

FCC Test Report

Equipment : DOCSIS Cable Gateway
Brand Name : Technicolor
Model No. : CGM4140COM, CGM4141COX
FCC ID : G95CGM414X
Standard : 47 CFR FCC Part 15.407
Operating Band : 5250 MHz – 5350 MHz
5470 MHz – 5725 MHz
5725 MHz – 5850 MHz
Applicant / Manufacturer : Technicolor Connected Home USA LLC
5030 Sugarloaf Parkway, Building 6, Lawrenceville,
Georgia, United States,30044
Function : Outdoor; Indoor; Fixed P2P
 Client
TPC Function : TPC

This report was evaluated for permissive change. The product sample received on Nov. 30, 2017 and completely tested on Nov. 17, 2017. We, SPORTON, 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., the test report shall not be reproduced except in full.


Phoenix Chen / Assistant Manager





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PHOTOGRAPHS OF EUT V01



Summary of Test Result

Conformance Test Specifications			
Report Clause	Ref. Std. Clause	Description	Result
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.407(a)	Emission Bandwidth	Complied
3.2	15.407(a)	Maximum Conducted Output Power	Complied
3.3	15.407(a)	Peak Power Spectral Density	Complied



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)	5260-5320	52-64 [4]
5470-5725		5500-5700	100-140 [11]
straddle 5725		5720	144 [1]
5250-5350	n (HT40), ac (VHT40)	5270-5310	54-62 [2]
5470-5725		5510-5670	102-134 [5]
straddle 5725		5710	142 [1]
5250-5350	ac (VHT80)	5290	58 [1]
5470-5725		5530-5610	106-122 [2]
straddle 5725		5690	138 [1]
5250-5350	ac (VHT160)	5250	50 [1]
5470-5725		5570	114 [1]

Non-Beamforming - NSS1

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11a	20	8TX
5.47-5.725GHz	802.11a	20	8TX
5.725-5.85GHz	802.11a	20	8TX
5.25-5.35GHz	802.11ac VHT20	20	8TX
5.47-5.725GHz	802.11ac VHT20	20	8TX
5.725-5.85GHz	802.11ac VHT20	20	8TX
5.25-5.35GHz	802.11ac VHT40	40	8TX
5.47-5.725GHz	802.11ac VHT40	40	8TX
5.725-5.85GHz	802.11ac VHT40	40	8TX
5.25-5.35GHz	802.11ac VHT80	80	8TX
5.47-5.725GHz	802.11ac VHT80	80	8TX
5.725-5.85GHz	802.11ac VHT80	80	8TX
5.15-5.25GHz	802.11ac VHT160	160	8TX
5.25-5.35GHz	802.11ac VHT160	160	8TX
5.47-5.725GHz	802.11ac VHT160	160	8TX



Non-Beamforming – NSS2

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11ac VHT20	20	8TX
5.47-5.725GHz	802.11ac VHT20	20	8TX
5.725-5.85GHz	802.11ac VHT20	20	8TX
5.25-5.35GHz	802.11ac VHT40	40	8TX
5.47-5.725GHz	802.11ac VHT40	40	8TX
5.725-5.85GHz	802.11ac VHT40	40	8TX
5.25-5.35GHz	802.11ac VHT80	80	8TX
5.47-5.725GHz	802.11ac VHT80	80	8TX
5.725-5.85GHz	802.11ac VHT80	80	8TX
5.15-5.25GHz	802.11ac VHT160	160	8TX
5.25-5.35GHz	802.11ac VHT160	160	8TX
5.47-5.725GHz	802.11ac VHT160	160	8TX

Beamforming - NSS1

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11ac VHT20-BF	20	8TX
5.47-5.725GHz	802.11ac VHT20-BF	20	8TX
5.725-5.85GHz	802.11ac VHT20-BF	20	8TX
5.25-5.35GHz	802.11ac VHT40-BF	40	8TX
5.47-5.725GHz	802.11ac VHT40-BF	40	8TX
5.725-5.85GHz	802.11ac VHT40-BF	40	8TX
5.25-5.35GHz	802.11ac VHT80-BF	80	8TX
5.47-5.725GHz	802.11ac VHT80-BF	80	8TX
5.725-5.85GHz	802.11ac VHT80-BF	80	8TX
5.15-5.25GHz	802.11ac VHT160-BF	160	8TX
5.25-5.35GHz	802.11ac VHT160-BF	160	8TX
5.47-5.725GHz	802.11ac VHT160-BF	160	8TX



Beamforming – NSS2

Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11ac VHT20-BF	20	8TX
5.47-5.725GHz	802.11ac VHT20-BF	20	8TX
5.725-5.85GHz	802.11ac VHT20-BF	20	8TX
5.25-5.35GHz	802.11ac VHT40-BF	40	8TX
5.47-5.725GHz	802.11ac VHT40-BF	40	8TX
5.725-5.85GHz	802.11ac VHT40-BF	40	8TX
5.25-5.35GHz	802.11ac VHT80-BF	80	8TX
5.47-5.725GHz	802.11ac VHT80-BF	80	8TX
5.725-5.85GHz	802.11ac VHT80-BF	80	8TX
5.15-5.25GHz	802.11ac VHT160-BF	160	8TX
5.25-5.35GHz	802.11ac VHT160-BF	160	8TX
5.47-5.725GHz	802.11ac VHT160-BF	160	8TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80, VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, modulation.
- ♦ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Antenna gain list for non-BF Power with NSS2 20-MHz channel widths, BF power, PSD

Mode/ Directional gain(dBi)	5200MHz(Band1&2)	5500MHz(Band3)	5700MHz(Band4)
4TX 1/2/5/6	5.5	4.9	5.5
8T1S	7	6.6	7.5
8T2S	4	3.6	4.6

Antenna gain list for non-BF Power except NSS2 20-MHz channel widths

Mode/ Directional gain(dBi)	5200MHz(Band1&2)	5500MHz(Band3)	5700MHz(Band4)
1&2	3.20	2.64	2.50
5&6	3.40	2.45	3.20
3&4	1.50	2.63	2.50
7&8	3.50	2.82	3.40

Note:

- ♦ The Signals support CDD and correlated, and transmits simultaneously in multiple channels in single or multiple frequency bands.
- ♦ If all antennas have the same gain, G_{ANT} :
Directional gain = $G_{ANT} + 10 \log(N_{ANT}/N_{SS})$ dBi, where N_{SS} = the number of independent spatial streams of data and G_{ANT} is the antenna gain in dBi. (This formula can also be applied when antennas have different gains if the highest antenna gain is substituted for G_{ANT} .)
- ♦ For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.
- ♦ Customer declared that the gain of non-BF Power with NSS2 20-MHz channel widths was follow the 8T2S as above form.



1.1.3 EUT Information

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

1.1.4 Mode Test Duty Cycle

Non-Beamforming - NSS1

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.919	0.367	568.75u	3k
802.11ac VHT160	0.926	0.334	596.875u	3k
802.11ac VHT20	0.991	0.039	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	0.98	0.088	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT80	0.961	0.173	1.142m	1k

Non-Beamforming – NSS2

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT160	0.881	0.55	321.25u	10k
802.11ac VHT20	0.972	0.123	2.516m	1k
802.11ac VHT40	0.956	0.195	1.236m	1k
802.11ac VHT80	0.923	0.348	596.875u	3k



Beamforming - NSS1

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT160-BF	0.931	0.311	596.875u	3k
802.11ac VHT20-BF	0.968	0.141	4.973m	300
802.11ac VHT40-BF	0.971	0.128	2.415m	1k
802.11ac VHT80-BF	0.937	0.283	1.141m	1k

Beamforming - NSS2

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ac VHT160-BF	0.845	0.731	321.25u	10k
802.11ac VHT20-BF	0.975	0.11	2.516m	1k
802.11ac VHT40-BF	0.959	0.182	1.236m	1k
802.11ac VHT80-BF	0.906	0.429	596.875u	3k

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR732723-01AN

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

Modifications	Performance Checking
Sample is identical and re-calculation the directional gain.	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density

1.2 Testing Applied Standards

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

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ KDB 789033 D02 v02
- ◆ KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location		
<input checked="" type="checkbox"/>	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973
Test site Designation No. TW1190 with FCC.		
<input type="checkbox"/>	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.) TEL : 886-3-656-9065 FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.		

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted <Non-Beamforming>	TH01-HY	Tim	22.1°C / 65%	17/Nov/2017
RF Conducted <Beamforming>	TH01-HY	Ryan	24.8°C / 65%	17/Nov/2017

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Condition

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

2.2 Test Channel Mode

Test Software	Dos
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Non-Beamforming – NSS1

Mode	Power Setting
802.11a_Nss1,(6Mbps)_8TX	-
5260MHz	14,14
5300MHz	14,14
5320MHz	14,15
5500MHz	15,16
5580MHz	15,15
5700MHz	15,15
5720MHz Straddle 5.47-5.725GHz	15,15
5720MHz Straddle 5.725-5.85GHz	15,15
802.11ac VHT20_Nss1,(MCS0)_8TX	-
5260MHz	14,14
5300MHz	14,14
5320MHz	14,14
5500MHz	15,16
5580MHz	15,15
5700MHz	15,15
5720MHz Straddle 5.47-5.725GHz	15,16
5720MHz Straddle 5.725-5.85GHz	15,16
802.11ac VHT40_Nss1,(MCS0)_8TX	-
5270MHz	15,15
5310MHz	15,15
5510MHz	15,15
5550MHz	15,15



Mode	Power Setting
5670MHz	15,15
5710MHz Straddle 5.47-5.725GHz	15,15
5710MHz Straddle 5.725-5.85GHz	15,15
802.11ac VHT80_Nss1,(MCS0)_8TX	-
5290MHz	15,15
5530MHz	15,15
5610MHz	15,15
5690MHz Straddle 5.47-5.725GHz	15,15
5690MHz Straddle 5.725-5.85GHz	15,15
802.11ac VHT160_Nss1,(MCS0)_8TX	-
5250MHz Straddle 5.15-5.25GHz	16,16
5250MHz Straddle 5.25-5.35GHz	16,16
5570MHz	15,15



Non-Beamforming – NSS2

Mode	Power Setting
802.11ac VHT20_Nss2,(MCS0)_8TX	-
5260MHz	15,15
5300MHz	15,15
5320MHz	15,15
5500MHz	15,15
5580MHz	15,15
5700MHz	16,16
5720MHz Straddle 5.47-5.725GHz	15,16
5720MHz Straddle 5.725-5.85GHz	15,16
802.11ac VHT40_Nss2,(MCS0)_8TX	-
5270MHz	15,15
5310MHz	14,15
5510MHz	14,15
5550MHz	14,15
5670MHz	15,15
5710MHz Straddle 5.47-5.725GHz	15,15
5710MHz Straddle 5.725-5.85GHz	15,15
802.11ac VHT80_Nss2,(MCS0)_8TX	-
5290MHz	15,15
5530MHz	15,15
5610MHz	15,16
5690MHz Straddle 5.47-5.725GHz	15,15
5690MHz Straddle 5.725-5.85GHz	15,15
802.11ac VHT160_Nss2,(MCS0)_8TX	-
5250MHz	17,18
5250MHz	17,18
5570MHz	15,15



Test Software	putty , iperf
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Beamforming – NSS1

Mode	Power Setting
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	-
5260MHz	13,14
5300MHz	13,14
5320MHz	13,14
5500MHz	15,15
5580MHz	15,15
5700MHz	15,15
5720MHz Straddle 5.47-5.725GHz	15,16
5720MHz Straddle 5.725-5.85GHz	15,16
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	-
5270MHz	13,13
5310MHz	13,14
5510MHz	14,15
5550MHz	14,15
5670MHz	14,15
5710MHz Straddle 5.47-5.725GHz	15,15
5710MHz Straddle 5.725-5.85GHz	15,15
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	-
5290MHz	13,14
5530MHz	15,15
5610MHz	15,15
5690MHz Straddle 5.47-5.725GHz	15,16
5690MHz Straddle 5.725-5.85GHz	15,16
802.11ac VHT160-BF_Nss1,(MCS0)_8TX	-
5250MHz Straddle 5.15-5.25GHz	16,16
5250MHz Straddle 5.25-5.35GHz	16,16
5570MHz	15,15



Beamforming – NSS2

Mode	Power Setting
802.11ac VHT20-BF_Nss2,(MCS0)_8TX	-
5260MHz	15,16
5300MHz	15,16
5320MHz	15,16
5500MHz	16,16
5580MHz	16,16
5700MHz	16,16
5720MHz Straddle 5.47-5.725GHz	16,16
5720MHz Straddle 5.725-5.85GHz	16,16
802.11ac VHT40-BF_Nss2,(MCS0)_8TX	-
5270MHz	15,16
5310MHz	15,16
5510MHz	15,15
5550MHz	15,15
5670MHz	15,15
5710MHz Straddle 5.47-5.725GHz	16,16
5710MHz Straddle 5.725-5.85GHz	16,16
802.11ac VHT80-BF_Nss2,(MCS0)_8TX	-
5290MHz	15,16
5530MHz	16,16
5610MHz	16,16
5690MHz Straddle 5.47-5.725GHz	16,16
5690MHz Straddle 5.725-5.85GHz	16,16
802.11ac VHT160-BF_Nss2,(MCS0)_8TX	-
5250MHz Straddle 5.15-5.25GHz	18,18
5250MHz Straddle 5.25-5.35GHz	18,18
5570MHz	16,16



2.3 The Worst Case Measurement Configuration

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

2.4 Accessories

Accessories				
Power Cable	Power Cord	1.5 meter, non-shielded cable	In/Out door	indoor

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

2.5 Support Equipment

Support Equipment - RF Conducted < Non-Beamforming >				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	Doc
2	Adapter for NB	DELL	HA65NM130	Doc

Support Equipment - RF Conducted < Beamforming >				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	Doc
2	Adapter for NB	DELL	HA65NM130	Doc
3	Notebook	DELL	E5410	Doc
4	Adapter for NB	DELL	HA65NM130	Doc
5	client	-	-	-

Note: Support equipment No.5 was provided by customer.

3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

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

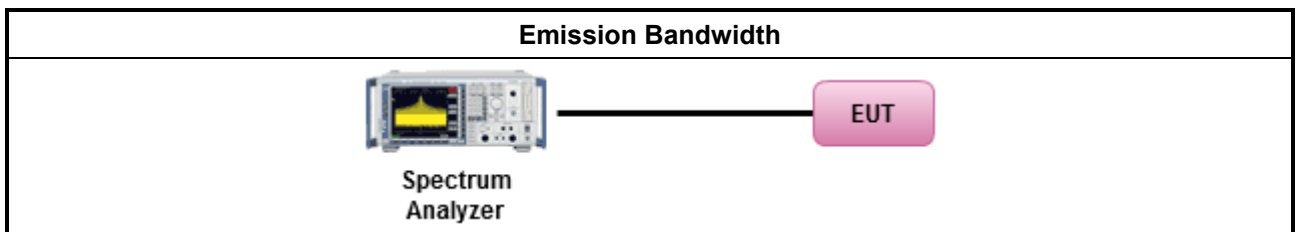
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ For the emission bandwidth shall be measured using one of the options below: 	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
<input checked="" type="checkbox"/>	Refer as IC RSS-Gen, clause 6.6 for bandwidth testing.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

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

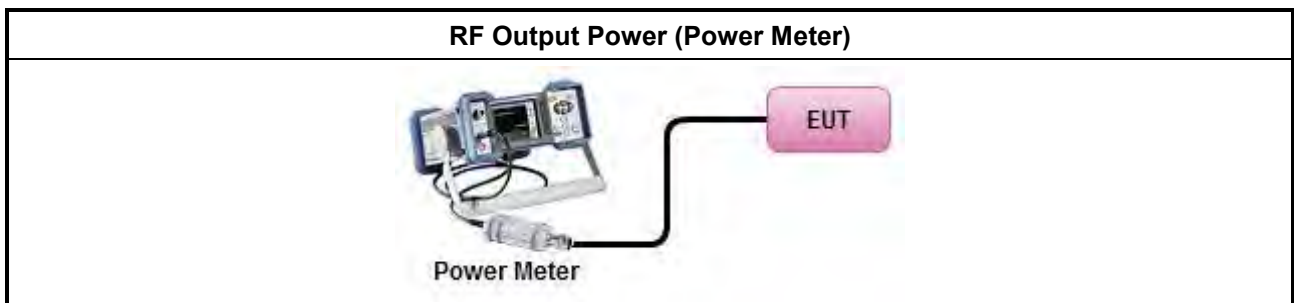
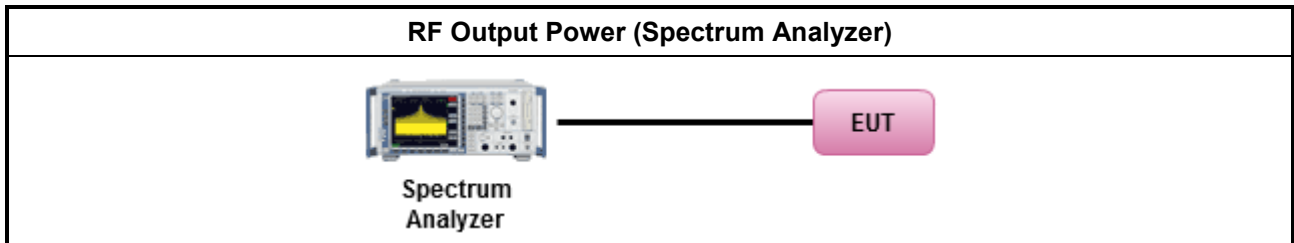
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Maximum Conducted Output Power 	
	Duty cycle $\geq 98\%$
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
	Duty cycle $< 98\%$
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method PM (using an RF average power meter).
<ul style="list-style-type: none"> For conducted measurement. 	
	<ul style="list-style-type: none"> If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	<ul style="list-style-type: none"> If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B



3.3 Peak Power Spectral Density

3.3.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band:	
	▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	▪ Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.
<input checked="" type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then $PPSD = 11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then $PPSD = 30 - (G_{TX} - 6)$.
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

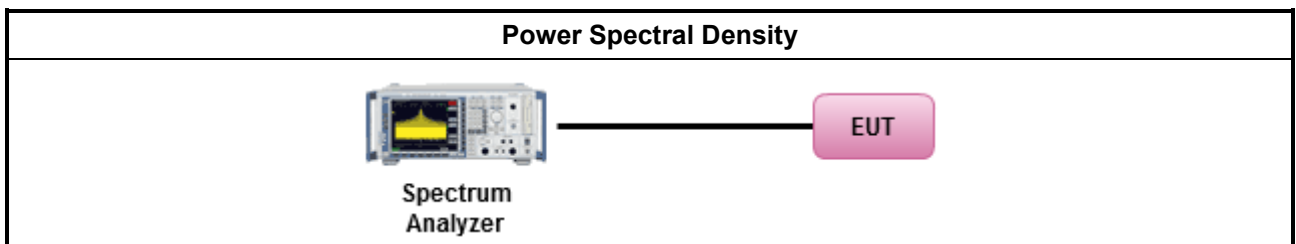
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> ▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options: 	
<input type="checkbox"/>	Refer as 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%	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 (spectral trace averaging).
Duty cycle < 98%	
<input checked="" type="checkbox"/>	Refer as KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
<ul style="list-style-type: none"> ▪ For conducted measurement. 	
<ul style="list-style-type: none"> ▪ If the EUT supports multiple transmit chains using options given below: <ul style="list-style-type: none"> ▪ Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace. ▪ If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$ 	

3.3.4 Test Setup



3.3.5 Test Result of Peak Power Spectral Density

Refer as Appendix C



4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	9kHz~40GHz	30/Dec/2016	29/Dec/2017
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	10/Feb/2017	09/Feb/2018
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	10/Feb/2017	09/Feb/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10712/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-1.5m	HUBER+SUHNER	SUCOFLEX_104	MY12583/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018



Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT160_Nss1,(MCS0)_8TX	81.44M	75.882M	75M9D1D	80.8M	75.482M
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	23.725M	16.667M	16M7D1D	21.975M	16.517M
802.11ac VHT20_Nss1,(MCS0)_8TX	24.55M	17.841M	17M8D1D	24.05M	17.716M
802.11ac VHT40_Nss1,(MCS0)_8TX	42.7M	36.282M	36M3D1D	42.1M	36.082M
802.11ac VHT80_Nss1,(MCS0)_8TX	87M	75.662M	75M7D1D	85.7M	75.562M
802.11ac VHT160_Nss1,(MCS0)_8TX	81.6M	75.642M	75M6D1D	80.64M	75.402M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	23.225M	16.667M	16M7D1D	15.705M	13.253M
802.11ac VHT20_Nss1,(MCS0)_8TX	24.45M	17.866M	17M9D1D	16.035M	13.913M
802.11ac VHT40_Nss1,(MCS0)_8TX	42.95M	36.332M	36M3D1D	36.26M	33.023M
802.11ac VHT80_Nss1,(MCS0)_8TX	86.9M	75.662M	75M7D1D	77.55M	72.264M
802.11ac VHT160_Nss1,(MCS0)_8TX	23.225M	16.667M	16M7D1D	15.705M	13.253M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	3.18M	4.118M	3M9D1D	3.08M	3.758M
802.11ac VHT20_Nss1,(MCS0)_8TX	3.78M	4.318M	4M3D1D	3.68M	4.238M
802.11ac VHT40_Nss1,(MCS0)_8TX	3.18M	3.678M	3M7D1D	3.08M	3.618M
802.11ac VHT80_Nss1,(MCS0)_8TX	3.18M	4.858M	4M9D1D	2.52M	4.378M

Max-N dB = Maximum 6dB down bandwidth for UNII-3 band / Maximum 26dB down bandwidth for other band; Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for UNII-3 band / Maximum 26dB down bandwidth for other band; Min-OBW = Minimum 99% occupied bandwidth;



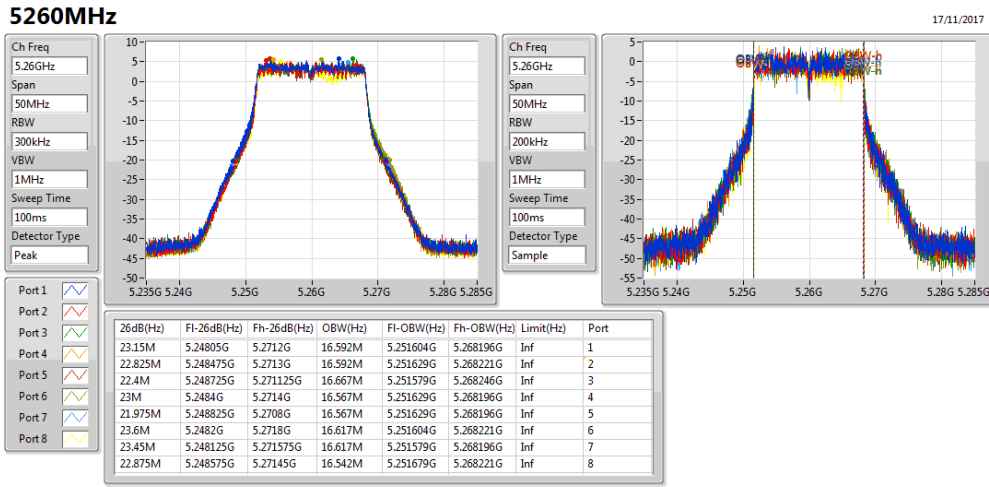
Result

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)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11a_Nss1,(6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	23.15M	16.592M	22.825M	16.592M	22.4M	16.667M	23M	16.567M	21.975M	16.567M	23.6M	16.617M	23.45M	16.617M	22.875M	16.542M
5300MHz	Pass	Inf	23.275M	16.592M	22.675M	16.592M	22.4M	16.617M	23.2M	16.592M	22.2M	16.542M	23.6M	16.617M	23.4M	16.592M	22.95M	16.517M
5320MHz	Pass	Inf	23.125M	16.567M	22.75M	16.592M	22.4M	16.642M	23.125M	16.567M	22.3M	16.567M	23.725M	16.567M	23.275M	16.592M	22.95M	16.542M
5500MHz	Pass	Inf	22.8M	16.592M	22.65M	16.617M	22.3M	16.642M	23.225M	16.567M	21.05M	16.567M	22.95M	16.542M	22.9M	16.567M	22.175M	16.517M
5580MHz	Pass	Inf	23.1M	16.592M	22.8M	16.567M	22.8M	16.567M	23.05M	16.542M	21.425M	16.617M	22.825M	16.667M	23.05M	16.567M	21.675M	16.467M
5700MHz	Pass	Inf	23.025M	16.592M	21.25M	16.592M	22.45M	16.617M	21.9M	16.542M	22.4M	16.567M	22.975M	16.642M	22.7M	16.542M	21.625M	16.467M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.17M	13.313M	16.14M	13.358M	15.99M	13.358M	15.81M	13.343M	15.765M	13.328M	16.44M	13.448M	16.2M	13.313M	15.705M	13.253M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.1M	3.758M	3.1M	3.938M	3.16M	3.898M	3.1M	3.998M	3.1M	3.838M	3.08M	3.898M	3.18M	3.918M	3.12M	4.118M
802.11ac_VHT20_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	24.175M	17.816M	24.55M	17.766M	24.325M	17.791M	24.2M	17.741M	24.075M	17.766M	24.15M	17.716M	24.225M	17.766M	24.375M	17.841M
5300MHz	Pass	Inf	24.425M	17.791M	24.25M	17.791M	24.475M	17.766M	24.275M	17.741M	24.525M	17.766M	24.25M	17.766M	24.4M	17.791M	24.15M	17.791M
5320MHz	Pass	Inf	24.275M	17.816M	24.425M	17.766M	24.225M	17.791M	24.375M	17.766M	24.325M	17.791M	24.425M	17.741M	24.05M	17.766M	24.375M	17.791M
5500MHz	Pass	Inf	23.55M	17.766M	22.55M	17.766M	24.2M	17.791M	24.075M	17.716M	24.425M	17.766M	23.875M	17.791M	23.75M	17.766M	23.85M	17.866M
5580MHz	Pass	Inf	23.875M	17.766M	24.125M	17.741M	24M	17.741M	24.325M	17.741M	24.225M	17.791M	24.275M	17.741M	23.55M	17.766M	24.2M	17.816M
5700MHz	Pass	Inf	24.45M	17.791M	23.125M	17.766M	24.125M	17.816M	23.725M	17.741M	23.125M	17.816M	24.1M	17.741M	24.45M	17.791M	23.875M	17.791M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.515M	13.973M	16.695M	13.973M	16.44M	13.973M	16.545M	13.913M	16.605M	13.973M	16.62M	13.958M	16.035M	13.958M	16.215M	14.003M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.7M	4.238M	3.78M	4.298M	3.72M	4.258M	3.7M	4.298M	3.74M	4.318M	3.68M	4.238M	3.7M	4.298M	3.7M	4.278M
802.11ac_VHT40_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	42.4M	36.182M	42.45M	36.282M	42.3M	36.232M	42.45M	36.282M	42.65M	36.282M	42.2M	36.232M	42.4M	36.232M	42.1M	36.082M
5310MHz	Pass	Inf	42.4M	36.232M	42.7M	36.232M	42.15M	36.232M	42.7M	36.232M	42.6M	36.232M	42.55M	36.282M	42.65M	36.282M	42.15M	36.132M
5510MHz	Pass	Inf	42.2M	36.232M	42M	36.232M	42.4M	36.182M	41.9M	36.332M	41.6M	36.282M	42.4M	36.182M	42.6M	36.282M	41.75M	35.932M
5550MHz	Pass	Inf	42.25M	36.132M	42.05M	36.282M	42.65M	36.332M	42.25M	36.232M	42.05M	36.182M	42.35M	36.182M	42.2M	36.232M	42.05M	36.232M
5670MHz	Pass	Inf	42.55M	36.182M	42.65M	36.182M	42.3M	36.132M	42.95M	36.232M	42.7M	36.232M	42.45M	36.132M	42.75M	36.232M	42.45M	36.182M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	36.26M	33.023M	36.435M	33.058M	36.435M	33.093M	36.505M	33.023M	36.505M	33.058M	36.33M	33.023M	36.61M	33.058M	36.435M	33.058M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	3.658M	3.18M	3.638M	3.1M	3.658M	3.18M	3.618M	3.08M	3.678M	3.14M	3.678M	3.08M	3.678M	3.08M	3.678M
802.11ac_VHT80_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	85.7M	75.662M	86.6M	75.562M	85.9M	75.662M	86.8M	75.662M	87M	75.662M	86M	75.662M	86.9M	75.662M	85.7M	75.562M
5530MHz	Pass	Inf	85.7M	75.562M	86.7M	75.562M	85.4M	75.562M	86.9M	75.662M	86.6M	75.662M	86.1M	75.562M	86.9M	75.662M	85.2M	75.362M
5610MHz	Pass	Inf	85.5M	75.462M	86.8M	75.562M	85M	75.662M	86.5M	75.562M	86.7M	75.662M	85.3M	75.562M	86.5M	75.562M	84.5M	75.462M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	77.55M	72.264M	78M	72.489M	77.775M	72.414M	78.075M	72.489M	77.775M	72.489M	77.625M	72.264M	78M	72.264M	77.55M	72.339M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.08M	4.378M	3.1M	4.518M	3.08M	4.478M	3.04M	4.378M	3.12M	4.518M	3.18M	4.458M	3.04M	4.858M	2.52M	4.638M
802.11ac_VHT160_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.2M	75.802M	80.88M	75.722M	81.36M	75.482M	80.8M	75.642M	81.44M	75.562M	80.88M	75.642M	81.12M	75.722M	81.2M	75.882M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.44M	75.642M	81.2M	75.562M	81.04M	75.562M	81.6M	75.642M	80.64M	75.402M	80.96M	75.562M	81.28M	75.562M	81.44M	75.562M
5570MHz	Pass	Inf	162.8M	153.123 M	162.8M	152.524 M	163.2M	152.724 M	163.4M	152.924 M	163.8M	152.524 M	162.8M	152.924 M	163.6M	152.924 M	162.6M	152.524 M

Port X-N dB = Port X 6dB down bandwidth for UNII-3 band / 26dB down bandwidth for other band; Port X-OBW = Port X 99% occupied bandwidth;

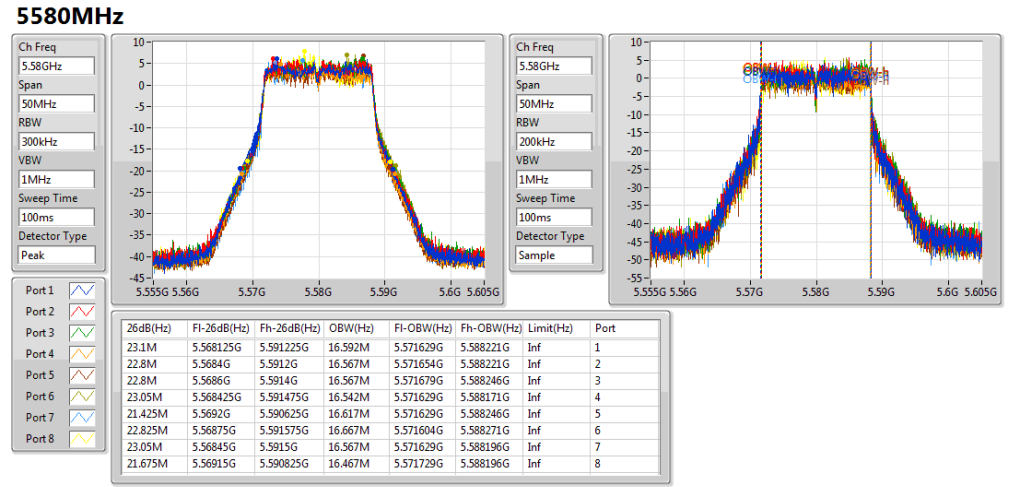
802.11a_Nss1,(6Mbps)_8TX

EBW



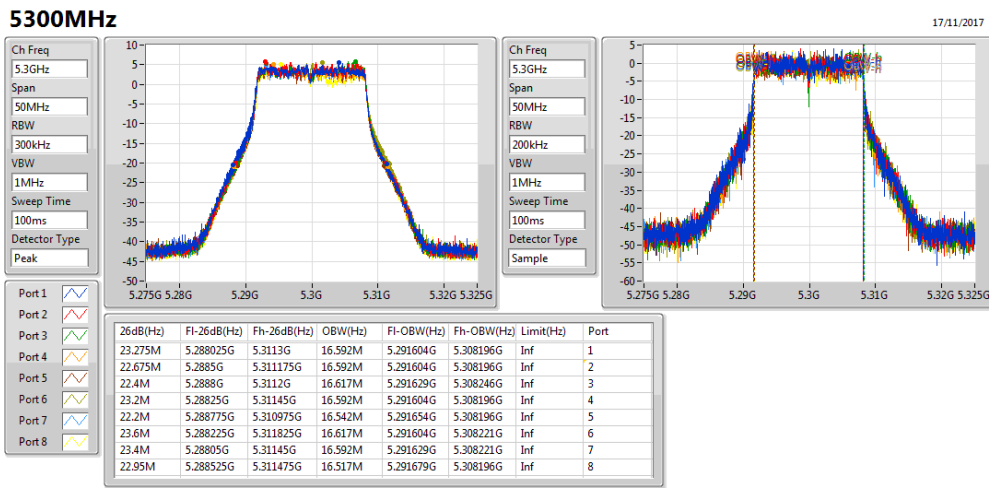
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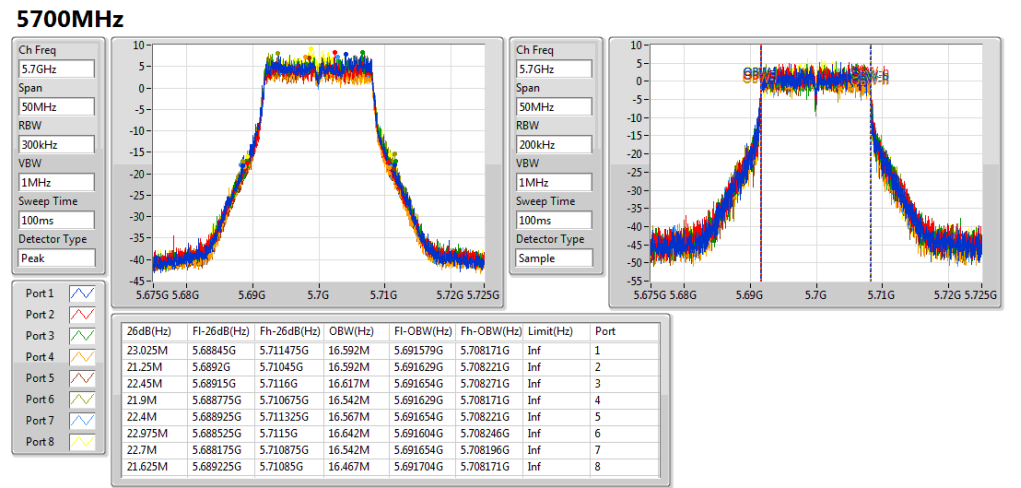
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802.11a_Nss1,(6Mbps)_8TX

EBW



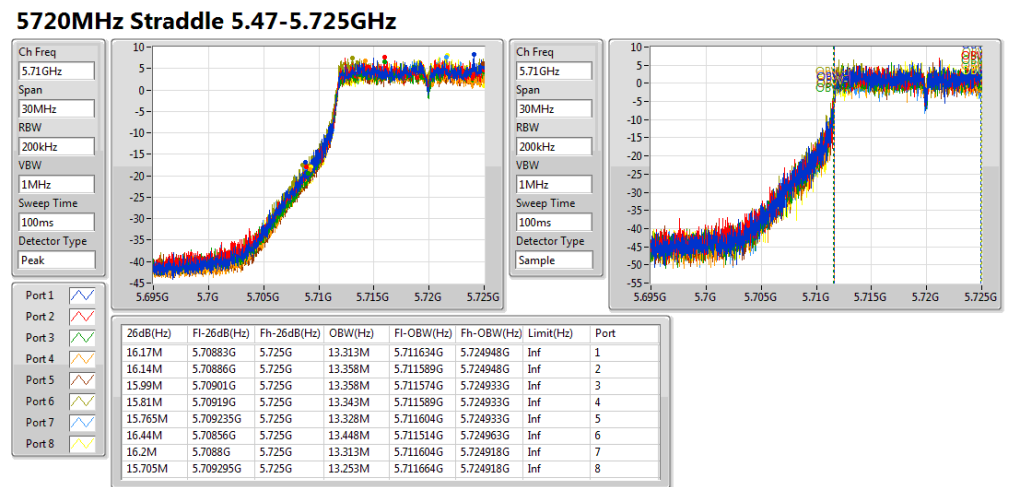
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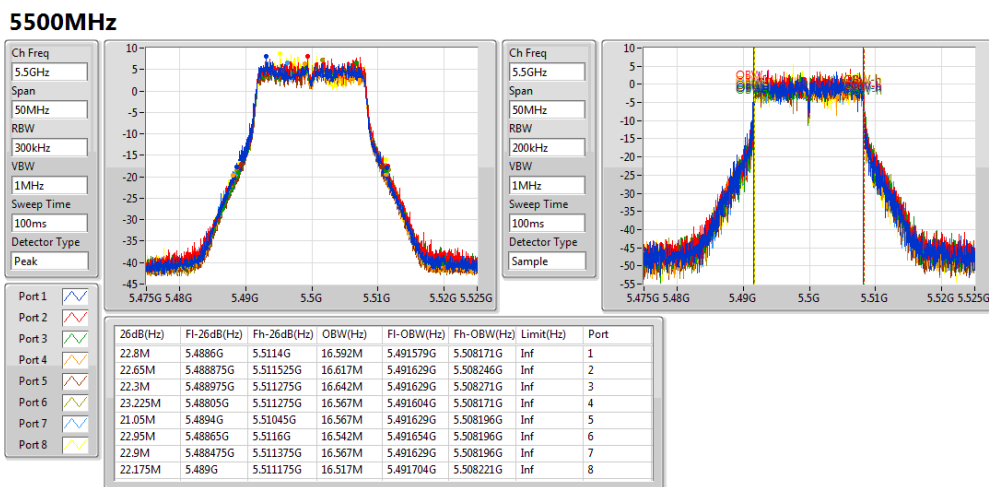
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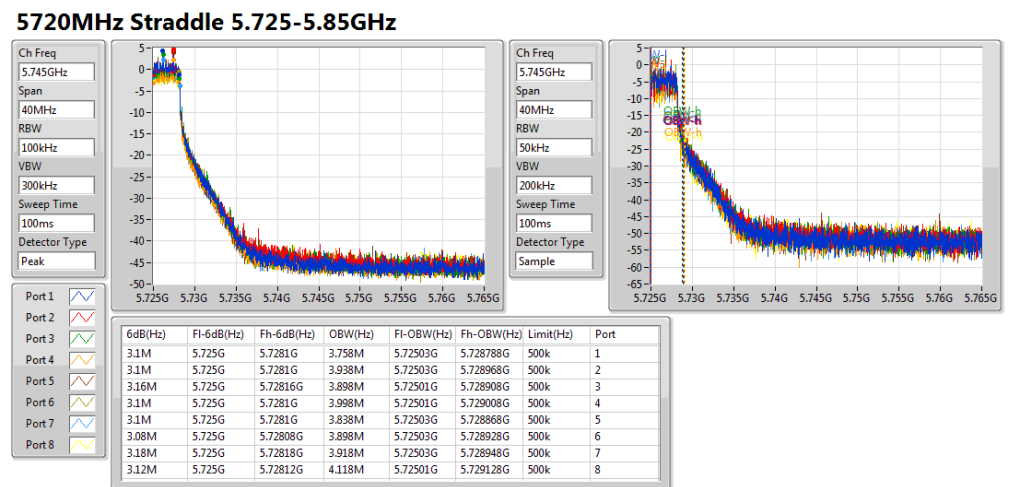
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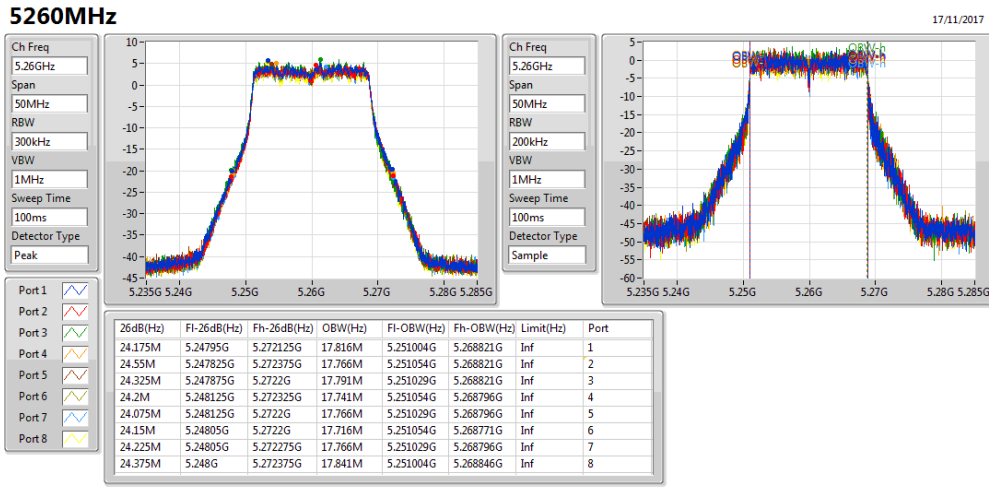
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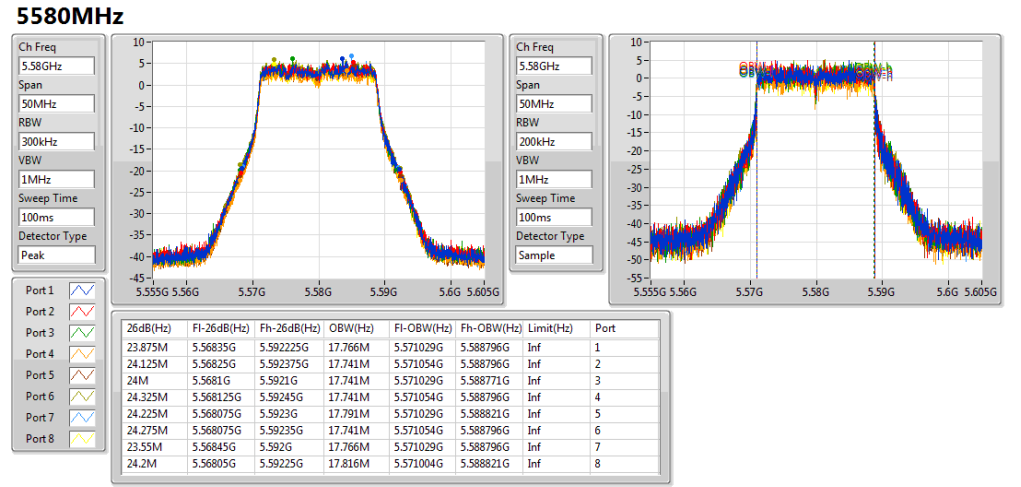
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EBW



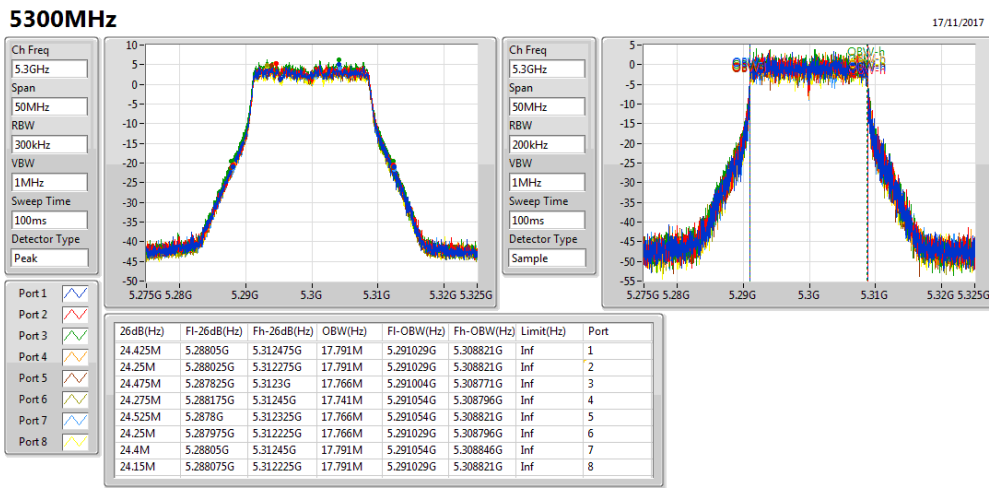
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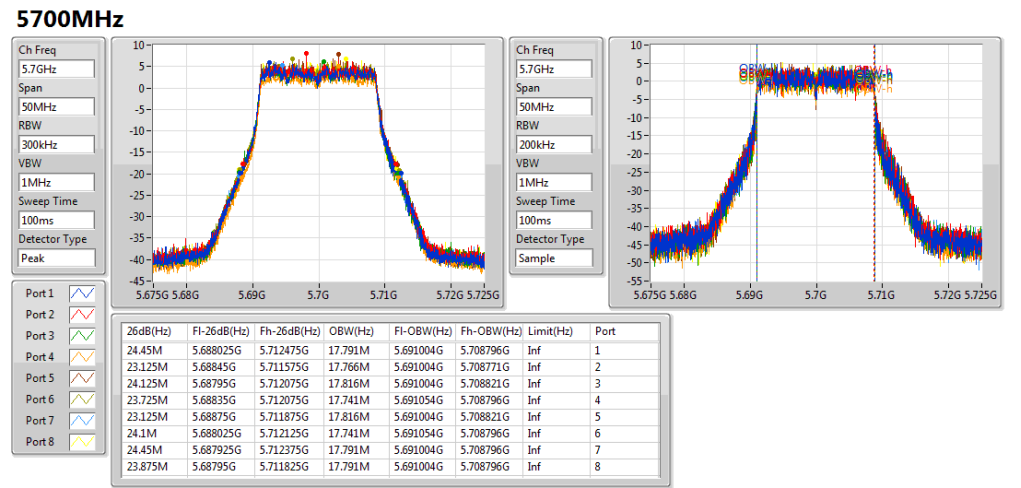
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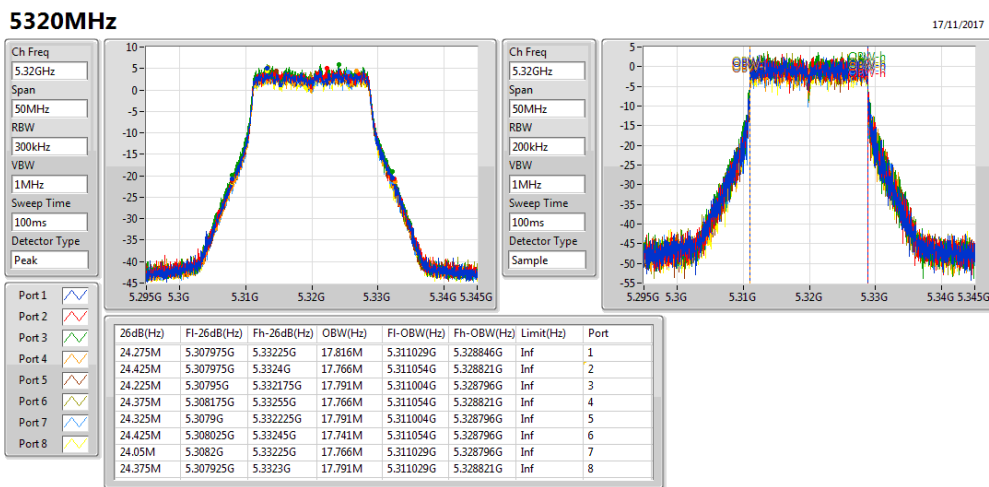
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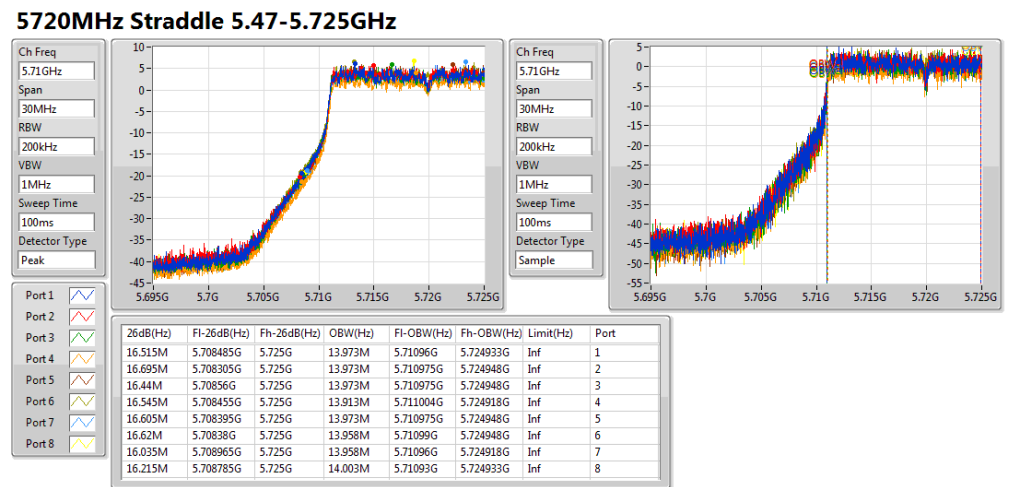
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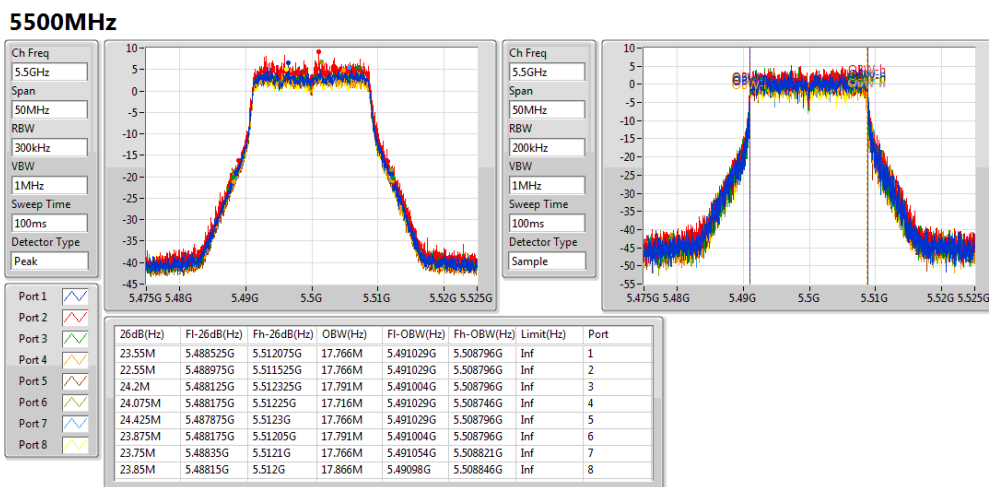
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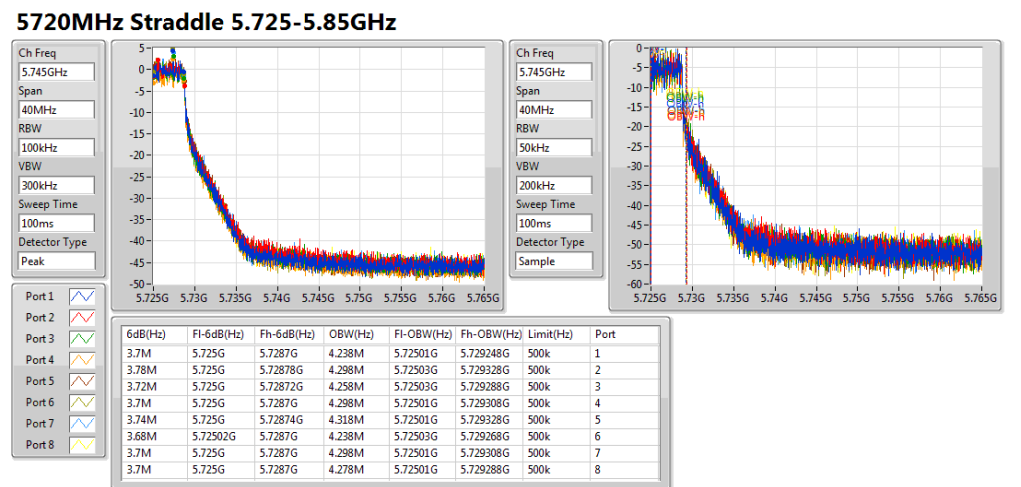
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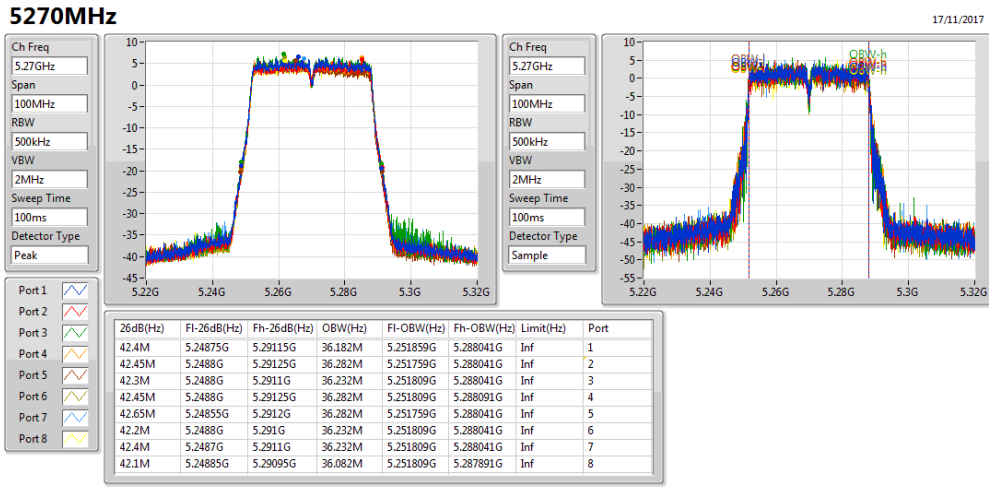
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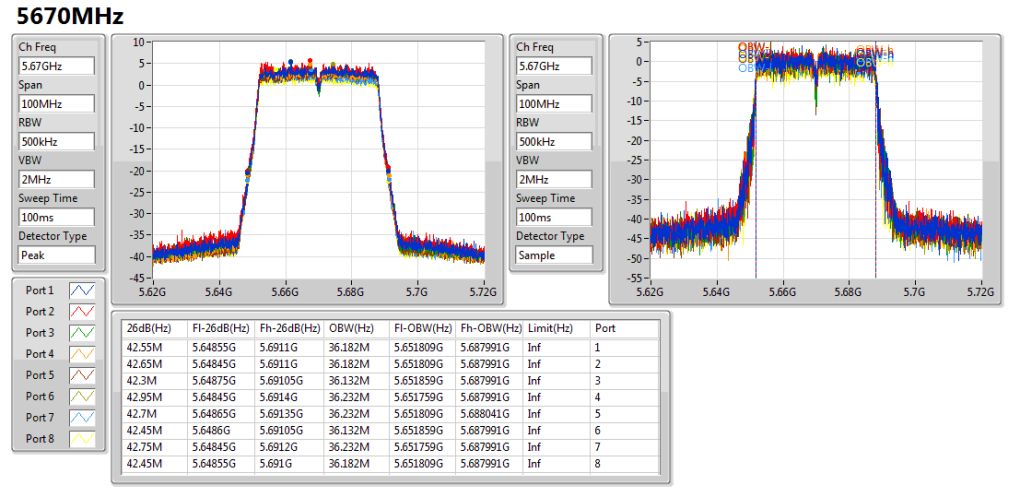
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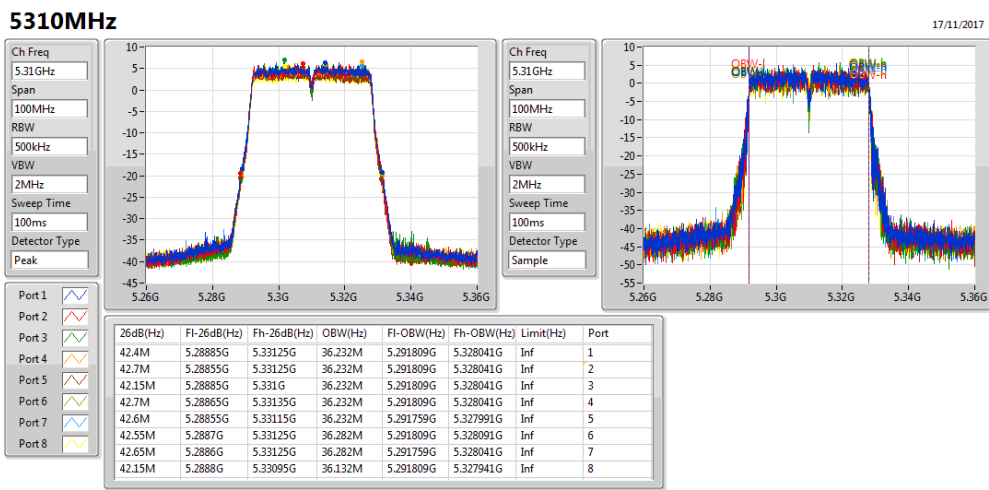
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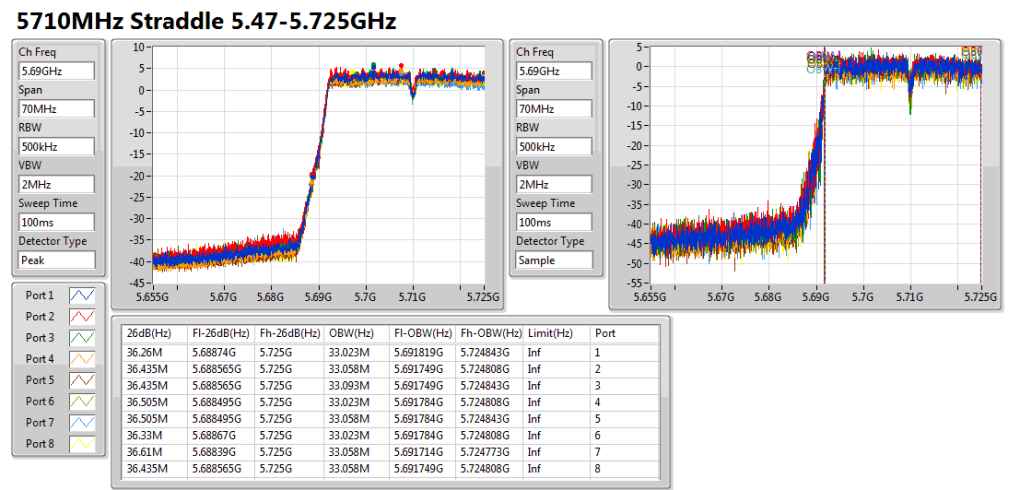
802.11ac VHT40_Nss1,(MCS0)_8TX

EBW



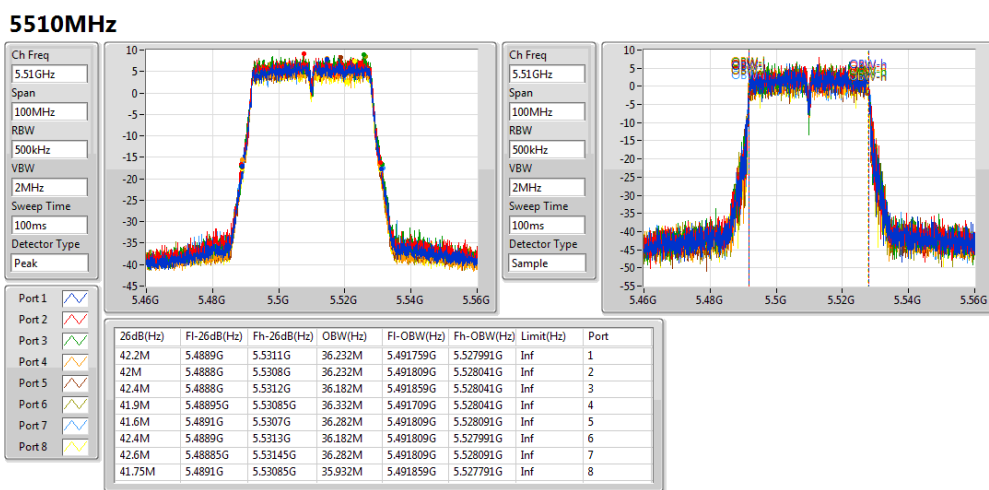
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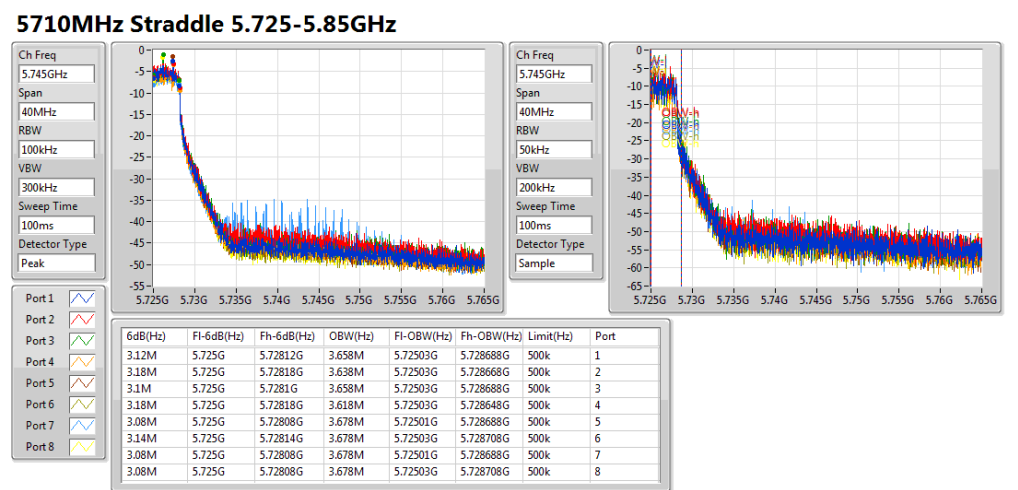
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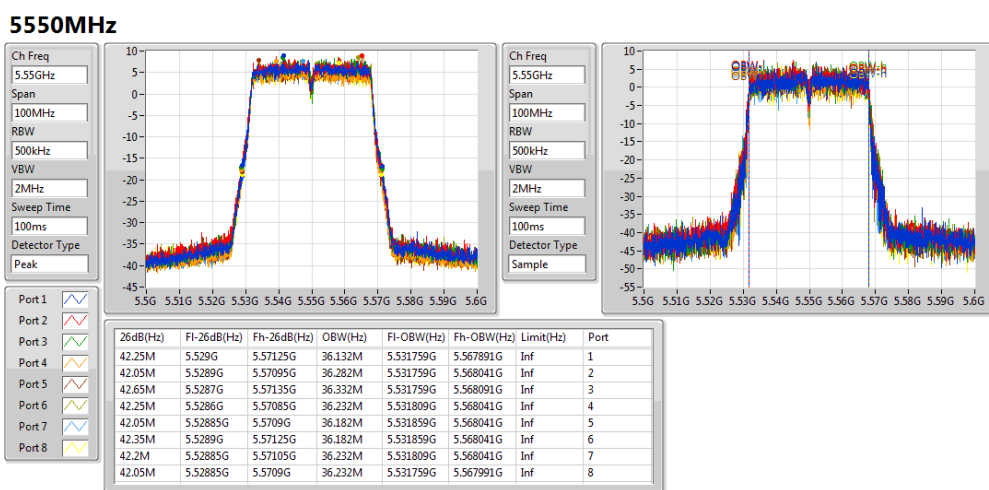
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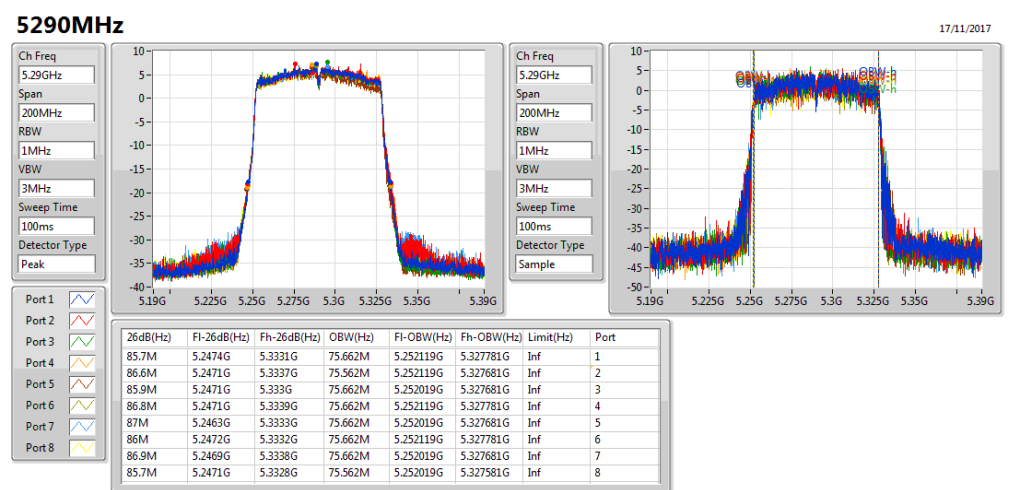
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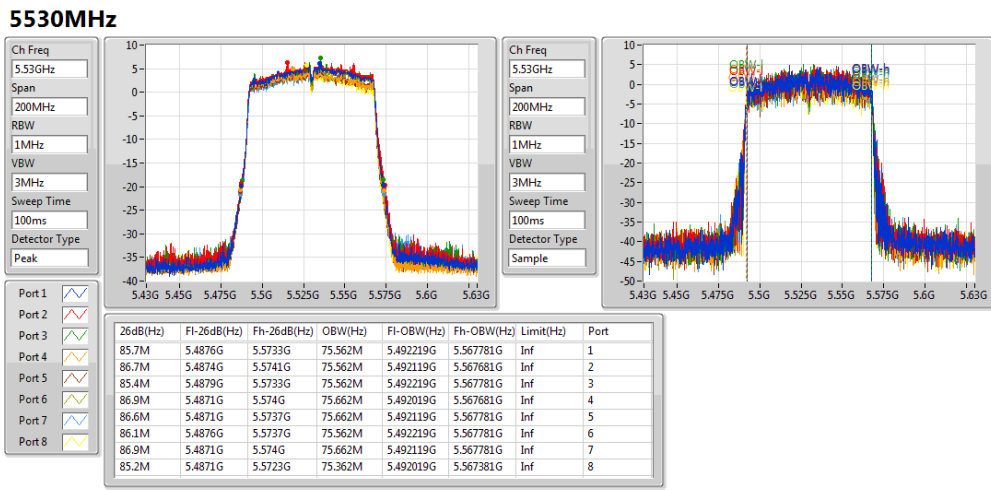
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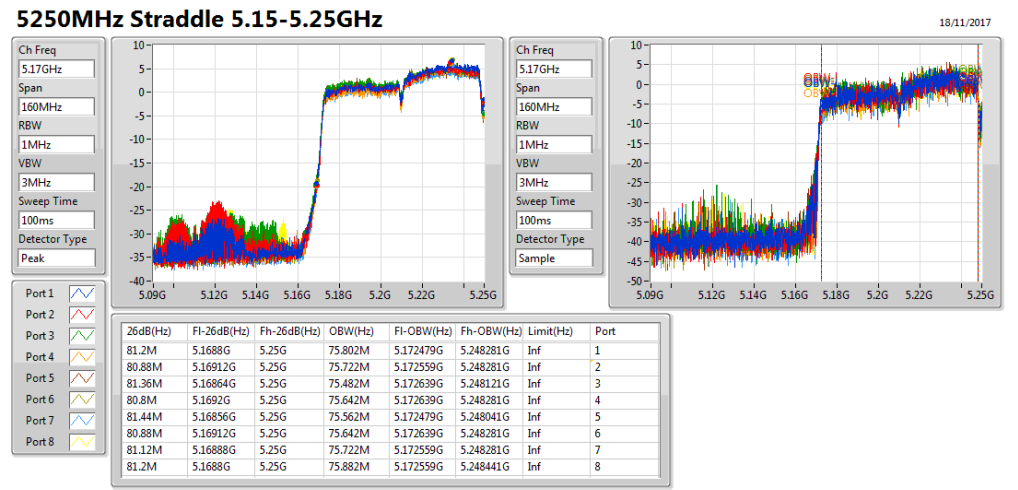
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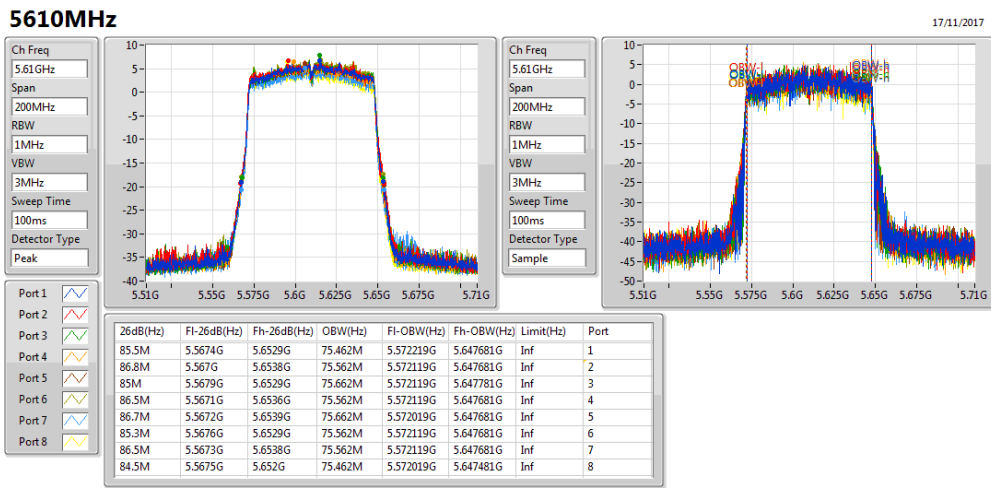
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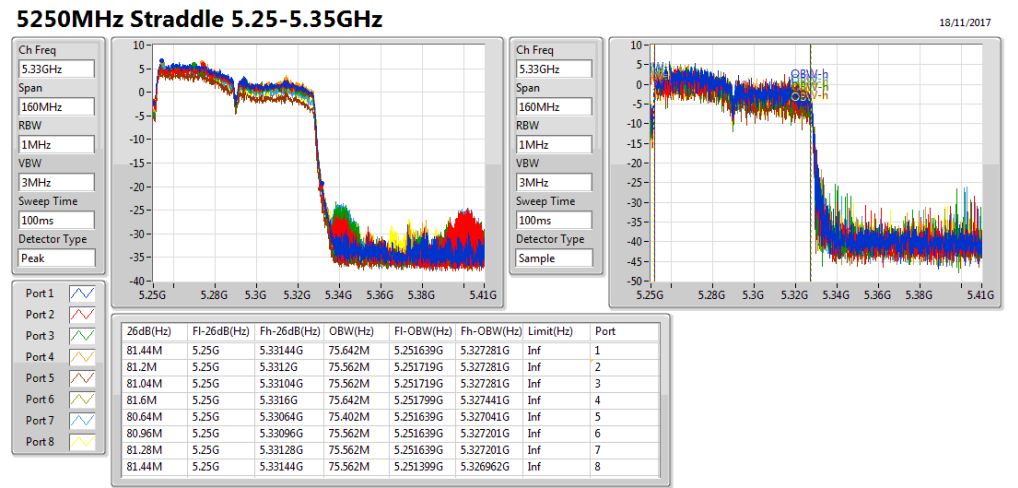
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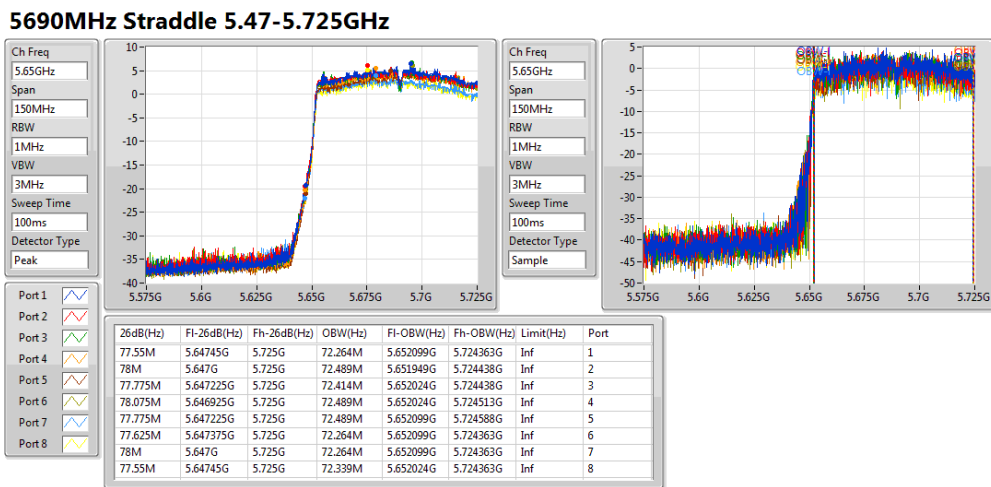
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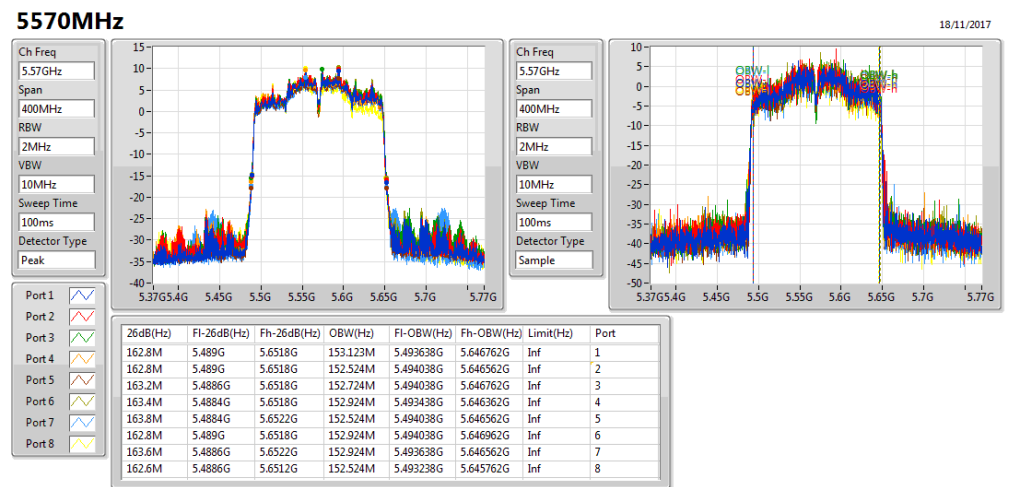
802.11ac VHT80_Nss1,(MCS0)_8TX

EBW



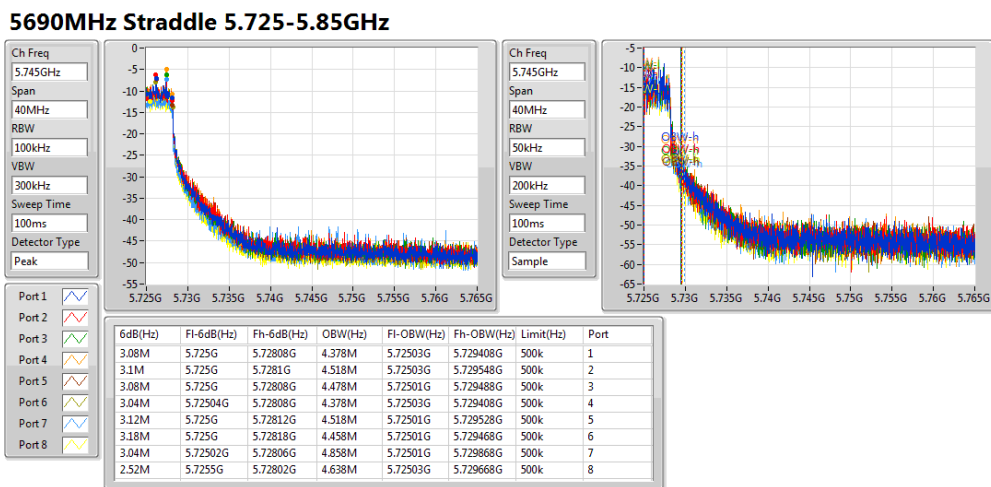
802.11ac VHT160_Nss1,(MCS0)_8TX

EBW



802.11ac VHT80_Nss1,(MCS0)_8TX

EBW





Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11ac VHT20_Nss2,(MCS0)_8TX	-	-	-	-	-
5.25-5.35GHz	30.025M	17.891M	17M9D1D	23.5M	17.716M
5.47-5.725GHz	24.95M	17.816M	17M8D1D	16.545M	13.928M
5.725-5.85GHz	3.84M	4.318M	4M32D1D	3.72M	4.198M
802.11ac VHT40_Nss2,(MCS0)_8TX	-	-	-	-	-
5.25-5.35GHz	42.85M	36.282M	36M3D1D	41.35M	36.182M
5.47-5.725GHz	42.75M	36.332M	36M3D1D	35.77M	33.023M
5.725-5.85GHz	3.2M	3.698M	3M70D1D	3.08M	3.538M
802.11ac VHT80_Nss2,(MCS0)_8TX	-	-	-	-	-
5.25-5.35GHz	86.2M	75.762M	75M8D1D	84.6M	75.562M
5.47-5.725GHz	86.4M	75.762M	75M8D1D	77.55M	72.339M
5.725-5.85GHz	3.12M	4.338M	4M34D1D	3.04M	4.118M
802.11ac VHT160_Nss2,(MCS0)_8TX	-	-	-	-	-
5.15-5.25GHz	81.2M	75.722M	75M7D1D	80.72M	75.242M
802.11ac VHT160_Nss2,(MCS0)_8TX	-	-	-	-	-
5.25-5.35GHz	80.64M	75.642M	75M6D1D	80.16M	75.242M
5.47-5.725GHz	163M	152.924M	153MD1D	162.2M	151.724M

Max-N dB = Maximum 6dB down bandwidth for UNII-3 band / Maximum 26dB down bandwidth for other band; Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for UNII-3 band / Maximum 26dB down bandwidth for other band; Min-OBW = Minimum 99% occupied bandwidth;

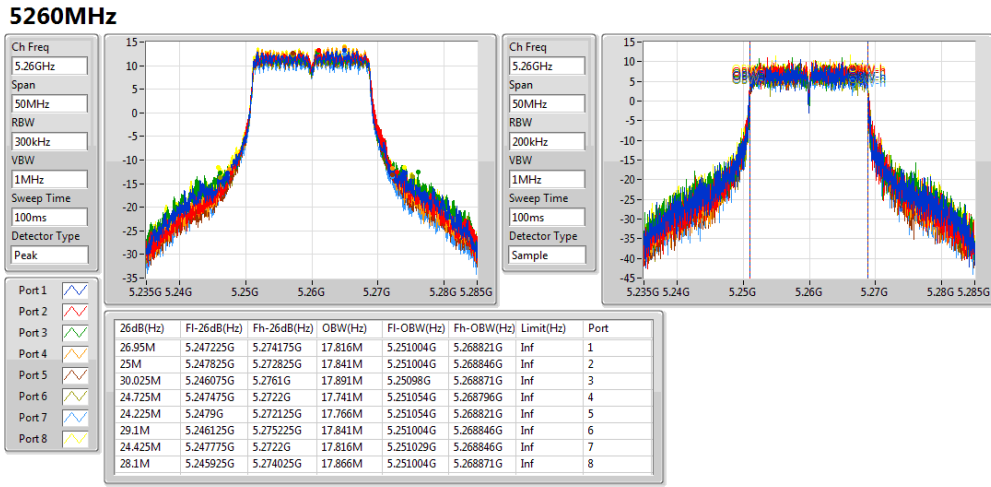


Result

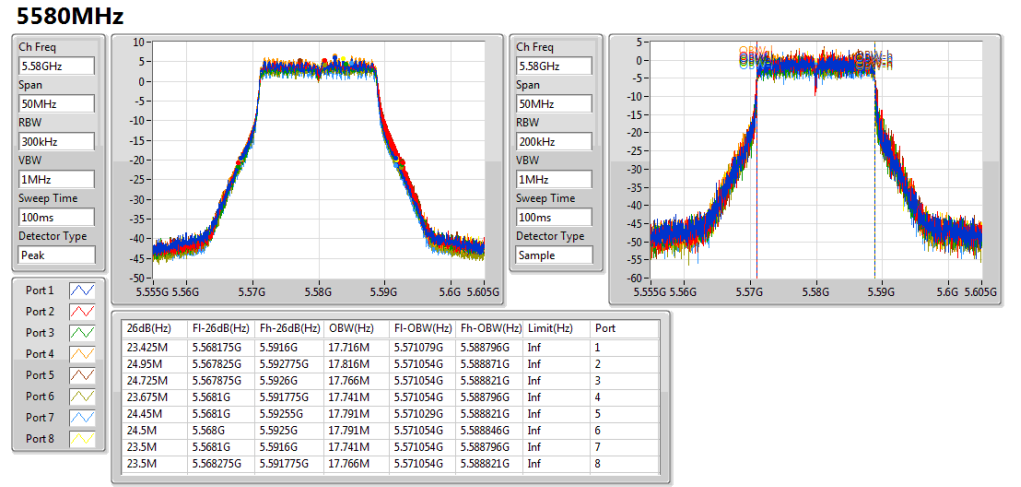
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11ac VHT20_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	26.95M	17.816M	25M	17.841M	30.025M	17.891M	24.725M	17.741M	24.225M	17.766M	29.1M	17.841M	24.425M	17.816M	28.1M	17.866M
5300MHz	Pass	Inf	23.625M	17.766M	24.875M	17.791M	24.875M	17.791M	23.65M	17.766M	24.75M	17.816M	24.725M	17.766M	23.625M	17.716M	23.625M	17.741M
5320MHz	Pass	Inf	23.7M	17.766M	24.95M	17.741M	24.9M	17.766M	23.5M	17.791M	24.7M	17.791M	24.9M	17.791M	23.775M	17.741M	23.7M	17.716M
5500MHz	Pass	Inf	23.55M	17.816M	24.9M	17.766M	24.75M	17.816M	23.75M	17.741M	24.7M	17.766M	24.775M	17.766M	23.65M	17.766M	23.7M	17.766M
5580MHz	Pass	Inf	23.425M	17.716M	24.95M	17.816M	24.725M	17.766M	23.675M	17.741M	24.45M	17.791M	24.5M	17.791M	23.5M	17.741M	23.5M	17.766M
5700MHz	Pass	Inf	23.525M	17.741M	24.75M	17.766M	24.6M	17.766M	23.5M	17.741M	24.55M	17.791M	24.525M	17.766M	23.425M	17.741M	23.45M	17.766M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.74M	13.943M	16.755M	13.943M	16.755M	13.973M	16.68M	13.958M	16.605M	13.943M	16.83M	13.943M	16.545M	13.928M	16.695M	13.943M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.74M	4.238M	3.72M	4.258M	3.72M	4.258M	3.74M	4.318M	3.74M	4.298M	3.84M	4.198M	3.74M	4.298M	3.72M	4.278M
802.11ac VHT40_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	41.45M	36.182M	42.5M	36.182M	42.55M	36.232M	41.35M	36.182M	42.6M	36.232M	42.45M	36.182M	41.55M	36.282M	41.55M	36.182M
5310MHz	Pass	Inf	41.4M	36.232M	42.7M	36.232M	42.85M	36.182M	41.7M	36.282M	42.8M	36.232M	42.7M	36.232M	41.65M	36.282M	41.5M	36.232M
5510MHz	Pass	Inf	41.5M	36.232M	42.65M	36.232M	42.7M	36.182M	41.45M	36.282M	42.75M	36.182M	42.45M	36.182M	41.8M	36.232M	41.45M	36.232M
5550MHz	Pass	Inf	41.6M	36.332M	42.5M	36.182M	42.75M	36.132M	41.75M	36.232M	42.4M	36.232M	42.35M	36.282M	41.8M	36.232M	41.6M	36.282M
5670MHz	Pass	Inf	41.45M	36.232M	42.6M	36.232M	42.45M	36.232M	41.7M	36.232M	42.55M	36.232M	42.3M	36.182M	41.9M	36.232M	41.4M	36.232M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	35.77M	33.128M	36.645M	33.023M	36.75M	33.023M	35.91M	33.058M	36.715M	33.058M	36.68M	33.058M	36.12M	33.093M	35.945M	33.023M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.1M	3.638M	3.1M	3.538M	3.08M	3.658M	3.16M	3.678M	3.12M	3.698M	3.12M	3.678M	3.2M	3.678M	3.1M	3.678M
802.11ac VHT80_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	85.7M	75.662M	85.7M	75.562M	86.1M	75.562M	85.1M	75.562M	85.4M	75.562M	86.2M	75.762M	84.6M	75.762M	84.9M	75.562M
5530MHz	Pass	Inf	85.6M	75.762M	85.3M	75.562M	86.4M	75.662M	84.8M	75.462M	85.3M	75.362M	85.7M	75.762M	84.7M	75.562M	84.8M	75.462M
5610MHz	Pass	Inf	85.7M	75.562M	85.3M	75.362M	85.8M	75.362M	85M	75.662M	85.6M	75.462M	85.8M	75.562M	84.9M	75.562M	84.9M	75.562M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	77.925M	72.339M	78M	72.339M	77.85M	72.414M	77.7M	72.489M	78.225M	72.339M	78.075M	72.339M	77.925M	72.339M	77.55M	72.414M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.12M	4.218M	3.06M	4.118M	3.1M	4.218M	3.1M	4.338M	3.12M	4.198M	3.1M	4.258M	3.04M	4.238M	3.1M	4.178M
802.11ac VHT160_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5250MHz	Pass	Inf	80.88M	75.562M	80.88M	75.722M	81.04M	75.642M	81.04M	75.562M	80.72M	75.402M	81.12M	75.562M	81.2M	75.642M	81.2M	75.242M
802.11ac VHT160_Nss2,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5250MHz	Pass	Inf	80.4M	75.642M	80.4M	75.242M	80.4M	75.482M	80.48M	75.402M	80.64M	75.562M	80.48M	75.402M	80.16M	75.482M	80.24M	75.402M
5570MHz	Pass	Inf	162.4M	152.524 M	162.4M	152.924 M	162.6M	151.724 M	162.6M	152.724 M	162.8M	152.524 M	163M	152.524 M	162.2M	151.924 M	162.4M	151.924 M

Port X-N dB = Port X 6dB down bandwidth for UNII-3 band / 26dB down bandwidth for other band; Port X-OBW = Port X 99% occupied bandwidth;

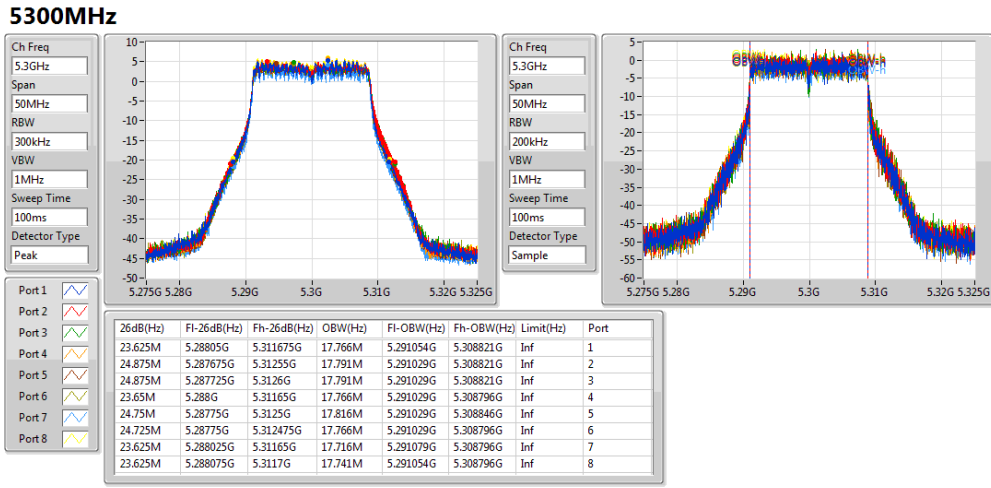
802.11ac VHT20_Nss2,(MCS0)_8TX EBW



802.11ac VHT20_Nss2,(MCS0)_8TX EBW



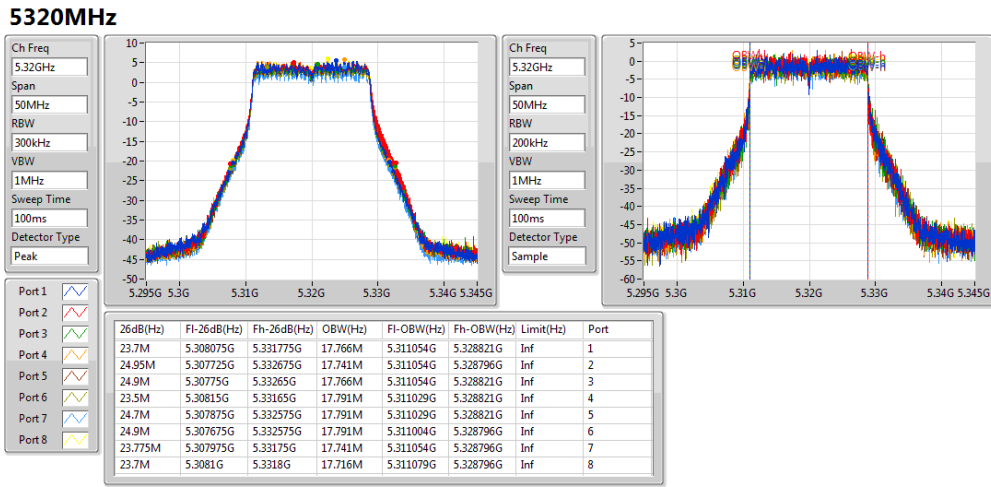
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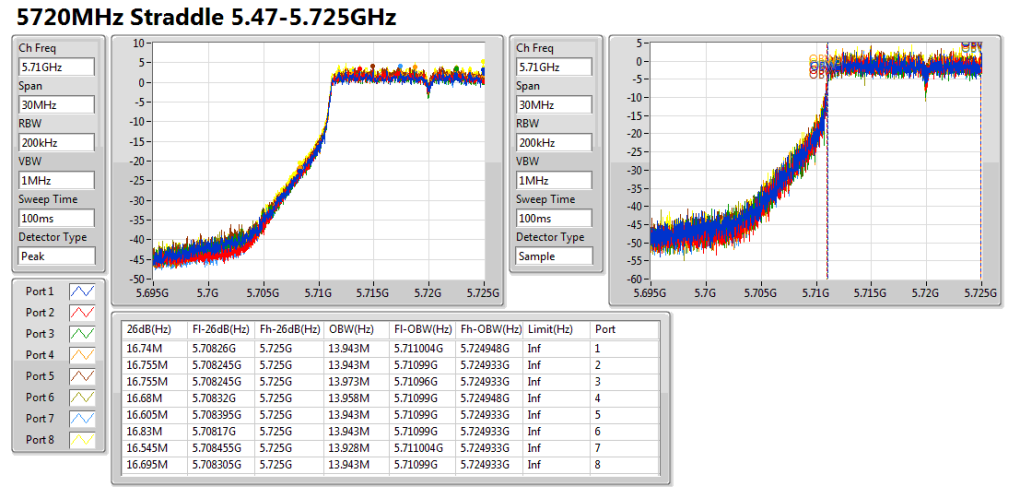
802.11ac VHT20_Nss2,(MCS0)_8TX EBW



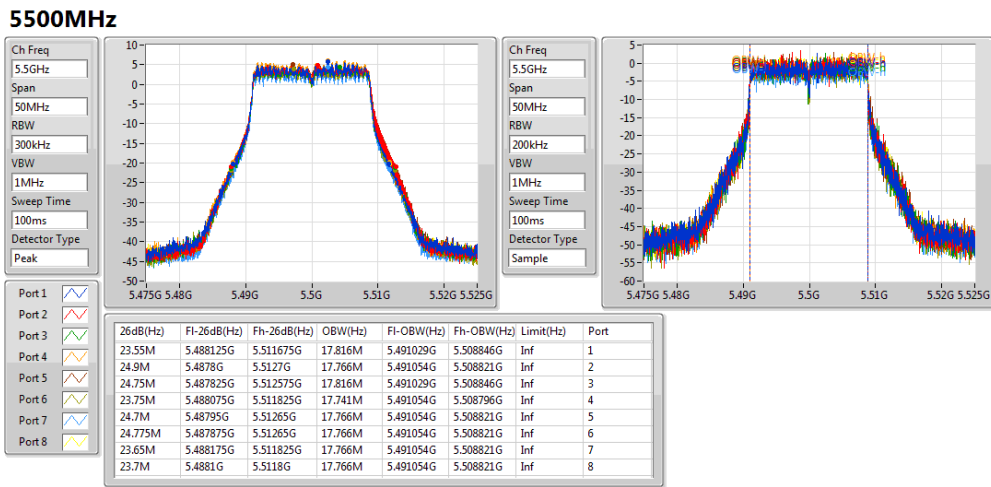
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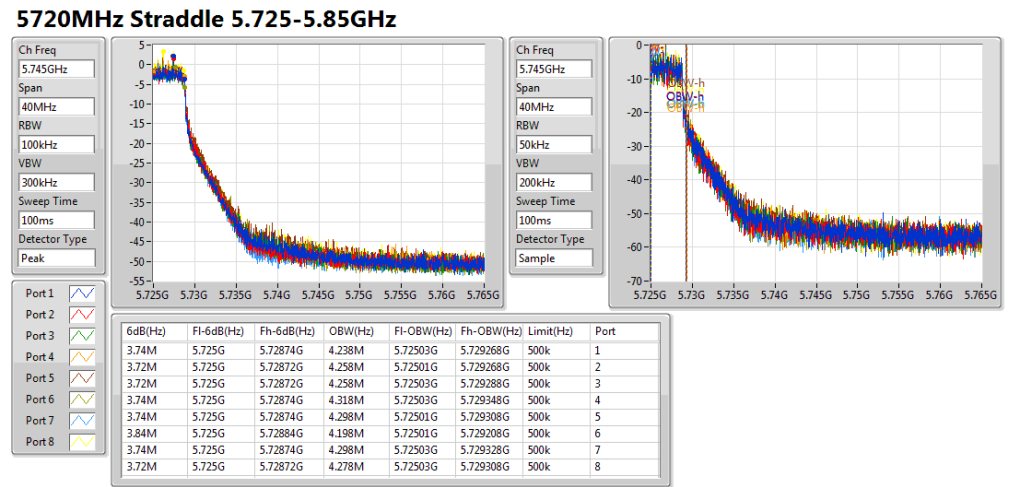
802.11ac VHT20_Nss2,(MCS0)_8TX EBW

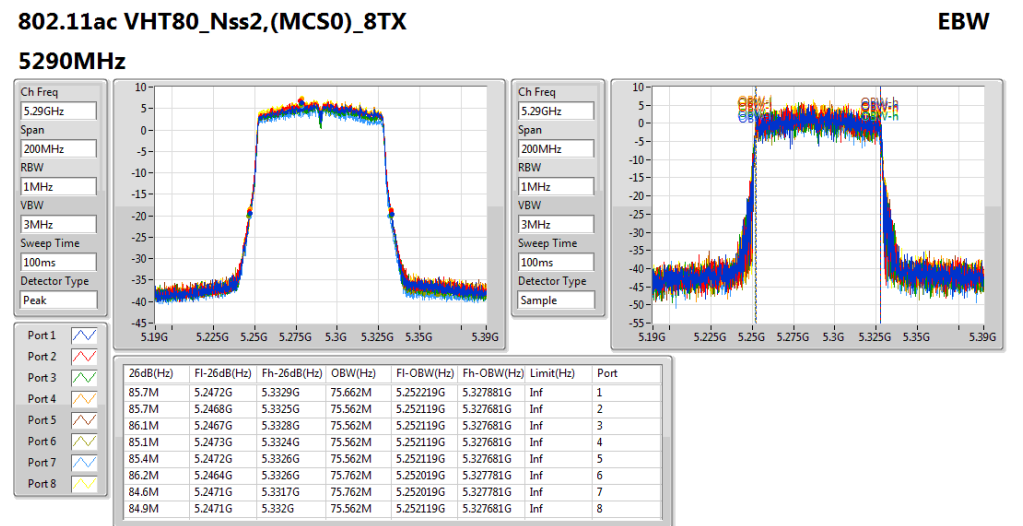
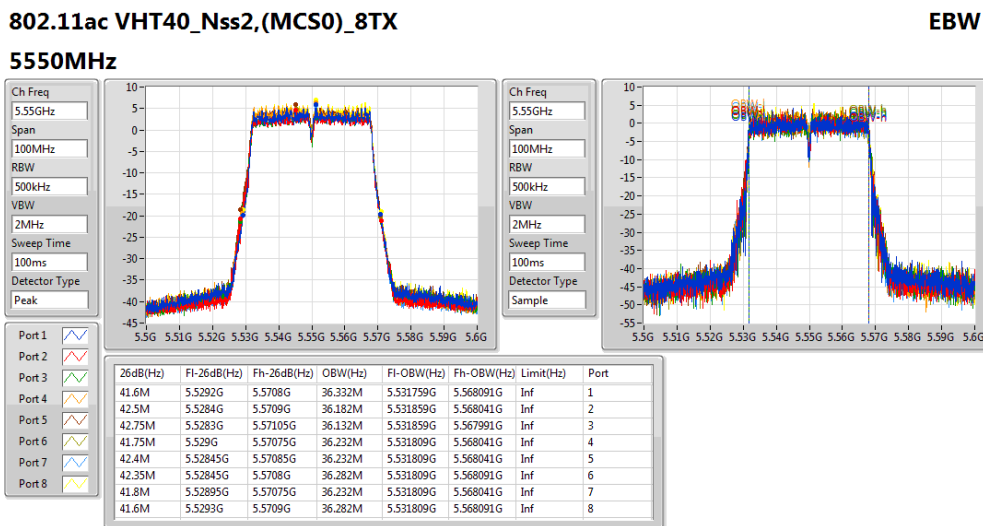
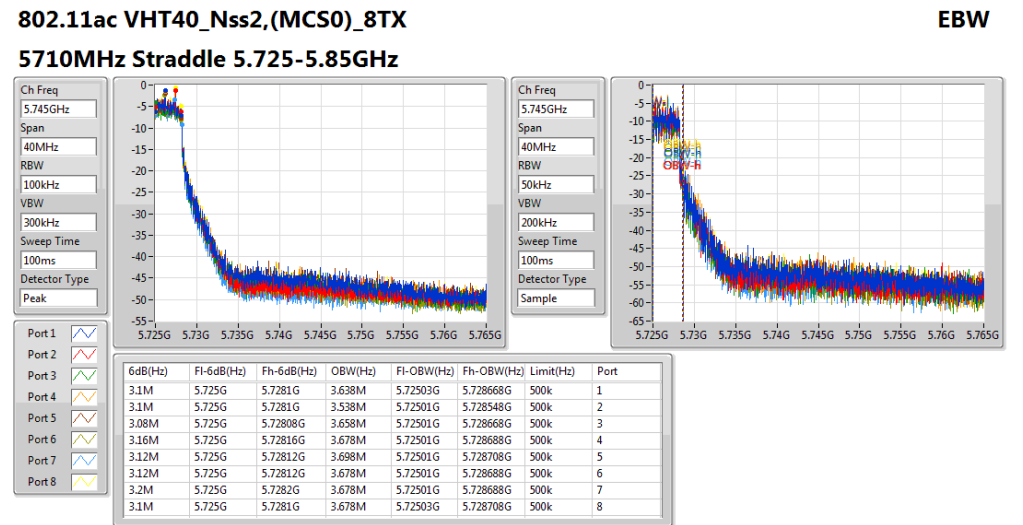
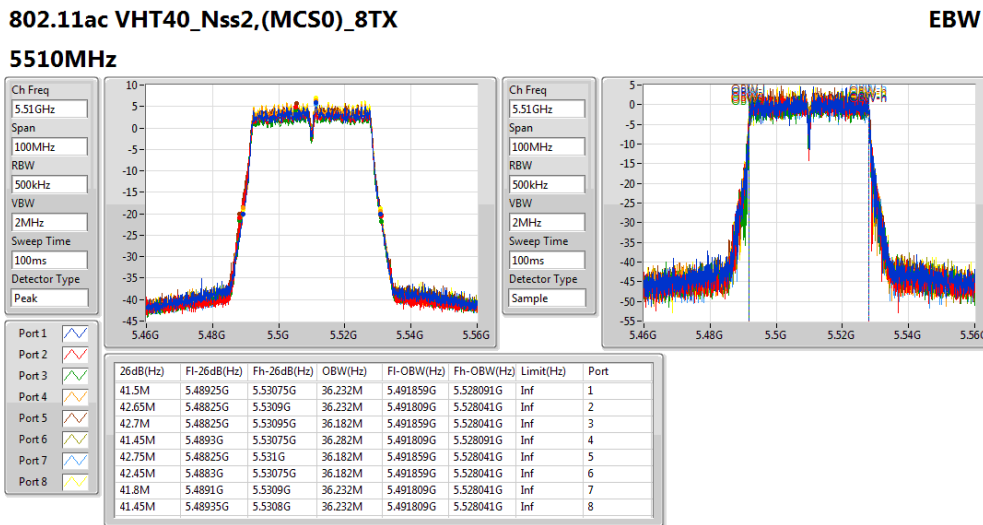
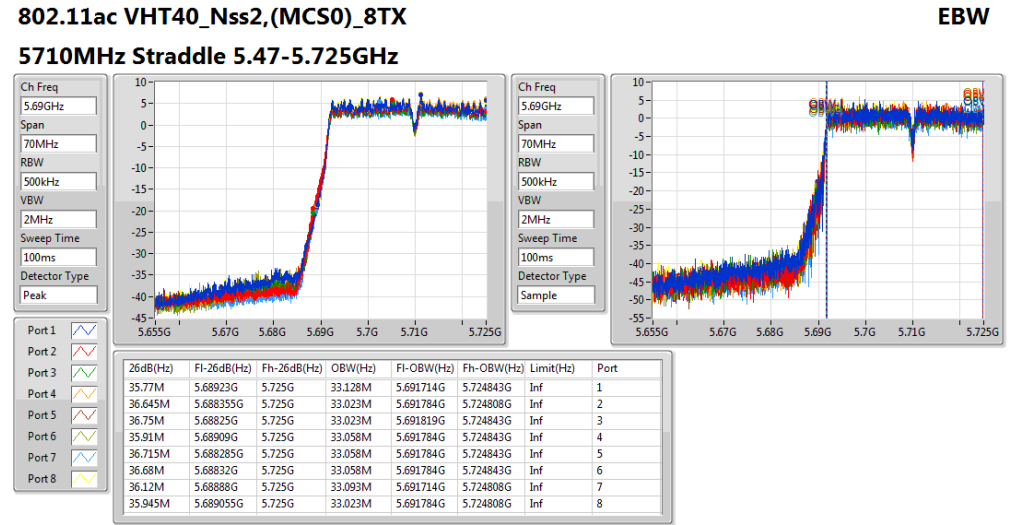
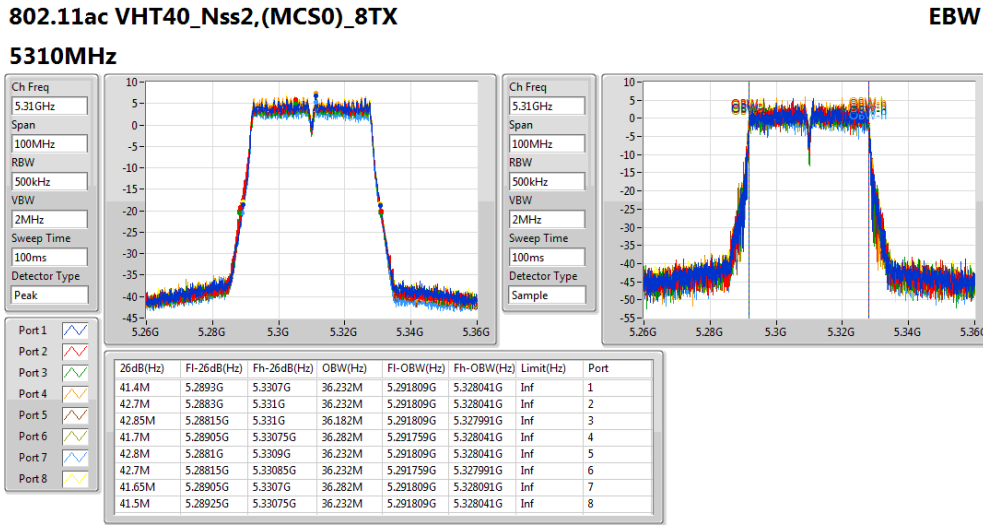
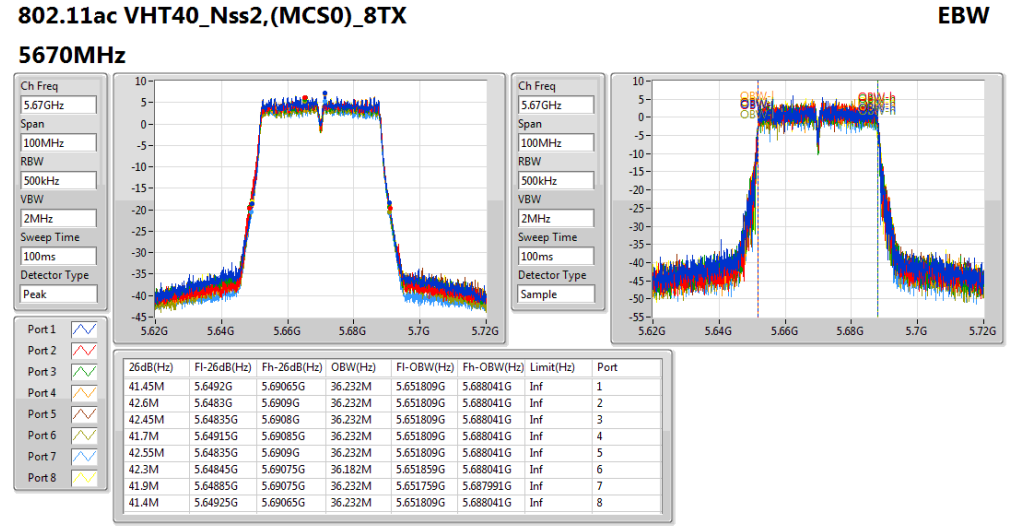
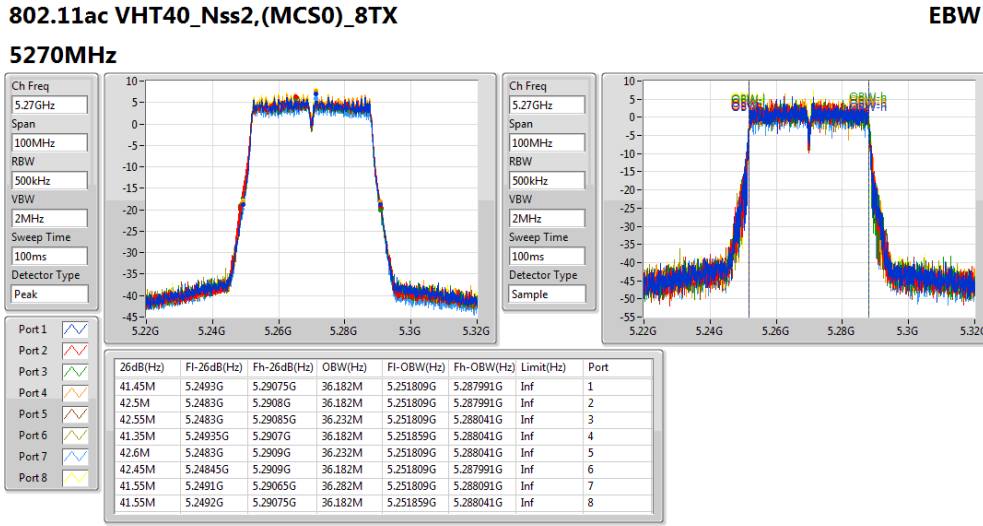


802.11ac VHT20_Nss2,(MCS0)_8TX EBW



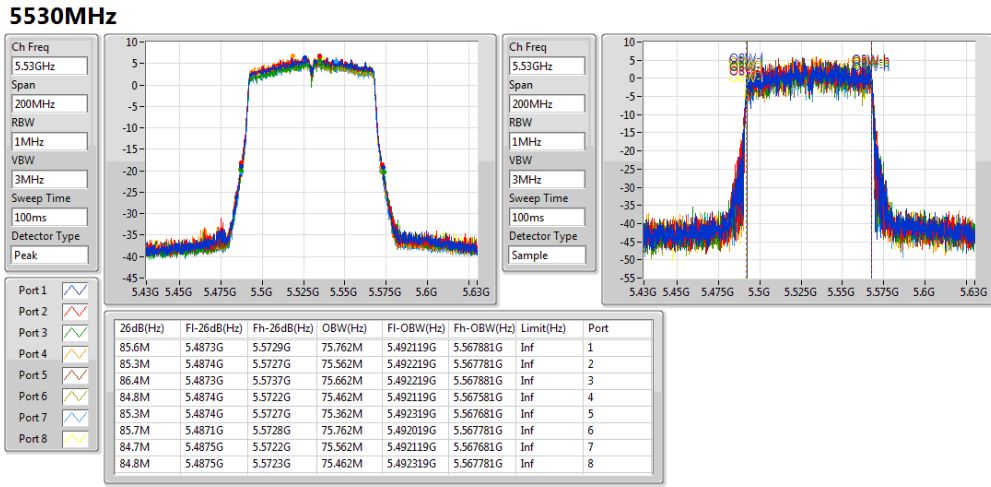
802.11ac VHT20_Nss2,(MCS0)_8TX EBW





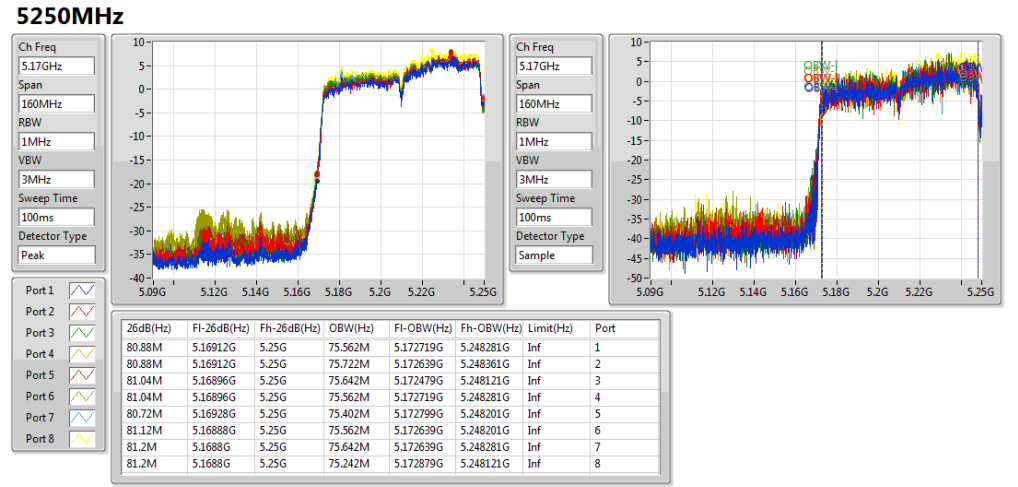
802.11ac VHT80_Nss2,(MCS0)_8TX

EBW



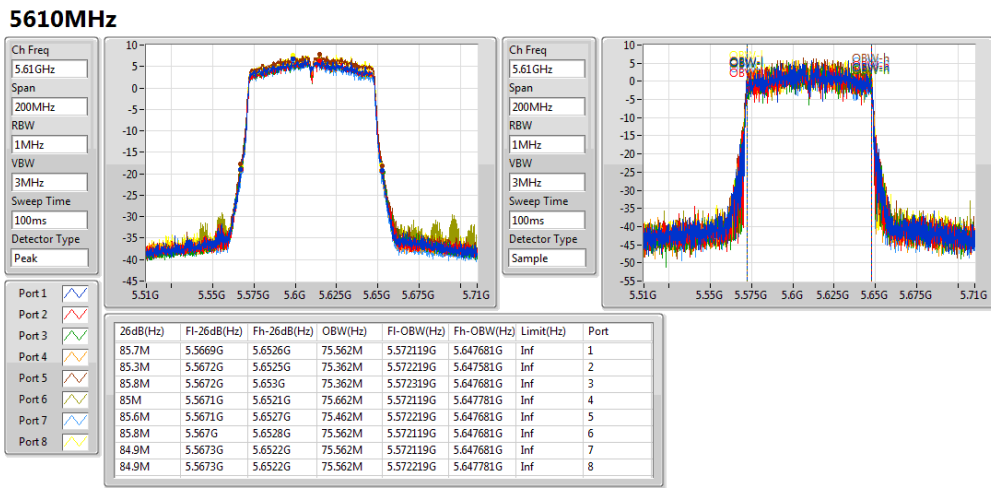
802.11ac VHT160_Nss1,(MCS0)_8TX

EBW



802.11ac VHT80_Nss2,(MCS0)_8TX

EBW



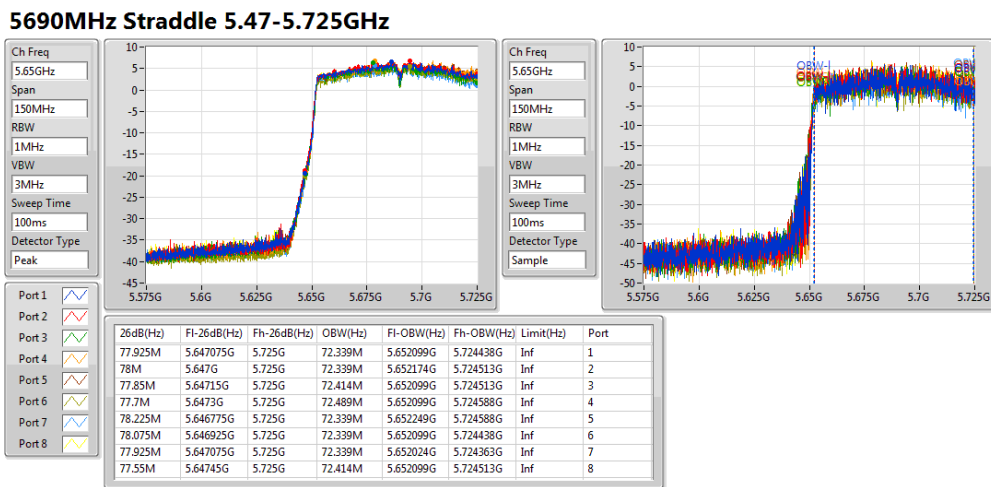
802.11ac VHT160_Nss2,(MCS0)_8TX

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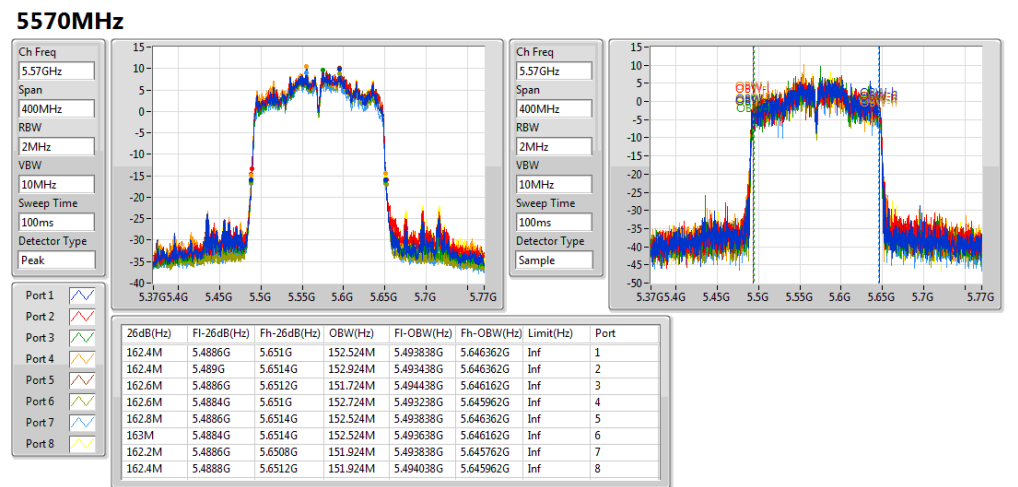
802.11ac VHT80_Nss2,(MCS0)_8TX

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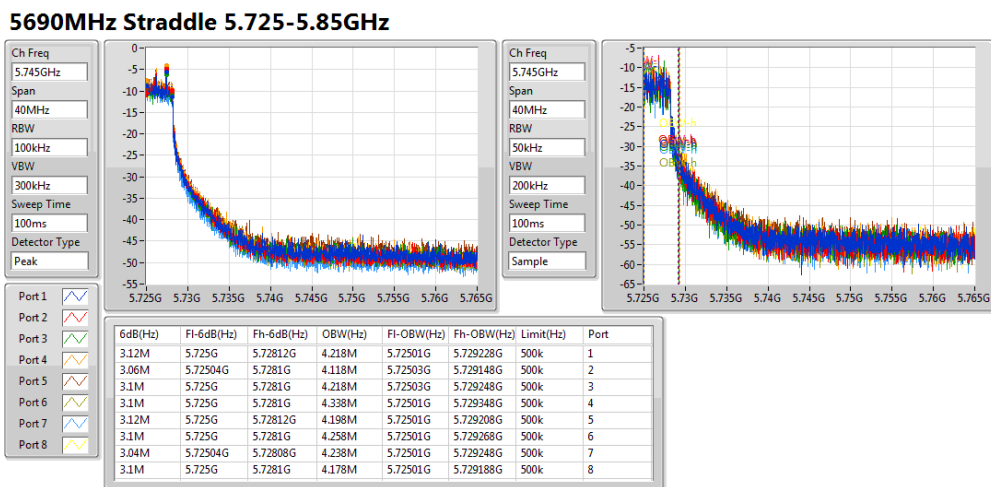
802.11ac VHT160_Nss2,(MCS0)_8TX

EBW



802.11ac VHT80_Nss2,(MCS0)_8TX

EBW





Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT160-BF_Nss1,(MCS0)_8TX	81.44M	75.962M	76M0D1D	80.88M	75.562M
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	24.525M	17.866M	17M9D1D	23.875M	17.716M
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	42.8M	36.282M	36M3D1D	42.2M	36.132M
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	87.4M	75.762M	75M8D1D	86M	75.462M
802.11ac VHT160-BF_Nss1,(MCS0)_8TX	81.6M	75.722M	75M7D1D	80.88M	75.482M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	24.65M	17.841M	17M8D1D	16.305M	13.943M
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	42.95M	36.382M	36M4D1D	36.295M	32.989M
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	87.2M	75.762M	75M8D1D	77.325M	72.339M
802.11ac VHT160-BF_Nss1,(MCS0)_8TX	164.2M	152.924M	153MD1D	162.6M	152.124M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	3.8M	4.298M	4M30D1D	3.66M	4.218M
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	3.14M	3.738M	3M74D1D	3.06M	3.618M
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	3.16M	4.578M	4M58D1D	2.62M	4.318M

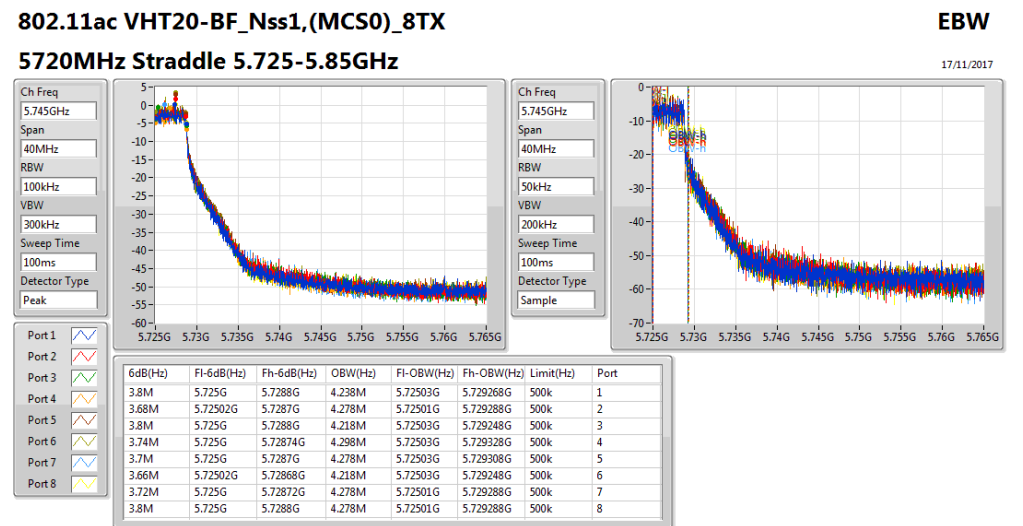
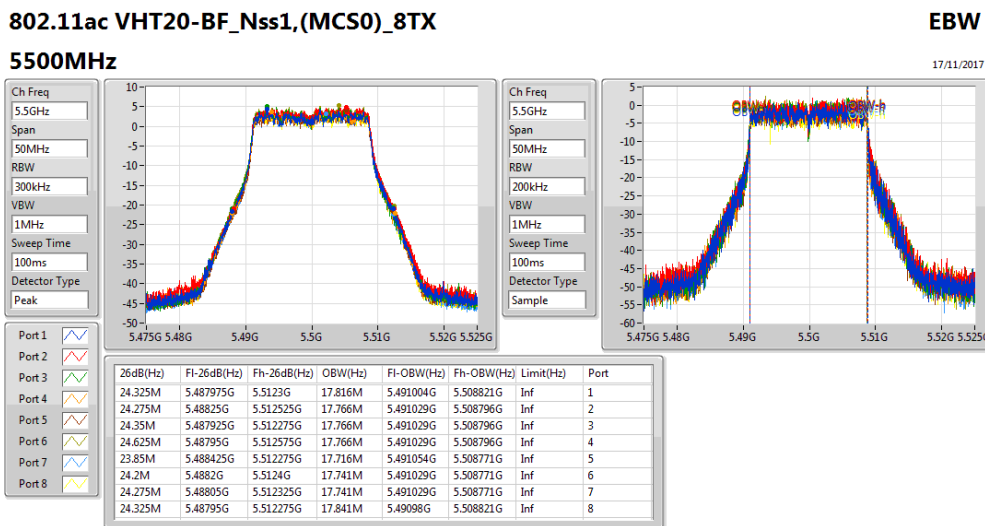
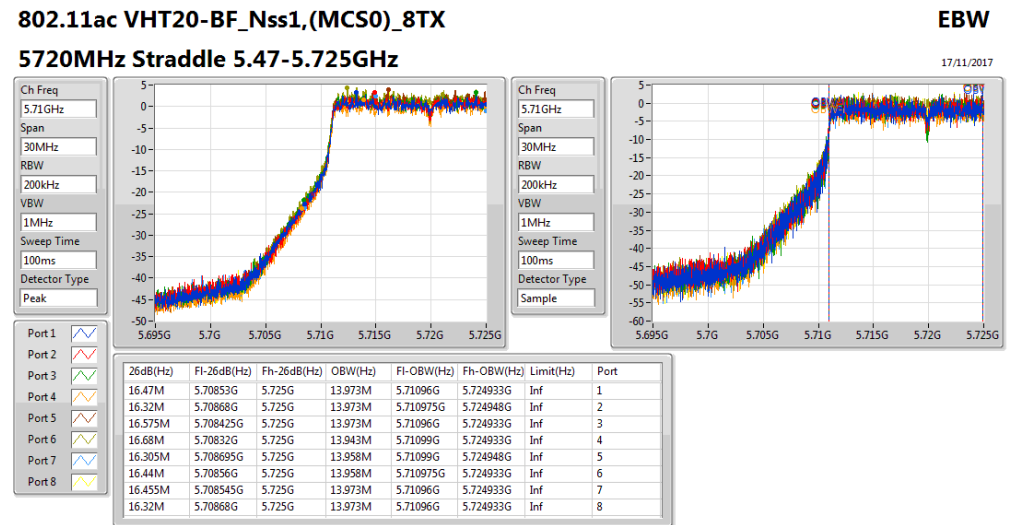
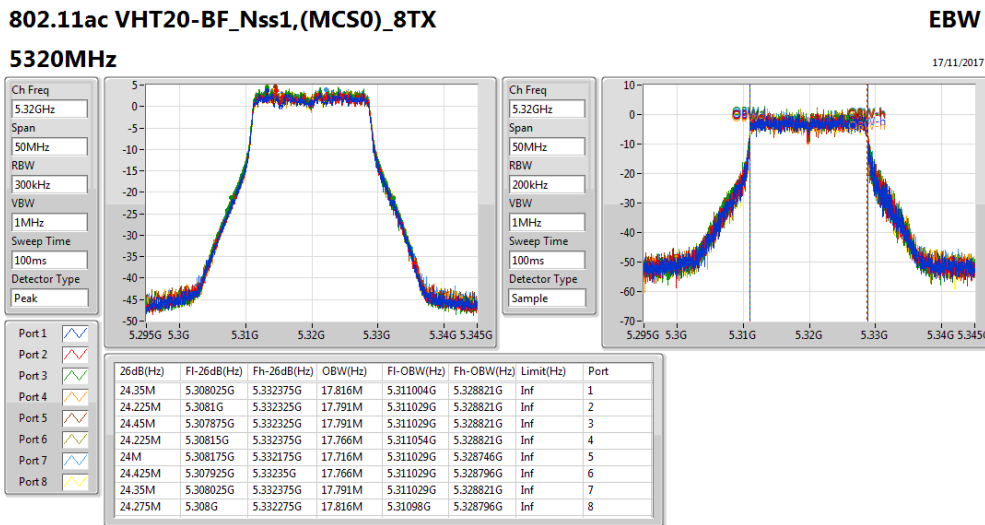
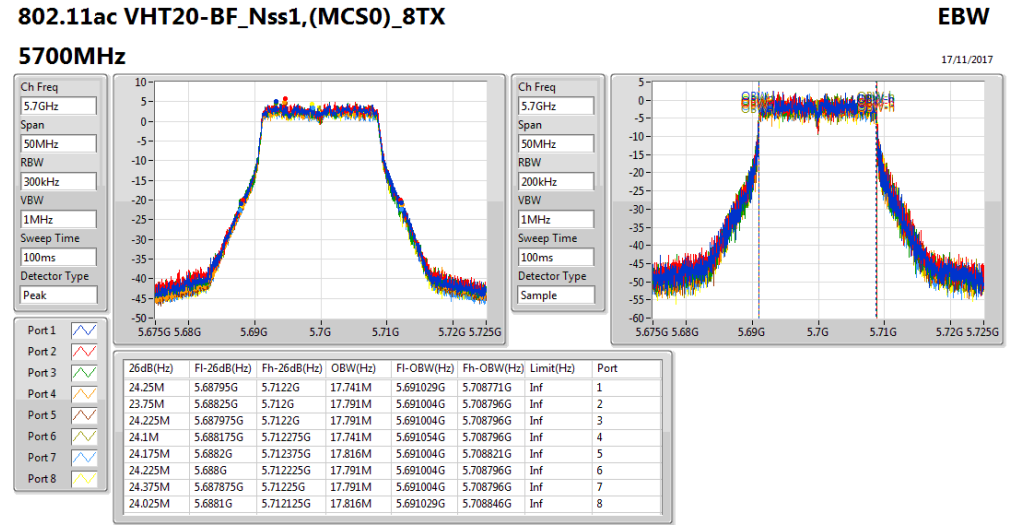
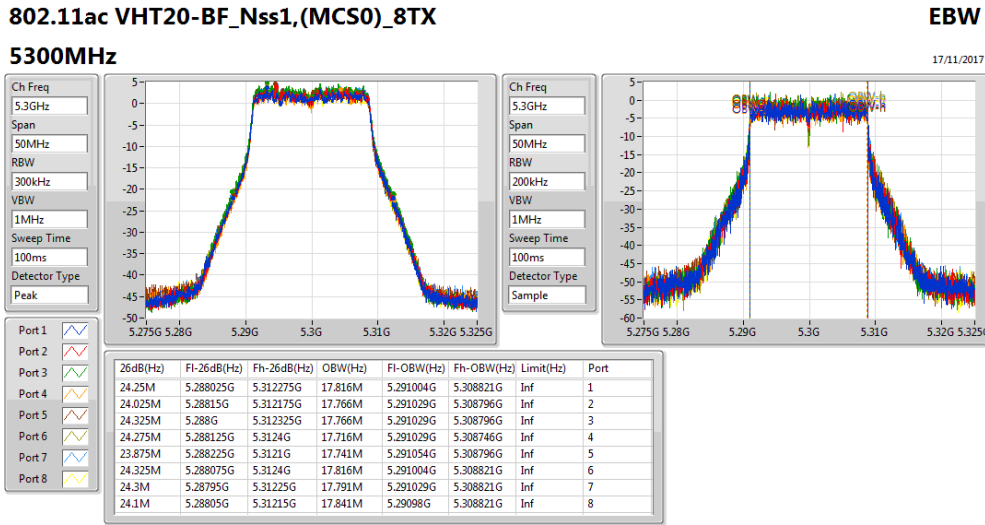
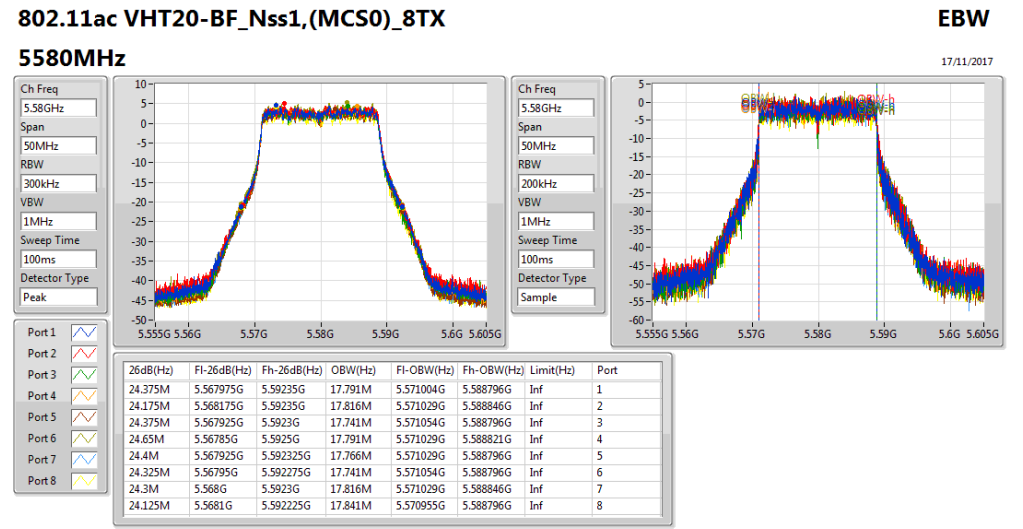
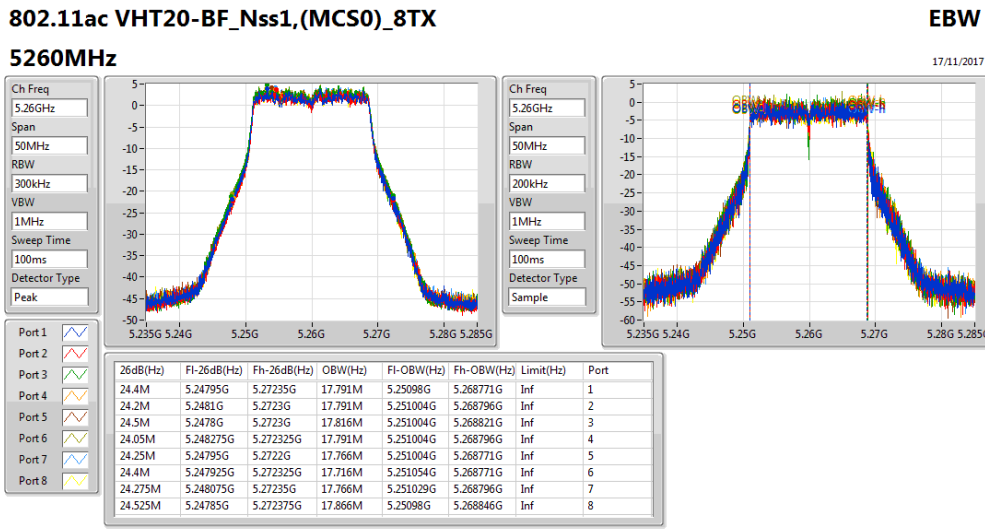
Max-N dB = Maximum 6dB down bandwidth for UNII-3 band / Maximum 26dB down bandwidth for other band; Max-OBW = Maximum 99% occupied bandwidth;
 Min-N dB = Minimum 6dB down bandwidth for UNII-3 band / Maximum 26dB down bandwidth for other band; Min-OBW = Minimum 99% occupied bandwidth;

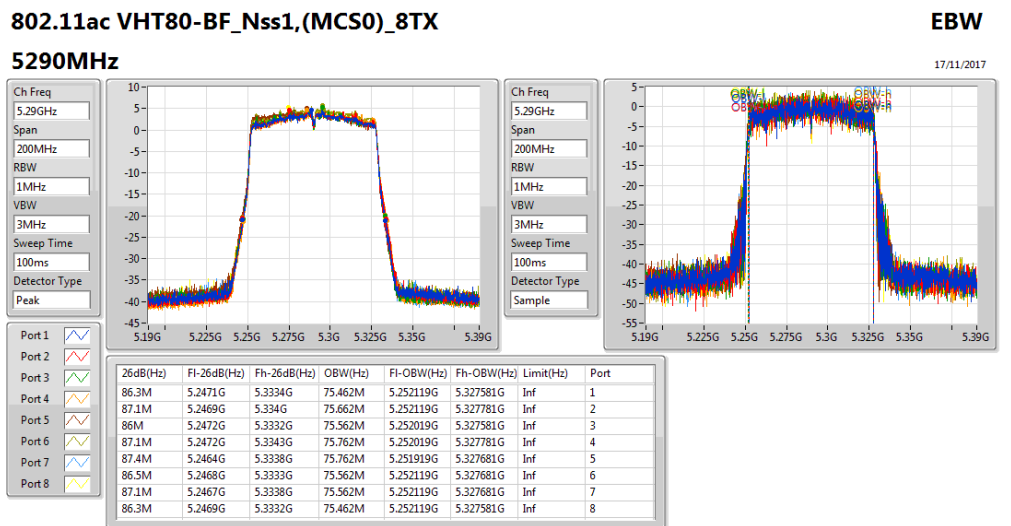
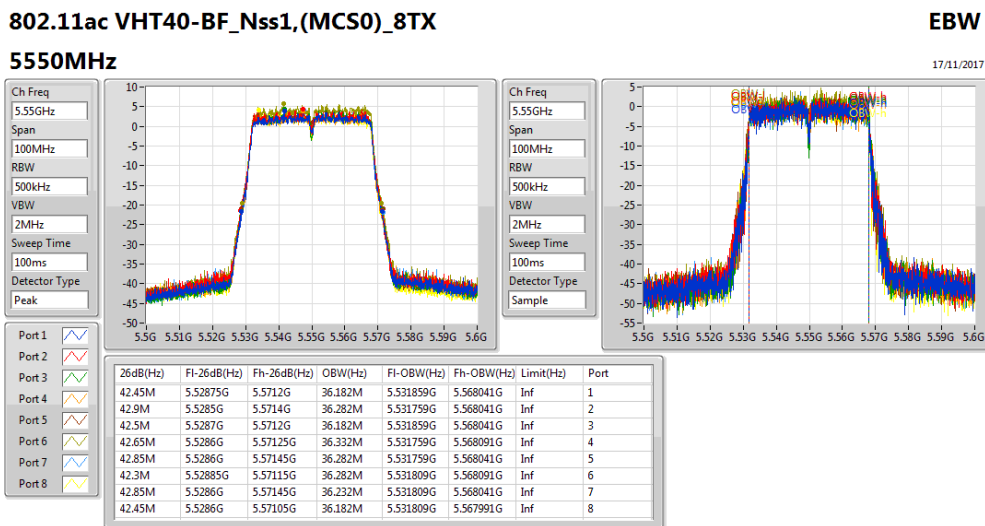
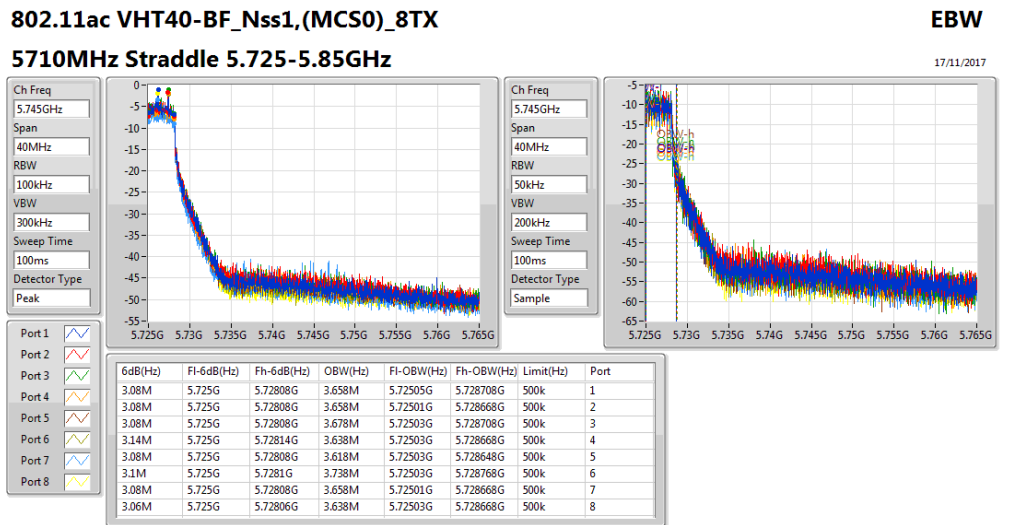
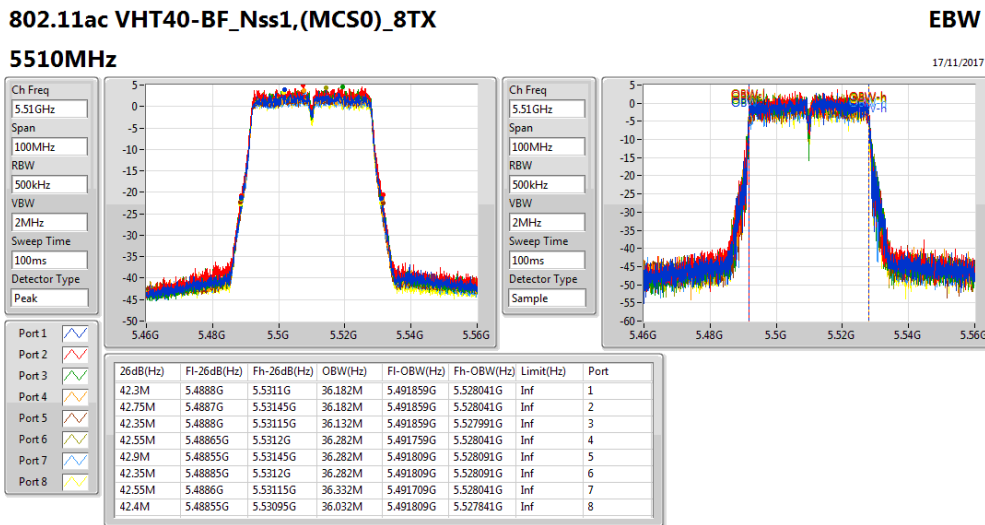
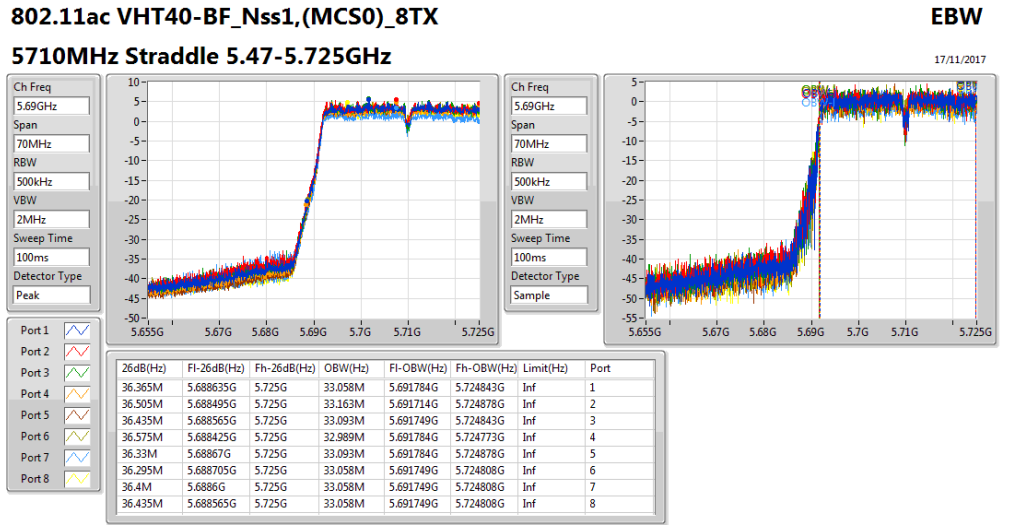
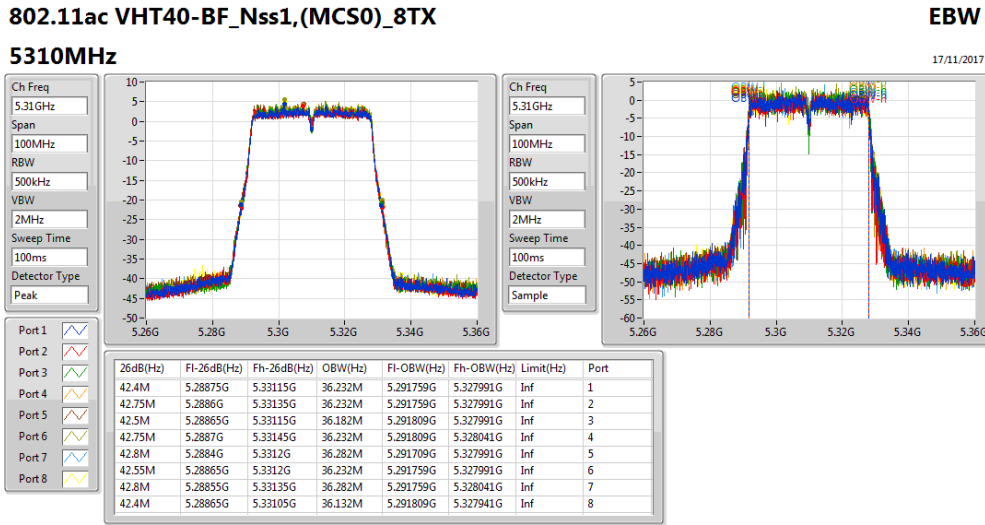
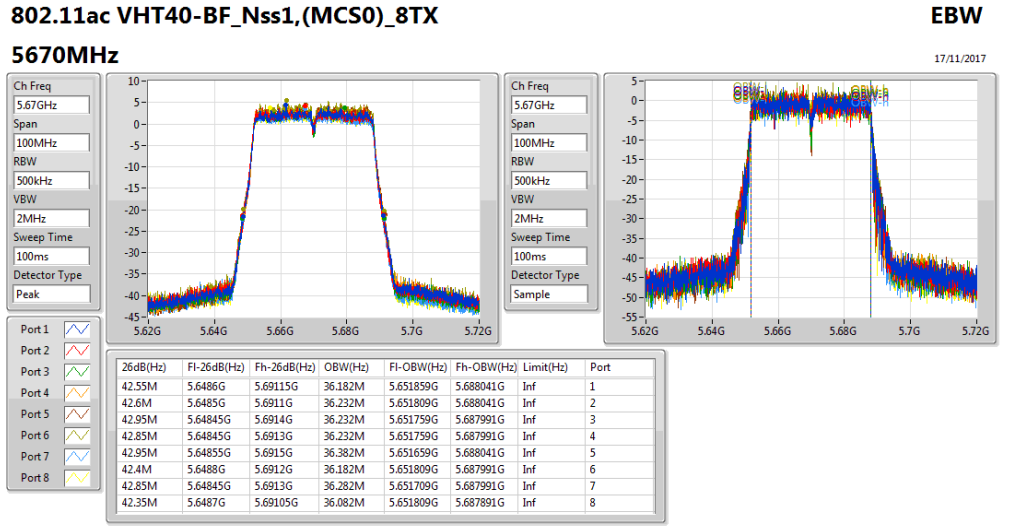
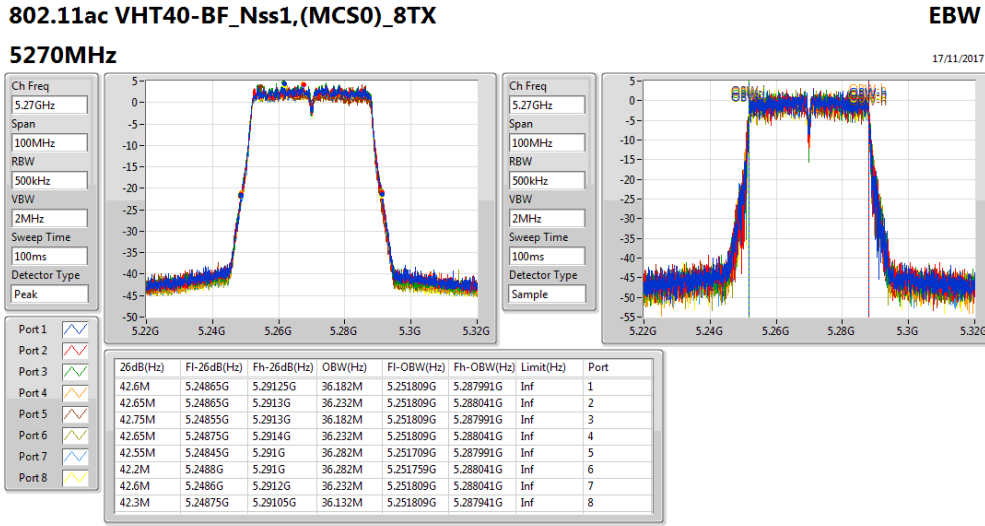


Result

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)	Port 5-N dB (Hz)	Port 5-OBW (Hz)	Port 6-N dB (Hz)	Port 6-OBW (Hz)	Port 7-N dB (Hz)	Port 7-OBW (Hz)	Port 8-N dB (Hz)	Port 8-OBW (Hz)
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	24.4M	17.791M	24.2M	17.791M	24.5M	17.816M	24.05M	17.791M	24.25M	17.766M	24.4M	17.716M	24.275M	17.766M	24.525M	17.866M
5300MHz	Pass	Inf	24.25M	17.816M	24.025M	17.766M	24.325M	17.766M	24.275M	17.716M	23.875M	17.741M	24.325M	17.816M	24.3M	17.791M	24.1M	17.841M
5320MHz	Pass	Inf	24.35M	17.816M	24.225M	17.791M	24.45M	17.791M	24.225M	17.766M	24M	17.716M	24.425M	17.766M	24.35M	17.791M	24.275M	17.816M
5500MHz	Pass	Inf	24.325M	17.816M	24.275M	17.766M	24.35M	17.766M	24.625M	17.766M	23.85M	17.716M	24.2M	17.741M	24.275M	17.741M	24.325M	17.841M
5580MHz	Pass	Inf	24.375M	17.791M	24.175M	17.816M	24.375M	17.741M	24.65M	17.791M	24.4M	17.766M	24.325M	17.741M	24.3M	17.816M	24.125M	17.841M
5700MHz	Pass	Inf	24.25M	17.741M	23.75M	17.791M	24.225M	17.791M	24.1M	17.741M	24.175M	17.816M	24.225M	17.791M	24.375M	17.791M	24.025M	17.816M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	16.47M	13.973M	16.32M	13.973M	16.575M	13.973M	16.68M	13.943M	16.305M	13.958M	16.44M	13.958M	16.455M	13.973M	16.32M	13.973M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.8M	4.238M	3.68M	4.278M	3.8M	4.218M	3.74M	4.298M	3.7M	4.278M	3.66M	4.218M	3.72M	4.278M	3.8M	4.278M
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	42.6M	36.182M	42.65M	36.232M	42.75M	36.182M	42.65M	36.232M	42.55M	36.282M	42.2M	36.282M	42.6M	36.232M	42.3M	36.132M
5310MHz	Pass	Inf	42.4M	36.232M	42.75M	36.232M	42.5M	36.182M	42.75M	36.232M	42.8M	36.282M	42.55M	36.232M	42.8M	36.282M	42.4M	36.132M
5510MHz	Pass	Inf	42.3M	36.182M	42.75M	36.182M	42.35M	36.132M	42.55M	36.282M	42.9M	36.282M	42.35M	36.282M	42.55M	36.332M	42.4M	36.032M
5550MHz	Pass	Inf	42.45M	36.182M	42.9M	36.282M	42.5M	36.182M	42.65M	36.332M	42.85M	36.282M	42.3M	36.282M	42.85M	36.232M	42.45M	36.182M
5670MHz	Pass	Inf	42.55M	36.182M	42.6M	36.232M	42.95M	36.232M	42.85M	36.232M	42.95M	36.382M	42.4M	36.182M	42.85M	36.282M	42.35M	36.082M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	36.365M	33.058M	36.505M	33.163M	36.435M	33.093M	36.575M	32.989M	36.33M	33.093M	36.295M	33.058M	36.4M	33.058M	36.435M	33.058M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.08M	3.658M	3.08M	3.658M	3.08M	3.678M	3.14M	3.638M	3.08M	3.618M	3.1M	3.738M	3.08M	3.658M	3.06M	3.638M
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	86.3M	75.462M	87.1M	75.662M	86M	75.562M	87.1M	75.762M	87.4M	75.762M	86.5M	75.562M	87.1M	75.562M	86.3M	75.462M
5530MHz	Pass	Inf	85.8M	75.462M	86.7M	75.562M	85M	75.562M	86.8M	75.662M	87M	75.562M	86.2M	75.462M	87.2M	75.662M	85.3M	75.562M
5610MHz	Pass	Inf	86.1M	75.462M	86.8M	75.462M	85.2M	75.562M	86.7M	75.762M	87M	75.562M	85.4M	75.662M	86.6M	75.562M	85M	75.562M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	77.55M	72.564M	78.075M	72.489M	77.625M	72.414M	77.925M	72.339M	77.625M	72.489M	77.325M	72.489M	78.075M	72.489M	77.475M	72.489M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.08M	4.398M	3.08M	4.478M	3.08M	4.318M	3.06M	4.498M	3.08M	4.378M	3.16M	4.338M	3.04M	4.578M	2.62M	4.418M
802.11ac VHT160-BF_Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5250MHz Straddle 5.15-5.25GHz	Pass	Inf	81.04M	75.642M	80.96M	75.722M	81.44M	75.562M	80.88M	75.642M	81.36M	75.722M	80.88M	75.962M	80.96M	75.642M	81.12M	75.962M
5250MHz Straddle 5.25-5.35GHz	Pass	Inf	81.12M	75.482M	81.52M	75.722M	81.04M	75.642M	81.6M	75.642M	80.88M	75.642M	81.04M	75.722M	81.36M	75.562M	81.04M	75.482M
5570MHz	Pass	Inf	162.8M	152.524 M	162.8M	152.724 M	163.2M	152.524 M	163.4M	152.724 M	164.2M	152.524 M	163M	152.124 M	163.6M	152.924 M	162.6M	152.124 M

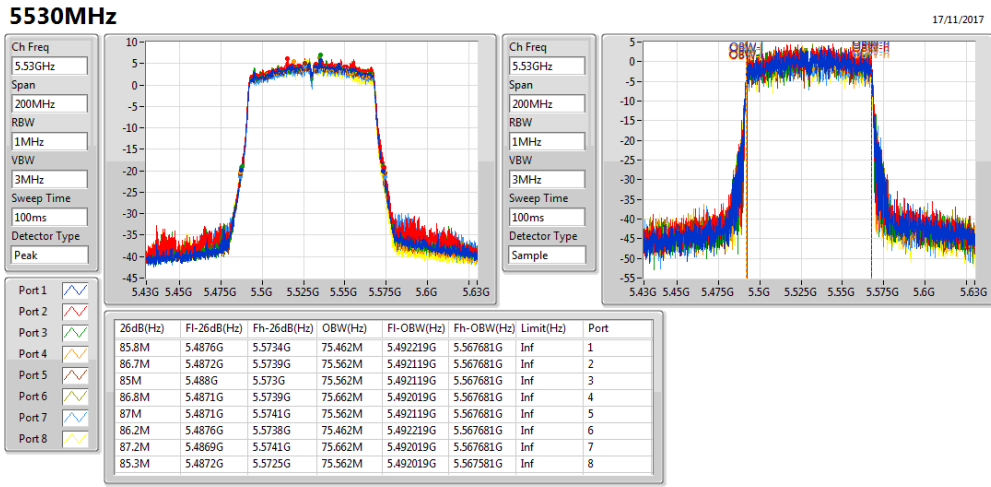
Port X-N dB = Port X 6dB down bandwidth for UNII-3 band / 26dB down bandwidth for other band; Port X-OBW = Port X 99% occupied bandwidth;





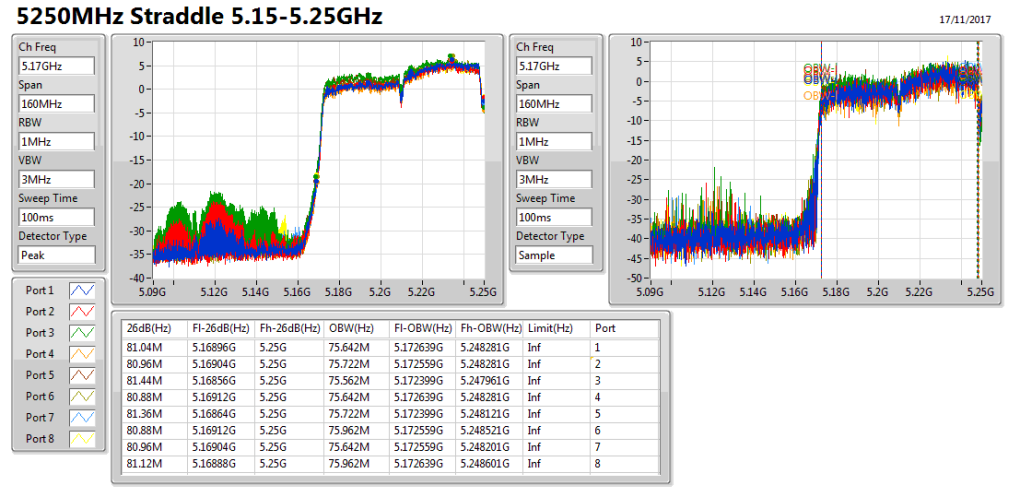
802.11ac VHT80-BF_Nss1,(MCS0)_8TX

EBW



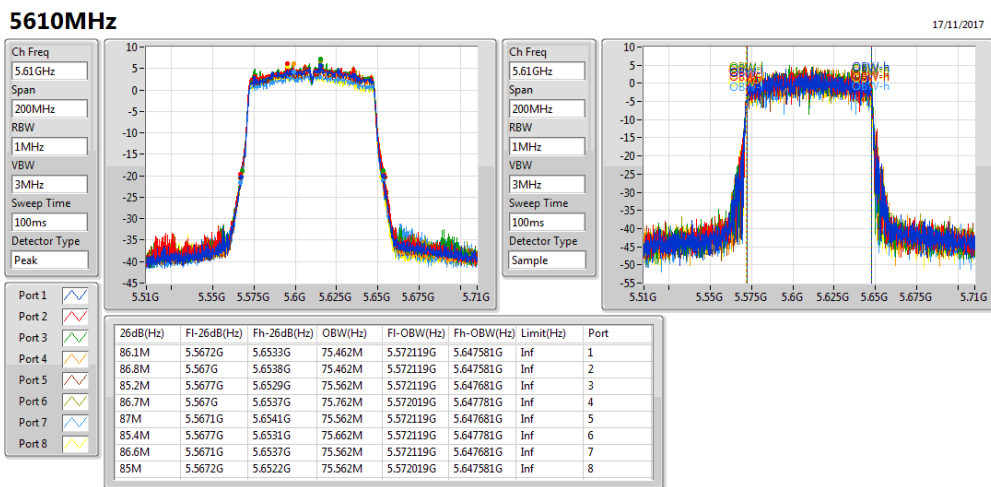
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EBW



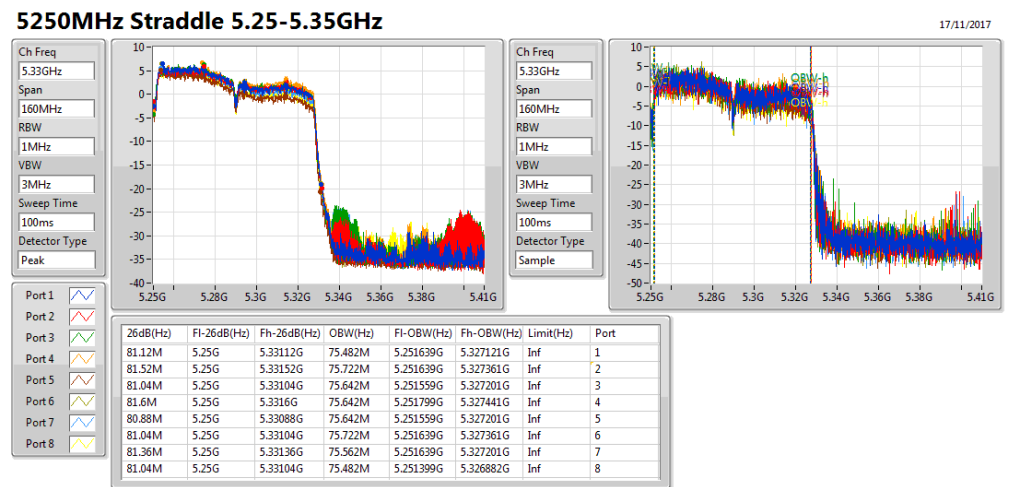
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EBW



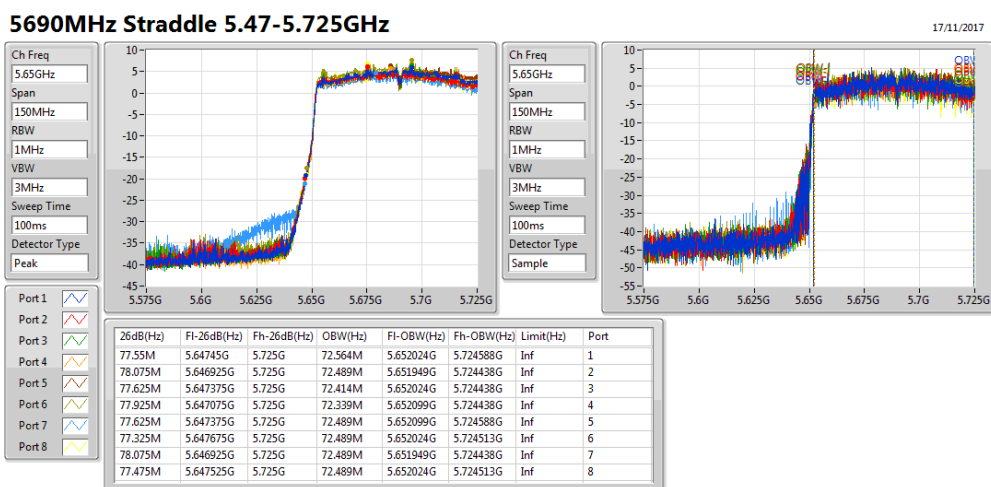
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EBW



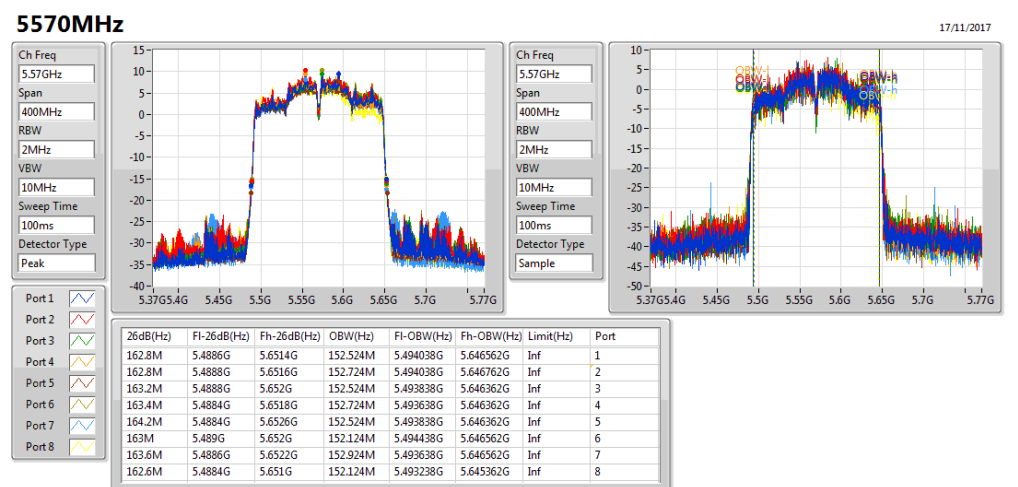
802.11ac VHT80-BF_Nss1,(MCS0)_8TX

EBW



802.11ac VHT160-BF_Nss1,(MCS0)_8TX

EBW



802.11ac VHT80-BF_Nss1,(MCS0)_8TX

EBW

