EMISSION & OCCUPIED BANDWIDTH

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST DESCRIPTION
5.2GHz band
FCC KDB 789033 General UNII Test Procedures were followed.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio.
A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

☐RBW = Approx. 1% of the emission bandwidth (B).
☐VBW = > RBW
☐Detector = Peak
☐Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure 26 dB emission bandwidth.

There is no required limit to be met in the rule part for the 5.2GHz band. The purpose of the test is to both report the results as required by the KDB, and to utilize the emission bandwidth for setting the channel power integration bandwidth during conducted output power testing.

5.8GHz band
FCC KDB 789033 General UNII Test Procedures were followed to measure the minimum emission bandwidth for the 5.725-5.85 GHz band.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

RBW = 100 kHz
VBW = ≥ 3x RBW
Detector = Peak
Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure 6 dB emission bandwidth.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Spectrum Analyzer	Agilent	N9010A	AFL	9/20/2014	9/20/2015
DC Block, 40 GHz	Fairview Microwave	SD3379	AMM	2/27/2015	2/27/2016
Attenuator, 20dB, 40 GHz	Fairview Microwave	SA4018-20	TQY	2/27/2015	2/27/2016
Signal Generator, 40 GHz	Agilent	N5173B	TIW	7/15/2014	7/15/2017

EMISSION & OCCUPIED BANDWIDTH

NORTHWEST EMC VERSION

EUT:	Firebox T50-W (BS5AE7W)	Work Order:	VDEI0009
Serial Number:	70AF00069-3EB6	Date:	07/31/15
Customer:	WatchGuard Technologies, Inc.	Temperature:	25.6°C
Attendees:	None	Relative Humidity:	44%
Customer Project:	None	Bar. Pressure:	1014 mbar
Tested By:	Jonathan Kiefer	Job Site:	TX09
Power:	110VAC/60Hz	Configuration:	1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2015	ANSI C63.10:2013

COMMENTS

Chain A corresponds to Chain 0.

DEVIATIONS FROM TEST STANDARD

None

RESULTS

		Value	Limit (>)	Result
Chain A				
802.11(a) 6 Mbps				
20 MHz				
	Low Channel 5180 MHz	21.919 MHz	N/A	N/A
	High Channel 5240 MHz	21.876 MHz	N/A	N/A
	Low Channel 5745 MHz	16.481 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.36 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.357 MHz	500 kHz	Pass
802.11(a) 36 Mbps				
20 MHz				
	Low Channel 5180 MHz	21.136 MHz	N/A	N/A
	High Channel 5240 MHz	21.205 MHz	N/A	N/A
	Low Channel 5745 MHz	16.433 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.446 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.452 MHz	500 kHz	Pass
802.11(a) 54 Mbps				
20 MHz				
	Low Channel 5180 MHz	22.544 MHz	N/A	N/A
	High Channel 5240 MHz	24.414 MHz	N/A	N/A
	Low Channel 5745 MHz	16.417 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.459 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.461 MHz	500 kHz	Pass
802.11(n) MCS0				
20 MHz				
	Low Channel 5180 MHz	22.468 MHz	N/A	N/A
	High Channel 5240 MHz	22.22 MHz	N/A	N/A
	Low Channel 5745 MHz	17.556 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.581 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.549 MHz	500 kHz	Pass
40 MHz				

EMISSION & OCCUPIED BANDWIDTH

		Value	Limit (>)	Result
	Low Channel 5190 MHz	44.467 MHz	N/A	N/A
	High Channel 5230 MHz	45.054 MHz	N/A	N/A
	Low Channel 5755 MHz	36.058 MHz	500 kHz	Pass
	High Channel 5795 MHz	36.324 MHz	500 kHz	Pass
80 MHz				
	Low Channel 5210 MHz	86.405 MHz	N/A	N/A
	Low Channel 5775 MHz	75.754 MHz	500 kHz	Pass
802.11(n) MCS7				
20 MHz				
	Low Channel 5180 MHz	23.503 MHz	N/A	N/A
	High Channel 5240 MHz	22.838 MHz	N/A	N/A
	Low Channel 5745 MHz	17.671 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.574 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.557 MHz	500 kHz	Pass
40 MHz				
	Low Channel 5190 MHz	45.17 MHz	N/A	N/A
	High Channel 5230 MHz	45.86 MHz	N/A	N/A
	Low Channel 5755 MHz	36.068 MHz	500 kHz	Pass
	High Channel 5795 MHz	36.352 MHz	500 kHz	Pass
802.11(ac) MCS8 (256-QAM)				
20 MHz				
	Low Channel 5180 MHz	22.878 MHz	N/A	N/A
	High Channel 5240 MHz	23.032 MHz	N/A	N/A
	Low Channel 5745 MHz	17.689 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.675 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.657 MHz	500 kHz	Pass
802.11(ac) MCS9 (256-QAM)				
40 MHz				
	Low Channel 5190 MHz	47.929 MHz	N/A	N/A
	High Channel 5230 MHz	48.12 MHz	N/A	N/A
	Low Channel 5755 MHz	35.824 MHz	500 kHz	Pass
	High Channel 5795 MHz	36.277 MHz	500 kHz	Pass
80 MHz				
	Low Channel 5210 MHz	86.386 MHz	N/A	N/A
	Low Channel 5775 MHz	75.95 MHz	500 kHz	Pass

Jonathan Kiefer

Tested By

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(a) 6 Mbps, 20 MHz, Low Channel 5180 MHz
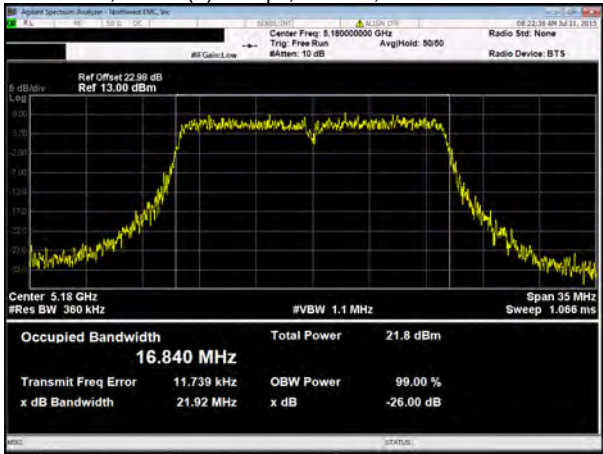
Value	21.919 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(a) 6 Mbps, 20 MHz, High Channel 5240 MHz
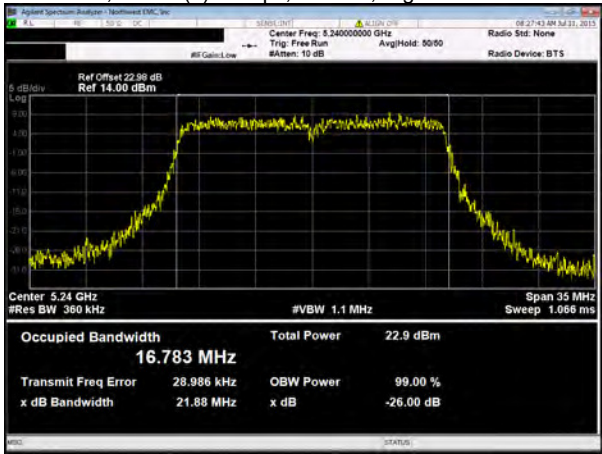
Value	21.876 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(a) 6 Mbps, 20 MHz, Low Channel 5745 MHz
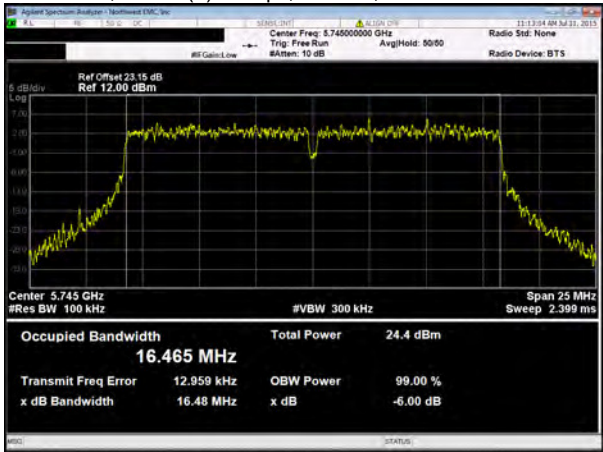
Value	16.481 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(a) 6 Mbps, 20 MHz, Mid Channel 5785 MHz
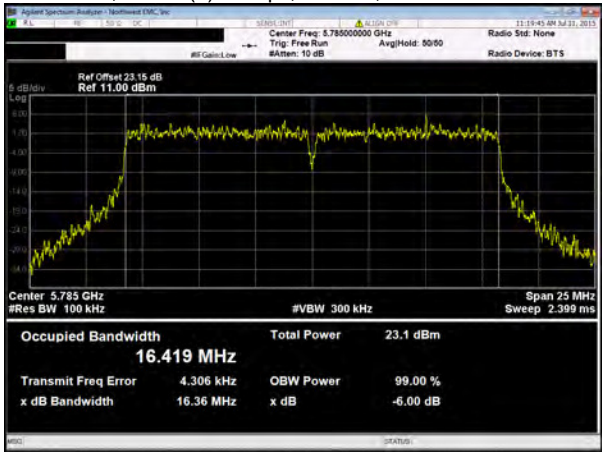
Value	16.36 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(a) 6 Mbps, 20 MHz, High Channel 5825 MHz
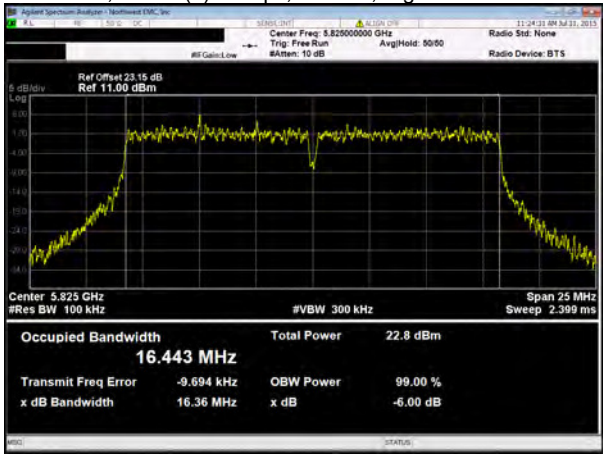
Value	16.357 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(a) 36 Mbps, 20 MHz, Low Channel 5180 MHz
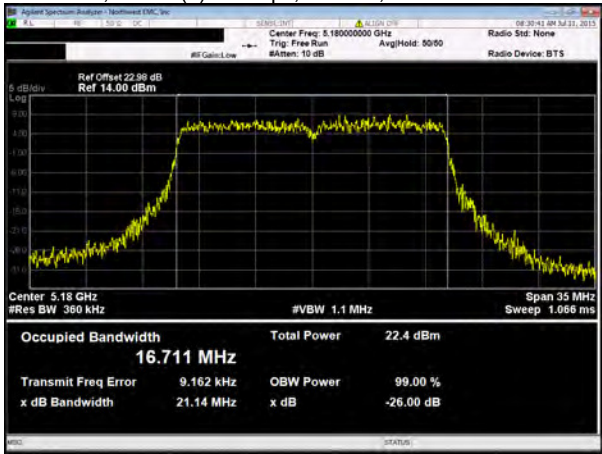
Value	21.136 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(a) 36 Mbps, 20 MHz, High Channel 5240 MHz
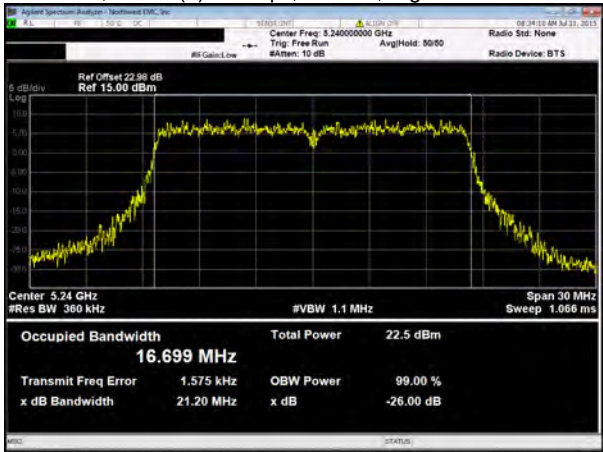
Value	21.205 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(a) 36 Mbps, 20 MHz, Low Channel 5745 MHz
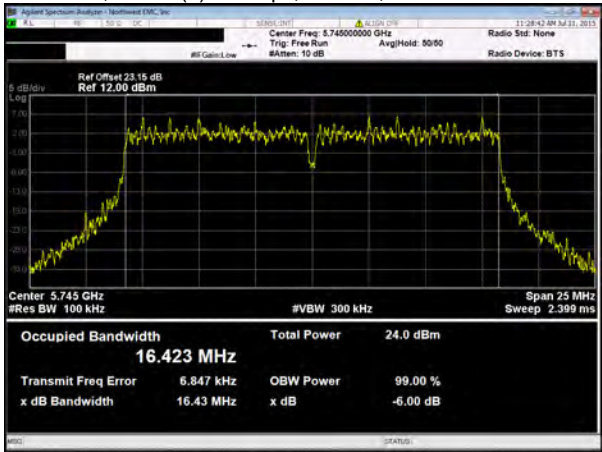
Value	16.433 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(a) 36 Mbps, 20 MHz, Mid Channel 5785 MHz
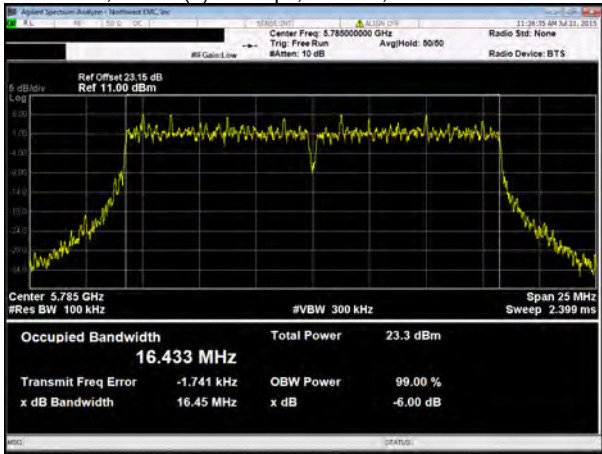
Value	16.446 MHz
Limit (>)	500 kHz
Result	Pass
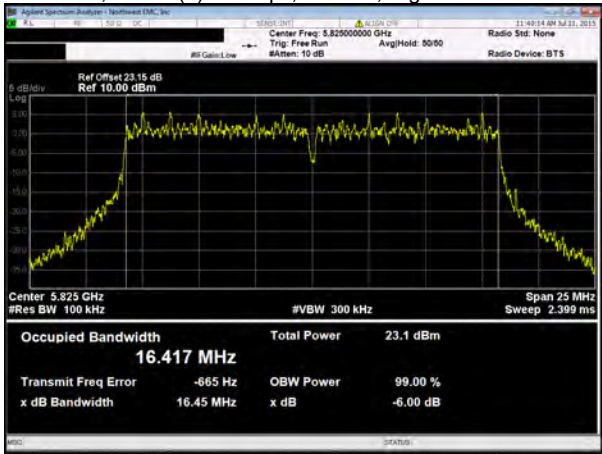
Chain A, 802.11(a) 36 Mbps, 20 MHz, High Channel 5825 MHz

Value	16.452 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(a) 54 Mbps, 20 MHz, Low Channel 5180 MHz
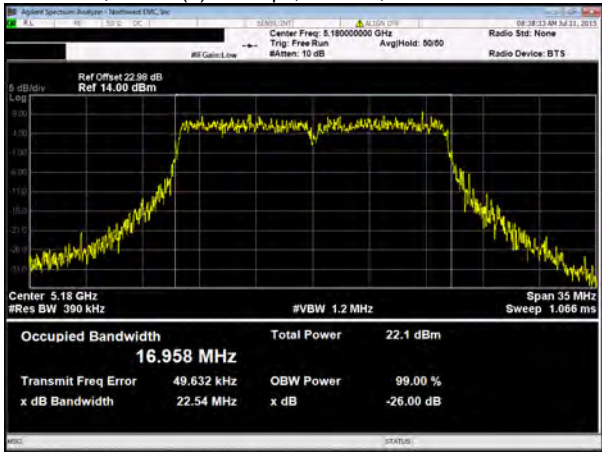
Value	22.544 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(a) 54 Mbps, 20 MHz, High Channel 5240 MHz
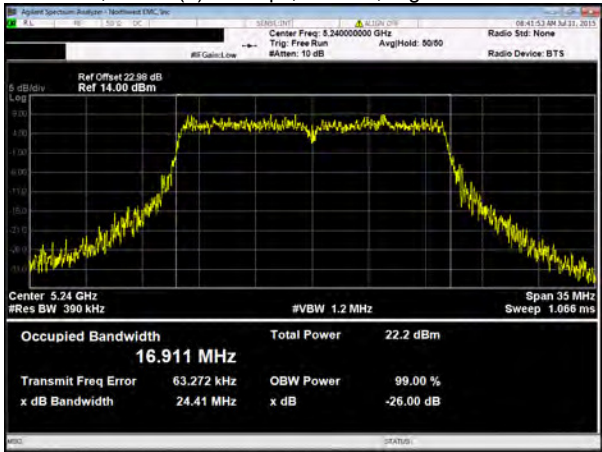
Value	24.414 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(a) 54 Mbps, 20 MHz, Low Channel 5745 MHz
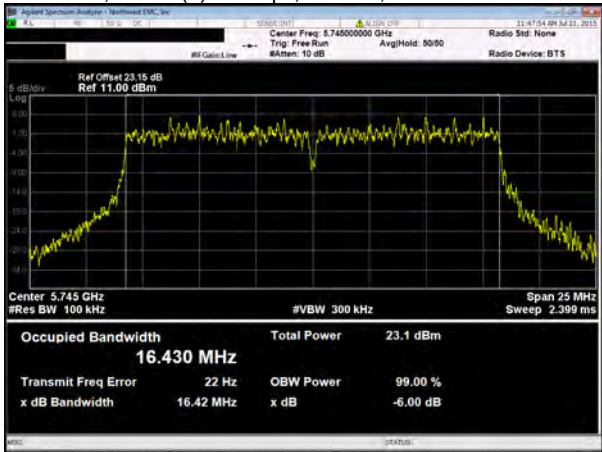
Value	16.417 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(a) 54 Mbps, 20 MHz, Mid Channel 5785 MHz
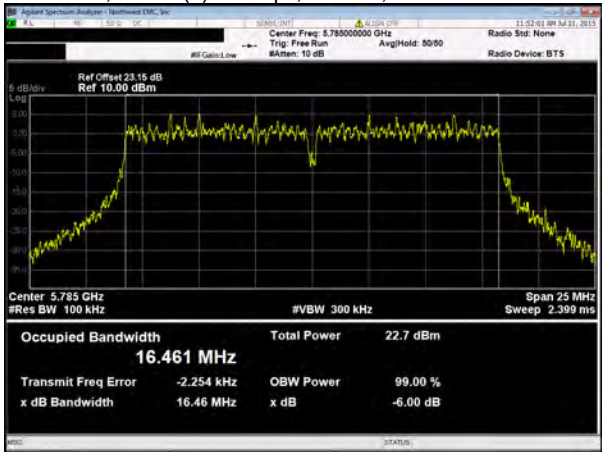
Value	16.459 MHz
Limit (>)	500 kHz
Result	Pass
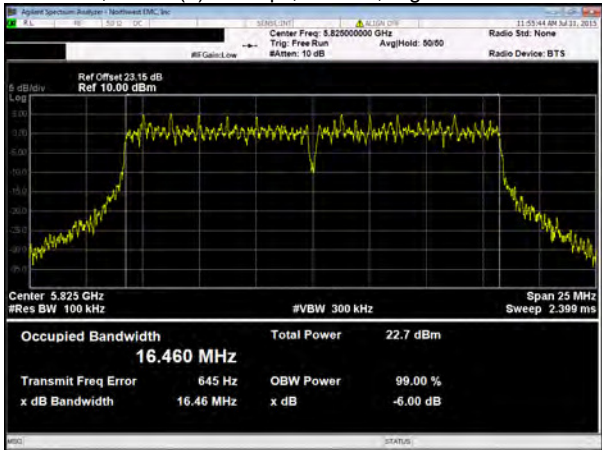
Chain A, 802.11(a) 54 Mbps, 20 MHz, High Channel 5825 MHz

Value	16.461 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS0, 20 MHz, Low Channel 5180 MHz
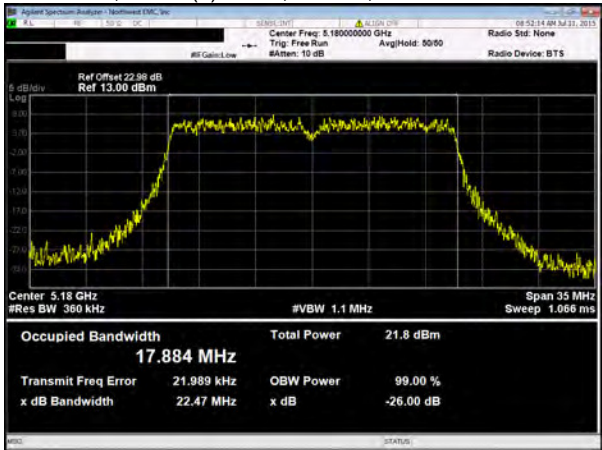
Value	22.468 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(n) MCS0, 20 MHz, High Channel 5240 MHz
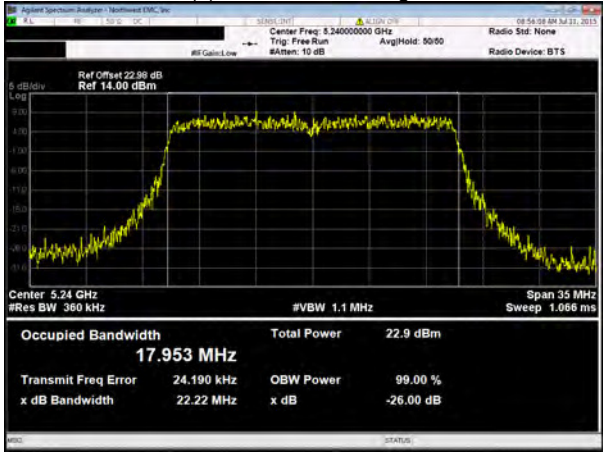
Value	22.22 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(n) MCS0, 20 MHz, Low Channel 5745 MHz
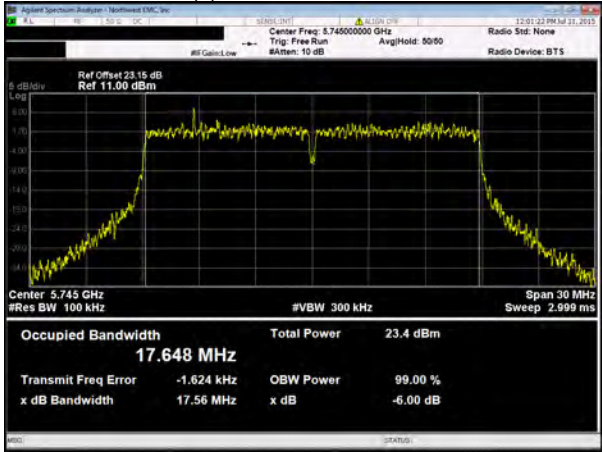
Value	17.556 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS0, 20 MHz, Mid Channel 5785 MHz
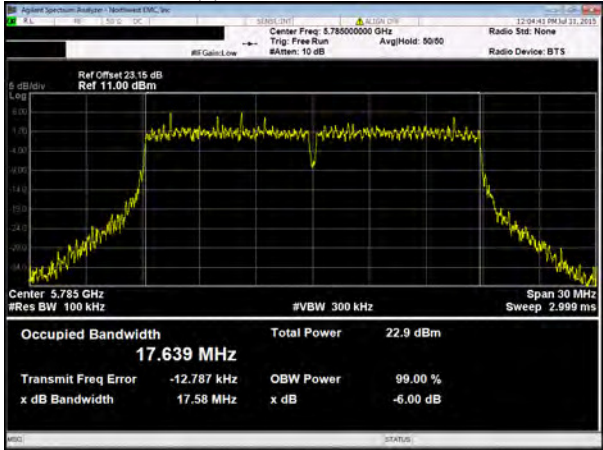
Value	17.581 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS0, 20 MHz, High Channel 5825 MHz
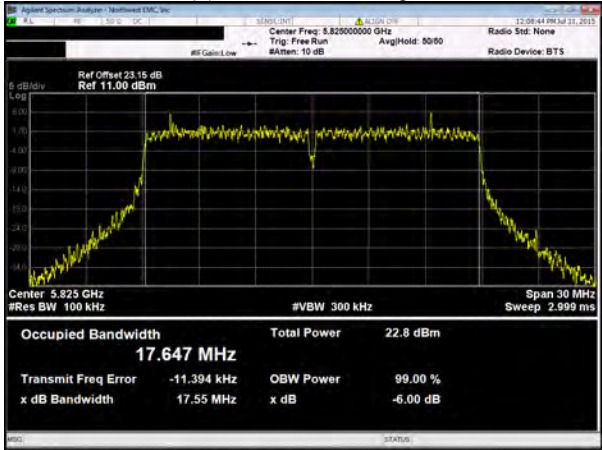
Value	17.549 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(n) MCS0, 40 MHz, Low Channel 5190 MHz
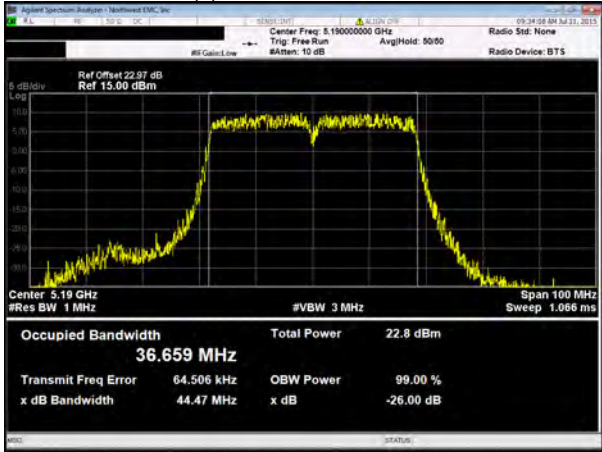
Value	44.467 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(n) MCS0, 40 MHz, High Channel 5230 MHz
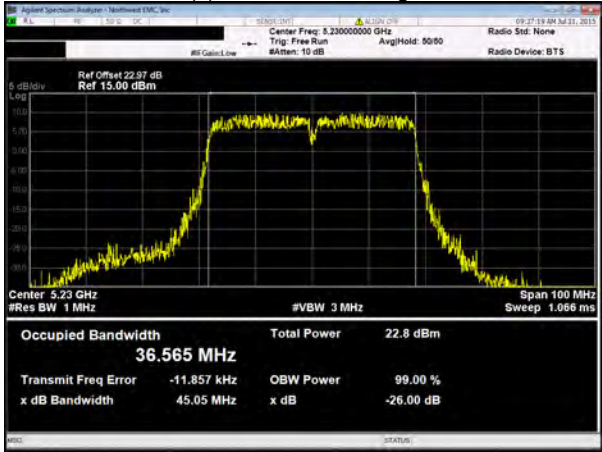
Value	45.054 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(n) MCS0, 40 MHz, Low Channel 5755 MHz
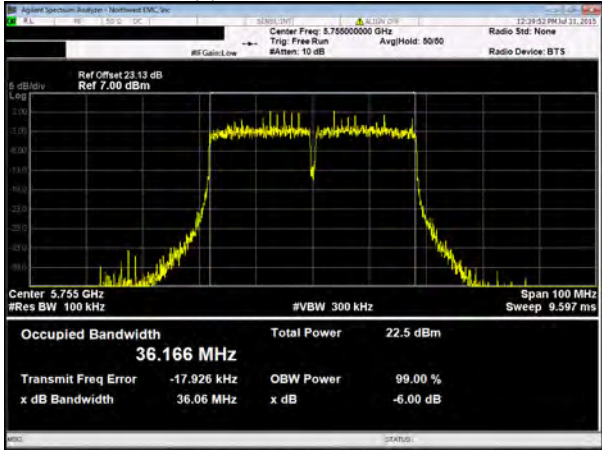
Value	36.058 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS0, 40 MHz, High Channel 5795 MHz
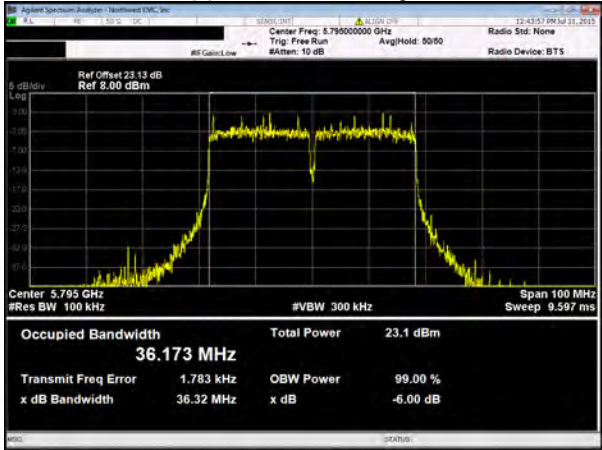
Value	36.324 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(n) MCS0, 80 MHz, Low Channel 5210 MHz
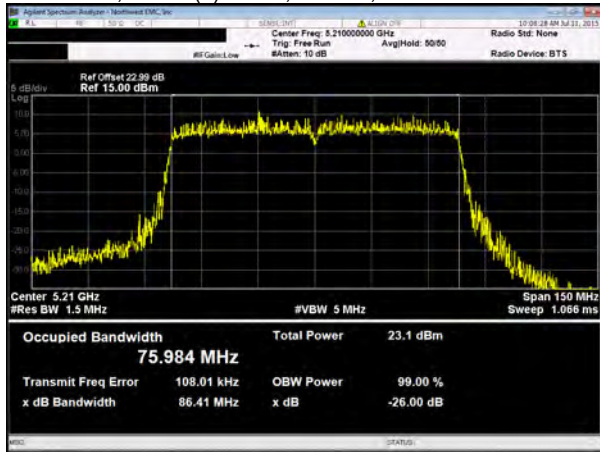
Value	86.405 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(n) MCS0, 80 MHz, Low Channel 5775 MHz
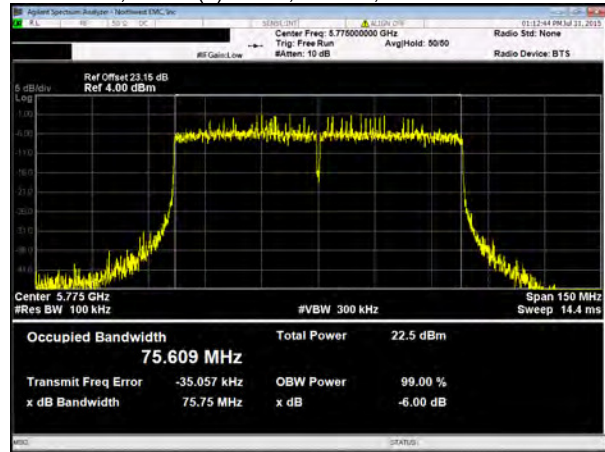
Value	75.754 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS7, 20 MHz, Low Channel 5180 MHz
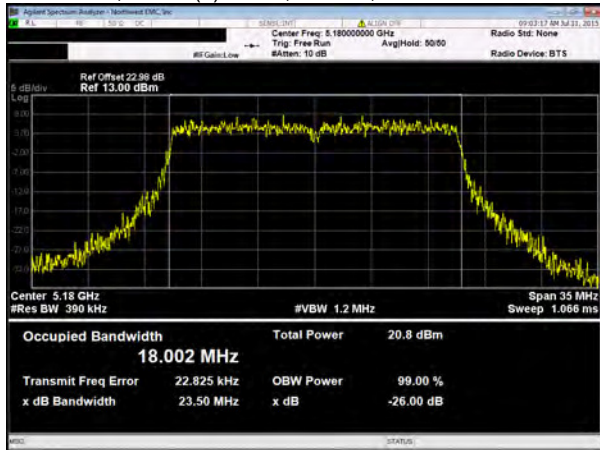
Value	23.503 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(n) MCS7, 20 MHz, High Channel 5240 MHz
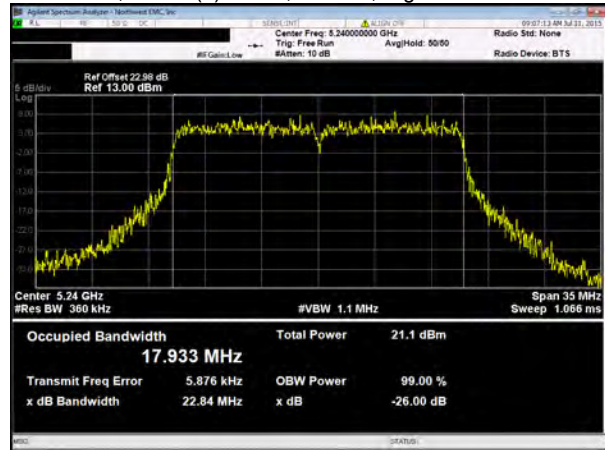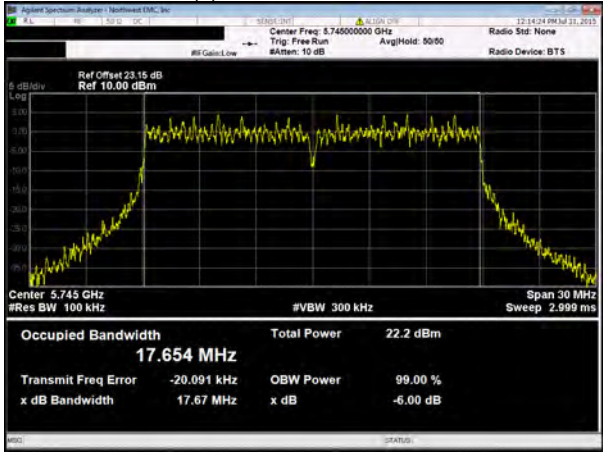

Value	22.838 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(n) MCS7, 20 MHz, Low Channel 5745 MHz

Value	17.671 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS7, 20 MHz, Mid Channel 5785 MHz
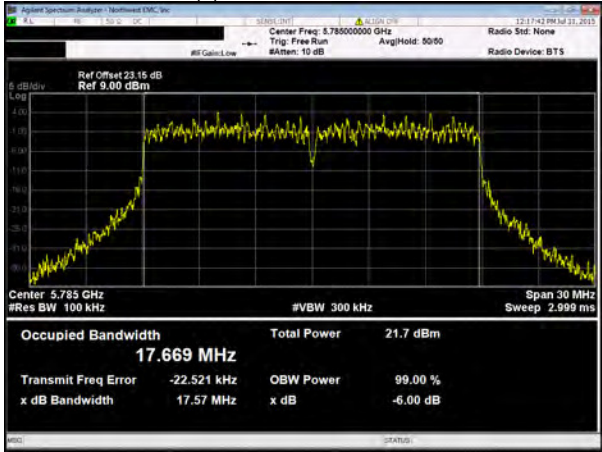
Value	17.574 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS7, 20 MHz, High Channel 5825 MHz
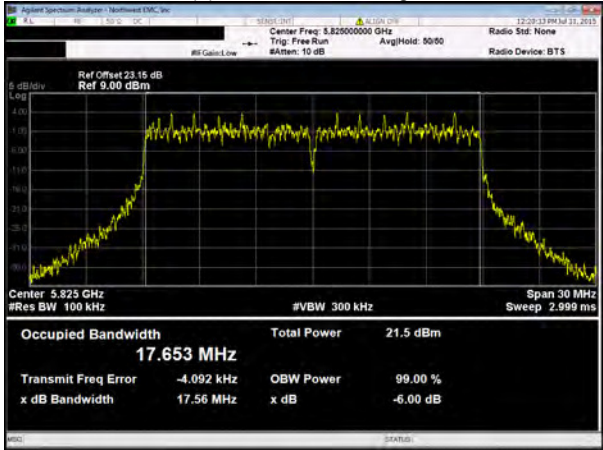
Value	17.557 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS7, 40 MHz, Low Channel 5190 MHz
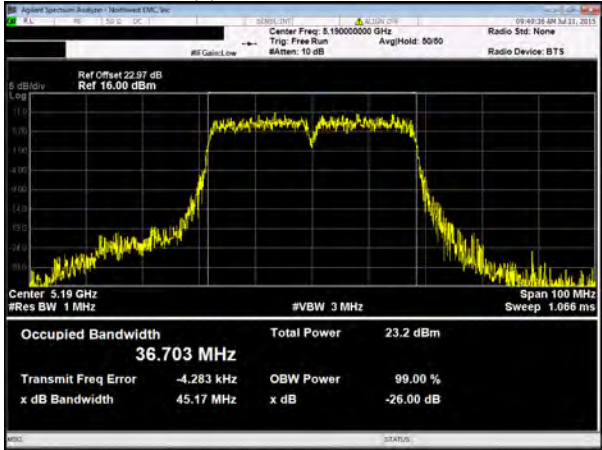
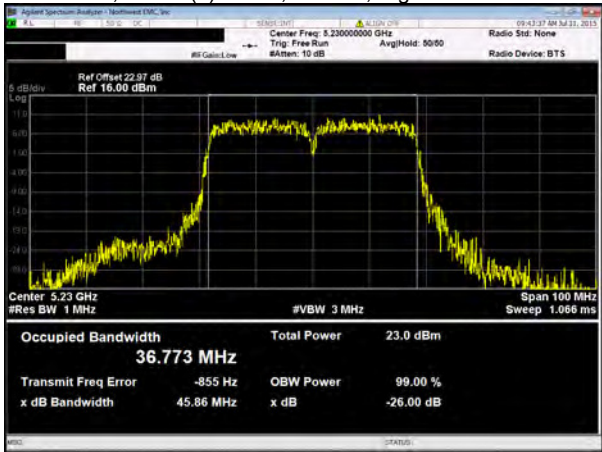| Value	45.17 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(n) MCS7, 40 MHz, High Channel 5230 MHz

Value	45.86 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(n) MCS7, 40 MHz, Low Channel 5755 MHz
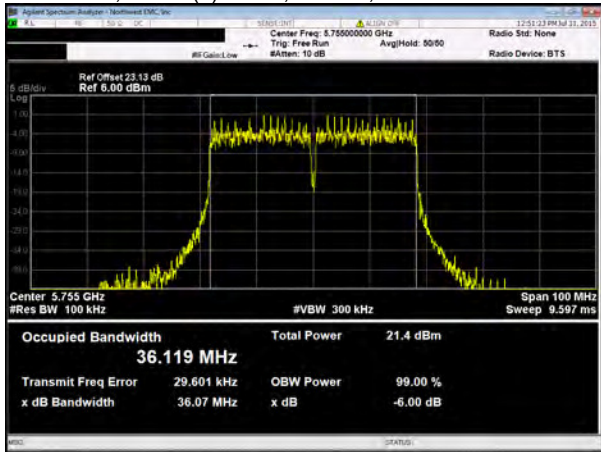
Value	36.068 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(n) MCS7, 40 MHz, High Channel 5795 MHz

Value	36.352 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(ac) MCS8 (256-QAM), 20 MHz, Low Channel 5180 MHz
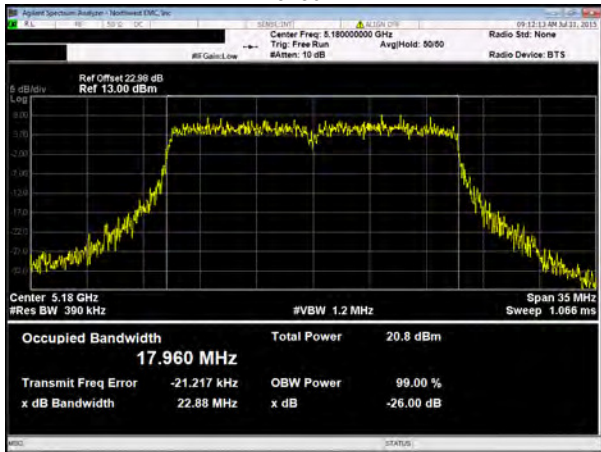
Value	22.878 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

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Chain A, 802.11(ac) MCS8 (256-QAM), 20 MHz, High Channel 5240 MHz
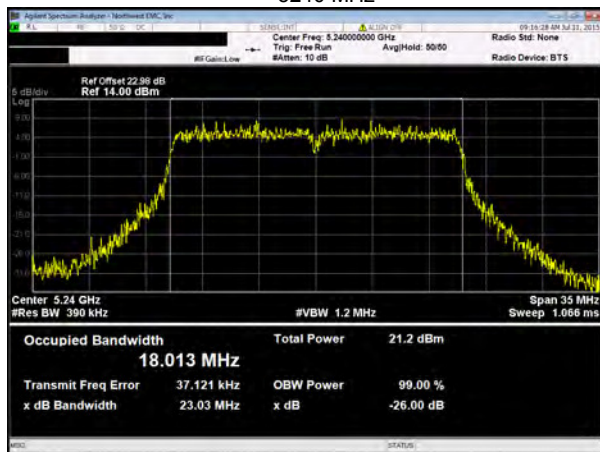
Value	23.032 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(ac) MCS8 (256-QAM), 20 MHz, Low Channel 5745 MHz
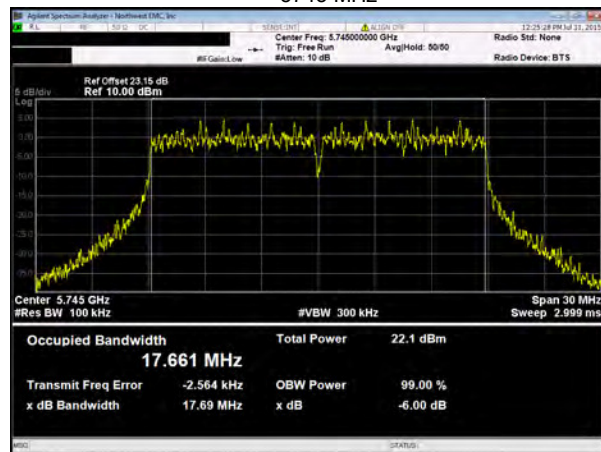
Value	17.689 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(ac) MCS8 (256-QAM), 20 MHz, Mid Channel 5785 MHz
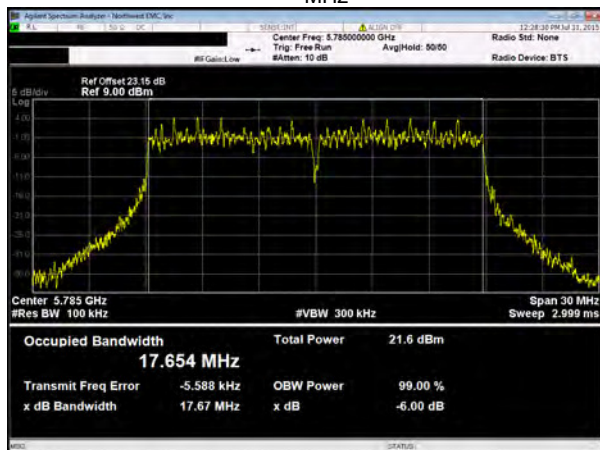
Value	17.675 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(ac) MCS8 (256-QAM), 20 MHz, High Channel 5825 MHz
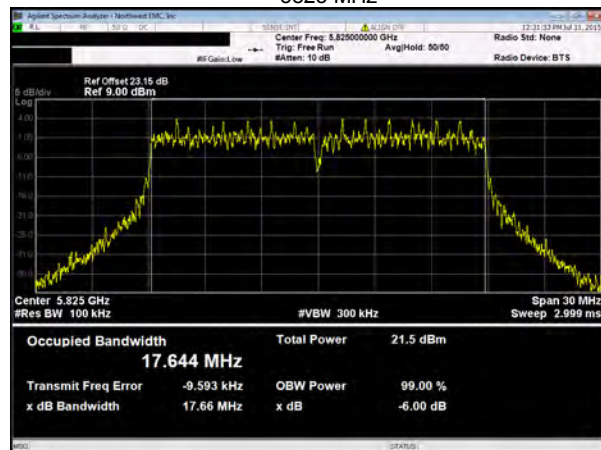
Value	17.657 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(ac) MCS9 (256-QAM), 40 MHz, Low Channel 5190 MHz
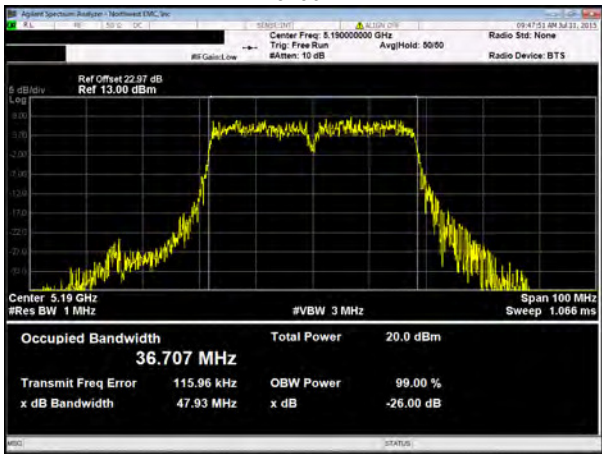
Value	47.929 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(ac) MCS9 (256-QAM), 40 MHz, High Channel 5230 MHz
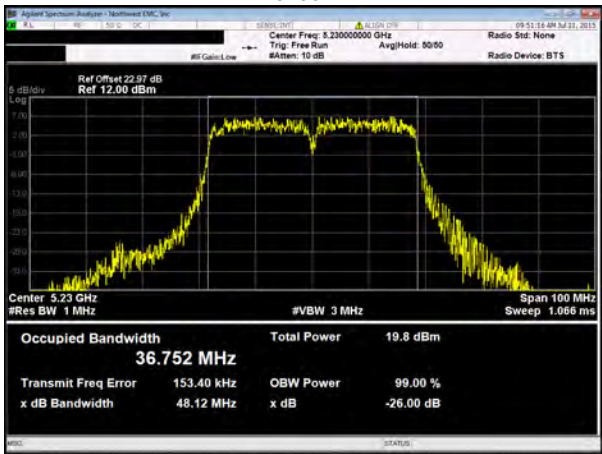
Value	48.12 MHz
Limit (>)	N/A
Result	N/A

Chain A, 802.11(ac) MCS9 (256-QAM), 40 MHz, Low Channel 5755 MHz
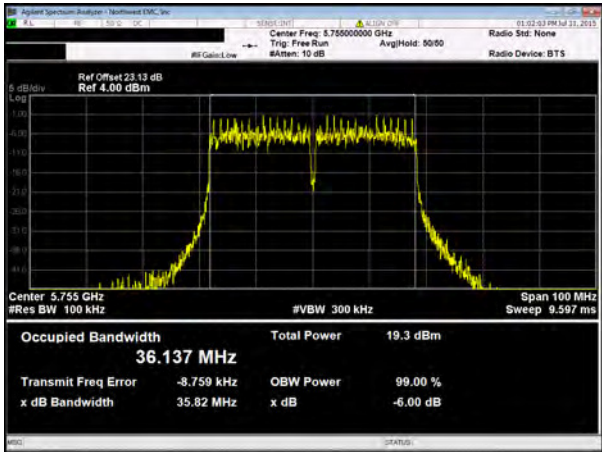
Value	35.824 MHz
Limit (>)	500 kHz
Result	Pass

Chain A, 802.11(ac) MCS9 (256-QAM), 40 MHz, High Channel 5795 MHz
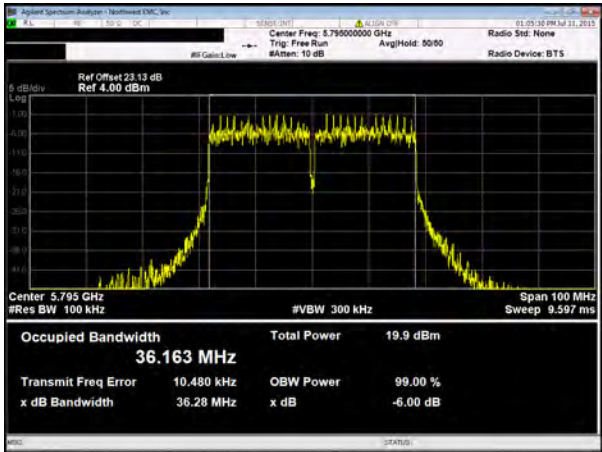
Value	36.277 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain A, 802.11(ac) MCS9 (256-QAM), 80 MHz, Low Channel
5210 MHz

Chain A, 802.11(ac) MCS9 (256-QAM), 80 MHz, Low Channel
5775 MHz
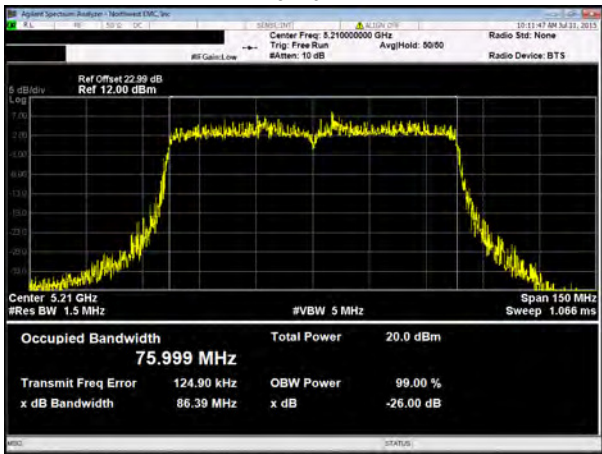
Value	86.386 MHz
Limit (>)	N/A
Result	N/A
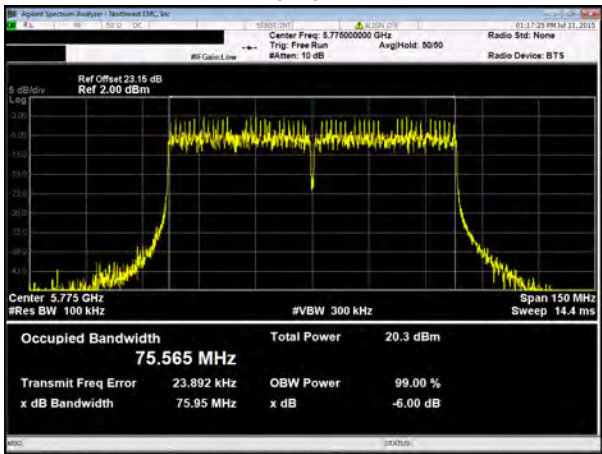
Value	75.95 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

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TEST DESCRIPTION

5.2GHz band
FCC KDB 789033 General UNII Test Procedures were followed.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio.
A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

RBW = Approx. 1% of the emission bandwidth (B).
VBW = > RBW
Detector = Peak
Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure 26 dB emission bandwidth.

There is no required limit to be met in the rule part for the 5.2GHz band. The purpose of the test is to both report the results as required by the KDB, and to utilize the emission bandwidth for setting the channel power integration bandwidth during conducted output power testing.

5.8GHz band
FCC KDB 789033 General UNII Test Procedures were followed to measure the minimum emission bandwidth for the 5.725-5.85 GHz band.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

RBW = 100 kHz
VBW = ≥ 3x RBW
Detector = Peak
Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure 6 dB emission bandwidth.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Spectrum Analyzer	Agilent	N9010A	AFL	9/20/2014	9/20/2015
DC Block, 40 GHz	Fairview Microwave	SD3379	AMM	2/27/2015	2/27/2016
Attenuator, 20dB, 40 GHz	Fairview Microwave	SA4018-20	TQY	2/27/2015	2/27/2016
Signal Generator, 40 GHz	Agilent	N5173B	TIW	7/15/2014	7/15/2017

EMISSION & OCCUPIED BANDWIDTH

NORTHWEST
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EUT:	Firebox T50-W (BS5AE7W)	Work Order:	VDEI0009
Serial Number:	70AF00069-3EB6	Date:	08/03/15
Customer:	WatchGuard Technologies, Inc.	Temperature:	25.5°C
Attendees:	None	Relative Humidity:	44%
Customer Project:	None	Bar. Pressure:	1014 mbar
Tested By:	Jonathan Kiefer	Job Site:	TX09
Power:	110VAC/60Hz	Configuration:	1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2015	ANSI C63.10:2013

COMMENTS

Chain B corresponds to Chain 1.

DEVIATIONS FROM TEST STANDARD

None

RESULTS

			Limit	
		Value	(>)	Result
Chain B				
802.11(a) 6 Mbps				
20 MHz				
	Low Channel 5180 MHz	22.099 MHz	N/A	N/A
	High Channel 5240 MHz	21.937 MHz	N/A	N/A
	Low Channel 5745 MHz	16.34 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.326 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.378 MHz	500 kHz	Pass
802.11(a) 36 Mbps				
20 MHz				
	Low Channel 5180 MHz	20.166 MHz	N/A	N/A
	High Channel 5240 MHz	20.466 MHz	N/A	N/A
	Low Channel 5745 MHz	16.427 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.359 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.452 MHz	500 kHz	Pass
802.11(a) 54 Mbps				
20 MHz				
	Low Channel 5180 MHz	22.845 MHz	N/A	N/A
	High Channel 5240 MHz	21.91 MHz	N/A	N/A
	Low Channel 5745 MHz	16.461 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.397 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.383 MHz	500 kHz	Pass
802.11(n) HT, MCS0				
20 MHz				
	Low Channel 5180 MHz	22.468 MHz	N/A	N/A
	High Channel 5240 MHz	22.173 MHz	N/A	N/A
	Low Channel 5745 MHz	17.574 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.593 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.026 MHz	500 kHz	Pass
40 MHz				

EMISSION & OCCUPIED BANDWIDTH

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|			Value	Limit (>)	Result
		Low Channel 5190 MHz	44.47 MHz	N/A	N/A
		High Channel 5230 MHz	45.348 MHz	N/A	N/A
		Low Channel 5755 MHz	35.417 MHz	500 kHz	Pass
		High Channel 5795 MHz	36.272 MHz	500 kHz	Pass
	80 MHz				
		Low Channel 5210 MHz	86.83 MHz	N/A	N/A
		Low Channel 5775 MHz	74.836 MHz	500 kHz	Pass
802.11(n) HT, MCS7					
	20 MHz				
		Low Channel 5180 MHz	23.686 MHz	N/A	N/A
		High Channel 5240 MHz	22.769 MHz	N/A	N/A
		Low Channel 5745 MHz	17.677 MHz	500 kHz	Pass
		Mid Channel 5785 MHz	17.586 MHz	500 kHz	Pass
		High Channel 5825 MHz	17.672 MHz	500 kHz	Pass
	40 MHz				
		Low Channel 5190 MHz	45.248 MHz	N/A	N/A
		High Channel 5230 MHz	46.102 MHz	N/A	N/A
		Low Channel 5755 MHz	36.339 MHz	500 kHz	Pass
		High Channel 5795 MHz	36.196 MHz	500 kHz	Pass
802.11(ac) VHT, MCS8 (256-QAM)					
	20 MHz				
		Low Channel 5180 MHz	22.93 MHz	N/A	N/A
		High Channel 5240 MHz	22.999 MHz	N/A	N/A
		Low Channel 5745 MHz	17.617 MHz	500 kHz	Pass
		Mid Channel 5785 MHz	17.666 MHz	500 kHz	Pass
		High Channel 5825 MHz	17.671 MHz	500 kHz	Pass
802.11(ac) VHT, MCS9 (256-QAM)					
	40 MHz				
		Low Channel 5190 MHz	47.095 MHz	N/A	N/A
		High Channel 5230 MHz	47.304 MHz	N/A	N/A
		Low Channel 5755 MHz	36.073 MHz	500 kHz	Pass
		High Channel 5795 MHz	35.733 MHz	500 kHz	Pass
	80 MHz				
		Low Channel 5210 MHz	88.153 MHz	N/A	N/A
		Low Channel 5775 MHz	75.464 MHz	500 kHz	Pass

Jonathan Kiefer

Tested By

EMISSION & OCCUPIED BANDWIDTH

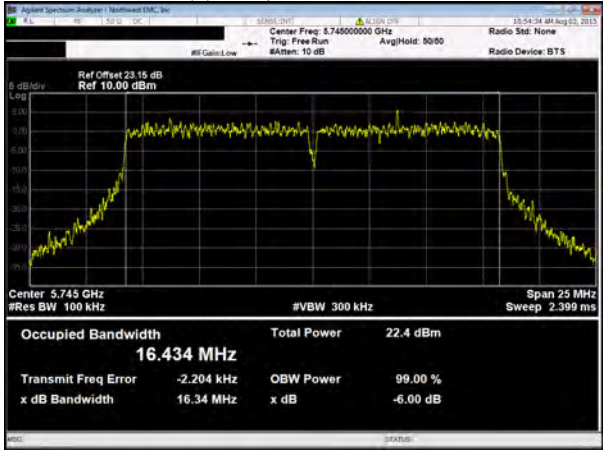Chain B, 802.11(a) 6 Mbps, 20 MHz, Low Channel 5180 MHz
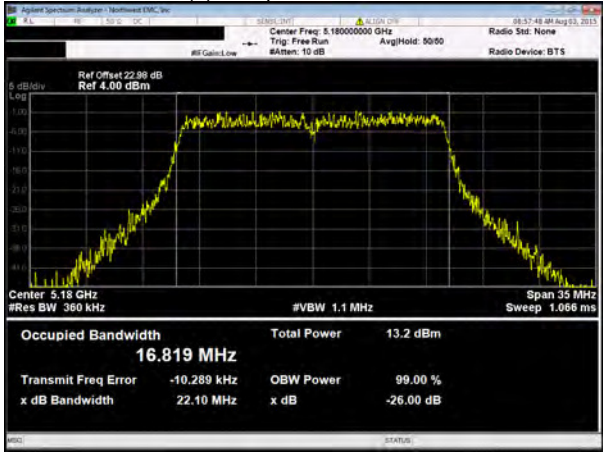
Value	22.099 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(a) 6 Mbps, 20 MHz, High Channel 5240 MHz
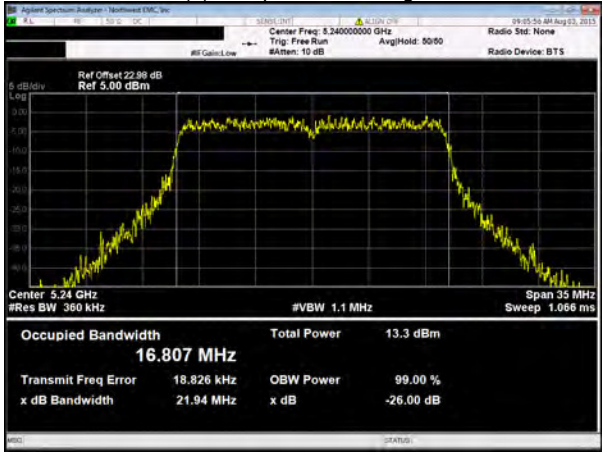
Value	21.937 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(a) 6 Mbps, 20 MHz, Low Channel 5745 MHz

Value	16.34 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(a) 6 Mbps, 20 MHz, Mid Channel 5785 MHz
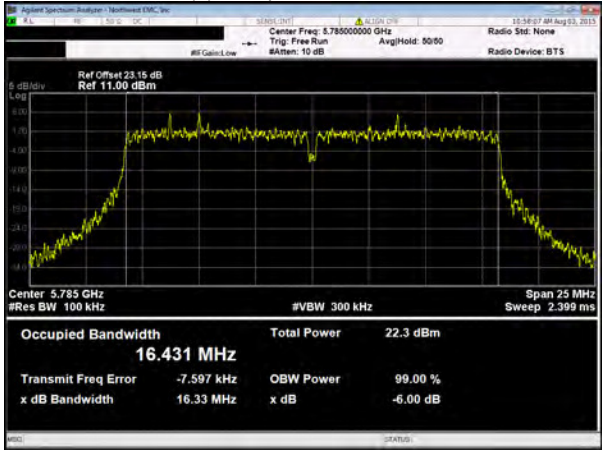
Value	16.326 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(a) 6 Mbps, 20 MHz, High Channel 5825 MHz
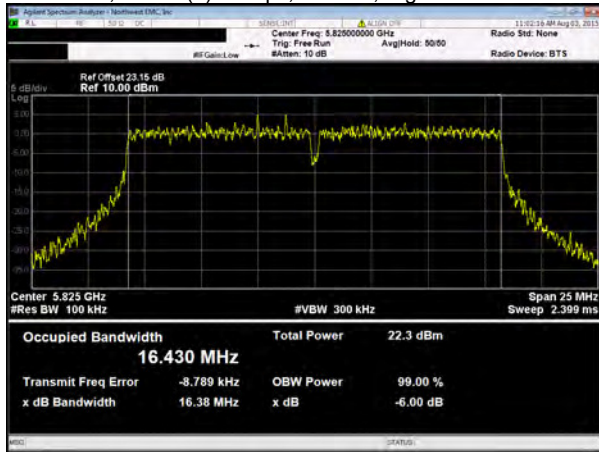
Value	16.378 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(a) 36 Mbps, 20 MHz, Low Channel 5180 MHz
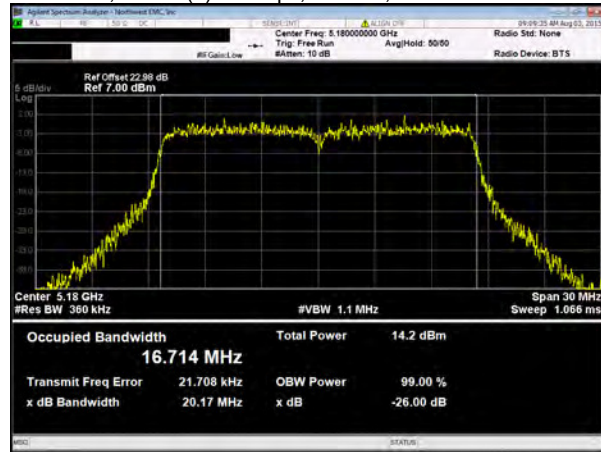
Value	20.166 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(a) 36 Mbps, 20 MHz, High Channel 5240 MHz
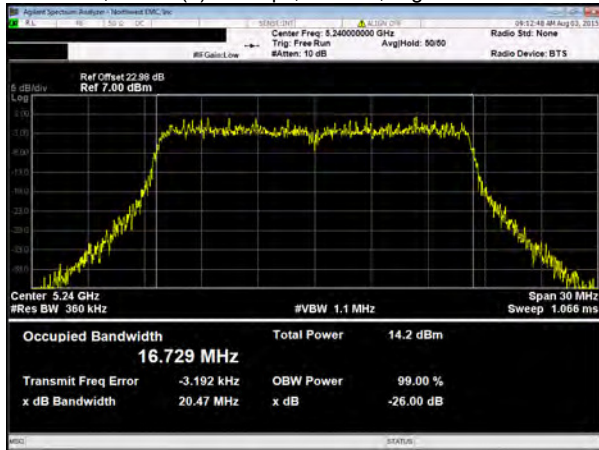
Value	20.466 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(a) 36 Mbps, 20 MHz, Low Channel 5745 MHz
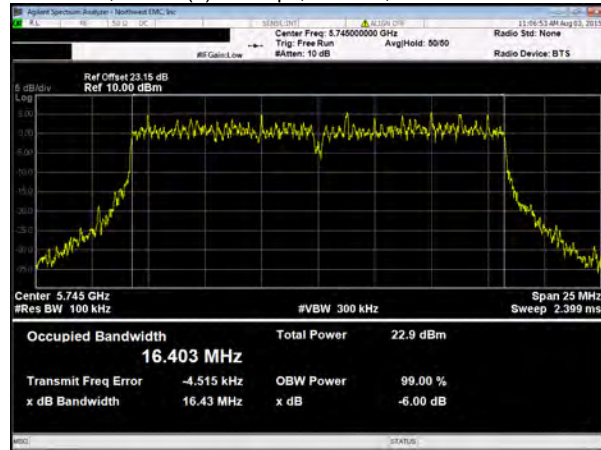
Value	16.427 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(a) 36 Mbps, 20 MHz, Mid Channel 5785 MHz
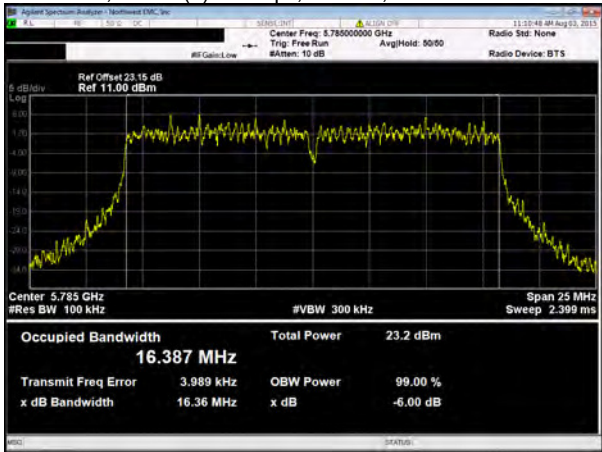
Value	16.359 MHz
Limit (>)	500 kHz
Result	Pass
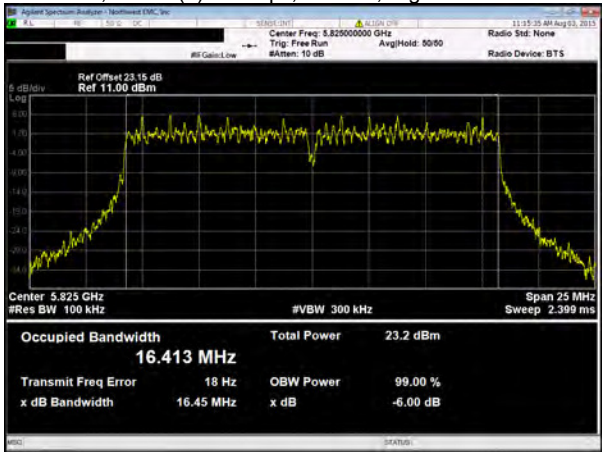
Chain B, 802.11(a) 36 Mbps, 20 MHz, High Channel 5825 MHz

Value	16.452 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(a) 54 Mbps, 20 MHz, Low Channel 5180 MHz
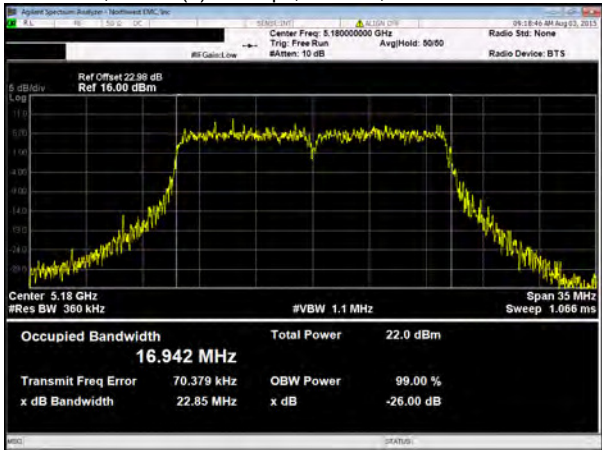
Value	22.845 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(a) 54 Mbps, 20 MHz, High Channel 5240 MHz
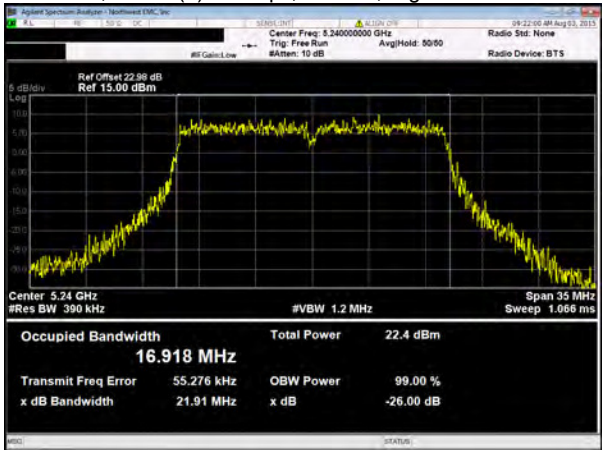
Value	21.91 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(a) 54 Mbps, 20 MHz, Low Channel 5745 MHz
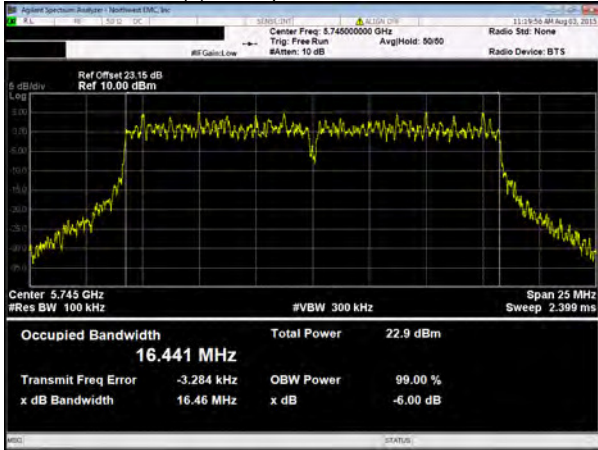
Value	16.461 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(a) 54 Mbps, 20 MHz, Mid Channel 5785 MHz
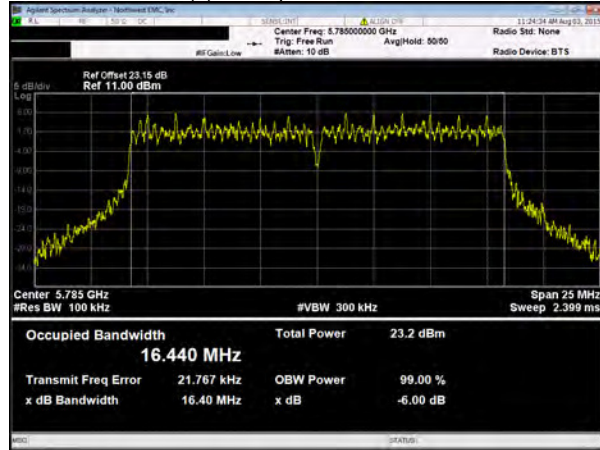
Value	16.397 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(a) 54 Mbps, 20 MHz, High Channel 5825 MHz
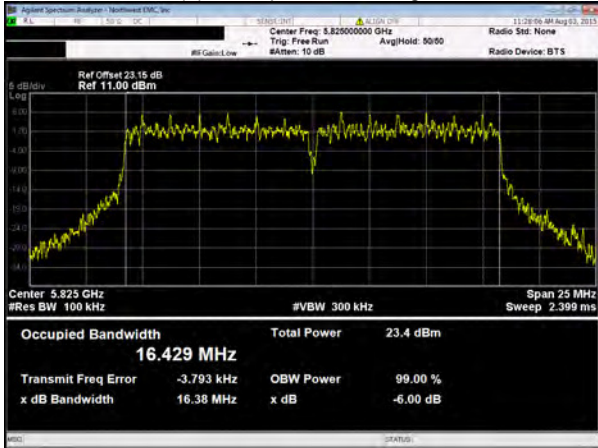
Value	16.383 MHz
Limit (>)	500 kHz
Result	Pass
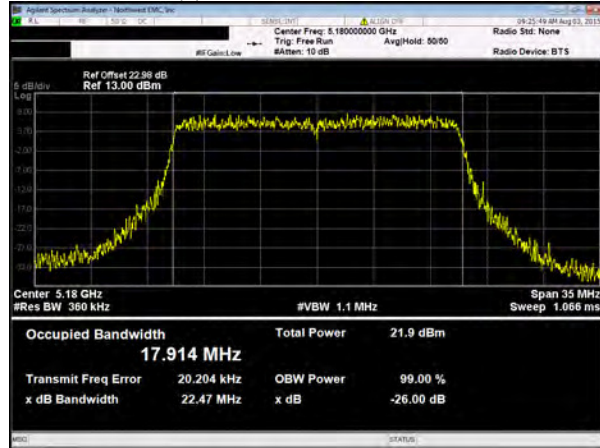
Chain B, 802.11(n) HT, MCS0, 20 MHz, Low Channel 5180 MHz

Value	22.468 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(n) HT, MCS0, 20 MHz, High Channel 5240 MHz
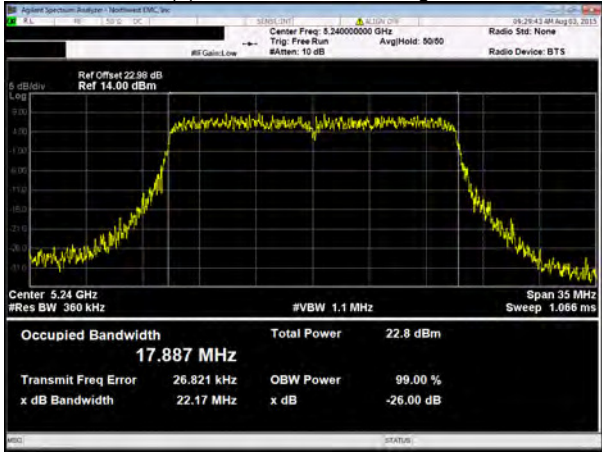
Value	22.173 MHz
Limit (>)	N/A
Result	N/A
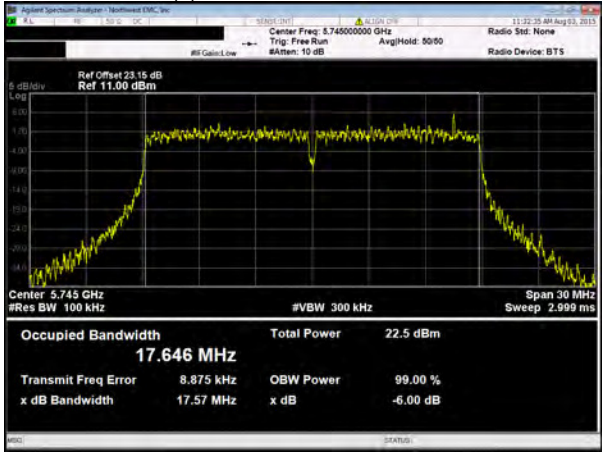
Chain B, 802.11(n) HT, MCS0, 20 MHz, Low Channel 5745 MHz

Value	17.574 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS0, 20 MHz, Mid Channel 5785 MHz
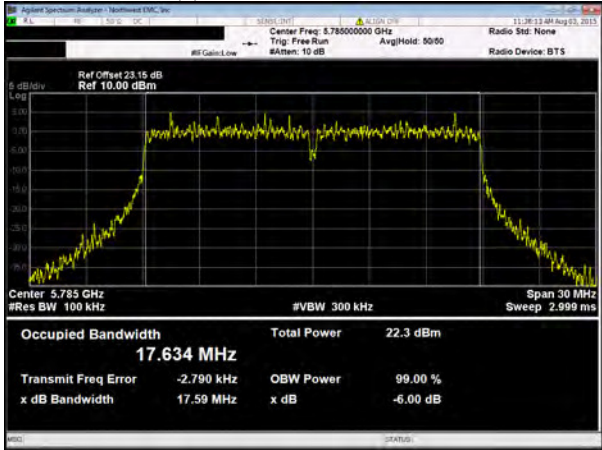
Value	17.593 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS0, 20 MHz, High Channel 5825 MHz
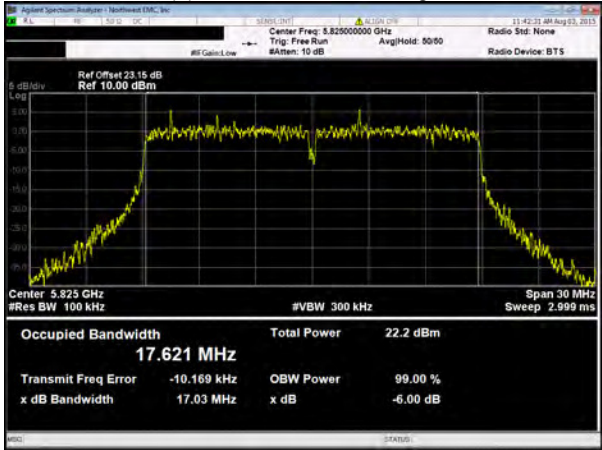
Value	17.026 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(n) HT, MCS0, 40 MHz, Low Channel 5190 MHz
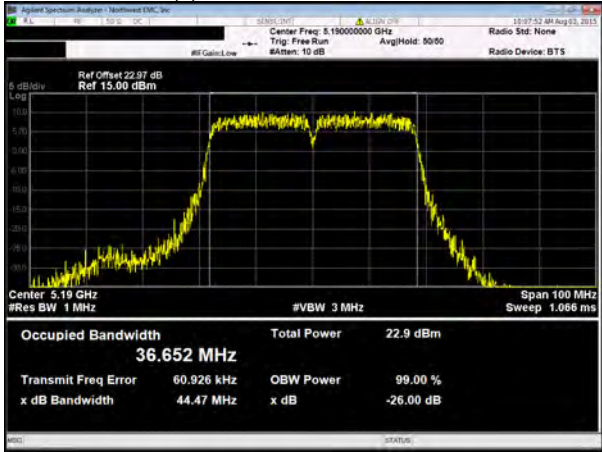
Value	44.47 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(n) HT, MCS0, 40 MHz, High Channel 5230 MHz
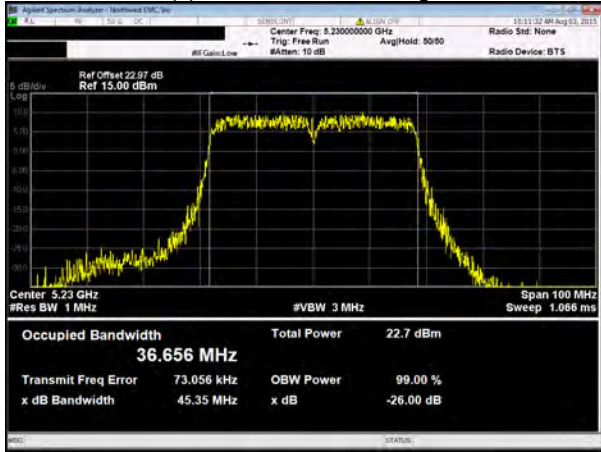
Value	45.348 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(n) HT, MCS0, 40 MHz, Low Channel 5755 MHz
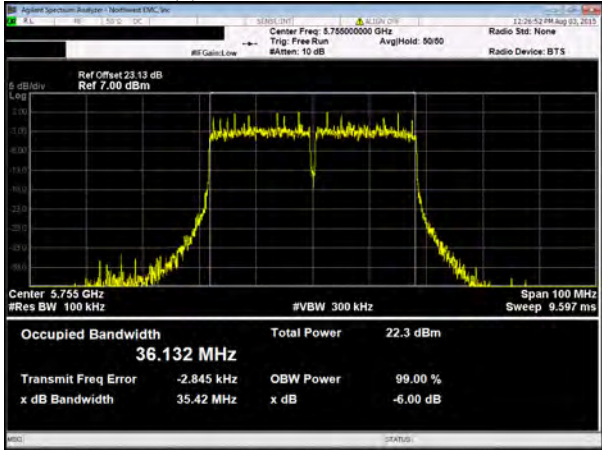
Value	35.417 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS0, 40 MHz, High Channel 5795 MHz
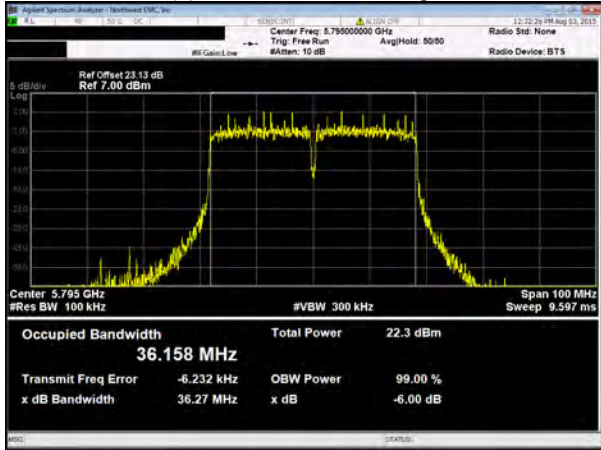
Value	36.272 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH
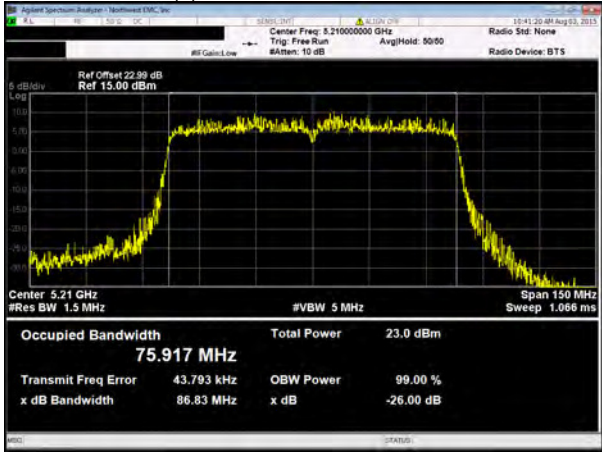
Chain B, 802.11(n) HT, MCS0, 80 MHz, Low Channel 5210 MHz

Value	86.83 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(n) HT, MCS0, 80 MHz, Low Channel 5775 MHz
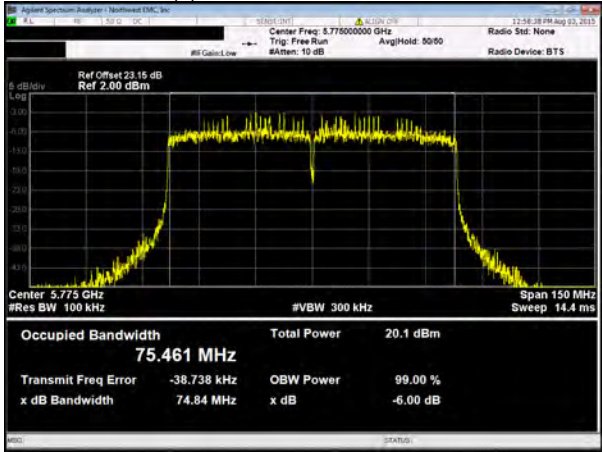
Value	74.836 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS7, 20 MHz, Low Channel 5180 MHz
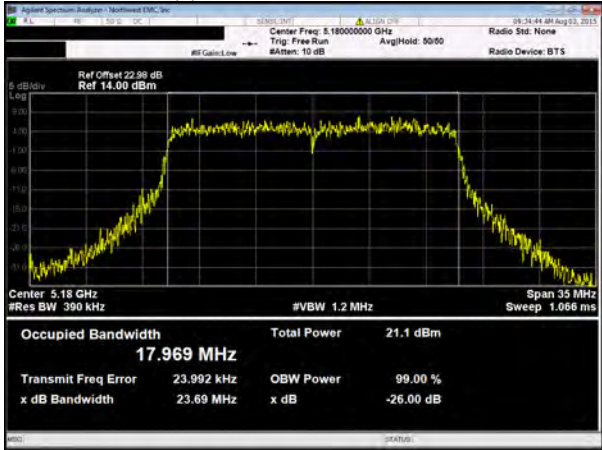
Value	23.686 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(n) HT, MCS7, 20 MHz, High Channel 5240 MHz
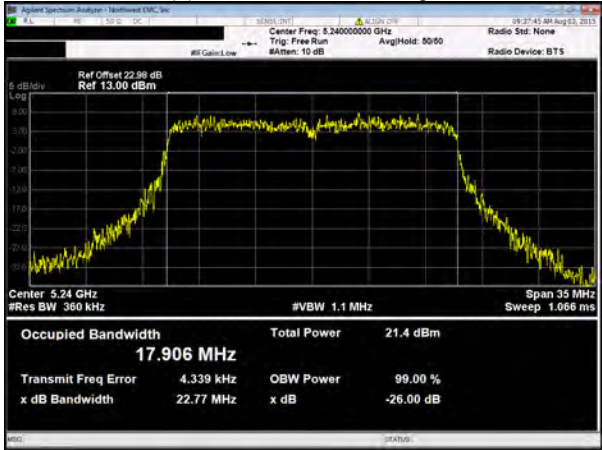
Value	22.769 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(n) HT, MCS7, 20 MHz, Low Channel 5745 MHz
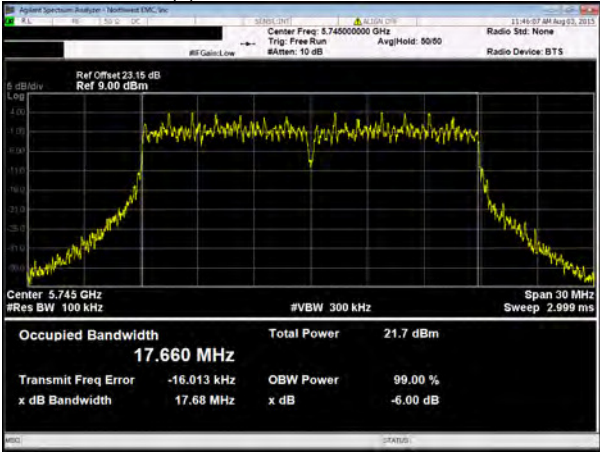
Value	17.677 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS7, 20 MHz, Mid Channel 5785 MHz
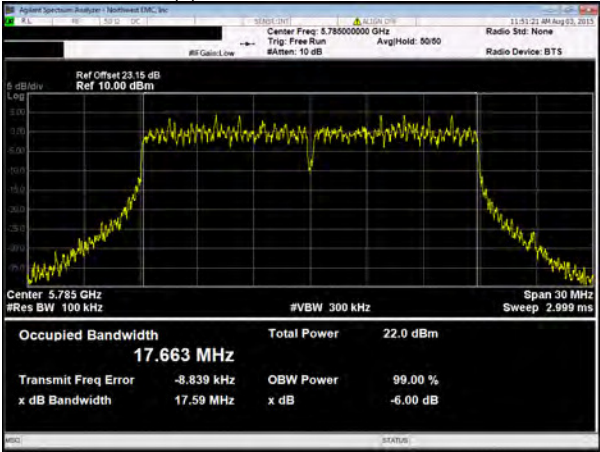
Value	17.586 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS7, 20 MHz, High Channel 5825 MHz
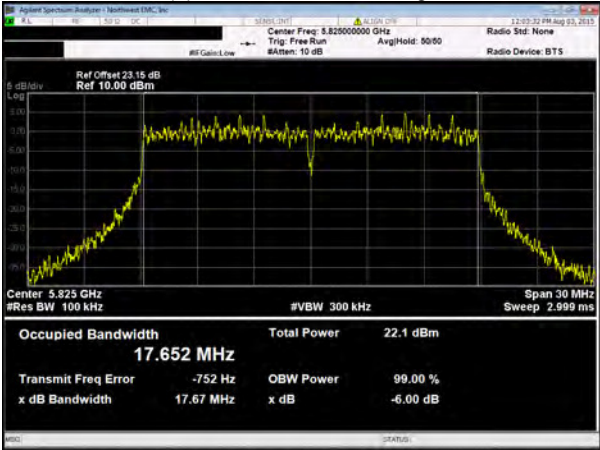
Value	17.672 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS7, 40 MHz, Low Channel 5190 MHz
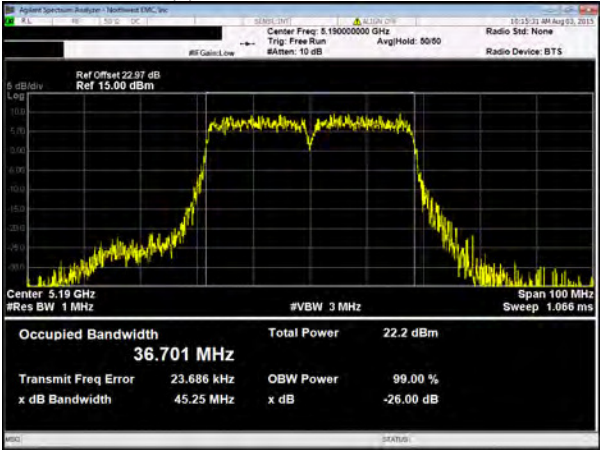
Value	45.248 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(n) HT, MCS7, 40 MHz, High Channel 5230 MHz
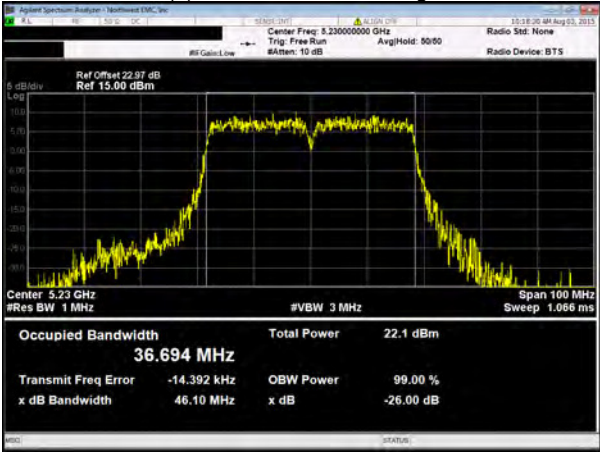
Value	46.102 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(n) HT, MCS7, 40 MHz, Low Channel 5755 MHz
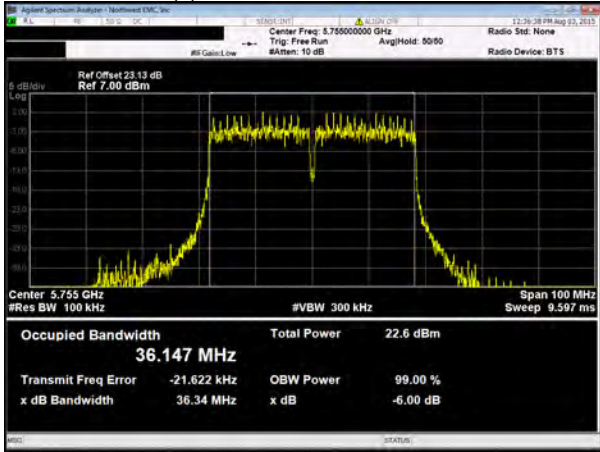
Value	36.339 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(n) HT, MCS7, 40 MHz, High Channel 5795 MHz
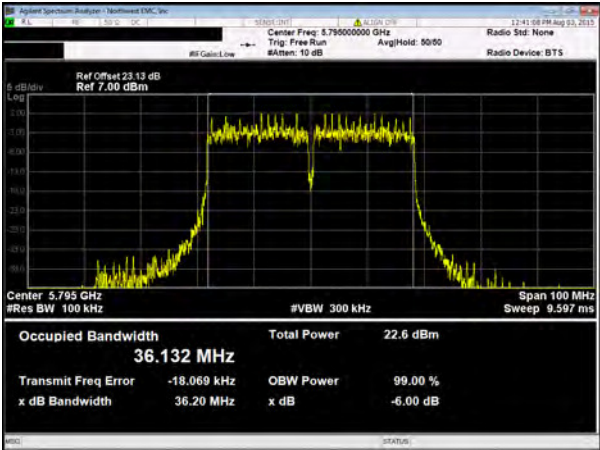
Value	36.196 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, Low Channel 5180 MHz
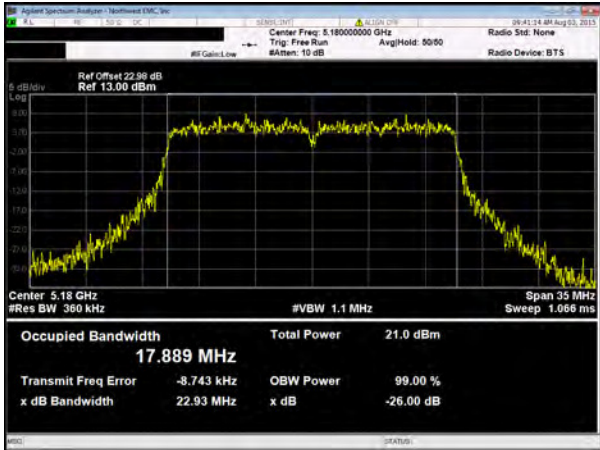
Value	22.93 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, High Channel 5240 MHz
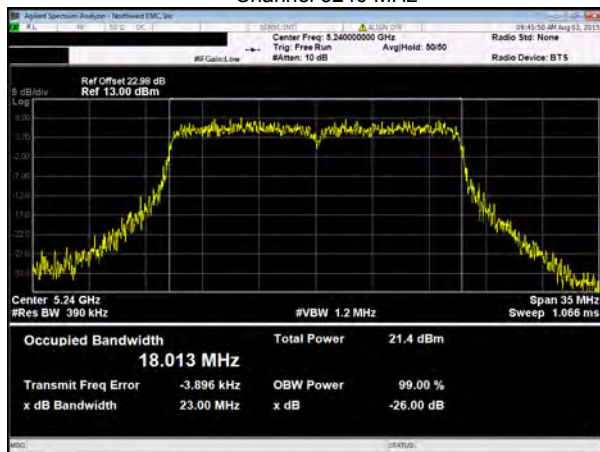
Value	22.999 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, Low Channel 5745 MHz
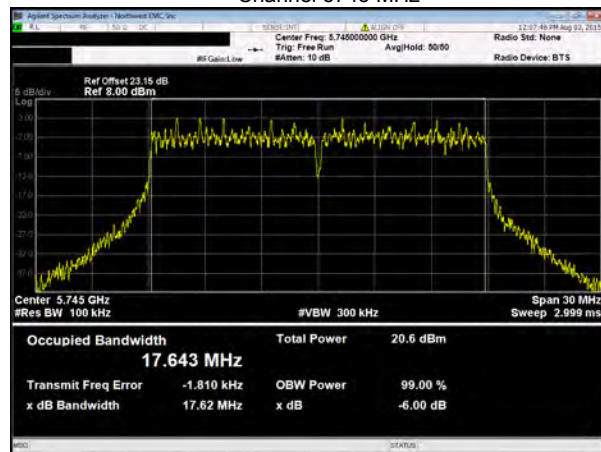
Value	17.617 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, Mid Channel 5785 MHz
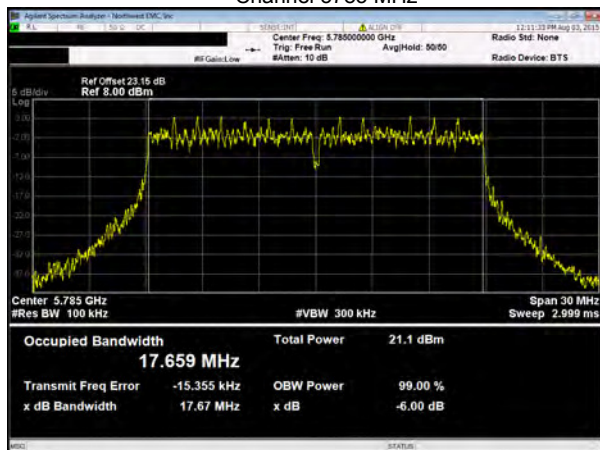
Value	17.666 MHz
Limit (>)	500 kHz
Result	Pass
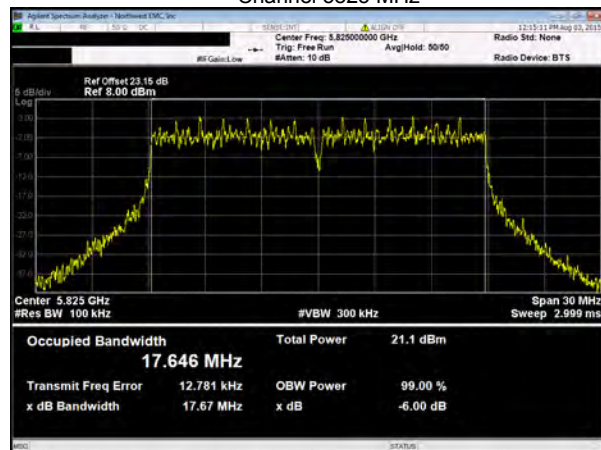
Chain B, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, High Channel 5825 MHz

Value	17.671 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, Low Channel 5190 MHz

Value	47.095 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, High Channel 5230 MHz
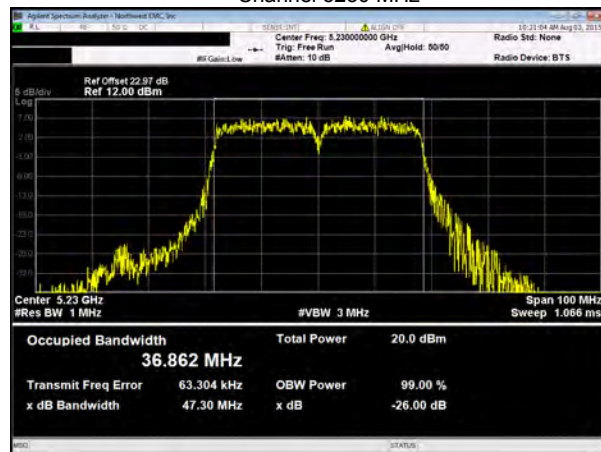
Value	47.304 MHz
Limit (>)	N/A
Result	N/A

Chain B, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, Low Channel 5755 MHz

Value	36.073 MHz
Limit (>)	500 kHz
Result	Pass

Chain B, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, High Channel 5795 MHz
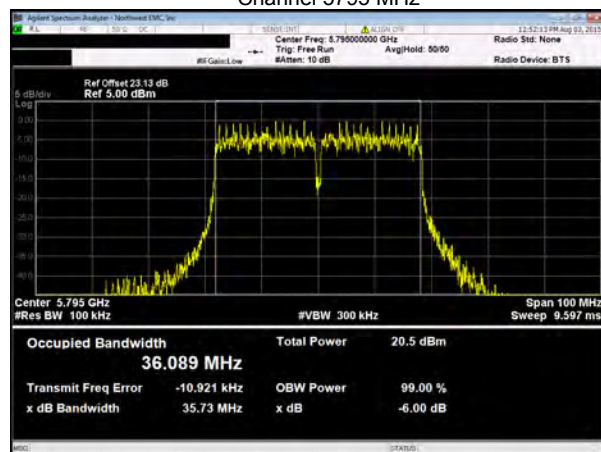
Value	35.733 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain B, 802.11(ac) VHT, MCS9 (256-QAM), 80 MHz, Low Channel 5210 MHz

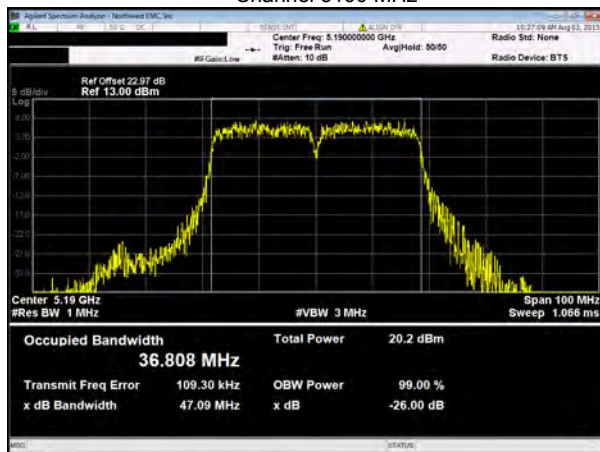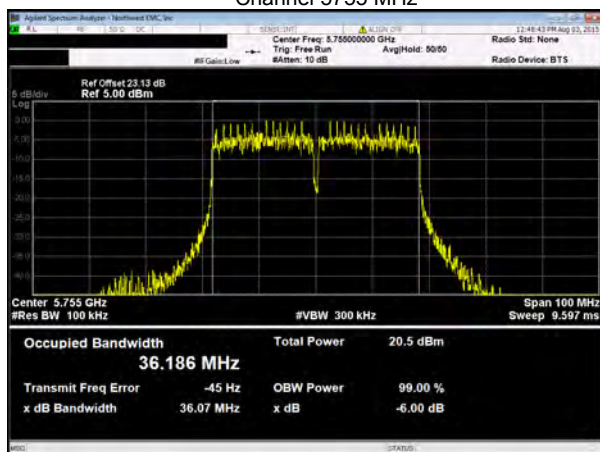Chain B, 802.11(ac) VHT, MCS9 (256-QAM), 80 MHz, Low Channel 5775 MHz
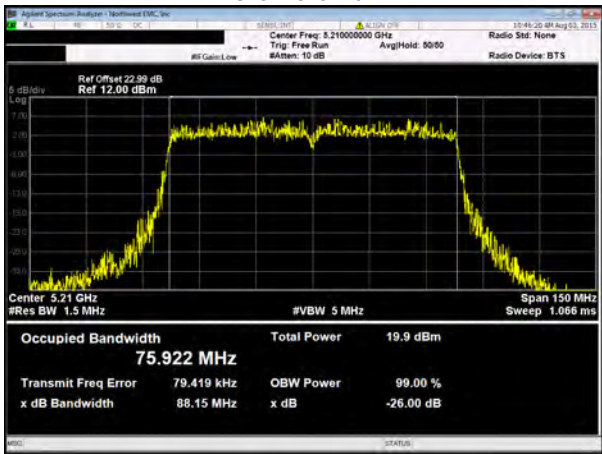
Value	88.153 MHz
Limit (>)	N/A
Result	N/A
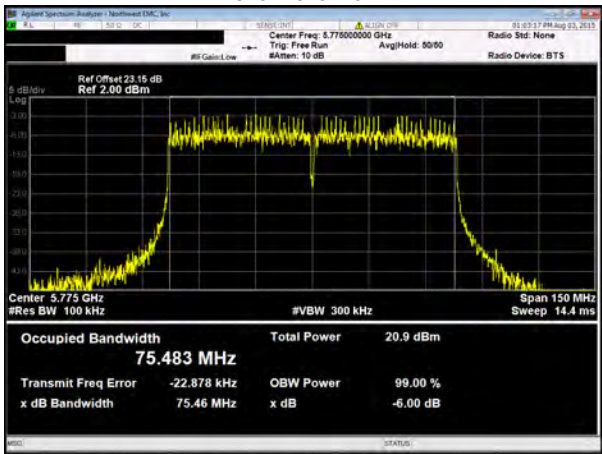
Value	75.464 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST DESCRIPTION
5.2GHz band
FCC KDB 789033 General UNII Test Procedures were followed.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio.
A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

RBW = Approx. 1% of the emission bandwidth (B).
VBW = > RBW
Detector = Peak
Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure 26 dB emission bandwidth.

There is no required limit to be met in the rule part for the 5.2GHz band. The purpose of the test is to both report the results as required by the KDB, and to utilize the emission bandwidth for setting the channel power integration bandwidth during conducted output power testing.

5.8GHz band
FCC KDB 789033 General UNII Test Procedures were followed to measure the minimum emission bandwidth for the 5.725-5.85 GHz band.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

RBW = 100 kHz
VBW = ≥ 3x RBW
Detector = Peak
Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure 6 dB emission bandwidth.
3 General UNII Test Procedures were followed.

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio.
A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

RBW = Approx. 1% of the emission bandwidth (B).
VBW = > RBW
Detector = Peak
Trace mode = max hold

EMISSION & OCCUPIED BANDWIDTH

The spectrum analyzer occupied bandwidth measurement function was then used to measure 26 dB emission bandwidth.

There is no required limit to be met in the rule part for this test. The purpose of the test is to both report the results as required by the KDB, and to utilize the emission bandwidth for setting the channel power integration bandwidth during conducted output power testing.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Spectrum Analyzer	Agilent	N9010A	AFL	9/20/2014	9/20/2015
DC Block, 40 GHz	Fairview Microwave	SD3379	AMM	2/27/2015	2/27/2016
Attenuator, 20dB, 40 GHz	Fairview Microwave	SA4018-20	TQY	2/27/2015	2/27/2016
Signal Generator, 40 GHz	Agilent	N5173B	TIW	7/15/2014	7/15/2017

EMISSION & OCCUPIED BANDWIDTH

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EUT:	Firebox T50-W (BS5AE7W)	Work Order:	VDEI0009
Serial Number:	70AF00069-3EB6	Date:	08/03/15
Customer:	WatchGuard Technologies, Inc.	Temperature:	25.5°C
Attendees:	None	Relative Humidity:	44%
Customer Project:	None	Bar. Pressure:	1014 mbar
Tested By:	Jonathan Kiefer	Job Site:	TX09
Power:	110VAC/60Hz	Configuration:	1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.407:2015	ANSI C63.10:2013

COMMENTS

Chain C corresponds to Chain 2.

DEVIATIONS FROM TEST STANDARD

None

RESULTS

			Limit	
		Value	**(>)**	**Result**
Chain C				
802.11(a) 6 Mbps				
20 MHz				
	Low Channel 5180 MHz	21.614 MHz	N/A	N/A
	High Channel 5240 MHz	22.059 MHz	N/A	N/A
	Low Channel 5745 MHz	16.31 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.324 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.342 MHz	500 kHz	Pass
802.11(a) 36 Mbps				
20 MHz				
	Low Channel 5180 MHz	20.554 MHz	N/A	N/A
	High Channel 5240 MHz	20.847 MHz	N/A	N/A
	Low Channel 5745 MHz	16.321 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.465 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.349 MHz	500 kHz	Pass
802.11(a) 54 Mbps				
20 MHz				
	Low Channel 5180 MHz	22.923 MHz	N/A	N/A
	High Channel 5240 MHz	22.369 MHz	N/A	N/A
	Low Channel 5745 MHz	16.52 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	16.424 MHz	500 kHz	Pass
	High Channel 5825 MHz	16.392 MHz	500 kHz	Pass
802.11(n) HT, MCS0				
20 MHz				
	Low Channel 5180 MHz	22.774 MHz	N/A	N/A
	High Channel 5240 MHz	21.908 MHz	N/A	N/A
	Low Channel 5745 MHz	17.564 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.575 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.55 MHz	500 kHz	Pass
40 MHz				

EMISSION & OCCUPIED BANDWIDTH

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			Limit	
		Value	(>)	Result
	Low Channel 5190 MHz	46.687 MHz	N/A	N/A
	High Channel 5230 MHz	44.948 MHz	N/A	N/A
	Low Channel 5755 MHz	35.934 MHz	500 kHz	Pass
	High Channel 5795 MHz	35.896 MHz	500 kHz	Pass
80 MHz				
	Low Channel 5210 MHz	86.825 MHz	N/A	N/A
	Low Channel 5775 MHz	76.287 MHz	500 kHz	Pass
802.11(n) HT, MCS7				
20 MHz				
	Low Channel 5180 MHz	23.664 MHz	N/A	N/A
	High Channel 5240 MHz	23.296 MHz	N/A	N/A
	Low Channel 5745 MHz	17.65 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.632 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.649 MHz	500 kHz	Pass
40 MHz				
	Low Channel 5190 MHz	44.917 MHz	N/A	N/A
	High Channel 5230 MHz	45.837 MHz	N/A	N/A
	Low Channel 5755 MHz	36.28 MHz	500 kHz	Pass
	High Channel 5795 MHz	36.31 MHz	500 kHz	Pass
802.11(ac) VHT, MCS8 (256-QAM)				
20 MHz				
	Low Channel 5180 MHz	22.856 MHz	N/A	N/A
	High Channel 5240 MHz	22.98 MHz	N/A	N/A
	Low Channel 5745 MHz	17.637 MHz	500 kHz	Pass
	Mid Channel 5785 MHz	17.756 MHz	500 kHz	Pass
	High Channel 5825 MHz	17.704 MHz	500 kHz	Pass
802.11(ac) VHT, MCS9 (256-QAM)				
40 MHz				
	Low Channel 5190 MHz	46.928 MHz	N/A	N/A
	High Channel 5230 MHz	46.873 MHz	N/A	N/A
	Low Channel 5755 MHz	36.365 MHz	500 kHz	Pass
	High Channel 5795 MHz	36.391 MHz	500 kHz	Pass
80 MHz				
	Low Channel 5210 MHz	93.889 MHz	N/A	N/A
	Low Channel 5775 MHz	76.014 MHz	500 kHz	Pass

Jonathan Kiefer

Tested By

EMISSION & OCCUPIED BANDWIDTH

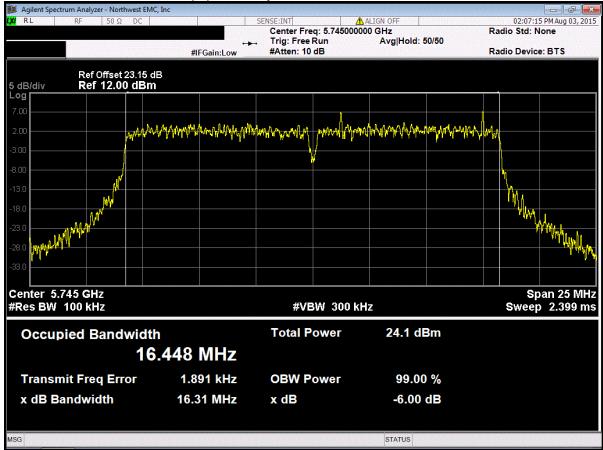### Chain C, 802.11(a) 6 Mbps, 20 MHz, Low Channel 5180 MHz
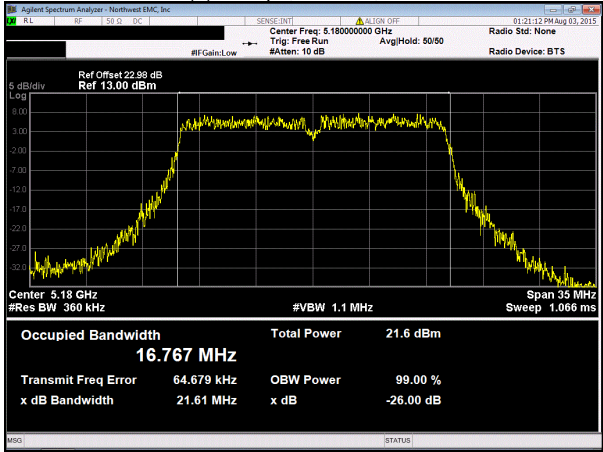
Value	21.614 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(a) 6 Mbps, 20 MHz, High Channel 5240 MHz
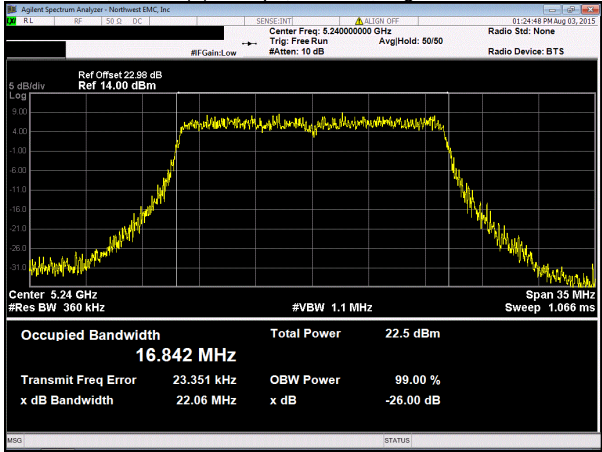
Value	22.059 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(a) 6 Mbps, 20 MHz, Low Channel 5745 MHz

Value	16.31 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(a) 6 Mbps, 20 MHz, Mid Channel 5785 MHz
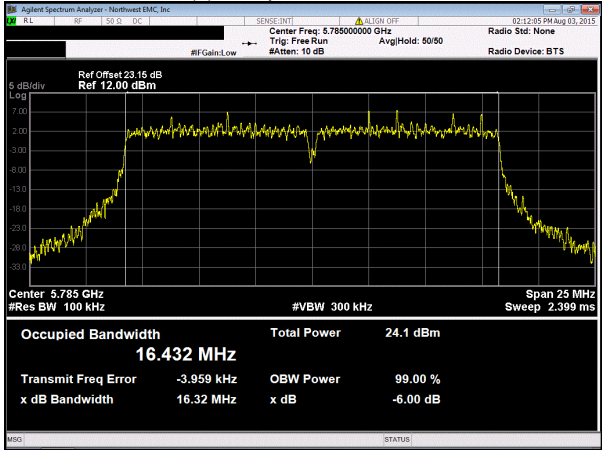
Value	16.324 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(a) 6 Mbps, 20 MHz, High Channel 5825 MHz
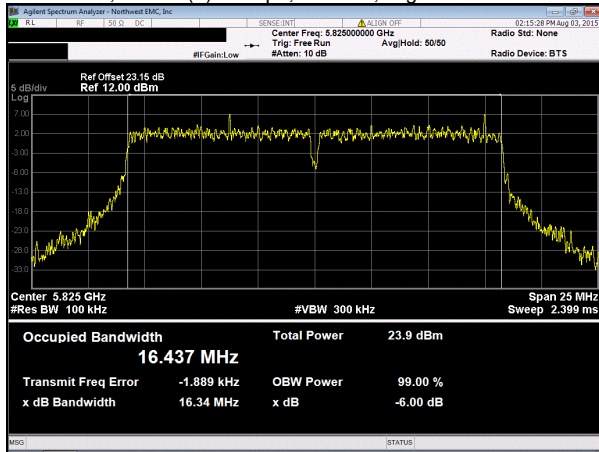
Value	16.342 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(a) 36 Mbps, 20 MHz, Low Channel 5180 MHz
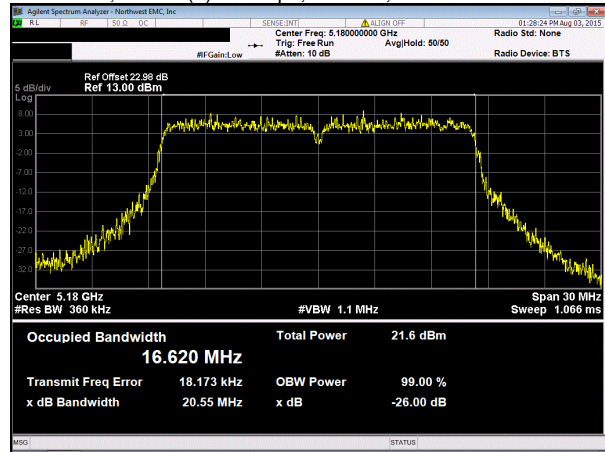
Value	20.554 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(a) 36 Mbps, 20 MHz, High Channel 5240 MHz
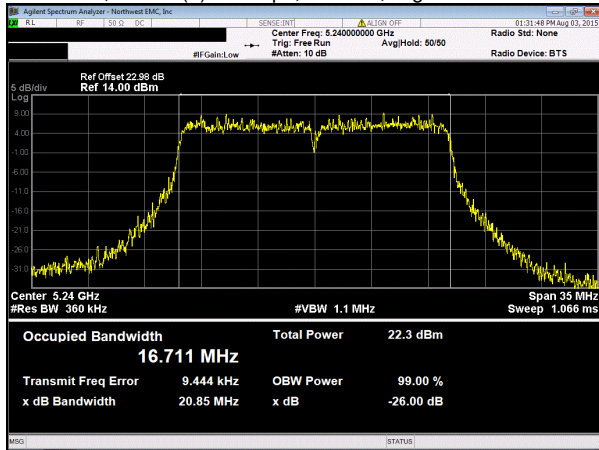
Value	20.847 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(a) 36 Mbps, 20 MHz, Low Channel 5745 MHz
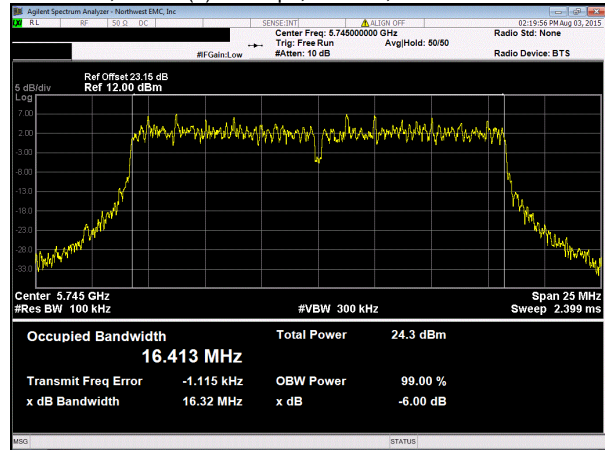
Value	16.321 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(a) 36 Mbps, 20 MHz, Mid Channel 5785 MHz

Occupied Bandwidth	Total Power	24.2 dBm
16.428 MHz		
Transmit Freq Error	-5.382 kHz	OBW Power	99.00 %
x dB Bandwidth	16.47 MHz	x dB	-6.00 dB
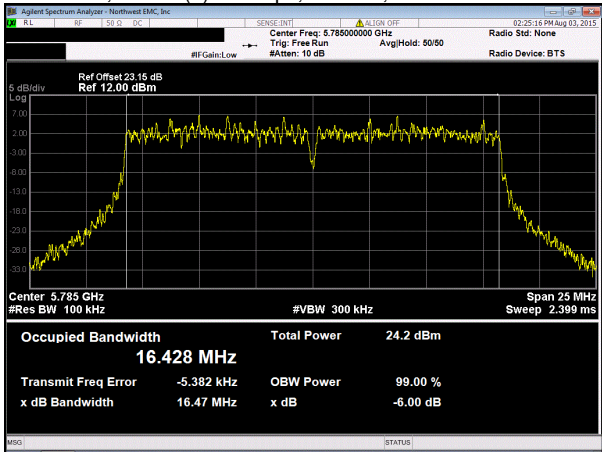
Value	16.465 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(a) 36 Mbps, 20 MHz, High Channel 5825 MHz

Occupied Bandwidth	Total Power	24.1 dBm
16.389 MHz		
Transmit Freq Error	2.832 kHz	OBW Power	99.00 %
x dB Bandwidth	16.35 MHz	x dB	-6.00 dB
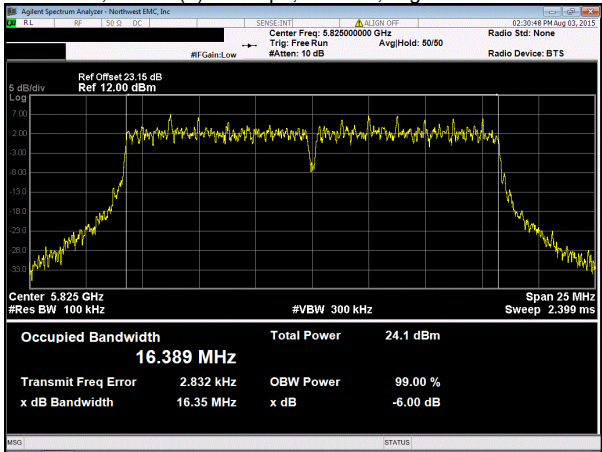
Value	16.349 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(a) 54 Mbps, 20 MHz, Low Channel 5180 MHz

Occupied Bandwidth	Total Power	20.8 dBm
16.882 MHz		
Transmit Freq Error	47.402 kHz	OBW Power	99.00 %
x dB Bandwidth	22.92 MHz	x dB	-26.00 dB
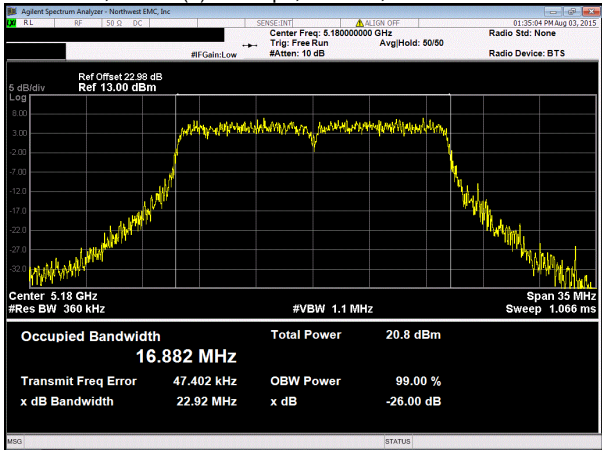
Value	22.923 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(a) 54 Mbps, 20 MHz, High Channel 5240 MHz

Occupied Bandwidth	Total Power	22.2 dBm
16.943 MHz		
Transmit Freq Error	51.837 kHz	OBW Power	99.00 %
x dB Bandwidth	22.37 MHz	x dB	-26.00 dB
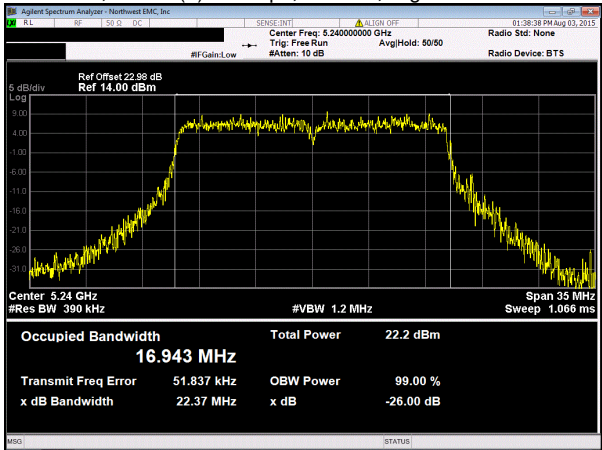
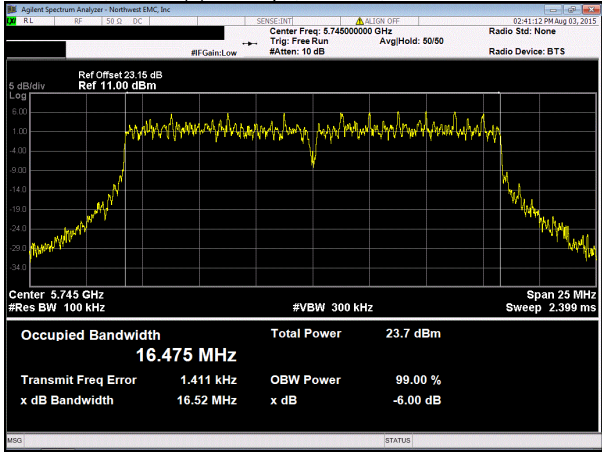| Value	22.369 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(a) 54 Mbps, 20 MHz, Low Channel 5745 MHz

Value	16.52 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(a) 54 Mbps, 20 MHz, Mid Channel 5785 MHz
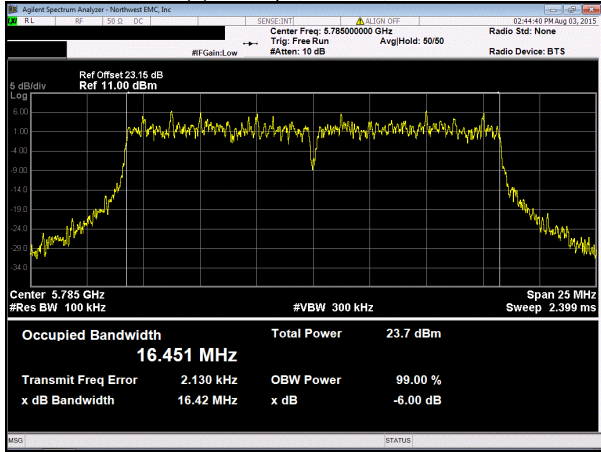
Value	16.424 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(a) 54 Mbps, 20 MHz, High Channel 5825 MHz
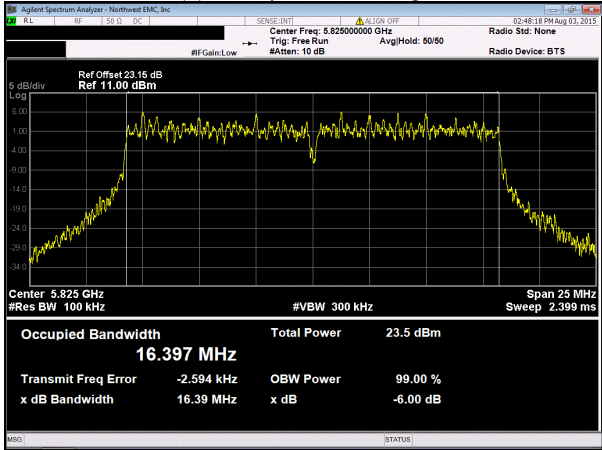
Value	16.392 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS0, 20 MHz, Low Channel 5180 MHz
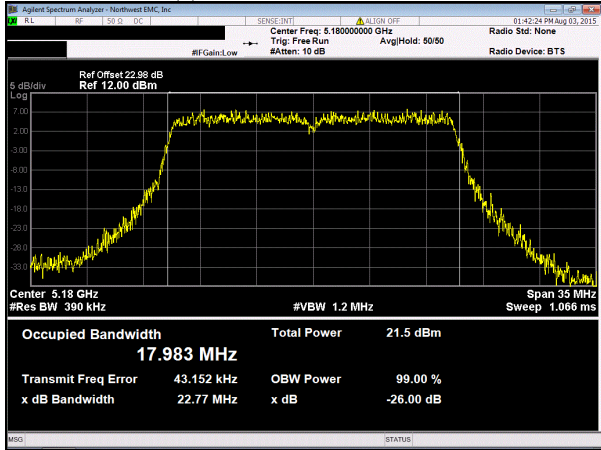
Value	22.774 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(n) HT, MCS0, 20 MHz, High Channel 5240 MHz
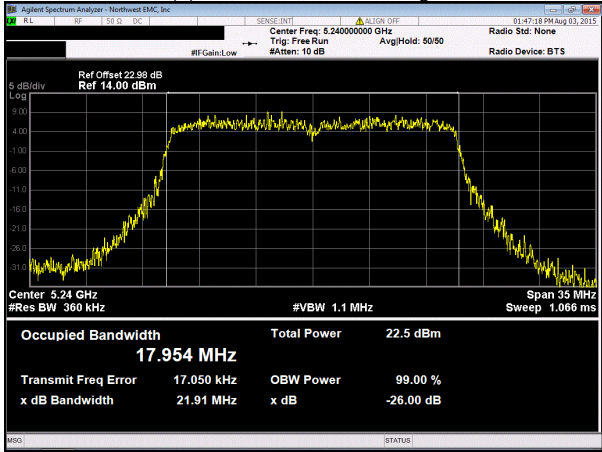
Value	21.908 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(n) HT, MCS0, 20 MHz, Low Channel 5745 MHz
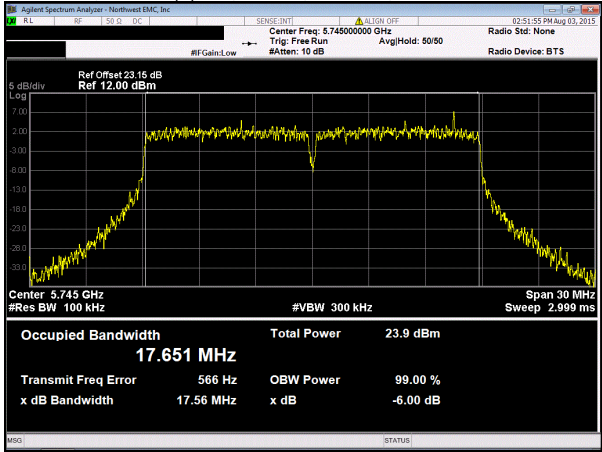
Value	17.564 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS0, 20 MHz, Mid Channel 5785 MHz
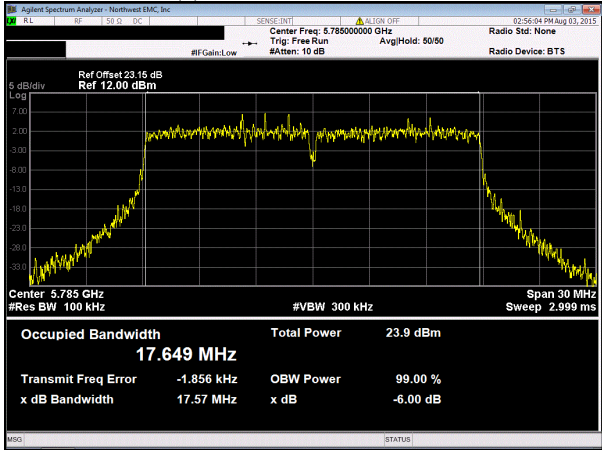
Value	17.575 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS0, 20 MHz, High Channel 5825 MHz
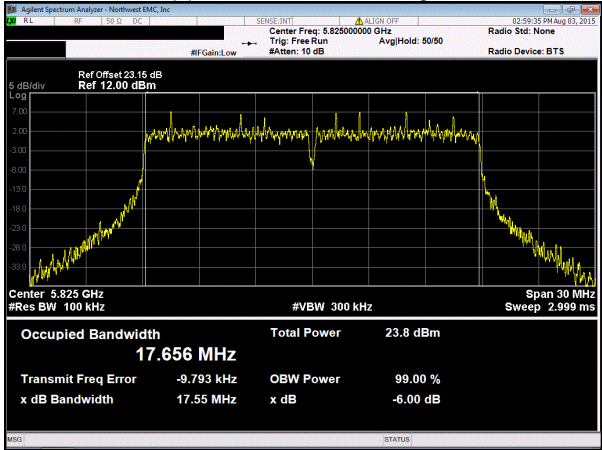
Value	17.55 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(n) HT, MCS0, 40 MHz, Low Channel 5190 MHz

Occupied Bandwidth		Total Power	21.9 dBm
36.571 MHz			
Transmit Freq Error	79.058 kHz	OBW Power	99.00 %
x dB Bandwidth	46.69 MHz	x dB	-26.00 dB
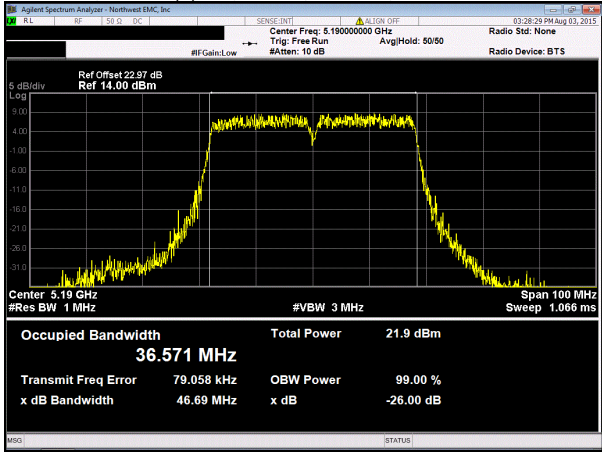
Value	46.687 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(n) HT, MCS0, 40 MHz, High Channel 5230 MHz

Occupied Bandwidth		Total Power	22.6 dBm
36.578 MHz			
Transmit Freq Error	20.100 kHz	OBW Power	99.00 %
x dB Bandwidth	44.95 MHz	x dB	-26.00 dB
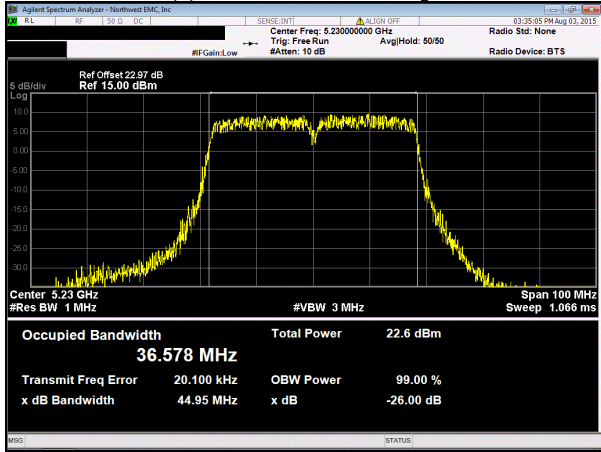
Value	44.948 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(n) HT, MCS0, 40 MHz, Low Channel 5755 MHz

Occupied Bandwidth		Total Power	23.0 dBm
36.164 MHz			
Transmit Freq Error	-5.582 kHz	OBW Power	99.00 %
x dB Bandwidth	35.93 MHz	x dB	-6.00 dB
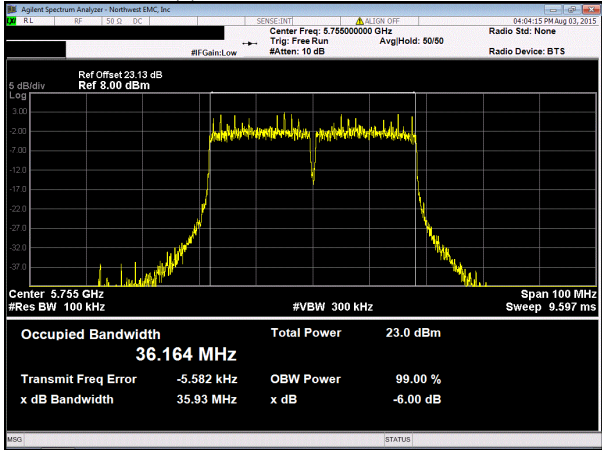
Value	35.934 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS0, 40 MHz, High Channel 5795 MHz

Occupied Bandwidth		Total Power	22.6 dBm
36.157 MHz			
Transmit Freq Error	-2.878 kHz	OBW Power	99.00 %
x dB Bandwidth	35.90 MHz	x dB	-6.00 dB
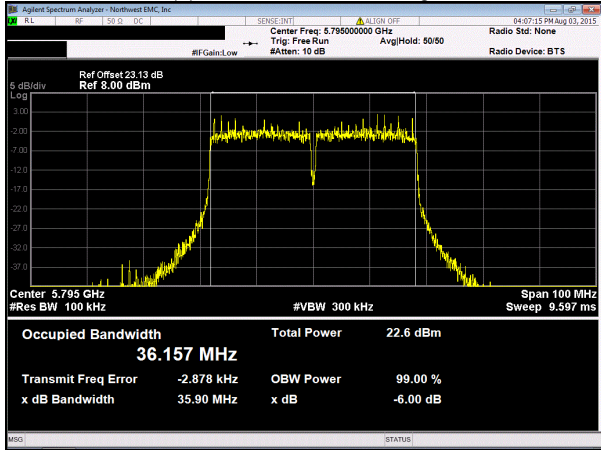
Value	35.896 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(n) HT, MCS0, 80 MHz, Low Channel 5210 MHz
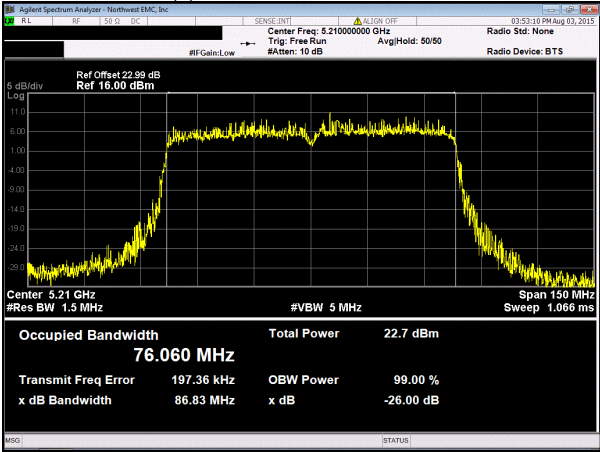
Value	86.825 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(n) HT, MCS0, 80 MHz, Low Channel 5775 MHz
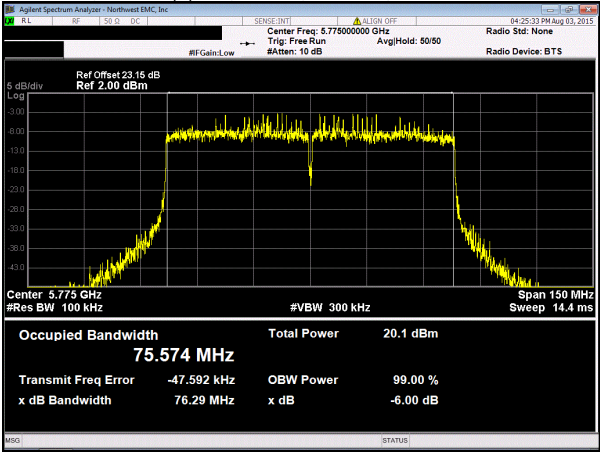
Value	76.287 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS7, 20 MHz, Low Channel 5180 MHz
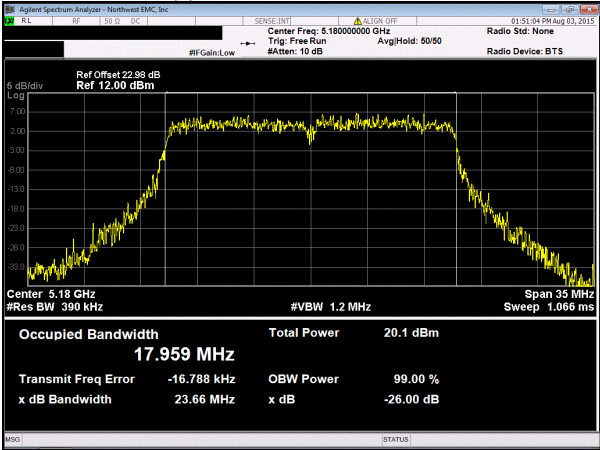
Value	23.664 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(n) HT, MCS7, 20 MHz, High Channel 5240 MHz
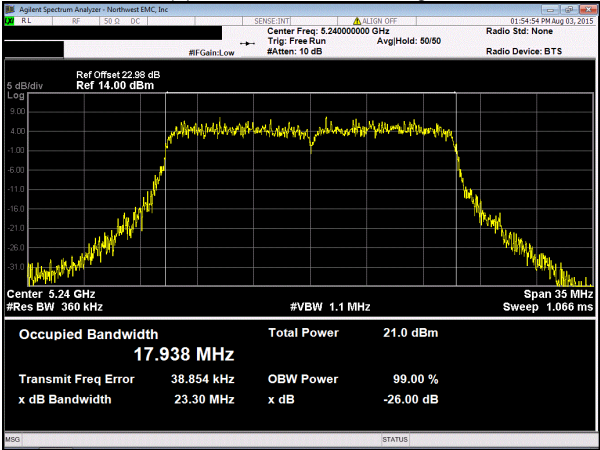
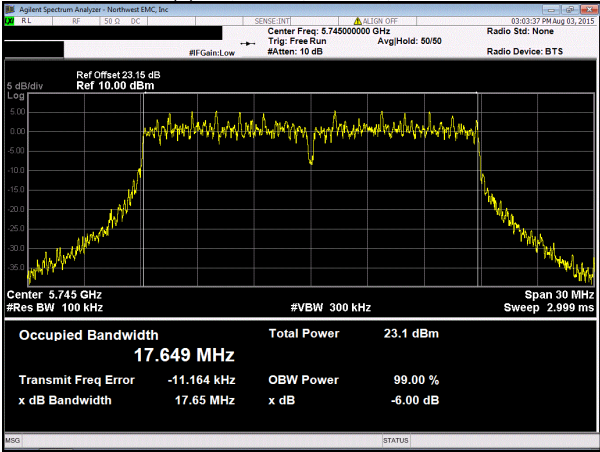| Value	23.296 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(n) HT, MCS7, 20 MHz, Low Channel 5745 MHz

Value	17.65 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS7, 20 MHz, Mid Channel 5785 MHz
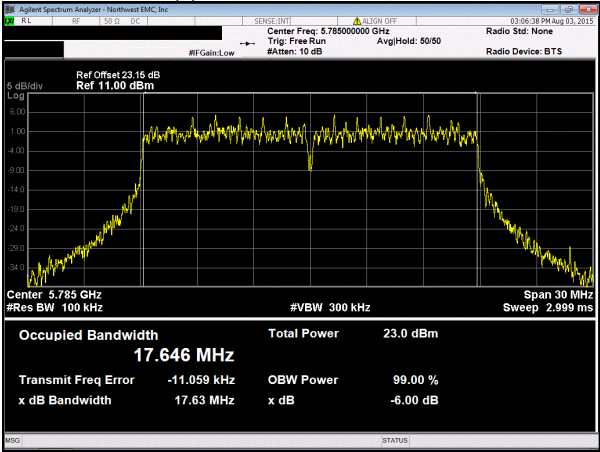
Value	17.632 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS7, 20 MHz, High Channel 5825 MHz
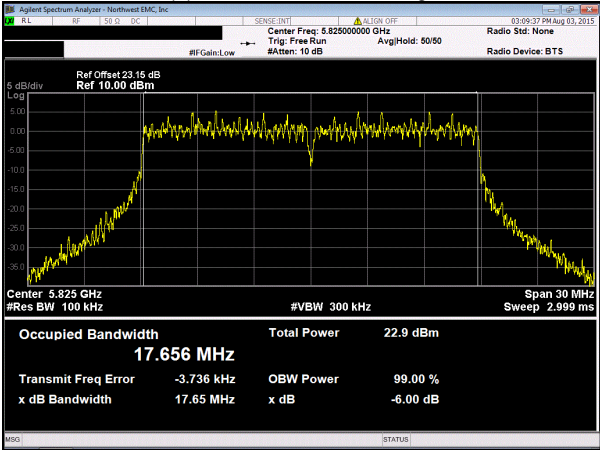
Value	17.649 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS7, 40 MHz, Low Channel 5190 MHz
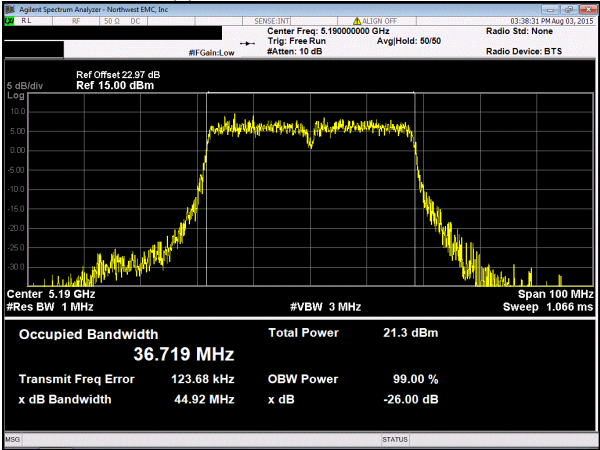
Value	44.917 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(n) HT, MCS7, 40 MHz, High Channel 5230 MHz
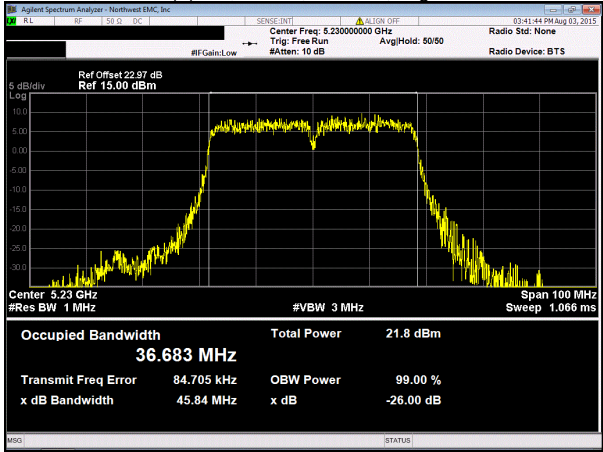
Value	45.837 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(n) HT, MCS7, 40 MHz, Low Channel 5755 MHz
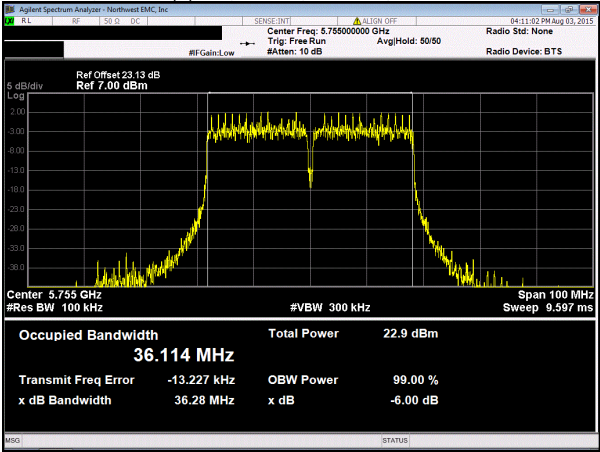
Value	36.28 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(n) HT, MCS7, 40 MHz, High Channel 5795 MHz
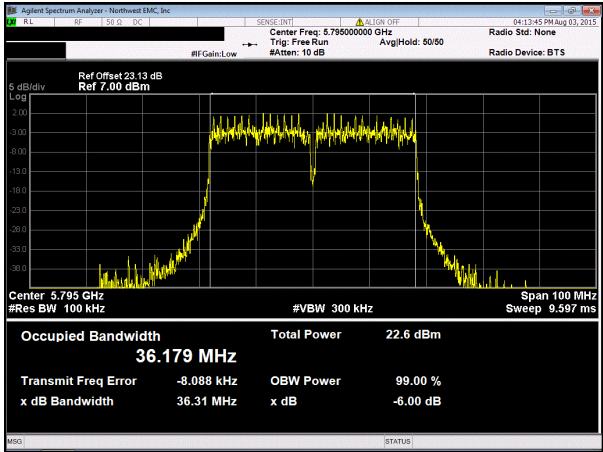
Value	36.31 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, Low Channel 5180 MHz
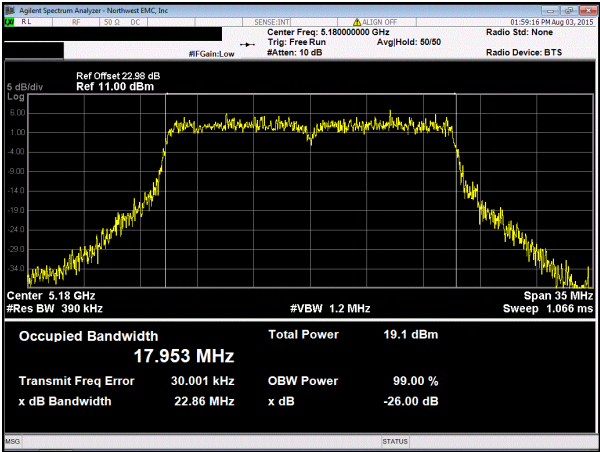
Value	22.856 MHz
Limit (>)	N/A
Result	N/A

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, High Channel 5240 MHz
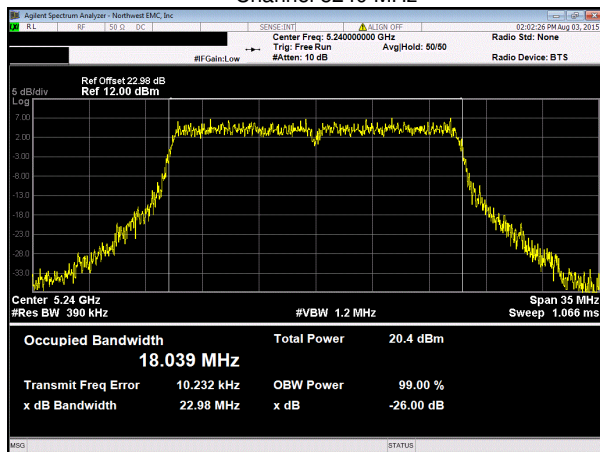
Value	22.98 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, Low Channel 5745 MHz
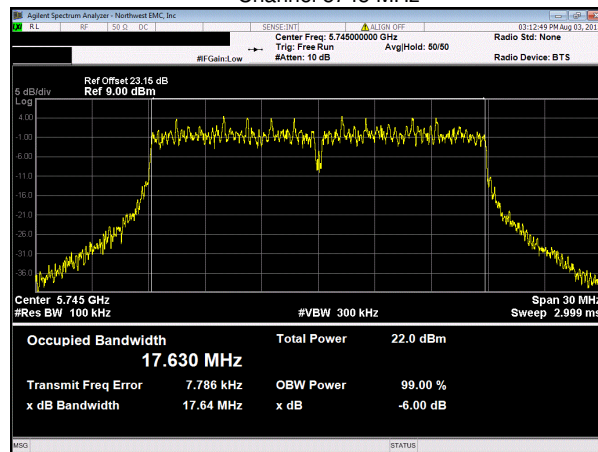
Value	17.637 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, Mid Channel 5785 MHz
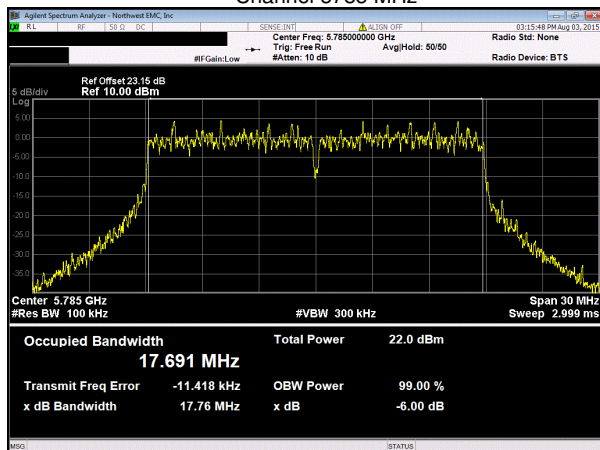
Value	17.756 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(ac) VHT, MCS8 (256-QAM), 20 MHz, High Channel 5825 MHz
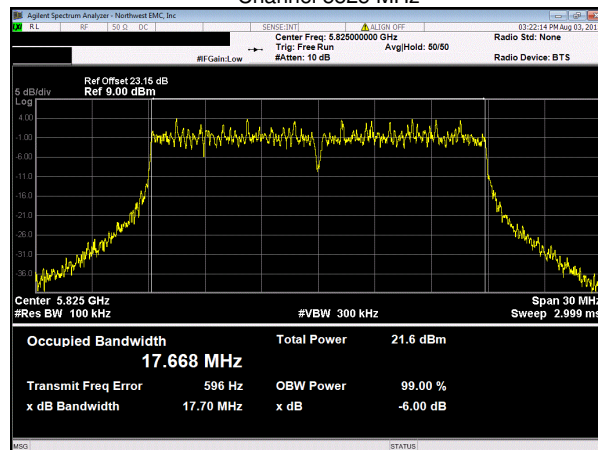
Value	17.704 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

Chain C, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, Low Channel 5190 MHz

Occupied Bandwidth		Total Power	19.3 dBm
36.709 MHz			
Transmit Freq Error	127.45 kHz	OBW Power	99.00 %
x dB Bandwidth	46.93 MHz	x dB	-26.00 dB
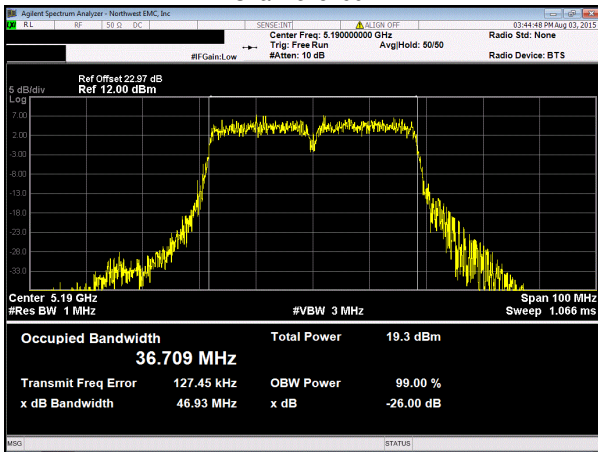
Value	46.928 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, High Channel 5230 MHz

Occupied Bandwidth		Total Power	19.8 dBm
36.727 MHz			
Transmit Freq Error	79.814 kHz	OBW Power	99.00 %
x dB Bandwidth	46.87 MHz	x dB	-26.00 dB
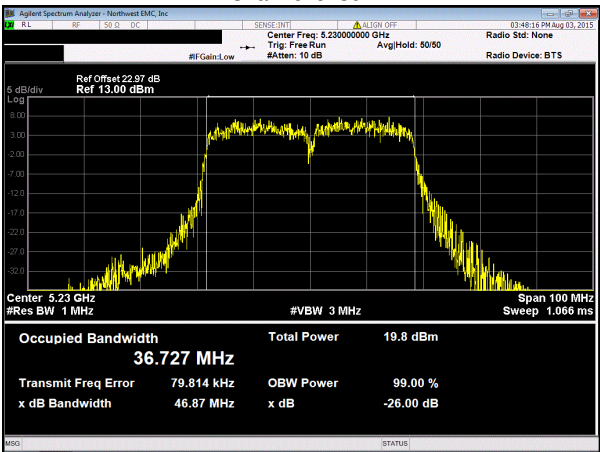
Value	46.873 MHz
Limit (>)	N/A
Result	N/A

Chain C, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, Low Channel 5755 MHz

Occupied Bandwidth		Total Power	20.9 dBm
36.187 MHz			
Transmit Freq Error	-16.986 kHz	OBW Power	99.00 %
x dB Bandwidth	36.36 MHz	x dB	-6.00 dB

Value	36.365 MHz
Limit (>)	500 kHz
Result	Pass

Chain C, 802.11(ac) VHT, MCS9 (256-QAM), 40 MHz, High Channel 5795 MHz

Occupied Bandwidth		Total Power	22.7 dBm
36.174 MHz			
Transmit Freq Error	-12.278 kHz	OBW Power	99.00 %
x dB Bandwidth	36.39 MHz	x dB	-6.00 dB
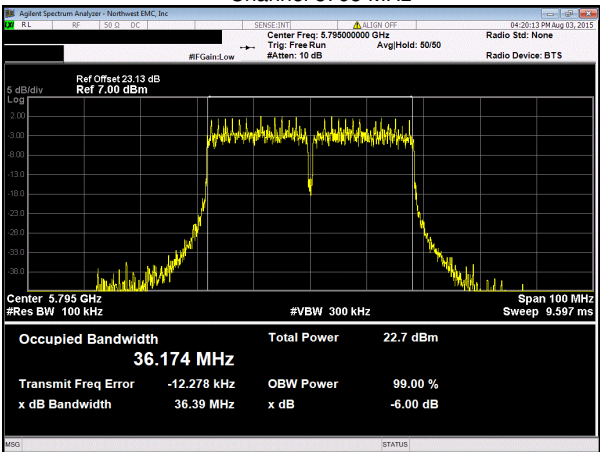
Value	36.391 MHz
Limit (>)	500 kHz
Result	Pass

EMISSION & OCCUPIED BANDWIDTH

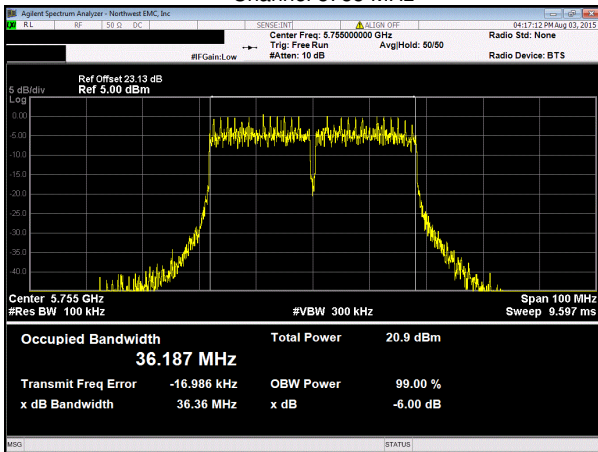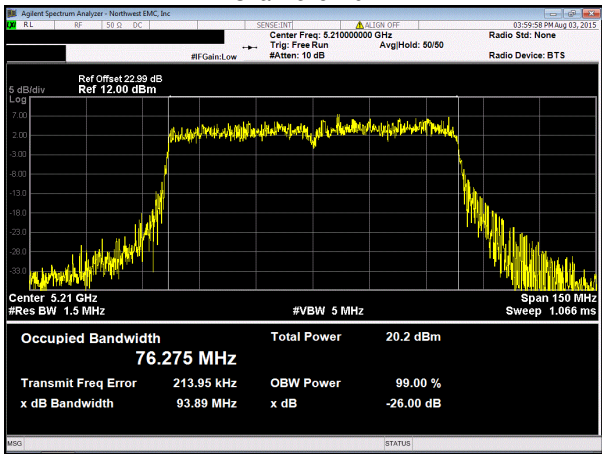Chain C, 802.11(ac) VHT, MCS9 (256-QAM), 80 MHz, Low Channel 5210 MHz

Chain C, 802.11(ac) VHT, MCS9 (256-QAM), 80 MHz, Low Channel 5775 MHz

Occupied Bandwidth		Total Power	20.2 dBm	
76.275 MHz				
Transmit Freq Error	213.95 kHz	OBW Power	99.00 %	
x dB Bandwidth	93.89 MHz	x dB	-26.00 dB	

Occupied Bandwidth		Total Power	21.1 dBm	
75.551 MHz				
Transmit Freq Error	18.867 kHz	OBW Power	99.00 %	
x dB Bandwidth	76.01 MHz	x dB	-6.00 dB	

Value	93.889 MHz
Limit (>)	N/A
Result	N/A
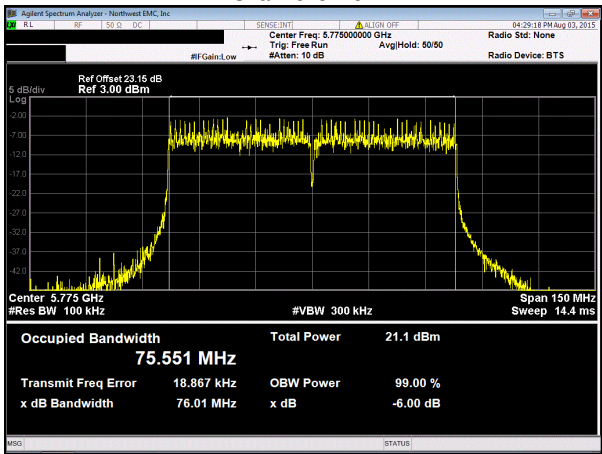
Value	76.014 MHz
Limit (>)	500 kHz
Result	Pass