

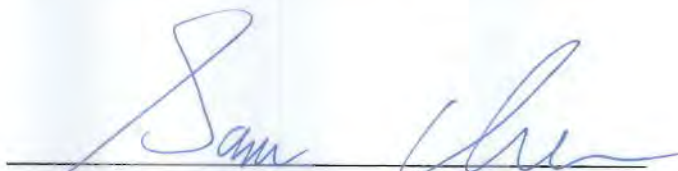


# RADIO TEST REPORT

FCC ID : QXO-AP510INB  
Equipment : 802.11ax Access Point  
Brand Name : Extreme Networks  
Model Name : AP510i  
Applicant : Extreme Networks, Inc.  
6480 Via Del Oro, San Jose, CA 95119  
Manufacturer : Extreme Networks, Inc.  
6480 Via Del Oro, San Jose, CA 95119  
Standard : 47 CFR FCC Part 15.407

The product was received on Nov. 03, 2018, and testing was started from Nov. 14, 2018 and completed on Dec. 01, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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



Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**  
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## Table of Contents

**History of this test report.....3**

**Summary of Test Result.....4**

**1 General Description .....5**

1.1 Information.....5

1.2 Testing Applied Standards .....14

1.3 Testing Location Information .....14

1.4 Measurement Uncertainty .....15

**2 Test Configuration of EUT .....16**

2.1 Test Channel Mode .....16

2.2 The Worst Case Measurement Configuration .....28

2.3 EUT Operation during Test .....30

2.4 Accessories .....31

2.5 Support Equipment.....31

2.6 Test Setup Diagram .....33

**3 Transmitter Test Result .....37**

3.1 AC Power-line Conducted Emissions .....37

3.2 Emission Bandwidth .....39

3.3 Maximum Conducted Output Power .....40

3.4 Peak Power Spectral Density.....42

3.5 Unwanted Emissions.....45

**4 Test Equipment and Calibration Data .....49**

**Appendix A. Test Results of AC Power-line Conducted Emissions**

**Appendix B. Test Results of Emission Bandwidth**

**Appendix C. Test Results of Maximum Output Power**

**Appendix D. Test Results of Power Spectral Density**

**Appendix E. Test Results of Unwanted Emissions**

**Appendix F. Test Results of Radiated Emission Co-location**

**Appendix G. Test Photos**

**Photographs of EUT v01**





## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Output Power	PASS	-
3.4	15.407(a)	Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

Note: Reference to Sporton Project No.: 8O1739-02

**Declaration of Conformity:**

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

**Comments and Explanations:**

- 1.The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
- 2.The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

**Reviewed by: Sam Chen**

**Report Producer: Vicky 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
5250-5350	a, n (HT20), ac (VHT20), ax (HEW20)	5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5250-5350	n (HT40), ac (VHT40), ax (HEW40)	5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5250-5350	ac (VHT80), ax (HEW80)	5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5150-5350	ac (VHT160), ax (HEW160)	5250	50 [1]
5470-5725		5570	114 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11ac VHT160	160	1TX, 2TX, 4TX
5.15-5.25GHz	802.11ax HEW160	160	1TX, 2TX, 4TX
5.15-5.25GHz	802.11ac VHT160-BF	160	2TX, 4TX
5.15-5.25GHz	802.11ax HEW160-BF	160	2TX, 4TX



<b>Band</b>	<b>Mode</b>	<b>BWch (MHz)</b>	<b>Nant</b>
5.25-5.35GHz	802.11a	20	1TX, 2TX, 4TX
5.25-5.35GHz	802.11n HT20	20	1TX, 2TX, 4TX
5.25-5.35GHz	802.11n HT20-BF	20	2TX, 4TX
5.25-5.35GHz	802.11ac VHT20	20	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	2TX, 4TX
5.25-5.35GHz	802.11ax HEW20	20	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ax HEW20-BF	20	2TX, 4TX
5.25-5.35GHz	802.11n HT40	40	1TX, 2TX, 4TX
5.25-5.35GHz	802.11n HT40-BF	40	2TX, 4TX
5.25-5.35GHz	802.11ac VHT40	40	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	2TX, 4TX
5.25-5.35GHz	802.11ax HEW40	40	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ax HEW40-BF	40	2TX, 4TX
5.25-5.35GHz	802.11ac VHT80	80	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	2TX, 4TX
5.25-5.35GHz	802.11ax HEW80	80	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ax HEW80-BF	80	2TX, 4TX
5.25-5.35GHz	802.11ac VHT160	160	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ac VHT160-BF	160	2TX, 4TX
5.25-5.35GHz	802.11ax HEW160	160	1TX, 2TX, 4TX
5.25-5.35GHz	802.11ax HEW160-BF	160	2TX, 4TX



Band	Mode	BWch (MHz)	Nant
5.47-5.725GHz	802.11a	20	1TX, 2TX, 4TX
5.47-5.725GHz	802.11n HT20	20	1TX, 2TX, 4TX
5.47-5.725GHz	802.11n HT20-BF	20	2TX, 4TX
5.47-5.725GHz	802.11ac VHT20	20	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	2TX, 4TX
5.47-5.725GHz	802.11ax HEW20	20	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ax HEW20-BF	20	2TX, 4TX
5.47-5.725GHz	802.11n HT40	40	1TX, 2TX, 4TX
5.47-5.725GHz	802.11n HT40-BF	40	2TX, 4TX
5.47-5.725GHz	802.11ac VHT40	40	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	2TX, 4TX
5.47-5.725GHz	802.11ax HEW40	40	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ax HEW40-BF	40	2TX, 4TX
5.47-5.725GHz	802.11ac VHT80	80	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	2TX, 4TX
5.47-5.725GHz	802.11ax HEW80	80	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ax HEW80-BF	80	2TX, 4TX
5.47-5.725GHz	802.11ac VHT160	160	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ac VHT160-BF	160	2TX, 4TX
5.47-5.725GHz	802.11ax HEW160	160	1TX, 2TX, 4TX
5.47-5.725GHz	802.11ax HEW160-BF	160	2TX, 4TX

**Note:**

- ◆ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ◆ VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ◆ HEW20, HEW40, HEW80 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ◆ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Ant.	Port			Brand	Model Name	Antenna Type	Connector	Radio	Antenna Gain(dBi)
	1TX	2TX	4TX						
1	1	1	1	WNC	Starlord 510i	PIFA	I-PEX	R1-5GHz	Note 1
2	-	2	2	WNC	Starlord 510i	PIFA	I-PEX	R1-5GHz	Note 1
3	-	-	3	WNC	Starlord 510i	PIFA	I-PEX	R1-5GHz	Note 1
4	-	-	4	WNC	Starlord 510i	PIFA	I-PEX	R1-5GHz	Note 1
5	R2-1	R2-1	R1-4 R2-1	WNC	Starlord 510i	PIFA	I-PEX	R1-2.4GHz R2-5GHz	Note 1
6	-	R2-2	R1-3 R2-2	WNC	Starlord 510i	PIFA	I-PEX	R1-2.4GHz R2-5GHz	Note 1
7	-	R1-2	R1-2 R2-3	WNC	Starlord 510i	PIFA	I-PEX	R1-2.4GHz R2-5GHz	Note 1
8	R1-1	R1-1	R1-1 R2-4	WNC	Starlord 510i	PIFA	I-PEX	R1-2.4GHz R2-5GHz	Note 1

Note1:

Ant.	Antenna Gain(dBi)	
	WLAN 2.4GHz	WLAN 5GHz
1	-	5.89
2	-	5.36
3	-	5.67
4	-	5.36
5	3.48	4.57
6	3.80	4.40
7	3.84	4.98
8	3.90	5.18

Note2: The above information was declared by manufacturer.

Note3:

**For 2.4GHz function:**

**For IEEE 802.11b/g/n/ax mode (1TX, 2TX, 4TX/4RX):**

For 1TX

Only Port 1 can be use as transmitting antenna.

For 2TX

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

Port 1 and Port 2 could transmit simultaneously.

For 4TX

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

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

For 4RX

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

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

**For 5GHz function:**

**For IEEE 802.11a/n/ac/ax mode (1TX, 2TX, 4TX/4RX):**

For 1TX

Only Port 1 can be use as transmitting antenna.





For 2TX

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

Port 1 and Port 2 could transmit simultaneously.

For 4TX

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

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

For 4RX

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

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

Note 4: Directional gain information

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

Ex.

Directional Gain (NSS1) formula :

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

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

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

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

$$\log \left[ \frac{(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2}{N_{ANT}} \right]$$

Where ;

G1 = Ant 1 Gain ; G2 = Ant 2 Gain ; G3 = Ant 3 Gain ; G4 = Ant 4 Gain ;

(Radio1\_2T2S)

2.4GHz DG = 3.87 dBi

5 GHz U-NII-1 DG = 5.63 dBi

5 GHz U-NII-2A DG = 5.63 dBi

5 GHz U-NII-2C DG = 5.63 dBi

5 GHz U-NII-3 DG = 5.63 dBi

(Radio1\_4T1S)

2.4GHz DG = 9.78 dBi

5 GHz U-NII-1 DG = 11.59 dBi

5 GHz U-NII-2A DG = 11.59 dBi

5 GHz U-NII-2C DG = 11.59 dBi

5 GHz U-NII-3 DG = 11.59 dBi



(Radio1\_4T4S)

2.4GHz DG = 3.76 dBi

5 GHz U-NII-1 DG = 5.58 dBi

5 GHz U-NII-2A DG = 5.58 dBi

5 GHz U-NII-2C DG = 5.58 dBi

5 GHz U-NII-3 DG = 5.58 dBi

(Radio2\_2T2S)

5 GHz U-NII-1 DG = 4.49 dBi

5 GHz U-NII-2A DG = 4.49 dBi

5 GHz U-NII-2C DG = 4.49 dBi

5 GHz U-NII-3 DG = 4.49 dBi

(Radio2\_4T1S)

5 GHz U-NII-1 DG = 10.81 dBi

5 GHz U-NII-2A DG = 10.81 dBi

5 GHz U-NII-2C DG = 10.81 dBi

5 GHz U-NII-3 DG = 10.81 dBi

(Radio2\_4T4S)

5 GHz U-NII-1 DG = 4.79 dBi

5 GHz U-NII-2A DG = 4.79 dBi

5 GHz U-NII-2C DG = 4.79 dBi

5 GHz U-NII-3 DG = 4.79 dBi

**1.1.3 Mode Test Duty Cycle****For Radio 1 / 1T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.955	0.2	2.07m	1k
802.11ax HEW20	0.984	0.07	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.963	0.164	772.5u	3k
802.11ax HEW80	0.944	0.25	472.5u	3k
802.11ax HEW160	0.831	0.59	190 u	300

**For Radio 1 / 2T2S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.972	0.123	926.25u	3k
802.11ax HEW40	0.948	0.232	506.25u	3k
802.11ax HEW80	0.915	0.386	290u	10k
802.11ax HEW160	0.831	0.59	190 u	300

**For Radio 1 / 4T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.956	0.195	2.066m	1k
802.11ax HEW20	0.986	0.061	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.97	0.132	910u	3k
802.11ax HEW80	0.945	0.246	473.75u	3k
802.11ax HEW160	0.909	0.41	273.75 u	300
802.11ax HEW20-BF	0.886	0.526	1.499m	1k
802.11ax HEW40-BF	0.885	0.531	2.343m	1k
802.11ax HEW80-BF	0.925	0.339	3.835m	300
802.11ax HEW160-BF	0.463	3.35	232.2u	1k

**For Radio 1 / 4T4S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.953	0.209	537.5u	3k
802.11ax HEW40	0.923	0.348	330u	10k
802.11ax HEW80	0.89	0.506	221.25u	10k
802.11ax HEW160	0.859	0.66	170u	300

**For Radio 2 / 1T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.944	0.25	2.065m	1k
802.11ax HEW20	0.986	0.061	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.973	0.119	910u	3k
802.11ax HEW80	0.945	0.246	473.75u	3k
802.11ax HEW160	0.913	0.45	272.2u	1k

**For Radio 2 / 2T2S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.97	0.132	926.25u	3k
802.11ax HEW40	0.948	0.232	506.25u	3k
802.11ax HEW80	0.912	0.4	290u	10k
802.11ax HEW160	0.864	0.63	188.2u	1k

**For Radio 2 / 4T1S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11a	0.951	0.218	2.068m	1k
802.11ax HEW20	0.984	0.07	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.97	0.132	910u	3k
802.11ax HEW80	0.945	0.246	473.75u	3k
802.11ax HEW160	0.899	0.46	272.133u	1k
802.11ax HEW20-BF	0.883	0.54	1.499m	1k
802.11ax HEW40-BF	0.881	0.55	2.343m	1k
802.11ax HEW80-BF	0.938	0.278	2.804m	1k
802.11ax HEW160-BF	0.485	3.14	233.125u	1k

**For Radio 2 / 4T4S Mode:**

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20	0.953	0.209	537.5u	3k
802.11ax HEW40	0.923	0.348	330u	10k
802.11ax HEW80	0.89	0.506	221.25u	10k
802.11ax HEW160	0.838	0.77	168.2u	1k

**Note:**

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



**1.1.4 EUT Operational Condition**

<b>EUT Power Type</b>	From Power Adapter or PoE			
<b>Beamforming Function</b>	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
	For 802.11ax in 2.4GHz and 802.11n/ac/ax in 5GHz.			
<b>Weather Band</b>	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/>	Without 5600~5650MHz
<b>TPC Function</b>	<input checked="" type="checkbox"/>	With TPC	<input type="checkbox"/>	Without TPC
<b>Function</b>	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
<b>Test Software Version</b>	accessMtool 3.0.0.6			

Note: The above information was declared by manufacturer.

**1.1.5 Table for Multiple Listing**

The EUT has two radios, the information as following table:

Radio	Function	
	WLAN 2.4GHz	WLAN 5GHz
1	V	V
2	-	V

**1.1.6 Table for EUT support function**

Function	Support Type	Support Band
AP	Master	WLAN 2.4GHz/WLAN 5GHz Band 1~4
Client	Slave without Radar Detection (Sensor Mode)	WLAN 2.4GHz/WLAN 5GHz Band 1+4
Bridge	Master	WLAN 2.4GHz/WLAN 5GHz Band 1+4
Mesh	Master	WLAN 2.4GHz/WLAN 5GHz Band 1+4

Note: The above information was declared by manufacturer.



### 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
- ◆ FCC KDB 789033 D02 v02r01

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

- ◆ FCC KDB 662911 D01 v02r01
- ◆ FCC KDB 412172 D01 v01r01
- ◆ FCC KDB 414788 D01 v01r01

### 1.3 Testing Location Information

<b>Testing Location Information</b>	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	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	Test Date
RF Conducted	TH01-CB	Eddie Weng	23 / 61	Nov. 14, 2018 ~ Dec. 31, 2018
Radiated (Below 1GHz)	03CH05-CB	Kevin Huang	23.7-24.8 / 56-59	Nov. 30, 2021
Radiated (Emission Co-location)	03CH01-CB	Paul Chen	22 / 54	Nov. 22, 2018 ~ Nov. 23, 2018
Radiated (Above 1GHz)	03CH01-CB	Stim Sung	22 / 54	Nov. 14, 2018 ~ Dec. 18, 2018
AC Conduction	CO02-CB	Peter Wu	23~24 / 58~59	Dec. 01, 2021



## 1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.5 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	$9.74 \times 10^{-8}$	Confidence levels of 95%



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

For Radio 1 / 1T1S Mode:

For Conducted measurement and Band Edge Emission test:

Mode	PowerSetting	PowerSetting (dBm)
802.11a_Nss1,(6Mbps)_1TX	-	-
5260MHz	78	19.5
5300MHz	76	19
5320MHz	78	19.5
5500MHz	72	18
5580MHz	64	16
5700MHz	62	15.5
5720MHz Straddle 5.47-5.725GHz	60	15
5720MHz Straddle 5.725-5.85GHz	60	15
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-
5260MHz	83	20.75
5300MHz	84	21
5320MHz	75	18.75
5500MHz	72	18
5580MHz	63	15.75
5700MHz	57	14.25
5720MHz Straddle 5.47-5.725GHz	50	12.5
5720MHz Straddle 5.725-5.85GHz	50	12.5
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-
5270MHz	83	20.75
5310MHz	64	16
5510MHz	67	16.75
5550MHz	71	17.75
5670MHz	65	16.25
5710MHz Straddle 5.47-5.725GHz	60	15
5710MHz Straddle 5.725-5.85GHz	60	15
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-
5290MHz	61	15.25
5530MHz	66	16.5
5610MHz	71	17.75
5690MHz Straddle 5.47-5.725GHz	70	17.5
5690MHz Straddle 5.725-5.85GHz	70	17.5
802.11ax HEW160_Nss1,(MCS0)_1TX	-	-
5250MHz Straddle 5.15-5.25GHz	59	14.75
5250MHz Straddle 5.25-5.35GHz	59	14.75
5570MHz	56	14





**For Radio 1 / 2T2S Mode:  
For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-
5260MHz	83	20.75
5300MHz	84	21
5320MHz	68	17
5500MHz	68	17
5580MHz	63	15.75
5700MHz	57	14.25
5720MHz Straddle 5.47-5.725GHz	50	12.5
5720MHz Straddle 5.725-5.85GHz	50	12.5
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-
5270MHz	82	20.5
5310MHz	65	16.25
5510MHz	66	16.5
5550MHz	71	17.75
5670MHz	65	16.25
5710MHz Straddle 5.47-5.725GHz	60	15
5710MHz Straddle 5.725-5.85GHz	60	15
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-
5290MHz	65	16.25
5530MHz	64	16
5610MHz	74	18.5
5690MHz Straddle 5.47-5.725GHz	70	17.5
5690MHz Straddle 5.725-5.85GHz	70	17.5
802.11ax HEW160_Nss2,(MCS0)_2TX	-	-
5250MHz Straddle 5.15-5.25GHz	57	14.25
5250MHz Straddle 5.25-5.35GHz	57	14.25
5570MHz	56	14



**For Radio 1 / 4T1S Mode:  
For Radiated Emission:**

Mode	Radiated Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	78
5300MHz	76
5320MHz	78
5500MHz	72
5580MHz	64
5700MHz	62
5720MHz Straddle 5.47-5.725GHz	60
5720MHz Straddle 5.725-5.85GHz	60
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	83
5300MHz	84
5320MHz	81
5500MHz	72
5580MHz	63
5700MHz	57
5720MHz Straddle 5.47-5.725GHz	50
5720MHz Straddle 5.725-5.85GHz	50
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	83
5310MHz	86
5510MHz	80
5550MHz	71
5670MHz	65
5710MHz Straddle 5.47-5.725GHz	60
5710MHz Straddle 5.725-5.85GHz	60
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	93
5530MHz	83
5610MHz	74
5690MHz Straddle 5.47-5.725GHz	70
5690MHz Straddle 5.725-5.85GHz	70
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	99
5250MHz Straddle 5.25-5.35GHz	99
5570MHz	78

**For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-
5260MHz	51	12.75
5300MHz	53	13.25
5320MHz	53	13.25
5500MHz	49	12.25
5580MHz	50	12.5
5700MHz	50	12.5
5720MHz Straddle 5.47-5.725GHz	50	12.5
5720MHz Straddle 5.725-5.85GHz	50	12.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-
5260MHz	53	13.25
5300MHz	55	13.75
5320MHz	55	13.75
5500MHz	51	12.75
5580MHz	52	13
5700MHz	52	13
5720MHz Straddle 5.47-5.725GHz	50	12.5
5720MHz Straddle 5.725-5.85GHz	50	12.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-
5270MHz	65	16.25
5310MHz	55	13.75
5510MHz	56	14
5550MHz	63	15.75
5670MHz	62	15.5
5710MHz Straddle 5.47-5.725GHz	60	15
5710MHz Straddle 5.725-5.85GHz	60	15
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-
5290MHz	55	13.75
5530MHz	54	13.5
5610MHz	65	16.25
5690MHz Straddle 5.47-5.725GHz	70	17.5
569MHz Straddle 5.725-5.85GHz	70	17.5
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-
5250MHz Straddle 5.15-5.25GHz	49	12.25
5250MHz Straddle 5.25-5.35GHz	49	12.25
5570MHz	52	13
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-
5260MHz	53	13.25
5300MHz	53	13.25



Mode	PowerSetting	PowerSetting (dBm)
5320MHz	53	13.25
5500MHz	49	12.25
5580MHz	50	12.5
5700MHz	49	12.25
5720MHz Straddle 5.47-5.725GHz	50	12.5
5720MHz Straddle 5.725-5.85GHz	50	12.5
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-
5270MHz	53	13.25
5310MHz	53	13.25
5510MHz	46	11.5
5550MHz	51	12.75
5670MHz	49	12.25
5710MHz Straddle 5.47-5.725GHz	51	12.75
5710MHz Straddle 5.725-5.85GHz	51	12.75
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-
5290MHz	53	13.25
5530MHz	50	12.5
5610MHz	49	12.25
5690MHz Straddle 5.47-5.725GHz	50	12.5
5690MHz Straddle 5.725-5.85GHz	50	12.5
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-
5250MHz Straddle 5.15-5.25GHz	52	13
5250MHz Straddle 5.25-5.35GHz	52	13
5570MHz	49	12.25



**For Radio 1 / 4T4S Mode:  
For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11ax HEW20_Nss4,(MCS0)_4TX	-	-
5260MHz	72	18
5300MHz	73	18.25
5320MHz	66	16.5
5500MHz	64	16
5580MHz	63	15.75
5700MHz	57	14.25
5720MHz Straddle 5.47-5.725GHz	50	12.5
5720MHz Straddle 5.725-5.850GHz	50	12.5
802.11ax HEW40_Nss4,(MCS0)_4TX	-	#VALUE!
5270MHz	74	18.5
5310MHz	56	14
5510MHz	56	14
5550MHz	71	17.75
5670MHz	59	14.75
5710MHz Straddle 5.47-5.725GHz	60	15
5710MHz Straddle 5.725-5.850GHz	60	15
802.11ax HEW80_Nss4,(MCS0)_4TX	-	#VALUE!
5290MHz	58	14.5
5530MHz	55	13.75
5610MHz	68	17
5690MHz Straddle 5.47-5.725GHz	70	17.5
5690MHz Straddle 5.725-5.850GHz	70	17.5
802.11ax HEW160_Nss4,(MCS0)_4TX	-	#VALUE!
5250MHz Straddle 5.15-5.25GHz	52	13
5250MHz Straddle 5.25-5.35GHz	52	13
5570MHz	52	13



**For Radio 2 / 1T1S Mode:  
For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11a_Nss1,(6Mbps)_1TX	-	-
5260MHz	75	18.75
5300MHz	83	20.75
5320MHz	78	19.5
5500MHz	79	19.75
5580MHz	90	22.5
5700MHz	72	18
5720MHz Straddle 5.47-5.725GHz	85	21.25
5720MHz Straddle 5.725-5.85GHz	85	21.25
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-
5260MHz	77	19.25
5300MHz	79	19.75
5320MHz	73	18.25
5500MHz	74	18.5
5580MHz	91	22.75
5700MHz	67	16.75
5720MHz Straddle 5.47-5.725GHz	84	21
5720MHz Straddle 5.725-5.85GHz	84	21
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-
5270MHz	75	18.75
5310MHz	69	17.25
5510MHz	69	17.25
5550MHz	87	21.75
5670MHz	72	18
5710MHz Straddle 5.47-5.725GHz	86	21.5
5710MHz Straddle 5.725-5.85GHz	86	21.5
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-
5290MHz	66	16.5
5530MHz	69	17.25
5610MHz	79	19.75
5690MHz Straddle 5.47-5.725GHz	85	21.25
5690MHz Straddle 5.725-5.85GHz	85	21.25
802.11ax HEW160_Nss1,(MCS0)_1TX	-	-
5250MHz Straddle 5.15-5.25GHz	62	15.5
5250MHz Straddle 5.25-5.35GHz	62	15.5
5570MHz	63	15.75

**For Radio 2 / 2T2S Mode:****For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-
5260MHz	77	19.25
5300MHz	79	19.75
5320MHz	69	17.25
5500MHz	69	17.25
5580MHz	88	22
5700MHz	62	15.5
5720MHz Straddle 5.47-5.725GHz	83	20.75
5720MHz Straddle 5.725-5.85GHz	83	20.75
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-
5270MHz	75	18.75
5310MHz	64	16
5510MHz	66	16.5
5550MHz	85	21.25
5670MHz	68	17
5710MHz Straddle 5.47-5.725GHz	86	21.5
5710MHz Straddle 5.725-5.85GHz	86	21.5
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-
5290MHz	62	15.5
5530MHz	62	15.5
5610MHz	75	18.75
5690MHz Straddle 5.47-5.725GHz	82	20.5
5690MHz Straddle 5.725-5.85GHz	82	20.5
802.11ax HEW160_Nss2,(MCS0)_2TX	-	-
5250MHz Straddle 5.15-5.25GHz	58	14.5
5250MHz Straddle 5.25-5.35GHz	58	14.5
5570MHz	56	14



**For Radio 2 / 4T1S Mode:  
For Radiated Emission:**

Mode	Radiated Setting
802.11a_Nss1,(6Mbps)_4TX	-
5260MHz	75
5300MHz	83
5320MHz	78
5500MHz	87
5580MHz	98
5700MHz	97
5720MHz Straddle 5.47-5.725GHz	98
5720MHz Straddle 5.725-5.85GHz	98
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5260MHz	77
5300MHz	79
5320MHz	80
5500MHz	97
5580MHz	108
5700MHz	106
5720MHz Straddle 5.47-5.725GHz	108
5720MHz Straddle 5.725-5.85GHz	108
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5270MHz	75
5310MHz	82
5510MHz	100
5550MHz	110
5670MHz	110
5710MHz Straddle 5.47-5.725GHz	110
5710MHz Straddle 5.725-5.85GHz	110
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5290MHz	83
5530MHz	110
5610MHz	110
5690MHz Straddle 5.47-5.725GHz	110
5690MHz Straddle 5.725-5.85GHz	110
802.11ax HEW160_Nss1,(MCS0)_4TX	-
5250MHz Straddle 5.15-5.25GHz	88
5250MHz Straddle 5.25-5.35GHz	88
5570MHz	110





**For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-
5260MHz	55	13.75
5300MHz	55	13.75
5320MHz	55	13.75
5500MHz	56	14
5580MHz	57	14.25
5700MHz	57	14.25
5720MHz Straddle 5.47-5.725GHz	55	13.75
5720MHz Straddle 5.725-5.85GHz	55	13.75
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-
5260MHz	58	14.5
5300MHz	58	14.5
5320MHz	58	14.5
5500MHz	58	14.5
5580MHz	59	14.75
5700MHz	53	13.25
5720MHz Straddle 5.47-5.725GHz	58	14.5
5720MHz Straddle 5.725-5.85GHz	58	14.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-
5270MHz	68	17
5310MHz	58	14.5
5510MHz	60	15
5550MHz	69	17.25
5670MHz	62	15.5
5710MHz Straddle 5.47-5.725GHz	69	17.25
5710MHz Straddle 5.725-5.85GHz	69	17.25
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-
5290MHz	56	14
5530MHz	58	14.5
5610MHz	65	16.25
5690MHz Straddle 5.47-5.725GHz	76	19
5690MHz Straddle 5.725-5.85GHz	76	19
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-
5250MHz Straddle 5.15-5.25GHz	53	13.25
5250MHz Straddle 5.25-5.35GHz	53	13.25
5570MHz	54	13.5
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-
5260MHz	54	13.5
5300MHz	53	13.25



Mode	PowerSetting	PowerSetting (dBm)
5320MHz	52	13
5500MHz	53	13.25
5580MHz	54	13.5
5700MHz	53	13.25
5720MHz Straddle 5.47-5.725GHz	55	13.75
5720MHz Straddle 5.725-5.85GHz	55	13.75
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-
5270MHz	53	13.25
5310MHz	53	13.25
5510MHz	51	12.75
5550MHz	54	13.5
5670MHz	54	13.5
5710MHz Straddle 5.47-5.725GHz	55	13.75
5710MHz Straddle 5.725-5.85GHz	55	13.75
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-
5290MHz	54	13.5
5530MHz	54	13.5
5610MHz	54	13.5
5690MHz Straddle 5.47-5.725GHz	57	14.25
5690MHz Straddle 5.725-5.85GHz	57	14.25
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-
5250MHz Straddle 5.15-5.25GHz	51	12.75
5250MHz Straddle 5.25-5.35GHz	51	12.75
5570MHz	52	13



**For Radio 2 / 4T4S Mode:  
For Conducted measurement and Band Edge Emission test:**

Mode	PowerSetting	PowerSetting (dBm)
802.11ax HEW20_Nss4,(MCS0)_4TX	-	-
5260MHz	72	18
5300MHz	72	18
5320MHz	66	16.5
5500MHz	68	17
5580MHz	74	18.5
5700MHz	60	15
5720MHz Straddle 5.47-5.725GHz	77	19.25
5720MHz Straddle 5.725-5.85GHz	77	19.25
802.11ax HEW40_Nss4,(MCS0)_4TX	-	-
5270MHz	72	18
5310MHz	59	14.75
5510MHz	60	15
5550MHz	73	18.25
5670MHz	64	16
5710MHz Straddle 5.47-5.725GHz	76	19
5710MHz Straddle 5.725-5.85GHz	76	19
802.11ax HEW80_Nss4,(MCS0)_4TX	-	-
5290MHz	59	14.75
5530MHz	60	15
5610MHz	70	17.5
5690MHz Straddle 5.47-5.725GHz	76	19
5690MHz Straddle 5.725-5.85GHz	76	19
802.11ax HEW160_Nss4,(MCS0)_4TX	-	-
5250MHz Straddle 5.15-5.25GHz	52	13
5250MHz Straddle 5.25-5.35GHz	52	13
5570MHz	52	13



## 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							
	Radio 1 with 2.4GHz function	Radio 1 with 5GHz function	Radio 2 with 5GHz function	EUT GE1	EUT GE2	Adapter	PoE connect with EUT GE1	PoE connect with EUT GE2
1	●	-	●	●	●	●	-	-
2	-	●	●	●	●	●	-	-
Mode 1 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 ~ 4 will follow this same test mode.								
3	●	-	●	●	●	-	●	-
4	●	-	●	●	●	-	-	●
For operating mode 3 is the worst case and it was record in this test report.								

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density
Test Condition	Conducted measurement at transmit chains
Test Mode	Refer to note 1

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										
	EUT at Z-axis	EUT at Y-axis	EUT at X-axis	Radio 1 with 2.4GHz function	Radio 1 with 5GHz function	Radio 2 with 5GHz function	EUT GE1	EUT GE2	Adapter	PoE connect with EUT GE1	PoE connect with EUT GE2
1	●	-	-	●	-	●	●	●	●	-	-
2	-	●	-	●	-	●	●	●	●	-	-
3	-	-	●	●	-	●	●	●	●	-	-
Mode 1 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.											
4	●	-	-	-	●	●	●	●	●	-	-
Mode 1 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5 ~ 6 will follow this same test mode.											
5	●	-	-	●	-	●	●	●	-	●	-



6	●	-	-	●	-	●	●	●	-	-	●
For operating mode 1 is the worst case and it was record in this test report.											
<b>Operating Mode &gt; 1GHz</b>		CTX									
<b>For Radiated Emission</b>											
Radio 1 / 4T1S Mode: The EUT was performed at Y axis, X axis and Z axis and the worst case was found at Z axis. So the measurement will follow this same test configuration.											
Radio 2 / 4T1S Mode: The EUT was performed at Y axis, X axis and Z axis and the worst case was found at Y axis. So the measurement will follow this same test configuration.											
<b>For Band Edge Emission</b>											
Radio 1 / 1T1S, 2T2S, 4T1S, 4T4S Mode: The EUT was performed at Y axis, X axis and Z axis and the worst case was found at Y axis. So the measurement will follow this same test configuration.											
Radio 2 / 1T1S, 2T2S, 4T1S, 4T4S Mode: The EUT was performed at Y axis, X axis and Z axis and the worst case was found at Z axis. So the measurement will follow this same test configuration.											
<b>Test Mode</b>		Refer to note 1									

<b>The Worst Case Mode for Following Conformance Tests</b>	
<b>Tests Item</b>	Simultaneous Transmission Analysis - Radiated Emission Co-location
<b>Test Condition</b>	Radiated measurement
<b>Operating Mode</b>	Normal Link
he EUT was performed at Y axis, X axis and Z axis position for Unwanted Emissions above 1GHz, and the worst case was found at Z axis. So the measurement will follow this same test configuration.	
1	EUT in Z axis WLAN 2.4GHz (Radio 1) + WLAN 5GHz (Radio 2)
Refer to Appendix F for Radiated Emission Co-location.	

<b>The Worst Case Mode for Following Conformance Tests</b>	
<b>Tests Item</b>	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
<b>Operating Mode</b>	
1	WLAN 2.4GHz (Radio 1) + WLAN 5GHz (Radio 2)
2	WLAN 5GHz (Radio 1) + WLAN 5GHz (Radio 2)
Refer to Sporton Test Report No.: FA8O1739-39 for Co-location RF Exposure Evaluation.	



Note:

1. Test Mode:

Test Item	Test Mode								
	802.11a		802.11ax HEW20/40/80/160						
	1T1S	4T1S	CDD 1T1S	SDM 2T2S	CDD 4T1S	SDM 4T4S	TxBF 2T2S	TxBF 4T1S	TxBF 4T4S
Maximum Conducted Output Power	V	V	V	V	V	V	-	V	-
Emission Bandwidth	V	V	V	V	V	V	-	V	-
Peak Power Spectral Density	V	V	V	V	V	V	-	V	-
Radiated Emission	Cover by CDD 4T1S Max setting	V	Cover by CDD 4T1S Max setting	Cover by CDD 4T1S Max setting	Max setting	Cover by CDD 4T1S Max setting	-	Cover by CDD 4T1S Max setting	-
Band Edge Emission	V	V	V	V	V	V	-	V	-

2. 802.11ax modulation and bandwidth are similar for 802.11n mode for 20/40MHz and 802.11ac mode for 20/40/80/160MHz, therefore investigated worst case to representative mode in test report.

3. The PoE is for measurement only, would not be marketed.

PoE information as below:

Power	Brand	Model
PoE	Microsemi	PD-9001GR/AT/AC

### 2.3 EUT Operation during Test

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 7 were executed. The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet and LanTest.
3. Executed " Telnet and LanTest " to link with the remote workstation to transmit and receive packet by WLAN module and transmit duty cycle no less than 98%.

For Normal Link:

During the test, the EUT operation to normal function.



## 2.4 Accessories

Accessories			
Equipment Name	Brand Holder	Model Name	Rating
Adapter	Powertron Electronics Corp.	PA1045-120HIB300	Input:100-240V~50-60Hz, 1.0A Output: 12V, 3.0A 36W Max
Others			
Plug*6 (US*1, EU*1, UK*1, AU*1, China*1, BZ*1)			
Bracket*1			

## 2.5 Support Equipment

### For AC Conduction

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Flash disk3.0	Transcend	JetFlash-700	N/A
B	PoE	Microsemi	PD-9001GR/AT/AC	N/A
C	PoE PC	DELL	T3400	N/A
D	LAN NB	DELL	E6430	N/A
E	5G-1 NB	DELL	E6430	N/A
F	5G-2 NB	DELL	E6430	N/A

### For Radiated (below 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	NB	DELL	E4300	N/A
C	NB	DELL	E4300	N/A
D	PC	HP	SGH8190LP1	N/A
E	Flash disk3.0	Transcend	JetFlash-700	N/A



**For RF Conducted and Radiated (above 1GHz, Non-Beamforming Mode)**

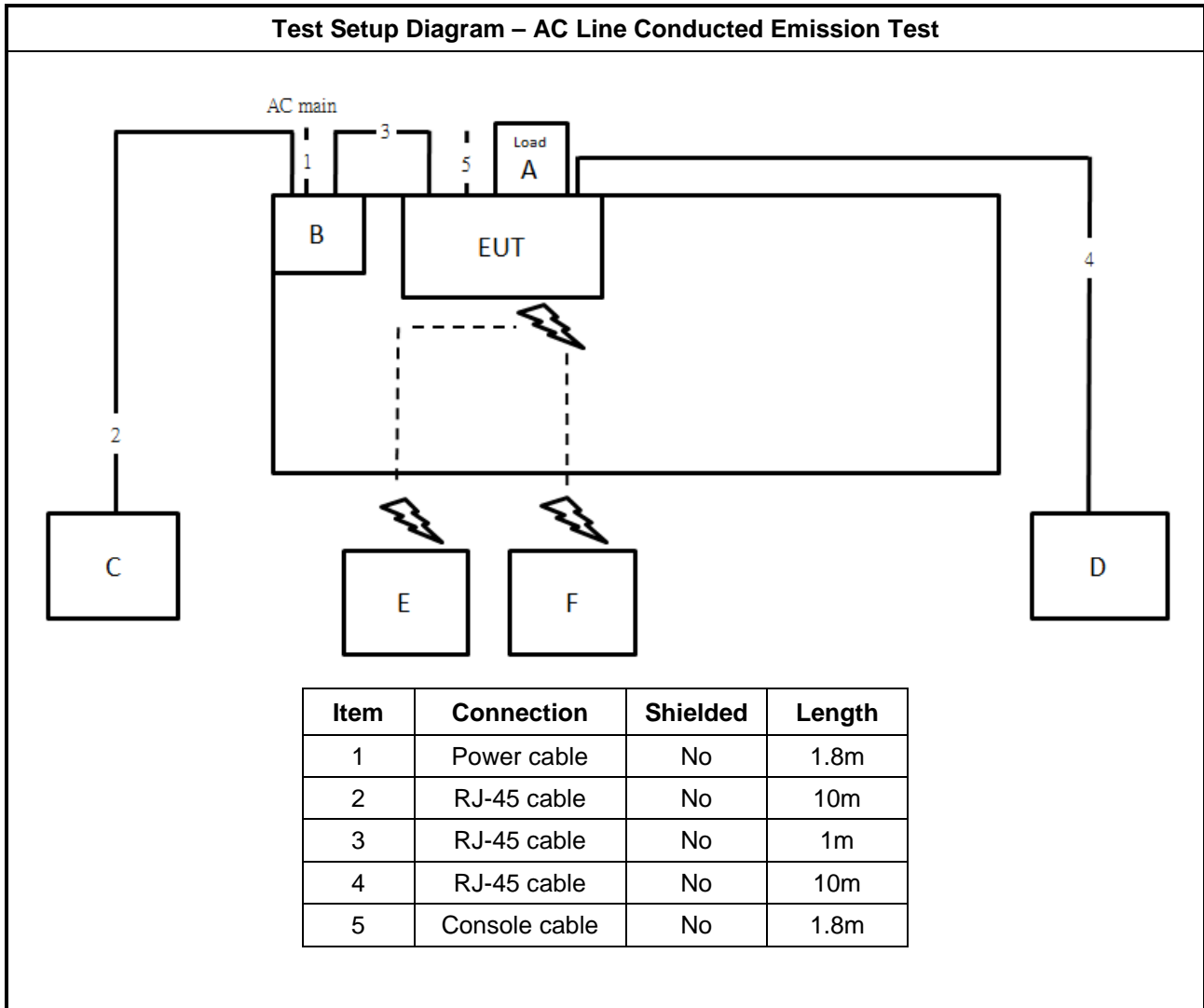
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

**For Radiated (above 1GHz, Beamforming Mode)**

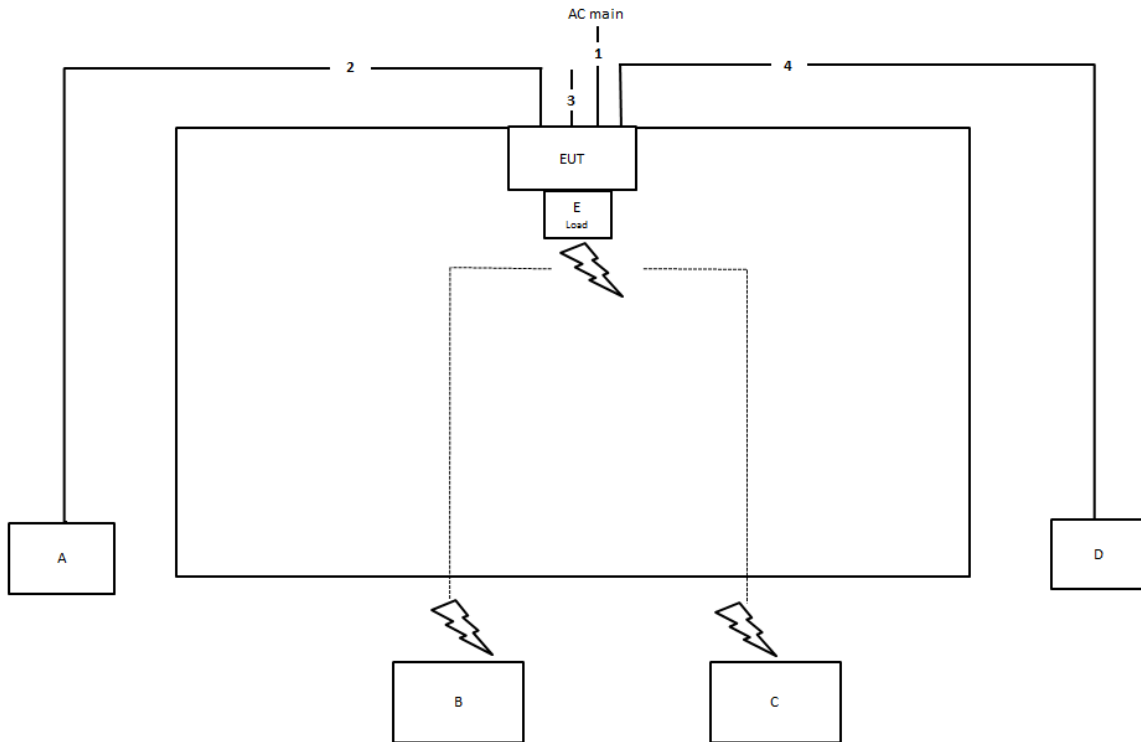
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
C	Notebook	DELL	E4300	N/A
D	WLAN module	Boardcom	BCM 943684MCH5	N/A



## 2.6 Test Setup Diagram

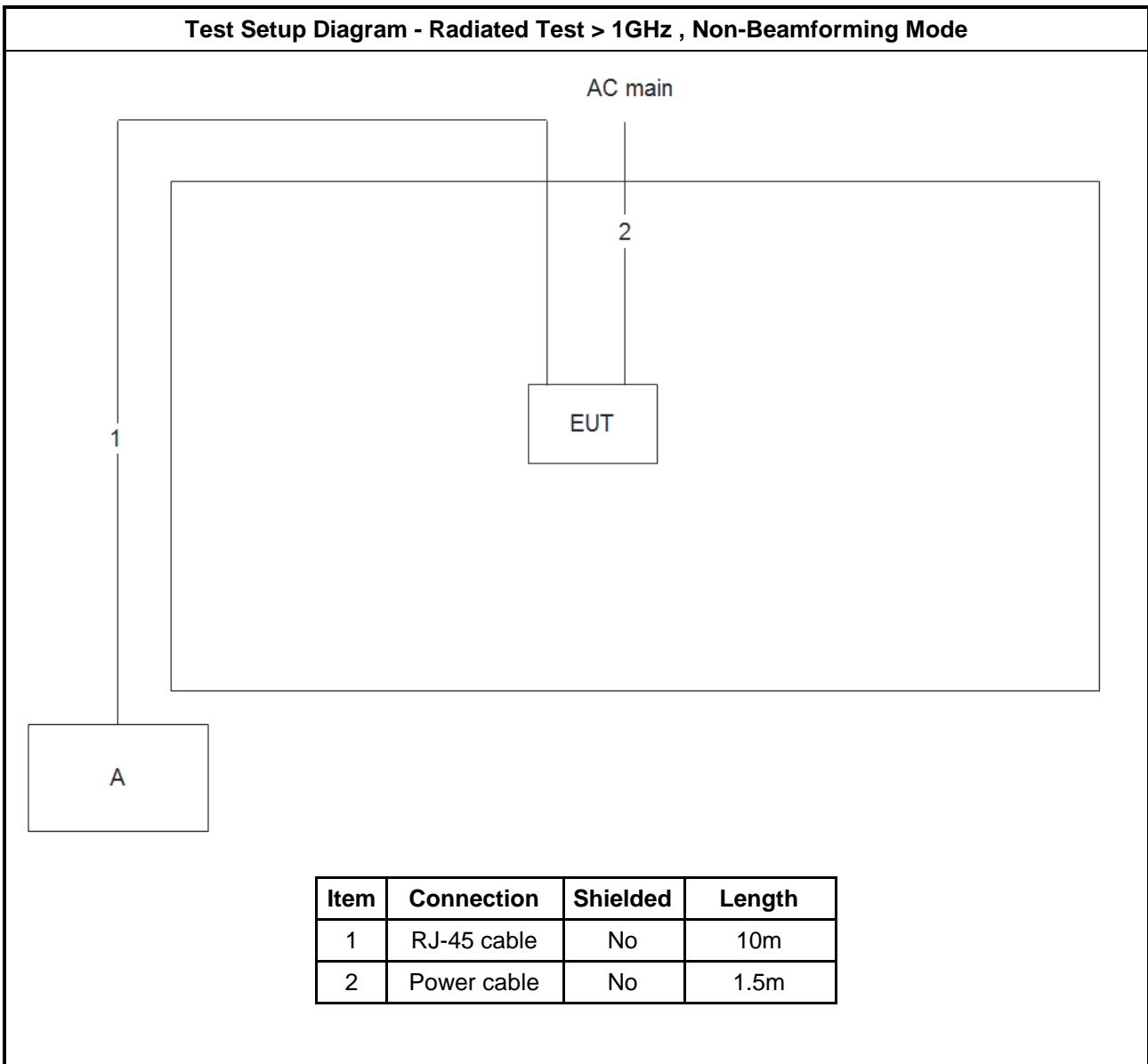


**Test Setup Diagram - Radiated Test < 1GHz**



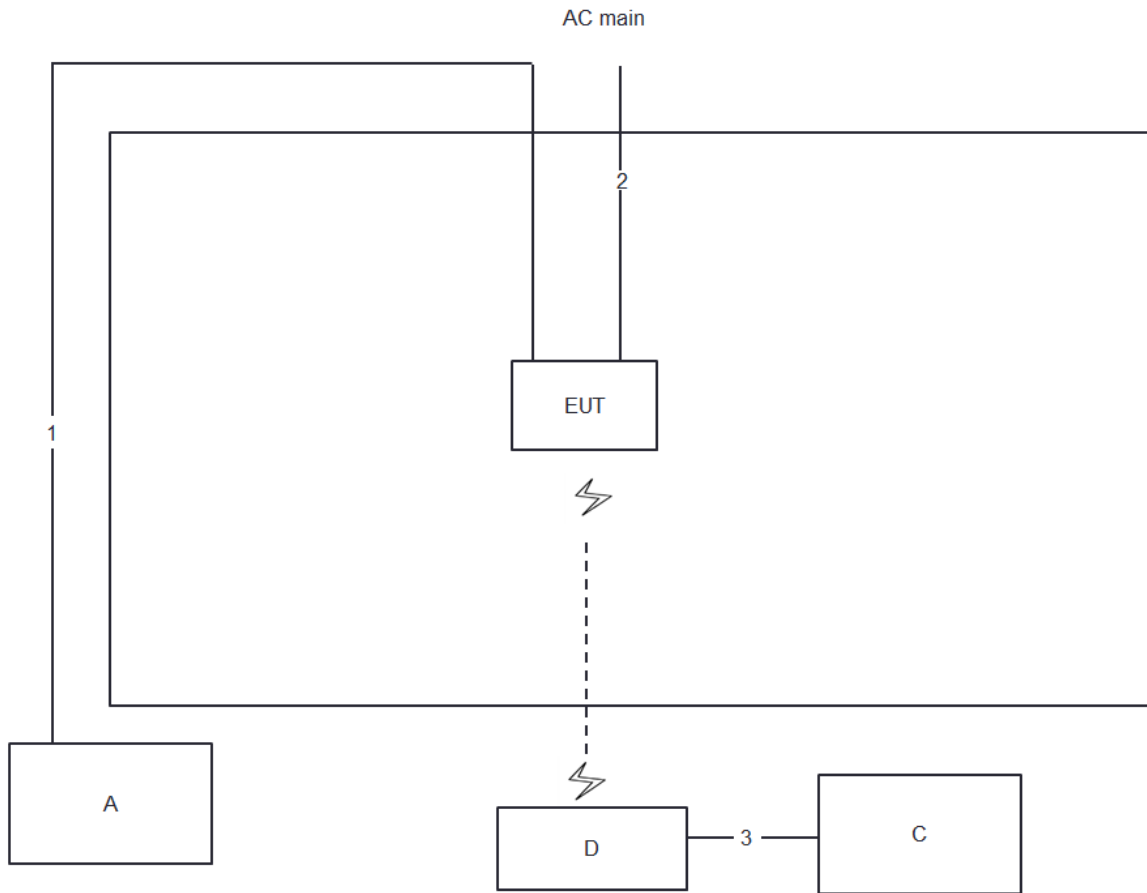
Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m
3	Console cable	No	2m
4	RJ-45 cable	No	10m

**Test Setup Diagram - Radiated Test > 1GHz , Non-Beamforming Mode**



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

**Test Setup Diagram - Radiated Test > 1GHz , Beamforming Mode**



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



### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

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

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

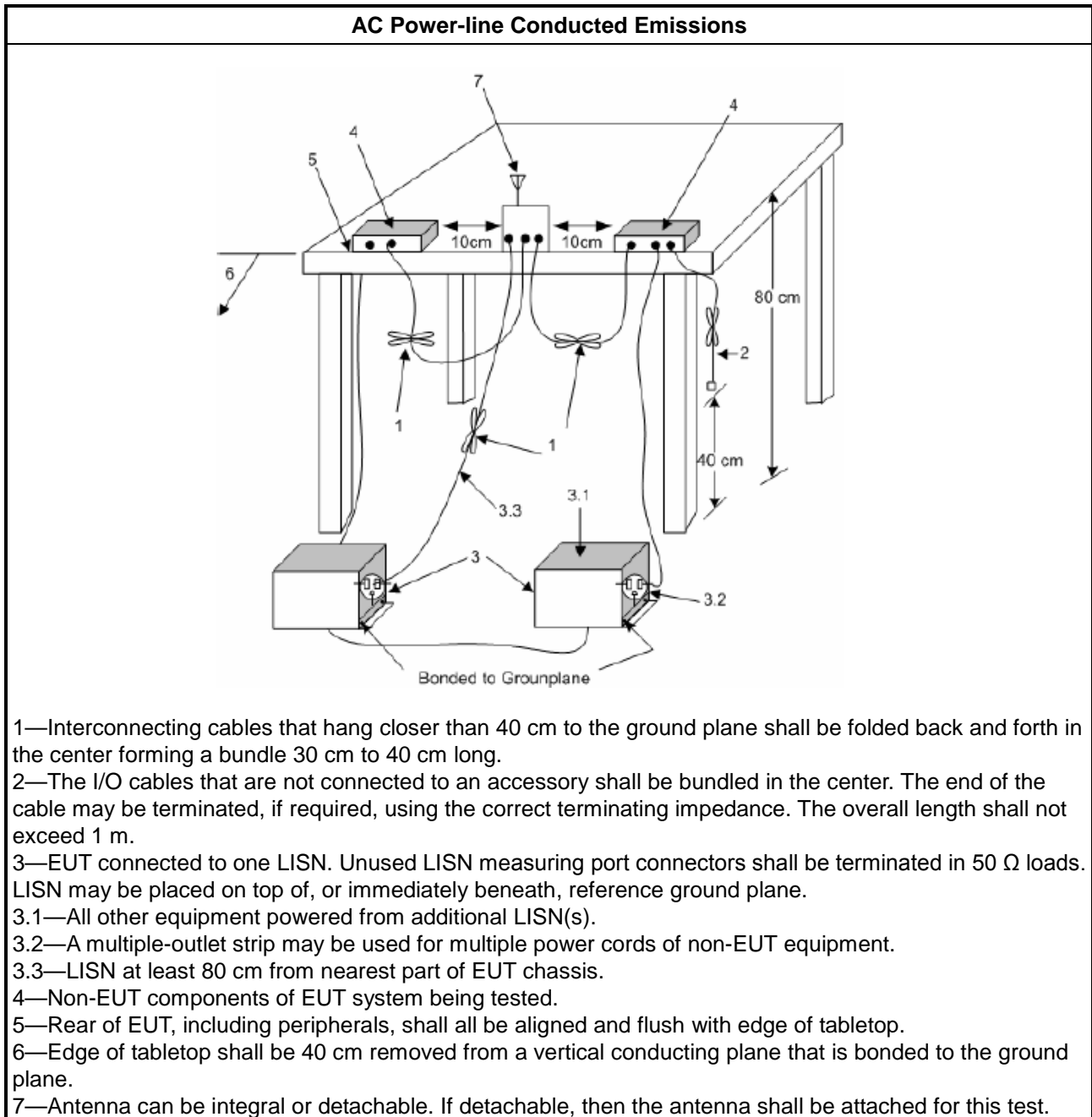
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedures

Test Method
<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	
<b>UNII Devices</b>	
<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.
<b>LE-LAN Devices</b>	
<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 $\geq$ 500kHz.

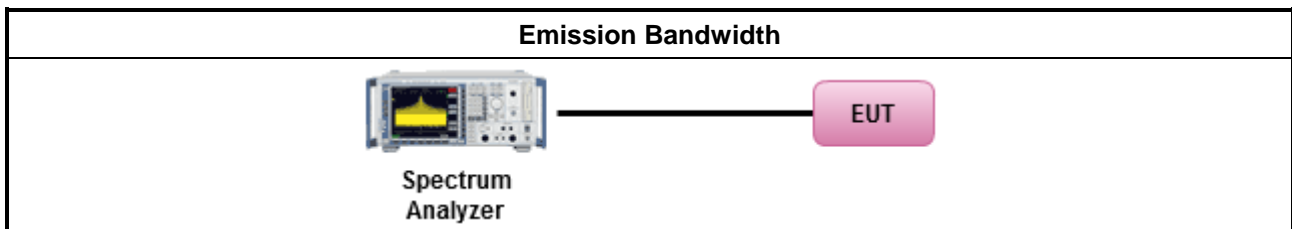
#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

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

#### 3.2.4 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	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/>	For the 5.15-5.25 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Outdoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>. e.i.r.p. at any elevation angle above 30 degrees <math>\leq 125mW</math> [21dBm]</li> <li>▪ Indoor AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math></li> <li>▪ Point-to-point AP: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 23)</math>.</li> <li>▪ Mobile or Portable Client: the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 250 mW. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 24 - (G_{TX} - 6)</math>.</li> </ul>
<input checked="" type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .
<input checked="" type="checkbox"/>	For the 5.47-5.725 GHz band, the maximum conducted output power ( $P_{Out}$ ) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$ .
<input checked="" type="checkbox"/>	For the 5.725-5.85 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>
<b>LE-LAN Devices</b>	
<input type="checkbox"/>	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
<input type="checkbox"/>	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$ , dBm, whichever power is less. B is the 99% emission bandwidth in MHz
<input type="checkbox"/>	For the 5.725-5.85 GHz band:
<input type="checkbox"/>	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the maximum conducted output power (<math>P_{Out}</math>) shall not exceed the lesser of 1 W.</li> </ul>
$P_{Out}$ = maximum conducted output power in dBm, $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.	



### 3.3.2 Measuring Instruments

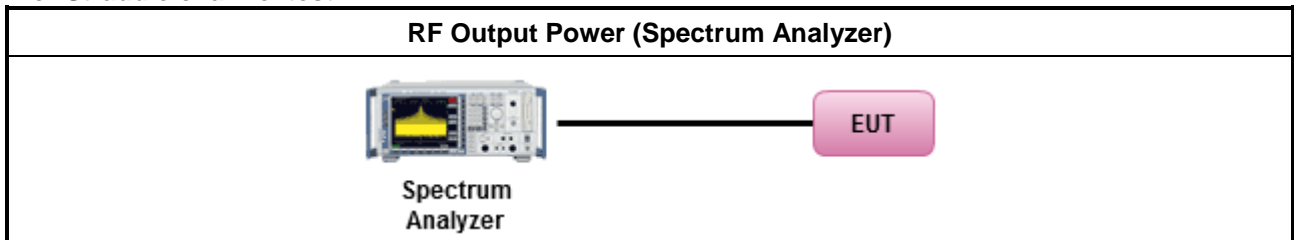
Refer a test equipment and calibration data table in this test report.

### 3.3.3 Test Procedures

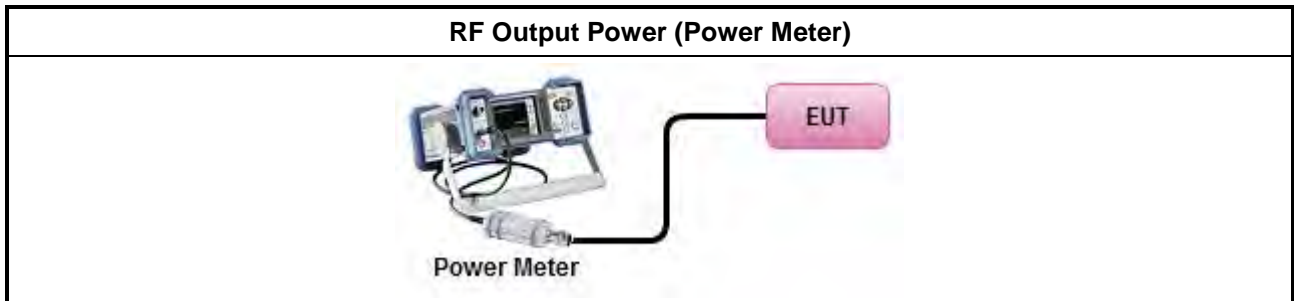
Test Method	
<ul style="list-style-type: none"> <li>Maximum Conducted Output Power</li> </ul>	
Average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
<ul style="list-style-type: none"> <li>For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	
<ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP calculation could be following as methods:  <math>P_{total} = P_1 + P_2 + \dots + P_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>	

### 3.3.4 Test Setup

For Straddle channel test:



For other test:



### 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	
<b>UNII Devices</b>	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	
	<ul style="list-style-type: none"> <li>▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If <math>G_{TX} &gt; 23</math> dBi, then <math>P_{Out} = 17 - (G_{TX} - 23)</math>.</li> <li>▪ Mobile or Portable Client: the peak power spectral density (PPSD) <math>\leq 11</math> dBm/MHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 11 - (G_{TX} - 6)</math>.</li> </ul>
<input checked="" type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ 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) $\leq 11$ 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"> <li>▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>
<b>LE-LAN Devices</b>	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) $\leq 10$ dBm/MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.	
	<ul style="list-style-type: none"> <li>▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where <math>\theta</math> is the angle above the local horizontal plane (of the Earth) as shown below:            -13 dBW/MHz for <math>0^\circ \leq \theta &lt; 8^\circ</math> ; -13 - 0.716 (<math>\theta-8</math>) dBW/MHz for <math>8^\circ \leq \theta &lt; 40^\circ</math>            -35.9 - 1.22 (<math>\theta-40</math>) dBW/MHz for <math>40^\circ \leq \theta \leq 45^\circ</math> ; -42 dBW/MHz for <math>\theta &gt; 45^\circ</math></li> </ul>
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) $\leq 11$ dBm/MHz.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	
	<ul style="list-style-type: none"> <li>▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz. If <math>G_{TX} &gt; 6</math> dBi, then <math>PPSD = 30 - (G_{TX} - 6)</math>.</li> <li>▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) <math>\leq 30</math> dBm/500kHz.</li> </ul>
<p><b>PPSD</b> = 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  <b>G<sub>TX</sub></b> = the maximum transmitting antenna directional gain in dBi.</p>	



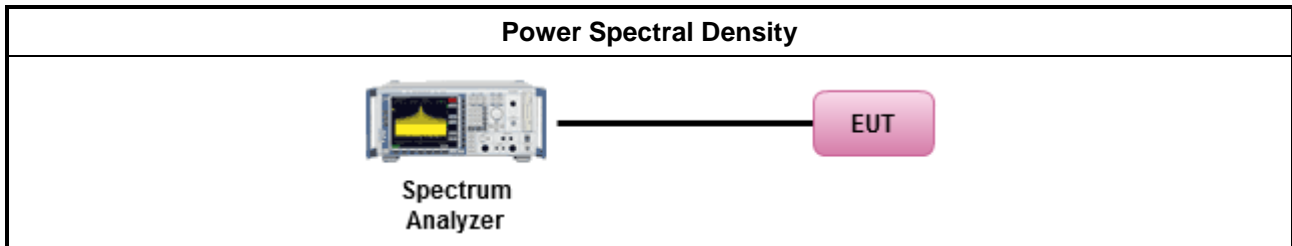
### 3.4.2 Measuring Instruments

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"> <li>▪ 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:</li> </ul>	
<input type="checkbox"/>	Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
[duty cycle ≥ 98% or external video / power trigger]	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
duty cycle < 98% and average over on/off periods with duty factor	
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
<input type="checkbox"/>	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<ul style="list-style-type: none"> <li>▪ For conducted measurement.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ If the EUT supports multiple transmit chains using options given below:</li> </ul>	
<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"> <li>▪ If multiple transmit chains, EIRP PPSD calculation could be following as methods:  <math>PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n</math>                      (calculated in linear unit [mW] and transfer to log unit [dBm])  <math>EIRP_{total} = PPSD_{total} + DG</math> </li> </ul>	

### 3.4.4 Test Setup



### 3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D



### 3.5 Unwanted Emissions

#### 3.5.1 Transmitter Unwanted Emissions Limit

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

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

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

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



Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
<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

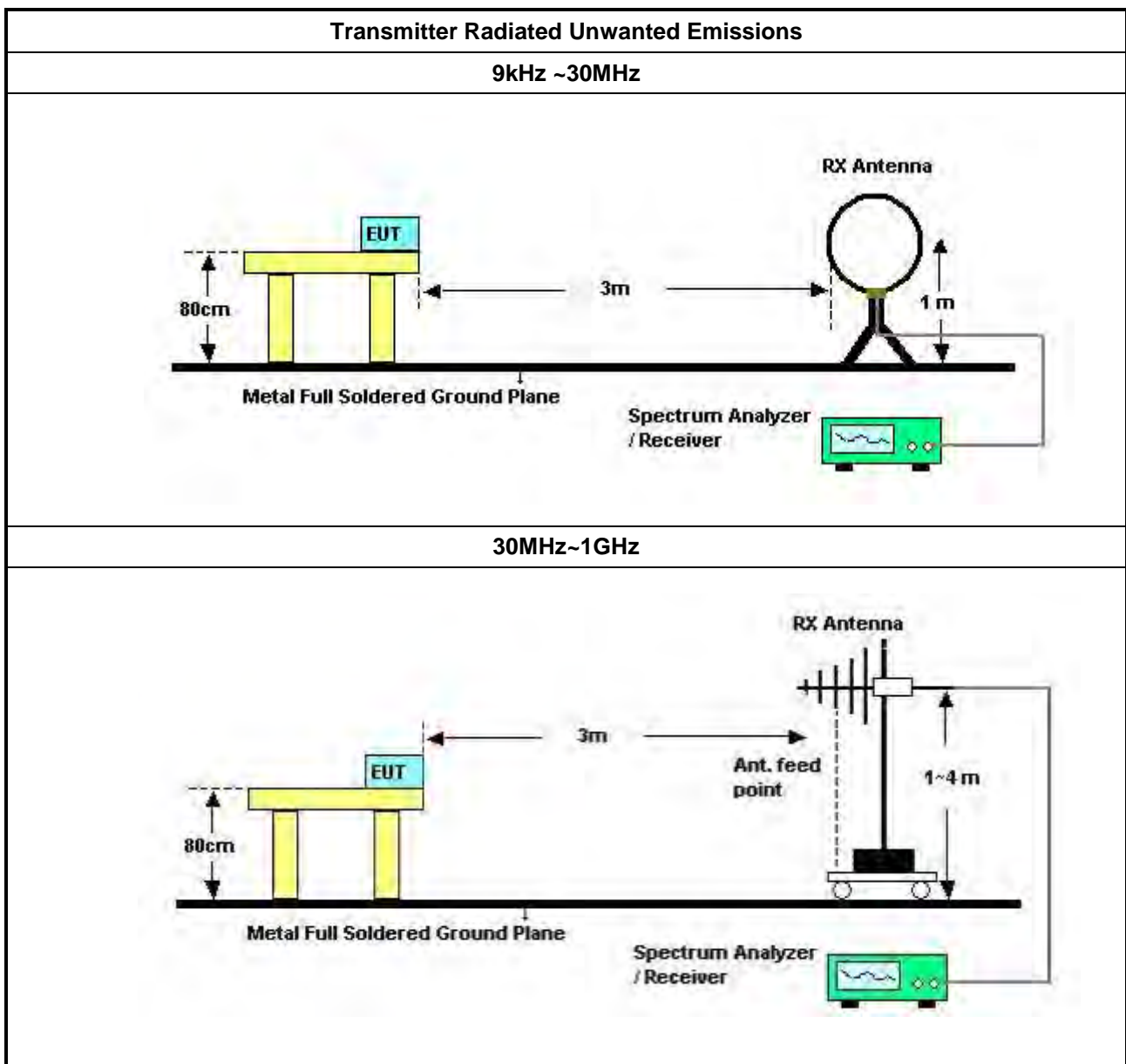
Refer a test equipment and calibration data table in this test report.

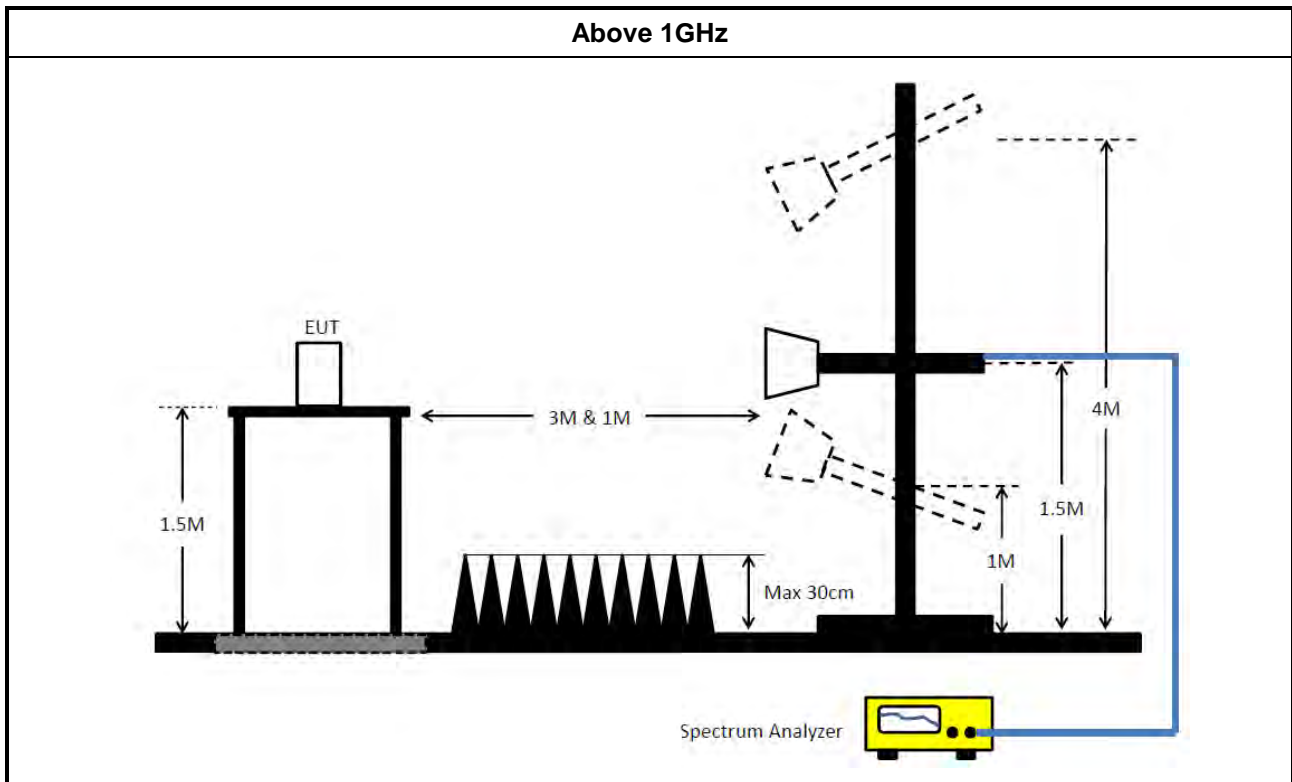
### 3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> <li>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).</li> </ul>	
<ul style="list-style-type: none"> <li>The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].</li> </ul>	
<ul style="list-style-type: none"> <li>For the transmitter unwanted emissions shall be measured using following options below:               <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.</li> <li>Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.</li> </ul> </li> </ul> </li> </ul>	

Test Method	
<ul style="list-style-type: none"> <li>▪ For radiated measurement.</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>
<ul style="list-style-type: none"> <li>▪ The any unwanted emissions level shall not exceed the fundamental emission level.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.</li> </ul>	

### 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
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Dec. 04, 2020	Dec. 03, 2021	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Mar. 07, 2021	Mar. 06, 2022	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 05, 2021	May 04, 2022	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 19, 2021	Oct. 18, 2022	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Mar. 18, 2021	Mar. 17, 2022	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 09, 2021	Aug. 08, 2022	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 26, 2021	Mar. 25, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH05-CB)
Signal Analyzer	R&S	FSV40	101903	9kHz ~ 40GHz	Mar. 22, 2021	Mar. 21, 2022	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 21, 2021	Jun. 20, 2022	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 13, 2021	Oct. 12, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 09, 2018	Jan. 08, 2019	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 21, 2017	Dec. 20, 2018	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jun. 22, 2018	Jun. 21, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

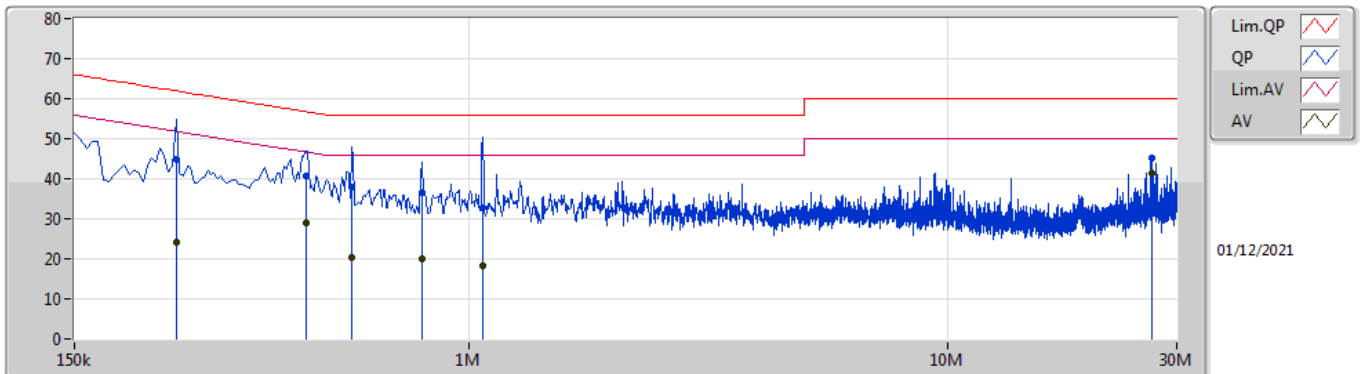
N.C.R. means Non-Calibration required.



**Summary**

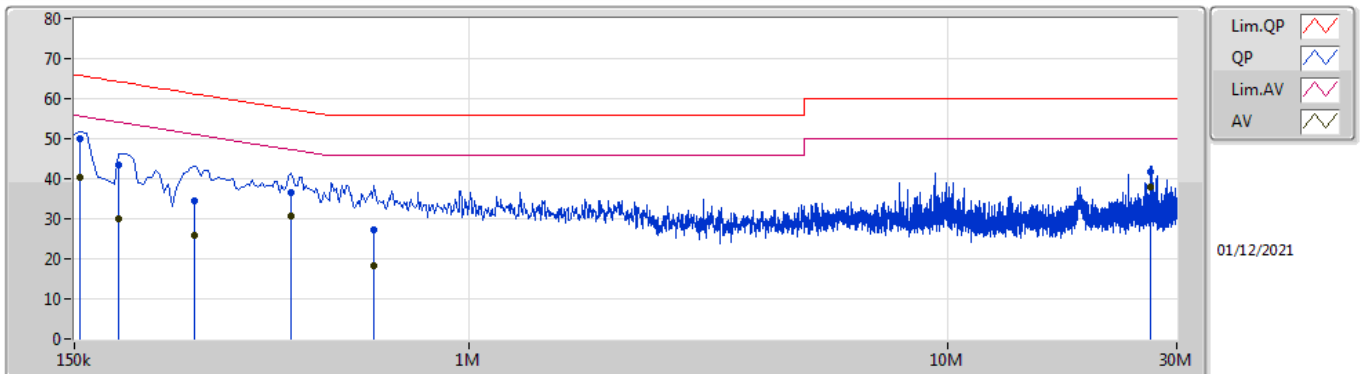
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	AV	26.61M	41.31	50.00	-8.69	Line

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	244.5k	44.69	61.95	-17.26	10.24	Line	-	34.45	0.07	0.02	10.15
AV	244.5k	24.31	51.95	-27.64	10.24	Line	-	14.07	0.07	0.02	10.15
QP	456k	40.76	56.76	-16.00	10.21	Line	-	30.55	0.08	0.02	10.11
AV	456k	28.86	46.76	-17.90	10.21	Line	-	18.65	0.08	0.02	10.11
QP	568.5k	37.90	56.00	-18.10	10.21	Line	-	27.69	0.08	0.02	10.11
AV	568.5k	20.51	46.00	-25.49	10.21	Line	-	10.30	0.08	0.02	10.11
QP	798k	36.44	56.00	-19.56	10.21	Line	-	26.23	0.09	0.02	10.10
AV	798k	19.85	46.00	-26.15	10.21	Line	-	9.64	0.09	0.02	10.10
QP	1.068M	32.80	56.00	-23.20	10.21	Line	-	22.59	0.09	0.02	10.10
AV	1.068M	18.37	46.00	-27.63	10.21	Line	-	8.16	0.09	0.02	10.10
QP	26.61M	45.33	60.00	-14.67	10.98	Line	-	34.35	0.57	0.21	10.20
AV	26.61M	41.31	50.00	-8.69	10.98	Line	"Worst"	30.33	0.57	0.21	10.20

Mode 3



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)
QP	154.5k	50.12	65.75	-15.63	10.23	Neutral	-	39.89	0.06	0.02	10.15
AV	154.5k	40.37	55.75	-15.38	10.23	Neutral	-	30.14	0.06	0.02	10.15
QP	186k	43.33	64.20	-20.87	10.24	Neutral	-	33.09	0.06	0.02	10.16
AV	186k	29.88	54.20	-24.32	10.24	Neutral	-	19.64	0.06	0.02	10.16
QP	267k	34.65	61.20	-26.55	10.22	Neutral	-	24.43	0.06	0.02	10.14
AV	267k	25.78	51.20	-25.42	10.22	Neutral	-	15.56	0.06	0.02	10.14
QP	424.5k	36.54	57.36	-20.82	10.19	Neutral	-	26.35	0.06	0.02	10.11
AV	424.5k	30.64	47.36	-16.72	10.19	Neutral	-	20.45	0.06	0.02	10.11
QP	631.5k	27.14	56.00	-28.86	10.20	Neutral	-	16.94	0.07	0.02	10.11
AV	631.5k	18.19	46.00	-27.81	10.20	Neutral	-	7.99	0.07	0.02	10.11
QP	26.489M	41.71	60.00	-18.29	10.78	Neutral	-	30.93	0.37	0.21	10.20
AV	26.489M	37.85	50.00	-12.15	10.78	Neutral	"Worst"	27.07	0.37	0.21	10.20



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	38.275M	16.717M	16M7D1D	25.9M	16.667M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	21.8M	16.617M	16M6D1D	15.66M	13.283M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	3.14M	3.878M	3M88D1D	3.14M	3.878M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

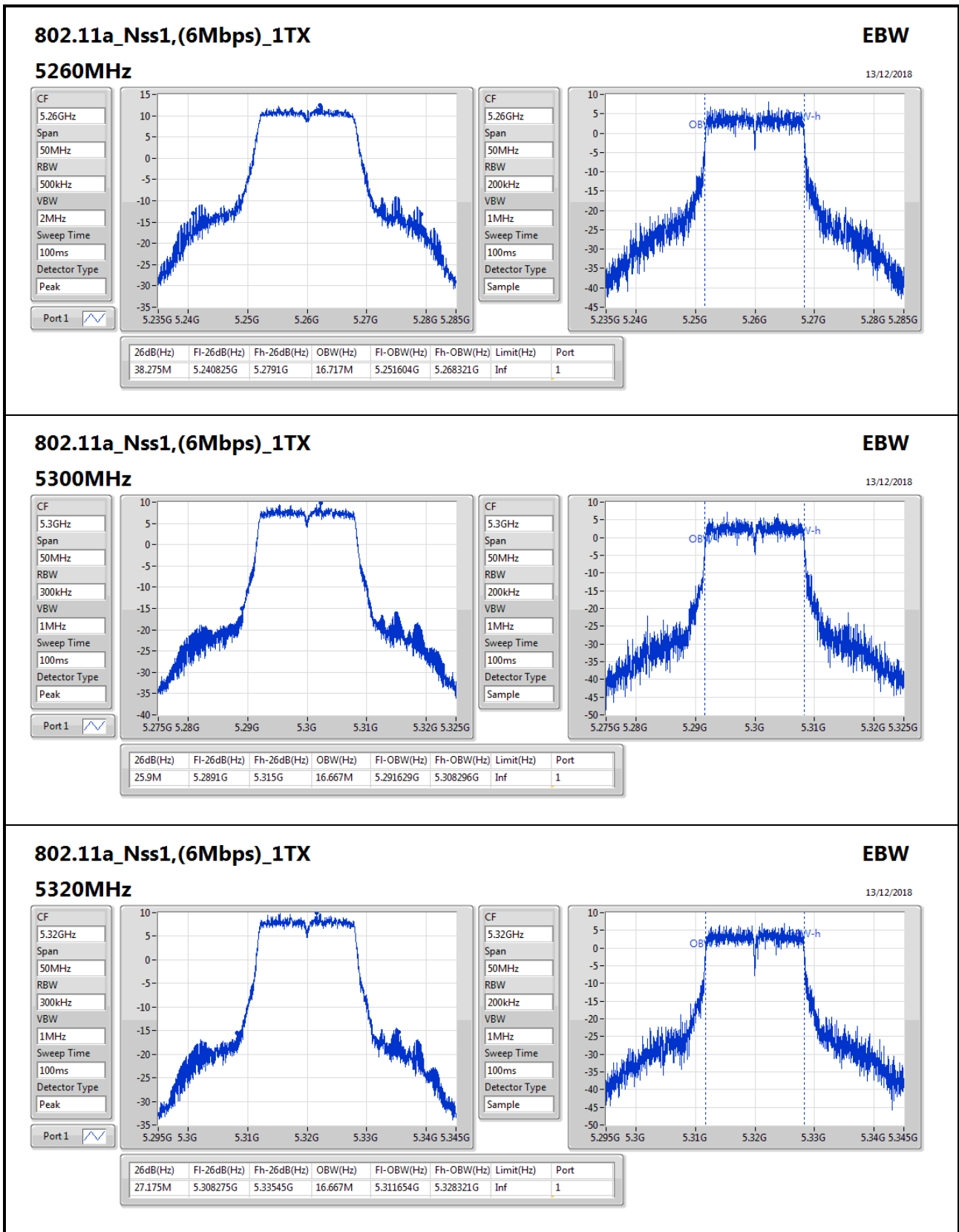
**Min-OBW** = Minimum 99% occupied bandwidth;

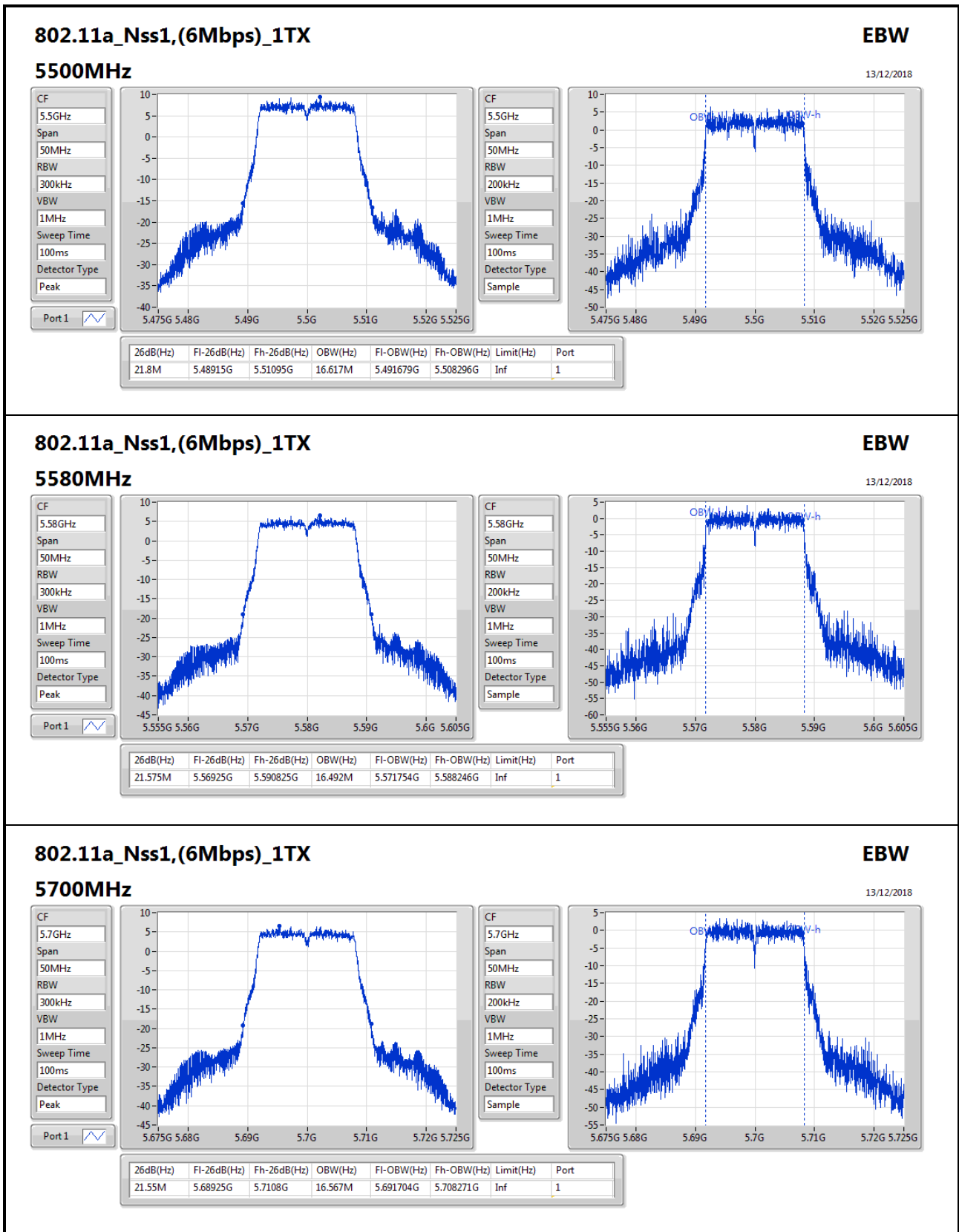
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5260MHz	Pass	Inf	38.275M	16.717M
5300MHz	Pass	Inf	25.9M	16.667M
5320MHz	Pass	Inf	27.175M	16.667M
5500MHz	Pass	Inf	21.8M	16.617M
5580MHz	Pass	Inf	21.575M	16.492M
5700MHz	Pass	Inf	21.55M	16.567M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.66M	13.283M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.878M

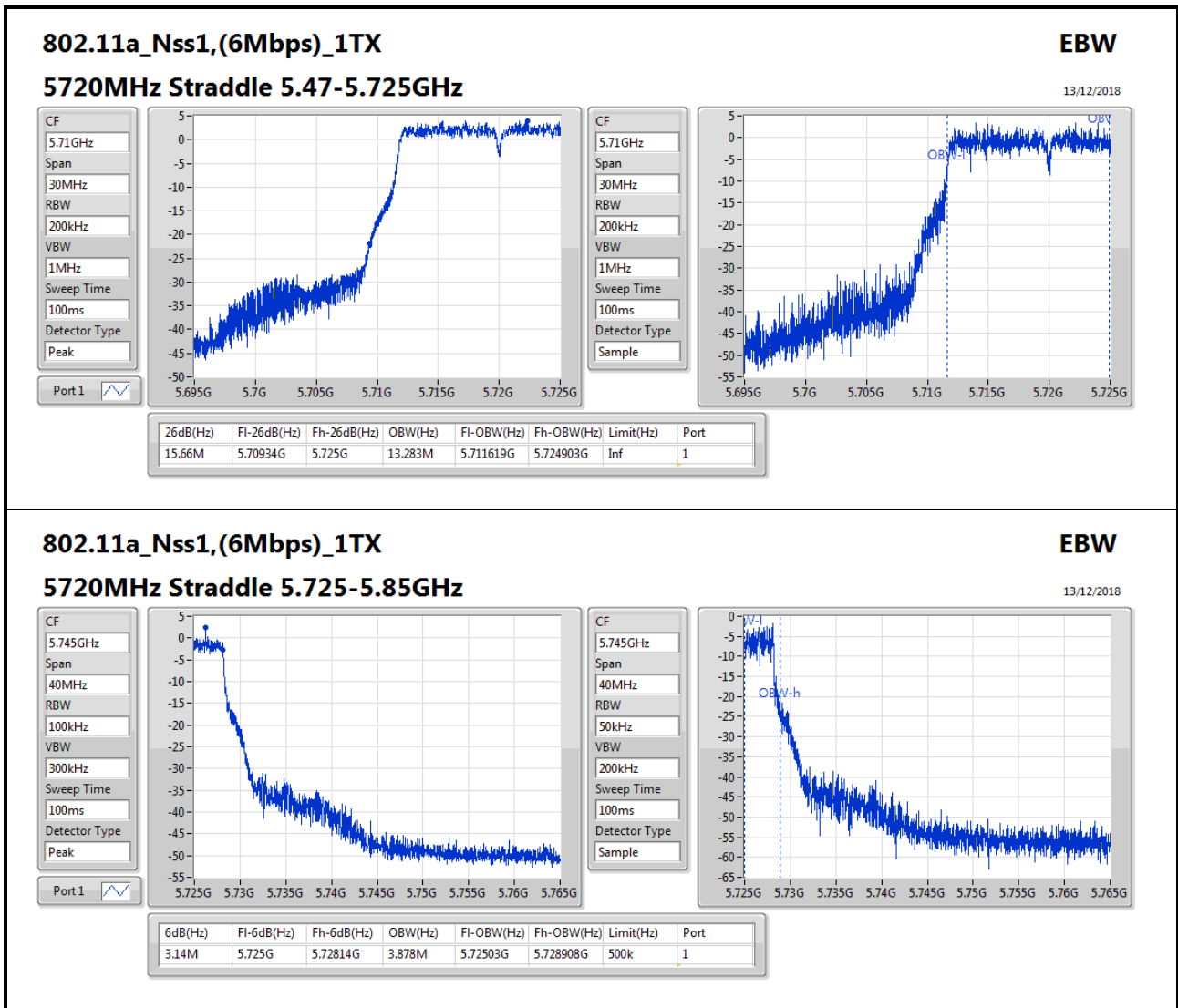
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

**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)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_1TX	81.2M	77.161M	77M2D1D	81.2M	77.161M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	40.875M	19.115M	19M1D1D	28.725M	18.991M
802.11ax HEW40_Nss1,(MCS0)_1TX	63.6M	37.781M	37M8D1D	39.95M	37.531M
802.11ax HEW80_Nss1,(MCS0)_1TX	81.6M	77.361M	77M4D1D	81.6M	77.361M
802.11ax HEW160_Nss1,(MCS0)_1TX	81.44M	77.161M	77M2D1D	81.44M	77.161M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	24.6M	18.966M	19M0D1D	15.75M	14.483M
802.11ax HEW40_Nss1,(MCS0)_1TX	45.35M	37.631M	37M6D1D	34.895M	33.688M
802.11ax HEW80_Nss1,(MCS0)_1TX	81.6M	77.061M	77M1D1D	77.55M	73.163M
802.11ax HEW160_Nss1,(MCS0)_1TX	164.4M	155.322M	155MD1D	164.4M	155.322M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	4.48M	4.518M	4M52D1D	4.48M	4.518M
802.11ax HEW40_Nss1,(MCS0)_1TX	3.88M	4.038M	4M04D1D	3.88M	4.038M
802.11ax HEW80_Nss1,(MCS0)_1TX	3.46M	27.786M	27M8D1D	3.46M	27.786M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

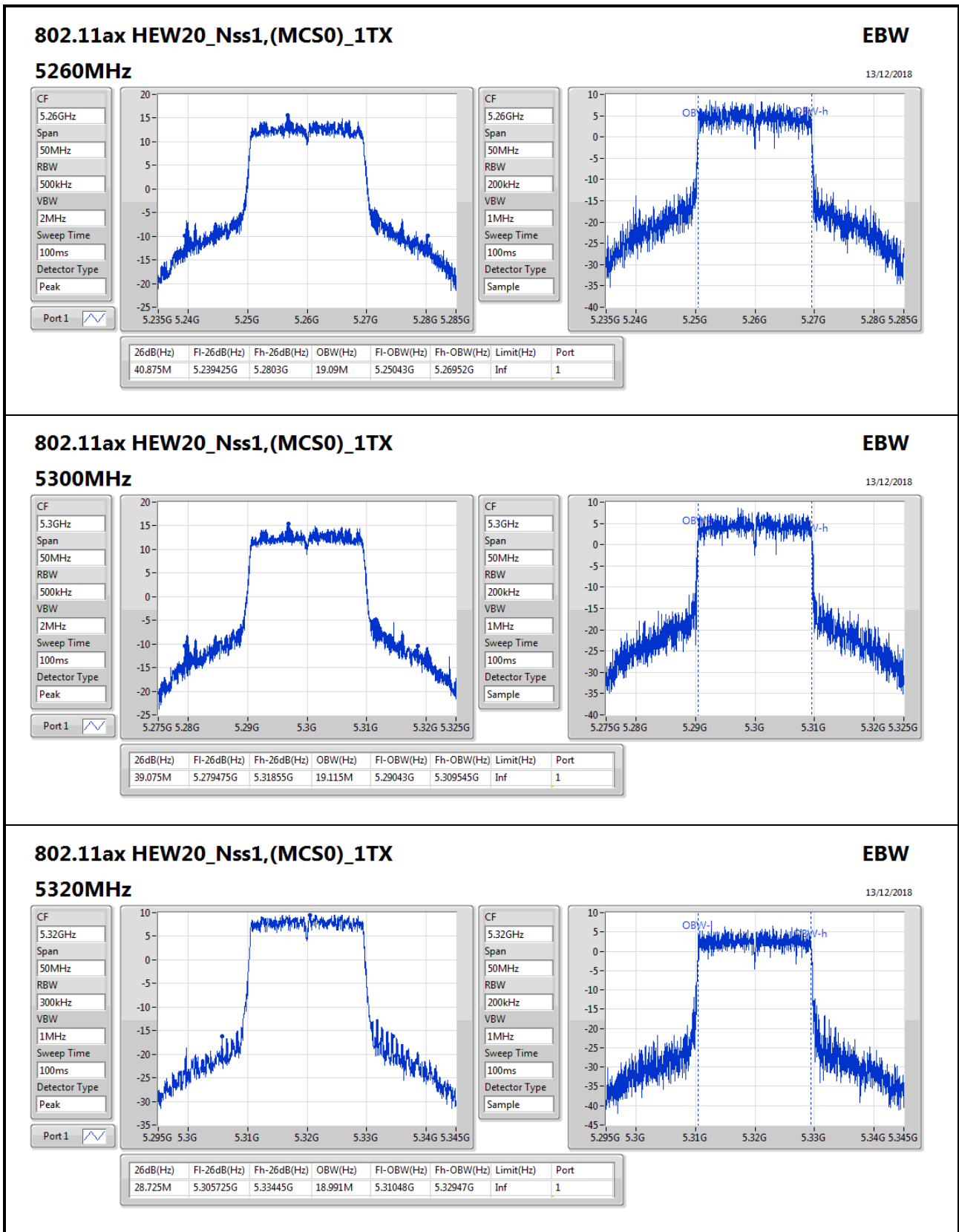
**Min-OBW** = Minimum 99% occupied bandwidth;

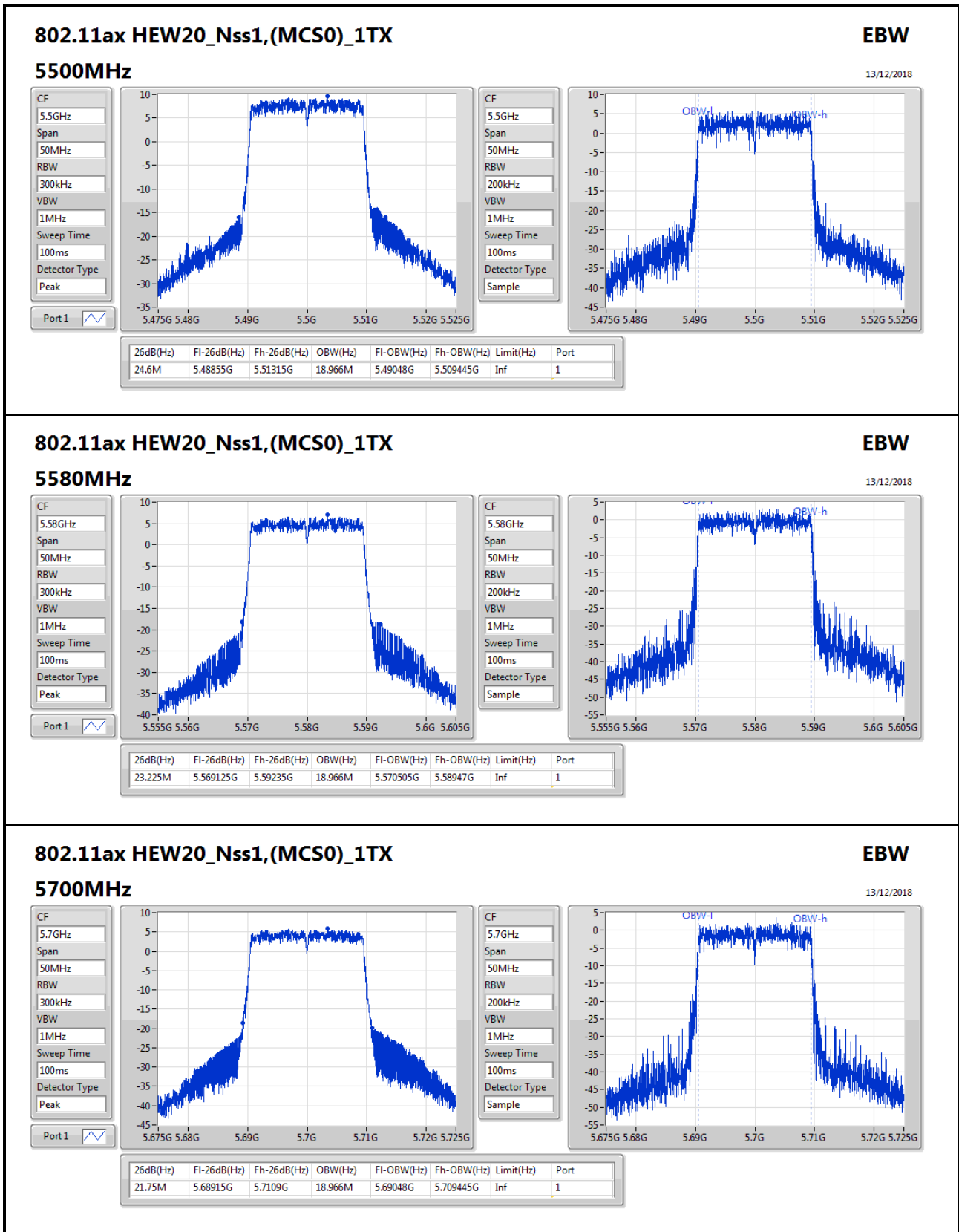


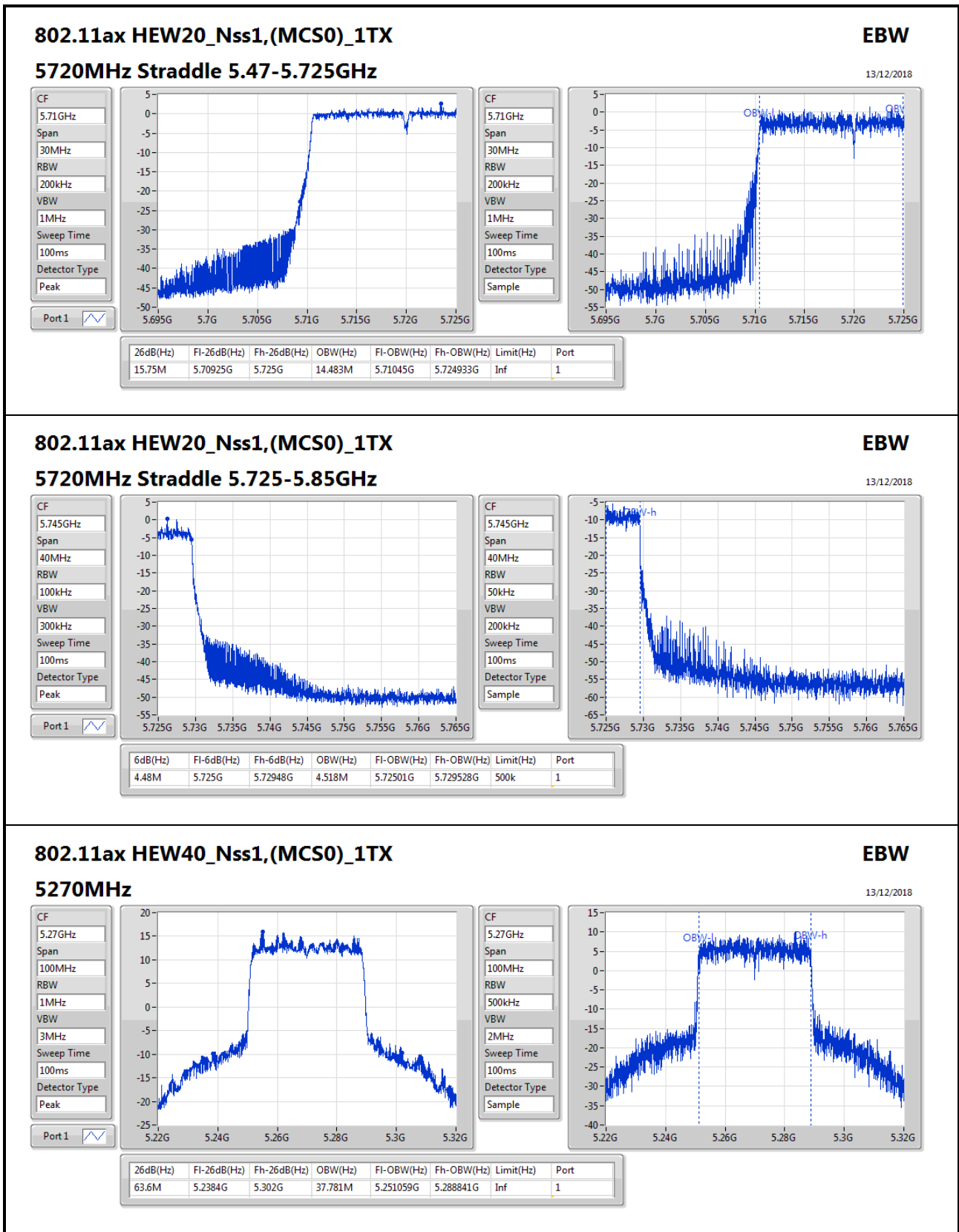
**Result**

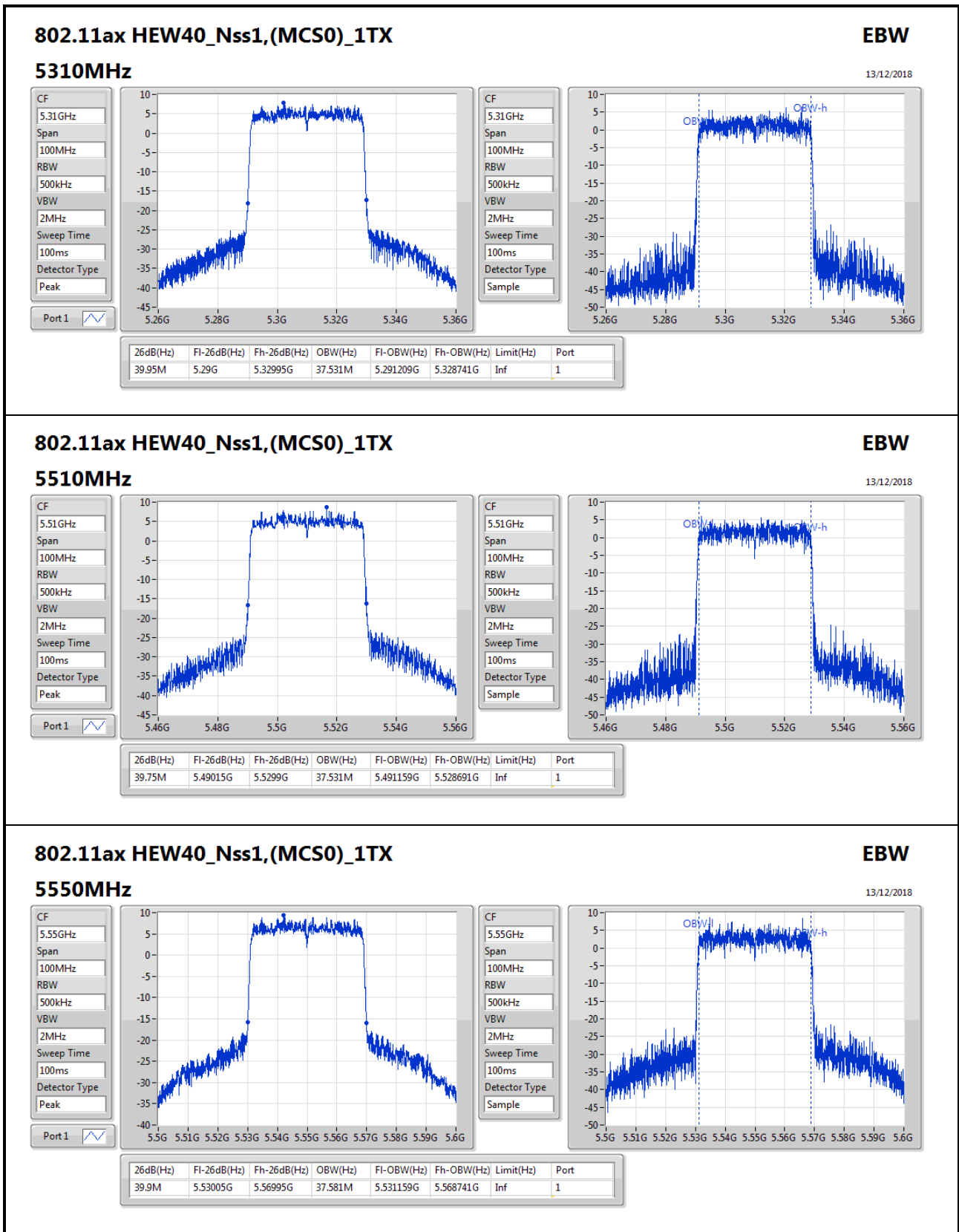
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5260MHz	Pass	Inf	40.875M	19.09M
5300MHz	Pass	Inf	39.075M	19.115M
5320MHz	Pass	Inf	28.725M	18.991M
5500MHz	Pass	Inf	24.6M	18.966M
5580MHz	Pass	Inf	23.225M	18.966M
5700MHz	Pass	Inf	21.75M	18.966M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.75M	14.483M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.518M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5270MHz	Pass	Inf	63.6M	37.781M
5310MHz	Pass	Inf	39.95M	37.531M
5510MHz	Pass	Inf	39.75M	37.531M
5550MHz	Pass	Inf	39.9M	37.581M
5670MHz	Pass	Inf	45.35M	37.631M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	34.895M	33.688M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.88M	4.038M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5290MHz	Pass	Inf	81.6M	77.361M
5530MHz	Pass	Inf	81.6M	77.061M
5610MHz	Pass	Inf	81.6M	77.061M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	77.55M	73.163M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.46M	27.786M
802.11ax HEW160_Nss1,(MCS0)_1TX	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.2M	77.161M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.44M	77.161M
5570MHz	Pass	Inf	164.4M	155.322M

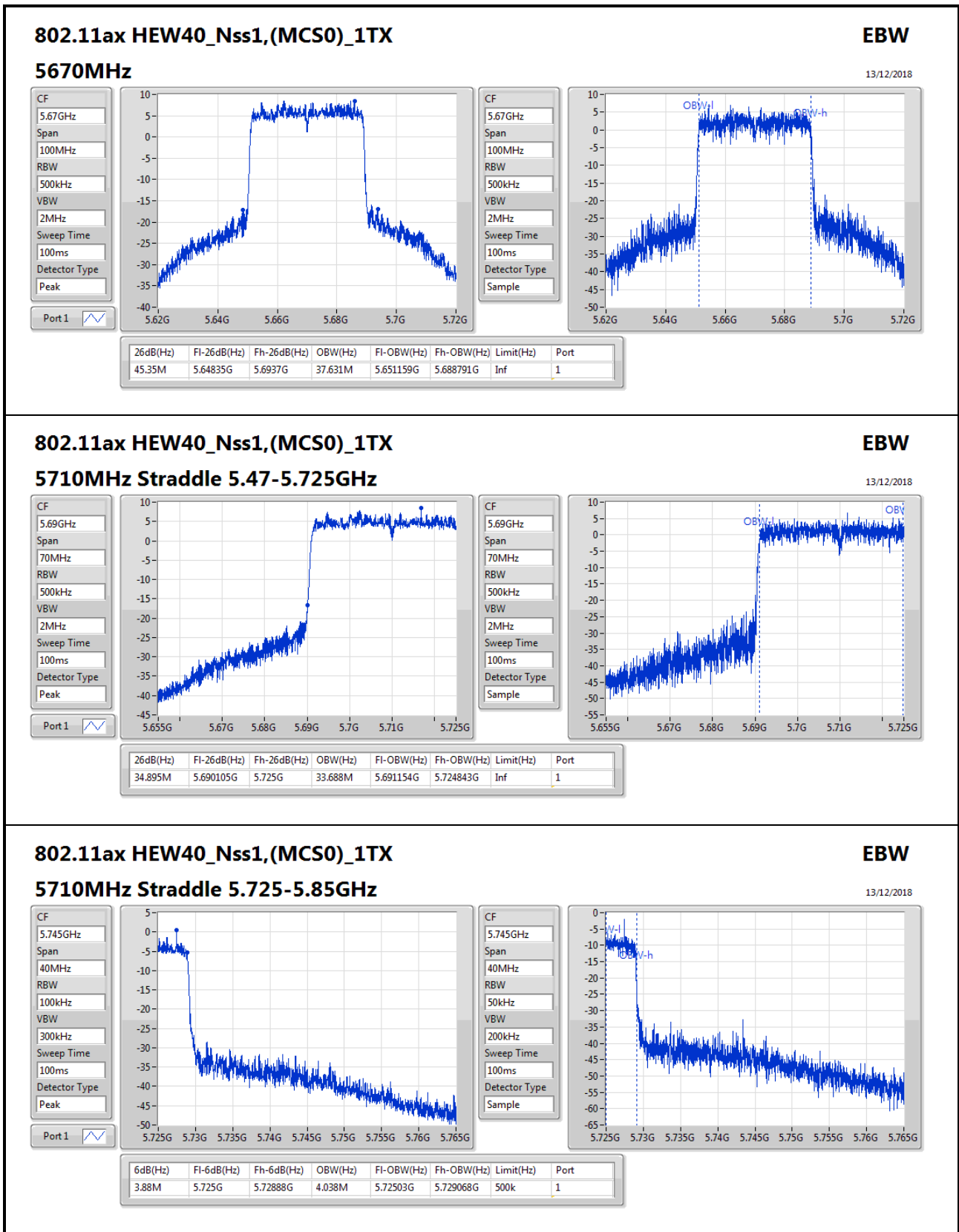
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
**Port X-OBW** = Port X 99% occupied bandwidth;



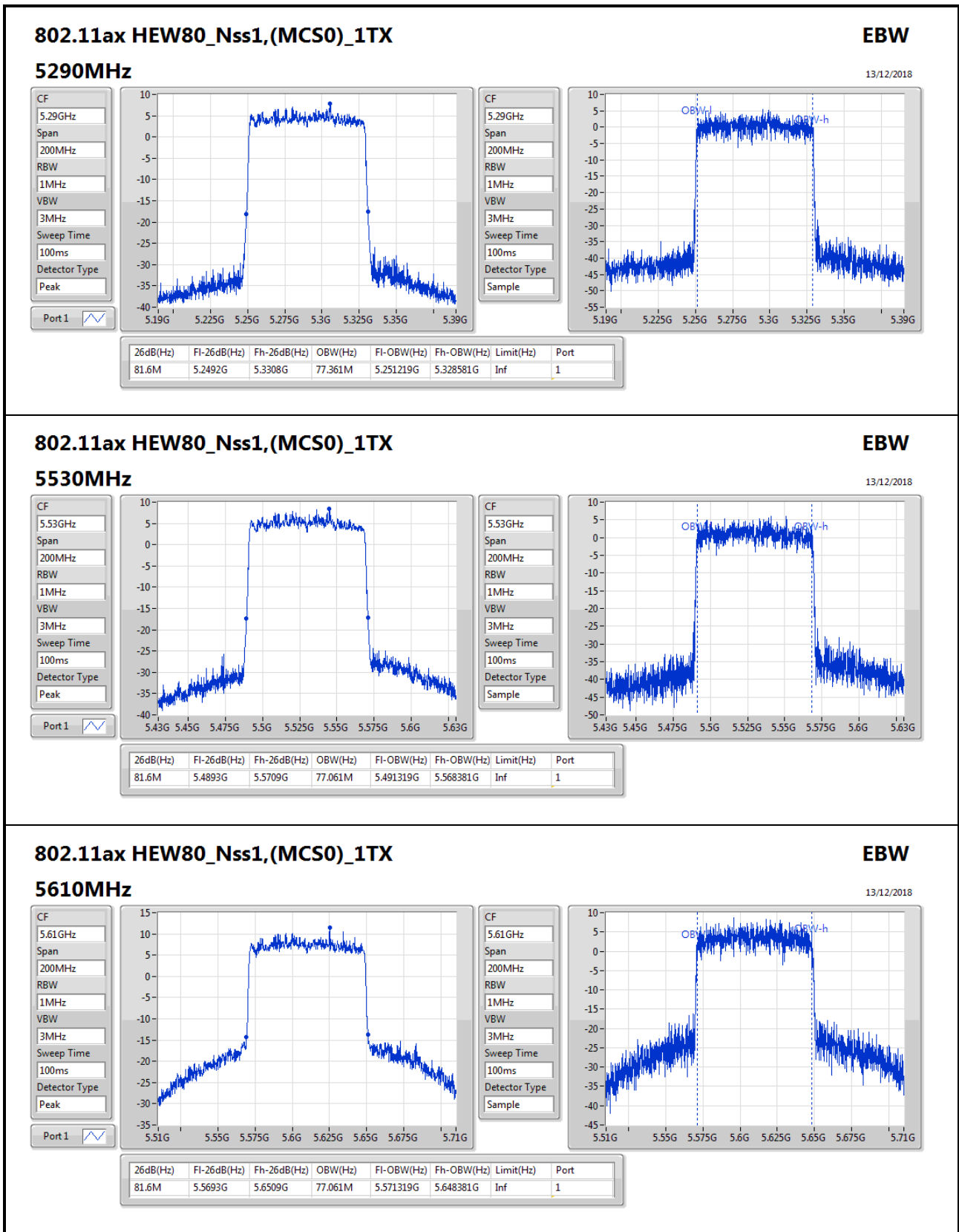


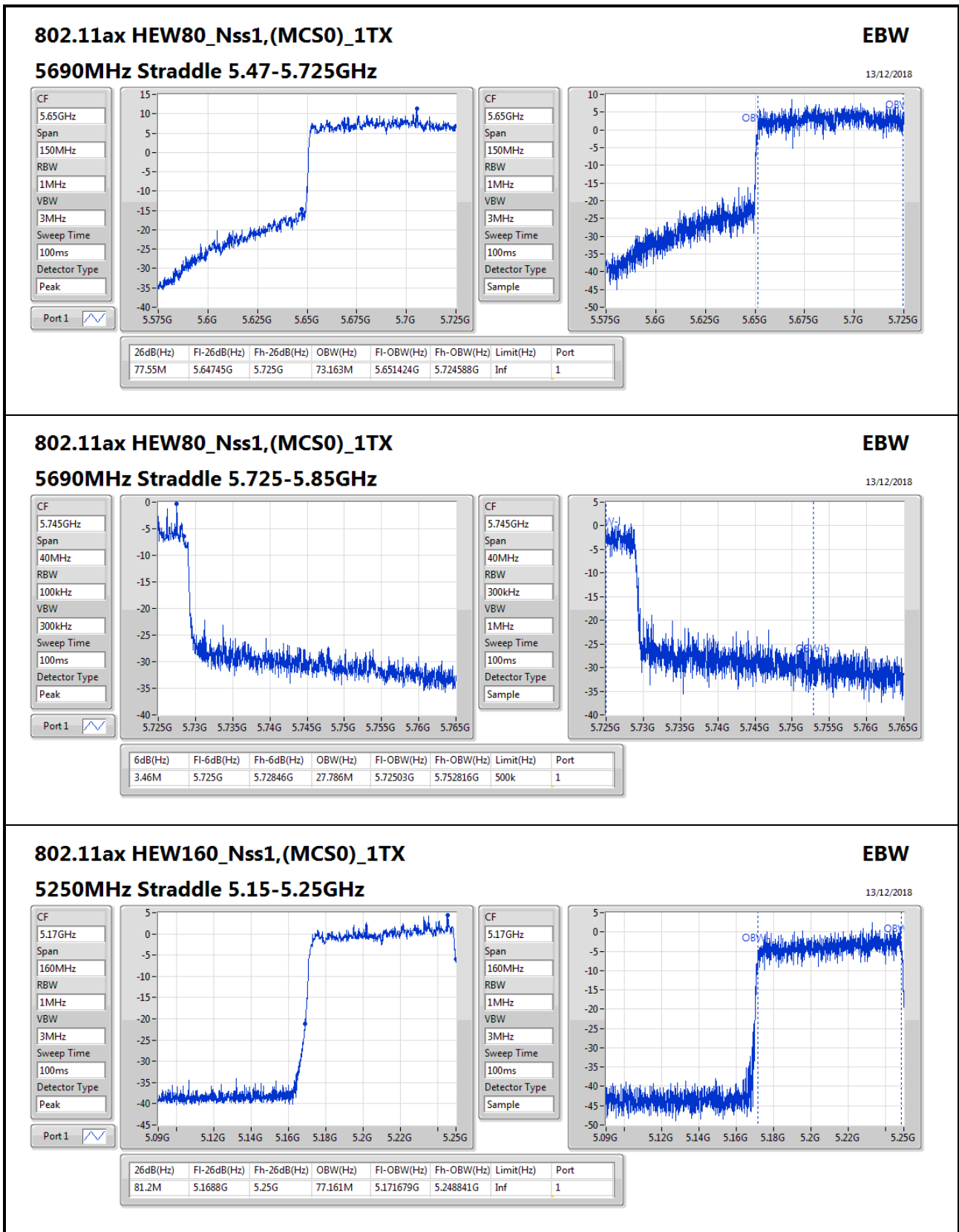


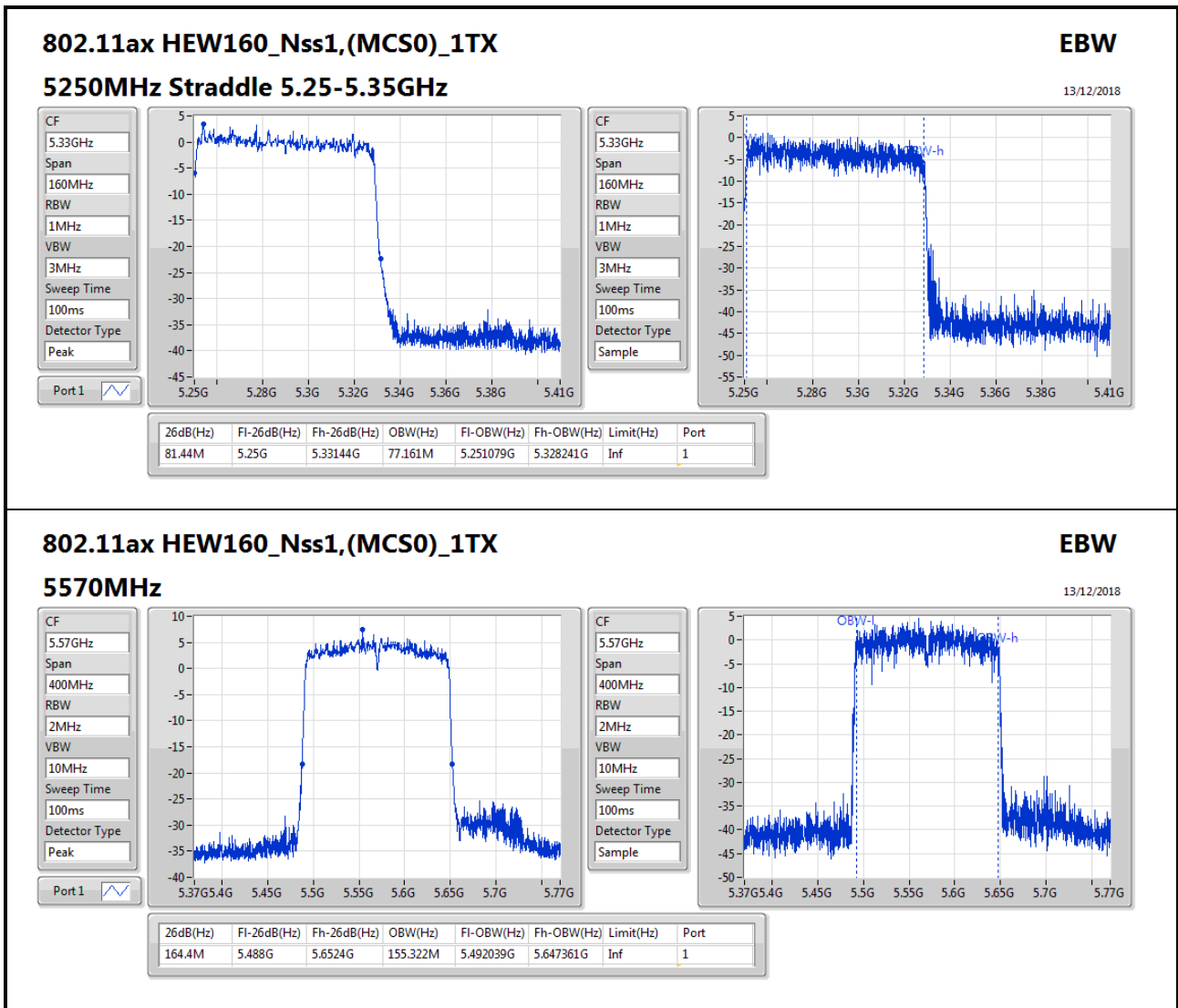














Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss2,(MCS0)_2TX	82.08M	77.241M	77M2D1D	81.52M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	43.125M	19.115M	19M1D1D	21.425M	18.941M
802.11ax HEW40_Nss2,(MCS0)_2TX	75.25M	37.781M	37M8D1D	39.95M	37.481M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.8M	76.962M	77M0D1D	81.4M	76.962M
802.11ax HEW160_Nss2,(MCS0)_2TX	81.92M	77.001M	77M0D1D	80.48M	76.842M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	21.95M	18.966M	19M0D1D	15.6M	14.483M
802.11ax HEW40_Nss2,(MCS0)_2TX	40.2M	37.631M	37M6D1D	35.07M	33.653M
802.11ax HEW80_Nss2,(MCS0)_2TX	118.2M	77.261M	77M3D1D	78.675M	73.088M
802.11ax HEW160_Nss2,(MCS0)_2TX	165.6M	154.923M	155MD1D	165M	154.923M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	4.42M	4.518M	4M52D1D	4.38M	4.498M
802.11ax HEW40_Nss2,(MCS0)_2TX	3.74M	4.018M	4M02D1D	3.7M	3.998M
802.11ax HEW80_Nss2,(MCS0)_2TX	3.76M	26.187M	26M2D1D	3.74M	26.147M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

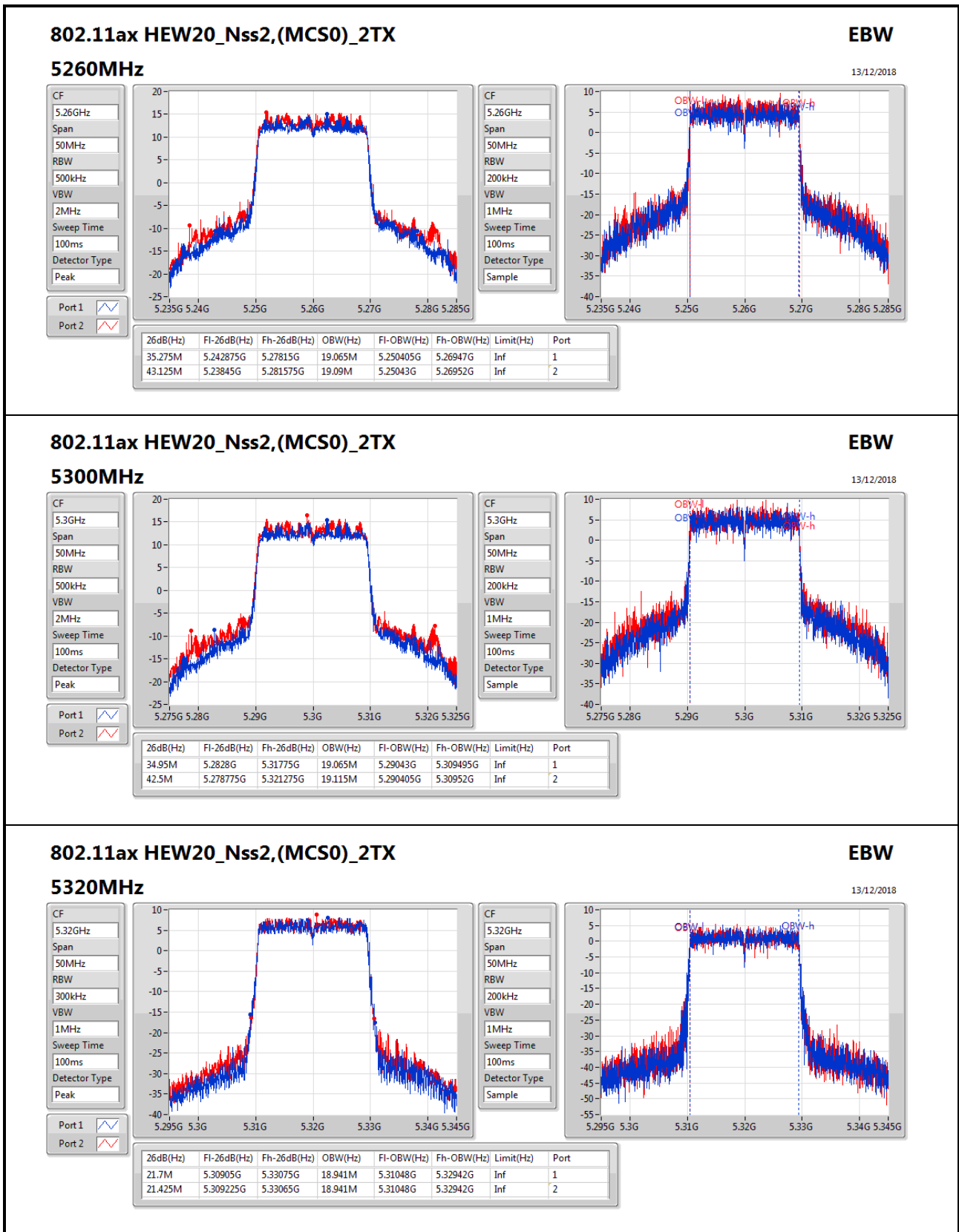
**Min-OBW** = Minimum 99% occupied bandwidth;

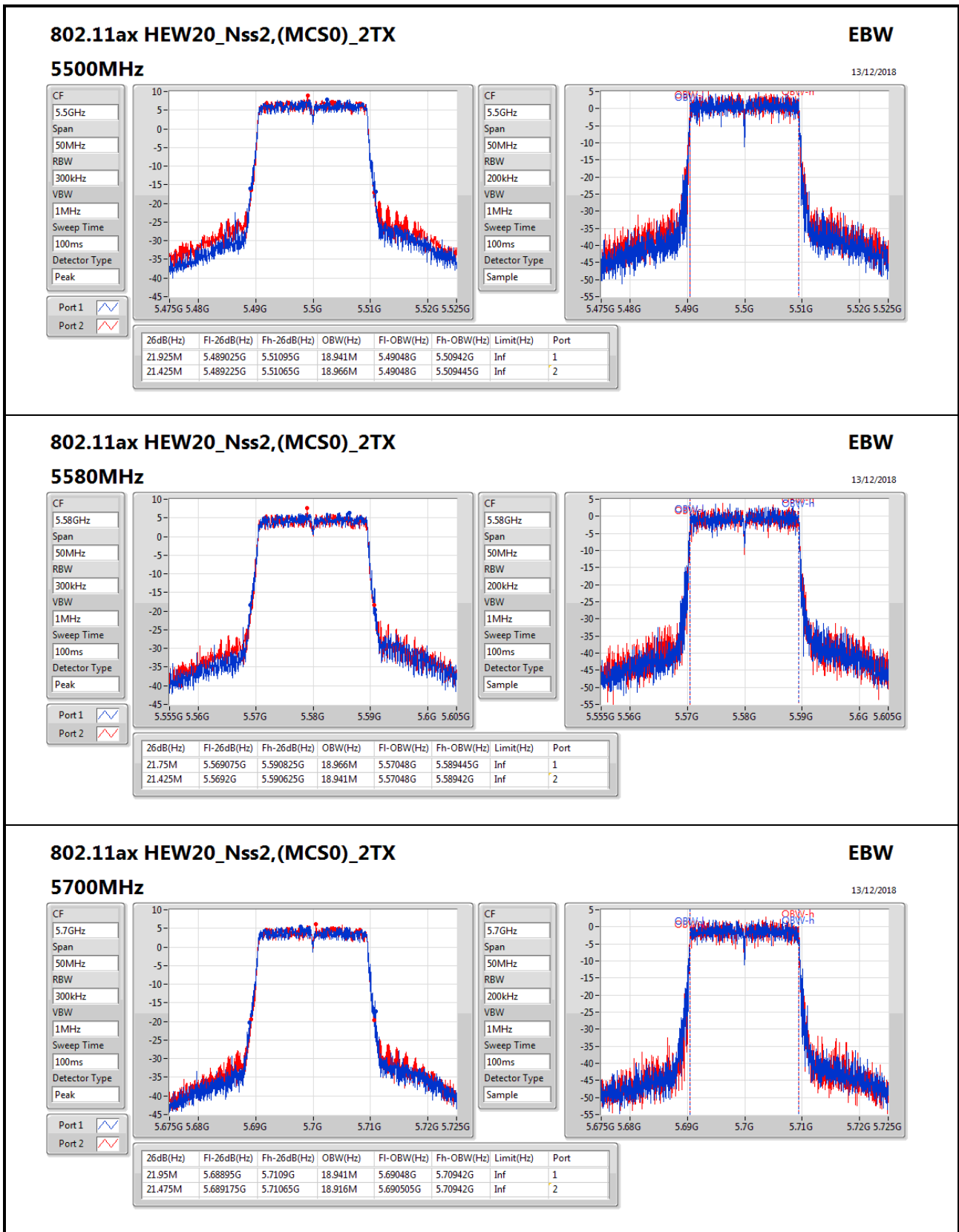
**Result**

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	35.275M	19.065M	43.125M	19.09M
5300MHz	Pass	Inf	34.95M	19.065M	42.5M	19.115M
5320MHz	Pass	Inf	21.7M	18.941M	21.425M	18.941M
5500MHz	Pass	Inf	21.925M	18.941M	21.425M	18.966M
5580MHz	Pass	Inf	21.75M	18.966M	21.425M	18.941M
5700MHz	Pass	Inf	21.95M	18.941M	21.475M	18.916M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.885M	14.483M	15.6M	14.483M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.42M	4.498M	4.38M	4.518M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	73.05M	37.781M	75.25M	37.731M
5310MHz	Pass	Inf	40M	37.531M	39.95M	37.481M
5510MHz	Pass	Inf	39.95M	37.481M	39.9M	37.581M
5550MHz	Pass	Inf	40M	37.631M	40.05M	37.531M
5670MHz	Pass	Inf	40.2M	37.581M	40.1M	37.581M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.07M	33.723M	35.07M	33.653M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.7M	4.018M	3.74M	3.998M
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	81.4M	76.962M	81.8M	76.962M
5530MHz	Pass	Inf	81.8M	76.762M	81.8M	77.261M
5610MHz	Pass	Inf	118.2M	77.061M	108.2M	77.161M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	78.675M	73.088M	92.85M	73.388M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	26.147M	3.74M	26.187M
802.11ax HEW160_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.52M	77.081M	82.08M	77.241M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.92M	77.001M	80.48M	76.842M
5570MHz	Pass	Inf	165.6M	154.923M	165M	154.923M

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

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





### 802.11ax HEW20\_Nss2,(MCS0)\_2TX

#### 5700MHz

**EBW**  
13/12/2018

CF: 5.7GHz  
Span: 50MHz  
RBW: 300kHz  
VBW: 1MHz  
Sweep Time: 100ms  
Detector Type: Peak

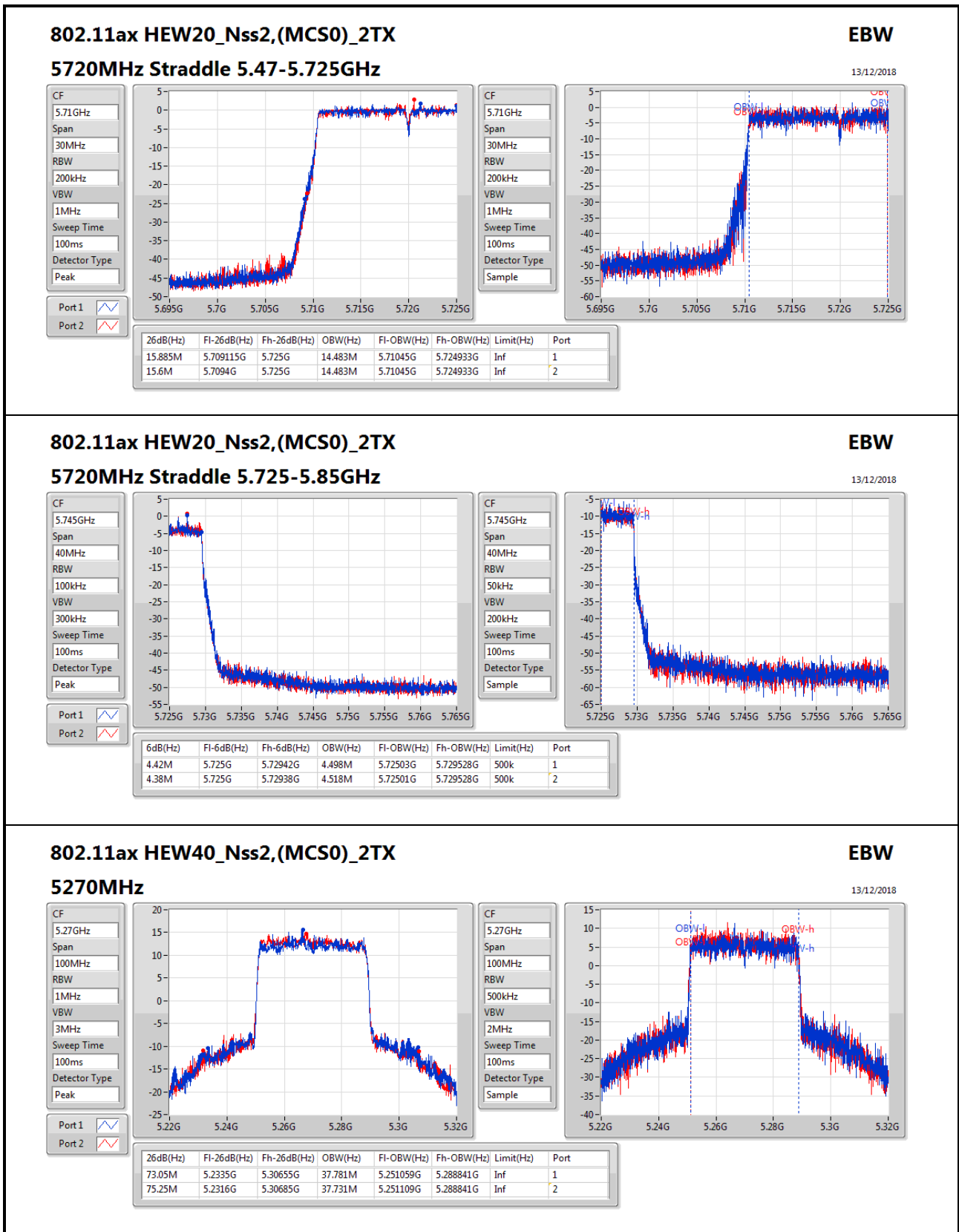
Port 1:   
Port 2: 



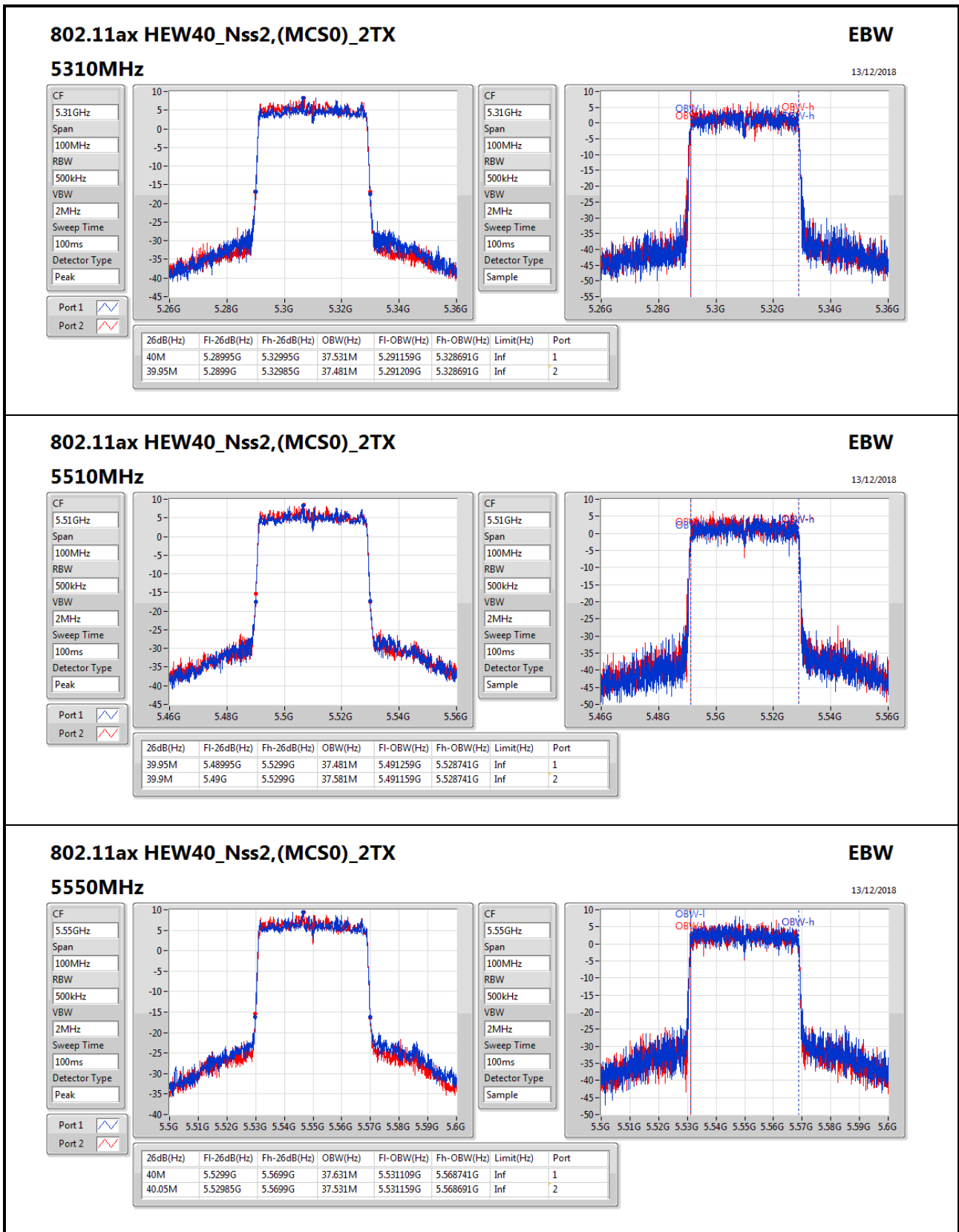
CF: 5.7GHz  
Span: 50MHz  
RBW: 200kHz  
VBW: 1MHz  
Sweep Time: 100ms  
Detector Type: Sample

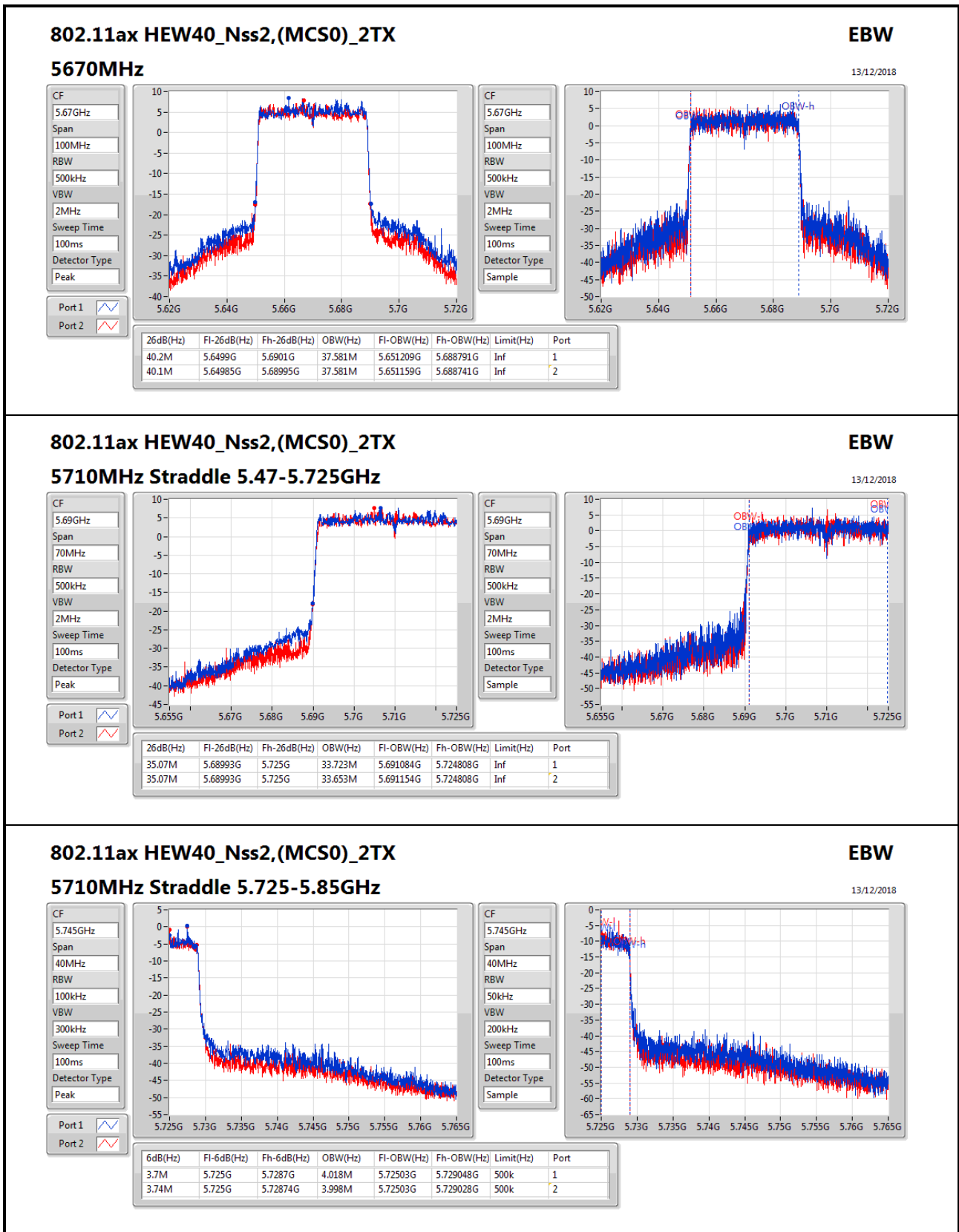
Port 1:   
Port 2: 

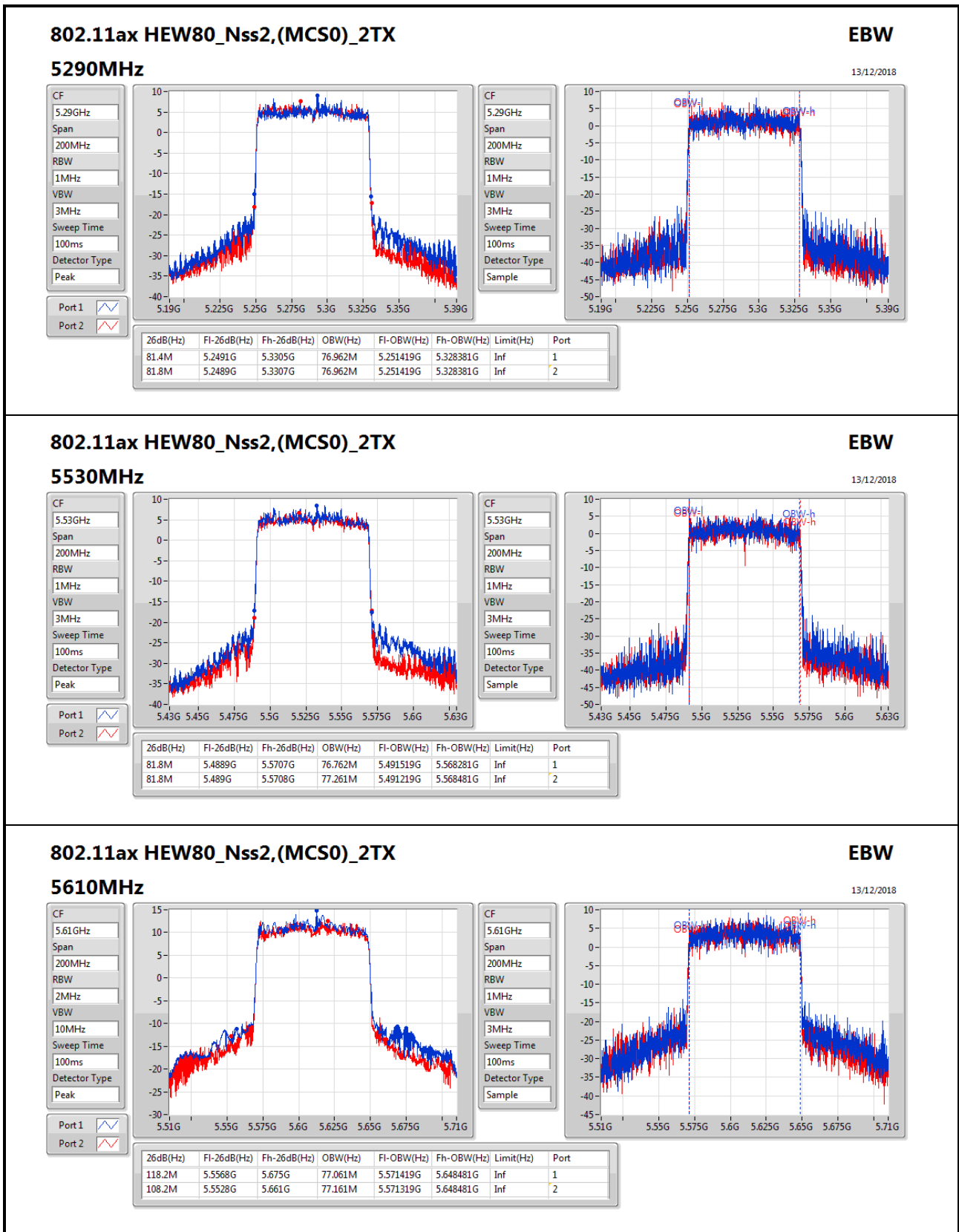


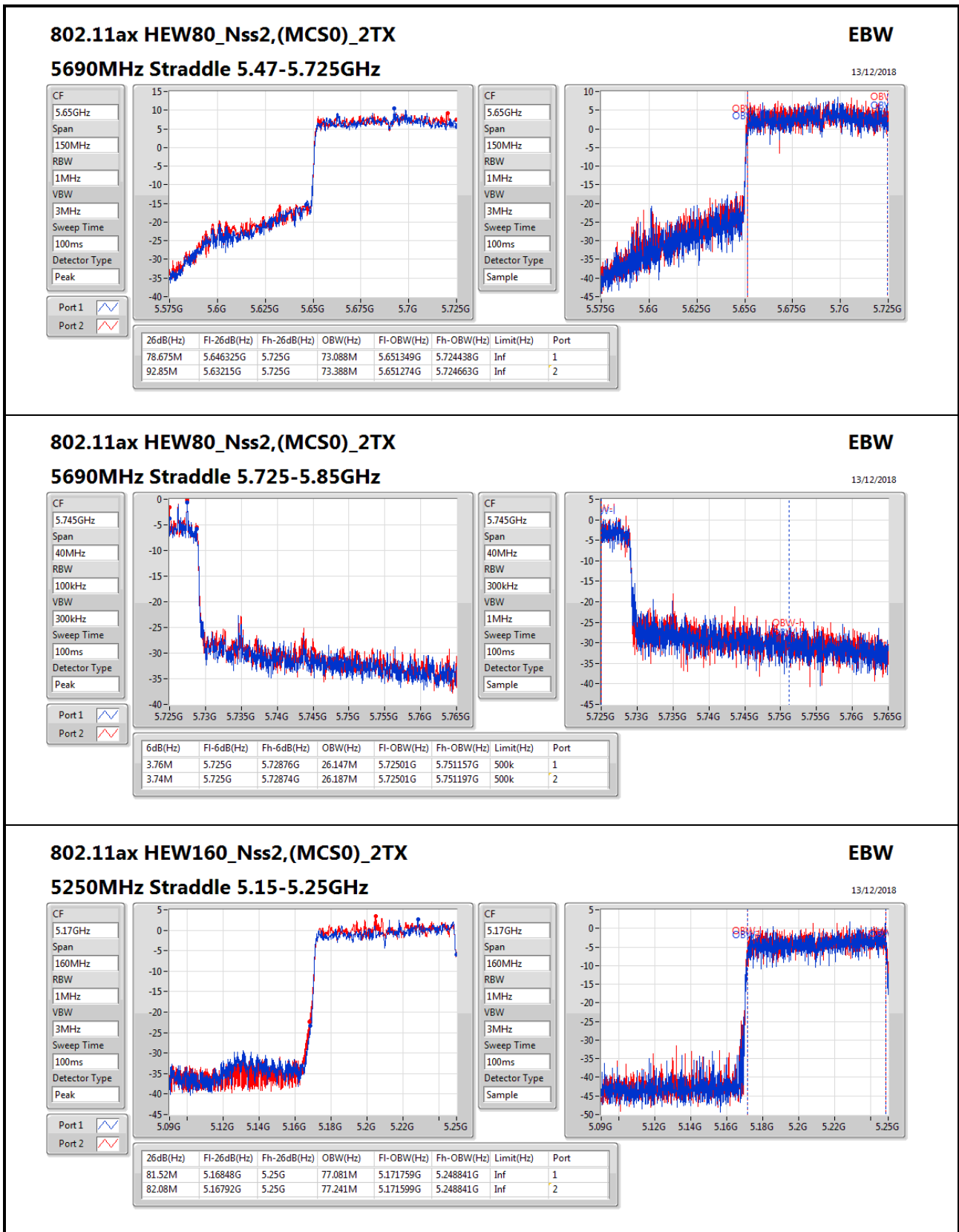


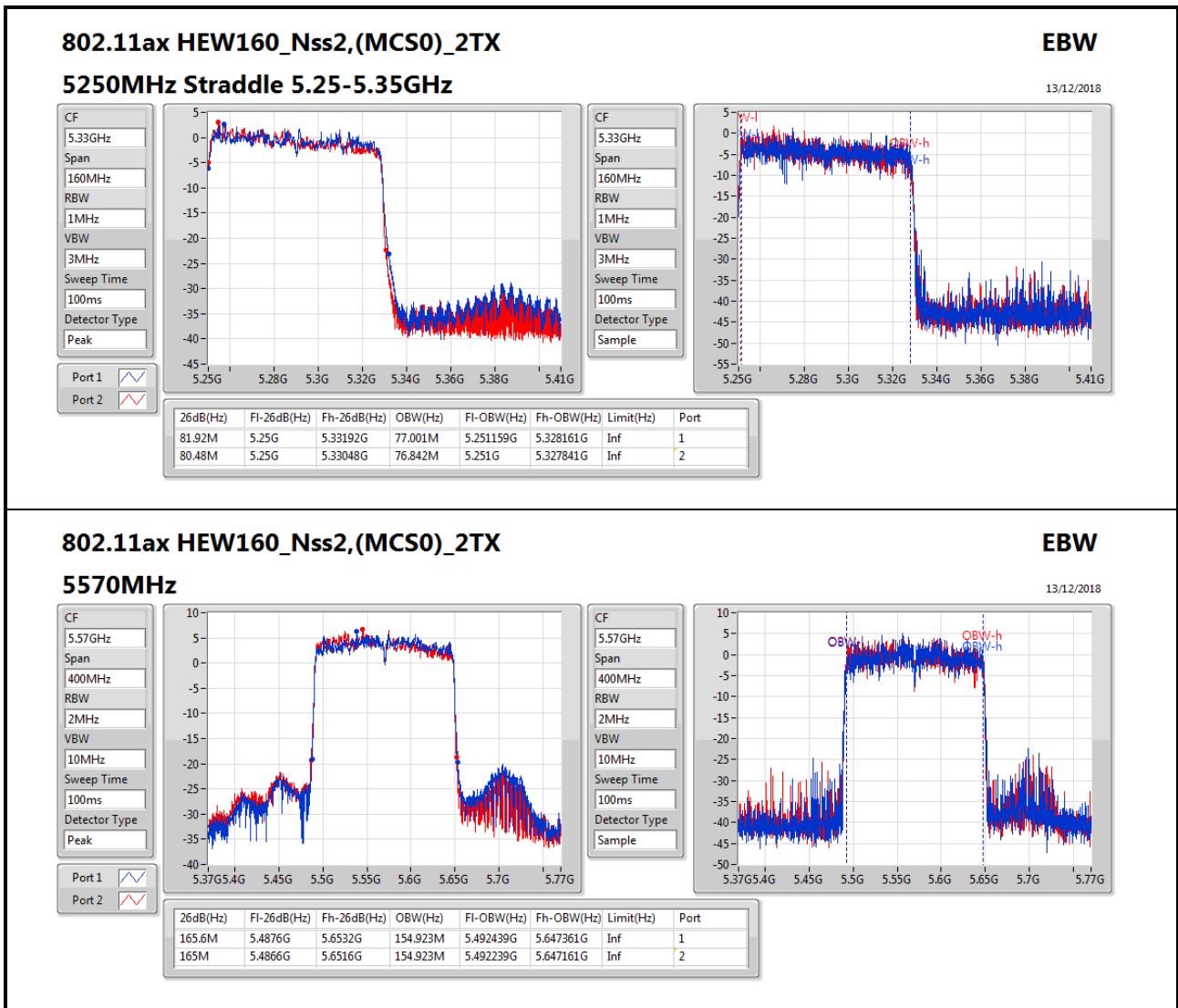














Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.65M	16.592M	16M6D1D	21.45M	16.517M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.675M	16.592M	16M6D1D	15.615M	13.298M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	3.12M	3.858M	3M86D1D	3.12M	3.738M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

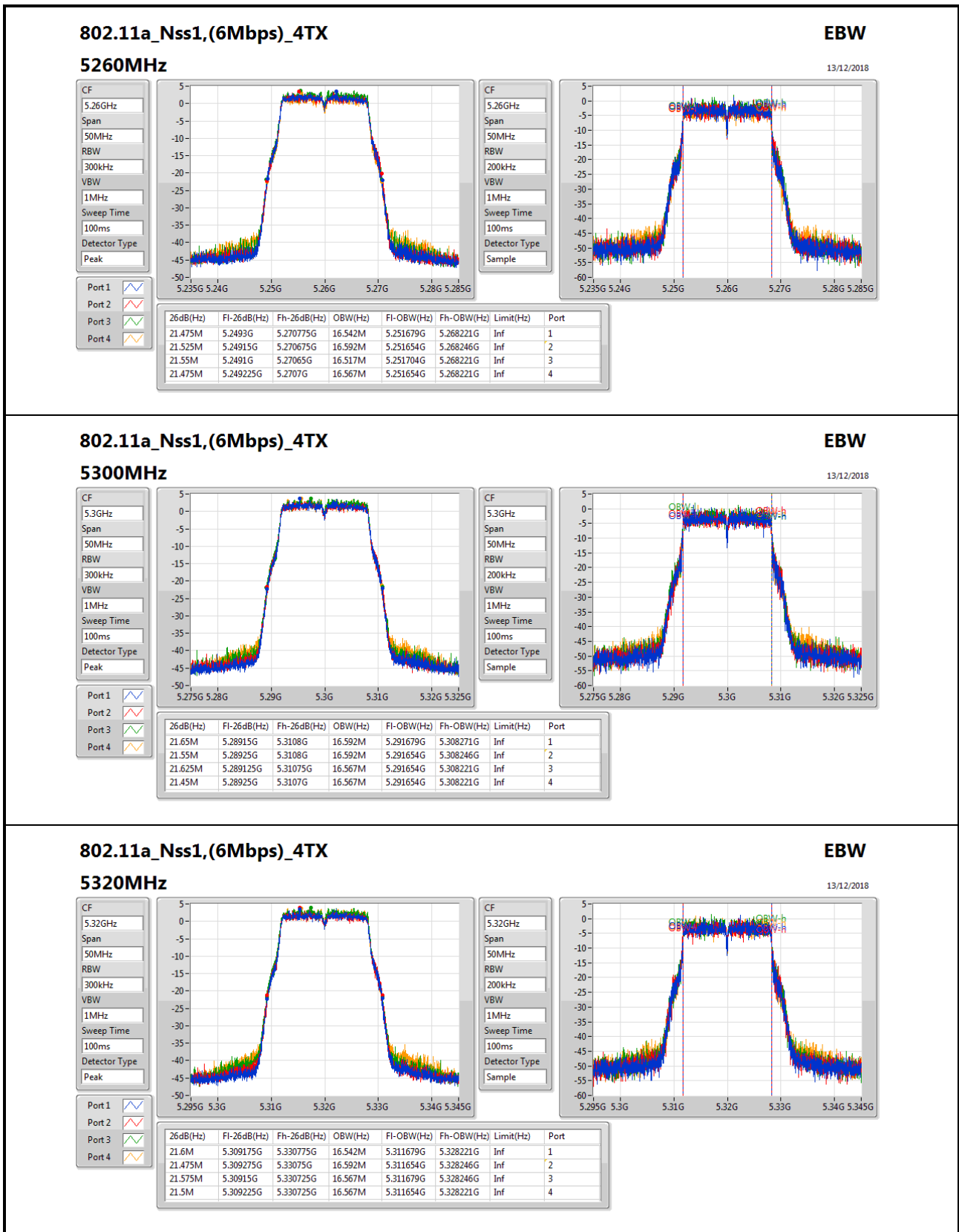
**Min-OBW** = Minimum 99% occupied bandwidth;

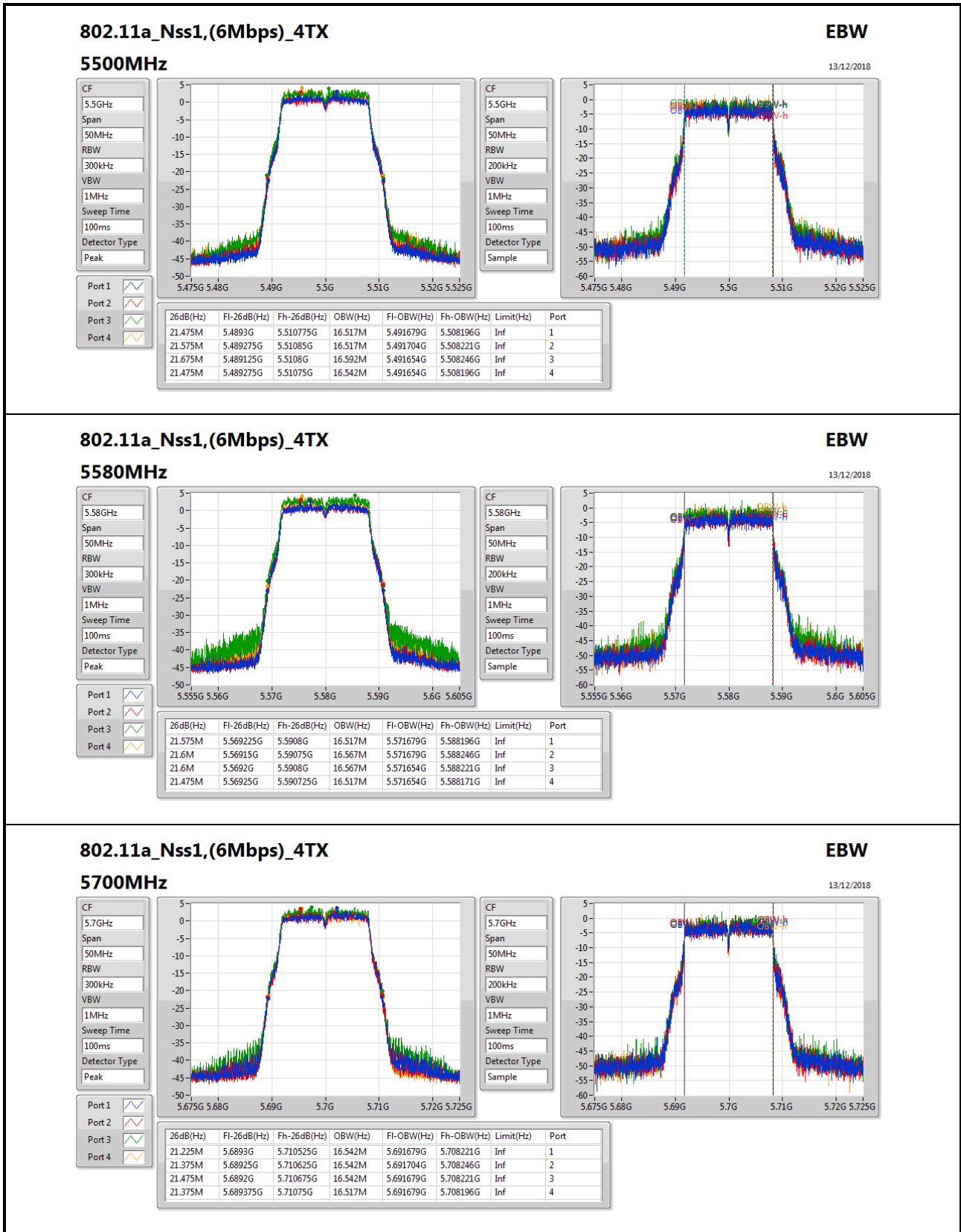
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.475M	16.542M	21.525M	16.592M	21.55M	16.517M	21.475M	16.567M
5300MHz	Pass	Inf	21.65M	16.592M	21.55M	16.592M	21.625M	16.567M	21.45M	16.567M
5320MHz	Pass	Inf	21.6M	16.542M	21.475M	16.592M	21.575M	16.567M	21.5M	16.567M
5500MHz	Pass	Inf	21.475M	16.517M	21.575M	16.517M	21.675M	16.592M	21.475M	16.542M
5580MHz	Pass	Inf	21.575M	16.517M	21.6M	16.567M	21.6M	16.567M	21.475M	16.517M
5700MHz	Pass	Inf	21.225M	16.542M	21.375M	16.542M	21.475M	16.542M	21.375M	16.517M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.615M	13.328M	15.705M	13.358M	15.645M	13.298M	15.63M	13.313M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	3.818M	3.12M	3.838M	3.12M	3.858M	3.12M	3.738M

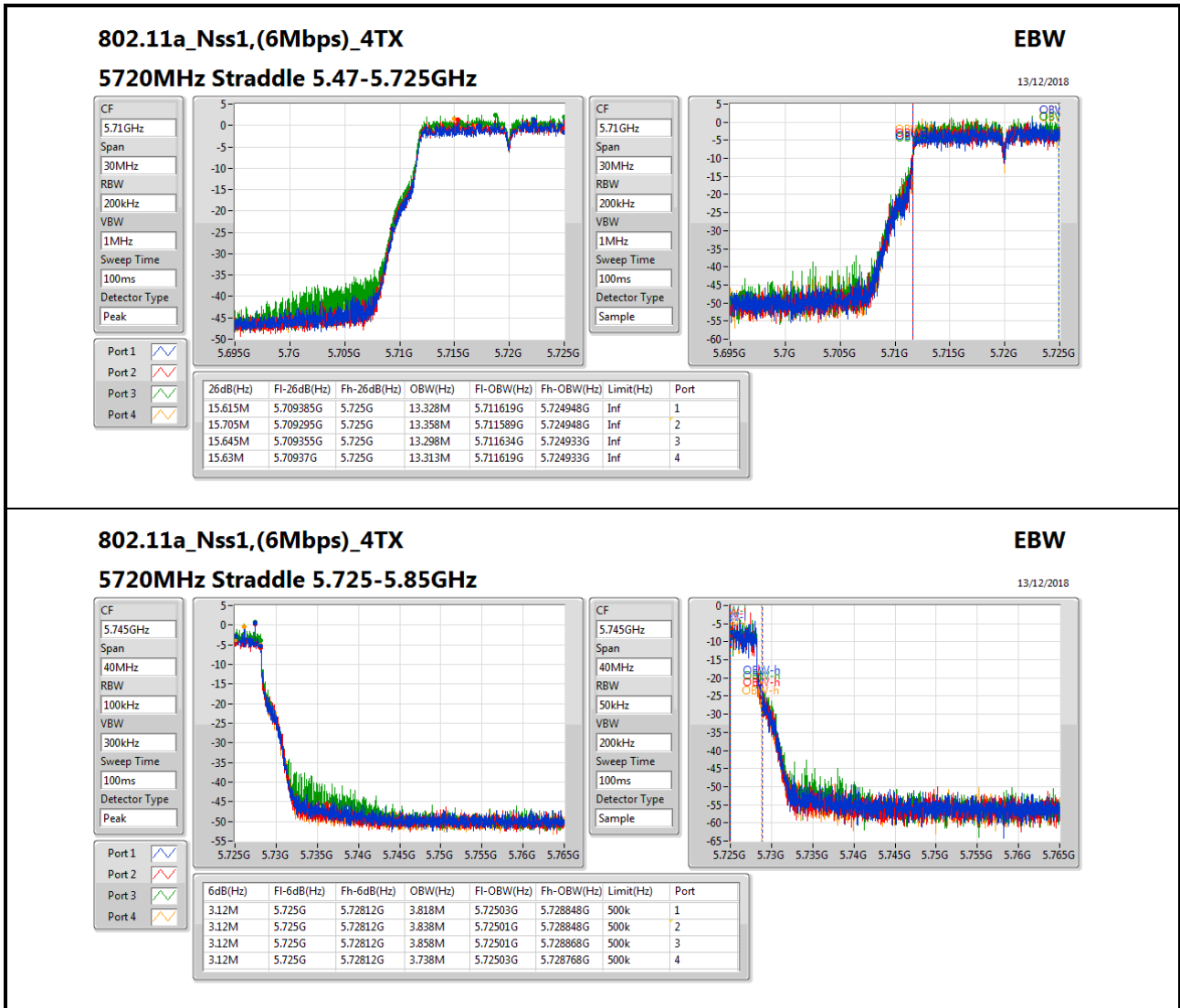
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

**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)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_4TX	81.04M	77.241M	77M2D1D	80.72M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	21.925M	19.015M	19M0D1D	21.25M	18.916M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.2M	37.631M	37M6D1D	39.8M	37.531M
802.11ax HEW80_Nss1,(MCS0)_4TX	81.5M	77.061M	77M1D1D	81.2M	76.962M
802.11ax HEW160_Nss1,(MCS0)_4TX	81.52M	77.241M	77M2D1D	80.72M	76.762M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	21.875M	18.991M	19M0D1D	15.705M	14.468M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.25M	37.631M	37M6D1D	35.035M	33.653M
802.11ax HEW80_Nss1,(MCS0)_4TX	81.6M	77.161M	77M2D1D	75.45M	73.163M
802.11ax HEW160_Nss1,(MCS0)_4TX	165.4M	155.322M	155MD1D	163.6M	154.923M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	4.5M	4.518M	4M52D1D	4.42M	4.478M
802.11ax HEW40_Nss1,(MCS0)_4TX	3.94M	4.038M	4M04D1D	3.68M	3.998M
802.11ax HEW80_Nss1,(MCS0)_4TX	3.84M	27.586M	27M6D1D	3.32M	19.11M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

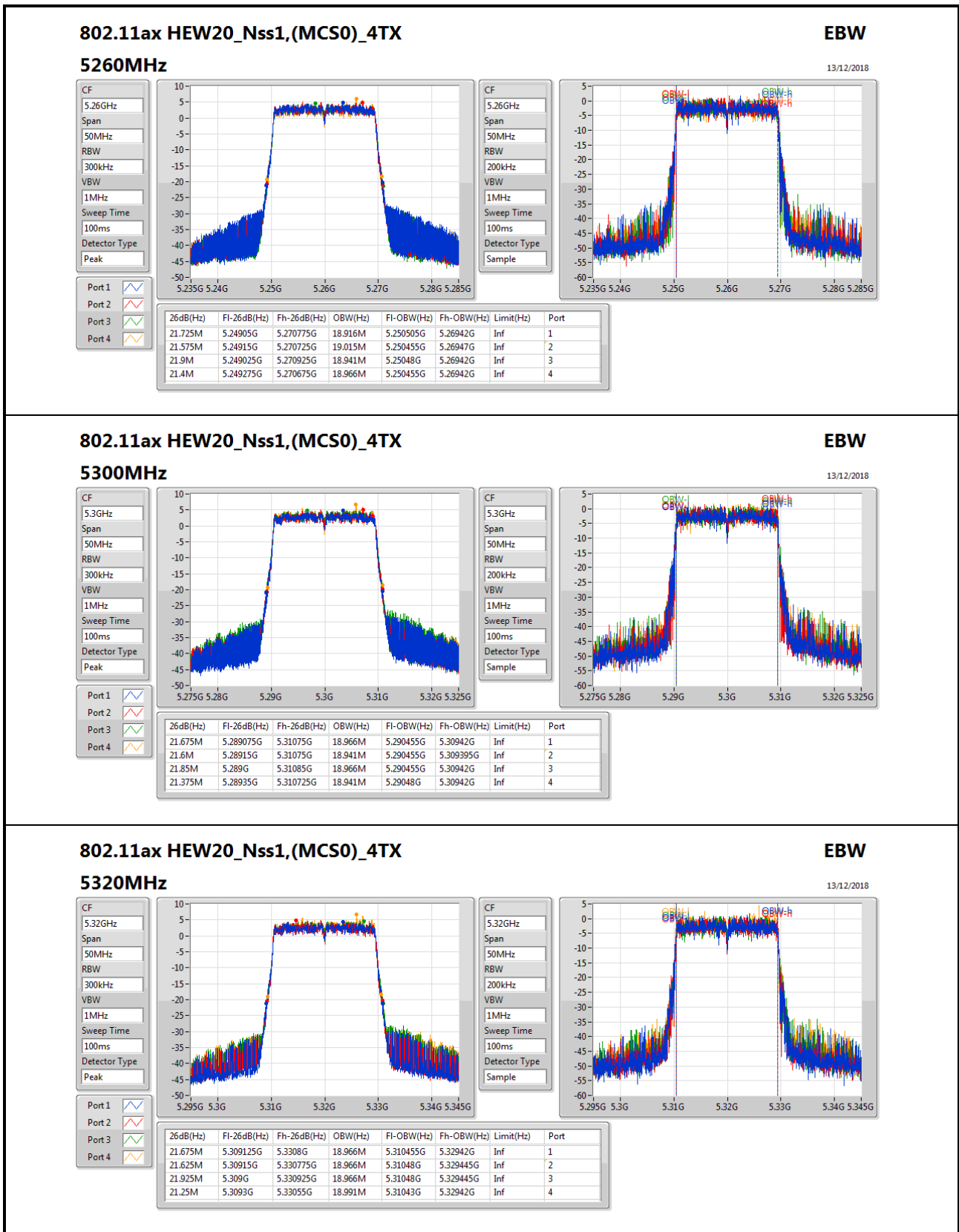
**Min-OBW** = Minimum 99% occupied bandwidth;

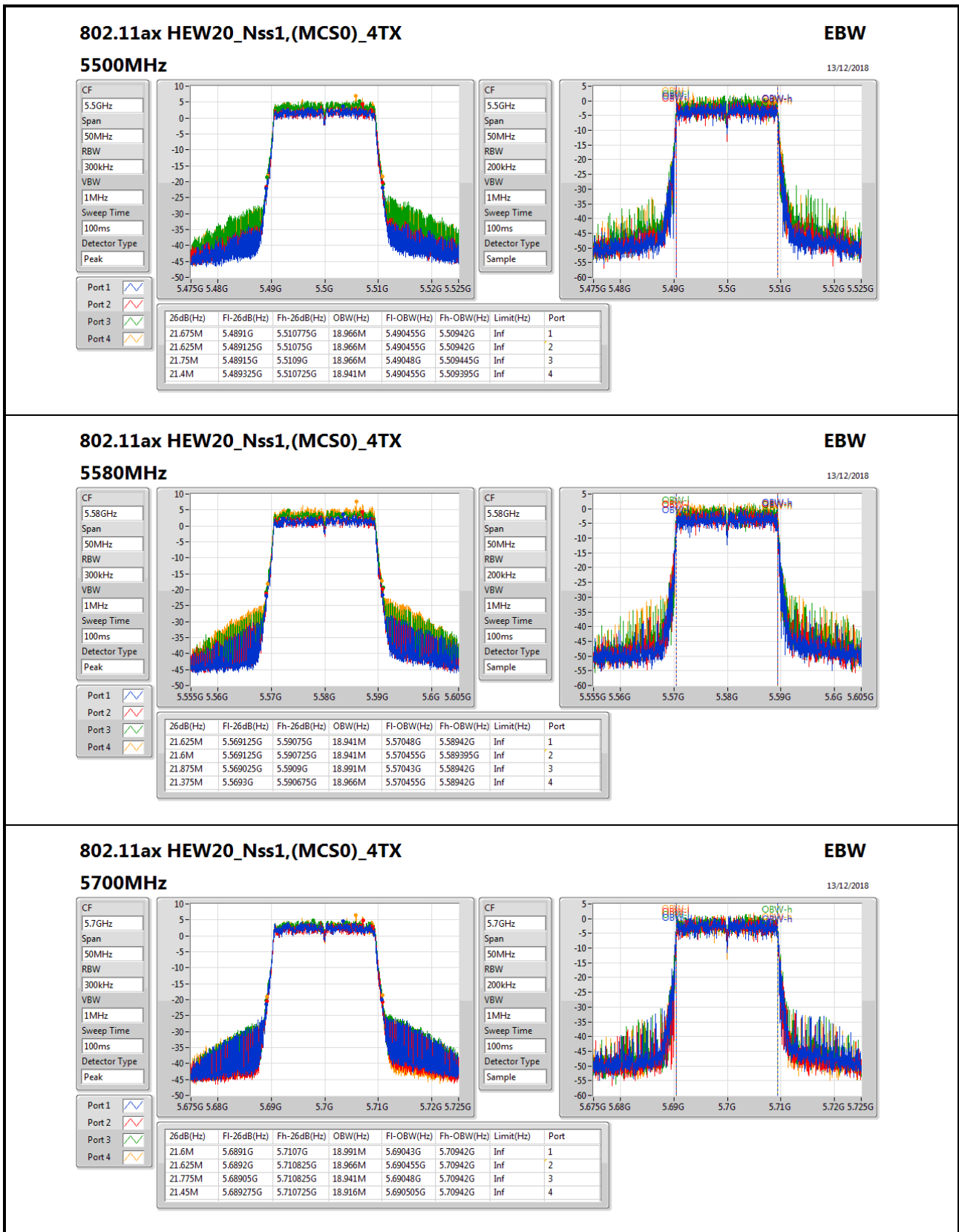
**Result**

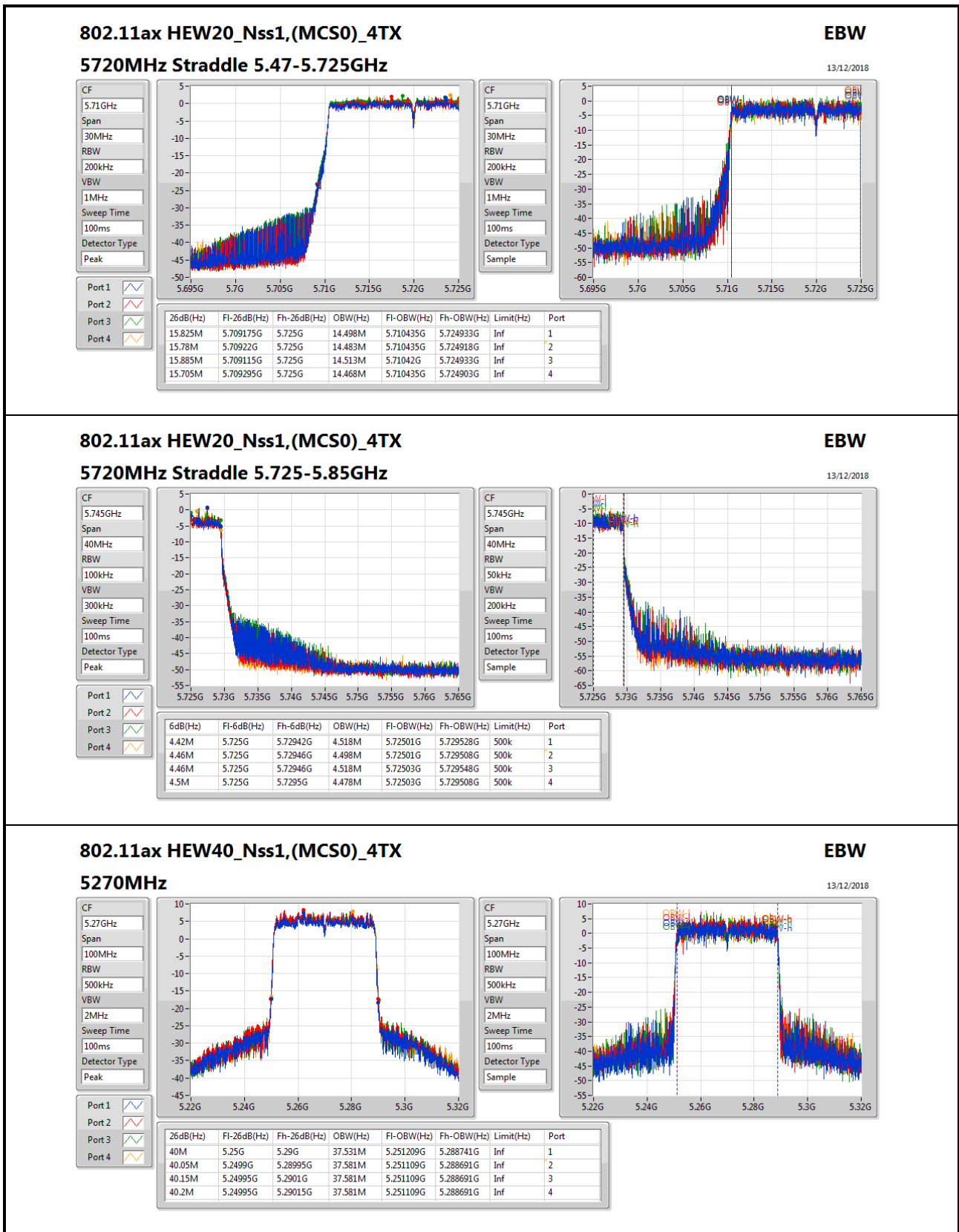
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.725M	18.916M	21.575M	19.015M	21.9M	18.941M	21.4M	18.966M
5300MHz	Pass	Inf	21.675M	18.966M	21.6M	18.941M	21.85M	18.966M	21.375M	18.941M
5320MHz	Pass	Inf	21.675M	18.966M	21.625M	18.966M	21.925M	18.966M	21.25M	18.991M
5500MHz	Pass	Inf	21.675M	18.966M	21.625M	18.966M	21.75M	18.966M	21.4M	18.941M
5580MHz	Pass	Inf	21.625M	18.941M	21.6M	18.941M	21.875M	18.991M	21.375M	18.966M
5700MHz	Pass	Inf	21.6M	18.991M	21.625M	18.966M	21.775M	18.941M	21.45M	18.916M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.825M	14.498M	15.78M	14.483M	15.885M	14.513M	15.705M	14.468M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.42M	4.518M	4.46M	4.498M	4.46M	4.518M	4.5M	4.478M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40M	37.531M	40.05M	37.581M	40.15M	37.581M	40.2M	37.581M
5310MHz	Pass	Inf	39.8M	37.631M	40.1M	37.531M	39.95M	37.531M	40.05M	37.581M
5510MHz	Pass	Inf	39.9M	37.581M	40.2M	37.531M	40.05M	37.431M	39.85M	37.581M
5550MHz	Pass	Inf	39.9M	37.581M	40.05M	37.531M	40.1M	37.581M	40.1M	37.531M
5670MHz	Pass	Inf	40M	37.631M	40.2M	37.631M	40.25M	37.631M	40.05M	37.481M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.035M	33.688M	35.07M	33.653M	35.07M	33.653M	35.07M	33.793M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.94M	4.038M	3.68M	3.998M	3.68M	4.018M	3.88M	3.998M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.3M	77.061M	81.5M	77.061M	81.2M	77.061M	81.3M	76.962M
5530MHz	Pass	Inf	81.5M	77.061M	81.2M	76.762M	81.1M	77.161M	81.3M	77.061M
5610MHz	Pass	Inf	81.6M	76.962M	81.1M	77.061M	81.3M	77.061M	81.6M	76.962M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.825M	73.313M	75.45M	73.388M	77.775M	73.313M	75.825M	73.163M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.44M	25.607M	3.76M	22.709M	3.32M	27.586M	3.84M	19.11M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.04M	77.241M	80.96M	77.241M	80.88M	77.241M	80.72M	77.081M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.2M	77.081M	80.72M	76.762M	80.8M	77.241M	81.52M	77.081M
5570MHz	Pass	Inf	165.4M	155.122M	164.6M	155.322M	163.8M	154.923M	163.6M	155.322M

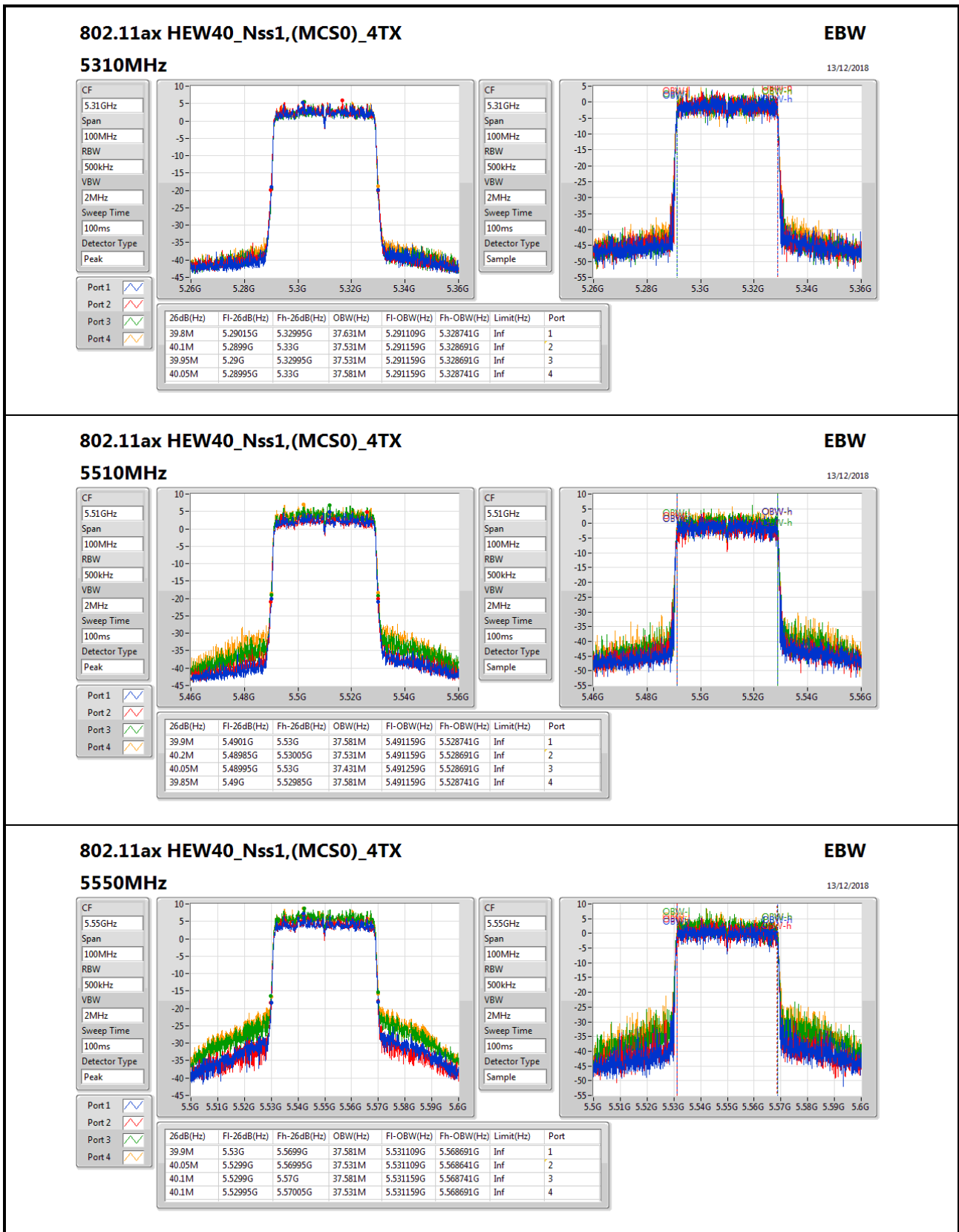
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

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








**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**

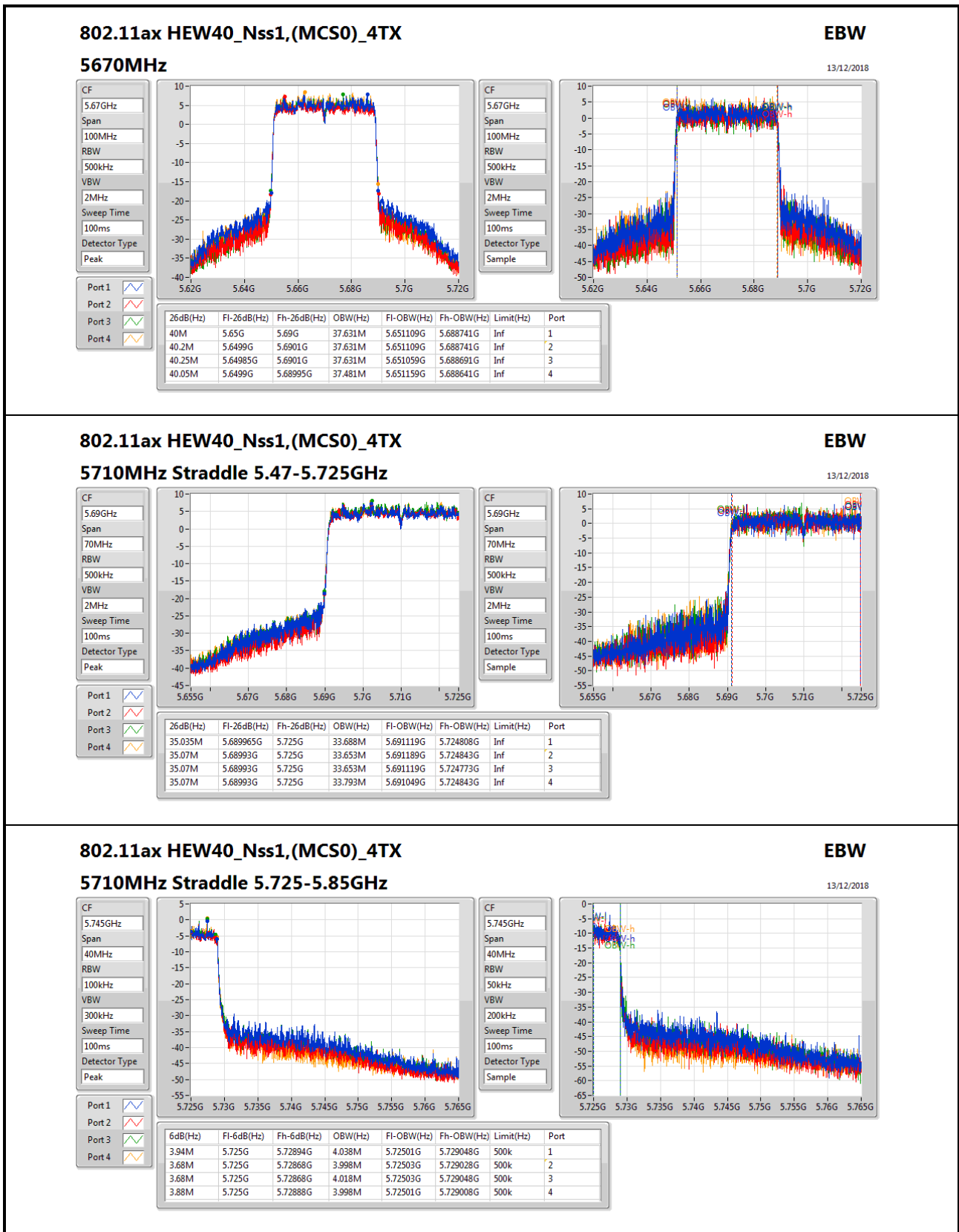
13/12/2018

**5550MHz**

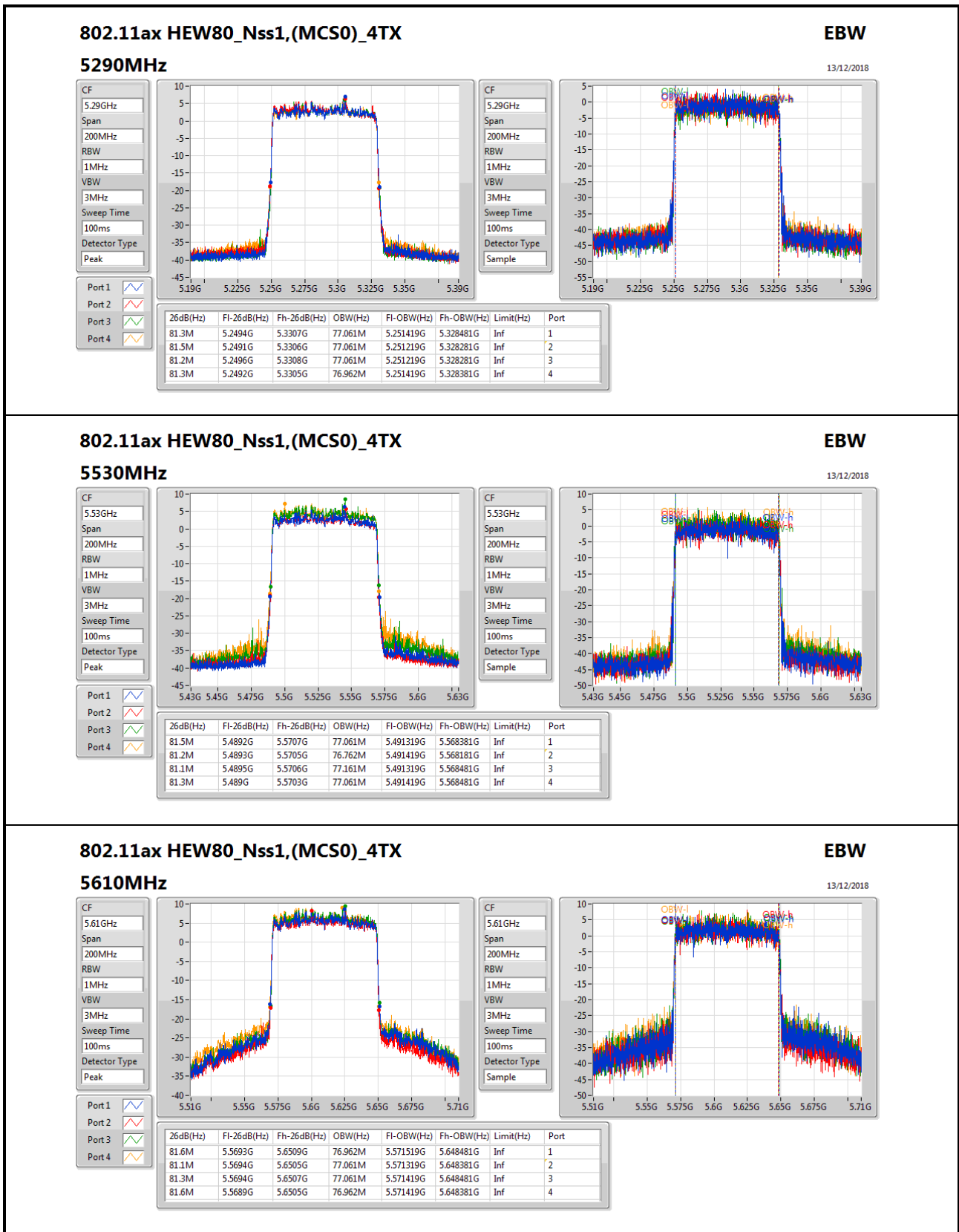
CF: 5.55GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Peak

CF: 5.55GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Sample

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.9M	5.53G	5.5699G	37.581M	5.531109G	5.568691G	Inf	1
40.05M	5.5299G	5.56995G	37.531M	5.531109G	5.568641G	Inf	2
40.1M	5.5299G	5.57G	37.581M	5.531159G	5.568741G	Inf	3
40.1M	5.52995G	5.57005G	37.531M	5.531159G	5.568691G	Inf	4






**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**

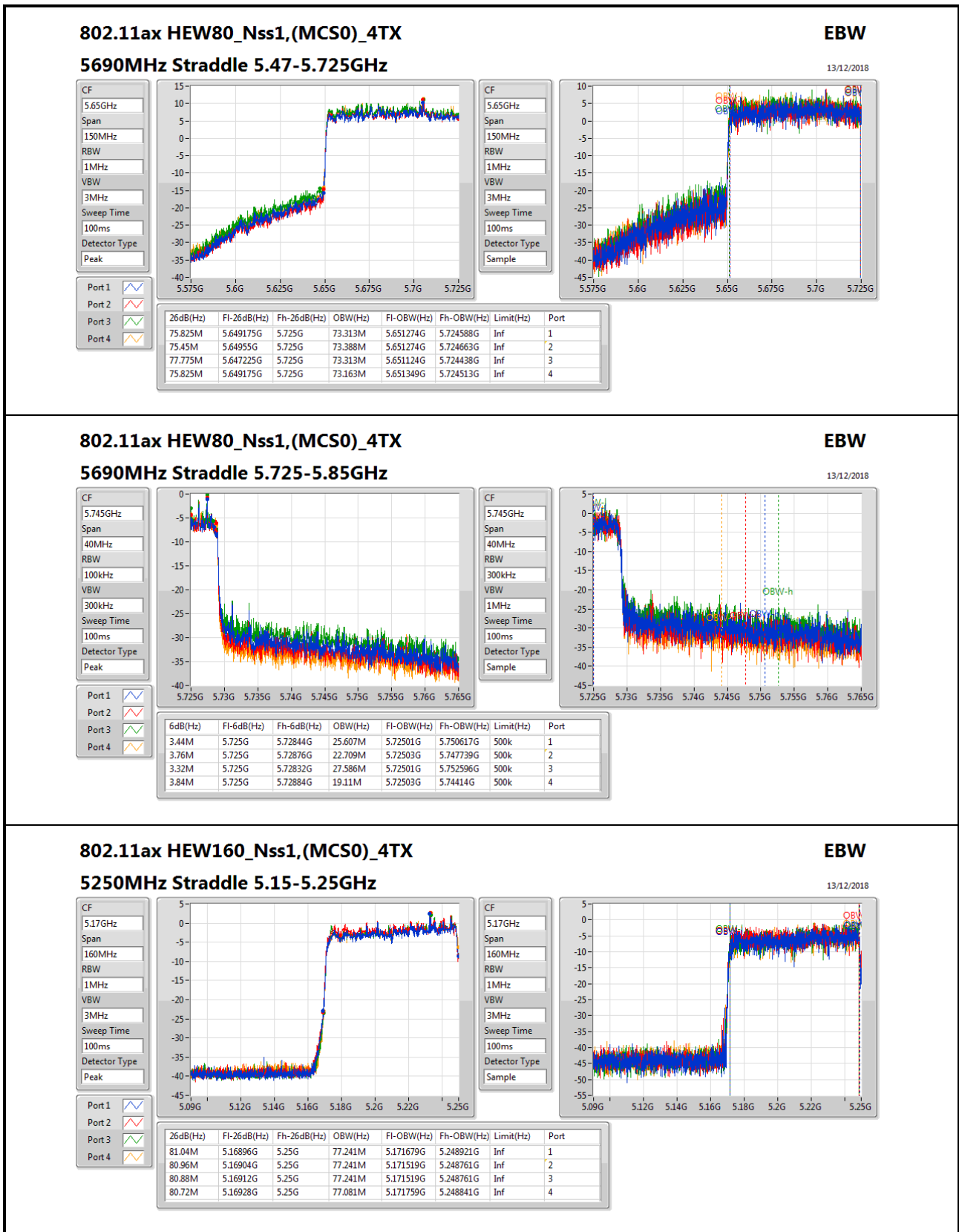
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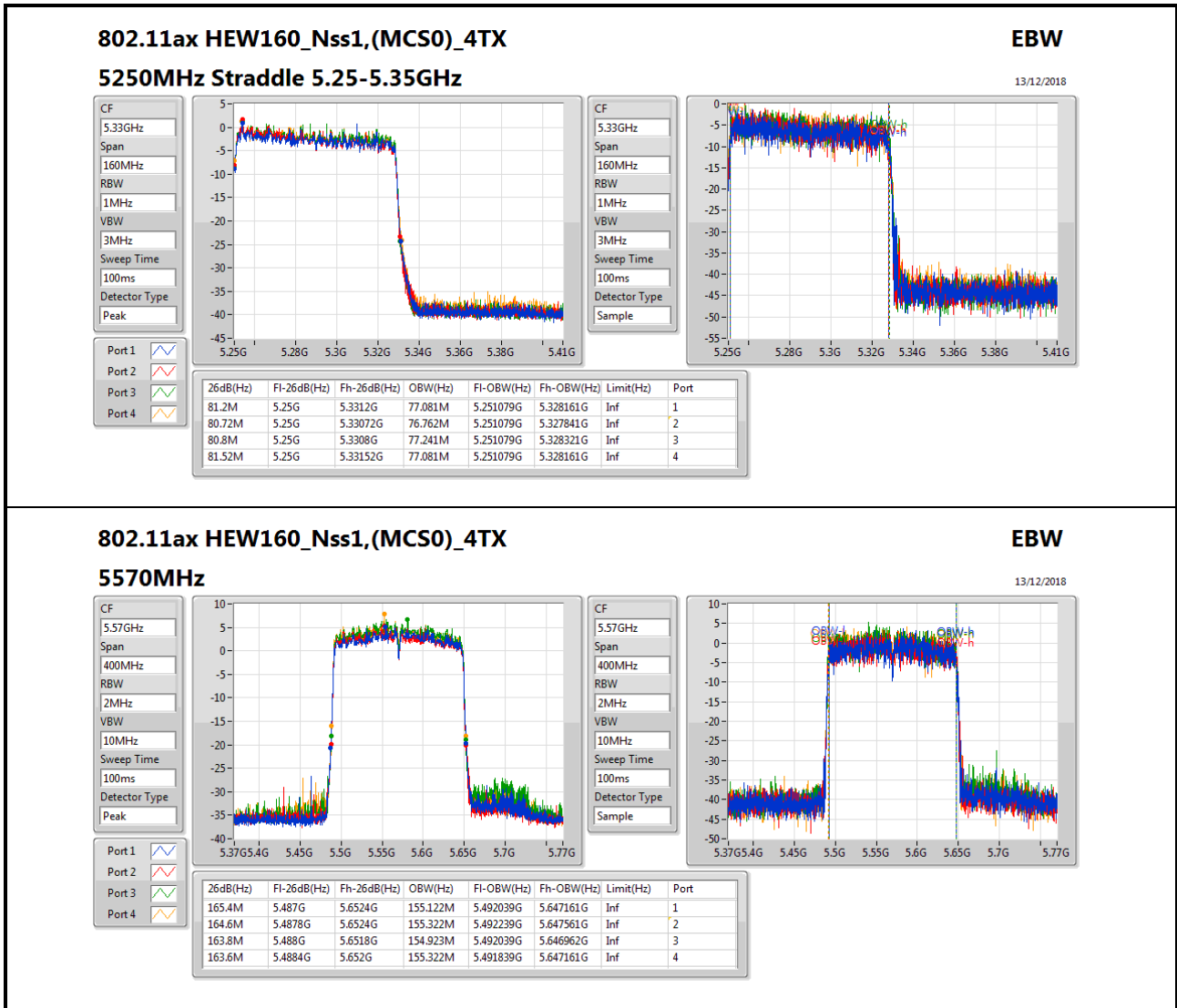
**5610MHz**

CF: 5.61GHz  
Span: 200MHz  
RBW: 1MHz  
VBW: 3MHz  
Sweep Time: 100ms  
Detector Type: Peak

CF: 5.61GHz  
Span: 200MHz  
RBW: 1MHz  
VBW: 3MHz  
Sweep Time: 100ms  
Detector Type: Sample

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.6M	5.5693G	5.6509G	76.962M	5.571519G	5.648481G	Inf	1
81.1M	5.5694G	5.6505G	77.061M	5.571319G	5.648381G	Inf	2
81.3M	5.5694G	5.6507G	77.061M	5.571419G	5.648481G	Inf	3
81.6M	5.5689G	5.6505G	76.962M	5.571419G	5.648381G	Inf	4







Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	81.2M	77.401M	77M4D1D	80.56M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	21.8M	18.991M	19M0D1D	21.325M	18.941M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	40.2M	37.631M	37M6D1D	39.9M	37.481M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.6M	77.261M	77M3D1D	81M	76.962M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	81.52M	77.241M	77M2D1D	80.8M	76.922M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	21.95M	18.991M	19M0D1D	15.675M	14.483M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	40.2M	37.631M	37M6D1D	35M	33.618M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	81.9M	77.361M	77M4D1D	75.375M	73.013M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	165.2M	155.522M	156MD1D	164M	154.923M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	4.5M	4.518M	4M52D1D	4.48M	4.498M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	3.9M	4.018M	4M02D1D	3.7M	3.998M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	3.9M	4.038M	4M04D1D	3.46M	3.998M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

**Min-OBW** = Minimum 99% occupied bandwidth;

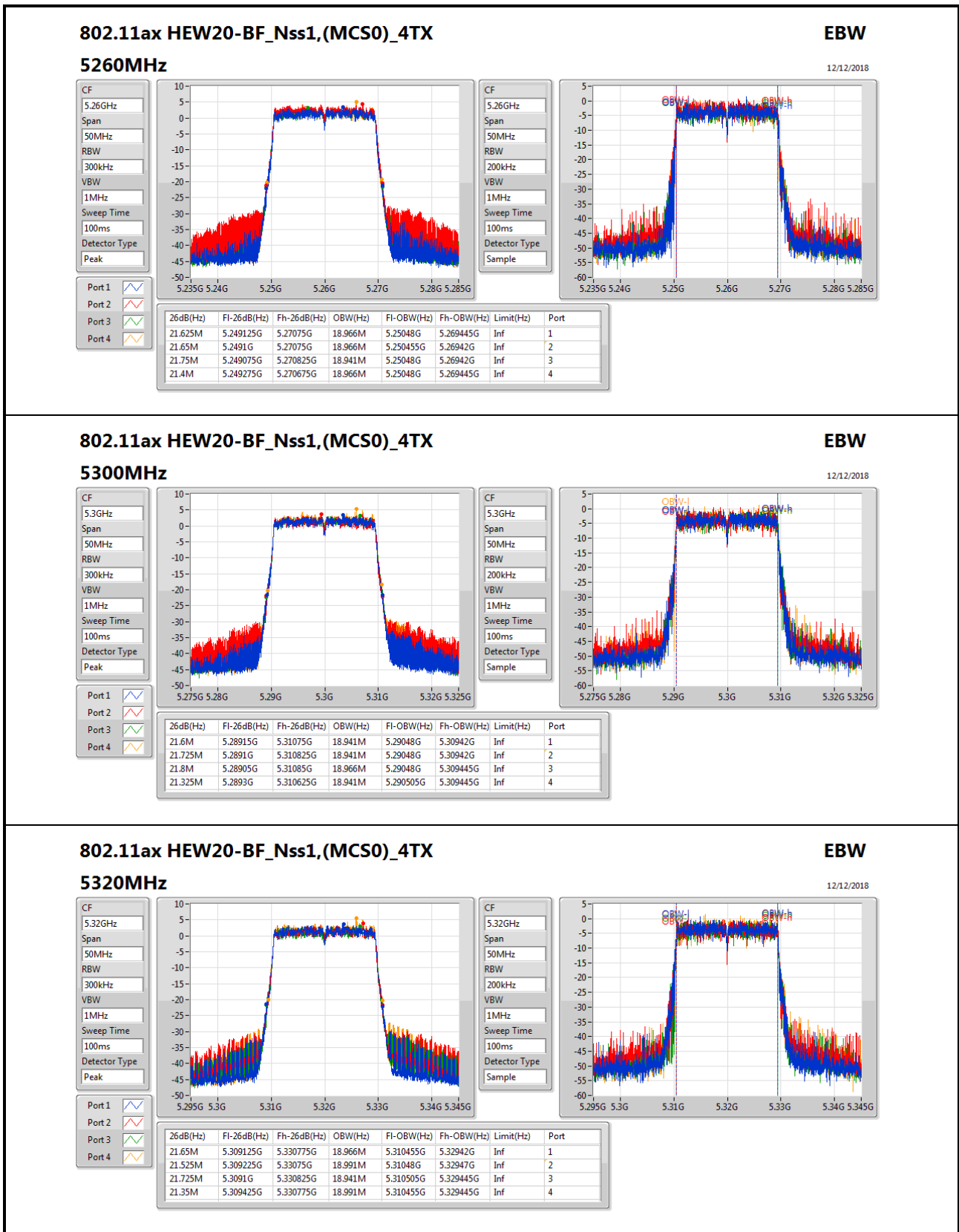


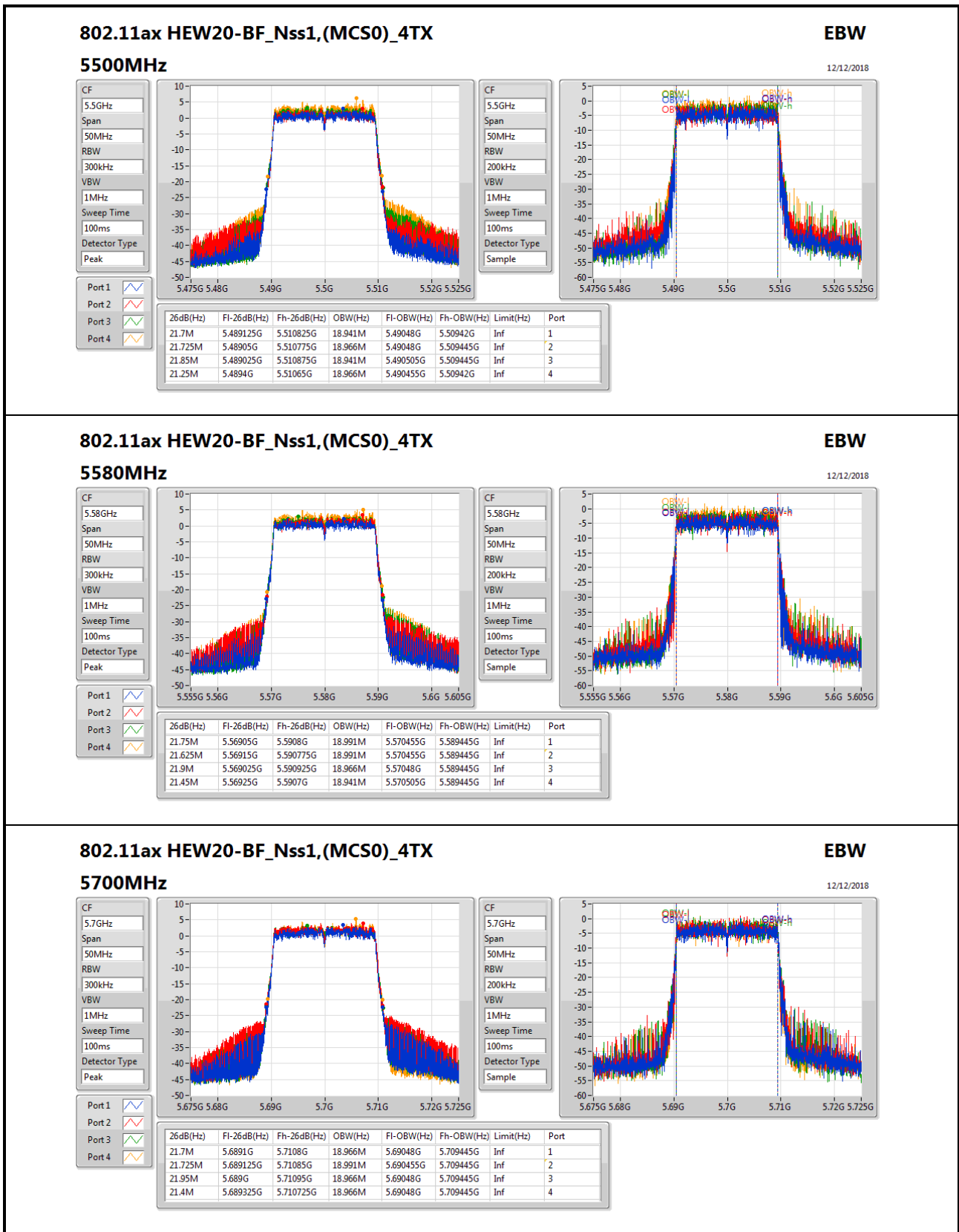
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.625M	18.966M	21.65M	18.966M	21.75M	18.941M	21.4M	18.966M
5300MHz	Pass	Inf	21.6M	18.941M	21.725M	18.941M	21.8M	18.966M	21.325M	18.941M
5320MHz	Pass	Inf	21.65M	18.966M	21.525M	18.991M	21.725M	18.941M	21.35M	18.991M
5500MHz	Pass	Inf	21.7M	18.941M	21.725M	18.966M	21.85M	18.941M	21.25M	18.966M
5580MHz	Pass	Inf	21.75M	18.991M	21.625M	18.991M	21.9M	18.966M	21.45M	18.941M
5700MHz	Pass	Inf	21.7M	18.966M	21.725M	18.991M	21.95M	18.966M	21.4M	18.966M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.81M	14.483M	15.795M	14.498M	15.78M	14.483M	15.675M	14.498M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	4.518M	4.5M	4.518M	4.5M	4.498M	4.48M	4.498M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	39.9M	37.631M	40.05M	37.631M	40.05M	37.581M	40.15M	37.481M
5310MHz	Pass	Inf	40.05M	37.531M	40.2M	37.581M	40.1M	37.531M	40.15M	37.531M
5510MHz	Pass	Inf	39.9M	37.531M	40.05M	37.531M	39.95M	37.581M	40.05M	37.531M
5550MHz	Pass	Inf	40M	37.481M	40M	37.631M	40.1M	37.531M	40.2M	37.531M
5670MHz	Pass	Inf	39.95M	37.531M	40.05M	37.581M	40.15M	37.581M	40.1M	37.581M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35M	33.653M	35.105M	33.618M	35.07M	33.688M	35.105M	33.723M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.9M	4.018M	3.72M	3.998M	3.7M	4.018M	3.86M	3.998M
802.11ax HEW80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.6M	76.962M	81.2M	77.261M	81M	76.962M	81.5M	77.161M
5530MHz	Pass	Inf	81.5M	76.962M	81.4M	77.361M	81.2M	77.061M	81.2M	76.962M
5610MHz	Pass	Inf	81.9M	77.161M	81.2M	76.962M	81.2M	76.962M	81.1M	77.061M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	75.75M	73.163M	75.375M	73.163M	75.375M	73.013M	75.825M	73.163M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.48M	4.038M	3.9M	4.018M	3.46M	4.038M	3.86M	3.998M
802.11ax HEW160-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.2M	77.401M	81.04M	77.321M	80.56M	77.321M	80.56M	77.081M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.28M	76.922M	80.8M	77.241M	81.12M	77.081M	81.52M	77.241M
5570MHz	Pass	Inf	164.4M	155.122M	165.2M	155.122M	164M	154.923M	164.4M	155.522M

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

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




**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**

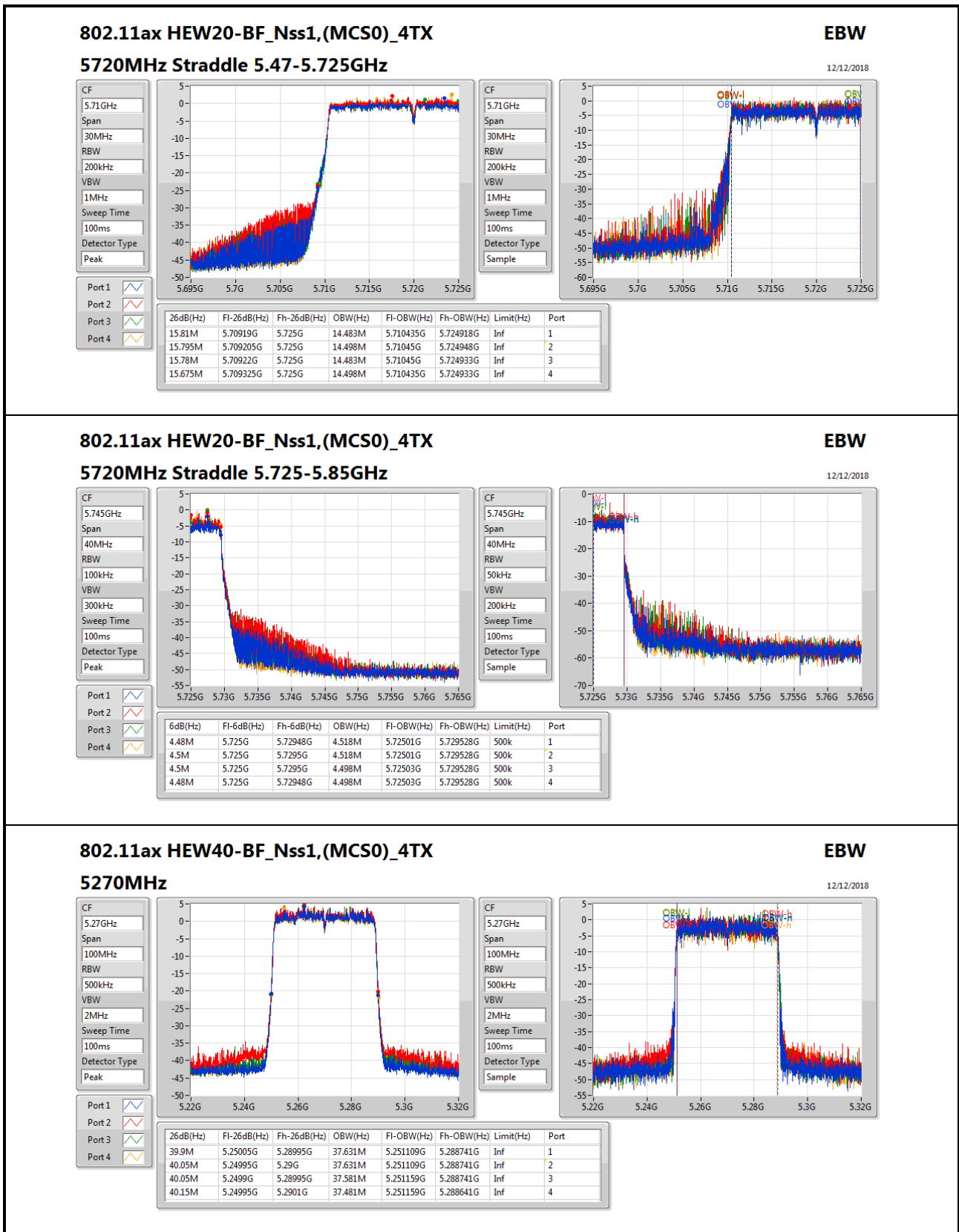
12/12/2018

**5700MHz**

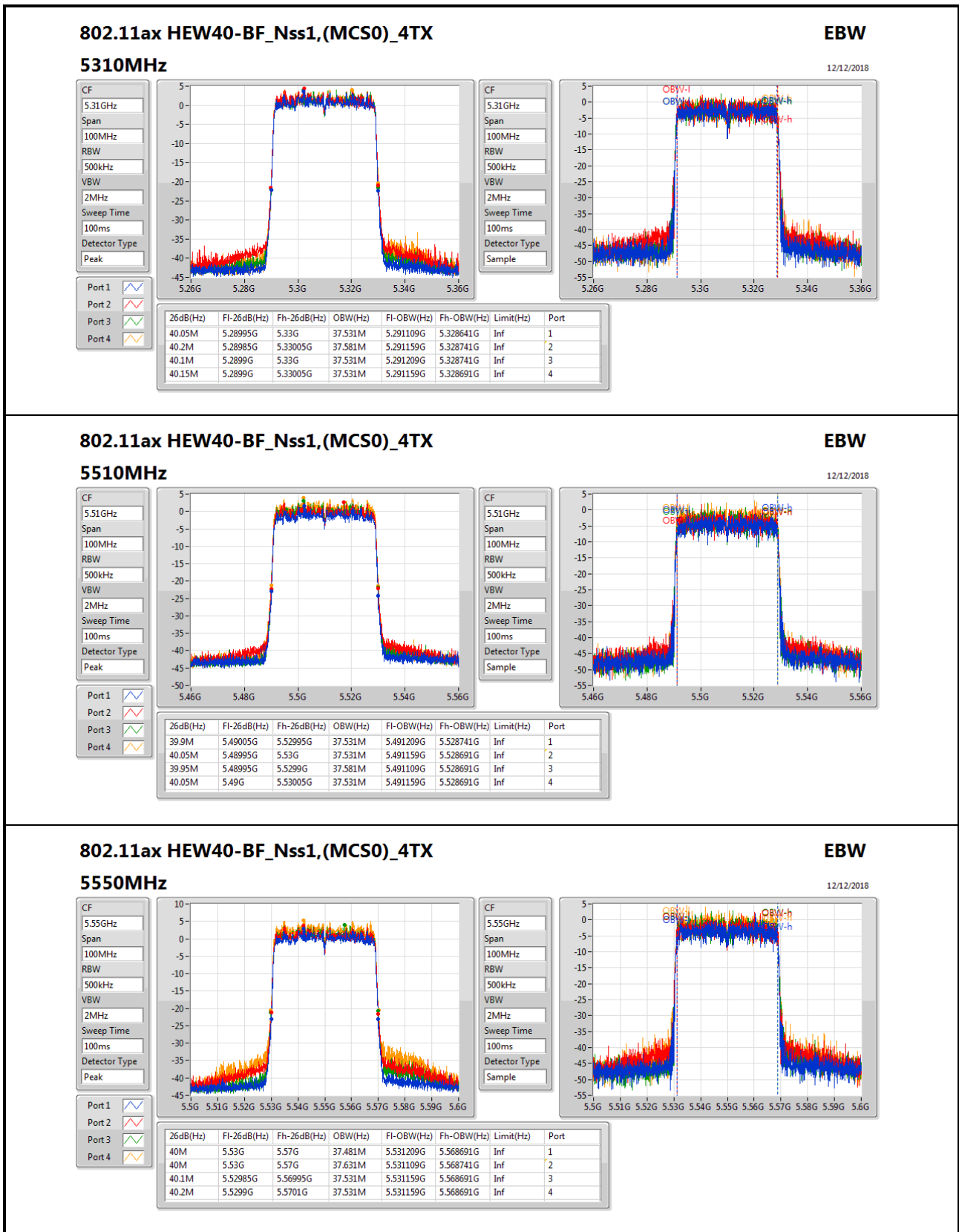
CF: 5.7GHz  
Span: 50MHz  
RBW: 300kHz  
VBW: 1MHz  
Sweep Time: 100ms  
Detector Type: Peak

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

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.7M	5.6891G	5.7108G	18.966M	5.69048G	5.709445G	Inf	1
21.725M	5.689125G	5.71085G	18.991M	5.690455G	5.709445G	Inf	2
21.95M	5.689G	5.71095G	18.966M	5.69048G	5.709445G	Inf	3
21.4M	5.689325G	5.710725G	18.966M	5.69048G	5.709445G	Inf	4






**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**

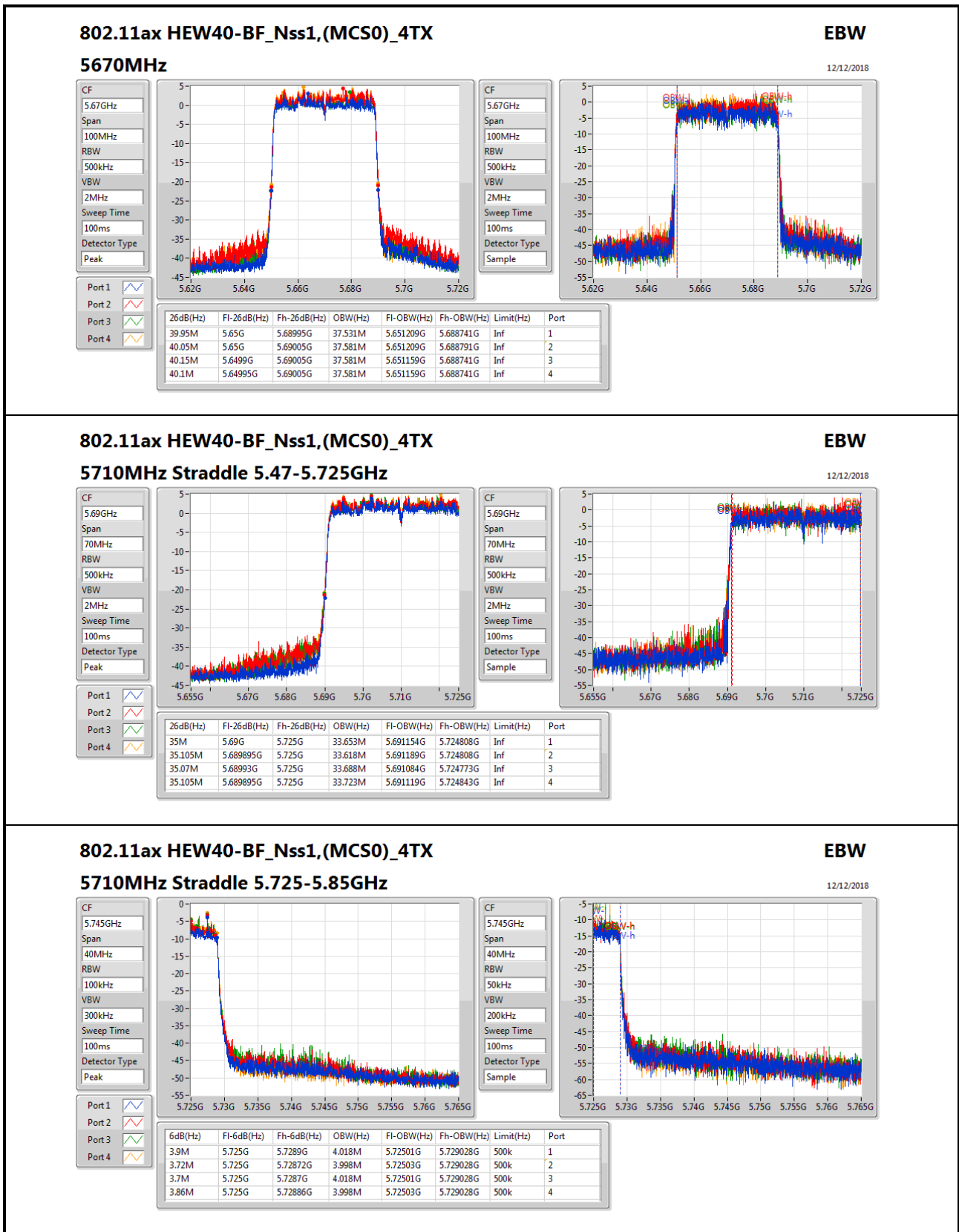
12/12/2018

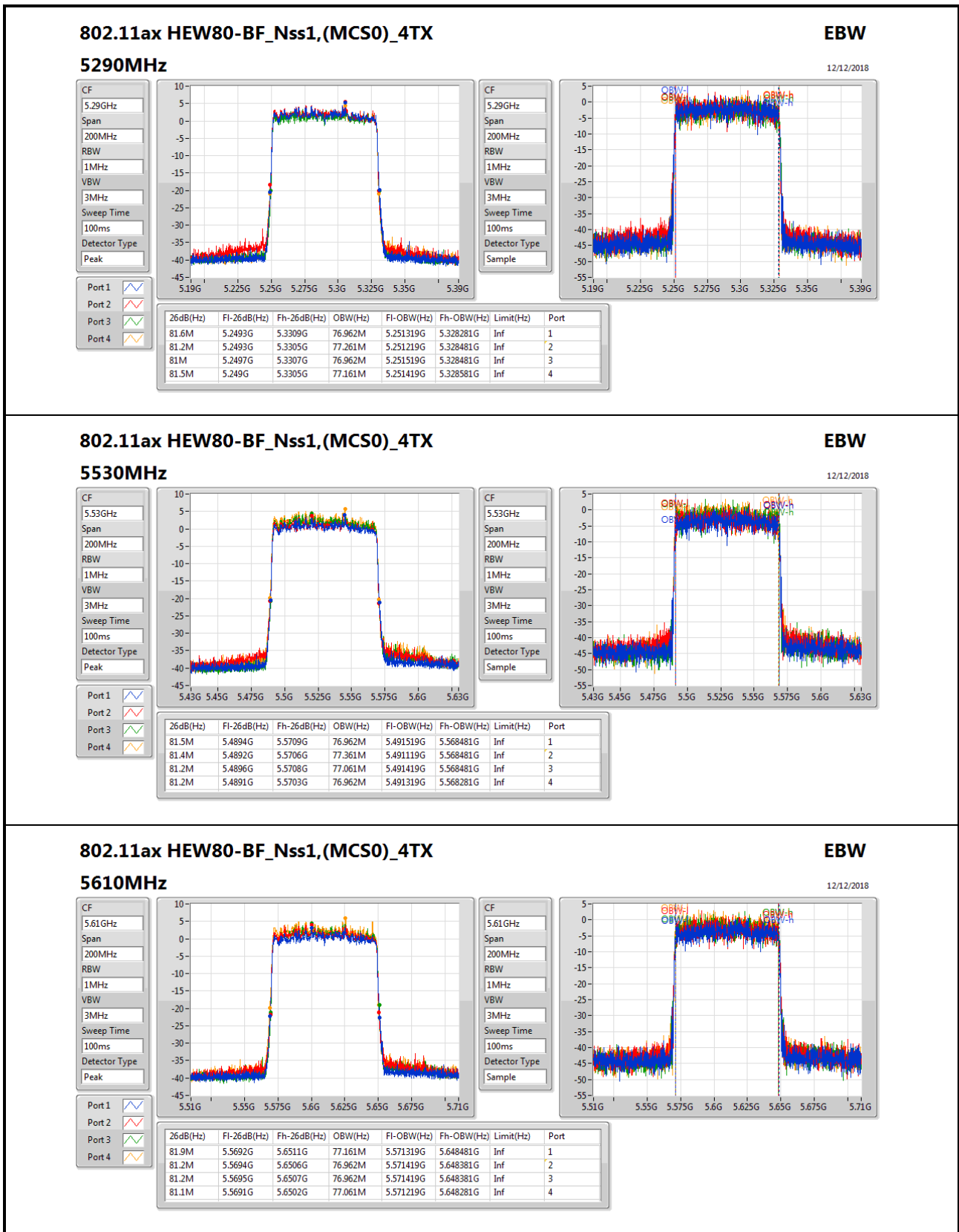
**5550MHz**

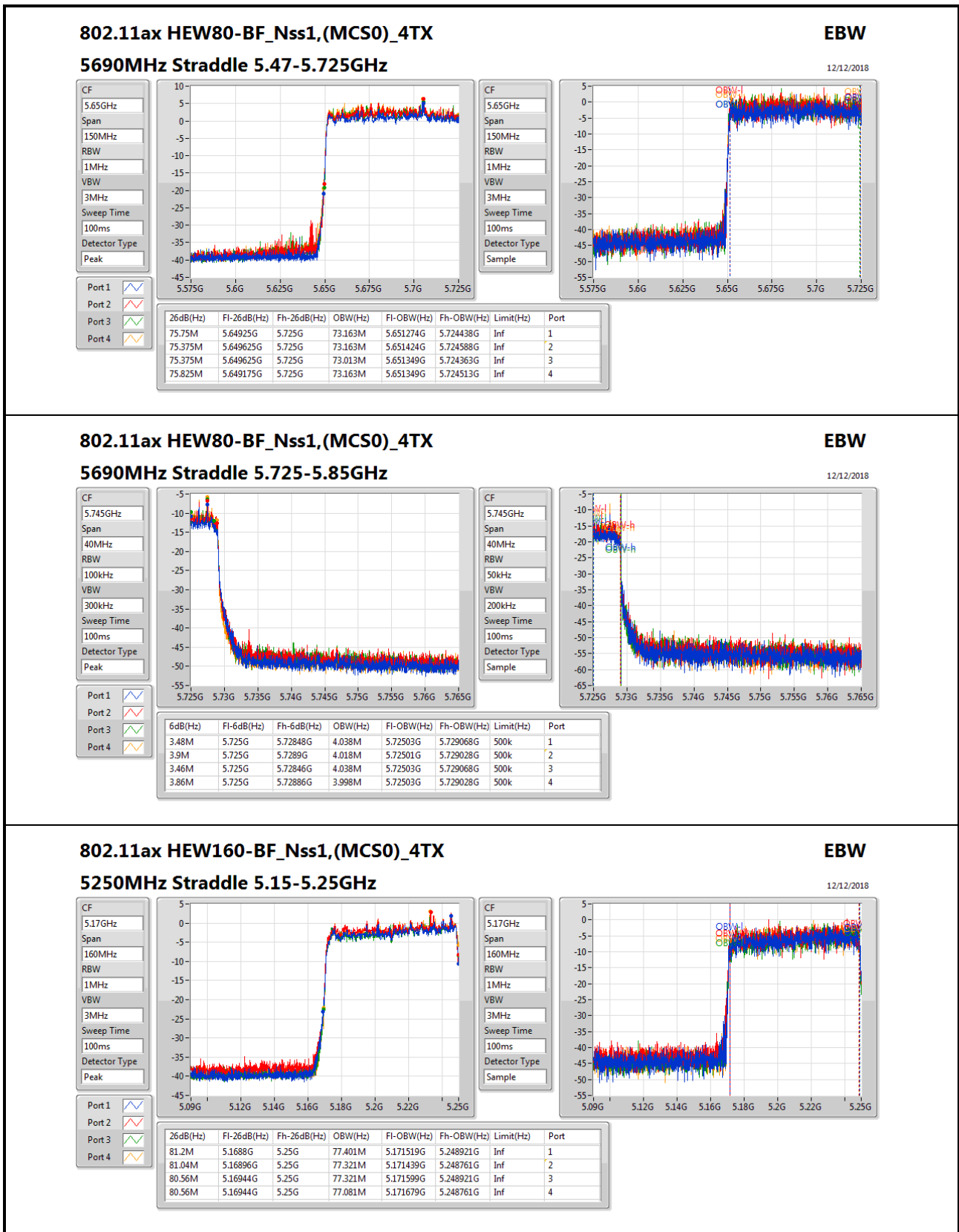
CF: 5.55GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Peak

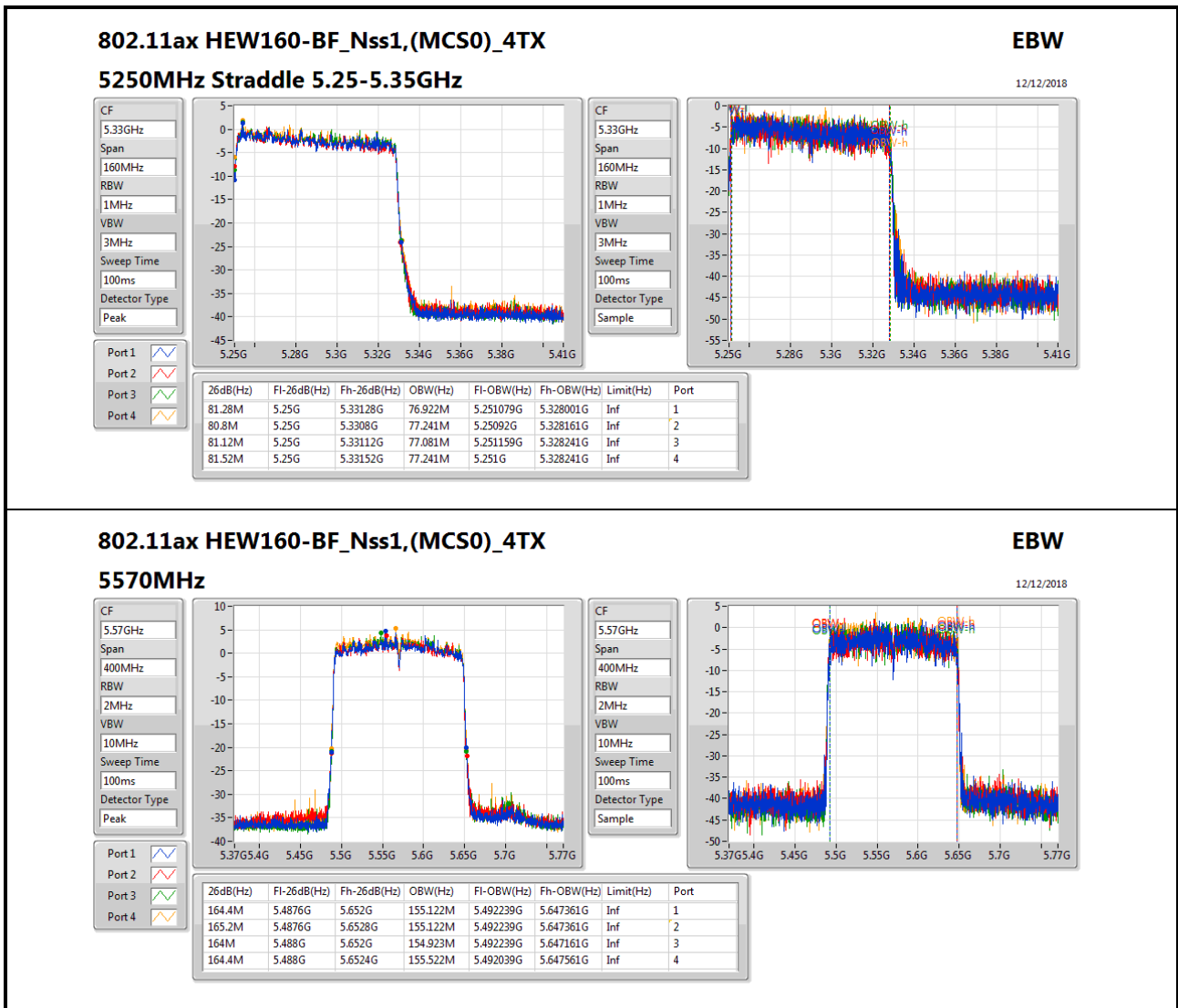
CF: 5.55GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Sample

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
40M	5.53G	5.57G	37.481M	5.531209G	5.568691G	Inf	1
40M	5.53G	5.57G	37.631M	5.531109G	5.568741G	Inf	2
40.1M	5.52985G	5.56995G	37.531M	5.531159G	5.568691G	Inf	3
40.2M	5.5299G	5.5701G	37.531M	5.531159G	5.568691G	Inf	4











Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss4,(MCS0)_4TX	81.76M	77.401M	77M4D1D	80.56M	77.081M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss4,(MCS0)_4TX	22.175M	18.991M	19M0D1D	21.225M	18.916M
802.11ax HEW40_Nss4,(MCS0)_4TX	49.7M	37.631M	37M6D1D	40M	37.481M
802.11ax HEW80_Nss4,(MCS0)_4TX	82M	77.261M	77M3D1D	81M	76.762M
802.11ax HEW160_Nss4,(MCS0)_4TX	82.16M	77.241M	77M2D1D	80.72M	77.001M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss4,(MCS0)_4TX	21.95M	18.991M	19M0D1D	15.585M	14.468M
802.11ax HEW40_Nss4,(MCS0)_4TX	63.35M	37.681M	37M7D1D	35.14M	33.618M
802.11ax HEW80_Nss4,(MCS0)_4TX	81.9M	77.261M	77M3D1D	75.675M	73.088M
802.11ax HEW160_Nss4,(MCS0)_4TX	165.4M	155.122M	155MD1D	164M	154.723M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss4,(MCS0)_4TX	4.46M	4.498M	4M50D1D	4.38M	4.478M
802.11ax HEW40_Nss4,(MCS0)_4TX	3.9M	4.018M	4M02D1D	3.74M	3.998M
802.11ax HEW80_Nss4,(MCS0)_4TX	3.94M	22.669M	22M7D1D	3.26M	14.133M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

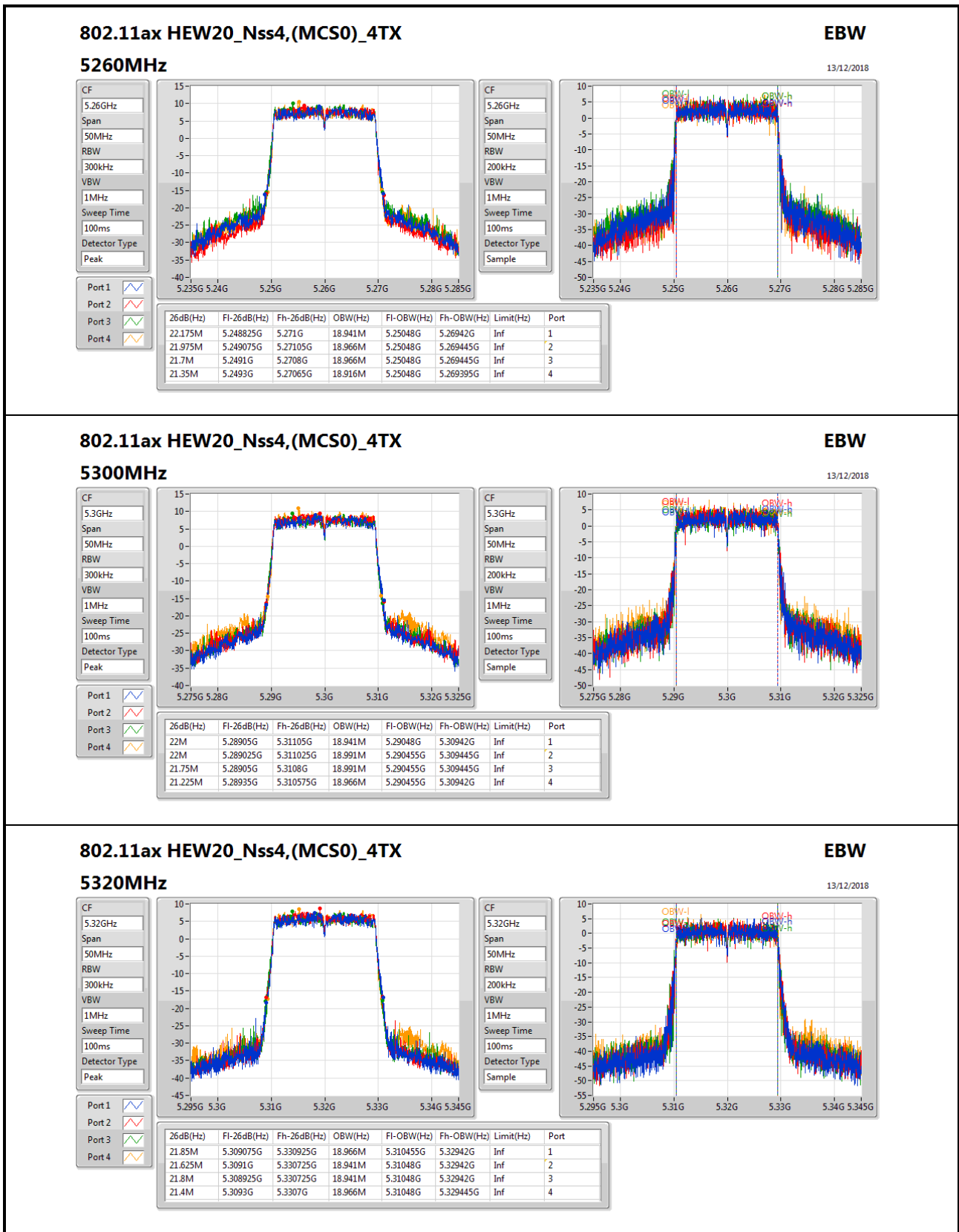
**Min-OBW** = Minimum 99% occupied bandwidth;

**Result**

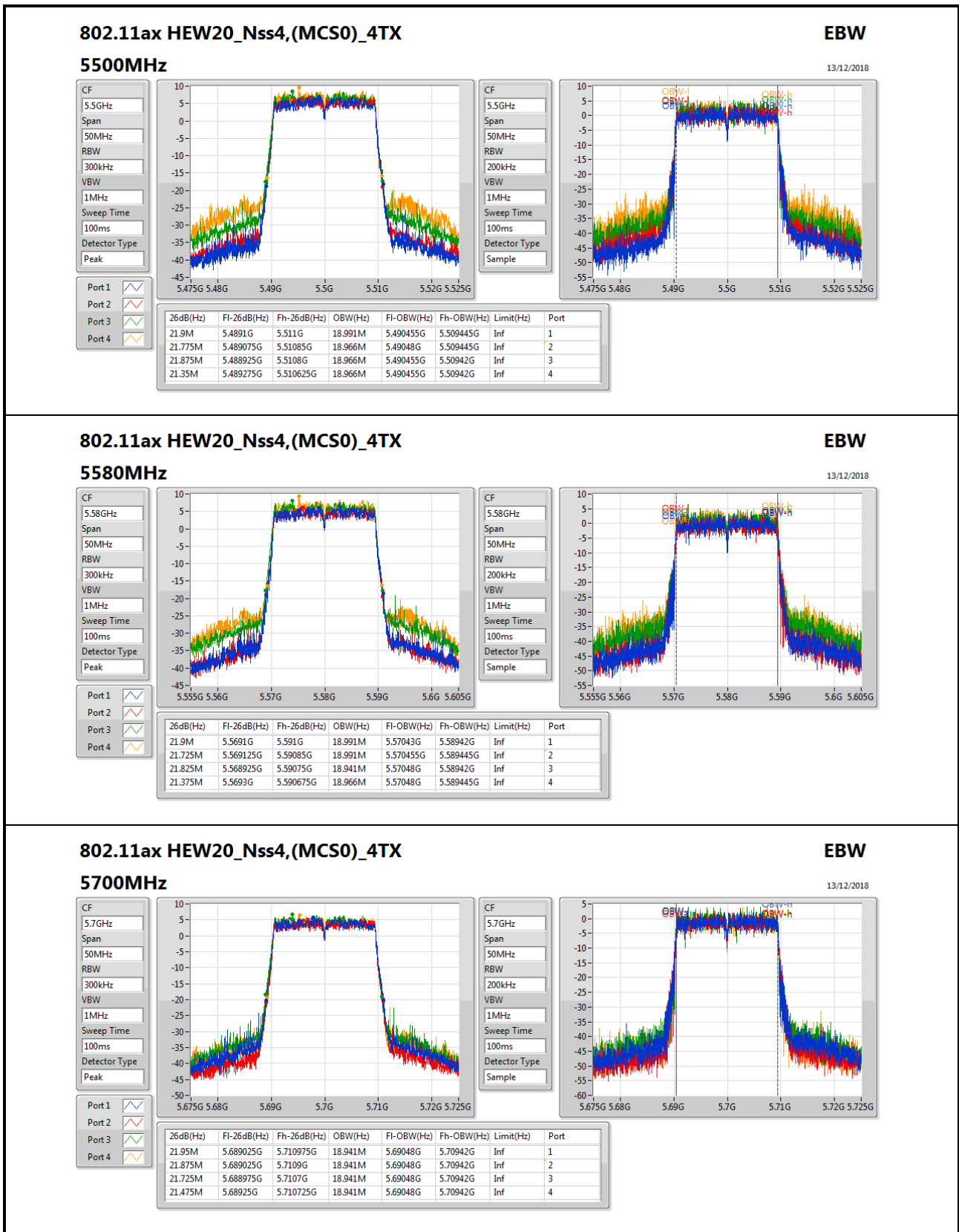
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW20_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	22.175M	18.941M	21.975M	18.966M	21.7M	18.966M	21.35M	18.916M
5300MHz	Pass	Inf	22M	18.941M	22M	18.991M	21.75M	18.991M	21.225M	18.966M
5320MHz	Pass	Inf	21.85M	18.966M	21.625M	18.941M	21.8M	18.941M	21.4M	18.966M
5500MHz	Pass	Inf	21.9M	18.991M	21.775M	18.966M	21.875M	18.966M	21.35M	18.966M
5580MHz	Pass	Inf	21.9M	18.991M	21.725M	18.991M	21.825M	18.941M	21.375M	18.966M
5700MHz	Pass	Inf	21.95M	18.941M	21.875M	18.941M	21.725M	18.941M	21.475M	18.941M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.78M	14.513M	15.84M	14.483M	15.99M	14.483M	15.585M	14.468M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.38M	4.478M	4.46M	4.498M	4.38M	4.498M	4.44M	4.478M
802.11ax HEW40_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	49.7M	37.581M	42.7M	37.631M	40.3M	37.581M	40.25M	37.631M
5310MHz	Pass	Inf	40.25M	37.531M	40.25M	37.531M	40M	37.481M	40.2M	37.581M
5510MHz	Pass	Inf	40.1M	37.531M	40.15M	37.481M	40M	37.481M	40.25M	37.581M
5550MHz	Pass	Inf	40.25M	37.581M	40.15M	37.481M	40.15M	37.531M	63.35M	37.681M
5670MHz	Pass	Inf	40.35M	37.481M	40.05M	37.631M	40.25M	37.631M	40.2M	37.481M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.28M	33.758M	35.28M	33.618M	35.14M	33.688M	35.14M	33.653M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.9M	3.998M	3.88M	3.998M	3.74M	4.018M	3.86M	3.998M
802.11ax HEW80_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.3M	76.762M	81M	76.962M	81.9M	77.261M	82M	77.161M
5530MHz	Pass	Inf	81.3M	76.962M	80.9M	76.962M	81.7M	76.862M	81.6M	77.061M
5610MHz	Pass	Inf	81.6M	76.962M	80.9M	77.261M	81.7M	77.161M	81.9M	77.061M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	76.05M	73.313M	75.9M	73.238M	76.125M	73.088M	75.675M	73.238M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.76M	22.669M	3.66M	21.709M	3.94M	22.369M	3.26M	14.133M
802.11ax HEW160_Nss4,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.96M	77.081M	81.76M	77.401M	80.56M	77.161M	80.8M	77.241M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.76M	77.241M	80.72M	77.001M	81.6M	77.161M	82.16M	77.161M
5570MHz	Pass	Inf	165M	154.723M	164M	155.122M	164M	154.923M	165.4M	154.923M

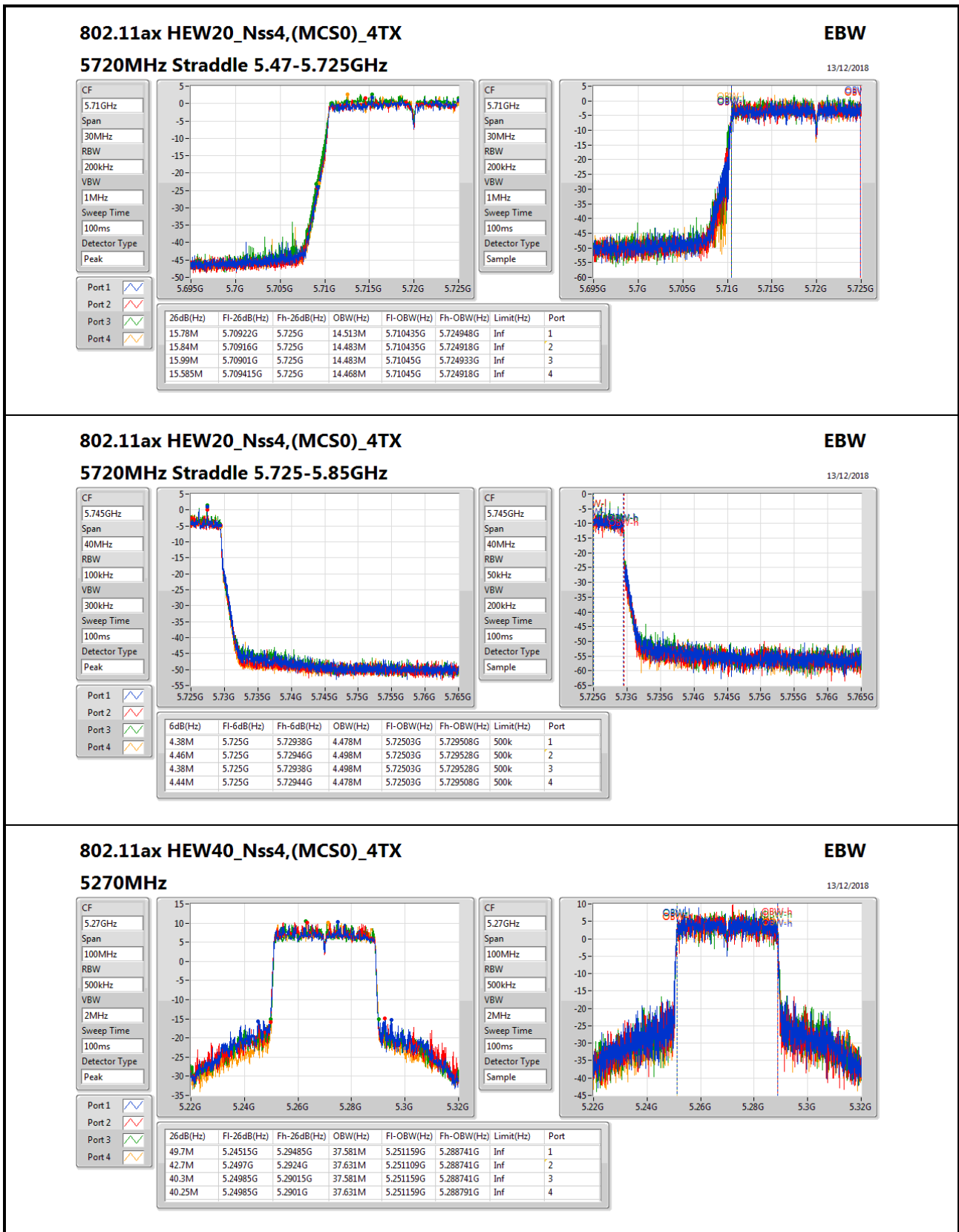
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

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









### 802.11ax HEW40\_Nss4,(MCS0)\_4TX

#### 5270MHz

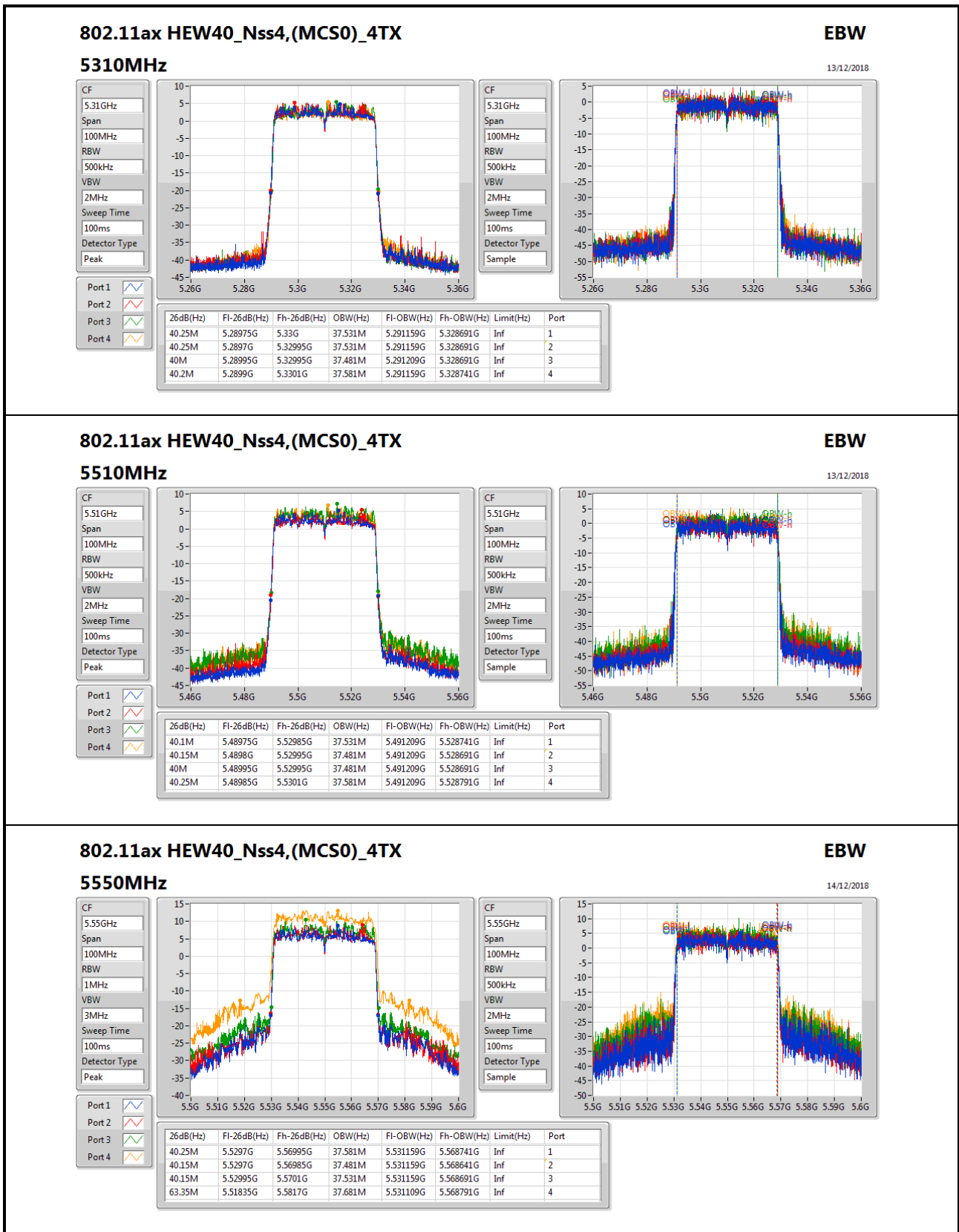
**EBW**  
13/12/2018

CF: 5.27GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Peak

Port 1: [Waveform]  
Port 2: [Waveform]  
Port 3: [Waveform]  
Port 4: [Waveform]

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
49.7M	5.24515G	5.29485G	37.581M	5.251159G	5.288741G	Inf	1
42.7M	5.2497G	5.2924G	37.631M	5.251109G	5.288741G	Inf	2
40.3M	5.24985G	5.29015G	37.581M	5.251159G	5.288741G	Inf	3
40.25M	5.24985G	5.2901G	37.631M	5.251159G	5.288791G	Inf	4

CF: 5.27GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Sample


**802.11ax HEW40\_Nss4,(MCS0)\_4TX**
**EBW**

14/12/2018

**5550MHz**

CF: 5.55GHz  
Span: 100MHz  
RBW: 1MHz  
VBW: 3MHz  
Sweep Time: 100ms  
Detector Type: Peak

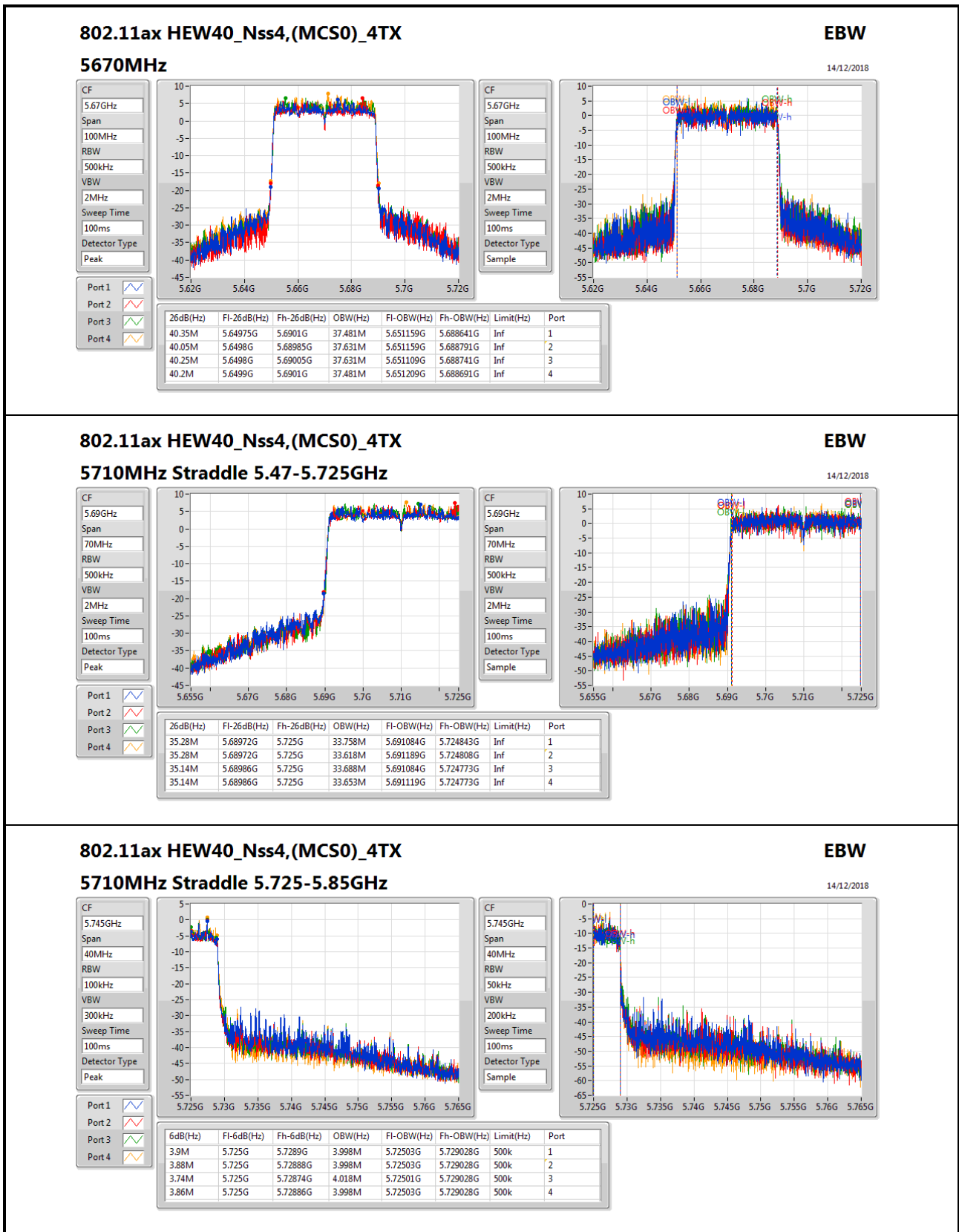
Port 1:

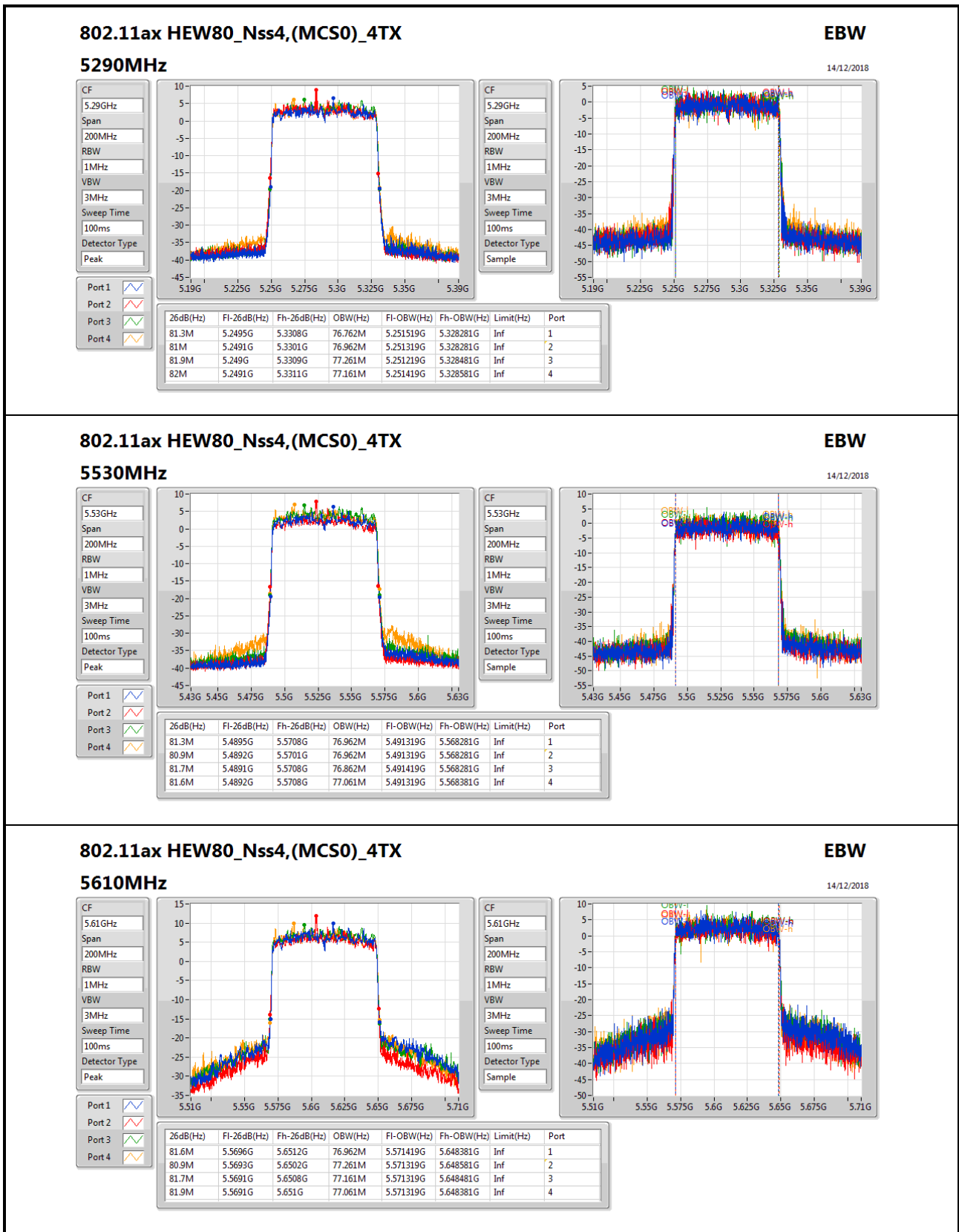
Port 2:

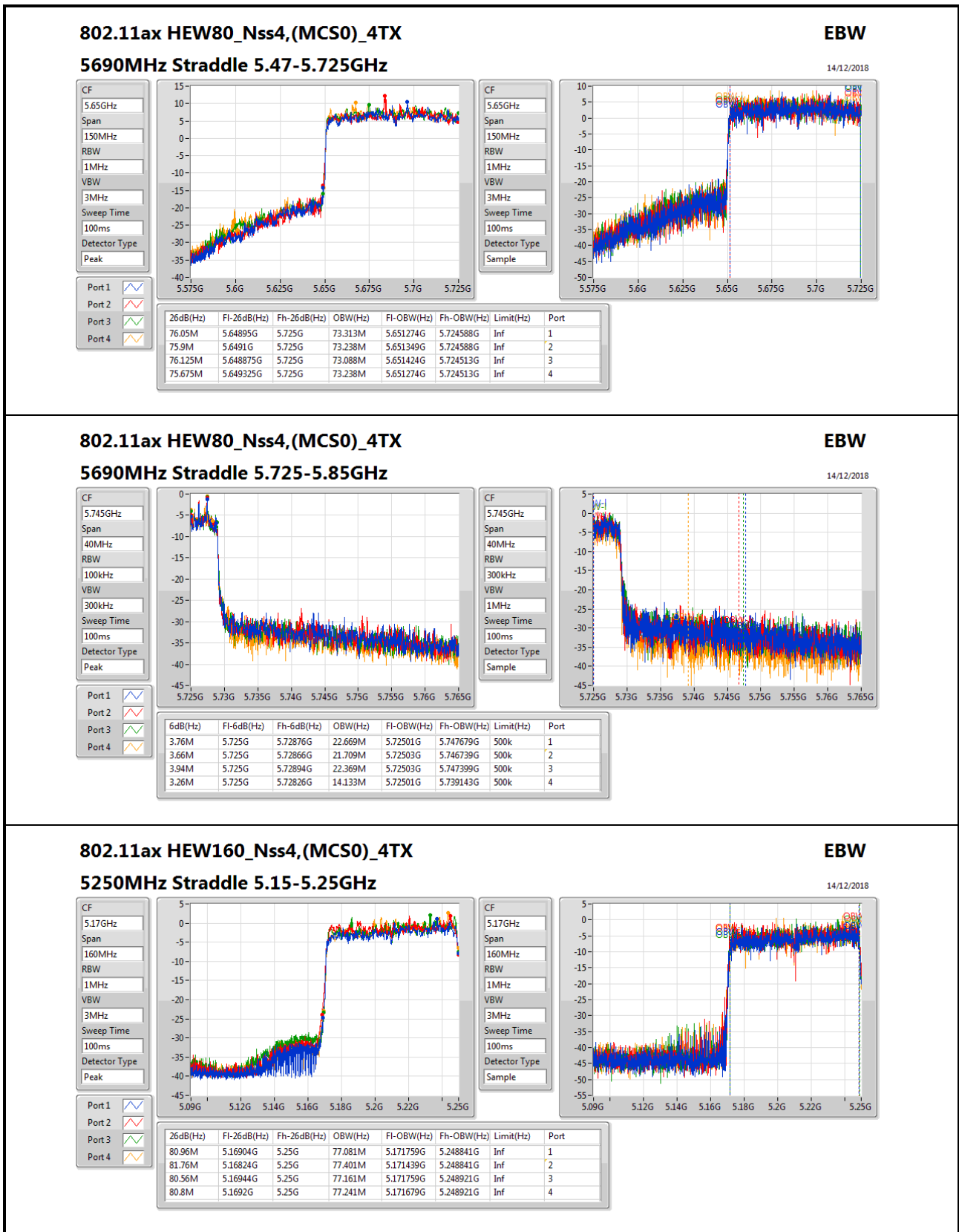
Port 3:

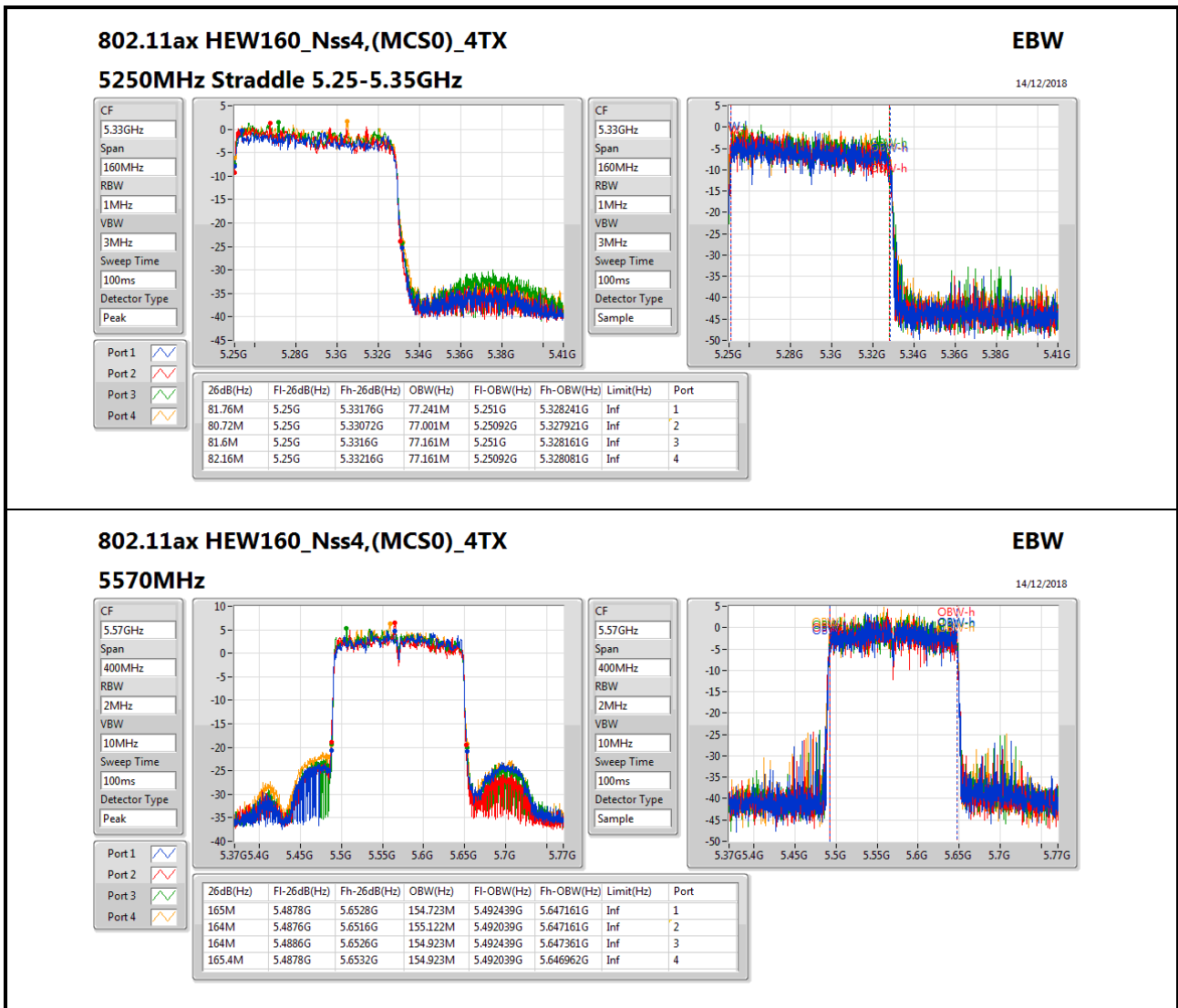
Port 4:

CF: 5.55GHz  
Span: 100MHz  
RBW: 500kHz  
VBW: 2MHz  
Sweep Time: 100ms  
Detector Type: Sample











Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	41.15M	17.191M	17M2D1D	21.875M	16.642M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	43.4M	18.591M	18M6D1D	24.78M	14.573M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_1TX	3.12M	11.154M	11M2D1D	3.12M	11.154M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

**Min-OBW** = Minimum 99% occupied bandwidth;

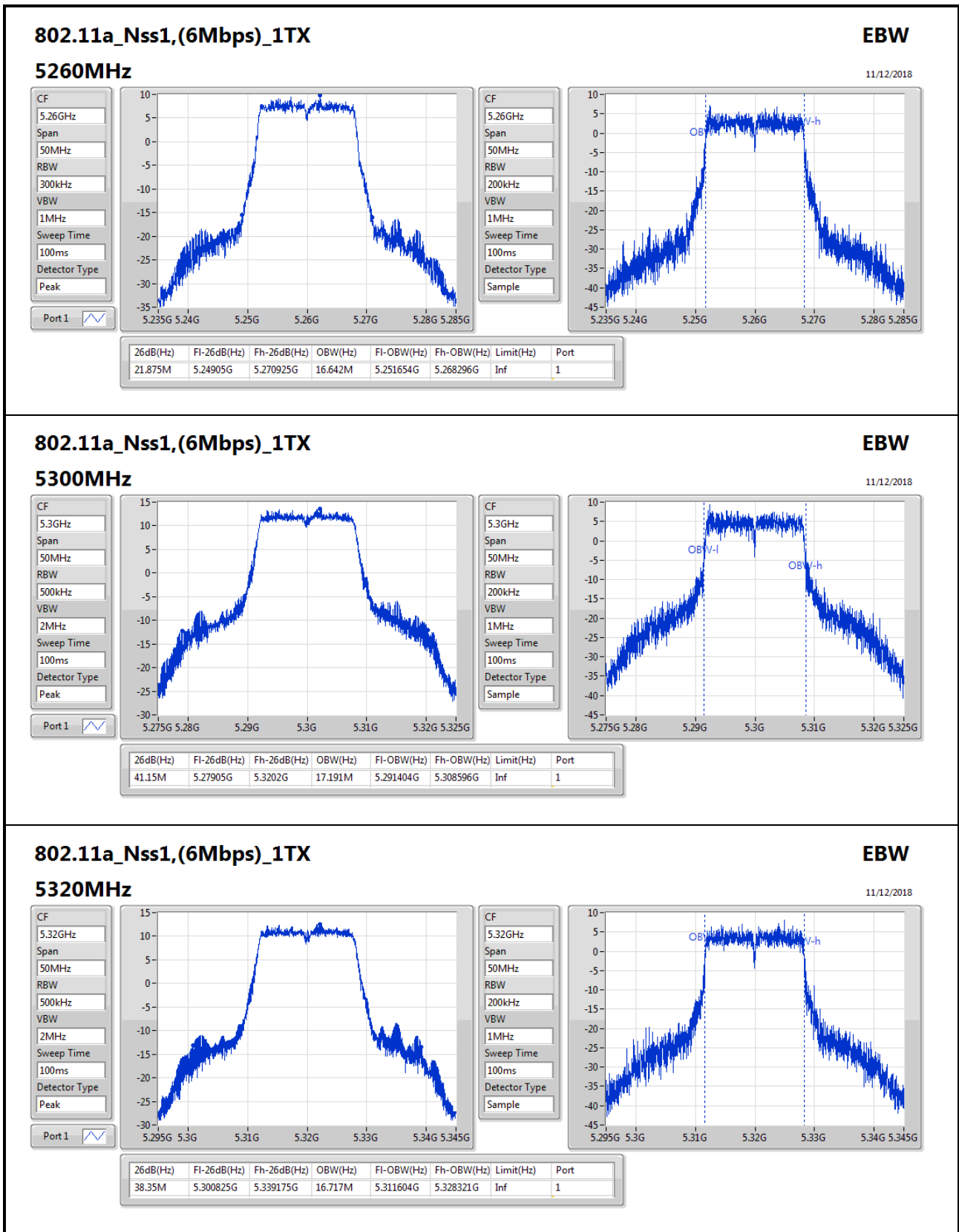
Result

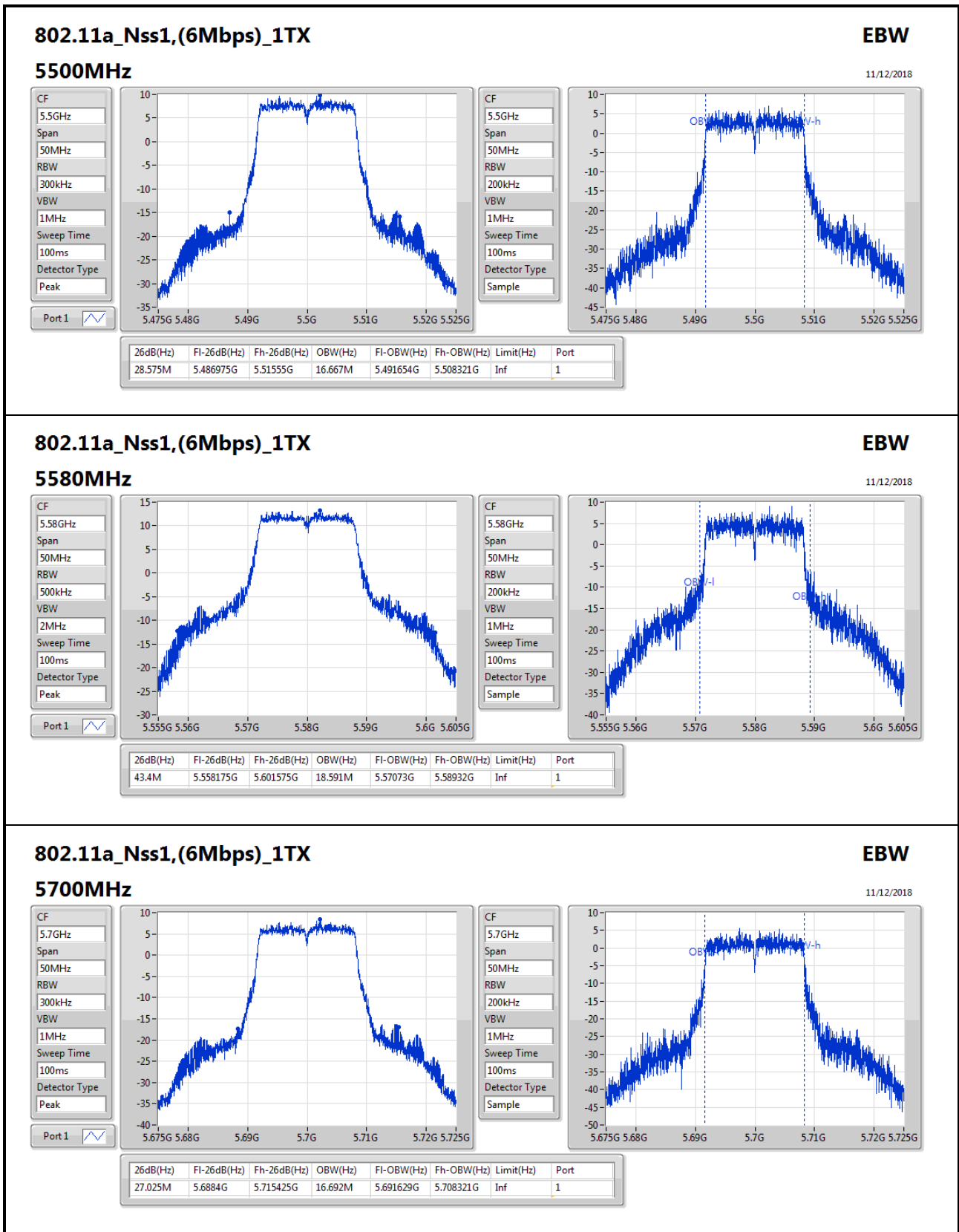
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11a_Nss1,(6Mbps)_1TX	-	-	-	-
5260MHz	Pass	Inf	21.875M	16.642M
5300MHz	Pass	Inf	41.15M	17.191M
5320MHz	Pass	Inf	38.35M	16.717M
5500MHz	Pass	Inf	28.575M	16.667M
5580MHz	Pass	Inf	43.4M	18.591M
5700MHz	Pass	Inf	27.025M	16.692M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	24.78M	14.573M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	11.154M

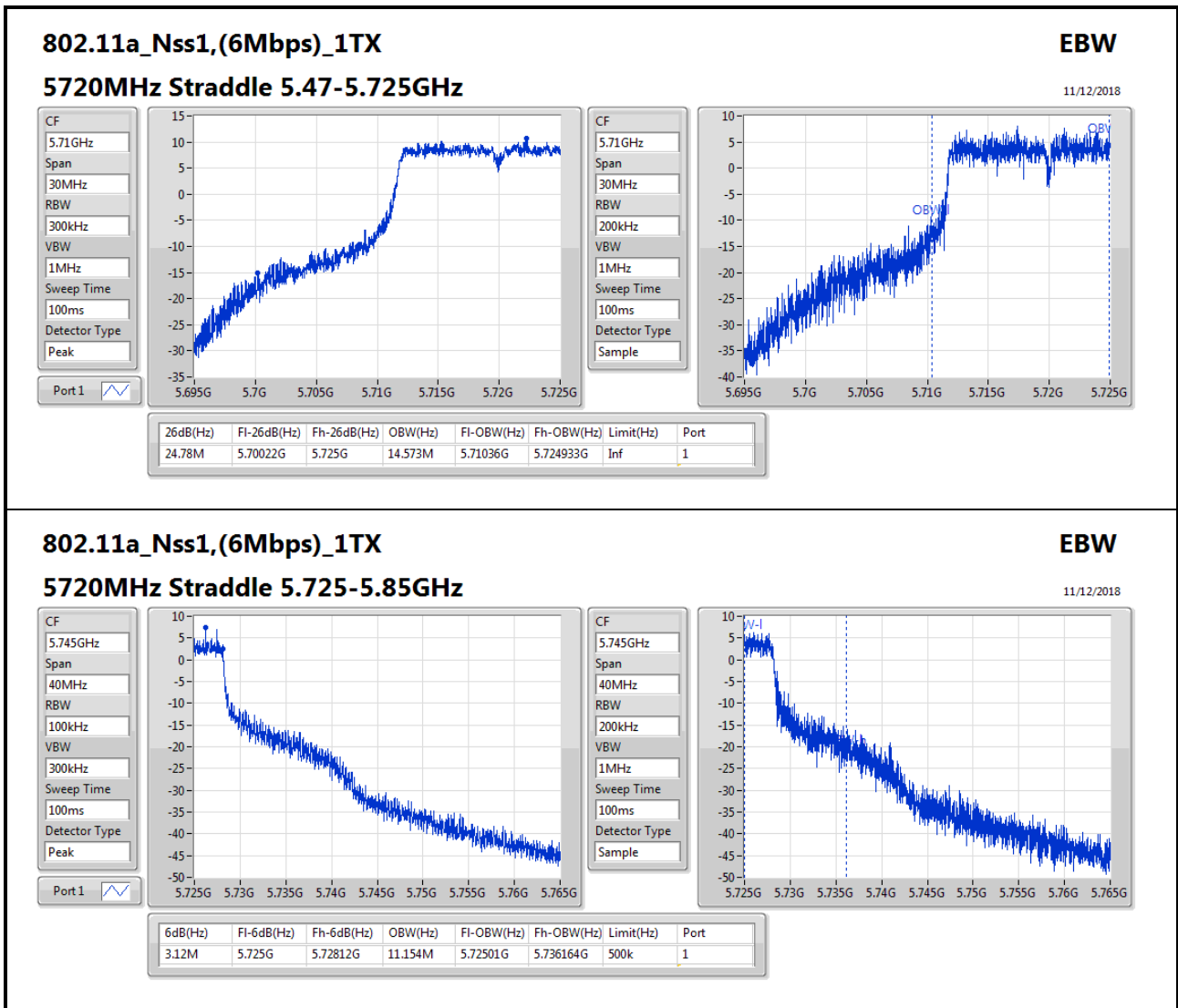
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

**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)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_1TX	80.88M	77.161M	77M2D1D	80.88M	77.161M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	36.6M	19.015M	19M0D1D	26.225M	18.991M
802.11ax HEW40_Nss1,(MCS0)_1TX	41.65M	37.731M	37M7D1D	40M	37.581M
802.11ax HEW80_Nss1,(MCS0)_1TX	81.4M	77.161M	77M2D1D	81.4M	77.161M
802.11ax HEW160_Nss1,(MCS0)_1TX	126.96M	77.081M	77M1D1D	126.96M	77.081M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	43.325M	19.665M	19M7D1D	23.4M	14.648M
802.11ax HEW40_Nss1,(MCS0)_1TX	78.2M	37.981M	38M0D1D	40.15M	34.143M
802.11ax HEW80_Nss1,(MCS0)_1TX	128.1M	77.461M	77M5D1D	81.8M	73.613M
802.11ax HEW160_Nss1,(MCS0)_1TX	266M	155.722M	156MD1D	266M	155.722M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_1TX	4.48M	11.554M	11M6D1D	4.48M	11.554M
802.11ax HEW40_Nss1,(MCS0)_1TX	3.96M	25.847M	25M8D1D	3.96M	25.847M
802.11ax HEW80_Nss1,(MCS0)_1TX	3.78M	35.502M	35M5D1D	3.78M	35.502M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

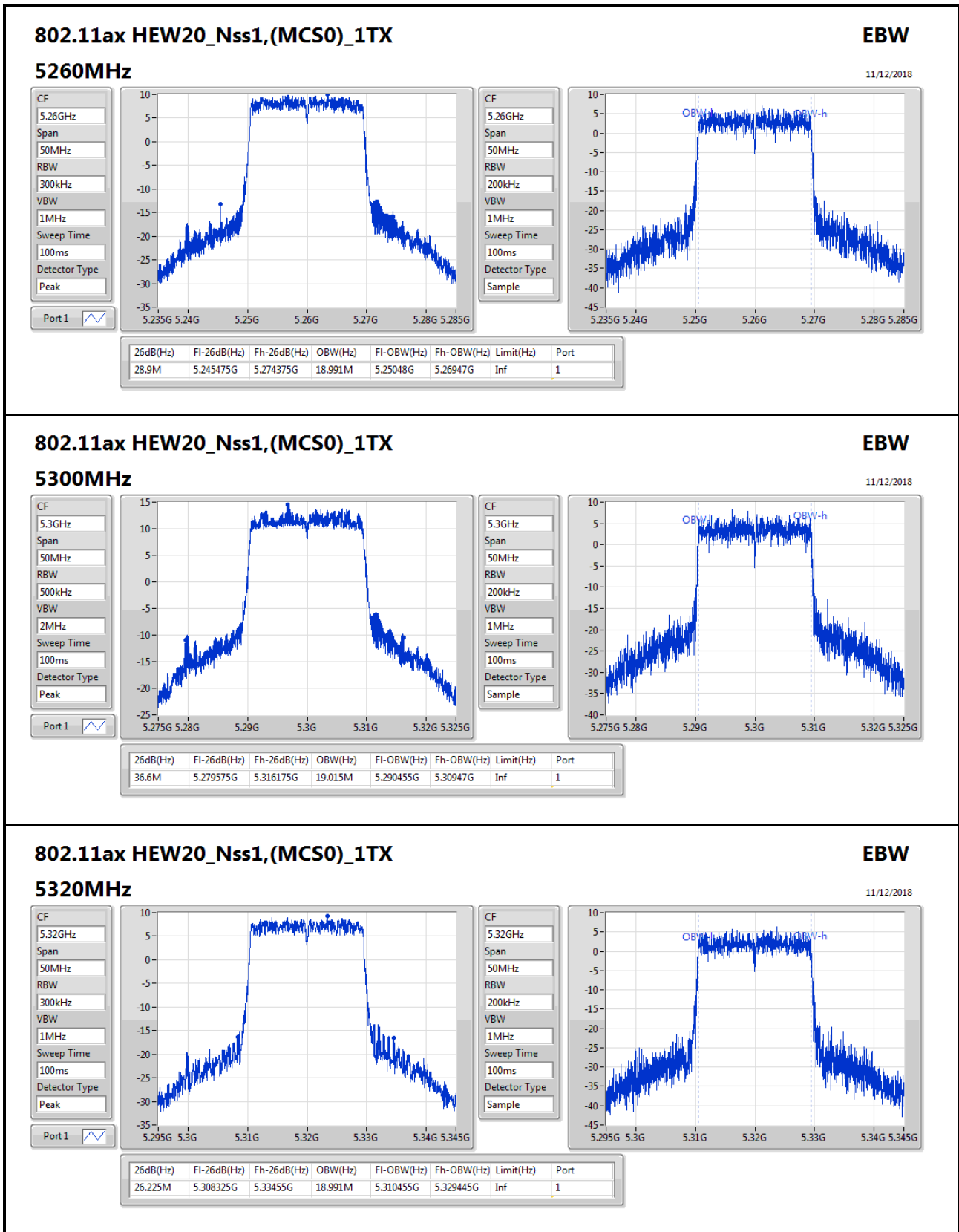
**Min-OBW** = Minimum 99% occupied bandwidth;

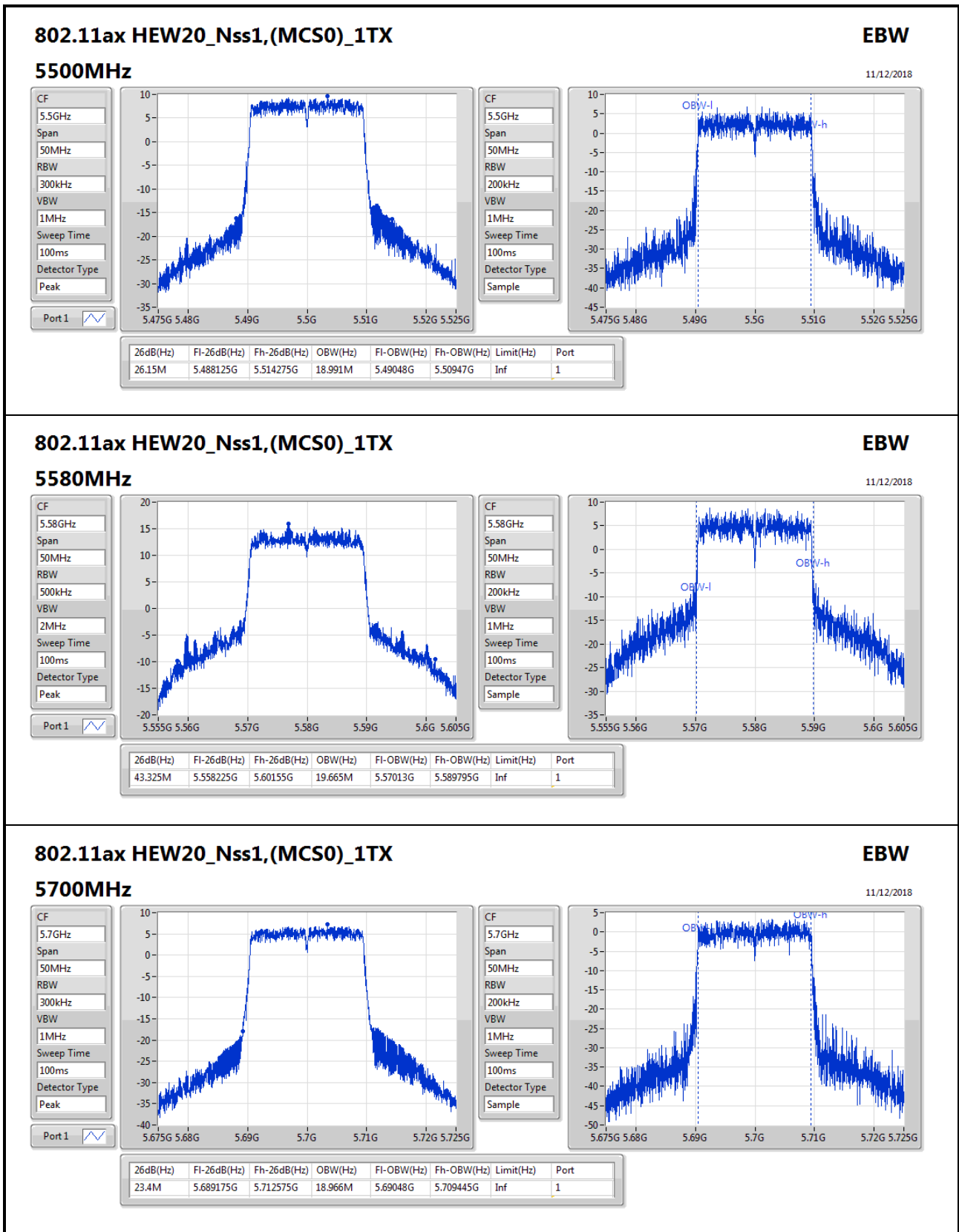
**Result**

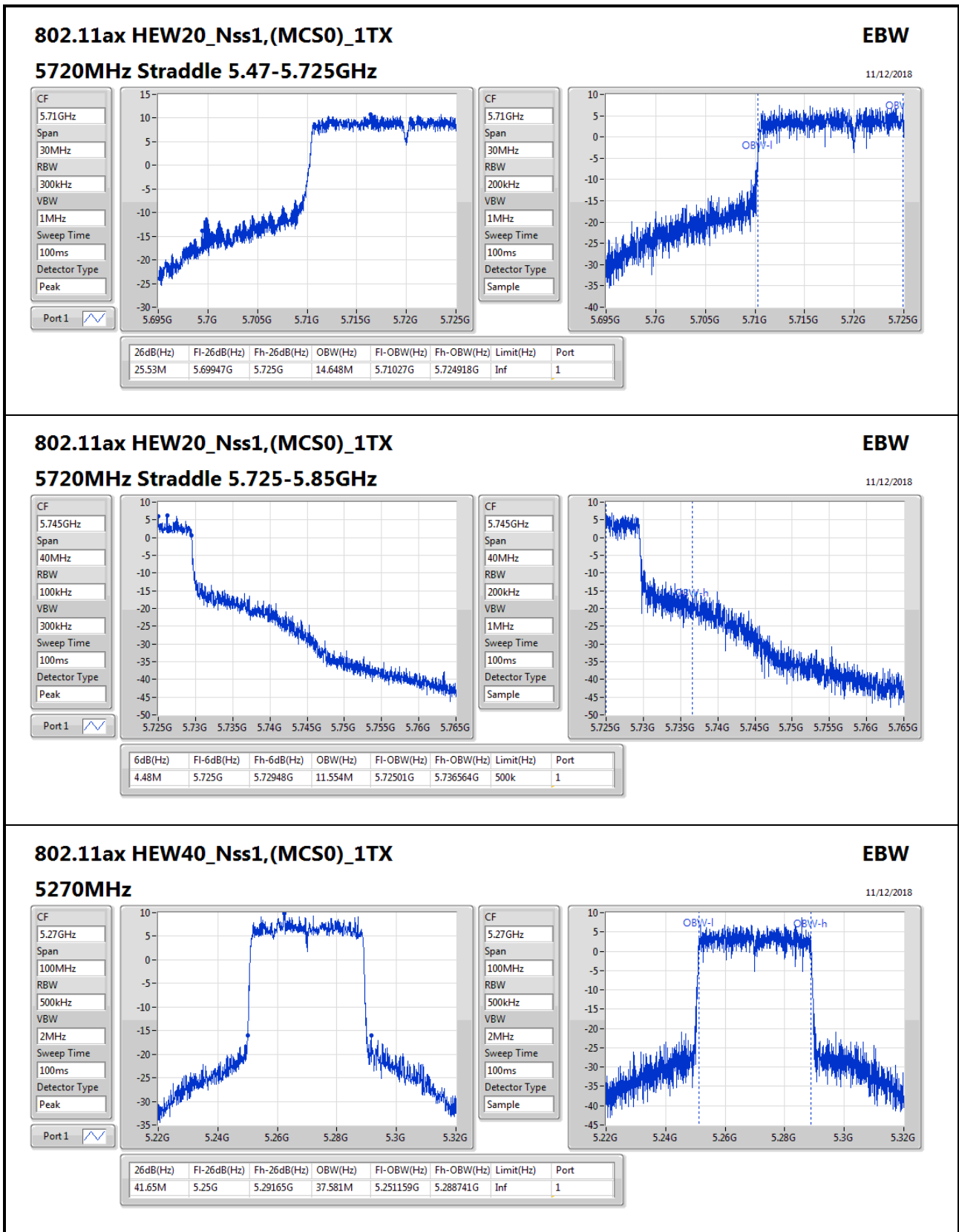
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11ax HEW20_Nss1,(MCS0)_1TX	-	-	-	-
5260MHz	Pass	Inf	28.9M	18.991M
5300MHz	Pass	Inf	36.6M	19.015M
5320MHz	Pass	Inf	26.225M	18.991M
5500MHz	Pass	Inf	26.15M	18.991M
5580MHz	Pass	Inf	43.325M	19.665M
5700MHz	Pass	Inf	23.4M	18.966M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	25.53M	14.648M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.48M	11.554M
802.11ax HEW40_Nss1,(MCS0)_1TX	-	-	-	-
5270MHz	Pass	Inf	41.65M	37.581M
5310MHz	Pass	Inf	40M	37.731M
5510MHz	Pass	Inf	40.15M	37.431M
5550MHz	Pass	Inf	78.2M	37.981M
5670MHz	Pass	Inf	44.1M	37.731M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	58.625M	34.143M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.96M	25.847M
802.11ax HEW80_Nss1,(MCS0)_1TX	-	-	-	-
5290MHz	Pass	Inf	81.4M	77.161M
5530MHz	Pass	Inf	81.8M	77.061M
5610MHz	Pass	Inf	128.1M	77.461M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	114.525M	73.613M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.78M	35.502M
802.11ax HEW160_Nss1,(MCS0)_1TX	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	80.88M	77.161M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	126.96M	77.081M
5570MHz	Pass	Inf	266M	155.722M

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

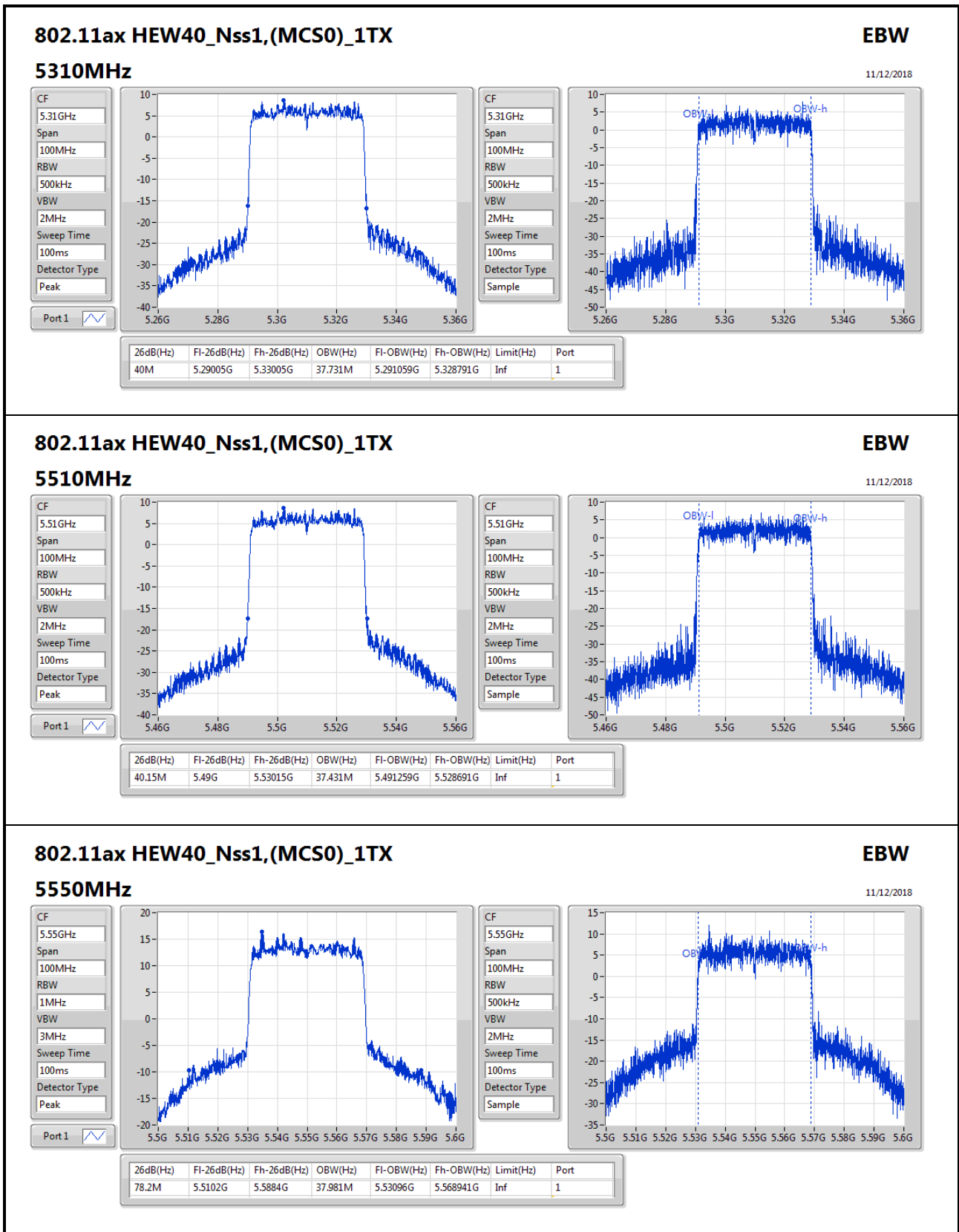
**Port X-OBW** = Port X 99% occupied bandwidth;

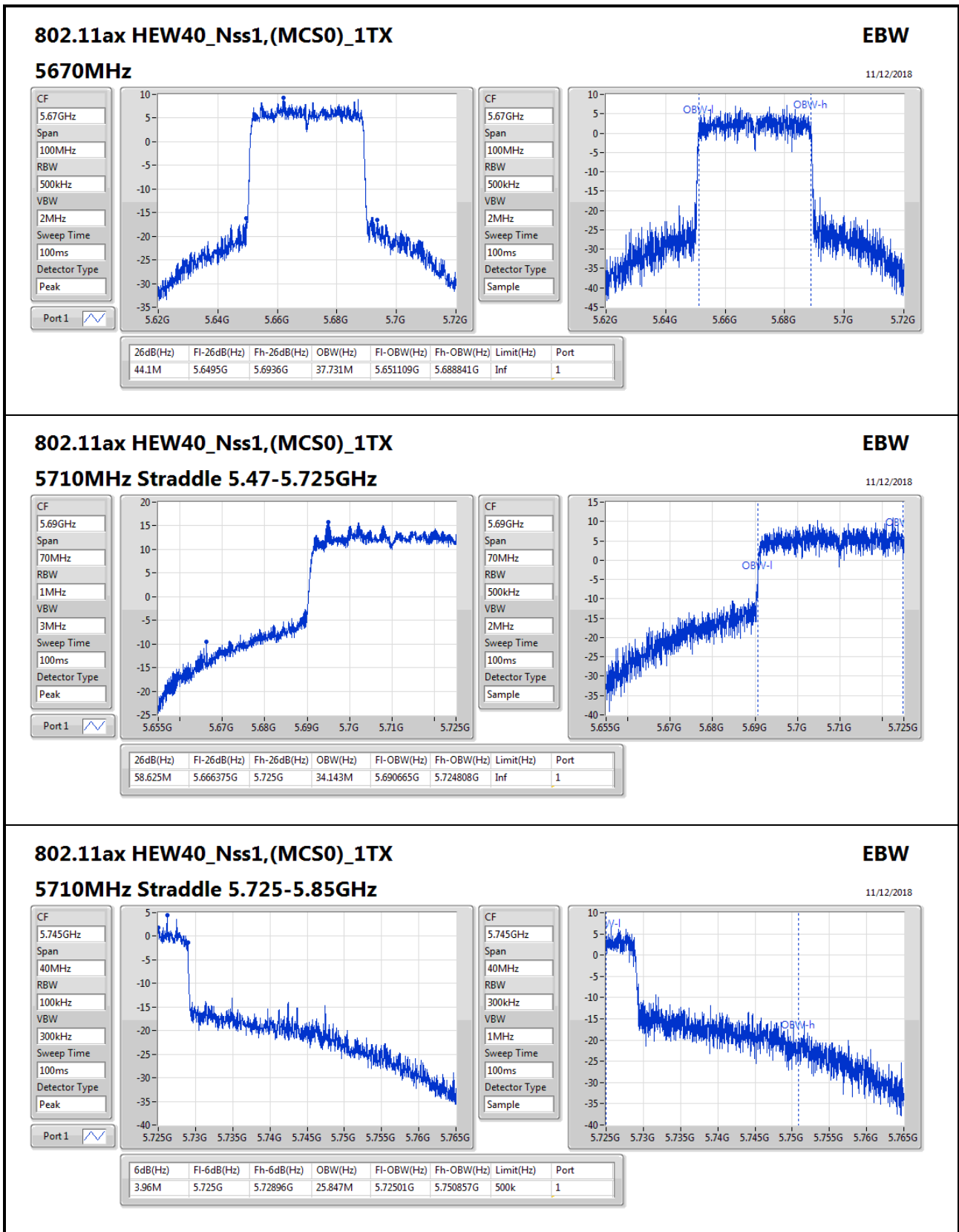


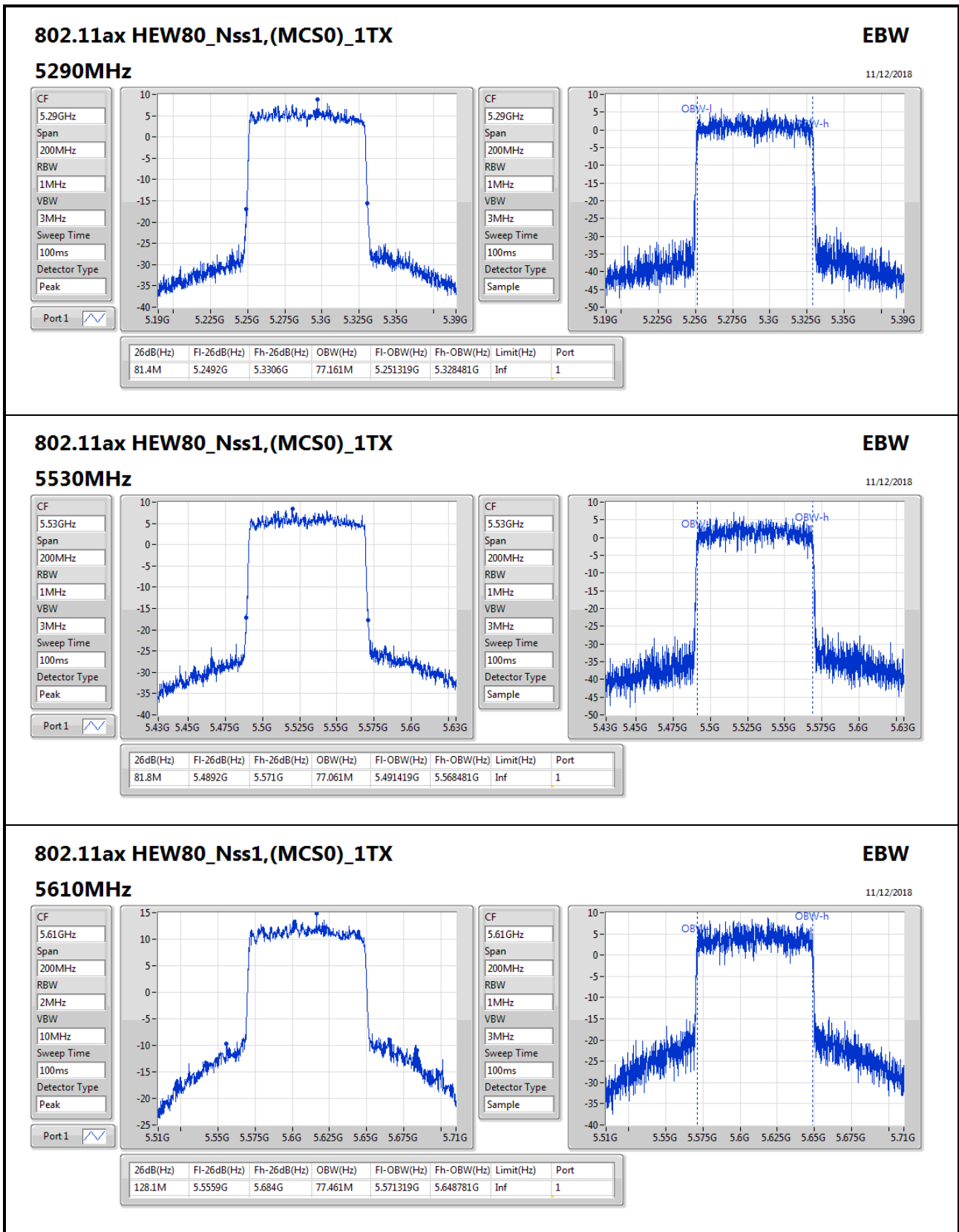


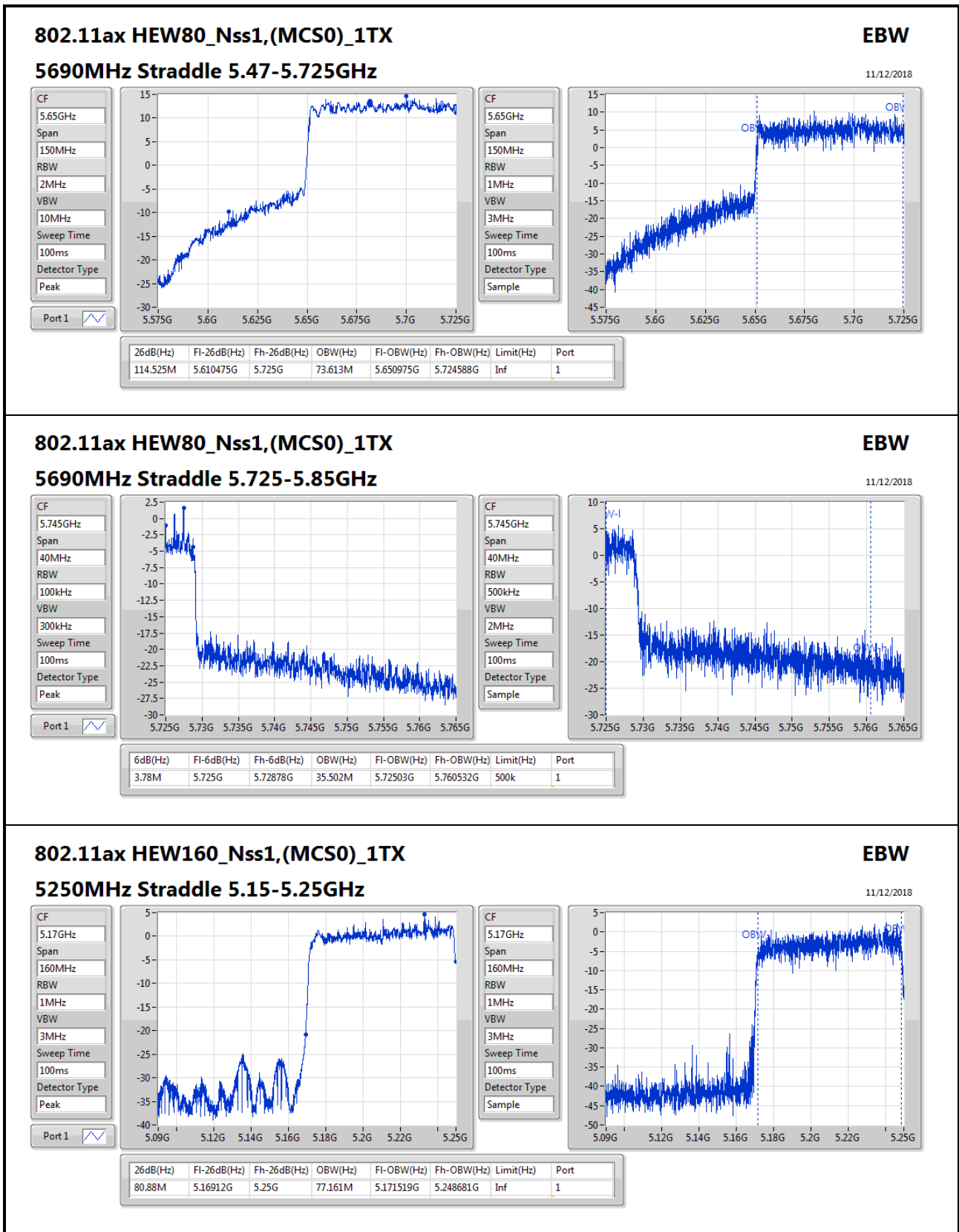












### 802.11ax HEW160\_Nss1,(MCS0)\_1TX

#### 5250MHz Straddle 5.15-5.25GHz

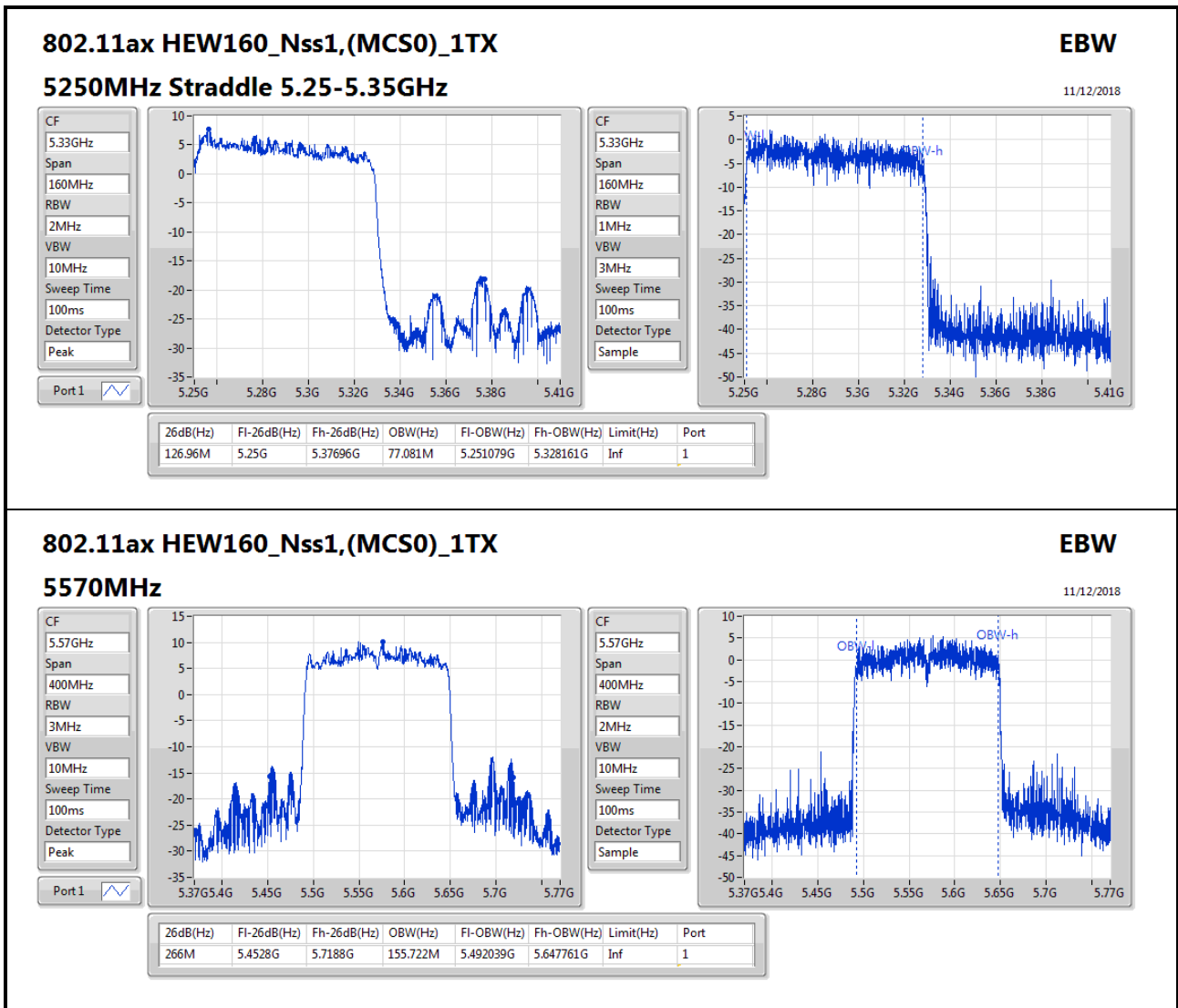
**EBW**  
11/12/2018

CF: 5.17GHz  
Span: 160MHz  
RBW: 1MHz  
VBW: 3MHz  
Sweep Time: 100ms  
Detector Type: Peak



CF: 5.17GHz  
Span: 160MHz  
RBW: 1MHz  
VBW: 3MHz  
Sweep Time: 100ms  
Detector Type: Sample







Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss2,(MCS0)_2TX	81.84M	77.241M	77M2D1D	81.52M	76.922M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	30.8M	19.015M	19M0D1D	21.675M	18.966M
802.11ax HEW40_Nss2,(MCS0)_2TX	45.25M	37.581M	37M6D1D	39.95M	37.531M
802.11ax HEW80_Nss2,(MCS0)_2TX	81.3M	77.361M	77M4D1D	81.3M	76.962M
802.11ax HEW160_Nss2,(MCS0)_2TX	81.12M	77.161M	77M2D1D	80.88M	77.001M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	42.55M	19.29M	19M3D1D	21.475M	14.618M
802.11ax HEW40_Nss2,(MCS0)_2TX	72.15M	37.881M	37M9D1D	39.95M	34.003M
802.11ax HEW80_Nss2,(MCS0)_2TX	109.275M	77.261M	77M3D1D	81.5M	73.313M
802.11ax HEW160_Nss2,(MCS0)_2TX	165M	155.322M	155MD1D	164.6M	154.923M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss2,(MCS0)_2TX	4.46M	12.134M	12M1D1D	4.4M	12.114M
802.11ax HEW40_Nss2,(MCS0)_2TX	3.9M	27.946M	27M9D1D	3.78M	25.767M
802.11ax HEW80_Nss2,(MCS0)_2TX	3.68M	34.463M	34M5D1D	3.5M	33.403M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

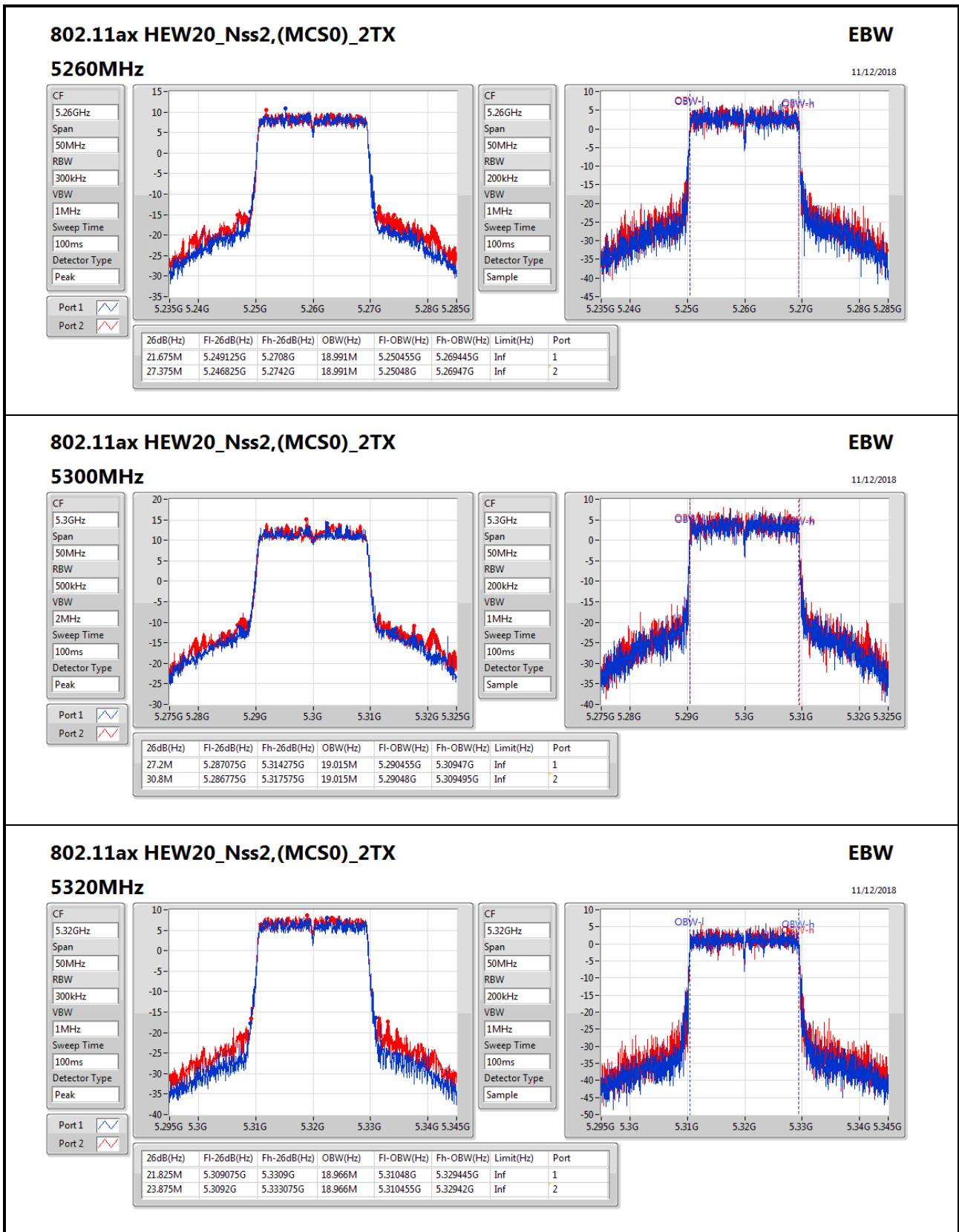
**Min-OBW** = Minimum 99% occupied bandwidth;

**Result**

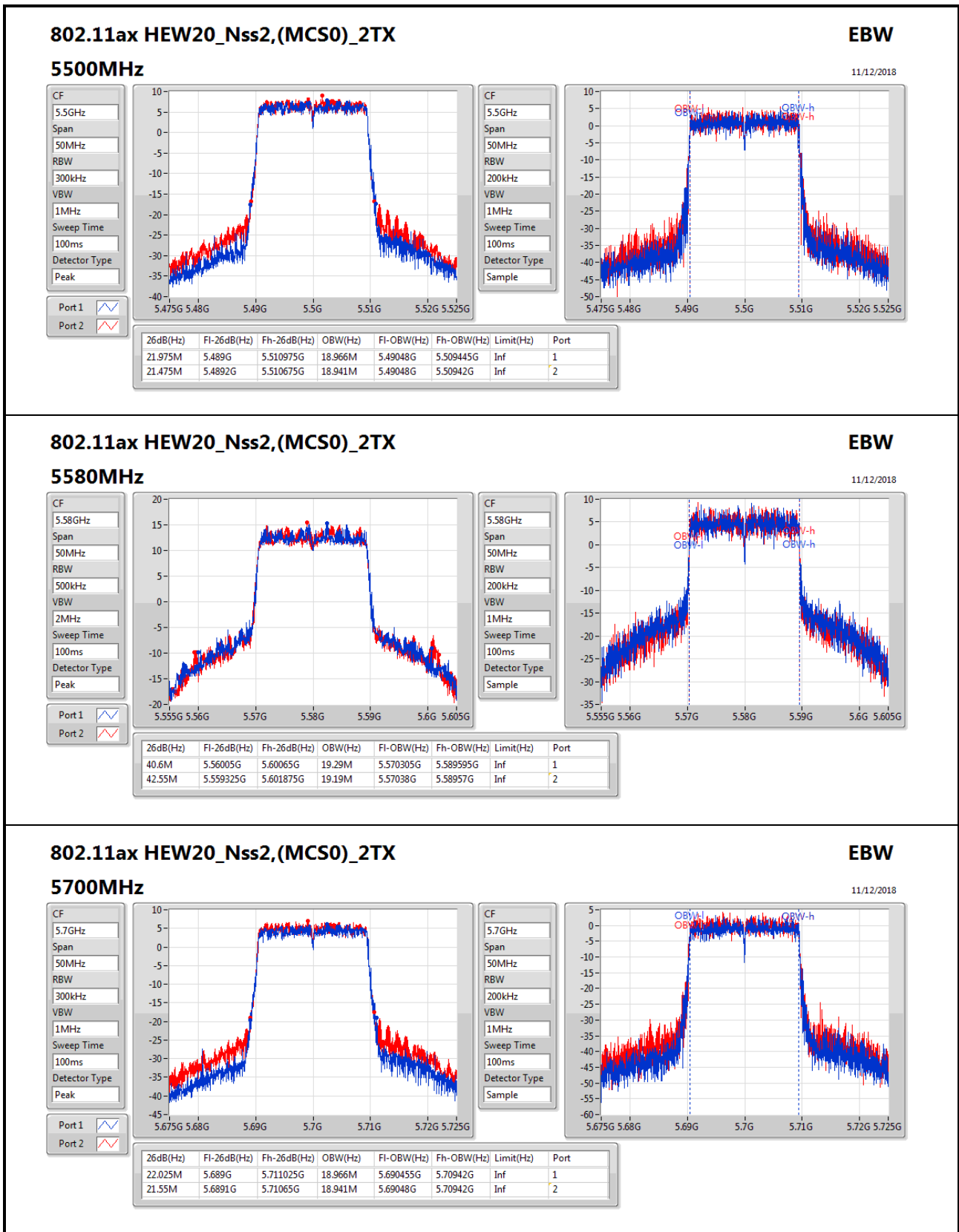
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ax HEW20_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5260MHz	Pass	Inf	21.675M	18.991M	27.375M	18.991M
5300MHz	Pass	Inf	27.2M	19.015M	30.8M	19.015M
5320MHz	Pass	Inf	21.825M	18.966M	23.875M	18.966M
5500MHz	Pass	Inf	21.975M	18.966M	21.475M	18.941M
5580MHz	Pass	Inf	40.6M	19.29M	42.55M	19.19M
5700MHz	Pass	Inf	22.025M	18.966M	21.55M	18.941M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	23.535M	14.618M	26.715M	14.873M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.46M	12.114M	4.4M	12.134M
802.11ax HEW40_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5270MHz	Pass	Inf	40.1M	37.581M	45.25M	37.531M
5310MHz	Pass	Inf	39.95M	37.531M	40.05M	37.531M
5510MHz	Pass	Inf	40M	37.531M	39.95M	37.481M
5550MHz	Pass	Inf	67.9M	37.881M	72.15M	37.881M
5670MHz	Pass	Inf	40.05M	37.581M	40.05M	37.581M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	54.88M	34.073M	58.345M	34.003M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.9M	27.946M	3.78M	25.767M
802.11ax HEW80_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5290MHz	Pass	Inf	81.3M	76.962M	81.3M	77.361M
5530MHz	Pass	Inf	81.5M	76.762M	81.5M	76.862M
5610MHz	Pass	Inf	88.6M	77.261M	85.9M	77.061M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	105.375M	73.313M	109.275M	73.463M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.68M	34.463M	3.5M	33.403M
802.11ax HEW160_Nss2,(MCS0)_2TX	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.52M	77.241M	81.84M	76.922M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.12M	77.001M	80.88M	77.161M
5570MHz	Pass	Inf	165M	155.322M	164.6M	154.923M

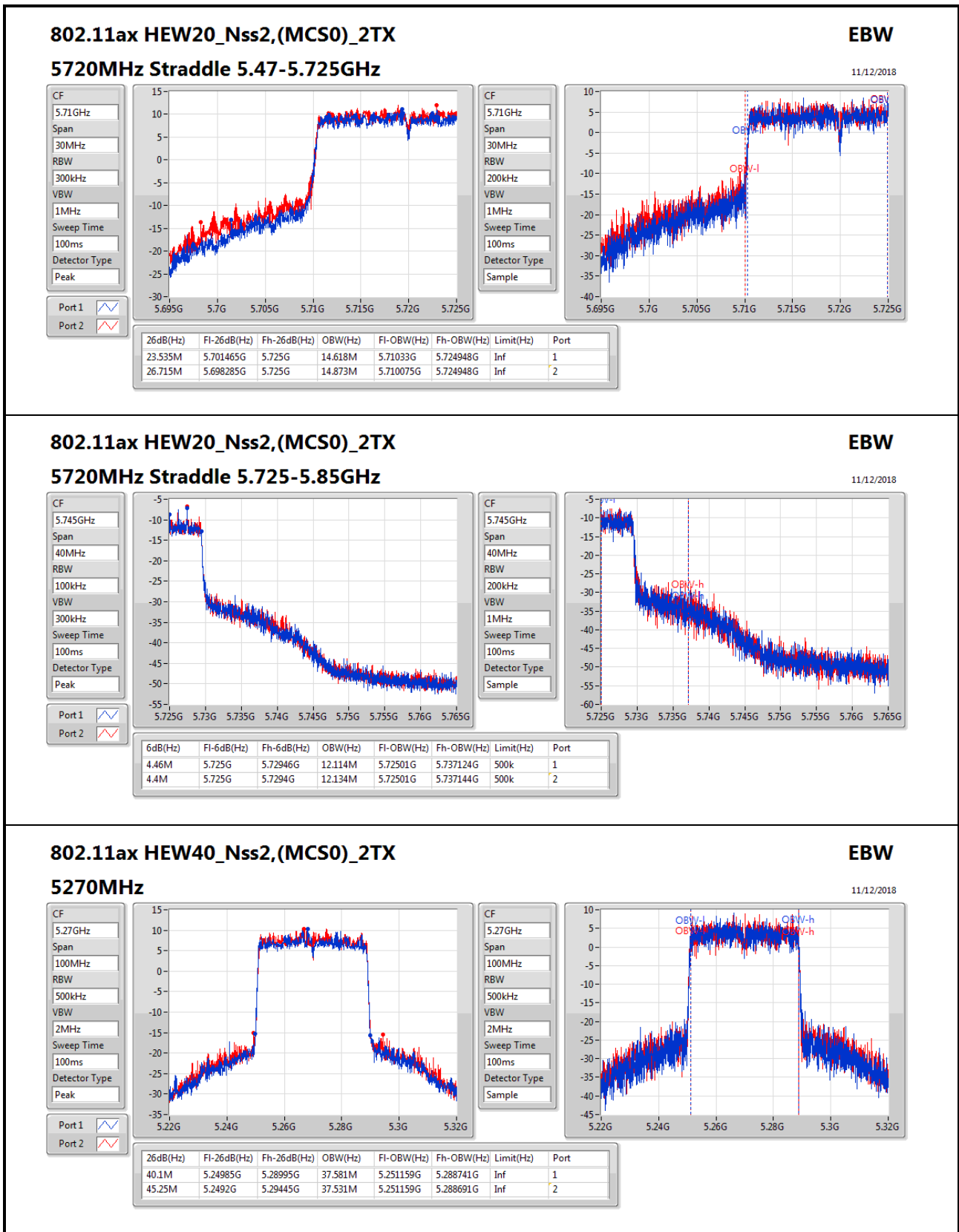
**Port X-N dB** = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

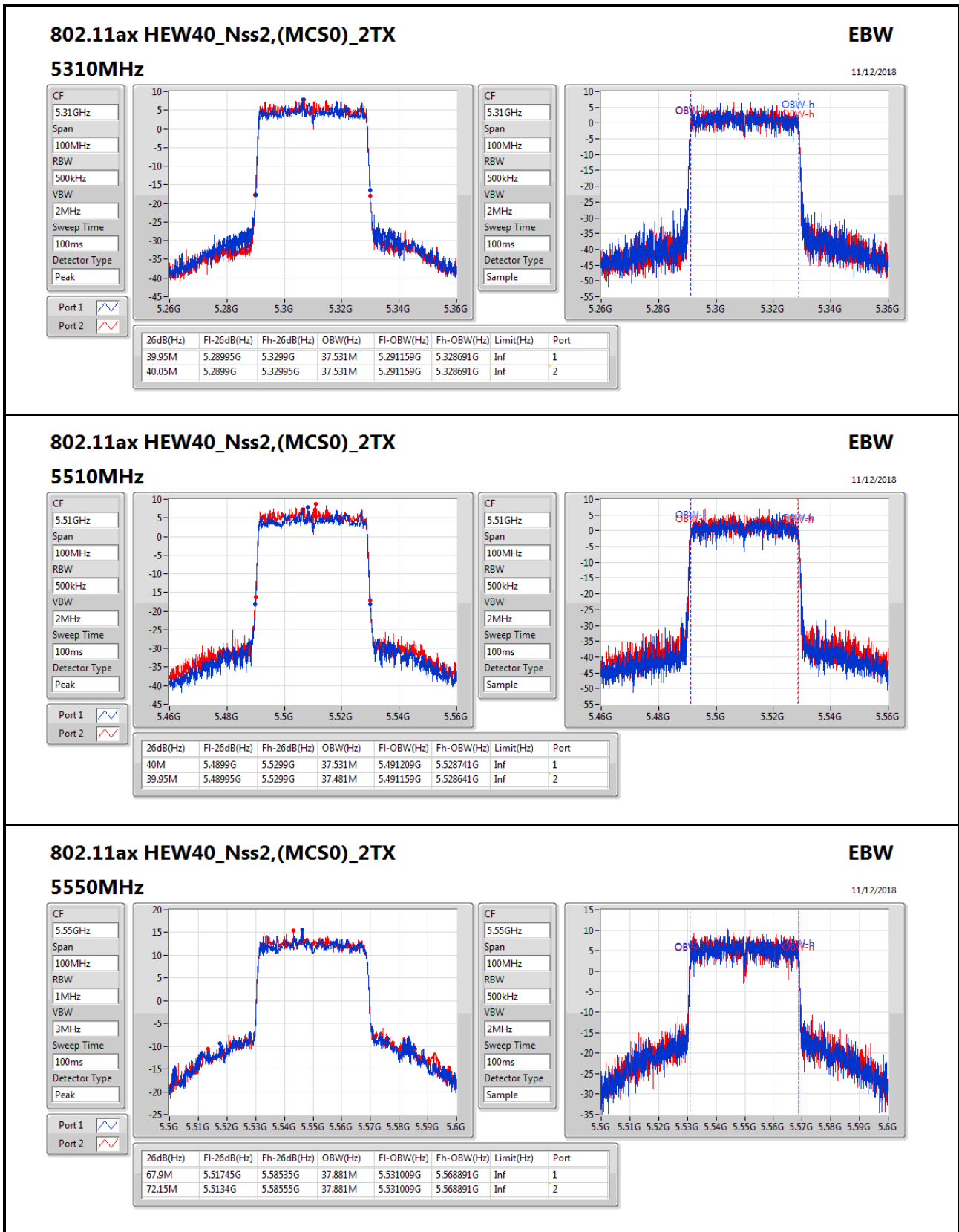
**Port X-OBW** = Port X 99% occupied bandwidth;

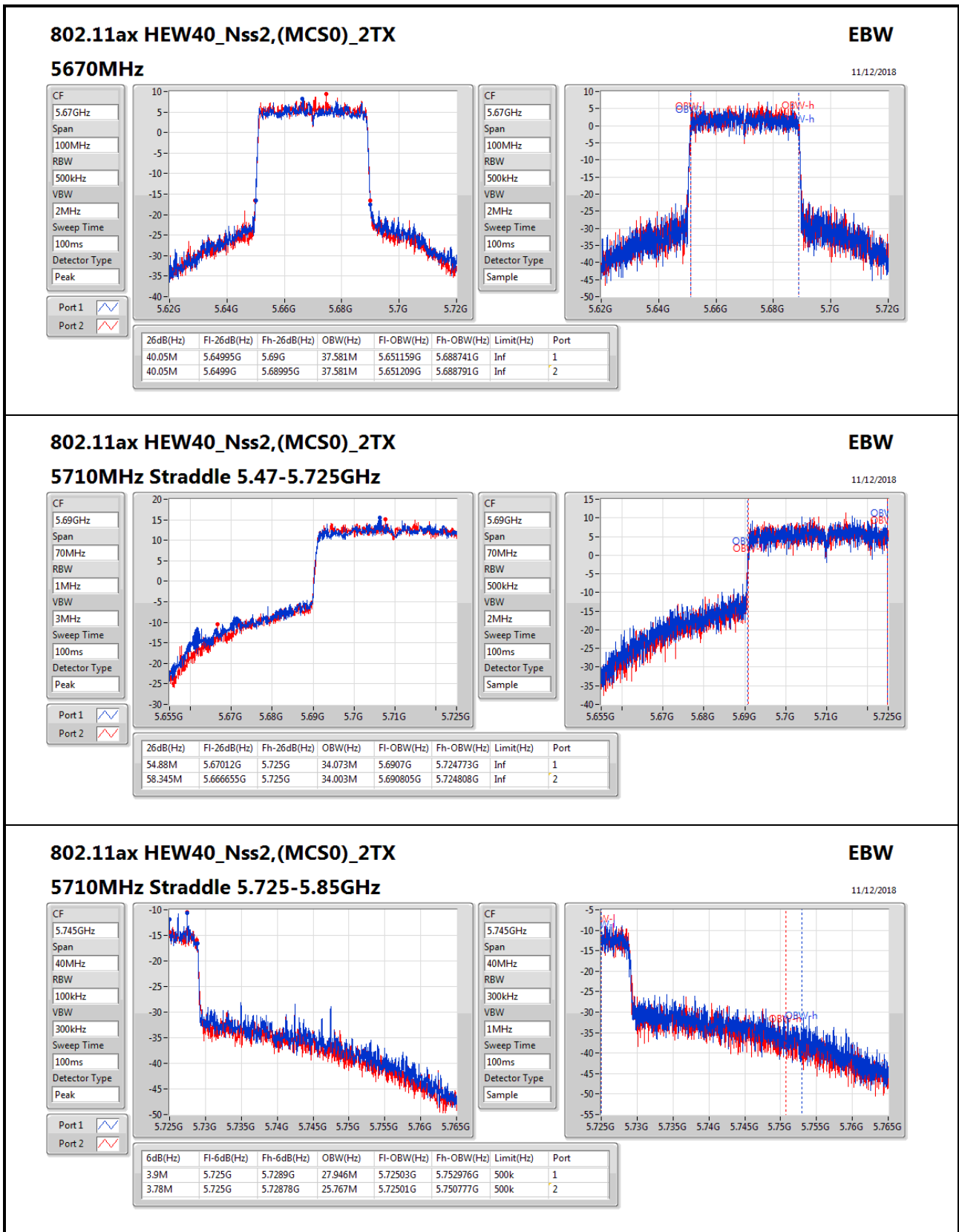











**802.11ax HEW40\_Nss2,(MCS0)\_2TX**
**EBW**

11/12/2018

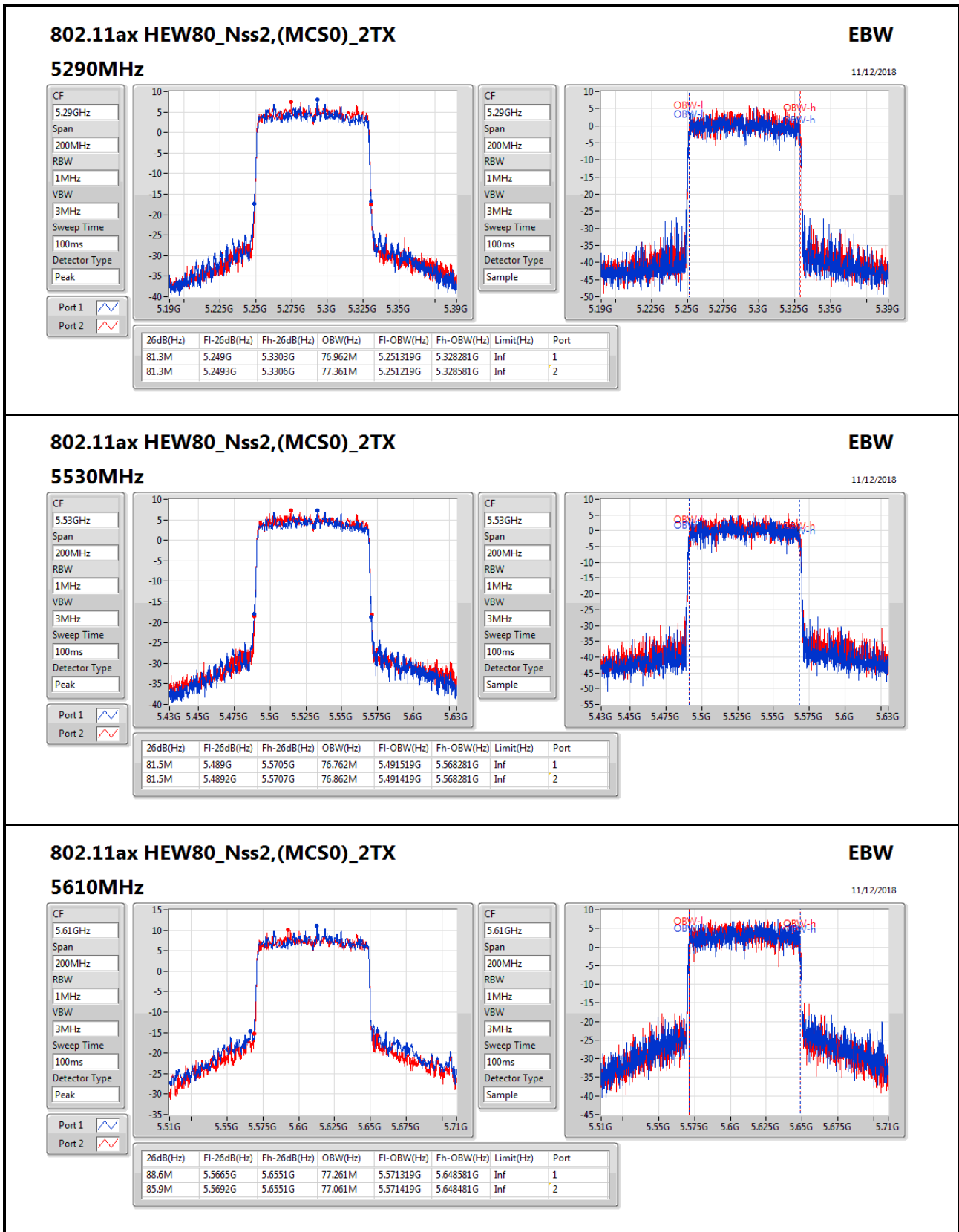
**5710MHz Straddle 5.725-5.85GHz**

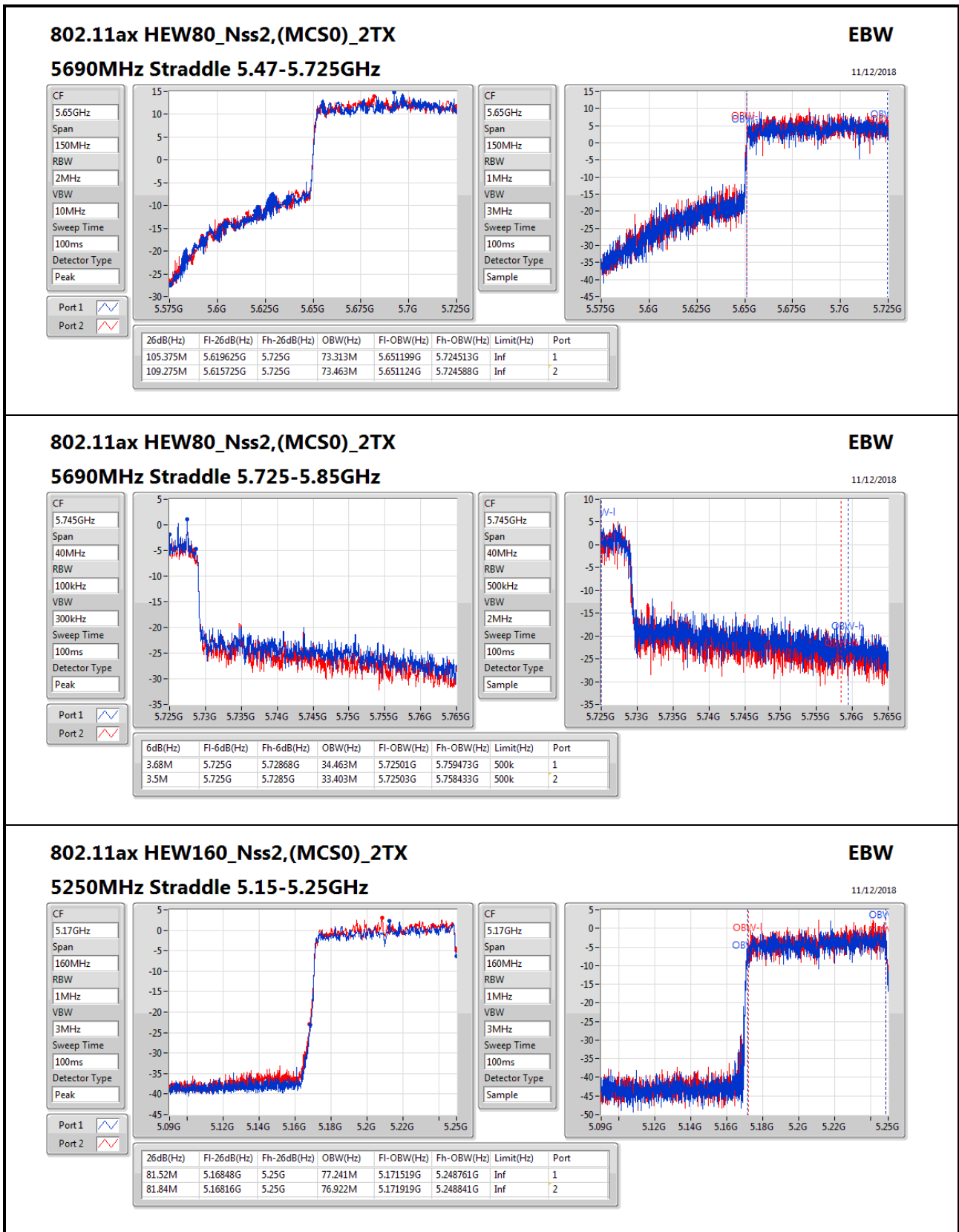
CF: 5.745GHz  
Span: 40MHz  
RBW: 100kHz  
VBW: 300kHz  
Sweep Time: 100ms  
Detector Type: Peak

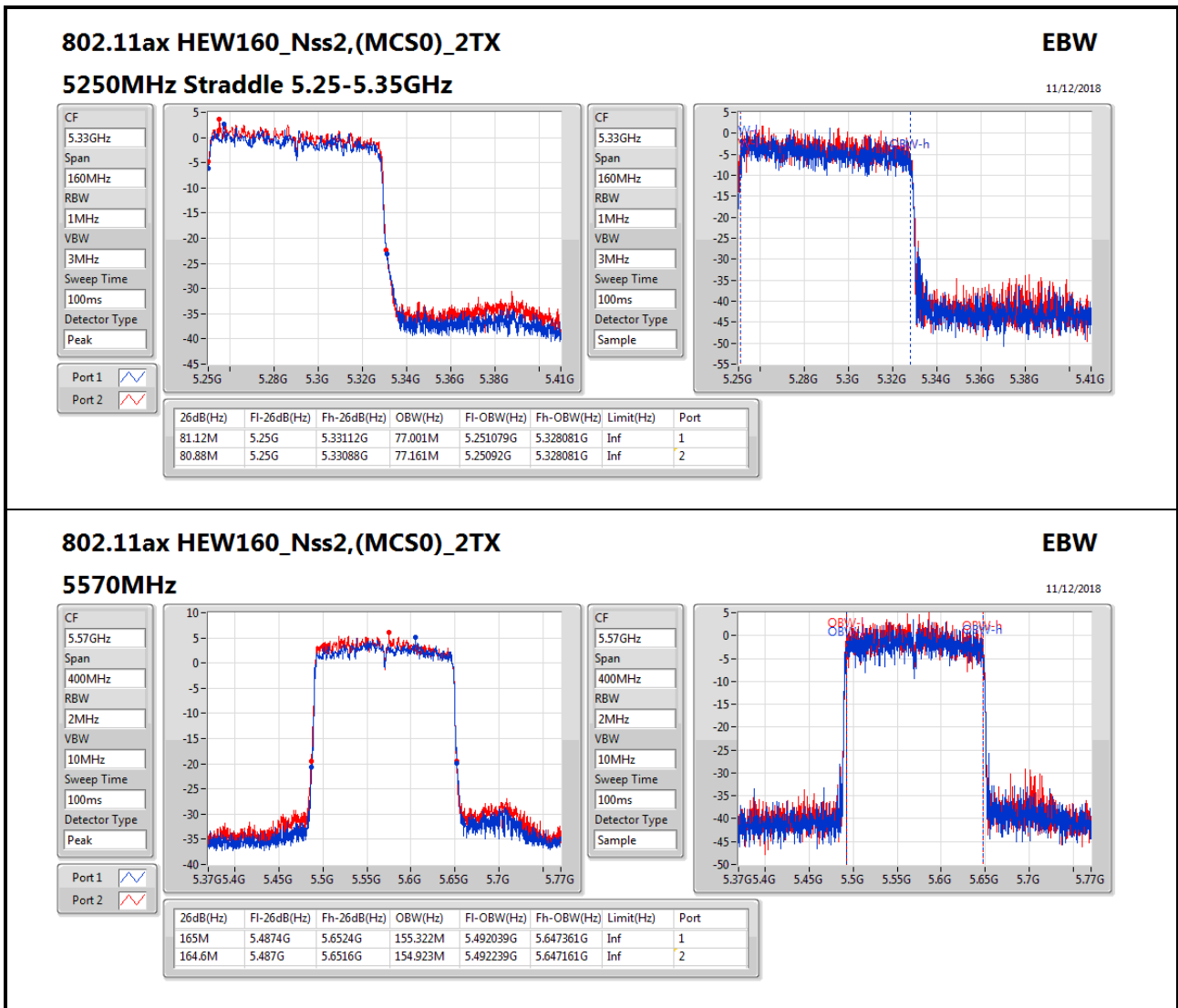
Port 1:

Port 2:

6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
3.9M	5.725G	5.7289G	27.946M	5.72503G	5.752976G	500k	1
3.78M	5.725G	5.72878G	25.767M	5.72501G	5.750777G	500k	2







**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.65M	16.617M	16M6D1D	21.375M	16.542M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	21.825M	16.642M	16M6D1D	15.585M	13.328M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	3.14M	3.938M	3M94D1D	3.1M	3.798M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

**Min-OBW** = Minimum 99% occupied bandwidth;

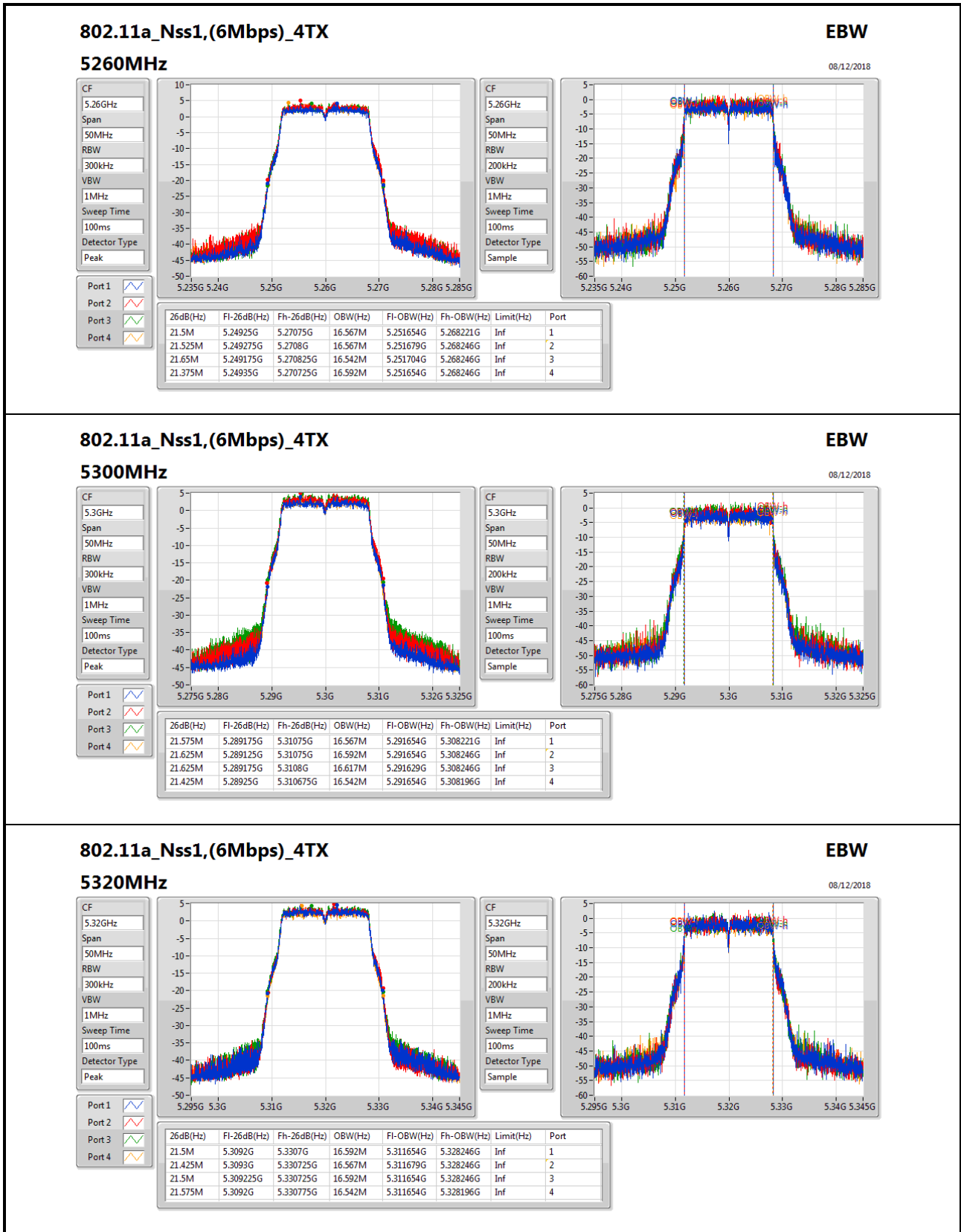
**Result**

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.5M	16.567M	21.525M	16.567M	21.65M	16.542M	21.375M	16.592M
5300MHz	Pass	Inf	21.575M	16.567M	21.625M	16.592M	21.625M	16.617M	21.425M	16.542M
5320MHz	Pass	Inf	21.5M	16.592M	21.425M	16.567M	21.5M	16.592M	21.575M	16.542M
5500MHz	Pass	Inf	21.65M	16.542M	21.55M	16.517M	21.65M	16.592M	21.5M	16.567M
5580MHz	Pass	Inf	21.825M	16.592M	21.675M	16.592M	21.8M	16.617M	21.55M	16.567M
5700MHz	Pass	Inf	21.525M	16.617M	21.55M	16.542M	21.7M	16.642M	21.3M	16.517M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.63M	13.343M	15.645M	13.328M	15.765M	13.358M	15.585M	13.328M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.14M	3.878M	3.1M	3.938M	3.1M	3.798M	3.1M	3.938M

**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**

08/12/2018

**5320MHz**

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

Port 1

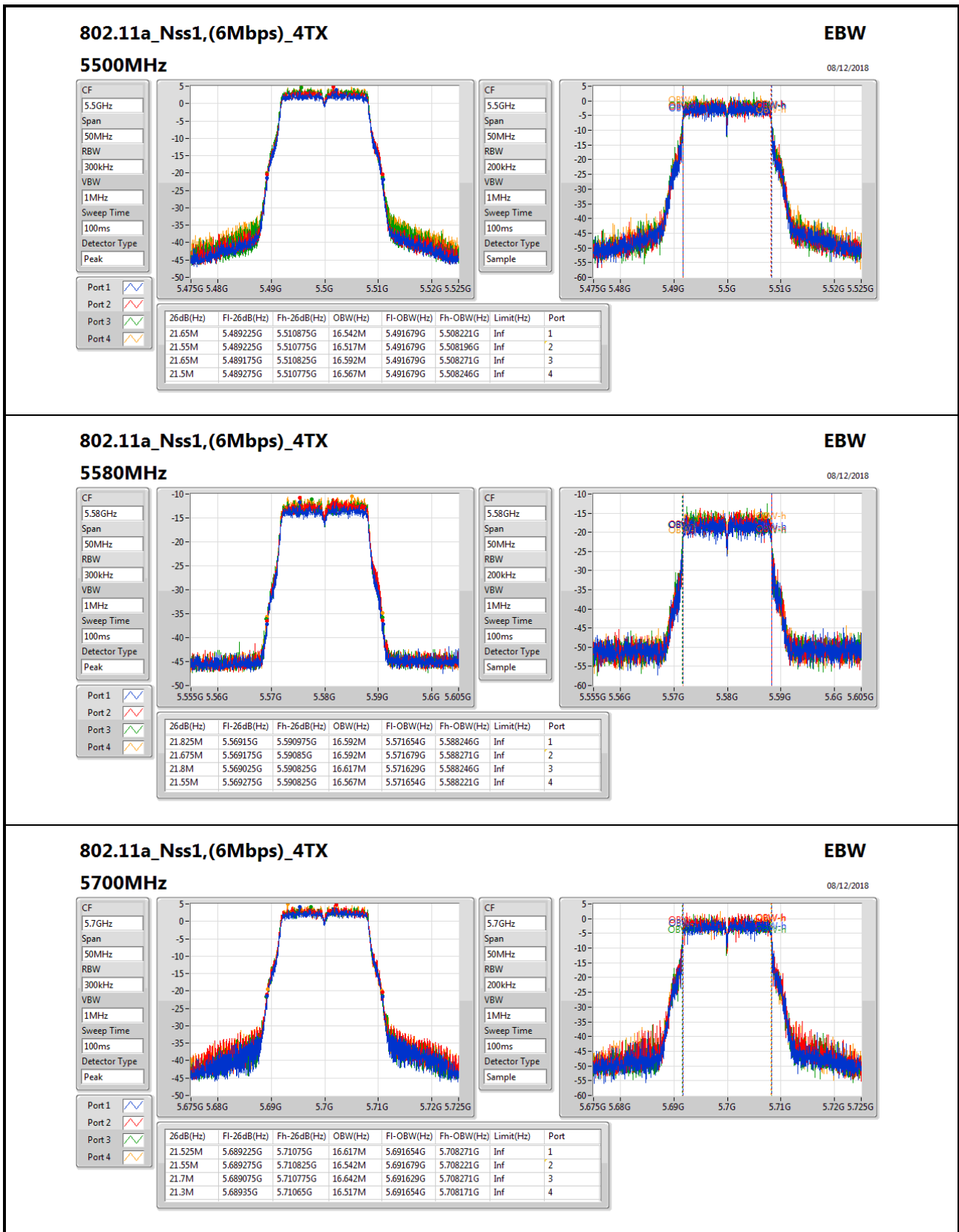
Port 2

Port 3

Port 4

26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.5M	5.3092G	5.3307G	16.592M	5.311654G	5.328246G	Inf	1
21.425M	5.3093G	5.330725G	16.567M	5.311679G	5.328246G	Inf	2
21.5M	5.309225G	5.330725G	16.592M	5.311654G	5.328246G	Inf	3
21.575M	5.3092G	5.330775G	16.542M	5.311654G	5.328196G	Inf	4

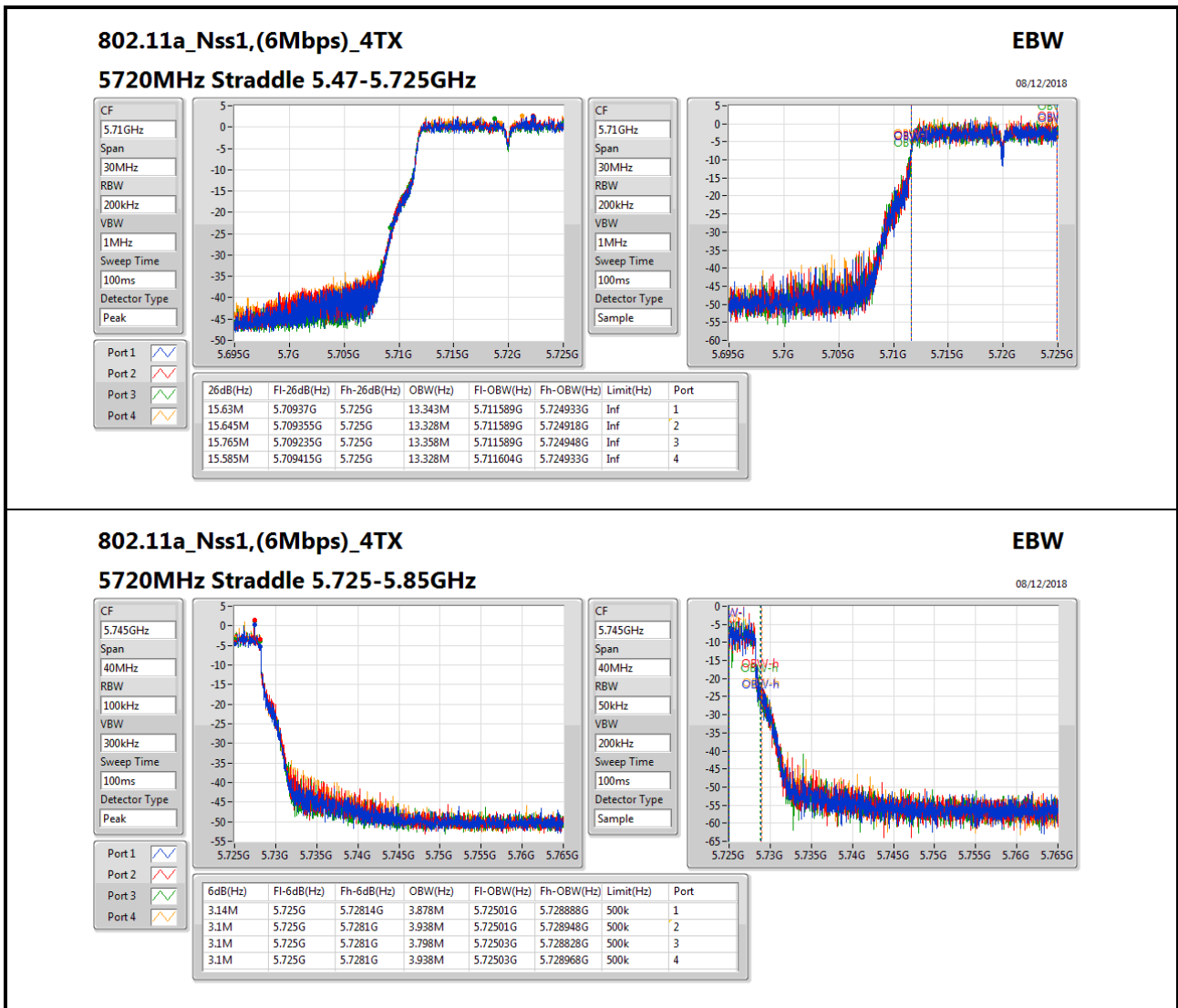
CF: 5.32GHz  
Span: 50MHz  
RBW: 200kHz  
VBW: 1MHz  
Sweep Time: 100ms  
Detector Type: Sample


**802.11a\_Nss1,(6Mbps)\_4TX**
**EBW**

**5700MHz** 08/12/2018

CF: 5.7GHz  
Span: 50MHz  
RBW: 300kHz  
VBW: 1MHz  
Sweep Time: 100ms  
Detector Type: Peak

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





Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ax HEW160_Nss1,(MCS0)_4TX	81.12M	77.321M	77M3D1D	80.88M	77.161M
5.25-5.35GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	21.825M	18.991M	19M0D1D	21.4M	18.966M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.3M	37.631M	37M6D1D	39.85M	37.531M
802.11ax HEW80_Nss1,(MCS0)_4TX	82M	77.261M	77M3D1D	81.4M	77.161M
802.11ax HEW160_Nss1,(MCS0)_4TX	82M	77.241M	77M2D1D	81.44M	77.161M
5.47-5.725GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	22M	18.991M	19M0D1D	15.75M	14.483M
802.11ax HEW40_Nss1,(MCS0)_4TX	40.3M	37.631M	37M6D1D	35.07M	33.688M
802.11ax HEW80_Nss1,(MCS0)_4TX	96.6M	77.161M	77M2D1D	81.2M	73.313M
802.11ax HEW160_Nss1,(MCS0)_4TX	165.4M	155.522M	156MD1D	164M	155.122M
5.725-5.85GHz	-	-	-	-	-
802.11ax HEW20_Nss1,(MCS0)_4TX	4.48M	4.518M	4M52D1D	4.44M	4.498M
802.11ax HEW40_Nss1,(MCS0)_4TX	3.92M	10.495M	10M5D1D	3.7M	7.716M
802.11ax HEW80_Nss1,(MCS0)_4TX	3.72M	31.564M	31M6D1D	3.32M	29.385M

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

**Max-OBW** = Maximum 99% occupied bandwidth;

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

**Min-OBW** = Minimum 99% occupied bandwidth;

**Result**

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	21.7M	18.966M	21.75M	18.966M	21.825M	18.991M	21.4M	18.966M
5300MHz	Pass	Inf	21.8M	18.966M	21.75M	18.991M	21.775M	18.991M	21.475M	18.966M
5320MHz	Pass	Inf	21.7M	18.966M	21.7M	18.966M	21.75M	18.966M	21.55M	18.991M
5500MHz	Pass	Inf	21.9M	18.991M	21.725M	18.966M	22M	18.966M	21.4M	18.966M
5580MHz	Pass	Inf	21.8M	18.966M	21.5M	18.966M	21.85M	18.991M	21.45M	18.991M
5700MHz	Pass	Inf	21.725M	18.966M	21.75M	18.991M	21.925M	18.966M	21.425M	18.966M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	15.825M	14.513M	15.75M	14.513M	15.9M	14.483M	15.78M	14.483M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	4.44M	4.518M	4.48M	4.498M	4.46M	4.518M	4.46M	4.518M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	39.85M	37.631M	40.15M	37.581M	40.2M	37.631M	40.2M	37.531M
5310MHz	Pass	Inf	40M	37.581M	40.05M	37.581M	40.1M	37.581M	40.3M	37.581M
5510MHz	Pass	Inf	40M	37.631M	40.25M	37.531M	39.95M	37.531M	39.95M	37.581M
5550MHz	Pass	Inf	40M	37.581M	40.05M	37.581M	40.3M	37.581M	40.25M	37.631M
5670MHz	Pass	Inf	40M	37.631M	40.15M	37.531M	40.25M	37.581M	40.2M	37.631M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.63M	33.688M	35.525M	33.758M	35.315M	33.758M	35.07M	33.758M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.92M	10.495M	3.7M	7.716M	3.78M	8.496M	3.86M	9.375M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	82M	77.161M	81.7M	77.161M	81.4M	77.161M	81.9M	77.261M
5530MHz	Pass	Inf	81.8M	76.962M	81.6M	77.161M	81.4M	77.061M	81.4M	77.061M
5610MHz	Pass	Inf	82M	77.061M	81.2M	77.161M	81.7M	77.061M	81.7M	77.061M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	91.5M	73.538M	96.6M	73.313M	91.425M	73.538M	90.375M	73.463M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.72M	31.564M	3.64M	30.365M	3.7M	29.385M	3.32M	30.485M
802.11ax HEW160_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.12M	77.321M	80.96M	77.161M	81.04M	77.241M	80.88M	77.321M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.68M	77.161M	82M	77.161M	81.44M	77.241M	81.44M	77.161M
5570MHz	Pass	Inf	165.4M	155.322M	165M	155.522M	164M	155.122M	165.2M	155.322M

**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;