



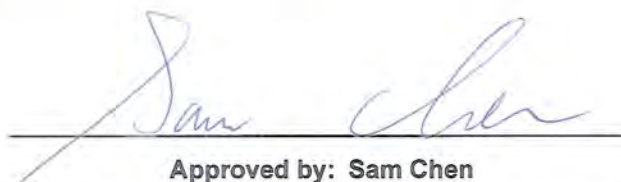
FCC RADIO TEST REPORT

FCC ID : O6ZBGW320
Equipment : BGW320-500 Wireless Integrated ONT Residential Gateway
Brand Name : HUMAX
Model Name : BGW320-500
Applicant : Humax Co., Ltd.
HUMAX BLDG., 2, Yeongmun-ro Cheoin-gu Yongin-si,
Gyeonggi-do South Korea 17040
Manufacturer : Humax Co., Ltd.
HUMAX BLDG., 2, Yeongmun-ro Cheoin-gu Yongin-si,
Gyeonggi-do South Korea 17040
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 14, 2019, and testing was started from Aug. 23, 2019 and completed on Oct. 29, 2019. 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 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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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_10 Ver1.0



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:

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

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Cindy Peng



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), VHT20, ax (HEW20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), VHT40, ax (HEW40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX, 4TX
2.4-2.4835GHz	802.11g	20	4TX
2.4-2.4835GHz	802.11n HT20	20	1TX, 2TX, 3TX, 4TX
2.4-2.4835GHz	802.11n HT20-BF	20	2TX, 3TX, 4TX
2.4-2.4835GHz	VHT20	20	1TX, 2TX, 3TX, 4TX
2.4-2.4835GHz	VHT20-BF	20	2TX, 3TX, 4TX
2.4-2.4835GHz	802.11ax HEW20	20	1TX, 2TX, 3TX, 4TX
2.4-2.4835GHz	802.11ax HEW20-BF	20	2TX, 3TX, 4TX
2.4-2.4835GHz	802.11n HT40	40	1TX, 2TX, 3TX, 4TX
2.4-2.4835GHz	802.11n HT40-BF	40	2TX, 3TX, 4TX
2.4-2.4835GHz	VHT40	40	1TX, 2TX, 3TX, 4TX
2.4-2.4835GHz	VHT40-BF	40	2TX, 3TX, 4TX
2.4-2.4835GHz	802.11ax HEW40	40	1TX, 2TX, 3TX, 4TX
2.4-2.4835GHz	802.11ax HEW40-BF	40	2TX, 3TX, 4TX

Note:

- ♦ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ♦ 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.


1.1.2 Antenna Information

Ant.	Brand	Model Name	Type	Connector	Gain (dBi)
1	CALTRONICS	02102140-06811U1	PCB	I-PEX	Note 1
2	CALTRONICS	02102140-06811U1	PCB	I-PEX	
3	CALTRONICS	02102140-06811U1	PCB	I-PEX	
4	CALTRONICS	02102140-06811U1	PCB	I-PEX	
5	CALTRONICS	02102140-06811U1	PCB	I-PEX	
6	CALTRONICS	02102140-06811U1	PCB	I-PEX	
7	CALTRONICS	02102140-06811U1	PCB	I-PEX	
8	CALTRONICS	02102140-06811U1	PCB	I-PEX	
9	CALTRONICS	02102140-06811U1	PCB	I-PEX	

Note 1:

Ant.	2.4GHz Port				5GHz Band 1 Port				5GHz Band 4 Port				Gain (dBi)		
													1TX mode for output power, PSD		
													CDD mode for output power		
	1TX	2TX	3TX	4TX	1TX	2TX	3TX	4TX	1TX	2TX	3TX	4TX	2.4GHz	5GHz Band 1	5GHz Band 4
1	1	1	1	1	4	4	4	4	-	-	-	-	3.70	4.10	-
2	2	2	2	2	3	3	3	3	-	-	-	-	3.90	4.60	-
3	3	3	3	3	2	2	2	2	-	-	-	-	3.70	4.10	-
4	4	4	-	4	1	1	1	1	-	-	-	-	4.10	4.60	-
5	-	-	-	-	-	-	-	-	1	1	1	1	-	-	5.30
6	-	-	-	-	-	-	-	-	2	2	2	2	-	-	6.00
7	-	-	-	-	-	-	-	-	3	3	3	3	-	-	5.30
8	-	-	-	-	-	-	-	-	4	4	4	4	-	-	5.50
9	-	-	-	-	RX only	-	-	-	RX only	-	-	-	-	5.50	5.50

Ant.	Gain (dBi)			
	CDD mode for PSD			
	Beamforming mode, SDM Mode for output power & PSD			
	2.4GHz		5GHz Band 1	5GHz Band 4
	3TX	4TX	4TX	4TX
1	4.99	5.88	6.09	-
2				
3				
4				
5	-	-	-	6.03
6				
7				
8				
9	-	-	5.50	5.50



Note 2: The above information was declared by manufacturer.

Note 3: The EUT has nine antennas.

Note 4:

For 2.4GHz function:

For IEEE 802.11b (1TX/1RX, 4TX/4RX):

For 1TX, 1RX

Only Port 1 can be used as transmitting antenna.

The EUT supports all antennas with RX diversity functions.

At once time there is only one antenna port can receiving RF signal

For 4TX, 4RX

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

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

For IEEE 802.11g (4TX/4RX):

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

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

For IEEE 802.11n/VHT/ax (1TX, 2TX, 3TX, 4TX/4RX):

For 1TX

The EUT supports all antennas with TX diversity functions.

At once time there is only one antenna port can transmitting RF signal.

For 2TX

The EUT supports all antennas with TX diversity functions.

At once time there are only two antenna port can transmitting RF signal.

For 3TX

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

For 4TX, 4RX

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

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

For 5GHz function:

For IEEE 802.11a (4TX/4RX):

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

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

For IEEE 802.11n/ac/ax (1TX, 2TX, 3TX, 4TX/4RX):

For 1TX

The EUT supports all antennas with TX diversity functions.

At once time there is only one antenna port can transmitting RF signal.

For 2TX

The EUT supports all antennas with TX diversity functions.

At once time there are only two antenna port can transmitting RF signal.

For 3TX

The EUT supports all antennas with TX diversity functions.

At once time there are only three antenna port can transmitting RF signal

For 4TX, 4RX

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

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

For 1RX:

Ant. 9 can be use as receiving antenna only.

**1.1.3 Mode Test Duty Cycle**

<For non-beamforming mode>

1T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b	0.952	0.21	12.42m	100

3T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
VHT40	0.971	0.13	952.5u	3k
802.11ax HEW20	0.979	0.09	1.489m	1k
802.11ax HEW40	0.961	0.17	773.75u	3k

3T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20	0.873	0.59	686.25u	3k
802.11ax HEW20	0.575	2.4	136.25u	10k

3T3S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20	0.961	0.17	686.25u	3k
802.11ax HEW20	0.948	0.23	558.75u	3k

4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b	0.949	0.23	12.425m	100
802.11g	0.953	0.21	2.068m	1k
VHT20	0.986	0.06	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
VHT40	0.971	0.13	952.5u	3k
802.11ax HEW20	0.982	0.08	n/a (DC $\geq$ 0.98)	n/a (DC $\geq$ 0.98)
802.11ax HEW40	0.965	0.15	773.75u	3k

4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20	0.873	0.59	686.25u	3k
VHT40	0.784	1.06	353.75u	3k
802.11ax HEW20	0.573	2.42	136.25u	10k
802.11ax HEW40	0.502	2.99	101.25u	10k

4T3S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
VHT20	0.833	0.79	481.25u	3k
VHT40	0.726	1.39	262.5u	10k
802.11ax HEW20	0.561	2.51	128.75u	10k
802.11ax HEW40	0.516	2.87	106.25u	10k



<For beamforming mode>

3T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
VHT20-BF	0.976	0.11	3.838m	300
VHT40-BF	0.945	0.25	3.694m	300
802.11ax HEW20-BF	0.966	0.15	2.925m	1k
802.11ax HEW40-BF	0.92	0.36	4.358m	300

3T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
VHT20-BF	0.941	0.26	3.904m	300
802.11ax HEW20-BF	0.936	0.29	4.367m	300

4T1S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
VHT20-BF	0.836	0.78	9.055m	300
VHT40-BF	0.945	0.25	3.695m	300
802.11ax HEW20-BF	0.933	0.3	2.99m	1k
802.11ax HEW40-BF	0.921	0.36	4.36m	300

4T2S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
VHT20-BF	0.956	0.2	3.838m	300
VHT40-BF	0.947	0.24	4.62m	300
802.11ax HEW20-BF	0.938	0.28	4.375m	300
802.11ax HEW40-BF	0.936	0.29	5.085m	300

4T3S

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
VHT20-BF	0.977	0.1	5.11m	300
VHT40-BF	0.975	0.11	7.123m	300
802.11ax HEW20-BF	0.975	0.11	9.105m	300
802.11ax HEW40-BF	0.965	0.15	7.17m	300

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From power adapter			
Beamforming Function	☒	With beamforming	☐	Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	MTool 3.1.0.1 V17.10.77.15 ; Telnet			

Note: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 558074 D01 v05r02
- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☐	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
☒	JHUBEI	ADD : 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 Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH02-CB	Owen Hsu	24.7~25.6°C / 59~61%	Sep. 02, 2019~Sep. 11, 2019
Radiated	03CH04-CB	Cola Fan	24~25.3°C / 55~59%	Aug. 23, 2019~Oct. 22, 2019
AC Conduction	CO01-CB	Deven Huang	20~22°C / 55~56%	Oct. 29, 2019

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

<For non-beamforming mode>

1T1S

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	110
2417MHz	110
2437MHz	110
2457MHz	110
2462MHz	110

3T1S

Mode	Power Setting
VHT20_Nss1,(MCS0)_3TX	-
2412MHz	98
2417MHz	99
2437MHz	100
2457MHz	102
2462MHz	103
VHT40_Nss1,(MCS0)_3TX	-
2422MHz	96
2427MHz	98
2437MHz	99
2447MHz	100
2452MHz	97
802.11ax HEW20_Nss1,(MCS0)_3TX	-
2412MHz	94
2417MHz	97
2437MHz	99
2457MHz	102
2462MHz	102
802.11ax HEW40_Nss1,(MCS0)_3TX	-
2422MHz	95
2427MHz	97
2437MHz	94
2447MHz	98
2452MHz	97

**3T2S**

Mode	Power Setting
VHT20_Nss2,(MCS0)_3TX	-
2412MHz	25
2462MHz	26
802.11ax HEW20_Nss2,(MCS0)_3TX	-
2412MHz	25
2462MHz	26

3T3S

Mode	Power Setting
VHT20_Nss3,(MCS0)_3TX	-
2412MHz	98
2462MHz	103
802.11ax HEW20_Nss3,(MCS0)_3TX	-
2412MHz	97
2462MHz	100

**4T1S**

Mode	Power Setting
802.11b_Nss1,(1Mbps)_4TX	-
2412MHz	94
2417MHz	94
2437MHz	94
2457MHz	97
2462MHz	97
802.11g_Nss1,(6Mbps)_4TX	-
2412MHz	94
2417MHz	93
2437MHz	95
2457MHz	98
2462MHz	98
VHT20_Nss1,(MCS0)_4TX	-
2412MHz	94
2417MHz	94
2437MHz	95
2457MHz	99
2462MHz	98
VHT40_Nss1,(MCS0)_4TX	-
2422MHz	93
2427MHz	93
2437MHz	94
2447MHz	95
2452MHz	95
802.11ax HEW20_Nss1,(MCS0)_4TX	-
2412MHz	93
2417MHz	92
2437MHz	94
2457MHz	96
2462MHz	96
802.11ax HEW40_Nss1,(MCS0)_4TX	-
2422MHz	92
2427MHz	92
2437MHz	93
2447MHz	94
2452MHz	94

**4T2S**

Mode	Power Setting
VHT20_Nss2,(MCS0)_4TX	-
2412MHz	24.5
2462MHz	24.5
VHT40_Nss2,(MCS0)_4TX	-
2422MHz	23.5
2437MHz	23.5
2452MHz	24.5
802.11ax HEW20_Nss2,(MCS0)_4TX	-
2412MHz	24
2462MHz	24.5
802.11ax HEW40_Nss2,(MCS0)_4TX	-
2422MHz	23
2437MHz	24
2452MHz	23.5

4T3S

Mode	PowerSetting
VHT20_Nss3,(MCS0)_4TX	-
2412MHz	23.5
2437MHz	
2462MHz	24.5
VHT40_Nss3,(MCS0)_4TX	-
2422MHz	23.5
2437MHz	23.5
2452MHz	23.5
802.11ax HEW20_Nss3,(MCS0)_4TX	-
2412MHz	25.5
2437MHz	
2462MHz	24.5
802.11ax HEW40_Nss3,(MCS0)_4TX	-
2422MHz	22.5
2437MHz	22.5
2452MHz	22.5



<For beamforming mode>

3T1S

Mode	PowerSetting
VHT20-BF_Nss1,(MCS0)_3TX	-
2412MHz	98
2417MHz	99
2437MHz	100
2457MHz	102
2462MHz	103
VHT40-BF_Nss1,(MCS0)_3TX	-
2422MHz	96
2427MHz	98
2437MHz	99
2447MHz	100
2452MHz	95
802.11ax HEW20-BF_Nss1,(MCS0)_3TX	-
2412MHz	94
2417MHz	97
2437MHz	99
2457MHz	102
2462MHz	97
802.11ax HEW40-BF_Nss1,(MCS0)_3TX	-
2422MHz	95
2427MHz	97
2437MHz	94
2447MHz	97
2452MHz	95

3T2S

Mode	Power Setting
VHT20-BF_Nss2,(MCS0)_3TX	-
2412MHz	99
2462MHz	103
802.11ax HEW20-BF_Nss2,(MCS0)_3TX	-
2412MHz	97
2462MHz	104

**4T1S**

Mode	Power Setting
VHT20-BF_Nss1,(MCS0)_4TX	-
2412MHz	94
2417MHz	94
2437MHz	95
2457MHz	99
2462MHz	98
VHT40-BF_Nss1,(MCS0)_4TX	-
2422MHz	93
2427MHz	93
2437MHz	94
2447MHz	94
2452MHz	94
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-
2412MHz	93
2417MHz	92
2437MHz	94
2457MHz	96
2462MHz	96
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-
2422MHz	92
2427MHz	92
2437MHz	93
2447MHz	94
2452MHz	93

**4T2S**

Mode	Power Setting
VHT20-BF_Nss2,(MCS0)_4TX	-
2412MHz	94
2462MHz	97
VHT40-BF_Nss2,(MCS0)_4TX	-
2422MHz	94
2437MHz	94
2452MHz	96
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-
2412MHz	95
2462MHz	98
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-
2422MHz	94
2437MHz	96
2452MHz	97

4T3S

Mode	PowerSetting
VHT20-BF_Nss3,(MCS0)_4TX	-
2412MHz	94
2462MHz	98
VHT40-BF_Nss3,(MCS0)_4TX	-
2422MHz	94
2437MHz	94
2452MHz	96
802.11ax HEW20-BF_Nss3,(MCS0)_4TX	-
2412MHz	94
2462MHz	98
802.11ax HEW40-BF_Nss3,(MCS0)_4TX	-
2422MHz	90
2437MHz	94
2452MHz	96

Note:

- VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than VHT20 and VHT40.
- There are two modes of EUT, one is beamforming mode, and the other is Non-beamforming mode for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz, Beamforming mode and Non-beamforming mode has been test and record in this test report.

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	WLAN 2.4GHz
2	WLAN 5GHz
For operating mode 2 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	WLAN 2.4GHz
2	WLAN 5GHz
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	WLAN 2.4GHz + WLAN 5GHz Band 1
Refer to Appendix G for Radiated Emission Co-location.	



The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz + WLAN 5GHz Band 1 + WLAN 5GHz Band 4
Refer to Sporton Test Report No.: FA981323 for Co-location RF Exposure Evaluation.	

Note: The EUT can only be used at Y axis position.

2.3 EUT Operation during Test

For CTX Mode:

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

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

The program was executed as follows:

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

For Normal Link:

During the test, the EUT operation to normal function.



2.4 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Adapter	DIRECTV	EPS48R0-16	Input: 120V~1.1A, 60Hz Output: 12V, 4A, 48W

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Flash disk3.0	Transcend	JetFlash-700	N/A
B	LAN NB	DELL	E6430	N/A

For Radiated (below 1GHz) and RF Conducted:

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

For Radiated (above 1GHz):

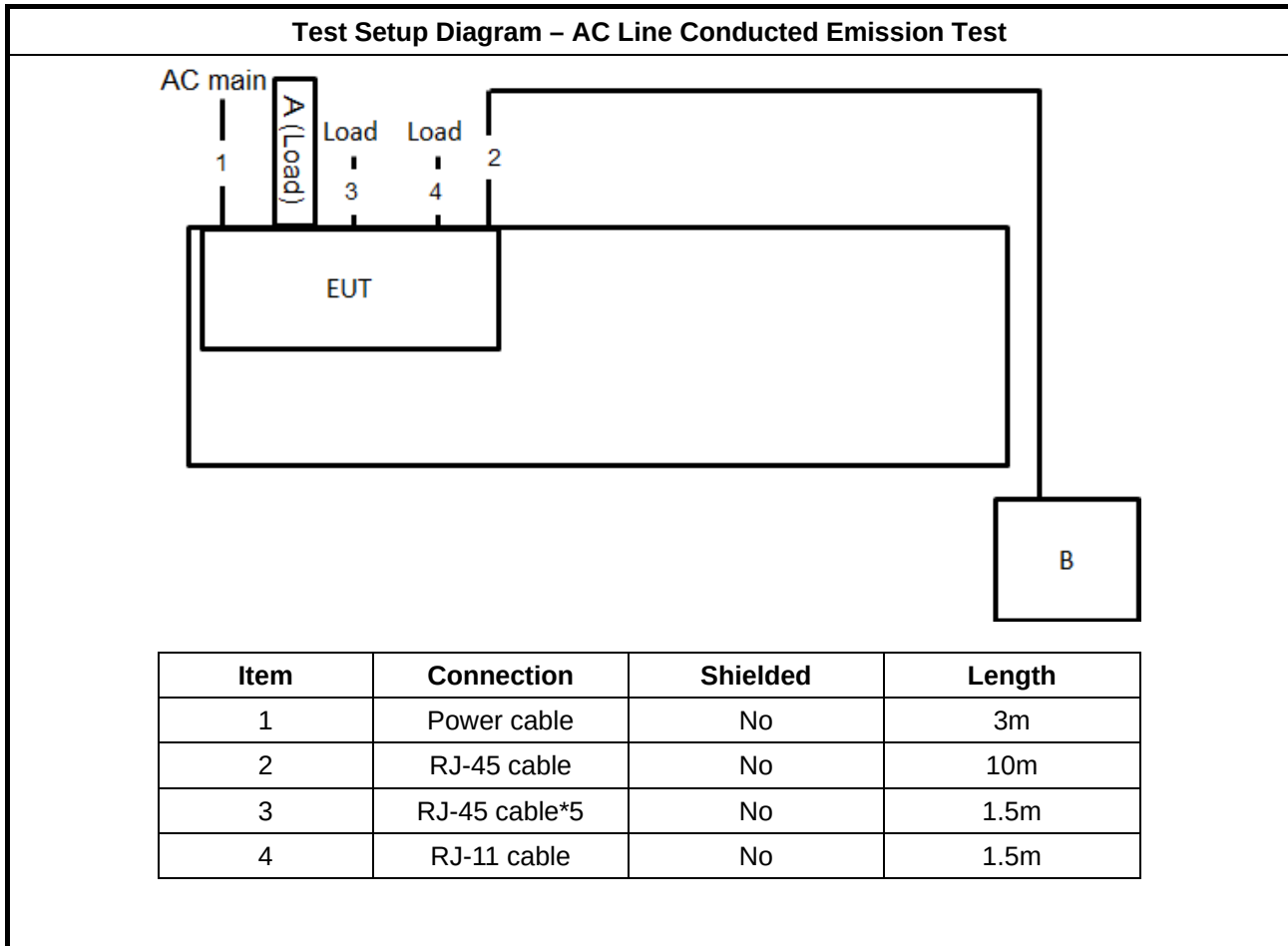
For non-beamforming mode:

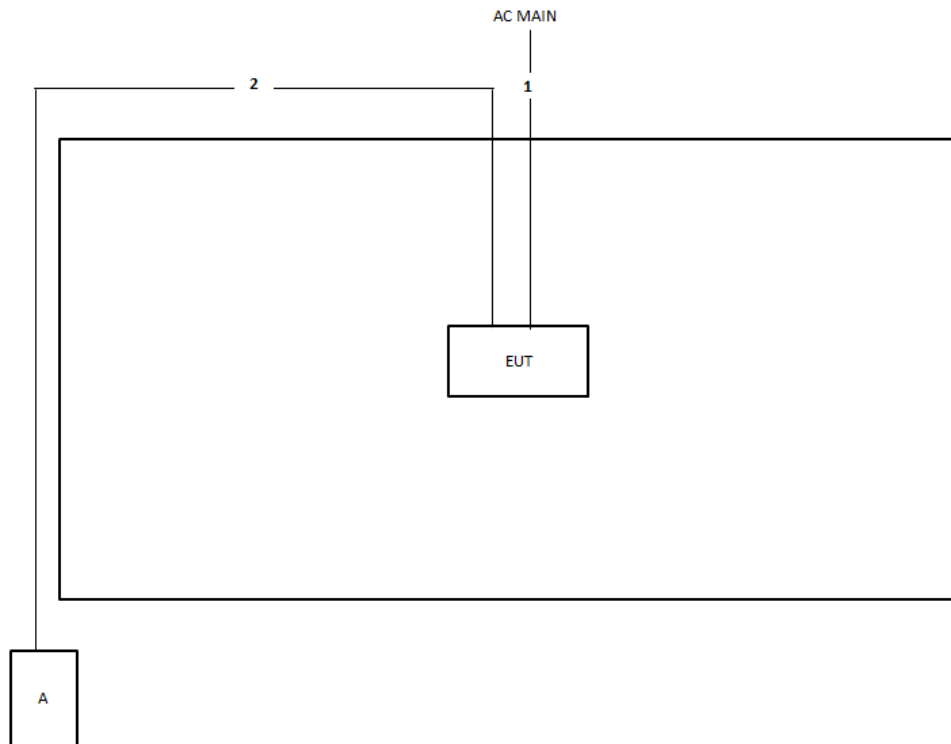
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

For beamforming mode:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	RX Device	ASUS	RT-AX88U	MSQ-RTAXHP00
C	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram

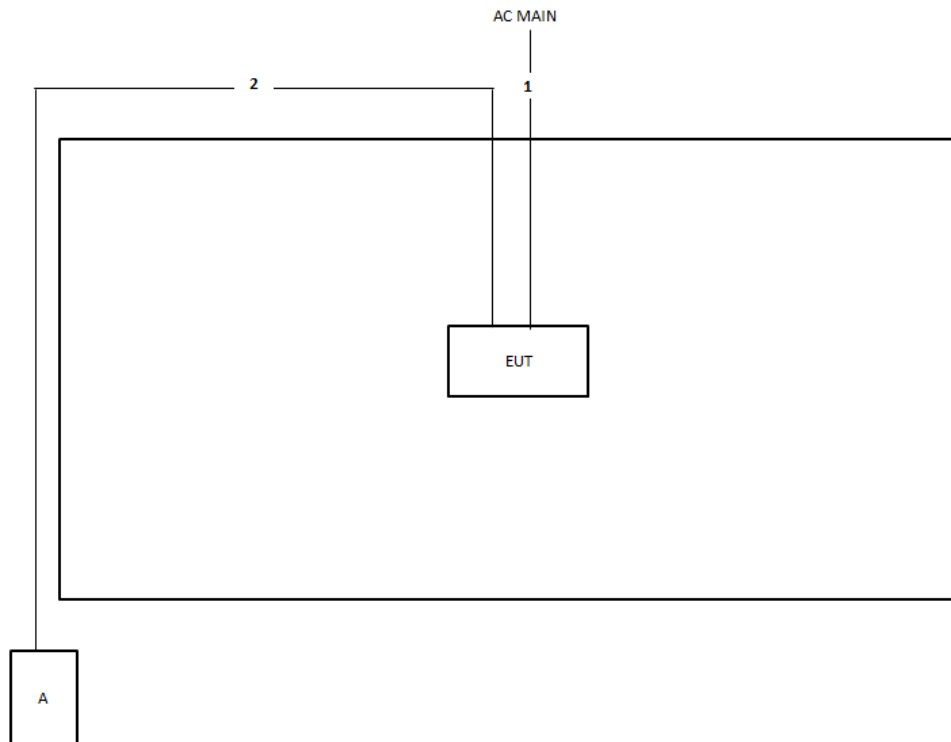


Test Setup Diagram - Radiated Test < 1GHz


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

Test Setup Diagram - Radiated Test > 1GHz

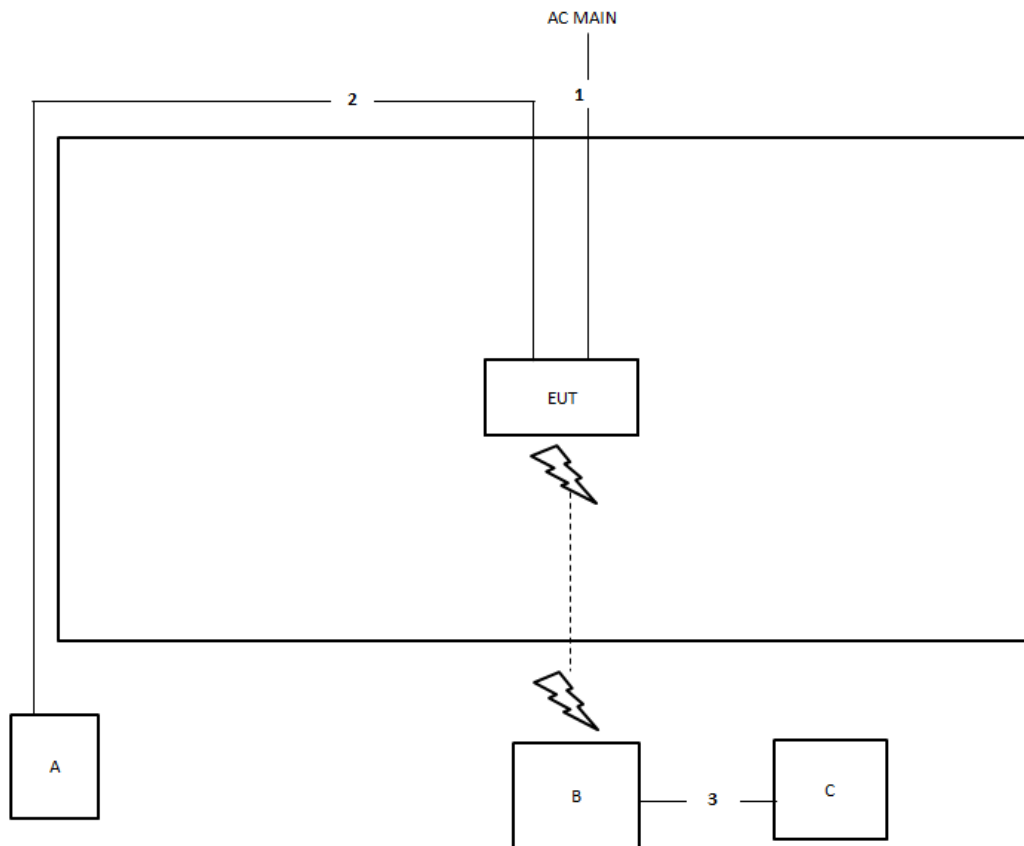
For non-beamforming mode:



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

Test Setup Diagram - Radiated Test > 1GHz

For beamforming mode:



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



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

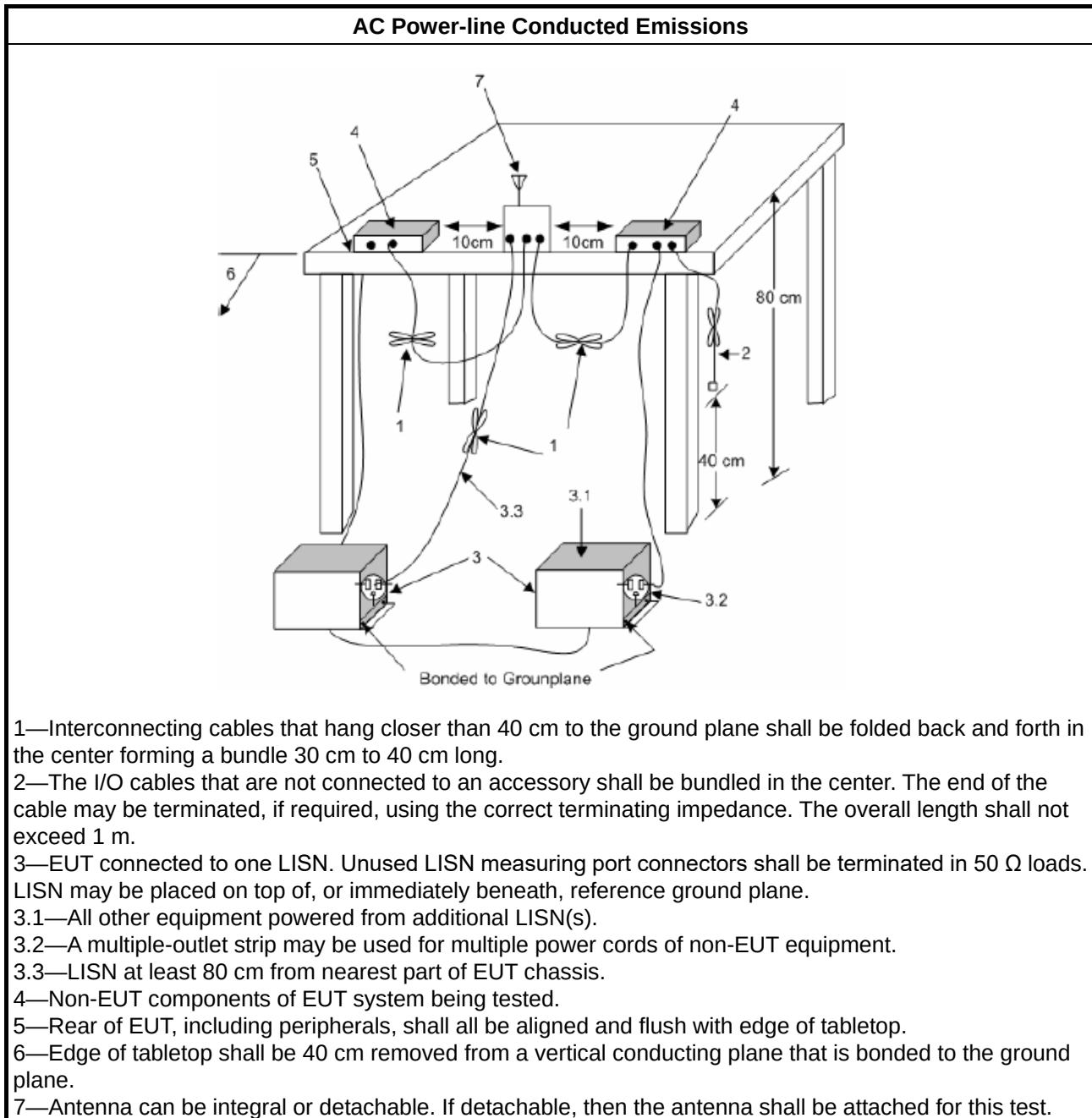
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

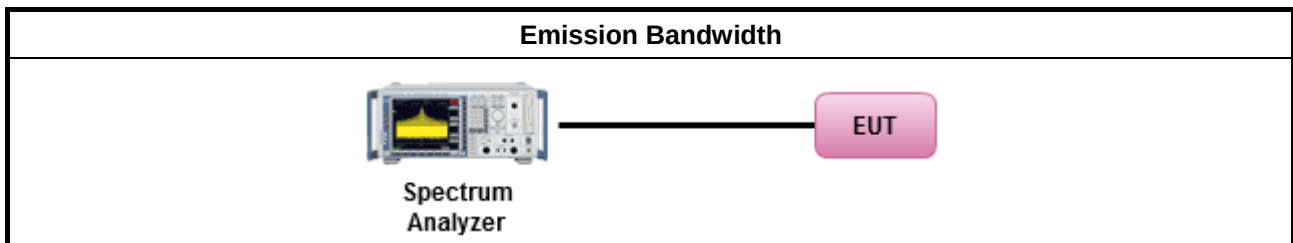
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
☐	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	▪ If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	▪ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	▪ Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

3.3.2 Measuring Instruments

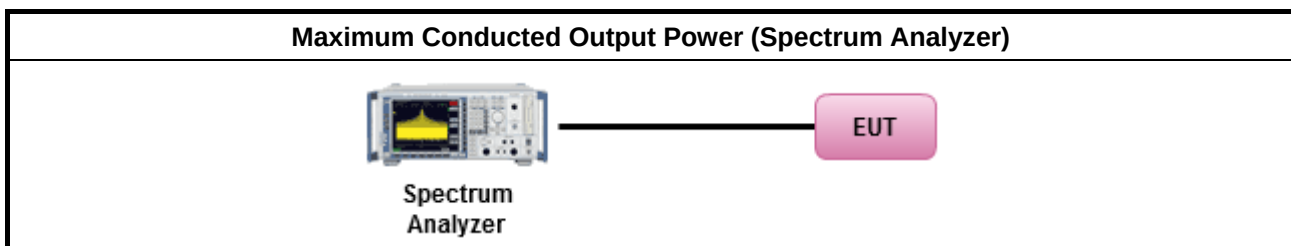
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
☐	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW $\geq$ EBW method).
☐	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
[duty cycle $\geq$ 98% or external video / power trigger]	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
duty cycle < 98% and average over on/off periods with duty factor	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
Measurement using a power meter (PM)	
☒	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
☐	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).

For conducted measurement.	
	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit
▪ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

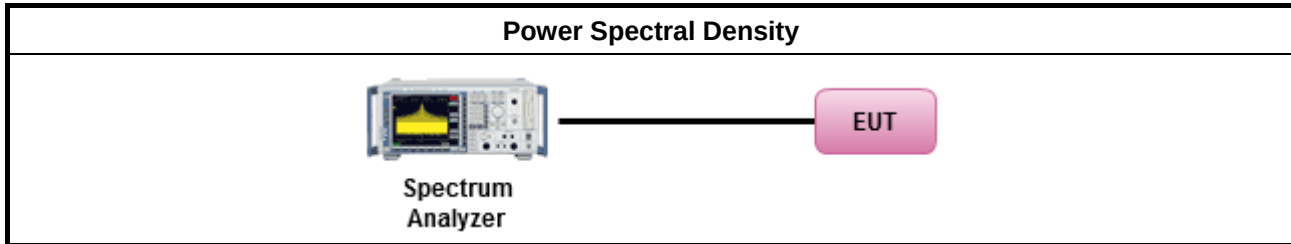
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD. [duty cycle $\geq 98\%$ or external video / power trigger]
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPS-1.
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPS-2.
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPS-3.
duty cycle $< 98\%$ and average over on/off periods with duty factor
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPS-1A. (alternative).
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPS-2A. (alternative)
☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPS-3A. (alternative)
▪ For conducted measurement.
▪ If The EUT supports multiple transmit chains using options given below:
☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,

- ☐ Option 3: Measure and add $10 \log(N)$ dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dBc)
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.	

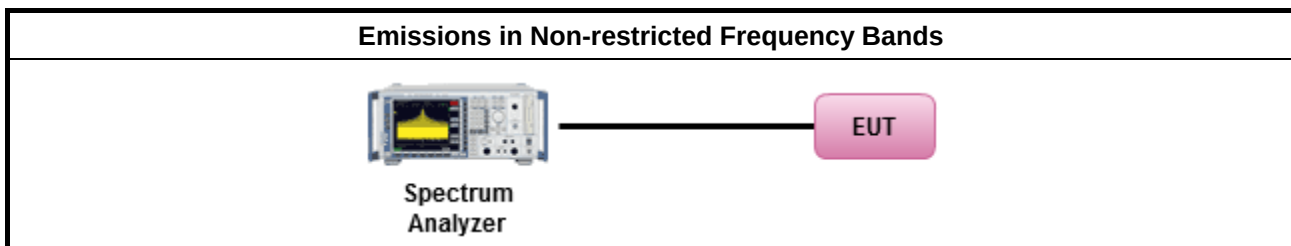
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E



3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

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

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

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

3.6.2 Measuring Instruments

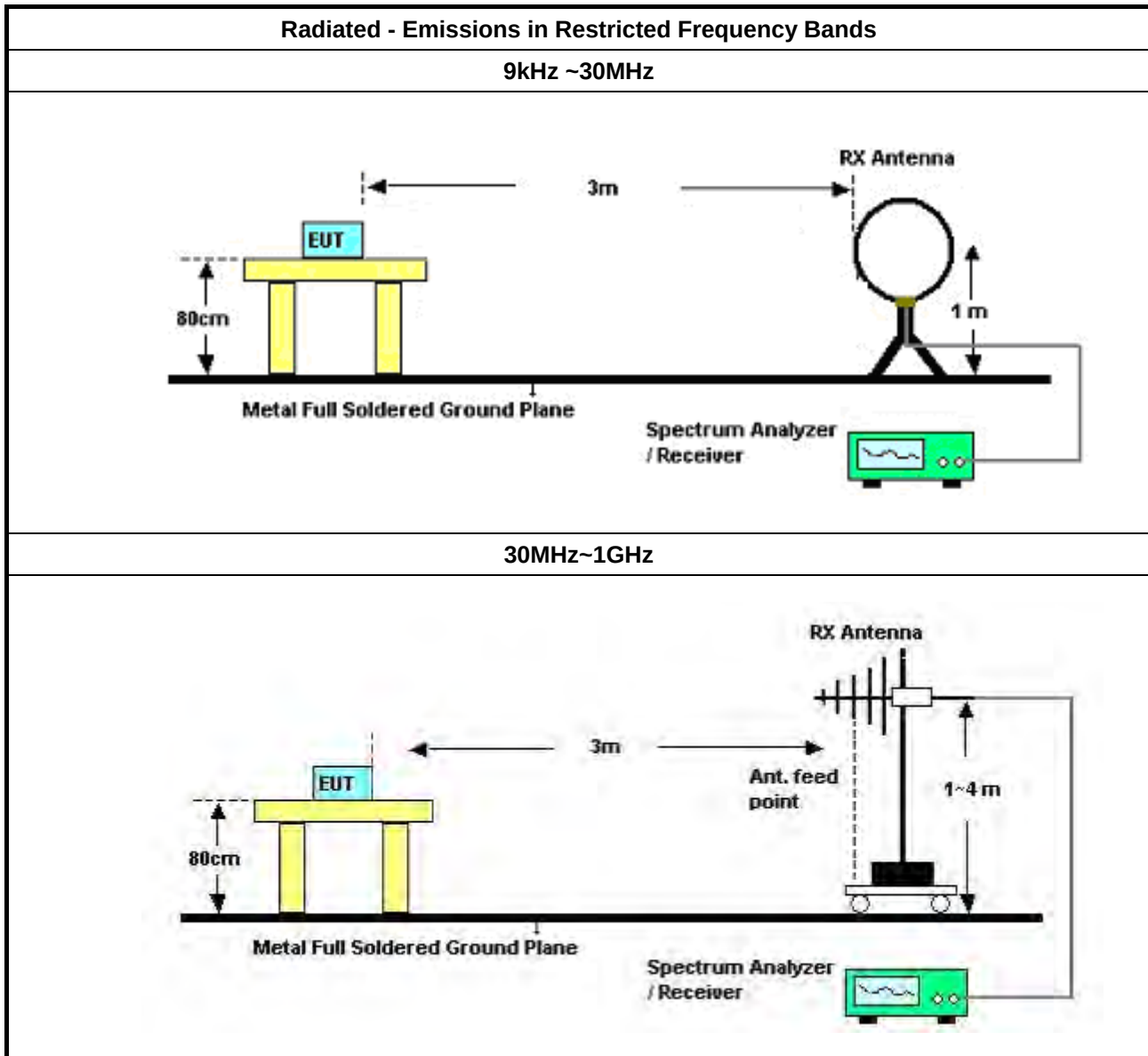
Refer a test equipment and calibration data table in this test report.

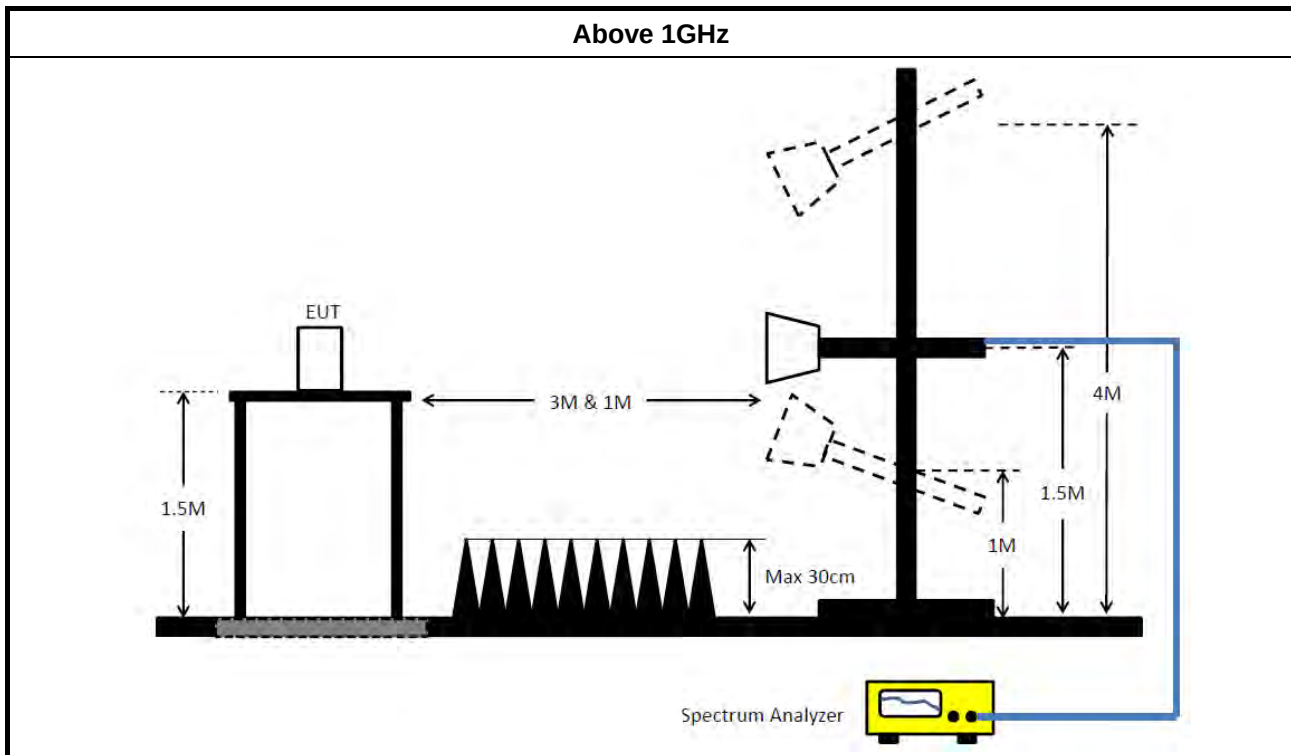


3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq 1/T$).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.6.4 Test Setup





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

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

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

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

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

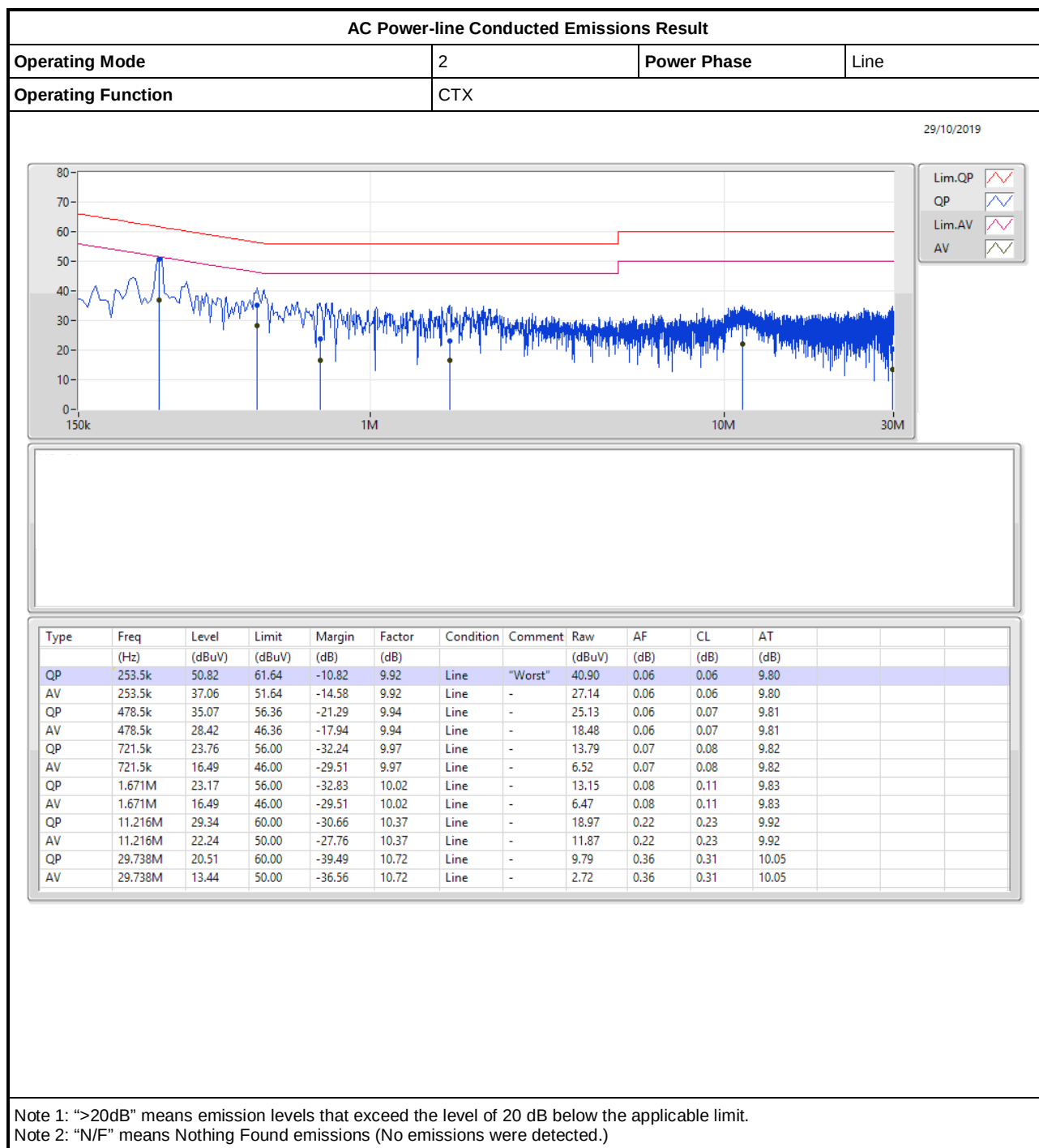
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & Woken	CBL6112B & N-6-06	22021&AT-N0 607	30MHz ~ 1GHz	Oct. 12, 2018	Oct. 11, 2019	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N0 607	30MHz ~ 1GHz	Oct. 11, 2019	Oct. 10, 2020	Radiation (03CH04-CB)
Horn Antenna	ETS · Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
Horn Antenna	ETS · Lindgren	3115	00143147	750MHz~18GHz	Oct. 22, 2019	Oct. 21, 2020	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	310N	187291	0.1MHz ~ 1GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+22	30MHz ~ 1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+22	30MHz ~ 1GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)

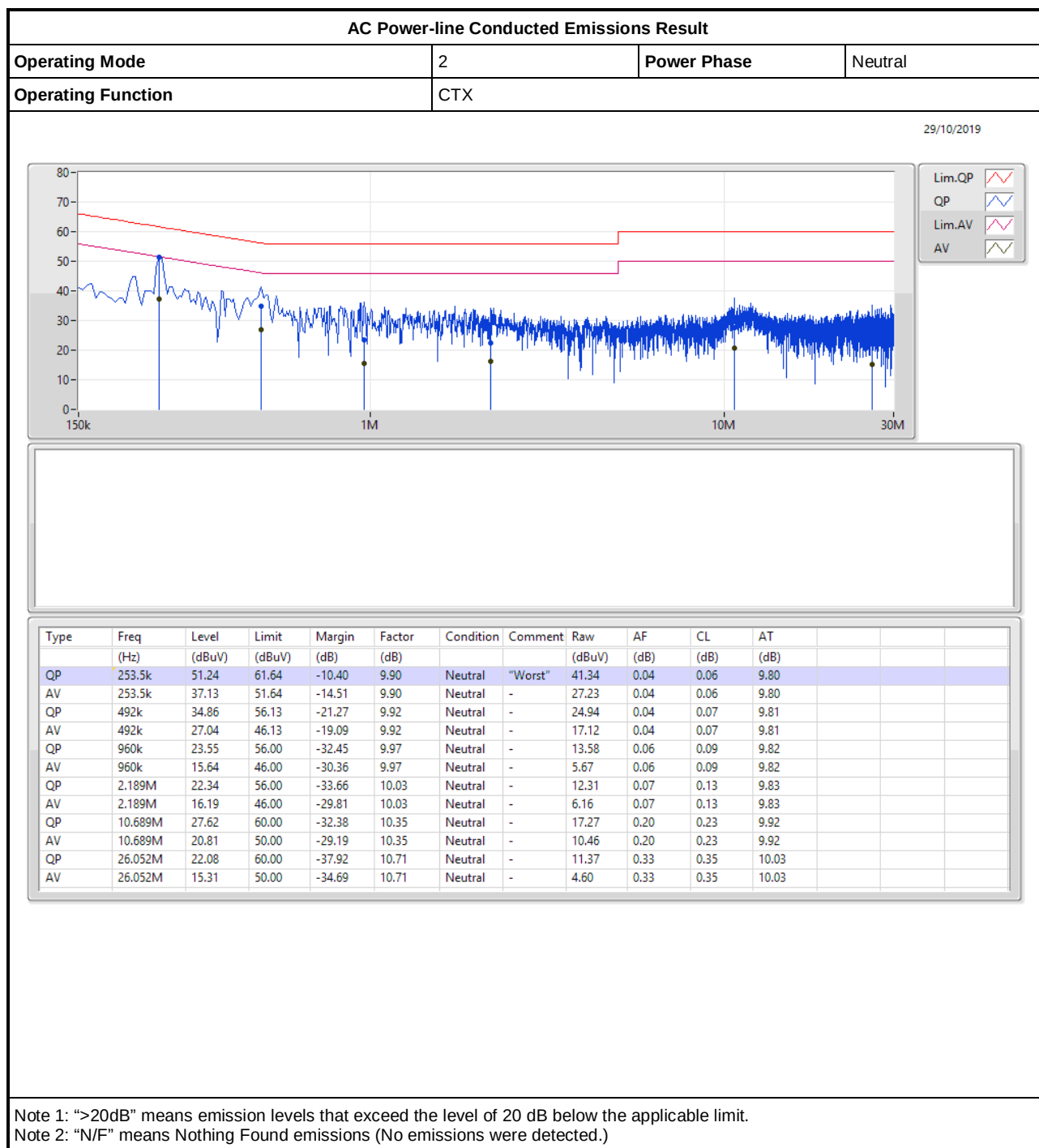


Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Jul. 02, 2019	Jul. 01, 2020	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1531343	300MHz~40GHz	Jul. 31, 2019	Jul. 30, 2020	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1728001	300MHz~40GHz	Jul. 31, 2019	Jul. 30, 2020	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-3	1 GHz – 26.5 GHz	Oct. 24, 2018	Oct. 23, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH02-CB)

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

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







<For non-beamforming mode>

1T1S

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	7.05M	11.219M	11M2G1D	7.05M	10.67M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;



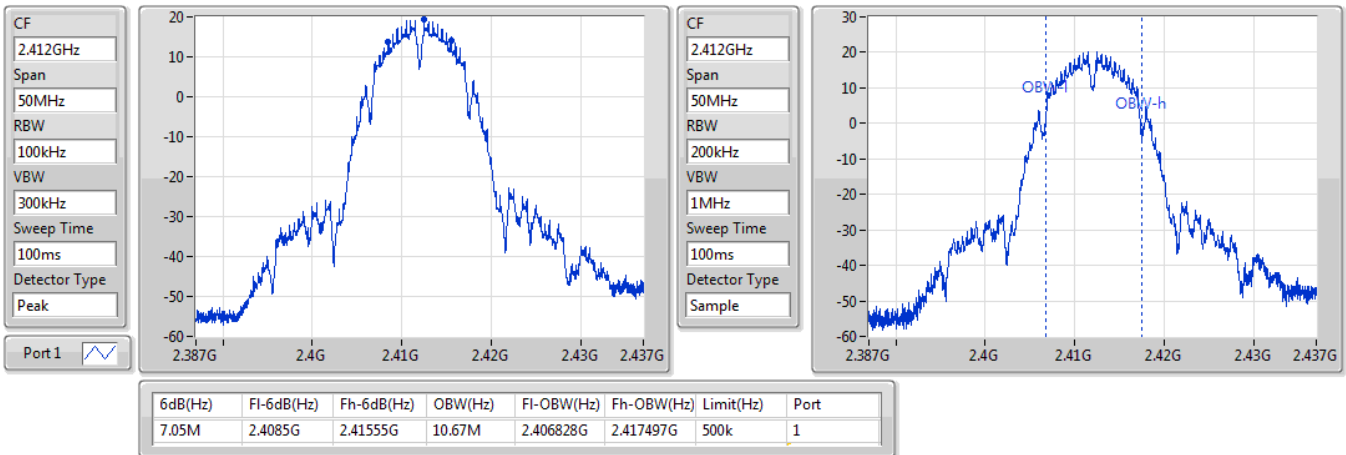
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz	Pass	500k	7.05M	10.67M
2437MHz	Pass	500k	7.05M	10.745M
2462MHz	Pass	500k	7.05M	11.219M

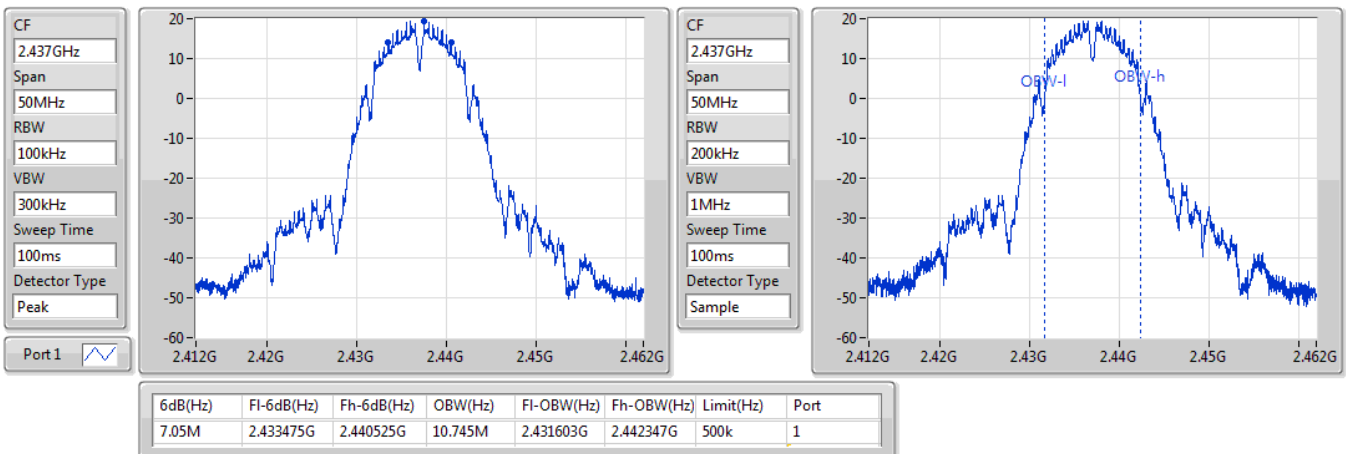
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_1TX
EBW
2412MHz

04/09/2019


802.11b_Nss1,(1Mbps)_1TX
EBW
2437MHz

04/09/2019

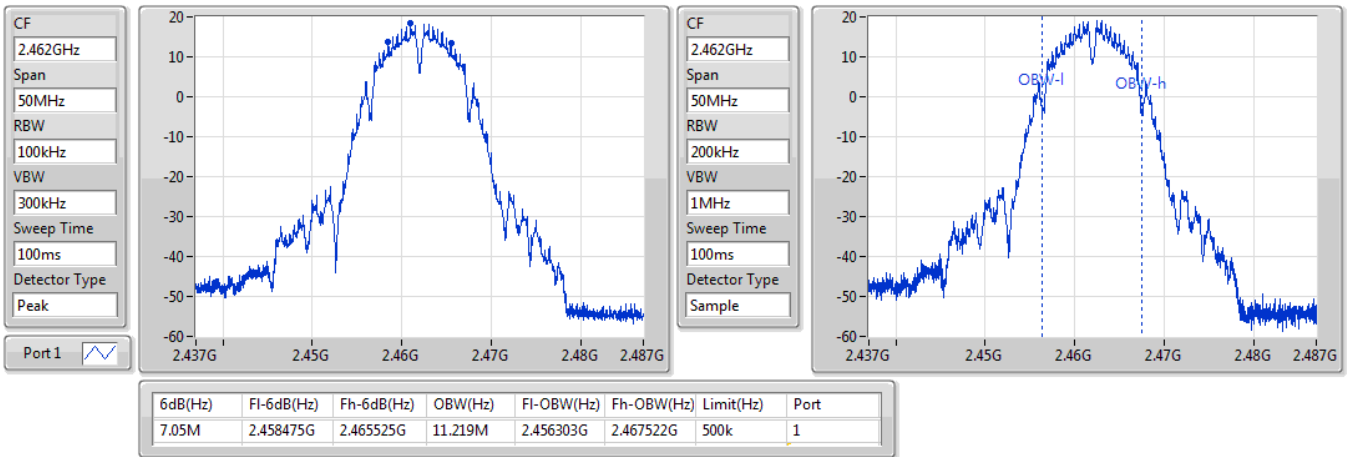


802.11b_Nss1,(1Mbps)_1TX

EBW

2462MHz

04/09/2019



**3T1S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20_Nss1,(MCS0)_3TX	17.575M	18.041M	18M0D1D	16.95M	17.766M
VHT40_Nss1,(MCS0)_3TX	36.35M	36.382M	36M4D1D	35.75M	36.132M
802.11ax HEW20_Nss1,(MCS0)_3TX	18.975M	19.115M	19M1D1D	18.5M	18.966M
802.11ax HEW40_Nss1,(MCS0)_3TX	37.55M	37.631M	37M6D1D	36.1M	37.481M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

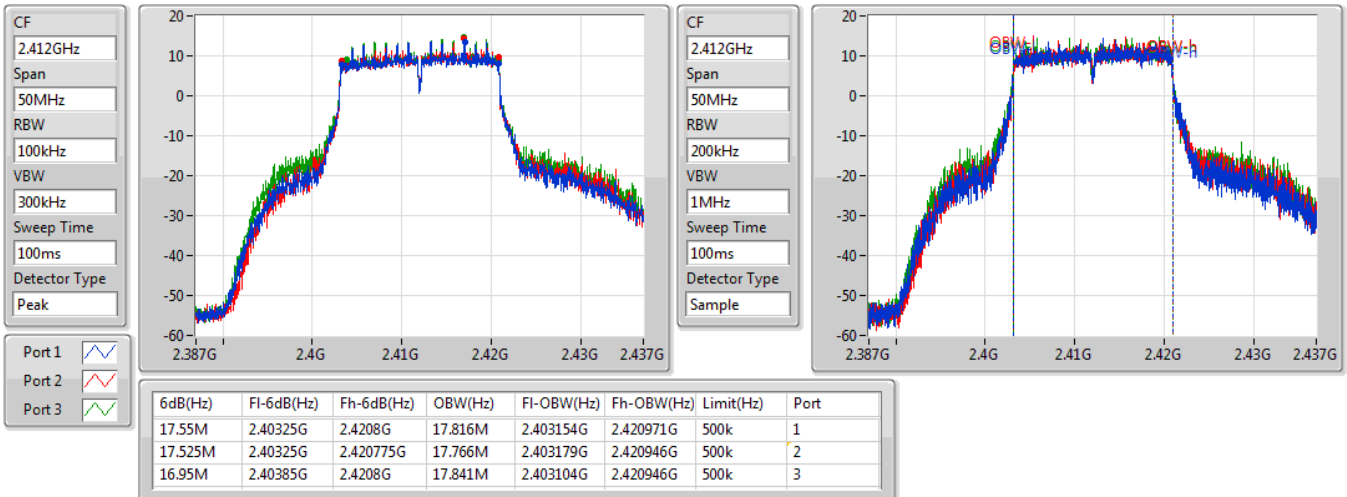
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.816M	17.525M	17.766M	16.95M	17.841M
2437MHz	Pass	500k	17.55M	17.841M	17.55M	17.816M	17.575M	17.891M
2462MHz	Pass	500k	17.575M	17.866M	17.55M	17.891M	17.55M	18.041M
VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.05M	36.132M	35.75M	36.232M	35.9M	36.282M
2437MHz	Pass	500k	35.8M	36.232M	36.3M	36.382M	36.35M	36.382M
2452MHz	Pass	500k	36.3M	36.282M	36.3M	36.332M	36.05M	36.282M
802.11ax HEW20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.65M	18.991M	18.5M	18.991M	18.7M	18.966M
2437MHz	Pass	500k	18.925M	18.991M	18.975M	19.015M	18.7M	19.04M
2462MHz	Pass	500k	18.9M	18.991M	18.925M	19.04M	18.875M	19.115M
802.11ax HEW40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.5M	37.531M	36.1M	37.531M	37.25M	37.581M
2437MHz	Pass	500k	37.2M	37.631M	36.95M	37.481M	37.3M	37.631M
2452MHz	Pass	500k	37.2M	37.631M	37.55M	37.631M	37.25M	37.531M

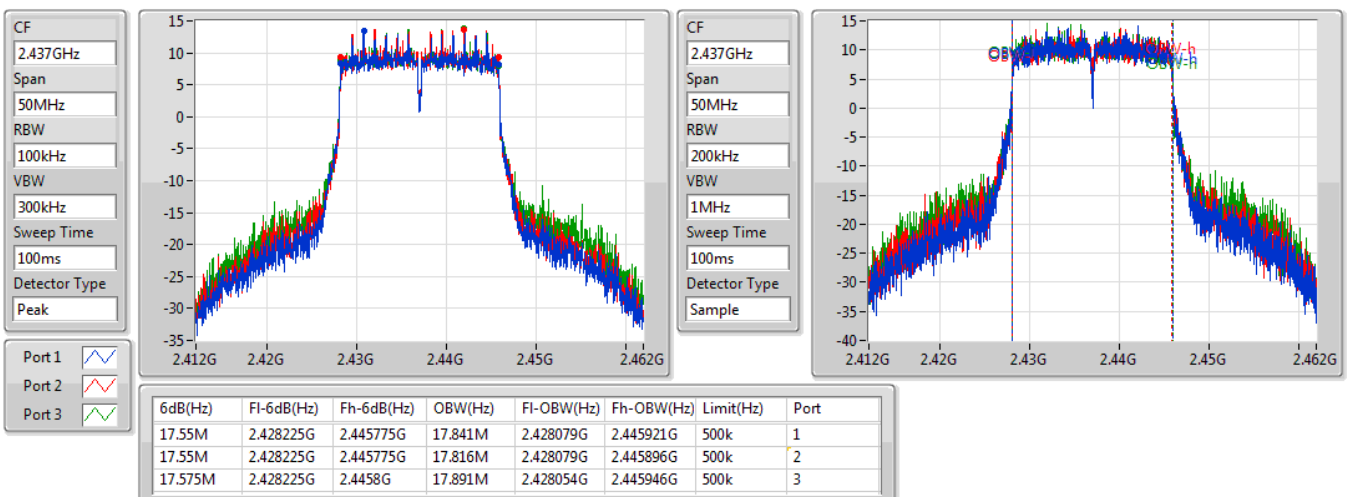
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20_Nss1,(MCS0)_3TX
EBW
2412MHz

03/09/2019

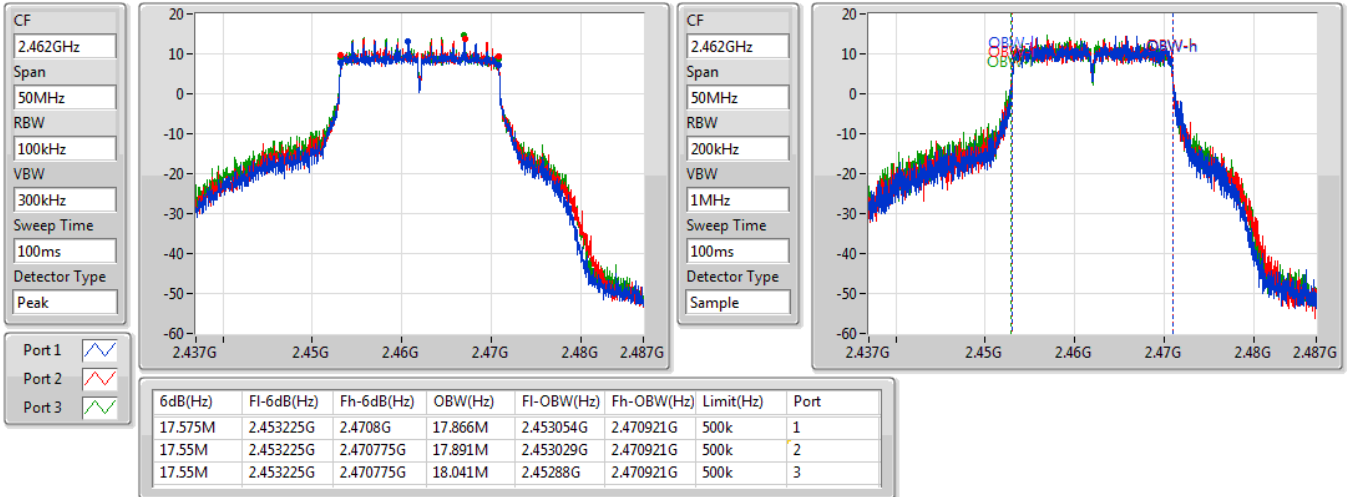

VHT20_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019

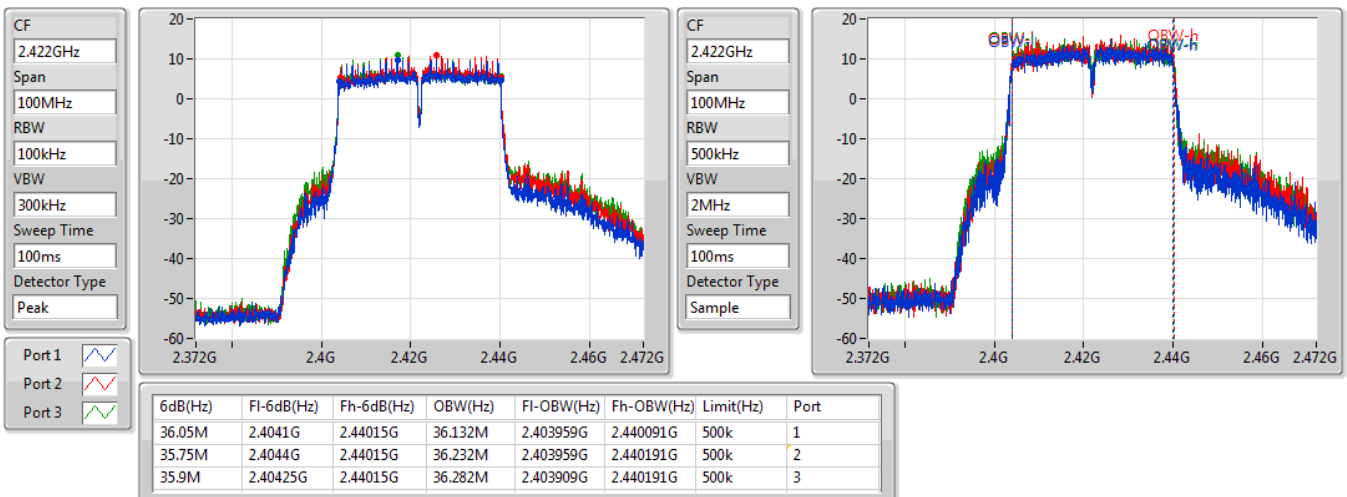


VHT20_Nss1,(MCS0)_3TX
EBW
2462MHz

03/09/2019

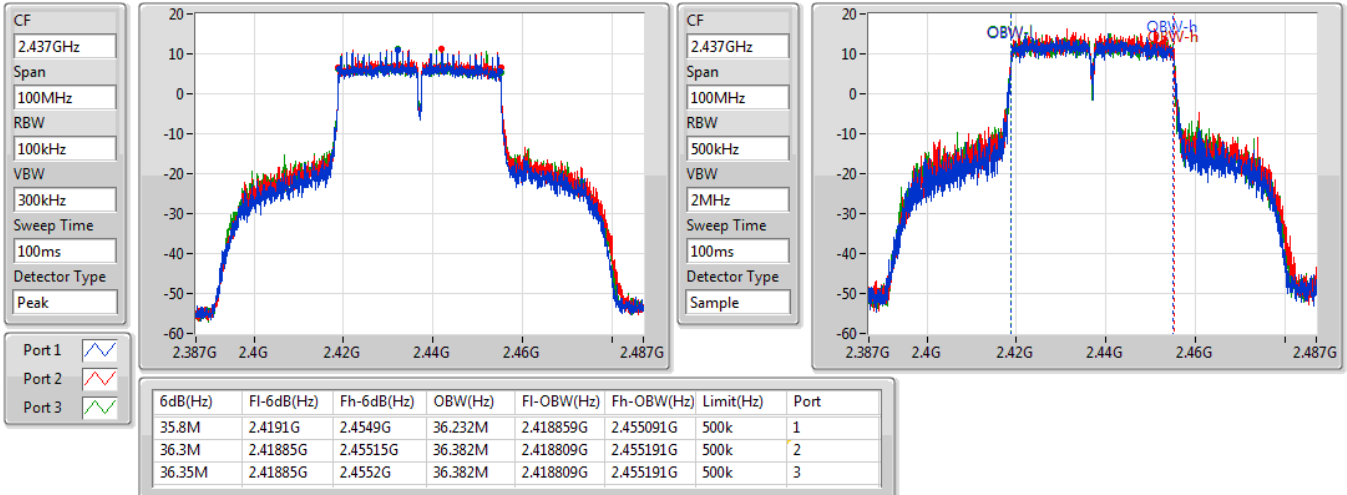

VHT40_Nss1,(MCS0)_3TX
EBW
2422MHz

03/09/2019

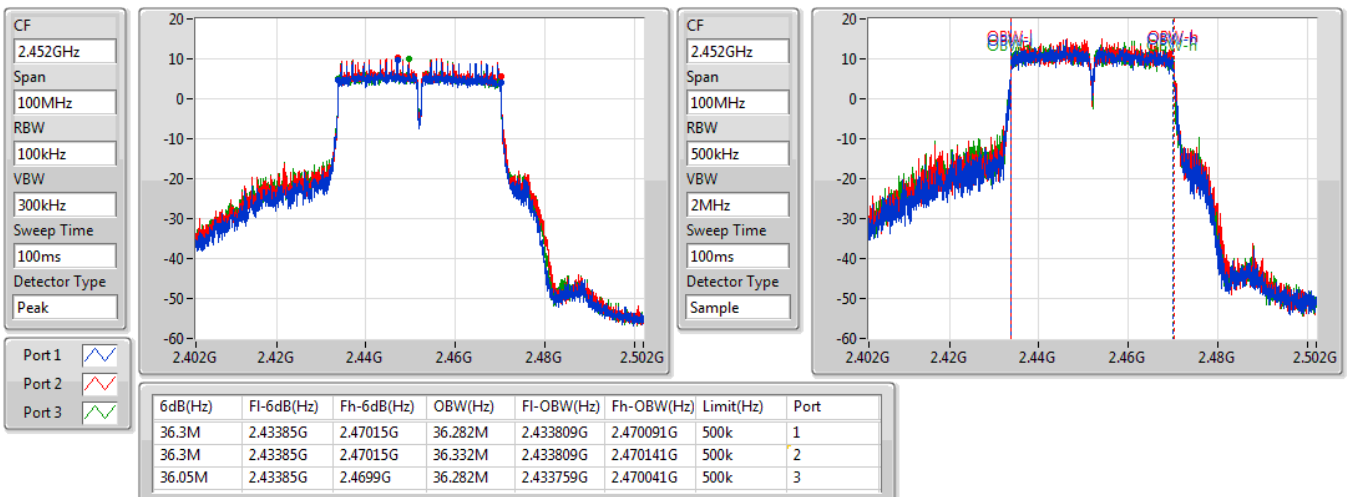


VHT40_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019

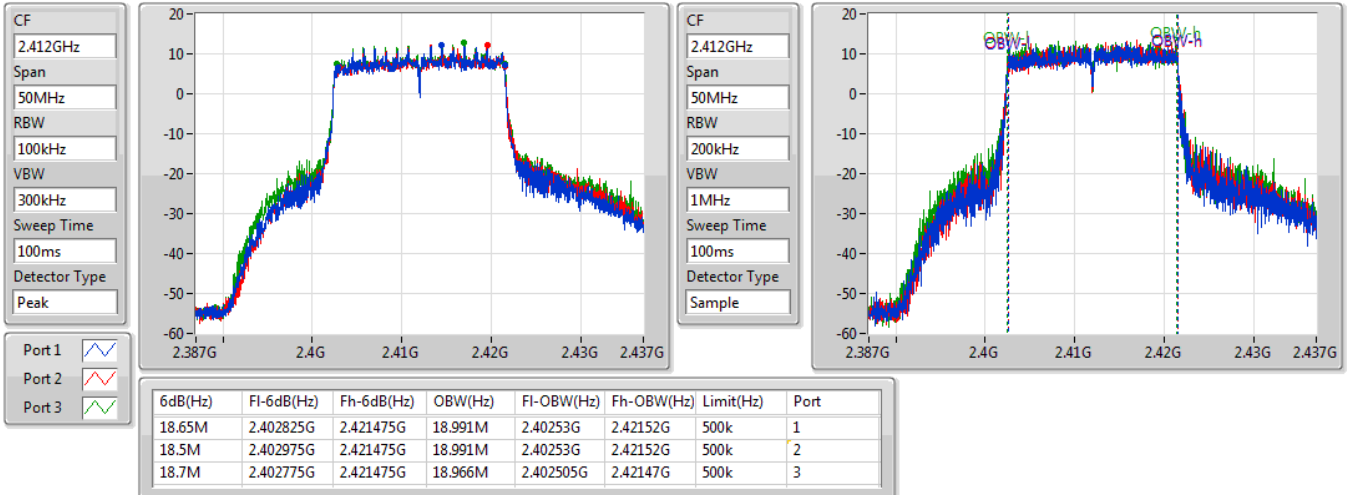

VHT40_Nss1,(MCS0)_3TX
EBW
2452MHz

03/09/2019

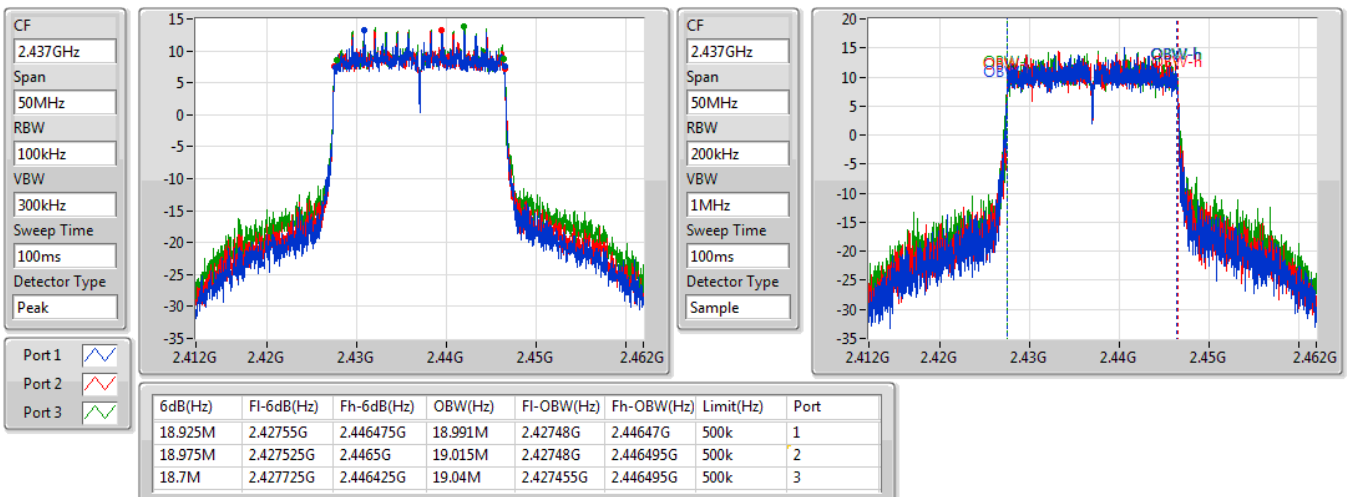


802.11ax HEW20_Nss1,(MCS0)_3TX
EBW
2412MHz

03/09/2019

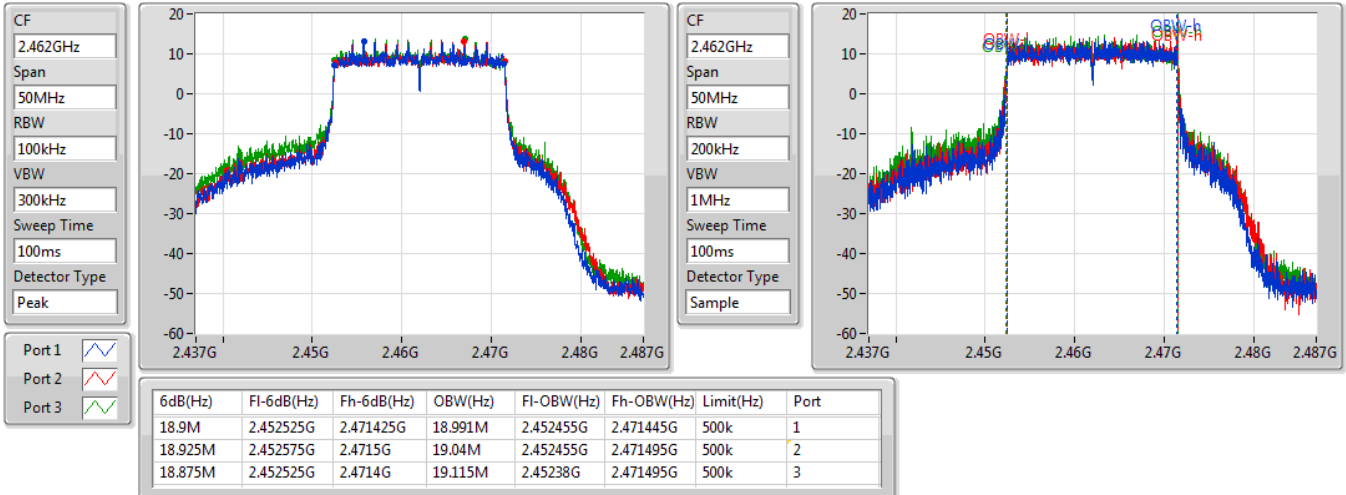

802.11ax HEW20_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019

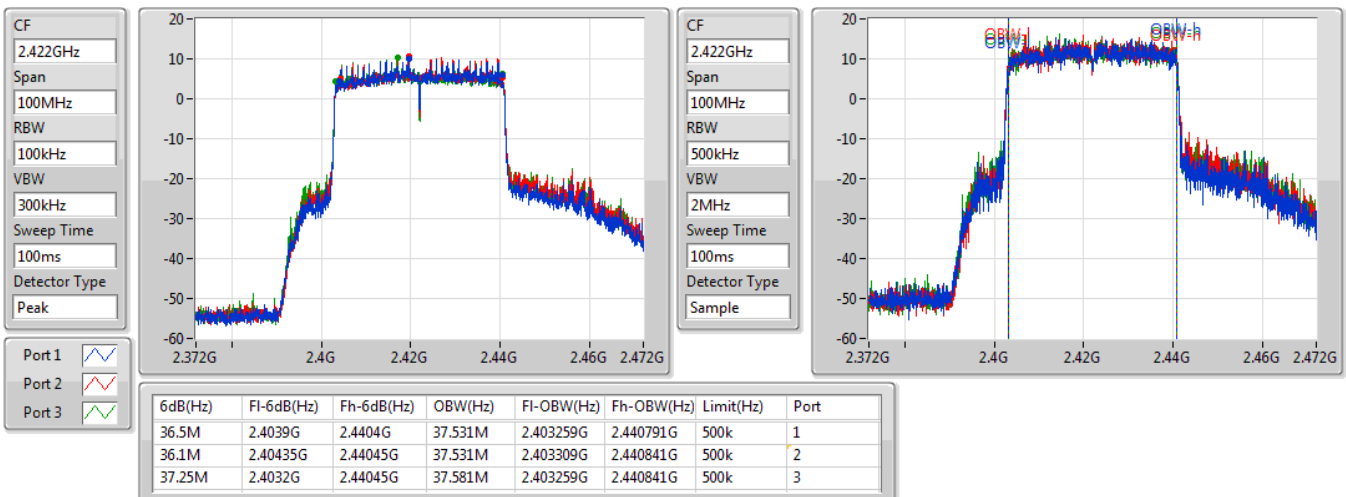


802.11ax HEW20_Nss1,(MCS0)_3TX
EBW
2462MHz

03/09/2019

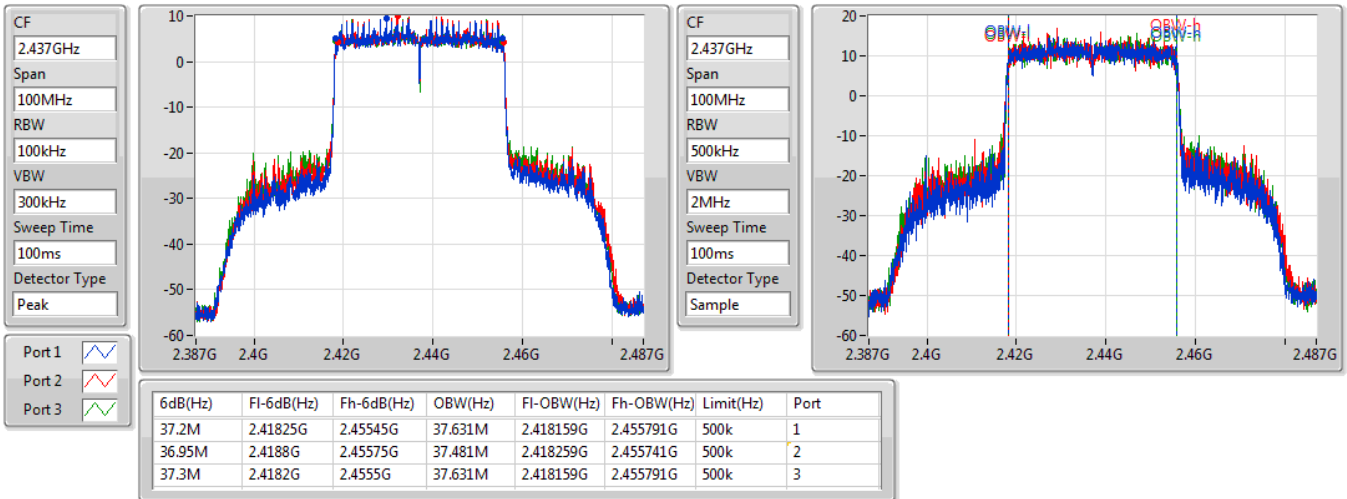

802.11ax HEW40_Nss1,(MCS0)_3TX
EBW
2422MHz

03/09/2019

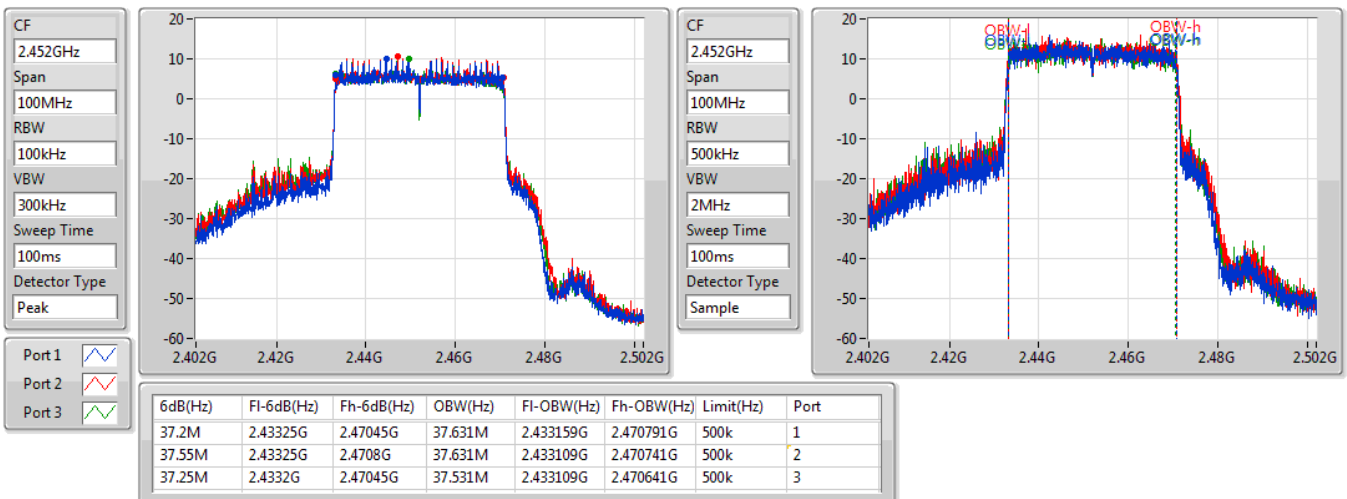


802.11ax HEW40_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019


802.11ax HEW40_Nss1,(MCS0)_3TX
EBW
2452MHz

03/09/2019



**3T2S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20_Nss2,(MCS0)_3TX	17.575M	17.941M	17M9D1D	17.175M	17.766M
802.11ax HEW20_Nss2,(MCS0)_3TX	18.7M	19.04M	19M0D1D	18.425M	18.966M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

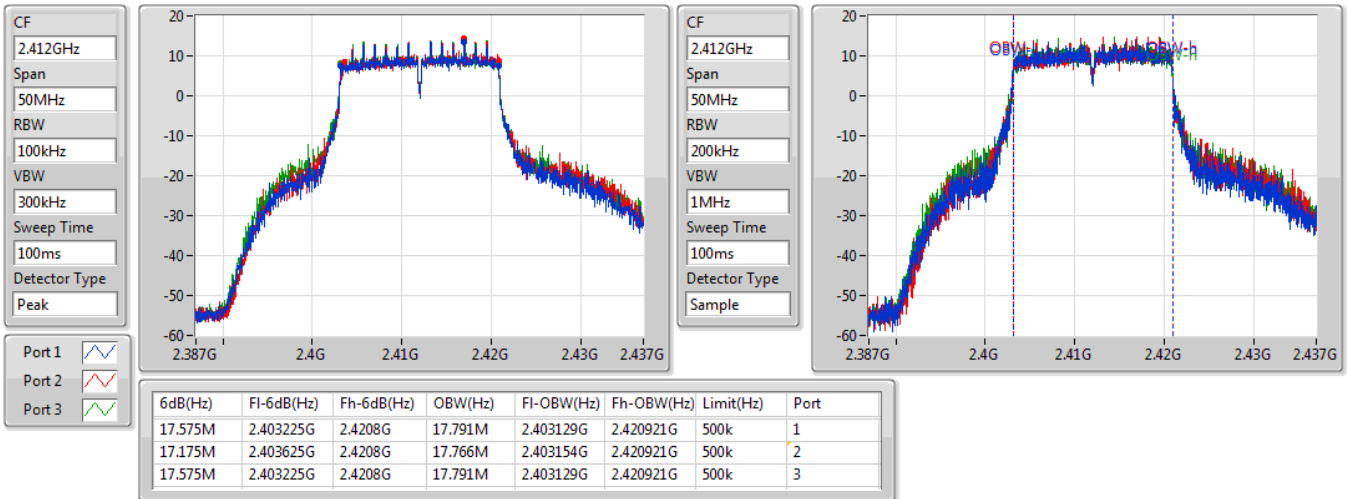
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
VHT20_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.575M	17.791M	17.175M	17.766M	17.575M	17.791M
2462MHz	Pass	500k	17.55M	17.841M	17.55M	17.941M	17.3M	17.866M
802.11ax HEW20_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.525M	18.966M	18.525M	18.991M	18.525M	18.966M
2462MHz	Pass	500k	18.65M	19.04M	18.7M	19.04M	18.425M	19.015M

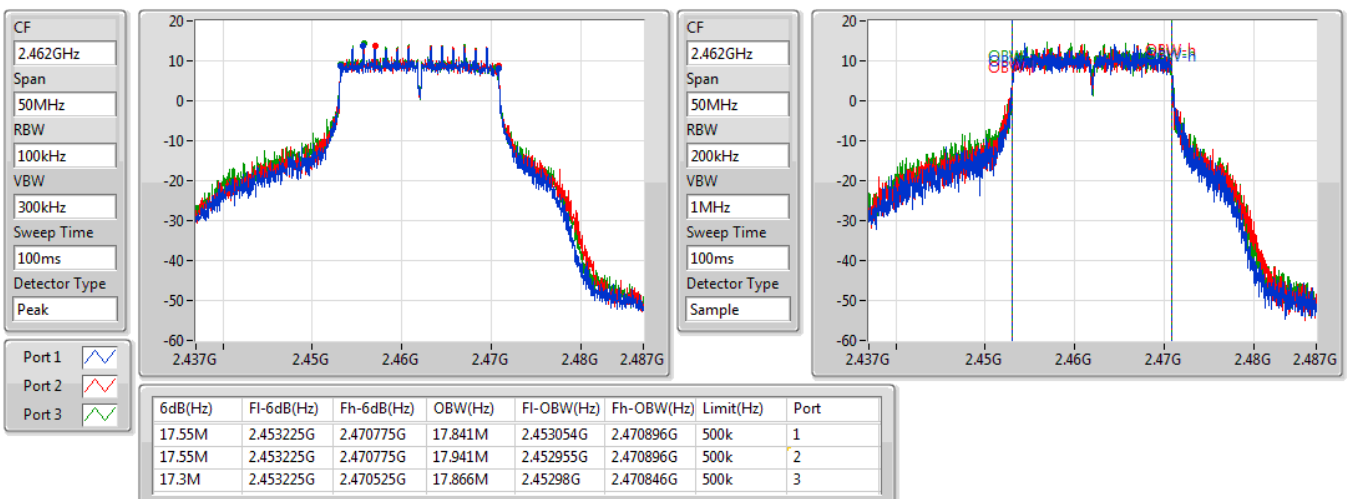
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20_Nss2,(MCS0)_3TX
EBW
2412MHz

04/09/2019

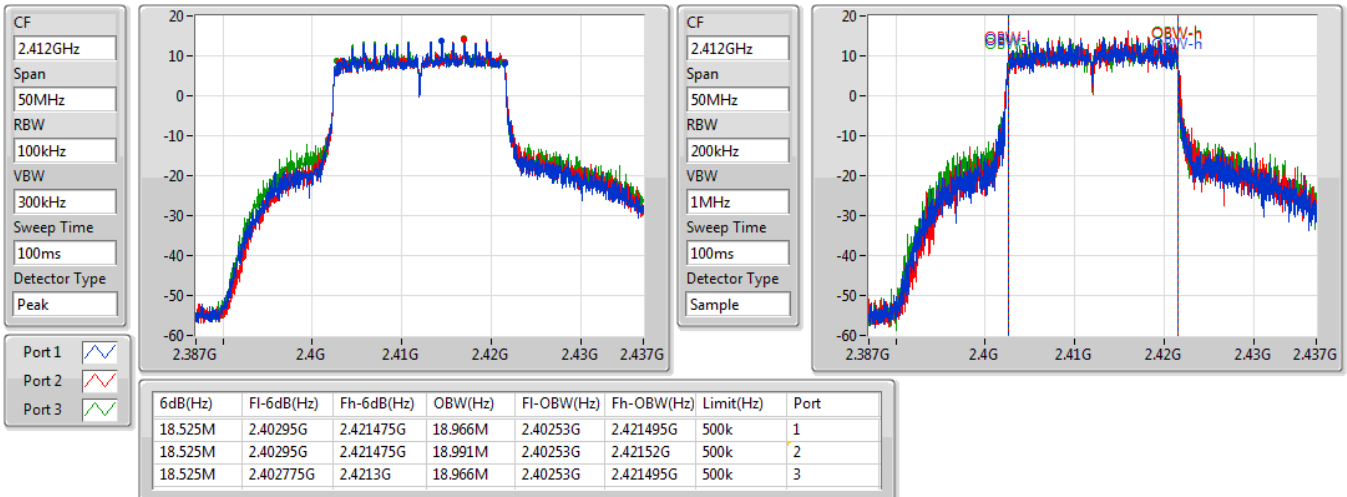

VHT20_Nss2,(MCS0)_3TX
EBW
2462MHz

04/09/2019

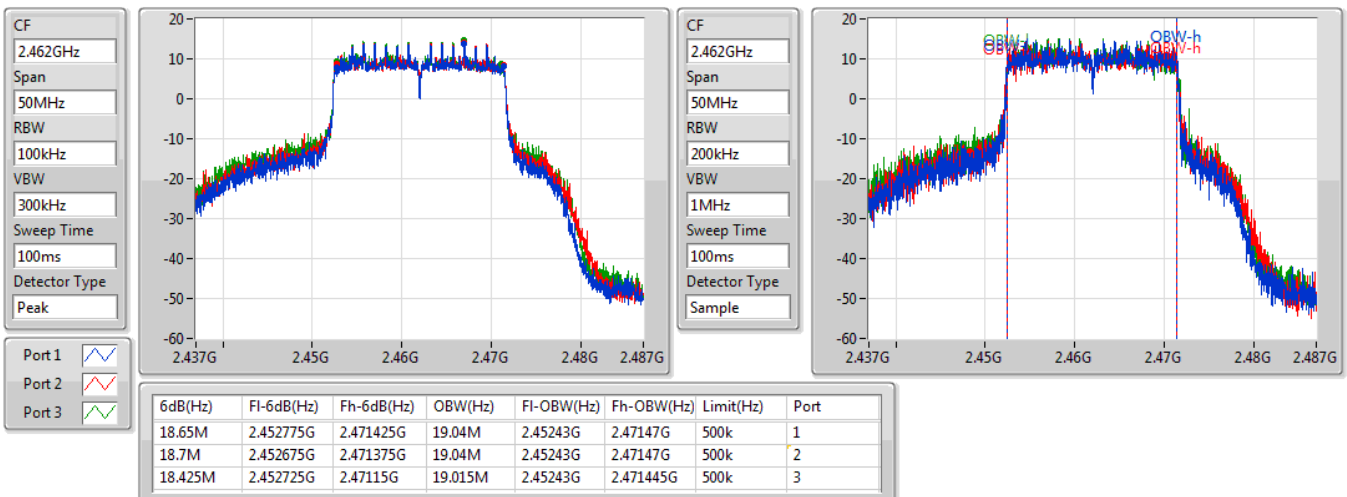


802.11ax HEW20_Nss2,(MCS0)_3TX
EBW
2412MHz

04/09/2019


802.11ax HEW20_Nss2,(MCS0)_3TX
EBW
2462MHz

04/09/2019



**3T3S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20_Nss3,(MCS0)_3TX	17.575M	17.966M	18M0D1D	17.3M	17.816M
802.11ax HEW20_Nss3,(MCS0)_3TX	18.725M	19.065M	19M1D1D	18.2M	18.966M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

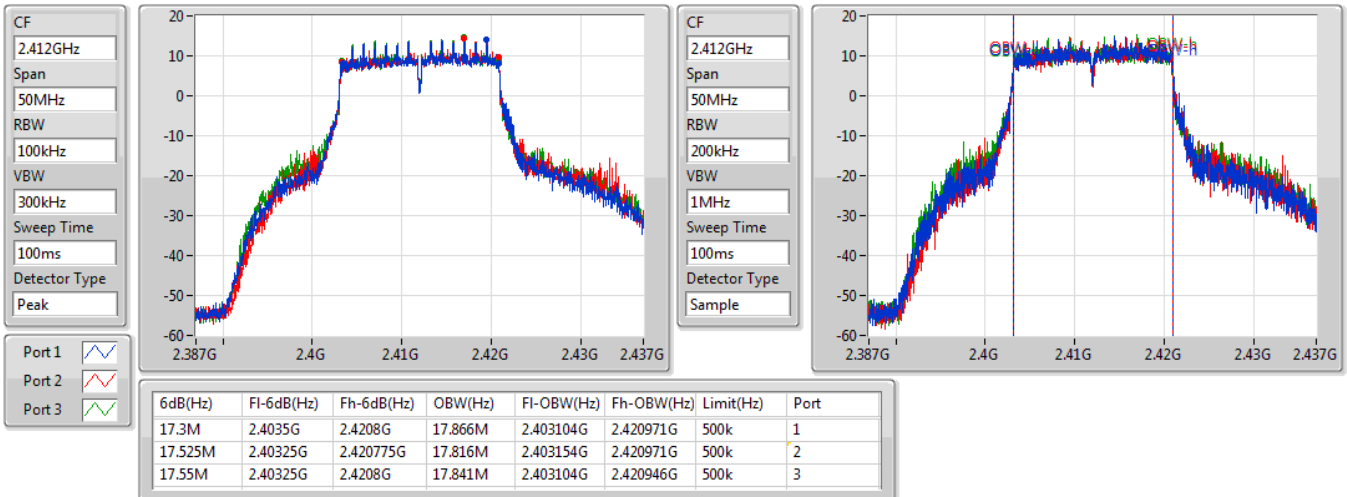
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
VHT20_Nss3,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.3M	17.866M	17.525M	17.816M	17.55M	17.841M
2462MHz	Pass	500k	17.55M	17.916M	17.55M	17.941M	17.575M	17.966M
802.11ax HEW20_Nss3,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.6M	18.966M	18.3M	18.991M	18.2M	19.04M
2462MHz	Pass	500k	18.725M	19.015M	18.7M	19.04M	18.5M	19.065M

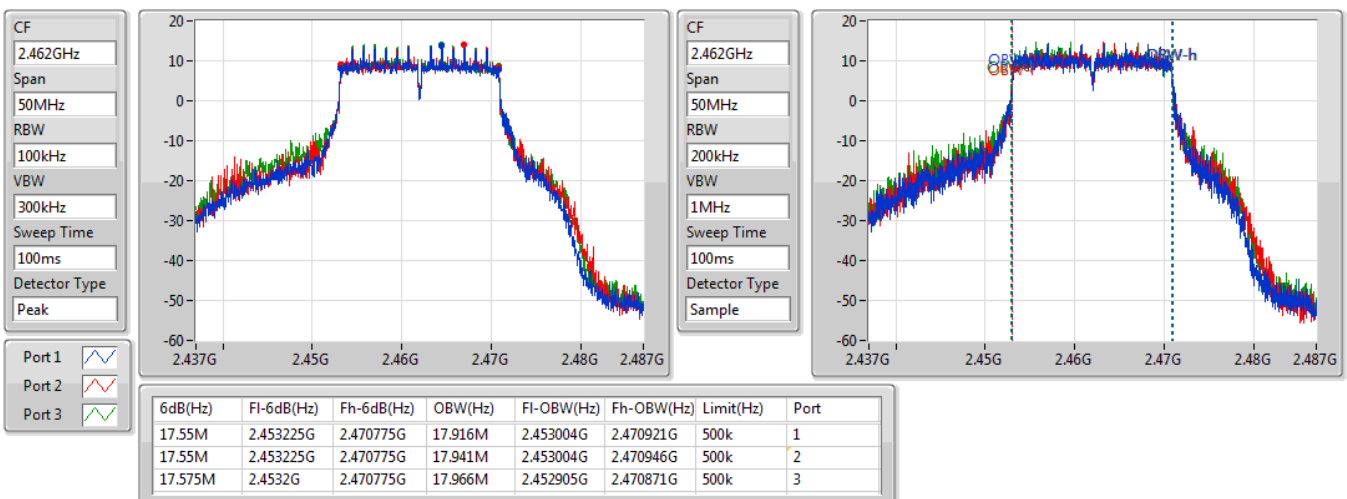
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20_Nss3,(MCS0)_3TX
EBW
2412MHz

04/09/2019

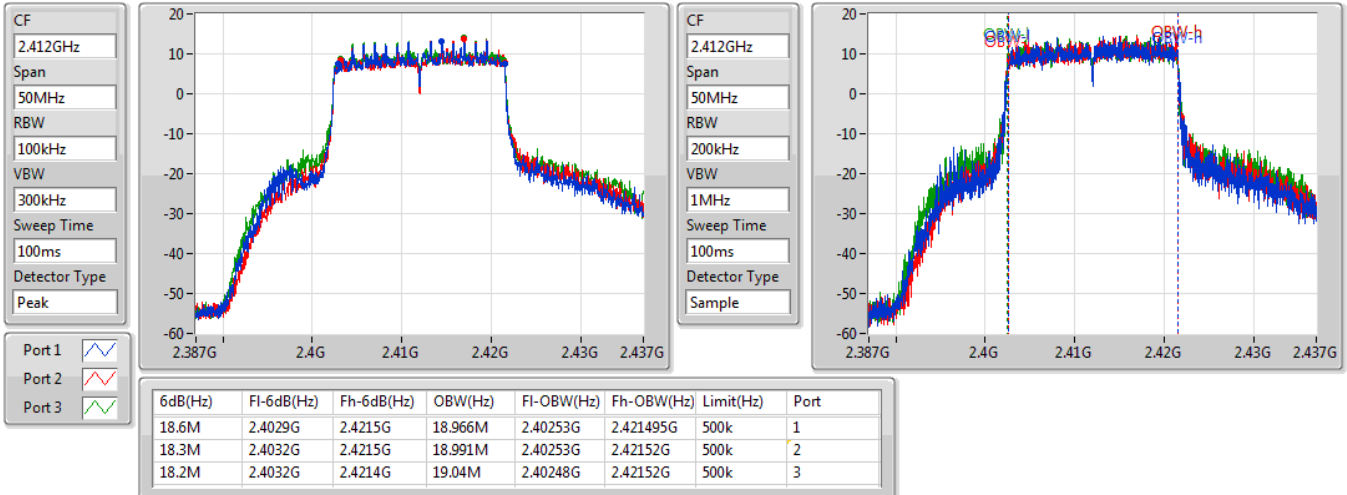

VHT20_Nss3,(MCS0)_3TX
EBW
2462MHz

04/09/2019

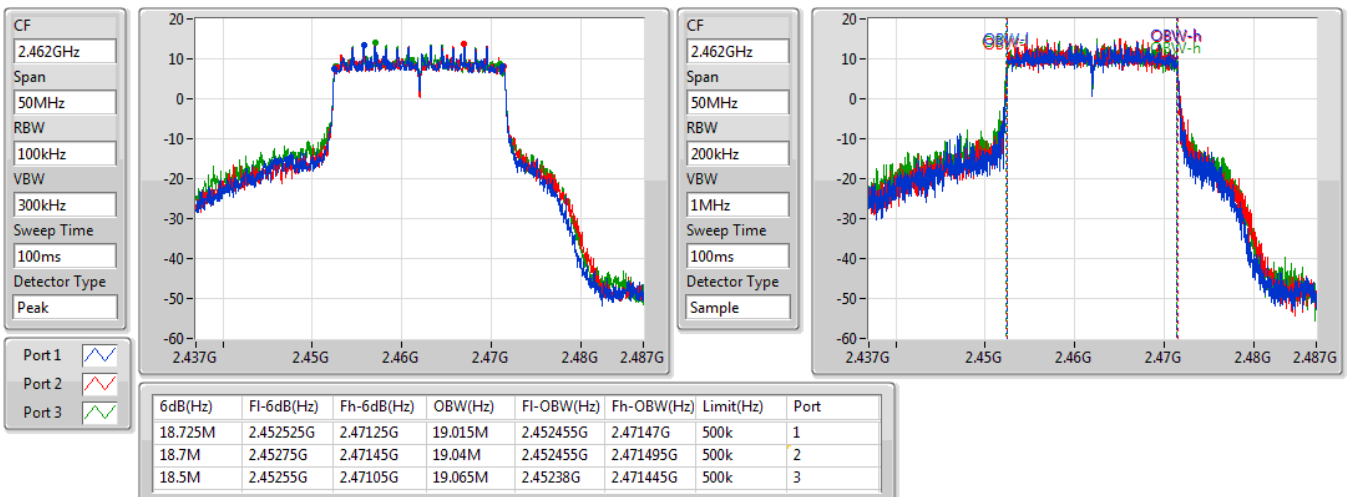


802.11ax HEW20_Nss3,(MCS0)_3TX
EBW
2412MHz

04/09/2019


802.11ax HEW20_Nss3,(MCS0)_3TX
EBW
2462MHz

04/09/2019



**4T1S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_4TX	7.5M	10.41M	10M4G1D	6.525M	10.21M
802.11g_Nss1,(6Mbps)_4TX	16.35M	16.642M	16M6D1D	16.3M	16.492M
VHT20_Nss1,(MCS0)_4TX	17.6M	17.816M	17M8D1D	17.55M	17.716M
VHT40_Nss1,(MCS0)_4TX	36.4M	36.282M	36M3D1D	35.9M	36.132M
802.11ax HEW20_Nss1,(MCS0)_4TX	19M	19.015M	19M0D1D	18.475M	18.941M
802.11ax HEW40_Nss1,(MCS0)_4TX	37.5M	37.631M	37M6D1D	36.3M	37.431M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

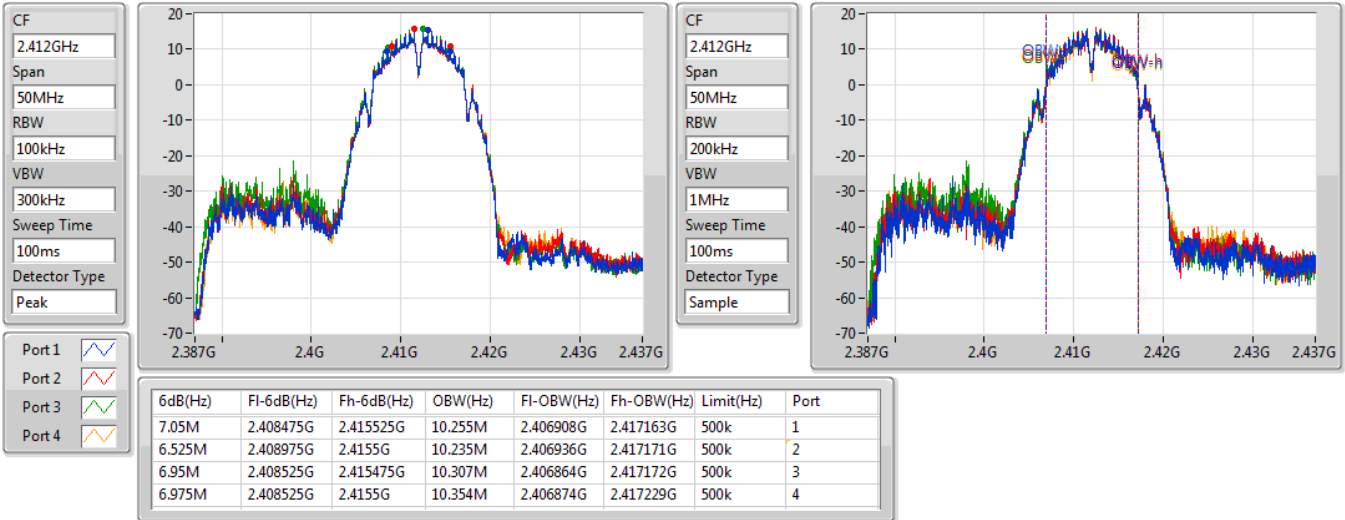
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	7.05M	10.255M	6.525M	10.235M	6.95M	10.307M	6.975M	10.354M
2437MHz	Pass	500k	7.025M	10.21M	7M	10.238M	7M	10.301M	7.025M	10.267M
2462MHz	Pass	500k	7.5M	10.282M	7.075M	10.264M	6.575M	10.41M	7.05M	10.32M
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	16.3M	16.492M	16.3M	16.592M	16.325M	16.592M	16.3M	16.517M
2437MHz	Pass	500k	16.325M	16.592M	16.325M	16.592M	16.35M	16.642M	16.325M	16.592M
2462MHz	Pass	500k	16.325M	16.567M	16.325M	16.592M	16.3M	16.617M	16.35M	16.567M
VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.716M	17.55M	17.766M	17.575M	17.741M	17.575M	17.741M
2437MHz	Pass	500k	17.6M	17.766M	17.575M	17.741M	17.575M	17.791M	17.6M	17.791M
2462MHz	Pass	500k	17.55M	17.816M	17.575M	17.816M	17.55M	17.791M	17.6M	17.741M
VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.05M	36.182M	36.35M	36.232M	36.1M	36.282M	36M	36.132M
2437MHz	Pass	500k	36.3M	36.182M	36.3M	36.282M	36.35M	36.232M	36M	36.232M
2452MHz	Pass	500k	36.05M	36.232M	36.4M	36.232M	36M	36.132M	35.9M	36.282M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.75M	18.941M	18.775M	18.966M	18.75M	18.991M	18.475M	18.941M
2437MHz	Pass	500k	18.9M	18.991M	18.875M	18.941M	18.875M	19.015M	18.875M	18.941M
2462MHz	Pass	500k	19M	18.966M	18.9M	19.015M	18.825M	18.966M	18.925M	18.966M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	37.25M	37.431M	36.65M	37.481M	37.5M	37.581M	36.3M	37.481M
2437MHz	Pass	500k	37.25M	37.481M	36.6M	37.631M	37.25M	37.631M	36.75M	37.581M
2452MHz	Pass	500k	37.3M	37.481M	37.1M	37.581M	37.25M	37.531M	37.3M	37.481M

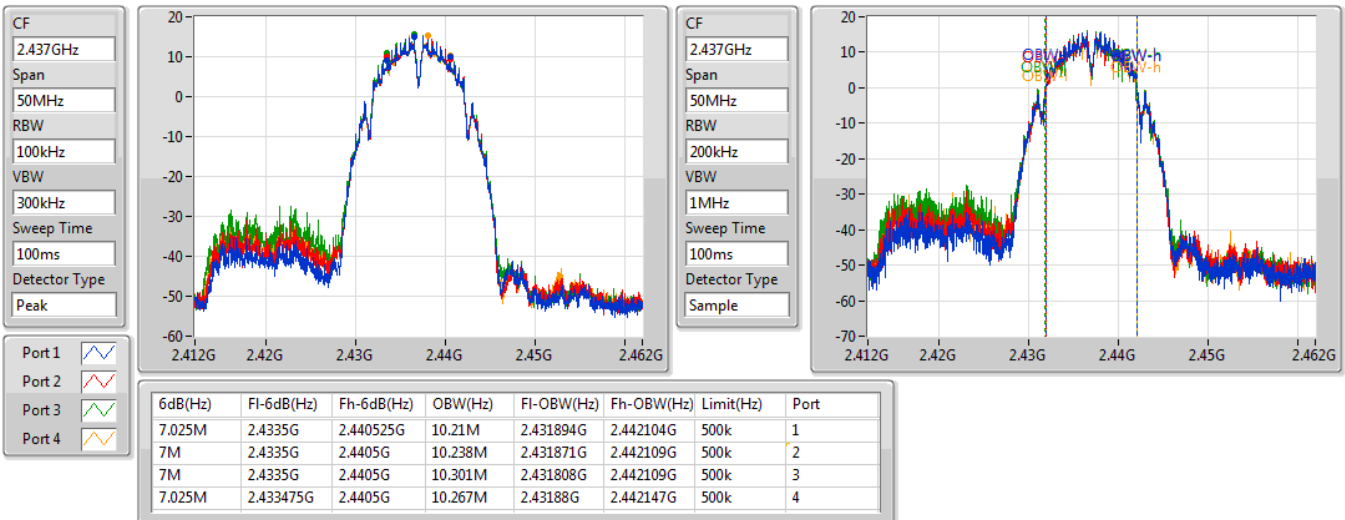
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

802.11b_Nss1,(1Mbps)_4TX
EBW
2412MHz

20/09/2019

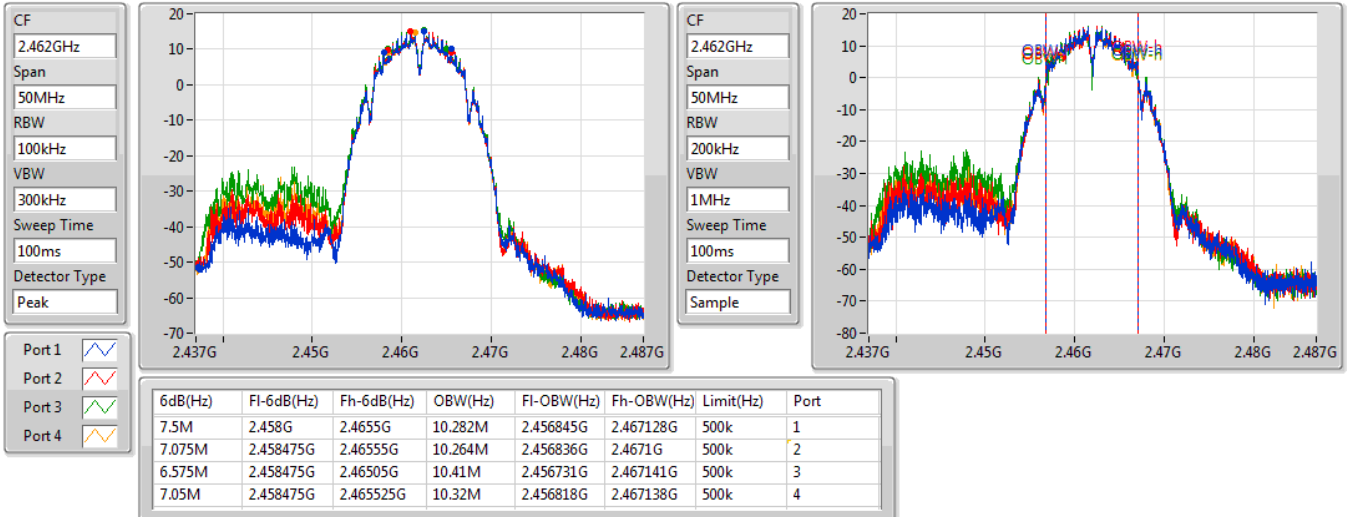

802.11b_Nss1,(1Mbps)_4TX
EBW
2437MHz

20/09/2019

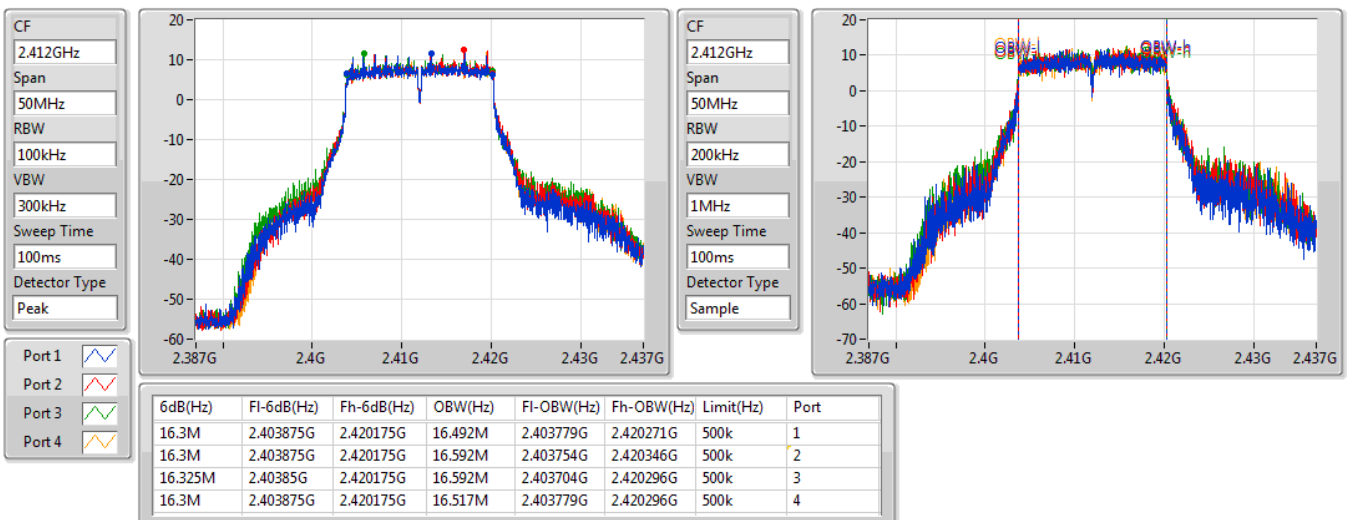


802.11b_Nss1,(1Mbps)_4TX
EBW
2462MHz

20/09/2019

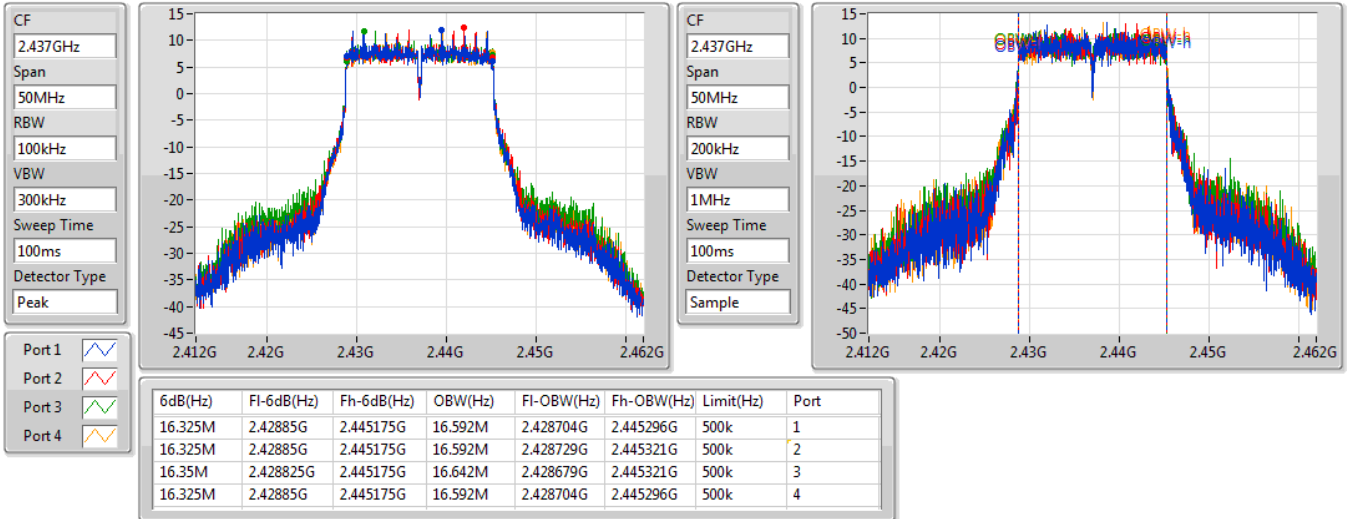

802.11g_Nss1,(6Mbps)_4TX
EBW
2412MHz

03/09/2019

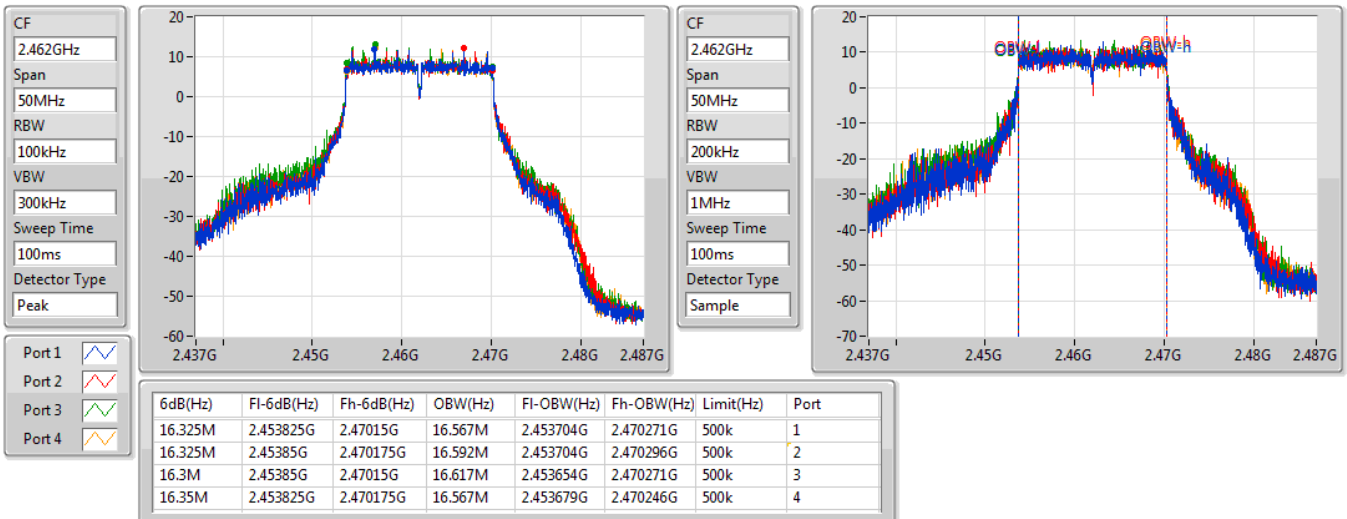


802.11g_Nss1,(6Mbps)_4TX
EBW
2437MHz

03/09/2019

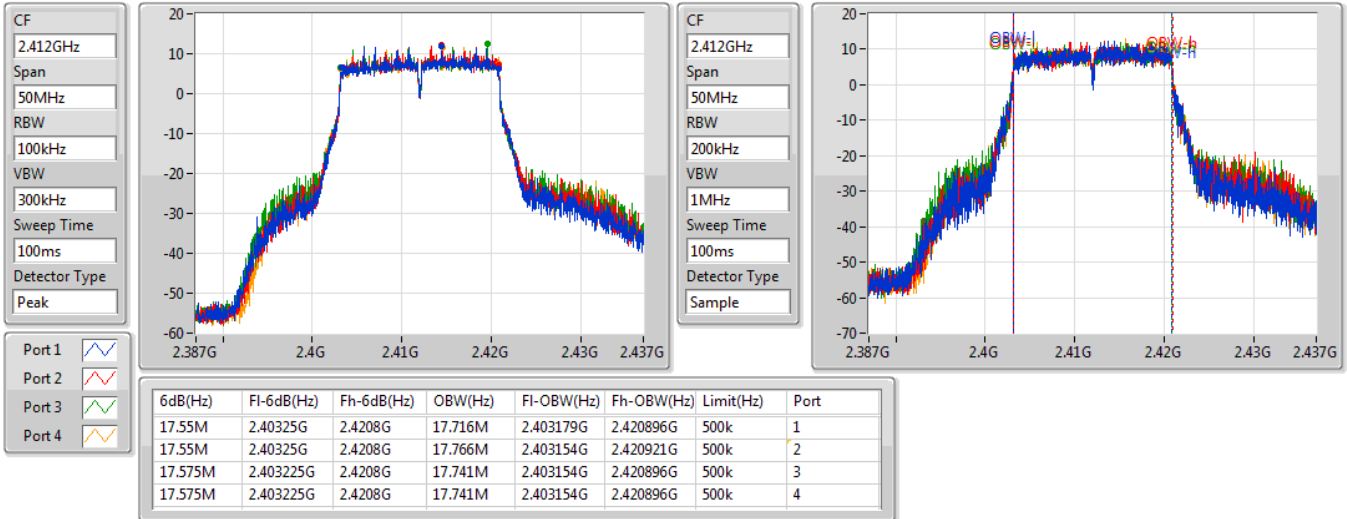

802.11g_Nss1,(6Mbps)_4TX
EBW
2462MHz

03/09/2019

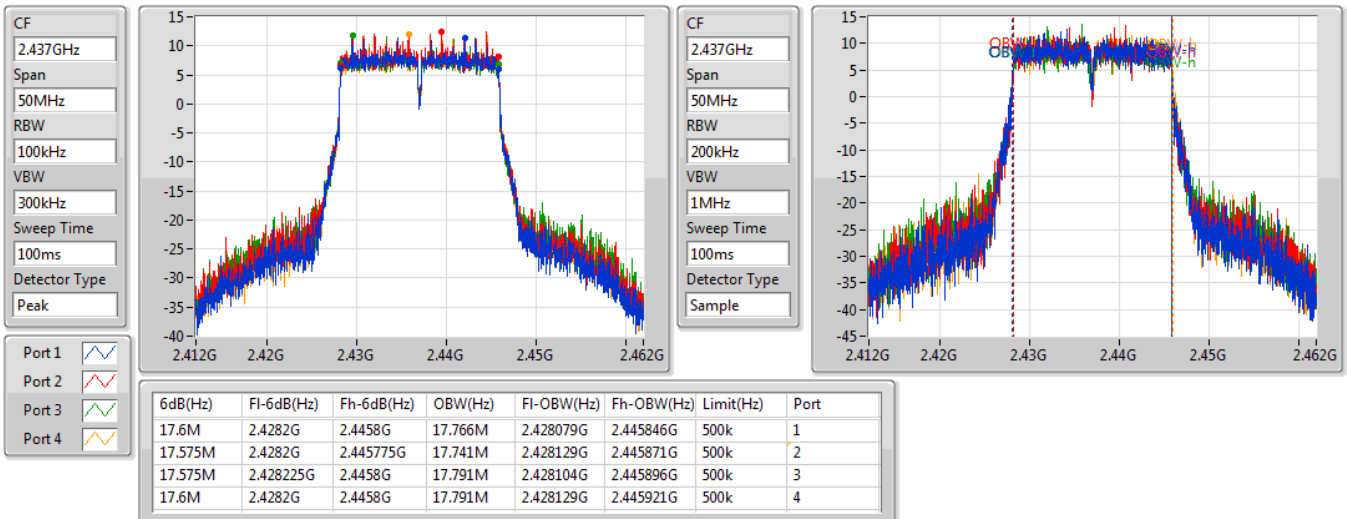


VHT20_Nss1,(MCS0)_4TX
EBW
2412MHz

03/09/2019

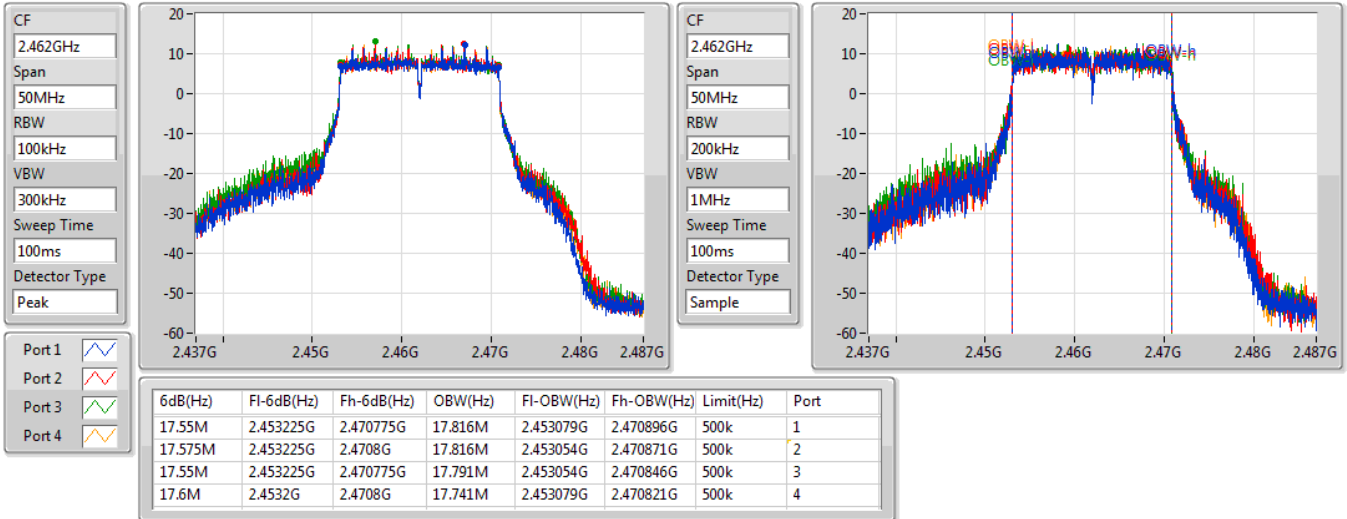

VHT20_Nss1,(MCS0)_4TX
EBW
2437MHz

03/09/2019

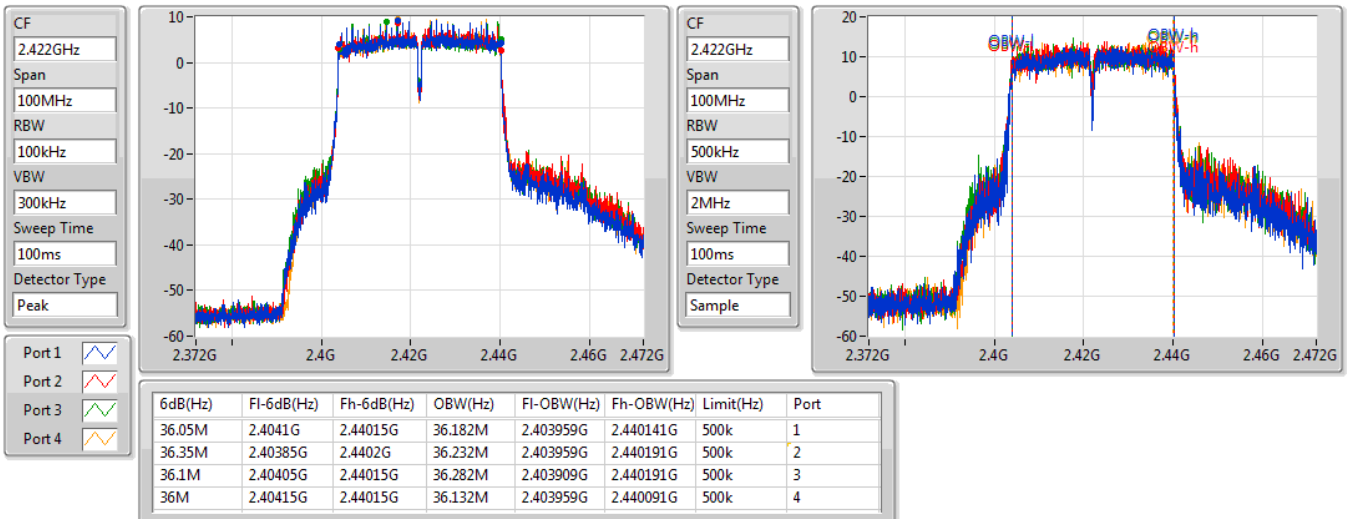


VHT20_Nss1,(MCS0)_4TX
EBW
2462MHz

03/09/2019

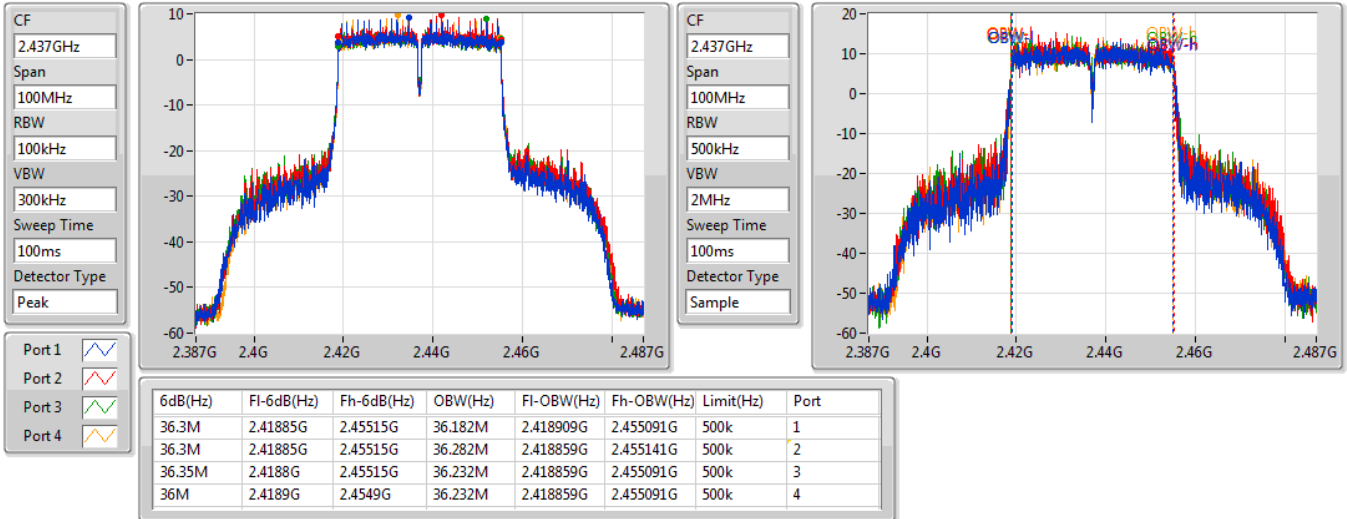

VHT40_Nss1,(MCS0)_4TX
EBW
2422MHz

03/09/2019

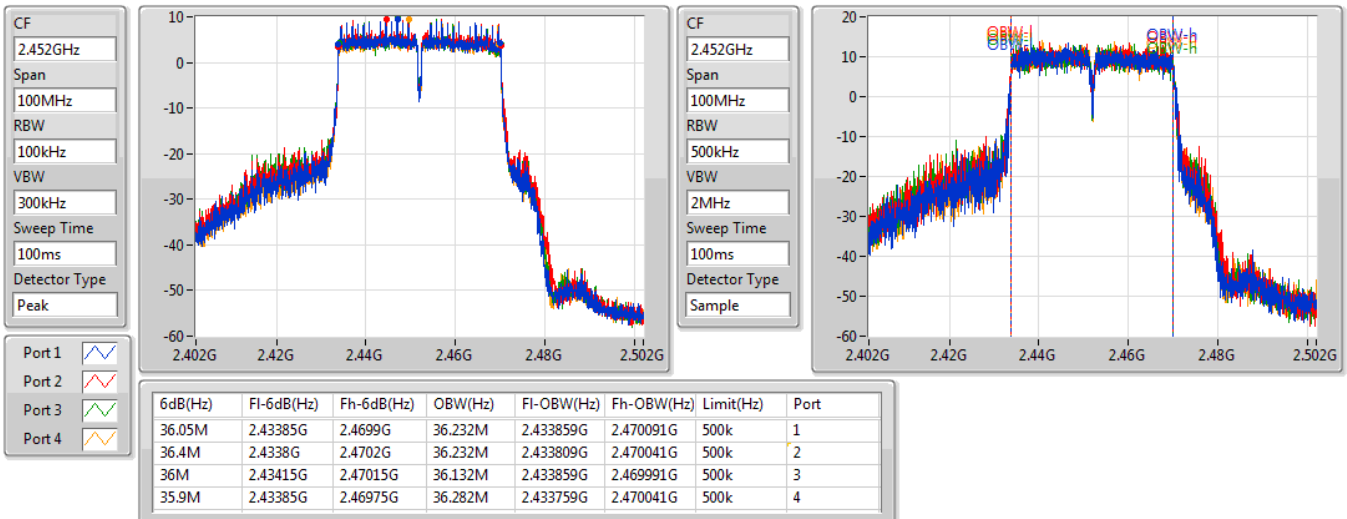


VHT40_Nss1,(MCS0)_4TX
EBW
2437MHz

03/09/2019

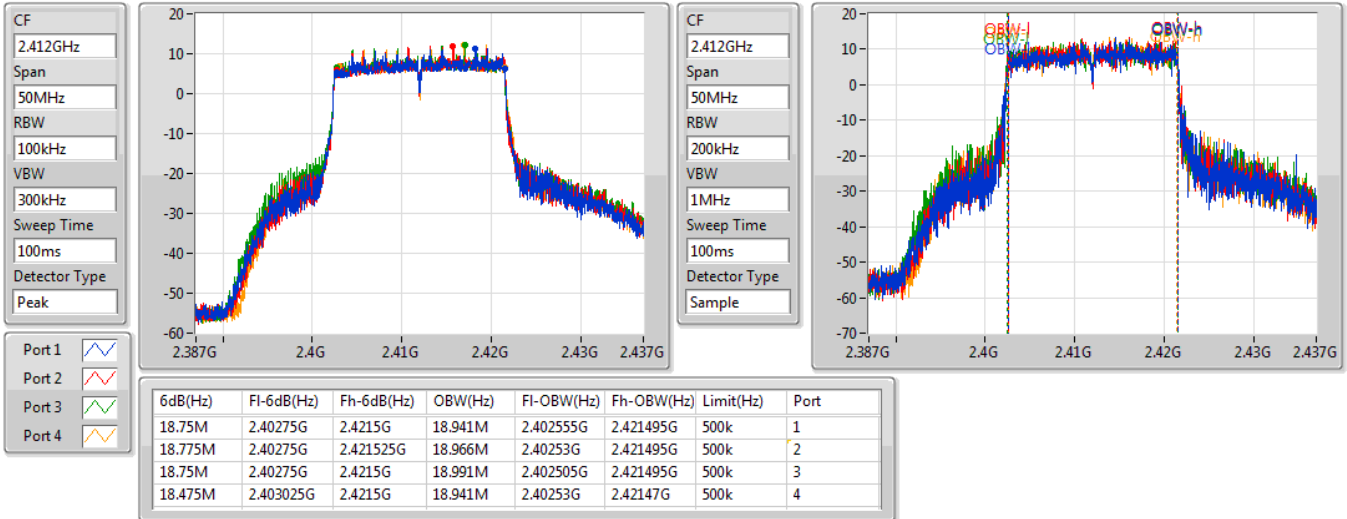

VHT40_Nss1,(MCS0)_4TX
EBW
2452MHz

03/09/2019

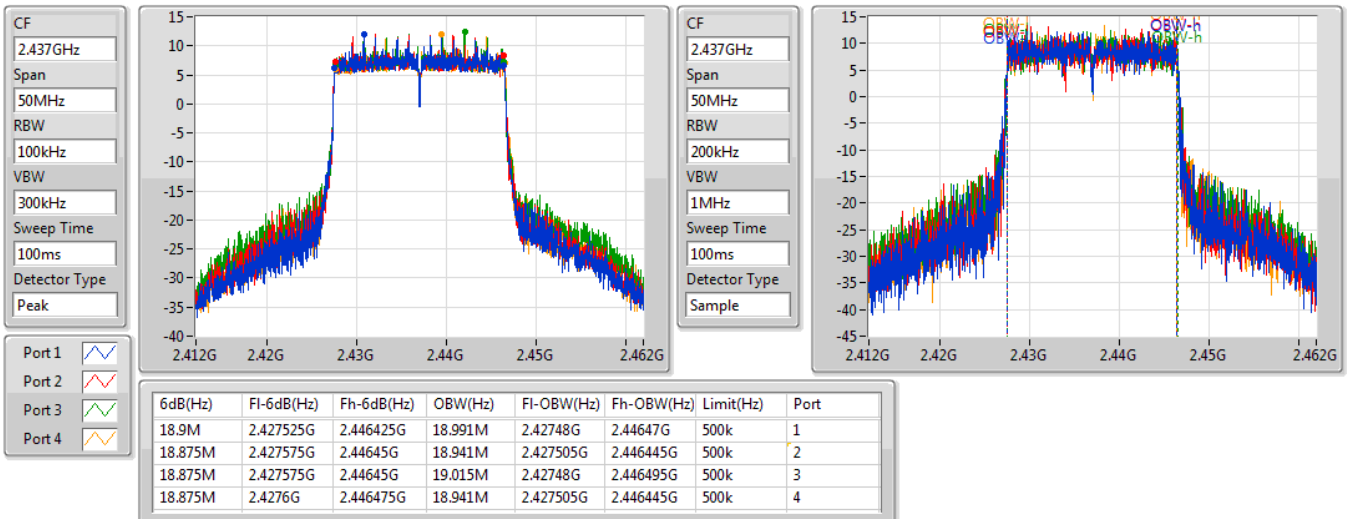


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
2412MHz

03/09/2019

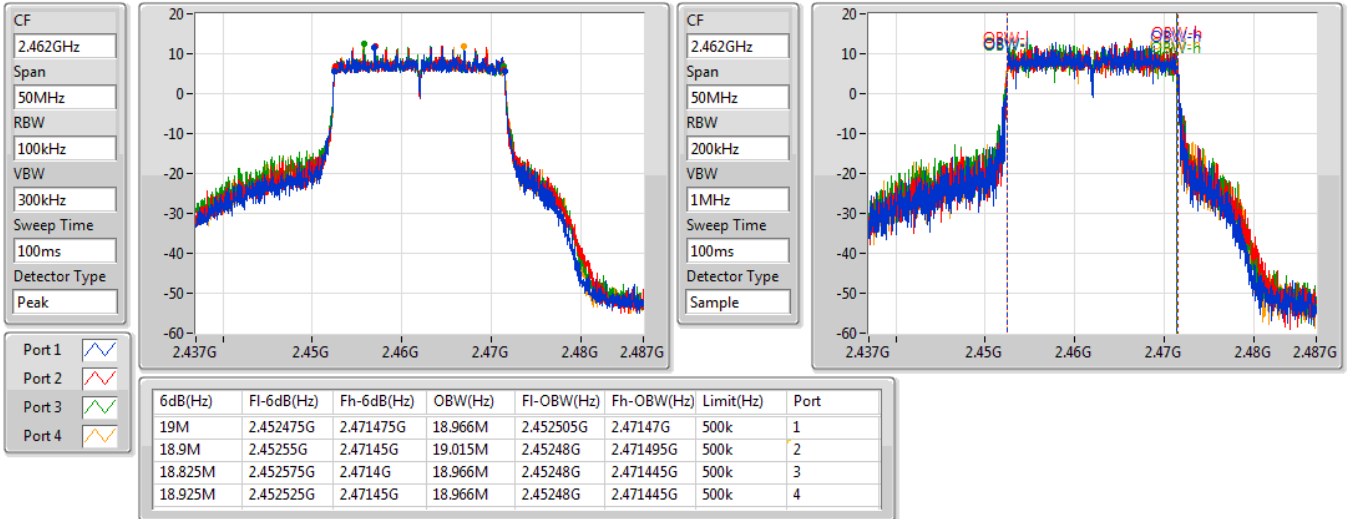

802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
2437MHz

03/09/2019

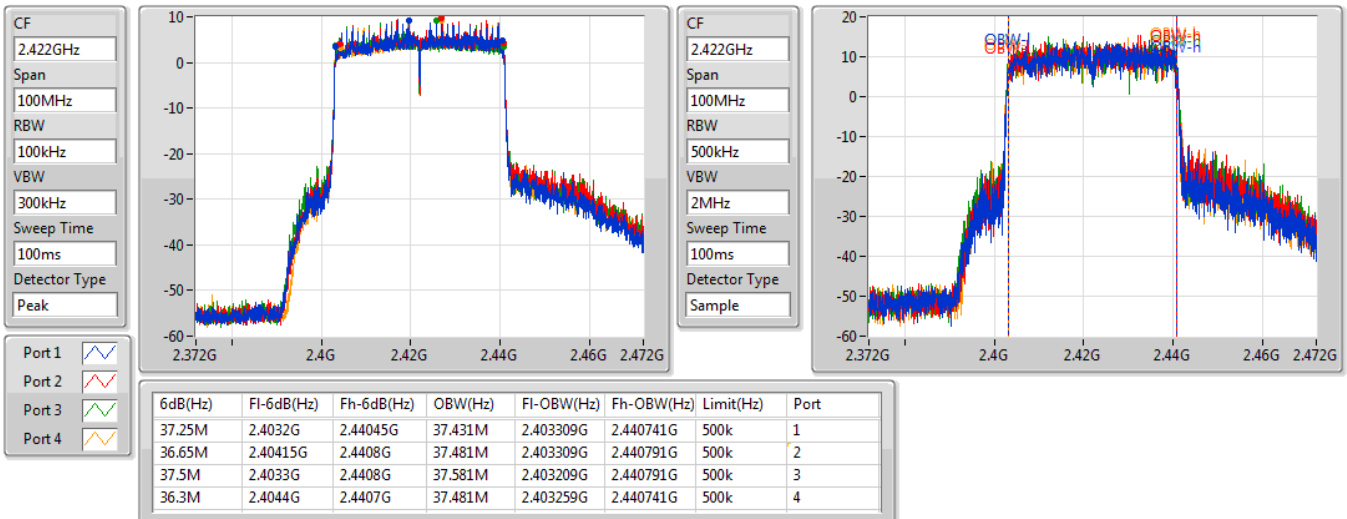


802.11ax HEW20_Nss1,(MCS0)_4TX
EBW
2462MHz

03/09/2019

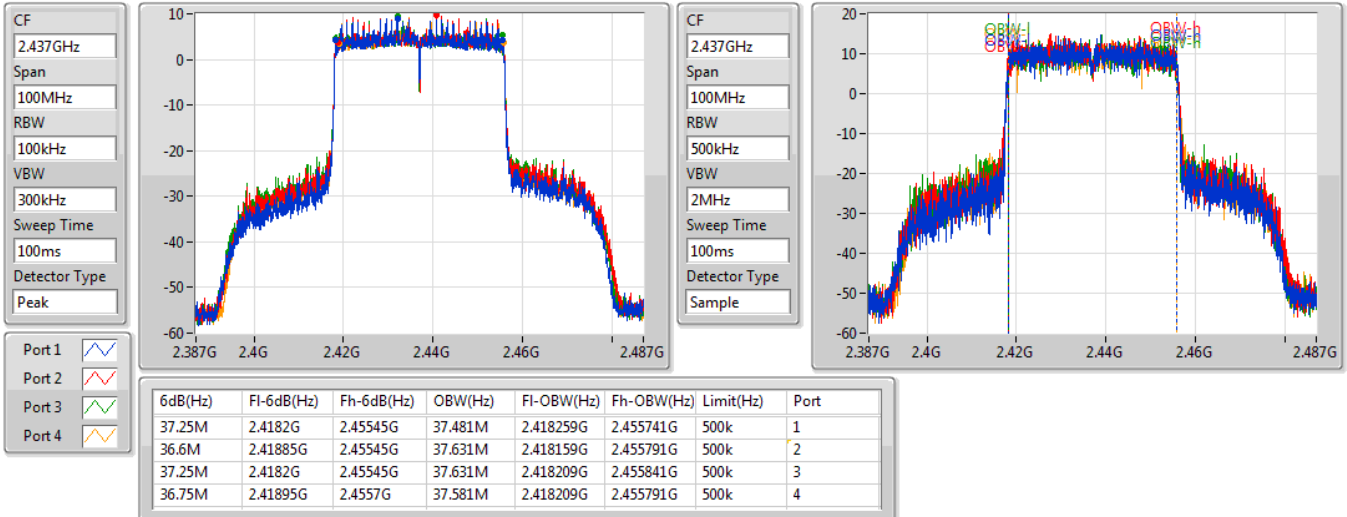

802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
2422MHz

03/09/2019

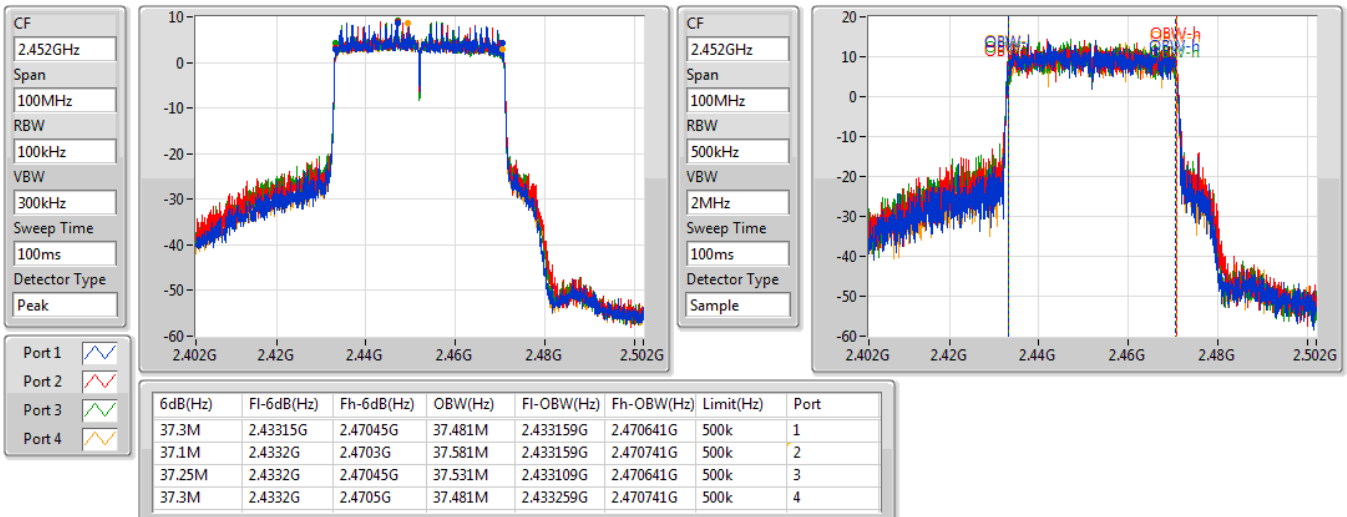


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
2437MHz

03/09/2019


802.11ax HEW40_Nss1,(MCS0)_4TX
EBW
2452MHz

03/09/2019



**4T2S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20_Nss2,(MCS0)_4TX	17.6M	17.766M	17M8D1D	17.175M	17.691M
VHT40_Nss2,(MCS0)_4TX	36.3M	36.382M	36M4D1D	35.4M	36.182M
802.11ax HEW20_Nss2,(MCS0)_4TX	18.775M	18.991M	19M0D1D	18.175M	18.916M
802.11ax HEW40_Nss2,(MCS0)_4TX	37.6M	37.731M	37M7D1D	36.35M	37.331M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

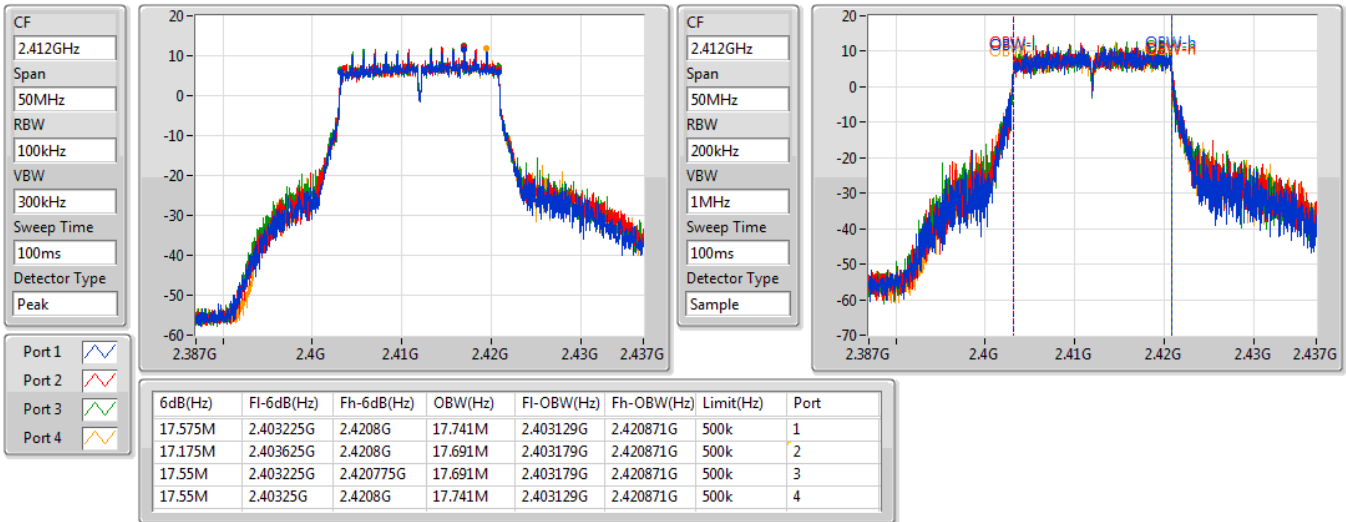
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.575M	17.741M	17.175M	17.691M	17.55M	17.691M	17.55M	17.741M
2462MHz	Pass	500k	17.575M	17.766M	17.6M	17.741M	17.525M	17.741M	17.55M	17.741M
VHT40_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	35.7M	36.182M	35.9M	36.182M	36.05M	36.182M	35.9M	36.232M
2437MHz	Pass	500k	36.05M	36.232M	36.25M	36.282M	36.25M	36.382M	36.3M	36.282M
2452MHz	Pass	500k	36.3M	36.232M	36.3M	36.332M	35.7M	36.182M	35.4M	36.282M
802.11ax HEW20_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.325M	18.916M	18.175M	18.991M	18.3M	18.966M	18.375M	18.966M
2462MHz	Pass	500k	18.775M	18.966M	18.55M	18.966M	18.175M	18.916M	18.525M	18.991M
802.11ax HEW40_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.35M	37.331M	36.4M	37.581M	36.55M	37.531M	36.6M	37.431M
2437MHz	Pass	500k	37.6M	37.481M	37.6M	37.681M	36.6M	37.481M	36.55M	37.631M
2452MHz	Pass	500k	37.55M	37.481M	37.55M	37.731M	36.5M	37.531M	36.4M	37.581M

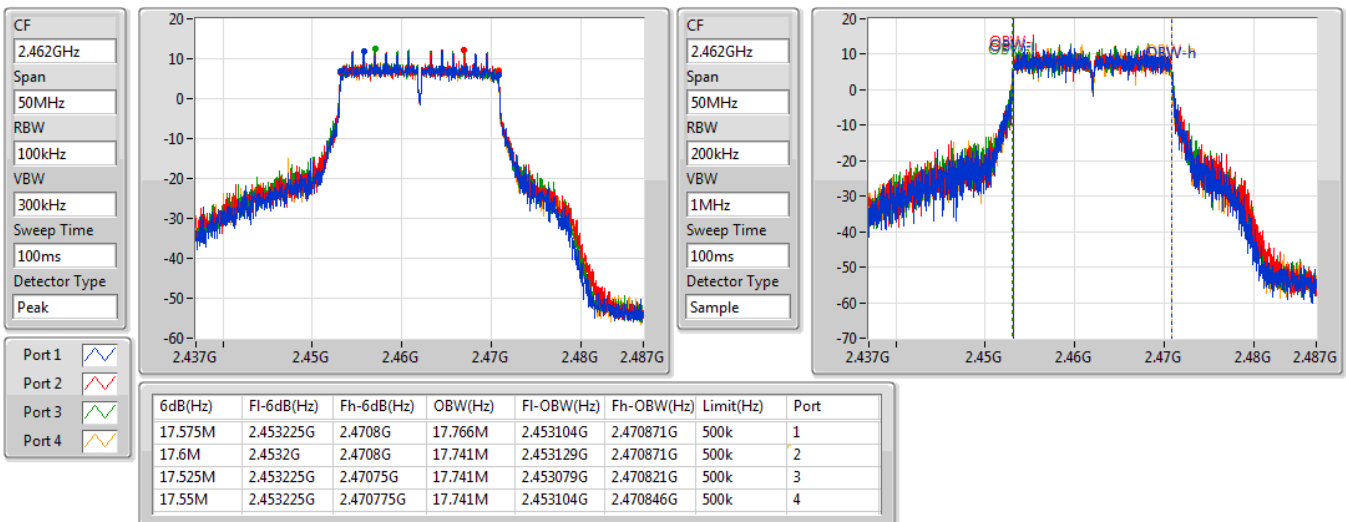
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20_Nss2,(MCS0)_4TX
EBW
2412MHz

04/09/2019

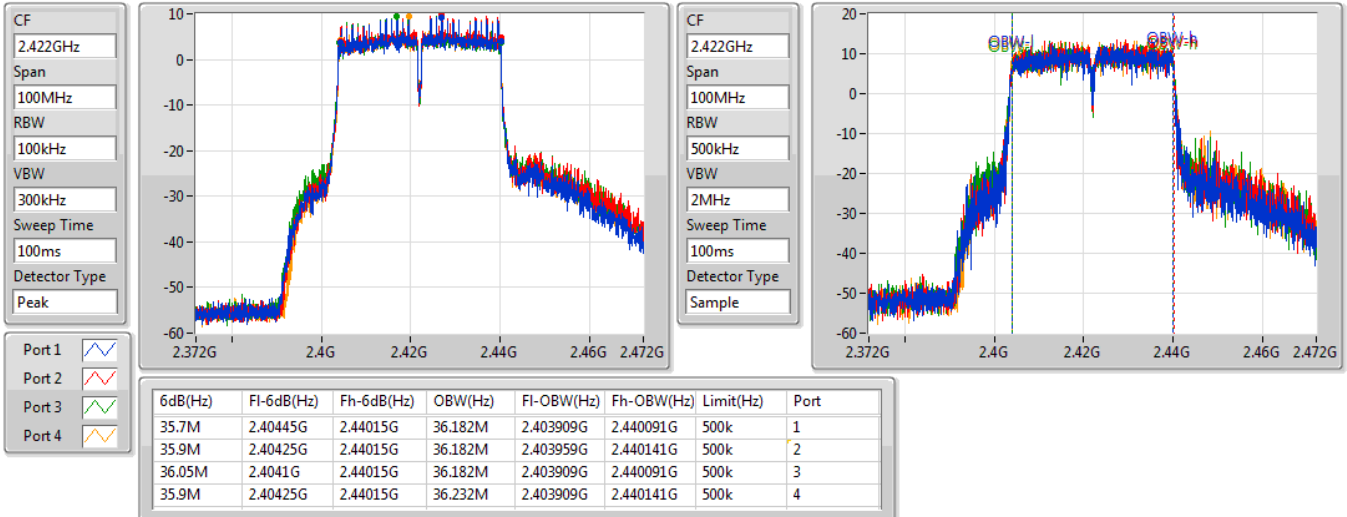

VHT20_Nss2,(MCS0)_4TX
EBW
2462MHz

04/09/2019

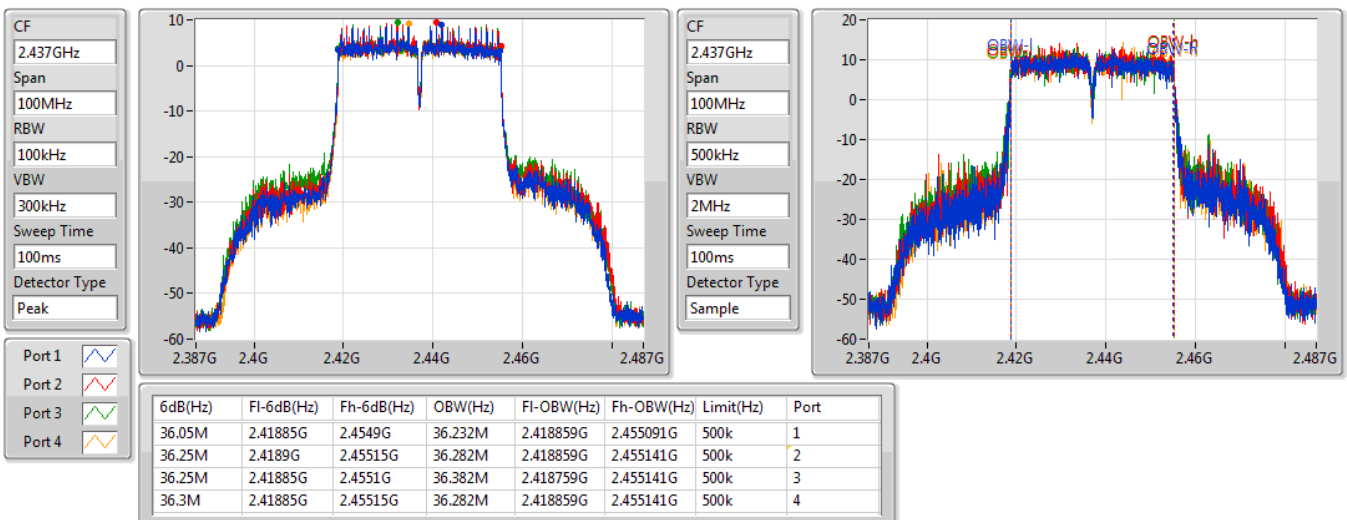


VHT40_Nss2,(MCS0)_4TX
EBW
2422MHz

04/09/2019

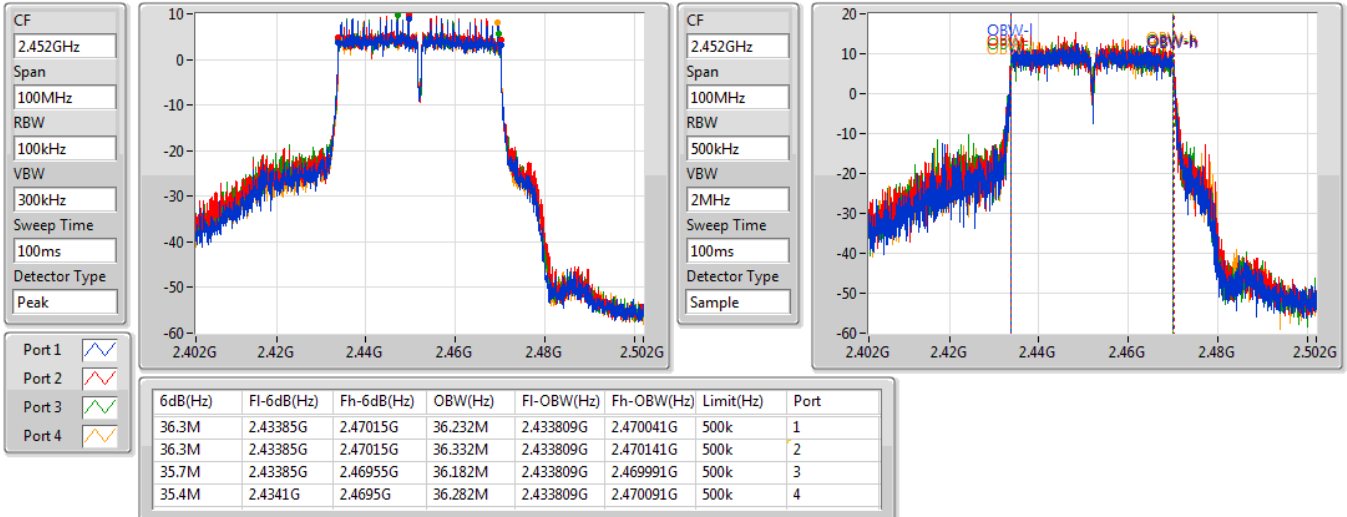

VHT40_Nss2,(MCS0)_4TX
EBW
2437MHz

04/09/2019

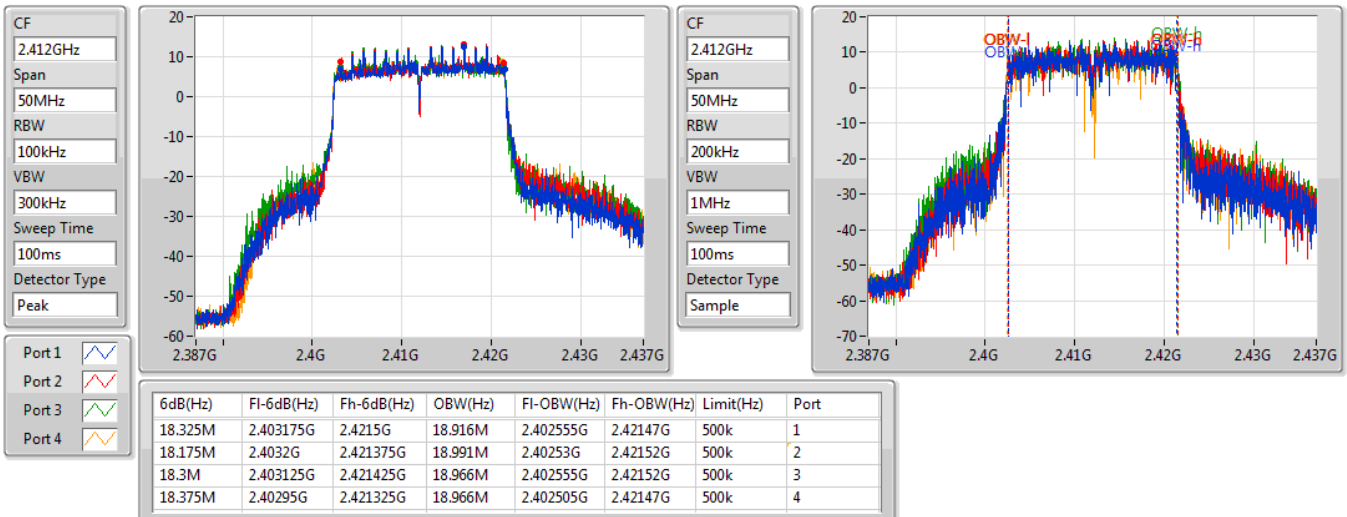


VHT40_Nss2,(MCS0)_4TX
EBW
2452MHz

04/09/2019

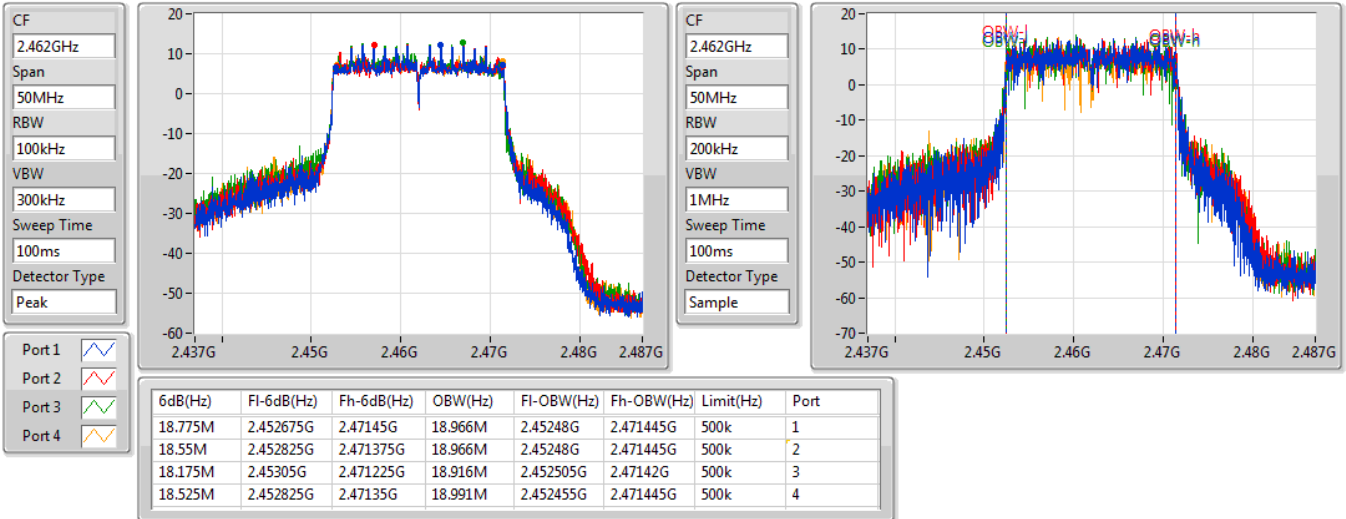

802.11ax HEW20_Nss2,(MCS0)_4TX
EBW
2412MHz

04/09/2019

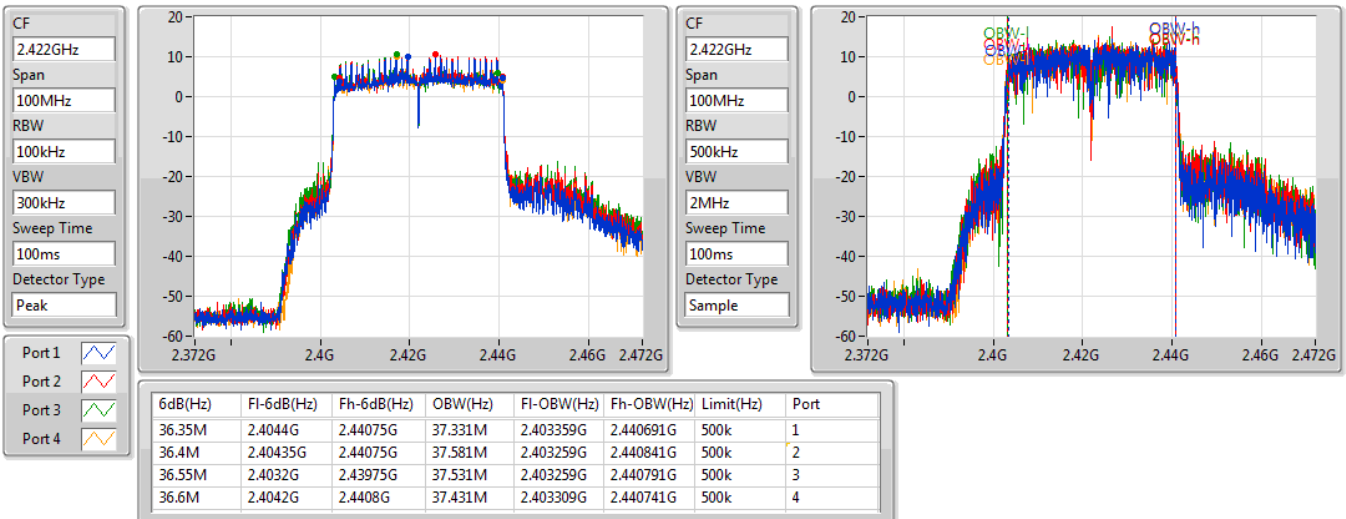


802.11ax HEW20_Nss2,(MCS0)_4TX
EBW
2462MHz

04/09/2019

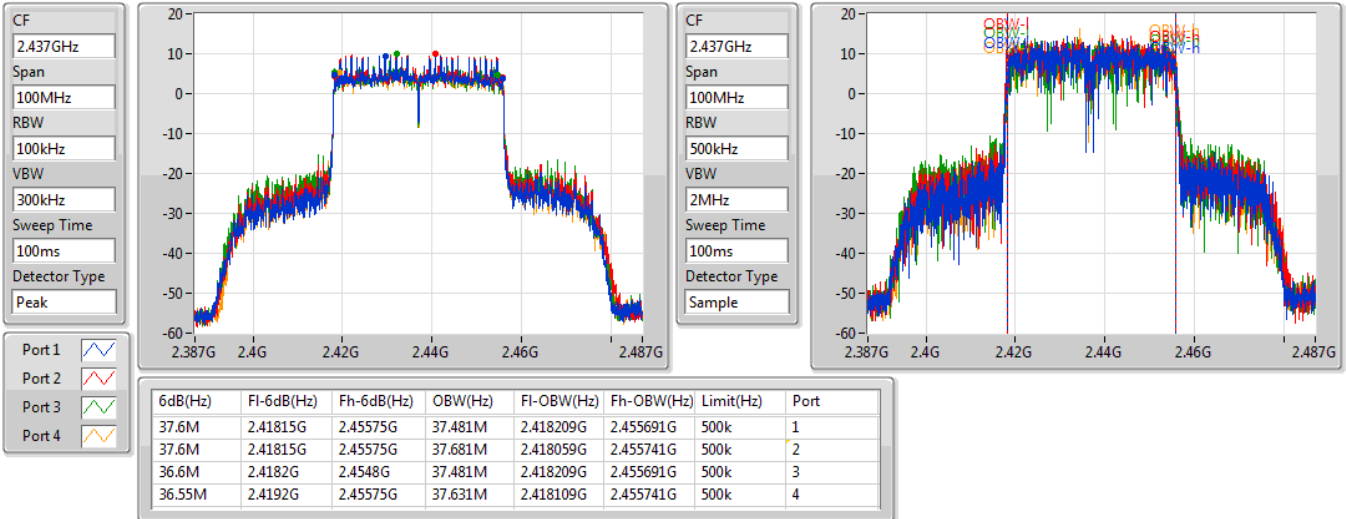

802.11ax HEW40_Nss2,(MCS0)_4TX
EBW
2422MHz

04/09/2019

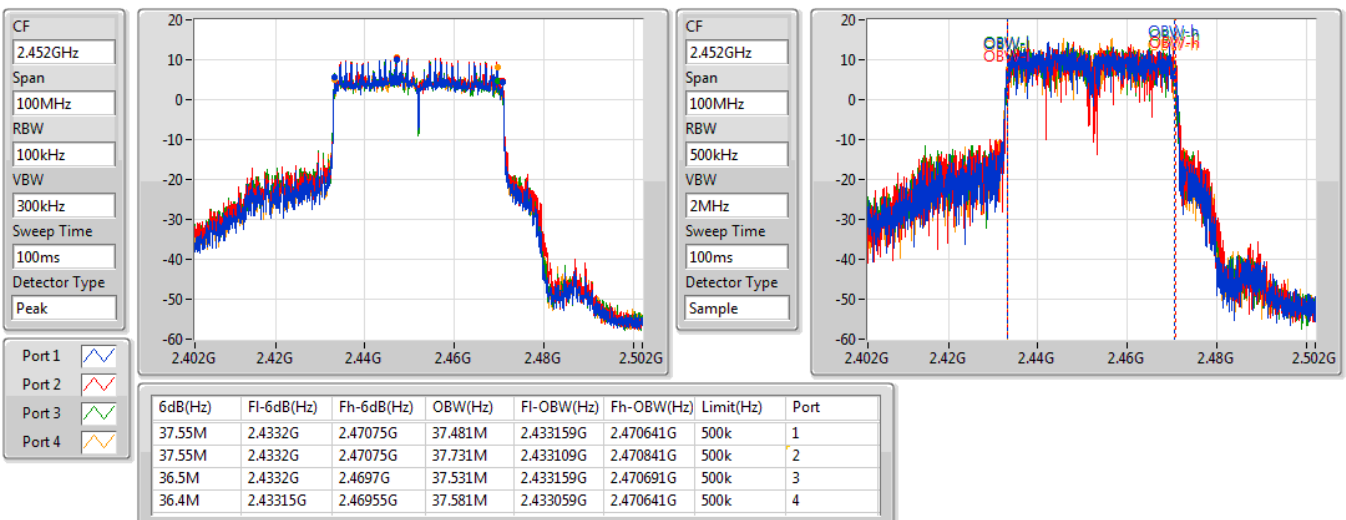


802.11ax HEW40_Nss2,(MCS0)_4TX
EBW
2437MHz

04/09/2019


802.11ax HEW40_Nss2,(MCS0)_4TX
EBW
2452MHz

04/09/2019



**4T3S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20_Nss3,(MCS0)_4TX	17.55M	17.766M	17M8D1D	16.675M	17.641M
VHT40_Nss3,(MCS0)_4TX	36.35M	36.382M	36M4D1D	35.7M	36.132M
802.11ax HEW20_Nss3,(MCS0)_4TX	19M	19.065M	19M1D1D	18.175M	18.966M
802.11ax HEW40_Nss3,(MCS0)_4TX	37.6M	37.681M	37M7D1D	36.55M	37.431M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

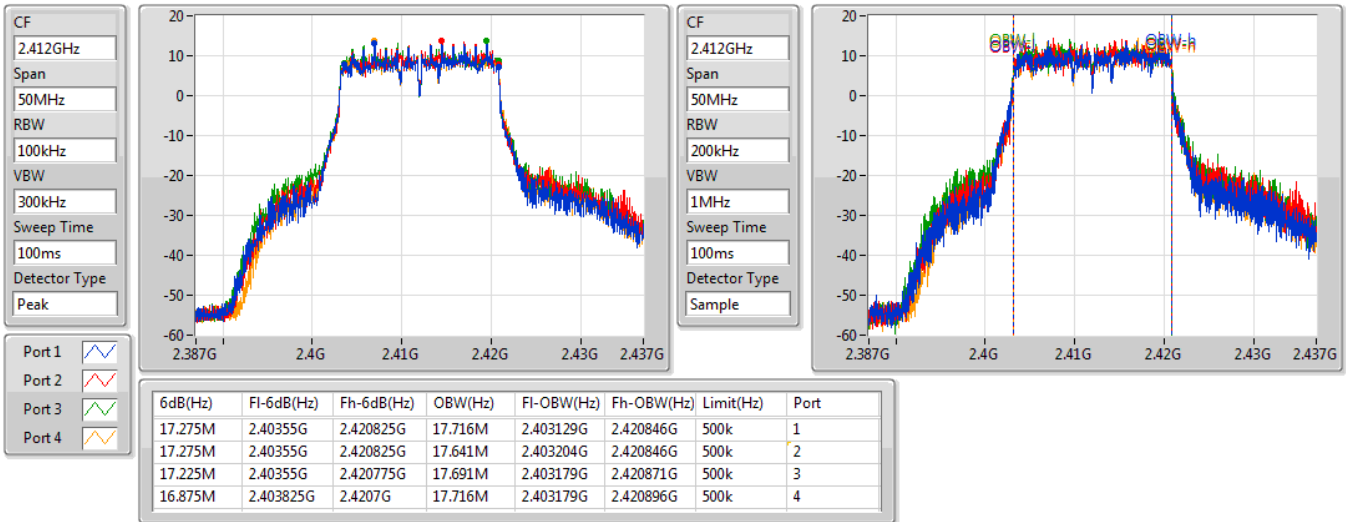
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.275M	17.716M	17.275M	17.641M	17.225M	17.691M	16.875M	17.716M
2462MHz	Pass	500k	16.975M	17.766M	17.3M	17.691M	17.55M	17.691M	16.675M	17.666M
VHT40_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.25M	36.232M	35.95M	36.132M	36.35M	36.282M	35.75M	36.282M
2437MHz	Pass	500k	35.7M	36.282M	36.3M	36.282M	36.35M	36.382M	36.3M	36.332M
2452MHz	Pass	500k	35.95M	36.232M	36.2M	36.282M	36.3M	36.332M	36.3M	36.282M
802.11ax HEW20_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.875M	18.991M	18.175M	18.991M	18.45M	18.966M	18.725M	18.966M
2462MHz	Pass	500k	19M	19.015M	18.825M	19.015M	18.4M	19.015M	18.625M	19.065M
802.11ax HEW40_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	37.55M	37.481M	37.5M	37.531M	36.6M	37.581M	36.85M	37.431M
2437MHz	Pass	500k	37.6M	37.581M	36.55M	37.581M	36.65M	37.681M	37M	37.631M
2452MHz	Pass	500k	36.6M	37.531M	36.6M	37.481M	36.6M	37.481M	36.7M	37.431M

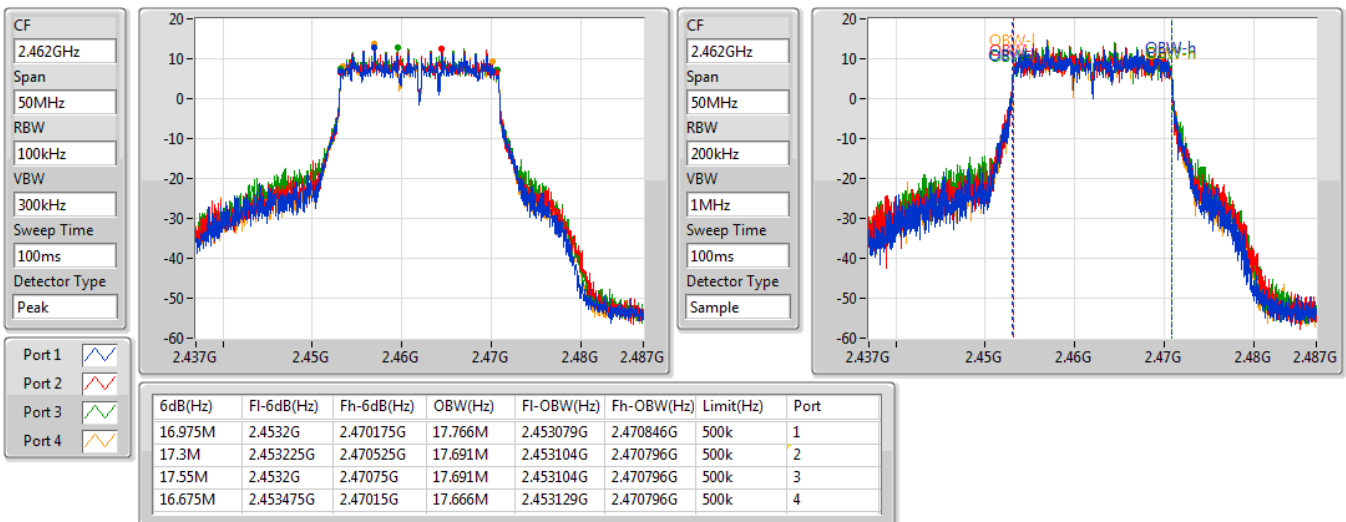
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20_Nss3,(MCS0)_4TX
EBW
2412MHz

05/09/2019

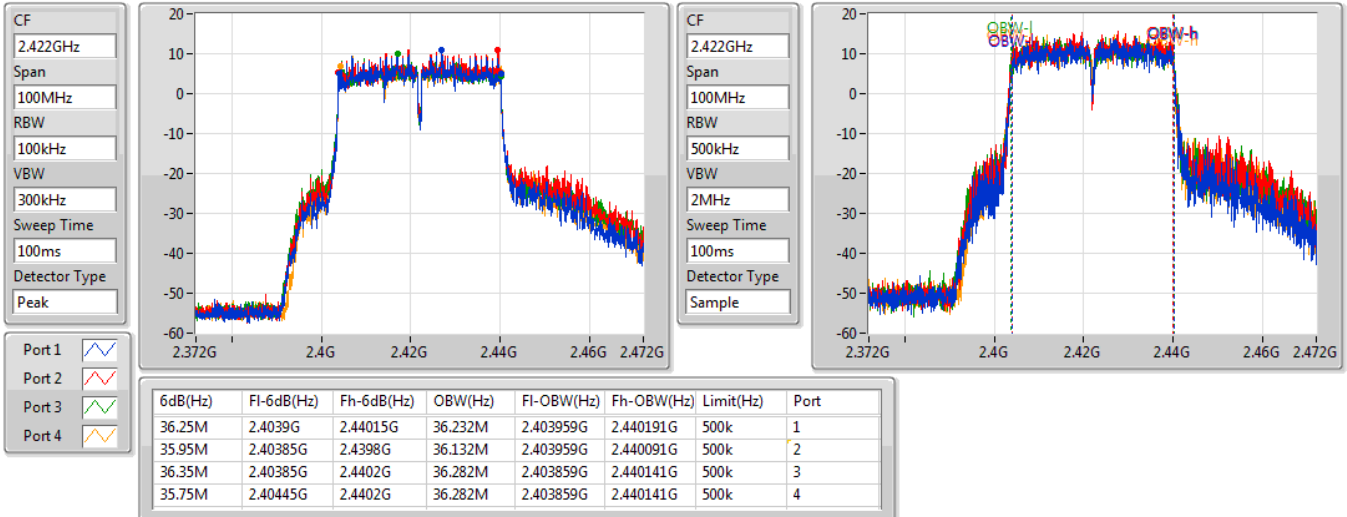

VHT20_Nss3,(MCS0)_4TX
EBW
2462MHz

05/09/2019

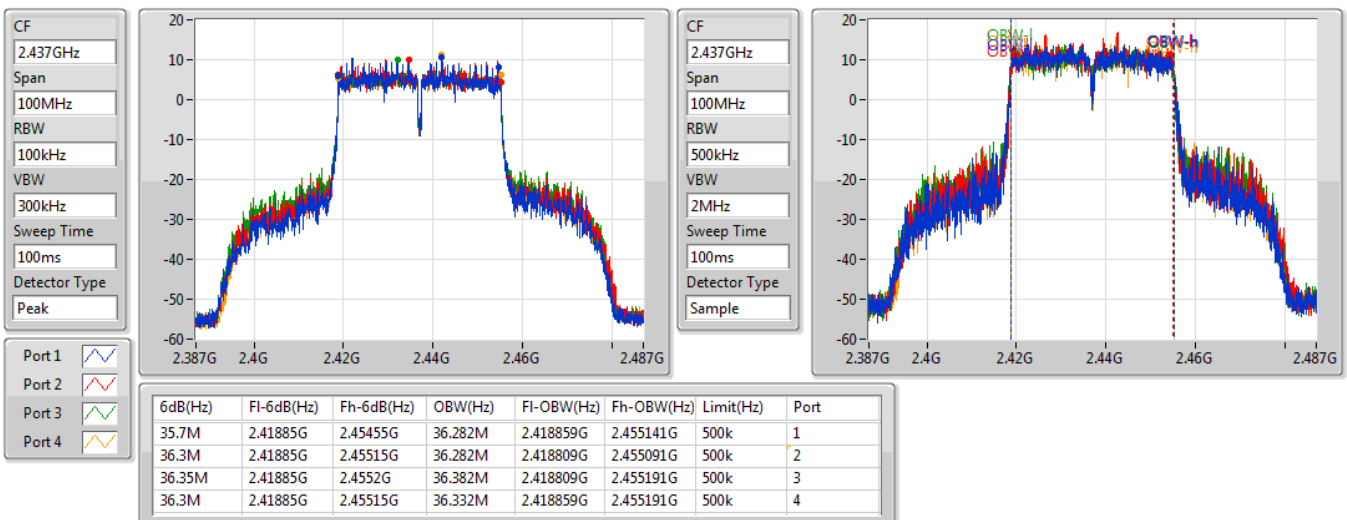


VHT40_Nss3,(MCS0)_4TX
EBW
2422MHz

04/09/2019

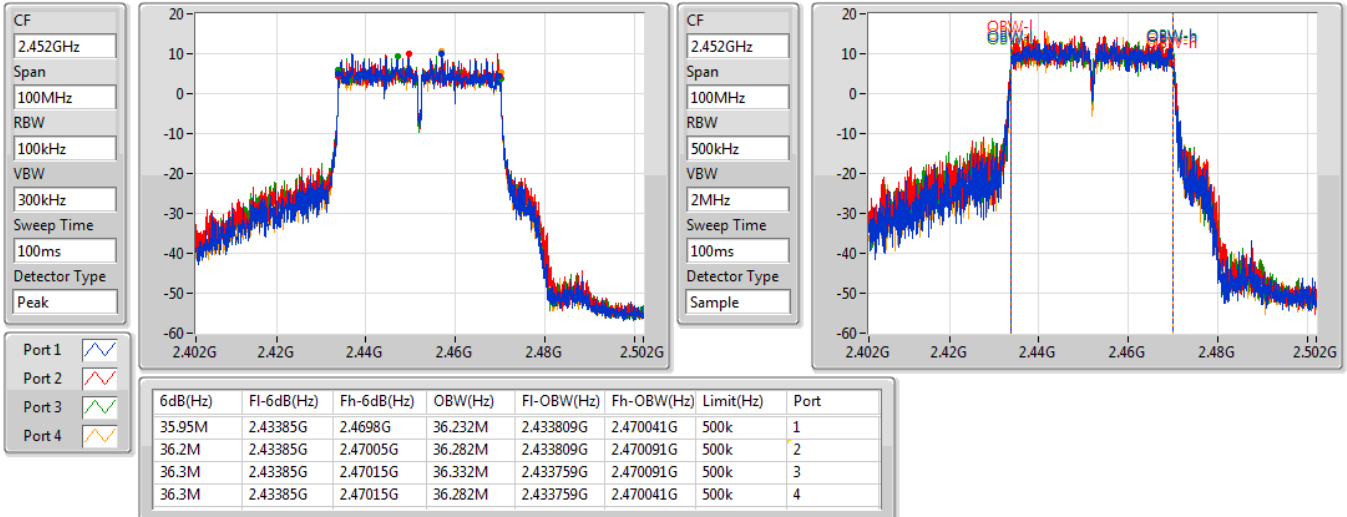

VHT40_Nss3,(MCS0)_4TX
EBW
2437MHz

05/09/2019

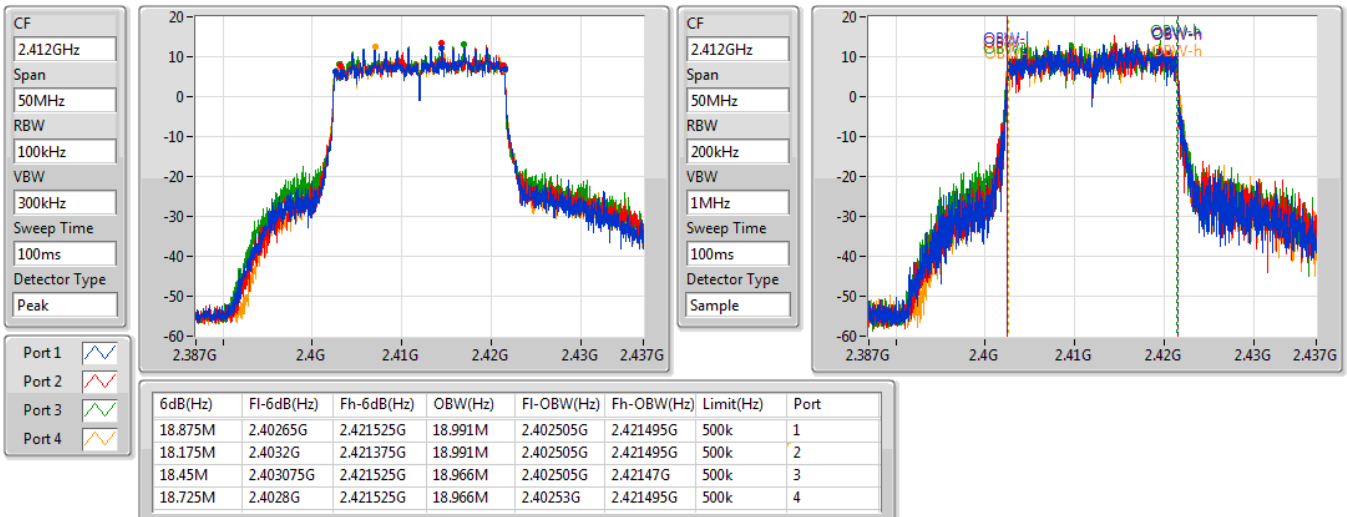


VHT40_Nss3,(MCS0)_4TX
EBW
2452MHz

04/09/2019

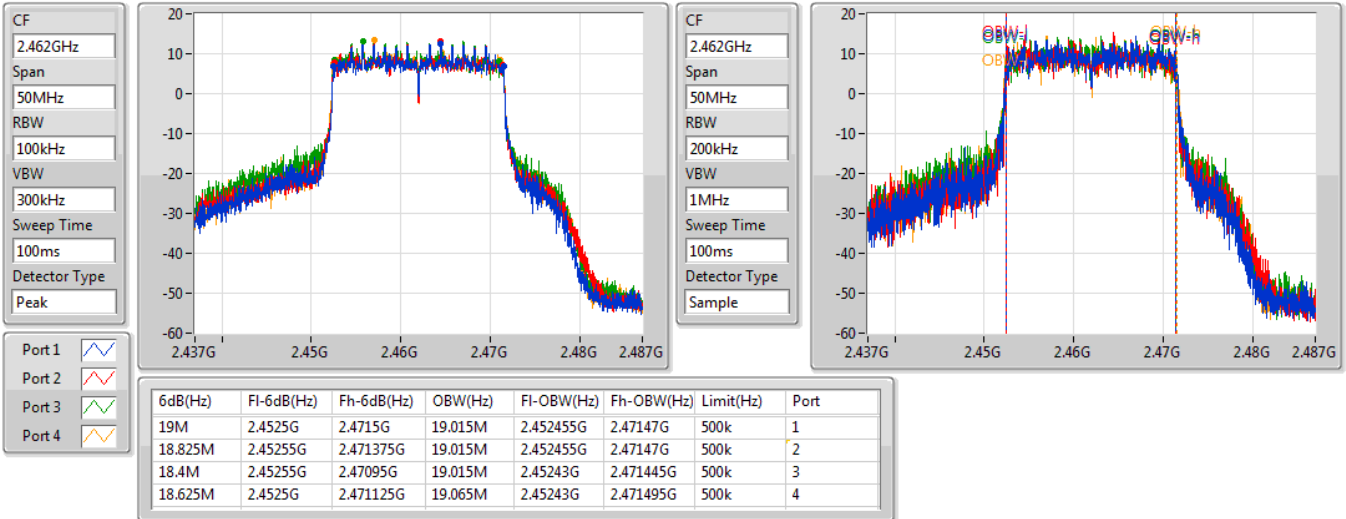

802.11ax HEW20_Nss3,(MCS0)_4TX
EBW
2412MHz

05/09/2019

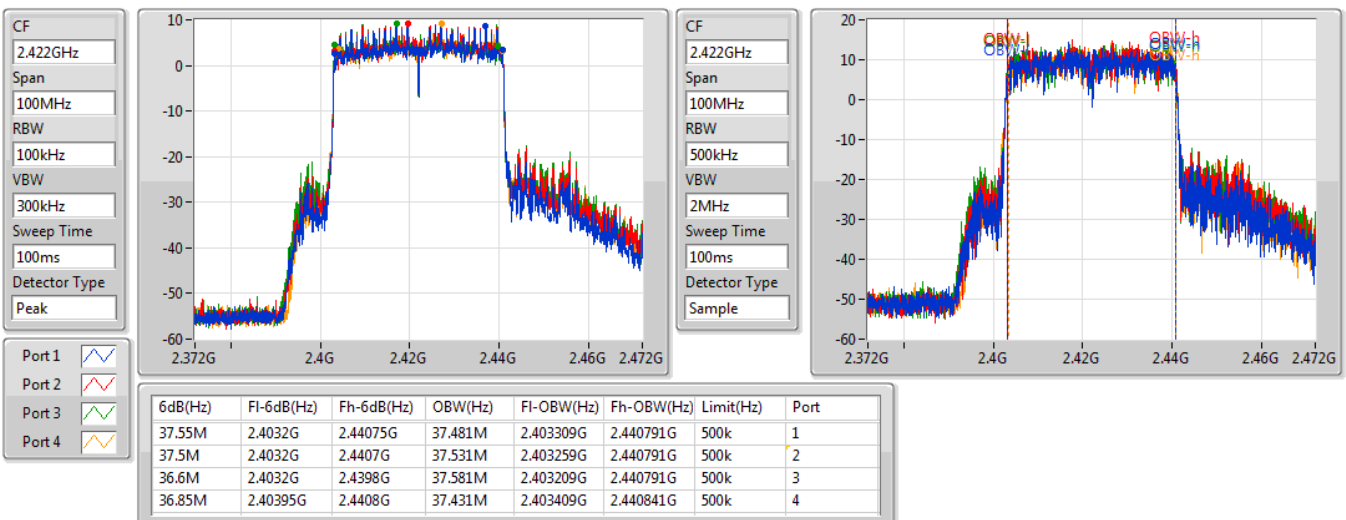


802.11ax HEW20_Nss3,(MCS0)_4TX
EBW
2462MHz

05/09/2019

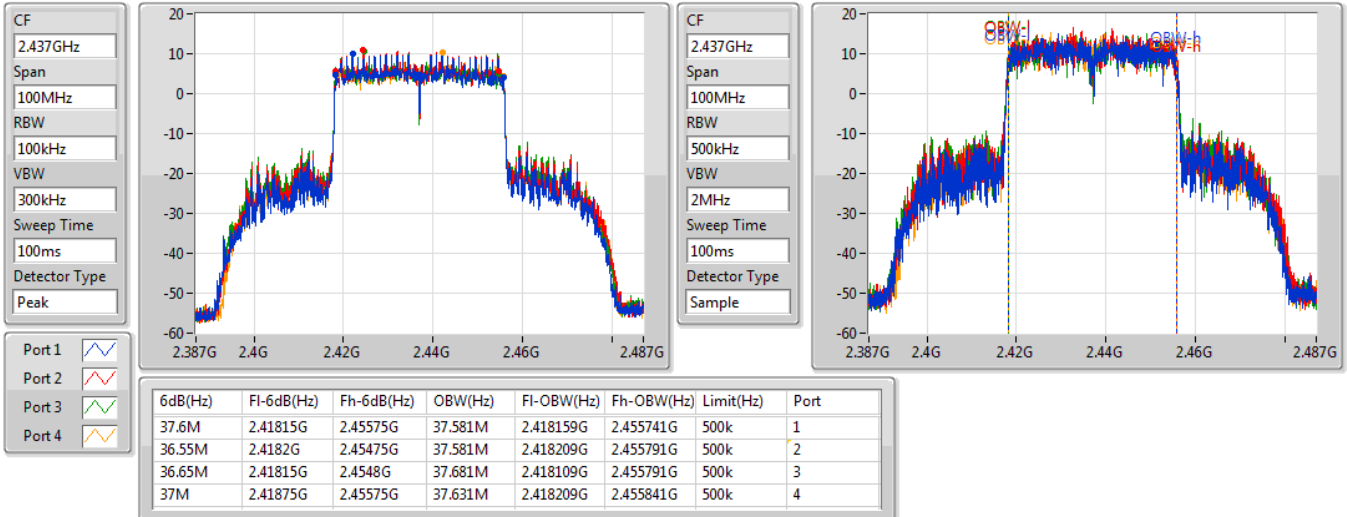

802.11ax HEW40_Nss3,(MCS0)_4TX
EBW
2422MHz

04/09/2019

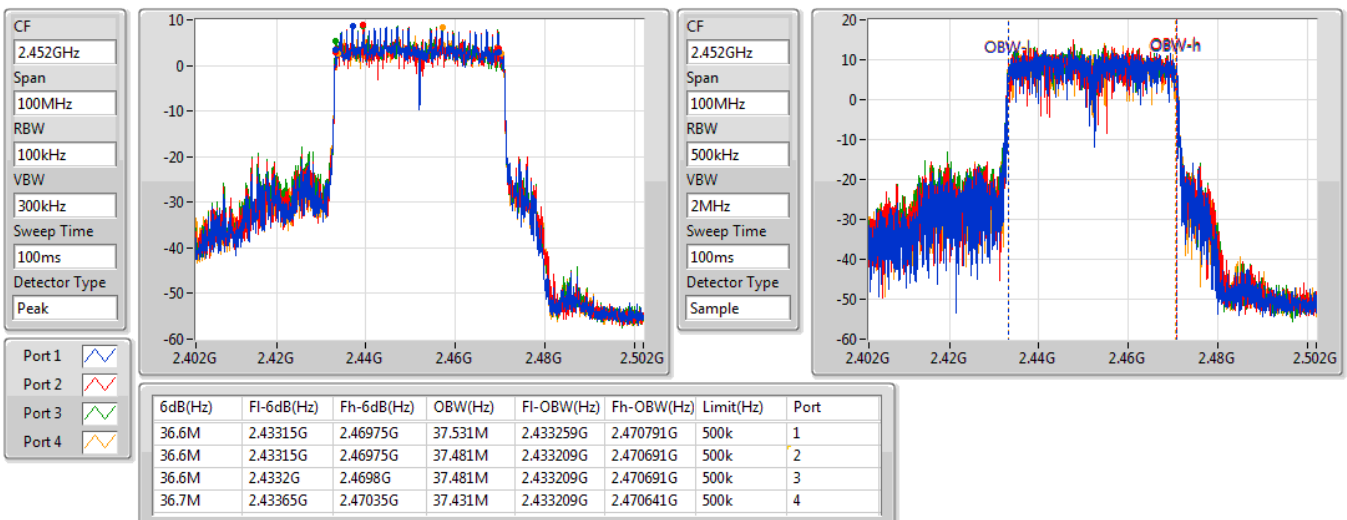


802.11ax HEW40_Nss3,(MCS0)_4TX
EBW
2437MHz

04/09/2019


802.11ax HEW40_Nss3,(MCS0)_4TX
EBW
2452MHz

04/09/2019



**<For beamforming mode>****3T1S****Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_3TX	17.575M	18.041M	18M0D1D	16.95M	17.766M
VHT40-BF_Nss1,(MCS0)_3TX	36.35M	36.382M	36M4D1D	35.75M	36.132M
802.11ax HEW20-BF_Nss1,(MCS0)_3TX	18.975M	19.115M	19M1D1D	18.5M	18.966M
802.11ax HEW40-BF_Nss1,(MCS0)_3TX	37.55M	37.631M	37M6D1D	36.1M	37.481M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;**Min-N dB** = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

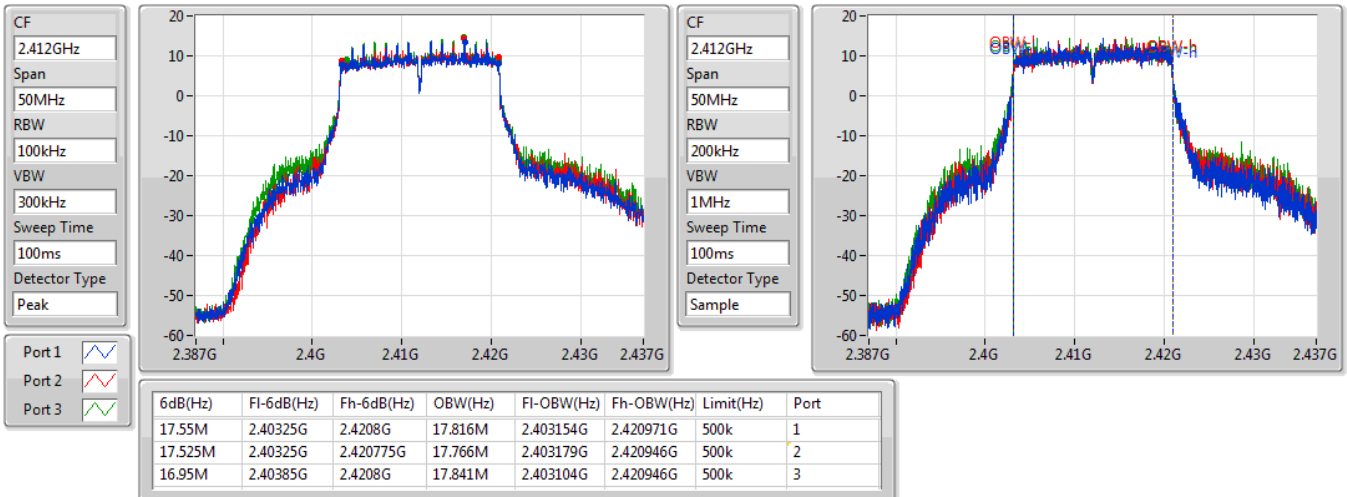
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.816M	17.525M	17.766M	16.95M	17.841M
2437MHz	Pass	500k	17.55M	17.841M	17.55M	17.816M	17.575M	17.891M
2462MHz	Pass	500k	17.575M	17.866M	17.55M	17.891M	17.55M	18.041M
VHT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.05M	36.132M	35.75M	36.232M	35.9M	36.282M
2437MHz	Pass	500k	35.8M	36.232M	36.3M	36.382M	36.35M	36.382M
2452MHz	Pass	500k	36.3M	36.282M	36.3M	36.332M	36.05M	36.282M
802.11ax HEW20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.65M	18.991M	18.5M	18.991M	18.7M	18.966M
2437MHz	Pass	500k	18.925M	18.991M	18.975M	19.015M	18.7M	19.04M
2462MHz	Pass	500k	18.9M	18.991M	18.925M	19.04M	18.875M	19.115M
802.11ax HEW40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.5M	37.531M	36.1M	37.531M	37.25M	37.581M
2437MHz	Pass	500k	37.2M	37.631M	36.95M	37.481M	37.3M	37.631M
2452MHz	Pass	500k	37.2M	37.631M	37.55M	37.631M	37.25M	37.531M

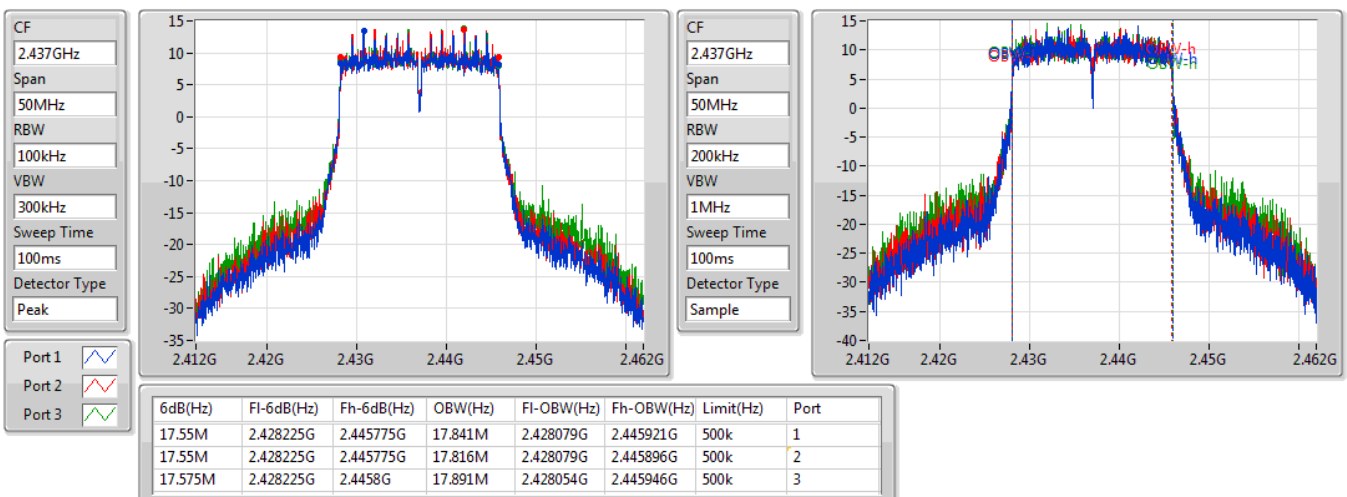
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_3TX
EBW
2412MHz

03/09/2019

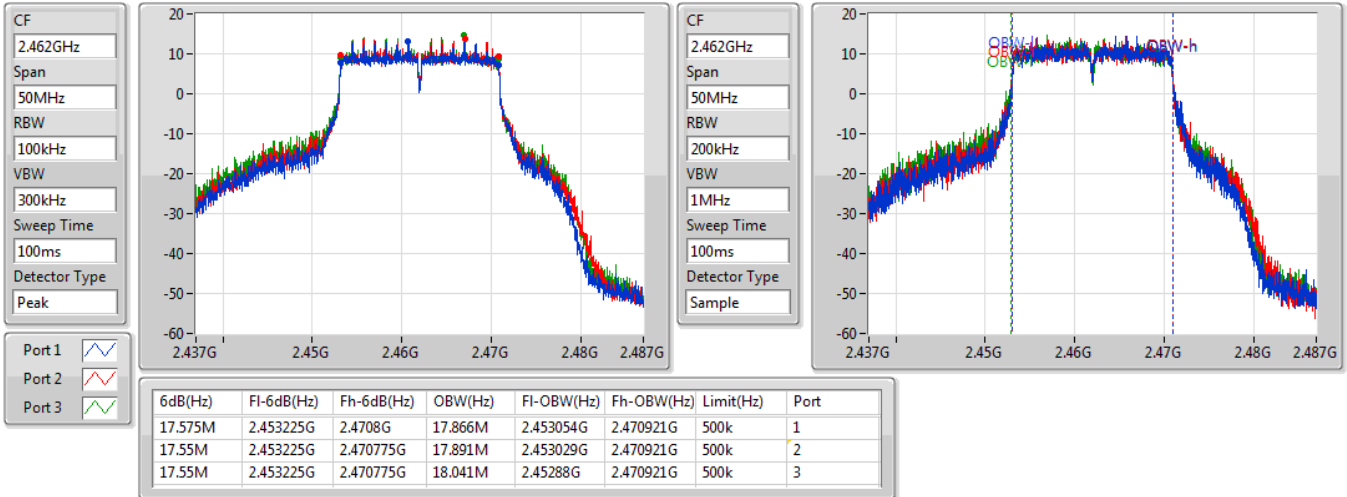

VHT20-BF_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019

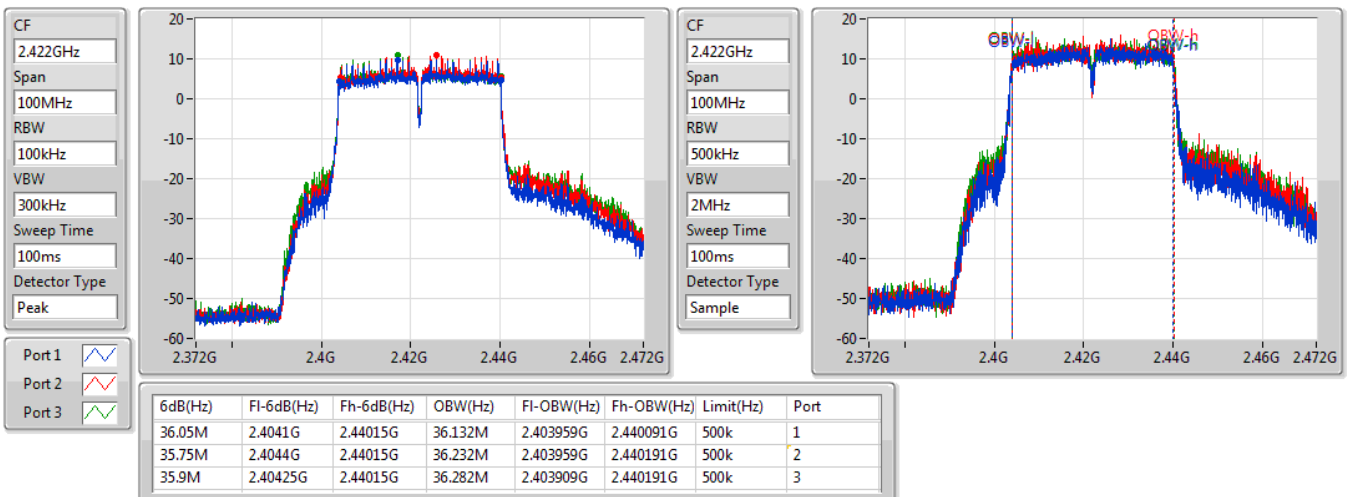


VHT20-BF_Nss1,(MCS0)_3TX
EBW
2462MHz

03/09/2019

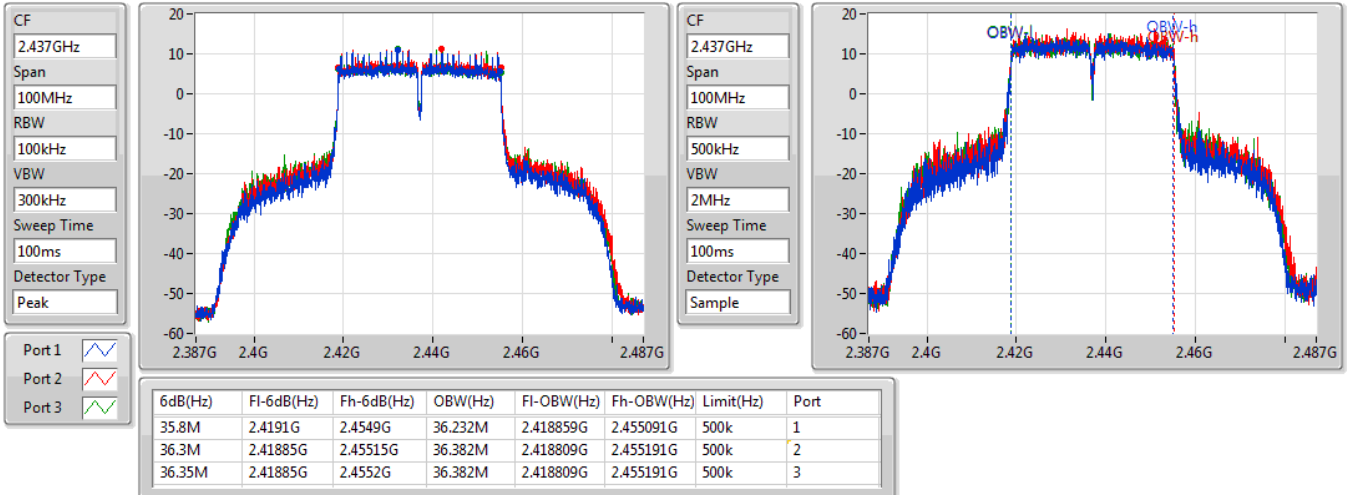

VHT40-BF_Nss1,(MCS0)_3TX
EBW
2422MHz

03/09/2019

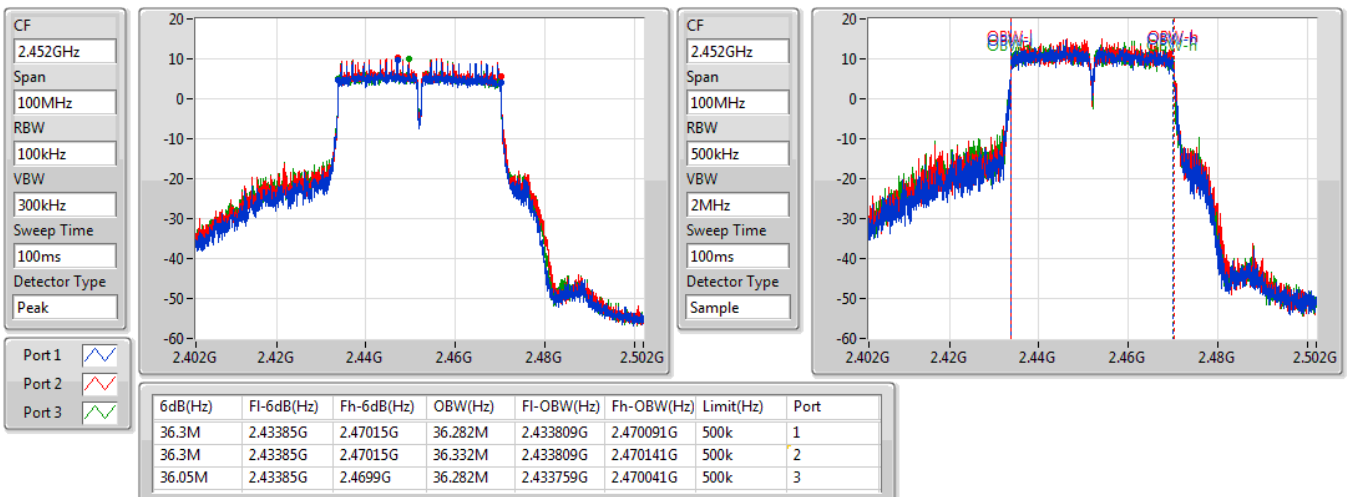


VHT40-BF_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019

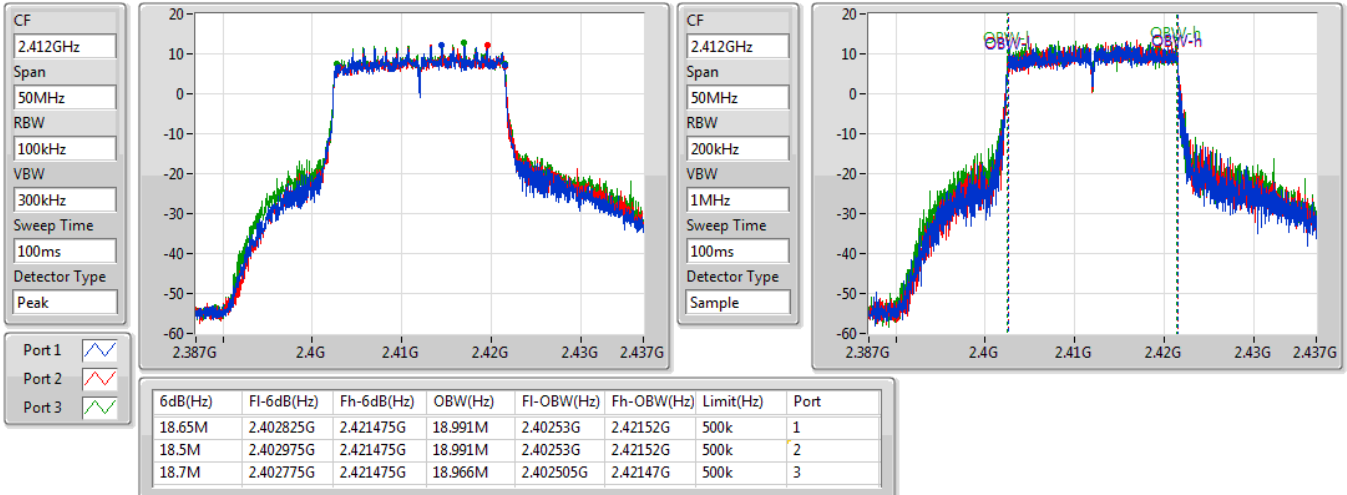

VHT40-BF_Nss1,(MCS0)_3TX
EBW
2452MHz

03/09/2019

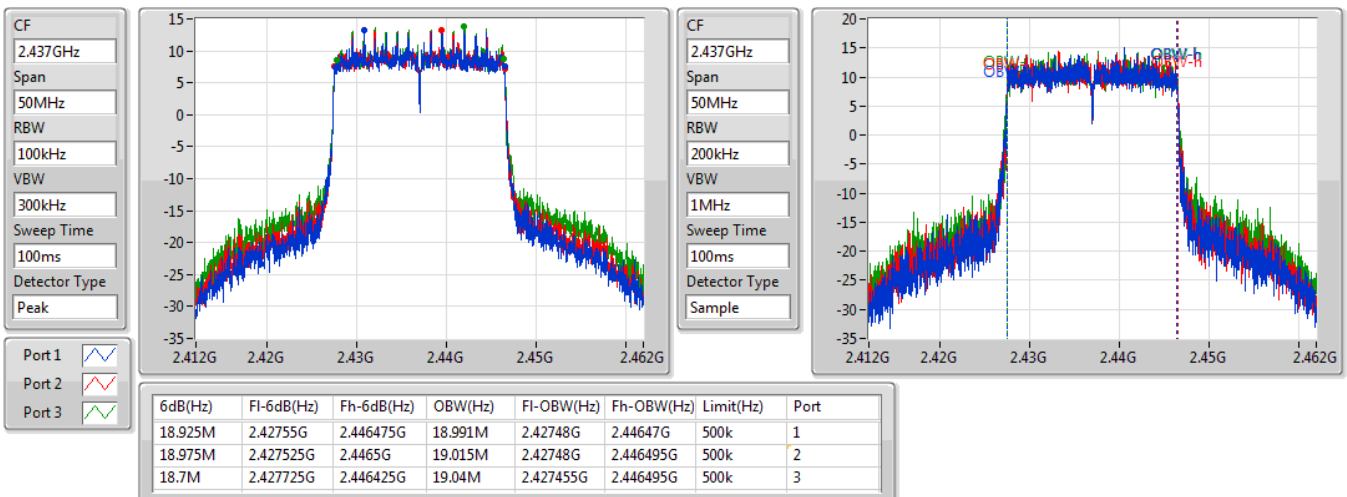


802.11ax HEW20-BF_Nss1,(MCS0)_3TX
EBW
2412MHz

03/09/2019

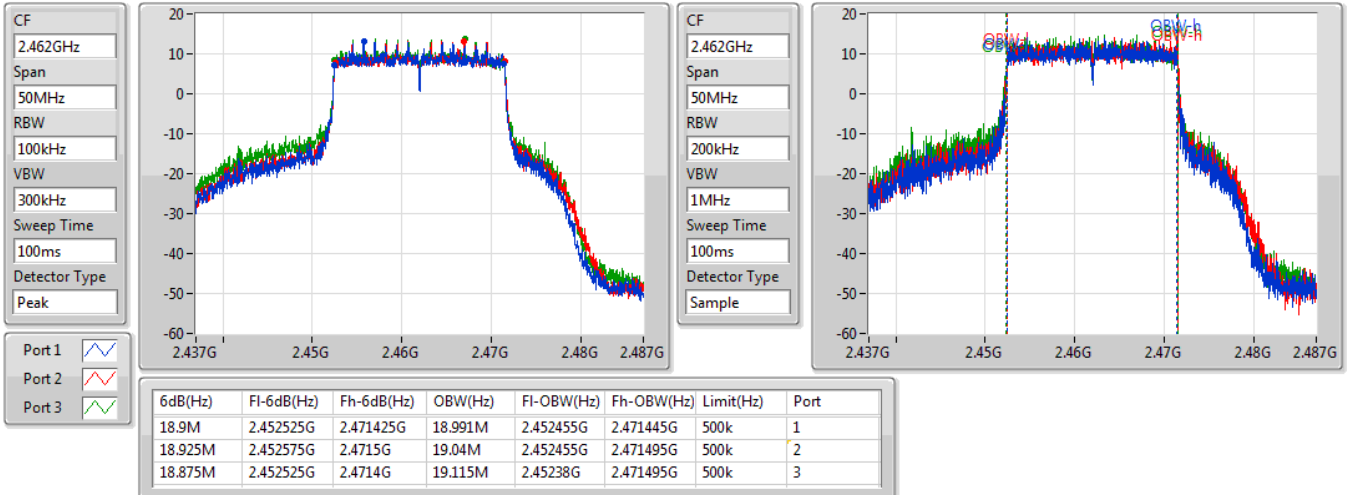

802.11ax HEW20-BF_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019

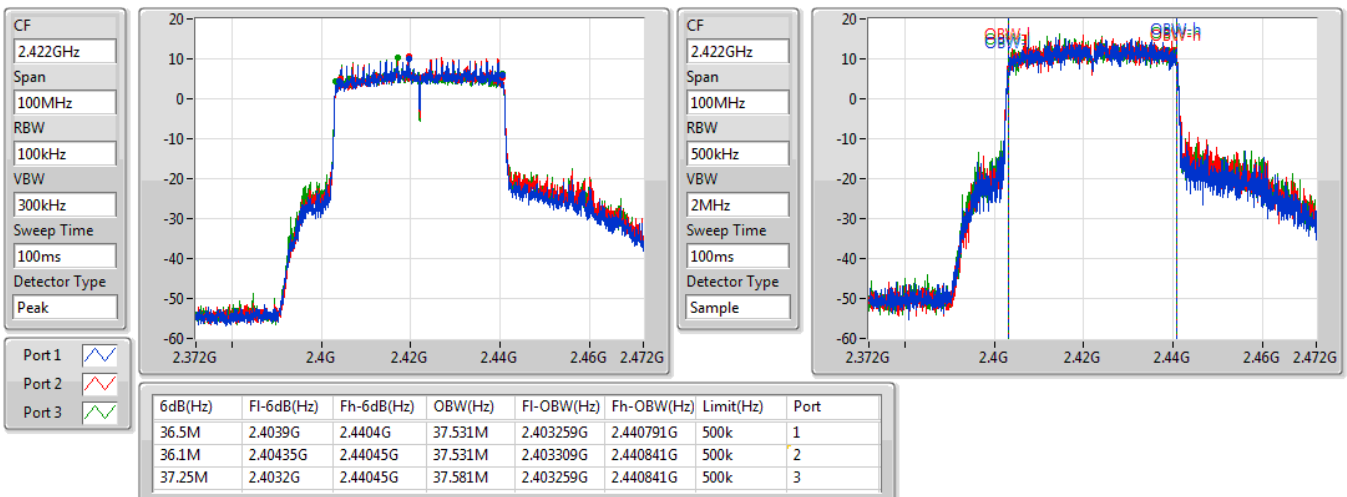


802.11ax HEW20-BF_Nss1,(MCS0)_3TX
EBW
2462MHz

03/09/2019

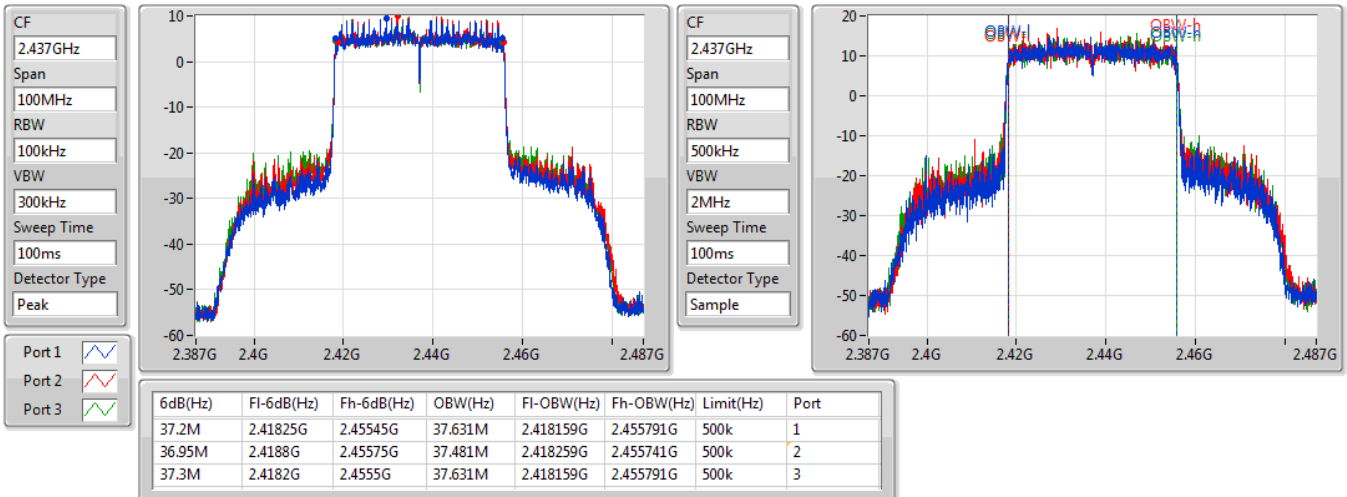

802.11ax HEW40-BF_Nss1,(MCS0)_3TX
EBW
2422MHz

03/09/2019

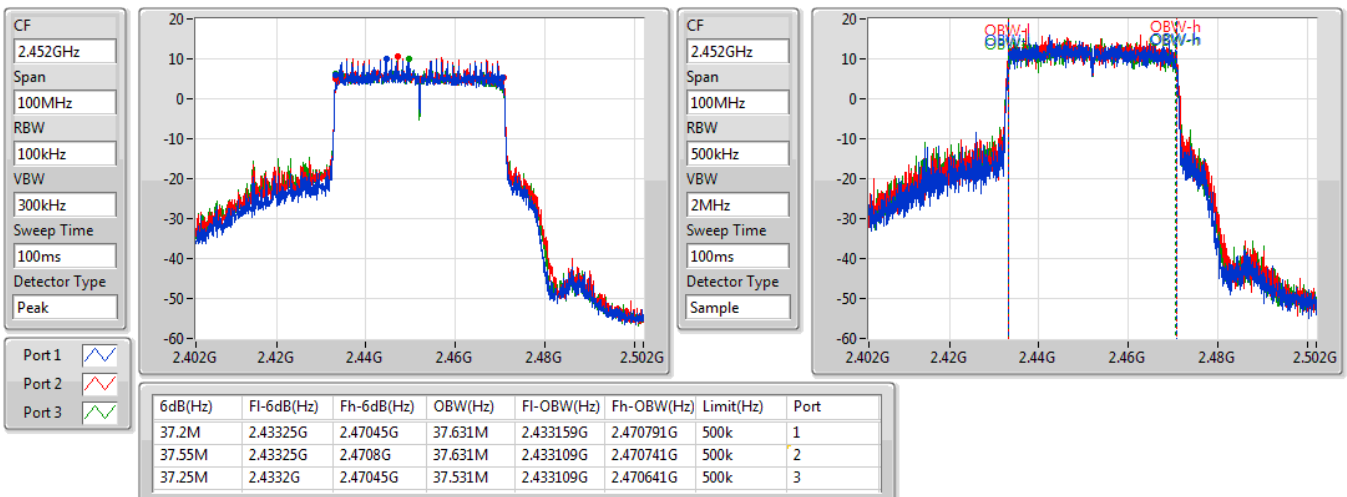


802.11ax HEW40-BF_Nss1,(MCS0)_3TX
EBW
2437MHz

03/09/2019


802.11ax HEW40-BF_Nss1,(MCS0)_3TX
EBW
2452MHz

03/09/2019



**3T2S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss2,(MCS0)_3TX	17.625M	17.841M	17M8D1D	17.2M	17.741M
802.11ax HEW20-BF_Nss2,(MCS0)_3TX	18.675M	18.991M	19M0D1D	17.425M	18.916M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

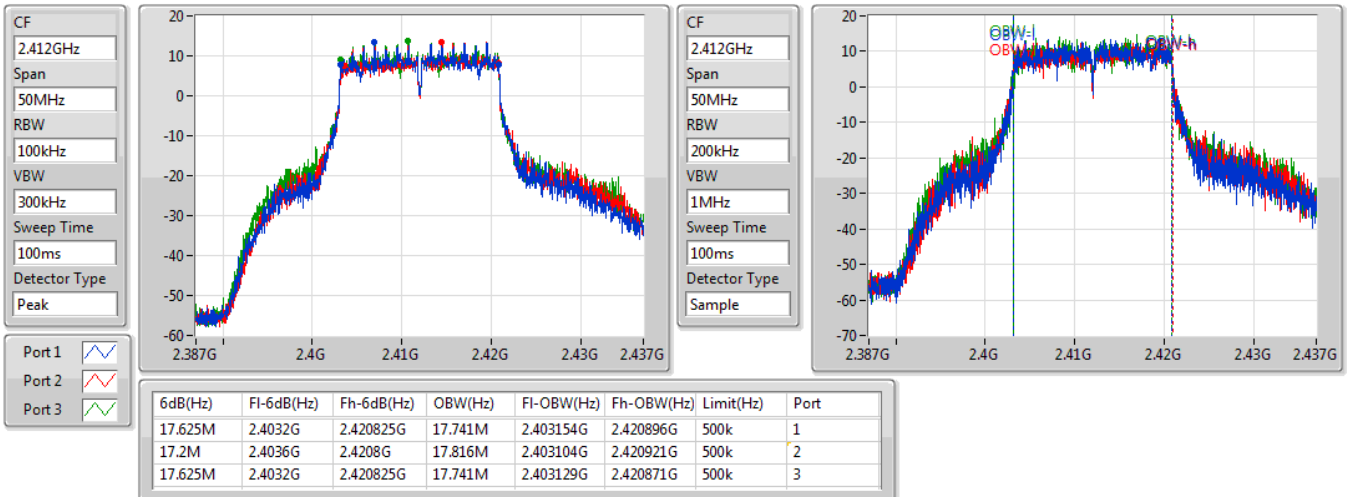
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)
VHT20-BF_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.625M	17.741M	17.2M	17.816M	17.625M	17.741M
2462MHz	Pass	500k	17.4M	17.766M	17.55M	17.841M	17.6M	17.816M
802.11ax HEW20-BF_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.375M	18.991M	17.425M	18.916M	18.65M	18.966M
2462MHz	Pass	500k	18.3M	18.941M	18.475M	18.966M	18.675M	18.966M

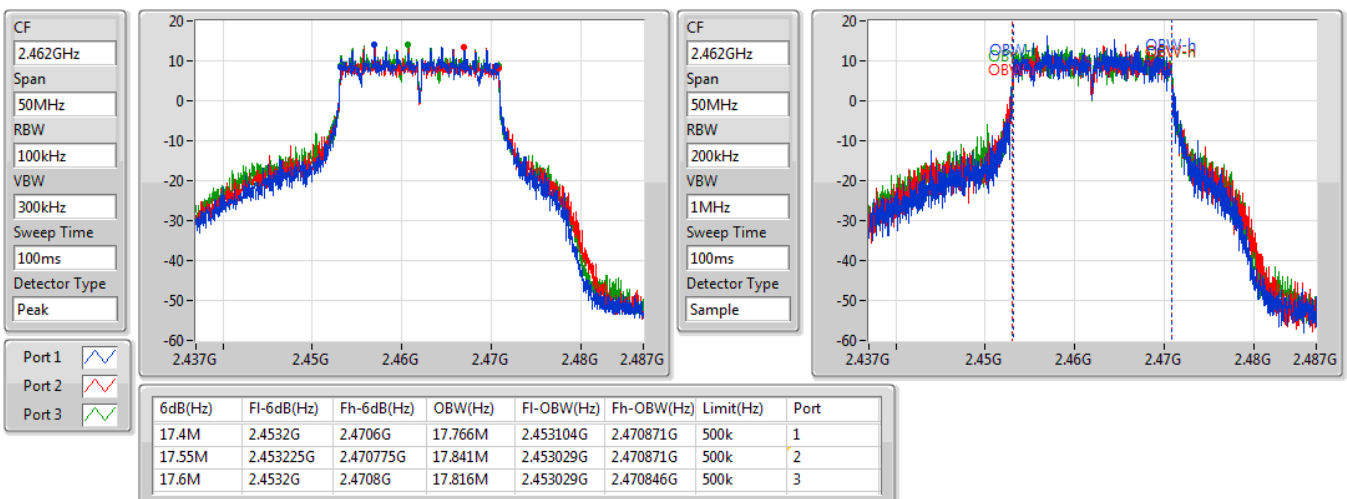
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss2,(MCS0)_3TX
EBW
2412MHz

05/09/2019

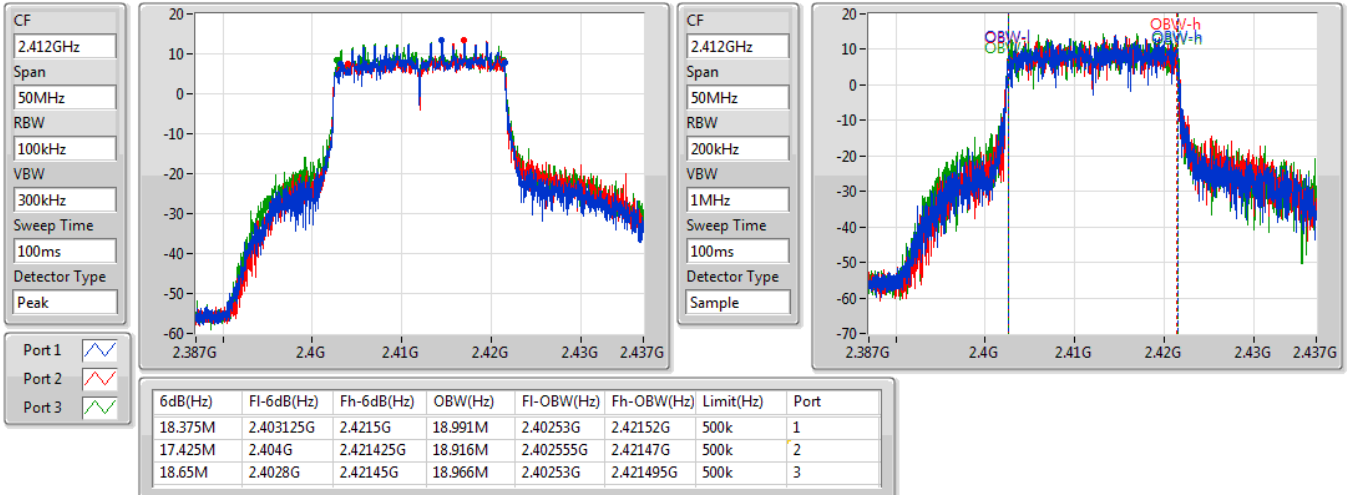

VHT20-BF_Nss2,(MCS0)_3TX
EBW
2462MHz

05/09/2019

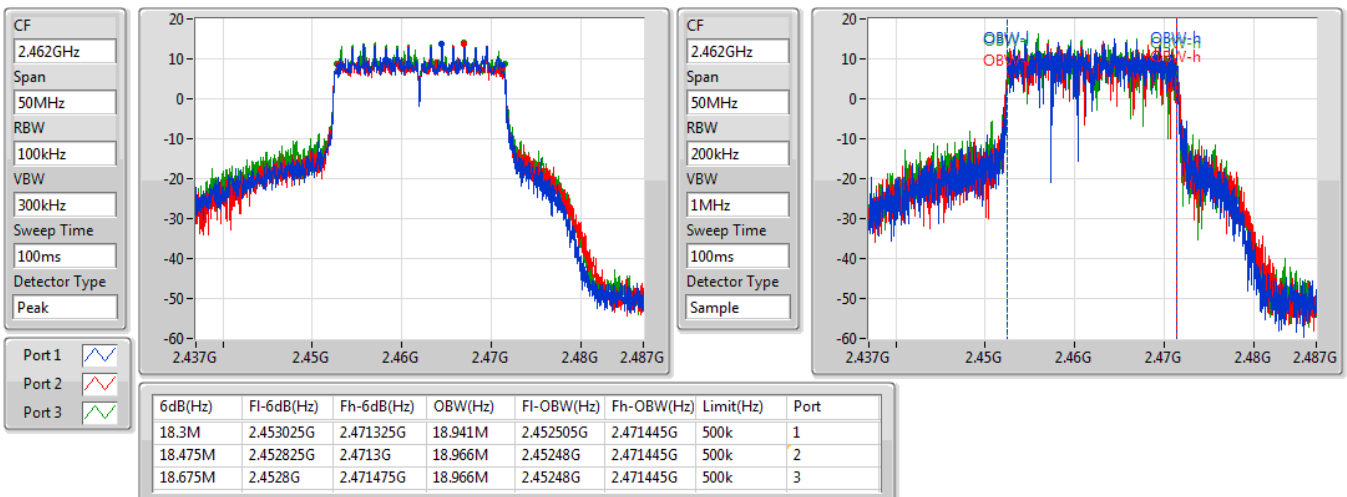


802.11ax HEW20-BF_Nss2,(MCS0)_3TX
EBW
2412MHz

05/09/2019


802.11ax HEW20-BF_Nss2,(MCS0)_3TX
EBW
2462MHz

05/09/2019



**4T1S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss1,(MCS0)_4TX	17.6M	17.841M	17M8D1D	17.525M	17.716M
VHT40-BF_Nss1,(MCS0)_4TX	36.35M	36.282M	36M3D1D	35.65M	36.132M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	19.05M	19.015M	19M0D1D	18.2M	18.941M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	37.5M	37.631M	37M6D1D	36.3M	37.431M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

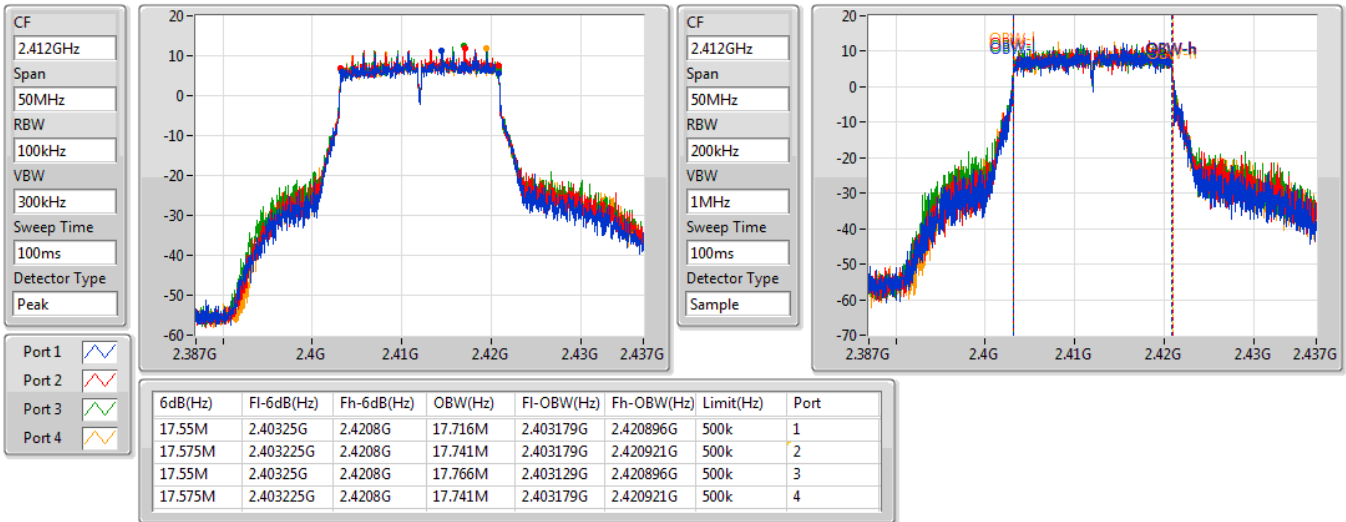
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.716M	17.575M	17.741M	17.55M	17.766M	17.575M	17.741M
2437MHz	Pass	500k	17.6M	17.841M	17.575M	17.791M	17.55M	17.816M	17.575M	17.766M
2462MHz	Pass	500k	17.55M	17.791M	17.575M	17.766M	17.525M	17.816M	17.575M	17.791M
VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.05M	36.232M	35.65M	36.182M	35.7M	36.232M	36.3M	36.132M
2437MHz	Pass	500k	36.3M	36.282M	36.35M	36.282M	36.3M	36.282M	36.3M	36.182M
2452MHz	Pass	500k	36.3M	36.232M	36.35M	36.182M	36.3M	36.182M	36.3M	36.232M
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.65M	18.966M	18.2M	18.941M	18.925M	19.015M	19.05M	18.941M
2437MHz	Pass	500k	18.9M	18.966M	18.975M	18.941M	18.925M	18.991M	18.95M	18.966M
2462MHz	Pass	500k	18.925M	18.991M	18.9M	19.015M	18.8M	18.991M	18.8M	18.991M
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	37.5M	37.431M	36.6M	37.481M	37.1M	37.531M	36.3M	37.531M
2437MHz	Pass	500k	37.1M	37.531M	36.95M	37.531M	37.3M	37.531M	36.8M	37.631M
2452MHz	Pass	500k	37.25M	37.481M	37.25M	37.531M	37.25M	37.581M	37.35M	37.531M

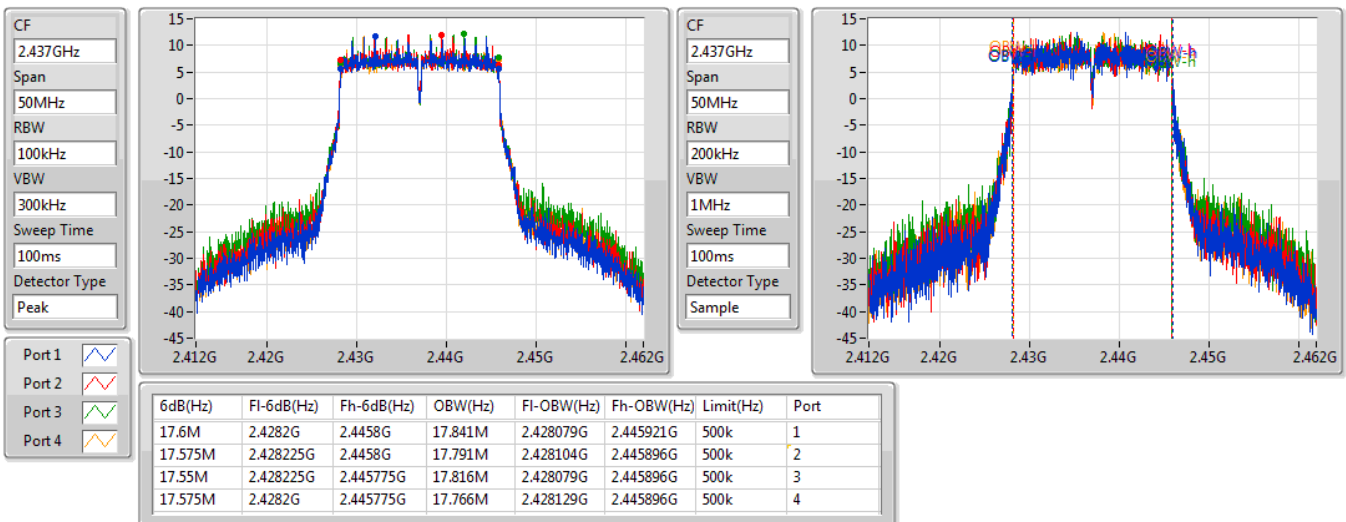
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss1,(MCS0)_4TX
EBW
2412MHz

05/09/2019

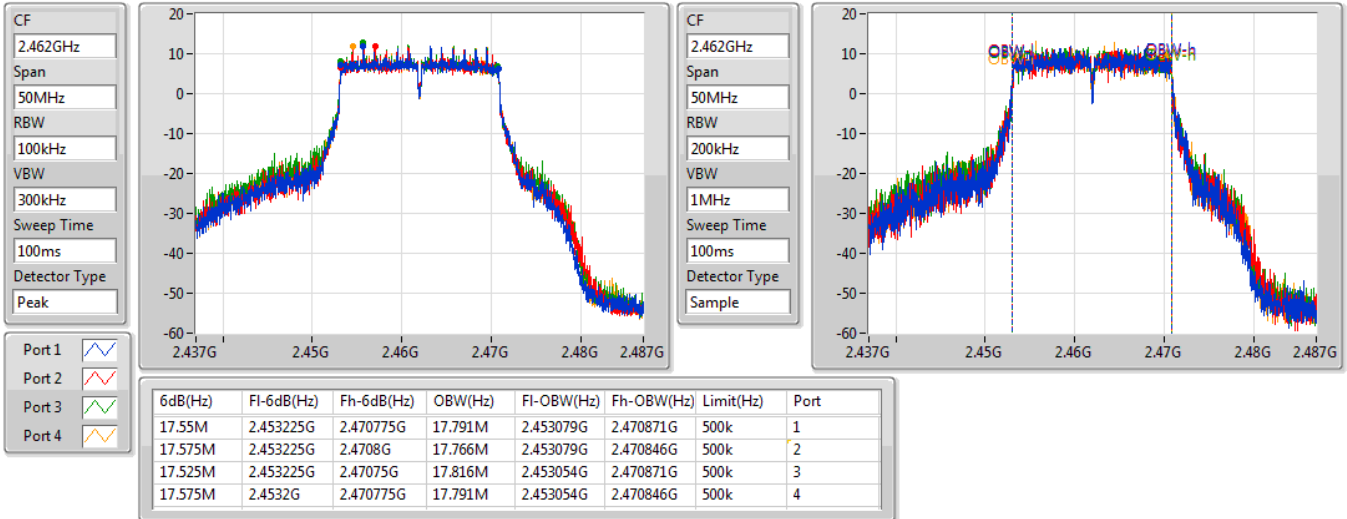

VHT20-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

05/09/2019

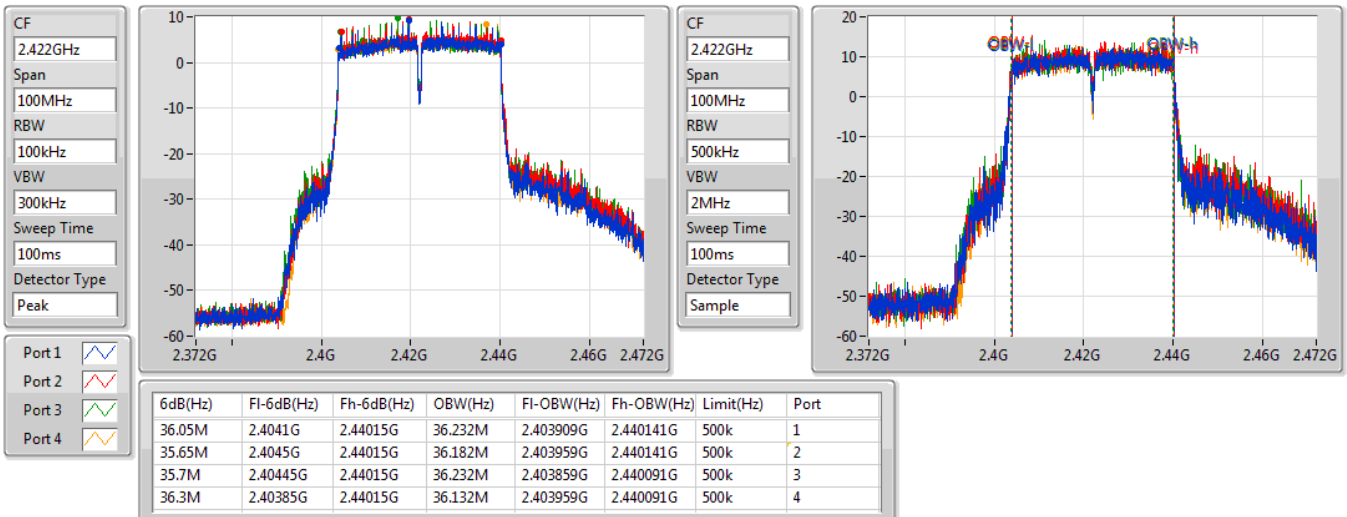


VHT20-BF_Nss1,(MCS0)_4TX
EBW
2462MHz

05/09/2019

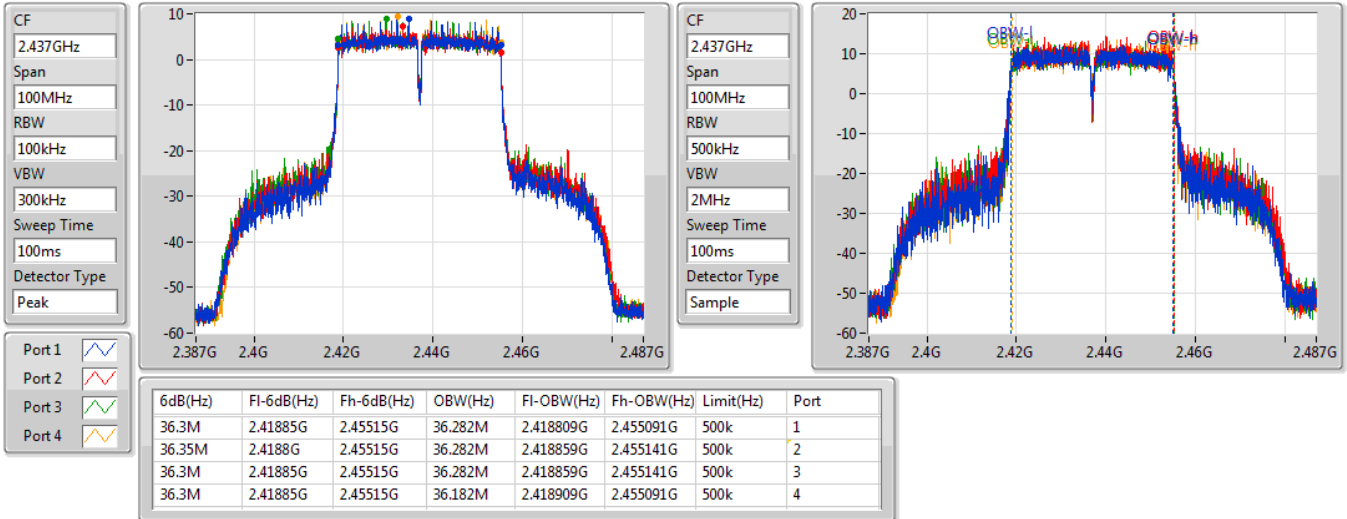

VHT40-BF_Nss1,(MCS0)_4TX
EBW
2422MHz

05/09/2019

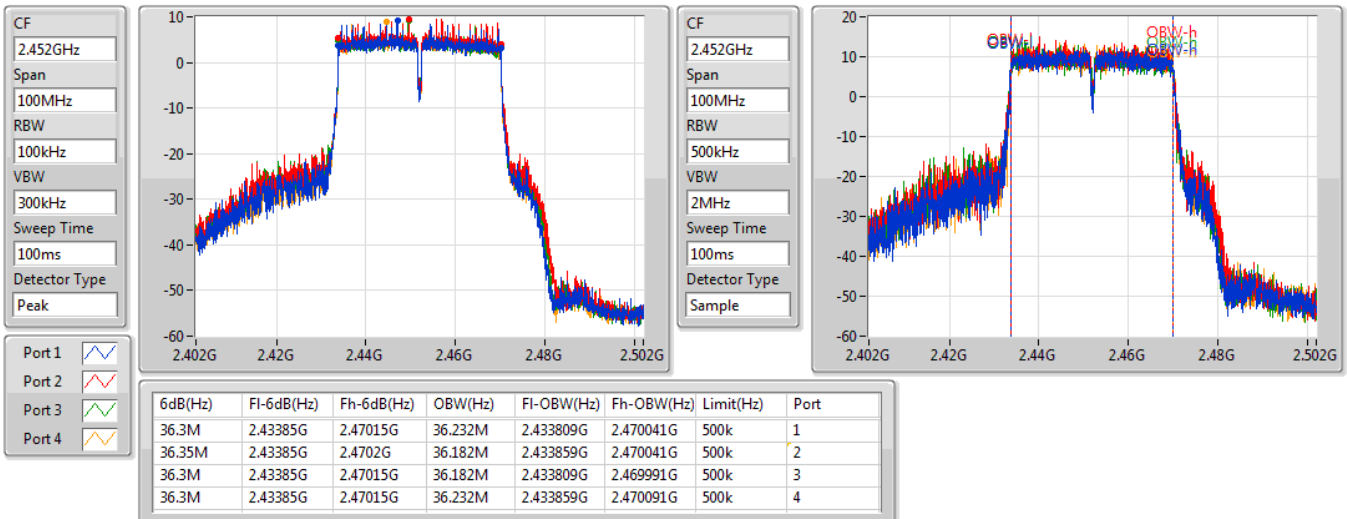


VHT40-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

05/09/2019

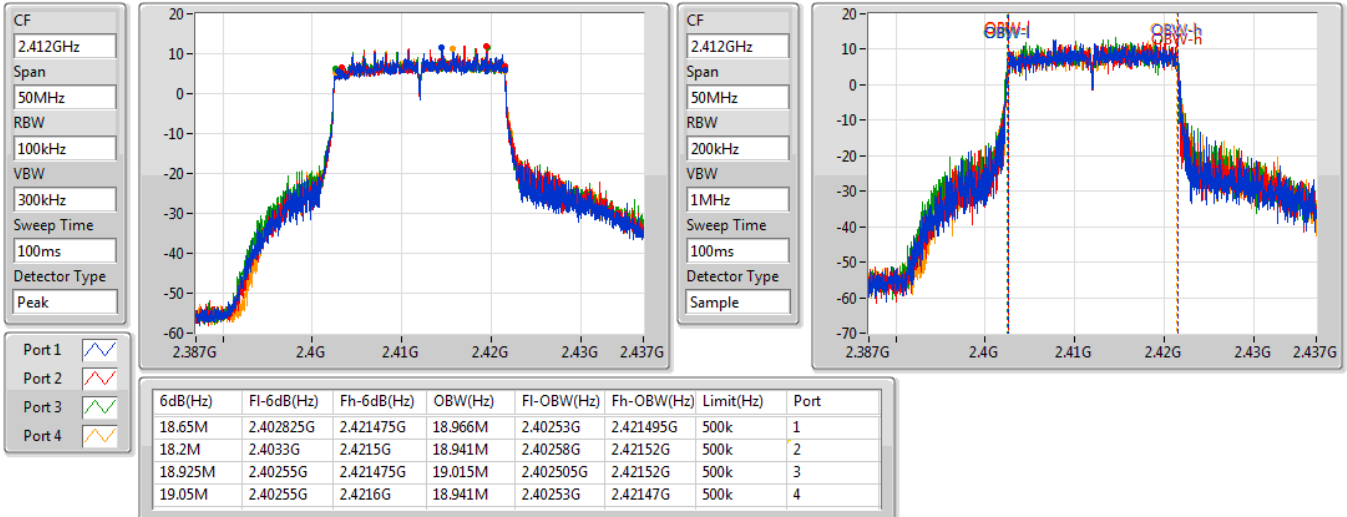

VHT40-BF_Nss1,(MCS0)_4TX
EBW
2452MHz

15/10/2019

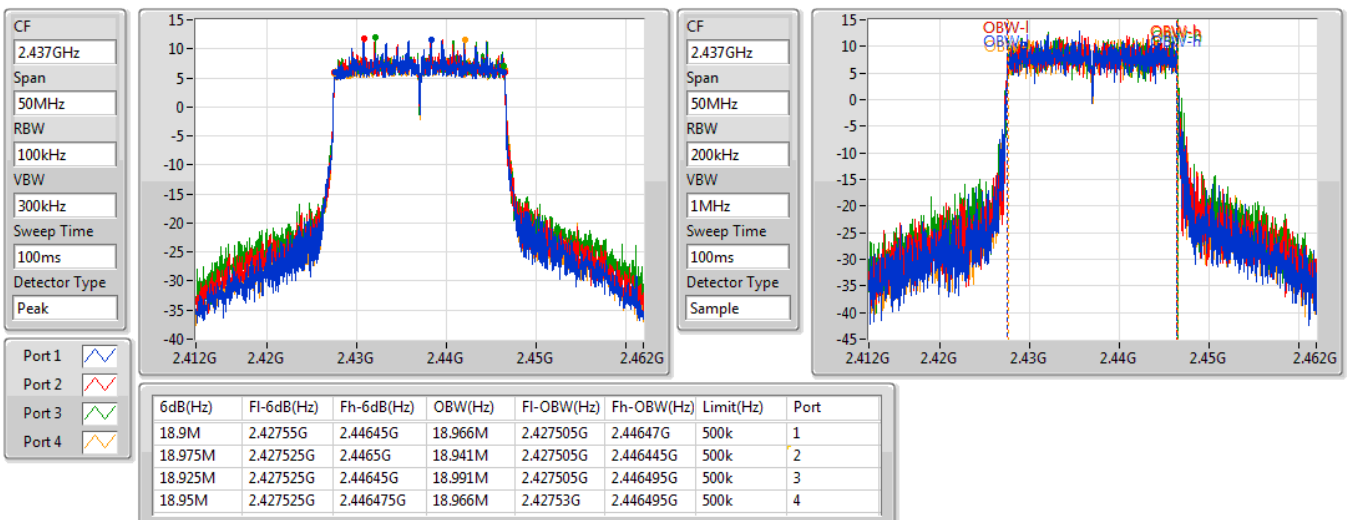


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
2412MHz

05/09/2019

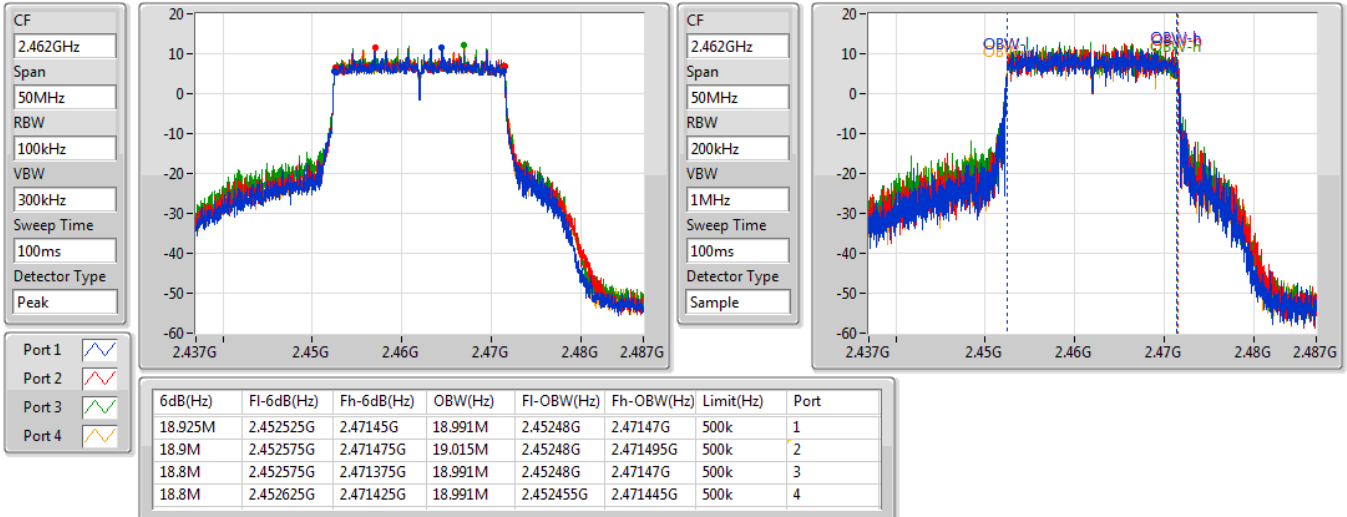

802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

05/09/2019

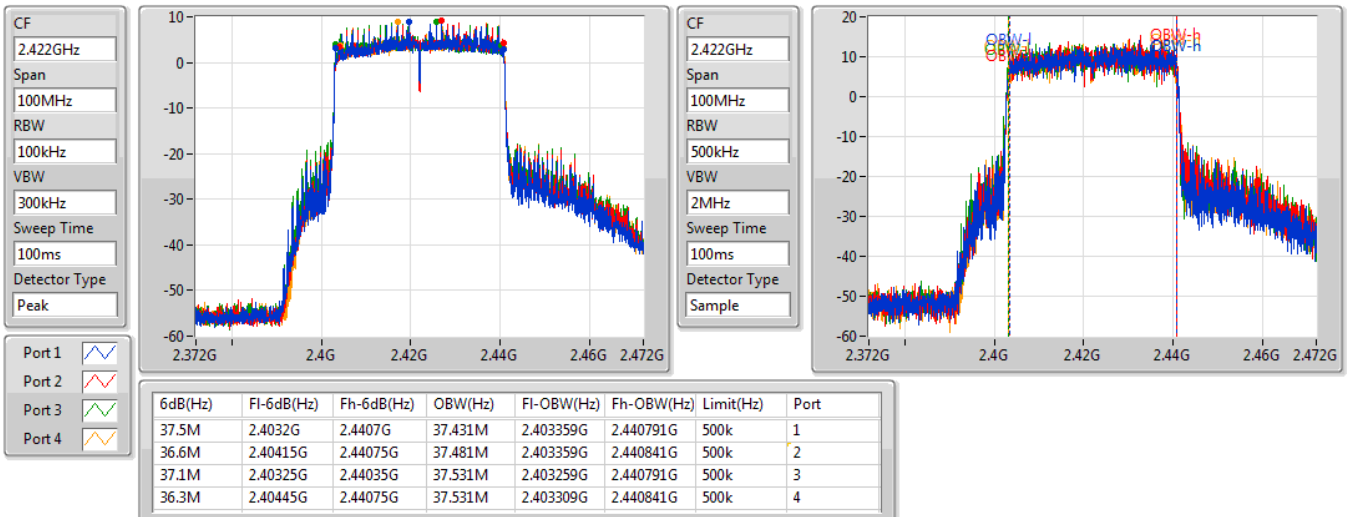


802.11ax HEW20-BF_Nss1,(MCS0)_4TX
EBW
2462MHz

05/09/2019

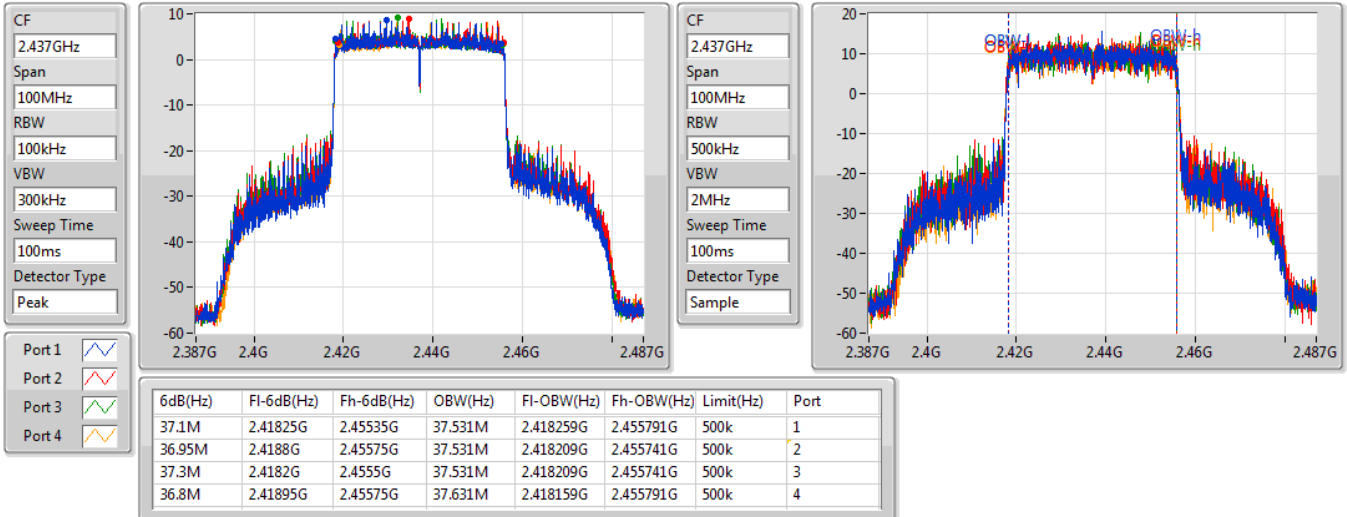

802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
2422MHz

05/09/2019

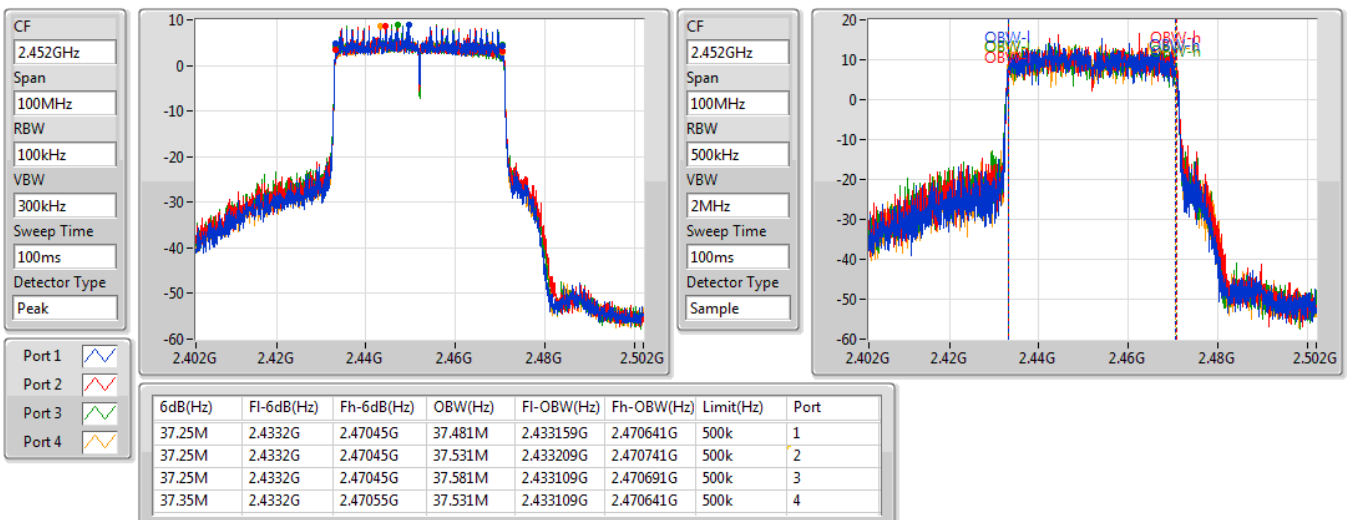


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
2437MHz

05/09/2019


802.11ax HEW40-BF_Nss1,(MCS0)_4TX
EBW
2452MHz

15/10/2019



**4T2S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss2,(MCS0)_4TX	17.575M	17.766M	17M8D1D	17.175M	17.666M
VHT40-BF_Nss2,(MCS0)_4TX	36.3M	36.432M	36M4D1D	35.45M	36.182M
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	19M	19.015M	19M0D1D	18.125M	18.941M
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	37.4M	37.731M	37M7D1D	36.35M	37.381M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

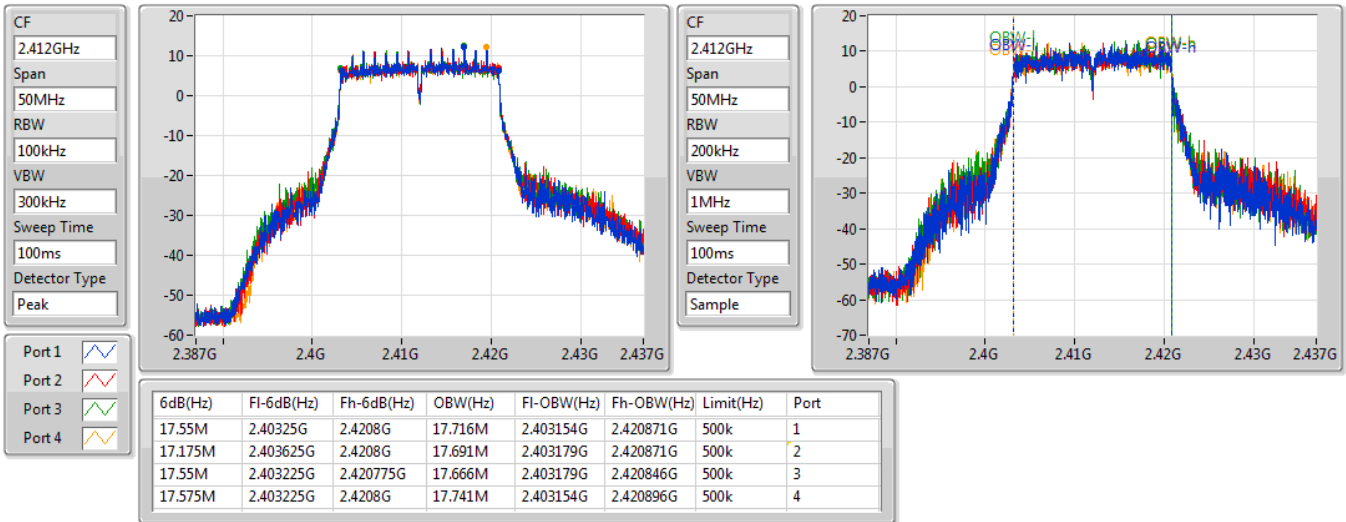
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.716M	17.175M	17.691M	17.55M	17.666M	17.575M	17.741M
2462MHz	Pass	500k	17.55M	17.741M	17.575M	17.766M	17.275M	17.716M	17.575M	17.691M
VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	35.7M	36.182M	35.7M	36.182M	35.5M	36.182M	35.95M	36.232M
2437MHz	Pass	500k	36.1M	36.182M	36.3M	36.282M	36.05M	36.432M	36.3M	36.182M
2452MHz	Pass	500k	36.3M	36.282M	36.3M	36.282M	35.75M	36.332M	35.45M	36.282M
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.85M	18.966M	18.3M	18.941M	18.8M	18.966M	18.125M	19.015M
2462MHz	Pass	500k	19M	19.015M	18.525M	18.991M	18.45M	18.941M	18.575M	18.966M
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.8M	37.381M	36.35M	37.531M	36.6M	37.431M	36.6M	37.481M
2437MHz	Pass	500k	37.4M	37.581M	37.1M	37.581M	36.85M	37.631M	37M	37.631M
2452MHz	Pass	500k	37.35M	37.631M	37.4M	37.731M	36.35M	37.481M	36.95M	37.631M

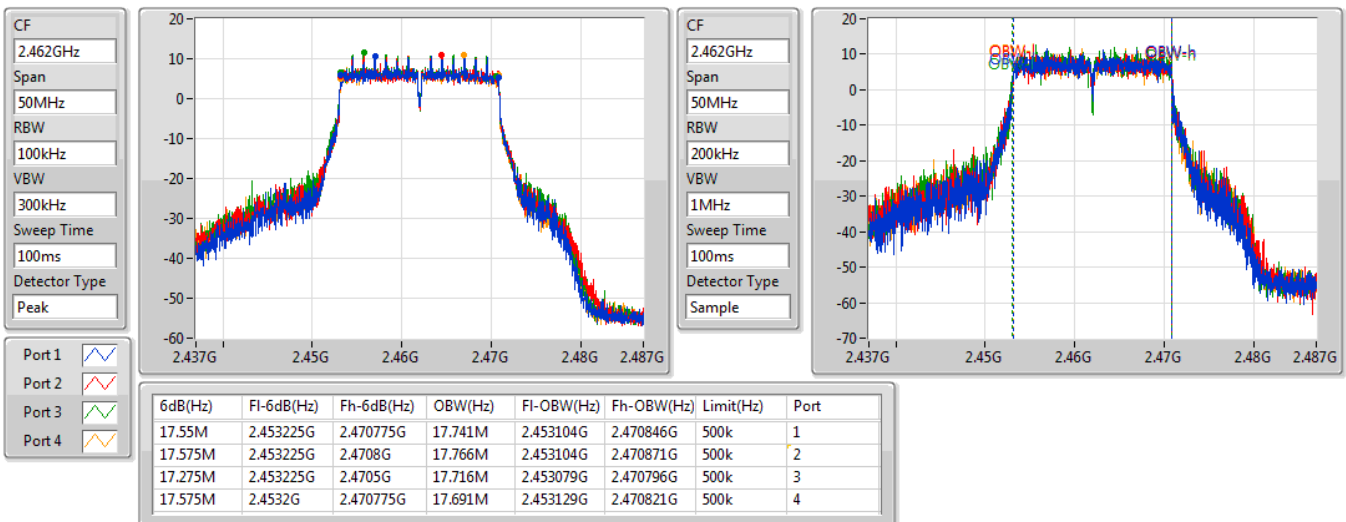
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss2,(MCS0)_4TX
EBW
2412MHz

05/09/2019

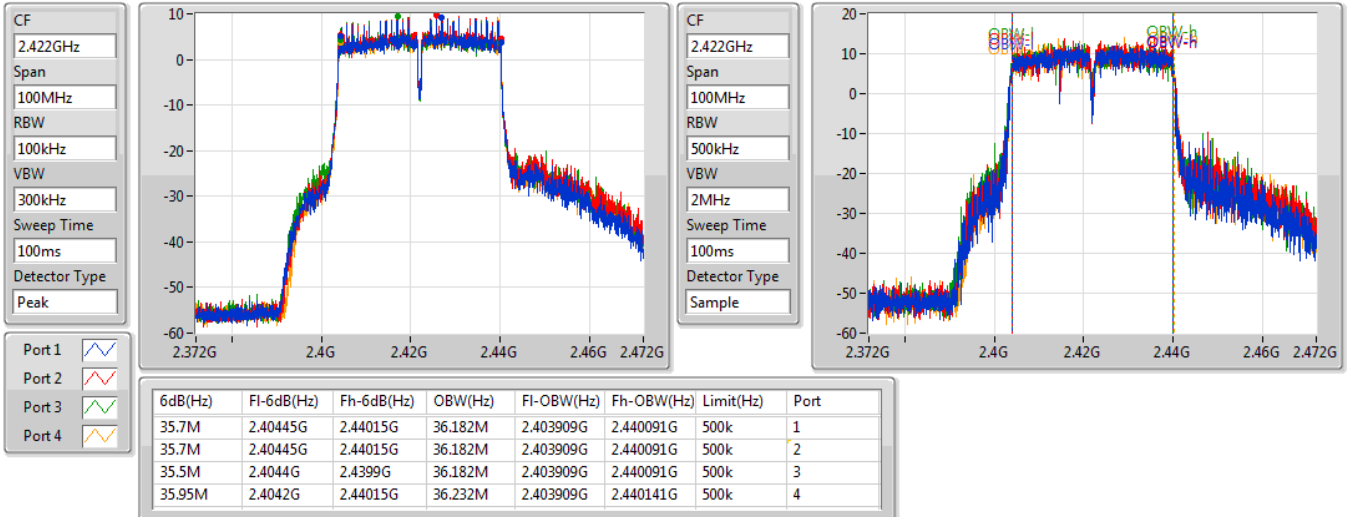

VHT20-BF_Nss2,(MCS0)_4TX
EBW
2462MHz

05/09/2019

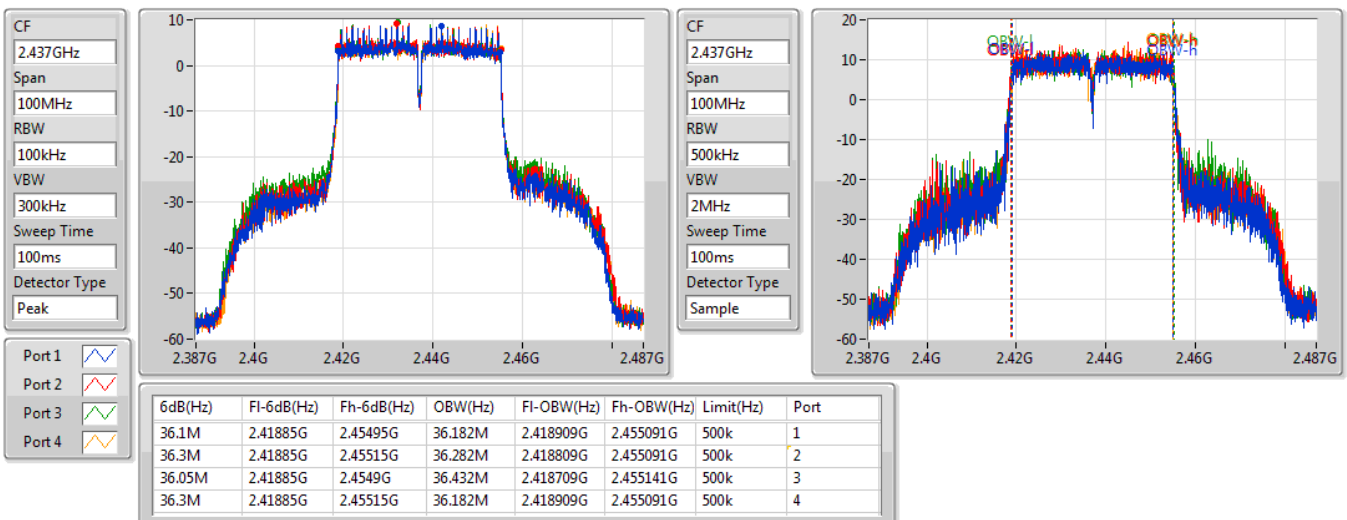


VHT40-BF_Nss2,(MCS0)_4TX
EBW
2422MHz

05/09/2019

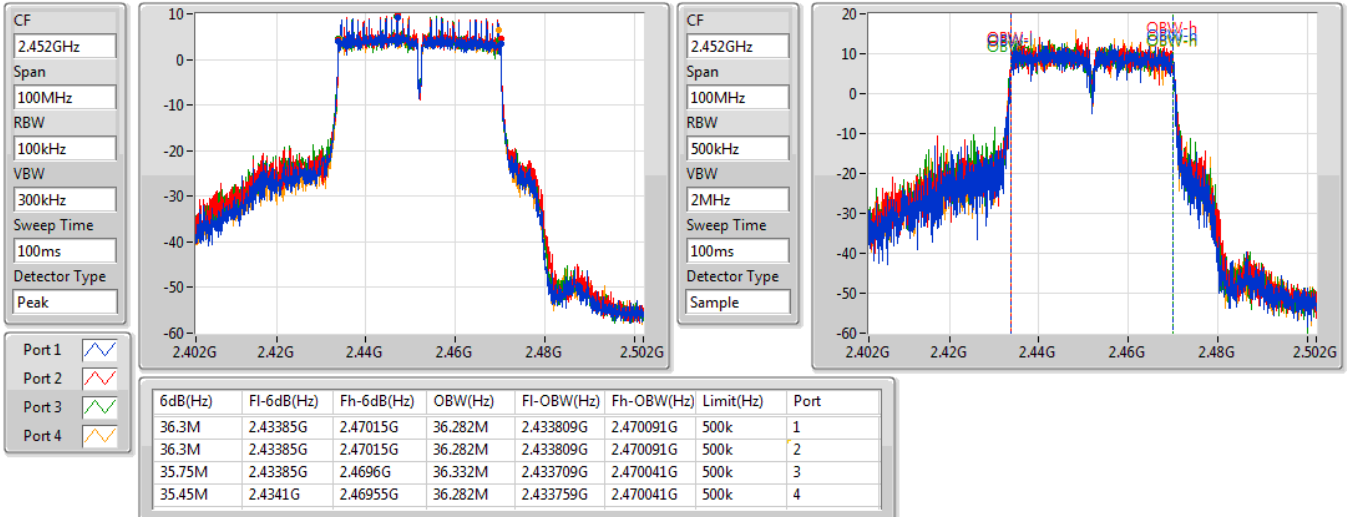

VHT40-BF_Nss2,(MCS0)_4TX
EBW
2437MHz

05/09/2019

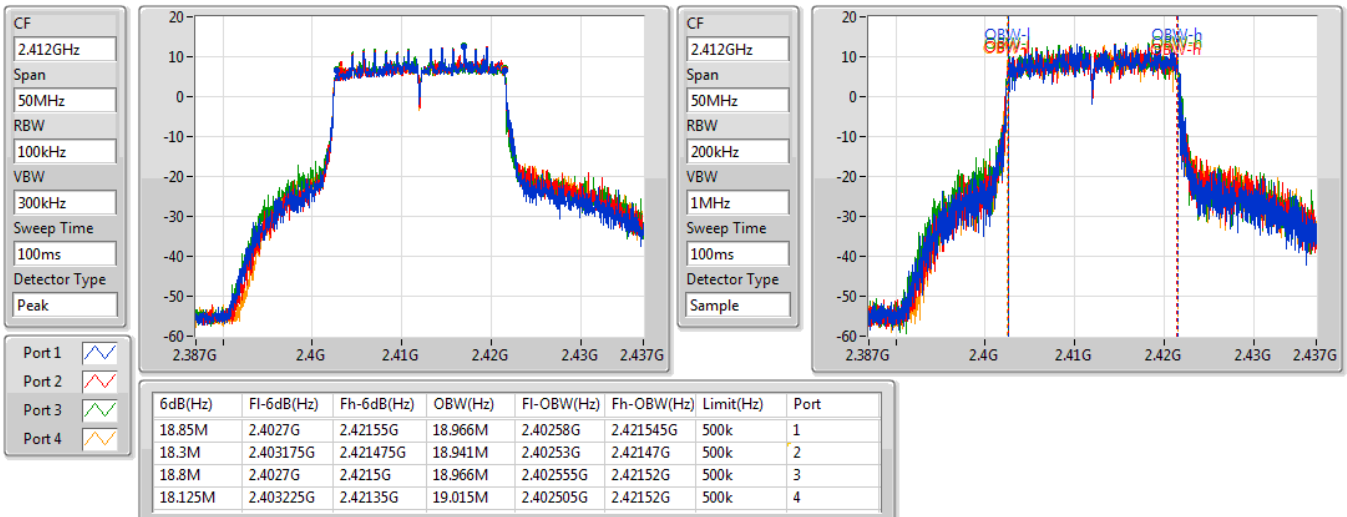


VHT40-BF_Nss2,(MCS0)_4TX
EBW
2452MHz

05/09/2019

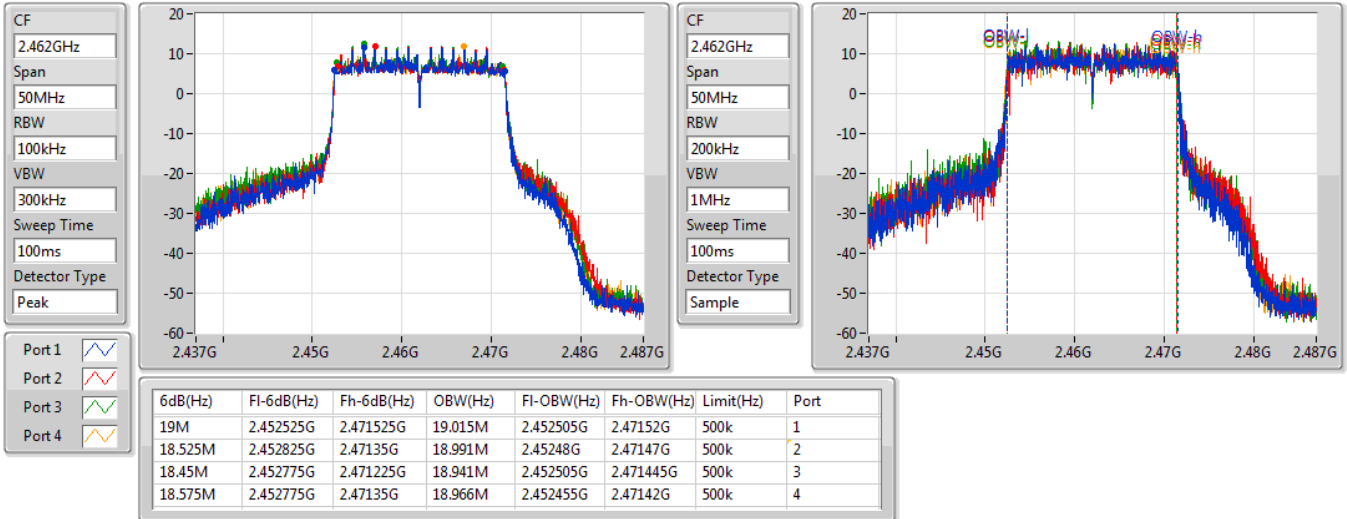

802.11ax HEW20-BF_Nss2,(MCS0)_4TX
EBW
2412MHz

05/09/2019

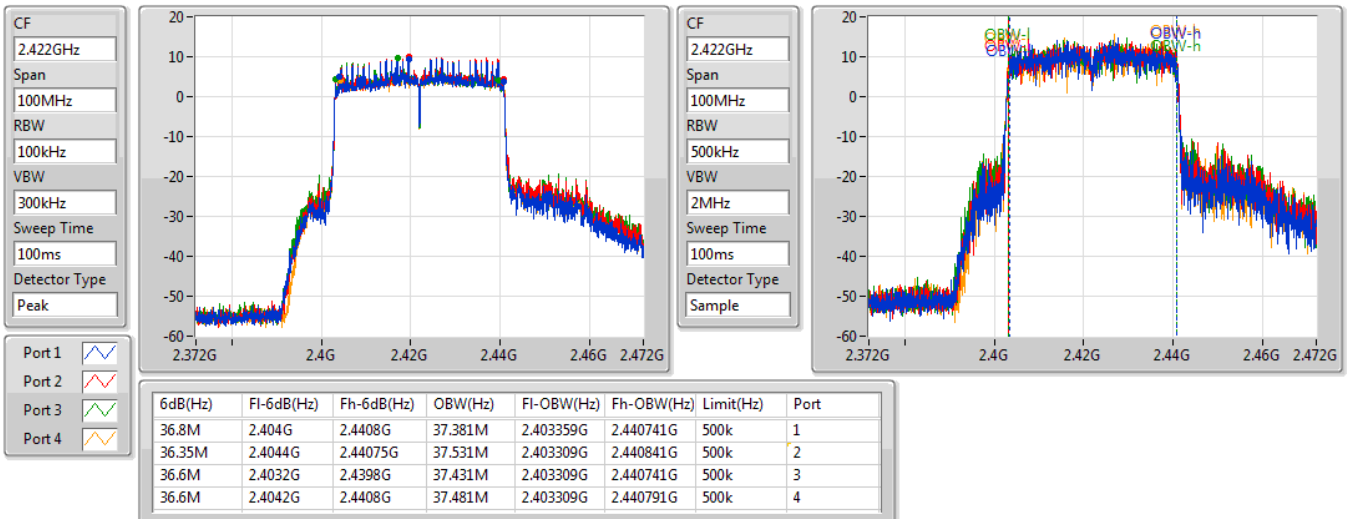


802.11ax HEW20-BF_Nss2,(MCS0)_4TX
EBW
2462MHz

05/09/2019

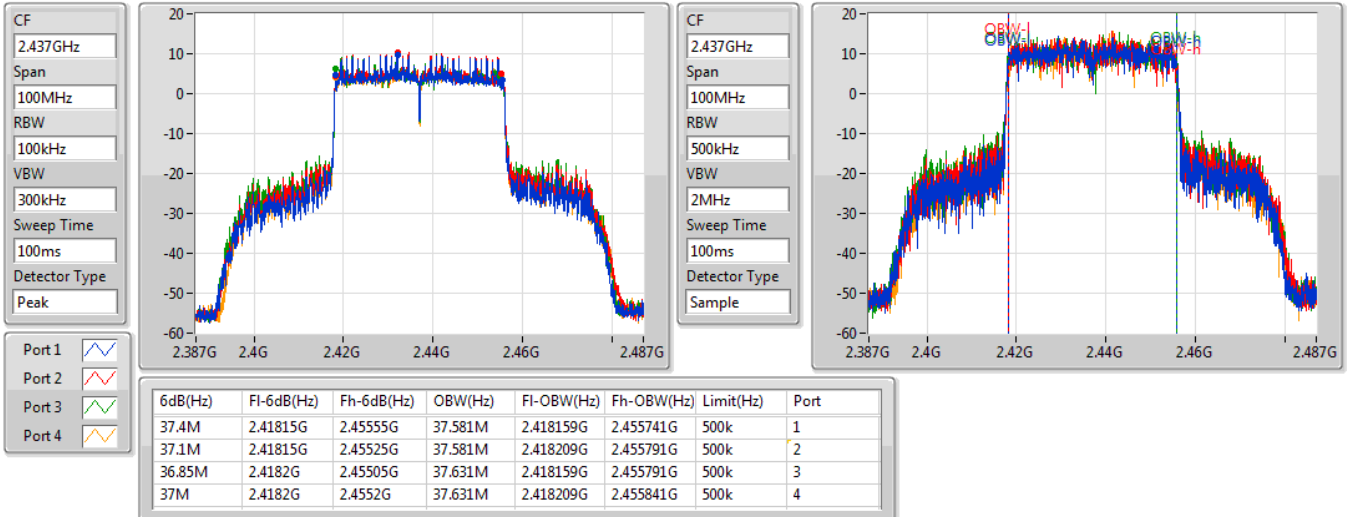

802.11ax HEW40-BF_Nss2,(MCS0)_4TX
EBW
2422MHz

05/09/2019

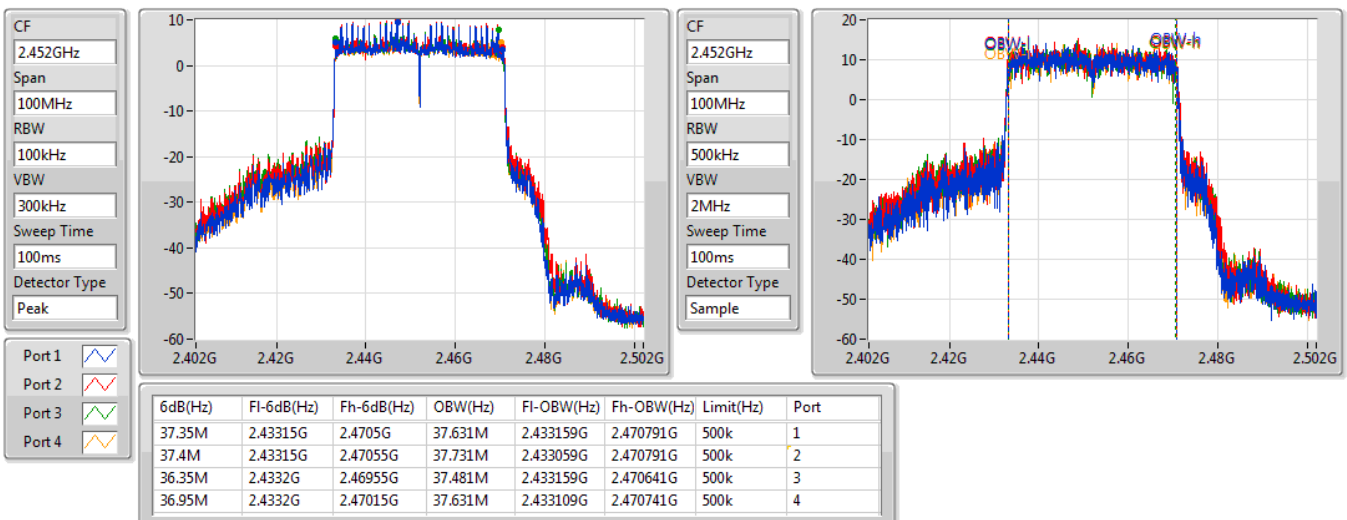


802.11ax HEW40-BF_Nss2,(MCS0)_4TX
EBW
2437MHz

05/09/2019


802.11ax HEW40-BF_Nss2,(MCS0)_4TX
EBW
2452MHz

05/09/2019



**4T3S
Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
VHT20-BF_Nss3,(MCS0)_4TX	17.55M	17.766M	17M8D1D	16.675M	17.641M
VHT40-BF_Nss3,(MCS0)_4TX	36.35M	36.432M	36M4D1D	35.7M	36.132M
802.11ax HEW20-BF_Nss3,(MCS0)_4TX	19M	19.065M	19M1D1D	18.175M	18.966M
802.11ax HEW40-BF_Nss3,(MCS0)_4TX	37.55M	37.581M	37M6D1D	36.55M	37.431M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

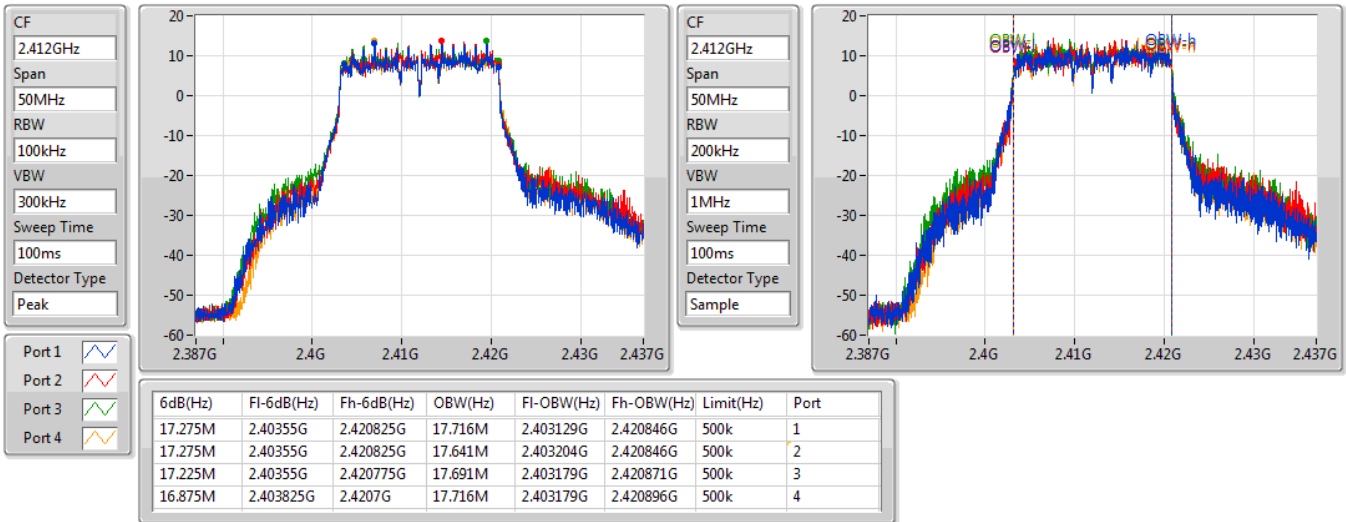
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
VHT20-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.275M	17.716M	17.275M	17.641M	17.225M	17.691M	16.875M	17.716M
2462MHz	Pass	500k	16.975M	17.766M	17.3M	17.691M	17.55M	17.691M	16.675M	17.666M
VHT40-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	36.25M	36.232M	35.95M	36.132M	36.35M	36.282M	35.75M	36.282M
2437MHz	Pass	500k	35.7M	36.282M	36.3M	36.282M	36.35M	36.382M	36.3M	36.332M
2452MHz	Pass	500k	35.9M	36.282M	36.05M	36.332M	36.3M	36.432M	36.05M	36.332M
802.11ax HEW20-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	18.875M	18.991M	18.175M	18.991M	18.45M	18.966M	18.725M	18.966M
2462MHz	Pass	500k	19M	19.015M	18.825M	19.015M	18.4M	19.015M	18.625M	19.065M
802.11ax HEW40-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	37.55M	37.481M	37.5M	37.531M	36.6M	37.581M	36.85M	37.431M
2437MHz	Pass	500k	36.95M	37.481M	36.55M	37.581M	36.6M	37.581M	36.6M	37.581M
2452MHz	Pass	500k	36.6M	37.531M	36.6M	37.481M	36.6M	37.481M	36.7M	37.431M

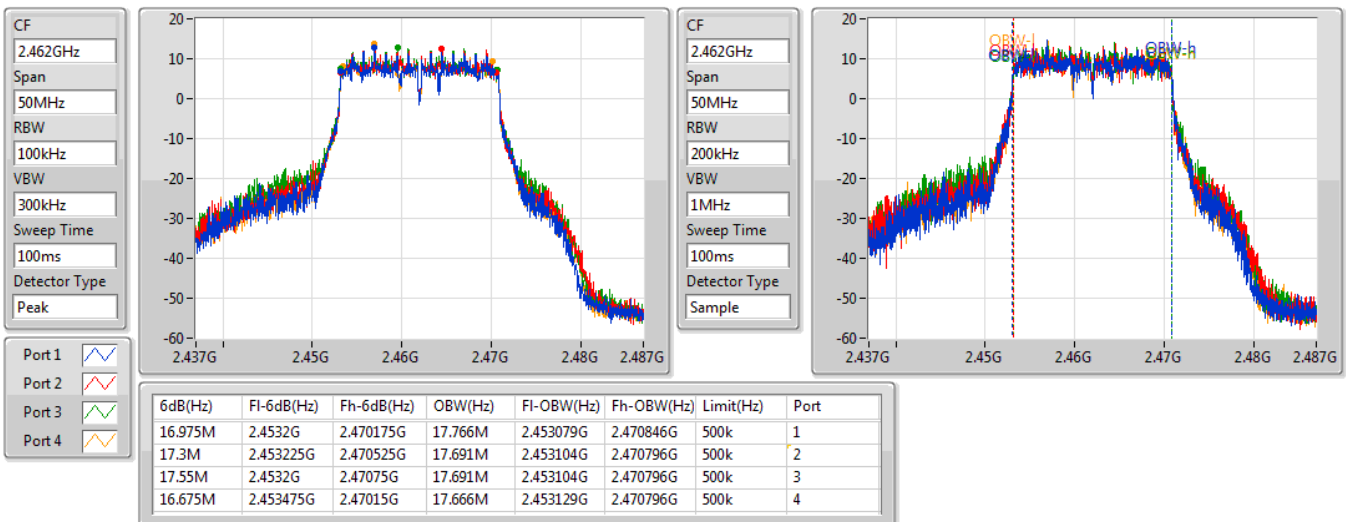
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

VHT20-BF_Nss3,(MCS0)_4TX
EBW
2412MHz

05/09/2019

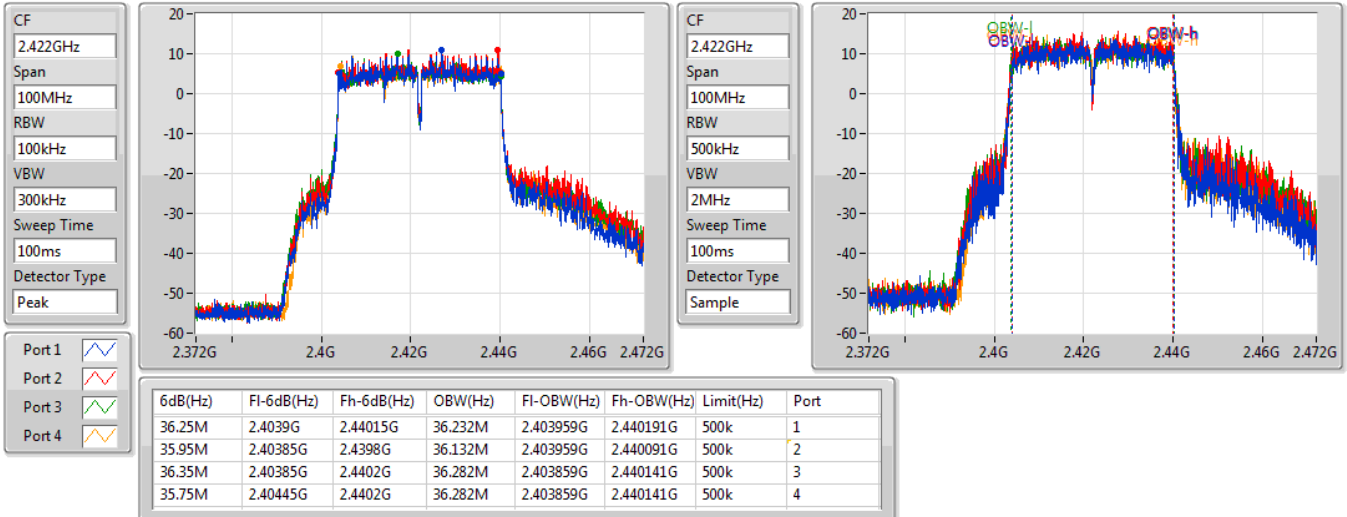

VHT20-BF_Nss3,(MCS0)_4TX
EBW
2462MHz

05/09/2019

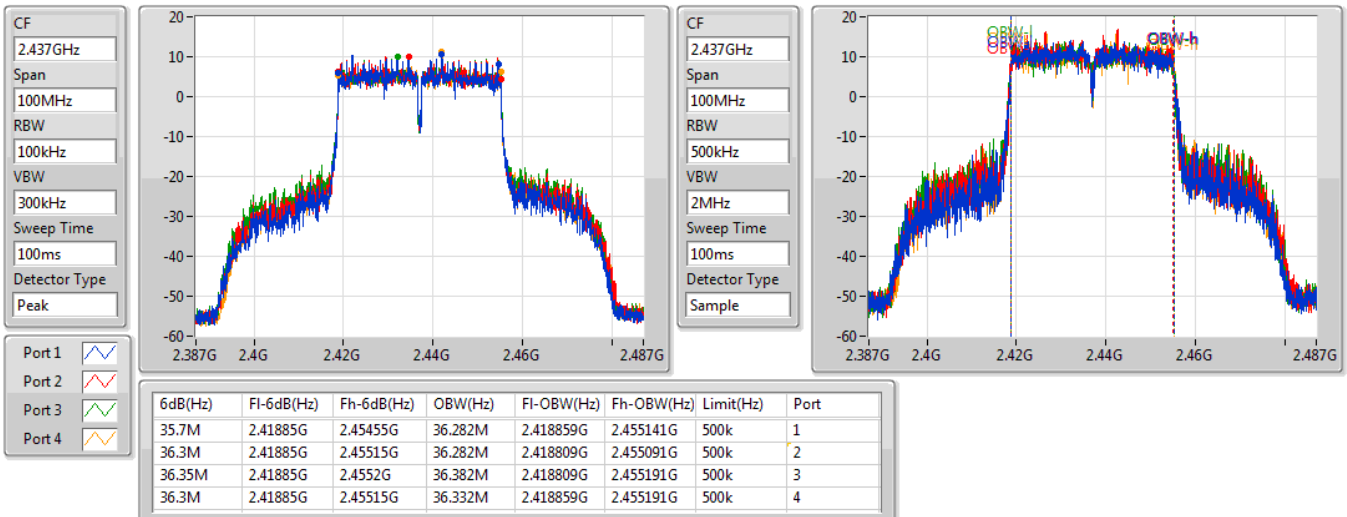


VHT40-BF_Nss3,(MCS0)_4TX
EBW
2422MHz

04/09/2019

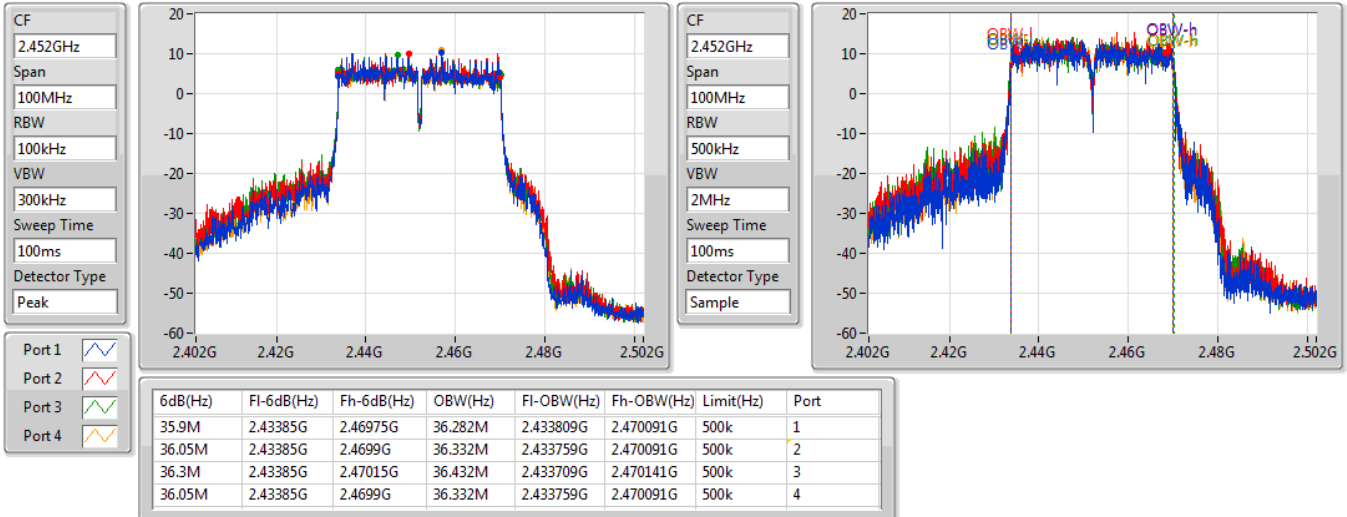

VHT40-BF_Nss3,(MCS0)_4TX
EBW
2437MHz

05/09/2019

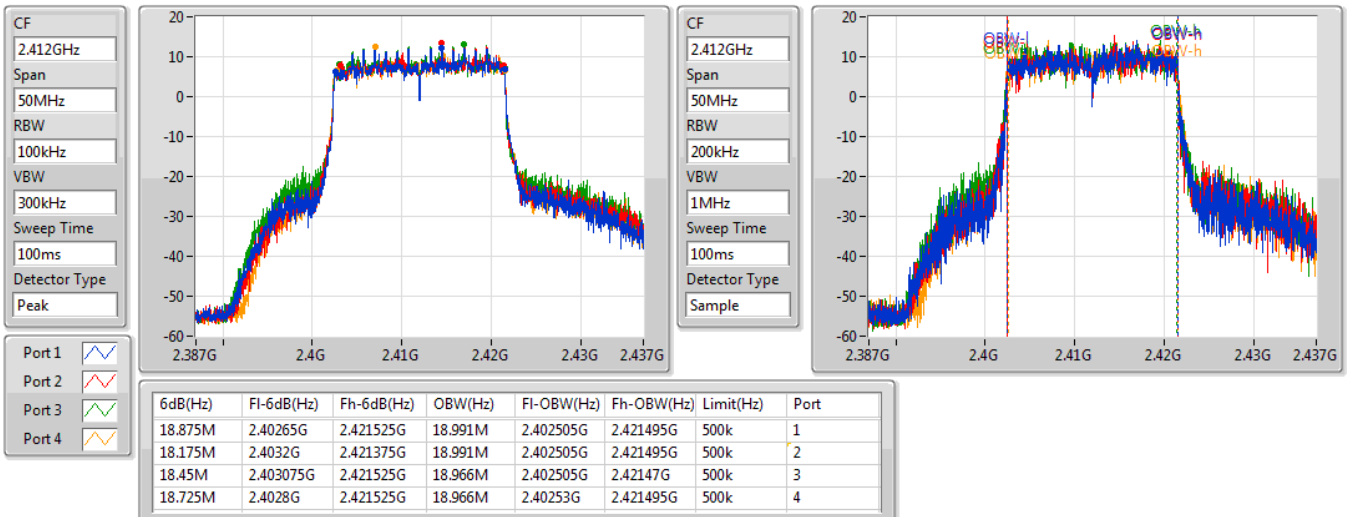


VHT40-BF_Nss3,(MCS0)_4TX
EBW
2452MHz

05/09/2019

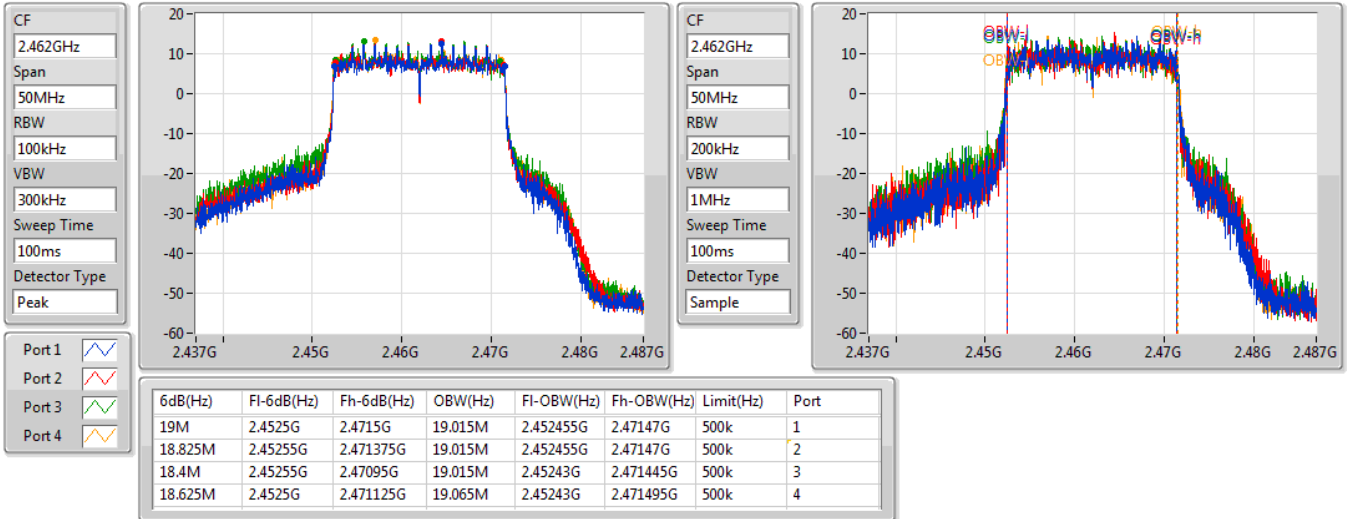

802.11ax HEW20-BF_Nss3,(MCS0)_4TX
EBW
2412MHz

05/09/2019

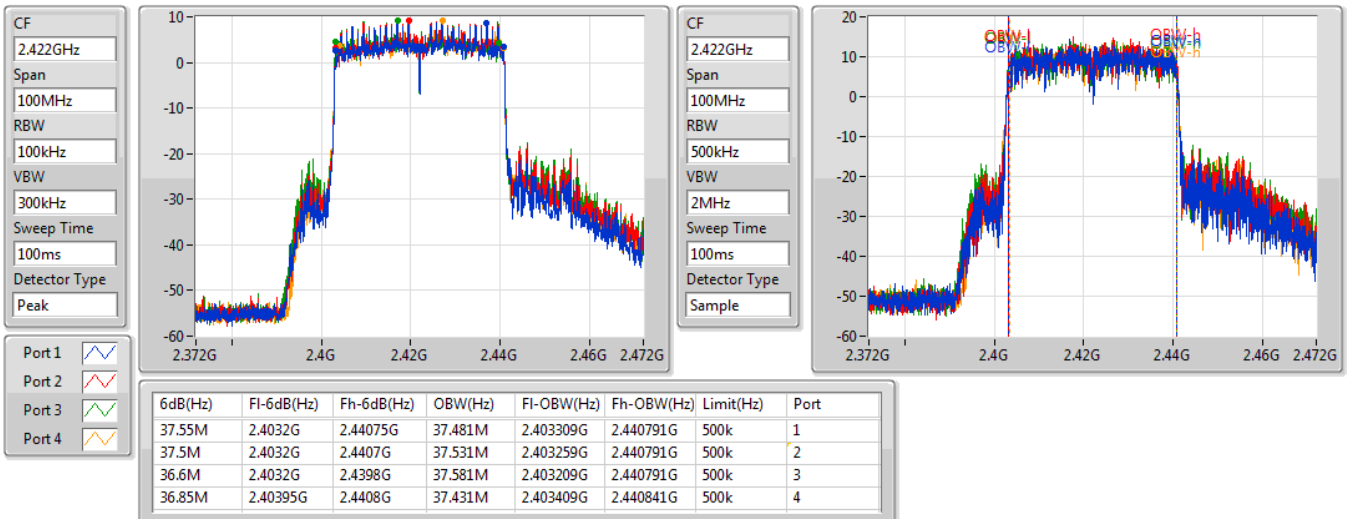


802.11ax HEW20-BF_Nss3,(MCS0)_4TX
EBW
2462MHz

05/09/2019

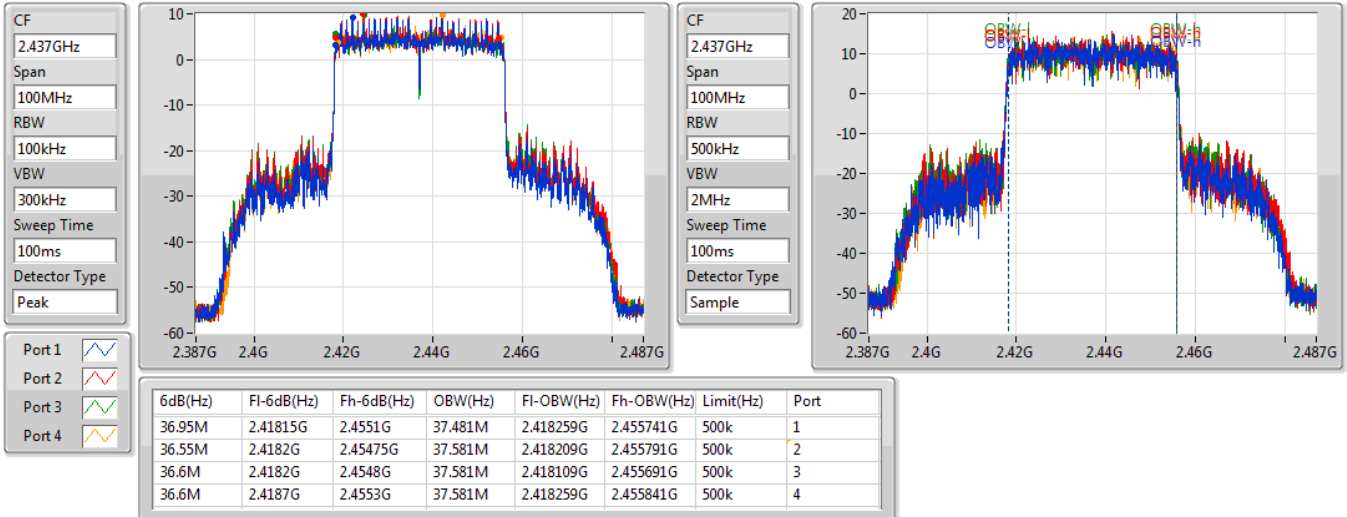

802.11ax HEW40-BF_Nss3,(MCS0)_4TX
EBW
2422MHz

04/09/2019

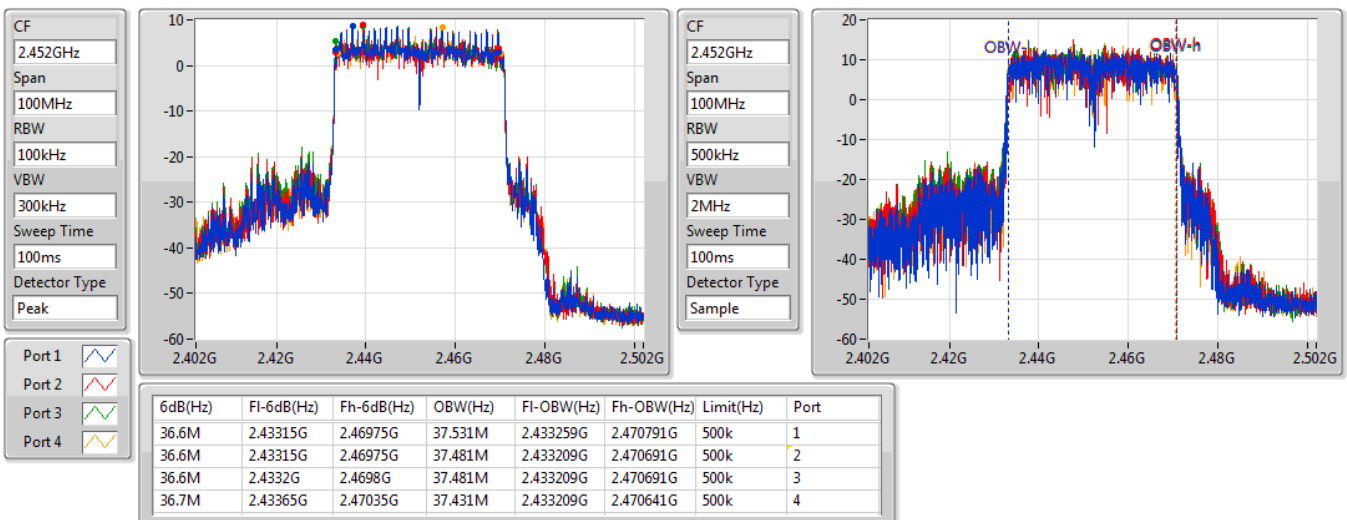


802.11ax HEW40-BF_Nss3,(MCS0)_4TX
EBW
2437MHz

05/09/2019


802.11ax HEW40-BF_Nss3,(MCS0)_4TX
EBW
2452MHz

04/09/2019





<For non-beamforming mode>

1T1S

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	27.78	0.59979



Average Power Result / Non-beamforming mode

Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.70	27.66	27.66	30.00
2417MHz	Pass	3.70	27.78	27.78	30.00
2437MHz	Pass	3.70	27.78	27.78	30.00
2457MHz	Pass	3.70	26.81	26.81	30.00
2462MHz	Pass	3.70	26.64	26.64	30.00

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



**3T1S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20_Nss1,(MCS0)_3TX	29.98	0.99541
VHT40_Nss1,(MCS0)_3TX	29.98	0.99541
802.11ax HEW20_Nss1,(MCS0)_3TX	29.99	0.99770
802.11ax HEW40_Nss1,(MCS0)_3TX	29.88	0.97275

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.90	24.77	24.80	25.12	29.67	30.00
2417MHz	Pass	3.90	25.11	25.07	25.41	29.97	30.00
2437MHz	Pass	3.90	25.05	25.17	25.39	29.98	30.00
2457MHz	Pass	3.90	24.83	24.83	25.31	29.77	30.00
2462MHz	Pass	3.90	25.04	25.15	25.32	29.94	30.00
VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	3.90	24.30	24.91	24.73	29.43	30.00
2427MHz	Pass	3.90	24.92	25.40	25.20	29.95	30.00
2437MHz	Pass	3.90	24.89	25.56	25.15	29.98	30.00
2447MHz	Pass	3.90	25.01	25.41	25.21	29.98	30.00
2452MHz	Pass	3.90	24.28	24.67	24.39	29.22	30.00
802.11ax HEW20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.90	23.89	24.04	24.24	28.83	30.00
2417MHz	Pass	3.90	24.93	24.91	25.40	29.86	30.00
2437MHz	Pass	3.90	25.08	25.23	25.34	29.99	30.00
2457MHz	Pass	3.90	25.11	25.10	25.36	29.96	30.00
2462MHz	Pass	3.90	24.82	25.21	25.46	29.94	30.00
802.11ax HEW40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	3.90	24.31	24.77	24.65	29.35	30.00
2427MHz	Pass	3.90	24.75	25.45	25.11	29.88	30.00
2437MHz	Pass	3.90	24.01	24.42	24.24	29.00	30.00
2447MHz	Pass	3.90	24.78	25.11	24.88	29.70	30.00
2452MHz	Pass	3.90	24.49	24.86	24.61	29.43	30.00

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



**3T2S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20_Nss2,(MCS0)_3TX	29.94	0.98628
802.11ax HEW20_Nss2,(MCS0)_3TX	29.98	0.99541



Average Power Result / Non-beamforming mode

Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.90	24.98	25.01	25.51	29.94	30.00
2462MHz	Pass	3.90	24.99	24.87	25.53	29.91	30.00
802.11ax HEW20_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.90	25.05	25.13	25.43	29.98	30.00
2462MHz	Pass	3.90	25.07	25.06	25.45	29.97	30.00

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



**3T3S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20_Nss3,(MCS0)_3TX	29.87	0.97051
802.11ax HEW20_Nss3,(MCS0)_3TX	29.88	0.97275



Average Power Result / Non-beamforming mode

Appendix C.1

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20_Nss3,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.90	24.63	24.82	25.01	29.59	30.00
2462MHz	Pass	3.90	24.96	24.99	25.35	29.87	30.00
802.11ax HEW20_Nss3,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	3.90	24.64	24.69	25.01	29.55	30.00
2462MHz	Pass	3.90	24.84	25.07	25.39	29.88	30.00

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



**4T1S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_4TX	29.96	0.99083
802.11g_Nss1,(6Mbps)_4TX	29.98	0.99541
VHT20_Nss1,(MCS0)_4TX	29.99	0.99770
VHT40_Nss1,(MCS0)_4TX	29.90	0.97724
802.11ax HEW20_Nss1,(MCS0)_4TX	29.91	0.97949
802.11ax HEW40_Nss1,(MCS0)_4TX	29.88	0.97275

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.87	23.88	24.10	23.70	29.91	30.00
2417MHz	Pass	4.10	23.80	23.73	24.11	24.09	29.96	30.00
2437MHz	Pass	4.10	23.56	23.68	24.02	23.95	29.83	30.00
2457MHz	Pass	4.10	23.58	23.91	24.09	23.78	29.86	30.00
2462MHz	Pass	4.10	23.63	23.92	24.16	23.48	29.83	30.00
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.66	23.76	23.94	23.69	29.78	30.00
2417MHz	Pass	4.10	23.72	23.96	24.01	23.75	29.88	30.00
2437MHz	Pass	4.10	23.86	23.87	23.91	23.89	29.90	30.00
2457MHz	Pass	4.10	23.82	23.72	24.37	23.90	29.98	30.00
2462MHz	Pass	4.10	23.81	23.91	24.02	23.66	29.87	30.00
VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.60	23.82	23.89	23.71	29.78	30.00
2417MHz	Pass	4.10	23.84	23.96	24.08	23.93	29.97	30.00
2437MHz	Pass	4.10	23.99	24.14	23.97	23.79	29.99	30.00
2457MHz	Pass	4.10	23.54	23.70	24.00	23.83	29.79	30.00
2462MHz	Pass	4.10	23.79	23.85	24.19	23.88	29.95	30.00
VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.10	23.44	24.03	23.66	23.85	29.77	30.00
2427MHz	Pass	4.10	23.57	24.03	23.72	23.70	29.78	30.00
2437MHz	Pass	4.10	23.62	24.15	23.90	23.83	29.90	30.00
2447MHz	Pass	4.10	23.78	24.12	23.82	23.73	29.89	30.00
2452MHz	Pass	4.10	23.60	24.10	23.69	23.66	29.79	30.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.54	23.83	24.00	23.74	29.80	30.00
2417MHz	Pass	4.10	23.57	23.84	23.95	23.71	29.79	30.00
2437MHz	Pass	4.10	23.85	23.86	24.02	23.82	29.91	30.00
2457MHz	Pass	4.10	23.77	23.91	24.08	23.75	29.90	30.00
2462MHz	Pass	4.10	23.64	23.71	23.95	23.74	29.78	30.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.10	23.51	24.07	23.77	23.65	29.78	30.00
2427MHz	Pass	4.10	23.62	24.09	23.86	23.69	29.84	30.00
2437MHz	Pass	4.10	23.61	24.14	23.85	23.83	29.88	30.00
2447MHz	Pass	4.10	23.65	24.08	23.76	23.85	29.86	30.00
2452MHz	Pass	4.10	23.63	24.01	23.66	23.62	29.75	30.00

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



**4T2S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20_Nss2,(MCS0)_4TX	29.89	0.97499
VHT40_Nss2,(MCS0)_4TX	29.81	0.95719
802.11ax HEW20_Nss2,(MCS0)_4TX	29.98	0.99541
802.11ax HEW40_Nss2,(MCS0)_4TX	29.75	0.94406

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.89	23.90	23.42	23.83	29.79	30.00
2462MHz	Pass	4.10	23.80	23.73	24.10	23.82	29.89	30.00
VHT40_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.10	23.59	24.00	23.75	23.76	29.80	30.00
2437MHz	Pass	4.10	23.49	23.57	23.41	23.52	29.52	30.00
2452MHz	Pass	4.10	23.58	24.02	23.77	23.76	29.81	30.00
802.11ax HEW20_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.76	23.97	24.25	23.84	29.98	30.00
2462MHz	Pass	4.10	23.51	23.51	23.94	23.58	29.66	30.00
802.11ax HEW40_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.10	22.76	23.20	22.96	22.74	28.94	30.00
2437MHz	Pass	4.10	23.58	23.79	23.84	23.70	29.75	30.00
2452MHz	Pass	4.10	22.77	23.05	22.94	22.68	28.88	30.00

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



**4T3S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20_Nss3,(MCS0)_4TX	29.83	0.96161
VHT40_Nss3,(MCS0)_4TX	29.69	0.93111
802.11ax HEW20_Nss3,(MCS0)_4TX	29.75	0.94406
802.11ax HEW40_Nss3,(MCS0)_4TX	28.64	0.73114

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.26	23.79	24.06	23.32	29.64	30.00
2437MHz								
2462MHz	Pass	4.10	23.43	23.92	24.24	23.59	29.83	30.00
VHT40_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.10	23.25	24.15	23.76	23.42	29.68	30.00
2437MHz	Pass	4.10	23.35	24.09	23.75	23.43	29.69	30.00
2452MHz	Pass	4.10	22.94	23.55	23.23	22.90	29.18	30.00
802.11ax HEW20_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	4.10	23.40	23.75	23.94	23.39	29.65	30.00
2437MHz								
2462MHz	Pass	4.10	23.47	23.52	24.19	23.69	29.75	30.00
802.11ax HEW40_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	4.10	22.17	22.75	22.82	22.50	28.59	30.00
2437MHz	Pass	4.10	22.18	22.84	22.89	22.54	28.64	30.00
2452MHz	Pass	4.10	21.95	22.43	22.34	21.94	28.19	30.00

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



<For beamforming mode>

3T1S

Summary

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20-BF_Nss1,(MCS0)_3TX	29.98	0.99541
VHT40-BF_Nss1,(MCS0)_3TX	29.98	0.99541
802.11ax HEW20-BF_Nss1,(MCS0)_3TX	29.99	0.99770
802.11ax HEW40-BF_Nss1,(MCS0)_3TX	29.88	0.97275

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	24.77	24.8	25.12	29.67	30.00
2417MHz	Pass	4.99	25.11	25.07	25.41	29.97	30.00
2437MHz	Pass	4.99	25.05	25.17	25.39	29.98	30.00
2457MHz	Pass	4.99	24.83	24.83	25.31	29.77	30.00
2462MHz	Pass	4.99	25.04	25.15	25.32	29.94	30.00
VHT40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	4.99	24.3	24.91	24.73	29.43	30.00
2427MHz	Pass	4.99	24.92	25.4	25.2	29.95	30.00
2437MHz	Pass	4.99	24.89	25.56	25.15	29.98	30.00
2447MHz	Pass	4.99	25.01	25.41	25.21	29.98	30.00
2452MHz	Pass	4.99	23.76	23.89	23.77	28.58	30.00
802.11ax HEW20-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	23.89	24.04	24.24	28.83	30.00
2417MHz	Pass	4.99	24.93	24.91	25.4	29.86	30.00
2437MHz	Pass	4.99	25.08	25.23	25.34	29.99	30.00
2457MHz	Pass	4.99	25.11	25.1	25.36	29.96	30.00
2462MHz	Pass	4.99	23.90	23.92	24.24	28.79	30.00
802.11ax HEW40-BF_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	4.99	24.31	24.77	24.65	29.35	30.00
2427MHz	Pass	4.99	24.75	25.45	25.11	29.88	30.00
2437MHz	Pass	4.99	24.01	24.42	24.24	29.00	30.00
2447MHz	Pass	4.99	24.43	24.81	24.45	29.34	30.00
2452MHz	Pass	4.99	23.86	24.07	24.20	28.82	30.00

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



**3T2S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20-BF_Nss2,(MCS0)_3TX	29.80	0.95499
802.11ax HEW20-BF_Nss2,(MCS0)_3TX	29.76	0.94624

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20-BF_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	24.67	24.74	25.14	29.63	30.00
2462MHz	Pass	4.99	24.78	24.97	25.31	29.80	30.00
802.11ax HEW20-BF_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	23.99	24.18	24.47	28.99	30.00
2462MHz	Pass	4.99	24.79	24.94	25.23	29.76	30.00

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



**4T1S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20-BF_Nss1,(MCS0)_4TX	29.99	0.99770
VHT40-BF_Nss1,(MCS0)_4TX	29.90	0.97724
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	29.91	0.97949
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	29.88	0.97275



Average Power Result / Beamforming mode

Appendix C.2

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	23.6	23.82	23.89	23.71	29.78	30.00
2417MHz	Pass	5.88	23.84	23.96	24.08	23.93	29.97	30.00
2437MHz	Pass	5.88	23.99	24.14	23.97	23.79	29.99	30.00
2457MHz	Pass	5.88	23.54	23.7	24	23.83	29.79	30.00
2462MHz	Pass	5.88	23.79	23.85	24.19	23.88	29.95	30.00
VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	23.44	24.03	23.66	23.85	29.77	30.00
2427MHz	Pass	5.88	23.57	24.03	23.72	23.7	29.78	30.00
2437MHz	Pass	5.88	23.62	24.15	23.9	23.83	29.90	30.00
2447MHz	Pass	5.88	23.31	23.80	23.53	23.34	29.52	30.00
2452MHz	Pass	5.88	23.15	23.72	23.39	23.26	29.41	30.00
802.11ax HEW20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	23.54	23.83	24	23.74	29.80	30.00
2417MHz	Pass	5.88	23.57	23.84	23.95	23.71	29.79	30.00
2437MHz	Pass	5.88	23.85	23.86	24.02	23.82	29.91	30.00
2457MHz	Pass	5.88	23.77	23.91	24.08	23.75	29.90	30.00
2462MHz	Pass	5.88	23.64	23.71	23.95	23.74	29.78	30.00
802.11ax HEW40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	23.51	24.07	23.77	23.65	29.78	30.00
2427MHz	Pass	5.88	23.62	24.09	23.86	23.69	29.84	30.00
2437MHz	Pass	5.88	23.61	24.14	23.85	23.83	29.88	30.00
2447MHz	Pass	5.88	23.56	23.83	23.73	23.62	29.71	30.00
2452MHz	Pass	5.88	23.17	23.48	23.39	23.31	29.36	30.00

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



**4T2S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20-BF_Nss2,(MCS0)_4TX	29.88	0.97275
VHT40-BF_Nss2,(MCS0)_4TX	29.88	0.97275
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	29.79	0.95280
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	29.90	0.97724

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	23.63	23.59	23.95	23.56	29.71	30.00
2462MHz	Pass	5.88	23.77	24.05	23.81	23.80	29.88	30.00
VHT40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	23.52	24.17	23.74	23.72	29.81	30.00
2437MHz	Pass	5.88	23.37	23.76	23.78	23.60	29.65	30.00
2452MHz	Pass	5.88	23.71	23.97	23.87	23.87	29.88	30.00
802.11ax HEW20-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	23.64	23.77	23.98	23.66	29.79	30.00
2462MHz	Pass	5.88	23.62	23.56	24.07	23.71	29.77	30.00
802.11ax HEW40-BF_Nss2,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	23.39	23.85	23.59	23.46	29.60	30.00
2437MHz	Pass	5.88	23.66	24.10	24.01	23.75	29.90	30.00
2452MHz	Pass	5.88	23.74	24.12	23.73	23.63	29.83	30.00

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



**4T3S
Summary**

Mode	Total Power (dBm)	Total Power (W)
2.4-2.4835GHz	-	-
VHT20-BF_Nss3,(MCS0)_4TX	29.83	0.96161
VHT40-BF_Nss3,(MCS0)_4TX	29.76	0.94624
802.11ax HEW20-BF_Nss3,(MCS0)_4TX	29.75	0.94406
802.11ax HEW40-BF_Nss3,(MCS0)_4TX	29.71	0.93541

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)
VHT20-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	23.26	23.79	24.06	23.32	29.64	30.00
2462MHz	Pass	5.88	23.43	23.92	24.24	23.59	29.83	30.00
VHT40-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	23.25	24.15	23.76	23.42	29.68	30.00
2437MHz	Pass	5.88	23.35	24.09	23.75	23.43	29.69	30.00
2452MHz	Pass	5.88	23.57	24.11	23.83	23.41	29.76	30.00
802.11ax HEW20-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	23.4	23.75	23.94	23.39	29.65	30.00
2462MHz	Pass	5.88	23.47	23.52	24.19	23.69	29.75	30.00
802.11ax HEW40-BF_Nss3,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	22.17	22.75	22.82	22.5	28.59	30.00
2437MHz	Pass	5.88	23.19	23.70	23.50	23.38	29.47	30.00
2452MHz	Pass	5.88	23.65	23.71	23.67	23.71	29.71	30.00

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



<For non-beamforming mode>

1T1S

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_1TX	5.58

RBW=3 kHz.



Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz	Pass	3.70	5.58	5.58	8.00
2437MHz	Pass	3.70	4.92	4.92	8.00
2462MHz	Pass	3.70	4.73	4.73	8.00

DG = Directional Gain; RBW=3 kHz;

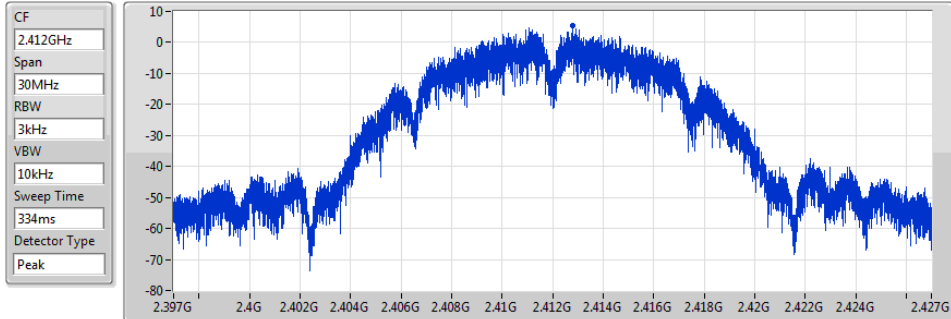
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

802.11b_Nss1,(1Mbps)_1TX

PSD

2412MHz

04/09/2019



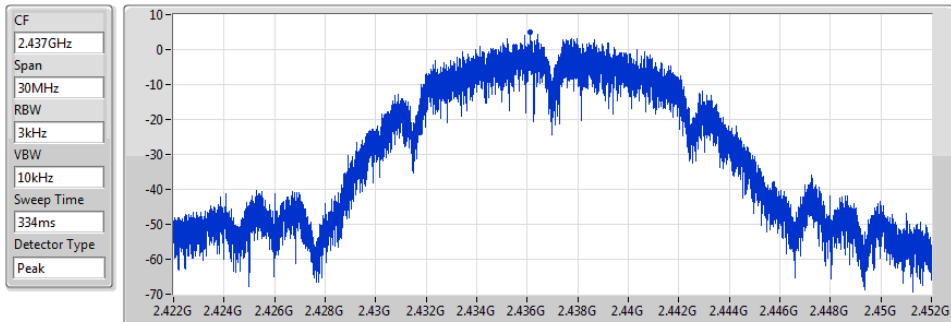
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.58	5.58	5.58

802.11b_Nss1,(1Mbps)_1TX

PSD

2437MHz

04/09/2019



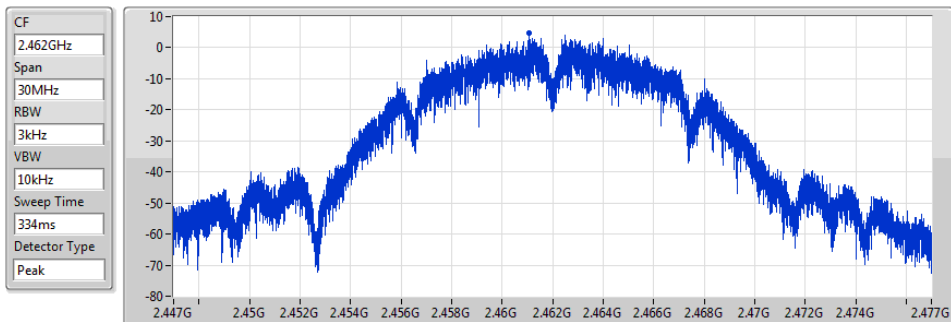
Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.92	4.92	4.92

802.11b_Nss1,(1Mbps)_1TX

PSD

2462MHz

04/09/2019



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
4.73	4.73	4.73



**3T1S
Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
VHT20_Nss1,(MCS0)_3TX	2.56
VHT40_Nss1,(MCS0)_3TX	0.28
802.11ax HEW20_Nss1,(MCS0)_3TX	3.39
802.11ax HEW40_Nss1,(MCS0)_3TX	0.42

RBW=3 kHz.

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
VHT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	-1.54	-2.13	1.30	2.36	8.00
2437MHz	Pass	4.99	-1.86	-1.24	-0.72	2.56	8.00
2462MHz	Pass	4.99	-1.60	-1.46	-0.81	2.13	8.00
VHT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	4.99	-5.00	-2.53	-4.72	-0.81	8.00
2437MHz	Pass	4.99	-4.19	-1.75	-3.87	0.28	8.00
2452MHz	Pass	4.99	-2.87	-4.40	-5.04	-0.37	8.00
802.11ax HEW20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	-3.71	-3.18	-1.52	1.86	8.00
2437MHz	Pass	4.99	-2.93	-1.19	-2.04	1.68	8.00
2462MHz	Pass	4.99	-1.86	-1.99	-0.05	3.39	8.00
802.11ax HEW40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	4.99	-4.48	-4.10	-4.47	0.42	8.00
2437MHz	Pass	4.99	-6.00	-5.47	-4.80	-0.65	8.00
2452MHz	Pass	4.99	-5.91	-5.43	-4.27	-1.49	8.00

DG = Directional Gain; RBW=3 kHz;

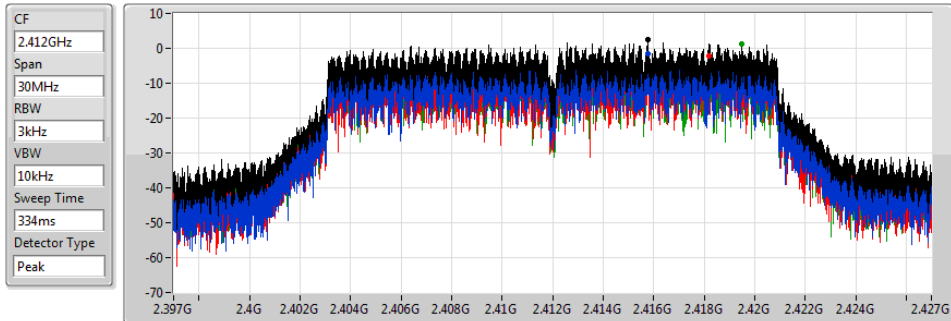
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

VHT20_Nss1,(MCS0)_3TX

2412MHz

PSD

03/09/2019



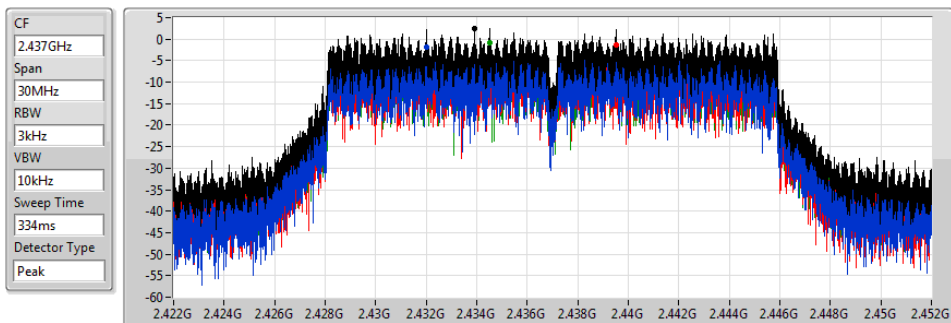
Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.36	2.36	-1.54	-2.13	1.30

VHT20_Nss1,(MCS0)_3TX

2437MHz

PSD

03/09/2019



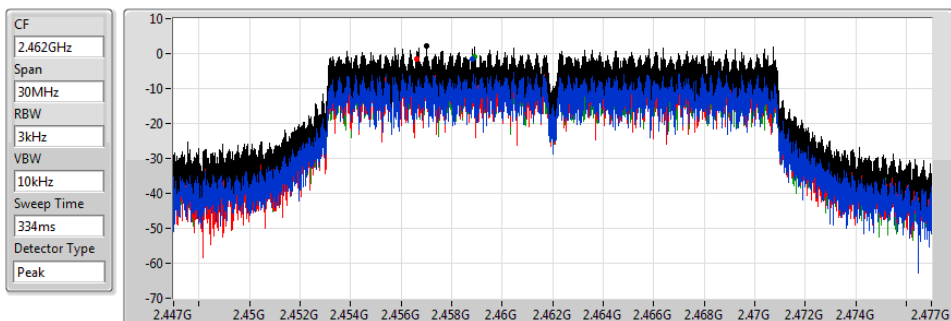
Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.56	2.56	-1.86	-1.24	-0.72

VHT20_Nss1,(MCS0)_3TX

2462MHz

PSD

03/09/2019



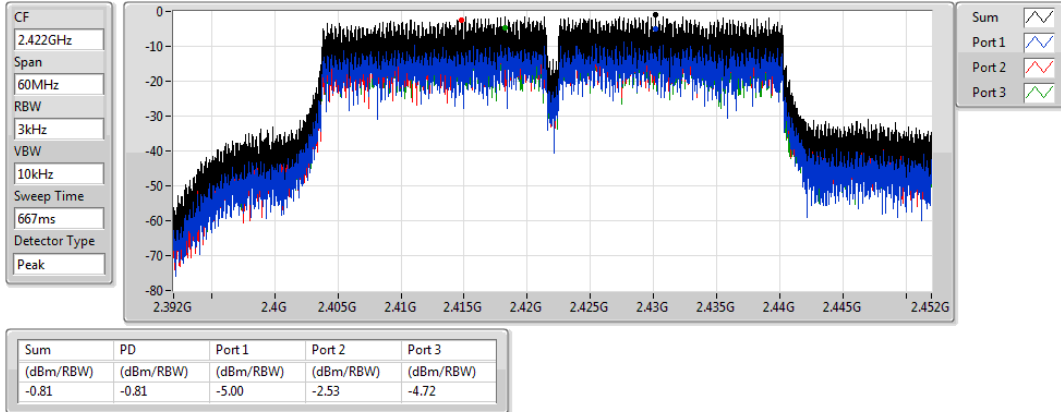
Sum	PD	Port 1	Port 2	Port 3
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.13	2.13	-1.60	-1.46	-0.81

VHT40_Nss1,(MCS0)_3TX

PSD

2422MHz

03/09/2019

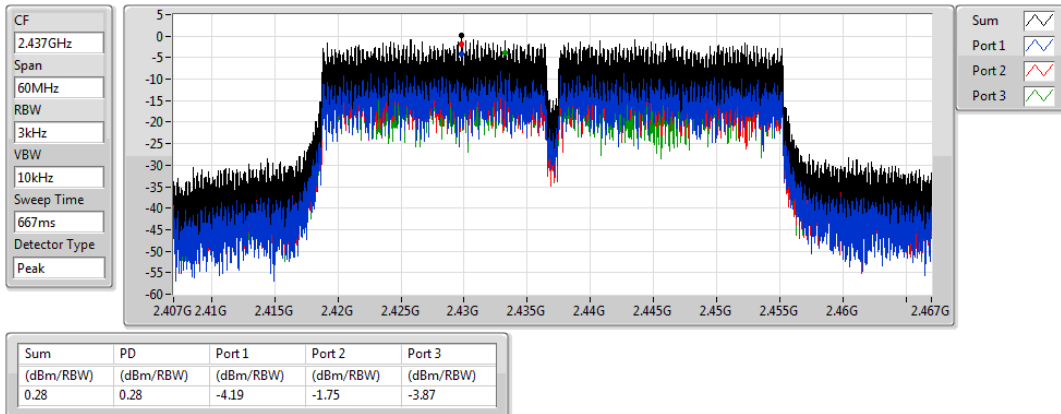


VHT40_Nss1,(MCS0)_3TX

PSD

2437MHz

03/09/2019

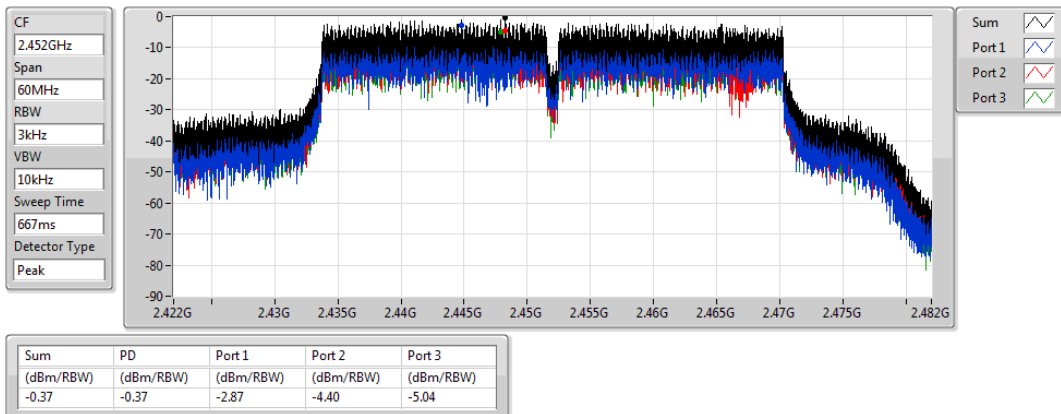


VHT40_Nss1,(MCS0)_3TX

PSD

2452MHz

03/09/2019

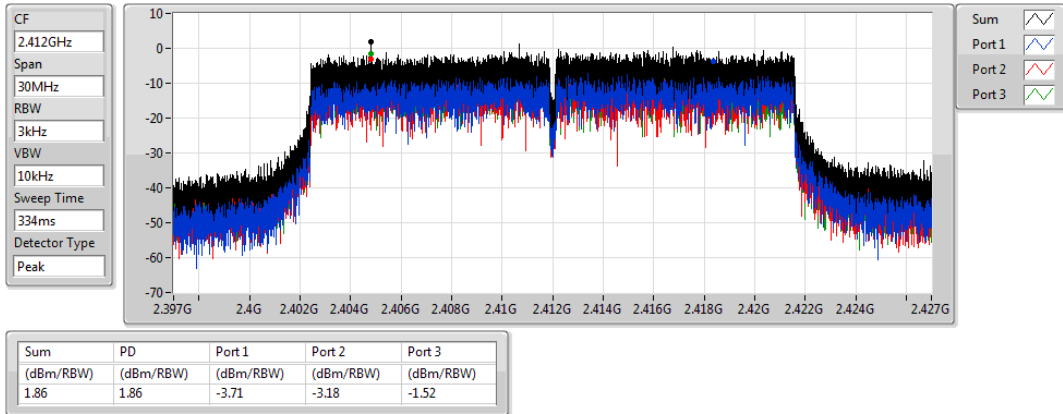


802.11ax HEW20_Nss1,(MCS0)_3TX

PSD

2412MHz

03/09/2019

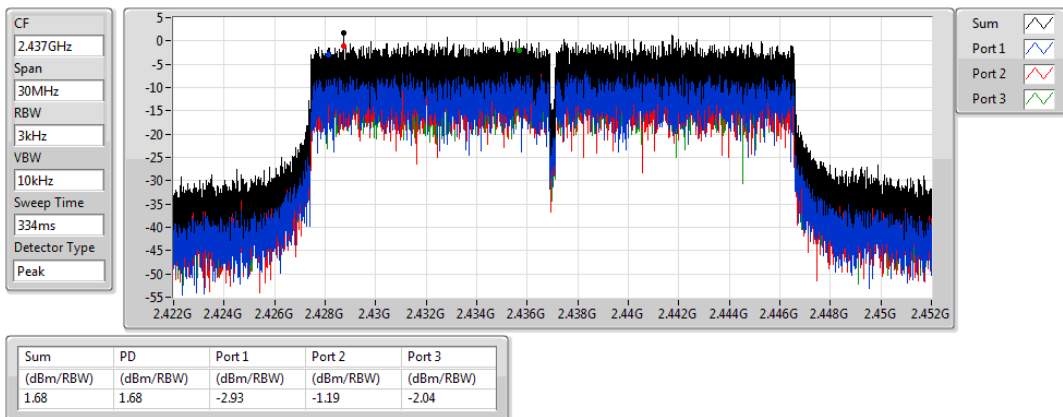


802.11ax HEW20_Nss1,(MCS0)_3TX

PSD

2437MHz

03/09/2019

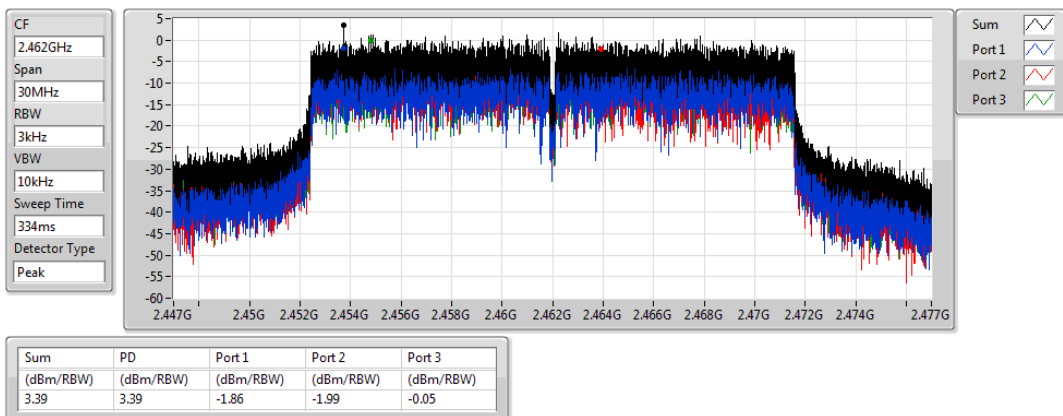


802.11ax HEW20_Nss1,(MCS0)_3TX

PSD

2462MHz

03/09/2019

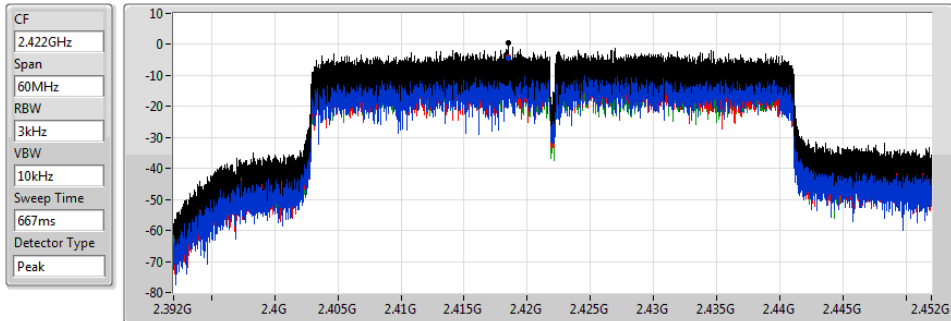


802.11ax HEW40_Nss1,(MCS0)_3TX

PSD

2422MHz

03/09/2019



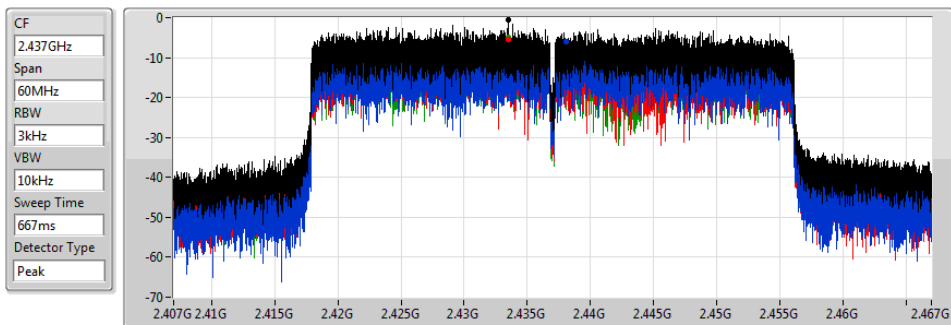
Sum	PD	Port 1	Port 2	Port 3
(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)
0.42	0.42	-4.48	-4.10	-4.47

802.11ax HEW40_Nss1,(MCS0)_3TX

PSD

2437MHz

03/09/2019



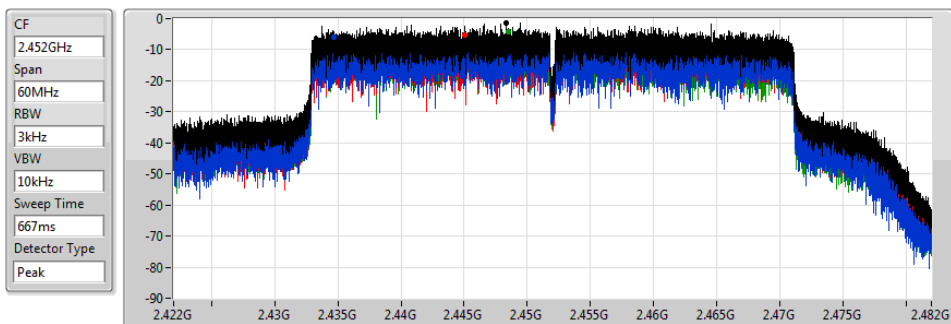
Sum	PD	Port 1	Port 2	Port 3
(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)
-0.65	-0.65	-6.00	-5.47	-4.80

802.11ax HEW40_Nss1,(MCS0)_3TX

PSD

2452MHz

03/09/2019



Sum	PD	Port 1	Port 2	Port 3
(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)	(dBm/100Hz)
-1.49	-1.49	-5.91	-5.43	-4.27



**3T2S
Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
VHT20_Nss2,(MCS0)_3TX	1.82
802.11ax HEW20_Nss2,(MCS0)_3TX	0.47

RBW=3 kHz.



Result

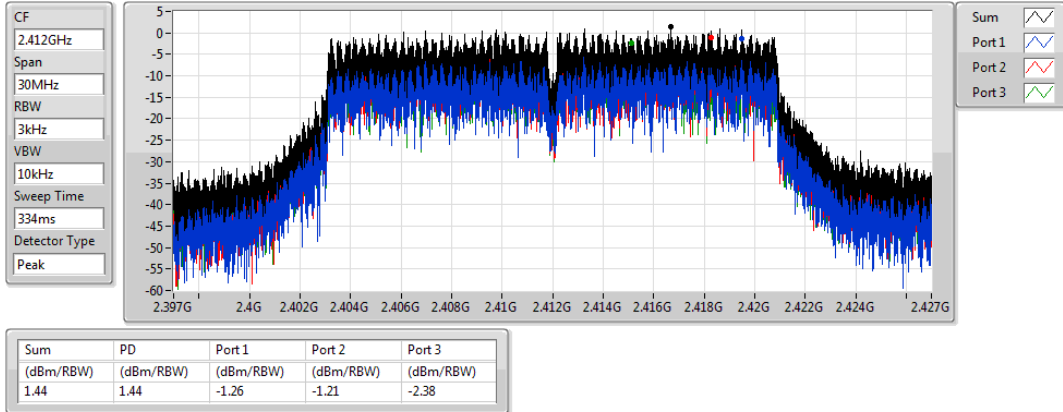
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
VHT20_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	-1.26	-1.21	-2.38	1.44	8.00
2462MHz	Pass	4.99	-2.26	-1.73	-1.15	1.82	8.00
802.11ax HEW20_Nss2,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	-3.30	-3.66	-1.58	0.22	8.00
2462MHz	Pass	4.99	-3.11	-1.75	-3.08	0.47	8.00

DG = Directional Gain; RBW=3 kHz;

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

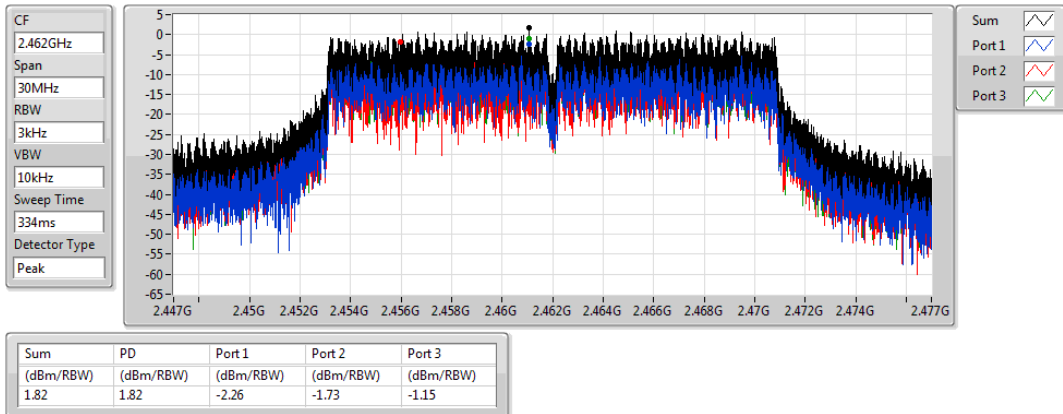
VHT20_Nss2,(MCS0)_3TX

2412MHz



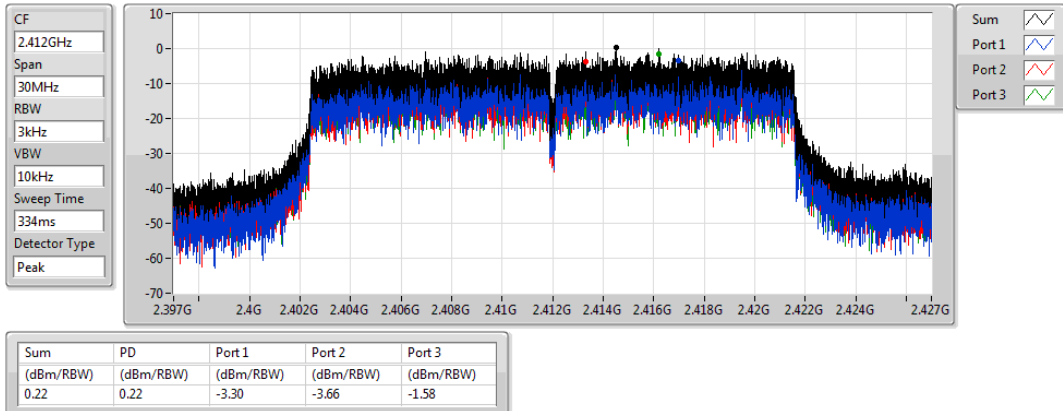
VHT20_Nss2,(MCS0)_3TX

2462MHz



802.11ax HEW20_Nss2,(MCS0)_3TX

2412MHz

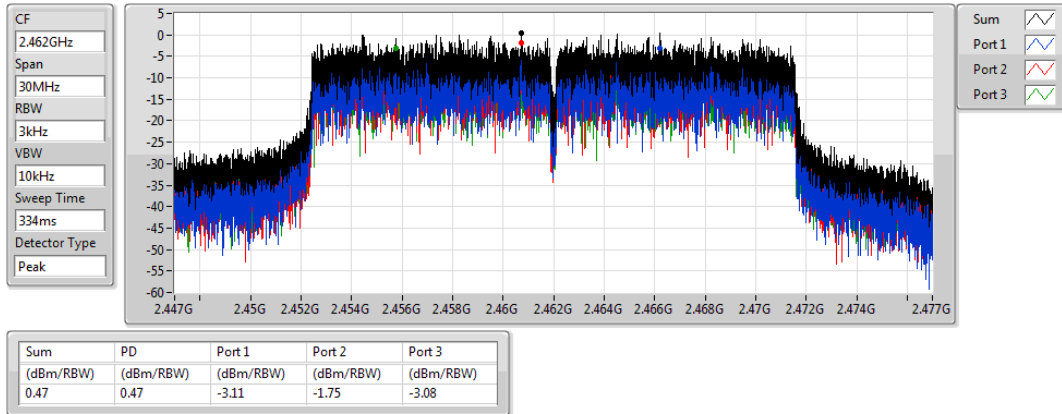


802.11ax HEW20_Nss2,(MCS0)_3TX

PSD

2462MHz

04/09/2019





**3T3S
Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
VHT20_Nss3,(MCS0)_3TX	1.40
802.11ax HEW20_Nss3,(MCS0)_3TX	0.64

RBW=3 kHz.

Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
VHT20_Nss3,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	-1.56	-1.40	-0.68	1.01	8.00
2462MHz	Pass	4.99	-1.58	-1.78	0.38	1.40	8.00
802.11ax HEW20_Nss3,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	4.99	-2.59	-2.57	-2.45	0.64	8.00
2462MHz	Pass	4.99	-2.14	-2.26	-2.34	0.46	8.00

DG = Directional Gain; RBW=3 kHz;

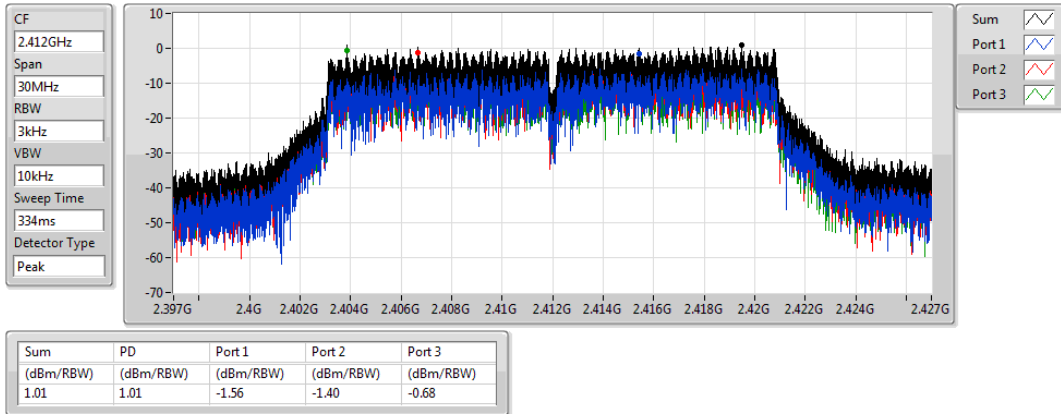
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

VHT20_Nss3,(MCS0)_3TX

PSD

2412MHz

04/09/2019

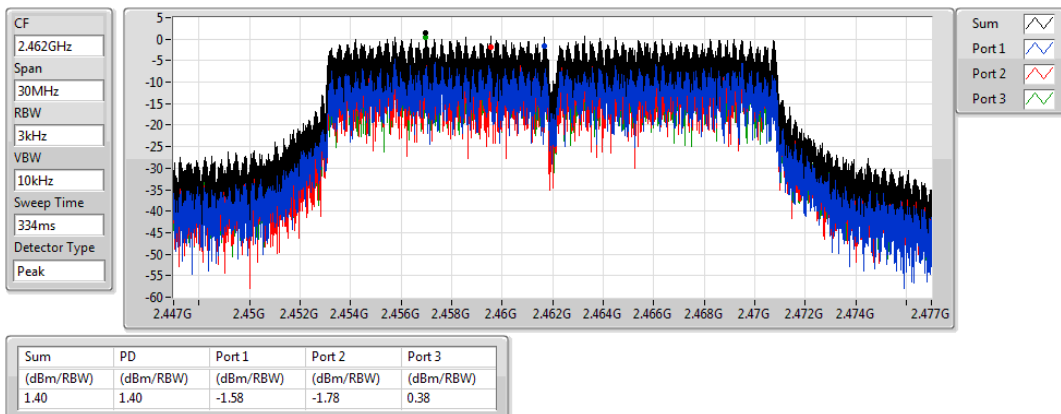


VHT20_Nss3,(MCS0)_3TX

PSD

2462MHz

04/09/2019

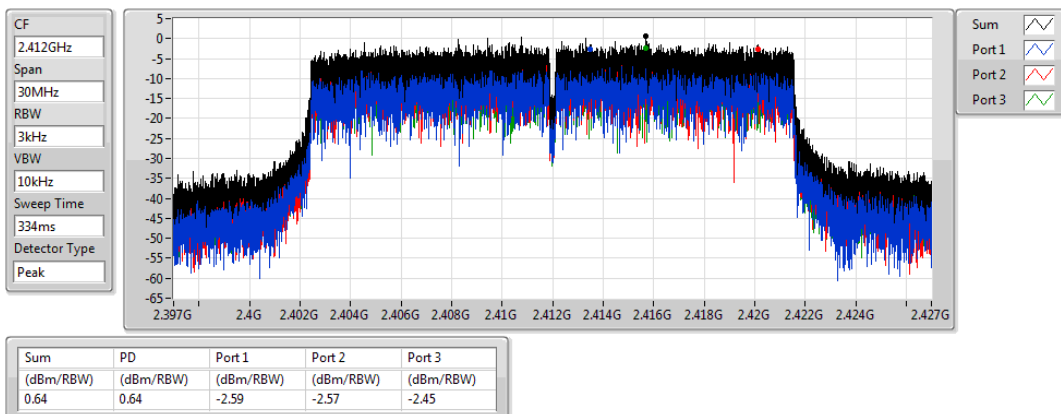


802.11ax HEW20_Nss3,(MCS0)_3TX

PSD

2412MHz

04/09/2019

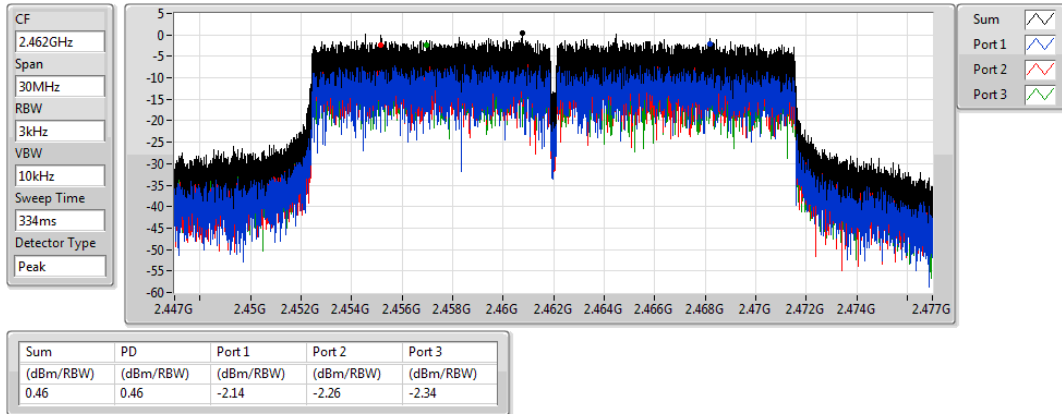


802.11ax HEW20_Nss3,(MCS0)_3TX

PSD

2462MHz

04/09/2019





**4T1S
Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
802.11b_Nss1,(1Mbps)_4TX	5.66
802.11g_Nss1,(6Mbps)_4TX	3.88
VHT20_Nss1,(MCS0)_4TX	3.92
VHT40_Nss1,(MCS0)_4TX	2.31
802.11ax HEW20_Nss1,(MCS0)_4TX	5.19
802.11ax HEW40_Nss1,(MCS0)_4TX	0.89

RBW=3 kHz.

Result

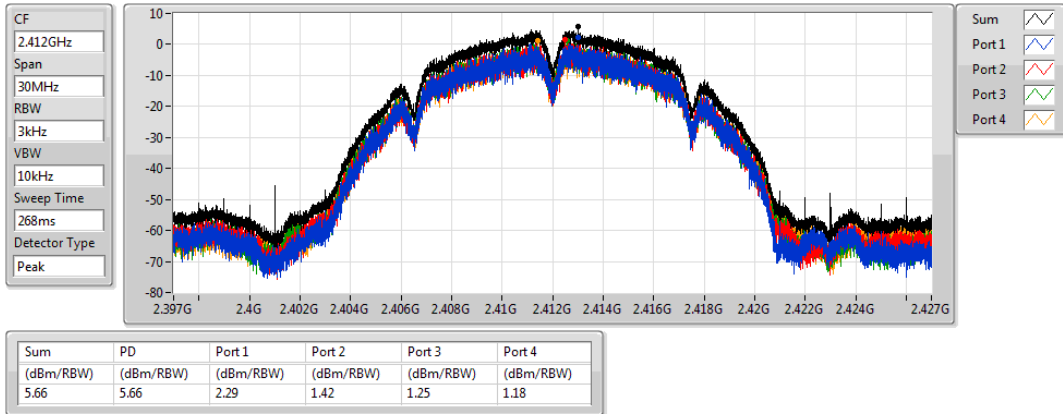
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	Port 3 (dBm/RBW)	Port 4 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11b_Nss1,(1Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	2.29	1.42	1.25	1.18	5.66	8.00
2437MHz	Pass	5.88	0.87	0.66	1.31	1.62	4.59	8.00
2462MHz	Pass	5.88	0.34	0.56	1.98	0.58	4.90	8.00
802.11g_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	-2.34	-2.02	-0.37	-2.26	3.85	8.00
2437MHz	Pass	5.88	-1.85	-1.65	-2.42	-0.76	3.88	8.00
2462MHz	Pass	5.88	-2.15	-1.92	-1.84	-1.96	3.59	8.00
VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	-2.25	-1.71	-1.68	-2.35	3.04	8.00
2437MHz	Pass	5.88	-2.14	-1.54	-1.55	-1.90	3.45	8.00
2462MHz	Pass	5.88	-2.02	-1.94	-1.63	-2.29	3.92	8.00
VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	-3.85	-3.26	-3.73	-3.95	2.31	8.00
2437MHz	Pass	5.88	-3.52	-2.84	-3.51	-3.84	1.80	8.00
2452MHz	Pass	5.88	-4.64	-4.17	-3.34	-3.16	1.76	8.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2412MHz	Pass	5.88	-3.62	-2.50	-2.48	-2.03	2.70	8.00
2437MHz	Pass	5.88	-1.19	-0.80	-0.47	-0.88	5.19	8.00
2462MHz	Pass	5.88	-2.18	-1.36	-1.03	-0.94	4.67	8.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
2422MHz	Pass	5.88	-5.05	-6.06	-4.58	-6.26	0.19	8.00
2437MHz	Pass	5.88	-6.00	-4.80	-5.18	-4.68	0.89	8.00
2452MHz	Pass	5.88	-6.19	-4.80	-4.91	-5.93	-0.43	8.00

DG = Directional Gain; RBW=3 kHz;

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

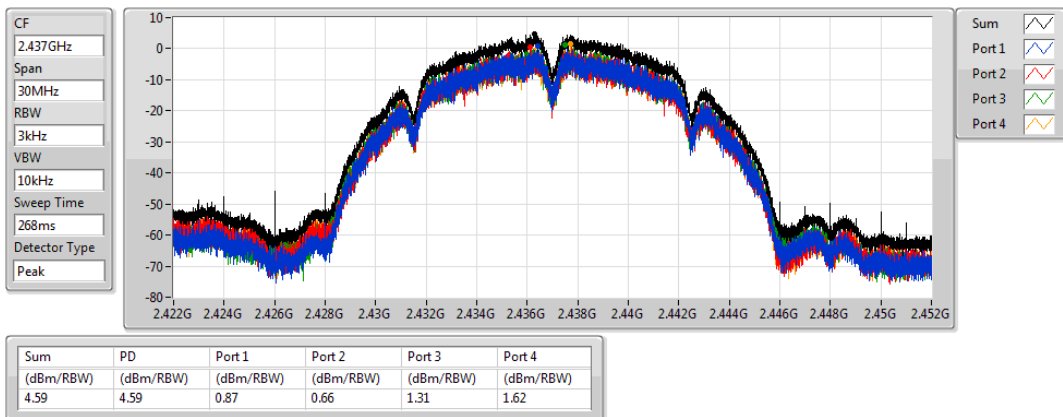
802.11b_Nss1,(1Mbps)_4TX

2412MHz



802.11b_Nss1,(1Mbps)_4TX

2437MHz



802.11b_Nss1,(1Mbps)_4TX

2462MHz

