DUTY CYCLE

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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 EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	6/22/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKV	3/4/2016	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/6/2016	24

TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. 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 duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

DUTY CYCLE

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EUT:	Model 1631	Work Order:	MCSO1748
Serial Number:	041152140753	Date:	04/13/16
Customer:	Microsoft Corporation	Temperature:	23°C
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	1019 mbar
Tested by:	Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02

TEST SPECIFICATIONS	Test Method
FCC 15.407:2016	ANSI C63.10:2013

COMMENTS

Power setting at 11dBm for 20MHz and 40MHz channels. Power Setting at 10dBm for 80MHz channels. Client supplied adapter cable loss of 1.3dB included in reference level offset. Signal setting at > 95% Duty Cycle.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	1	Signature

			Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
2x2 MIMO, Chain A								
	20MHz BW							
		Low Channel, Ch 149 - 5745 MHz						
		802.11(n) MCS8	1.478 ms	1.512 ms	1	97.8	N/A	N/A
		802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15	181.9 us	215.6 us	1	84.4	N/A	N/A
		802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS0	1.486 ms	1.513 ms	1	98.2	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS8	161.6 us	189.4 us	1	85.3	N/A	N/A
		802.11(ac) MCS8	N/A	N/A	5	N/A	N/A	N/A
		Mid Channel, Ch 157 - 5785 MHz						
		802.11(n) MCS8	1.478 ms	1.511 ms	1	97.8	N/A	N/A
		802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15	181.6 us	215.3 us	1	84.3	N/A	N/A
		802.11(n) MCS15	N/A	N/A	6	N/A	N/A	N/A
		802.11(ac) MCS0	1.486 ms	1.513 ms	1	98.2	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS8	161.4 us	189.2 us	1	85.3	N/A	N/A
		802.11(ac) MCS8	N/A	N/A	5	N/A	N/A	N/A
		High Channel, Ch 165 - 5825 MHz						
		802.11(n) MCS8	1.478 ms	1.512 ms	1	97.8	N/A	N/A
		802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15	181.7 us	215.6 us	1	84.3	N/A	N/A
		802.11(n) MCS15	N/A	N/A	6	N/A	N/A	N/A
		802.11(ac) MCS0	1.486 ms	1.513 ms	1	98.2	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS8	161.9 us	189.5 us	1	85.4	N/A	N/A
		802.11(ac) MCS8	N/A	N/A	5	N/A	N/A	N/A
	40MHz BW							
		Low Channel, Ch 149/153 - 5755 MHz						
		802.11(n) MCS8	729.54 us	763.269 us	1	95.6	N/A	N/A
		802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15	98.115 us	139.644 us	1	70.3	N/A	N/A
		802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS0	714.2 us	765.5 us	1	93.3	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS9	92.573 us	121.6 us	1	76.1	N/A	N/A
		802.11(ac) MCS9	N/A	N/A	5	N/A	N/A	N/A
		High Channel, Ch 157/161 - 5795 MHz						
		802.11(n) MCS8	704.3 us	763.3 us	1	92.3	N/A	N/A
		802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15	98.127 us	139.944 us	1	70.1	N/A	N/A
		802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS0	712.7 us	764 us	1	93.3	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS9	68.3 us	121.6 us	1	56.2	N/A	N/A
		802.11(ac) MCS9	N/A	N/A	5	N/A	N/A	N/A
	80MHz BW							
		Mid Channel, Ch 149/161 - 5775 MHz						
		802.11(ac) MCS0	342.3 us	393.4 us	1	87	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS9	42.3 us	81.3 us	1	52	N/A	N/A
		802.11(ac) MCS9	N/A	N/A	4	N/A	N/A	N/A
2x2 MIMO, Chain B								
	20MHz BW							
		Low Channel, Ch 149 - 5745 MHz						
		802.11(n) MCS8	1.477 ms	1.511 ms	1	97.7	N/A	N/A
		802.11(n) MCS8	N/A	N/A	6	N/A	N/A	N/A
		802.11(n) MCS15	180.9 us	215.3 us	1	84	N/A	N/A
		802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS0	1.485 ms	1.513 ms	1	98.1	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS8	161.1 us	189.4 us	1	85.1	N/A	N/A
		802.11(ac) MCS8	N/A	N/A	5	N/A	N/A	N/A
		Mid Channel, Ch 157 - 5785 MHz						
		802.11(n) MCS8	1.477 ms	1.511 ms	1	97.7	N/A	N/A
		802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
		802.11(n) MCS15	180.9 us	215.3 us	1	84	N/A	N/A
		802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS0	1.485 ms	1.513 ms	1	98.1	N/A	N/A
		802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
		802.11(ac) MCS8	160.9 us	189.4 us	1	85	N/A	N/A
		802.11(ac) MCS8	N/A	N/A	5	N/A	N/A	N/A

	High Channel, Ch 165 - 5825 MHz						
	802.11(n) MCS8	1.477 ms	1.511 ms	1	97.7	N/A	N/A
	802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
	802.11(n) MCS15	181.2 us	215.6 us	1	84	N/A	N/A
	802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
	802.11(ac) MCS0	1.485 ms	1.513 ms	1	98.1	N/A	N/A
	802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
	802.11(ac) MCS8	161.2 us	189.5 us	1	85.1	N/A	N/A
	802.11(ac) MCS8	N/A	N/A	5	N/A	N/A	N/A
40MHz BW							
	Low Channel, Ch 149/153 - 5755 MHz						
	802.11(n) MCS8	705.1 us	763.3 us	1	92.4	N/A	N/A
	802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
	802.11(n) MCS15	81.3 us	139.7 us	1	58.2	N/A	N/A
	802.11(n) MCS15	N/A	N/A	5	N/A	N/A	N/A
	802.11(ac) MCS0	712.8 us	765.5 us	1	93.1	N/A	N/A
	802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
	802.11(ac) MCS9	94.005 us	121.6 us	1	77.3	N/A	N/A
	802.11(ac) MCS9	N/A	N/A	5	N/A	N/A	N/A
	High Channel, Ch 157/161 - 5795 MHz						
	802.11(n) MCS8	704.3 us	762.9 us	1	92.3	N/A	N/A
	802.11(n) MCS8	N/A	N/A	5	N/A	N/A	N/A
	802.11(n) MCS15	80.3 us	138.9 us	1	57.8	N/A	N/A
	802.11(n) MCS15	N/A	N/A	6	N/A	N/A	N/A
	802.11(ac) MCS0	712.7 us	765.8 us	1	93.1	N/A	N/A
	802.11(ac) MCS0	N/A	N/A	6	N/A	N/A	N/A
	802.11(ac) MCS9	68.4 us	121.1 us	1	56.5	N/A	N/A
	802.11(ac) MCS9	N/A	N/A	5	N/A	N/A	N/A
80MHz BW							
	Mid Channel, Ch 149/161 - 5775 MHz						
	802.11(ac) MCS0	336.9 us	389.4 us	1	86.5	N/A	N/A
	802.11(ac) MCS0	N/A	N/A	5	N/A	N/A	N/A
	802.11(ac) MCS9	65.725 us	93.564 us	1	70.2	N/A	N/A
	802.11(ac) MCS9	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

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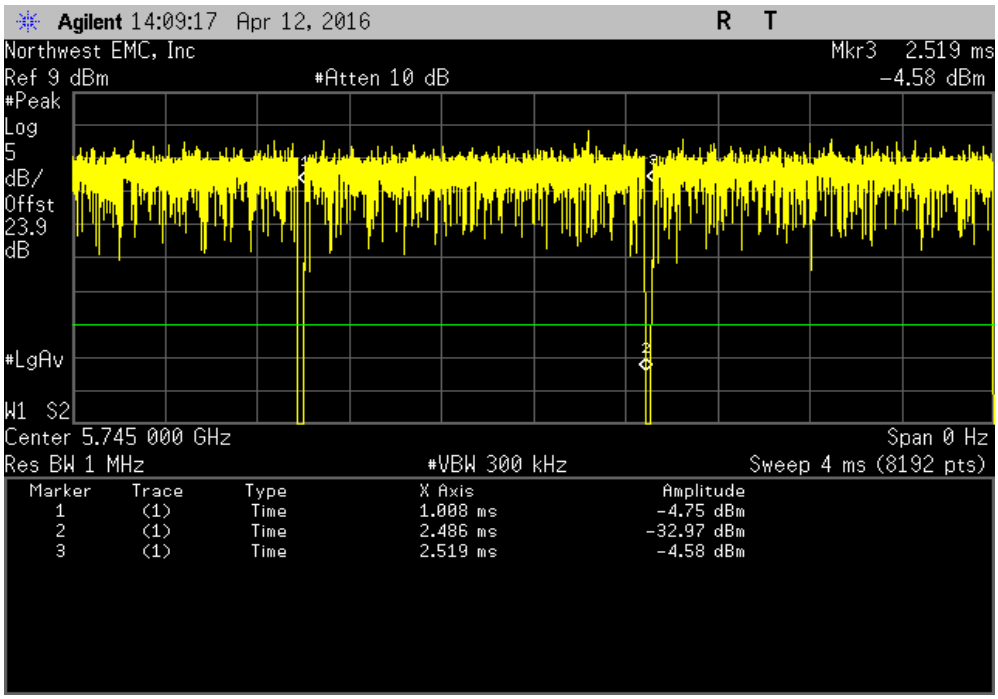
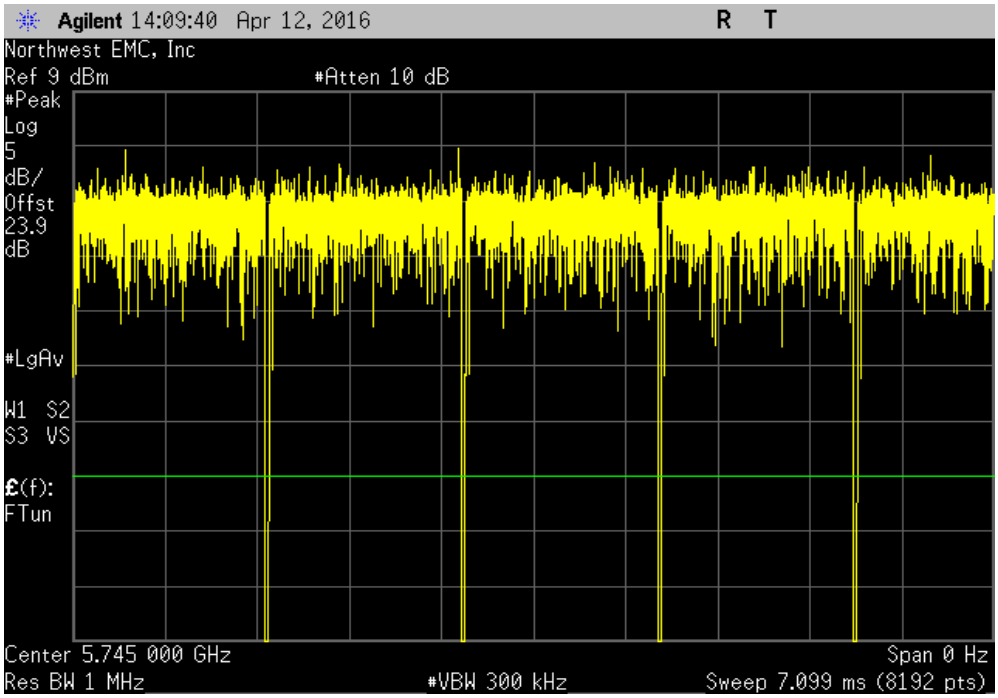
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.478 ms	1.512 ms	1	97.8	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

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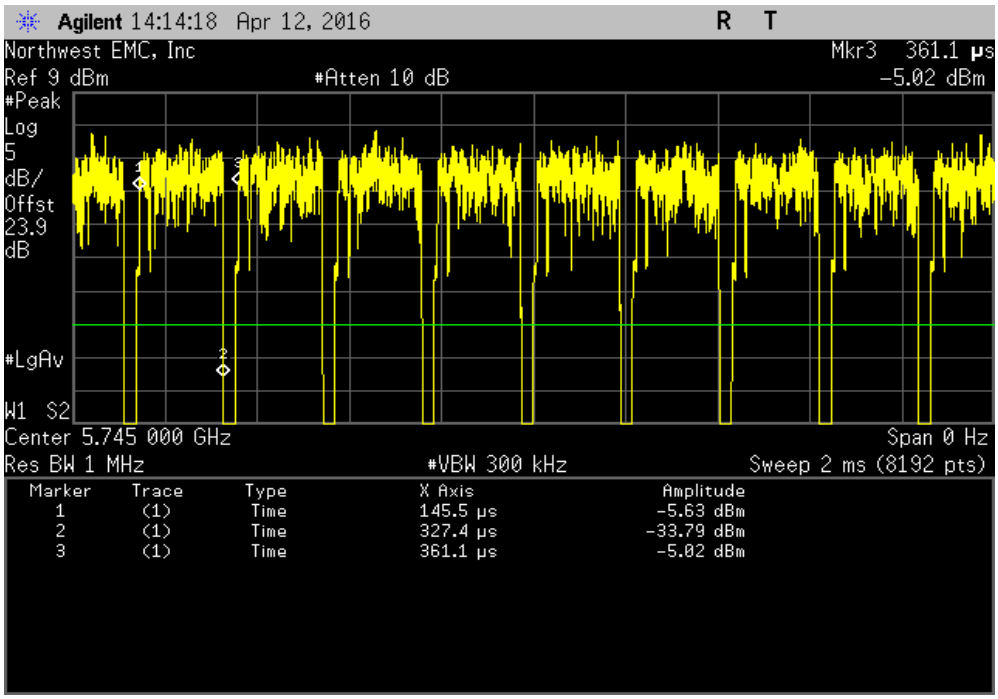
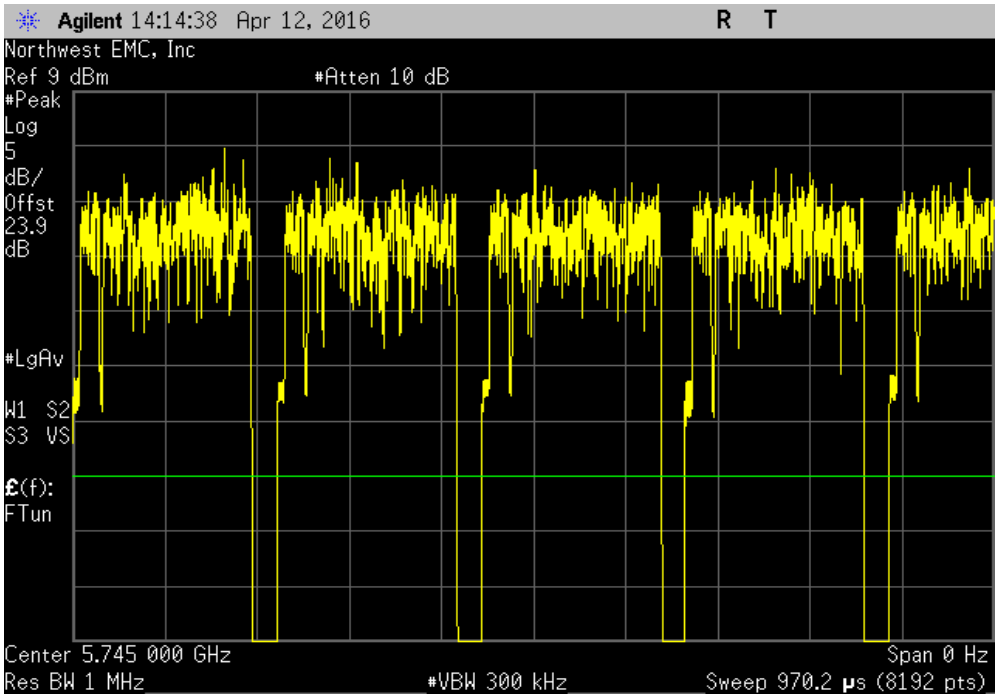
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	181.9 us	215.6 us	1	84.4	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

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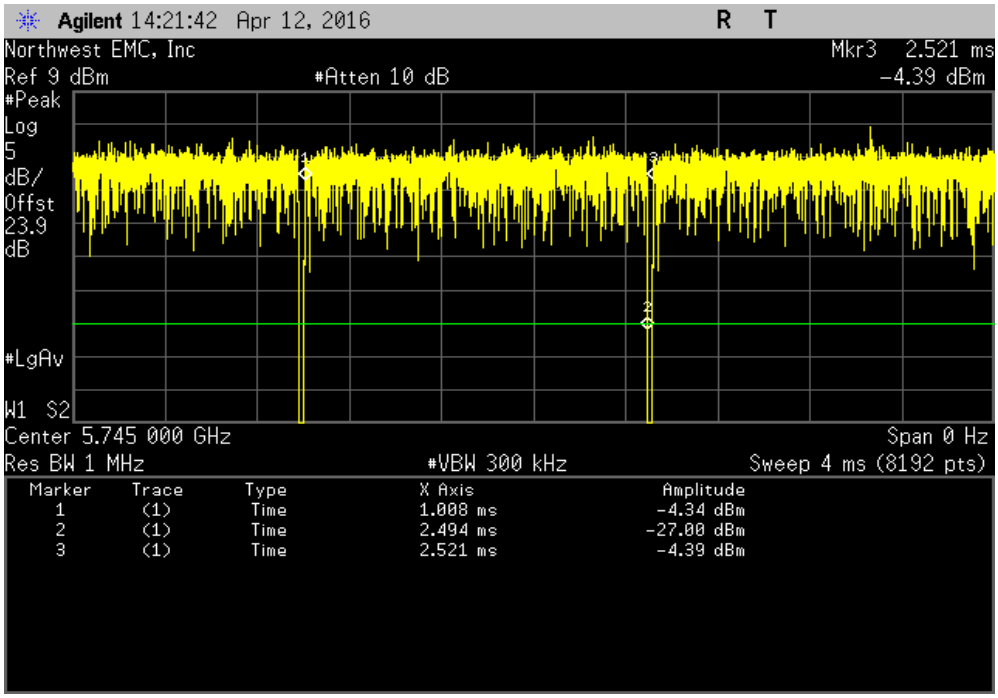
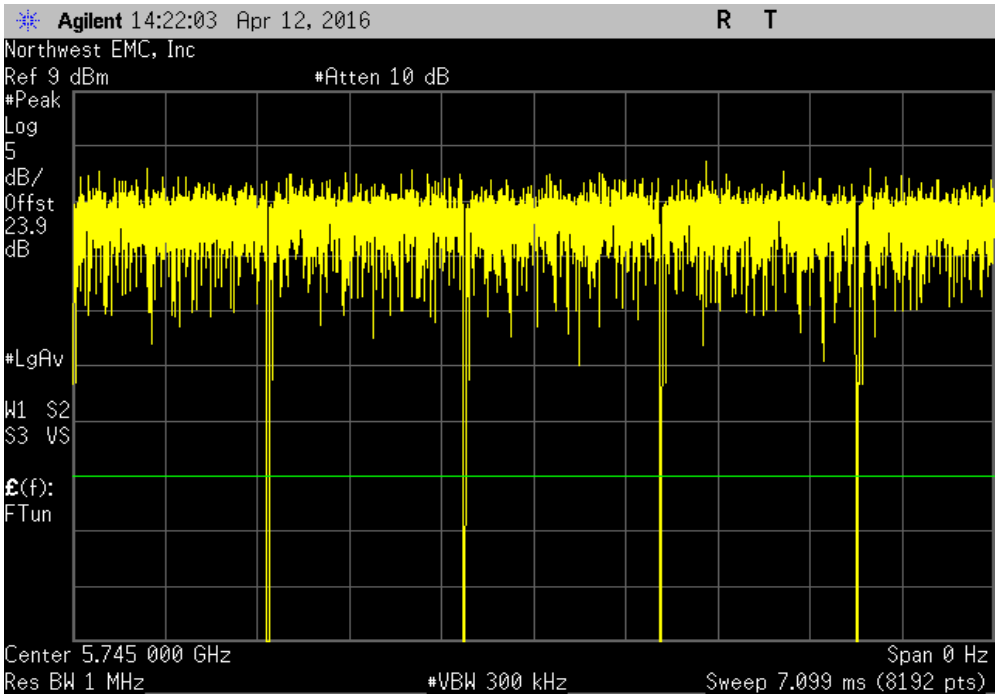
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.486 ms	1.513 ms	1	98.2	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

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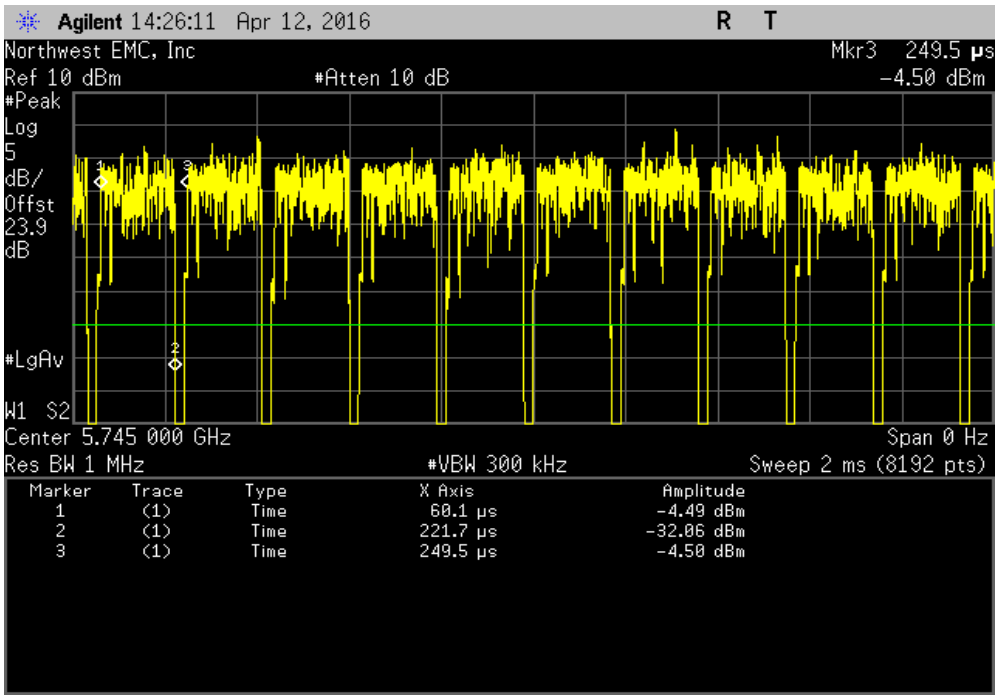
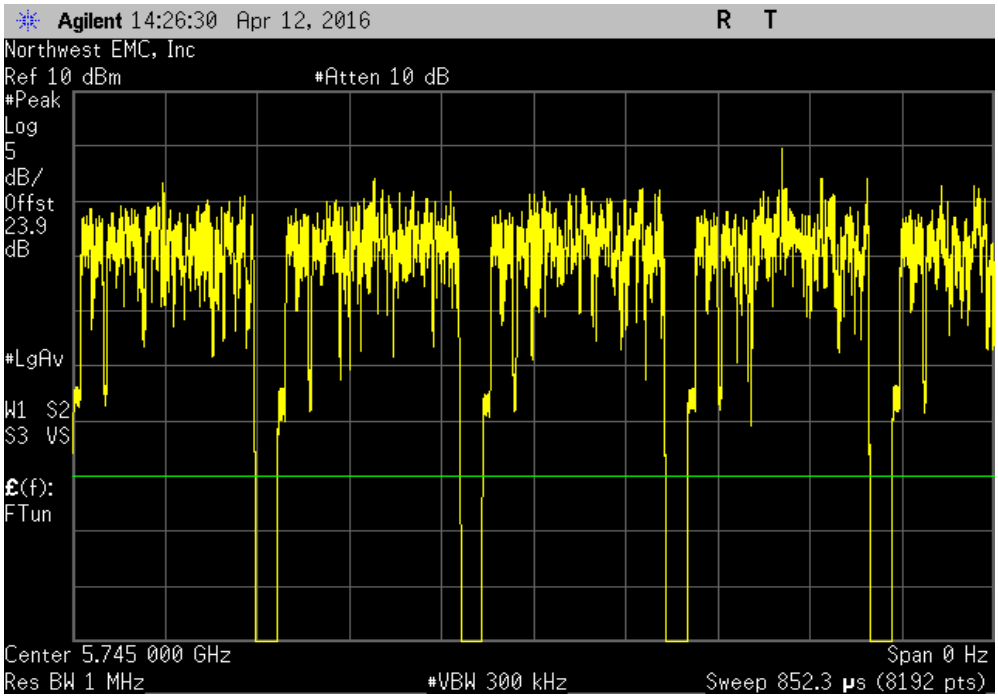
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	161.6 us	189.4 us	1	85.3	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

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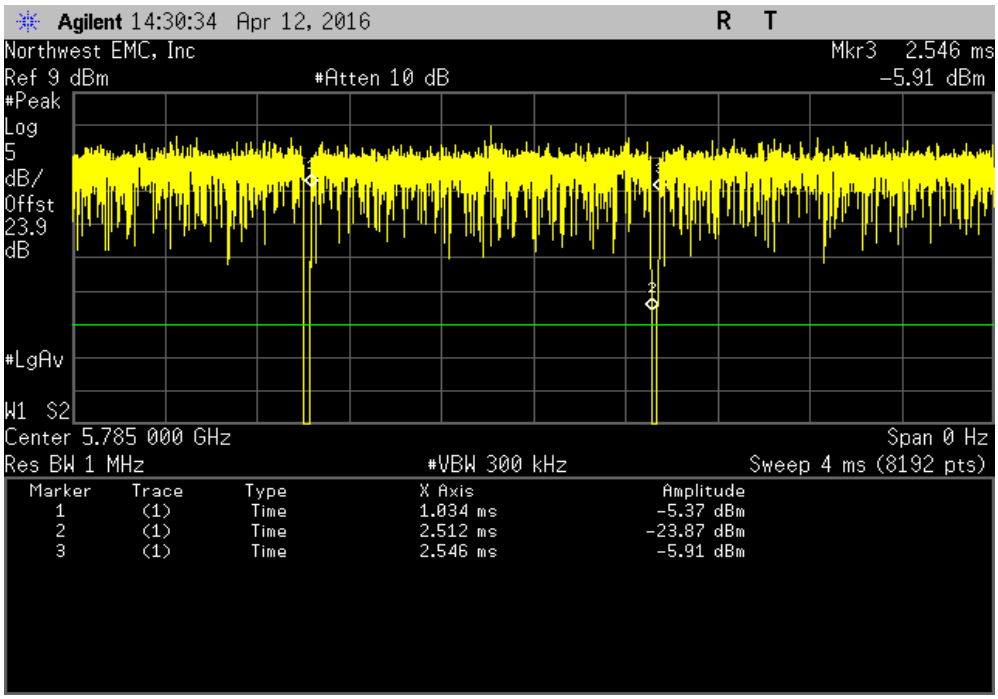
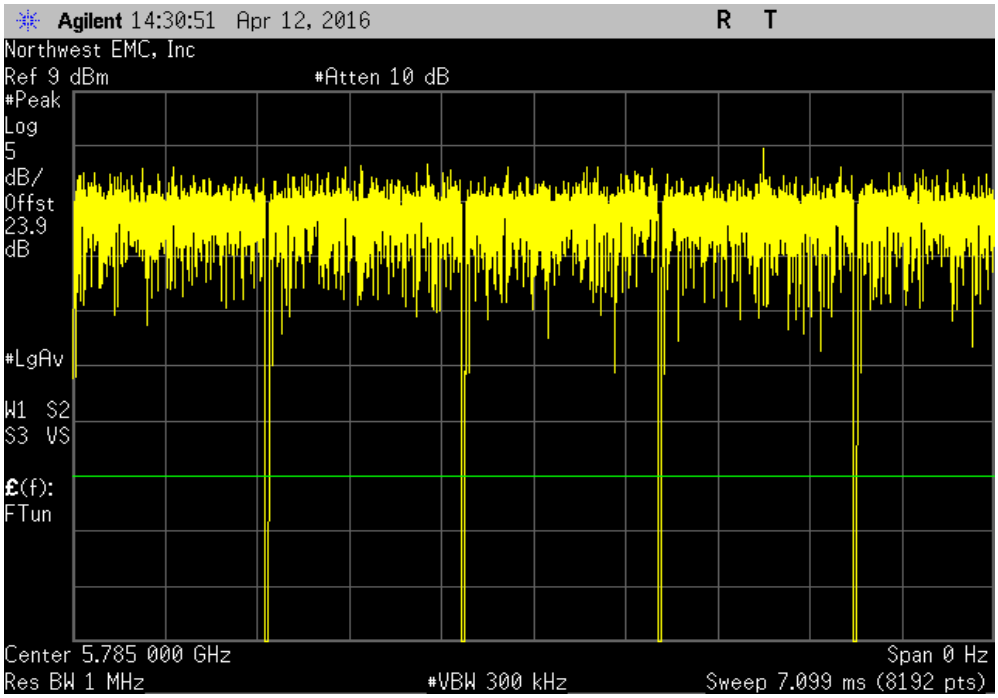
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.478 ms	1.511 ms	1	97.8	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

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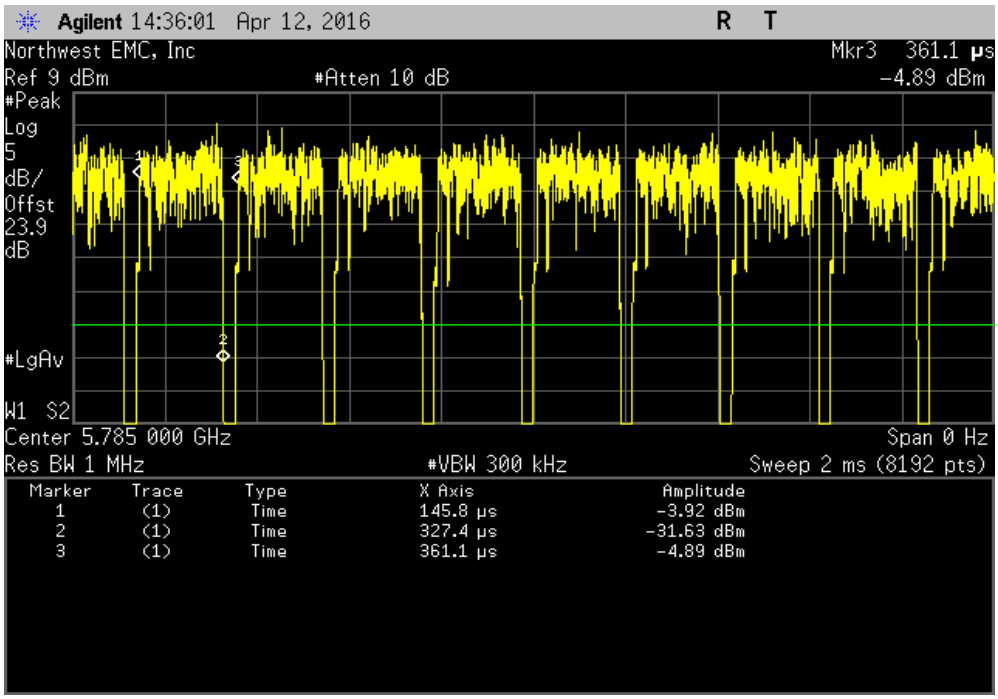
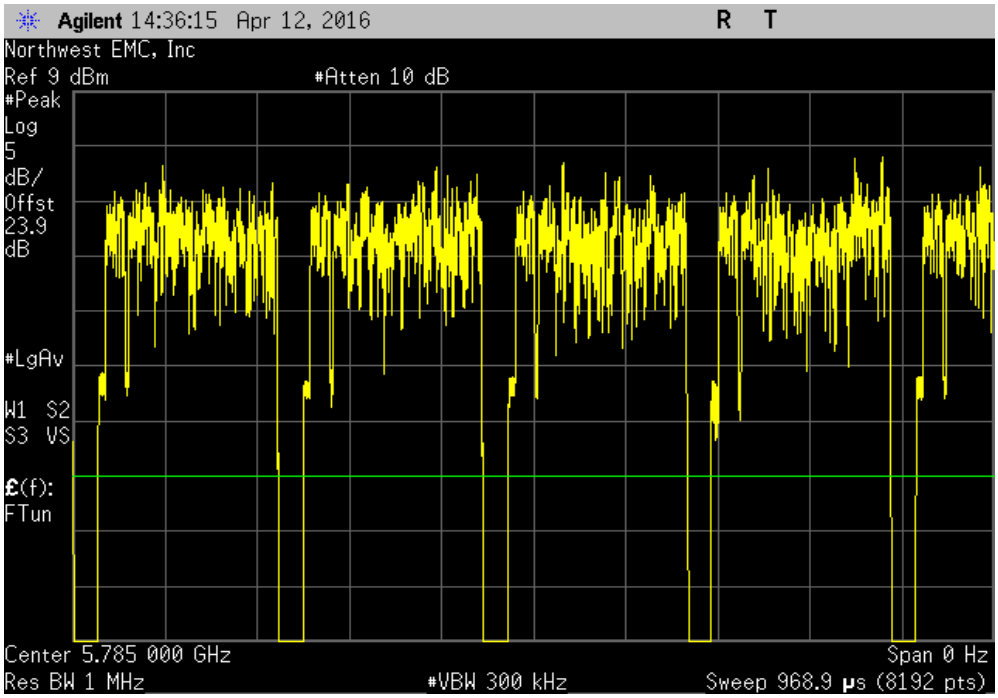
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	181.6 us	215.3 us	1	84.3	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A



DUTY CYCLE

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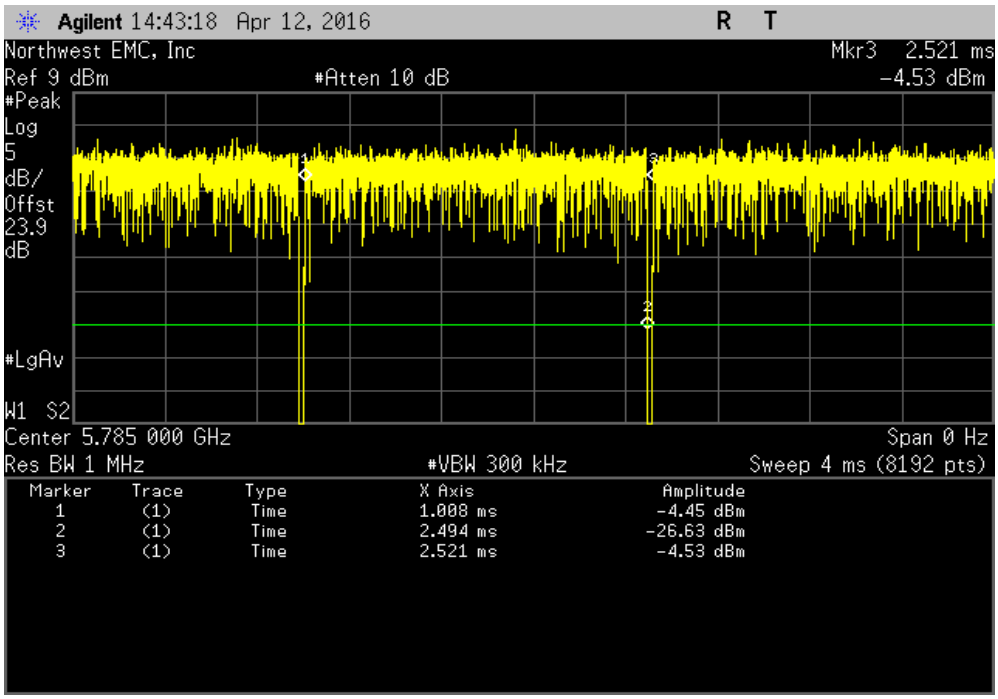
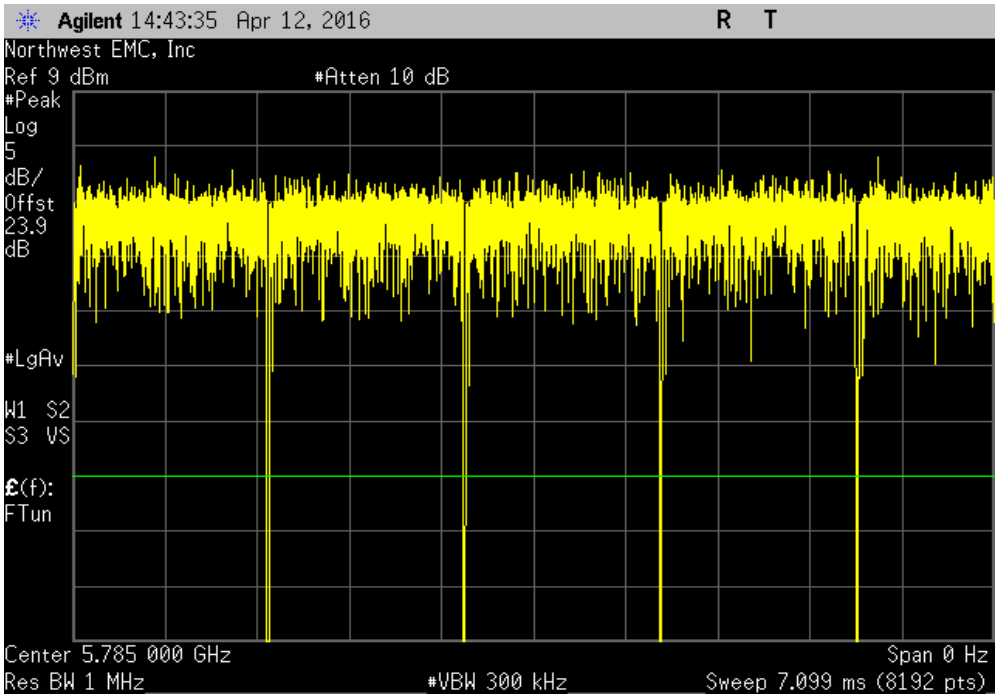
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.486 ms	1.513 ms	1	98.2	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

NORTHWEST EMC

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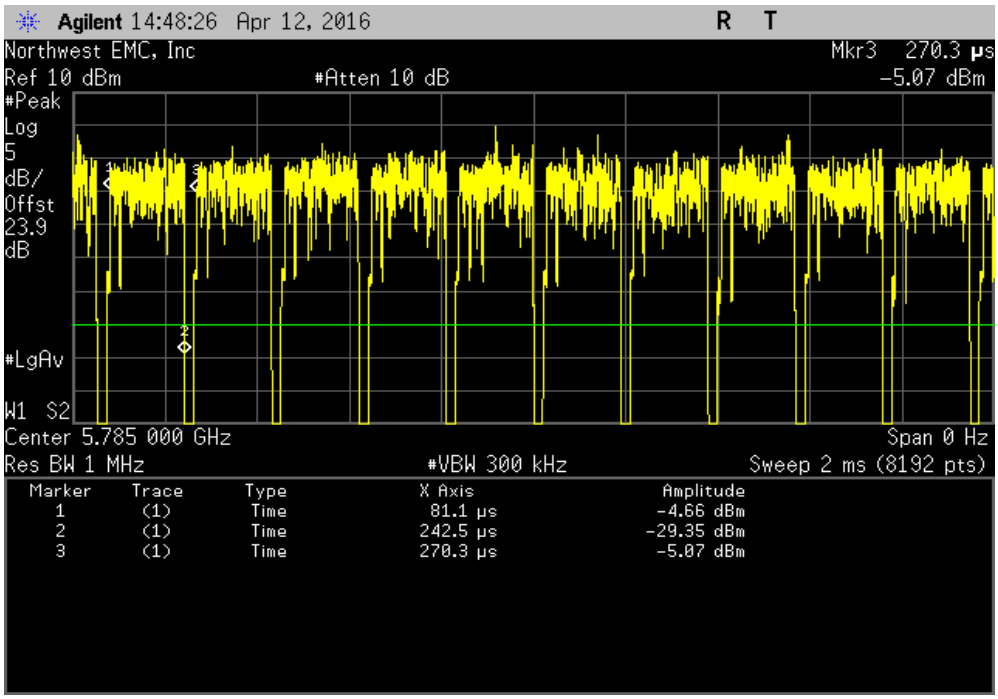
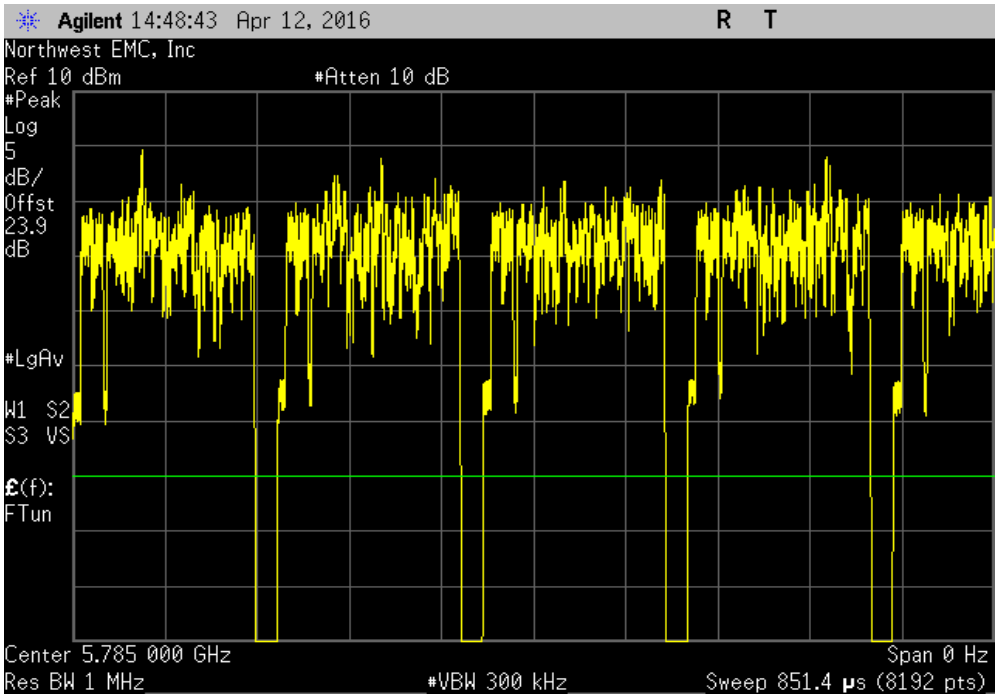
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	161.4 us	189.2 us	1	85.3	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

NORTHWEST EMC

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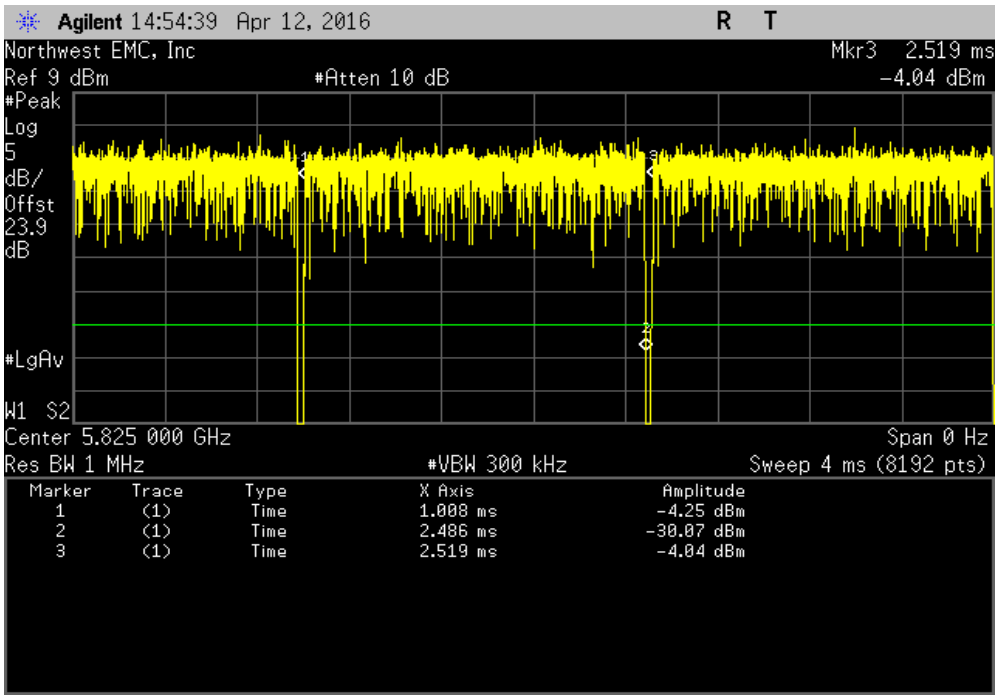
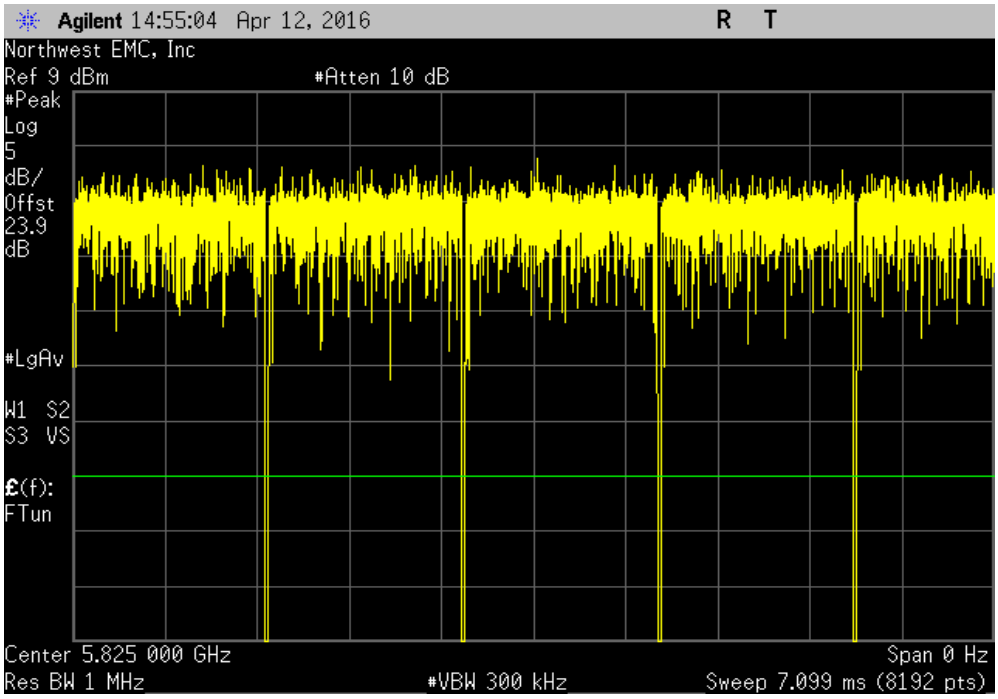
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.478 ms	1.512 ms	1	97.8	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

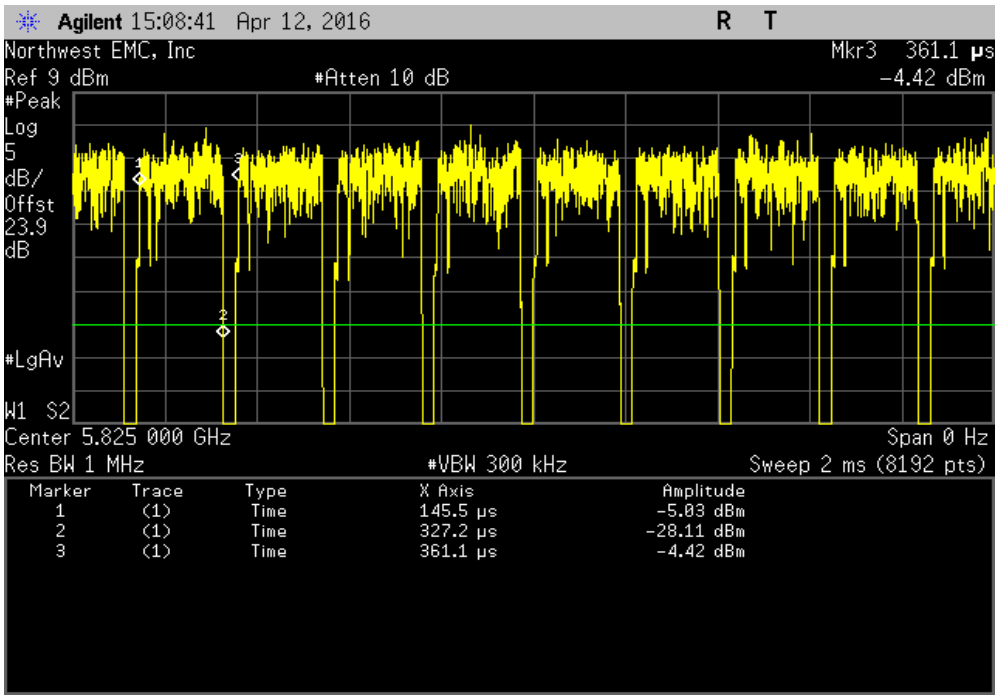


DUTY CYCLE

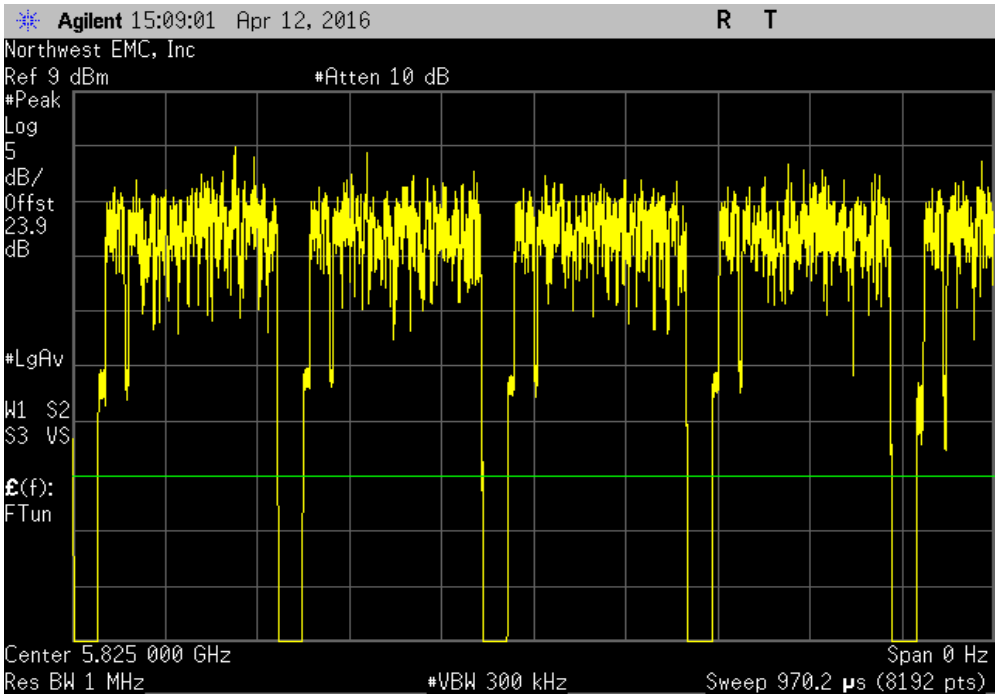
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	181.7 us	215.6 us	1	84.3	N/A	N/A



2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A

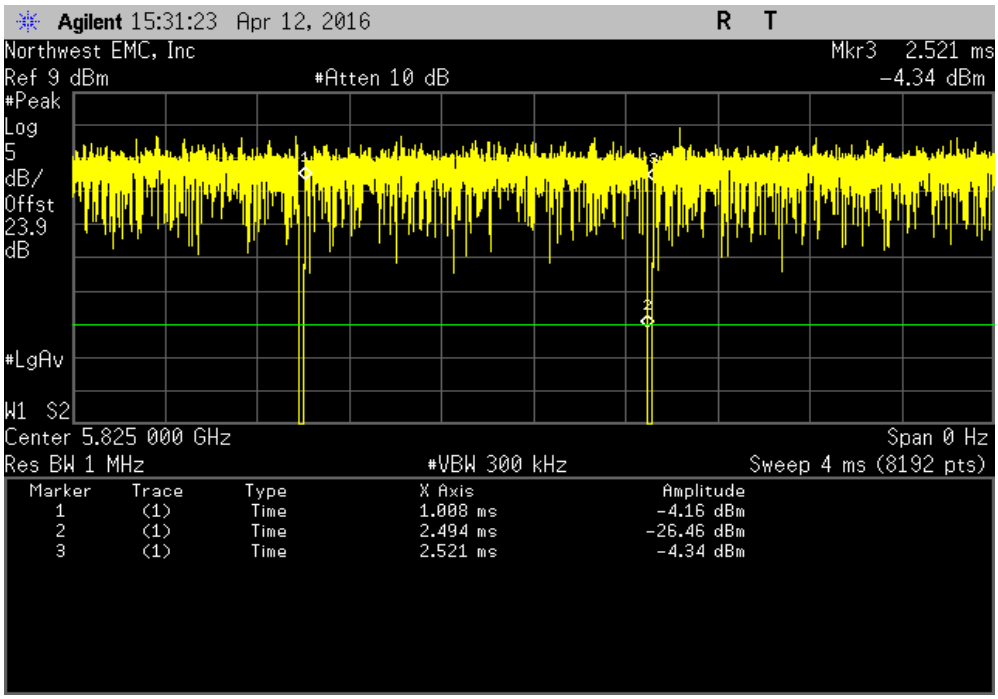


DUTY CYCLE

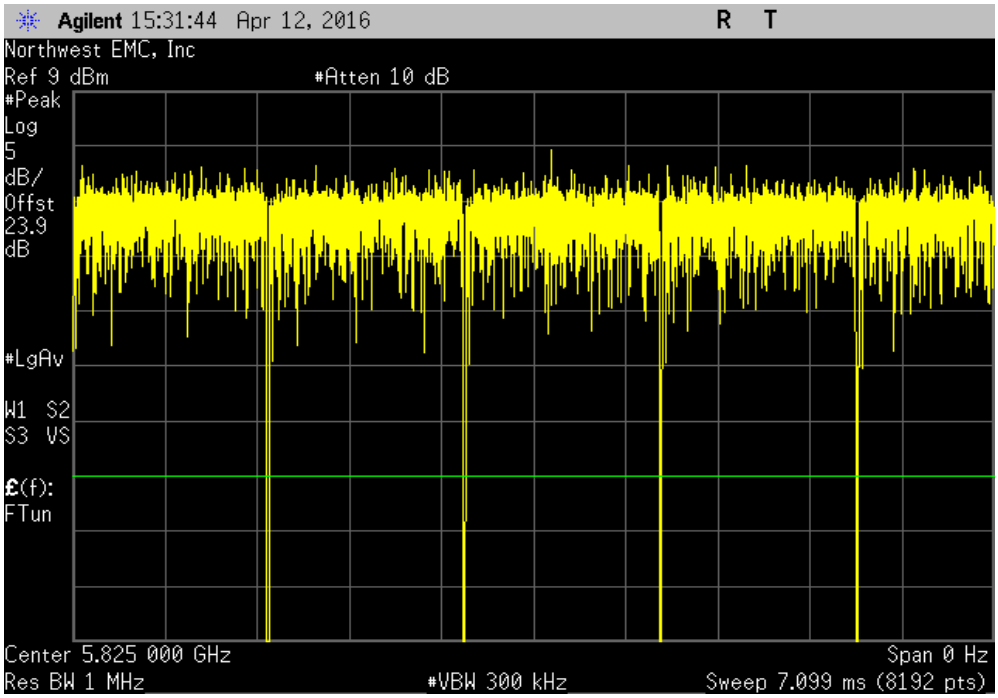
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.486 ms	1.513 ms	1	98.2	N/A	N/A



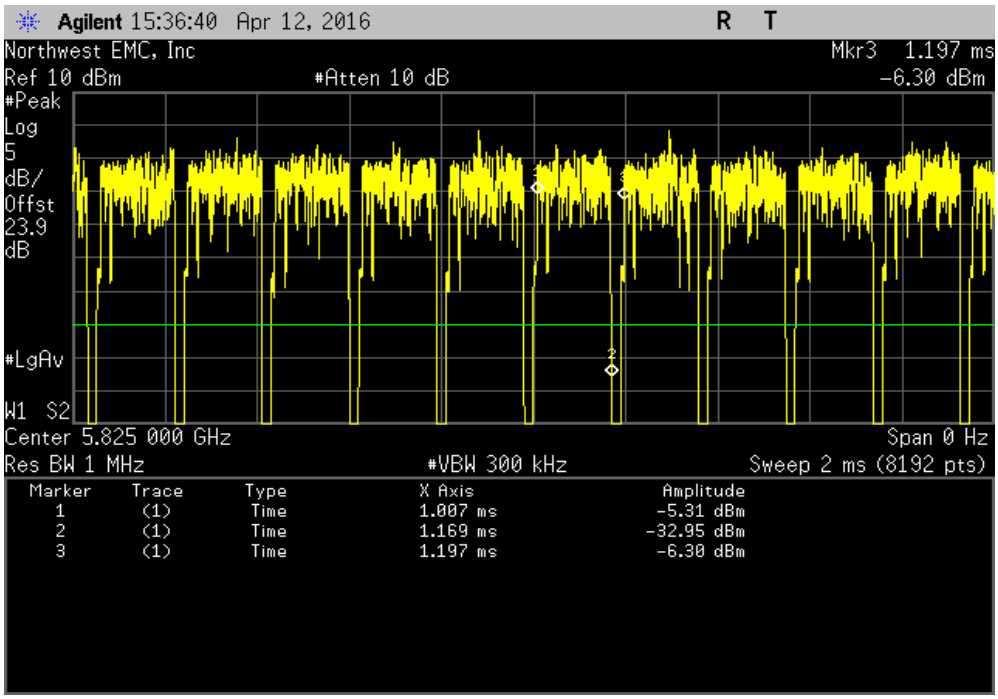
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



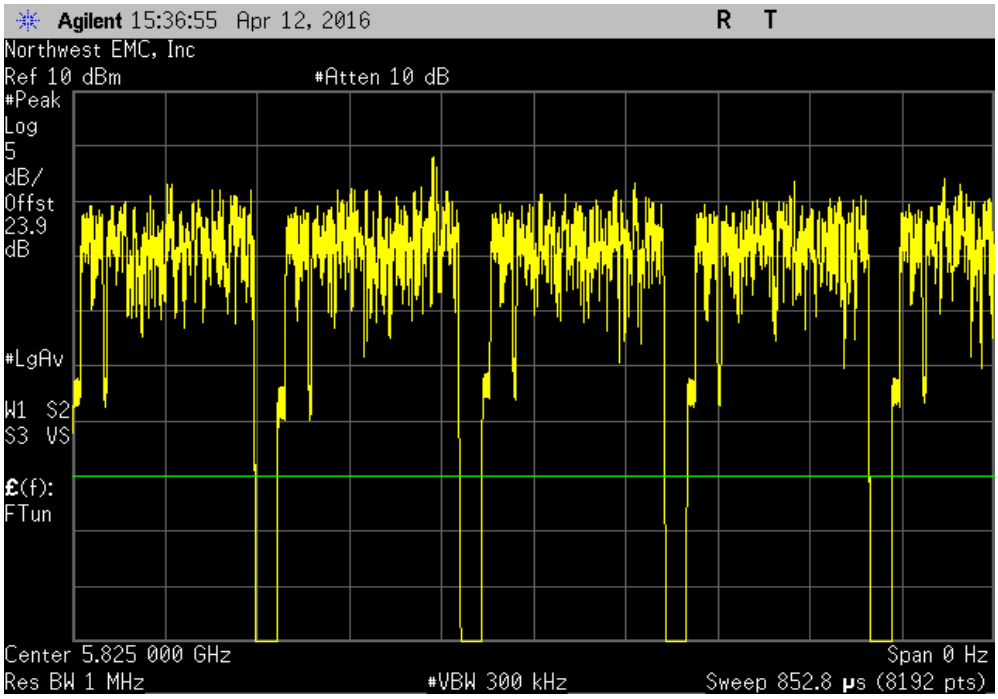
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	161.9 us	189.5 us	1	85.4	N/A	N/A



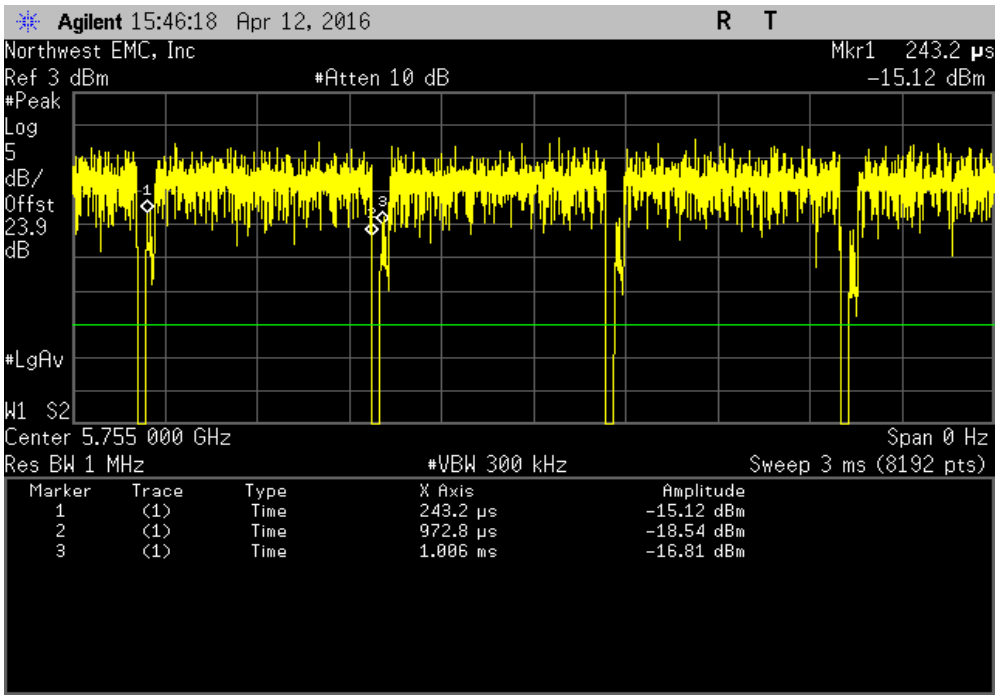
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



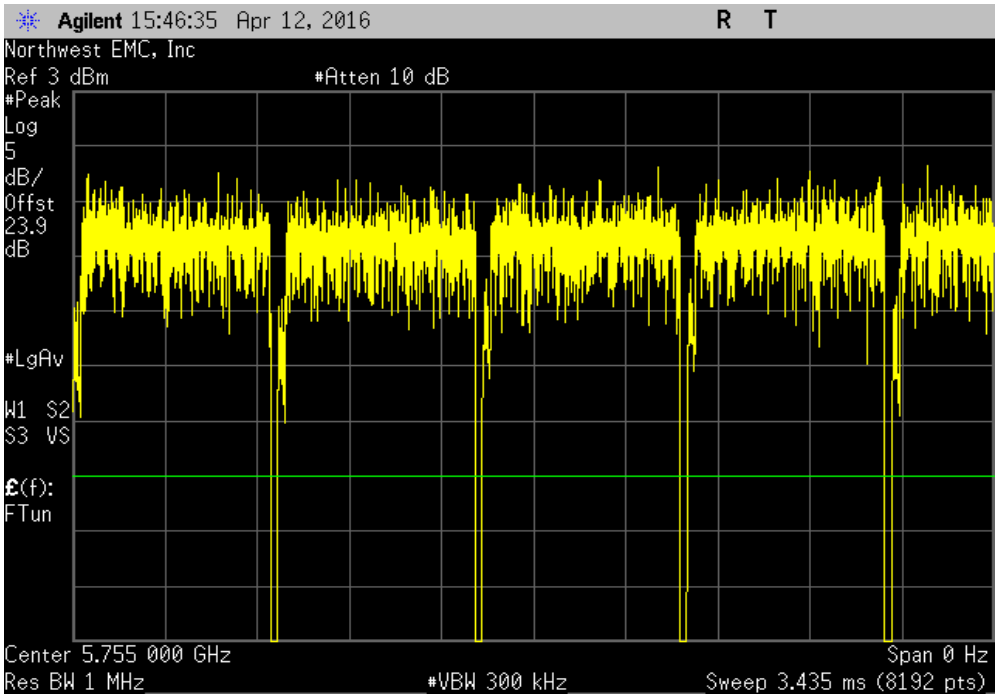
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	729.54 us	763.269 us	1	95.6	N/A	N/A

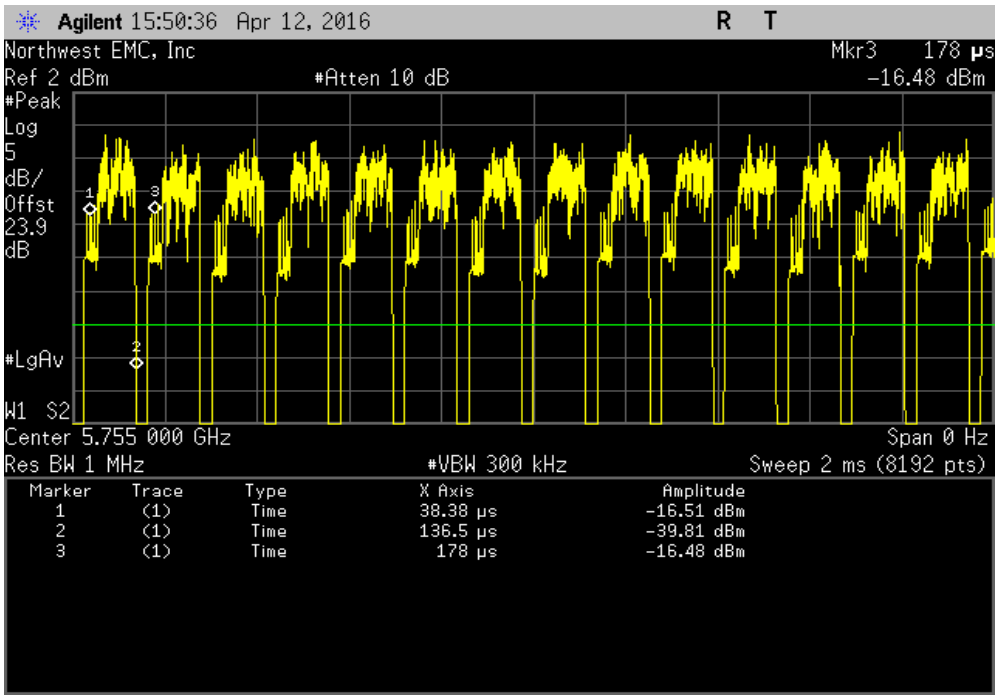


2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

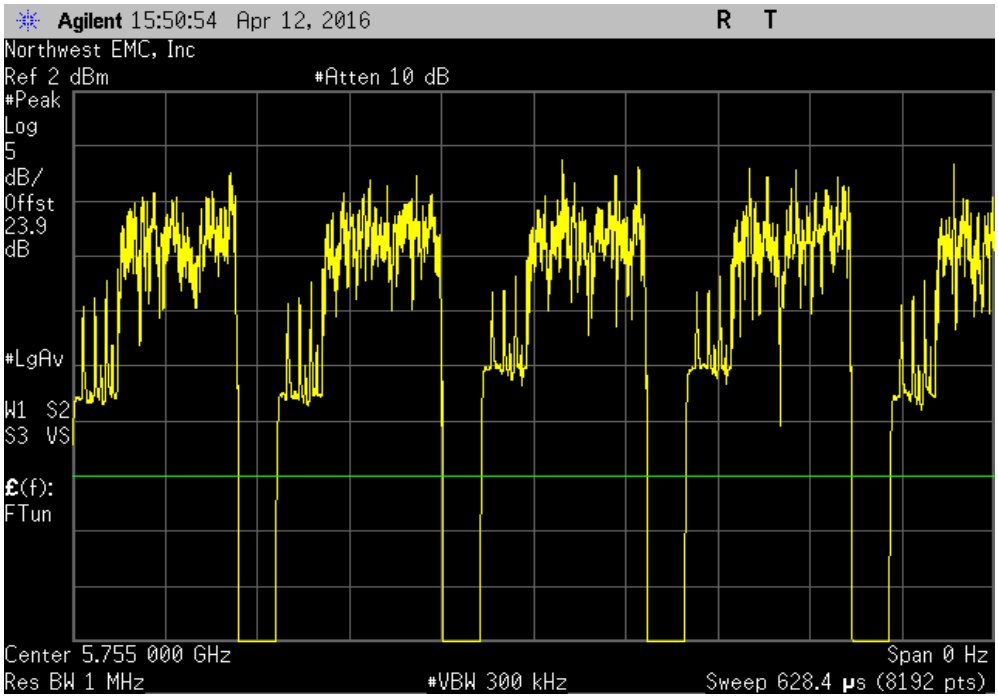


DUTY CYCLE

2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	98.115 us	139.644 us	1	70.3	N/A	N/A



2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

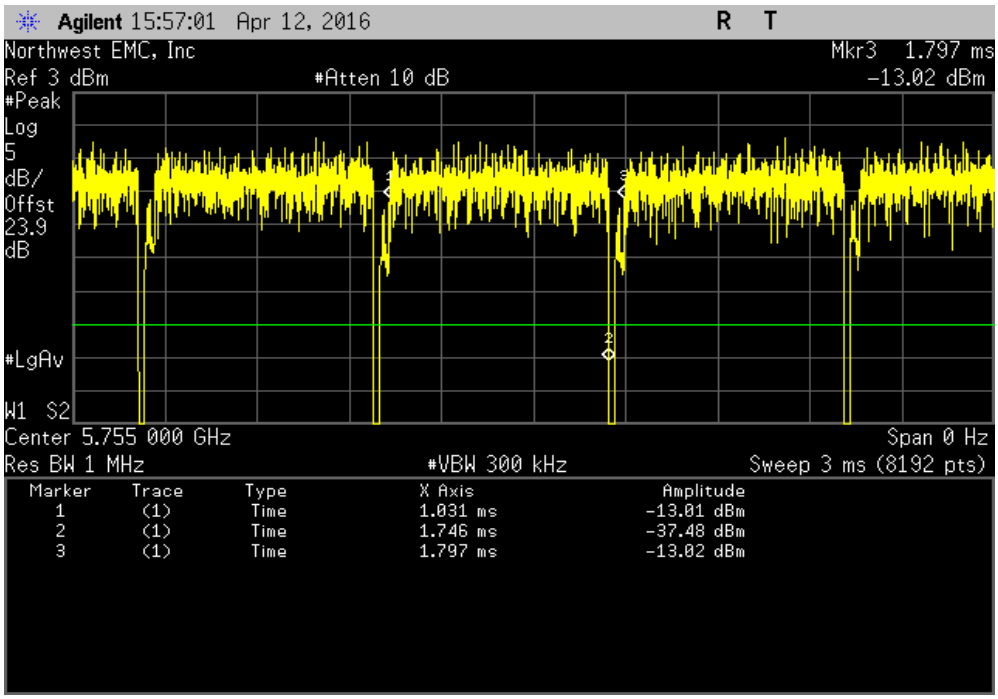


DUTY CYCLE

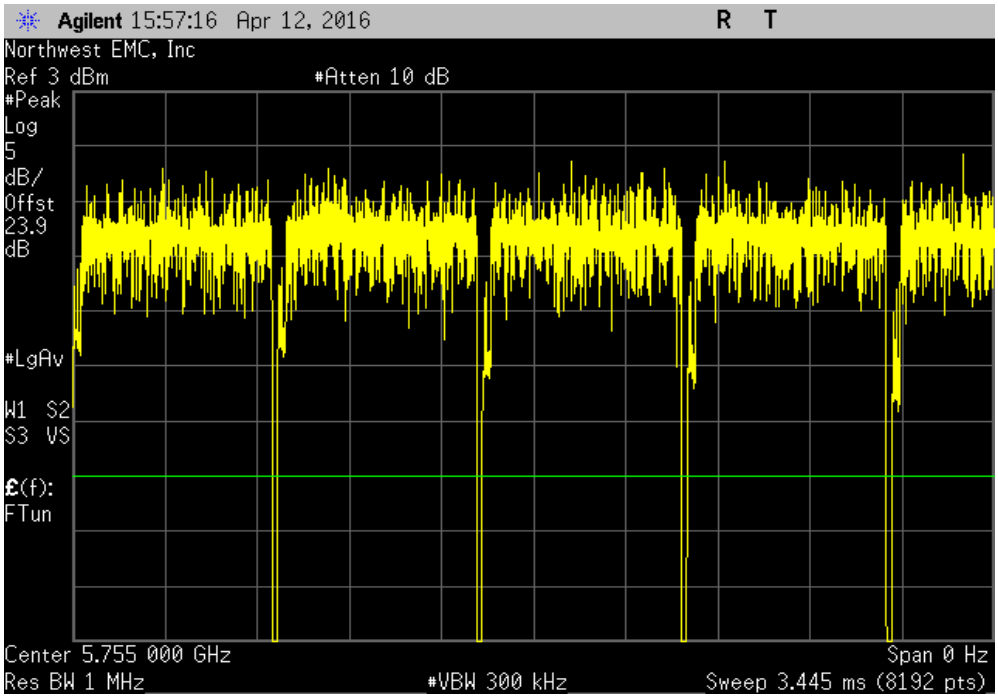
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	714.2 us	765.5 us	1	93.3	N/A	N/A



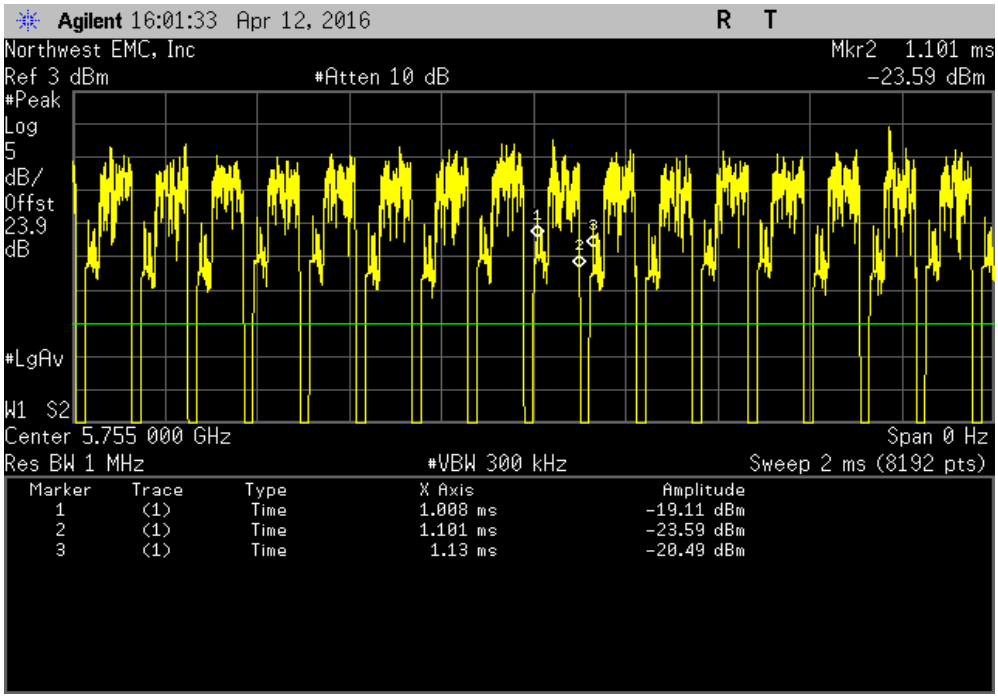
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



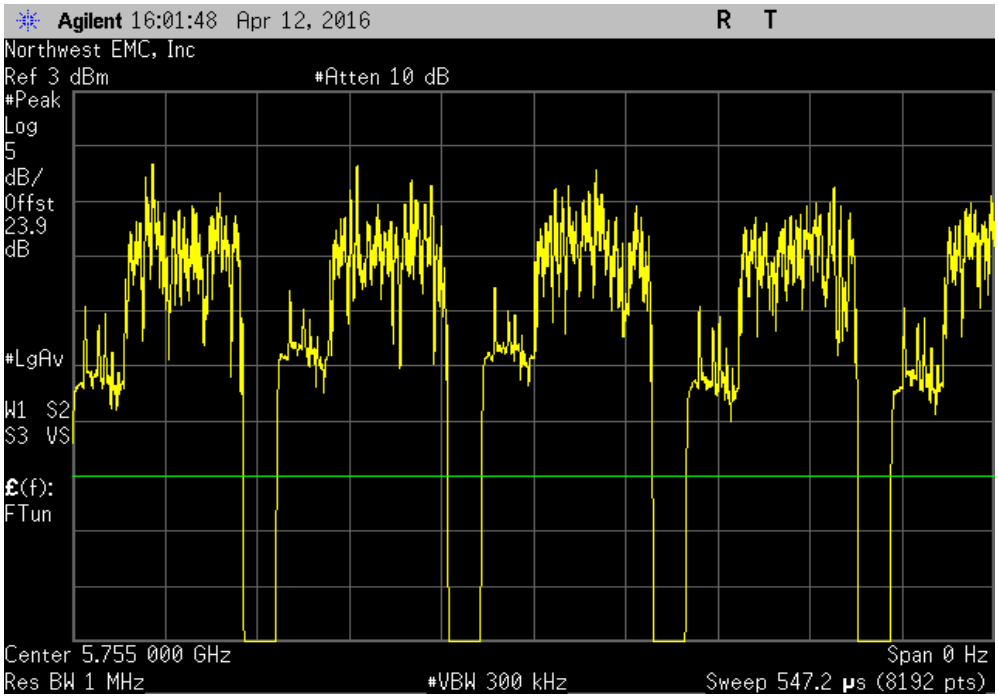
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	92.573 us	121.6 us	1	76.1	N/A	N/A



2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

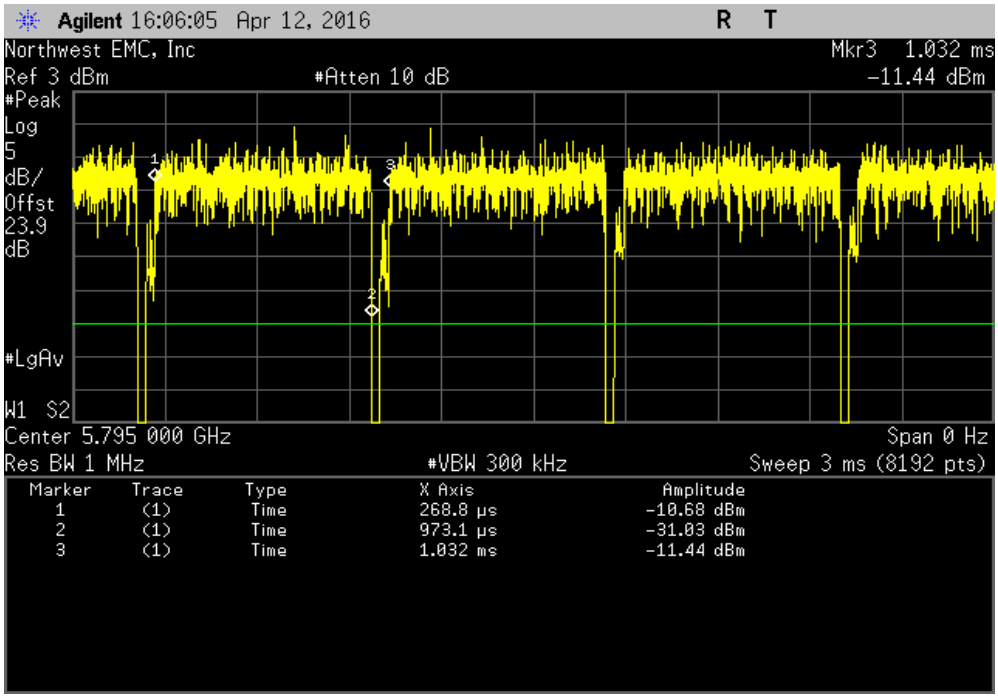


DUTY CYCLE

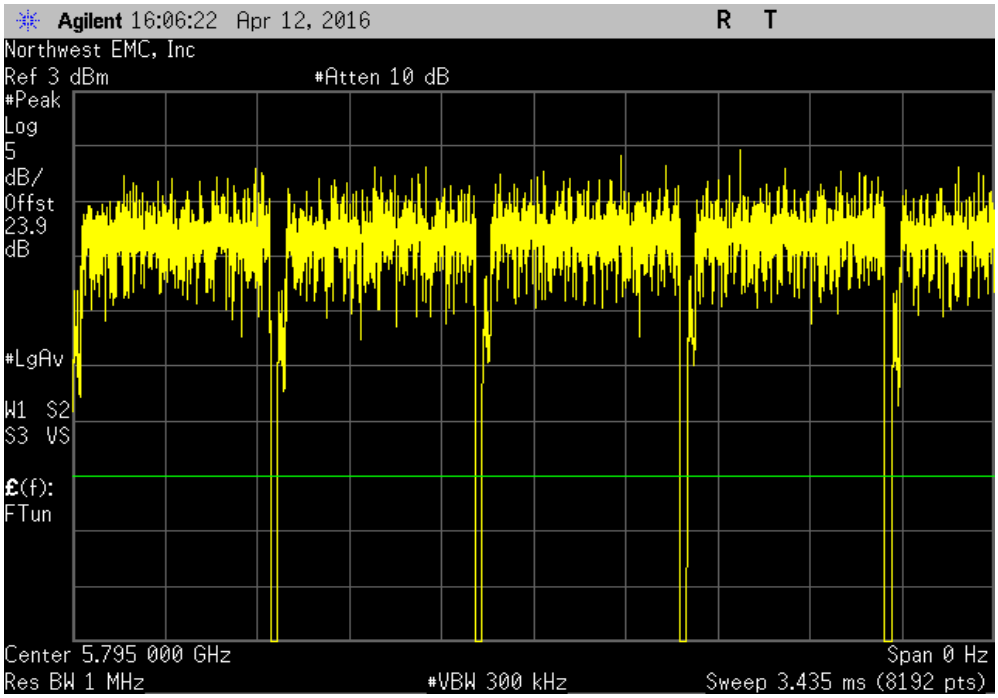
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	704.3 us	763.3 us	1	92.3	N/A	N/A

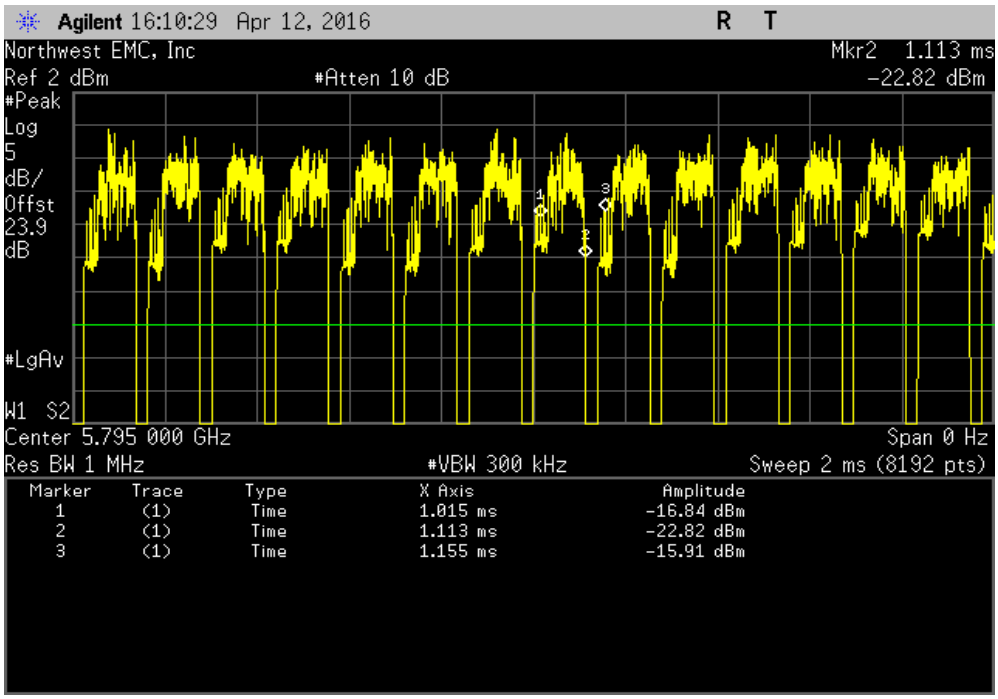


2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

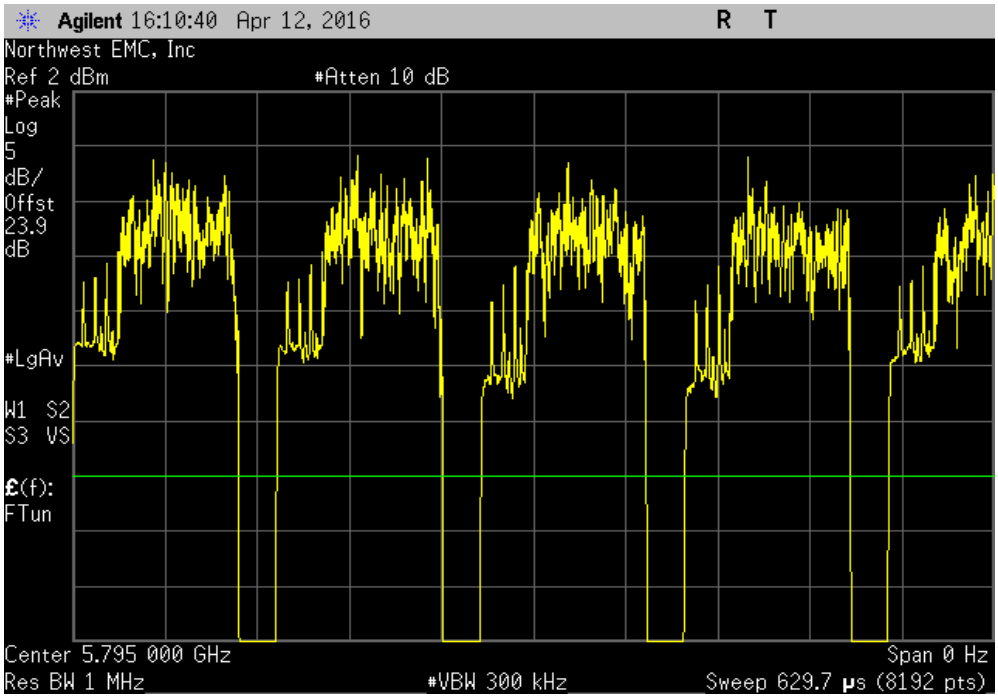


DUTY CYCLE

2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	98.127 us	139.944 us	1	70.1	N/A	N/A



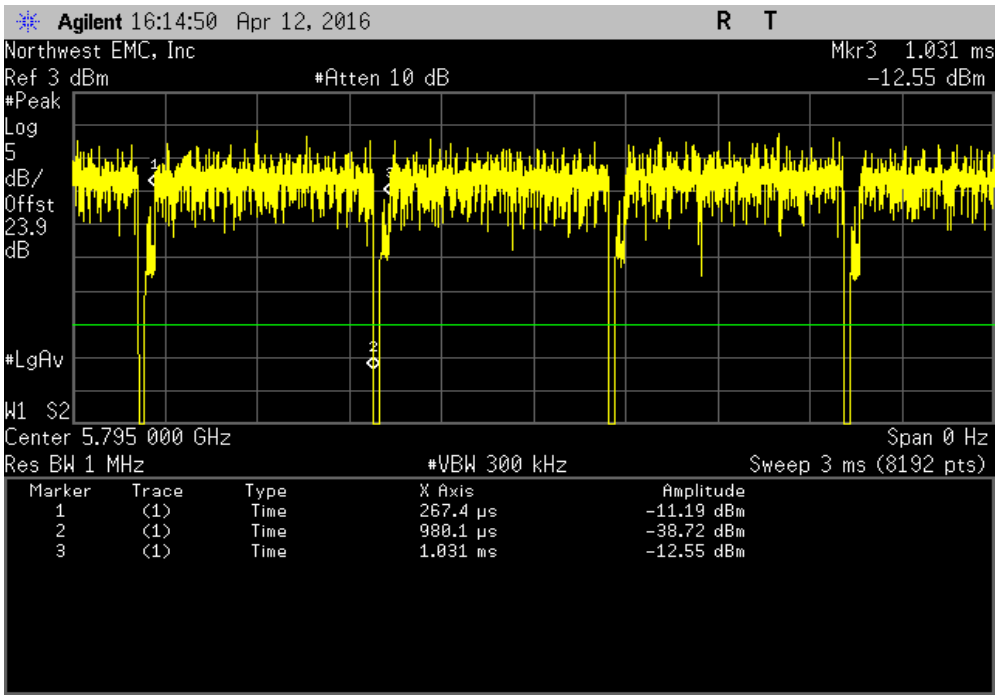
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



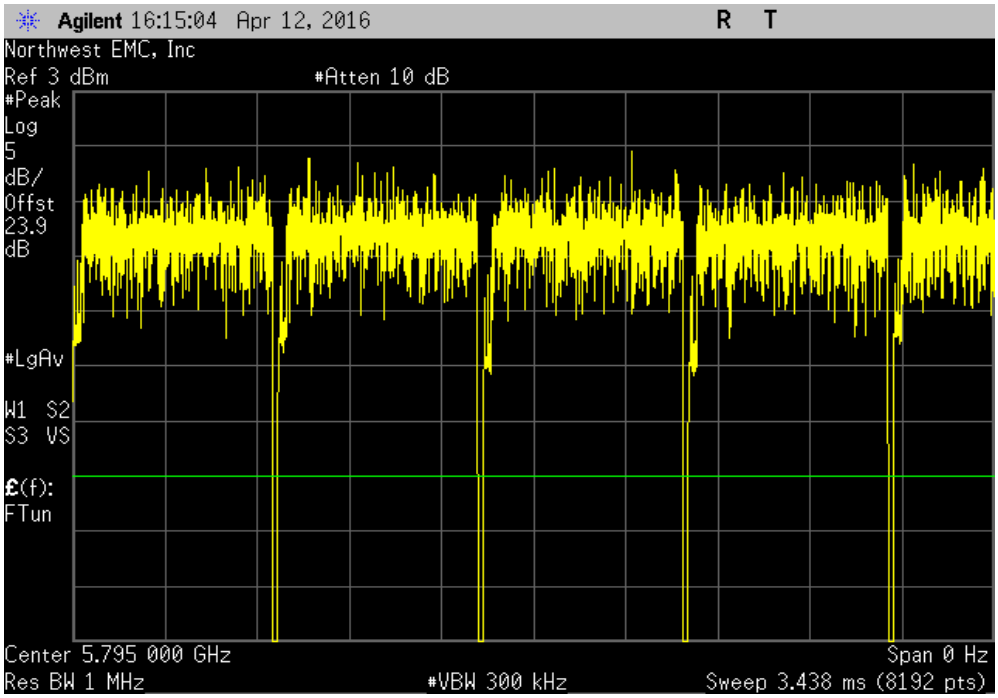
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	712.7 us	764 us	1	93.3	N/A	N/A



2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

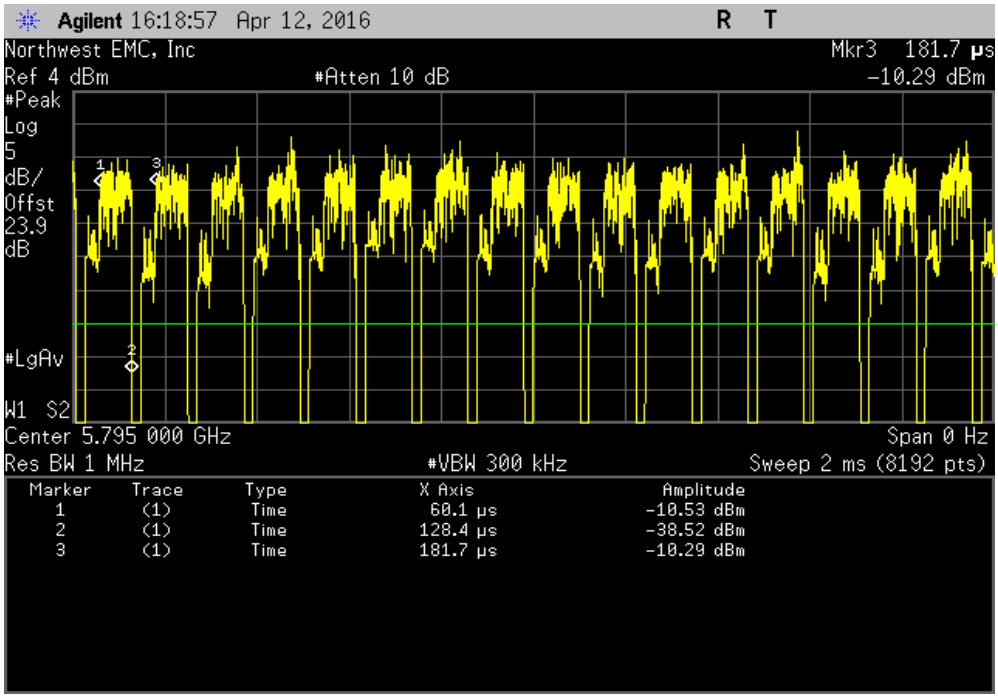


DUTY CYCLE

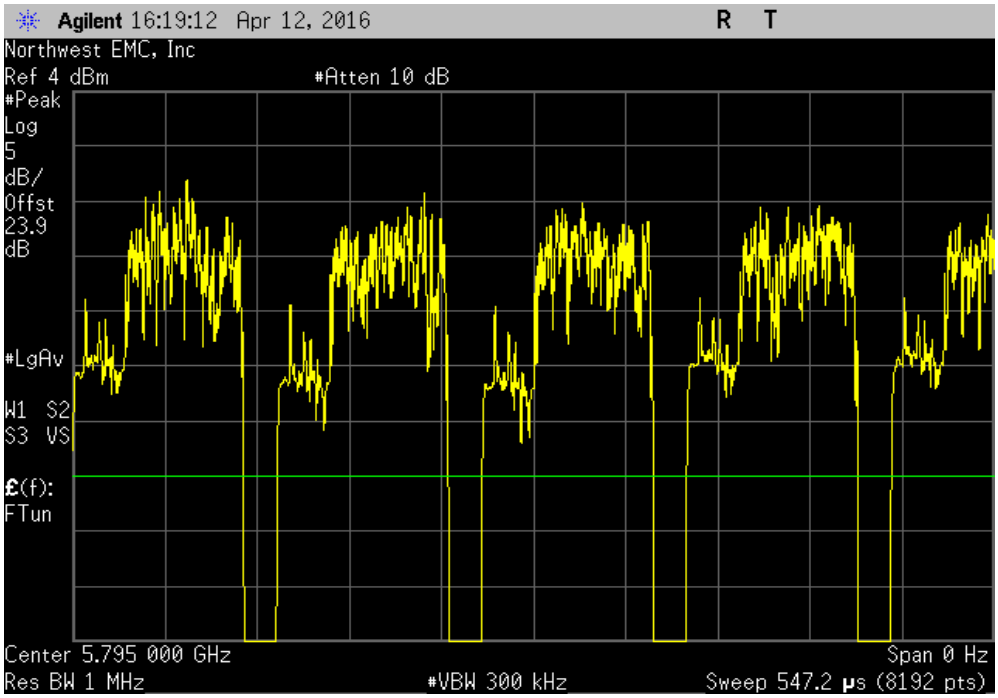
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	68.3 us	121.6 us	1	56.2	N/A	N/A



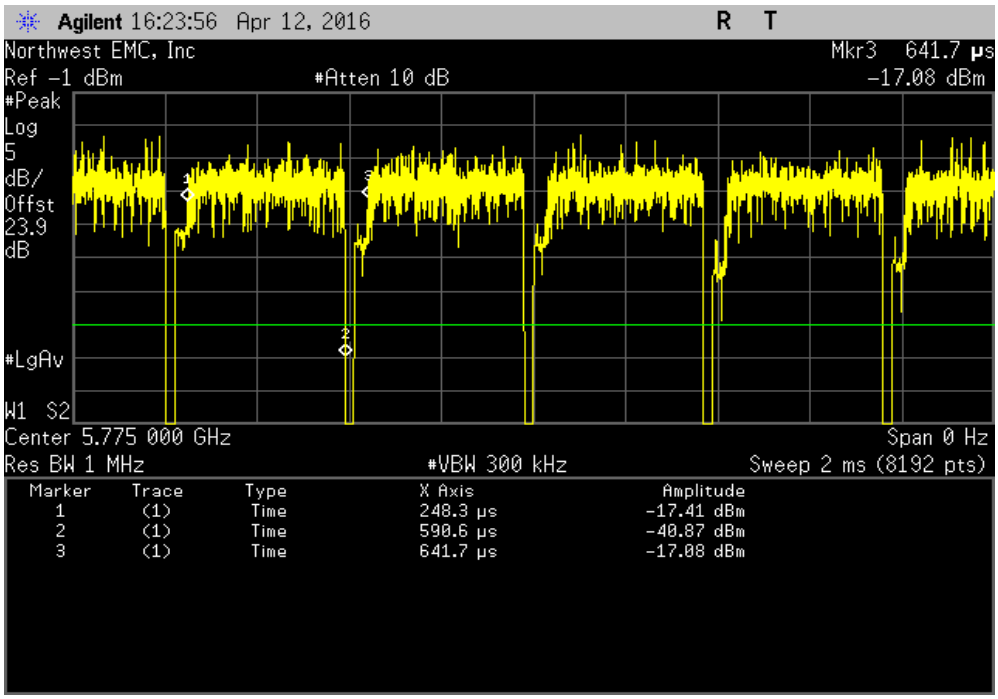
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



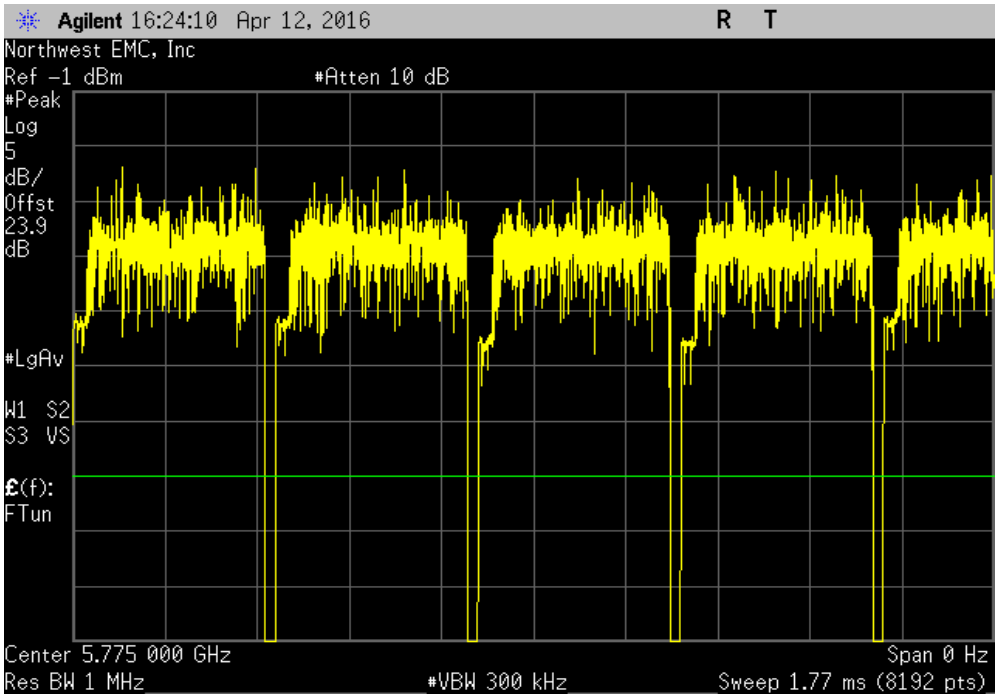
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	342.3 us	393.4 us	1	87	N/A	N/A

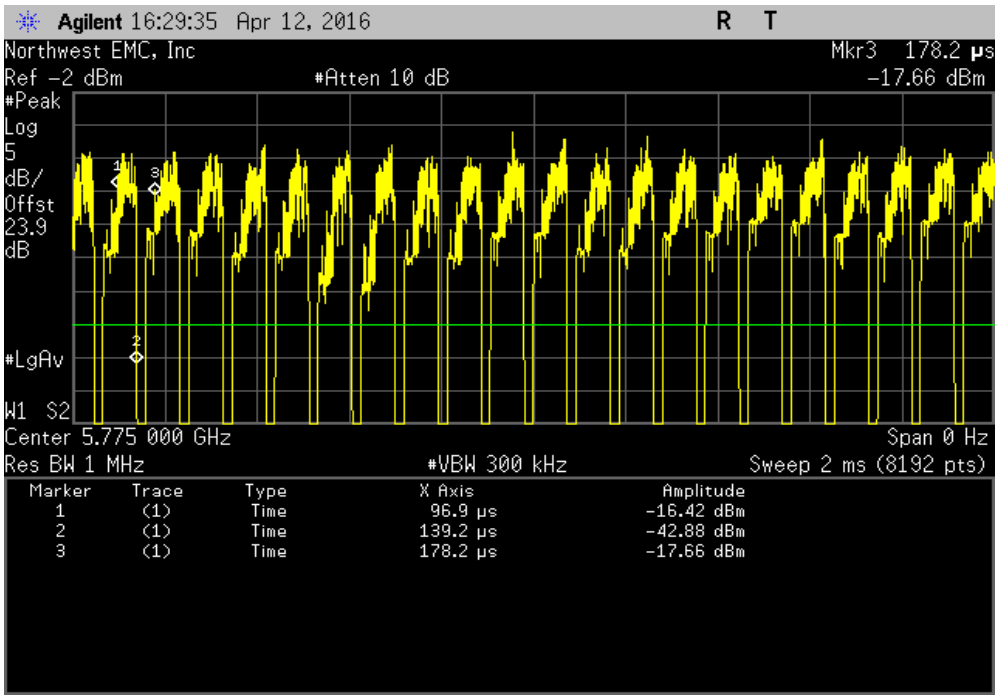


2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

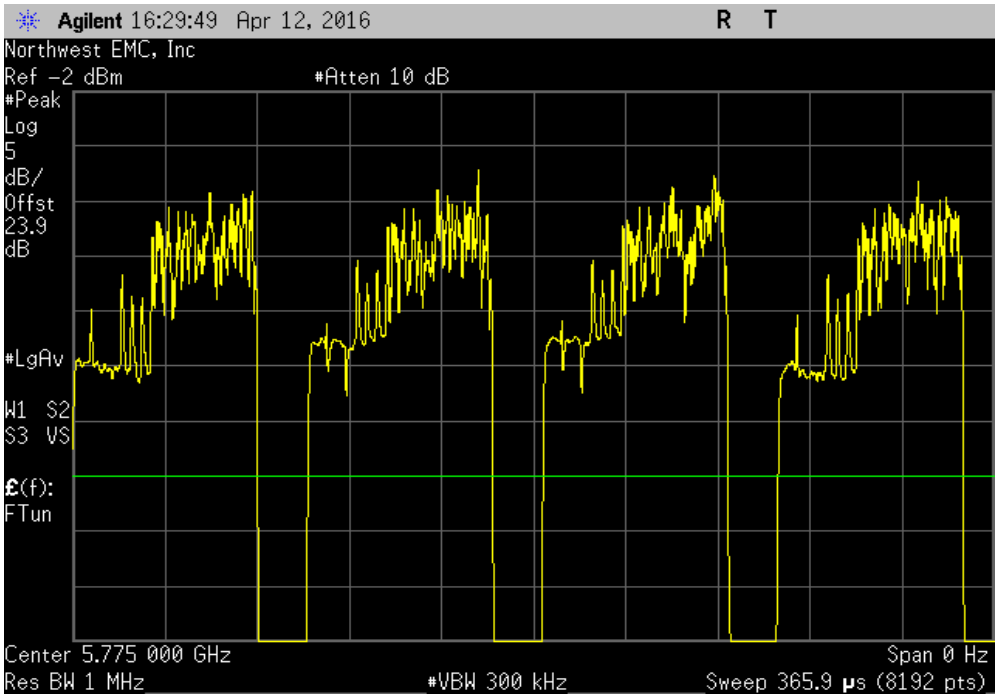


DUTY CYCLE

2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	42.3 us	81.3 us	1	52	N/A	N/A

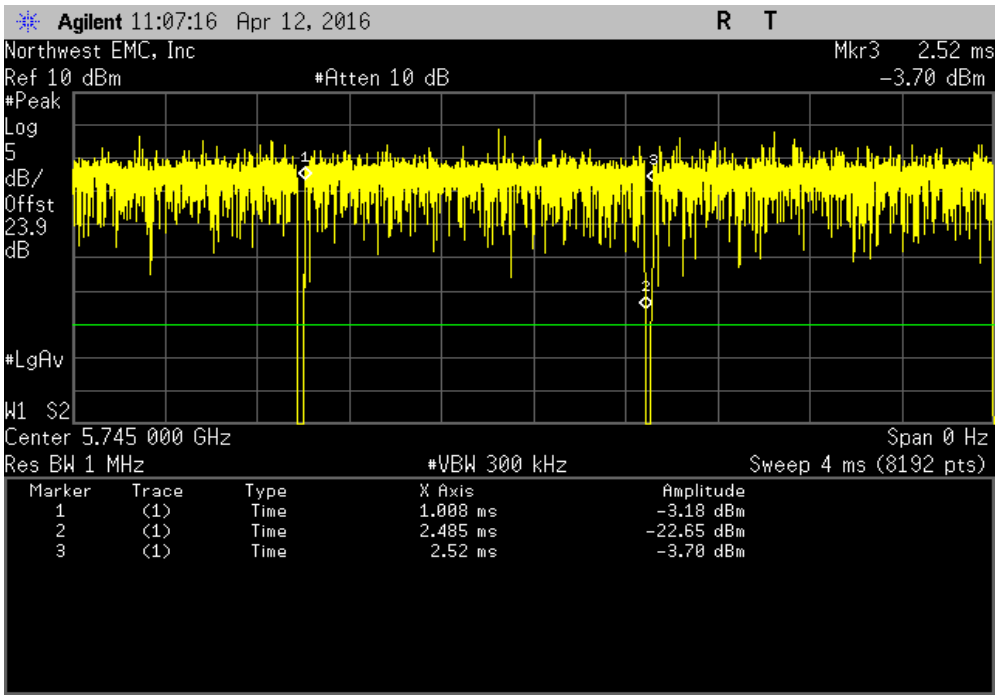


2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	4	N/A	N/A	N/A

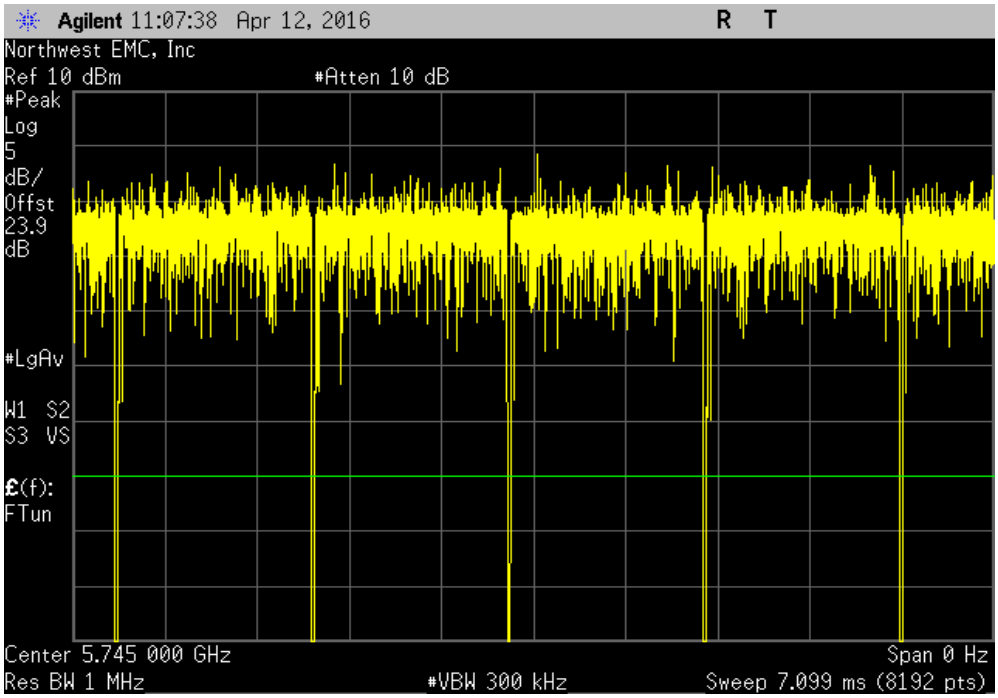


DUTY CYCLE

2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.477 ms	1.511 ms	1	97.7	N/A	N/A



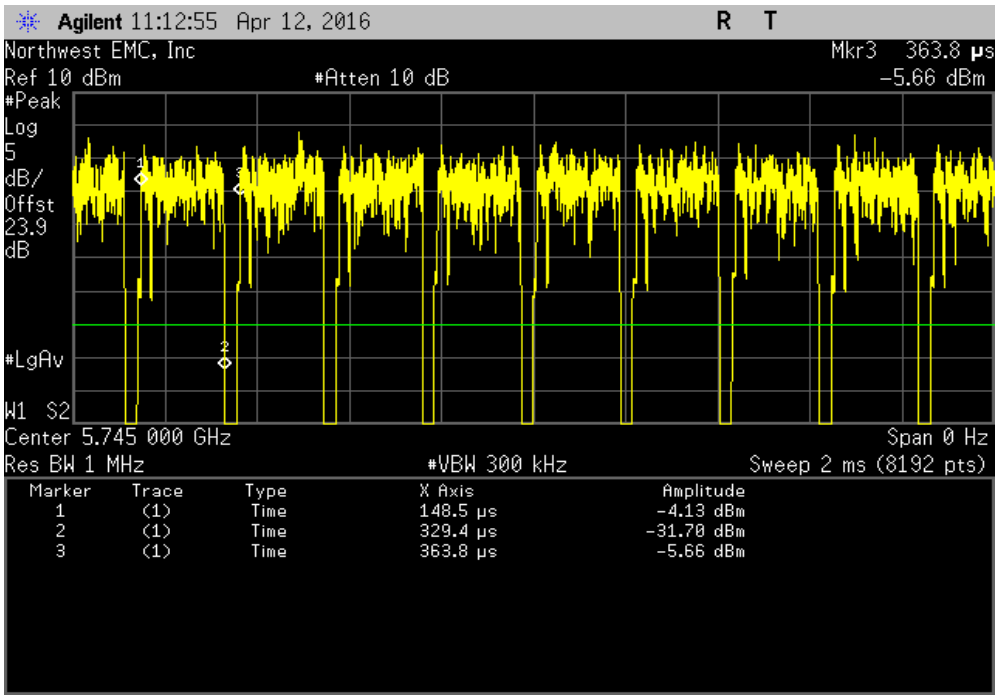
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A



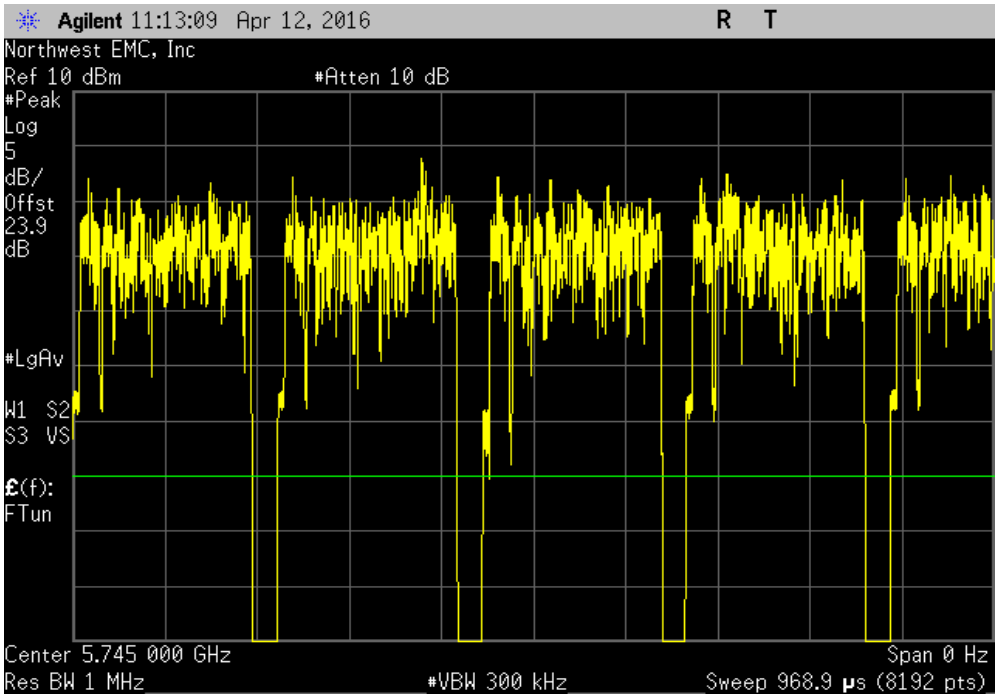
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	180.9 us	215.3 us	1	84	N/A	N/A

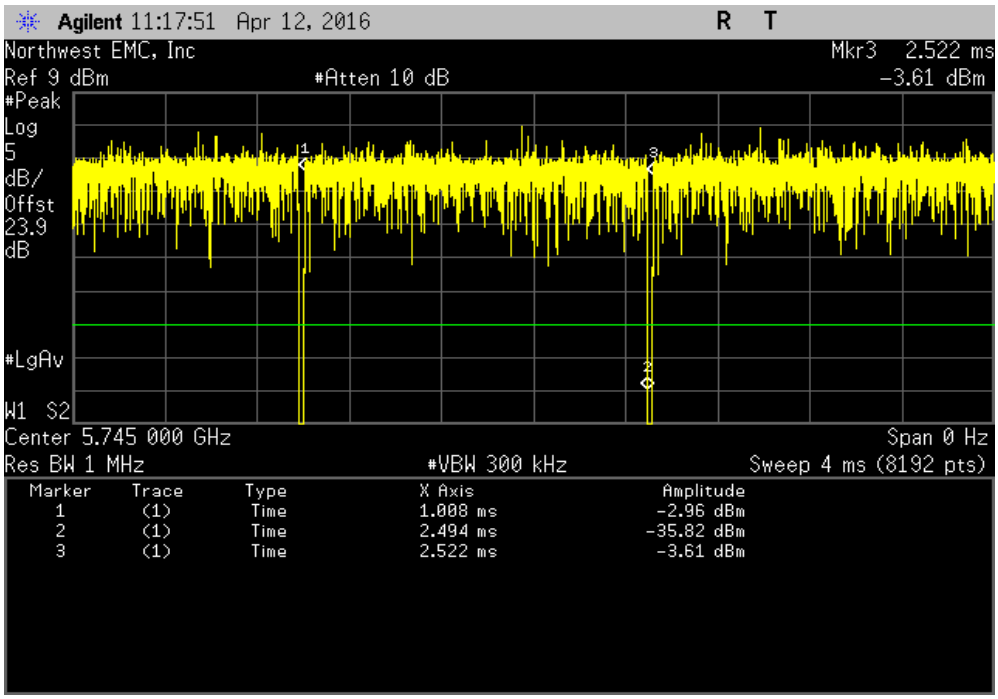


2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

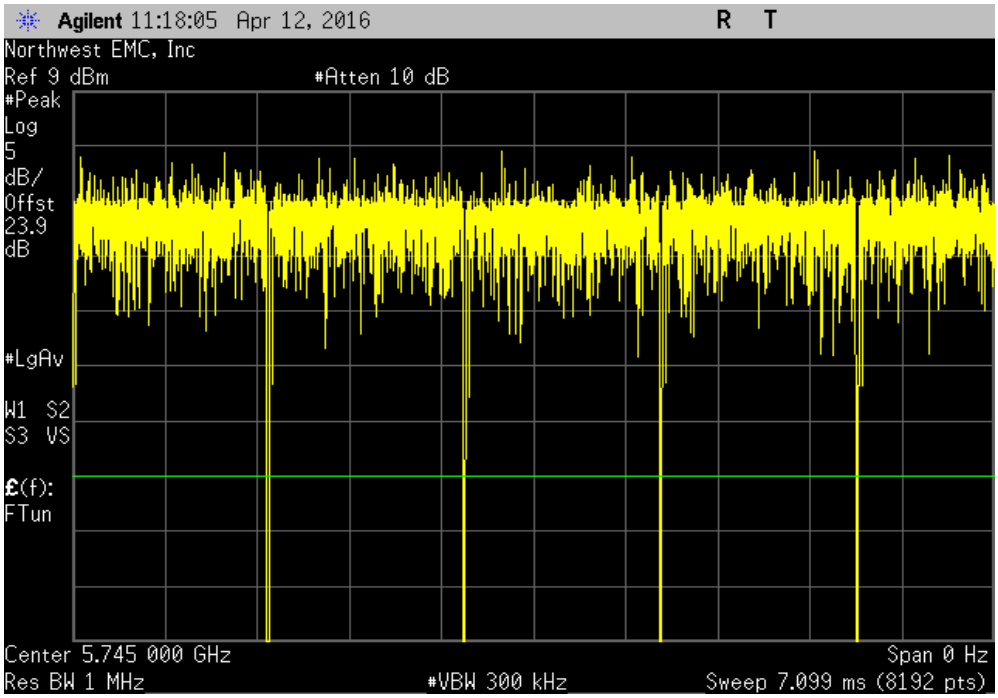


DUTY CYCLE

2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.485 ms	1.513 ms	1	98.1	N/A	N/A



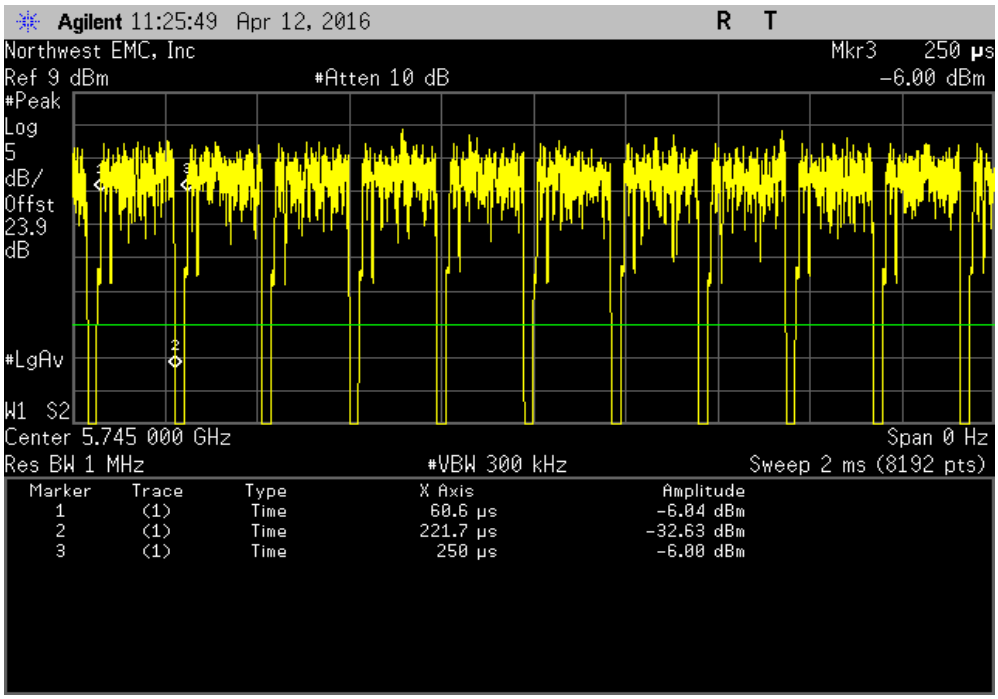
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



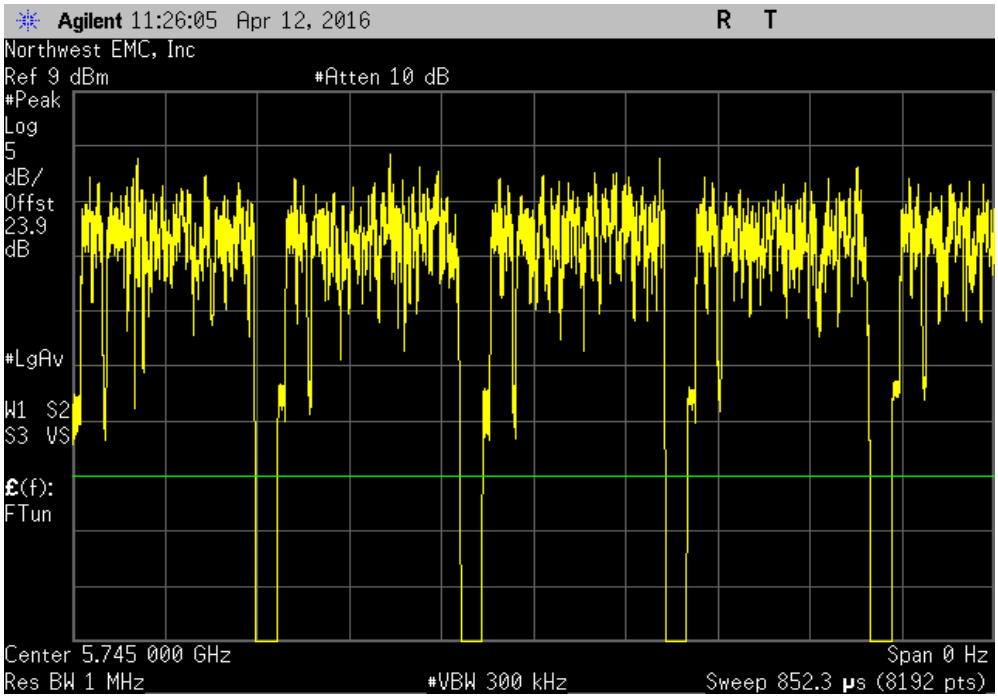
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	161.1 us	189.4 us	1	85.1	N/A	N/A



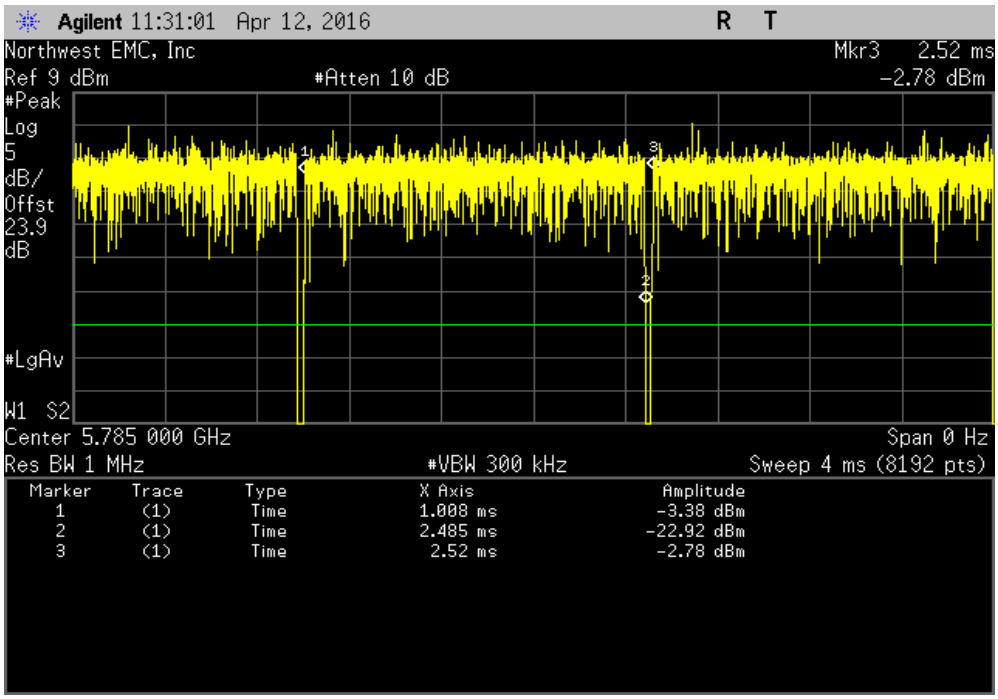
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



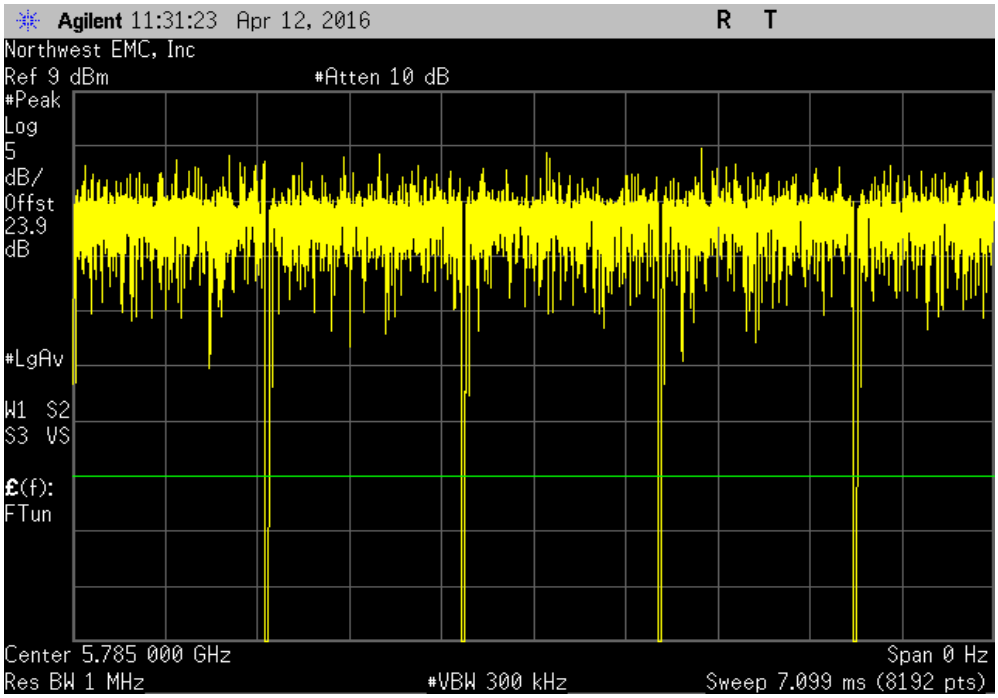
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.477 ms	1.511 ms	1	97.7	N/A	N/A



2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

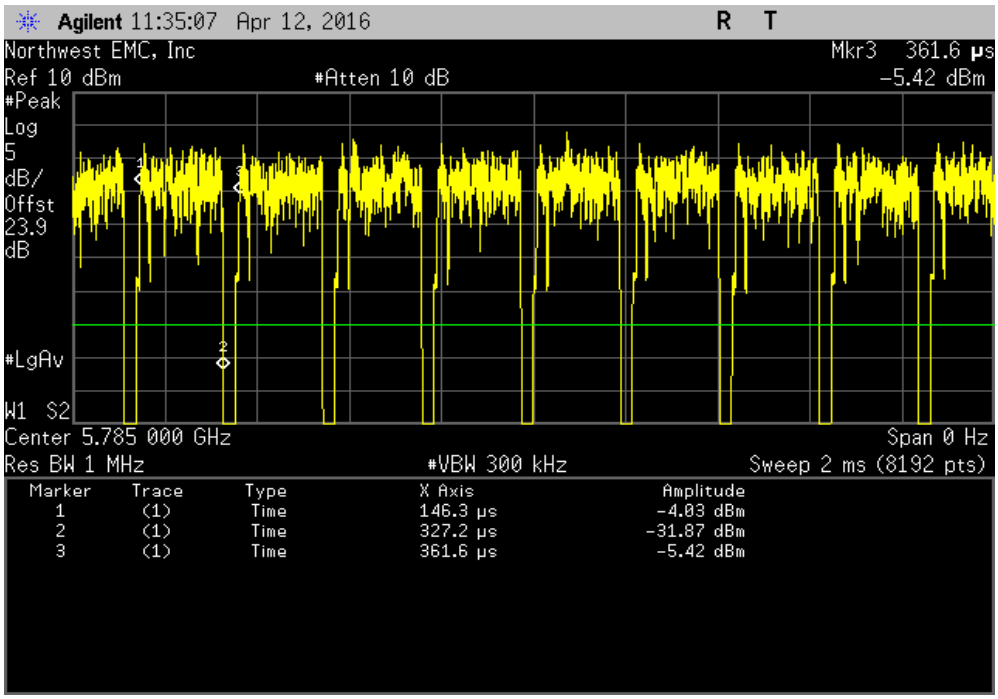


DUTY CYCLE

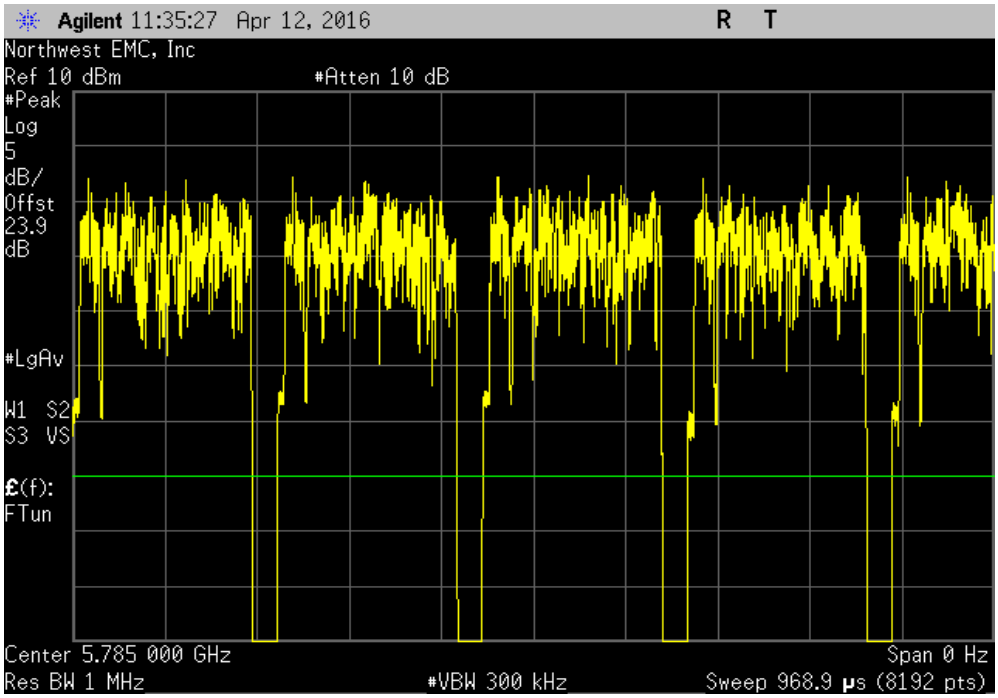
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	180.9 us	215.3 us	1	84	N/A	N/A



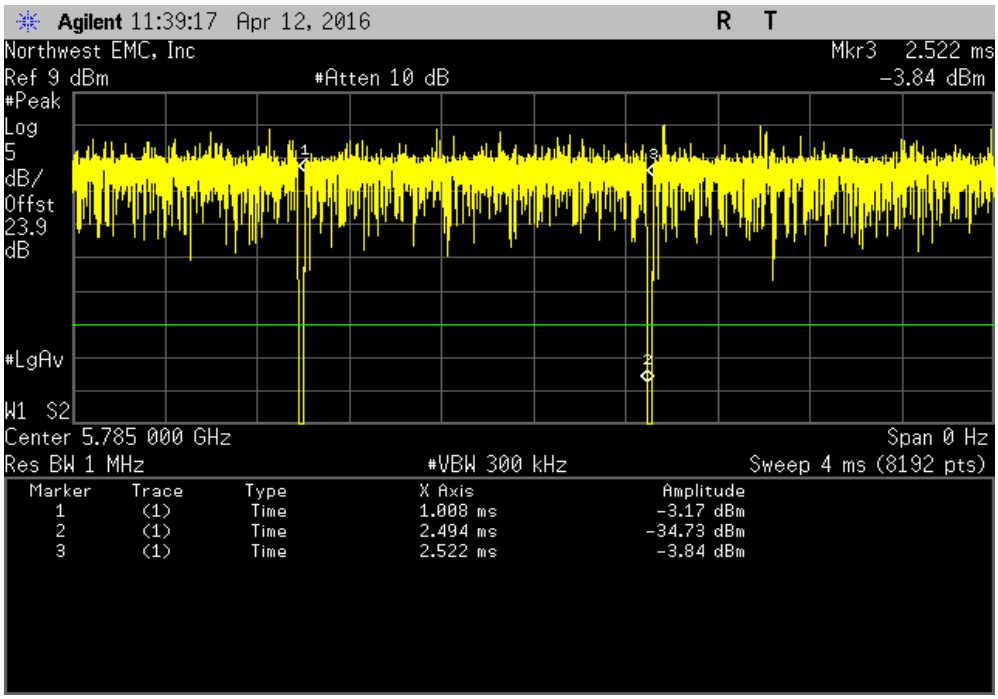
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



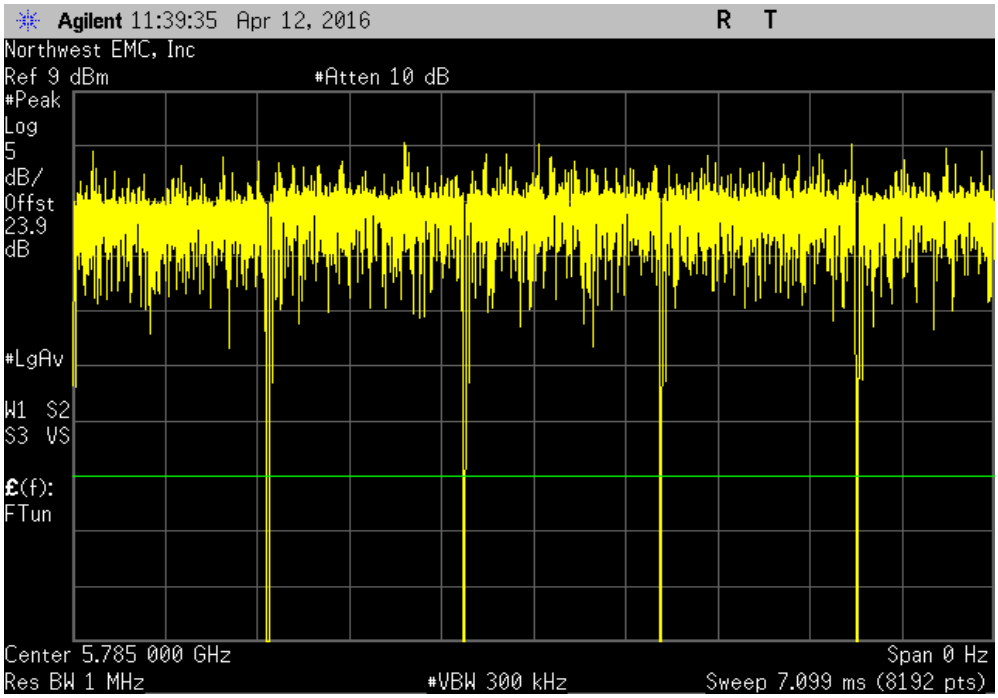
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.485 ms	1.513 ms	1	98.1	N/A	N/A



2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

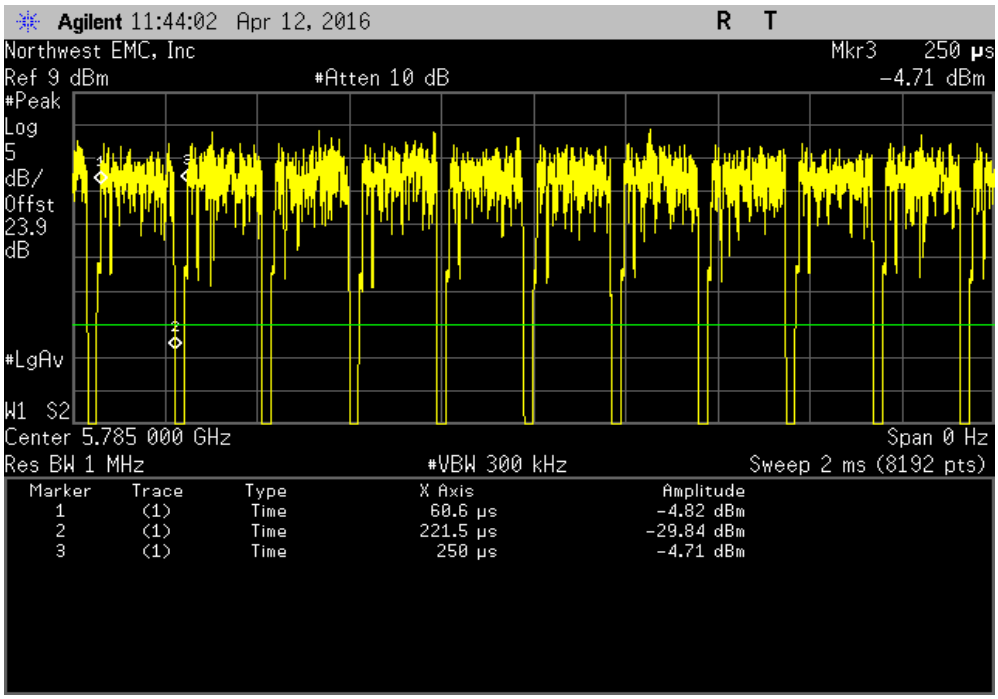


DUTY CYCLE

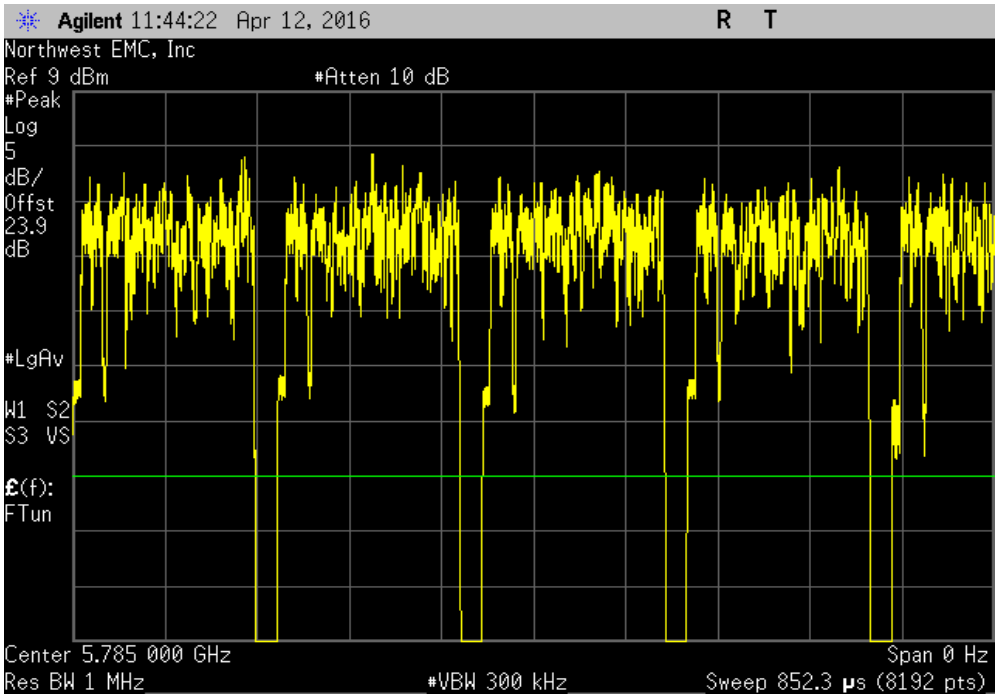
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	160.9 us	189.4 us	1	85	N/A	N/A



2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

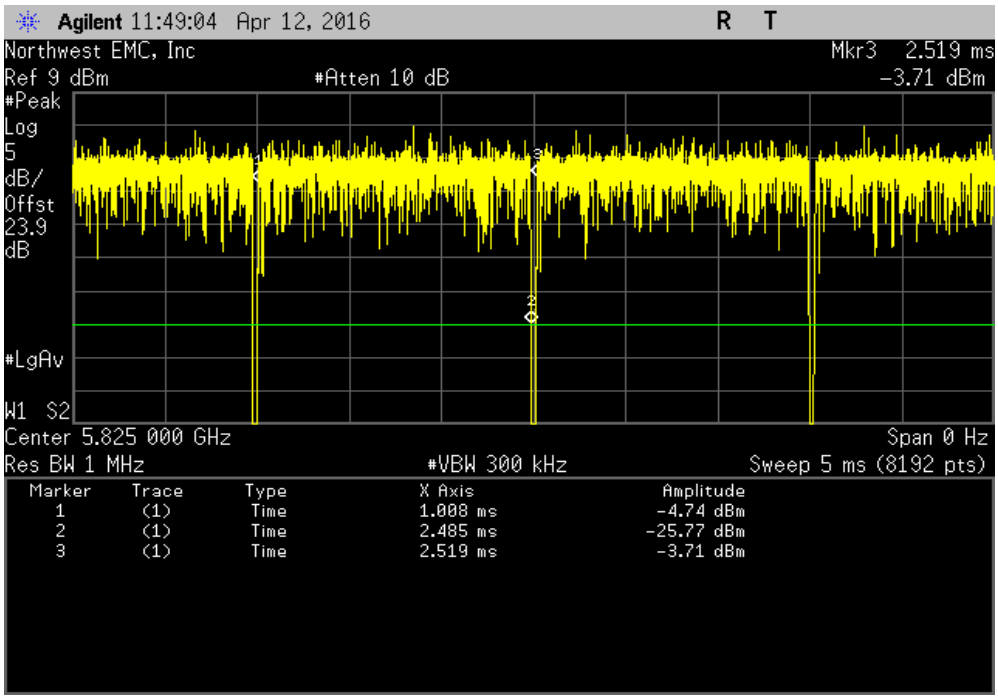


DUTY CYCLE

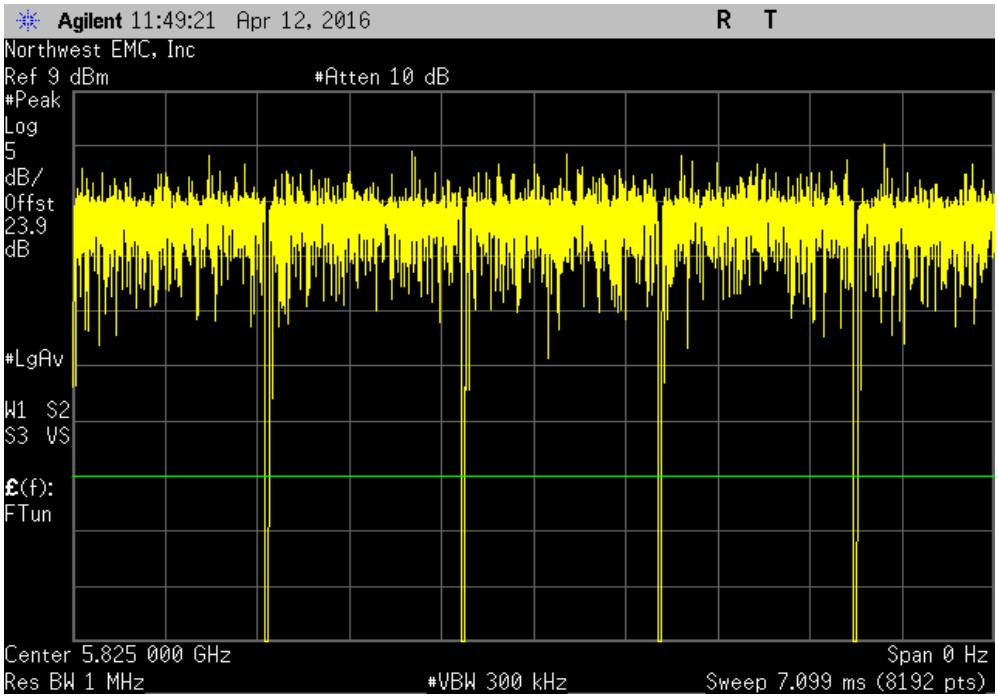
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.477 ms	1.511 ms	1	97.7	N/A	N/A



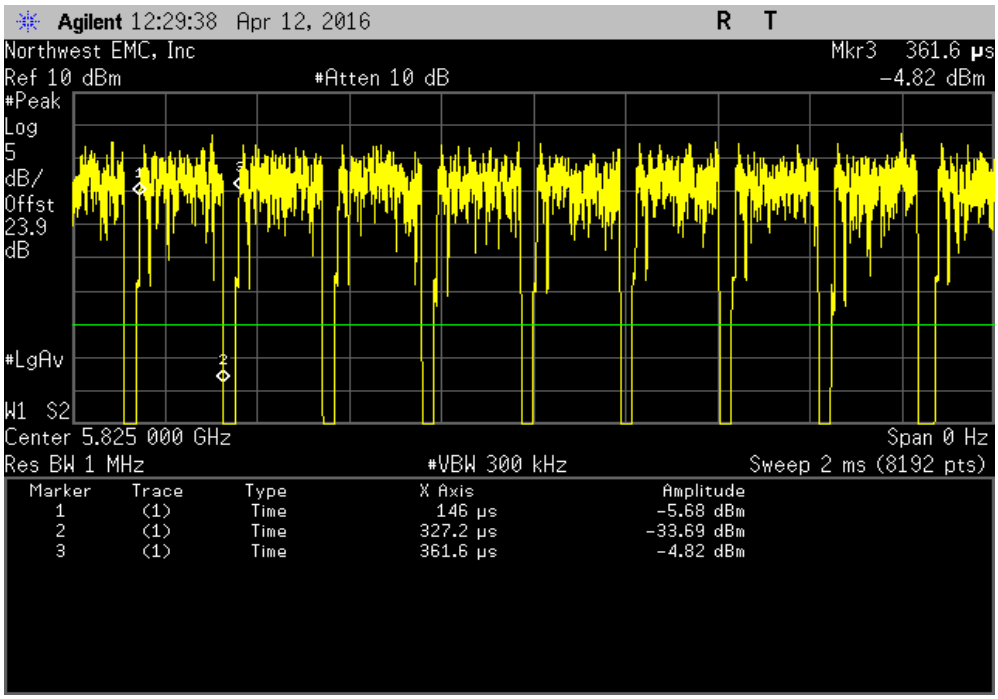
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



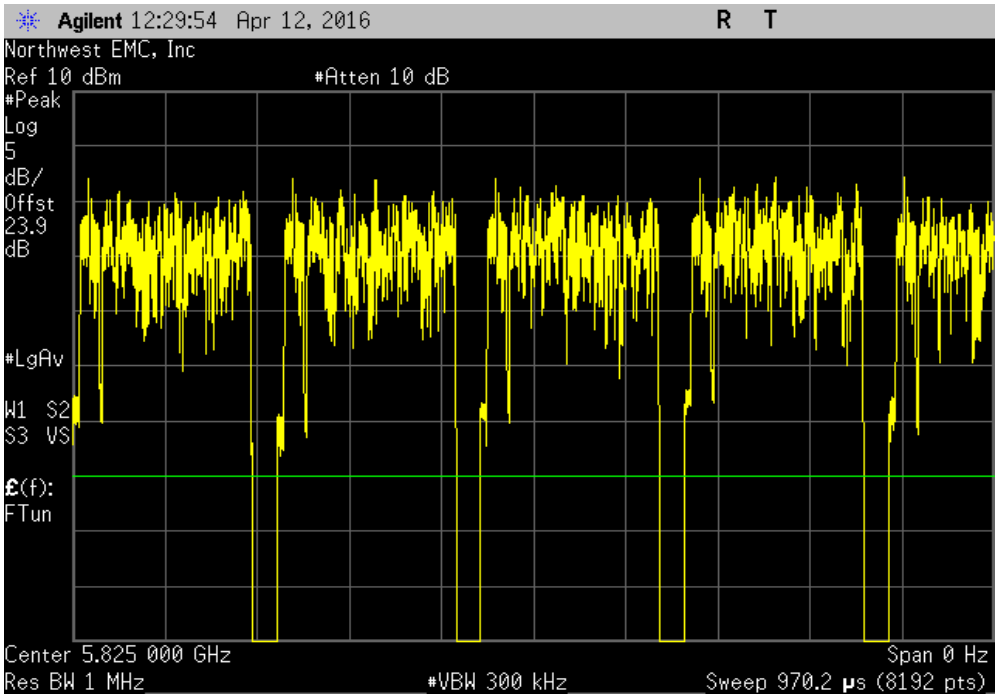
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	181.2 us	215.6 us	1	84	N/A	N/A



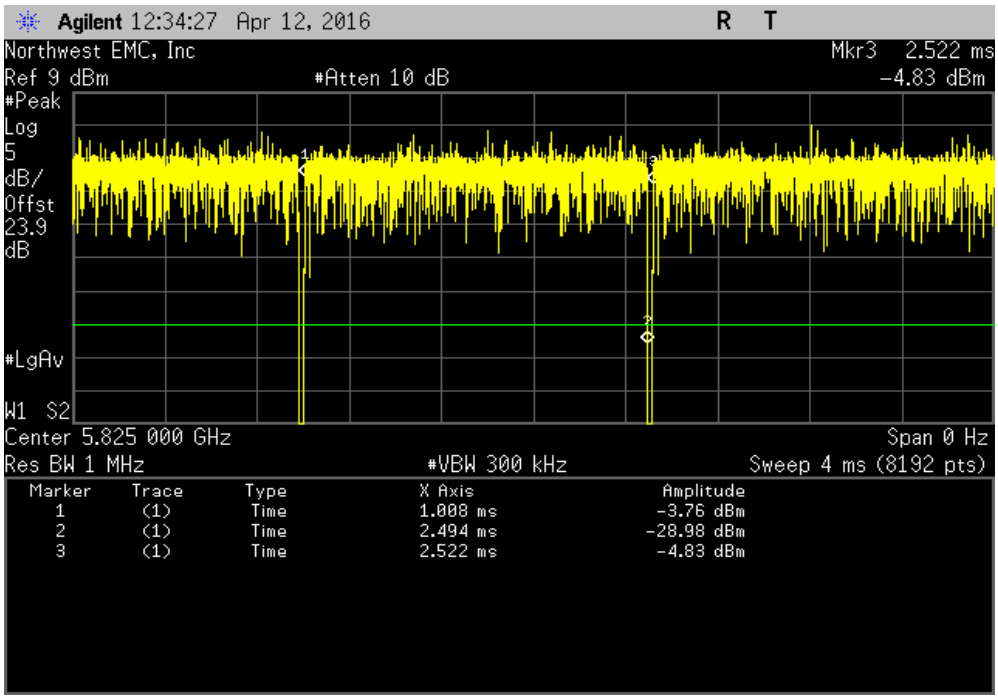
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



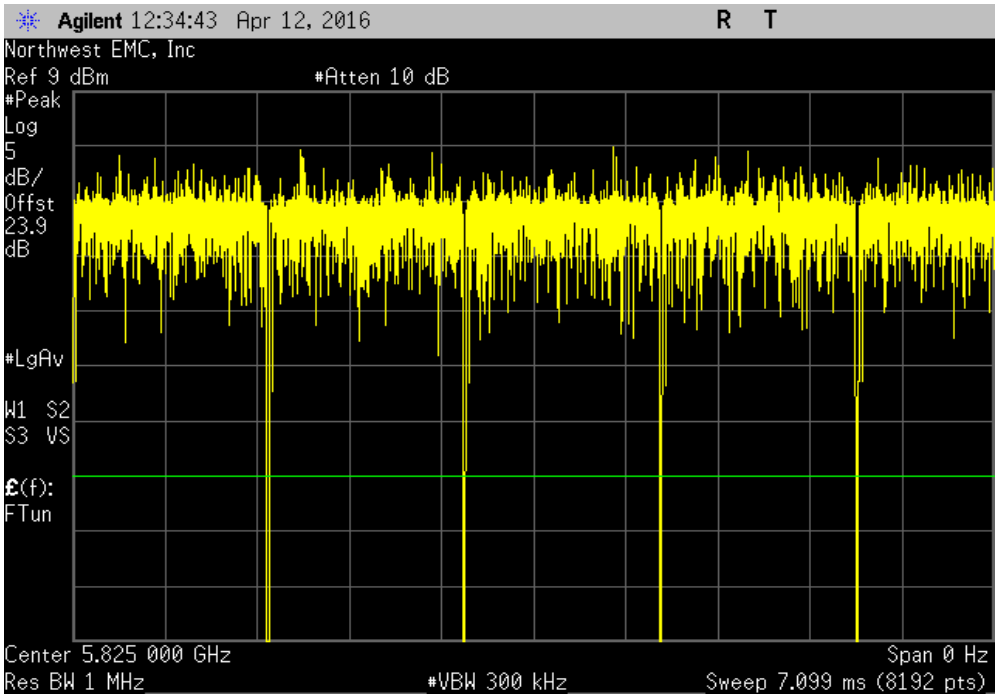
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.485 ms	1.513 ms	1	98.1	N/A	N/A



2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

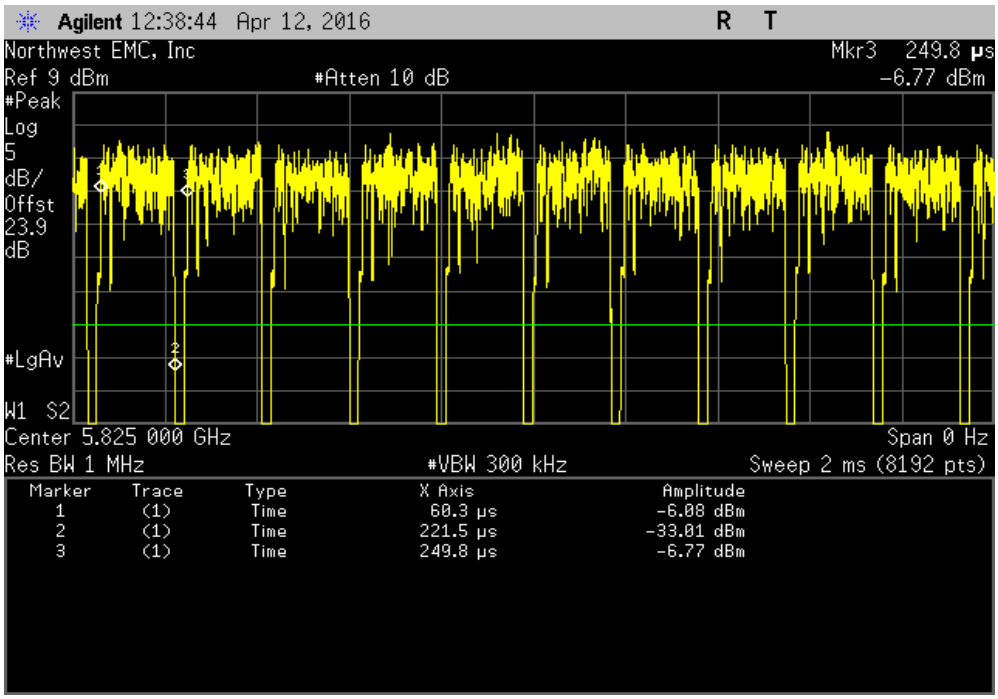


DUTY CYCLE

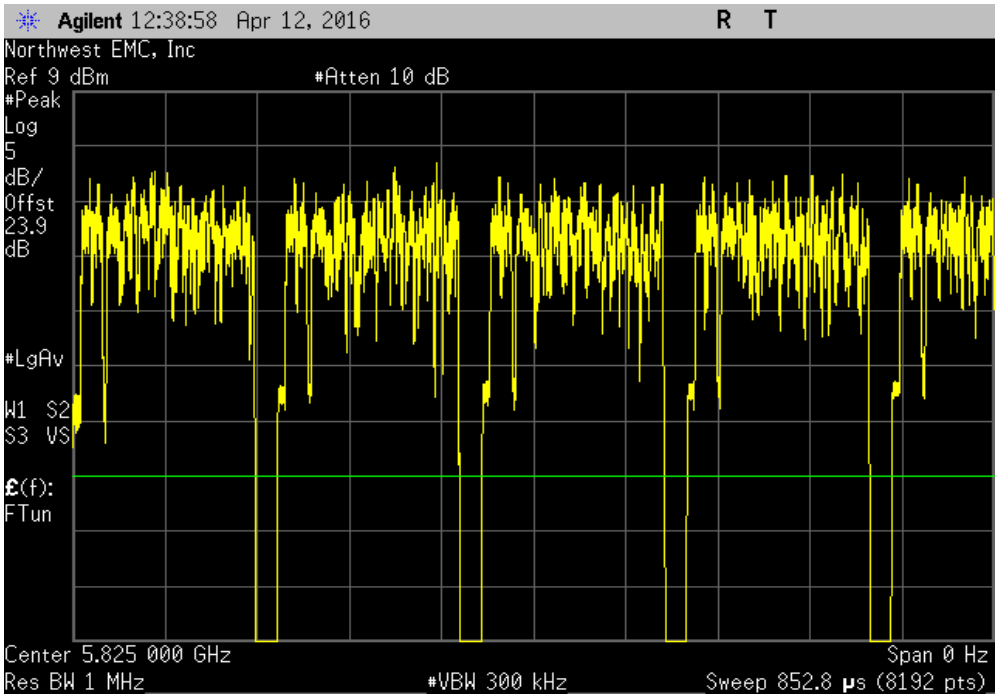
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	161.2 us	189.5 us	1	85.1	N/A	N/A



2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

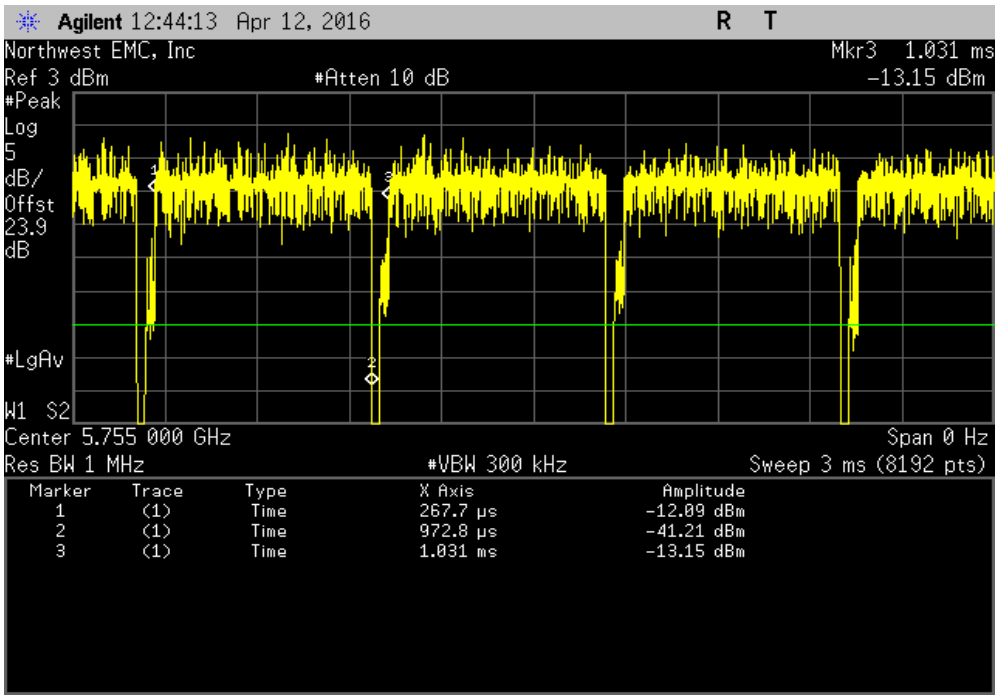


DUTY CYCLE

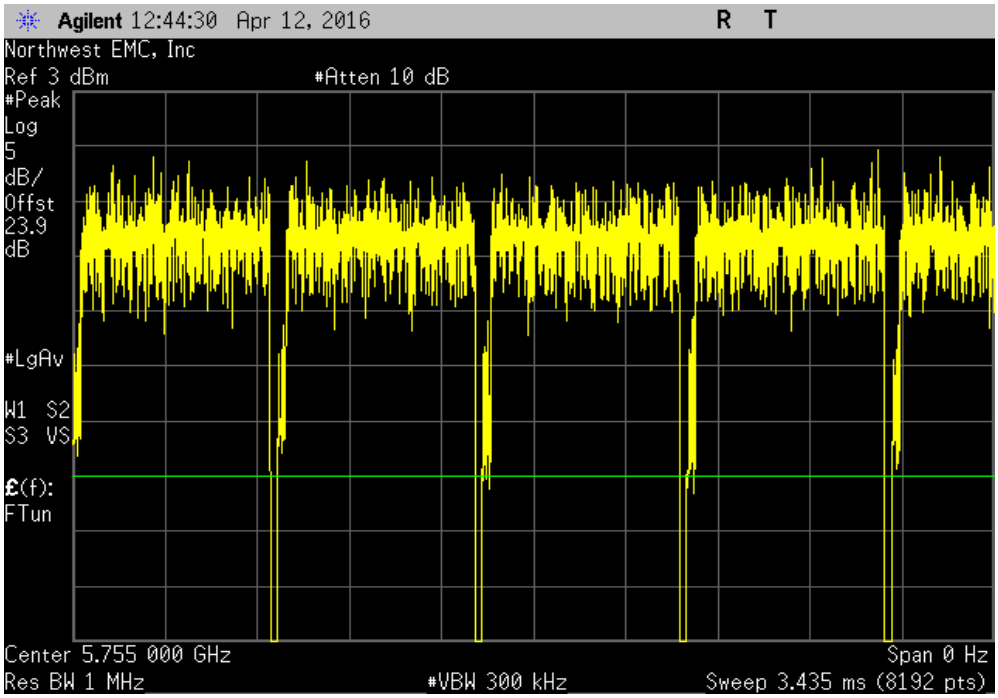
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	705.1 us	763.3 us	1	92.4	N/A	N/A



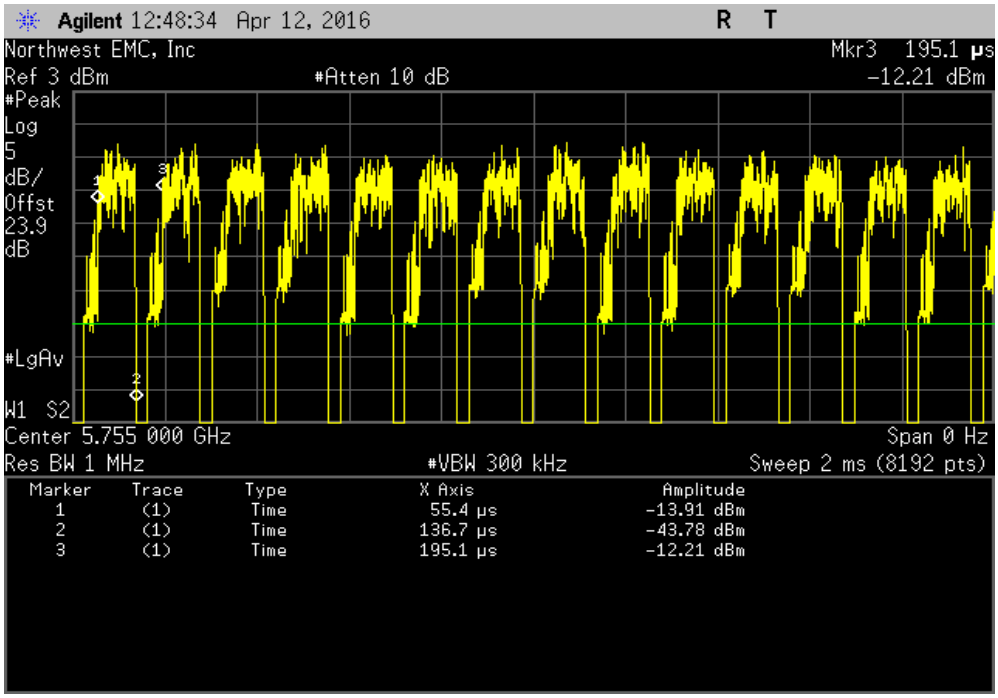
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



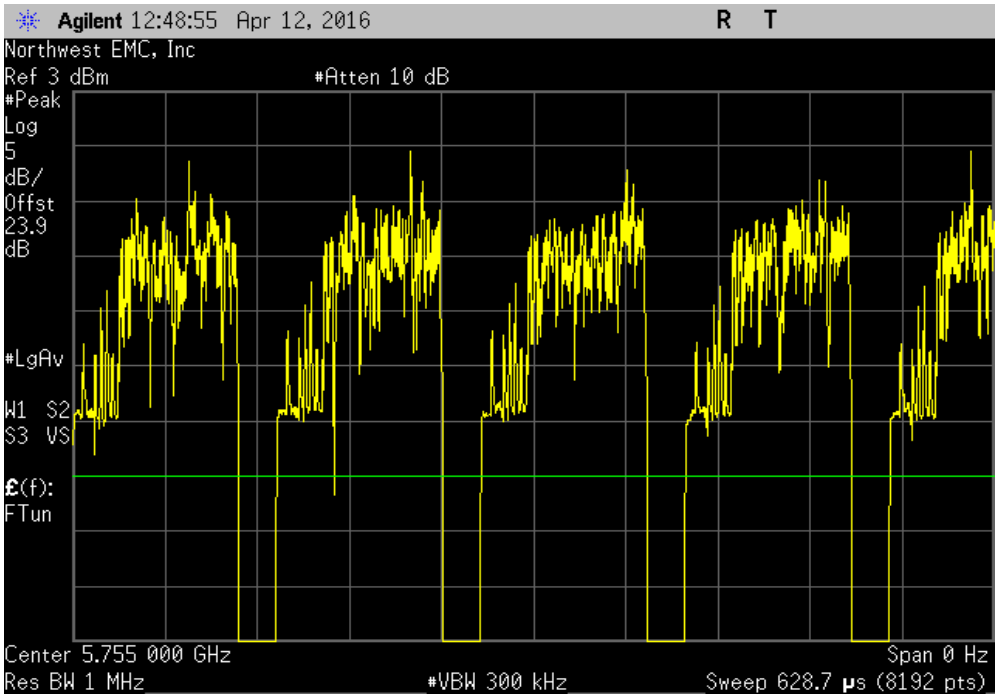
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	81.3 us	139.7 us	1	58.2	N/A	N/A



2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

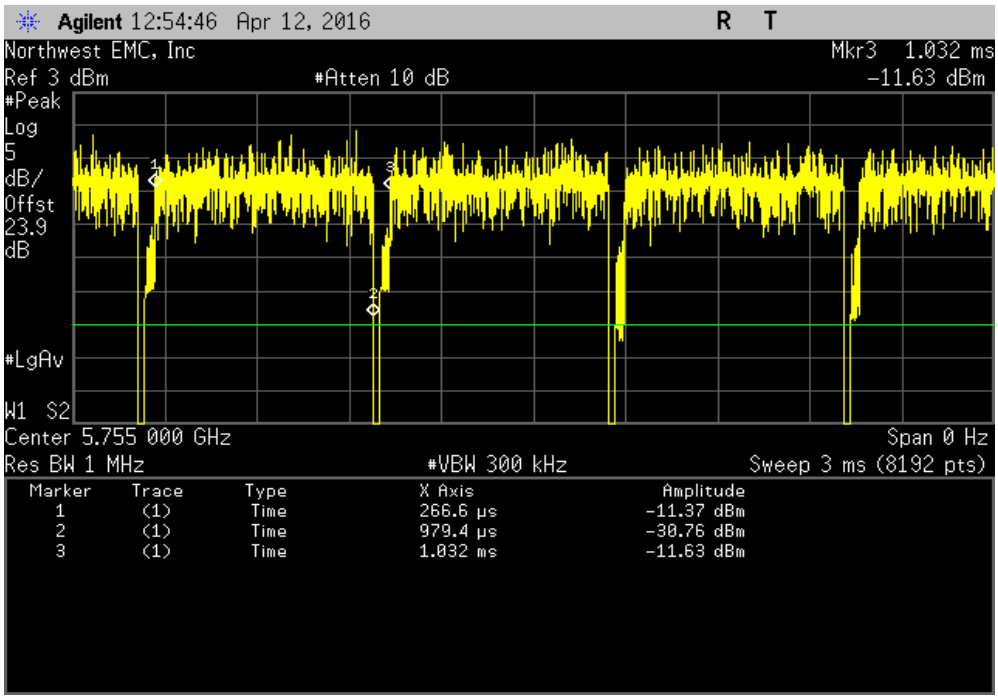


DUTY CYCLE

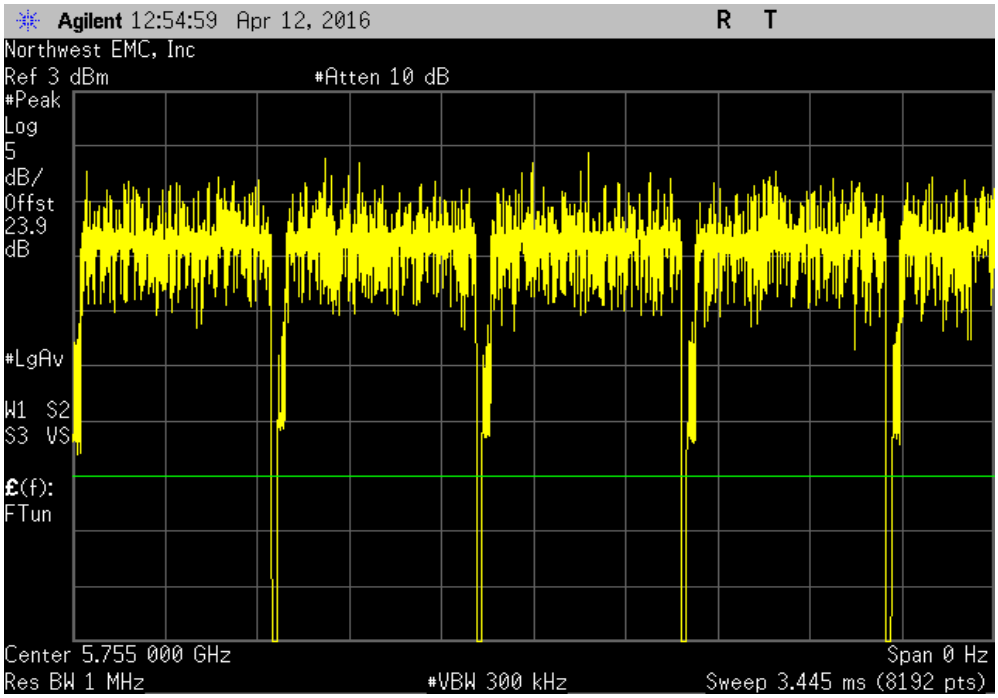
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	712.8 us	765.5 us	1	93.1	N/A	N/A



2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

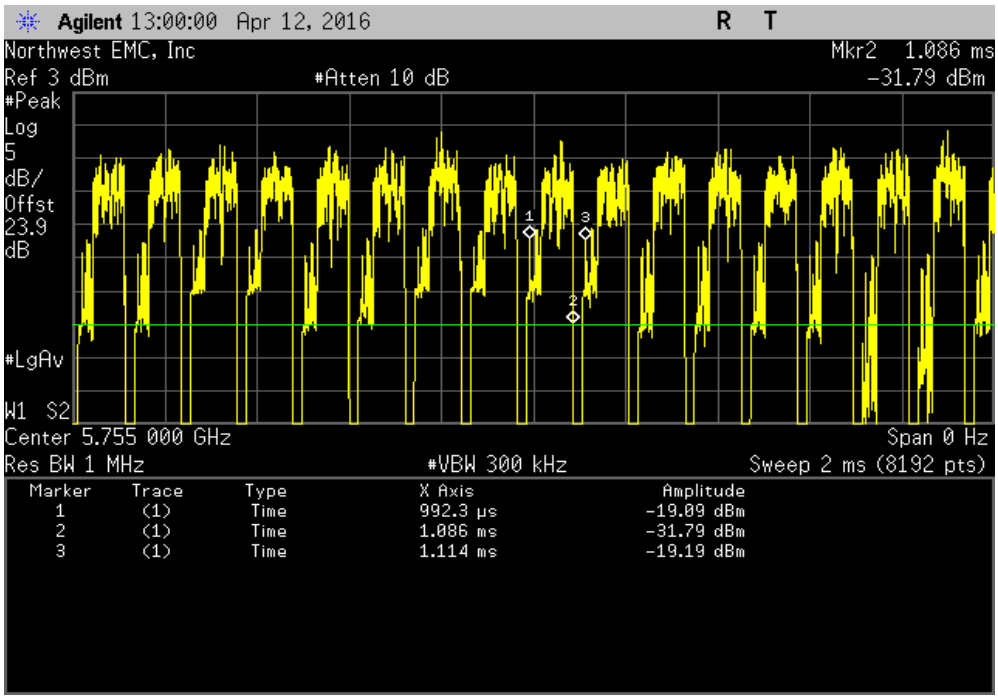


DUTY CYCLE

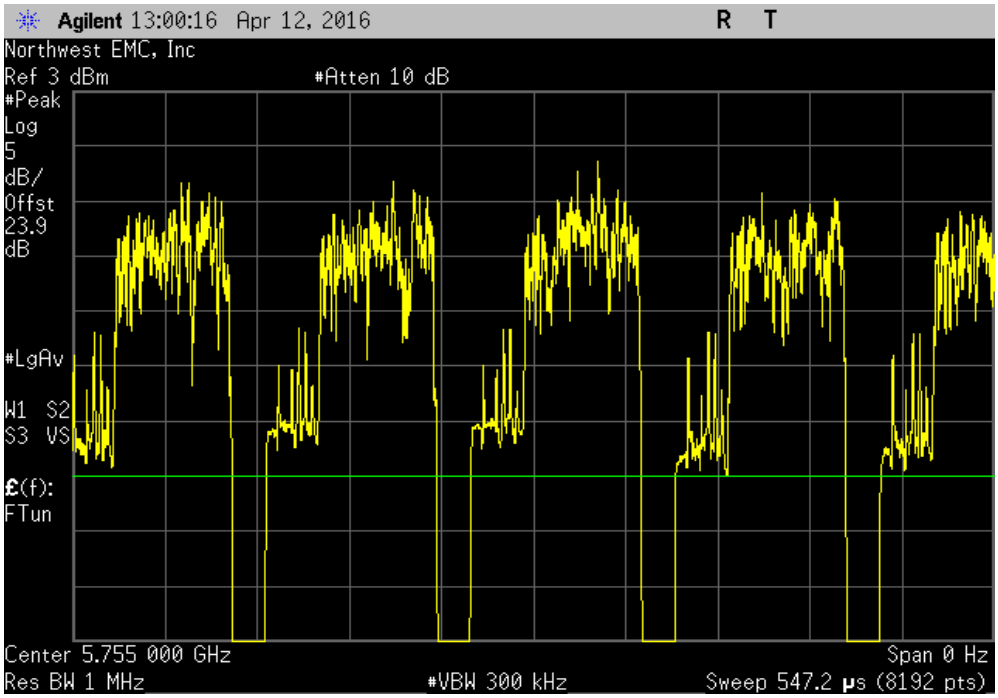
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	94.005 us	121.6 us	1	77.3	N/A	N/A



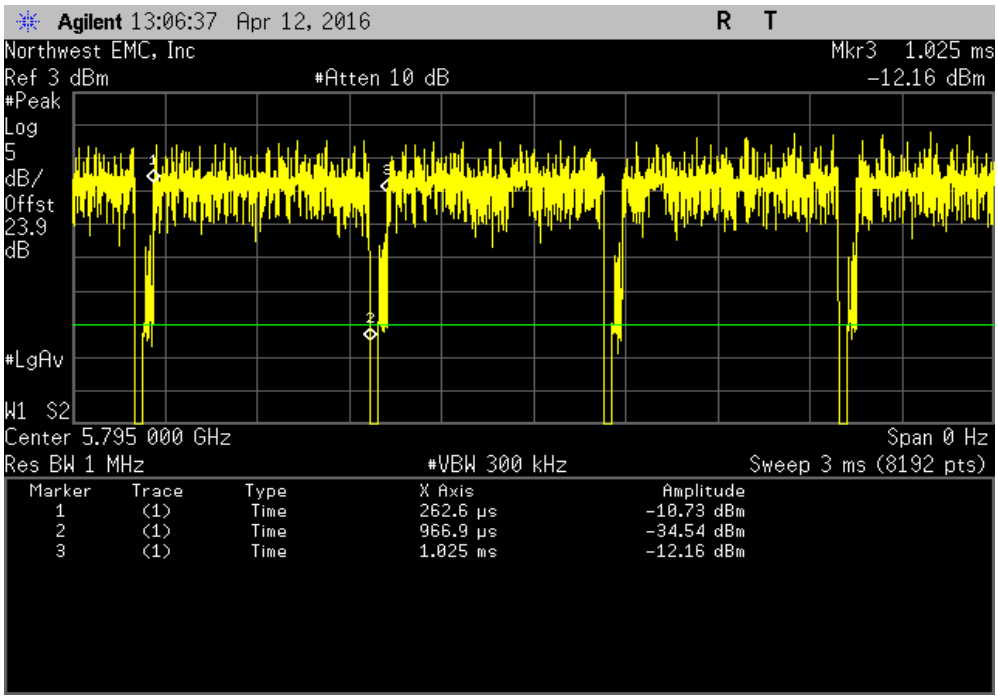
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



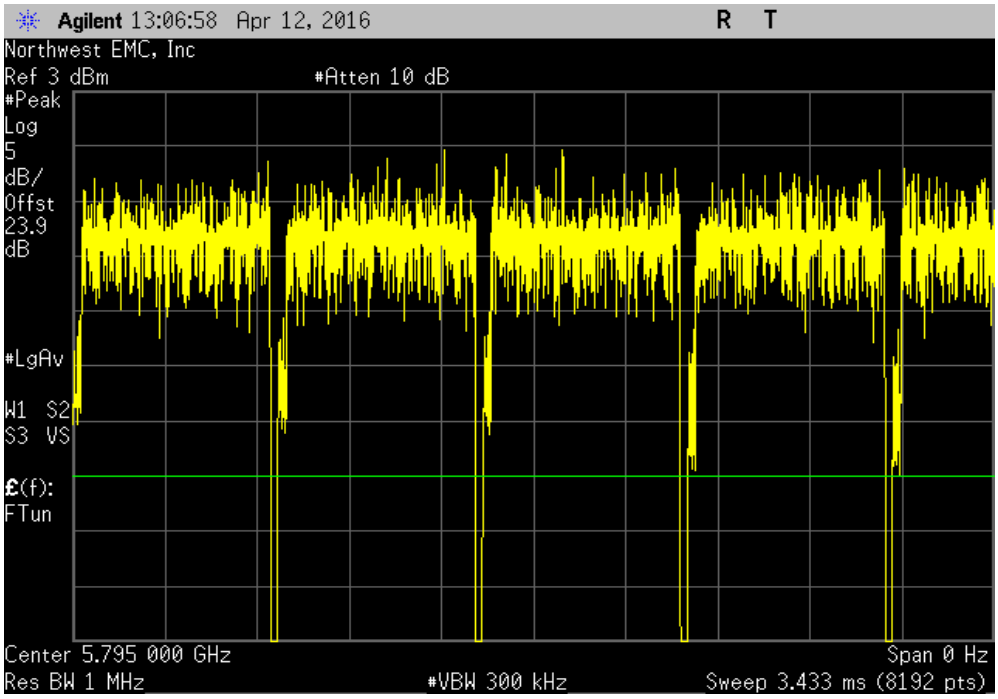
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	704.3 us	762.9 us	1	92.3	N/A	N/A



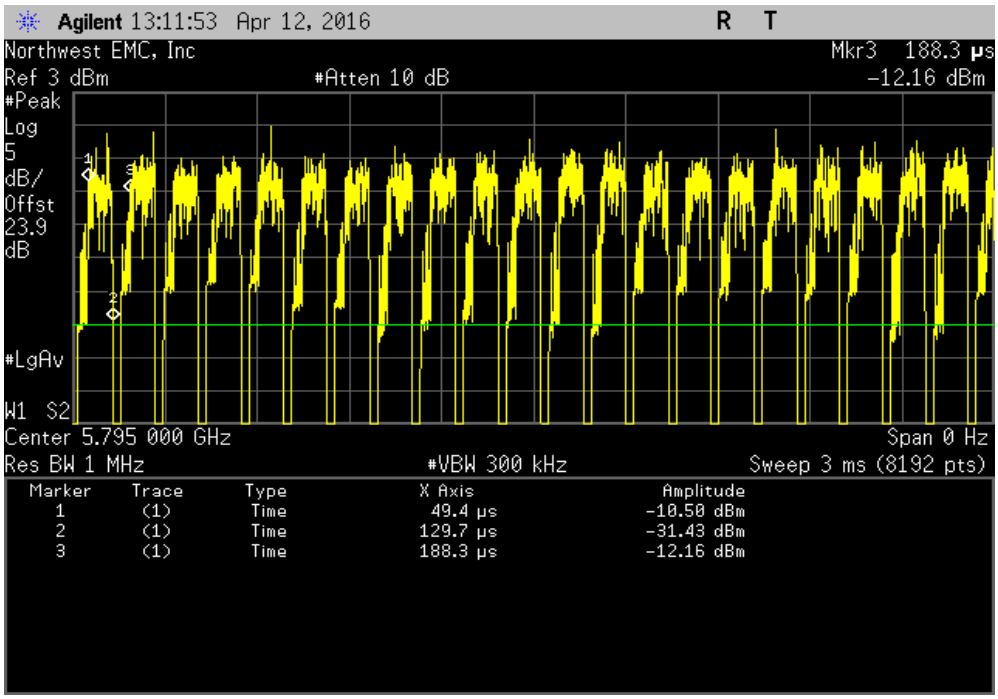
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



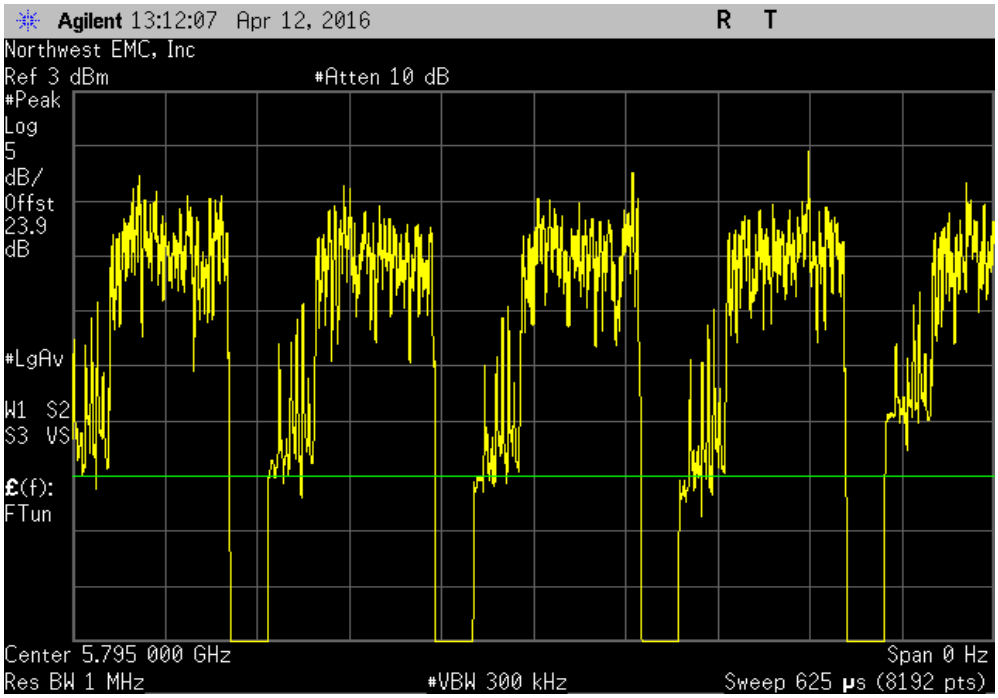
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	80.3 us	138.9 us	1	57.8	N/A	N/A



2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A

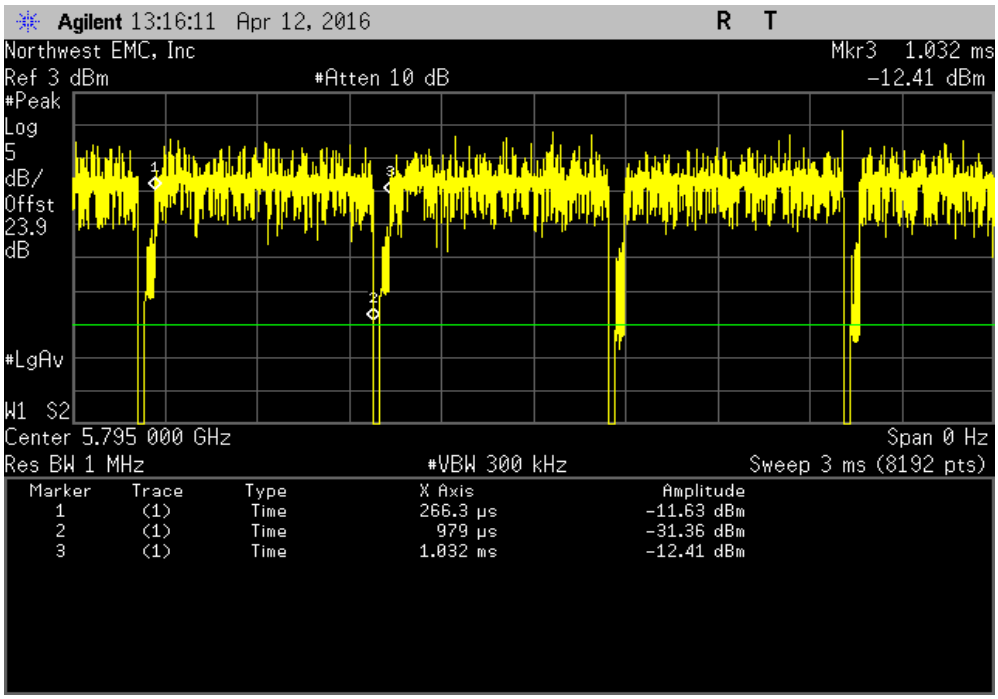


DUTY CYCLE

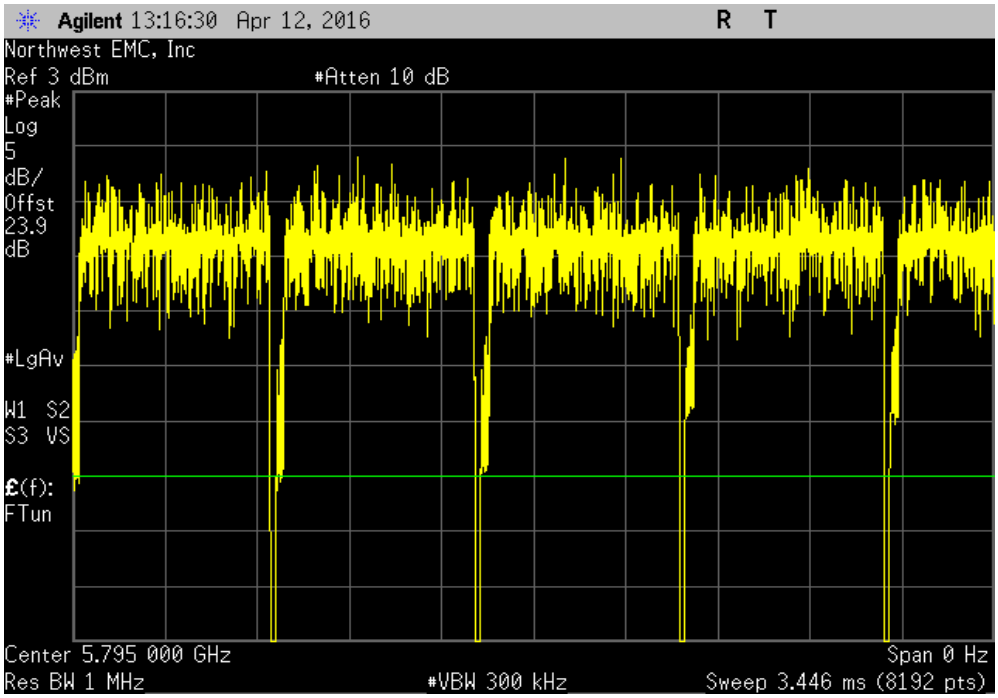
NORTHWEST EMC

XMit 2015.01.14

2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	712.7 us	765.8 us	1	93.1	N/A	N/A

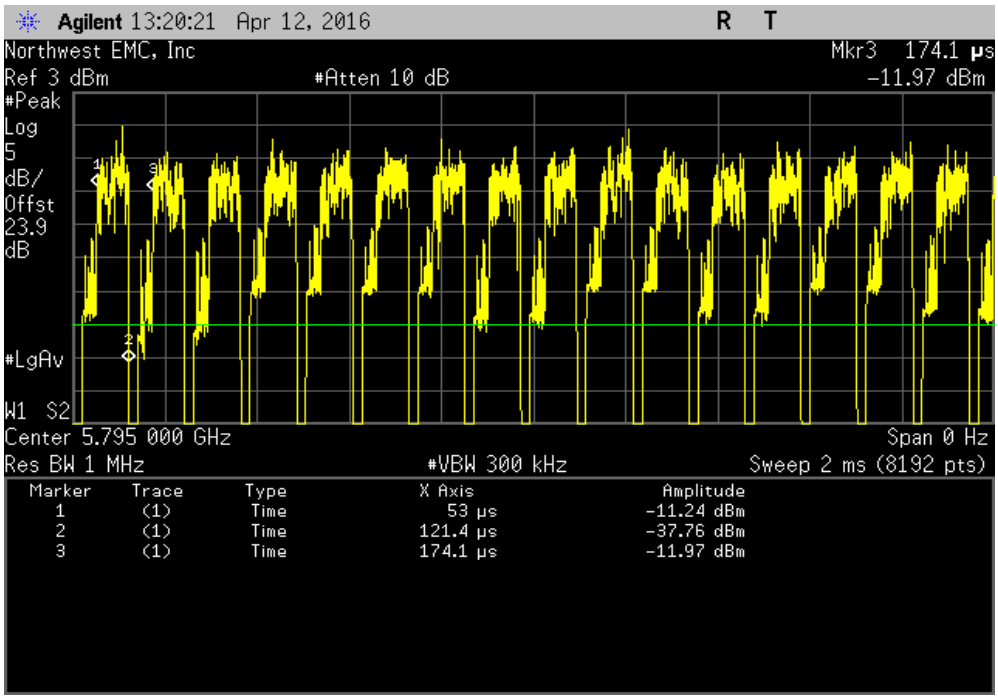


2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A

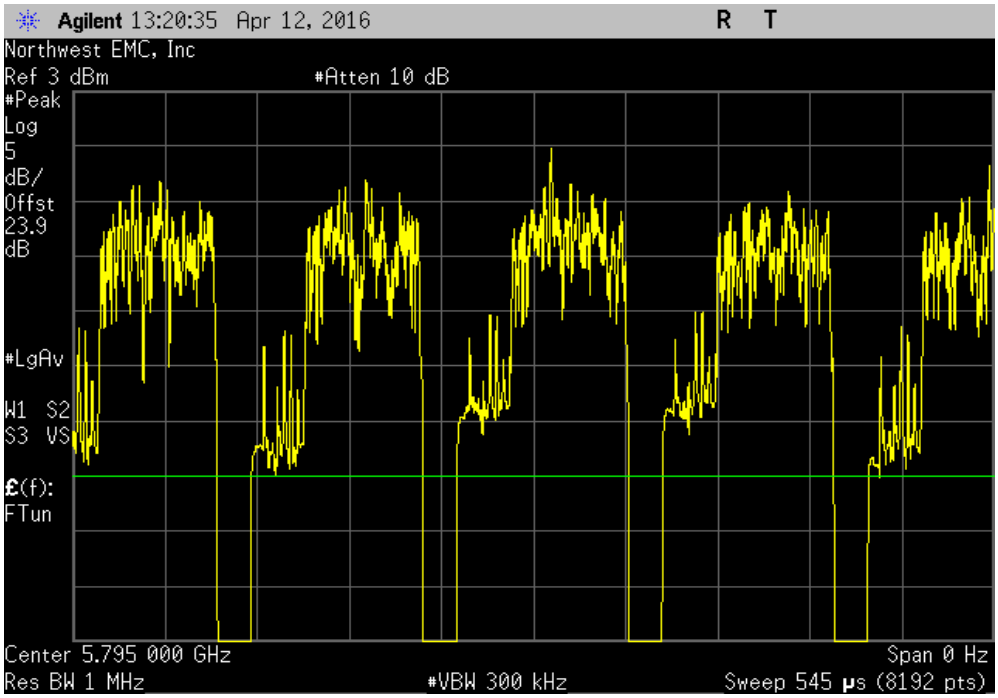


DUTY CYCLE

2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	68.4 us	121.1 us	1	56.5	N/A	N/A

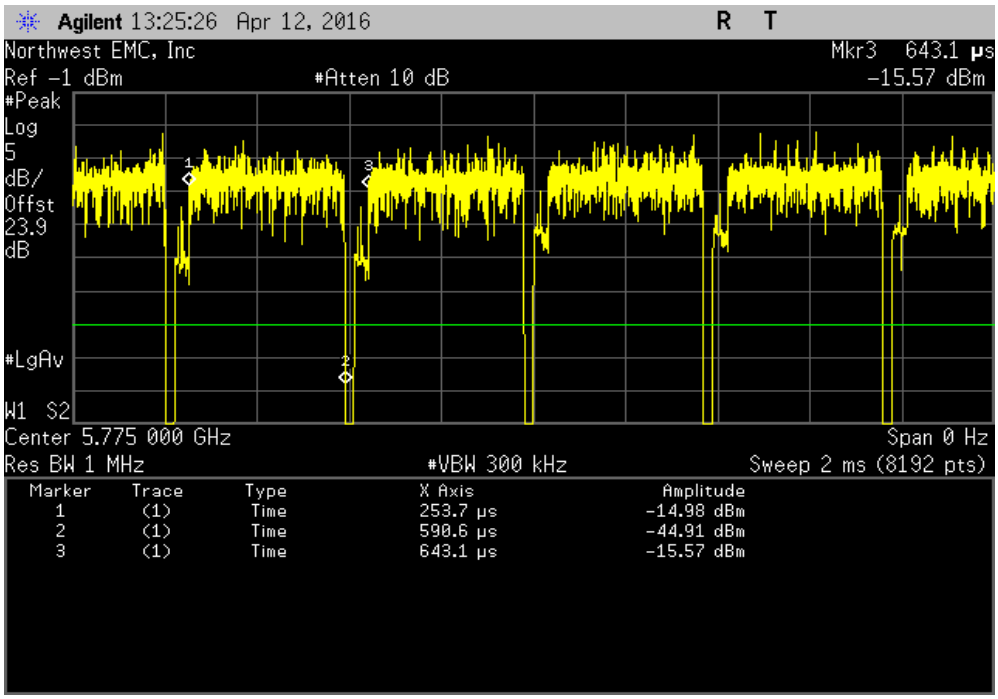


2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

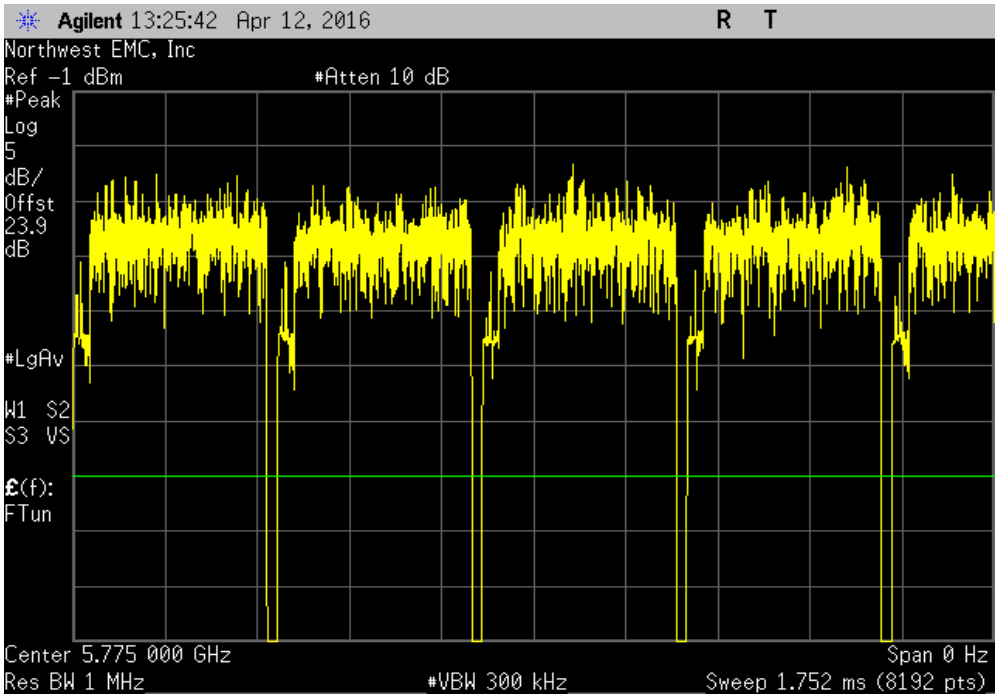


DUTY CYCLE

2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	336.9 us	389.4 us	1	86.5	N/A	N/A



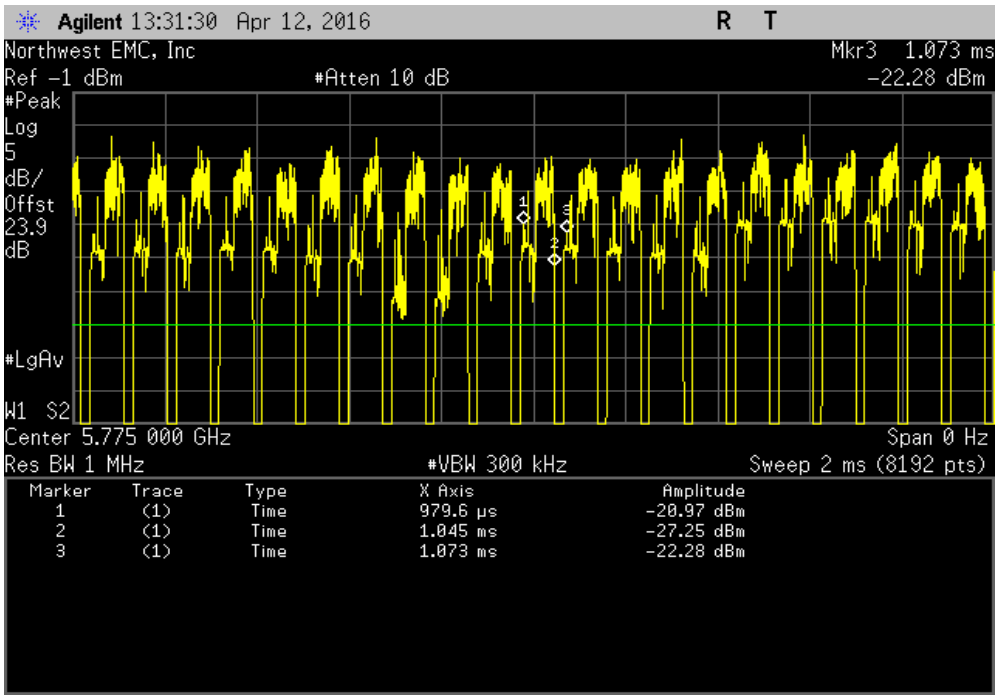
2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



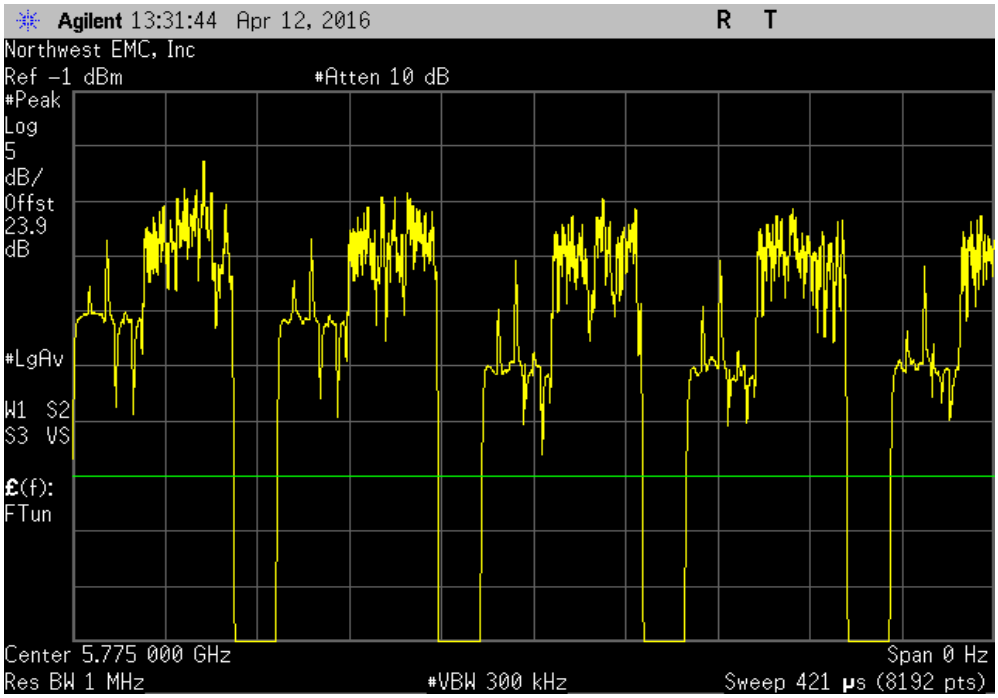
DUTY CYCLE

NORTHWEST EMC
XMit 2015.01.14

2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	65.725 us	93.564 us	1	70.2	N/A	N/A



2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



MAXIMUM CONDUCTED OUTPUT POWER

XMit 2015.01.14

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 EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	6/22/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKV	3/4/2016	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TID	11/26/2014	36

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

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.

Prior to measuring maximum transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The maximum conducted output power was measured using ANSI C63.10, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

-RMS Detector

-Trace average 100 traces in power averaging mode.

-Power was integrated across “B”, by using the channel power function of the analyzer.

A duty cycle correction factor was added to the measurement using the results of the formula of 10*LOG(1/D) where D is the duty cycle.

MAXIMUM CONDUCTED OUTPUT POWER

NORTHWEST EMC

XMit 2015.01.14

EUT:	Model 1631	Work Order:	MCSO1748
Serial Number:	041152140753	Date:	04/12/16
Customer:	Microsoft Corporation	Temperature:	23°C
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	1019 mbar
Tested by:	Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02

TEST SPECIFICATIONS	Test Method
FCC 15.407:2016	ANSI C63.10:2013

COMMENTS

Power setting at 11dBm for 20MHz and 40MHz channels. Power Setting at 10dBm for 80MHz channels. Client supplied adapter cable loss of 1.3dB included in reference level offset. Signal setting at > 95% Duty Cycle.

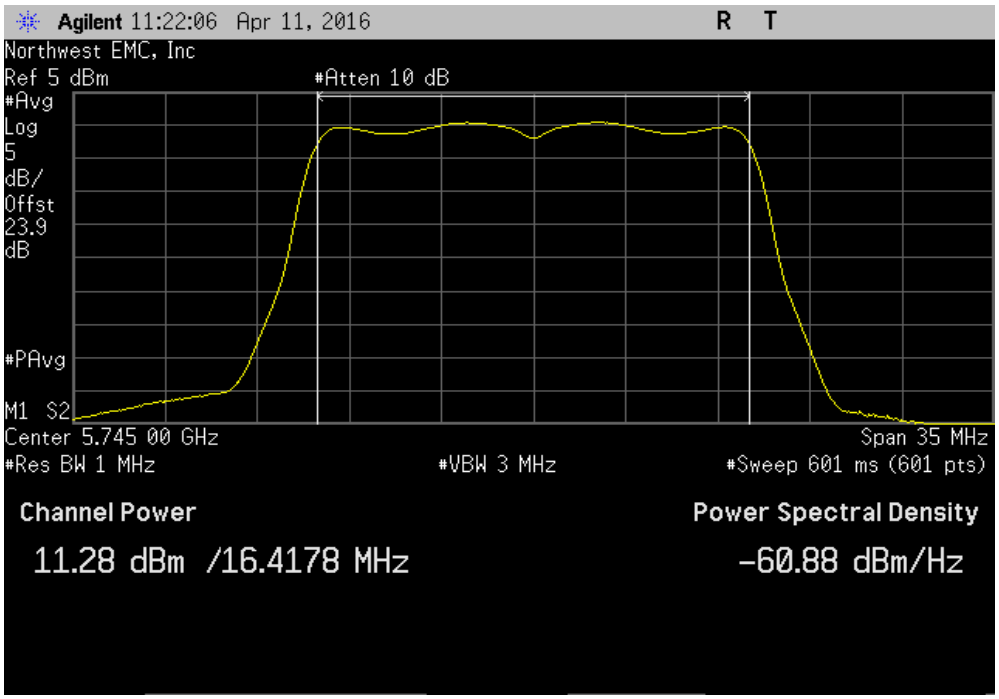
DEVIATIONS FROM TEST STANDARD

None

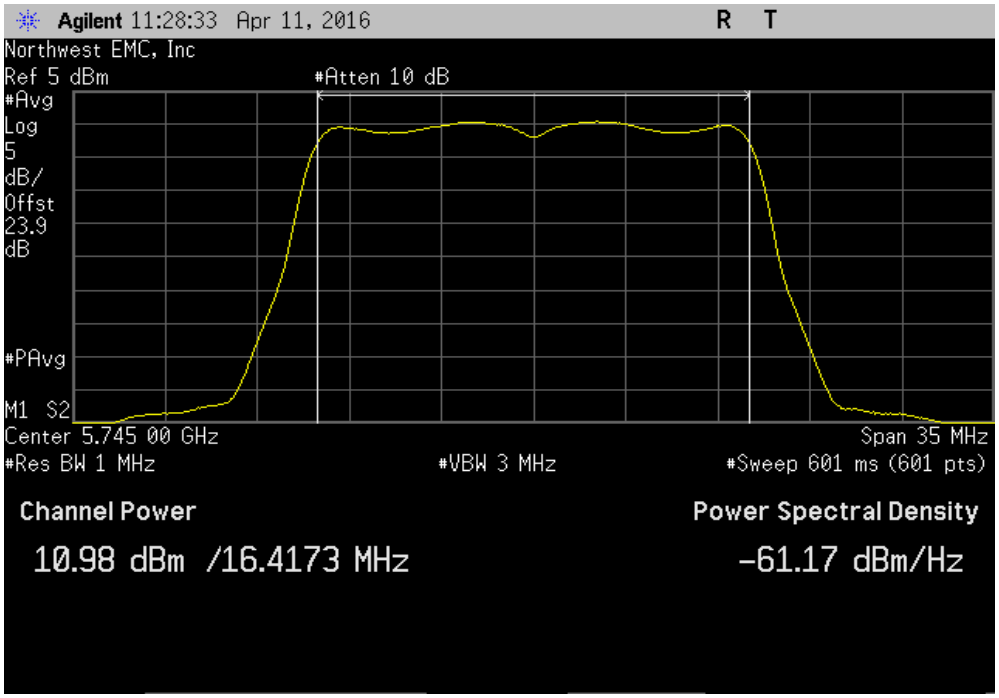
Configuration #	1	Signature

			Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Value (dBm)	Limit (dBm)	Results
SISO, Chain A							
	20MHz BW						
		Low Channel, Ch 149 - 5745 MHz					
		802.11(a) 6 Mbps	11.276	0	11.3	30	Pass
		802.11(a) 36 Mbps	10.984	0.3	11.2	30	Pass
		802.11(a) 54 Mbps	10.856	0.4	11.3	30	Pass
		802.11(n) MCS0	11.437	0	11.5	30	Pass
		802.11(n) MCS7	10.778	0.4	11.2	30	Pass
		802.11(ac) MCS0	11.33	0	11.4	30	Pass
		802.11(ac) MCS8	11.002	0.4	11.4	30	Pass
		Mid Channel, Ch 157 - 5785 MHz					
		802.11(a) 6 Mbps	11.34	0	11.4	30	Pass
		802.11(a) 36 Mbps	11.105	0.3	11.4	30	Pass
		802.11(a) 54 Mbps	10.943	0.4	11.3	30	Pass
		802.11(n) MCS0	11.411	0	11.5	30	Pass
		802.11(n) MCS7	10.957	0.4	11.4	30	Pass
		802.11(ac) MCS0	11.452	0	11.5	30	Pass
		802.11(ac) MCS8	11.161	0.4	11.6	30	Pass
		High Channel, Ch 165 - 5825 MHz					
		802.11(a) 6 Mbps	11.447	0	11.5	30	Pass
		802.11(a) 36 Mbps	11.058	0.3	11.3	30	Pass
		802.11(a) 54 Mbps	11	0.4	11.4	30	Pass
		802.11(n) MCS0	11.455	0	11.5	30	Pass
		802.11(n) MCS7	11.145	0.4	11.6	30	Pass
		802.11(ac) MCS0	11.504	0	11.5	30	Pass
		802.11(ac) MCS8	11.174	0.4	11.6	30	Pass
	40MHz BW						
		Low Channel, Ch 149/153 - 5755 MHz					
		802.11(n) MCS0	11.152	0.2	11.3	30	Pass
		802.11(n) MCS7	10.709	1.5	12.2	30	Pass
		802.11(ac) MCS0	11.279	0.2	11.4	30	Pass
		802.11(ac) MCS9	10.77	1.6	12.4	30	Pass
		High Channel, Ch 157/161 - 5795 MHz					
		802.11(n) MCS0	11.281	0.2	11.4	30	Pass
		802.11(n) MCS7	10.629	1.5	12.1	30	Pass
		802.11(ac) MCS0	11.254	0.2	11.4	30	Pass
		802.11(ac) MCS9	10.734	1.6	12.4	30	Pass
	80MHz BW						
		Mid Channel, Ch 149/161 - 5775 MHz					
		802.11(ac) MCS0	9.841	0.3	10.2	30	Pass
		802.11(ac) MCS9	8.83	1.8	10.7	30	Pass
SISO, Chain B							
	20MHz BW						
		Low Channel, Ch 149 - 5745 MHz					
		802.11(a) 6 Mbps	10.968	0	11	30	Pass
		802.11(a) 36 Mbps	11.107	0.3	11.4	30	Pass
		802.11(a) 54 Mbps	10.707	0.4	11.1	30	Pass
		802.11(n) MCS0	11.069	0	11.1	30	Pass
		802.11(n) MCS7	10.787	0.4	11.2	30	Pass
		802.11(ac) MCS0	11.173	0	11.2	30	Pass
		802.11(ac) MCS8	10.823	0.4	11.2	30	Pass
		Mid Channel, Ch 157 - 5785 MHz					
		802.11(a) 6 Mbps	11.355	0	11.4	30	Pass
		802.11(a) 36 Mbps	10.914	0.3	11.2	30	Pass
		802.11(a) 54 Mbps	10.876	0.4	11.3	30	Pass
		802.11(n) MCS0	11.367	0	11.4	30	Pass
		802.11(n) MCS7	10.967	0.4	11.4	30	Pass
		802.11(ac) MCS0	11.341	0	11.4	30	Pass
		802.11(ac) MCS8	10.942	0.4	11.4	30	Pass
		High Channel, Ch 165 - 5825 MHz					
		802.11(a) 6 Mbps	11.263	0	11.3	30	Pass
		802.11(a) 36 Mbps	10.984	0.3	11.2	30	Pass
		802.11(a) 54 Mbps	10.802	0.4	11.2	30	Pass
		802.11(n) MCS0	11.271	0	11.3	30	Pass
		802.11(n) MCS7	10.908	0.4	11.3	30	Pass
		802.11(ac) MCS0	11.371	0	11.4	30	Pass
		802.11(ac) MCS8	11.028	0.4	11.4	30	Pass
	40MHz BW						
		Low Channel, Ch 149/153 - 5755 MHz					
		802.11(n) MCS0	11.307	0.2	11.5	30	Pass
		802.11(n) MCS7	10.429	1.5	11.9	30	Pass
		802.11(ac) MCS0	11.271	0.2	11.4	30	Pass
		802.11(ac) MCS9	10.838	1.6	12.5	30	Pass
		High Channel, Ch 157/161 - 5795 MHz					
		802.11(n) MCS0	11.372	0.2	11.6	30	Pass
		802.11(n) MCS7	10.535	1.5	12	30	Pass
		802.11(ac) MCS0	11.426	0.2	11.6	30	Pass
		802.11(ac) MCS9	10.599	1.7	12.3	30	Pass
	80MHz BW						
		Mid Channel, Ch 149/161 - 5775 MHz					
		802.11(ac) MCS0	10.405	0.2	10.7	30	Pass
		802.11(ac) MCS9	9.377	1.9	11.2	30	Pass

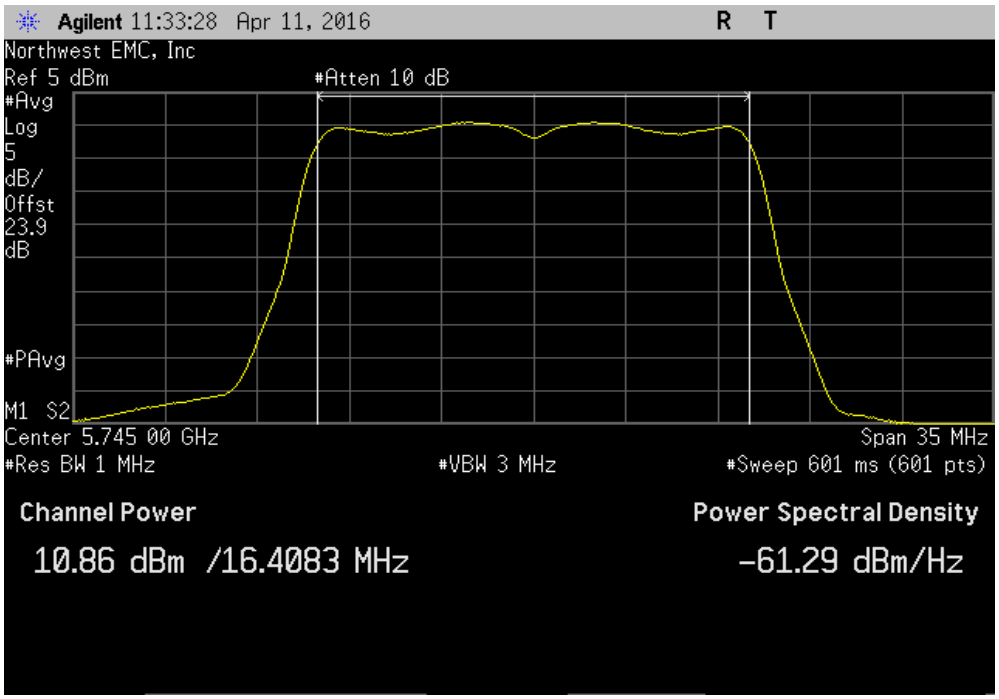
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.276	0		11.3	30	Pass



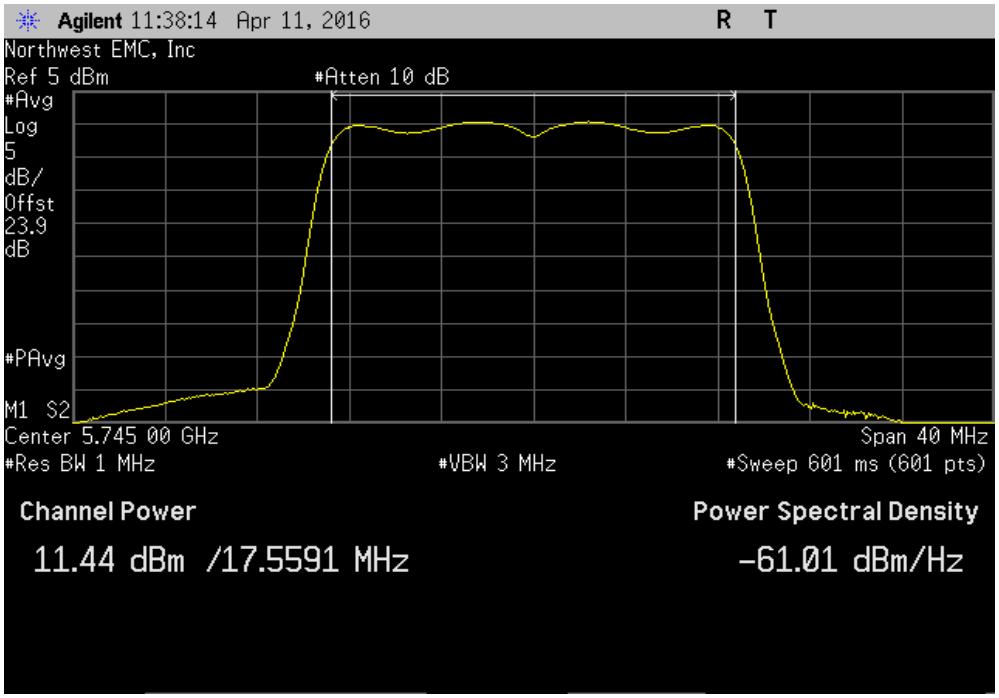
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.984	0.3		11.2	30	Pass



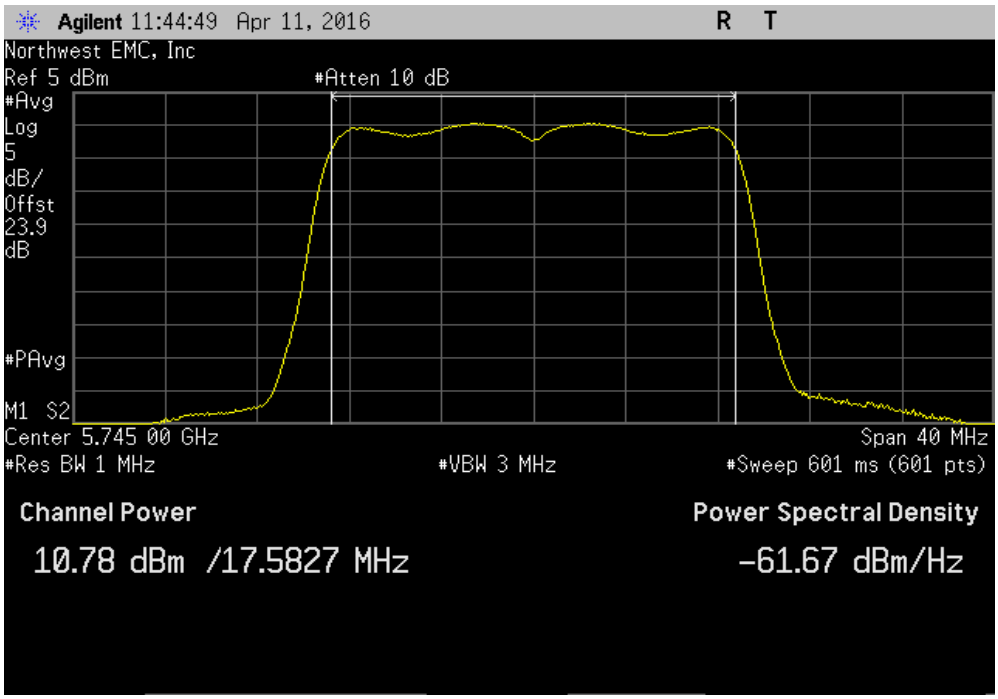
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.856	0.4		11.3	30	Pass



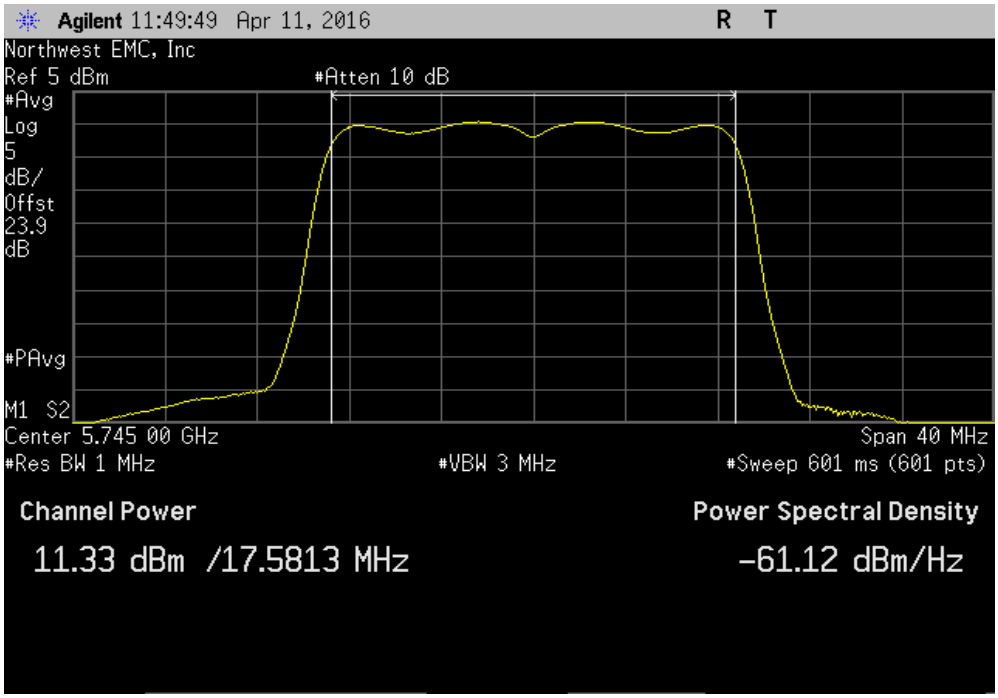
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.437	0		11.5	30	Pass



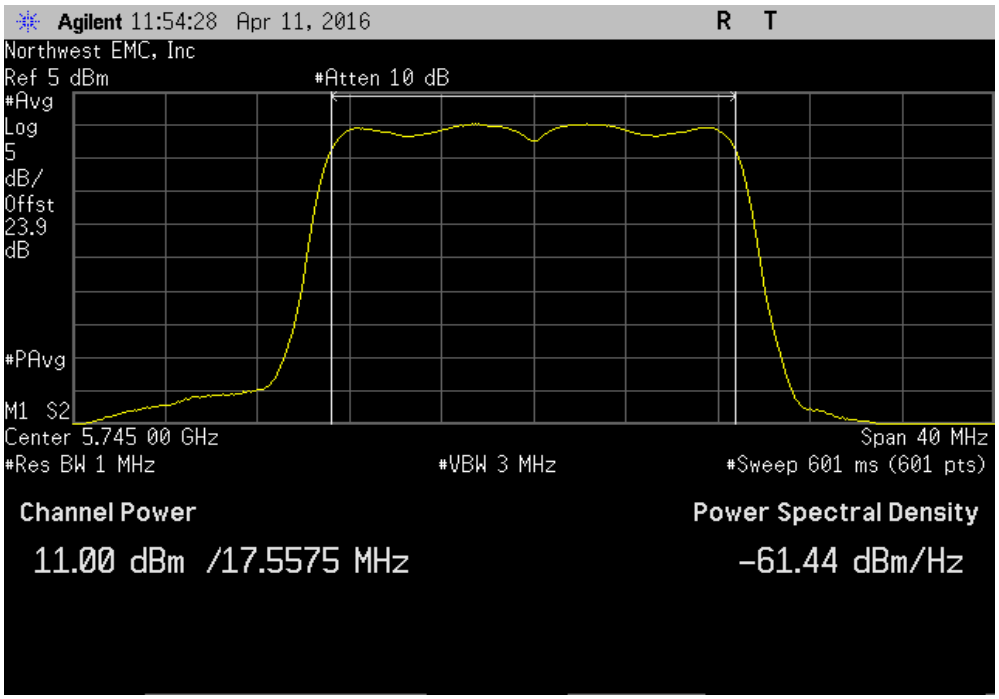
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.778	0.4		11.2	30	Pass



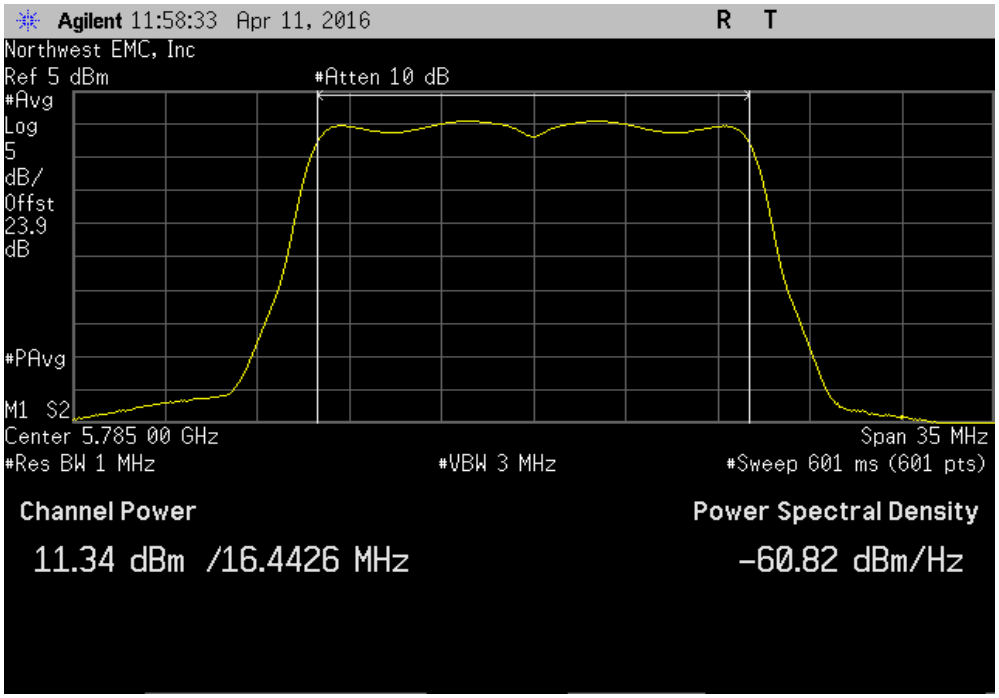
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.33	0		11.4	30	Pass



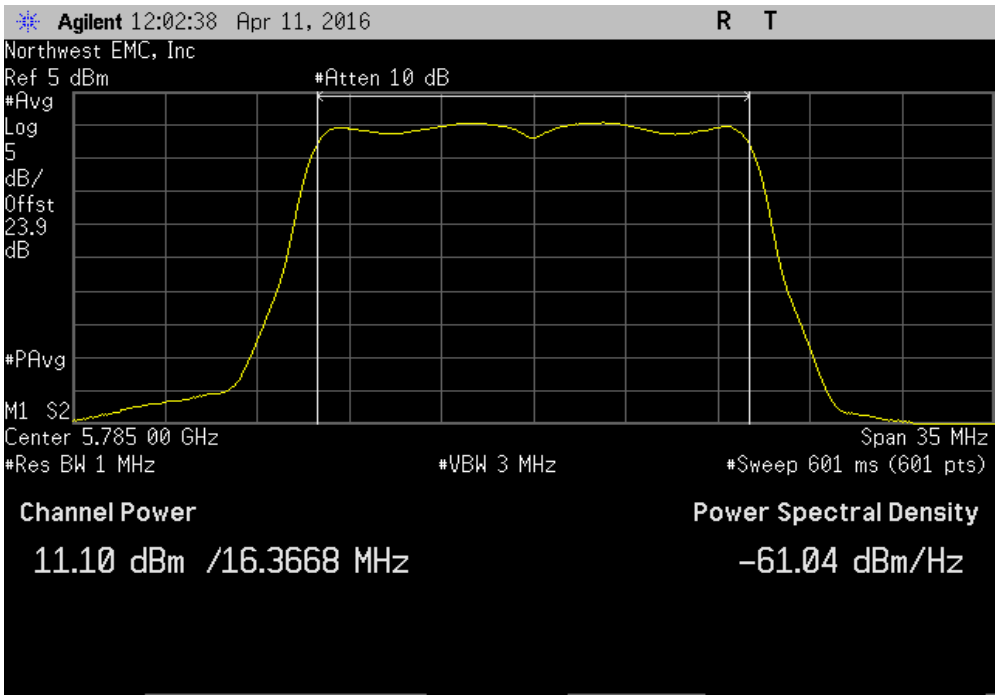
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.002	0.4		11.4	30	Pass



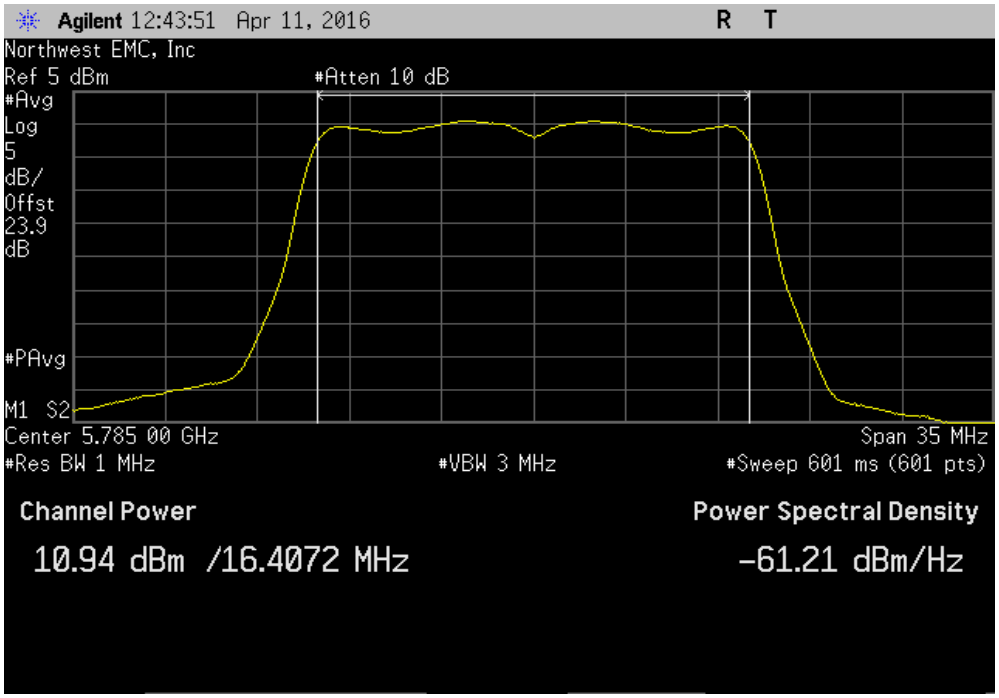
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.34	0		11.4	30	Pass



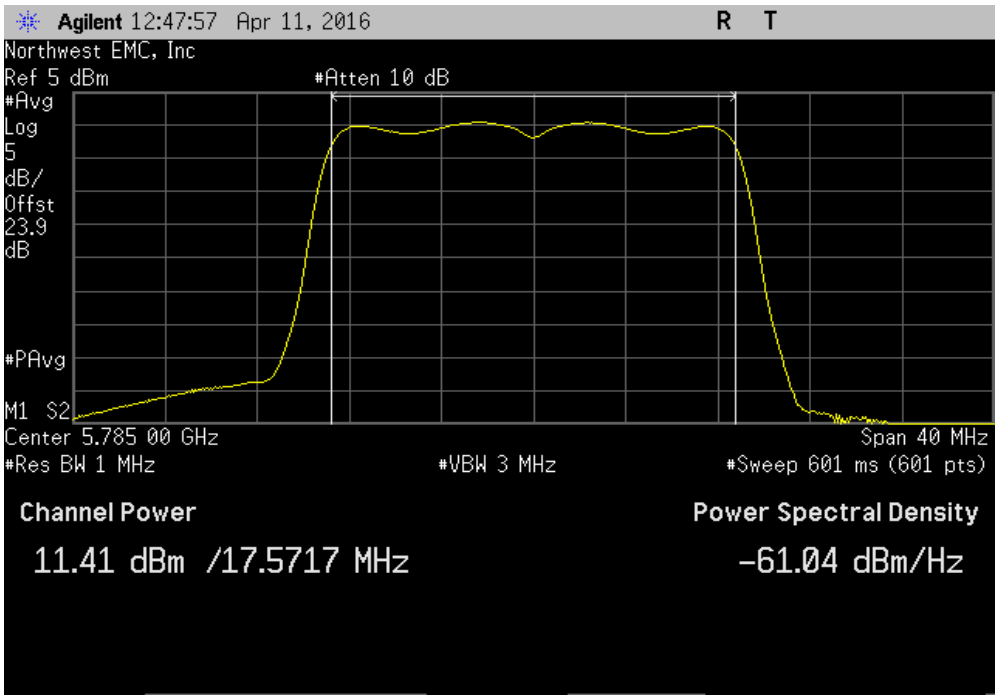
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.105	0.3		11.4	30	Pass



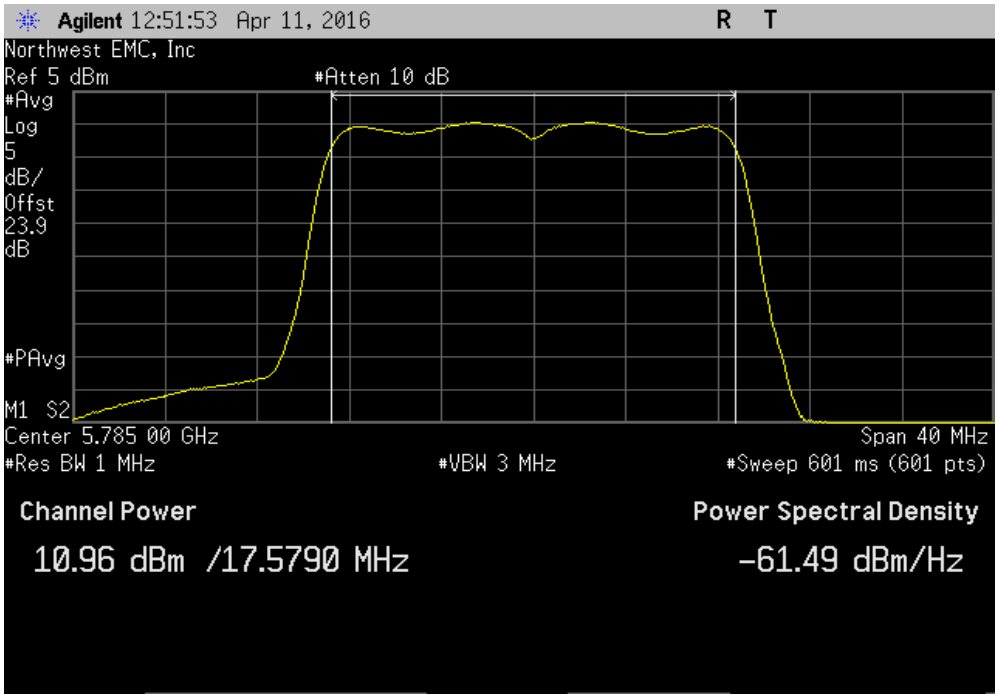
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.943	0.4		11.3	30	Pass



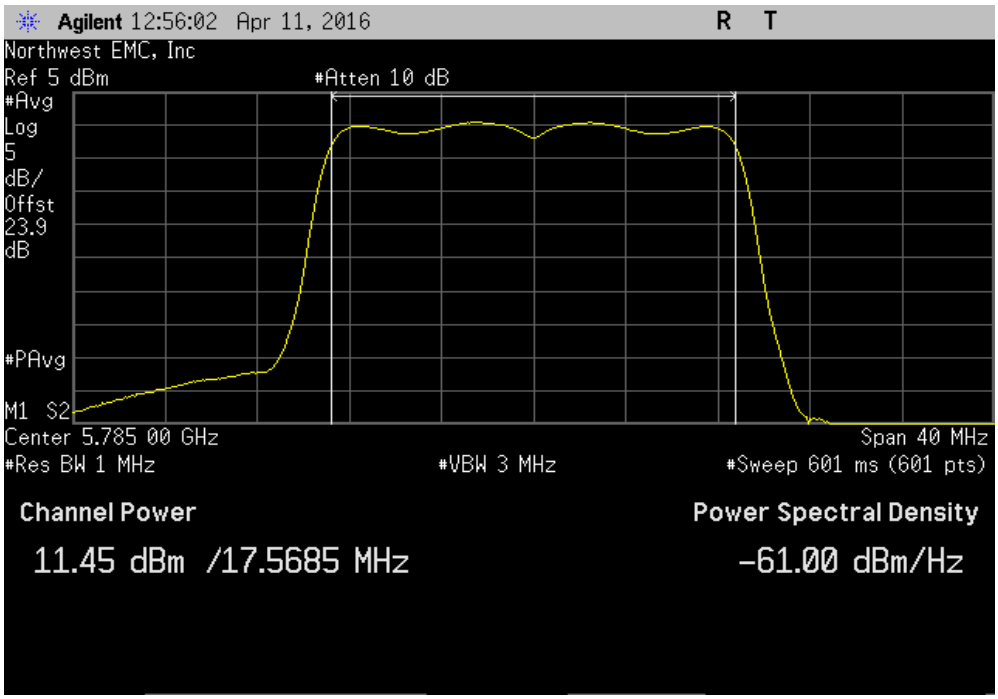
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.411	0		11.5	30	Pass



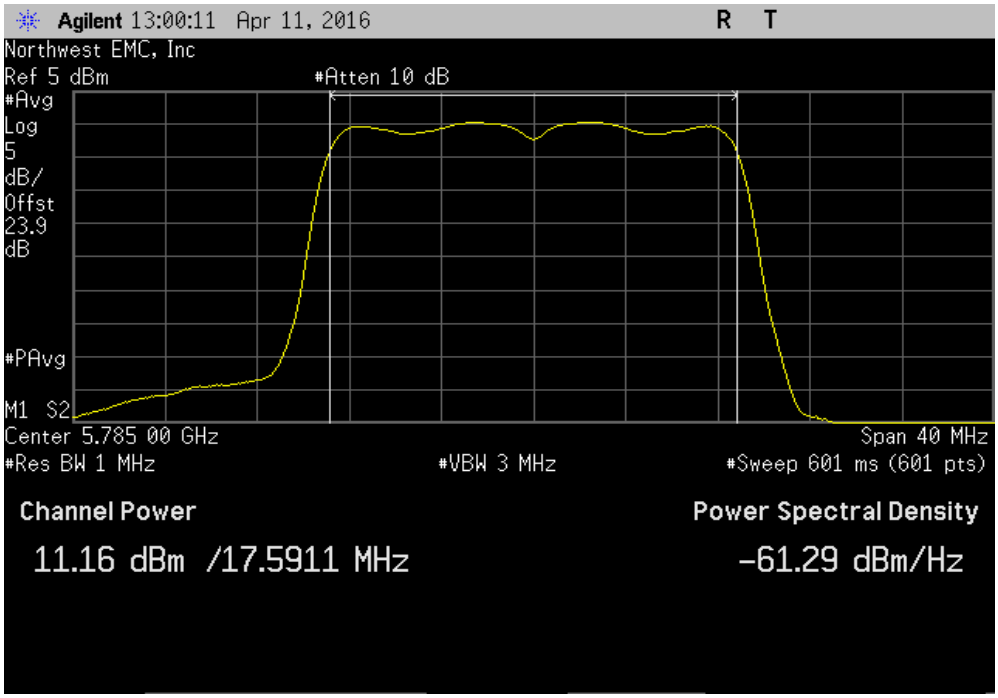
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.957	0.4		11.4	30	Pass



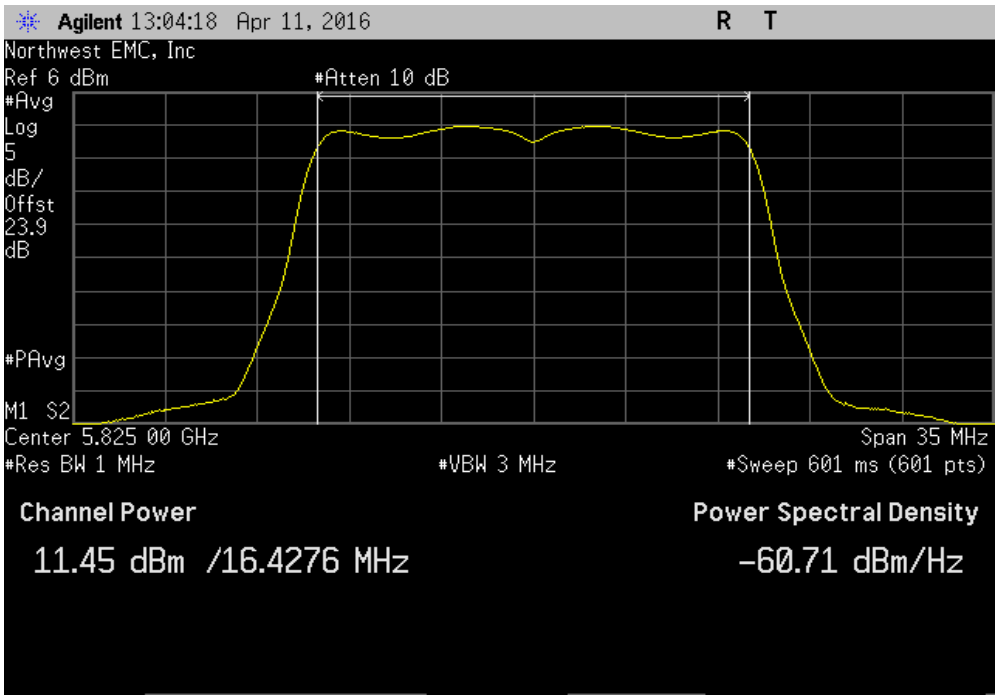
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.452	0		11.5	30	Pass



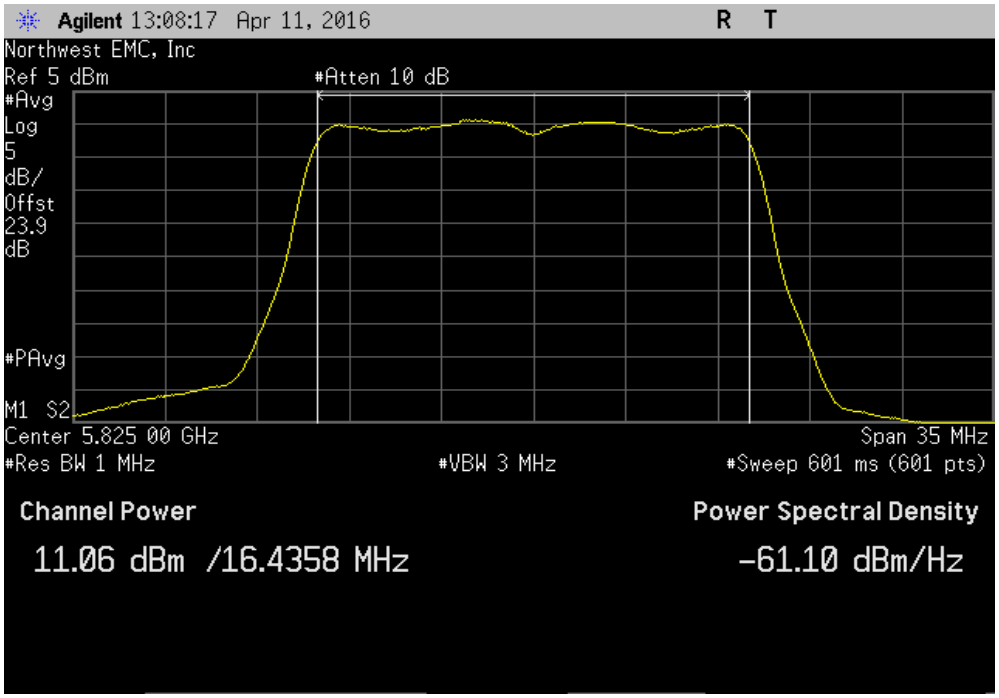
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.161	0.4		11.6	30	Pass



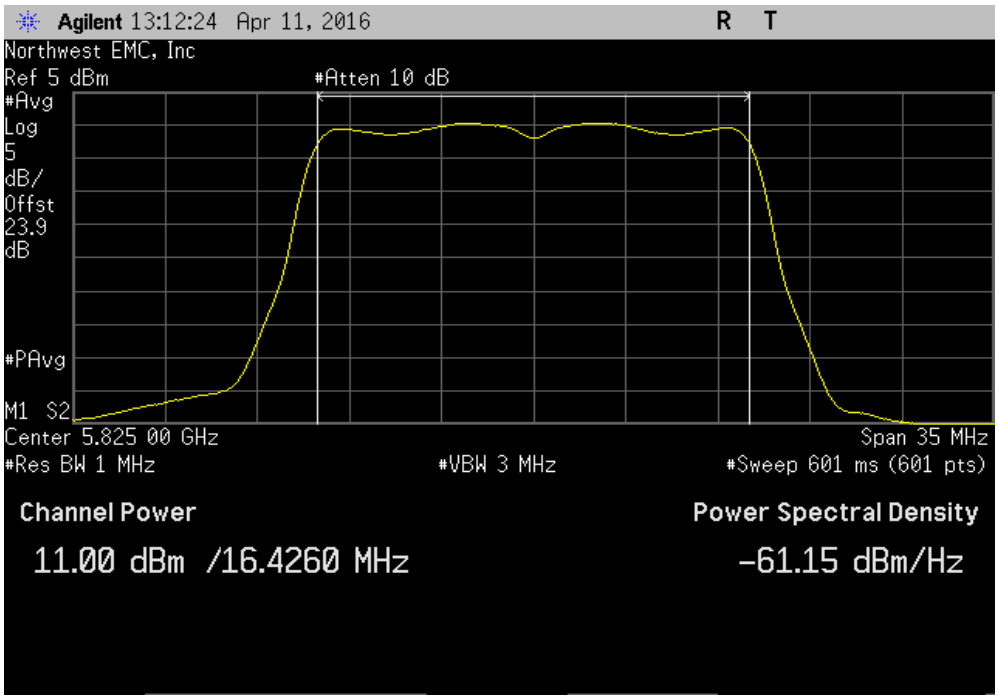
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.447	0		11.5	30	Pass



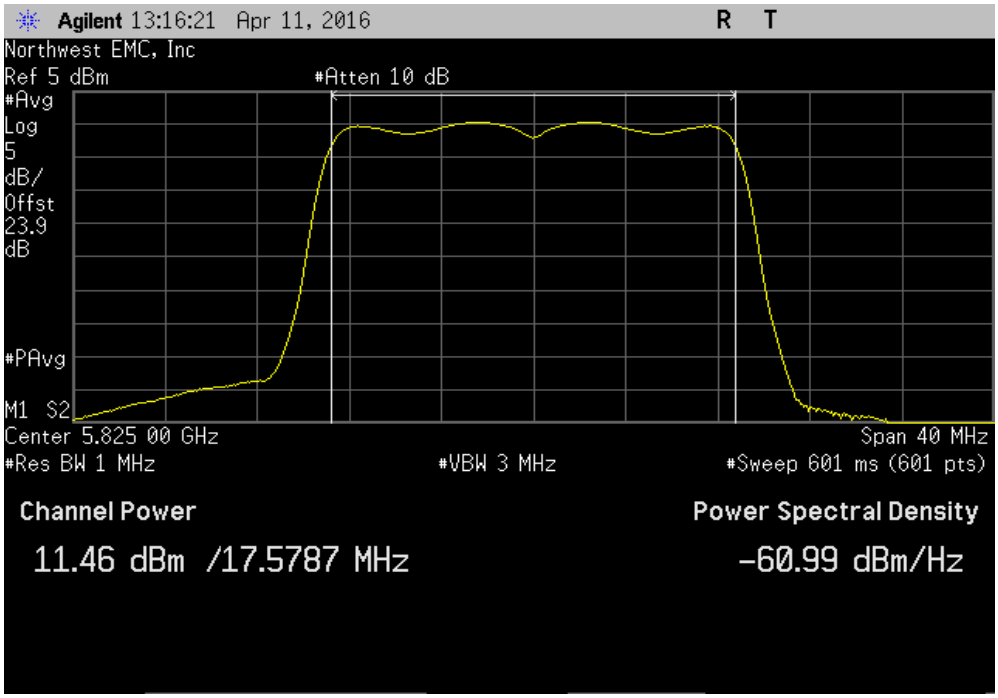
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.058	0.3		11.3	30	Pass



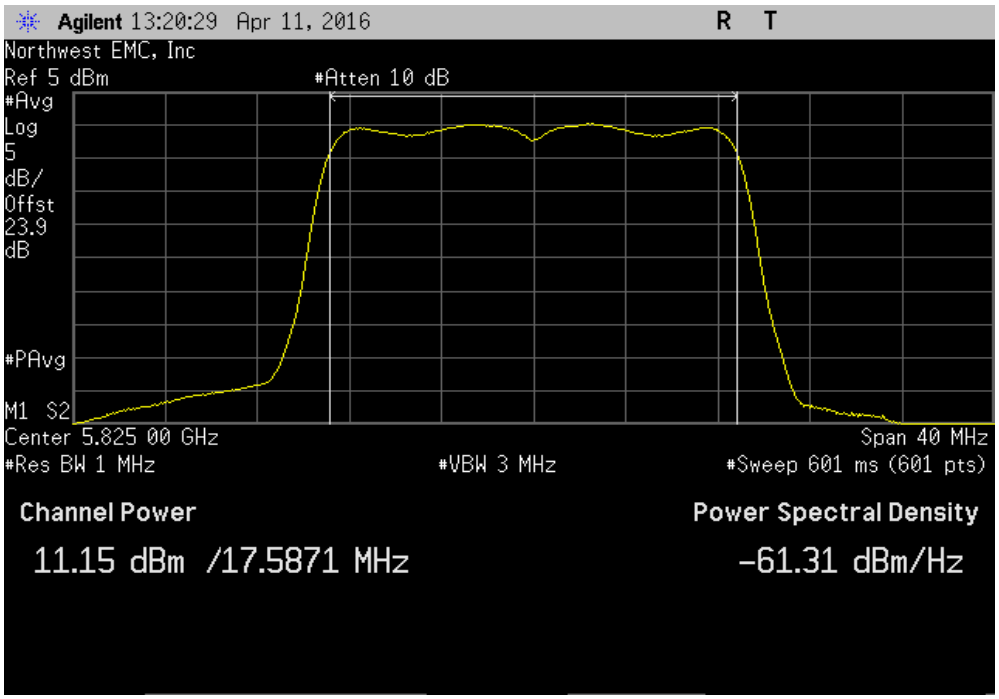
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11	0.4		11.4	30	Pass



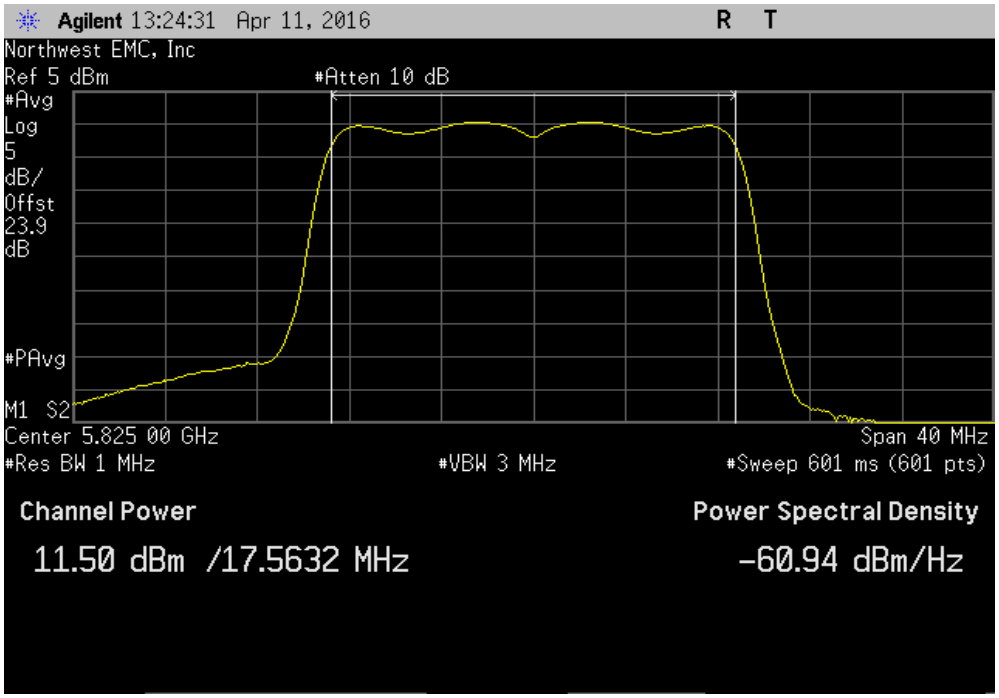
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.455	0		11.5	30	Pass



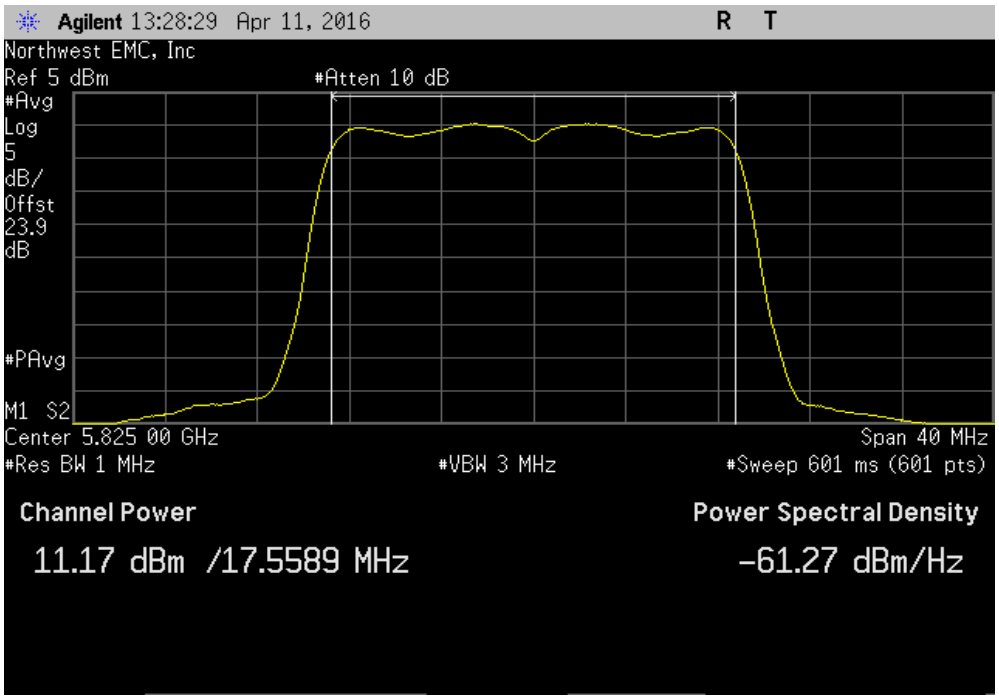
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.145	0.4		11.6	30	Pass



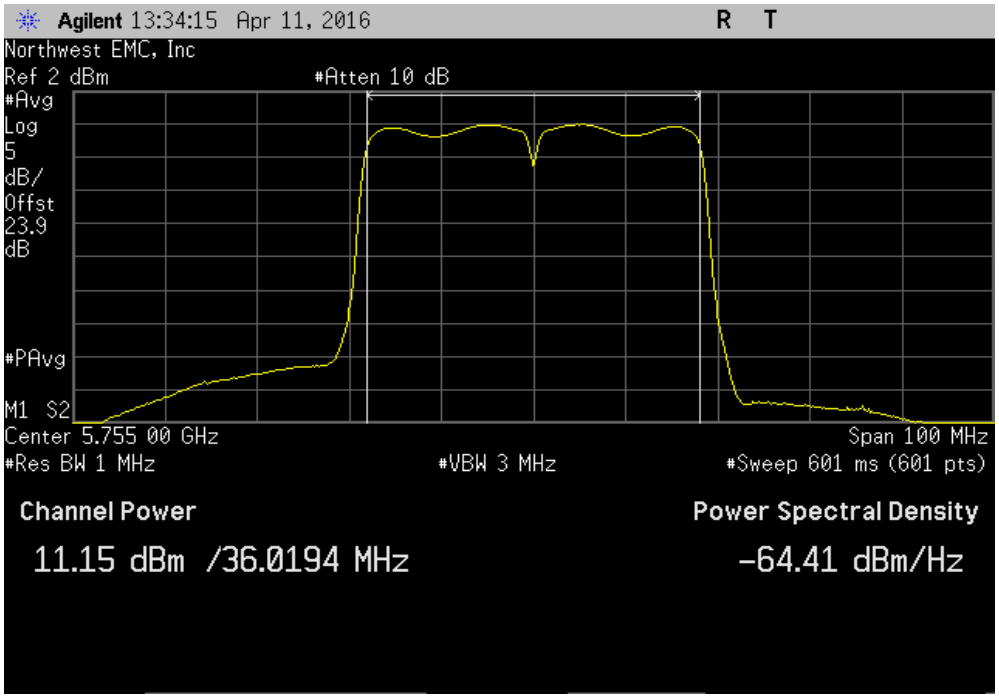
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.504	0		11.5	30	Pass



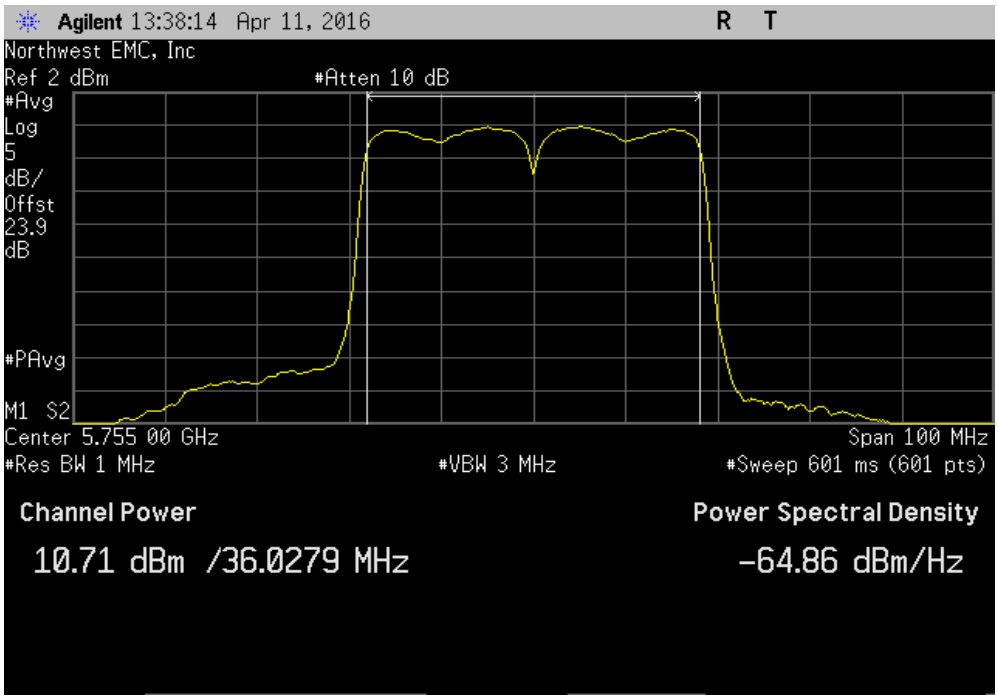
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.174	0.4		11.6	30	Pass



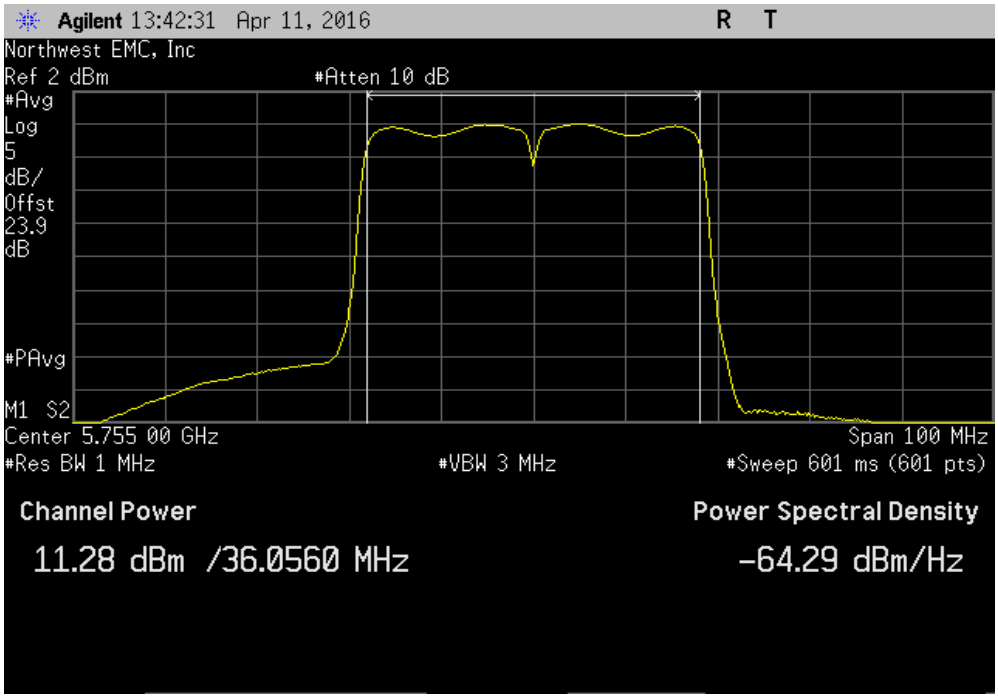
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.152	0.2		11.3	30	Pass



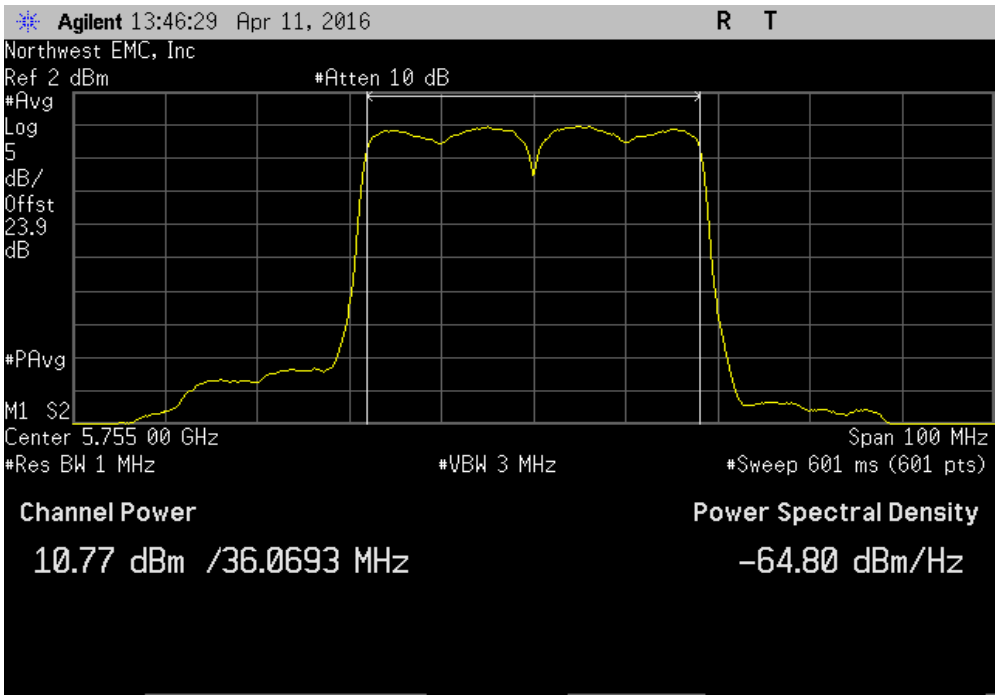
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.709	1.5		12.2	30	Pass



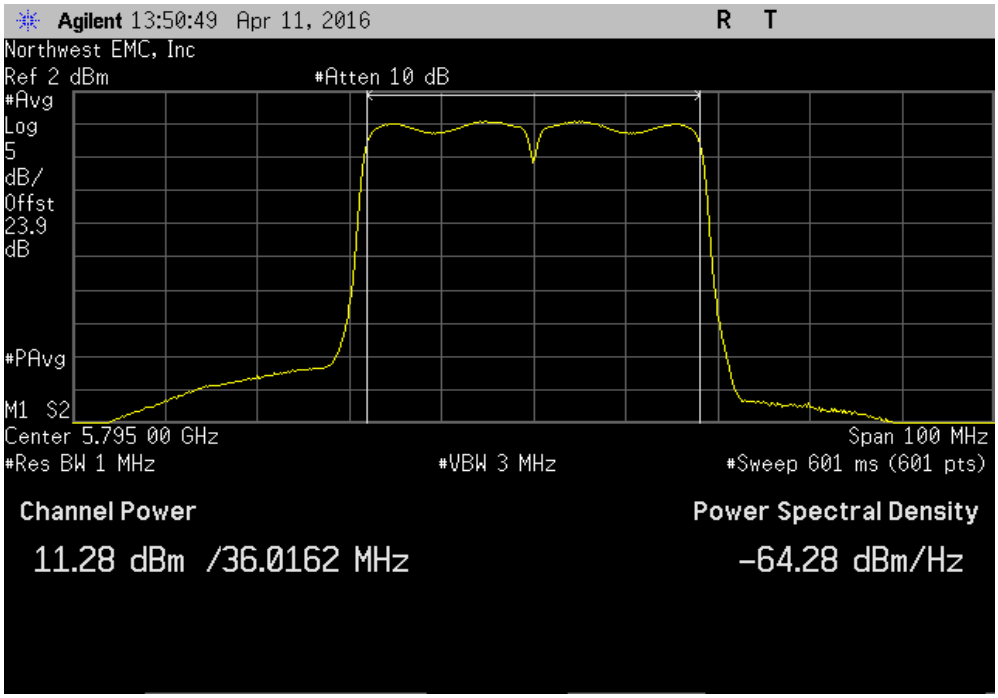
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.279	0.2		11.4	30	Pass



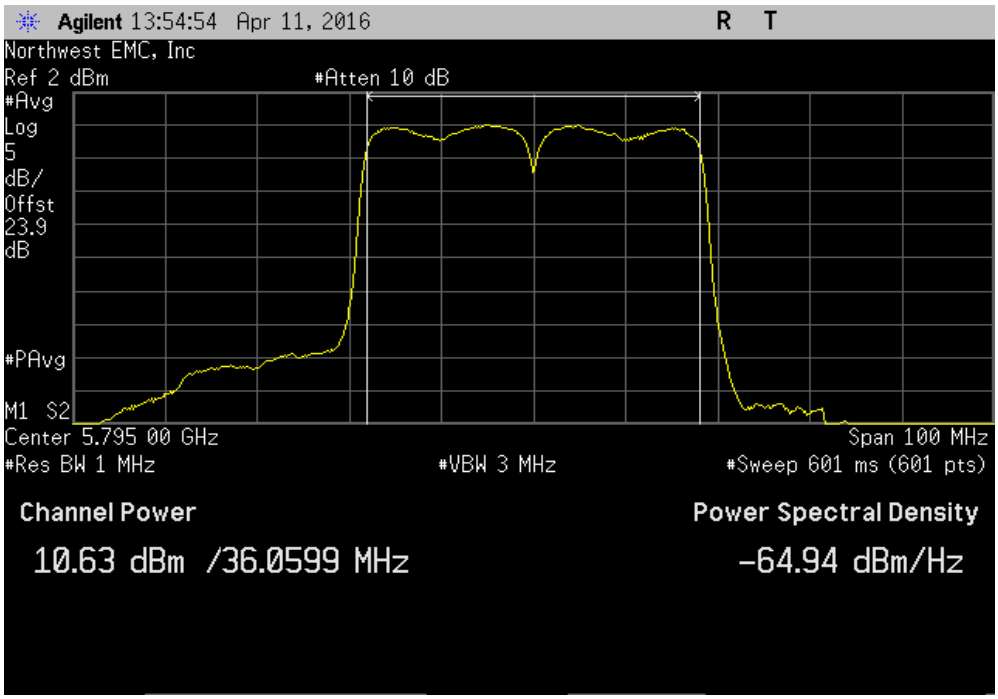
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.77	1.6		12.4	30	Pass



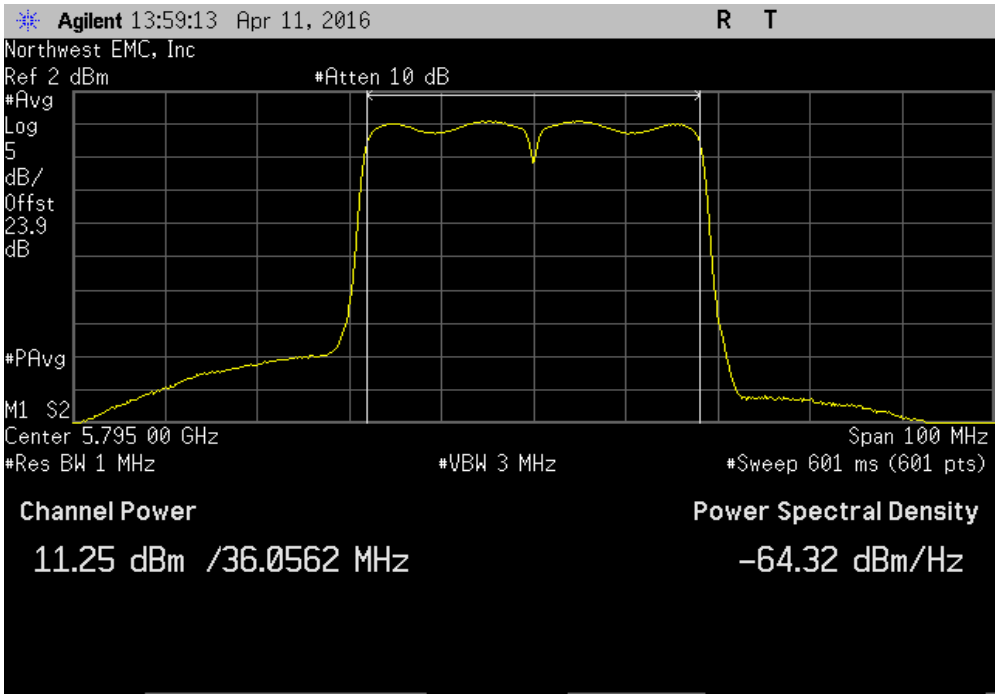
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.281	0.2		11.4	30	Pass



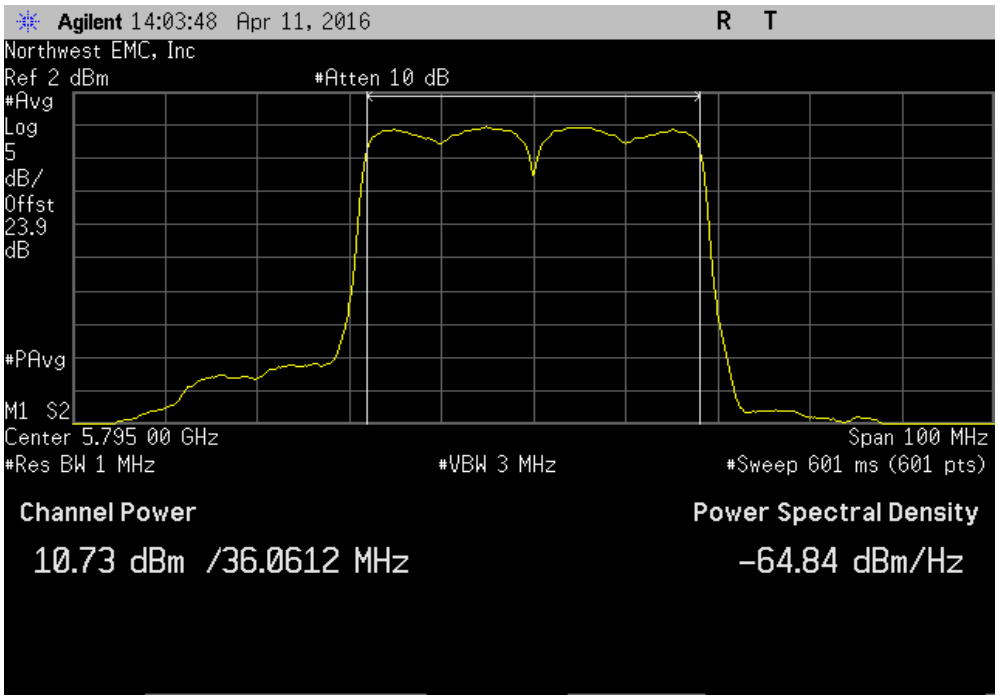
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.629	1.5		12.1	30	Pass



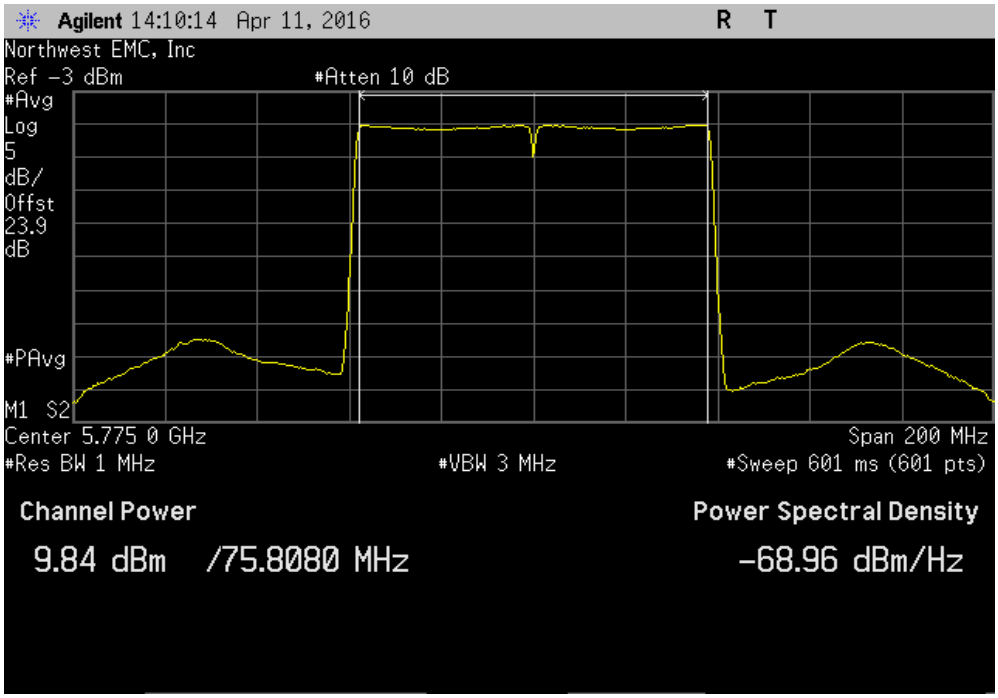
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.254	0.2		11.4	30	Pass



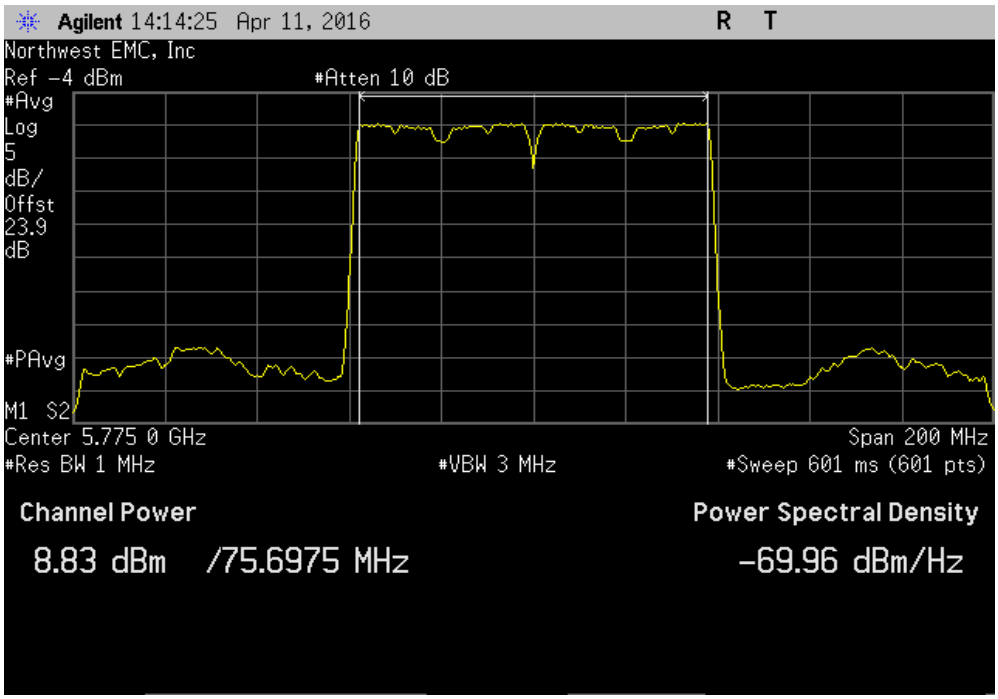
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.734	1.6		12.4	30	Pass



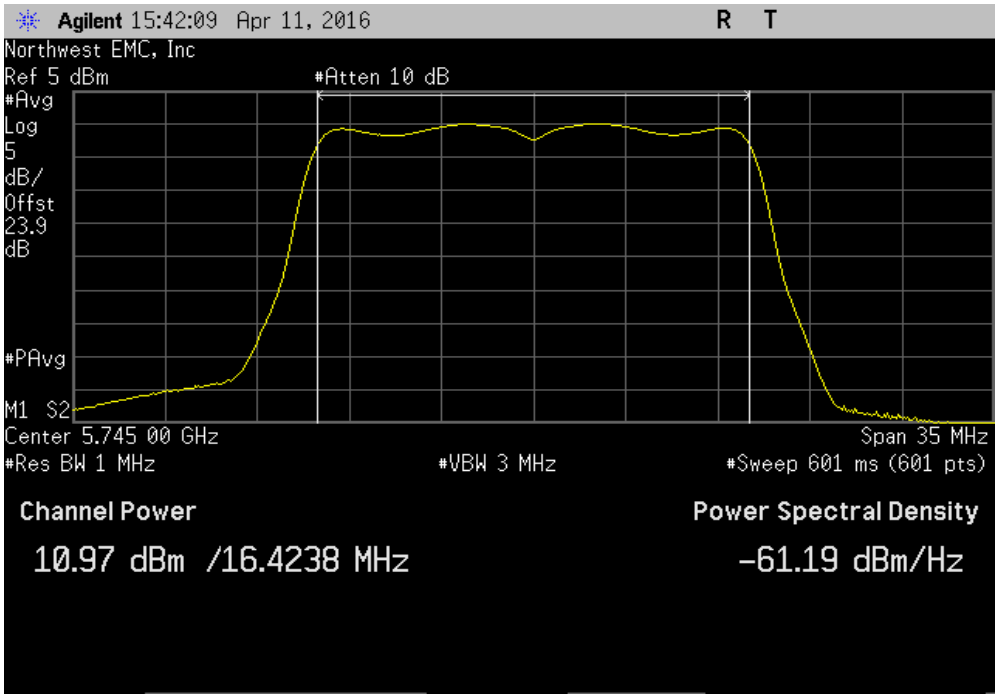
SISO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.841	0.3		10.2	30	Pass



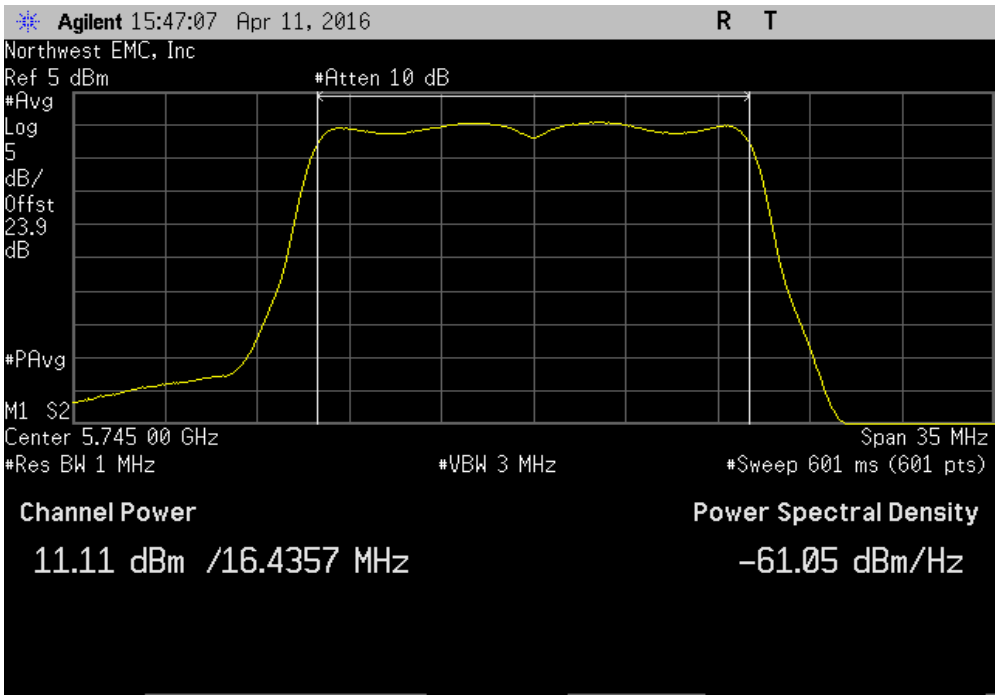
SISO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	8.83	1.8		10.7	30	Pass



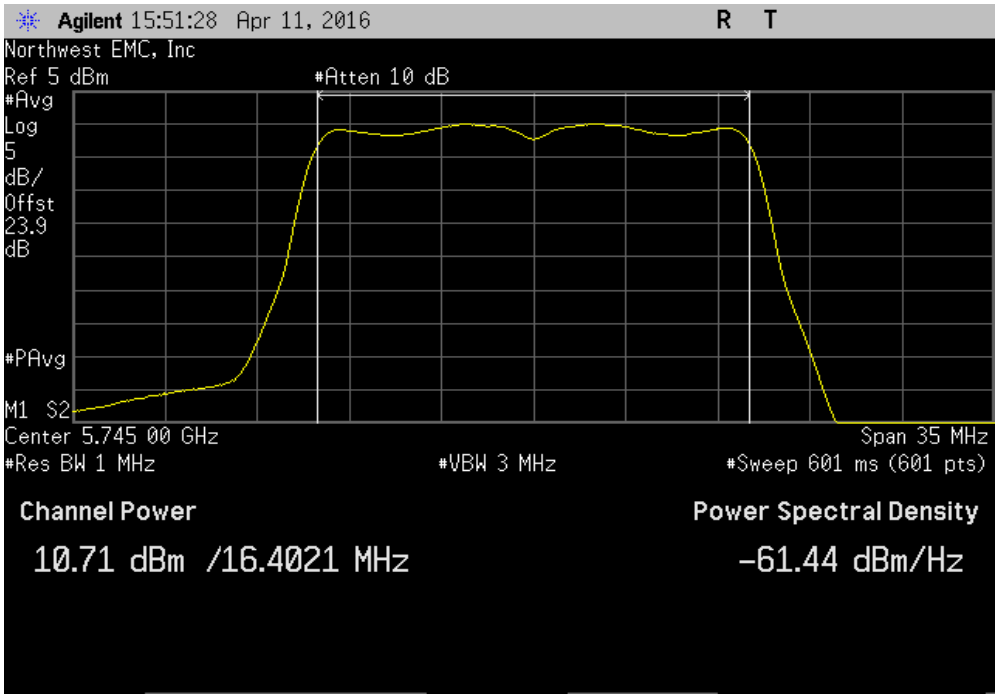
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.968	0		11	30	Pass



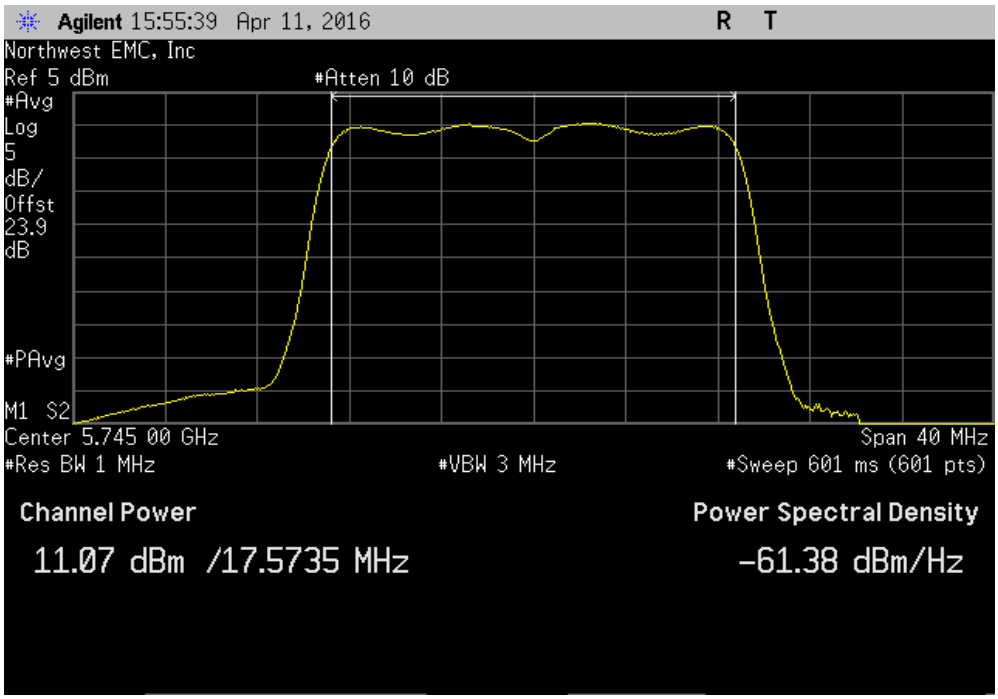
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.107	0.3		11.4	30	Pass



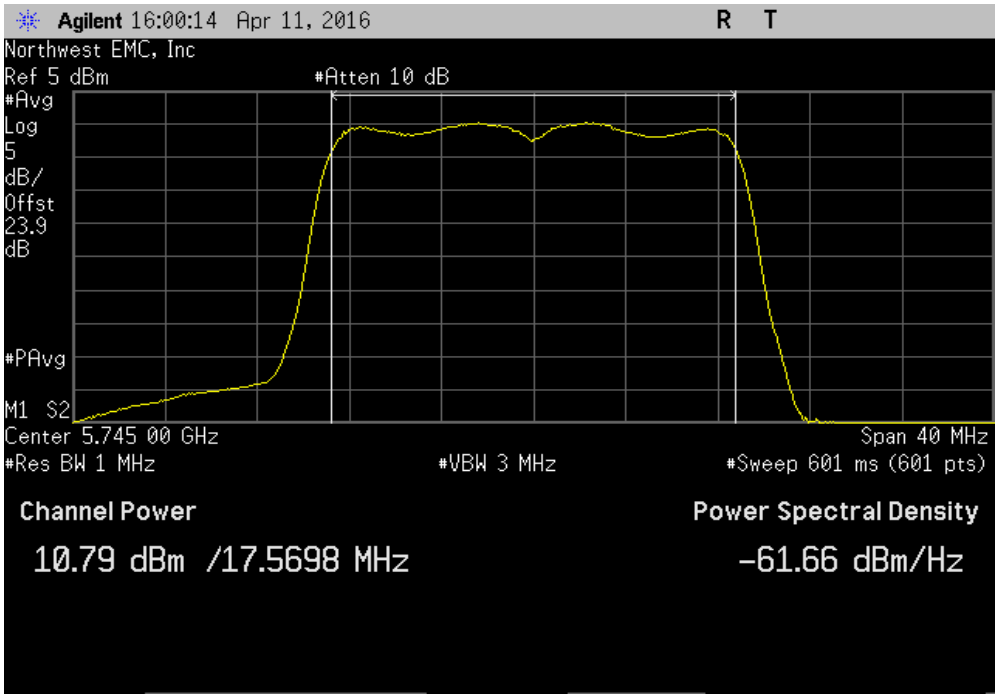
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.707	0.4		11.1	30	Pass



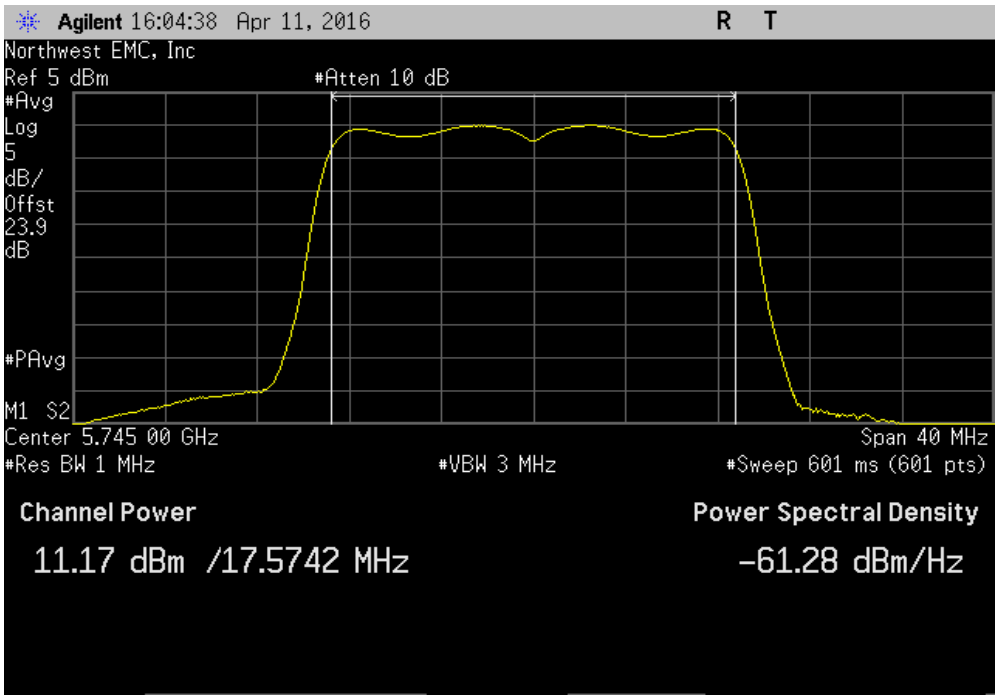
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.069	0		11.1	30	Pass



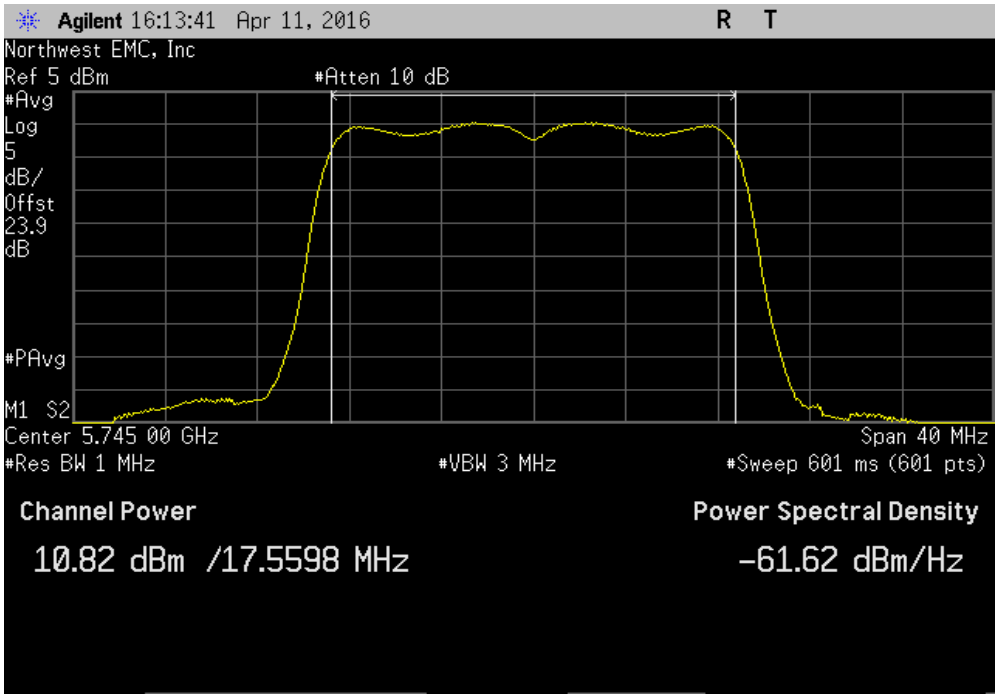
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.787	0.4		11.2	30	Pass



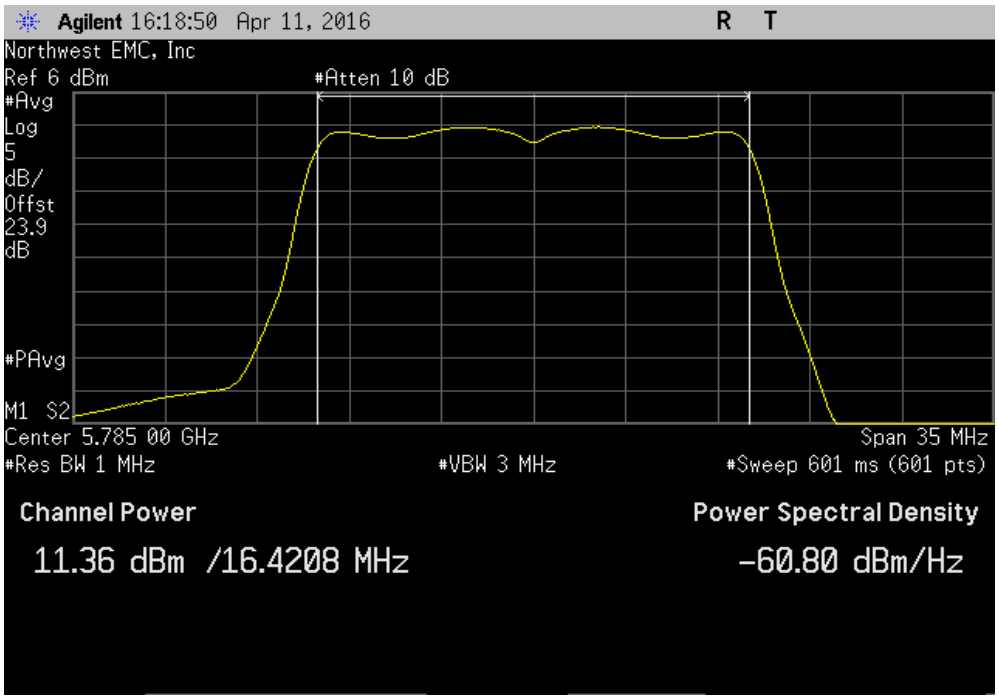
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.173	0		11.2	30	Pass



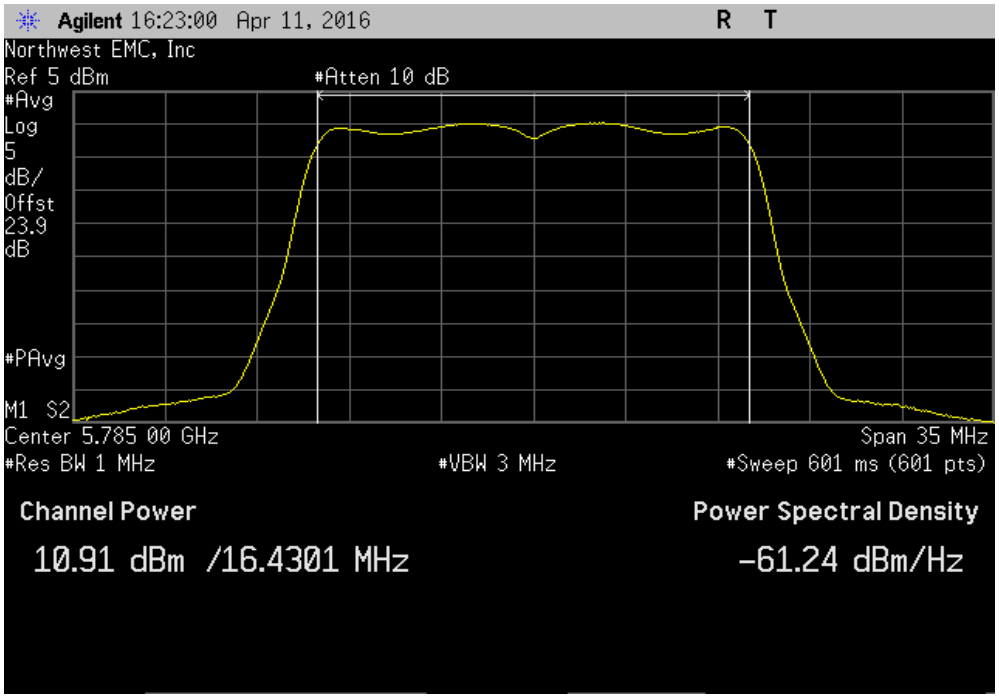
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.823	0.4		11.2	30	Pass



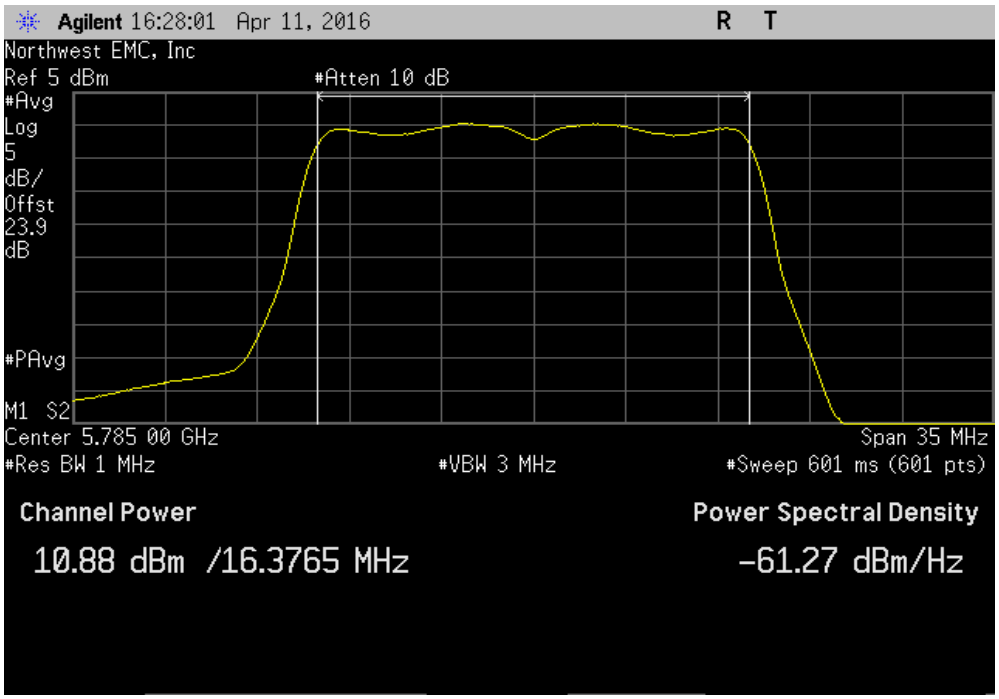
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.355	0		11.4	30	Pass



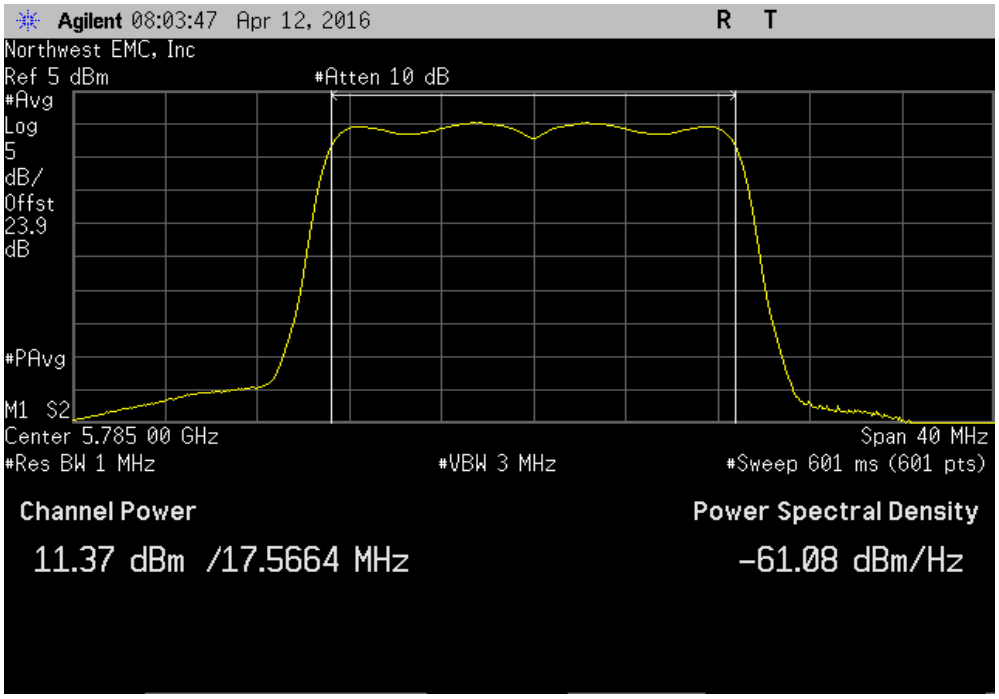
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.914	0.3		11.2	30	Pass



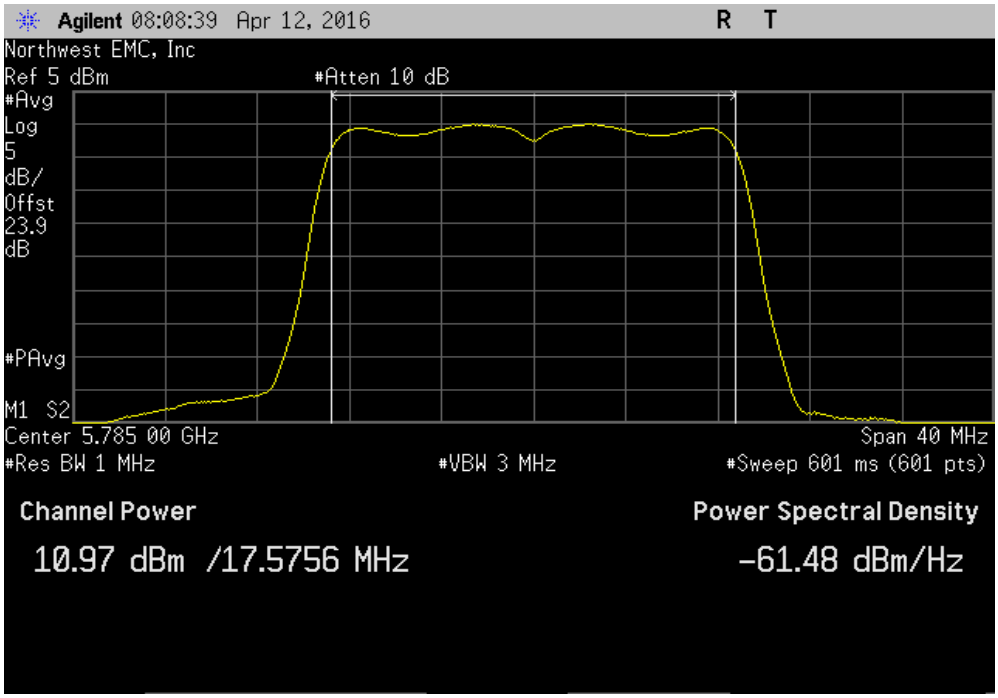
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.876	0.4		11.3	30	Pass



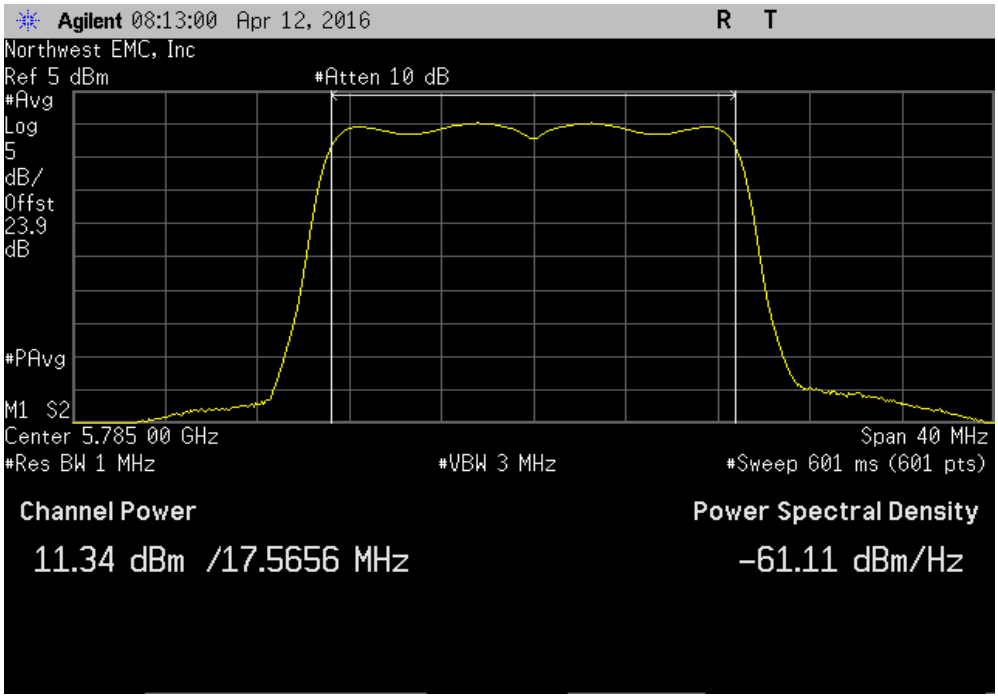
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.367	0		11.4	30	Pass



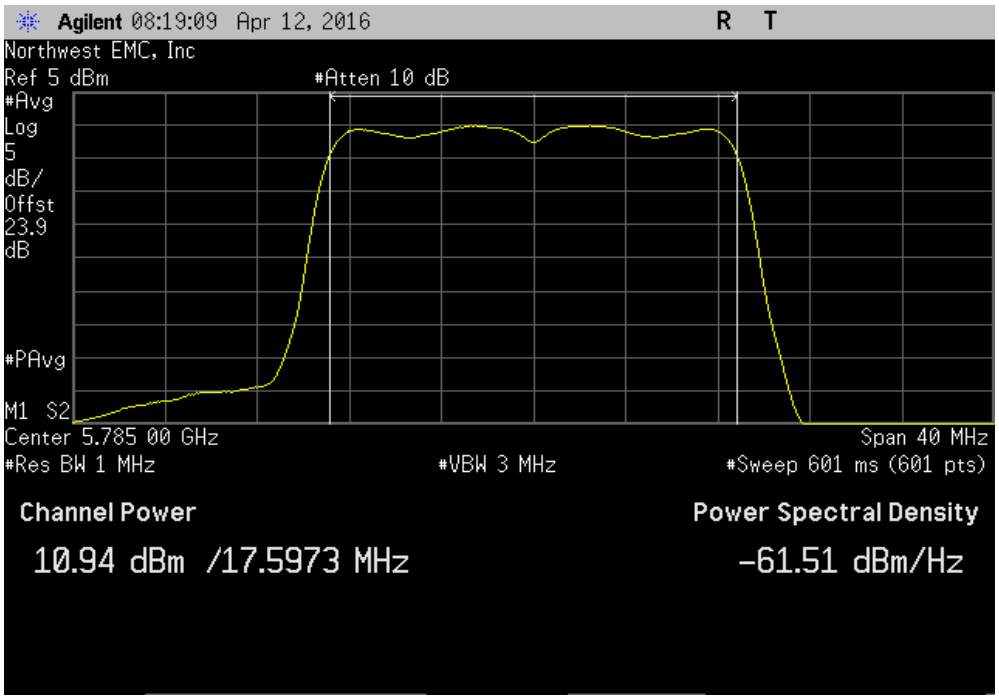
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.967	0.4		11.4	30	Pass



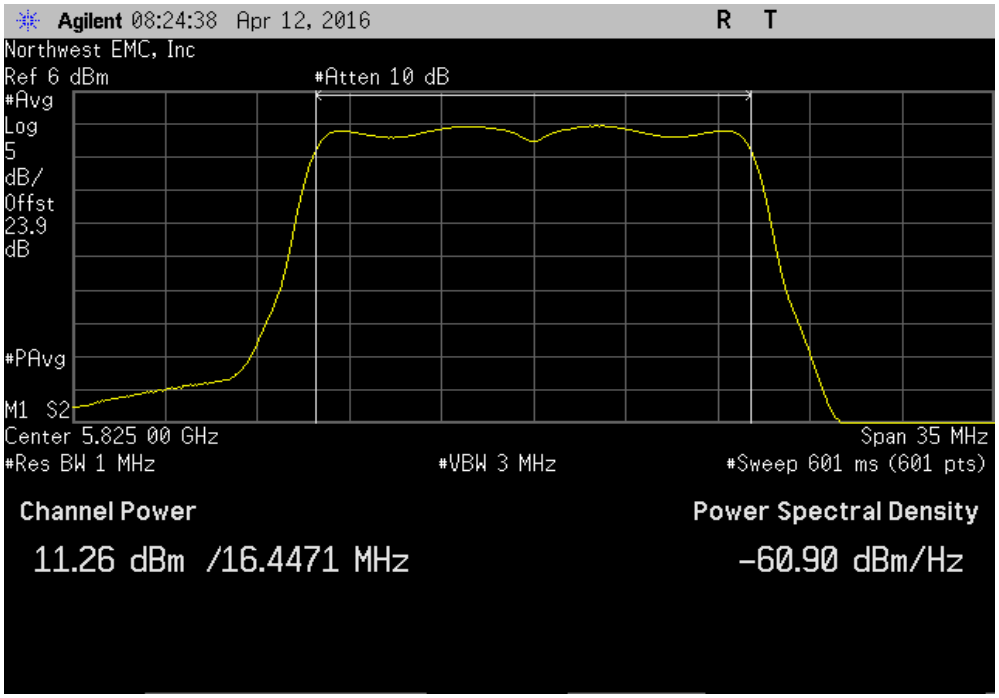
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.341	0		11.4	30	Pass



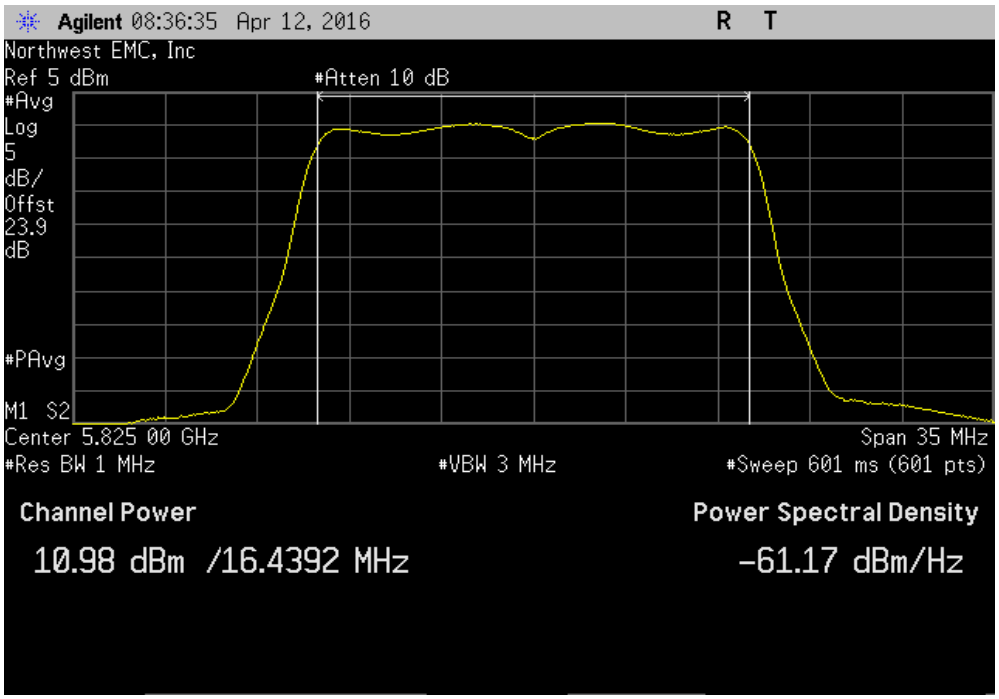
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.942	0.4		11.4	30	Pass



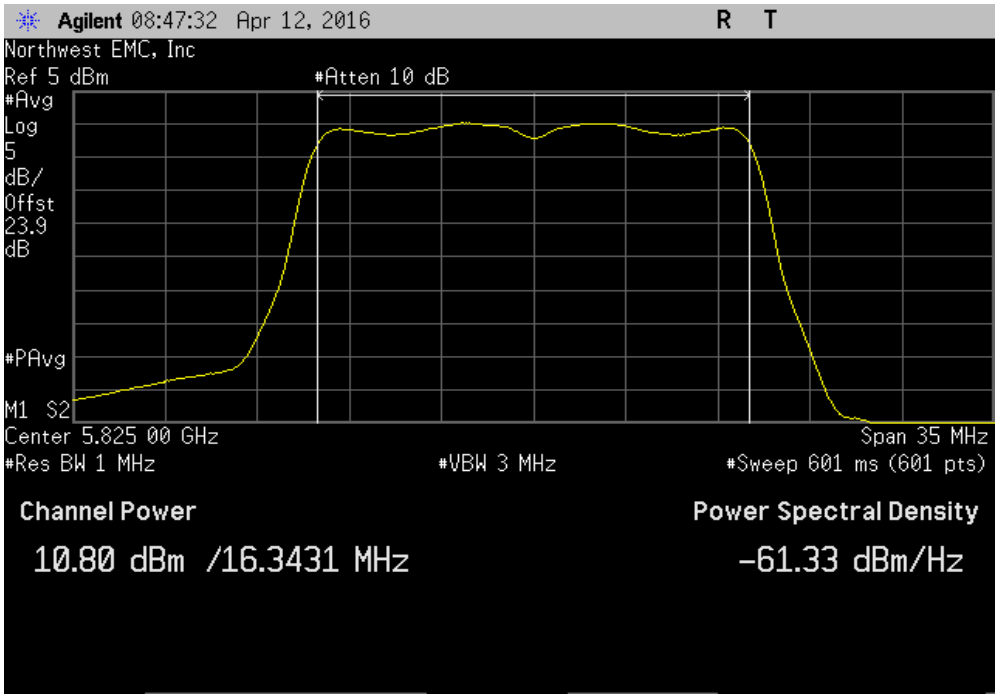
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.263	0		11.3	30	Pass



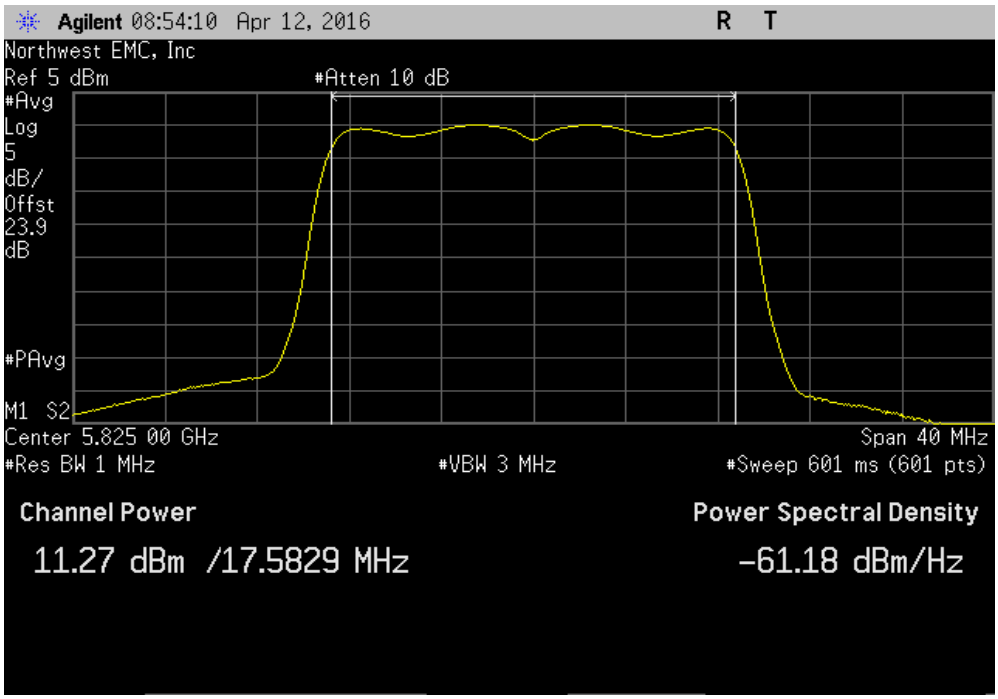
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.984	0.3		11.2	30	Pass



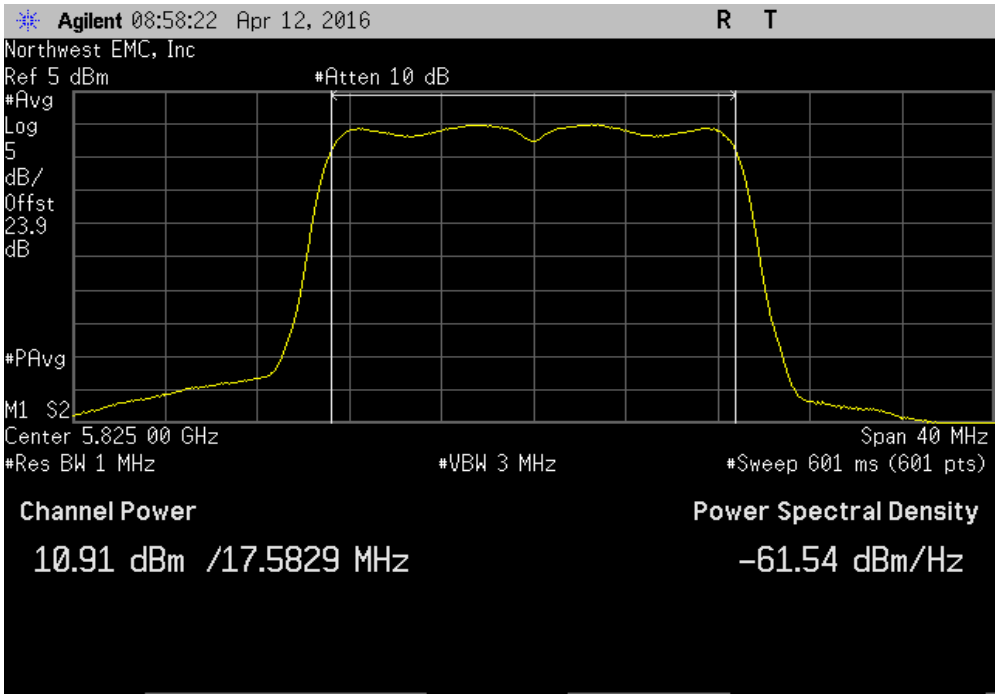
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.802	0.4		11.2	30	Pass



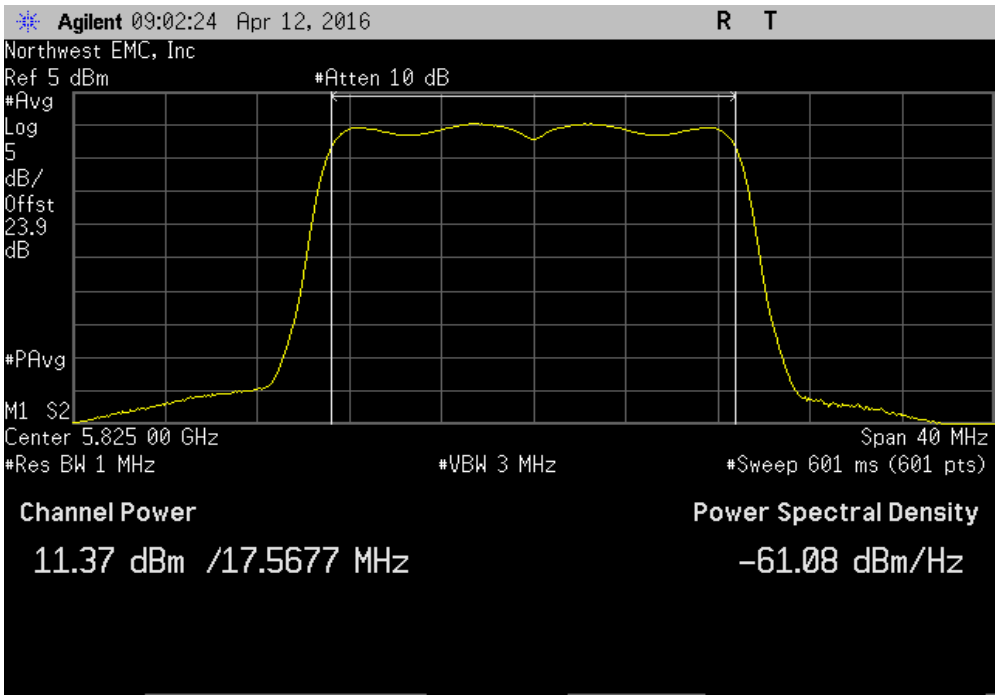
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.271	0		11.3	30	Pass



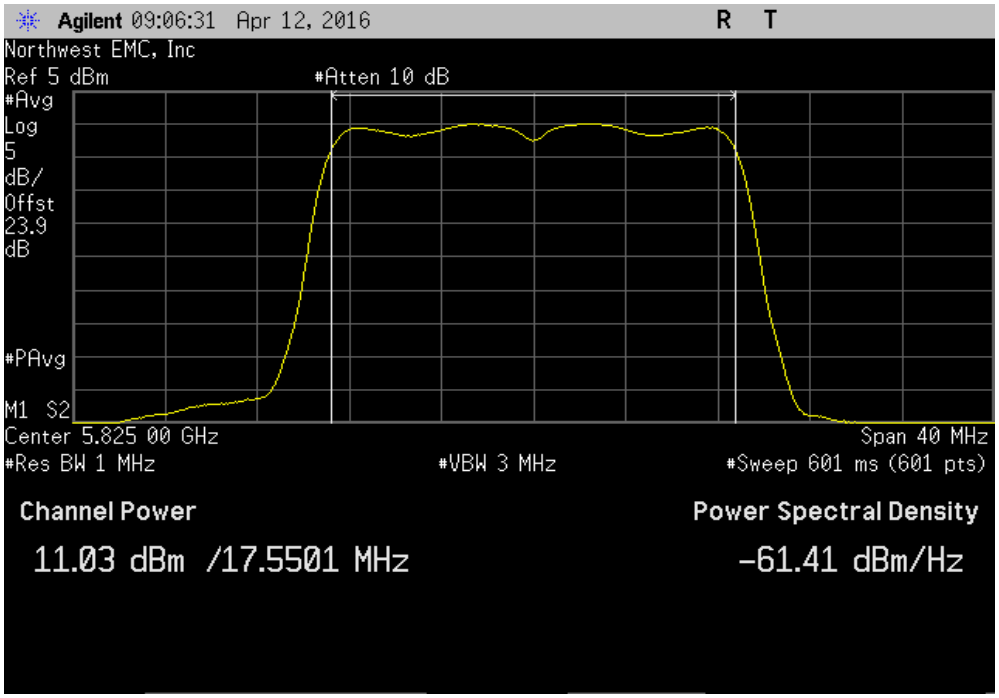
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.908	0.4		11.3	30	Pass



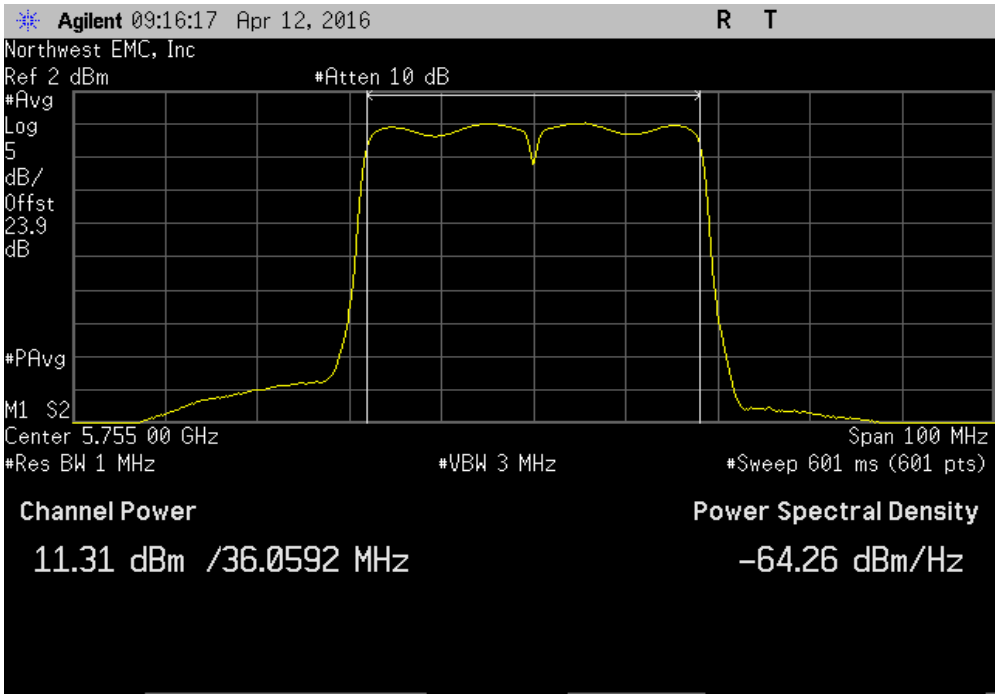
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.371	0		11.4	30	Pass



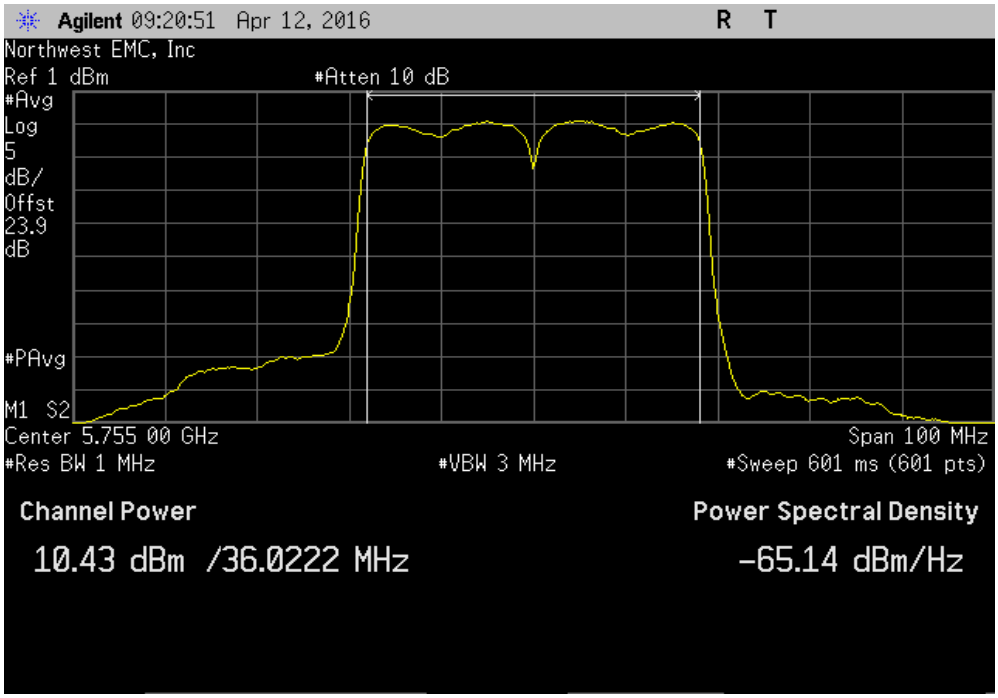
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.028	0.4		11.4	30	Pass



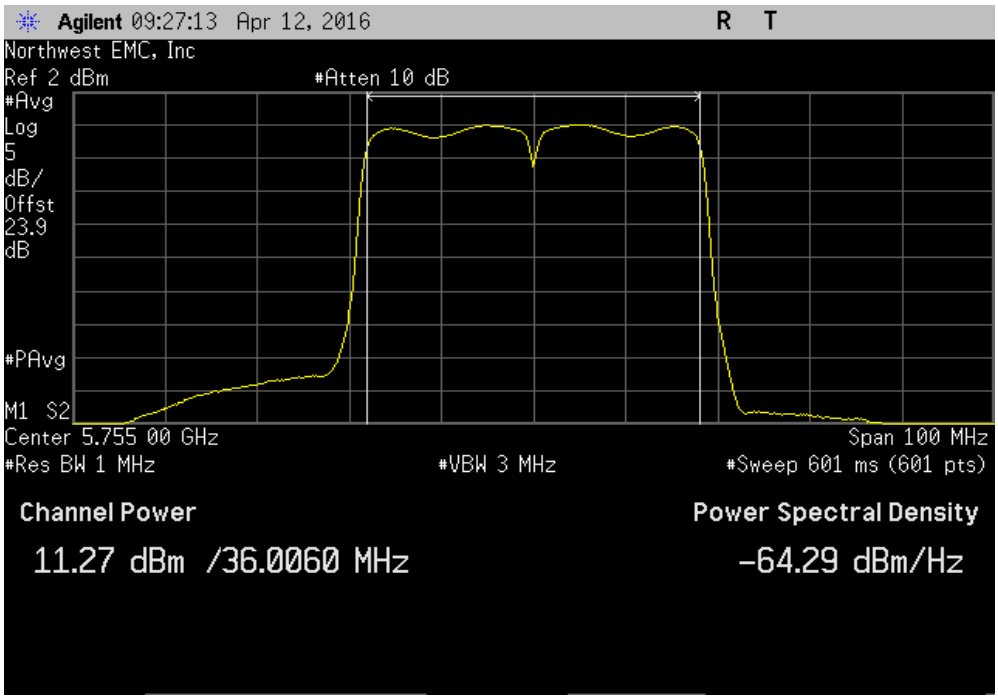
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.307	0.2		11.5	30	Pass



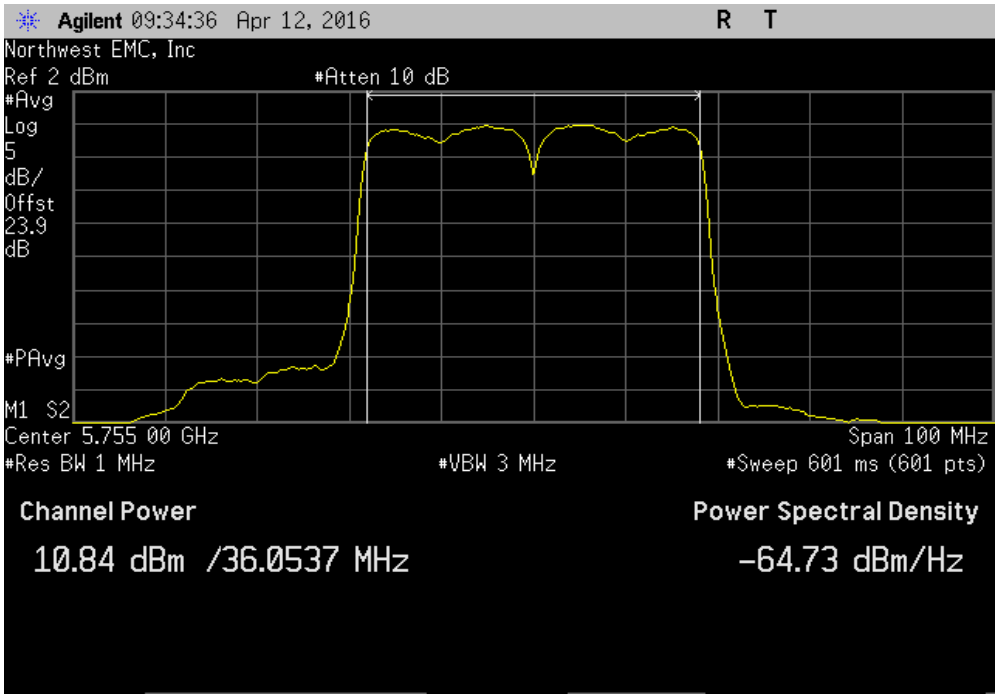
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.429	1.5		11.9	30	Pass



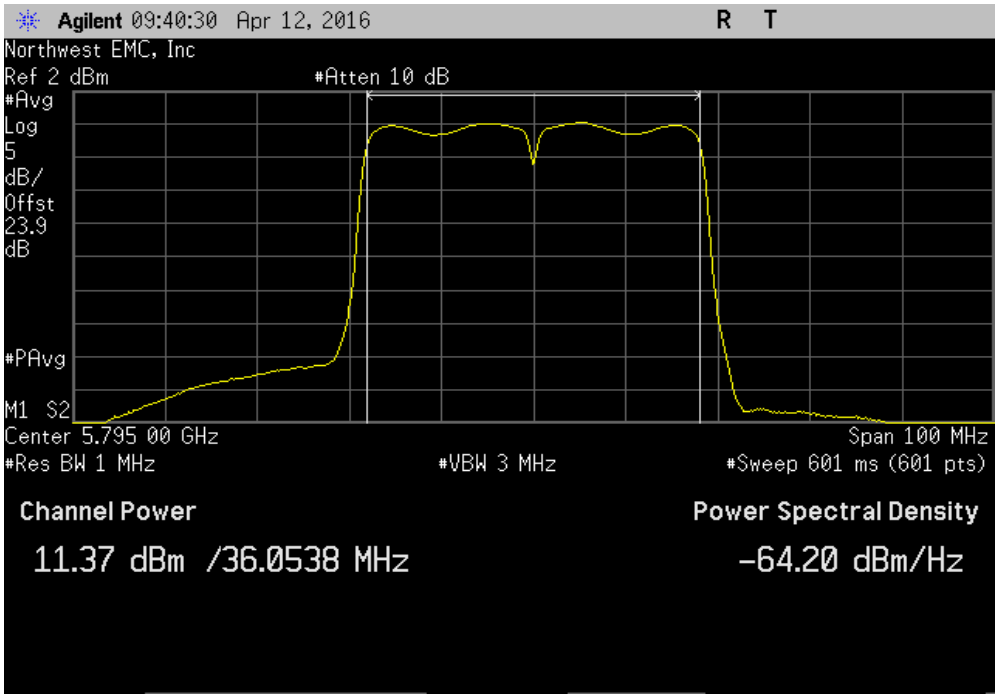
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.271	0.2		11.4	30	Pass



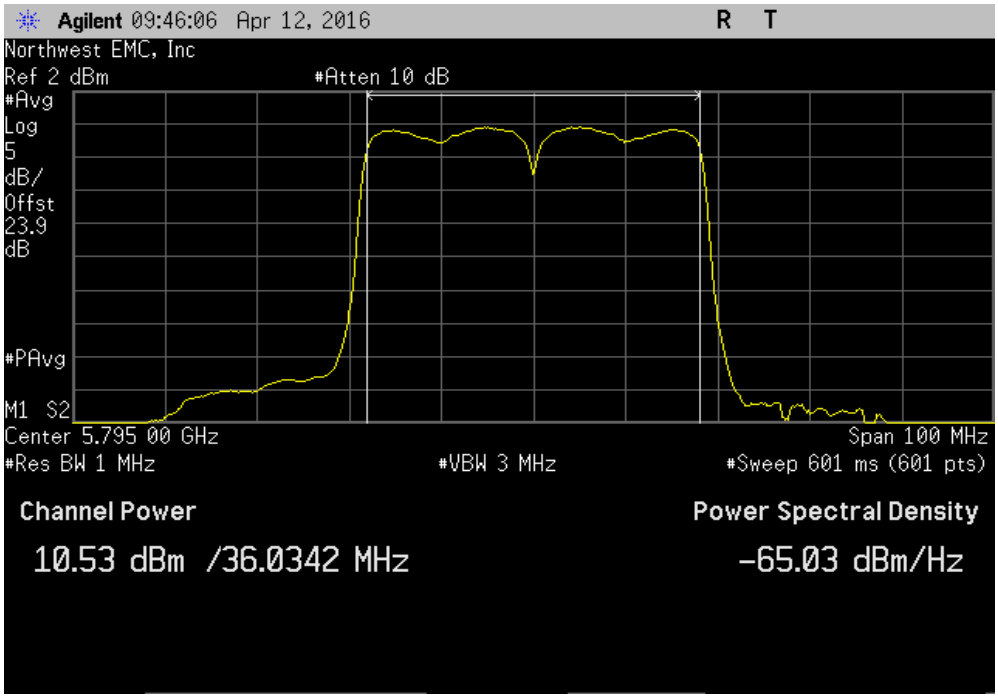
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.838	1.6		12.5	30	Pass



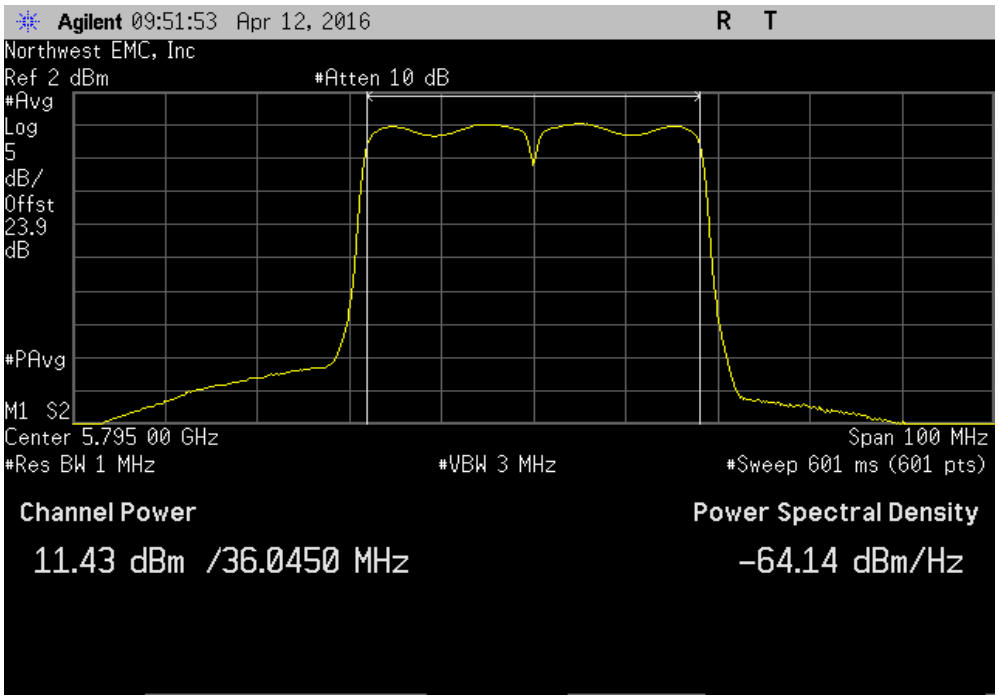
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.372	0.2		11.6	30	Pass



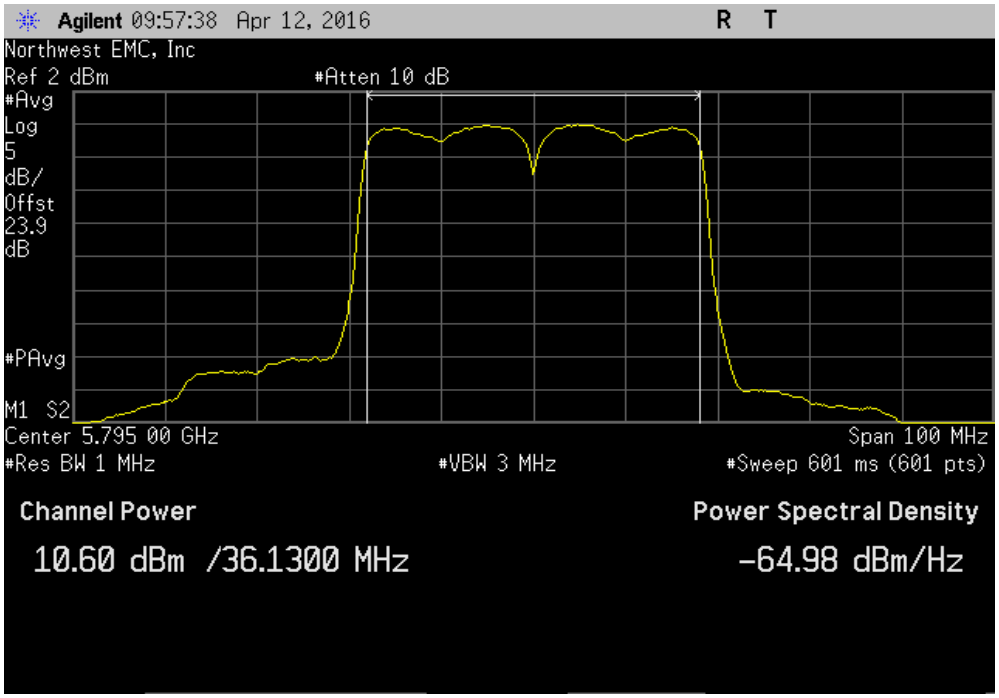
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS7						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.535	1.5		12	30	Pass



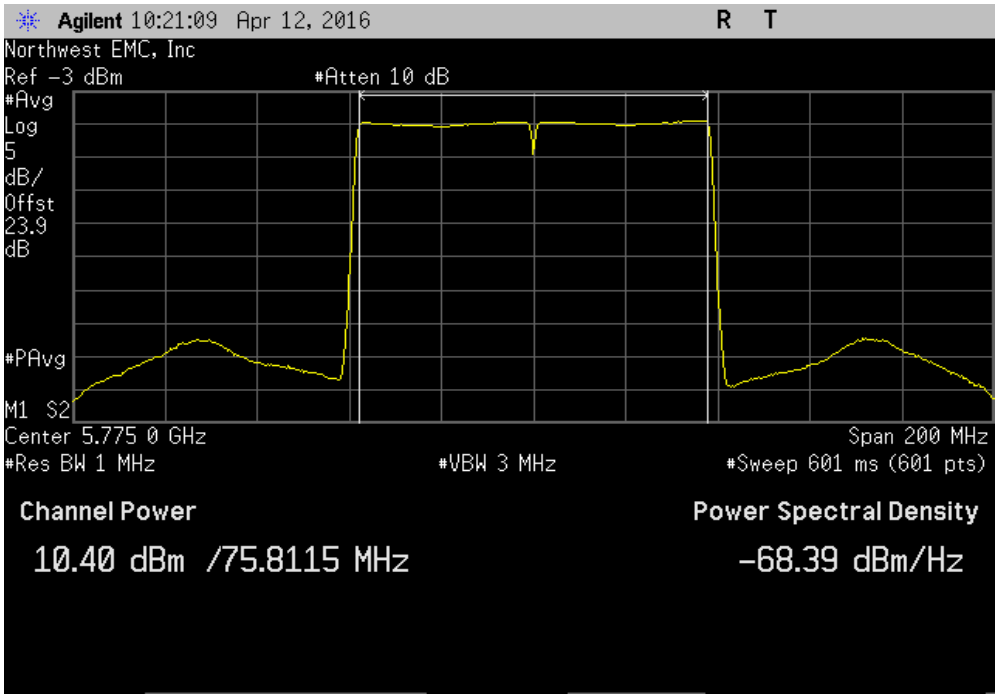
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.426	0.2		11.6	30	Pass



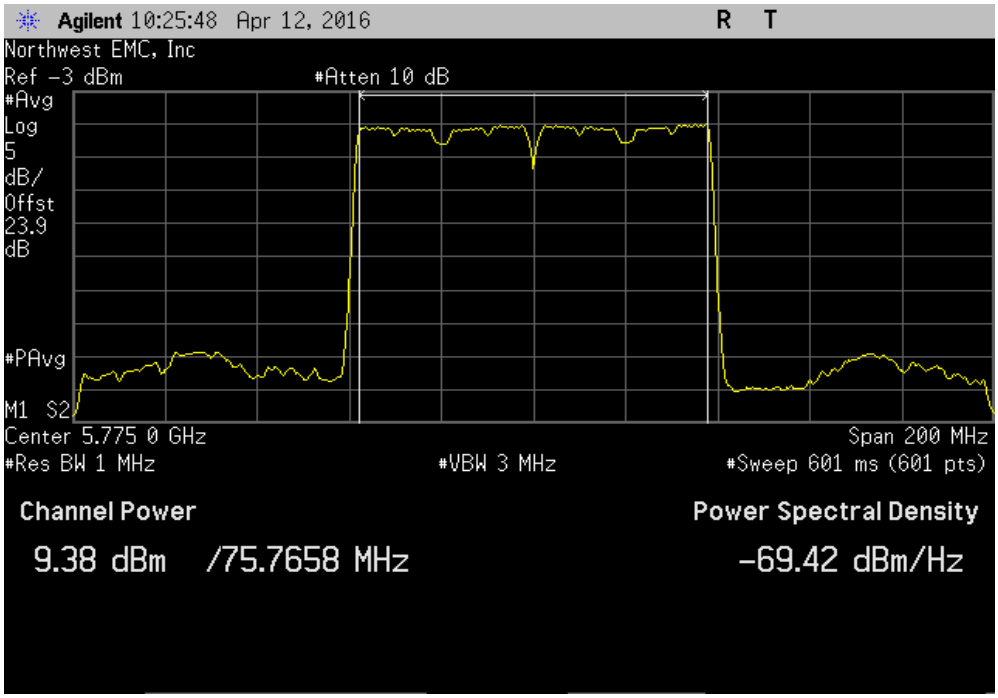
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.599	1.7		12.3	30	Pass



SISO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.405	0.2		10.7	30	Pass



SISO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.377	1.9		11.2	30	Pass



MAXIMUM CONDUCTED OUTPUT POWER

XMit 2015.01.14

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 EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	6/22/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKV	3/4/2016	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/6/2016	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

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.

Prior to measuring maximum transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The maximum conducted output power was measured using ANSI C63.10, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

-RMS Detector

-Trace average 100 traces in power averaging mode.

-Power was integrated across “B”, by using the channel power function of the analyzer.

A duty cycle correction factor was added to the measurement using the results of the formula of 10*LOG(1/D) where D is the duty cycle.

MAXIMUM CONDUCTED OUTPUT POWER

NORTHWEST EMC

XMit 2015.01.14

EUT:	Model 1631	Work Order:	MCSO1748
Serial Number:	041152140753	Date:	04/13/16
Customer:	Microsoft Corporation	Temperature:	23°C
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	1019 mbar
Tested by:	Richard Mellroth	Job Site:	NC02
Power:	110VAC/60Hz		

TEST SPECIFICATIONS	Test Method
FCC 15.407:2016	ANSI C63.10:2013

COMMENTS

Power setting at 11dBm for 20MHz and 40MHz channels. Power Setting at 10dBm for 80MHz channels. Client supplied adapter cable loss of 1.3dB included in reference level offset. Signal setting at > 95% Duty Cycle.

DEVIATIONS FROM TEST STANDARD

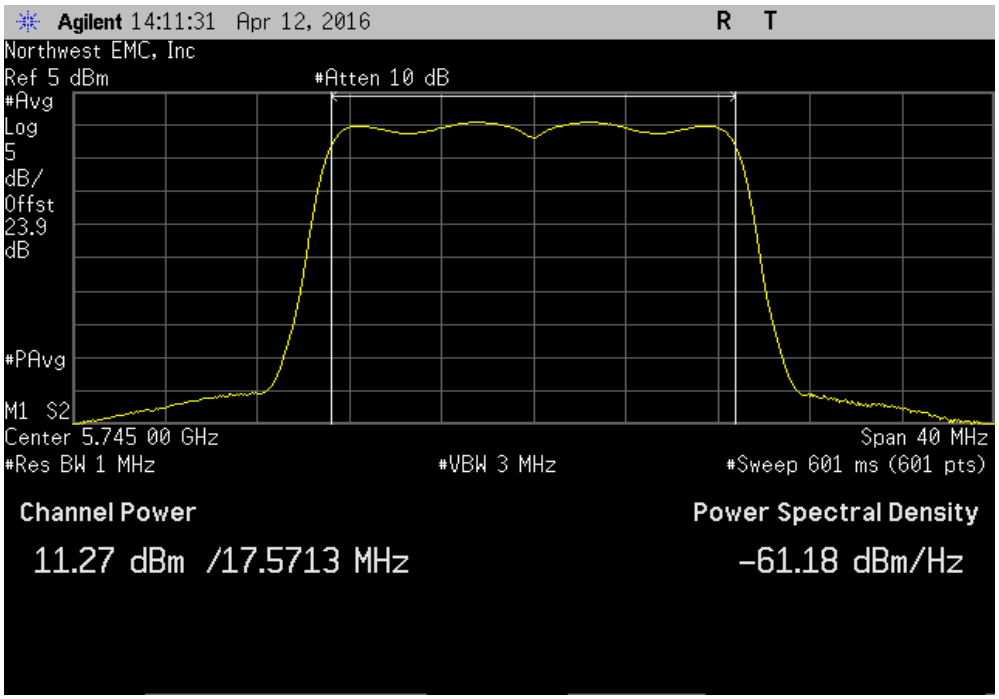
None

Configuration #	1	Signature

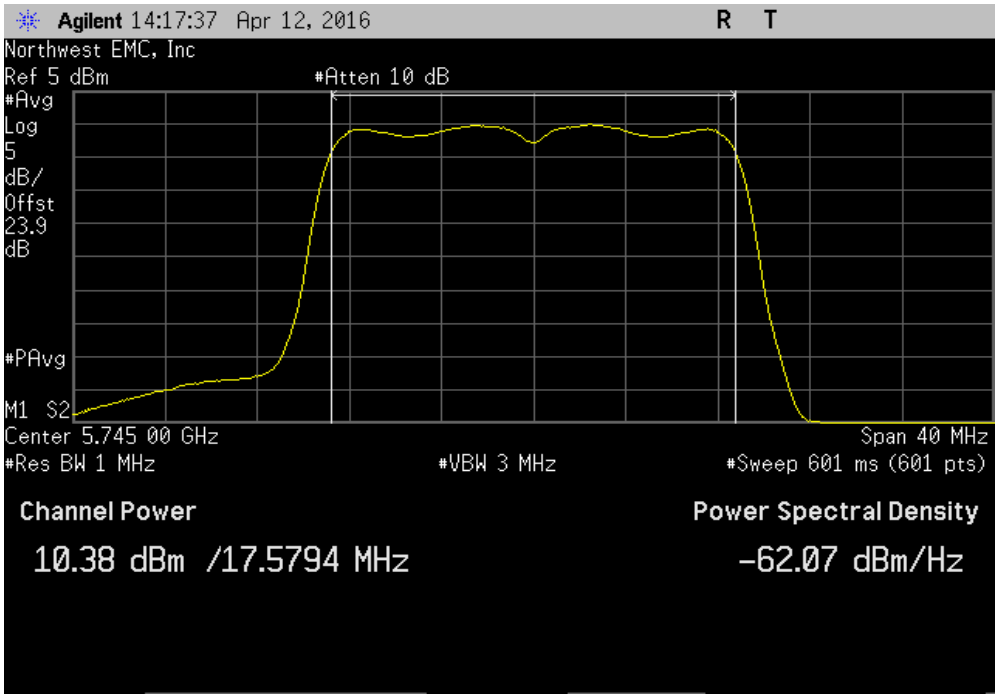
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Value (dBm)	Limit (dBm)	Results
2x2 MIMO, Chain A					
20MHz BW					
Low Channel, Ch 149 - 5745 MHz					
802.11(n) MCS8	11.267	0.1	11.4	30	Pass
802.11(n) MCS15	10.384	0.7	11.1	30	Pass
802.11(ac) MCS0	11.192	0.1	11.3	30	Pass
802.11(ac) MCS8	10.452	0.7	11.1	30	Pass
Mid Channel, Ch 157 - 5785 MHz					
802.11(n) MCS8	11.328	0.1	11.4	30	Pass
802.11(n) MCS15	10.56	0.7	11.3	30	Pass
802.11(ac) MCS0	11.467	0.1	11.5	30	Pass
802.11(ac) MCS8	10.547	0.7	11.2	30	Pass
High Channel, Ch 165 - 5825 MHz					
802.11(n) MCS8	11.324	0.1	11.4	30	Pass
802.11(n) MCS15	10.67	0.7	11.4	30	Pass
802.11(ac) MCS0	11.264	0.1	11.3	30	Pass
802.11(ac) MCS8	10.838	0.7	11.5	30	Pass
40MHz BW					
Low Channel, Ch 149/153 - 5755 MHz					
802.11(n) MCS8	10.751	0.2	10.9	30	Pass
802.11(n) MCS15	9.567	1.5	11.1	30	Pass
802.11(ac) MCS0	10.861	0.3	11.2	30	Pass
802.11(ac) MCS9	9.708	1.2	10.9	30	Pass
High Channel, Ch 157/161 - 5795 MHz					
802.11(n) MCS8	10.779	0.3	11.1	30	Pass
802.11(n) MCS15	9.708	1.5	11.3	30	Pass
802.11(ac) MCS0	10.829	0.3	11.1	30	Pass
802.11(ac) MCS9	10.08	2.5	12.6	30	Pass
80MHz BW					
Mid Channel, Ch 149/161 - 5775 MHz					
802.11(ac) MCS0	8.62	0.6	9.2	30	Pass
802.11(ac) MCS9	7.741	2.8	10.6	30	Pass
2x2 MIMO, Chain B					
20MHz BW					
Low Channel, Ch 149 - 5745 MHz					
802.11(n) MCS8	10.939	0.1	11	30	Pass
802.11(n) MCS15	10.485	0.8	11.2	30	Pass
802.11(ac) MCS0	10.692	0.1	10.8	30	Pass
802.11(ac) MCS8	10.467	0.7	11.2	30	Pass
Mid Channel, Ch 157 - 5785 MHz					
802.11(n) MCS8	10.984	0.1	11.1	30	Pass
802.11(n) MCS15	10.559	0.8	11.3	30	Pass
802.11(ac) MCS0	11.144	0.1	11.2	30	Pass
802.11(ac) MCS8	10.576	0.7	11.3	30	Pass
High Channel, Ch 165 - 5825 MHz					
802.11(n) MCS8	11.077	0.1	11.2	30	Pass
802.11(n) MCS15	10.636	0.8	11.4	30	Pass
802.11(ac) MCS0	11.133	0.1	11.2	30	Pass
802.11(ac) MCS8	10.608	0.7	11.3	30	Pass
40MHz BW					
Low Channel, Ch 149/153 - 5755 MHz					
802.11(n) MCS8	10.541	0.3	10.9	30	Pass
802.11(n) MCS15	9.704	2.4	12.1	30	Pass
802.11(ac) MCS0	10.668	0.3	11	30	Pass
802.11(ac) MCS9	9.817	1.1	10.9	30	Pass
High Channel, Ch 157/161 - 5795 MHz					
802.11(n) MCS8	10.667	0.3	11	30	Pass
802.11(n) MCS15	9.754	2.4	12.1	30	Pass
802.11(ac) MCS0	10.743	0.3	11.1	30	Pass
802.11(ac) MCS9	9.978	2.5	12.5	30	Pass
80MHz BW					
Mid Channel, Ch 149/161 - 5775 MHz					
802.11(ac) MCS0	8.796	0.6	9.4	30	Pass
802.11(ac) MCS9	8.132	1.5	9.7	30	Pass

2x2 MIMO, Power Summing Table						
20MHz BW	Chain A Value (mW)	Chain B Value (mW)	Summed Value (mW)	Summed Value (dBm)	Limit (dBm)	Results
Low Channel, Ch 149 - 5745 MHz						
802.11(n) MCS8	13.8	12.6	26.4	14.2	30	Pass
802.11(n) MCS15	12.9	13.2	26.1	14.2	30	Pass
802.11(ac) MCS0	13.5	12.0	25.5	14.1	30	Pass
802.11(ac) MCS8	12.9	13.2	26.1	14.2	30	Pass
Mid Channel, Ch 157 - 5785 MHz						
802.11(n) MCS8	13.8	12.9	26.7	14.3	30	Pass
802.11(n) MCS15	13.5	13.5	27.0	14.3	30	Pass
802.11(ac) MCS0	14.1	13.2	27.3	14.4	30	Pass
802.11(ac) MCS8	13.2	13.5	26.7	14.3	30	Pass
High Channel, Ch 165 - 5825 MHz						
802.11(n) MCS8	13.8	13.2	27.0	14.3	30	Pass
802.11(n) MCS15	13.8	13.8	27.6	14.4	30	Pass
802.11(ac) MCS0	13.5	13.2	26.7	14.3	30	Pass
802.11(ac) MCS8	14.1	13.5	27.6	14.4	30	Pass
40MHz BW						
Low Channel, Ch 149/153 - 5755 MHz						
802.11(n) MCS8	12.3	12.3	24.6	13.9	30	Pass
802.11(n) MCS15	12.9	16.2	29.1	14.6	30	Pass
802.11(ac) MCS0	13.2	12.6	25.8	14.1	30	Pass
802.11(ac) MCS9	12.3	12.3	24.6	13.9	30	Pass
High Channel, Ch 157/161 - 5795 MHz						
802.11(n) MCS8	12.9	12.6	25.5	14.1	30	Pass
802.11(n) MCS15	13.5	16.2	29.7	14.7	30	Pass
802.11(ac) MCS0	12.9	12.9	25.8	14.1	30	Pass
802.11(ac) MCS9	18.2	17.8	36.0	15.6	30	Pass
80MHz BW						
Mid Channel, Ch 149/161 - 5775 MHz						
802.11(ac) MCS0	8.3	8.7	17.0	12.3	30	Pass
802.11(ac) MCS9	11.5	9.3	20.8	13.2	30	Pass

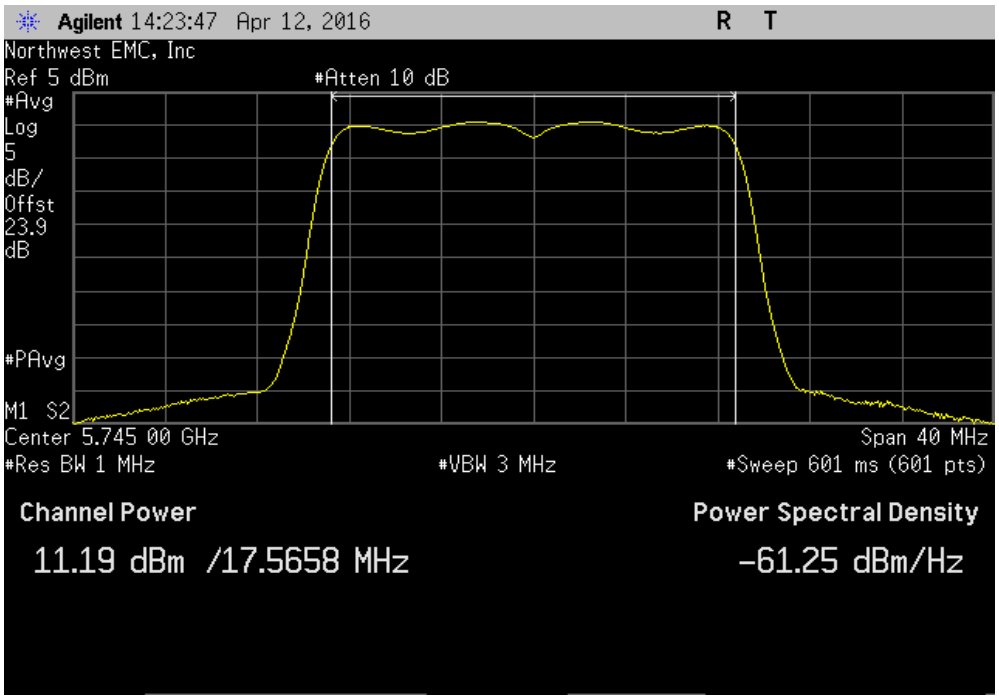
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.267	0.1		11.4	30	Pass



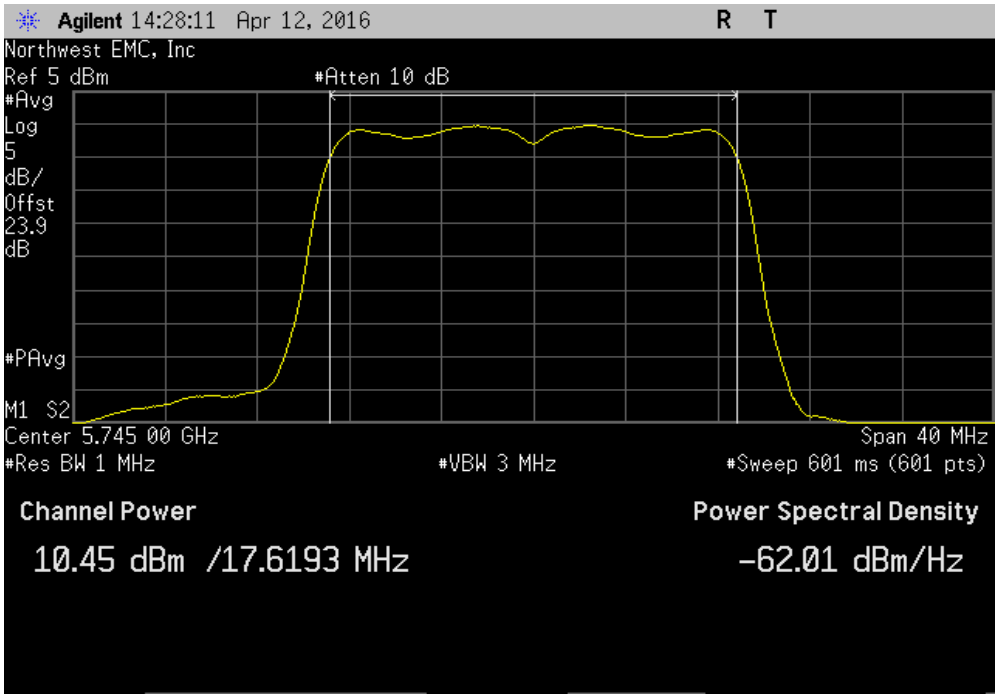
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.384	0.7		11.1	30	Pass



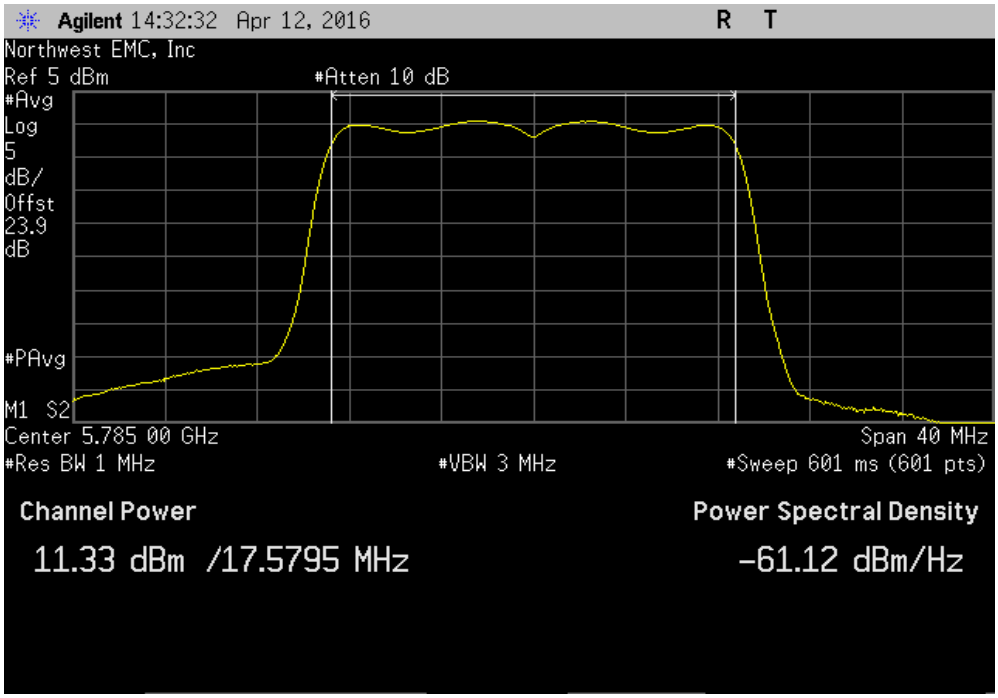
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.192	0.1		11.3	30	Pass



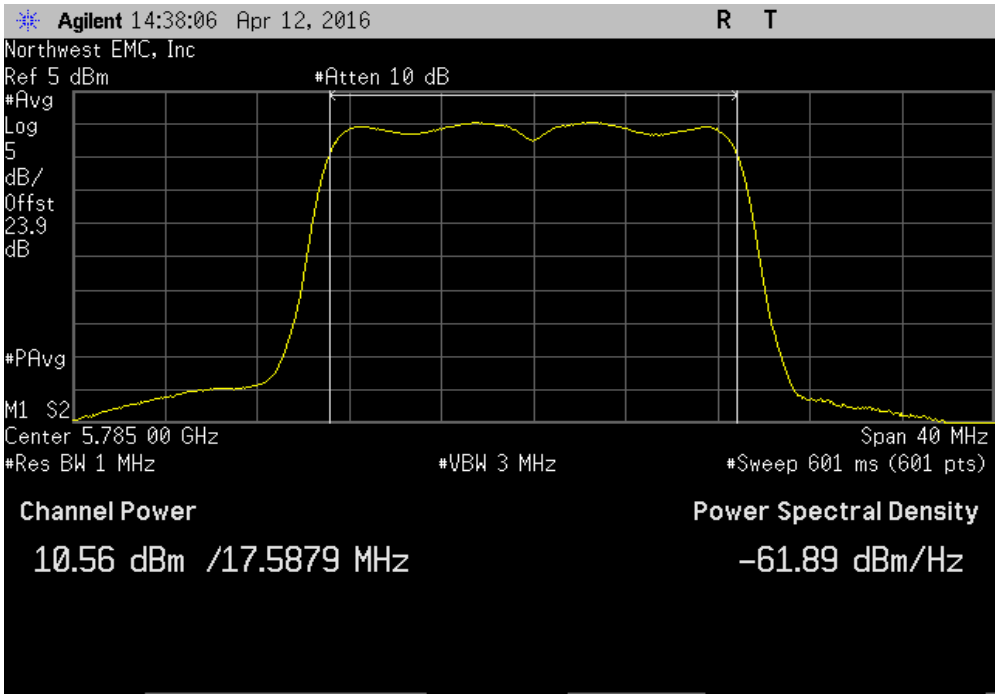
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.452	0.7		11.1	30	Pass



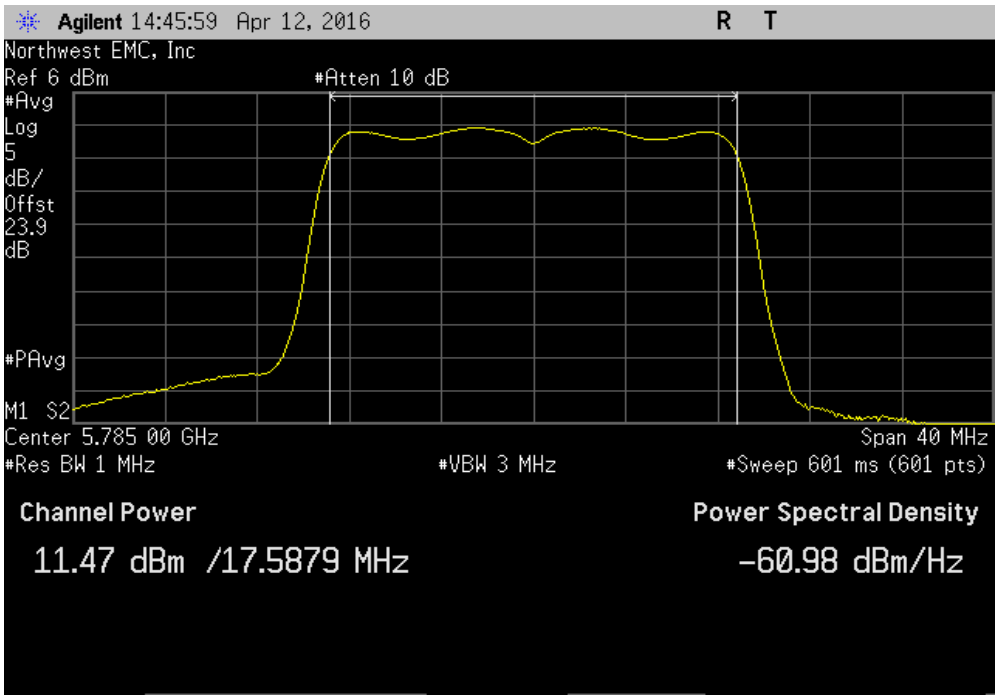
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.328	0.1		11.4	30	Pass



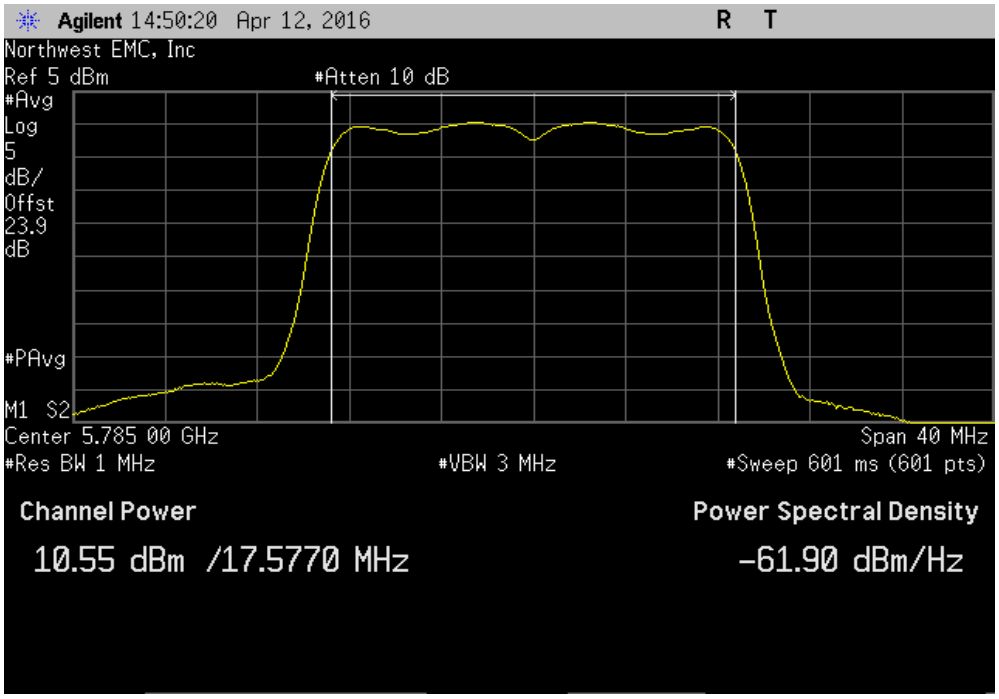
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.56	0.7		11.3	30	Pass



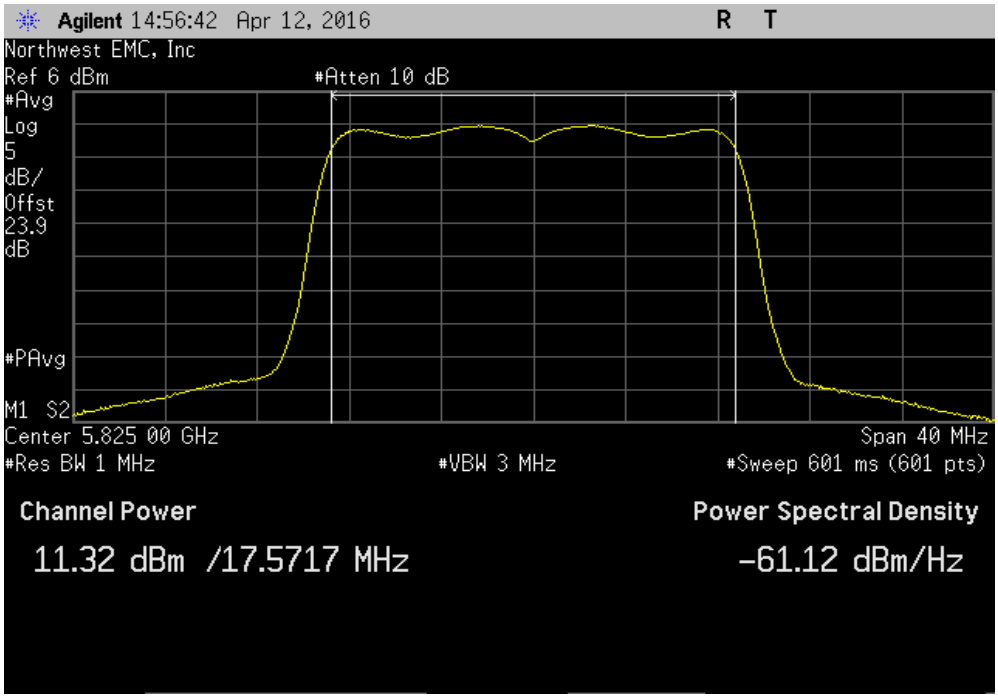
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.467	0.1		11.5	30	Pass



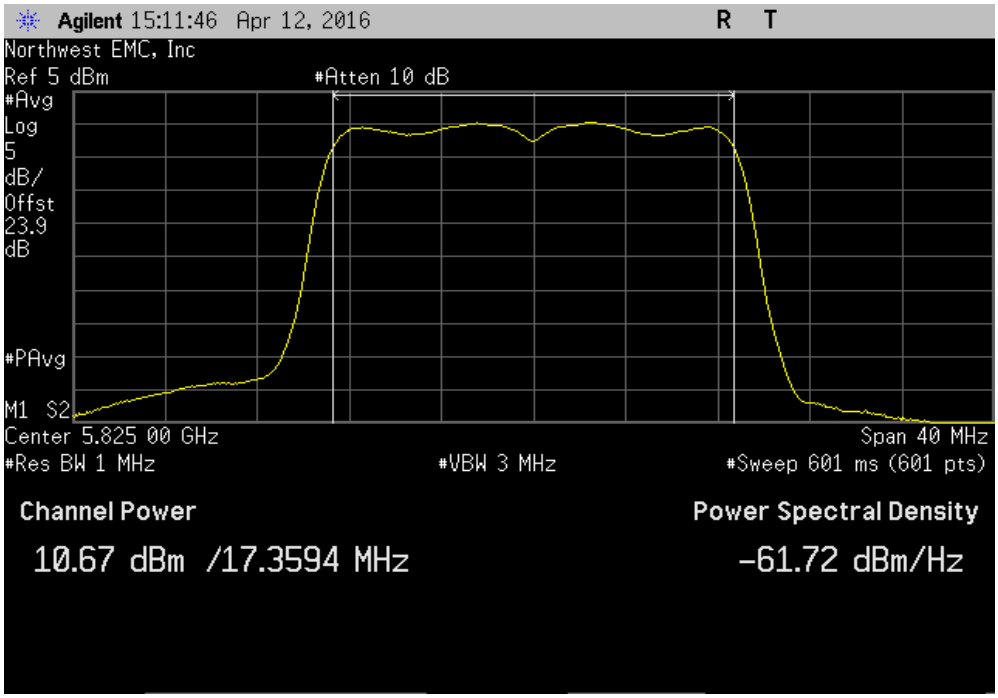
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.547	0.7		11.2	30	Pass



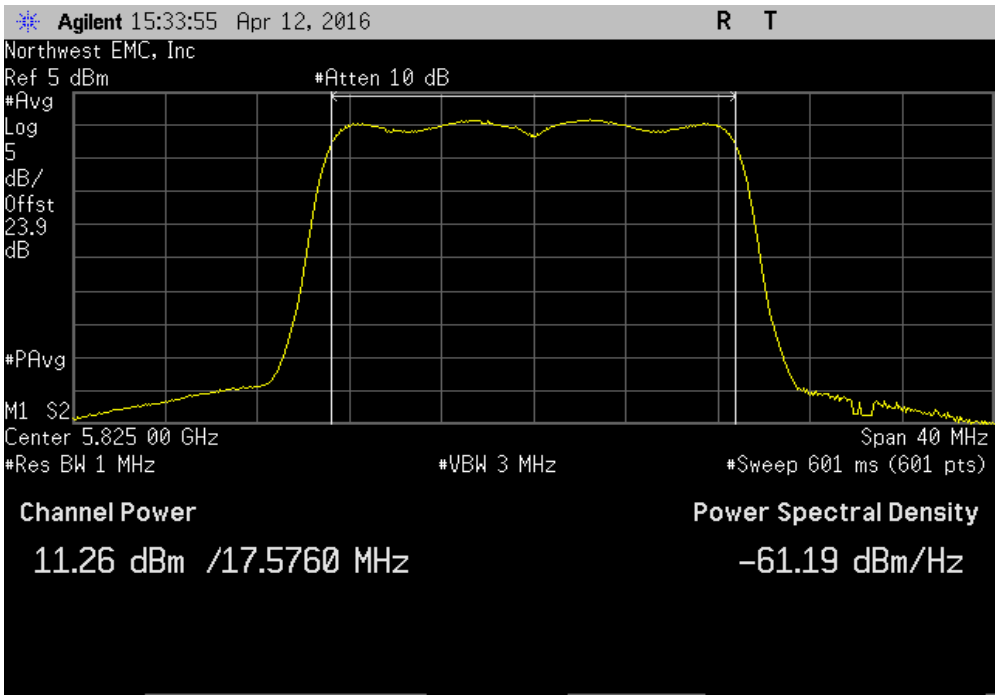
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.324	0.1		11.4	30	Pass



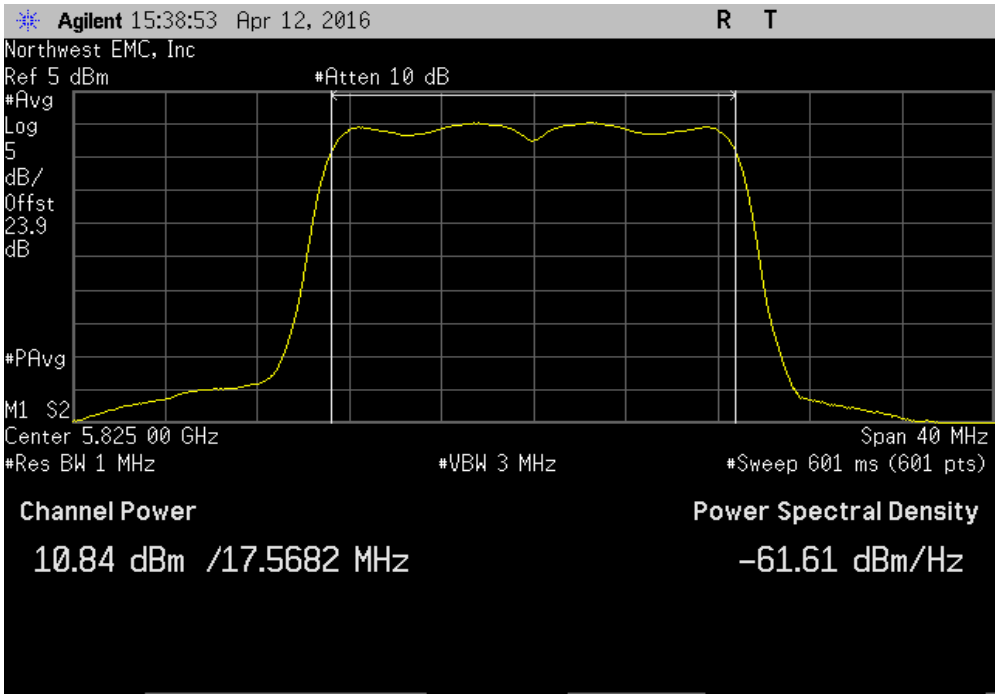
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.67	0.7		11.4	30	Pass



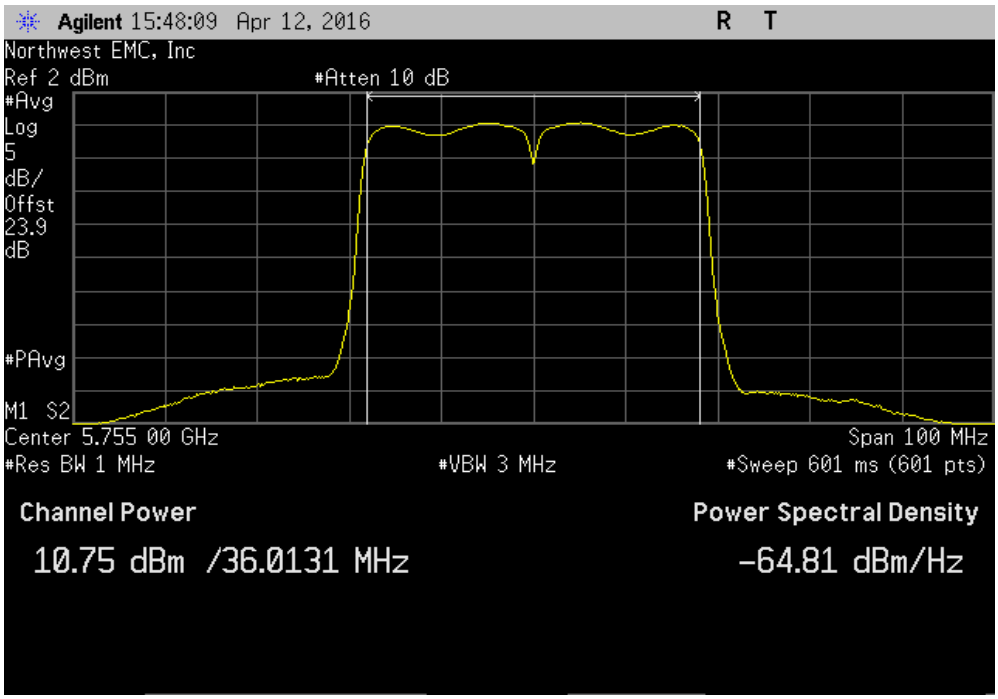
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.264	0.1		11.3	30	Pass



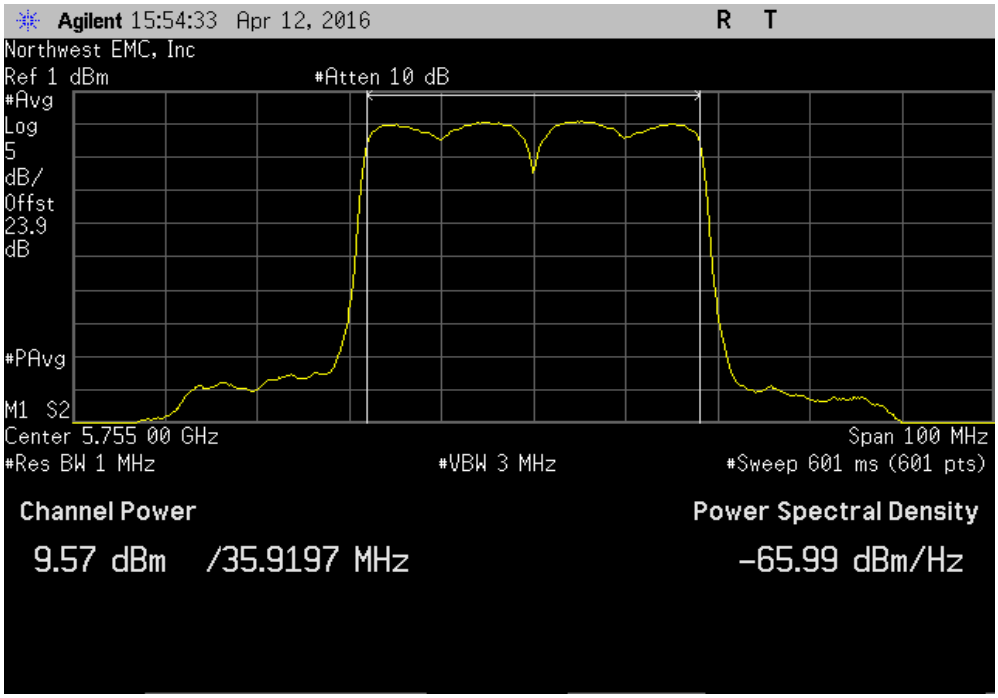
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.838	0.7		11.5	30	Pass



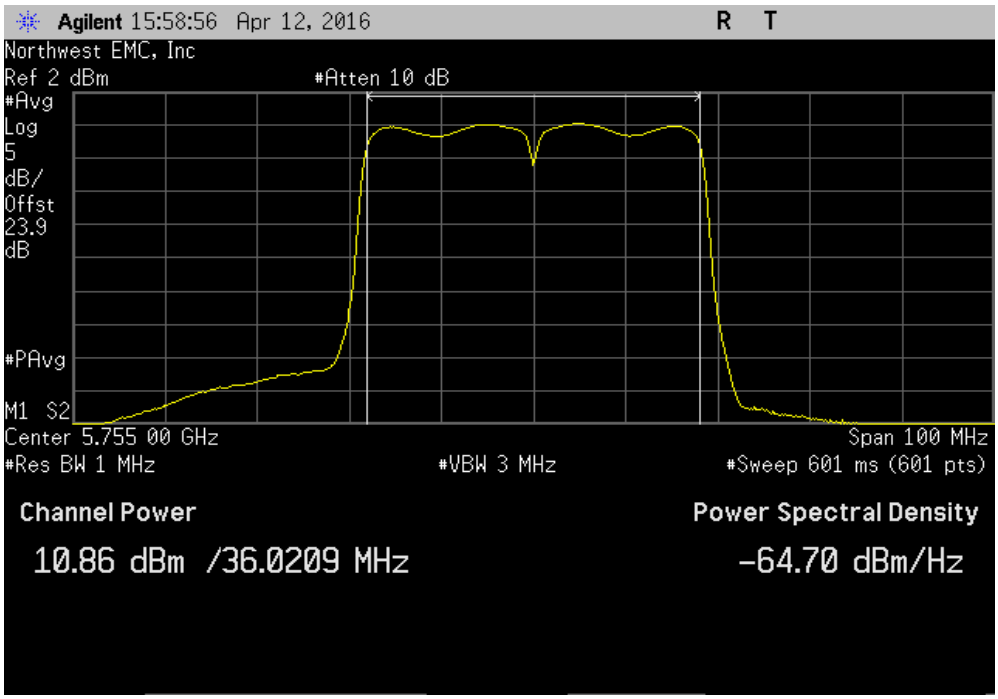
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.751	0.2		10.9	30	Pass



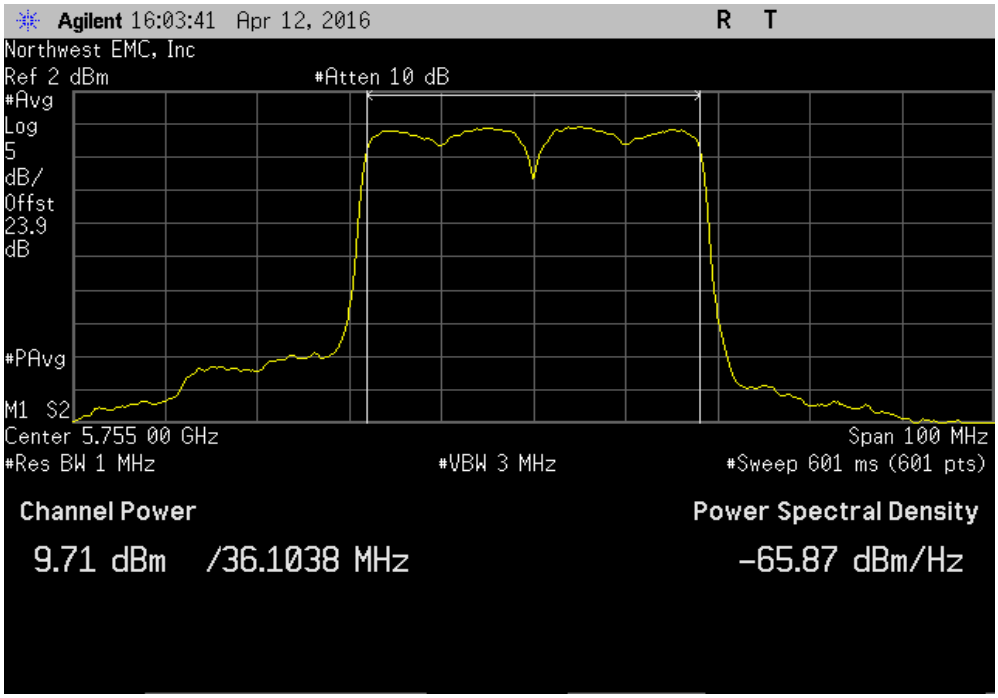
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.567	1.5		11.1	30	Pass



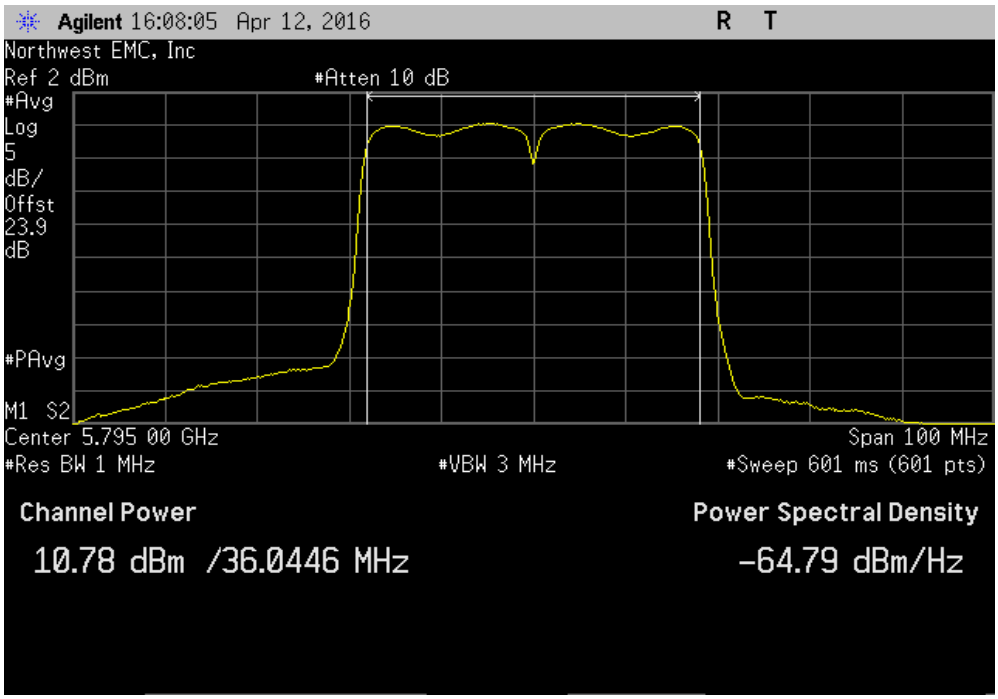
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.861	0.3		11.2	30	Pass



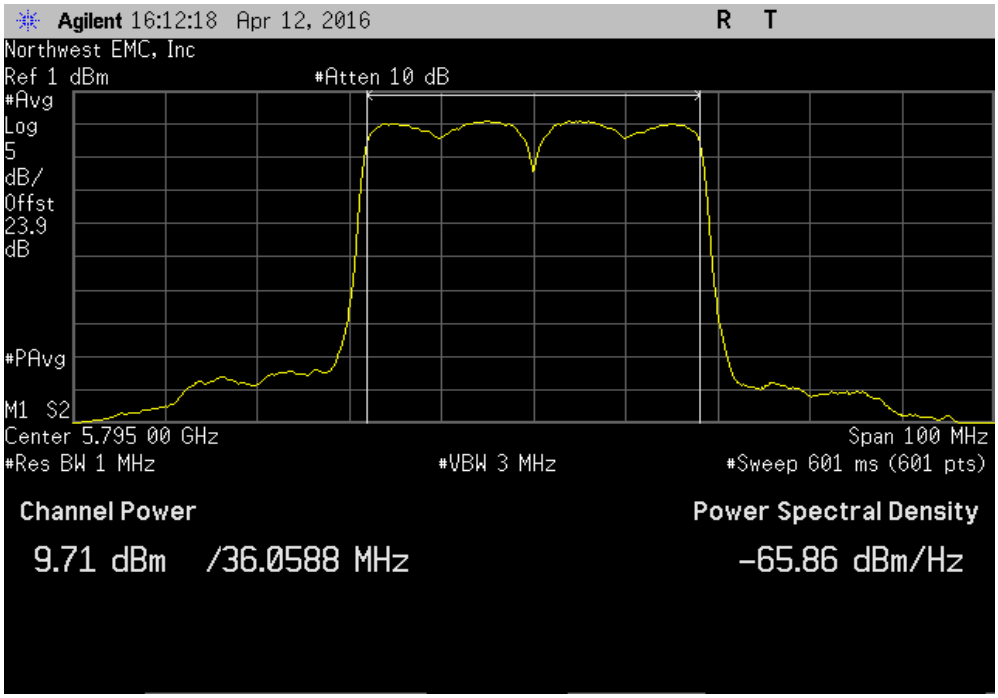
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.708	1.2		10.9	30	Pass



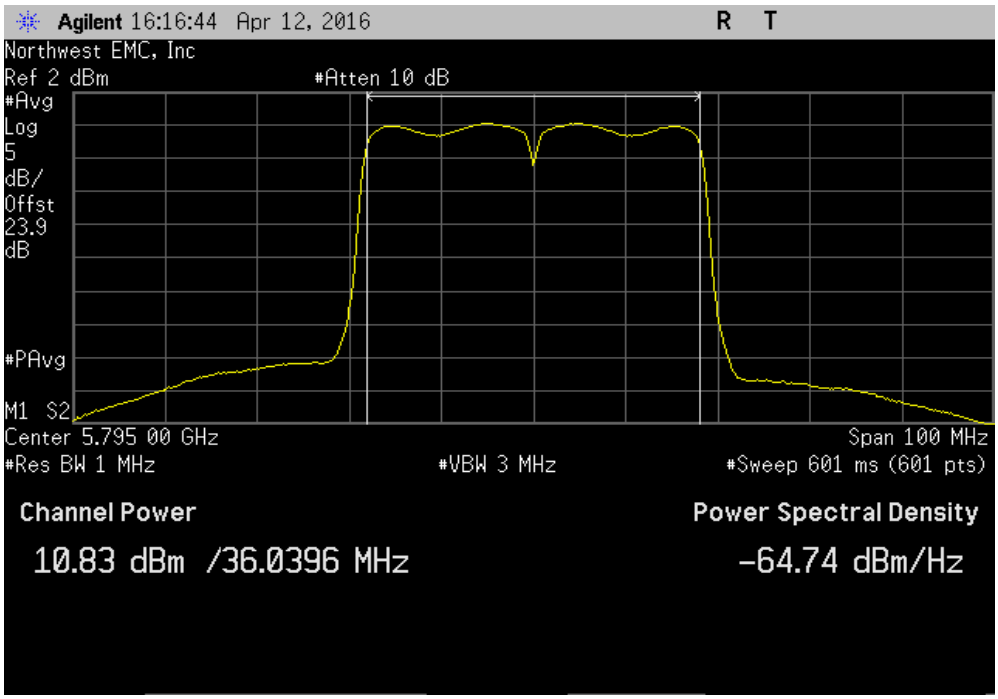
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.779	0.3		11.1	30	Pass



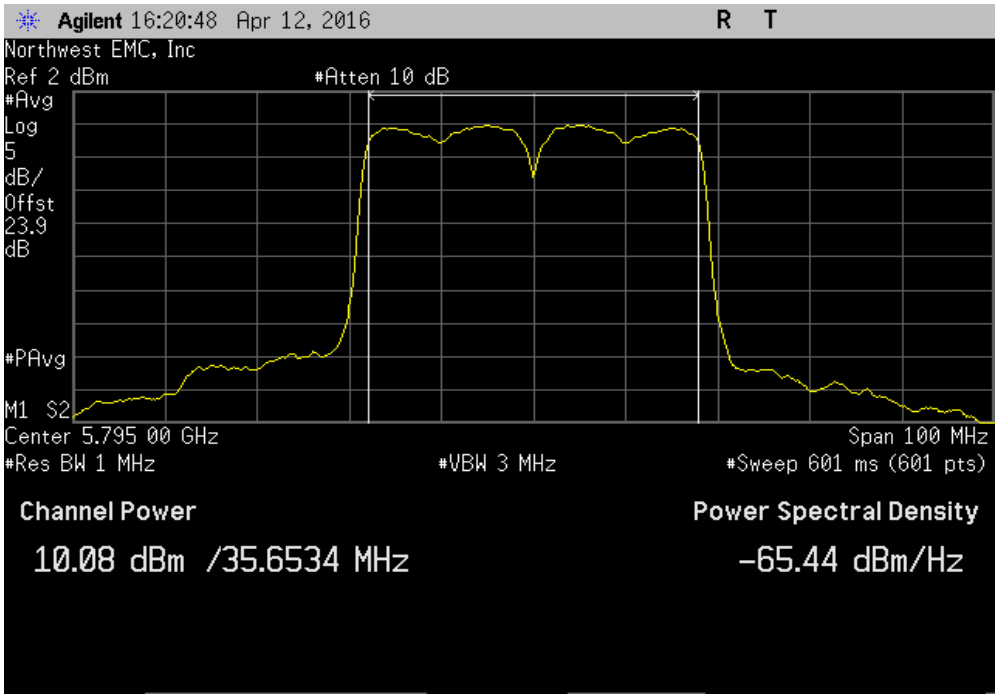
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.708	1.5		11.3	30	Pass



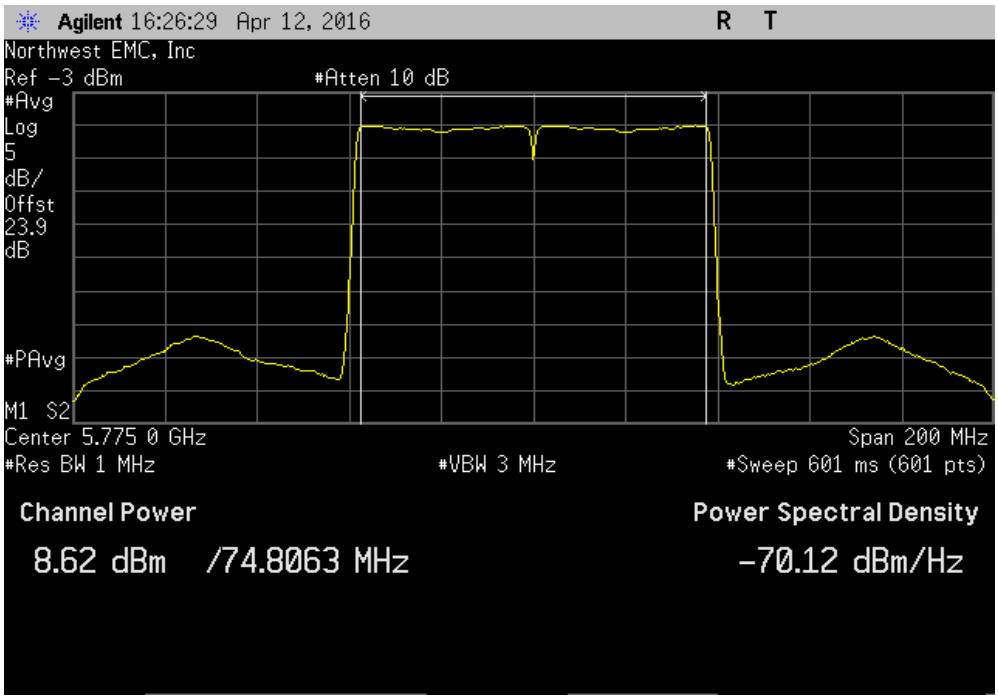
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.829	0.3		11.1	30	Pass



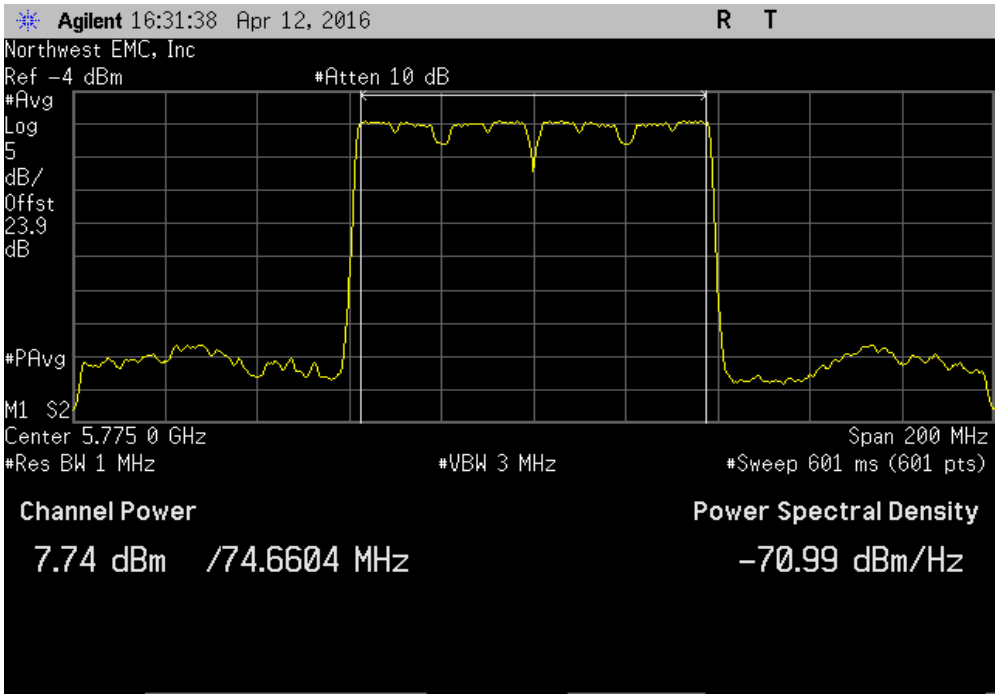
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.08	2.5		12.6	30	Pass



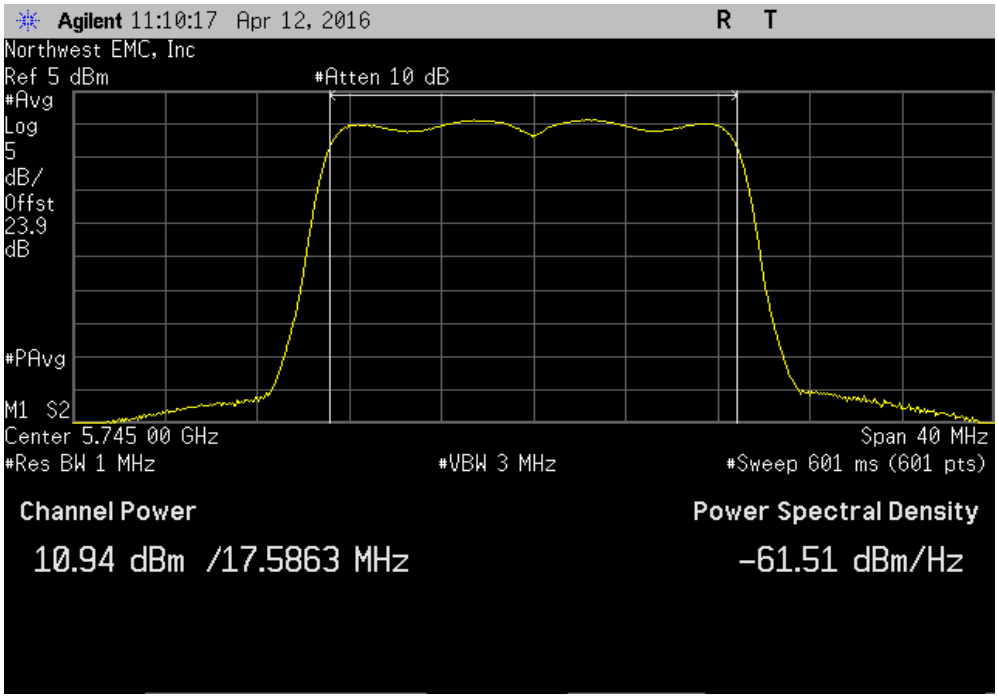
2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	8.62	0.6		9.2	30	Pass



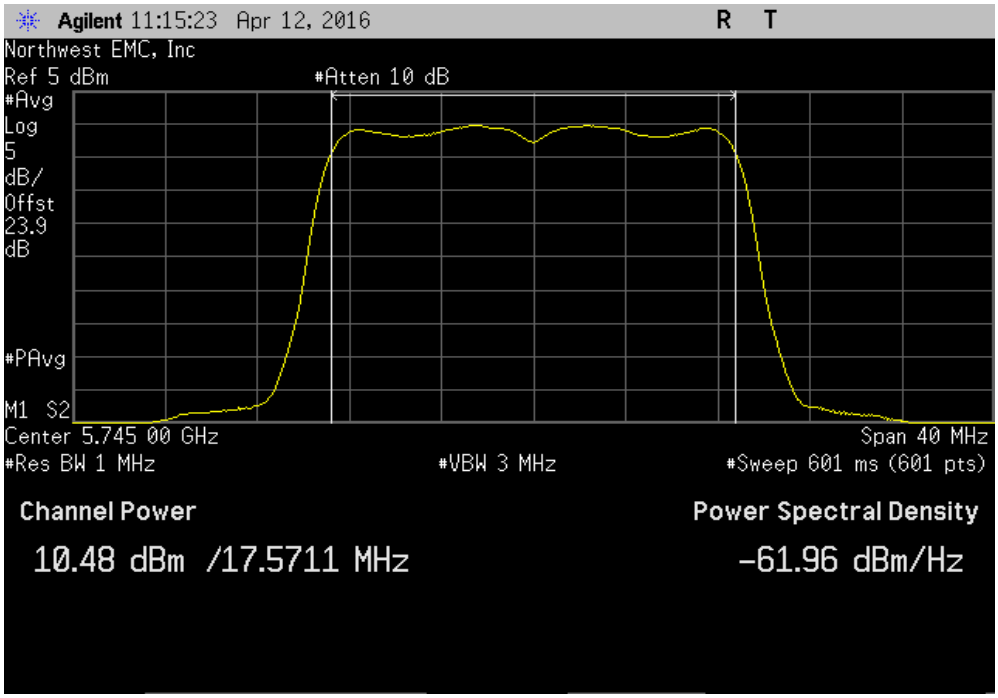
2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	7.741	2.8		10.6	30	Pass



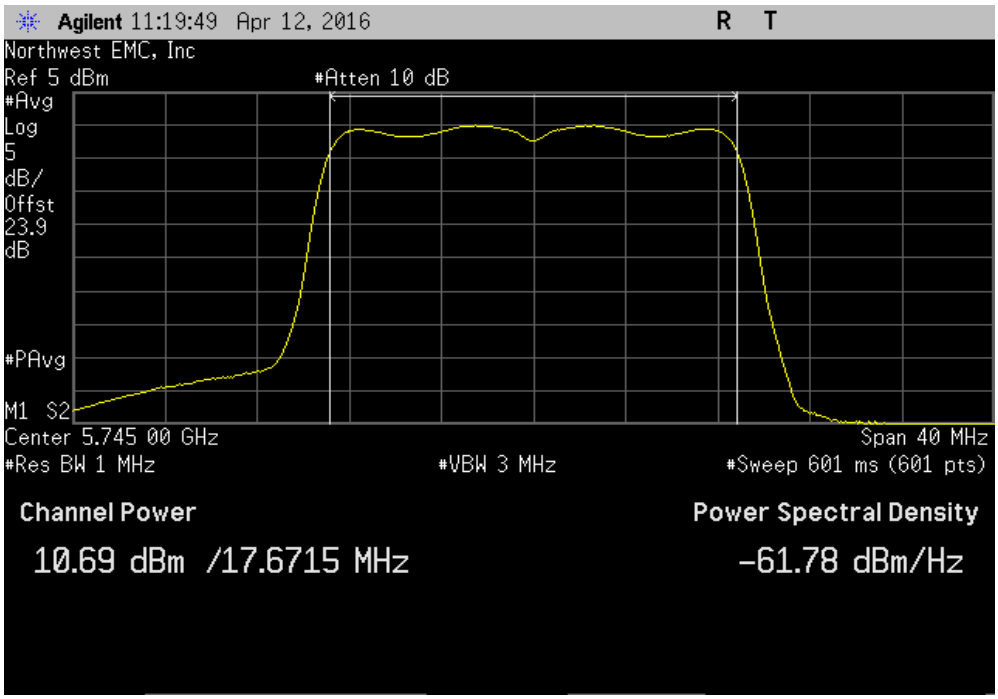
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.939	0.1		11	30	Pass



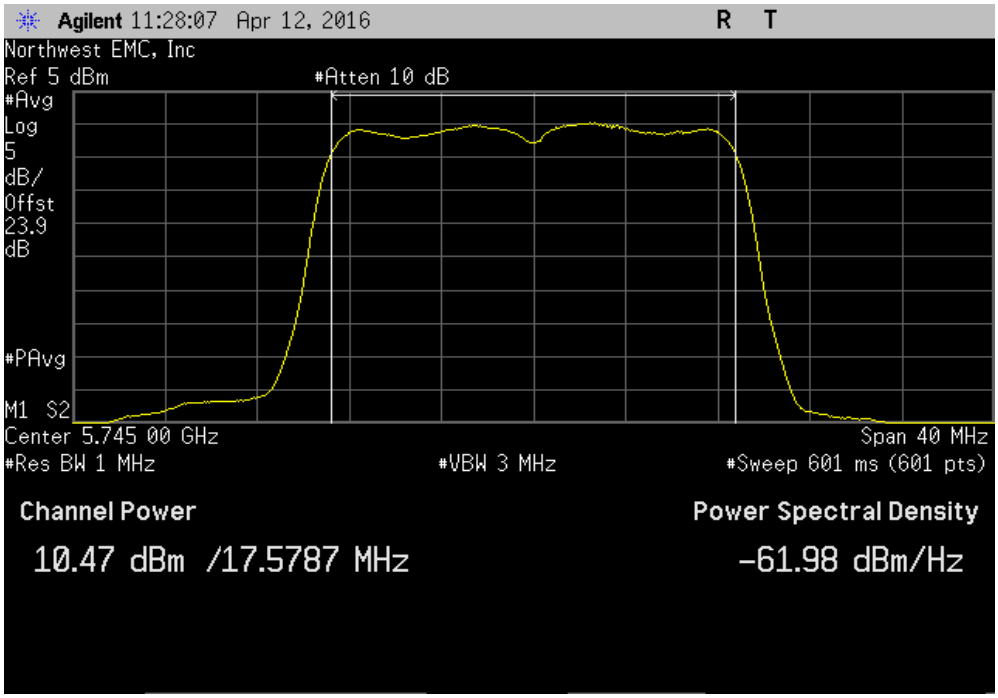
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.485	0.8		11.2	30	Pass



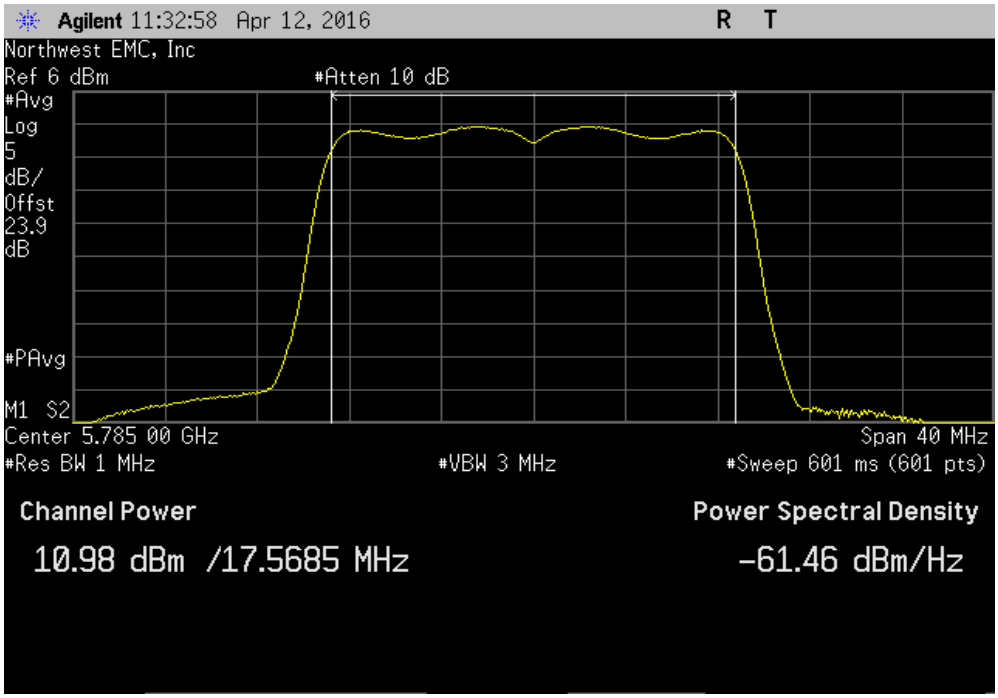
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.692	0.1		10.8	30	Pass



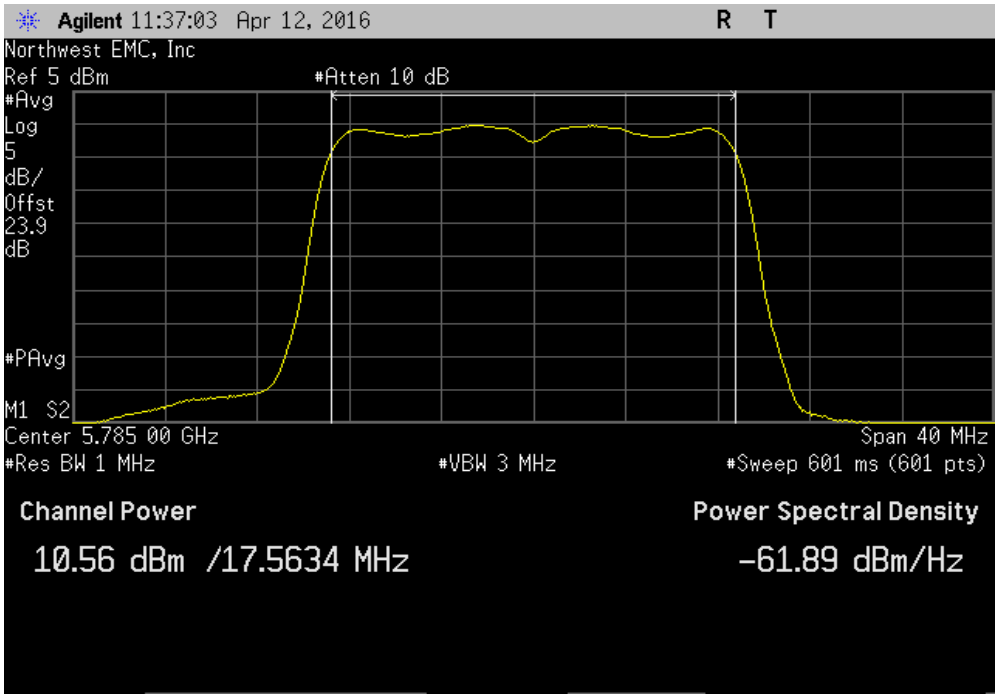
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.467	0.7		11.2	30	Pass



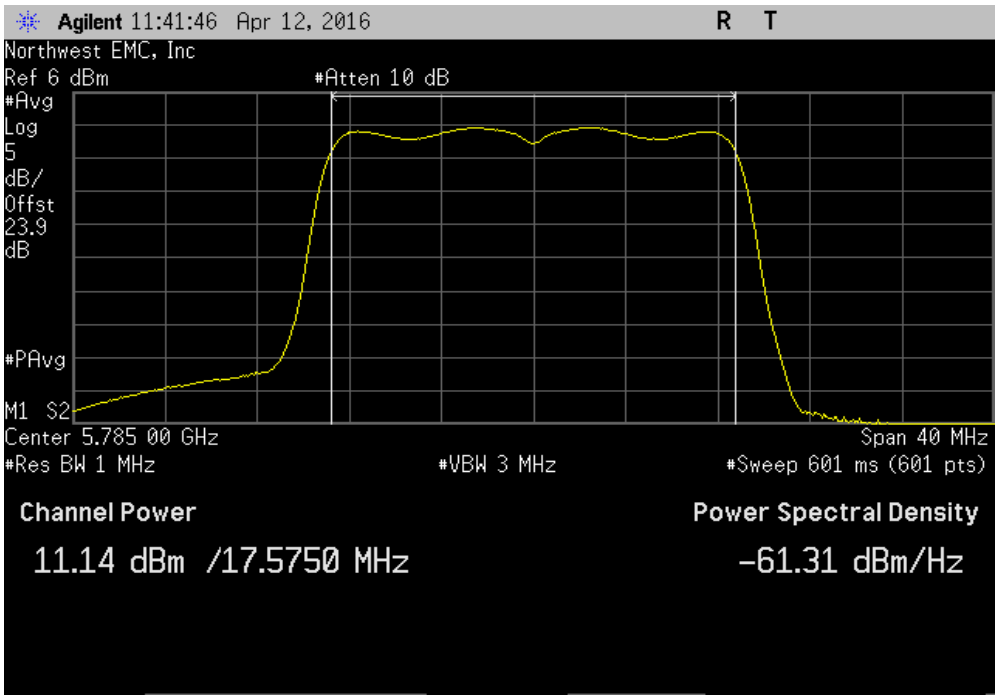
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.984	0.1		11.1	30	Pass



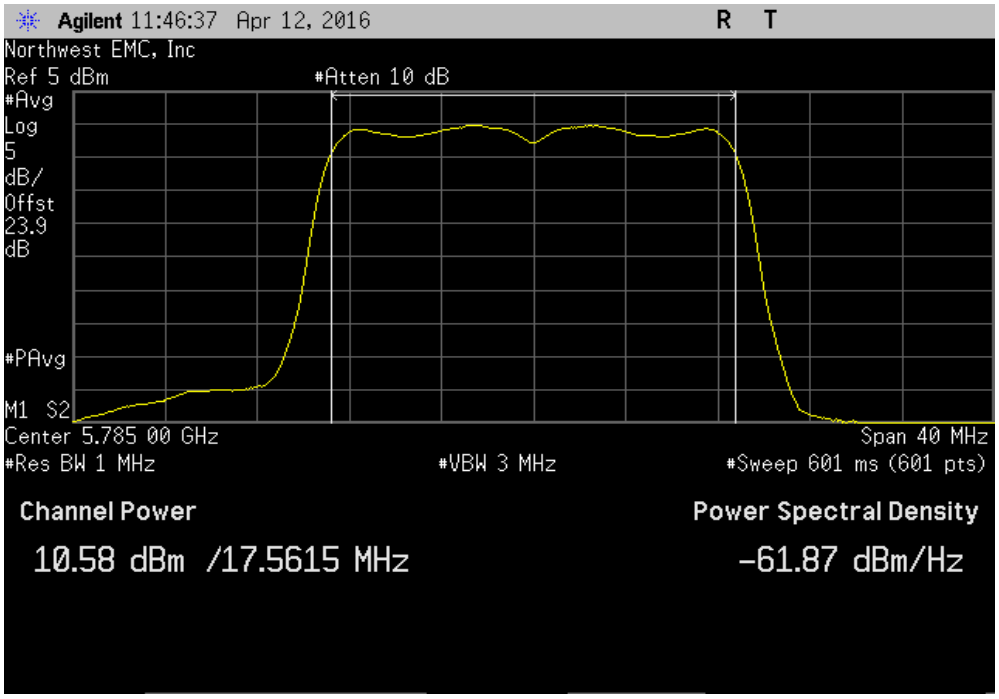
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.559	0.8		11.3	30	Pass



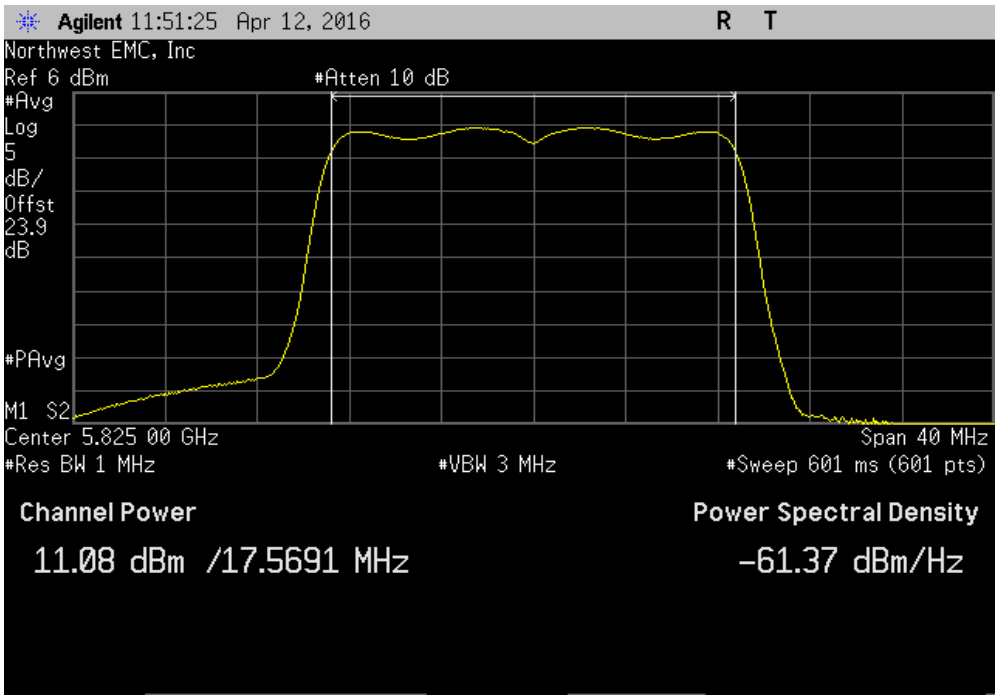
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.144	0.1		11.2	30	Pass



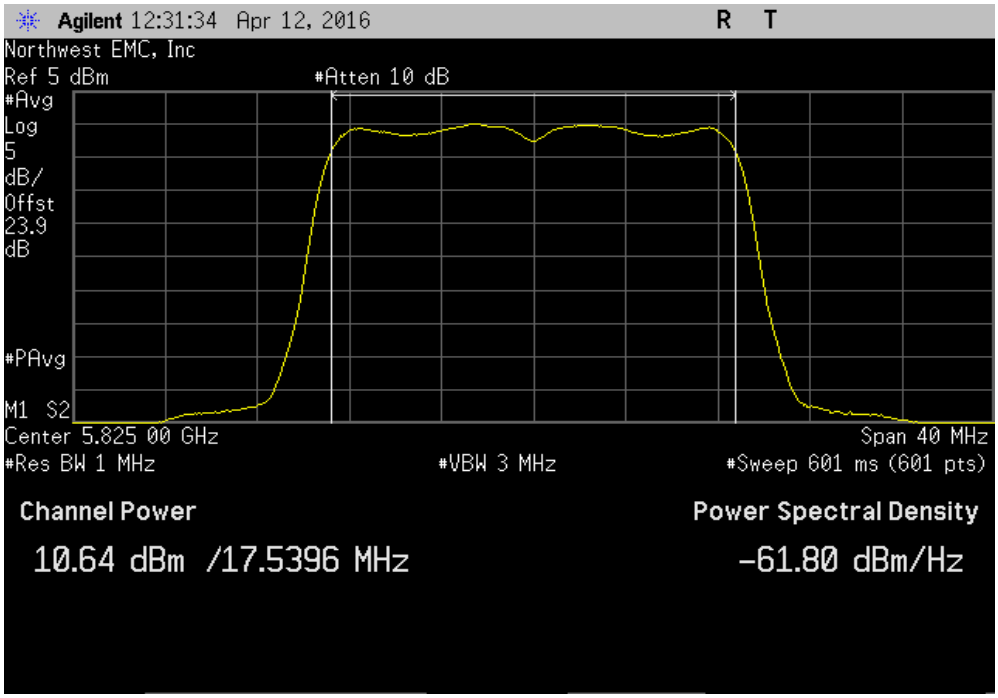
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.576	0.7		11.3	30	Pass



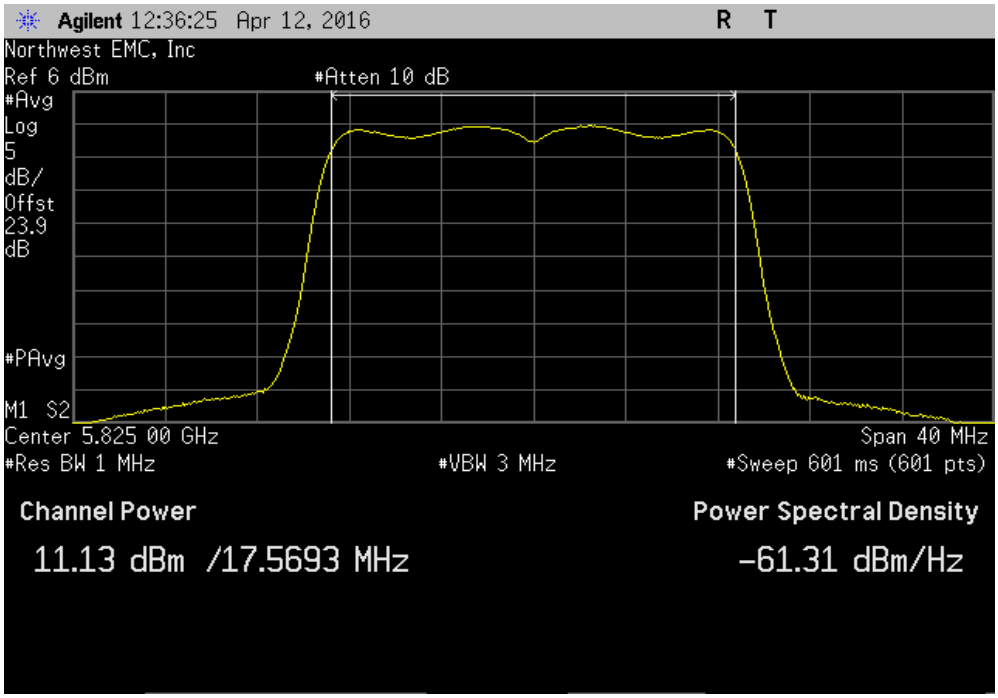
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.077	0.1		11.2	30	Pass



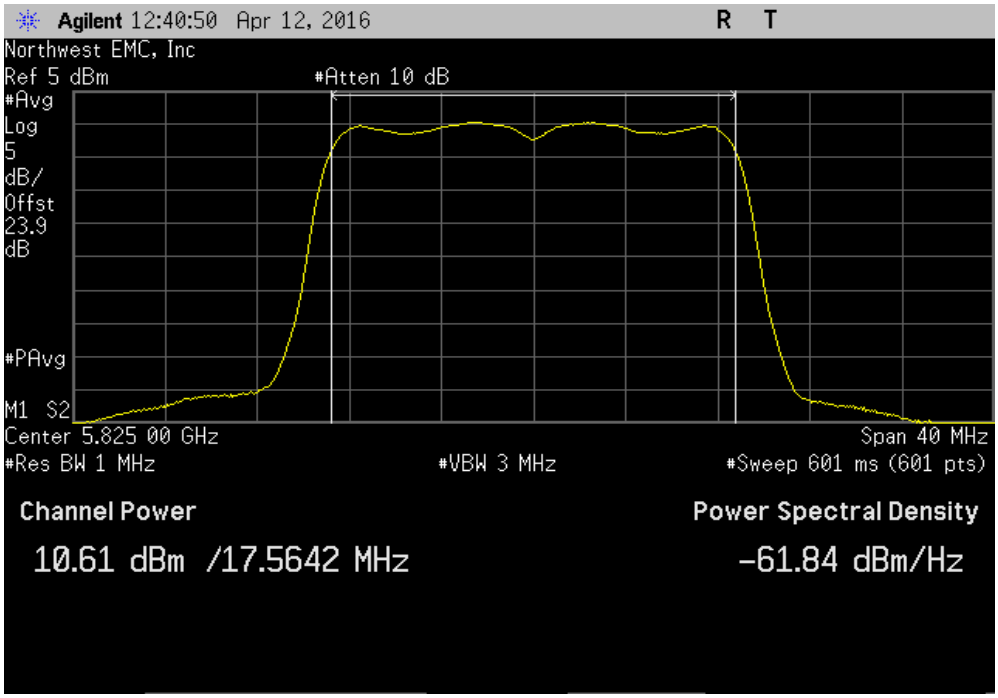
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.636	0.8		11.4	30	Pass



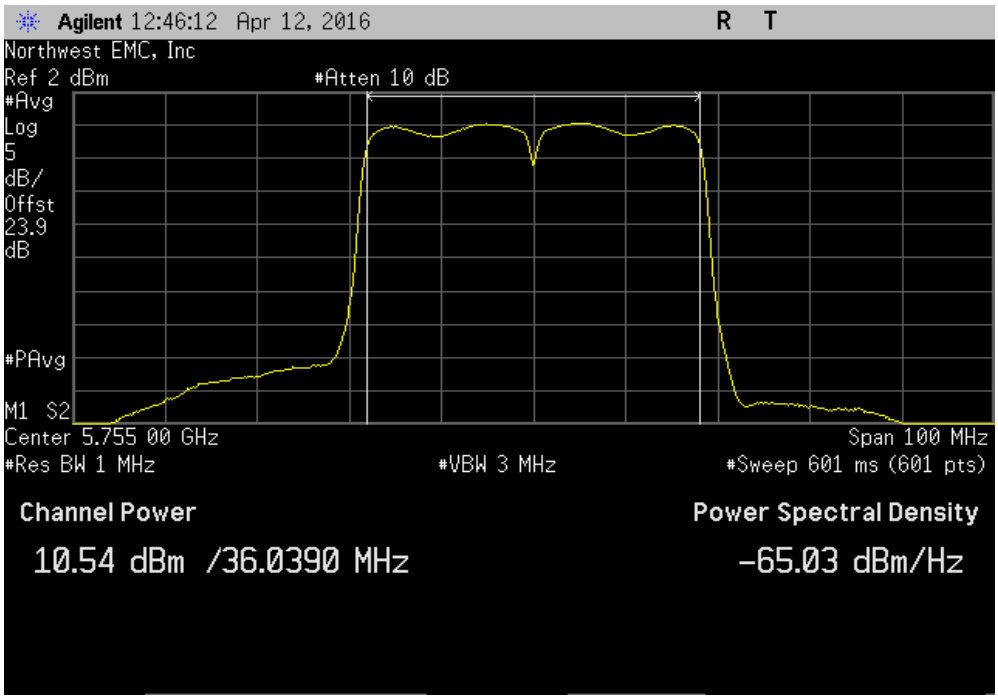
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	11.133	0.1		11.2	30	Pass



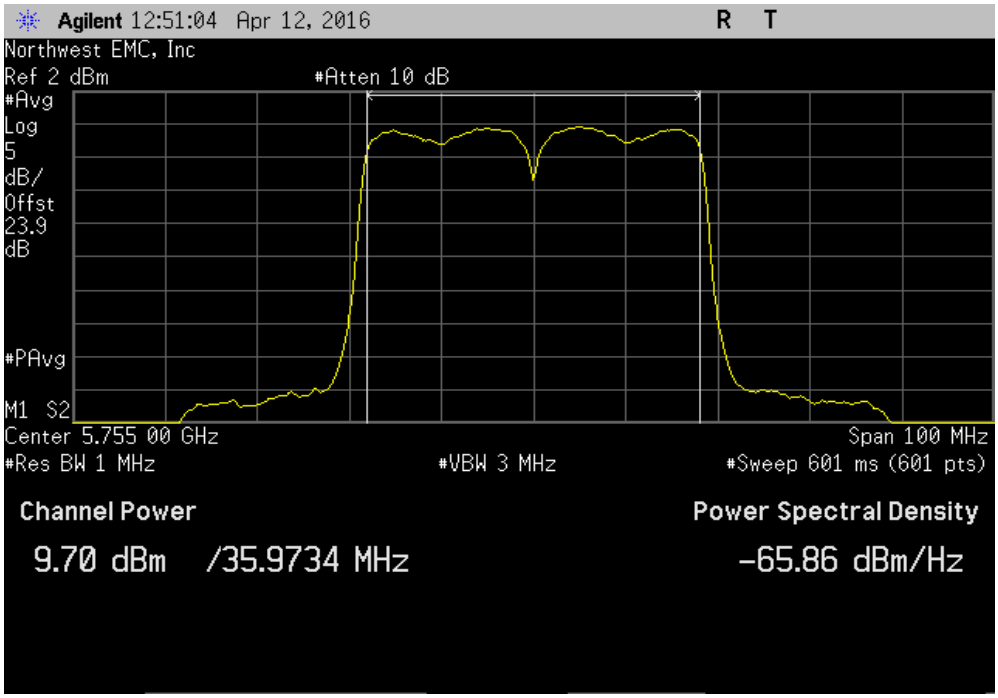
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.608	0.7		11.3	30	Pass



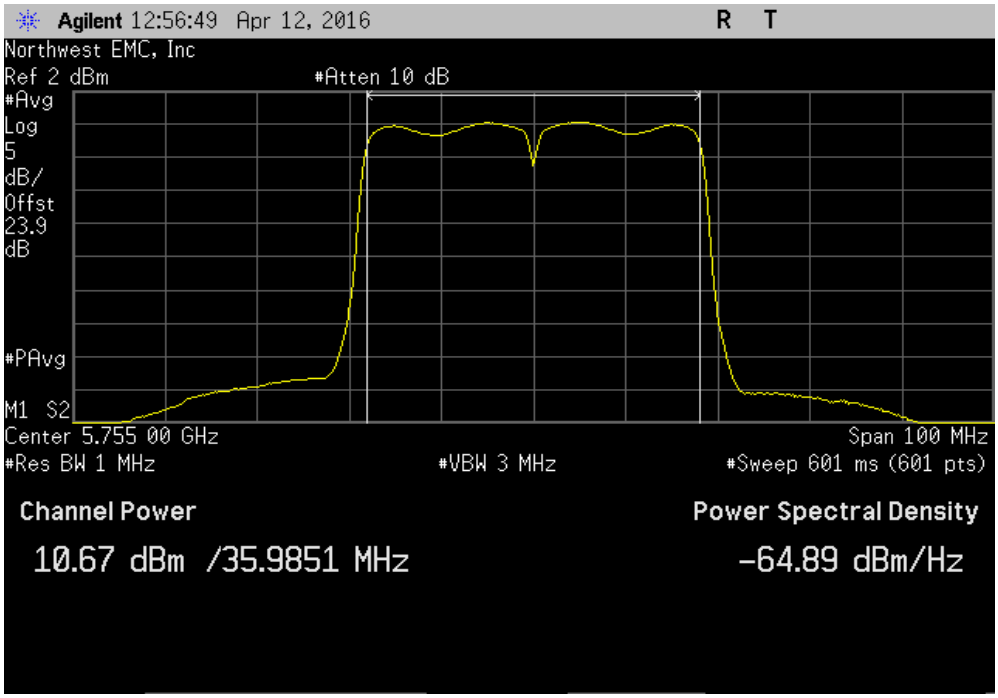
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.541	0.3		10.9	30	Pass



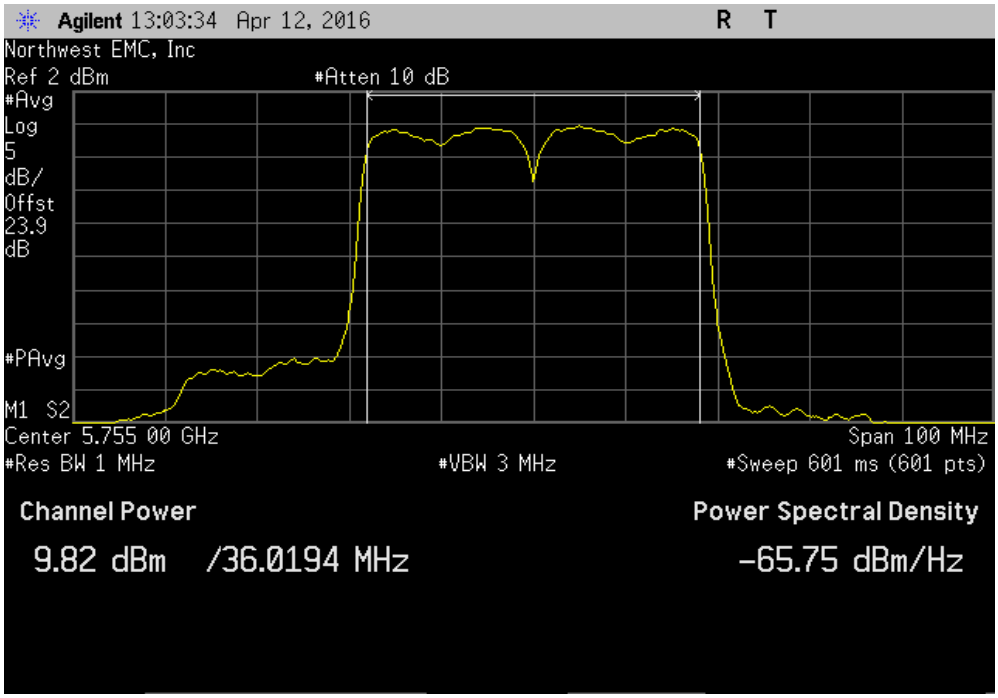
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.704	2.4		12.1	30	Pass



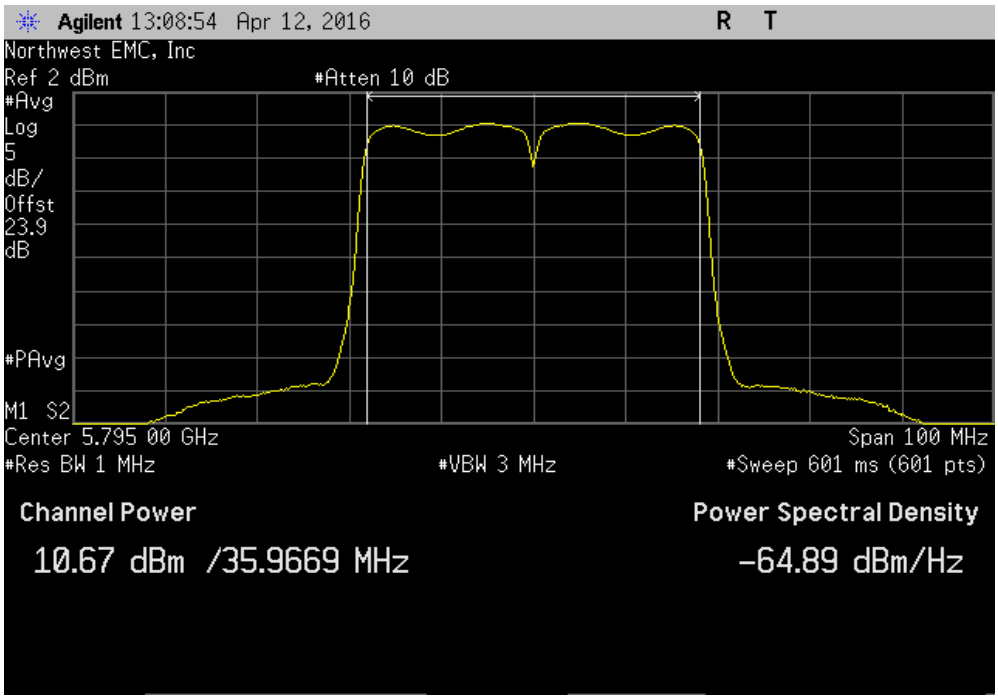
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.668	0.3		11	30	Pass



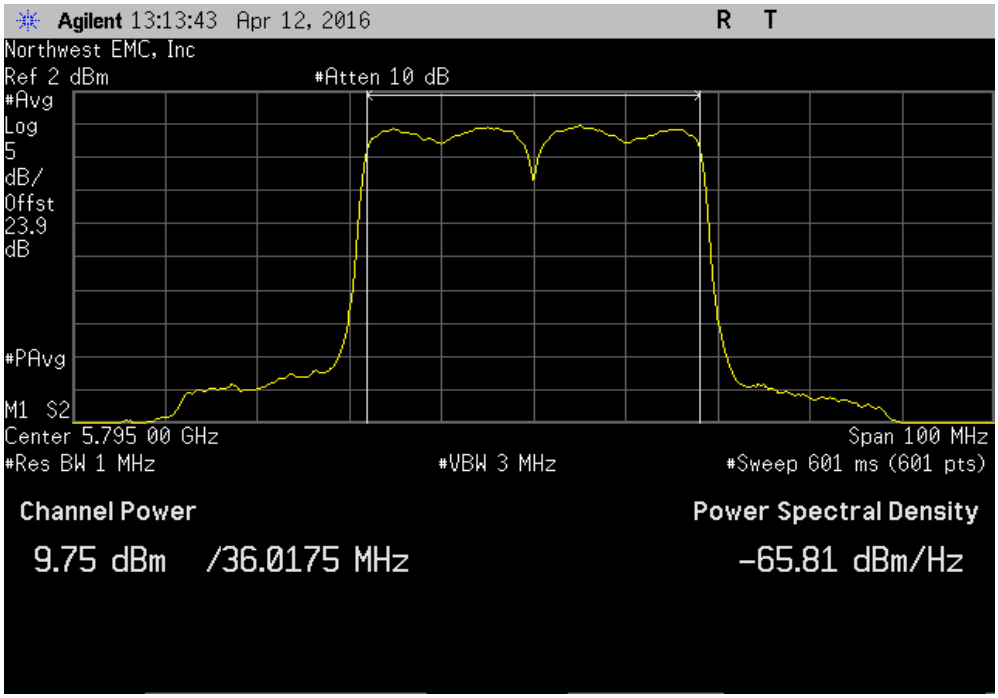
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.817	1.1		10.9	30	Pass



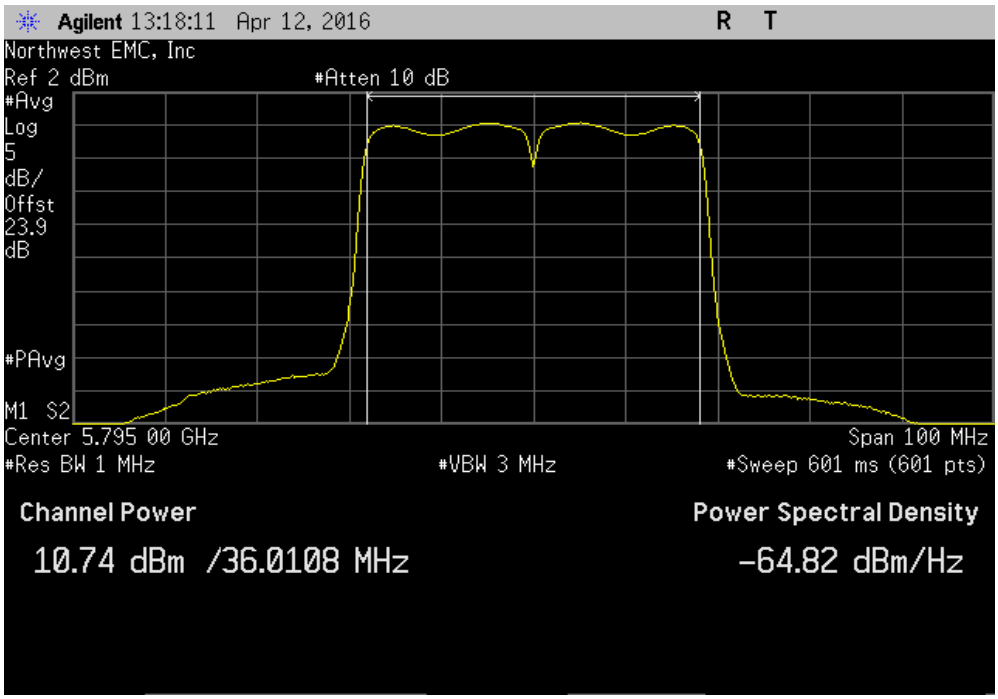
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.667	0.3		11	30	Pass



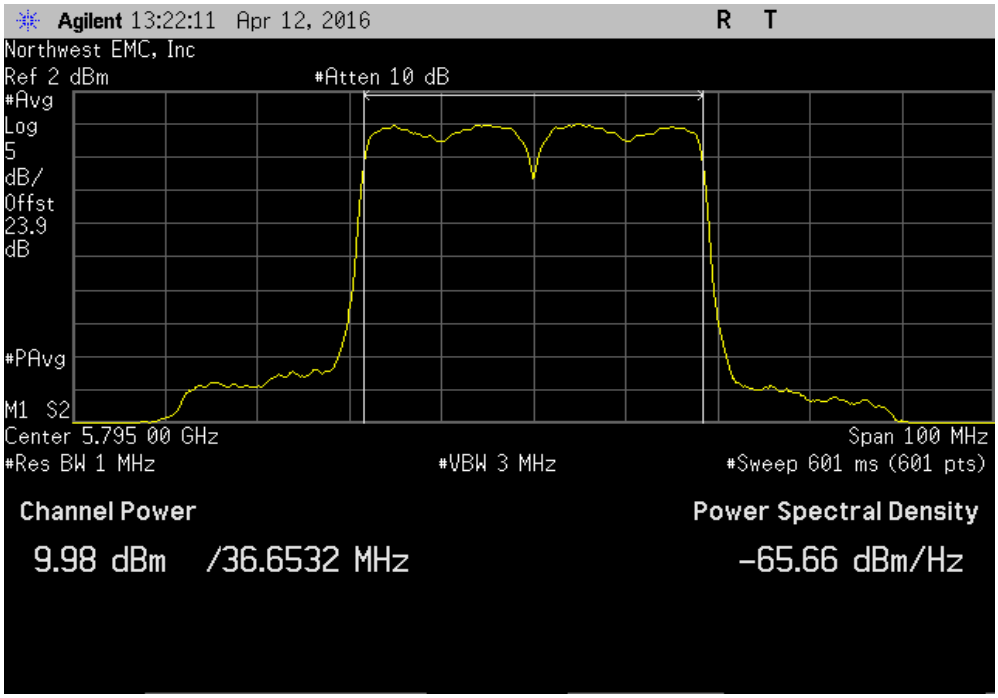
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.754	2.4		12.1	30	Pass



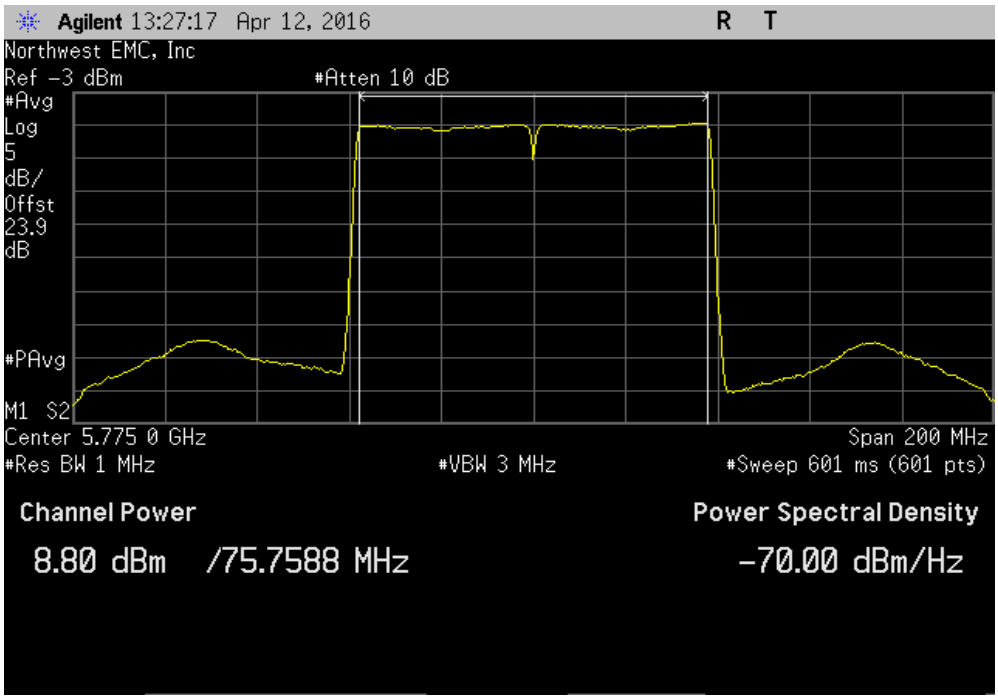
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	10.743	0.3		11.1	30	Pass



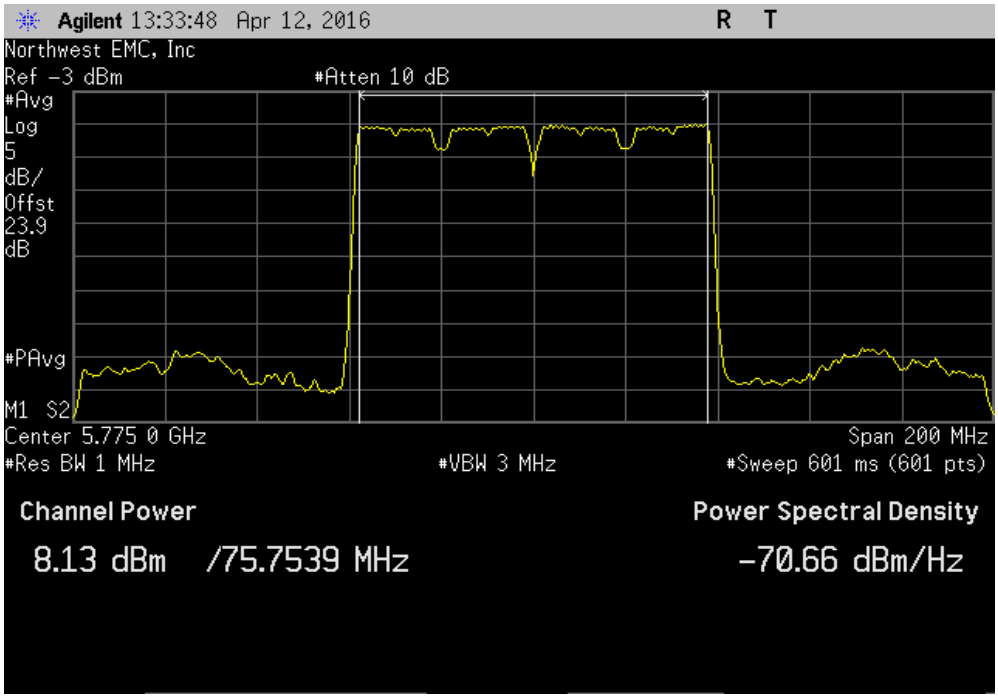
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	9.978	2.5		12.5	30	Pass



2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	8.796	0.6		9.4	30	Pass



2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)		Value (dBm)	Limit (dBm)	Results
	8.132	1.5		9.7	30	Pass



OCCUPIED BANDWIDTH

XMit 2015.01.14

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 EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	6/22/2015	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKV	3/4/2016	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Generator - Signal	Agilent	N5183A	TID	11/26/2014	36

TEST DESCRIPTION

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.

Per ANSI C63.10, 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 the 6 dB emission bandwidth.

The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time to be used for setting the channel power integration bandwidth during conducted output power testing.

OCCUPIED BANDWIDTH

NORTHWEST EMC

XMit 2015.01.14

EUT:	Model 1631	Work Order:	MCSO1748
Serial Number:	041152140753	Date:	04/12/16
Customer:	Microsoft Corporation	Temperature:	23°C
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	1019 mbar
Tested by:	Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02

TEST SPECIFICATIONS	Test Method
FCC 15.407:2016	ANSI C63.10:2013

COMMENTS

Power setting at 11dBm for 20MHz and 40MHz channels. Power Setting at 10dBm for 80MHz channels. Client supplied adapter cable loss of 1.3dB included in reference level offset. Signal setting at > 95% Duty Cycle.

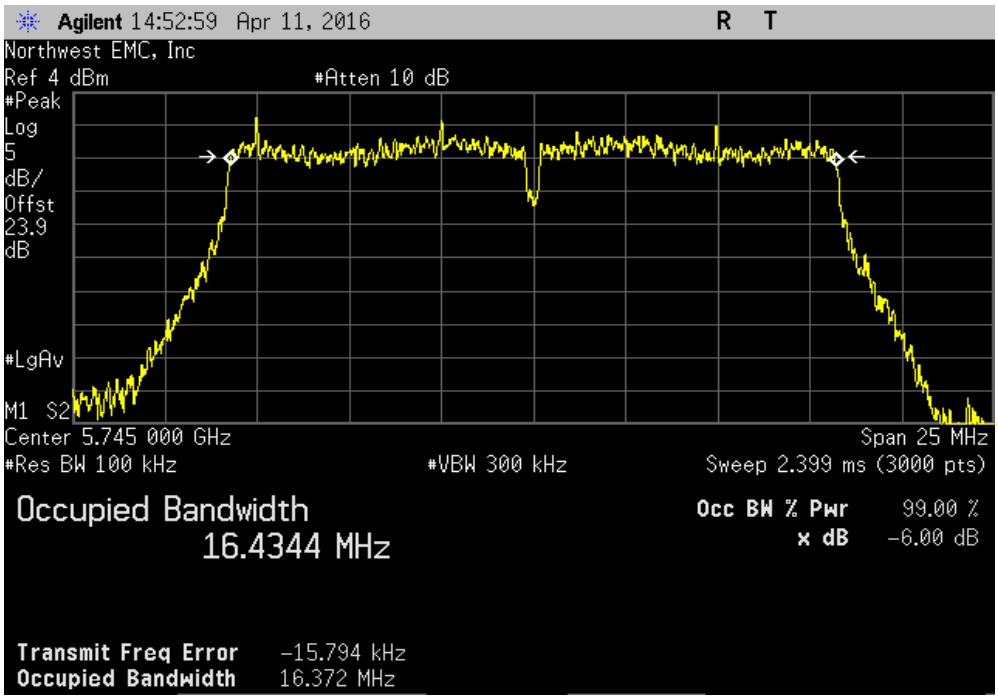
DEVIATIONS FROM TEST STANDARD

None

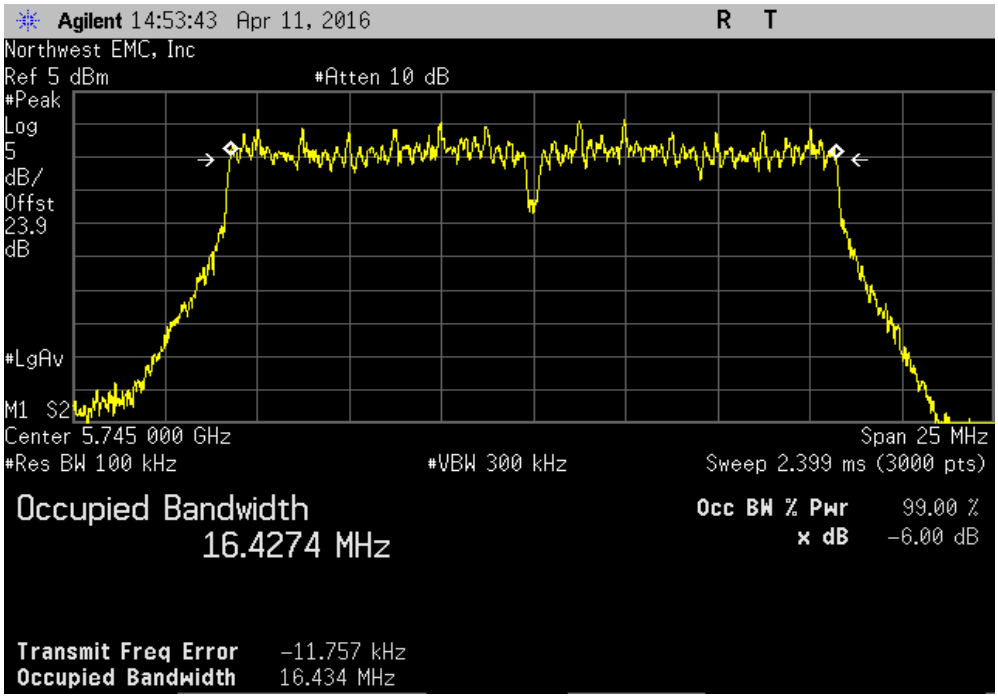
Configuration #	1	Signature

			Value	Limit (>)	Result
SISO, Chain A					
	20MHz BW				
		Low Channel, Ch 149 - 5745 MHz			
		802.11(a) 6 Mbps	16.372 MHz	500 kHz	Pass
		802.11(a) 36 Mbps	16.434 MHz	500 kHz	Pass
		802.11(a) 54 Mbps	16.409 MHz	500 kHz	Pass
		802.11(n) MCS0	17.622 MHz	500 kHz	Pass
		802.11(n) MCS7	17.46 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.636 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.539 MHz	500 kHz	Pass
		Mid Channel, Ch 157 - 5785 MHz			
		802.11(a) 6 Mbps	16.394 MHz	500 kHz	Pass
		802.11(a) 36 Mbps	16.307 MHz	500 kHz	Pass
		802.11(a) 54 Mbps	16.378 MHz	500 kHz	Pass
		802.11(n) MCS0	17.602 MHz	500 kHz	Pass
		802.11(n) MCS7	17.578 MHz	500 kHz	Pass
		802.11(ac) MCS0	16.948 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.588 MHz	500 kHz	Pass
		High Channel, Ch 165 - 5825 MHz			
		802.11(a) 6 Mbps	16.504 MHz	500 kHz	Pass
		802.11(a) 36 Mbps	16.426 MHz	500 kHz	Pass
		802.11(a) 54 Mbps	16.46 MHz	500 kHz	Pass
		802.11(n) MCS0	17.408 MHz	500 kHz	Pass
		802.11(n) MCS7	17.593 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.572 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.382 MHz	500 kHz	Pass
	40MHz BW				
		Low Channel, Ch 149/153 - 5755 MHz			
		802.11(n) MCS0	35.953 MHz	500 kHz	Pass
		802.11(n) MCS7	35.735 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.422 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.706 MHz	500 kHz	Pass
		High Channel, Ch 157/161 - 5795 MHz			
		802.11(n) MCS0	35.496 MHz	500 kHz	Pass
		802.11(n) MCS7	35.642 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.466 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.63 MHz	500 kHz	Pass
	80MHz BW				
		Mid Channel, Ch 149/161 - 5775 MHz			
		802.11(ac) MCS0	76.303 MHz	500 kHz	Pass
		802.11(ac) MCS9	76.441 MHz	500 kHz	Pass
SISO, Chain B					
	20MHz BW				
		Low Channel, Ch 149 - 5745 MHz			
		802.11(a) 6 Mbps	16.349 MHz	500 kHz	Pass
		802.11(a) 36 Mbps	16.455 MHz	500 kHz	Pass
		802.11(a) 54 Mbps	16.411 MHz	500 kHz	Pass
		802.11(n) MCS0	17.655 MHz	500 kHz	Pass
		802.11(n) MCS7	17.595 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.587 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.423 MHz	500 kHz	Pass
		Mid Channel, Ch 157 - 5785 MHz			
		802.11(a) 6 Mbps	16.405 MHz	500 kHz	Pass
		802.11(a) 36 Mbps	16.428 MHz	500 kHz	Pass
		802.11(a) 54 Mbps	16.383 MHz	500 kHz	Pass
		802.11(n) MCS0	17.558 MHz	500 kHz	Pass
		802.11(n) MCS7	17.475 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.621 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.612 MHz	500 kHz	Pass
		High Channel, Ch 165 - 5825 MHz			
		802.11(a) 6 Mbps	16.369 MHz	500 kHz	Pass
		802.11(a) 36 Mbps	16.478 MHz	500 kHz	Pass
		802.11(a) 54 Mbps	16.356 MHz	500 kHz	Pass
		802.11(n) MCS0	17.625 MHz	500 kHz	Pass
		802.11(n) MCS7	17.642 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.382 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.535 MHz	500 kHz	Pass
	40MHz BW				
		Low Channel, Ch 149/153 - 5755 MHz			
		802.11(n) MCS0	36.324 MHz	500 kHz	Pass
		802.11(n) MCS7	35.86 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.901 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.715 MHz	500 kHz	Pass
		High Channel, Ch 157/161 - 5795 MHz			
		802.11(n) MCS0	35.695 MHz	500 kHz	Pass
		802.11(n) MCS7	35.681 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.817 MHz	500 kHz	Pass
		802.11(ac) MCS9	36.01 MHz	500 kHz	Pass
	80MHz BW				
		Mid Channel, Ch 149/161 - 5775 MHz			
		802.11(ac) MCS0	76.317 MHz	500 kHz	Pass
		802.11(ac) MCS9	76.474 MHz	500 kHz	Pass

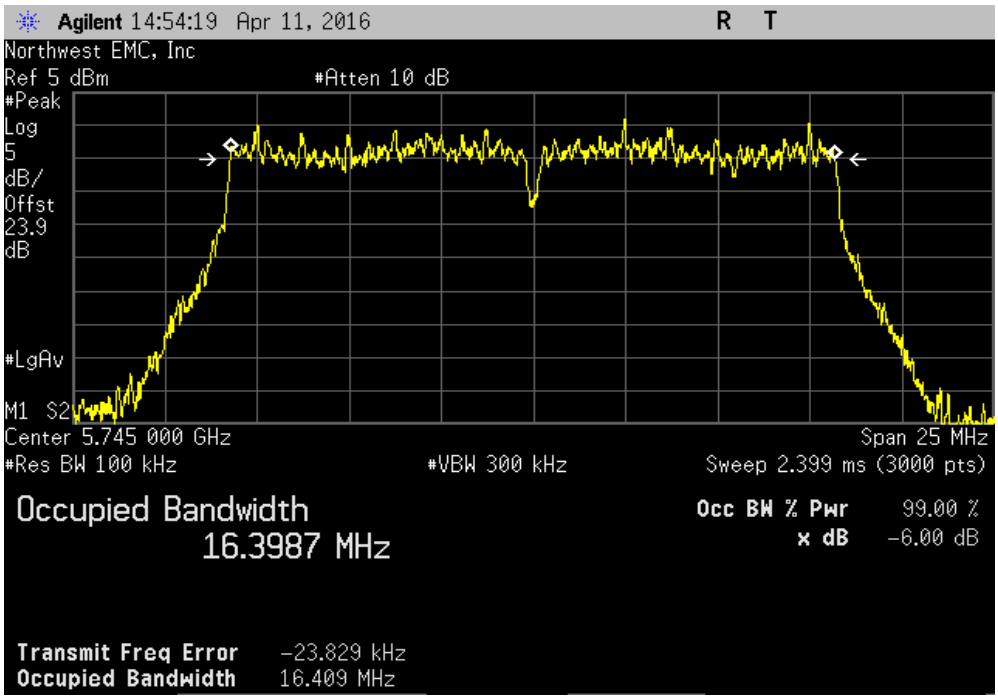
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps						
				Value	Limit (>)	Result
				16.372 MHz	500 kHz	Pass



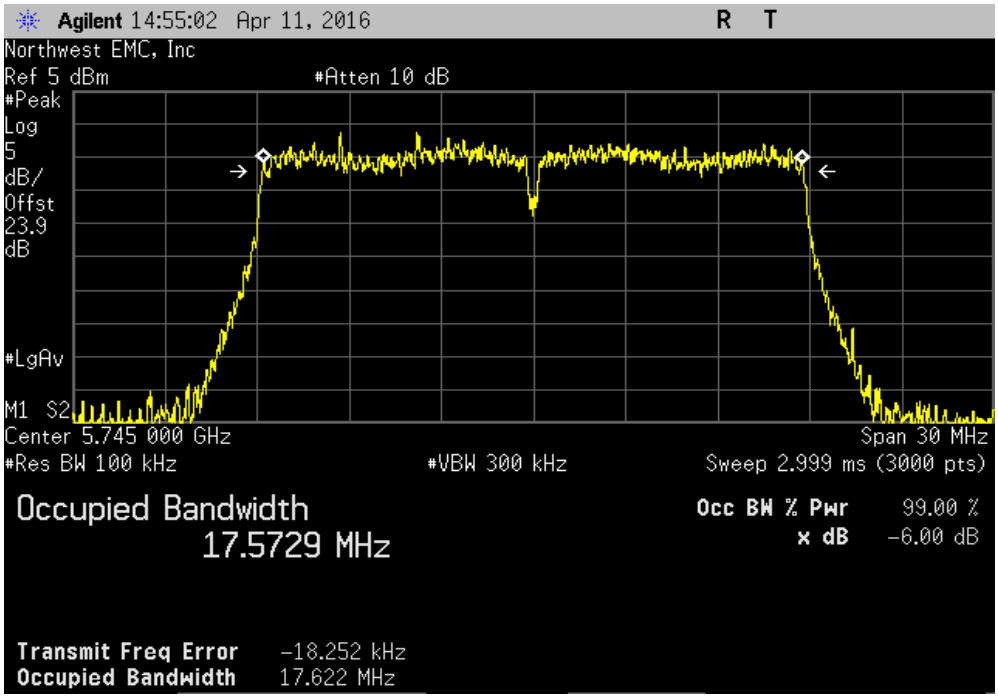
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps						
				Value	Limit (>)	Result
				16.434 MHz	500 kHz	Pass



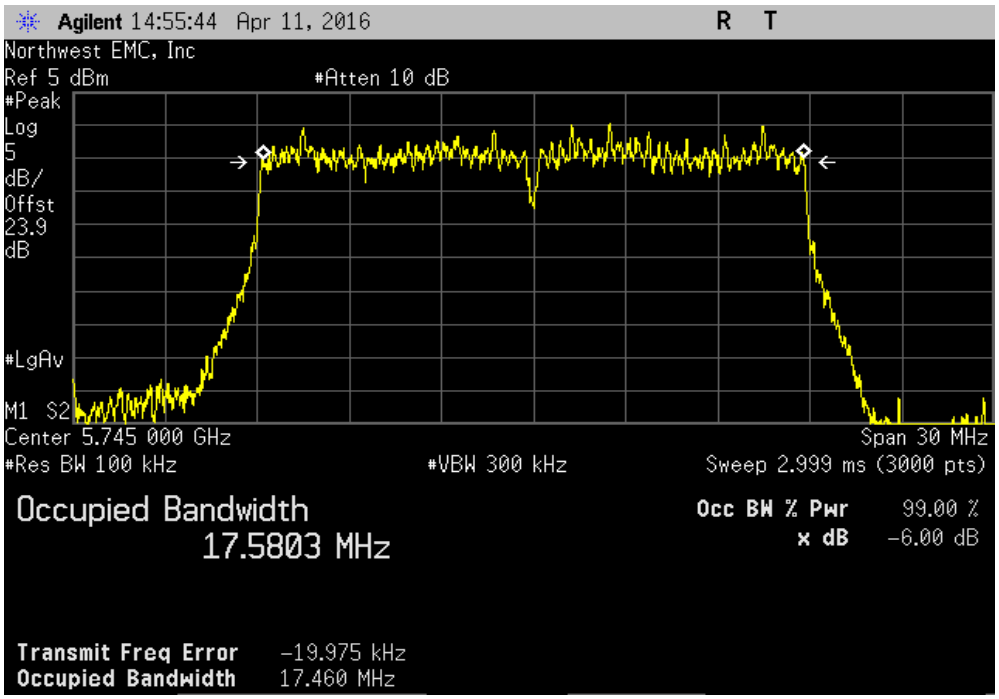
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps						
				Value	Limit (>)	Result
				16.409 MHz	500 kHz	Pass



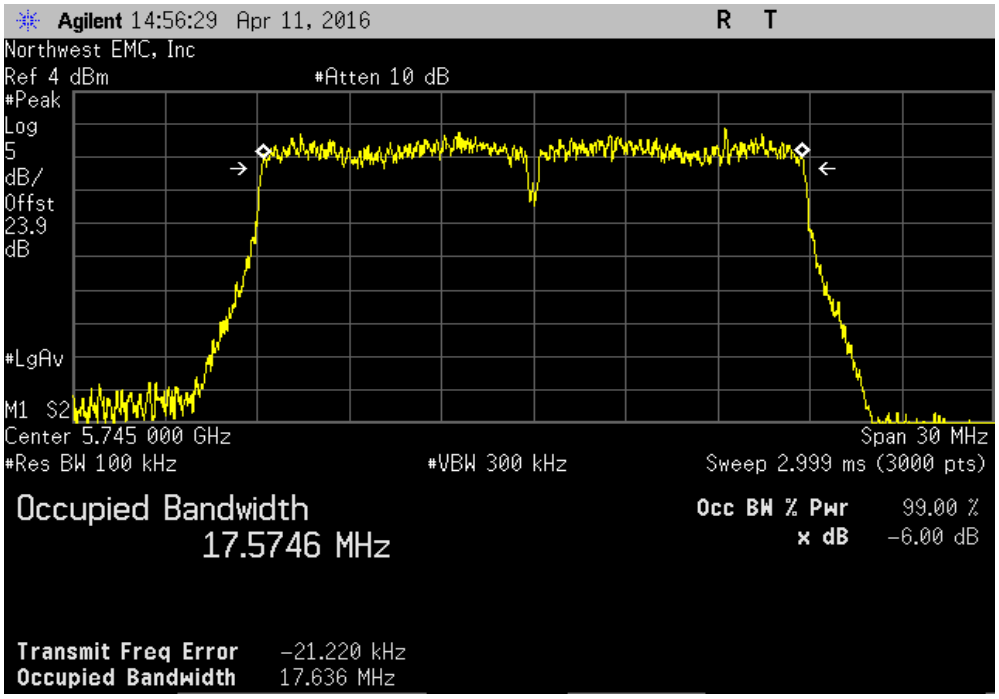
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				17.622 MHz	500 kHz	Pass



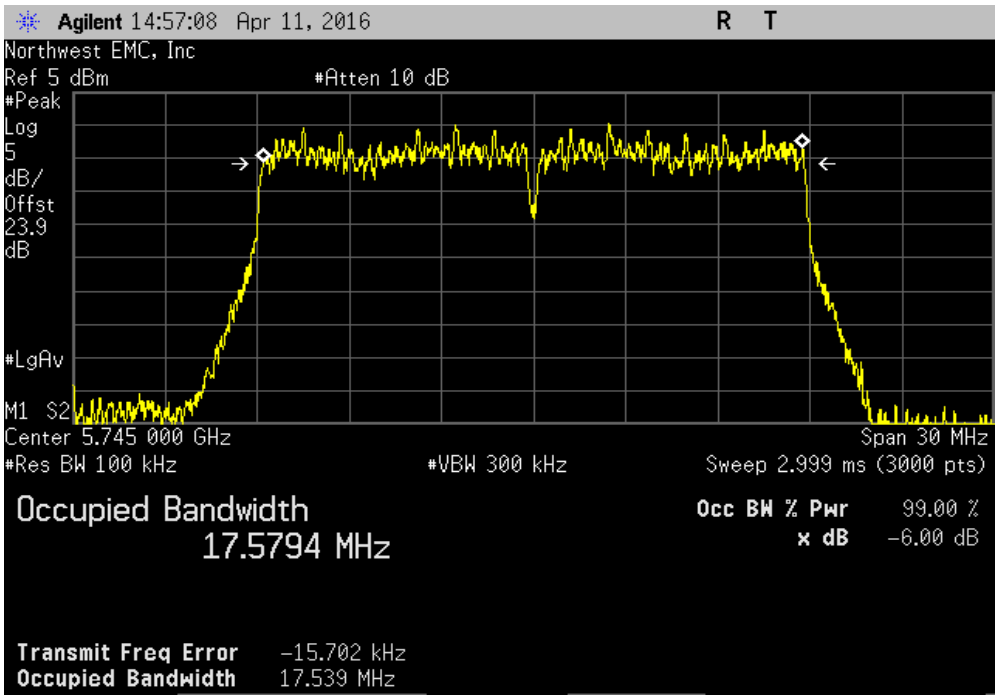
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				17.46 MHz	500 kHz	Pass



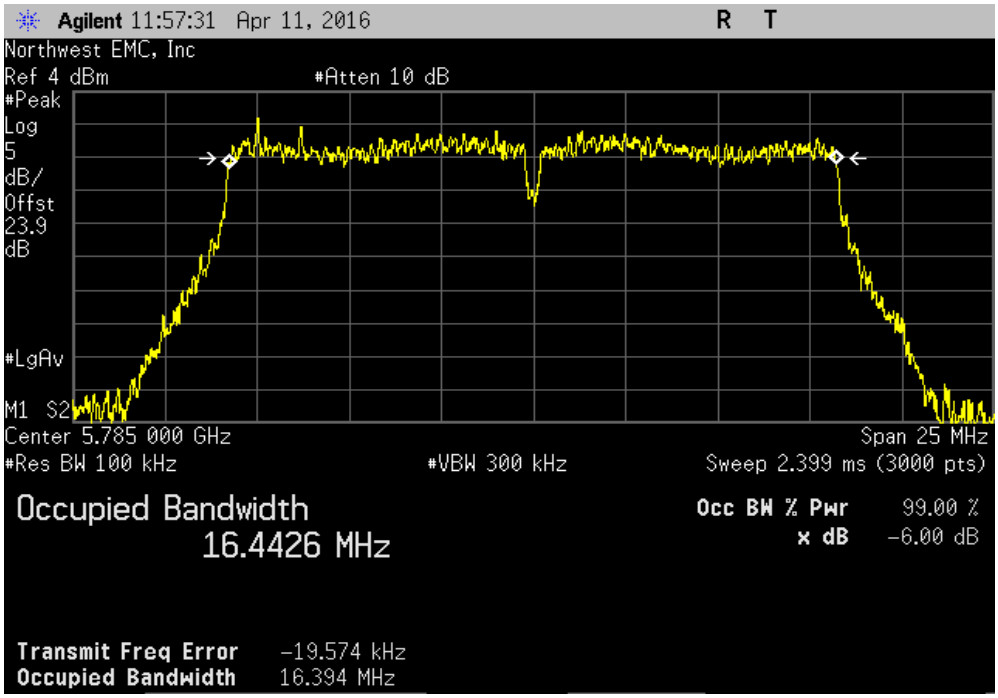
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.636 MHz	500 kHz	Pass



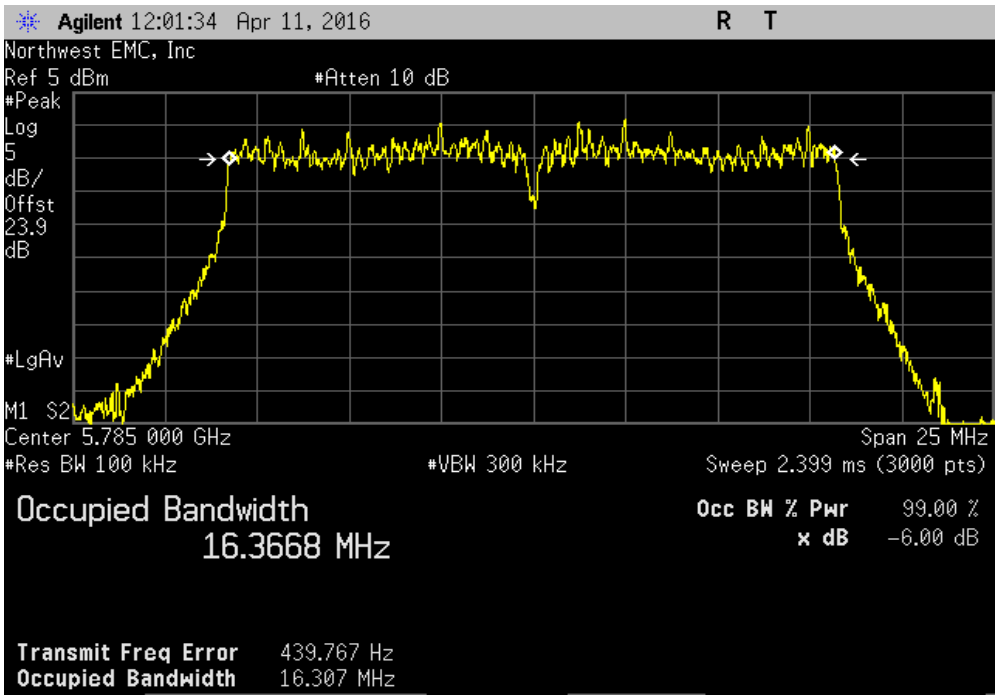
SISO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.539 MHz	500 kHz	Pass



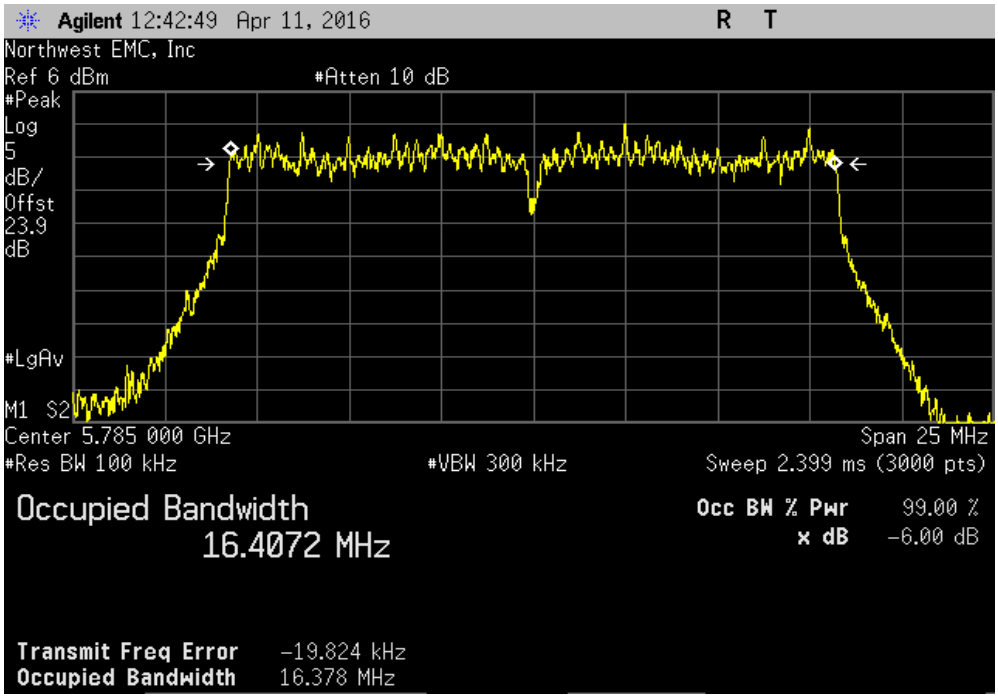
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps						
				Value	Limit (>)	Result
				16.394 MHz	500 kHz	Pass



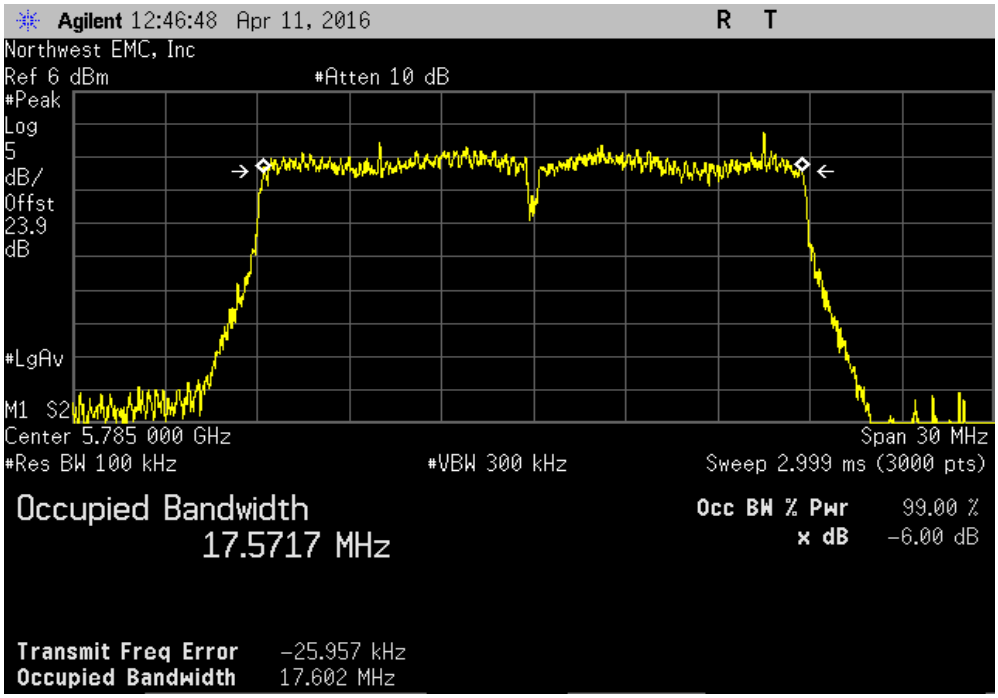
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps						
				Value	Limit (>)	Result
				16.307 MHz	500 kHz	Pass



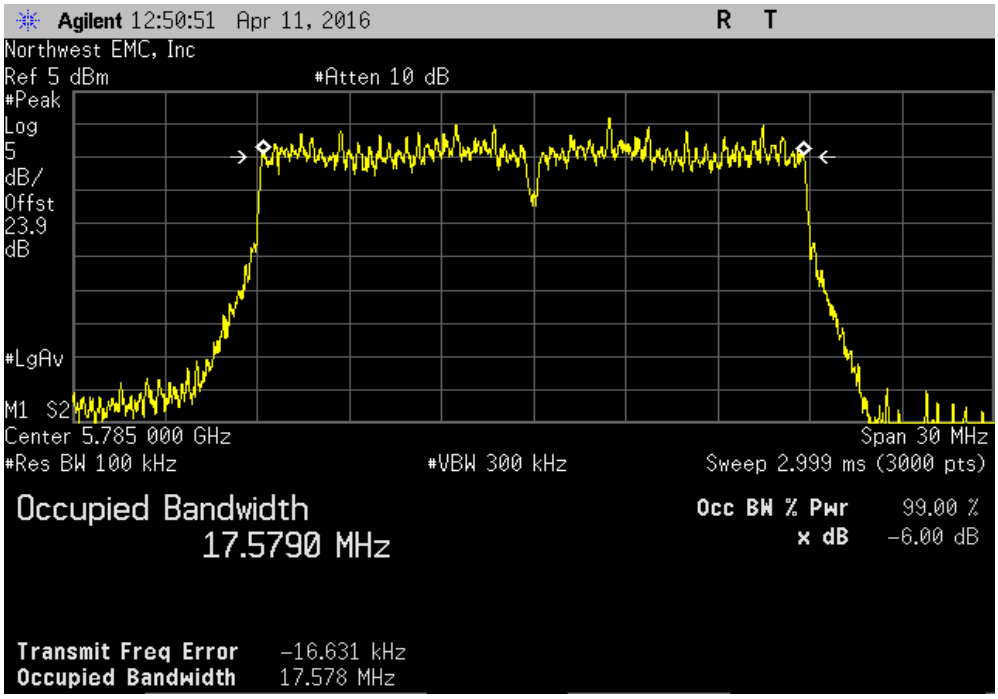
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps						
				Value	Limit (>)	Result
				16.378 MHz	500 kHz	Pass



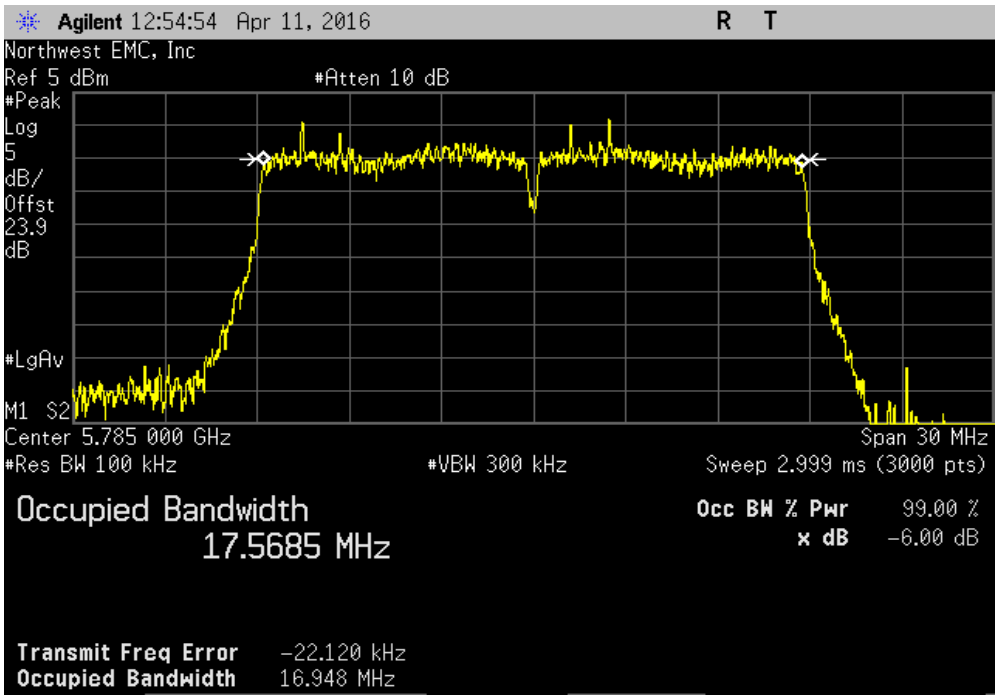
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				17.602 MHz	500 kHz	Pass



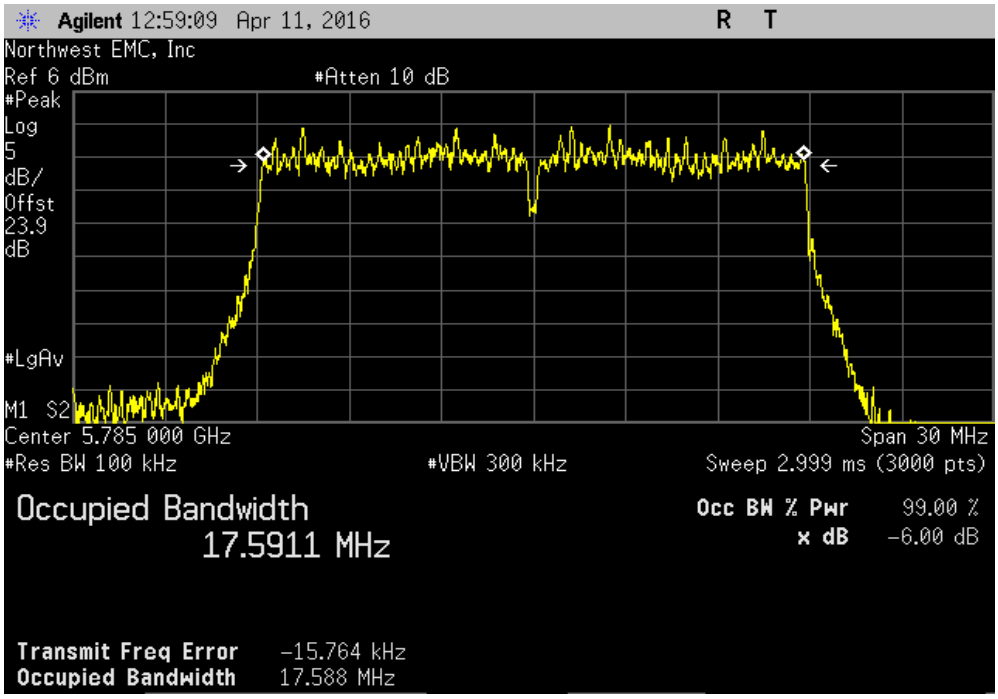
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				17.578 MHz	500 kHz	Pass



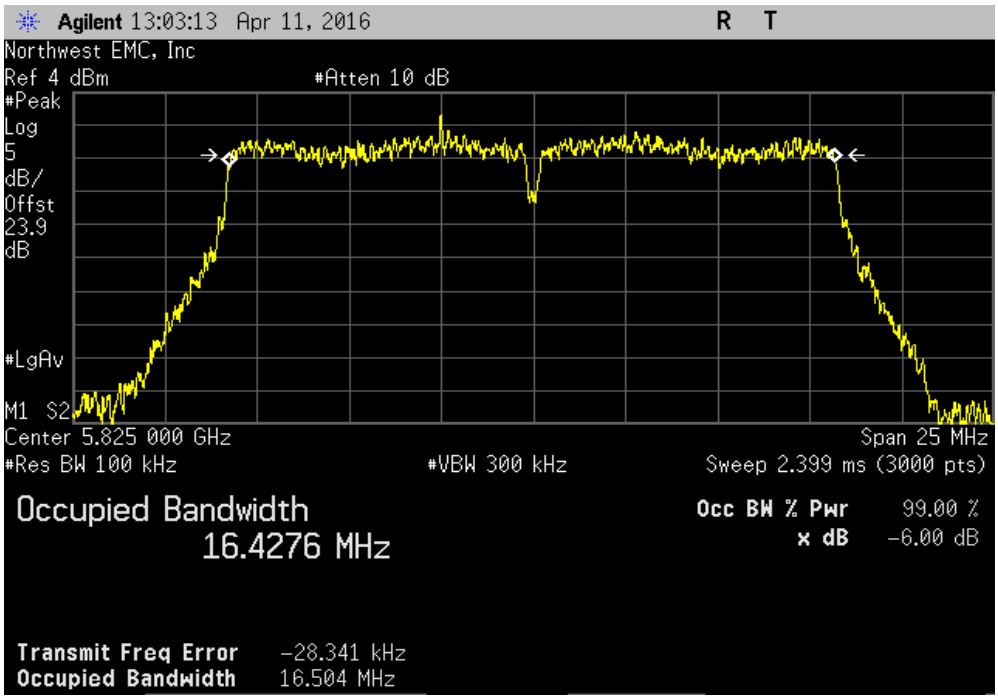
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				16.948 MHz	500 kHz	Pass



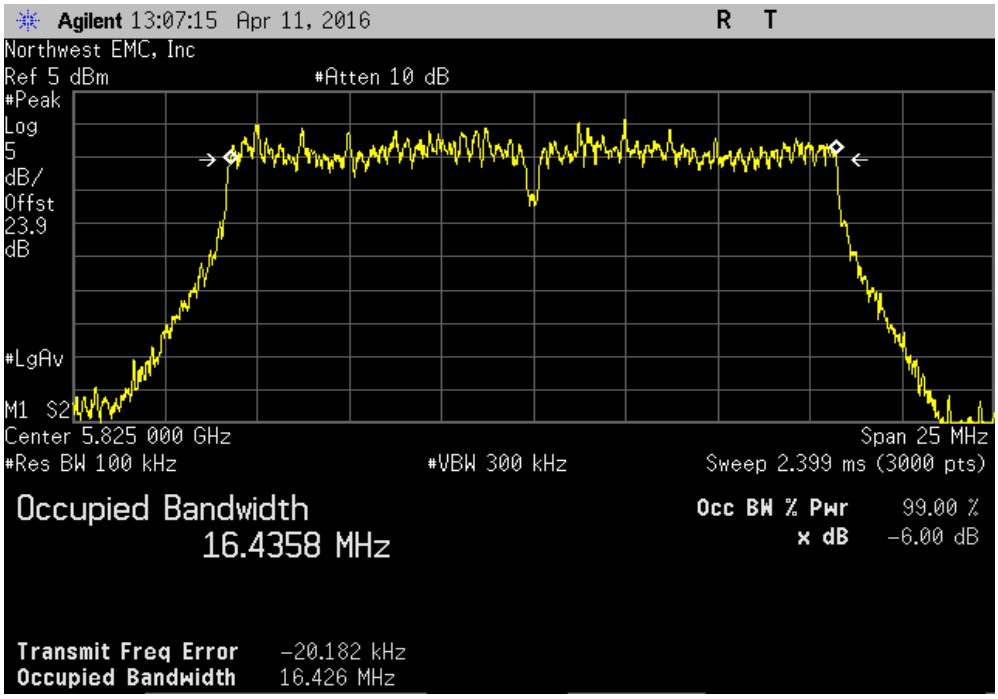
SISO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.588 MHz	500 kHz	Pass



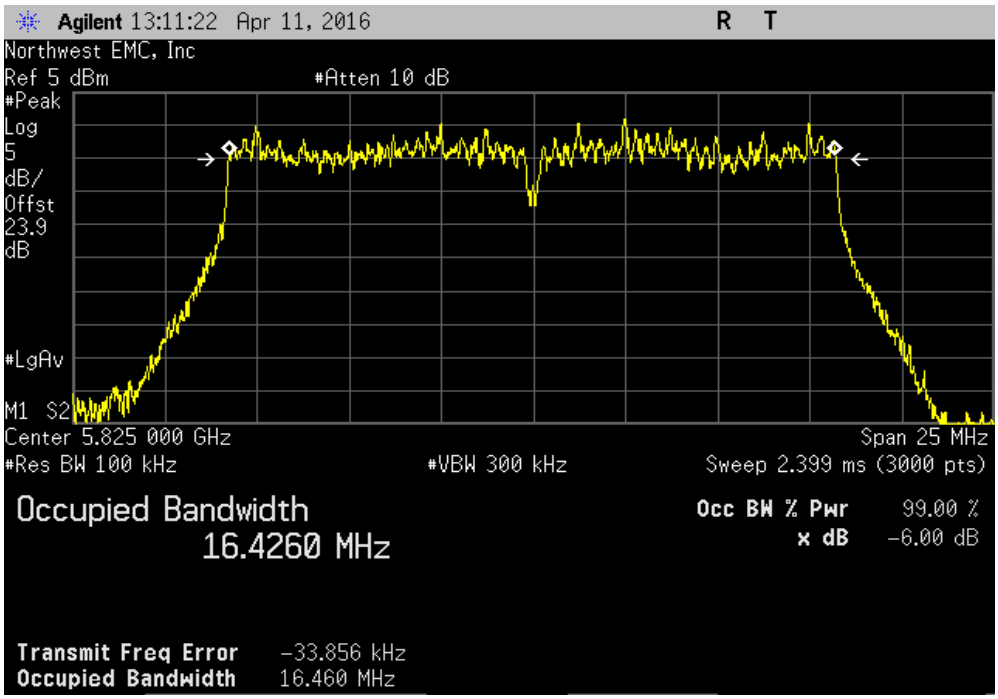
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps						
				Value	Limit (>)	Result
				16.504 MHz	500 kHz	Pass



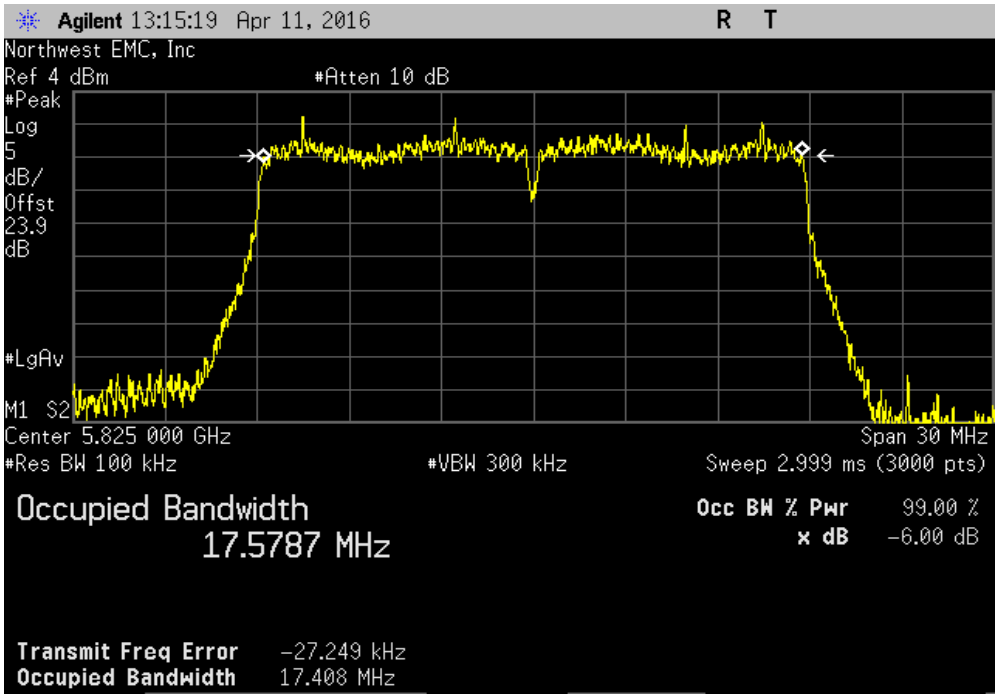
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps						
				Value	Limit (>)	Result
				16.426 MHz	500 kHz	Pass



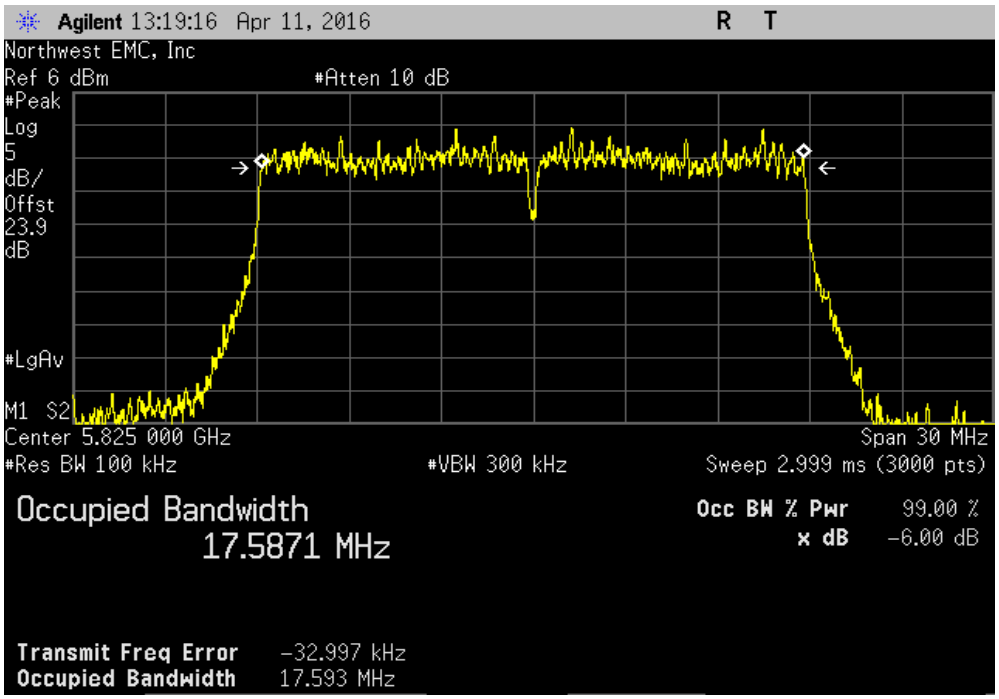
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps						
				Value	Limit (>)	Result
				16.46 MHz	500 kHz	Pass



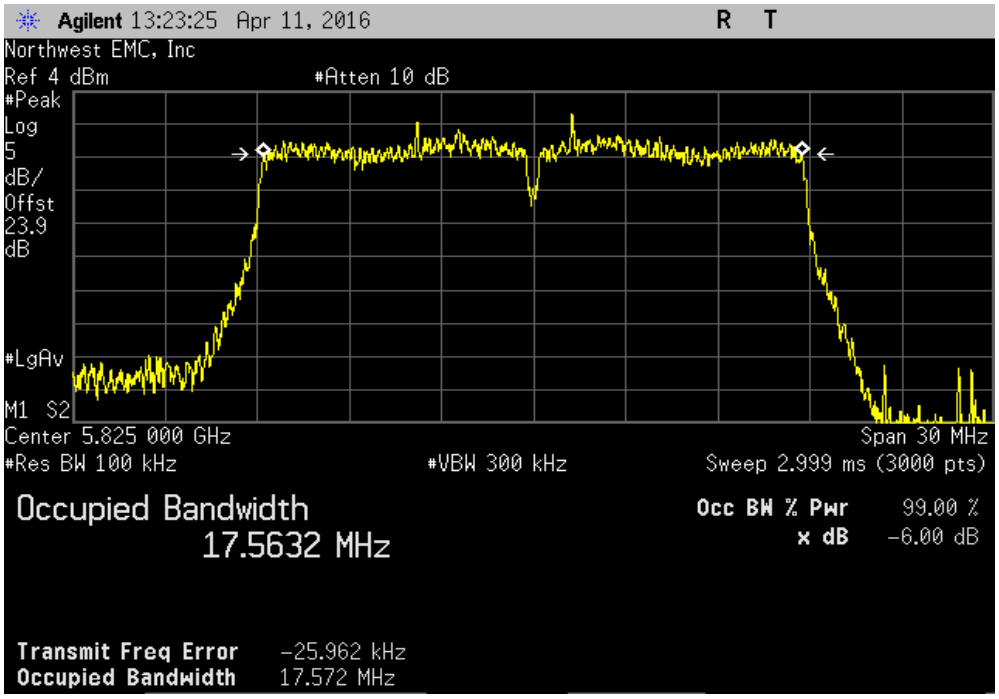
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				17.408 MHz	500 kHz	Pass



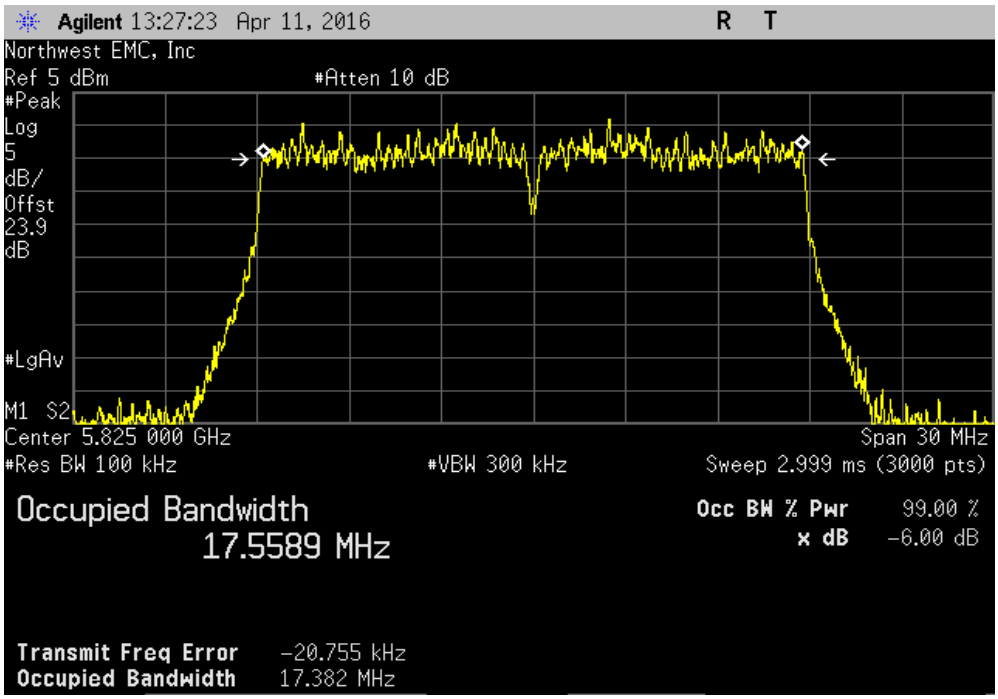
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				17.593 MHz	500 kHz	Pass



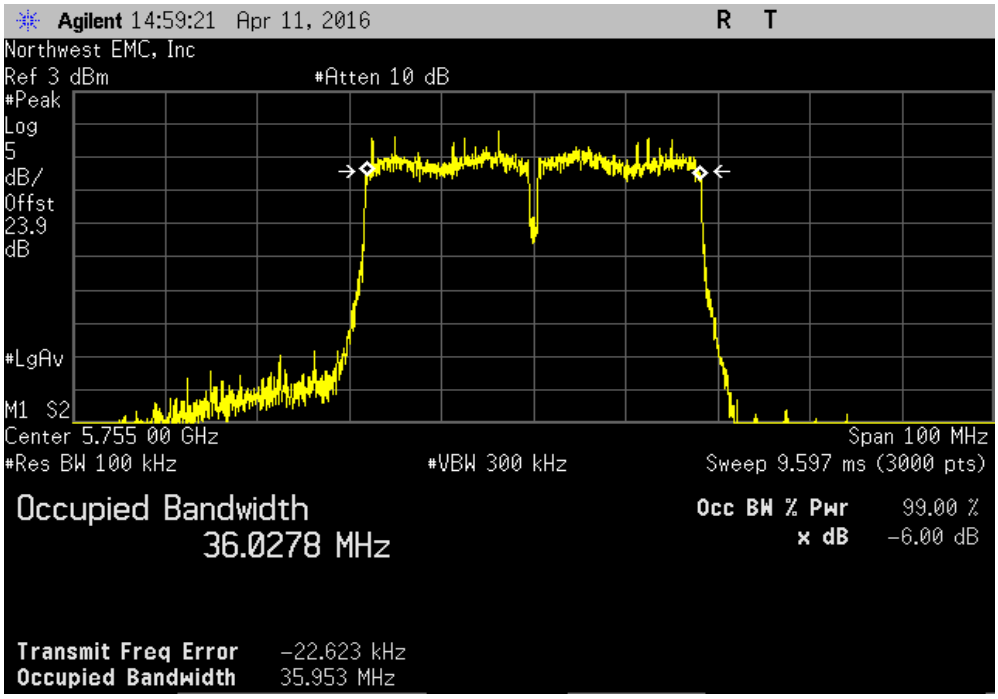
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.572 MHz	500 kHz	Pass



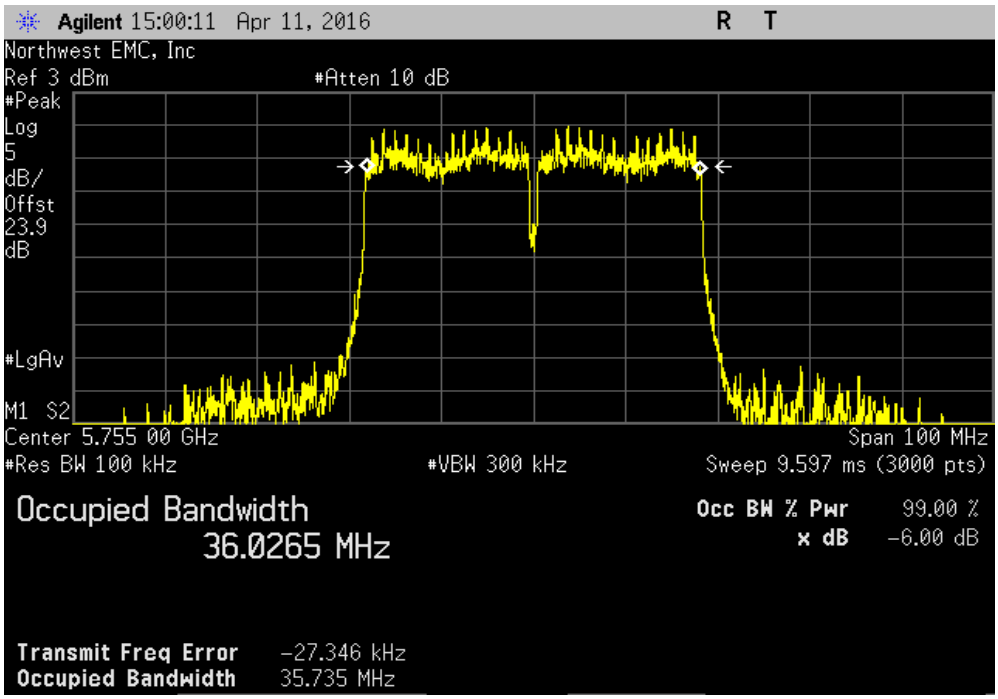
SISO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.382 MHz	500 kHz	Pass



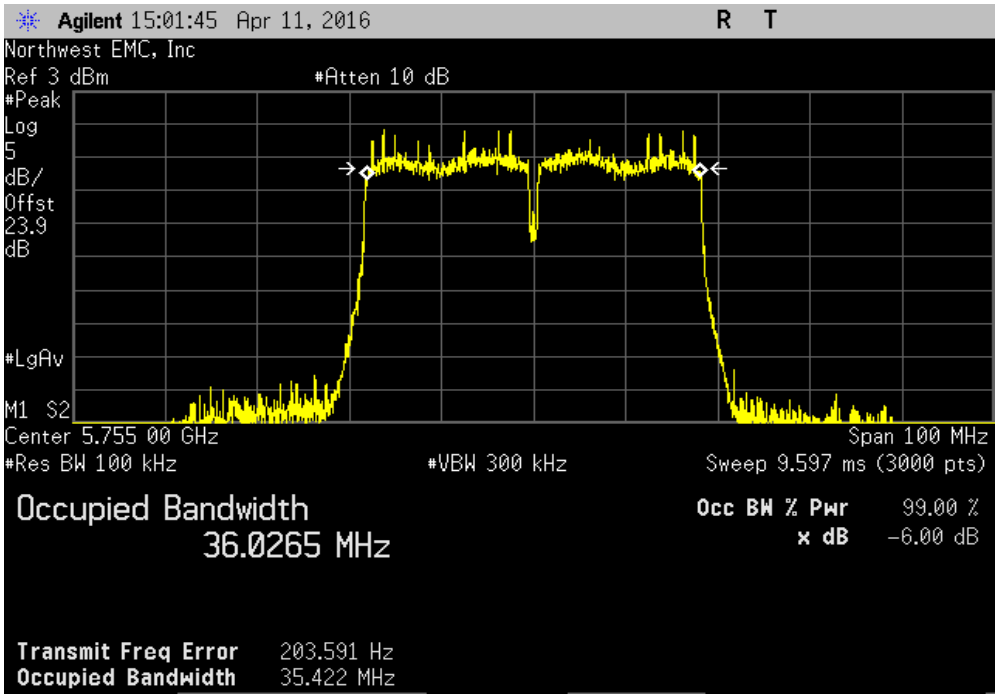
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				35.953 MHz	500 kHz	Pass



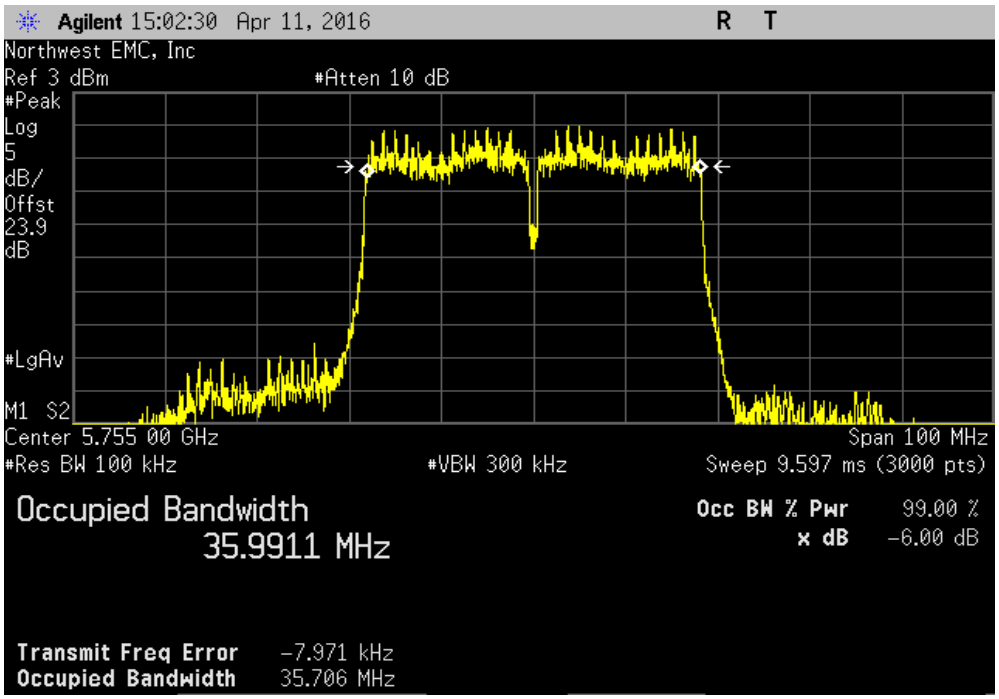
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				35.735 MHz	500 kHz	Pass



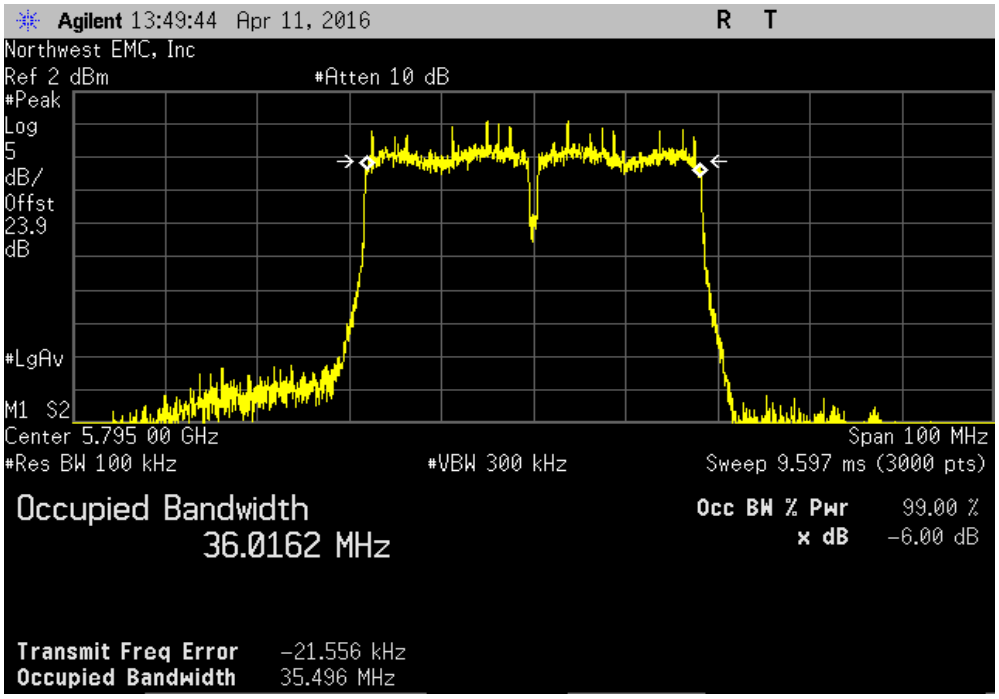
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.422 MHz	500 kHz	Pass



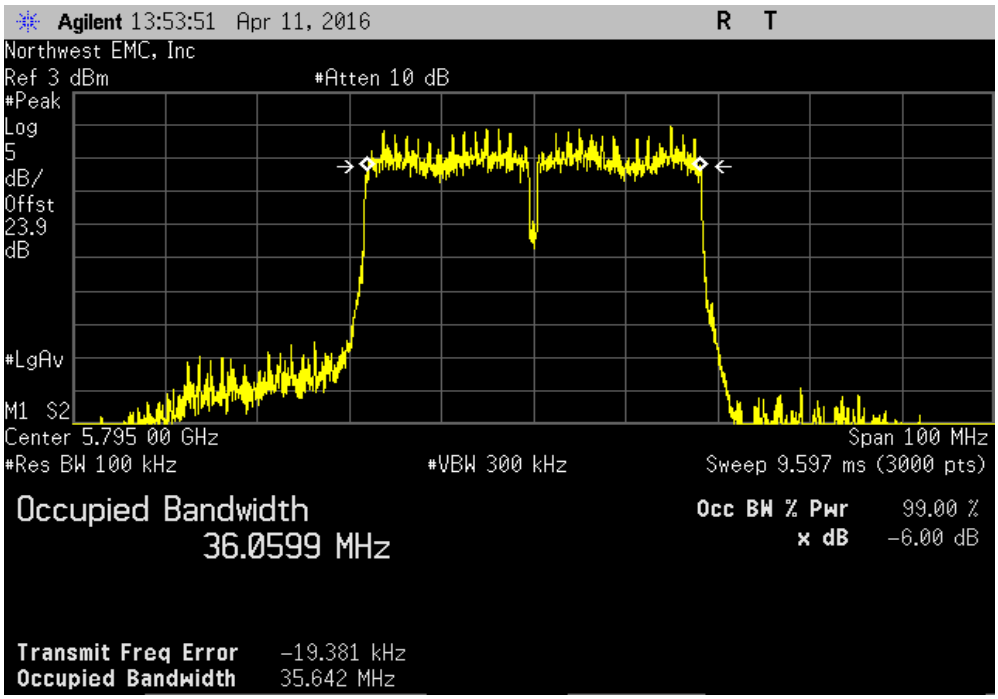
SISO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.706 MHz	500 kHz	Pass



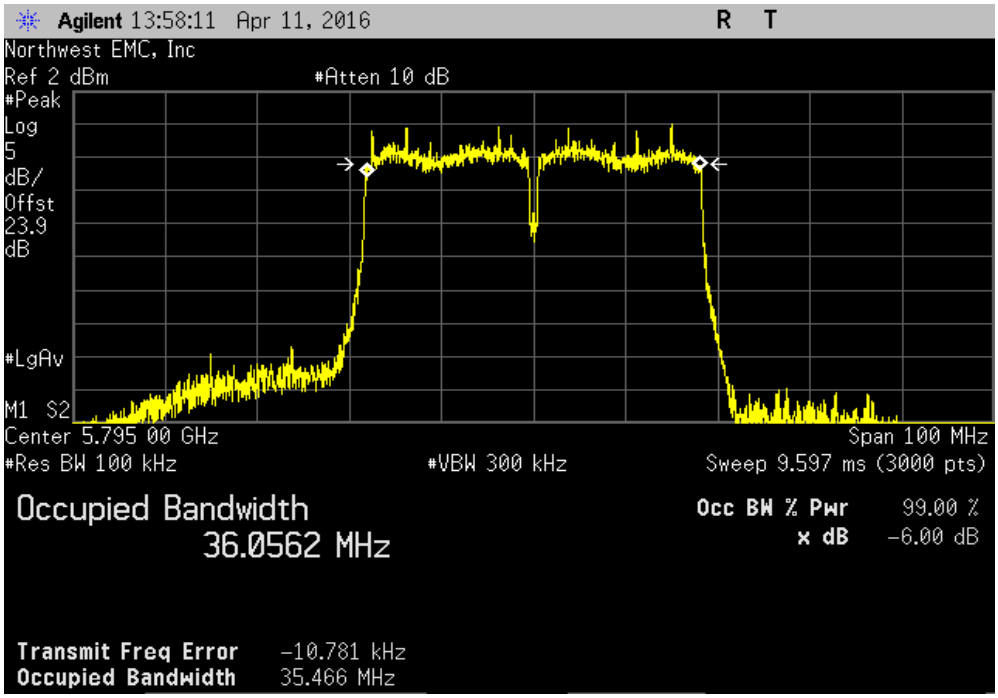
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				35.496 MHz	500 kHz	Pass



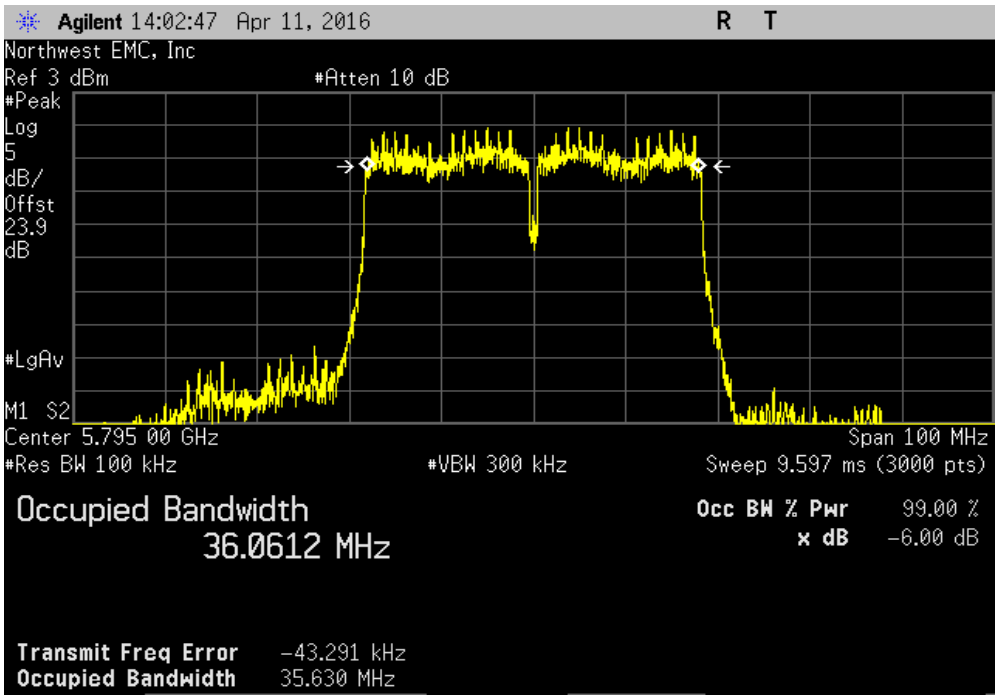
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				35.642 MHz	500 kHz	Pass



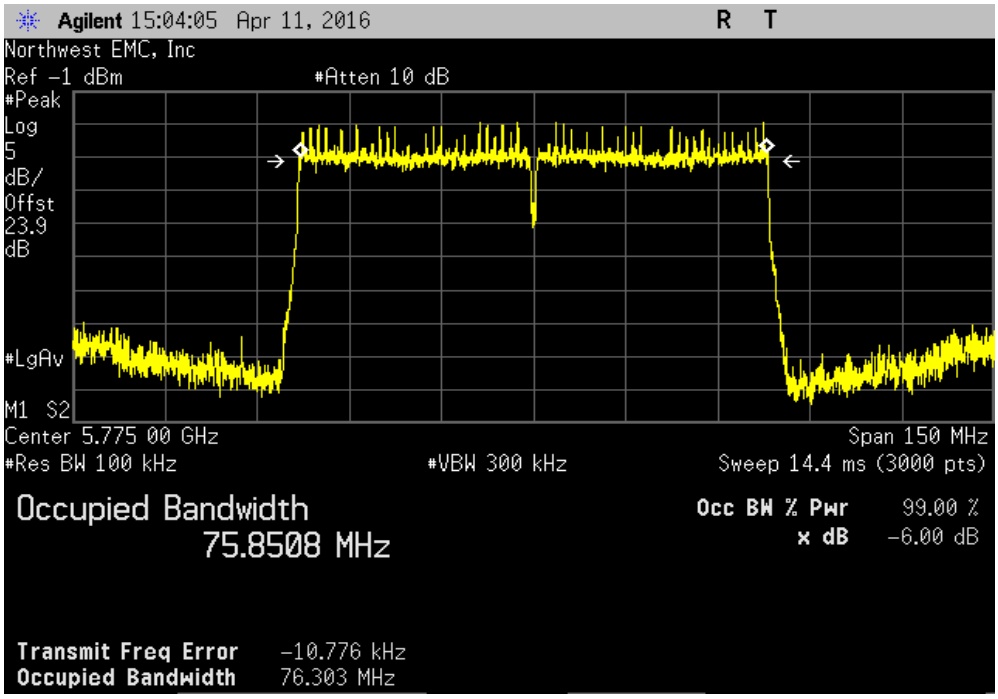
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.466 MHz	500 kHz	Pass



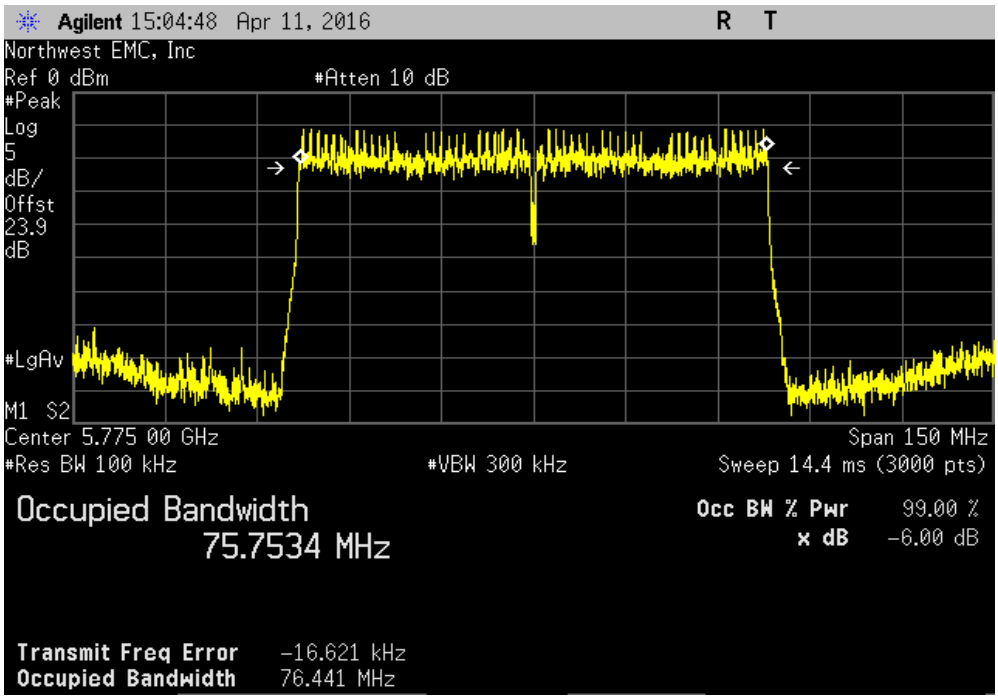
SISO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.63 MHz	500 kHz	Pass



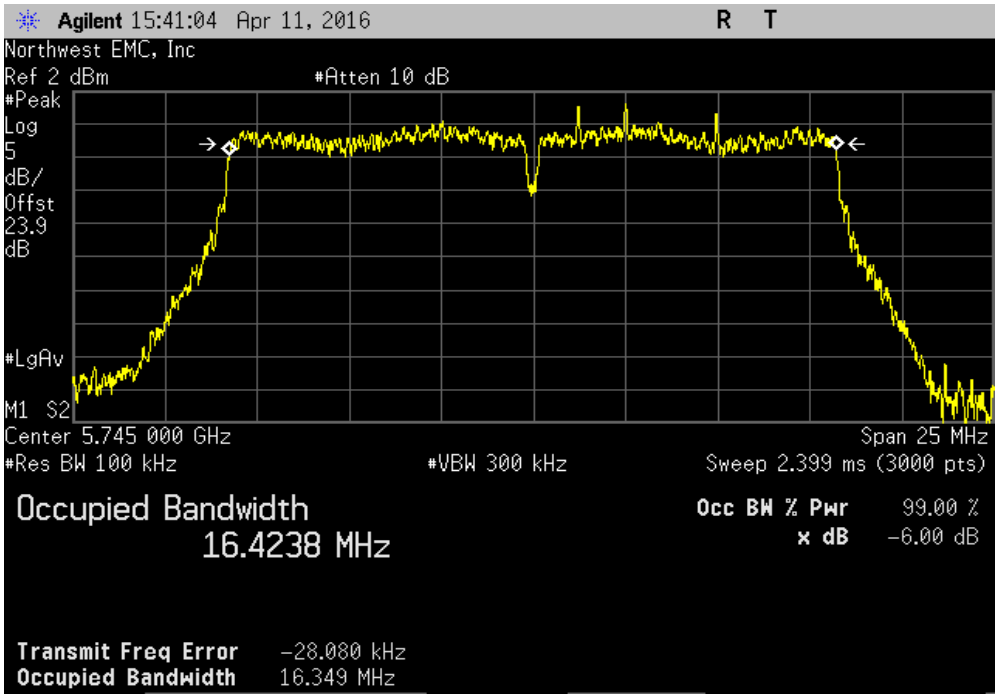
SISO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				76.303 MHz	500 kHz	Pass



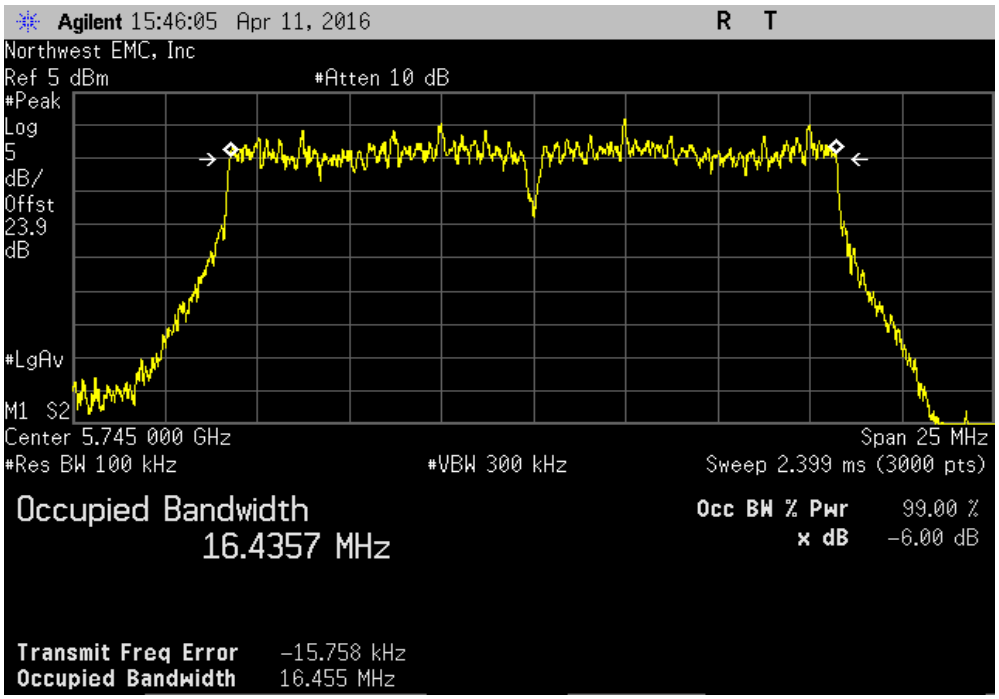
SISO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				76.441 MHz	500 kHz	Pass



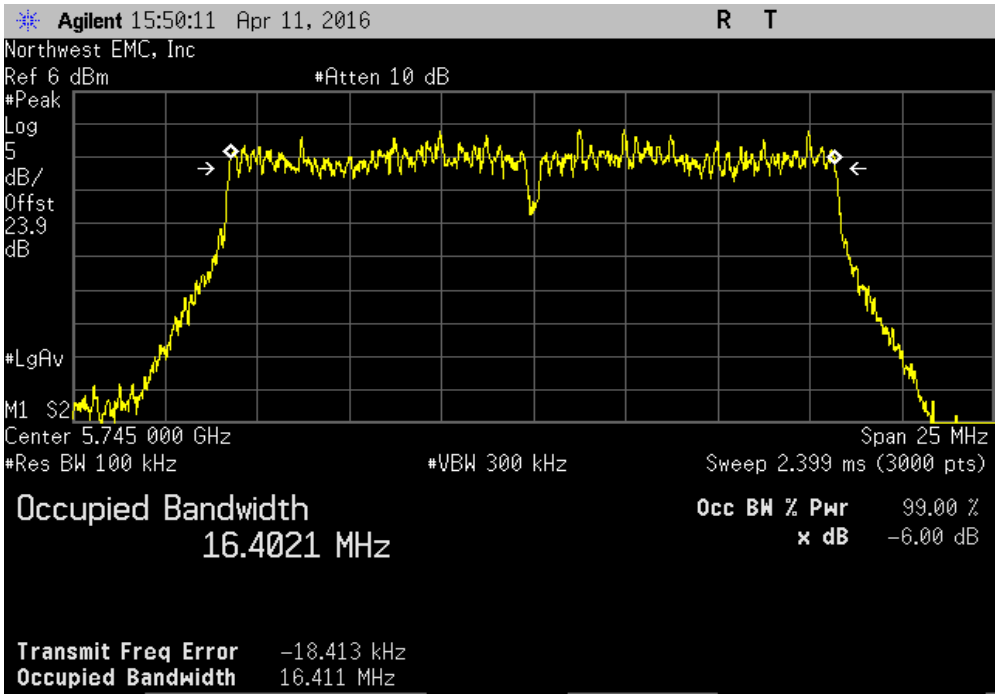
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps						
				Value	Limit (>)	Result
				16.349 MHz	500 kHz	Pass



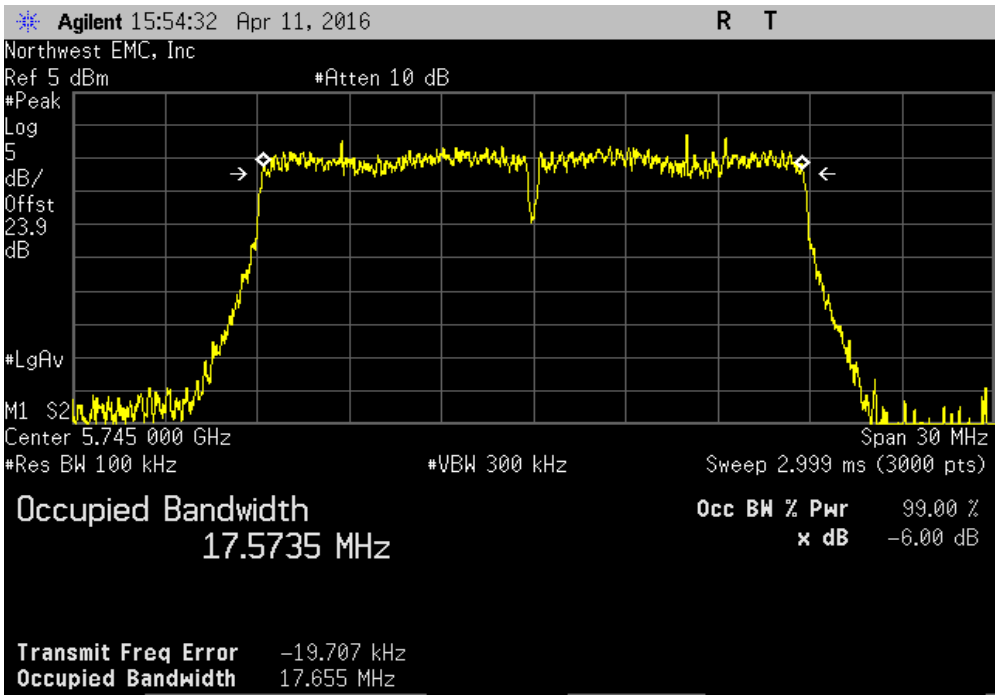
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps						
				Value	Limit (>)	Result
				16.455 MHz	500 kHz	Pass



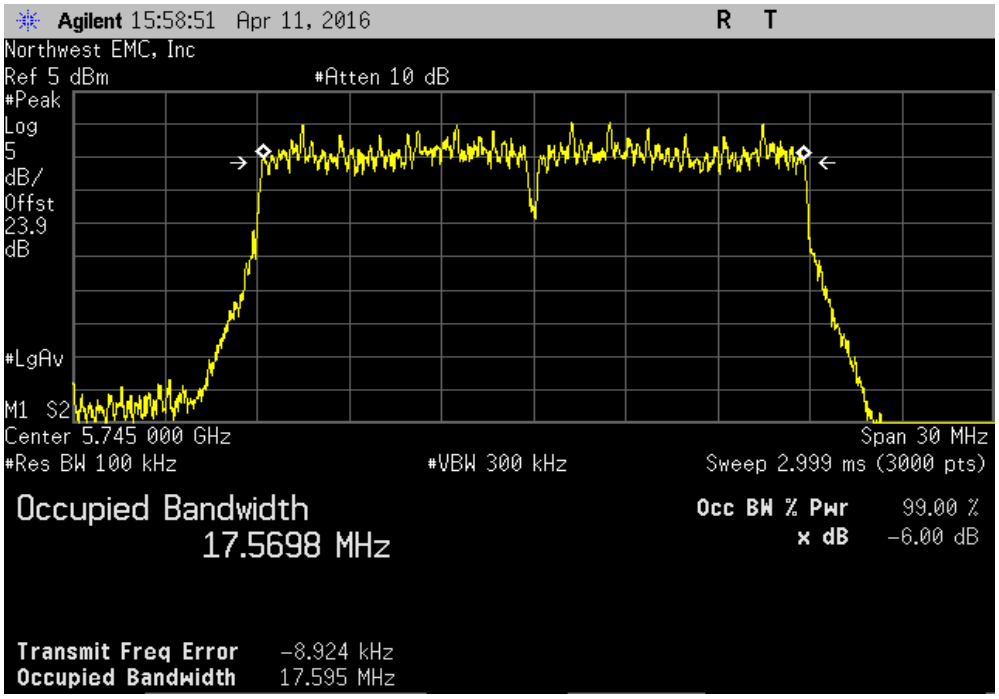
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps						
				Value	Limit (>)	Result
				16.411 MHz	500 kHz	Pass



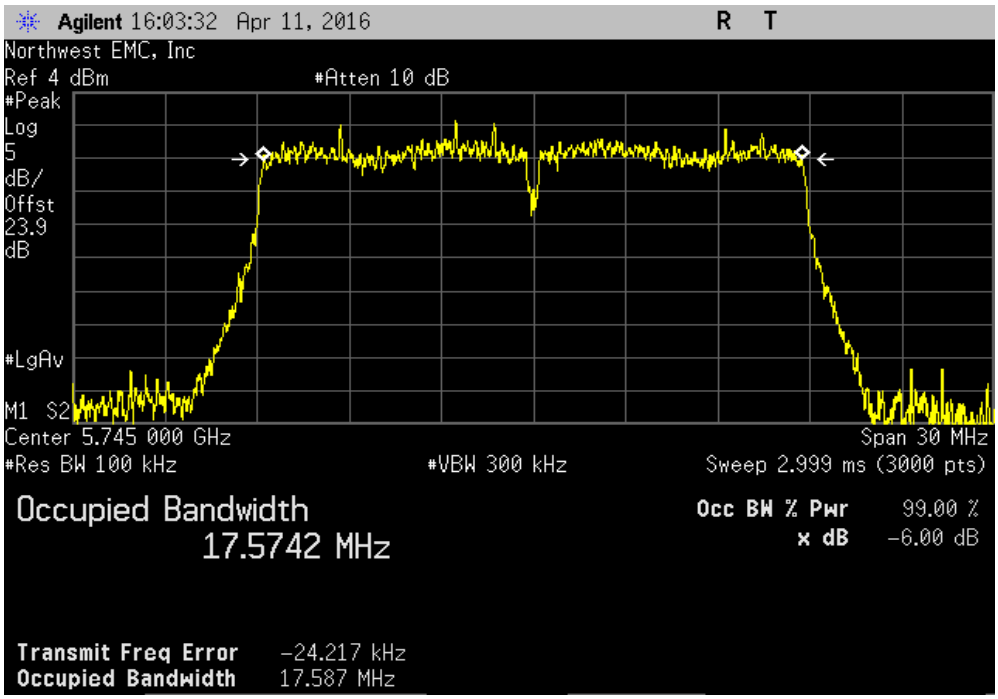
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				17.655 MHz	500 kHz	Pass



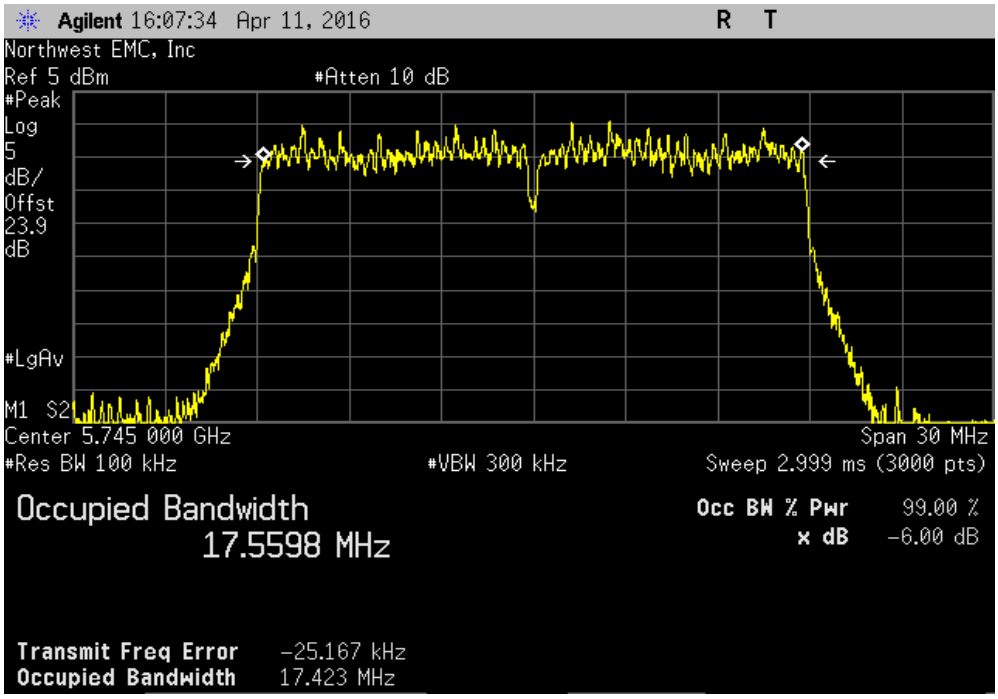
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				17.595 MHz	500 kHz	Pass



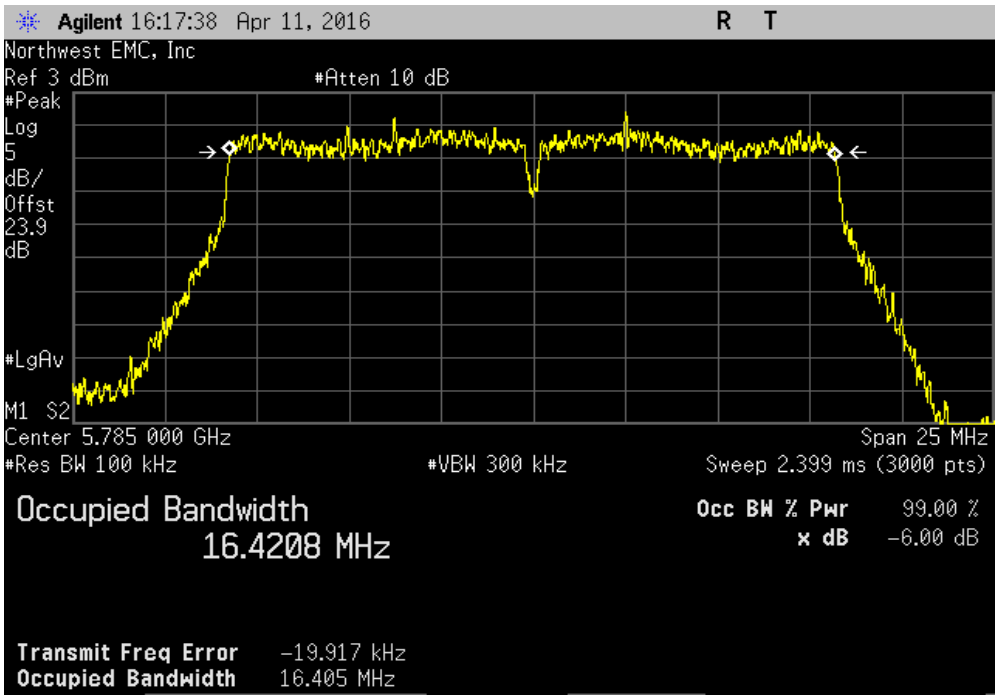
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.587 MHz	500 kHz	Pass



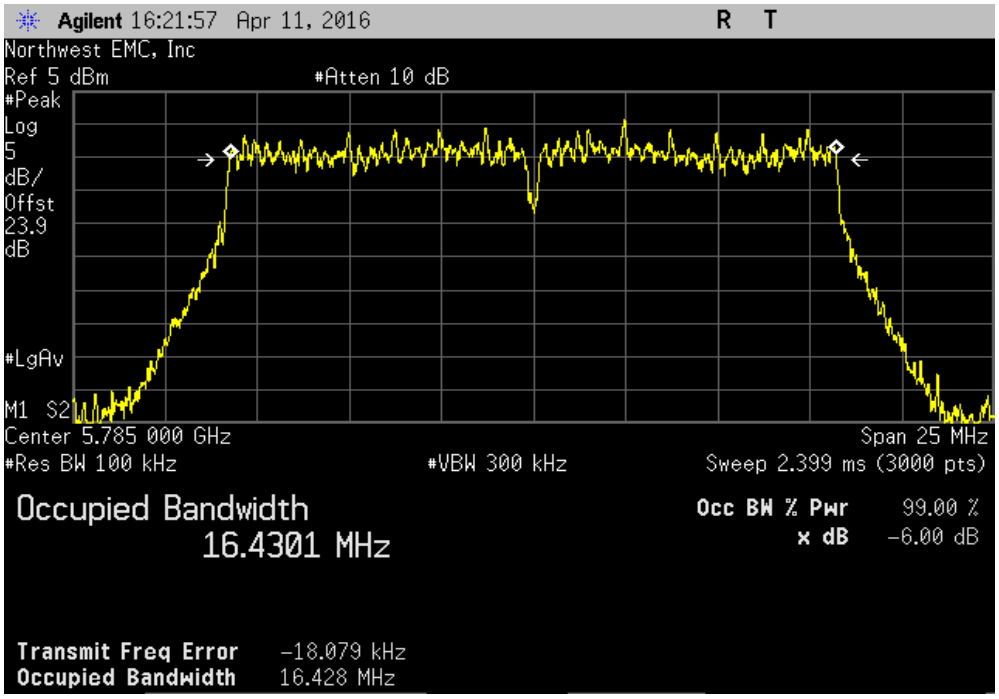
SISO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.423 MHz	500 kHz	Pass



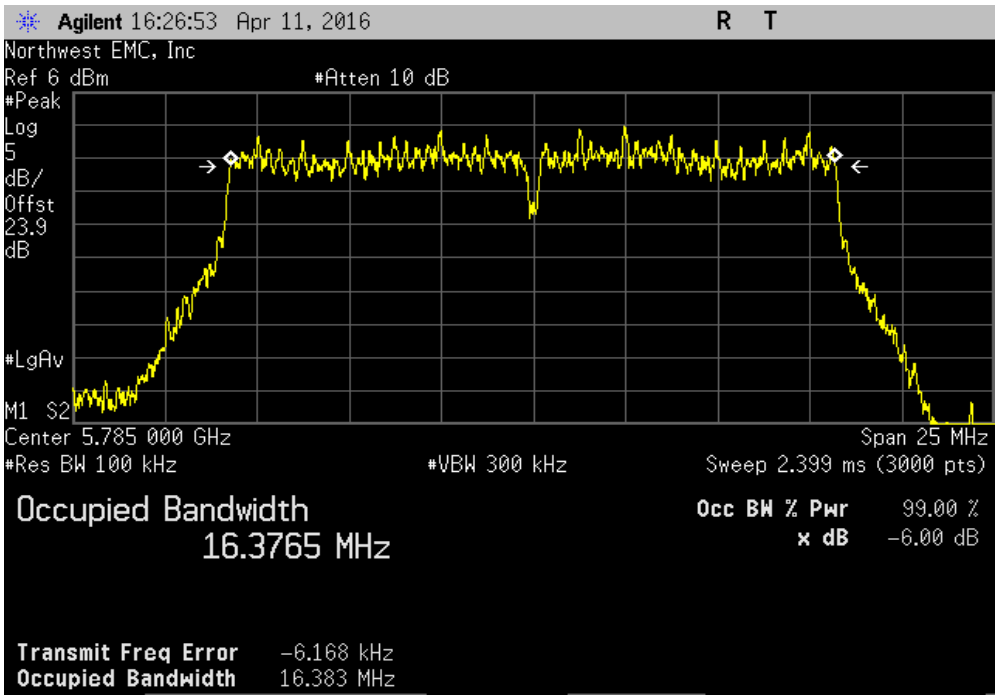
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps						
				Value	Limit (>)	Result
				16.405 MHz	500 kHz	Pass



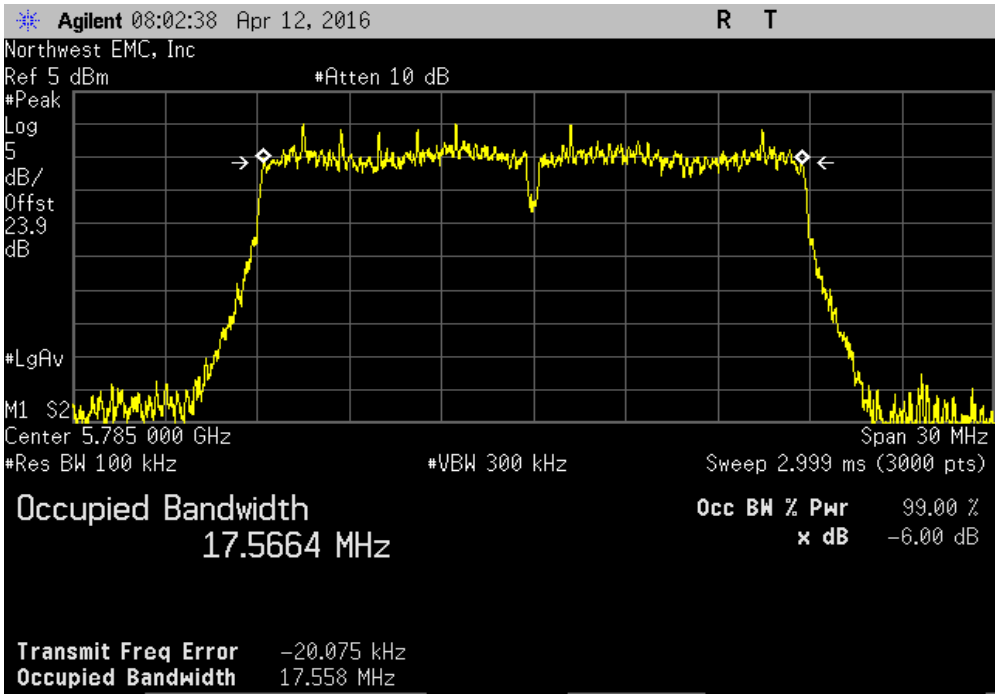
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps						
				Value	Limit (>)	Result
				16.428 MHz	500 kHz	Pass



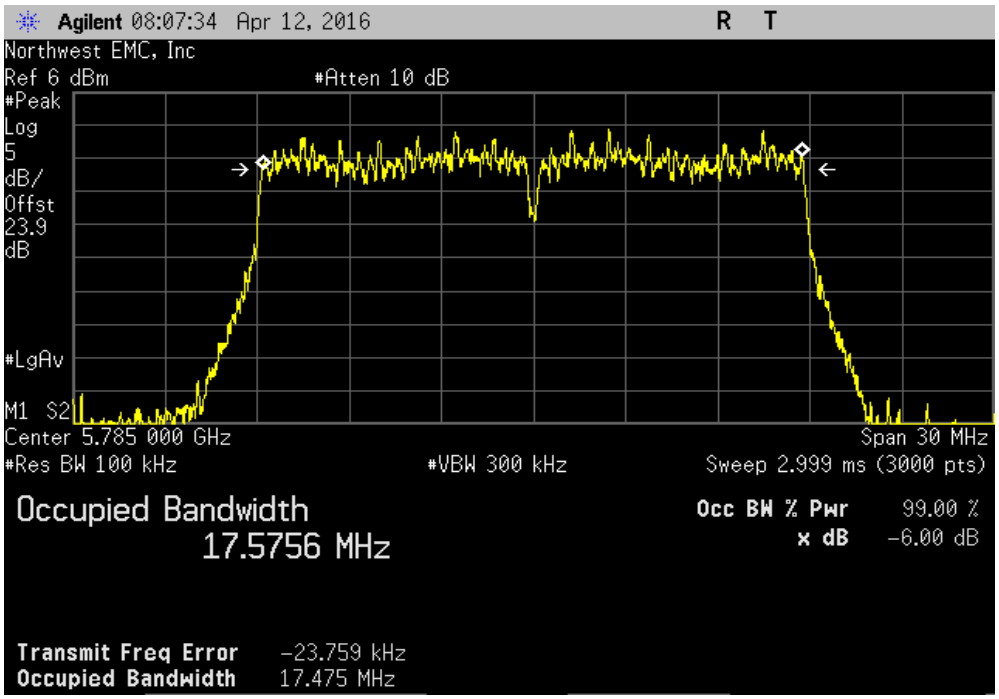
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps						
				Value	Limit (>)	Result
				16.383 MHz	500 kHz	Pass



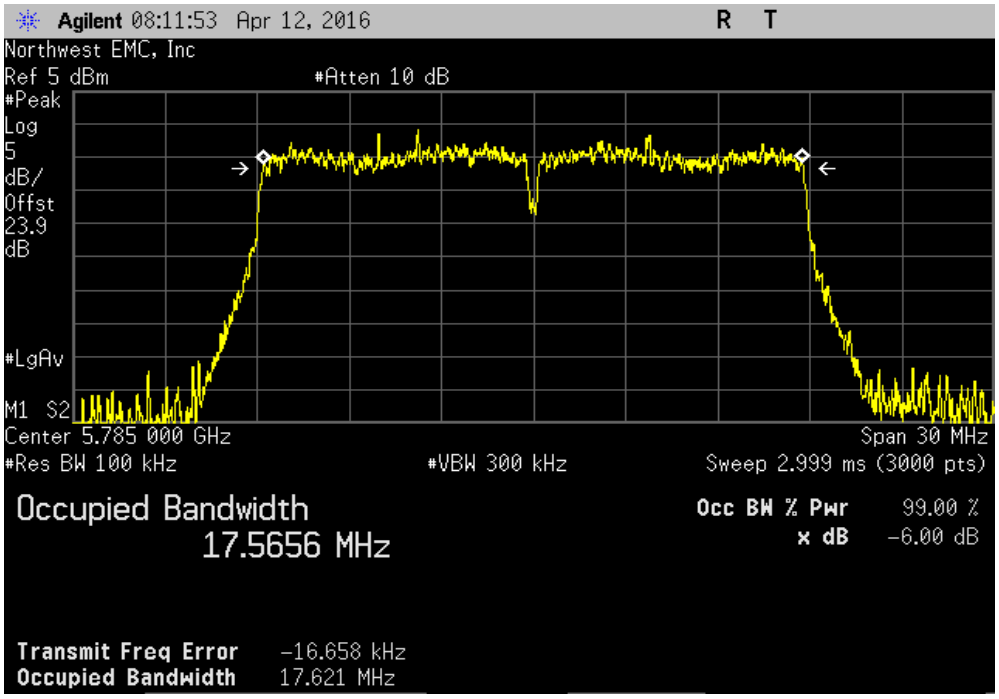
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				17.558 MHz	500 kHz	Pass



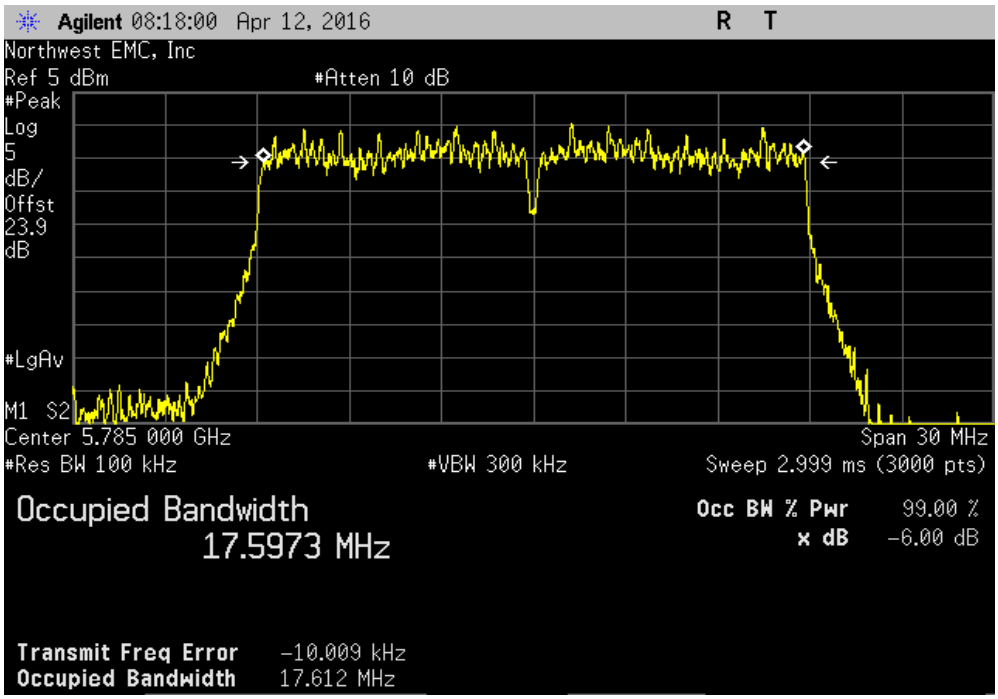
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				17.475 MHz	500 kHz	Pass



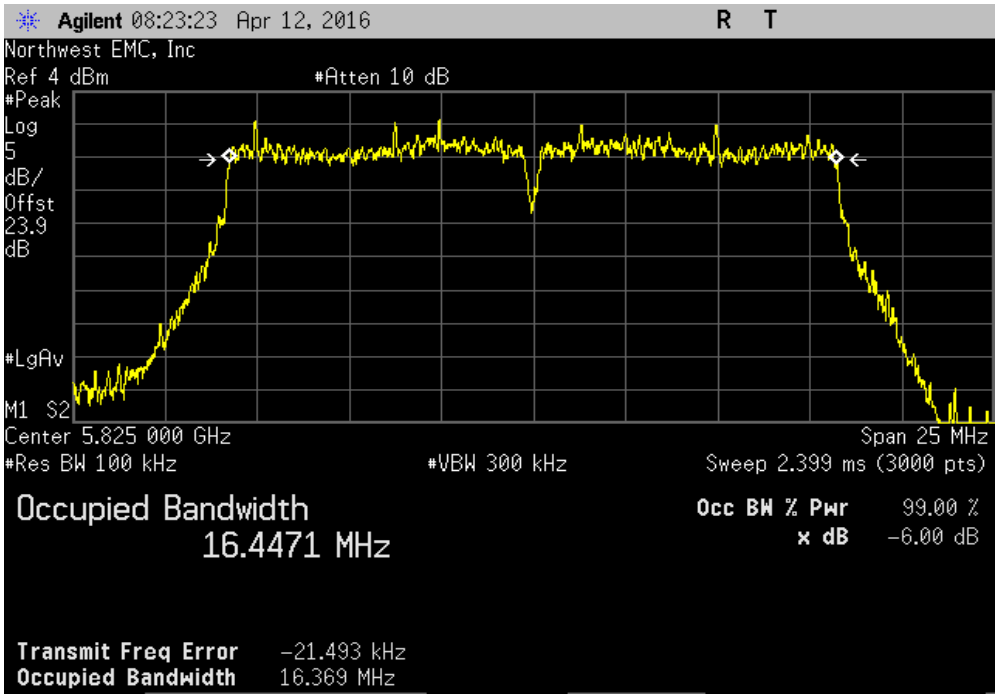
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.621 MHz	500 kHz	Pass



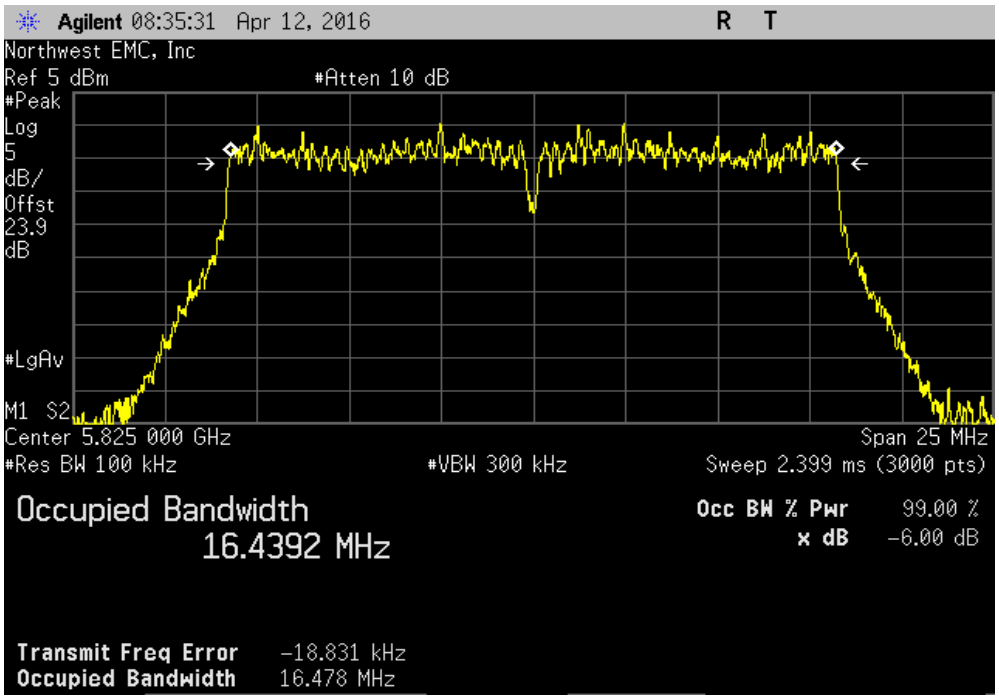
SISO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.612 MHz	500 kHz	Pass



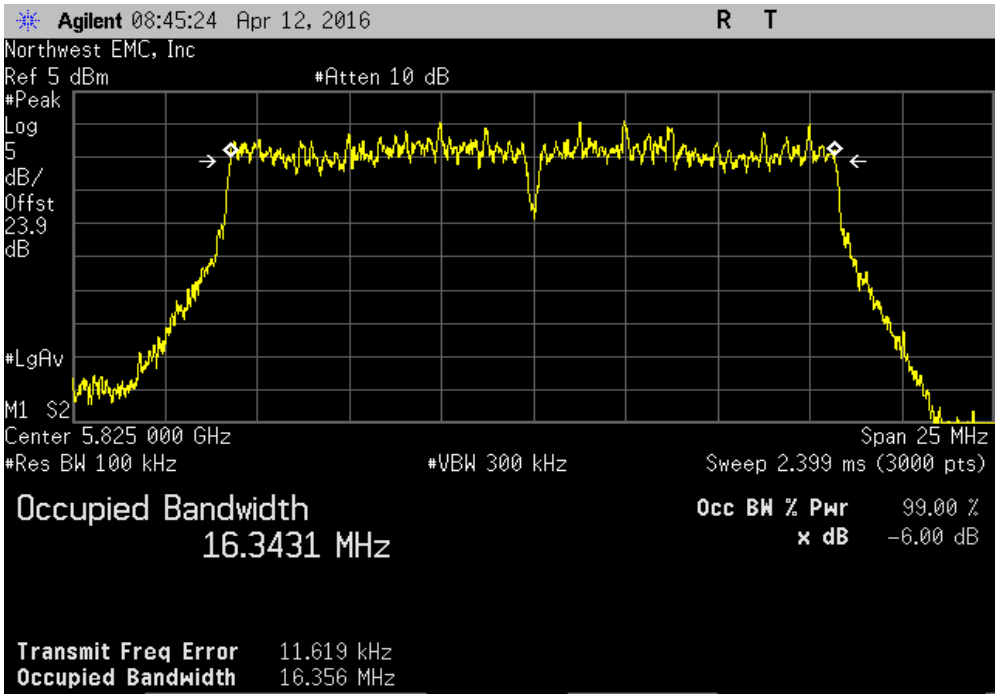
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps						
				Value	Limit (>)	Result
				16.369 MHz	500 kHz	Pass



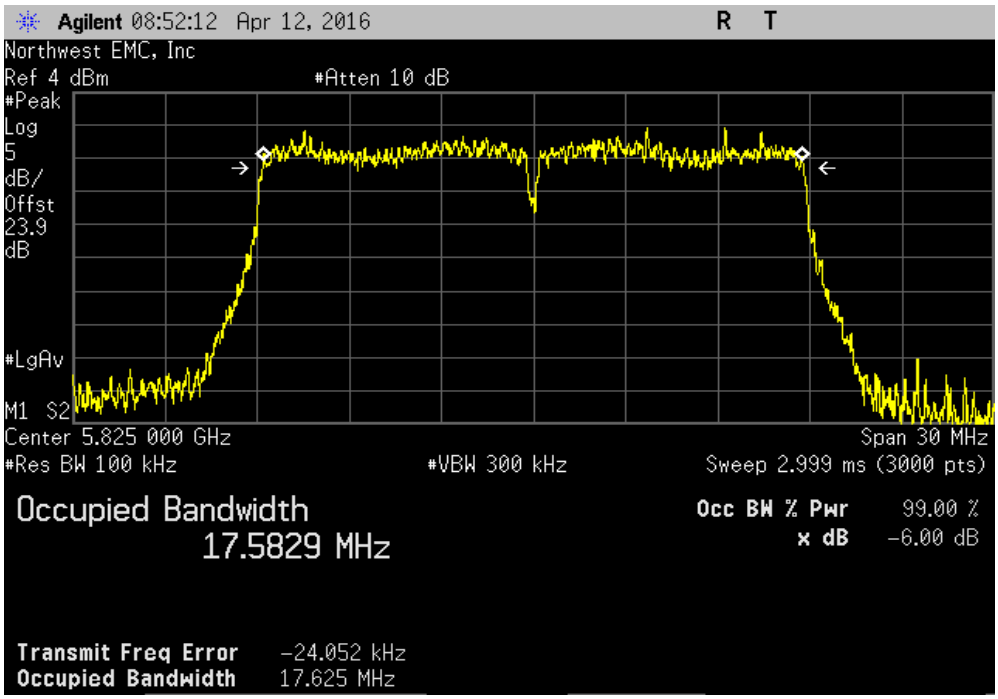
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps						
				Value	Limit (>)	Result
				16.478 MHz	500 kHz	Pass



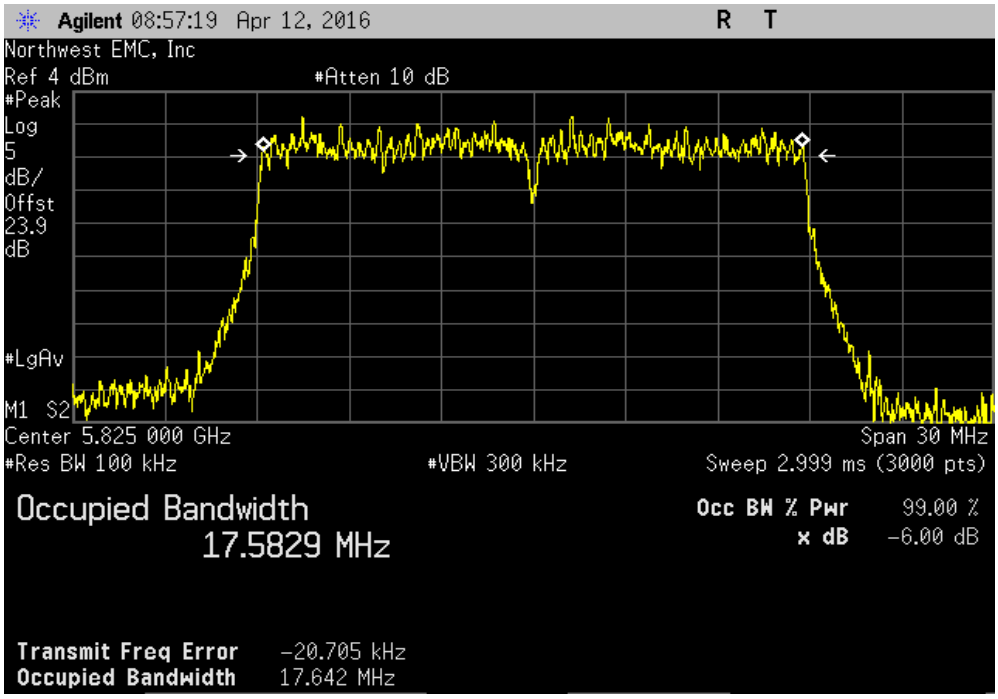
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps						
				Value	Limit (>)	Result
				16.356 MHz	500 kHz	Pass



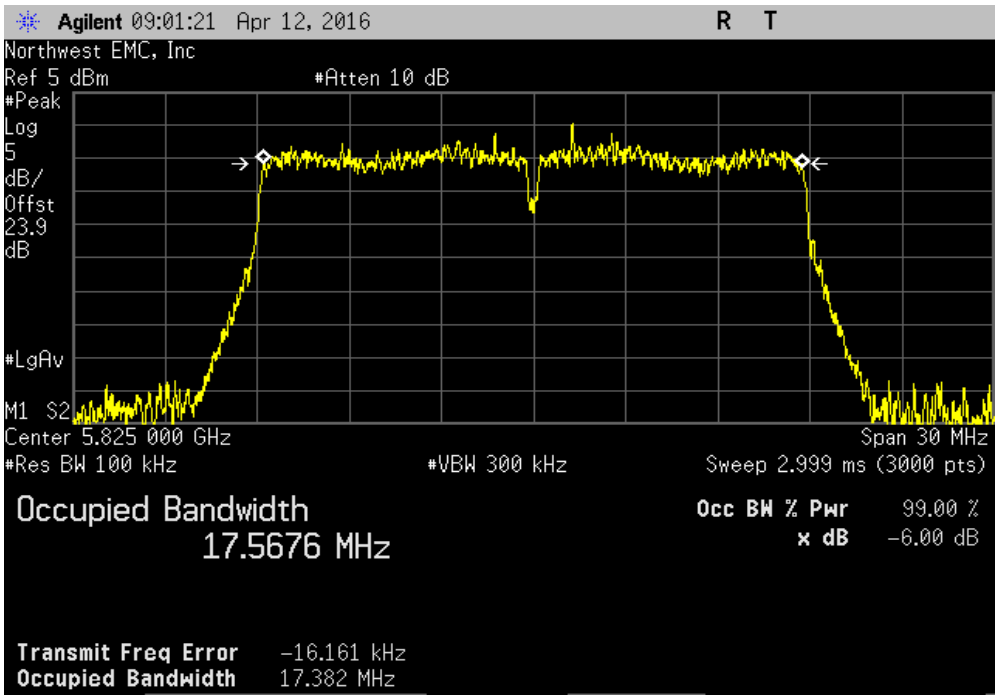
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				17.625 MHz	500 kHz	Pass



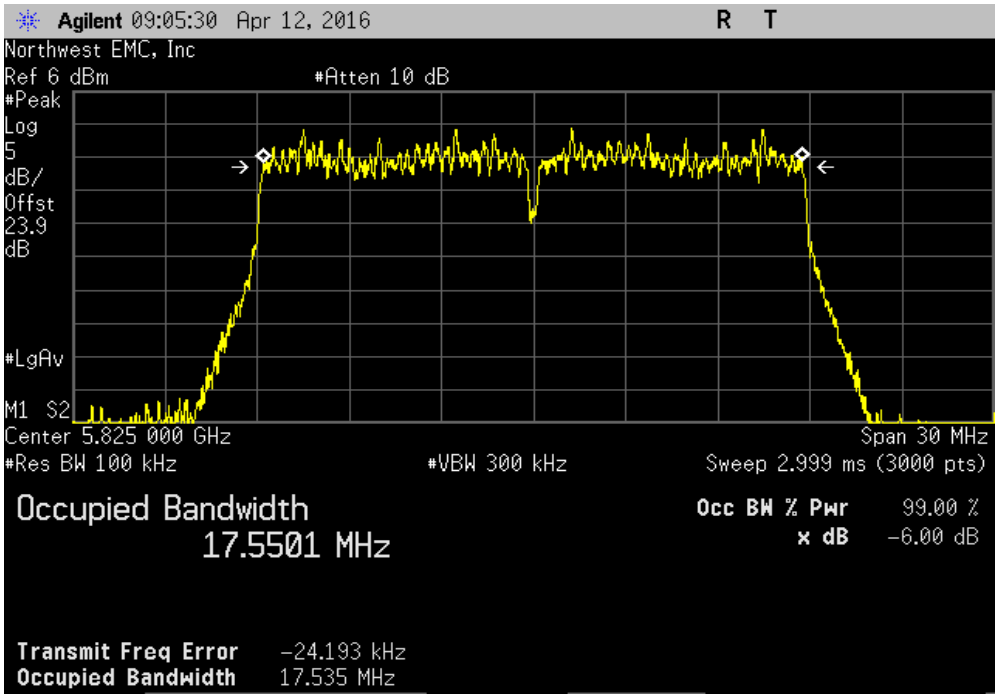
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				17.642 MHz	500 kHz	Pass



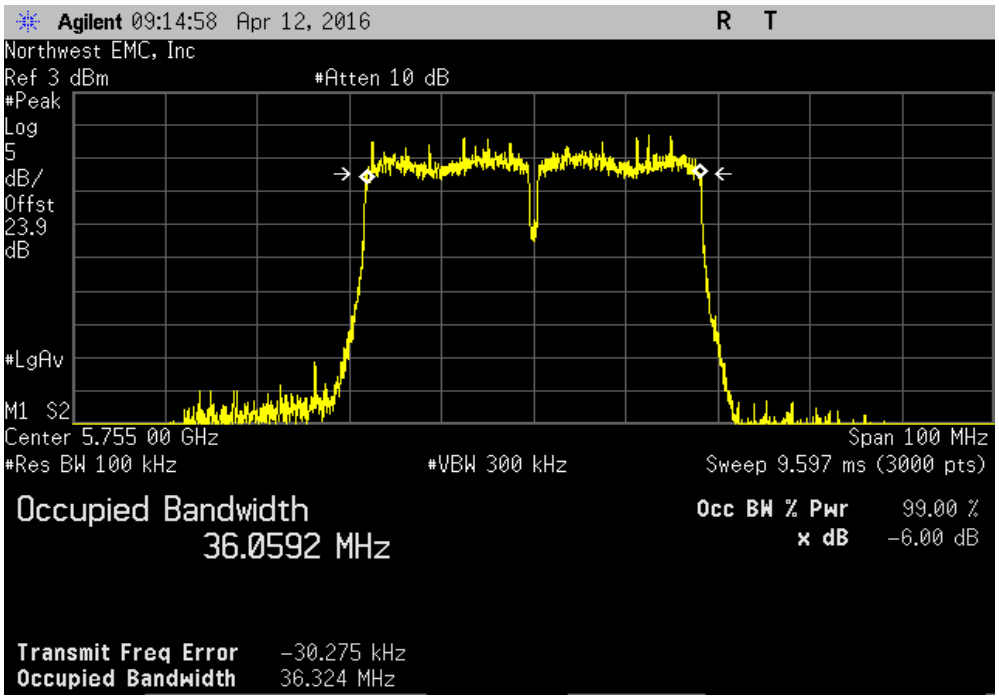
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.382 MHz	500 kHz	Pass



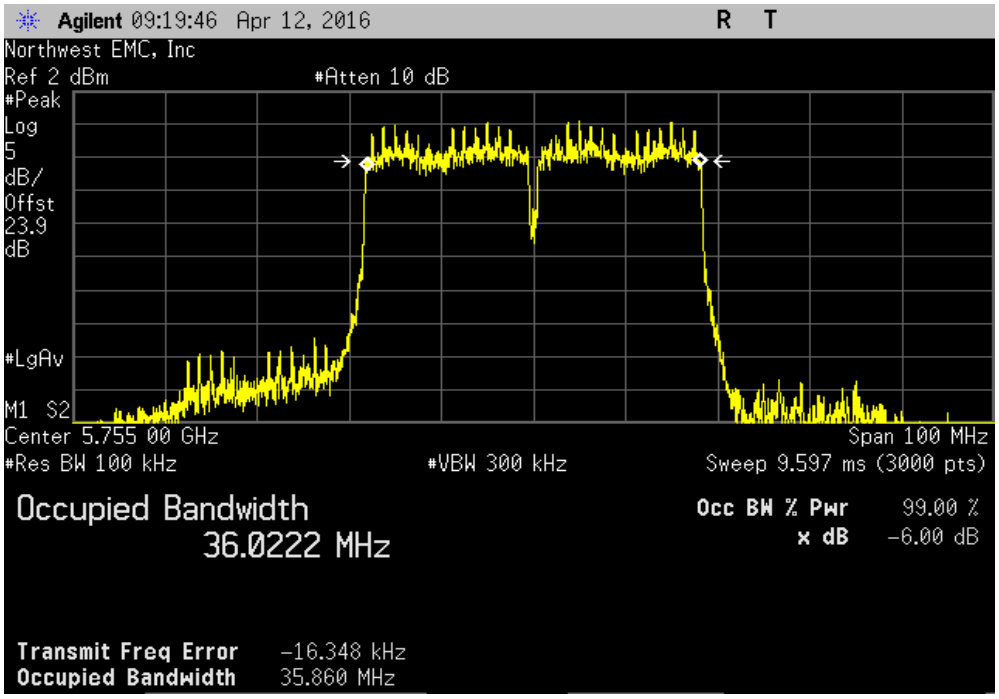
SISO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.535 MHz	500 kHz	Pass



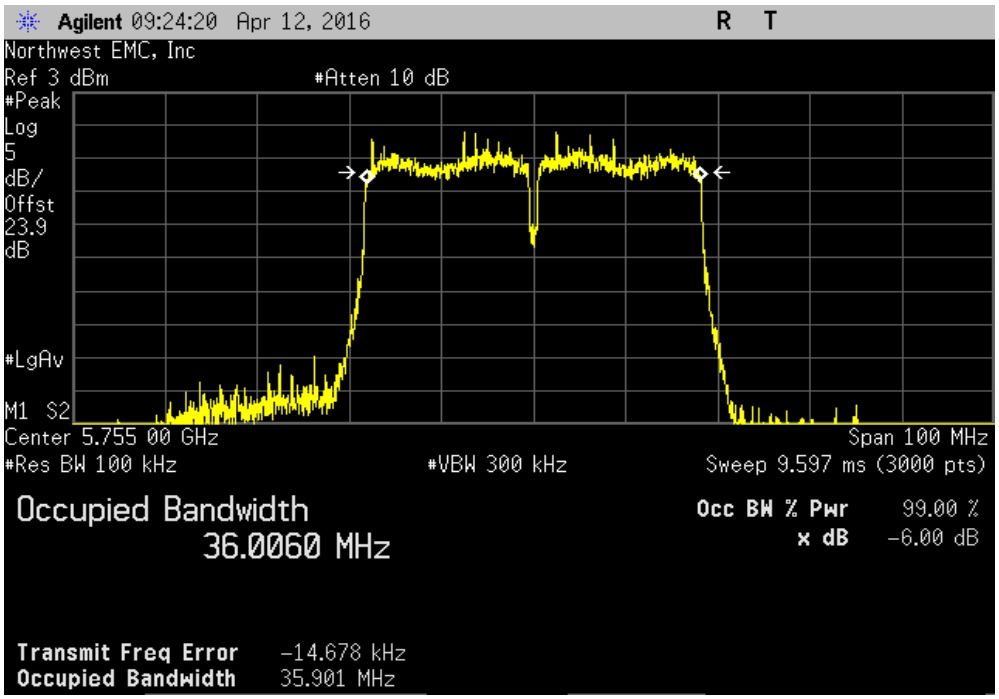
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				36.324 MHz	500 kHz	Pass



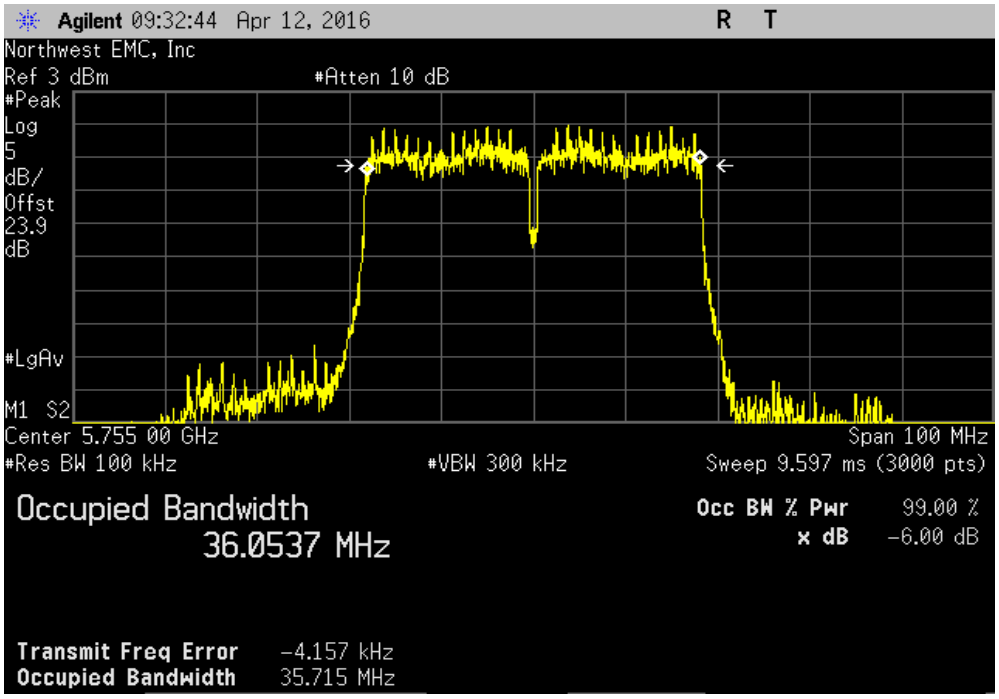
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				35.86 MHz	500 kHz	Pass



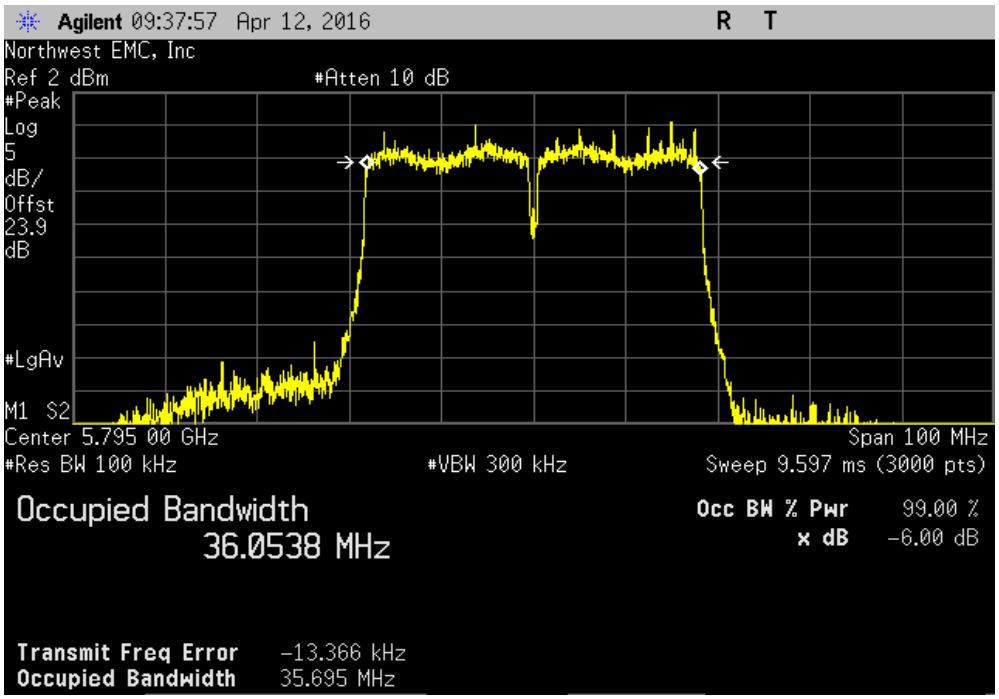
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.901 MHz	500 kHz	Pass



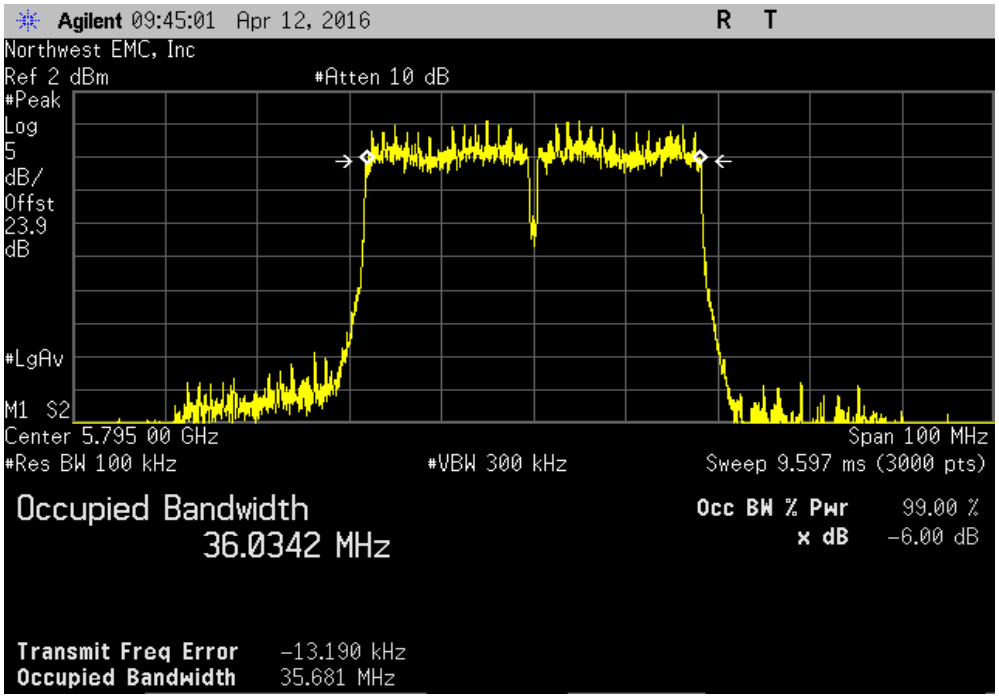
SISO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.715 MHz	500 kHz	Pass



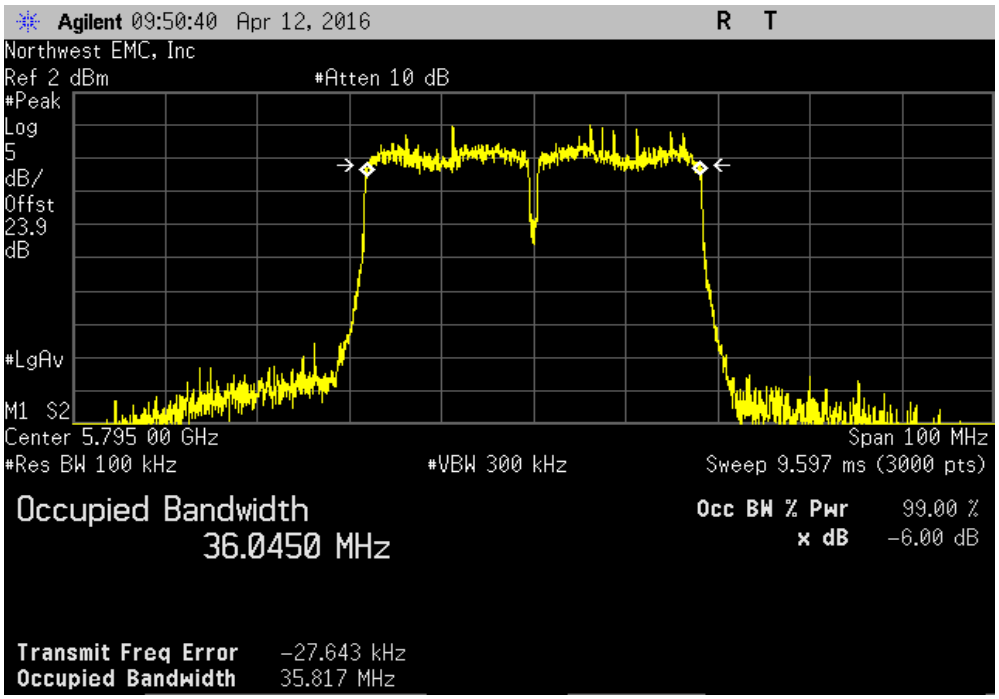
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS0						
				Value	Limit (>)	Result
				35.695 MHz	500 kHz	Pass



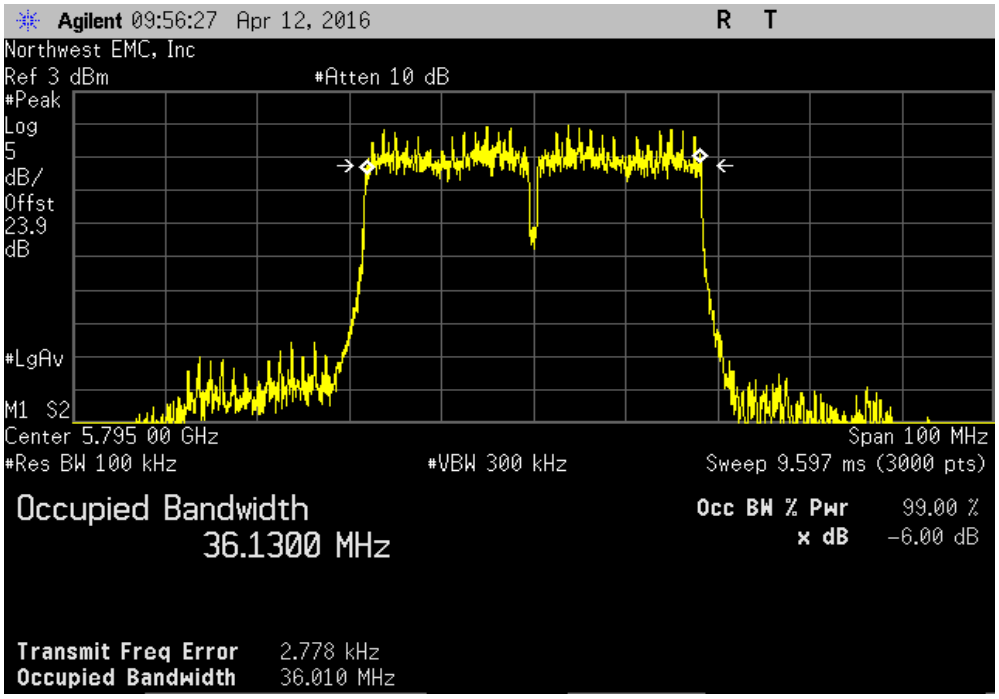
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS7						
				Value	Limit (>)	Result
				35.681 MHz	500 kHz	Pass



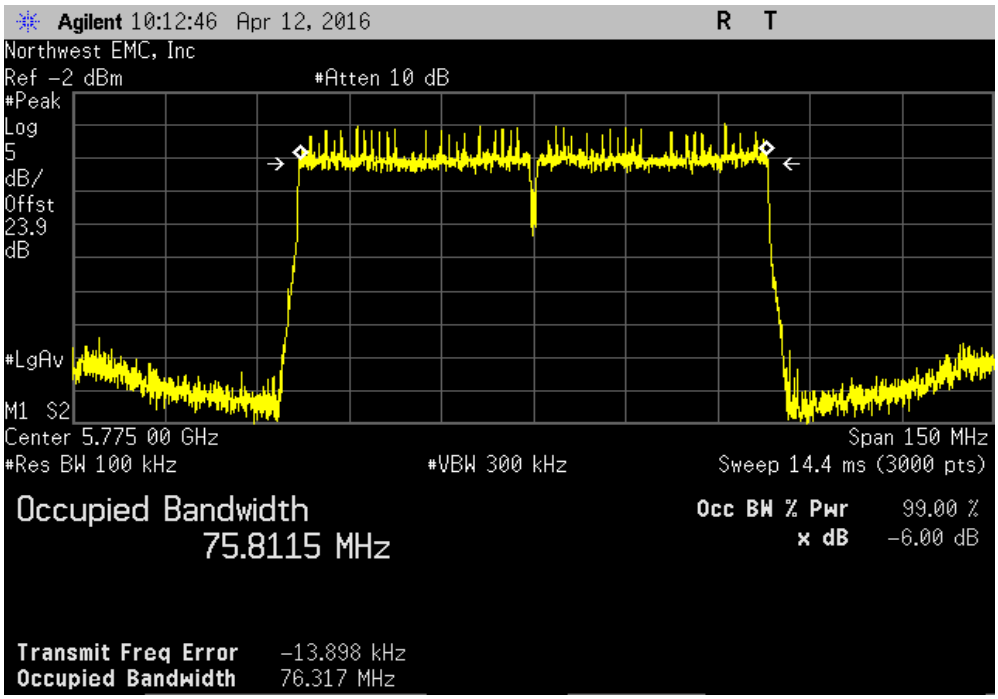
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.817 MHz	500 kHz	Pass



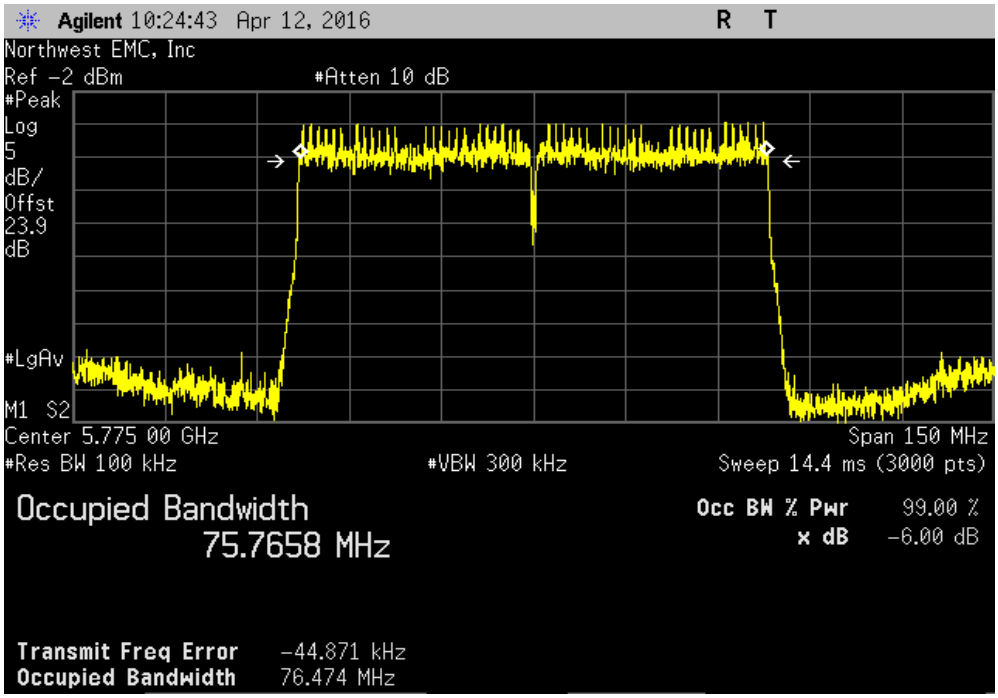
SISO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				36.01 MHz	500 kHz	Pass



SISO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				76.317 MHz	500 kHz	Pass



SISO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				76.474 MHz	500 kHz	Pass



OCCUPIED BANDWIDTH

XMit 2015.01.14

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 EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	6/22/2015	12
Attenuator	Fairview Microwave	SA4014-20	TKV	3/4/2016	12
Block - DC	Fairview Microwave	SD3379	AMJ	6/6/2015	12
Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	6/6/2015	12
Generator - Signal	Agilent	N5183A	TIA	4/6/2016	24

TEST DESCRIPTION

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.

Per ANSI C63.10, 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 the 6 dB emission bandwidth.

The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time to be used for setting the channel power integration bandwidth during conducted output power testing.

OCCUPIED BANDWIDTH

NORTHWEST EMC

XMit 2015.01.14

EUT:	Model 1631	Work Order:	MCSO1748
Serial Number:	041152140753	Date:	04/13/16
Customer:	Microsoft Corporation	Temperature:	23°C
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	1019 mbar
Tested by:	Richard Mellroth	Power: 110VAC/60Hz	Job Site: NC02

TEST SPECIFICATIONS	Test Method
FCC 15.407:2016	ANSI C63.10:2013

COMMENTS

Power setting at 11dBm for 20MHz and 40MHz channels. Power Setting at 10dBm for 80MHz channels. Client supplied adapter cable loss of 1.3dB included in reference level offset. Signal setting at > 95% Duty Cycle.

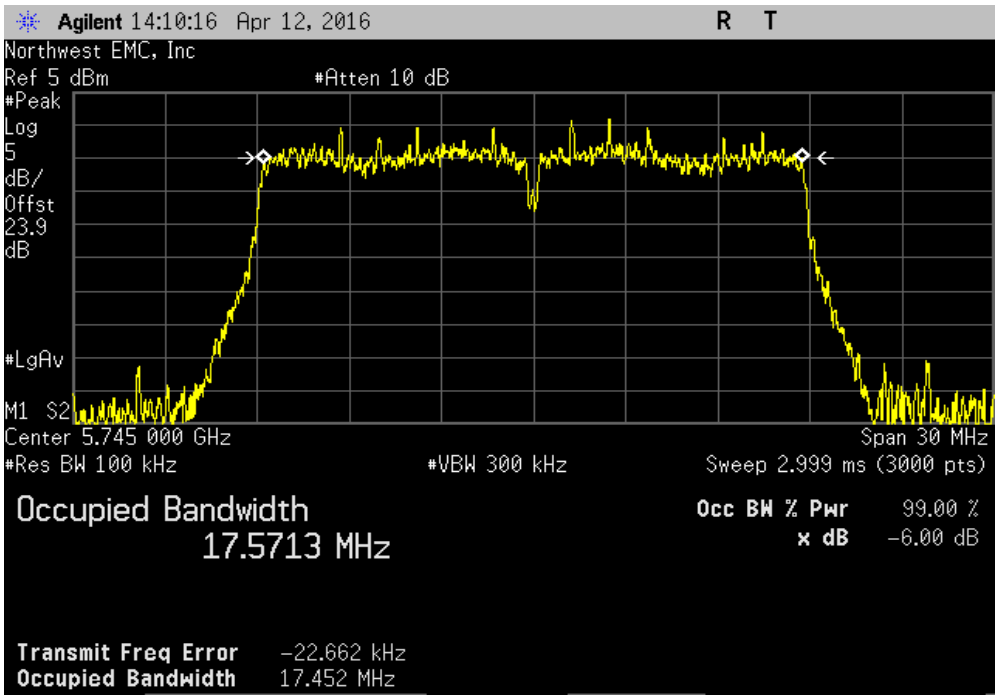
DEVIATIONS FROM TEST STANDARD

None

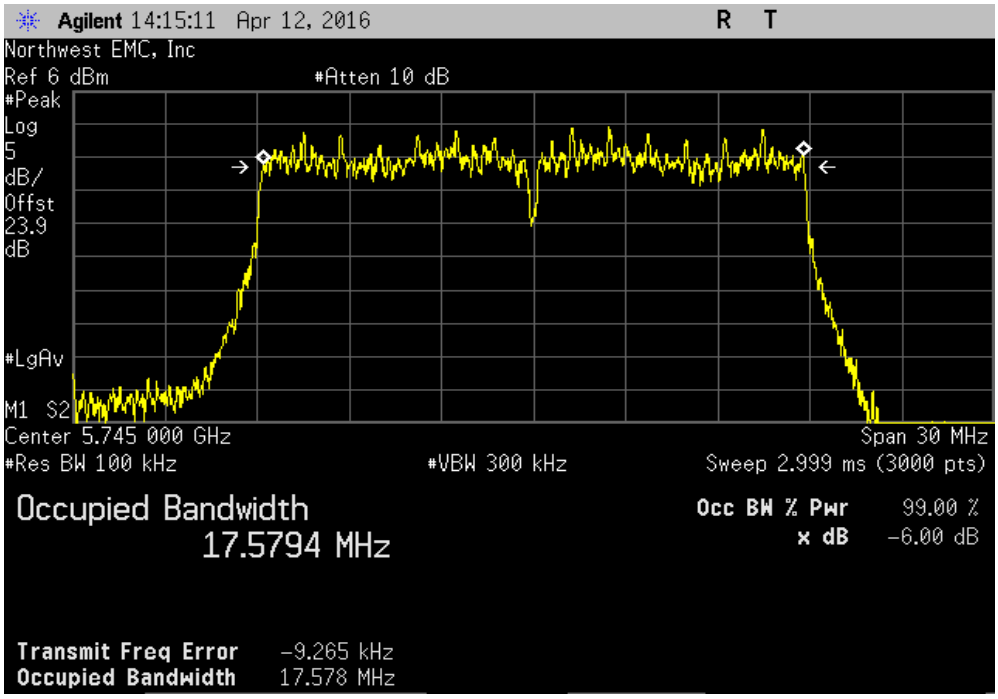
Configuration #	1	Signature

			Value	Limit (>)	Result
2x2 MIMO, Chain A					
	20MHz BW				
		Low Channel, Ch 149 - 5745 MHz			
		802.11(n) MCS8	17.452 MHz	500 kHz	Pass
		802.11(n) MCS15	17.578 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.399 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.418 MHz	500 kHz	Pass
		Mid Channel, Ch 157 - 5785 MHz			
		802.11(n) MCS8	17.535 MHz	500 kHz	Pass
		802.11(n) MCS15	17.575 MHz	500 kHz	Pass
		802.11(ac) MCS0	16.78 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.135 MHz	500 kHz	Pass
		High Channel, Ch 165 - 5825 MHz			
		802.11(n) MCS8	17.495 MHz	500 kHz	Pass
		802.11(n) MCS15	17.034 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.503 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.491 MHz	500 kHz	Pass
	40MHz BW				
		Low Channel, Ch 149/153 - 5755 MHz			
		802.11(n) MCS8	35.249 MHz	500 kHz	Pass
		802.11(n) MCS15	35.188 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.412 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.749 MHz	500 kHz	Pass
		High Channel, Ch 157/161 - 5795 MHz			
		802.11(n) MCS8	35.268 MHz	500 kHz	Pass
		802.11(n) MCS15	36.016 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.243 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.094 MHz	500 kHz	Pass
	80MHz BW				
		Mid Channel, Ch 149/161 - 5775 MHz			
		802.11(ac) MCS0	75.346 MHz	500 kHz	Pass
		802.11(ac) MCS9	75.091 MHz	500 kHz	Pass
2x2 MIMO, Chain B					
	20MHz BW				
		Low Channel, Ch 149 - 5745 MHz			
		802.11(n) MCS8	17.579 MHz	500 kHz	Pass
		802.11(n) MCS15	17.465 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.457 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.615 MHz	500 kHz	Pass
		Mid Channel, Ch 157 - 5785 MHz			
		802.11(n) MCS8	17.56 MHz	500 kHz	Pass
		802.11(n) MCS15	17.479 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.67 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.421 MHz	500 kHz	Pass
		High Channel, Ch 165 - 5825 MHz			
		802.11(n) MCS8	17.448 MHz	500 kHz	Pass
		802.11(n) MCS15	17.539 MHz	500 kHz	Pass
		802.11(ac) MCS0	17.319 MHz	500 kHz	Pass
		802.11(ac) MCS8	17.371 MHz	500 kHz	Pass
	40MHz BW				
		Low Channel, Ch 149/153 - 5755 MHz			
		802.11(n) MCS8	35.084 MHz	500 kHz	Pass
		802.11(n) MCS15	35.63 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.585 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.602 MHz	500 kHz	Pass
		High Channel, Ch 157/161 - 5795 MHz			
		802.11(n) MCS8	35.587 MHz	500 kHz	Pass
		802.11(n) MCS15	35.655 MHz	500 kHz	Pass
		802.11(ac) MCS0	35.398 MHz	500 kHz	Pass
		802.11(ac) MCS9	35.166 MHz	500 kHz	Pass
	80MHz BW				
		Mid Channel, Ch 149/161 - 5775 MHz			
		802.11(ac) MCS0	76.286 MHz	500 kHz	Pass
		802.11(ac) MCS9	76.362 MHz	500 kHz	Pass

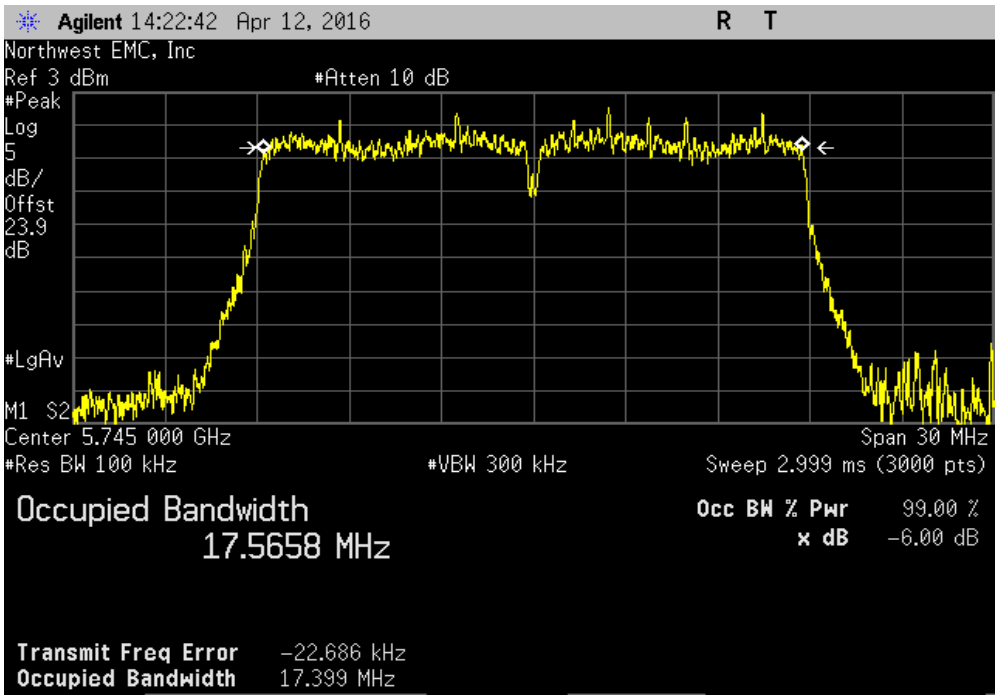
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				17.452 MHz	500 kHz	Pass



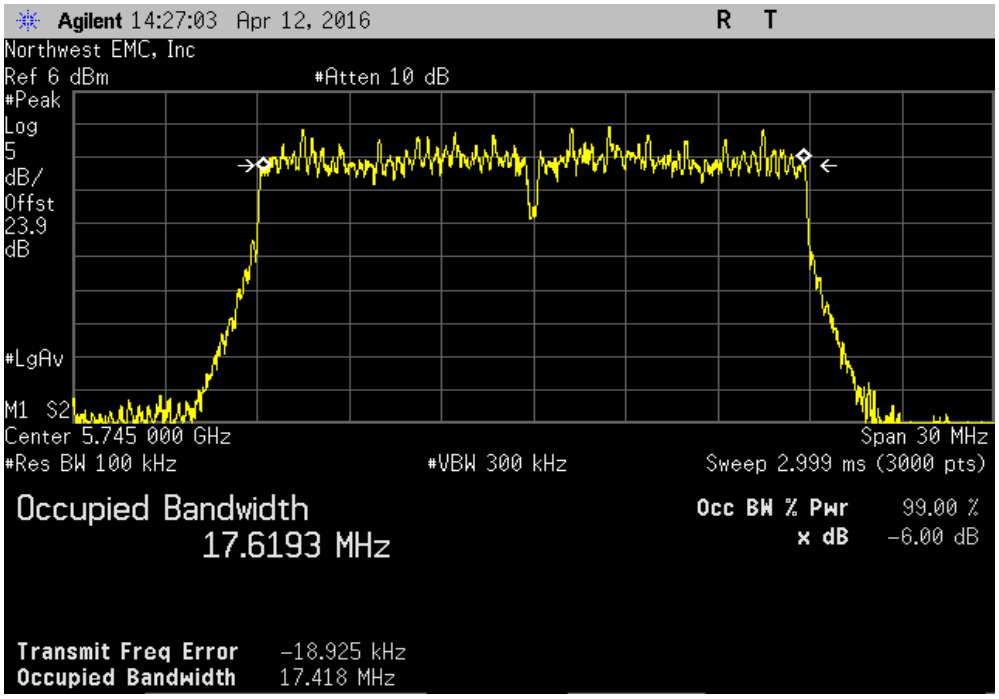
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				17.578 MHz	500 kHz	Pass



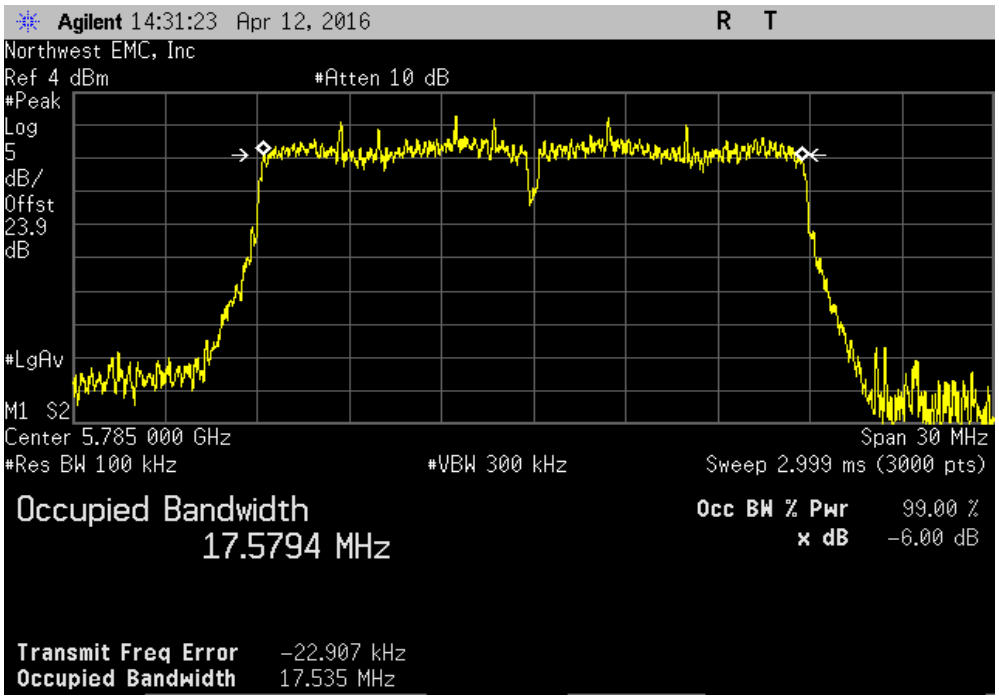
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.399 MHz	500 kHz	Pass



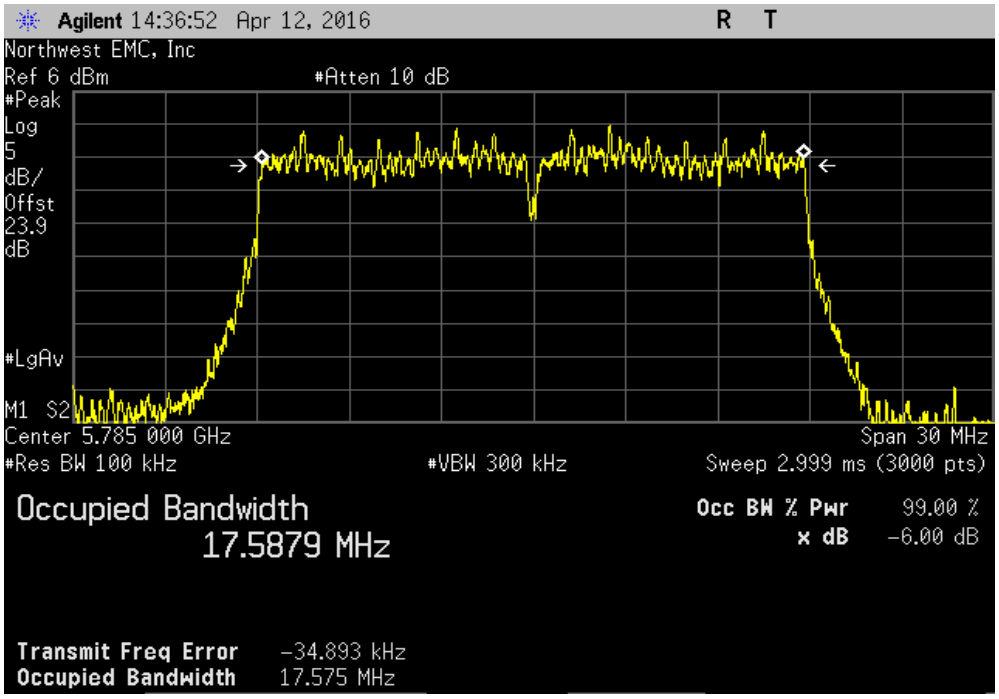
2x2 MIMO, Chain A, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.418 MHz	500 kHz	Pass



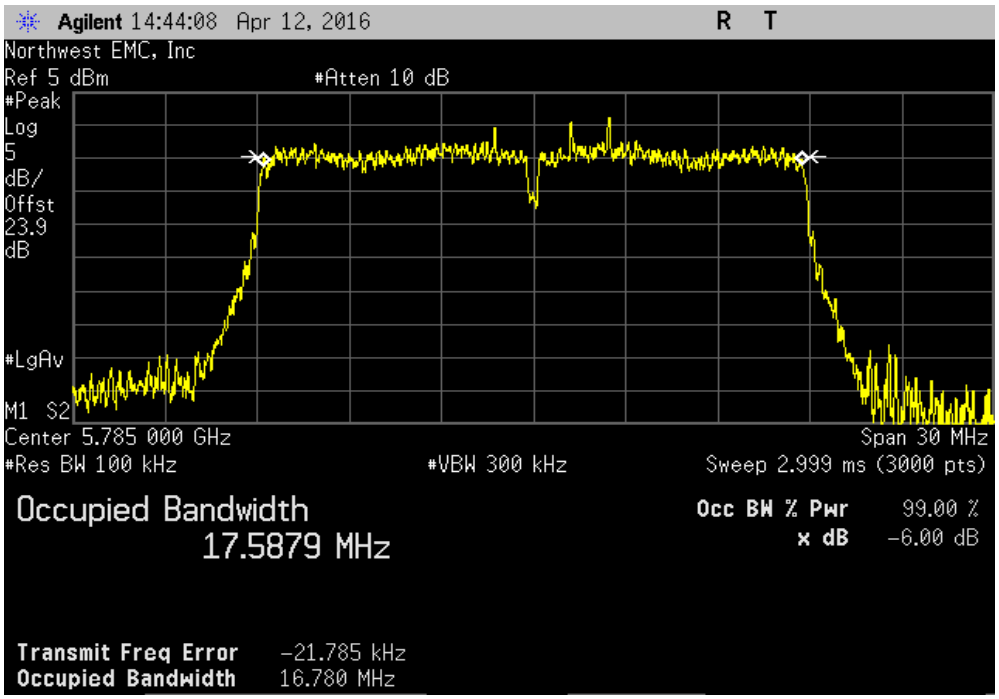
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				17.535 MHz	500 kHz	Pass



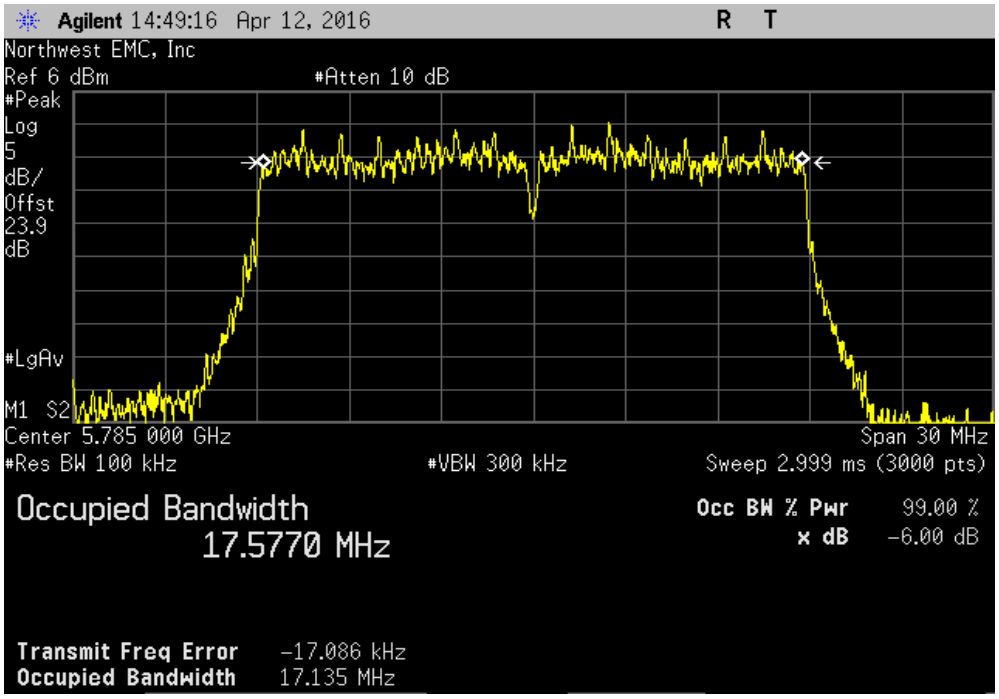
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				17.575 MHz	500 kHz	Pass



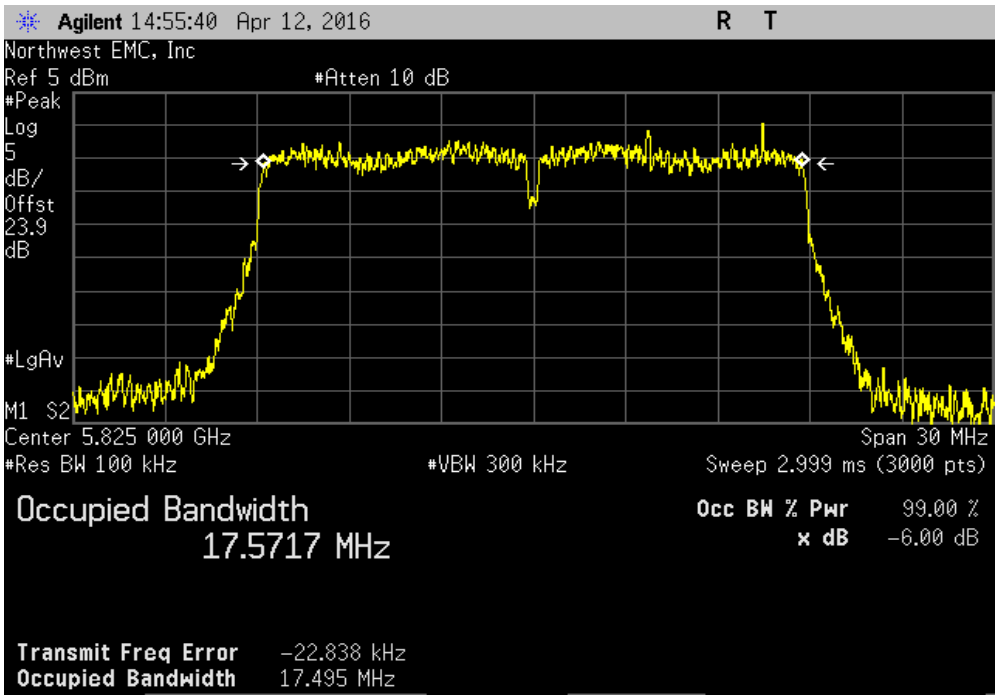
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				16.78 MHz	500 kHz	Pass



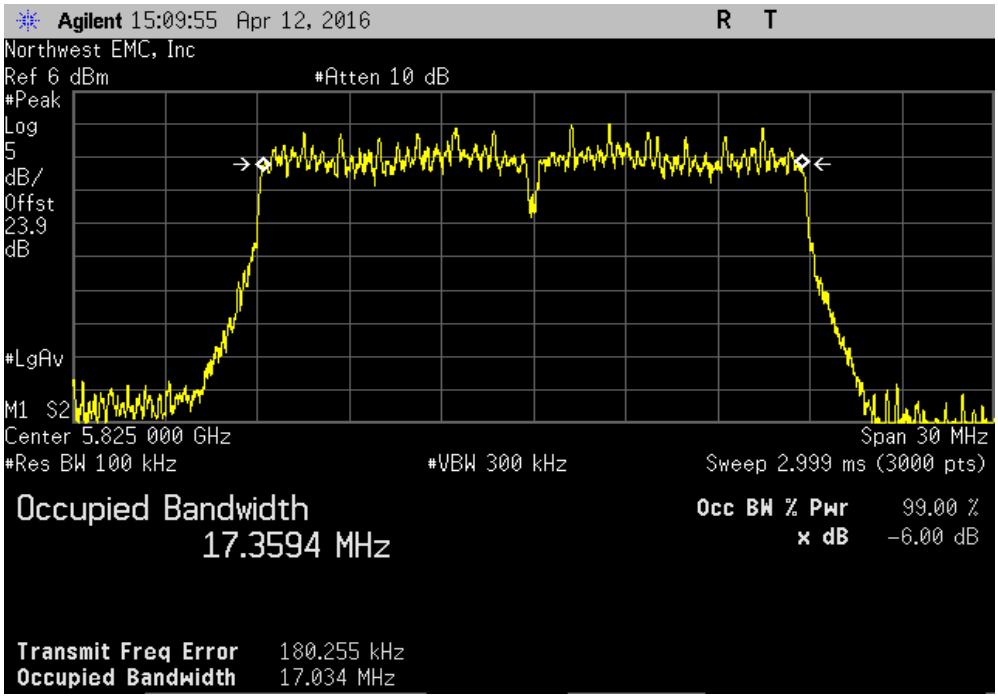
2x2 MIMO, Chain A, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.135 MHz	500 kHz	Pass



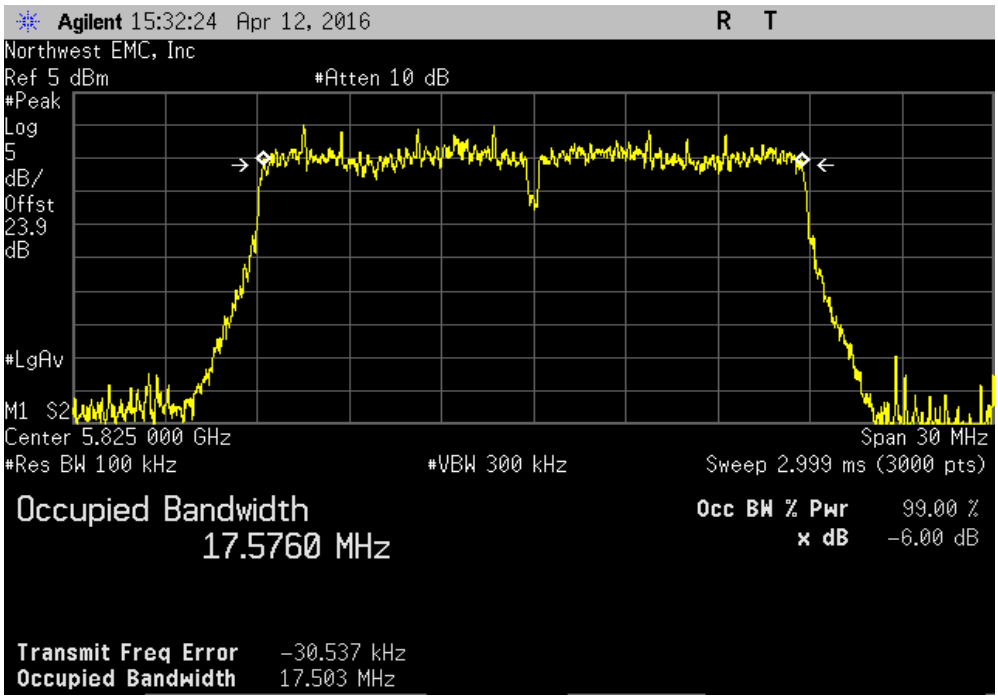
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				17.495 MHz	500 kHz	Pass



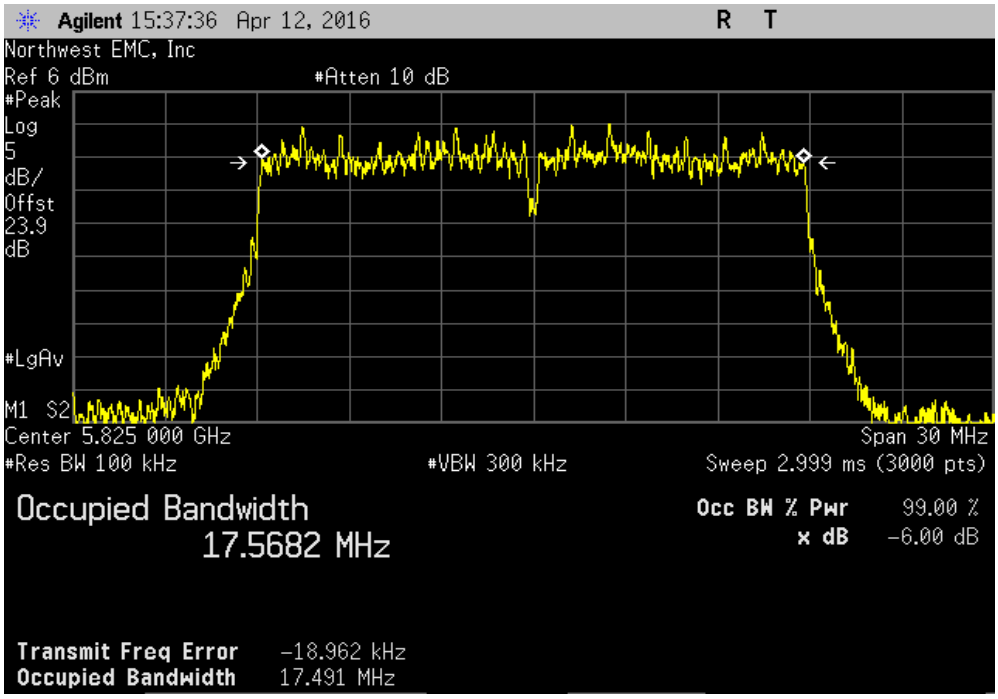
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				17.034 MHz	500 kHz	Pass



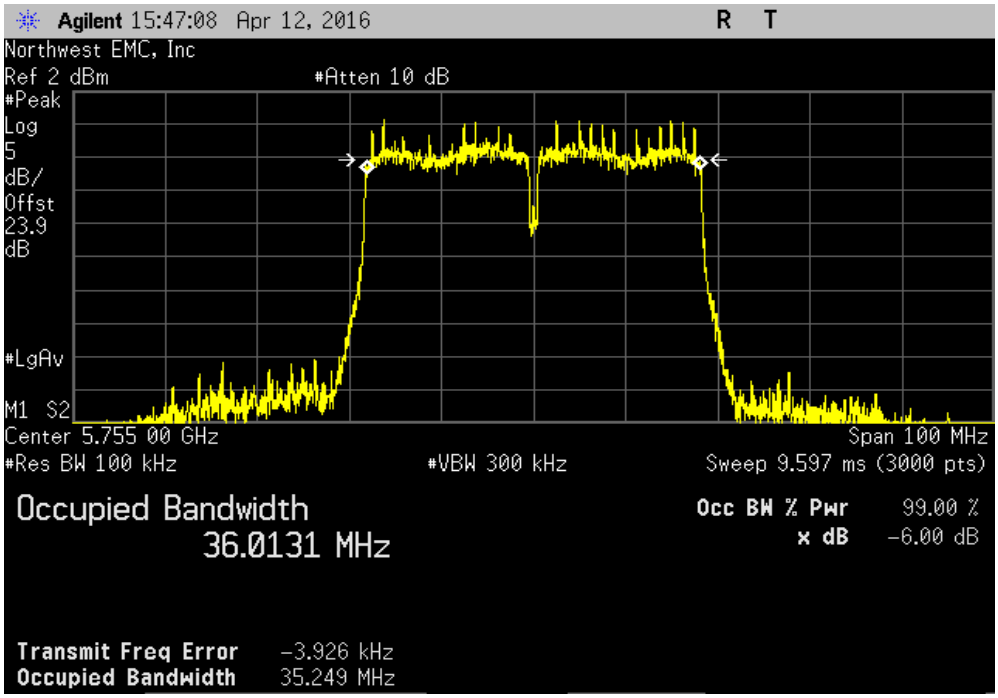
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.503 MHz	500 kHz	Pass



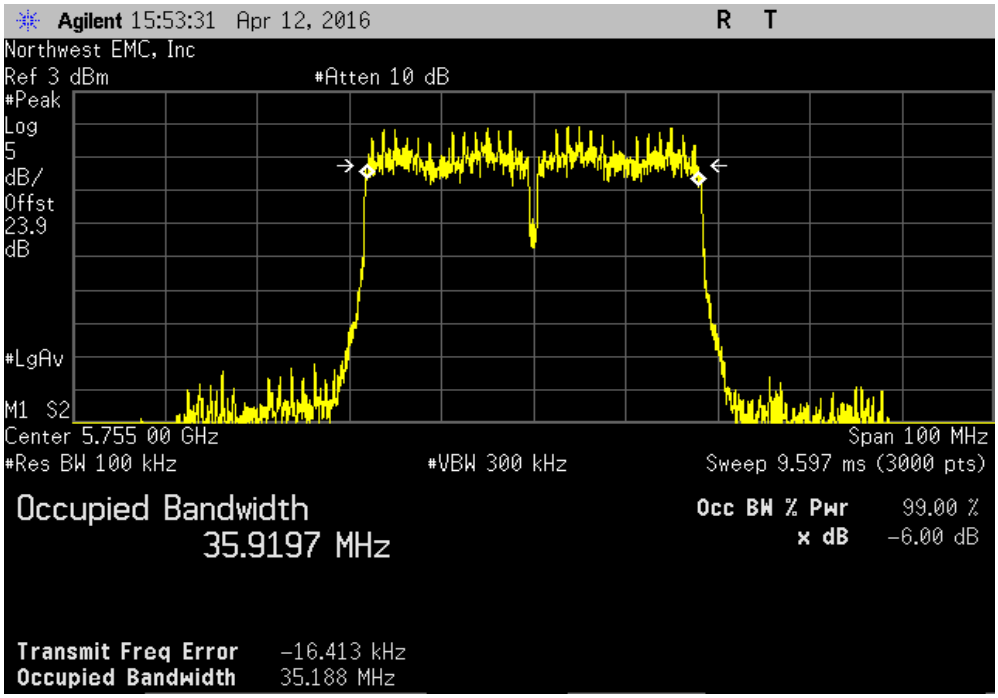
2x2 MIMO, Chain A, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.491 MHz	500 kHz	Pass



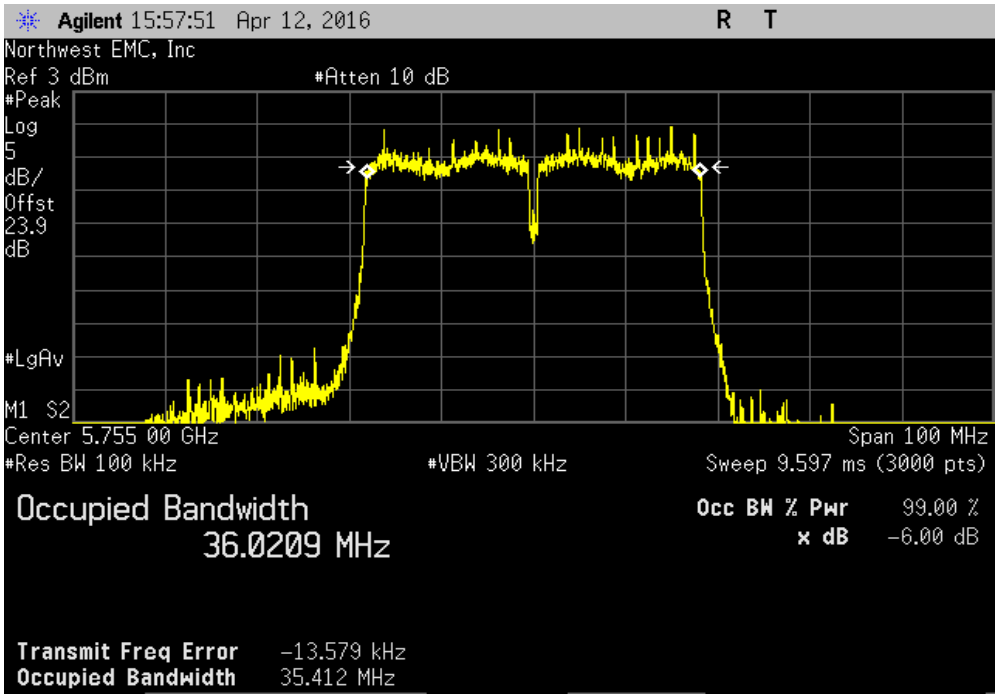
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				35.249 MHz	500 kHz	Pass



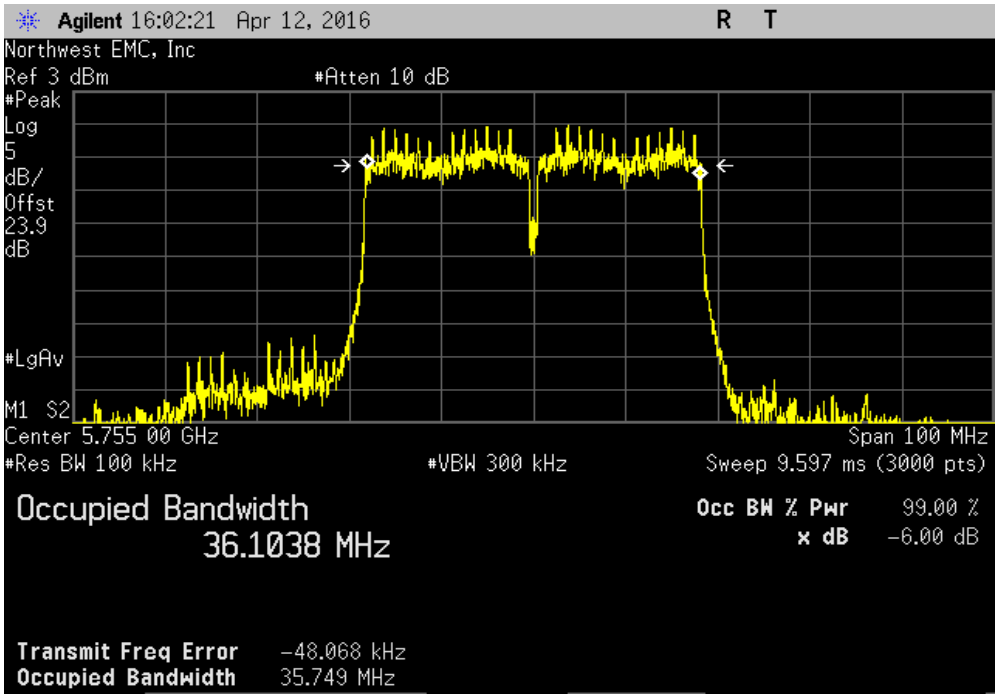
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				35.188 MHz	500 kHz	Pass



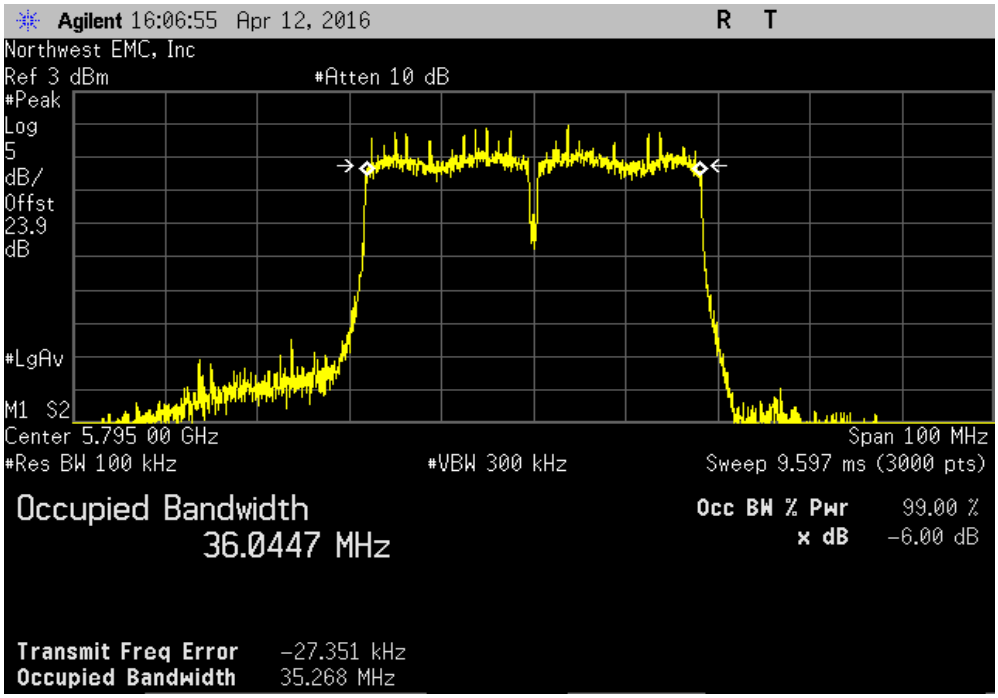
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.412 MHz	500 kHz	Pass



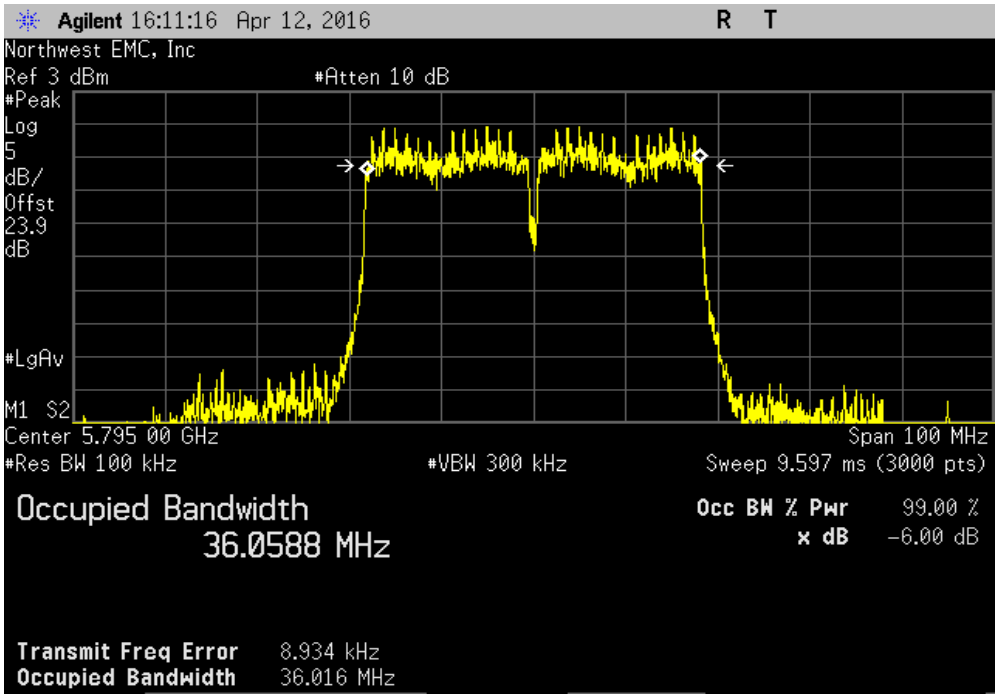
2x2 MIMO, Chain A, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.749 MHz	500 kHz	Pass



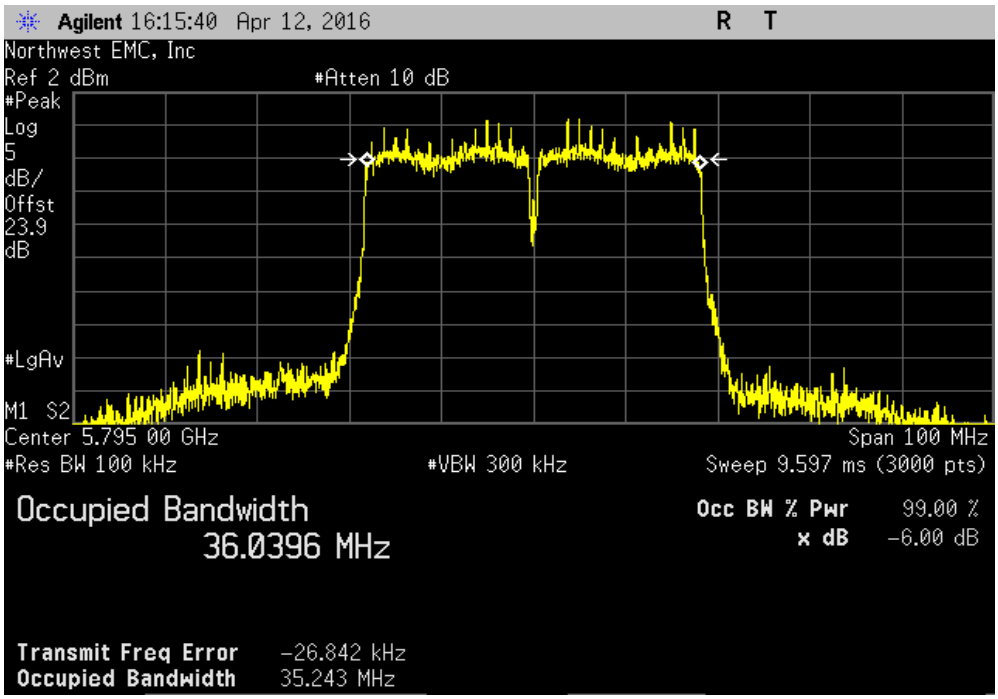
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				35.268 MHz	500 kHz	Pass



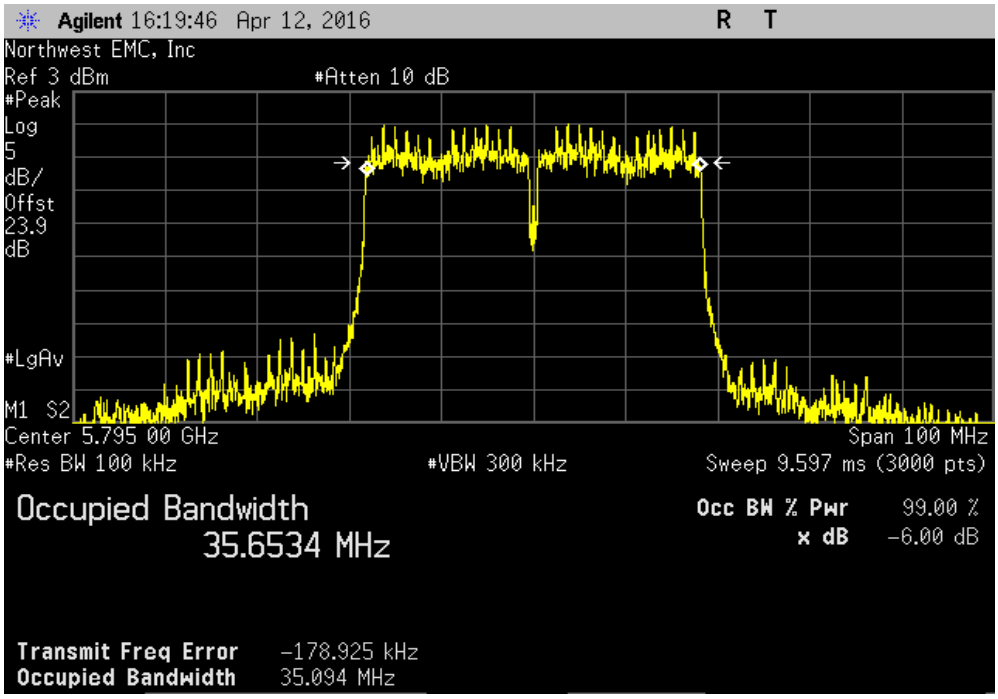
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				36.016 MHz	500 kHz	Pass



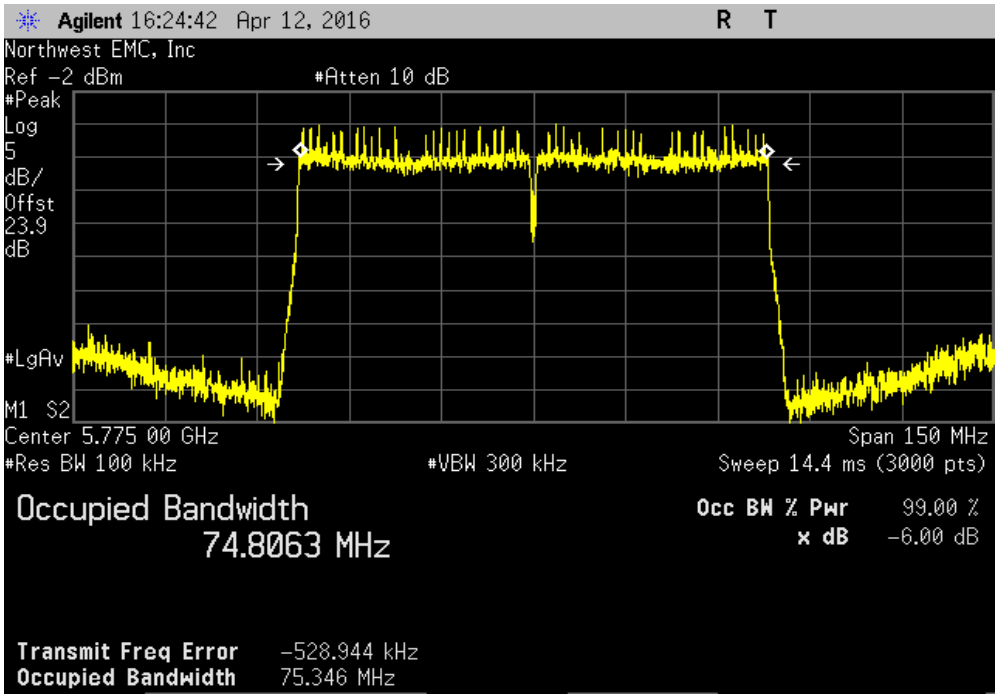
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.243 MHz	500 kHz	Pass



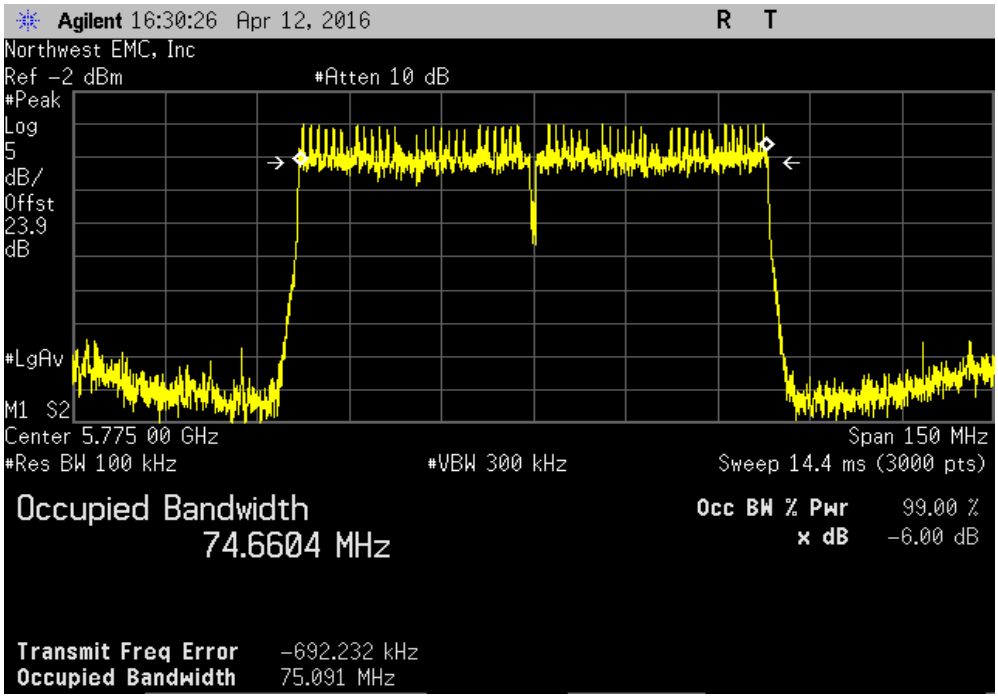
2x2 MIMO, Chain A, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.094 MHz	500 kHz	Pass



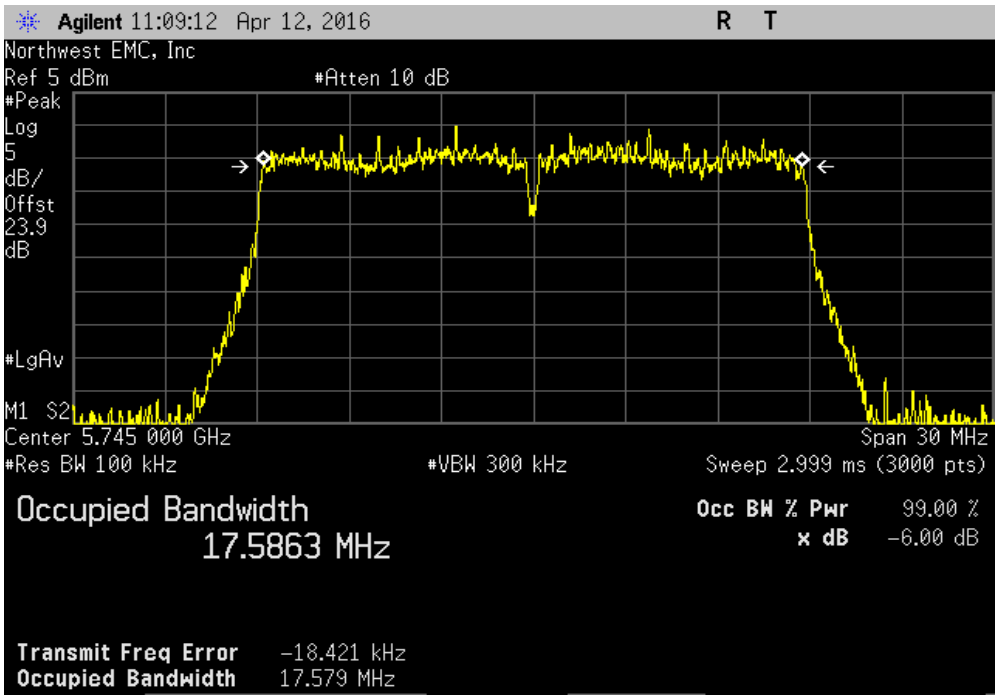
2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				75.346 MHz	500 kHz	Pass



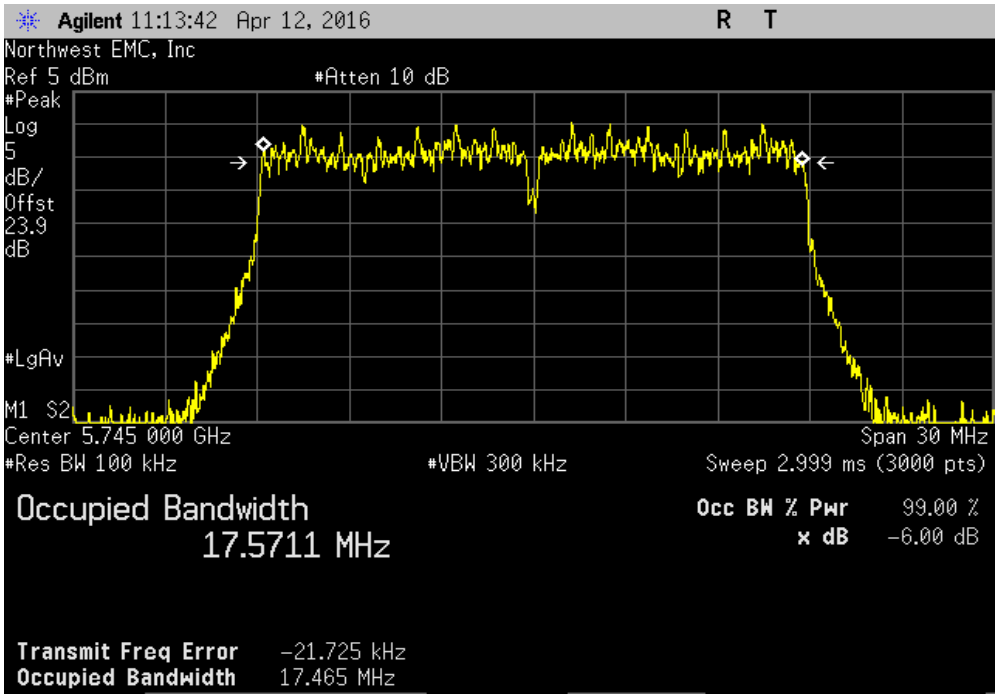
2x2 MIMO, Chain A, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				75.091 MHz	500 kHz	Pass



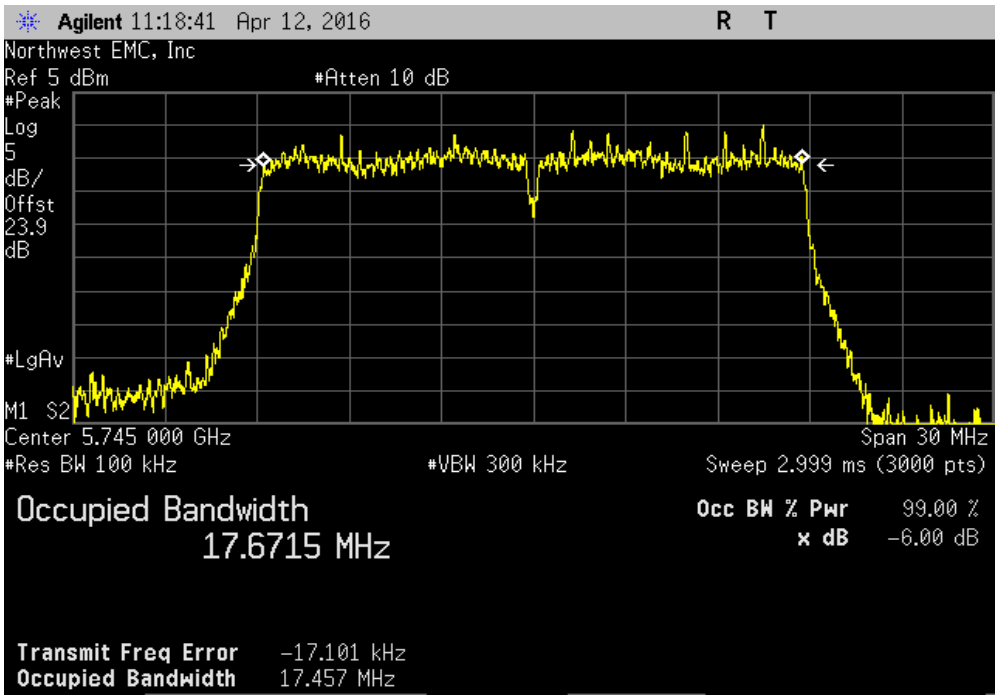
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				17.579 MHz	500 kHz	Pass



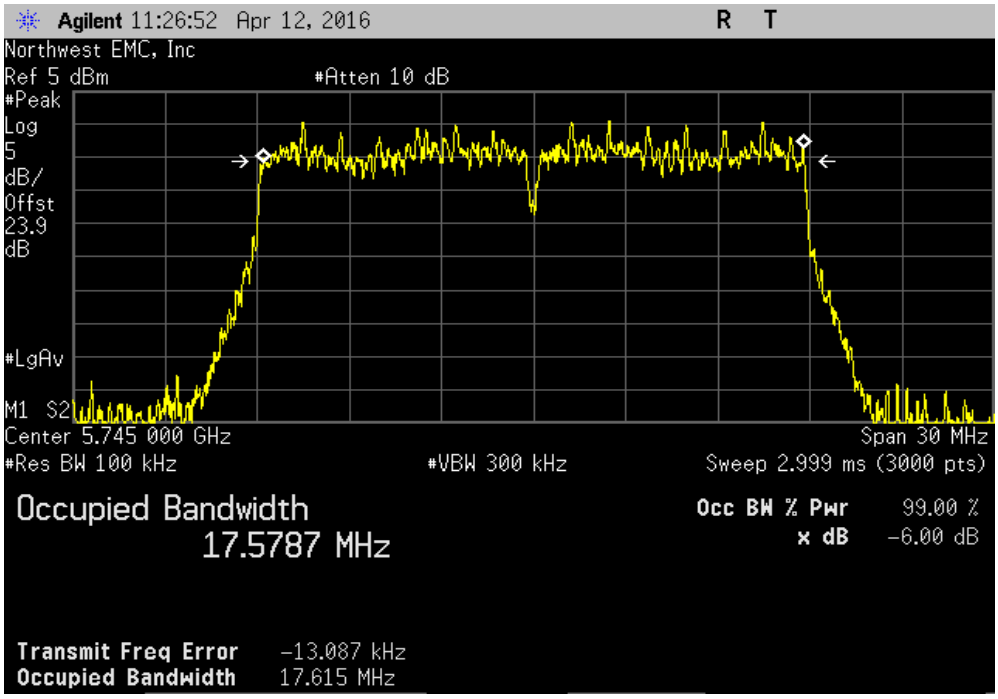
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				17.465 MHz	500 kHz	Pass



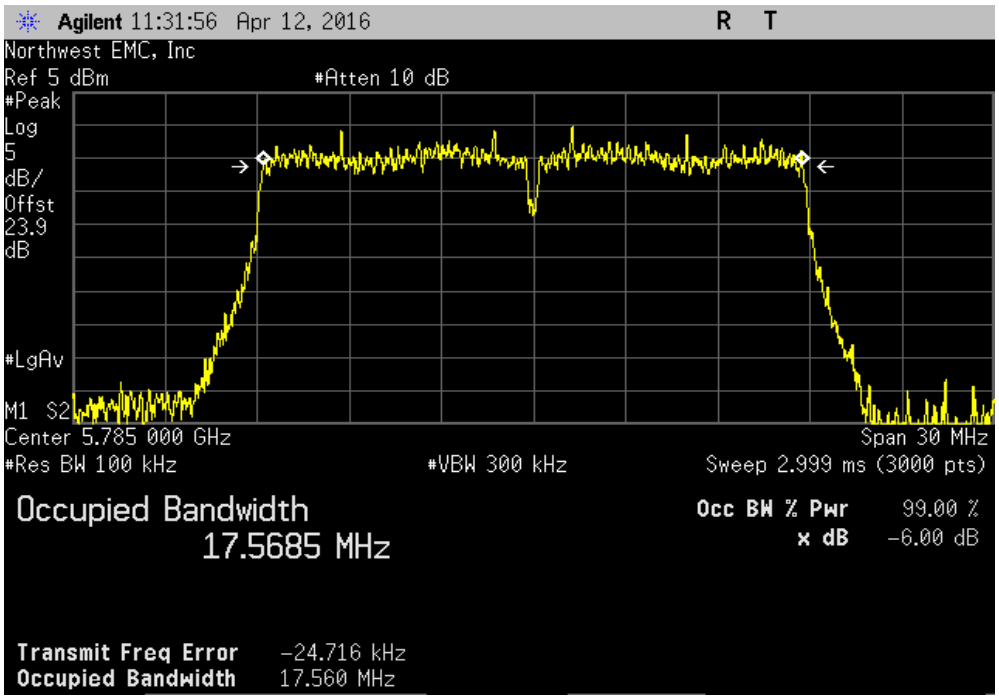
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.457 MHz	500 kHz	Pass



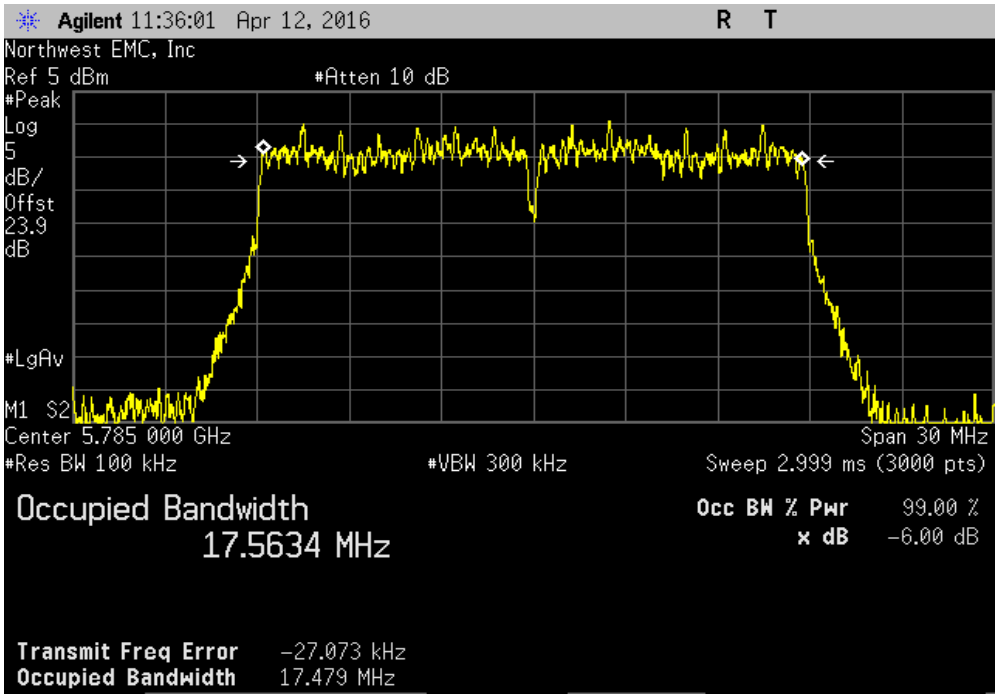
2x2 MIMO, Chain B, 20MHz BW, Low Channel, Ch 149 - 5745 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.615 MHz	500 kHz	Pass



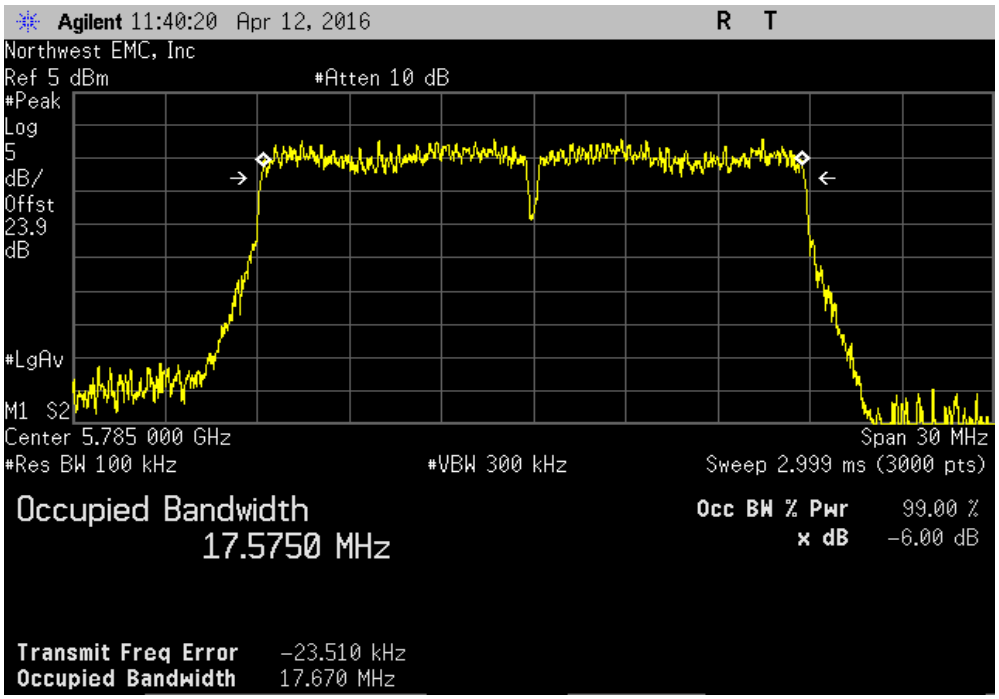
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				17.56 MHz	500 kHz	Pass



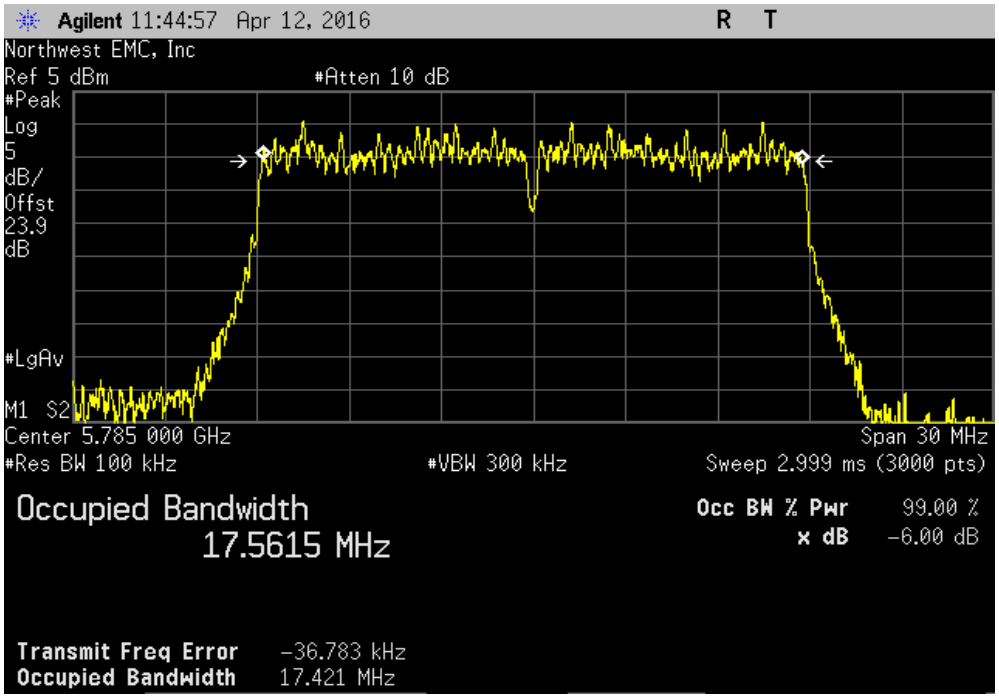
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				17.479 MHz	500 kHz	Pass



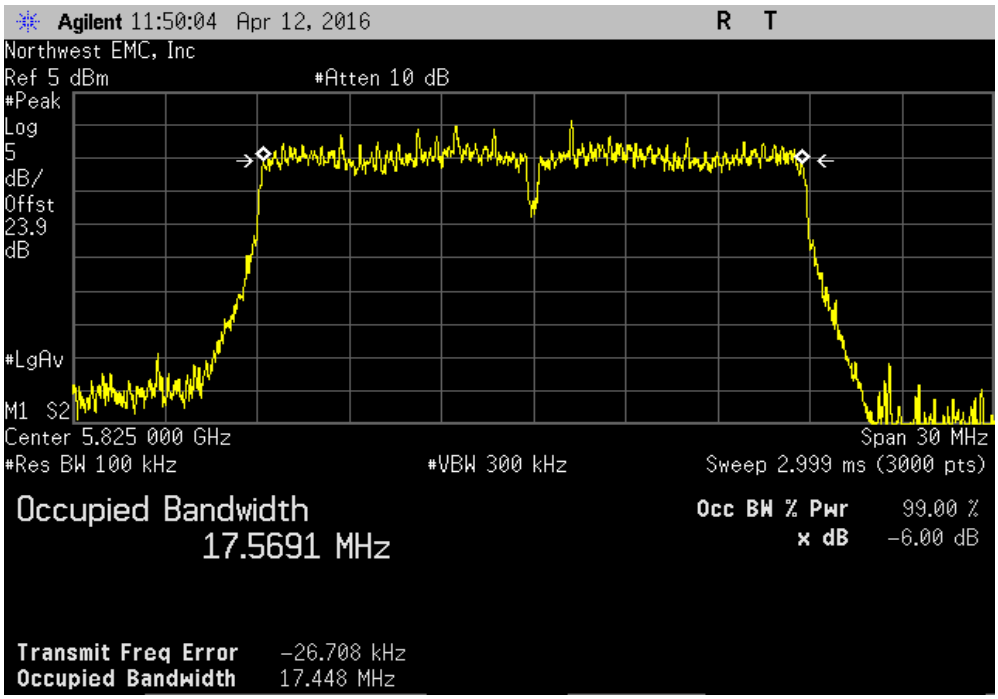
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.67 MHz	500 kHz	Pass



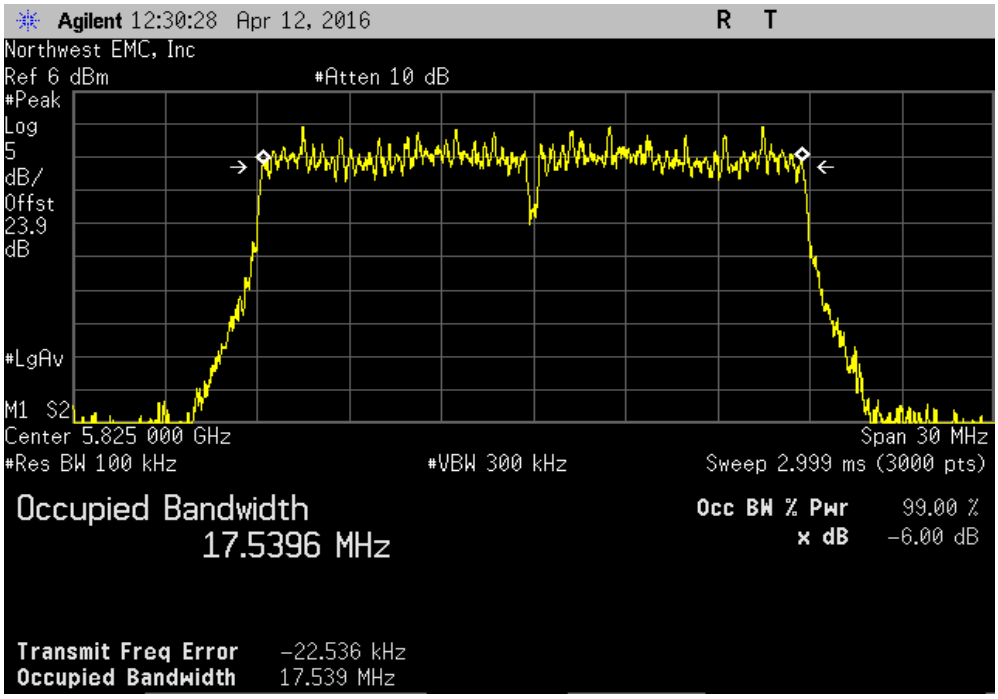
2x2 MIMO, Chain B, 20MHz BW, Mid Channel, Ch 157 - 5785 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.421 MHz	500 kHz	Pass



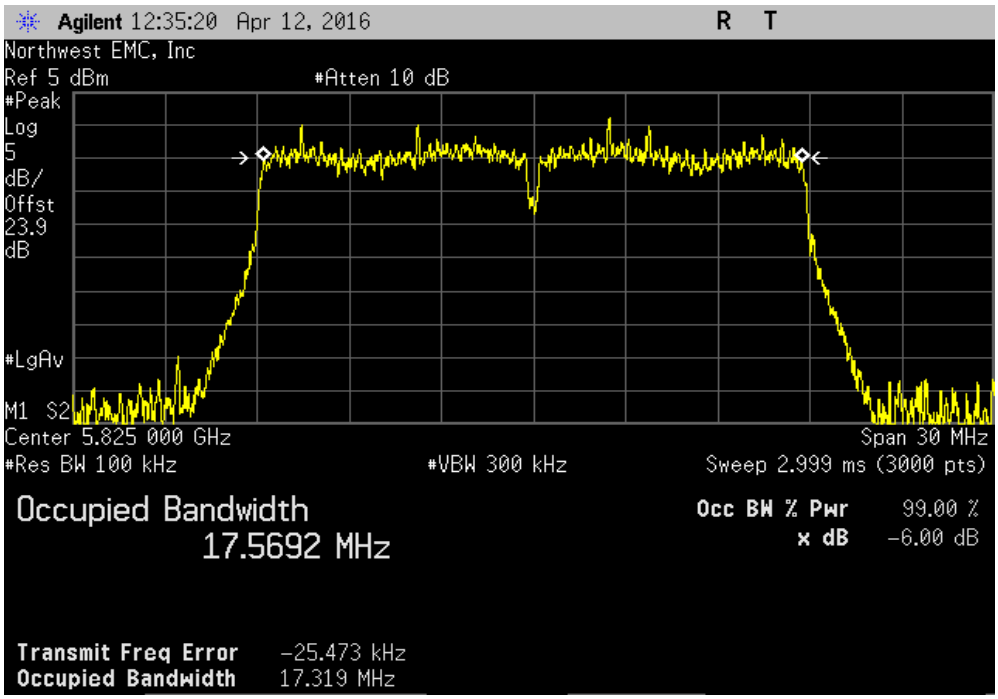
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				17.448 MHz	500 kHz	Pass



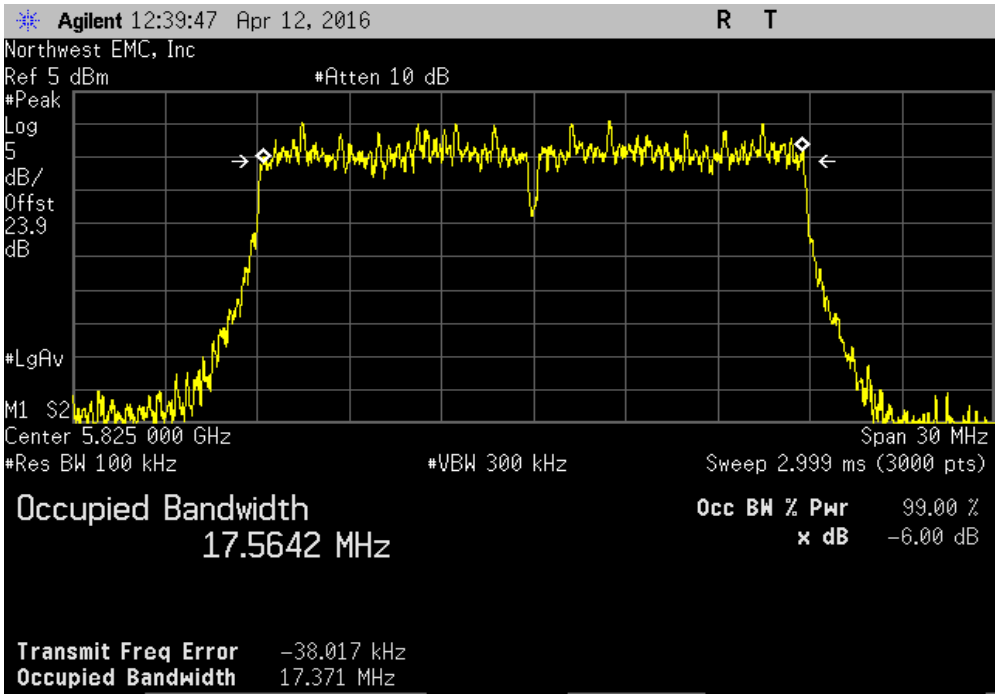
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				17.539 MHz	500 kHz	Pass



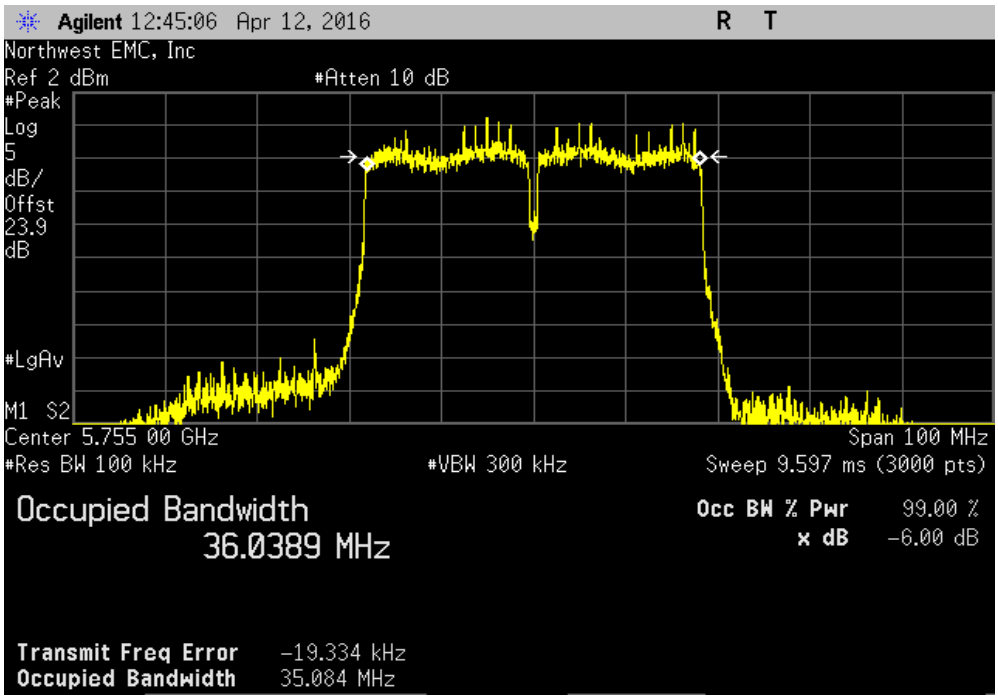
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				17.319 MHz	500 kHz	Pass



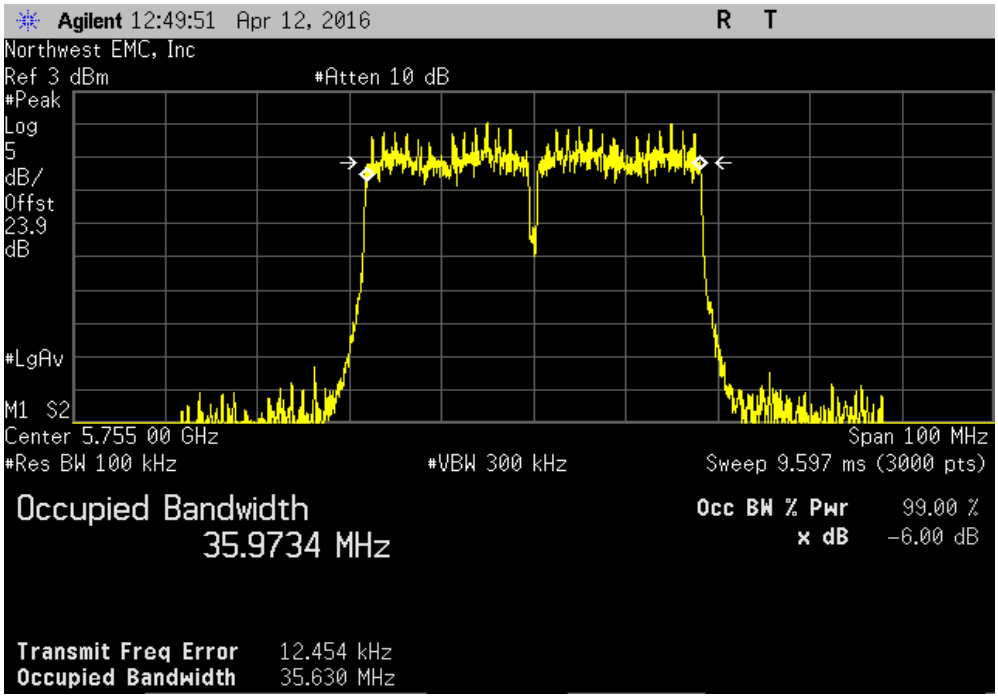
2x2 MIMO, Chain B, 20MHz BW, High Channel, Ch 165 - 5825 MHz, 802.11(ac) MCS8						
				Value	Limit (>)	Result
				17.371 MHz	500 kHz	Pass



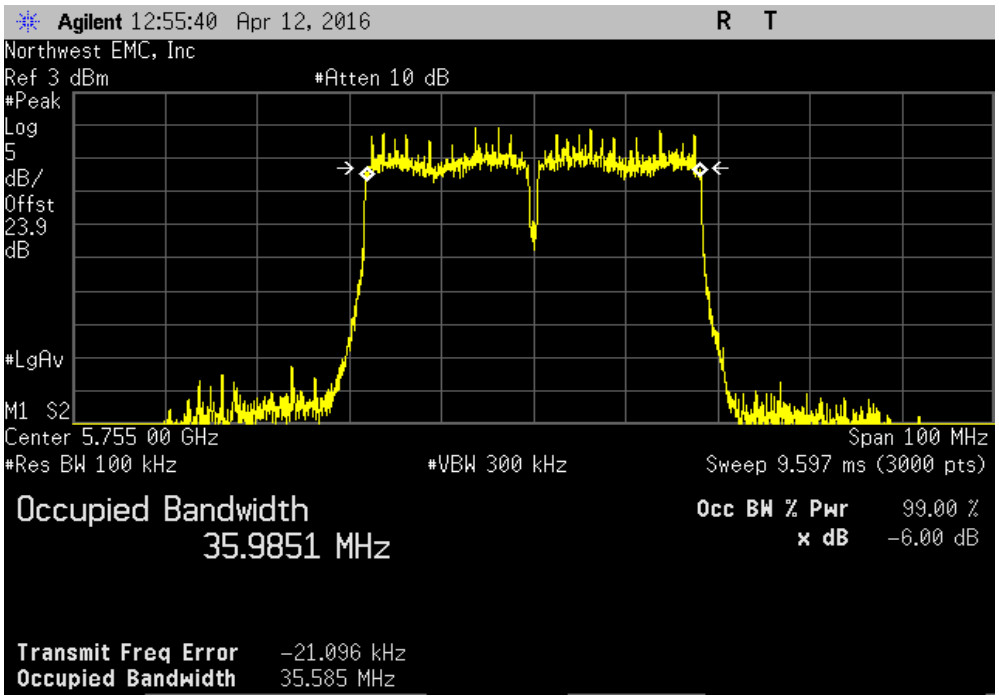
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				35.084 MHz	500 kHz	Pass



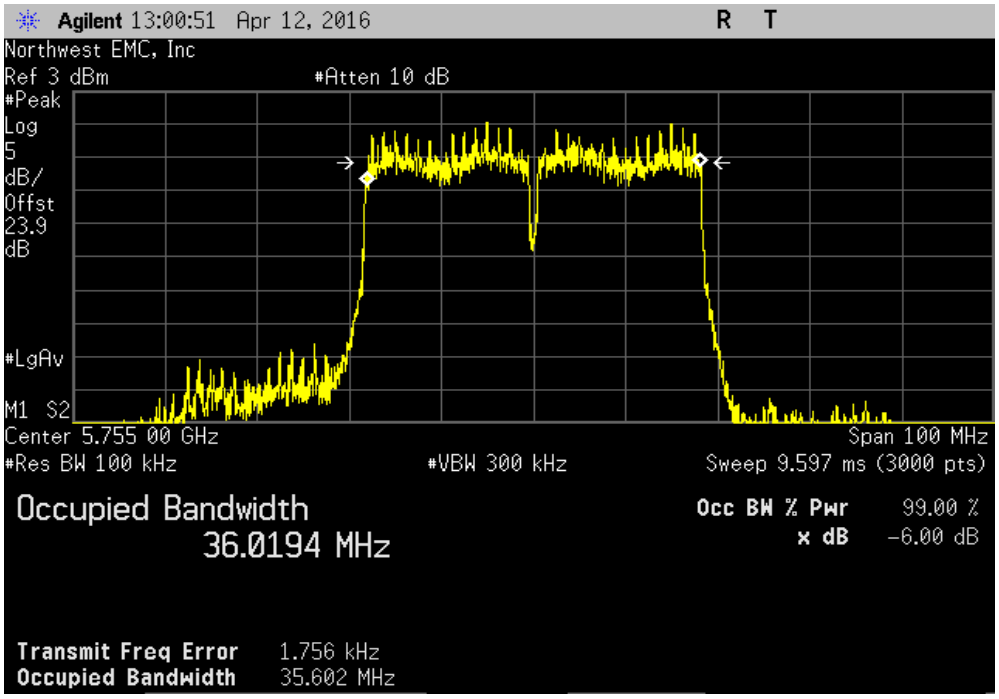
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				35.63 MHz	500 kHz	Pass



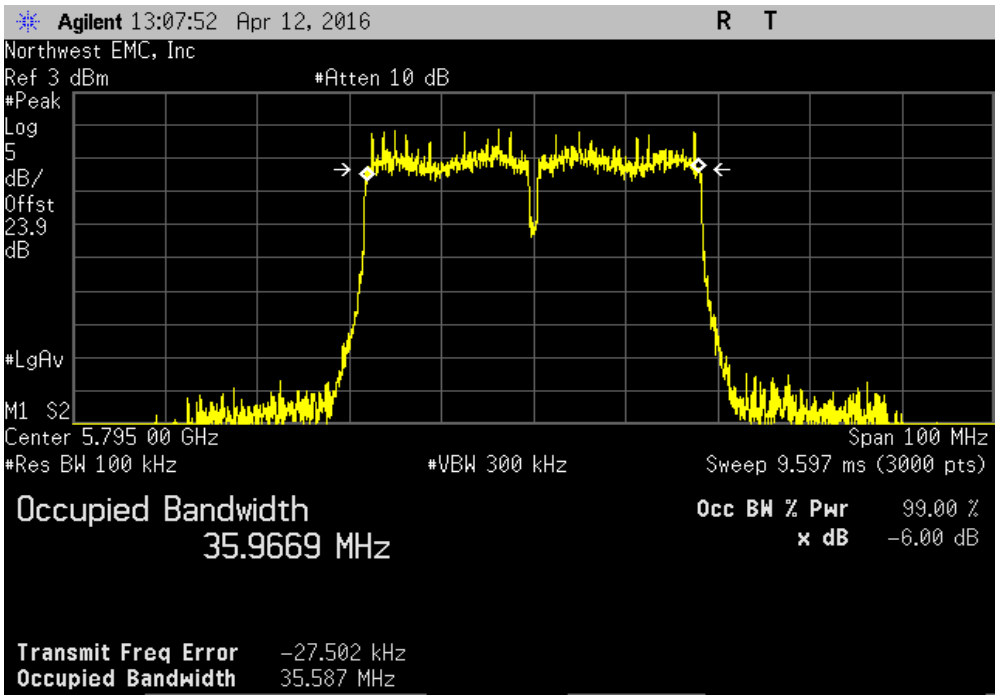
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.585 MHz	500 kHz	Pass



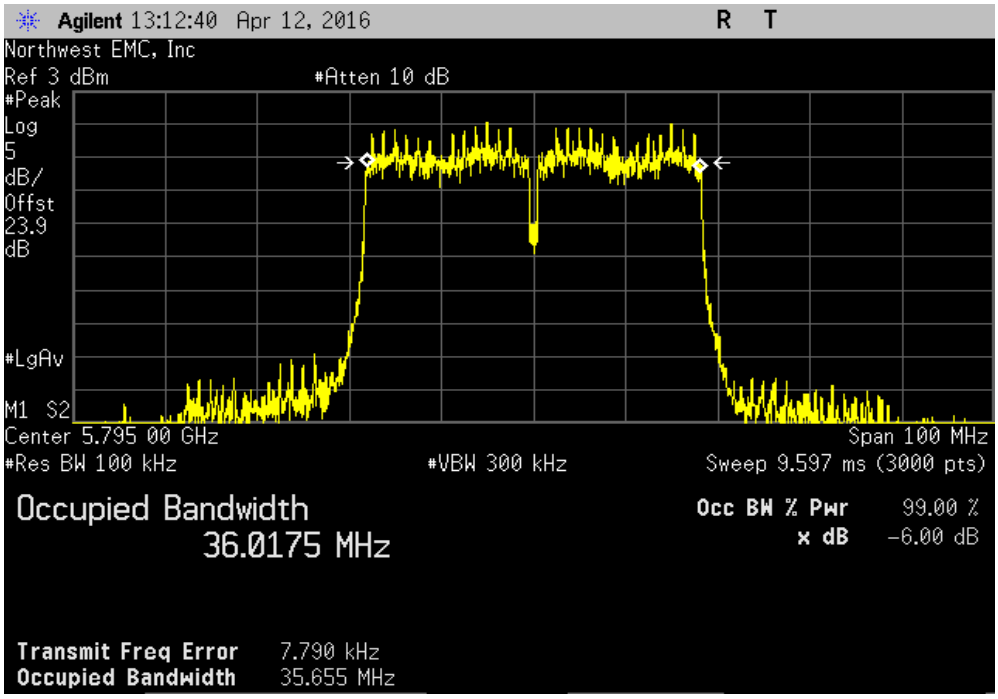
2x2 MIMO, Chain B, 40MHz BW, Low Channel, Ch 149/153 - 5755 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.602 MHz	500 kHz	Pass



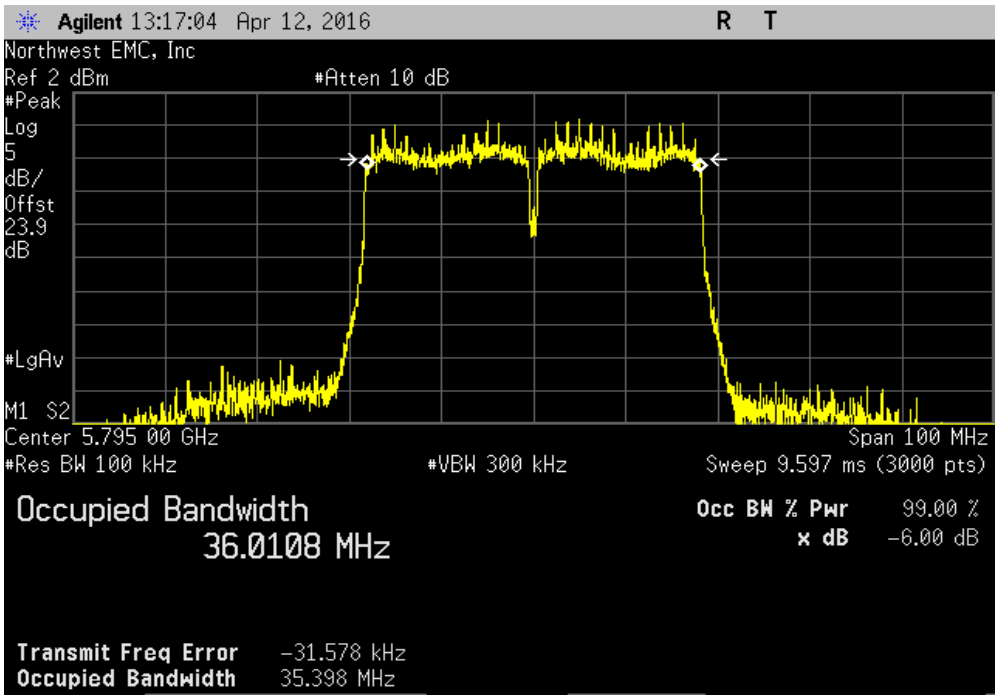
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS8						
				Value	Limit (>)	Result
				35.587 MHz	500 kHz	Pass



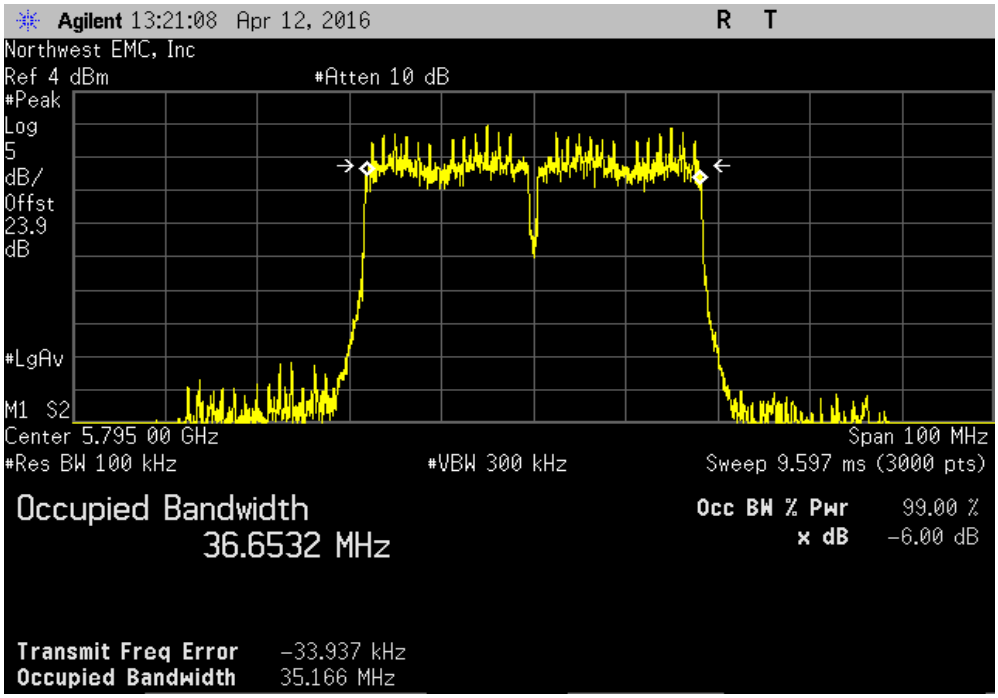
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(n) MCS15						
				Value	Limit (>)	Result
				35.655 MHz	500 kHz	Pass



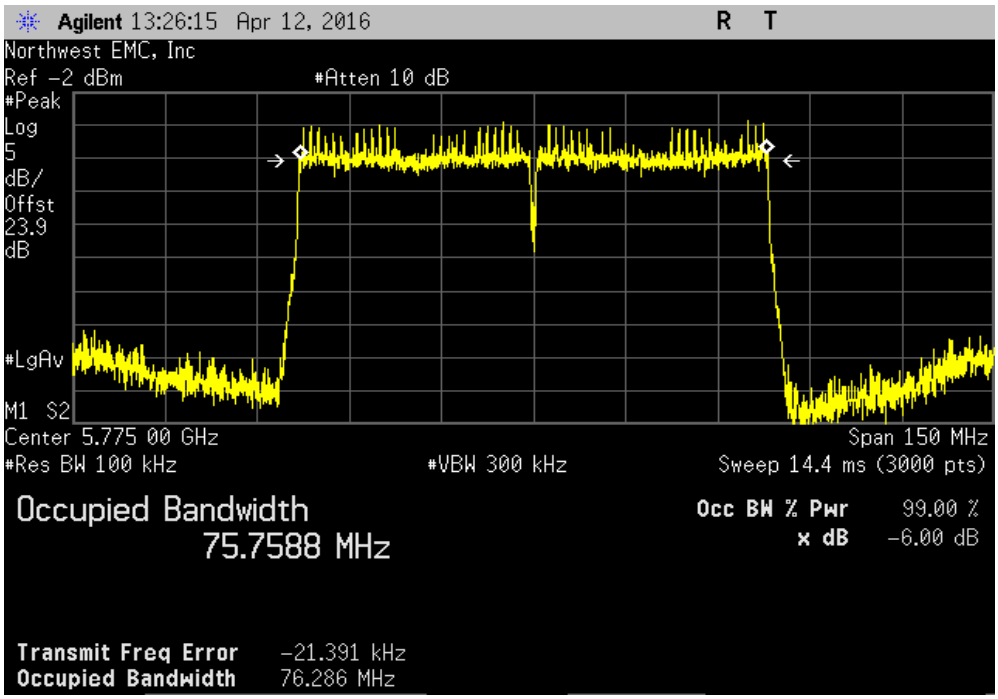
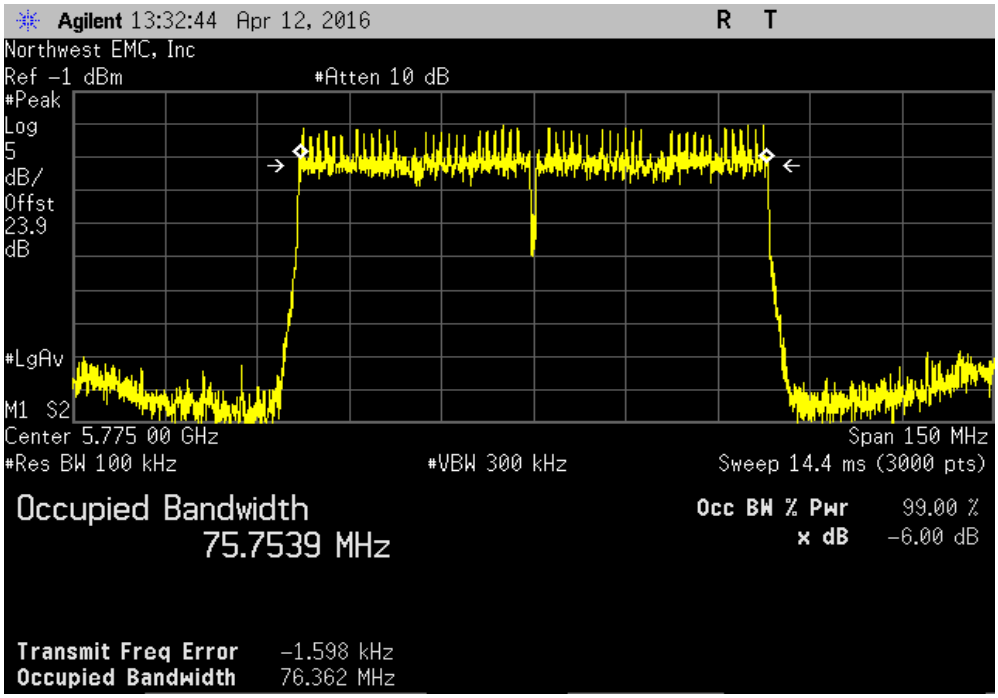
2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				35.398 MHz	500 kHz	Pass



2x2 MIMO, Chain B, 40MHz BW, High Channel, Ch 157/161 - 5795 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				35.166 MHz	500 kHz	Pass



2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS0						
				Value	Limit (>)	Result
				76.286 MHz	500 kHz	Pass



2x2 MIMO, Chain B, 80MHz BW, Mid Channel, Ch 149/161 - 5775 MHz, 802.11(ac) MCS9						
				Value	Limit (>)	Result
				76.362 MHz	500 kHz	Pass