FCC RADIO TEST REPORT

FCC ID	:	G95-CGA4234
Equipment Name	:	DOCSIS3.1 Wireless Residential Gateway with Embeded Digital Voice Adapter
Trade Name	:	technicolor
Model Number	:	CGA4234
Product Code	:	CGA4234DGW-TCH, CGA4234VGW-TCH
Applicant	:	Technicolor Connected Home USA LLC 5030 Sugarloaf Parkway Building 6 Lawrenceville, GA 30044
Standard	:	47 CFR FCC Part 15 Subpart E § 15.407

The product was received on Jan. 19, 2018, and testing was started from Jan. 23, 2018 and completed on Jul. 20, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013, 47 CFR FCC Part 15 Subpart E, KDB789033 D02 v02r01, KDB662911 D01 v02r01, ET Docket No. 13–49; FCC 16–24 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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History of this test report

Report No.	Version	Description	Issued Date
FR811125AB	01	Initial issue of report	Sep. 10, 2018

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Measured	Limit
2.1	15.407(b)(6)	AC Power Line Conducted Emissions	PASS	21.1676MHz 44.98dBuV (Margin -5.02dB)	-
2.2	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	PASS	99% Occupied Bandwidth [MHz]: **For CDD Mode:** 11a: 16.817MHz **For SDM Mode:** 11ac(20M): 17.966MHz 11ac(40M): 36.532MHz 11ac(80M): 74.963MHz **For TXBF Mode:** 11ac(20M): 17.941MHz 11ac(40M): 36.482MHz 11ac(80M): 75.462MHz 26dB Bandwidth [MHz]: **For CDD Mode:** 11a: 21.675MHz **For SDM Mode:** 11ac(20M): 31.650MHz 11ac(40M): 40.500MHz 11ac(80M): 81.000MHz **For TXBF Mode:** 11ac(20M): 30.075MHz 11ac(40M): 40.850MHz 11ac(80M): 81.700MHz	-

2.3	15.407(e)	6dB Bandwidth and 99% Occupied Bandwidth for U-NII-3	PASS	99% Occupied Bandwidth [MHz]: **For CDD Mode:** 11a: 16.817MHz **For SDM Mode:** 11ac(20M): 18.516MHz 11ac(40M): 37.181MHz 11ac(80M): 76.062MHz **For TXBF Mode:** 11ac(20M): 18.016MHz 11ac(40M): 37.231MHz 11ac(80M): 76.062MHz 6dB Bandwidth [MHz]: **For CDD Mode:** 11a: 16.325MHz **For SDM Mode:** 11ac(20M): 17.550MHz 11ac(40M): 35.750MHz 11ac(80M): 76.100MHz **For TXBF Mode:** 11ac(20M): 17.050MHz 11ac(40M): 36.300MHz 11ac(80M): 75.600MHz	≥500kHz

2.4	15.407(a) (1/2/3)	Maximum Conducted Output Power	PASS	**For CDD Mode:** 5150-5250MHz Power [dBm]: 11a: 28.11 dBm 5725-5850MHz Power [dBm]: 11a: 26.55 dBm **For SDM Mode:** 5150-5250MHz Power [dBm]: 11ac(20M): 28.86 dBm 11ac(40M): 28.16 dBm 11ac(80M): 24.40 dBm 5725-5850MHz Power [dBm]: 11ac(20M): 29.79 dBm 11ac(40M): 29.90 dBm 11ac(80M): 26.51 dBm **For TXBF Mode:** 5150-5250MHz Power [dBm]: Nss 1 MCS0 1S4T 11ac(20M): 28.12 dBm 11ac(40M): 25.33 dBm 11ac(80M): 21.92 dBm Nss 2 MCS0 2S4T 11ac(20M): 28.65 dBm 11ac(40M): 26.92 dBm 11ac(80M): 23.49 dBm Nss 3 MCS0 3S4T 11ac(20M): 28.53 dBm 11ac(40M): 27.63 dBm 11ac(80M): 22.48 dBm	Power [dBm] 5150-5250MHz:30 5725-5850MHz:30

				5725-5850MHz Power [dBm]: Nss 1 MCS0 1S4T 11ac(20M): 26.58 dBm 11ac(40M): 28.67 dBm 11ac(80M): 24.50 dBm Nss 2 MCS0 2S4T 11ac(20M): 27.13 dBm 11ac(40M): 29.83 dBm 11ac(80M): 27.00 dBm Nss 3 MCS0 3S4T 11ac(20M): 29.27 dBm 11ac(40M): 29.87 dBm 11ac(80M): 25.92 dBm	

2.5	15.407(a) (1/2/3)	Power Spectral Density	PASS	**For CDD Mode:** 5150-5250MHz [dBm/MHz]: 11a: 15.13 dBm/MHz 5725-5850MHz [dBm/500kHz]: 11a: 11.77 dBm/500kHz **For SDM Mode:** 5150-5250MHz [dBm/MHz]: 11ac(20M): 15.62 dBm/MHz 11ac(40M): 12.04 dBm/MHz 11ac(80M): 5.96 dBm/MHz 5725-5850MHz [dBm/500kHz]: 11ac(20M): 14.67 dBm/500kHz 11ac(40M): 12.17 dBm/500kHz 11ac(80M): 6.00 dBm/500kHz **For TXBF Mode:** 5150-5250MHz [dBm/MHz]: Nss 1 MCS0 1S4T 11ac(20M): 15.18 dBm/MHz 11ac(40M): 8.87 dBm/MHz 11ac(80M): 3.44 dBm/MHz Nss 2 MCS0 2S4T 11ac(20M): 15.16 dBm/MHz 11ac(40M): 10.40 dBm/MHz 11ac(80M): 4.85 dBm/MHz Nss 3 MCS0 3S4T 11ac(20M): 15.25 dBm/MHz 11ac(40M): 11.90 dBm/MHz 11ac(80M): 5.01 dBm/MHz	5150-5250MHz:17 [dBm/MHz] 5725-5850MHz:30 [dBm/500kHz]

				5725-5850MHz [dBm/500kHz]: Nss 1 MCS0 1S4T 11ac(20M): 11.41 dBm/500kHz 11ac(40M): 10.53 dBm/500kHz 11ac(80M): 3.65 dBm/500kHz Nss 2 MCS0 2S4T 11ac(20M): 11.71 dBm/500kHz 11ac(40M): 11.93 dBm/500kHz 11ac(80M): 6.11 dBm/500kHz Nss 3 MCS0 3S4T 11ac(20M): 14.42 dBm/500kHz 11ac(40M): 13.00 dBm/500kHz 11ac(80M): 6.68 dBm/500kHz	
2.6	15.407(b) (1/2/3/4/6)	Radiated Emissions	PASS	15.7226GHz 53.96dBuV/m (Margin -0.04dB)	-
		Band Edge Emissions		5.1032GHz 53.99dBuV/m (Margin -0.01dB)	-
2.7	15.407(g)	Frequency Stability	PASS	4.9807 ppm	Signal shall remain in-band
2.8	15.203	Antenna Requirements	PASS	-	-

Reviewed by: Sam Chen

Report Producer: Viola Huang

1. General Information

1.1. Product Details

Items	Description		
Equipment Name	DOCSIS3.1 Wireless Residential Gateway with Embeded Digital Voice Adapter		
Trade Name	technicolor		
Model Number	CGA4234		
Product Code	CGA4234DGW-TCH, CGA4234VGW-TCH		
FCC ID	G95-CGA4234		
Power Type	From power adapter		
Antenna Type	Please see Section 1.8		
EUT Stage	■ Product Unit	□	Pre-Sample
Operating Band, Conducted Output Power	**U-NII-1** 5150~5250MHz	■	IEEE 802.11a: 28.11 dBm
		■	IEEE 802.11ac (20MHz): 28.86 dBm
		■	IEEE 802.11ac (40MHz): 28.16 dBm
		■	IEEE 802.11ac (80MHz): 24.40 dBm
	U-NII-3 5725~ 5850 MHz	■	IEEE 802.11a: 26.55 dBm
		■	IEEE 802.11ac (20MHz): 29.79 dBm
		■	IEEE 802.11ac (40MHz): 29.90 dBm
		■	IEEE 802.11ac (80MHz): 27.00 dBm
Product Type	For IEEE 802.11a: WLAN(1/2/3/4TX, 4RX) For IEEE 802.11n: WLAN(1/2/3/4TX, 4RX) For IEEE 802.11ac: WLAN (1/2/3/4TX, 4RX)		
Nominal Channel Bandwidth	20MHz/40MHz/80MHz		
Modulation	802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11n: (BPSK / QPSK / 16QAM / 64QAM)See the below table. 802.11ac: (BPSK / QPSK / 16QAM / 64QAM/ 256QAM)See the below table		

Data Rate (Mbps)	11a mode: OFDM (6/9/12/18/24/36/48/54) 11n(20MHz) mode: MCS0~MCS31 11n(40MHz) mode: MCS0~MCS31 11ac(20MHz) mode: MCS0~MCS9 for Nss1~Nss4 See the below table 11ac(40MHz) mode: MCS0~MCS9 for Nss1~Nss4 See the below table 11ac(80MHz) mode: MCS0~MCS9 for Nss1~Nss4 See the below table			
Beam forming Function	■	With Beam forming	□	Without Beam forming
I/O Ports	LAN Port x 4 FXS Port x 2 USB Port x 1 Coaxial Port x1 CM-console 3.5mm x1			
Hardware Version	NPI			
Software Version	CGA4234GA_master_20180829160026			

802.11n Data Rate spec

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11n 20MHz Nss=1	MCS0	6.5	7.2	11n 40MHz Nss=1	MCS0	13.5	15
	MCS1	13	14.4		MCS1	27	30
	MCS2	19.5	21.7		MCS2	40.5	45
	MCS3	26	28.9		MCS3	54	60
	MCS4	39	43.3		MCS4	81	90
	MCS5	52	57.8		MCS5	108	120
	MCS6	58.5	65		MCS6	121.5	135
	MCS7	65	72.2		MCS7	135	150
11n 20MHz Nss=2	MCS8	13	14.4	11n 40MHz Nss=2	MCS8	27	30
	MCS9	26	28.9		MCS9	54	60
	MCS10	39	43.3		MCS10	81	90
	MCS11	52	57.8		MCS11	108	120
	MCS12	78	86.7		MCS12	162	180
	MCS13	104	115.6		MCS13	216	240
	MCS14	117	130		MCS14	243	270
	MCS15	130	144.4		MCS15	270	300
11n 20MHz Nss=3	MCS16	19.5	21.7	11n 40MHz Nss=3	MCS16	40.5	45
	MCS17	39	43.3		MCS17	81	90
	MCS18	58.5	65		MCS18	121.5	135
	MCS19	78	86.7		MCS19	162	180
	MCS20	117	130		MCS20	243	270
	MCS21	156	173.3		MCS21	324	360
	MCS22	175.5	195		MCS22	364.5	405
	MCS23	195	216.7		MCS23	405	450

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11n 20MHz Nss=4	MCS24	26	28.9	11n 40MHz Nss=4	MCS24	54	60
	MCS25	52	57.8		MCS25	108	120
	MCS26	78	86.7		MCS26	162	180
	MCS27	104	115.6		MCS27	216	240
	MCS28	156	173.3		MCS28	324	360
	MCS29	208	231.1		MCS29	432	480
	MCS30	234	260		MCS30	486	540
	MCS31	260	288.9		MCS31	540	600

802.11ac Data Rate spec

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz Nss=1	MCS0	6.5	7.2	11ac 40MHz Nss=1	MCS0	13.5	15.0	11ac 80MHz Nss=1	MCS0	29.3	32.5
	MCS1	13.0	14.4		MCS1	27	30.0		MCS1	58.5	65.0
	MCS2	19.5	21.7		MCS2	40.5	45.0		MCS2	87.8	97.5
	MCS3	26	28.9		MCS3	54	60.0		MCS3	117.0	130.0
	MCS4	39	43.3		MCS4	81	90.0		MCS4	175.5	195.0
	MCS5	52	57.8		MCS5	108	120.0		MCS5	234.0	260.0
	MCS6	58.5	65		MCS6	121.5	135.0		MCS6	263.3	292.5
	MCS7	65	72.2		MCS7	135.0	150.0		MCS7	292.5	325.0
	MCS8	78	86.7		MCS8	162.0	180.0		MCS8	351.0	390.0
	MCS9	Note	Note		MCS9	180.0	200.0		MCS9	390.0	433.3
NOTE: MCS 9 is invalid due to mod(NCBPS/NES, DR) not being equal to 0.											
Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz Nss=2	MCS0	13.0	14.4	11ac 40MHz Nss=2	MCS0	27.0	30.0	11ac 80MHz Nss=2	MCS0	58.5	65.0
	MCS1	26.0	28.9		MCS1	54.0	60.0		MCS1	117.0	130.0
	MCS2	39.0	43.3		MCS2	81.0	90.0		MCS2	175.5	195.0
	MCS3	52.0	57.8		MCS3	108.-0	120.0		MCS3	234.0	260.0
	MCS4	78.0	86.7		MCS4	162.0	180.0		MCS4	351.0	390.0
	MCS5	104.0	115.6		MCS5	216.0	240.0		MCS5	468.0	520.0
	MCS6	117.0	130.0		MCS6	243.0	270.0		MCS6	526.5	585.0
	MCS7	130.0	144.4		MCS7	270.0	300.0		MCS7	585.0	650.0
	MCS8	156.0	173.3		MCS8	324.0	360.0		MCS8	702.0	780.0
	MCS9	13.0	14.4		MCS9	360.0	400.0		MCS9	780.0	866.7

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz Nss=3	MCS0	19.5	21.7	11ac 40MHz Nss=3	MCS0	40.5	45.0	11ac 80MHz Nss=3	MCS0	87.8	97.5
	MCS1	39.0	43.3		MCS1	81.0	90.0		MCS1	175.5	195.0
	MCS2	58.5	65.0		MCS2	121.5	135.0		MCS2	263.3	292.5
	MCS3	78.0	86.7		MCS3	162.0	180.0		MCS3	351.0	190.0
	MCS4	117.0	130		MCS4	243.0	270.0		MCS4	526.5	585.0
	MCS5	156.0	173.3		MCS5	324.0	360.0		MCS5	702.0	780.0
	MCS6	175.5	195.0		MCS6	364.5	405.0		MCS6	Note	Note
	MCS7	195.0	216.7		MCS7	405.0	450.0		MCS7	877.5	975.0
	MCS8	234.0	260.0		MCS8	486.0	540.0		MCS8	1053.0	1170.0
	MCS9	260.0	228.9		MCS9	540.0	600.0		MCS9	1170.0	1300.0
NOTE: MCS 6 is invalid due to mod(NCBPS/NES, DR) not being equal to 0.											

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz Nss=4	MCS0	26.0	28.9	11ac 40MHz Nss=4	MCS0	54.0	60.0	11ac 80MHz Nss=4	MCS0	117.0	130.0
	MCS1	52.0	57.8		MCS1	108.0	120.0		MCS1	234.0	260.0
	MCS2	78.0	86.7		MCS2	162.0	180.0		MCS2	351.0	390.0
	MCS3	104.0	115.6		MCS3	216.0	240.0		MCS3	468.0	520.0
	MCS4	156.0	173.3		MCS4	324.0	360.0		MCS4	702.0	780.0
	MCS5	208.0	231.1		MCS5	432.0	480.0		MCS5	936.0	1040.0
	MCS6	234.0	260.0		MCS6	486.0	540.0		MCS6	1053.0	1170.0
	MCS7	260.0	288.9		MCS7	540.0	600.0		MCS7	1170.0	1300.0
	MCS8	312.0	346.7		MCS8	648.0	720.0		MCS8	1404.0	1560.0
	MCS9	Note	Note		MCS9	720.0	800.0		MCS9	1560.0	1733.3
NOTE: MCS 9 is invalid due to mod(NCBPS/NES, DR) not being equal to 0.											

1.2. Accessories

Adapter 1

Model	ADG009
Technicolor P/N	37562760
ID	AD0G2
Manufacturer	AcBel
Input Power	100-240V~50/60Hz, MAX. 1.5A
Output Power	12V, 4.5A
Cable Length	2m

Adapter 2

Model	ADS-48PI-12N-2
Technicolor P/N	N/A
ID	N/A
Manufacturer	HONOR
Input Power	100-240V~50/60Hz, MAX. 1.2A
Output Power	12V, 4.0A
Cable Length	2m

1.3. Information Provided by the Manufacturer

Interface Availability

Interface / Product Code	Internal AC~DC Power Input:100~240V output: DC 12Vdc	FXS	CM-console 3.5mm	Ethernet 10/100/ 1000 Mbps	USB 3.0	Cable modem: DOCSIS3.1 Cable Modem	WLAN IEEE 802.11a/b/g/n/ac (2.4GHz 3*3) (5GHz 4*4 ac)
CGA4234VGW-TCH	●	● (2 port)	● (1 port)	● (4 port)	● (1 port)	●	●
CGA4234DGW-TCH	●	○	● (1 port)	● (4 port)	● (1 port)	●	●

Note:

1. ● : Equipped / ○ : Not Equipped
2. Product code: CGA4234VGW-TCH was selected as representative model for the test and its data was recorded in this report.
3. The CM-console 3.5mm is generally used for FW upgrading by professional installer only.

1.4. Cabling Attached to the Equipment

Table 1- Cable and Interconnection

For product code: CGA4234VGW-TCH

Interface	Cable type	Cable length delivered with the modem	"Real life" Cable length that can be attached to this type of interface	Cable length to be used for testing	Internal/external connection
Cable modem	Coaxial	2 meter flat cable	> 10 meter	10 meter	External
ETH1	UTP Cat 5	1 meter	> 10 meter	10 meter	Internal
FXS1/2	UTP Cat 3	1 meter	> 10 meter	1 meter flat cable	Internal
USB	STP	1 meter	< 3meter	1 meter	Internal
AC power	-	-	-	-	External

For product code: CGA4234DGW-TCH

Interface	Cable type	Cable length delivered with the modem	"Real life" Cable length that can be attached to this type of interface	Cable length to be used for testing	Internal/external connection
Cable modem	Coaxial	2 meter flat cable	> 10 meter	10 meter	External
ETH1	UTP Cat 5	1 meter	> 10 meter	10 meter	Internal
USB	STP	1 meter	< 3meter	1 meter	Internal
AC power	-	-	-	-	External

1.5. Panel Drawing

Reset

X4-RJ45

USB Type-A

F-Connector

x2 FXS

CM-connector

DC-Power Jack

1.6. Transmit Operating Modes

Transmit Operating Mode							Transmit Muitiple Antennas					
■	Operating mode 1 (single antenna)						■	1TX				
■	Operating mode 2 (muitiple antenna, no beam forming)						■	2TX	■	3TX	■	4TX
■	Operating mode 3 (muitiple antenna, with beam forming)						■	2TX	■	3TX	■	4TX
■	802.11a	Operating mode	■	1TX	■	2TX	■	3TX	■	4TX		
■	802.11n(20MHz)	Operating mode	■	1TX	■	2TX	■	3TX	■	4TX		
■	802.11n(40MHz)	Operating mode	■	1TX	■	2TX	■	3TX	■	4TX		
■	802.11ac(20MHz)	Operating mode	■	1TX	■	2TX	■	3TX	■	4TX		
■	802.11ac(40MHz)	Operating mode	■	1TX	■	2TX	■	3TX	■	4TX		
■	802.11ac(80MHz)	Operating mode	■	1TX	■	2TX	■	3TX	■	4TX		

For IEEE802.11a,

6Mbps~54Mbps: 1TX; 2TX; 3TX; 4TX

For IEEE802.11n,

MCS 0~MCS 7: 1 Stream 1TX, 1 Stream 2TX, 1 Stream 3TX, 1 Stream 4TX;

MCS 8~MCS 15: 2 Stream 2TX, 2 Stream 3TX, 2 Stream 4TX;

MCS 16~MCS 23: 3 Stream 3TX, 3 Stream 4TX;

MCS 24~MCS 31: 4 Stream 4TX.

For IEEE802.11ac 20MHz,

Nss 1 MCS 0~Nss 1 MCS 8: 1 Stream 1TX, 1 Stream 2TX, 1 Stream 3TX, 1 Stream 4TX;

Nss 2 MCS 0~Nss 2 MCS 9: 2 Stream 2TX, 2 Stream 3TX, 2 Stream 4TX;

Nss 3 MCS 0~Nss 3 MCS 9: 3 Stream 3TX, 3 Stream 4TX;

Nss 4 MCS 0~Nss 4 MCS 8: 4 Stream 4TX.

For IEEE802.11ac 40/80 MHz,

Nss 1 MCS 0~Nss 1 MCS 9: 1 Stream 1TX, 1 Stream 2TX, 1Stream 3TX, 1 Stream 4TX;

Nss 2 MCS 0~Nss 2 MCS 9: 2 Stream 2TX, 2 Stream 3TX, 2 Stream 4TX;

Nss 3 MCS 0~Nss 3 MCS 9: 3 Stream 3TX, 3 Stream 4TX;

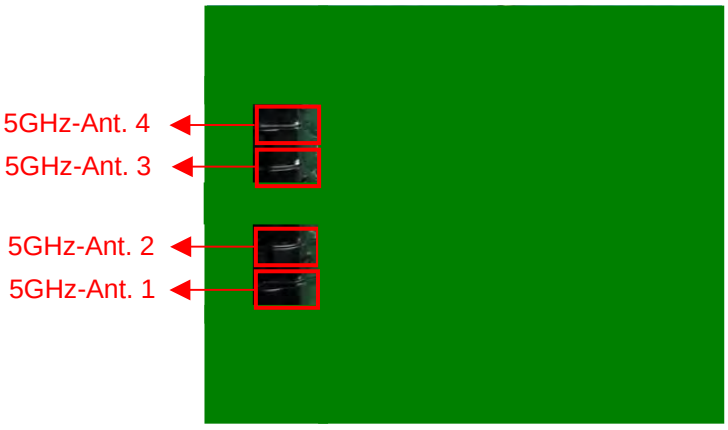
Nss 4 MCS 0~Nss 4 MCS 9: 4 Stream 4TX.

1.7. Antenna Requirement

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

1.8. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector
5GHz-Ant. 1	technicolor	5G ANTENNA PERP CGA3234	PIFA Antenna	N/A
5GHz-Ant. 2	technicolor	5G ANTENNA PARALLEL CGA3234	PIFA Antenna	N/A
5GHz-Ant. 3	technicolor	5G ANTENNA PARALLEL CGA3234	PIFA Antenna	N/A
5GHz-Ant. 4	technicolor	5G ANTENNA PERP CGA3234	PIFA Antenna	N/A



Number of Transmitter Antennas & Bandwidth

Number of Transmitter Antennas	1TX			2TX			3TX			4TX		
Bandwidth Mode	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz
802.11a	V	X	X	V	X	X	V	X	X	V	X	X
802.11n	V	V	X	V	V	X	V	V	X	V	V	X
802.11ac	V	V	V	V	V	V	V	V	V	V	V	V

Frequency	Maximum Gain (dBi) for CDD mode					
	CDD mode (1 Stream 4 TX) for Power Gain (KDB 662911 Option 2)			CDD mode (1 Stream 4 TX) for PSD Gain (KDB 662911 Option 2)		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	4.81	-	-	6.83	-	-
5190MHz	-	4.85	-	-	6.87	-
5200MHz	4.91	-	-	6.91	-	-
5210MHz	-	-	4.89	-	-	6.96
5230MHz	-	4.91	-	-	6.94	-
5240MHz	4.95	-	-	6.92	-	-
5745MHz	5.37	-	-	7.41	-	-
5755MHz	-	5.37	-	-	7.45	-
5775MHz	-	-	5.37	-	-	7.49
5785MHz	5.24	-	-	7.36	-	-
5795MHz	-	5.23	-	-	7.31	-
5825MHz	5.30	-	-	7.52	-	-

Note:

1. Antenna Gain refer to "CGA4234 Lab1D 4x4 5GHz Antennas After Component Matching new formulas.xls" files

2. Maximum Correlated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

3. Maximum Uncorrelated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

Frequency	Maximum Gain (dBi) for TxBF mode					
	TxBF mode (1 Stream 4 TX) for Power Gain (KDB 662911 Option 2)			TxBF mode (1 Stream 4 TX) for PSD Gain (KDB 662911 Option 2)		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	6.83	-	-	6.83	-	-
5190MHz	-	6.87	-	-	6.87	-
5200MHz	6.91	-	-	6.91	-	-
5210MHz	-	-	6.96	-	-	6.96
5230MHz	-	6.94	-	-	6.94	-
5240MHz	6.92	-	-	6.92	-	-
5745MHz	7.41	-	-	7.41	-	-
5755MHz	-	7.45	-	-	7.45	-
5775MHz	-	-	7.49	-	-	7.49
5785MHz	7.36	-	-	7.36	-	-
5795MHz	-	7.31	-		7.31	-
5825MHz	7.52	-	-	7.52	-	-

Note:

1. Antenna Gain refer to "CGA4234 Lab1D 4x4 5GHz Antennas After Component Matching new formulas.xls" files

2. Maximum Correlated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

3. Maximum Uncorrelated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

Frequency	Maximum Gain (dBi) for TxBF mode					
	TxBF mode (2 Stream 4 TX) for Power Gain (KDB 662911 Option 2)			TxBF mode (2 Stream 4 TX) for PSD Gain (KDB 662911 Option 2)		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	4.85	-	-	4.85	-	-
5190MHz	-	4.87	-	-	4.87	-
5200MHz	4.91	-	-	4.91	-	-
5210MHz	-	-	4.90	-	-	4.90
5230MHz	-	4.89	-	-	4.89	-
5240MHz	4.85	-	-	4.85	-	-
5745MHz	5.13	-	-	5.13	-	-
5755MHz	-	5.19	-	-	5.19	-
5775MHz	-	-	5.24	-	-	5.24
5785MHz	5.14	-	-	5.14	-	-
5795MHz	-	5.11	-	-	5.11	-
5825MHz	5.35	-	-	5.35	-	-

Note:

1. Antenna Gain refer to "CGA4234 Lab1D 4x4 5GHz Antennas After Component Matching new formulas.xls" files

2. Maximum Correlated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

3. Maximum Uncorrelated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

Frequency	Maximum Gain (dBi) for TxBF mode					
	TxBF mode (3 Stream 4 TX) for Power Gain (KDB 662911 Option 1)			TxBF mode (3 Stream 4 TX) for PSD Gain (KDB 662911 Option 2)		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	3.95	-	-	3.95	-	-
5190MHz	-	3.98	-	-	3.98	-
5200MHz	4.02	-	-	4.02	-	-
5210MHz	-	-	4.01	-	-	4.01
5230MHz	-	4.01	-	-	4.01	-
5240MHz	4.00	-	-	4.00	-	-
5745MHz	4.09	-	-	4.09	-	-
5755MHz	-	4.12	-	-	4.12	-
5775MHz	-	-	4.16	-	-	4.16
5785MHz	4.04	-	-	4.04	-	-
5795MHz	-	4.03	-	-	4.03	-
5825MHz	4.10	-	-	4.10	-	-

Note:

1. Antenna Gain refer to "CGA4234 Lab1D 4x4 5GHz Antennas After Component Matching new formulas.xls" files

2. Maximum Correlated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

3. Maximum Uncorrelated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

Frequency	Maximum Gain (dBi) for SDM mode					
	SDM mode (4 Stream 4 TX) for Power Gain (KDB 662911 Option 2)			SDM mode (4 Stream 4 TX) for PSD Gain (KDB 662911 Option 2)		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	1.16	-	-	1.16	-	-
5190MHz	-	1.19	-	-	1.19	-
5200MHz	1.23	-	-	1.23	-	-
5210MHz	-	-	1.23	-	-	1.23
5230MHz	-	1.24	-	-	1.24	-
5240MHz	1.24	-	-	1.24	-	-
5745MHz	1.29	-	-	1.29	-	-
5755MHz	-	1.32	-	-	1.32	-
5775MHz	-	-	1.35	-	-	1.35
5785MHz	1.23	-	-	1.23	-	-
5795MHz	-	1.22	-	-	1.22	-
5825MHz	1.33	-	-	1.33	-	-

Note:

1. Antenna Gain refer to "CGA4234 Lab1D 4x4 5GHz Antennas After Component Matching new formulas.xls" files

2. Maximum Correlated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

3. Maximum Uncorrelated Directional Gain = $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

1.9. Table for Carrier Frequencies

9 channels are provided for 802.11a / 802.11n / 802.11ac (20MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz	36	5180 MHz	44	5220 MHz
	40	5200 MHz	48	5240 MHz
5725~5850 MHz	149	5745 MHz	161	5805 MHz
	153	5765 MHz	165	5825 MHz
	157	5785 MHz	-	-

4 channels are provided for 802.11n / 802.11ac (40MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz	38	5190 MHz	46	5230 MHz
5725~5850 MHz	151	5755 MHz	159	5795 MHz

2 channels are provided for 802.11ac (80MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz	42	5210 MHz	-	-
5725~5850 MHz	155	5775 MHz	-	-

1.10. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. The following table is a list of the test modes shown in this test report.

Test Items	Mode		Channel	Data Rate	Ant.
AC Power Conducted Emission	Normal Link		-	-	-
Max. Conducted Output Power	11a	OFDM / BPSK	36/40/48 /149/157/165	1S4T CDD 6Mbps	1+2+3+4
	11ac(20MHz)		36/40/48 /149/157/165	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(40MHz)		38/46/151/159	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(80MHz)		42/155	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4

Power Spectral Density	11a	OFDM / BPSK	36/40/48 /149/157/165	1S4T CDD 6Mbps	1+2+3+4
	11ac(20MHz)		36/40/48 /149/157/165	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(40MHz)		38/46/151/159	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(80MHz)		42/155	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4

26dB Spectrum Bandwidth & 99% Occupied Bandwidth Measurement	11a	OFDM / BPSK	36/40/48	1S4T CDD 6Mbps	1+2+3+4
	11ac(20MHz)		36/40/48	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(40MHz)		38/46	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(80MHz)		42	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4

6dB Spectrum Bandwidth and 99% Occupied Bandwidth Measurement (U-NII-3)	11a	OFDM / BPSK	149/157/165	1S4T CDD 6Mbps	1+2+3+4
	11ac(20MHz)		149/157/165	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(40MHz)		151/159	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(80MHz)		155	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4

Radiated Emission Below 1GHz	Normal Link		-	-	-
Radiated Emission Above 1GHz& Band Edge Emission	11ac(20MHz)	OFDM / BPSK	36/40/48 /149/157/165	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(40MHz)		38/46/151/159	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
	11ac(80MHz)		42/155	1S4T TXBF Nss 1 MCS 0	1+2+3+4
				2S4T TXBF Nss 2 MCS 0	1+2+3+4
				3S4T TXBF Nss 3 MCS 0	1+2+3+4
				4S4T SDM Nss 4 MCS 0	1+2+3+4
Frequency Stability	20 MHz	Un-mo dulation	36/40/48 /149/157/165	-	1,2,3,4
	40 MHz		38/46/151/159	-	1,2,3,4
	80 MHz		42/155	-	1,2,3,4

Note1:

The device with multiple operating mode, measurements on the middle channel were tested to determine the worst case mode. (Each modulation family were tested in band edge, spurious emission and in band PSD after investigate worst case mode)

Note 2:

Base on tx core command, the 802.11a default mode is 1S4T CDD, the 802.11ac 20MHz/40MHz/80MHz, default mode are 1S4T TXBF,2S4T TXBF,3S4T TXBF&4S4T SDM.

wl -i wl0 txcore

txcore enabled bitmap (Nsts {4..1}) 0x0f 0x0f 0x0f 0x0f

txcore mask OFDM 0x0f CCK 0x0f

Note 3:

Base on same power setting, the 802.11a 1S4T CDD mode covered by 802.11ac 1S4T TXBF mode.

Note 4:

Base on same power setting, the 802.11a mode were only tested the “Maximum Conducted Output Power” , “Power Spectral Density” and ” Bandwidth”

The following test modes were performed for all tests:

For Conducted Emission test:

Test Mode 1: Normal Link + Adapter 1

Test Mode 2: Normal Link + Adapter 2

For Radiated Emission below 1GHz test:

Test Mode 1: Normal Link + Adapter 1

Test Mode 2: Normal Link + Adapter 2

For Radiated Emission above 1GHz test:

Test Mode 1: CTX in Y axis

For Co-location MPE Test:

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to FA811125) test is added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

Note 1: The EUT can only be used at standing position.

Note 2: The connection diagram of test system and test photos only selected worst mode to record in the test report.

Note 3: The CM-console port can not be used by end user. It is generally used for updating FW by professional installer.

Note 4: All the specification of test configurations and test modes were based on customer's request.

1.11. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Designation No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	TW0006	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

1.12. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

The Power Setting Parameter					
Test Software Version	CGA4234GA_master_20180829160026				
Worst Modulation Mode	**Number of Transmit Chains (NTX)**	**Frequency (MHz)**	**Maximum Output Power (dBm)**	**Power Setting**	**Data Rate / MCS**
802.11a (CDD)	1 stream 4TX	5180	23.67	70	6Mbps
802.11a (CDD)	1 stream 4TX	5200	20.09	55	6Mbps
802.11a (CDD)	1 stream 4TX	5240	28.11	88	6Mbps
802.11a (CDD)	1 stream 4TX	5745	26.55	84	6Mbps
802.11a (CDD)	1 stream 4TX	5785	25.92	82	6Mbps
802.11a (CDD)	1 stream 4TX	5825	25.58	81	6Mbps
802.11ac 20MHz (SDM)	4 stream 4TX	5180	25.83	79	Nss 4 MCS 0 (26)
802.11ac 20MHz (SDM)	4 stream 4TX	5200	25.76	79	Nss 4 MCS 0 (26)
802.11ac 20MHz (SDM)	4 stream 4TX	5240	28.86	91	Nss 4 MCS 0 (26)
802.11ac 20MHz (SDM)	4 stream 4TX	5745	29.78	97	Nss 4 MCS 0 (26)
802.11ac 20MHz (SDM)	4 stream 4TX	5785	29.79	97	Nss 4 MCS 0 (26)
802.11ac 20MHz (SDM)	4 stream 4TX	5825	29.77	97	Nss 4 MCS 0 (26)
802.11ac 20MHz (TxBF)	1 stream 4TX	5180	23.69	70	Nss 1 MCS 0 (6.5)
802.11ac 20MHz (TxBF)	1 stream 4TX	5200	20.19	55	Nss 1 MCS 0 (6.5)
802.11ac 20MHz (TxBF)	1 stream 4TX	5240	28.12	88	Nss 1 MCS 0 (6.5)
802.11ac 20MHz (TxBF)	1 stream 4TX	5745	26.58	84	Nss 1 MCS 0 (6.5)
802.11ac 20MHz (TxBF)	1 stream 4TX	5785	25.96	82	Nss 1 MCS 0 (6.5)
802.11ac 20MHz (TxBF)	1 stream 4TX	5825	25.60	81	Nss 1 MCS 0 (6.5)
802.11ac 20MHz (TxBF)	2 stream 4TX	5180	22.08	63	Nss 2 MCS 0 (13)
802.11ac 20MHz (TxBF)	2 stream 4TX	5200	23.81	70	Nss 2 MCS 0 (13)
802.11ac 20MHz (TxBF)	2 stream 4TX	5240	28.65	90	Nss 2 MCS 0 (13)
802.11ac 20MHz (TxBF)	2 stream 4TX	5745	26.23	81	Nss 2 MCS 0 (13)
802.11ac 20MHz (TxBF)	2 stream 4TX	5785	26.35	82	Nss 2 MCS 0 (13)
802.11ac 20MHz (TxBF)	2 stream 4TX	5825	27.13	85	Nss 2 MCS 0 (13)
802.11ac 20MHz (TxBF)	3 stream 4TX	5180	25.01	75	Nss 3 MCS 0 (19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5200	25.13	75	Nss 3 MCS 0 (19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5240	28.53	90	Nss 3 MCS 0 (19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5745	28.16	90	Nss 3 MCS 0 (19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5785	28.10	90	Nss 3 MCS 0 (19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5825	29.27	95	Nss 3 MCS 0 (19.5)

802.11ac 40MHz (SDM)	4 stream 4TX	5190	23.69	70	Nss 4 MCS 0 (54)
802.11ac 40MHz (SDM)	4 stream 4TX	5230	28.16	88	Nss 4 MCS 0 (54)
802.11ac 40MHz (SDM)	4 stream 4TX	5755	29.55	95	Nss 4 MCS 0 (54)
802.11ac 40MHz (SDM)	4 stream 4TX	5795	29.90	97	Nss 4 MCS 0 (54)
802.11ac 40MHz (TxBF)	1 stream 4TX	5190	20.71	58	Nss 1 MCS 0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5230	25.33	77	Nss 1 MCS 0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5755	27.09	86	Nss 1 MCS 0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5795	28.67	92	Nss 1 MCS 0 (13.5)
802.11ac 40MHz (TxBF)	2 stream 4TX	5190	24.13	72	Nss 2 MCS 0 (27)
802.11ac 40MHz (TxBF)	2 stream 4TX	5230	26.92	83	Nss 2 MCS 0 (27)
802.11ac 40MHz (TxBF)	2 stream 4TX	5755	28.83	92	Nss 2 MCS 0 (27)
802.11ac 40MHz (TxBF)	2 stream 4TX	5795	29.83	97	Nss 2 MCS 0 (27)
802.11ac 40MHz (TxBF)	3 stream 4TX	5190	23.06	66	Nss 3 MCS 0 (40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5230	27.63	86	Nss 3 MCS 0 (40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5755	28.80	92	Nss 3 MCS 0 (40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5795	29.87	97	Nss 3 MCS 0 (40.5)
802.11ac 80MHz (SDM)	4 stream 4TX	5210	24.40	72	Nss 4 MCS 0 (117)
802.11ac 80MHz (SDM)	4 stream 4TX	5775	26.51	83	Nss 4 MCS 0 (117)
802.11ac 80MHz (TxBF)	1 stream 4TX	5210	21.92	63	Nss 1 MCS 0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5775	24.50	76	Nss 1 MCS 0 (29.3)
802.11ac 80MHz (TxBF)	2 stream 4TX	5210	23.49	69	Nss 2 MCS 0 (58.5)
802.11ac 80MHz (TxBF)	2 stream 4TX	5775	27.00	85	Nss 2 MCS 0 (58.5)
802.11ac 80MHz (TxBF)	3 stream 4TX	5210	22.48	66	Nss 3 MCS 0 (87.8)
802.11ac 80MHz (TxBF)	3 stream 4TX	5775	25.92	81	Nss 3 MCS 0 (87.8)

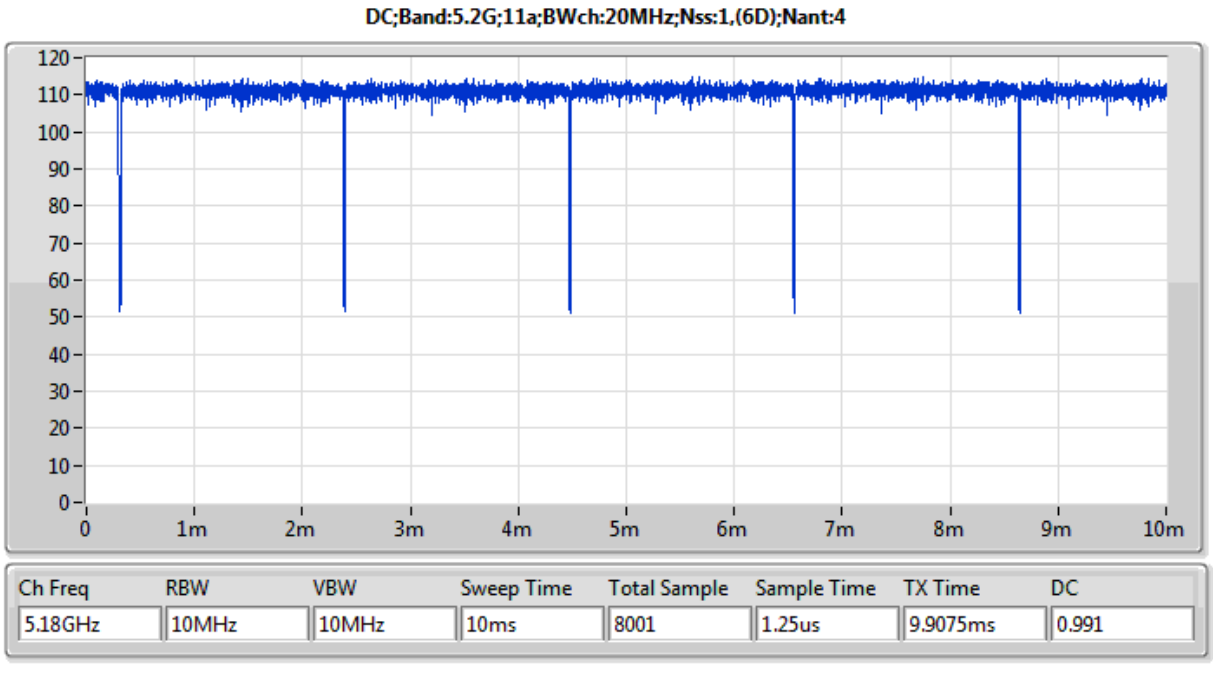
1.13. On Time and Duty Cycle

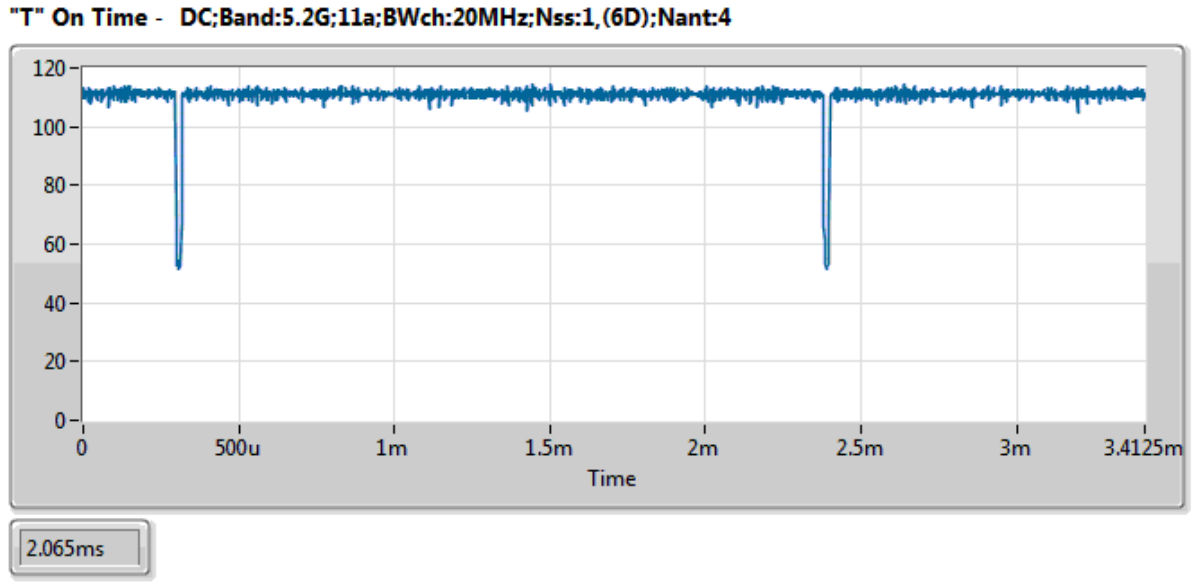
Mode	Total On Time (ms)	Period (ms)	on time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW/(kHz)
802.11a CDD	9.907	10	2.065	99.1%	0.04	0.01
802.11ac(20MHz) 4S4T SDM	9.656	10	0.526	96.6%	0.15	1.90
802.11ac(40MHz) 4S4T SDM	9.391	10	0.281	93.9%	0.27	3.56
802.11ac(80MHz) 4S4T SDM	8.988	10	0.161	89.9%	0.46	6.21
802.11ac(20MHz) 1S4T TXBF	19.100	20	3.840	95.5%	0.20	0.26
802.11ac(40MHz) 1S4T TXBF	18.302	20	3.695	91.5%	0.39	0.27
802.11ac(80MHz) 1S4T TXBF	18.962	20	5.098	94.8%	0.23	0.20
802.11ac(20MHz) 2S4T TXBF	18.815	20	3.843	94.1%	0.27	0.26
802.11ac(40MHz) 2S4T TXBF	19.180	20	5.070	95.9%	0.18	0.20
802.11ac(80MHz) 2S4T TXBF	18.085	20	5.328	90.4%	0.44	0.19
802.11ac(20MHz) 3S4T TXBF	19.147	20	5.113	95.7%	0.19	0.20
802.11ac(40MHz) 3S4T TXBF	18.610	20	4.923	93%	0.31	0.20
802.11ac(80MHz) 3S4T TXBF	18.212	20	5.390	91.1%	0.41	0.19

Note:
1. Power measurement using sweep trigger and gating of the power meter, duty factor is not required.
2. Duty cycle > 98%, duty factor is not required.

Plot:

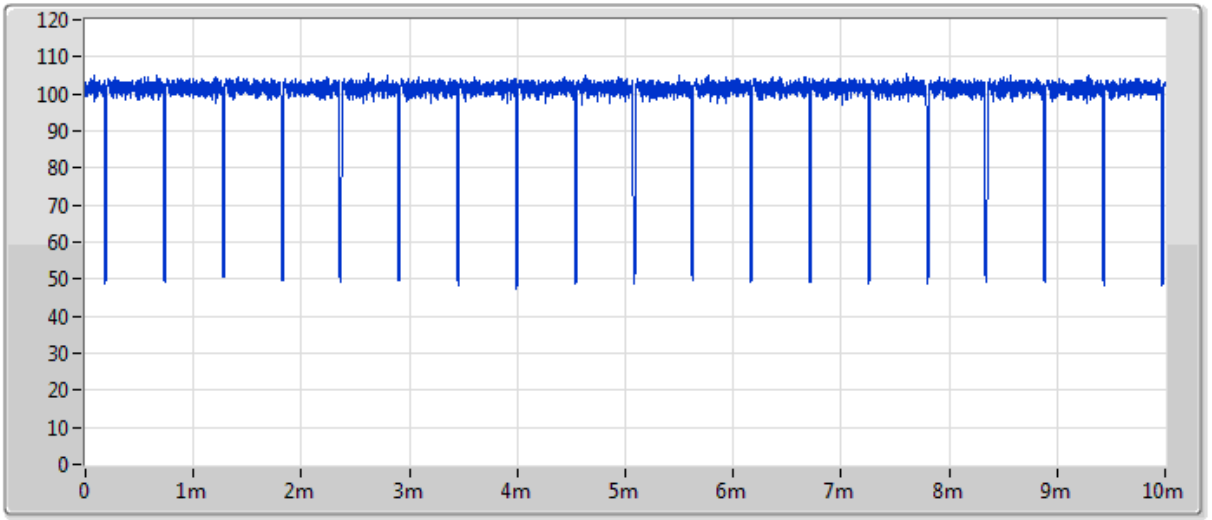
802.11a CDD





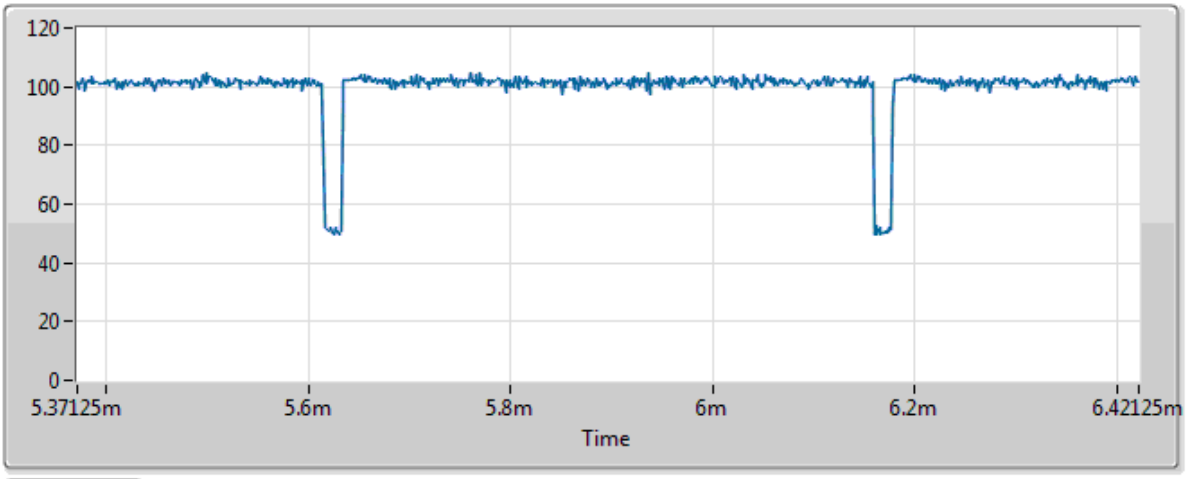
802.11ac(20MHz) 4S4T SDM

DC;Band:5.2G;VHT20;BWch:20MHz;Nss:4,(M0);Nant:4



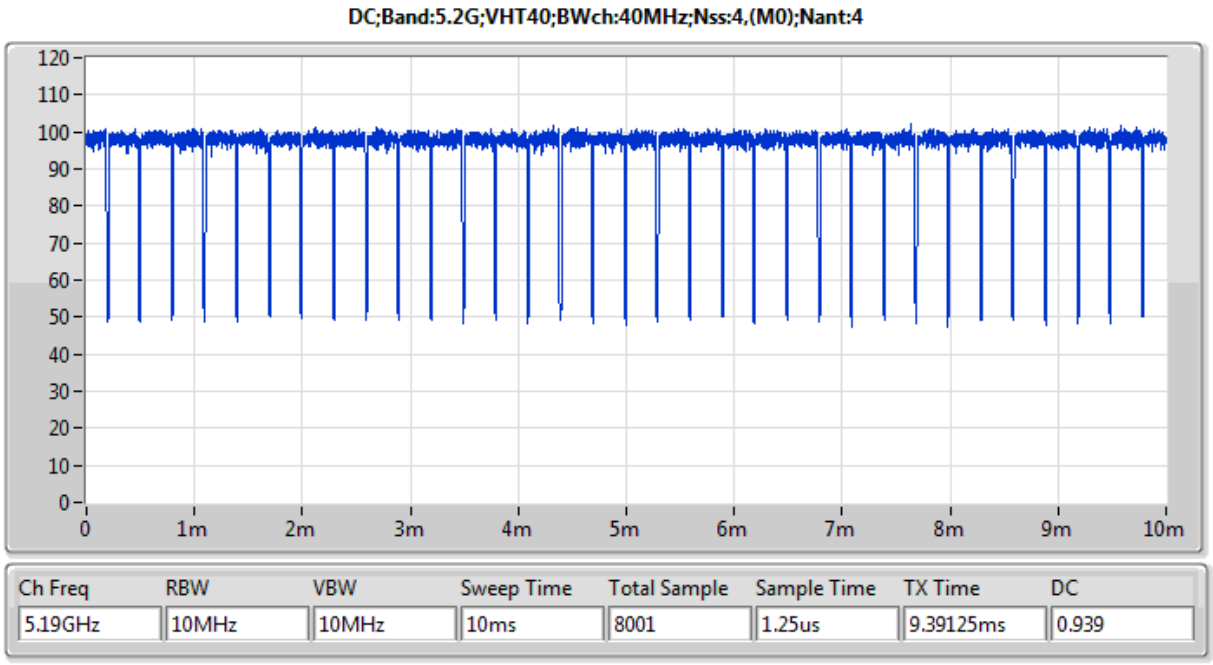
Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
5.18GHz	10MHz	10MHz	10ms	8001	1.25us	9.65625ms	0.966

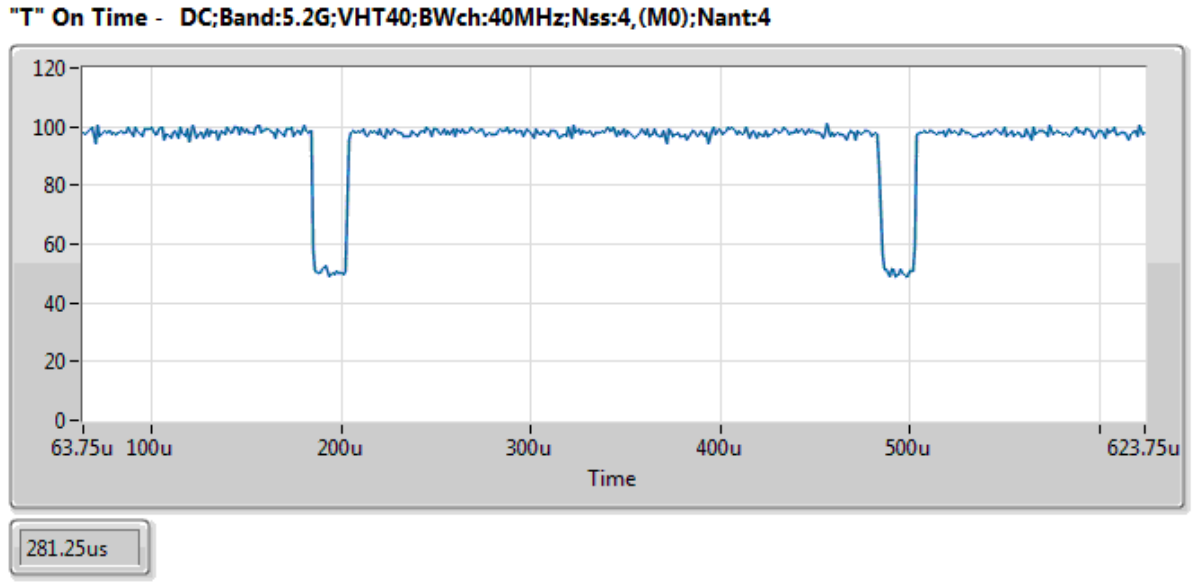
"T" On Time - DC;Band:5.2G;VHT20;BWch:20MHz;Nss:4,(M0);Nant:4



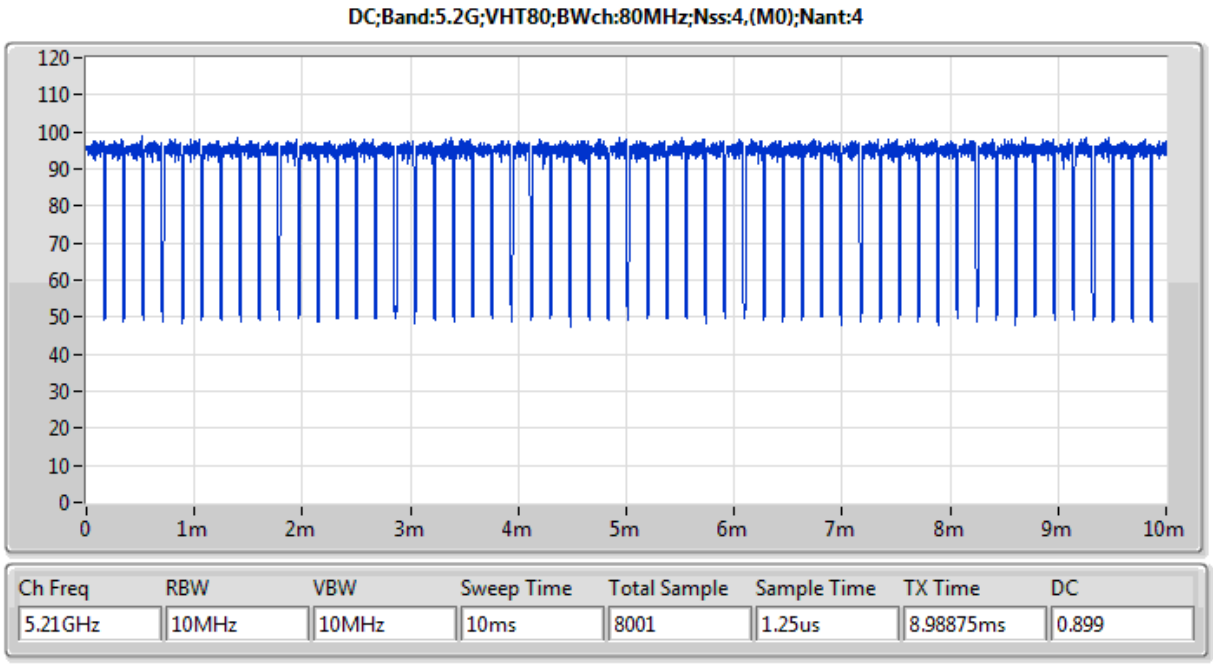
526.25us

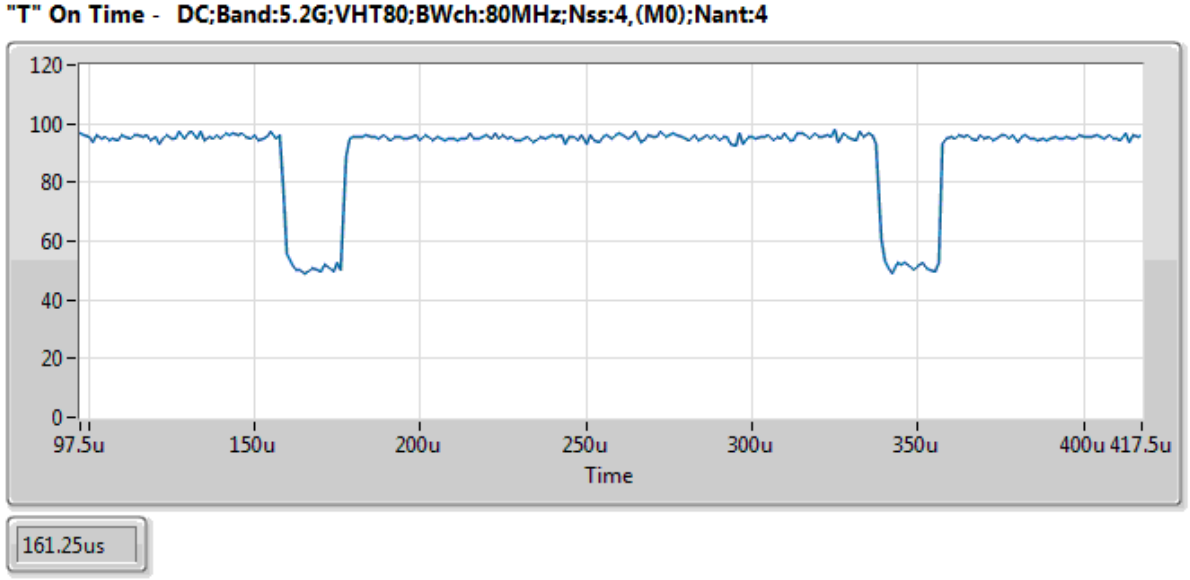
802.11ac(40MHz) 4S4T SDM



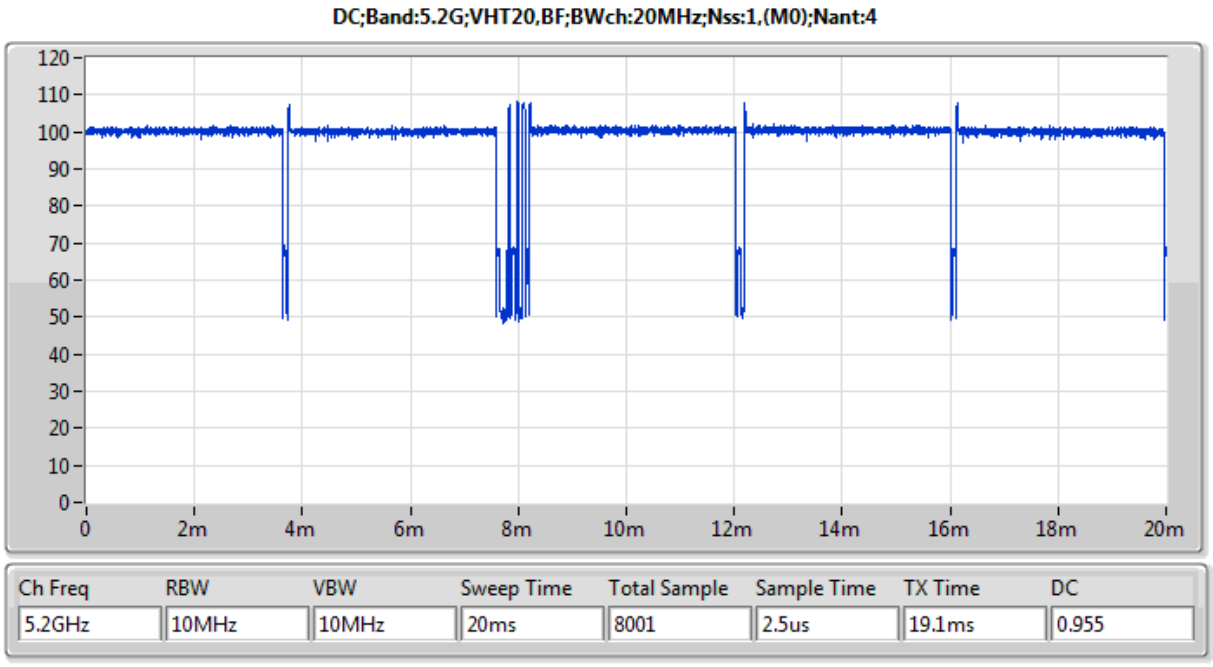


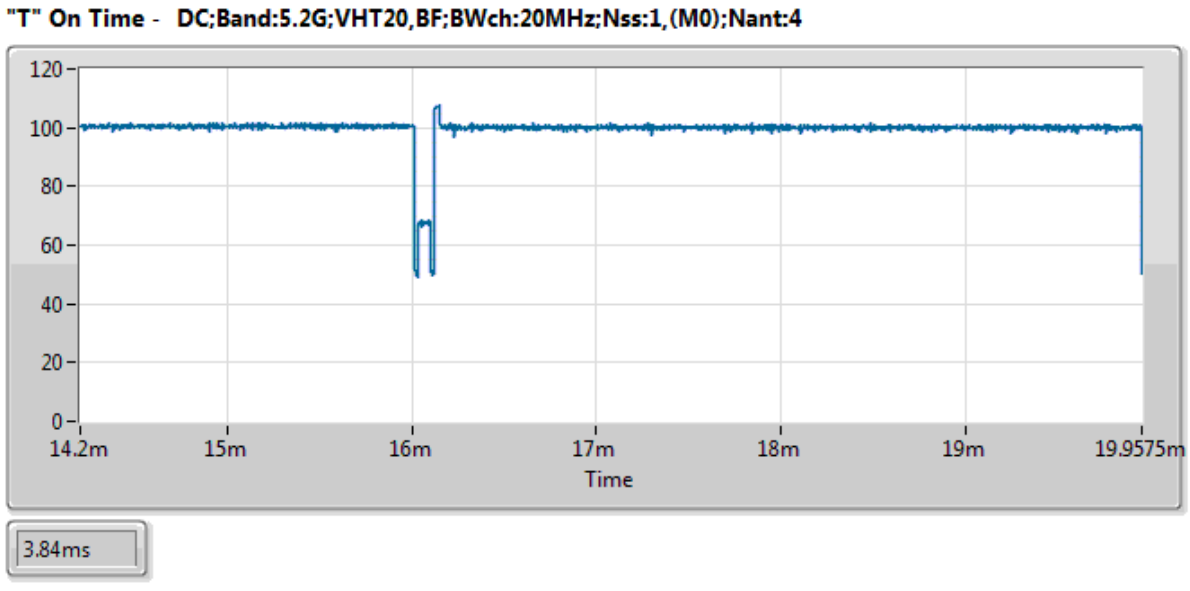
802.11ac(80MHz) 4S4T SDM



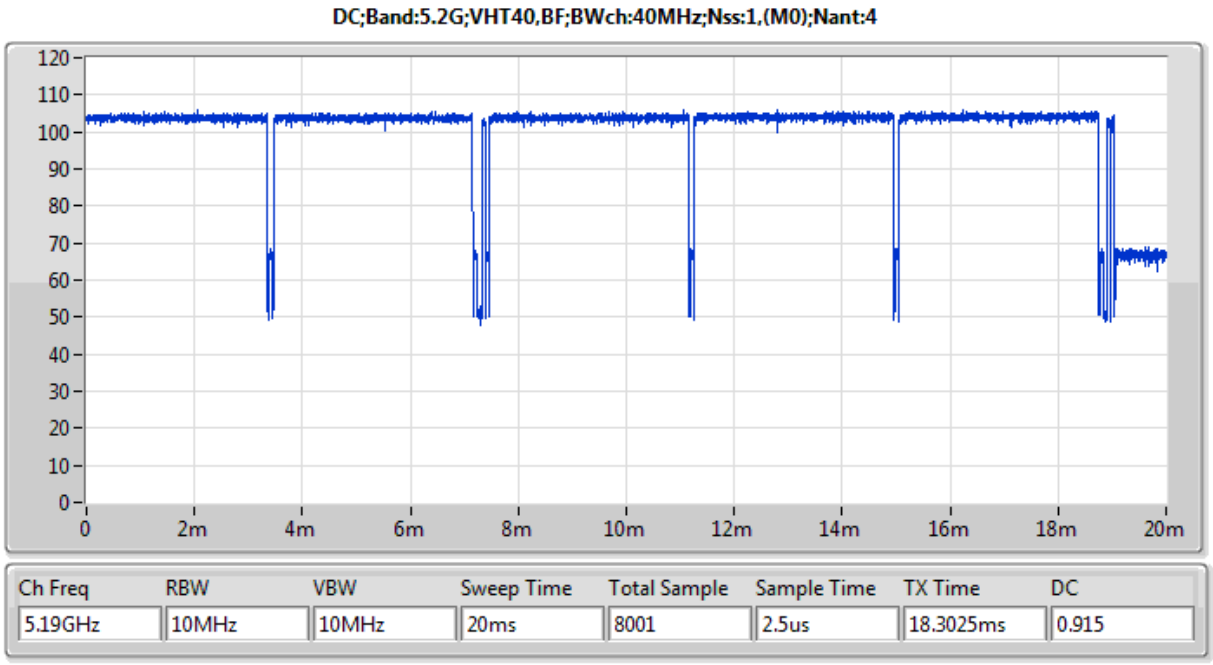


802.11ac(20MHz) 1S4T TXBF

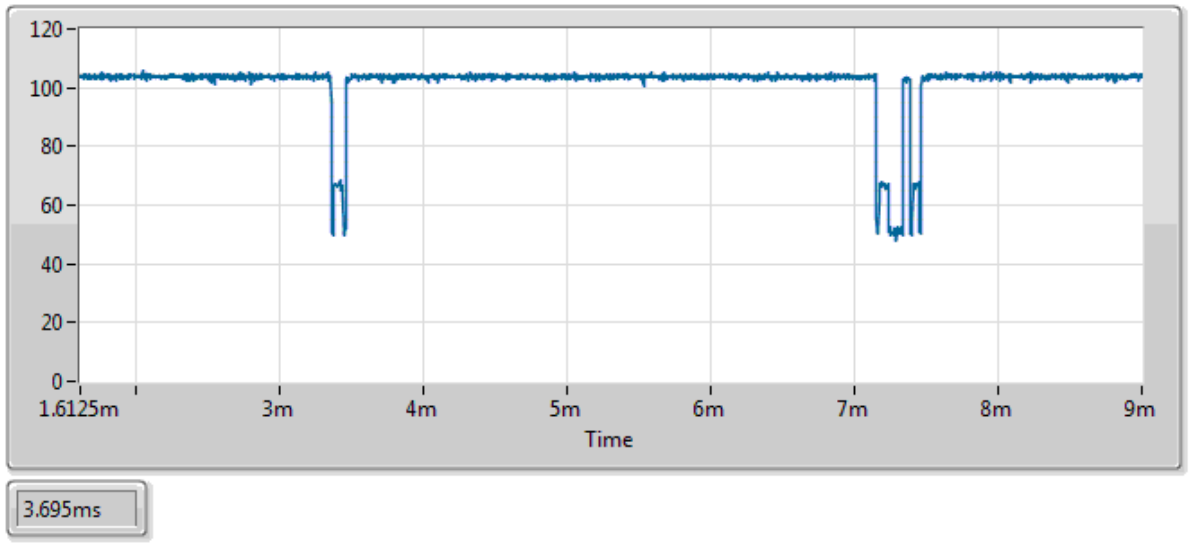




802.11ac(40MHz) 1S4T TXBF

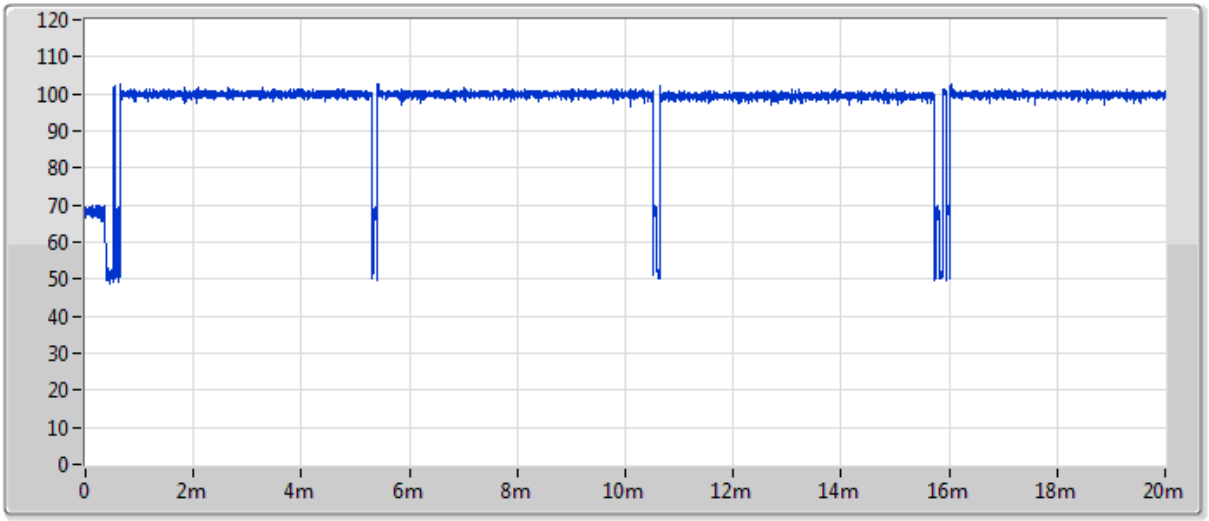


Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
5.19GHz	10MHz	10MHz	20ms	8001	2.5us	18.3025ms	0.915



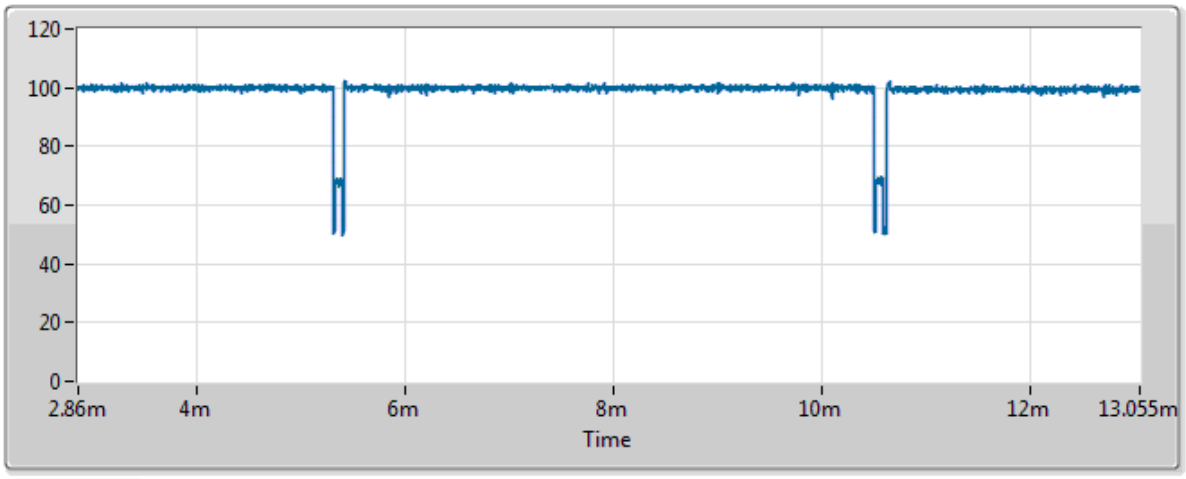
802.11ac(80MHz) 1S4T TXBF

DC;Band:5.2G;VHT80,BF;BWch:80MHz;Nss:1,(M0);Nant:4



Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
5.21GHz	10MHz	10MHz	20ms	8001	2.5us	18.9625ms	0.948

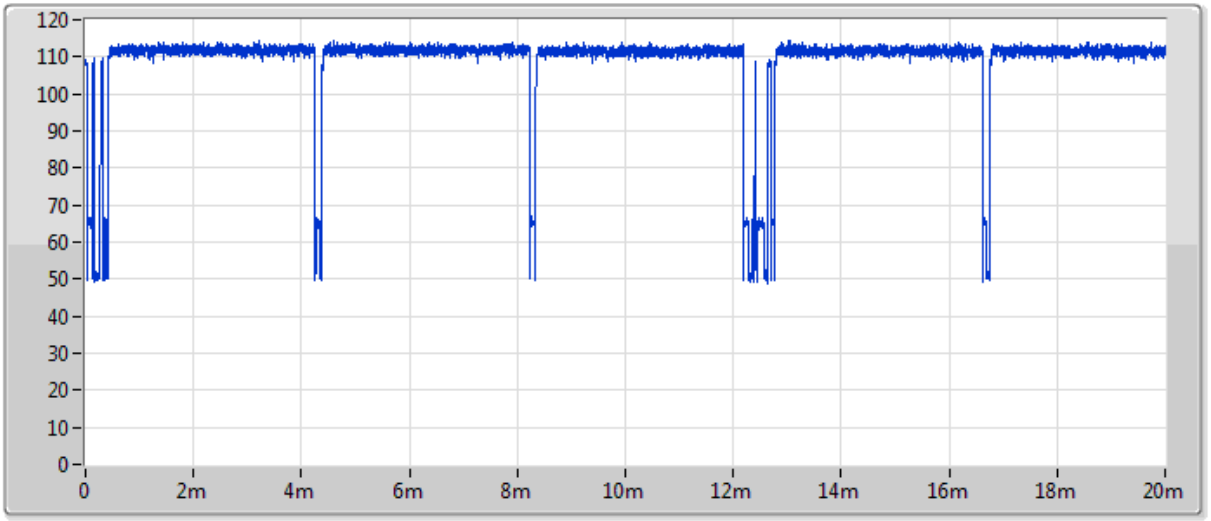
"T" On Time - DC;Band:5.2G;VHT80,BF;BWch:80MHz;Nss:1,(M0);Nant:4



5.098ms

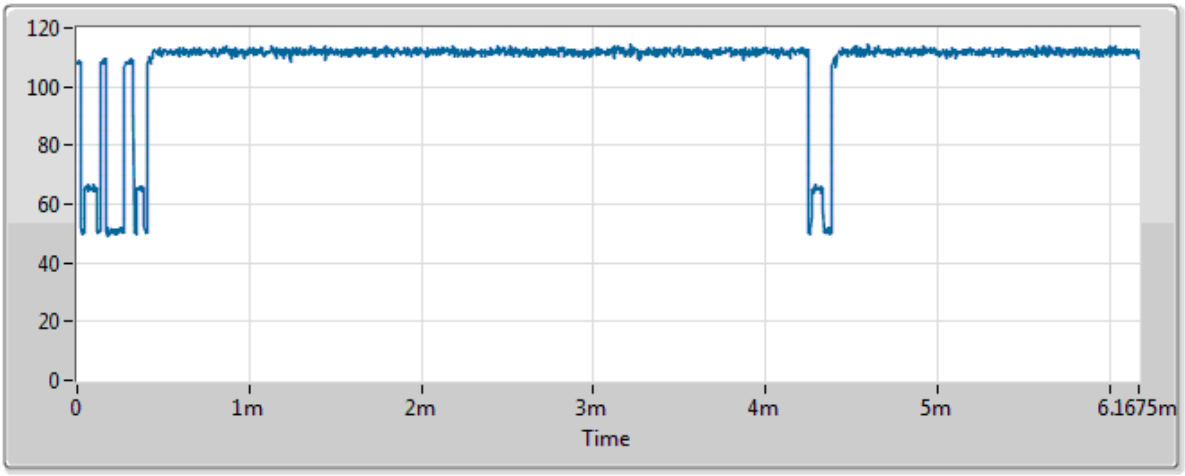
802.11ac(20MHz) 2S4T TXBF

DC;Band:5.2G;VHT20,BF;BWch:20MHz;Nss:2,(M0);Nant:4



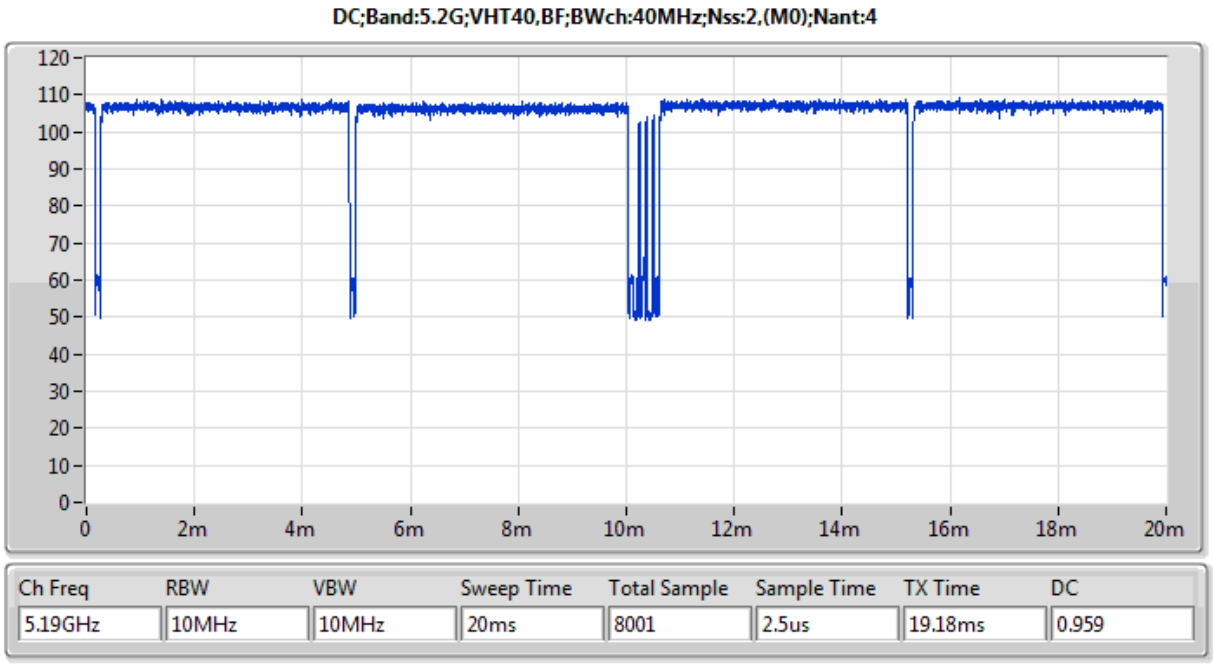
Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
5.2GHz	10MHz	10MHz	20ms	8001	2.5us	18.815ms	0.941

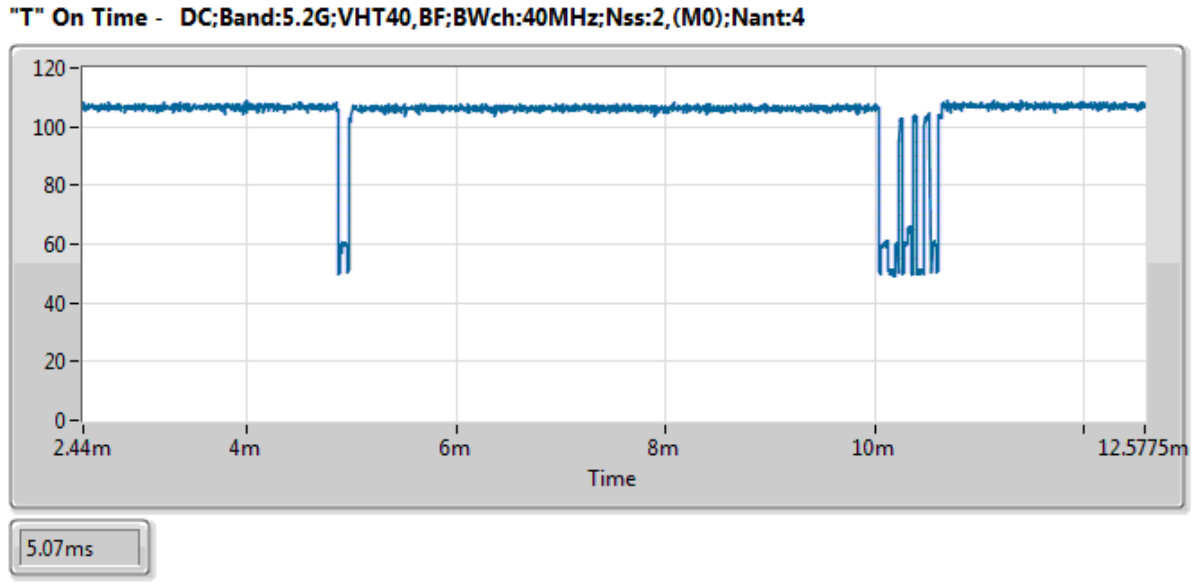
"T" On Time - DC;Band:5.2G;VHT20,BF;BWch:20MHz;Nss:2,(M0);Nant:4



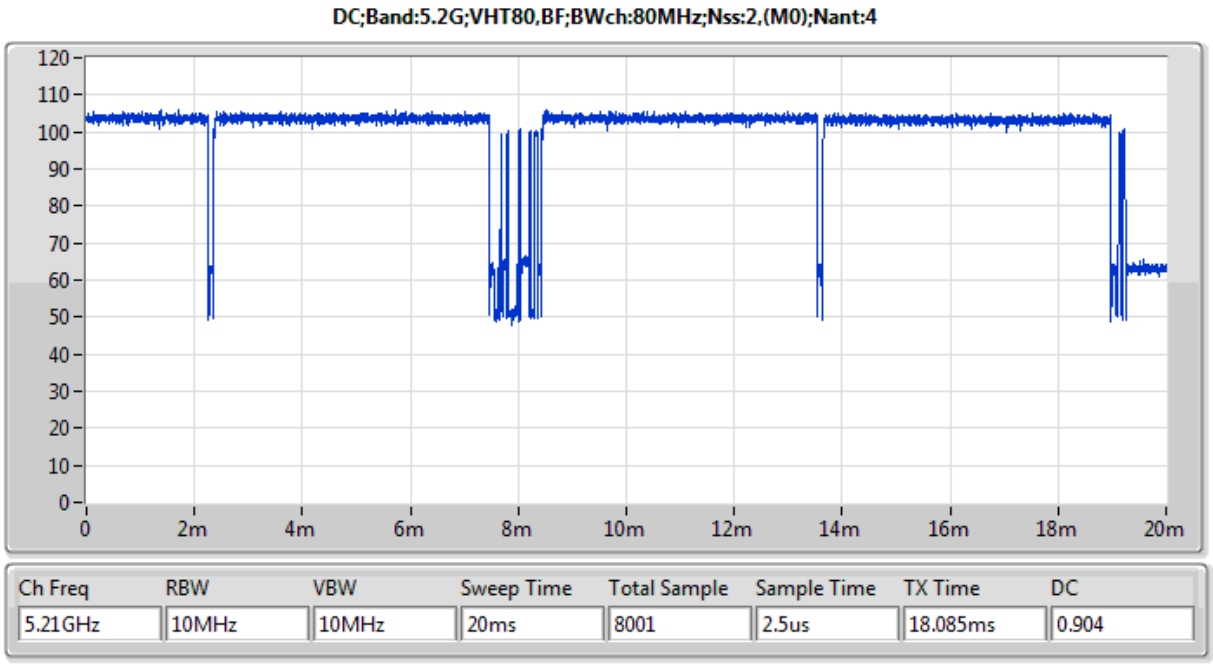
3.843ms

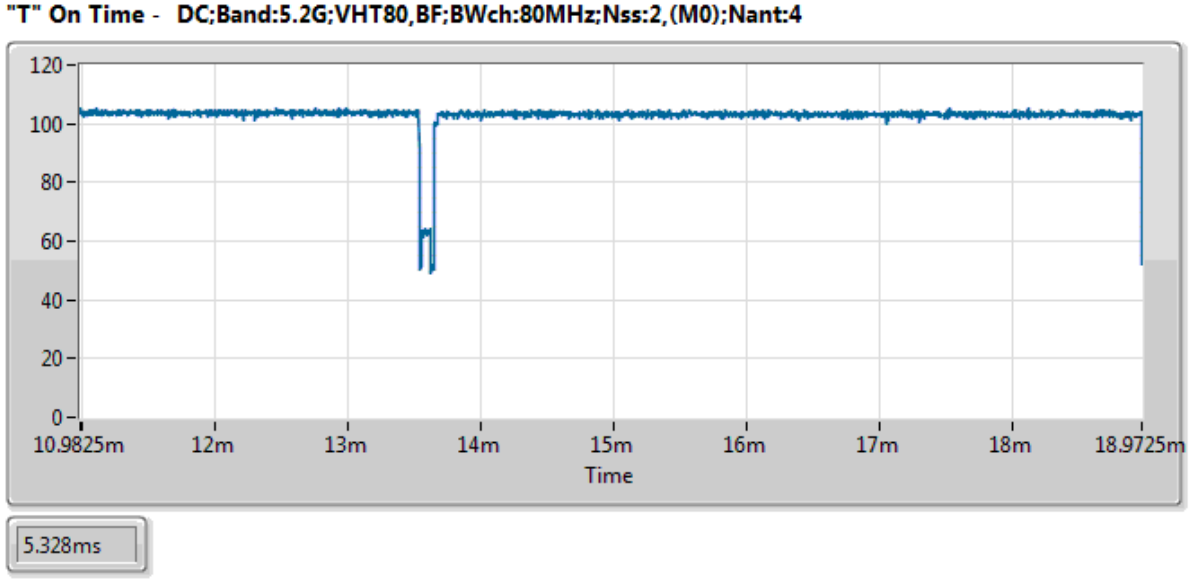
802.11ac(40MHz) 2S4T TXBF



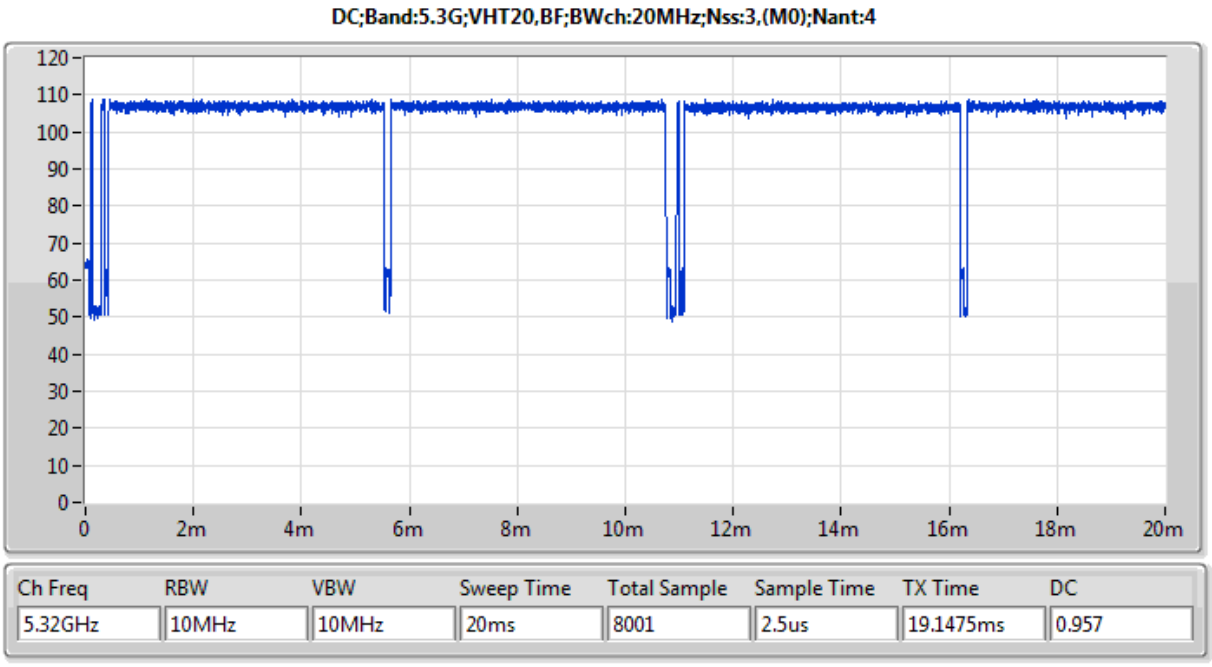


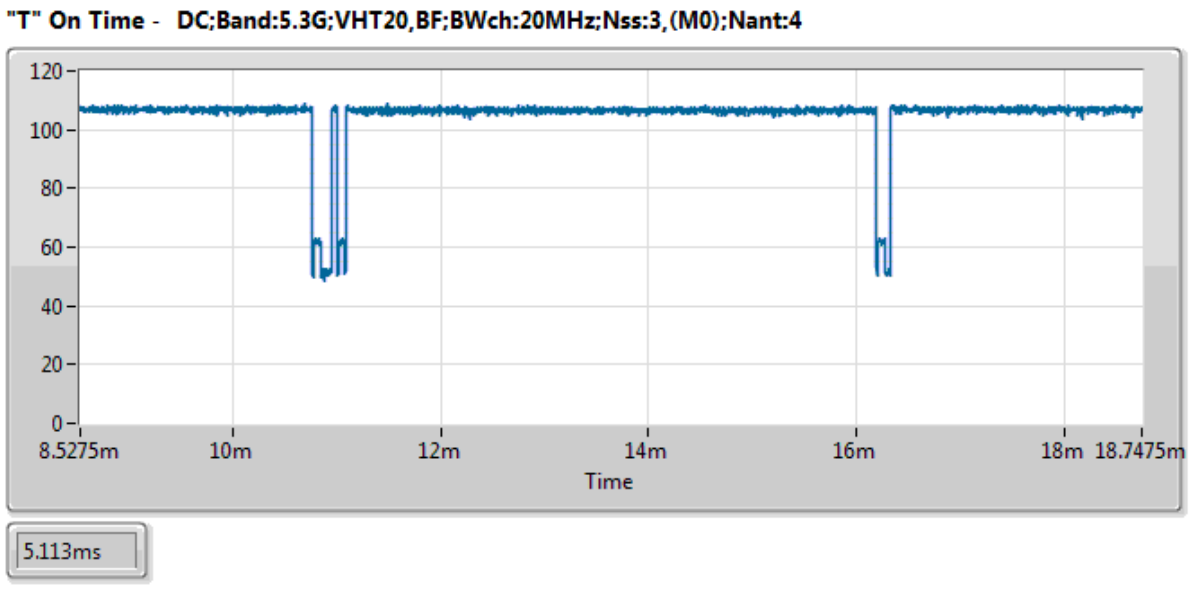
802.11ac(80MHz) 2S4T TXBF



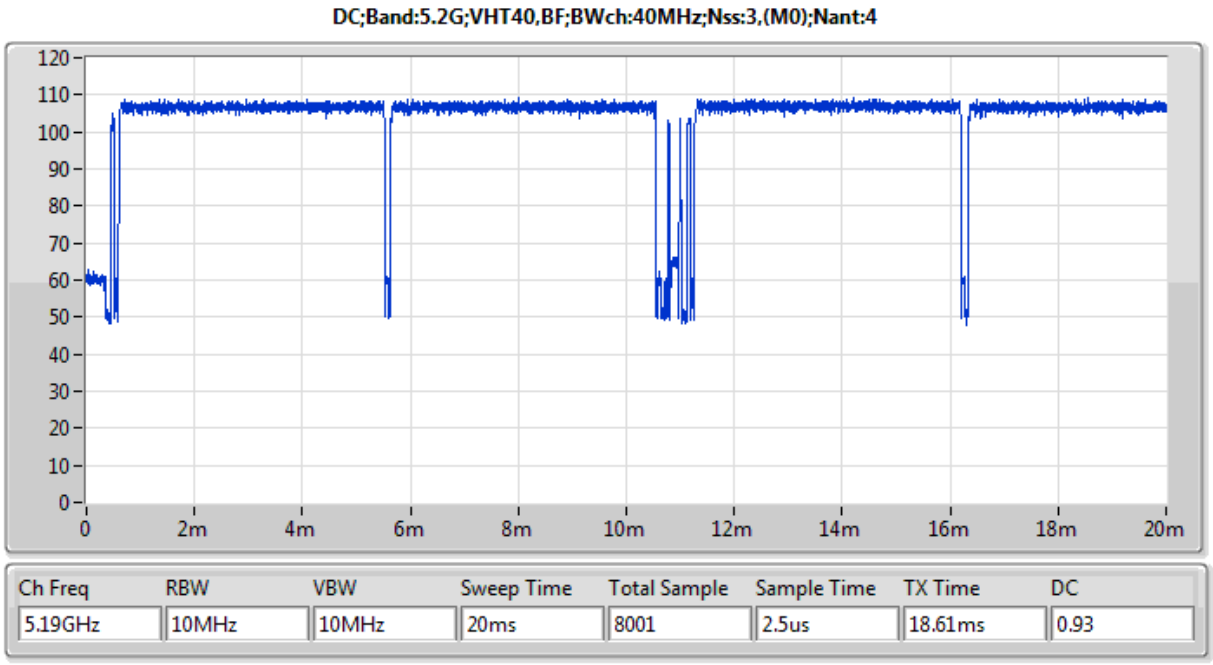


802.11ac(20MHz) 3S4T TXBF

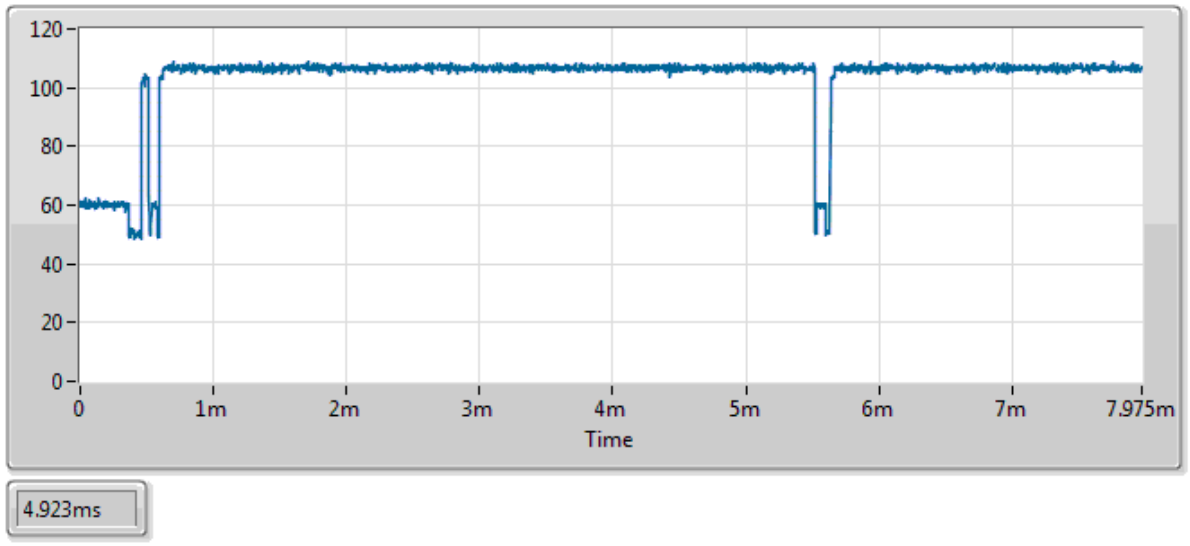




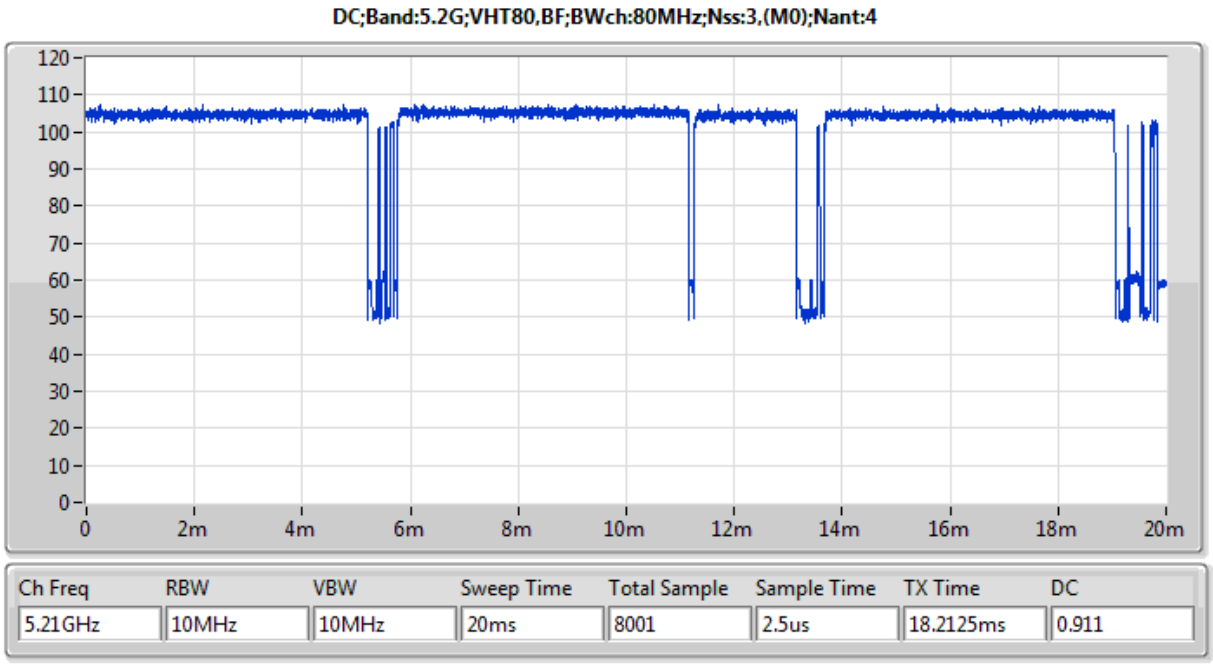
802.11ac(40MHz) 3S4T TXBF

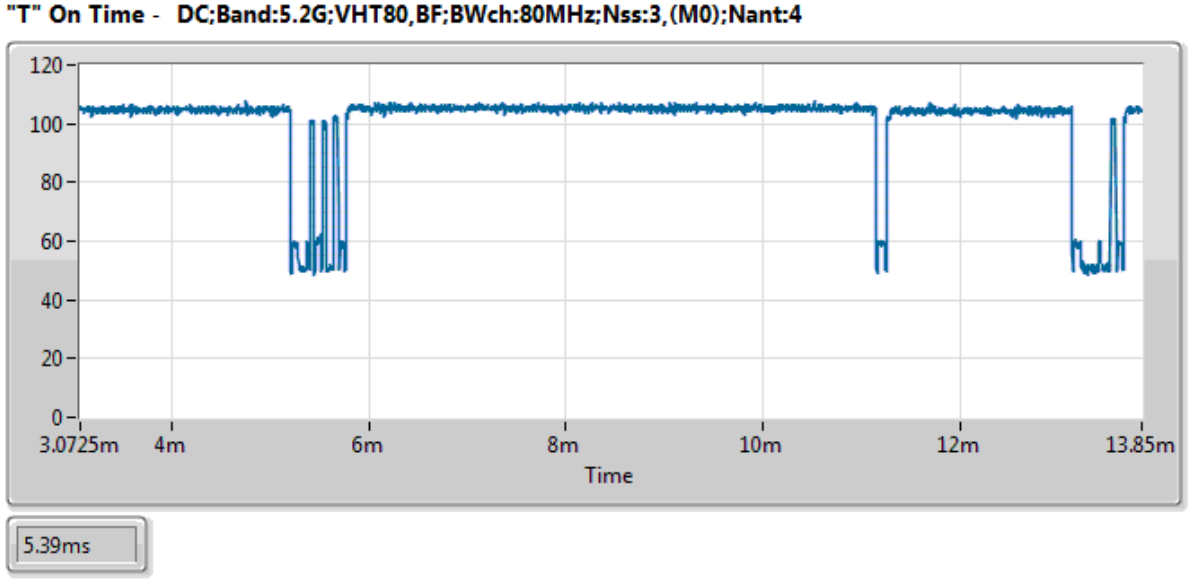


Ch Freq	RBW	VBW	Sweep Time	Total Sample	Sample Time	TX Time	DC
5.19GHz	10MHz	10MHz	20ms	8001	2.5us	18.61ms	0.93



802.11ac(80MHz) 3S4T TXBF





1.14. Table for Supporting Units

For Test Site No: 03CH01-CB (For below 1GHz)

Support Unit	Brand	Model	FCC ID
Notebook*5	DELL	E4300	N/A
Notebook	Apple	Mac Book	N/A
Phone*2	SAMPO	HT-B 907WL	N/A
Terminal System(CO)	HUAWEI	SmartAX MA5633	N/A
Terminal System(OLT)	HUAWEI	SLD X-100	N/A
Terminal System(PC)	Acer	VT7200D	N/A
Terminal System(Monitor)	DELL	1704FPTt	N/A
Terminal System(Mouse)	Logitech	M-U0026	N/A
Terminal System(Keyboard)	iCooky	SK068	N/A
Flash disk3.0	Silicon Power	I-Series	N/A

For Test Site No: 03CH01-CB

(For above 1GHz / CDD & SDM mode)

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	N/A

(For beamforming mode)

Support Unit	Brand	Model	FCC ID
Notebook*2	DELL	E4300	N/A
WLAN Card (RX Device)	ASUS	PCE-88U	MSQ-PCIE0U00

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook*6	DELL	E6430	N/A
Phone*2	SAMPO	HT-B 907WL	N/A
Terminal System(CO)	HUAWEI	SmartAX MA5633	N/A
Terminal System(OLT)	HUAWEI	SLD X-100	N/A
Terminal System(PC)	Acer	VT7200D	N/A
Terminal System(Monitor)	DELL	1704FPTt	N/A
Terminal System(Mouse)	Logitech	M-U0026	N/A
Terminal System(Keyboard)	iCooky	SK068	N/A
Flash disk3.0	Transcend	JetFlash-700	N/A

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	N/A

1.15. EUT Operation during Test

For CTX Mode:

CDD & SDM 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:

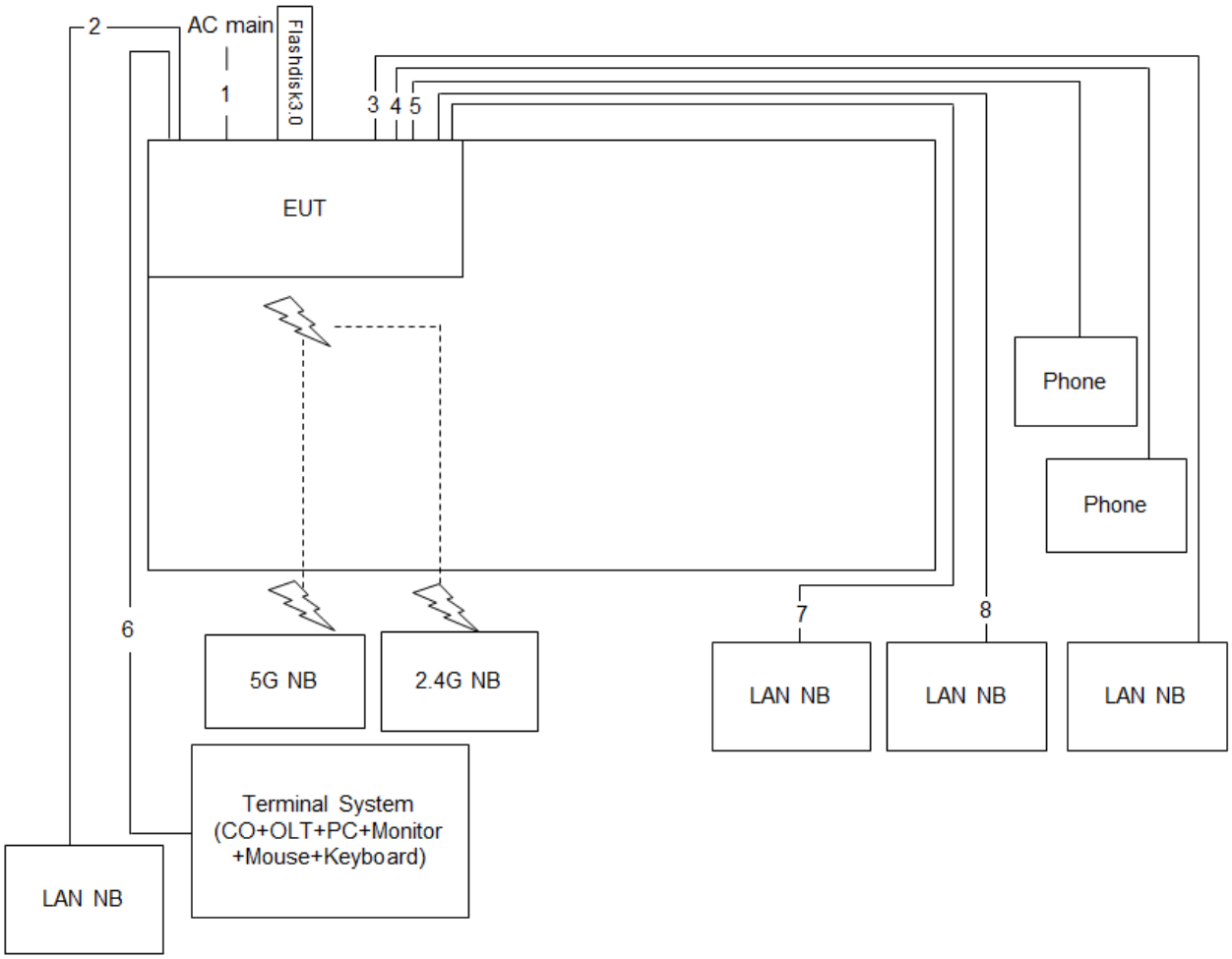
1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet.
3. Executed "iperf.exe" to link with the remote workstation to transmit and receive packet by RX Device and maximum transmit duty cycle.

For Normal Link:

During the test, the EUT operation to normal function.

1.16. Test Configurations

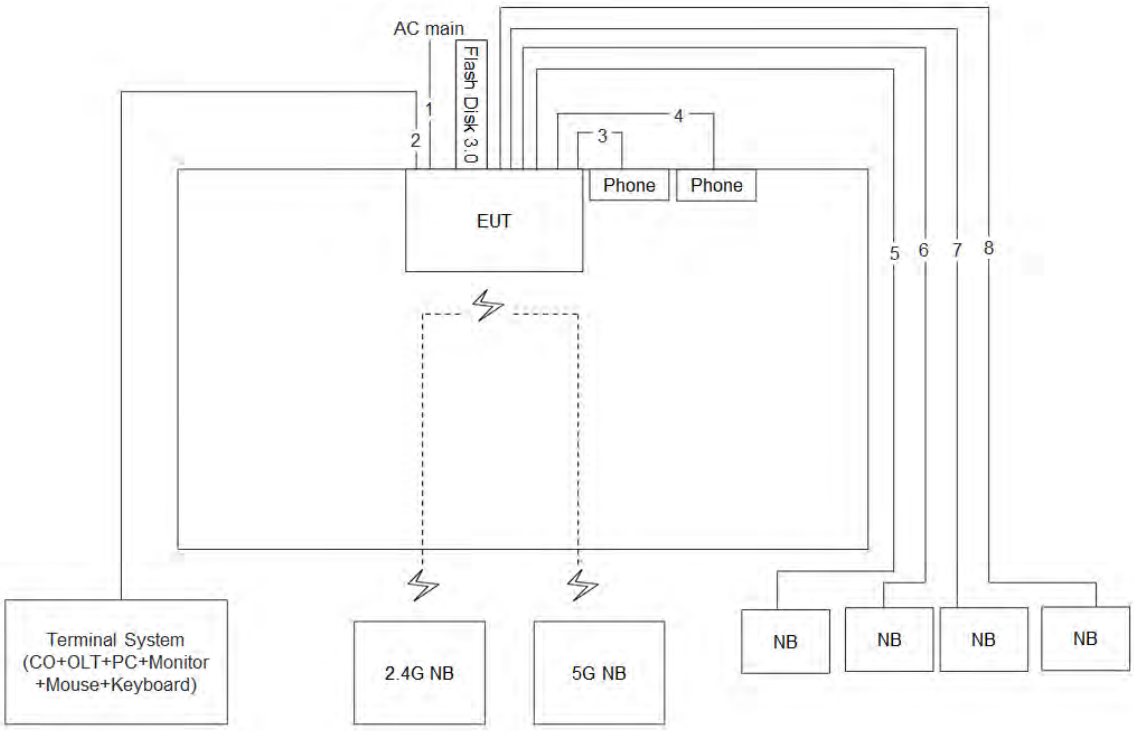
1.16.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	3.1m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	10m
4	RJ-11 cable	No	10m
5	RJ-11 cable	No	10m
6	Coaxial cable	Yes	10m
7	RJ-45 cable	No	10m
8	RJ-45 cable	No	10m

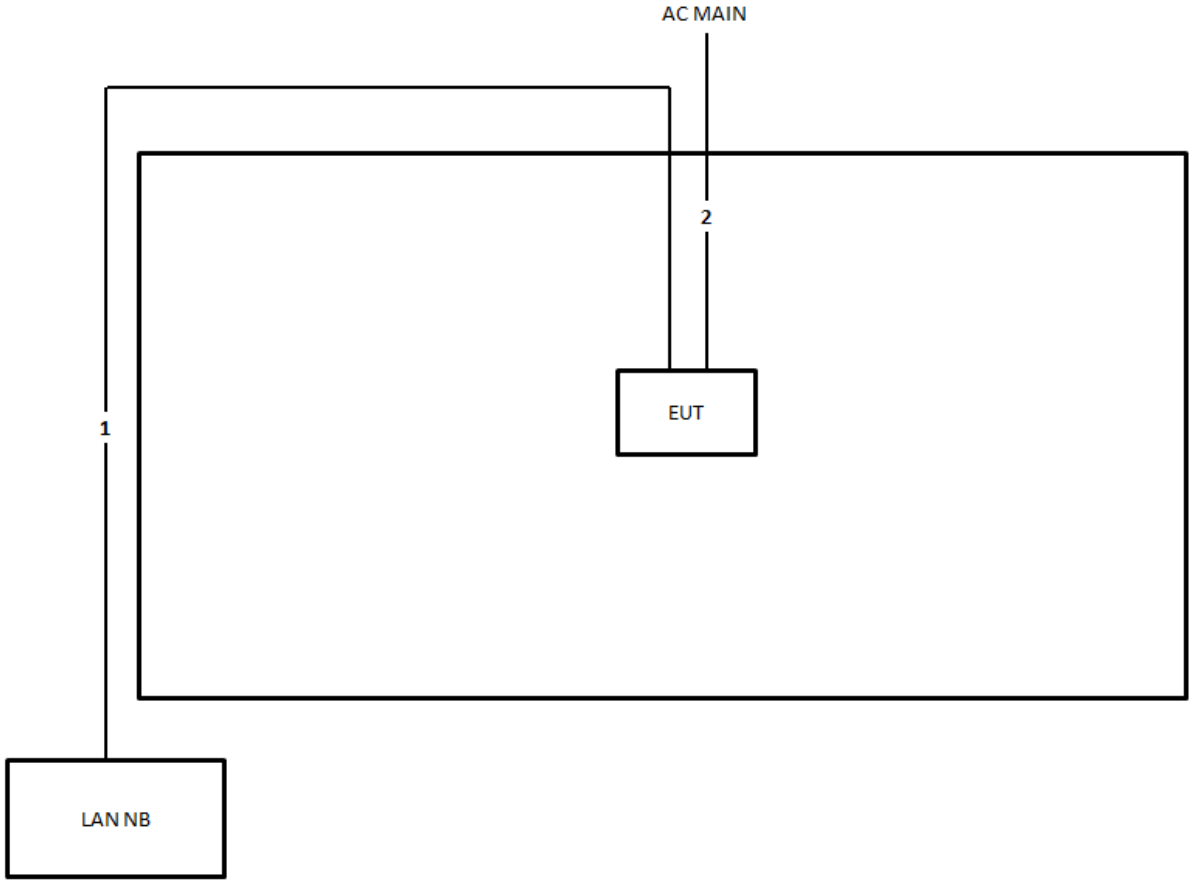
1.16.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz ~1GHz



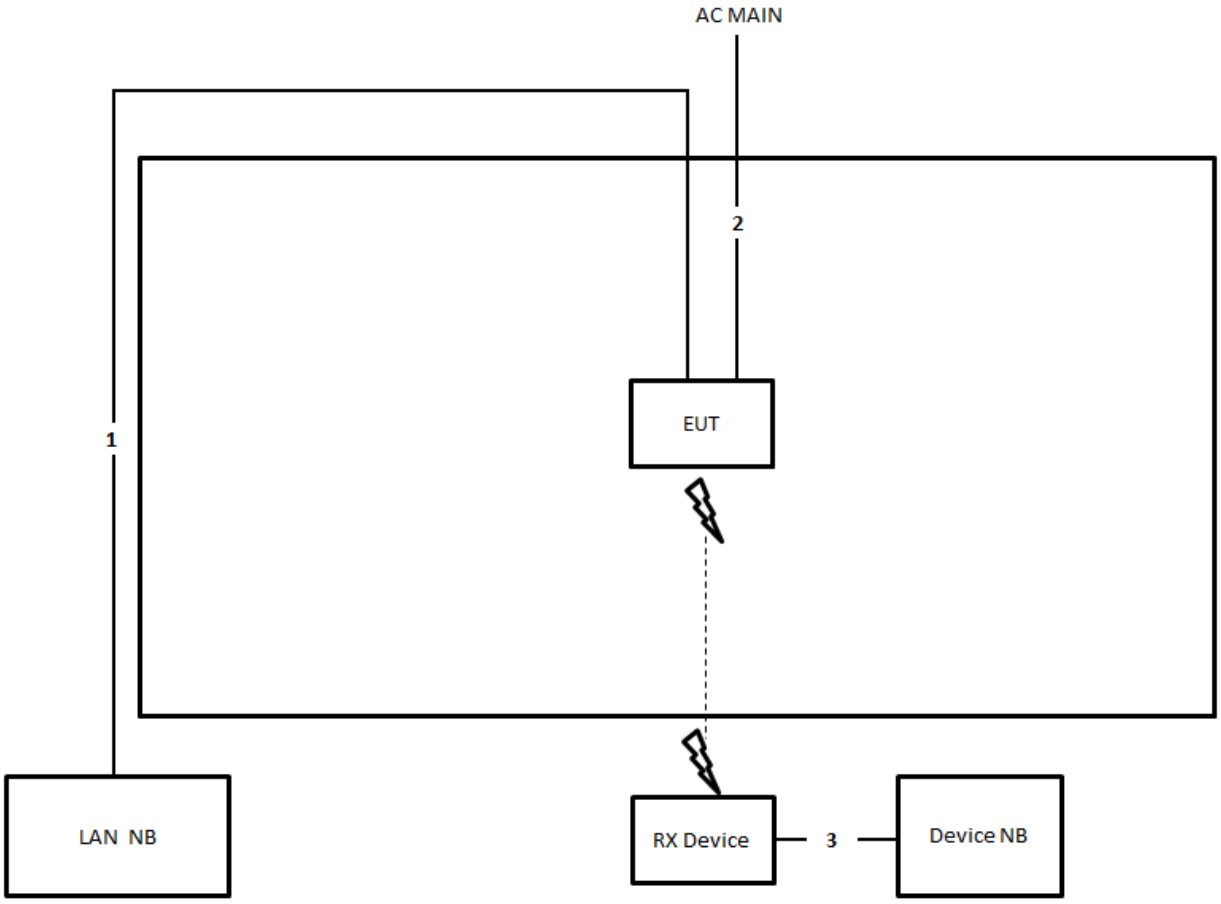
Item	Connection	Shielded	Length
1	Power cable	No	3.1m
2	Coaxial cable	Yes	10m
3	RJ-11 cable	No	1.5m
4	RJ-11 cable	No	1.5m
5	RJ-45 cable	No	10m
6	RJ-45 cable	No	10m
7	RJ-45 cable	No	10m
8	RJ-45 cable	No	10m

Test Configuration: above 1GHz / For CDD & SDM mode



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	3.1m

For beamforming mode



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	3.1m
3	RJ-45 cable	No	1.5m

2. Test Result

2.1. AC Power Line Conducted Emissions Measurement

2.1.1. Limit

For this product that is designed to connect to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

2.1.2. Measuring Instruments and Setting

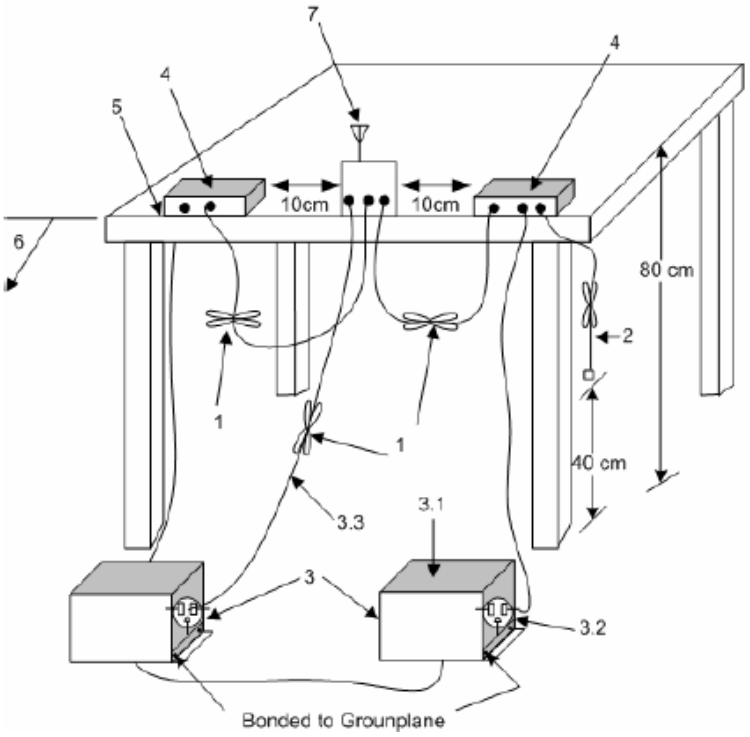
Please refer to section 3 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

2.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

2.1.4. Test Setup Layout



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

2.1.5. Test Deviation

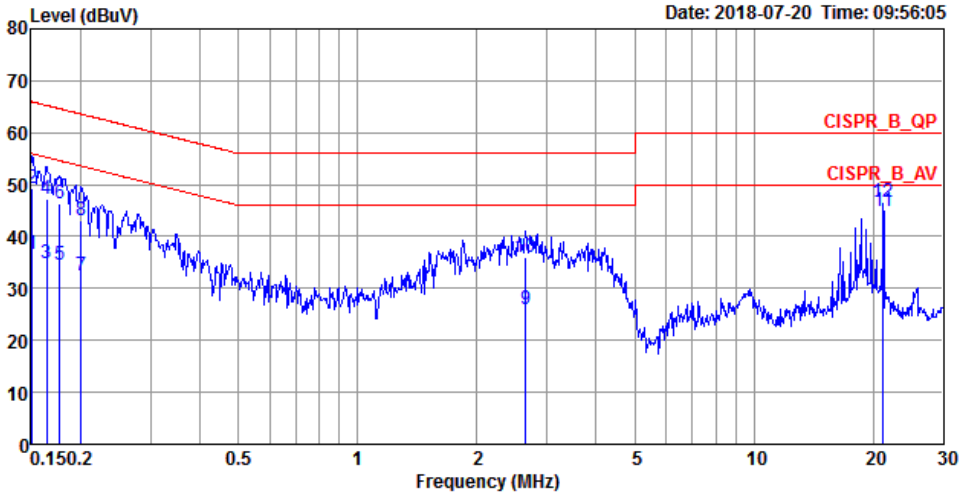
There is no deviation with the original standard.

2.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

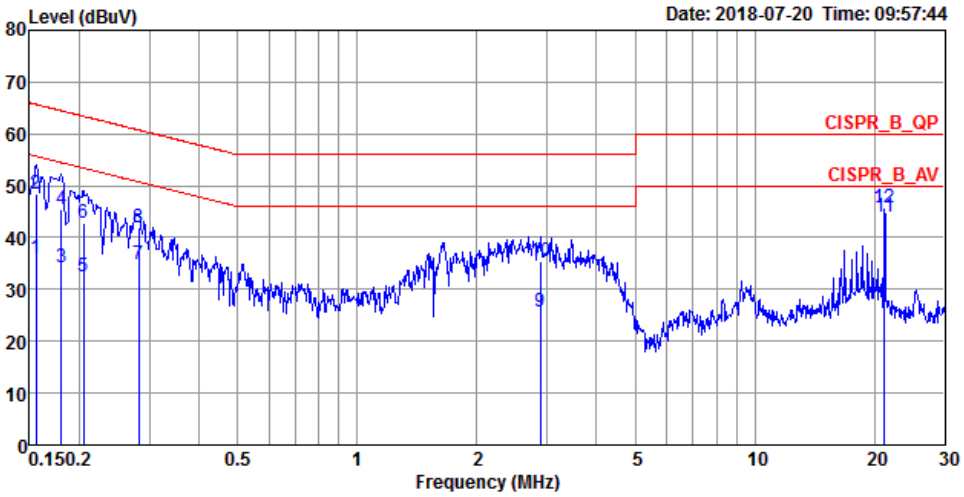
2.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	22℃	Humidity	62%
Test Engineer	Max Lin	Phase	Line
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1508	36.57	-19.39	55.96	26.50	9.91	0.16	Average	LINE
2	0.1508	49.22	-16.74	65.96	39.15	9.91	0.16	QP	LINE
3	0.1641	34.69	-20.56	55.25	24.62	9.91	0.16	Average	LINE
4	0.1641	47.12	-18.13	65.25	37.05	9.91	0.16	QP	LINE
5	0.1768	34.54	-20.10	54.64	24.48	9.91	0.15	Average	LINE
6	0.1768	46.33	-18.31	64.64	36.27	9.91	0.15	QP	LINE
7	0.2007	32.53	-21.05	53.58	22.48	9.91	0.14	Average	LINE
8	0.2007	43.17	-20.41	63.58	33.12	9.91	0.14	QP	LINE
9	2.6500	25.98	-20.02	46.00	15.82	9.97	0.19	Average	LINE
10	2.6500	35.92	-20.08	56.00	25.76	9.97	0.19	QP	LINE
11	21.1676	44.98	-5.02	50.00	34.35	10.41	0.22	Average	LINE
12	21.1676	46.63	-13.37	60.00	36.00	10.41	0.22	QP	LINE

Temperature	22℃	Humidity	62%
Test Engineer	Max Lin	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 1

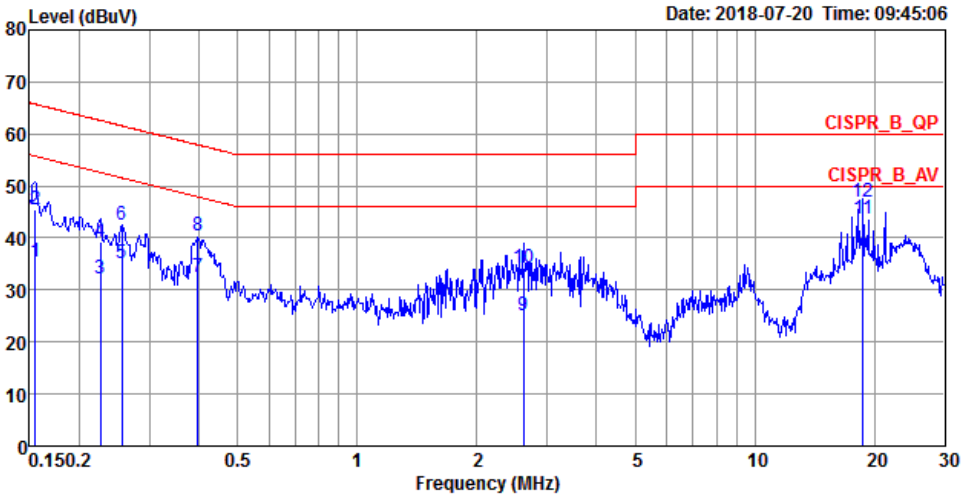


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1557	36.02	-19.67	55.69	25.94	9.92	0.16	Average	NEUTRAL
2	0.1557	48.54	-17.15	65.69	38.46	9.92	0.16	QP	NEUTRAL
3	0.1806	34.26	-20.20	54.46	24.19	9.92	0.15	Average	NEUTRAL
4	0.1806	45.36	-19.10	64.46	35.29	9.92	0.15	QP	NEUTRAL
5	0.2050	32.61	-20.79	53.40	22.55	9.92	0.14	Average	NEUTRAL
6	0.2050	42.78	-20.62	63.40	32.72	9.92	0.14	QP	NEUTRAL
7	0.2818	34.94	-15.82	50.76	24.89	9.92	0.13	Average	NEUTRAL
8	0.2818	41.86	-18.90	60.76	31.81	9.92	0.13	QP	NEUTRAL
9	2.8845	25.63	-20.37	46.00	15.48	9.97	0.18	Average	NEUTRAL
10	2.8845	35.28	-20.72	56.00	25.13	9.97	0.18	QP	NEUTRAL
11	21.1681	43.97	-6.03	50.00	33.48	10.27	0.22	Average	NEUTRAL
12	21.1681	45.68	-14.32	60.00	35.19	10.27	0.22	QP	NEUTRAL

Note:

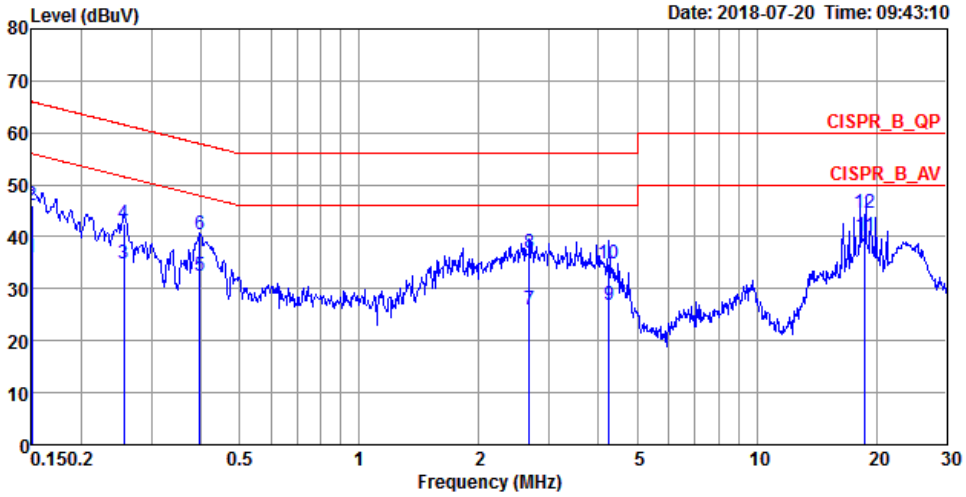
Level = Read Level + LISN Factor + Cable Loss.

Temperature	22℃	Humidity	62%
Test Engineer	Max Lin	Phase	Line
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1548	35.34	-20.40	55.74	25.27	9.91	0.16	Average	LINE
2	0.1548	45.49	-20.25	65.74	35.42	9.91	0.16	QP	LINE
3	0.2256	32.28	-20.33	52.61	22.23	9.91	0.14	Average	LINE
4	0.2256	39.30	-23.31	62.61	29.25	9.91	0.14	QP	LINE
5	0.2562	35.01	-16.55	51.56	24.97	9.91	0.13	Average	LINE
6	0.2562	42.55	-19.01	61.56	32.51	9.91	0.13	QP	LINE
7	0.3976	32.47	-15.43	47.90	22.44	9.91	0.12	Average	LINE
8	0.3976	40.45	-17.45	57.90	30.42	9.91	0.12	QP	LINE
9	2.6221	25.22	-20.78	46.00	15.06	9.97	0.19	Average	LINE
10	2.6221	34.31	-21.69	56.00	24.15	9.97	0.19	QP	LINE
11	18.6874	43.68	-6.32	50.00	33.12	10.35	0.21	Average	LINE
12	18.6874	46.88	-13.12	60.00	36.32	10.35	0.21	QP	LINE

Temperature	22℃	Humidity	62%
Test Engineer	Max Lin	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1500	35.96	-20.04	56.00	25.88	9.92	0.16	Average	NEUTRAL
2	0.1500	46.08	-19.92	66.00	36.00	9.92	0.16	QP	NEUTRAL
3	0.2562	34.93	-16.63	51.56	24.88	9.92	0.13	Average	NEUTRAL
4	0.2562	42.53	-19.03	61.56	32.48	9.92	0.13	QP	NEUTRAL
5	0.3976	32.59	-15.31	47.90	22.55	9.92	0.12	Average	NEUTRAL
6	0.3976	40.47	-17.43	57.90	30.43	9.92	0.12	QP	NEUTRAL
7	2.6783	26.03	-19.97	46.00	15.87	9.97	0.19	Average	NEUTRAL
8	2.6783	37.03	-18.97	56.00	26.87	9.97	0.19	QP	NEUTRAL
9	4.2466	26.72	-19.28	46.00	16.60	9.99	0.13	Average	NEUTRAL
10	4.2466	34.89	-21.11	56.00	24.77	9.99	0.13	QP	NEUTRAL
11	18.7245	40.20	-9.80	50.00	29.76	10.23	0.21	Average	NEUTRAL
12	18.7245	44.69	-15.31	60.00	34.25	10.23	0.21	QP	NEUTRAL

Note:

Level = Read Level + LISN Factor + Cable Loss.

2.2. 26dB Emission Bandwidth and 99% Occupied Bandwidth Measurement

2.2.1. Limit

No restriction limits.

2.2.2. Measuring Instruments and Setting

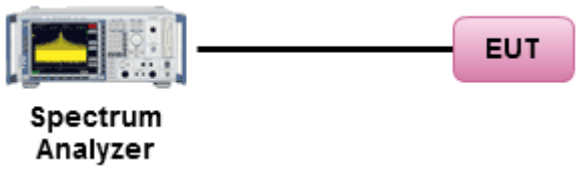
Please refer to section 3 of equipments list in this report. The following table is the setting of the spectrum analyzer.

26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

2.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under 789033 D02 General U-NII Test Procedures New Rules v02r01, in section “Emission bandwidth (C)(1)” & "99 Percent Occupied Bandwidth"(D). 12/14/2017.
3. When measuring Emission bandwidth with multiple antenna systems, add every result of the values by mathematic formula.

2.2.4. Test Setup Layout

Emission bandwidth and 99% Occupied Bandwidth


2.2.5. Test Deviation

There is no deviation with the original standard.

2.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.2.7. Test Result of 26dB Emission Bandwidth and 99% Occupied Bandwidth

Temperature	18.7℃	Humidity	46%
Test Engineer	Brian Sun & Ron Huang		

Configuration IEEE 802.11a

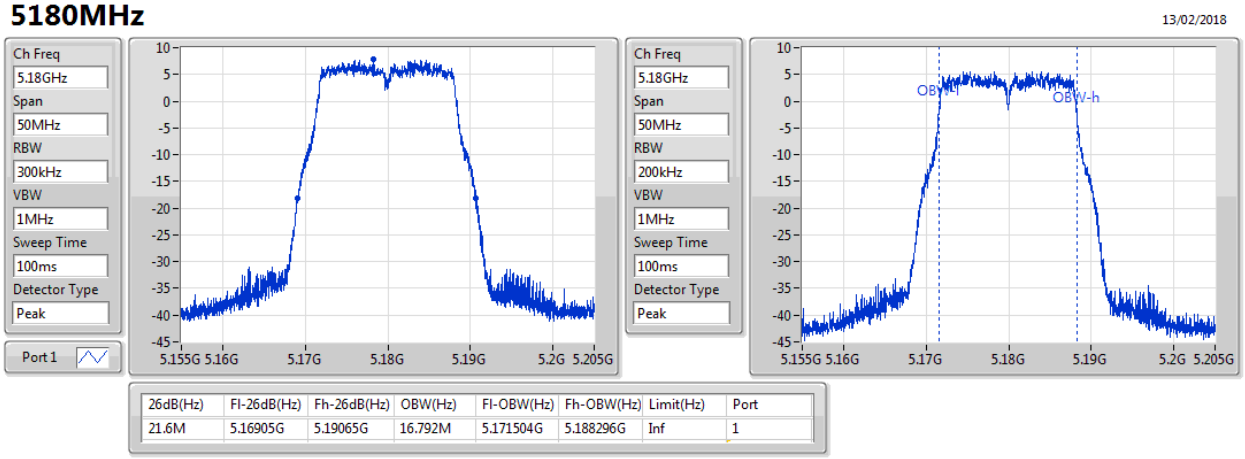
26dB Emission Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	26dB Emission Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11a (CDD)	1 stream 4TX	5180 MHz	21.600	21.425	21.450	21.350
	1 stream 4TX	5200 MHz	21.550	21.350	21.425	21.400
	1 stream 4TX	5240 MHz	21.675	21.500	21.475	21.475

99% Occupied Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	99% Occupied Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11a (CDD)	1 stream 4TX	5180 MHz	16.792	16.742	16.692	16.742
	1 stream 4TX	5200 MHz	16.817	16.742	16.692	16.692
	1 stream 4TX	5240 MHz	16.817	16.767	16.717	16.767

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 1 / CH36 / 5180 MHz

802.11a_Nss1,(6Mbps)_4TX(Port1) **EBW**

5180MHz

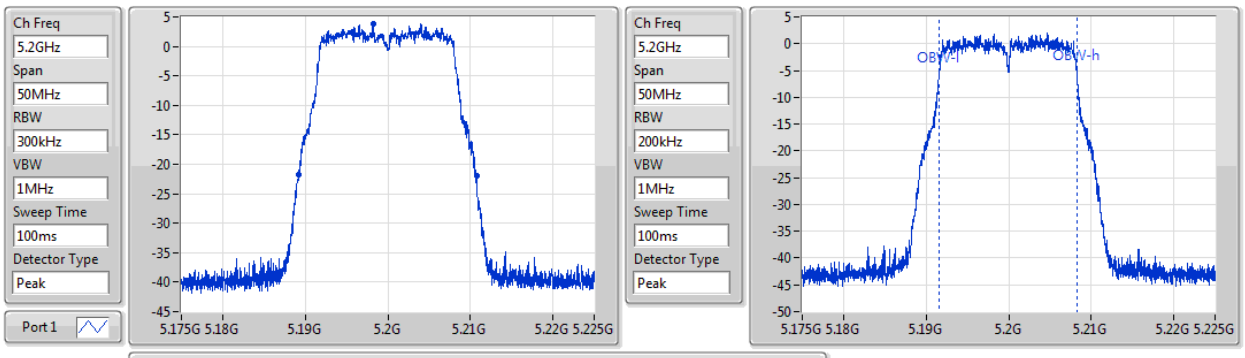


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.6M	5.16905G	5.19065G	16.792M	5.171504G	5.188296G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 1 / CH40 / 5200 MHz

802.11a_Nss1,(6Mbps)_4TX(Port1) **EBW**

5200MHz

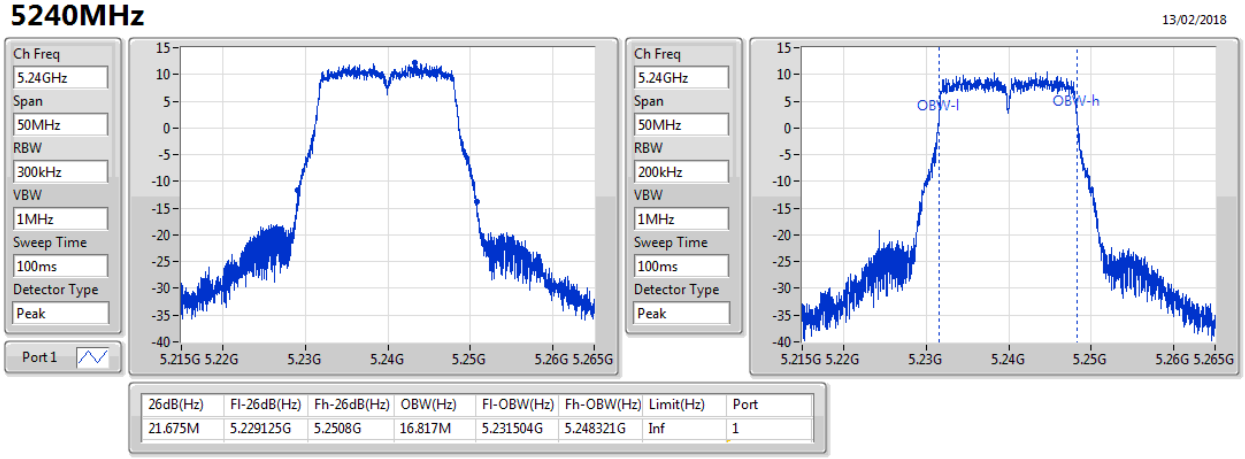


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.55M	5.189175G	5.210725G	16.817M	5.191504G	5.208321G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 1 / CH48 / 5240 MHz

802.11a_Nss1,(6Mbps)_4TX(Port1) **EBW**

5240MHz

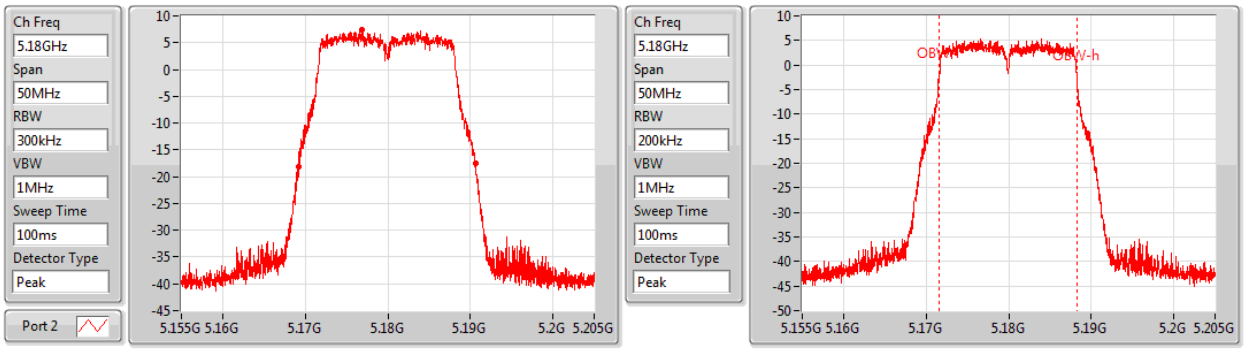


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.675M	5.229125G	5.2508G	16.817M	5.231504G	5.248321G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 2 / CH36 / 5180 MHz

802.11a_Nss1,(6Mbps)_4TX(Port2) **EBW**

5180MHz

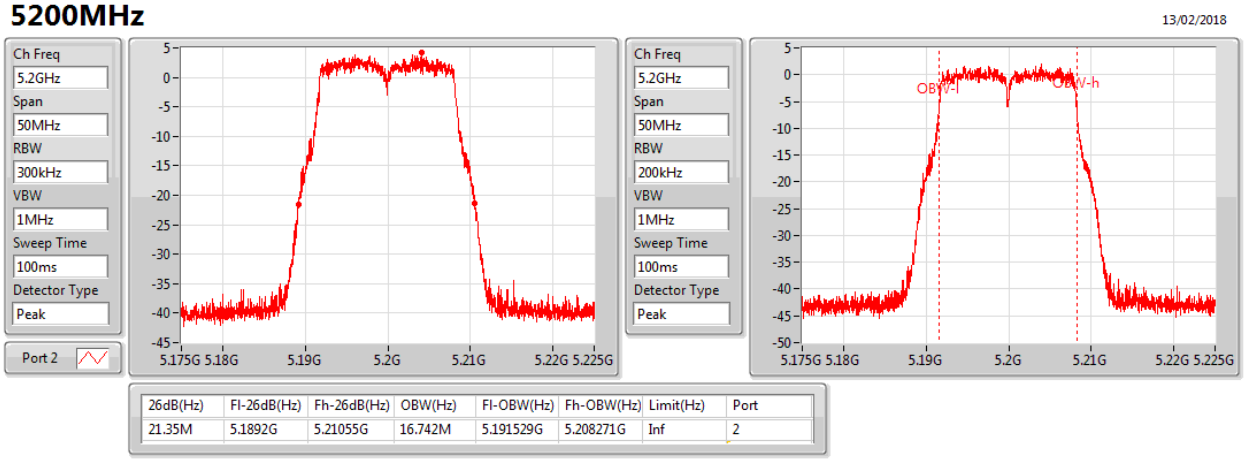


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.425M	5.1692G	5.190625G	16.742M	5.171529G	5.188271G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 2 / CH40 / 5200 MHz

802.11a_Nss1,(6Mbps)_4TX(Port2) **EBW**

5200MHz

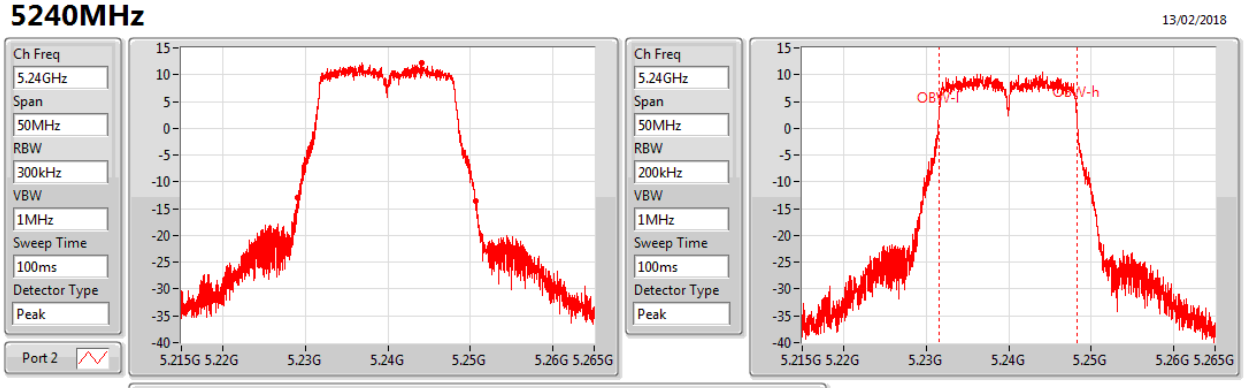


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.35M	5.1892G	5.21055G	16.742M	5.191529G	5.208271G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 2 / CH48 / 5240 MHz

802.11a_Nss1,(6Mbps)_4TX(Port2) **EBW**

5240MHz

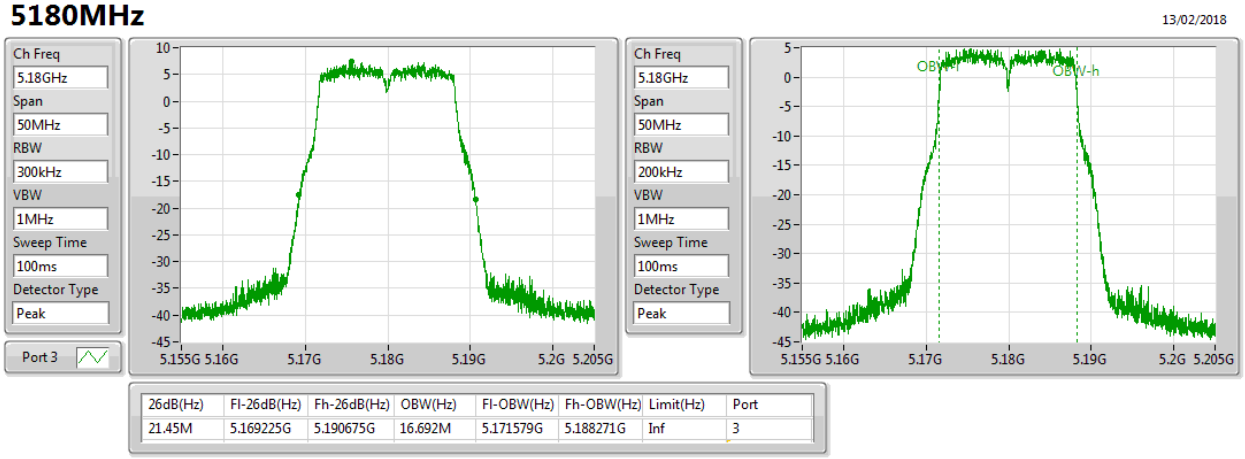


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.5M	5.229125G	5.250625G	16.767M	5.231504G	5.248271G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 3 / CH36 / 5180 MHz

802.11a_Nss1,(6Mbps)_4TX(Port3) **EBW**

5180MHz

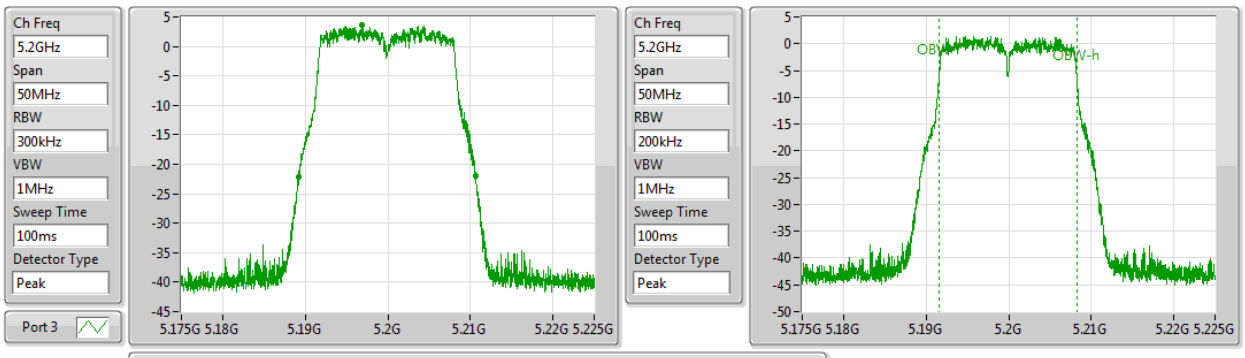


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.45M	5.169225G	5.190675G	16.692M	5.171579G	5.188271G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 3 / CH40 / 5200 MHz

802.11a_Nss1,(6Mbps)_4TX(Port3) **EBW**

5200MHz

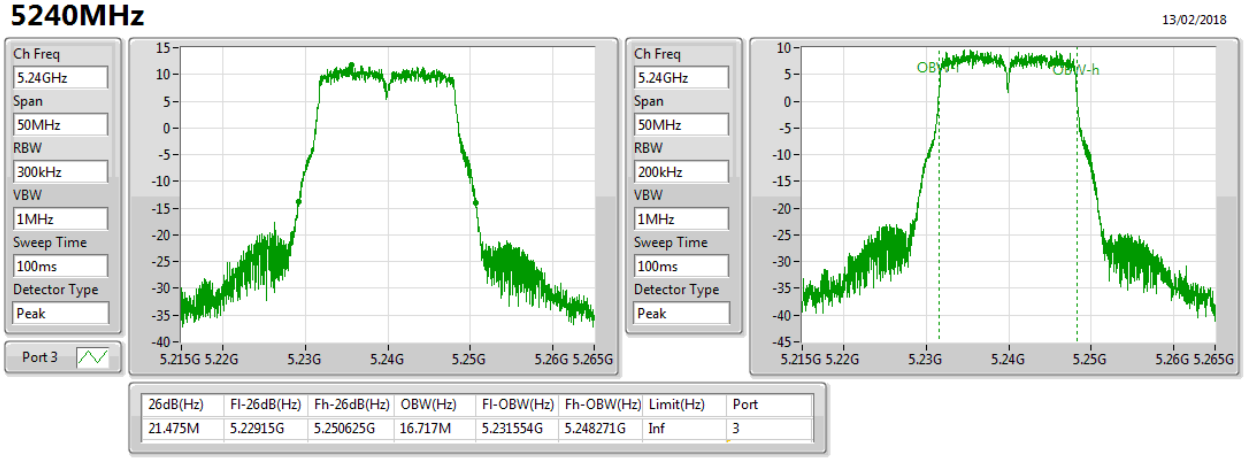


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.425M	5.189225G	5.21065G	16.692M	5.191579G	5.208271G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 3 / CH48 / 5240 MHz

802.11a_Nss1,(6Mbps)_4TX(Port3) **EBW**

5240MHz

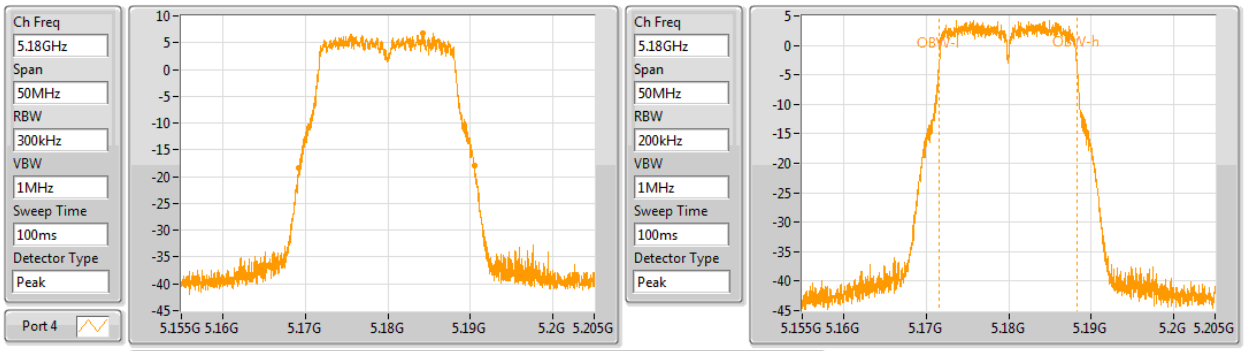


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.475M	5.22915G	5.250625G	16.717M	5.231554G	5.248271G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 4 / CH36 / 5180 MHz

802.11a_Nss1,(6Mbps)_4TX(Port4) **EBW**

5180MHz

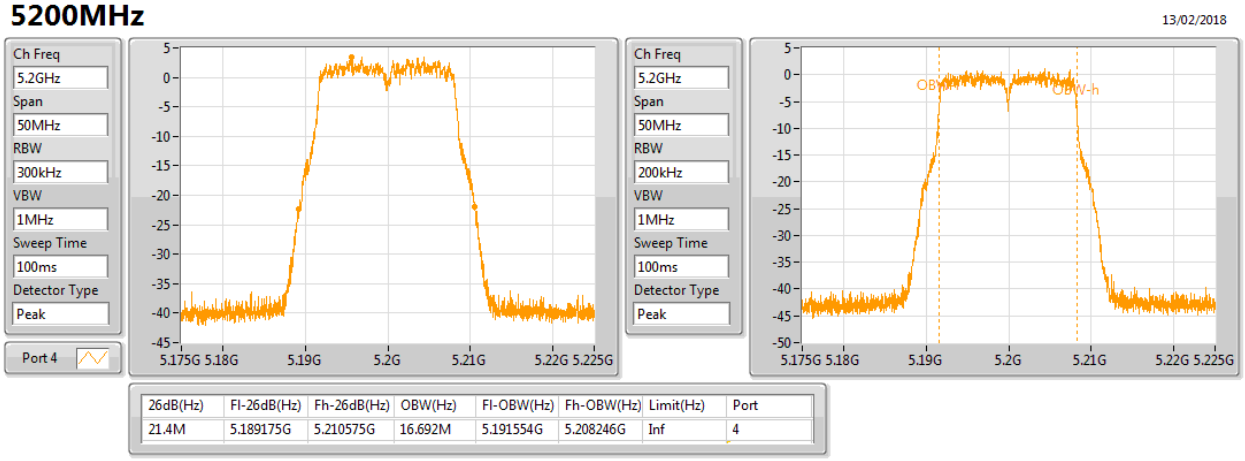


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.35M	5.1692G	5.19055G	16.742M	5.171529G	5.188271G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 4 / CH40 / 5200 MHz

802.11a_Nss1,(6Mbps)_4TX(Port4) **EBW**

5200MHz

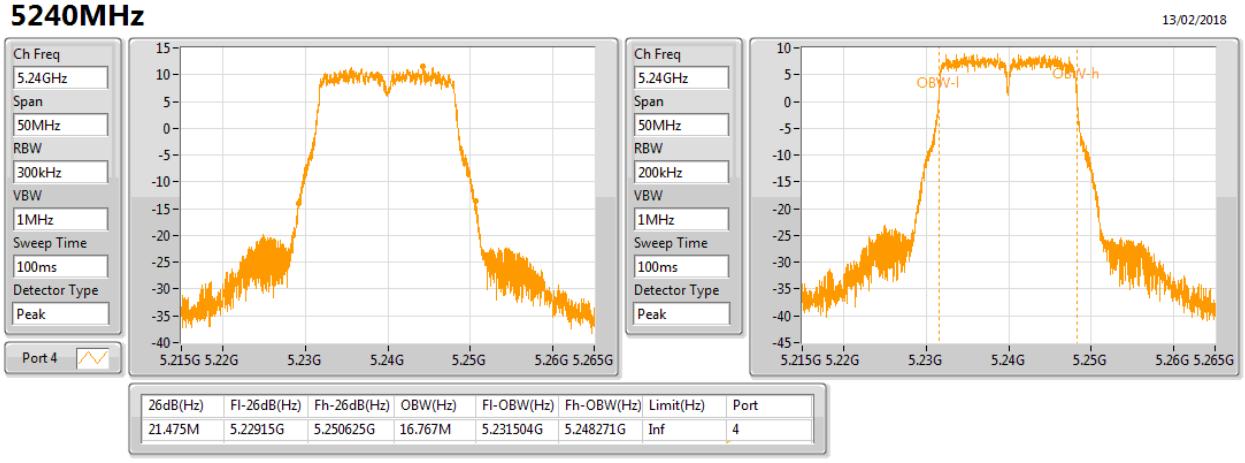


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.4M	5.189175G	5.210575G	16.692M	5.191554G	5.208246G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 4 / CH48 / 5240 MHz

802.11a_Nss1,(6Mbps)_4TX(Port4) **EBW**

5240MHz



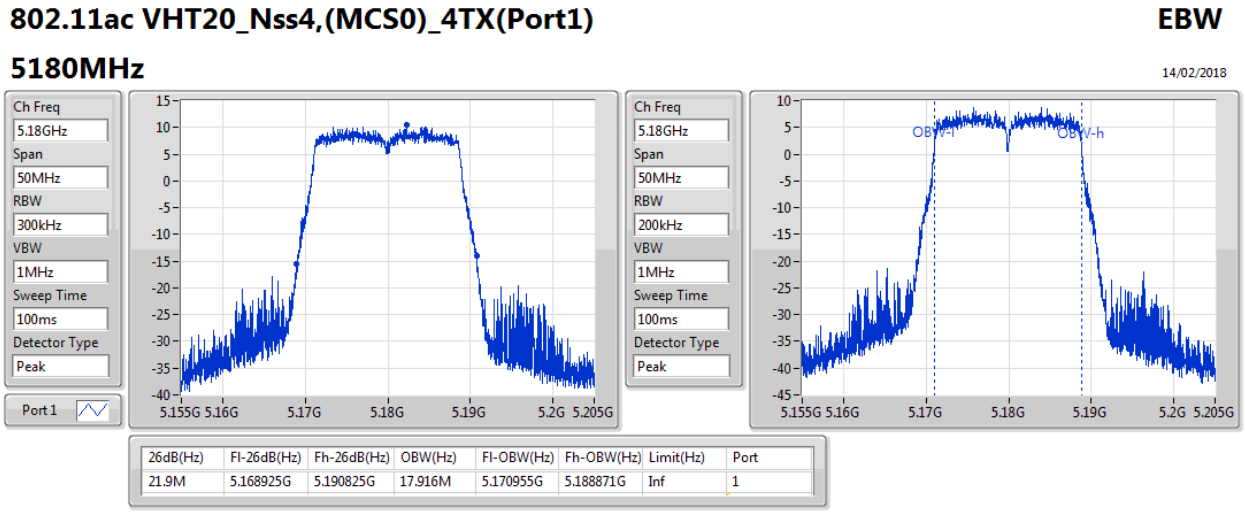
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.475M	5.22915G	5.250625G	16.767M	5.231504G	5.248271G	Inf	4

Configuration IEEE 802.11ac 20MHz

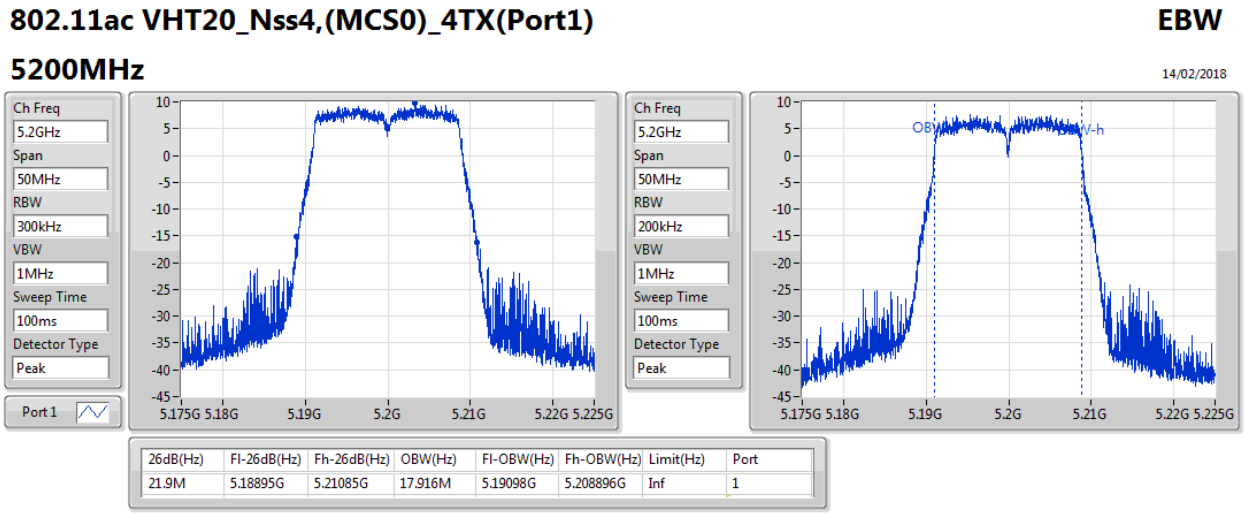
26dB Emission Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	26dB Emission Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11ac 20MHz (SDM)	4 stream 4TX	5180 MHz	21.900	21.500	21.525	21.450
802.11ac 20MHz (SDM)	4 stream 4TX	5200 MHz	21.900	21.625	21.775	21.675
802.11ac 20MHz (SDM)	4 stream 4TX	5240 MHz	31.650	24.525	25.225	21.725
802.11ac 20MHz (TXBF)	1 stream 4TX	5180 MHz	21.800	21.575	21.325	21.550
802.11ac 20MHz (TXBF)	1 stream 4TX	5200 MHz	21.700	21.475	21.450	21.525
802.11ac 20MHz (TXBF)	1 stream 4TX	5240 MHz	23.525	21.675	21.650	21.800
802.11ac 20MHz (TXBF)	2 stream 4TX	5180 MHz	22.075	21.350	21.850	21.475
802.11ac 20MHz (TXBF)	2 stream 4TX	5200 MHz	21.700	21.625	21.875	21.700
802.11ac 20MHz (TXBF)	2 stream 4TX	5240 MHz	30.075	21.600	26.850	21.600
802.11ac 20MHz (TXBF)	3 stream 4TX	5180 MHz	21.525	21.325	21.425	21.525
802.11ac 20MHz (TXBF)	3 stream 4TX	5200 MHz	21.500	21.275	21.575	21.675
802.11ac 20MHz (TXBF)	3 stream 4TX	5240 MHz	21.875	21.650	21.450	24.900

99% Occupied Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	99% Occupied Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11ac 20MHz (SDM)	4 stream 4TX	5180 MHz	17.916	17.816	17.816	17.841
802.11ac 20MHz (SDM)	4 stream 4TX	5200 MHz	17.916	17.841	17.841	17.841
802.11ac 20MHz (SDM)	4 stream 4TX	5240 MHz	17.966	17.966	17.916	17.866
802.11ac 20MHz (TXBF)	1 stream 4TX	5180 MHz	17.916	17.866	17.816	17.841
802.11ac 20MHz (TXBF)	1 stream 4TX	5200 MHz	17.891	17.841	17.841	17.841
802.11ac 20MHz (TXBF)	1 stream 4TX	5240 MHz	17.941	17.866	17.866	17.841
802.11ac 20MHz (TXBF)	2 stream 4TX	5180 MHz	17.891	17.816	17.891	17.816
802.11ac 20MHz (TXBF)	2 stream 4TX	5200 MHz	17.891	17.816	17.891	17.816
802.11ac 20MHz (TXBF)	2 stream 4TX	5240 MHz	17.941	17.866	17.916	17.841
802.11ac 20MHz (TXBF)	3 stream 4TX	5180 MHz	17.816	17.741	17.766	17.816
802.11ac 20MHz (TXBF)	3 stream 4TX	5200 MHz	17.816	17.741	17.766	17.841
802.11ac 20MHz (TXBF)	3 stream 4TX	5240 MHz	17.816	17.766	17.791	17.841

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 1 / CH36 / 5180 MHz



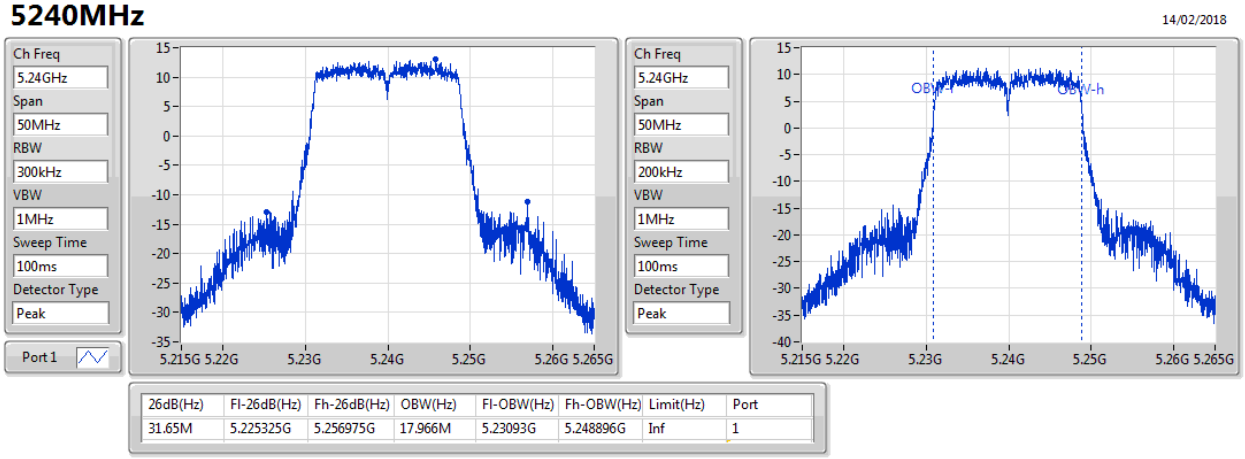
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 1 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 1 / CH48 / 5240 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port1) **EBW**

5240MHz

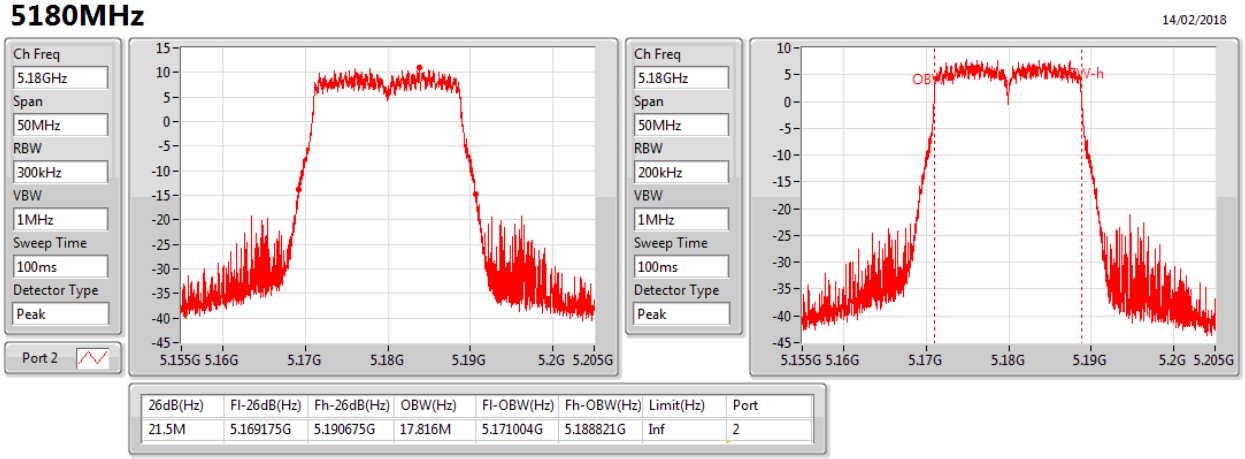


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
31.65M	5.225325G	5.256975G	17.966M	5.23093G	5.248896G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 2 / CH36 / 5180 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port2) **EBW**

5180MHz

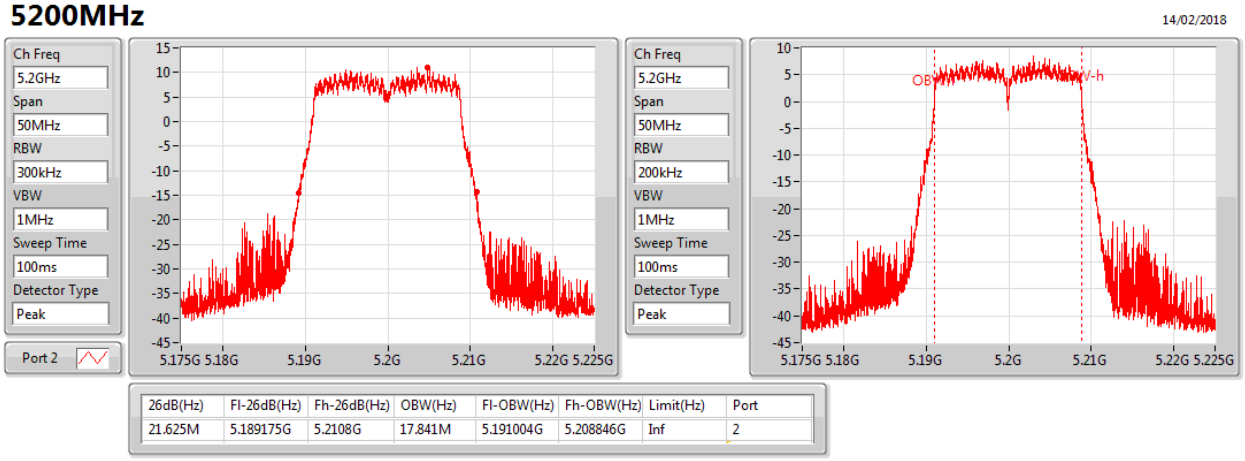


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.5M	5.169175G	5.190675G	17.816M	5.171004G	5.188821G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 2 / CH40 / 5200 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port2) **EBW**

5200MHz

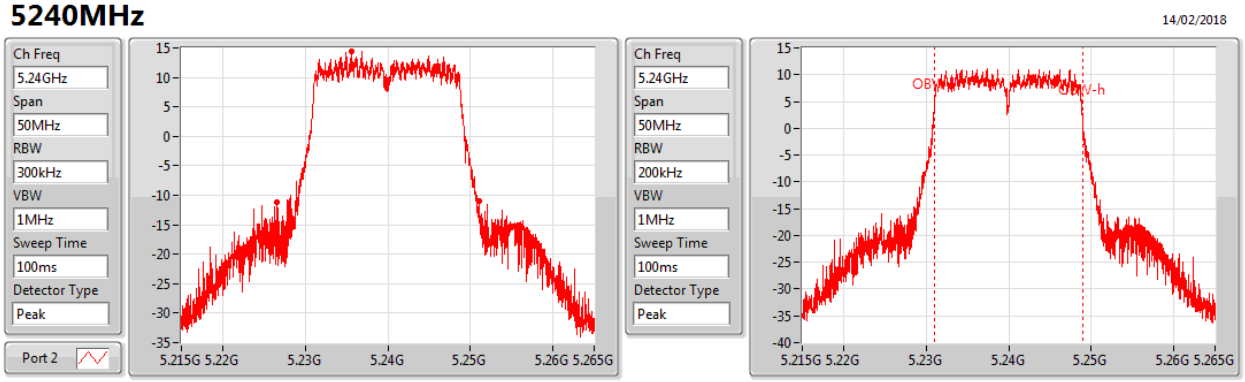


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.625M	5.189175G	5.2108G	17.841M	5.191004G	5.208846G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 2 / CH48 / 5240 MHz

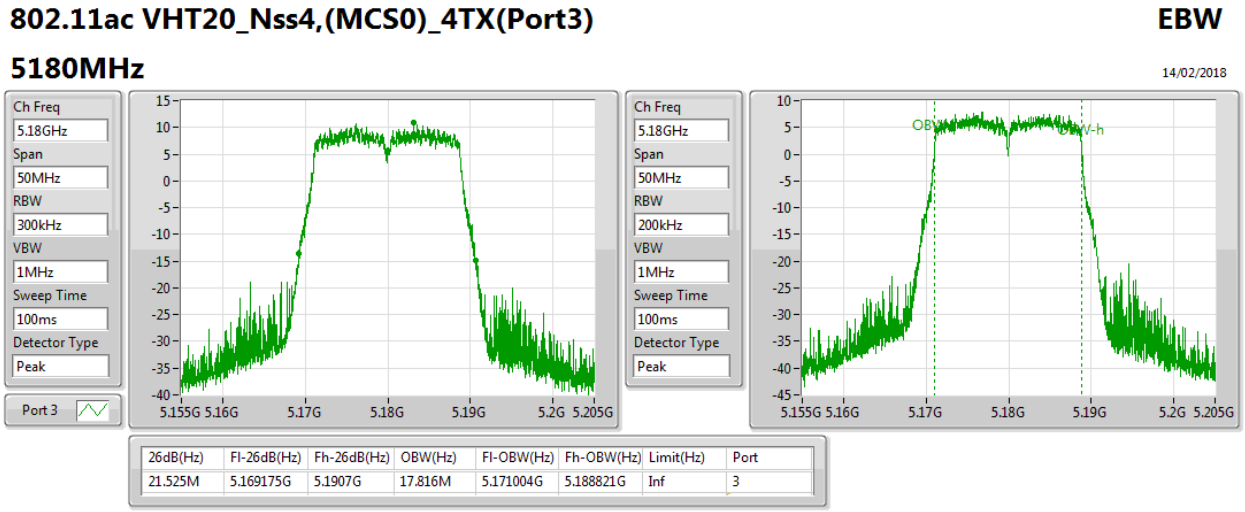
802.11ac VHT20_Nss4,(MCS0)_4TX(Port2) **EBW**

5240MHz

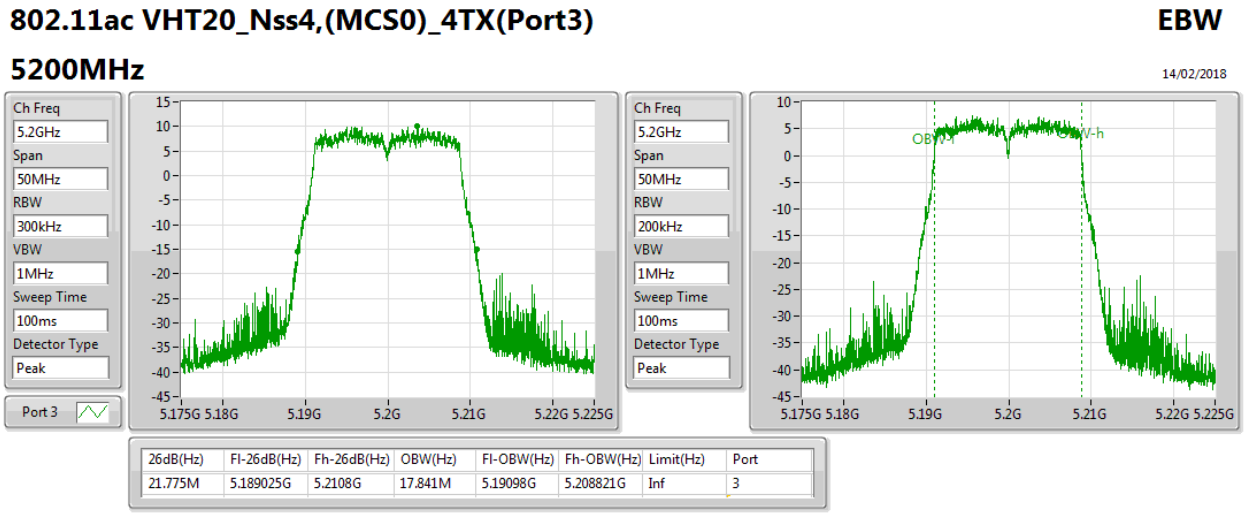


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
24.525M	5.22655G	5.251075G	17.966M	5.230955G	5.248921G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 3 / CH36 / 5180 MHz



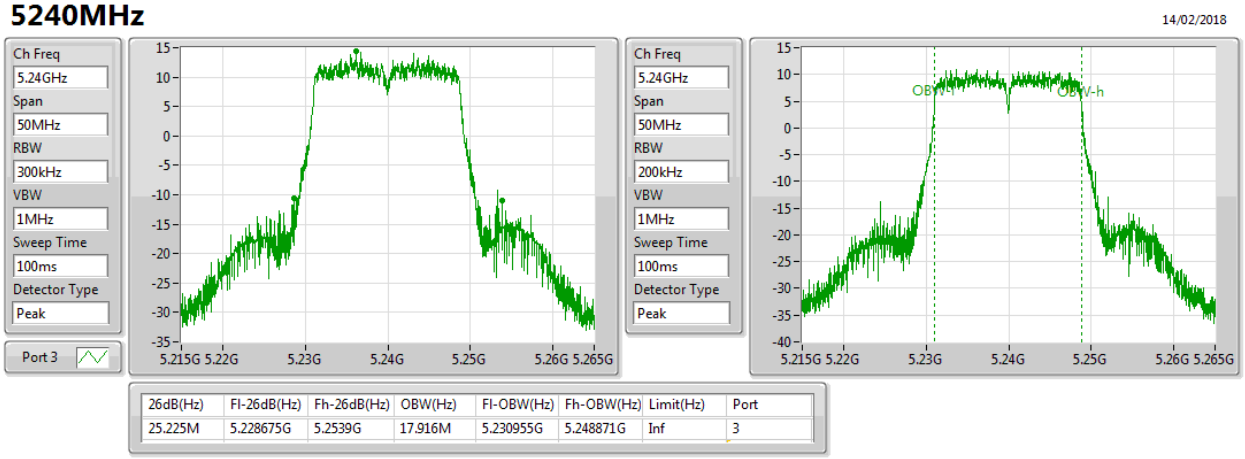
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 3 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 3 / CH48 / 5240 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port3) **EBW**

5240MHz

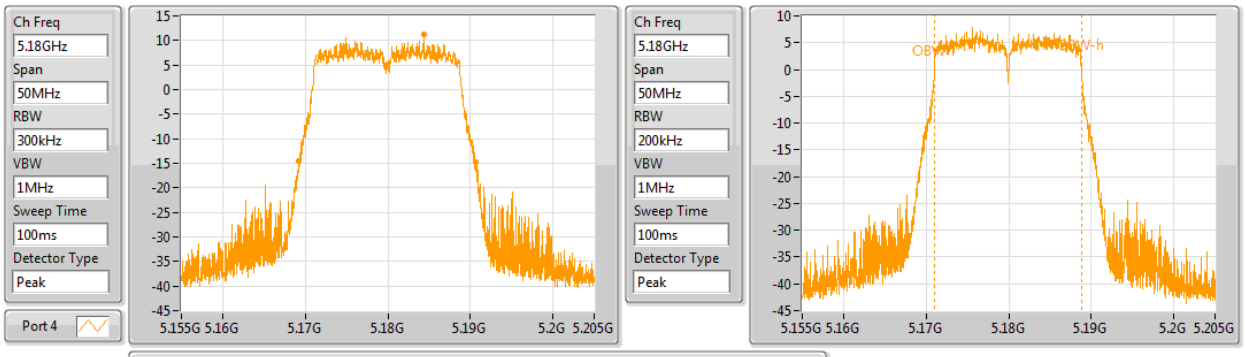


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25.225M	5.228675G	5.2539G	17.916M	5.230955G	5.248871G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 4 / CH36 / 5180 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port4) **EBW**

5180MHz

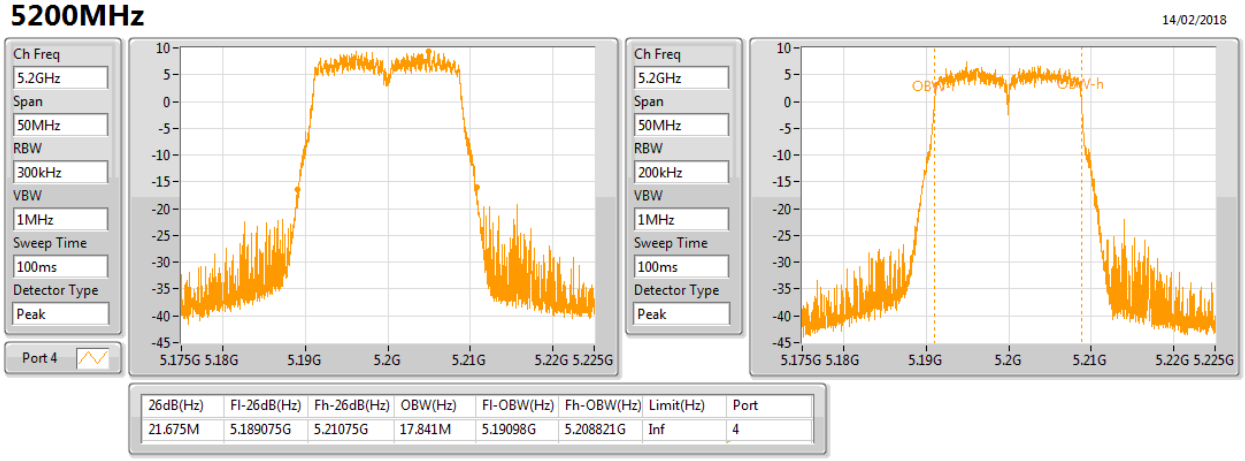


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.45M	5.1692G	5.19065G	17.841M	5.17098G	5.188821G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 4 / CH40 / 5200 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port4) **EBW**

5200MHz

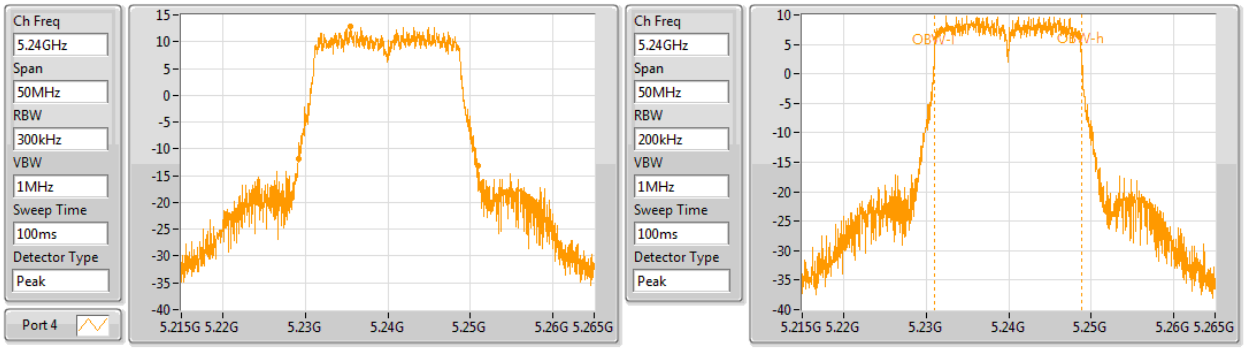


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.675M	5.189075G	5.21075G	17.841M	5.19098G	5.208821G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 4 MCS 0 / SDM 4S4T / Ant. 4 / CH48 / 5240 MHz

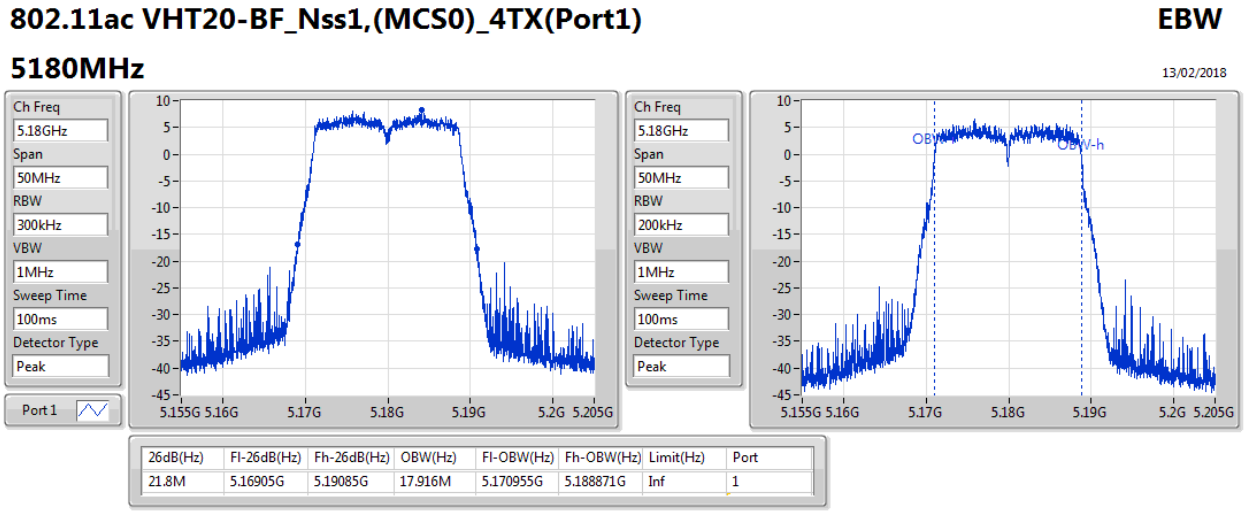
802.11ac VHT20_Nss4,(MCS0)_4TX(Port4) **EBW**

5240MHz

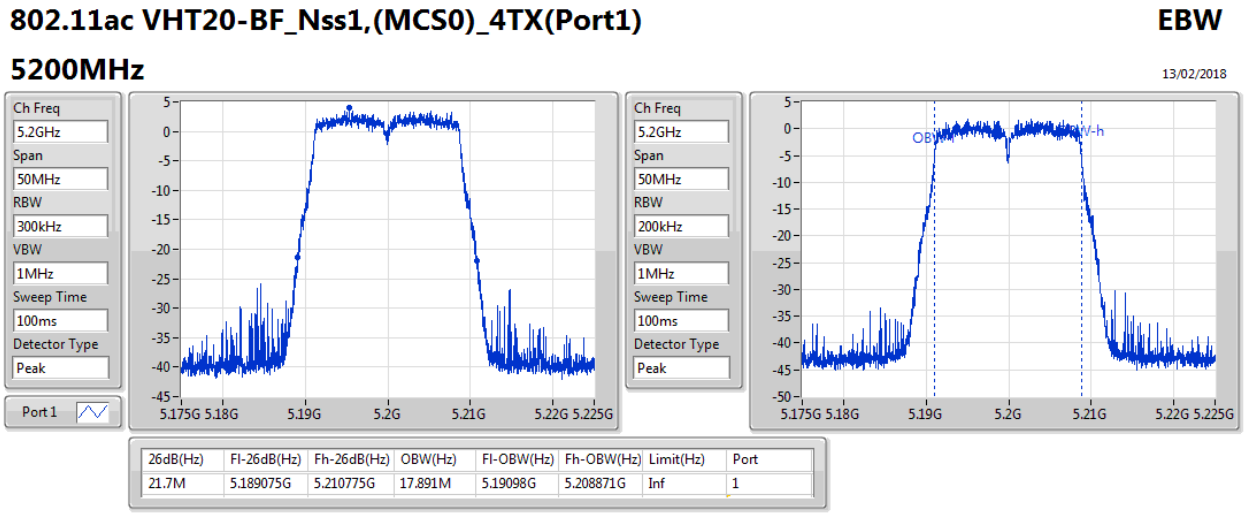


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.725M	5.22915G	5.250875G	17.866M	5.23098G	5.248846G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 1 / CH36 / 5180 MHz



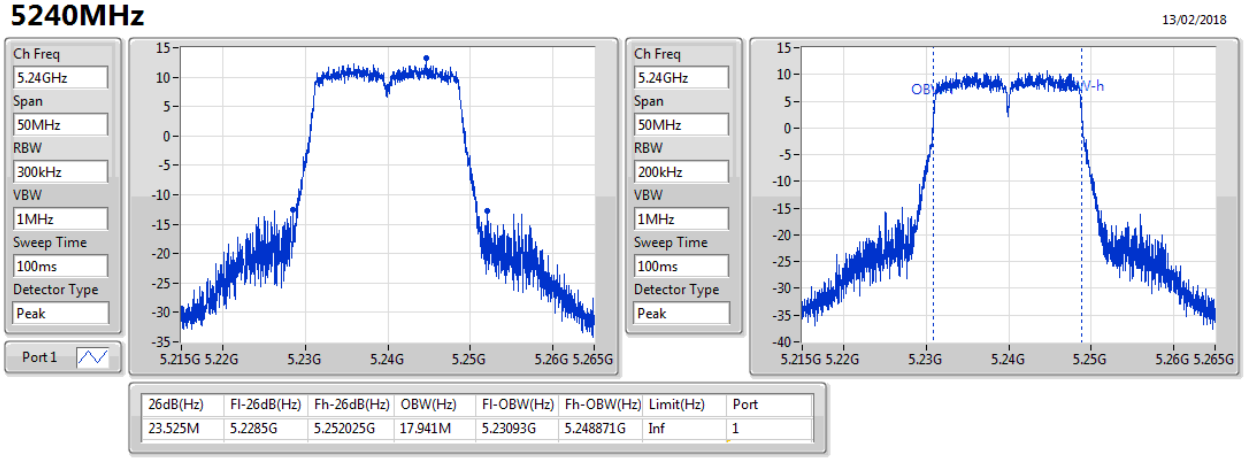
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 1 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 1 / CH48 / 5240 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port1) **EBW**

5240MHz

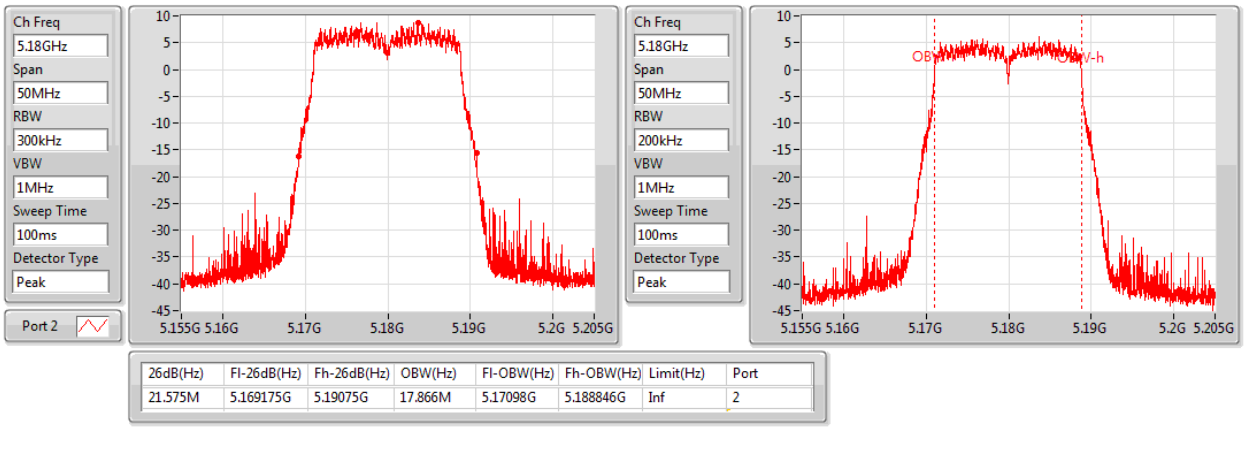


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
23.525M	5.2285G	5.252025G	17.941M	5.23093G	5.248871G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 2 / CH36 / 5180 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port2) **EBW**

5180MHz

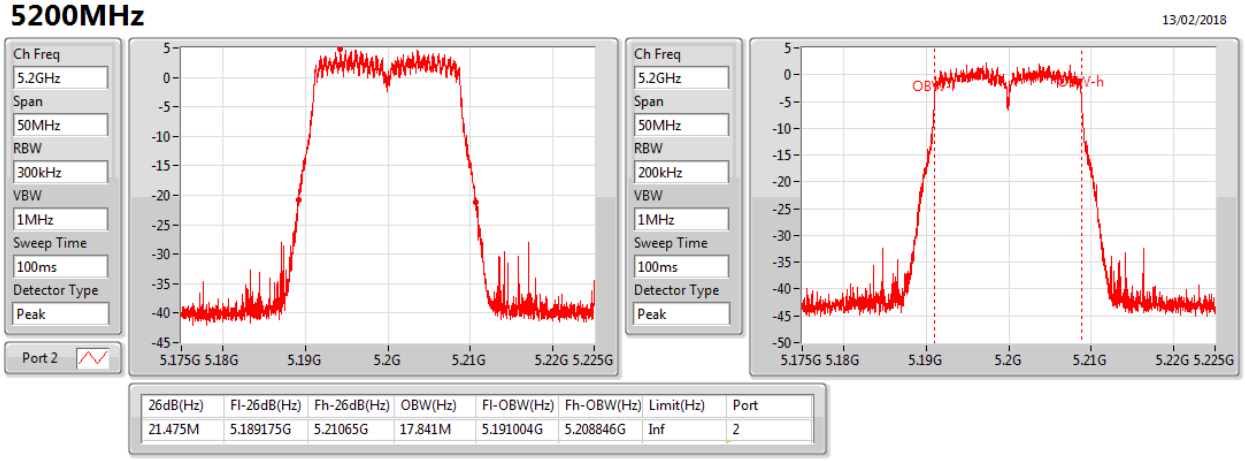


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.575M	5.169175G	5.19075G	17.866M	5.17098G	5.188846G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 2 / CH40 / 5200 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port2) EBW

5200MHz

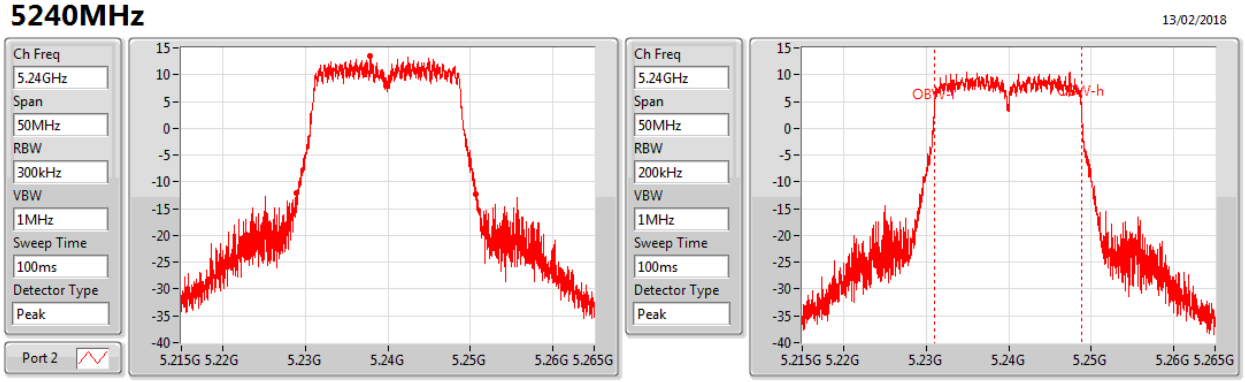


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.475M	5.189175G	5.21065G	17.841M	5.191004G	5.208846G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 2 / CH48 / 5240 MHz

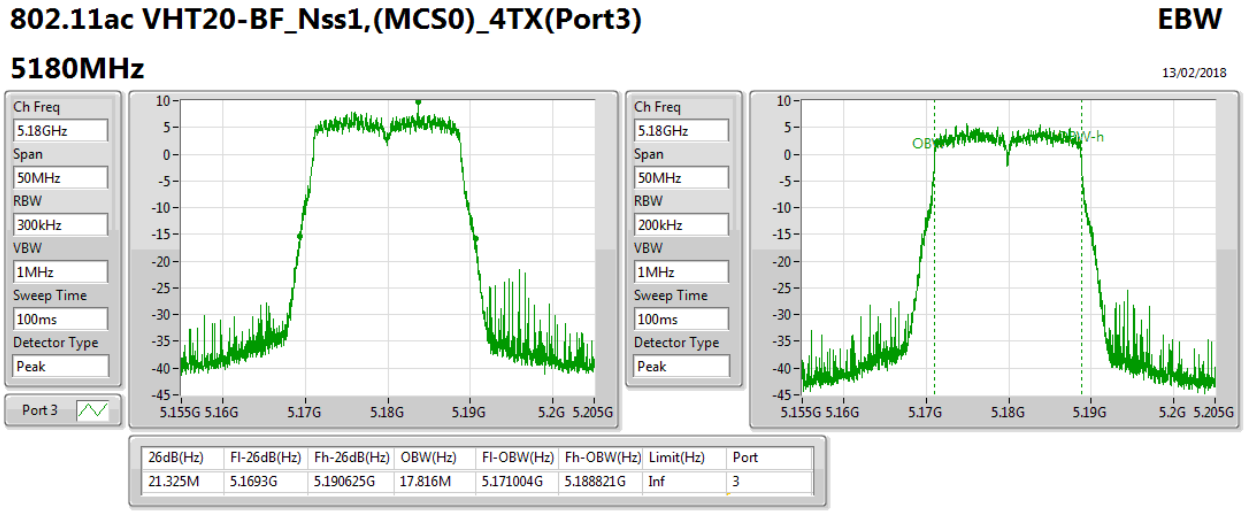
802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port2) EBW

5240MHz

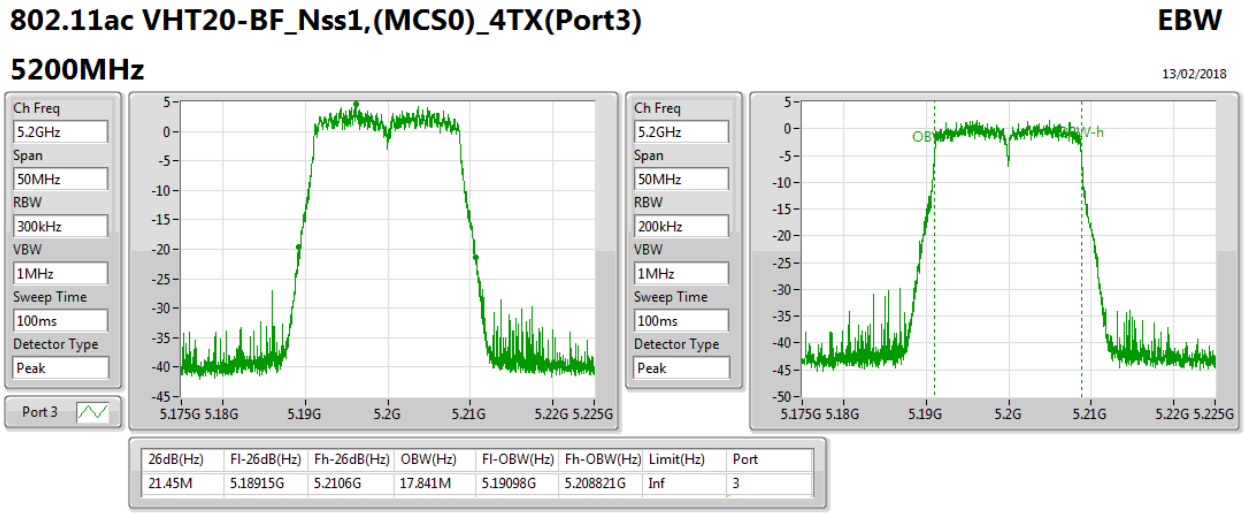


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.675M	5.22895G	5.250625G	17.866M	5.23098G	5.248846G	Inf	2

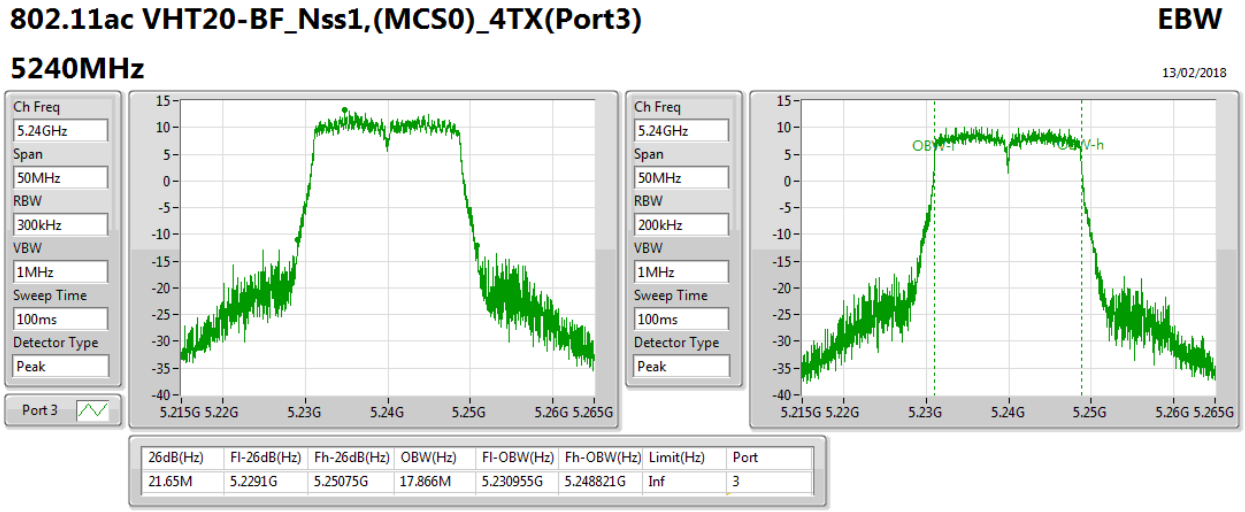
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 3 / CH36 / 5180 MHz



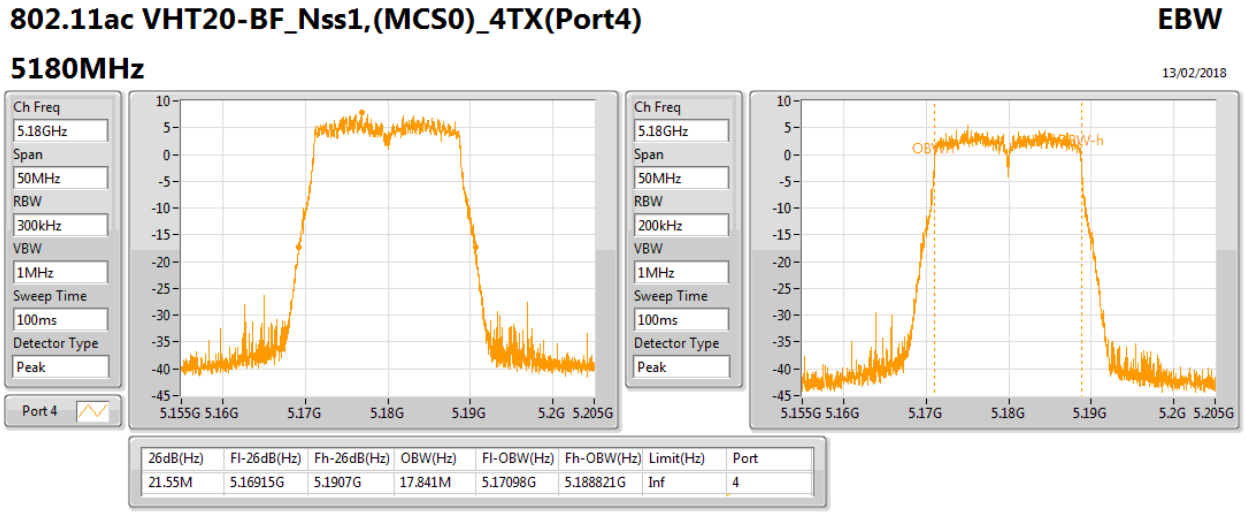
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 3 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 3 / CH48 / 5240 MHz



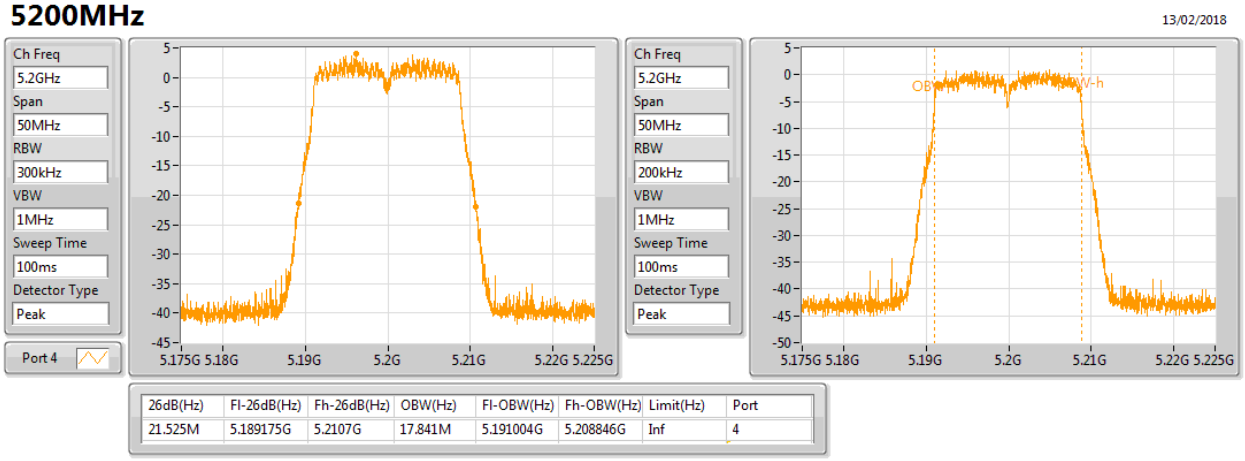
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 4 / CH36 / 5180 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 4 / CH40 / 5200 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port4) EBW

5200MHz

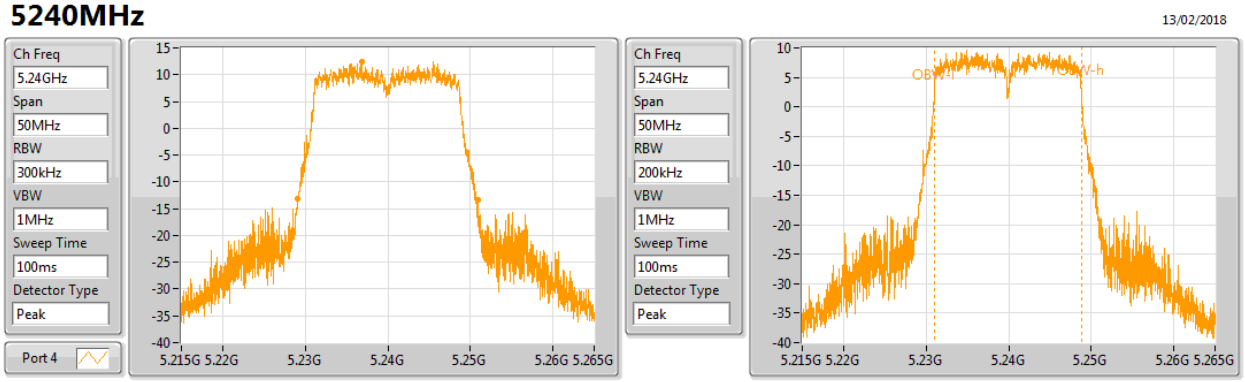


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.525M	5.189175G	5.2107G	17.841M	5.191004G	5.208846G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 4 / CH48 / 5240 MHz

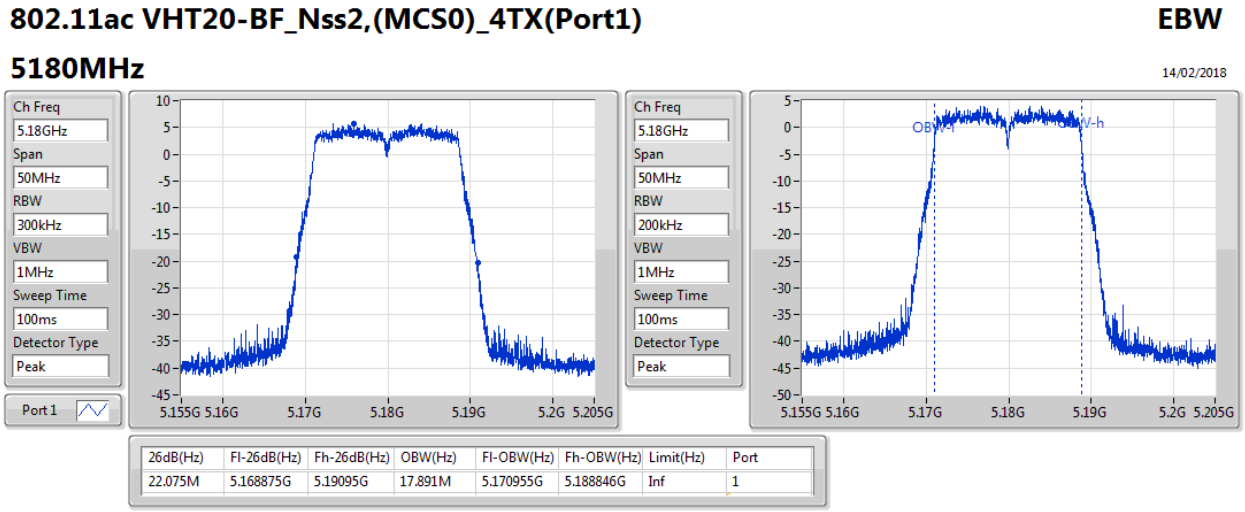
802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port4) EBW

5240MHz

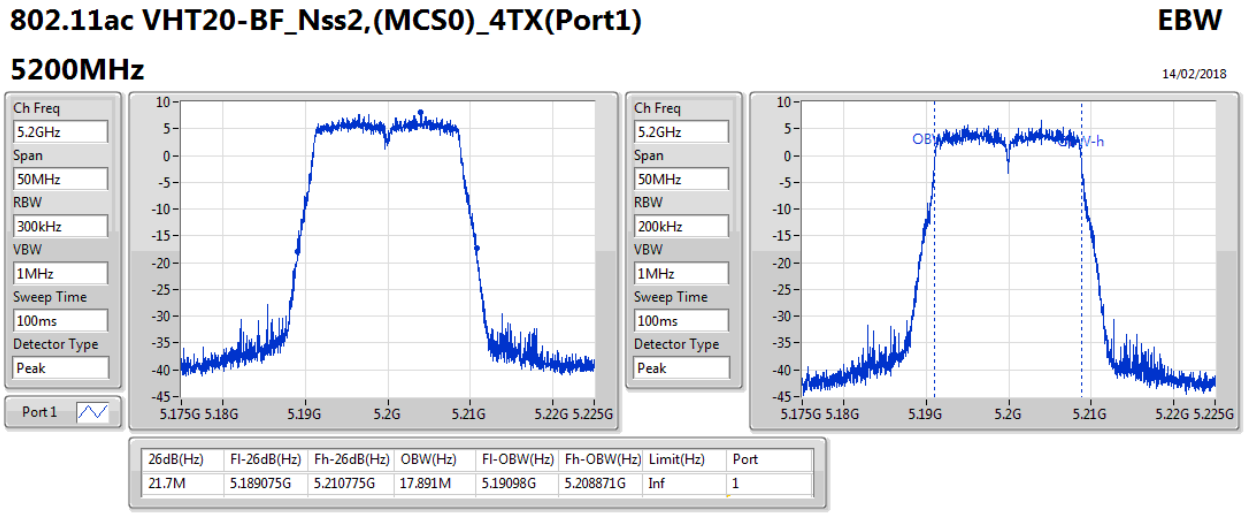


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.8M	5.229125G	5.250925G	17.841M	5.23098G	5.248821G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 1 / CH36 / 5180 MHz



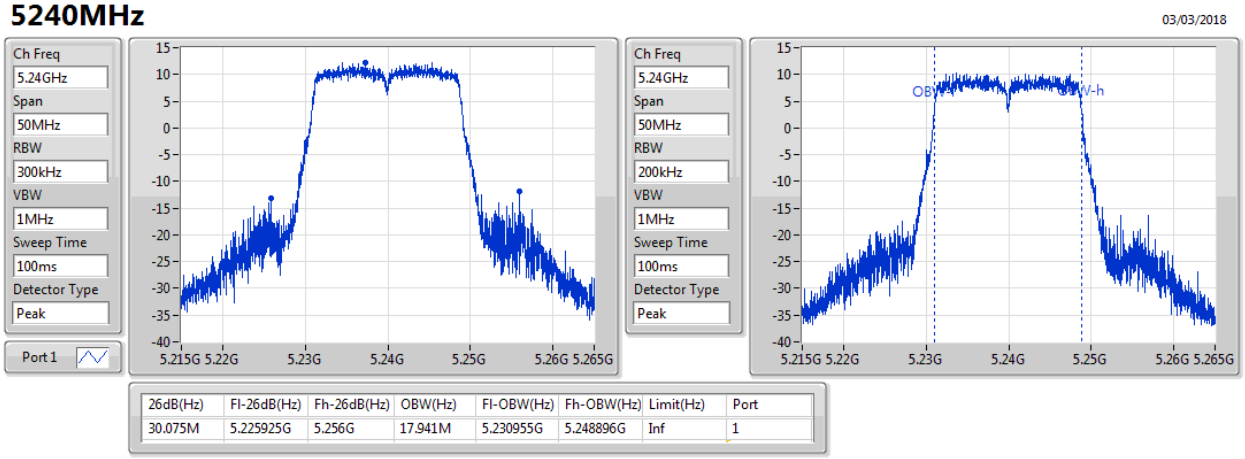
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 1 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 1 / CH48 / 5240 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port1) **EBW**

5240MHz

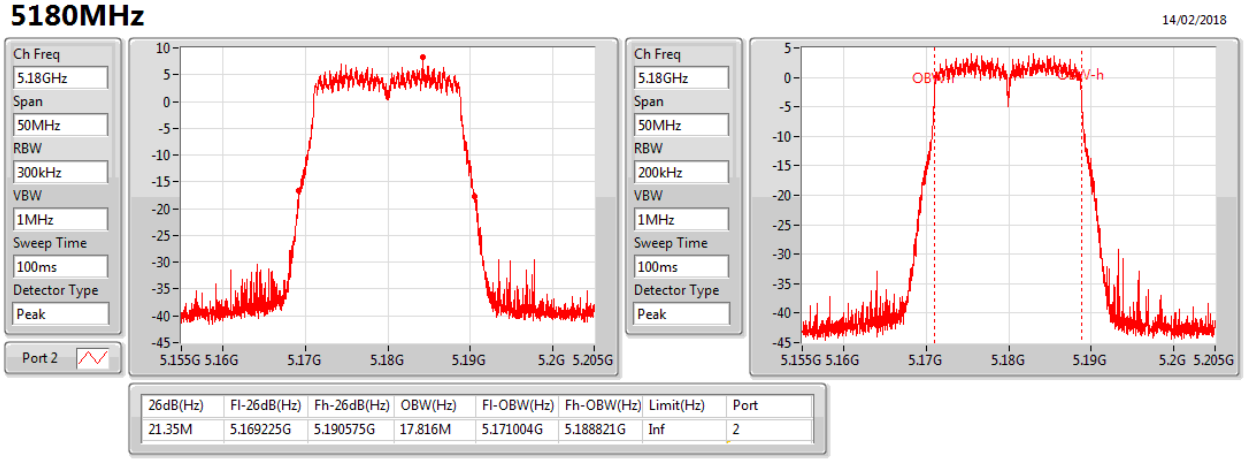


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
30.075M	5.225925G	5.256G	17.941M	5.230955G	5.248896G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 2 / CH36 / 5180 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5180MHz

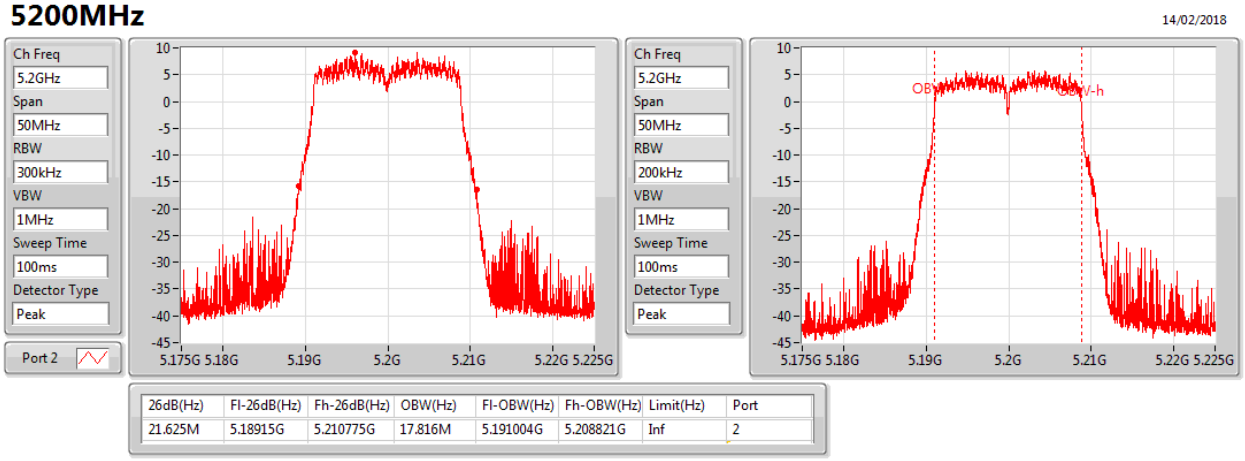


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.35M	5.169225G	5.190575G	17.816M	5.171004G	5.188821G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 2 / CH40 / 5200 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5200MHz

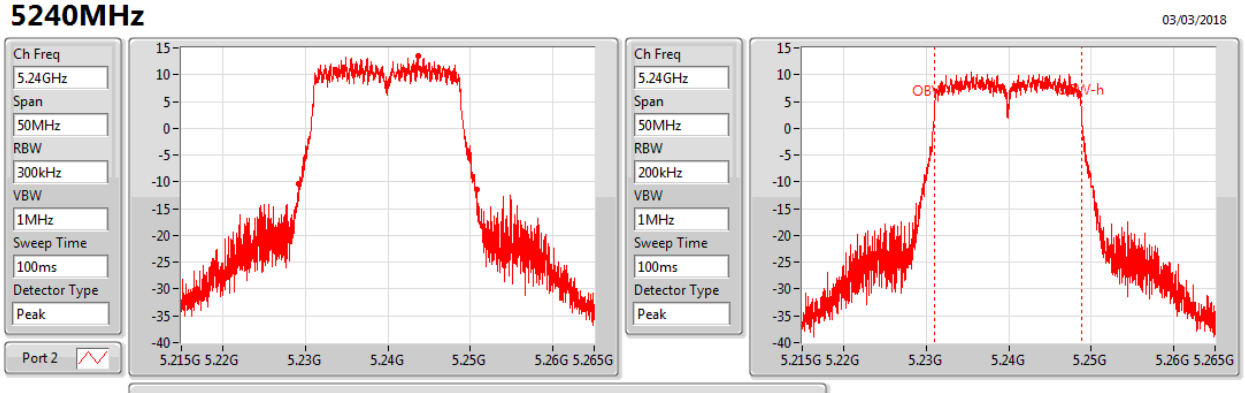


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.625M	5.18915G	5.210775G	17.816M	5.191004G	5.208821G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 2 / CH48 / 5240 MHz

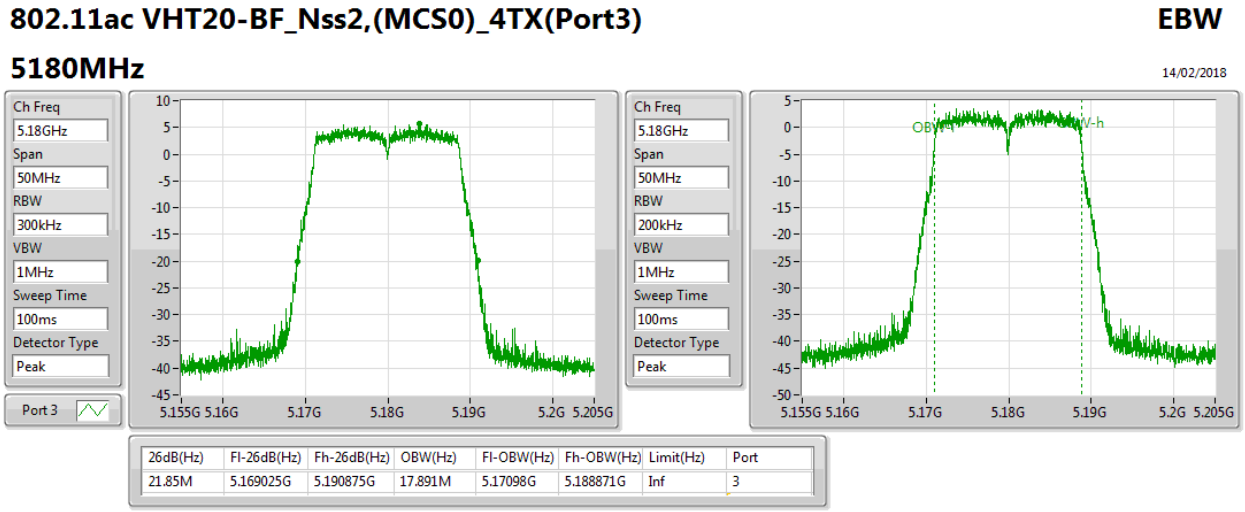
802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5240MHz

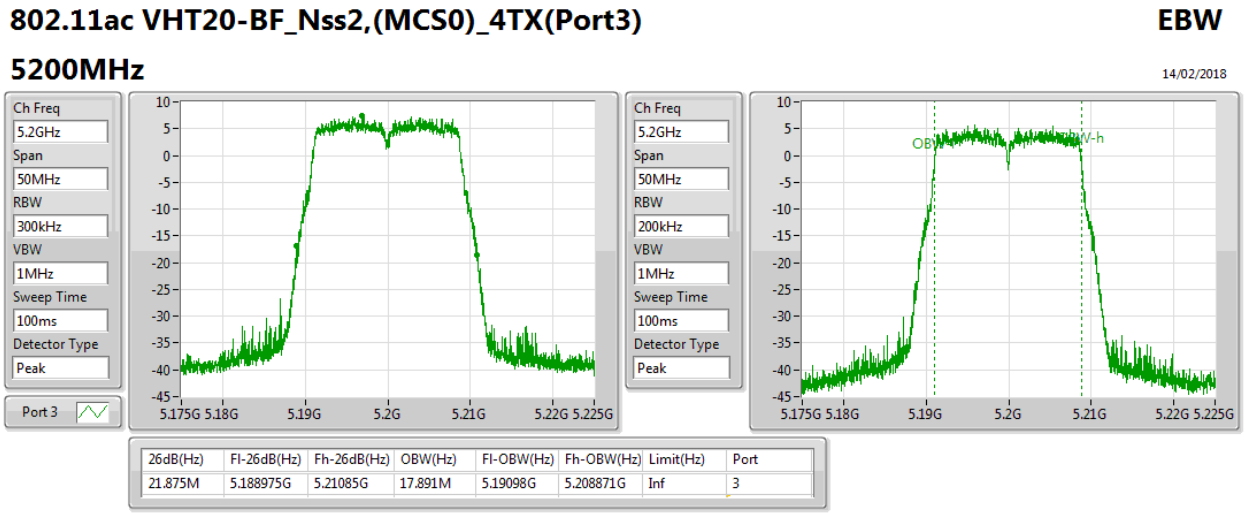


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.6M	5.22915G	5.25075G	17.866M	5.23098G	5.248846G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 3 / CH36 / 5180 MHz



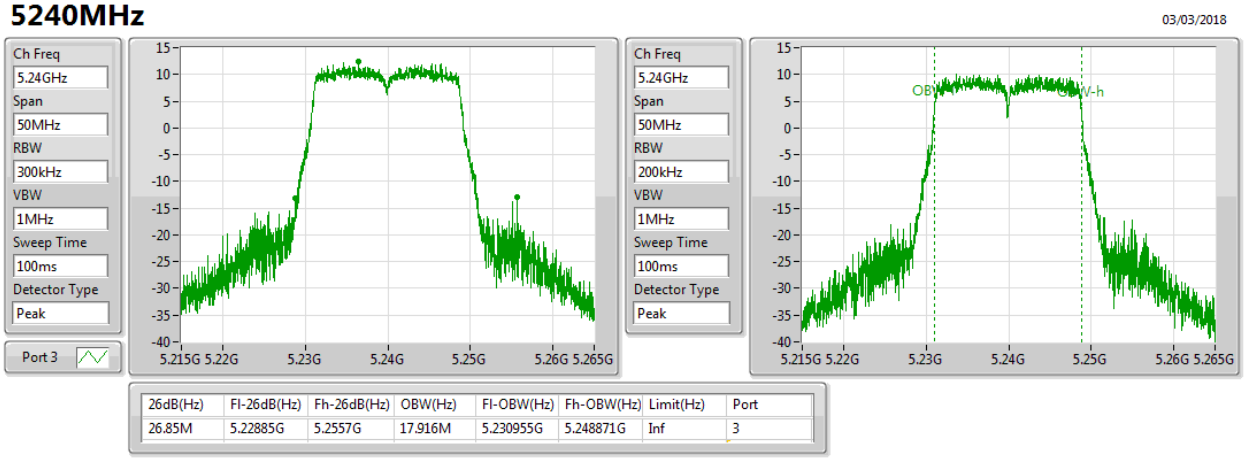
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 3 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 3 / CH48 / 5240 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port3) **EBW**

5240MHz

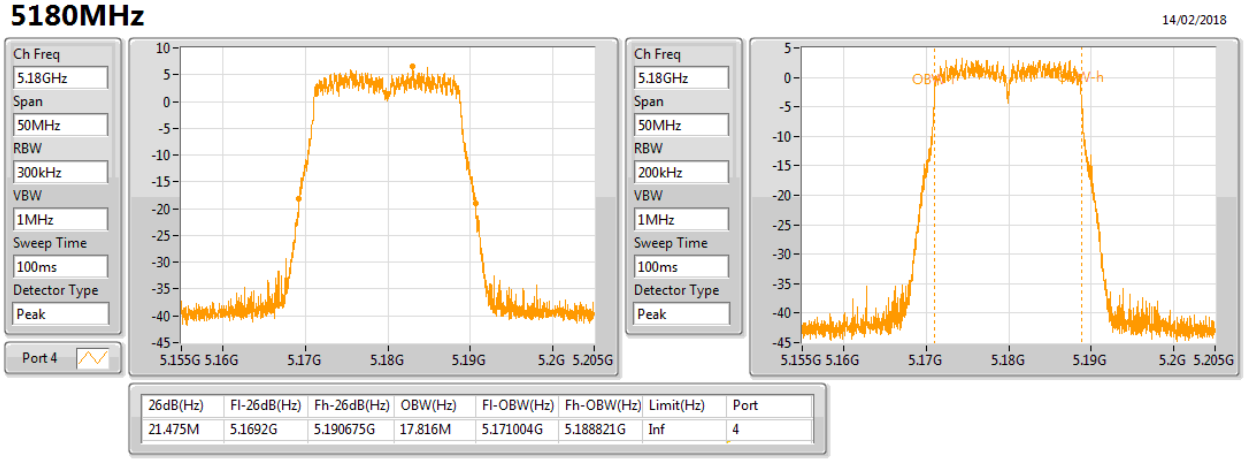


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
26.85M	5.22885G	5.2557G	17.916M	5.230955G	5.248871G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 4 / CH36 / 5180 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5180MHz

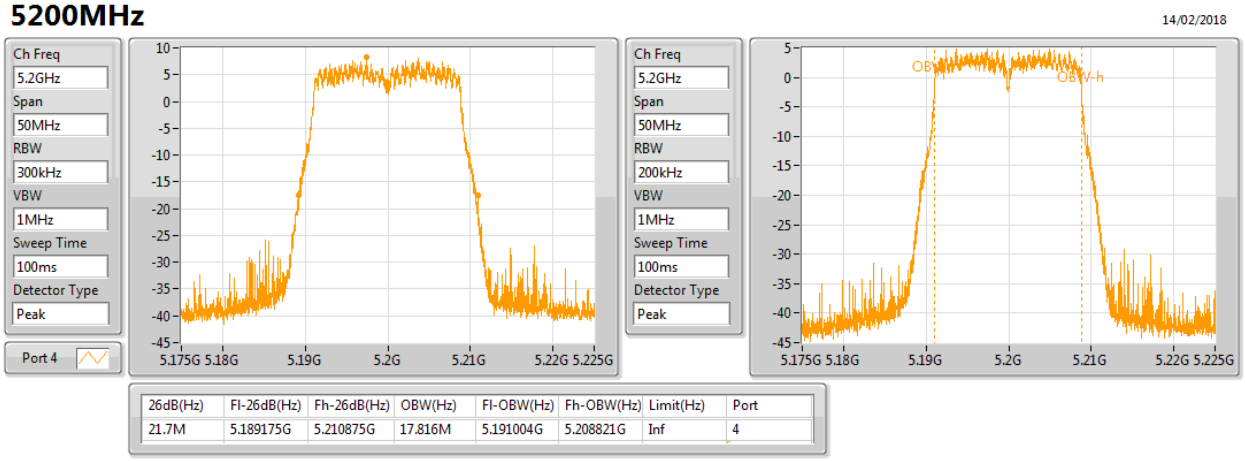


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.475M	5.1692G	5.190675G	17.816M	5.171004G	5.188821G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 4 / CH40 / 5200 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5200MHz

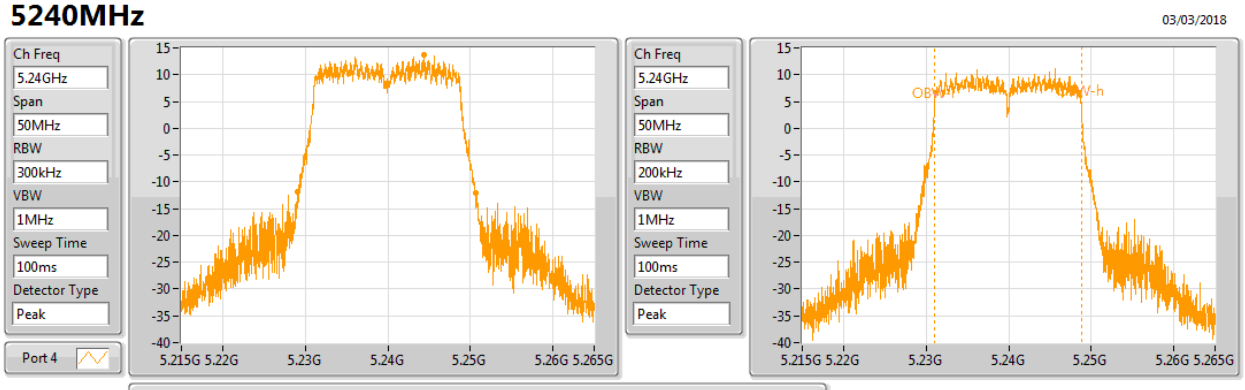


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.7M	5.189175G	5.210875G	17.816M	5.191004G	5.208821G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 4 / CH48 / 5240 MHz

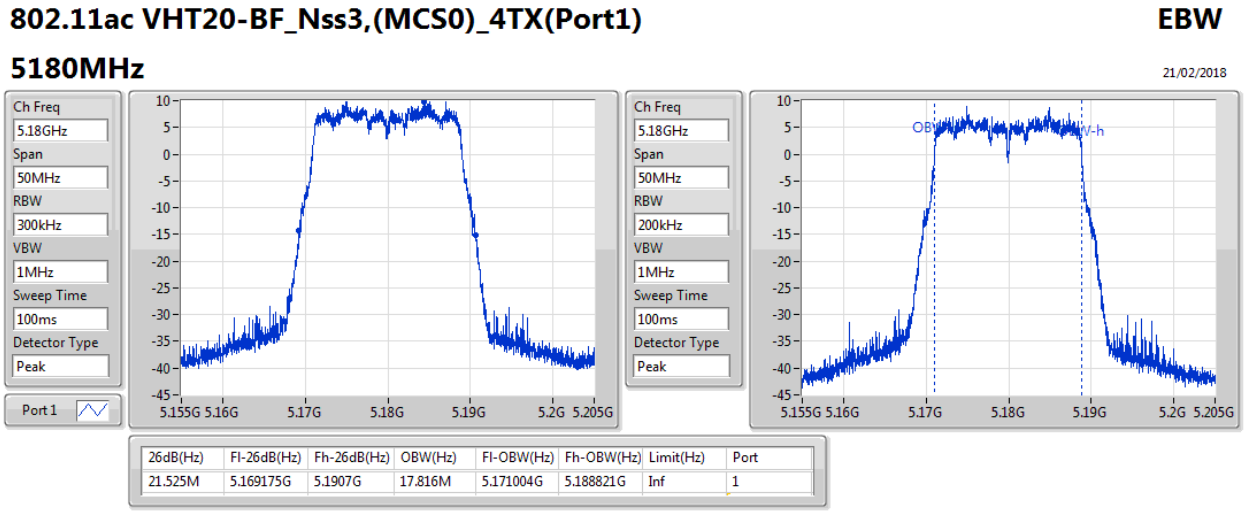
802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5240MHz

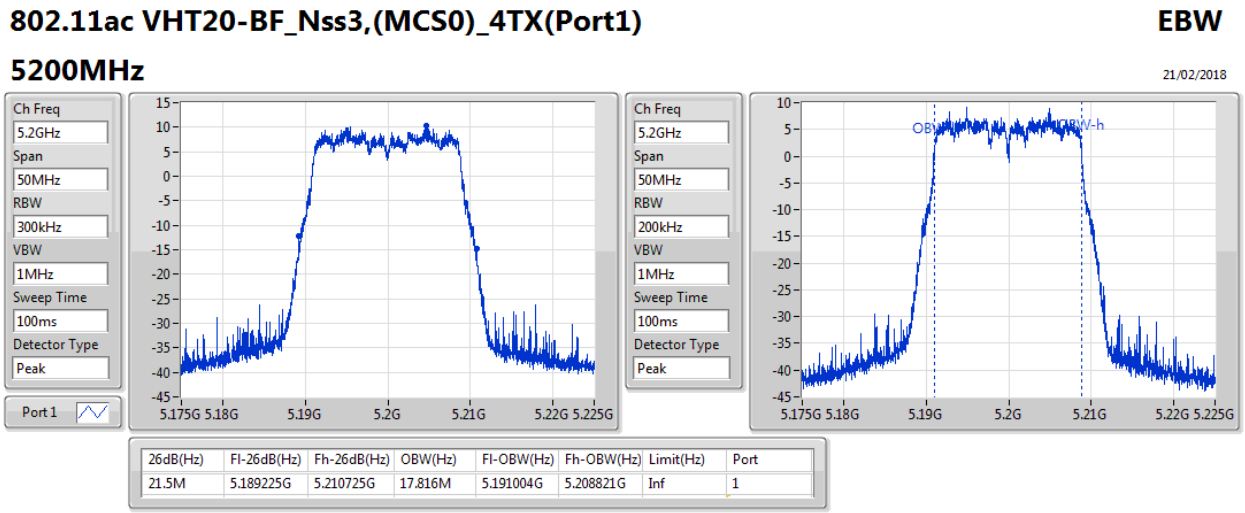


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.6M	5.229075G	5.250675G	17.841M	5.23098G	5.248821G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 1 / CH36 / 5180 MHz



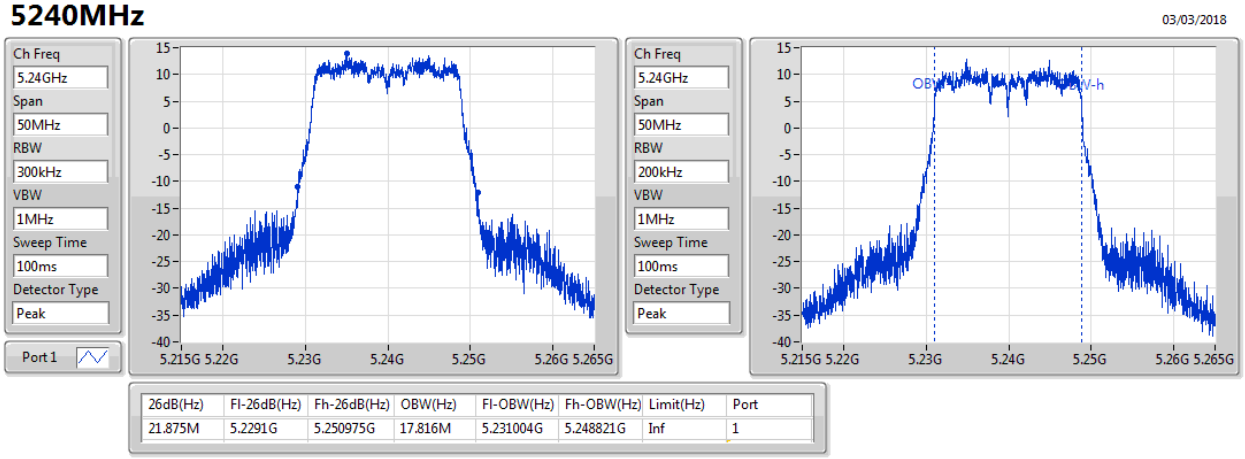
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 1 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 1 / CH48 / 5240 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port1) **EBW**

5240MHz

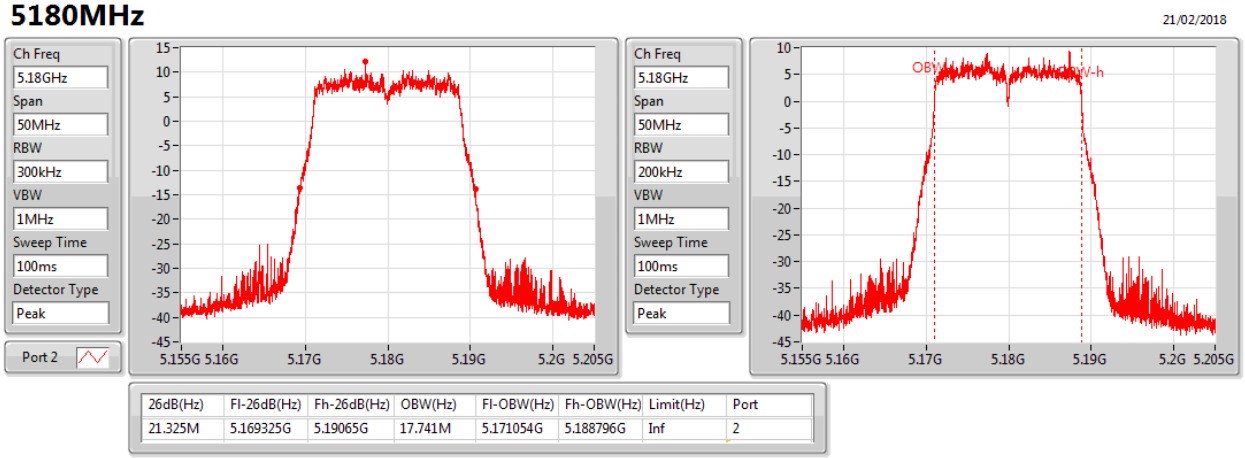


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.875M	5.2291G	5.250975G	17.816M	5.231004G	5.248821G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 2 / CH36 / 5180 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5180MHz

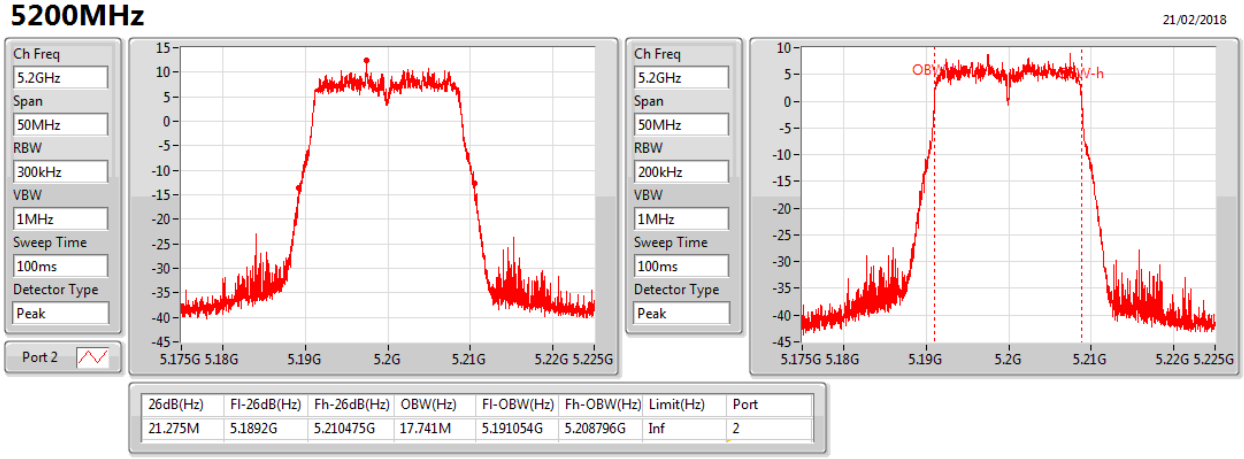


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.325M	5.169325G	5.19065G	17.741M	5.171054G	5.188796G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 2 / CH40 / 5200 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5200MHz

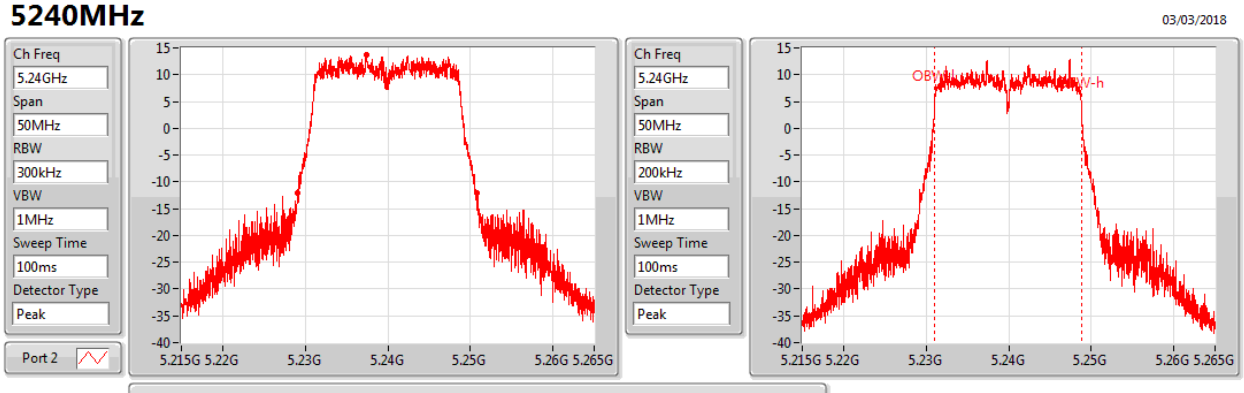


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.275M	5.1892G	5.210475G	17.741M	5.191054G	5.208796G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 2 / CH48 / 5240 MHz

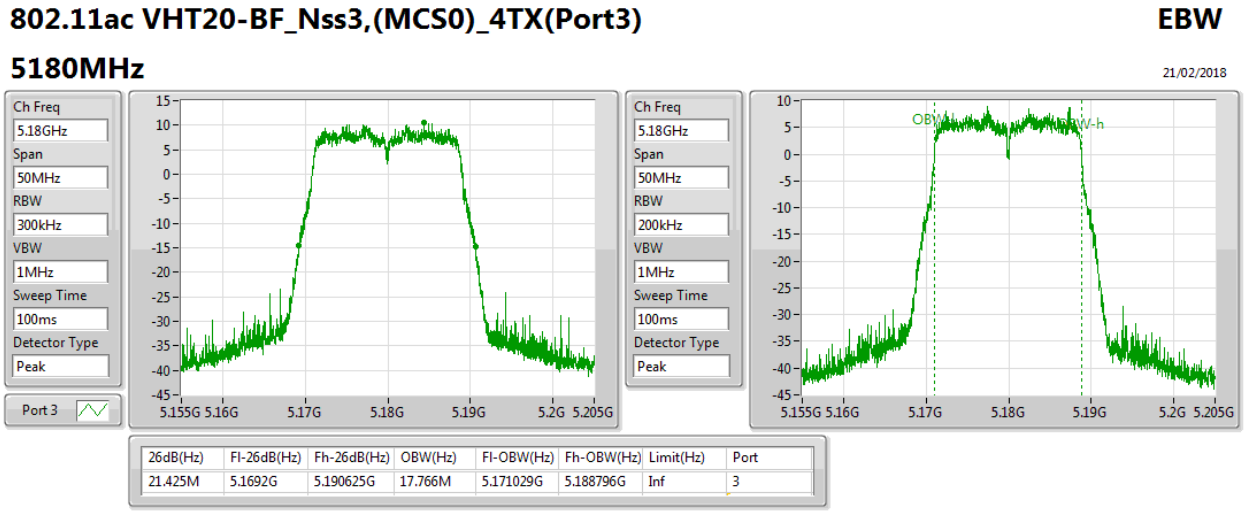
802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5240MHz

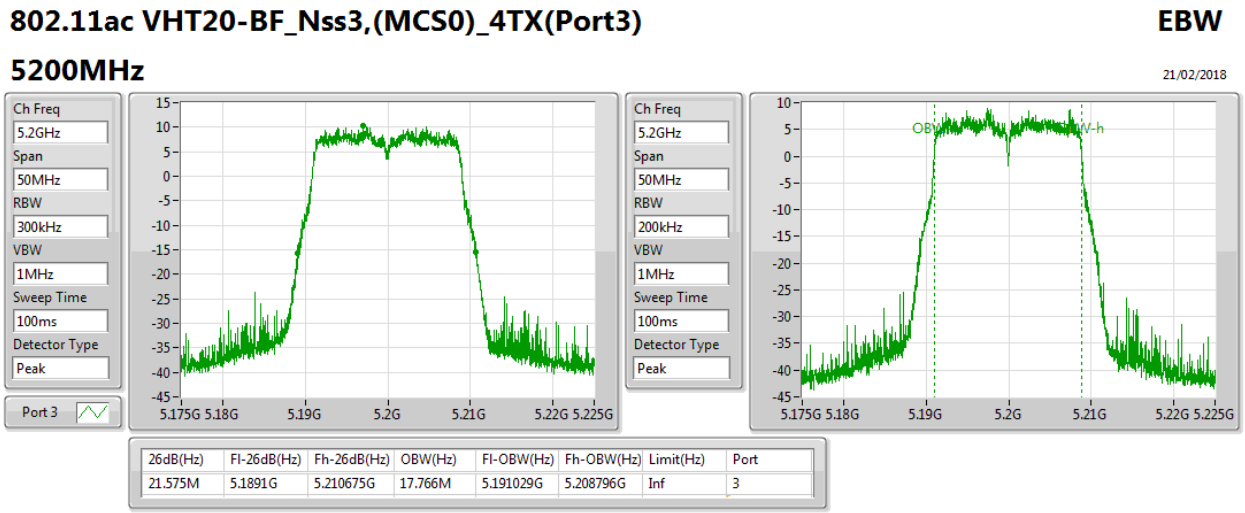


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.65M	5.2291G	5.25075G	17.766M	5.231029G	5.248796G	Inf	2

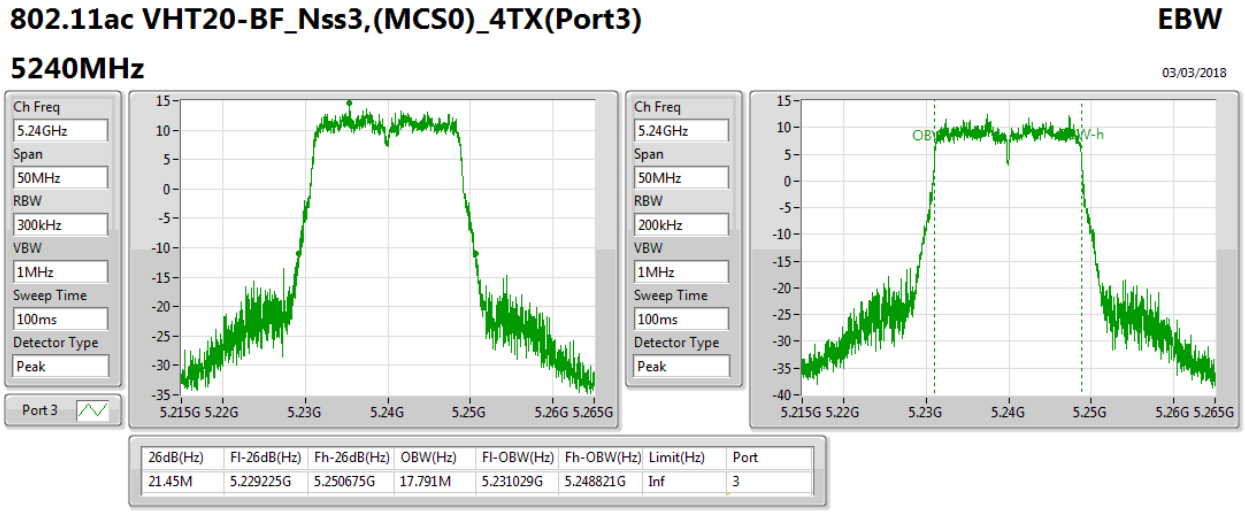
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 3 / CH36 / 5180 MHz



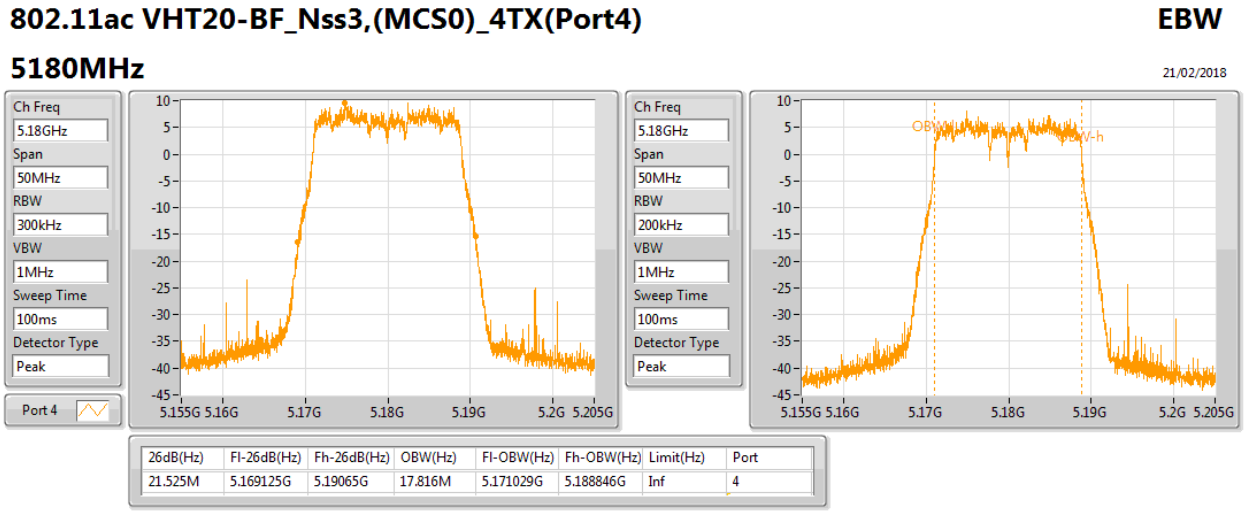
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 3 / CH40 / 5200 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 3 / CH48 / 5240 MHz



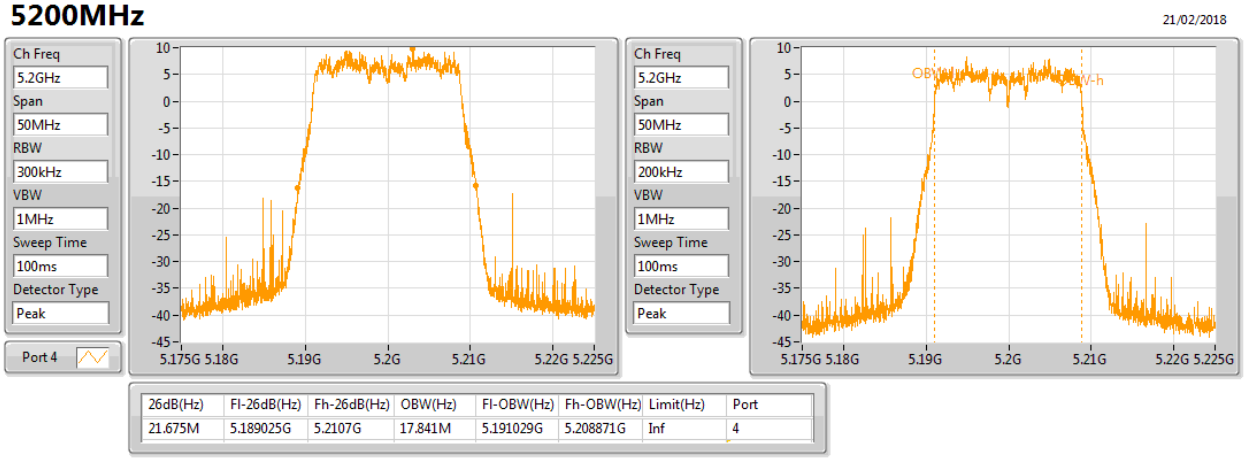
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 4 / CH36 / 5180 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 4 / CH40 / 5200 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port4) EBW

5200MHz

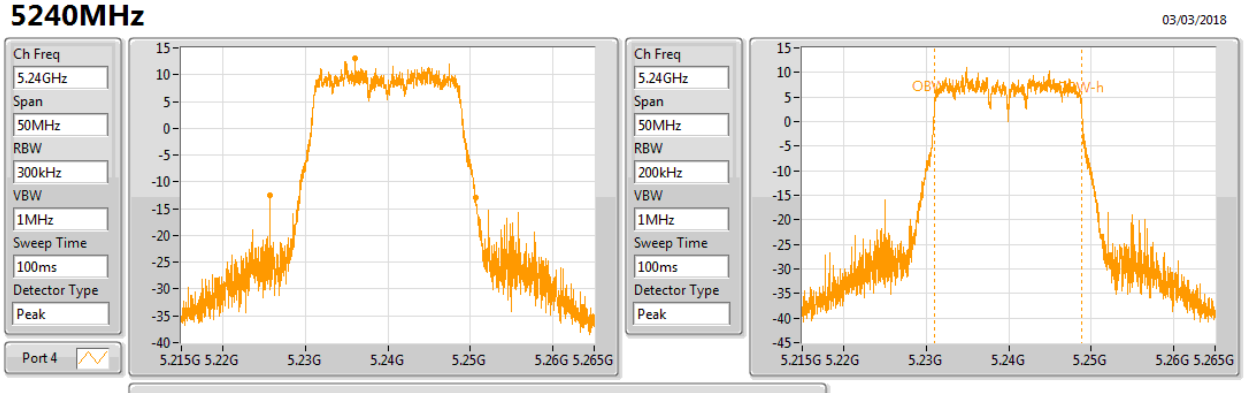


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
21.675M	5.189025G	5.2107G	17.841M	5.191029G	5.208871G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 20MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 4 / CH48 / 5240 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port4) EBW

5240MHz



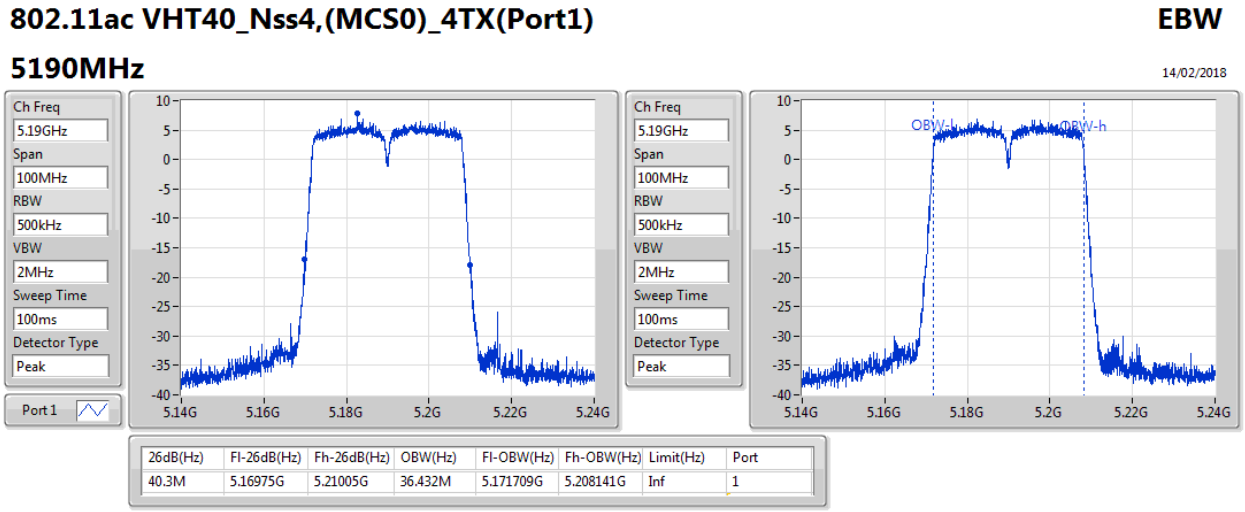
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
24.9M	5.225725G	5.250625G	17.841M	5.231004G	5.248846G	Inf	4

Configuration IEEE 802.11ac 40MHz

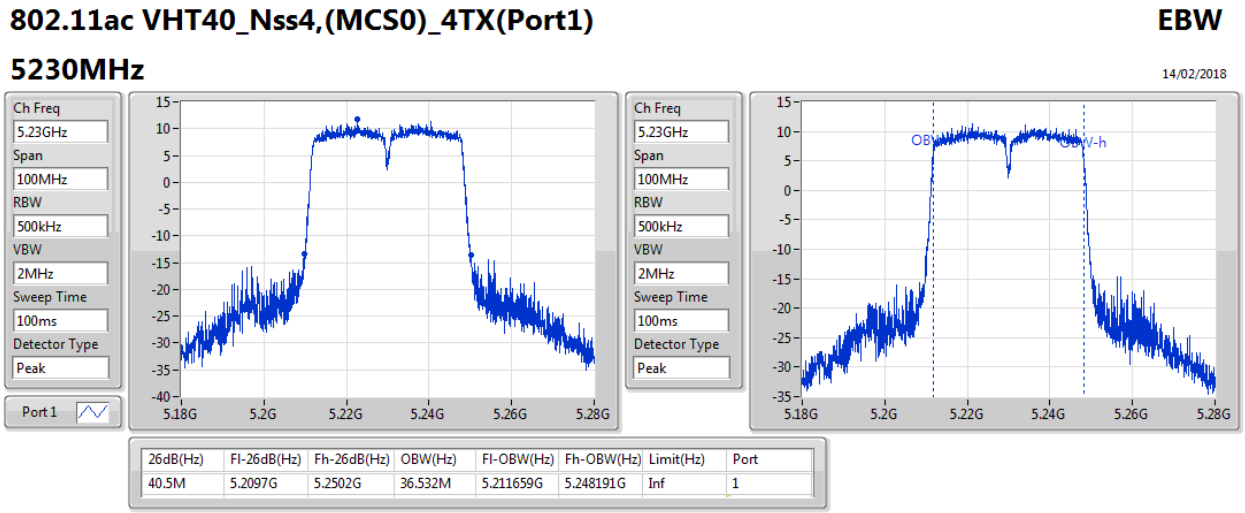
26dB Emission Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	26dB Emission Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11ac 40MHz (SDM)	4 stream 4TX	5190 MHz	40.300	39.900	39.900	39.850
802.11ac 40MHz (SDM)	4 stream 4TX	5230 MHz	40.500	40.050	39.800	39.900
802.11ac 40MHz (TXBF)	1 stream 4TX	5190 MHz	40.100	39.800	39.850	39.850
802.11ac 40MHz (TXBF)	1 stream 4TX	5230 MHz	40.350	39.650	39.600	40.000
802.11ac 40MHz (TXBF)	2 stream 4TX	5190 MHz	40.250	39.600	40.000	39.900
802.11ac 40MHz (TXBF)	2 stream 4TX	5230 MHz	40.200	39.700	39.950	40.850
802.11ac 40MHz (TXBF)	3 stream 4TX	5190 MHz	39.900	39.700	39.800	39.800
802.11ac 40MHz (TXBF)	3 stream 4TX	5230 MHz	40.050	39.600	40.500	39.850

99% Occupied Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	99% Occupied Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11ac 40MHz (SDM)	4 stream 4TX	5190 MHz	36.432	36.382	36.332	36.332
802.11ac 40MHz (SDM)	4 stream 4TX	5230 MHz	36.532	36.432	36.382	36.482
802.11ac 40MHz (TXBF)	1 stream 4TX	5190 MHz	36.432	36.282	36.382	36.382
802.11ac 40MHz (TXBF)	1 stream 4TX	5230 MHz	36.382	36.282	36.332	36.332
802.11ac 40MHz (TXBF)	2 stream 4TX	5190 MHz	36.482	36.282	36.432	36.332
802.11ac 40MHz (TXBF)	2 stream 4TX	5230 MHz	36.482	36.332	36.432	36.282
802.11ac 40MHz (TXBF)	3 stream 4TX	5190 MHz	36.382	36.382	36.382	36.482
802.11ac 40MHz (TXBF)	3 stream 4TX	5230 MHz	36.432	36.432	36.382	36.432

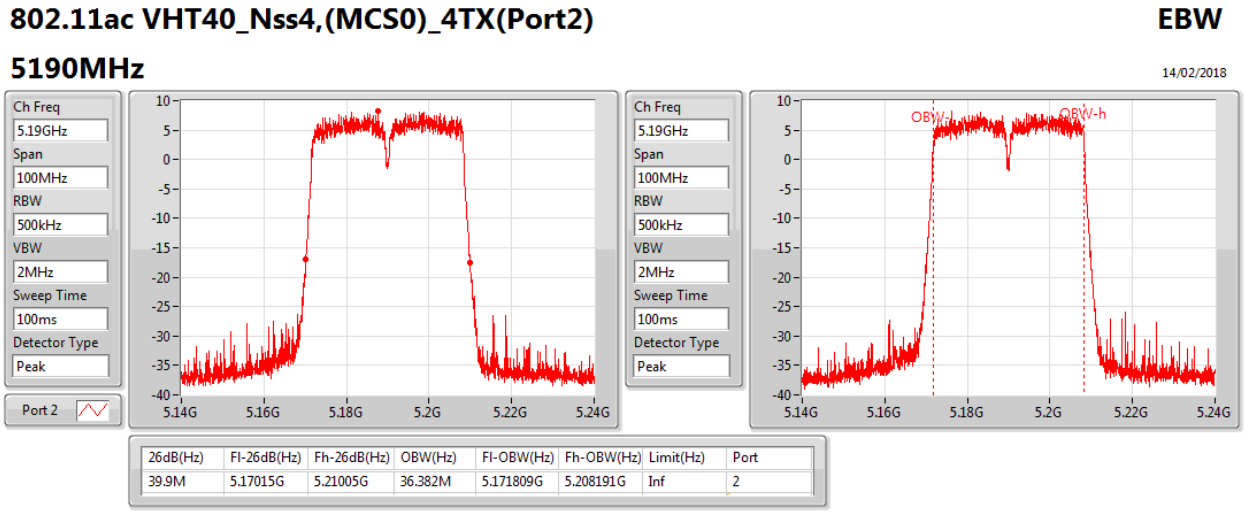
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 1 / CH38 / 5190 MHz



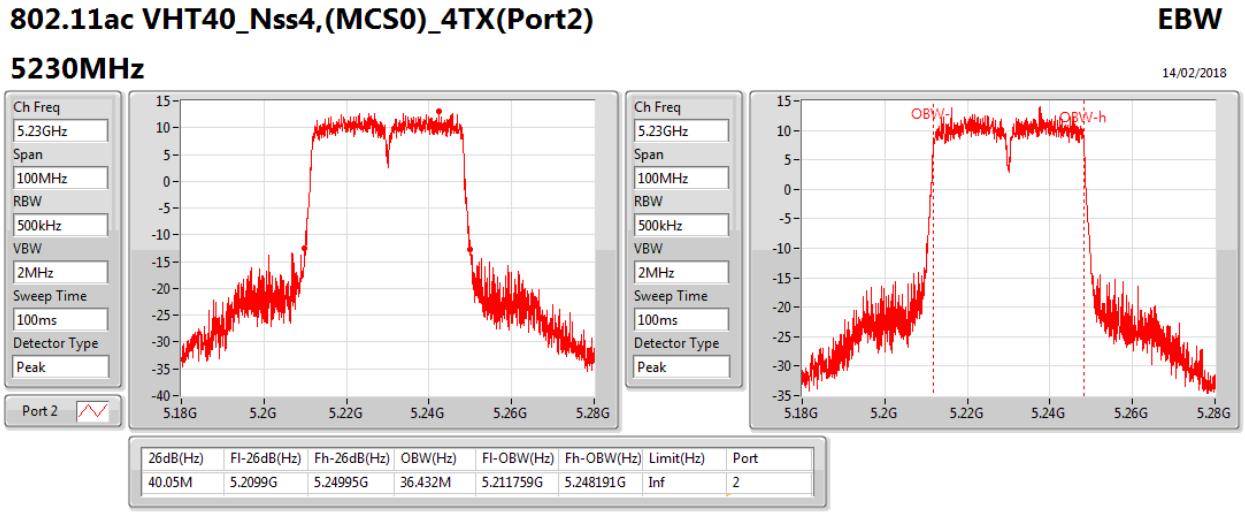
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 1 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 2 / CH38 / 5190 MHz



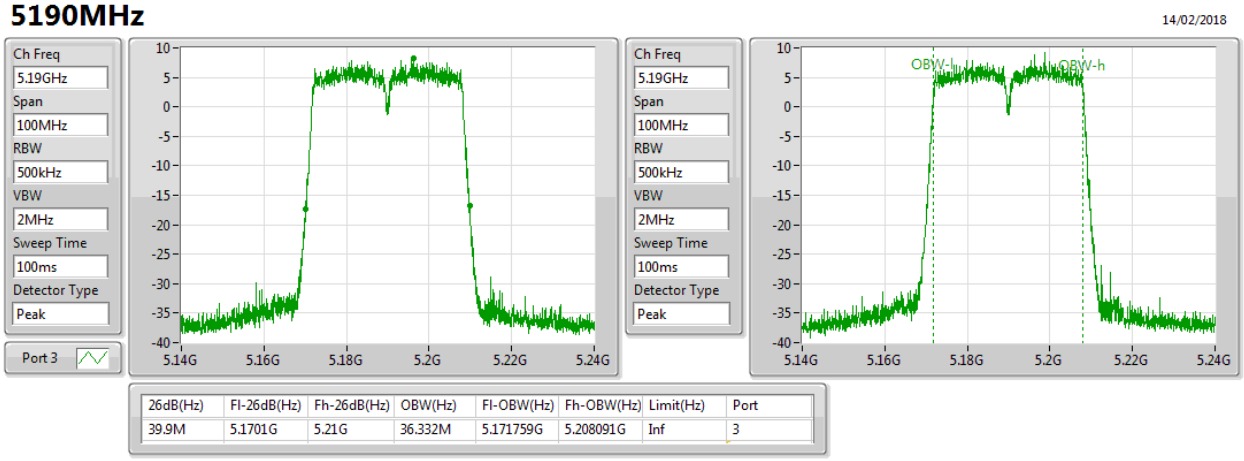
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 2 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 3 / CH38 / 5190 MHz

802.11ac VHT40_Nss4,(MCS0)_4TX(Port3) **EBW**

5190MHz

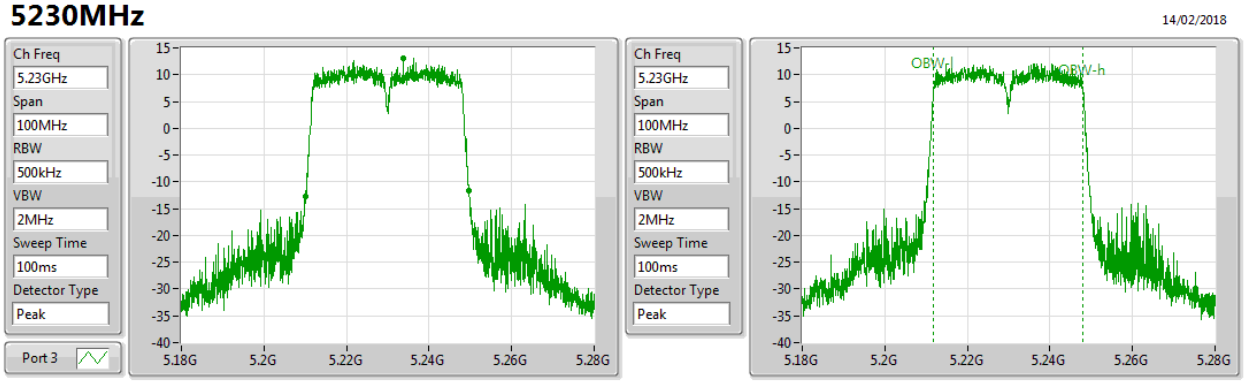


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.9M	5.1701G	5.21G	36.332M	5.171759G	5.208091G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 3 / CH46 / 5230 MHz

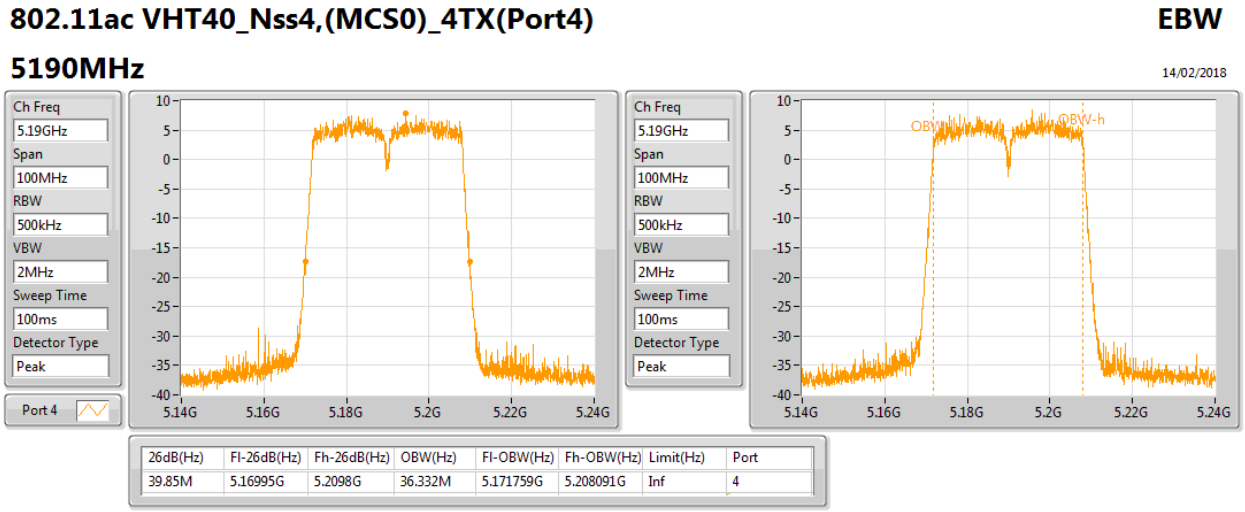
802.11ac VHT40_Nss4,(MCS0)_4TX(Port3) **EBW**

5230MHz

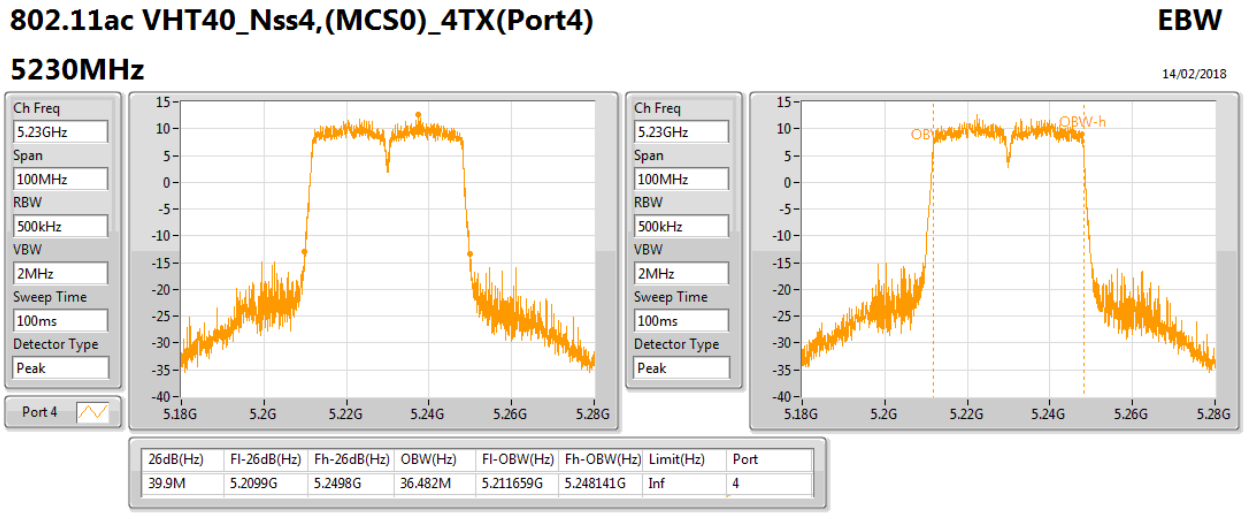


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.8M	5.20995G	5.24975G	36.382M	5.211709G	5.248091G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 4 / CH38 / 5190 MHz



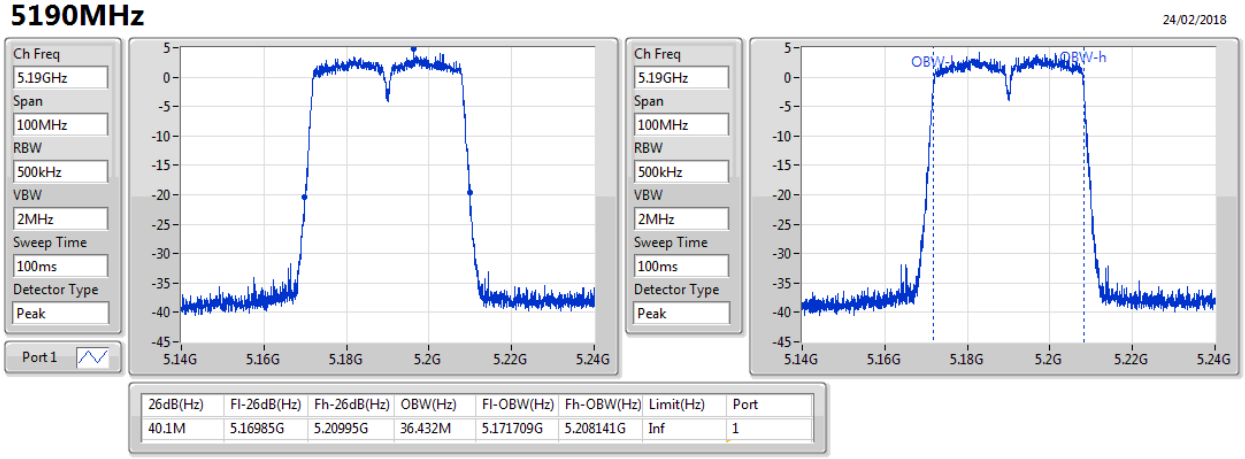
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 4 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 1 / CH38 / 5190 MHz

802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port1) **EBW**

5190MHz

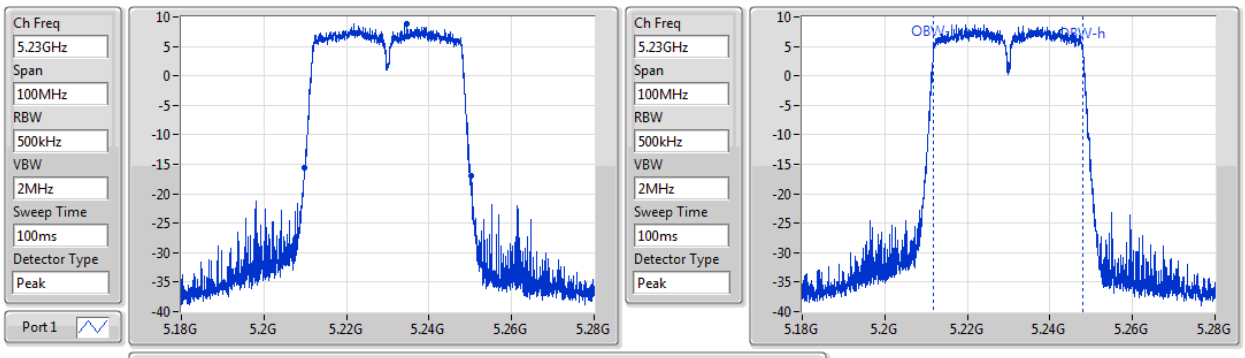


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
40.1M	5.16985G	5.20995G	36.432M	5.171709G	5.208141G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 1 / CH46 / 5230 MHz

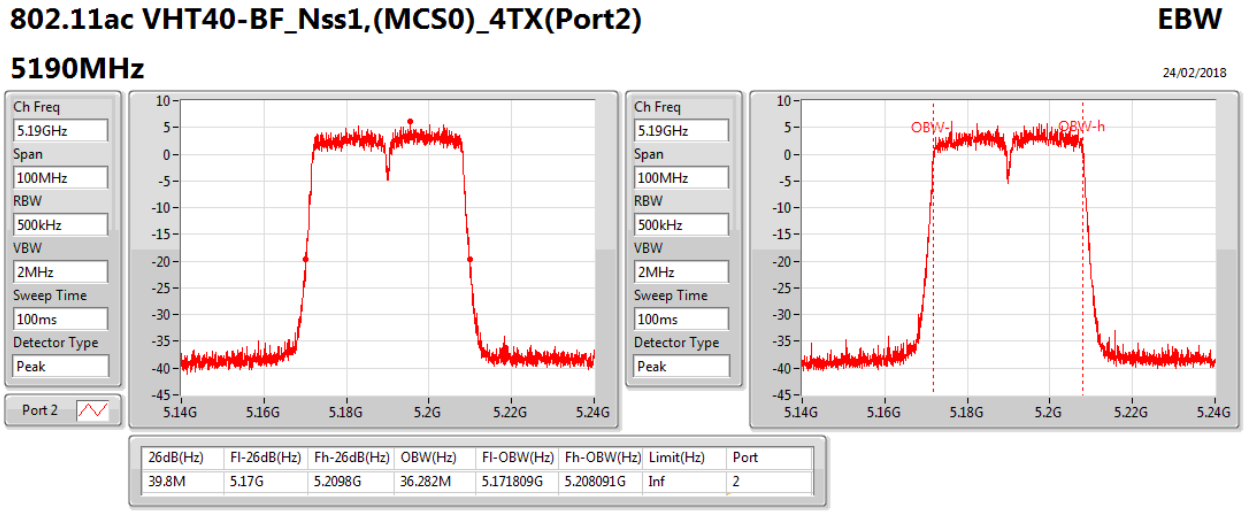
802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port1) **EBW**

5230MHz

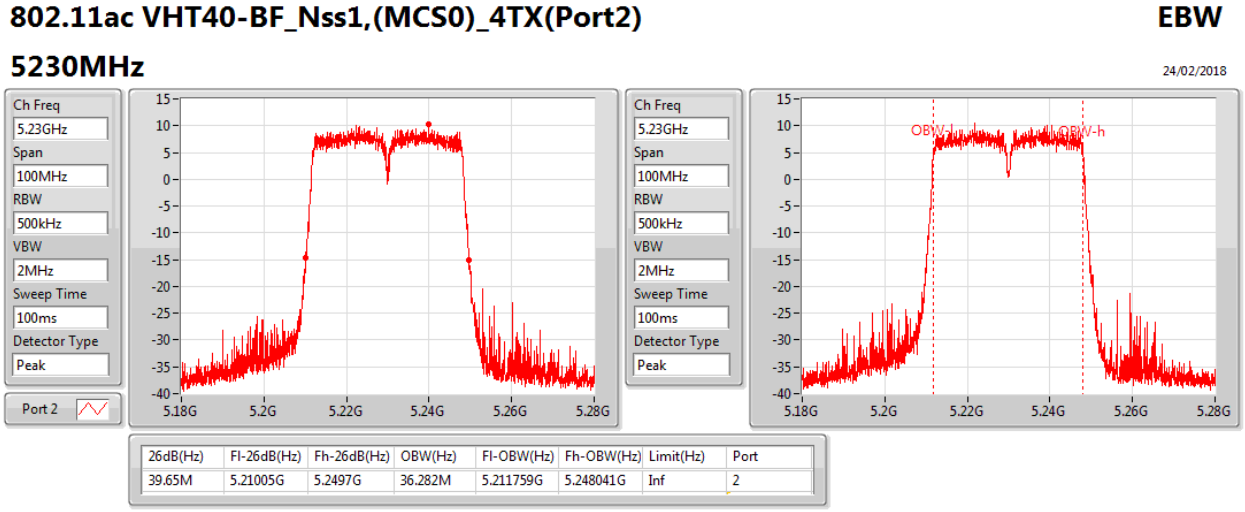


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
40.35M	5.20975G	5.2501G	36.382M	5.211709G	5.248091G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 2 / CH38 / 5190 MHz



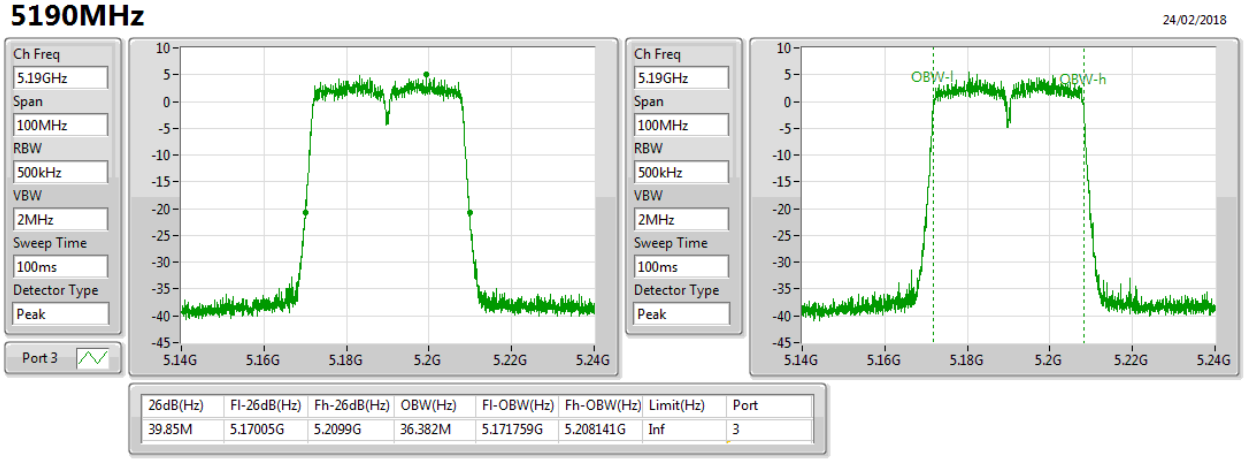
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 2 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 3 / CH38 / 5190 MHz

802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port3) EBW

5190MHz

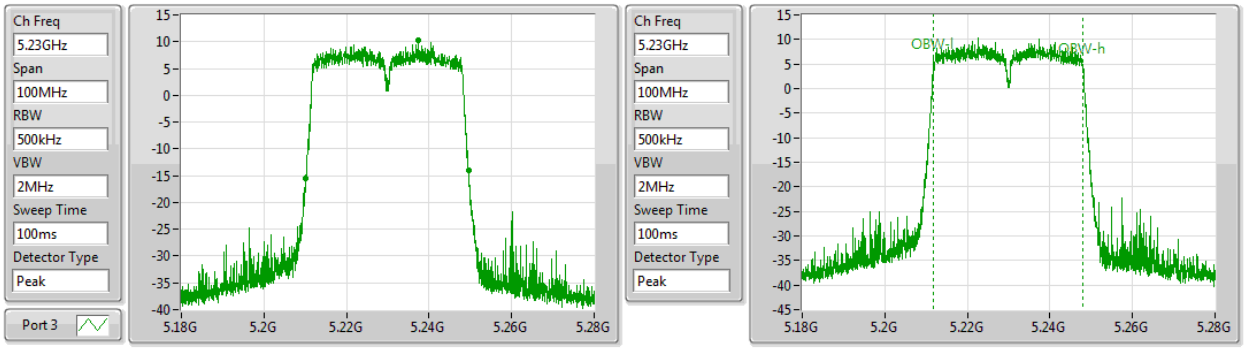


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.85M	5.17005G	5.2099G	36.382M	5.171759G	5.208141G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 3 / CH46 / 5230 MHz

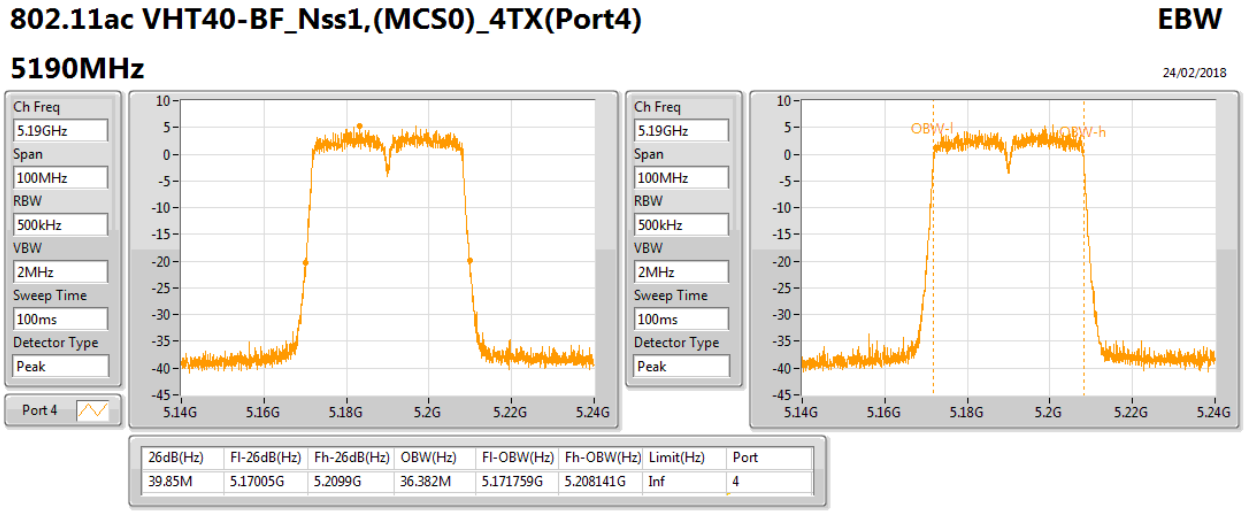
802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port3) EBW

5230MHz

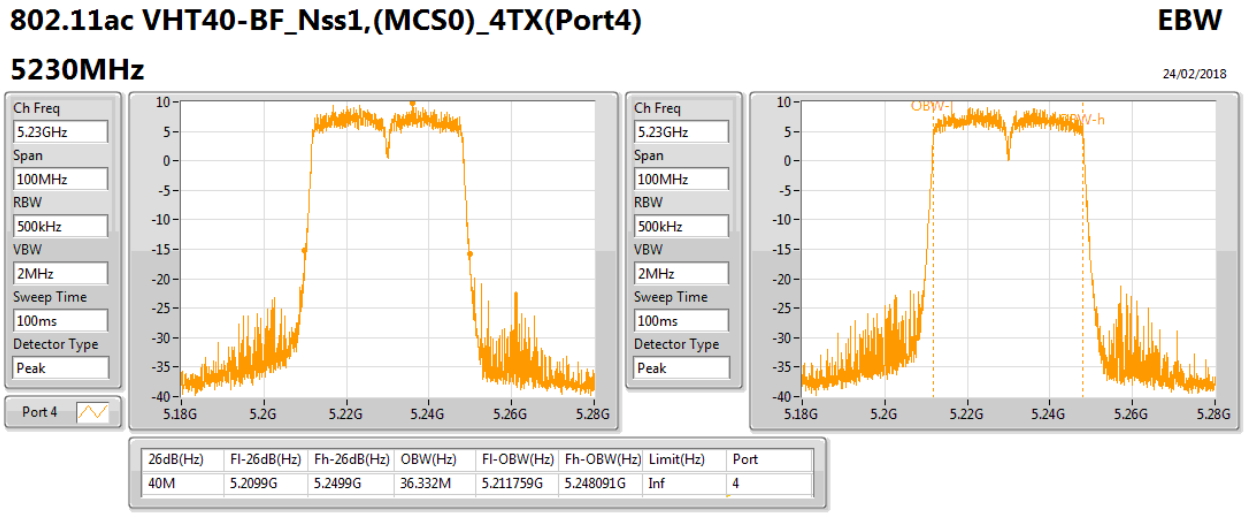


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.6M	5.21G	5.2496G	36.332M	5.211759G	5.248091G	Inf	3

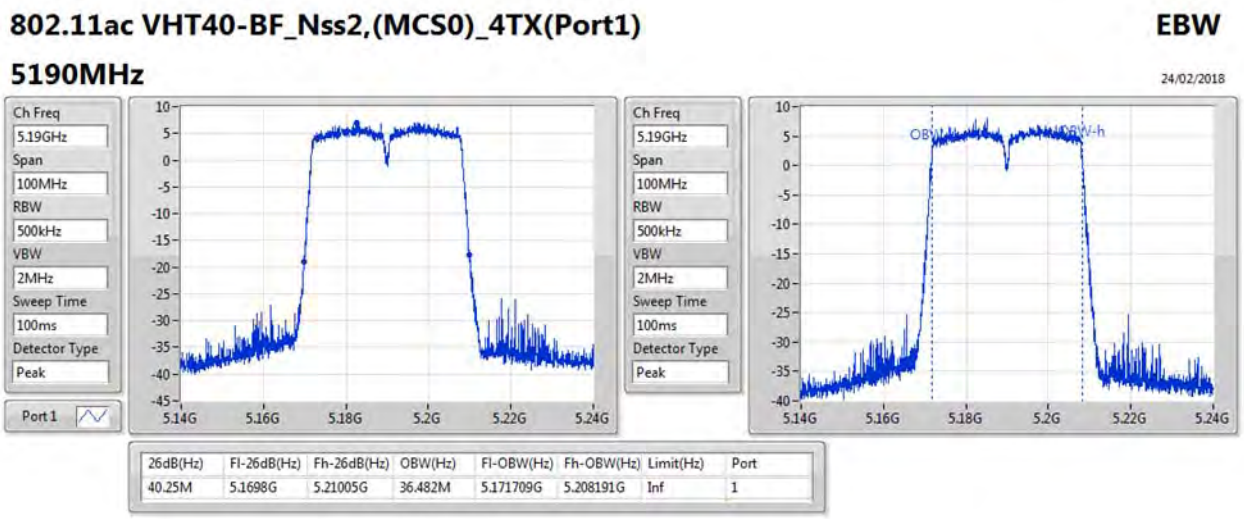
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 4 / CH38 / 5190 MHz



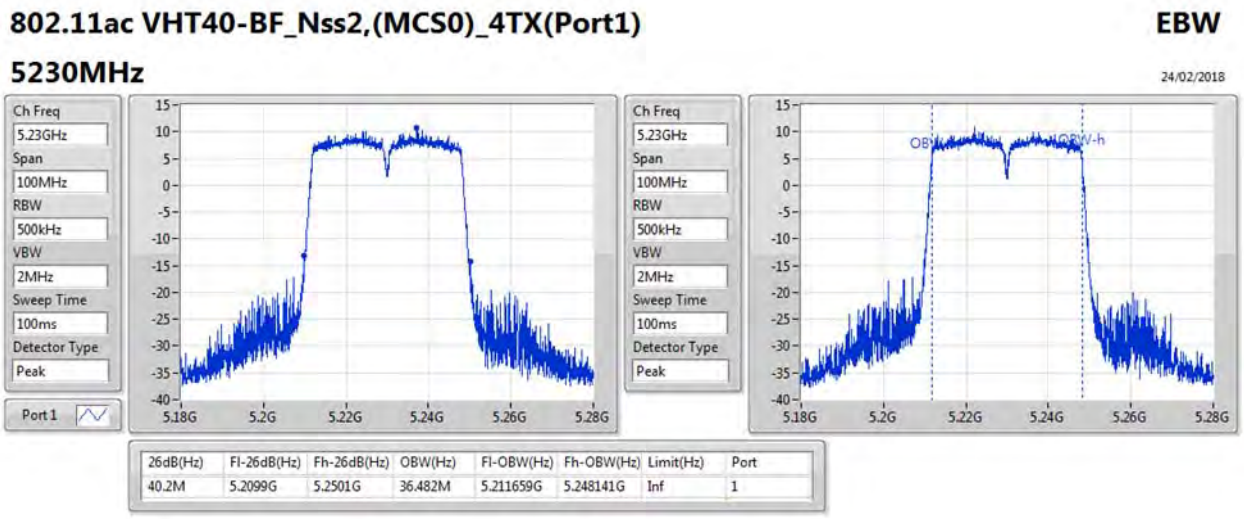
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 1 MCS 0 / TXBF 1S4T / Ant. 4 / CH46 / 5230 MHz



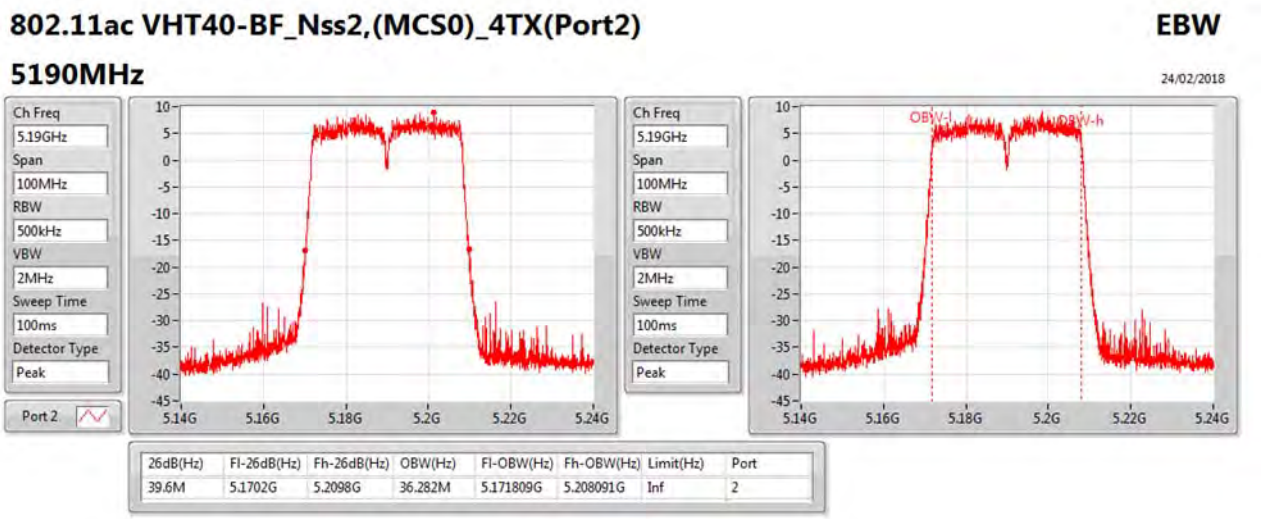
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 1 / CH38 / 5190 MHz



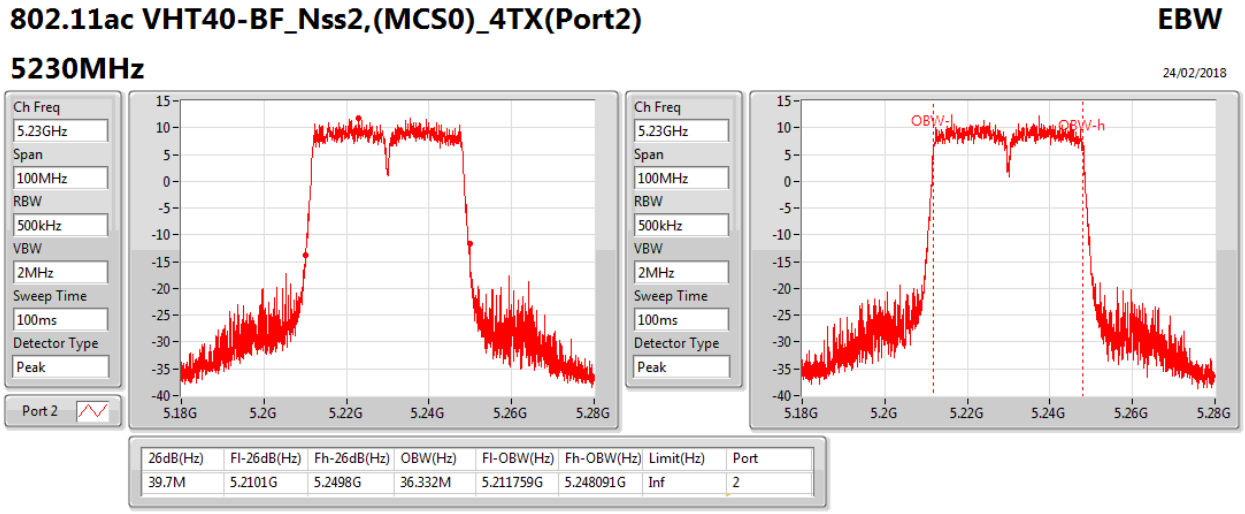
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 1 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 2 / CH38 / 5190 MHz



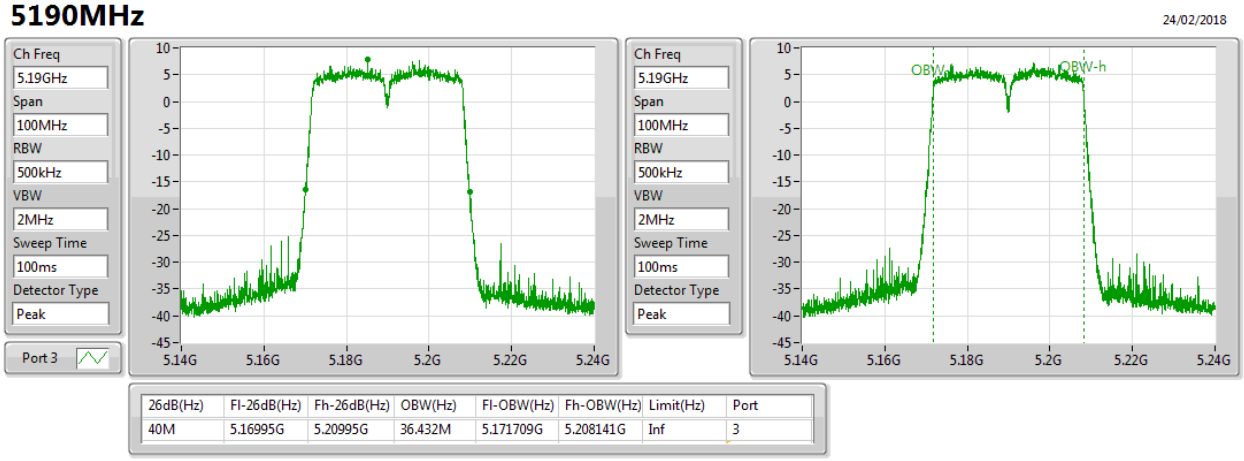
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 2 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 3 / CH38 / 5190 MHz

802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port3) EBW

5190MHz

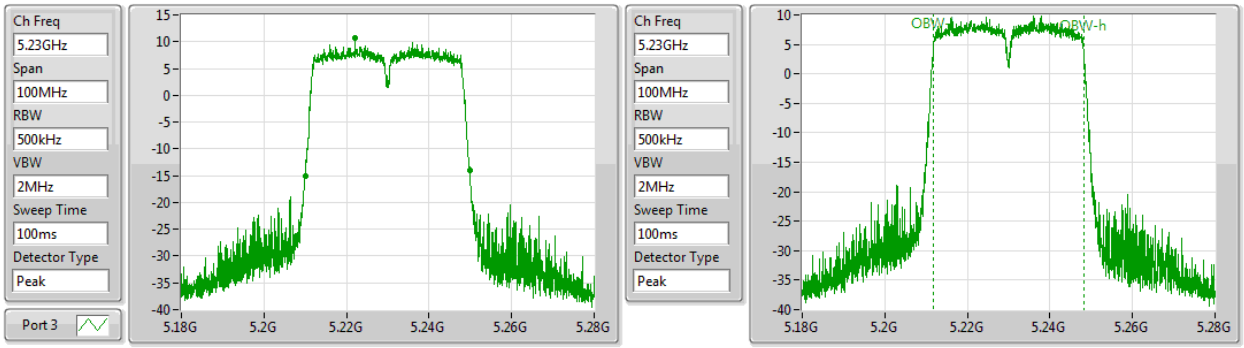


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
40M	5.16995G	5.20995G	36.432M	5.171709G	5.208141G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 3 / CH46 / 5230 MHz

802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port3) EBW

5230MHz

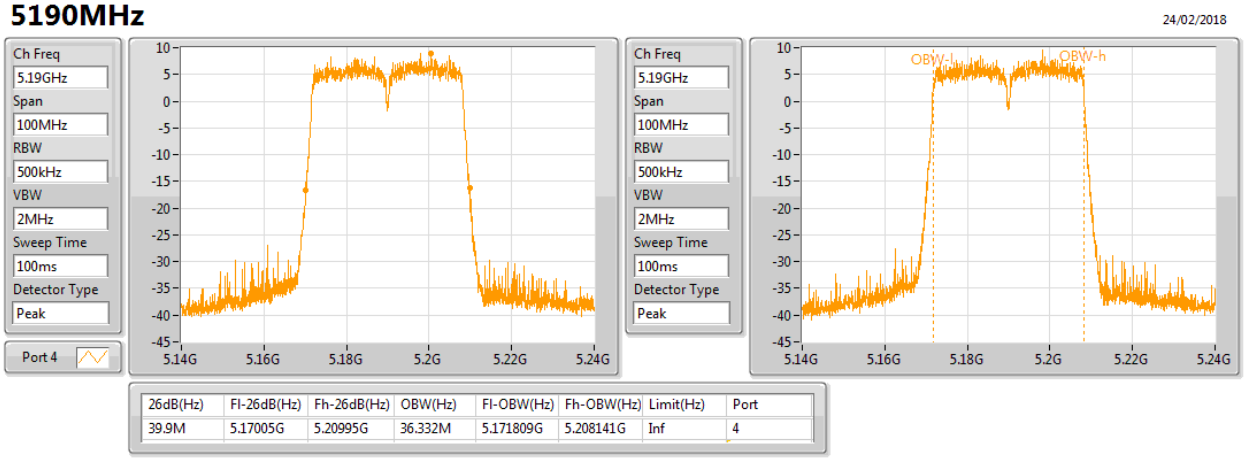


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.95M	5.20995G	5.2499G	36.432M	5.211709G	5.248141G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 4 / CH38 / 5190 MHz

802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5190MHz

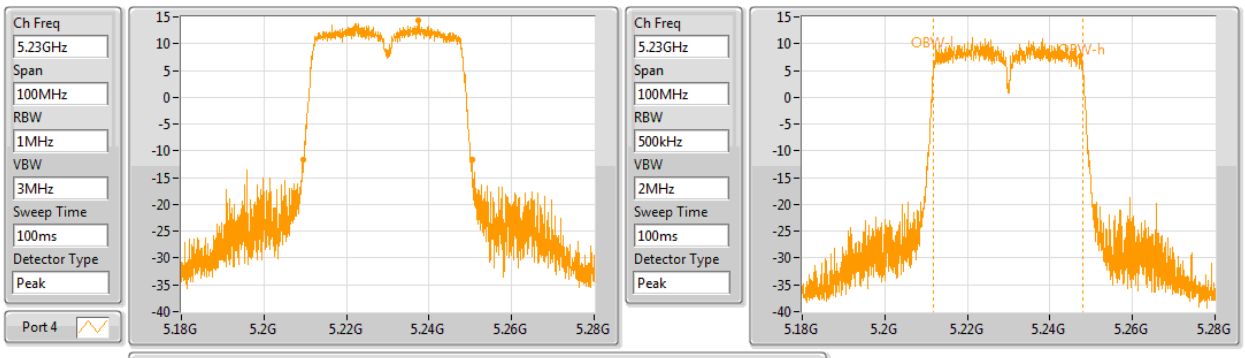


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.9M	5.17005G	5.20995G	36.332M	5.171809G	5.208141G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 2 MCS 0 / TXBF 2S4T / Ant. 4 / CH46 / 5230 MHz

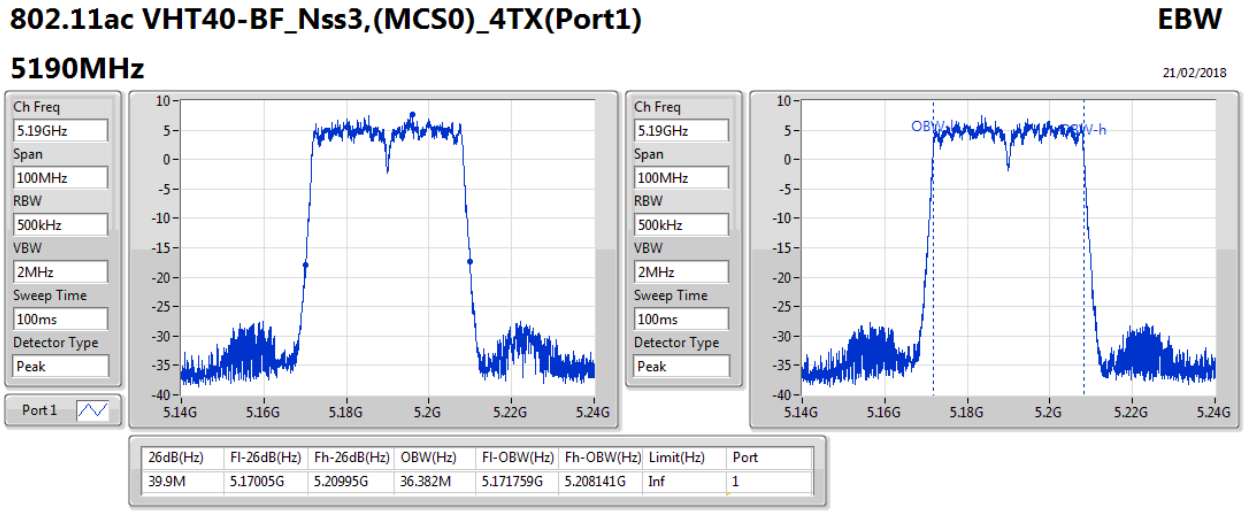
802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5230MHz

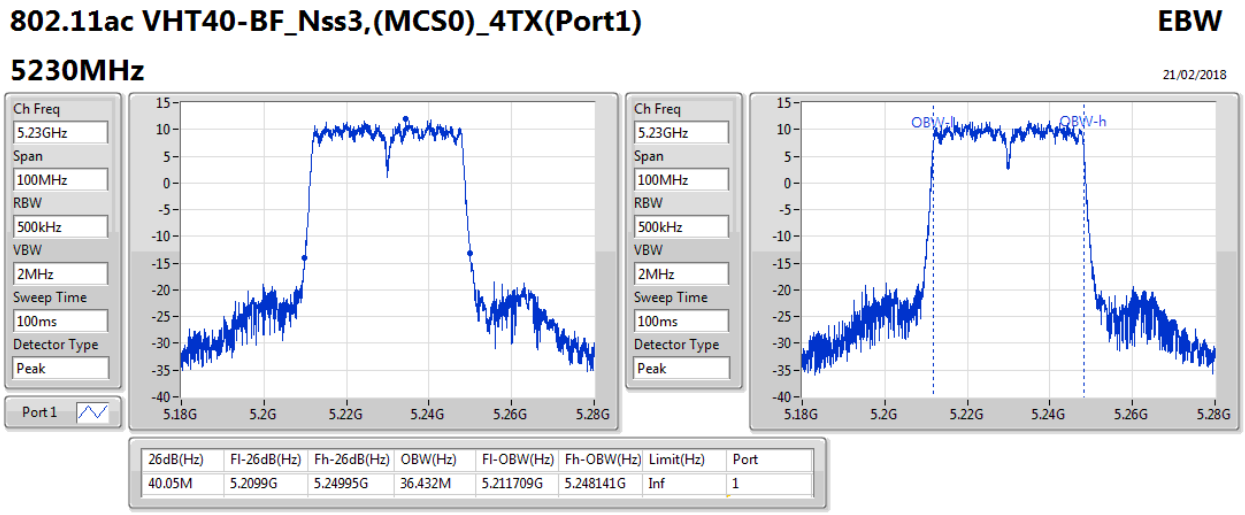


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
40.85M	5.20965G	5.2505G	36.282M	5.211759G	5.248041G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 1 / CH38 / 5190 MHz



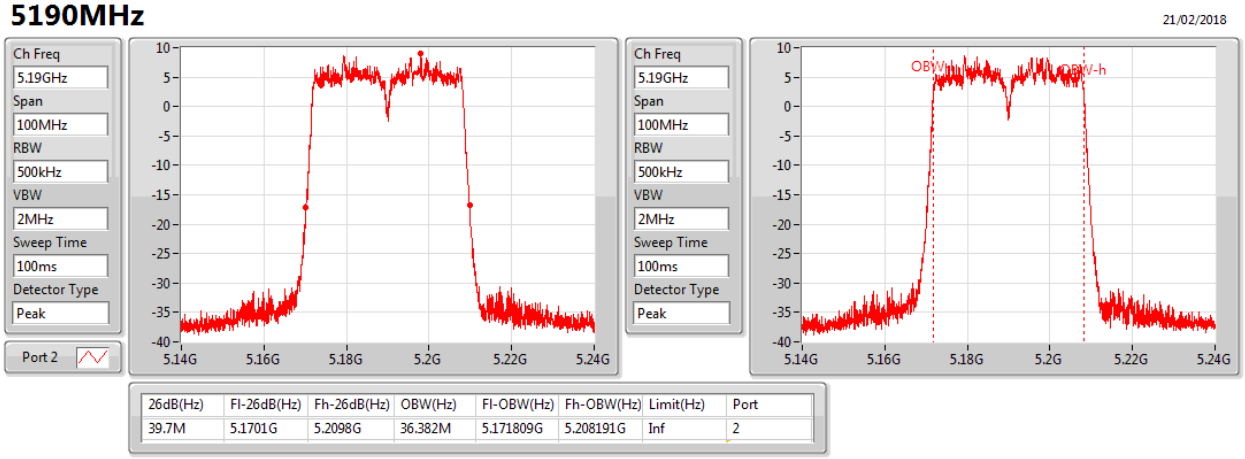
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 1 / CH46 / 5230 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 2 / CH38 / 5190 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5190MHz

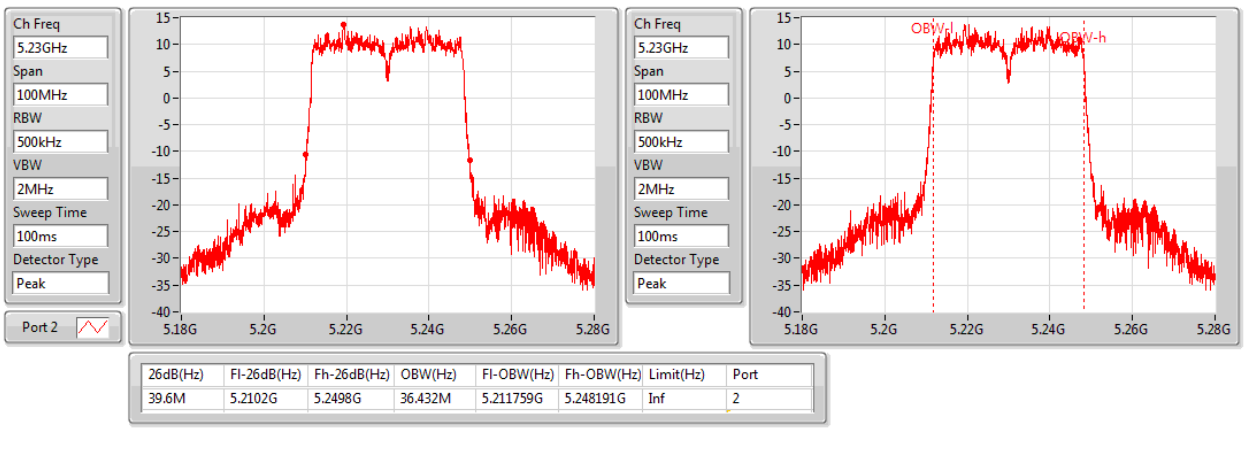


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.7M	5.1701G	5.2098G	36.382M	5.171809G	5.208191G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 2 / CH46 / 5230 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5230MHz

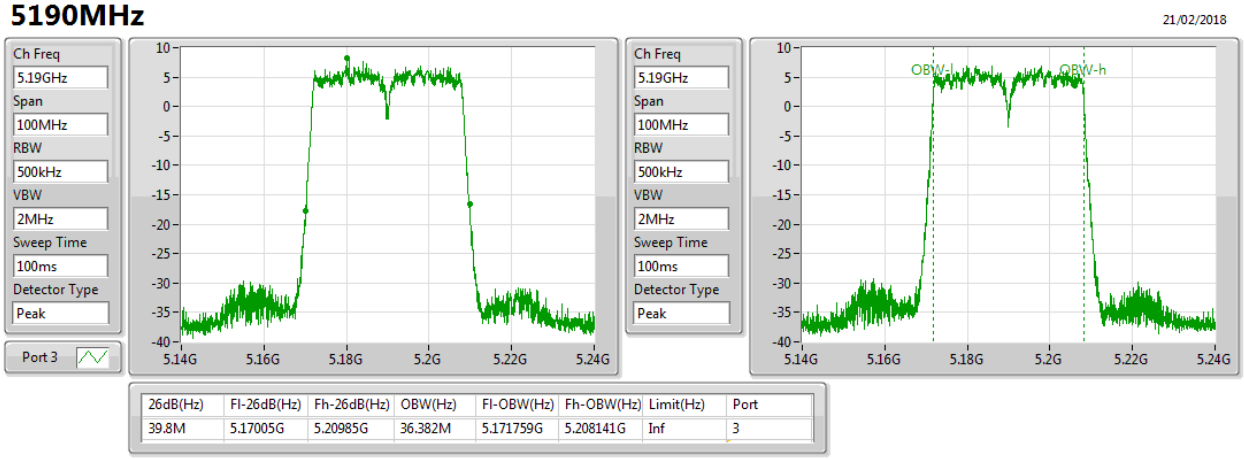


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.6M	5.2102G	5.2498G	36.432M	5.211759G	5.248191G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 3 / CH38 / 5190 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port3) EBW

5190MHz

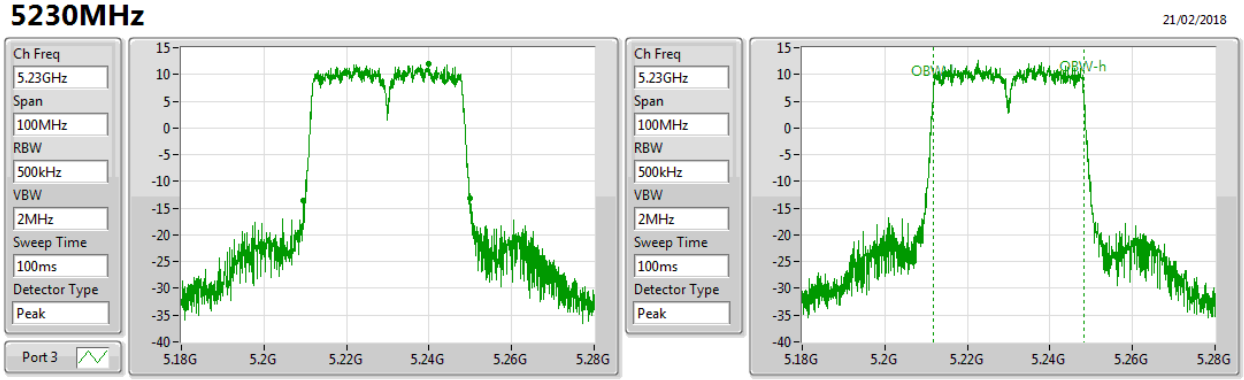


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
39.8M	5.17005G	5.20985G	36.382M	5.171759G	5.208141G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 3 / CH46 / 5230 MHz

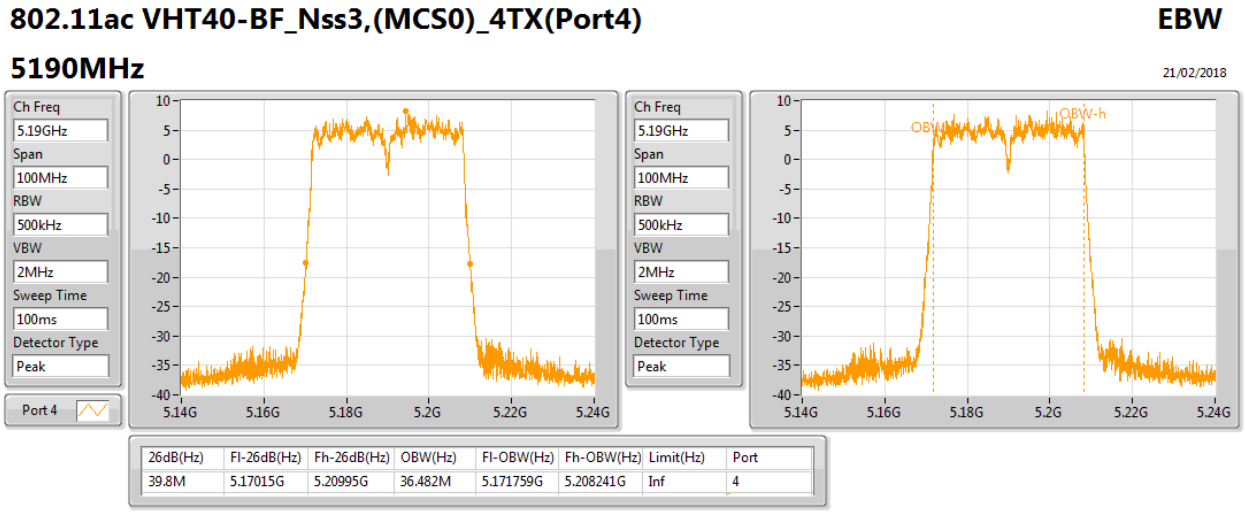
802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port3) EBW

5230MHz

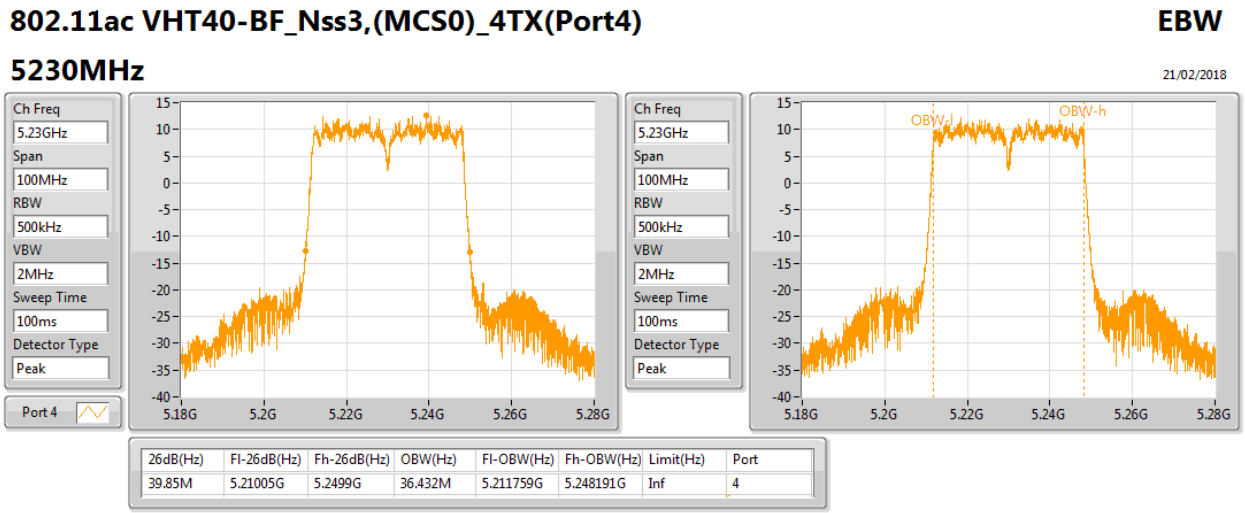


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
40.5M	5.2095G	5.25G	36.382M	5.211759G	5.248141G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 4 / CH38 / 5190 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 40MHz / Nss 3 MCS 0 / TXBF 3S4T / Ant. 4 / CH46 / 5230 MHz



Configuration IEEE 802.11ac 80MHz

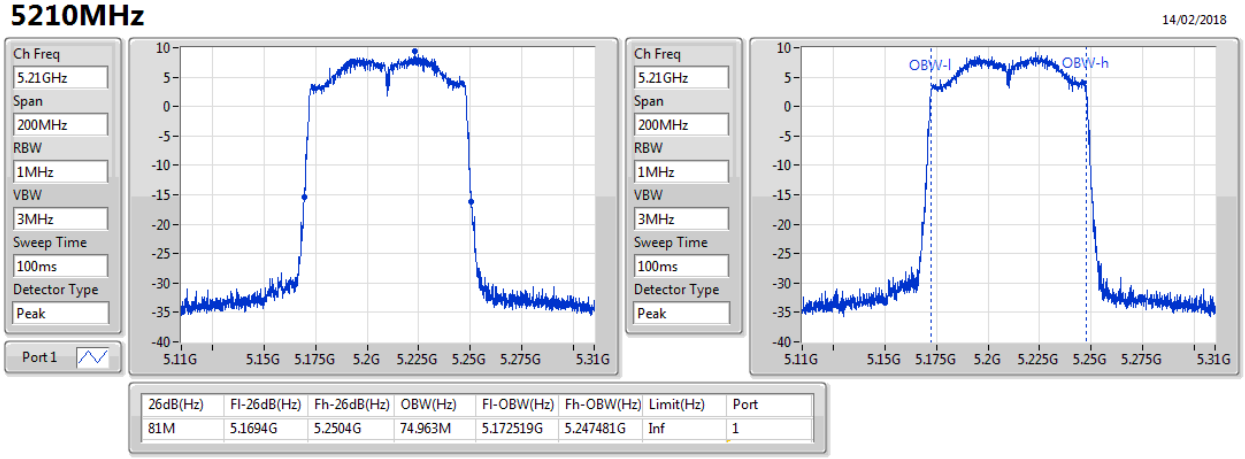
26dB Emission Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	26dB Emission Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11ac 80MHz (SDM)	4 stream 4TX	5210 MHz	81.000	81.400	80.800	80.900
802.11ac 80MHz (TXBF)	1 stream 4TX	5210 MHz	81.700	80.700	80.600	81.000
802.11ac 80MHz (TXBF)	2 stream 4TX	5210 MHz	81.400	80.400	81.100	80.900
802.11ac 80MHz (TXBF)	3 stream 4TX	5210 MHz	81.000	81.000	81.200	80.800

99% Occupied Bandwidth (MHz)						
Mode	Number of Transmit Chains (NTX)	Frequency	99% Occupied Bandwidth (MHz)			
			Ant. 1	Ant. 2	Ant. 3	Ant. 4
802.11ac 80MHz (SDM)	4 stream 4TX	5210 MHz	74.963	74.963	74.863	74.963
802.11ac 80MHz (TXBF)	1 stream 4TX	5210 MHz	74.863	74.963	74.863	74.863
802.11ac 80MHz (TXBF)	2 stream 4TX	5210 MHz	74.863	74.963	74.963	74.863
802.11ac 80MHz (TXBF)	3 stream 4TX	5210 MHz	75.162	75.162	75.262	75.462

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 1 / CH42 / 5210 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port1) **EBW**

5210MHz

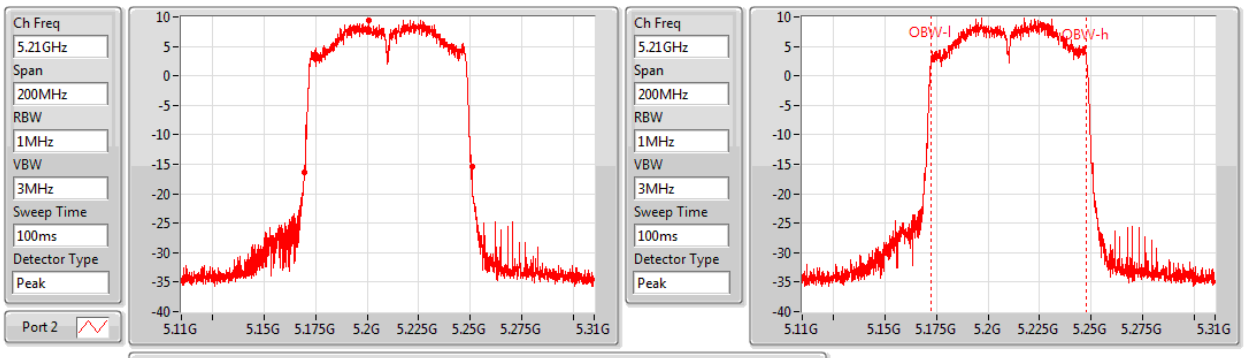


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81M	5.1694G	5.2504G	74.963M	5.172519G	5.247481G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 2 / CH42 / 5210 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port2) **EBW**

5210MHz

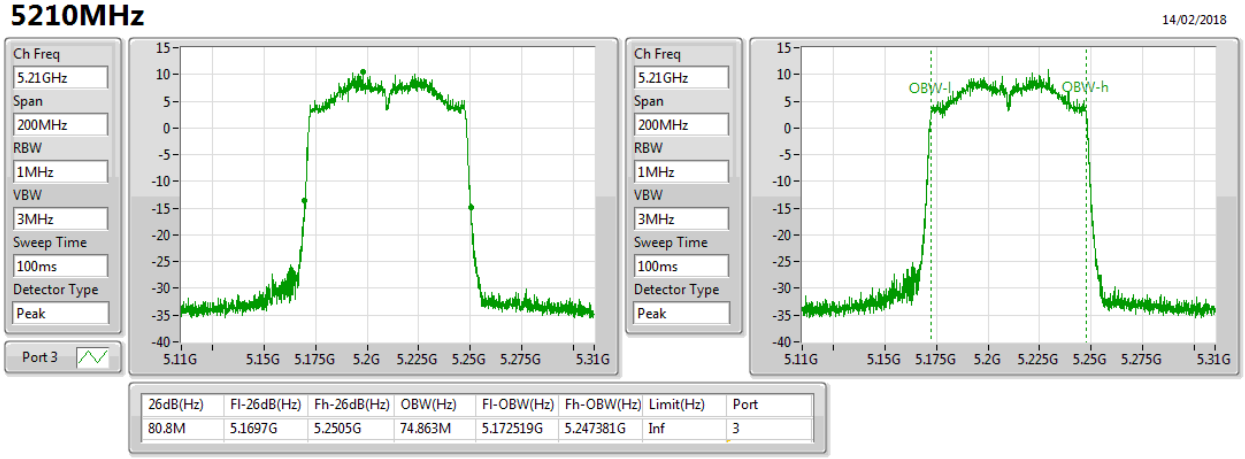


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.4M	5.1695G	5.2509G	74.963M	5.172619G	5.247581G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 3 / CH42 / 5210 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port3) **EBW**

5210MHz

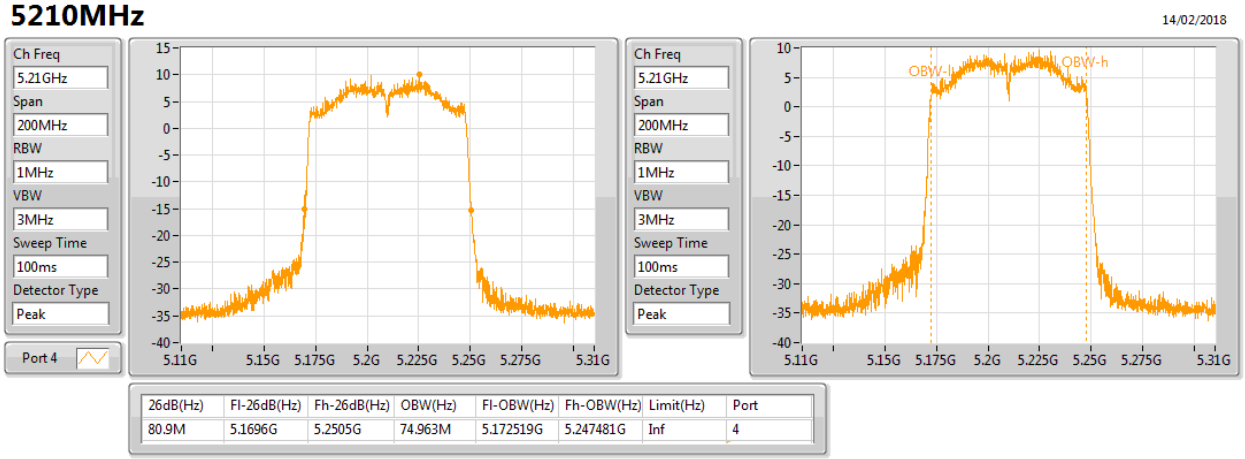


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
80.8M	5.1697G	5.2505G	74.863M	5.172519G	5.247381G	Inf	3

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 4 MCS0 / SDM 4S4T / Ant. 4 / CH42 / 5210 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port4) **EBW**

5210MHz

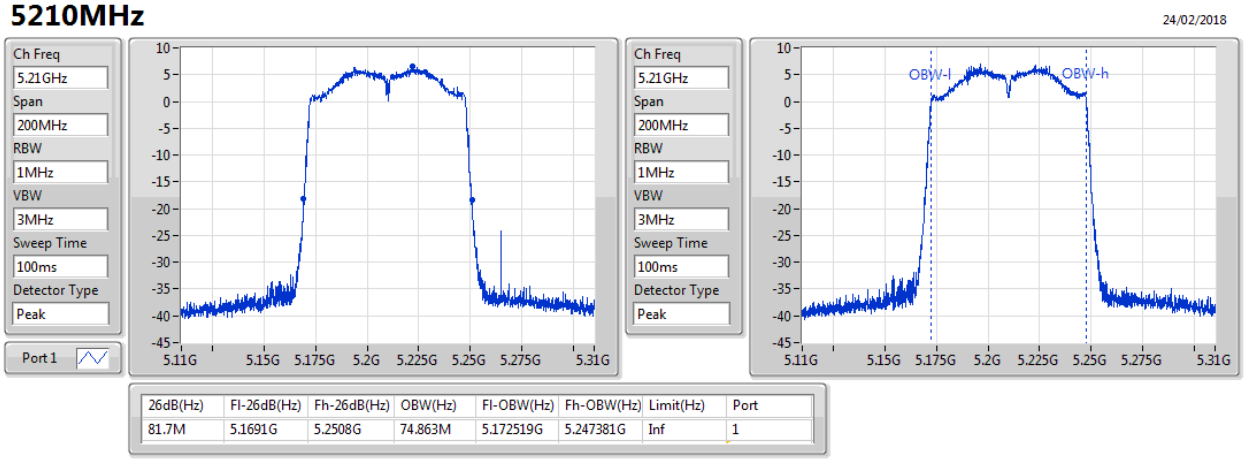


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
80.9M	5.1696G	5.2505G	74.963M	5.172519G	5.247481G	Inf	4

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 1 MCS0 / TXBF 1S4T / Ant. 1 / CH42 / 5210 MHz

802.11ac VHT80-BF_Nss1,(MCS0)_4TX(Port1) **EBW**

5210MHz

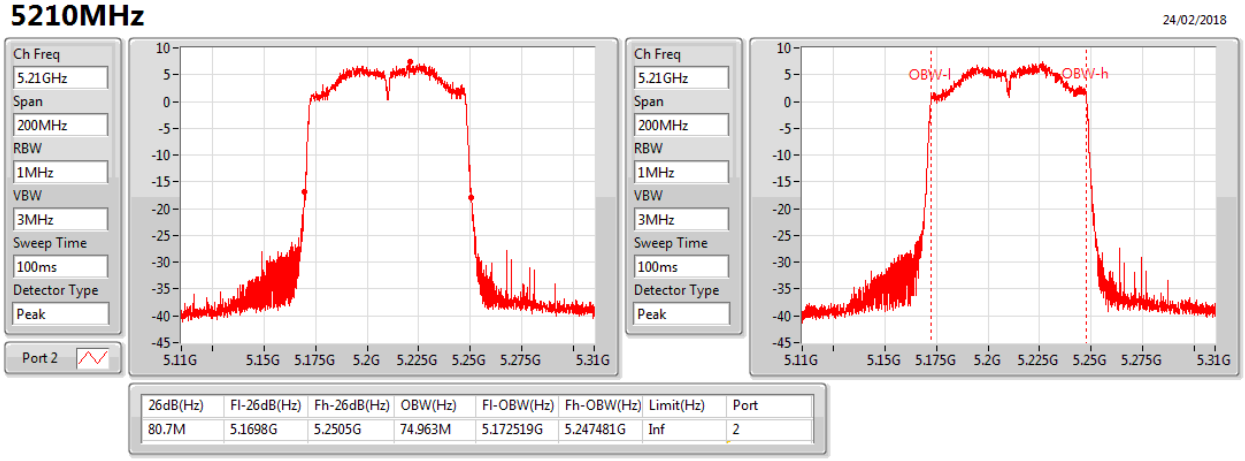


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.7M	5.1691G	5.2508G	74.863M	5.172519G	5.247381G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 1 MCS0 / TXBF 1S4T / Ant. 2 / CH42 / 5210 MHz

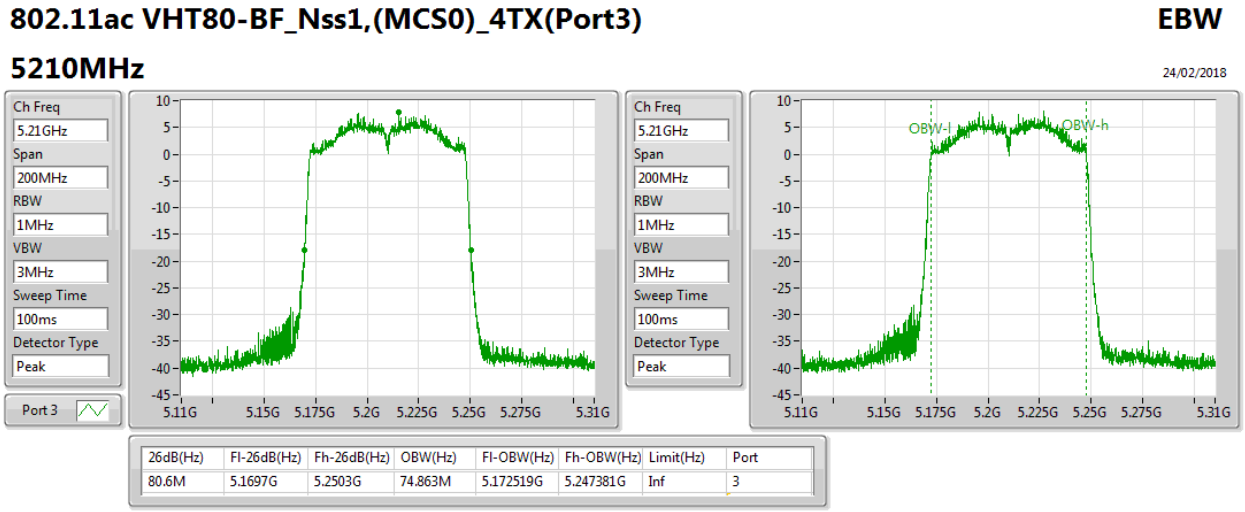
802.11ac VHT80-BF_Nss1,(MCS0)_4TX(Port2) **EBW**

5210MHz

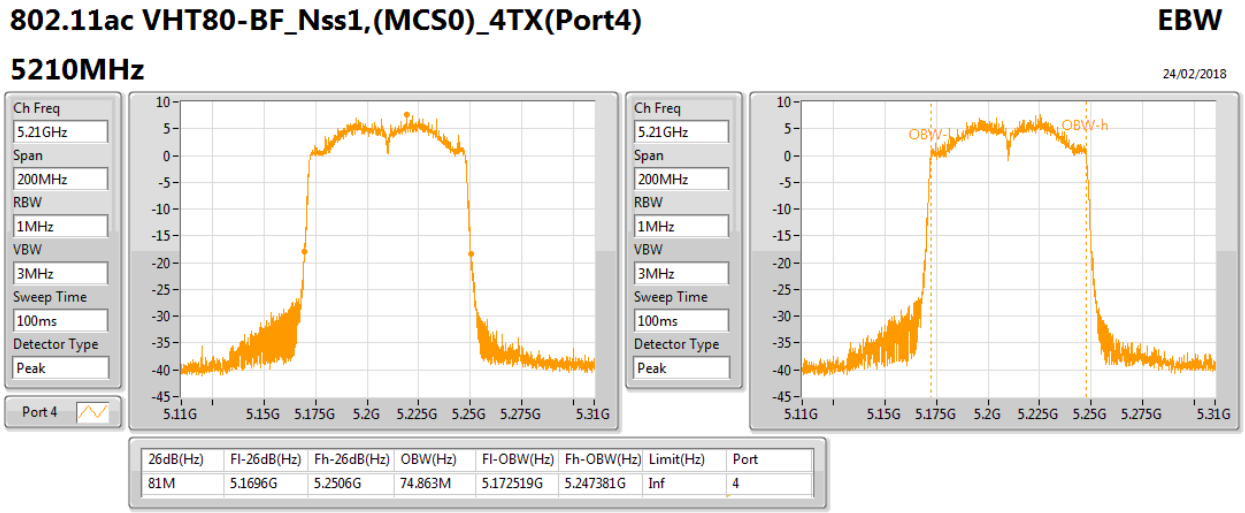


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
80.7M	5.1698G	5.2505G	74.963M	5.172519G	5.247481G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 1 MCS0 / TXBF 1S4T / Ant. 3 / CH42 / 5210 MHz



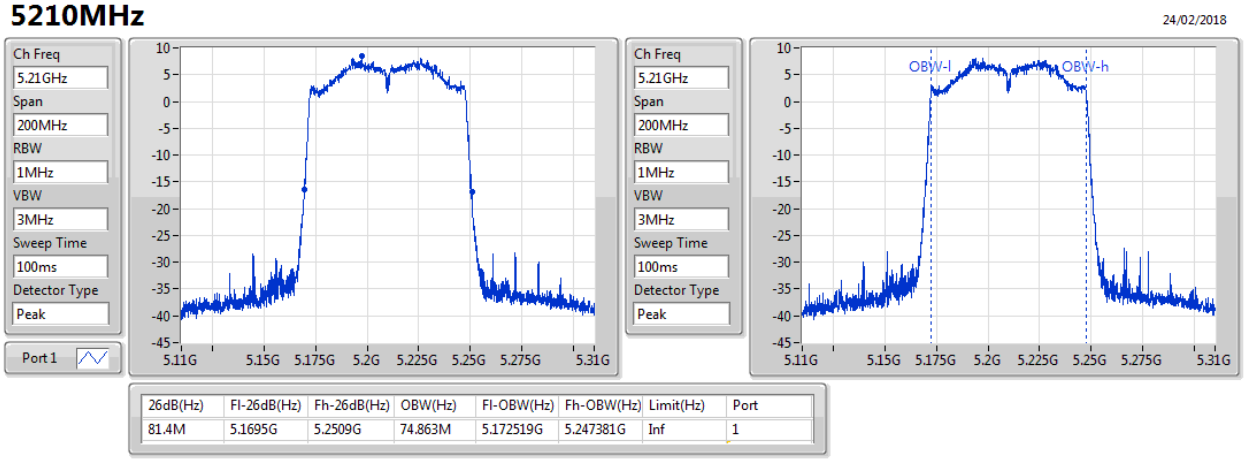
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 1 MCS0 / TXBF 1S4T / Ant. 4 / CH42 / 5210 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 2 MCS0 / TXBF 2S4T / Ant. 1 / CH42 / 5210 MHz

802.11ac VHT80-BF_Nss2,(MCS0)_4TX(Port1) **EBW**

5210MHz

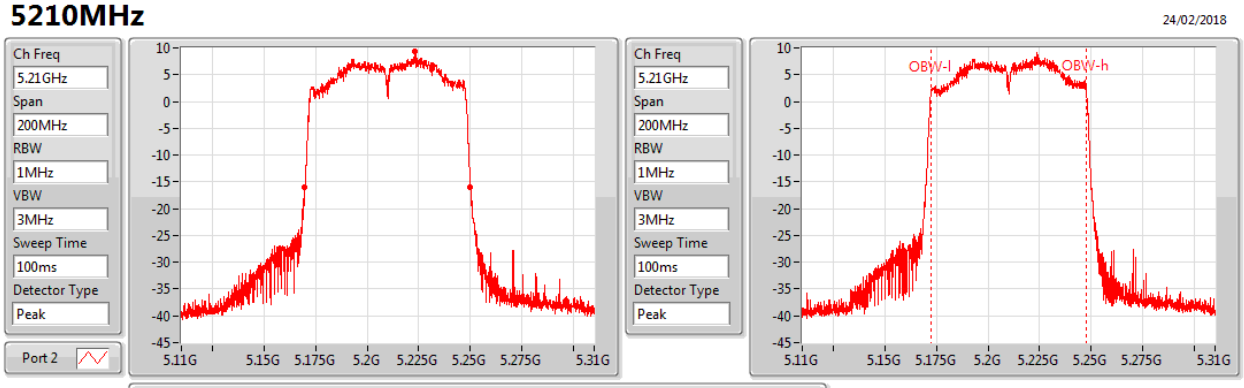


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.4M	5.1695G	5.2509G	74.863M	5.172519G	5.247381G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 2 MCS0 / TXBF 2S4T / Ant. 2 / CH42 / 5210 MHz

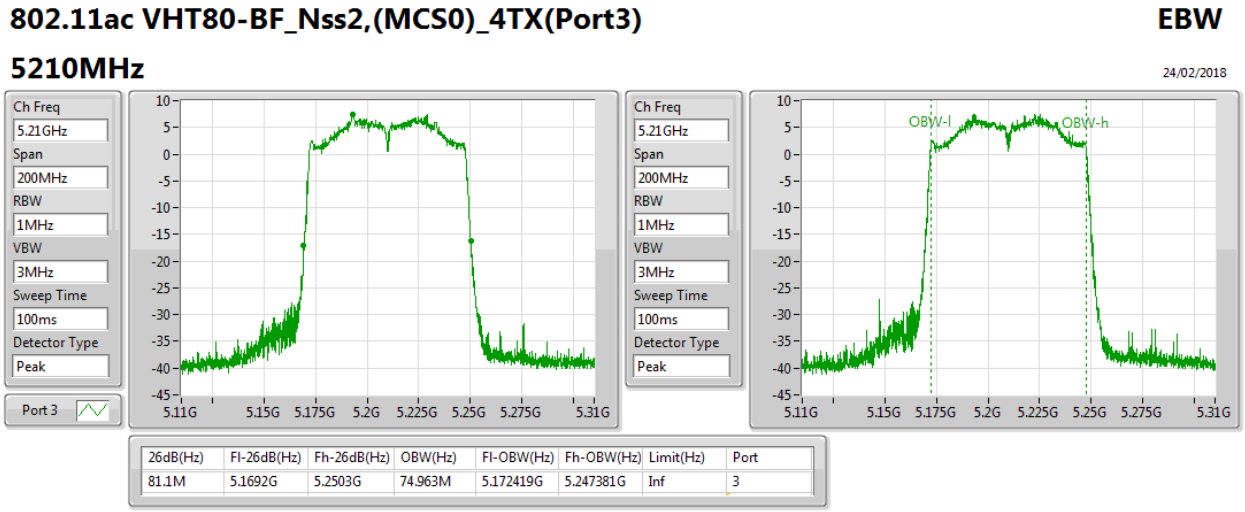
802.11ac VHT80-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5210MHz

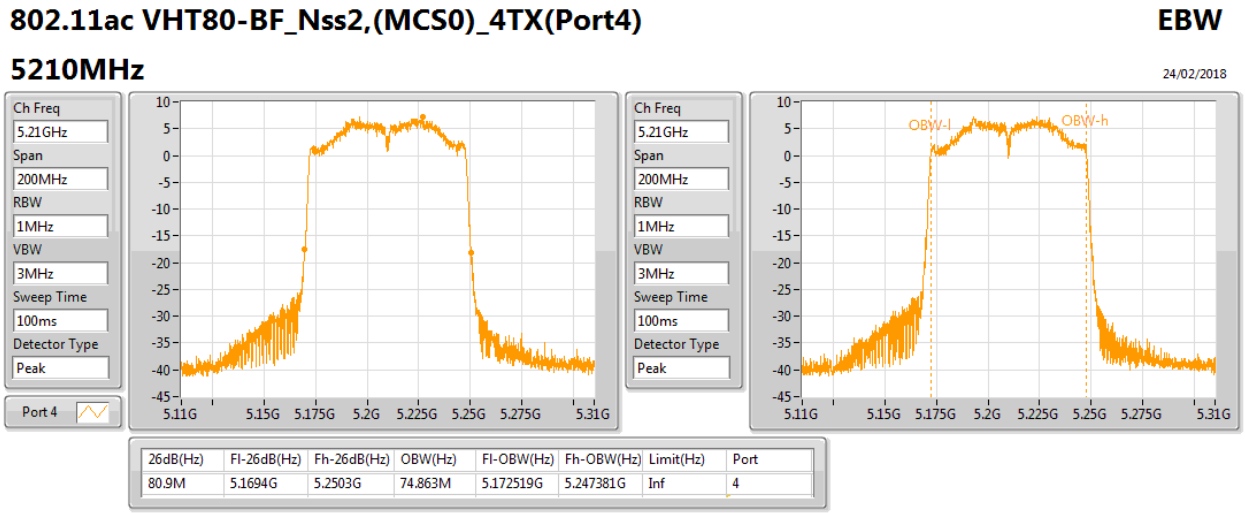


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
80.4M	5.1697G	5.2501G	74.963M	5.172519G	5.247481G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 2 MCS0 / TXBF 2S4T / Ant. 3 / CH42 / 5210 MHz



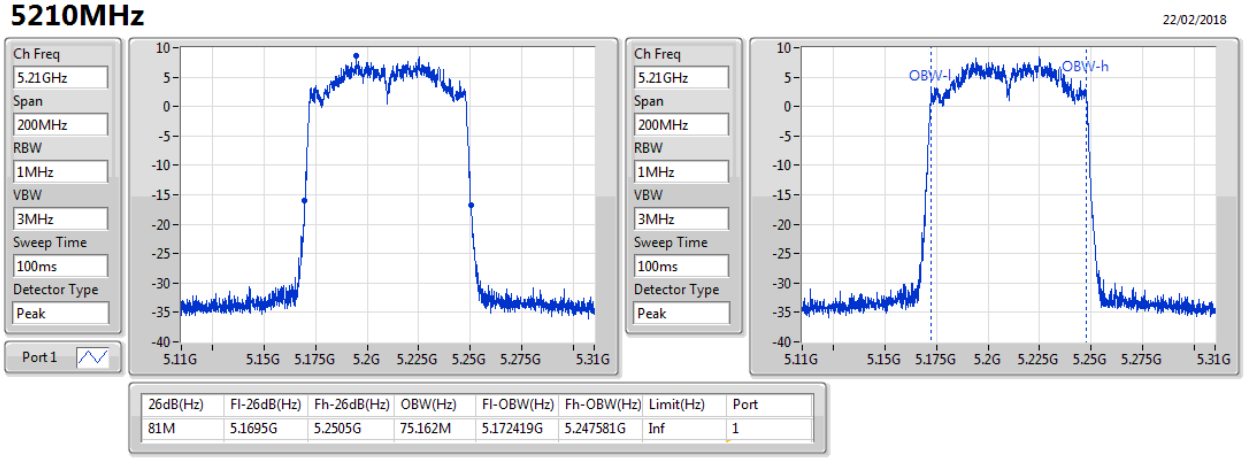
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 2 MCS0 / TXBF 2S4T / Ant. 4 / CH42 / 5210 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 3 MCS0 / TXBF 3S4T / Ant. 1 / CH42 / 5210 MHz

802.11ac VHT80-BF_Nss3,(MCS0)_4TX(Port1) **EBW**

5210MHz

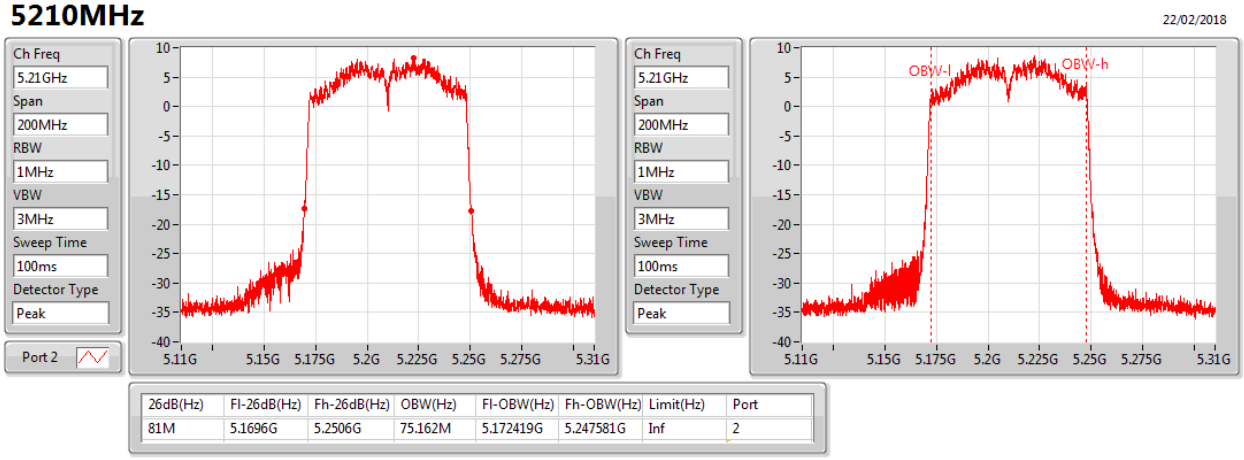


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81M	5.1695G	5.2505G	75.162M	5.172419G	5.247581G	Inf	1

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 3 MCS0 / TXBF 3S4T / Ant. 2 / CH42 / 5210 MHz

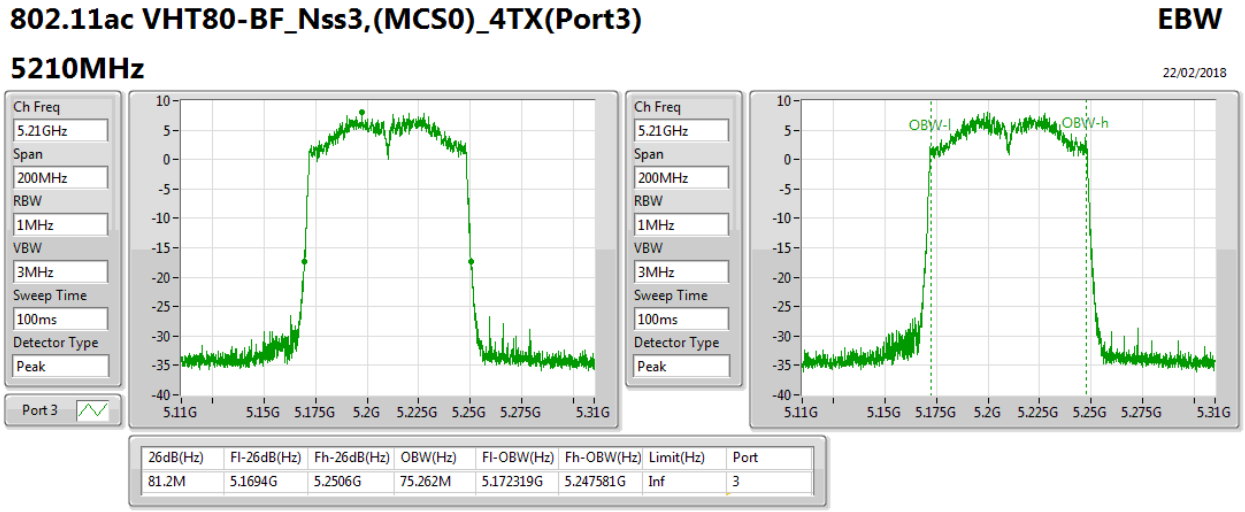
802.11ac VHT80-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5210MHz

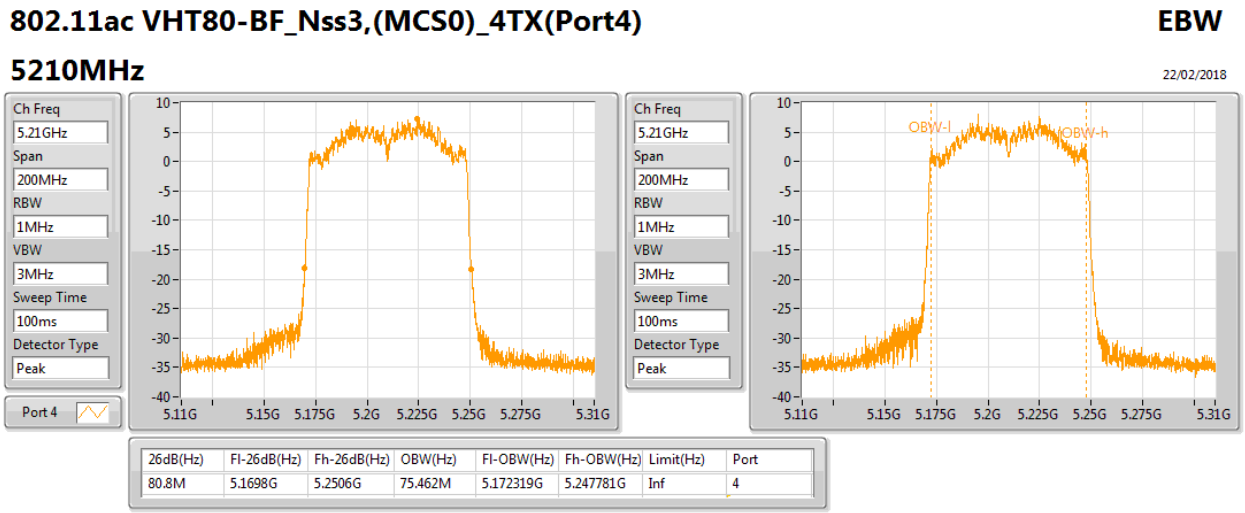


26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81M	5.1696G	5.2506G	75.162M	5.172419G	5.247581G	Inf	2

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 3 MCS0 / TXBF 3S4T / Ant. 3 / CH42 / 5210 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac 80MHz / Nss 3 MCS0 / TXBF 3S4T / Ant. 4 / CH42 / 5210 MHz



2.3. 6dB Spectrum Bandwidth Measurement

2.3.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

2.3.2. Measuring Instruments and Setting

Please refer to section 3 of equipments list in this report. The following table is the setting of spectrum analyzer.

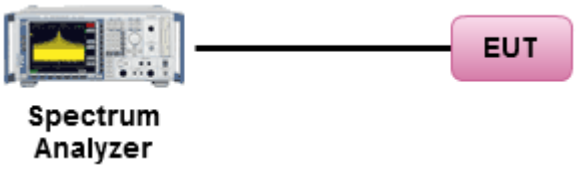
6dB Spectrum Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

2.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under 789033 D02 General UNII Test Procedures New Rules v02r01, in section “Emission bandwidth (C)(2)” & "99 Percent Occupied Bandwidth"(D). , 12/14/2017
3. Measured the spectrum width with power higher than 6dB account by this measurement.

2.3.4. Test Setup Layout

6dB Spectrum Bandwidth



2.3.5. Test Deviation

There is no deviation with the original standard.

2.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.3.7. Test Result of 6dB Spectrum Bandwidth

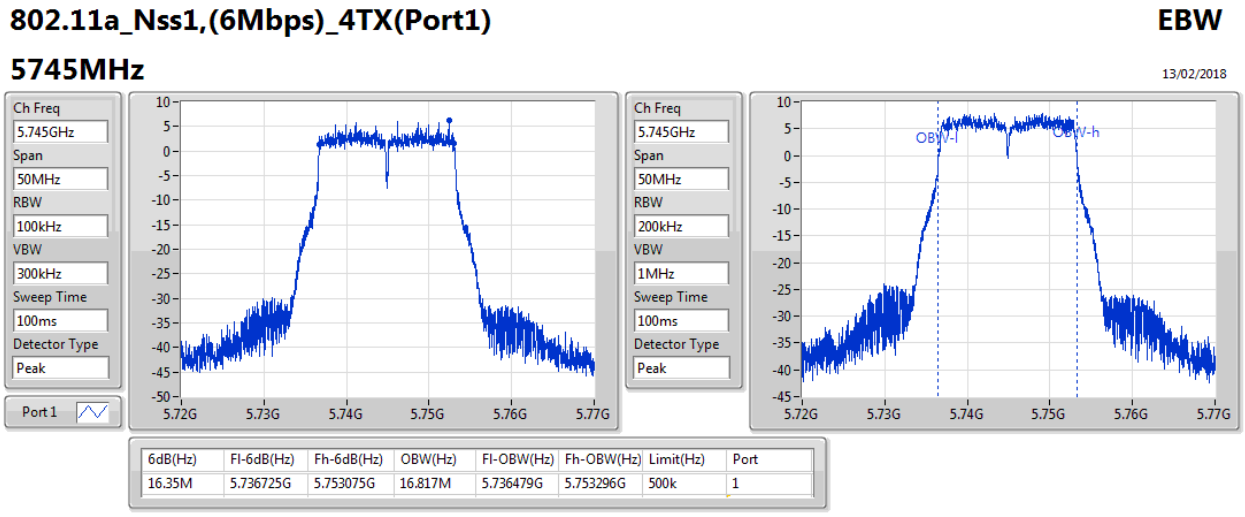
Temperature	18.7℃	Humidity	46%
Test Engineer	Brian Sun & Ron Huang		

Configuration IEEE 802.11a

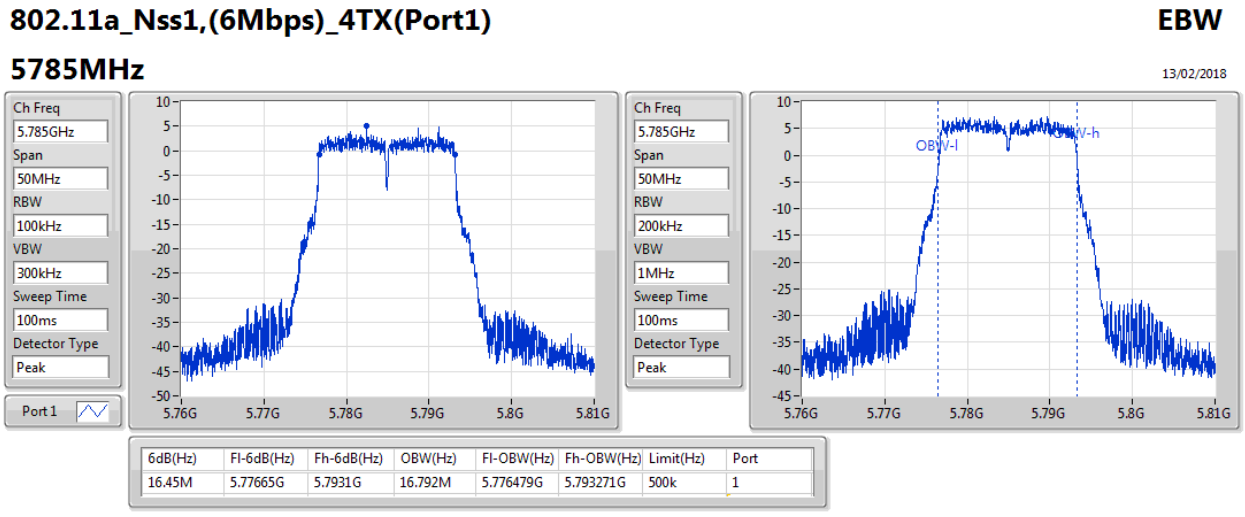
6dB Bandwidth (MHz)								
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Min. Limit (kHz)	Test Result
802.11a (CDD)	1 stream 4TX	5745 MHz	16.350	16.350	16.350	16.350	500	**PASS**
	1 stream 4TX	5785 MHz	16.450	16.350	16.325	16.350	500	**PASS**
	1 stream 4TX	5825 MHz	16.350	16.350	16.375	16.350	500	**PASS**

99% Occupied Bandwidth (MHz)							
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Test Result
802.11a (CDD)	1 stream 4TX	5745 MHz	16.817	16.792	16.692	16.717	**PASS**
	1 stream 4TX	5785 MHz	16.792	16.742	16.692	16.692	**PASS**
	1 stream 4TX	5825 MHz	16.767	16.767	16.692	16.717	**PASS**

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 1 / CH 149 / 5745 MHz



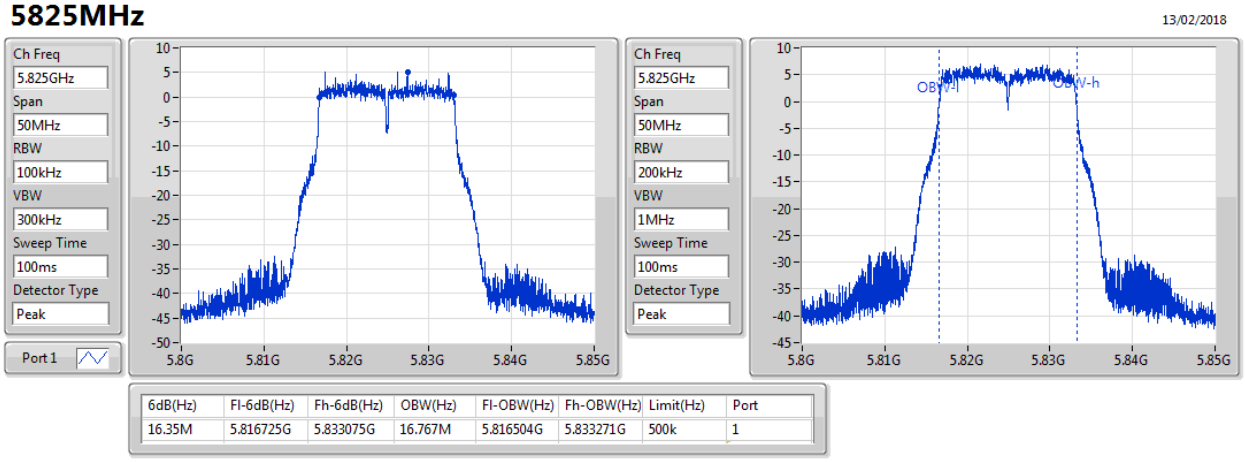
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 1 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 1 / CH 165 / 5825 MHz

802.11a_Nss1,(6Mbps)_4TX(Port1) **EBW**

5825MHz

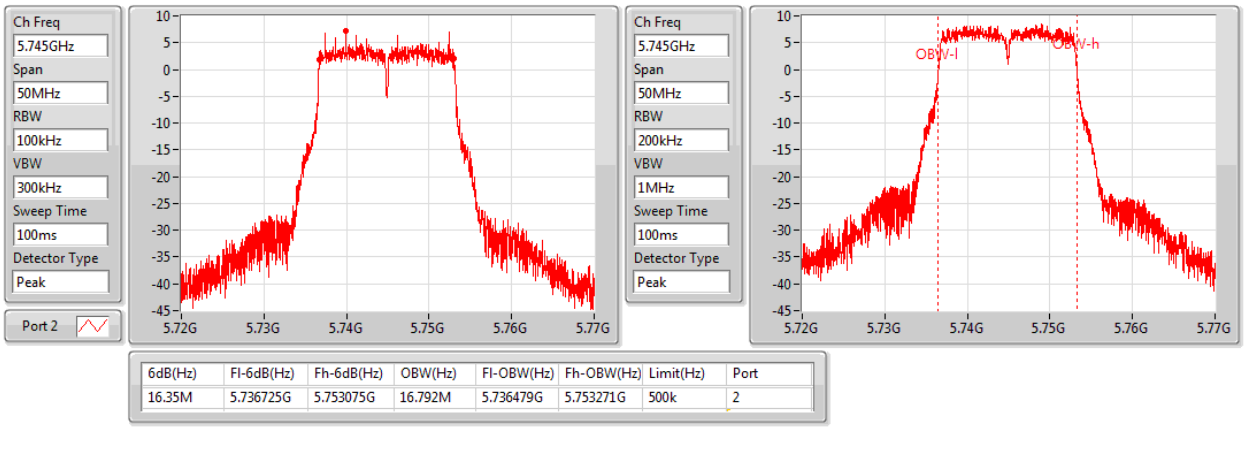


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.35M	5.816725G	5.833075G	16.767M	5.816504G	5.833271G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 2 / CH 149 / 5745 MHz

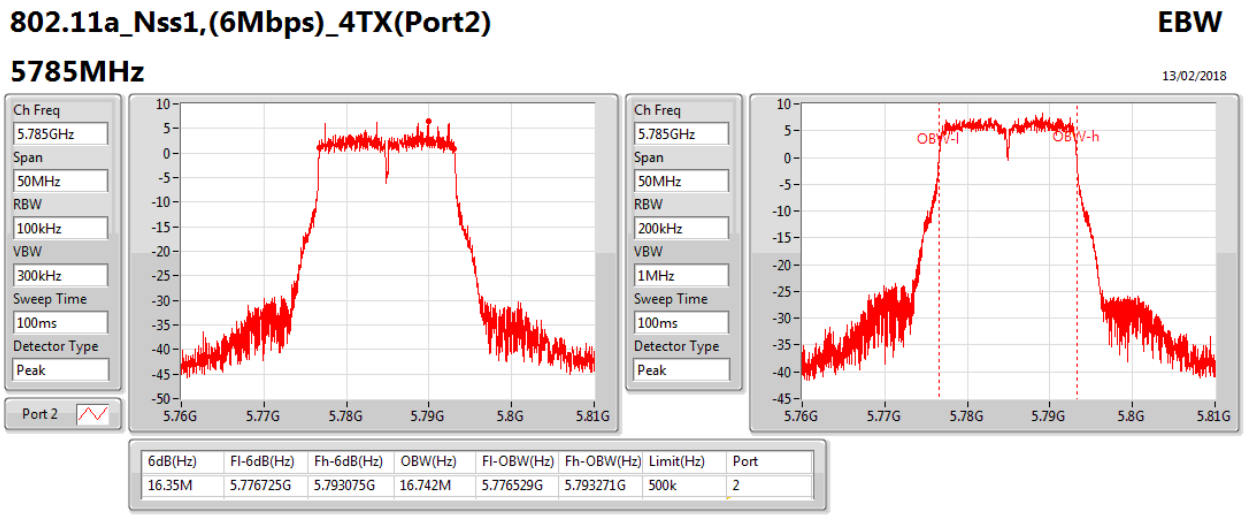
802.11a_Nss1,(6Mbps)_4TX(Port2) **EBW**

5745MHz

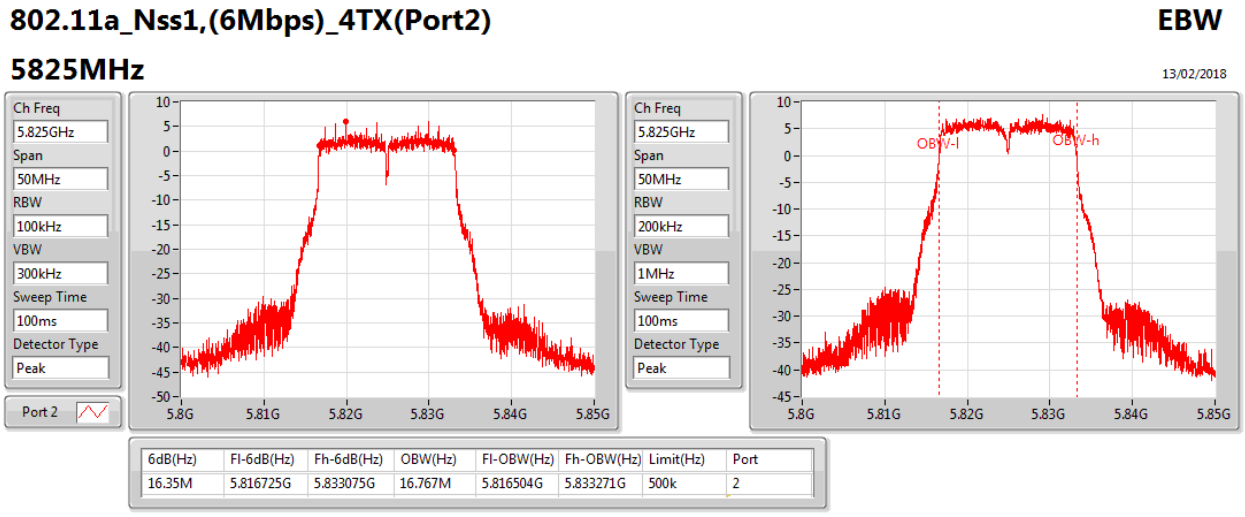


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.35M	5.736725G	5.753075G	16.792M	5.736479G	5.753271G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 2 / CH 157 / 5785 MHz



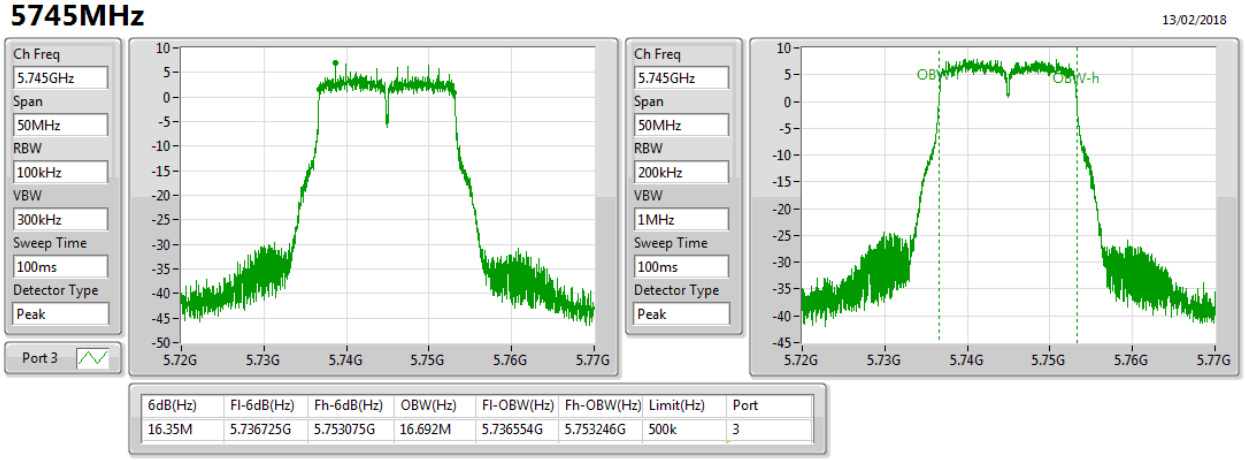
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 2 / CH 165 / 5825 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 3 / CH 149 / 5745 MHz

802.11a_Nss1,(6Mbps)_4TX(Port3) **EBW**

5745MHz

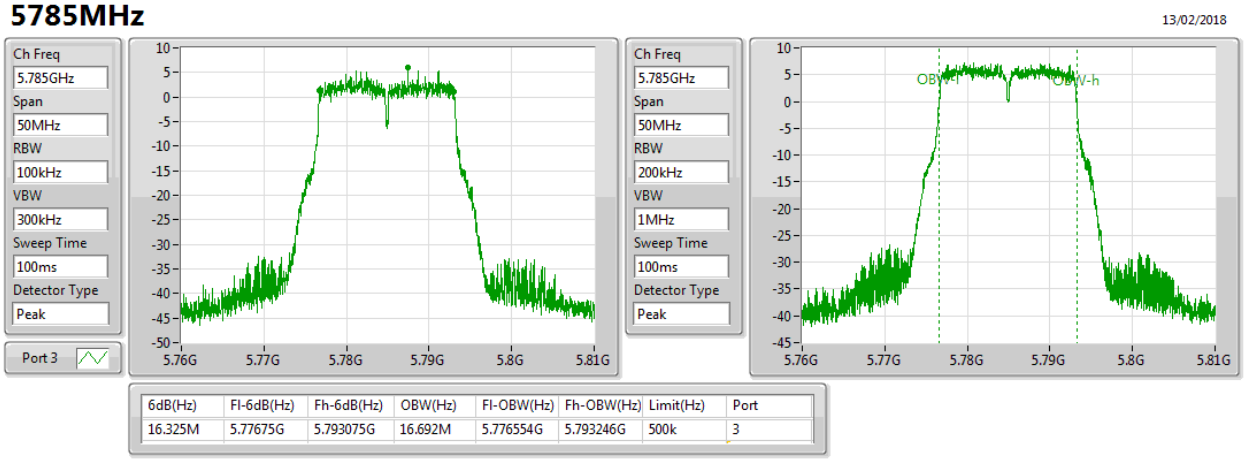


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.35M	5.736725G	5.753075G	16.692M	5.736554G	5.753246G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 3 / CH 157 / 5785 MHz

802.11a_Nss1,(6Mbps)_4TX(Port3) **EBW**

5785MHz

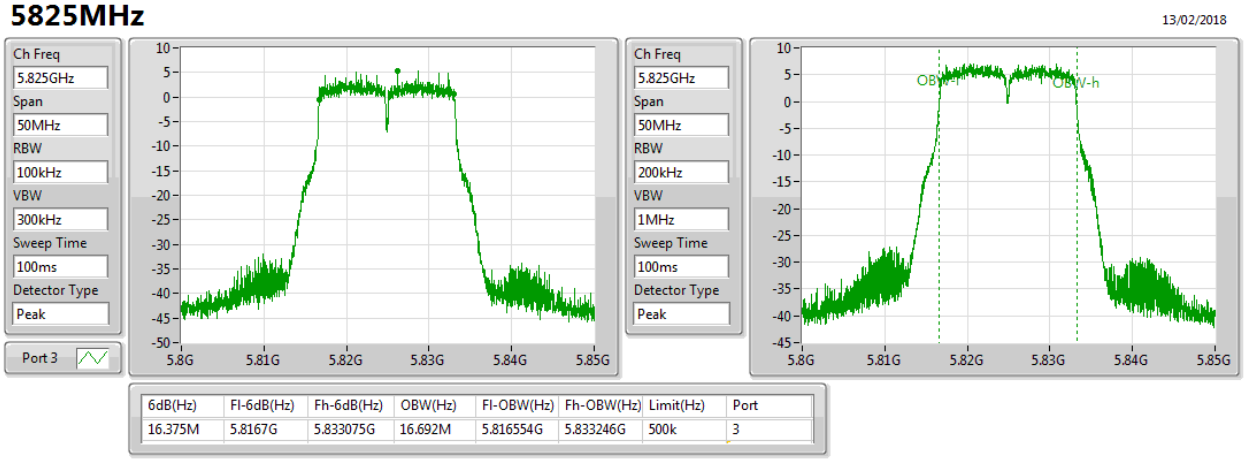


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.325M	5.77675G	5.793075G	16.692M	5.776554G	5.793246G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 3 / CH 165 / 5825 MHz

802.11a_Nss1,(6Mbps)_4TX(Port3) **EBW**

5825MHz

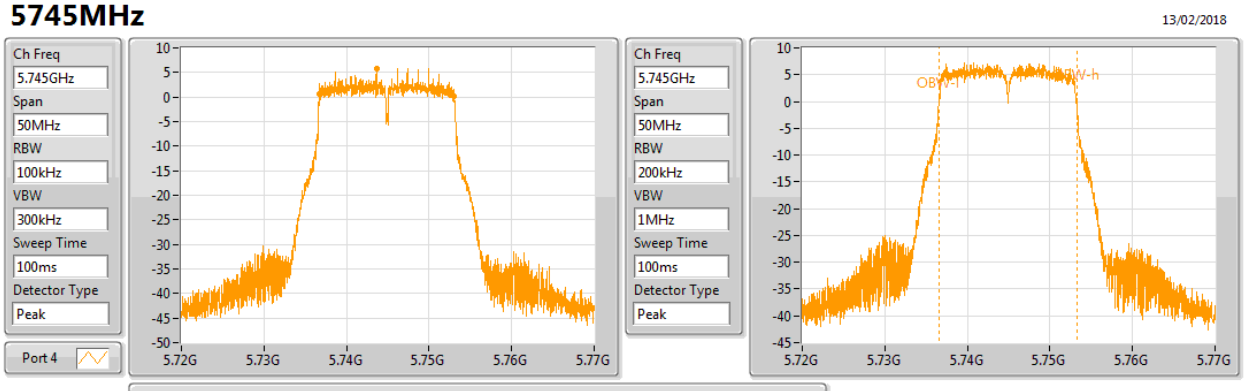


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.375M	5.8167G	5.833075G	16.692M	5.816554G	5.833246G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 4 / CH 149 / 5745 MHz

802.11a_Nss1,(6Mbps)_4TX(Port4) **EBW**

5745MHz

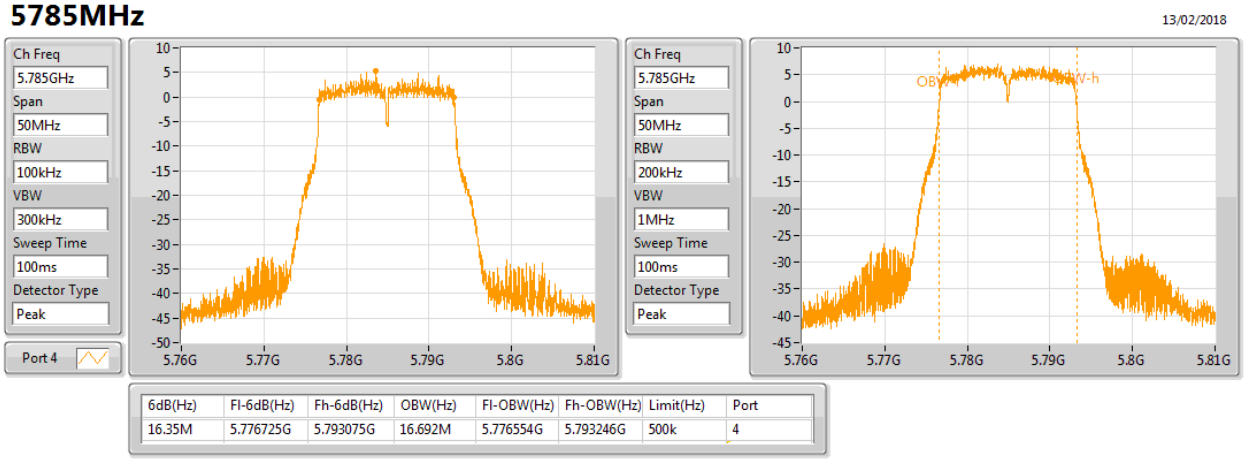


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.35M	5.736725G	5.753075G	16.717M	5.736504G	5.753221G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 4 / CH 157 / 5785 MHz

802.11a_Nss1,(6Mbps)_4TX(Port4) **EBW**

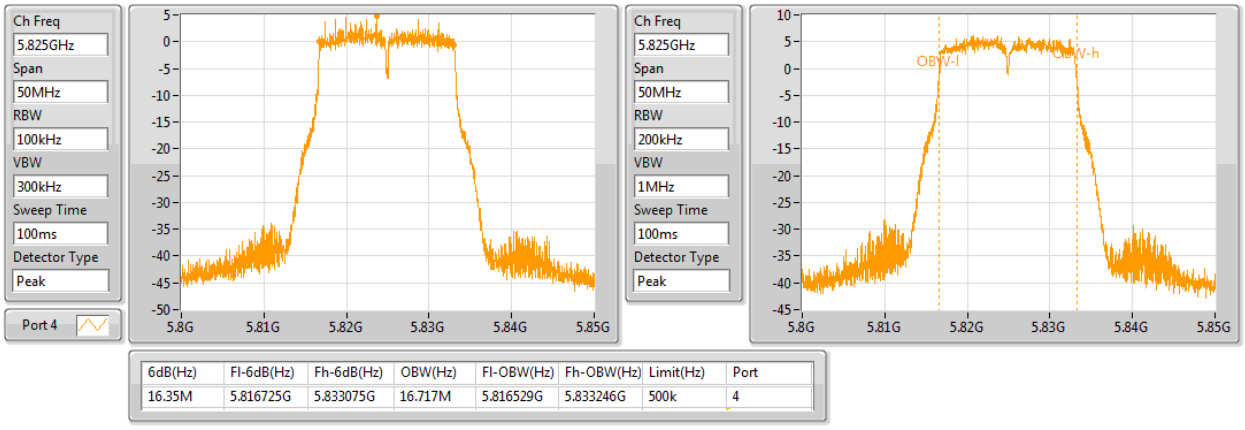
5785MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11a 1S4T CDD / Ant. 4 / CH 165 / 5825 MHz

802.11a_Nss1,(6Mbps)_4TX(Port4) **EBW**

5825MHz

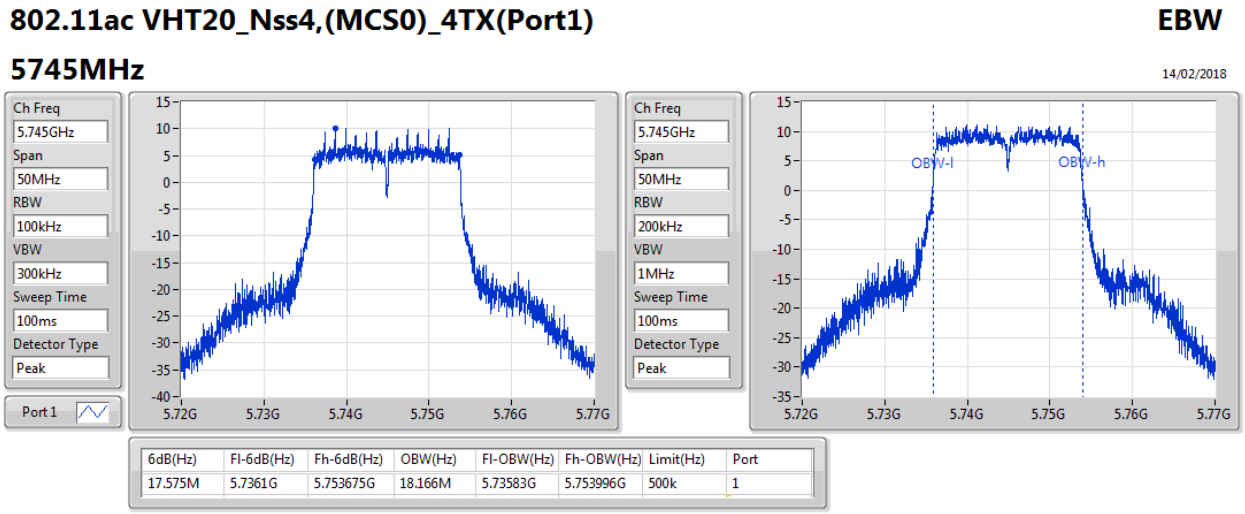


Configuration IEEE 802.11ac 20MHz

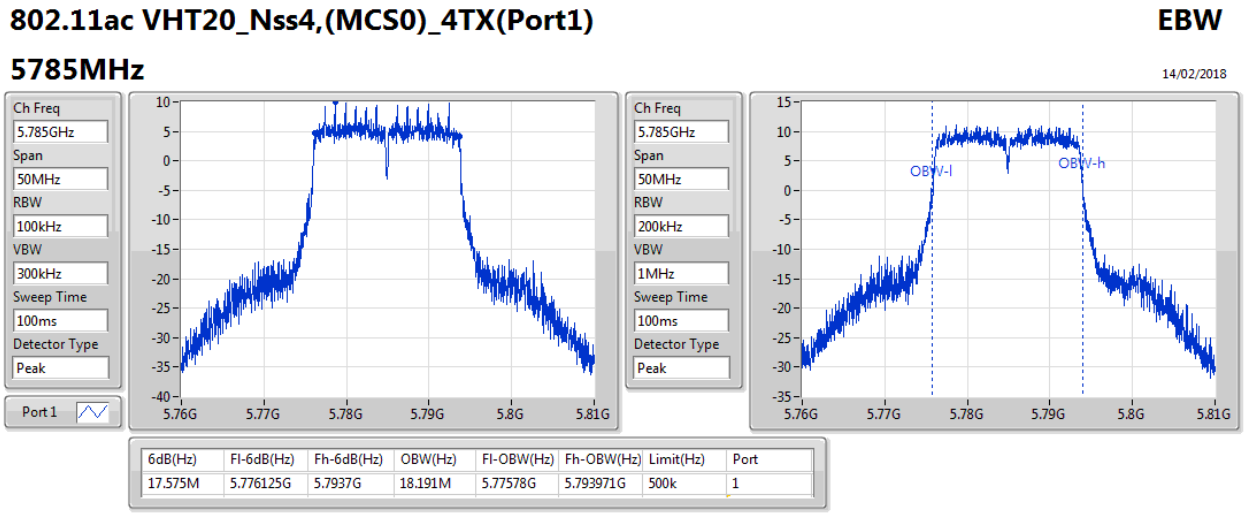
6dB Bandwidth (MHz)								
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Min. Limit (kHz)	Test Result
802.11ac 20MHz (SDM)	4 stream 4TX	5745 MHz	17.575	17.575	17.575	17.600	500	PASS
802.11ac 20MHz (SDM)	4 stream 4TX	5785 MHz	17.575	17.550	17.600	17.575	500	PASS
802.11ac 20MHz (SDM)	4 stream 4TX	5825 MHz	17.550	17.575	17.575	17.575	500	PASS
802.11ac 20MHz (TXBF)	1 stream 4TX	5745 MHz	17.600	17.600	17.575	17.575	500	PASS
802.11ac 20MHz (TXBF)	1 stream 4TX	5785 MHz	17.575	17.600	17.625	17.575	500	PASS
802.11ac 20MHz (TXBF)	1 stream 4TX	5825 MHz	17.600	17.600	17.600	17.600	500	PASS
802.11ac 20MHz (TXBF)	2 stream 4TX	5745 MHz	17.600	17.600	17.600	17.600	500	PASS
802.11ac 20MHz (TXBF)	2 stream 4TX	5785 MHz	17.600	17.575	17.575	17.600	500	PASS
802.11ac 20MHz (TXBF)	2 stream 4TX	5825 MHz	17.600	17.575	17.625	17.600	500	PASS
802.11ac 20MHz (TXBF)	3 stream 4TX	5745 MHz	17.050	17.200	17.500	17.550	500	PASS
802.11ac 20MHz (TXBF)	3 stream 4TX	5785 MHz	17.050	17.500	17.625	17.500	500	PASS
802.11ac 20MHz (TXBF)	3 stream 4TX	5825 MHz	17.075	17.300	17.625	17.550	500	PASS

99% Occupied Bandwidth (MHz)							
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Test Result
802.11ac 20MHz (SDM)	4 stream 4TX	5745 MHz	18.166	18.516	18.091	18.016	PASS
802.11ac 20MHz (SDM)	4 stream 4TX	5785 MHz	18.191	18.366	18.041	18.041	PASS
802.11ac 20MHz (SDM)	4 stream 4TX	5825 MHz	18.141	18.516	18.066	18.041	PASS
802.11ac 20MHz (TXBF)	1 stream 4TX	5745 MHz	17.941	17.866	17.841	17.816	PASS
802.11ac 20MHz (TXBF)	1 stream 4TX	5785 MHz	17.941	17.866	17.841	17.816	PASS
802.11ac 20MHz (TXBF)	1 stream 4TX	5825 MHz	17.916	17.866	17.816	17.816	PASS
802.11ac 20MHz (TXBF)	2 stream 4TX	5745 MHz	17.866	17.841	17.891	17.816	PASS
802.11ac 20MHz (TXBF)	2 stream 4TX	5785 MHz	17.916	17.841	17.916	17.791	PASS
802.11ac 20MHz (TXBF)	2 stream 4TX	5825 MHz	17.916	17.891	17.916	17.841	PASS
802.11ac 20MHz (TXBF)	3 stream 4TX	5745 MHz	17.816	17.841	17.791	17.841	PASS
802.11ac 20MHz (TXBF)	3 stream 4TX	5785 MHz	17.816	17.841	17.791	17.866	PASS
802.11ac 20MHz (TXBF)	3 stream 4TX	5825 MHz	17.916	18.016	17.866	17.891	PASS

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 1 / CH 149 / 5745 MHz



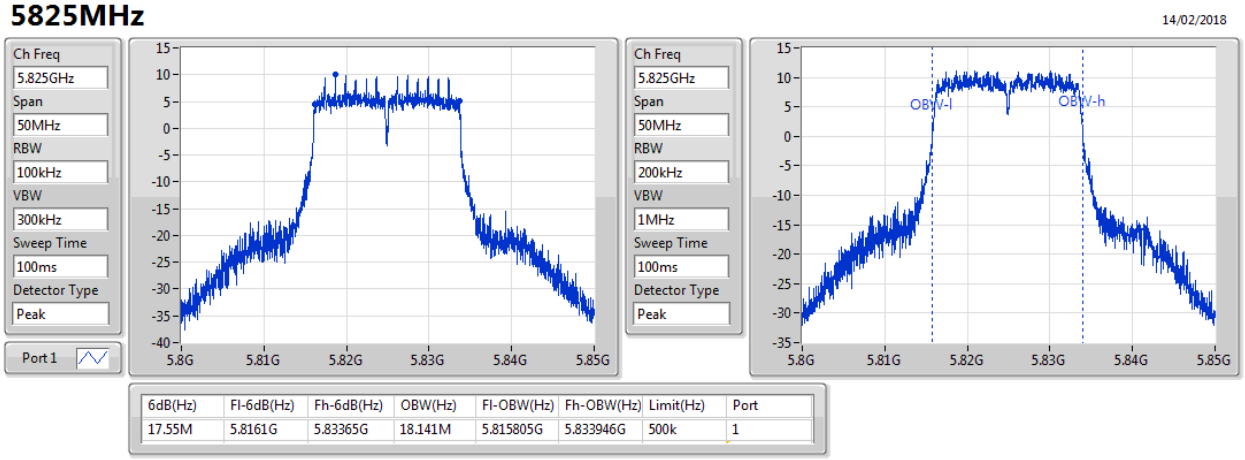
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 1 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 1 / CH 165 / 5825 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port1) **EBW**

5825MHz

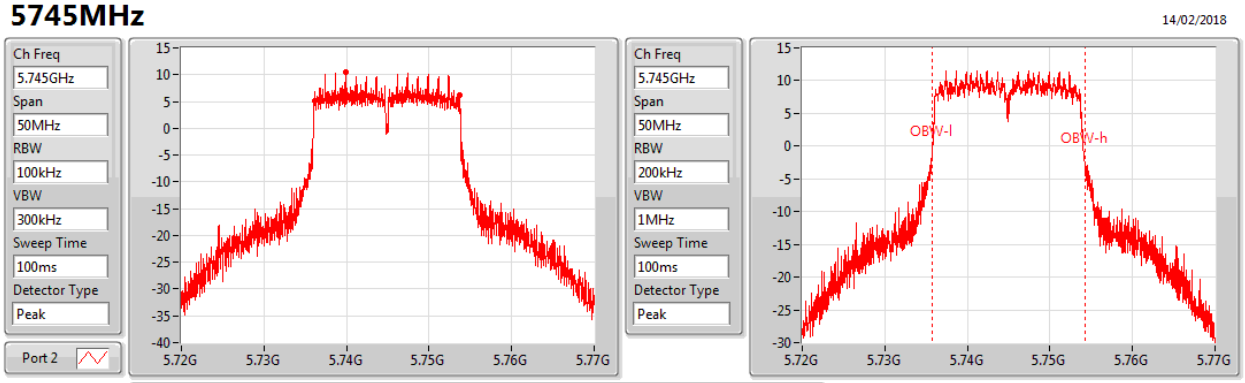


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.8161G	5.83365G	18.141M	5.815805G	5.833946G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 2 / CH 149 / 5745 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port2) **EBW**

5745MHz

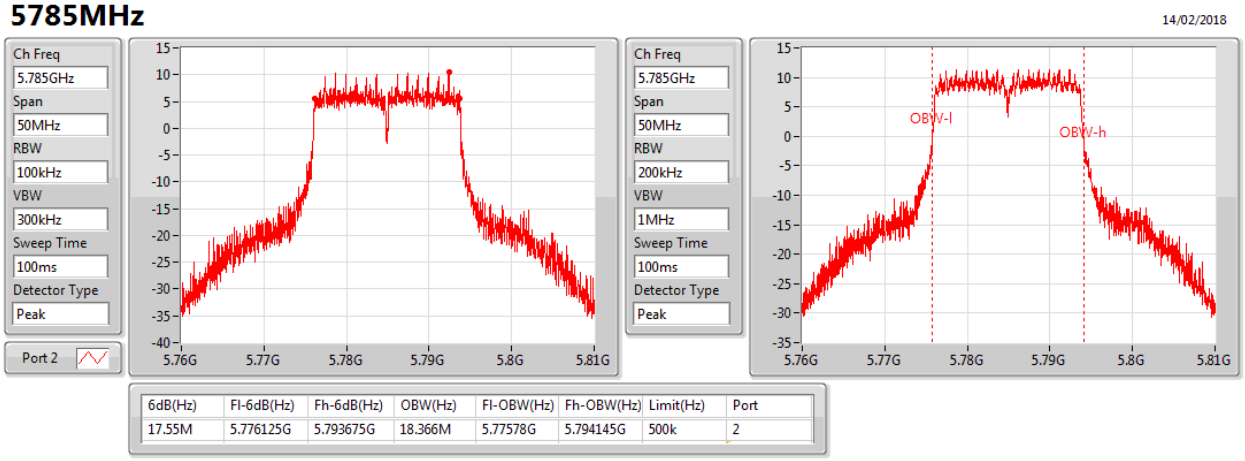


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.7361G	5.753675G	18.516M	5.73568G	5.754195G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 2 / CH 157 / 5785 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port2) **EBW**

5785MHz

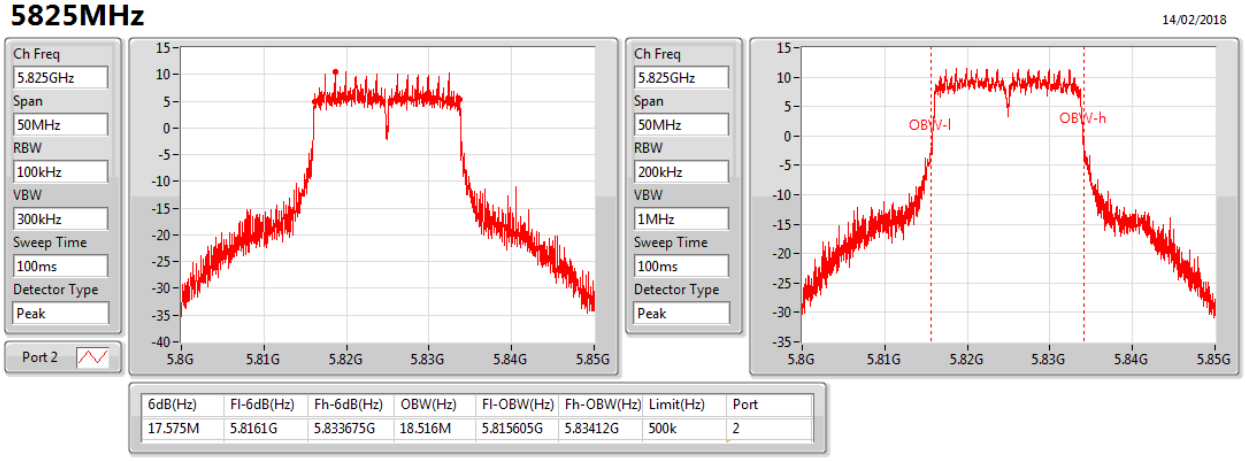


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.776125G	5.793675G	18.366M	5.77578G	5.794145G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 2 / CH 165 / 5825 MHz

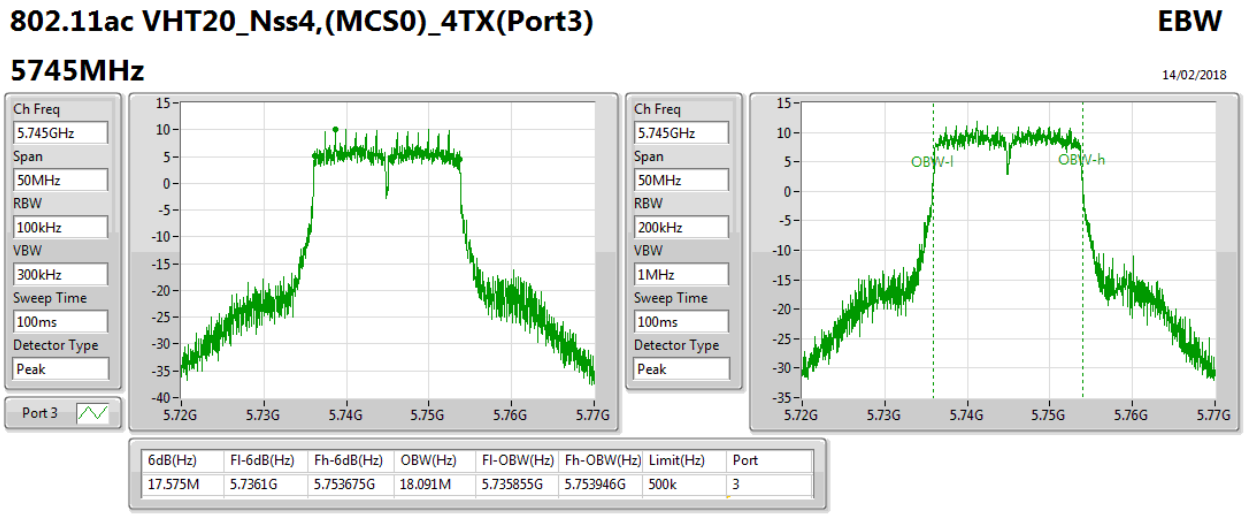
802.11ac VHT20_Nss4,(MCS0)_4TX(Port2) **EBW**

5825MHz

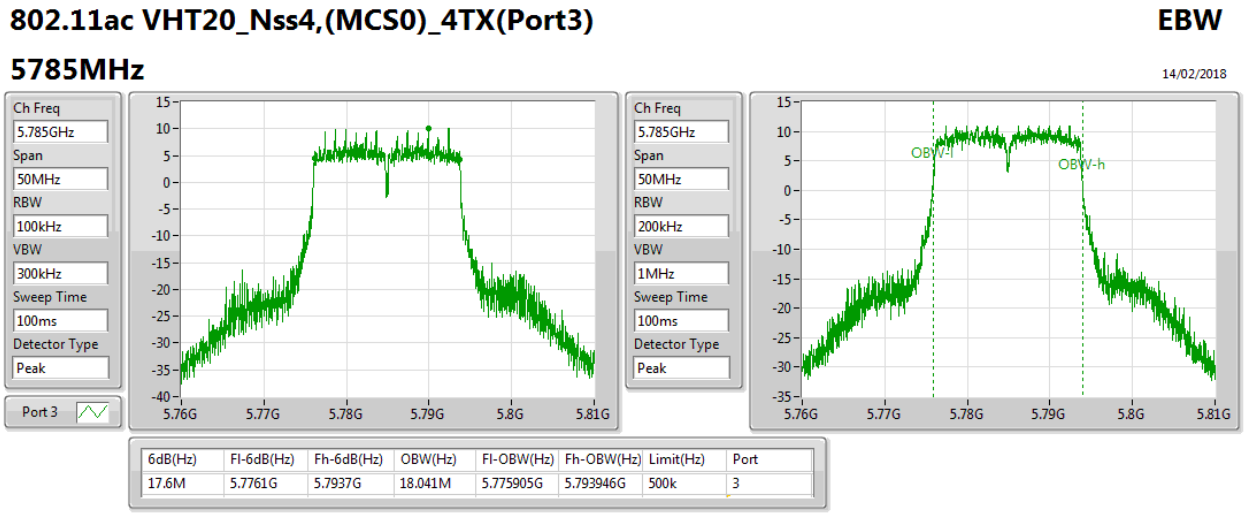


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.8161G	5.833675G	18.516M	5.815605G	5.83412G	500k	2

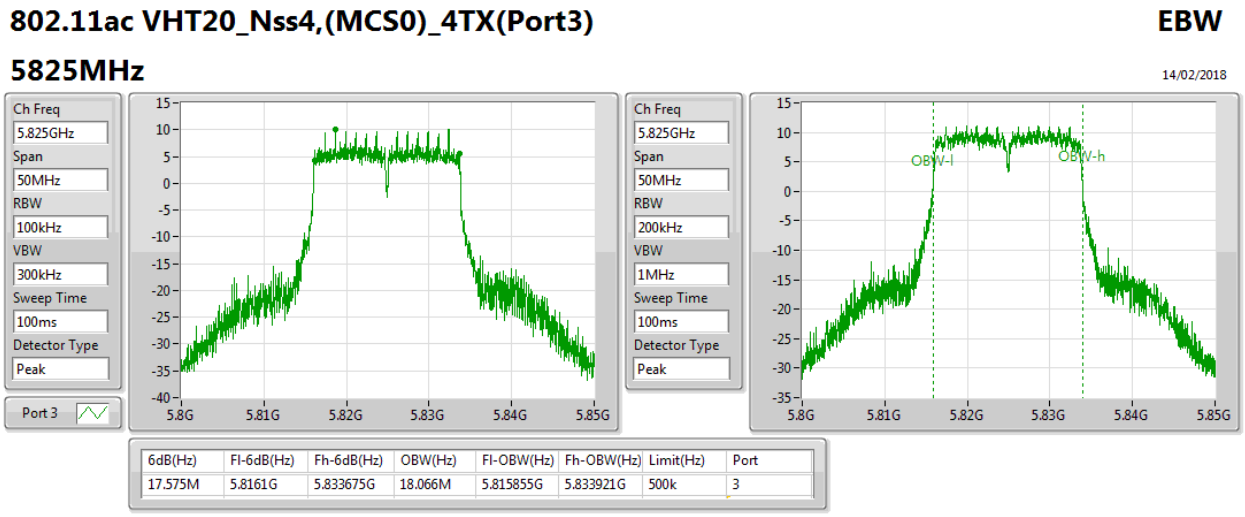
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 3 / CH 149 / 5745 MHz



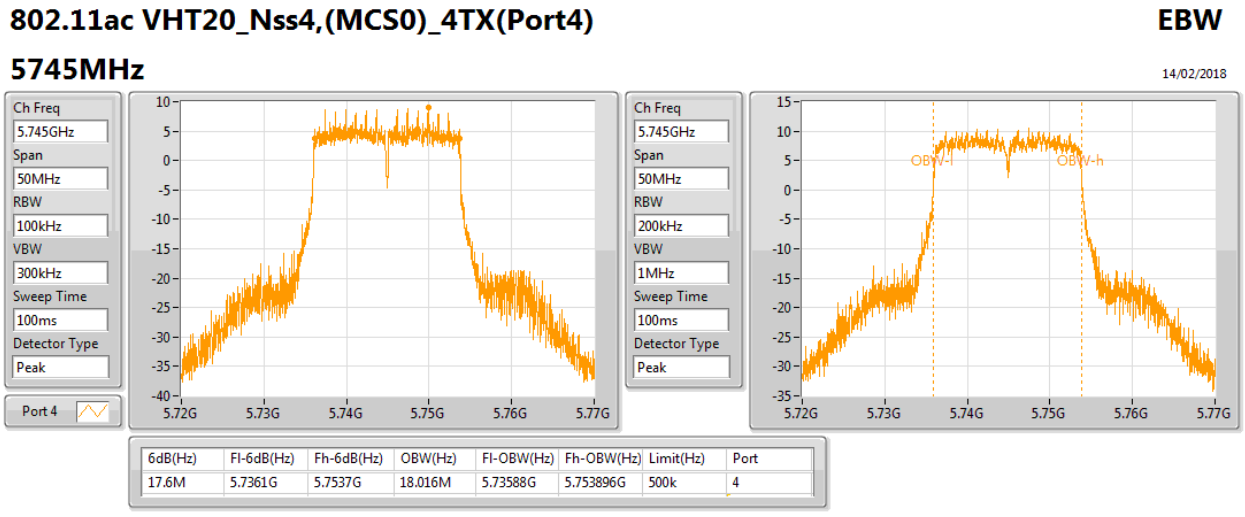
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 3 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 3 / CH 165 / 5825 MHz



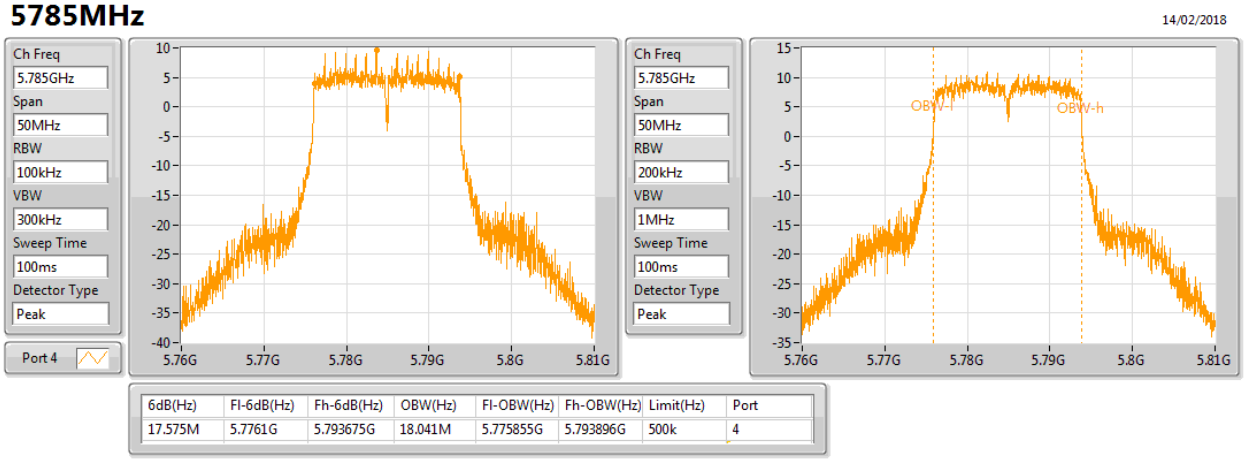
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 4 / CH 149 / 5745 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 4 / CH 157 / 5785 MHz

802.11ac VHT20_Nss4,(MCS0)_4TX(Port4) **EBW**

5785MHz

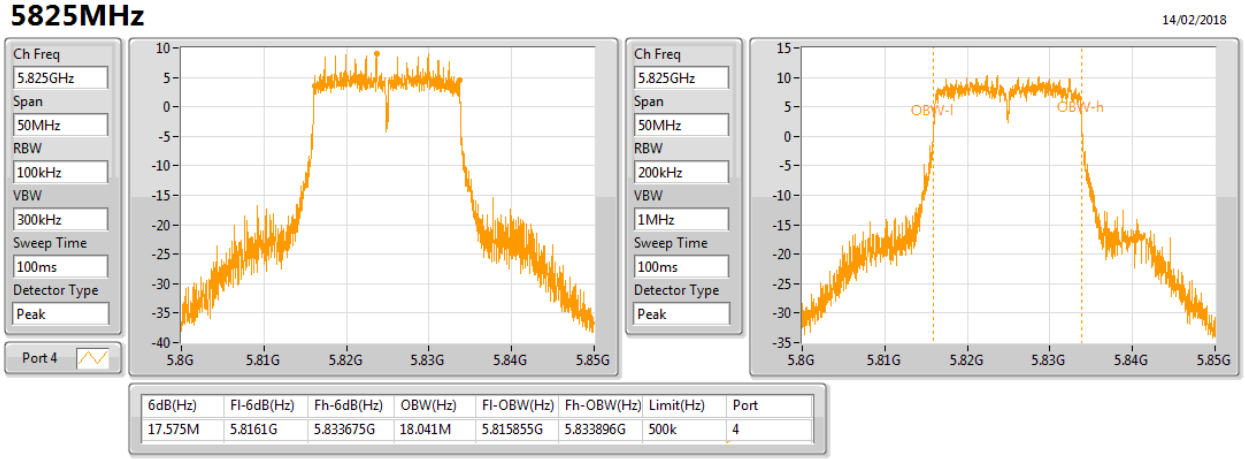


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.7761G	5.793675G	18.041M	5.775855G	5.793896G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 4S4T SDM / Ant. 4 / CH 165 / 5825 MHz

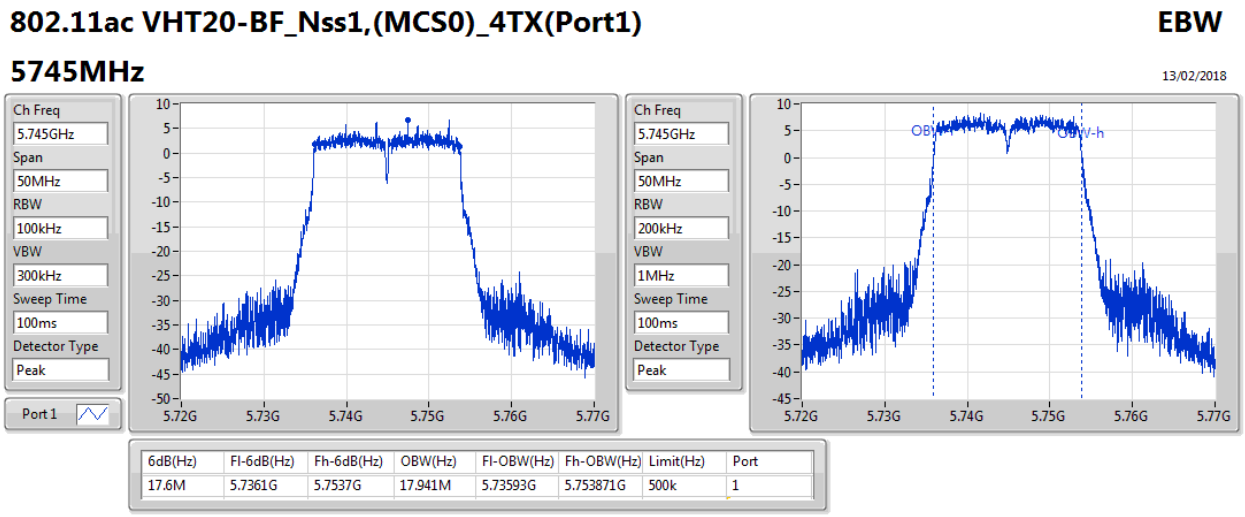
802.11ac VHT20_Nss4,(MCS0)_4TX(Port4) **EBW**

5825MHz

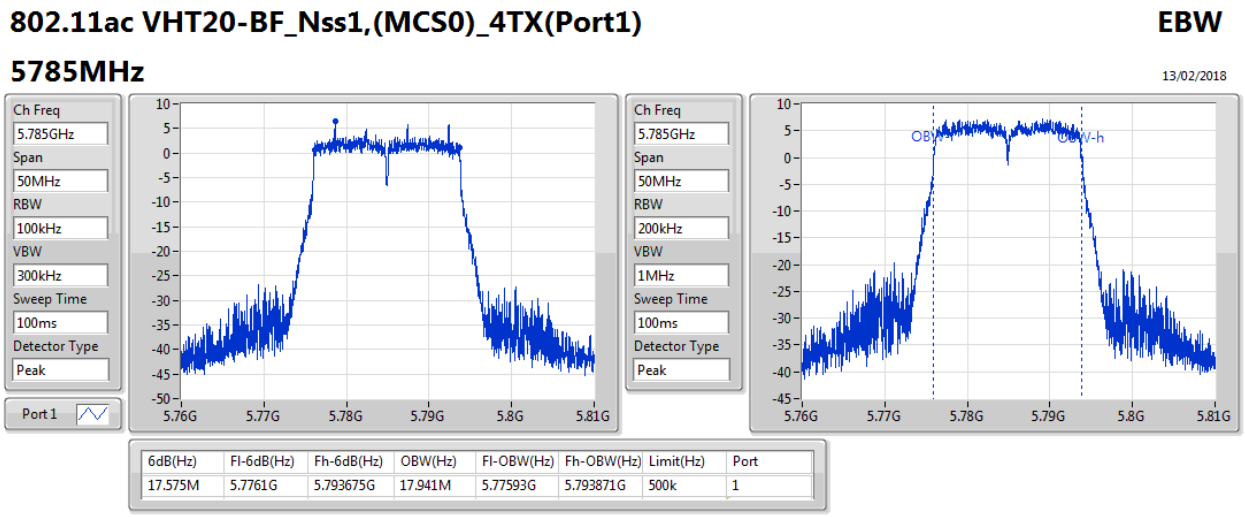


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.8161G	5.833675G	18.041M	5.815855G	5.833896G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 1 / CH 149 / 5745 MHz



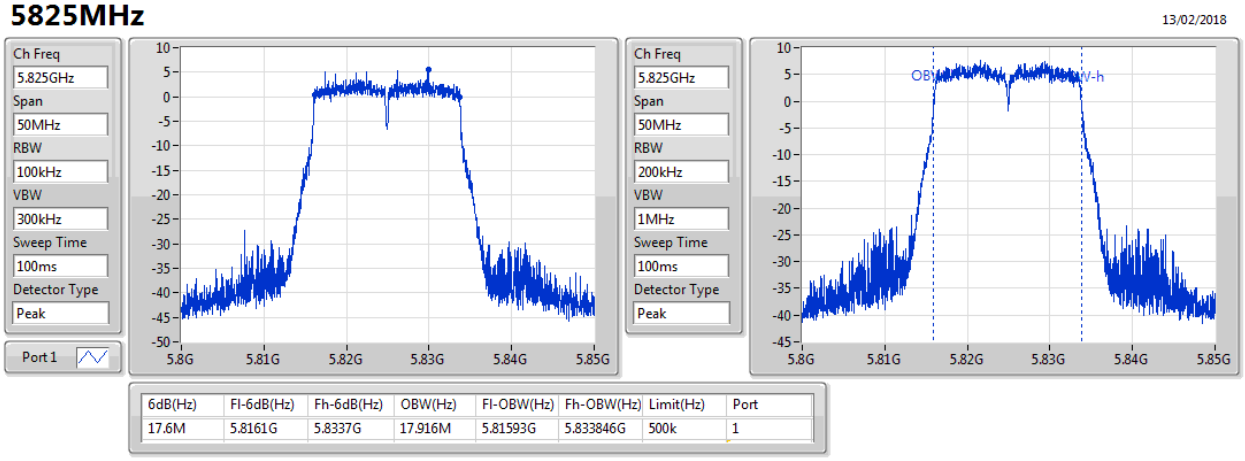
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 1 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 1 / CH 165 / 5825 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port1) **EBW**

5825MHz

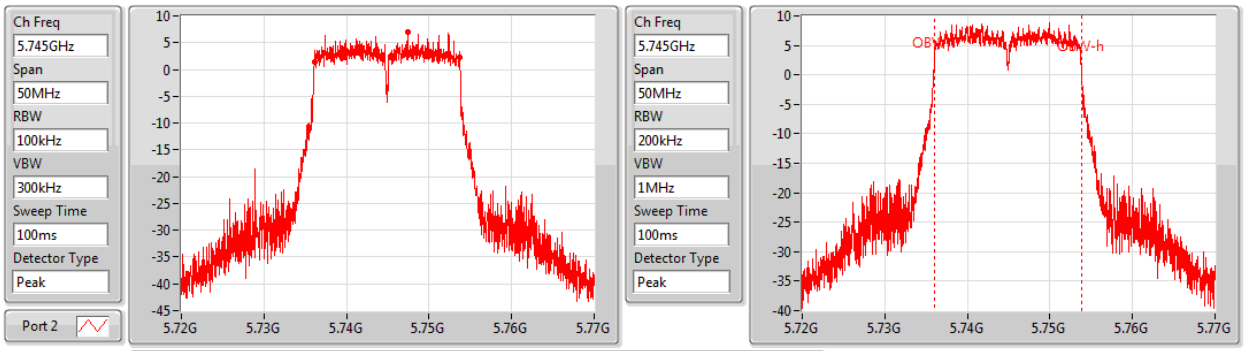


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.8161G	5.8337G	17.916M	5.81593G	5.833846G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 2 / CH 149 / 5745 MHz

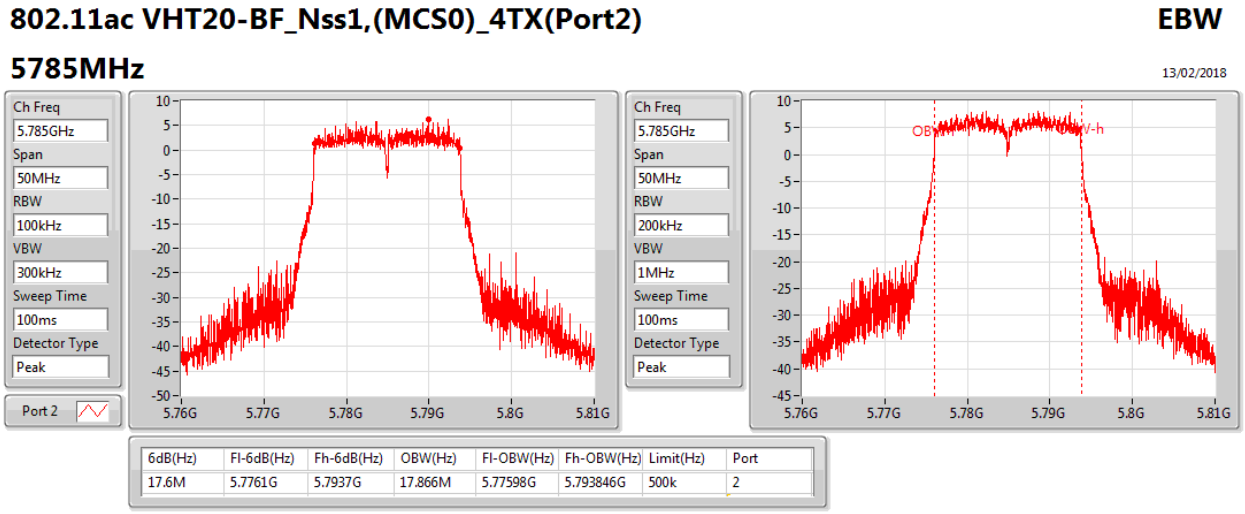
802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port2) **EBW**

5745MHz

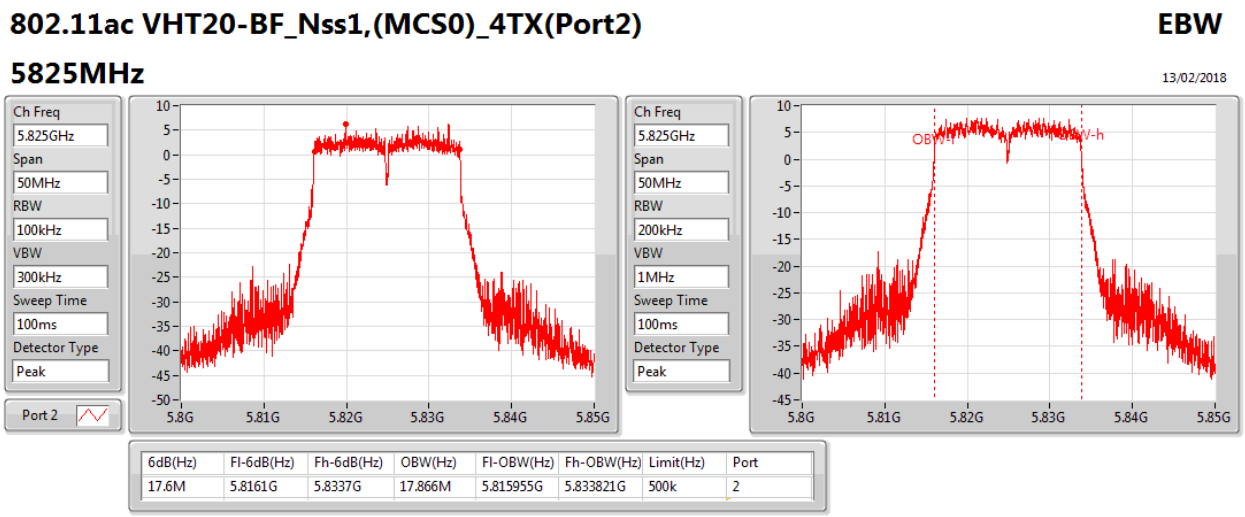


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.7361G	5.7537G	17.866M	5.735955G	5.753821G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 2 / CH 157 / 5785 MHz



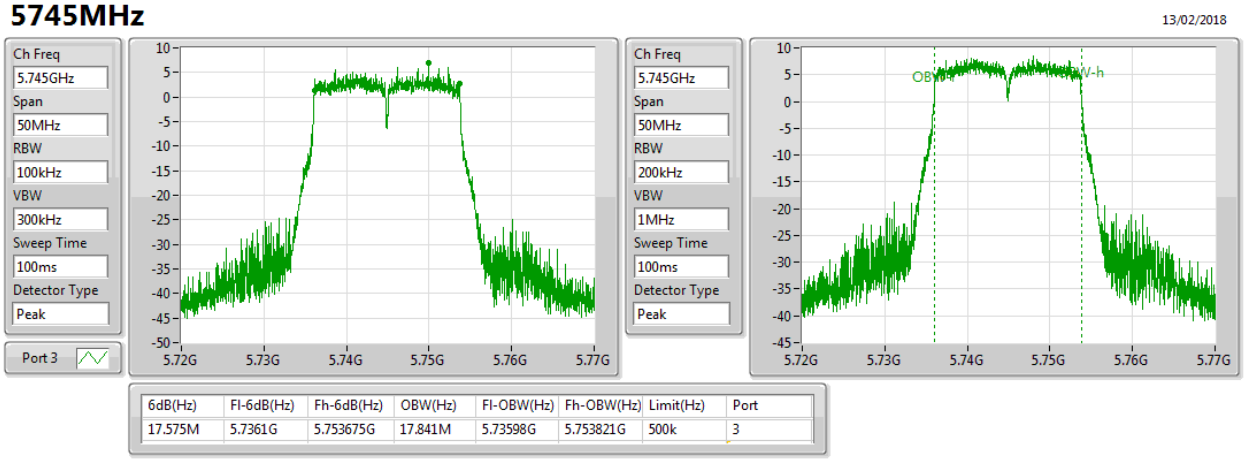
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 2 / CH 165 / 5825 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 3 / CH 149 / 5745 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port3) EBW

5745MHz

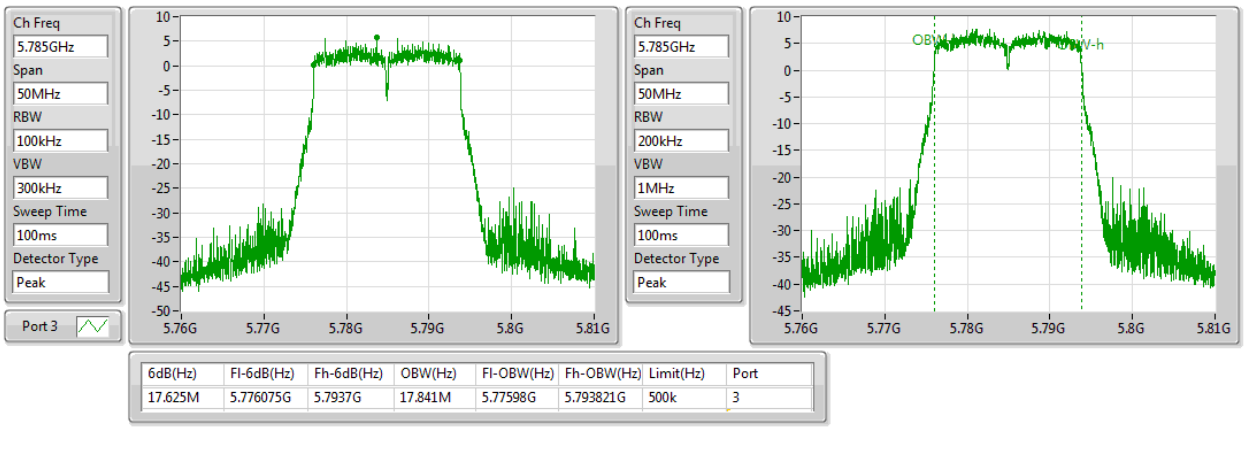


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.7361G	5.753675G	17.841M	5.73598G	5.753821G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 3 / CH 157 / 5785 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port3) EBW

5785MHz

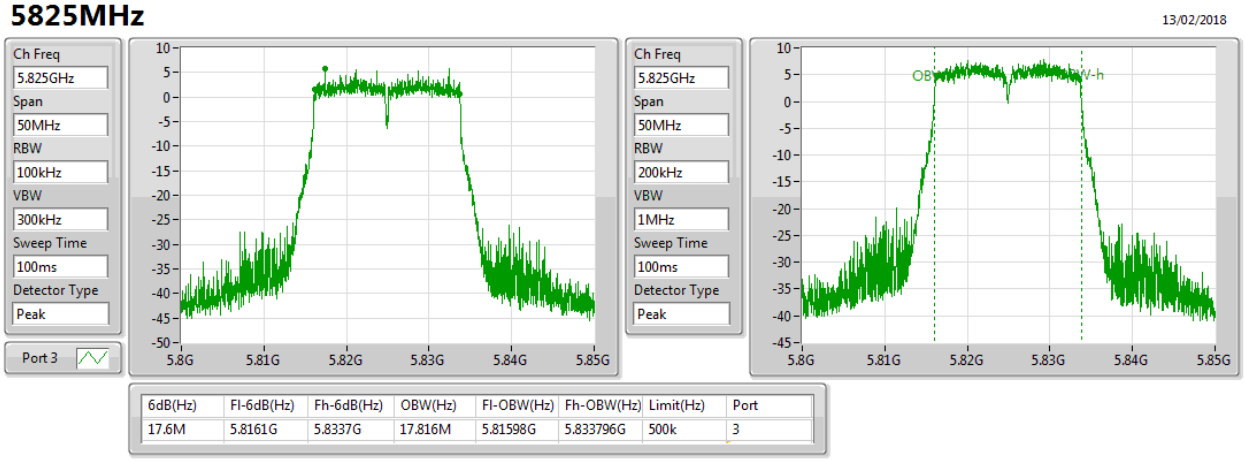


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.625M	5.776075G	5.7937G	17.841M	5.77598G	5.793821G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 3 / CH 165 / 5825 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port3) **EBW**

5825MHz

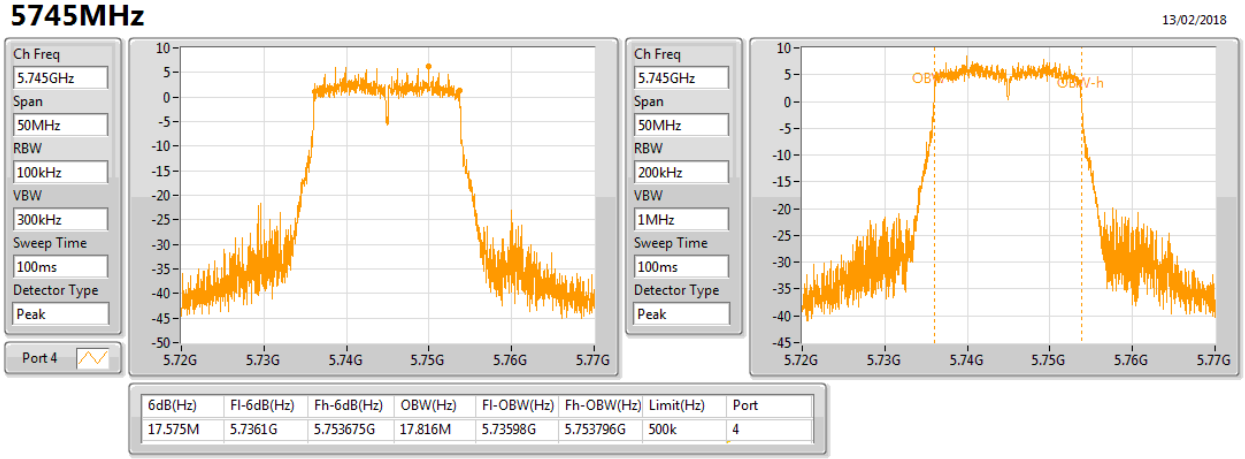


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.8161G	5.8337G	17.816M	5.81598G	5.833796G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 4 / CH 149 / 5745 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port4) **EBW**

5745MHz

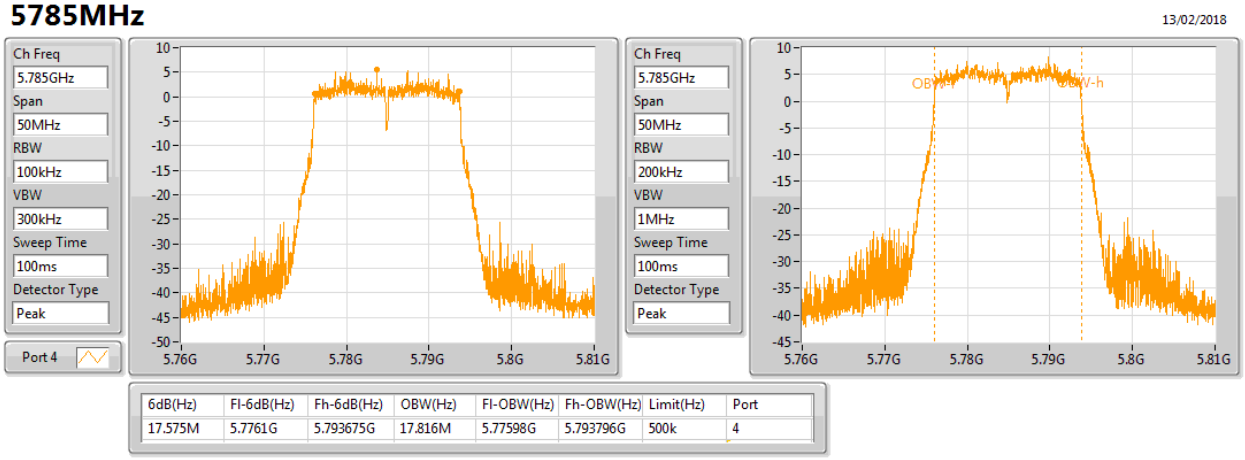


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.7361G	5.753675G	17.816M	5.73598G	5.753796G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 4 / CH 157 / 5785 MHz

802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port4) **EBW**

5785MHz

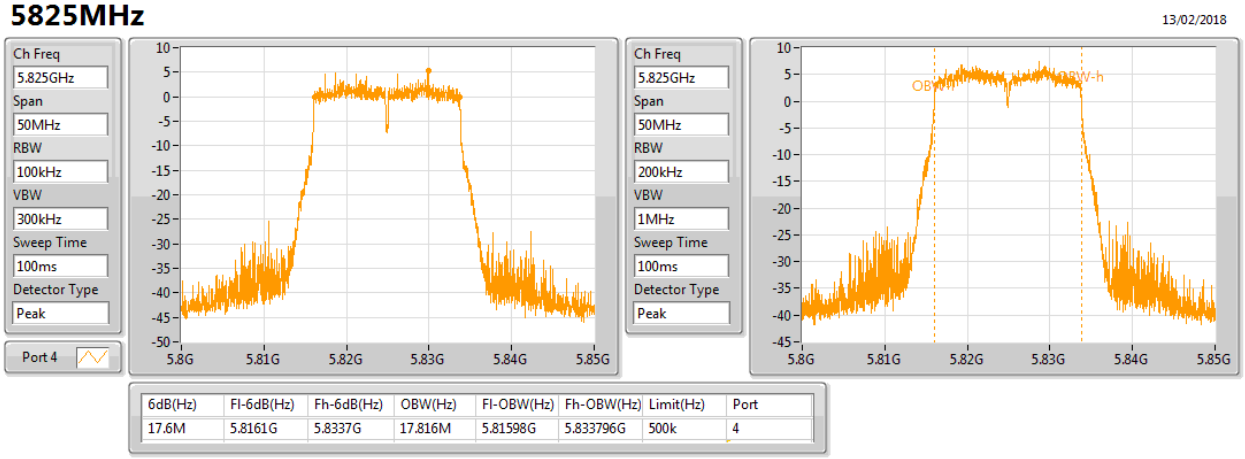


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.575M	5.7761G	5.793675G	17.816M	5.77598G	5.793796G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 1S4T TXBF / Ant. 4 / CH 165 / 5825 MHz

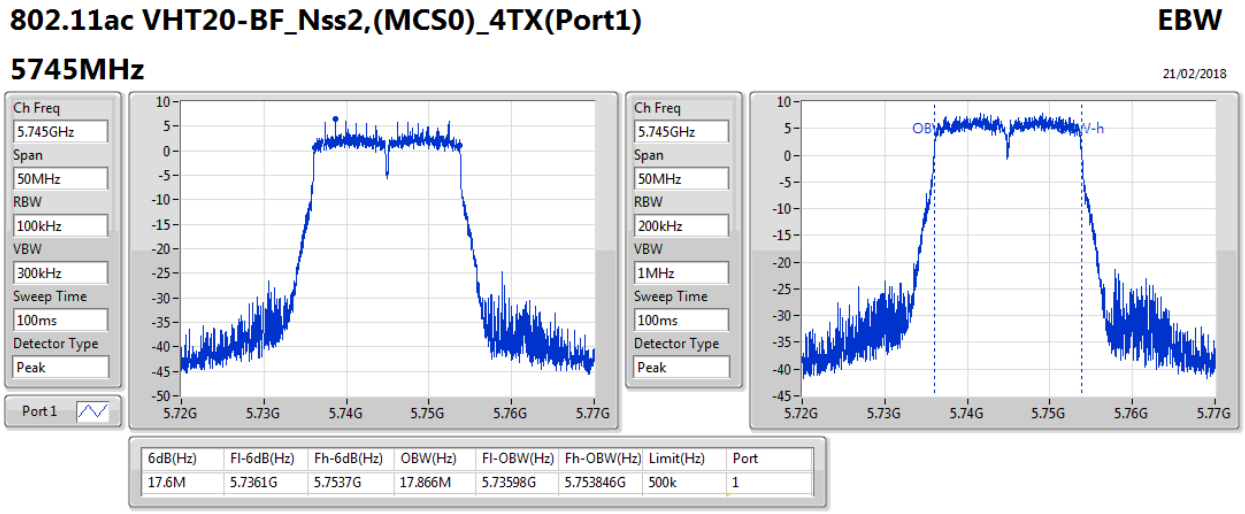
802.11ac VHT20-BF_Nss1,(MCS0)_4TX(Port4) **EBW**

5825MHz

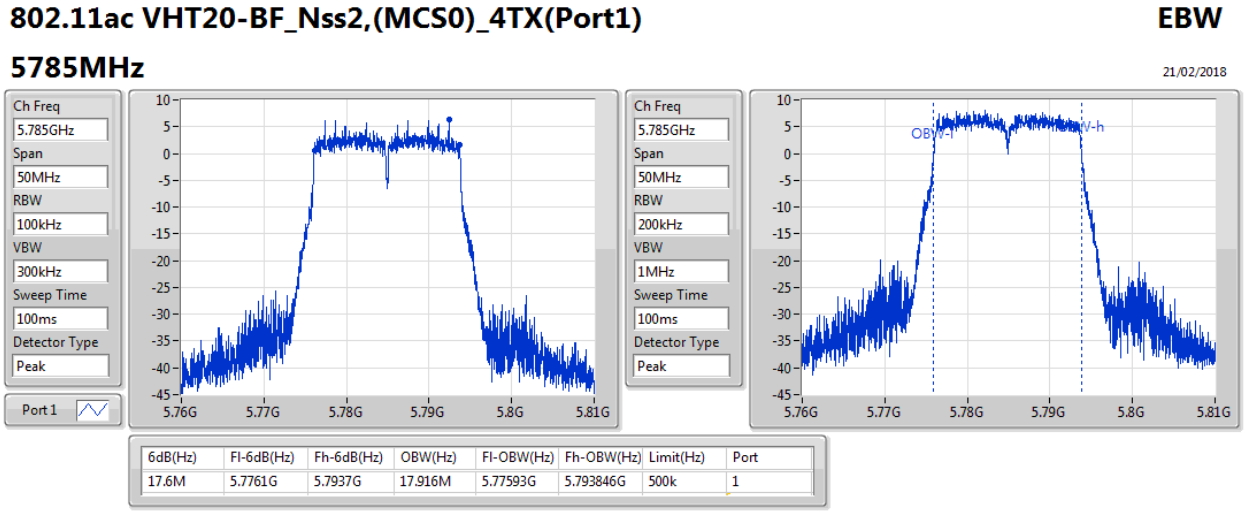


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.8161G	5.8337G	17.816M	5.81598G	5.833796G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 1 / CH 149 / 5745 MHz



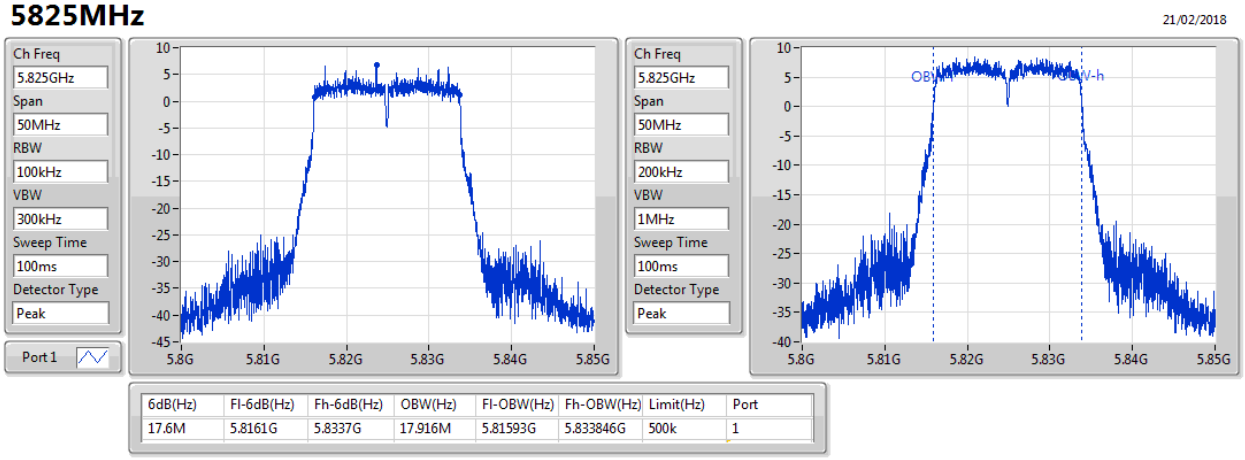
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 1 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 1 / CH 165 / 5825 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port1) **EBW**

5825MHz

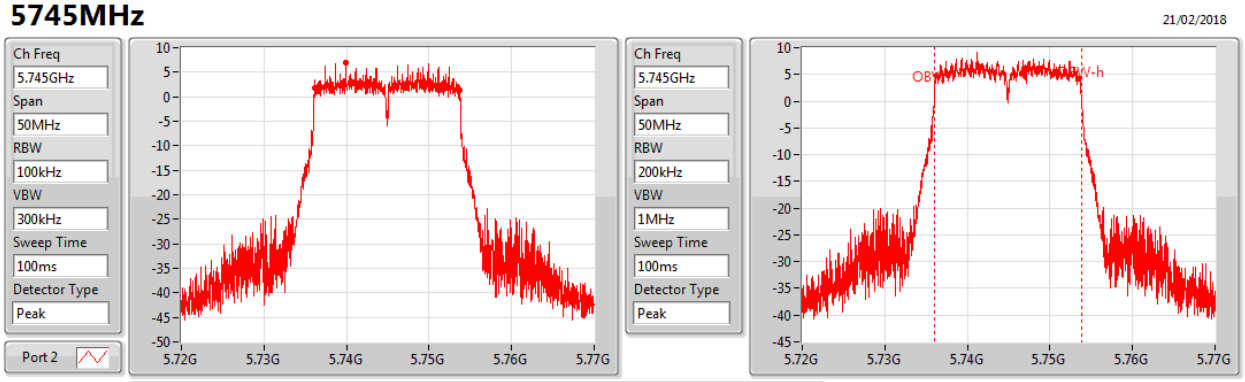


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.8161G	5.8337G	17.916M	5.81593G	5.833846G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 2 / CH 149 / 5745 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5745MHz

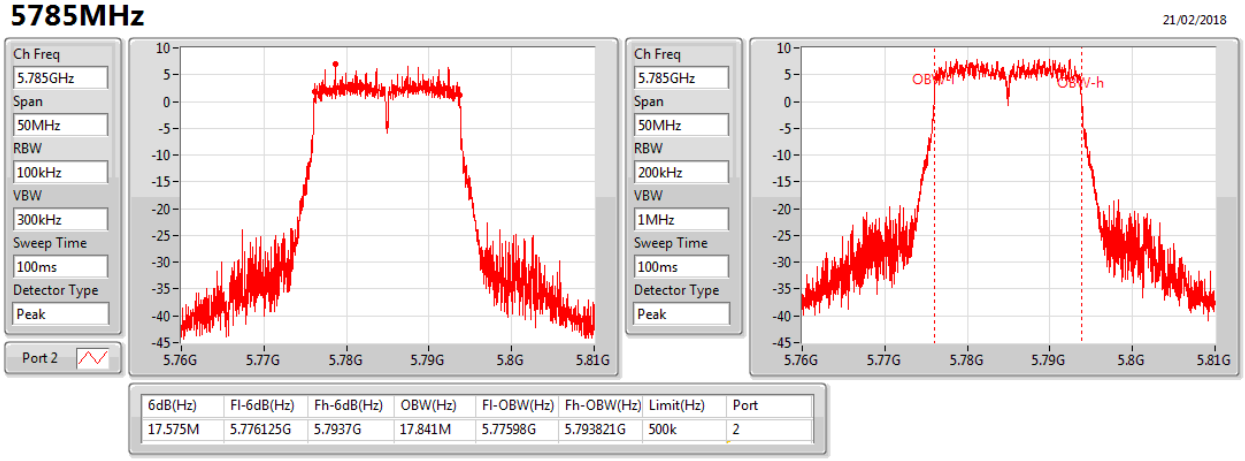


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.7361G	5.7537G	17.841M	5.73598G	5.753821G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 2 / CH 157 / 5785 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

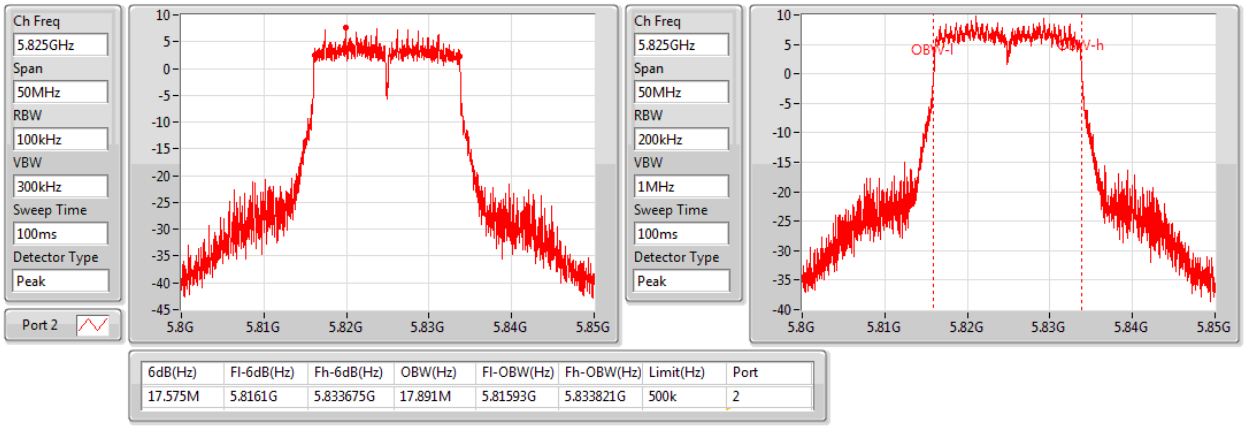
5785MHz



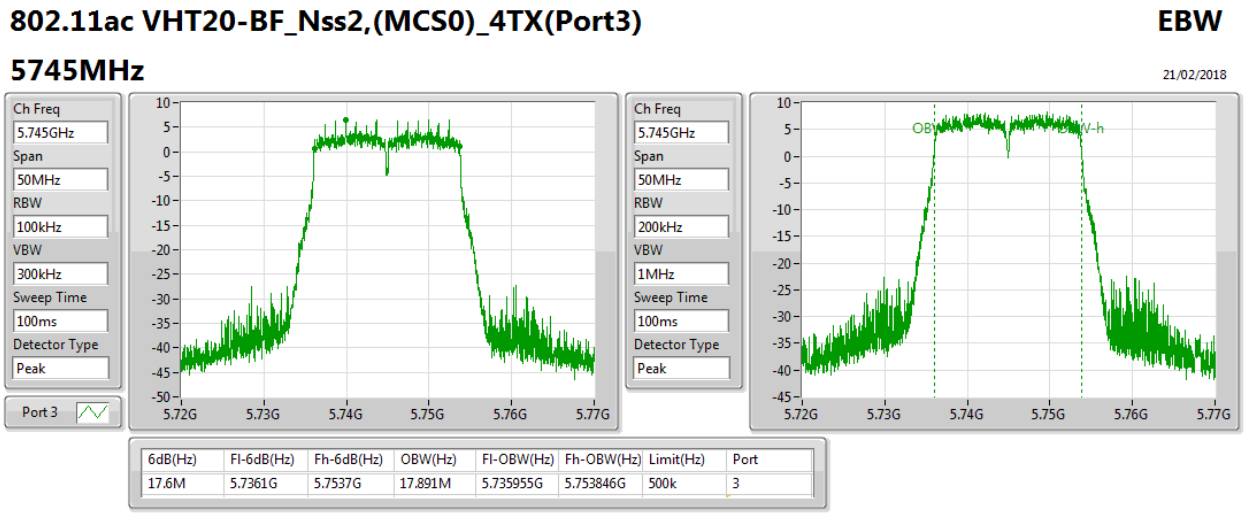
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 2 / CH 165 / 5825 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

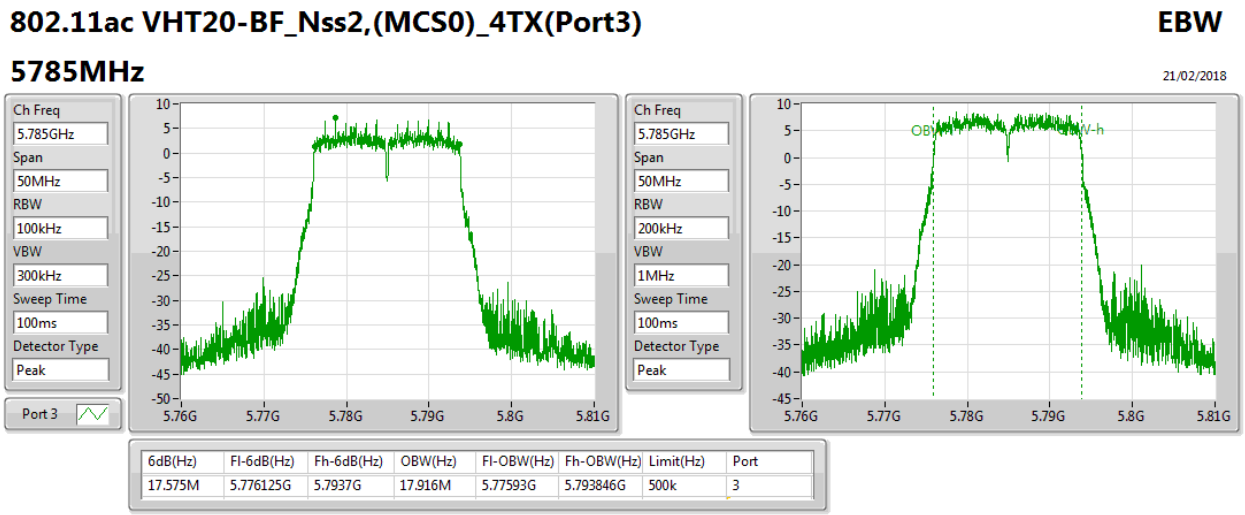
5825MHz



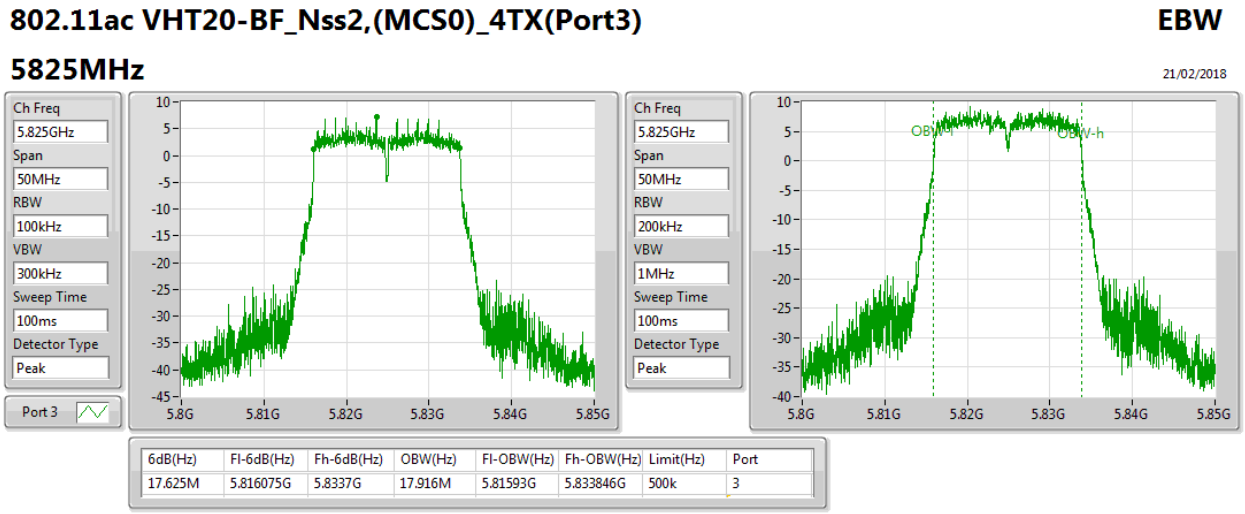
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 3 / CH 149 / 5745 MHz



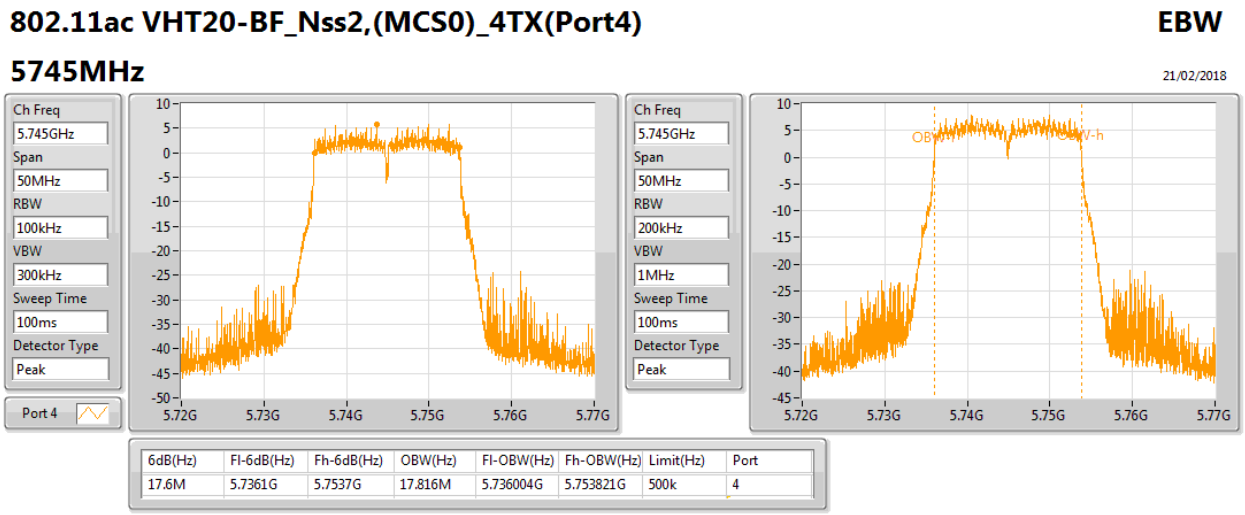
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 3 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 3 / CH 165 / 5825 MHz



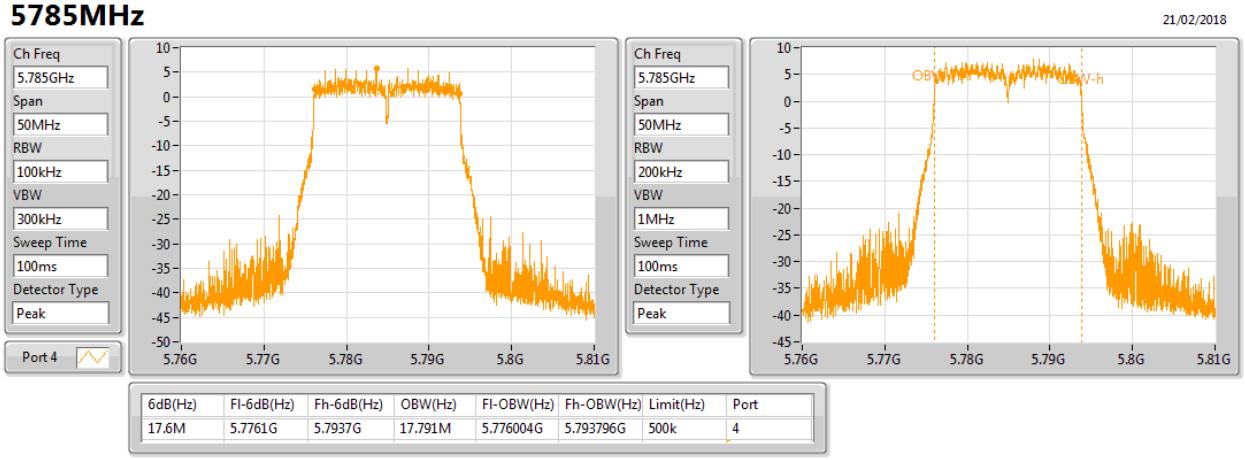
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 4 / CH 149 / 5745 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 4 / CH 157 / 5785 MHz

802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5785MHz

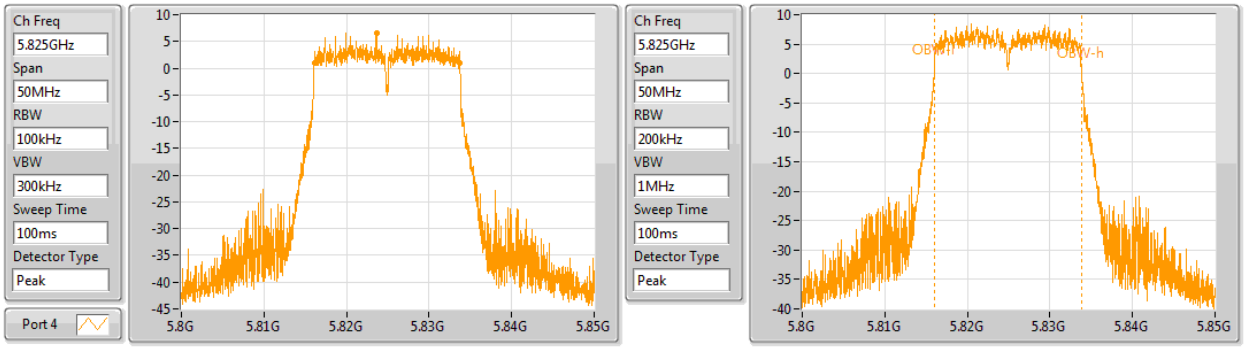


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.7761G	5.7937G	17.791M	5.776004G	5.793796G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 2S4T TXBF / Ant. 4 / CH 165 / 5825 MHz

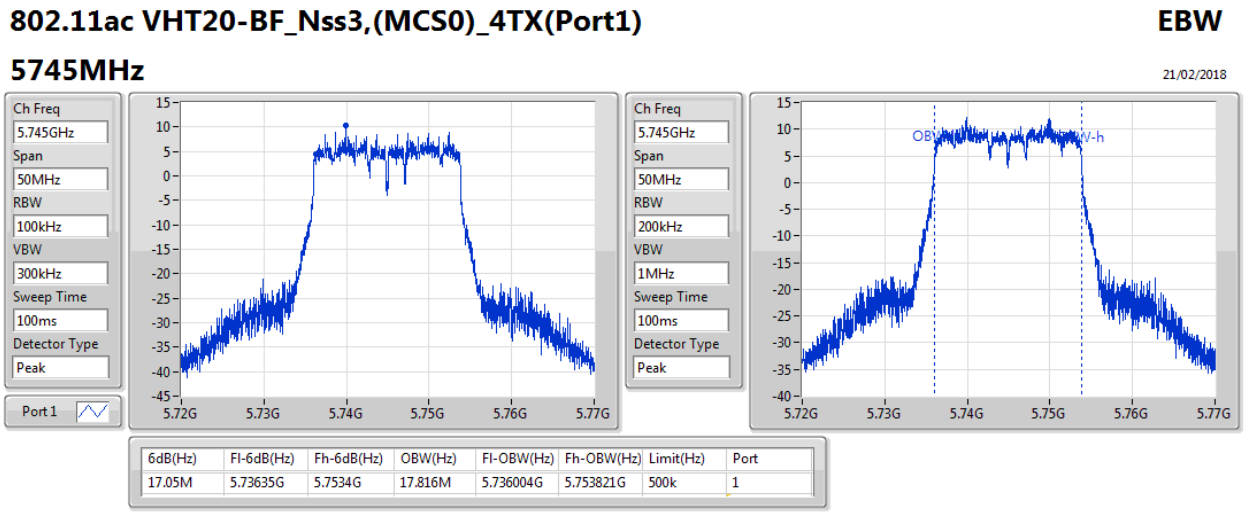
802.11ac VHT20-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5825MHz

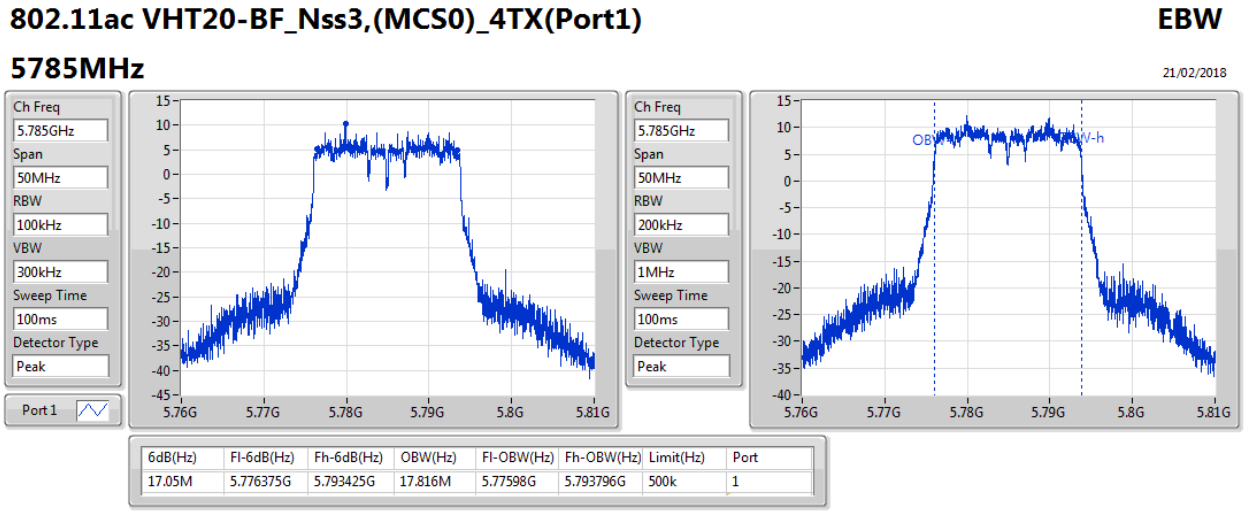


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.6M	5.8161G	5.8337G	17.841M	5.81598G	5.833821G	500k	4

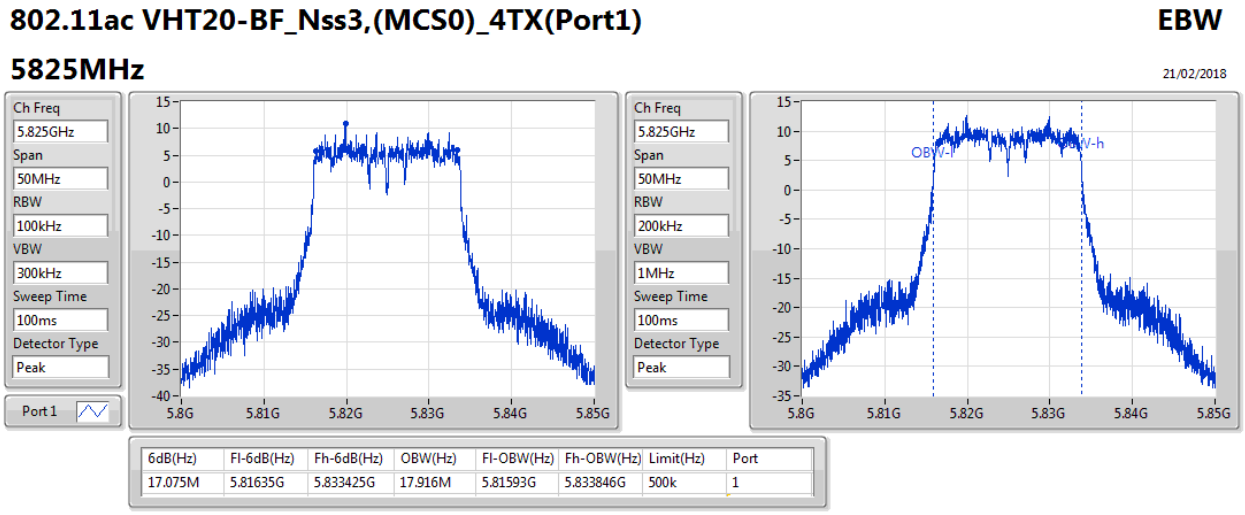
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 1 / CH 149 / 5745 MHz



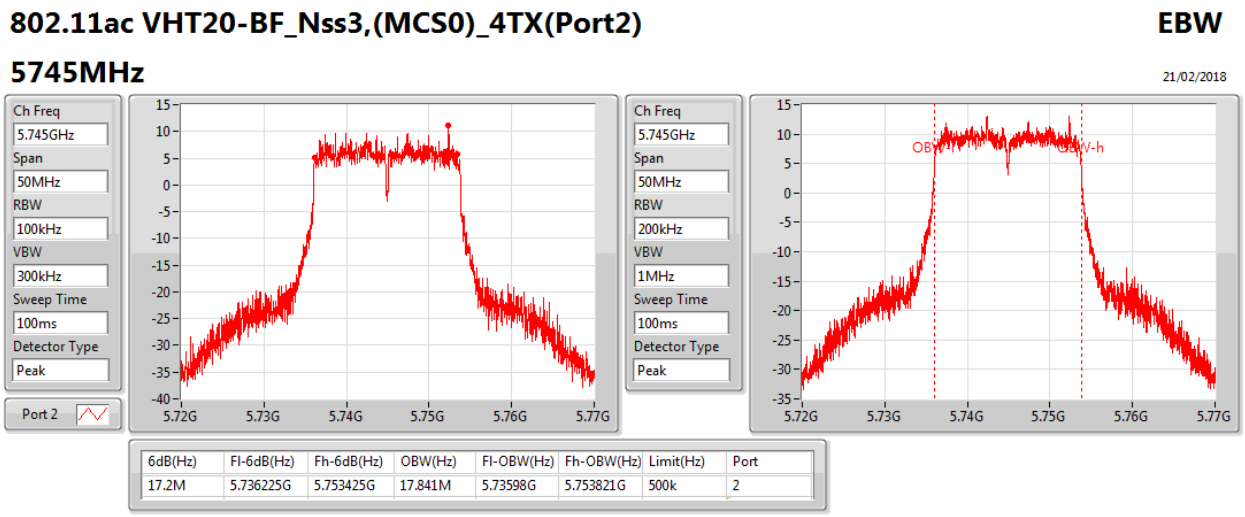
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 1 / CH 157 / 5785 MHz



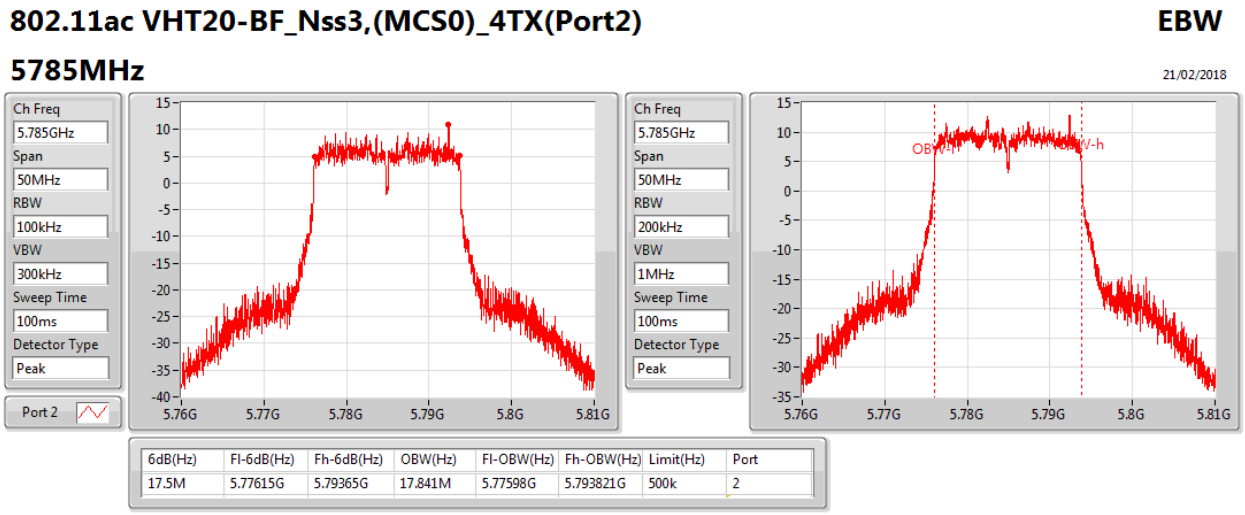
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 1 / CH 165 / 5825 MHz



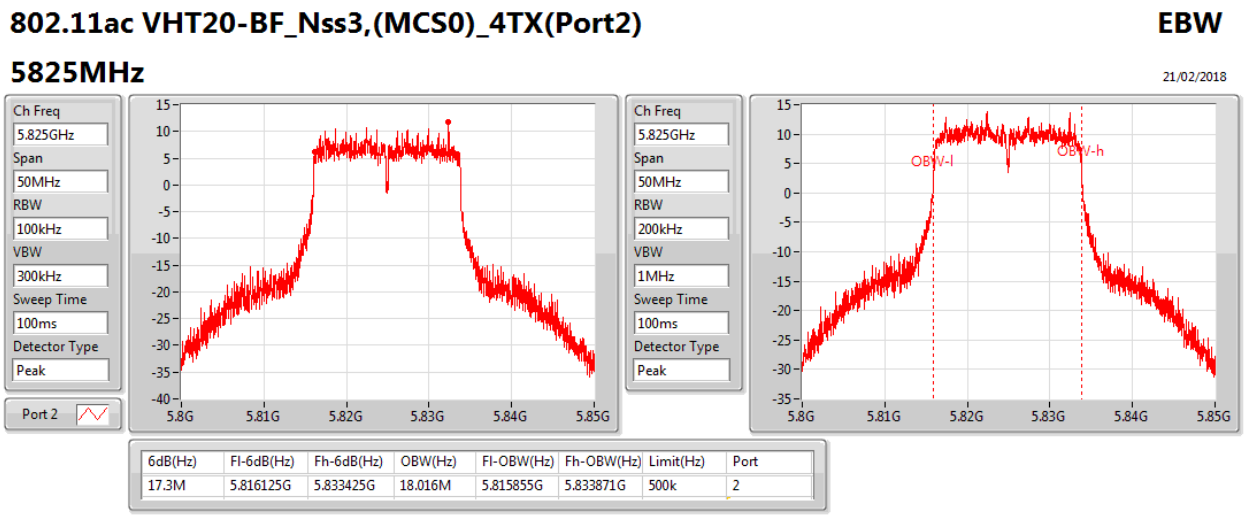
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 2 / CH 149 / 5745 MHz



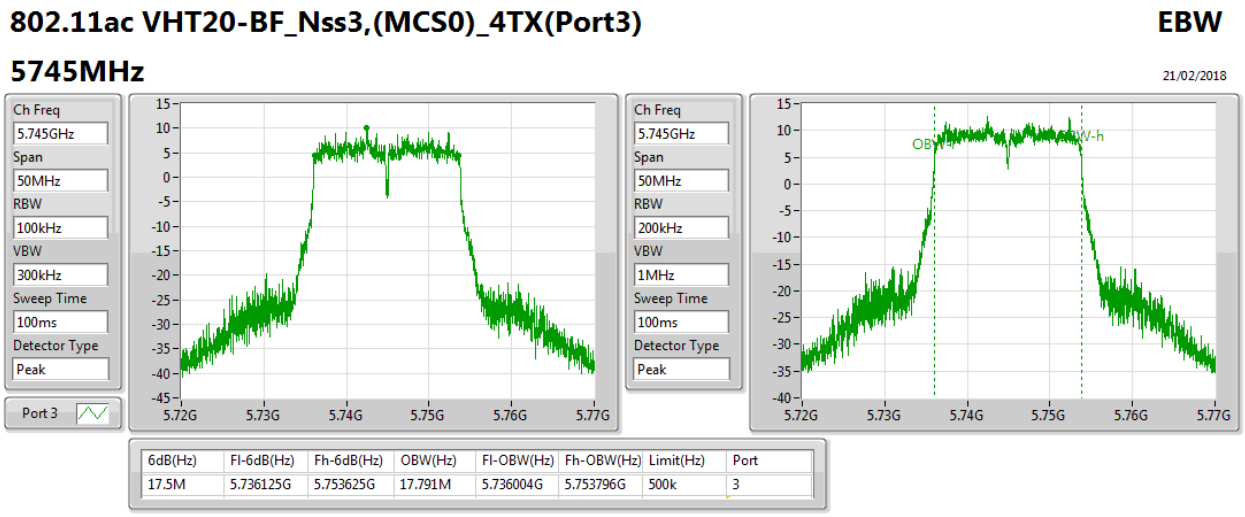
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 2 / CH 157 / 5785 MHz



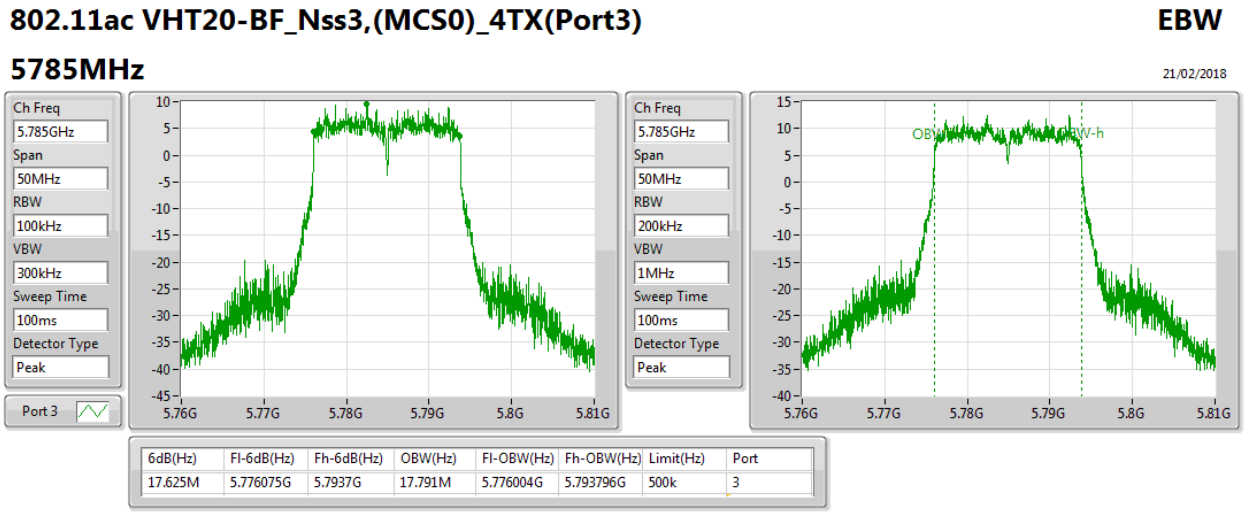
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 2 / CH 165 / 5825 MHz



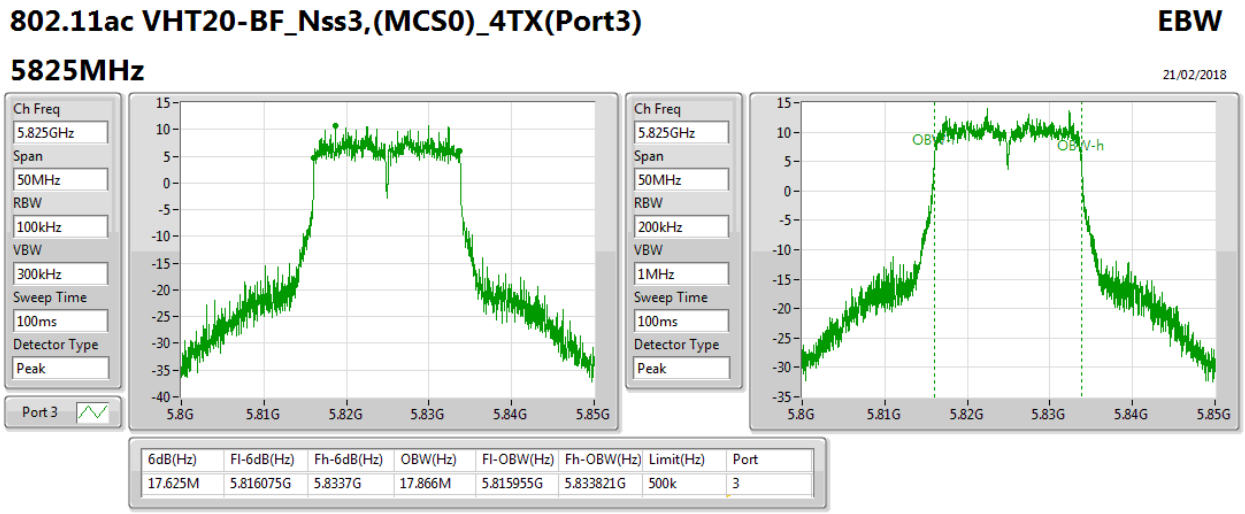
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 3 / CH 149 / 5745 MHz



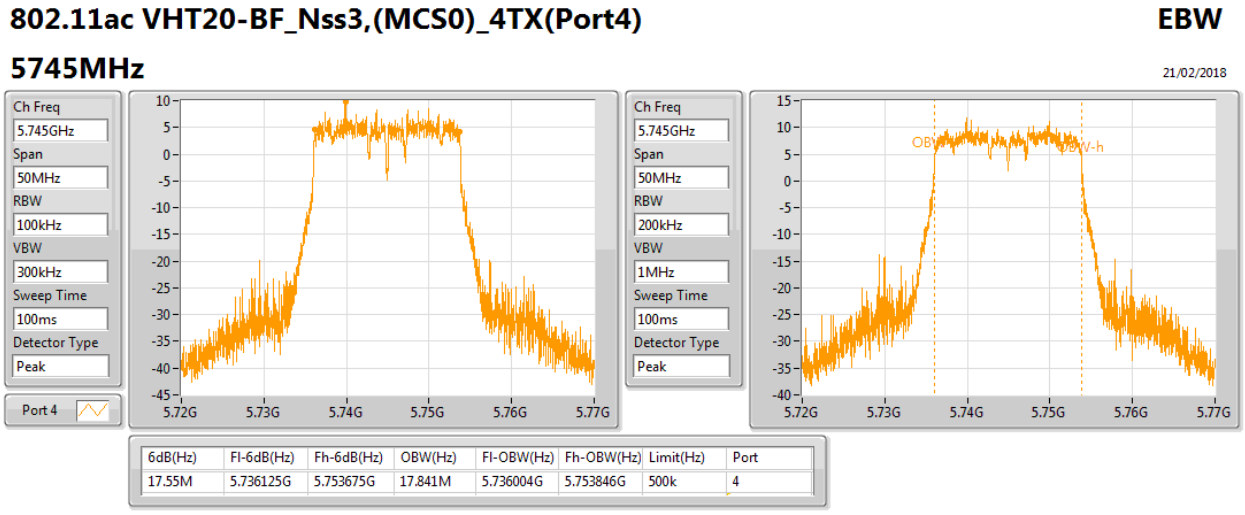
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 3 / CH 157 / 5785 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 3 / CH 165 / 5825 MHz



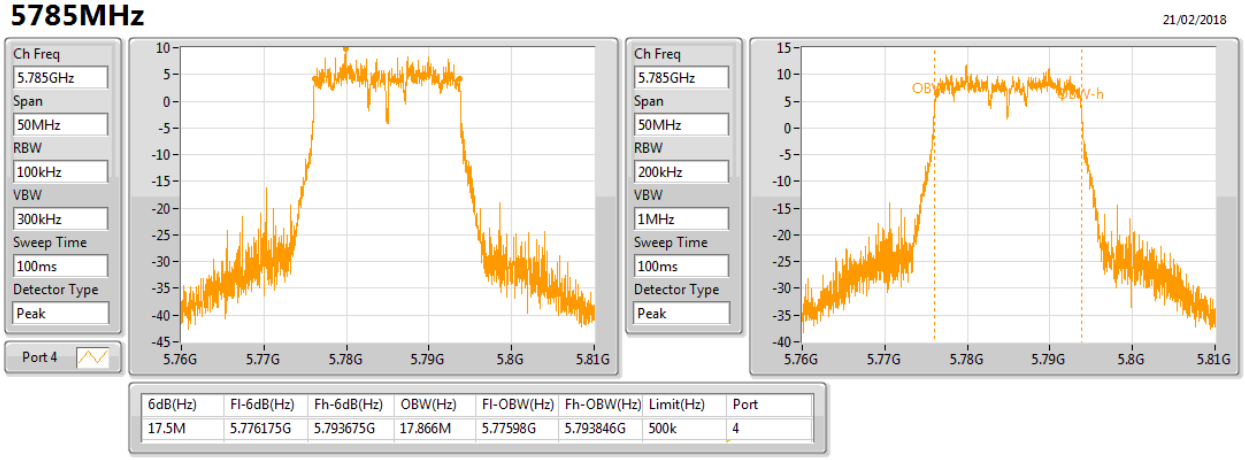
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 4 / CH 149 / 5745 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 4 / CH 157 / 5785 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port4) **EBW**

5785MHz

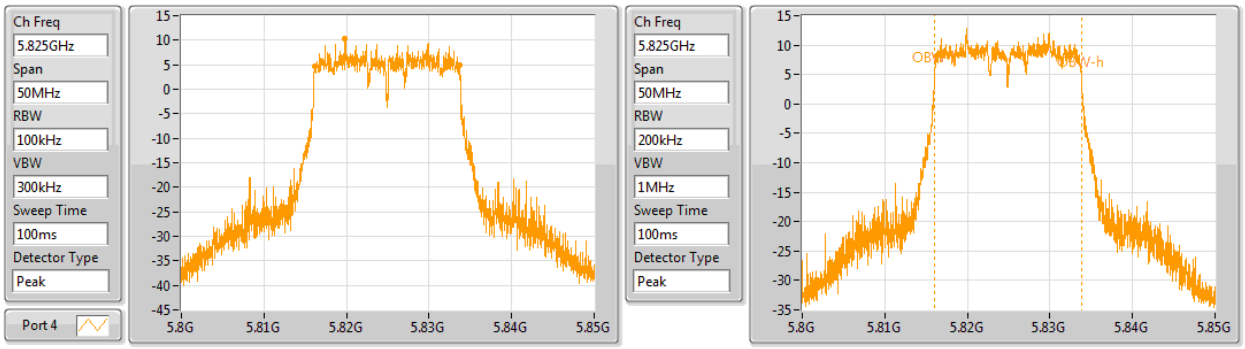


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.5M	5.776175G	5.793675G	17.866M	5.77598G	5.793846G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 20MHz 3S4T TXBF / Ant. 4 / CH 165 / 5825 MHz

802.11ac VHT20-BF_Nss3,(MCS0)_4TX(Port4) **EBW**

5825MHz



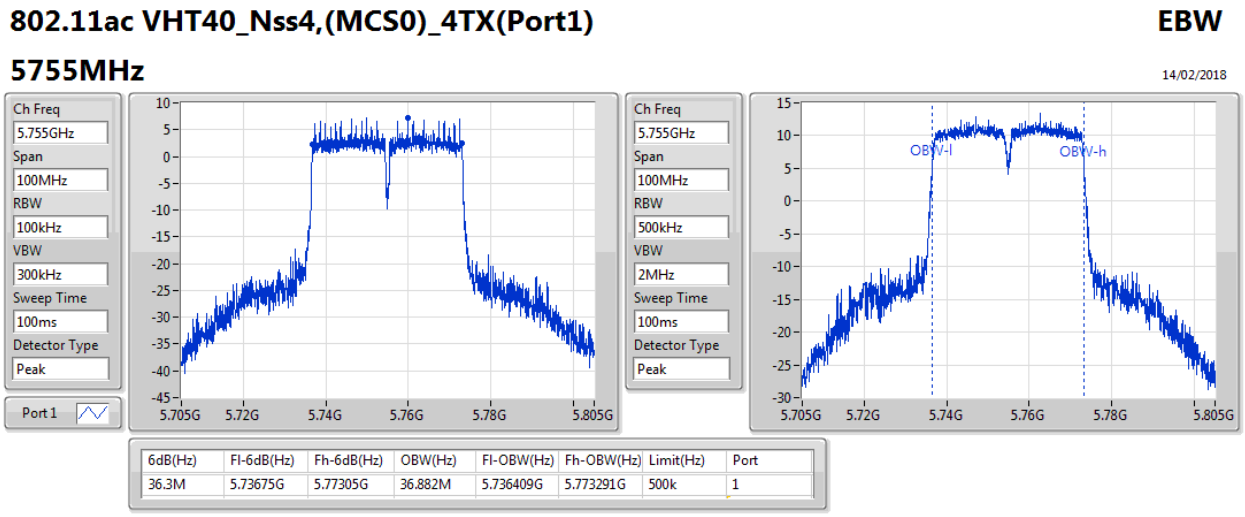
6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.55M	5.816125G	5.833675G	17.891M	5.81598G	5.833871G	500k	4

Configuration IEEE 802.11ac 40MHz

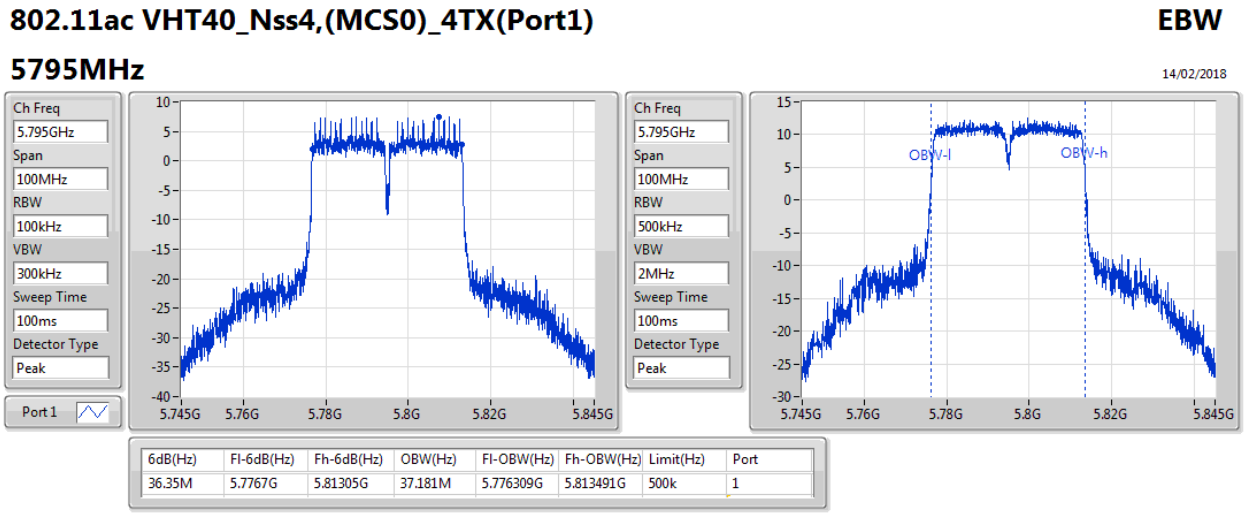
6dB Bandwidth (MHz)								
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Min. Limit (kHz)	Test Result
802.11ac 40MHz (SDM)	4 stream 4TX	5755 MHz	36.300	36.300	36.350	36.300	500	PASS
802.11ac 40MHz (SDM)	4 stream 4TX	5795 MHz	36.350	36.350	36.300	35.750	500	PASS
802.11ac 40MHz (TXBF)	1 stream 4TX	5755 MHz	36.300	36.350	36.350	36.300	500	PASS
802.11ac 40MHz (TXBF)	1 stream 4TX	5795 MHz	36.300	36.350	36.300	36.350	500	PASS
802.11ac 40MHz (TXBF)	2 stream 4TX	5755 MHz	36.300	36.350	36.350	36.350	500	PASS
802.11ac 40MHz (TXBF)	2 stream 4TX	5795 MHz	36.350	36.350	36.300	36.300	500	PASS
802.11ac 40MHz (TXBF)	3 stream 4TX	5755 MHz	36.350	36.350	36.350	36.350	500	PASS
802.11ac 40MHz (TXBF)	3 stream 4TX	5795 MHz	36.300	36.400	36.400	36.350	500	PASS

99% Occupied Bandwidth (MHz)							
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Test Result
802.11ac 40MHz (SDM)	4 stream 4TX	5755 MHz	36.882	36.932	36.582	36.632	PASS
802.11ac 40MHz (SDM)	4 stream 4TX	5795 MHz	37.181	37.031	36.682	36.732	PASS
802.11ac 40MHz (TXBF)	1 stream 4TX	5755 MHz	36.582	36.482	36.432	36.432	PASS
802.11ac 40MHz (TXBF)	1 stream 4TX	5795 MHz	36.782	36.732	36.582	36.482	PASS
802.11ac 40MHz (TXBF)	2 stream 4TX	5755 MHz	36.732	36.632	36.532	36.432	PASS
802.11ac 40MHz (TXBF)	2 stream 4TX	5795 MHz	37.131	37.131	36.782	36.632	PASS
802.11ac 40MHz (TXBF)	3 stream 4TX	5755 MHz	36.632	36.732	36.532	36.582	PASS
802.11ac 40MHz (TXBF)	3 stream 4TX	5795 MHz	36.982	37.231	36.882	36.732	PASS

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 1 / CH 151 / 5755 MHz



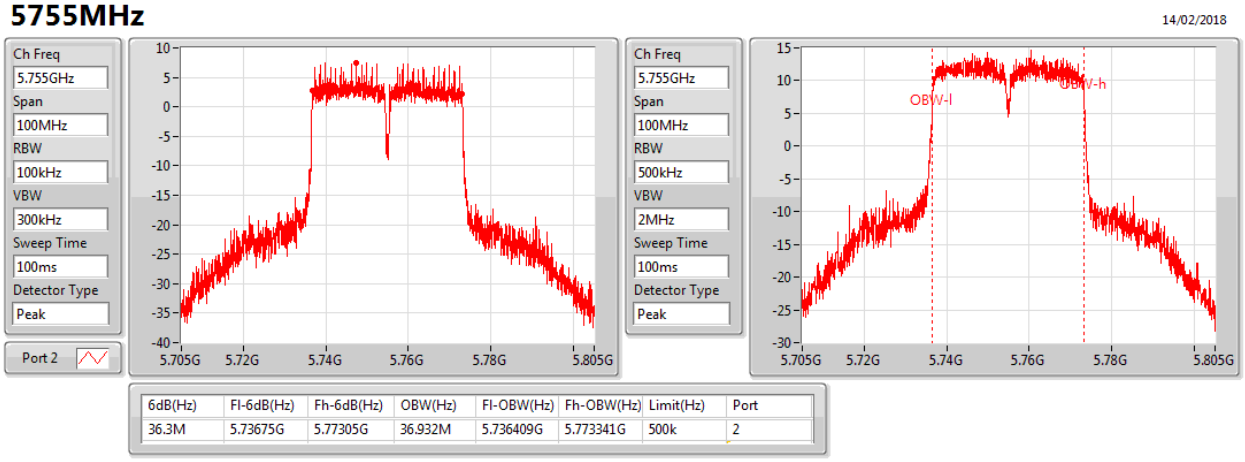
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 1 / CH 159 / 5795 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 2 / CH 151 / 5755 MHz

802.11ac VHT40_Nss4,(MCS0)_4TX(Port2) **EBW**

5755MHz

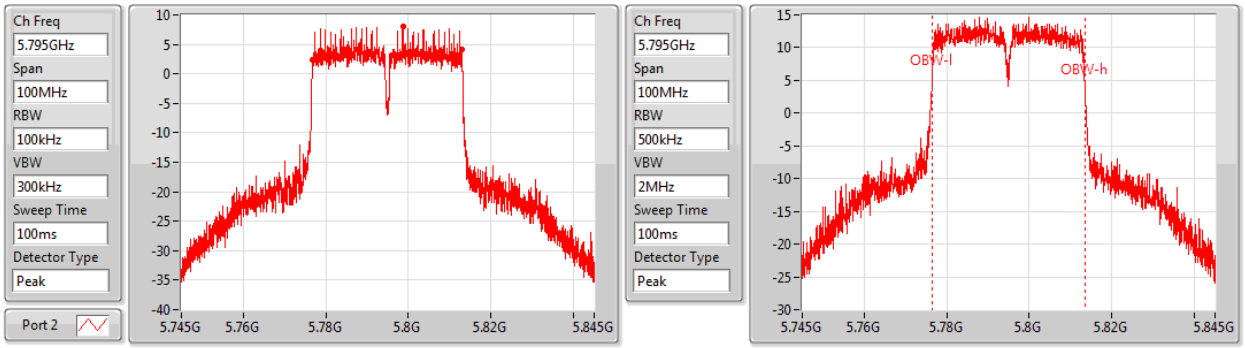


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.73675G	5.77305G	36.932M	5.736409G	5.773341G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 2 / CH 159 / 5795 MHz

802.11ac VHT40_Nss4,(MCS0)_4TX(Port2) **EBW**

5795MHz

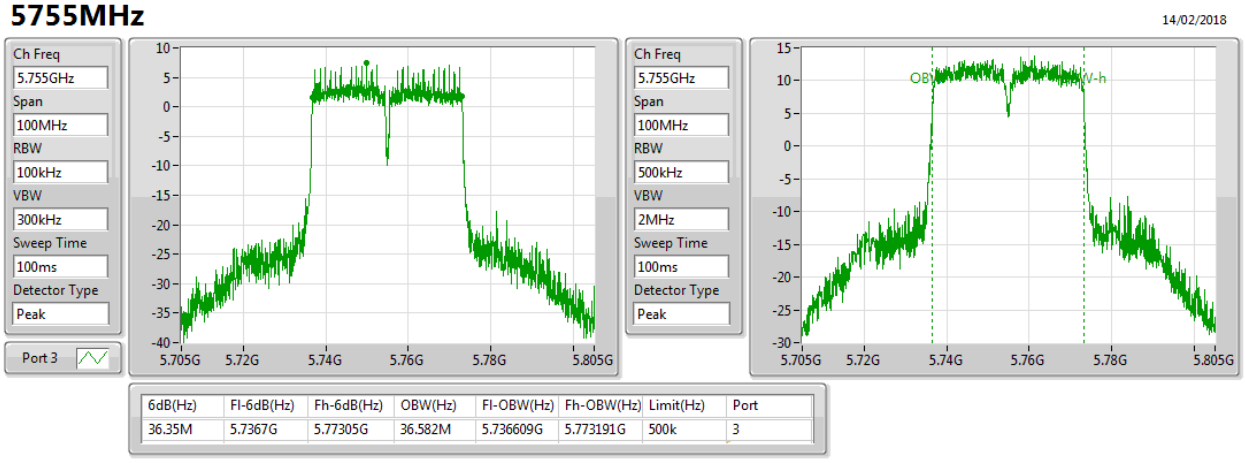


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.7767G	5.81305G	37.031M	5.776359G	5.813391G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 3 / CH 151 / 5755 MHz

802.11ac VHT40_Nss4,(MCS0)_4TX(Port3) **EBW**

5755MHz

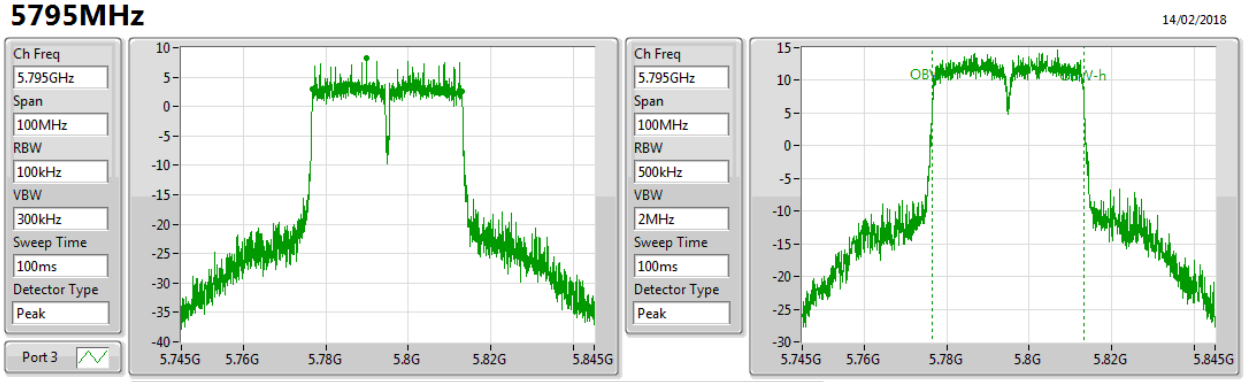


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.7367G	5.77305G	36.582M	5.736609G	5.773191G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 3 / CH 159 / 5795 MHz

802.11ac VHT40_Nss4,(MCS0)_4TX(Port3) **EBW**

5795MHz

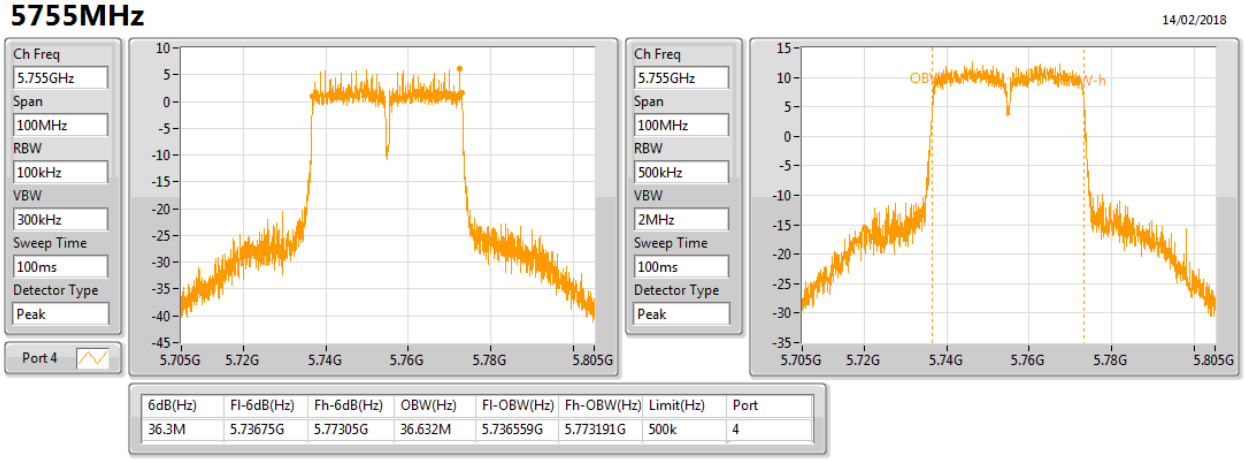


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.77675G	5.81305G	36.682M	5.776559G	5.813241G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 4 / CH 151 / 5755 MHz

802.11ac VHT40_Nss4,(MCS0)_4TX(Port4) **EBW**

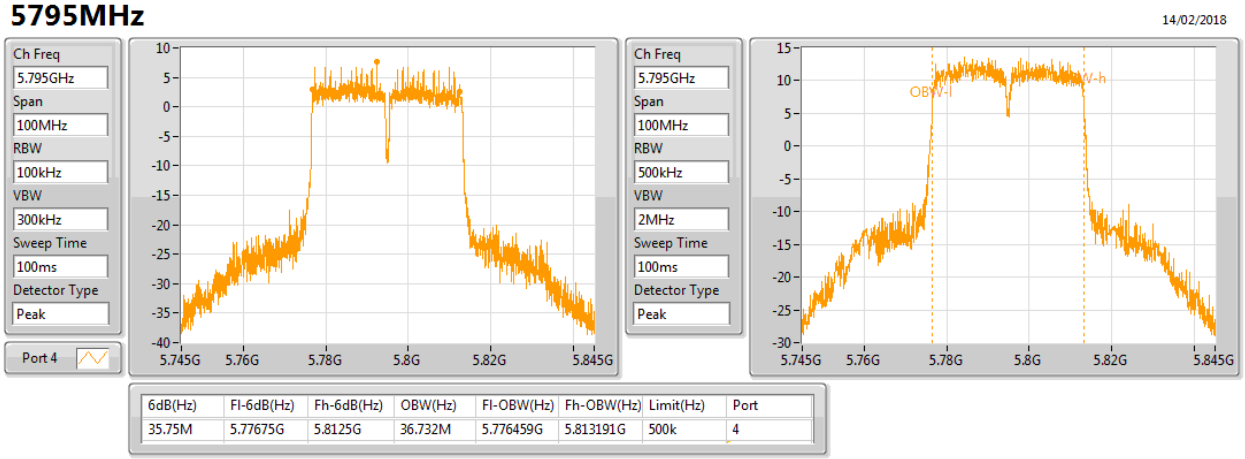
5755MHz



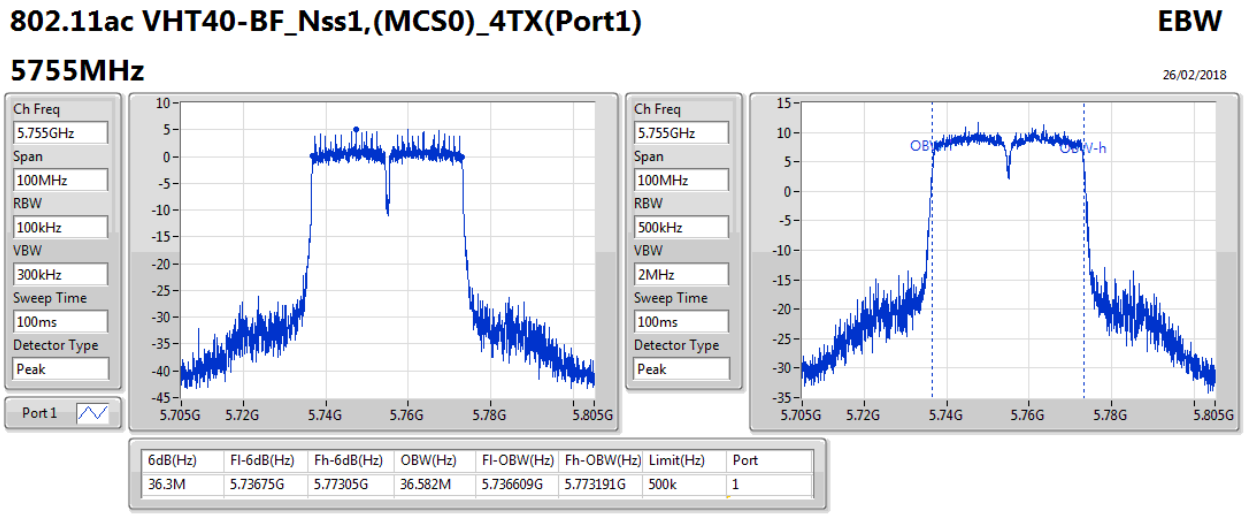
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 4S4T SDM / Ant. 4 / CH 159 / 5795 MHz z

802.11ac VHT40_Nss4,(MCS0)_4TX(Port4) **EBW**

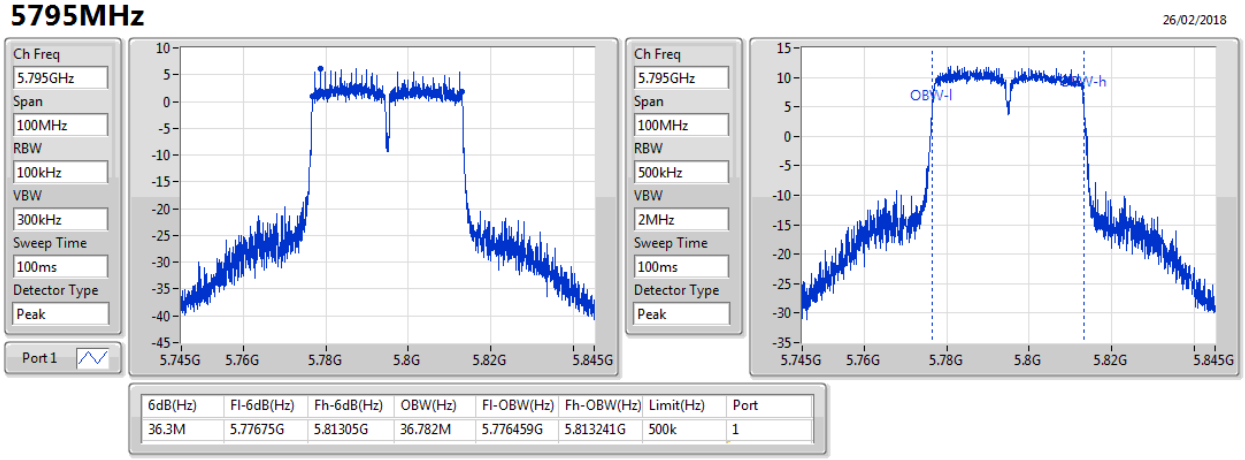
5795MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 1 / CH 151 / 5755 MHz



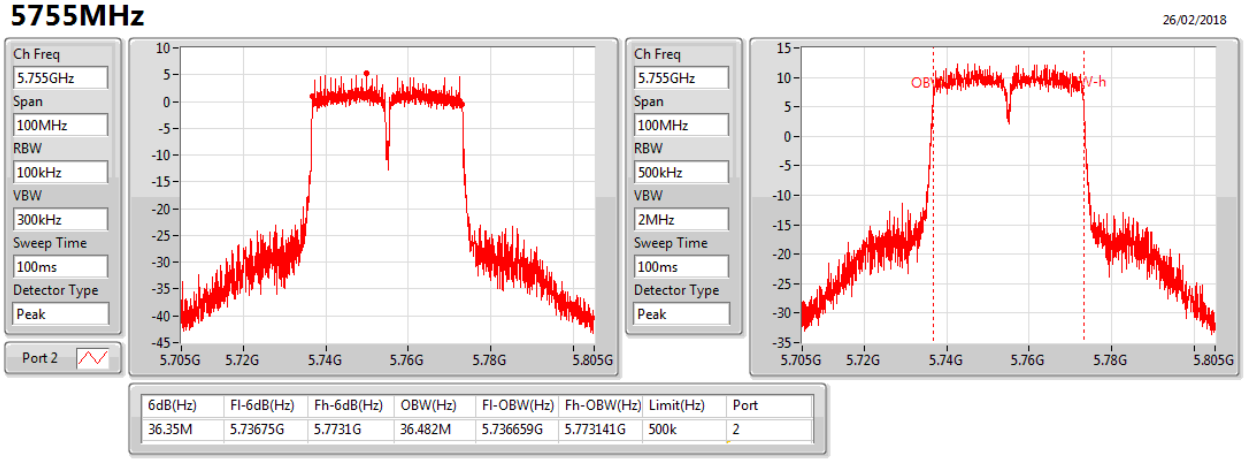
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 1 / CH 159 / 5795 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 2 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port2) **EBW**

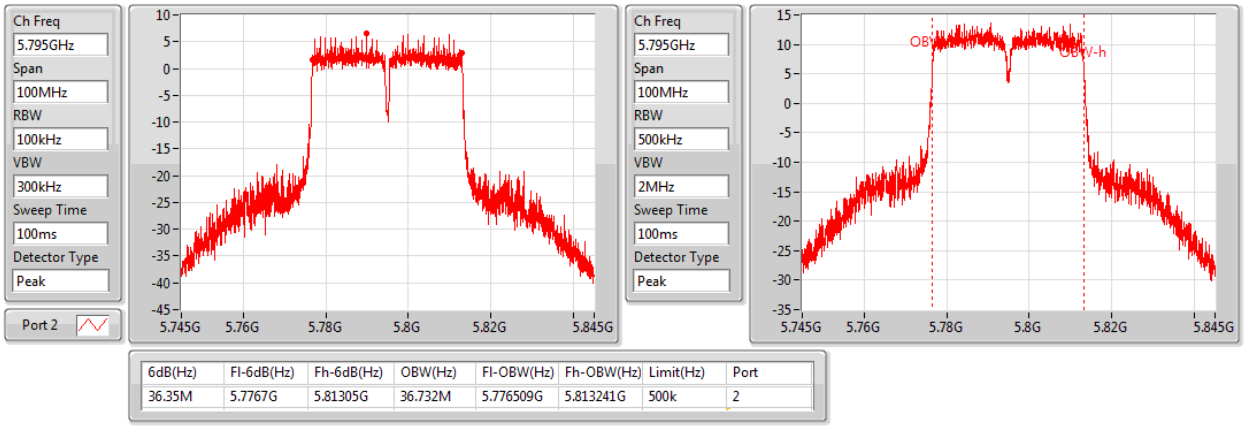
5755MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 2 / CH 159 / 5795 MHz

802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port2) **EBW**

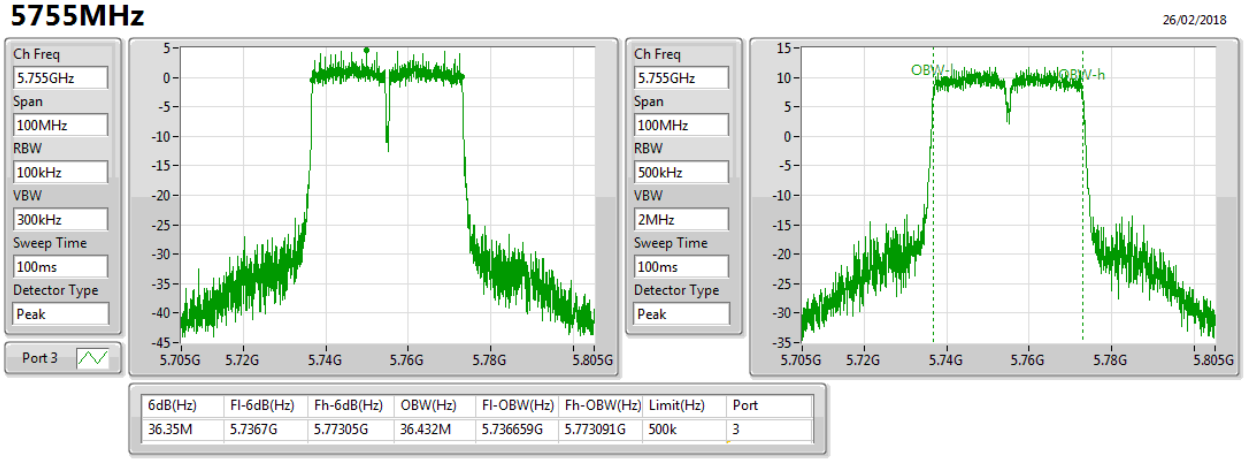
5795MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 3 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port3) **EBW**

5755MHz

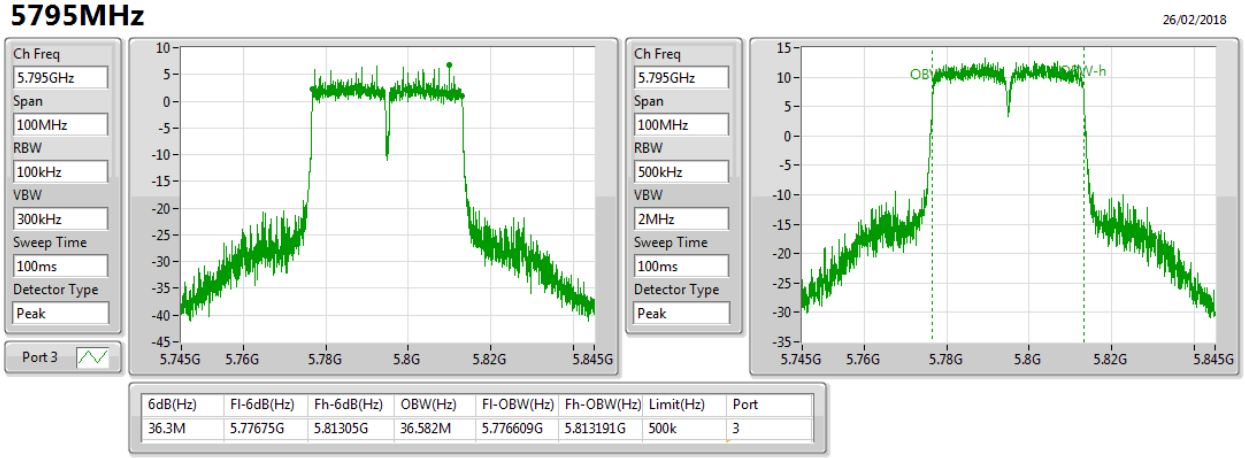


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.7367G	5.77305G	36.432M	5.736659G	5.773091G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 3 / CH 159 / 5795 MHz

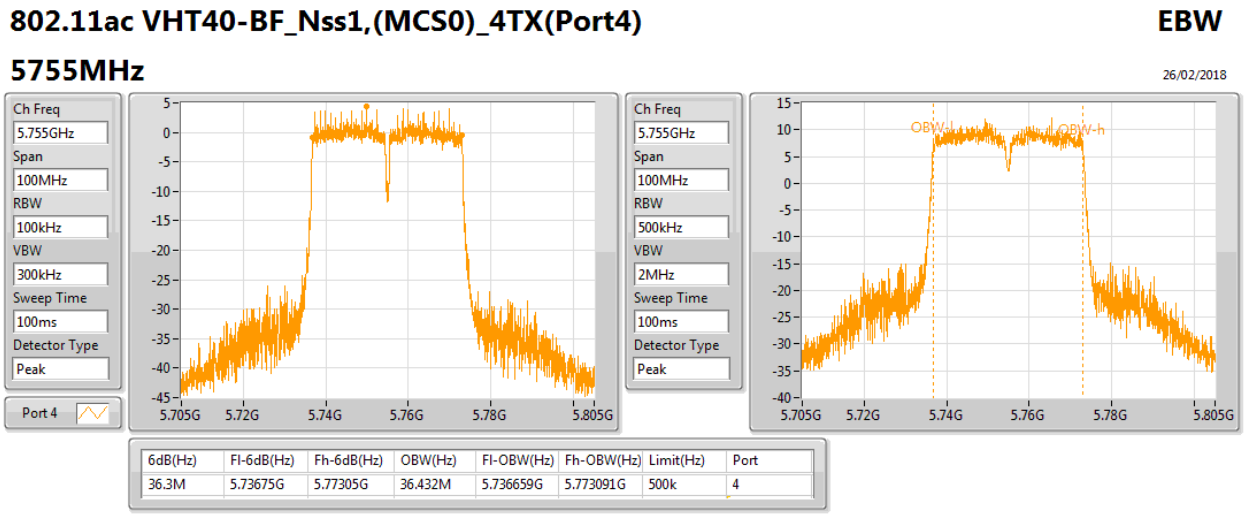
802.11ac VHT40-BF_Nss1,(MCS0)_4TX(Port3) **EBW**

5795MHz

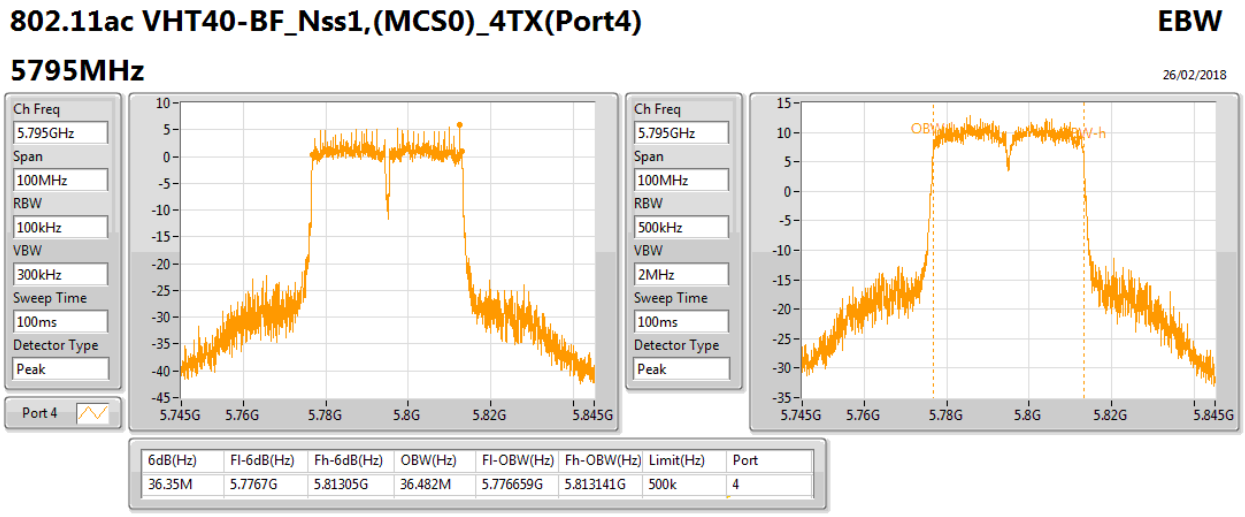


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.77675G	5.81305G	36.582M	5.776609G	5.813191G	500k	3

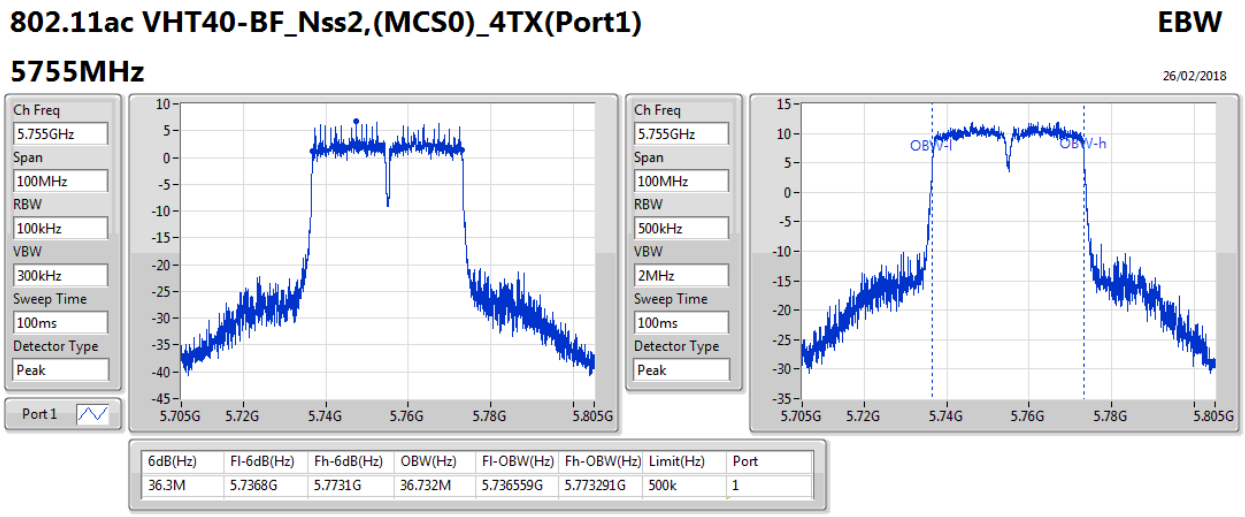
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 4 / CH 151 / 5755 MHz



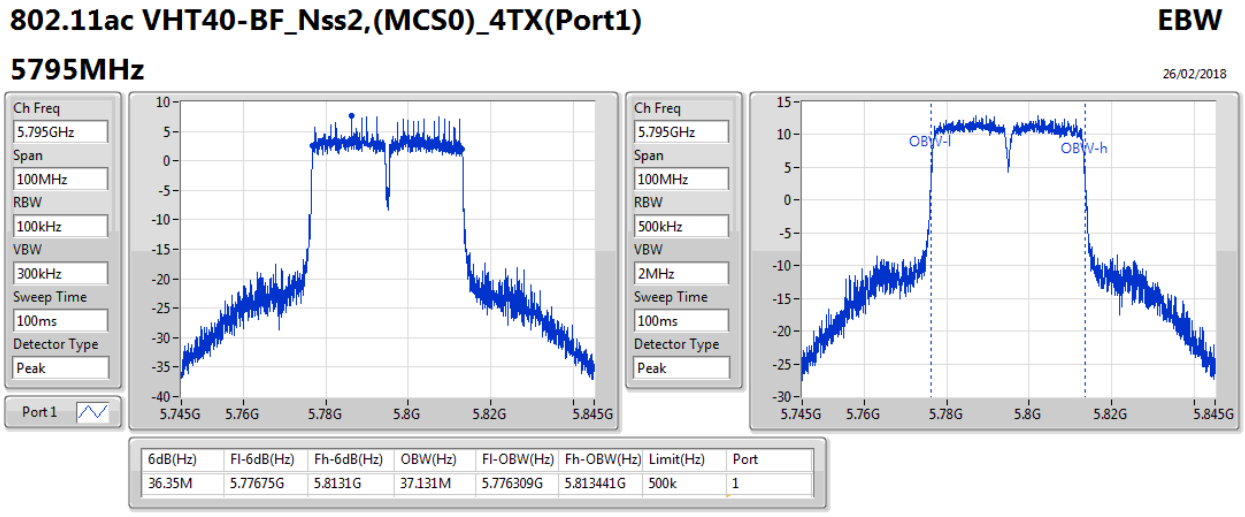
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 1S4T TXBF / Ant. 4 / CH 159 / 5795 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 1 / CH 151 / 5755 MHz



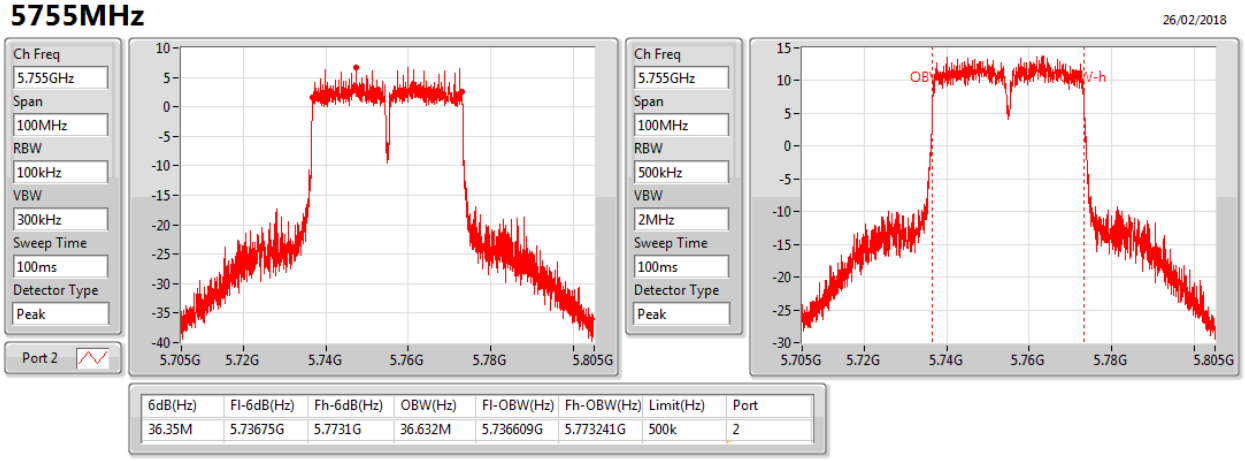
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 1 / CH 159 / 5795 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 2 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5755MHz

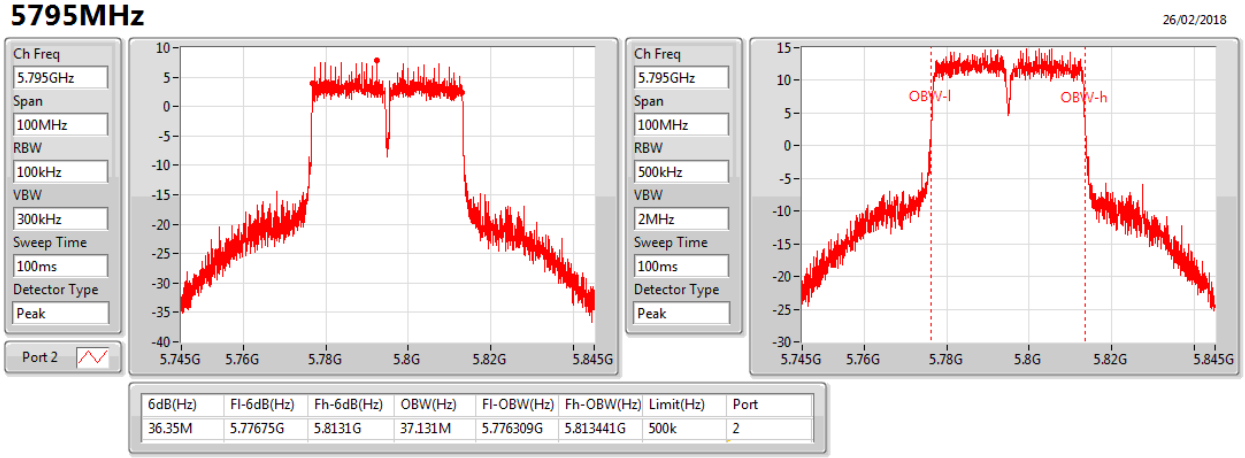


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.73675G	5.7731G	36.632M	5.736609G	5.773241G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 2 / CH 159 / 5795 MHz

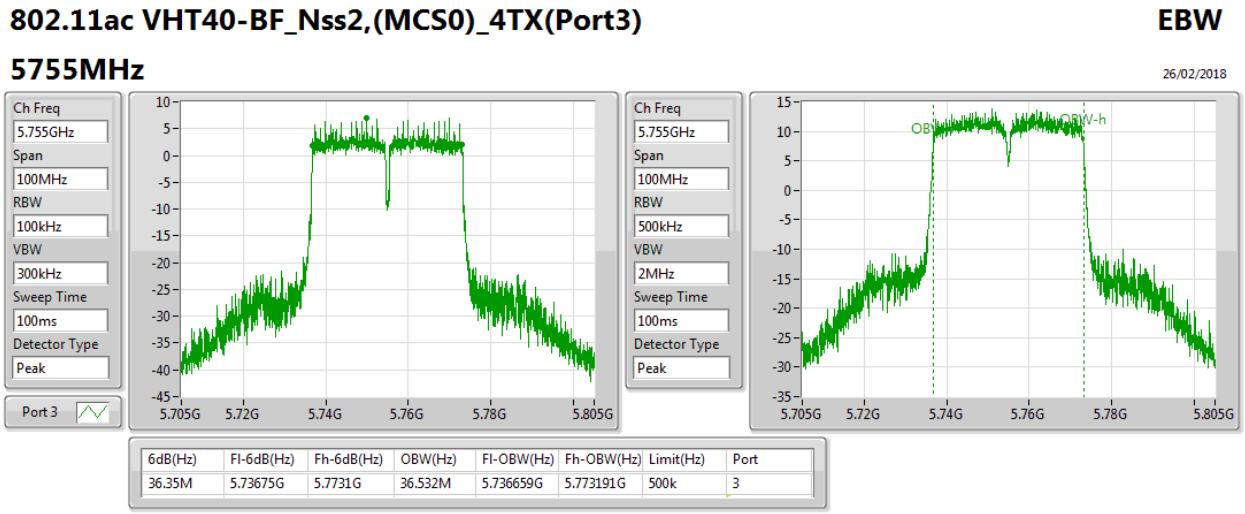
802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5795MHz

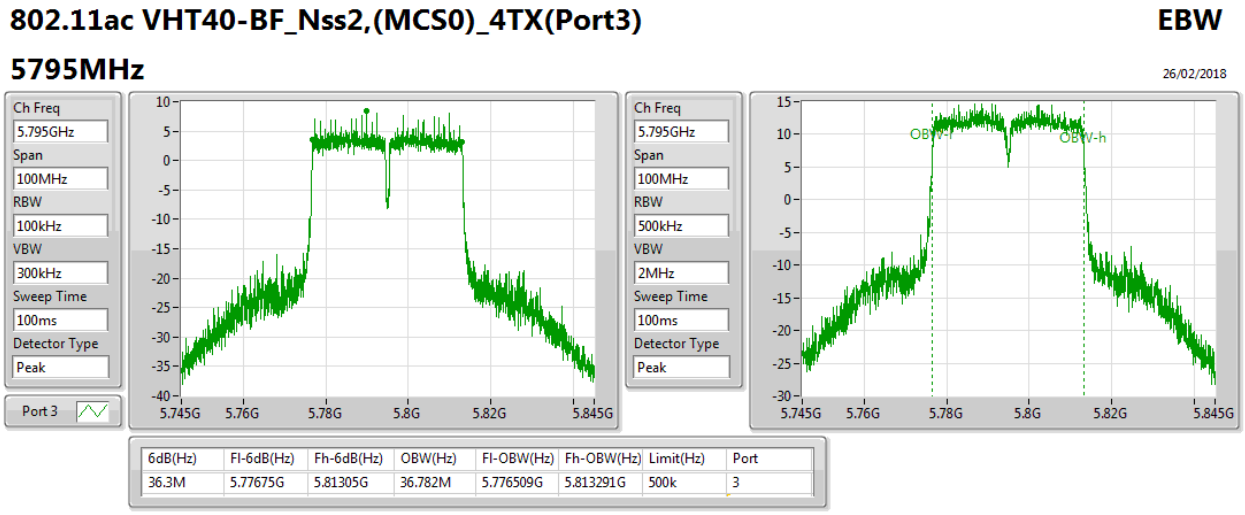


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.77675G	5.8131G	37.131M	5.776309G	5.813441G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 3 / CH 151 / 5755 MHz



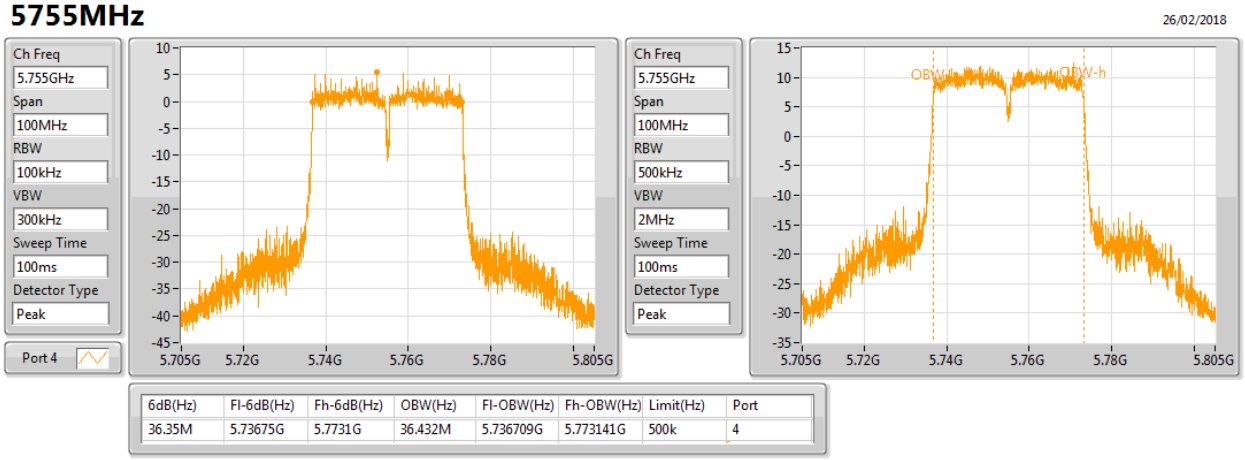
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 3 / CH 159 / 5795 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 4 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5755MHz

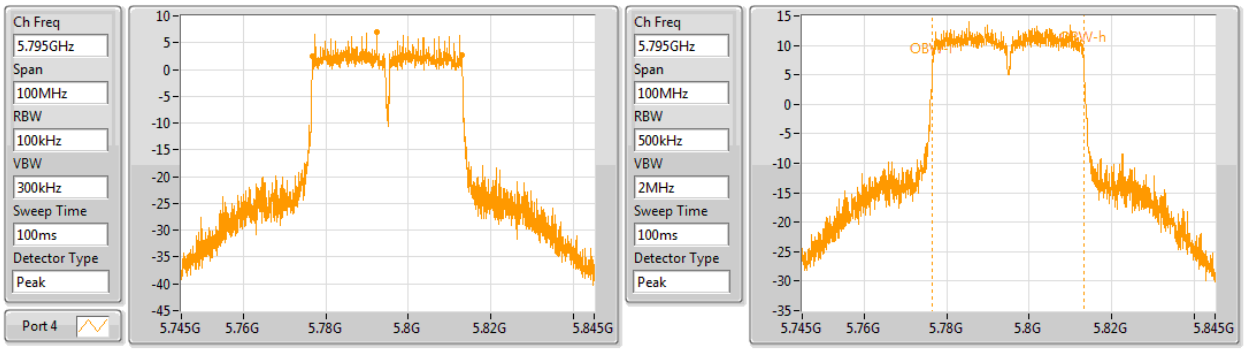


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.73675G	5.7731G	36.432M	5.736709G	5.773141G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 2S4T TXBF / Ant. 4 / CH 159 / 5795 MHz

802.11ac VHT40-BF_Nss2,(MCS0)_4TX(Port4) **EBW**

5795MHz

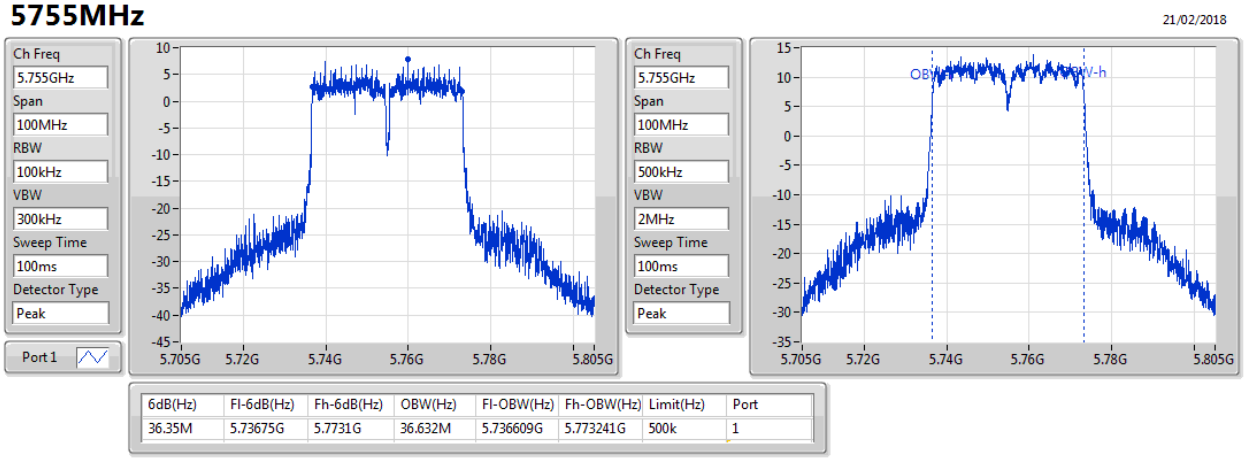


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.77675G	5.81305G	36.632M	5.776559G	5.813191G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 1 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port1) EBW

5755MHz

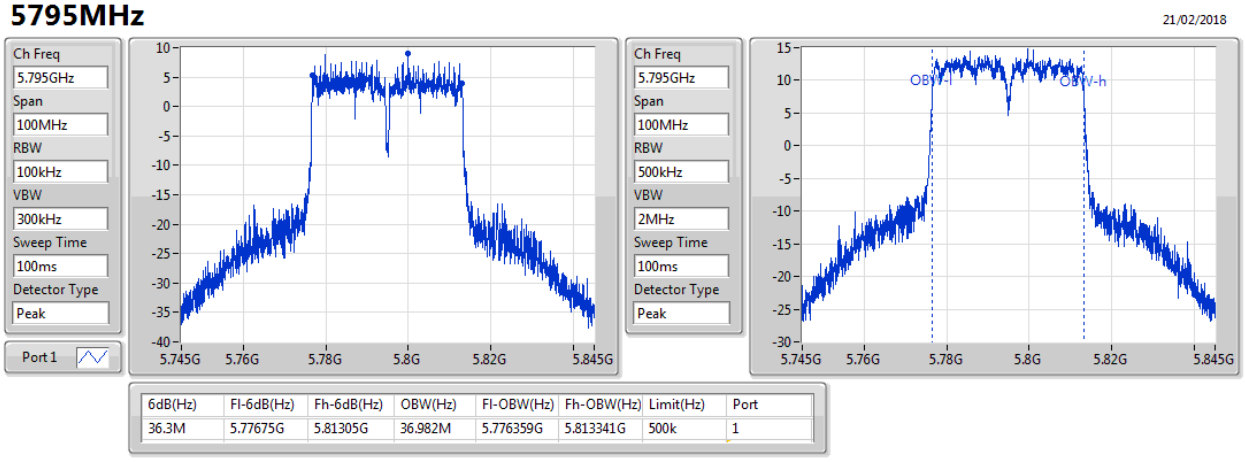


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.73675G	5.7731G	36.632M	5.736609G	5.773241G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 1 / CH 159 / 5795 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port1) EBW

5795MHz

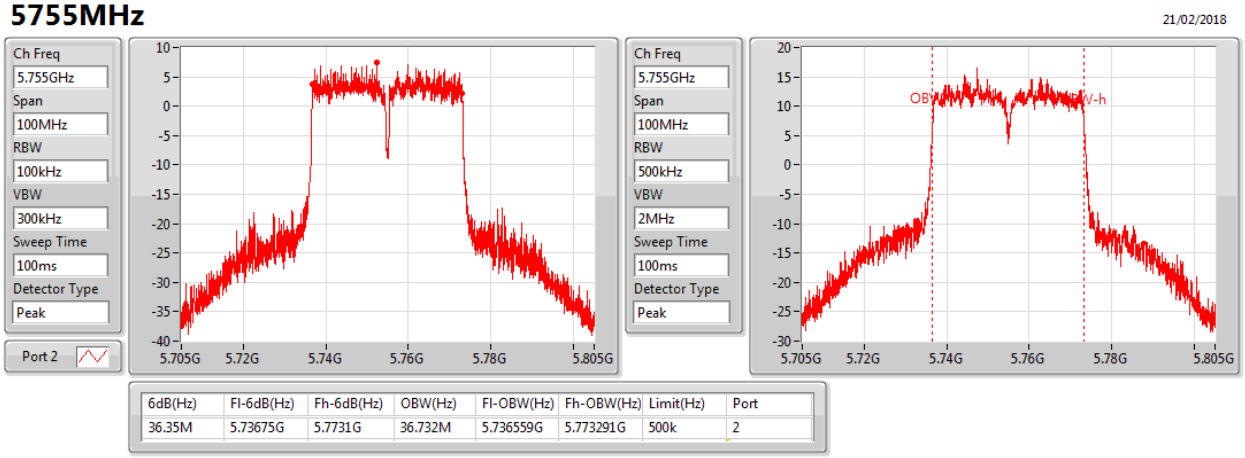


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.3M	5.77675G	5.81305G	36.982M	5.776359G	5.813341G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 2 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5755MHz

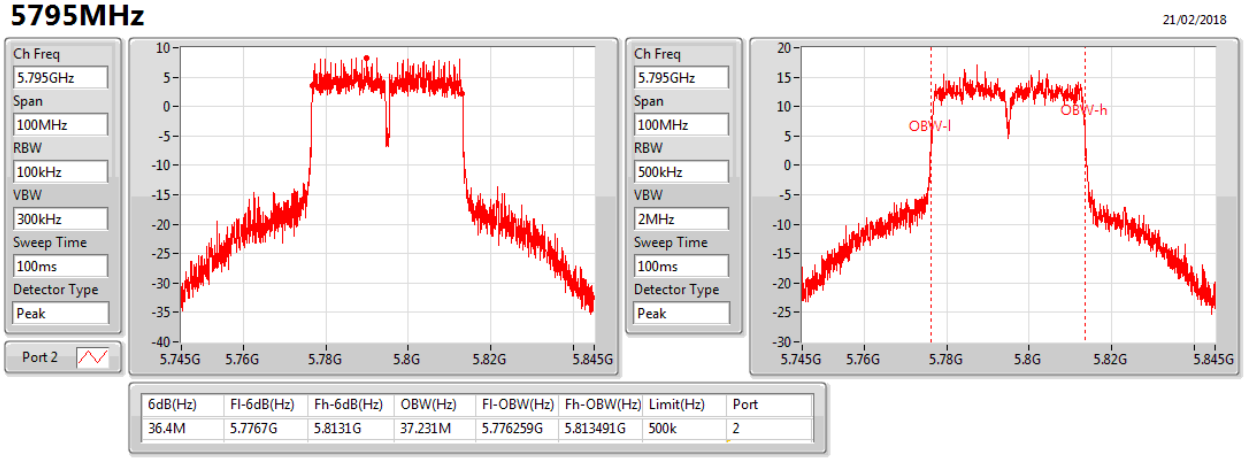


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.73675G	5.7731G	36.732M	5.736559G	5.773291G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 2 / CH 159 / 5795 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port2) **EBW**

5795MHz

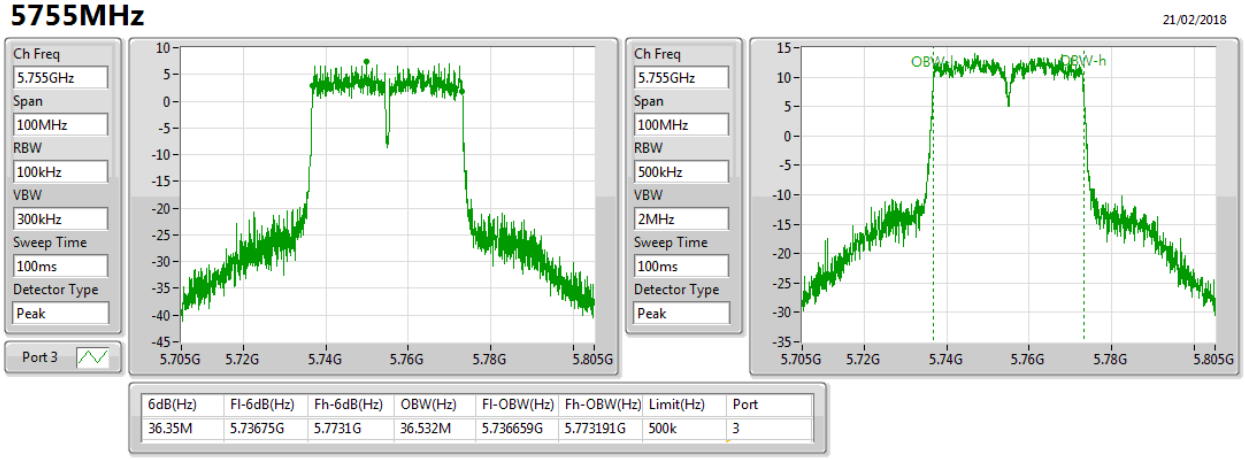


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.4M	5.7767G	5.8131G	37.231M	5.776259G	5.813491G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 3 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port3) **EBW**

5755MHz

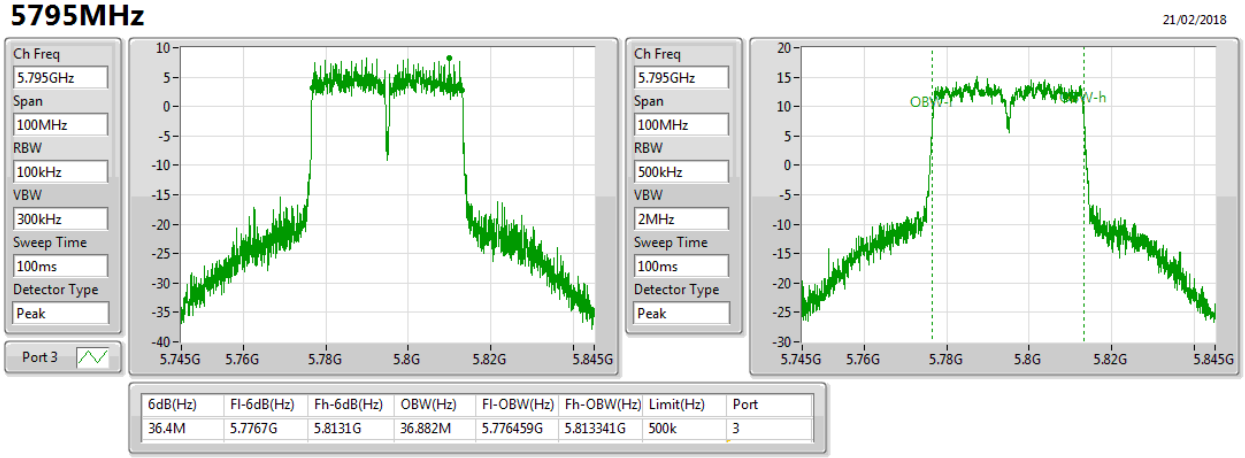


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.73675G	5.7731G	36.532M	5.736659G	5.773191G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 3 / CH 159 / 5795 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port3) **EBW**

5795MHz

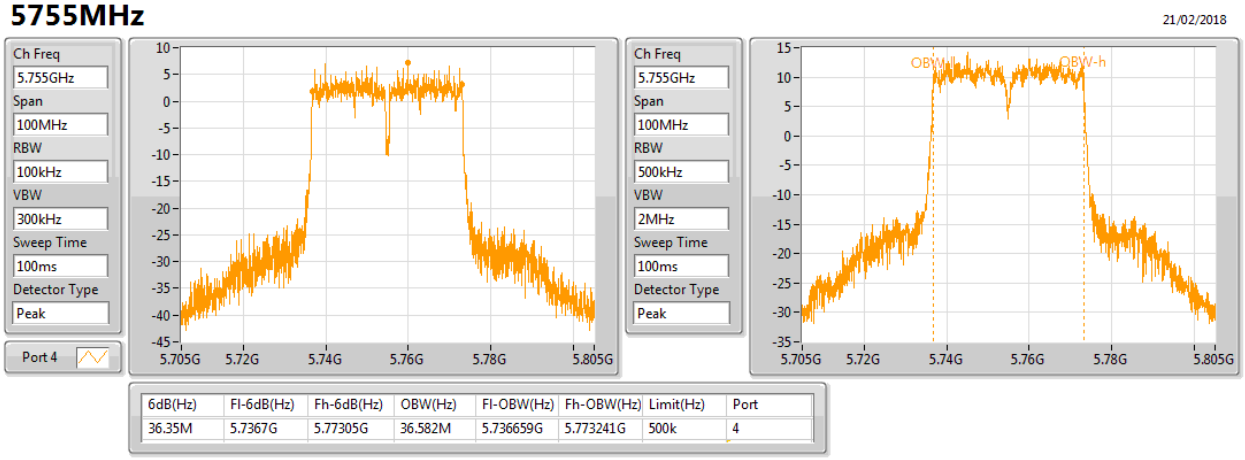


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.4M	5.7767G	5.8131G	36.882M	5.776459G	5.813341G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 4 / CH 151 / 5755 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port4) **EBW**

5755MHz

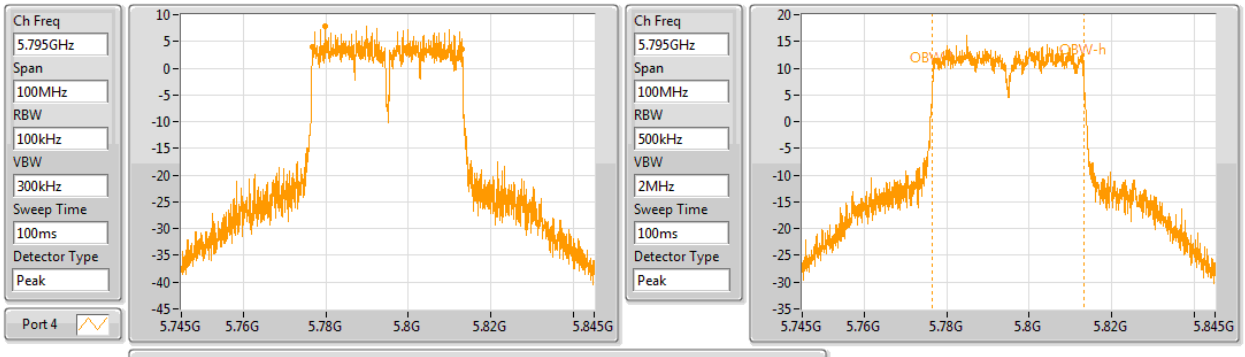


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.7367G	5.77305G	36.582M	5.736659G	5.773241G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 40MHz 3S4T TXBF / Ant. 4 / CH 159 / 5795 MHz

802.11ac VHT40-BF_Nss3,(MCS0)_4TX(Port4) **EBW**

5795MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.35M	5.77675G	5.8131G	36.732M	5.776559G	5.813291G	500k	4

Configuration IEEE 802.11ac 80MHz

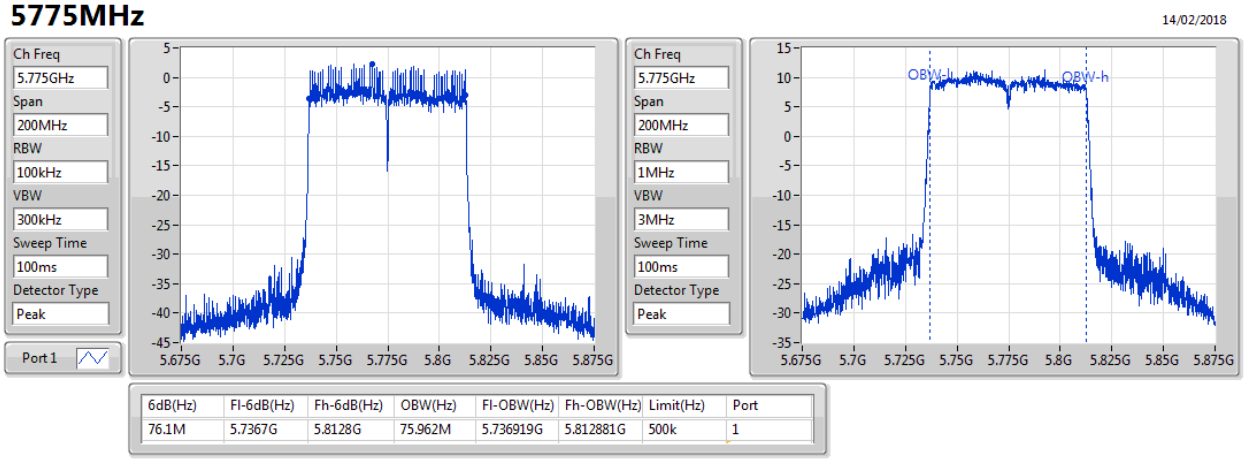
6dB Bandwidth (MHz)								
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Min. Limit (kHz)	Test Result
802.11ac 80MHz (SDM)	4 stream 4TX	5775 MHz	76.100	76.400	76.100	76.300	500	**PASS**
802.11ac 80MHz (TXBF)	1 stream 4TX	5775 MHz	75.600	76.300	76.300	76.400	500	**PASS**
802.11ac 80MHz (TXBF)	2 stream 4TX	5775 MHz	75.800	76.400	75.700	76.400	500	**PASS**
802.11ac 80MHz (TXBF)	3 stream 4TX	5775 MHz	76.000	76.400	76.400	76.200	500	**PASS**

99% Occupied Bandwidth (MHz)							
Mode	Number of Transmit Chains (NTX)	Frequency	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Test Result
802.11ac 80MHz (SDM)	4 stream 4TX	5775 MHz	75.962	76.062	75.962	75.962	**PASS**
802.11ac 80MHz (TXBF)	1 stream 4TX	5775 MHz	75.762	75.862	75.862	75.862	**PASS**
802.11ac 80MHz (TXBF)	2 stream 4TX	5775 MHz	75.962	75.862	75.862	75.862	**PASS**
802.11ac 80MHz (TXBF)	3 stream 4TX	5775 MHz	75.962	76.062	75.962	76.062	**PASS**

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 4S4T SDM / Ant. 1 / CH 155 / 5775 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port1) **EBW**

5775MHz

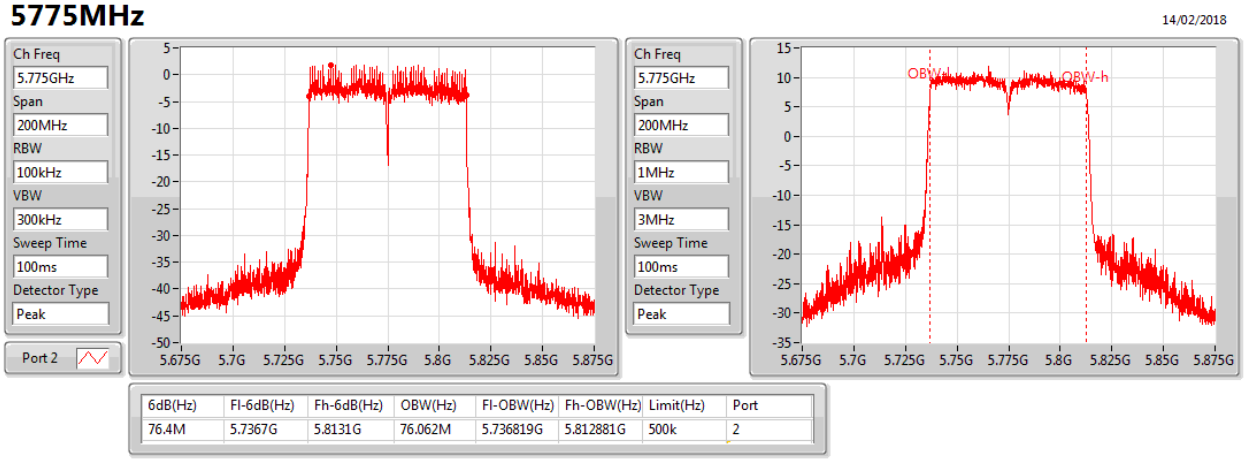


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.1M	5.7367G	5.8128G	75.962M	5.736919G	5.812881G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 4S4T SDM / Ant. 2 / CH 155 / 5775 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port2) **EBW**

5775MHz

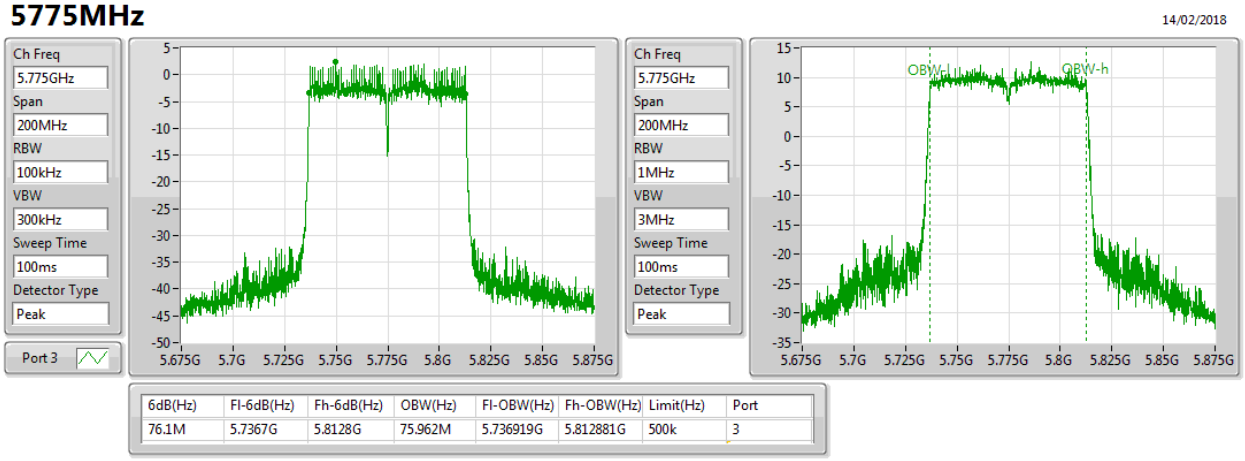


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.4M	5.7367G	5.8131G	76.062M	5.736819G	5.812881G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 4S4T SDM / Ant. 3 / CH 155 / 5775 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port3) **EBW**

5775MHz

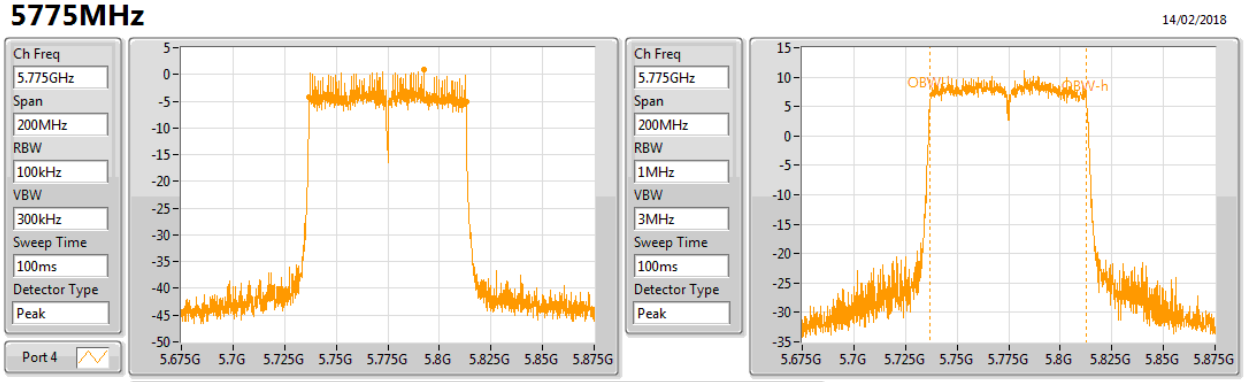


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.1M	5.7367G	5.8128G	75.962M	5.736919G	5.812881G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 4S4T SDM / Ant. 4 / CH 155 / 5775 MHz

802.11ac VHT80_Nss4,(MCS0)_4TX(Port4) **EBW**

5775MHz

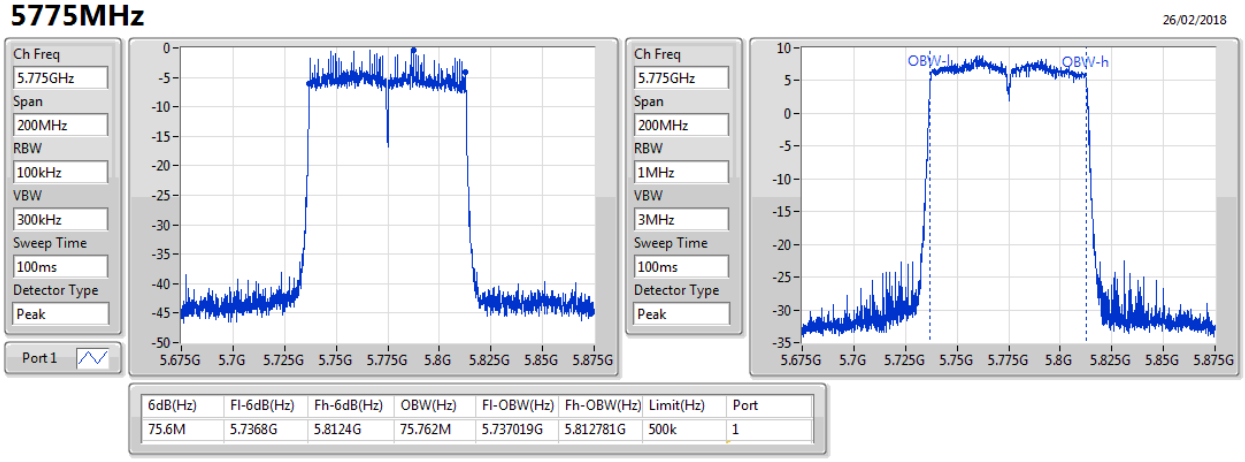


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.3M	5.7367G	5.813G	75.962M	5.736919G	5.812881G	500k	4

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 1S4T TXBF / Ant. 1 / CH 155 / 5775 MHz

802.11ac VHT80-BF_Nss1,(MCS0)_4TX(Port1) **EBW**

5775MHz

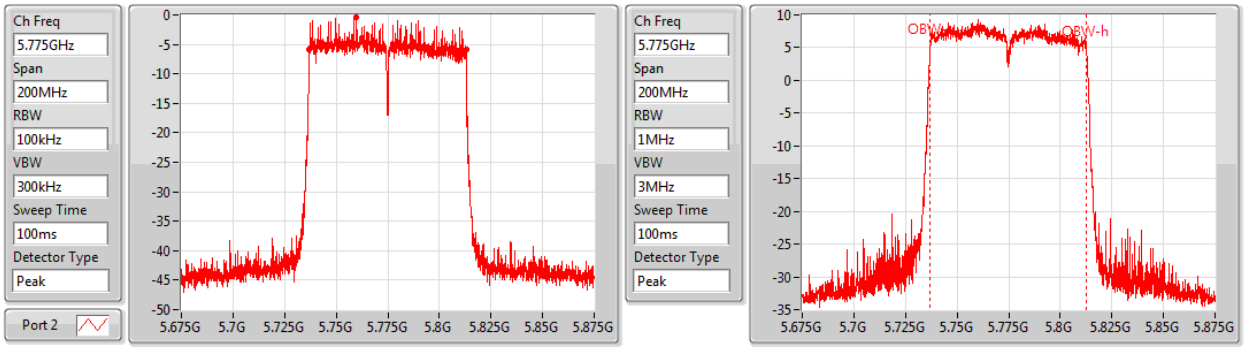


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75.6M	5.7368G	5.8124G	75.762M	5.737019G	5.812781G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 1S4T TXBF / Ant. 2 / CH 155 / 5775 MHz

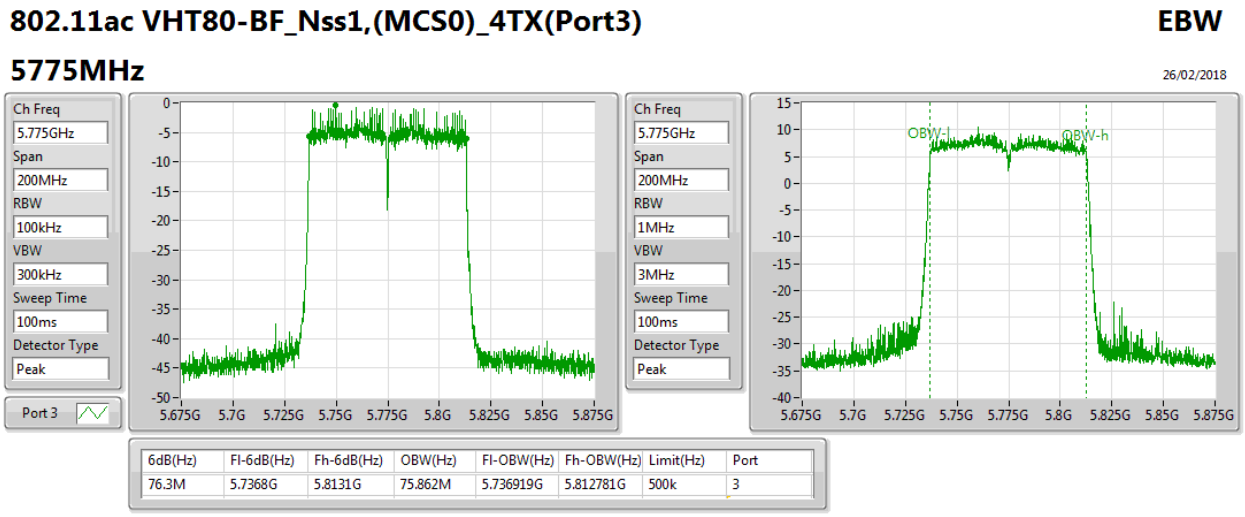
802.11ac VHT80-BF_Nss1,(MCS0)_4TX(Port2) **EBW**

5775MHz

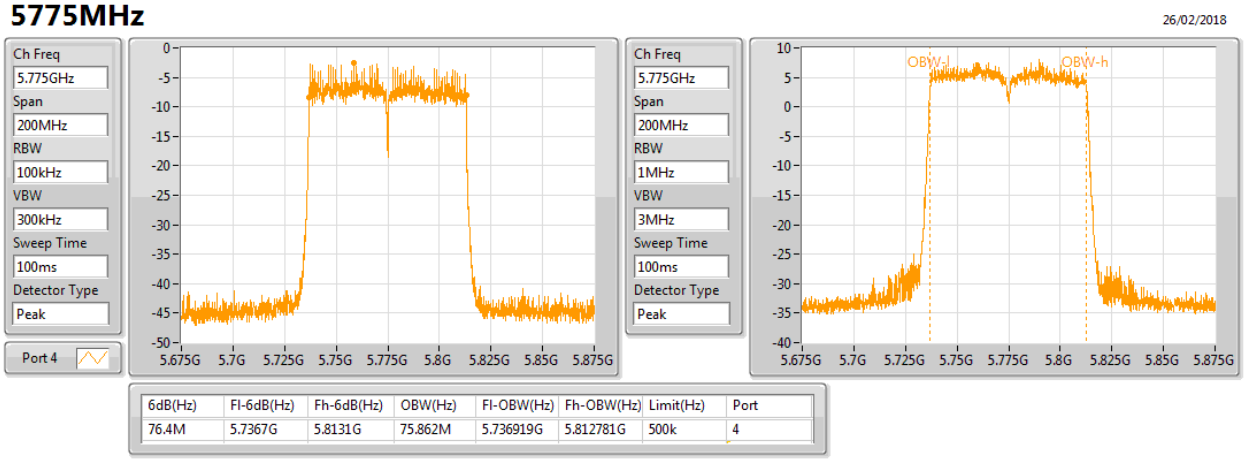


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.3M	5.7368G	5.8131G	75.862M	5.736919G	5.812781G	500k	2

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 1S4T TXBF / Ant. 3 / CH 155 / 5775 MHz



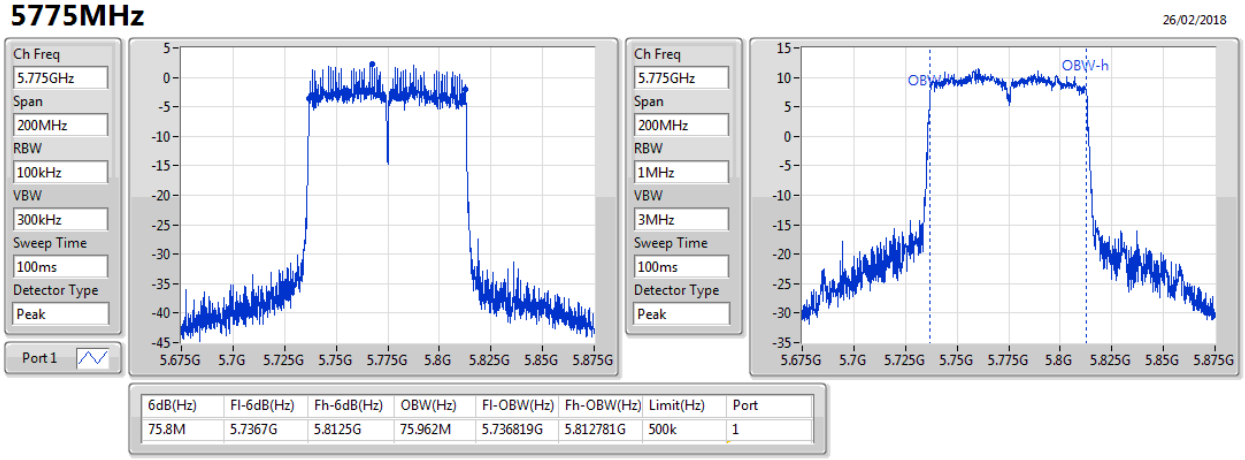
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 1S4T TXBF / Ant. 4 / CH 155 / 5775 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 2S4T TXBF / Ant. 1 / CH 155 / 5775 MHz

802.11ac VHT80-BF_Nss2,(MCS0)_4TX(Port1) **EBW**

5775MHz

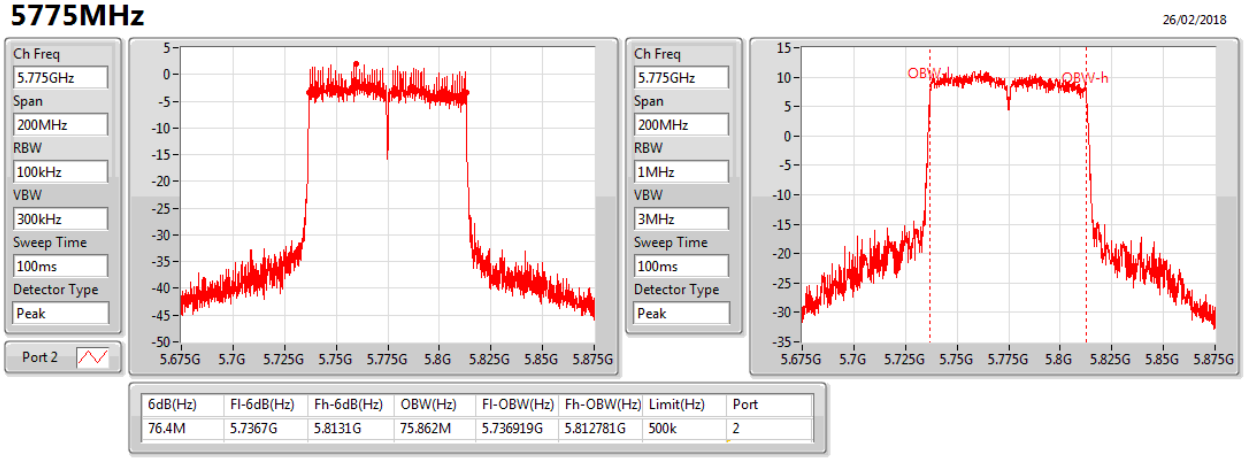


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75.8M	5.7367G	5.8125G	75.962M	5.736819G	5.812781G	500k	1

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 2S4T TXBF / Ant. 2 / CH 155 / 5775 MHz

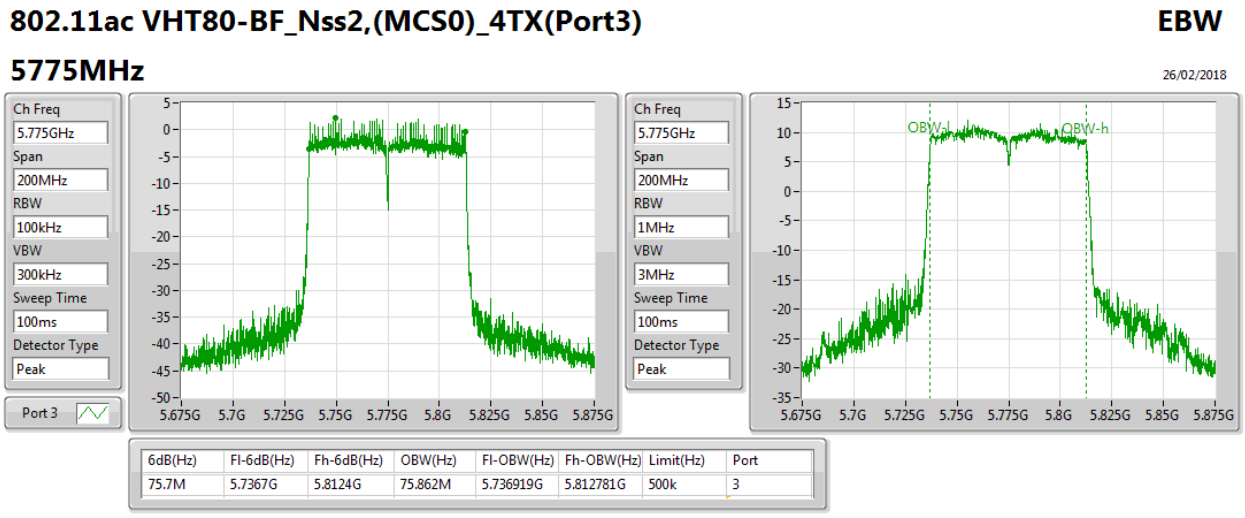
802.11ac VHT80-BF_Nss2,(MCS0)_4TX(Port2) **EBW**

5775MHz

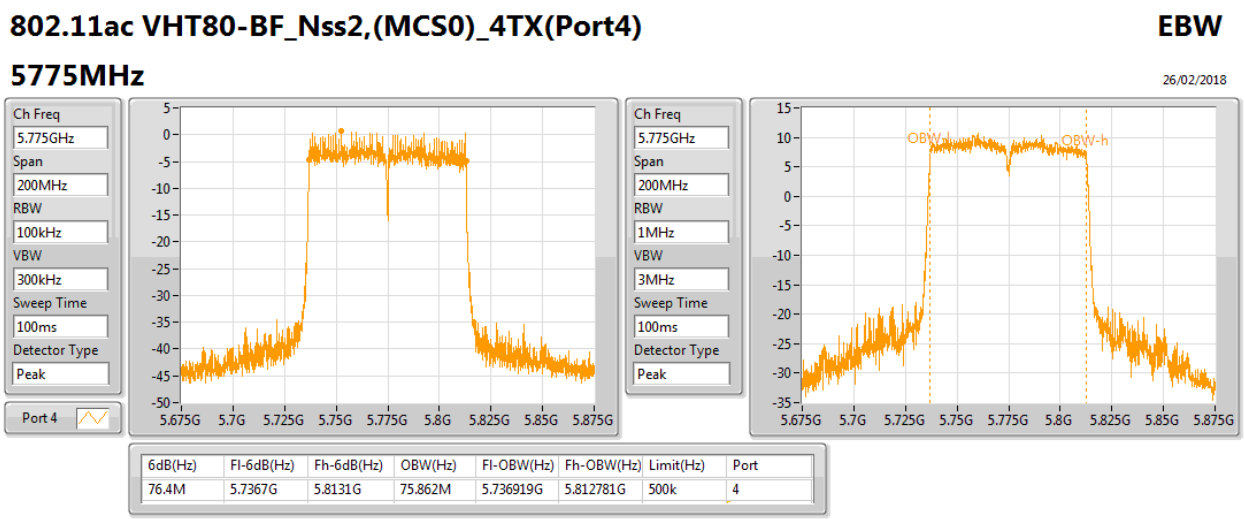


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.4M	5.7367G	5.8131G	75.862M	5.736919G	5.812781G	500k	2

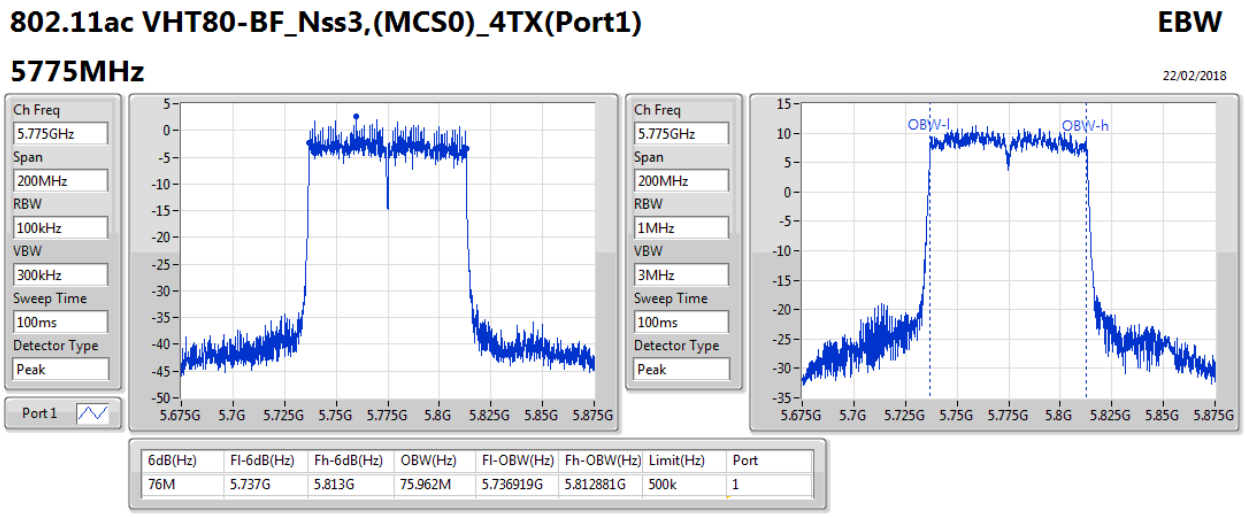
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 2S4T TXBF / Ant. 3 / CH 155 / 5775 MHz



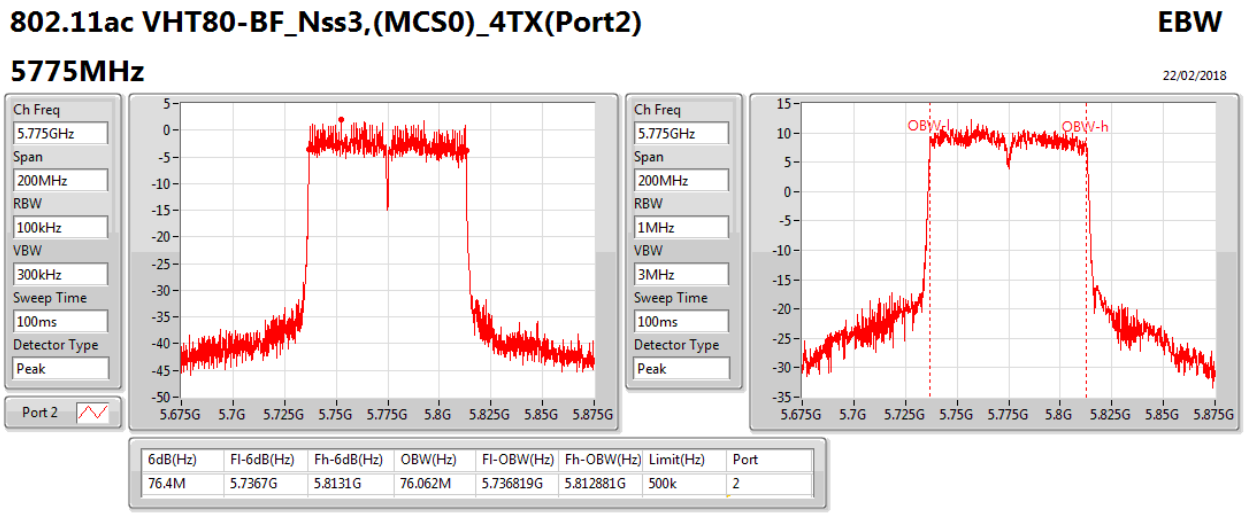
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 2S4T TXBF / Ant. 4 / CH 155 / 5775 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 3S4T TXBF / Ant. 1 / CH 155 / 5775 MHz



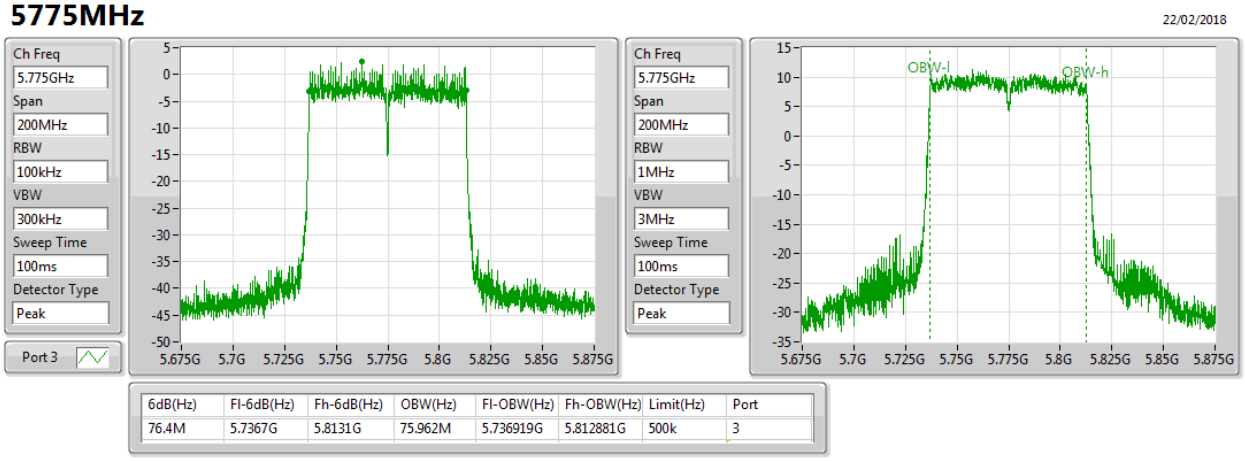
6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 3S4T TXBF / Ant. 2 / CH 155 / 5775 MHz



6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 3S4T TXBF / Ant. 3 / CH 155 / 5775 MHz

802.11ac VHT80-BF_Nss3,(MCS0)_4TX(Port3) **EBW**

5775MHz

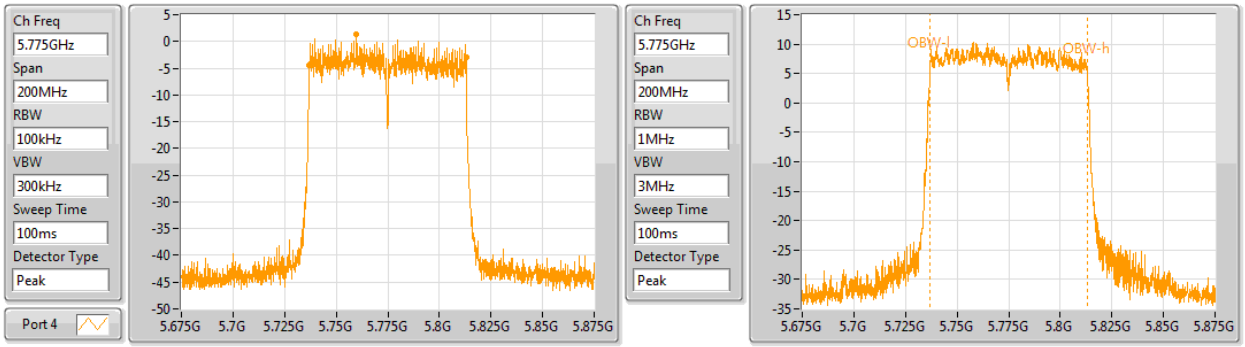


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.4M	5.7367G	5.8131G	75.962M	5.736919G	5.812881G	500k	3

6 dB Bandwidth and 99% Occupied Plot on Configuration IEEE 802.11ac 80MHz 3S4T TXBF / Ant. 4 / CH 155 / 5775 MHz

802.11ac VHT80-BF_Nss3,(MCS0)_4TX(Port4) **EBW**

5775MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
76.2M	5.7368G	5.813G	76.062M	5.736919G	5.812981G	500k	4

2.4. Maximum Conducted Output Power Measurement

2.4.1. Limit

Operation Band	EUT Category		Limit
U-NII-1	☐	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	☐	Fixed point-to-point Access Point	1 Watt (30 dBm)
	☒	Indoor Access Point	1 Watt (30 dBm)
	☐	Mobile and Portable client device	250mW (24 dBm)
U-NII-3	☒	---	1 Watt (30 dBm)

Per KDB 662911 Method of conducted output power measurement 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(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

2.4.2. Measuring Instruments and Setting

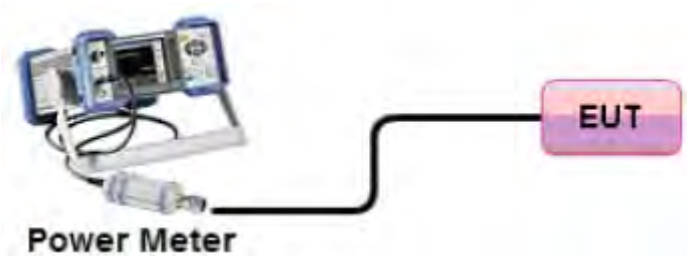
Please refer to section 3 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Power Meter Paramete	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Power Sensor	U2021XA

2.4.3. Test Procedures

1. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under 789033 D02 General UNII Test Procedures New Rules v02r01, in section “Maximum conducted output power Method AVGPM-G” , 12/14/2017
2. The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor and enable the trigger function to get the all on time transmission . Record the average power level.
3. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

2.4.4. Test Setup Layout

Maximum Conducted Output Power


2.4.5. Test Deviation

There is no deviation with the original standard.

2.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4.7. Test Result of Maximum Conducted Output Power

Temperature	18.7℃	Humidity	46%
Test Engineer	Brian Sun & Ron Huang	Test Date	Feb. 13, 2018 ~ Jul. 23, 2018
Duty Cycle	OFDM, 1S4T, CDD: 99.1%		

Configuration IEEE 802.11a

<OFDM, 1S4T, CDD>

Channel	Frequency	Conducted Power (dBm)					Antenna Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total			
36	5180 MHz	17.99	17.91	17.65	16.99	23.67	4.81	30.00	**PASS**
40	5200 MHz	14.44	14.50	13.86	13.40	20.09	4.91	30.00	**PASS**
48	5240 MHz	22.59	22.36	21.83	21.47	28.11	4.95	30.00	**PASS**
149	5745 MHz	20.79	20.77	20.72	19.76	26.55	5.37	30.00	**PASS**
157	5785 MHz	19.72	20.10	20.00	19.76	25.92	5.24	30.00	**PASS**
165	5825 MHz	19.61	19.69	19.77	19.14	25.58	5.30	30.00	**PASS**

Note:

5180 MHz= Antenna Gain= 4.81dBi <6dBi, so the limit doesn't reduce.

5200 MHz= Antenna Gain= 4.91dBi <6dBi, so the limit doesn't reduce.

5240 MHz= Antenna Gain= 4.95dBi <6dBi, so the limit doesn't reduce.

5745 MHz= Antenna Gain= 5.37dBi <6dBi, so the limit doesn't reduce.

5785 MHz= Antenna Gain= 5.24dBi <6dBi, so the limit doesn't reduce.

5825 MHz= Antenna Gain= 5.30dBi <6dBi, so the limit doesn't reduce.

Temperature	18.7℃	Humidity	46%
Test Engineer	Brian Sun & Ron Huang	Test Date	Feb. 13, 2018 ~ Jul. 23, 2018
Duty Cycle	Nss 4 MCS0, 4S4T, SDM: 96.6% Nss 1 MCS0, 1S4T, TXBF: 95.5% Nss 2 MCS0, 2S4T, TXBF: 94.1% Nss 3 MCS0, 3S4T, TXBF: 95.7%		

Configuration IEEE 802.11ac 20MHz

<Nss 4 MCS0, 4S4T, SDM>

Channel	Frequency	Conducted Power (dBm)					Antenna Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
36	5180 MHz	20.18	19.92	19.79	19.28	25.83	1.16	30.00	**PASS**
40	5200 MHz	20.11	19.83	19.76	19.23	25.76	1.23	30.00	**PASS**
48	5240 MHz	23.13	23.05	22.83	22.29	28.86	1.24	30.00	**PASS**
149	5745 MHz	23.76	24.08	23.95	23.19	29.78	1.29	30.00	**PASS**
157	5785 MHz	23.72	24.16	23.85	23.32	29.79	1.23	30.00	**PASS**
165	5825 MHz	23.77	24.04	23.87	23.28	29.77	1.33	30.00	**PASS**

Note:

5180 MHz= Antenna Gain= 1.16dBi <6dBi, so the limit doesn't reduce.

5200 MHz= Antenna Gain= 1.23dBi <6dBi, so the limit doesn't reduce.

5240 MHz= Antenna Gain= 1.24dBi <6dBi, so the limit doesn't reduce.

5745 MHz= Antenna Gain= 1.29dBi <6dBi, so the limit doesn't reduce.

5785 MHz= Antenna Gain= 1.23dBi <6dBi, so the limit doesn't reduce.

5825 MHz= Antenna Gain= 1.33dBi <6dBi, so the limit doesn't reduce.

<Nss 1 MCS0, 1S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
36	5180 MHz	18.12	18.03	17.53	16.91	23.69	6.83	29.17	**PASS**
40	5200 MHz	14.41	14.49	14.08	13.64	20.19	6.91	29.09	**PASS**
48	5240 MHz	22.47	22.42	22.07	21.33	28.12	6.92	29.08	**PASS**
149	5745 MHz	20.81	20.79	20.76	19.79	26.58	7.41	28.59	**PASS**
157	5785 MHz	19.91	20.09	19.94	19.82	25.96	7.36	28.64	**PASS**
165	5825 MHz	19.57	19.77	19.54	19.41	25.60	7.52	28.48	**PASS**

Note:

5180 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.83dBi>6dBi, so the power limit shall be reduced to 30-(6.83-6)=29.17dBm.

5200 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.91dBi>6dBi, so the power limit shall be reduced to 30-(6.91-6)=29.09dBm.

5240 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.92dBi>6dBi, so the power limit shall be reduced to 30-(6.92-6)=29.08dBm.

5745 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.41dBi>6dBi, so the power limit shall be reduced to 30-(7.41-6)=28.59dBm.

5785 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.36dBi>6dBi, so the power limit shall be reduced to 30-(7.36-6)=28.64dBm.

5825 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.52dBi>6dBi, so the power limit shall be reduced to 30-(7.52-6)=28.48dBm.

<Nss 2 MCS0, 2S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
36	5180 MHz	16.41	16.42	15.93	15.41	22.08	4.85	30.00	**PASS**
40	5200 MHz	18.28	18.13	17.60	17.06	23.81	4.91	30.00	**PASS**
48	5240 MHz	22.92	22.65	22.55	22.38	28.65	4.85	30.00	**PASS**
149	5745 MHz	20.15	20.43	20.33	19.89	26.23	5.13	30.00	**PASS**
157	5785 MHz	20.23	20.57	20.56	19.93	26.35	5.14	30.00	**PASS**
165	5825 MHz	20.89	21.44	21.35	20.73	27.13	5.35	30.00	**PASS**

Note:

5180 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.85dB<6dBi, so the limit doesn't reduce.

5200 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.91dBi<6dBi, so the limit doesn't reduce.

5240 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.85dBi<6dBi, so the limit doesn't reduce.

5745 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 5.13dBi<6dBi, so the limit doesn't reduce.

5785 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 5.14dBi<6dBi, so the limit doesn't reduce.

5825 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 5.35dBi<6dBi, so the limit doesn't reduce.

<Nss 3 MCS0, 3S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
36	5180 MHz	18.93	19.21	19.25	18.52	25.01	3.95	30.00	**PASS**
40	5200 MHz	18.97	19.35	19.38	18.71	25.13	4.02	30.00	**PASS**
48	5240 MHz	22.63	22.75	23.12	21.35	28.53	4.00	30.00	**PASS**
149	5745 MHz	21.86	22.44	22.38	21.86	28.16	4.09	30.00	**PASS**
157	5785 MHz	21.84	22.19	22.51	21.75	28.10	4.04	30.00	**PASS**
165	5825 MHz	22.94	23.53	23.52	22.96	29.27	4.10	30.00	**PASS**

Note:

5180 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 3.95dBi<6dBi, so the limit doesn't reduce.

5200 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.02dBi<6dBi, so the limit doesn't reduce.

5240 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.00dBi<6dBi, so the limit doesn't reduce.

5745 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.09dBi<6dBi, so the limit doesn't reduce.

5785 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.04dBi<6dBi, so the limit doesn't reduce.

5825 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.10dBi<6dBi, so the limit doesn't reduce.

Temperature	18.7℃	Humidity	46%
Test Engineer	Brian Sun & Ron Huang	Test Date	Feb. 13, 2018 ~ Jul. 23, 2018
Duty Cycle	Nss 4 MCS0, 4S4T, SDM: 93.9% Nss 1 MCS0, 1S4T, TXBF: 91.5% Nss 2 MCS0, 2S4T, TXBF: 95.9% Nss 3 MCS0, 3S4T, TXBF: 93.1%		

Configuration IEEE 802.11ac 40MHz

<Nss 4 MCS0, 4S4T, SDM>

Channel	Frequency	Conducted Power (dBm)					Antenna Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
38	5190 MHz	17.98	17.79	17.62	17.24	23.69	1.19	30.00	**PASS**
46	5230 MHz	22.23	22.41	22.19	21.69	28.16	1.24	30.00	**PASS**
151	5755 MHz	23.77	23.84	23.79	22.62	29.55	1.32	30.00	**PASS**
159	5795 MHz	23.91	24.16	23.93	23.51	29.90	1.22	30.00	**PASS**

Note:

5190 MHz= Antenna Gain= 1.19dBi <6dBi, so the limit doesn't reduce.

5230 MHz= Antenna Gain= 1.24dBi <6dBi, so the limit doesn't reduce.

5755 MHz= Antenna Gain= 1.32dBi <6dBi, so the limit doesn't reduce.

5795 MHz= Antenna Gain= 1.22dBi <6dBi, so the limit doesn't reduce.

<Nss 1 MCS0, 1S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
38	5190 MHz	15.14	14.83	14.40	14.35	20.71	6.87	29.13	**PASS**
46	5230 MHz	19.69	19.65	19.16	18.64	25.33	6.94	29.06	**PASS**
151	5755 MHz	21.00	21.15	21.31	20.79	27.09	7.45	28.55	**PASS**
159	5795 MHz	22.76	22.82	22.76	22.23	28.67	7.31	28.69	**PASS**

Note:

5190 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.87dBi>6dBi, so the power limit shall be reduced to 30-(6.87-6)=29.13dBm.

5230 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.94dBi>6dBi, so the power limit shall be reduced to 30-(6.94-6)=29.06dBm.

5755 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.45dBi>6dBi, so the power limit shall be reduced to 30-(7.45-6)=28.55dBm.

5795 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.31dBi>6dBi, so the power limit shall be reduced to 30-(7.31-6)=28.69dBm.

<Nss 2 MCS0, 2S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
38	5190 MHz	18.63	18.20	17.90	17.63	24.13	4.87	30.00	**PASS**
46	5230 MHz	21.13	20.92	20.91	20.62	26.92	4.89	30.00	**PASS**
151	5755 MHz	22.72	22.79	22.97	22.74	28.83	5.19	30.00	**PASS**
159	5795 MHz	23.85	23.89	23.95	23.52	29.83	5.11	30.00	**PASS**

Note:

5190 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.87dBi<6dBi, so the limit doesn't reduce.

5230 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 4.89dBi<6dBi, so the limit doesn't reduce.

5755 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 5.19dBi<6dBi, so the limit doesn't reduce.

5795 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 5.11dBi<6dBi, so the limit doesn't reduce.

<Nss 3 MCS0, 3S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
38	5190 MHz	17.09	17.3	17.15	16.58	23.06	3.98	30.00	**PASS**
46	5230 MHz	22.03	21.85	21.65	20.82	27.63	4.01	30.00	**PASS**
151	5755 MHz	22.74	22.82	23.07	22.45	28.80	4.12	30.00	**PASS**
159	5795 MHz	23.71	24.14	24.14	23.35	29.87	4.03	30.00	**PASS**

Note:

5190 MHz= $Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 3.98dBi<6dBi, so the limit doesn't reduce.

5230 MHz= $Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 4.01dBi<6dBi, so the limit doesn't reduce.

5755 MHz= $Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 4.12dBi<6dBi, so the limit doesn't reduce.

5795 MHz= $Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 4.03dBi<6dBi, so the limit doesn't reduce.

Temperature	18.7℃	Humidity	46%
Test Engineer	Brian Sun & Ron Huang	Test Date	Feb. 13, 2018 ~ Jul. 23, 2018
Duty Cycle	Nss 4 MCS0, 4S4T, SDM: 89.9% Nss 1 MCS0, 1S4T, TXBF: 94.8% Nss 2 MCS0, 2S4T, TXBF: 90.4% Nss 3 MCS0, 3S4T, TXBF: 91.1%		

Configuration IEEE 802.11ac 80MHz

<Nss 4 MCS0, 4S4T, SDM>

Channel	Frequency	Conducted Power (dBm)					Antenna Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
42	5210 MHz	18.37	18.61	18.54	17.95	24.40	1.23	30.00	**PASS**
155	5775 MHz	20.72	20.79	20.73	19.62	26.51	1.35	30.00	**PASS**

Note:

5210 MHz= Antenna Gain= 1.23dBi <6dBi, so the limit doesn't reduce.

5775 MHz= Antenna Gain= 1.35dBi <6dBi, so the limit doesn't reduce.

<Nss 1 MCS0, 1S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
42	5210 MHz	16.21	16.23	15.66	15.45	21.92	6.96	29.04	**PASS**
155	5775 MHz	18.55	18.76	18.56	18.00	24.50	7.49	28.51	**PASS**

Note:

5210 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.96dBi>6dBi, so the power limit shall be reduced to 30-(6.96-6)=29.04dBm.

5775 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.49dBi>6dBi, so the power limit shall be reduced to 30-(7.49-6)=28.51dBm.

<Nss 2 MCS0, 2S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
42	5210 MHz	17.83	17.73	17.57	16.63	23.49	4.90	30.00	**PASS**
155	5775 MHz	20.98	21.03	21.13	20.76	27.00	5.24	30.00	**PASS**

Note:

5210 MHz= $Directiona\ lGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 4.90dBi<6dBi, so the limit doesn't reduce.

5775 MHz= $Directiona\ lGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 5.24dBi<6dBi, so the limit doesn't reduce.

<Nss 3 MCS0, 3S4T, TXBF>

Channel	Frequency	Conducted Power (dBm)					Directional Gain	Max. Limit (dBm)	Result
		Ant. 1	Ant. 2	Ant. 3	Ant. 4	Total Conducted Power (dBm)			
42	5210 MHz	16.98	16.93	16.41	15.34	22.48	4.01	30.00	**PASS**
155	5775 MHz	19.97	20.03	20.31	19.21	25.92	4.16	30.00	**PASS**

Note:

5210 MHz= $Directiona\ lGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 4.01dBi<6dBi, so the limit doesn't reduce.

5775 MHz= $Directiona\ lGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$ = 4.16dBi<6dBi, so the limit doesn't reduce.

2.5. Power Spectral Density Measurement

2.5.1. Limit

Operation Band	EUT Category		Limit
U-NII-1	☐	Outdoor Access Point	17dBm/ MHz
	☐	Fixed point-to-point Access Point	
	☒	Indoor Access Point	
	☐	Mobile and Portable client device	11dBm/ MHz
U-NII-3	☒	---	30 dBm/500kHz

2.5.2. Measuring Instruments and Setting

Please refer to section 3 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz
VBW	≥ 3 MHz
Detector	RMS
Trace	Average
Sweep Time	Auto, trigger set to “free run”
Trace average	100 times

For U-NII-3 band:

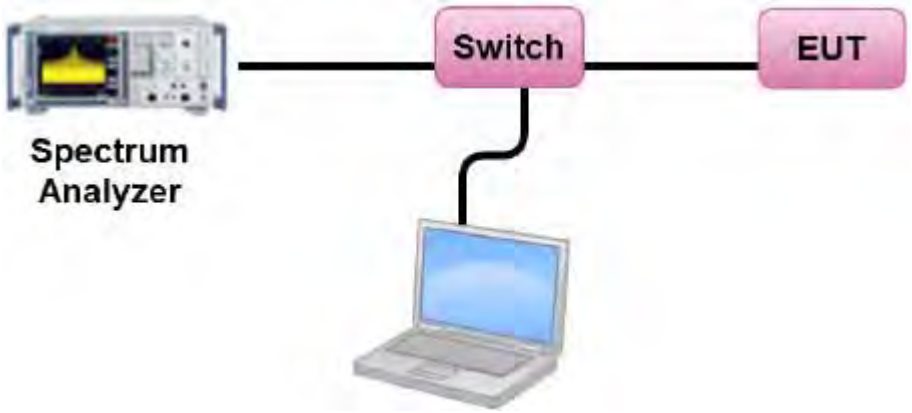
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	500kHz
VBW	≥ 3 RBW
Detector	RMS
Trace	Average
Sweep Time	Auto, trigger set to “free run”
Trace average	100 times

2.5.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. For U-NII-1 Bands, PSD Measure was performed in accordance with 789033 D02 General UNII Test Procedures New Rules v02r01, in section “Maximum conducted output power (E)(2)(d) Method SA-2”, 12/14/2017.
3. For U-NII-3 Band, PSD Measure was performed in accordance with 789033 D02 General UNII Test Procedures New Rules v02r01, in section “Maximum Power Spectral Density (F)(5)” , 12/14/2017
4. Multiple antenna systems was performed in accordance 662911 D01 Multiple Transmitter Output v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs (bin-by-bin summing).
5. When measuring 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 Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

2.5.4. Test Setup Layout

Power Spectral Density



2.5.5. Test Deviation

There is no deviation with the original standard.

2.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.5.7. Test Result of Power Spectral Density

Temperature	18.7℃	Humidity	46%
Test Engineer	Brain Sun & Ron Huang		

Configuration IEEE 802.11a

<OFDM, 1S4T, CDD>

Channel	Frequency	Power Density (dBm/MHz)	Directional Gain	Max. Limit (dBm/MHz)	Result
36	5180 MHz	10.70	6.83	16.17	**PASS**
40	5200 MHz	7.08	6.91	16.09	**PASS**
48	5240 MHz	15.13	6.92	16.08	**PASS**

Note:

5180 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.83dBi>6dBi, so the limit shall be reduced to 17-(6.83-6)=16.17dBm/MHz.

5200 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.91dBi>6dBi, so the limit shall be reduced to 17-(6.91-6)=16.09 dBm/MHz.

5240 MHz= $Directional\ Gain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 6.92dBi>6dBi, so the limit shall be reduced to 17-(6.92-6)=16.08 dBm/MHz.

<OFDM, 1S4T, CDD>

Channel	Frequency	Power Density (dBm/500kHz)	Directional Gain	Power Density Limit (dBm/500kHz)	Result
149	5745 MHz	11.77	7.41	28.59	**PASS**
157	5785 MHz	11.19	7.36	28.64	**PASS**
165	5825 MHz	10.83	7.52	28.48	**PASS**

Note:

5745 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.41dBi>6dBi, so the limit shall be reduced to 30-(7.41-6)=28.59dBm/500kHz.

5785 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.36dBi>6dBi, so the limit shall be reduced to 30-(7.36-6)=28.64dBm/500kHz.

5825 MHz= $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ = 7.52dBi>6dBi, so the limit shall be reduced to 30-(7.52-6)=28.48dBm/500kHz.