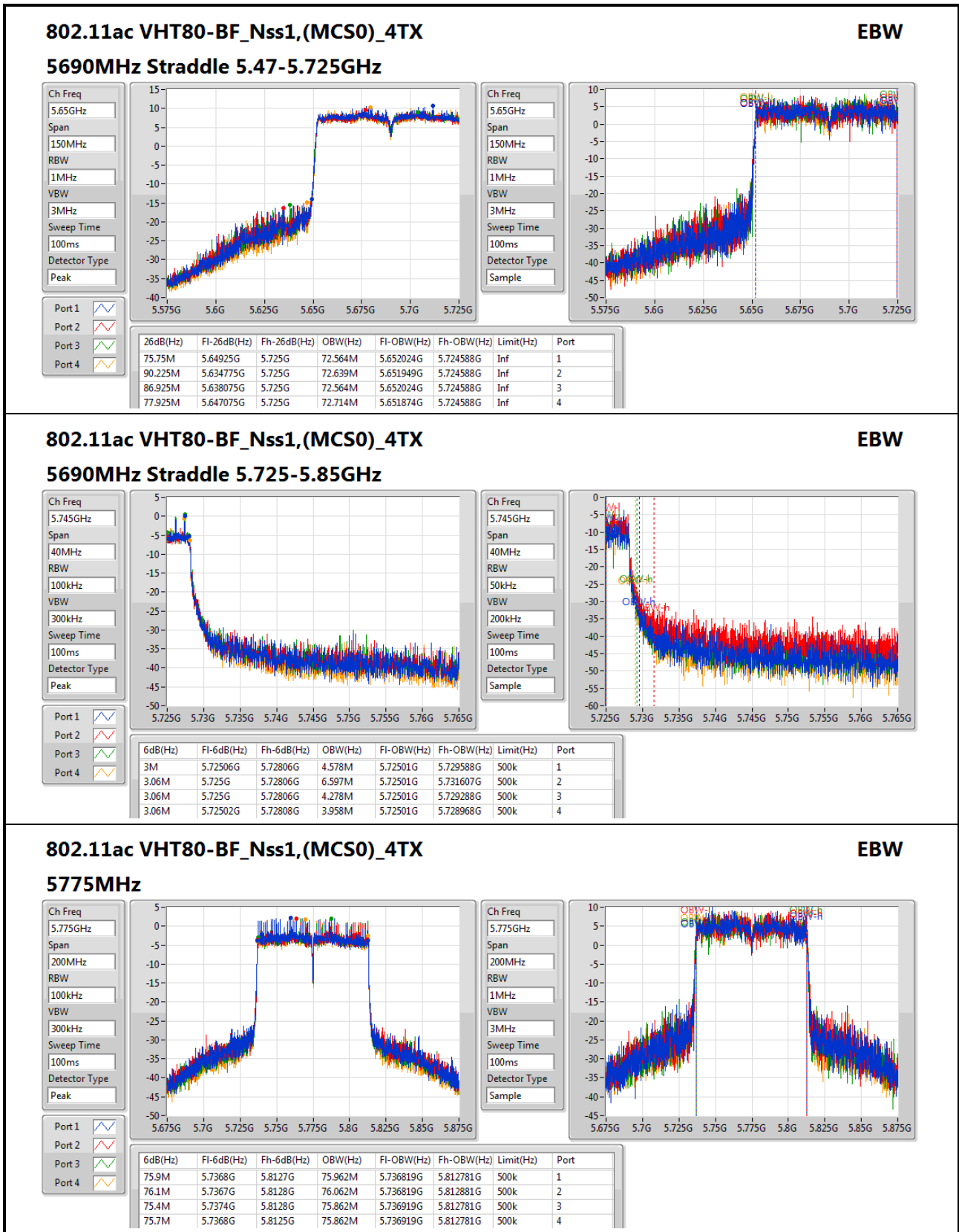














EBW Result_For Slave mode UNII 1~3 and AP mode UNII 3_4T2S Appendix B.4

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	28.375M	17.841M	17M8D1D	21.85M	17.691M
5.25-5.35GHz	30.375M	17.841M	17M8D1D	21.425M	17.666M
5.47-5.725GHz	21.9M	17.816M	17M8D1D	15.705M	13.883M
5.725-5.85GHz	17.75M	17.991M	18M0D1D	3.74M	4.178M
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	40.9M	36.432M	36M4D1D	39.6M	35.782M
5.25-5.35GHz	42.7M	36.532M	36M5D1D	38.95M	35.782M
5.47-5.725GHz	48.16M	36.432M	36M4D1D	34.685M	32.954M
5.725-5.85GHz	36.45M	36.682M	36M7D1D	3.18M	3.818M
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-
5.15-5.25GHz	84.9M	75.562M	75M6D1D	80.3M	74.463M
5.25-5.35GHz	81M	75.862M	75M9D1D	80.3M	74.563M
5.47-5.725GHz	97.9M	76.262M	76M3D1D	75.375M	72.489M
5.725-5.85GHz	76.4M	76.162M	76M2D1D	2.54M	4.318M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;



EBW Result For Slave mode UNII 1~3 and AP mode UNII 3_4T2S Appendix B.4

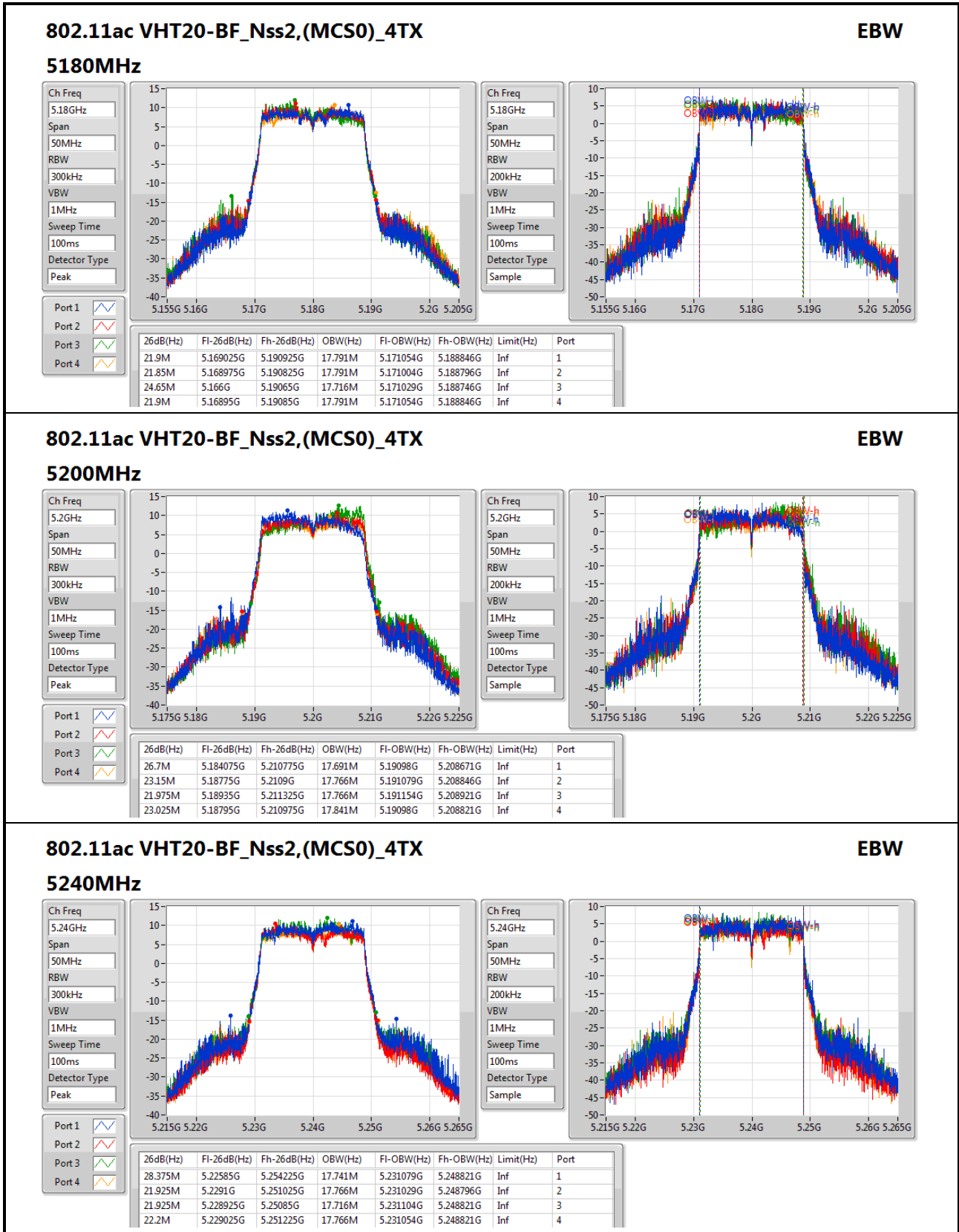
Result

Mode	Result	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_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5180MHz	Pass	21.9M	17.791M	21.85M	17.791M	24.65M	17.716M	21.9M	17.791M
5200MHz	Pass	26.7M	17.691M	23.15M	17.766M	21.975M	17.766M	23.025M	17.841M
5240MHz	Pass	28.375M	17.741M	21.925M	17.766M	21.925M	17.716M	22.2M	17.766M
5260MHz	Pass	21.825M	17.766M	22.825M	17.666M	21.775M	17.816M	23.5M	17.766M
5300MHz	Pass	30.375M	17.766M	25.325M	17.841M	21.525M	17.691M	28.175M	17.766M
5320MHz	Pass	22.125M	17.791M	21.95M	17.816M	21.425M	17.841M	22.65M	17.766M
5500MHz	Pass	21.725M	17.766M	21.675M	17.816M	21.6M	17.716M	21.9M	17.766M
5580MHz	Pass	21.55M	17.791M	21.6M	17.716M	21.425M	17.666M	21.575M	17.741M
5700MHz	Pass	21.5M	17.716M	21.65M	17.716M	21.75M	17.816M	21.85M	17.766M
5720MHz Straddle 5.47-5.725GHz	Pass	17.58M	13.958M	15.855M	13.898M	15.705M	13.883M	15.735M	13.913M
5720MHz Straddle 5.725-5.85GHz	Pass	3.74M	4.338M	3.76M	4.178M	3.84M	4.318M	3.74M	4.298M
5745MHz	Pass	17.625M	17.816M	17.55M	17.741M	17.575M	17.891M	17.6M	17.866M
5785MHz	Pass	17.25M	17.791M	17.625M	17.741M	17.625M	17.991M	17.675M	17.941M
5825MHz	Pass	17.75M	17.866M	17.625M	17.716M	17.6M	17.816M	17.6M	17.866M
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5190MHz	Pass	39.6M	36.082M	39.85M	36.282M	39.75M	36.432M	39.9M	36.232M
5230MHz	Pass	40M	35.782M	39.8M	36.432M	40.1M	36.382M	40.9M	36.282M
5270MHz	Pass	41.05M	36.332M	39.75M	36.132M	39.25M	36.132M	42.7M	36.232M
5310MHz	Pass	39.8M	36.332M	39.8M	36.532M	38.95M	35.782M	40M	36.232M
5510MHz	Pass	39.5M	36.232M	39.95M	36.432M	39.2M	35.982M	40.25M	36.232M
5550MHz	Pass	40.45M	36.332M	40.5M	36.282M	39.9M	36.082M	40.55M	36.282M
5670MHz	Pass	39.8M	36.332M	39.95M	36.232M	39.4M	36.332M	41.7M	36.182M
5710MHz Straddle 5.47-5.725GHz	Pass	42.56M	33.198M	34.93M	32.954M	34.685M	33.128M	48.16M	33.058M
5710MHz Straddle 5.725-5.85GHz	Pass	3.18M	3.818M	3.2M	3.838M	3.2M	3.938M	3.2M	3.878M
5755MHz	Pass	35.45M	36.432M	36.35M	36.482M	36.35M	36.332M	36.15M	36.382M
5795MHz	Pass	36.35M	36.282M	36.45M	36.482M	36.3M	36.682M	36.05M	36.532M
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-
5210MHz	Pass	80.3M	75.562M	83.1M	74.463M	80.4M	74.863M	84.9M	74.863M
5290MHz	Pass	80.6M	75.662M	80.4M	75.862M	81M	74.563M	80.3M	75.662M
5530MHz	Pass	80.8M	75.562M	80.9M	75.662M	81.1M	75.362M	81.8M	75.962M
5610MHz	Pass	80.6M	75.462M	82.3M	76.262M	81.2M	76.162M	97.9M	76.062M
5690MHz Straddle 5.47-5.725GHz	Pass	77.175M	72.489M	75.375M	72.714M	75.525M	72.864M	76.2M	72.639M
5690MHz Straddle 5.725-5.85GHz	Pass	2.54M	8.716M	3.1M	7.596M	3.18M	4.318M	3.1M	5.637M
5775MHz	Pass	76.4M	76.062M	75.8M	75.562M	76.1M	76.162M	76.3M	75.862M

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;

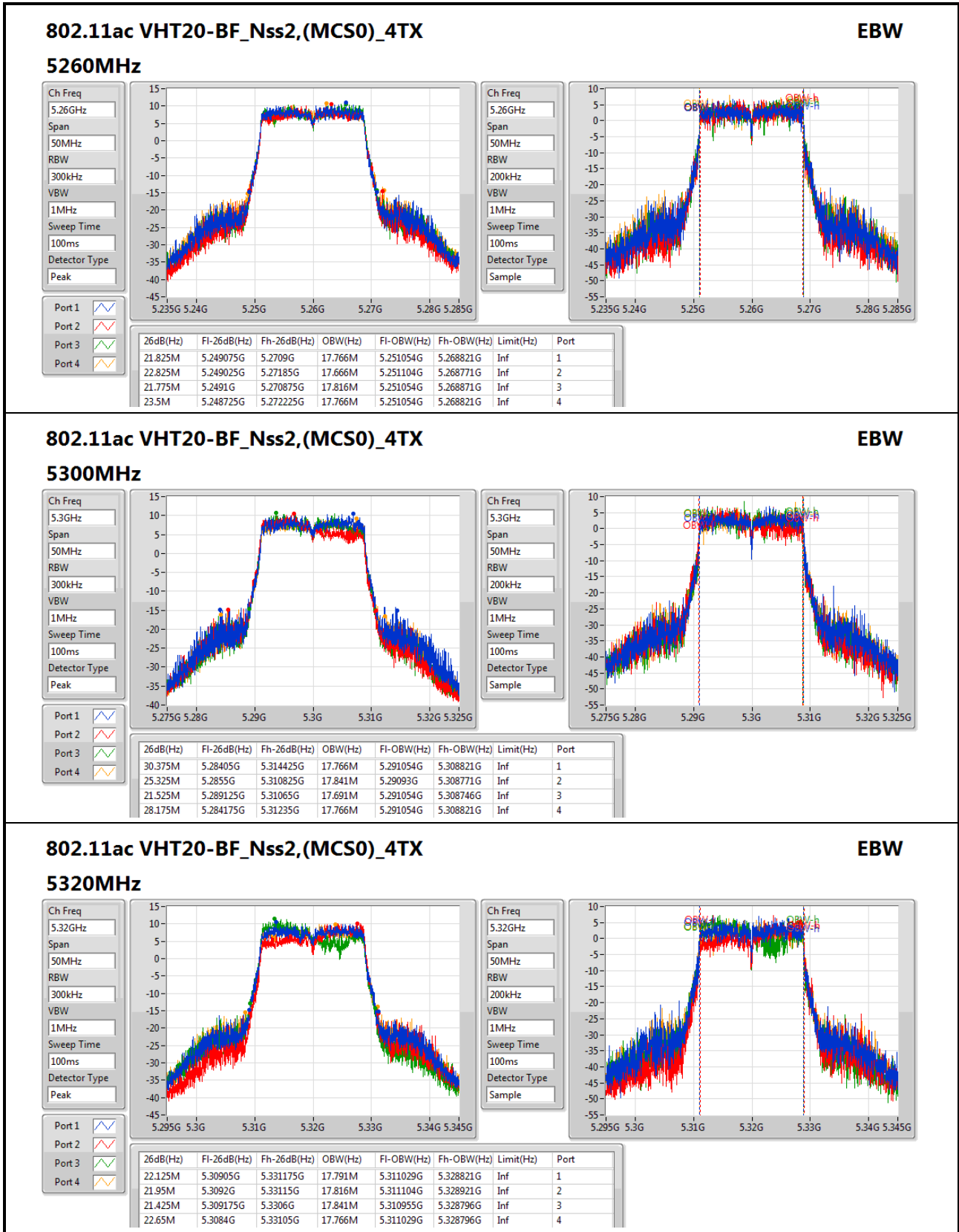


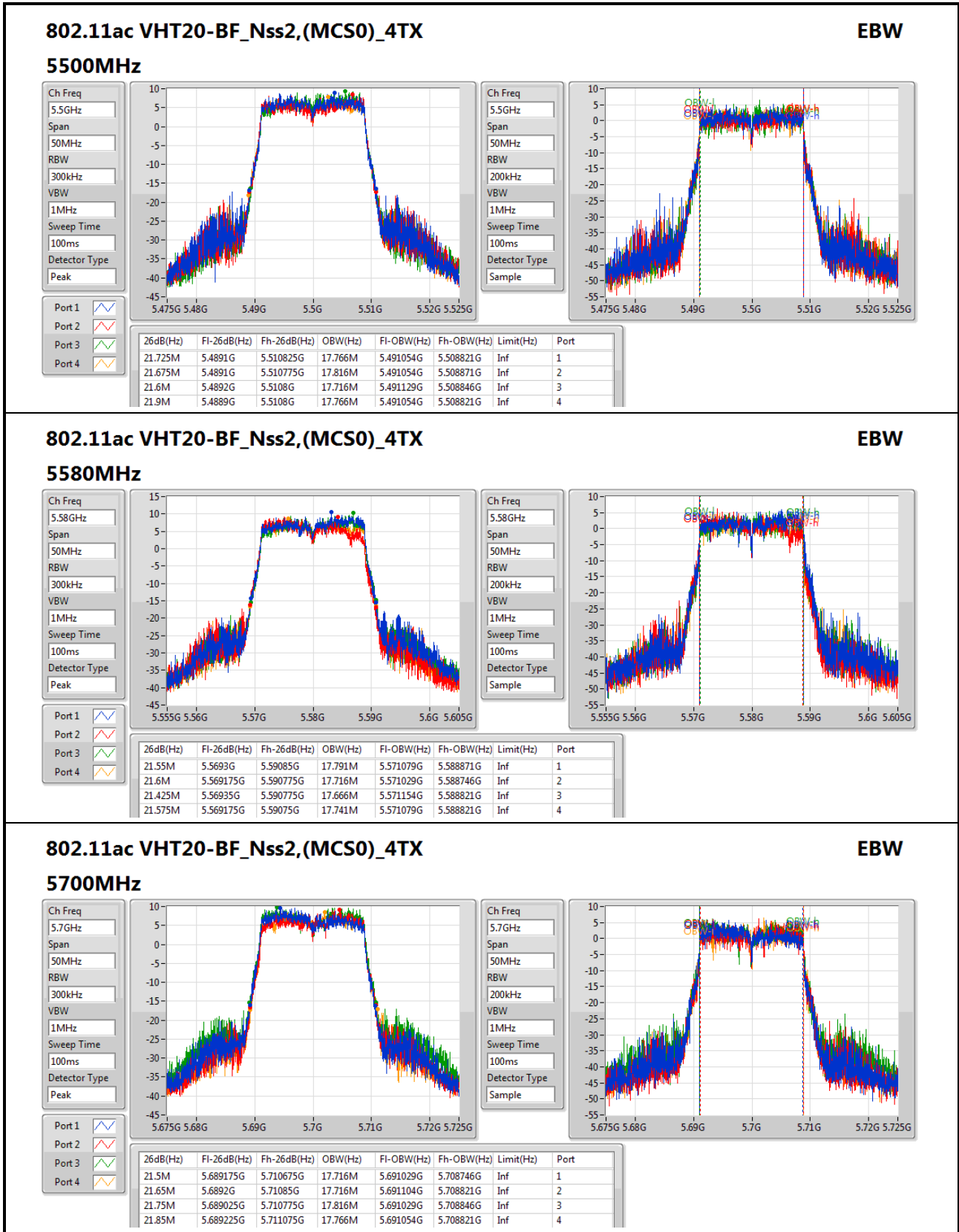
EBW Result_For Slave mode UNII 1~3 and AP mode UNII 3_4T2S Appendix B.4

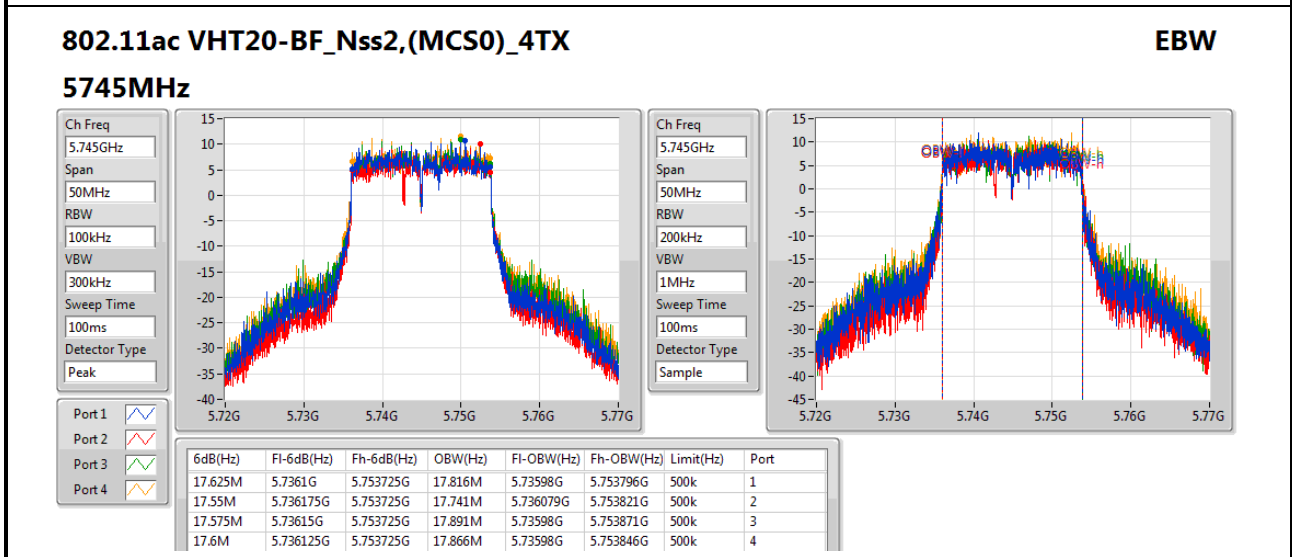
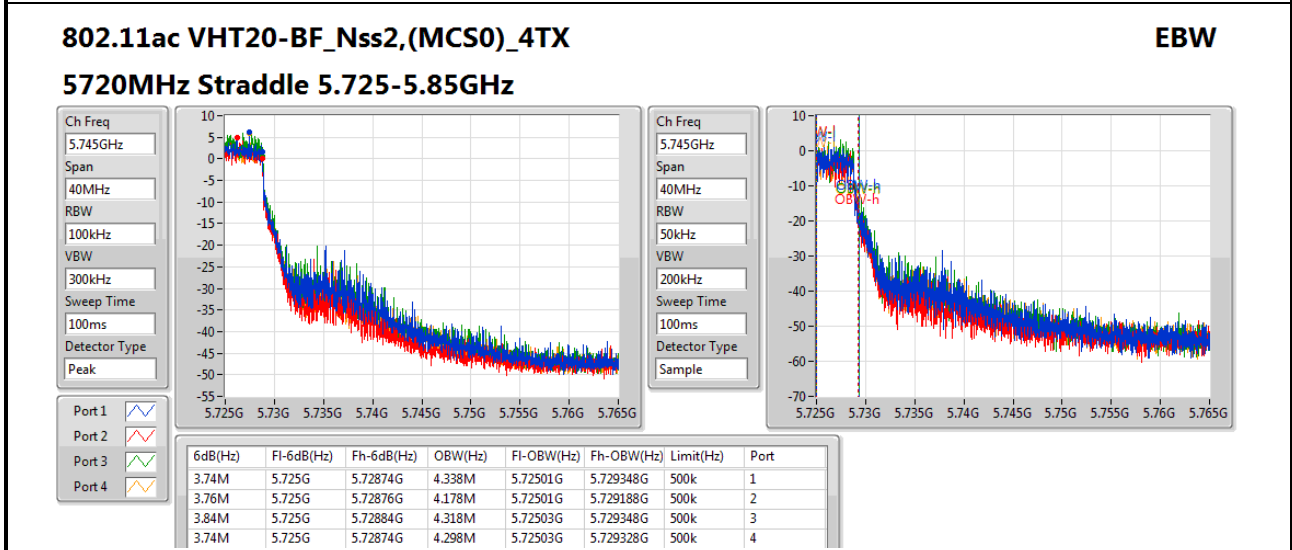
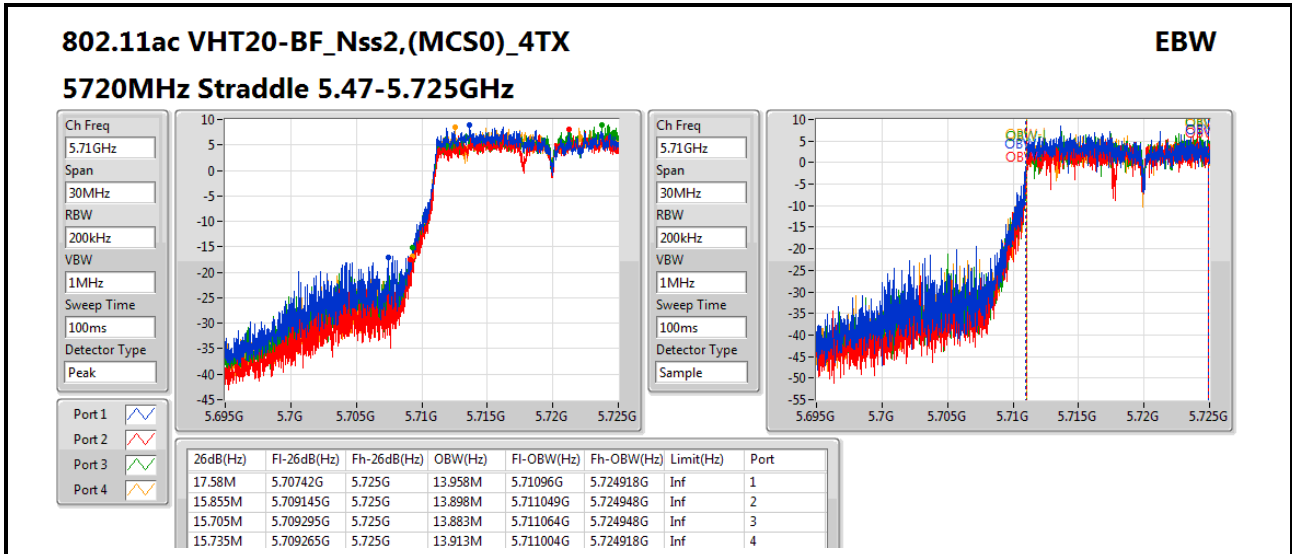


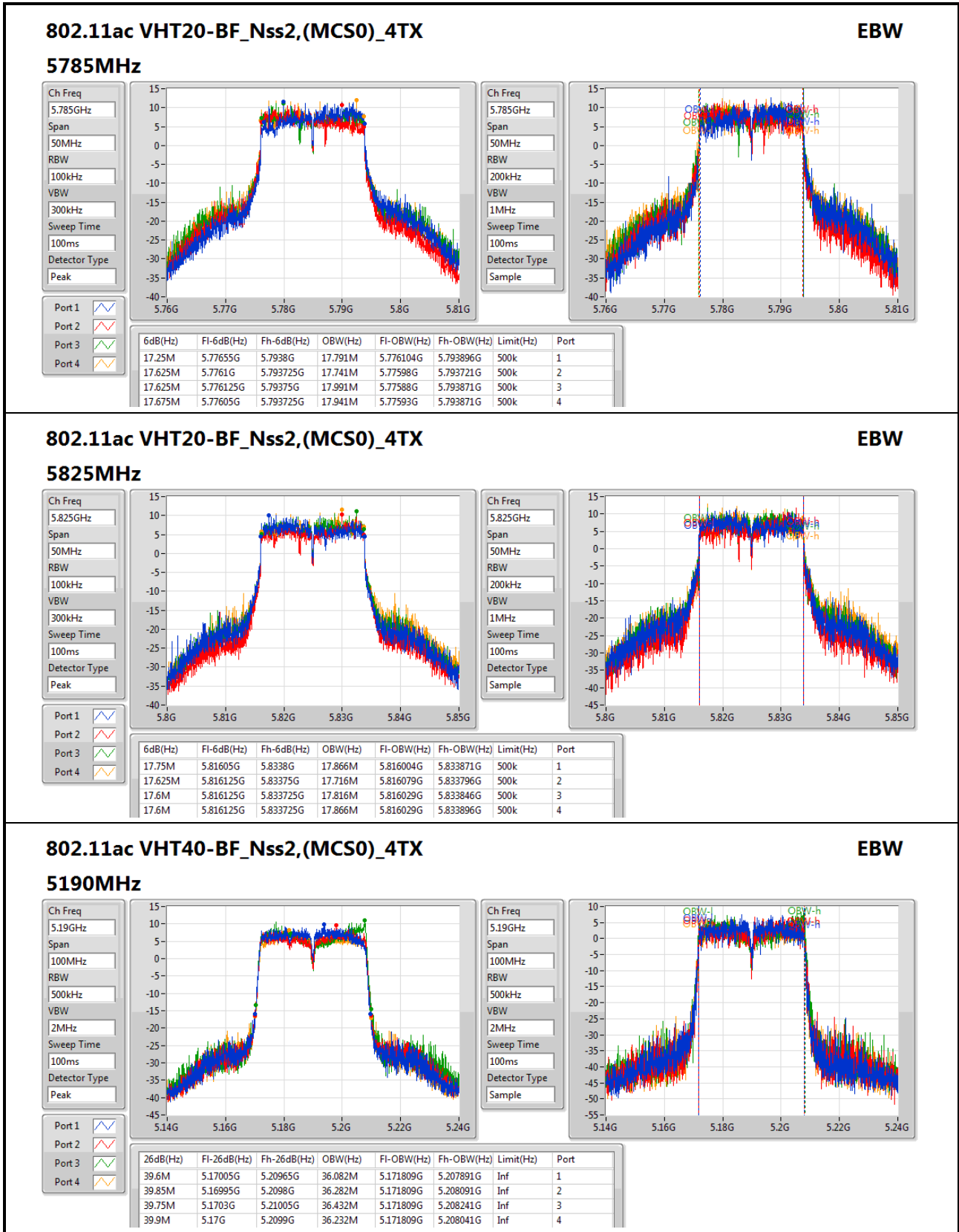


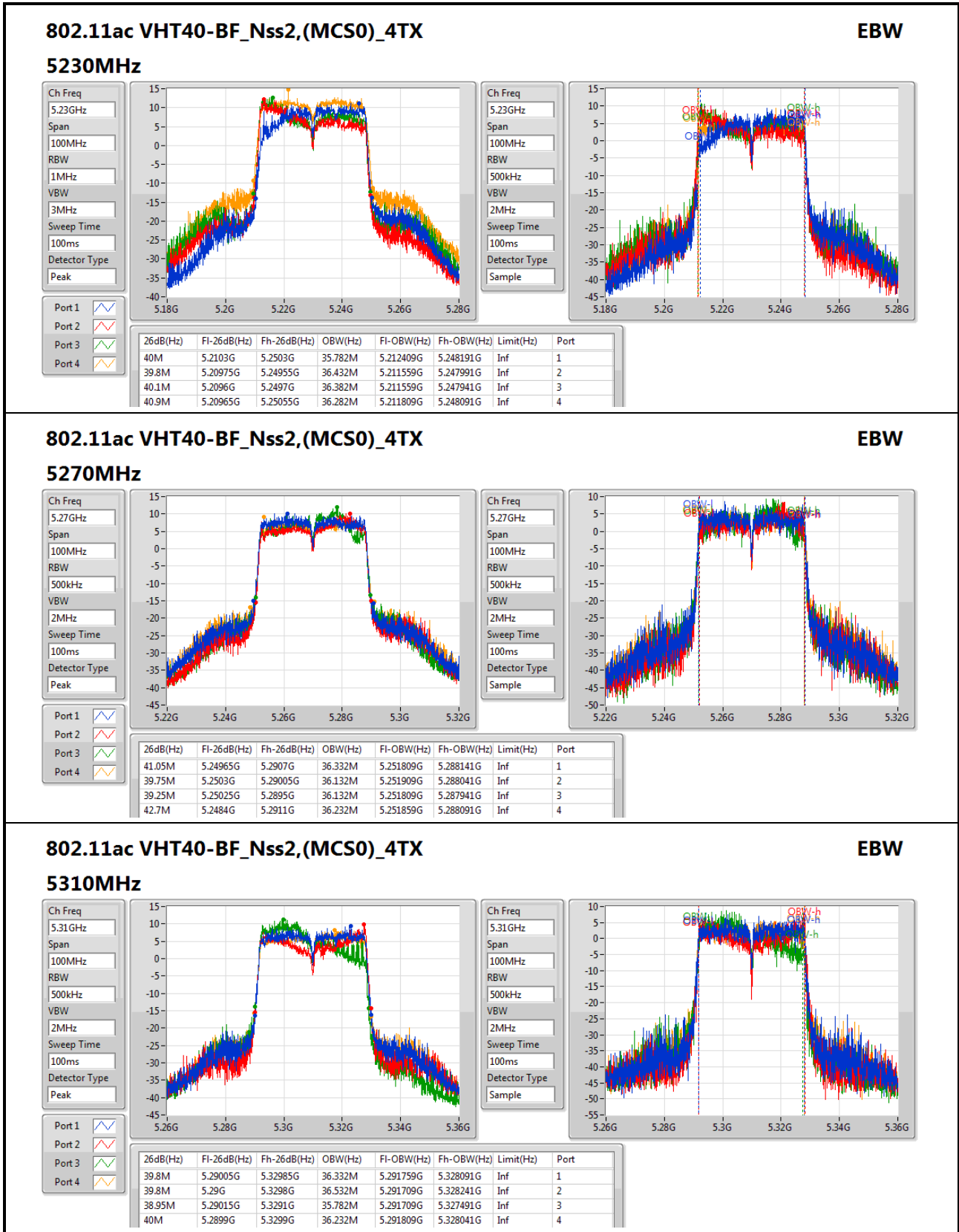
EBW Result_For Slave mode UNII 1~3 and AP mode UNII 3_4T2S Appendix B.4

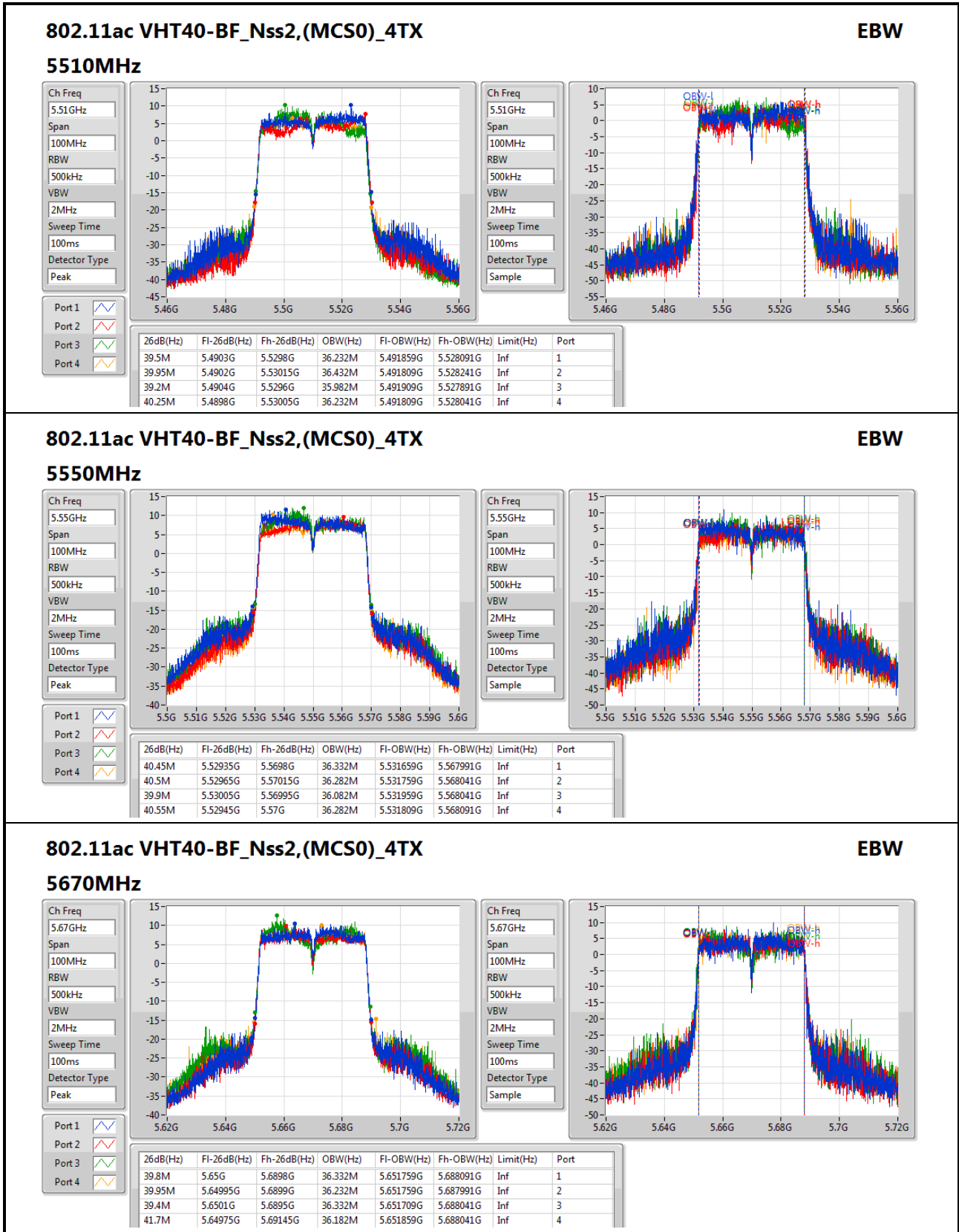






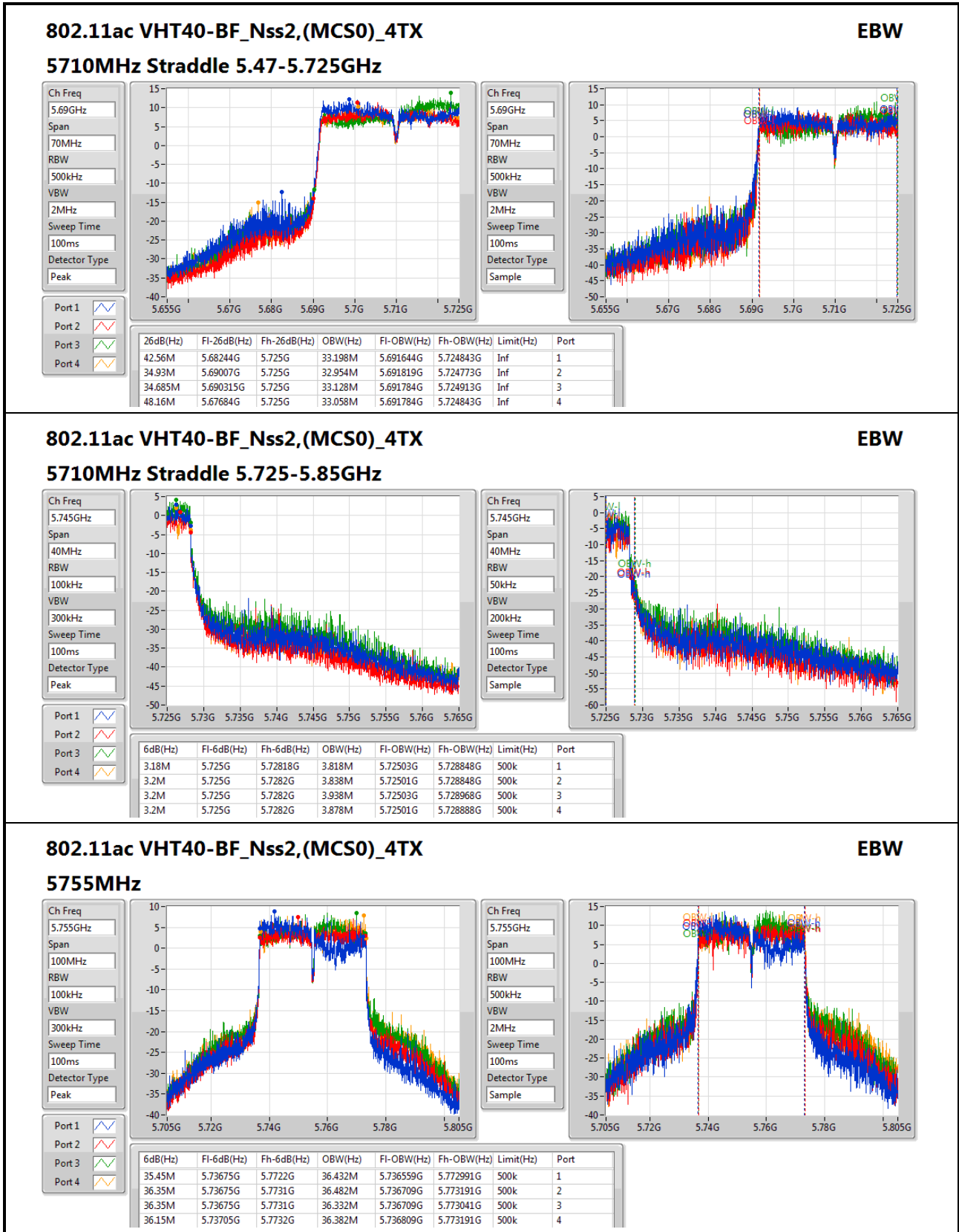


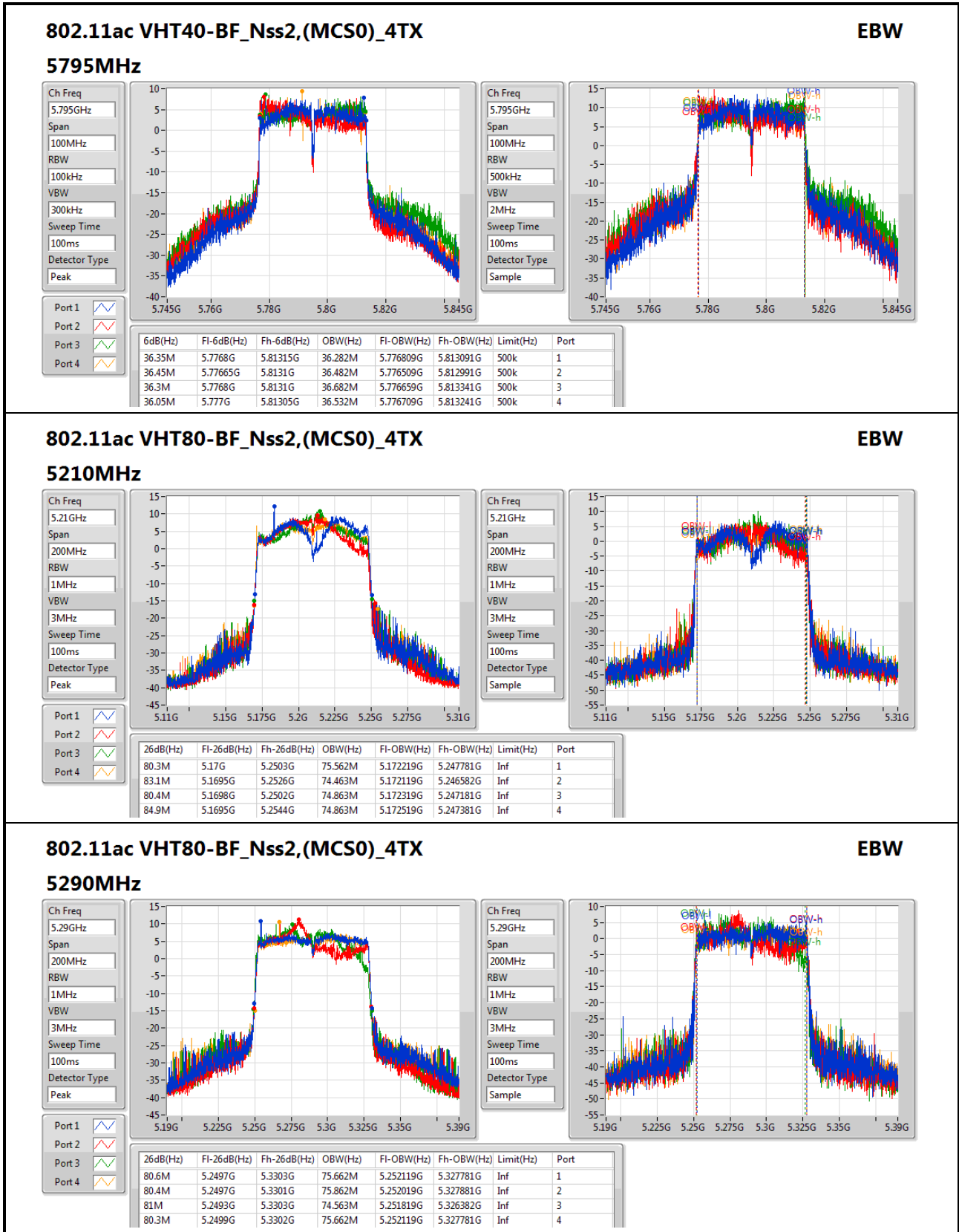


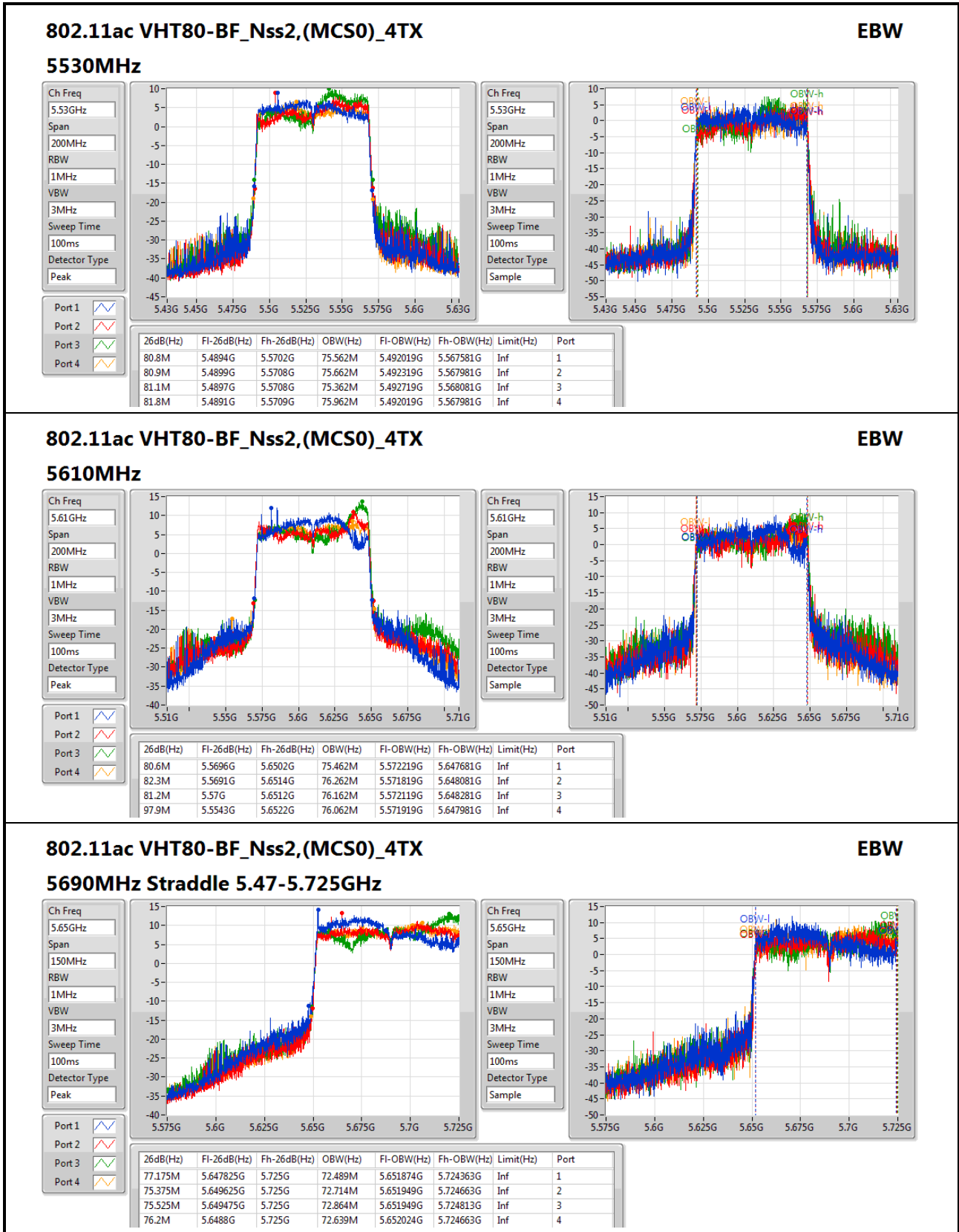


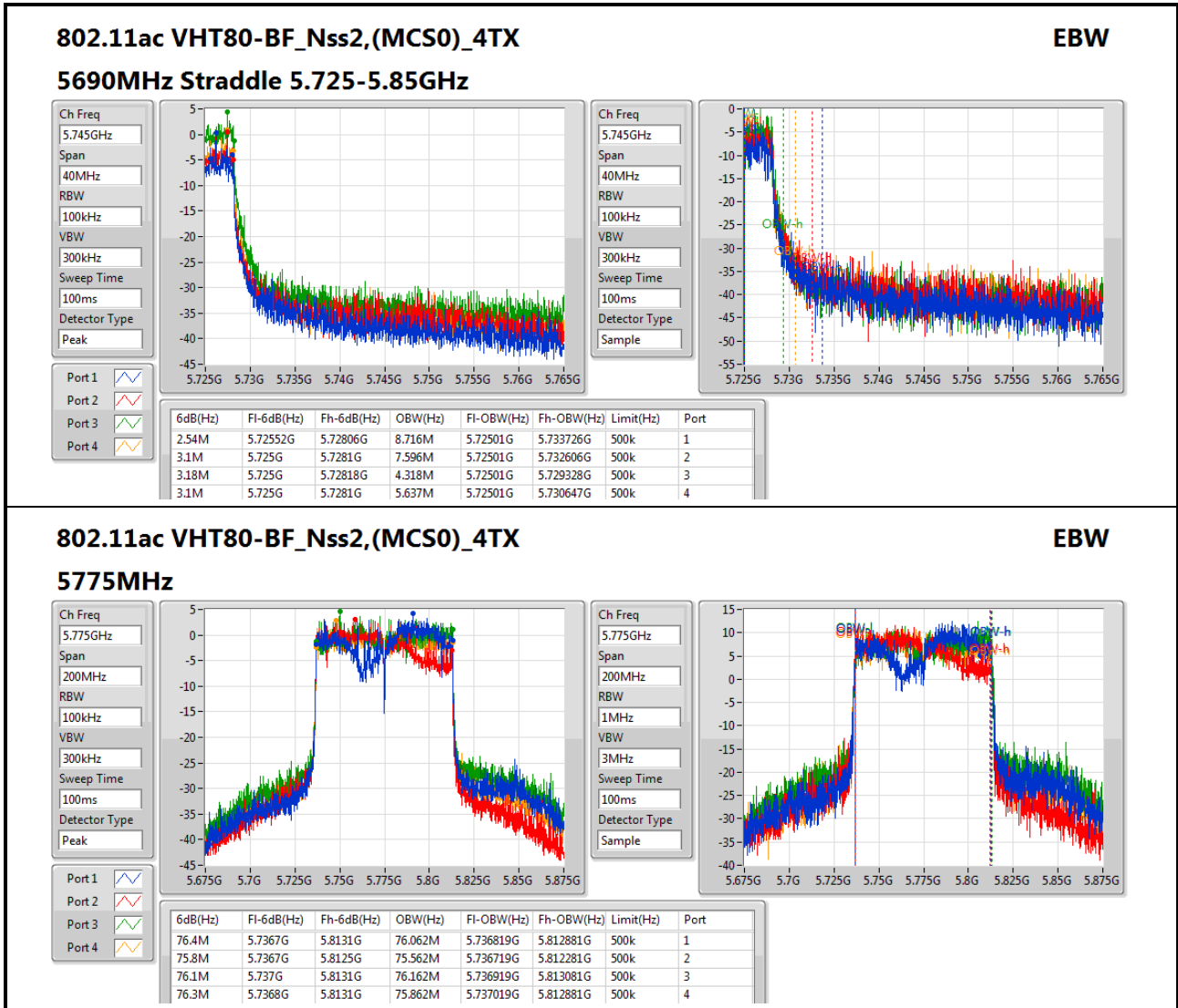


EBW Result_For Slave mode UNII 1~3 and AP mode UNII 3_4T2S Appendix B.4











Summary

Mode	Total Power (dBm)	Total Power (W)
802.11a_(6Mbps)_4TX	-	-
5.15-5.25GHz	27.10	0.51286
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	27.09	0.51168
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	27.02	0.50350
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	21.97	0.15740
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	27.46	0.55719
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	26.55	0.45186
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	21.96	0.15704



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_(6Mbps)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.94	19.13	18.91	19.34	18.63	25.03	30.00
5200MHz	Pass	2.94	21.16	20.77	21.06	20.13	26.82	30.00
5240MHz	Pass	2.94	21.77	20.13	21.45	20.80	27.10	30.00
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.94	18.69	18.27	18.62	18.15	24.46	30.00
5200MHz	Pass	2.94	20.21	19.64	20.07	19.32	25.84	30.00
5240MHz	Pass	2.94	21.70	20.06	21.52	20.81	27.09	30.00
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	2.94	16.40	16.16	16.52	15.97	22.29	30.00
5230MHz	Pass	2.94	21.36	21.03	21.42	20.08	27.02	30.00
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	2.94	16.18	15.85	16.21	15.54	21.97	30.00
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	4.53	19.49	19.41	19.48	19.43	25.47	30.00
5200MHz	Pass	4.53	20.98	20.81	20.95	20.75	26.89	30.00
5240MHz	Pass	4.53	21.98	21.05	21.88	20.73	27.46	30.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	4.53	16.74	16.72	16.70	16.62	22.72	30.00
5230MHz	Pass	4.53	20.74	20.36	20.71	20.27	26.55	30.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	4.53	15.98	15.88	15.91	15.99	21.96	30.00

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



Summary

Mode	Total Power (dBm)	Total Power (W)
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-	-
5.15-5.25GHz	26.84	0.48306
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-
5.15-5.25GHz	27.43	0.55335
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-
5.15-5.25GHz	21.82	0.15205



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ac VHT20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.94	18.77	18.86	18.69	18.32	24.69	30.00
5200MHz	Pass	2.94	21.13	20.94	20.88	20.27	26.84	30.00
5240MHz	Pass	2.94	21.21	20.42	20.76	20.15	26.67	30.00
802.11ac VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	2.94	16.23	16.34	16.29	15.71	22.17	30.00
5230MHz	Pass	2.94	21.87	21.05	21.65	21.02	27.43	30.00
802.11ac VHT80-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	2.94	15.88	15.79	16.12	15.38	21.82	30.00

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



Power Result For Slave mode UNII 1~3 and AP mode UNII 3_4T1S Appendix C.3

Summary

Mode	Total Power (dBm)	Total Power (W)
802.11a_(6Mbps)_4TX	-	-
5.15-5.25GHz	23.32	0.21478
5.25-5.35GHz	23.96	0.24889
5.47-5.725GHz	23.46	0.22182
5.725-5.85GHz	26.88	0.48753
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	23.40	0.21878
5.25-5.35GHz	23.82	0.24099
5.47-5.725GHz	22.50	0.17783
5.725-5.85GHz	26.93	0.49317
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	23.83	0.24155
5.25-5.35GHz	23.87	0.24378
5.47-5.725GHz	23.93	0.24717
5.725-5.85GHz	26.84	0.48306
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	21.97	0.15740
5.25-5.35GHz	21.73	0.14894
5.47-5.725GHz	23.83	0.24155
5.725-5.85GHz	25.69	0.37068
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	22.76	0.18880
5.25-5.35GHz	23.14	0.20606
5.47-5.725GHz	22.55	0.17989
5.725-5.85GHz	27.52	0.56494
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	22.71	0.18664
5.25-5.35GHz	23.10	0.20417
5.47-5.725GHz	23.48	0.22284
5.725-5.85GHz	27.66	0.58345
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-
5.15-5.25GHz	21.96	0.15704
5.25-5.35GHz	23.03	0.20091
5.47-5.725GHz	23.46	0.22182
5.725-5.85GHz	25.48	0.35318



Power Result For Slave mode UNII 1~3 and AP mode UNII 3_4T1S Appendix C.3

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11a_(6Mbps)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.94	17.29	17	17.28	16.8	23.12	23.98
5200MHz	Pass	2.94	17.48	16.87	17.18	16.53	23.05	23.98
5240MHz	Pass	2.94	17.55	17.21	17.76	16.6	23.32	23.98
5260MHz	Pass	2.67	17.95	17.16	17.97	17.52	23.68	23.98
5300MHz	Pass	2.67	18.12	17.58	18.35	17.65	23.96	23.98
5320MHz	Pass	2.67	17.89	17.37	18.3	17.16	23.72	23.98
5500MHz	Pass	3.22	17.85	17.13	17.69	17.01	23.46	23.98
5580MHz	Pass	3.22	15.50	14.54	15.10	14.24	20.89	23.98
5700MHz	Pass	3.22	14.49	13.78	14.74	14.10	20.31	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	3.22	16.12	15.87	15.98	15.65	21.93	22.95
5720MHz Straddle 5.725-5.85GHz	Pass	3.11	9.89	9.45	10.05	9.55	15.76	30.00
5745MHz	Pass	3.11	20.95	20.76	20.84	20.69	26.83	30.00
5785MHz	Pass	3.11	21.04	20.97	20.98	20.41	26.88	30.00
5825MHz	Pass	3.11	20.71	20.56	20.59	20.35	26.58	30.00
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	2.94	17.5	17.19	17.5	17.02	23.33	23.98
5200MHz	Pass	2.94	17.84	17.26	17.5	16.84	23.40	23.98
5240MHz	Pass	2.94	17.69	17.36	17.79	16.52	23.39	23.98
5260MHz	Pass	2.67	18.12	17.52	18.02	17.48	23.82	23.98
5300MHz	Pass	2.67	18.05	17.24	17.96	17.63	23.75	23.98
5320MHz	Pass	2.67	18.02	17.62	18.13	17.26	23.79	23.98
5500MHz	Pass	3.22	15.22	14.37	14.44	14.62	20.70	23.98
5580MHz	Pass	3.22	15.99	14.97	15.49	14.78	21.35	23.98
5700MHz	Pass	3.22	14.28	13.67	14.08	13.86	20.00	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	3.22	16.73	16.31	16.62	16.25	22.50	22.96
5720MHz Straddle 5.725-5.85GHz	Pass	3.11	10.91	10.64	10.81	10.68	16.78	30.00
5745MHz	Pass	3.11	20.93	20.86	20.82	20.63	26.83	30.00
5785MHz	Pass	3.11	21.17	21.04	21.08	20.28	26.93	30.00
5825MHz	Pass	3.11	20.74	20.55	20.78	20.2	26.59	30.00
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	2.94	16.4	16.16	16.52	15.97	22.29	23.98
5230MHz	Pass	2.94	18.02	17.84	18.13	17.21	23.83	23.98
5270MHz	Pass	2.67	18.12	17.54	18.05	17.67	23.87	23.98
5310MHz	Pass	2.67	16.8	16.43	17.01	16.3	22.66	23.98
5510MHz	Pass	3.22	13.60	12.89	12.78	13.00	19.10	23.98
5550MHz	Pass	3.22	18.06	17.68	18.25	17.30	23.86	23.98
5670MHz	Pass	3.22	15.51	15.41	15.79	15.73	21.63	23.98
5710MHz Straddle 5.47-5.725GHz	Pass	3.22	18.12	17.48	18.27	17.73	23.93	23.98
5710MHz Straddle 5.725-5.85GHz	Pass	3.11	7.74	7.09	7.86	7.44	13.56	30.00
5755MHz	Pass	3.11	20.92	20.58	20.93	20.83	26.84	30.00
5795MHz	Pass	3.11	20.97	20.78	20.82	20.51	26.79	30.00
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	2.94	16.18	15.85	16.21	15.54	21.97	23.98



Power Result For Slave mode UNII 1~3 and AP mode UNII 3_4T1S Appendix C.3

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
5290MHz	Pass	2.67	16.01	15.46	15.88	15.45	21.73	23.98
5530MHz	Pass	3.22	12.64	12.04	12.86	12.27	18.48	23.98
5610MHz	Pass	3.22	17.05	17.11	17.27	17.80	23.34	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	3.22	18.05	17.47	18.12	17.55	23.83	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	3.11	4.43	3.64	4.09	3.72	10.00	30.00
5775MHz	Pass	3.11	19.54	19.59	19.94	19.58	25.69	30.00
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	4.53	17.13	16.36	17.04	16.14	22.71	23.98
5200MHz	Pass	4.53	17.23	16.16	16.99	16.11	22.67	23.98
5240MHz	Pass	4.53	17.44	16.3	16.97	16.12	22.76	23.98
5260MHz	Pass	4.63	17.46	16.49	17.38	17.08	23.14	23.98
5300MHz	Pass	4.63	17.32	16.32	17.08	16.85	22.93	23.98
5320MHz	Pass	4.63	17.46	16.52	17.28	17.05	23.11	23.98
5500MHz	Pass	4.42	15.81	16.52	16.63	16.42	22.38	23.98
5580MHz	Pass	4.42	16.89	16.03	16.69	15.62	22.36	23.98
5700MHz	Pass	4.42	14.11	13.49	13.99	14.18	19.97	23.98
5720MHz Straddle 5.47-5.725GHz	Pass	4.42	16.5	16.32	16.94	16.33	22.55	23.03
5720MHz Straddle 5.725-5.85GHz	Pass	6.00	10.71	10.43	10.89	10.59	16.68	30.00
5745MHz	Pass	6.00	21.44	21.08	21.75	21.69	27.52	30.00
5785MHz	Pass	6.00	21.24	20.89	21.49	21.57	27.33	30.00
5825MHz	Pass	6.00	20.71	20.71	21.33	21.59	27.12	30.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	4.53	16.74	16.43	16.14	16.34	22.44	23.98
5230MHz	Pass	4.53	17.24	16.12	16.98	16.33	22.71	23.98
5270MHz	Pass	4.63	17.43	16.42	17.35	17.05	23.10	23.98
5310MHz	Pass	4.63	16.98	16.57	16.95	16.84	22.86	23.98
5510MHz	Pass	4.42	12.61	13.26	13.26	13.60	19.22	23.98
5550MHz	Pass	4.42	17.74	17.35	17.68	17.03	23.48	23.98
5670MHz	Pass	4.42	17.48	17.18	17.46	17.08	23.32	23.98
5710MHz Straddle 5.47-5.725GHz	Pass	4.42	17.42	17.37	17.73	17.28	23.47	23.98
5710MHz Straddle 5.725-5.85GHz	Pass	6.00	6.93	6.55	7.43	6.94	12.99	30.00
5755MHz	Pass	6.00	21.53	21.37	21.85	21.78	27.66	30.00
5795MHz	Pass	6.00	21.27	20.97	21.32	21.25	27.23	30.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	4.53	15.98	15.88	15.91	15.99	21.96	23.98
5290MHz	Pass	4.63	17.24	16.74	17.21	16.82	23.03	23.98
5530MHz	Pass	4.42	13.27	12.66	13.40	12.84	19.07	23.98
5610MHz	Pass	4.42	17.48	17.36	17.73	17.15	23.46	23.98
5690MHz Straddle 5.47-5.725GHz	Pass	4.42	17.49	17.28	17.75	17.03	23.42	23.98
5690MHz Straddle 5.725-5.85GHz	Pass	6.00	3.44	3.29	3.89	3.5	9.56	30.00
5775MHz	Pass	6.00	19.58	19.39	19.62	19.25	25.48	30.00

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

