Microsoft Corporation

Model 1631

FCC 15.247:2014

FCC 15.207:2014

Report #: MCSO1698 PART 4 OF 7

Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

OUTPUT POWER

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/18/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

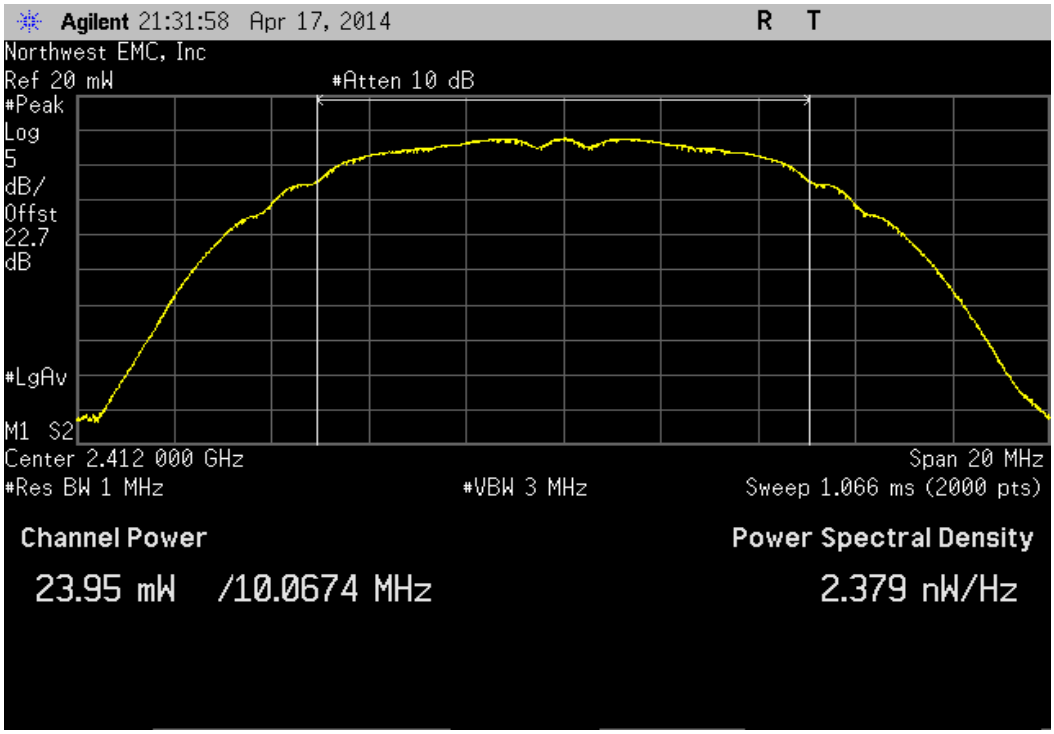
None

Configuration #	6	Signature

	Value	Limit	Result
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	23.946 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	22.583 mW	< 1 W	Pass
High Channel 11, 2462 MHz	21.621 mW	< 1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	19.671 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	18.361 mW	< 1 W	Pass
High Channel 11, 2462 MHz	17.415 mW	< 1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	17.875 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	17.078 mW	< 1 W	Pass
High Channel 11, 2462 MHz	16.874 mW	< 1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	14.808 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	16.29 mW	< 1 W	Pass
High Channel 11, 2462 MHz	16.287 mW	< 1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	14.894 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	13.823 mW	< 1 W	Pass
High Channel 11, 2462 MHz	15.317 mW	< 1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	17.925 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	16.921 mW	< 1 W	Pass
High Channel 11, 2462 MHz	17.398 mW	< 1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	15.606 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	16.709 mW	< 1 W	Pass
High Channel 11, 2462 MHz	16.737 mW	< 1 W	Pass

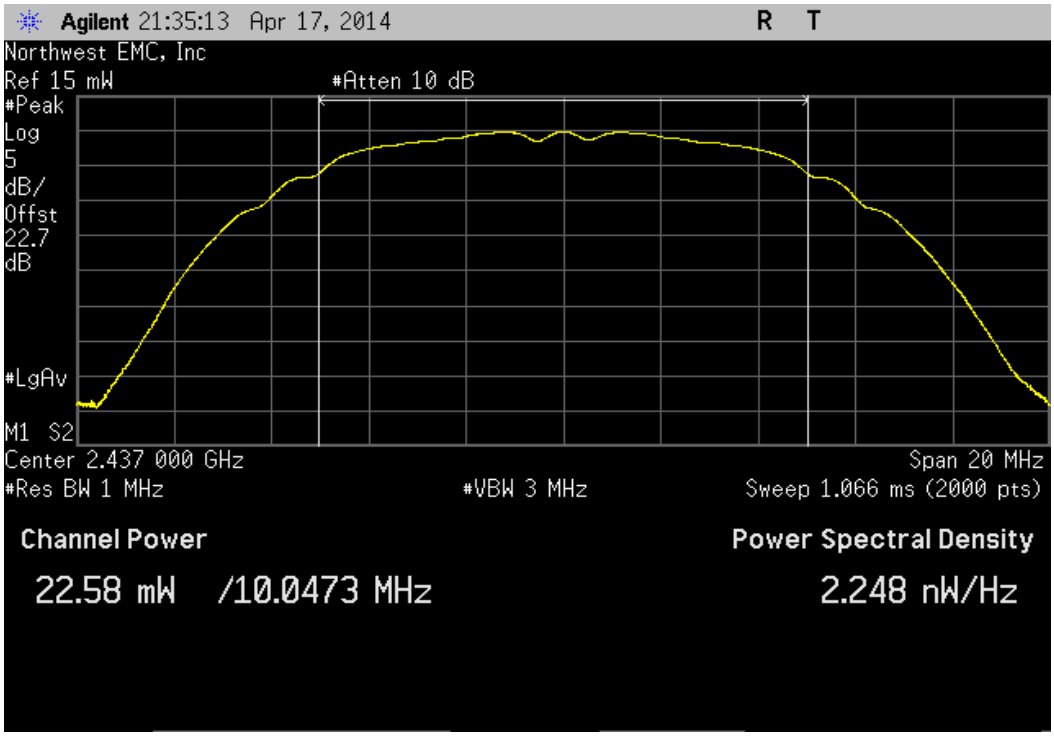
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				23.946 mW	< 1 W	Pass



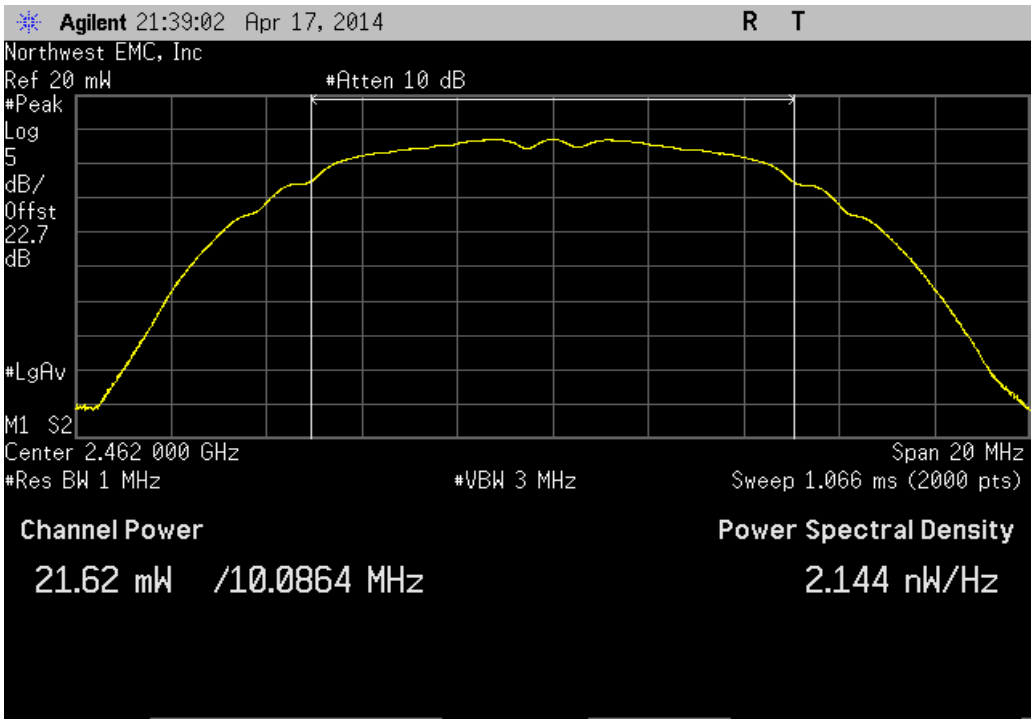
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				22.583 mW	< 1 W	Pass



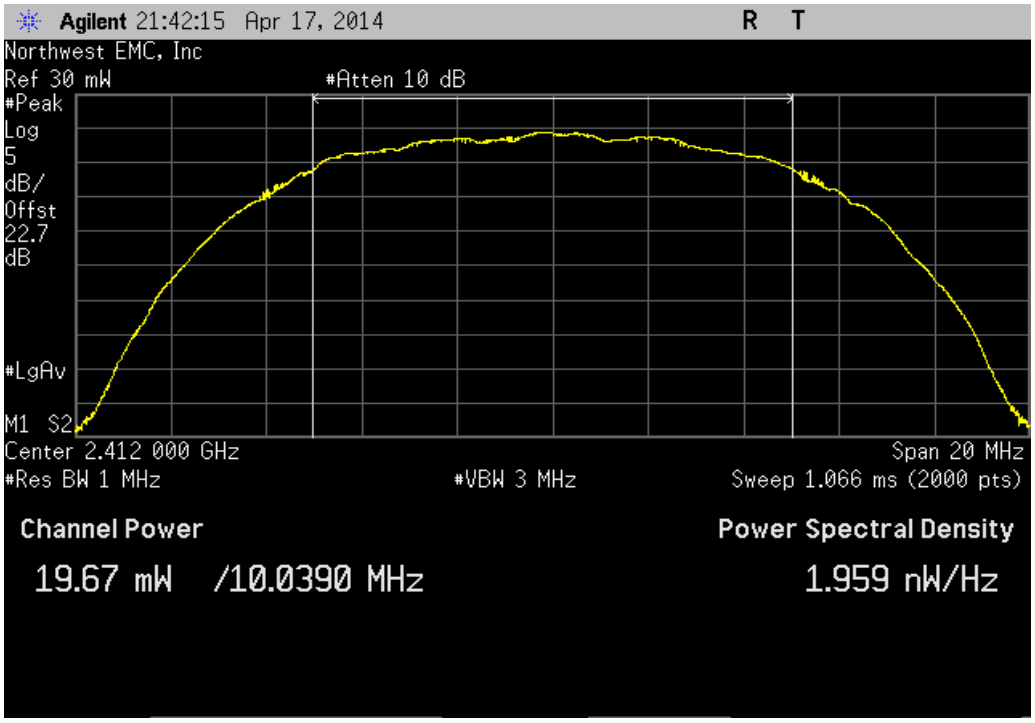
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				21.621 mW	< 1 W	Pass



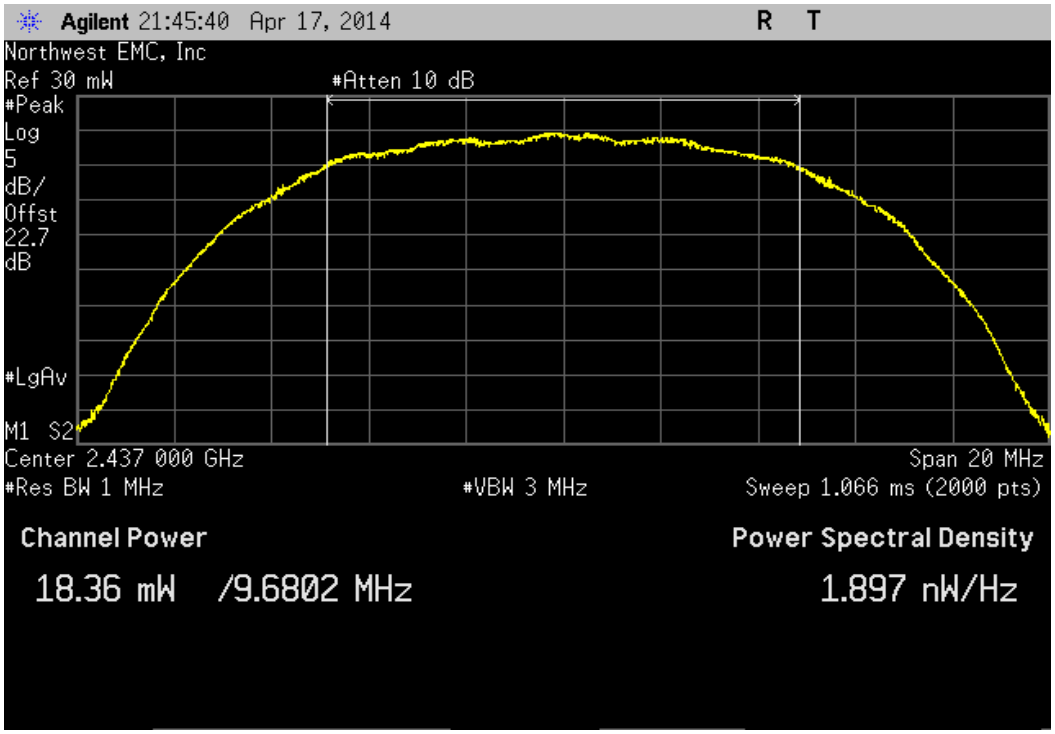
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				19.671 mW	< 1 W	Pass



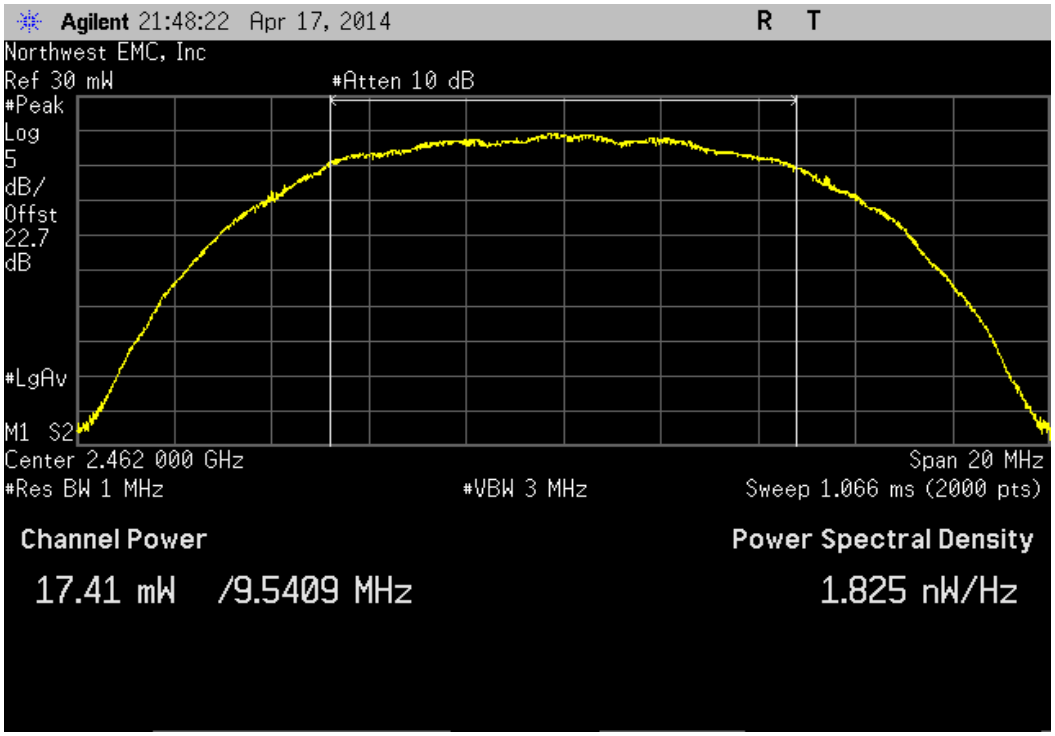
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				18.361 mW	< 1 W	Pass



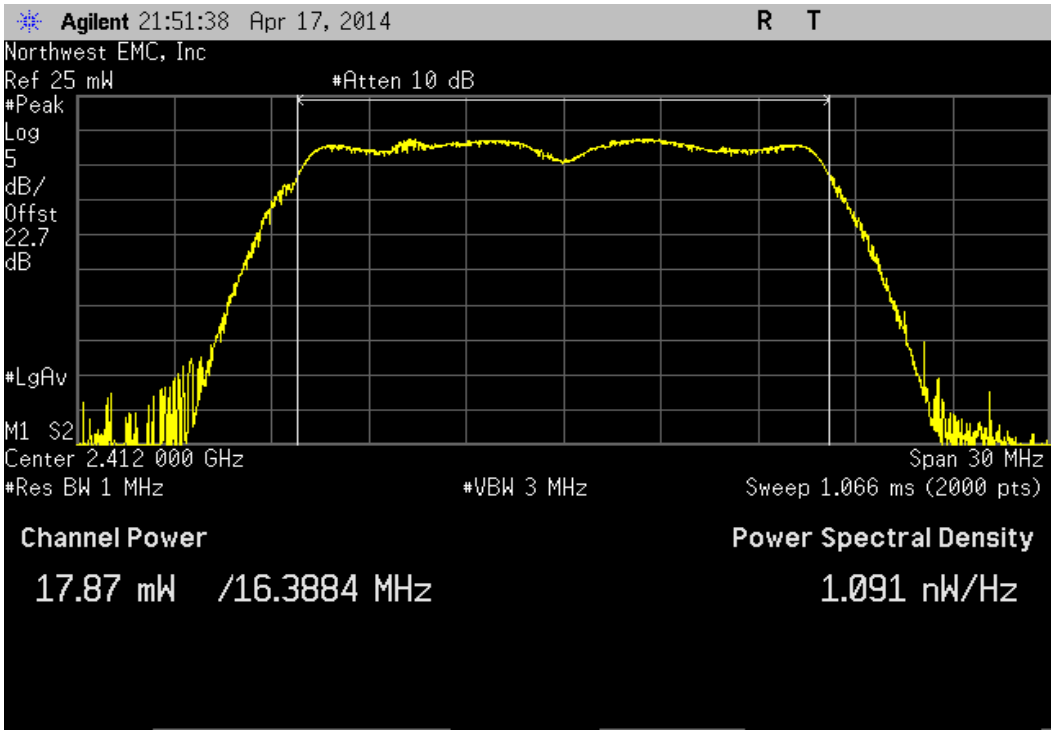
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.415 mW	< 1 W	Pass



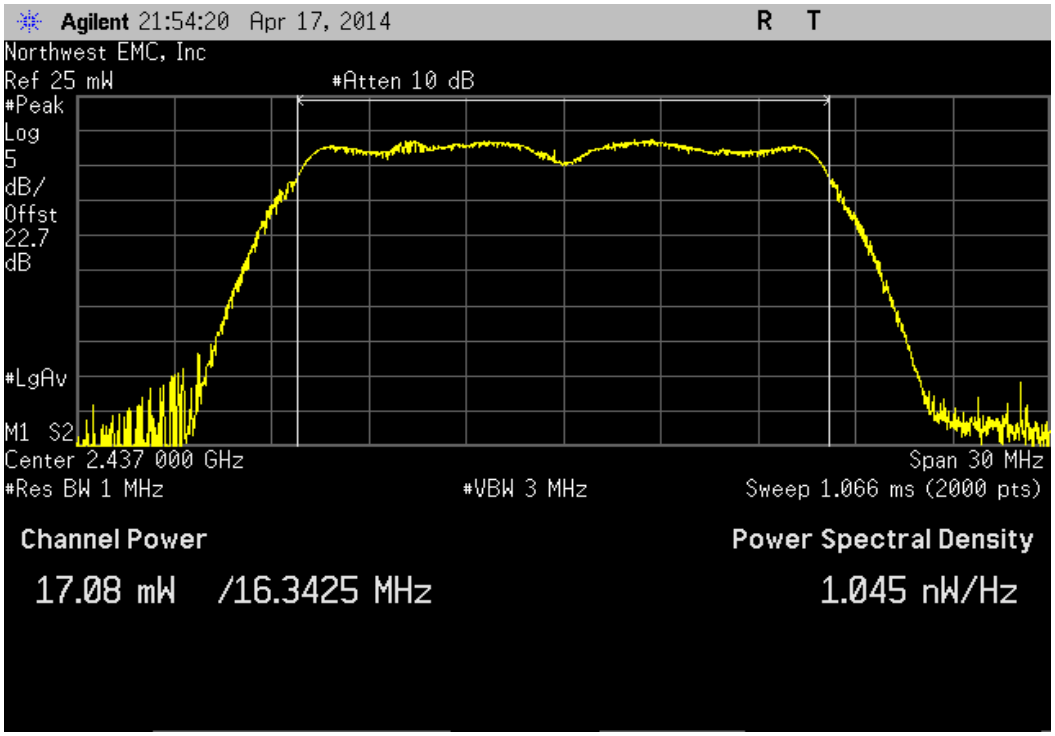
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.875 mW	< 1 W	Pass



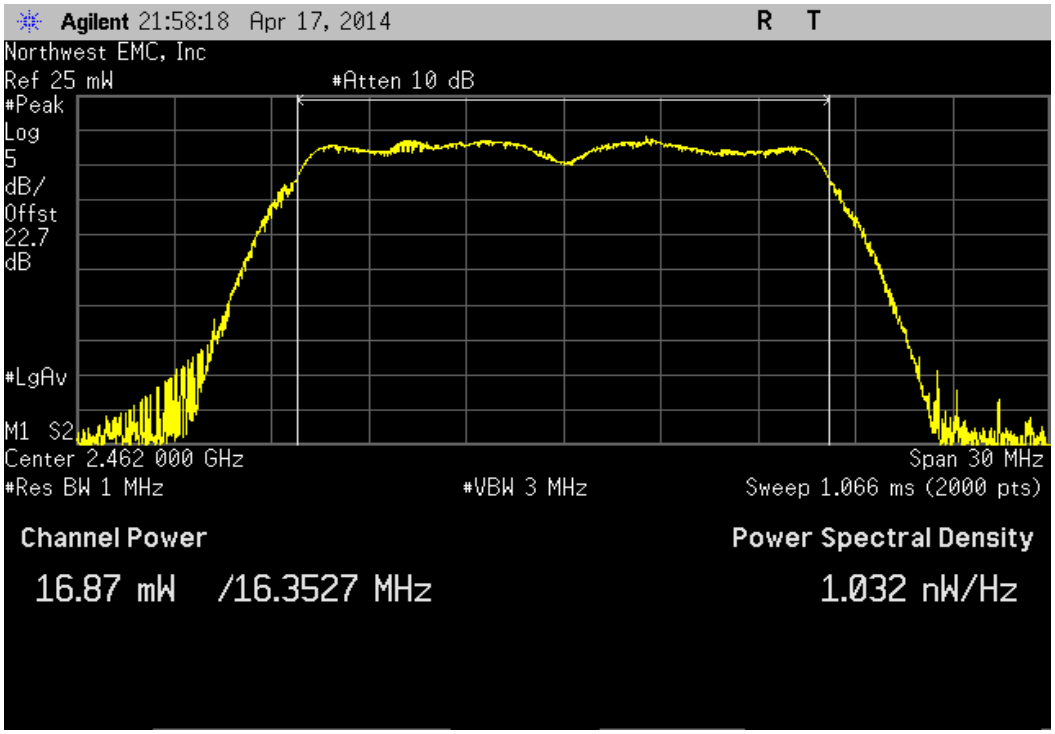
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.078 mW	< 1 W	Pass



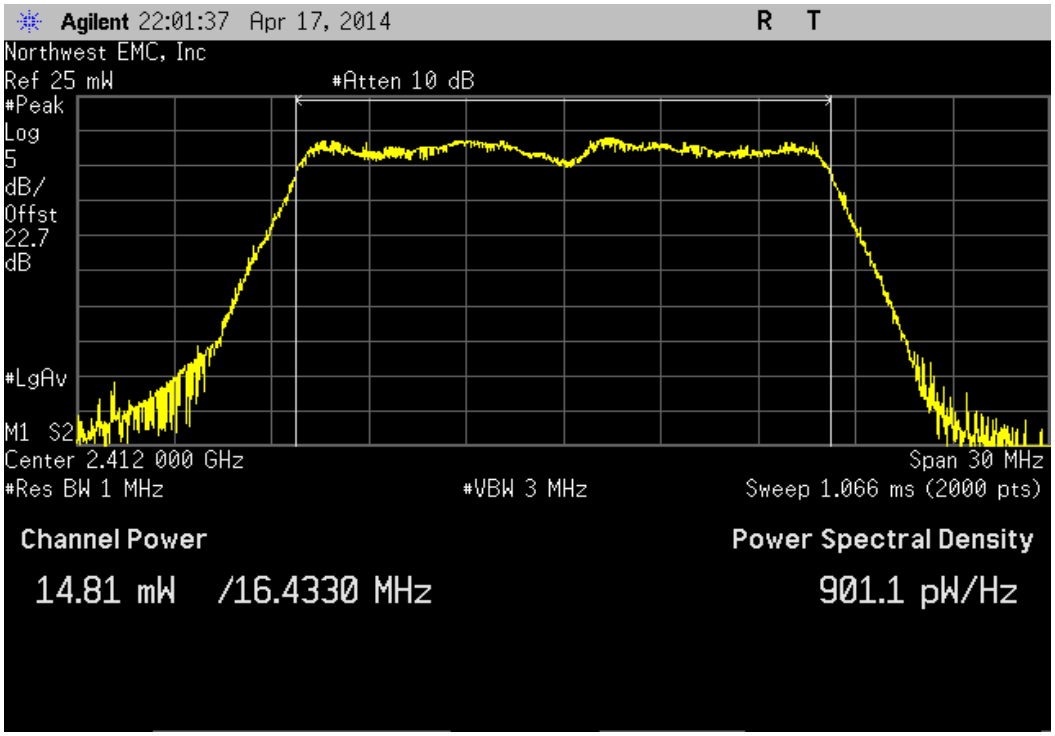
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.874 mW	< 1 W	Pass



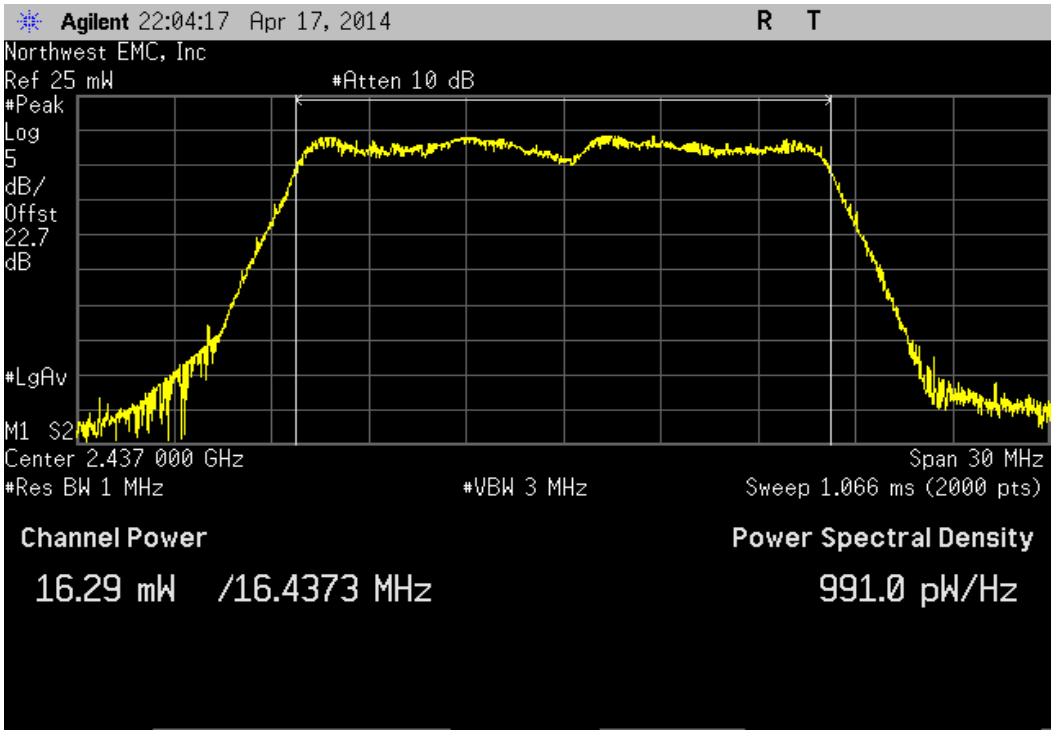
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				14.808 mW	< 1 W	Pass



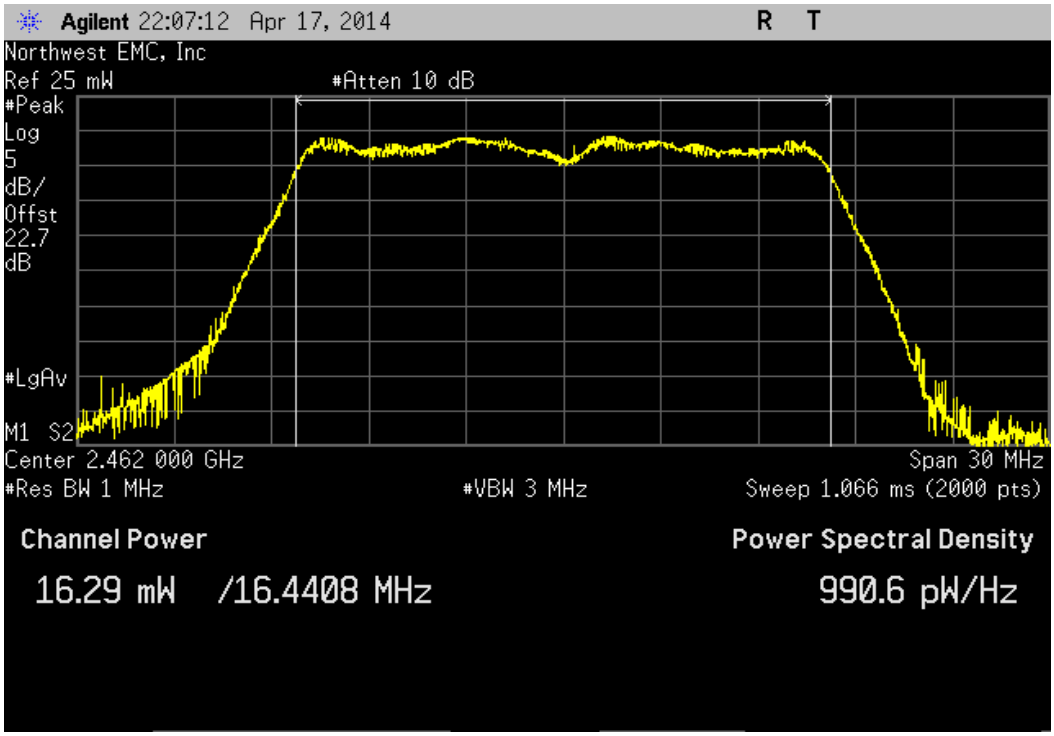
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				16.29 mW	< 1 W	Pass



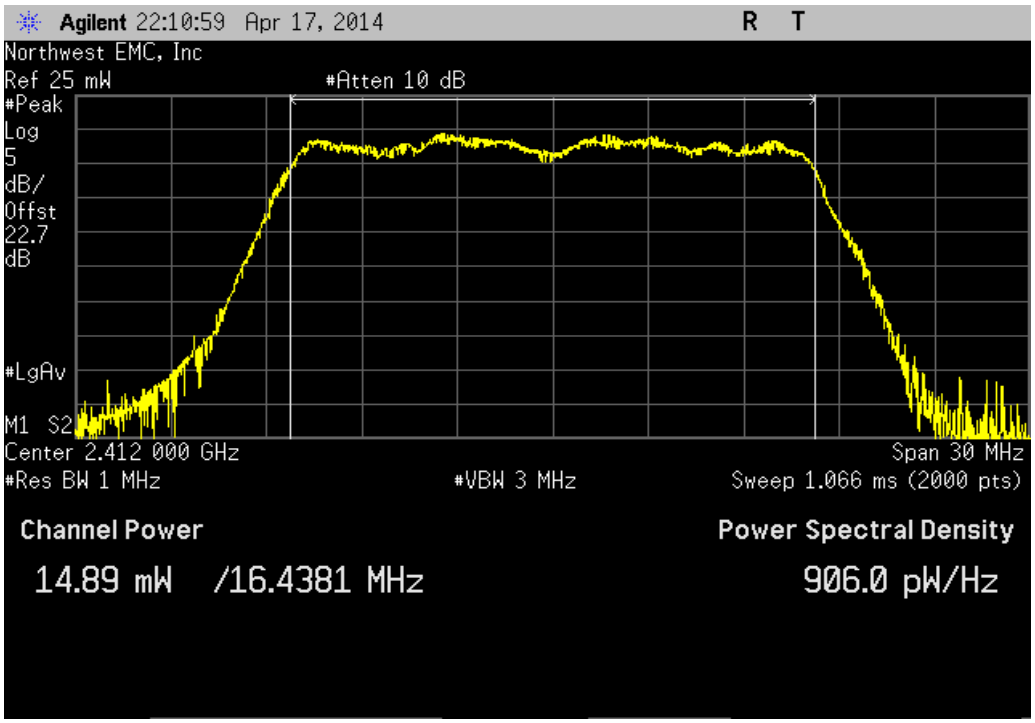
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.287 mW	< 1 W	Pass



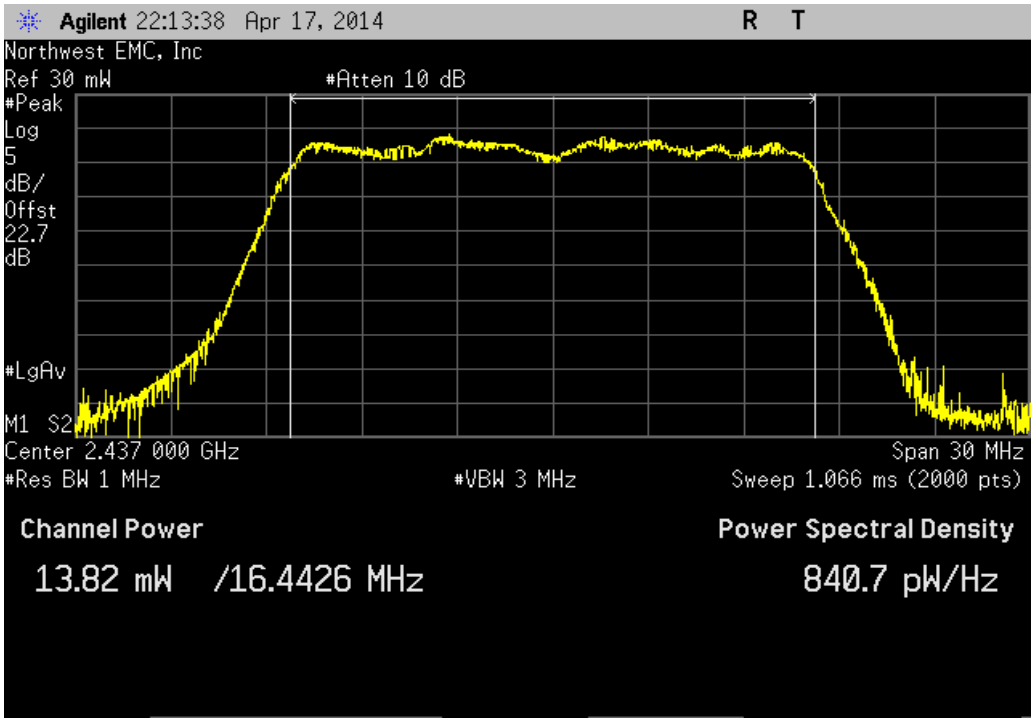
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				14.894 mW	< 1 W	Pass



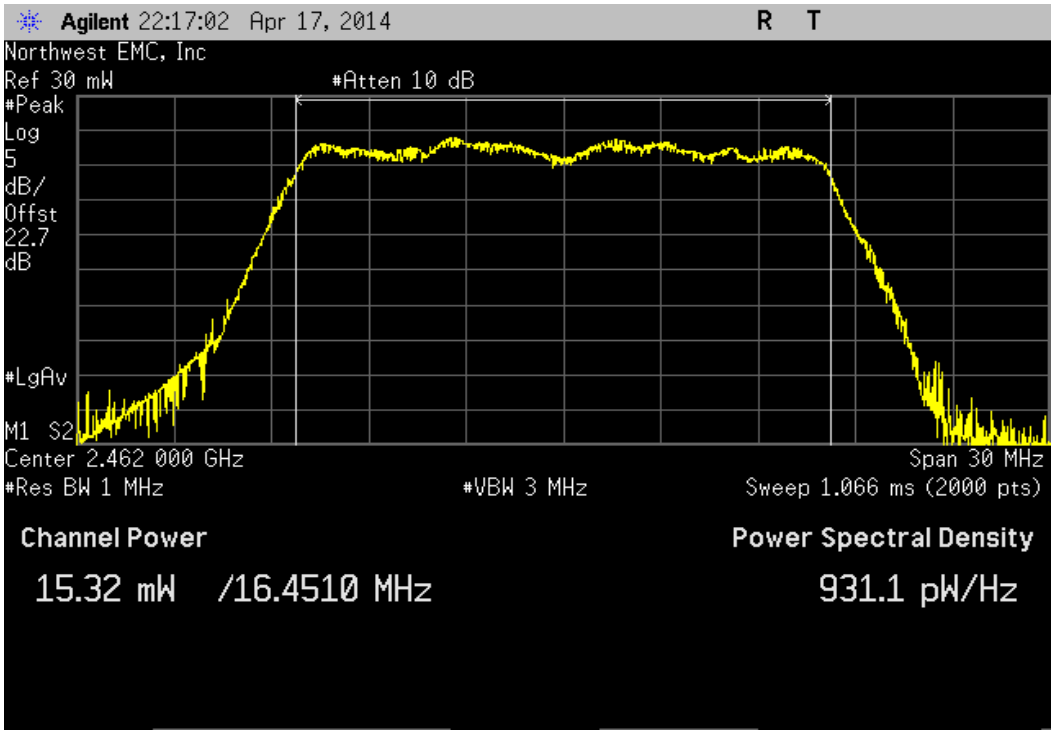
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				13.823 mW	< 1 W	Pass



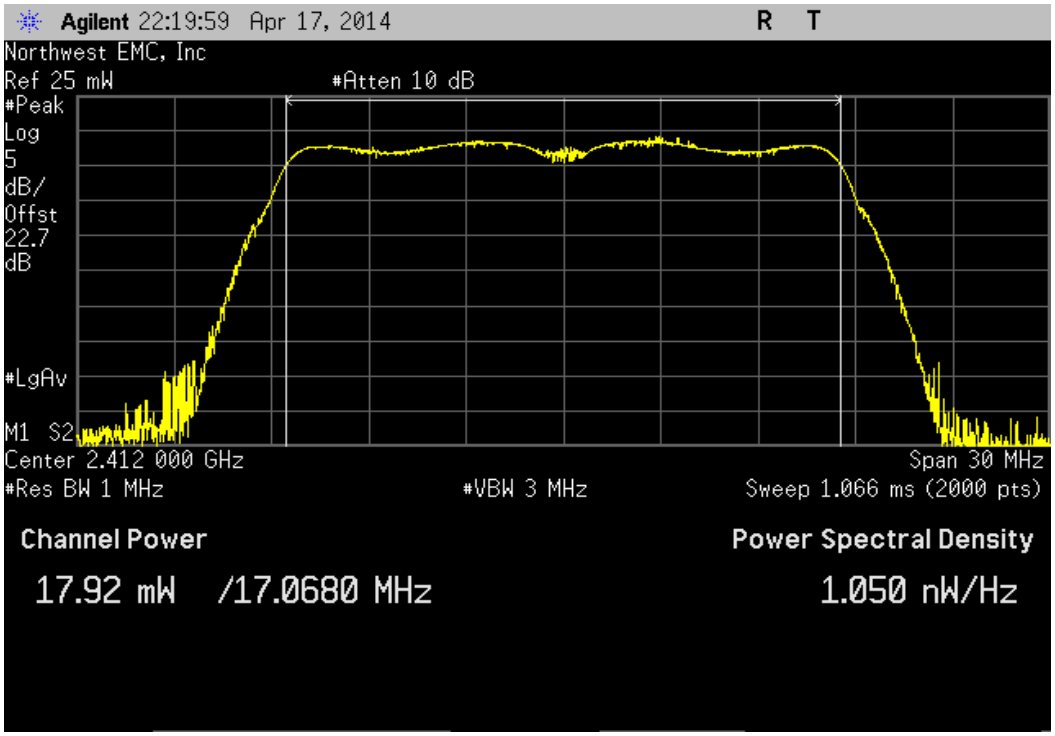
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				15.317 mW	< 1 W	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

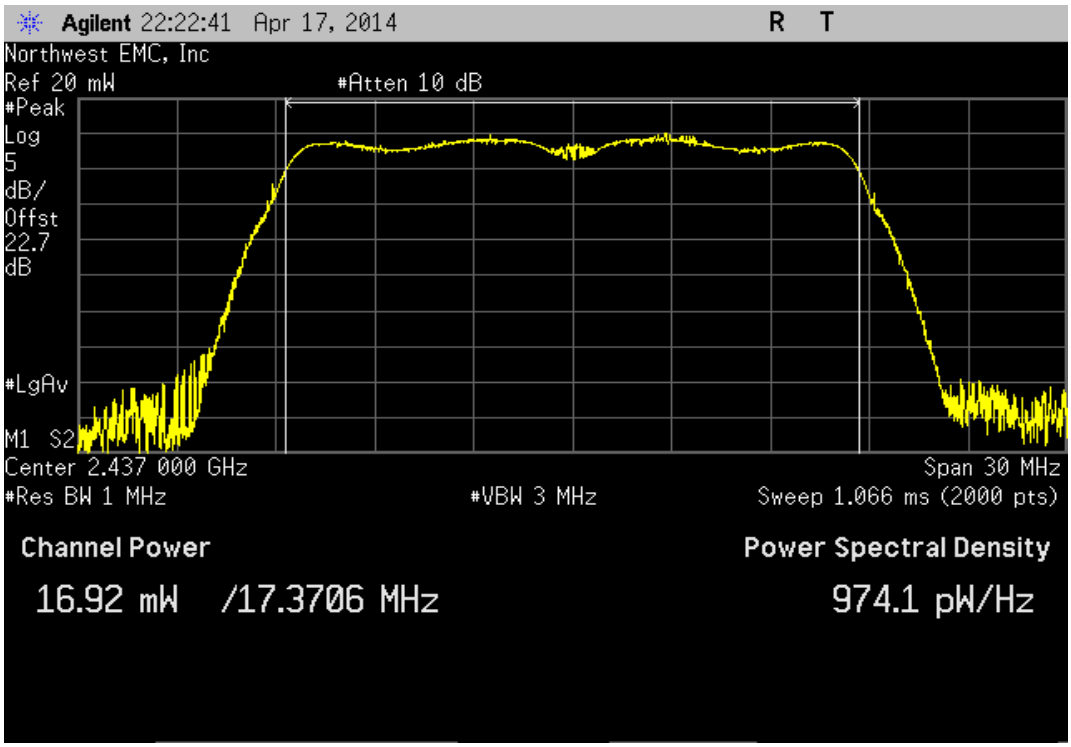
				Value	Limit	Result
				17.925 mW	< 1 W	Pass



OUTPUT POWER

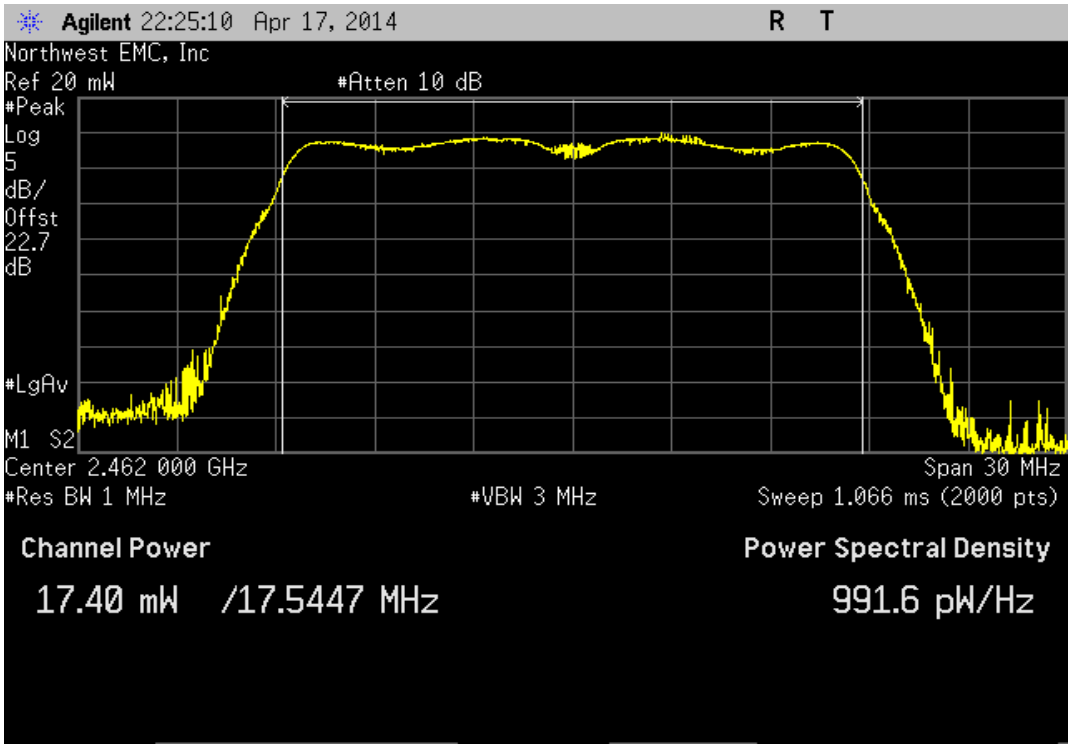
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				16.921 mW	< 1 W	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

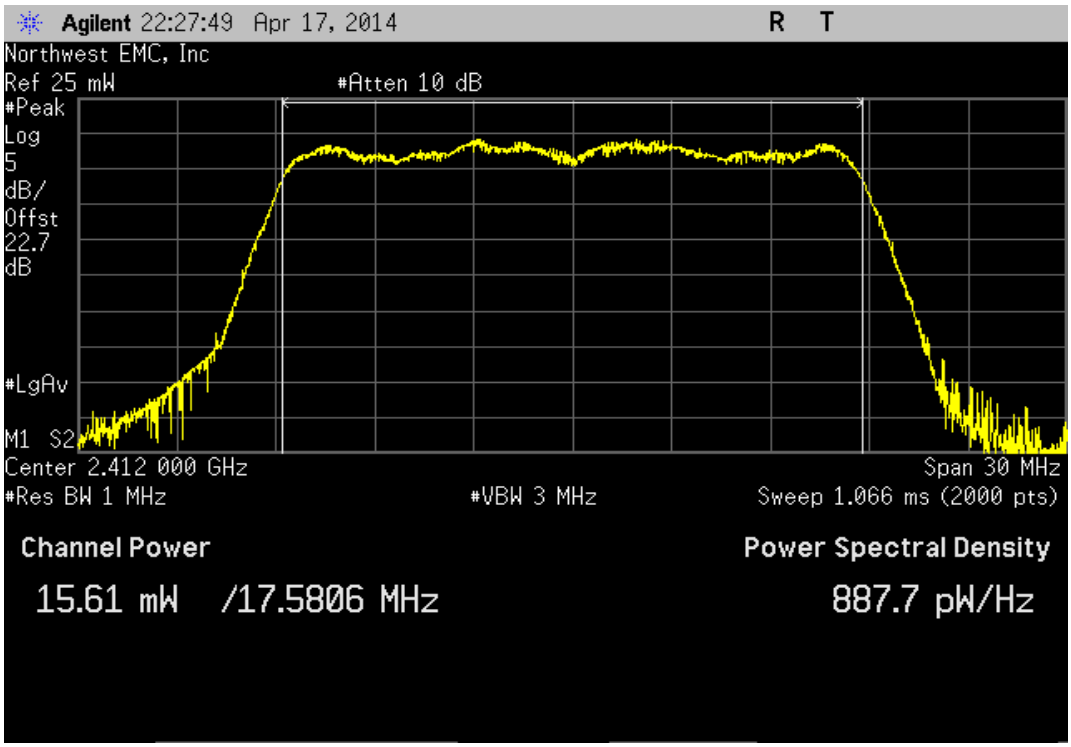
				Value	Limit	Result
				17.398 mW	< 1 W	Pass



OUTPUT POWER

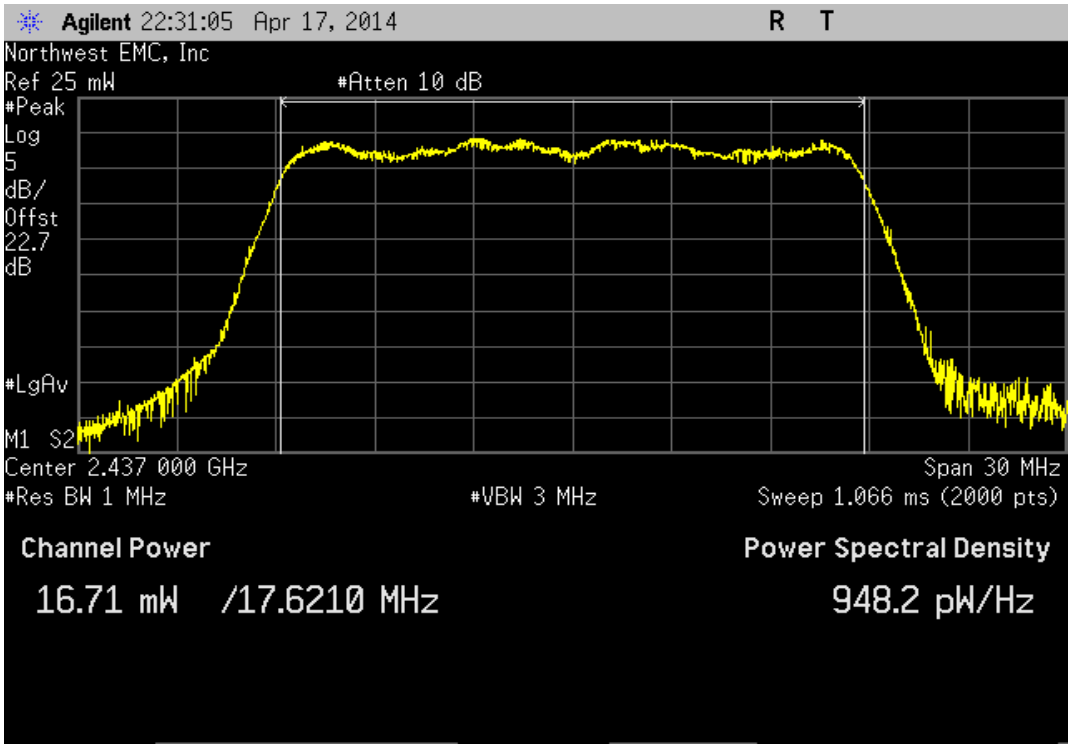
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

				Value	Limit	Result
				15.606 mW	< 1 W	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

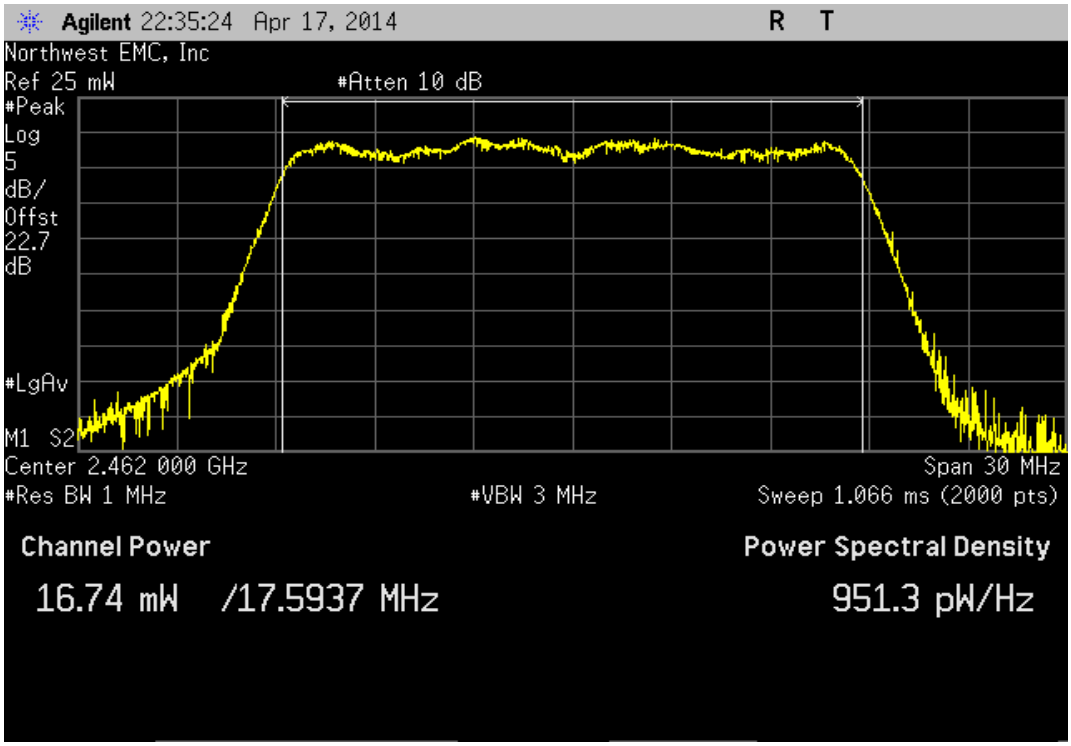
				Value	Limit	Result
				16.709 mW	< 1 W	Pass



OUTPUT POWER

20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.737 mW	< 1 W	Pass



OUTPUT POWER

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.)
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Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

None

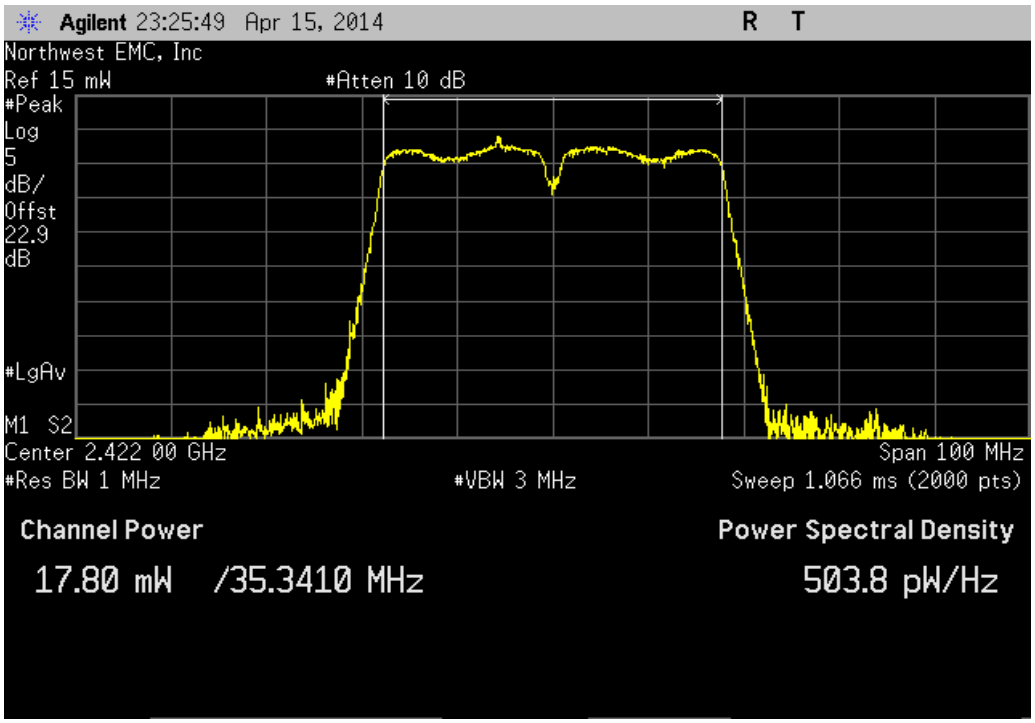
Configuration #	6	Signature

	Value	Limit	Result
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS0			
1/5 Low Channel, 2422 MHz	17.805 mW	< 1 W	Pass
4/8 Mid Channel, 2437 MHz	17.77 mW	< 1 W	Pass
7/11 High Channel, 2452 MHz	17.284 mW	< 1 W	Pass
802.11(n) MCS7			
1/5 Low Channel, 2422 MHz	15.629 mW	< 1 W	Pass
4/8 Mid Channel, 2437 MHz	16.156 mW	< 1 W	Pass
7/11 High Channel, 2452 MHz	15.495 mW	< 1 W	Pass

OUTPUT POWER

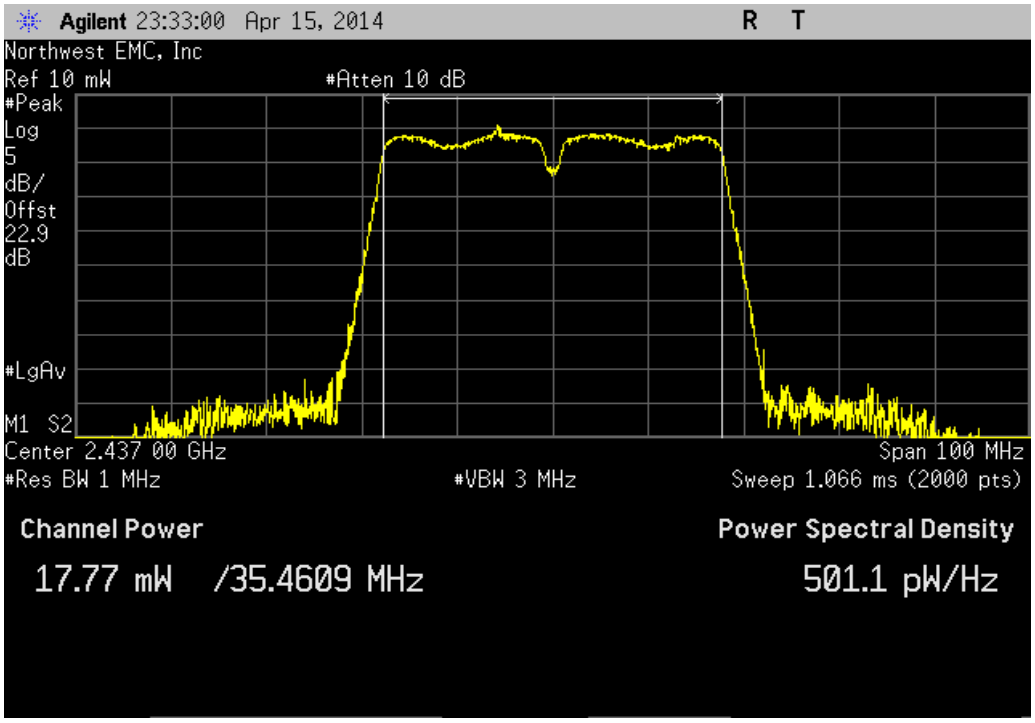
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 1/5 Low Channel, 2422 MHz

				Value	Limit	Result
				17.805 mW	< 1 W	Pass



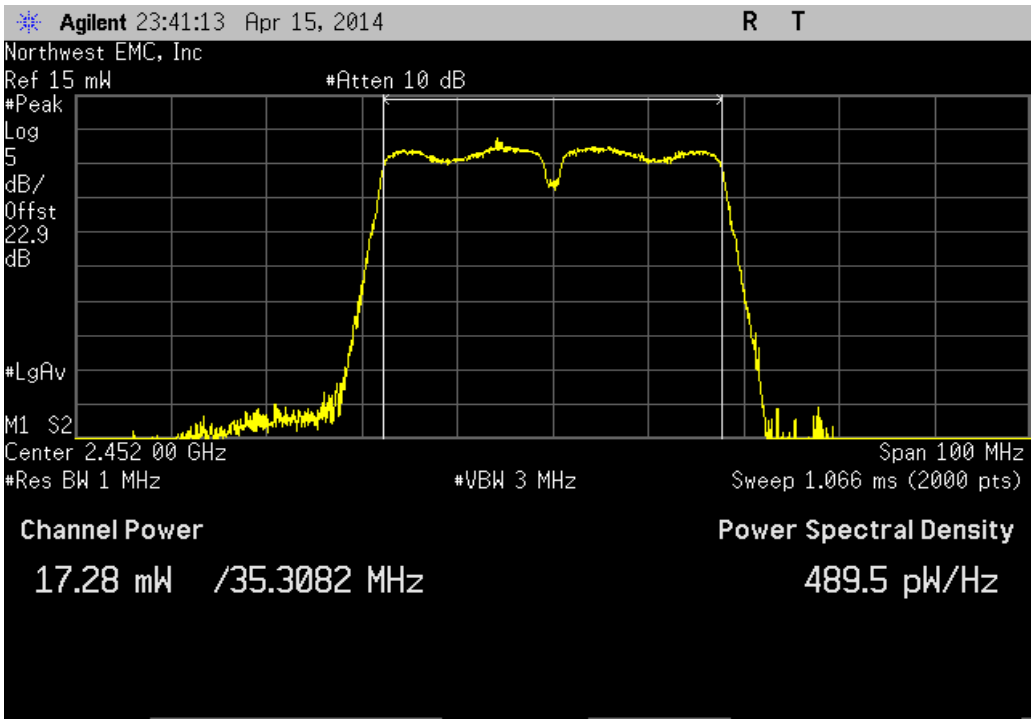
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 4/8 Mid Channel, 2437 MHz

				Value	Limit	Result
				17.77 mW	< 1 W	Pass



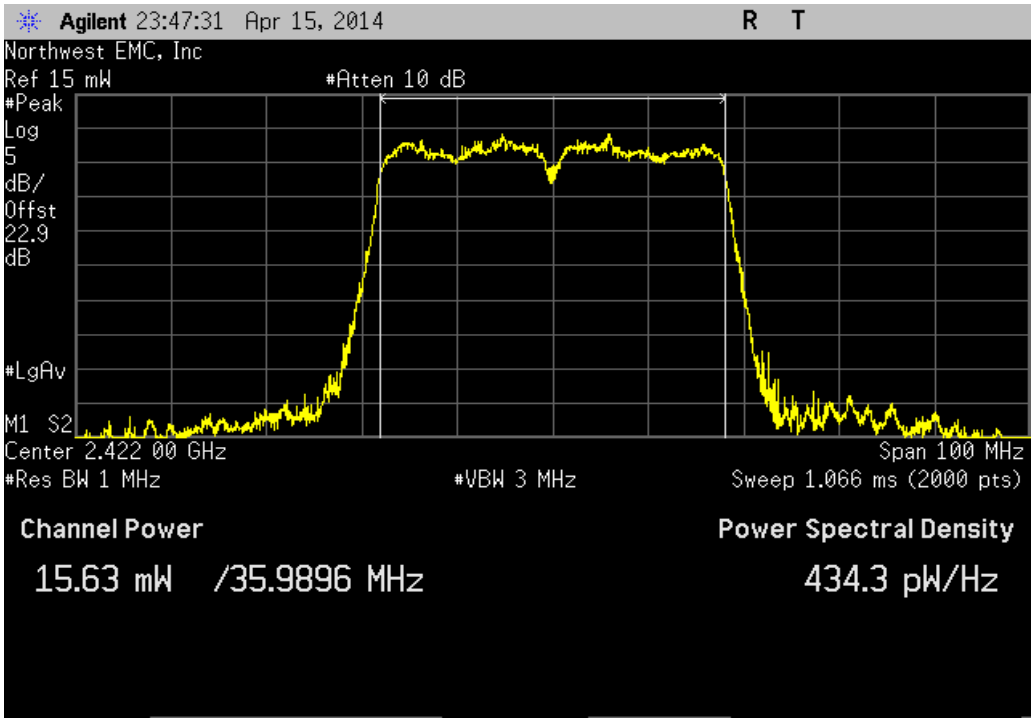
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 7/11 High Channel, 2452 MHz

				Value	Limit	Result
				17.284 mW	< 1 W	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 1/5 Low Channel, 2422 MHz

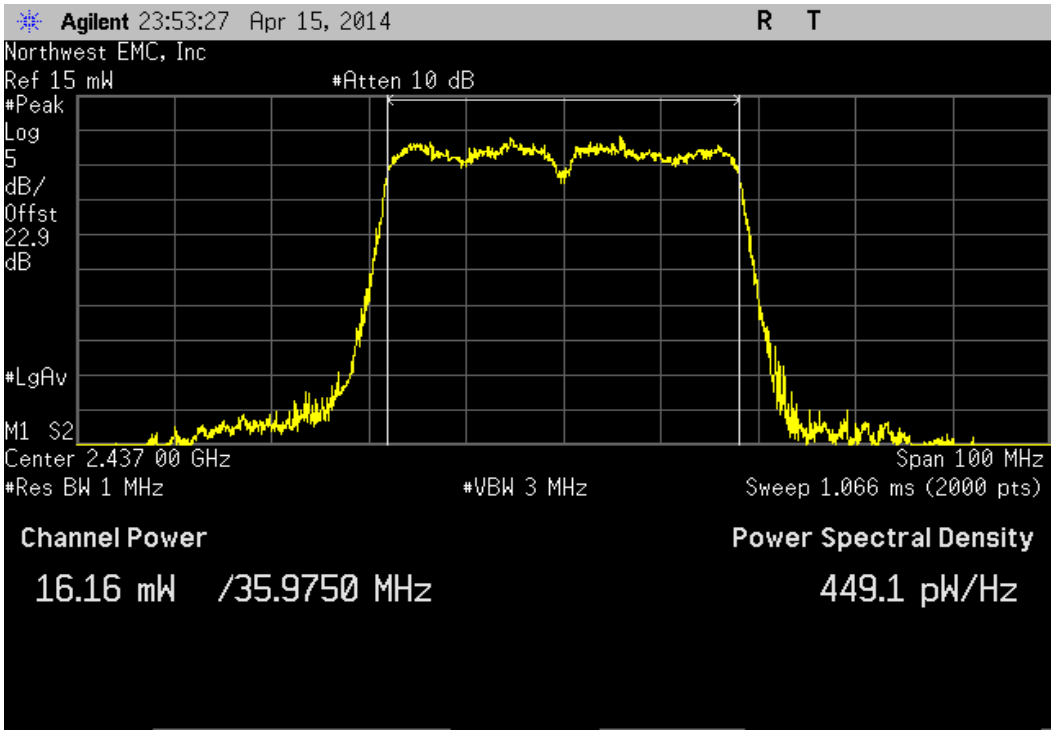
				Value	Limit	Result
				15.629 mW	< 1 W	Pass



OUTPUT POWER

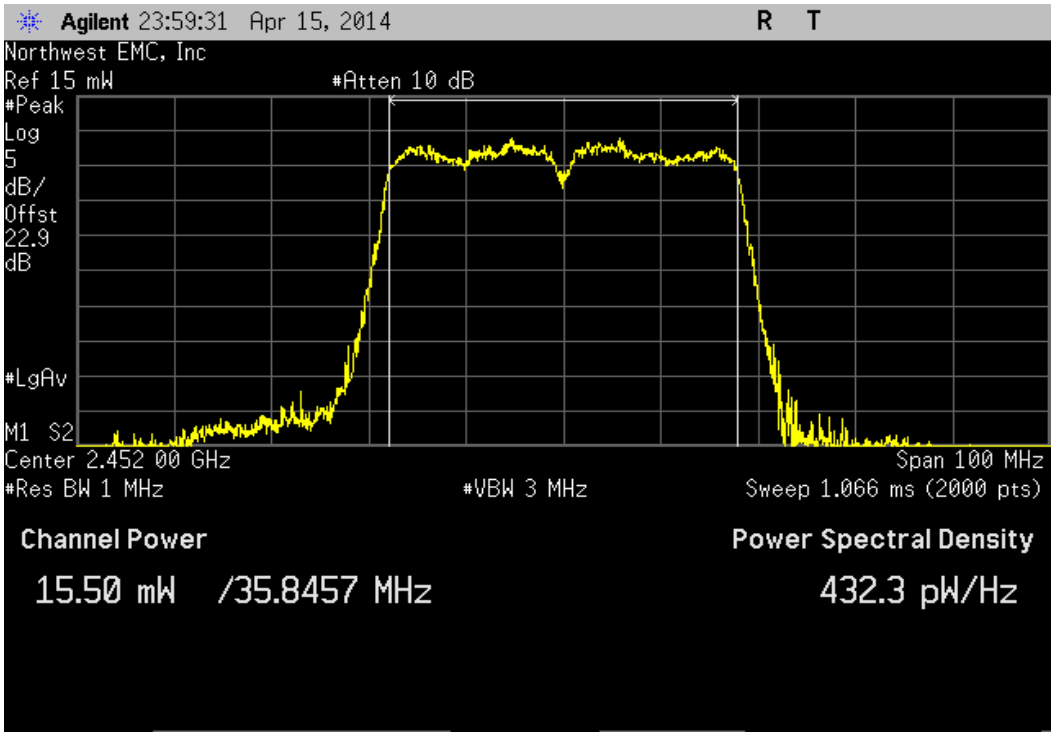
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 4/8 Mid Channel, 2437 MHz

				Value	Limit	Result
				16.156 mW	< 1 W	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 7/11 High Channel, 2452 MHz

				Value	Limit	Result
				15.495 mW	< 1 W	Pass



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COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

None

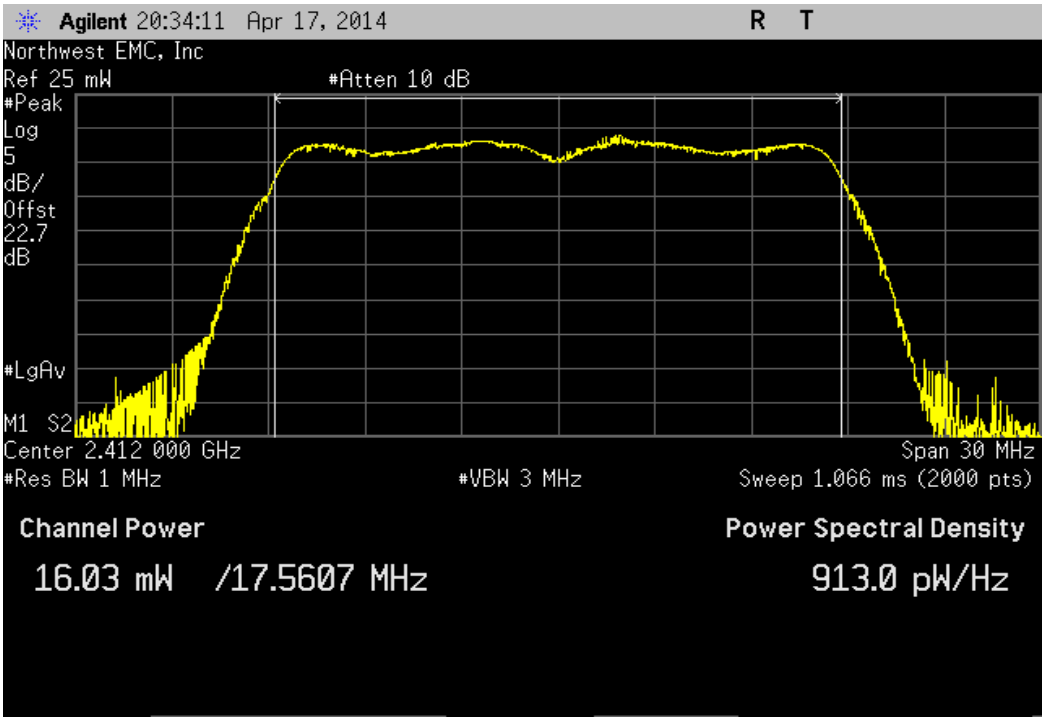
Configuration #	6	Signature

	Value	Limit	Result
Chain A			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz	16.032 mW	< 1 W	N/A
Mid Channel 6, 2437 MHz	17.621 mW	< 1 W	N/A
High Channel 11, 2462 MH	16.597 mW	< 1 W	N/A
802.11(n) MCS15			
Low Channel 1, 2412 MHz	11.38 mW	< 1 W	N/A
Mid Channel 6, 2437 MHz	15.448 mW	< 1 W	N/A
High Channel 11, 2462 MH	15.506 mW	< 1 W	N/A
Chain B			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz	18.927 mW	< 1 W	N/A
Mid Channel 6, 2437 MHz	18.506 mW	< 1 W	N/A
High Channel 11, 2462 MH	17.697 mW	< 1 W	N/A
802.11(n) MCS15			
Low Channel 1, 2412 MHz	15.173 mW	< 1 W	N/A
Mid Channel 6, 2437 MHz	17.218 mW	< 1 W	N/A
High Channel 11, 2462 MH	16.043 mW	< 1 W	N/A
Chain AB			
20 MHz			

2400 MHz - 2483.5 MHz Band	Chain A		Chain B		Summed Power	
802.11(n) MCS8	(dBm)	(mw)	(dBm)	(mw)	(mW)	
Low Channel 1, 2412 MHz	N/A	16.032000	N/A	18.927000	34.959000	Pass
Mid Channel 6, 2437 MHz	N/A	17.621000	N/A	18.506000	36.127000	Pass
High Channel 11, 2462 MH	N/A	16.597000	N/A	17.697000	34.294000	Pass
802.11(n) MCS15						
Low Channel 1, 2412 MHz	N/A	11.380000	N/A	15.173000	26.553000	Pass
Mid Channel 6, 2437 MHz	N/A	15.448000	N/A	17.218000	32.666000	Pass
High Channel 11, 2462 MHz	N/A	15.506000	N/A	16.043000	31.549000	Pass

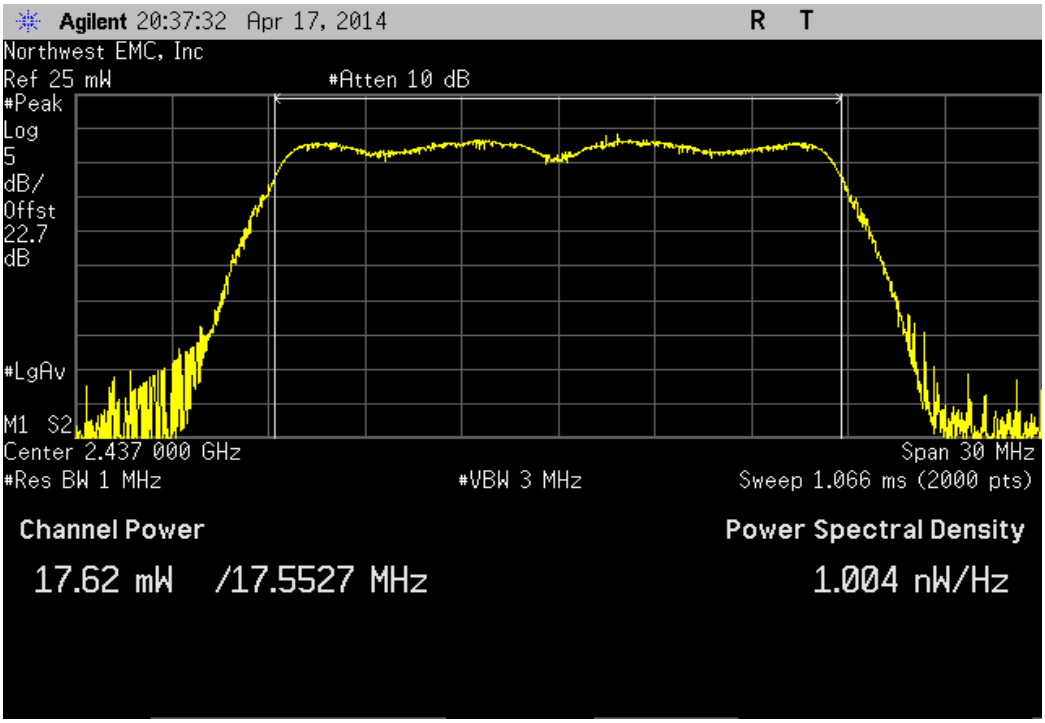
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				16.032 mW	< 1 W	Pass



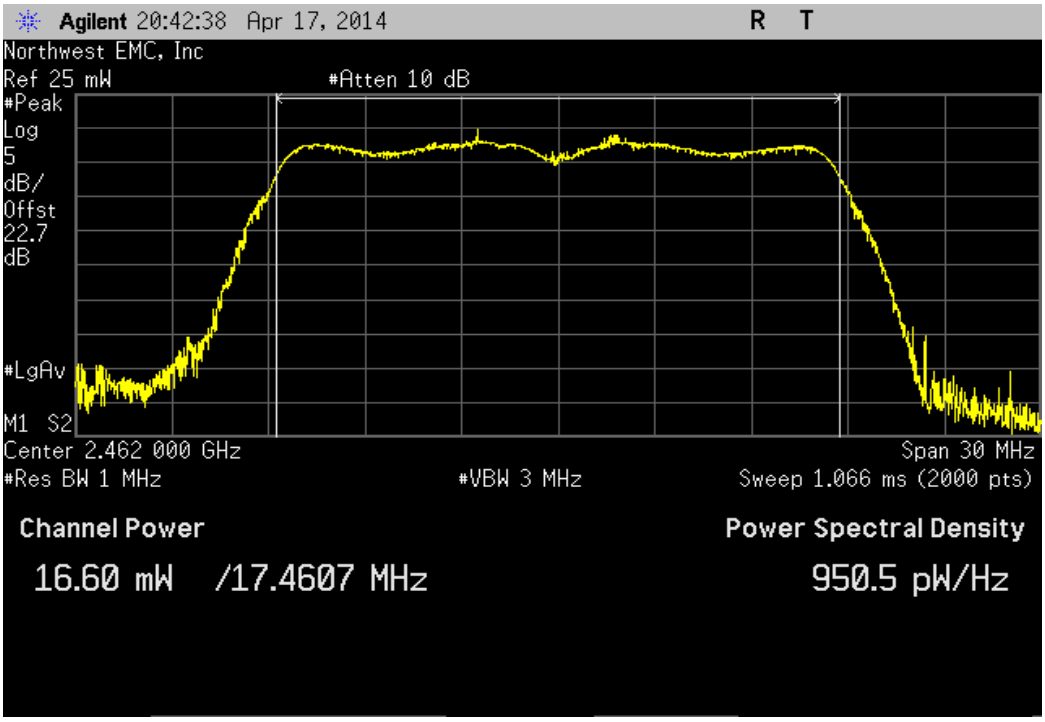
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.621 mW	< 1 W	Pass



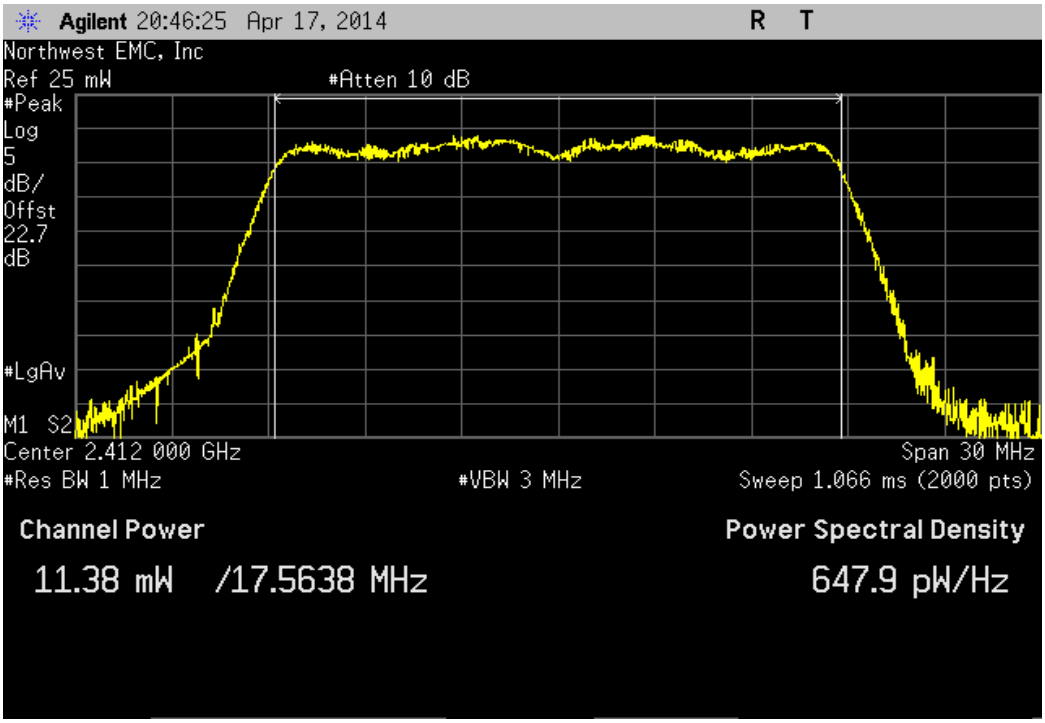
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.597 mW	< 1 W	Pass



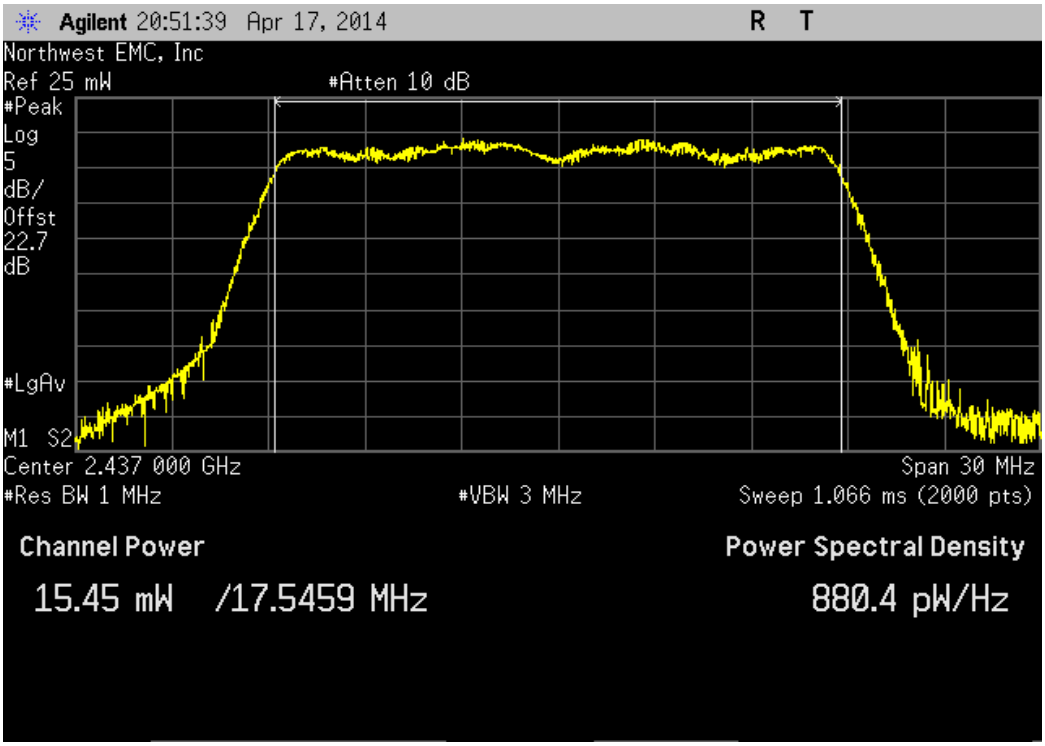
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

				Value	Limit	Result
				11.38 mW	< 1 W	Pass

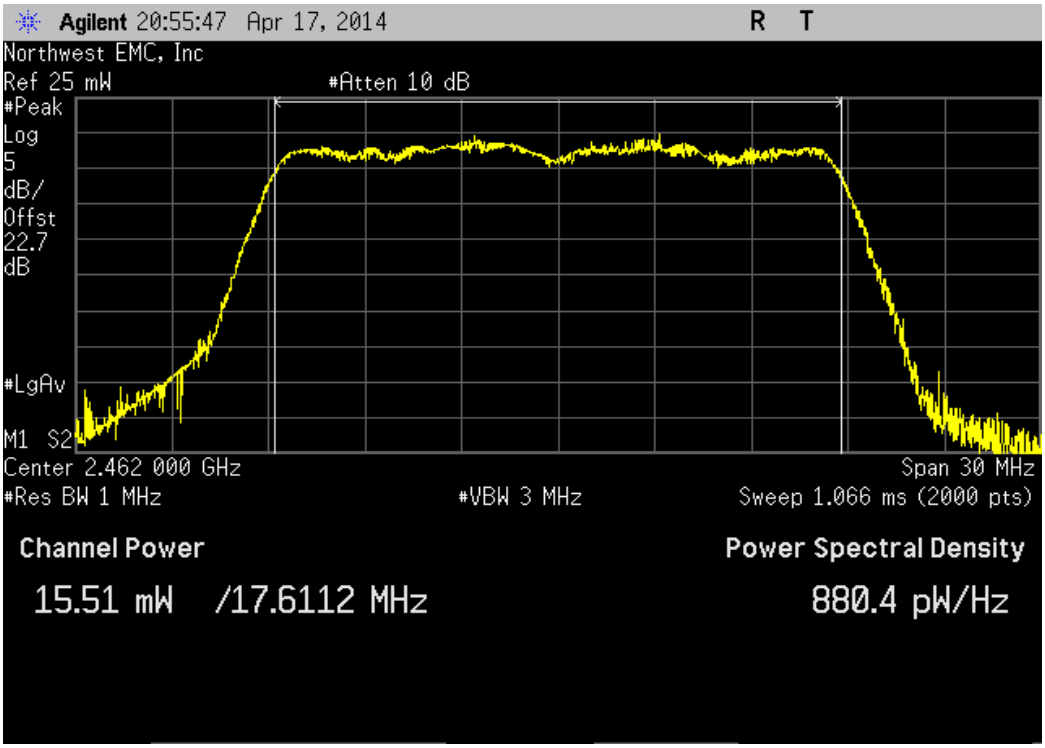


OUTPUT POWER

Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
				Value	Limit	Result
				15.448 mW	< 1 W	Pass

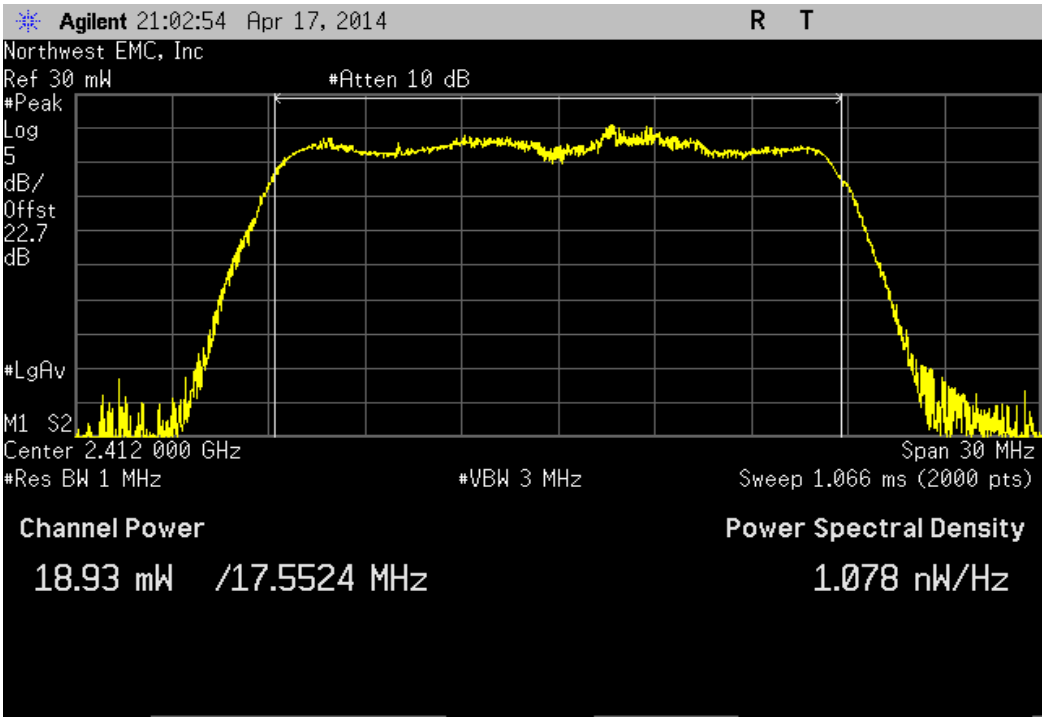


Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
				Value	Limit	Result
				15.506 mW	< 1 W	Pass



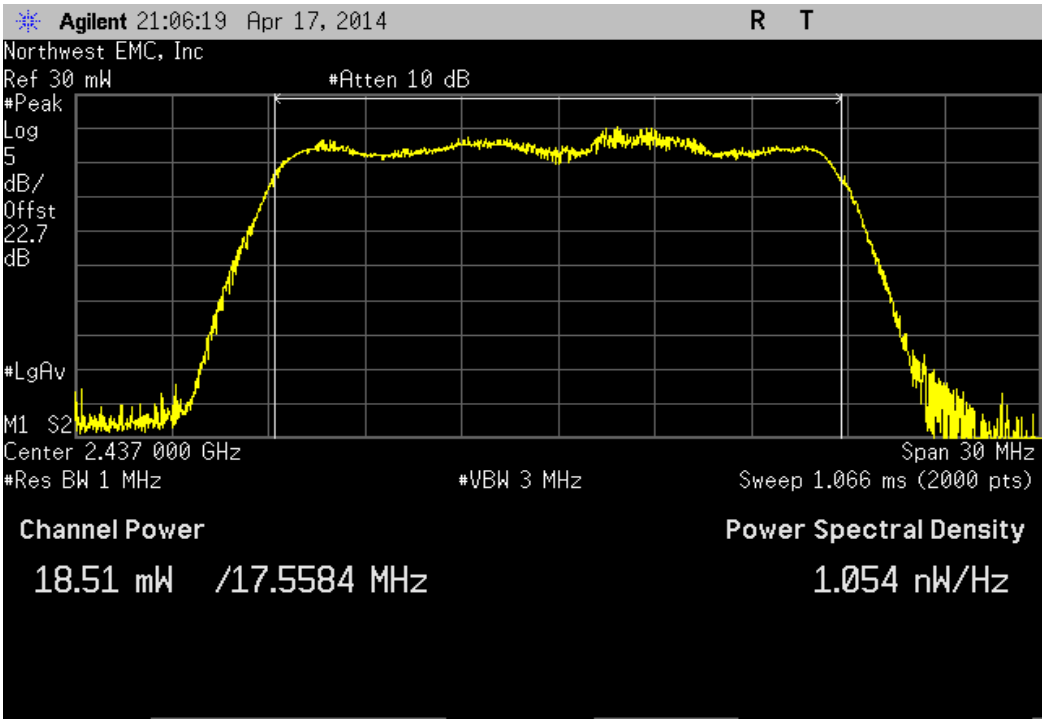
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				18.927 mW	< 1 W	Pass



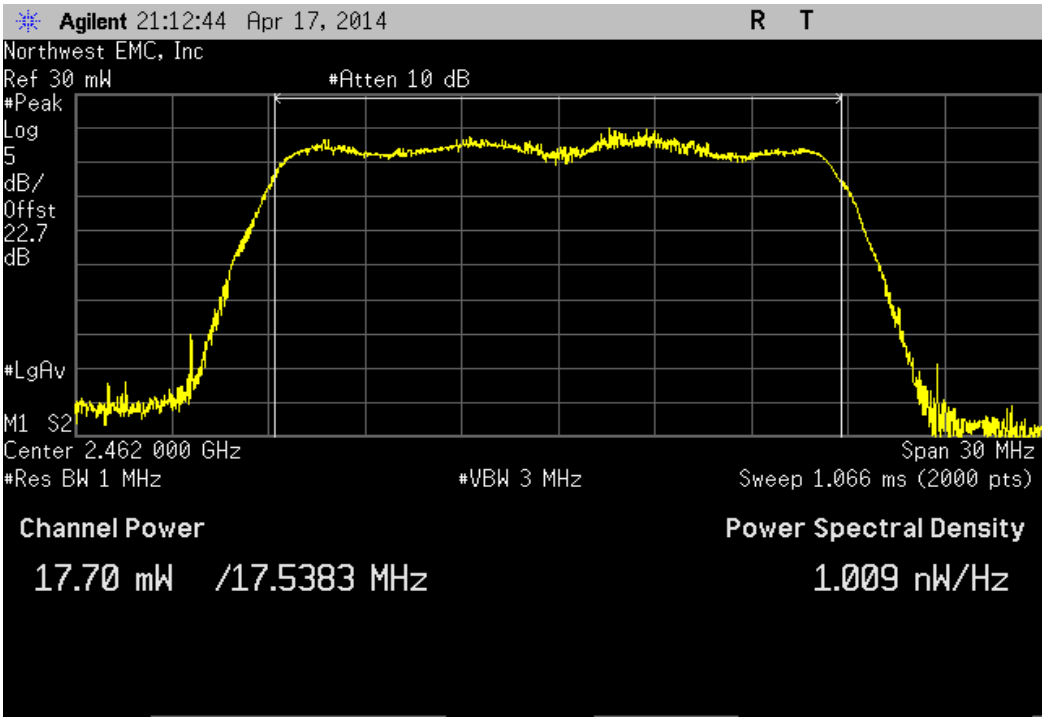
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				18.506 mW	< 1 W	Pass



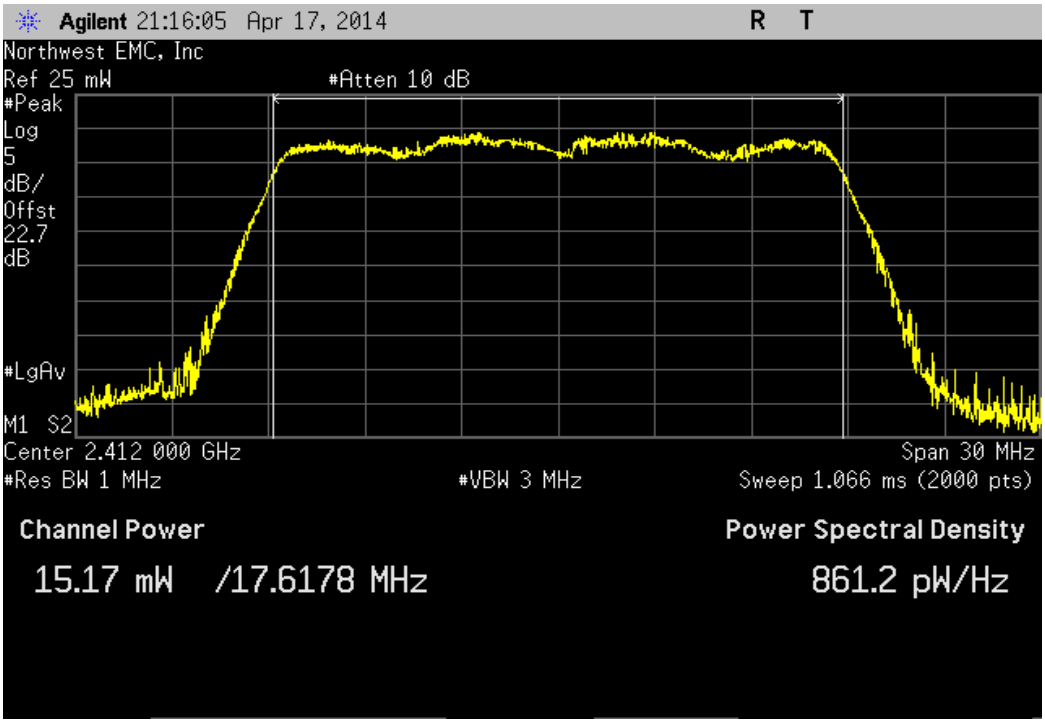
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

				Value	Limit	Result
				17.697 mW	< 1 W	Pass



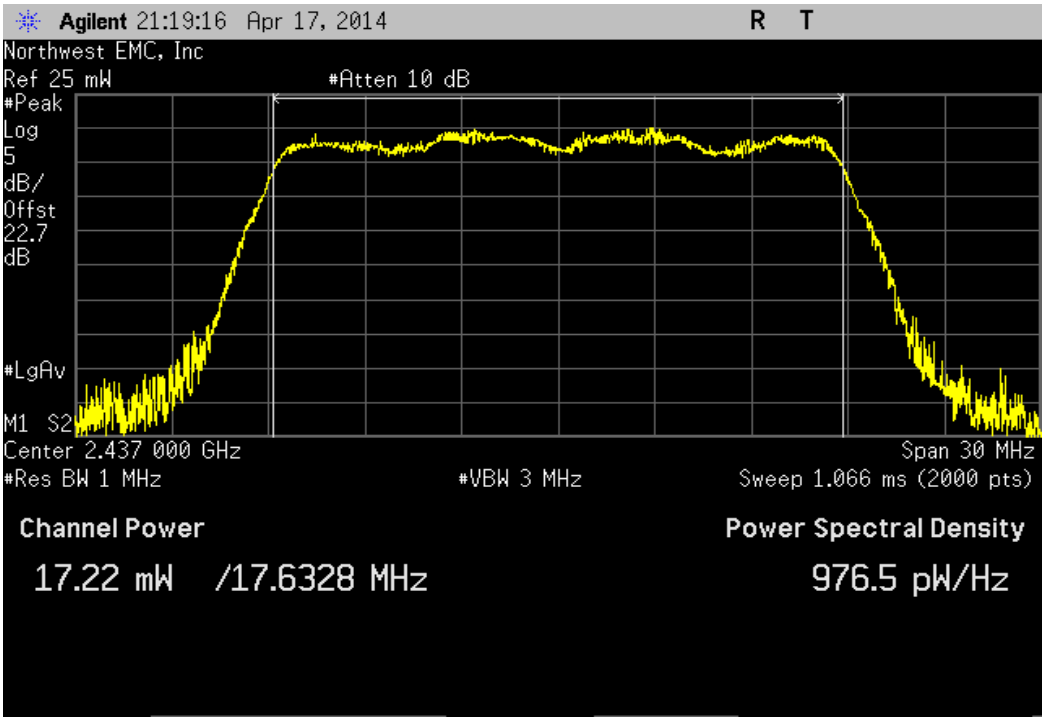
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

				Value	Limit	Result
				15.173 mW	< 1 W	Pass



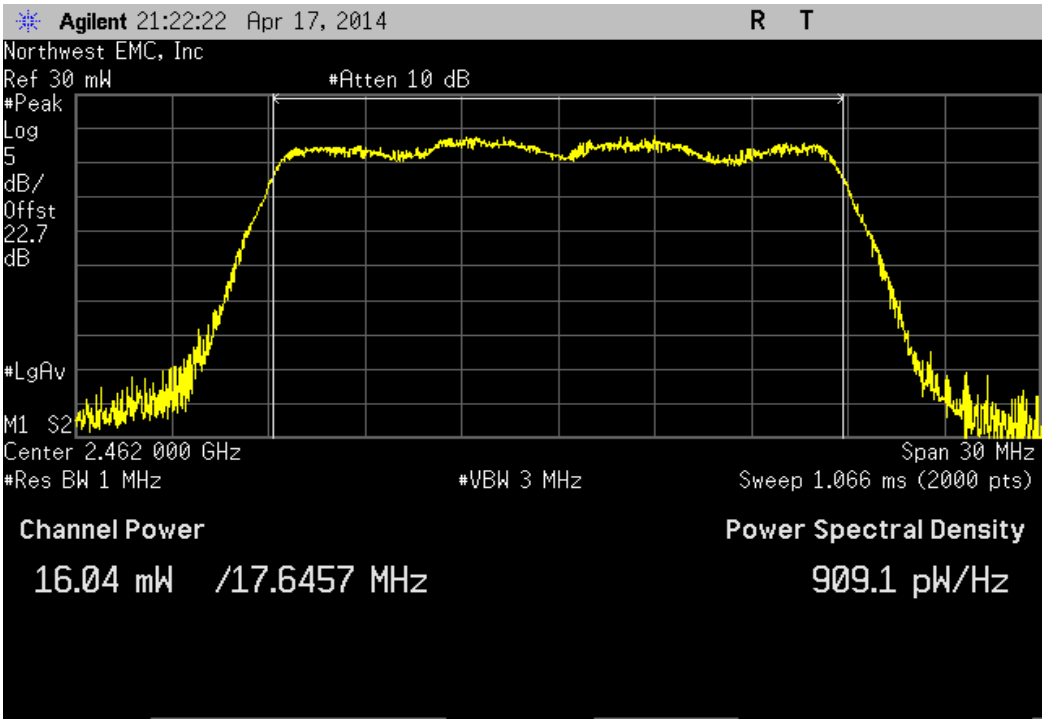
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.218 mW	< 1 W	Pass



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.043 mW	< 1 W	Pass



OUTPUT POWER

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	6	Signature

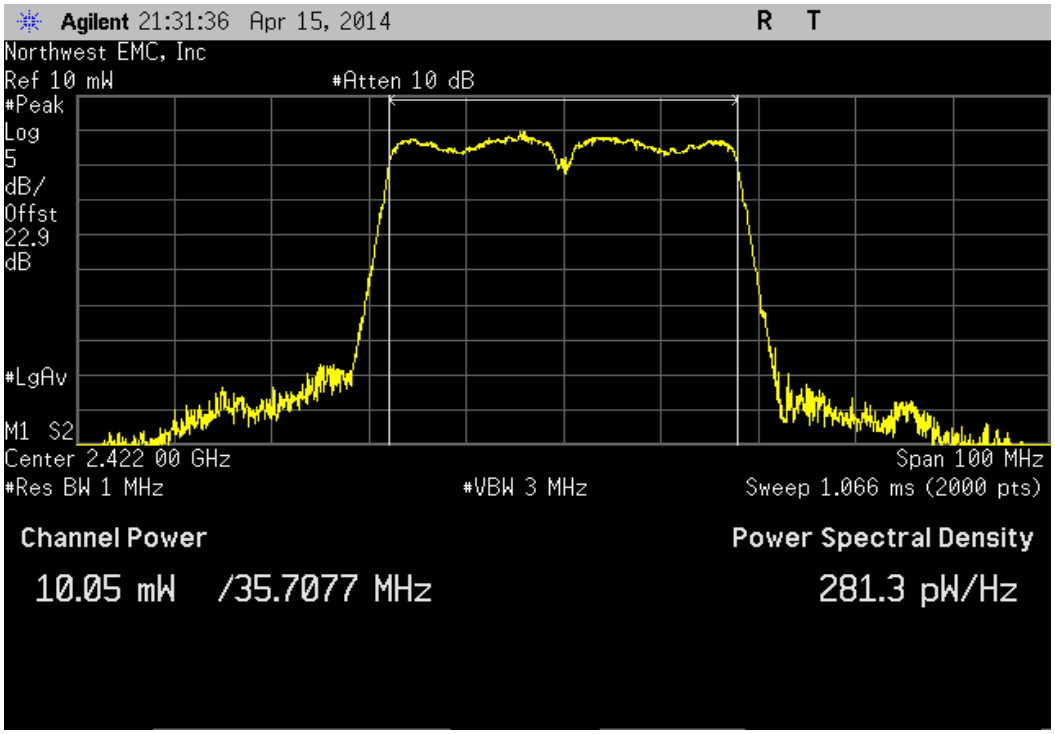
			Value	Limit	Result
Chain A					
	40 MHz				
		2400 MHz - 2483.5 MHz Band			
		802.11(n) MCS8			
		Low Channel 1/5, 2422 MH	10.045 mW	< 1 W	N/A
		Mid Channel 4/8, 2437 MH	17.776 mW	< 1 W	N/A
		High Channel 7/11, 2452 M	16.225 mW	< 1 W	N/A
		802.11(n) MCS15			
		Low Channel 1/5, 2422 MH	12.152 mW	< 1 W	N/A
		Mid Channel 4/8, 2437 MH	7.049 mW	< 1 W	N/A
		High Channel 7/11, 2452 M	13.883 mW	< 1 W	N/A
Chain B					
	40 MHz				
		2400 MHz - 2483.5 MHz Band			
		802.11(n) MCS8			
		Low Channel 1/5, 2422 MH	17.649 mW	< 1 W	N/A
		Mid Channel 4/8, 2437 MH	17.667 mW	< 1 W	N/A
		High Channel 7/11, 2452 M	16.463 mW	< 1 W	N/A
		802.11(n) MCS15			
		Low Channel 1/5, 2422 MH	13.144 mW	< 1 W	N/A
		Mid Channel 4/8, 2437 MH	10.634 mW	< 1 W	N/A
		High Channel 7/11, 2452 M	14.124 mW	< 1 W	N/A

Chain AB			Chain A		Chain B		Summed Power	
	40 MHz							
		2400 MHz - 2483.5 MHz Band						
		802.11(n) MCS8	(dBm)	(mw)	(dBm)	(mw)	(mW)	
		Low Channel 1/5, 2422 MH	N/A	10.045000	N/A	17.649000	27.694000	Pass
		Mid Channel 4/8, 2437 MH	N/A	17.776000	N/A	17.667000	35.443000	Pass
		High Channel 7/11, 2452 M	N/A	16.225000	N/A	16.463000	32.688000	Pass
		802.11(n) MCS15						
		Low Channel 1/5, 2422 MH	N/A	12.152000	N/A	13.144000	25.296000	Pass
		Mid Channel 4/8, 2437 MHz	N/A	7.049000	N/A	10.634000	17.683000	Pass
		High Channel 7/11, 2452 MHz	N/A	13.883000	N/A	14.124000	28.007000	Pass

OUTPUT POWER

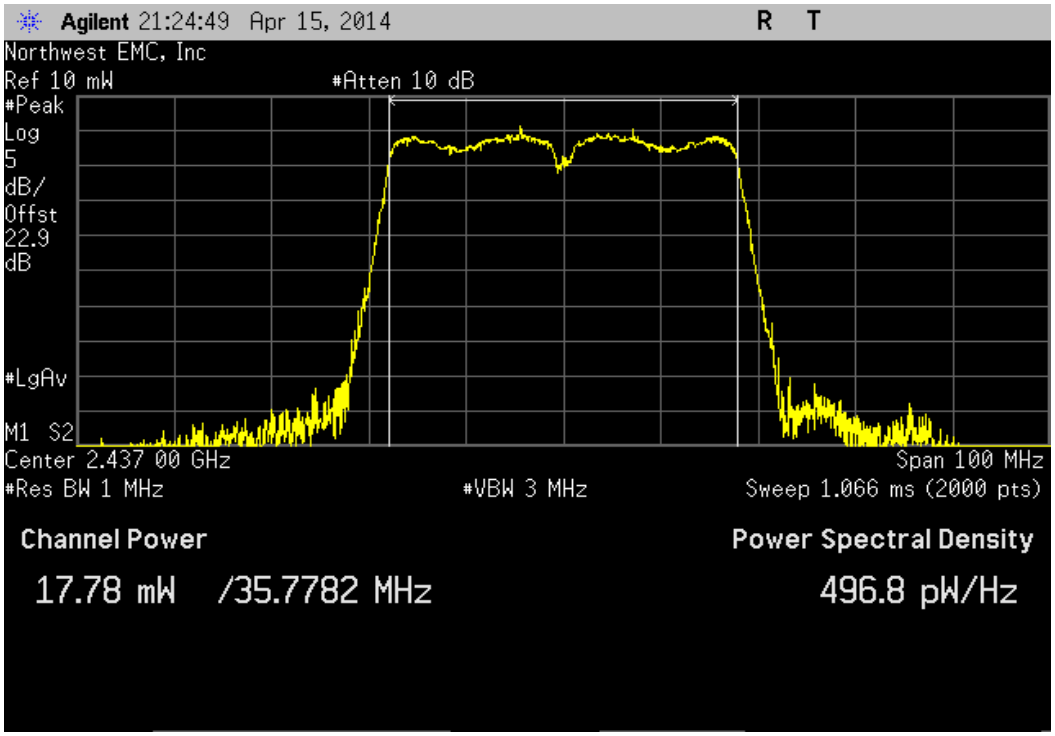
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				10.045 mW	< 1 W	Pass



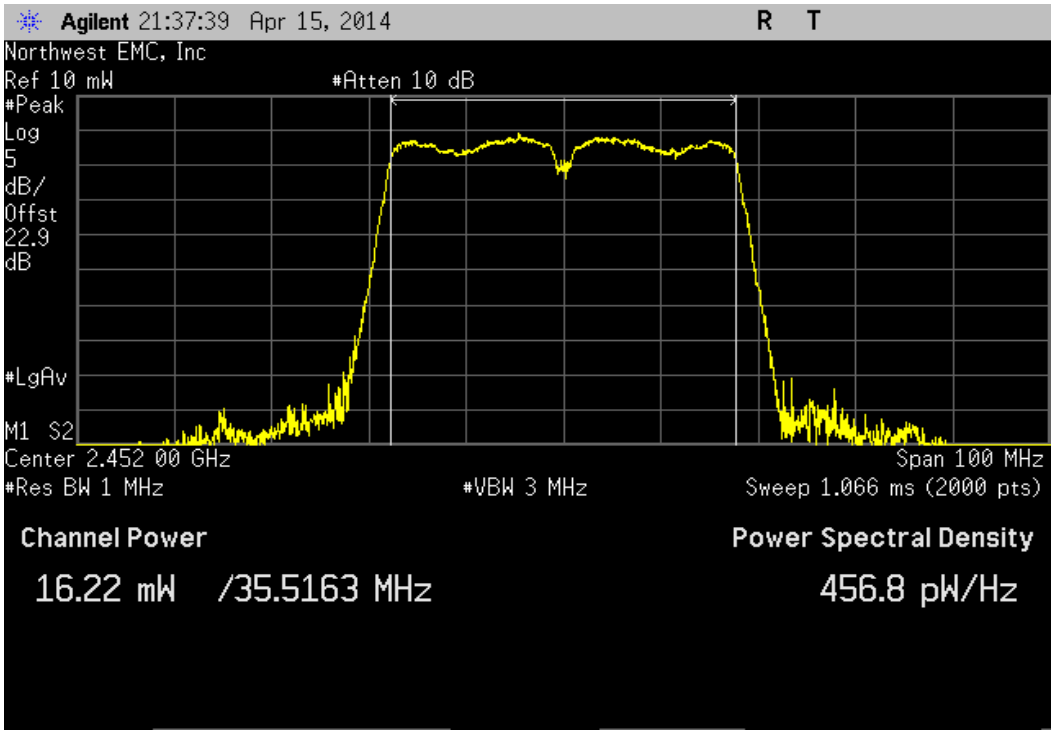
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

				Value	Limit	Result
				17.776 mW	< 1 W	Pass



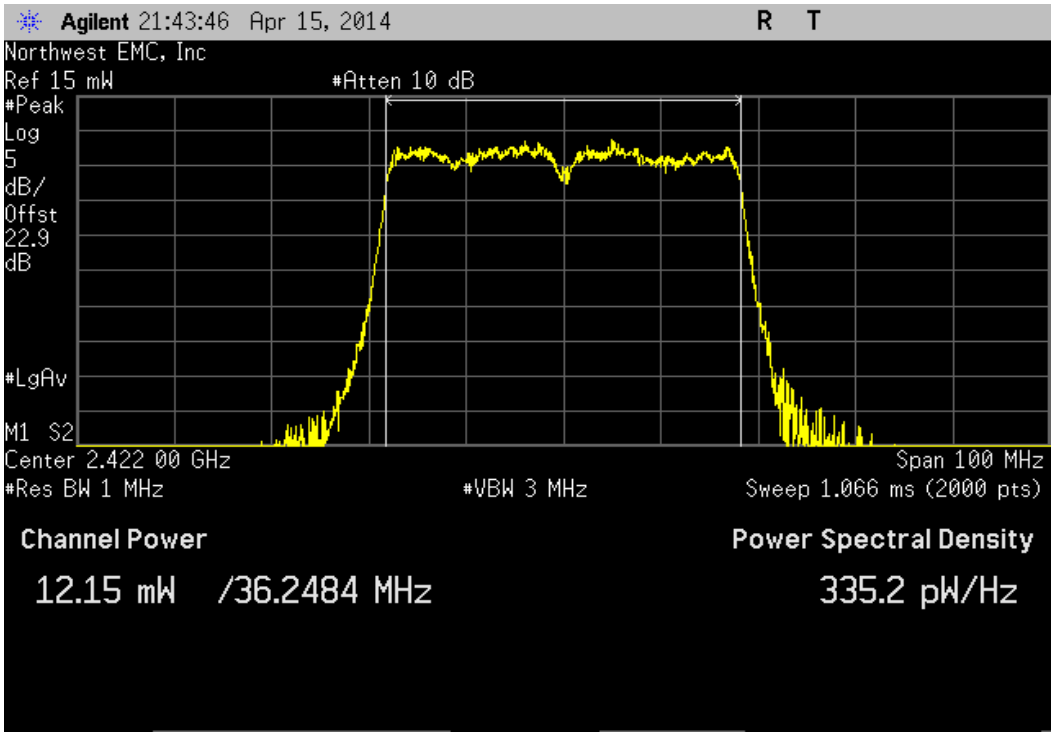
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				16.225 mW	< 1 W	Pass



Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

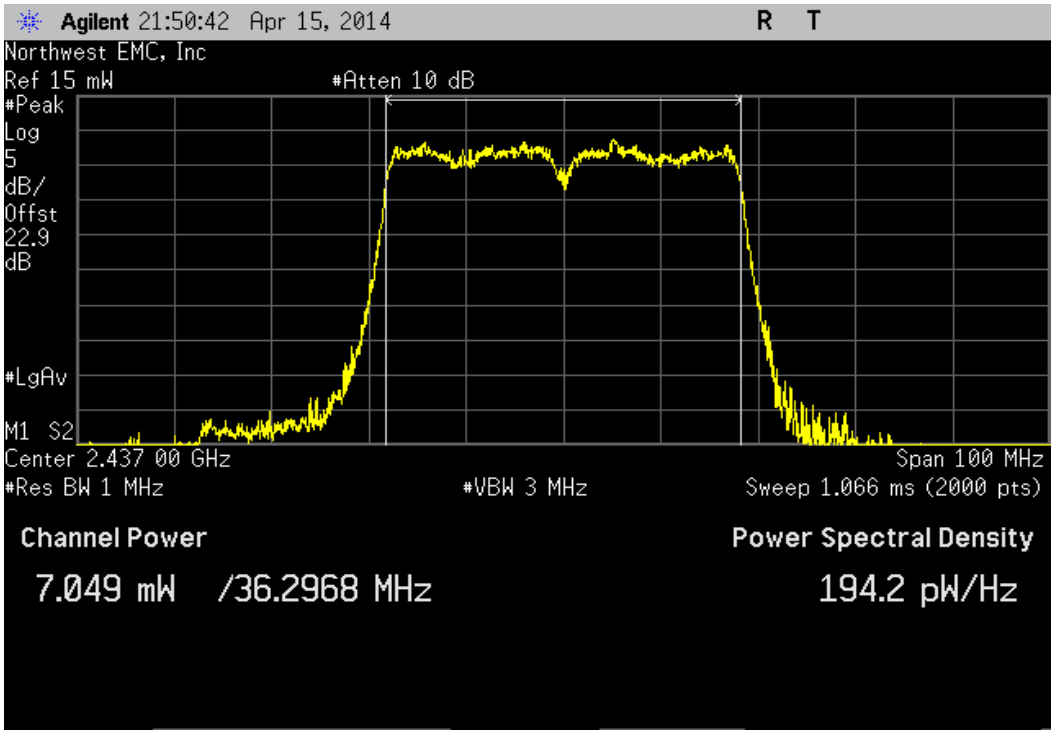
				Value	Limit	Result
				12.152 mW	< 1 W	Pass



OUTPUT POWER

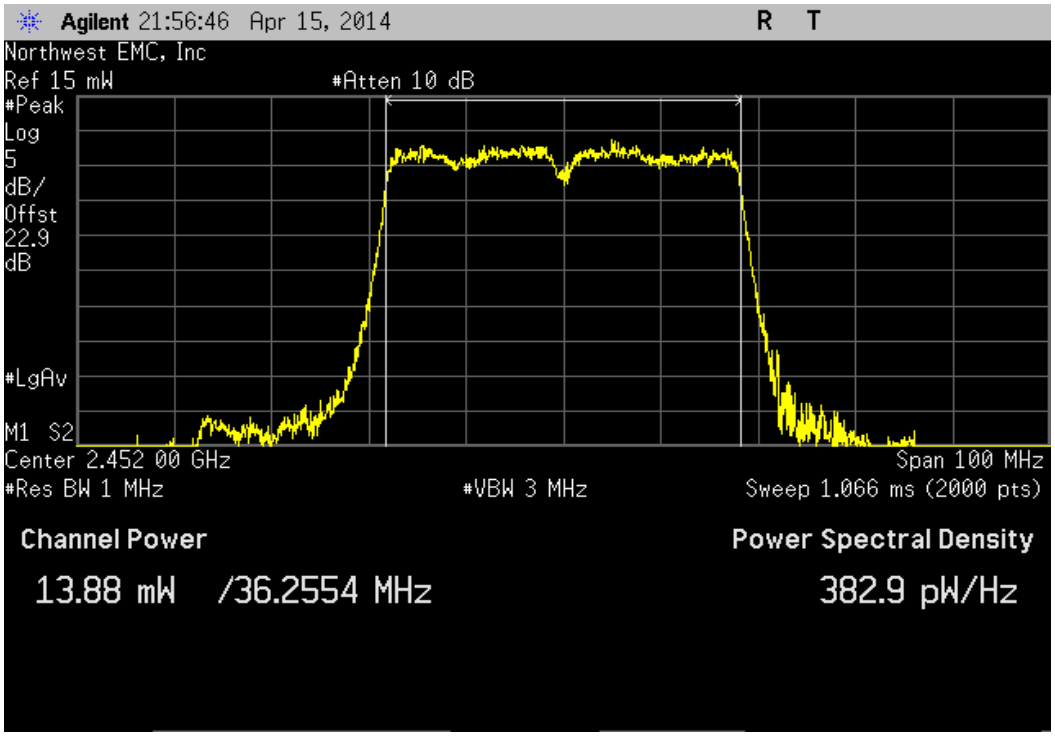
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

				Value	Limit	Result
				7.049 mW	< 1 W	Pass



Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

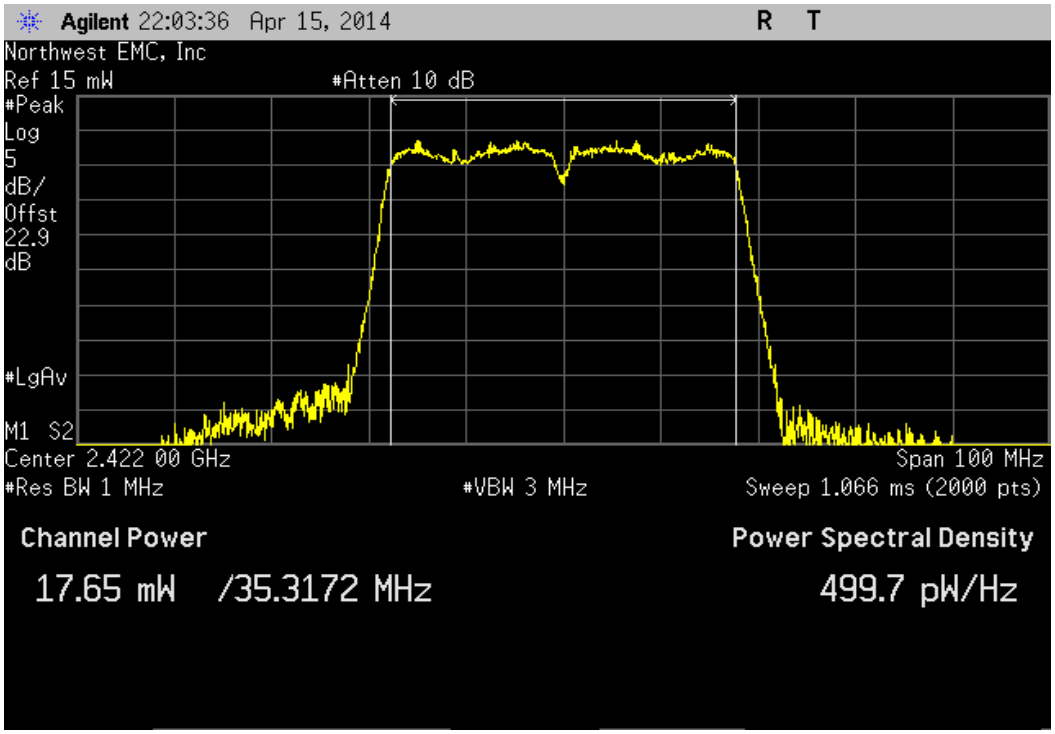
				Value	Limit	Result
				13.883 mW	< 1 W	Pass



OUTPUT POWER

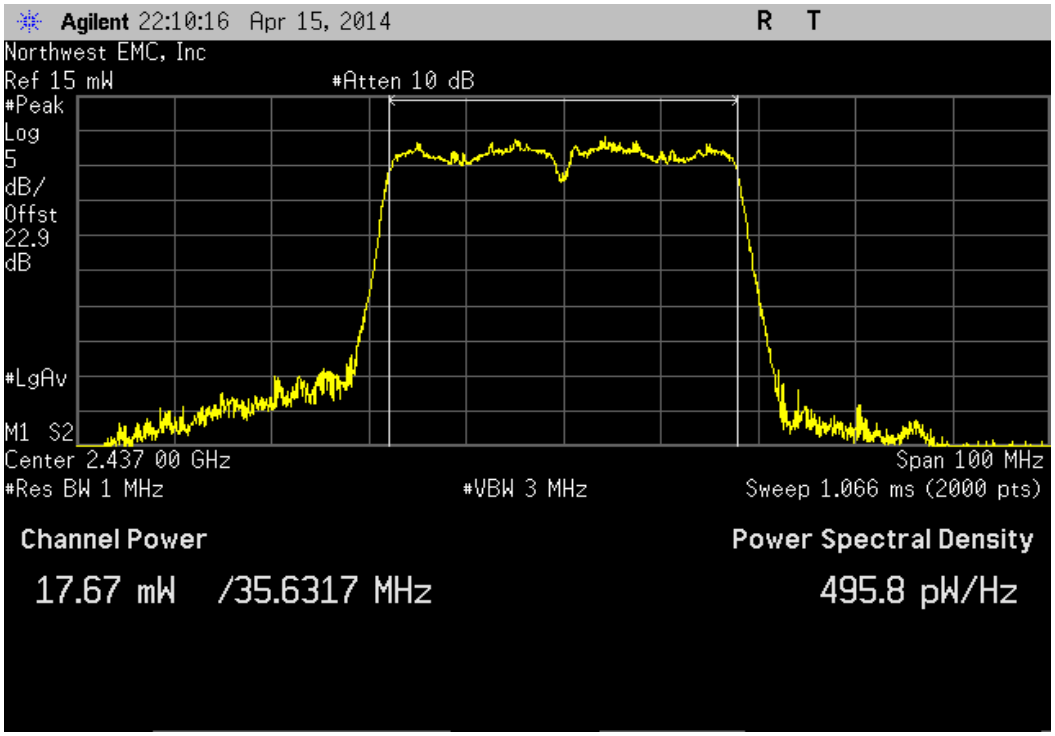
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				17.649 mW	< 1 W	Pass



Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

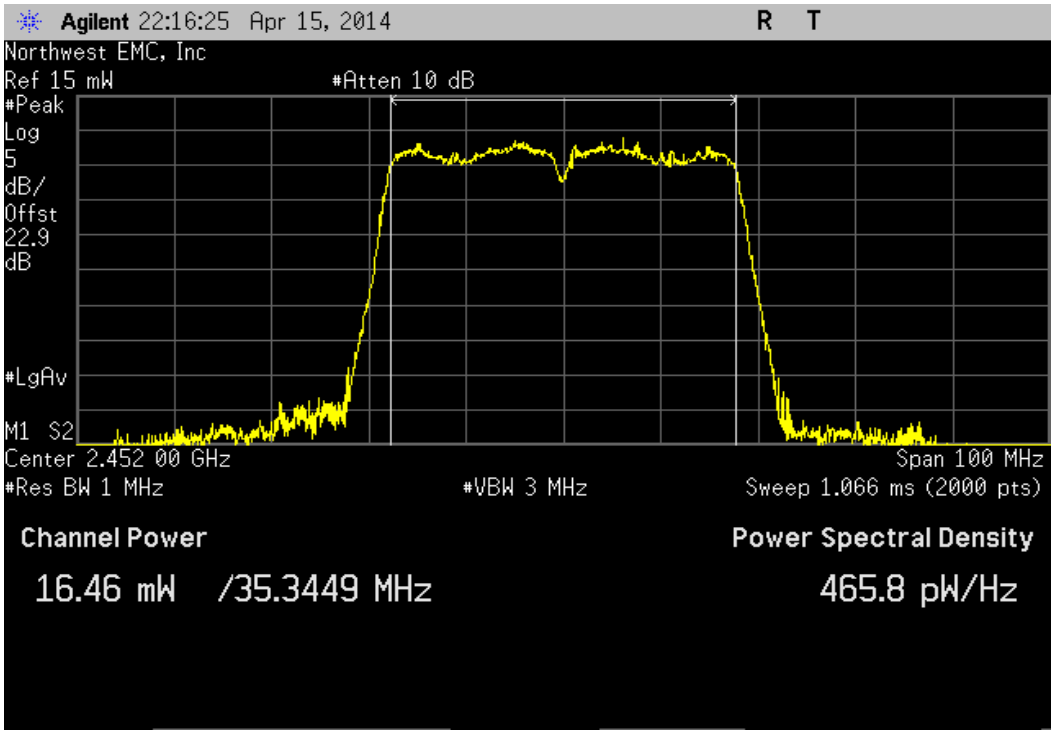
				Value	Limit	Result
				17.667 mW	< 1 W	Pass



OUTPUT POWER

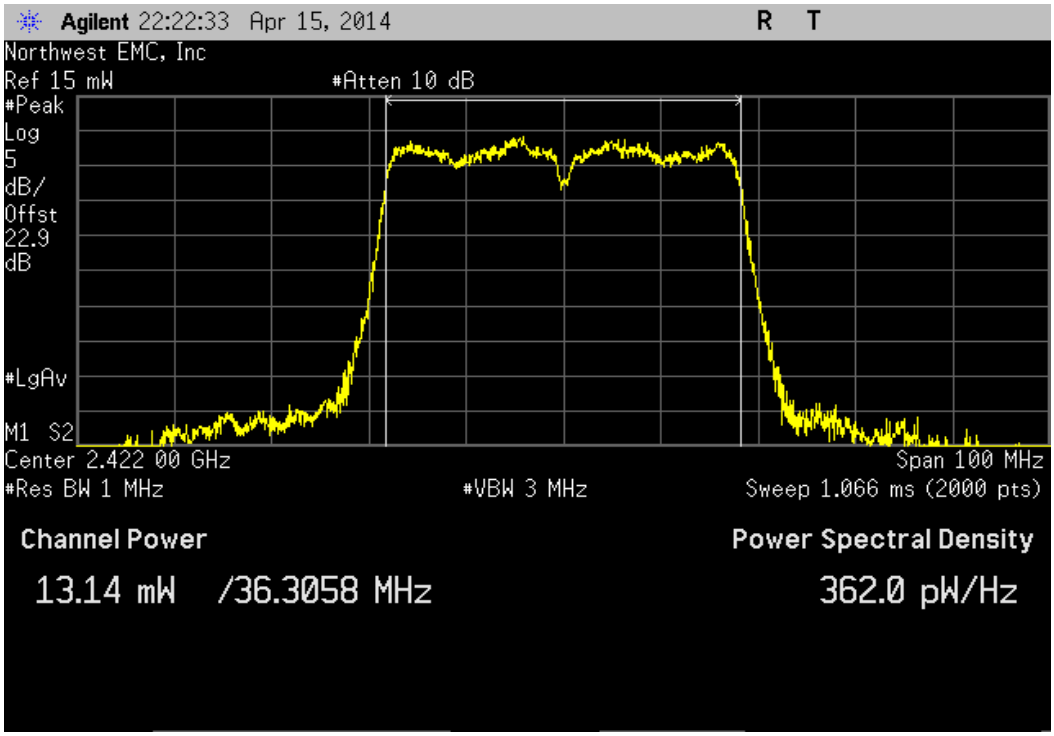
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				16.463 mW	< 1 W	Pass



Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

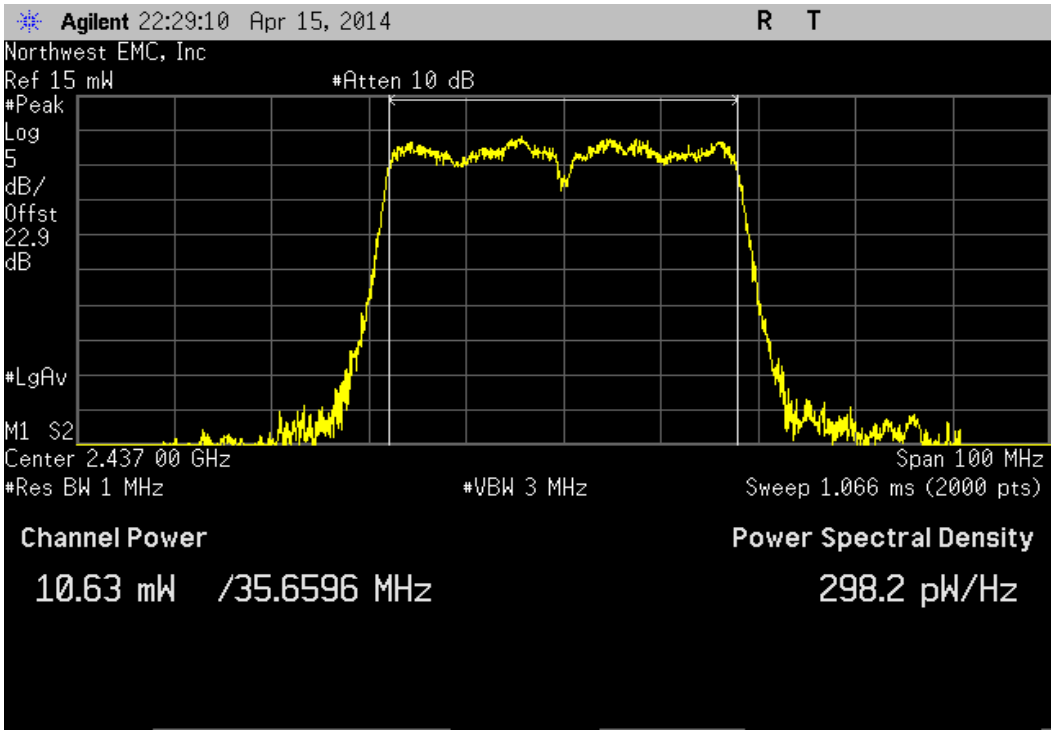
				Value	Limit	Result
				13.144 mW	< 1 W	Pass



OUTPUT POWER

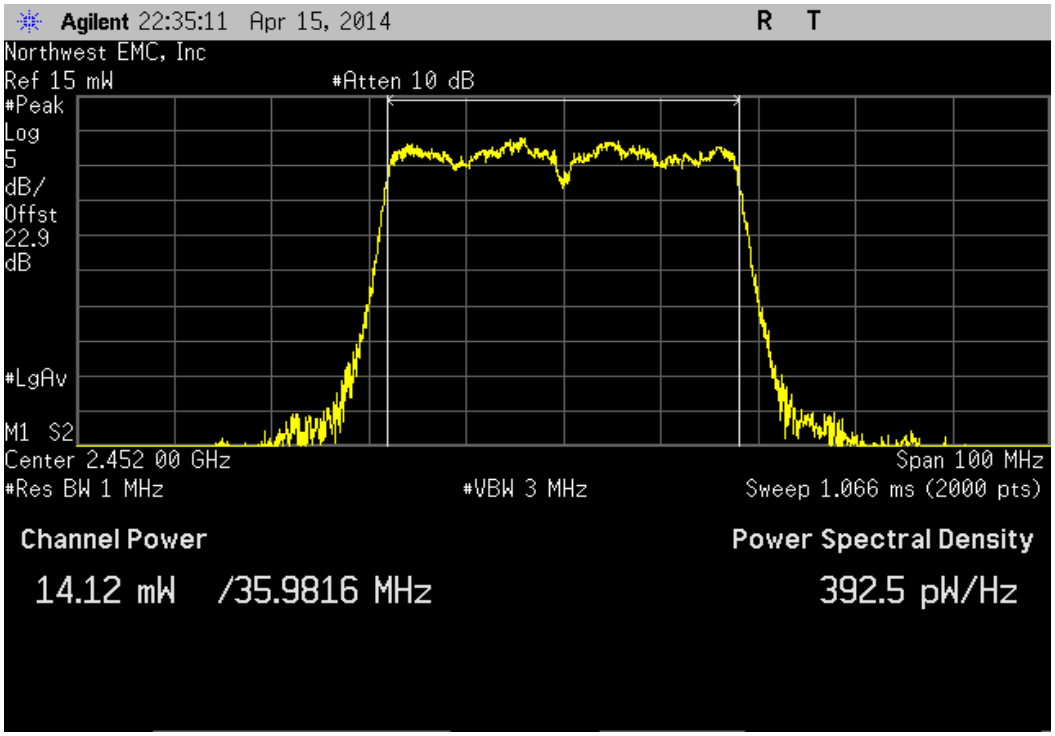
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

				Value	Limit	Result
				10.634 mW	< 1 W	Pass



Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				14.124 mW	< 1 W	Pass



OUTPUT POWER

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/18/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

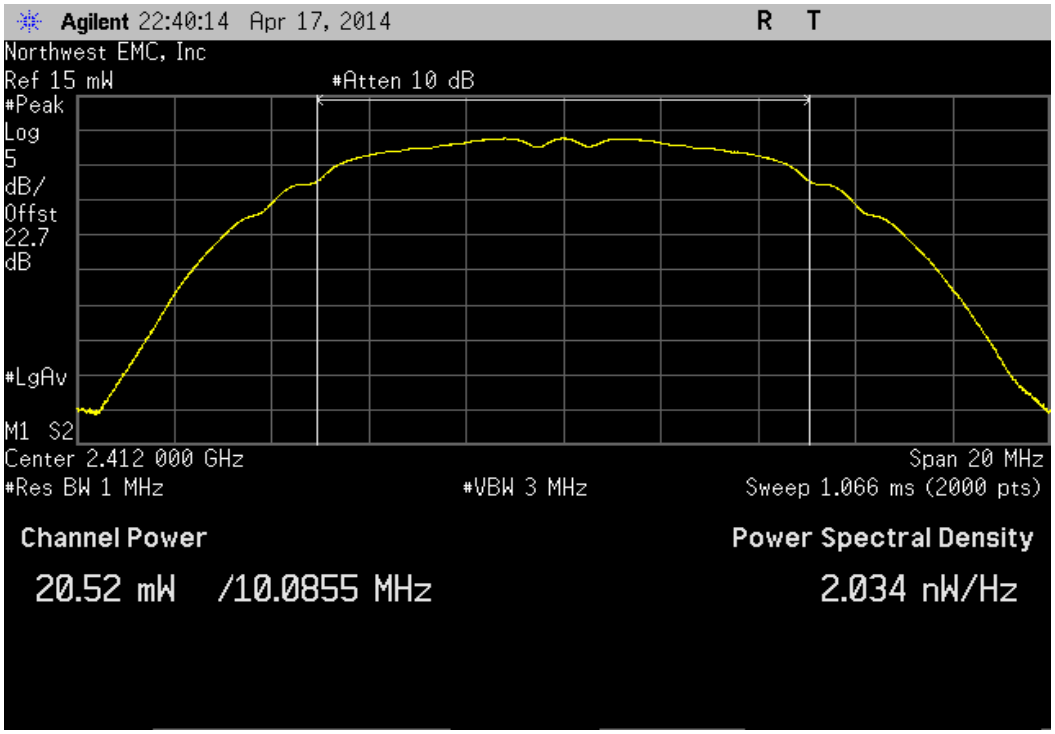
None

Configuration #	6	Signature

	Value	Limit	Result
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	20.518 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	20.04 mW	< 1 W	Pass
High Channel 11, 2462 MHz	21.266 mW	< 1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	16.001 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	15.354 mW	< 1 W	Pass
High Channel 11, 2462 MHz	16.66 mW	< 1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	18.909 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	18.97 mW	< 1 W	Pass
High Channel 11, 2462 MHz	17.929 mW	< 1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	16.226 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	16.04 mW	< 1 W	Pass
High Channel 11, 2462 MHz	15.239 mW	< 1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	16.2 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	15.577 mW	< 1 W	Pass
High Channel 11, 2462 MHz	15.399 mW	< 1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	17.607 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	17.621 mW	< 1 W	Pass
High Channel 11, 2462 MHz	16.825 mW	< 1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	17.004 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz	16.988 mW	< 1 W	Pass
High Channel 11, 2462 MHz	15.95 mW	< 1 W	Pass

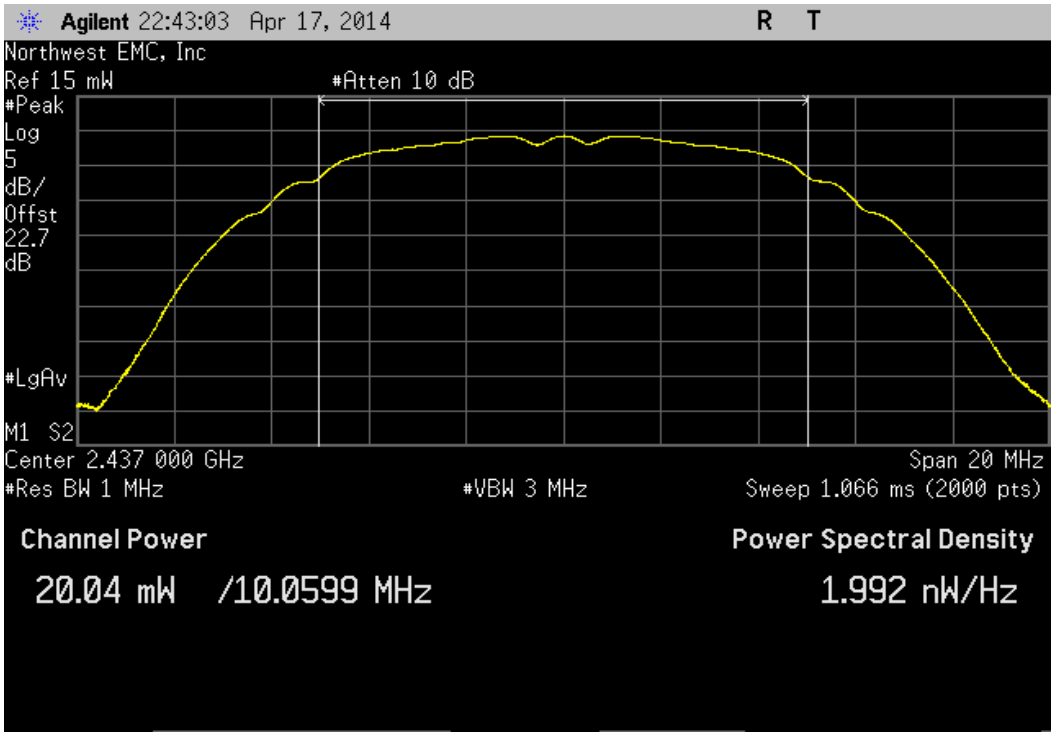
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				20.518 mW	< 1 W	Pass



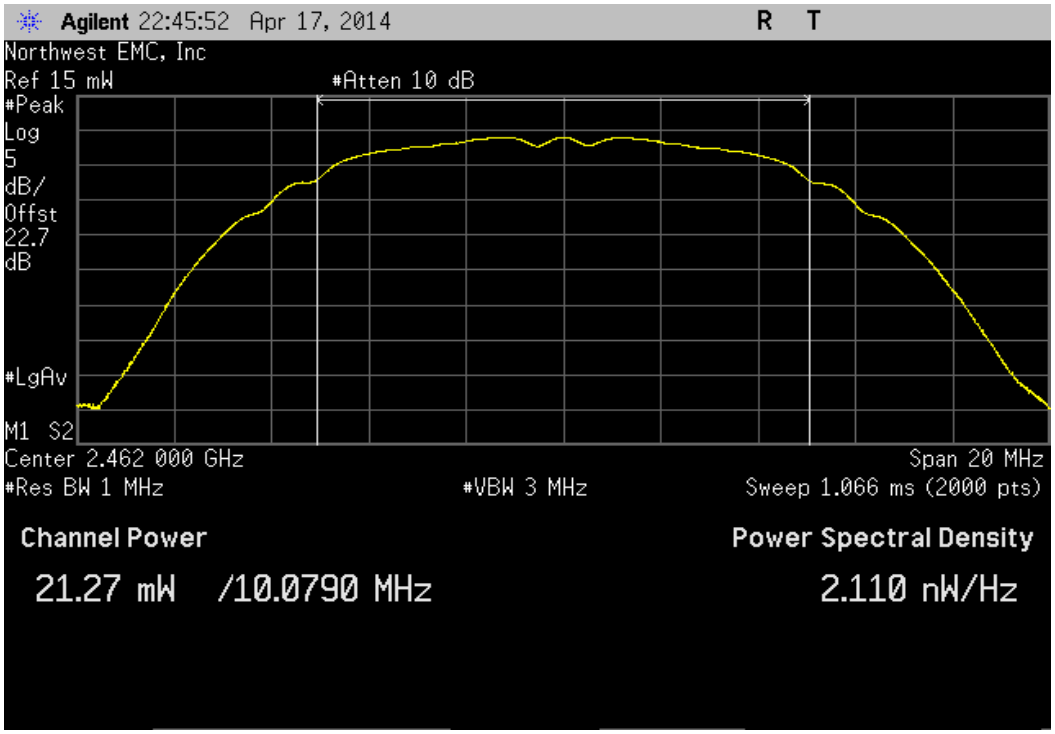
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				20.04 mW	< 1 W	Pass



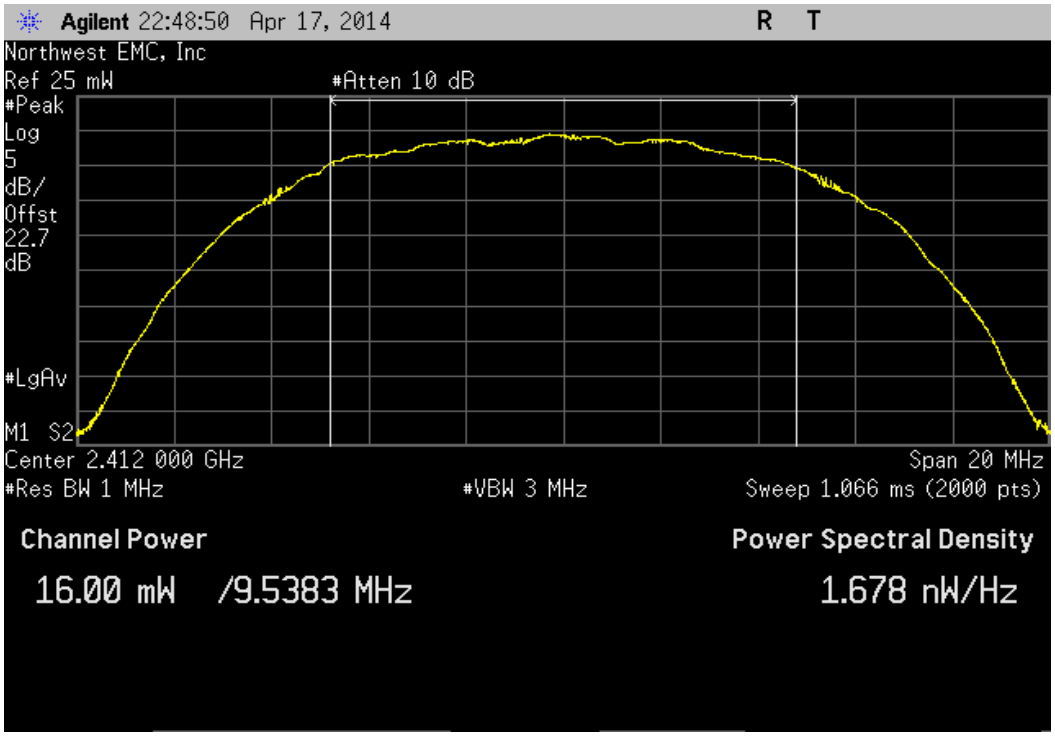
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				21.266 mW	< 1 W	Pass



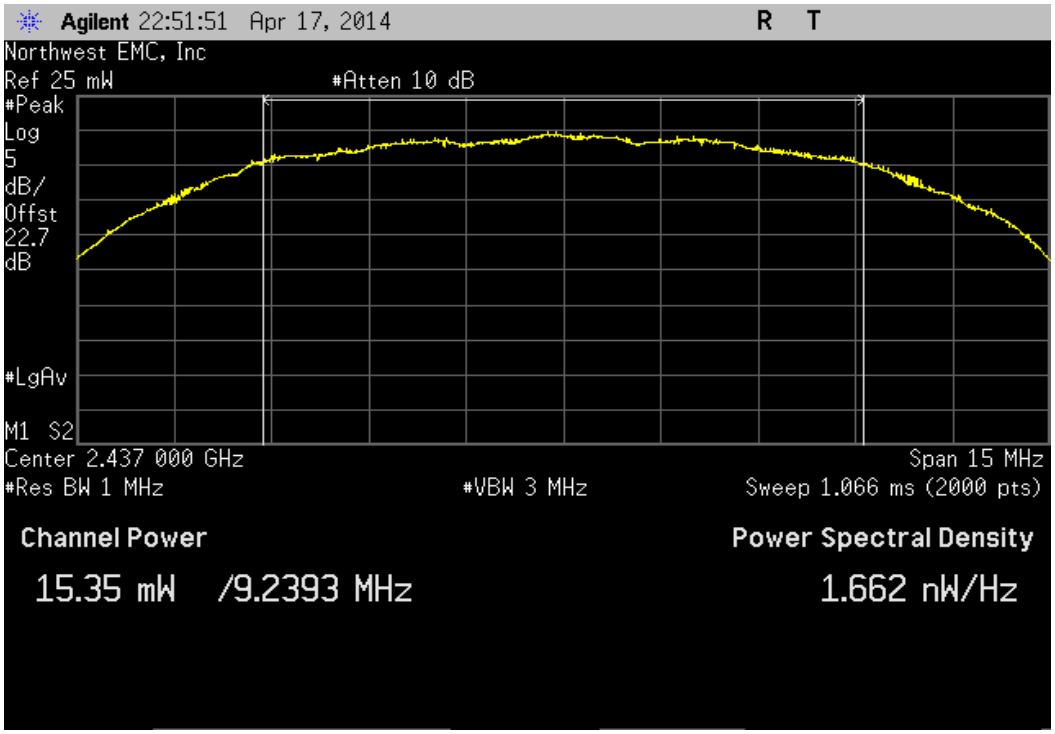
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				16.001 mW	< 1 W	Pass



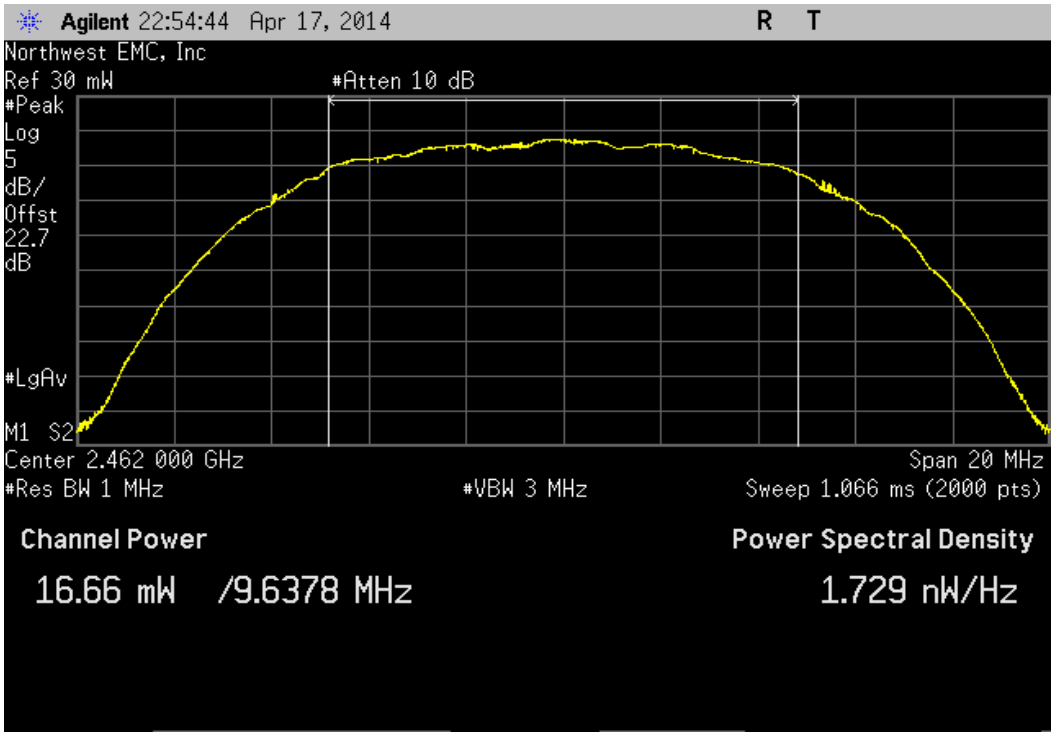
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				15.354 mW	< 1 W	Pass



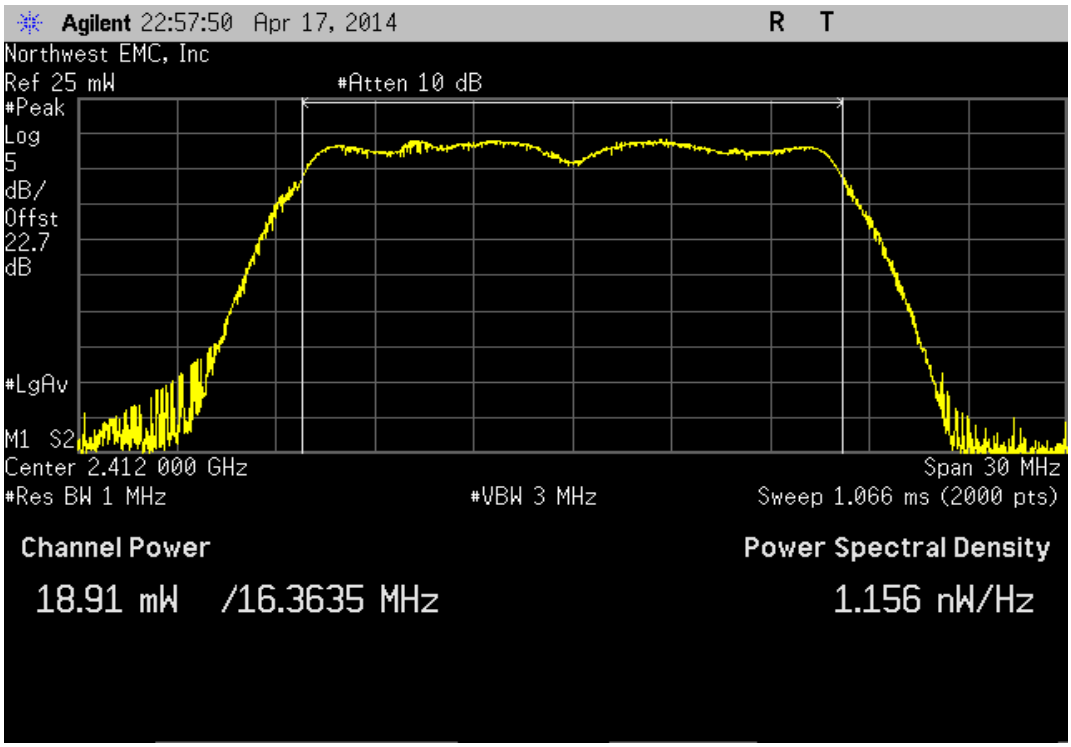
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.66 mW	< 1 W	Pass



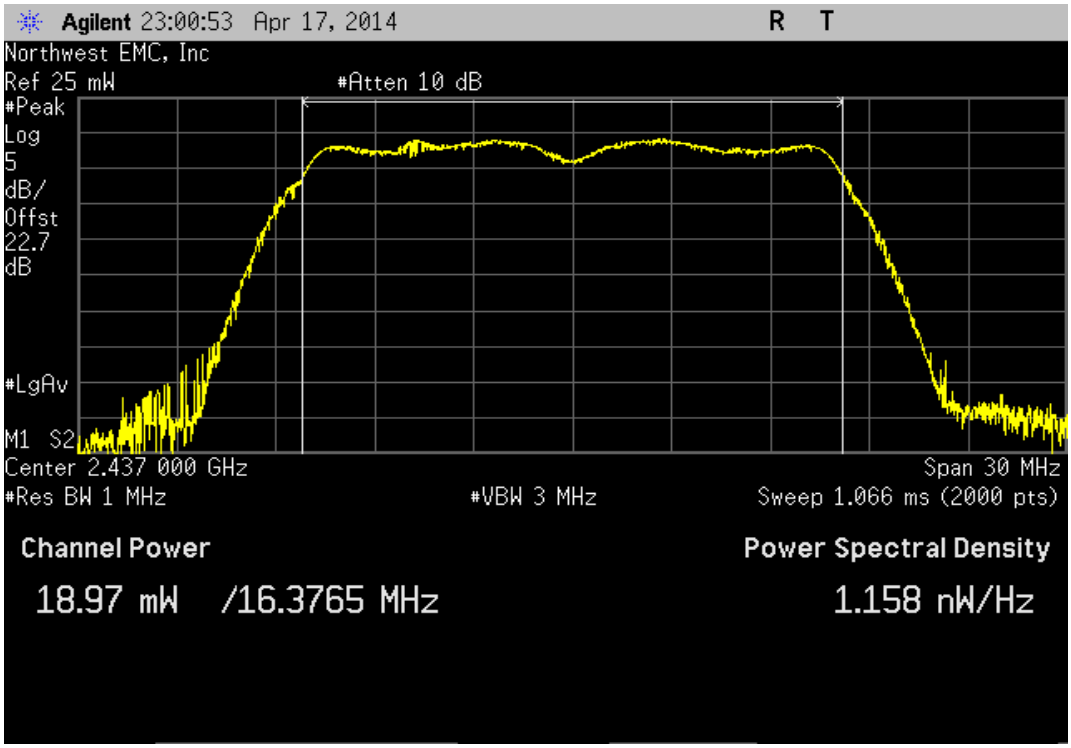
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				18.909 mW	< 1 W	Pass



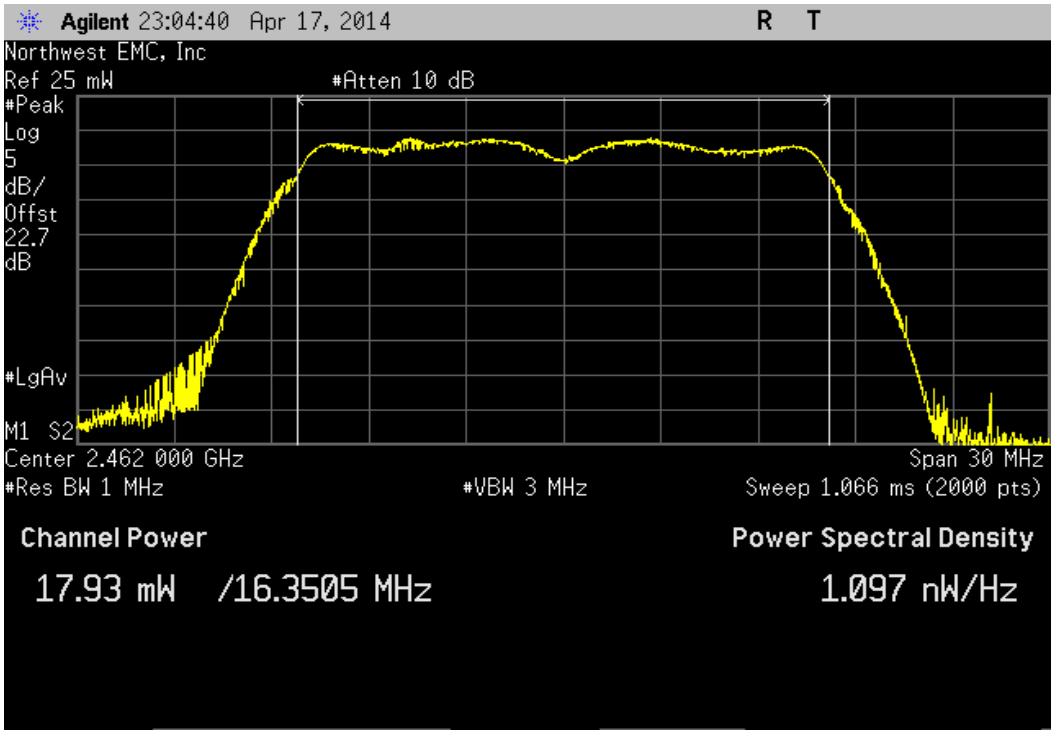
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				18.97 mW	< 1 W	Pass



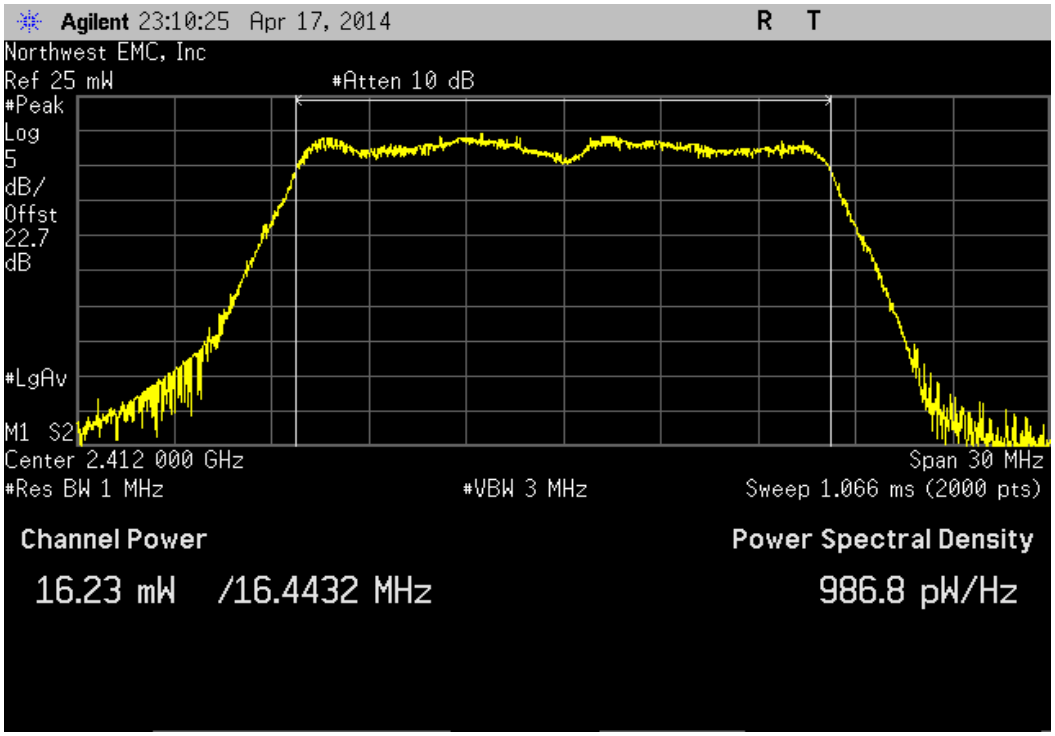
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

					Value	Limit	Result
					17.929 mW	< 1 W	Pass



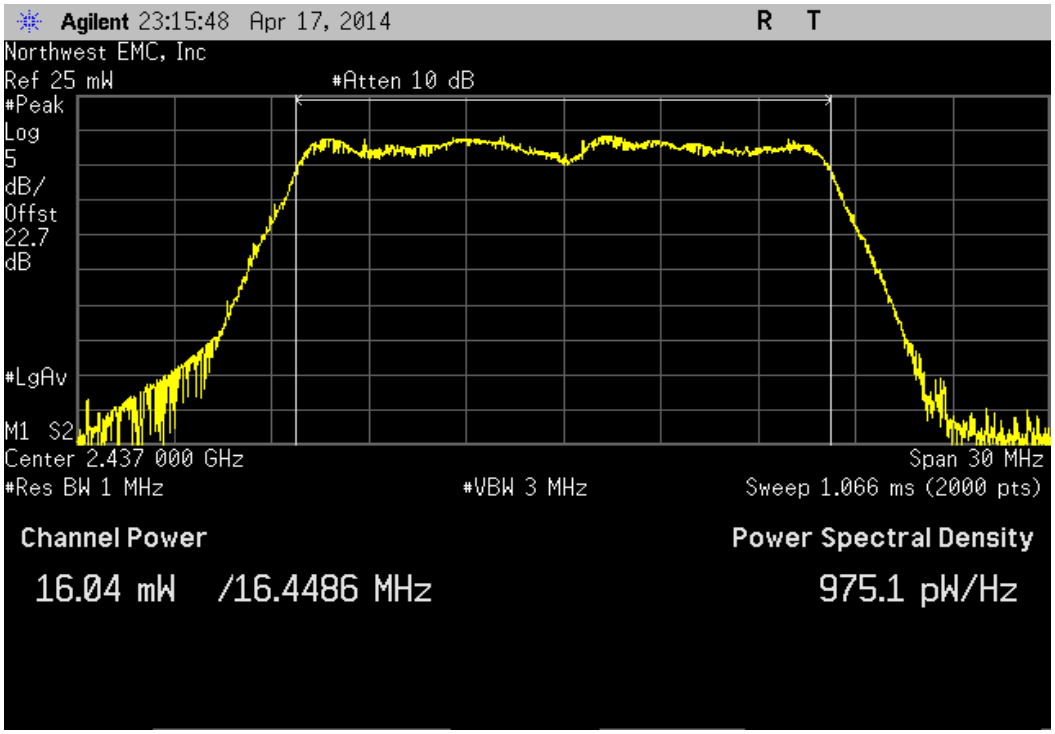
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

					Value	Limit	Result
					16.226 mW	< 1 W	Pass



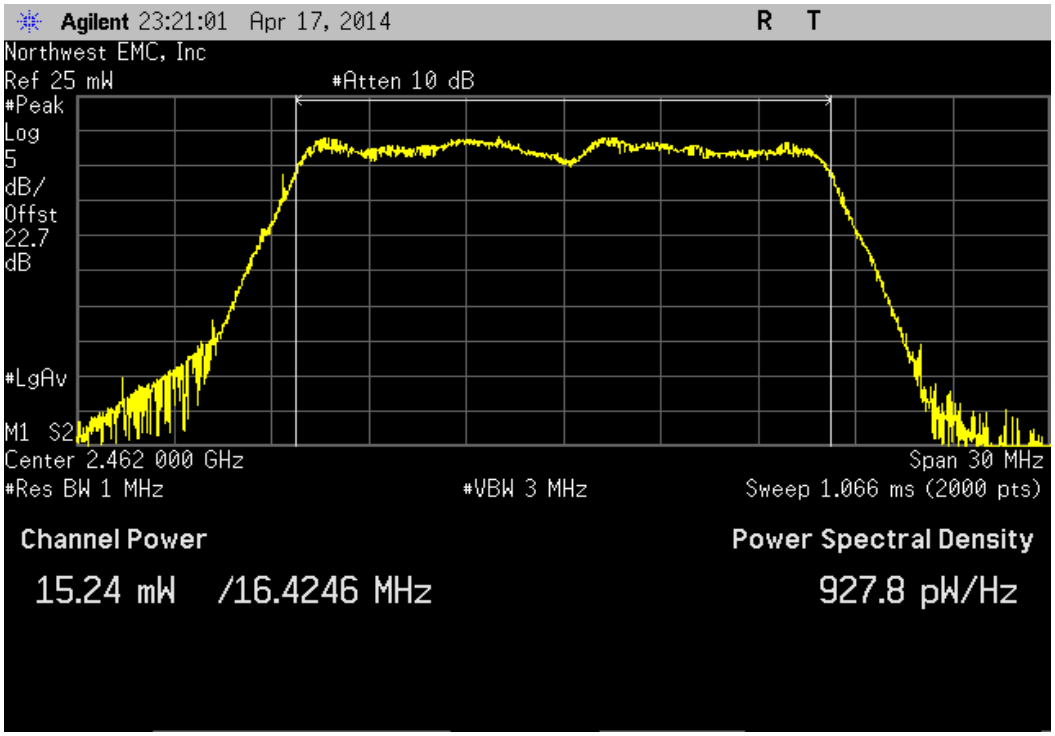
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				16.04 mW	< 1 W	Pass



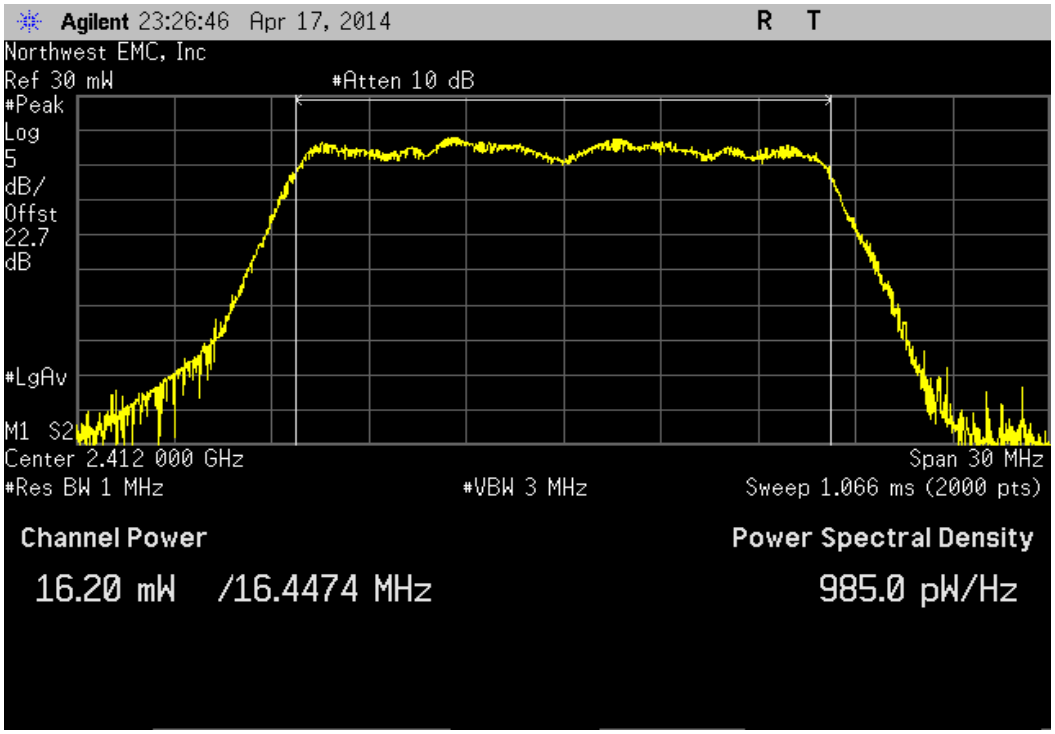
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				15.239 mW	< 1 W	Pass



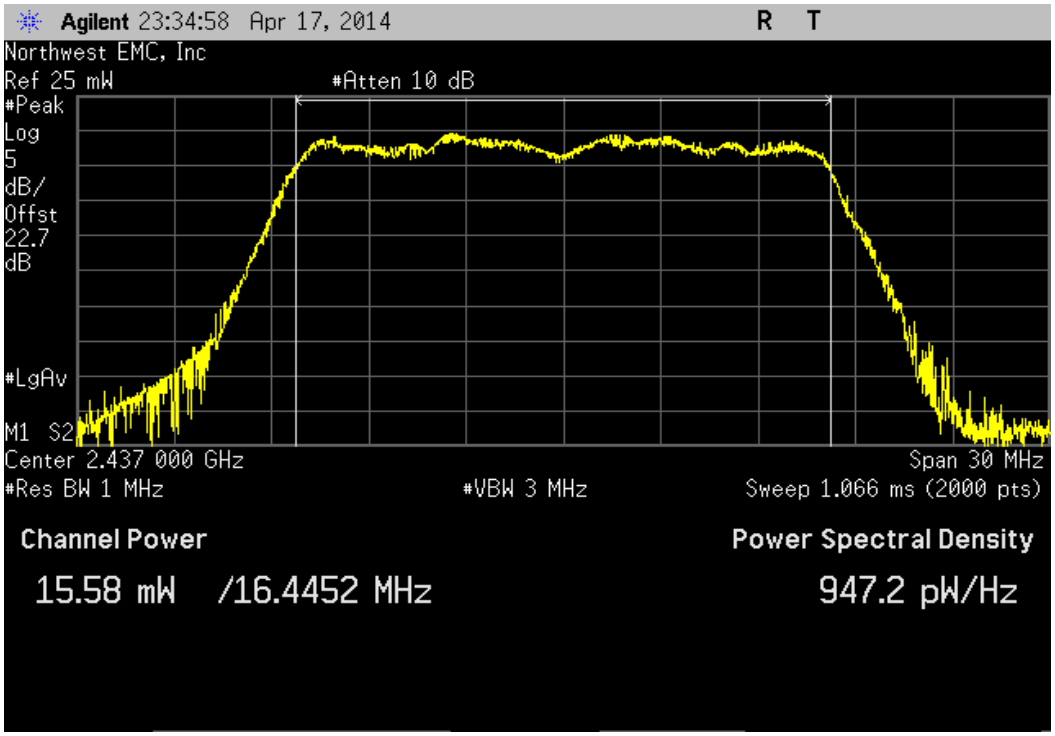
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				16.2 mW	< 1 W	Pass



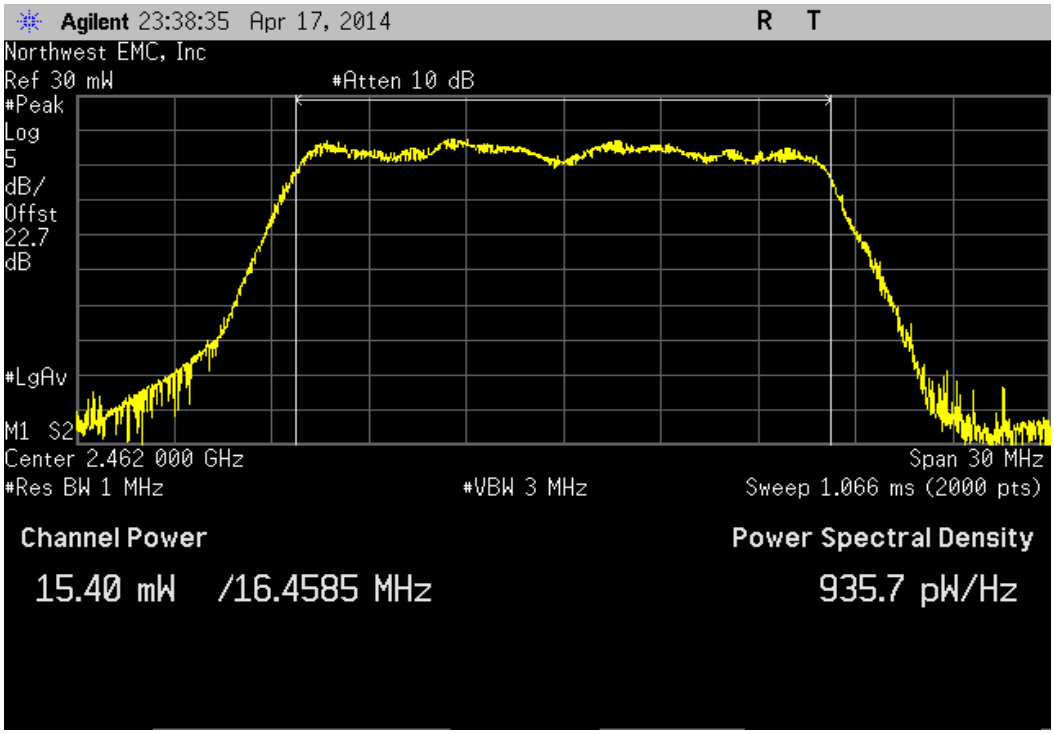
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				15.577 mW	< 1 W	Pass



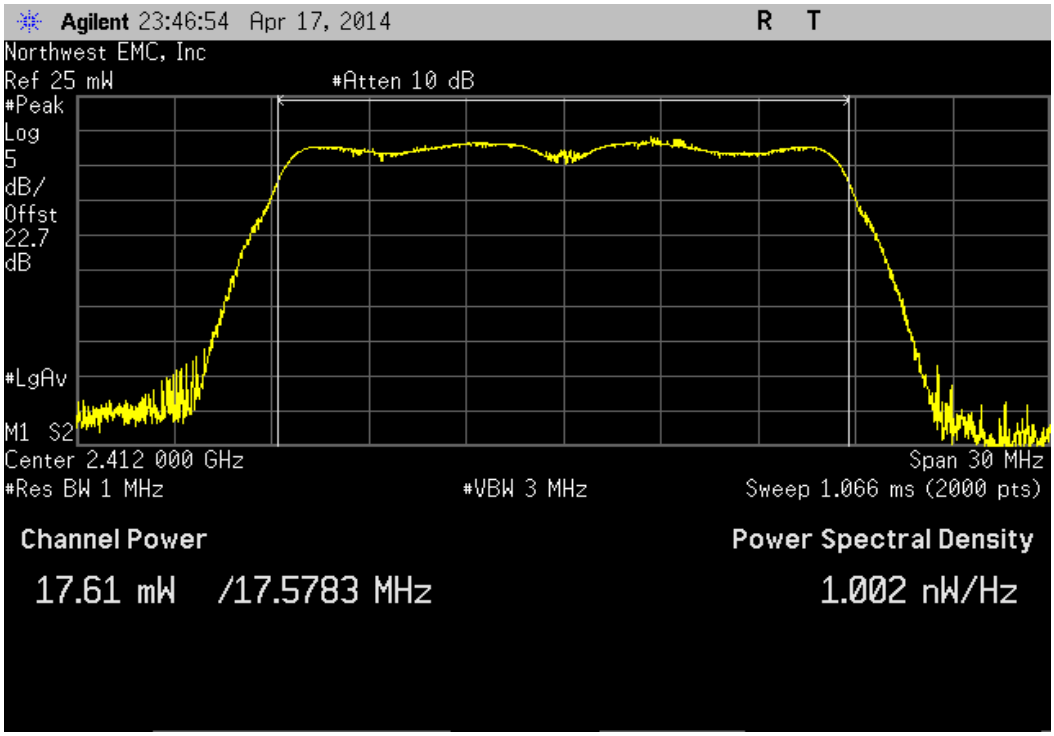
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

				Value	Limit	Result
				15.399 mW	< 1 W	Pass



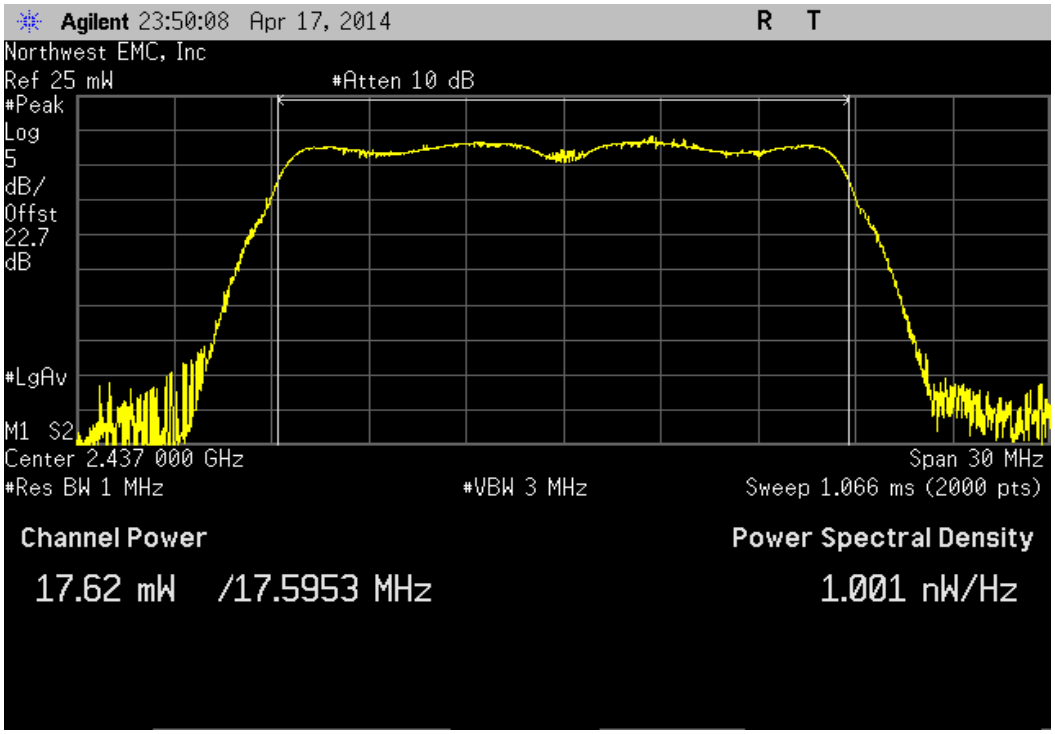
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.607 mW	< 1 W	Pass



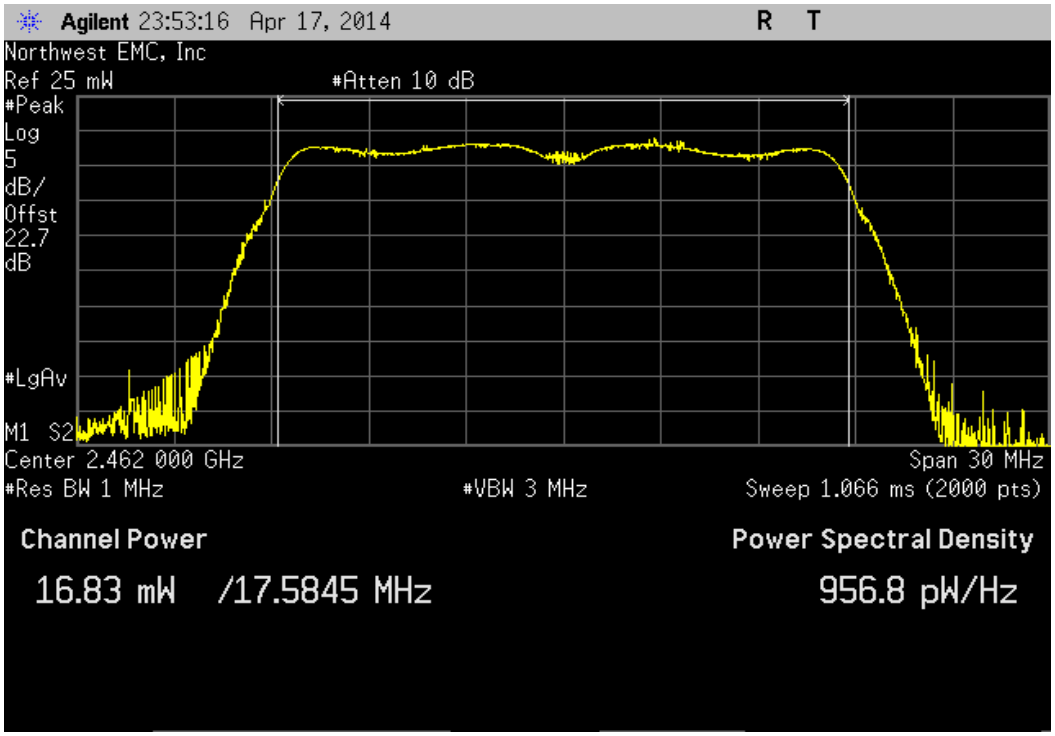
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

				Value	Limit	Result
				17.621 mW	< 1 W	Pass



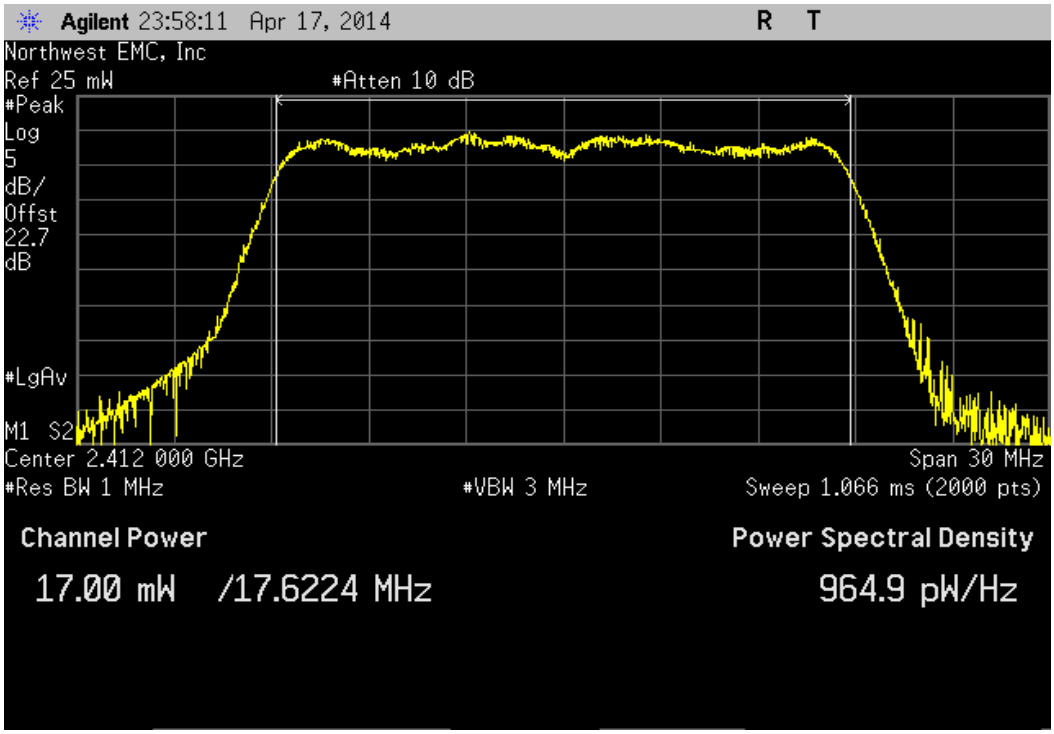
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

				Value	Limit	Result
				16.825 mW	< 1 W	Pass



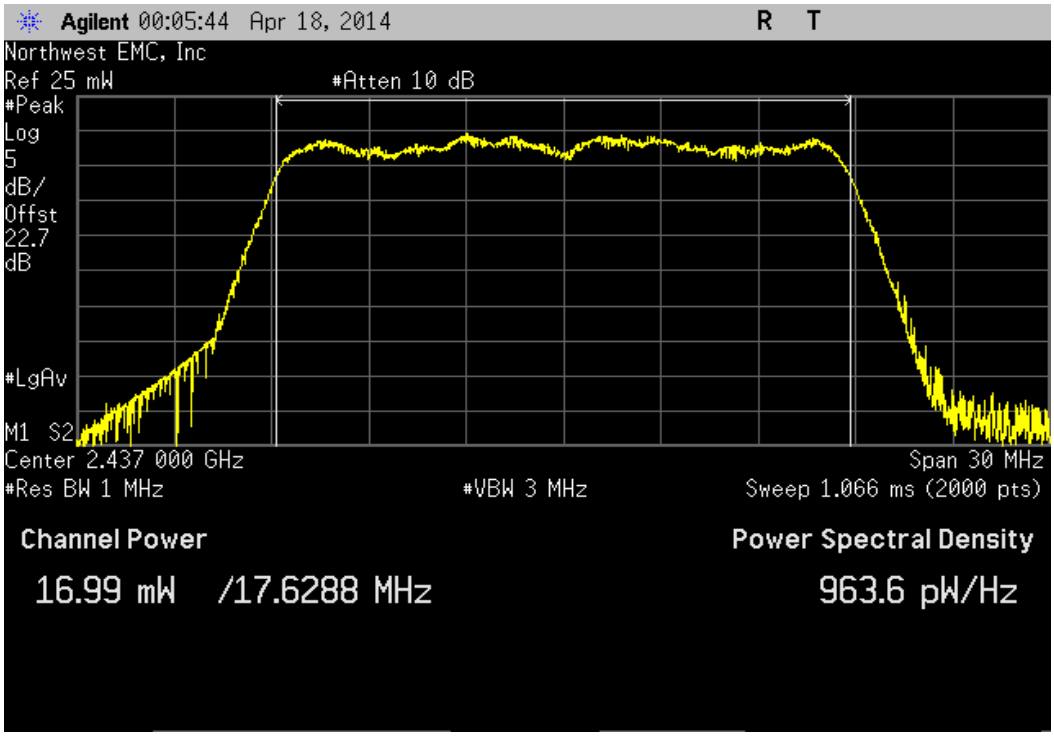
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

				Value	Limit	Result
				17.004 mW	< 1 W	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

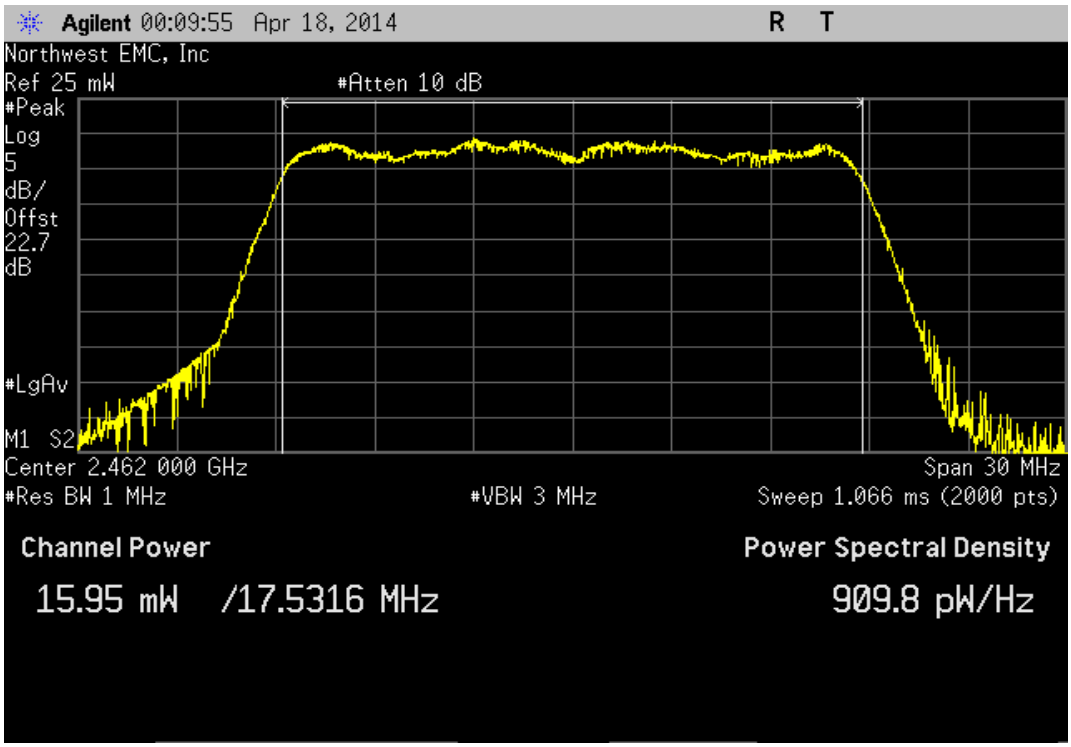
				Value	Limit	Result
				16.988 mW	< 1 W	Pass



OUTPUT POWER

20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

				Value	Limit	Result
				15.95 mW	< 1 W	Pass



OUTPUT POWER

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

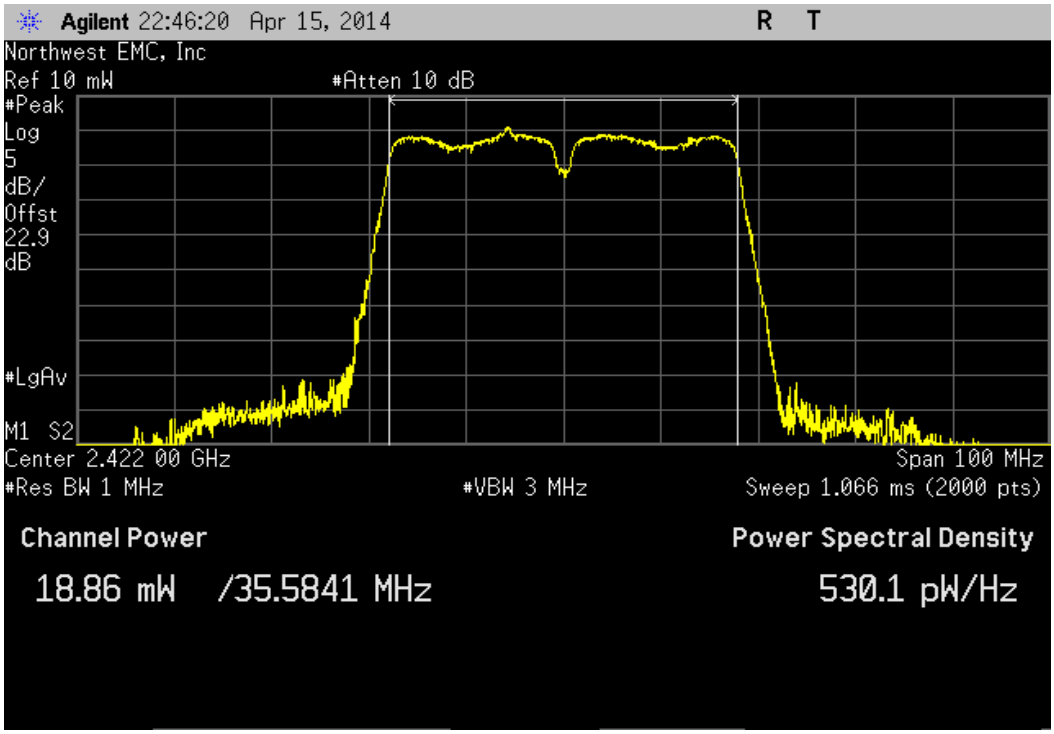
None

Configuration #	6	Signature

	Value	Limit	Result
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS0			
1/5 Low Channel, 2422 MHz	18.863 mW	< 1 W	Pass
4/8 Mid Channel, 2437 MHz	18.286 mW	< 1 W	Pass
7/11 High Channel, 2452 MHz	17.661 mW	< 1 W	Pass
802.11(n) MCS7			
1/5 Low Channel, 2422 MHz	16.68 mW	< 1 W	Pass
4/8 Mid Channel, 2437 MHz	14.305 mW	< 1 W	Pass
7/11 High Channel, 2452 MHz	16.041 mW	< 1 W	Pass

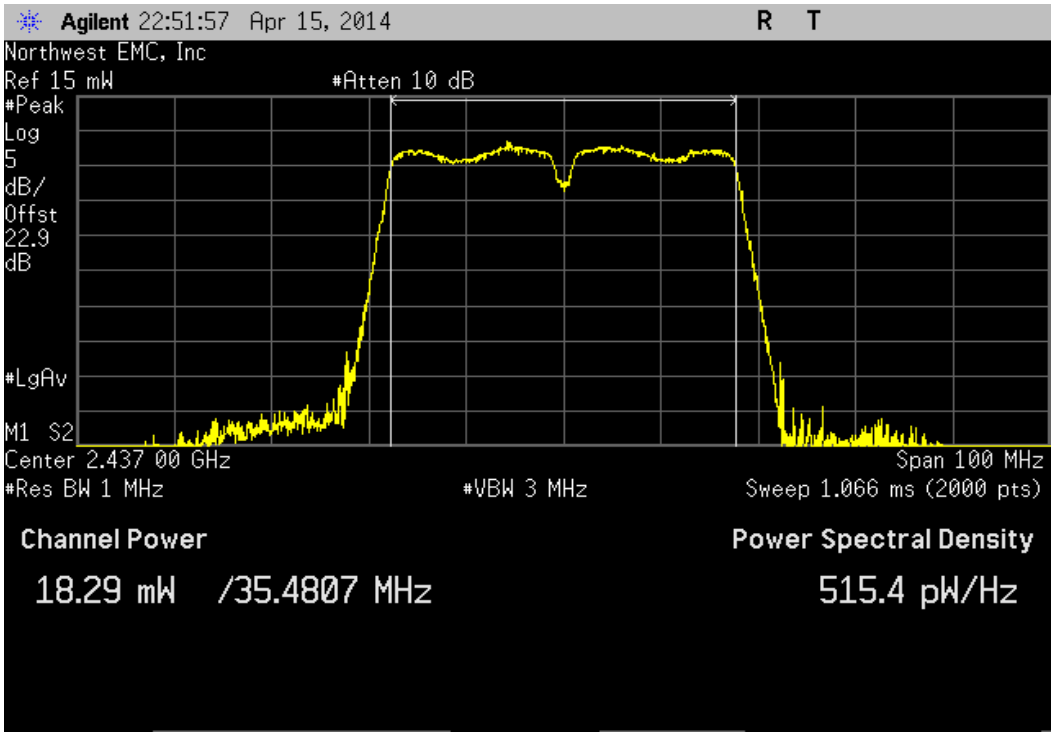
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 1/5 Low Channel, 2422 MHz

				Value	Limit	Result
				18.863 mW	< 1 W	Pass



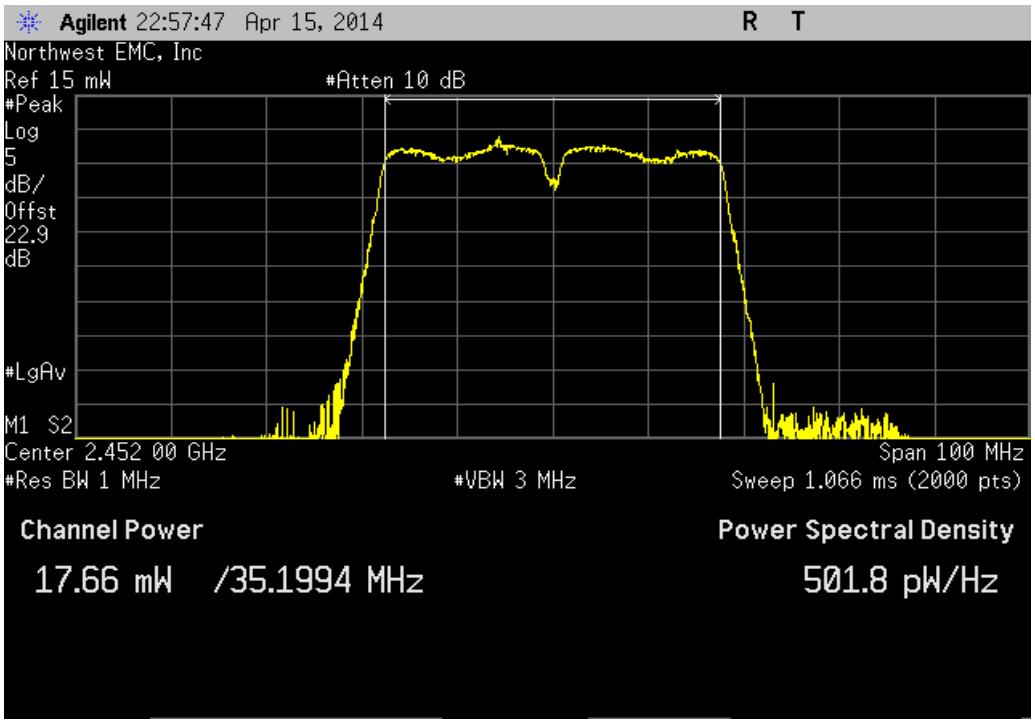
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 4/8 Mid Channel, 2437 MHz

				Value	Limit	Result
				18.286 mW	< 1 W	Pass



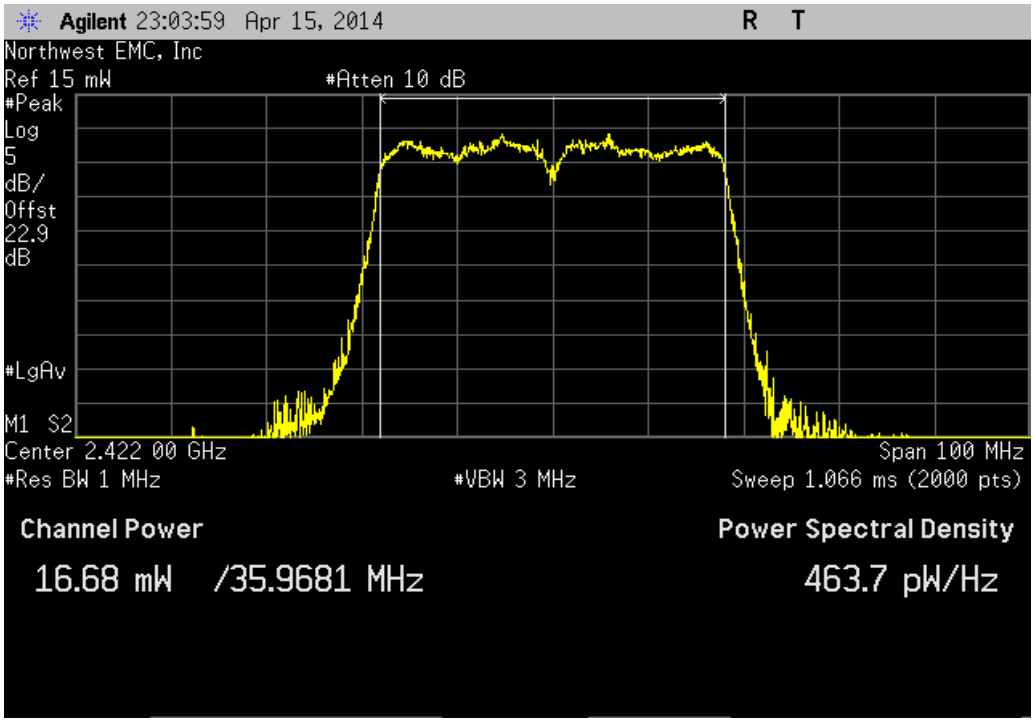
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 7/11 High Channel, 2452 MHz

				Value	Limit	Result
				17.661 mW	< 1 W	Pass



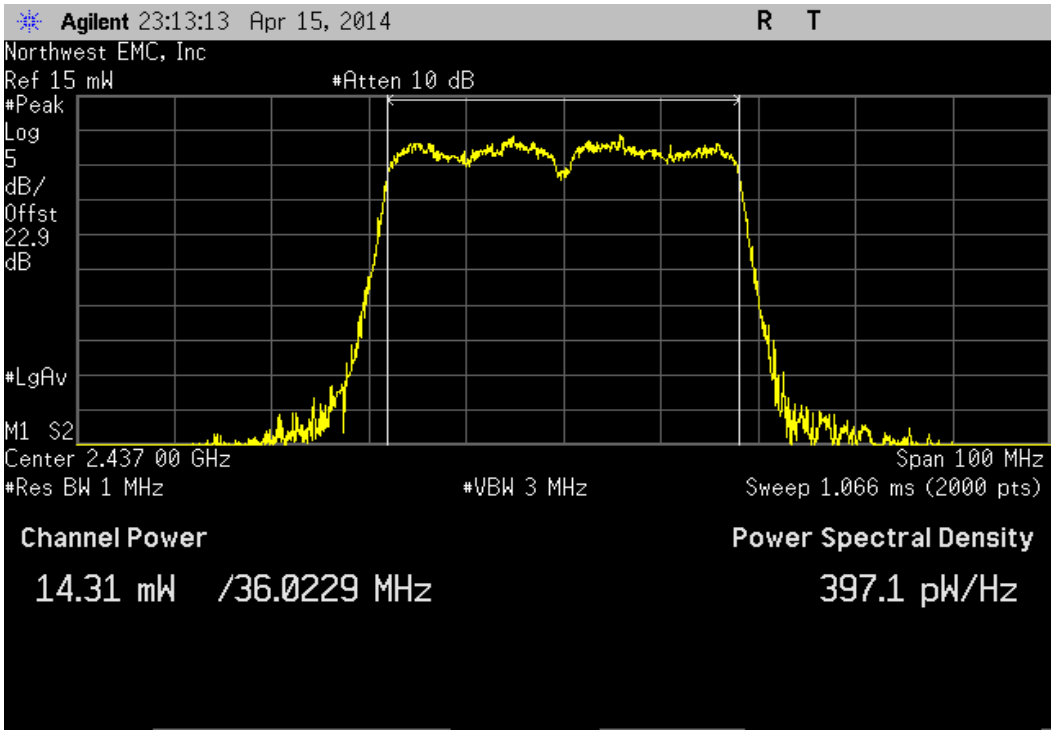
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 1/5 Low Channel, 2422 MHz

				Value	Limit	Result
				16.68 mW	< 1 W	Pass



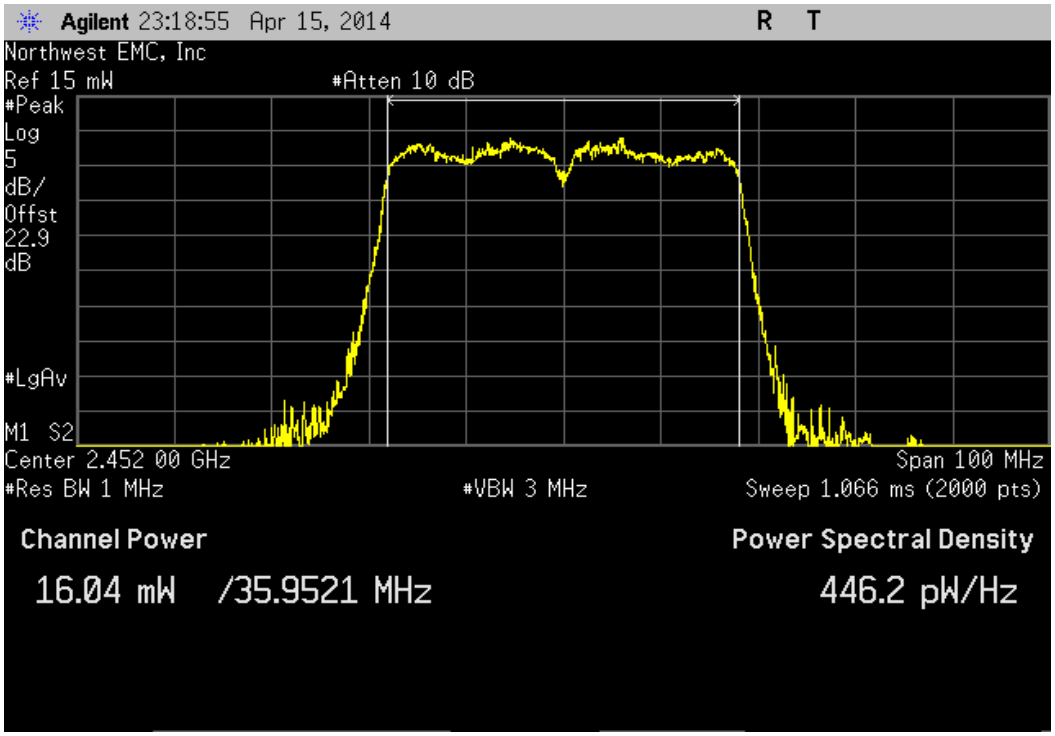
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 4/8 Mid Channel, 2437 MHz

				Value	Limit	Result
				14.305 mW	< 1 W	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 7/11 High Channel, 2452 MHz

				Value	Limit	Result
				16.041 mW	< 1 W	Pass



OUTPUT POWER

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/23/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

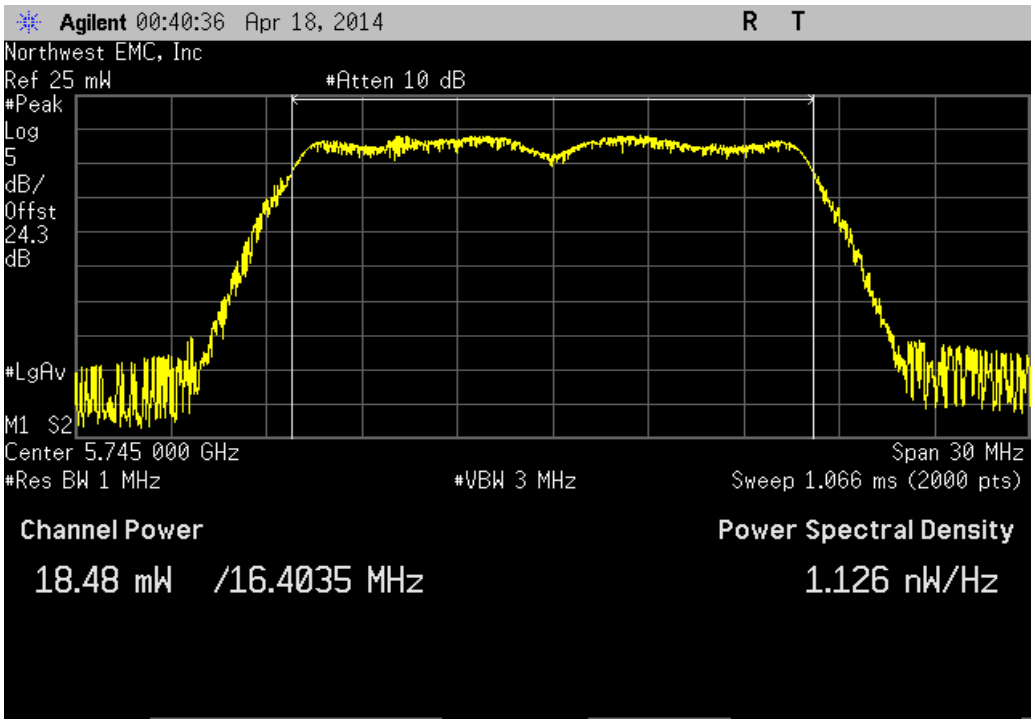
None

Configuration #	6	Signature

	Value	Limit	Result
IEEE 802.11(a)			
20 MHz			
5725 MHz - 5850 MHz Band			
6 Mbps			
Low Channel 149, 5745 M	18.477 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	19.037 mW	< 1 W	Pass
High Channel 165, 5825 M	17.732 mW	< 1 W	Pass
36 Mbps			
Low Channel 149, 5745 M	16.893 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	16.504 mW	< 1 W	Pass
High Channel 165, 5825 M	16.191 mW	< 1 W	Pass
54 Mbps			
Low Channel 149, 5745 M	16.307 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	16.038 mW	< 1 W	Pass
High Channel 165, 5825 M	16.284 mW	< 1 W	Pass
IEEE 802.11(n)			
20 MHz			
5725 MHz - 5850 MHz Band			
HT, MCS7			
Low Channel 149, 5745 M	17.036 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	16.486 mW	< 1 W	Pass
High Channel 165, 5825 M	16.636 mW	< 1 W	Pass
40 MHz			
5725 MHz - 5850 MHz Band			
HT, MCS7			
Low Channel 149/153, 575	17.449 mW	< 1 W	Pass
High Channel 157/161, 575	16.043 mW	< 1 W	Pass
IEEE 802.11(ac)			
20 MHz			
5725 MHz - 5850 MHz Band			
VHT, MCS0			
Low Channel 149, 5745 M	17.742 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	17.149 mW	< 1 W	Pass
High Channel 165, 5825 M	17.504 mW	< 1 W	Pass
VHT, MCS8			
Low Channel 149, 5745 M	18.162 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	16.952 mW	< 1 W	Pass
High Channel 165, 5825 M	16.821 mW	< 1 W	Pass
40 MHz			
5725 MHz - 5850 MHz Band			
VHT, MCS0			
Low Channel 149/153, 575	19.775 mW	< 1 W	Pass
High Channel 157/161, 575	19.504 mW	< 1 W	Pass
VHT, MCS9			
Low Channel 149/153, 575	17.289 mW	< 1 W	Pass
High Channel 157/161, 575	17.621 mW	< 1 W	Pass
80 MHz			
5725 MHz - 5850 MHz Band			
VHT, MCS0			
Low Channel 149/153/157	14.272 mW	< 1 W	Pass
VHT, MCS9			
Low Channel 149/153/157	11.343 mW	< 1 W	Pass

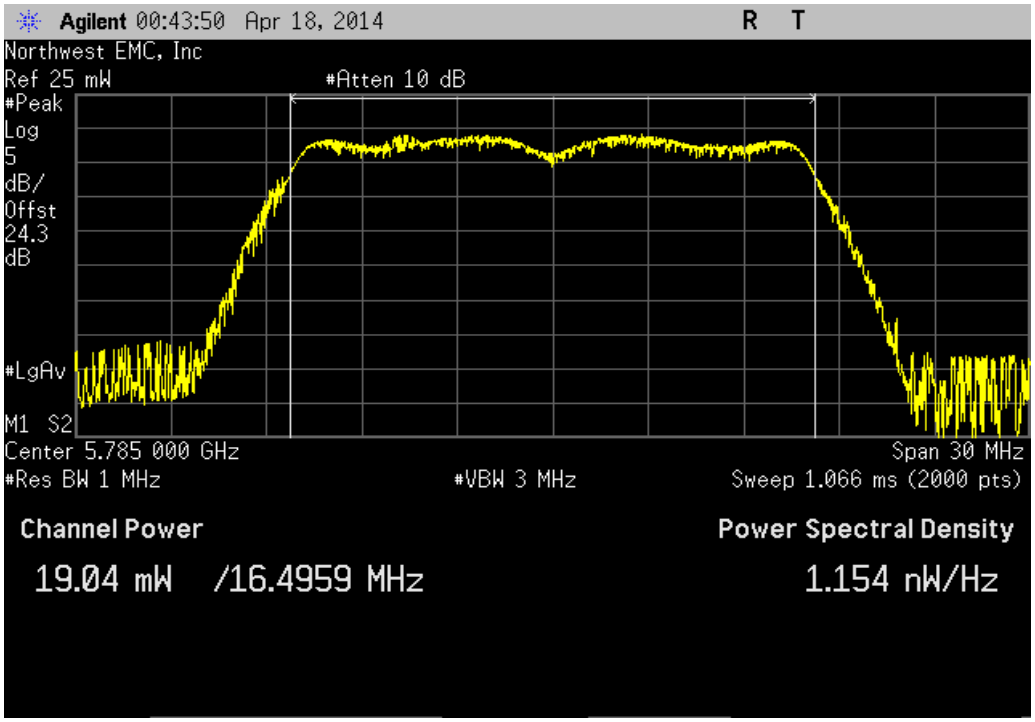
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.477 mW	< 1 W	Pass



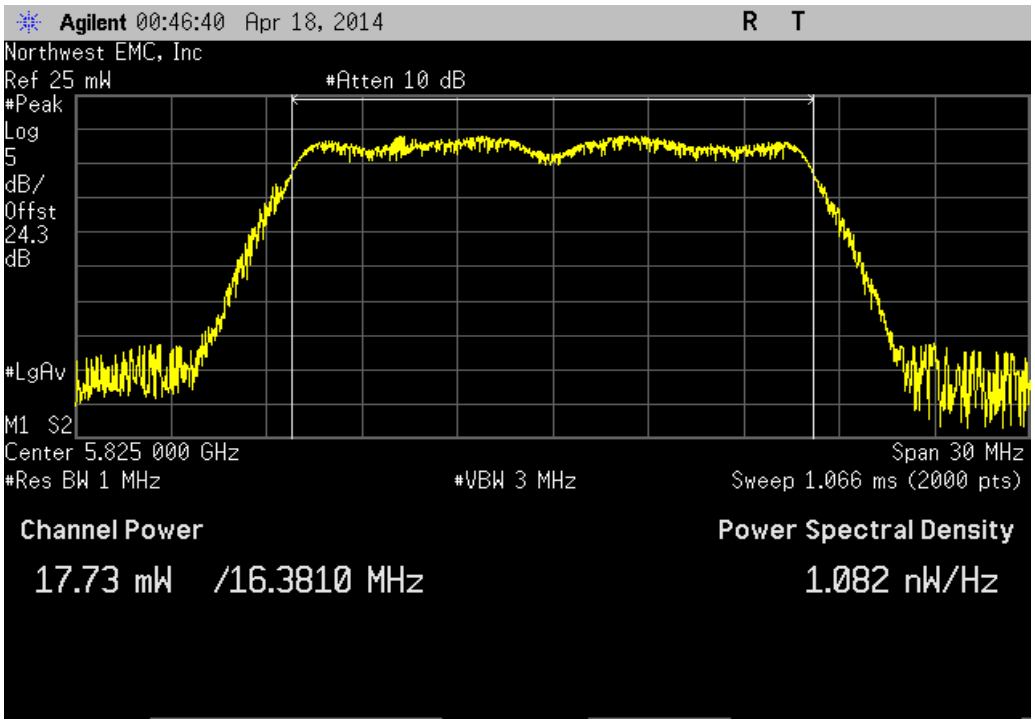
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				19.037 mW	< 1 W	Pass



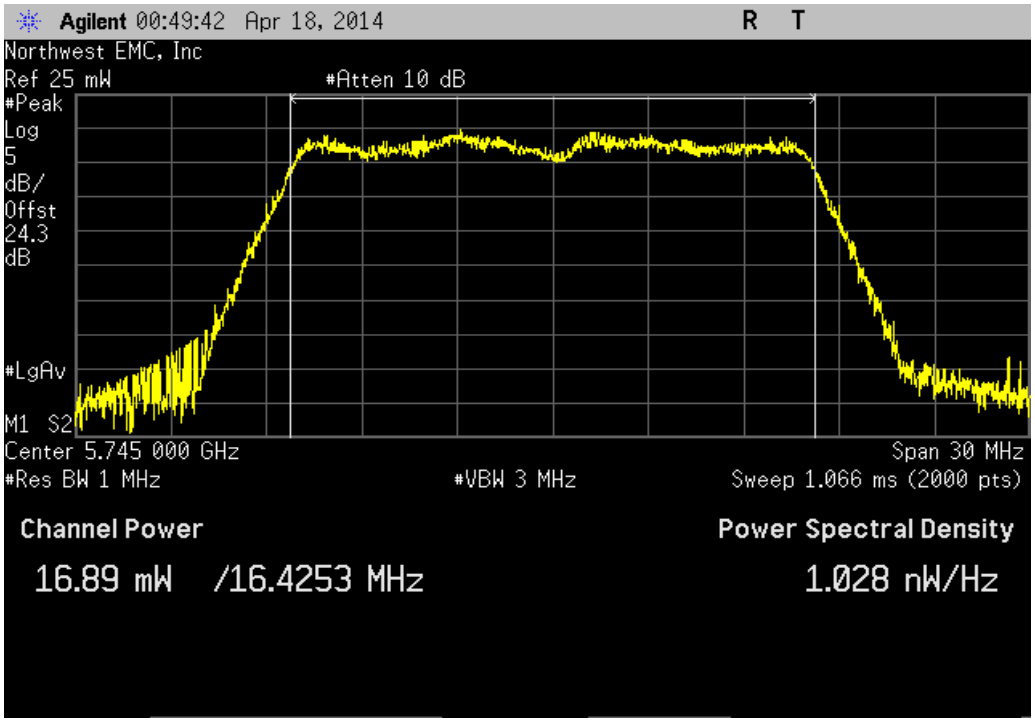
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				17.732 mW	< 1 W	Pass



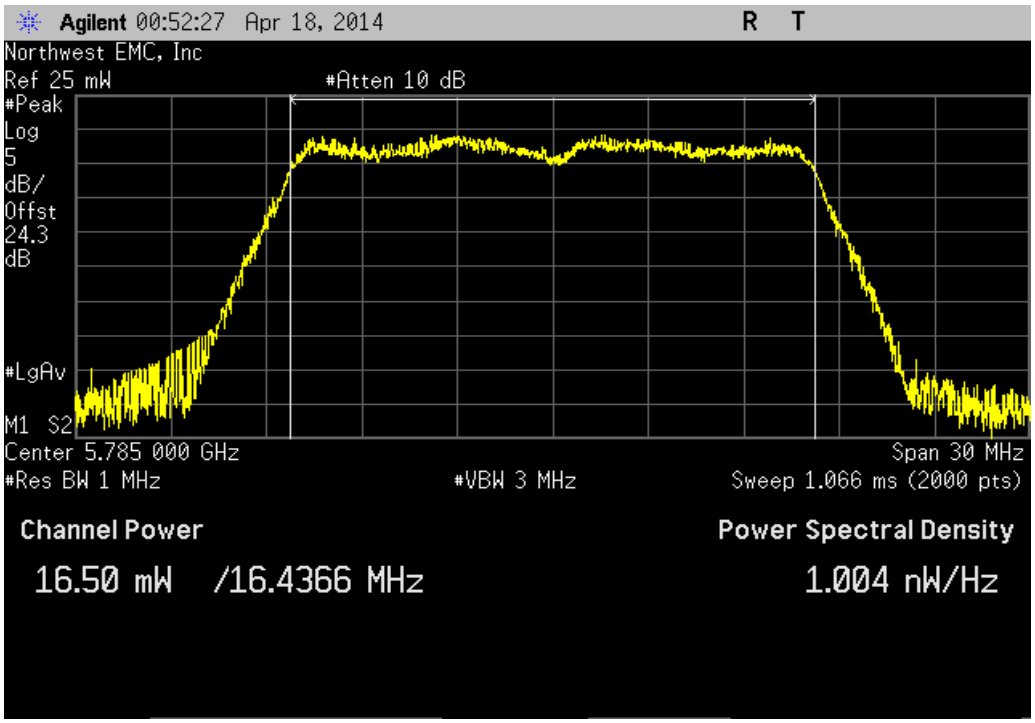
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				16.893 mW	< 1 W	Pass



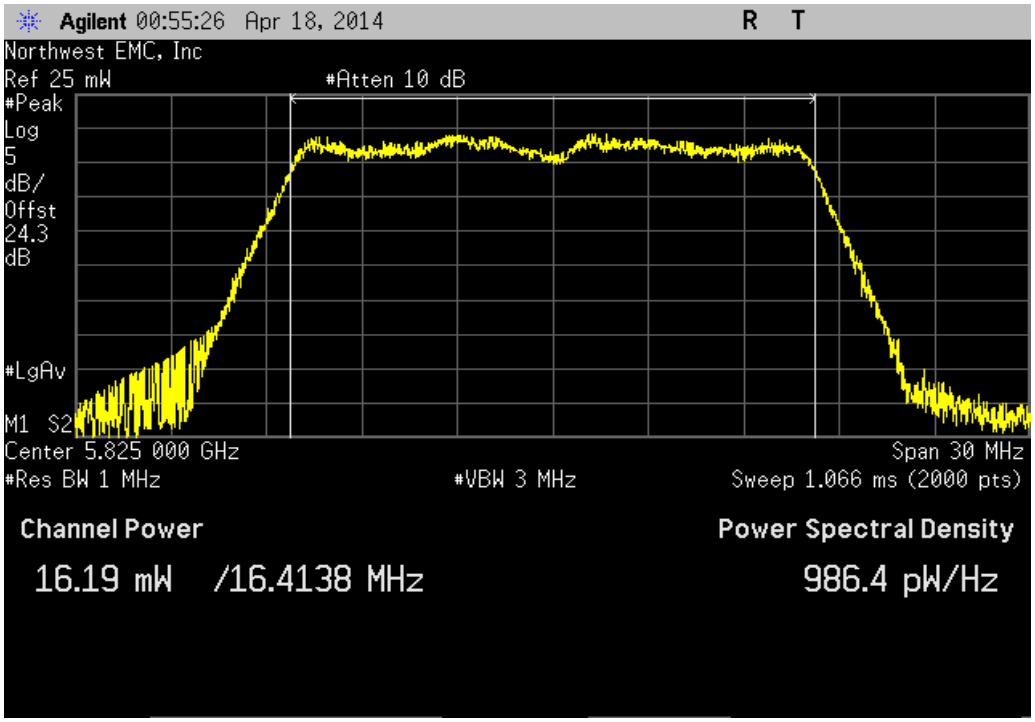
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				16.504 mW	< 1 W	Pass



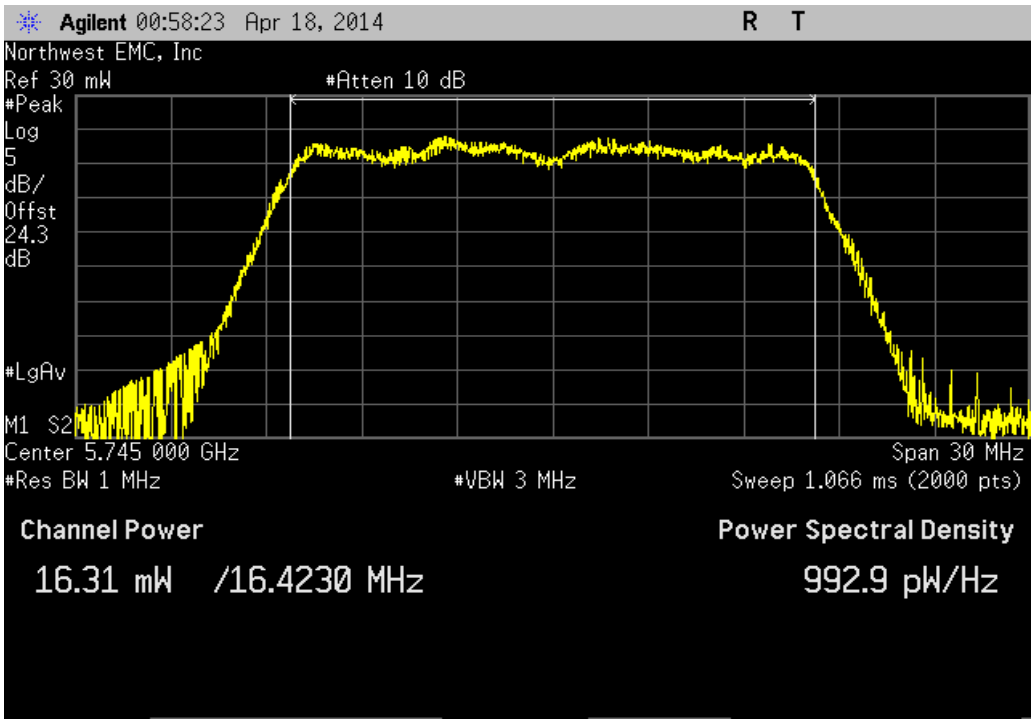
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.191 mW	< 1 W	Pass



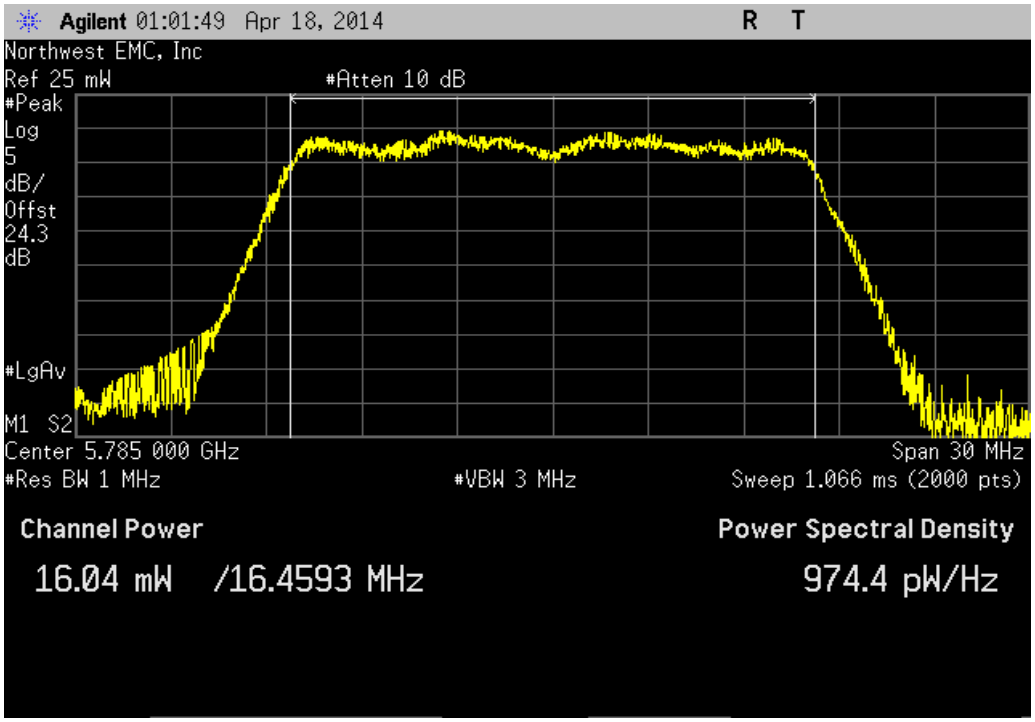
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				16.307 mW	< 1 W	Pass



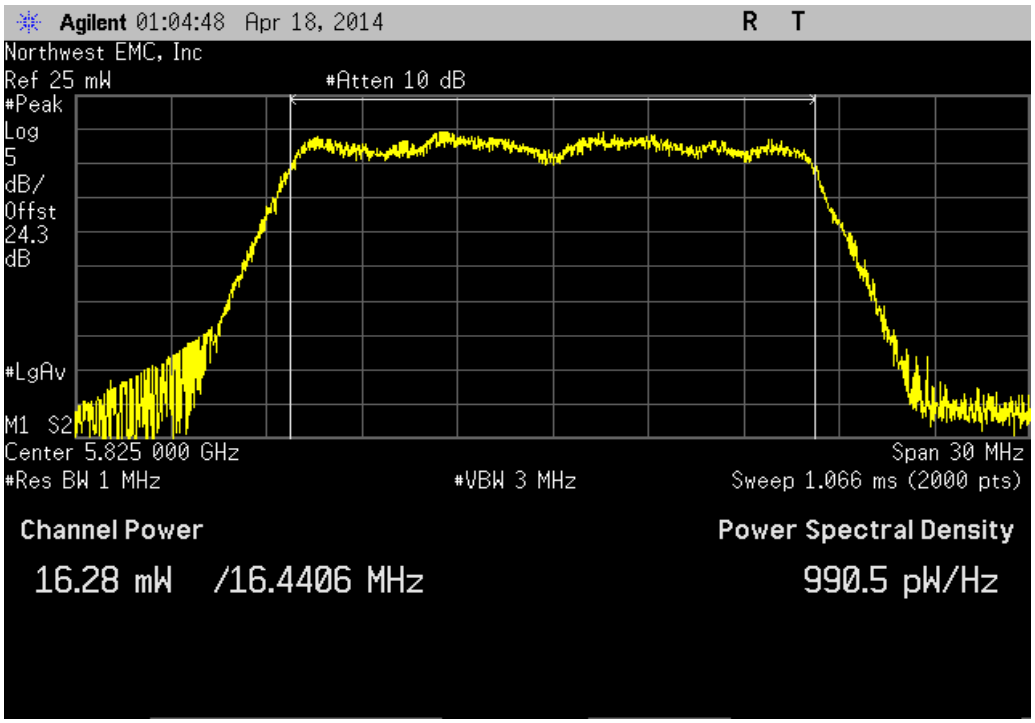
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				16.038 mW	< 1 W	Pass



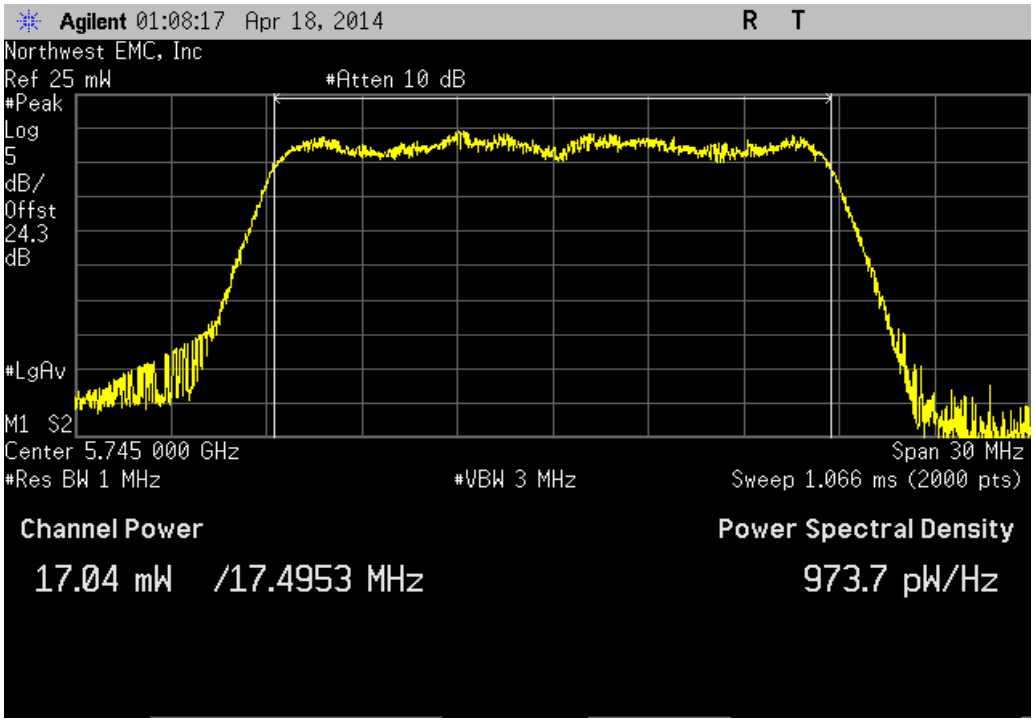
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.284 mW	< 1 W	Pass



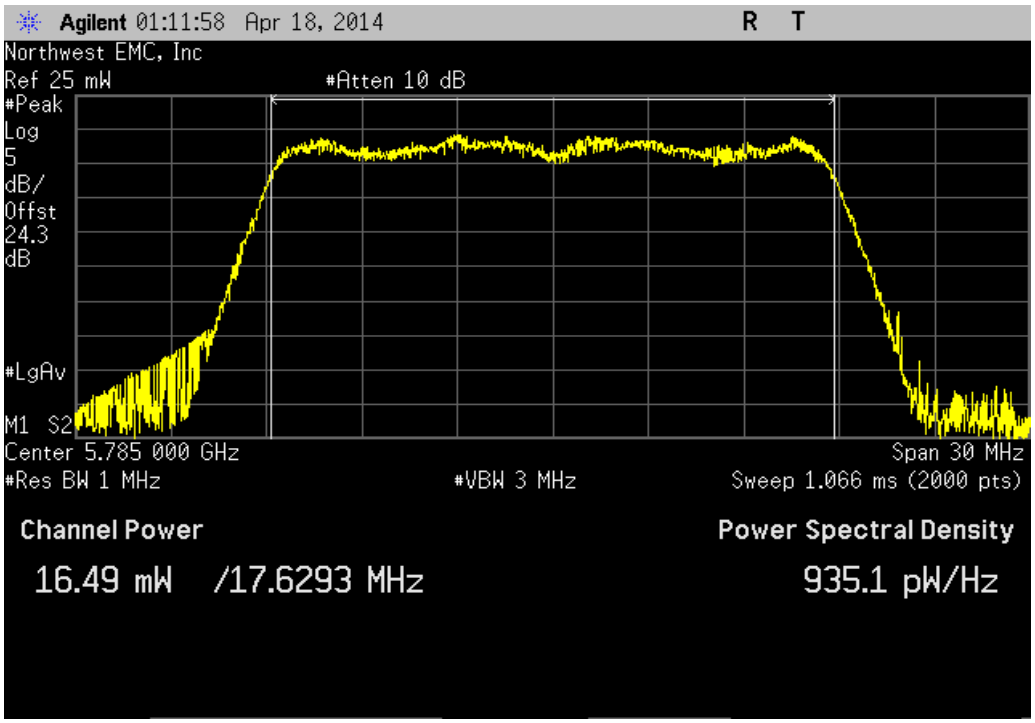
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149, 5745 MHz

				Value	Limit	Result
				17.036 mW	< 1 W	Pass



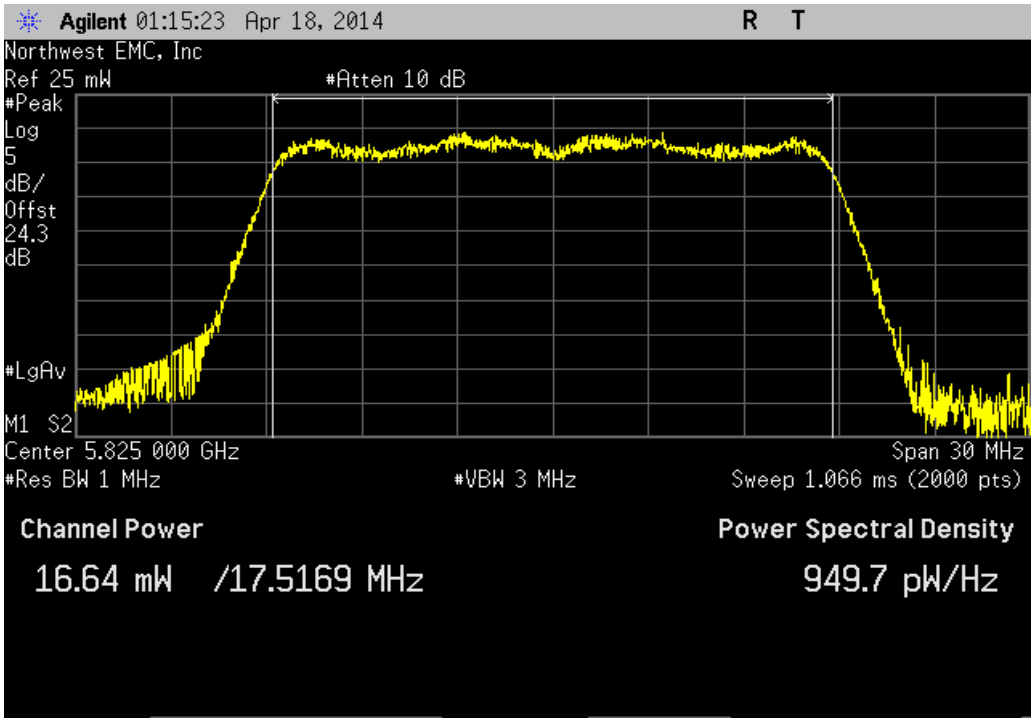
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				16.486 mW	< 1 W	Pass



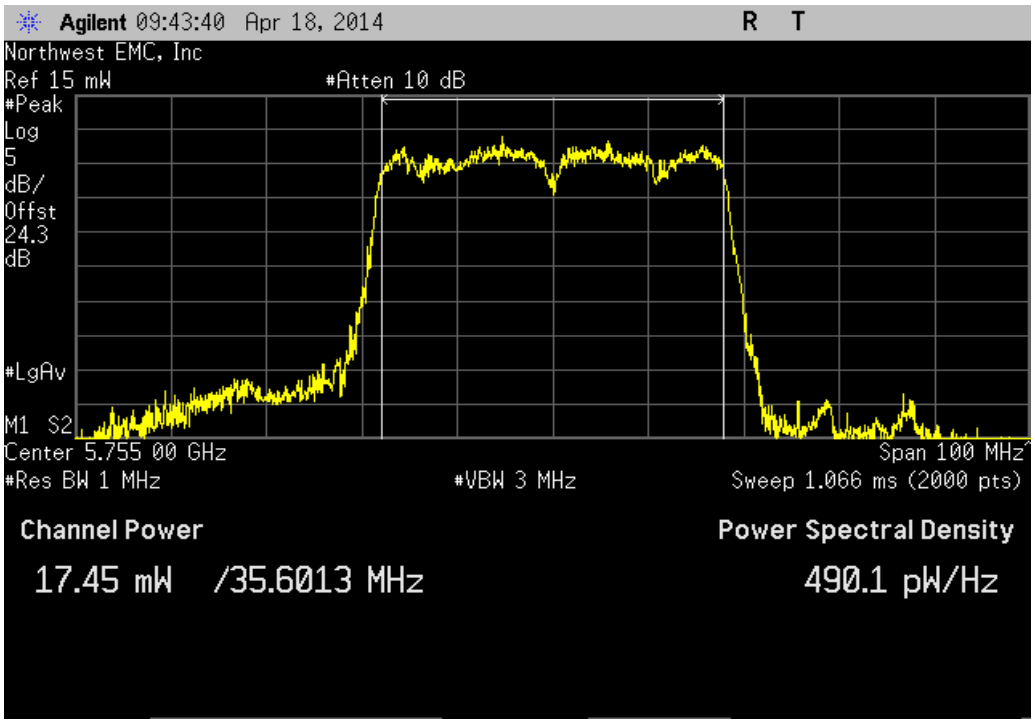
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.636 mW	< 1 W	Pass



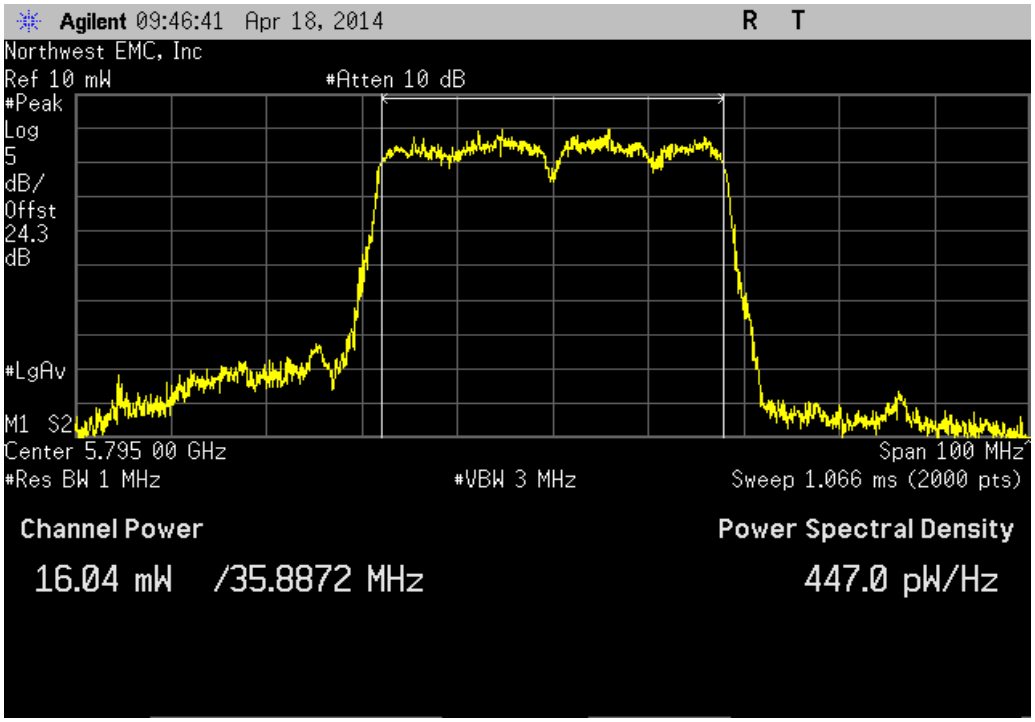
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				17.449 mW	< 1 W	Pass



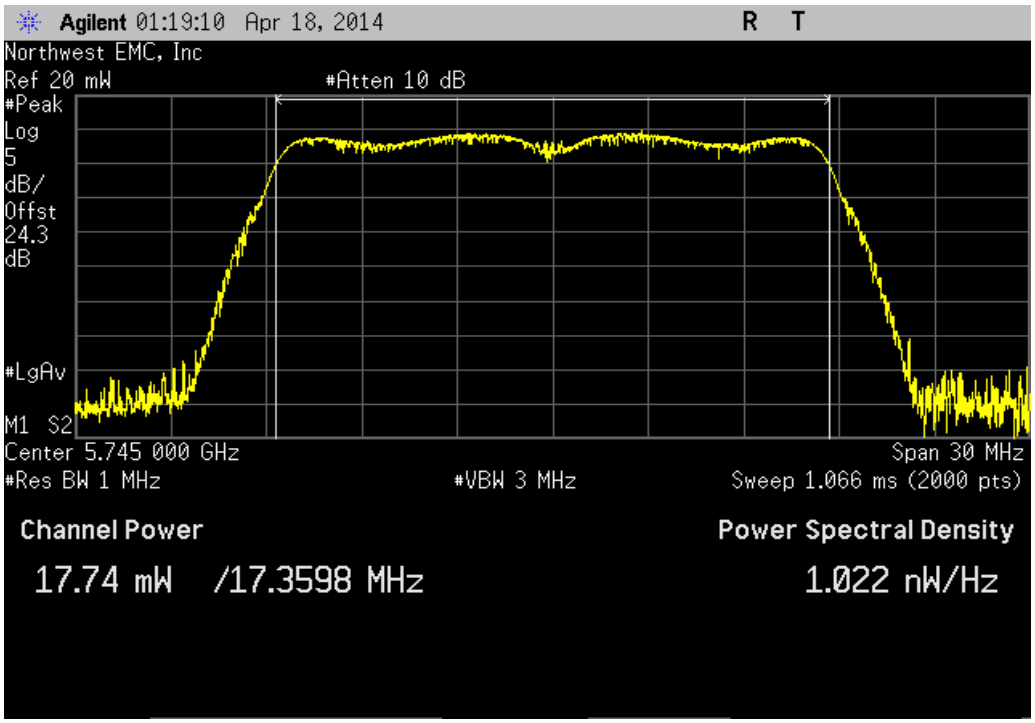
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				16.043 mW	< 1 W	Pass



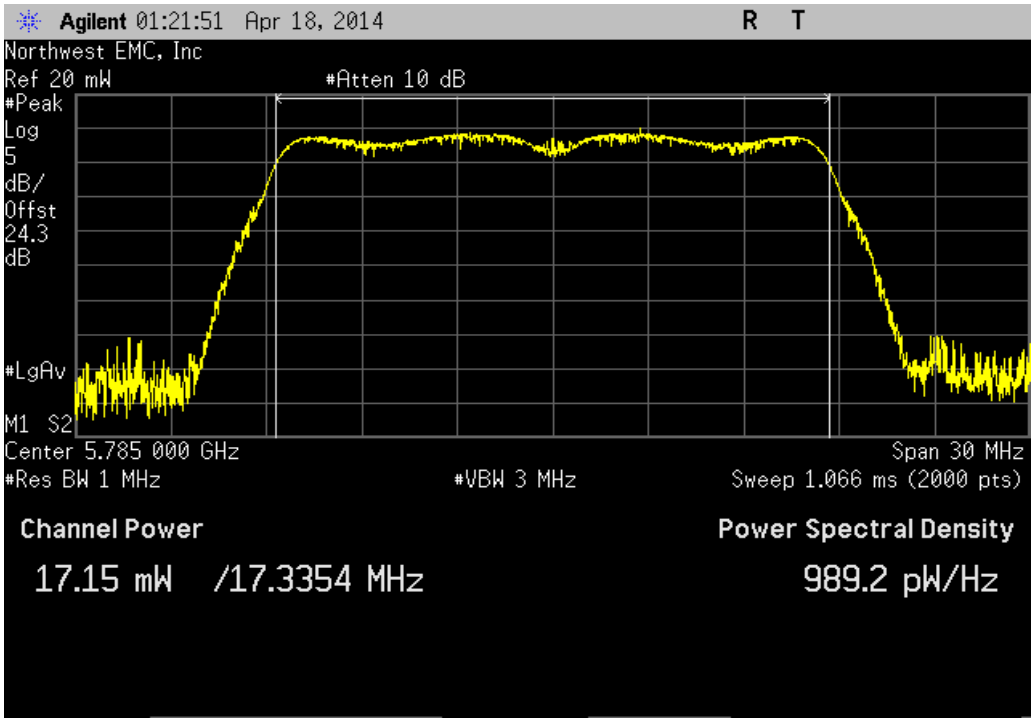
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				17.742 mW	< 1 W	Pass



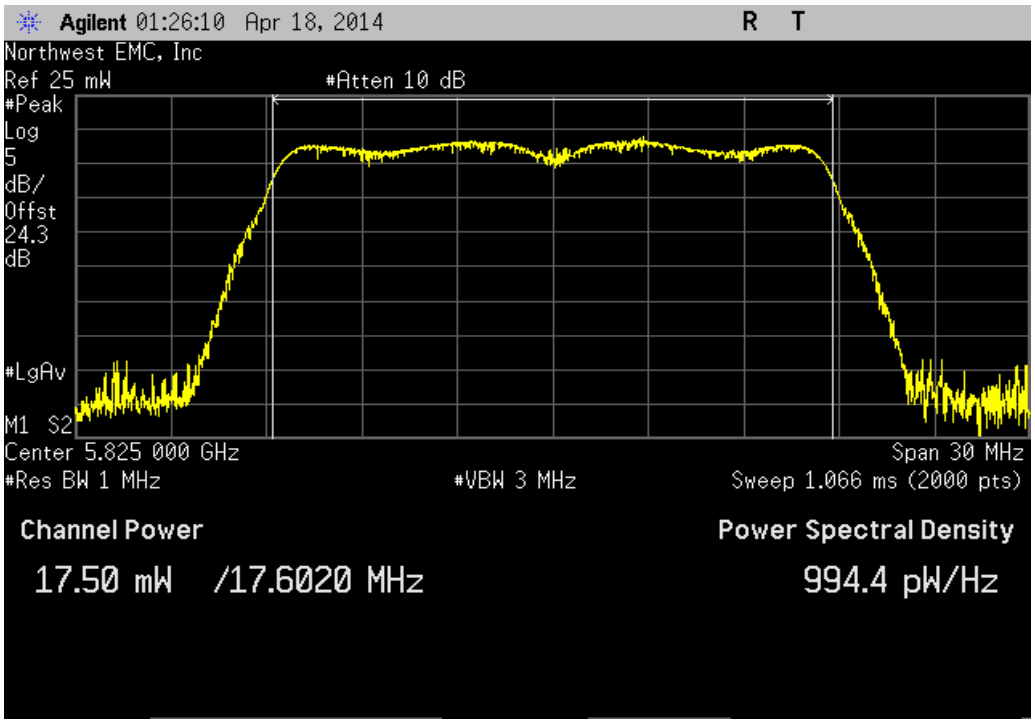
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				17.149 mW	< 1 W	Pass



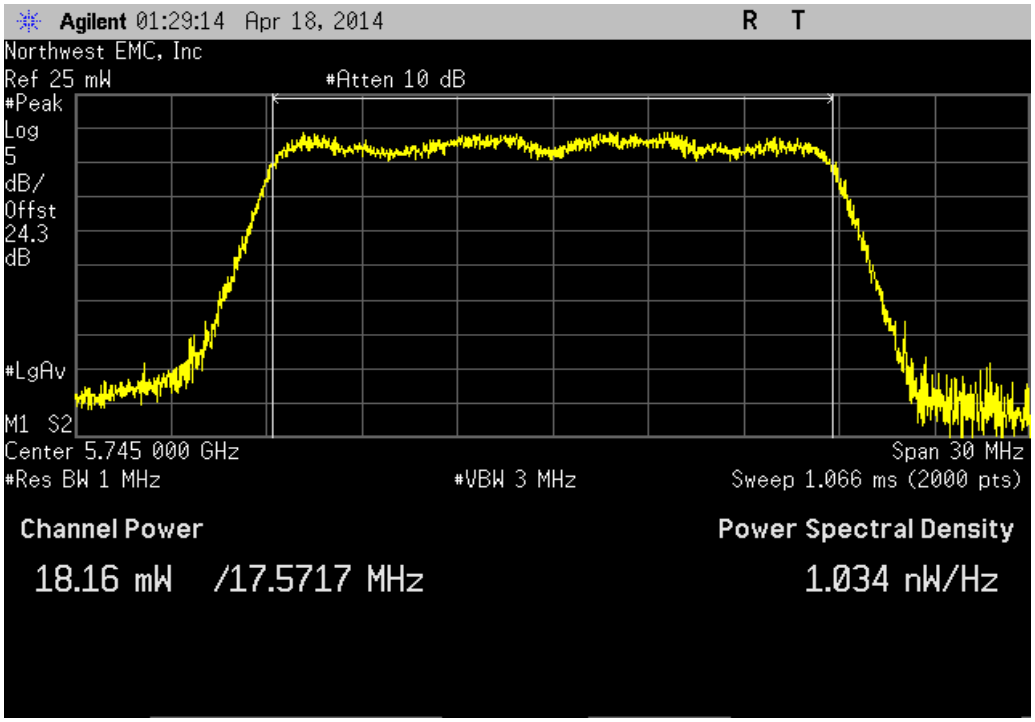
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

				Value	Limit	Result
				17.504 mW	< 1 W	Pass



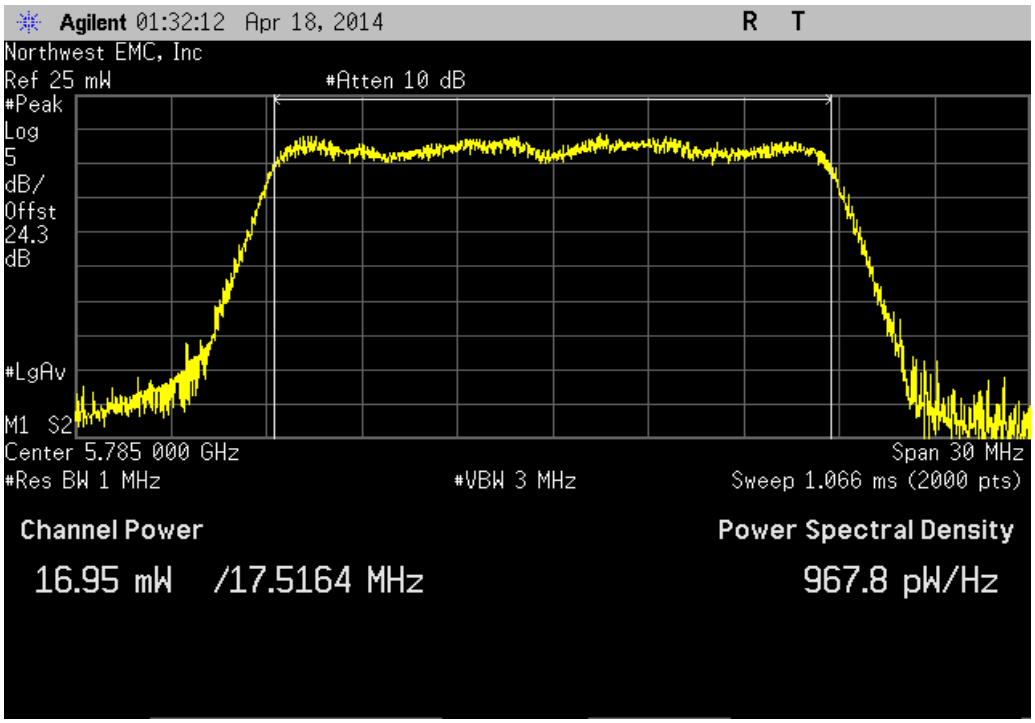
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.162 mW	< 1 W	Pass



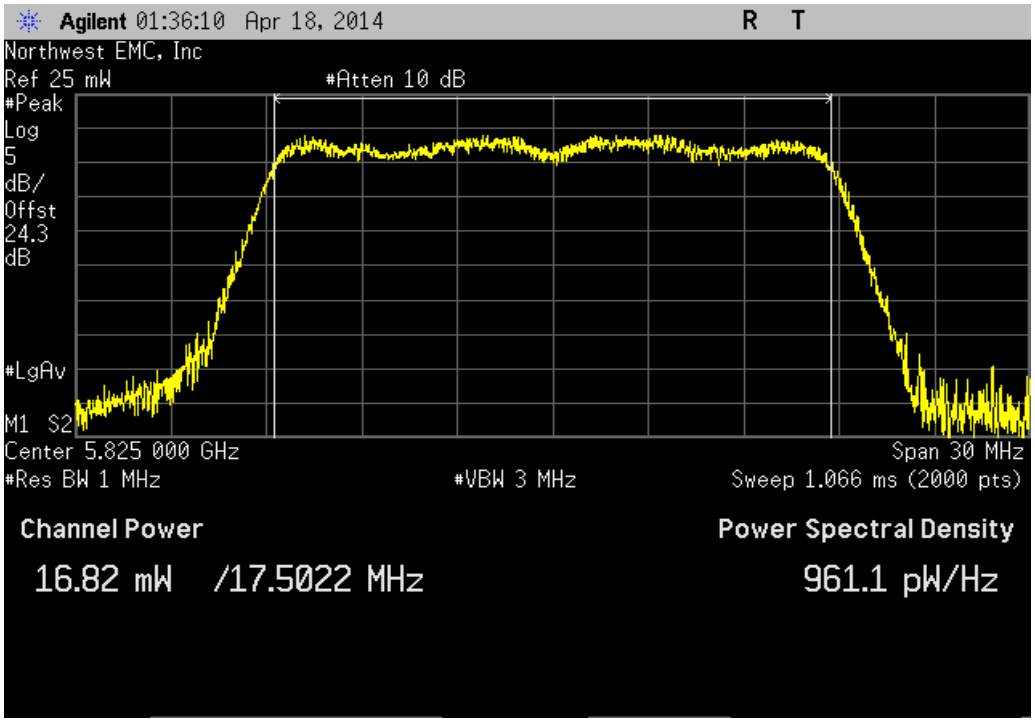
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				16.952 mW	< 1 W	Pass



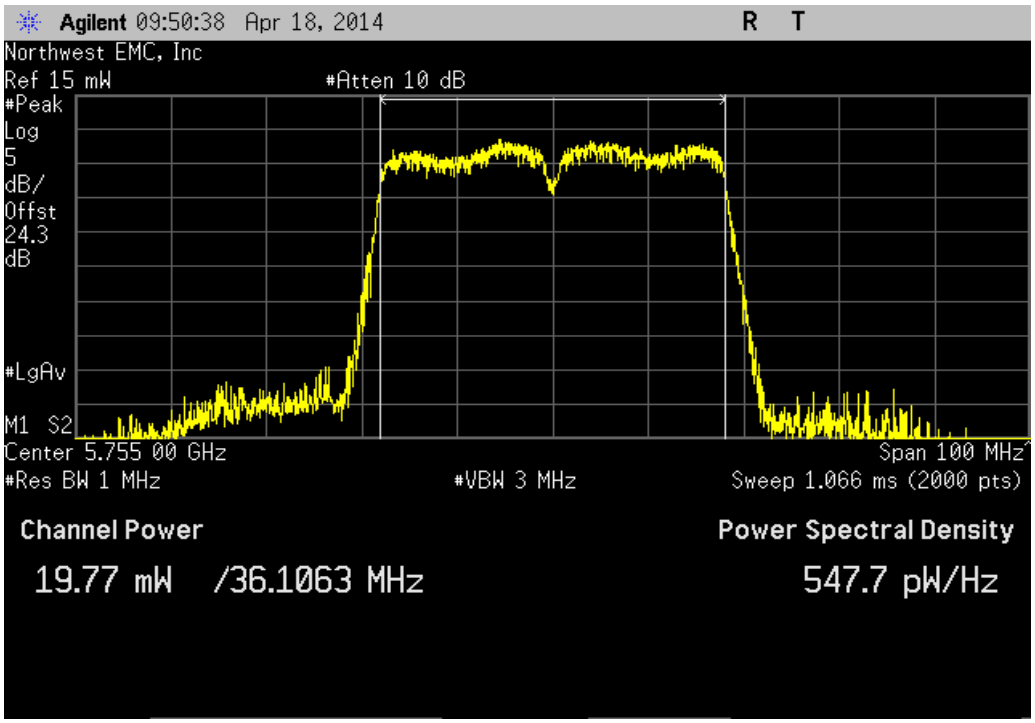
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.821 mW	< 1 W	Pass



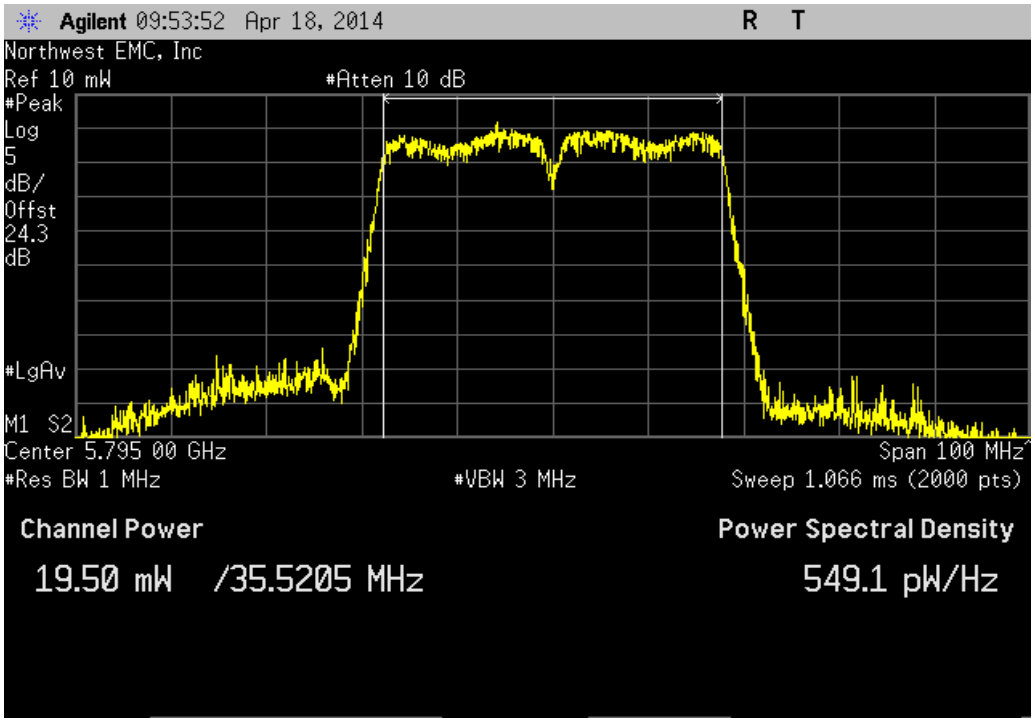
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				19.775 mW	< 1 W	Pass



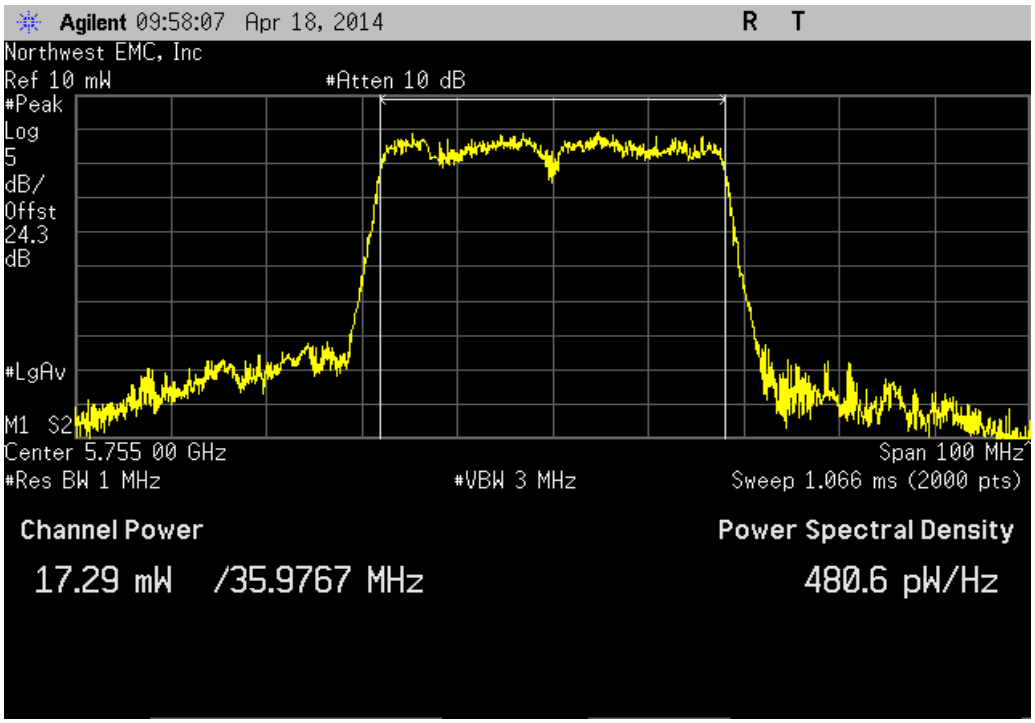
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				19.504 mW	< 1 W	Pass



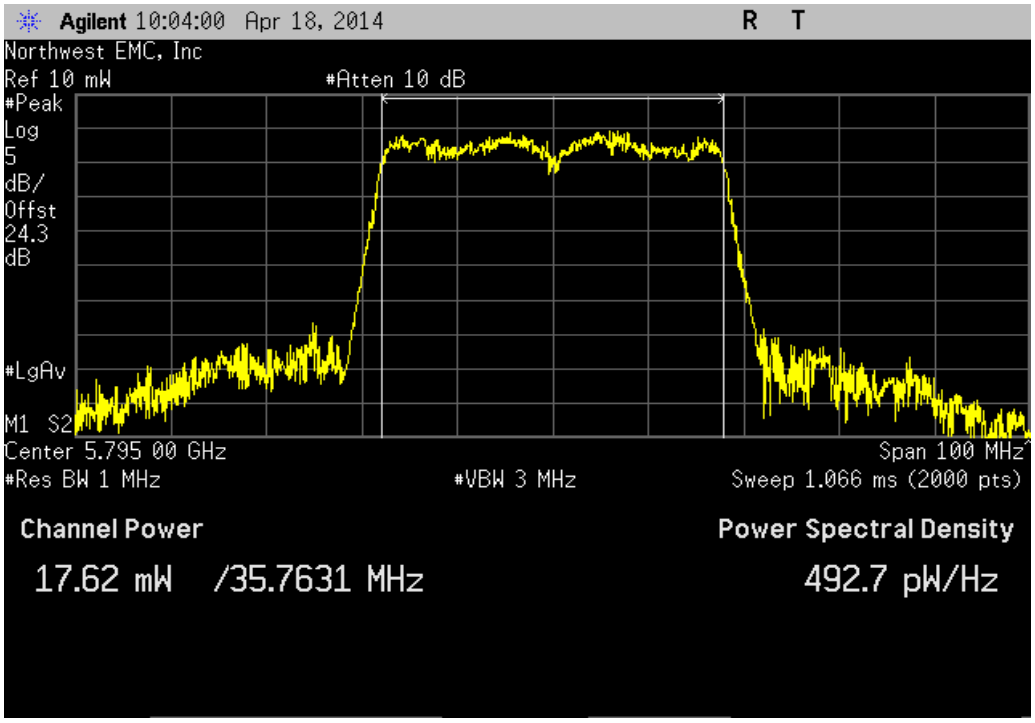
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				17.289 mW	< 1 W	Pass



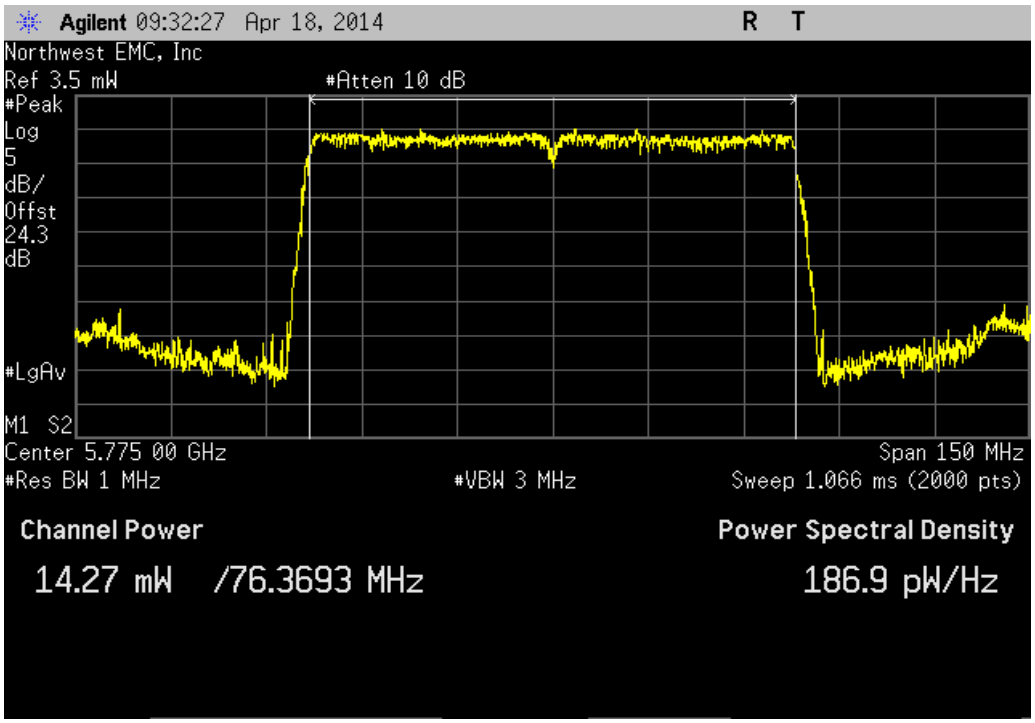
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				17.621 mW	< 1 W	Pass



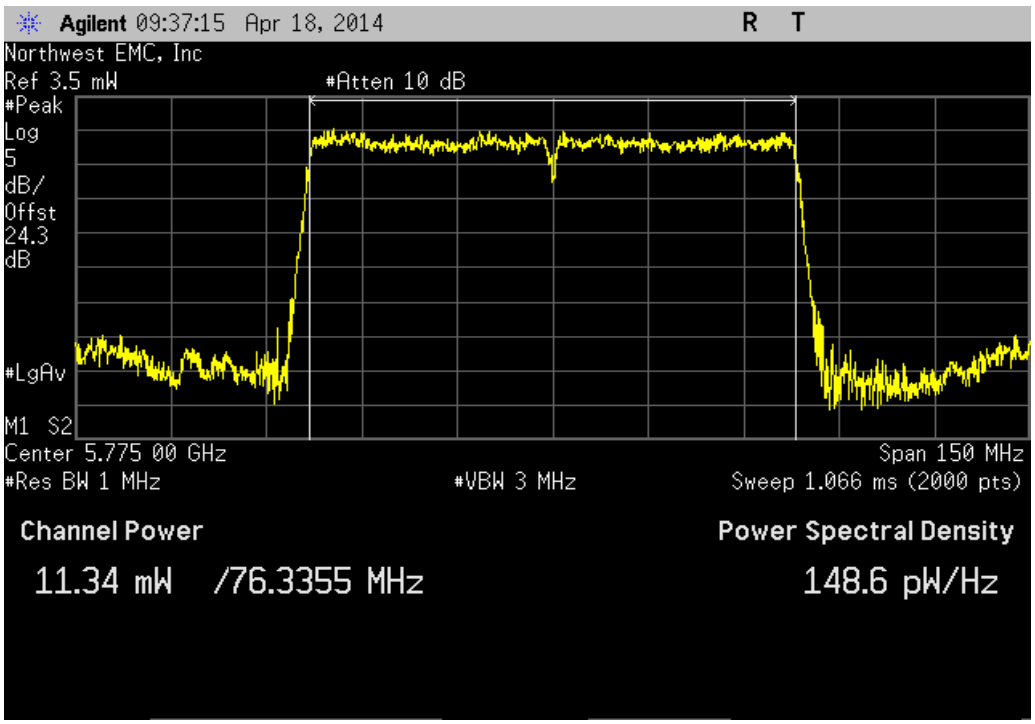
IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				14.272 mW	< 1 W	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				11.343 mW	< 1 W	Pass



OUTPUT POWER

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.)
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631	**Work Order:**	MCSO1698
Serial Number:	006840341053	**Date:**	04/23/14
Customer:	Microsoft Corporation	**Temperature:**	22.3°C
Attendees:	None	**Humidity:**	32%
Project:	None	**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:** 110VAC/60Hz	**Job Site:** EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

None

Configuration #	6	Signature

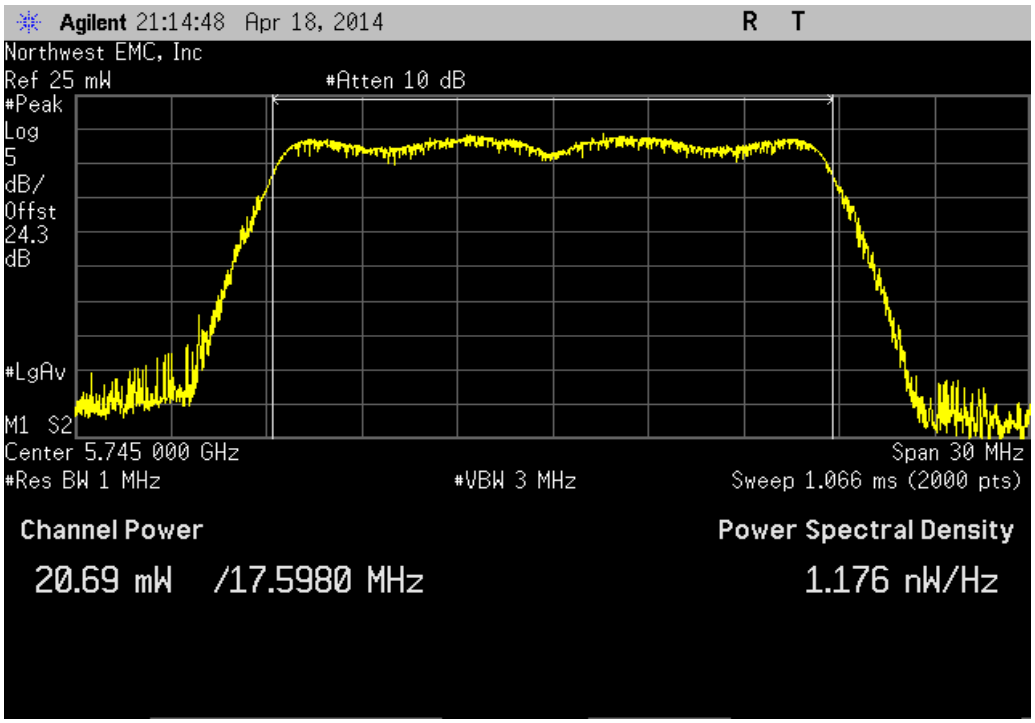
				Value	Limit	Result
A IEEE 802.11(n)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149, 5745 M	20.69 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	18.795 mW	< 1 W	N/A
			High Channel 165, 5825 M	19.062 mW	< 1 W	N/A
			HT, MCS15			
			Low Channel 149, 5745 M	18.385 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	16.584 mW	< 1 W	N/A
			High Channel 165, 5825 M	16.402 mW	< 1 W	N/A
	40 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149/153, 575	17.845 mW	< 1 W	N/A
			High Channel 157/161, 57	17.943 mW	< 1 W	N/A
			HT, MCS15			
			Low Channel 149/153, 575	14.431 mW	< 1 W	N/A
			High Channel 157/161, 57	15.163 mW	< 1 W	N/A
A IEEE 802.11(ac)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149, 5745 M	17.597 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	15.411 mW	< 1 W	N/A
			High Channel 165, 5825 M	15.247 mW	< 1 W	N/A
			VHT, MCS8			
			Low Channel 149, 5745 M	14.896 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	14.137 mW	< 1 W	N/A
			High Channel 165, 5825 M	10.974 mW	< 1 W	N/A
	40 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153, 575	15.646 mW	< 1 W	N/A
			High Channel 157/161, 57	19.05 mW	< 1 W	N/A
			VHT, MCS9			
			Low Channel 149/153, 575	10.7 mW	< 1 W	N/A
			High Channel 157/161, 57	14.372 mW	< 1 W	N/A
	80 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153/157	10.742 mW	< 1 W	N/A
			VHT, MCS9			
			Low Channel 149/153/157	12.49 mW	< 1 W	N/A
B IEEE 802.11(n)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149, 5745 M	17.213 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	20.541 mW	< 1 W	N/A
			High Channel 165, 5825 M	18.285 mW	< 1 W	N/A
			HT, MCS15			
			Low Channel 149, 5745 M	17.369 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	17.199 mW	< 1 W	N/A
			High Channel 165, 5825 M	16.926 mW	< 1 W	N/A
	40 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149/153, 575	11.807 mW	< 1 W	N/A
			High Channel 157/161, 57	15.414 mW	< 1 W	N/A
			HT, MCS15			
			Low Channel 149/153, 575	14.802 mW	< 1 W	N/A
			High Channel 157/161, 57	12.984 mW	< 1 W	N/A
B IEEE 802.11(ac)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149, 5745 M	19.543 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	18.83 mW	< 1 W	N/A
			High Channel 165, 5825 M	19.5 mW	< 1 W	N/A
			VHT, MCS8			
			Low Channel 149, 5745 M	18.438 mW	< 1 W	N/A
			Mid Channel 157, 5785 MH	17.982 mW	< 1 W	N/A
			High Channel 165, 5825 M	16.836 mW	< 1 W	N/A
	40 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153, 575	17.192 mW	< 1 W	N/A
			High Channel 157/161, 57	19.754 mW	< 1 W	N/A
			VHT, MCS9			
			Low Channel 149/153, 575	17.228 mW	< 1 W	N/A
			High Channel 157/161, 57	17.948 mW	< 1 W	N/A
	80 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153/157	7.587 mW	< 1 W	N/A
			VHT, MCS9			
			Low Channel 149/153/157	9.48 mW	< 1 W	N/A

Chain AB

			Chain A		Chain B		Summed Power	
			(dBm)	(mw)	(dBm)	(mw)	(mW)	
20 MHz								
	5725 MHz - 5850 MHz Band							
	IEEE 802.11(n)HT, MCS8							
		Low Channel 149, 5745 MHz	N/A	20.69	N/A	17.213	37.903	Pass
		Mid Channel 157, 5785 MHz	N/A	18.795	N/A	20.541	39.336	Pass
		High Channel 165, 5825 MHz	N/A	19.062	N/A	18.285	37.347	Pass
	IEEE 802.11(n)HT, MCS15							
		Low Channel 149, 5745 MHz	N/A	15.263	N/A	17.369	32.632	Pass
		Mid Channel 157, 5785 MHz	N/A	29.708	N/A	17.199	46.907	Pass
		High Channel 165, 5825 MHz	N/A	29.675	N/A	16.926	46.601	Pass
40 MHz								
	5725 MHz - 5850 MHz Band							
	IEEE 802.11(n)HT, MCS8							
		Low Channel 149/153, 5755 MHz	N/A	17.845	N/A	11.807	29.652	Pass
		High Channel 157/161, 5795 MHz	N/A	17.943	N/A	15.414	33.357	Pass
	IEEE 802.11(n)HT, MCS15							
		Low Channel 149/153, 5755 MHz	N/A	14.431	N/A	14.802	29.233	Pass
		High Channel 157/161, 5795 MHz	N/A	15.163	N/A	12.984	28.147	Pass
20 MHz								
	5725 MHz - 5850 MHz Band							
	IEEE 802.11(ac)VHT, MCS0							
		Low Channel 149, 5745 MI	N/A	17.597	N/A	19.543	37.14	Pass
		Mid Channel 157, 5785 MH	N/A	15.411	N/A	18.83	34.241	Pass
		High Channel 165, 5825 M	N/A	15.247	N/A	19.5	34.747	Pass
	IEEE 802.11(ac)VHT, MCS8							
		Low Channel 149, 5745 MHz	N/A	14.896	N/A	18.438	33.334	Pass
		Mid Channel 157, 5785 MHz	N/A	14.137	N/A	17.982	32.119	Pass
		High Channel 165, 5825 MHz	N/A	10.974	N/A	16.836	27.81	Pass
40 MHz								
	5725 MHz - 5850 MHz Band							
	IEEE 802.11(ac)VHT, MCS0							
		Low Channel 149/153, 5755 MHz	N/A	15.646	N/A	17.192	32.838	Pass
		High Channel 157/161, 5795 MHz	N/A	19.05	N/A	19.754	38.804	Pass
	5725 MHz - 5850 MHz Band							
	IEEE 802.11(ac)VHT, MCS9							
		Low Channel 149/153, 5755 MHz	N/A	10.7	N/A	17.228	27.928	Pass
		High Channel 157/161, 5795 MHz	N/A	14.372	N/A	17.948	32.32	Pass
80 MHz								
	5725 MHz - 5850 MHz Band							
	VHT, MCS0							
		Low Channel 149/153/157/161, 5775 MHz	N/A	10.742	N/A	7.587	18.329	Pass
	VHT, MCS9							
		Low Channel 149/153/157/161, 5775 MHz	N/A	12.49	N/A	9.48	21.97	Pass

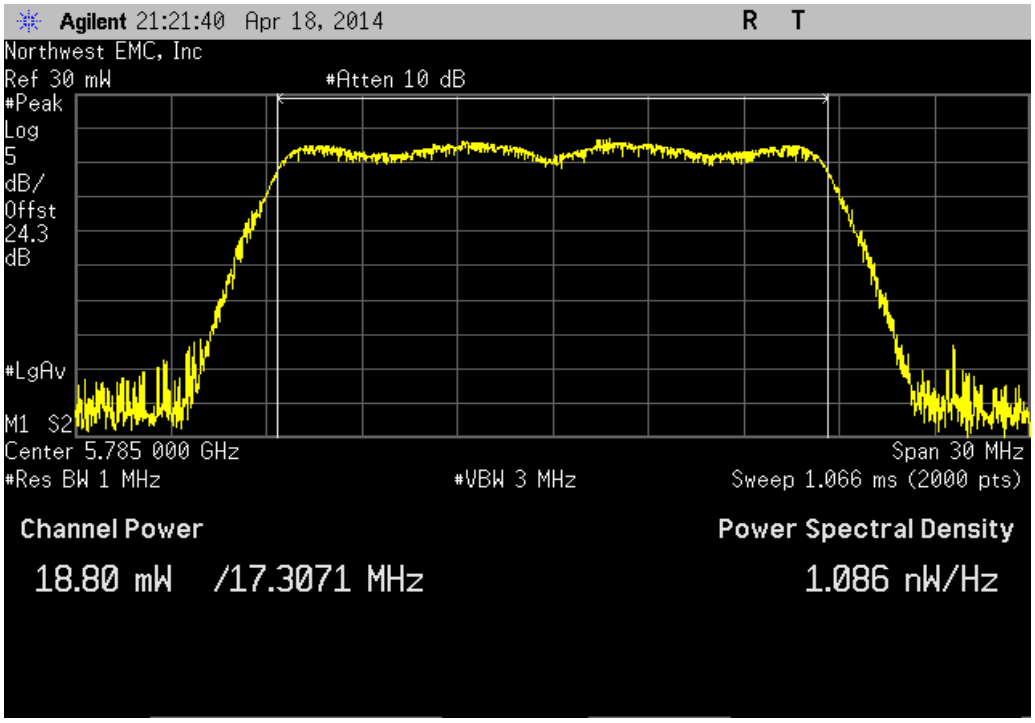
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				20.69 mW	< 1 W	Pass

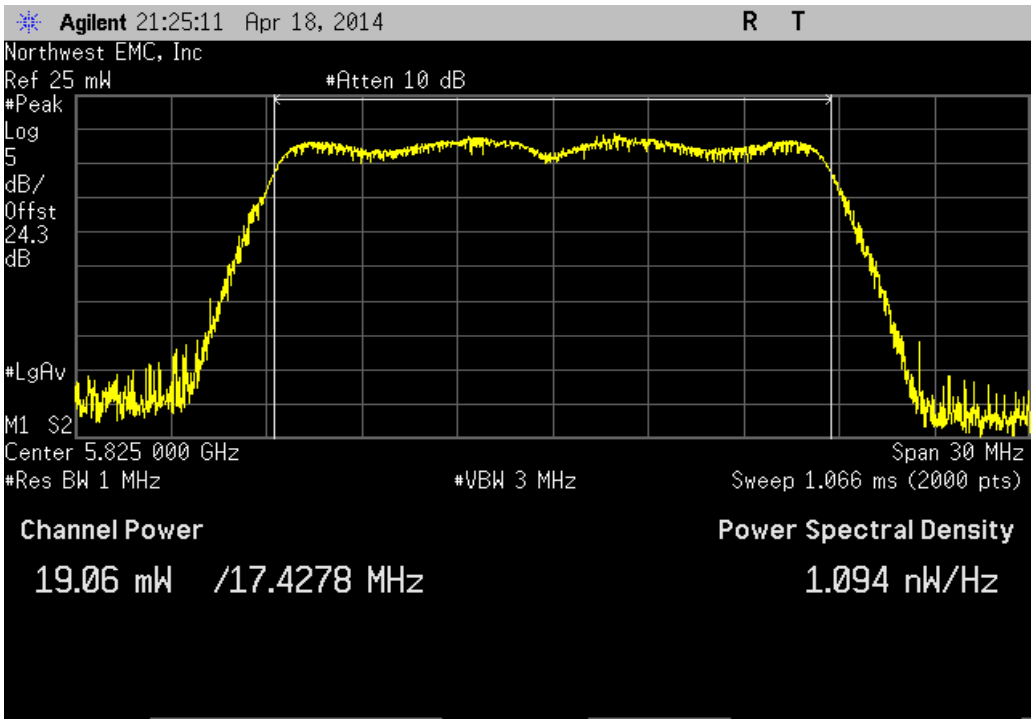


A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Mid Channel 157, 5785 MHz

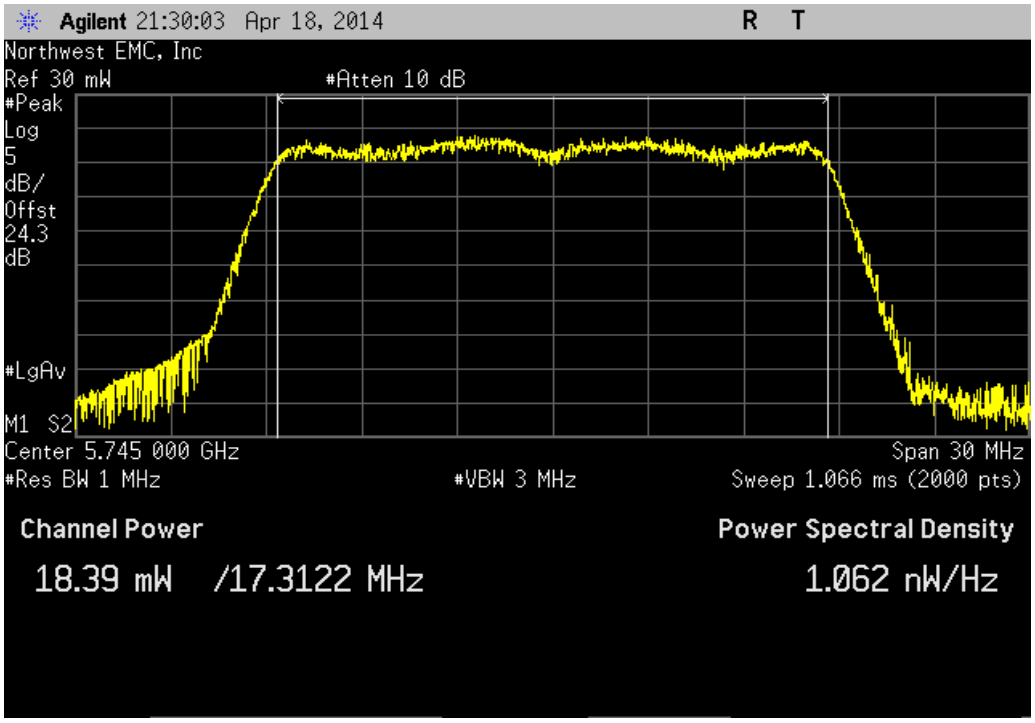
				Value	Limit	Result
				18.795 mW	< 1 W	Pass



A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 165, 5825 MHz						
				Value	Limit	Result
				19.062 mW	< 1 W	Pass

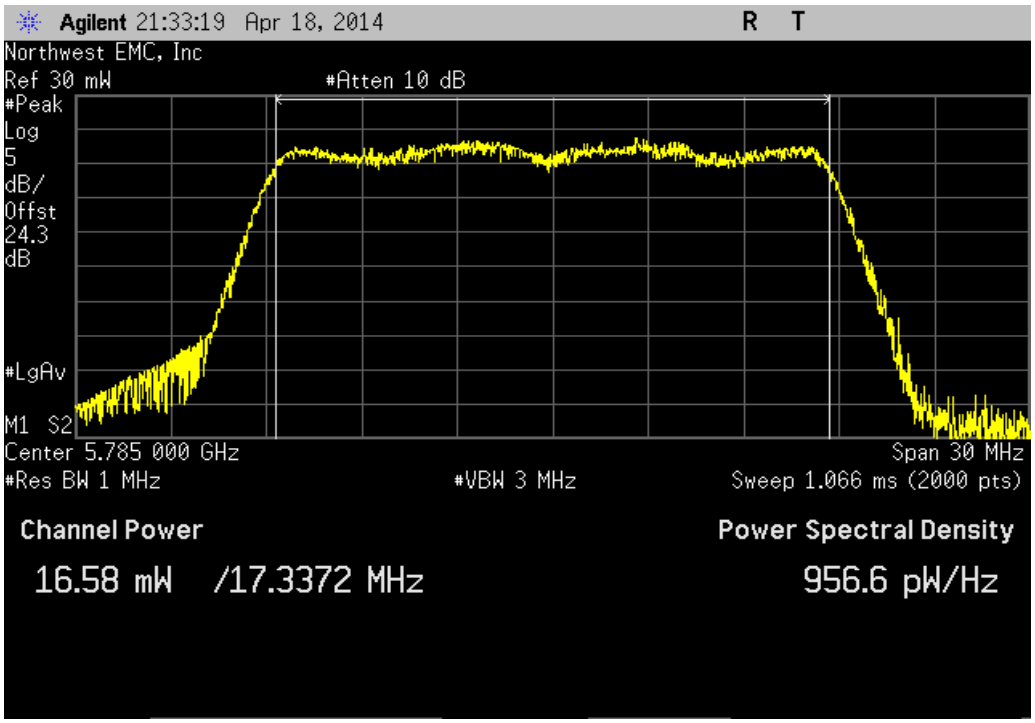


A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149, 5745 MHz						
				Value	Limit	Result
				18.385 mW	< 1 W	Pass



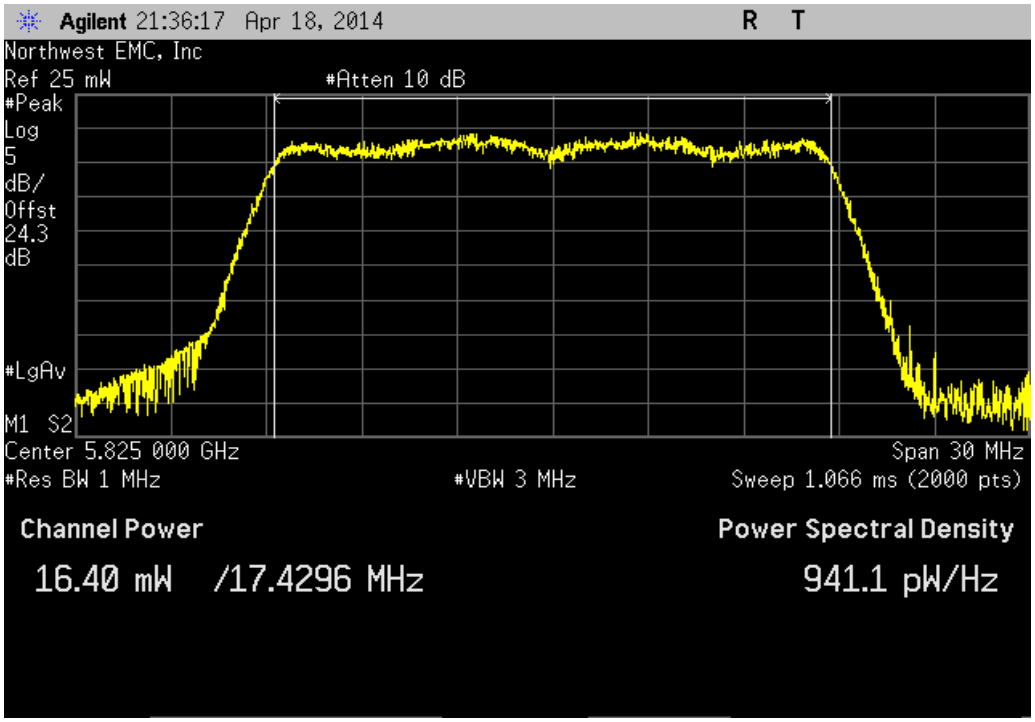
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				16.584 mW	< 1 W	Pass



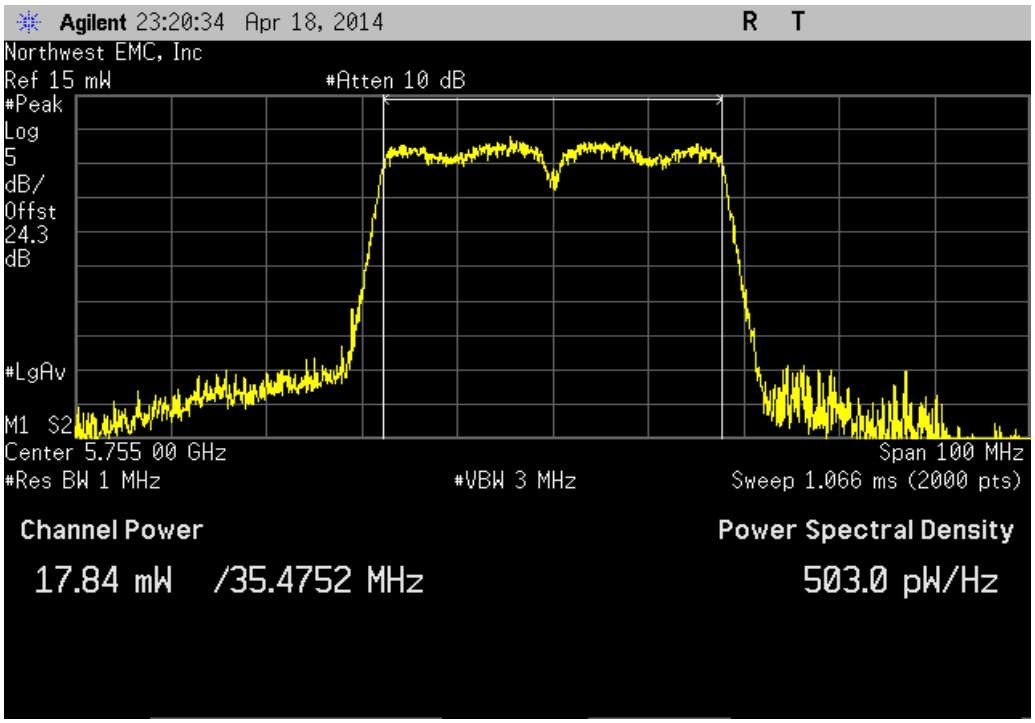
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.402 mW	< 1 W	Pass



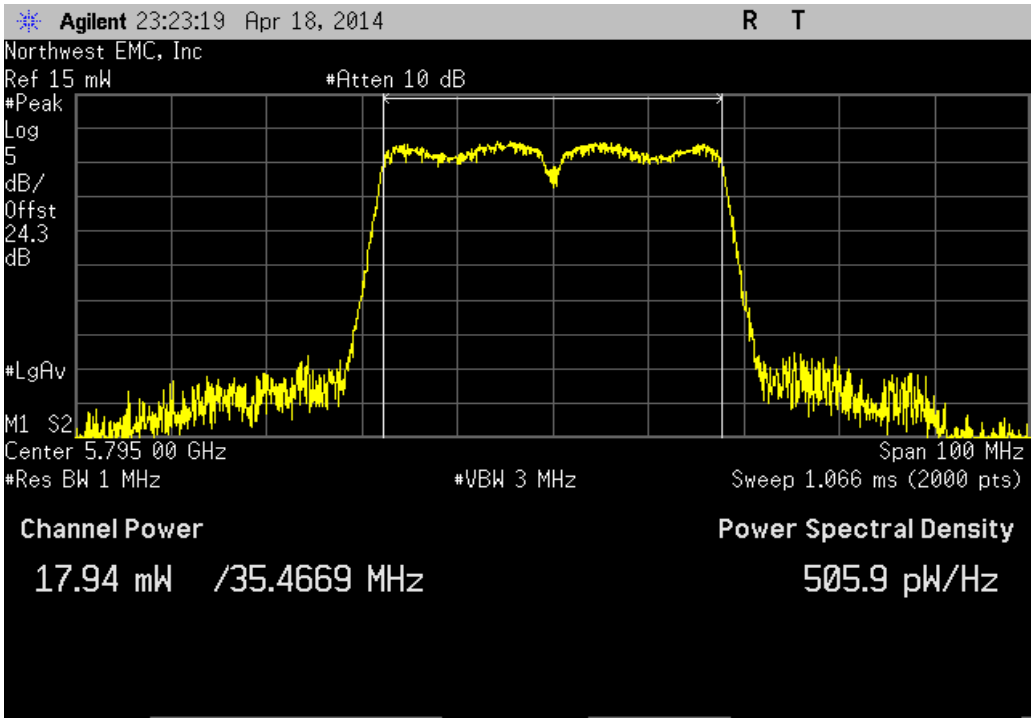
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				17.845 mW	< 1 W	Pass



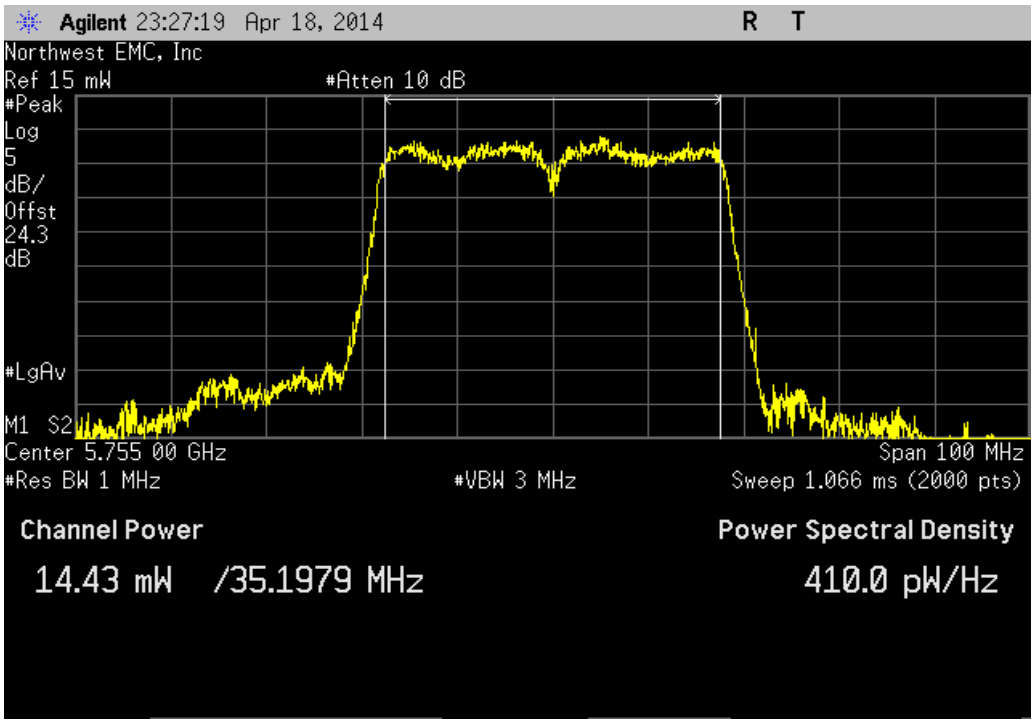
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				17.943 mW	< 1 W	Pass



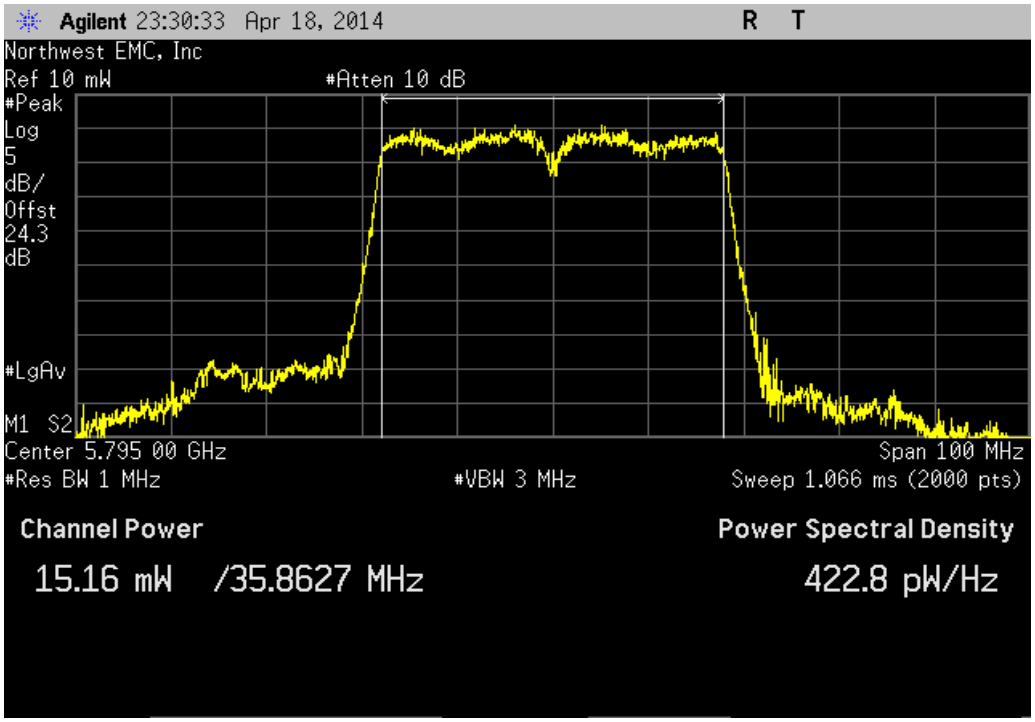
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				14.431 mW	< 1 W	Pass



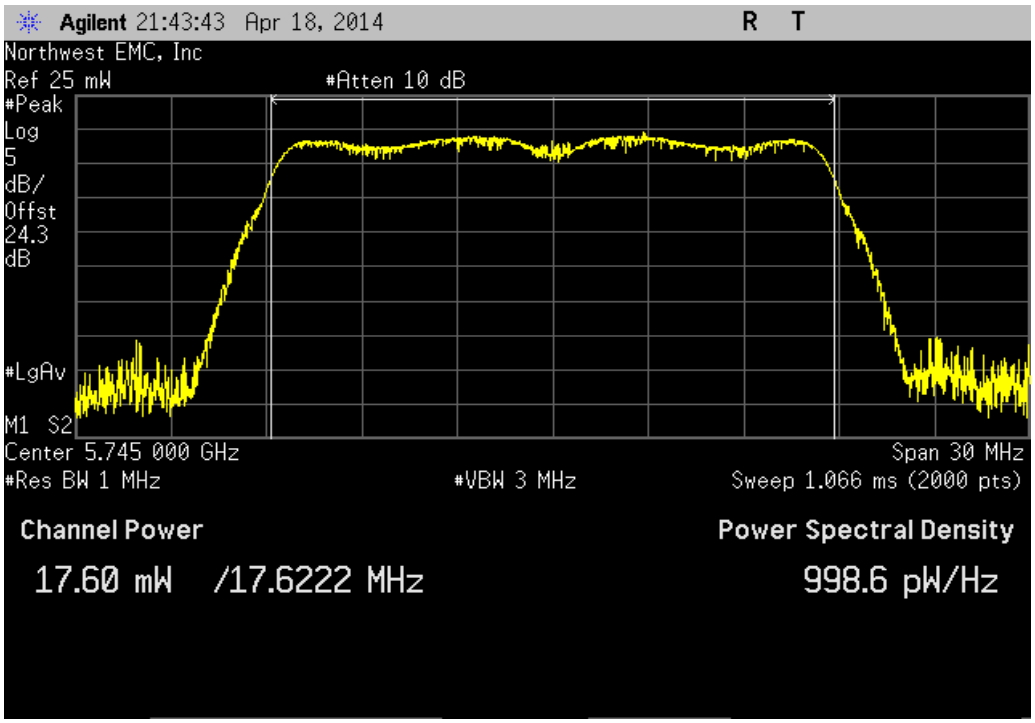
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				15.163 mW	< 1 W	Pass



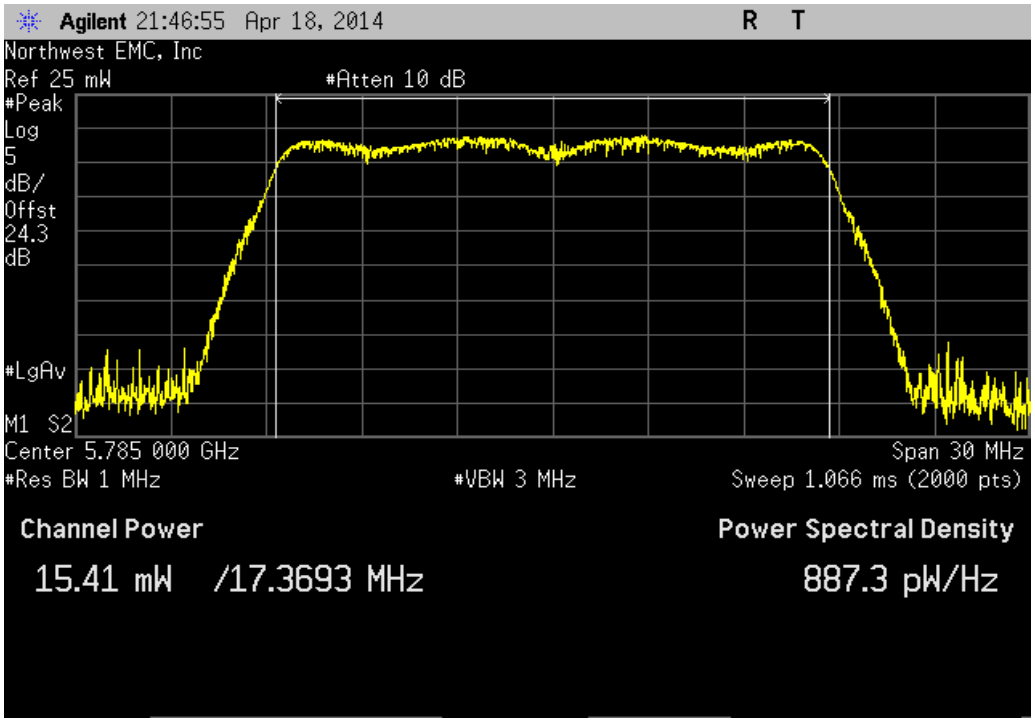
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				17.597 mW	< 1 W	Pass



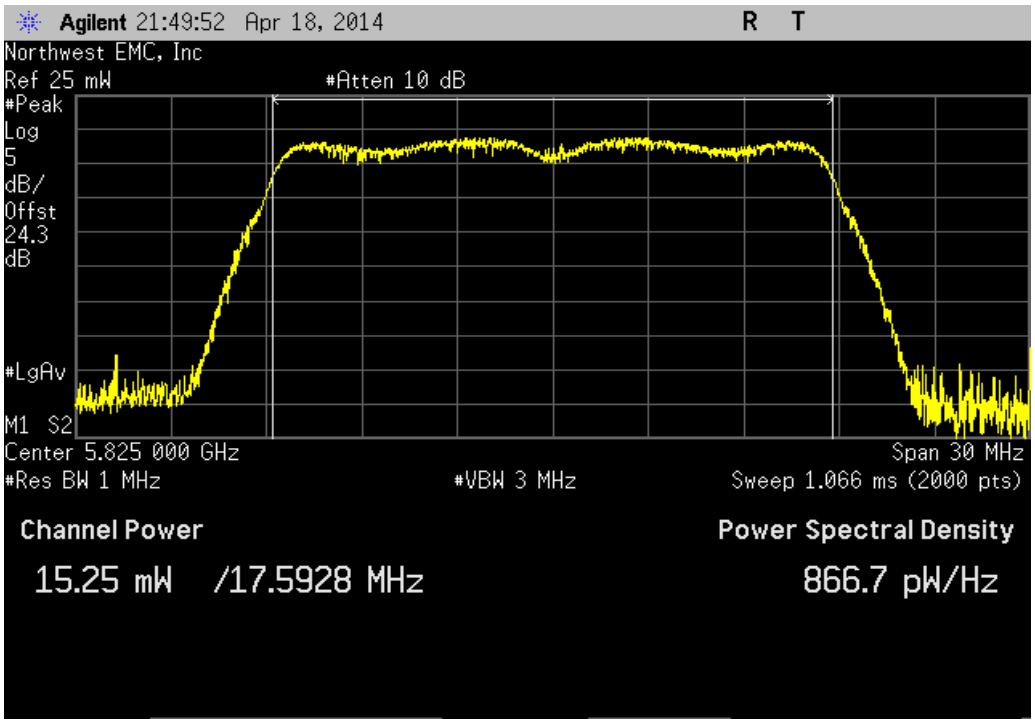
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				15.411 mW	< 1 W	Pass



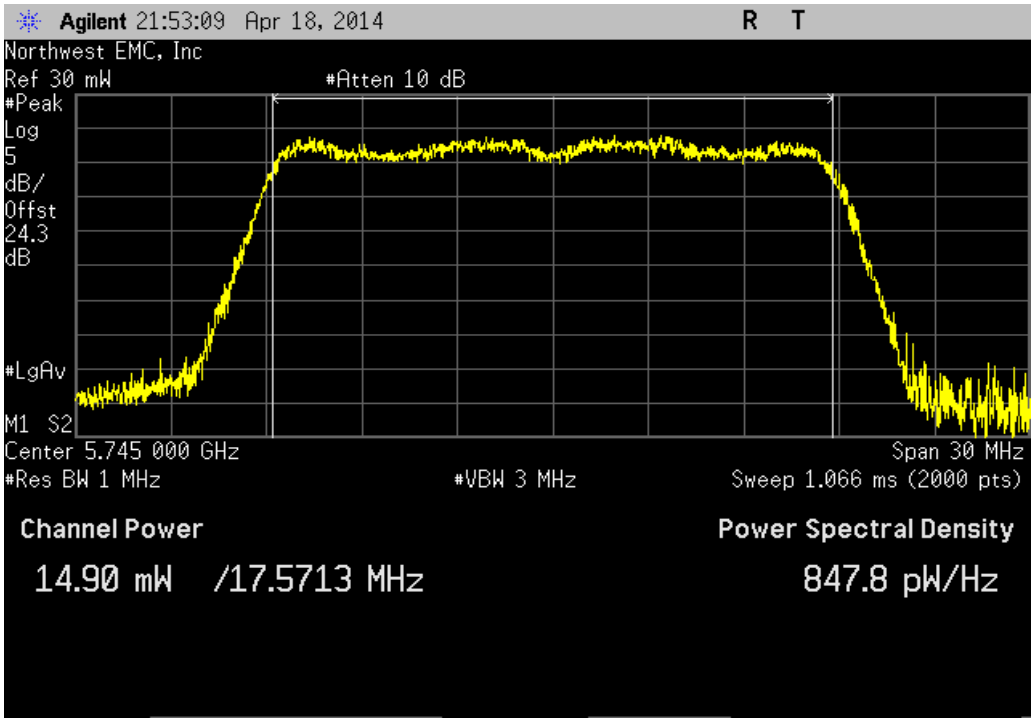
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

				Value	Limit	Result
				15.247 mW	< 1 W	Pass

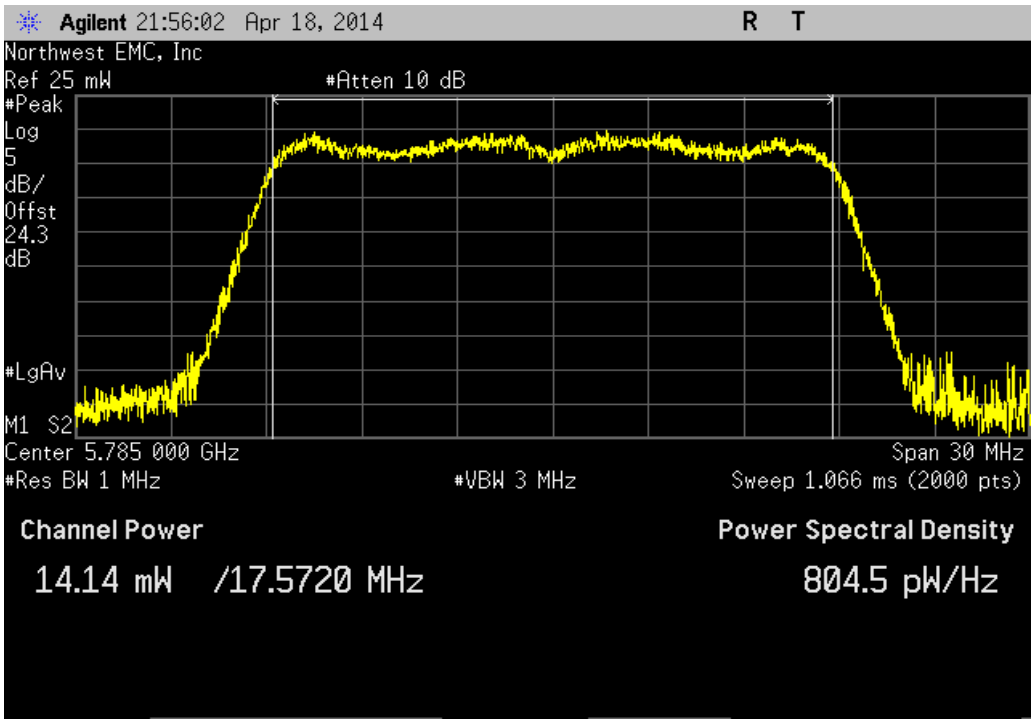


A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

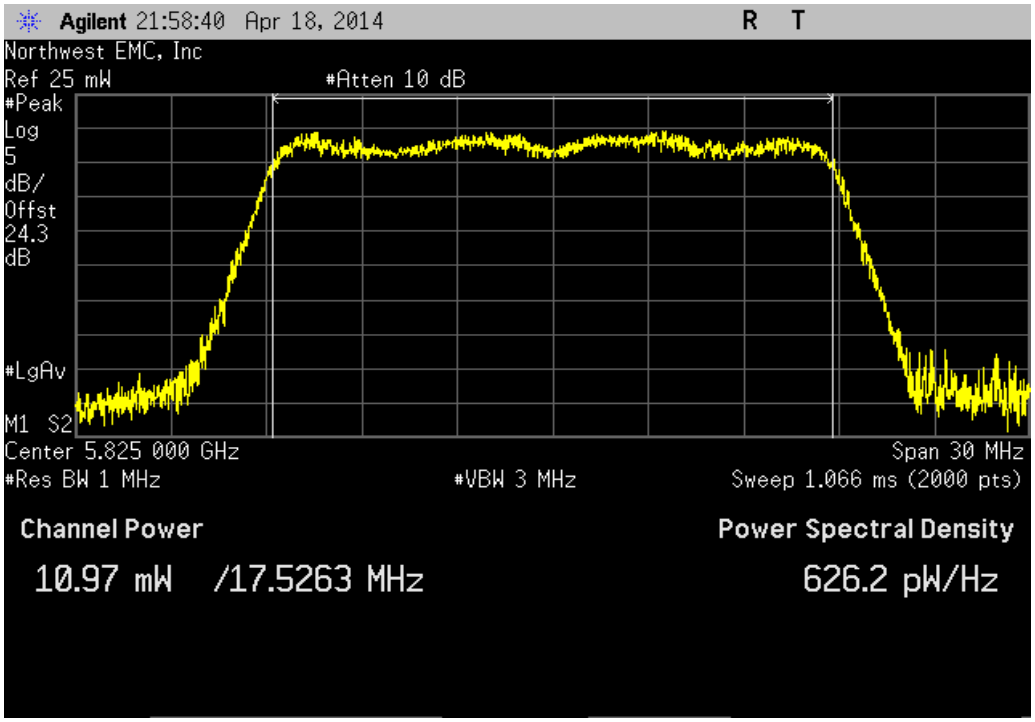
				Value	Limit	Result
				14.896 mW	< 1 W	Pass



A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz						
				Value	Limit	Result
				14.137 mW	< 1 W	Pass

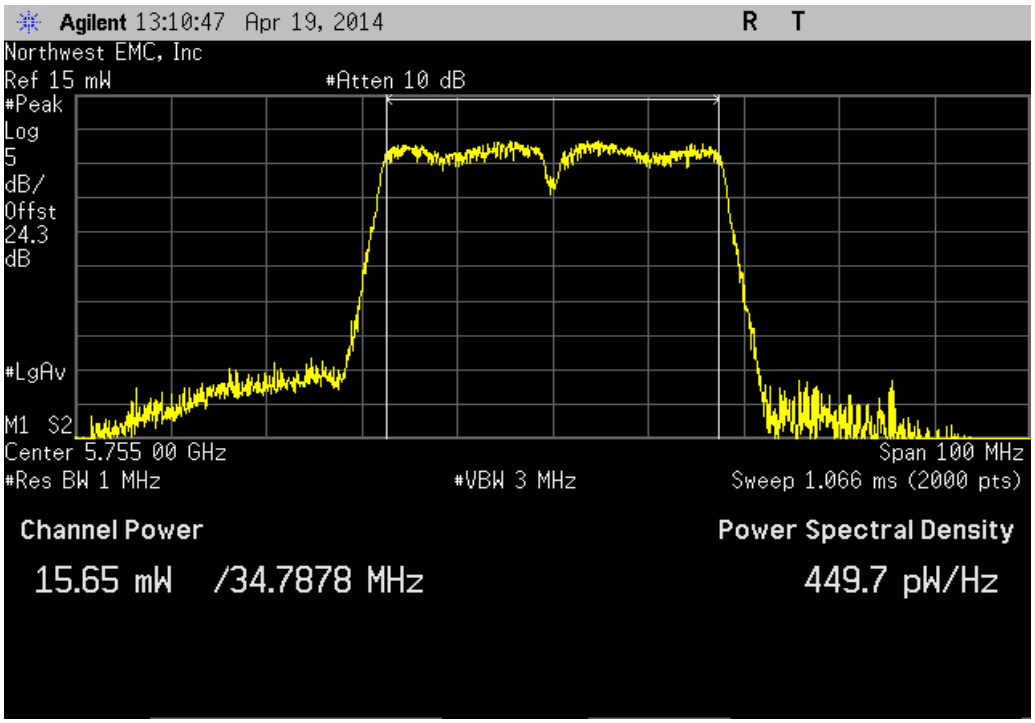


A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz						
				Value	Limit	Result
				10.974 mW	< 1 W	Pass



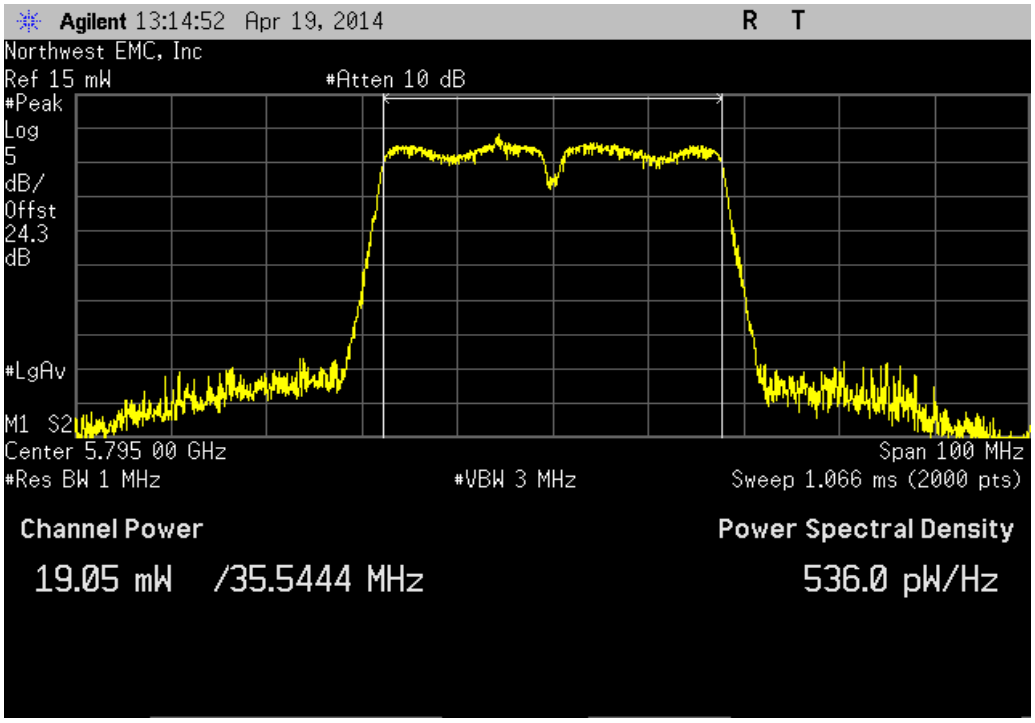
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				15.646 mW	< 1 W	Pass



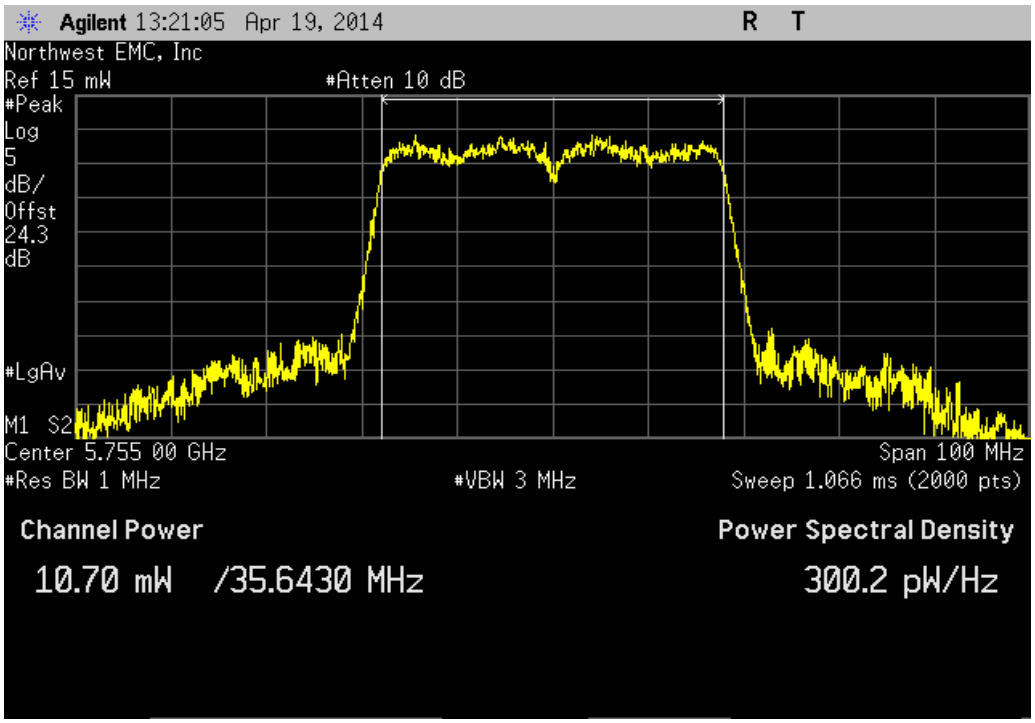
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				19.05 mW	< 1 W	Pass



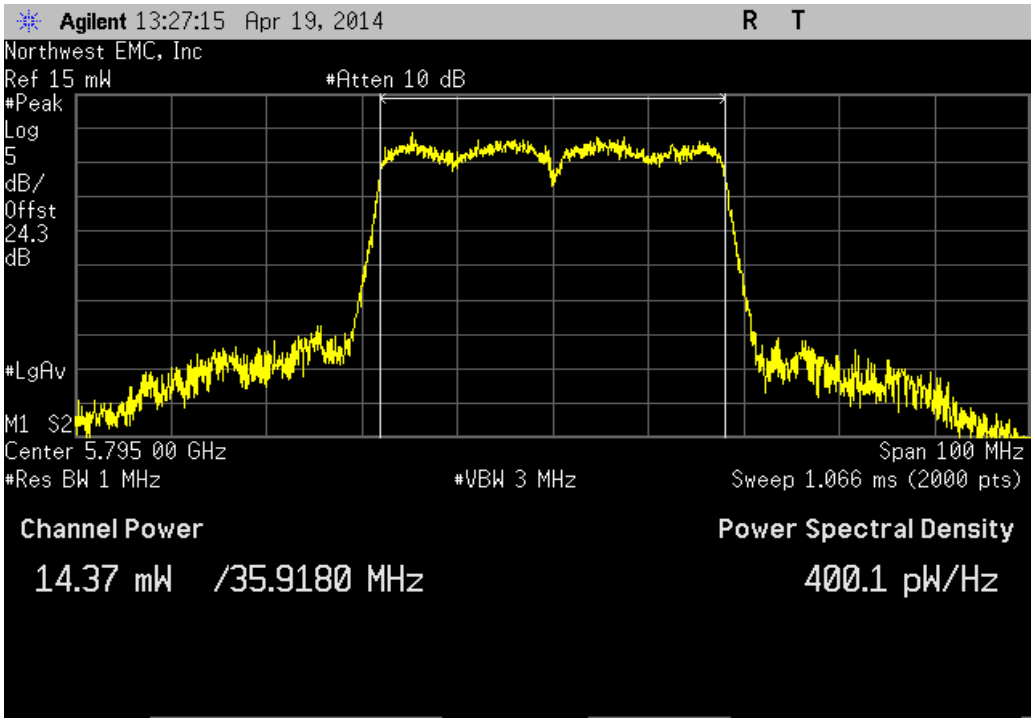
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				10.7 mW	< 1 W	Pass

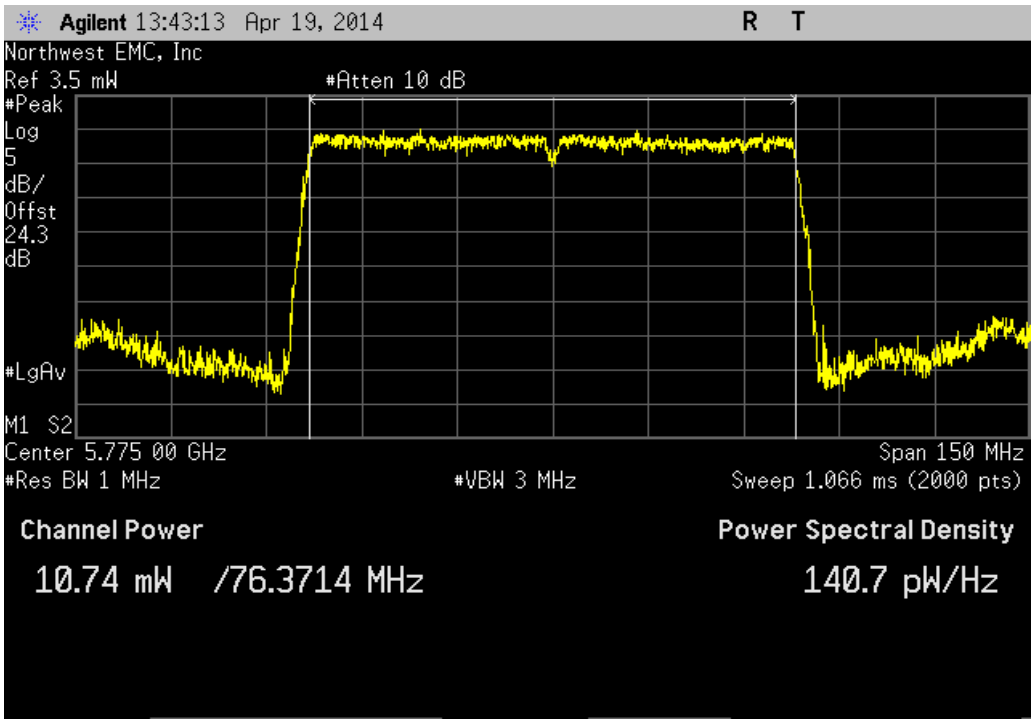


A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

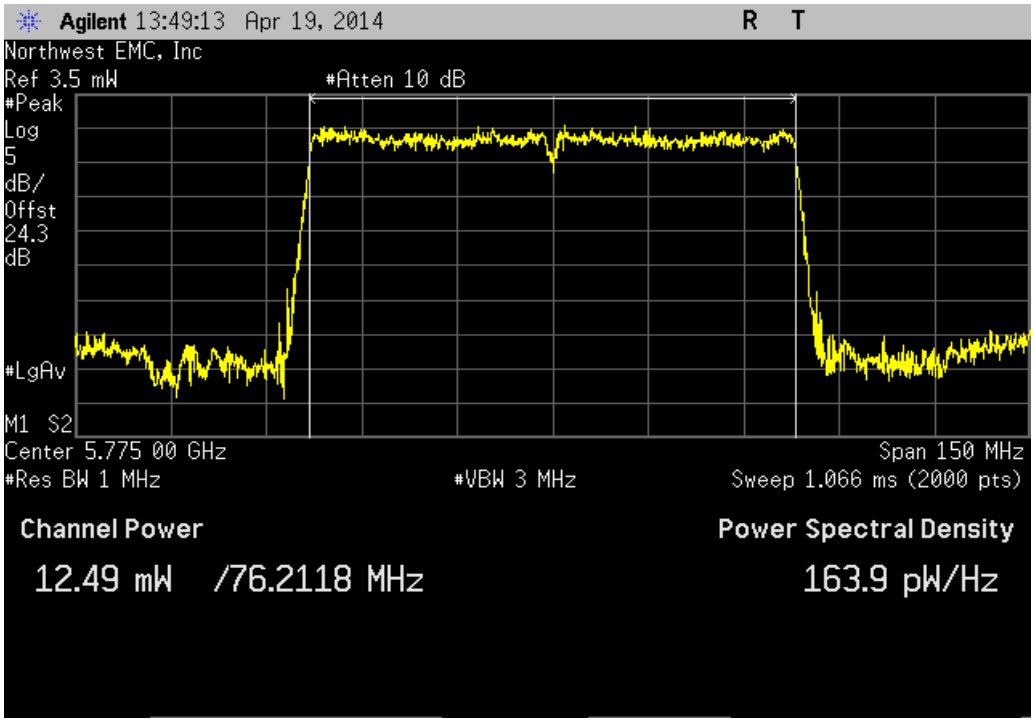
				Value	Limit	Result
				14.372 mW	< 1 W	Pass



A IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz						
				Value	Limit	Result
				10.742 mW	< 1 W	Pass

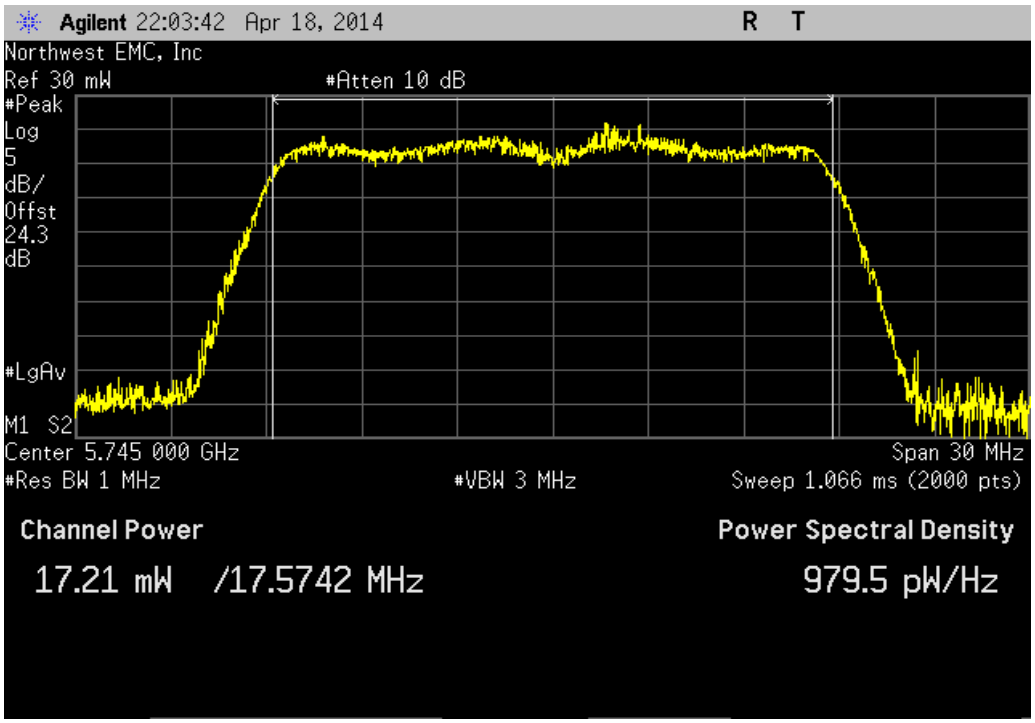


A IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz						
				Value	Limit	Result
				12.49 mW	< 1 W	Pass



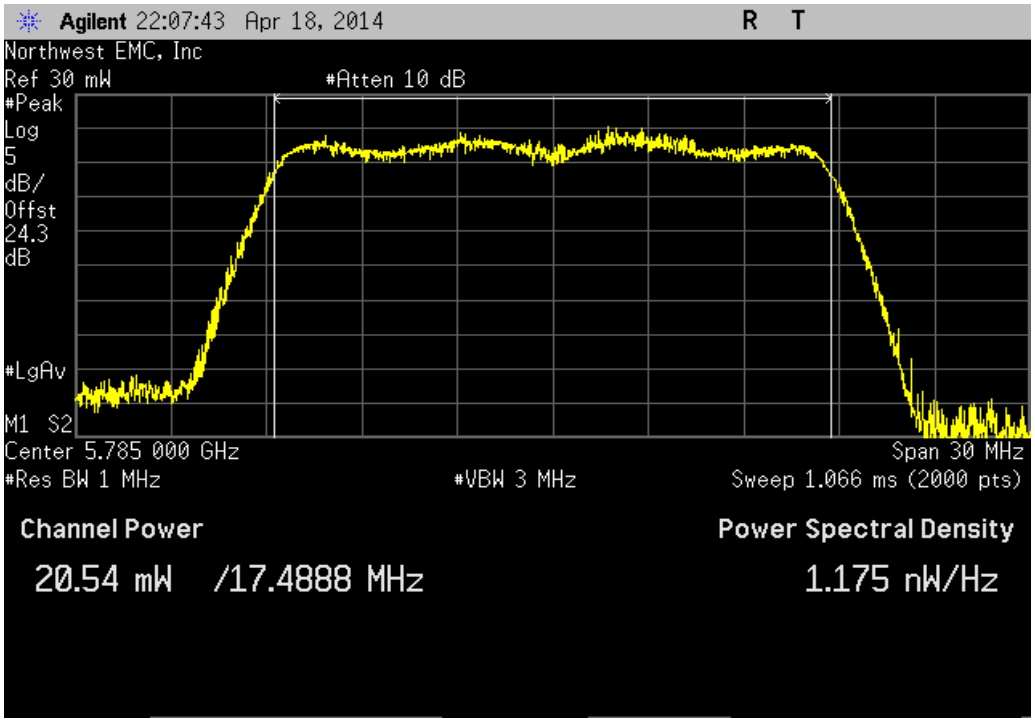
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				17.213 mW	< 1 W	Pass



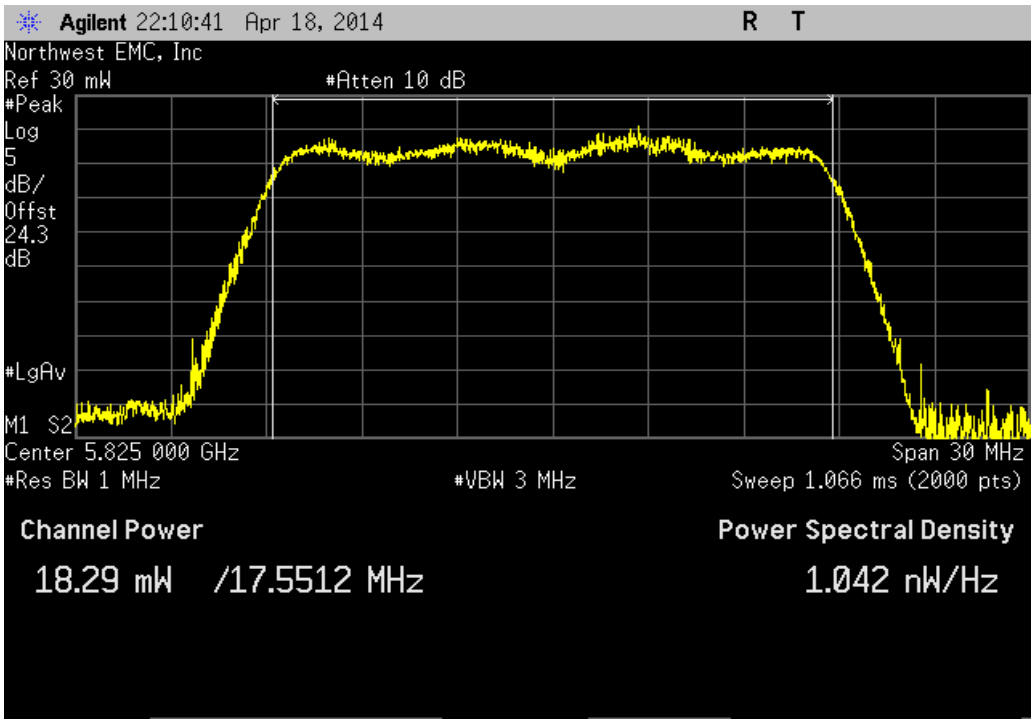
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				20.541 mW	< 1 W	Pass



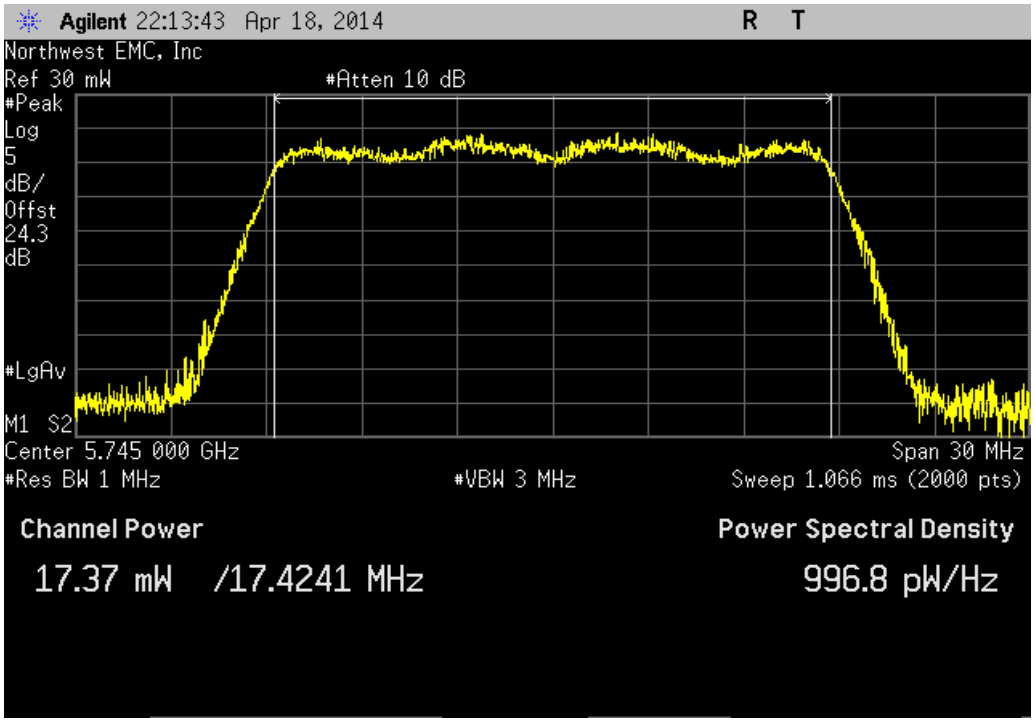
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 165, 5825 MHz

				Value	Limit	Result
				18.285 mW	< 1 W	Pass



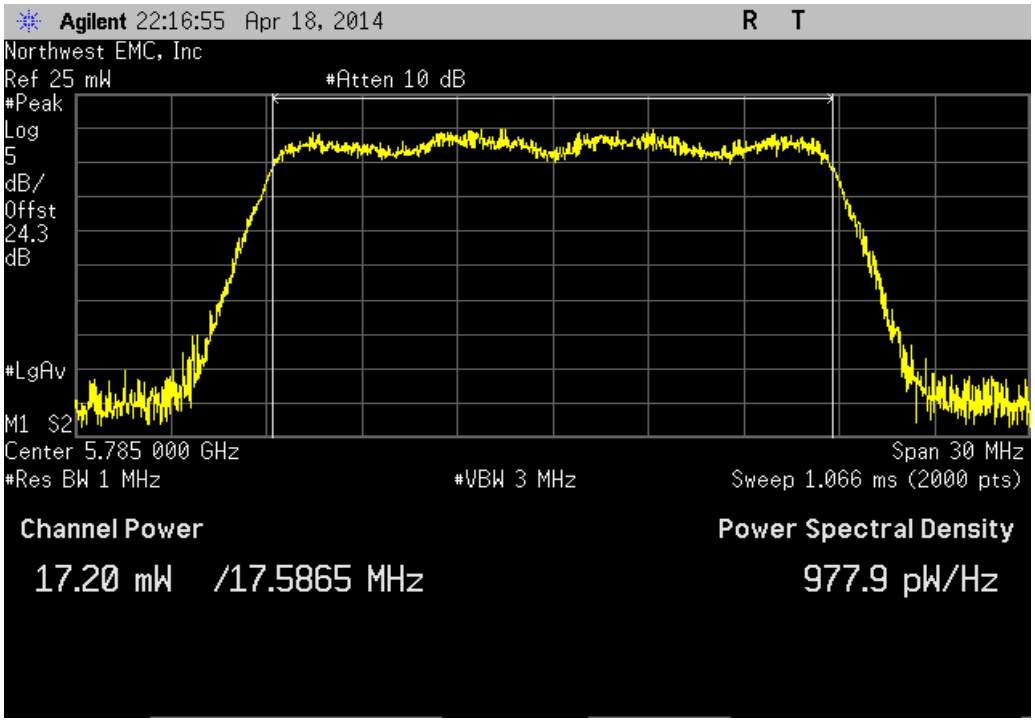
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149, 5745 MHz

				Value	Limit	Result
				17.369 mW	< 1 W	Pass



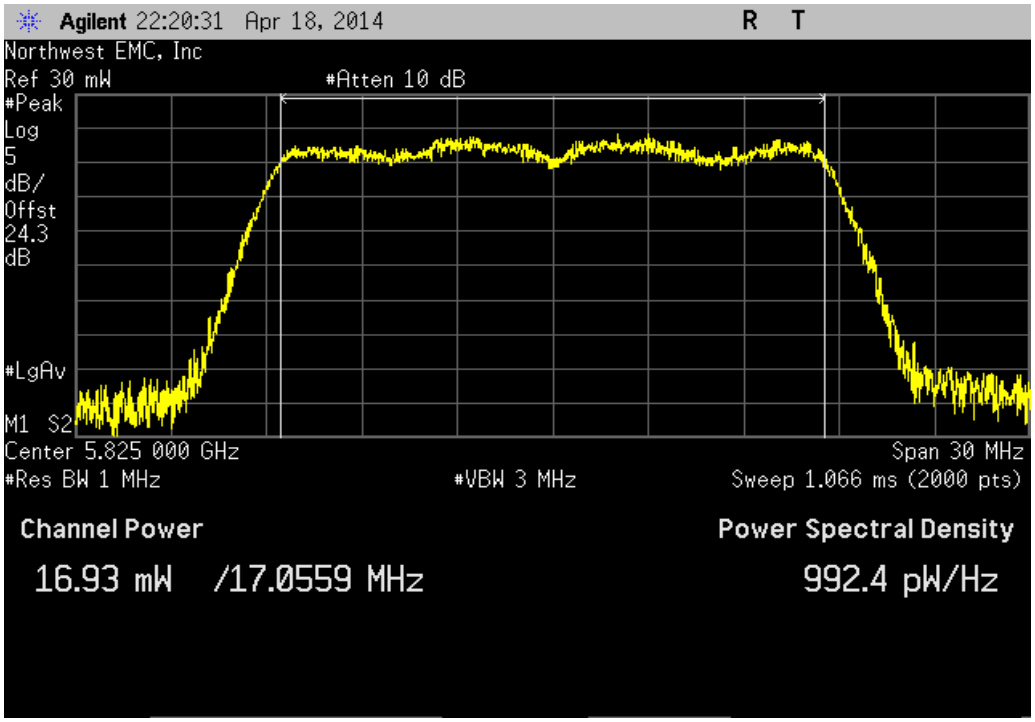
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				17.199 mW	< 1 W	Pass



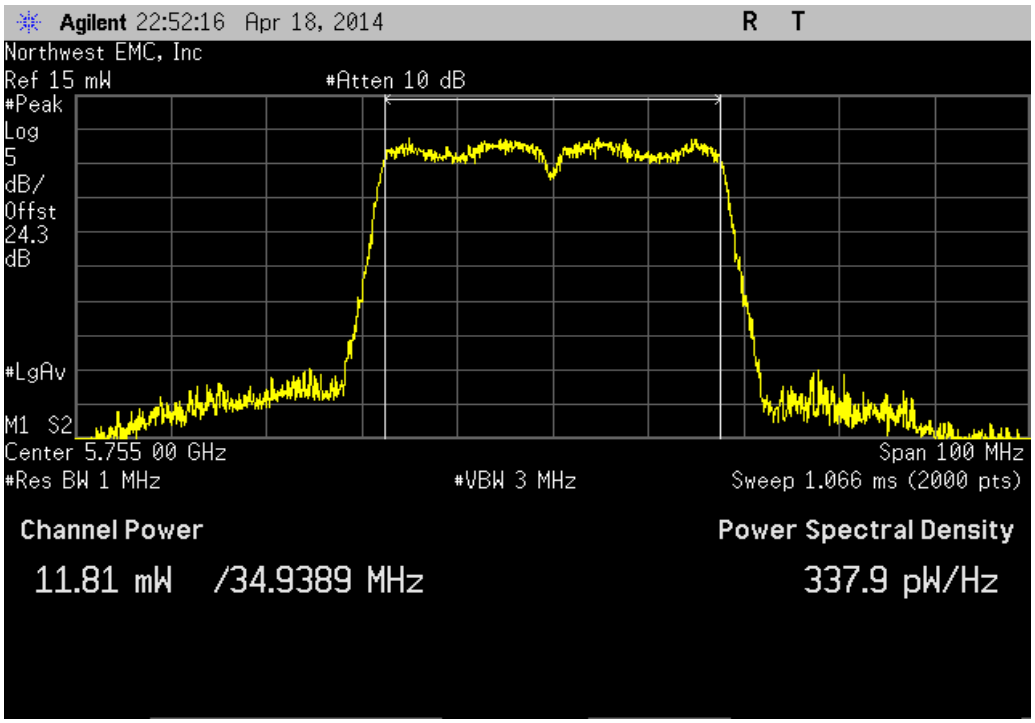
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.926 mW	< 1 W	Pass



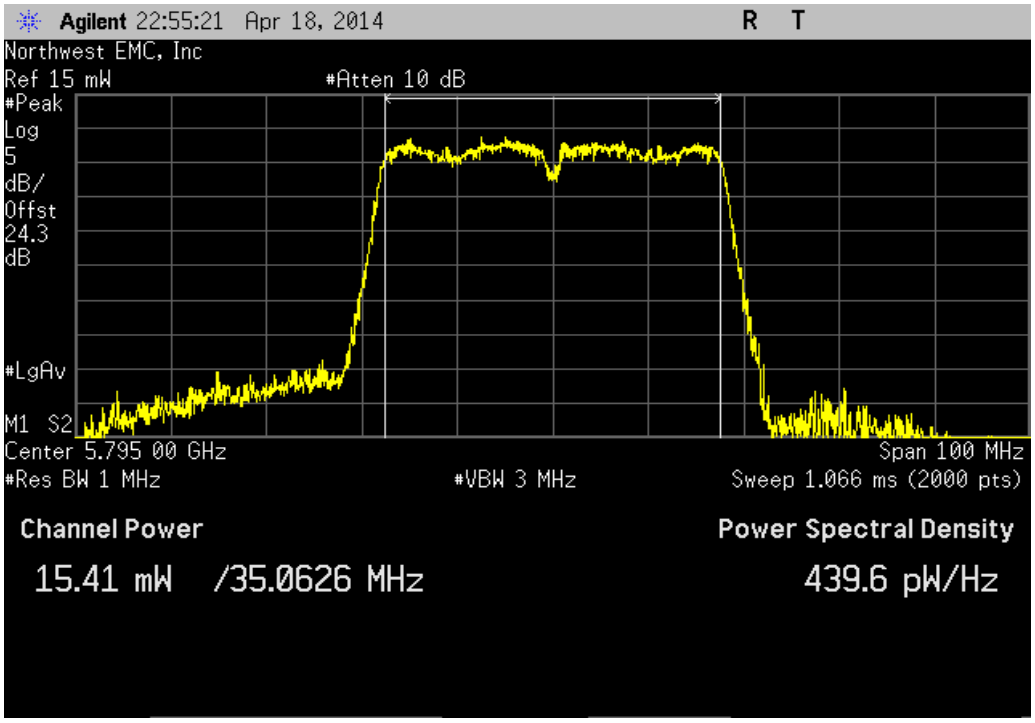
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				11.807 mW	< 1 W	Pass



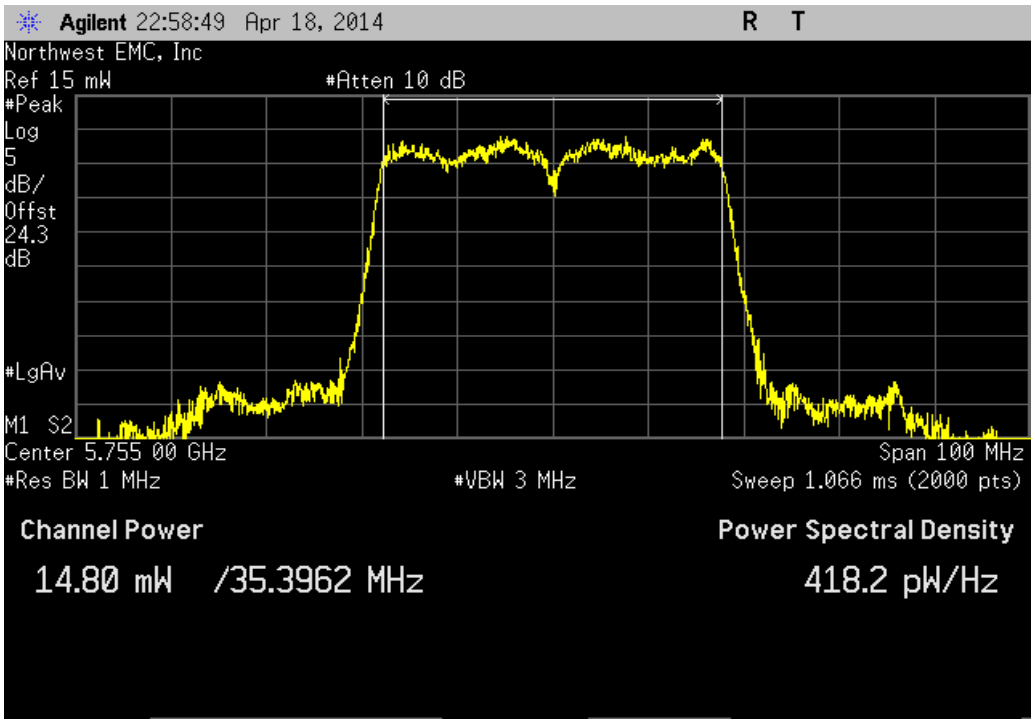
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				15.414 mW	< 1 W	Pass



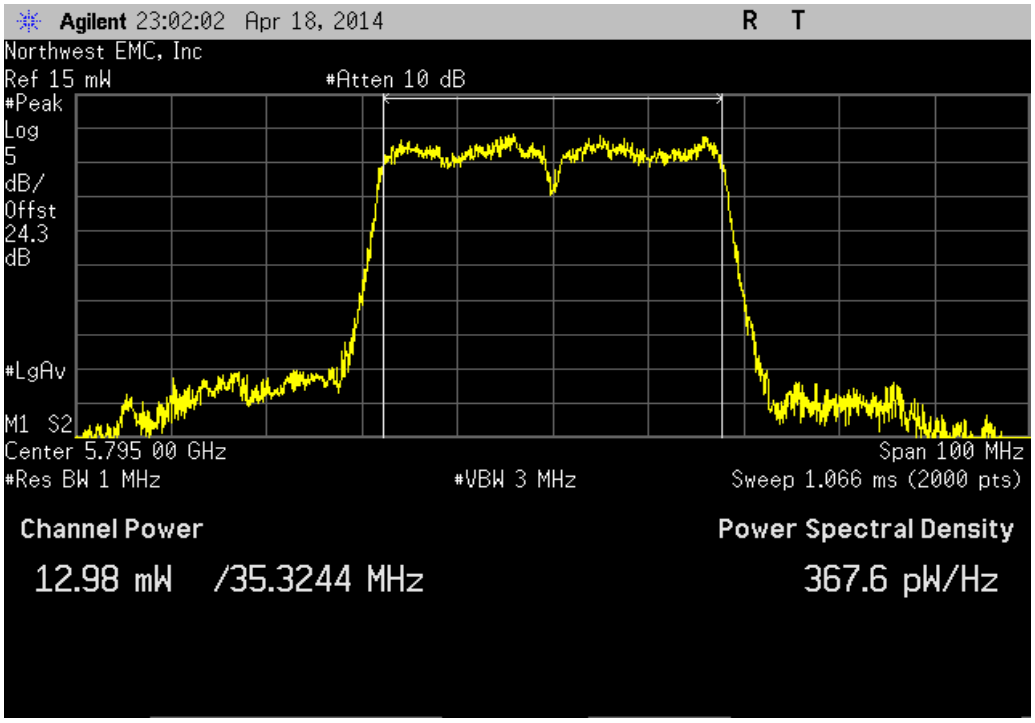
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				14.802 mW	< 1 W	Pass



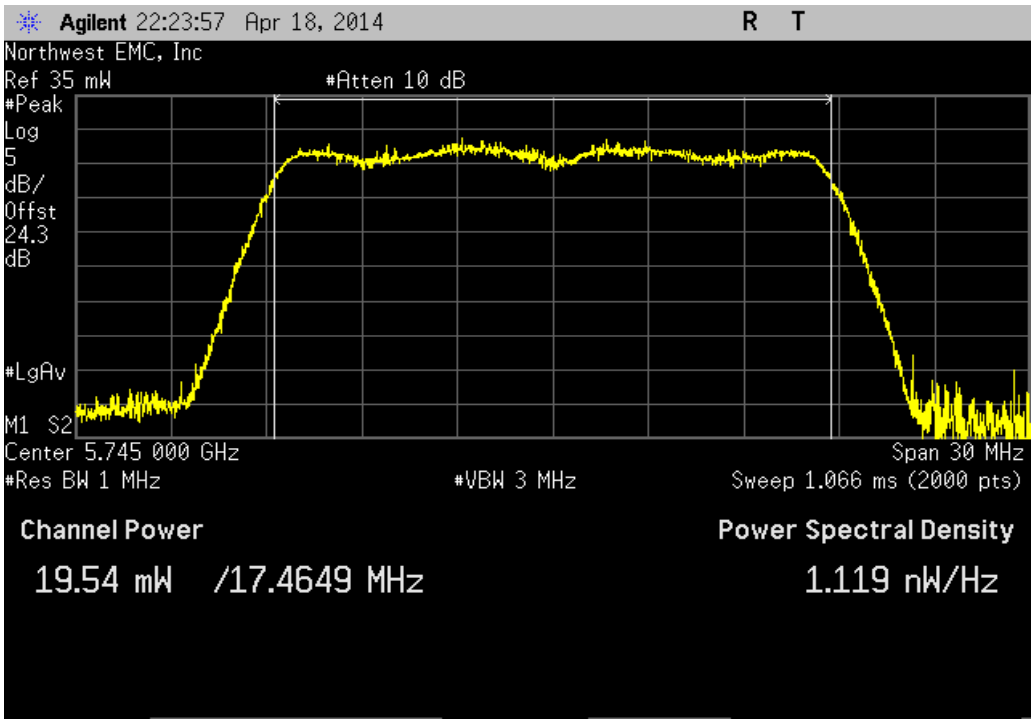
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				12.984 mW	< 1 W	Pass



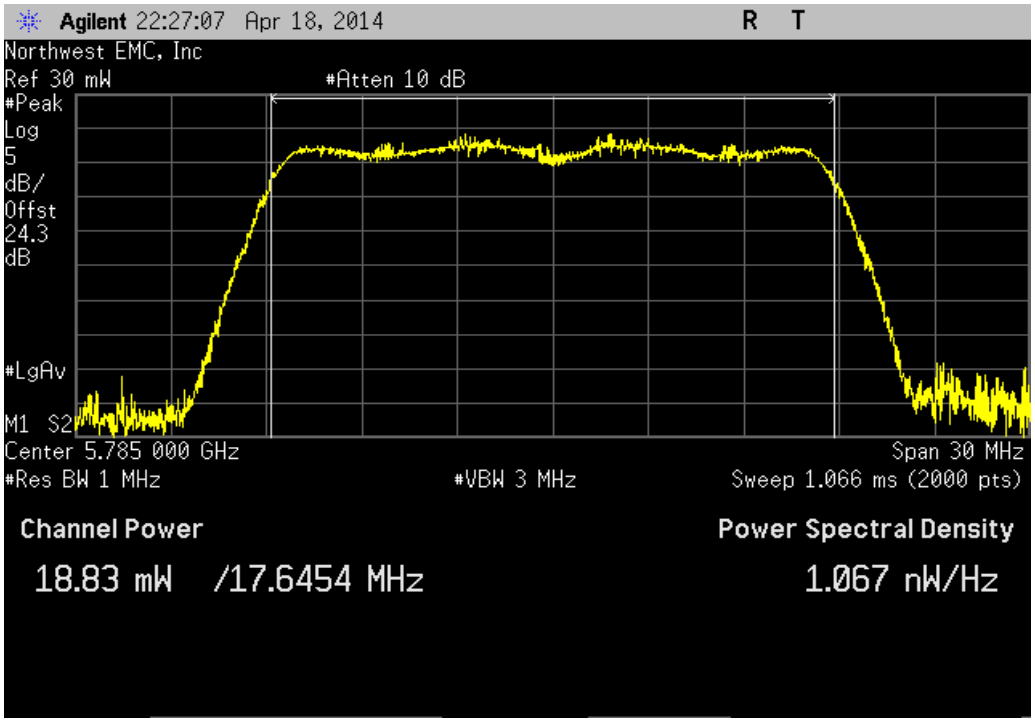
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				19.543 mW	< 1 W	Pass



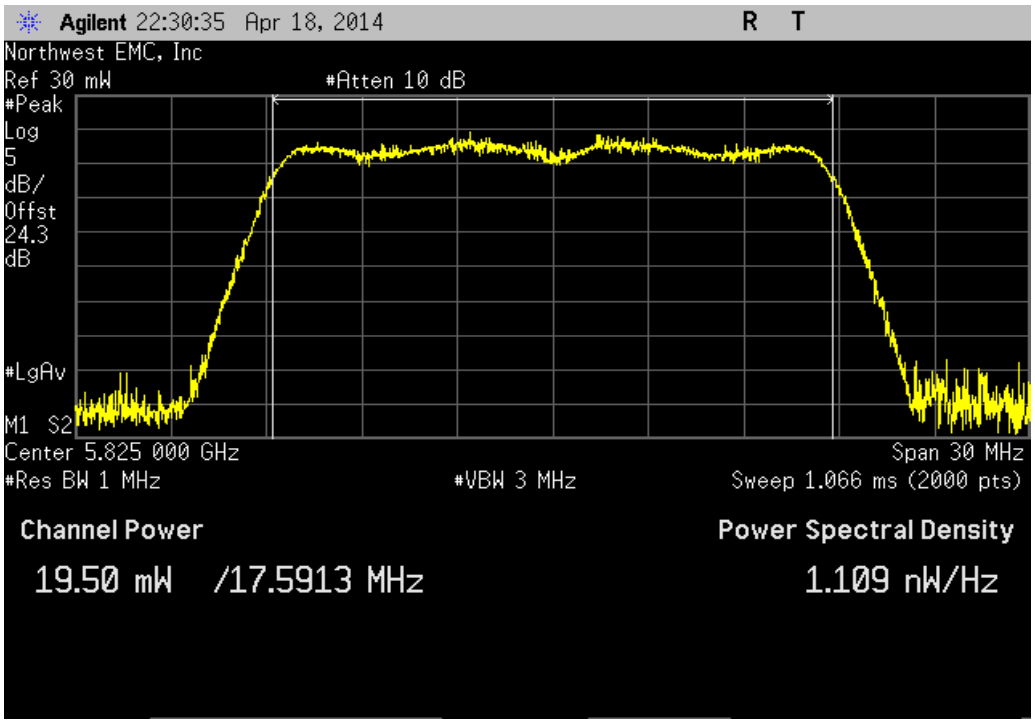
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				18.83 mW	< 1 W	Pass



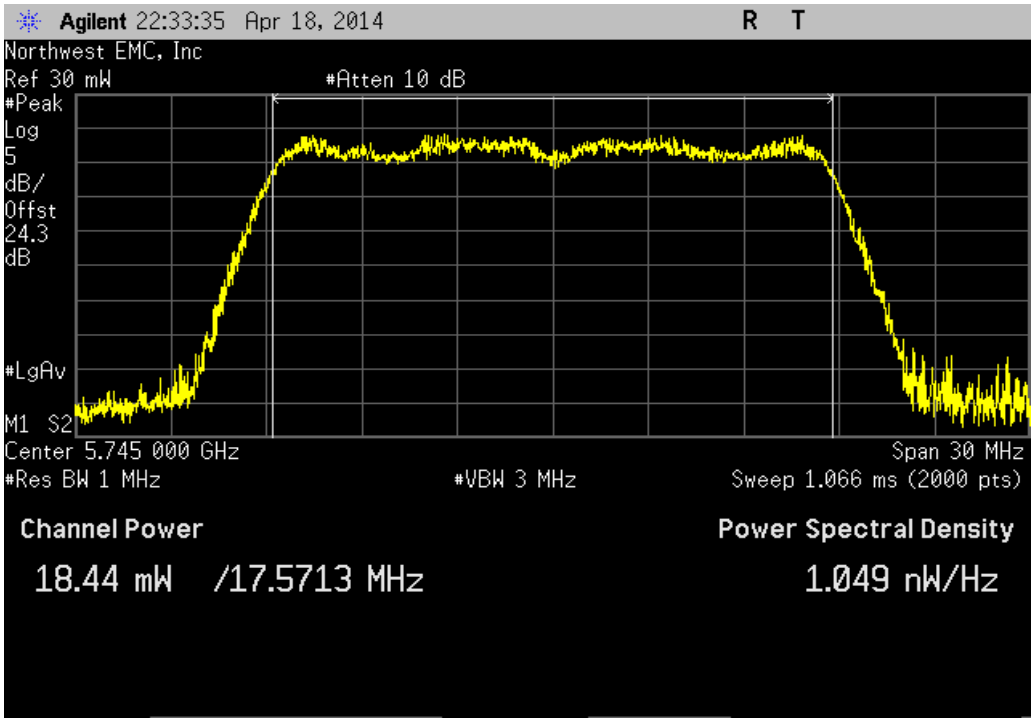
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

				Value	Limit	Result
				19.5 mW	< 1 W	Pass



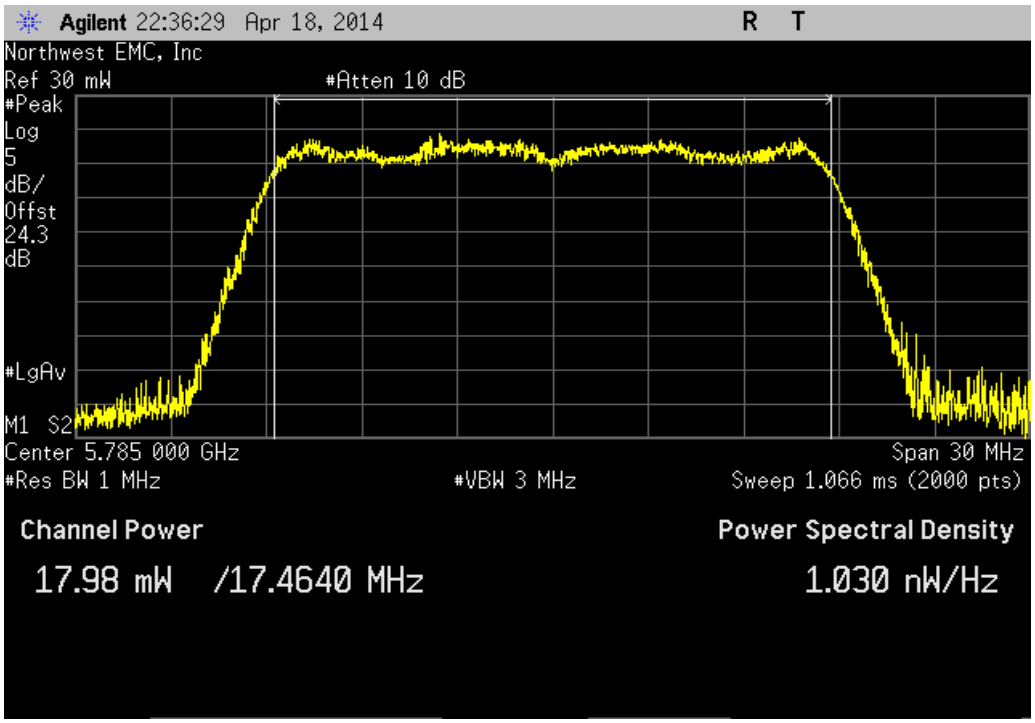
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.438 mW	< 1 W	Pass



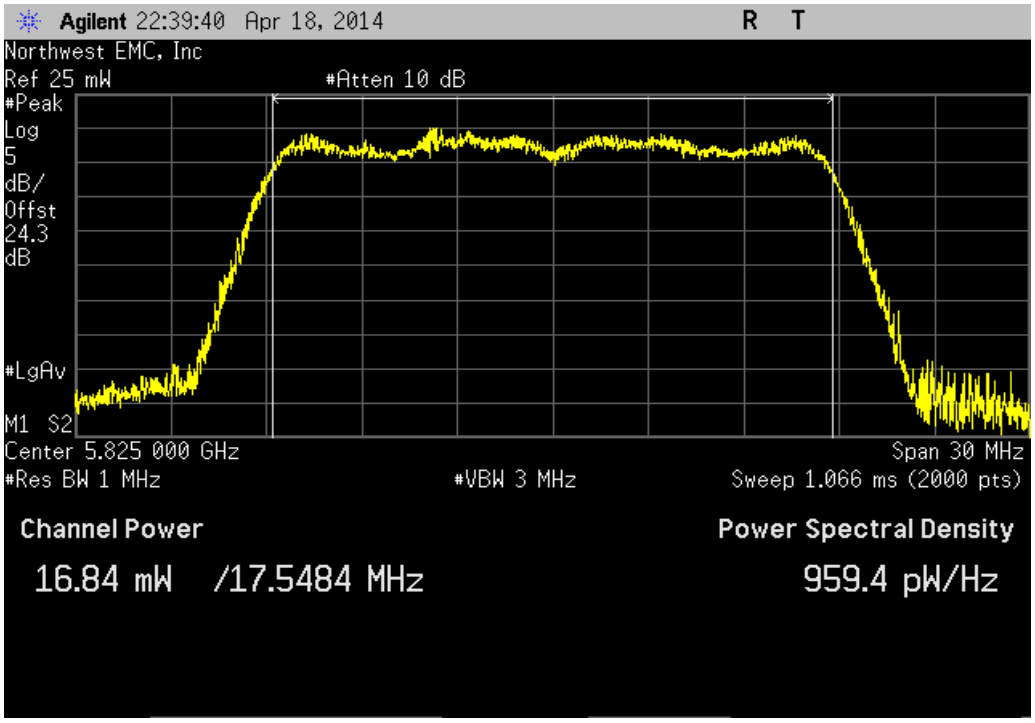
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				17.982 mW	< 1 W	Pass



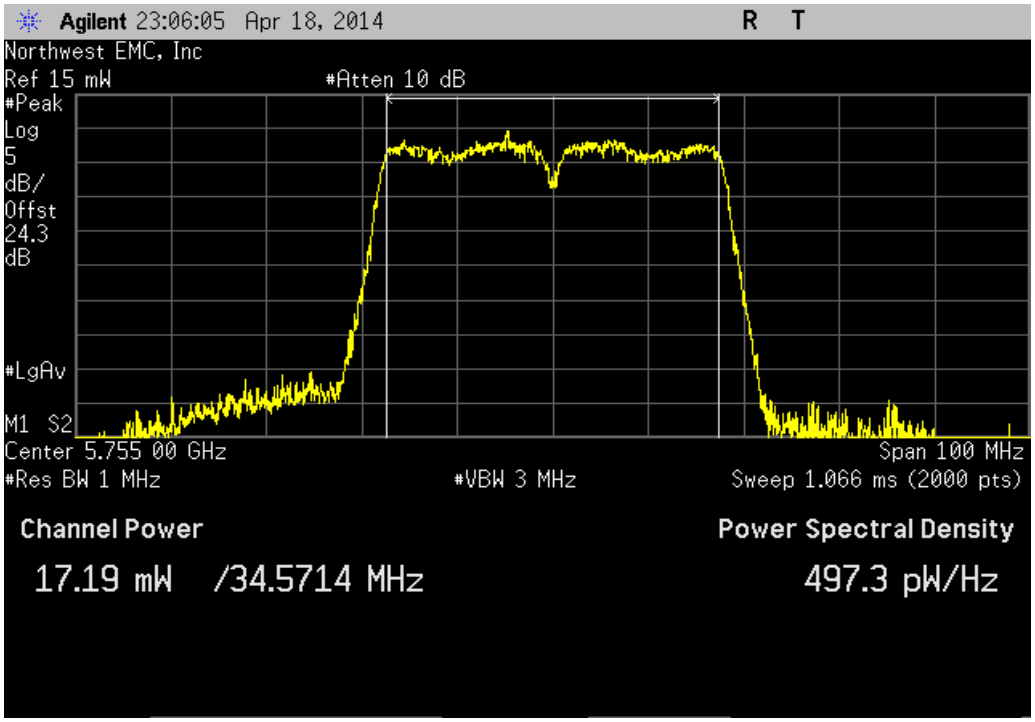
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.836 mW	< 1 W	Pass



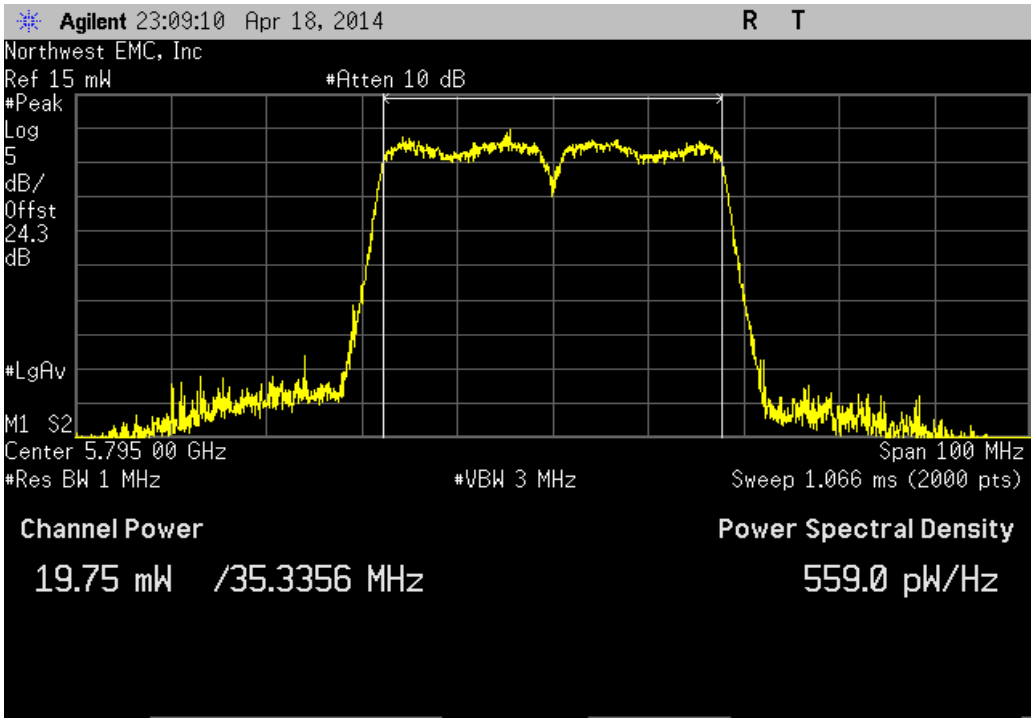
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				17.192 mW	< 1 W	Pass



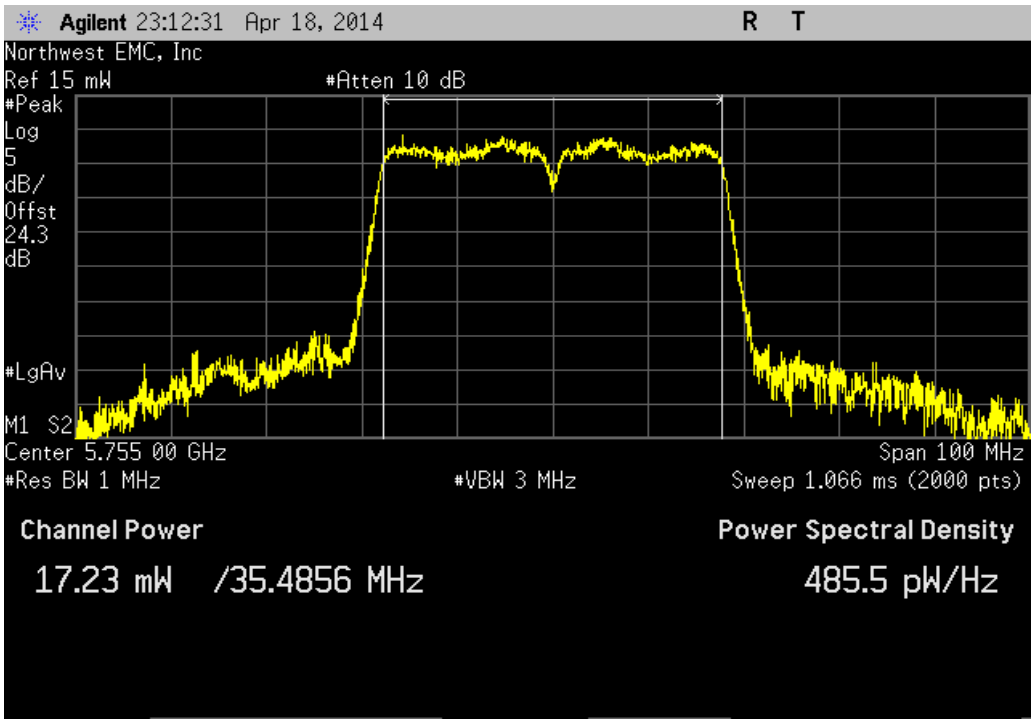
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				19.754 mW	< 1 W	Pass



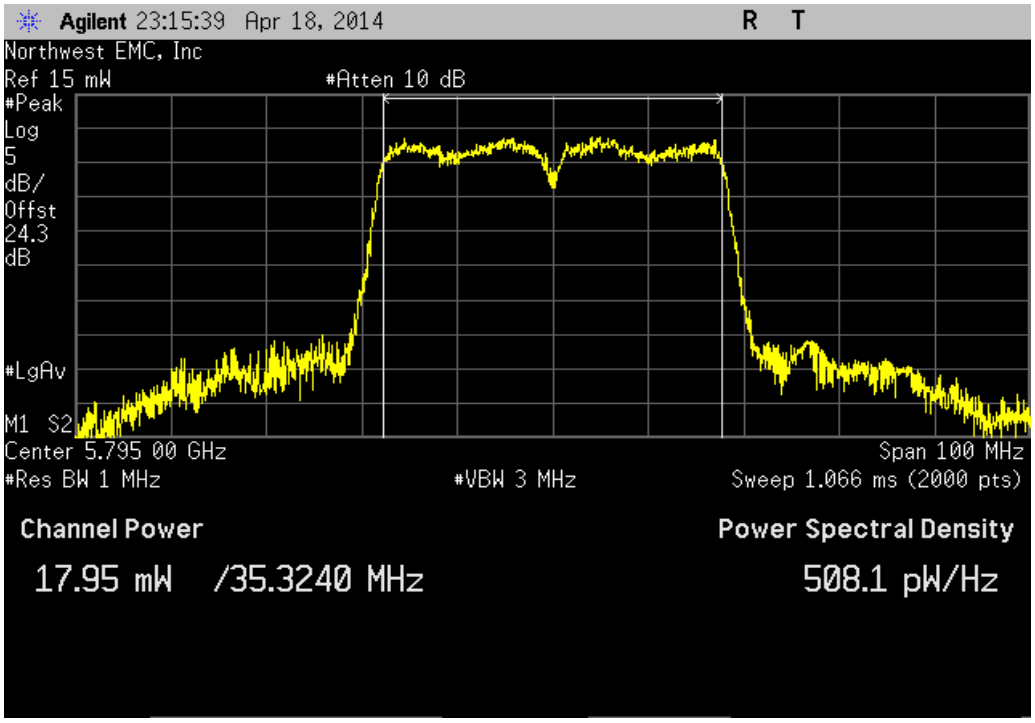
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				17.228 mW	< 1 W	Pass



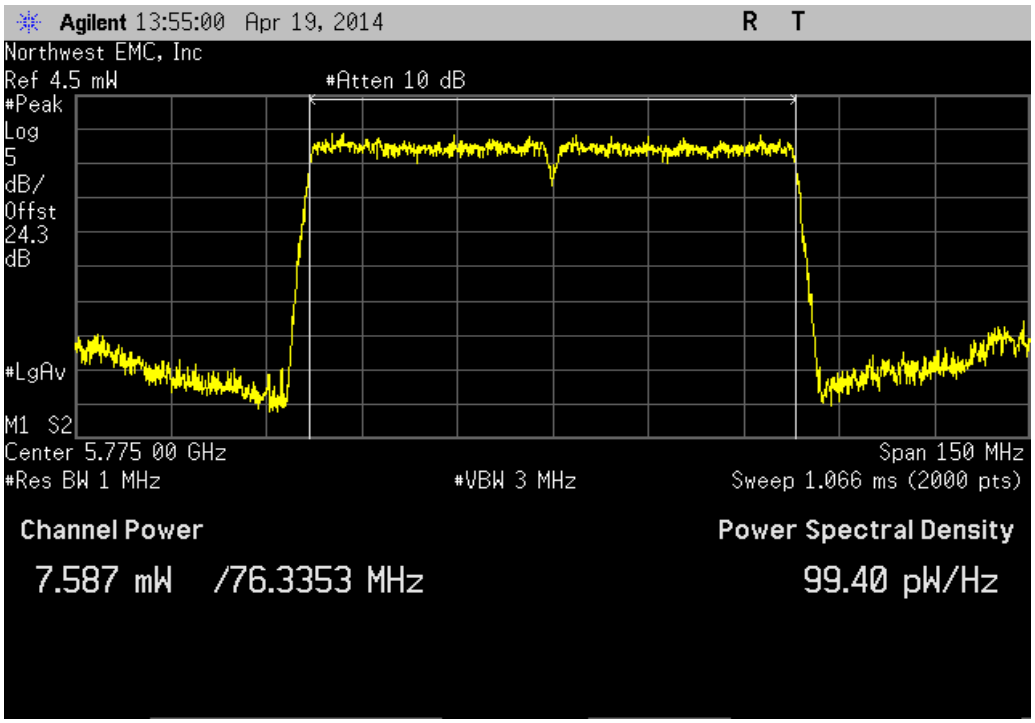
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				17.948 mW	< 1 W	Pass



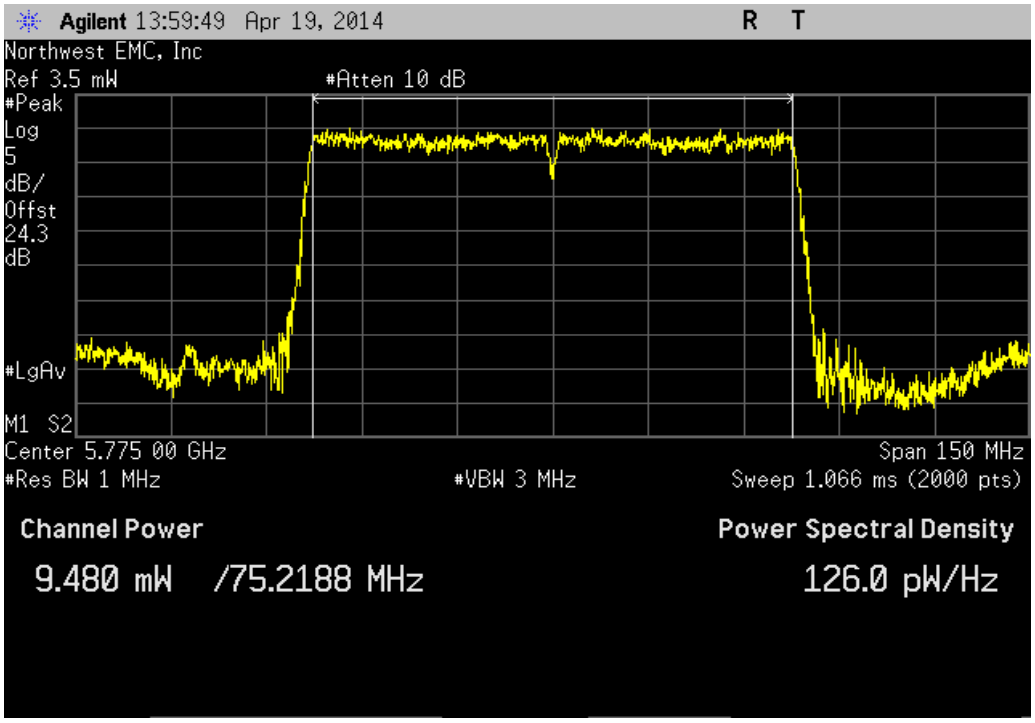
B IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				7.587 mW	< 1 W	Pass



B IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				9.48 mW	< 1 W	Pass



OUTPUT POWER

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER

EUT:	Model 1631	**Work Order:**	MCSO1698
Serial Number:	006840341053	**Date:**	04/23/14
Customer:	Microsoft Corporation	**Temperature:**	22.3°C
Attendees:	None	**Humidity:**	32%
Project:	None	**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:** 110VAC/60Hz	**Job Site:** EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

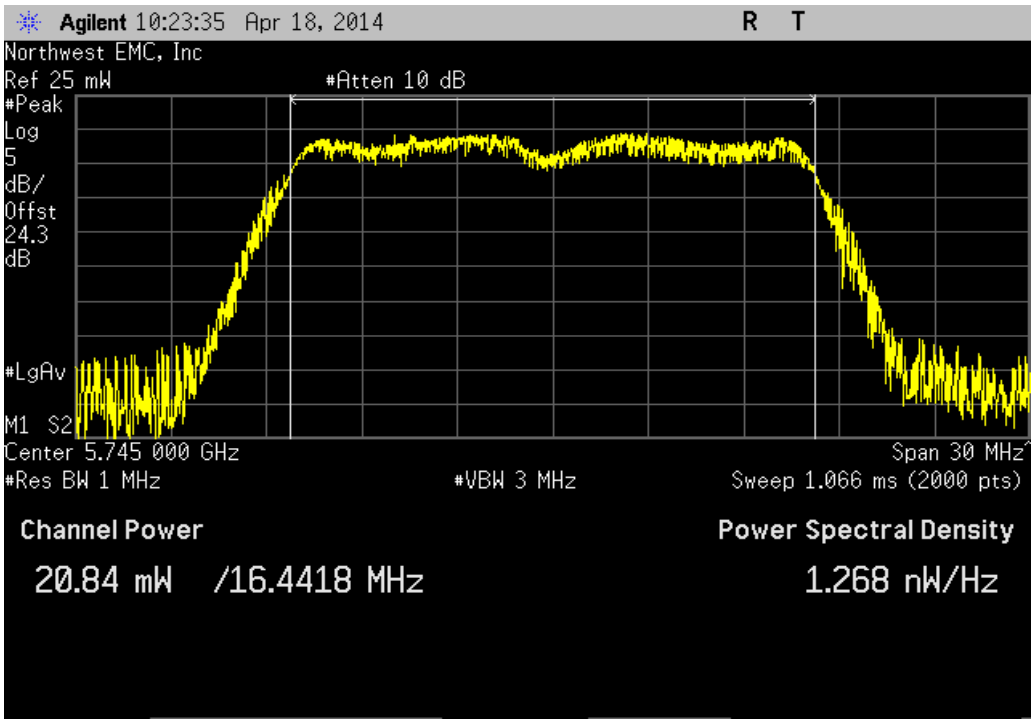
None

Configuration #	6	Signature

	Value	Limit	Result
IEEE 802.11(a)			
20 MHz			
5725 MHz - 5850 MHz Band			
6 Mbps			
Low Channel 149, 5745 M	20.843 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	20.288 mW	< 1 W	Pass
High Channel 165, 5825 M	20.287 mW	< 1 W	Pass
36 Mbps			
Low Channel 149, 5745 M	18.486 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	18.52 mW	< 1 W	Pass
High Channel 165, 5825 M	17.802 mW	< 1 W	Pass
54 Mbps			
Low Channel 149, 5745 M	17.553 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	18.191 mW	< 1 W	Pass
High Channel 165, 5825 M	18.388 mW	< 1 W	Pass
IEEE 802.11(n)			
20 MHz			
5725 MHz - 5850 MHz Band			
HT, MCS7			
Low Channel 149, 5745 M	18.865 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	18.961 mW	< 1 W	Pass
High Channel 165, 5825 M	18.048 mW	< 1 W	Pass
40 MHz			
5725 MHz - 5850 MHz Band			
HT, MCS7			
Low Channel 149/153, 575	16.216 mW	< 1 W	Pass
High Channel 157/161, 57!	16.532 mW	< 1 W	Pass
IEEE 802.11(ac)			
20 MHz			
5725 MHz - 5850 MHz Band			
VHT, MCS0			
Low Channel 149, 5745 M	18.882 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	18.764 mW	< 1 W	Pass
High Channel 165, 5825 M	18.212 mW	< 1 W	Pass
VHT, MCS8			
Low Channel 149, 5745 M	18.107 mW	< 1 W	Pass
Mid Channel 157, 5785 MH	18.368 mW	< 1 W	Pass
High Channel 165, 5825 M	18.277 mW	< 1 W	Pass
40 MHz			
5725 MHz - 5850 MHz Band			
VHT, MCS0			
Low Channel 149/153, 575	20.466 mW	< 1 W	Pass
High Channel 157/161, 57!	20.854 mW	< 1 W	Pass
VHT, MCS9			
Low Channel 149/153, 575	18.113 mW	< 1 W	Pass
High Channel 157/161, 57!	18.035 mW	< 1 W	Pass
80 MHz			
5725 MHz - 5850 MHz Band			
VHT, MCS0			
Low Channel 149/153/157	16.689 mW	< 1 W	Pass
VHT, MCS9			
Low Channel 149/153/157	14.947 mW	< 1 W	Pass

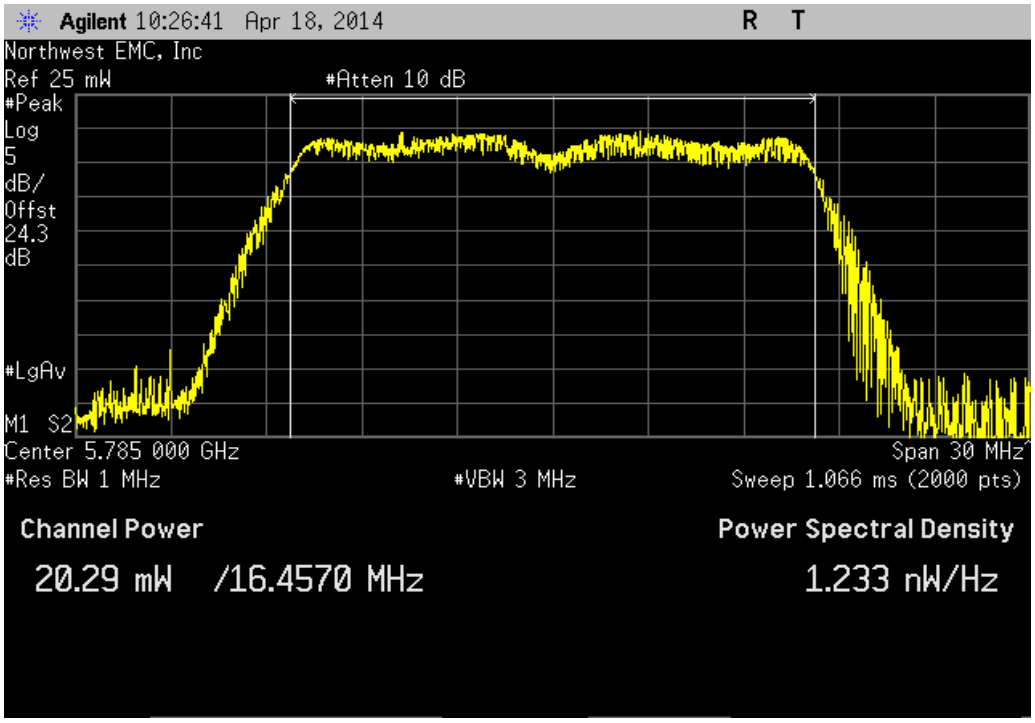
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				20.843 mW	< 1 W	Pass



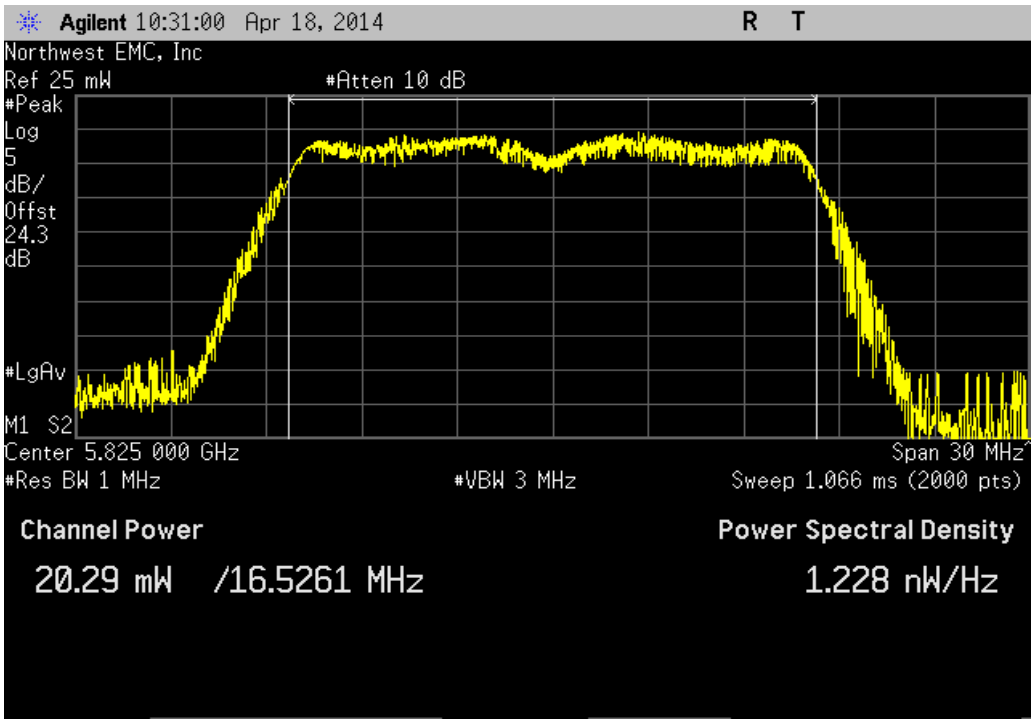
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				20.288 mW	< 1 W	Pass



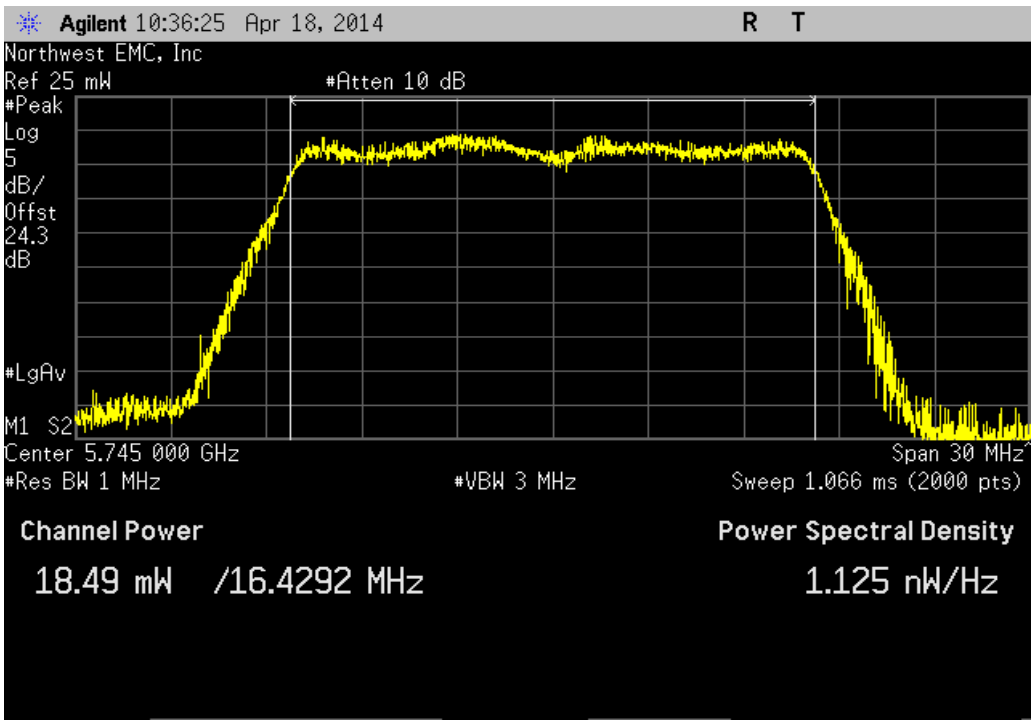
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				20.287 mW	< 1 W	Pass



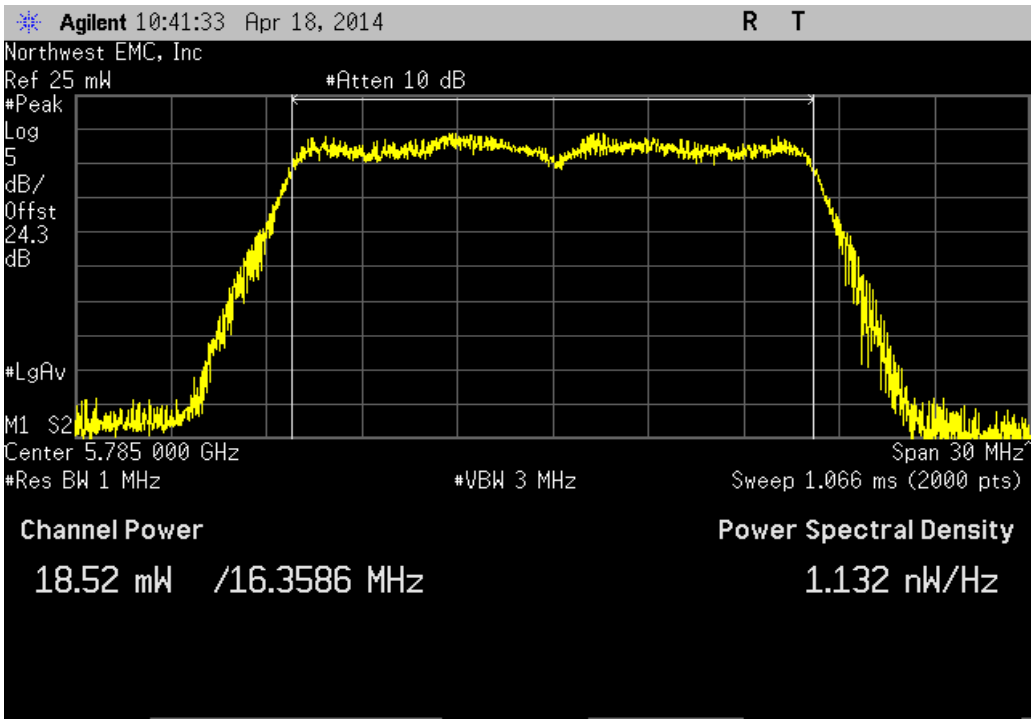
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.486 mW	< 1 W	Pass



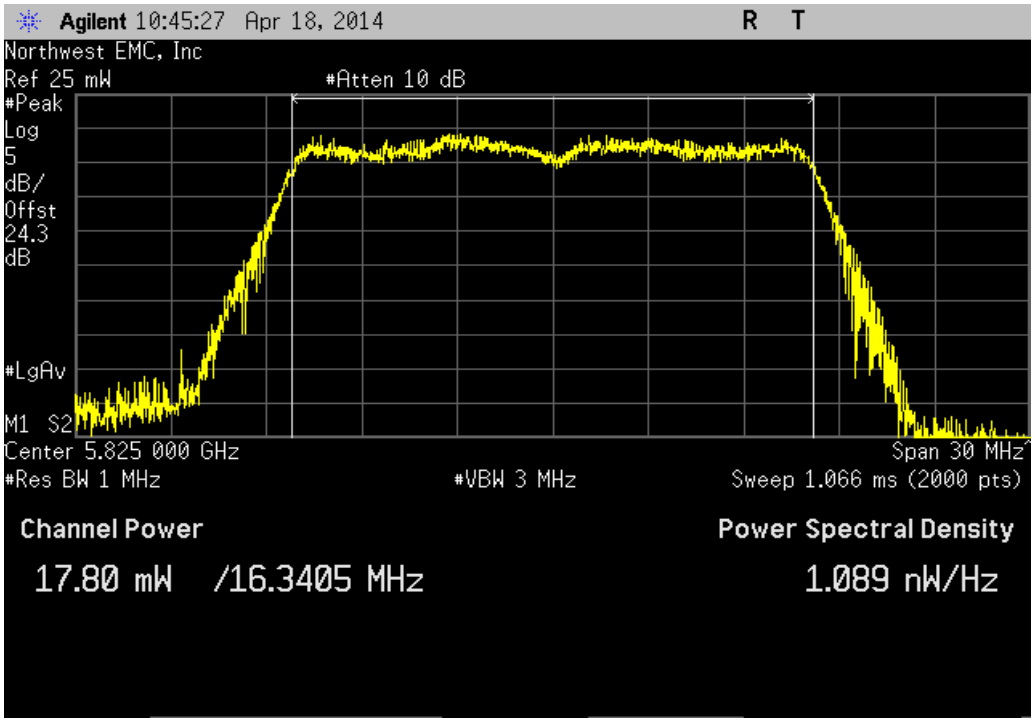
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				18.52 mW	< 1 W	Pass



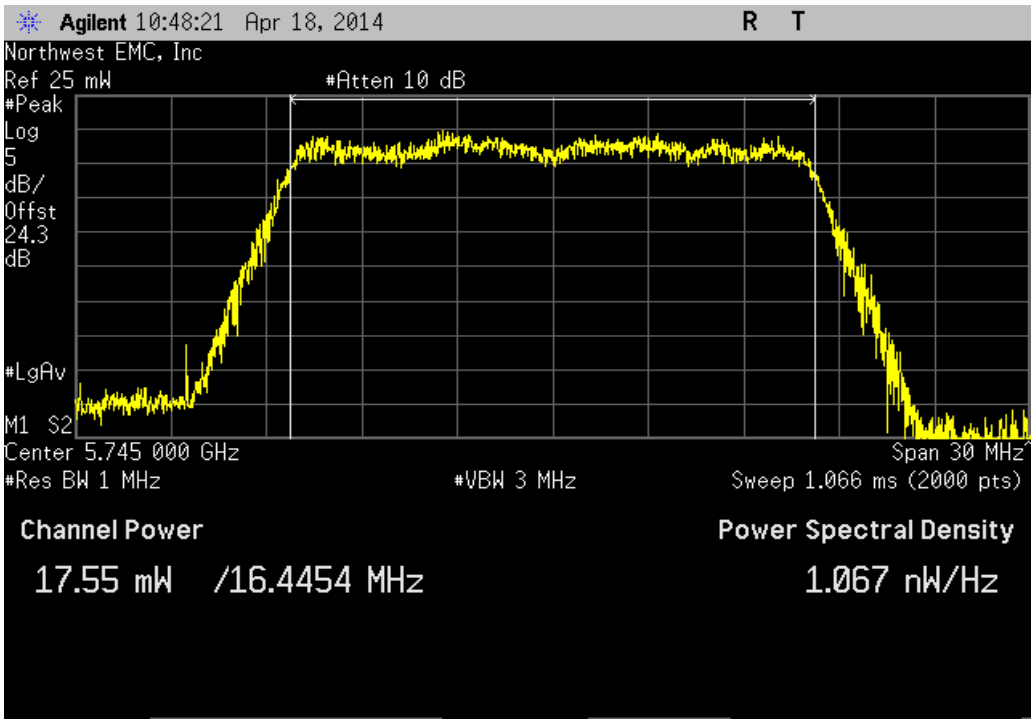
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				17.802 mW	< 1 W	Pass



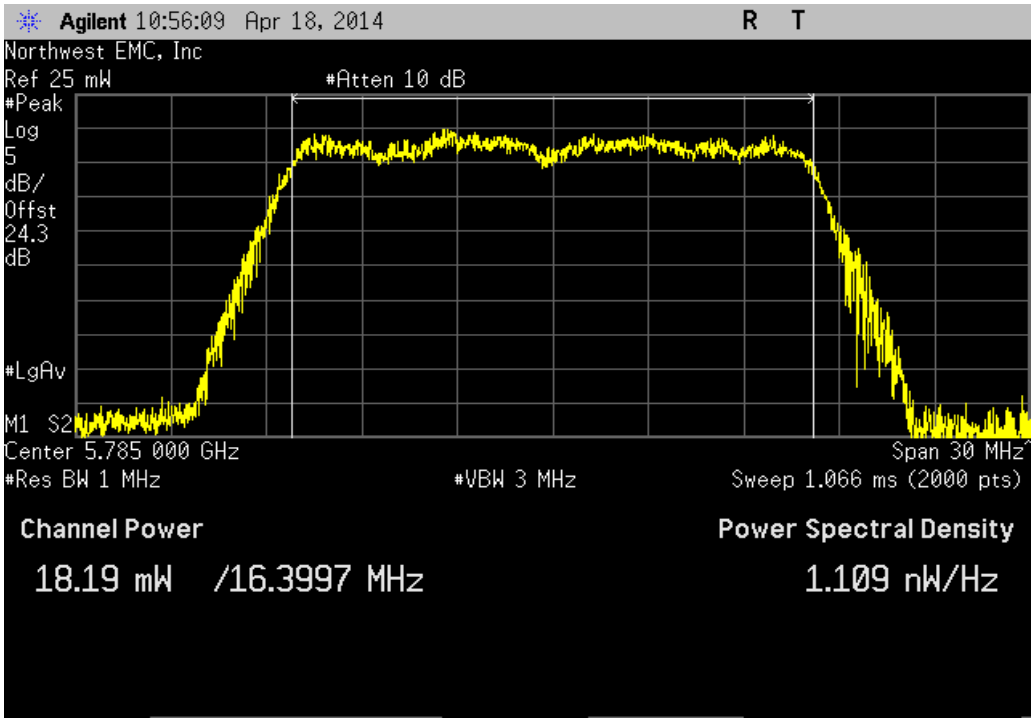
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				17.553 mW	< 1 W	Pass



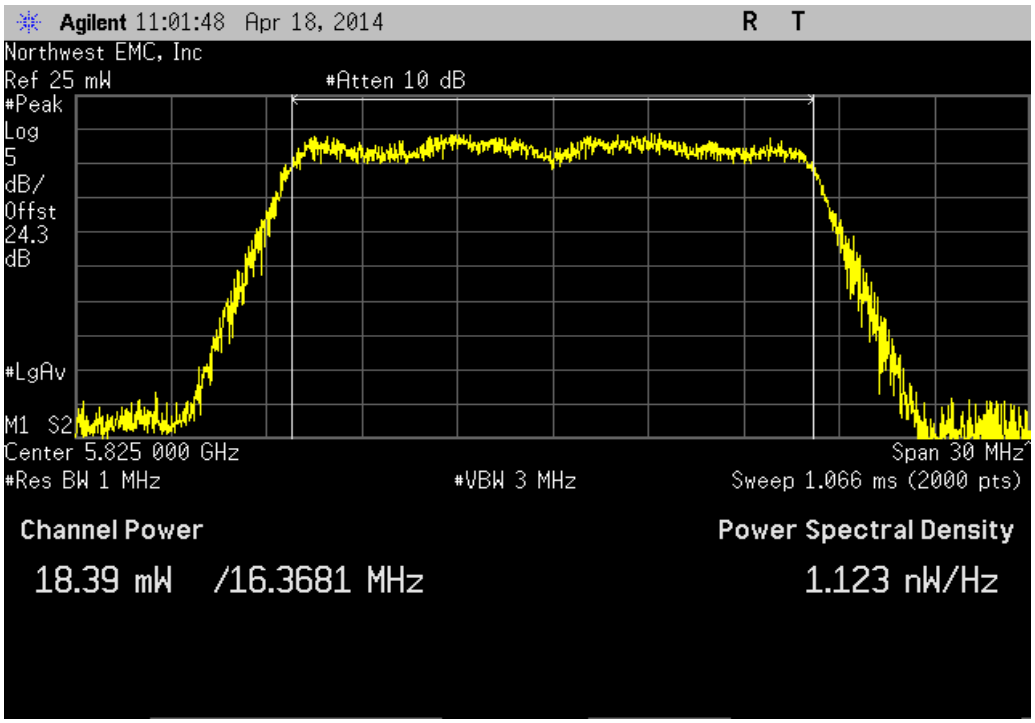
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				18.191 mW	< 1 W	Pass



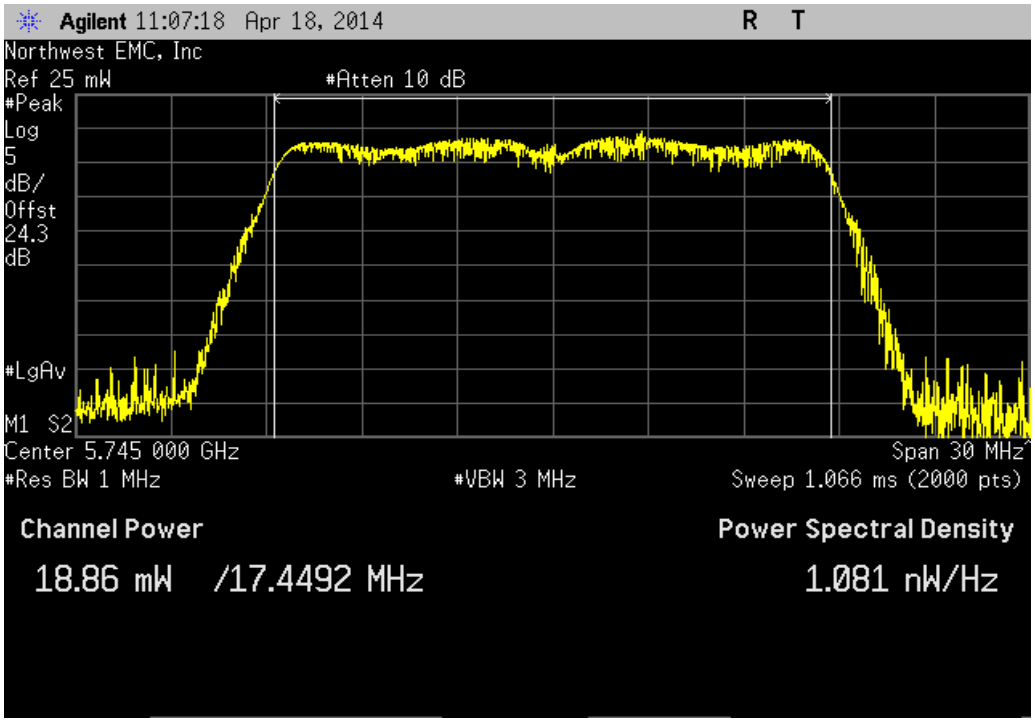
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				18.388 mW	< 1 W	Pass



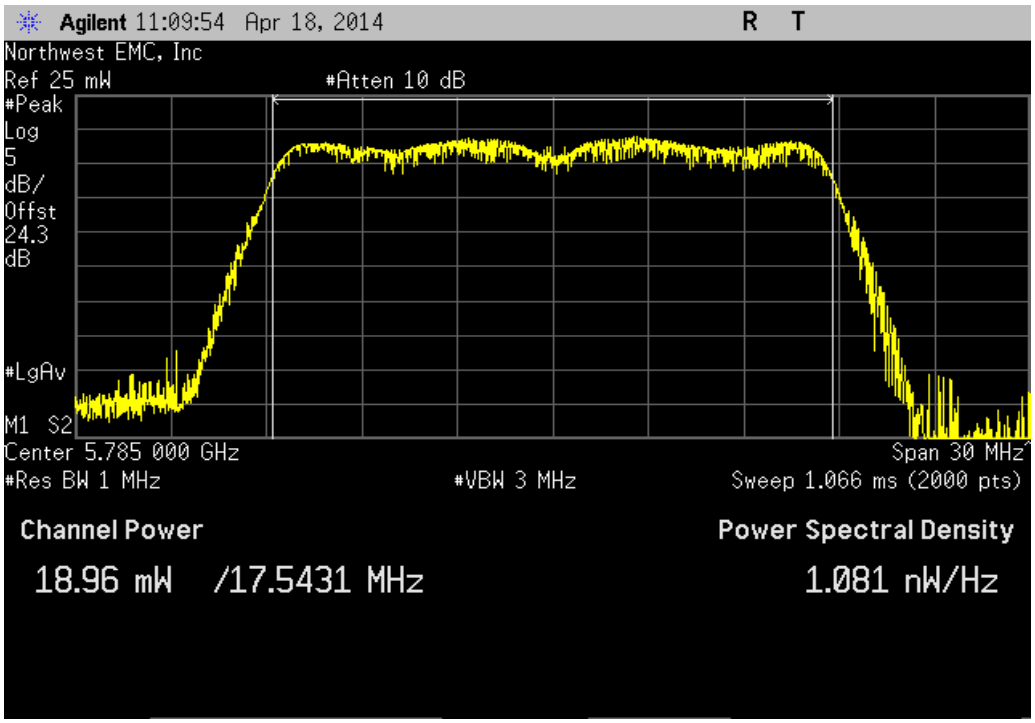
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.865 mW	< 1 W	Pass



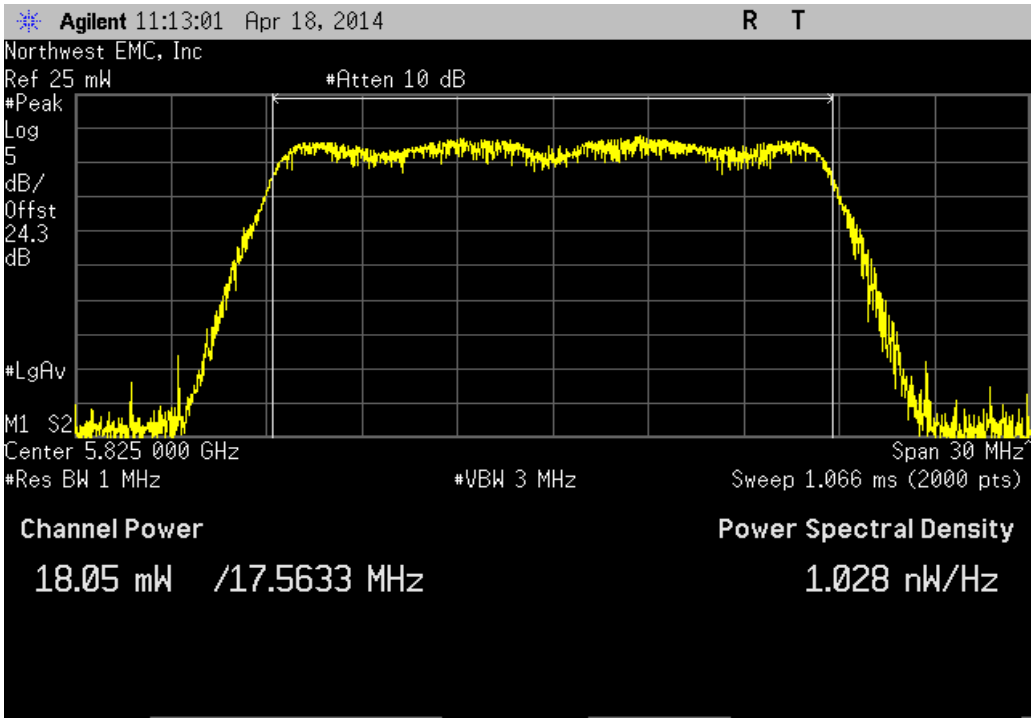
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				18.961 mW	< 1 W	Pass



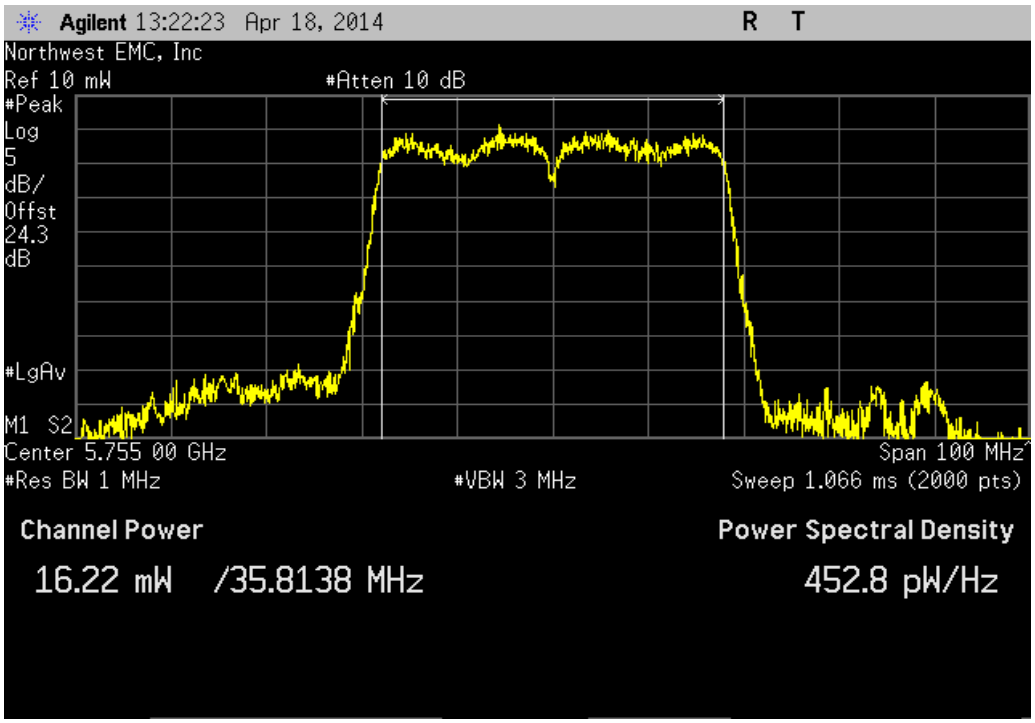
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 165, 5825 MHz

				Value	Limit	Result
				18.048 mW	< 1 W	Pass



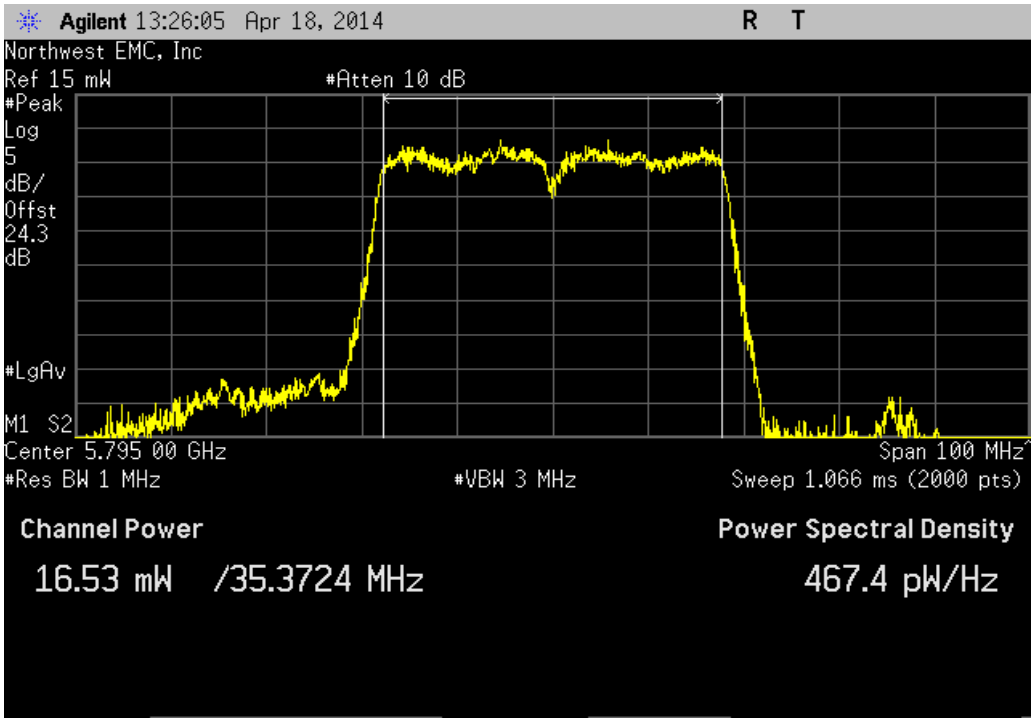
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				16.216 mW	< 1 W	Pass



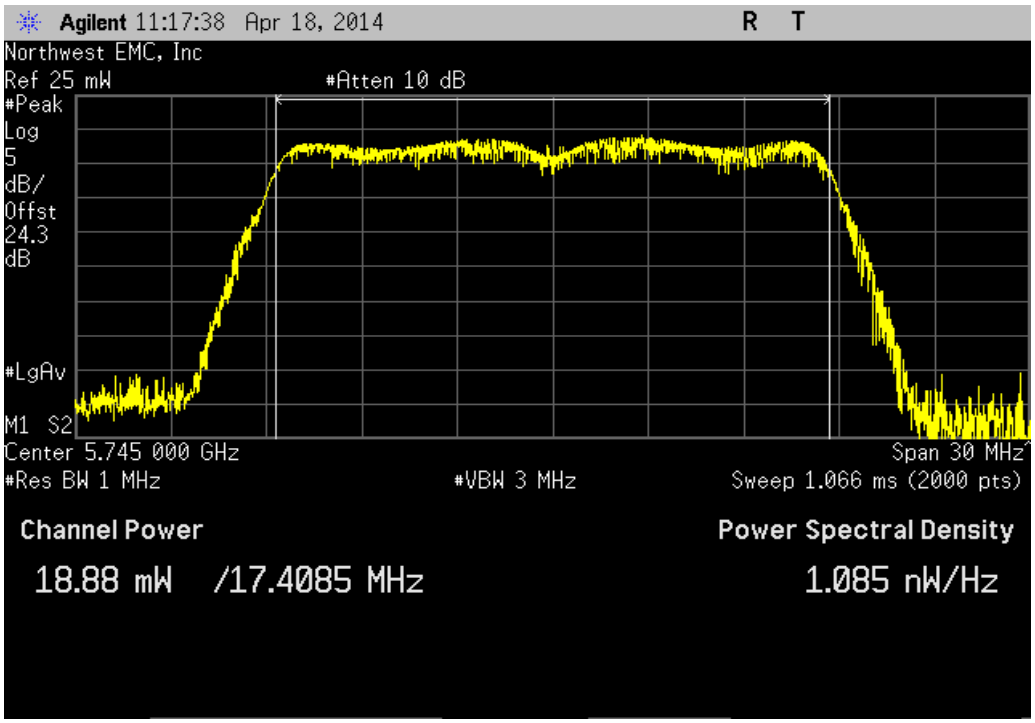
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				16.532 mW	< 1 W	Pass



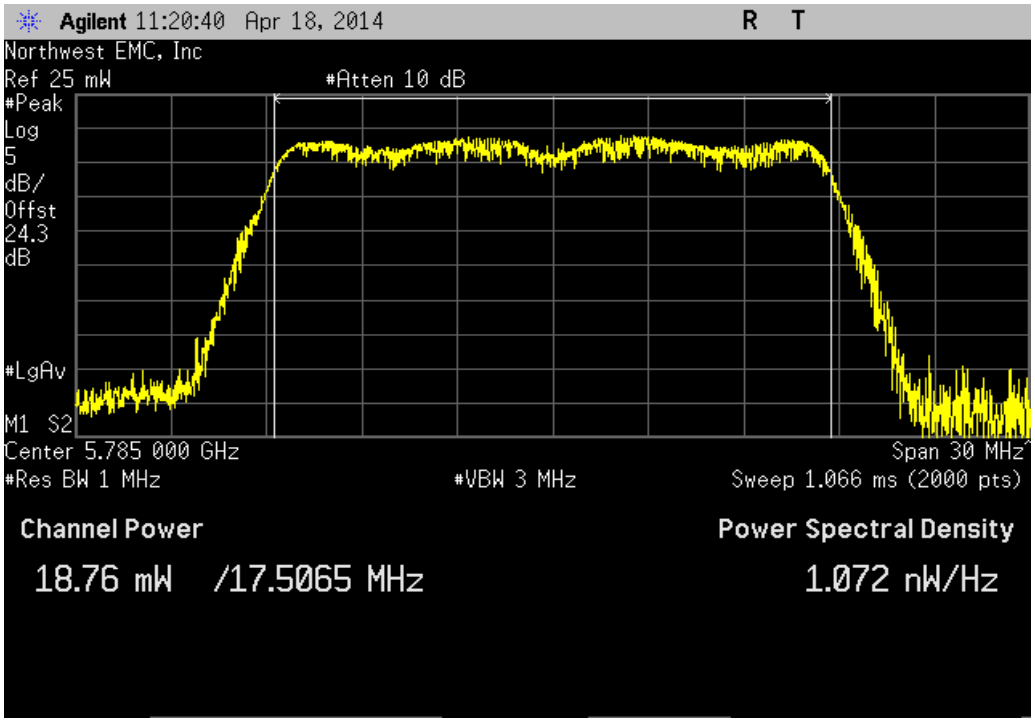
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.882 mW	< 1 W	Pass



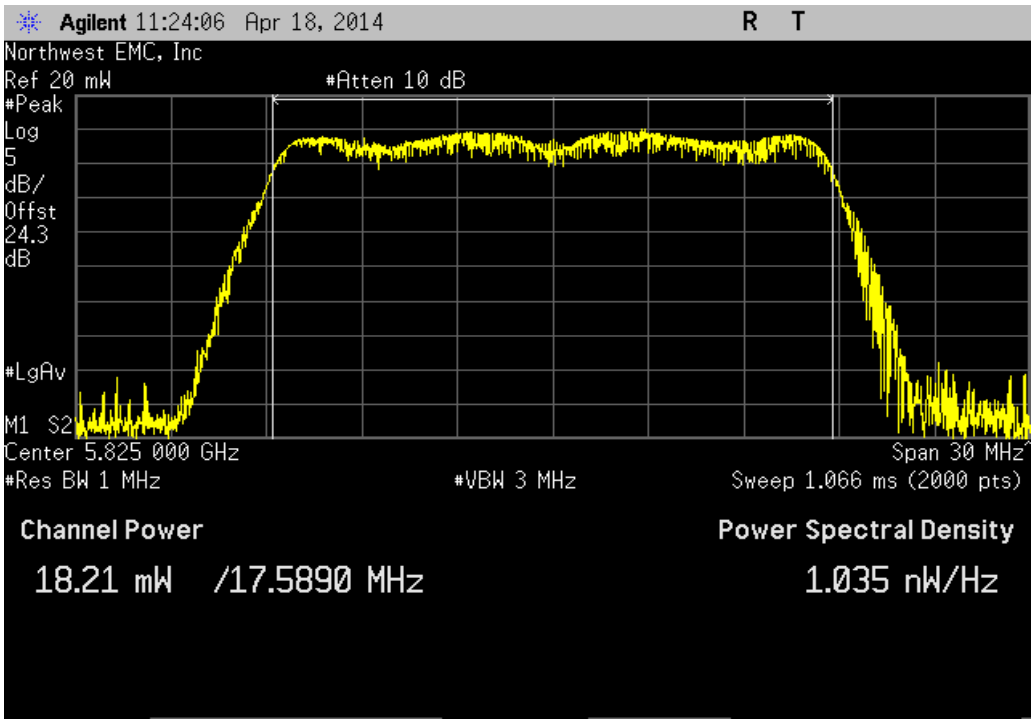
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				18.764 mW	< 1 W	Pass



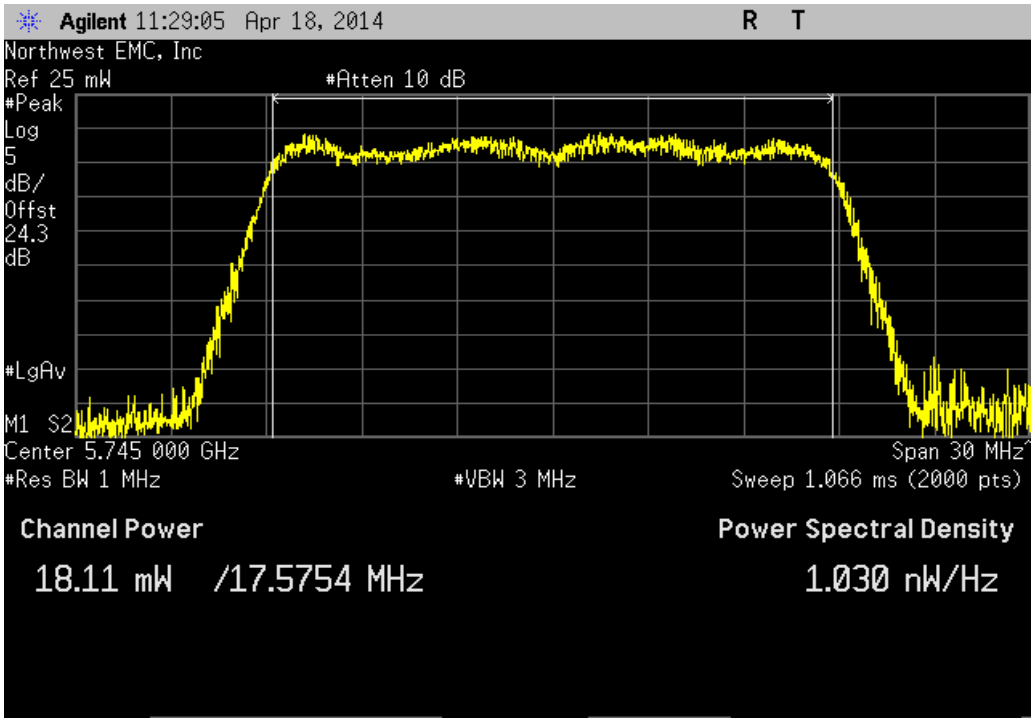
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

				Value	Limit	Result
				18.212 mW	< 1 W	Pass



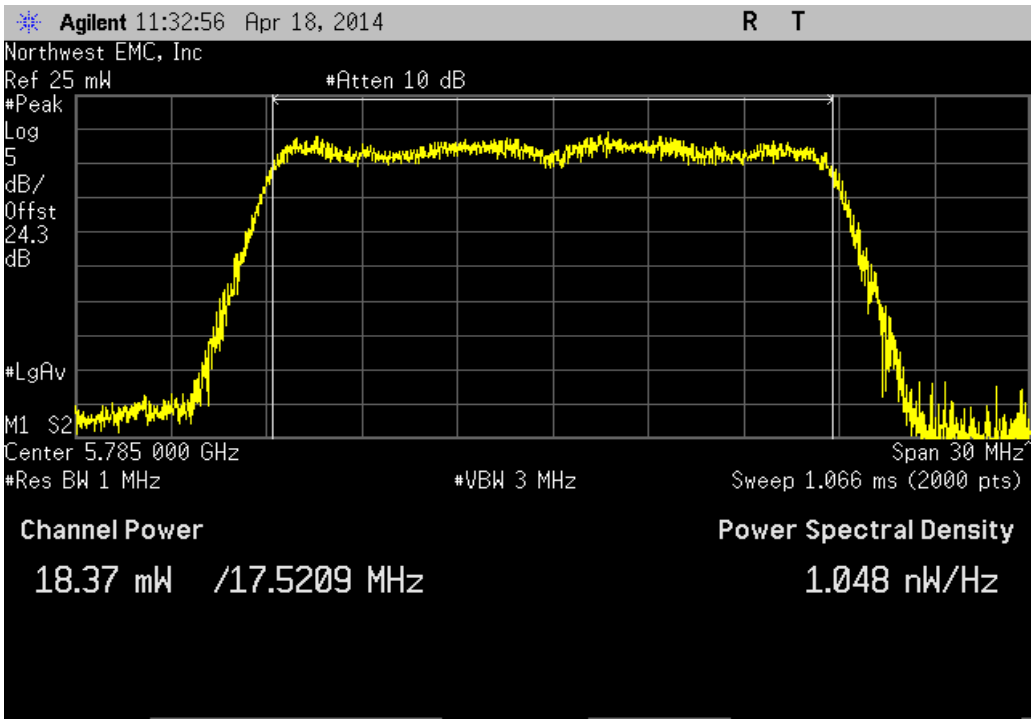
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				18.107 mW	< 1 W	Pass



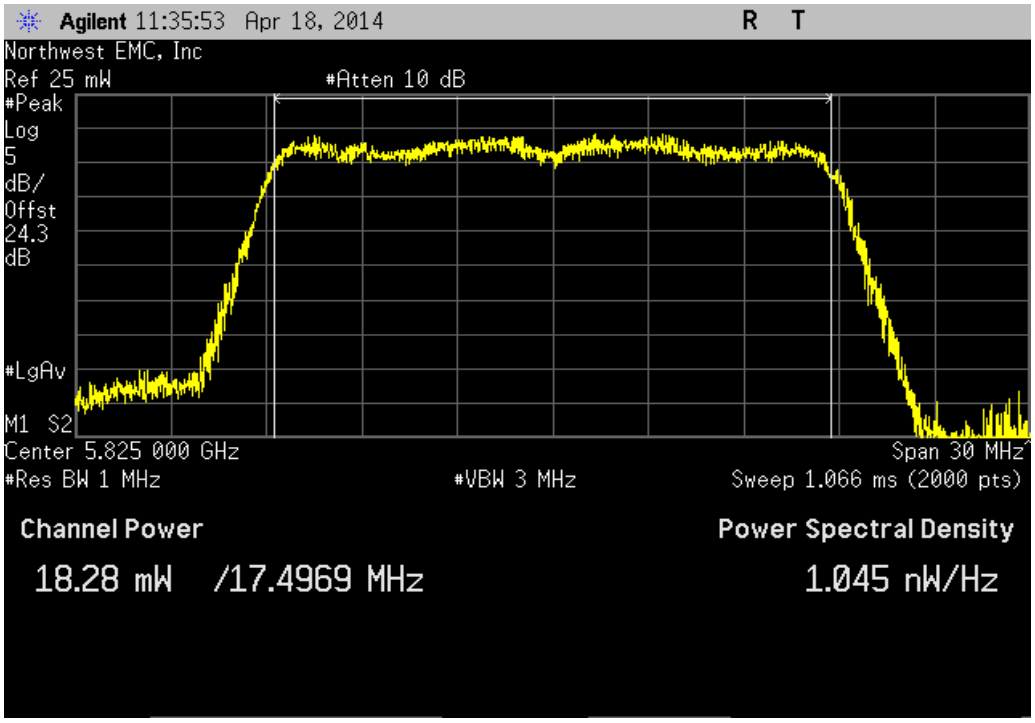
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				18.368 mW	< 1 W	Pass



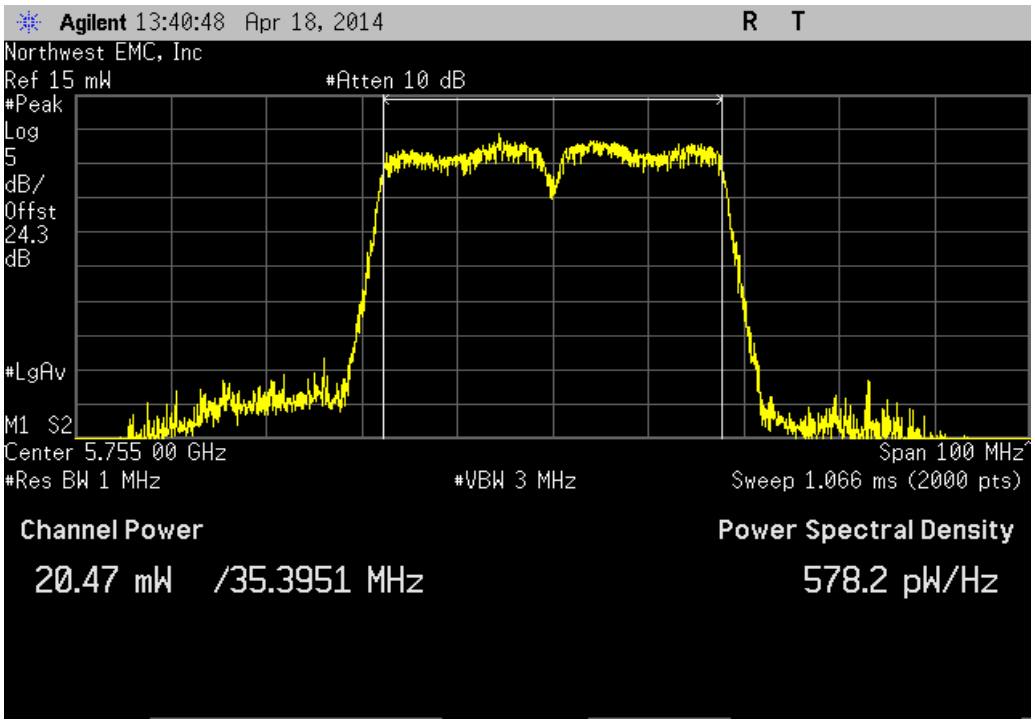
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

				Value	Limit	Result
				18.277 mW	< 1 W	Pass



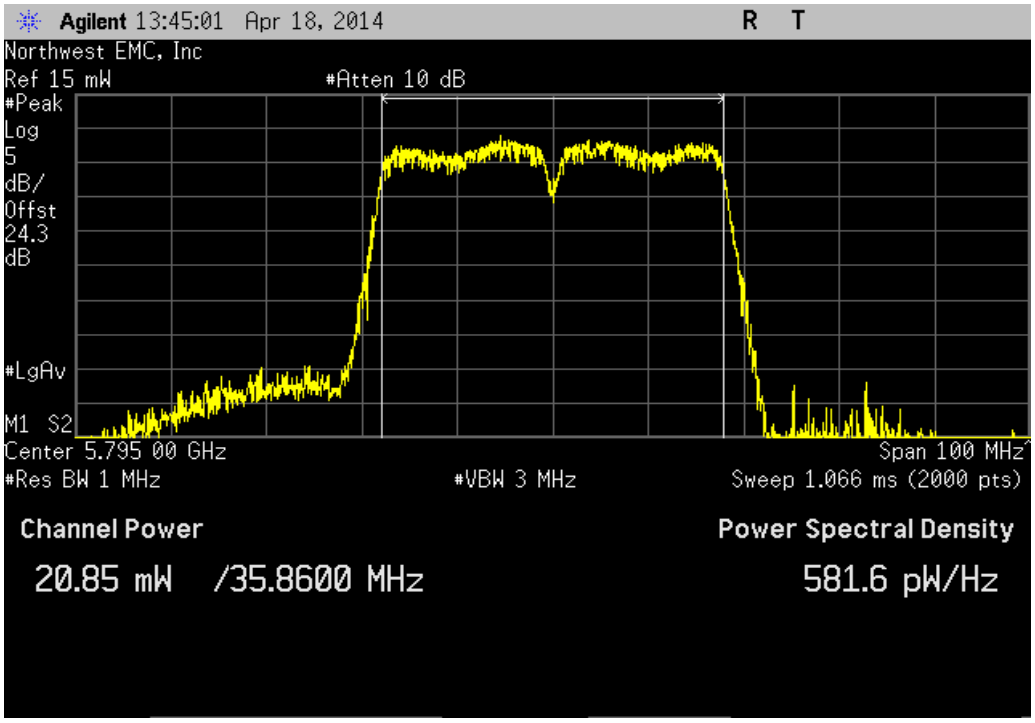
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				20.466 mW	< 1 W	Pass



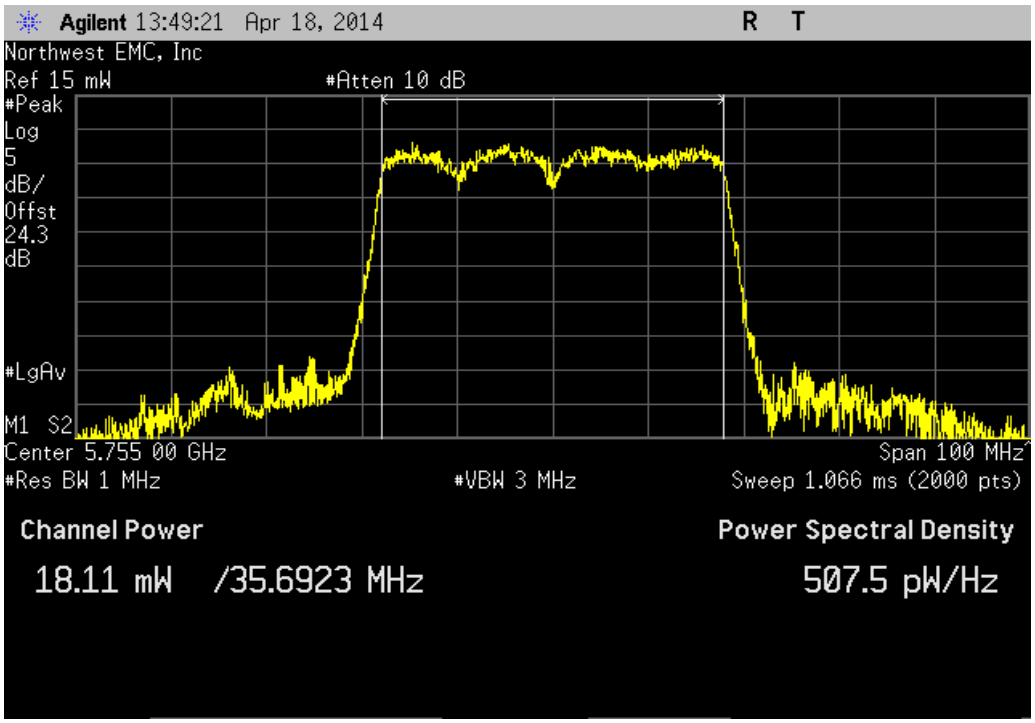
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				20.854 mW	< 1 W	Pass



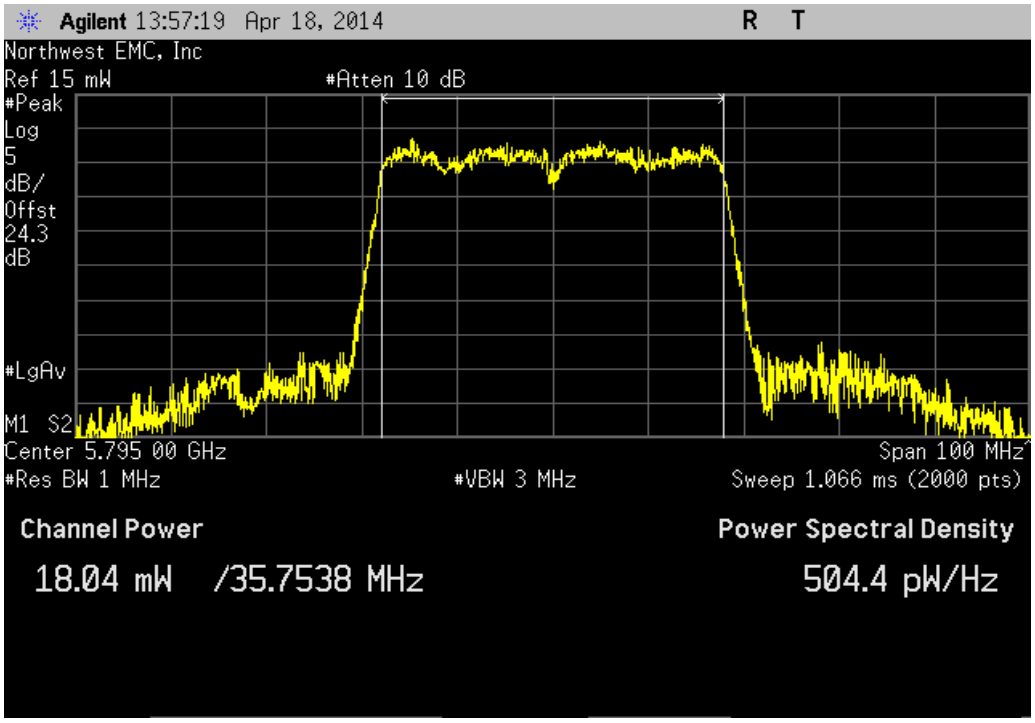
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				18.113 mW	< 1 W	Pass



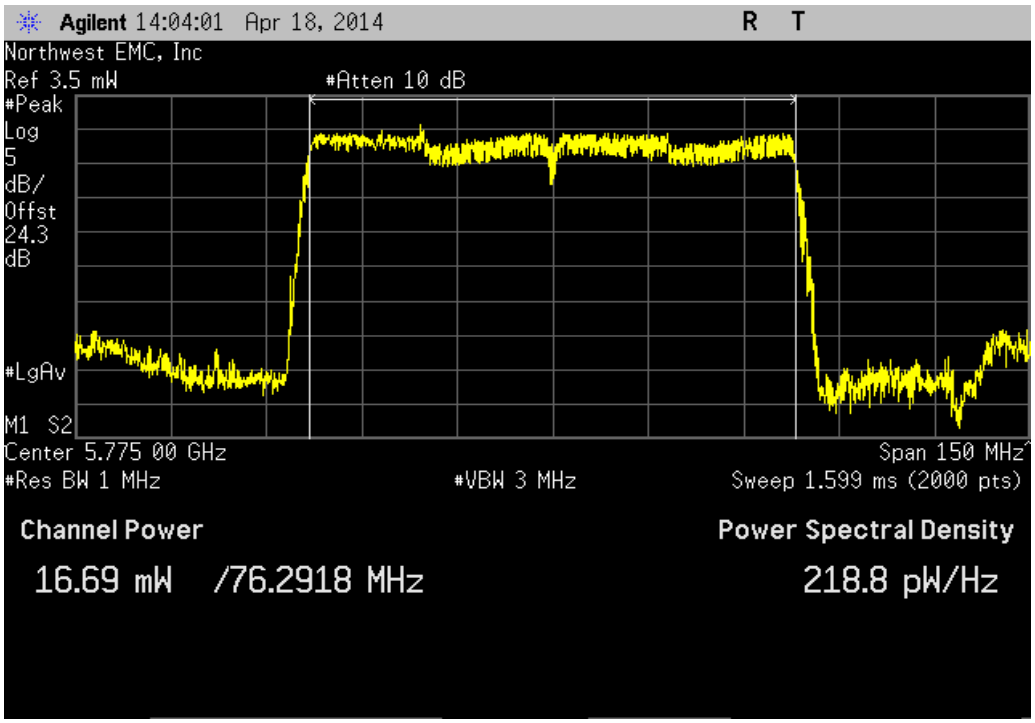
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

				Value	Limit	Result
				18.035 mW	< 1 W	Pass



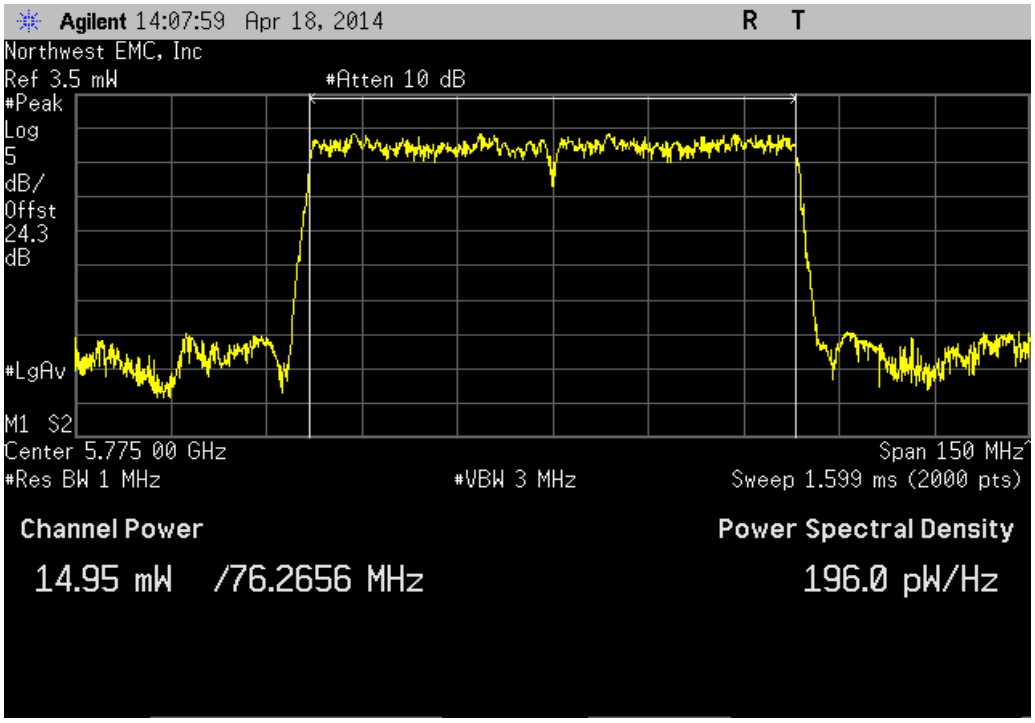
IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				16.689 mW	< 1 W	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				14.947 mW	< 1 W	Pass



POWER SPECTRAL DENSITY

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			Work Order:	MCSO1698
Serial Number:	006840341053			Date:	04/18/14
Customer:	Microsoft Corporation			Temperature:	22.3°C
Attendees:	None			Humidity:	32%
Project:	None			Barometric Pres.:	1014
Tested by:	Jared Ison	Power:	110VAC/60Hz	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

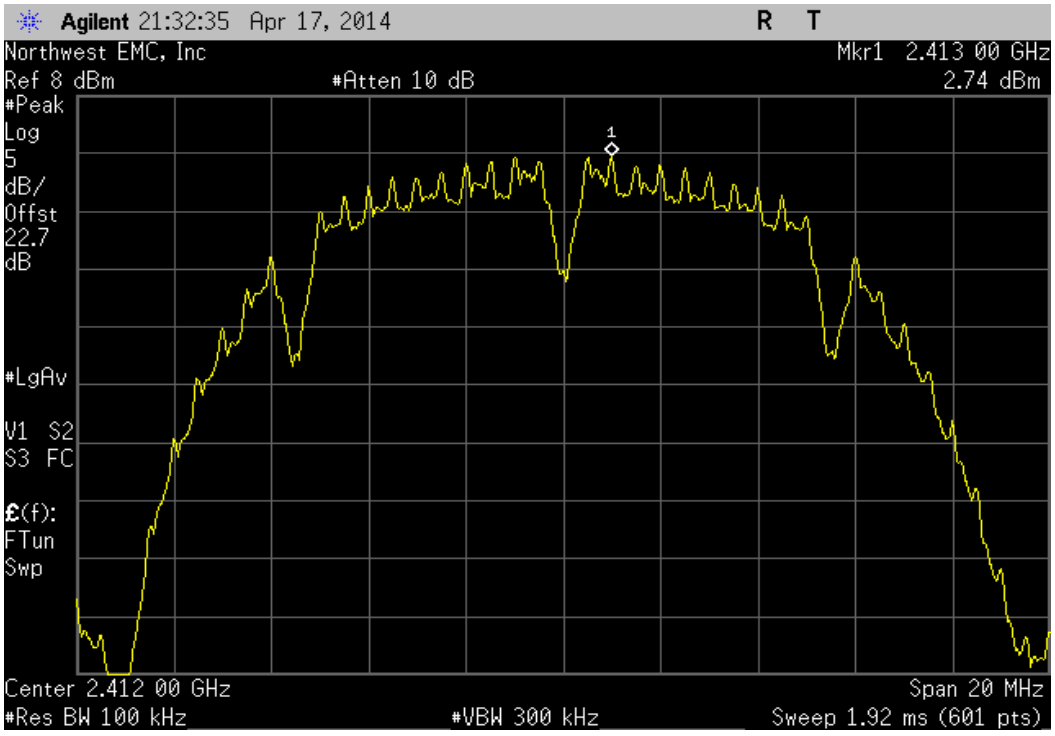
None

Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	2.741	-15.2	-12.459	8	Pass
Mid Channel 6, 2437 MHz	2.574	-15.2	-12.626	8	Pass
High Channel 11, 2462 MHz	2.531	-15.2	-12.669	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	2.369	-15.2	-12.831	8	Pass
Mid Channel 6, 2437 MHz	2.6	-15.2	-12.6	8	Pass
High Channel 11, 2462 MHz	2.507	-15.2	-12.693	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	0.2	-15.2	-15	8	Pass
Mid Channel 6, 2437 MHz	-0.04	-15.2	-15.24	8	Pass
High Channel 11, 2462 MHz	-0.048	-15.2	-15.248	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	-0.248	-15.2	-15.448	8	Pass
Mid Channel 6, 2437 MHz	-0.001	-15.2	-15.201	8	Pass
High Channel 11, 2462 MHz	0.021	-15.2	-15.179	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	-0.249	-15.2	-15.449	8	Pass
Mid Channel 6, 2437 MHz	0.045	-15.2	-15.155	8	Pass
High Channel 11, 2462 MHz	0.036	-15.2	-15.164	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	0.028	-15.2	-15.172	8	Pass
Mid Channel 6, 2437 MHz	-0.273	-15.2	-15.473	8	Pass
High Channel 11, 2462 MHz	-0.08	-15.2	-15.28	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	-0.226	-15.2	-15.426	8	Pass
Mid Channel 6, 2437 MHz	-0.019	-15.2	-15.219	8	Pass
High Channel 11, 2462 MHz	-0.018	-15.2	-15.218	8	Pass

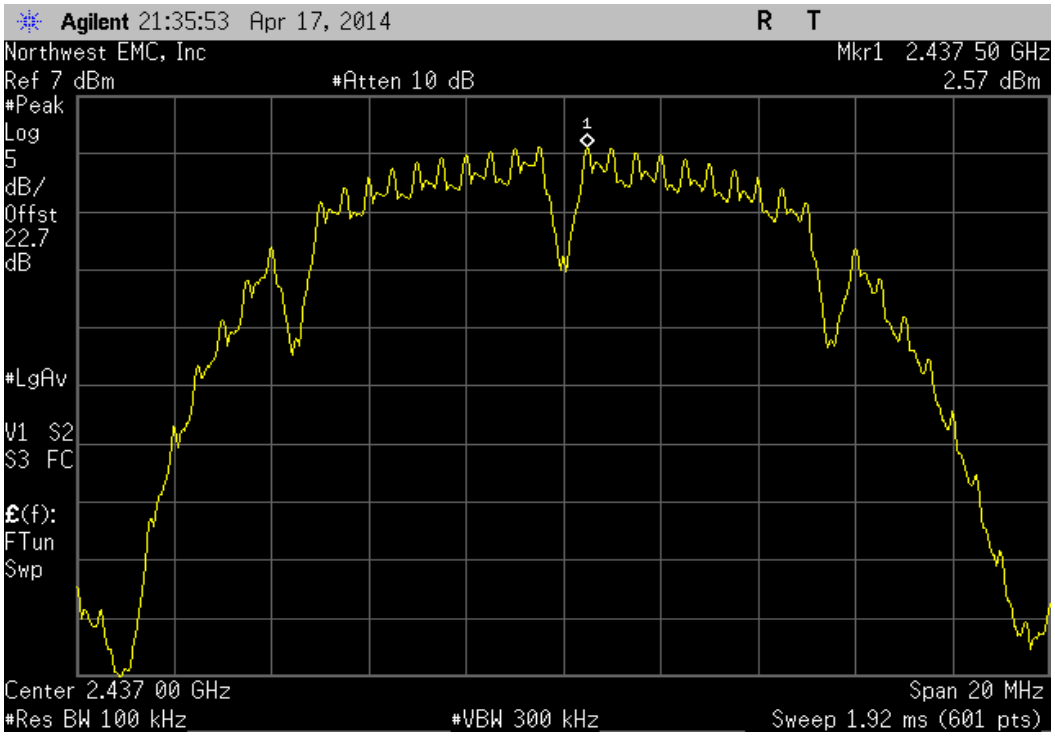
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.741	-15.2	-12.459	8	Pass

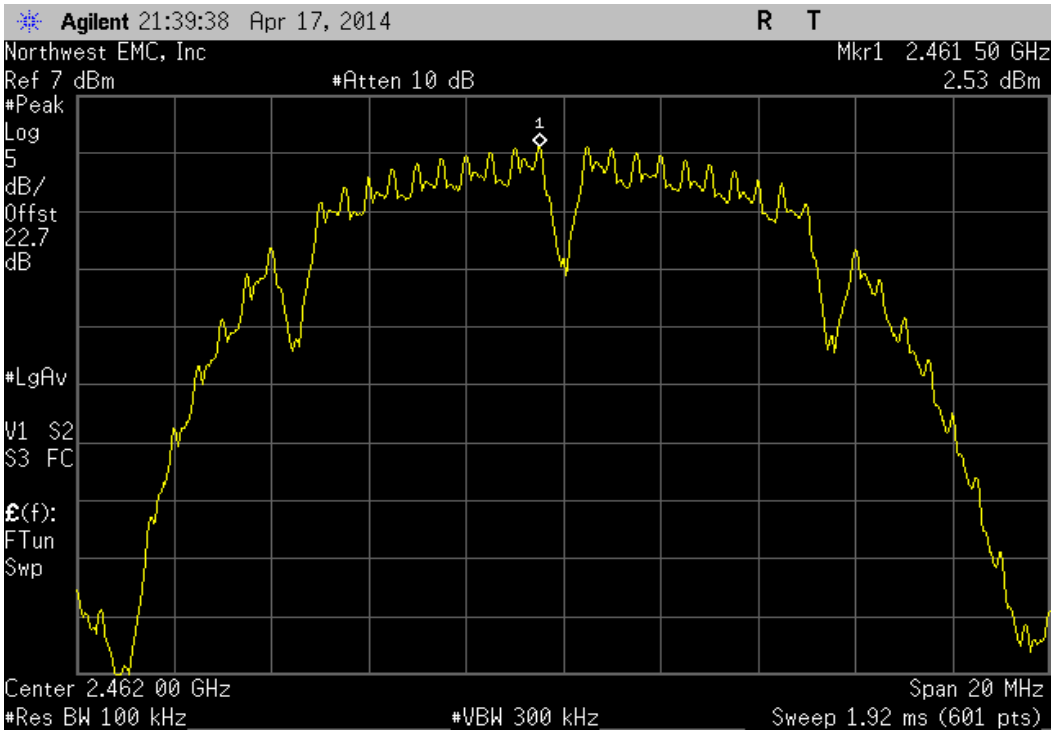


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

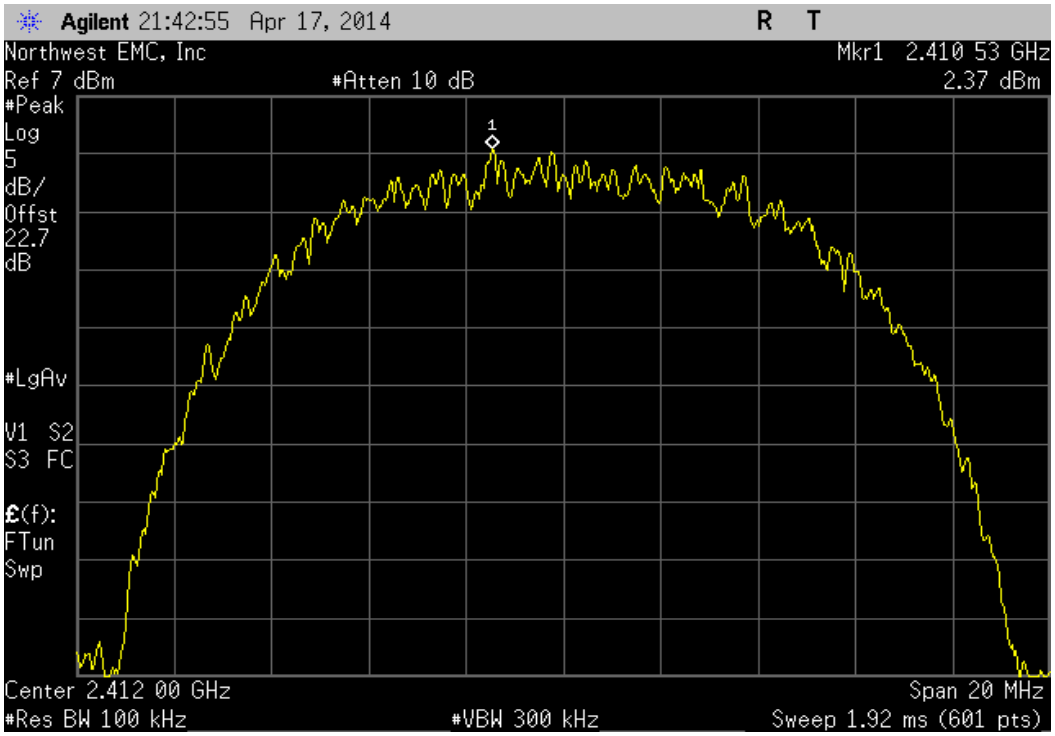
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.574	-15.2	-12.626	8	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.531	-15.2	-12.669	8	Pass

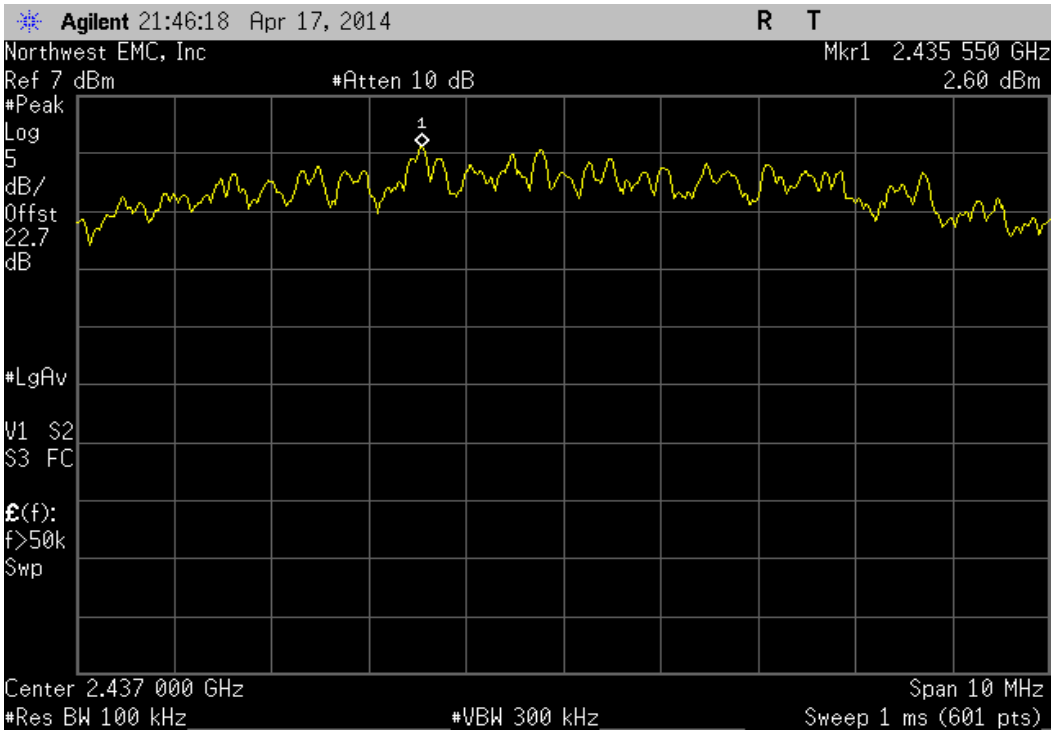


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.369	-15.2	-12.831	8	Pass



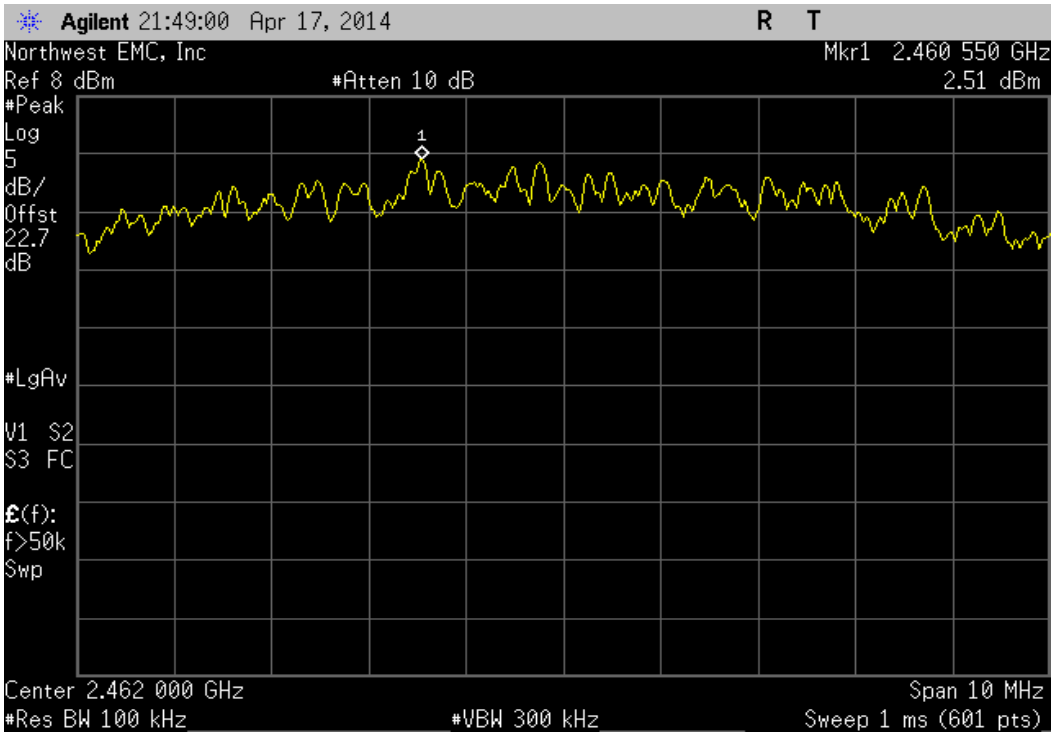
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.6	-15.2	-12.6	8	Pass

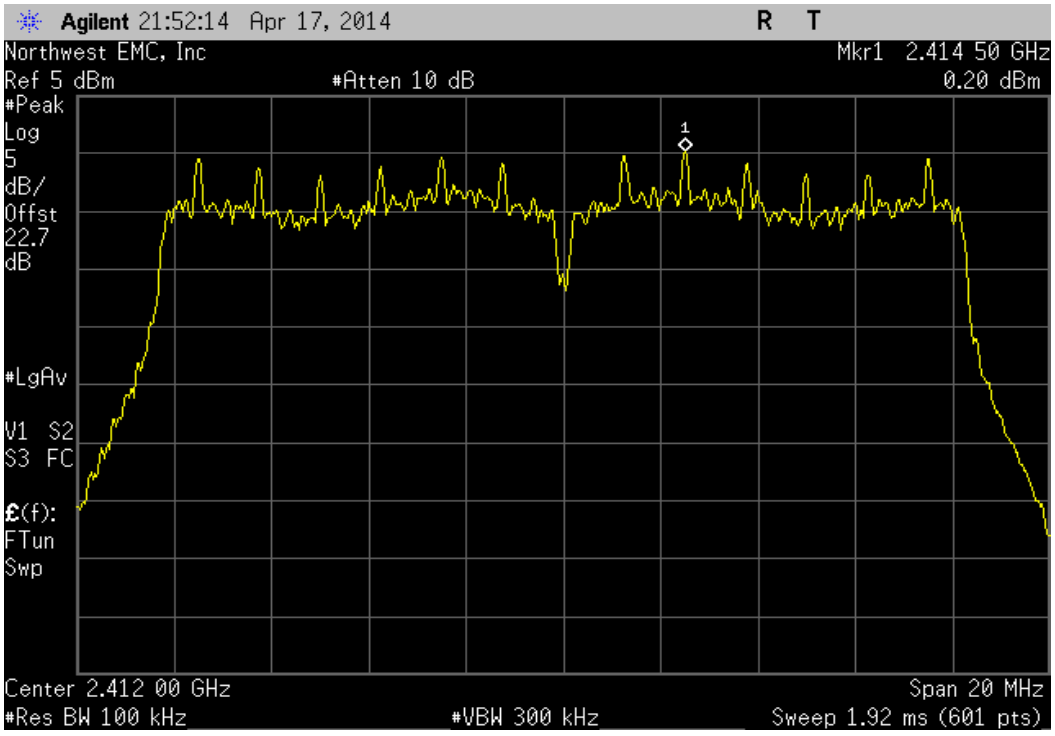


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

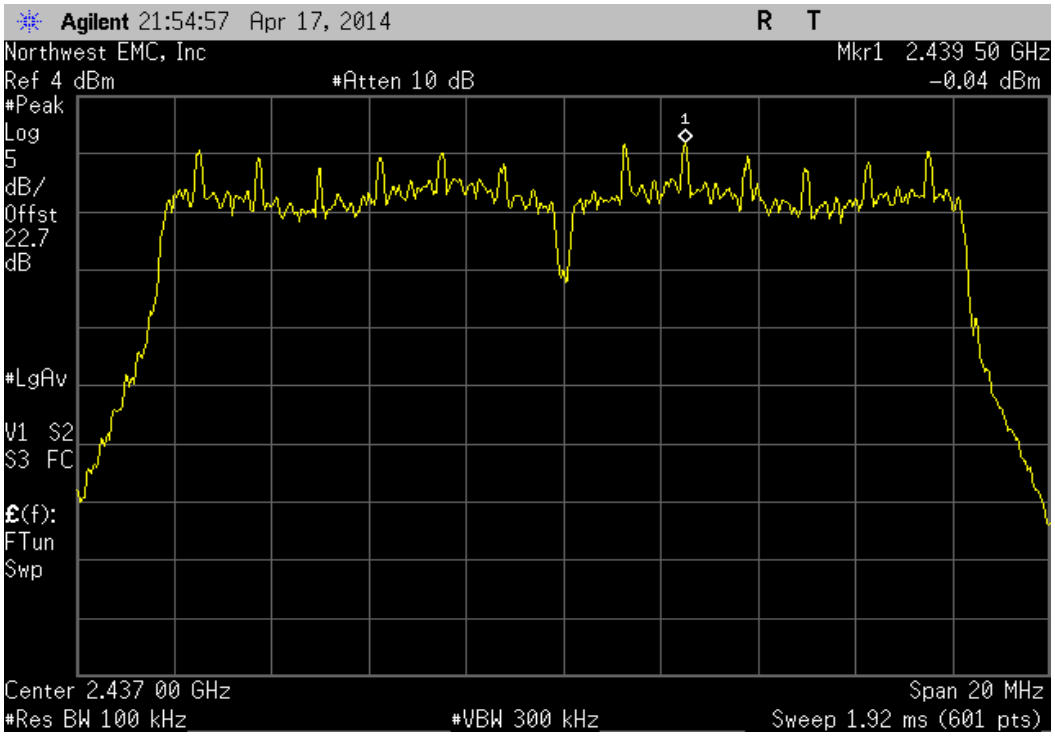
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.507	-15.2	-12.693	8	Pass



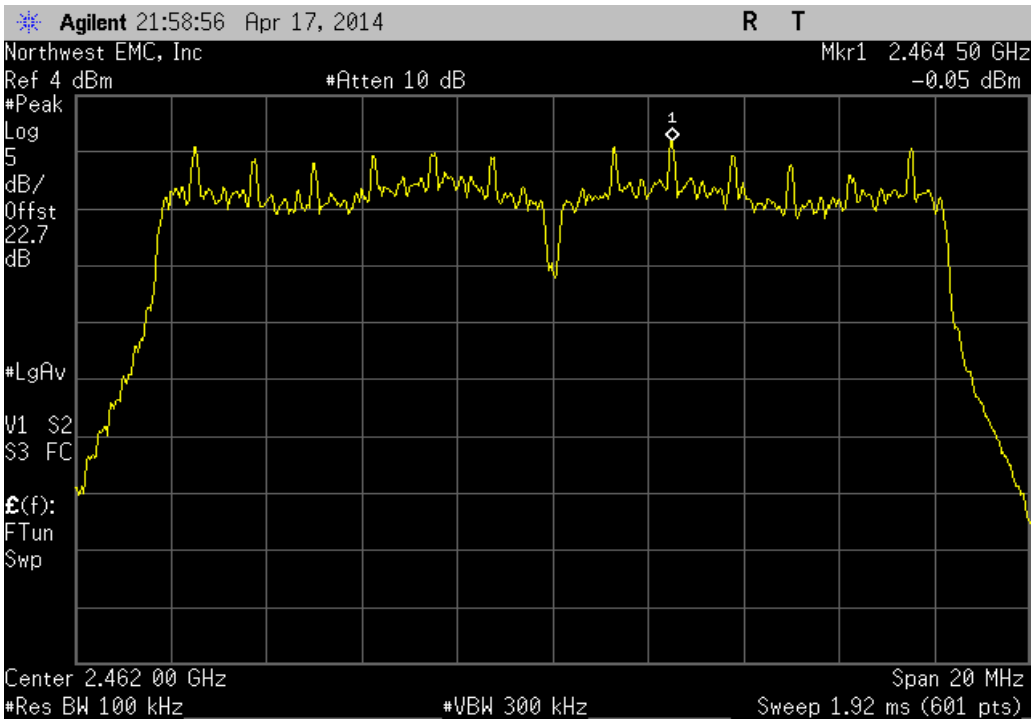
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.2	-15.2	-15	8	Pass



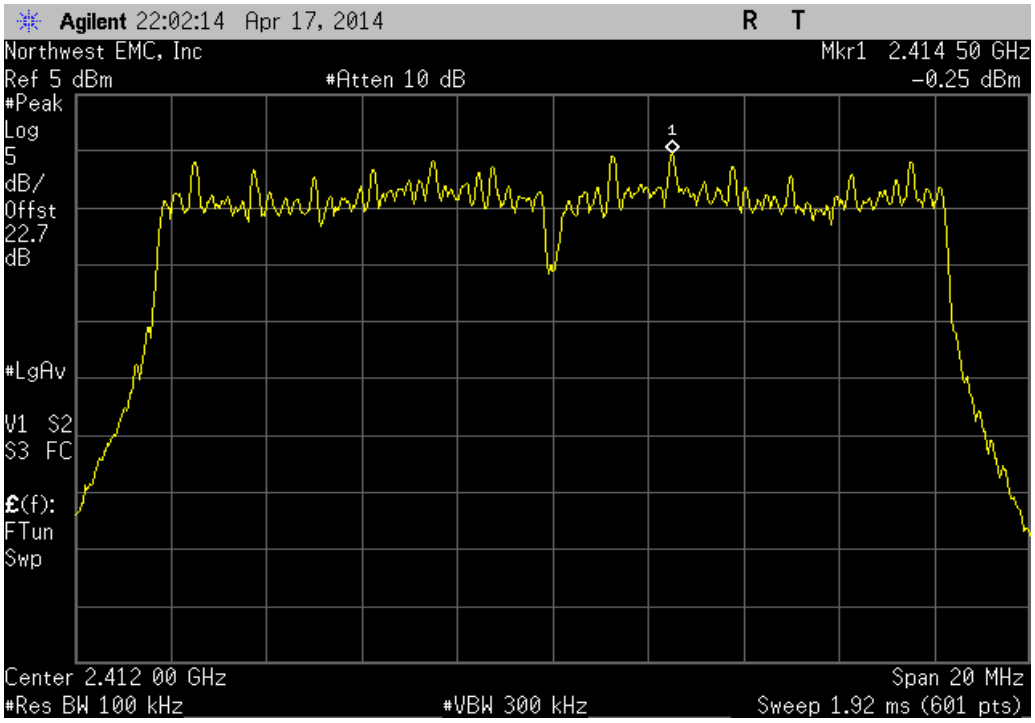
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.04	-15.2	-15.24	8	Pass



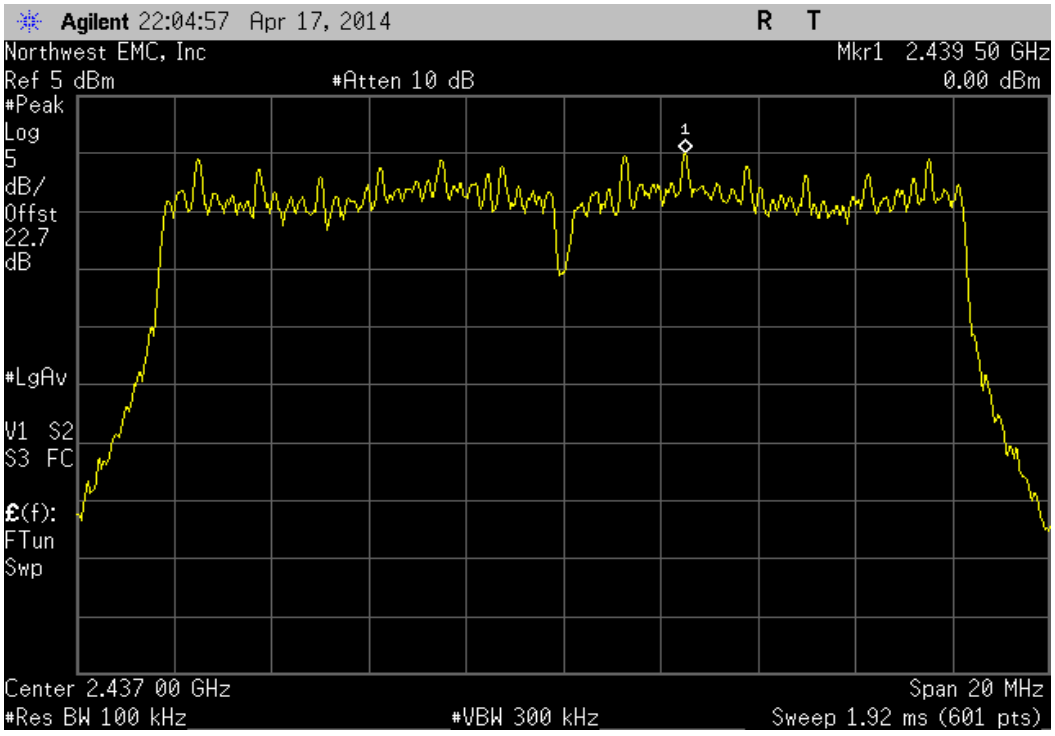
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.048	-15.2	-15.248	8	Pass



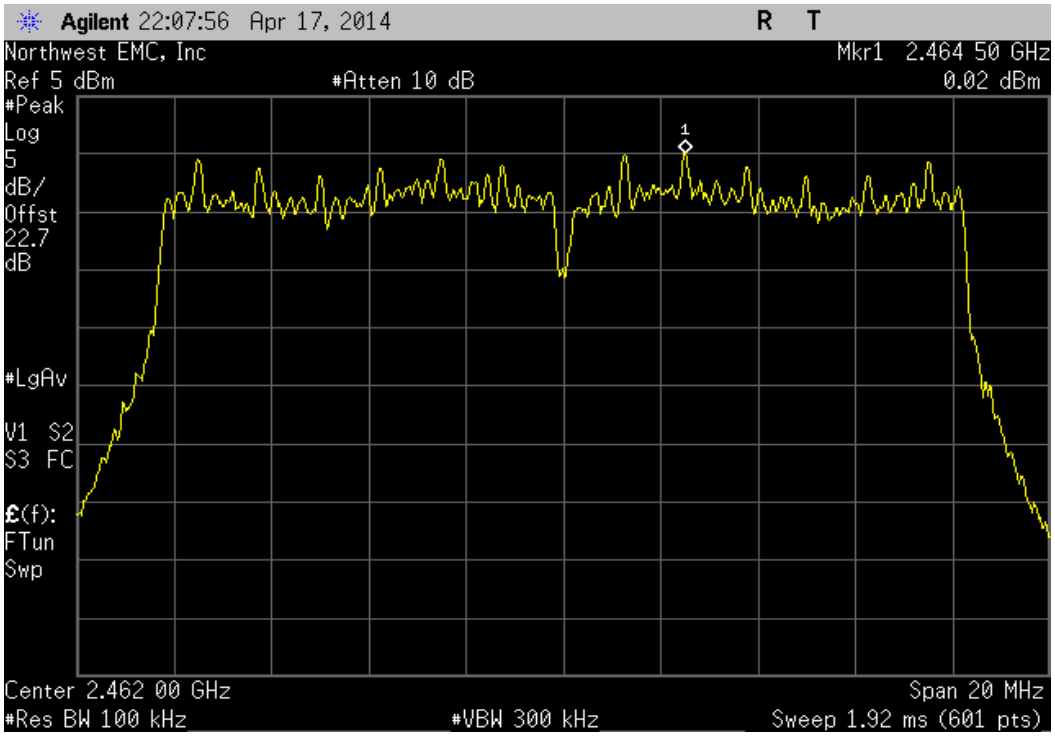
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.248	-15.2	-15.448	8	Pass



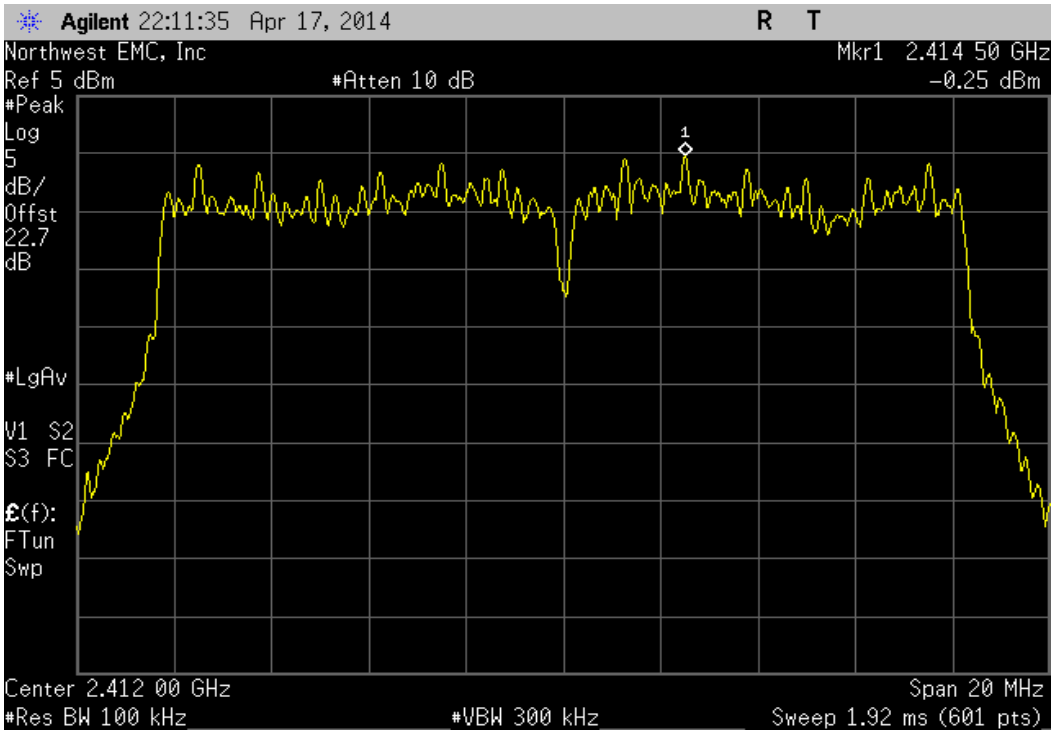
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.001	-15.2	-15.201	8	Pass



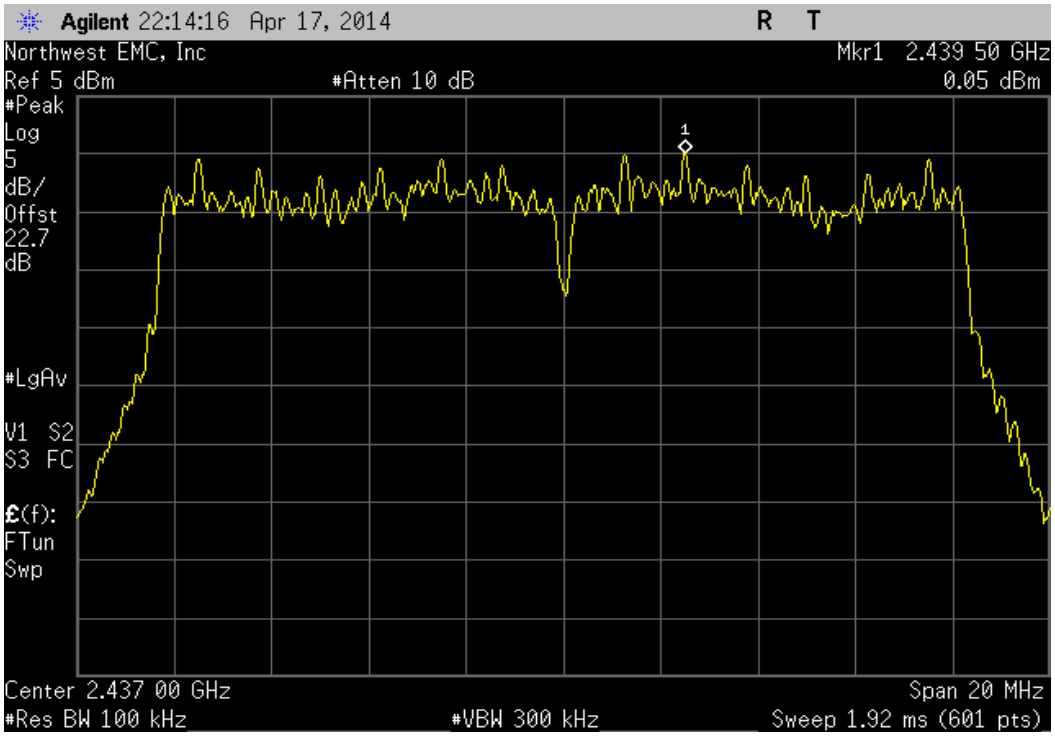
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.021	-15.2	-15.179	8	Pass



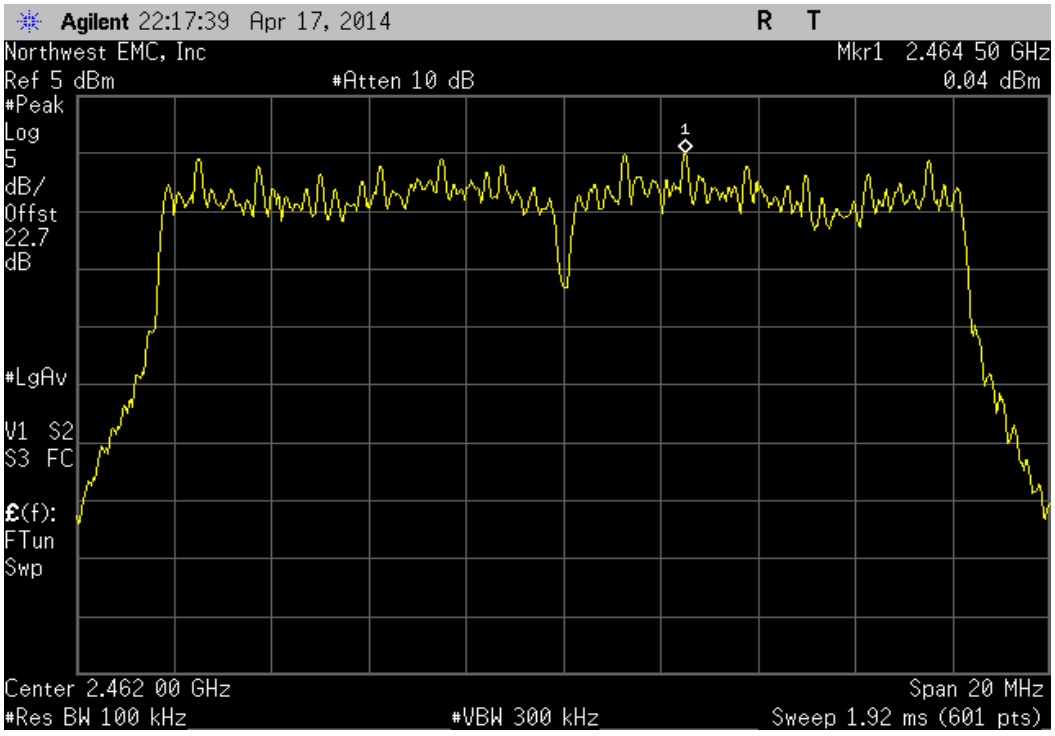
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.249	-15.2	-15.449	8	Pass



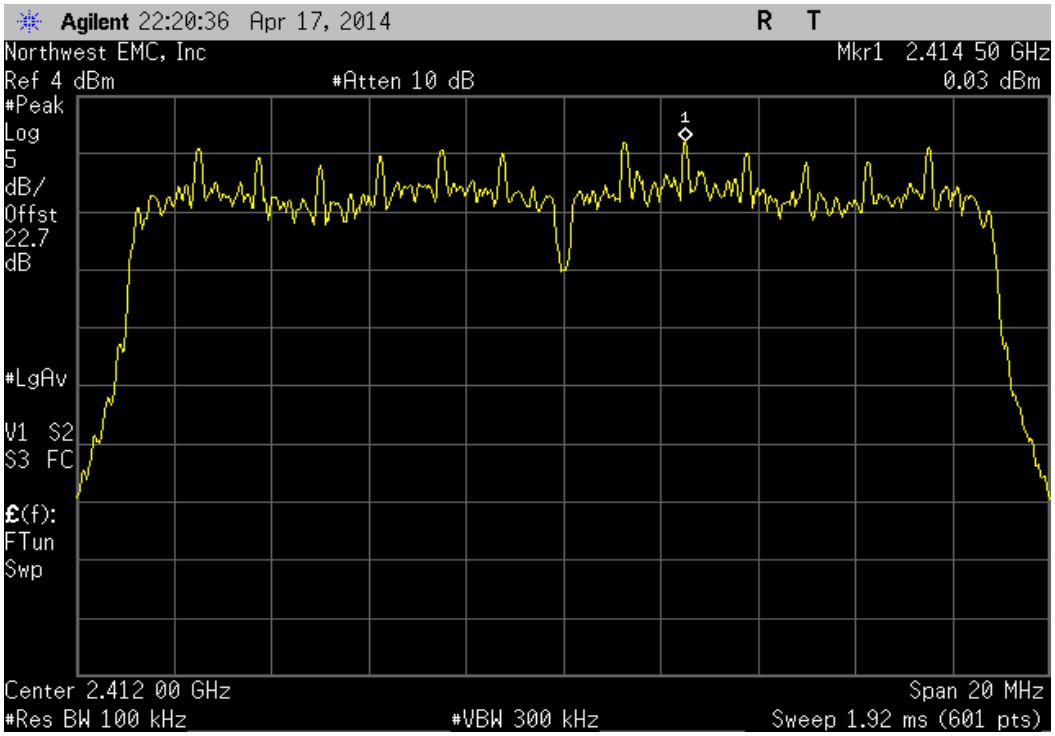
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.045	-15.2	-15.155	8	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.036	-15.2	-15.164	8	Pass

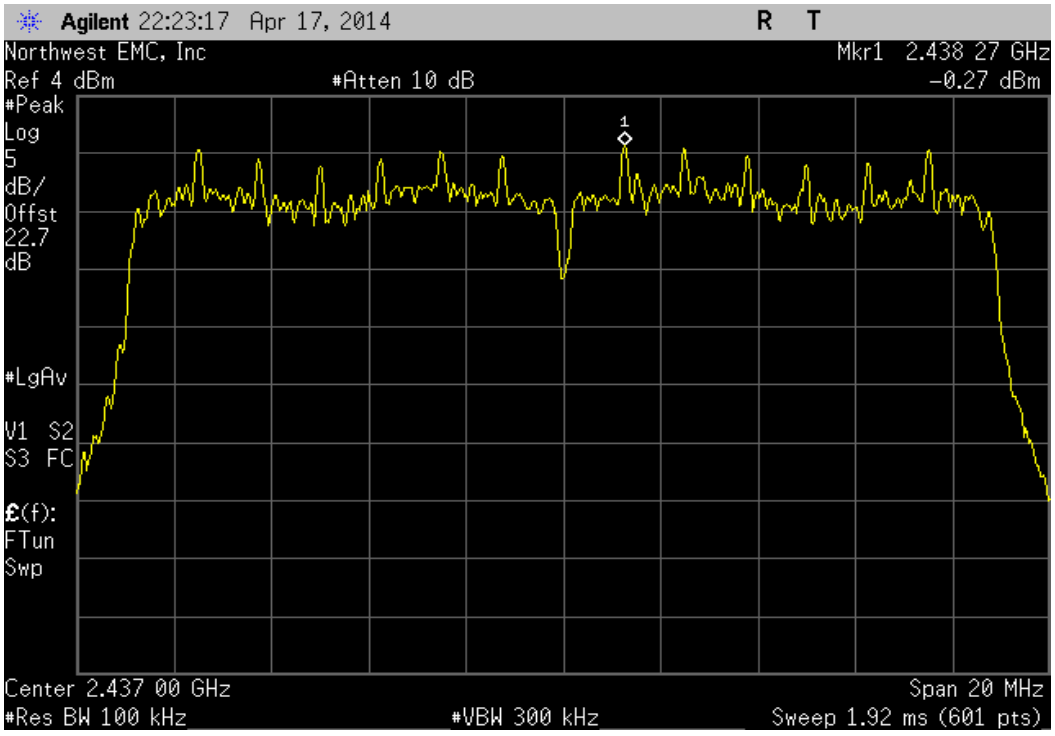


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.028	-15.2	-15.172	8	Pass



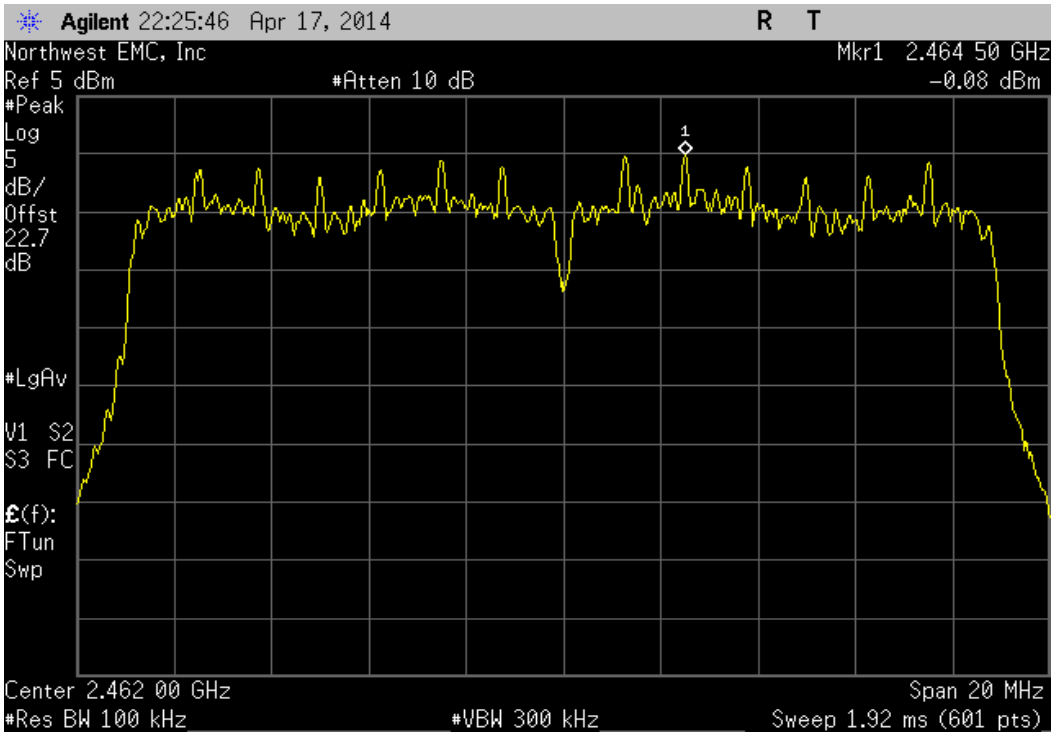
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.273	-15.2	-15.473	8	Pass

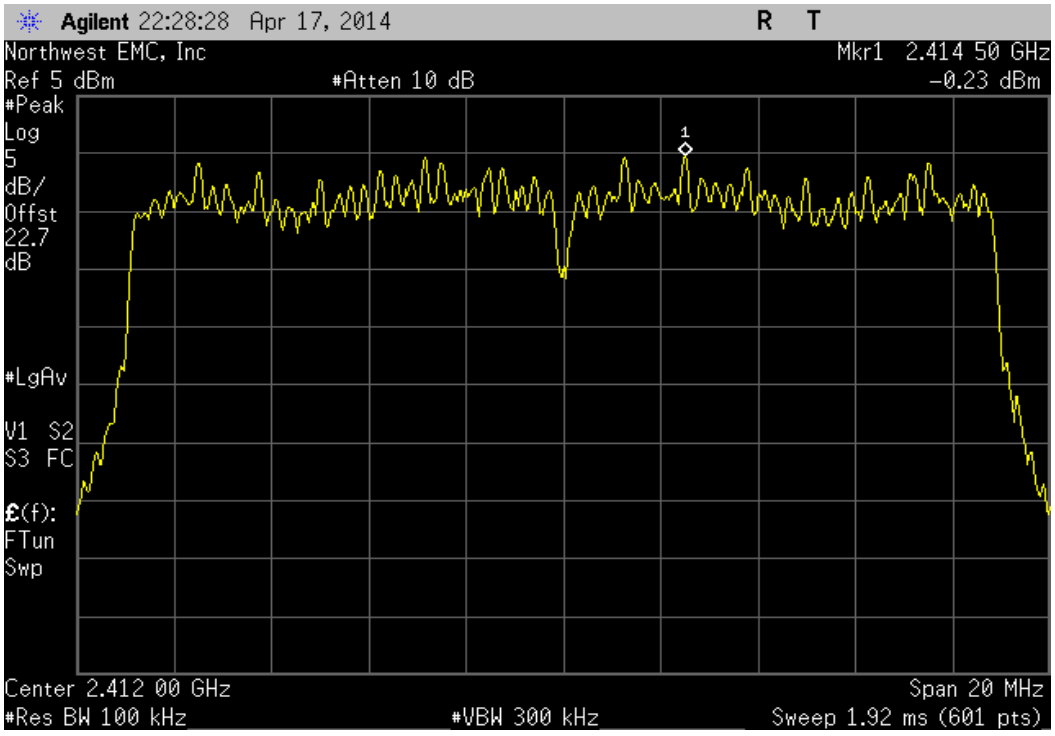


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

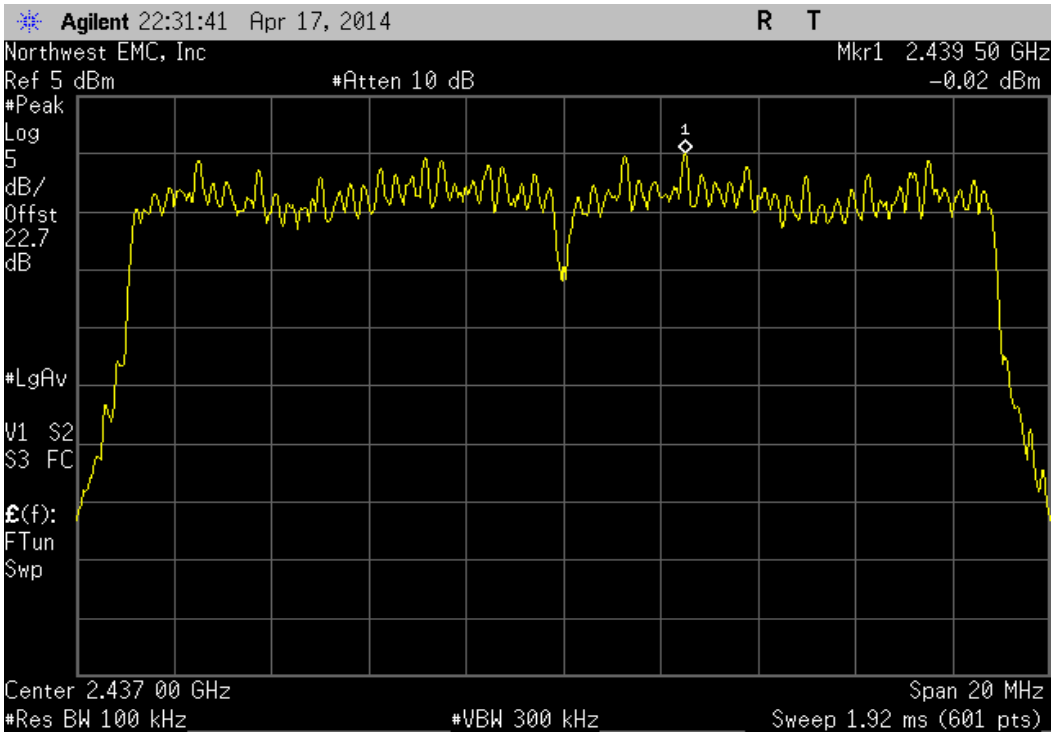
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.08	-15.2	-15.28	8	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.226	-15.2	-15.426	8	Pass

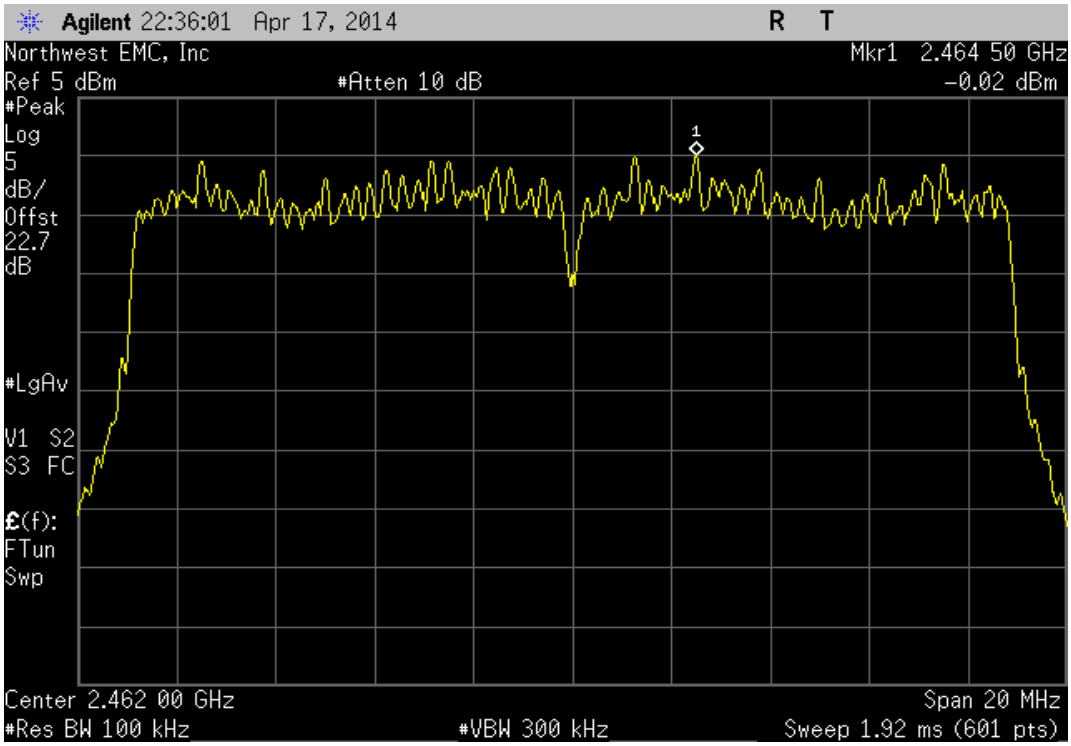


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.019	-15.2	-15.219	8	Pass



POWER SPECTRAL DENSITY

20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.018	-15.2	-15.218	8	Pass



POWER SPECTRAL DENSITY

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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

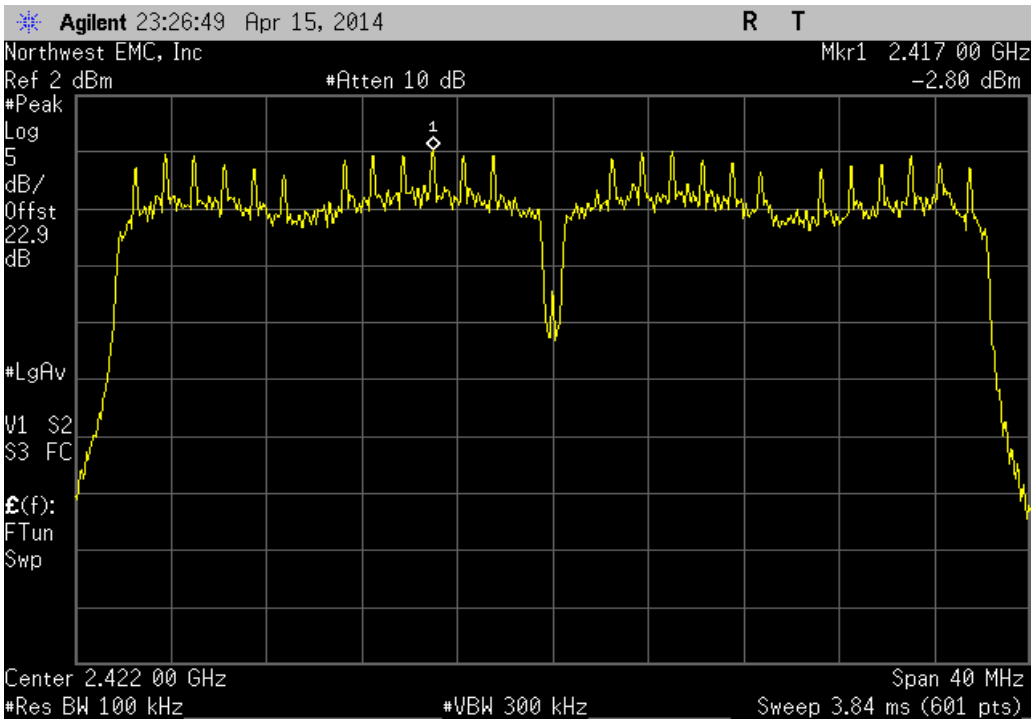
DEVIATIONS FROM TEST STANDARD

None

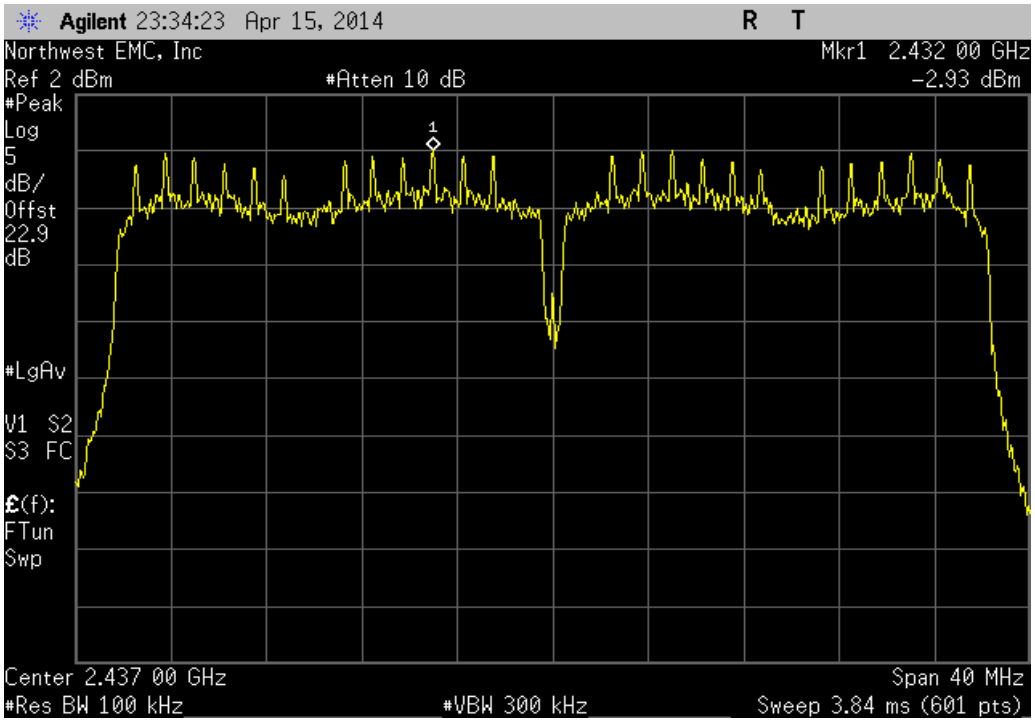
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS0					
1/5 Low Channel, 2422 MHz	-2.803	-15.2	-18.003	8	Pass
4/8 Mid Channel, 2437 MHz	-2.927	-15.2	-18.127	8	Pass
7/11 High Channel, 2452 MHz	-2.977	-15.2	-18.177	8	Pass
802.11(n) MCS7					
1/5 Low Channel, 2422 MHz	-2.737	-15.2	-17.937	8	Pass
4/8 Mid Channel, 2437 MHz	-2.765	-15.2	-17.965	8	Pass
7/11 High Channel, 2452 MHz	-2.834	-15.2	-18.034	8	Pass

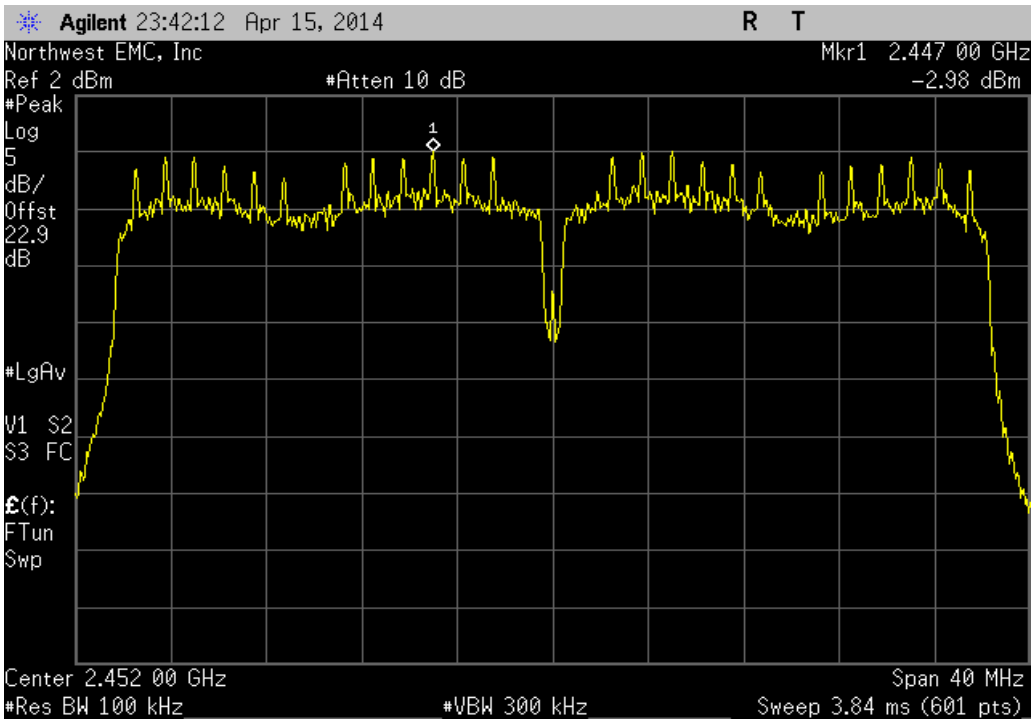
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 1/5 Low Channel, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.803	-15.2	-18.003	8	Pass



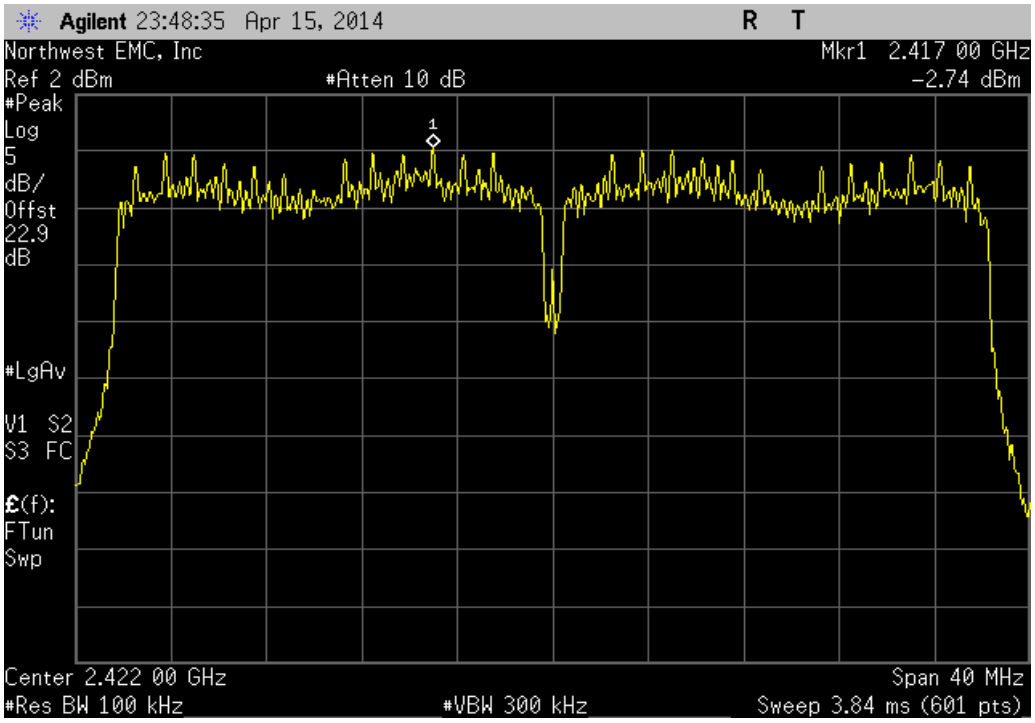
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 4/8 Mid Channel, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.927	-15.2	-18.127	8	Pass



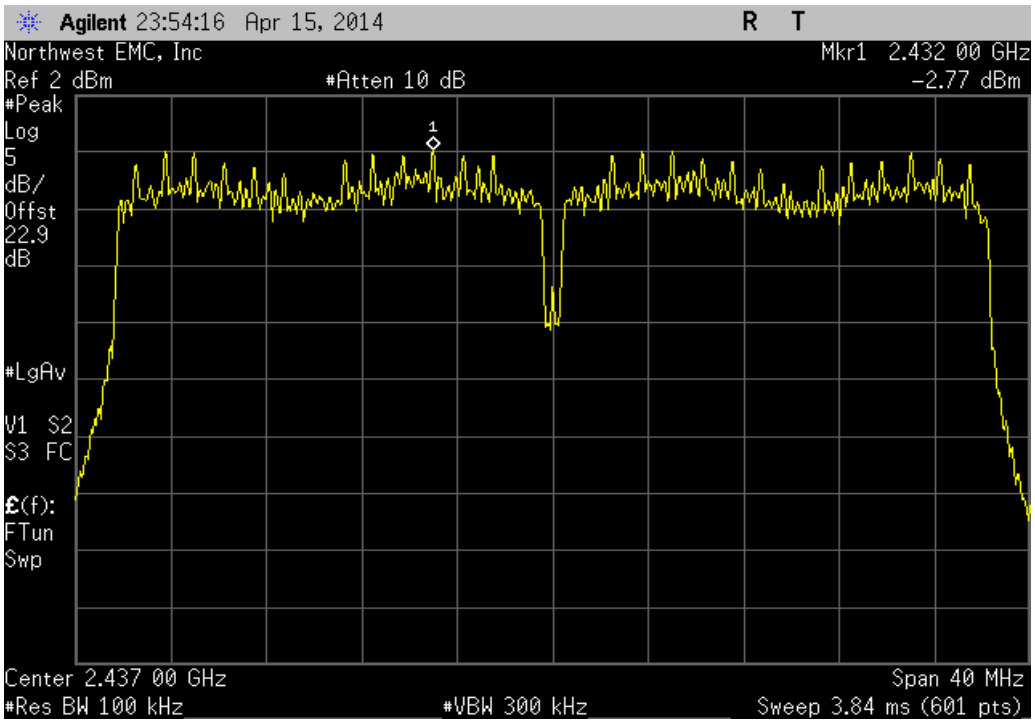
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 7/11 High Channel, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.977	-15.2	-18.177	8	Pass



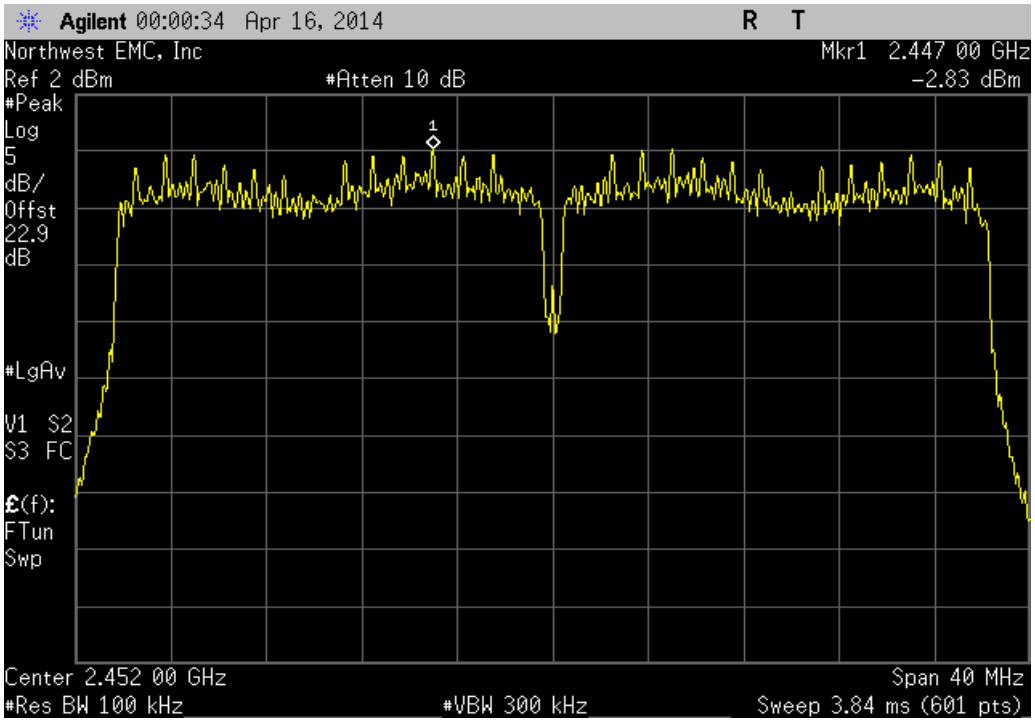
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 1/5 Low Channel, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.737	-15.2	-17.937	8	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 4/8 Mid Channel, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.765	-15.2	-17.965	8	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 7/11 High Channel, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.834	-15.2	-18.034	8	Pass



POWER SPECTRAL DENSITY

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/18/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

None

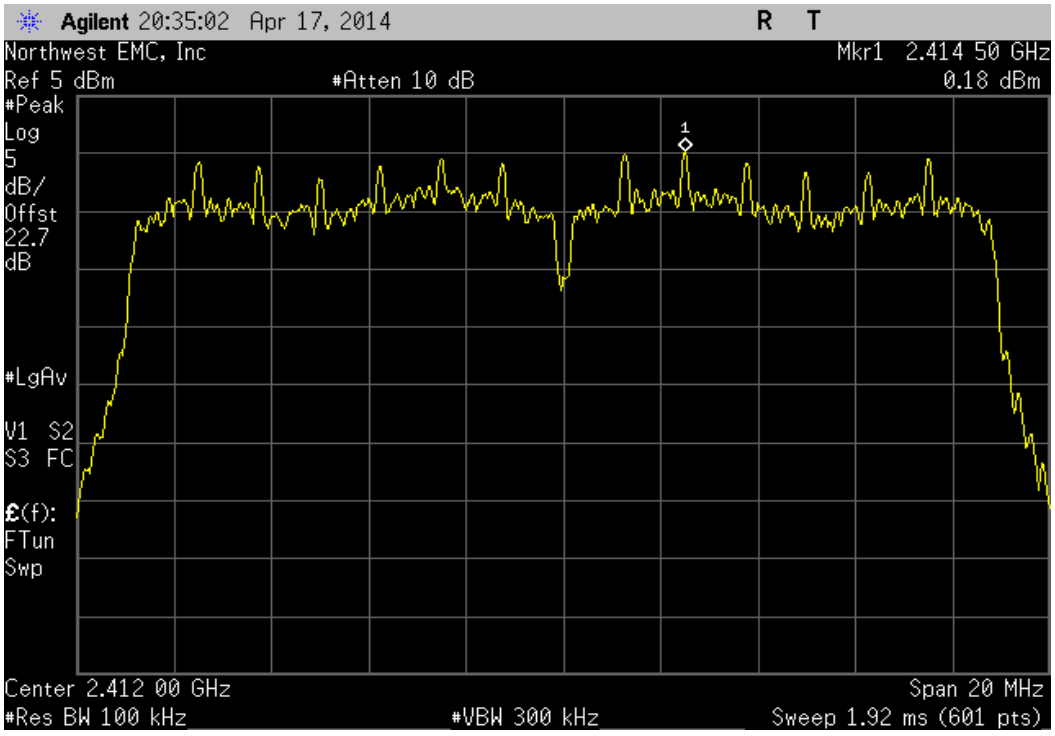
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	0.177	-15.2	-15.023	8	N/A
Mid Channel 6, 2437 MHz	0.163	-15.2	-15.037	8	N/A
High Channel 11, 2462 MH	-0.247	-15.2	-15.447	8	N/A
802.11(n) MCS15					
Low Channel 1, 2412 MHz	-0.148	-15.2	-15.348	8	N/A
Mid Channel 6, 2437 MHz	0.118	-15.2	-15.082	8	N/A
High Channel 11, 2462 MH	-0.039	-15.2	-15.239	8	N/A
Chain B					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	0.084	-15.2	-15.116	8	N/A
Mid Channel 6, 2437 MHz	0.015	-15.2	-15.185	8	N/A
High Channel 11, 2462 MH	-0.128	-15.2	-15.328	8	N/A
802.11(n) MCS15					
Low Channel 1, 2412 MHz	-0.264	-15.2	-15.464	8	N/A
Mid Channel 6, 2437 MHz	0.278	-15.2	-14.922	8	N/A
High Channel 11, 2462 MH	0.076	-15.2	-15.124	8	N/A

	Value (dBm/MHz)	Summing Factor (dBm)	dBm/100kHz To dBm/3kHz	Summed Power (dBm/MHz)	Limit (dBm/MHz)	Results
Chain A						
20 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS8						
Low Channel 1/5, 2422 MHz	0.177	3	-15.2	-12.023	8	Pass
Mid Channel 4/8, 2437 MHz	0.163	3	-15.2	-12.037	8	Pass
High Channel 7/11, 2452 MHz	-0.247	3	-15.2	-12.447	8	Pass
802.11(n) MCS15						
Low Channel 1/5, 2422 MHz	-0.148	3	-15.2	-12.348	8	Pass
Mid Channel 4/8, 2437 MHz	0.118	3	-15.2	-12.082	8	Pass
High Channel 7/11, 2452 MHz	-0.039	3	-15.2	-12.239	8	Pass
Chain B						
20 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS8						
Low Channel 1/5, 2422 MHz	0.084	3	-15.2	-12.116	8	Pass
Mid Channel 4/8, 2437 MHz	0.015	3	-15.2	-12.185	8	Pass
High Channel 7/11, 2452 MHz	-0.128	3	-15.2	-12.328	8	Pass
802.11(n) MCS15						
Low Channel 1/5, 2422 MHz	-0.264	3	-15.2	-12.464	8	Pass
Mid Channel 4/8, 2437 MHz	0.278	3	-15.2	-11.922	8	Pass
High Channel 7/11, 2452 MHz	0.076	3	-15.2	-12.124	8	Pass

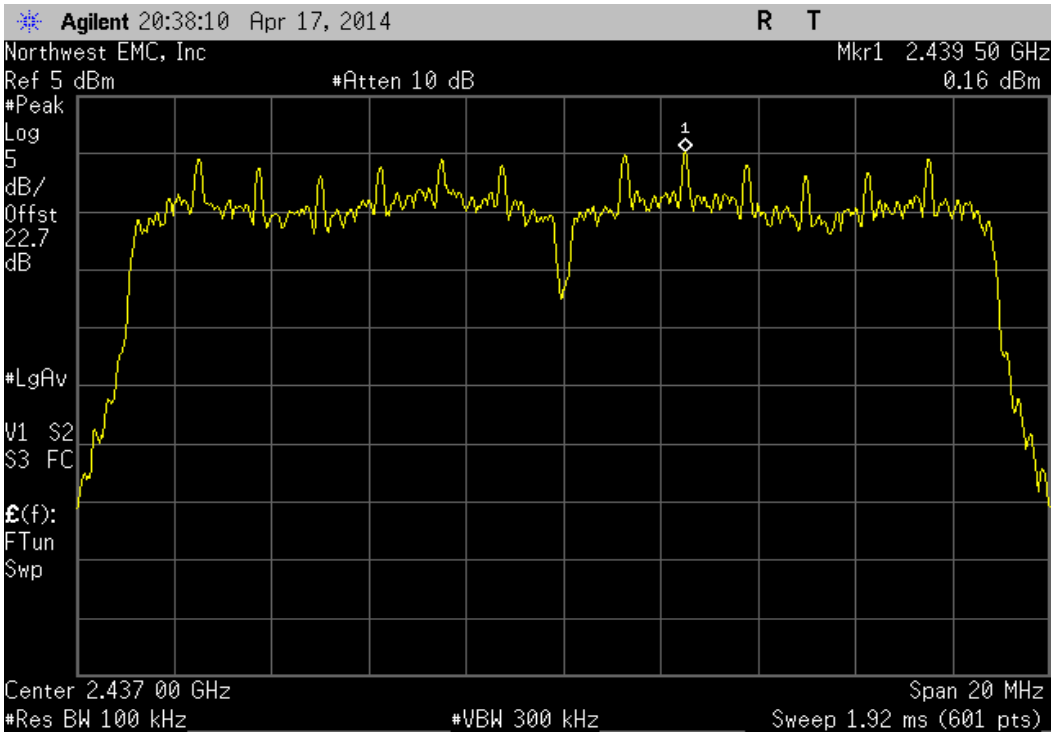
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.177	-15.2	-15.023	8	Pass

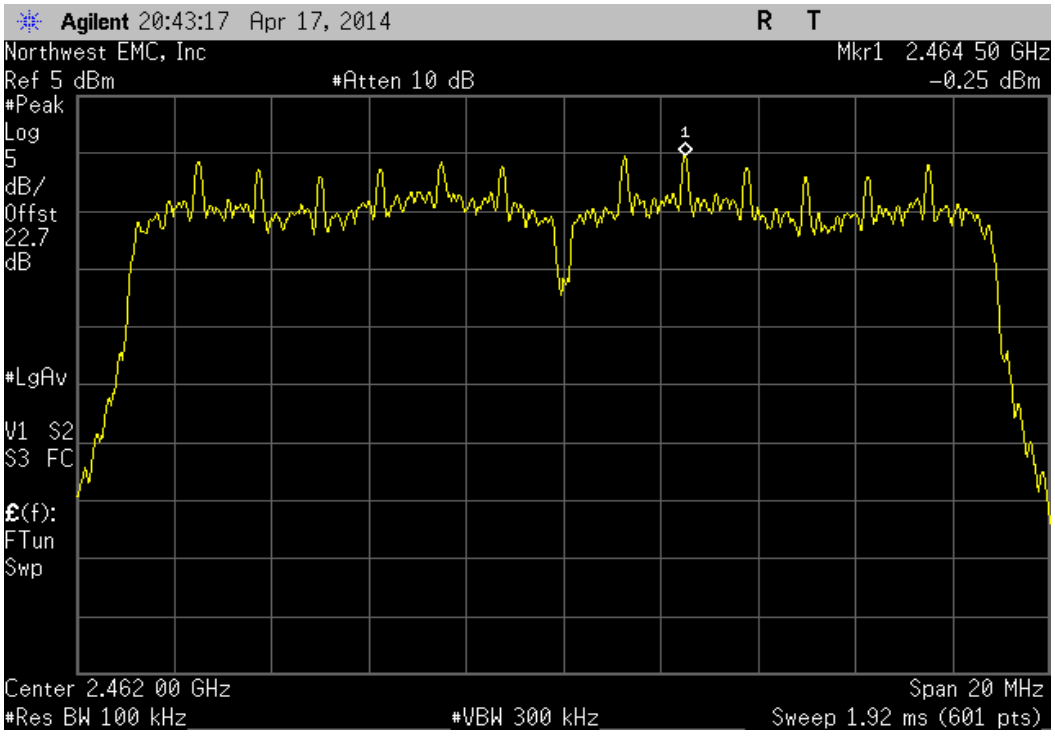


Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

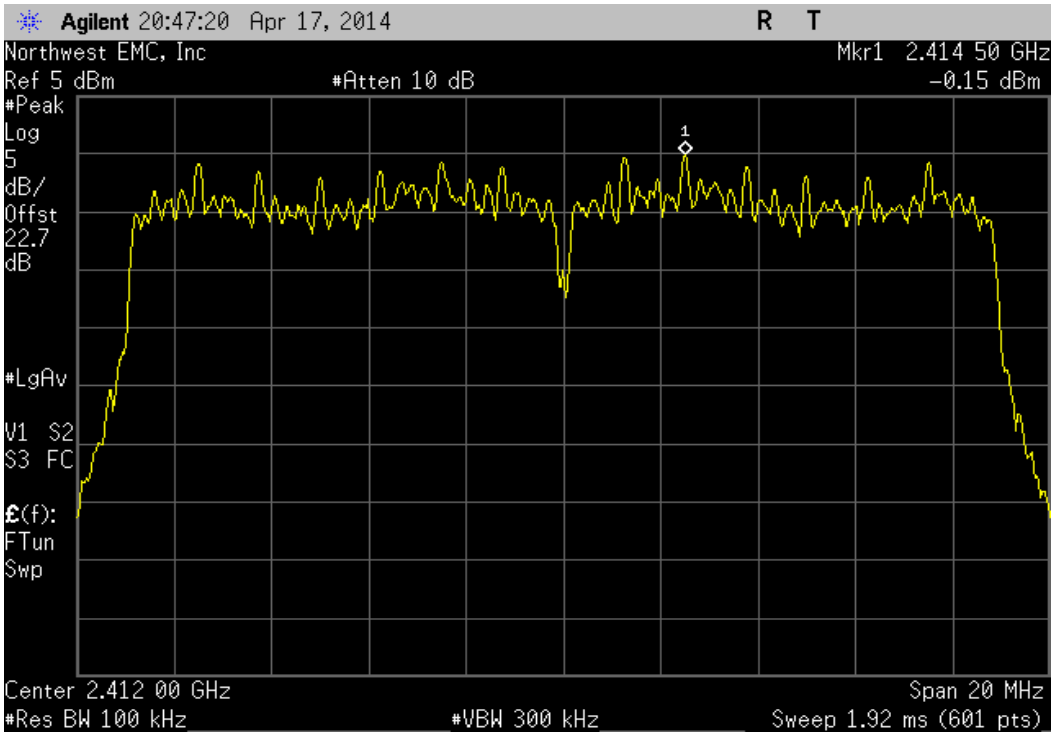
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.163	-15.2	-15.037	8	Pass



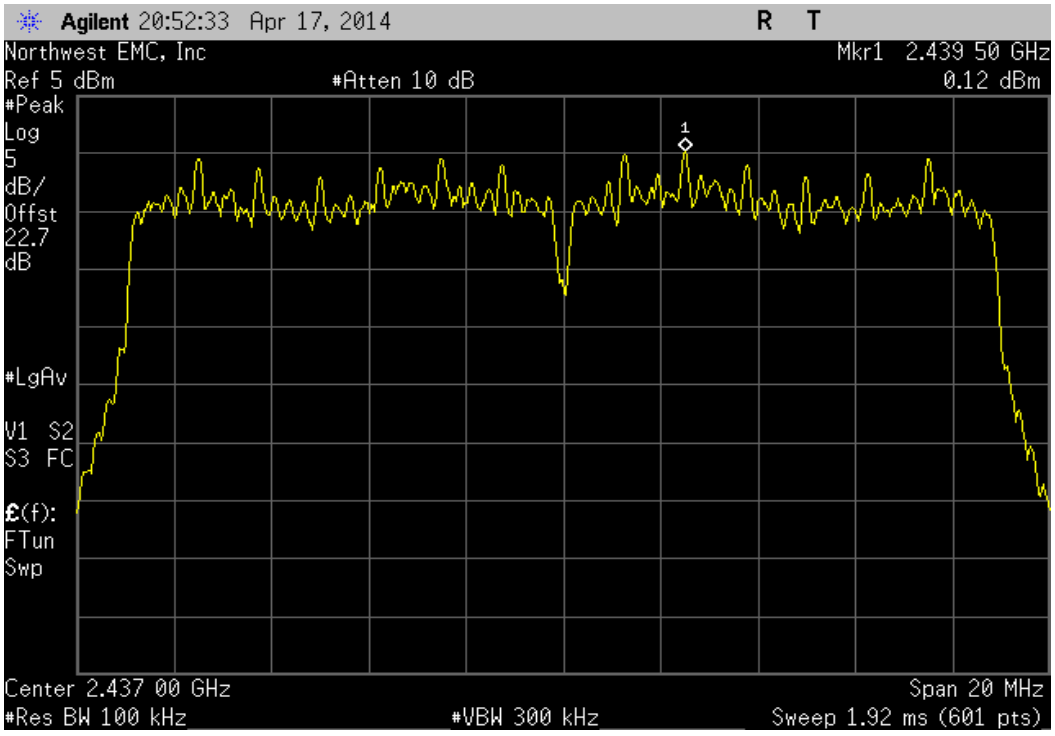
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.247	-15.2	-15.447	8	Pass



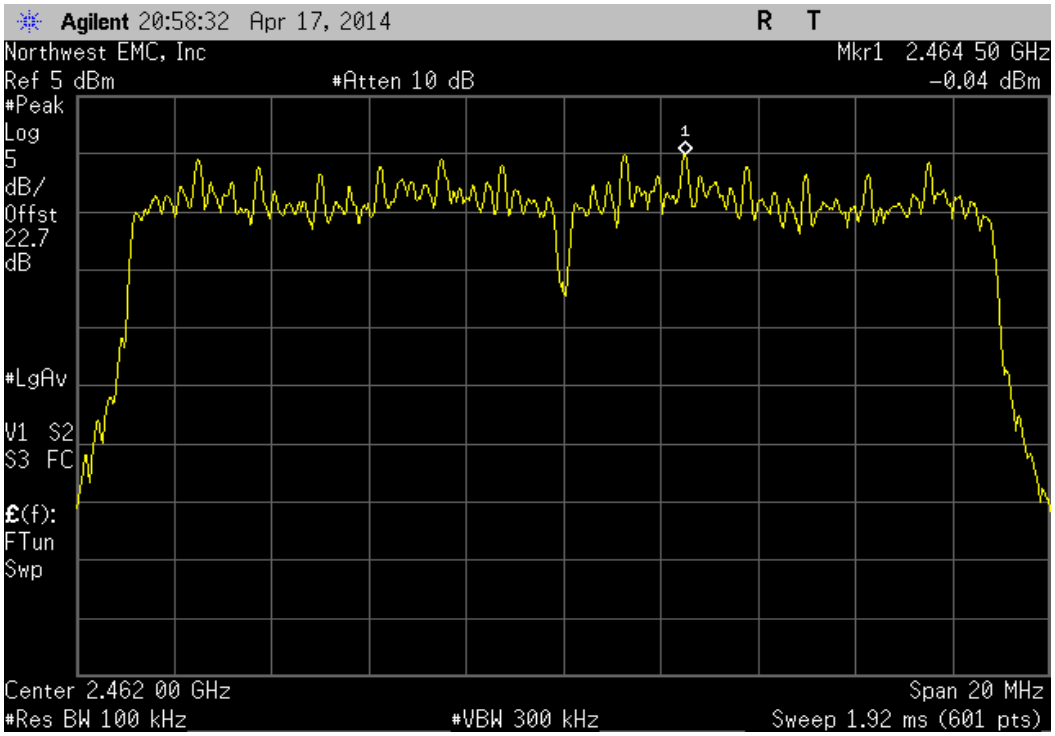
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.148	-15.2	-15.348	8	Pass



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.118	-15.2	-15.082	8	Pass

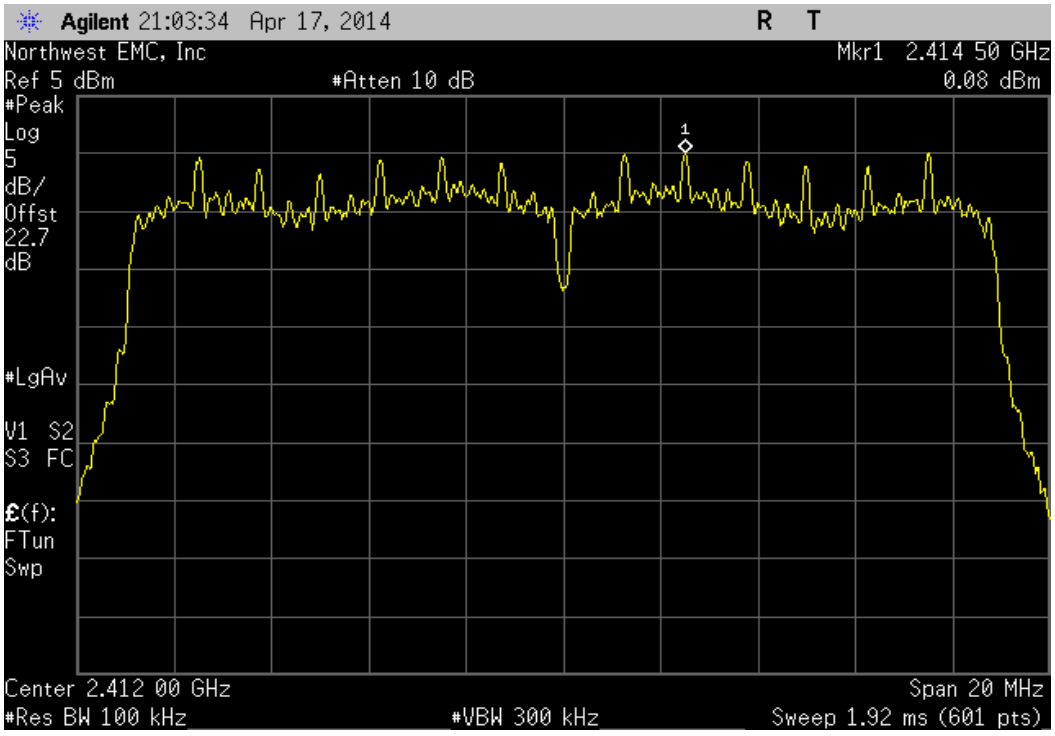


Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.039	-15.2	-15.239	8	Pass



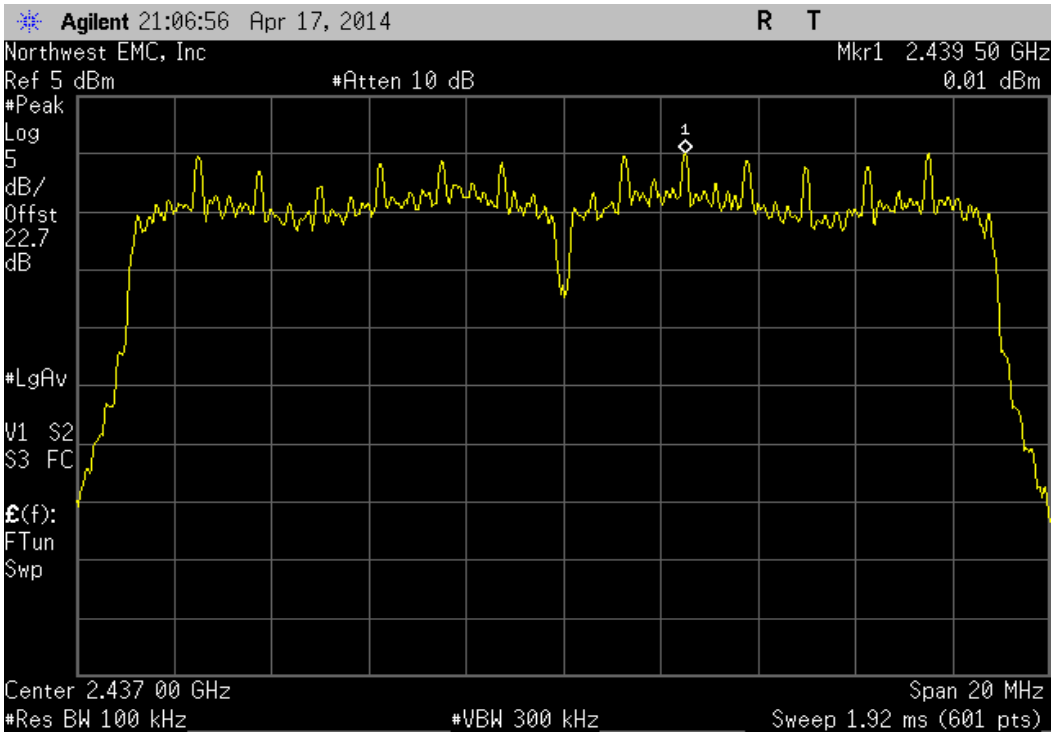
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.084	-15.2	-15.116	8	Pass

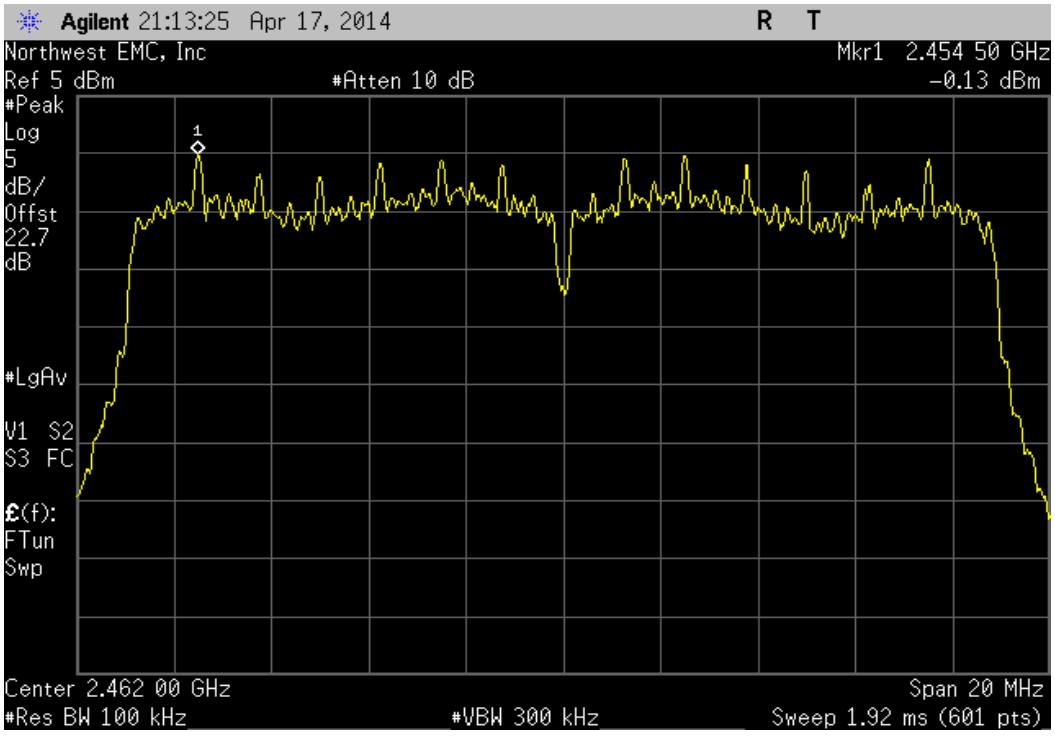


Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

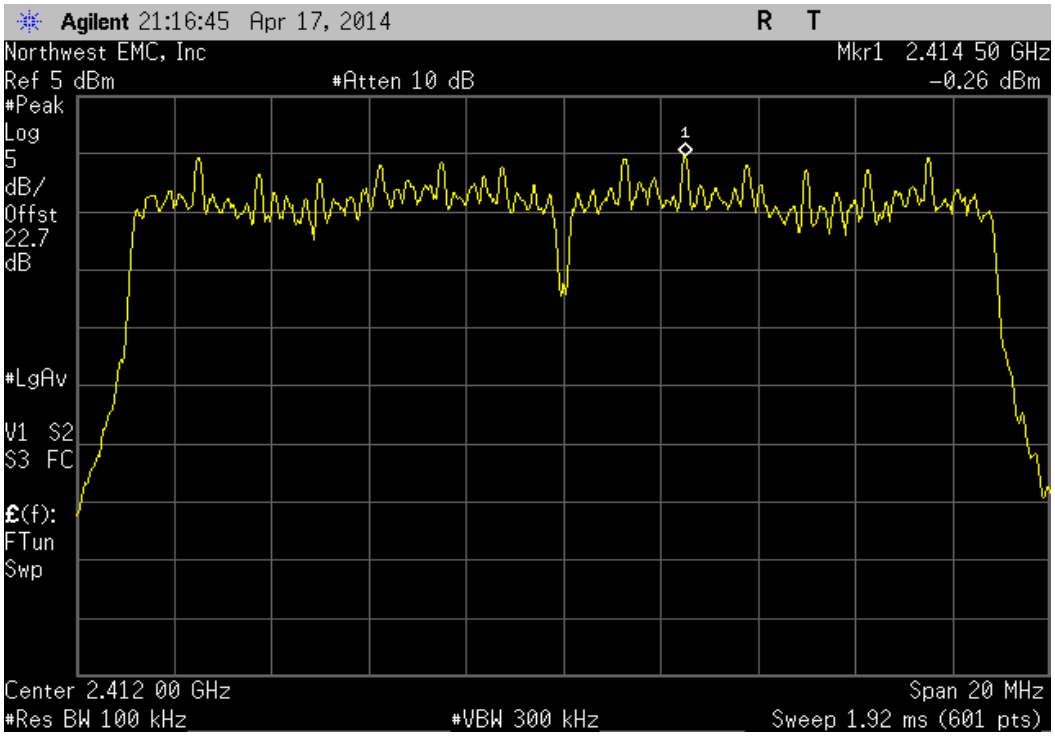
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.015	-15.2	-15.185	8	Pass



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.128	-15.2	-15.328	8	Pass

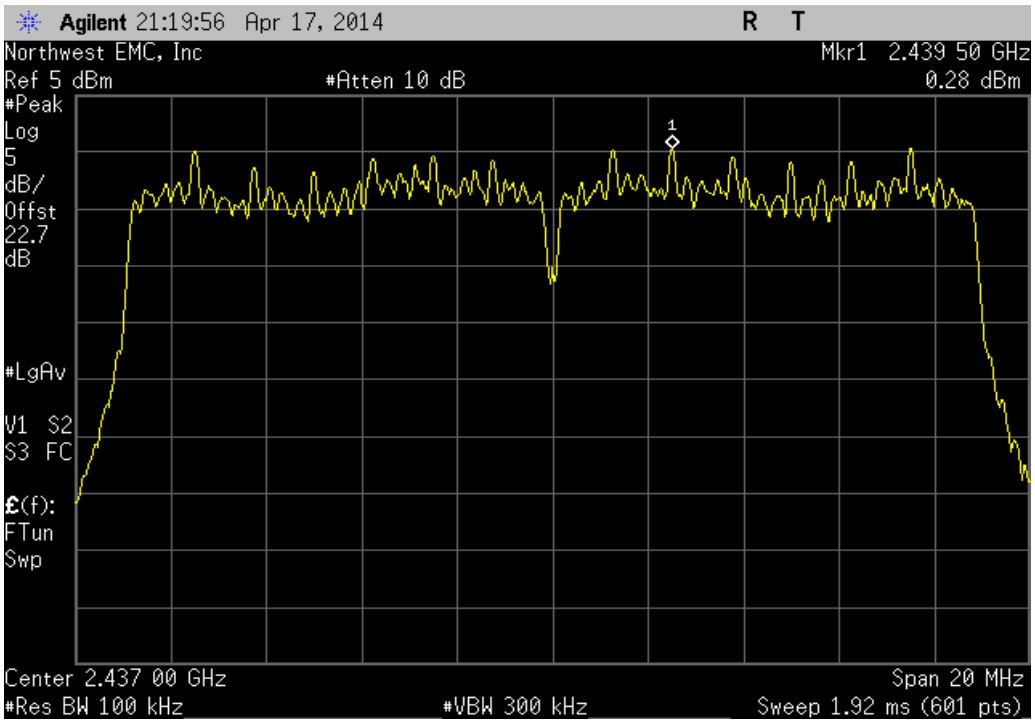


Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.264	-15.2	-15.464	8	Pass

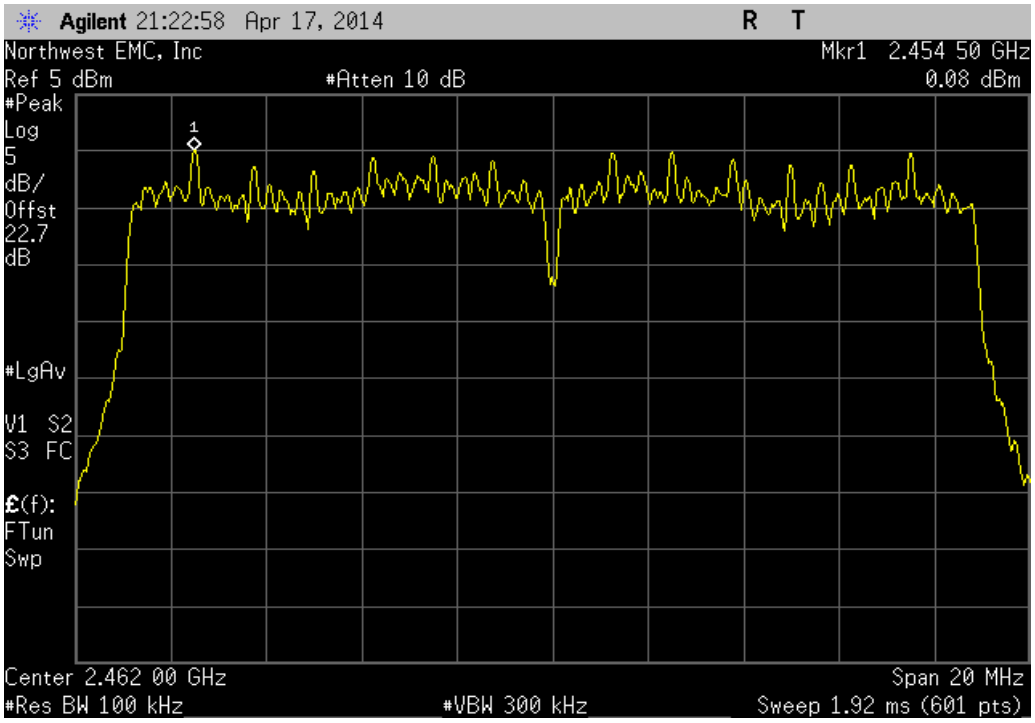


POWER SPECTRAL DENSITY

Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.278	-15.2	-14.922	8	Pass



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.076	-15.2	-15.124	8	Pass



POWER SPECTRAL DENSITY

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

None

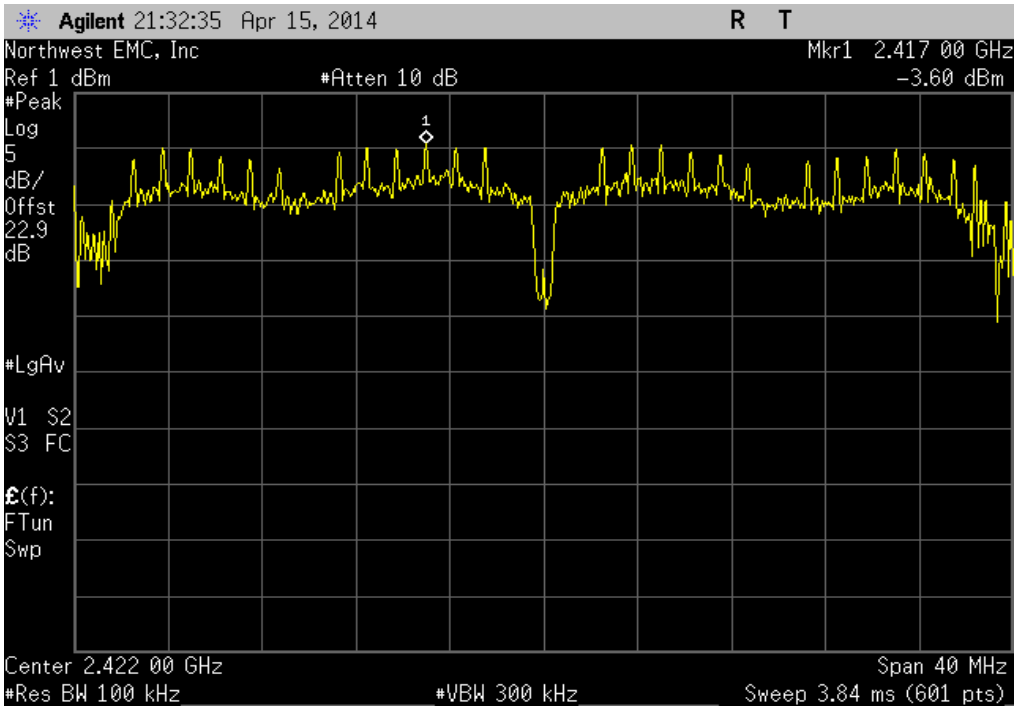
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
Chain A					
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1/5, 2422 MH	-3.6	-15.2	-18.8	8	Pass
Mid Channel 4/8, 2437 MH	-3.365	-15.2	-18.565	8	Pass
High Channel 7/11, 2452 M	-3.771	-15.2	-18.971	8	Pass
802.11(n) MCS15					
Low Channel 1/5, 2422 MH	-3.375	-15.2	-18.575	8	Pass
Mid Channel 4/8, 2437 MH	-3.218	-15.2	-18.418	8	Pass
High Channel 7/11, 2452 M	-3.454	-15.2	-18.654	8	Pass
Chain B					
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1/5, 2422 MH	-2.716	-15.2	-17.916	8	Pass
Mid Channel 4/8, 2437 MH	-2.748	-15.2	-17.948	8	Pass
High Channel 7/11, 2452 M	-2.81	-15.2	-18.01	8	Pass
802.11(n) MCS15					
Low Channel 1/5, 2422 MH	-2.565	-15.2	-17.765	8	Pass
Mid Channel 4/8, 2437 MH	-2.452	-15.2	-17.652	8	Pass
High Channel 7/11, 2452 M	-2.679	-15.2	-17.879	8	Pass

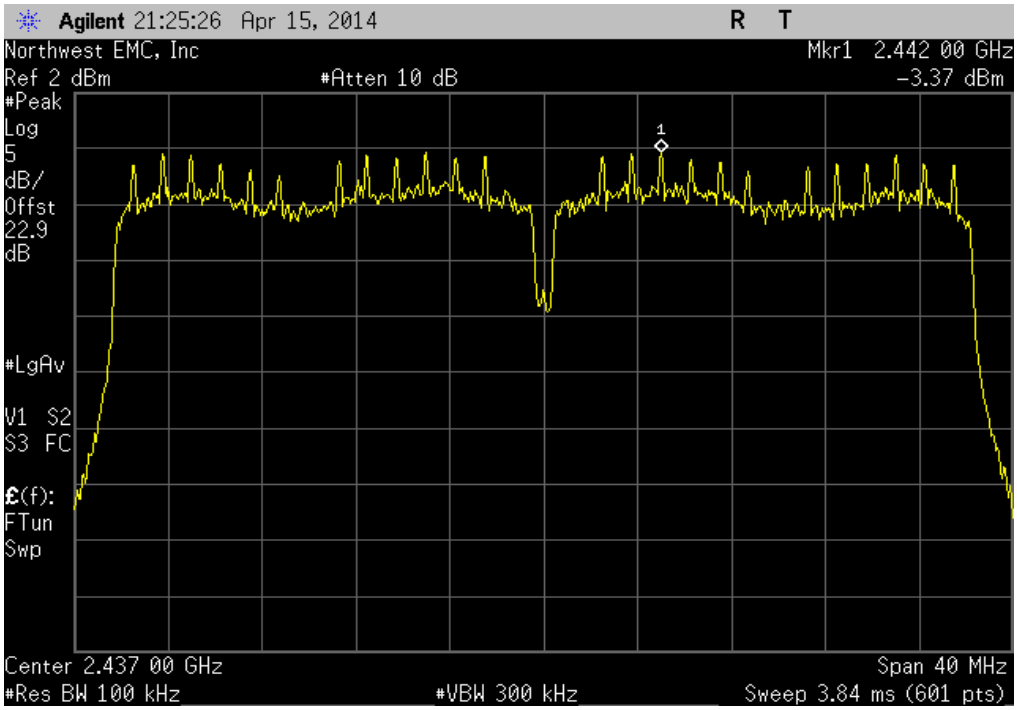
	Value (dBm/MHz)	Summing Factor (dBm)	dBm/100kHz To dBm/3kHz	Summed Power (dBm/MHz)	Limit (dBm/MHz)	Results
Chain A						
40 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS8						
Low Channel 1/5, 2422 MHz	-3.6	3	-15.2	-15.8	8	Pass
Mid Channel 4/8, 2437 MHz	-3.365	3	-15.2	-15.565	8	Pass
High Channel 7/11, 2452 MHz	-3.771	3	-15.2	-15.971	8	Pass
802.11(n) MCS15						
Low Channel 1/5, 2422 MHz	-3.375	3	-15.2	-15.575	8	Pass
Mid Channel 4/8, 2437 MHz	-3.218	3	-15.2	-15.418	8	Pass
High Channel 7/11, 2452 MHz	-3.454	3	-15.2	-15.654	8	Pass
Chain B						
40 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS8						
Low Channel 1/5, 2422 MHz	-2.716	3	-15.2	-14.916	8	Pass
Mid Channel 4/8, 2437 MHz	-2.748	3	-15.2	-14.948	8	Pass
High Channel 7/11, 2452 MHz	-2.81	3	-15.2	-15.01	8	Pass
802.11(n) MCS15						
Low Channel 1/5, 2422 MHz	-2.565	3	-15.2	-14.765	8	Pass
Mid Channel 4/8, 2437 MHz	-2.452	3	-15.2	-14.652	8	Pass
High Channel 7/11, 2452 MHz	-2.679	3	-15.2	-14.879	8	Pass

POWER SPECTRAL DENSITY

Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-3.6	-15.2	-18.8	8	Pass

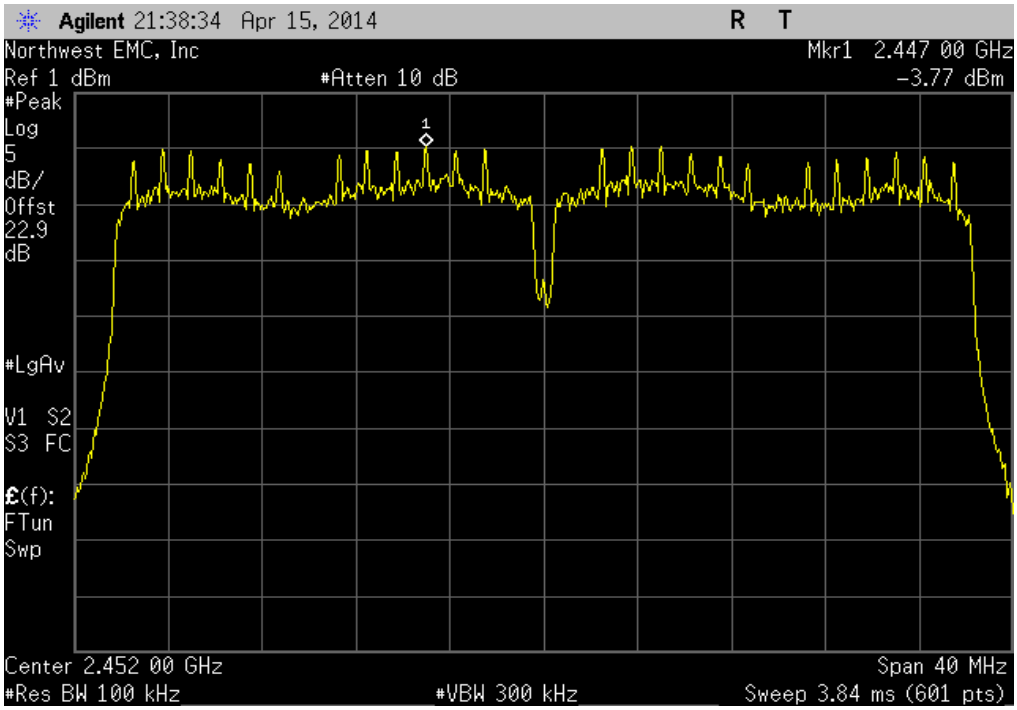


Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-3.365	-15.2	-18.565	8	Pass

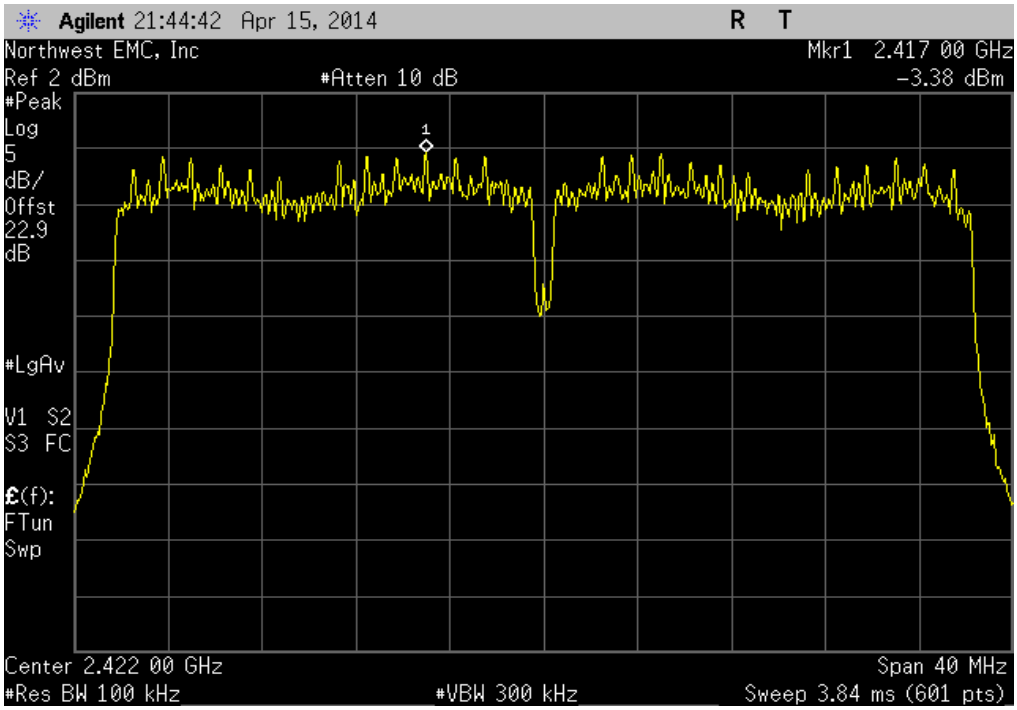


POWER SPECTRAL DENSITY

Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-3.771	-15.2	-18.971	8	Pass

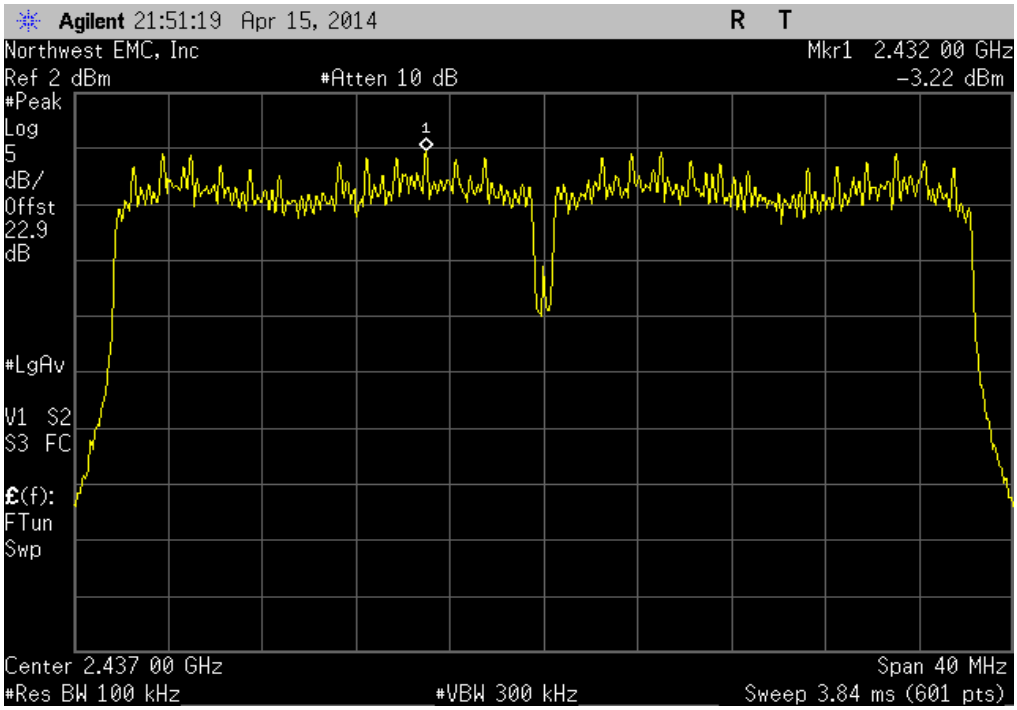


Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-3.375	-15.2	-18.575	8	Pass

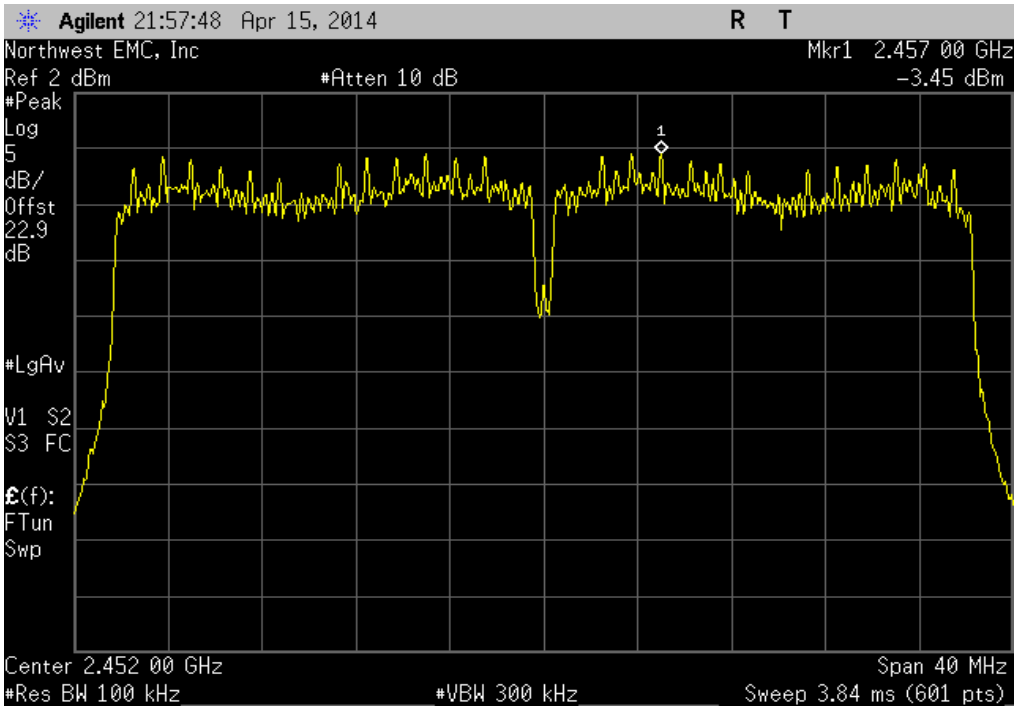


POWER SPECTRAL DENSITY

Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-3.218	-15.2	-18.418	8	Pass

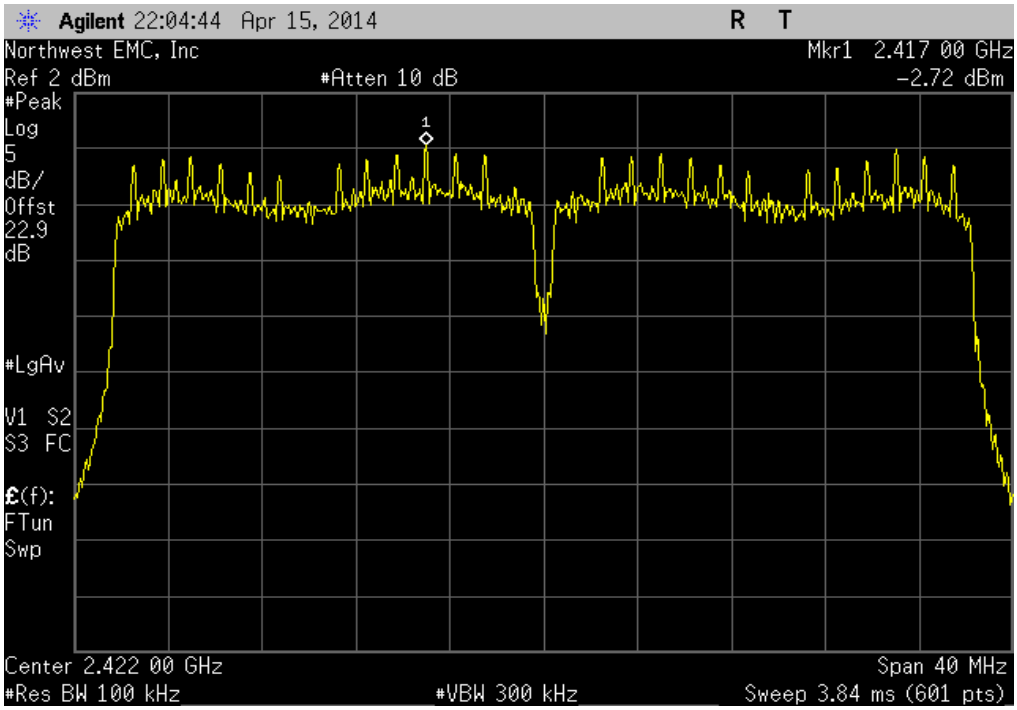


Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-3.454	-15.2	-18.654	8	Pass

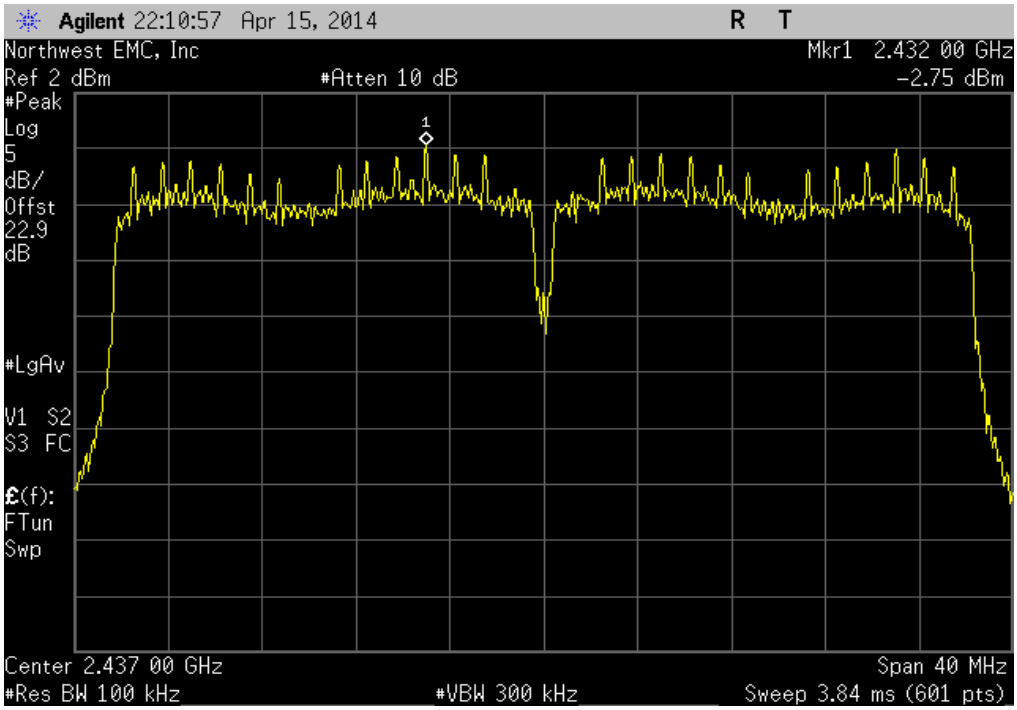


POWER SPECTRAL DENSITY

Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.716	-15.2	-17.916	8	Pass

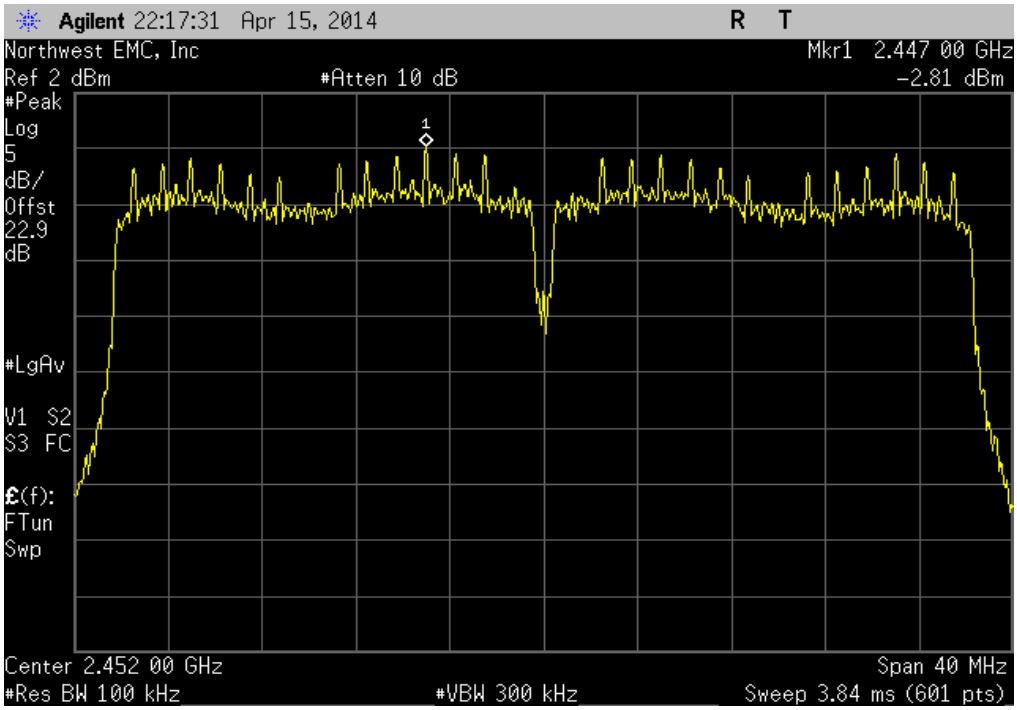


Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.748	-15.2	-17.948	8	Pass

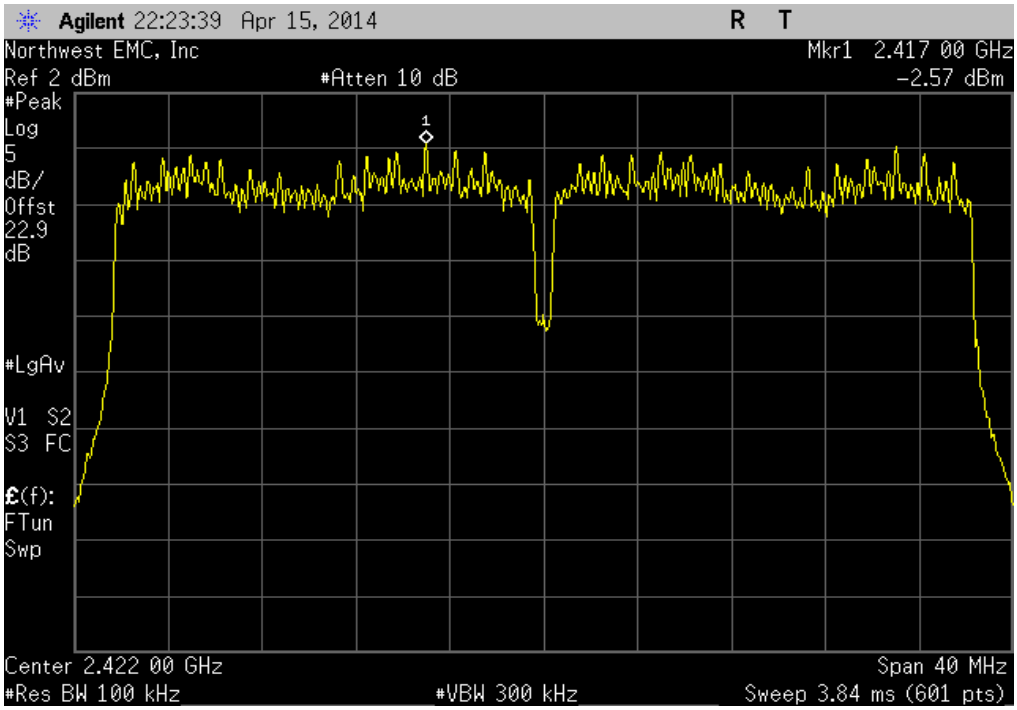


POWER SPECTRAL DENSITY

Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.81	-15.2	-18.01	8	Pass

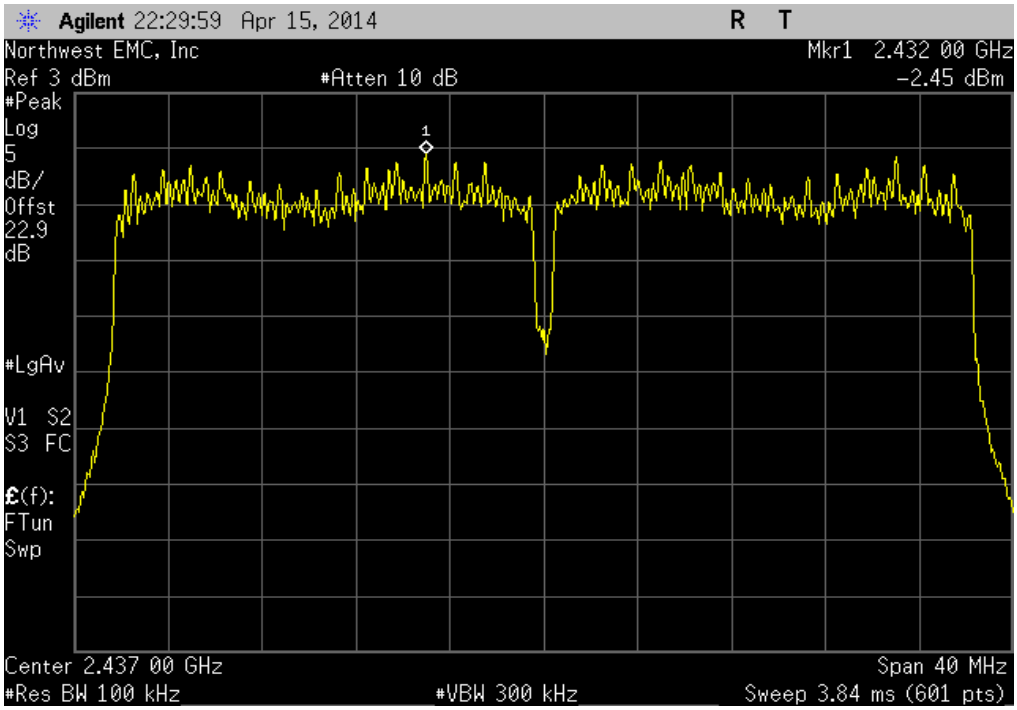


Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.565	-15.2	-17.765	8	Pass

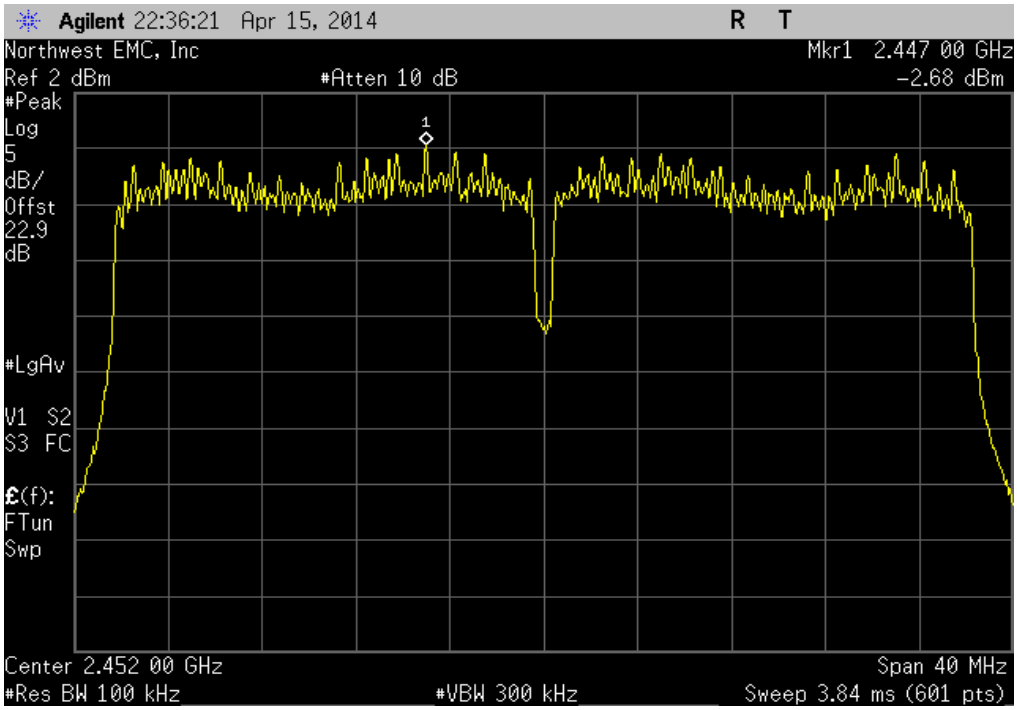


POWER SPECTRAL DENSITY

Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.452	-15.2	-17.652	8	Pass



Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.679	-15.2	-17.879	8	Pass



POWER SPECTRAL DENSITY

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TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
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Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			Work Order:	MCSO1698
Serial Number:	006840341053			Date:	04/18/14
Customer:	Microsoft Corporation			Temperature:	22.3°C
Attendees:	None			Humidity:	32%
Project:	None			Barometric Pres.:	1014
Tested by:	Jared Ison	Power:	110VAC/60Hz	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

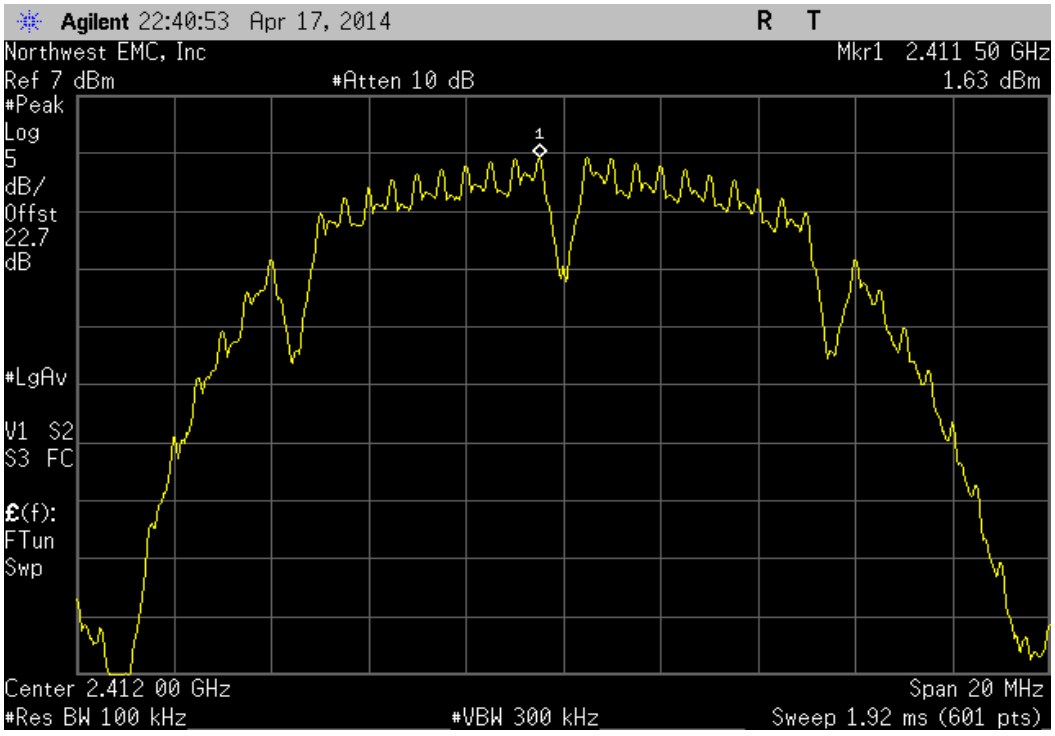
DEVIATIONS FROM TEST STANDARD

None

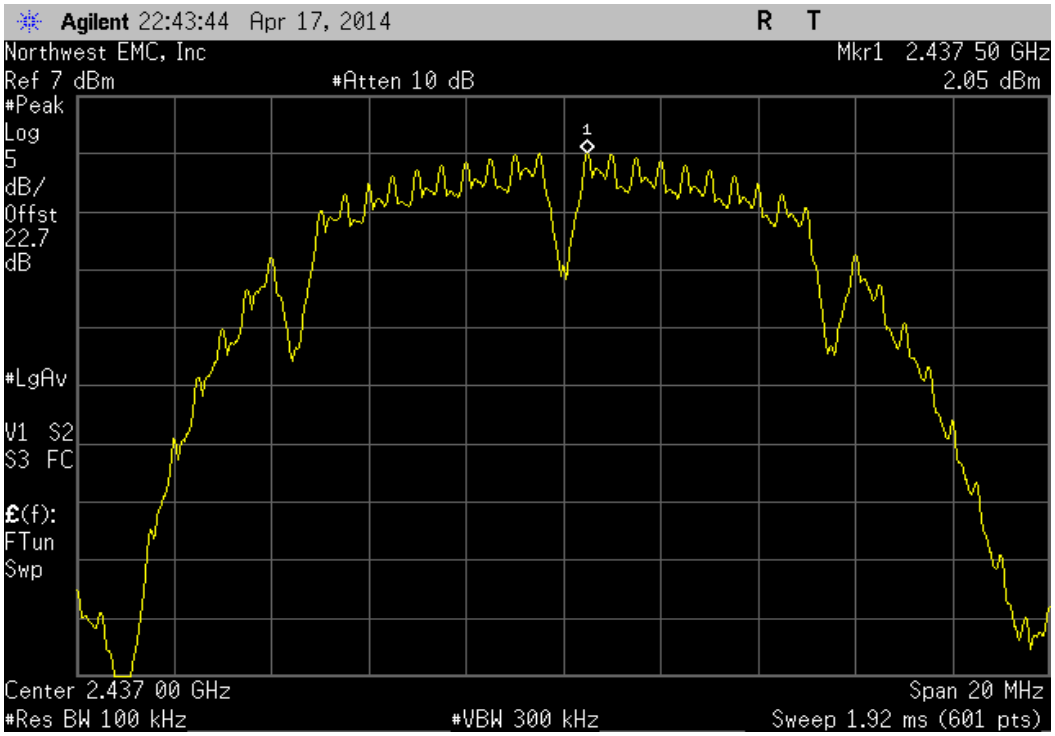
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	1.628	-15.2	-13.572	8	Pass
Mid Channel 6, 2437 MHz	2.045	-15.2	-13.155	8	Pass
High Channel 11, 2462 MHz	1.77	-15.2	-13.43	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	1.597	-15.2	-13.603	8	Pass
Mid Channel 6, 2437 MHz	1.813	-15.2	-13.387	8	Pass
High Channel 11, 2462 MHz	1.77	-15.2	-13.43	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	0.468	-15.2	-14.732	8	Pass
Mid Channel 6, 2437 MHz	0.551	-15.2	-14.649	8	Pass
High Channel 11, 2462 MHz	-0.049	-15.2	-15.249	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	0.039	-15.2	-15.161	8	Pass
Mid Channel 6, 2437 MHz	0.001	-15.2	-15.199	8	Pass
High Channel 11, 2462 MHz	-0.262	-15.2	-15.462	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	0.09	-15.2	-15.11	8	Pass
Mid Channel 6, 2437 MHz	0.006	-15.2	-15.194	8	Pass
High Channel 11, 2462 MHz	-0.176	-15.2	-15.376	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	-0.006	-15.2	-15.206	8	Pass
Mid Channel 6, 2437 MHz	0.079	-15.2	-15.121	8	Pass
High Channel 11, 2462 MHz	-0.204	-15.2	-15.404	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	0.147	-15.2	-15.053	8	Pass
Mid Channel 6, 2437 MHz	0.172	-15.2	-15.028	8	Pass
High Channel 11, 2462 MHz	-0.173	-15.2	-15.373	8	Pass

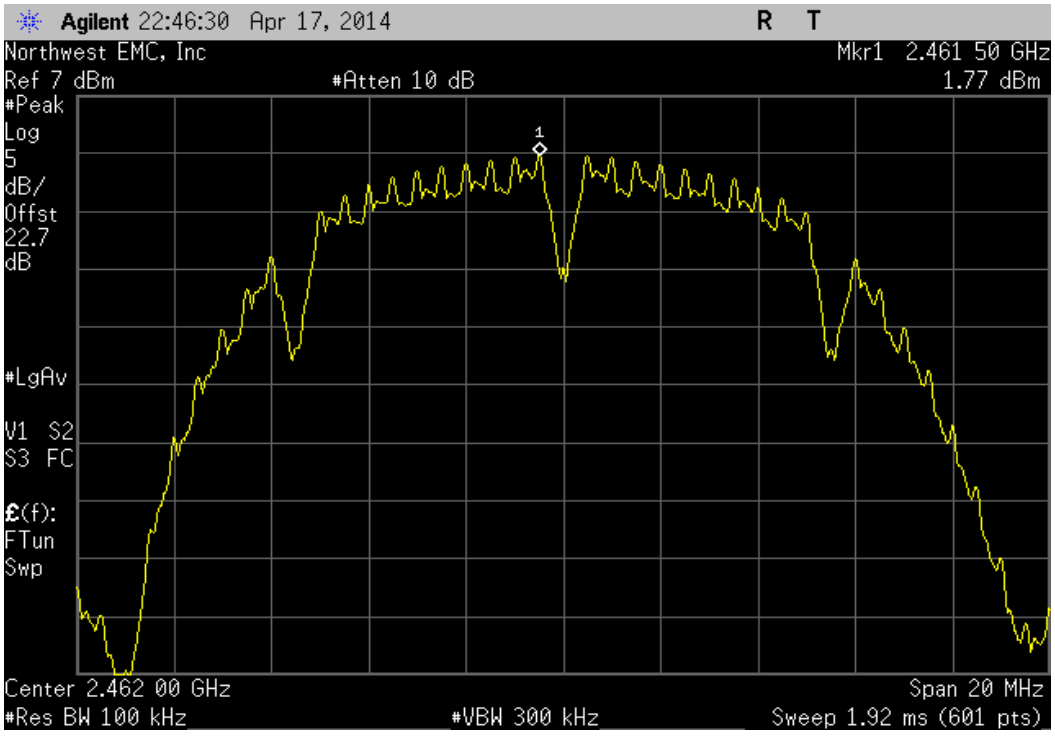
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.628	-15.2	-13.572	8	Pass



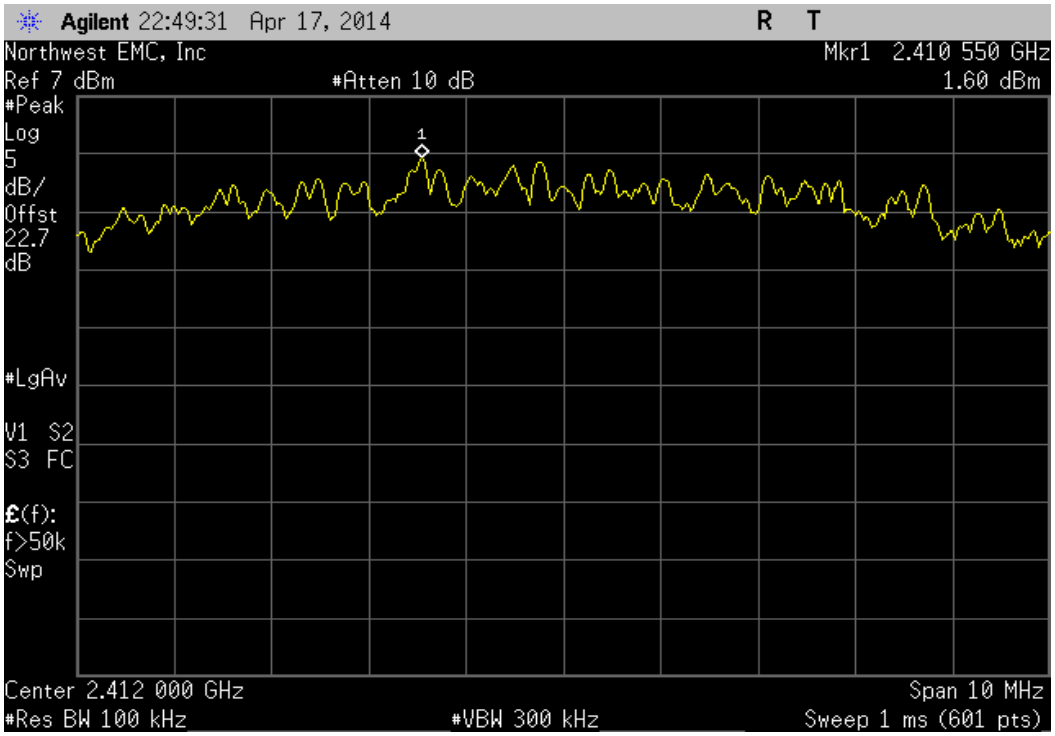
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		2.045	-15.2	-13.155	8	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.77	-15.2	-13.43	8	Pass

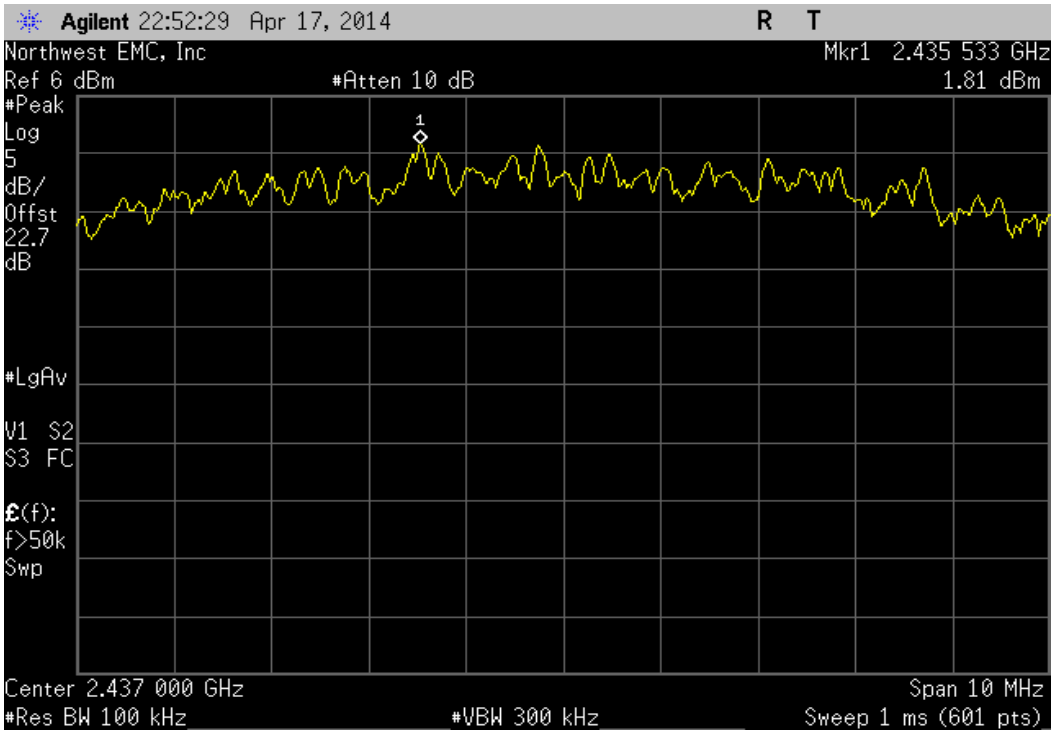


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.597	-15.2	-13.603	8	Pass



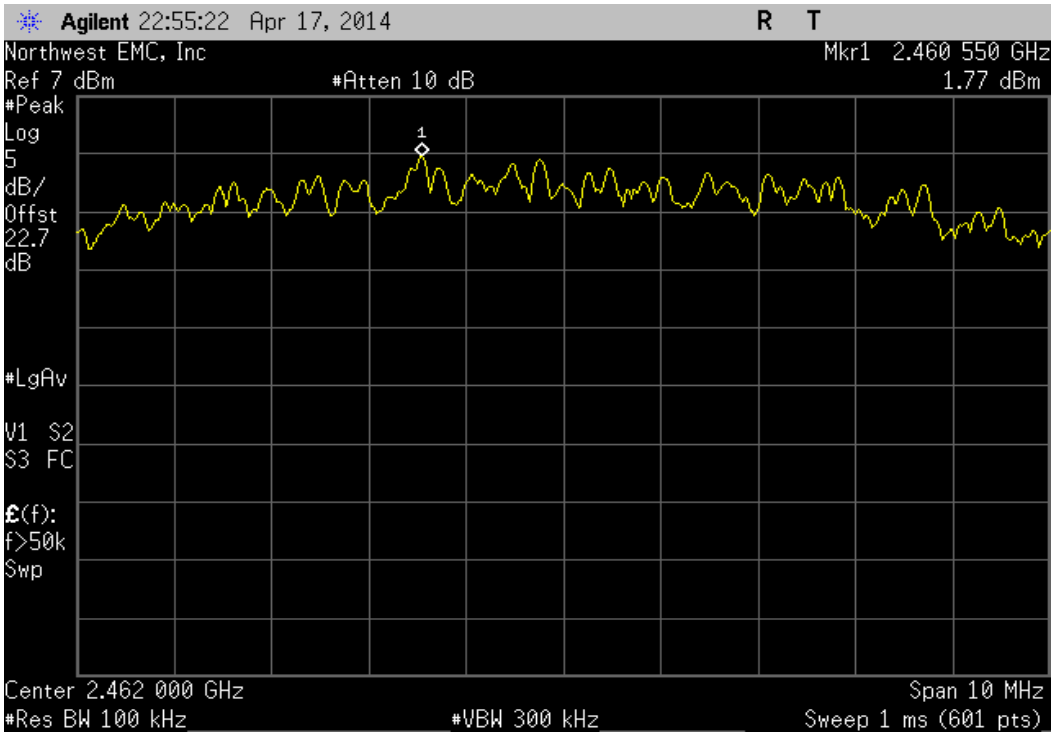
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.813	-15.2	-13.387	8	Pass

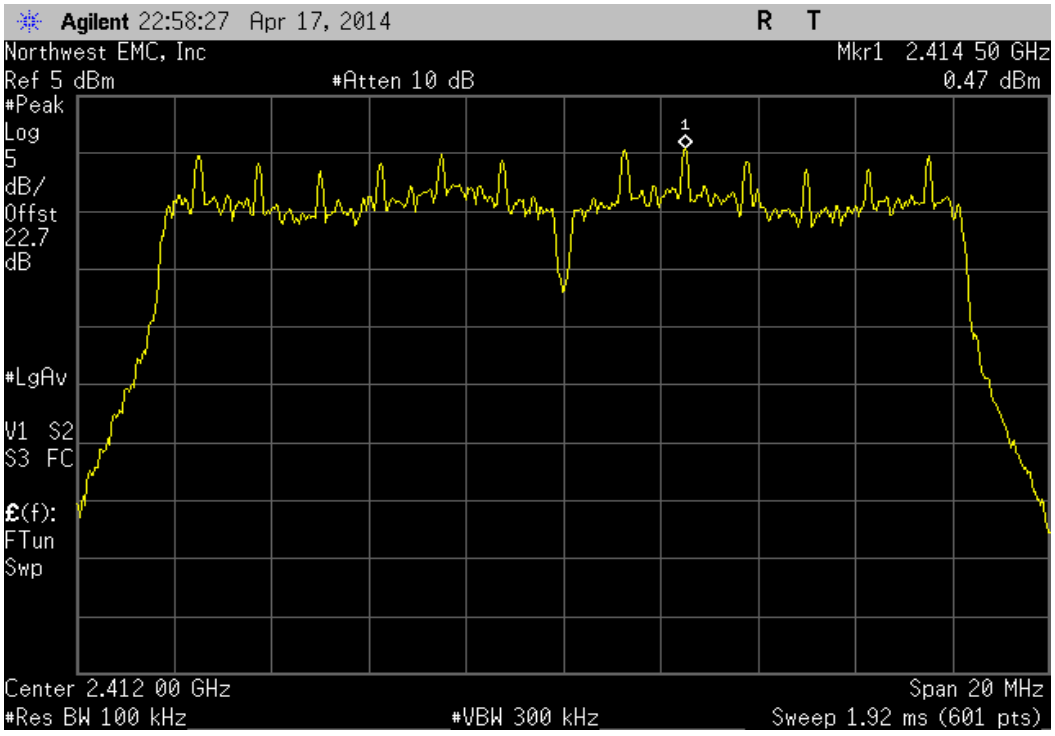


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

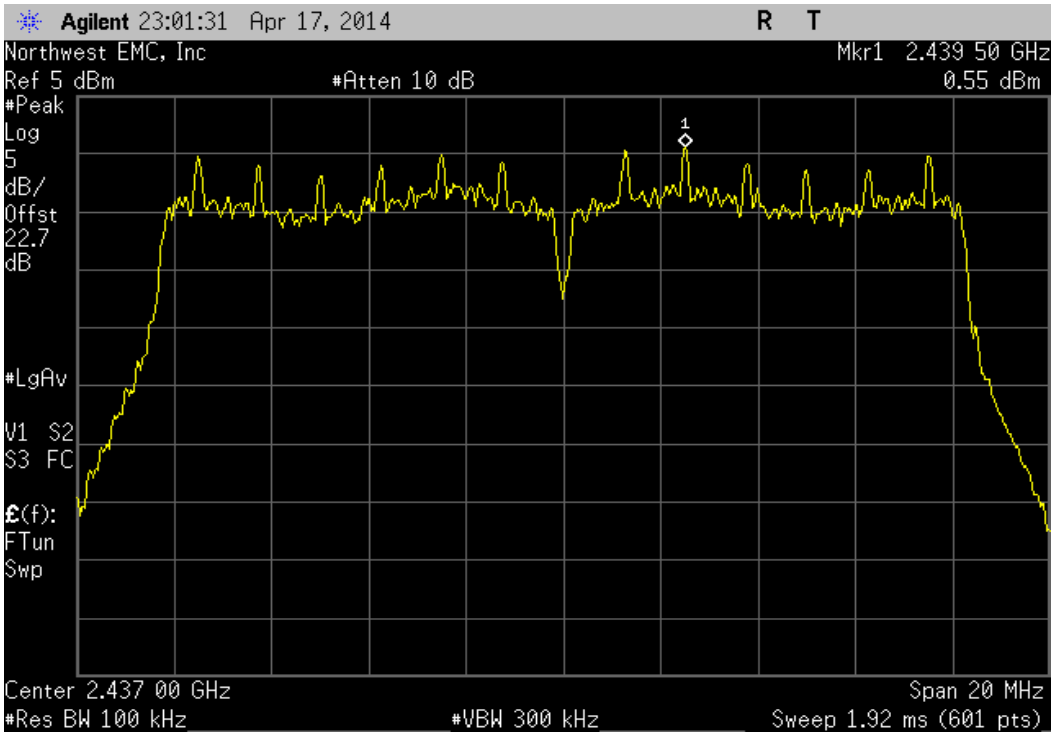
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		1.77	-15.2	-13.43	8	Pass



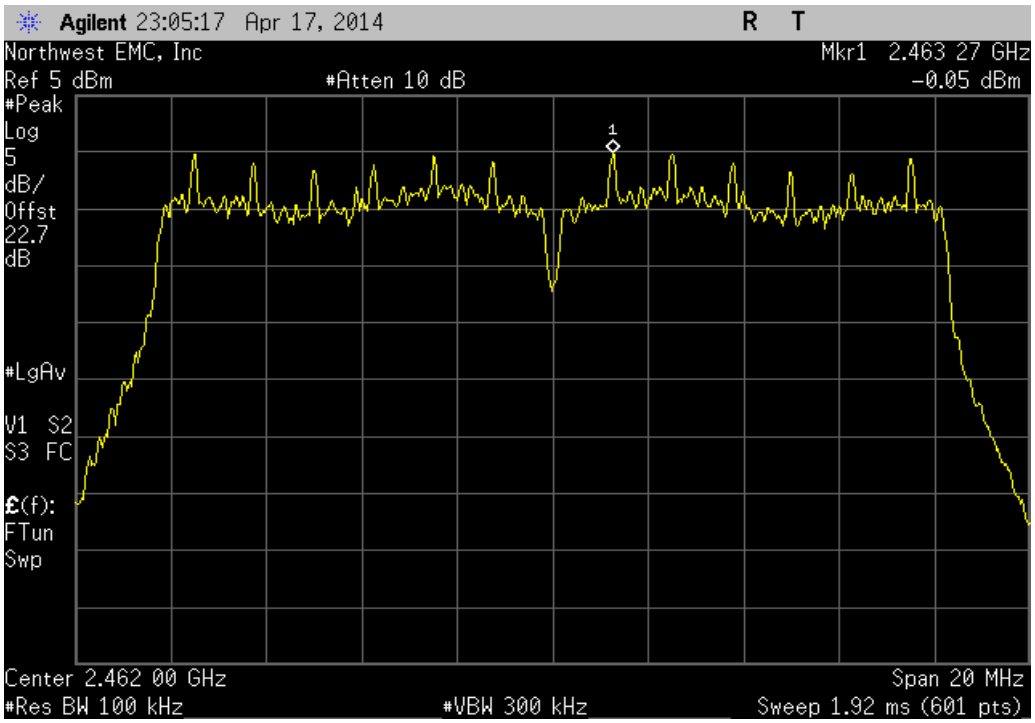
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.468	-15.2	-14.732	8	Pass



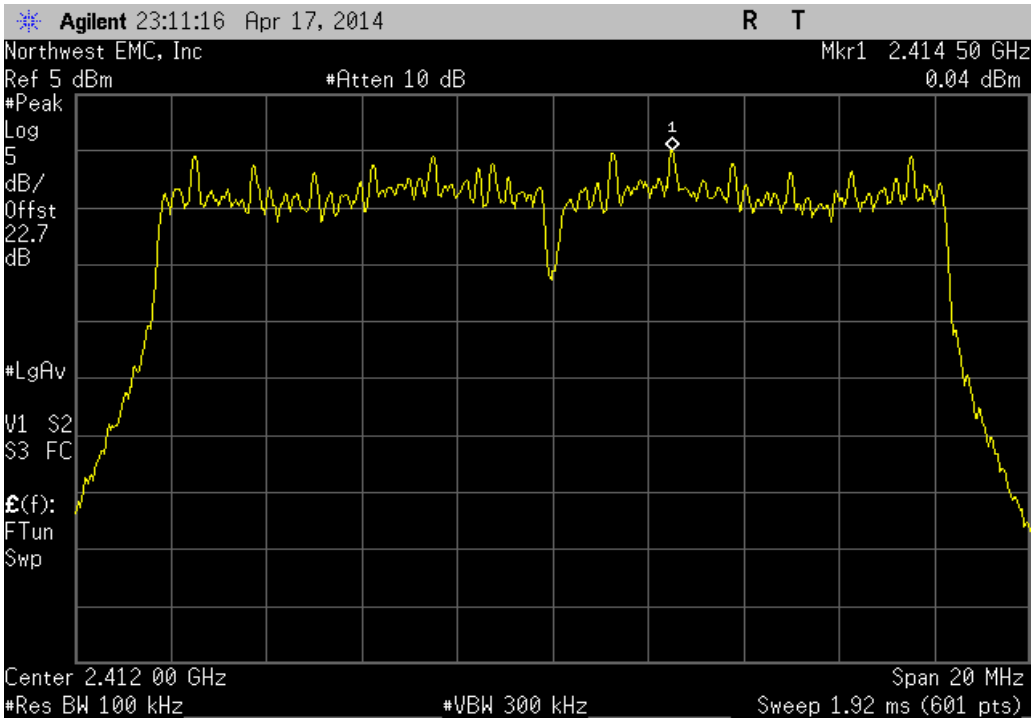
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.551	-15.2	-14.649	8	Pass



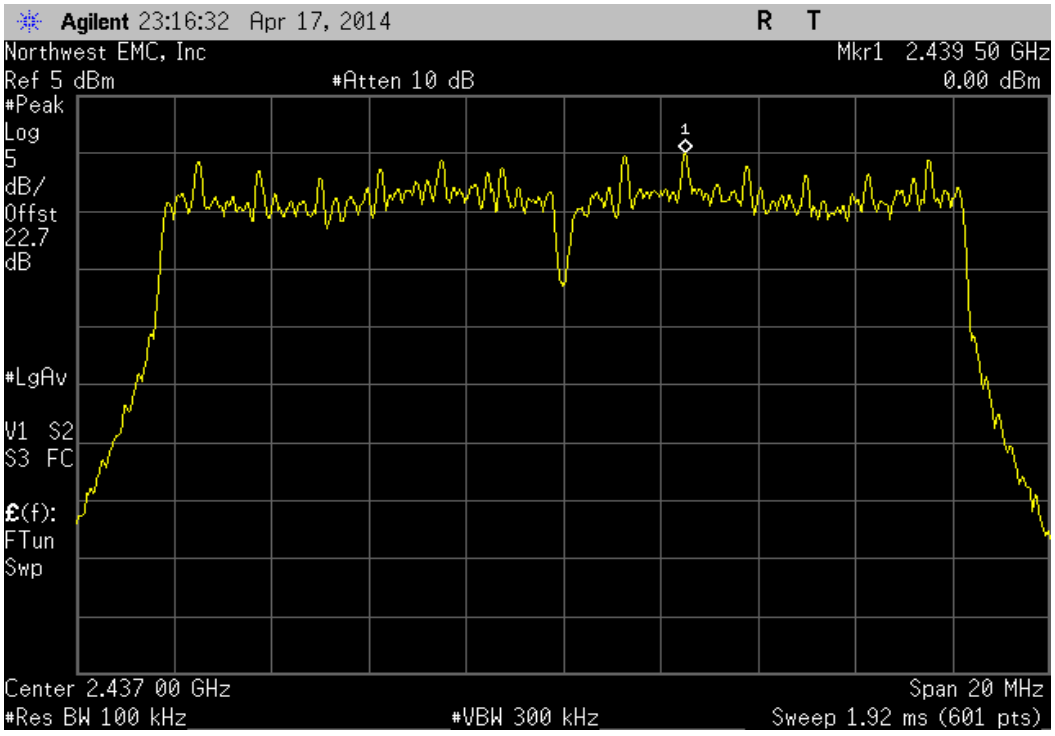
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.049	-15.2	-15.249	8	Pass



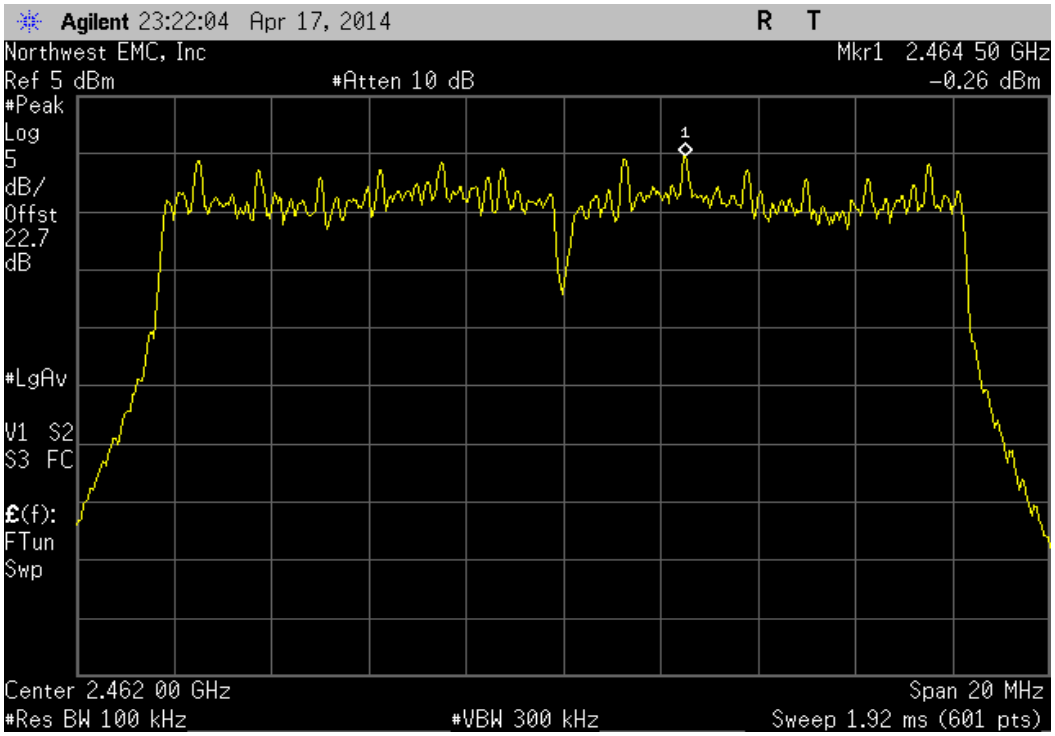
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.039	-15.2	-15.161	8	Pass



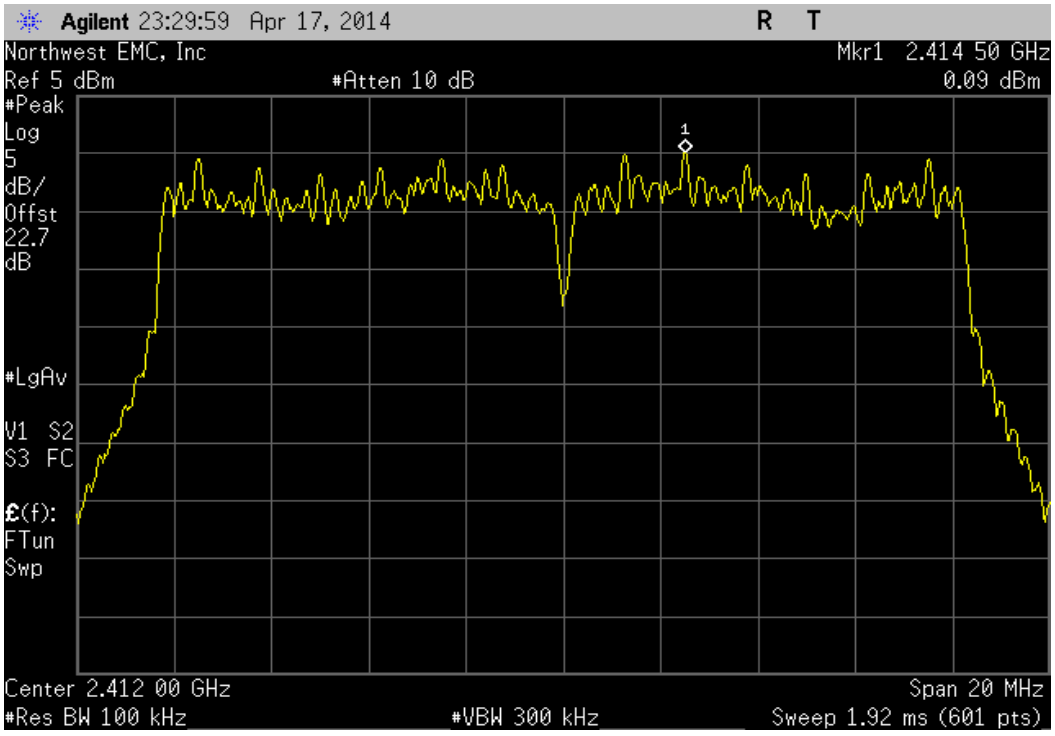
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.001	-15.2	-15.199	8	Pass



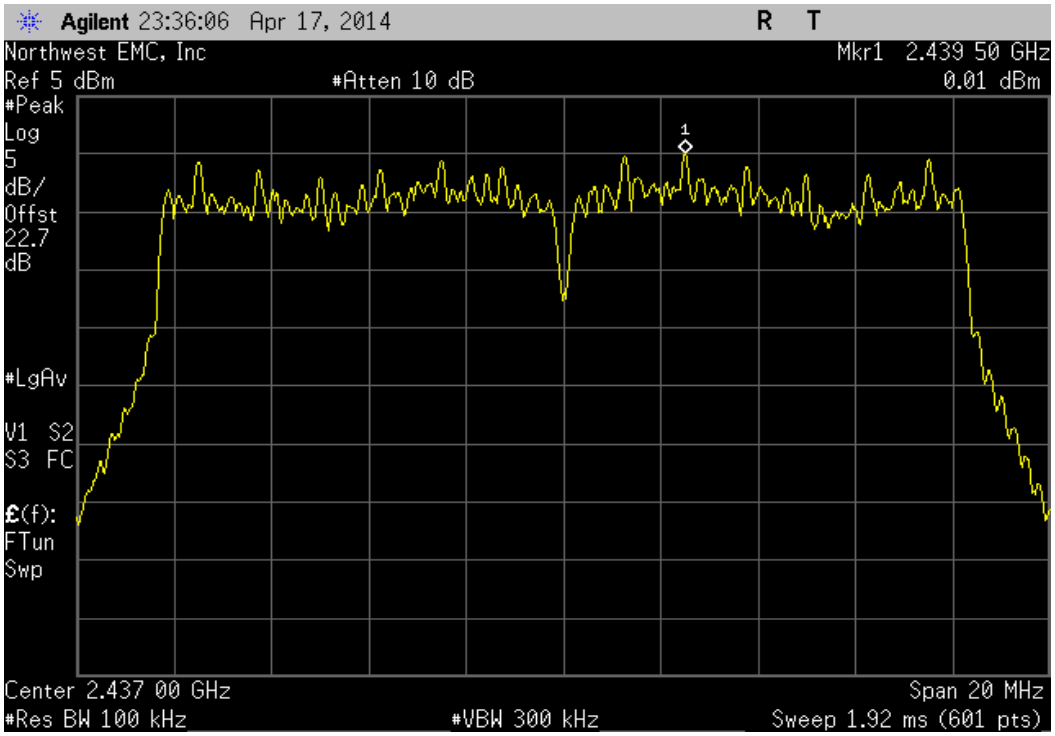
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.262	-15.2	-15.462	8	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.09	-15.2	-15.11	8	Pass

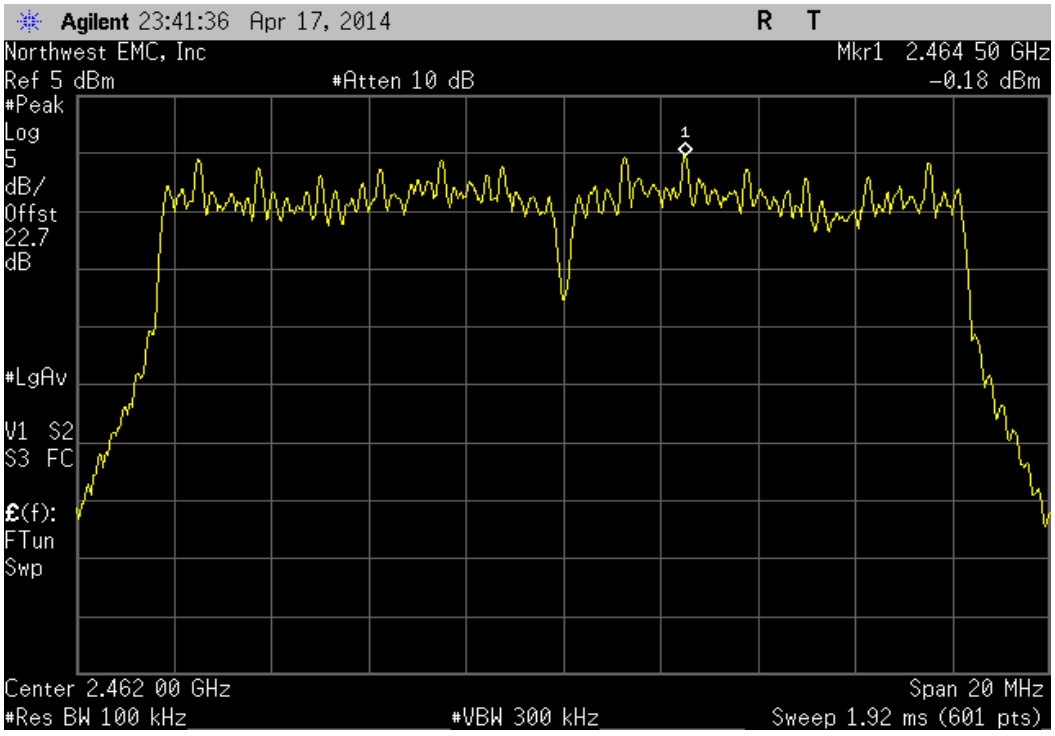


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.006	-15.2	-15.194	8	Pass



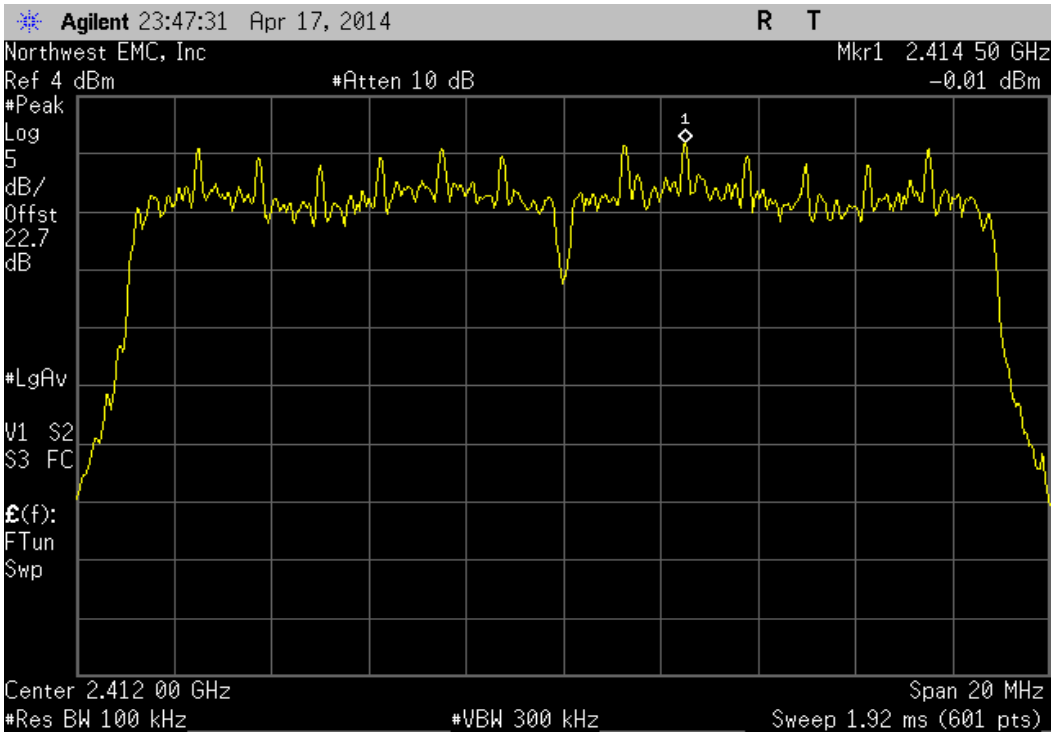
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
-0.176	-15.2	-15.376	8	Pass

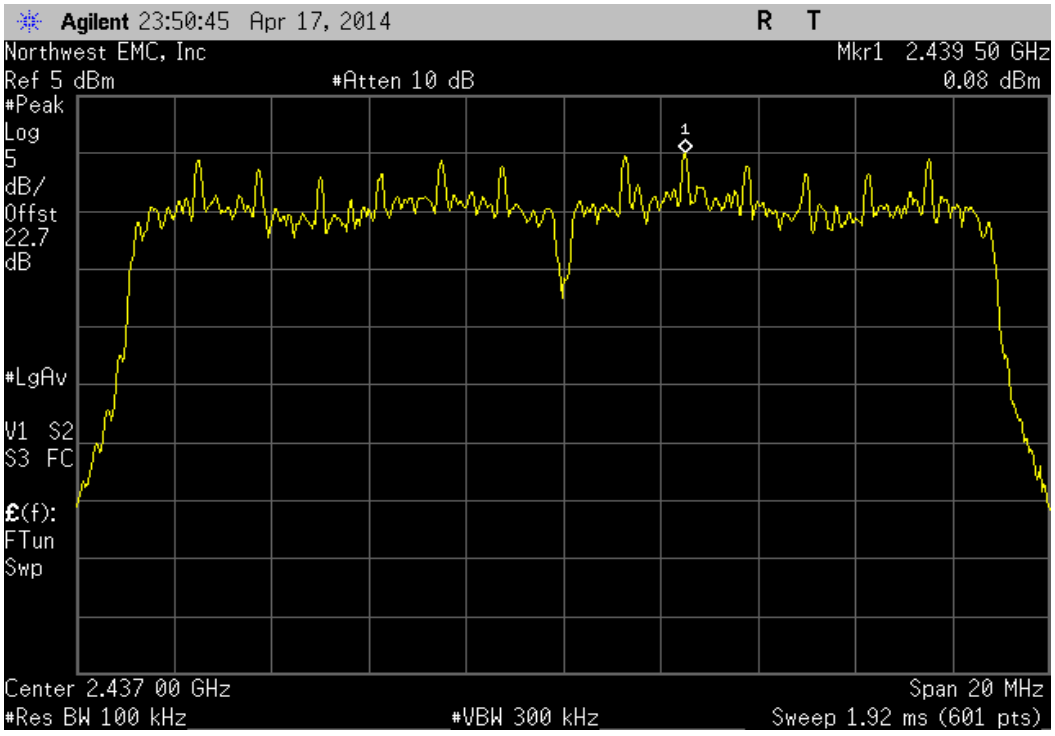


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

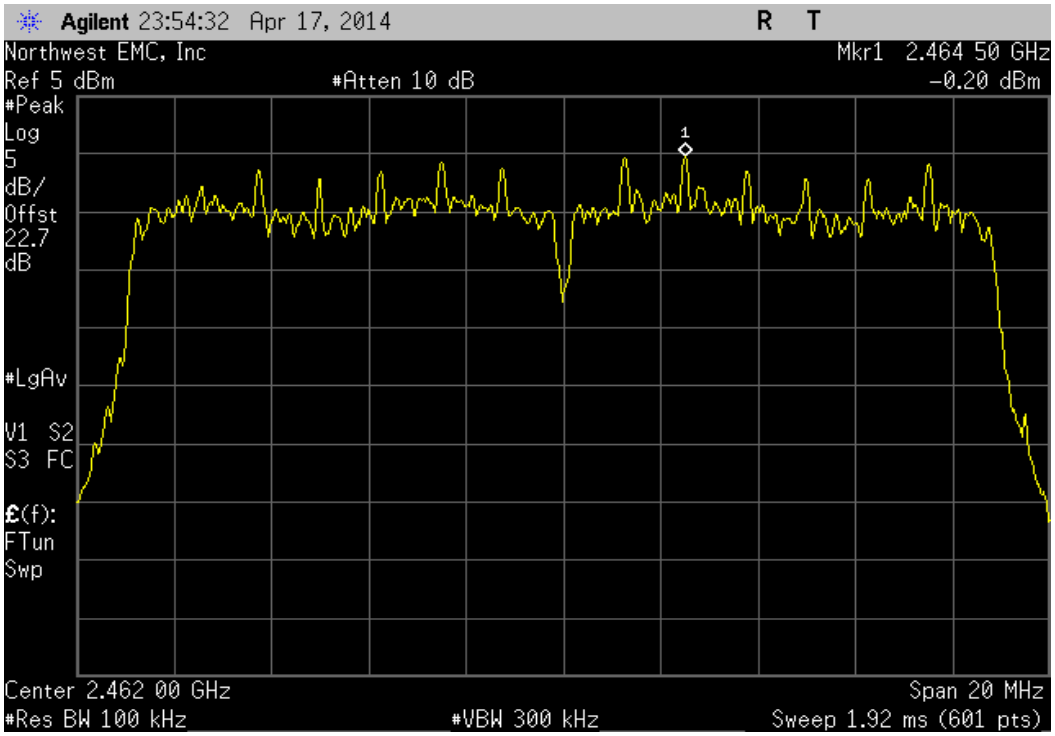
Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
-0.006	-15.2	-15.206	8	Pass



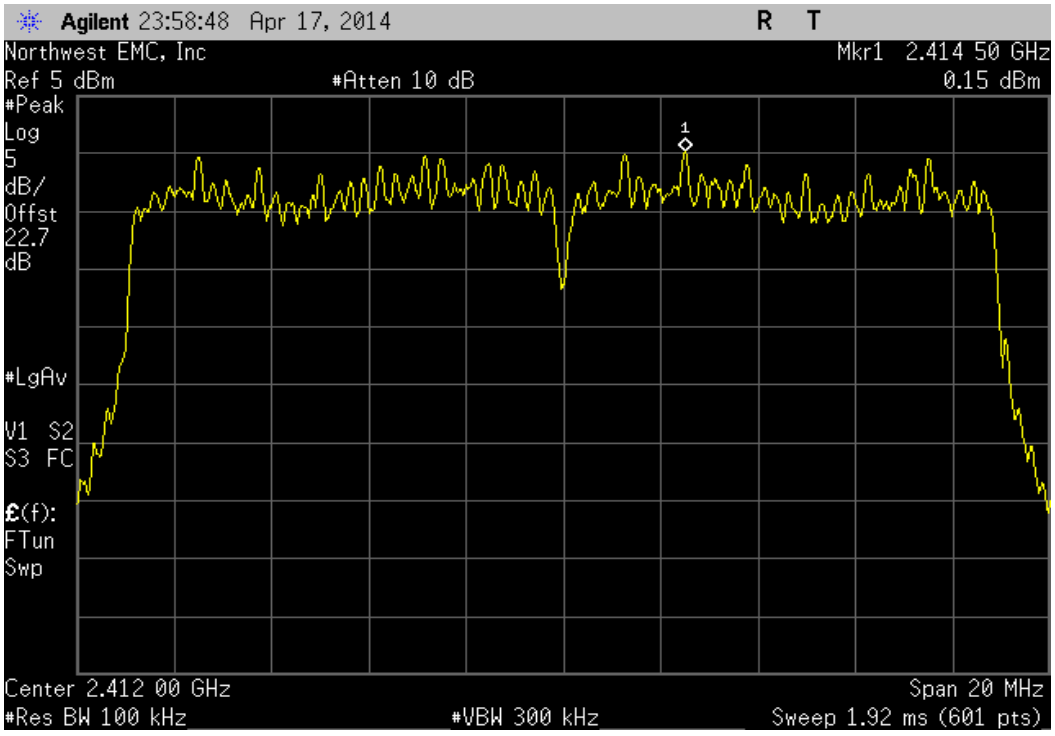
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.079	-15.2	-15.121	8	Pass



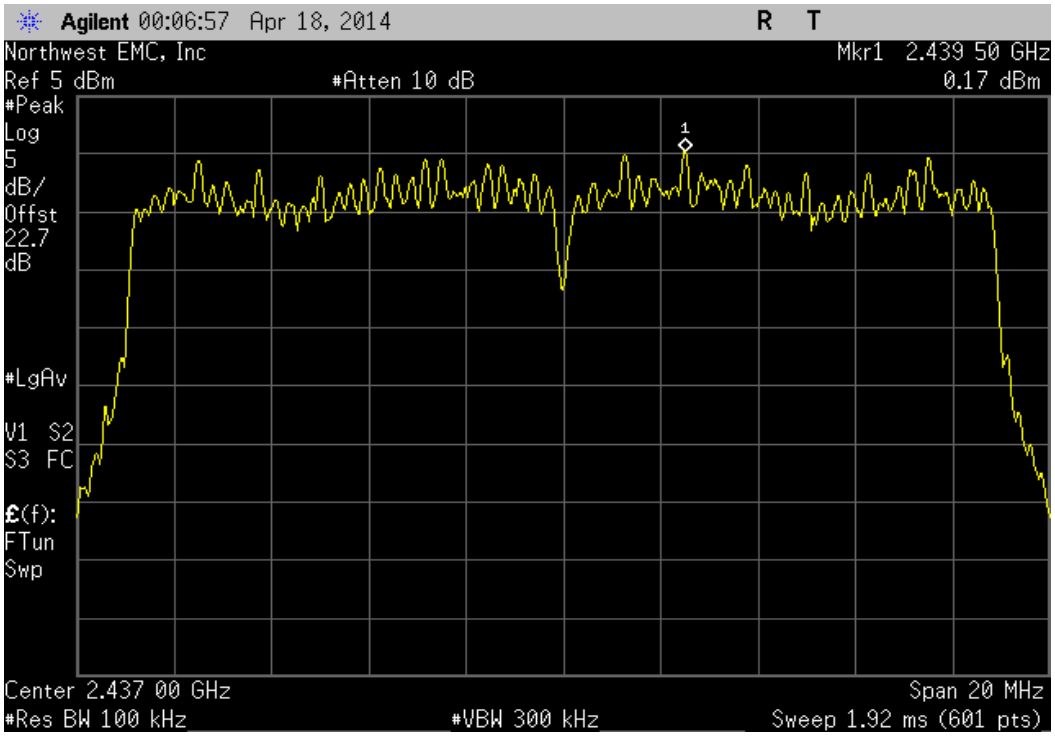
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.204	-15.2	-15.404	8	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.147	-15.2	-15.053	8	Pass

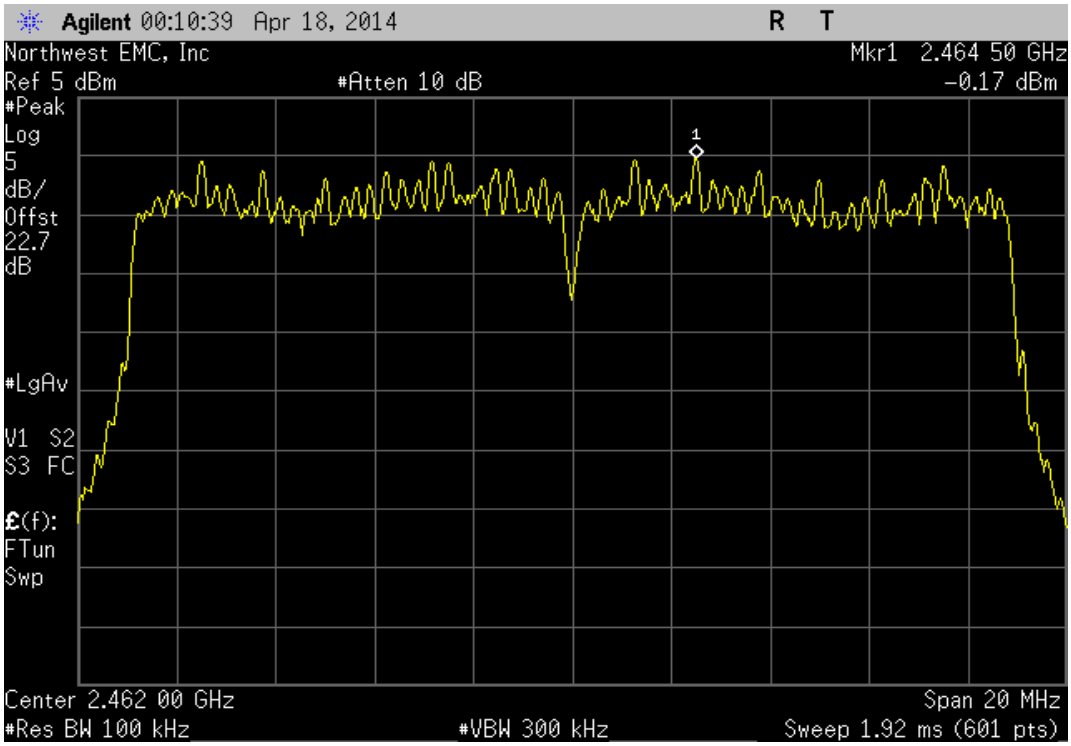


20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.172	-15.2	-15.028	8	Pass



POWER SPECTRAL DENSITY

20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.173	-15.2	-15.373	8	Pass



POWER SPECTRAL DENSITY

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.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

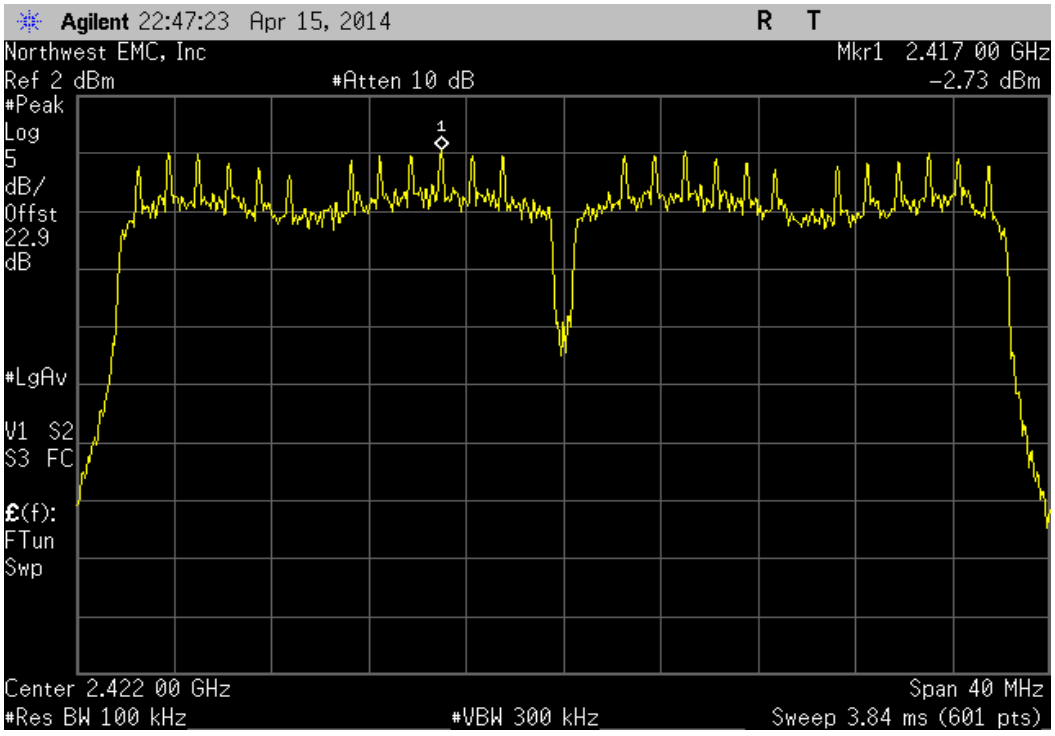
DEVIATIONS FROM TEST STANDARD

None

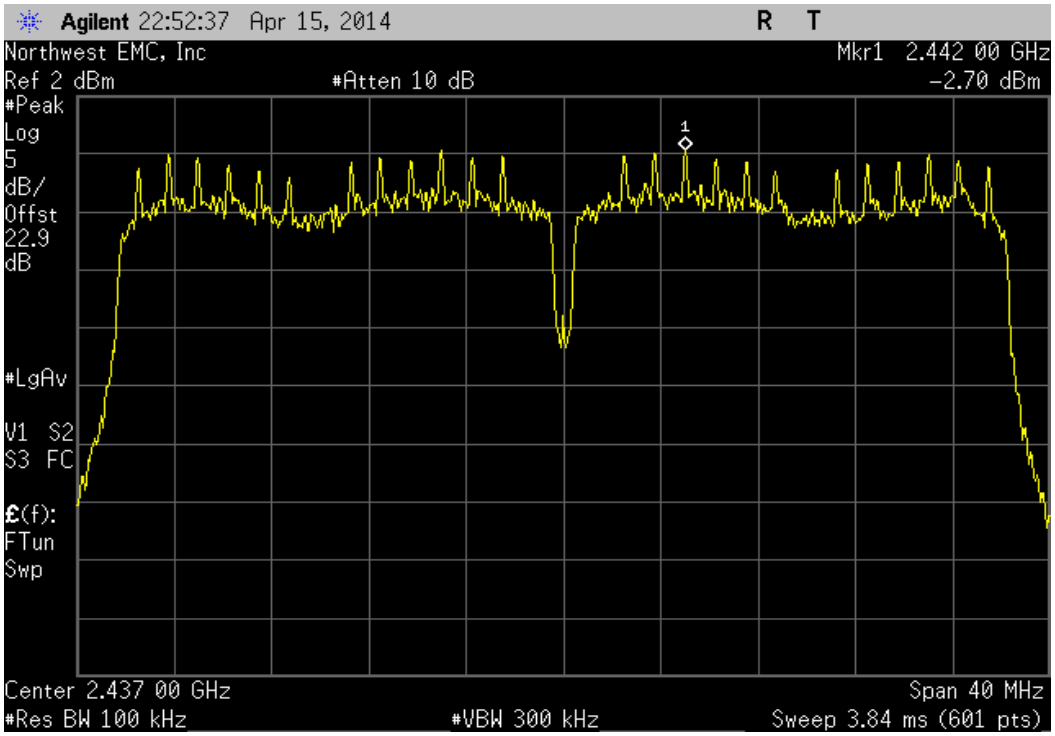
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS0					
1/5 Low Channel, 2422 MHz	-2.732	-15.2	-17.932	8	Pass
4/8 Mid Channel, 2437 MHz	-2.698	-15.2	-17.898	8	Pass
7/11 High Channel, 2452 MHz	-2.776	-15.2	-17.976	8	Pass
802.11(n) MCS7					
1/5 Low Channel, 2422 MHz	-2.61	-15.2	-17.81	8	Pass
4/8 Mid Channel, 2437 MHz	-2.547	-15.2	-17.747	8	Pass
7/11 High Channel, 2452 MHz	-2.649	-15.2	-17.849	8	Pass

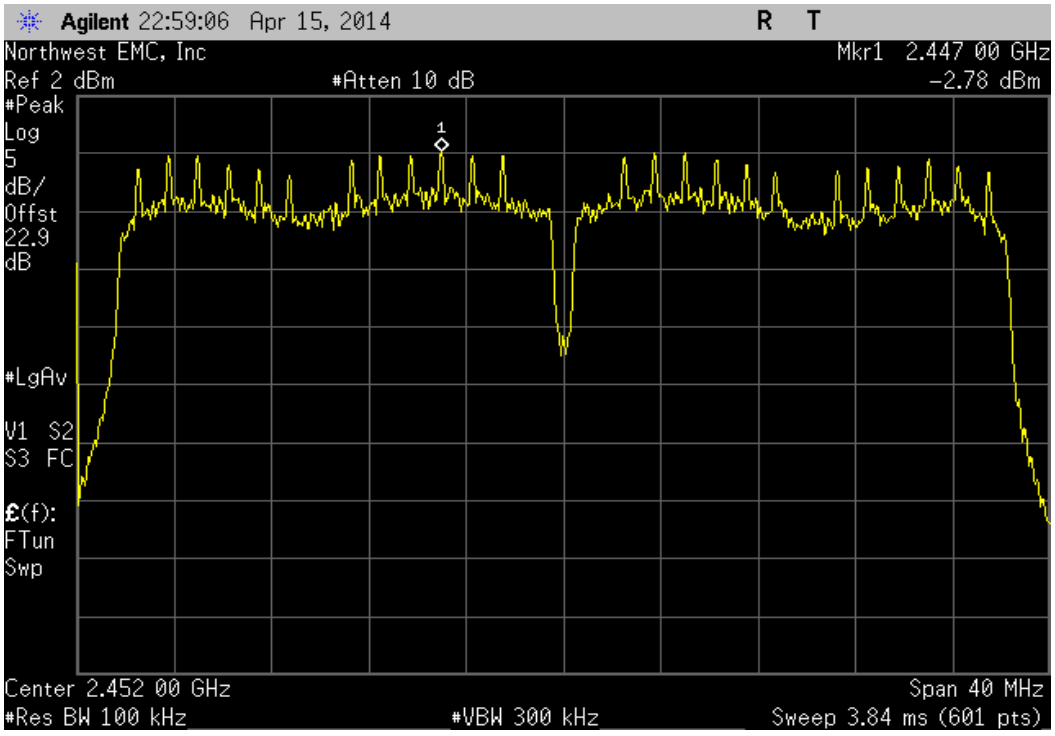
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 1/5 Low Channel, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.732	-15.2	-17.932	8	Pass



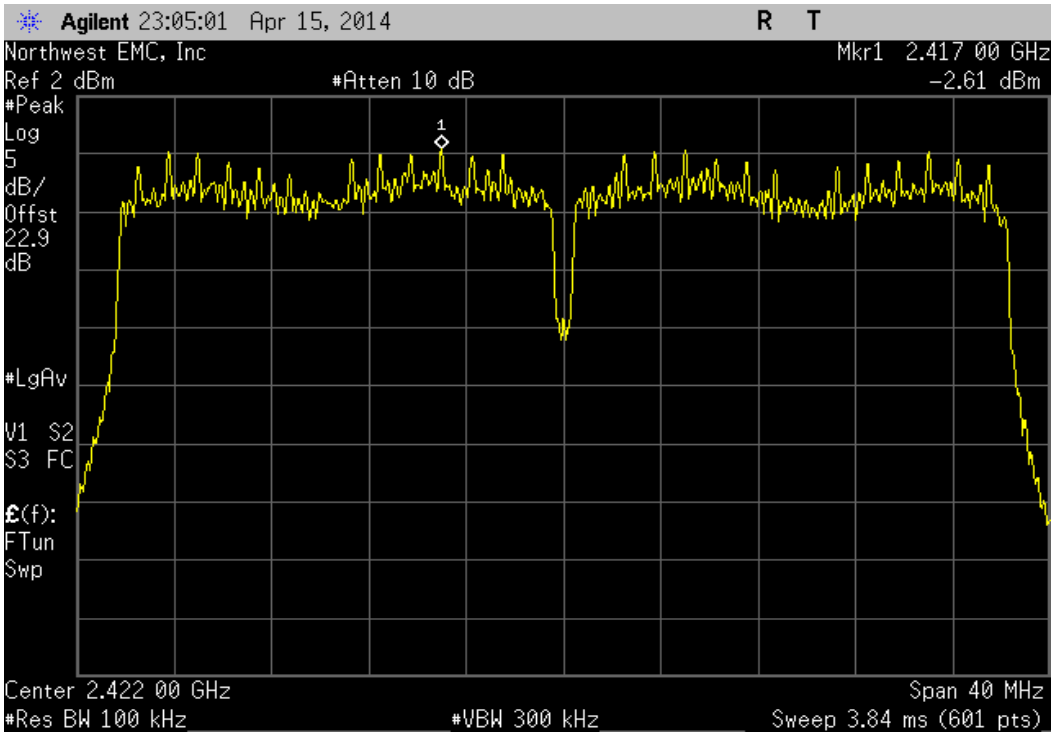
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 4/8 Mid Channel, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.698	-15.2	-17.898	8	Pass



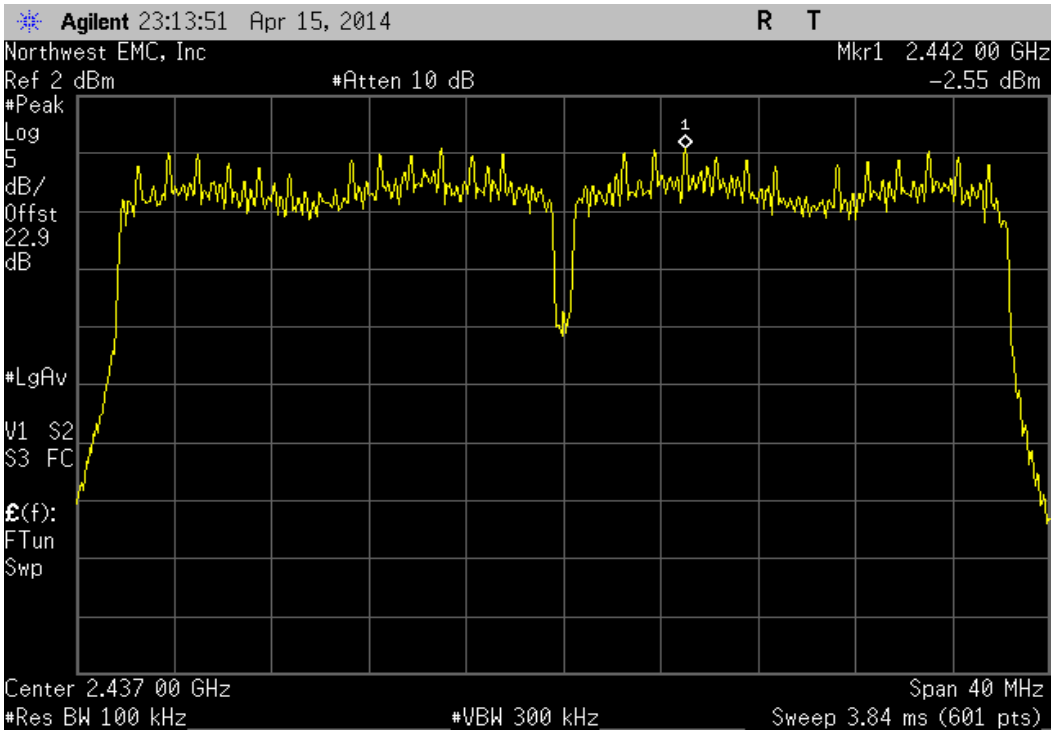
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 7/11 High Channel, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.776	-15.2	-17.976	8	Pass



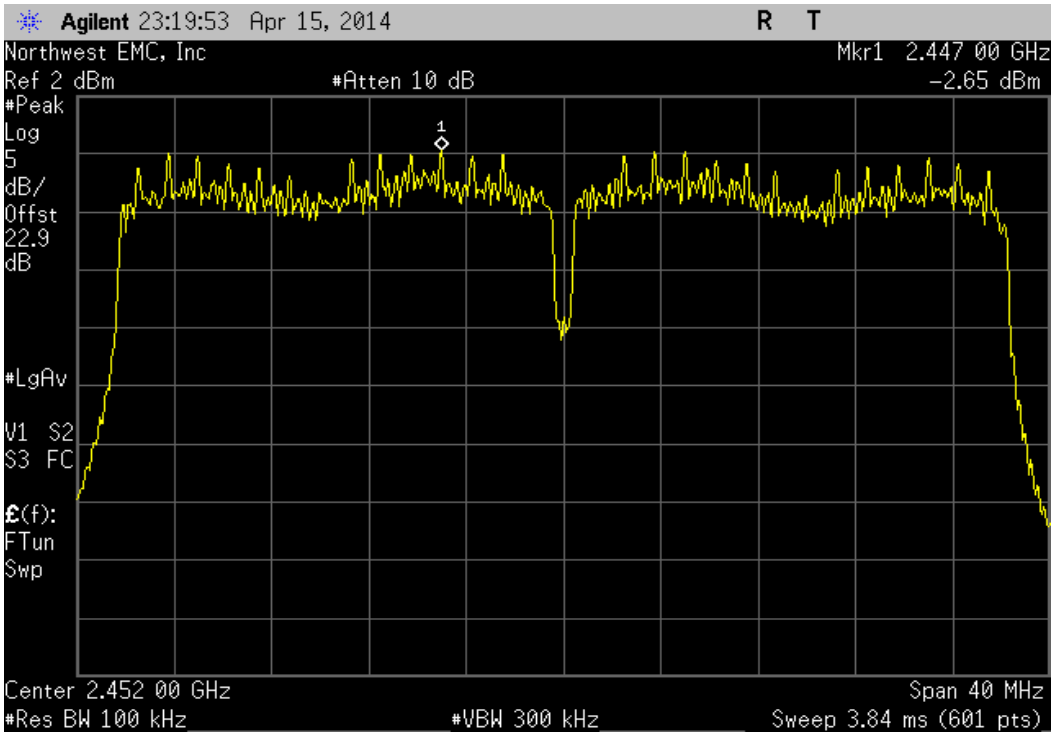
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 1/5 Low Channel, 2422 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.61	-15.2	-17.81	8	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 4/8 Mid Channel, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.547	-15.2	-17.747	8	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 7/11 High Channel, 2452 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.649	-15.2	-17.849	8	Pass



POWER SPECTRAL DENSITY

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/23/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

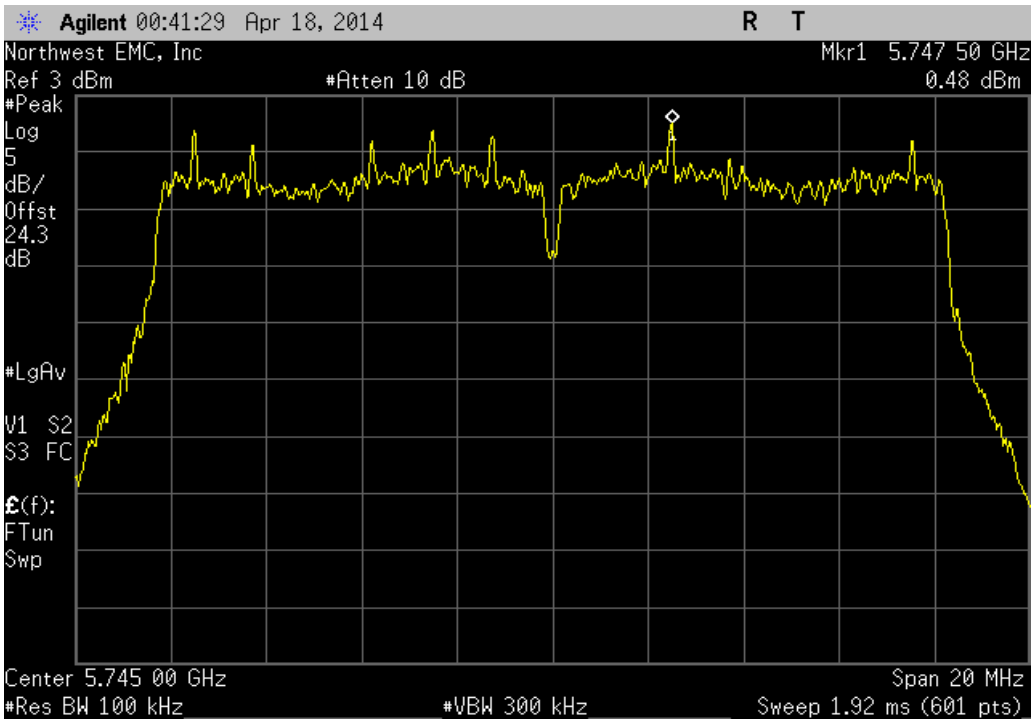
DEVIATIONS FROM TEST STANDARD

None

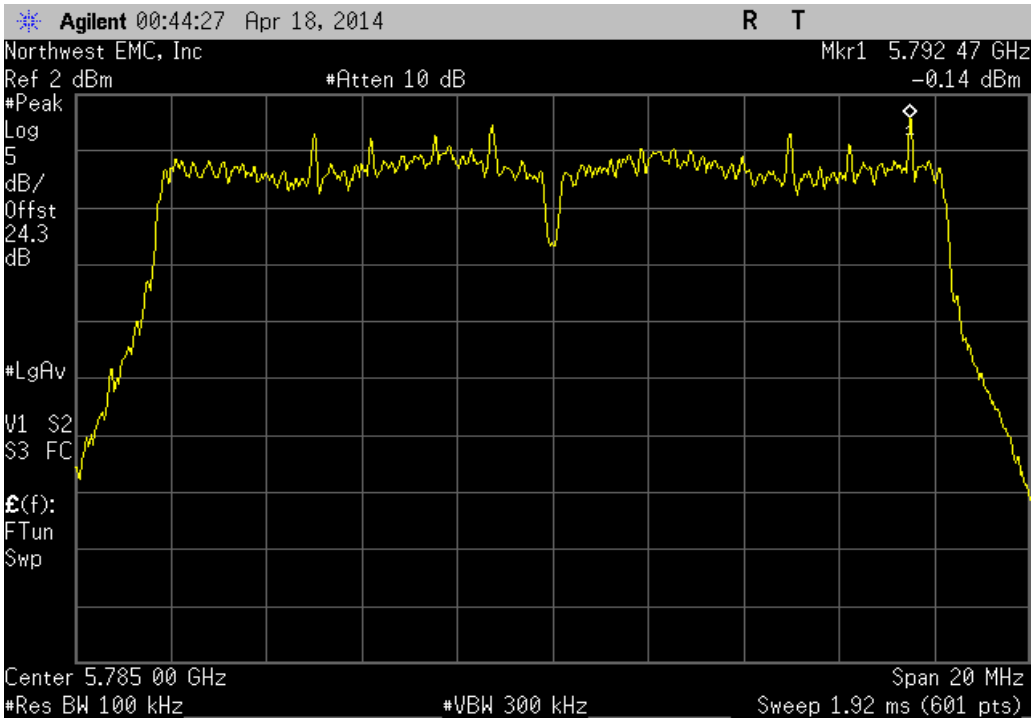
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
IEEE 802.11(a)					
20 MHz					
5725 MHz - 5850 MHz Band					
6 Mbps					
Low Channel 149, 5745 M	0.476	-15.2	-14.724	8	Pass
Mid Channel 157, 5785 MH	-0.139	-15.2	-15.339	8	Pass
High Channel 165, 5825 M	-1.071	-15.2	-16.271	8	Pass
36 Mbps					
Low Channel 149, 5745 M	0.208	-15.2	-14.992	8	Pass
Mid Channel 157, 5785 MH	-0.066	-15.2	-15.266	8	Pass
High Channel 165, 5825 M	-0.355	-15.2	-15.555	8	Pass
54 Mbps					
Low Channel 149, 5745 M	0.066	-15.2	-15.134	8	Pass
Mid Channel 157, 5785 MH	-0.252	-15.2	-15.452	8	Pass
High Channel 165, 5825 M	0.004	-15.2	-15.196	8	Pass
IEEE 802.11(n)					
20 MHz					
5725 MHz - 5850 MHz Band					
HT, MCS7					
Low Channel 149, 5745 M	0.001	-15.2	-15.199	8	Pass
Mid Channel 157, 5785 MH	-0.04	-15.2	-15.24	8	Pass
High Channel 165, 5825 M	0.001	-15.2	-15.199	8	Pass
40 MHz					
5725 MHz - 5850 MHz Band					
HT, MCS7					
Low Channel 149/153, 575	-2.497	-15.2	-17.697	8	Pass
High Channel 157/161, 57	-2.662	-15.2	-17.862	8	Pass
IEEE 802.11(ac)					
20 MHz					
5725 MHz - 5850 MHz Band					
VHT, MCS0					
Low Channel 149, 5745 M	-0.507	-15.2	-15.707	8	Pass
Mid Channel 157, 5785 MH	-0.191	-15.2	-15.391	8	Pass
High Channel 165, 5825 M	-0.397	-15.2	-15.597	8	Pass
VHT, MCS8					
Low Channel 149, 5745 M	0.671	-15.2	-14.529	8	Pass
Mid Channel 157, 5785 MH	0.06	-15.2	-15.14	8	Pass
High Channel 165, 5825 M	0.064	-15.2	-15.136	8	Pass
40 MHz					
5725 MHz - 5850 MHz Band					
VHT, MCS0					
Low Channel 149/153, 575	-2.789	-15.2	-17.989	8	Pass
High Channel 157/161, 57	-2.866	-15.2	-18.066	8	Pass
VHT, MCS9					
Low Channel 149/153, 575	-2.58	-15.2	-17.78	8	Pass
High Channel 157/161, 57	-2.65	-15.2	-17.85	8	Pass
80 MHz					
5725 MHz - 5850 MHz Band					
VHT, MCS0					
Low Channel 149/153/157	-7.039	-15.2	-22.239	8	Pass
VHT, MCS9					
Low Channel 149/153/157	-7.277	-15.2	-22.477	8	Pass

IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.476	-15.2	-14.724	8	Pass

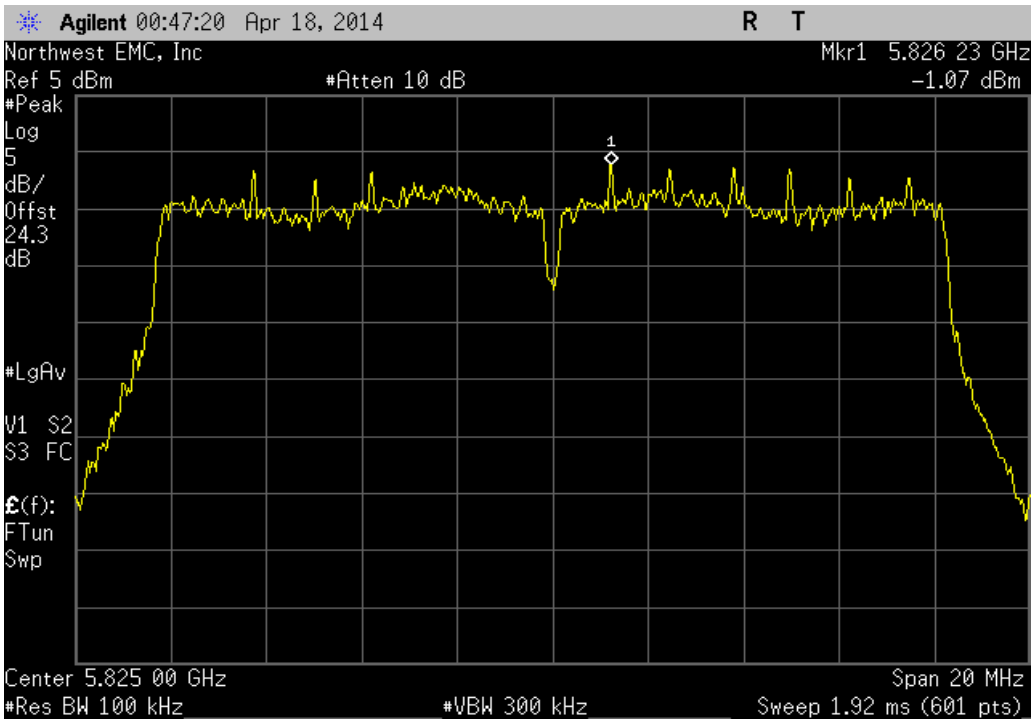


IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.139	-15.2	-15.339	8	Pass



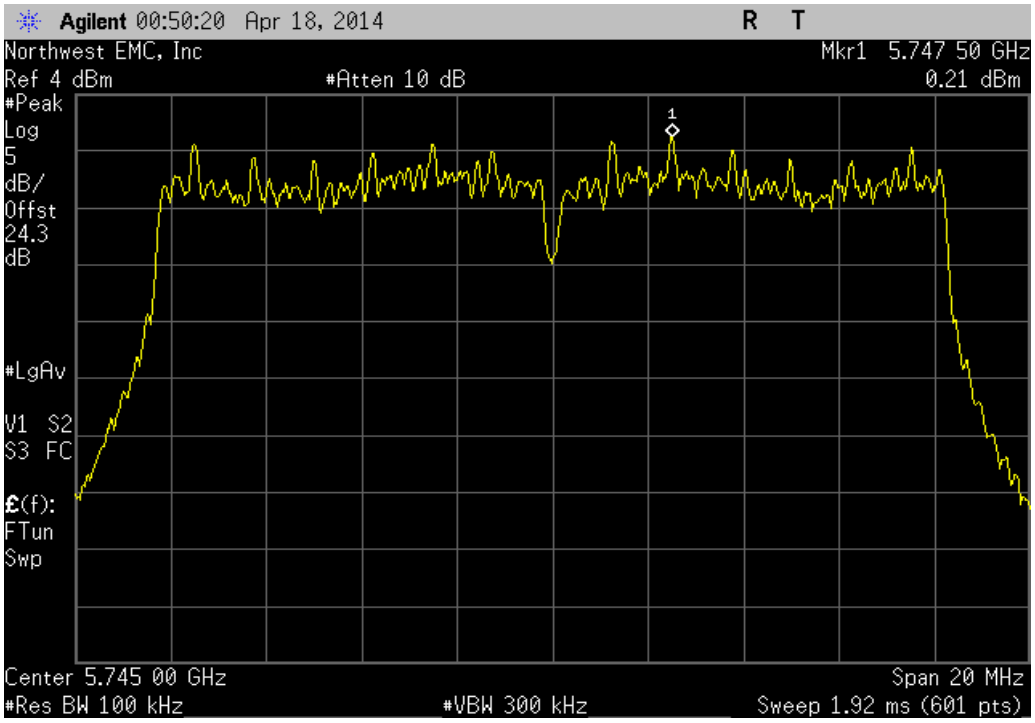
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-1.071	-15.2	-16.271	8	Pass



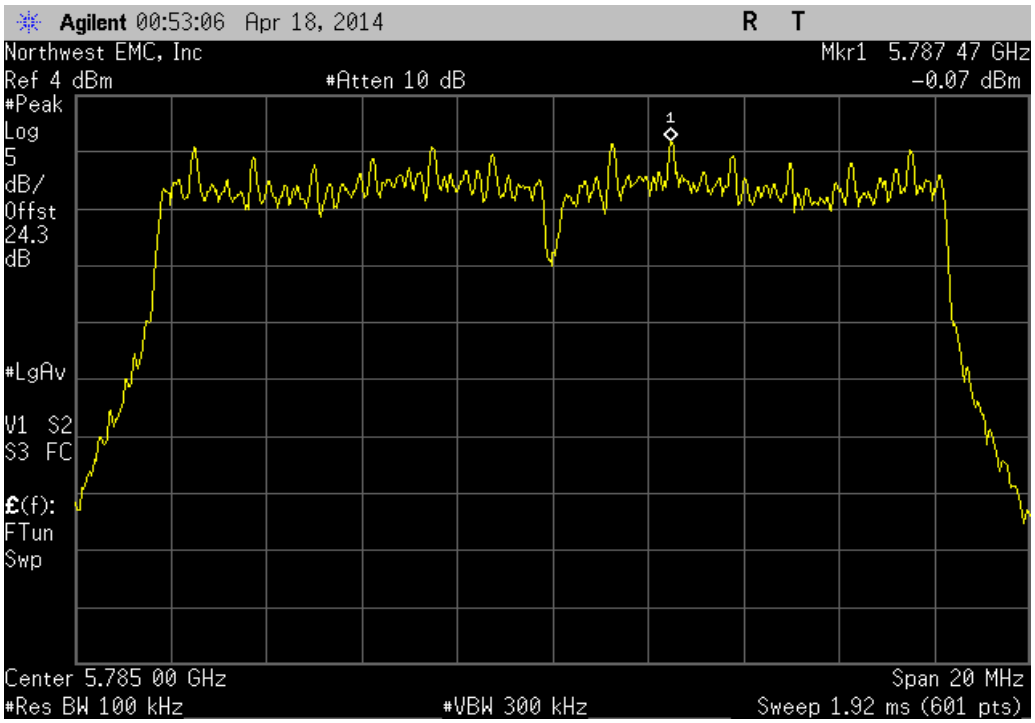
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.208	-15.2	-14.992	8	Pass



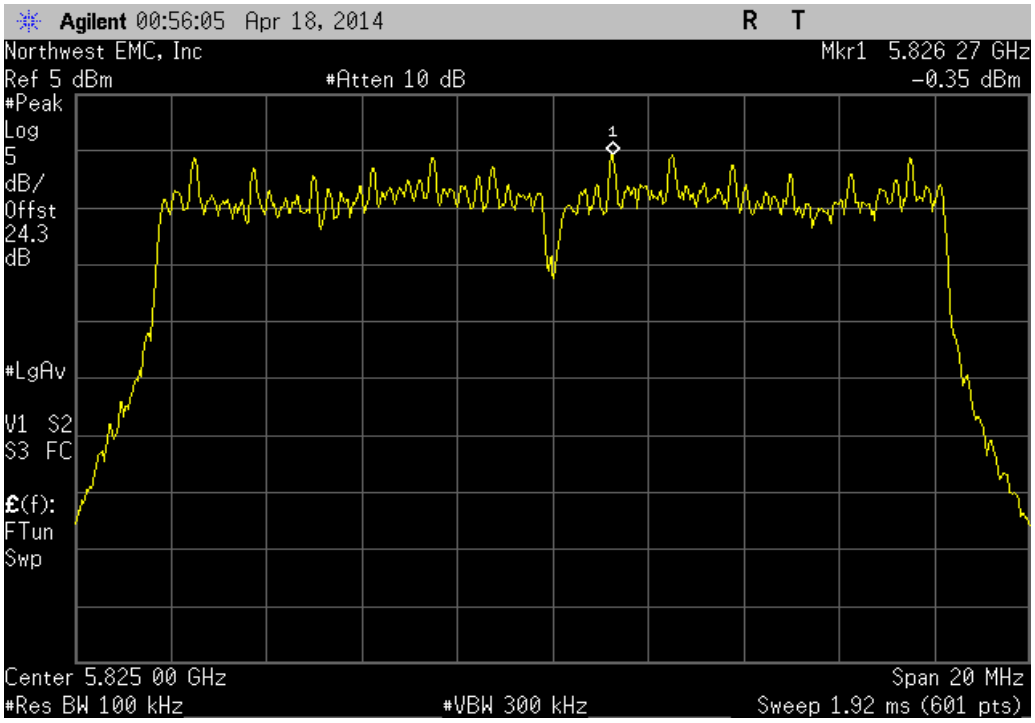
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Mid Channel 157, 5785 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.066	-15.2	-15.266	8	Pass

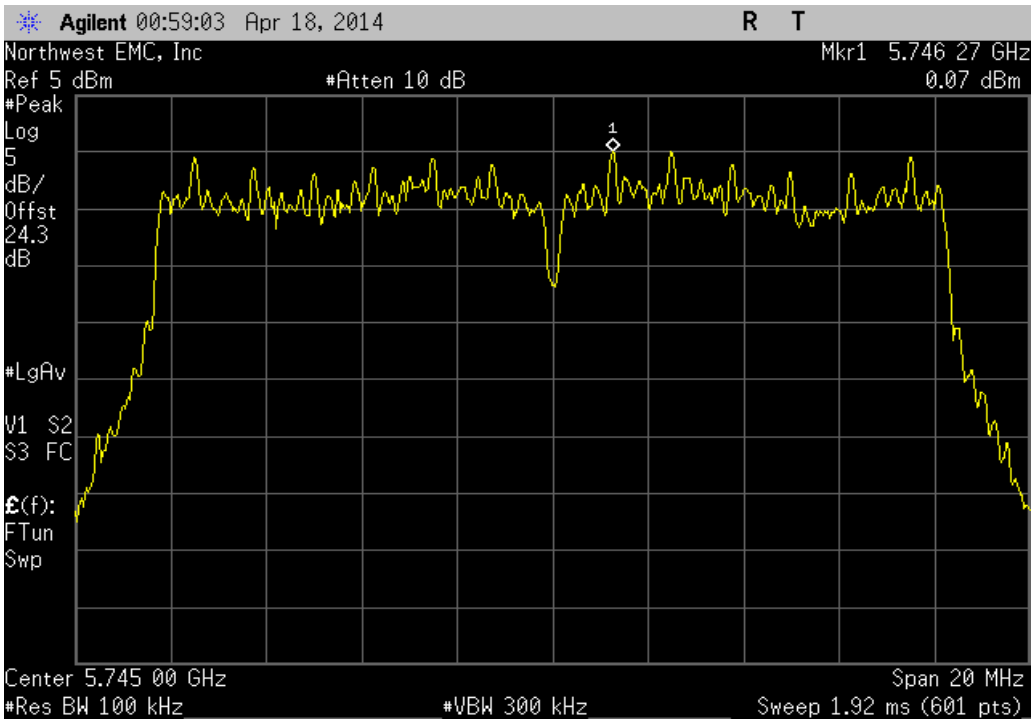


IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, High Channel 165, 5825 MHz

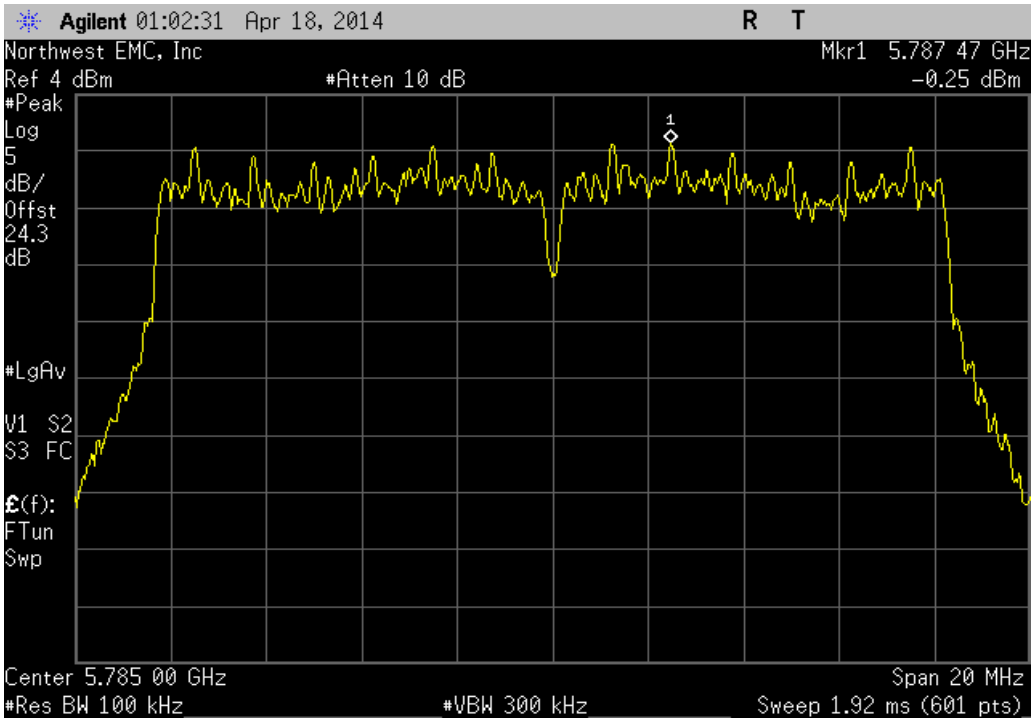
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.355	-15.2	-15.555	8	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.066	-15.2	-15.134	8	Pass

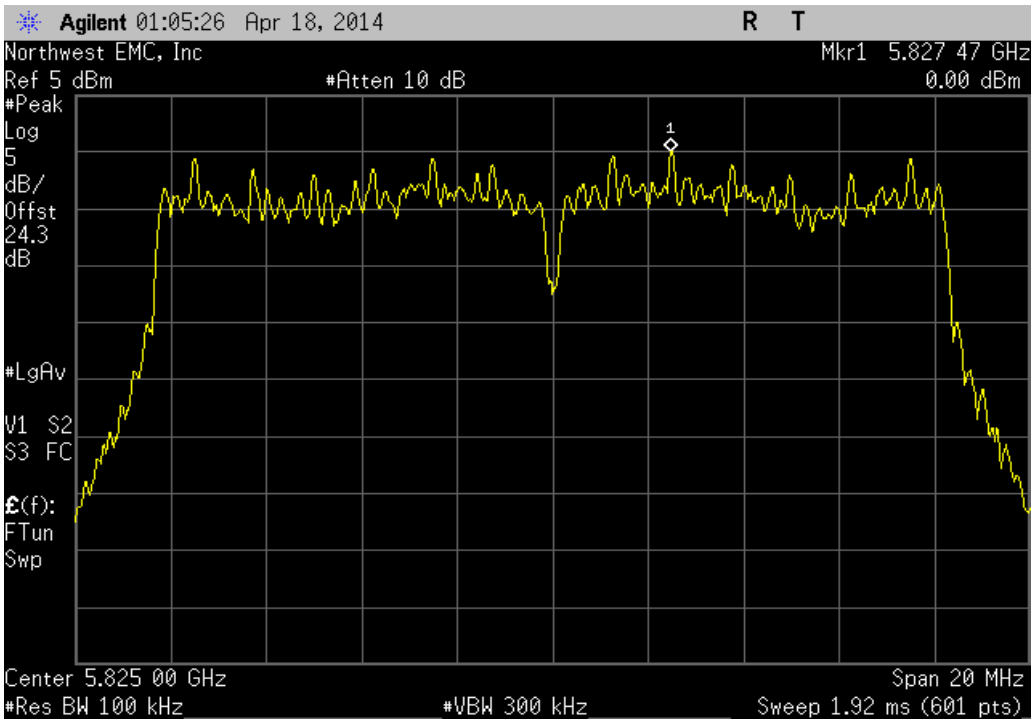


IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.252	-15.2	-15.452	8	Pass



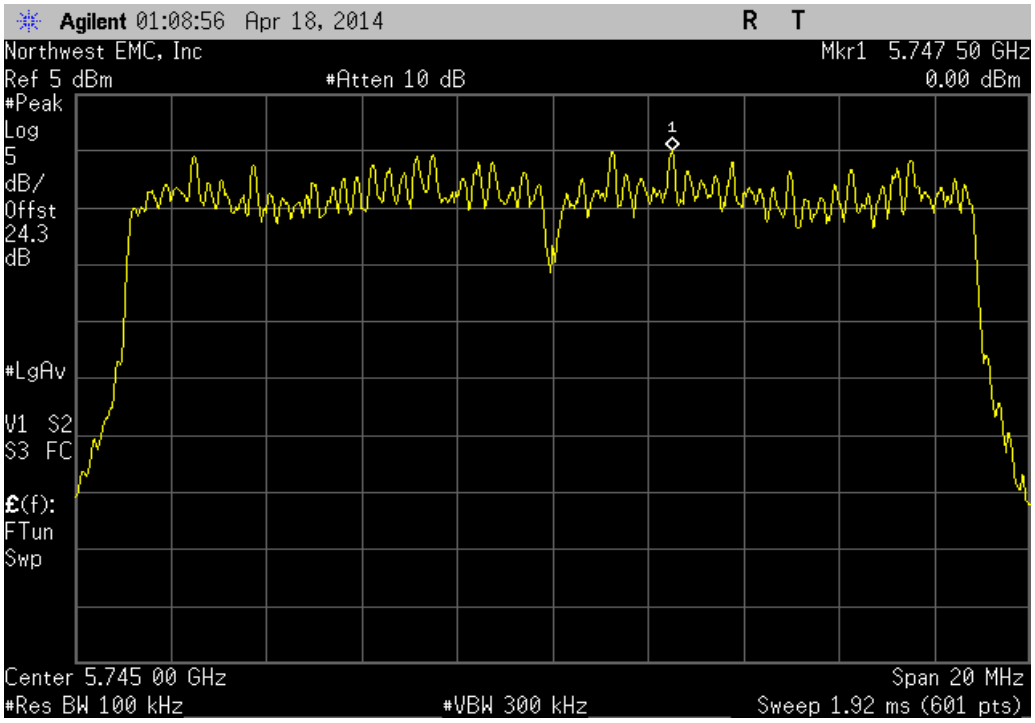
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.004	-15.2	-15.196	8	Pass



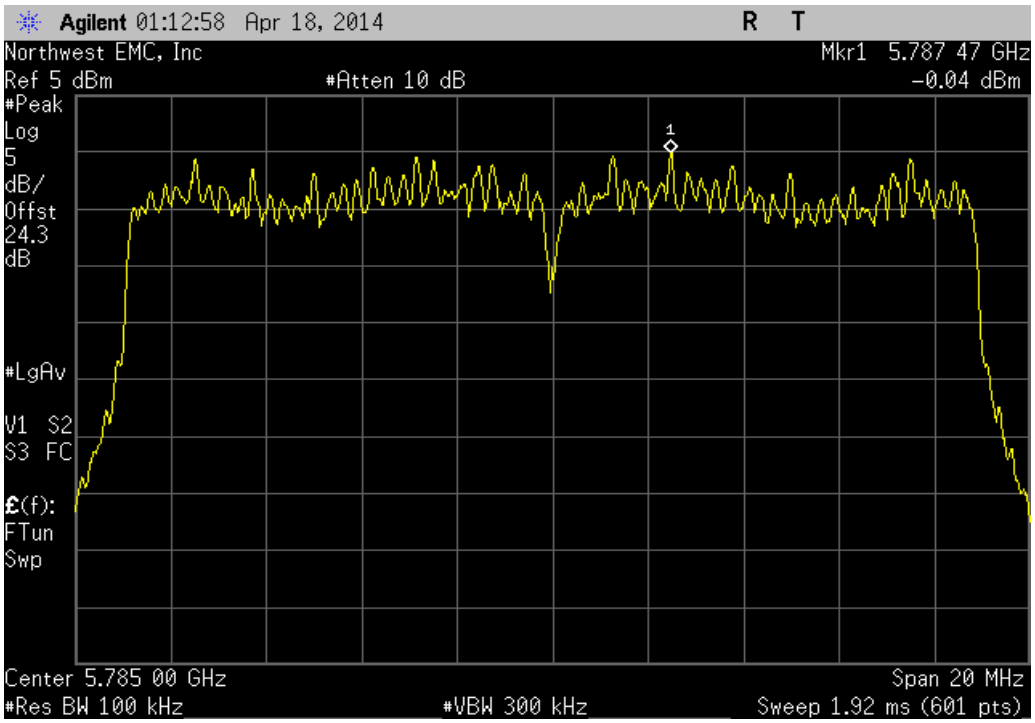
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.001	-15.2	-15.199	8	Pass



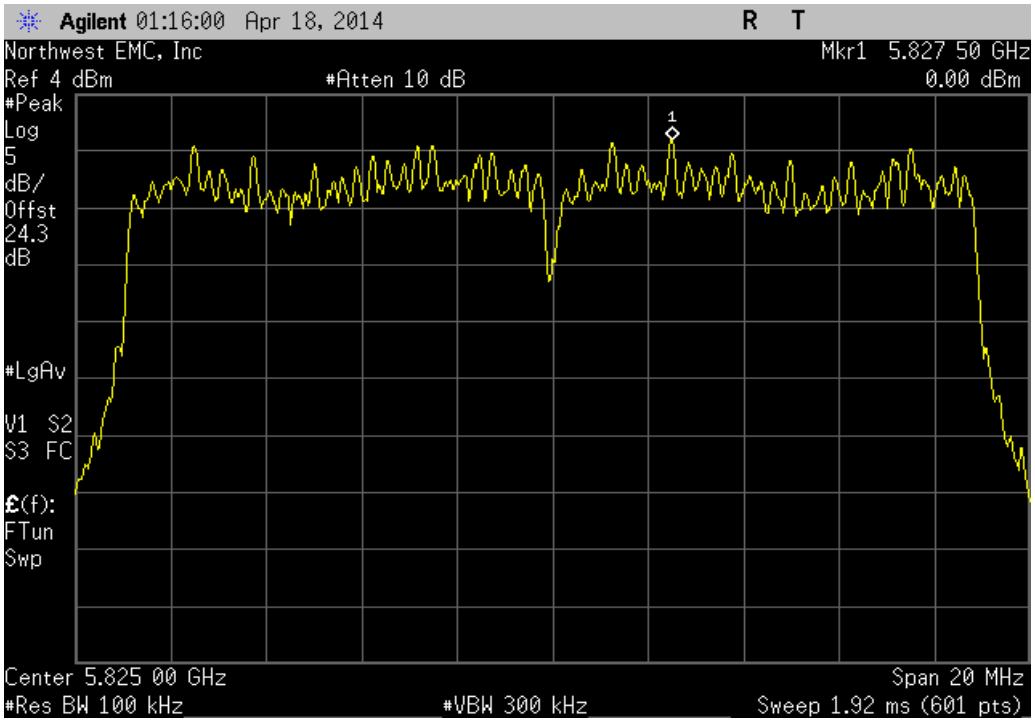
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Mid Channel 157, 5785 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.04	-15.2	-15.24	8	Pass



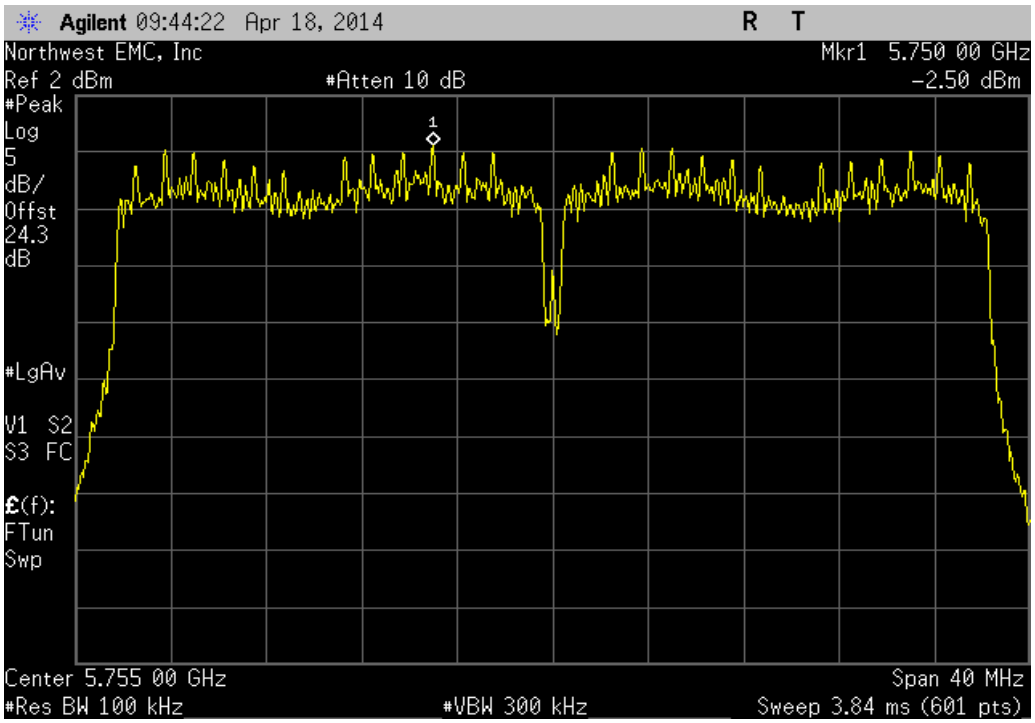
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.001	-15.2	-15.199	8	Pass



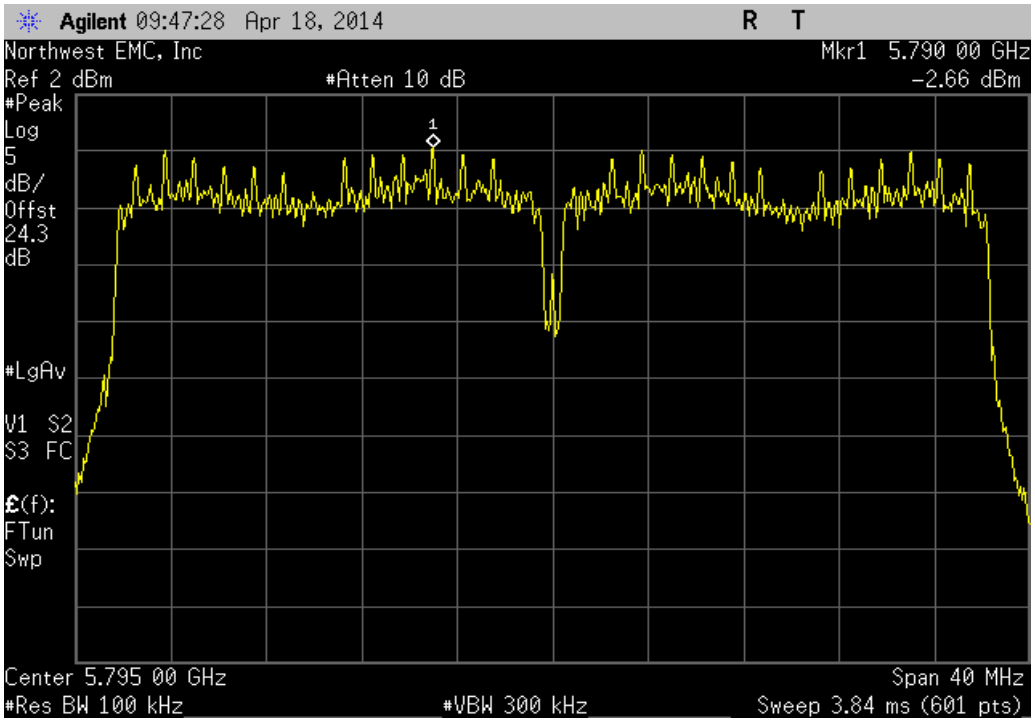
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149/153, 5755 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.497	-15.2	-17.697	8	Pass



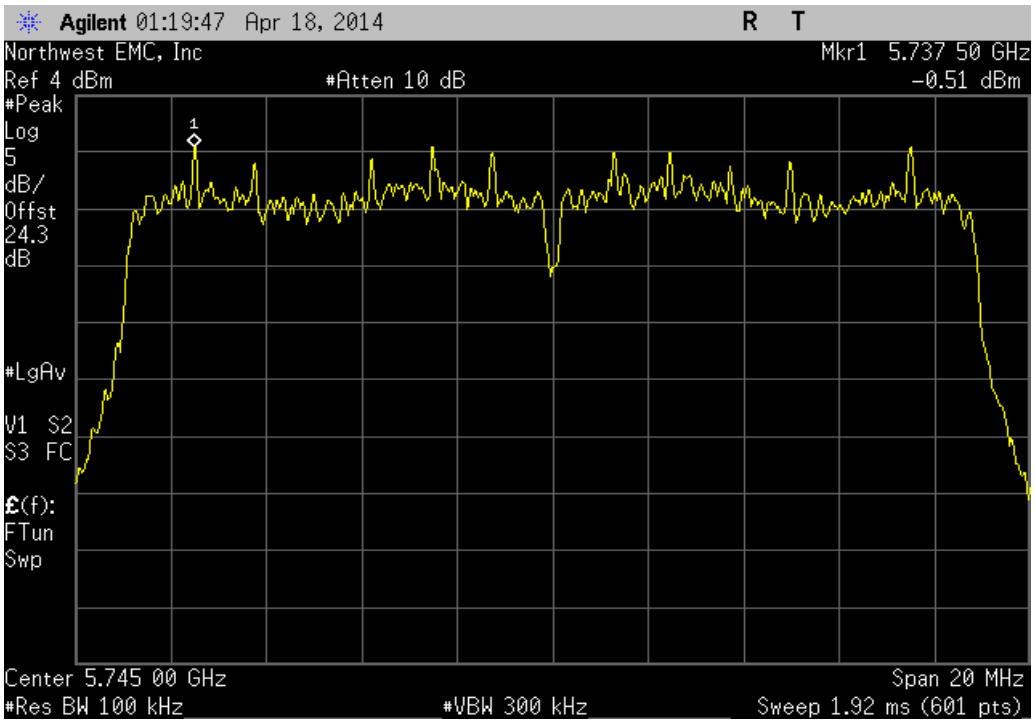
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 157/161, 5795 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.662	-15.2	-17.862	8	Pass

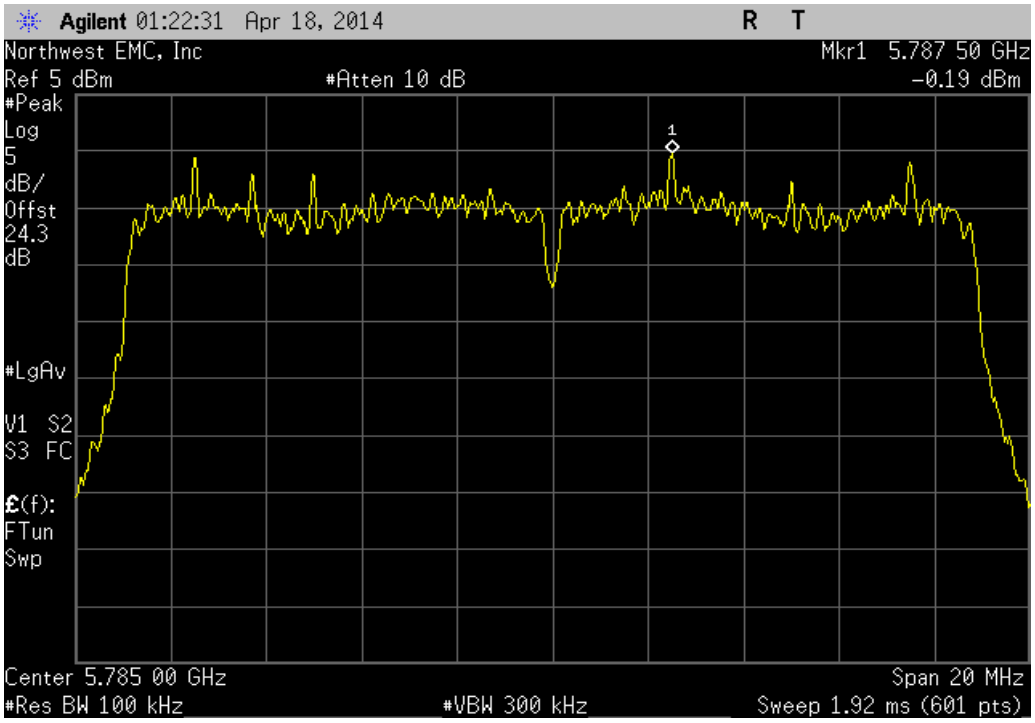


POWER SPECTRAL DENSITY

IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.507	-15.2	-15.707	8	Pass

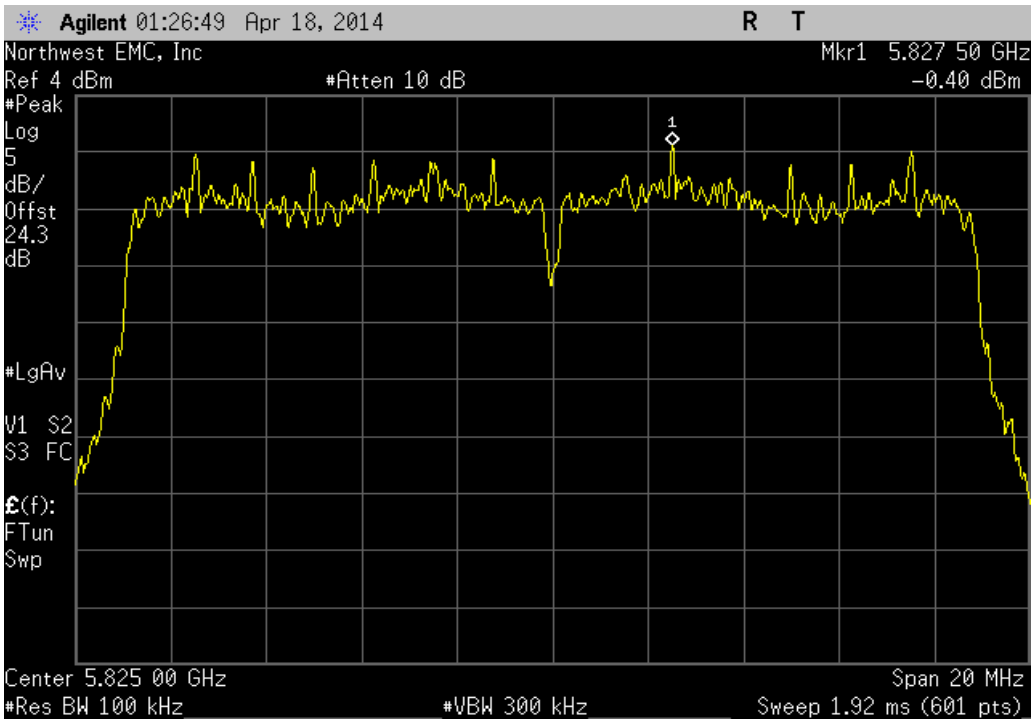


IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.191	-15.2	-15.391	8	Pass



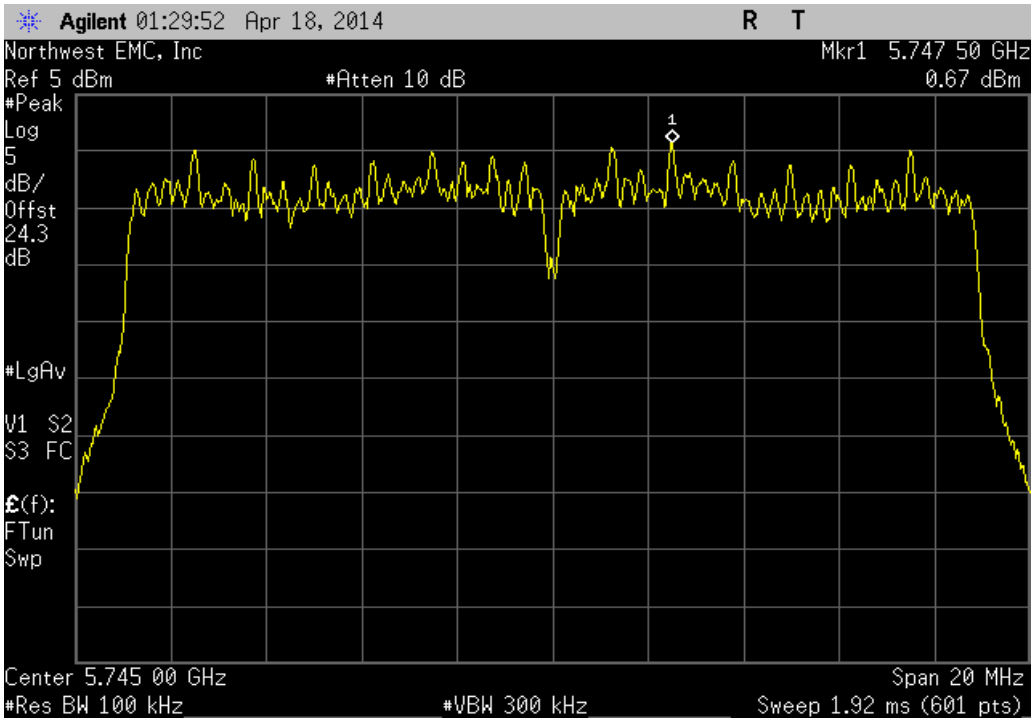
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.397	-15.2	-15.597	8	Pass



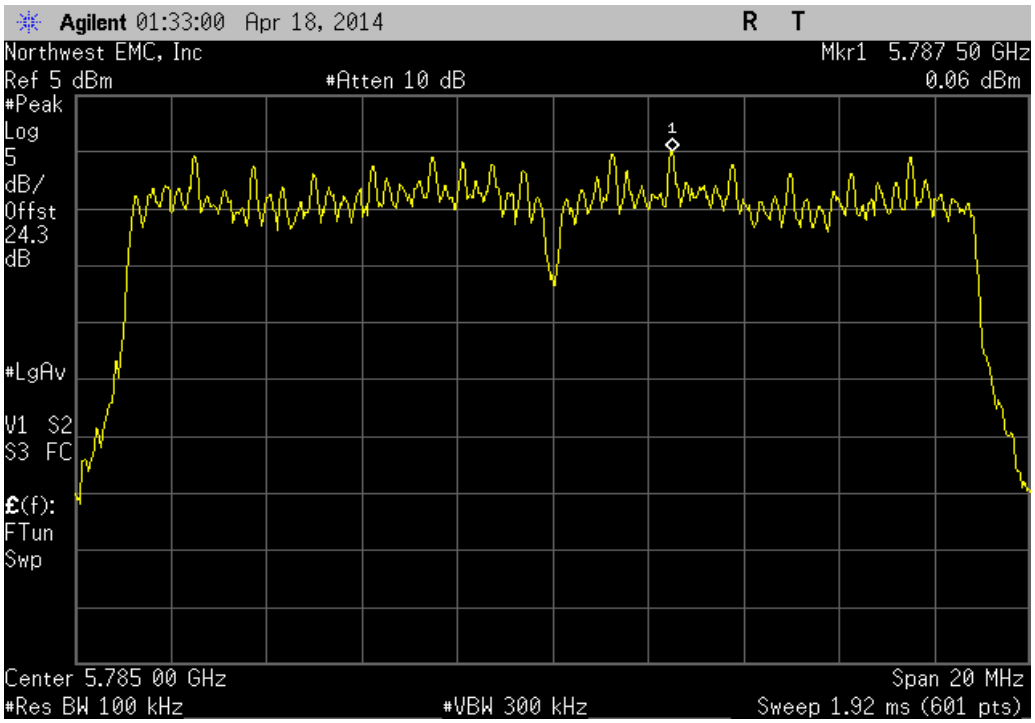
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.671	-15.2	-14.529	8	Pass



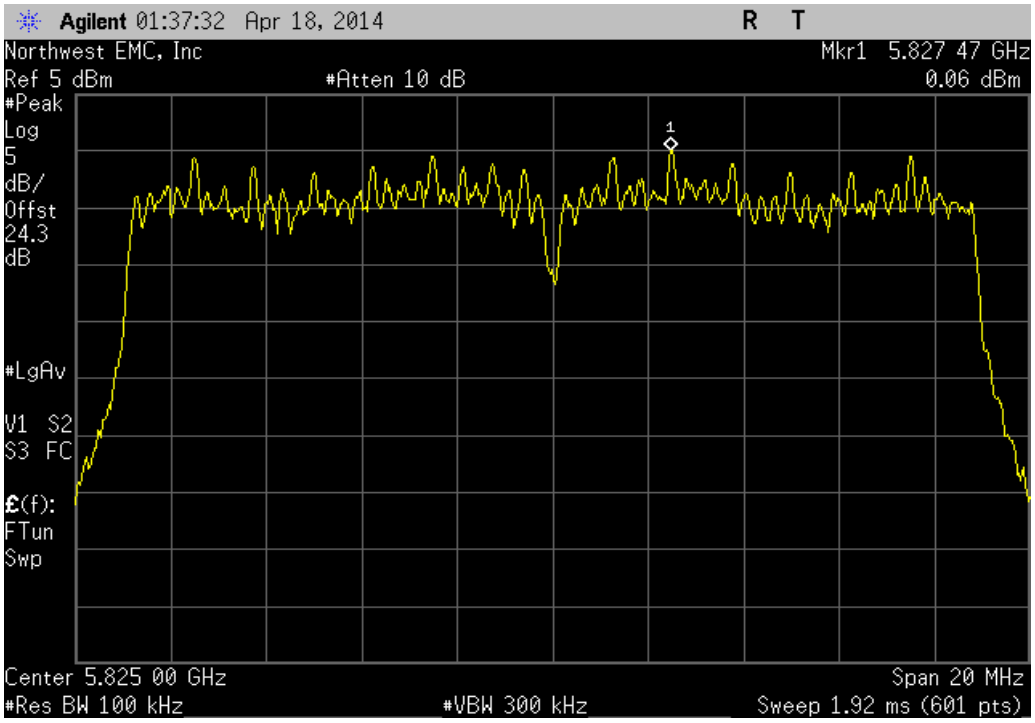
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.06	-15.2	-15.14	8	Pass



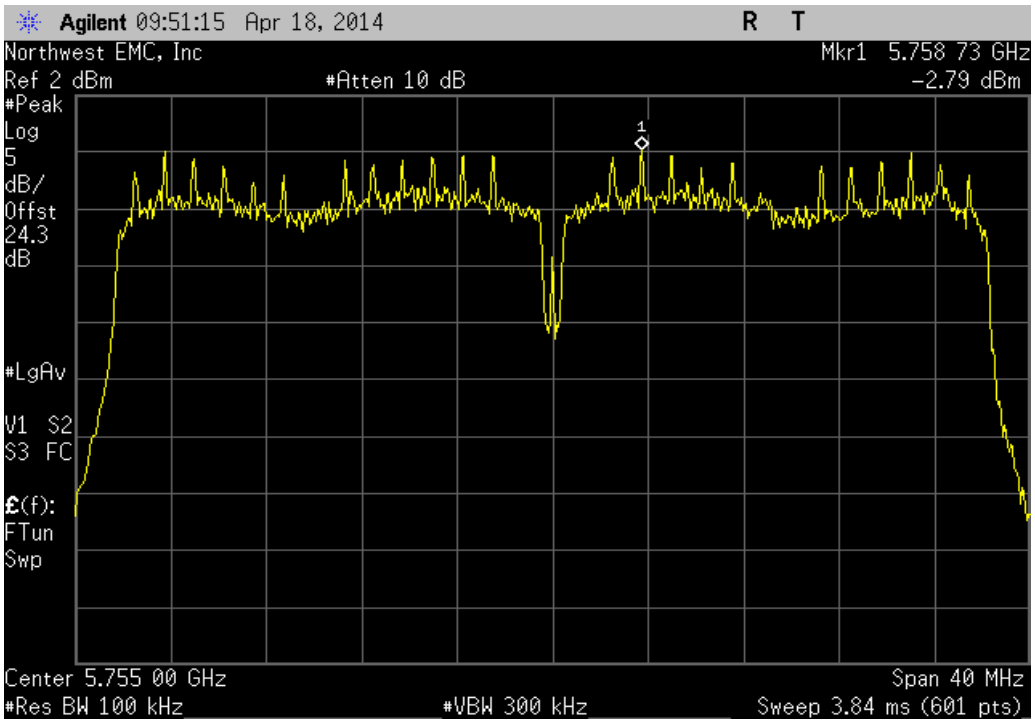
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.064	-15.2	-15.136	8	Pass

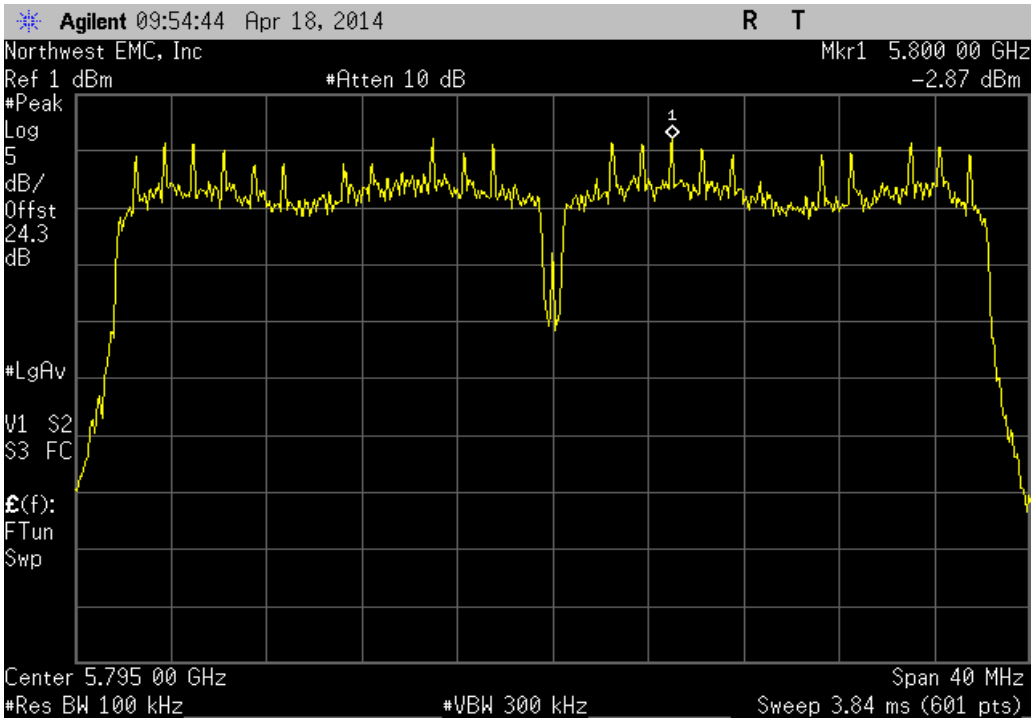


POWER SPECTRAL DENSITY

IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.789	-15.2	-17.989	8	Pass

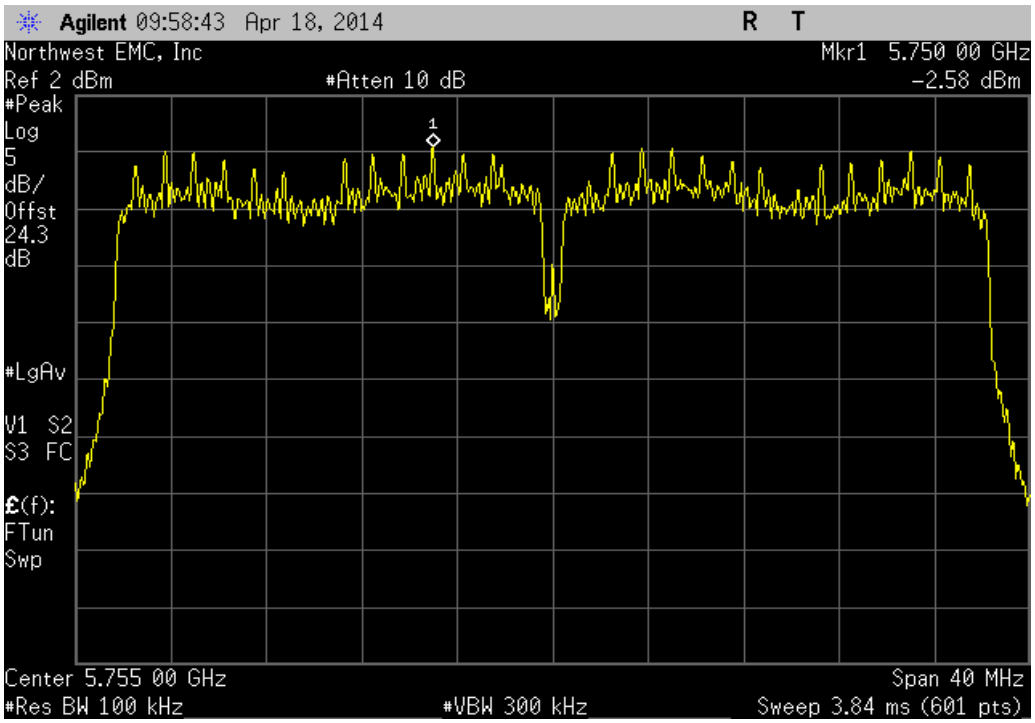


IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.866	-15.2	-18.066	8	Pass



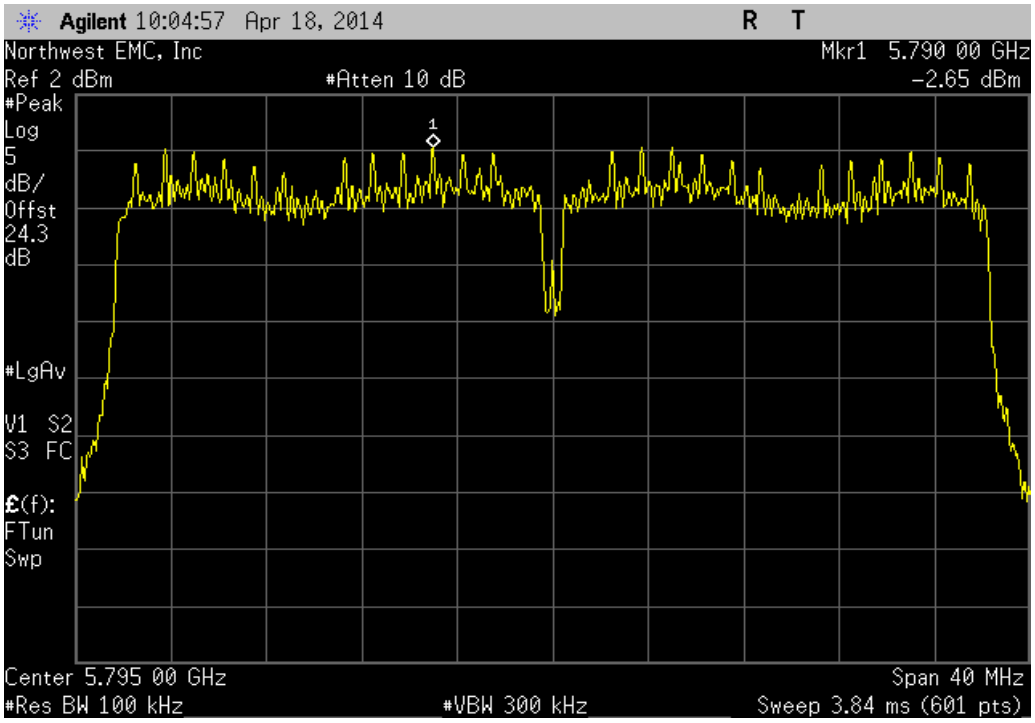
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.58	-15.2	-17.78	8	Pass

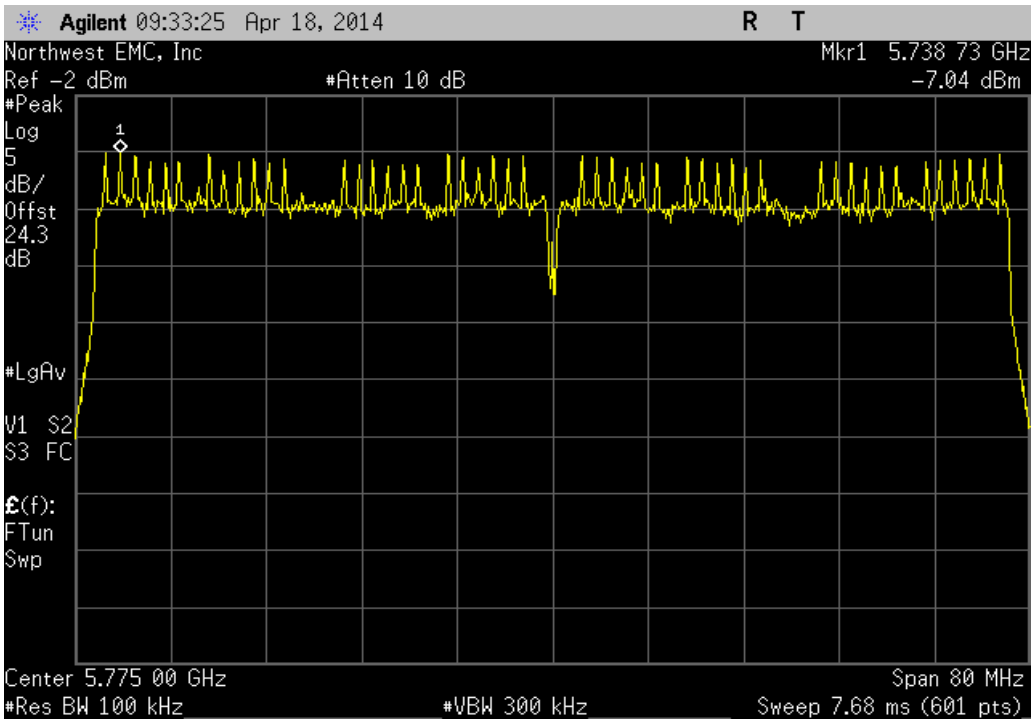


IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

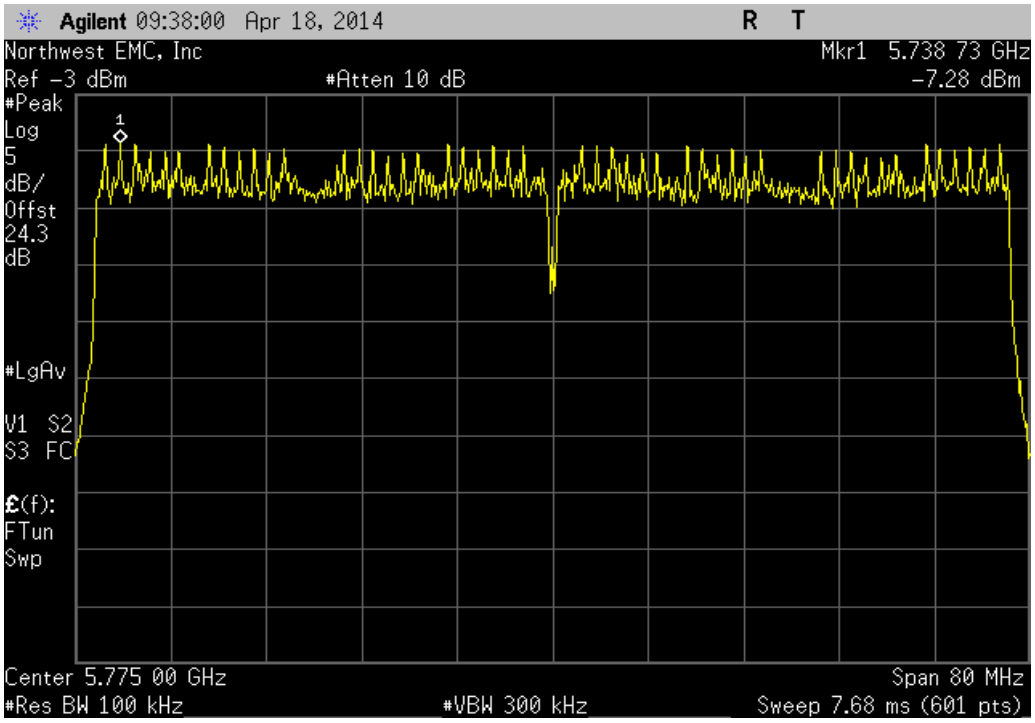
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.65	-15.2	-17.85	8	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-7.039	-15.2	-22.239	8	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-7.277	-15.2	-22.477	8	Pass



POWER SPECTRAL DENSITY

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/23/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

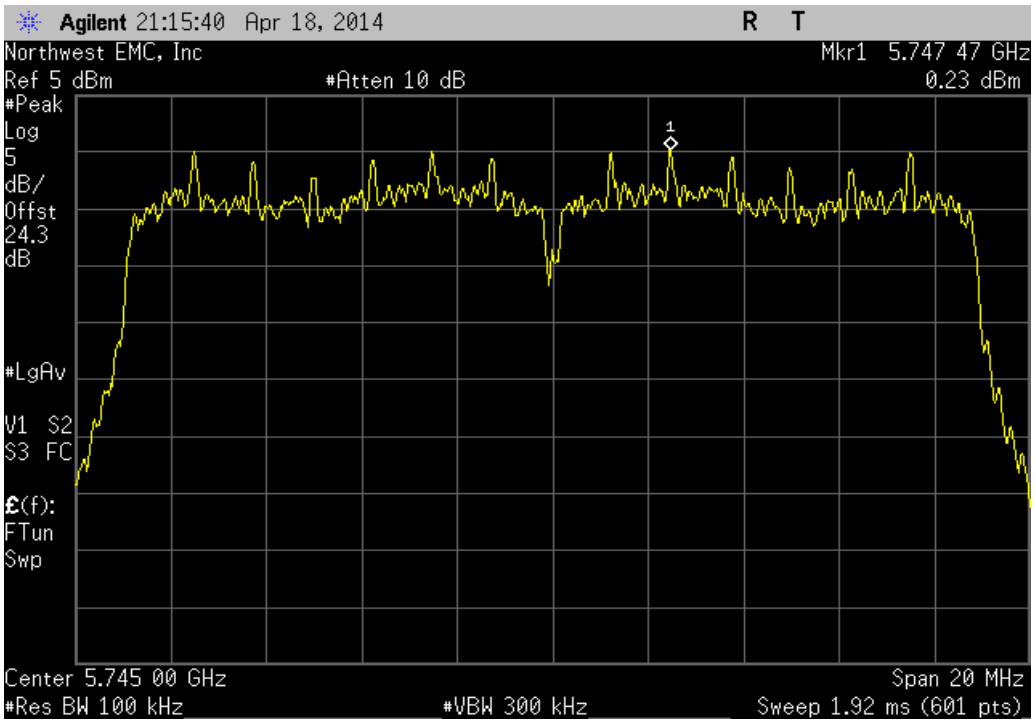
None

Configuration #	6	Signature

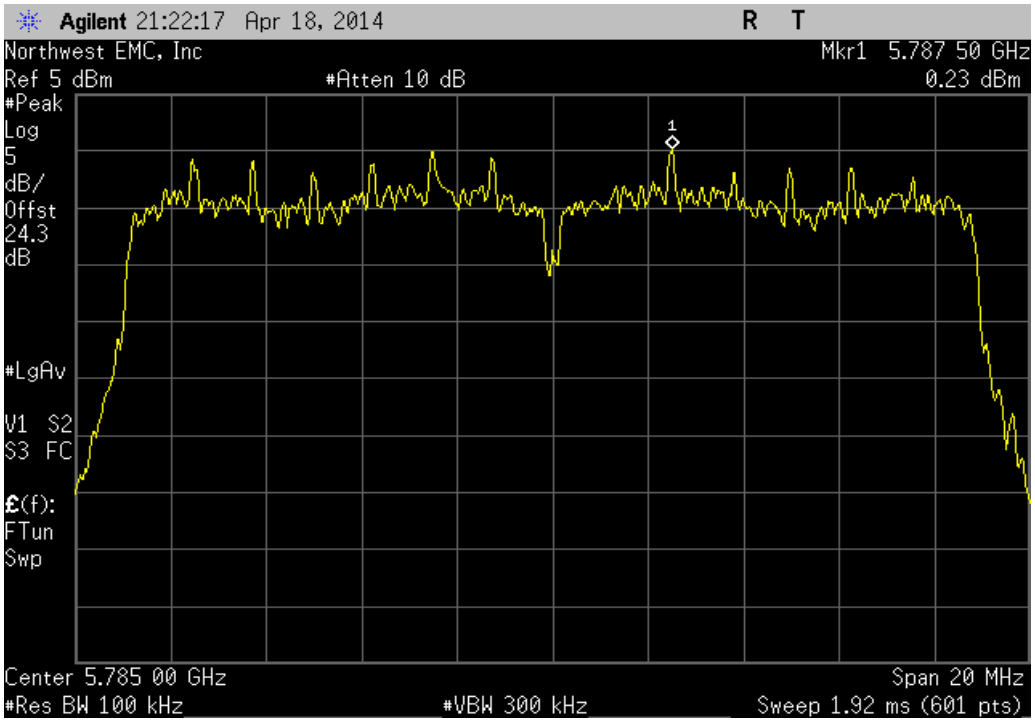
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
A IEEE 802.11(n)						
20 MHz						
5725 MHz - 5850 MHz Band						
HT, MCS8						
	Low Channel 149, 5745 M	0.233	-15.2	-14.967	8	N/A
	Mid Channel 157, 5785 MH	0.232	-15.2	-14.968	8	N/A
	High Channel 165, 5825 M	0.406	-15.2	-14.794	8	N/A
HT, MCS15						
	Low Channel 149, 5745 M	0.659	-15.2	-14.541	8	N/A
	Mid Channel 157, 5785 MH	0.31	-15.2	-14.89	8	N/A
	High Channel 165, 5825 M	0.237	-15.2	-14.963	8	N/A
40 MHz						
5725 MHz - 5850 MHz Band						
HT, MCS8						
	Low Channel 149/153, 575	-2.242	-15.2	-17.442	8	N/A
	High Channel 157/161, 57	-2.642	-15.2	-17.842	8	N/A
HT, MCS15						
	Low Channel 149/153, 575	-2.459	-15.2	-17.659	8	N/A
	High Channel 157/161, 57	-2.688	-15.2	-17.888	8	N/A
A IEEE 802.11(ac)						
20 MHz						
5725 MHz - 5850 MHz Band						
VHT, MCS0						
	Low Channel 149, 5745 M	0.662	-15.2	-14.538	8	N/A
	Mid Channel 157, 5785 MH	-0.021	-15.2	-15.221	8	N/A
	High Channel 165, 5825 M	-0.456	-15.2	-15.656	8	N/A
VHT, MCS8						
	Low Channel 149, 5745 M	0.696	-15.2	-14.504	8	N/A
	Mid Channel 157, 5785 MH	0.523	-15.2	-14.677	8	N/A
	High Channel 165, 5825 M	0.515	-15.2	-14.685	8	N/A
40 MHz						
5725 MHz - 5850 MHz Band						
VHT, MCS0						
	Low Channel 149/153, 575	-2.199	-15.2	-17.399	8	N/A
	High Channel 157/161, 57	-2.736	-15.2	-17.936	8	N/A
VHT, MCS9						
	Low Channel 149/153, 575	-2.057	-15.2	-17.257	8	N/A
	High Channel 157/161, 57	-2.32	-15.2	-17.52	8	N/A
80 MHz						
5725 MHz - 5850 MHz Band						
VHT, MCS0						
	Low Channel 149/153/157	-6.865	-15.2	-22.065	8	N/A
VHT, MCS9						
	Low Channel 149/153/157	-7.087	-15.2	-22.287	8	N/A
B IEEE 802.11(n)						
20 MHz						
5725 MHz - 5850 MHz Band						
HT, MCS8						
	Low Channel 149, 5745 M	0.373	-15.2	-14.827	8	N/A
	Mid Channel 157, 5785 MH	0.127	-15.2	-15.073	8	N/A
	High Channel 165, 5825 M	-0.24	-15.2	-15.44	8	N/A
HT, MCS15						
	Low Channel 149, 5745 M	0.297	-15.2	-14.903	8	N/A
	Mid Channel 157, 5785 MH	0.186	-15.2	-15.014	8	N/A
	High Channel 165, 5825 M	0.171	-15.2	-15.029	8	N/A
40 MHz						
5725 MHz - 5850 MHz Band						
HT, MCS8						
	Low Channel 149/153, 575	-2.12	-15.2	-17.32	8	N/A
	High Channel 157/161, 57	-2.052	-15.2	-17.252	8	N/A
HT, MCS15						
	Low Channel 149/153, 575	-1.913	-15.2	-17.113	8	N/A
	High Channel 157/161, 57	-1.902	-15.2	-17.102	8	N/A
B IEEE 802.11(ac)						
20 MHz						
5725 MHz - 5850 MHz Band						
VHT, MCS0						
	Low Channel 149, 5745 M	-0.318	-15.2	-15.518	8	N/A
	Mid Channel 157, 5785 MH	-0.683	-15.2	-15.883	8	N/A
	High Channel 165, 5825 M	-0.008	-15.2	-15.208	8	N/A
VHT, MCS8						
	Low Channel 149, 5745 M	0.466	-15.2	-14.734	8	N/A
	Mid Channel 157, 5785 MH	0.103	-15.2	-15.097	8	N/A
	High Channel 165, 5825 M	-0.017	-15.2	-15.217	8	N/A
40 MHz						
5725 MHz - 5850 MHz Band						
VHT, MCS0						
	Low Channel 149/153, 575	-2.443	-15.2	-17.643	8	N/A
	High Channel 157/161, 57	-2.13	-15.2	-17.33	8	N/A

		VHT, MCS9							
			Low Channel 149/153, 575		-1.616	-15.2	-16.816	8	N/A
			High Channel 157/161, 57		-1.877	-15.2	-17.077	8	N/A
	80 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149/153/157		-6.953	-15.2	-22.153	8	N/A
		VHT, MCS9							
			Low Channel 149/153/157		-6.969	-15.2	-22.169	8	N/A
A IEEE 802.11(n)									
	20 MHz								
		5725 MHz - 5850 MHz Band		**Value**	**Summing Factor**	**dBm/100kHz**	**Summed Power**	**Limit**	
		HT, MCS8		**dBm/MHz**	**(dBm)**	**To dBm/3kHz**	**(dBm/MHz)**	**dBm/3kHz**	**Result**
			Low Channel 149, 5745 MHz	0.233	3	-15.2	-11.967	8	Pass
			Mid Channel 157, 5785 MHz	0.232	3	-15.2	-11.968	8	Pass
			High Channel 165, 5825 MHz	0.406	3	-15.2	-11.794	8	Pass
		HT, MCS15							
			Low Channel 149, 5745 MHz	0.659	3	-15.2	-11.541	8	Pass
			Mid Channel 157, 5785 MHz	0.31	3	-15.2	-11.89	8	Pass
			High Channel 165, 5825 MHz	0.237	3	-15.2	-11.963	8	Pass
	40 MHz								
		5725 MHz - 5850 MHz Band							
		HT, MCS8							
			Low Channel 149/153, 5755 MHz	-2.242	3	-15.2	-14.442	8	Pass
			High Channel 157/161, 5795 MHz	-2.642	3	-15.2	-14.842	8	Pass
		HT, MCS15							
			Low Channel 149/153, 5755 MHz	-2.459	3	-15.2	-14.659	8	Pass
A IEEE 802.11(ac)									
	20 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149, 5745 MHz	0.662	3	-15.2	-11.538	8	Pass
			Mid Channel 157, 5785 MHz	-0.021	3	-15.2	-12.221	8	Pass
			High Channel 165, 5825 MHz	-0.456	3	-15.2	-12.656	8	Pass
		VHT, MCS8							
			Low Channel 149, 5745 MHz	0.696	3	-15.2	-11.504	8	Pass
			Mid Channel 157, 5785 MHz	0.523	3	-15.2	-11.677	8	Pass
			High Channel 165, 5825 MHz	0.515	3	-15.2	-11.685	8	Pass
	40 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149/153, 5755 MHz	-2.199	3	-15.2	-14.399	8	Pass
			High Channel 157/161, 5795 MHz	-2.736	3	-15.2	-14.936	8	Pass
		VHT, MCS9							
			Low Channel 149/153, 5755 MHz	-2.057	3	-15.2	-14.257	8	Pass
			High Channel 157/161, 5795 MHz	-2.32	3	-15.2	-14.52	8	Pass
	80 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149/153/157/161, 5775 MHz	-6.865	3	-15.2	-19.065	8	Pass
		VHT, MCS9							
			Low Channel 149/153/157/161, 5775 MHz	-7.087	3	-15.2	-19.287	8	Pass
B IEEE 802.11(n)									
	20 MHz								
		5725 MHz - 5850 MHz Band							
		HT, MCS8							
			Low Channel 149, 5745 MHz	0.373	3	-15.2	-11.827	8	Pass
			Mid Channel 157, 5785 MHz	0.127	3	-15.2	-12.073	8	Pass
			High Channel 165, 5825 MHz	-0.24	3	-15.2	-12.44	8	Pass
		HT, MCS15							
			Low Channel 149, 5745 MHz	-0.24	3	-15.2	-12.44	8	Pass
			Mid Channel 157, 5785 MHz	0	3	-15.2	-12.2	8	Pass
			High Channel 165, 5825 MHz	0.297	3	-15.2	-11.903	8	Pass
	40 MHz								
		5725 MHz - 5850 MHz Band							
		HT, MCS8							
			Low Channel 149/153, 5755 MHz	0	3	-15.2	-12.2	8	Pass
			High Channel 157/161, 5795 MHz	-2.12	3	-15.2	-14.32	8	Pass
		HT, MCS15							
			Low Channel 149/153, 5755 MHz	0	3	-15.2	-12.2	8	Pass
			High Channel 157/161, 5795 MHz	-1.913	3	-15.2	-14.113	8	Pass
B IEEE 802.11(ac)									
	20 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149, 5745 MHz	-0.318	3	-15.2	-12.518	8	Pass
			Mid Channel 157, 5785 MHz	-0.683	3	-15.2	-12.883	8	Pass
			High Channel 165, 5825 MHz	-0.008	3	-15.2	-12.208	8	Pass
		VHT, MCS8							
			Low Channel 149, 5745 MHz	0.466	3	-15.2	-11.734	8	Pass
			Mid Channel 157, 5785 MHz	0.103	3	-15.2	-12.097	8	Pass
			High Channel 165, 5825 MHz	-0.017	3	-15.2	-12.217	8	Pass
	40 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149/153, 5755 MHz	-2.443	3	-15.2	-14.643	8	Pass
			High Channel 157/161, 5795 MHz	-2.13	3	-15.2	-14.33	8	Pass
		VHT, MCS9							
			Low Channel 149/153, 5755 MHz	-1.616	3	-15.2	-13.816	8	Pass
			High Channel 157/161, 5795 MHz	-1.877	3	-15.2	-14.077	8	Pass
	80 MHz								
		5725 MHz - 5850 MHz Band							
		VHT, MCS0							
			Low Channel 149/153/157/161, 5775 MHz	-6.953	3	-15.2	-19.153	8	Pass
		VHT, MCS9							
			Low Channel 149/153/157/161, 5775 MHz	-6.969	3	-15.2	-19.169	8	Pass

A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.233	-15.2	-14.967	8	Pass

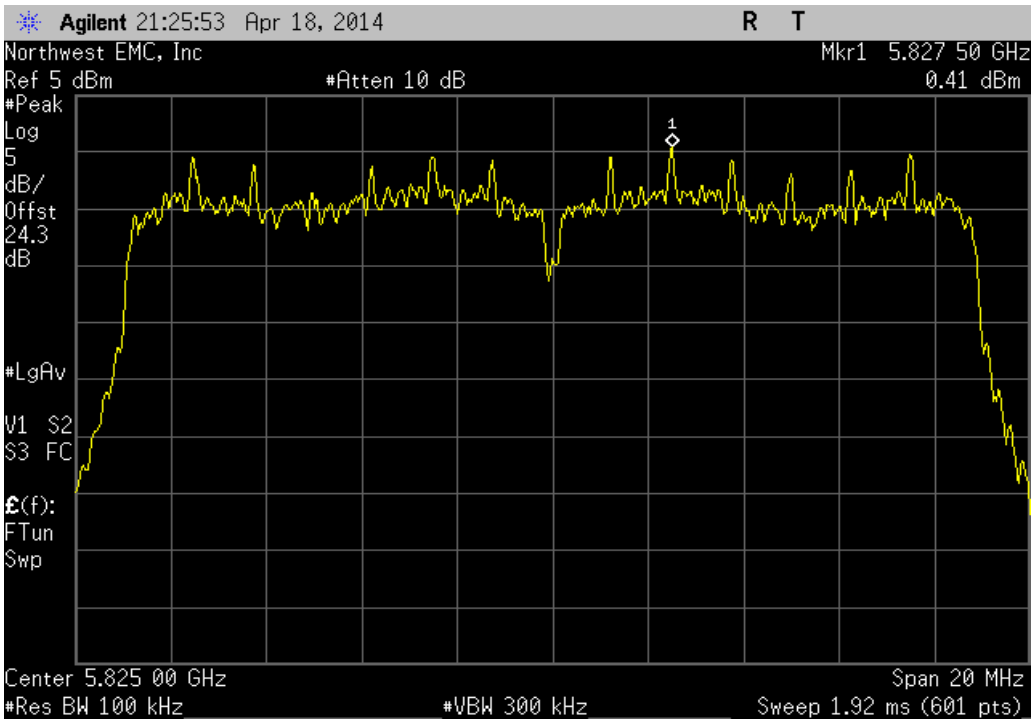


A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.232	-15.2	-14.968	8	Pass

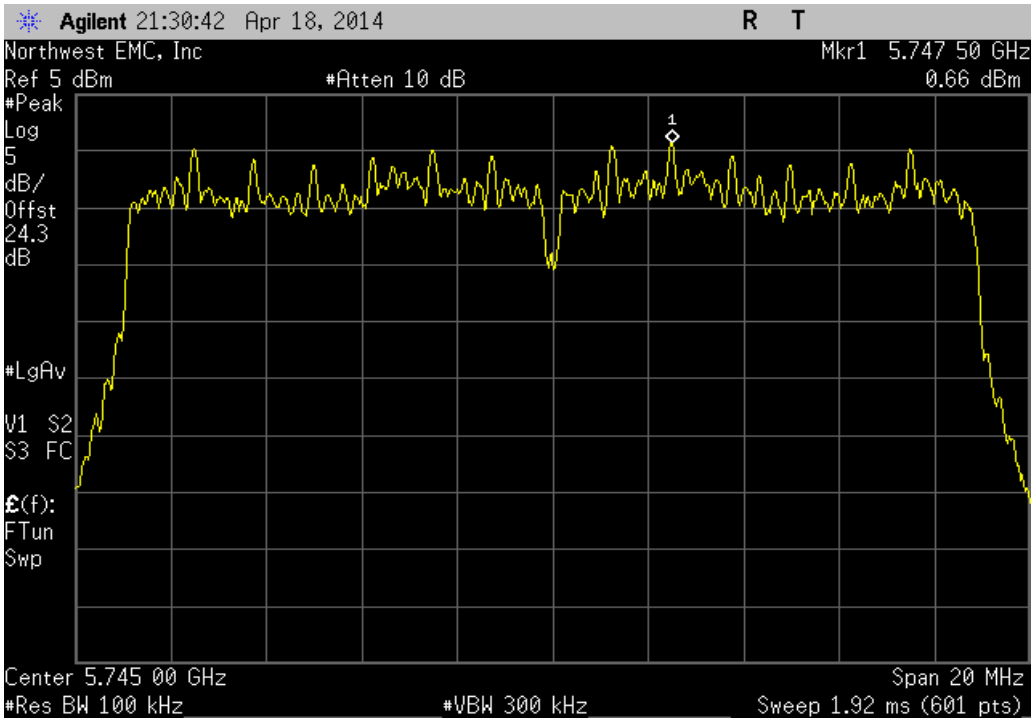


POWER SPECTRAL DENSITY

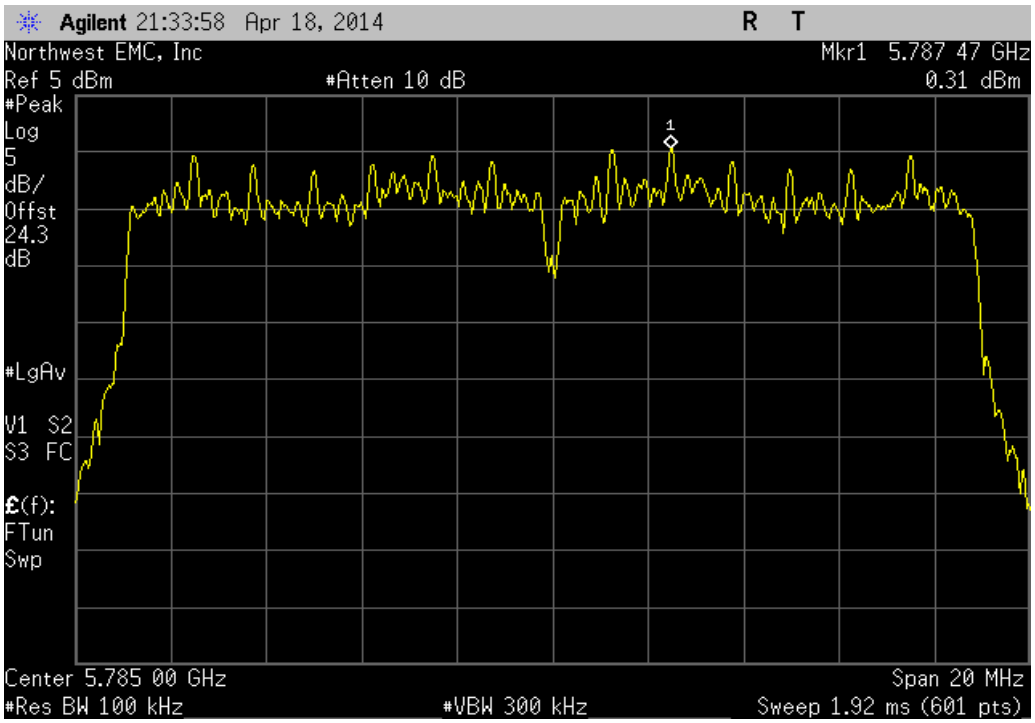
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.406	-15.2	-14.794	8	Pass



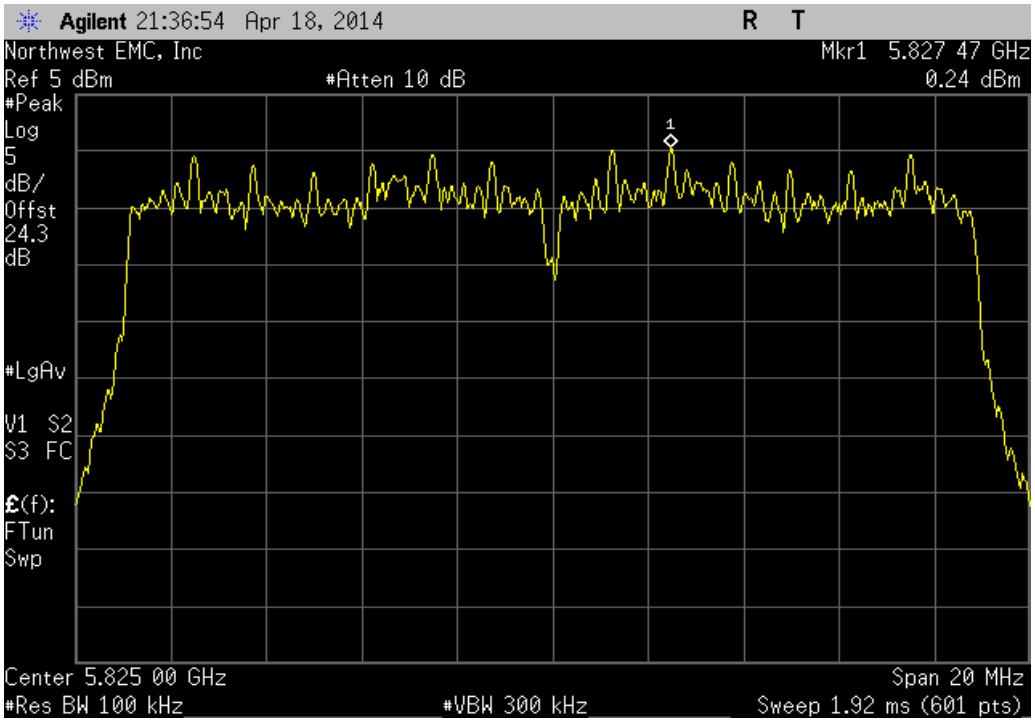
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.659	-15.2	-14.541	8	Pass



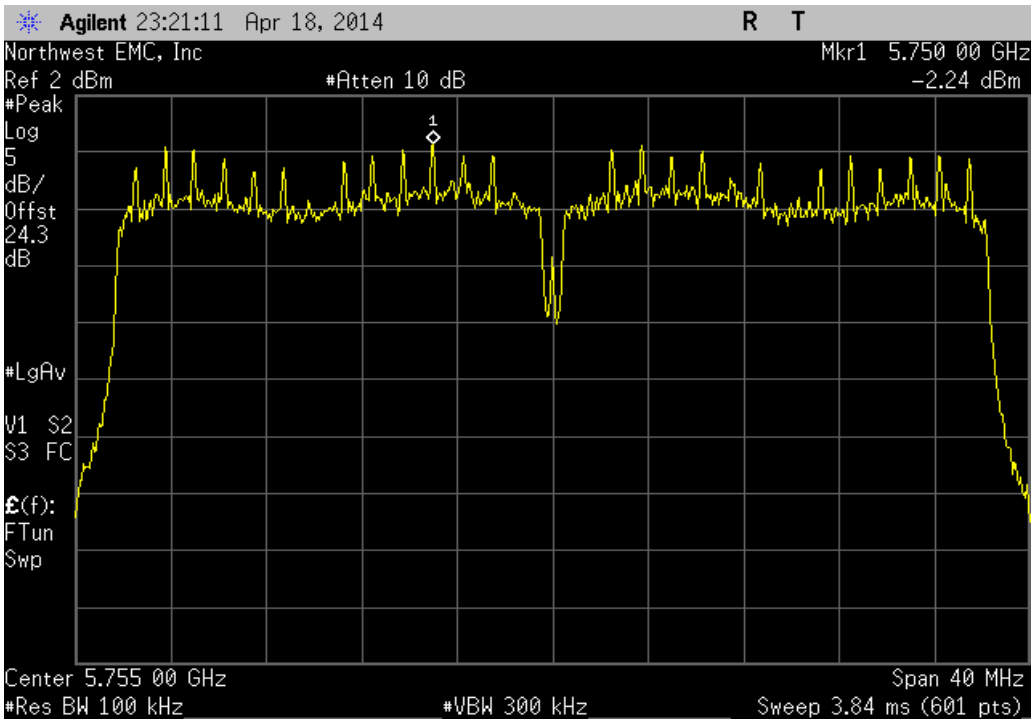
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.31	-15.2	-14.89	8	Pass



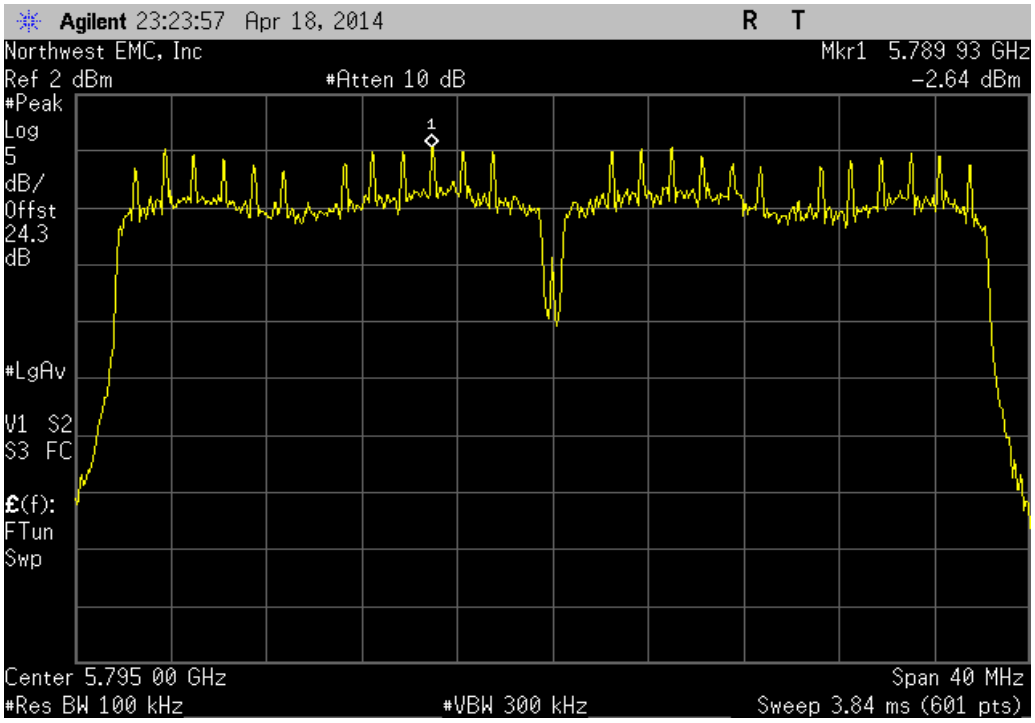
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.237	-15.2	-14.963	8	Pass



A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.242	-15.2	-17.442	8	Pass

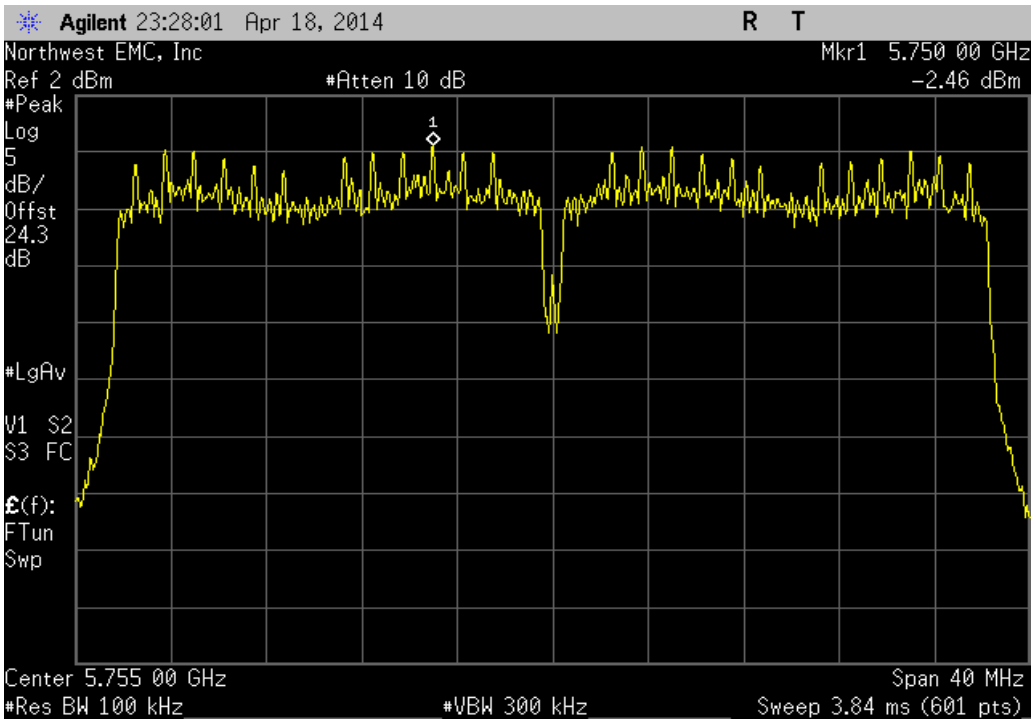


A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.642	-15.2	-17.842	8	Pass

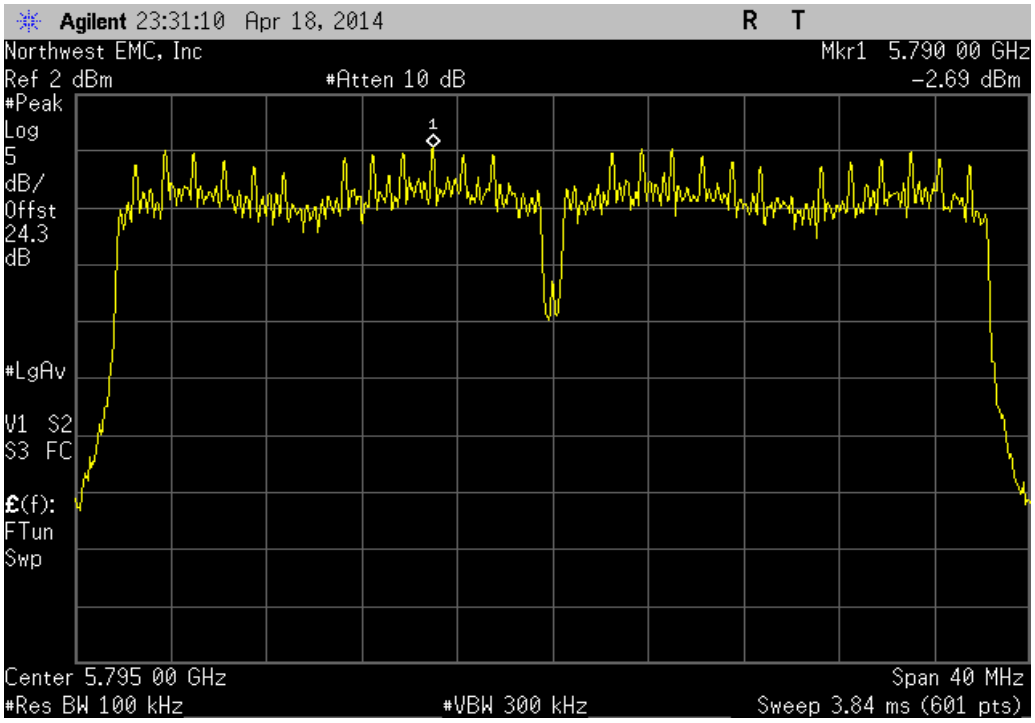


POWER SPECTRAL DENSITY

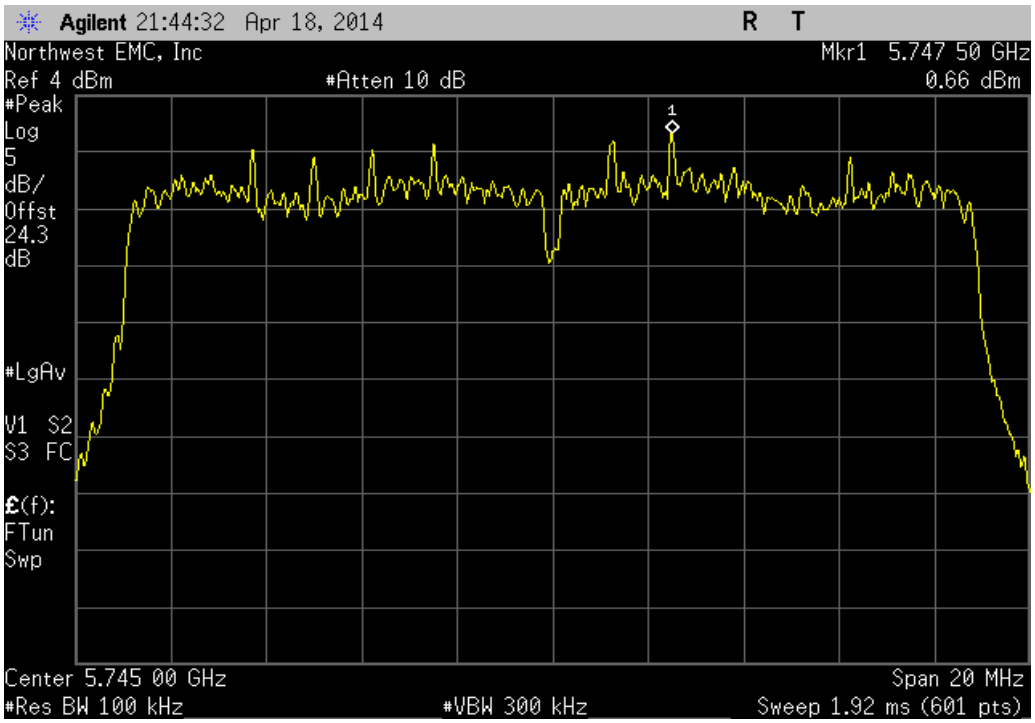
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.459	-15.2	-17.659	8	Pass



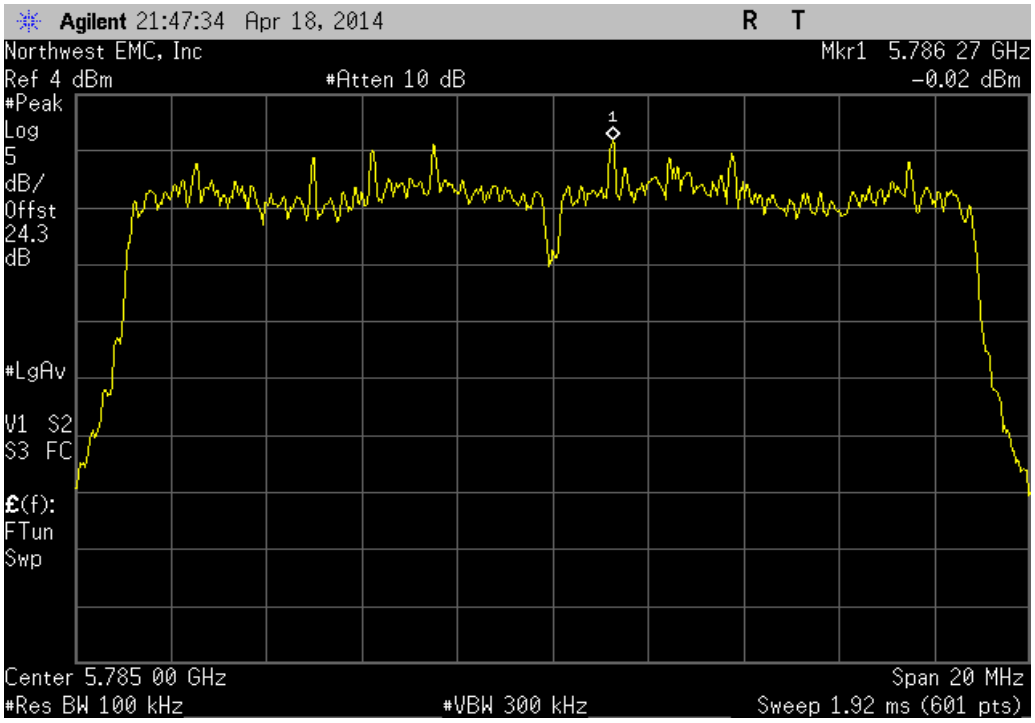
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.688	-15.2	-17.888	8	Pass



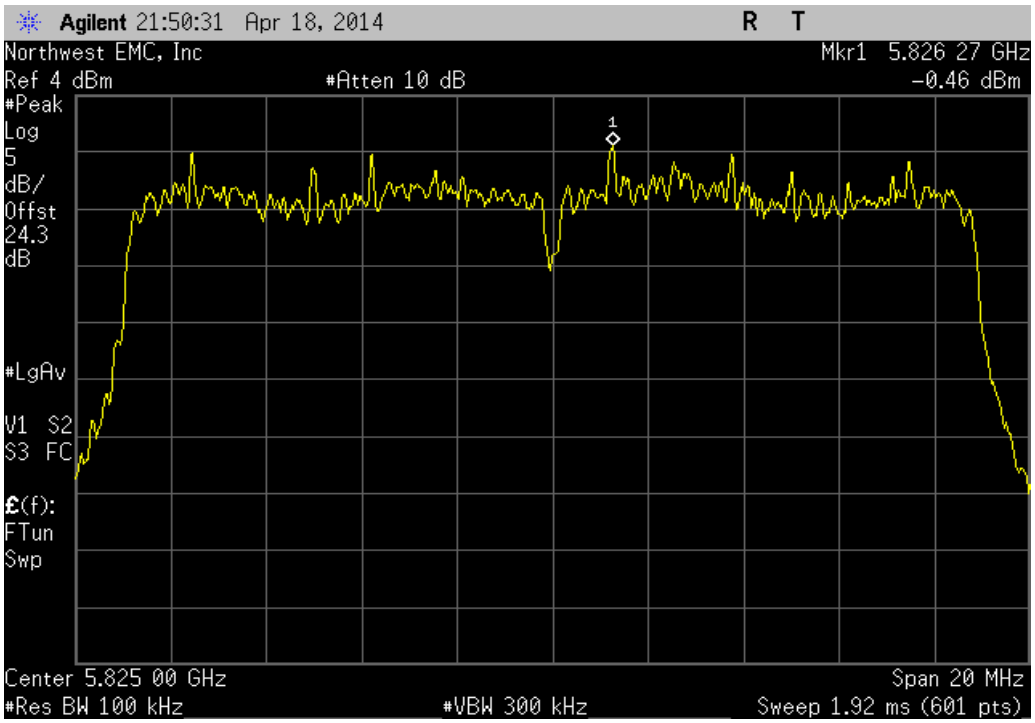
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.662	-15.2	-14.538	8	Pass



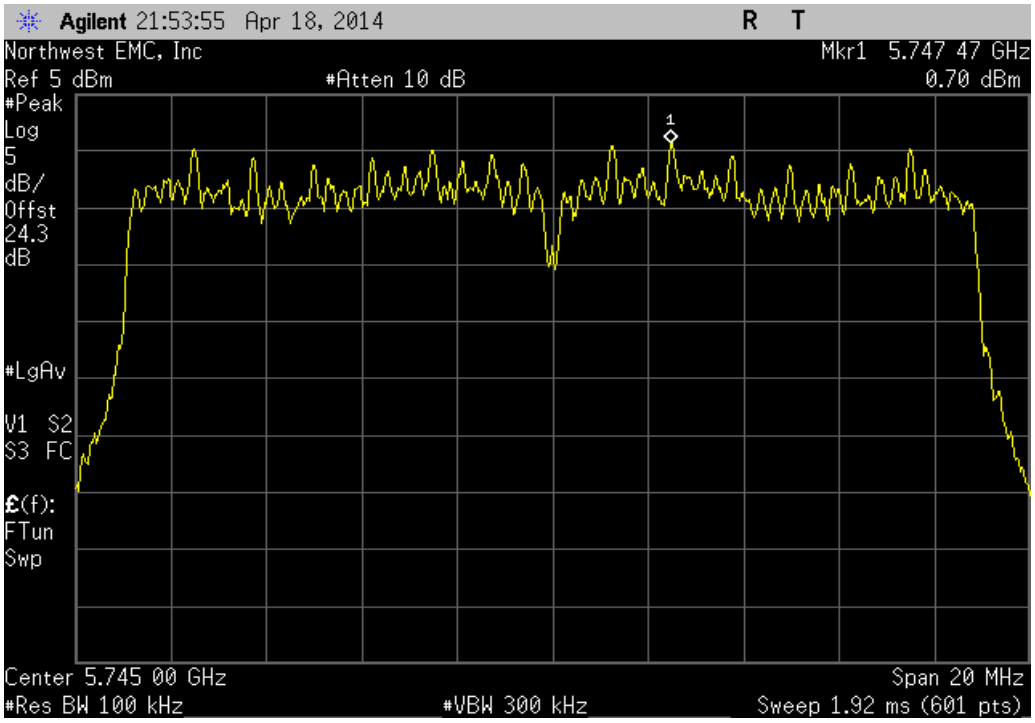
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.021	-15.2	-15.221	8	Pass



A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.456	-15.2	-15.656	8	Pass

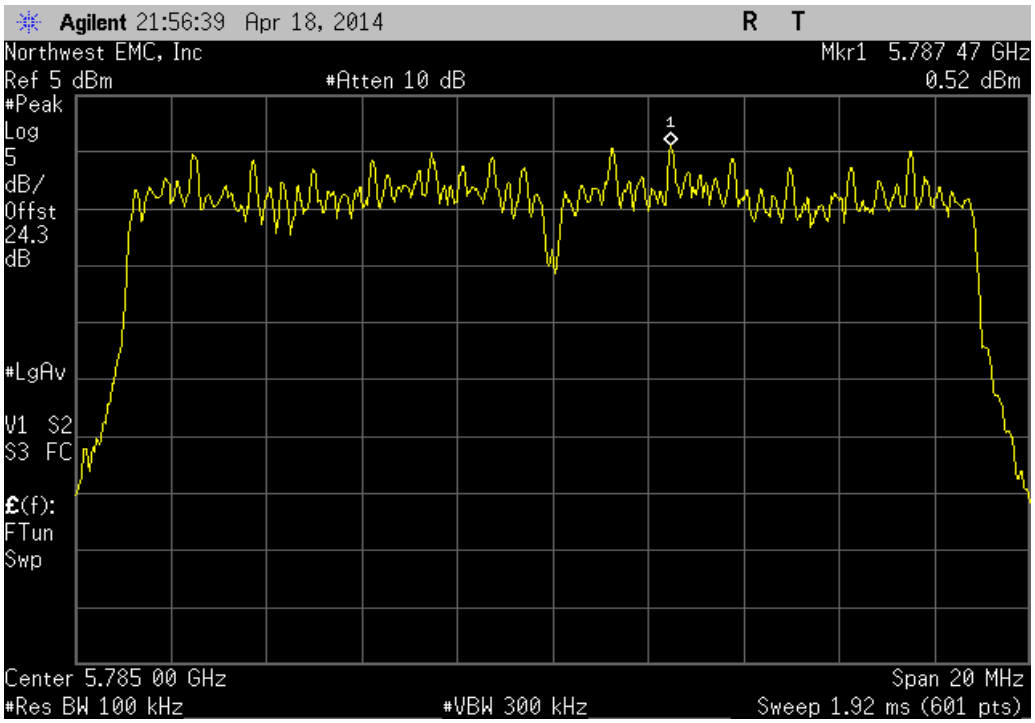


A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.696	-15.2	-14.504	8	Pass

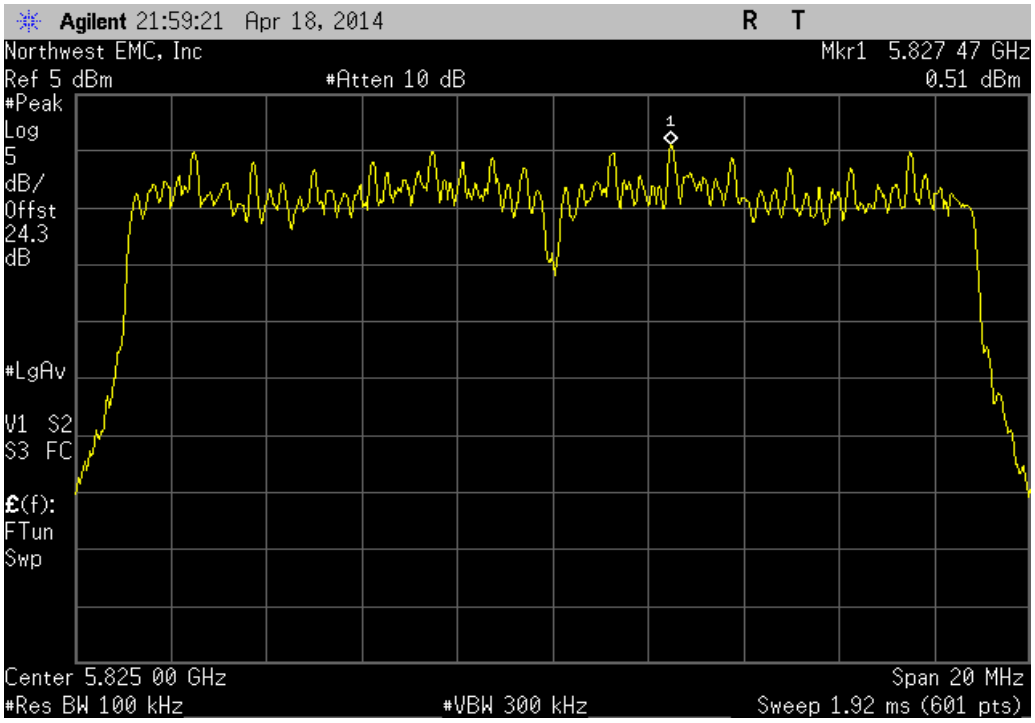


POWER SPECTRAL DENSITY

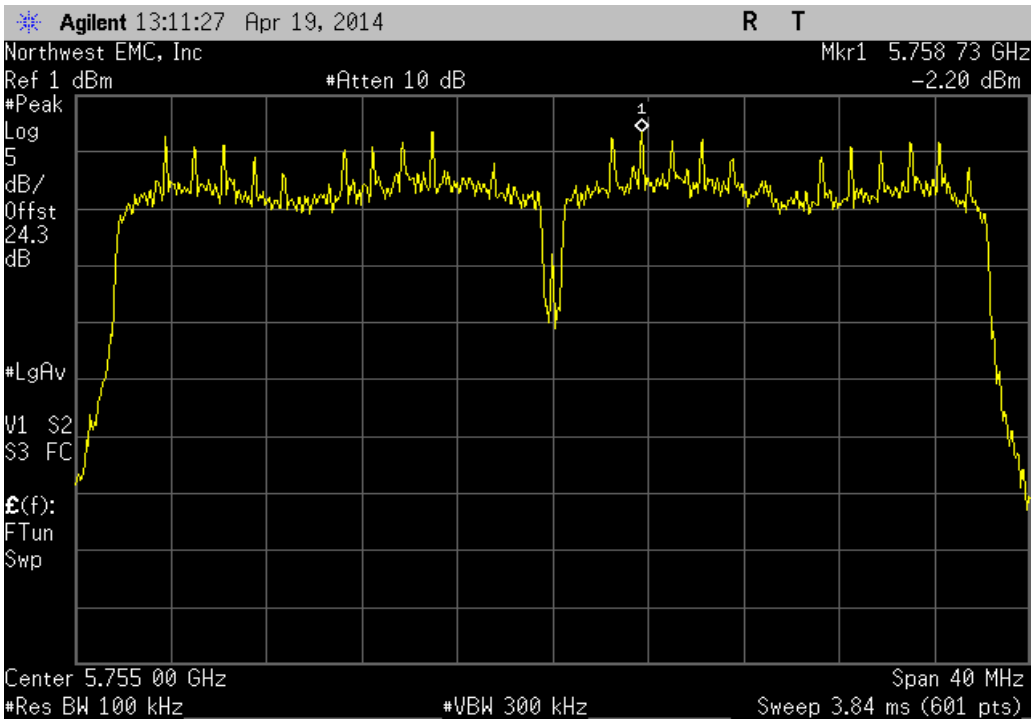
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.523	-15.2	-14.677	8	Pass



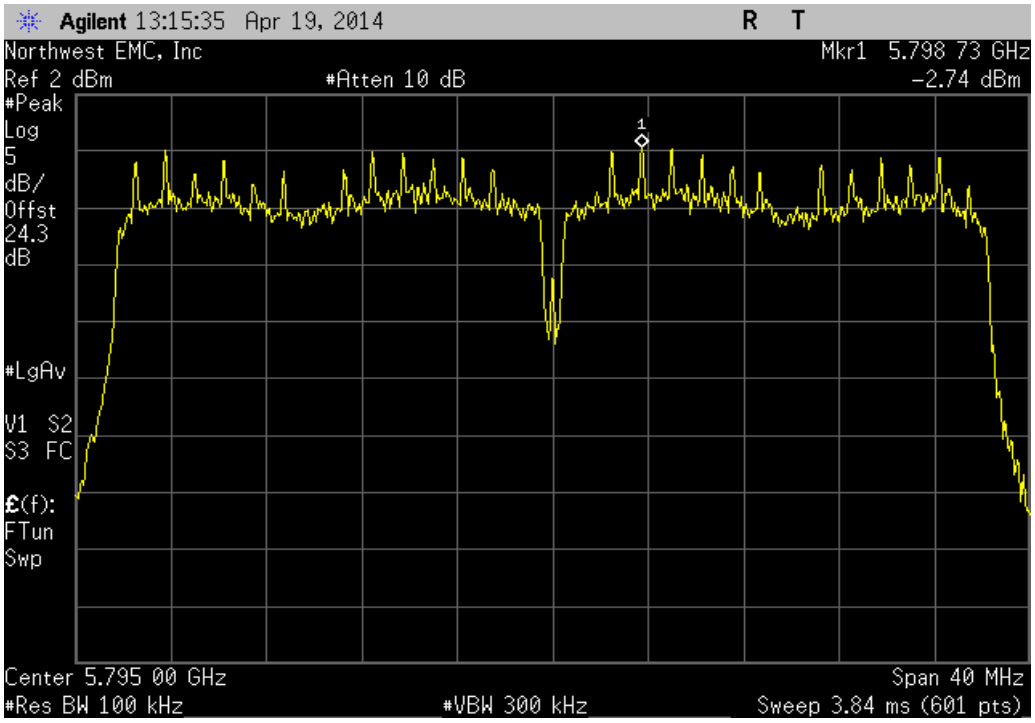
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.515	-15.2	-14.685	8	Pass



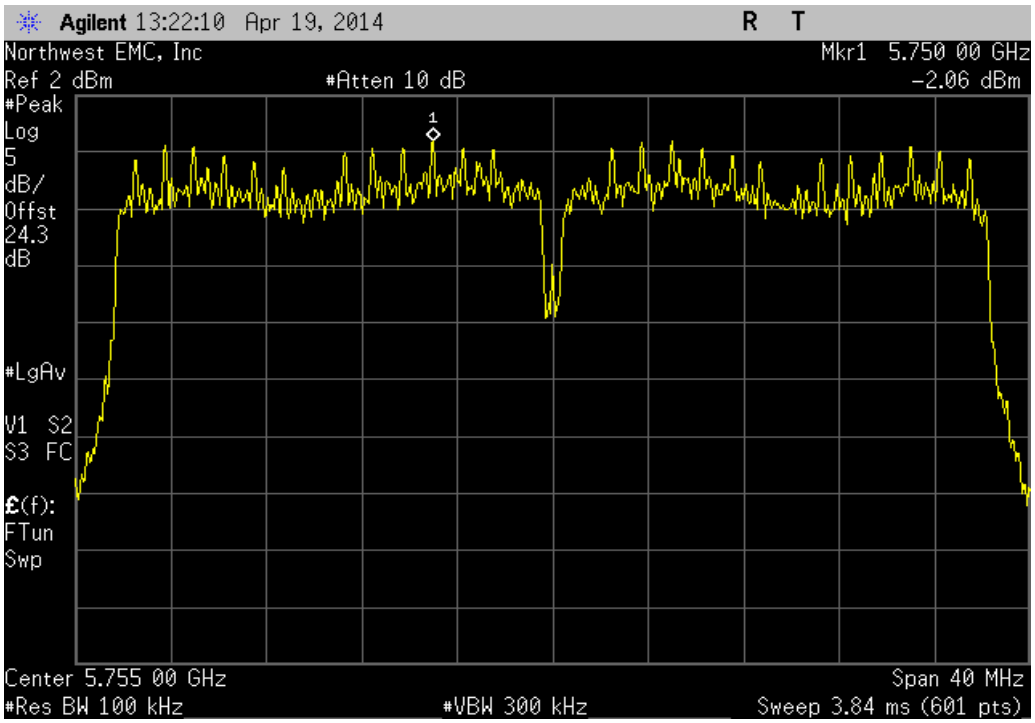
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.199	-15.2	-17.399	8	Pass



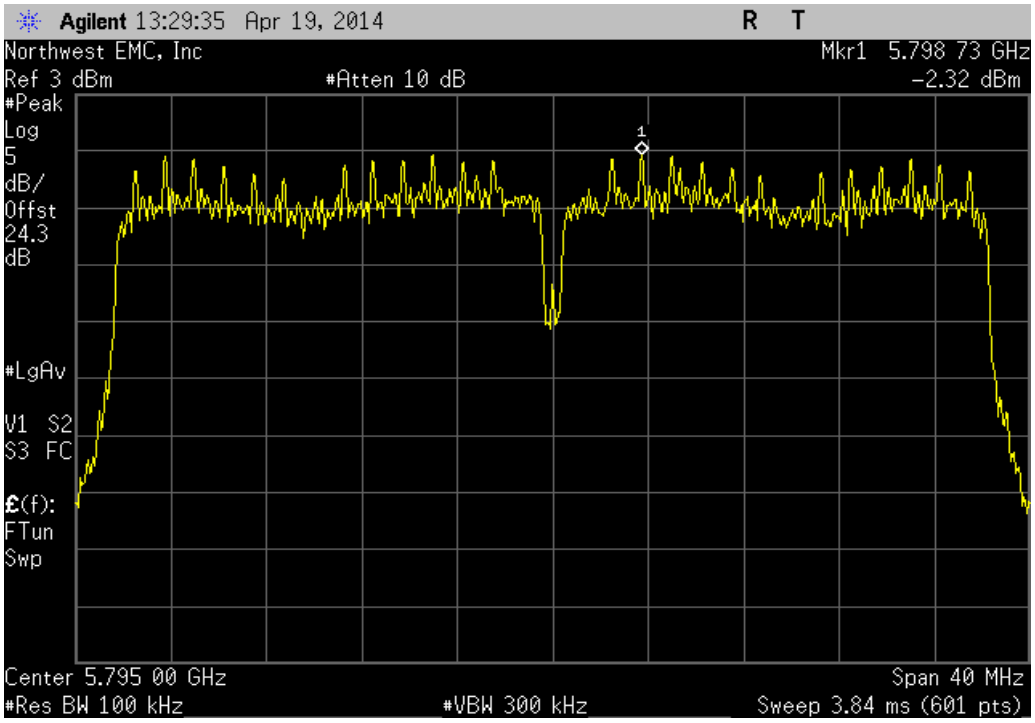
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.736	-15.2	-17.936	8	Pass



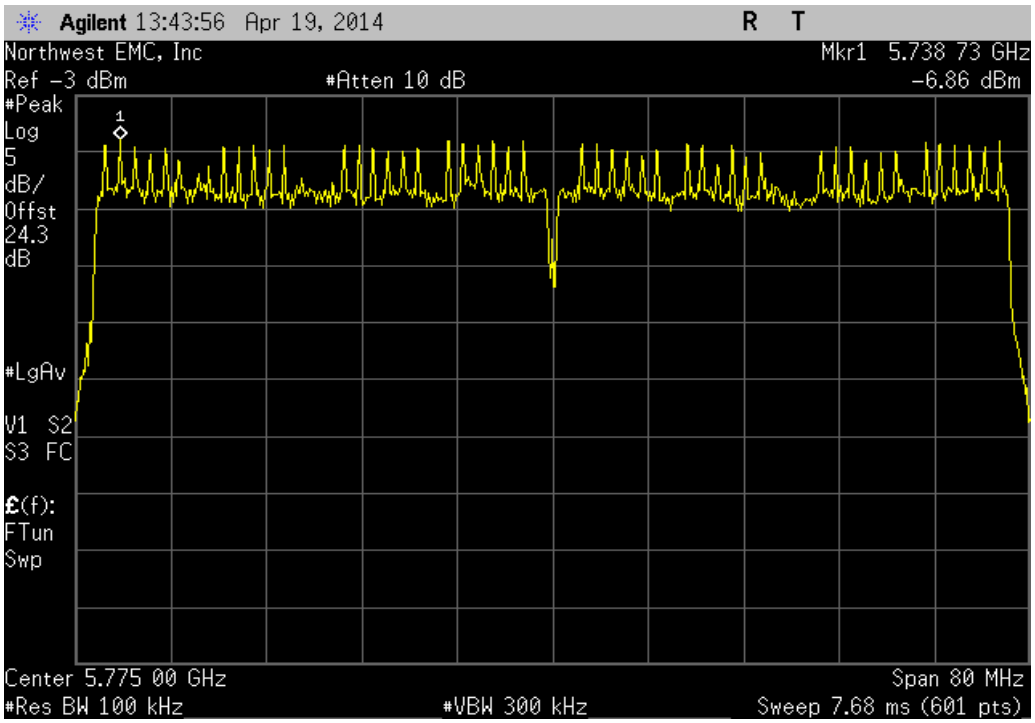
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.057	-15.2	-17.257	8	Pass



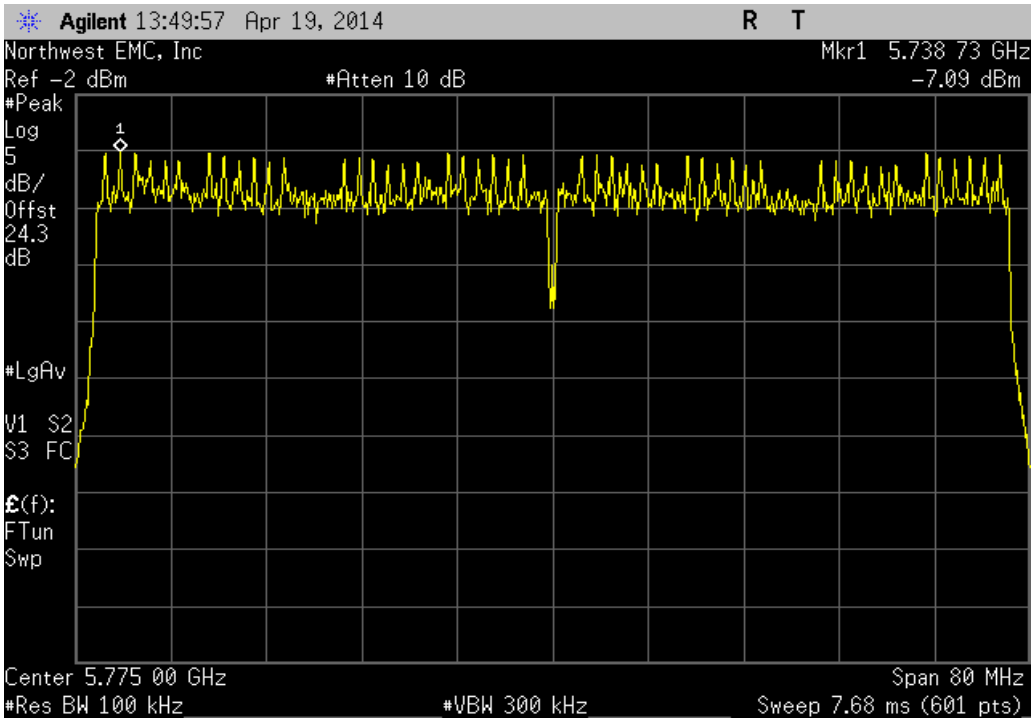
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.32	-15.2	-17.52	8	Pass



A IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-6.865	-15.2	-22.065	8	Pass

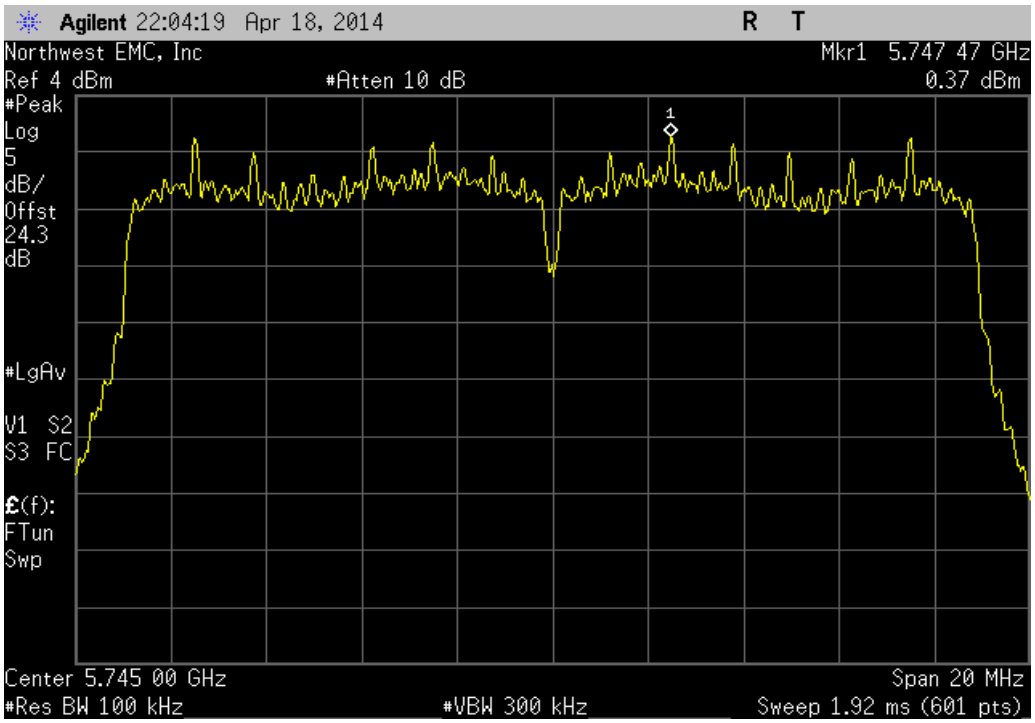


A IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-7.087	-15.2	-22.287	8	Pass



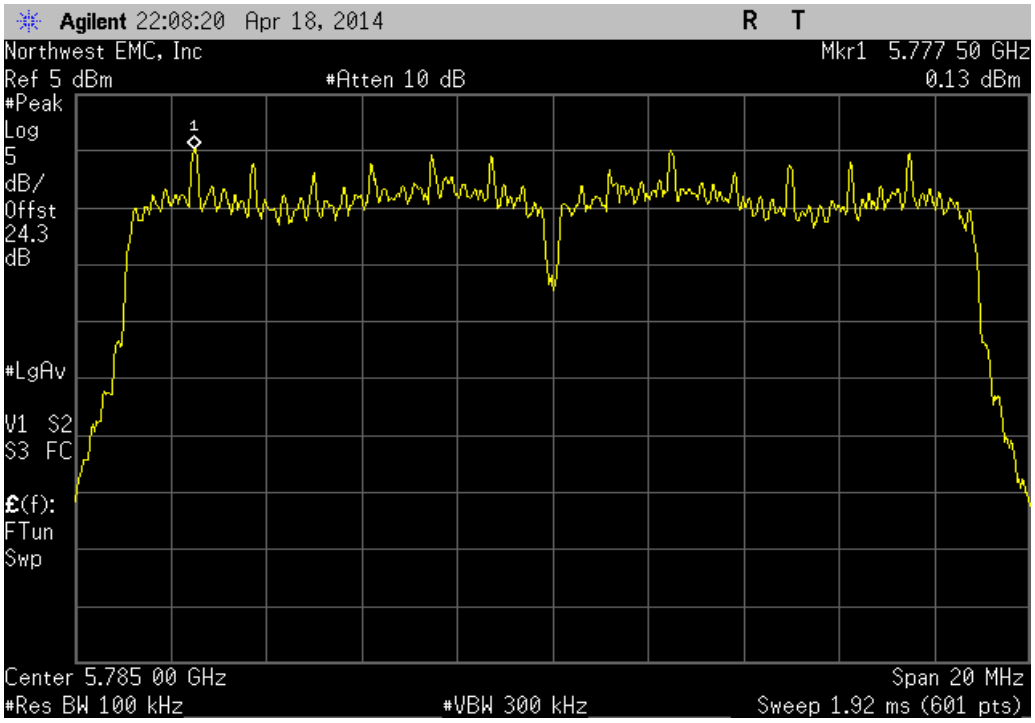
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.373	-15.2	-14.827	8	Pass



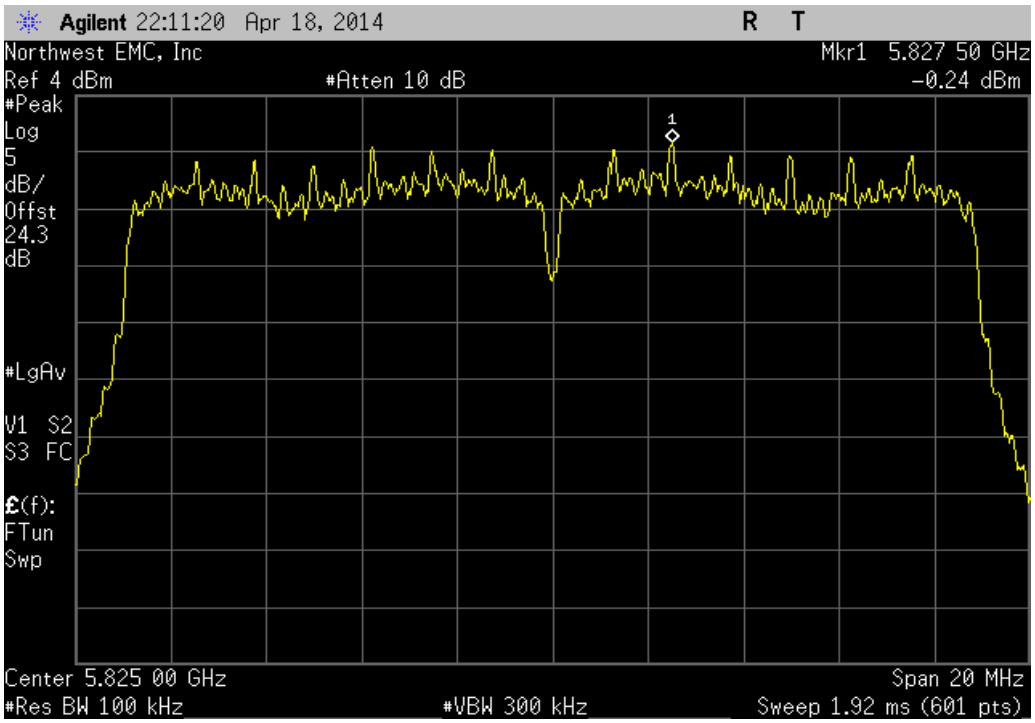
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Mid Channel 157, 5785 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.127	-15.2	-15.073	8	Pass

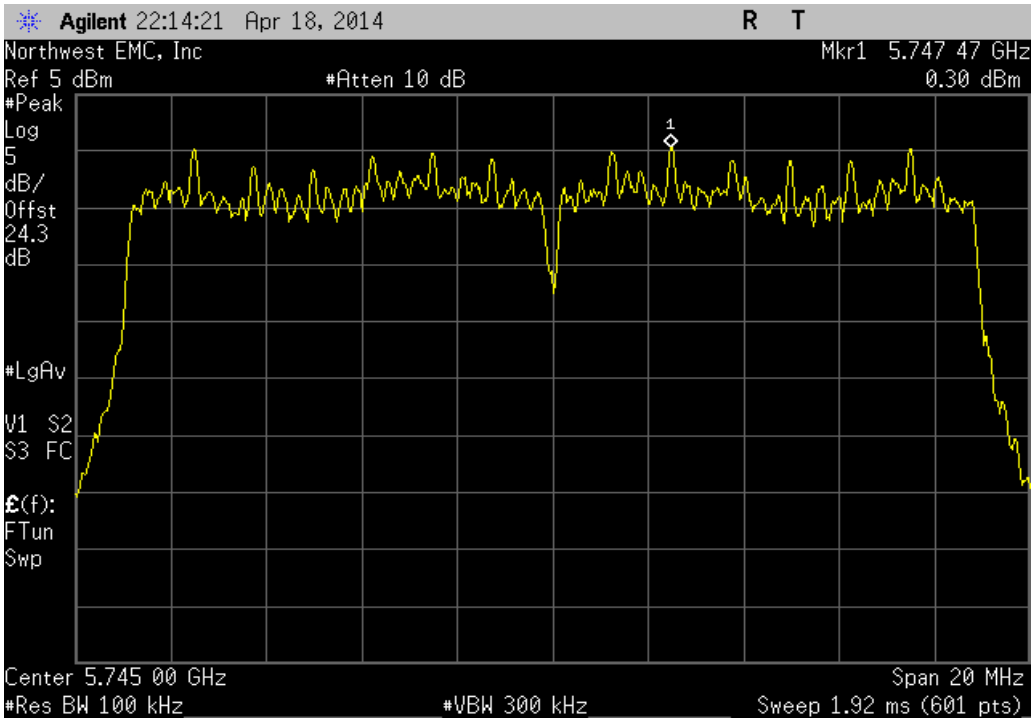


POWER SPECTRAL DENSITY

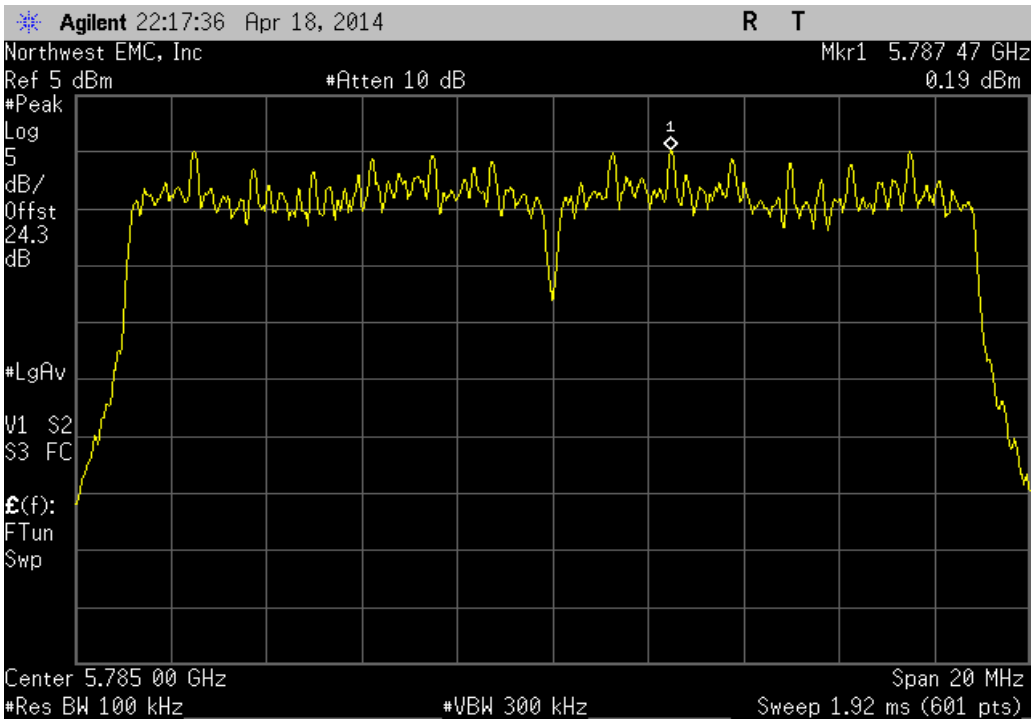
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.24	-15.2	-15.44	8	Pass



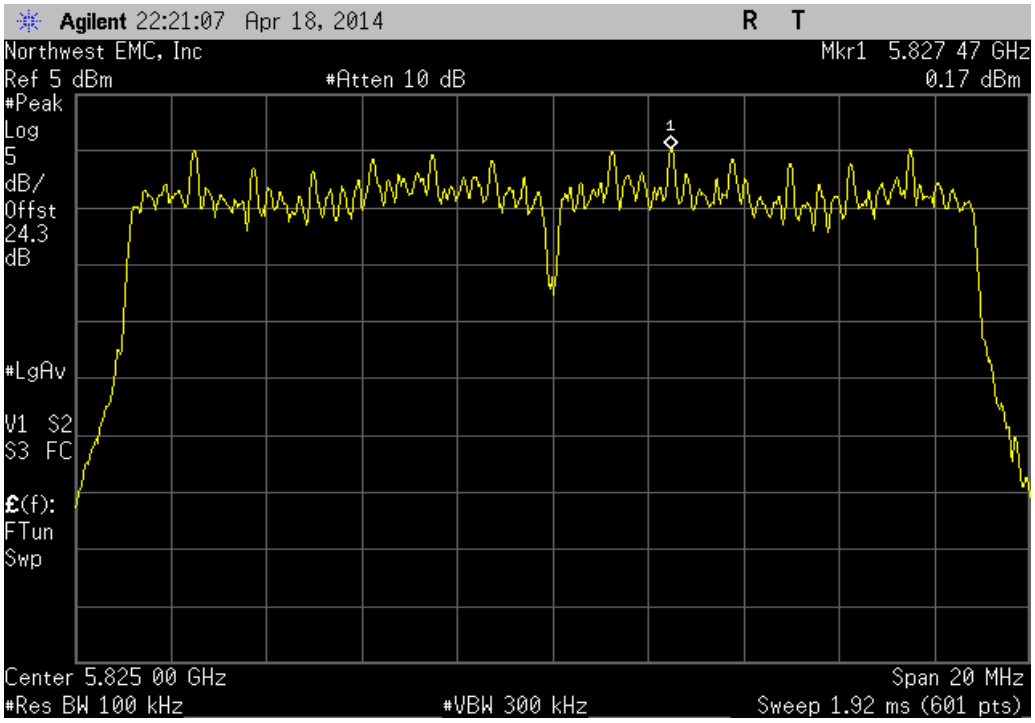
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.297	-15.2	-14.903	8	Pass



B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.186	-15.2	-15.014	8	Pass

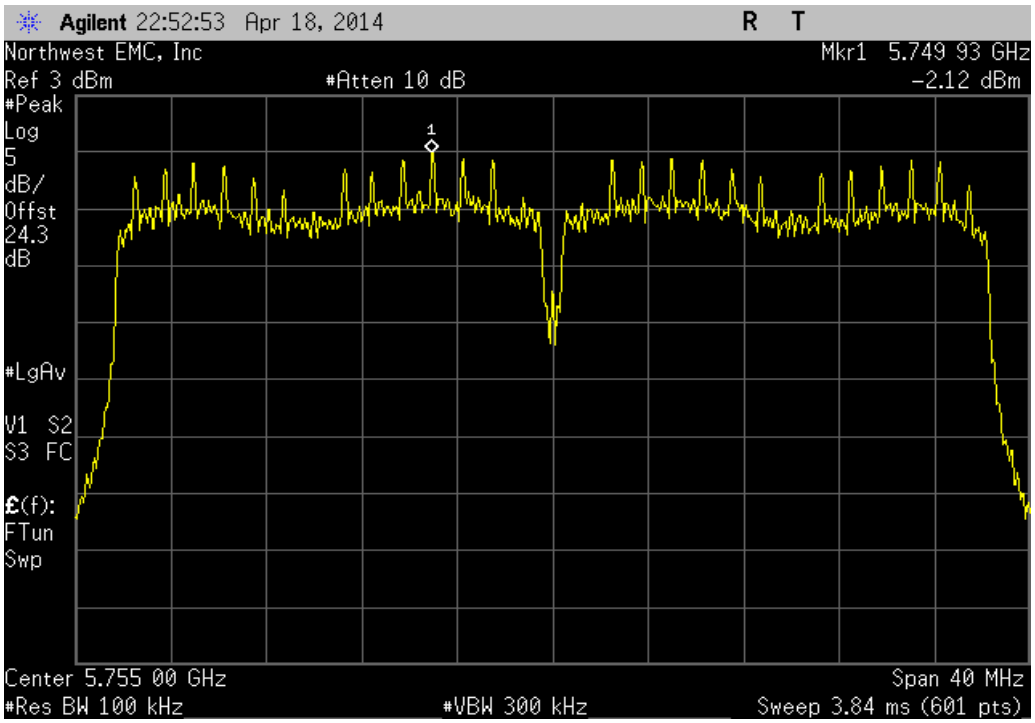


B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.171	-15.2	-15.029	8	Pass

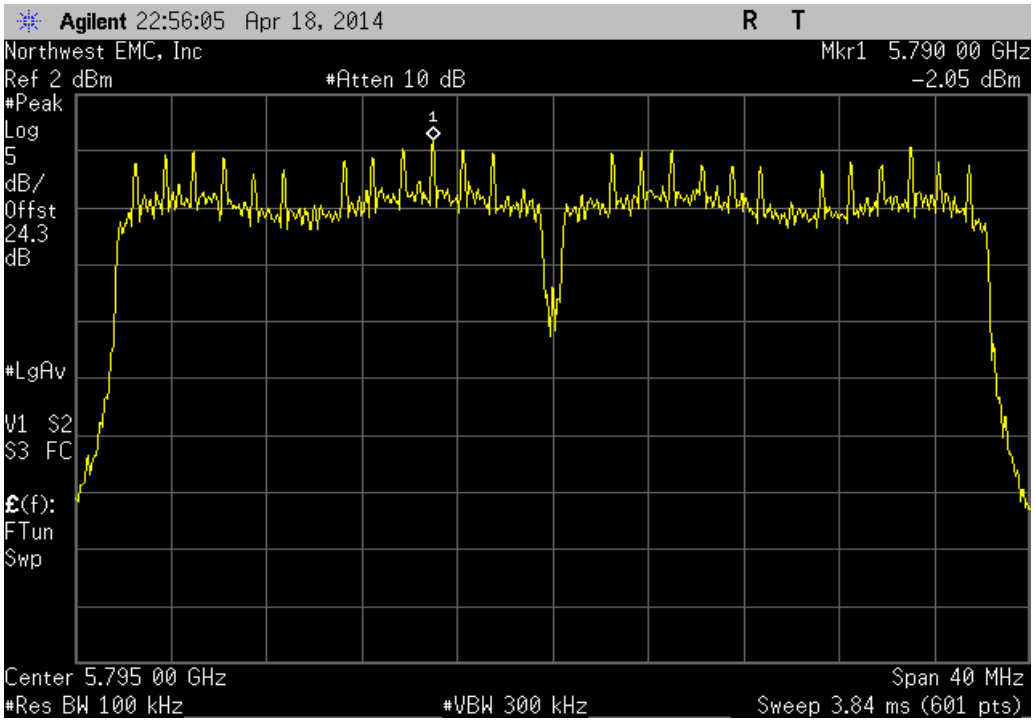


POWER SPECTRAL DENSITY

B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.12	-15.2	-17.32	8	Pass

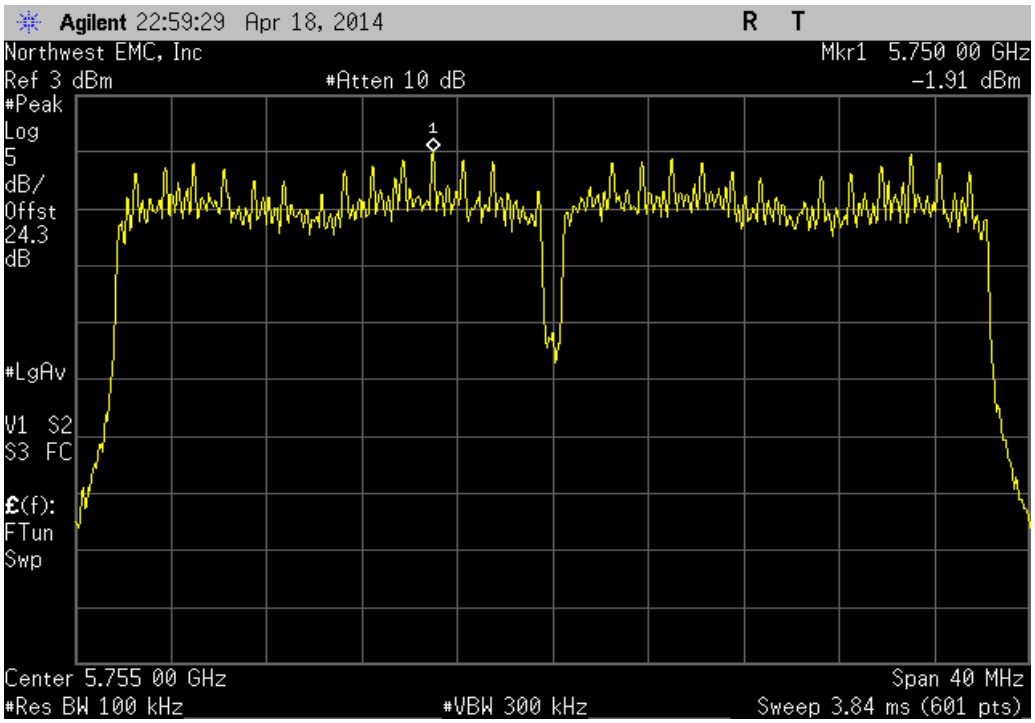


B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.052	-15.2	-17.252	8	Pass



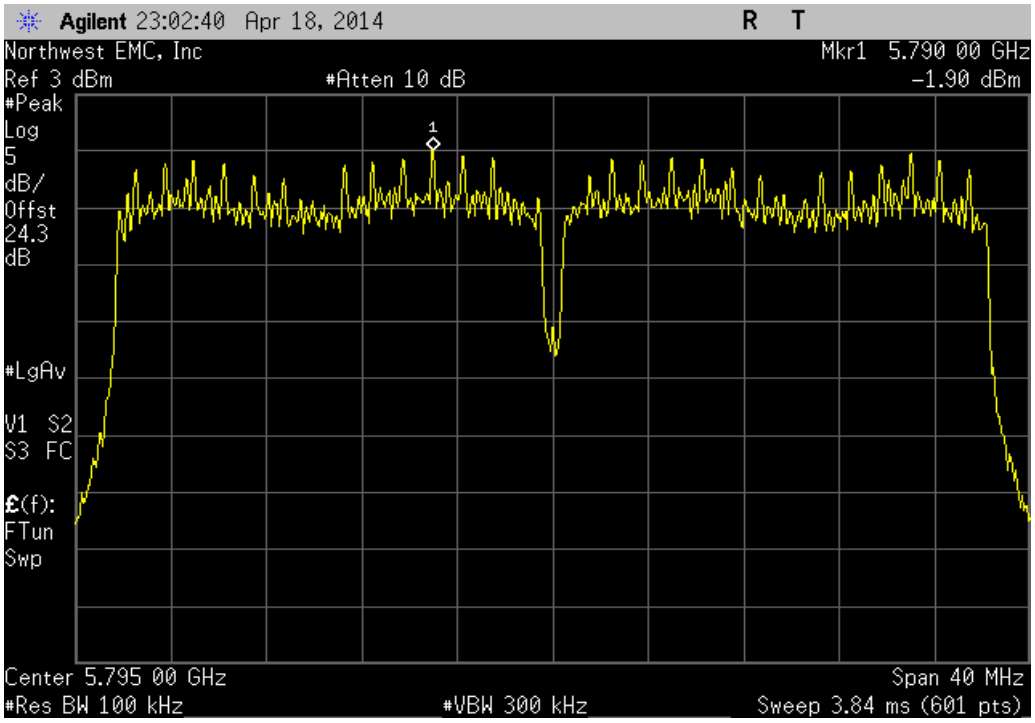
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149/153, 5755 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-1.913	-15.2	-17.113	8	Pass



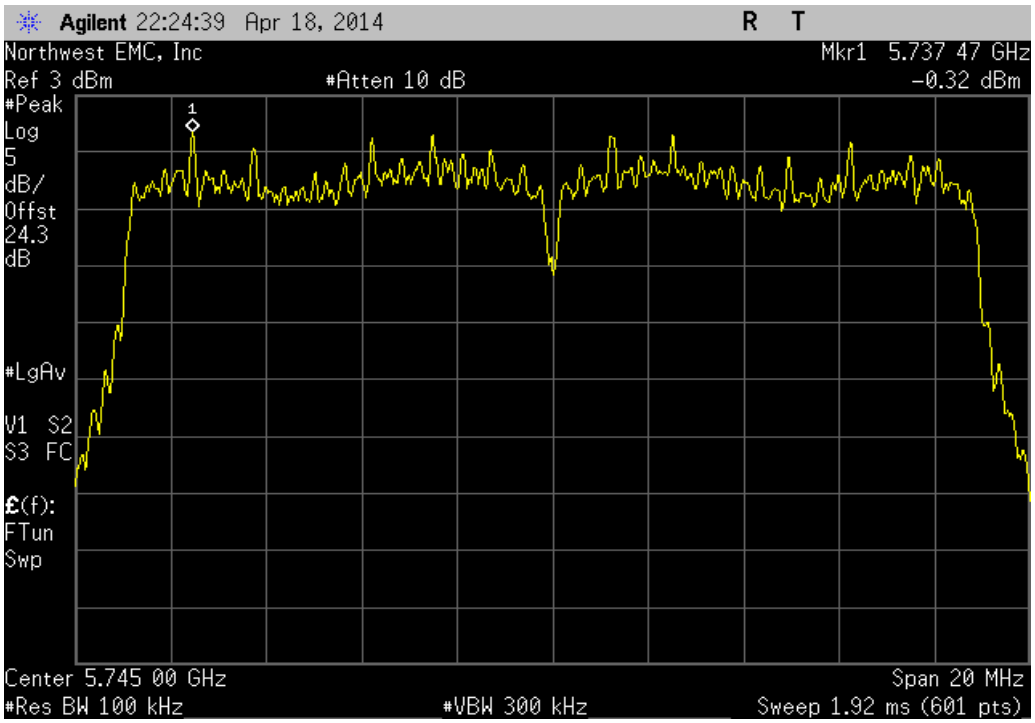
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 157/161, 5795 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-1.902	-15.2	-17.102	8	Pass



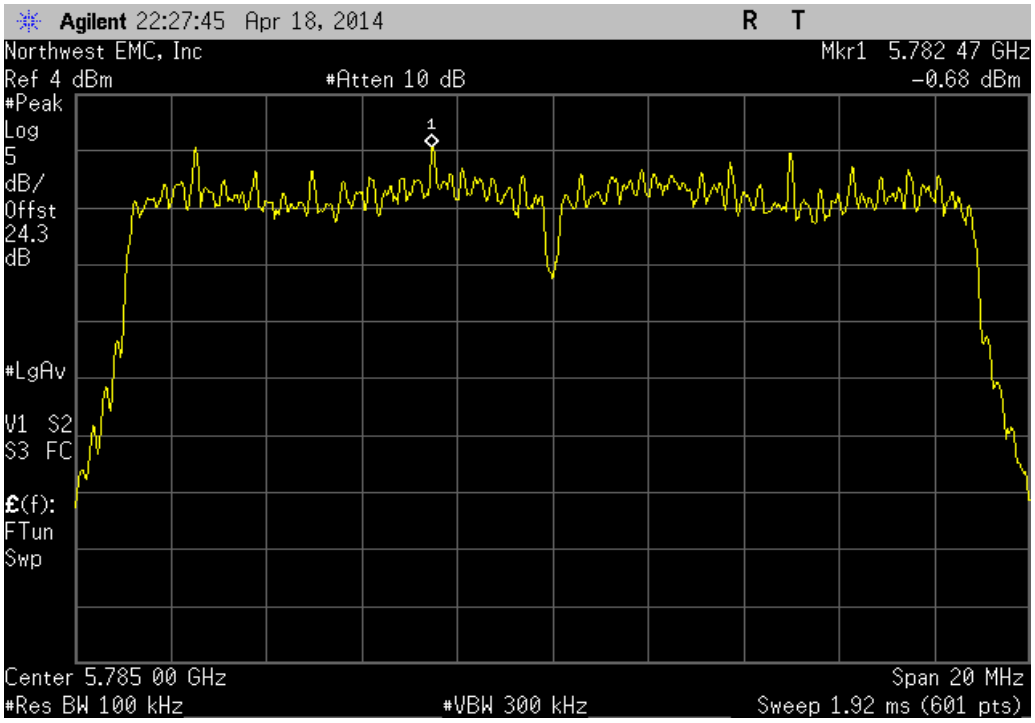
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.318	-15.2	-15.518	8	Pass

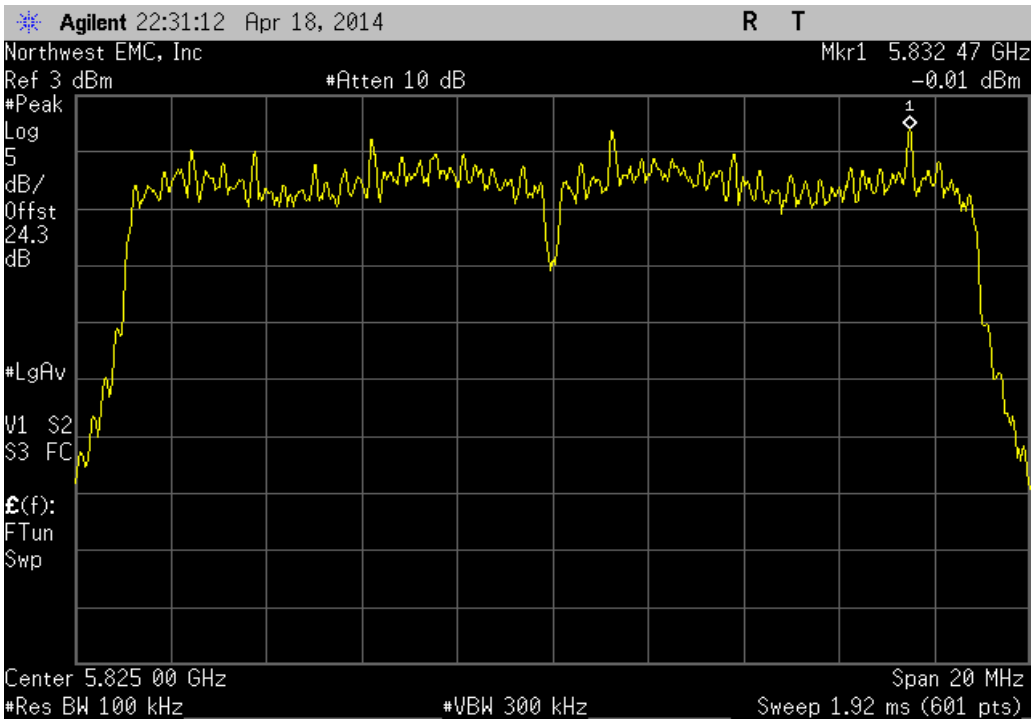


B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz

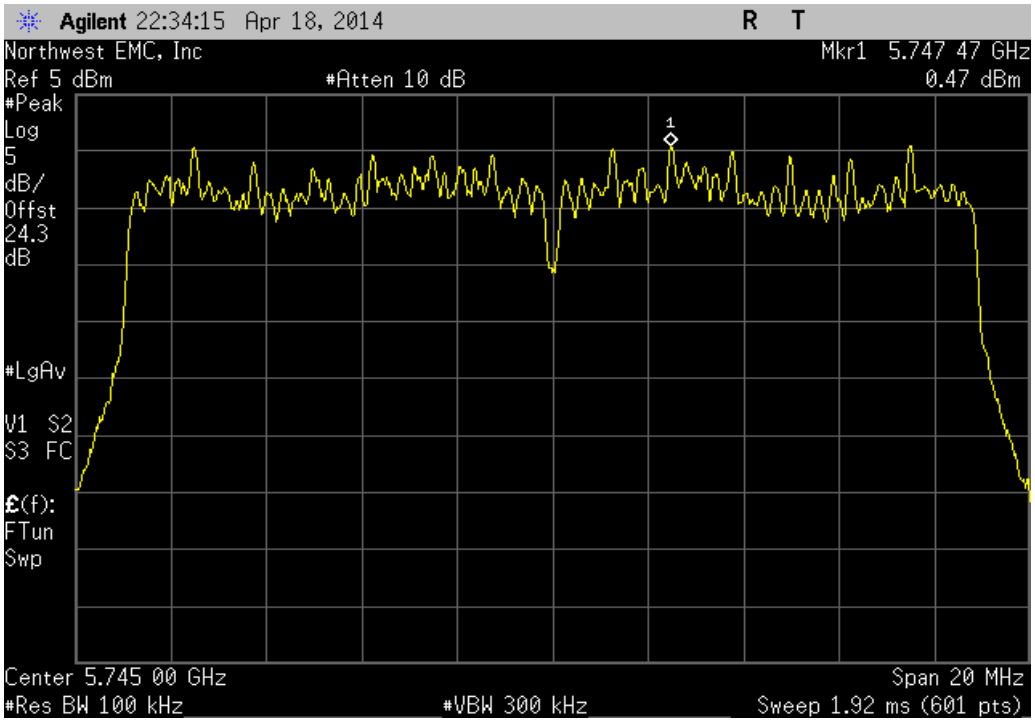
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.683	-15.2	-15.883	8	Pass



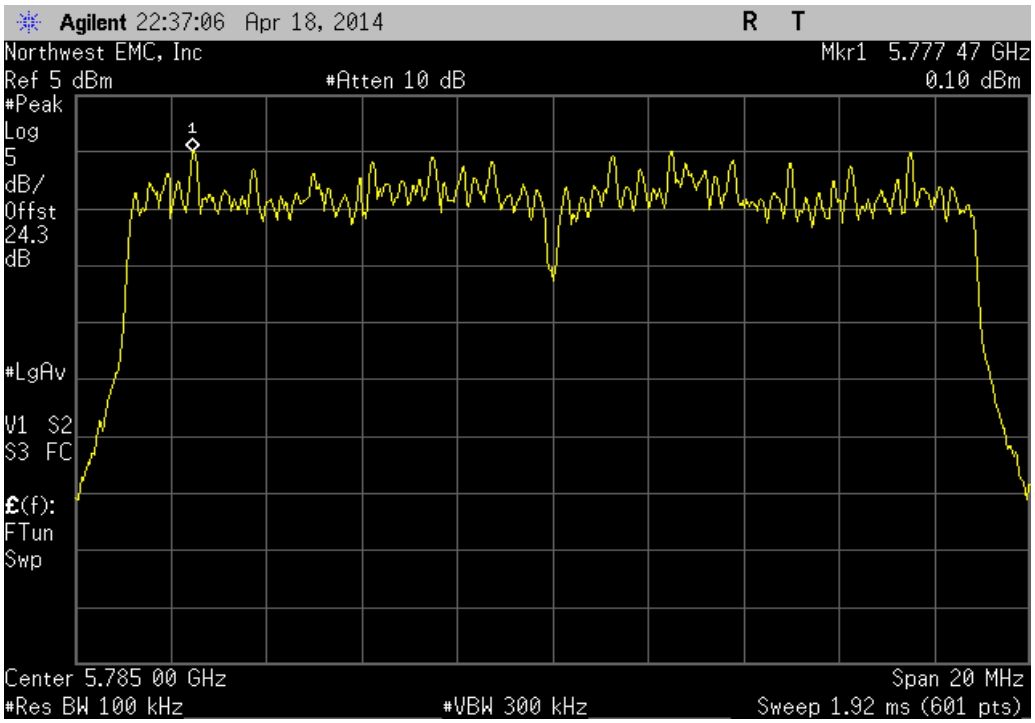
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.008	-15.2	-15.208	8	Pass



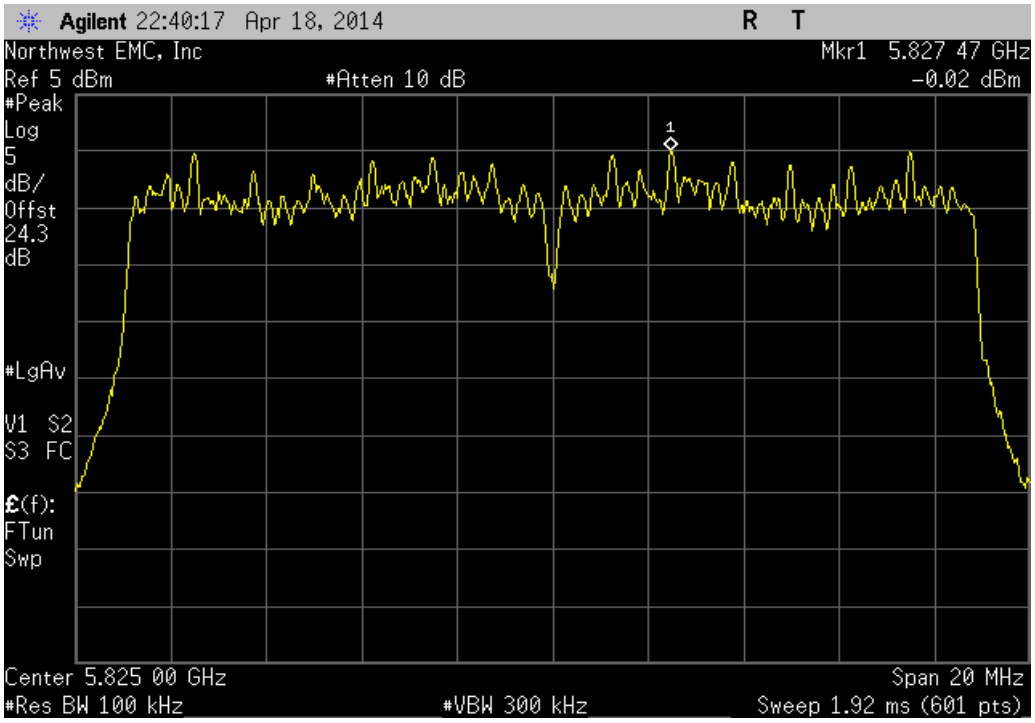
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.466	-15.2	-14.734	8	Pass



B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.103	-15.2	-15.097	8	Pass

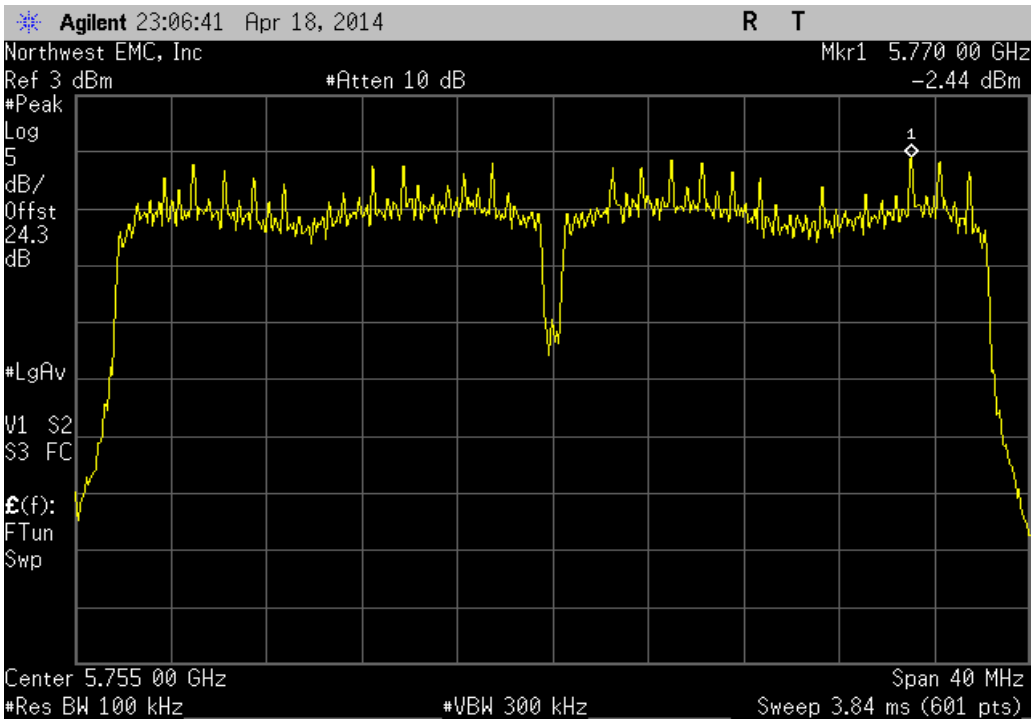


B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.017	-15.2	-15.217	8	Pass



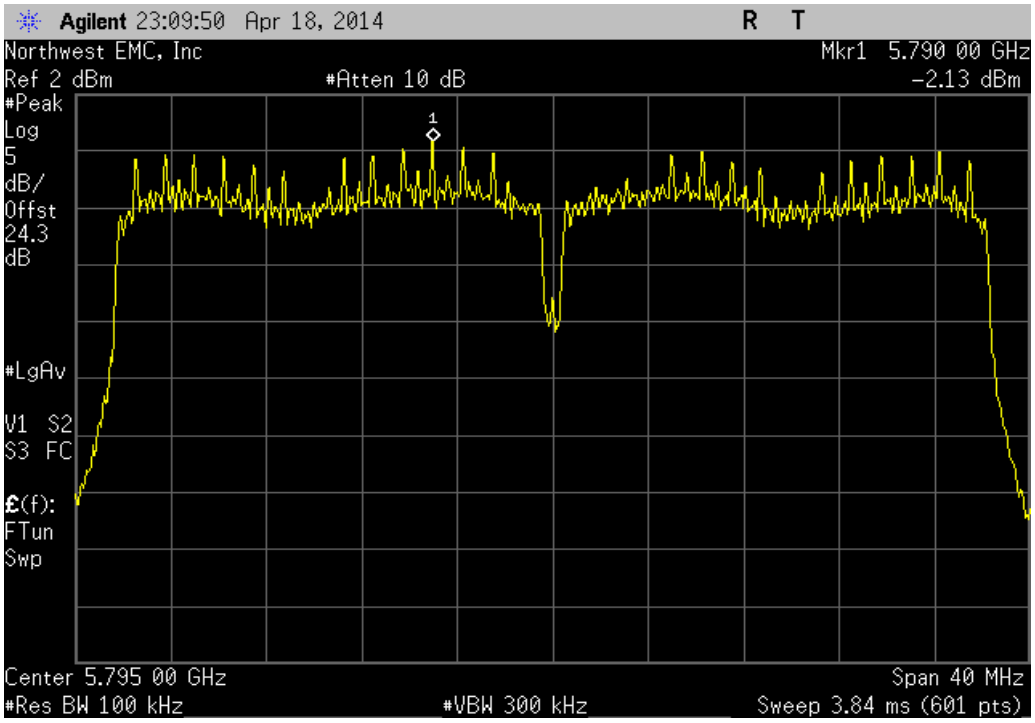
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.443	-15.2	-17.643	8	Pass

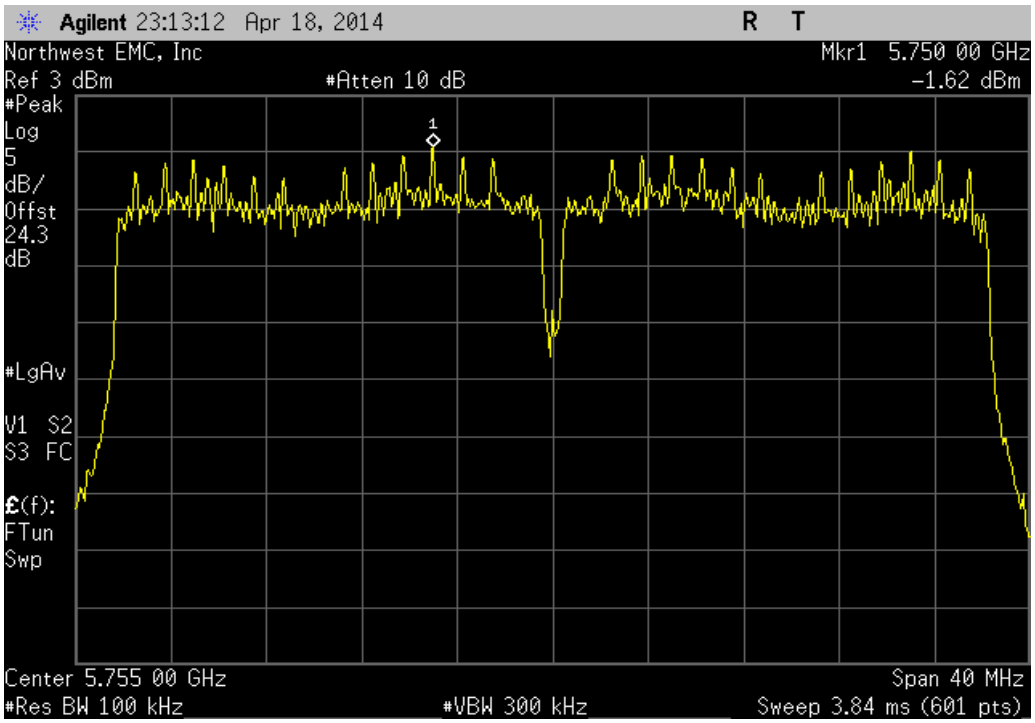


B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

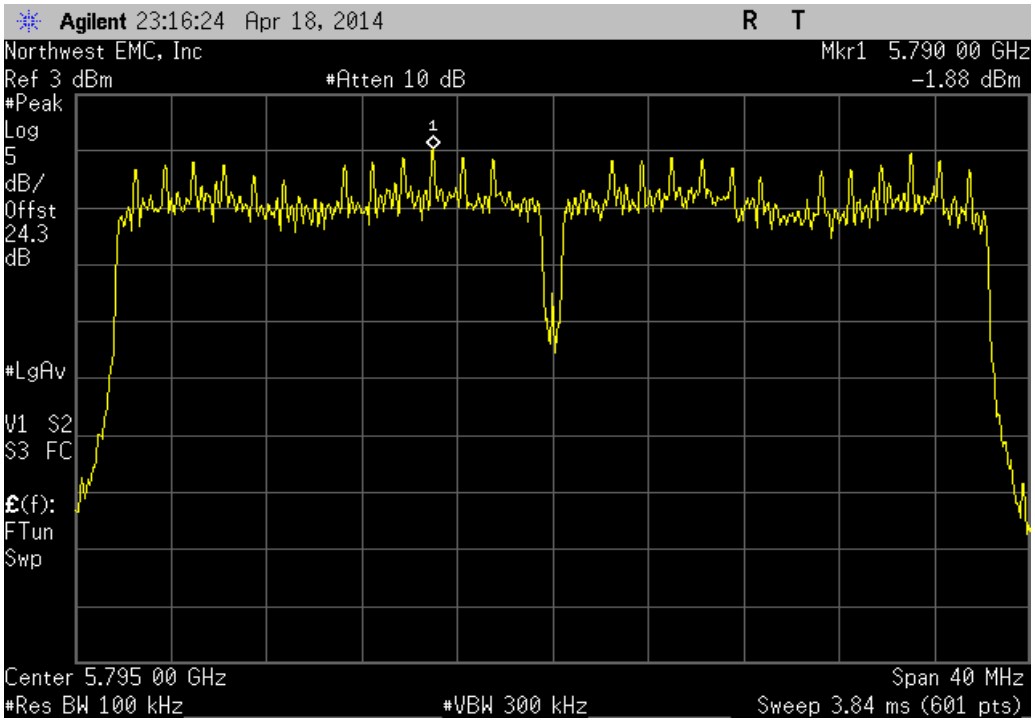
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.13	-15.2	-17.33	8	Pass



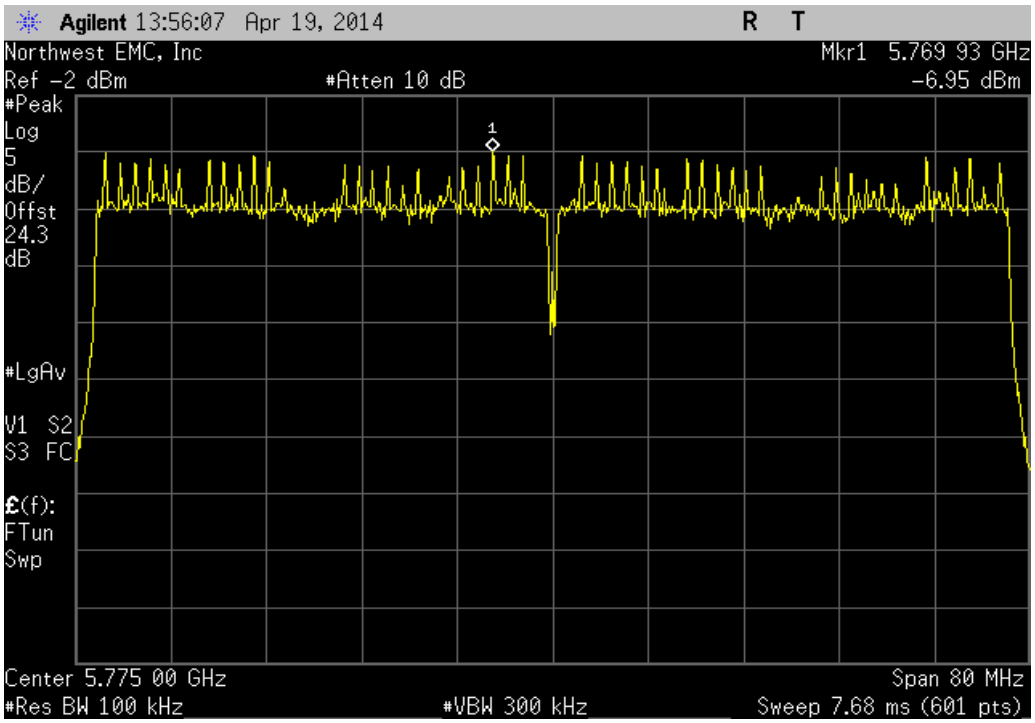
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-1.616	-15.2	-16.816	8	Pass



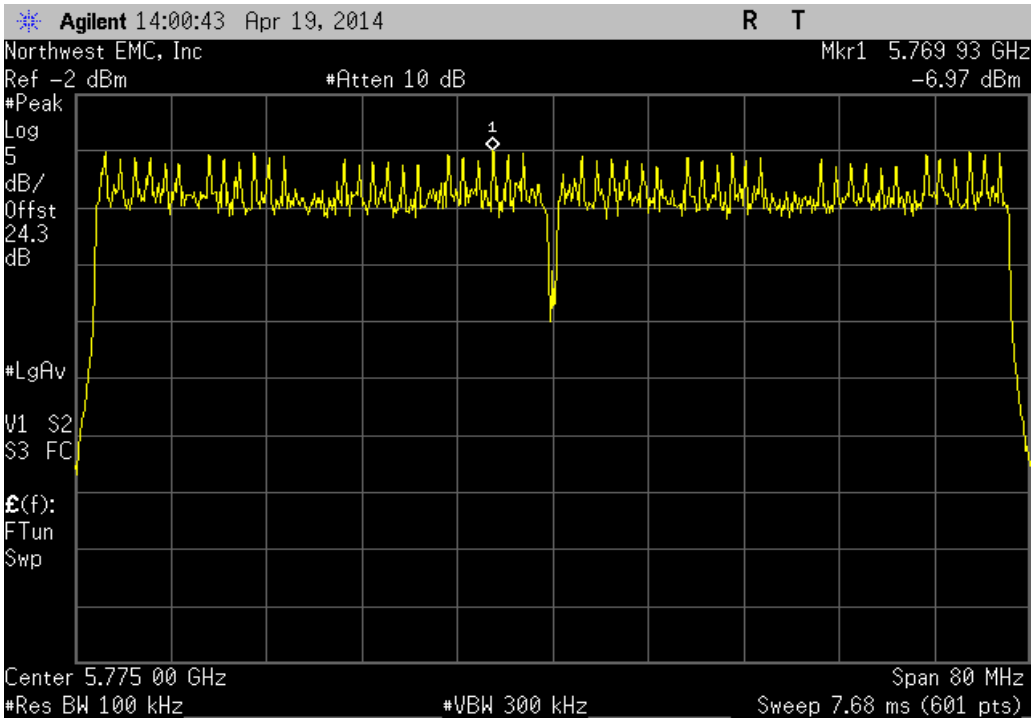
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-1.877	-15.2	-17.077	8	Pass



B IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-6.953	-15.2	-22.153	8	Pass



B IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-6.969	-15.2	-22.169	8	Pass



POWER SPECTRAL DENSITY

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

BWCF = 10*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/23/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

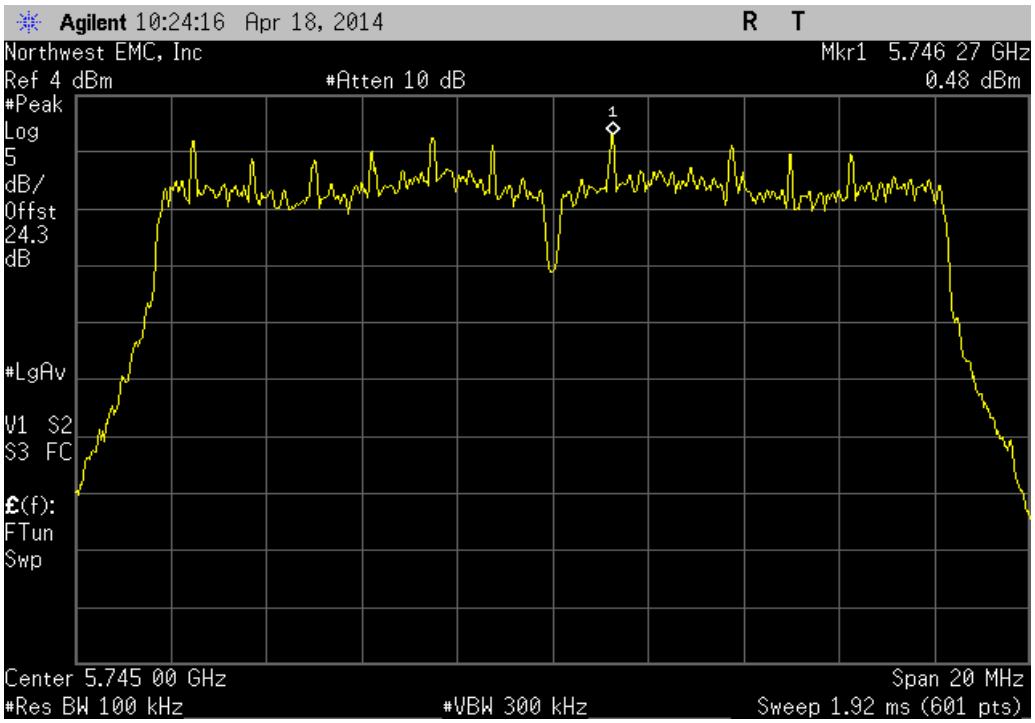
DEVIATIONS FROM TEST STANDARD

None

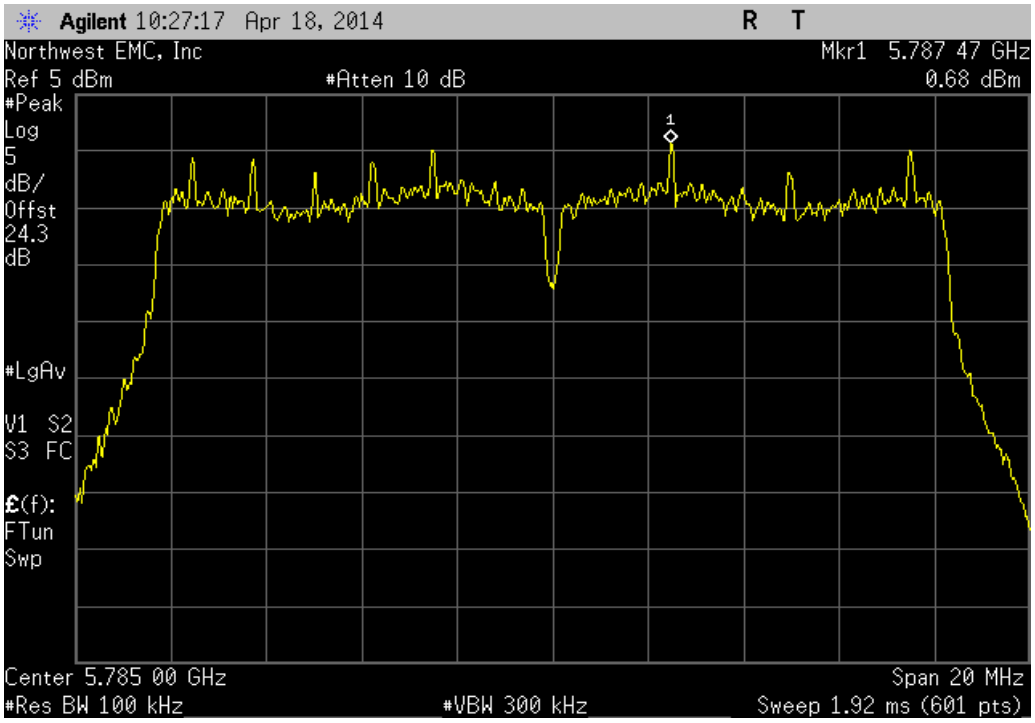
Configuration #	6	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
IEEE 802.11(a)					
20 MHz					
5725 MHz - 5850 MHz Band					
6 Mbps					
Low Channel 149, 5745 M	0.483	-15.2	-14.717	8	Pass
Mid Channel 157, 5785 MH	0.678	-15.2	-14.522	8	Pass
High Channel 165, 5825 M	0.041	-15.2	-15.159	8	Pass
36 Mbps					
Low Channel 149, 5745 M	0.388	-15.2	-14.812	8	Pass
Mid Channel 157, 5785 MH	0.415	-15.2	-14.785	8	Pass
High Channel 165, 5825 M	-0.147	-15.2	-15.347	8	Pass
54 Mbps					
Low Channel 149, 5745 M	0.389	-15.2	-14.811	8	Pass
Mid Channel 157, 5785 MH	0.361	-15.2	-14.839	8	Pass
High Channel 165, 5825 M	0.378	-15.2	-14.822	8	Pass
IEEE 802.11(n)					
20 MHz					
5725 MHz - 5850 MHz Band					
HT, MCS7					
Low Channel 149, 5745 M	0.317	-15.2	-14.883	8	Pass
Mid Channel 157, 5785 MH	-0.089	-15.2	-15.289	8	Pass
High Channel 165, 5825 M	-1.708	-15.2	-16.908	8	Pass
40 MHz					
5725 MHz - 5850 MHz Band					
HT, MCS7					
Low Channel 149/153, 575	-2.302	-15.2	-17.502	8	Pass
High Channel 157/161, 57!	-2.787	-15.2	-17.987	8	Pass
IEEE 802.11(ac)					
20 MHz					
5725 MHz - 5850 MHz Band					
VHT, MCS0					
Low Channel 149, 5745 M	-0.372	-15.2	-15.572	8	Pass
Mid Channel 157, 5785 MH	-0.092	-15.2	-15.292	8	Pass
High Channel 165, 5825 M	-0.203	-15.2	-15.403	8	Pass
VHT, MCS8					
Low Channel 149, 5745 M	0.303	-15.2	-14.897	8	Pass
Mid Channel 157, 5785 MH	0.26	-15.2	-14.94	8	Pass
High Channel 165, 5825 M	0.267	-15.2	-14.933	8	Pass
40 MHz					
5725 MHz - 5850 MHz Band					
VHT, MCS0					
Low Channel 149/153, 575	-2.548	-15.2	-17.748	8	Pass
High Channel 157/161, 57!	-2.681	-15.2	-17.881	8	Pass
VHT, MCS9					
Low Channel 149/153, 575	-2.347	-15.2	-17.547	8	Pass
High Channel 157/161, 57!	-2.426	-15.2	-17.626	8	Pass
80 MHz					
5725 MHz - 5850 MHz Band					
VHT, MCS0					
Low Channel 149/153/157	-7.291	-15.2	-22.491	8	Pass
VHT, MCS9					
Low Channel 149/153/157	-7.383	-15.2	-22.583	8	Pass

IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.483	-15.2	-14.717	8	Pass

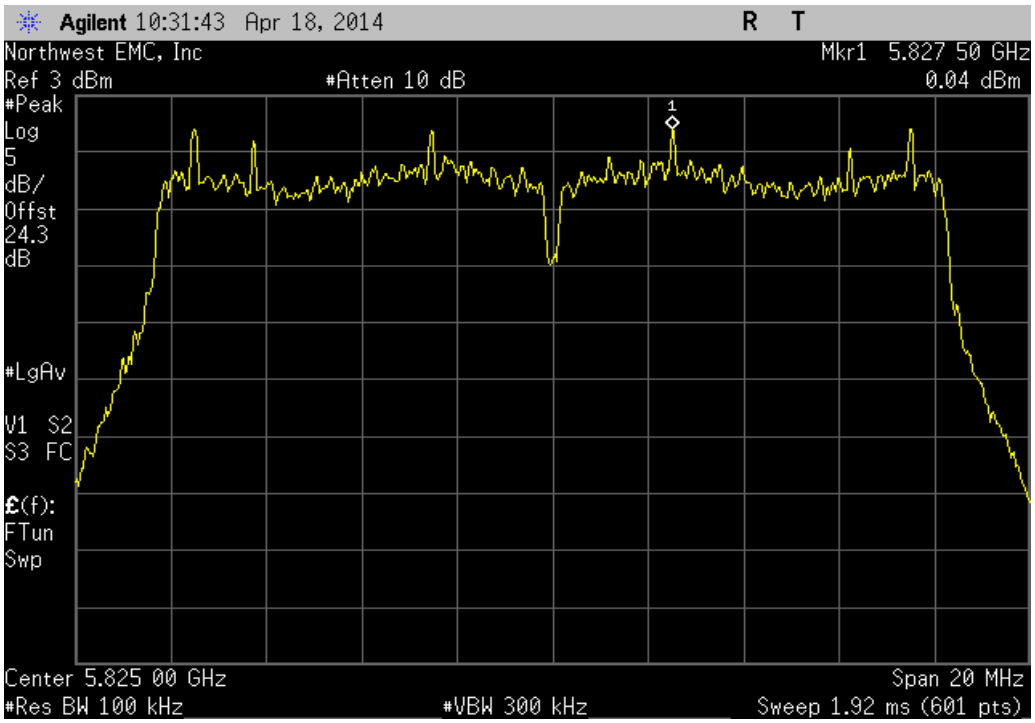


IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.678	-15.2	-14.522	8	Pass

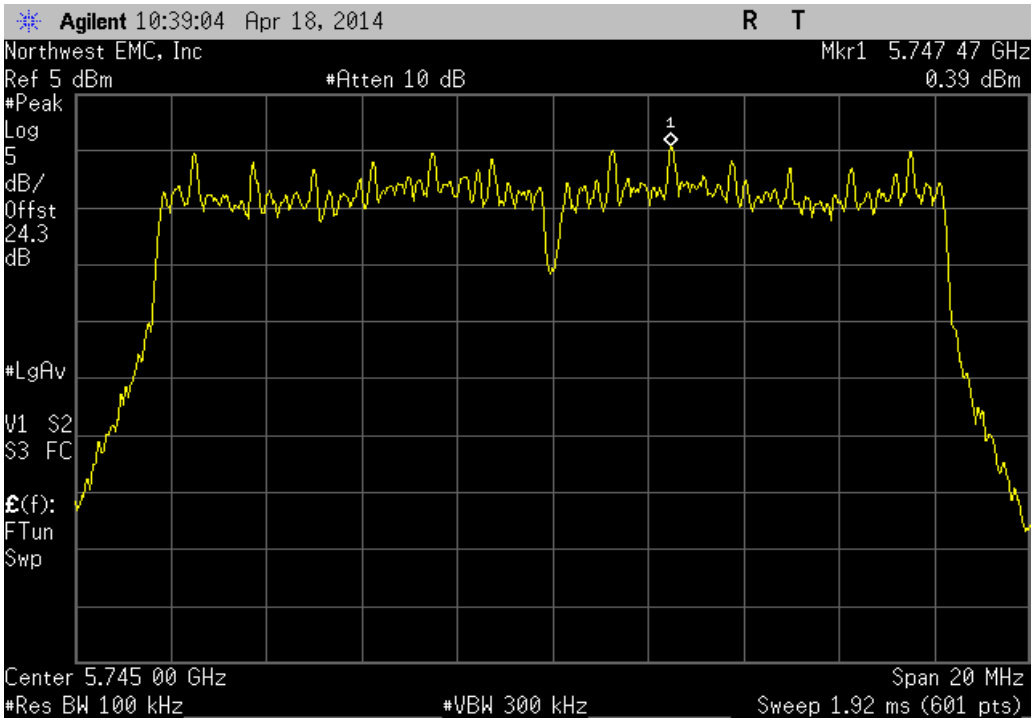


POWER SPECTRAL DENSITY

IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.041	-15.2	-15.159	8	Pass

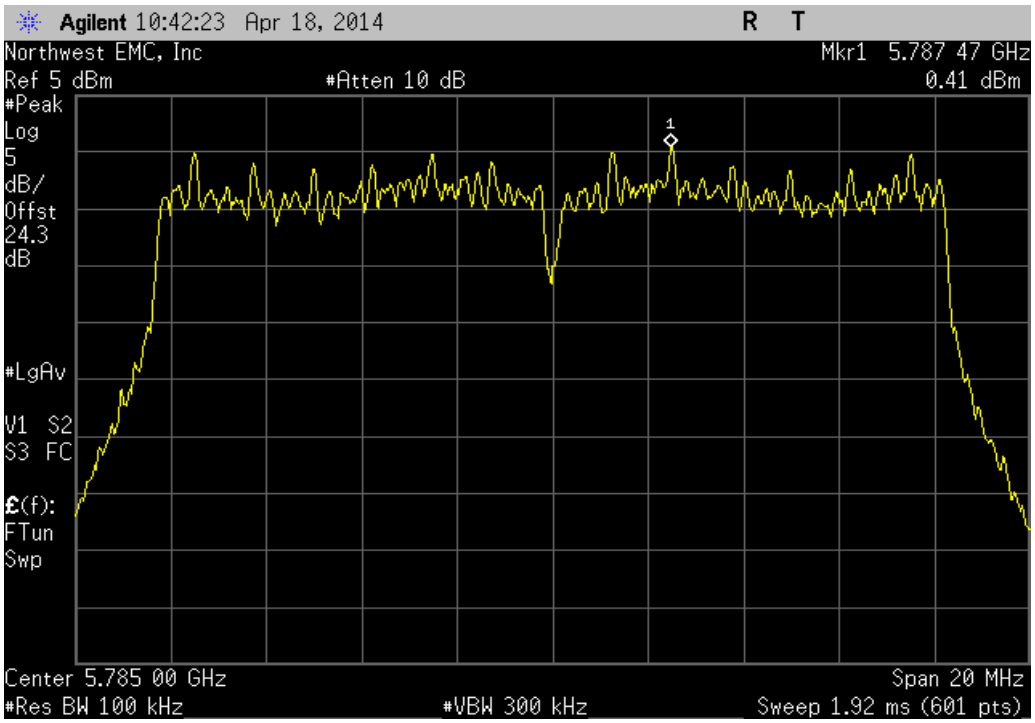


IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.388	-15.2	-14.812	8	Pass

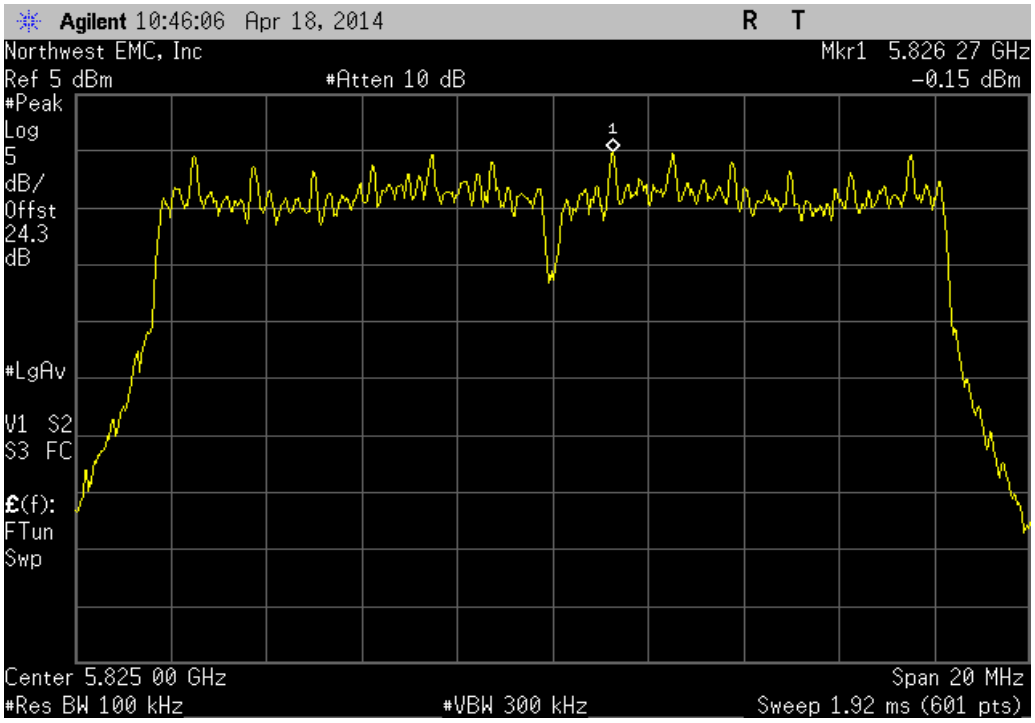


POWER SPECTRAL DENSITY

IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.415	-15.2	-14.785	8	Pass

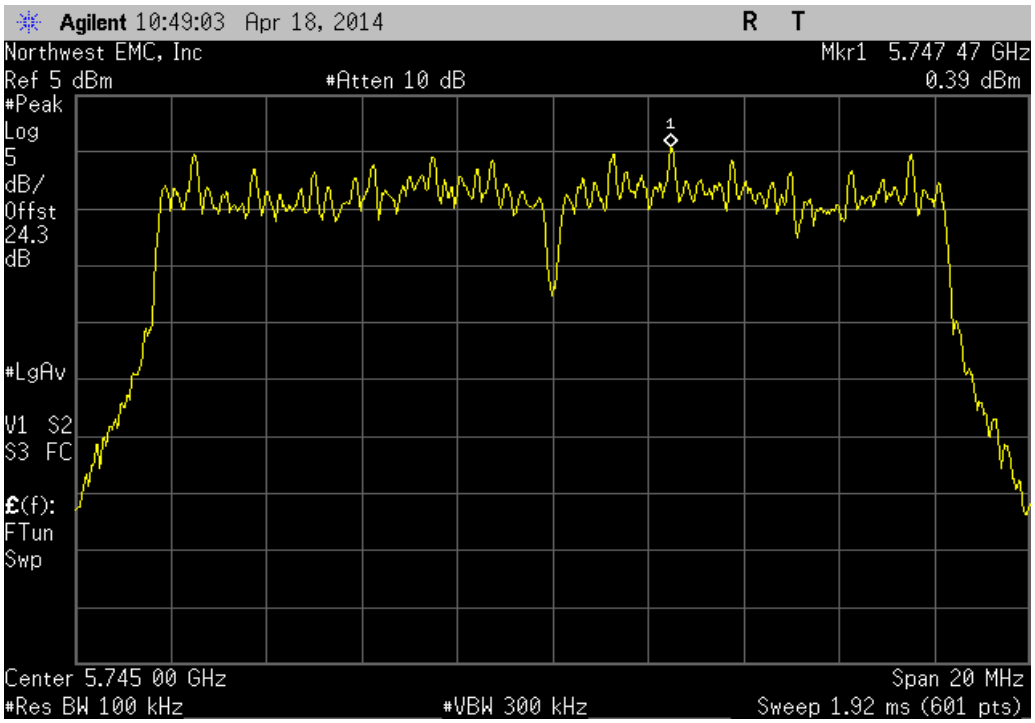


IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.147	-15.2	-15.347	8	Pass



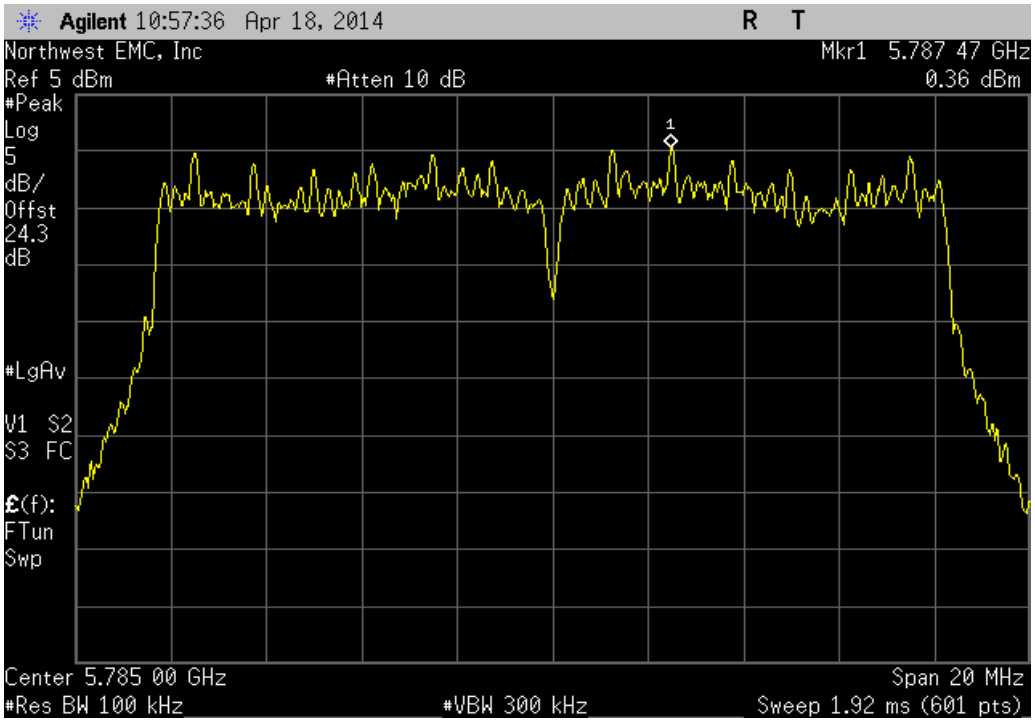
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.389	-15.2	-14.811	8	Pass



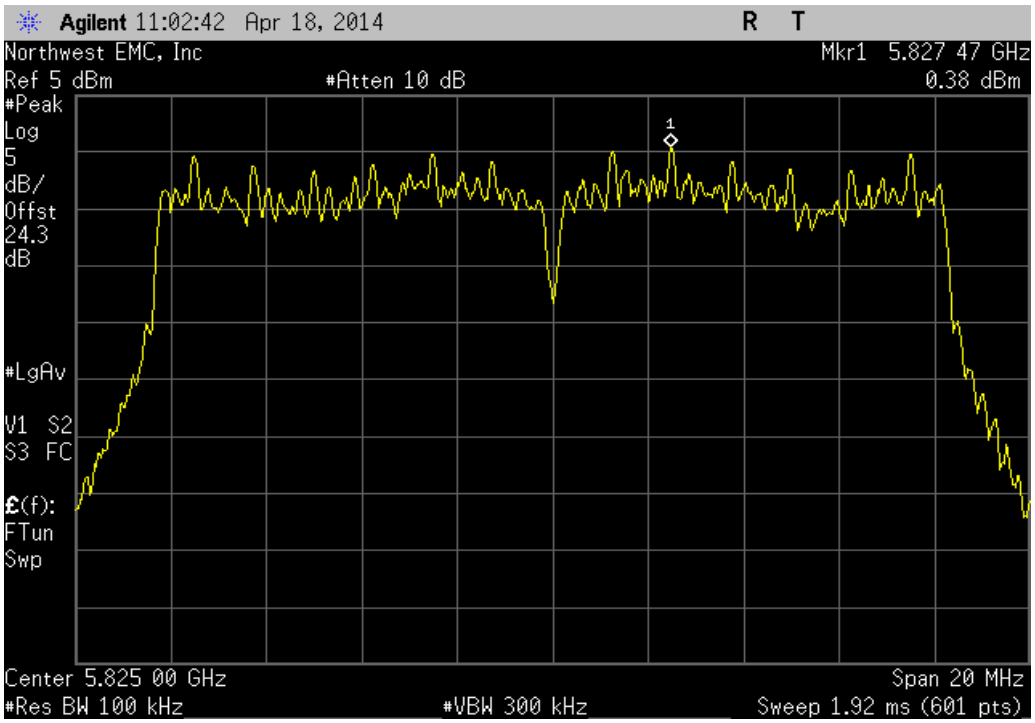
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Mid Channel 157, 5785 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.361	-15.2	-14.839	8	Pass



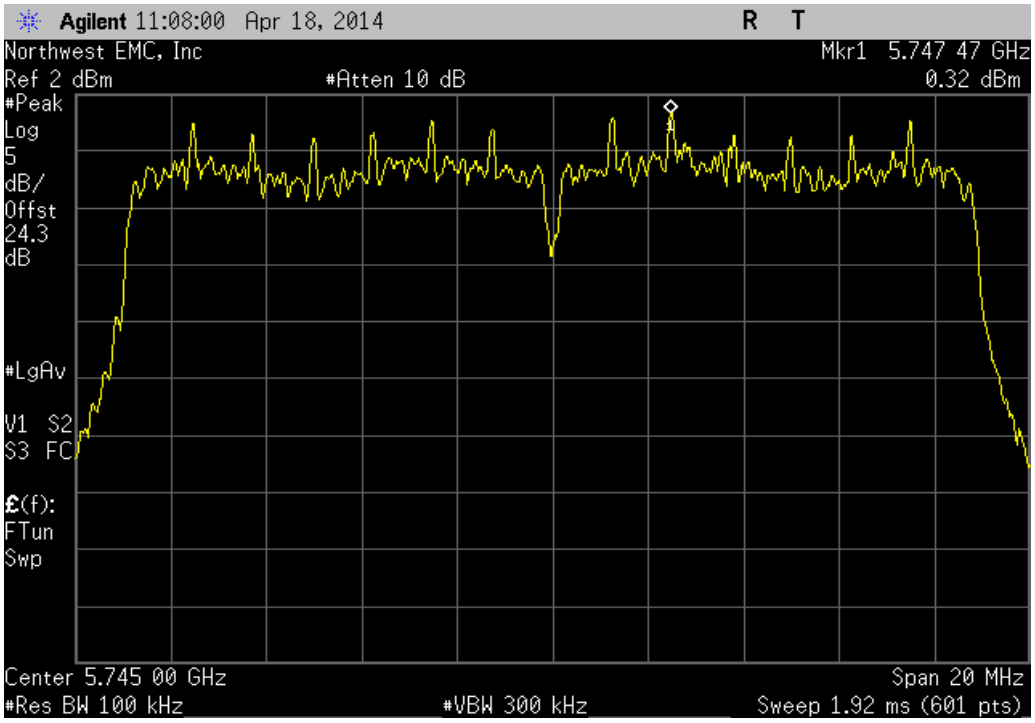
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.378	-15.2	-14.822	8	Pass



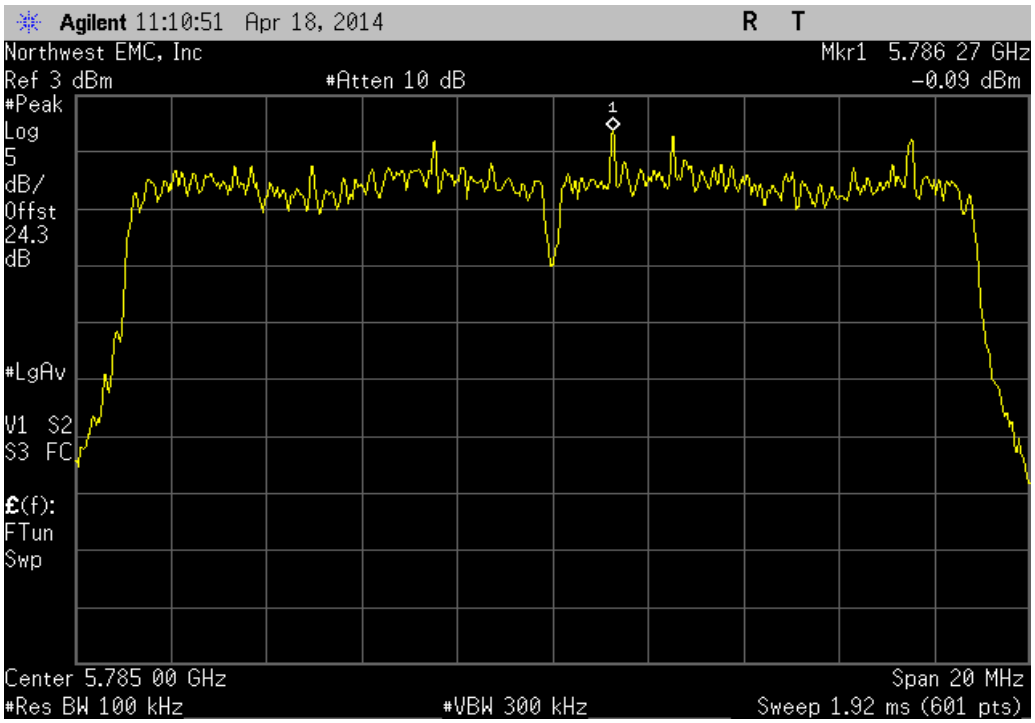
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.317	-15.2	-14.883	8	Pass

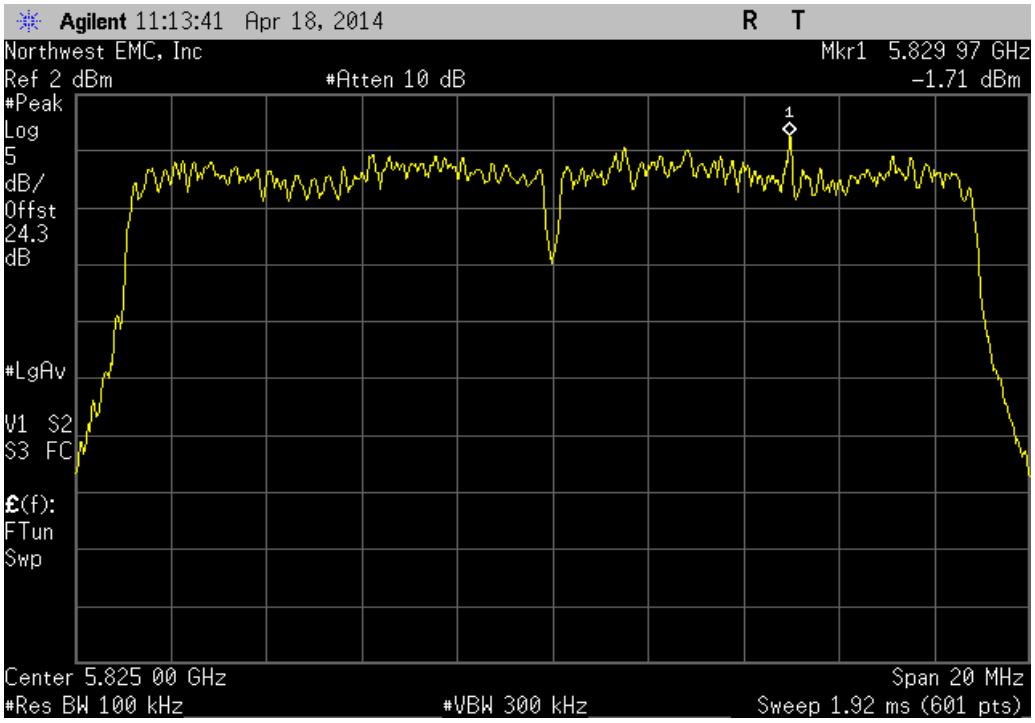


POWER SPECTRAL DENSITY

IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.089	-15.2	-15.289	8	Pass

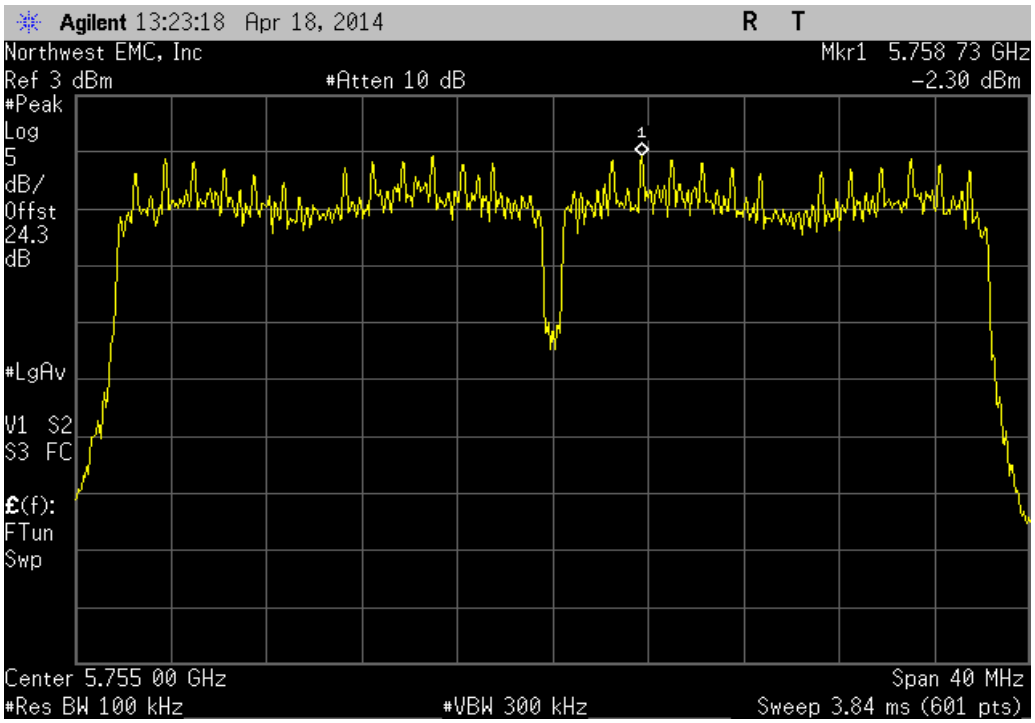


IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 165, 5825 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-1.708	-15.2	-16.908	8	Pass



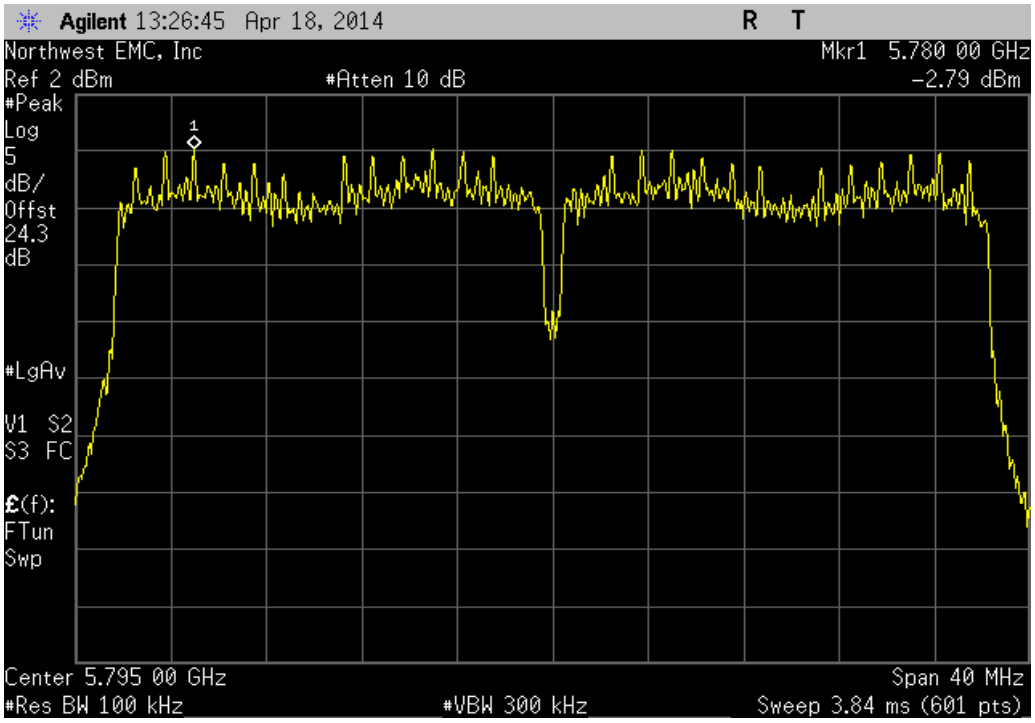
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149/153, 5755 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.302	-15.2	-17.502	8	Pass

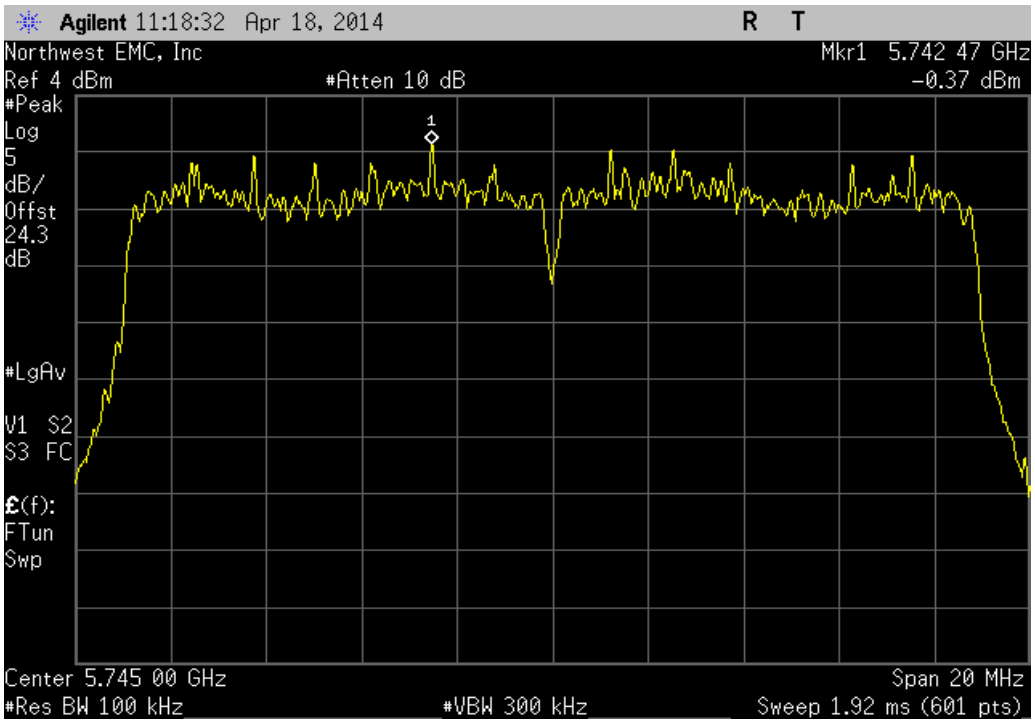


IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 157/161, 5795 MHz

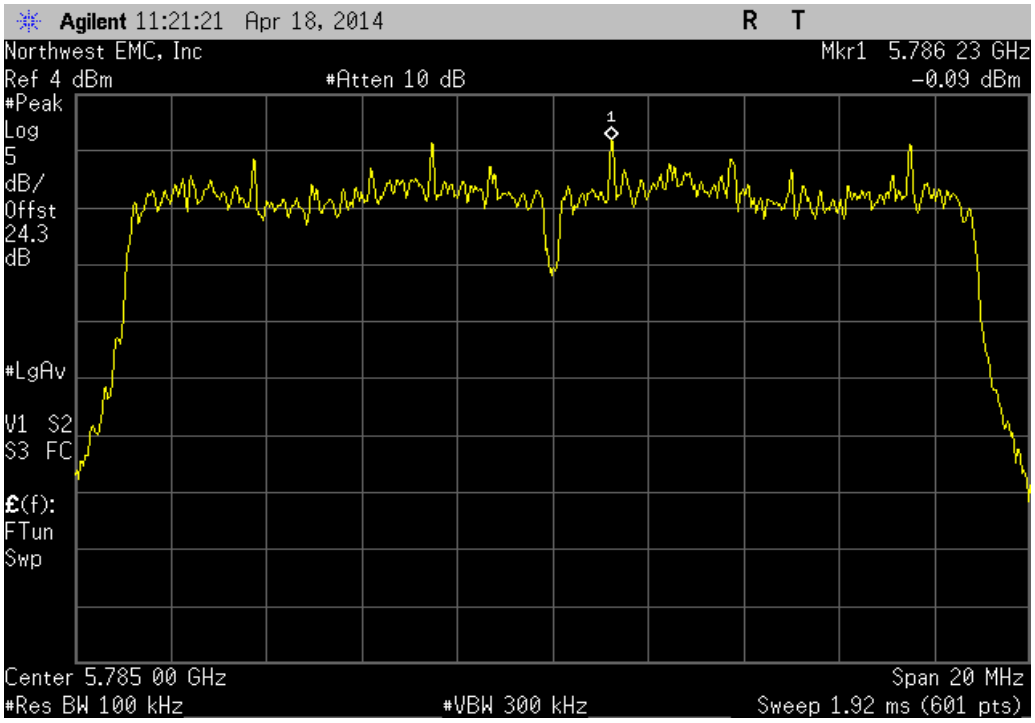
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.787	-15.2	-17.987	8	Pass



IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.372	-15.2	-15.572	8	Pass

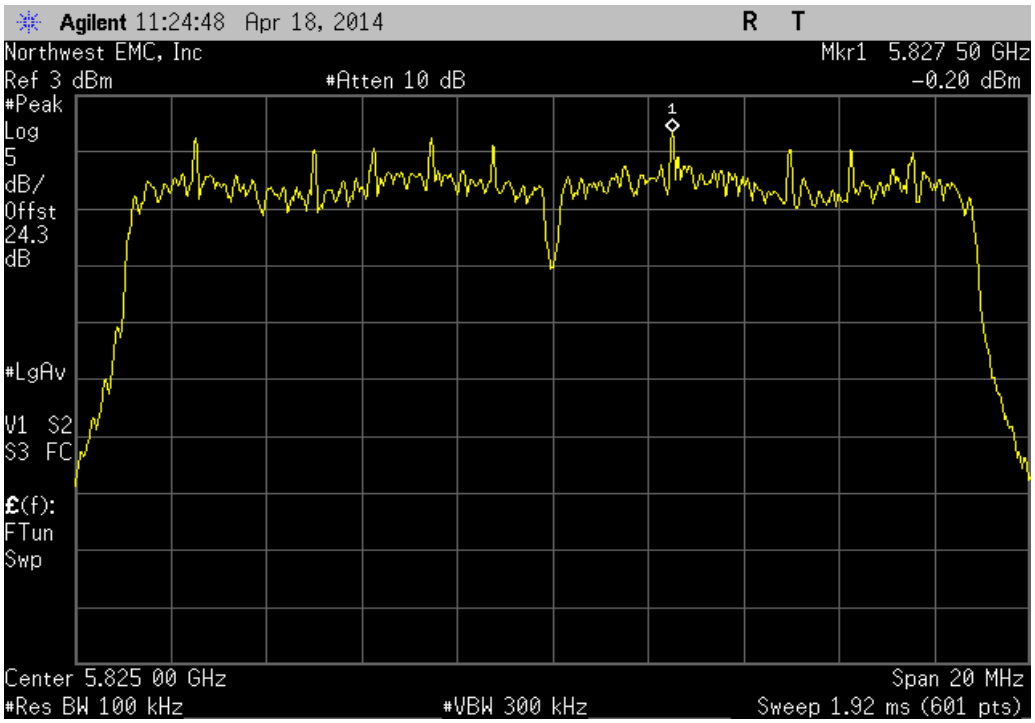


IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Mid Channel 157, 5785 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.092	-15.2	-15.292	8	Pass



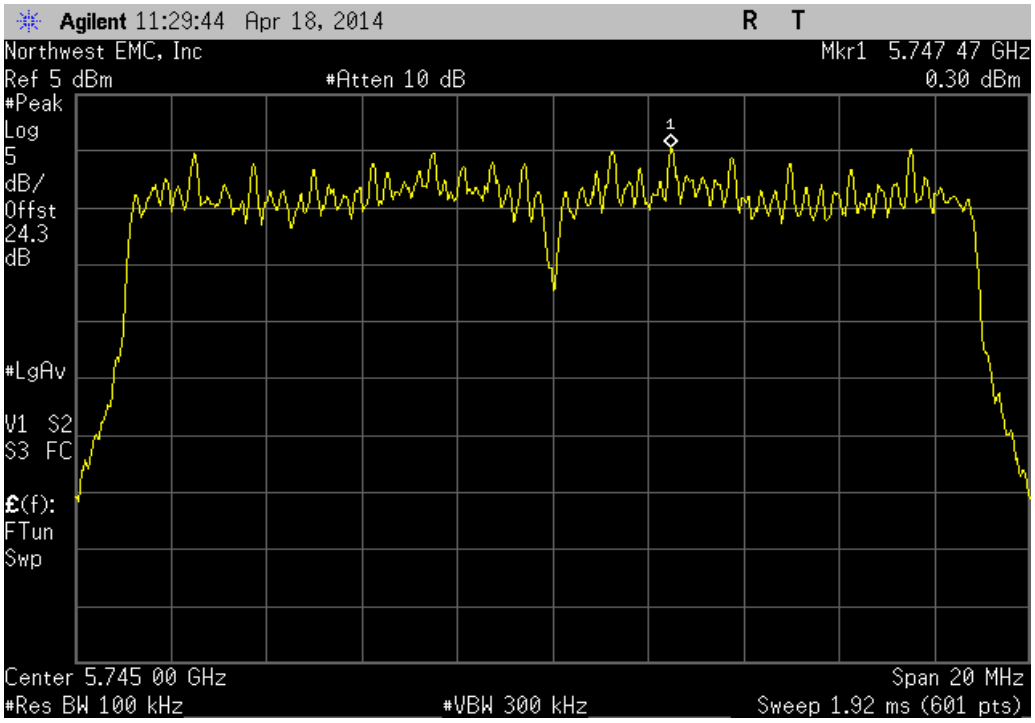
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-0.203	-15.2	-15.403	8	Pass



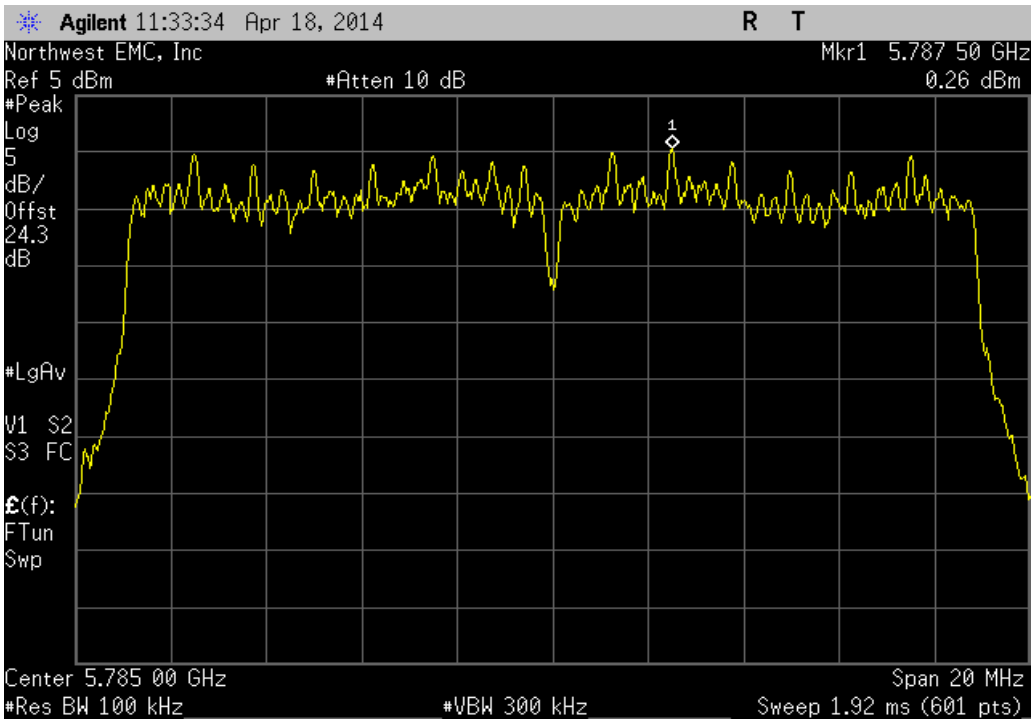
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.303	-15.2	-14.897	8	Pass



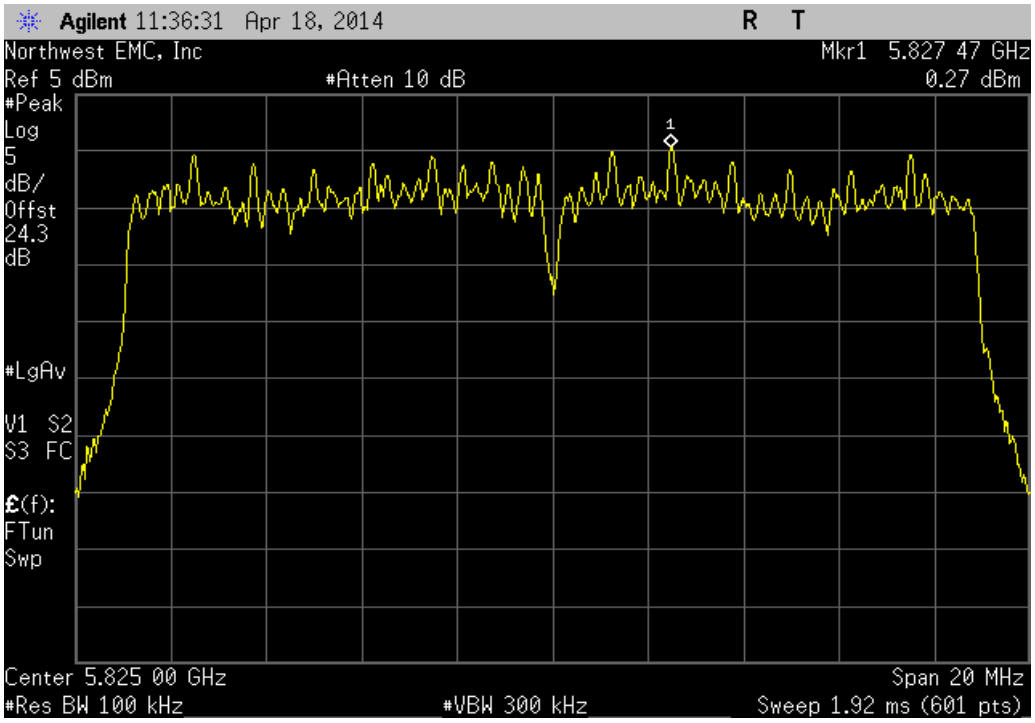
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Mid Channel 157, 5785 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.26	-15.2	-14.94	8	Pass

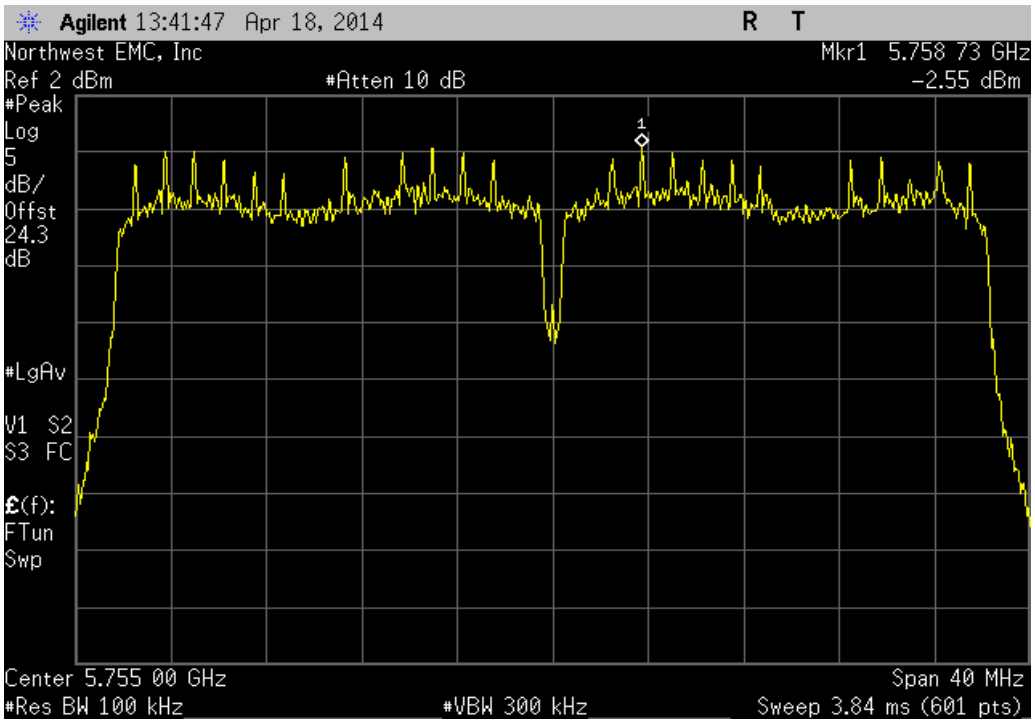


IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

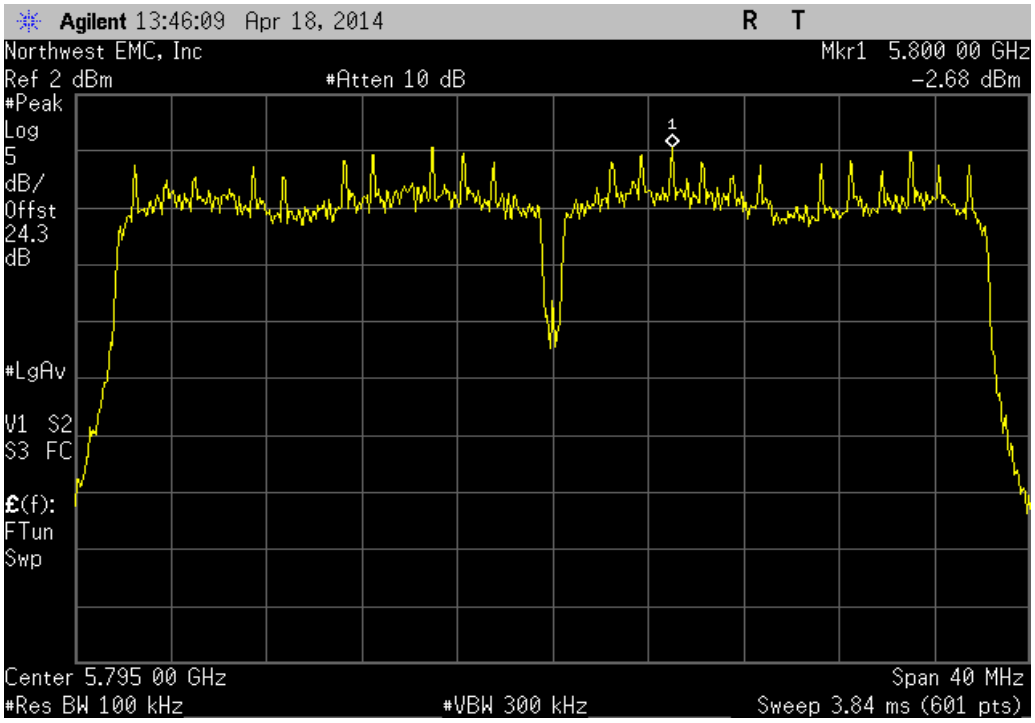
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		0.267	-15.2	-14.933	8	Pass



IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.548	-15.2	-17.748	8	Pass

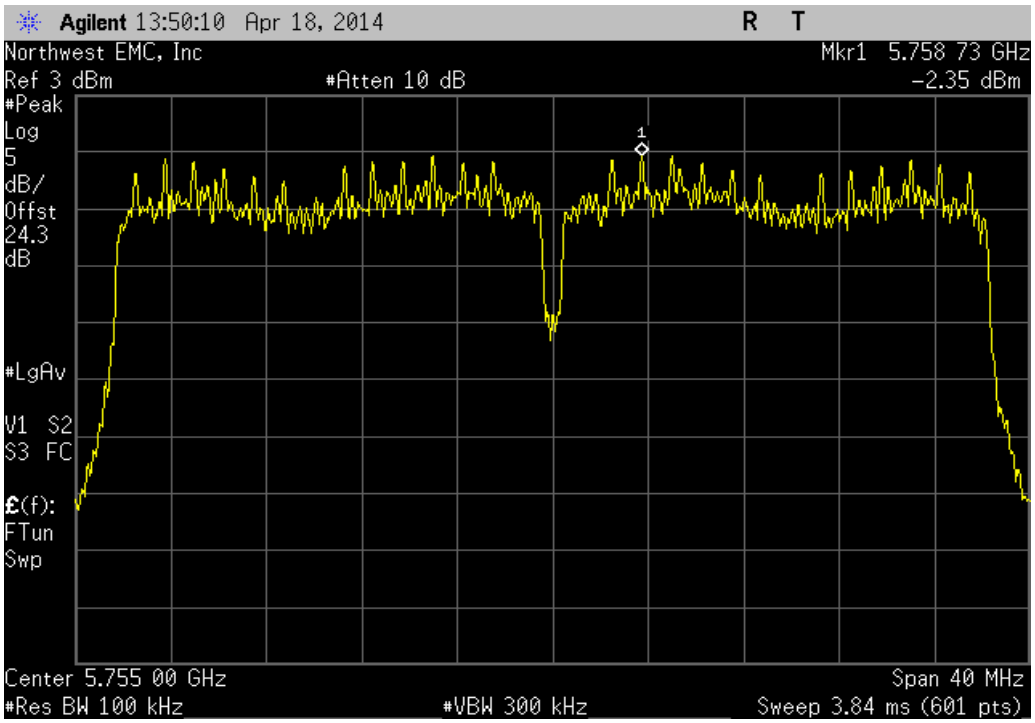


IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.681	-15.2	-17.881	8	Pass



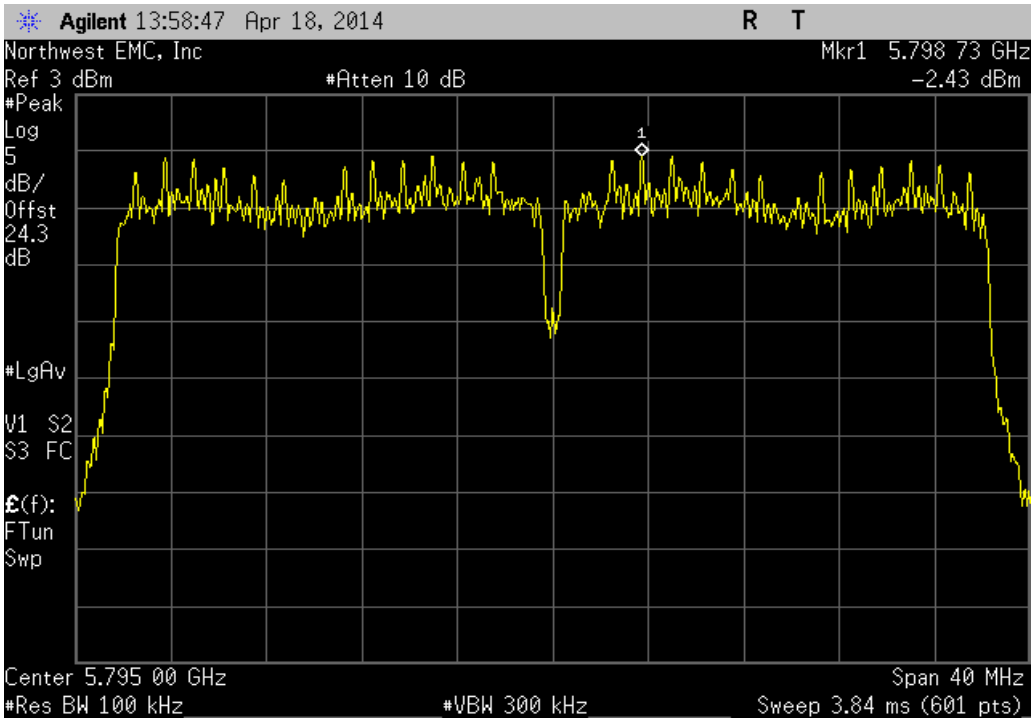
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.347	-15.2	-17.547	8	Pass

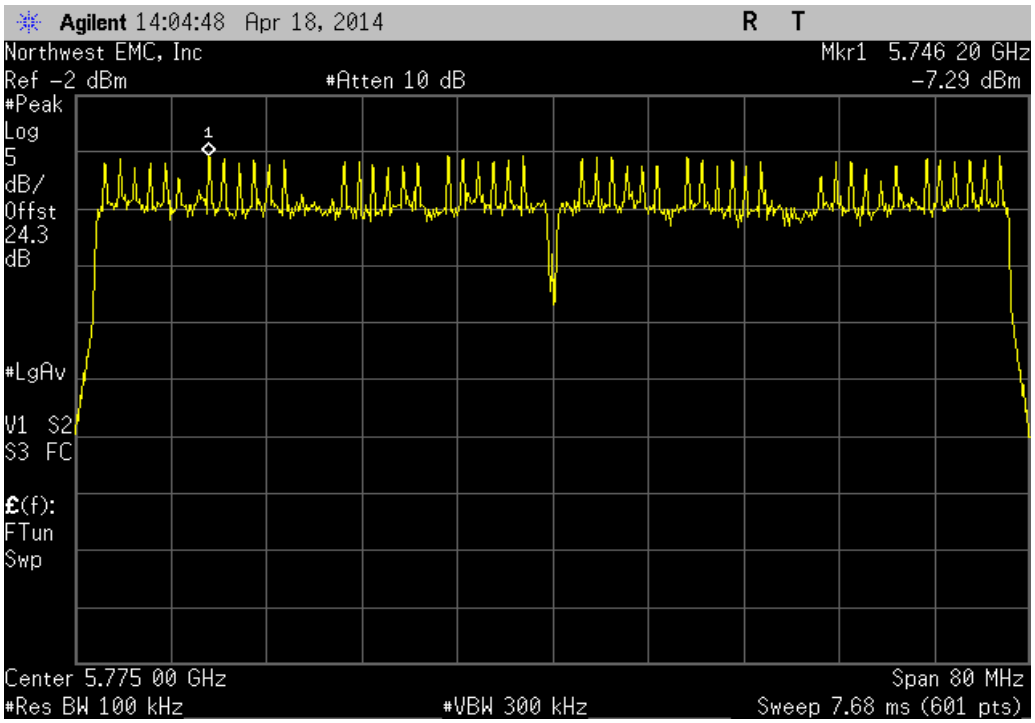


IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

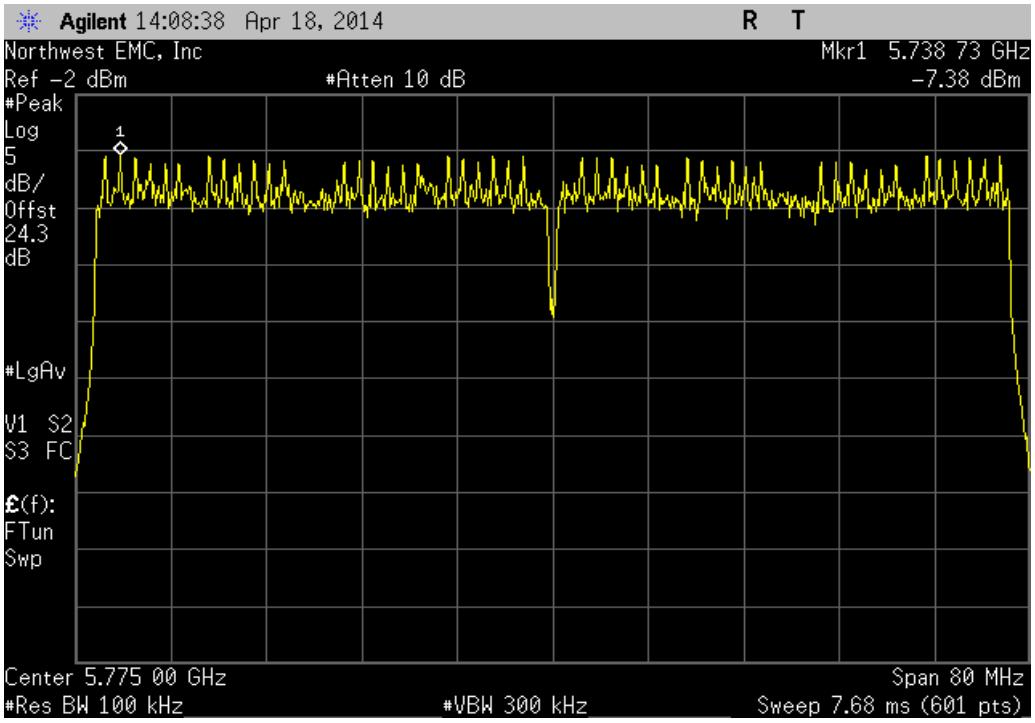
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-2.426	-15.2	-17.626	8	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-7.291	-15.2	-22.491	8	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
		-7.383	-15.2	-22.583	8	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			Work Order:	MCSO1698
Serial Number:	041148340753			Date:	03/22/14
Customer:	Microsoft Corporation			Temperature:	21.5°C
Attendees:	None			Humidity:	29%
Project:	1631			Barometric Pres.:	1007
Tested by:	Brandon Hobbs, Jared Ison	Power:	110VAC/60Hz	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

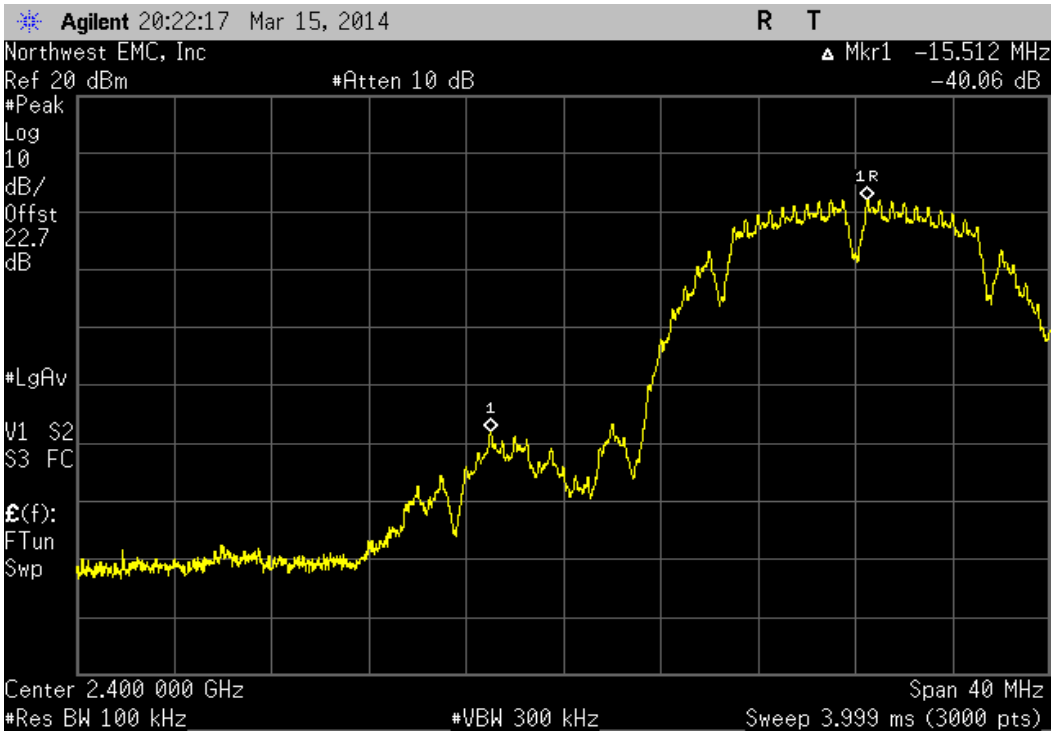
Configuration #	1	Signature

	Value	Limit	Result
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	-40.06 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-58.02 dBc	≤ -20 dBc	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	-43.47 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-60.21 dBc	≤ -20 dBc	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	-41.83 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-47.19 dBc	≤ -20 dBc	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	-44.94 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-46.24 dBc	≤ -20 dBc	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	-45.9 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-48.47 dBc	≤ -20 dBc	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	-45.19 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-41.91 dBc	≤ -20 dBc	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	-42.01 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-43.38 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

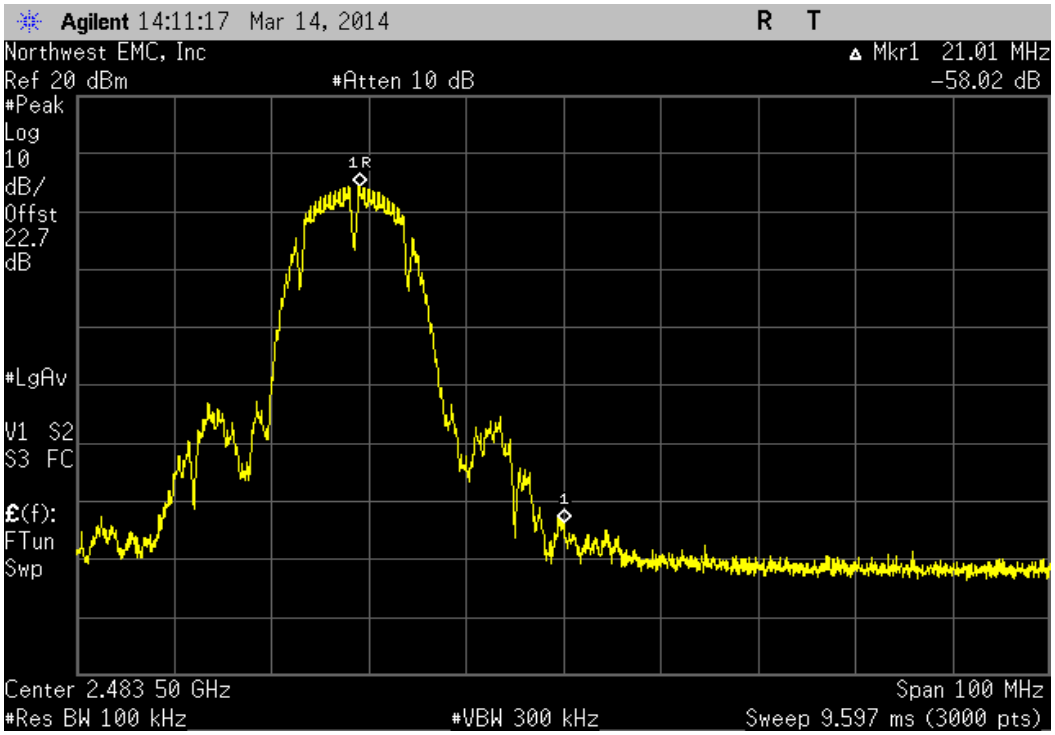
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-40.06 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

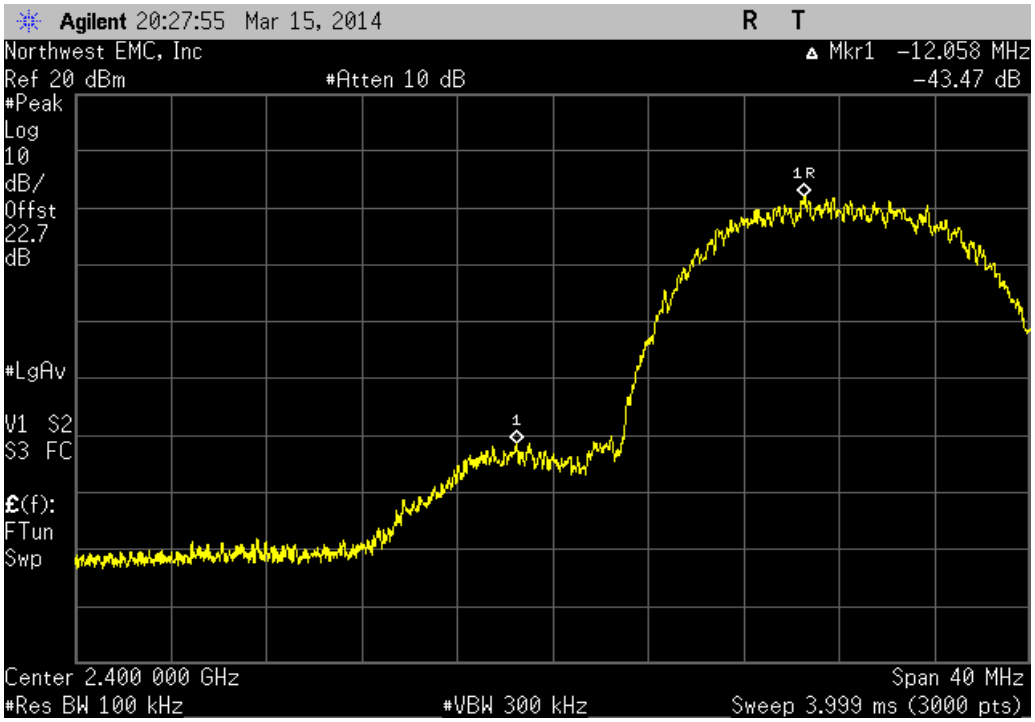
				Value	Limit	Result
				-58.02 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

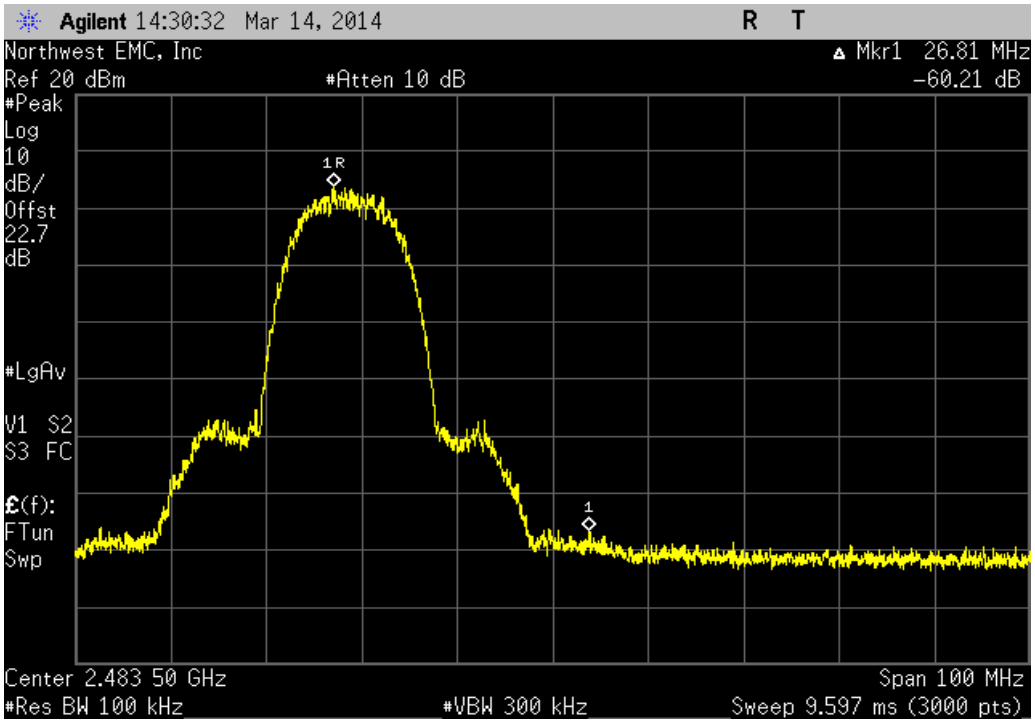
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-43.47 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

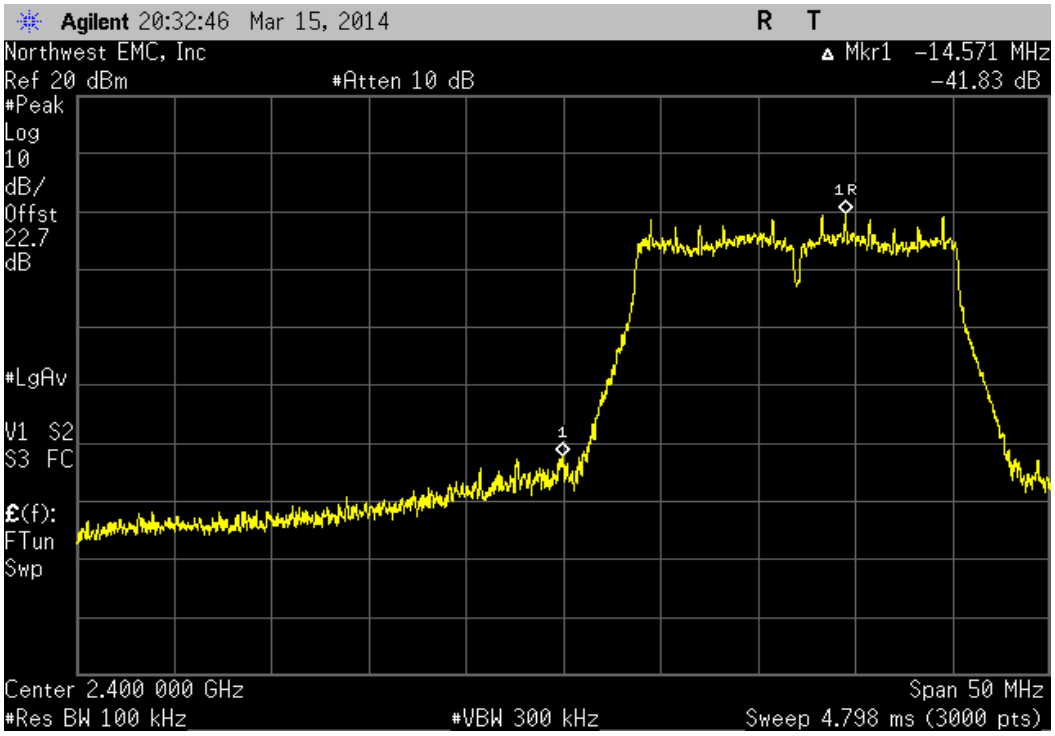
				Value	Limit	Result
				-60.21 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

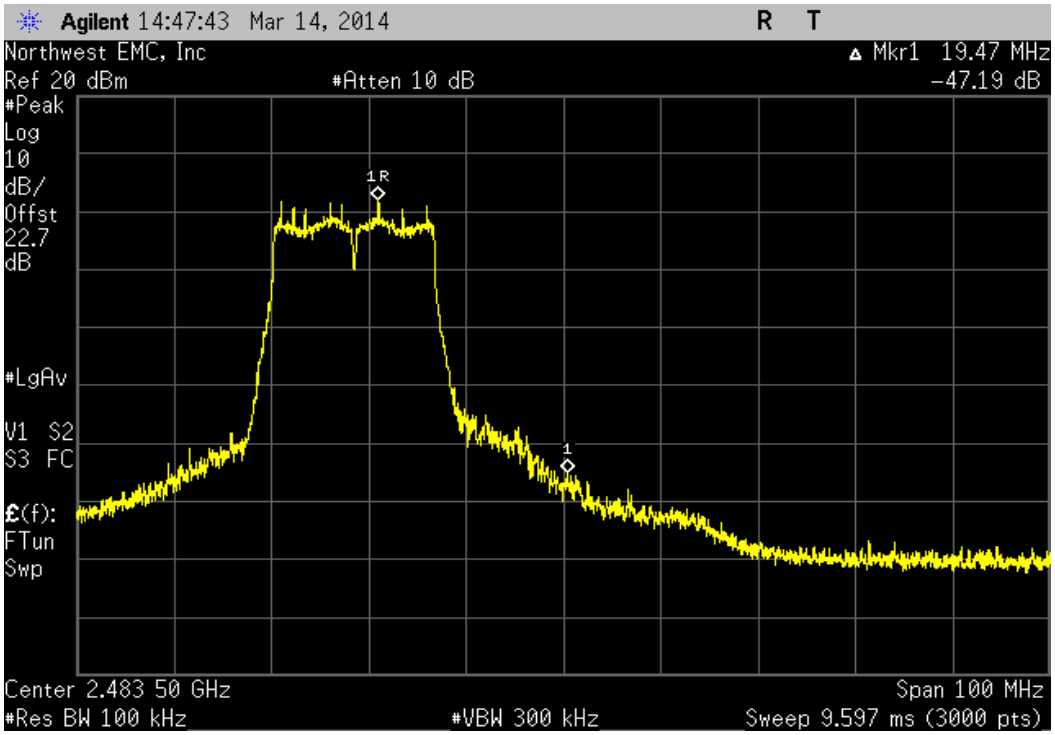
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-41.83 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

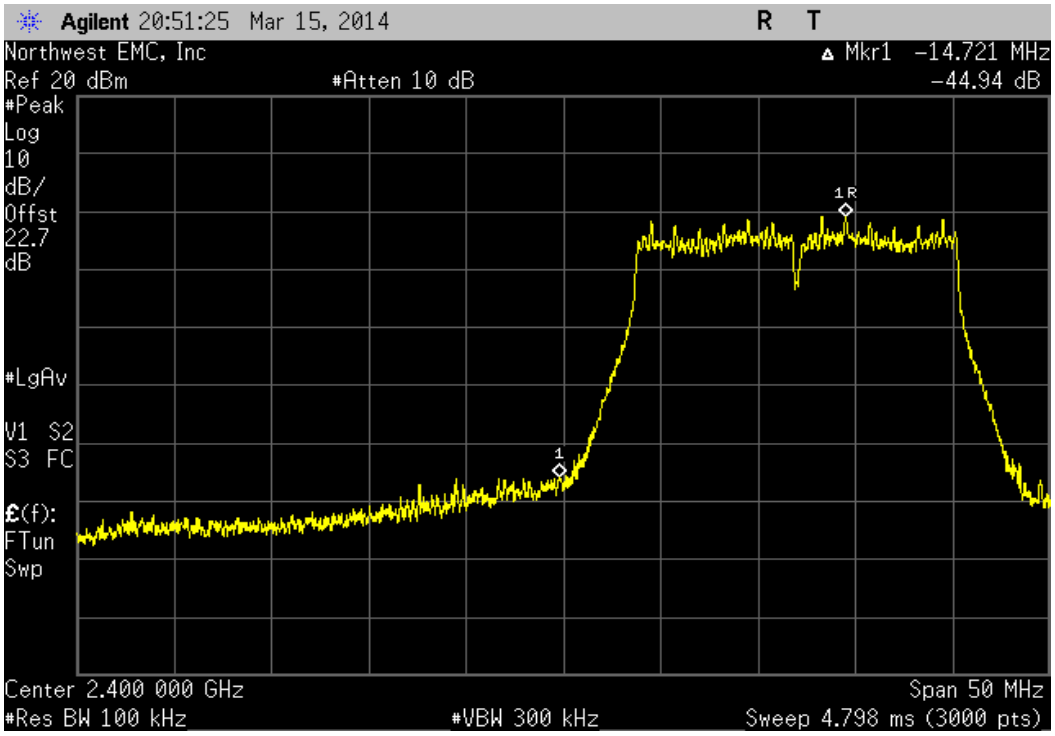
				Value	Limit	Result
				-47.19 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

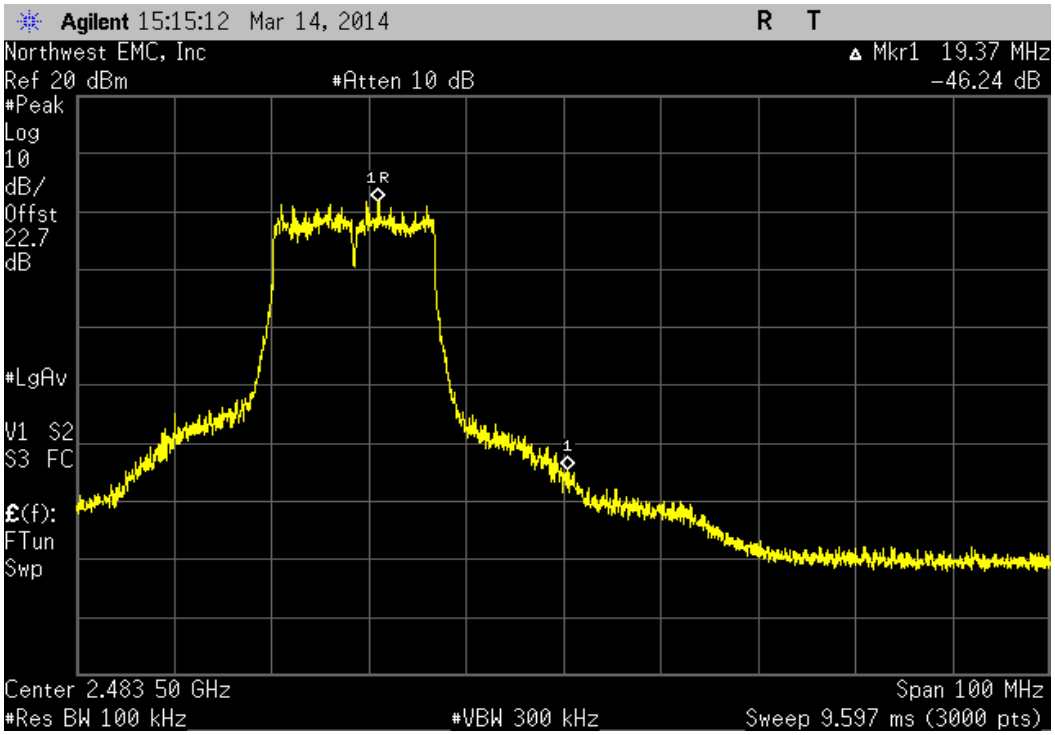
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-44.94 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

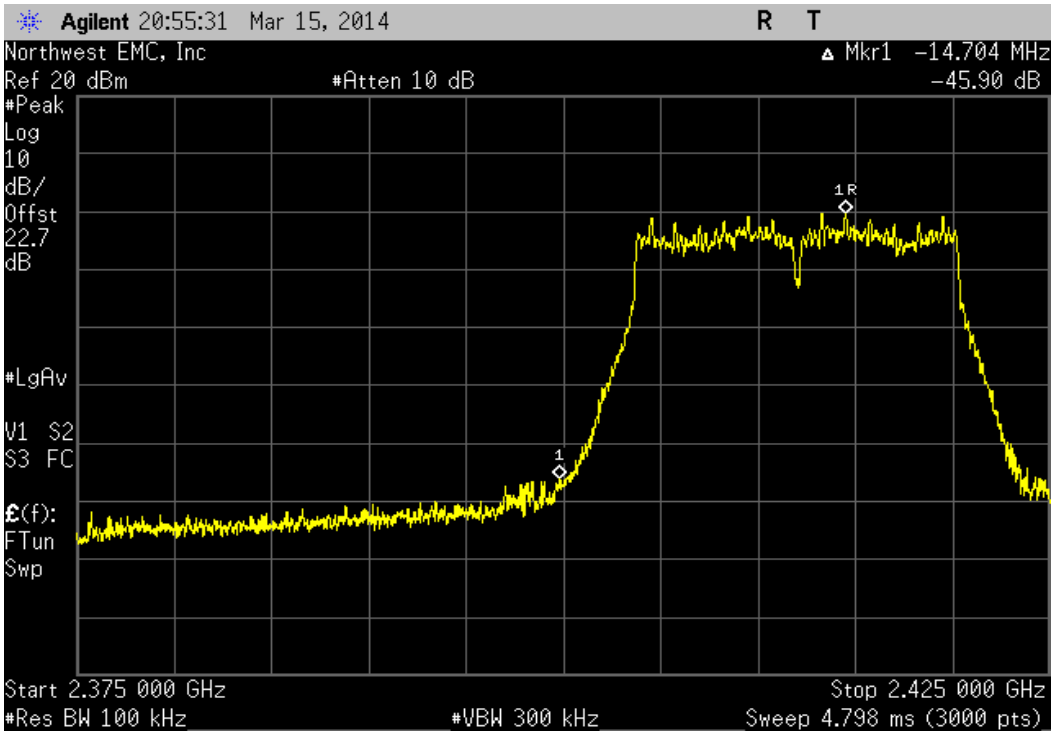
				Value	Limit	Result
				-46.24 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

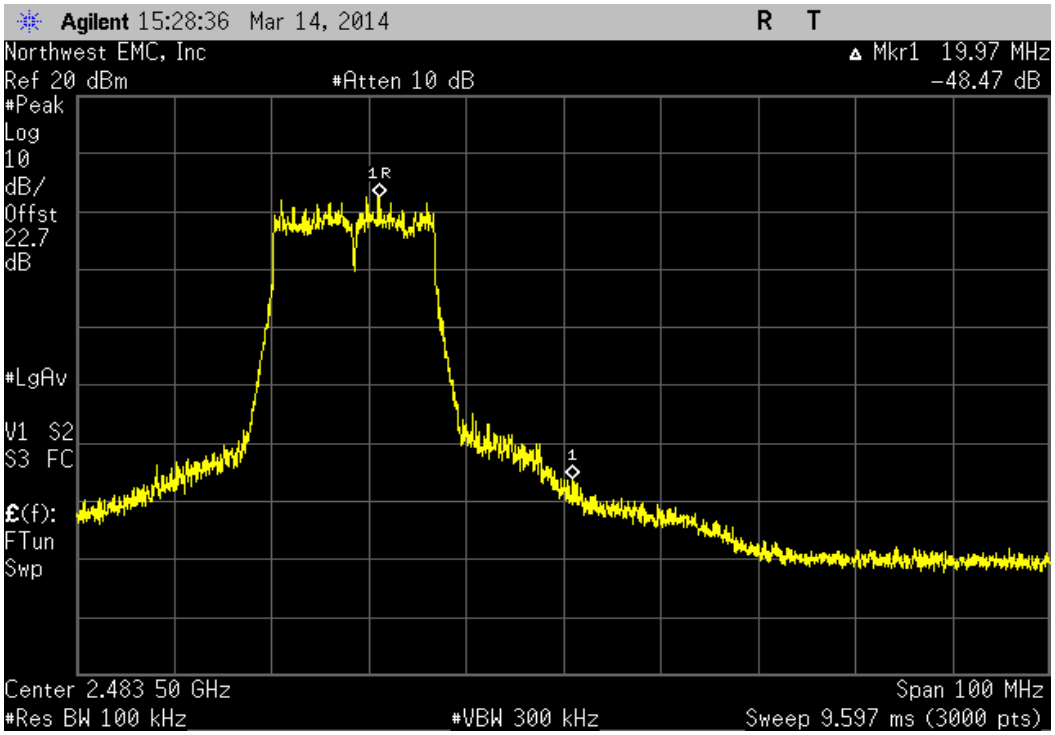
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-45.9 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

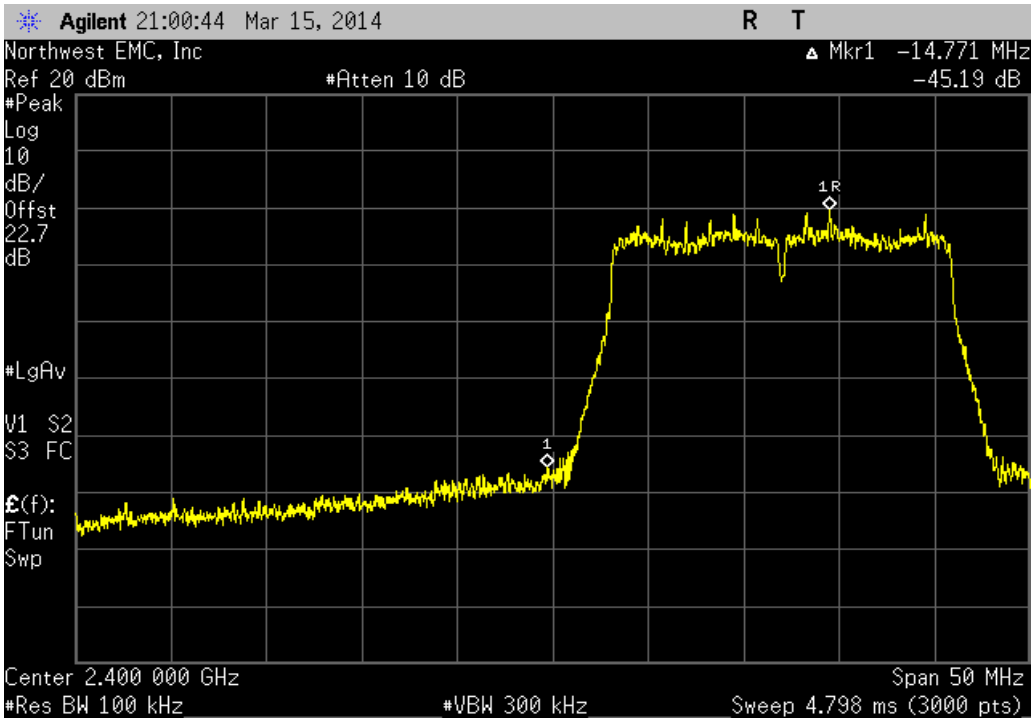
				Value	Limit	Result
				-48.47 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

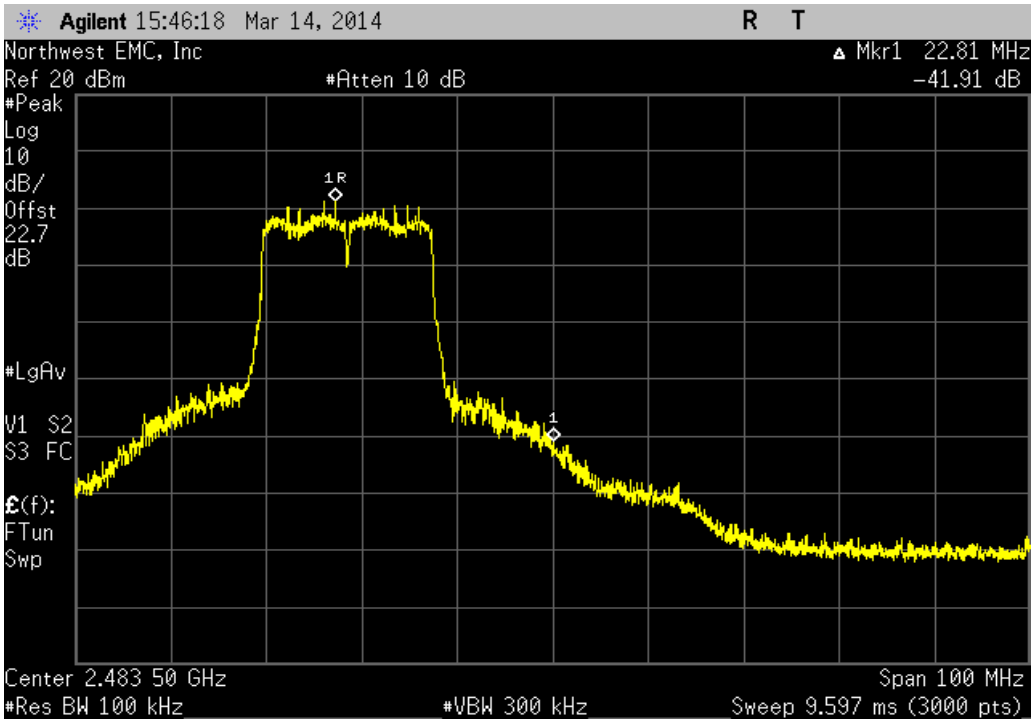
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-45.19 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

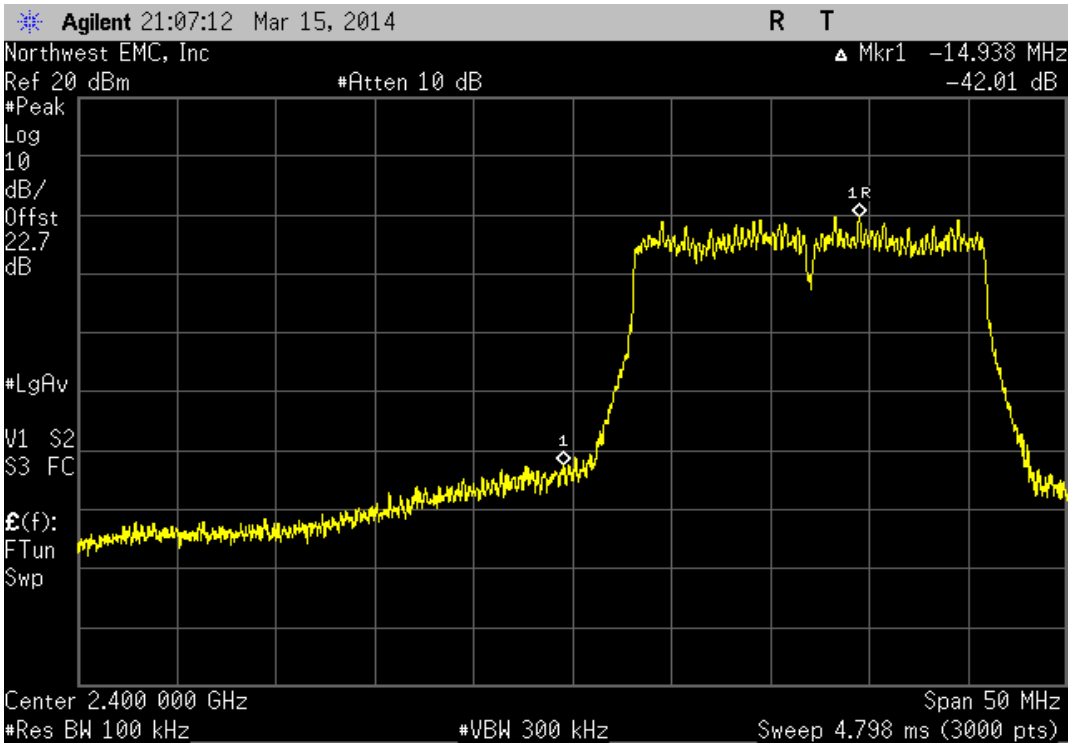
				Value	Limit	Result
				-41.91 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

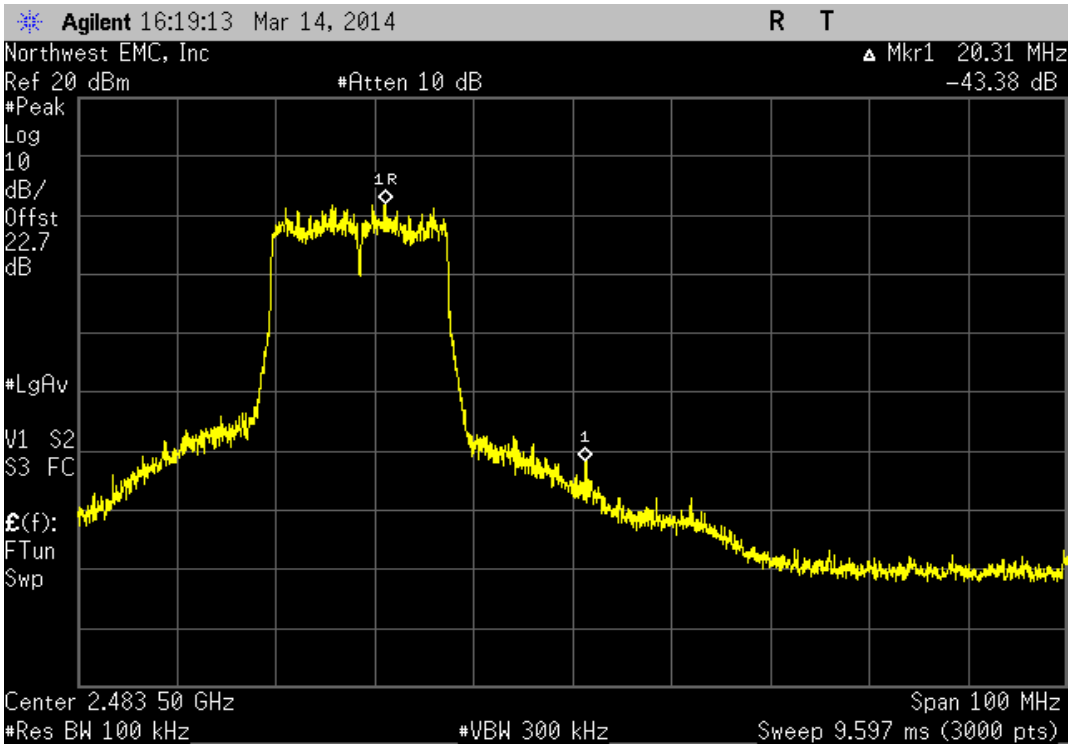
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-42.01 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

				Value	Limit	Result
				-43.38 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	**Model 1631**			**Work Order:**	**MCSO1698**
Serial Number:	**006840341053**			**Date:**	**04/16/14**
Customer:	**Microsoft Corporation**			**Temperature:**	**22.3°C**
Attendees:	**None**			**Humidity:**	**32%**
Project:	**None**			**Barometric Pres.:**	**1014**
Tested by:	**Jared Ison**	**Power:**	**110VAC/60Hz**	**Job Site:**	**EV06**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

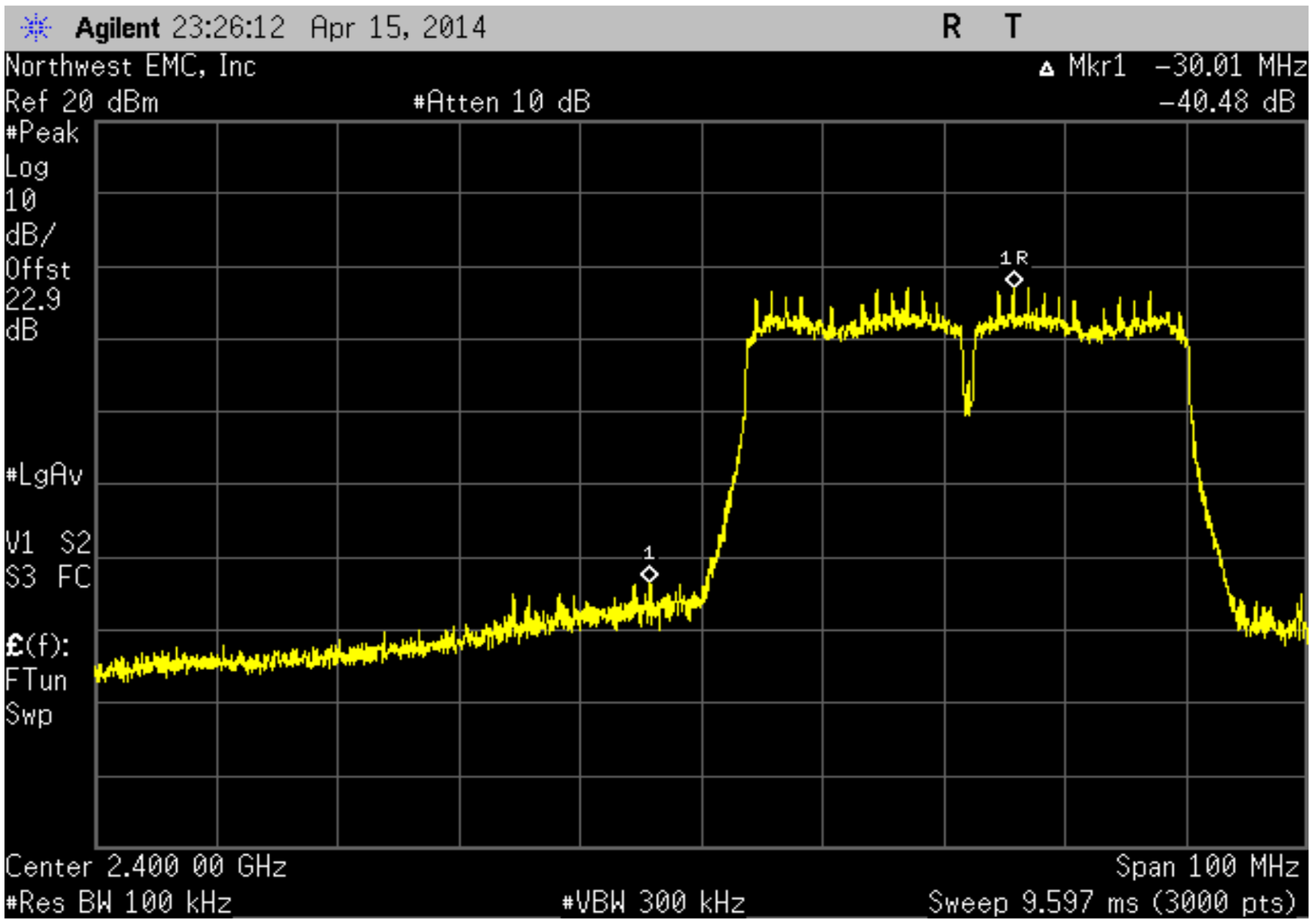
None

Configuration #	**6**	*Signature*

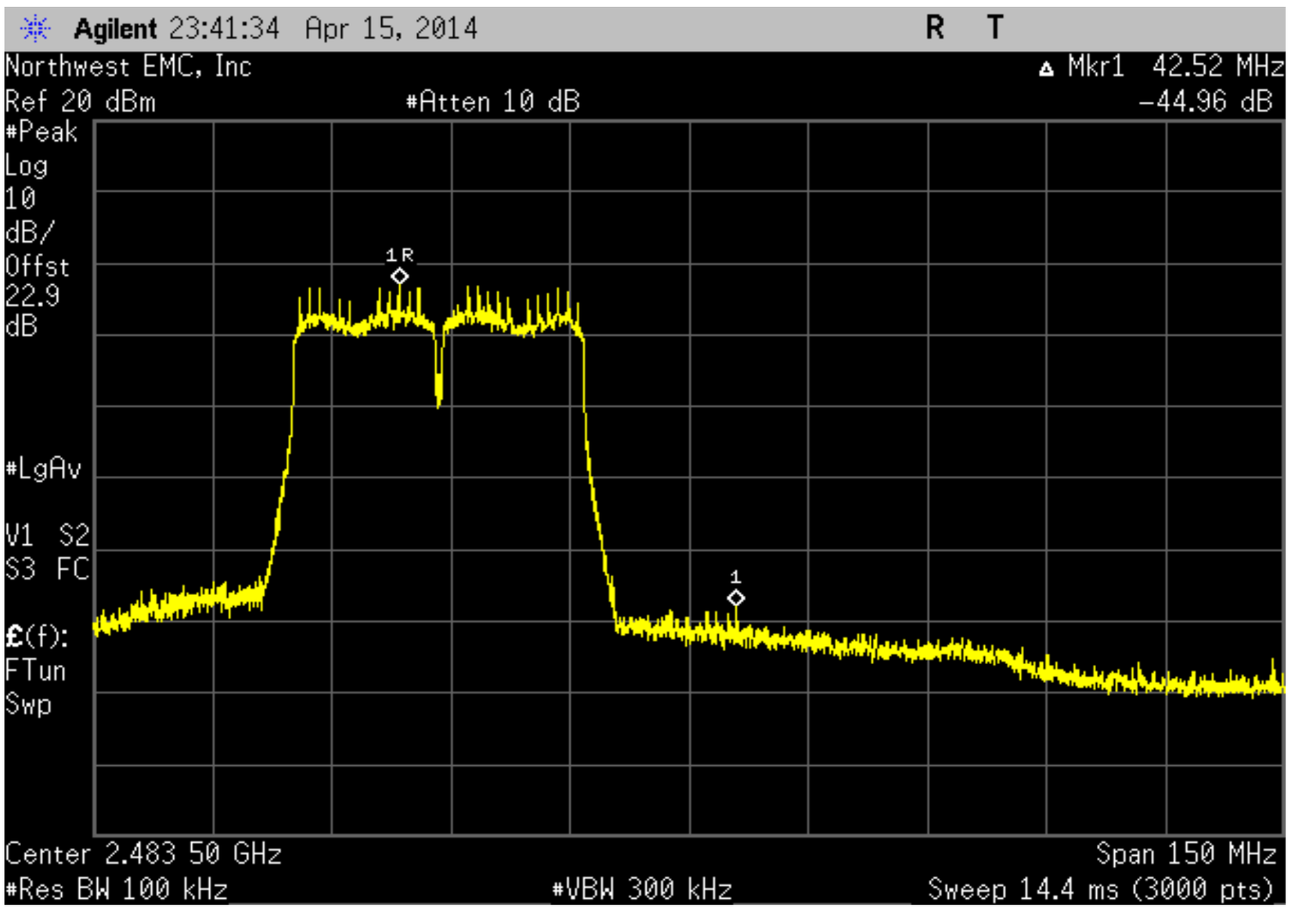
	Value	**Limit**	**Result**
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS0			
1/5 Low Channel, 2422 MHz	-40.48 dBc	≤ -20 dBc	Pass
7/11 High Channel, 2452 MHz	-44.96 dBc	≤ -20 dBc	Pass
802.11(n) MCS7			
1/5 Low Channel, 2422 MHz	-37.11 dBc	≤ -20 dBc	Pass
7/11 High Channel, 2452 MHz	-41.23 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 1/5 Low Channel, 2422 MHz						
				Value	**Limit**	**Result**
				-40.48 dBc	≤ -20 dBc	Pass

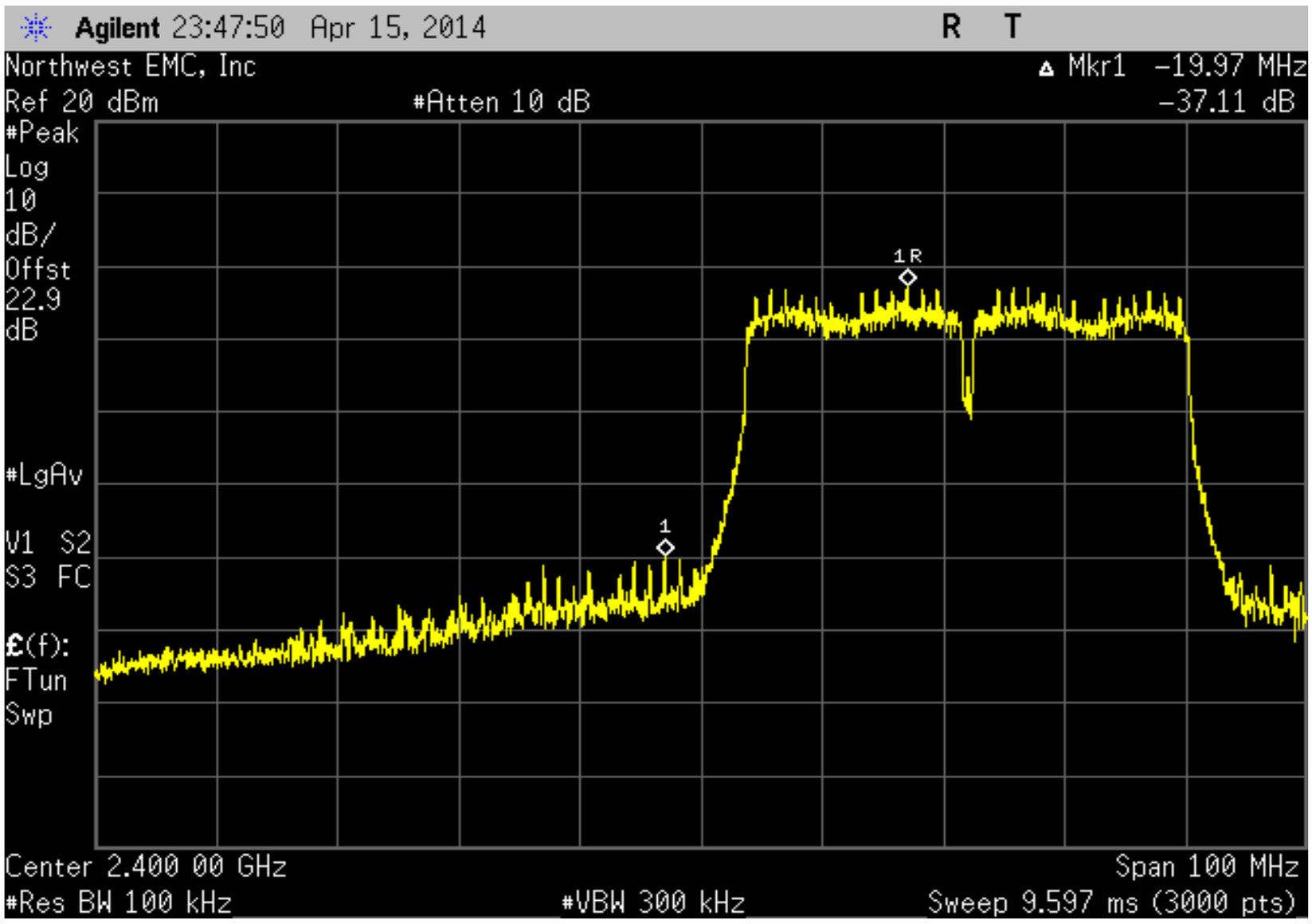


40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 7/11 High Channel, 2452 MHz						
				Value	**Limit**	**Result**
				-44.96 dBc	≤ -20 dBc	Pass

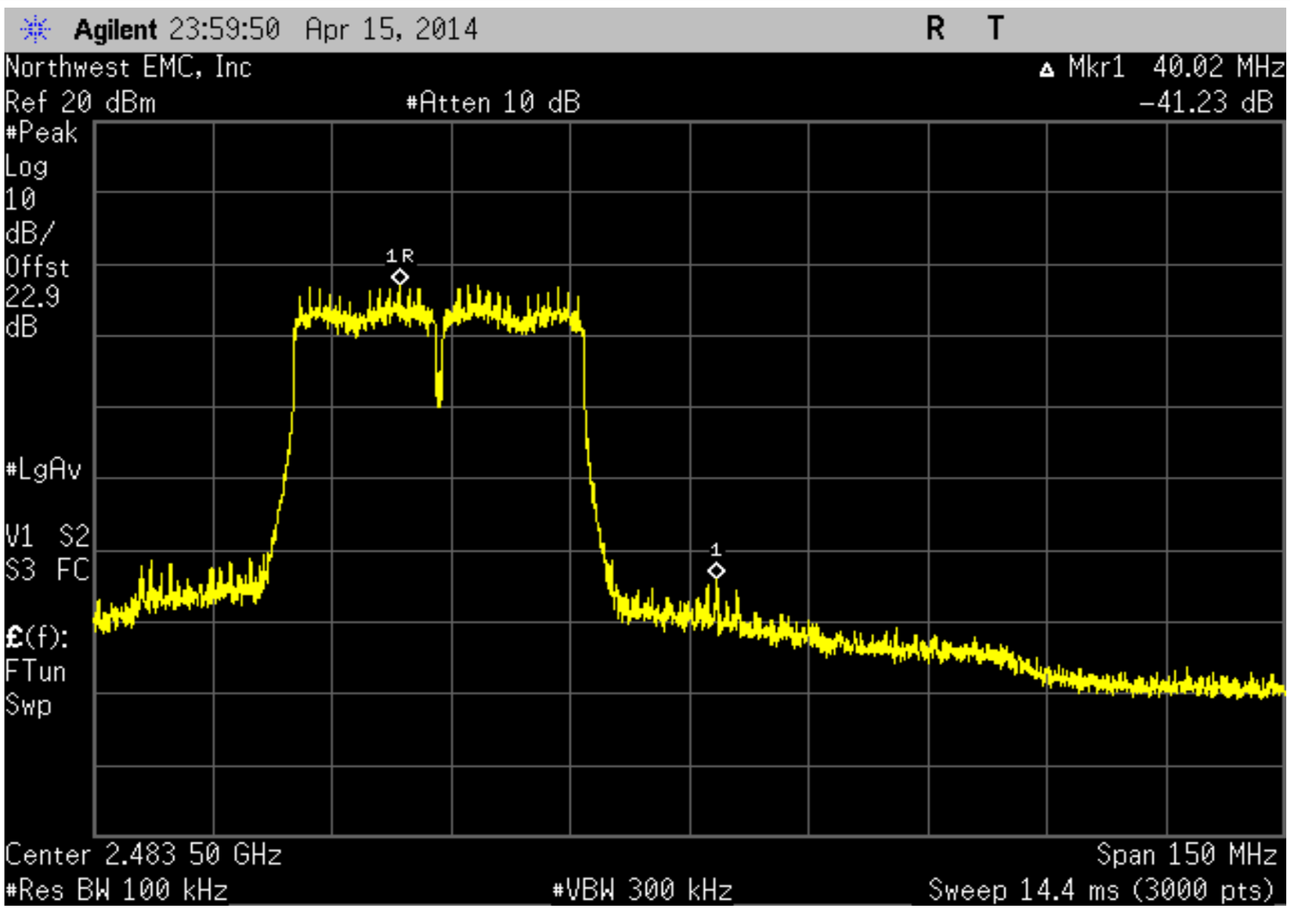


BAND EDGE COMPLIANCE

40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 1/5 Low Channel, 2422 MHz						
				Value	Limit	Result
				-37.11 dBc	≤ -20 dBc	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 7/11 High Channel, 2452 MHz						
				Value	Limit	Result
				-41.23 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	NCR	0
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	041148340753			**Date:**	03/22/14
Customer:	Microsoft Corporation			**Temperature:**	21.5°C
Attendees:	None			**Humidity:**	29%
Project:	1631			**Barometric Pres.:**	1007
Tested by:	Brandon Hobbs, Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

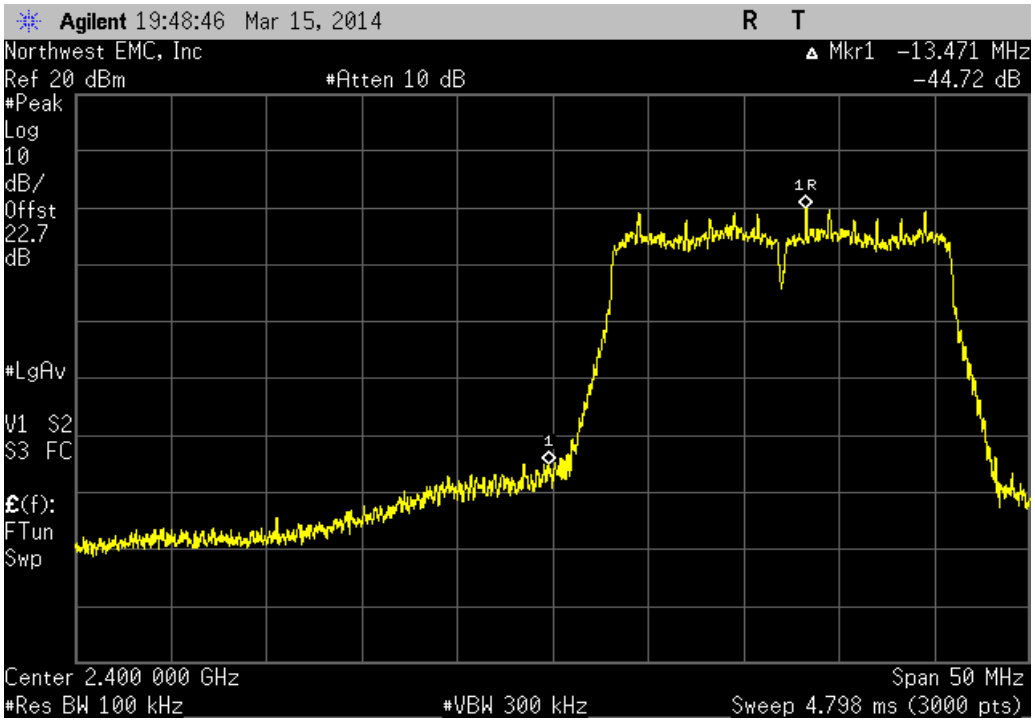
Configuration #	1	Signature

	Value	Limit	Result
Chain A			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz	-44.72 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-46.66 dBc	≤ -20 dBc	Pass
802.11(n) MCS15			
Low Channel 1, 2412 MHz	-44.91 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-45.19 dBc	≤ -20 dBc	Pass
Chain B			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz	-46.5 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-48.58 dBc	≤ -20 dBc	Pass
802.11(n) MCS15			
Low Channel 1, 2412 MHz	-43.61 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-48.42 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

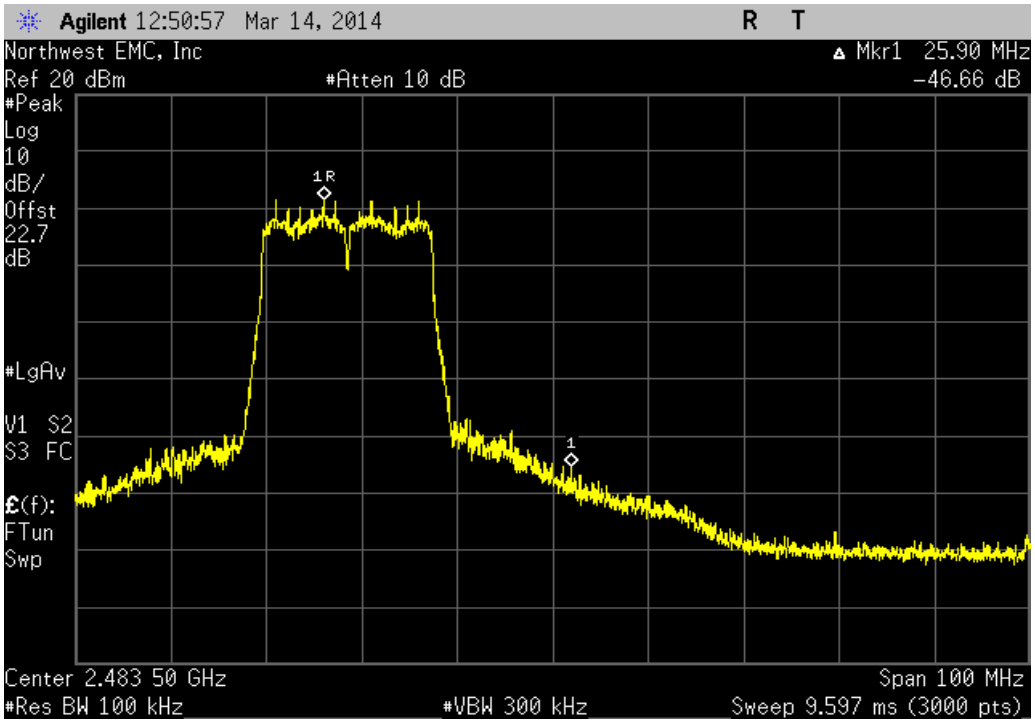
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-44.72 dBc	≤ -20 dBc	Pass



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

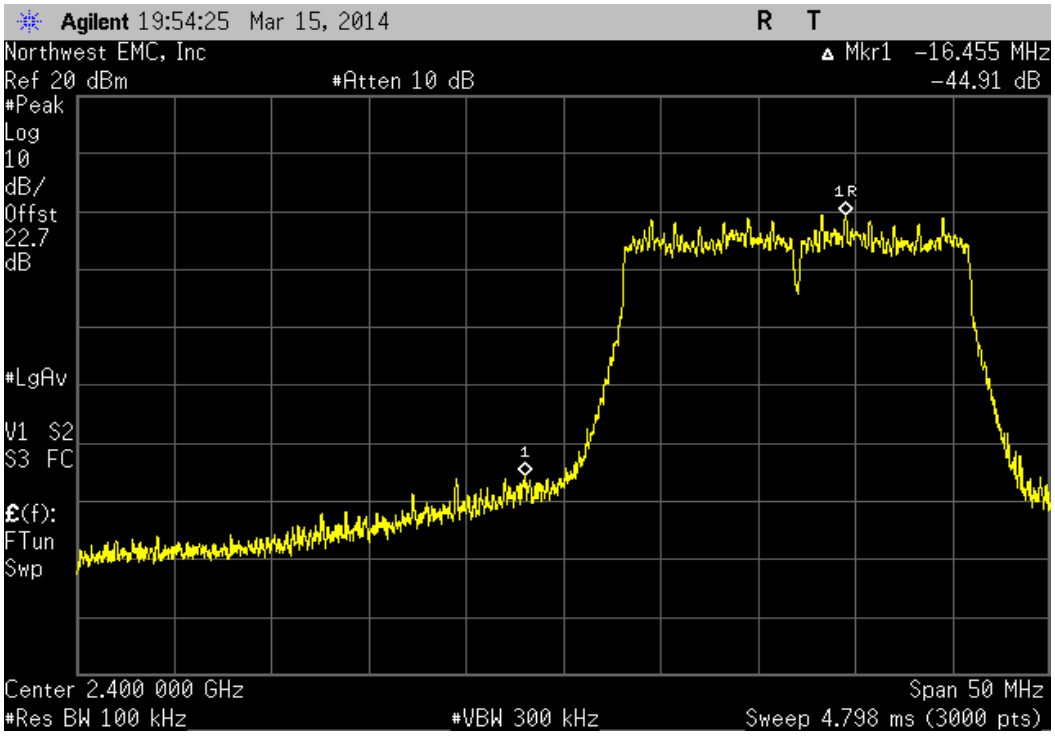
				Value	Limit	Result
				-46.66 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

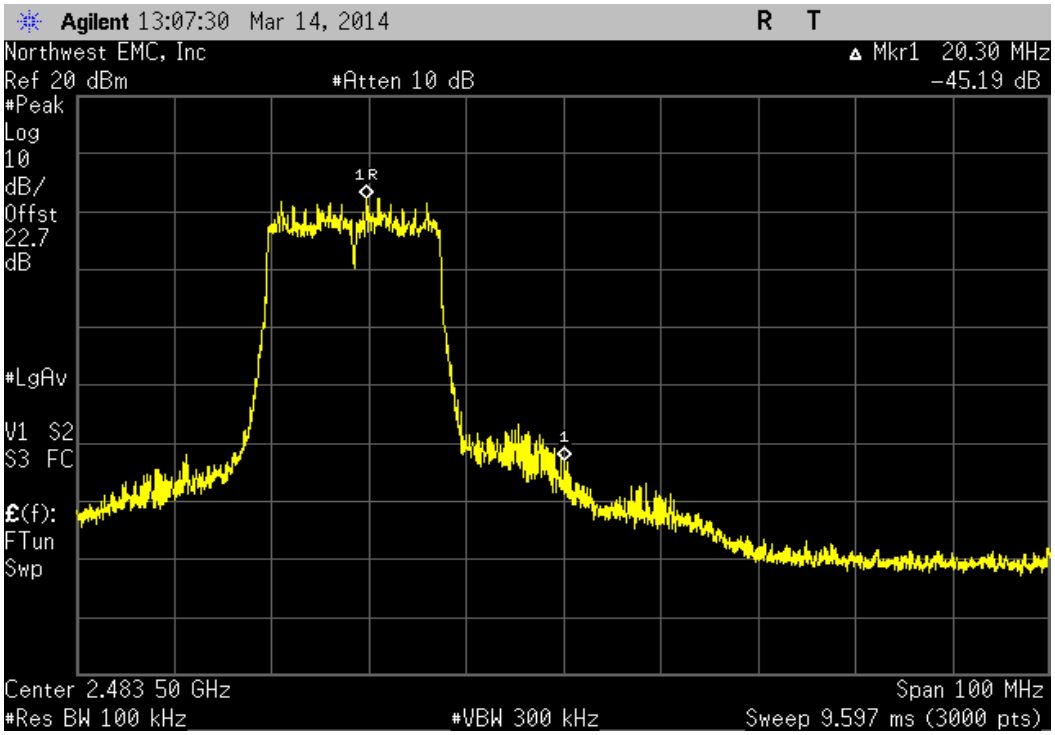
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-44.91 dBc	≤ -20 dBc	Pass



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

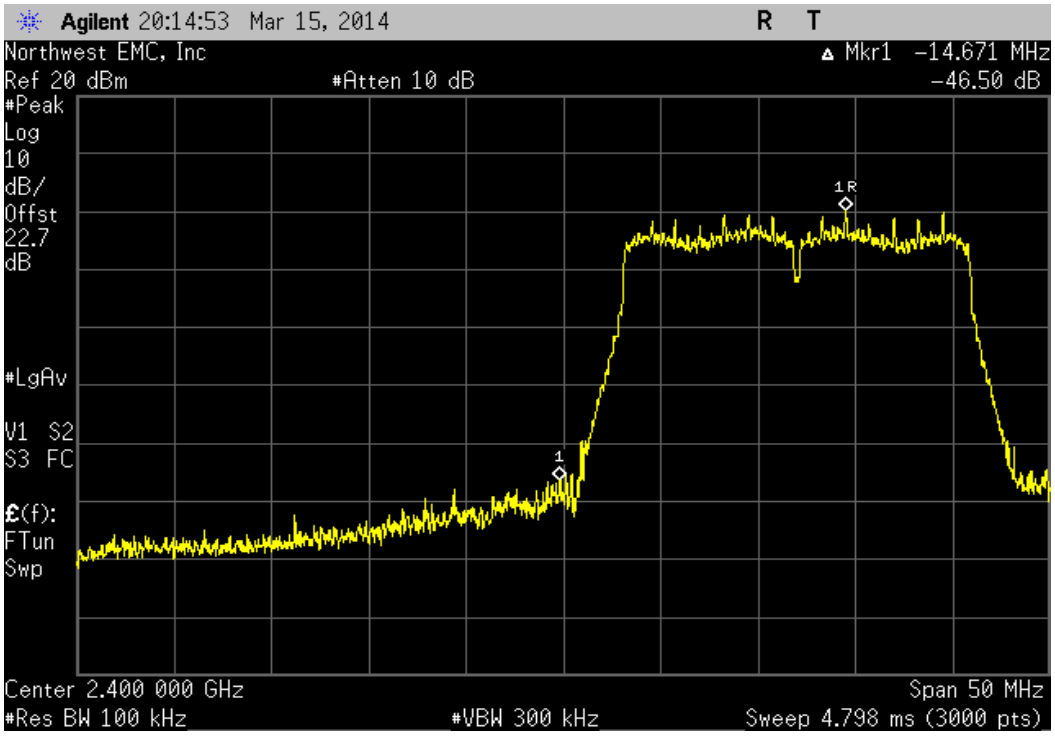
				Value	Limit	Result
				-45.19 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

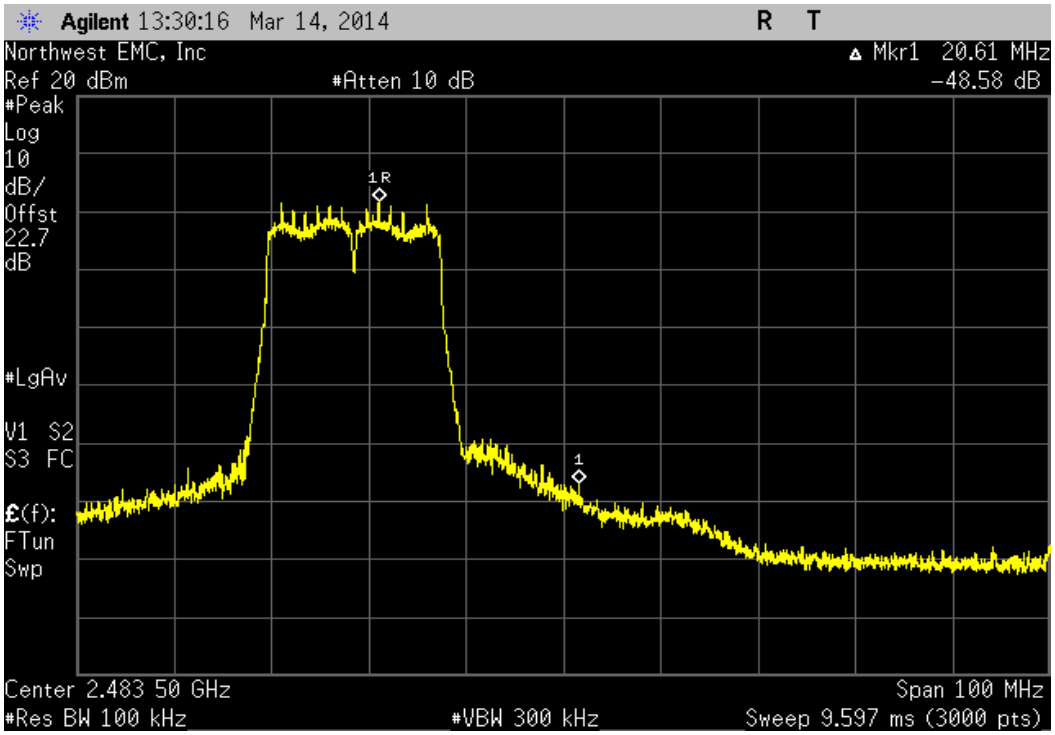
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-46.5 dBc	≤ -20 dBc	Pass



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

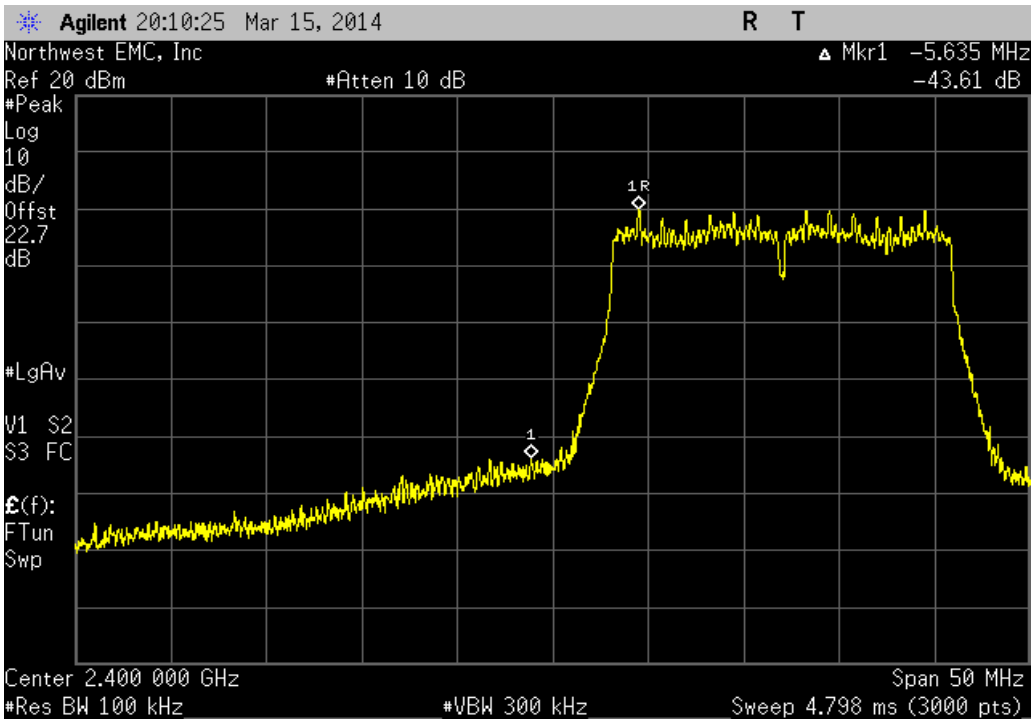
				Value	Limit	Result
				-48.58 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

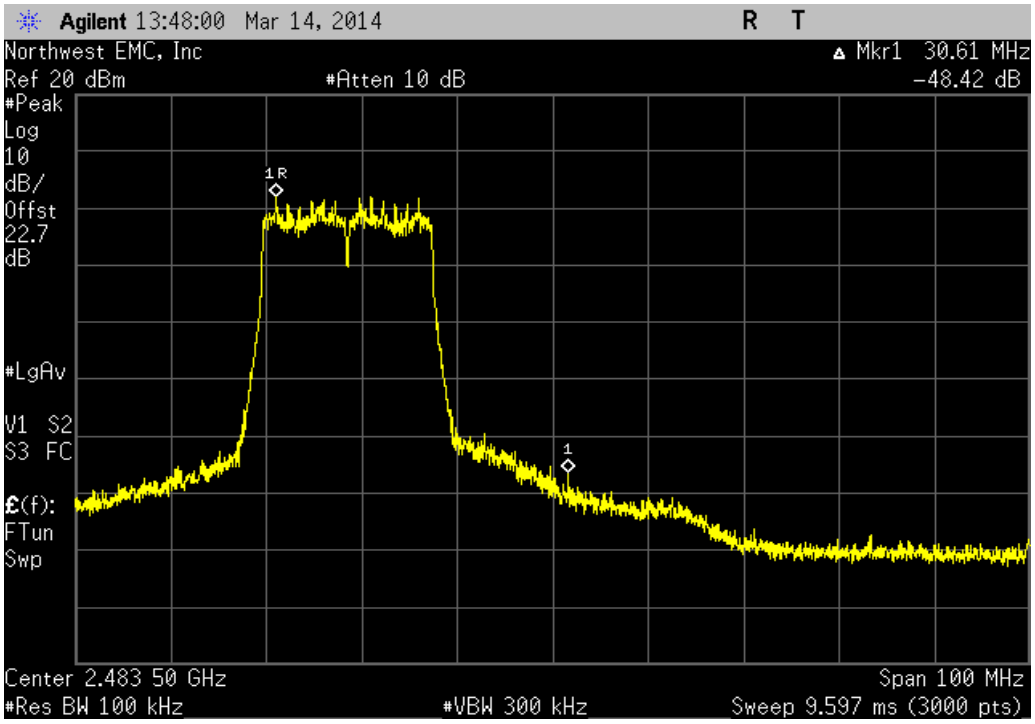
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-43.61 dBc	≤ -20 dBc	Pass



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

				Value	Limit	Result
				-48.42 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

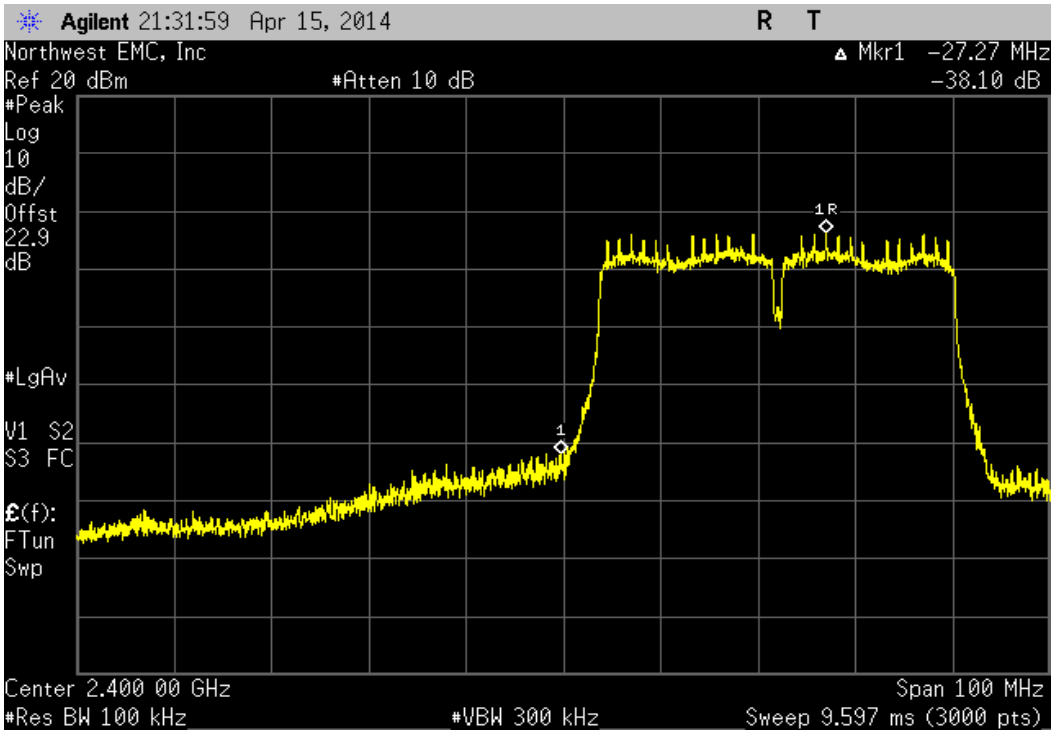
None

Configuration #	6	Signature

				Value	Limit	Result
Chain A						
	40 MHz					
		2400 MHz - 2483.5 MHz Band				
			802.11(n) MCS8			
			Low Channel 1/5, 2422 MH	-38.1 dBc	≤ -20 dBc	Pass
			High Channel 7/11, 2452 M	-42.9 dBc	≤ -20 dBc	Pass
			802.11(n) MCS15			
			Low Channel 1/5, 2422 MH	-40.56 dBc	≤ -20 dBc	Pass
			High Channel 7/11, 2452 M	-44.59 dBc	≤ -20 dBc	Pass
Chain B						
	40 MHz					
		2400 MHz - 2483.5 MHz Band				
			802.11(n) MCS8			
			Low Channel 1/5, 2422 MH	-39.69 dBc	≤ -20 dBc	Pass
			High Channel 7/11, 2452 M	-40.16 dBc	≤ -20 dBc	Pass
			802.11(n) MCS15			
			Low Channel 1/5, 2422 MH	-38.41 dBc	≤ -20 dBc	Pass
			High Channel 7/11, 2452 M	-45.04 dBc	≤ -20 dBc	Pass

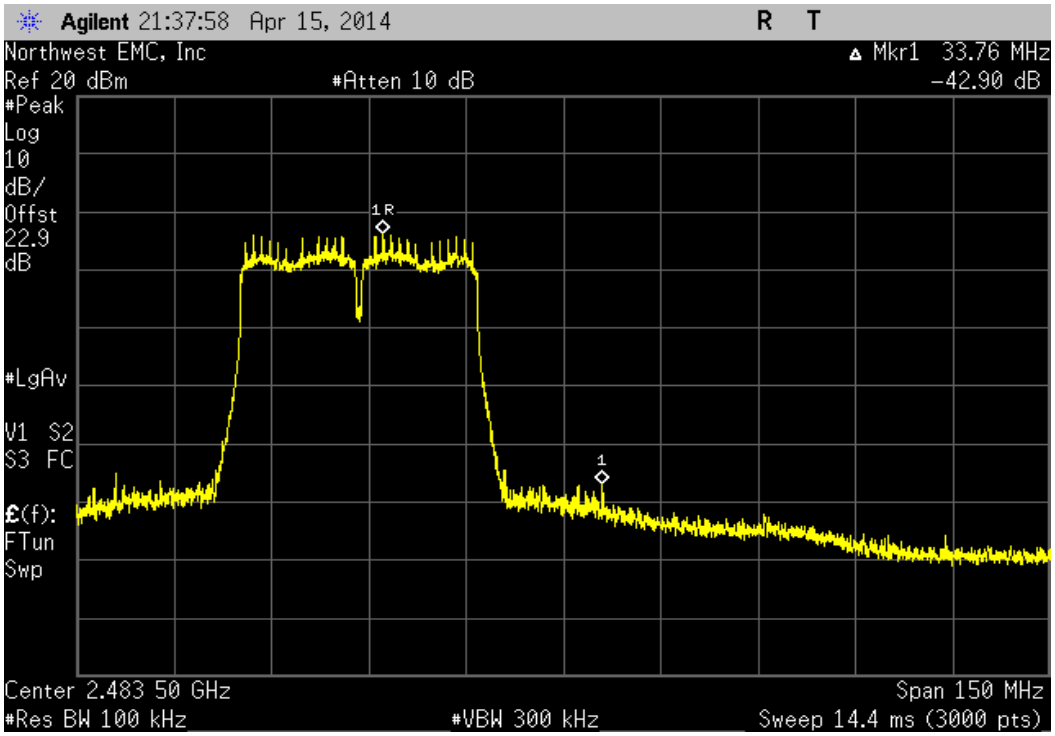
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				-38.1 dBc	≤ -20 dBc	Pass



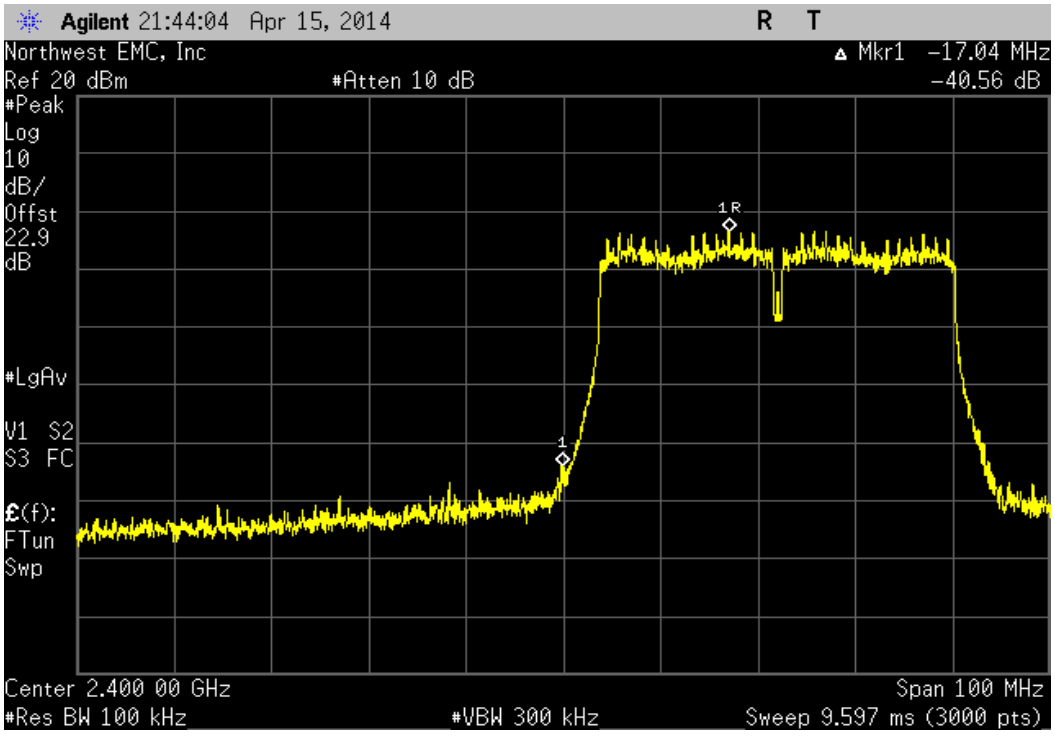
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				-42.9 dBc	≤ -20 dBc	Pass



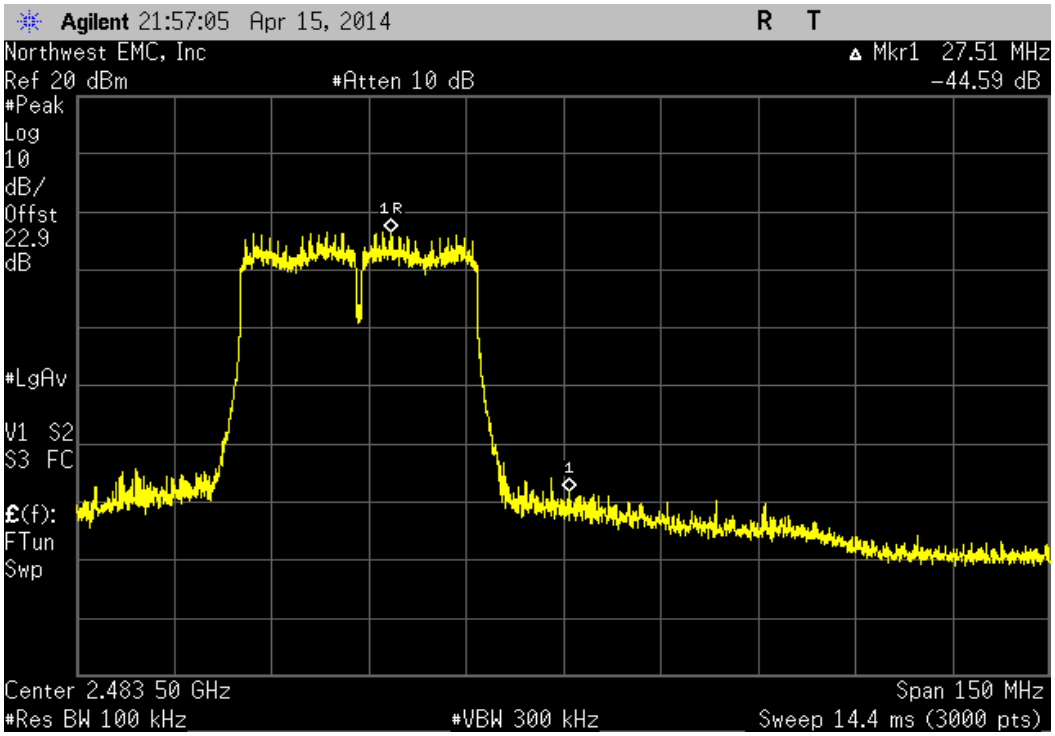
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				-40.56 dBc	≤ -20 dBc	Pass



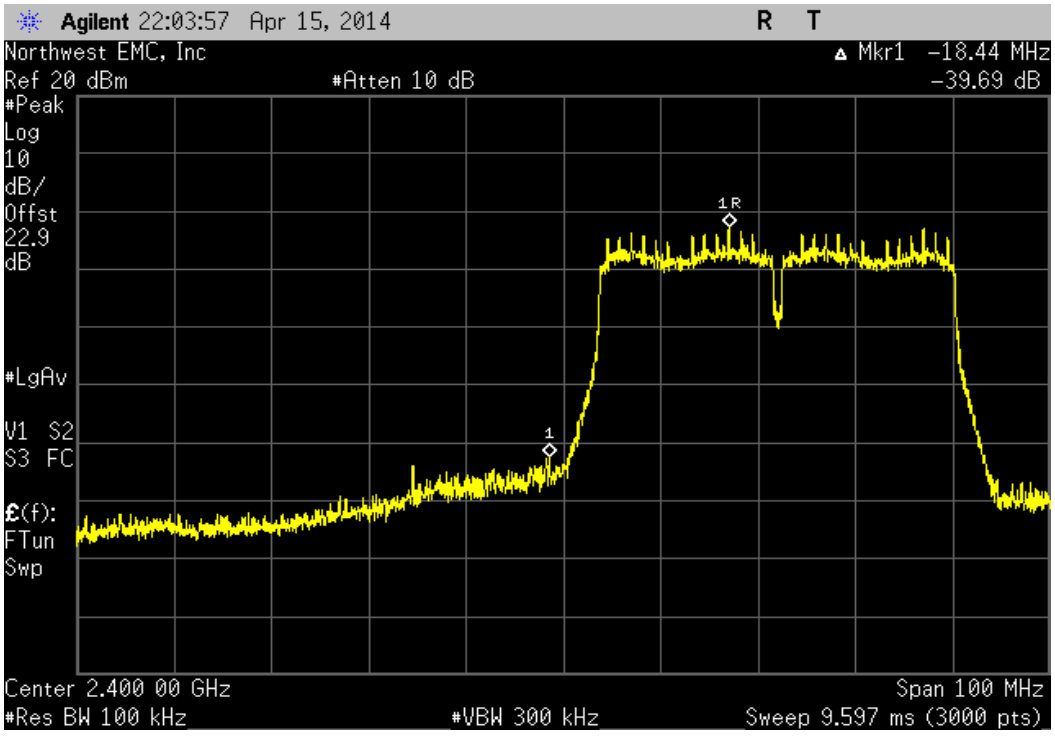
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				-44.59 dBc	≤ -20 dBc	Pass



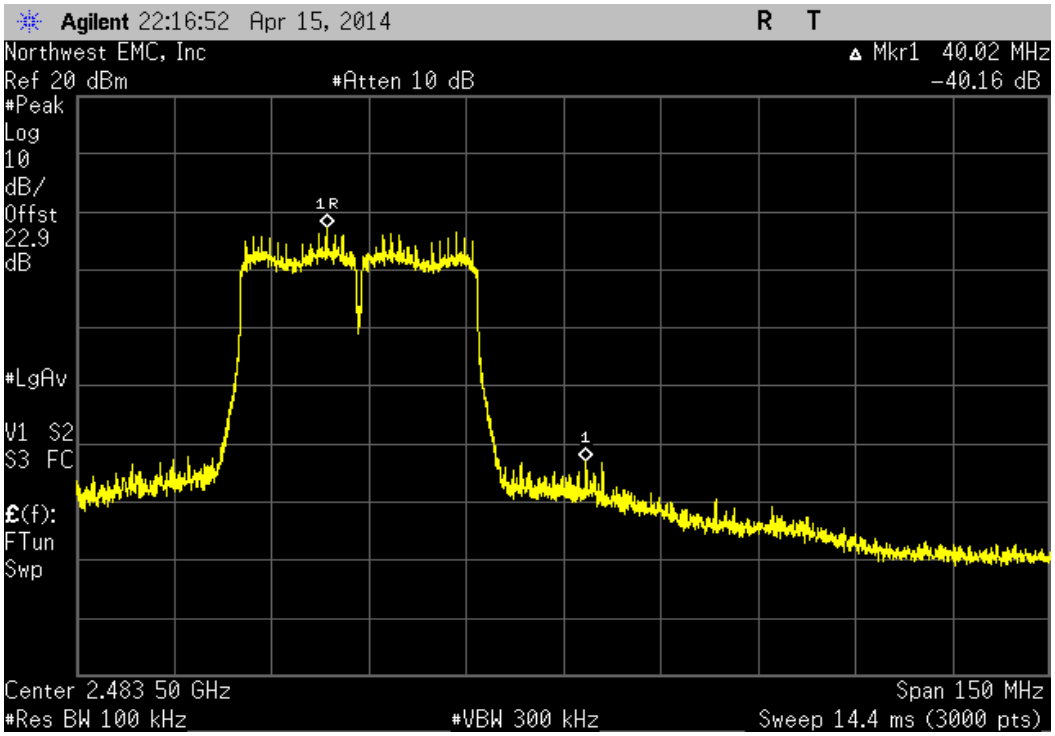
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				-39.69 dBc	≤ -20 dBc	Pass



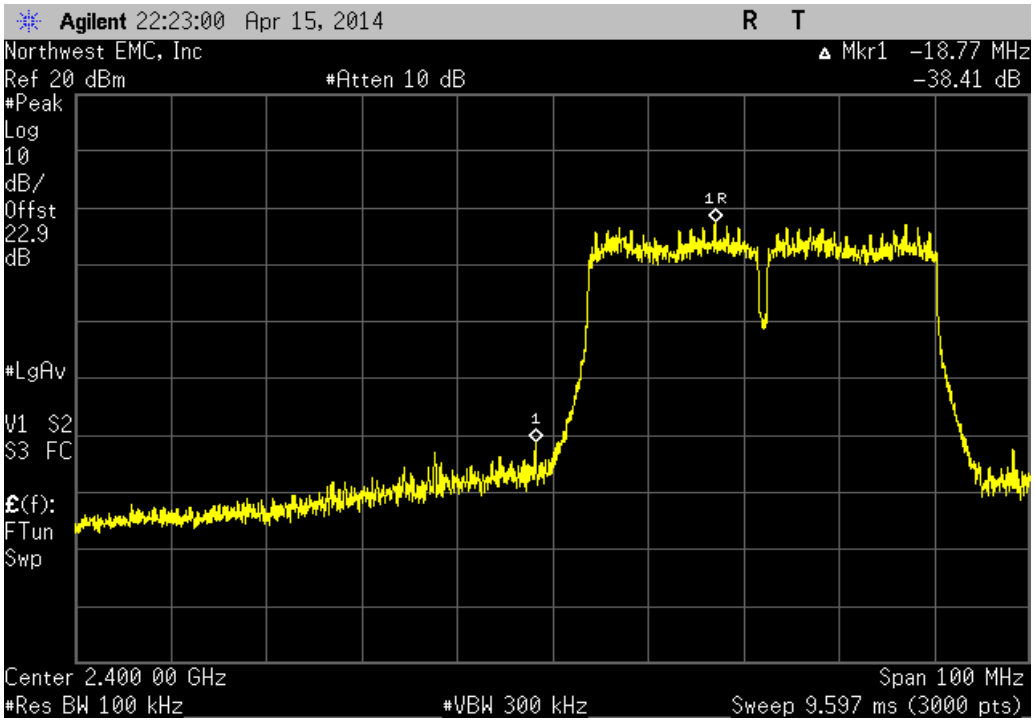
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				-40.16 dBc	≤ -20 dBc	Pass



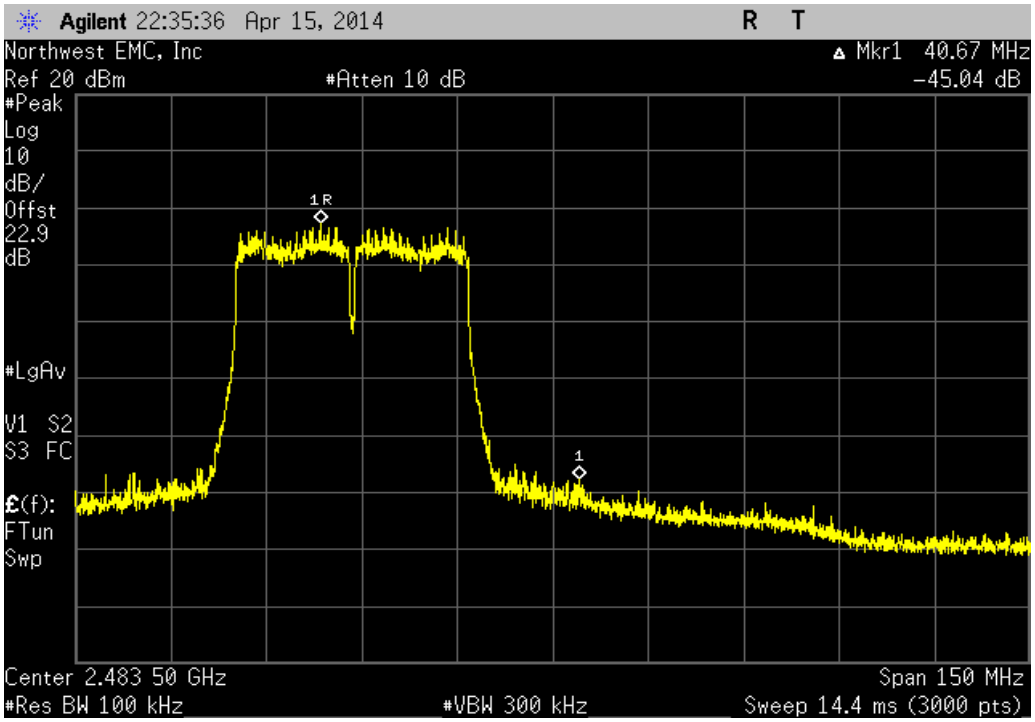
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				-38.41 dBc	≤ -20 dBc	Pass



Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				-45.04 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	041148340753			**Date:**	03/22/14
Customer:	Microsoft Corporation			**Temperature:**	21.5°C
Attendees:	None			**Humidity:**	29%
Project:	1631			**Barometric Pres.:**	1007
Tested by:	Brandon Hobbs, Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

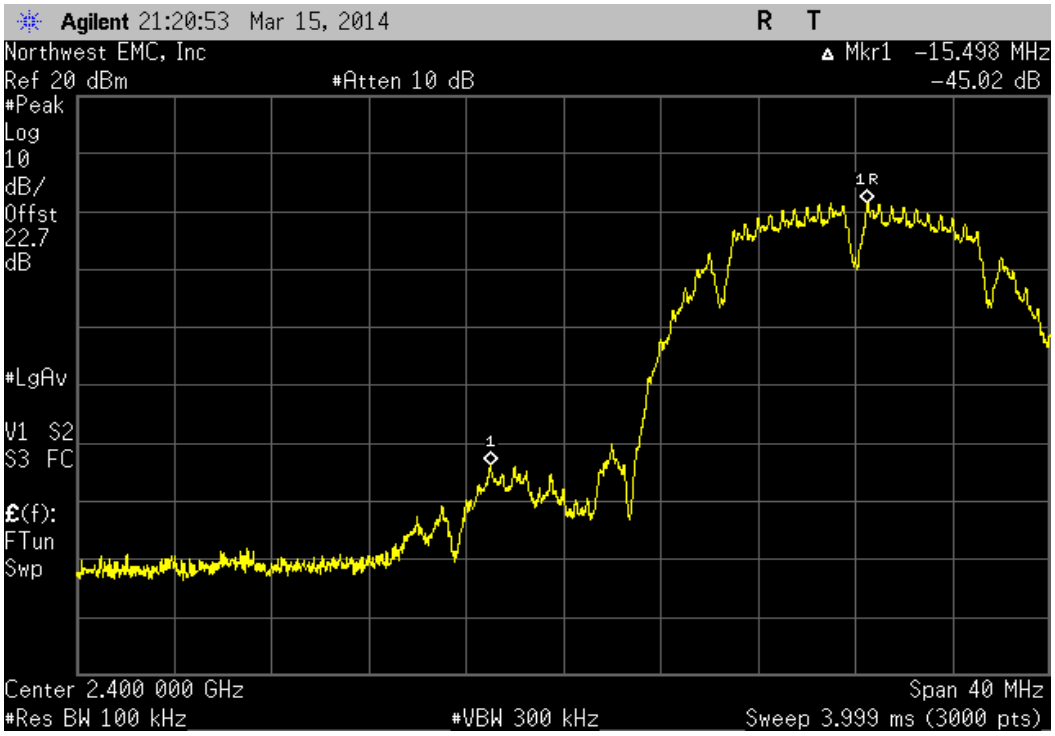
Configuration #	1	Signature

	Value	Limit	Result
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	-45.03 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-58.92 dBc	≤ -20 dBc	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	-48.36 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-61.19 dBc	≤ -20 dBc	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	-41.74 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-46.28 dBc	≤ -20 dBc	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	-44.7 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-49.38 dBc	≤ -20 dBc	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	-45.18 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-49.53 dBc	≤ -20 dBc	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	-44.26 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-45.44 dBc	≤ -20 dBc	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	-44.61 dBc	≤ -20 dBc	Pass
High Channel 11, 2462 MHz	-45.85 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

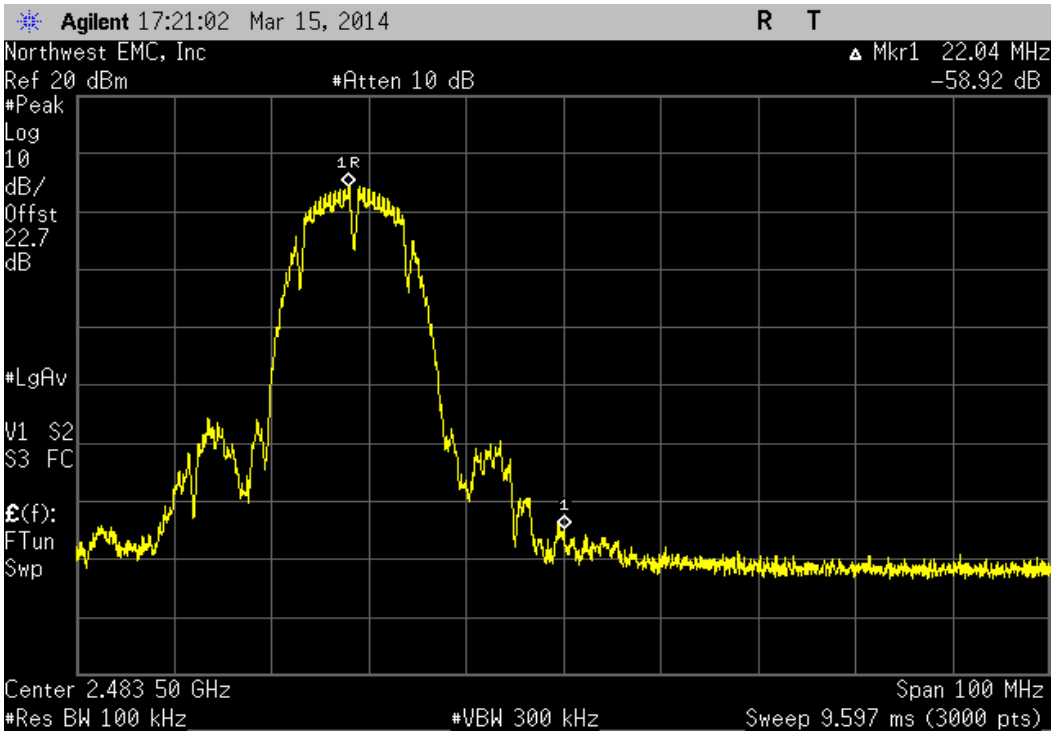
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-45.03 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

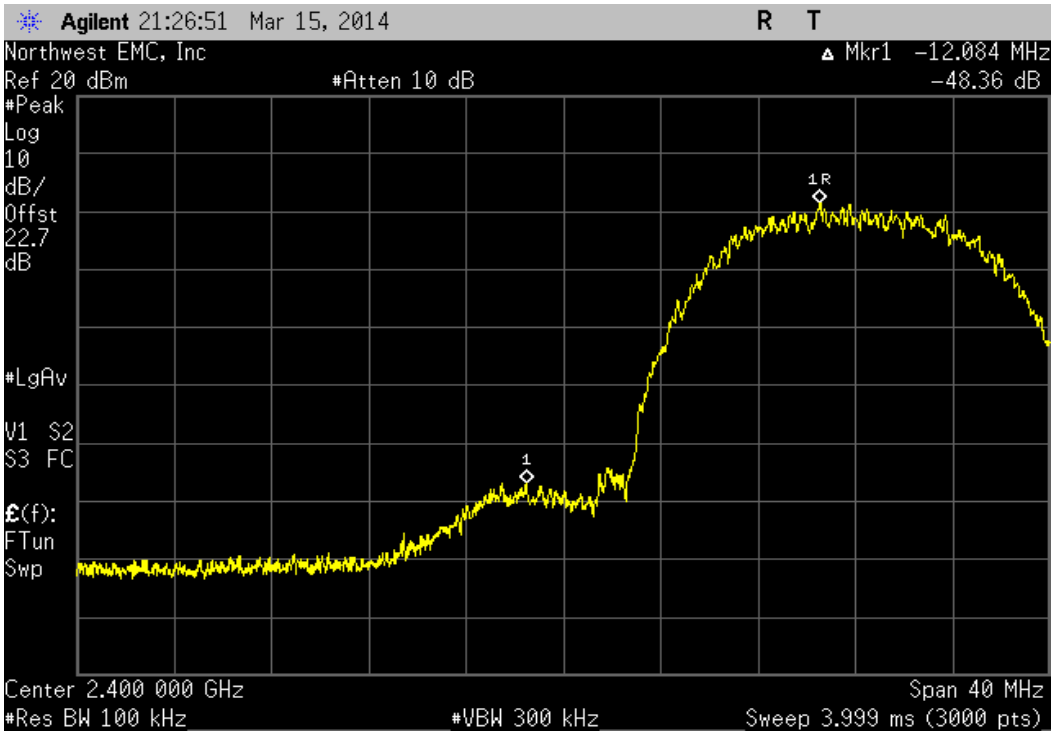
				Value	Limit	Result
				-58.92 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

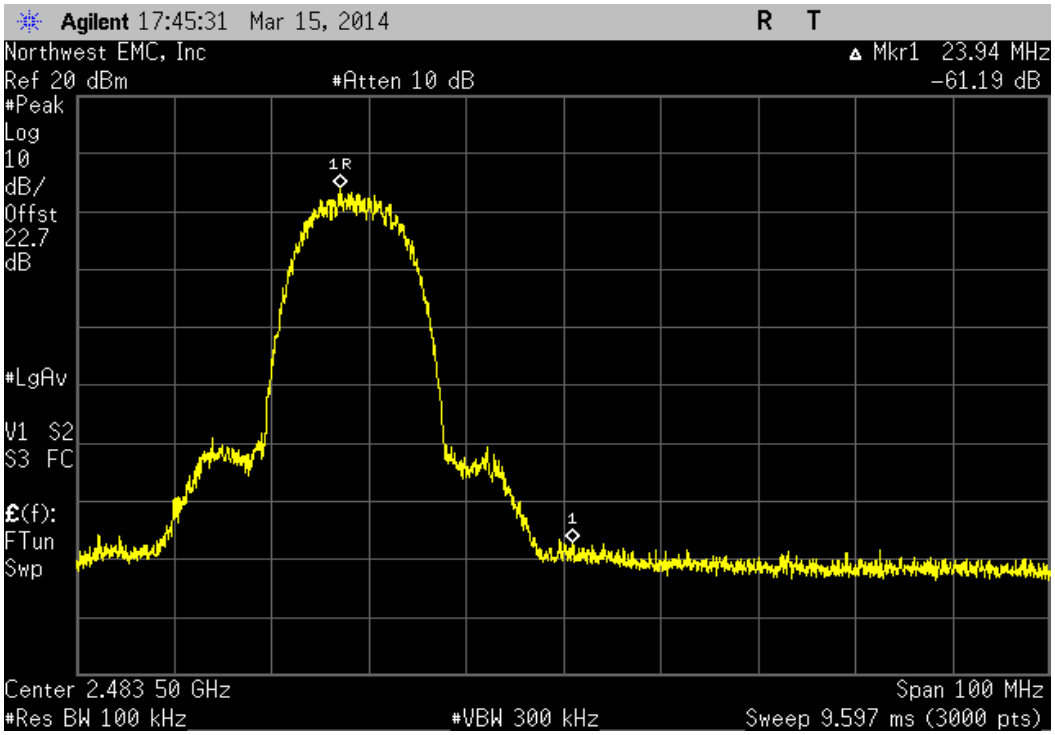
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-48.36 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

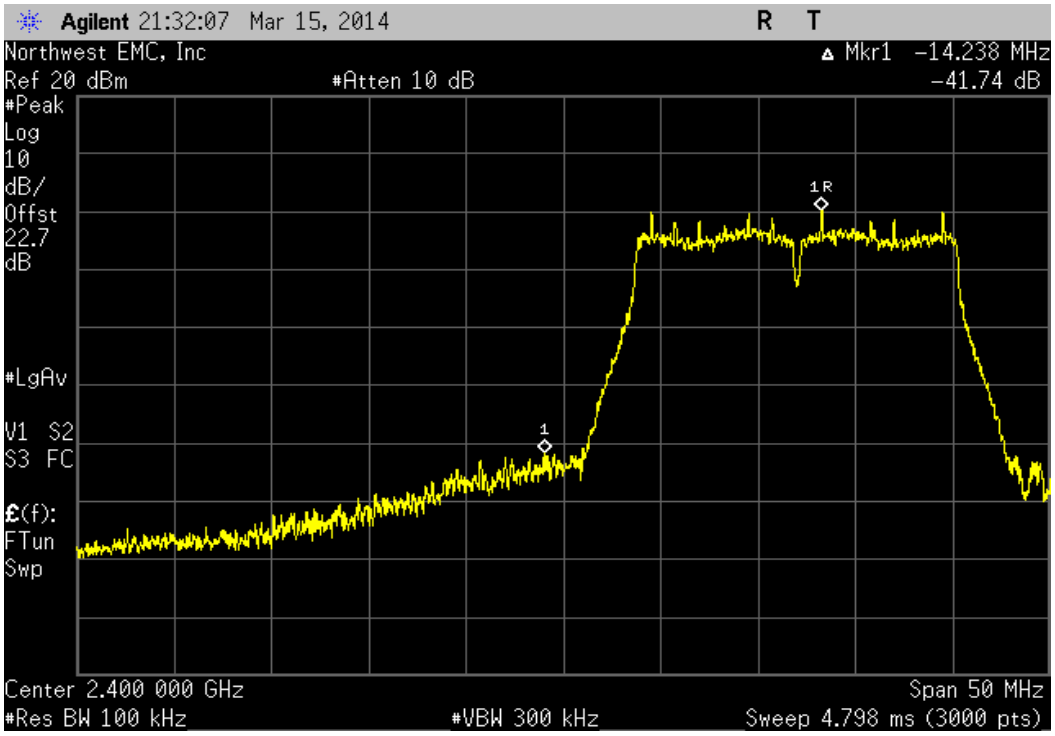
				Value	Limit	Result
				-61.19 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

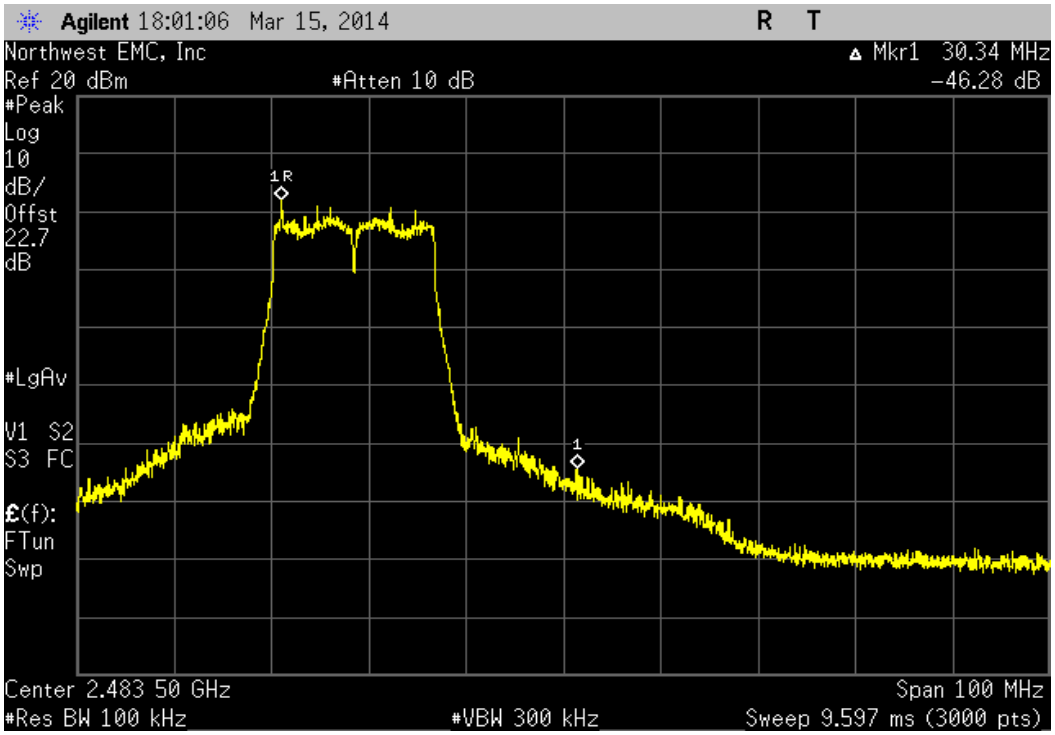
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-41.74 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

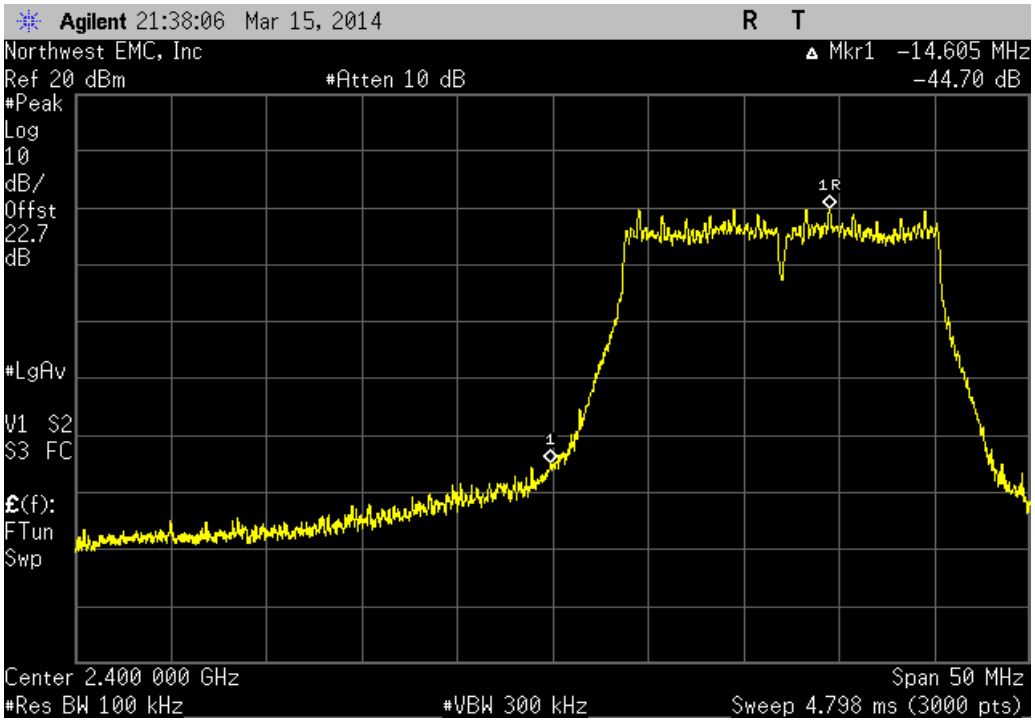
				Value	Limit	Result
				-46.28 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

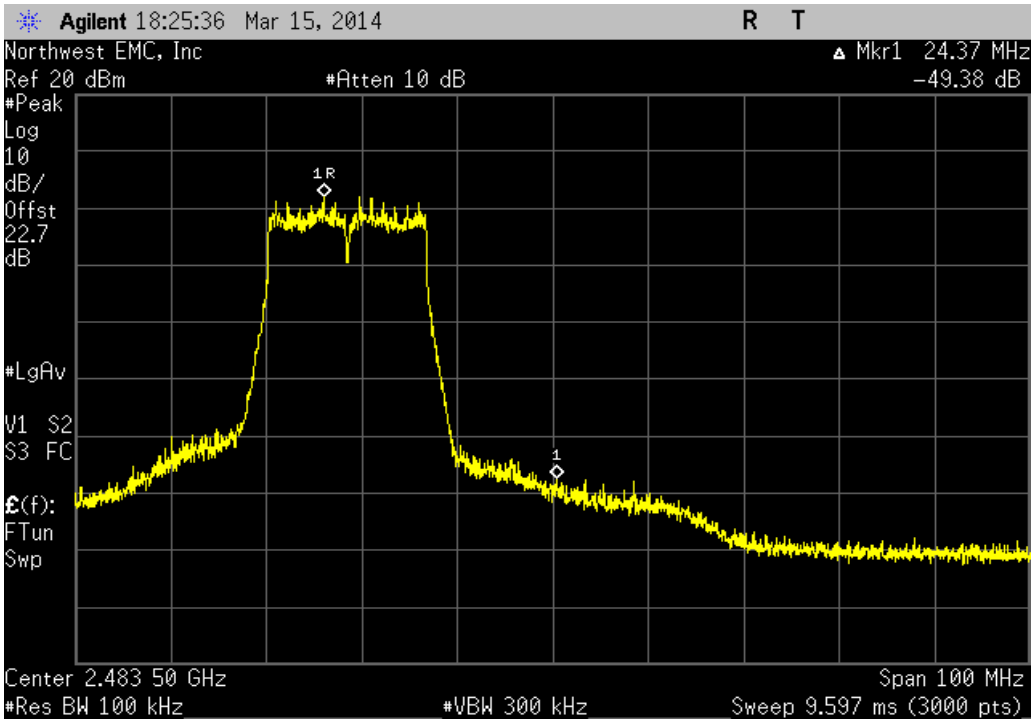
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-44.7 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

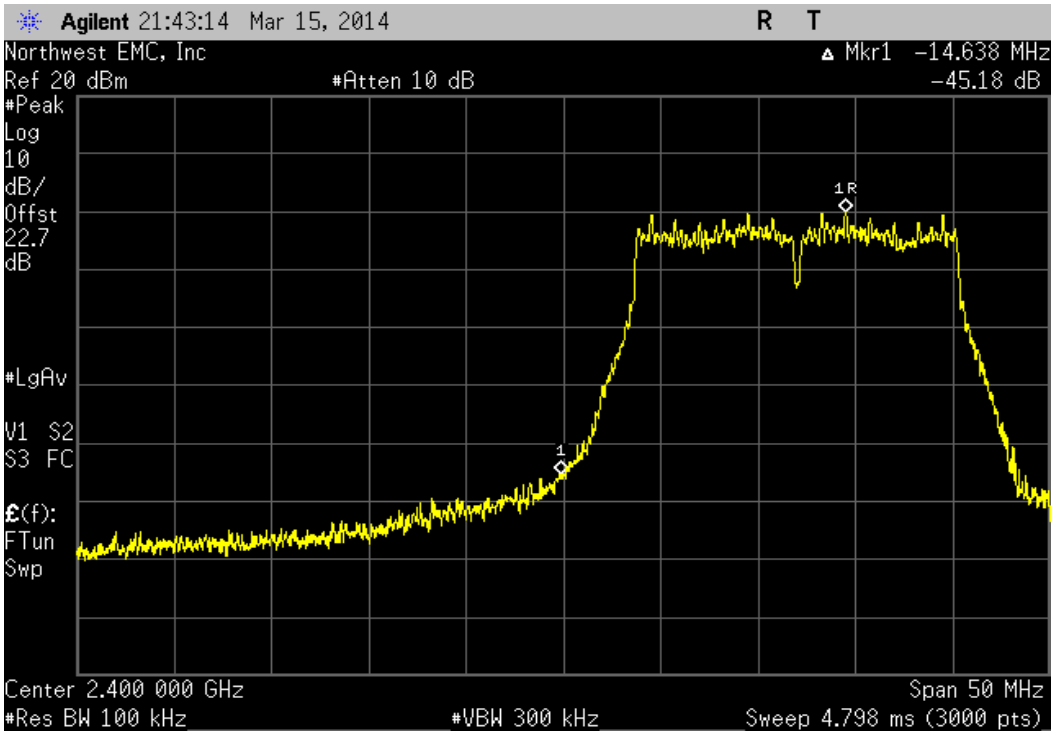
				Value	Limit	Result
				-49.38 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

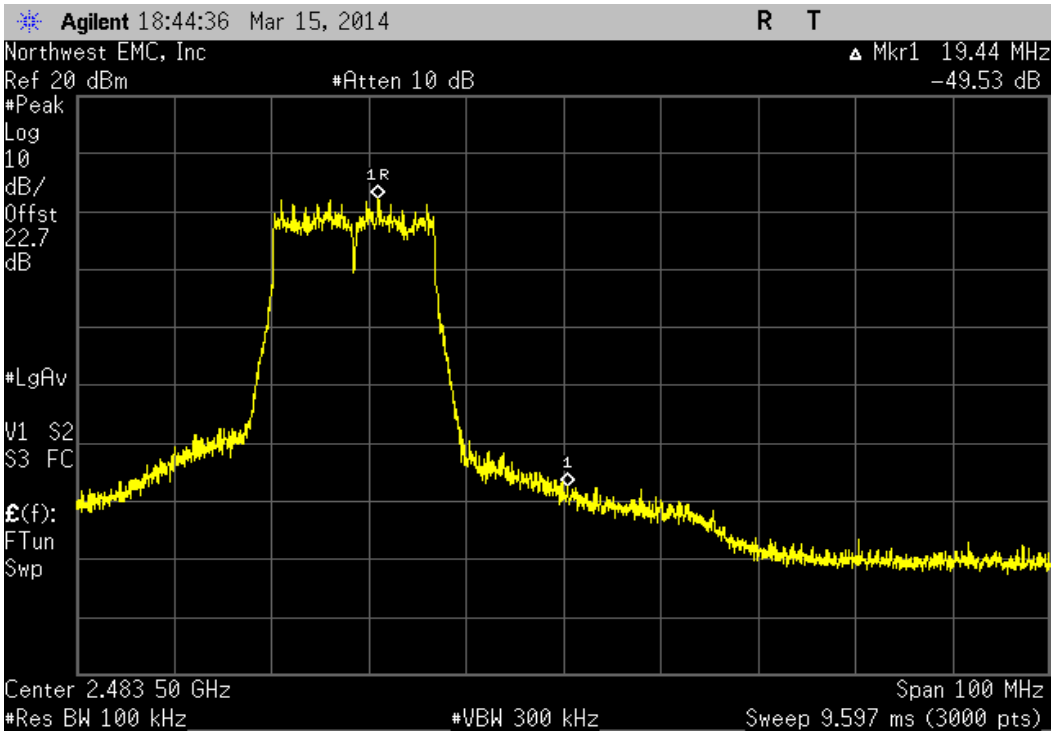
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-45.18 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

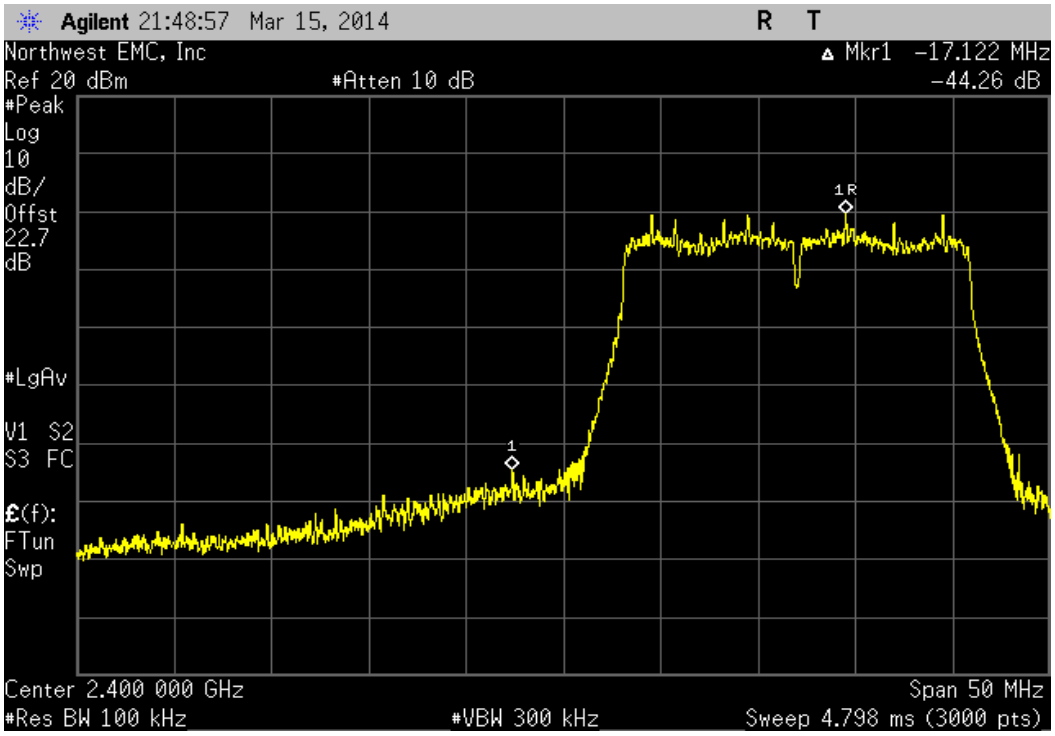
				Value	Limit	Result
				-49.53 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

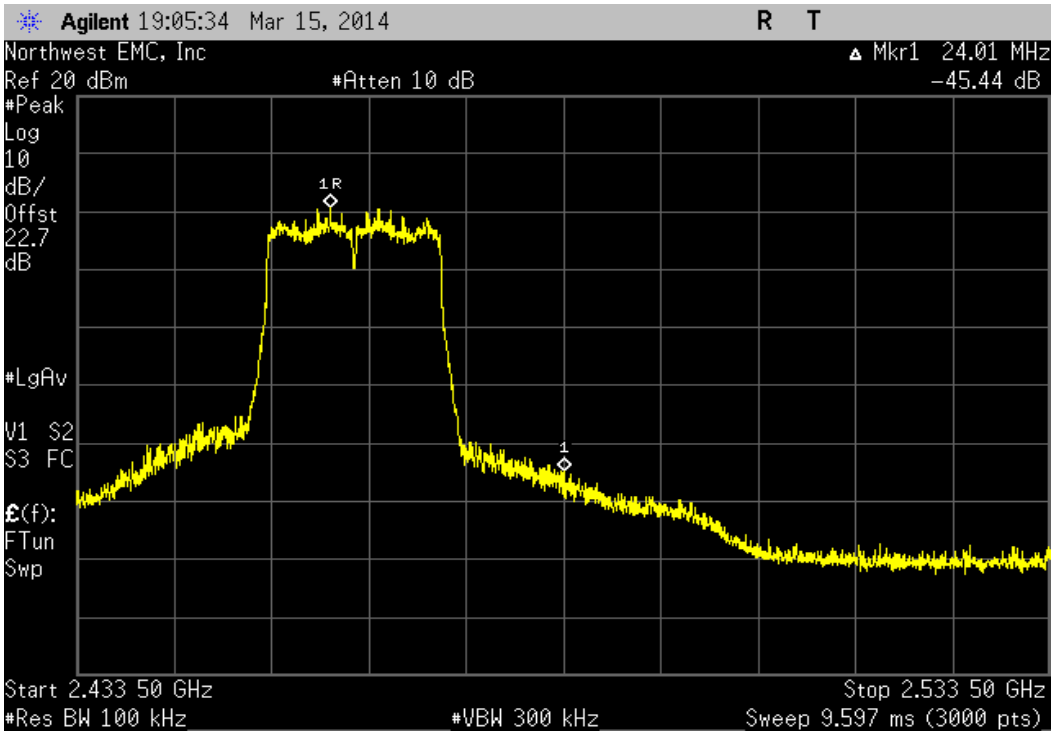
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-44.26 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

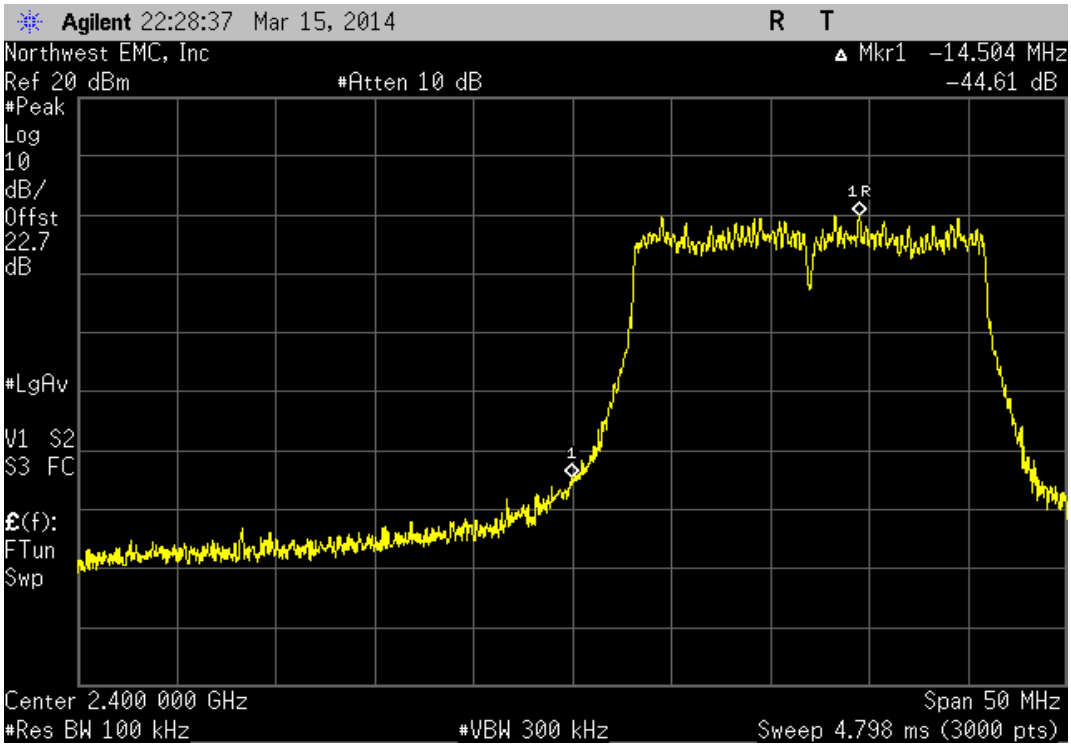
				Value	Limit	Result
				-45.44 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

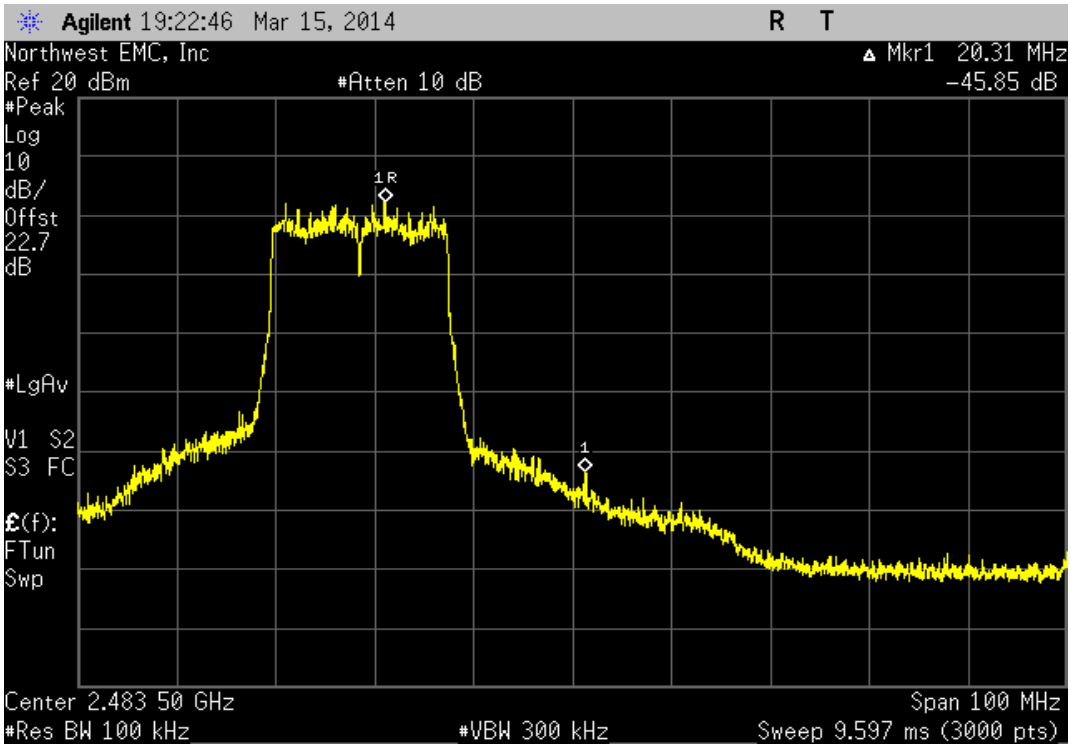
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

				Value	Limit	Result
				-44.61 dBc	≤ -20 dBc	Pass



20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

				Value	Limit	Result
				-45.85 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	006840341053			**Date:**	04/16/14
Customer:	Microsoft Corporation			**Temperature:**	22.3°C
Attendees:	None			**Humidity:**	32%
Project:	None			**Barometric Pres.:**	1014
Tested by:	Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided. Reference power level table for channel power setting.

DEVIATIONS FROM TEST STANDARD

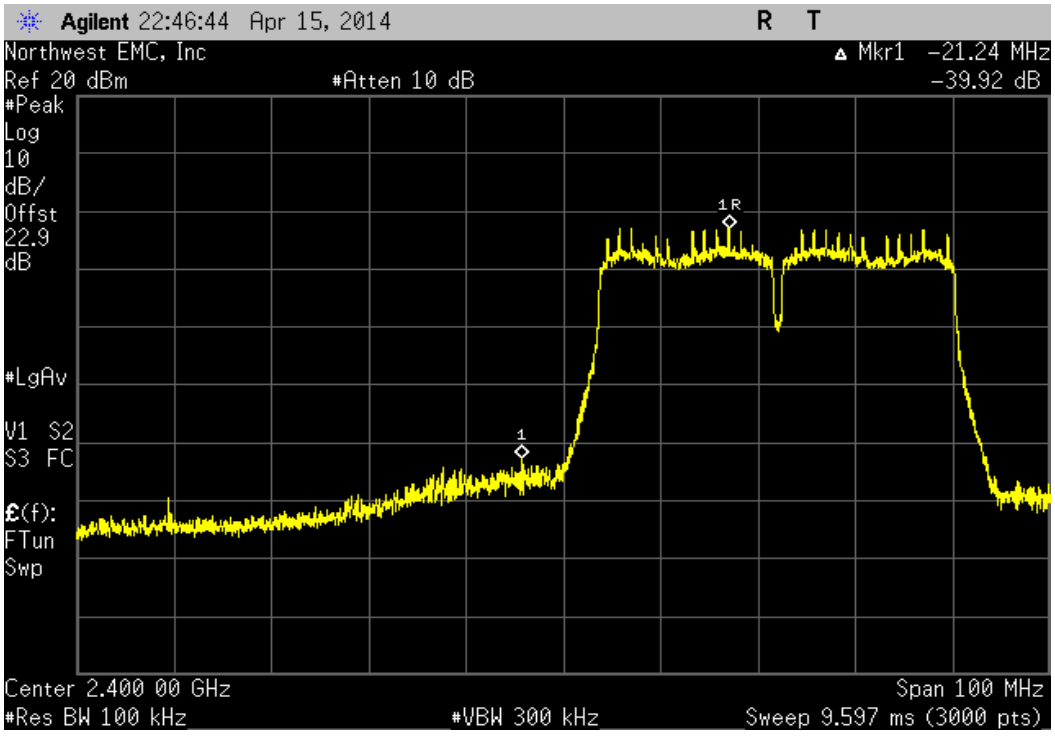
None

Configuration #	6	Signature

	Value	Limit	Result
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS0			
1/5 Low Channel, 2422 MHz	-39.92 dBc	≤ -20 dBc	Pass
7/11 High Channel, 2452 MHz	-44.33 dBc	≤ -20 dBc	Pass
802.11(n) MCS7			
1/5 Low Channel, 2422 MHz	-42.64 dBc	≤ -20 dBc	Pass
7/11 High Channel, 2452 MHz	-45.39 dBc	≤ -20 dBc	Pass

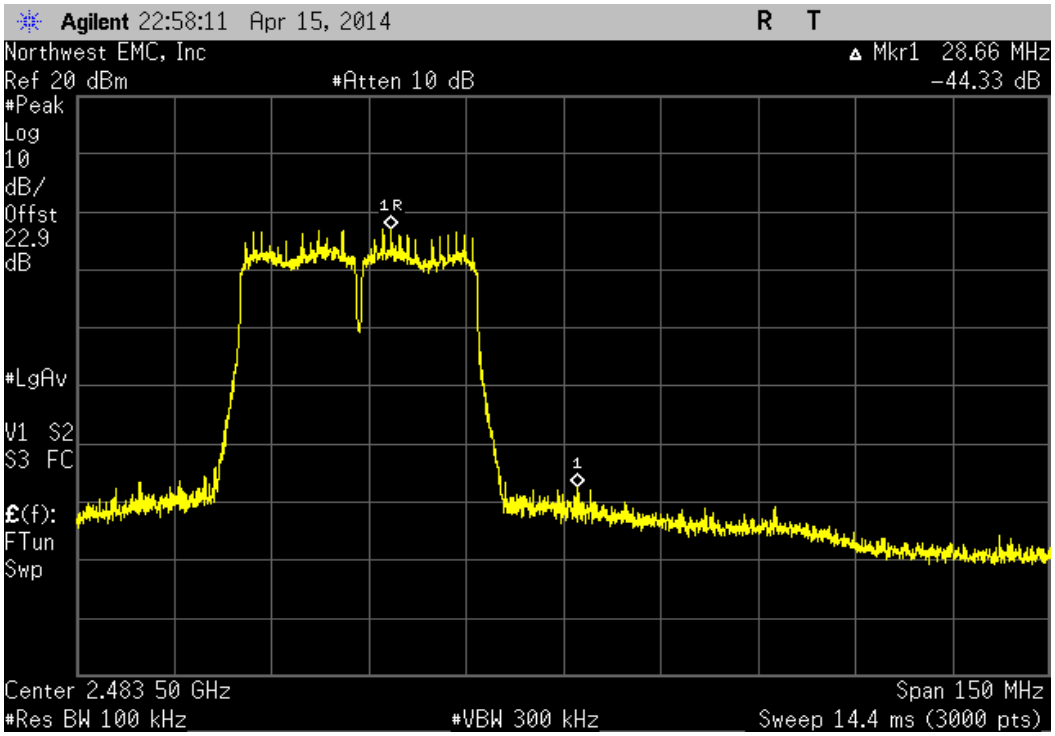
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 1/5 Low Channel, 2422 MHz

				Value	Limit	Result
				-39.92 dBc	≤ -20 dBc	Pass



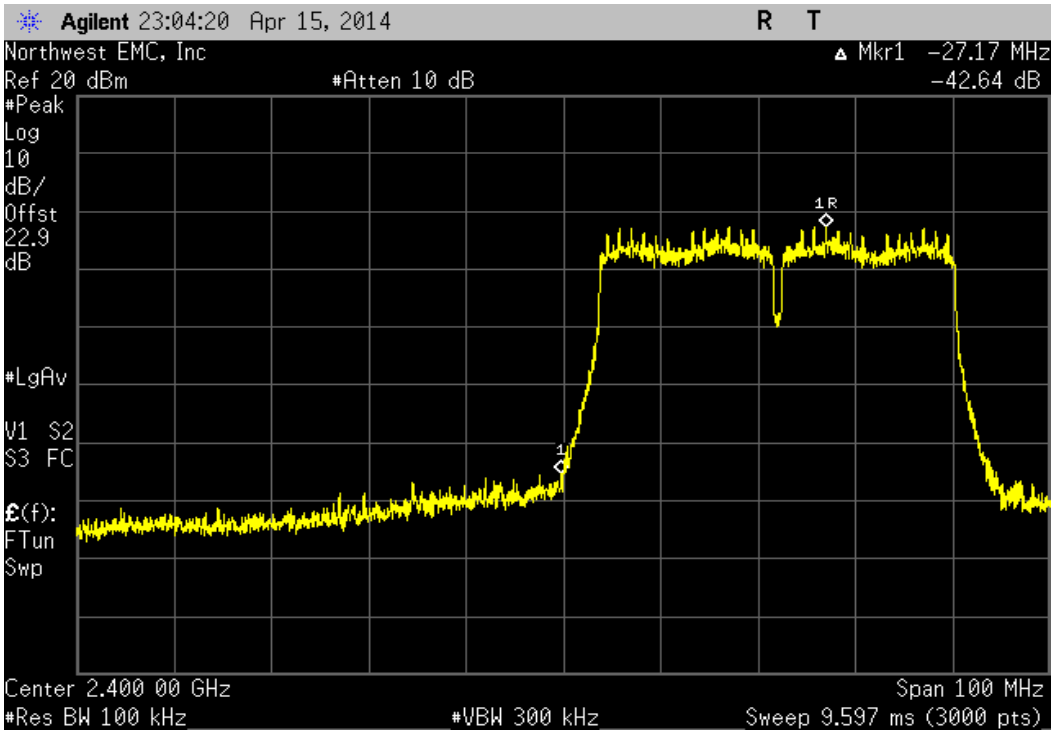
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, 7/11 High Channel, 2452 MHz

				Value	Limit	Result
				-44.33 dBc	≤ -20 dBc	Pass



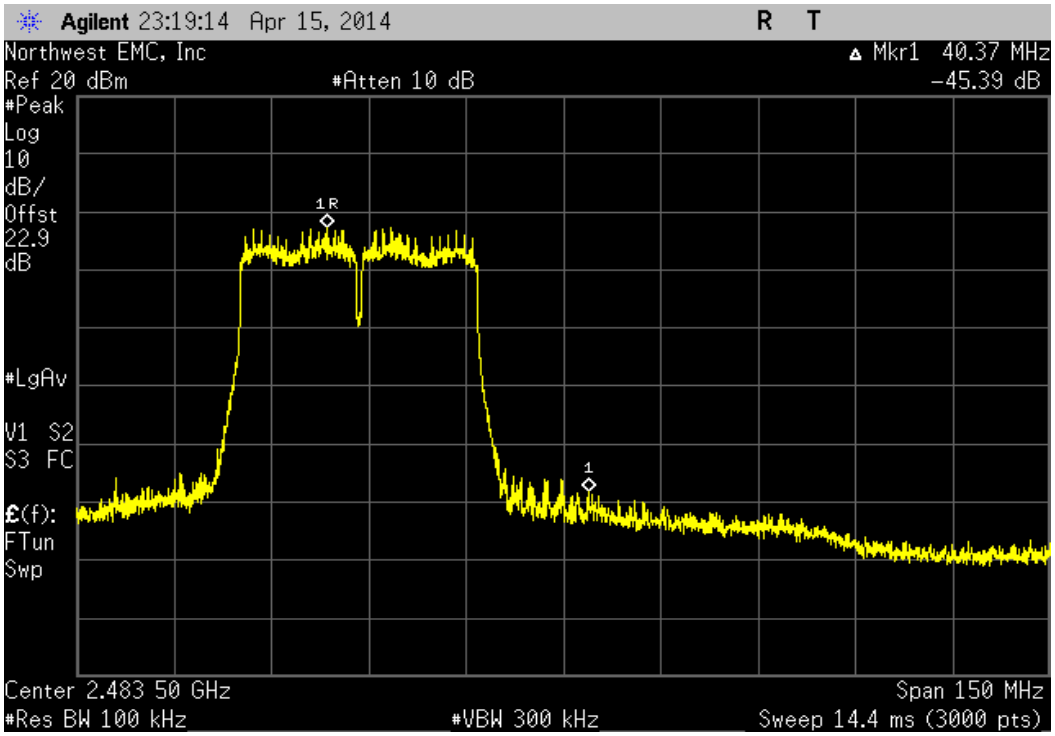
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 1/5 Low Channel, 2422 MHz

				Value	Limit	Result
				-42.64 dBc	≤ -20 dBc	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, 7/11 High Channel, 2452 MHz

				Value	Limit	Result
				-45.39 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	041148340753			**Date:**	03/22/14
Customer:	Microsoft Corporation			**Temperature:**	21.5°C
Attendees:	None			**Humidity:**	29%
Project:	1631			**Barometric Pres.:**	1007
Tested by:	Brandon Hobbs, Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

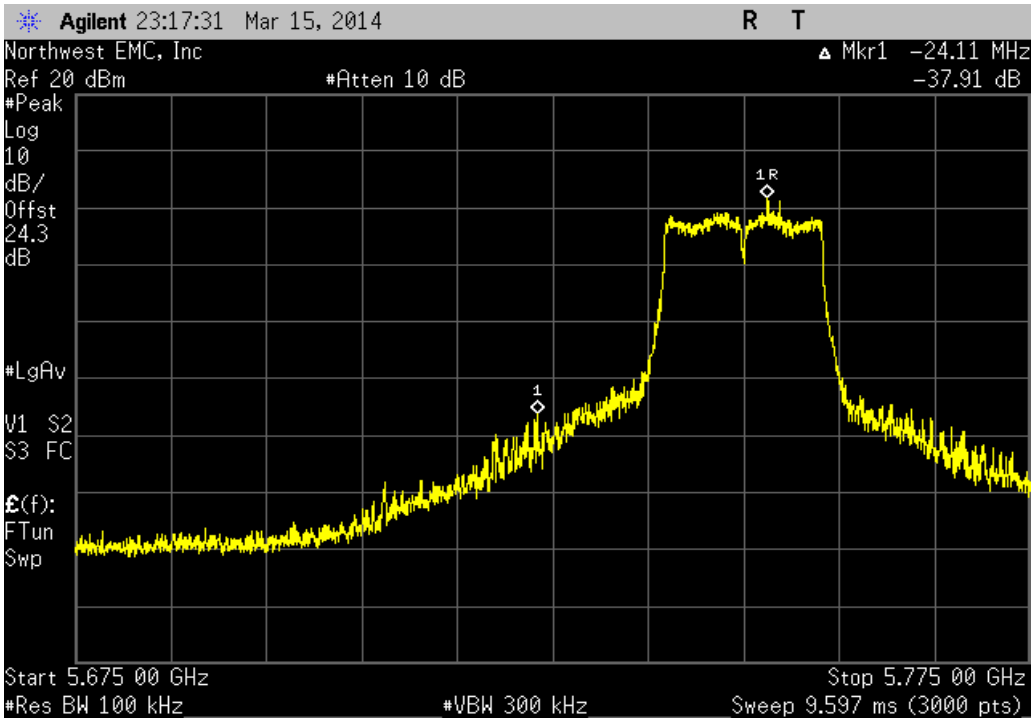
None

Configuration #	1	Signature

				Value	Limit	Result
IEEE 802.11(a)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			6 Mbps			
			Low Channel 149, 5745 MHz	-37.91 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-47.43 dBc	≤ -20 dBc	Pass
			36 Mbps			
			Low Channel 149, 5745 MHz	-41.73 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.17 dBc	≤ -20 dBc	Pass
			54 Mbps			
			Low Channel 149, 5745 MHz	-42.84 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.83 dBc	≤ -20 dBc	Pass
IEEE 802.11(n)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS7			
			Low Channel 149, 5745 MHz	-43.67 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-48.45 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS7			
			Low Channel 149/153, 5755 MHz	-34.26 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-45.71 dBc	≤ -20 dBc	Pass
IEEE 802.11(ac)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149, 5745 MHz	-43.23 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-43.24 dBc	≤ -20 dBc	Pass
			VHT, MCS8			
			Low Channel 149, 5745 MHz	-43.56 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-48.97 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153, 5755 MHz	-35.59 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-47.85 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153, 5755 MHz	-34.37 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-46.54 dBc	≤ -20 dBc	Pass
	80 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153/157/161, 5775 MHz	-28.4 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153/157/161, 5775 MHz	-30.48 dBc	≤ -20 dBc	Pass

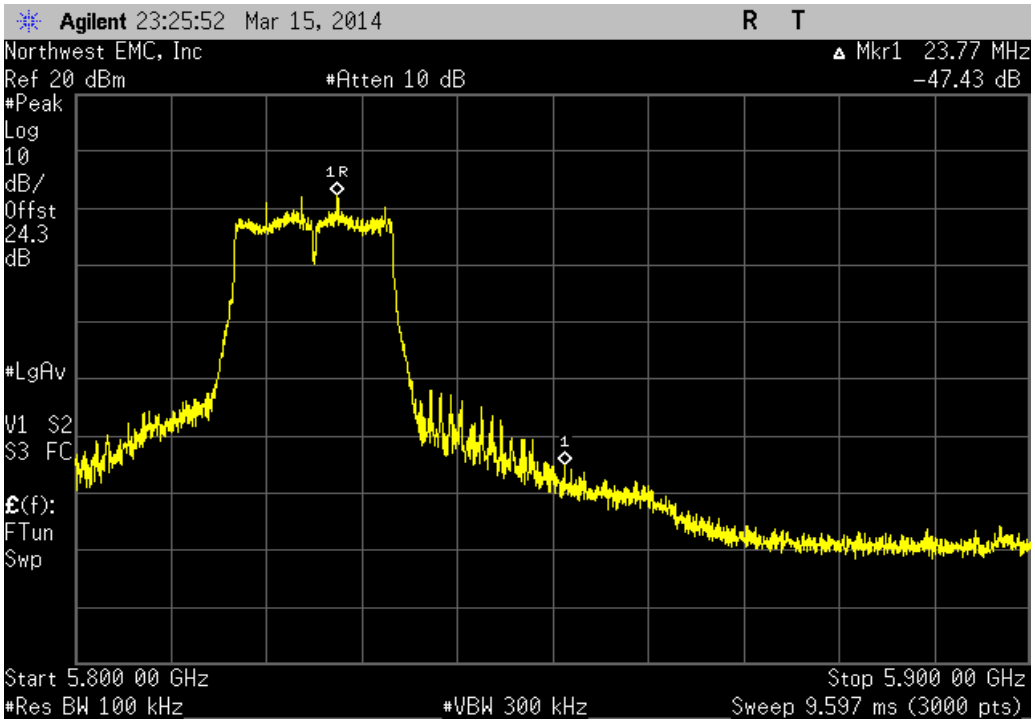
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-37.91 dBc	≤ -20 dBc	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz

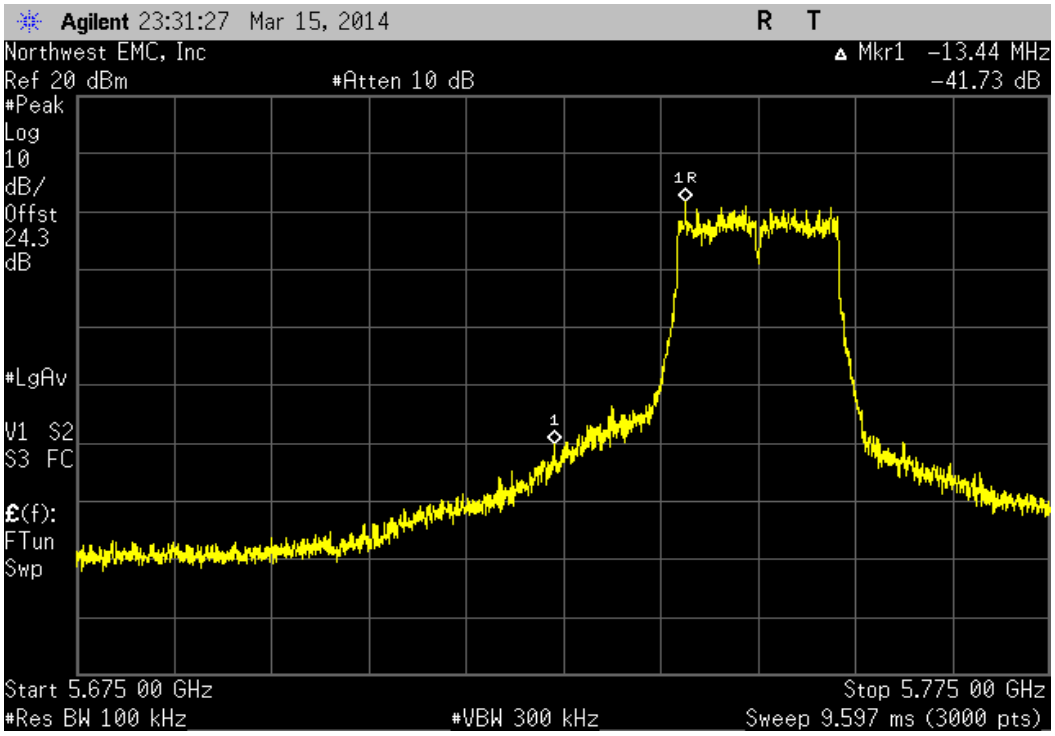
				Value	Limit	Result
				-47.43 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

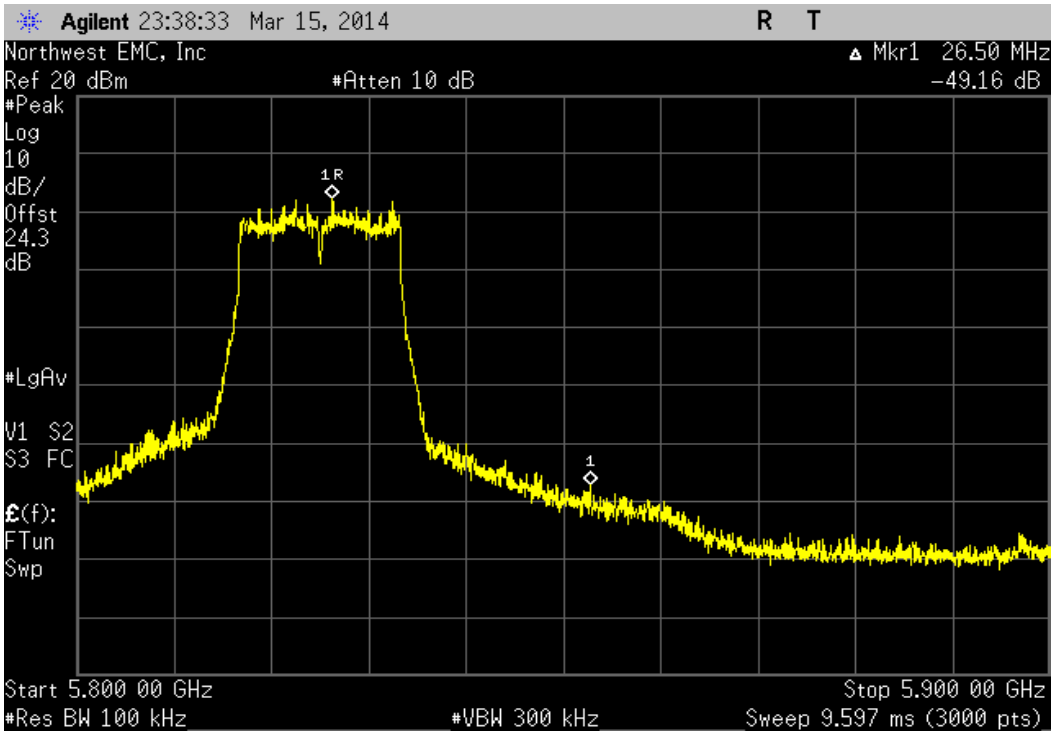
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-41.73 dBc	≤ -20 dBc	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, High Channel 165, 5825 MHz

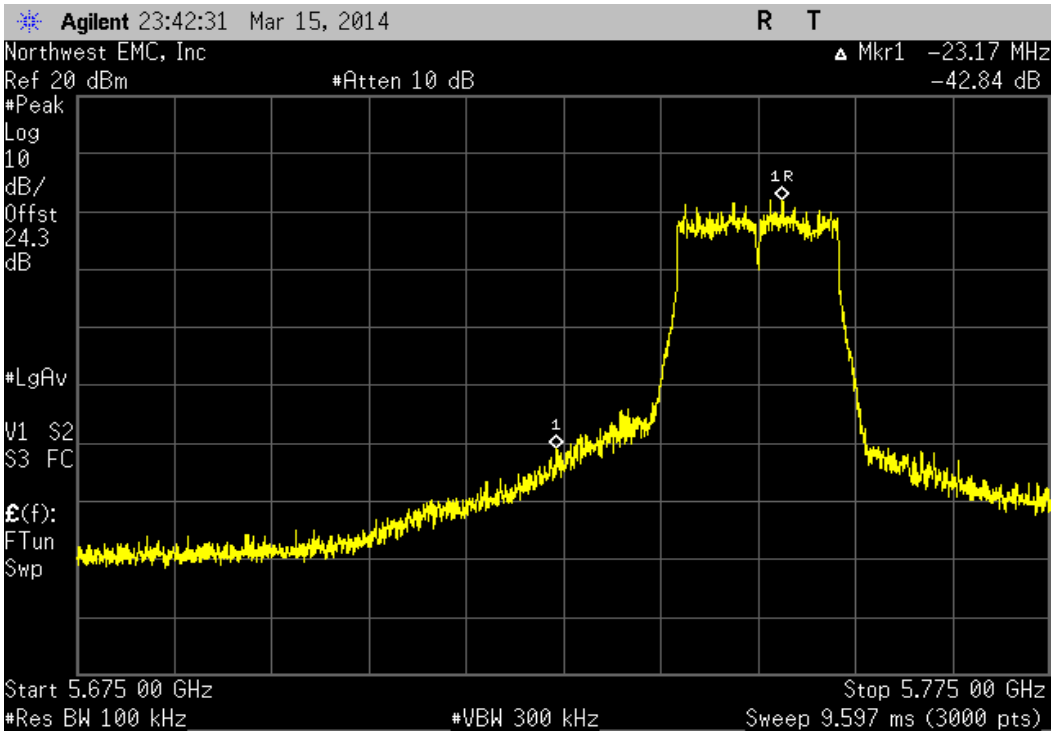
				Value	Limit	Result
				-49.17 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

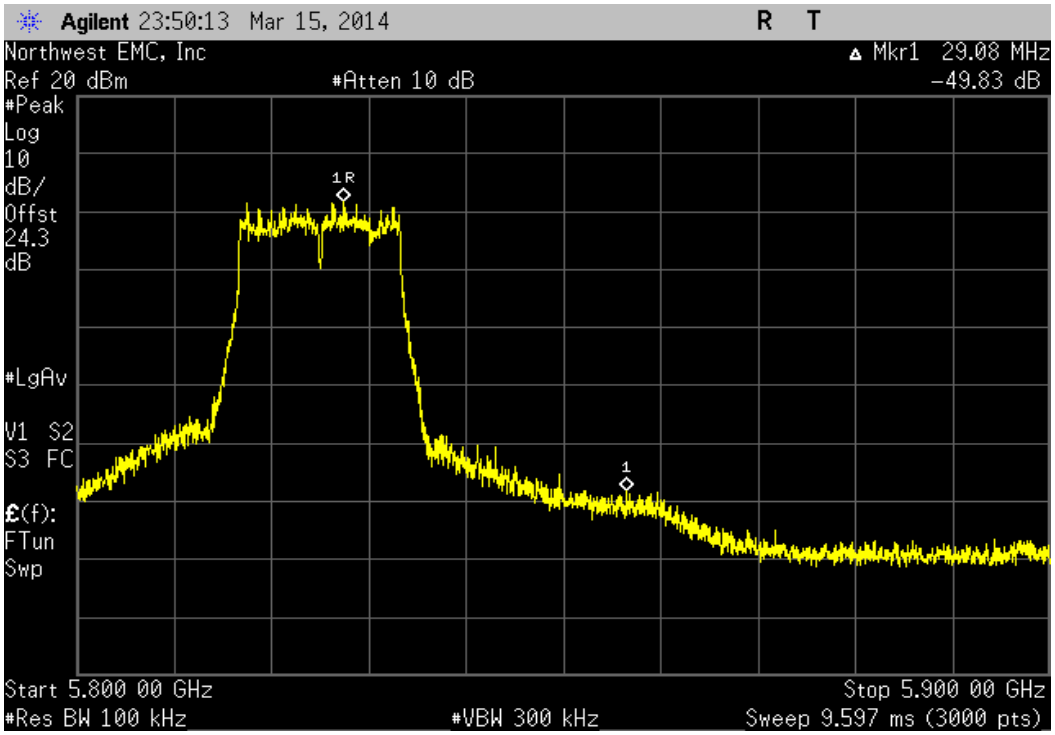
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-42.84 dBc	≤ -20 dBc	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, High Channel 165, 5825 MHz

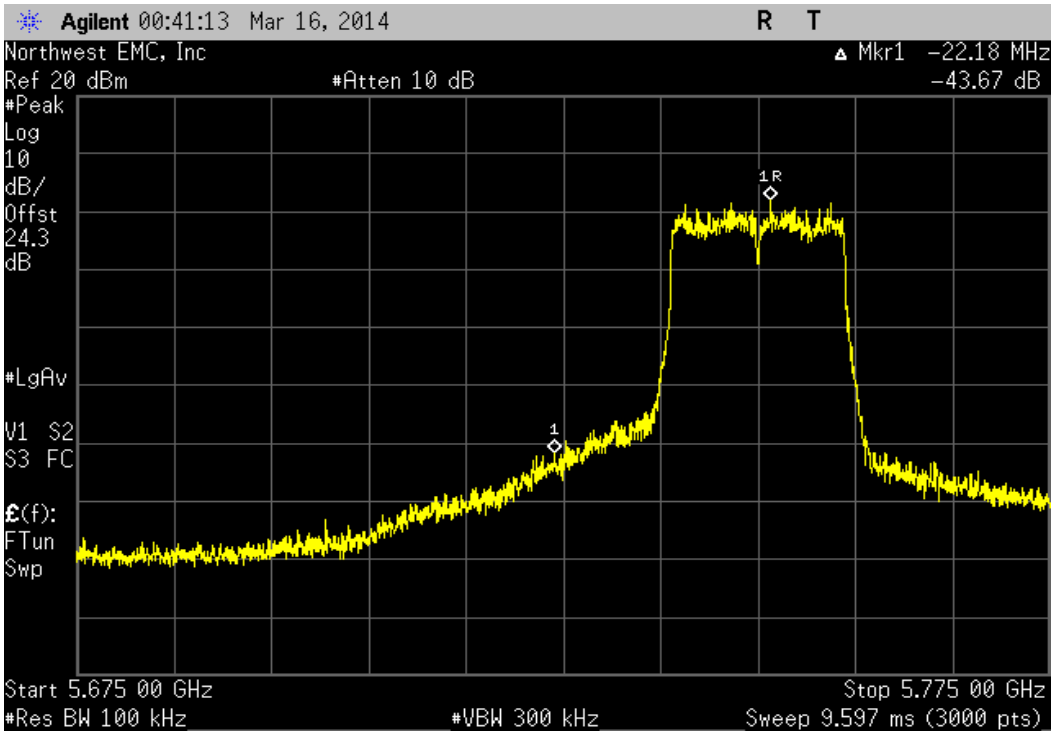
				Value	Limit	Result
				-49.83 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

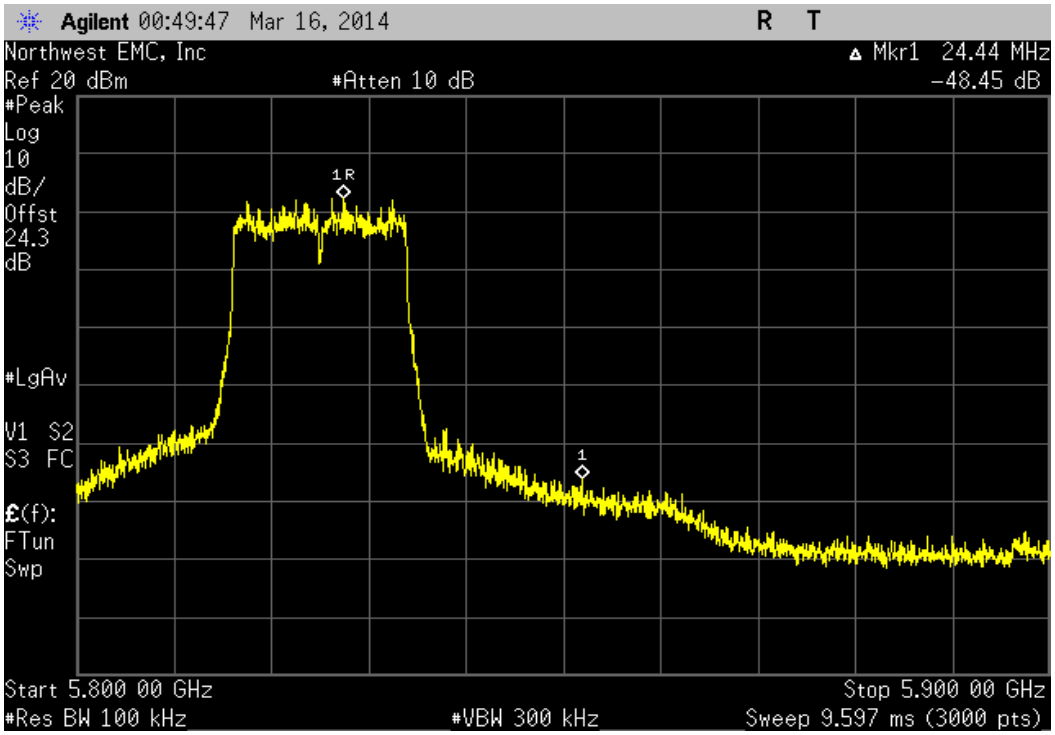
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-43.67 dBc	≤ -20 dBc	Pass



IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 165, 5825 MHz

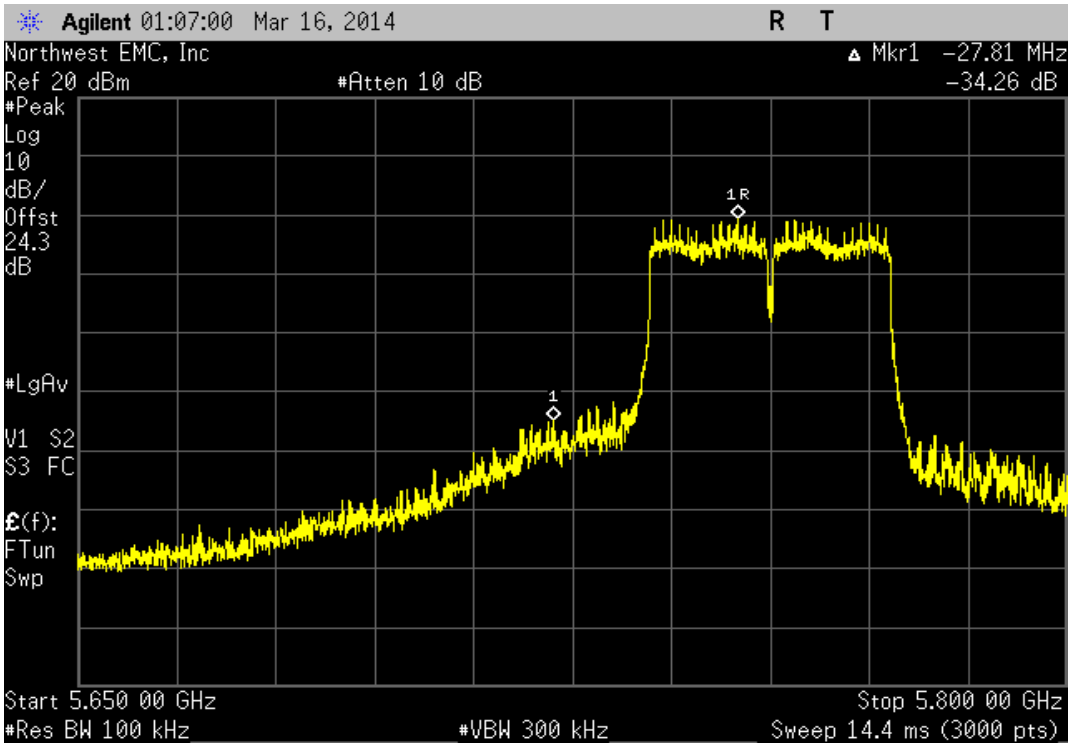
				Value	Limit	Result
				-48.45 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

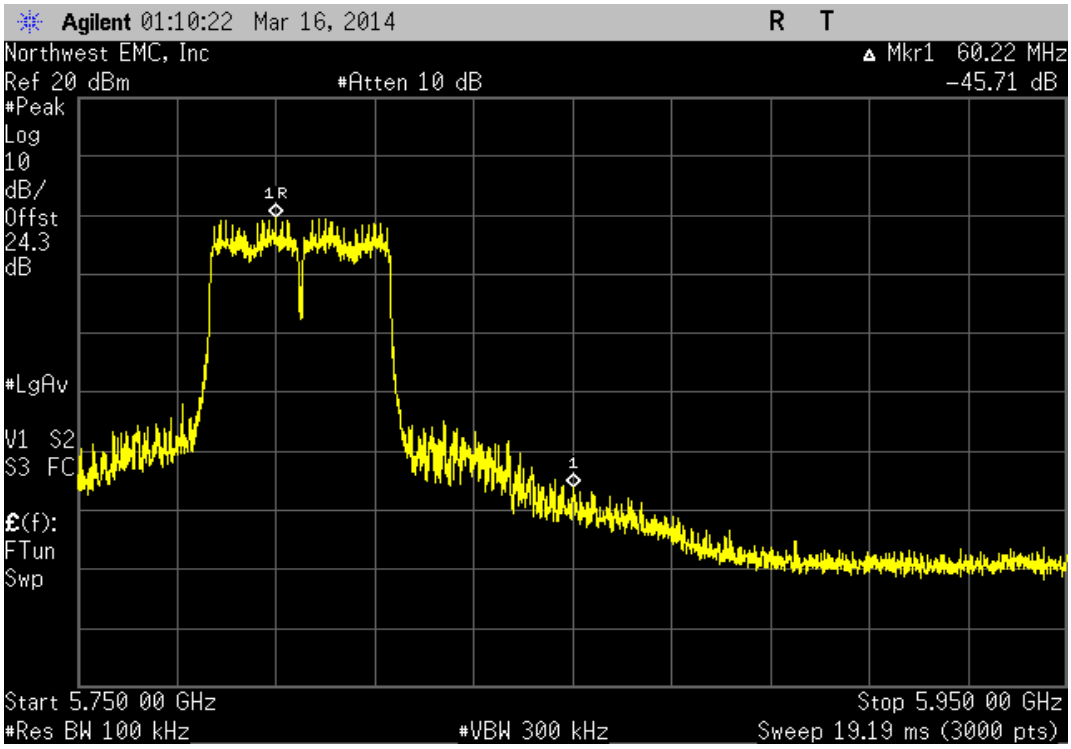
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-34.26 dBc	≤ -20 dBc	Pass



IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 157/161, 5795 MHz

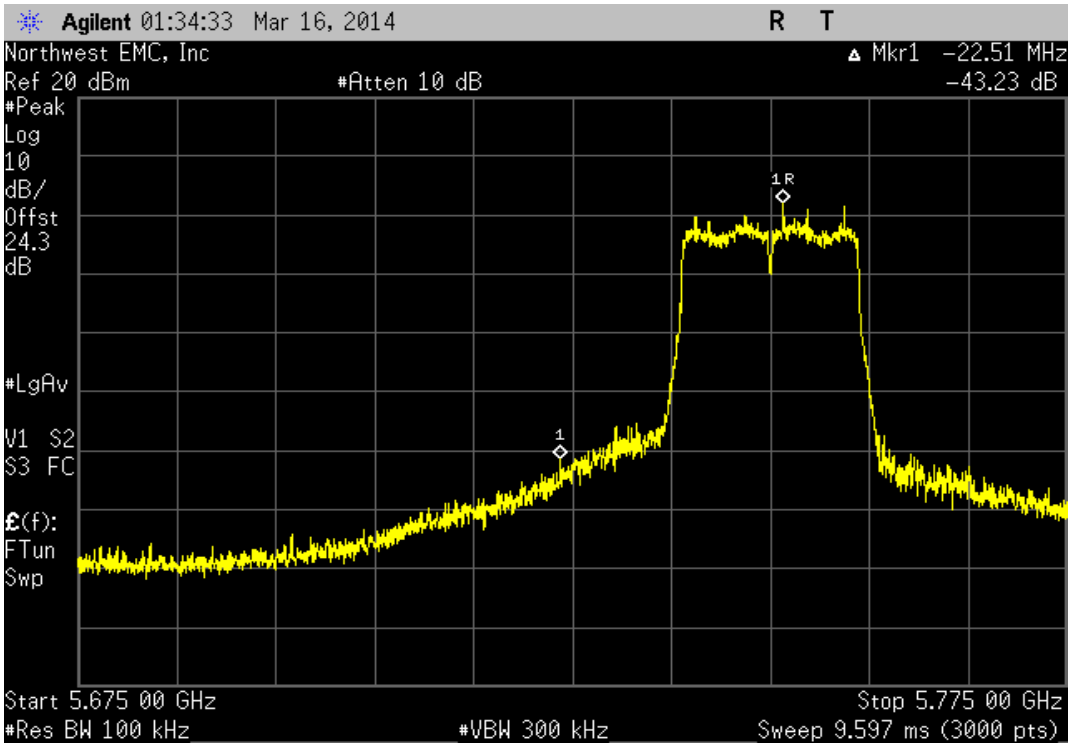
				Value	Limit	Result
				-45.71 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

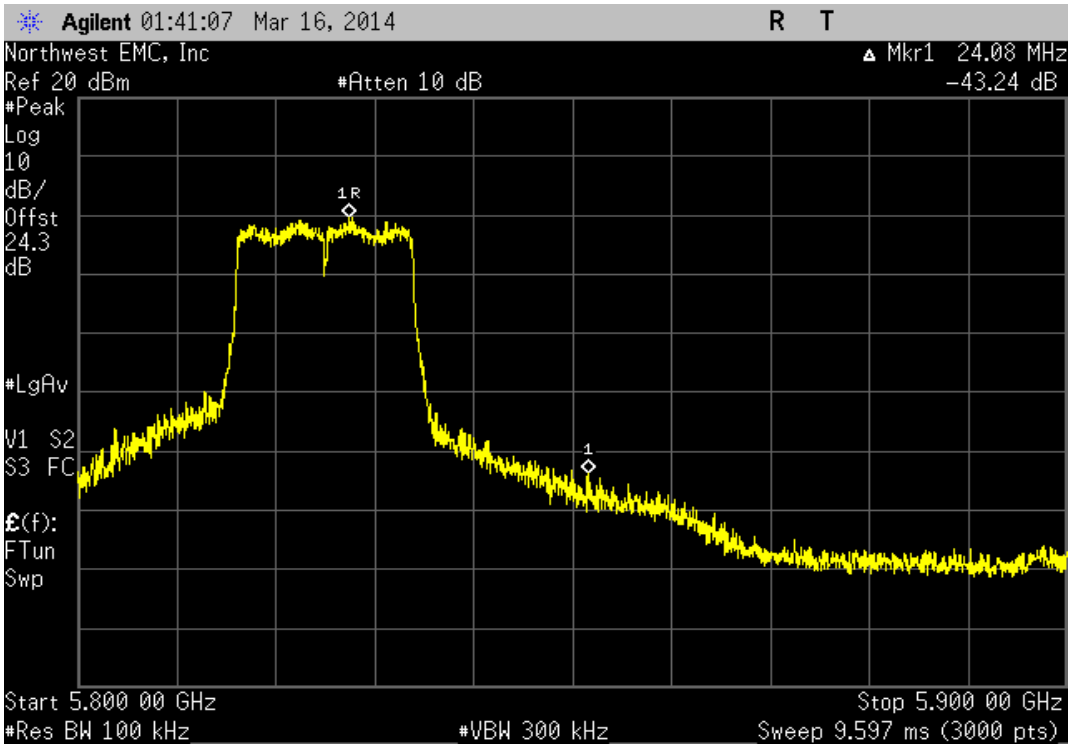
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-43.23 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

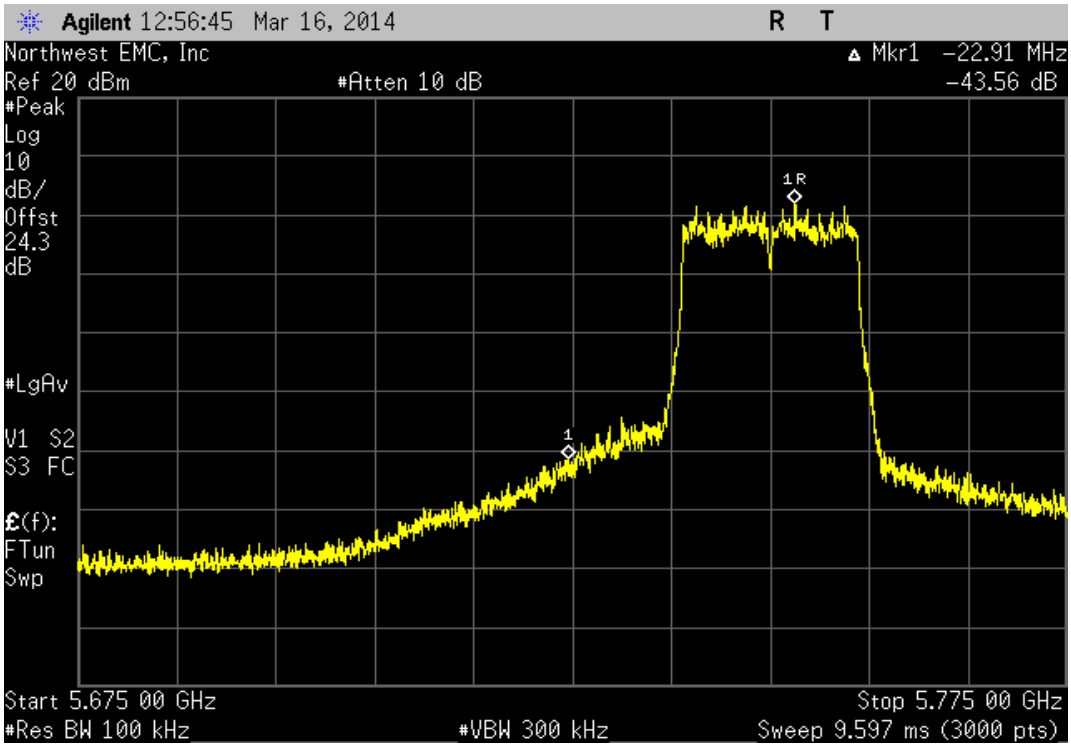
				Value	Limit	Result
				-43.24 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

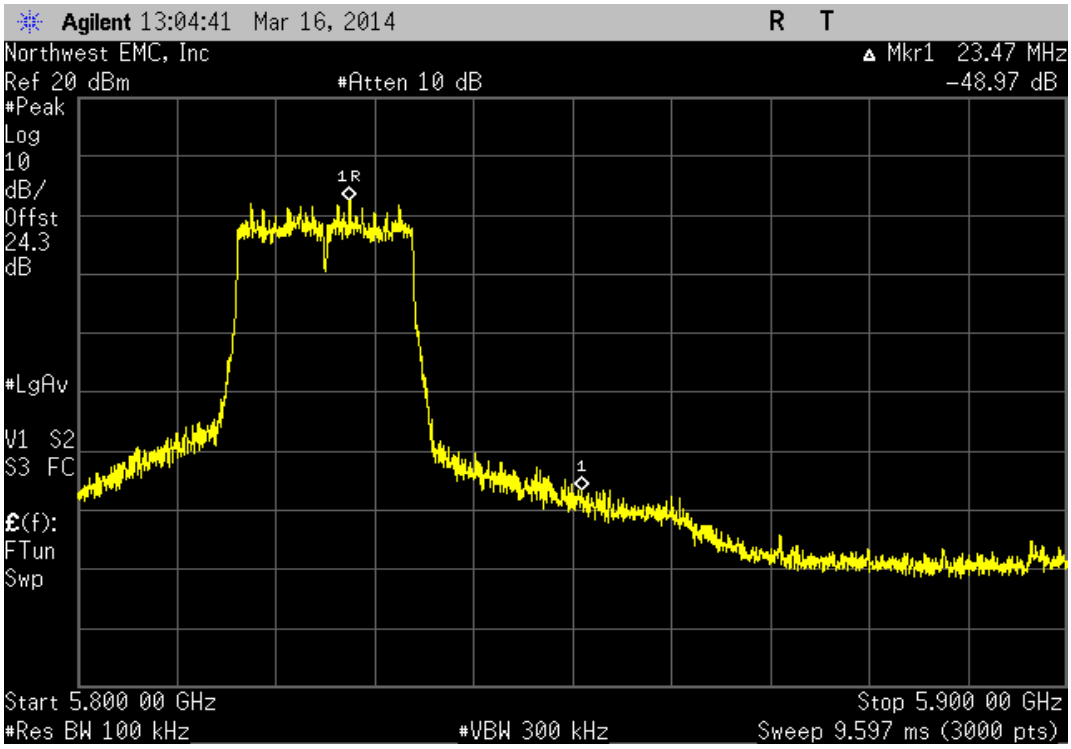
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-43.56 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

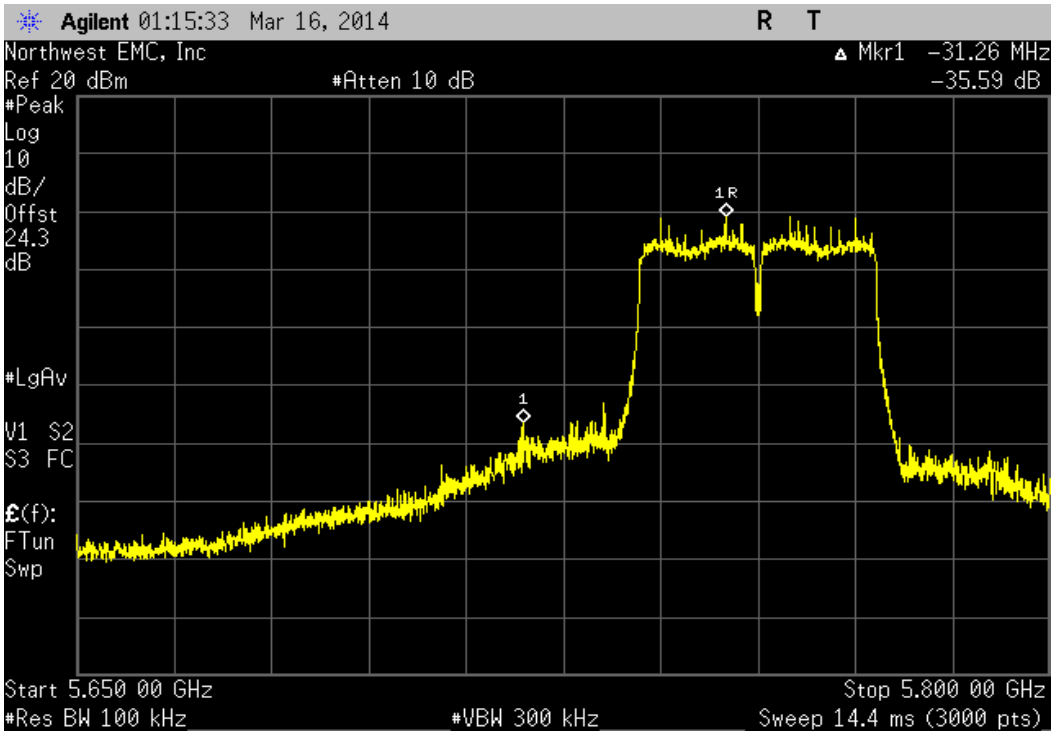
				Value	Limit	Result
				-48.97 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

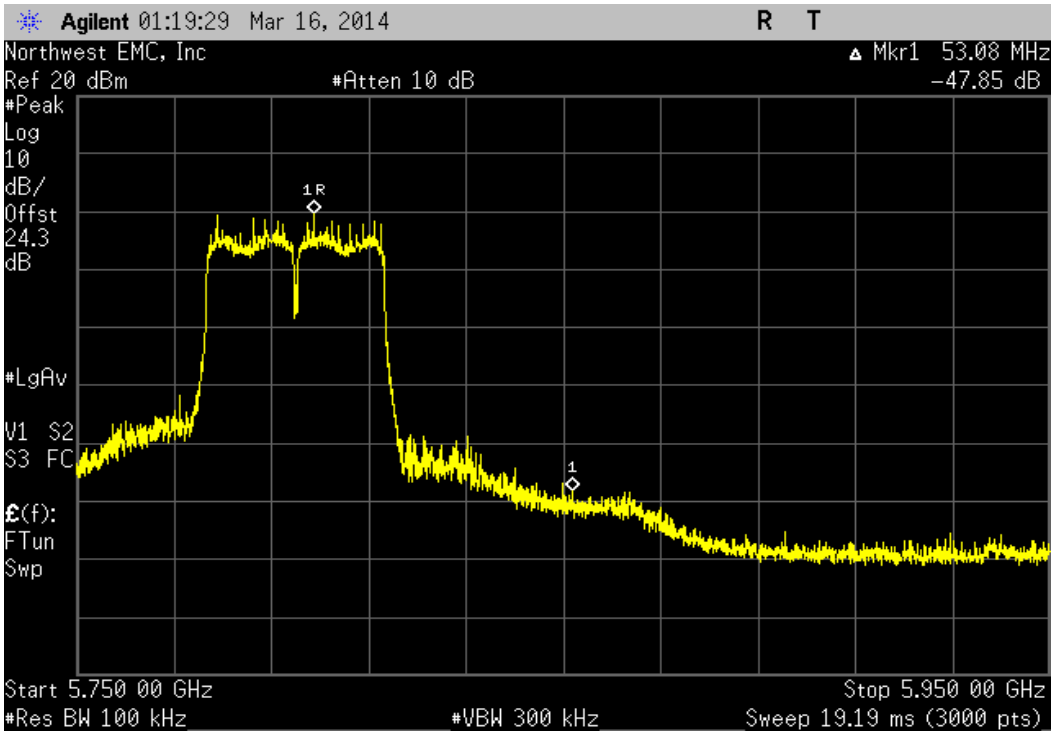
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

Value	Limit	Result
-35.59 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

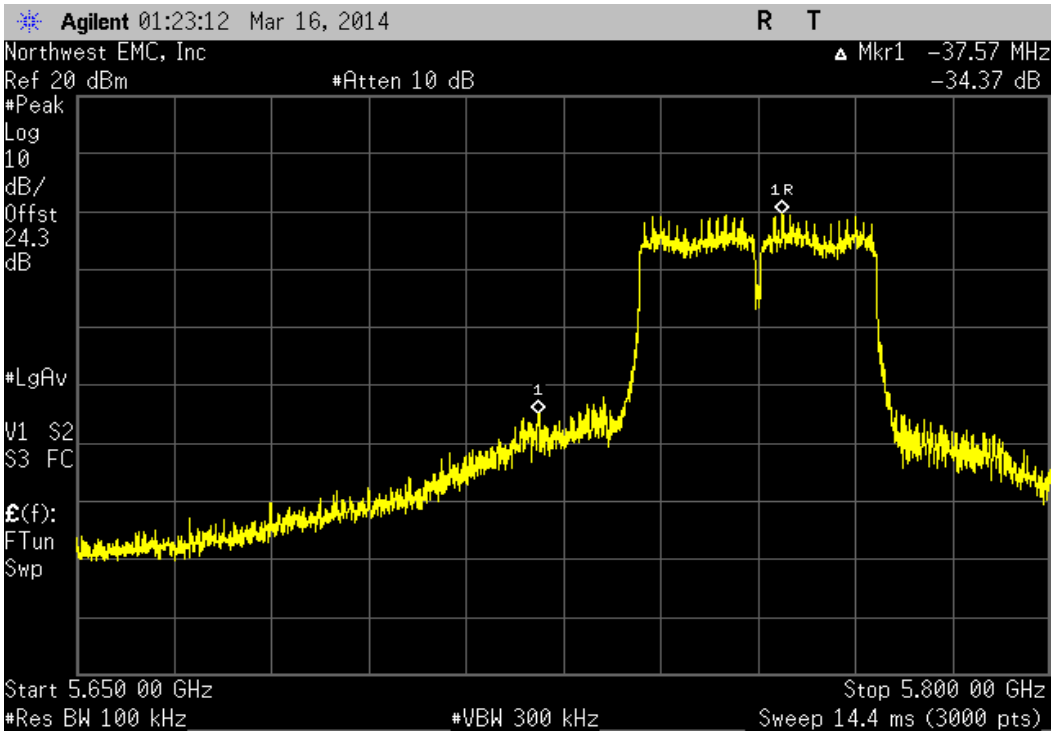
Value	Limit	Result
-47.85 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

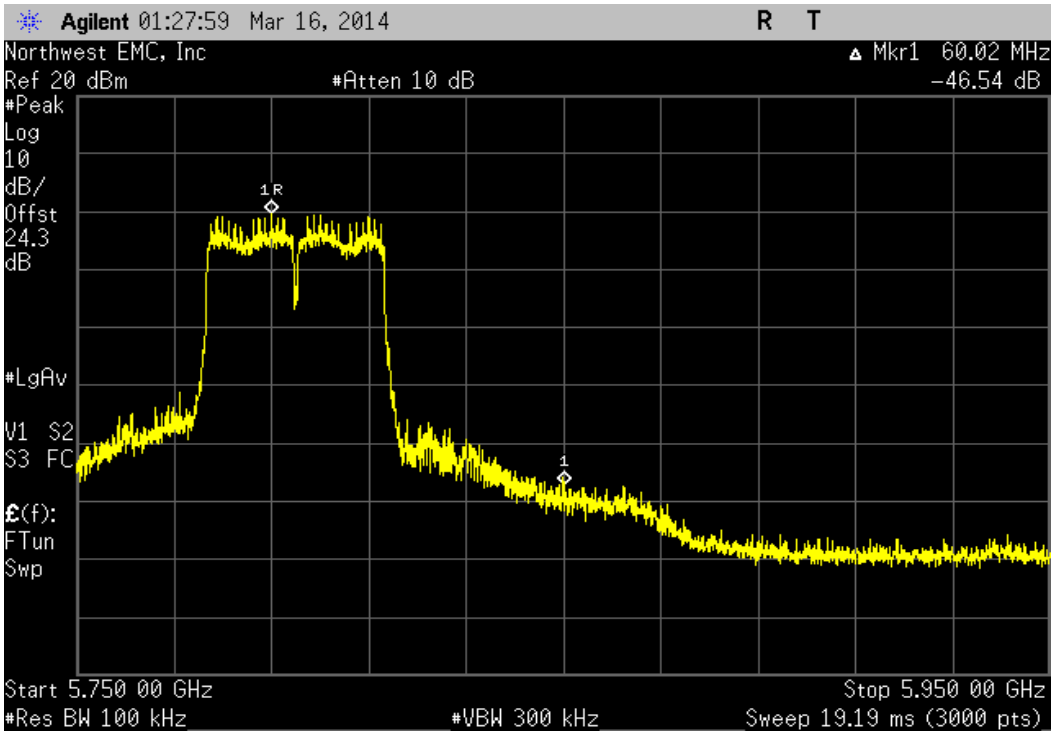
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-34.37 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

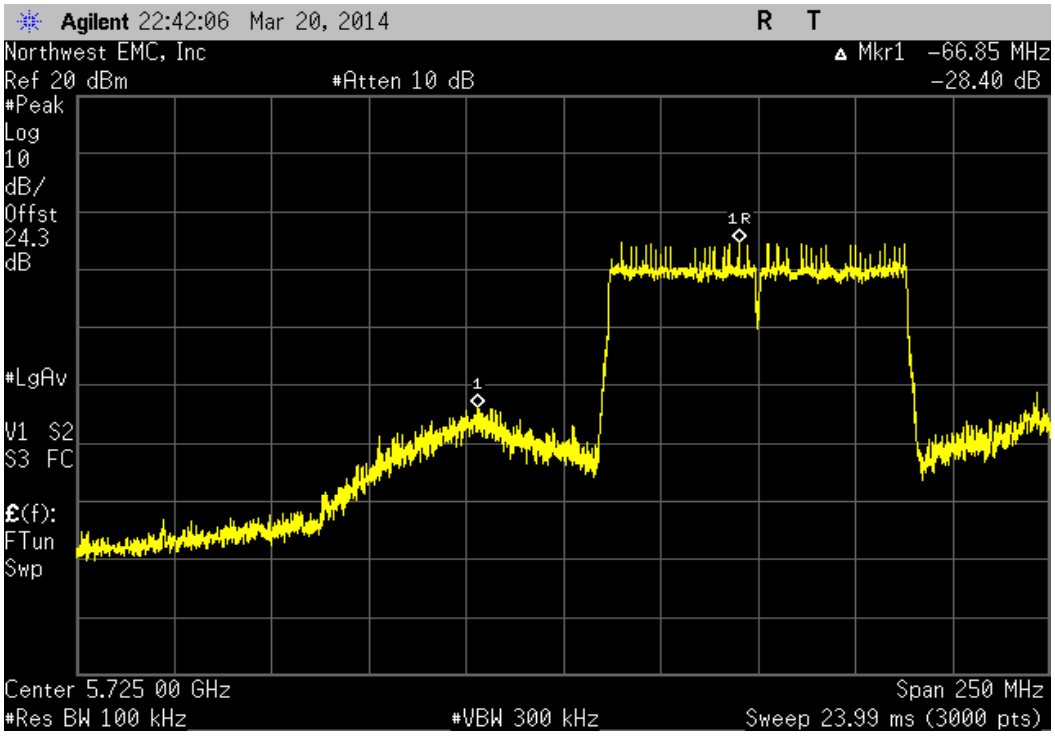
				Value	Limit	Result
				-46.54 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

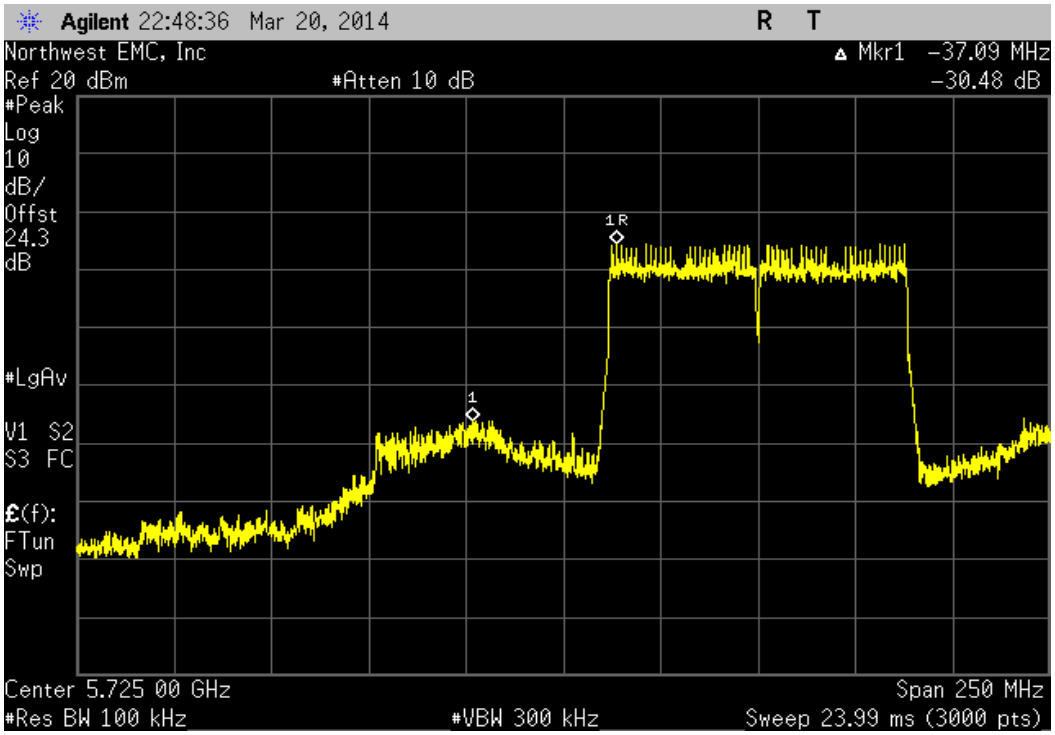
IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-28.4 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-30.48 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	041148340753			**Date:**	03/22/14
Customer:	Microsoft Corporation			**Temperature:**	21.5°C
Attendees:	None			**Humidity:**	29%
Project:	1631			**Barometric Pres.:**	1007
Tested by:	Brandon Hobbs, Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

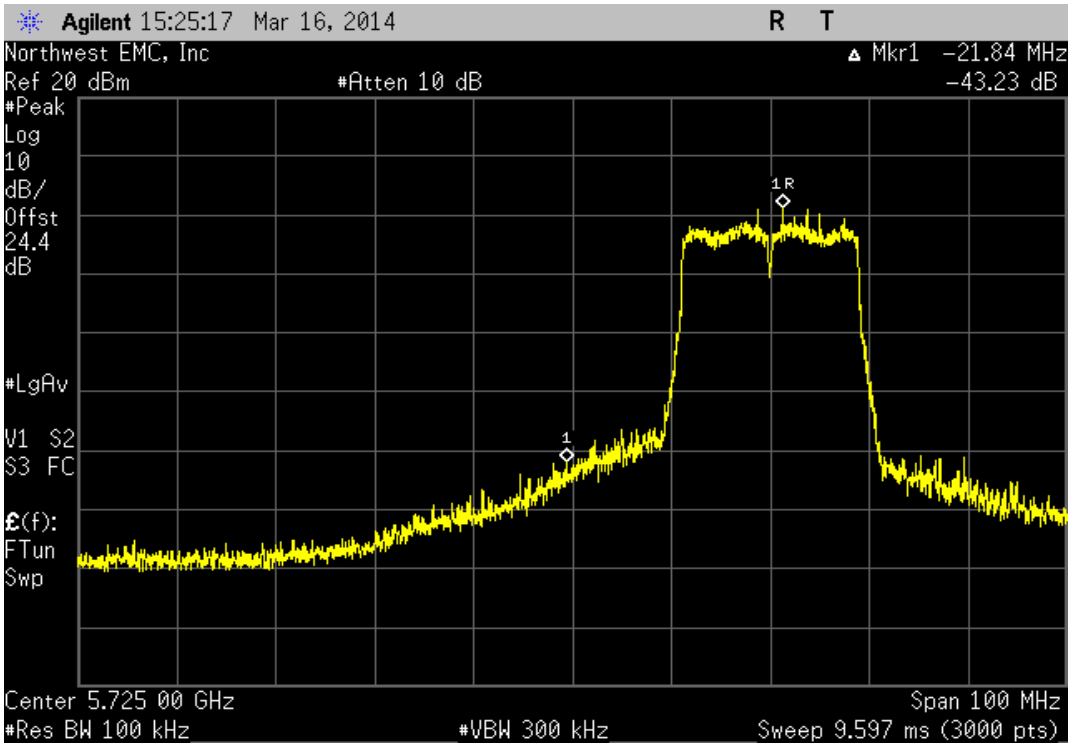
Configuration #	1	Signature

				Value	Limit	Result
A IEEE 802.11(n)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149, 5745 MHz	-43.23 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-47.77 dBc	≤ -20 dBc	Pass
			HT, MCS15			
			Low Channel 149, 5745 MHz	-42.04 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-48.18 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149/153, 5755 MHz	-36 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-48.48 dBc	≤ -20 dBc	Pass
			HT, MCS15			
			Low Channel 149/153, 5755 MHz	-35.27 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-45.62 dBc	≤ -20 dBc	Pass
A IEEE 802.11(ac)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149, 5745 MHz	-30.49 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-36.33 dBc	≤ -20 dBc	Pass
			VHT, MCS8			
			Low Channel 149, 5745 MHz	-42.14 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.38 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153, 5755 MHz	-22.49 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-36.13 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153, 5755 MHz	-36.63 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-46.37 dBc	≤ -20 dBc	Pass
	80 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153/157/161, 5775 MHz	-25.86 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153/157/161, 5775 MHz	-29.17 dBc	≤ -20 dBc	Pass
B IEEE 802.11(n)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149, 5745 MHz	-41 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.17 dBc	≤ -20 dBc	Pass
			HT, MCS15			
			Low Channel 149, 5745 MHz	-44.06 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.65 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS8			
			Low Channel 149/153, 5755 MHz	-35.7 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-49.67 dBc	≤ -20 dBc	Pass
			HT, MCS15			
			Low Channel 149/153, 5755 MHz	-34.92 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-44.6 dBc	≤ -20 dBc	Pass
B IEEE 802.11(ac)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149, 5745 MHz	-27.86 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-36.31 dBc	≤ -20 dBc	Pass
			VHT, MCS8			
			Low Channel 149, 5745 MHz	-44.12 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.6 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153, 5755 MHz	-32.01 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-44.52 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153, 5755 MHz	-37.61 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-47.04 dBc	≤ -20 dBc	Pass
	80 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153/157/161, 5775 MHz	-20.18 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153/157/161, 5775 MHz	-31.59 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

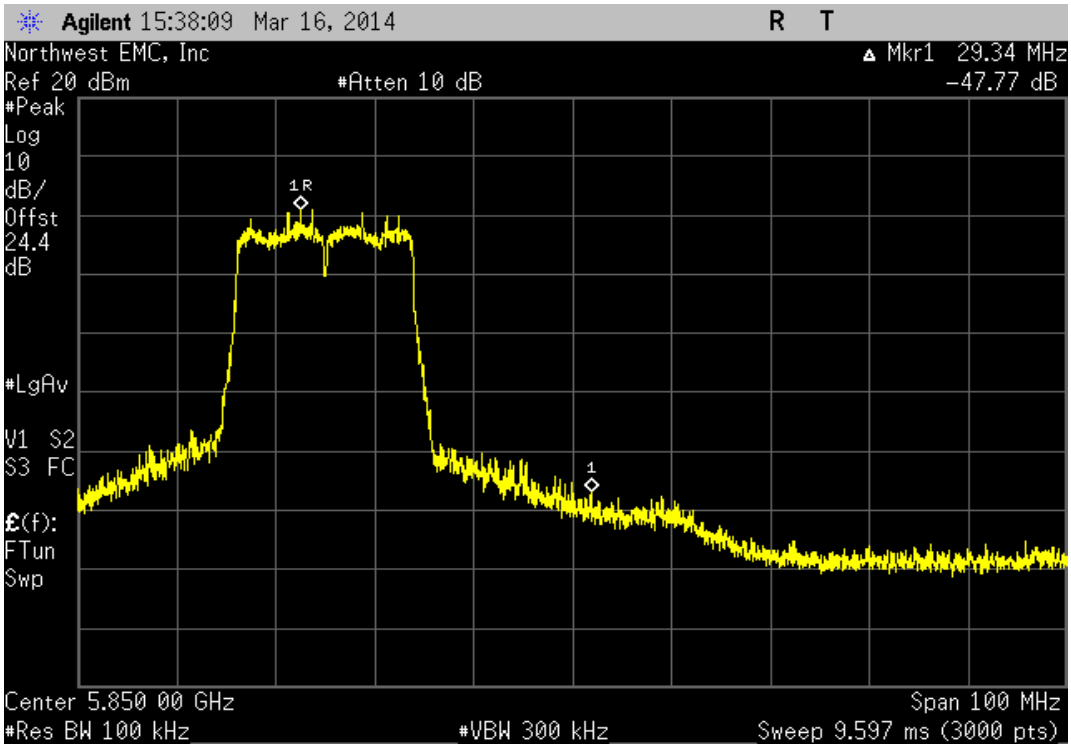
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-43.23 dBc	≤ -20 dBc	Pass



A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 165, 5825 MHz

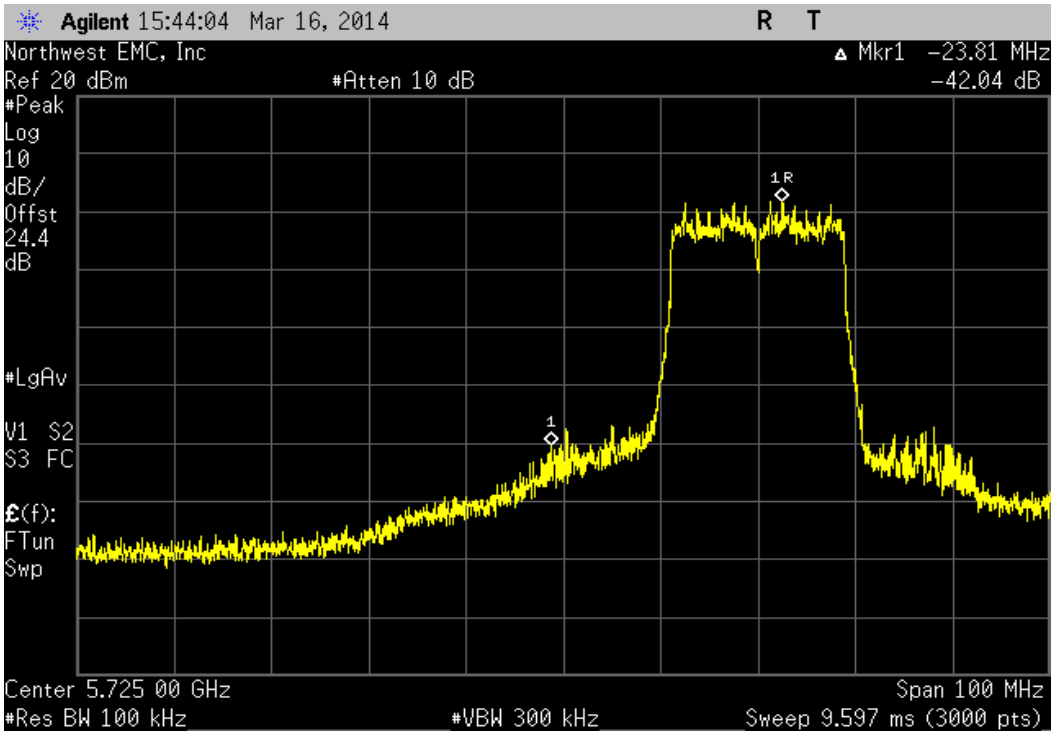
				Value	Limit	Result
				-47.77 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

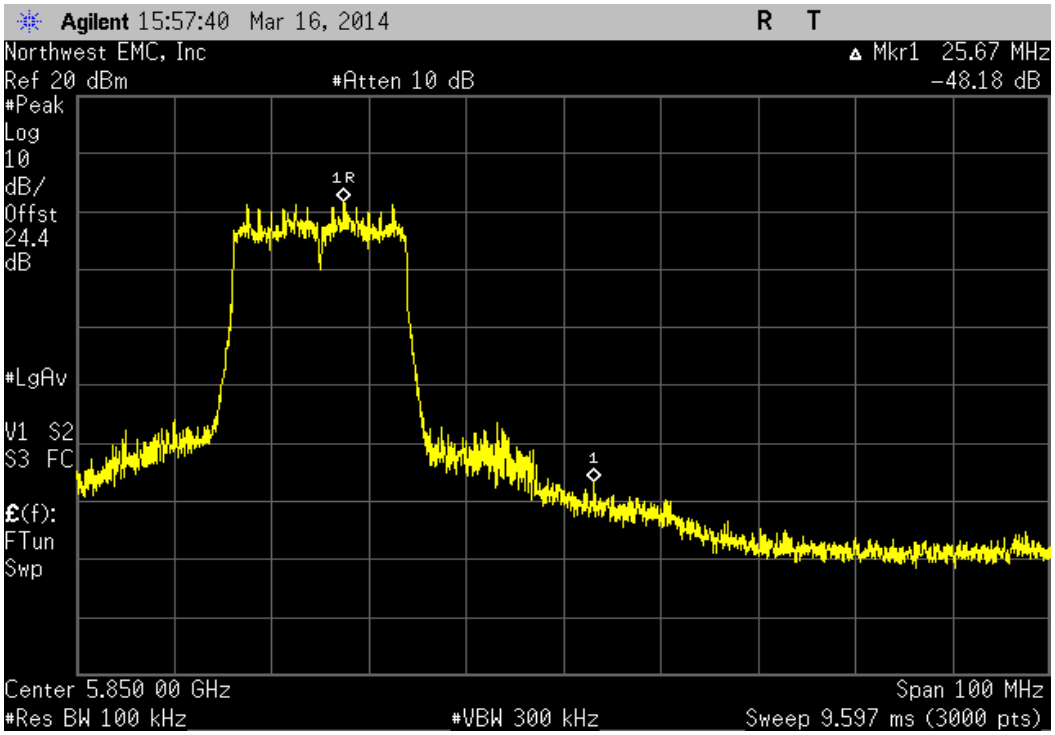
A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-42.04 dBc	≤ -20 dBc	Pass



A IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 165, 5825 MHz

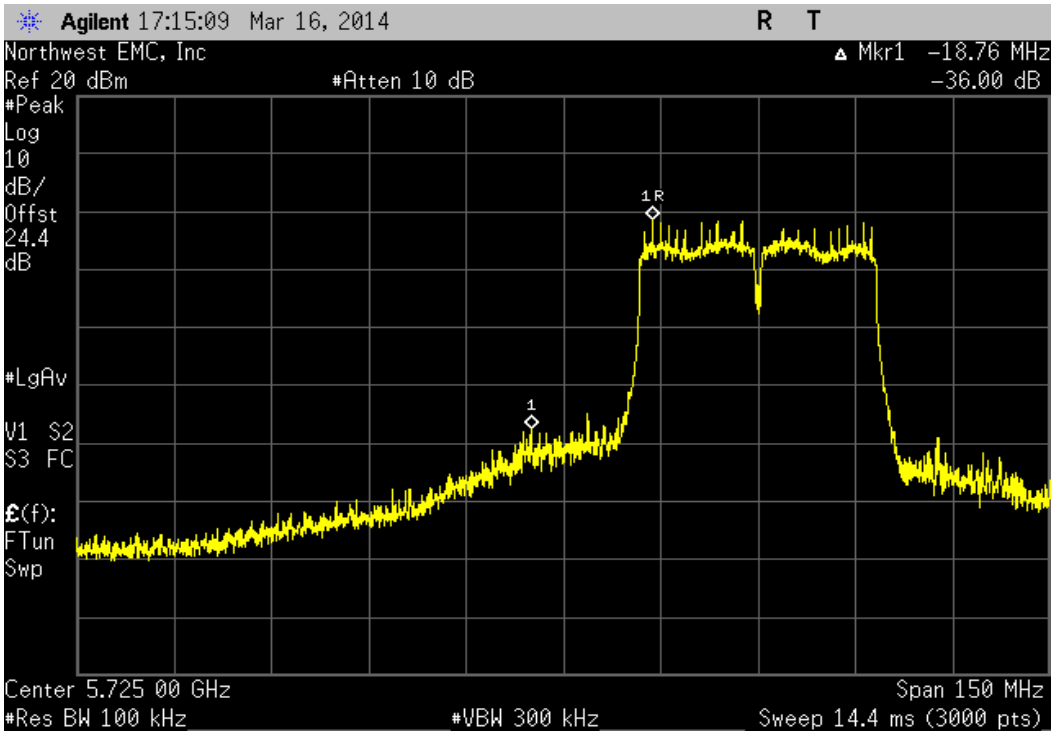
				Value	Limit	Result
				-48.18 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

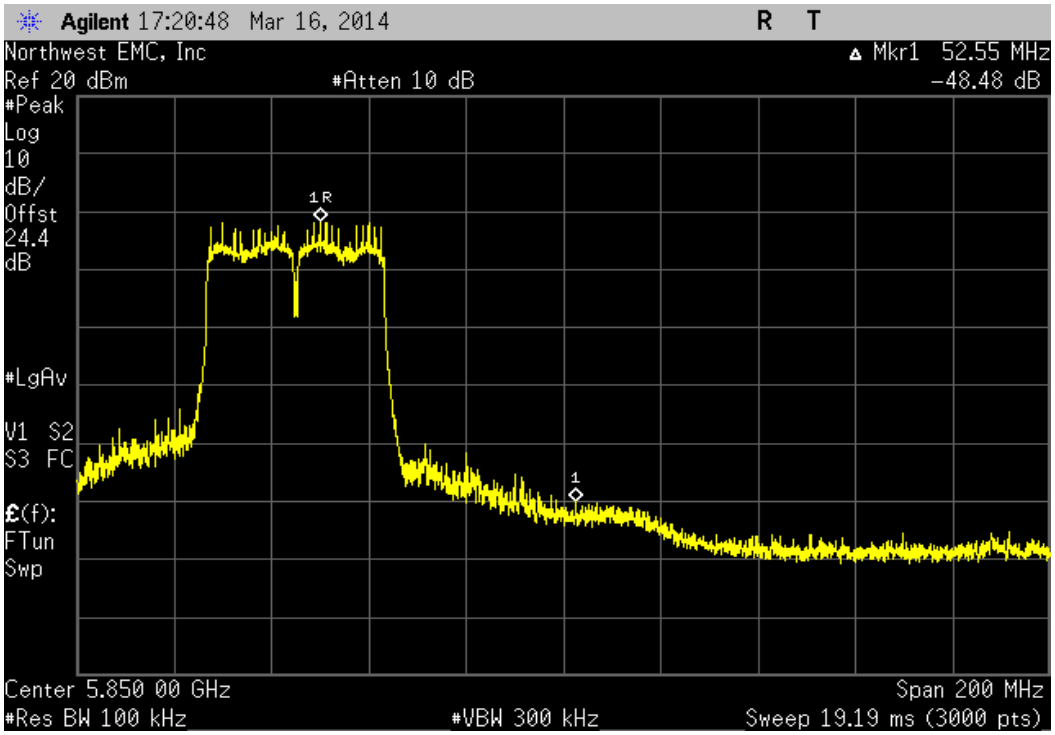
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-36 dBc	≤ -20 dBc	Pass



A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 157/161, 5795 MHz

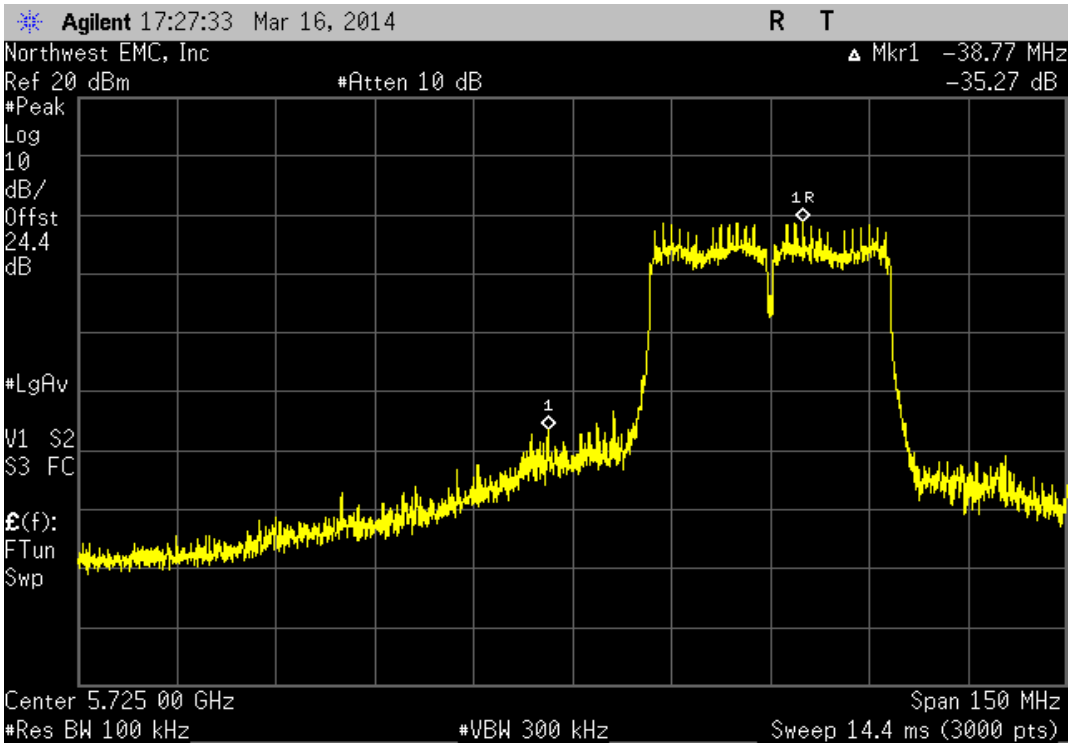
				Value	Limit	Result
				-48.48 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

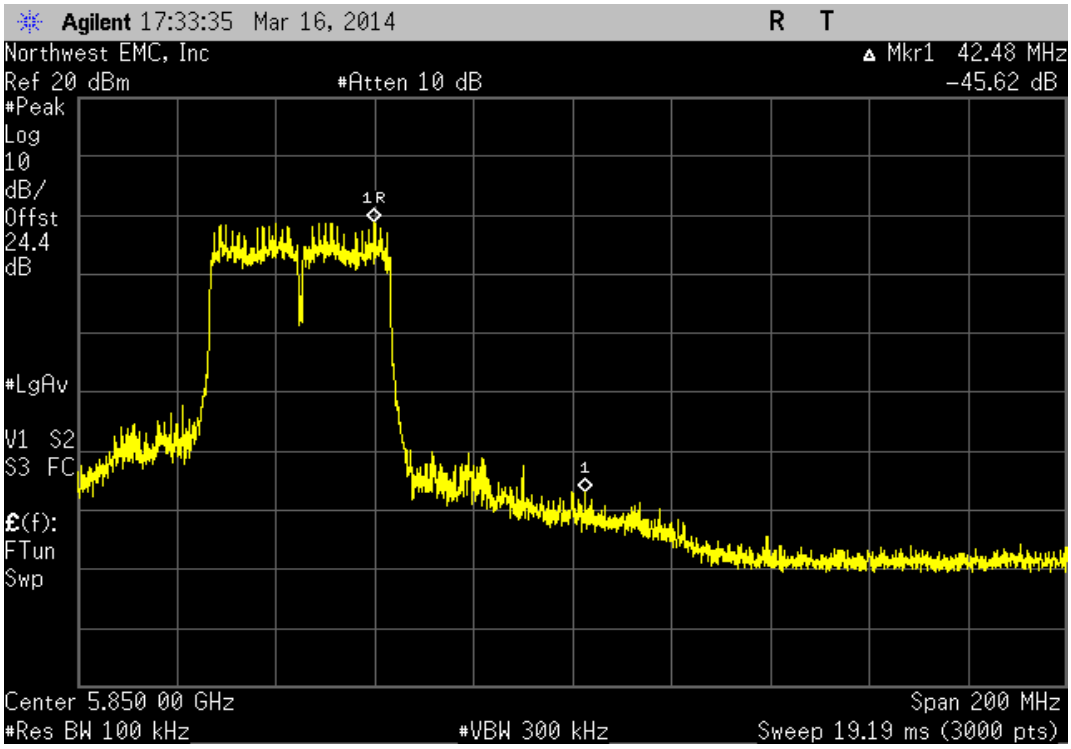
A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-35.27 dBc	≤ -20 dBc	Pass



A IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 157/161, 5795 MHz

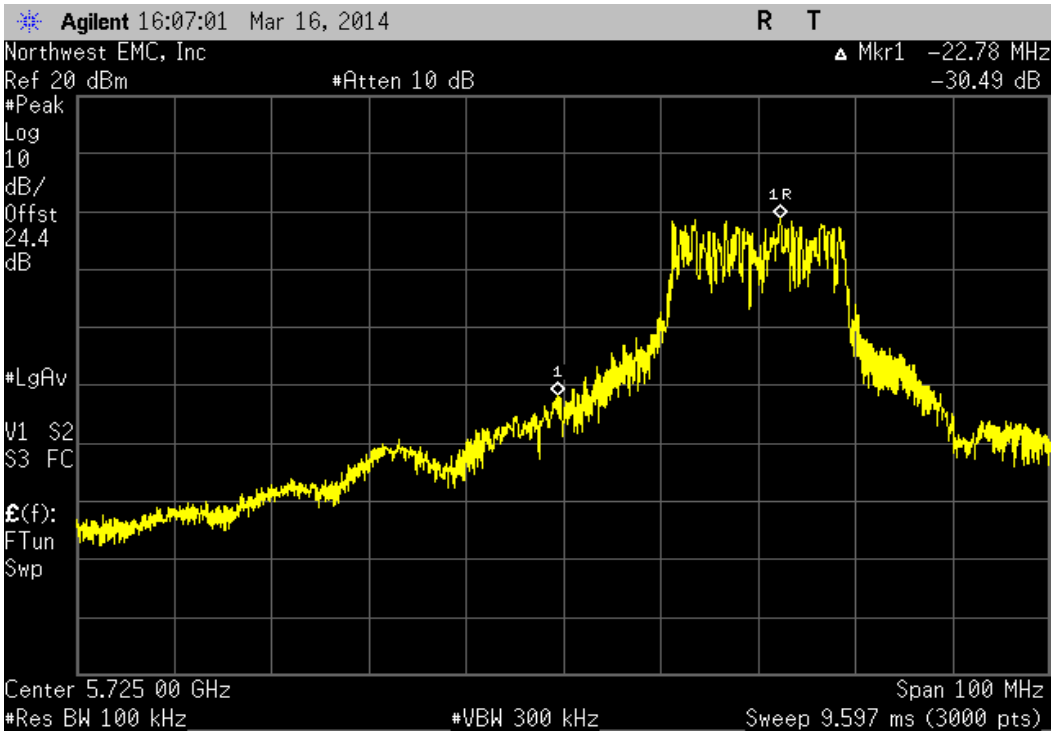
				Value	Limit	Result
				-45.62 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

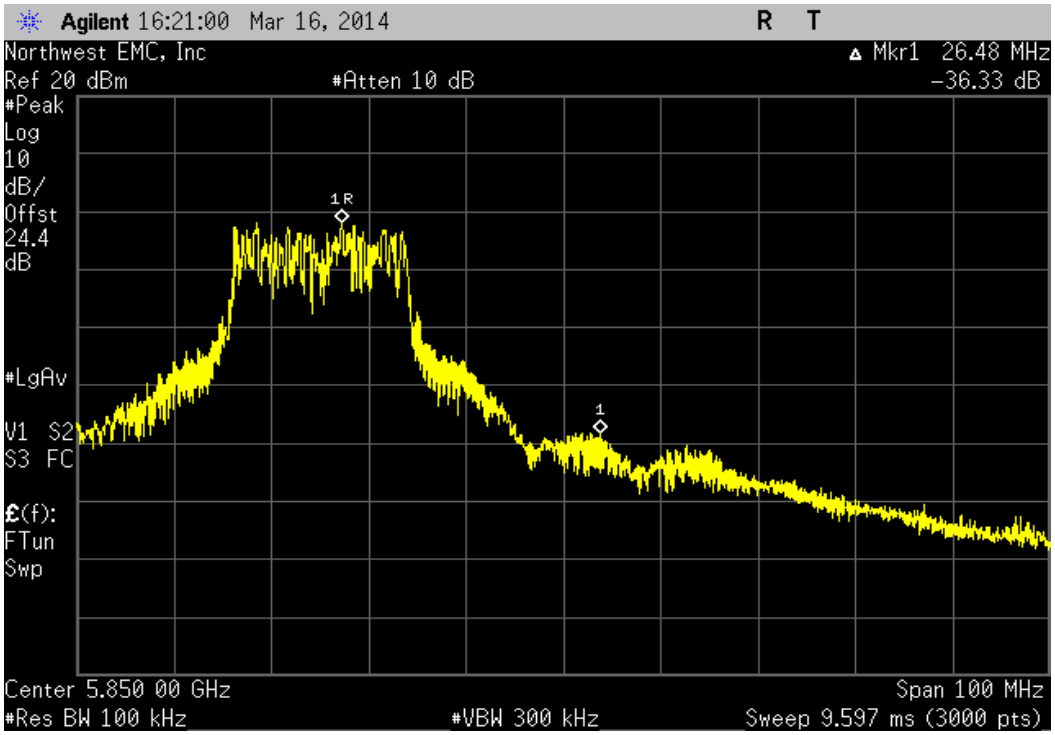
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

Value	Limit	Result
-30.49 dBc	≤ -20 dBc	Pass



A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

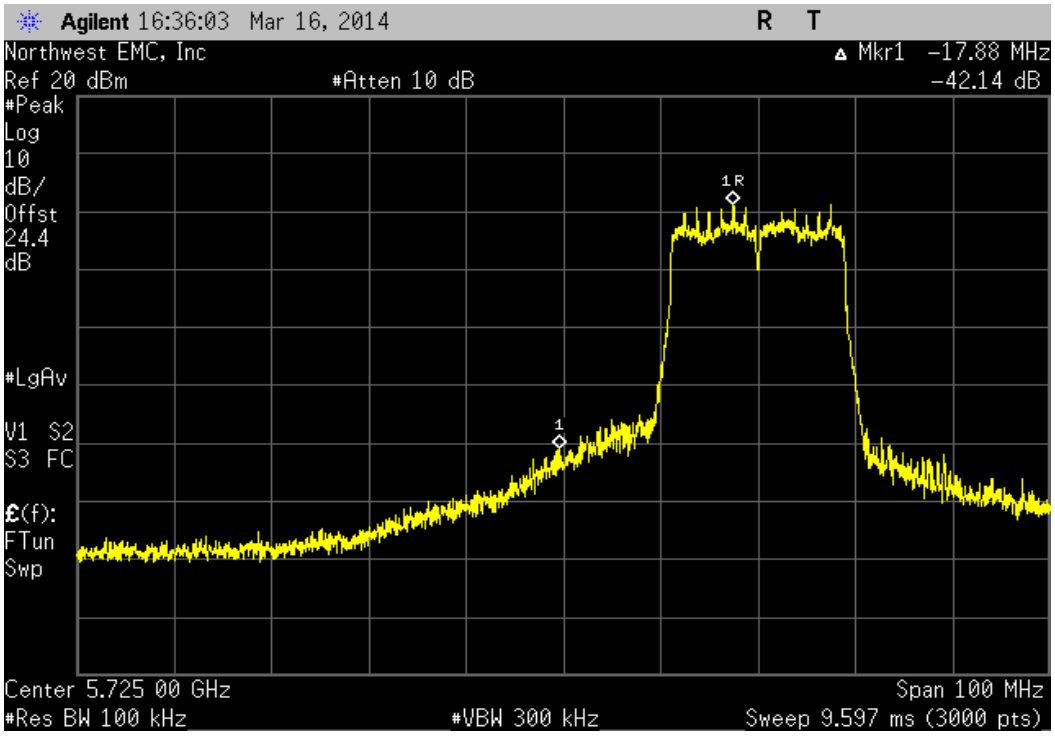
Value	Limit	Result
-36.33 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

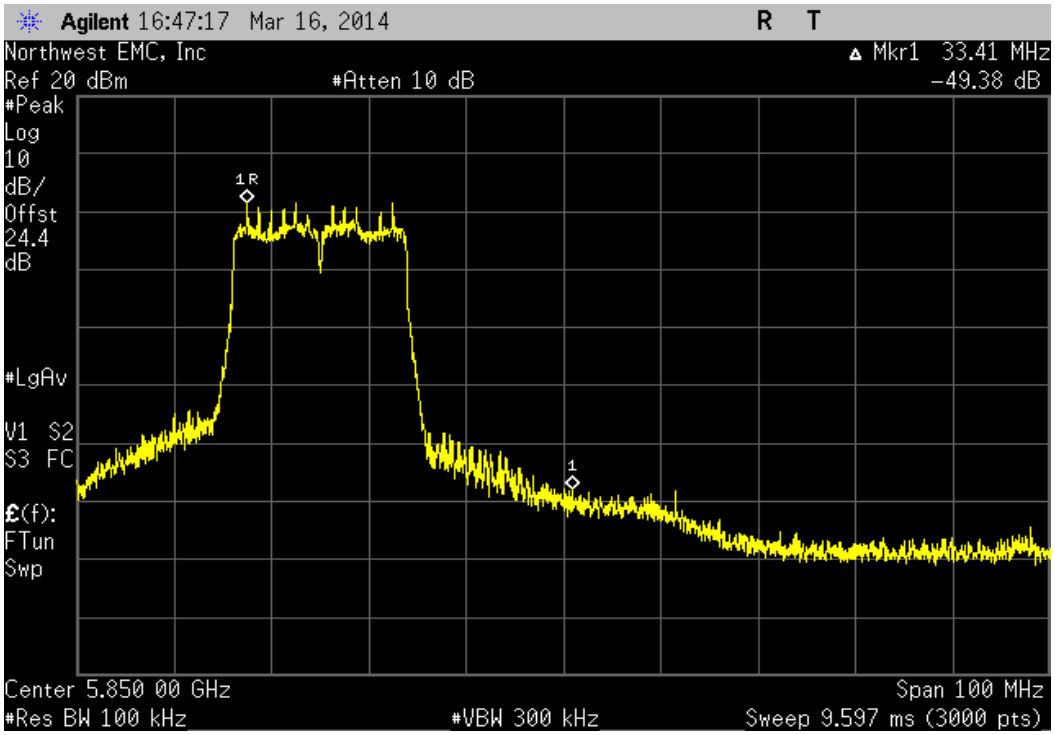
A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-42.14 dBc	≤ -20 dBc	Pass



A IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

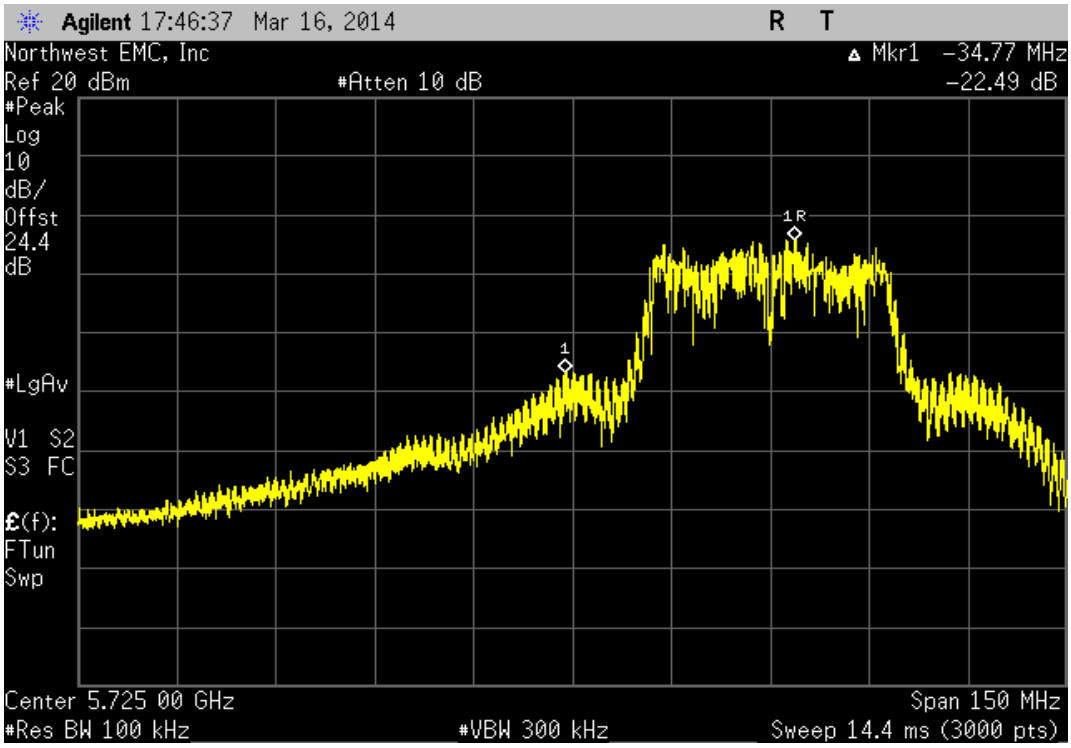
				Value	Limit	Result
				-49.38 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

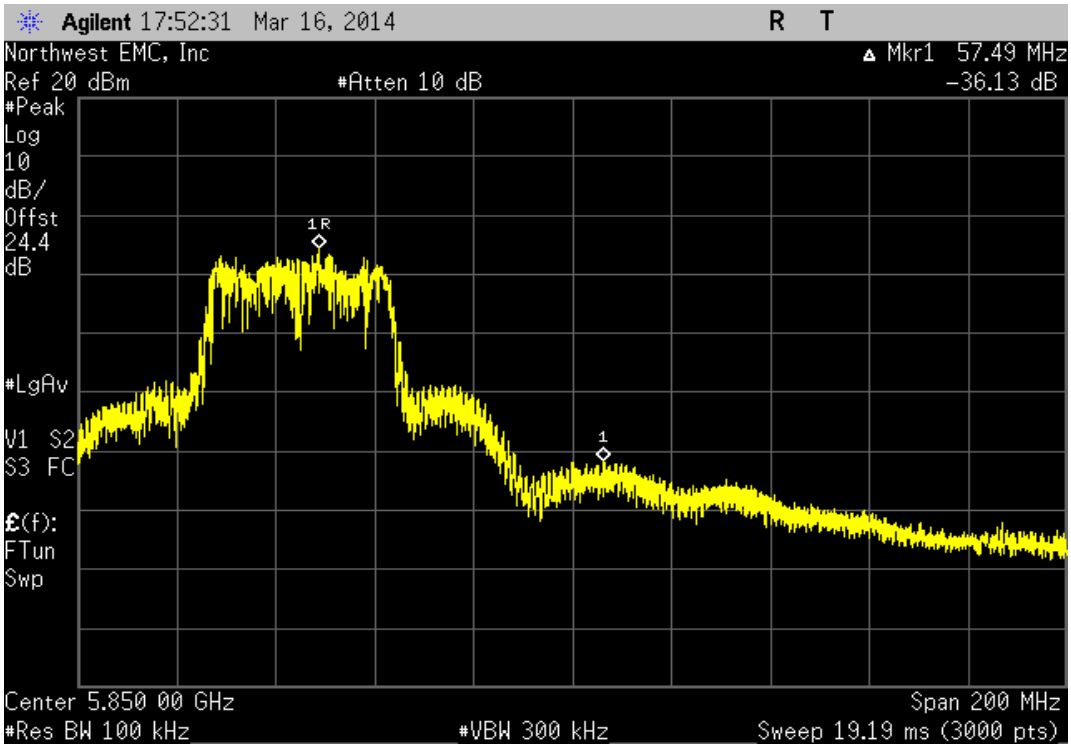
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-22.49 dBc	≤ -20 dBc	Pass



A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

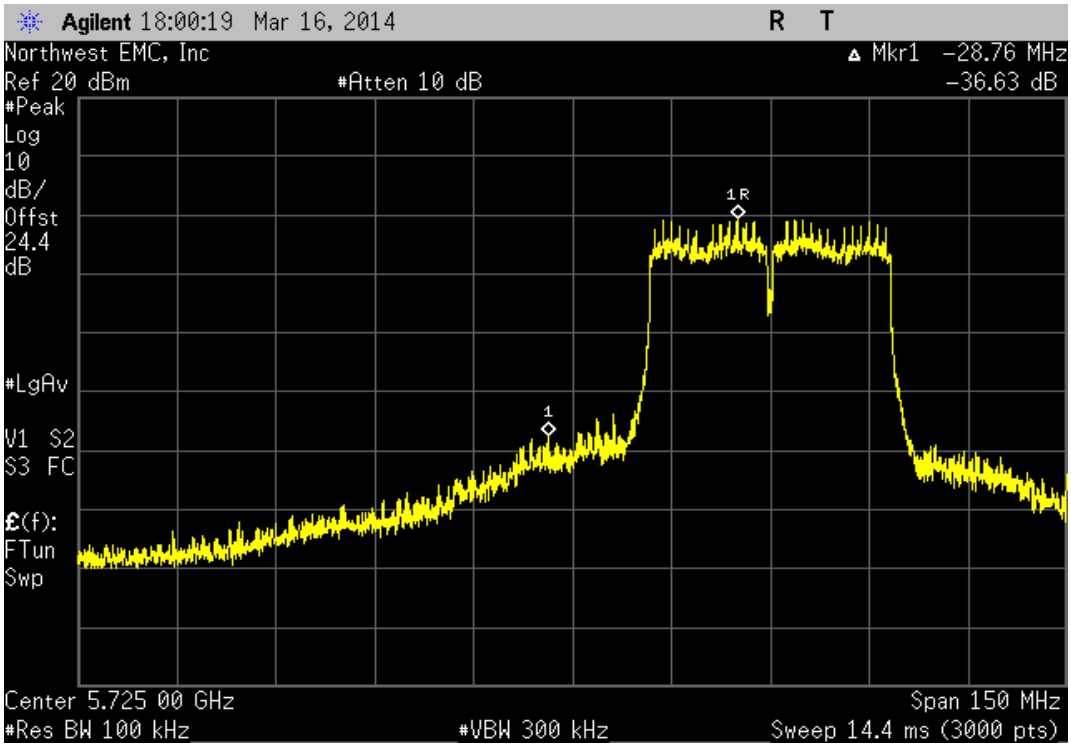
				Value	Limit	Result
				-36.13 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

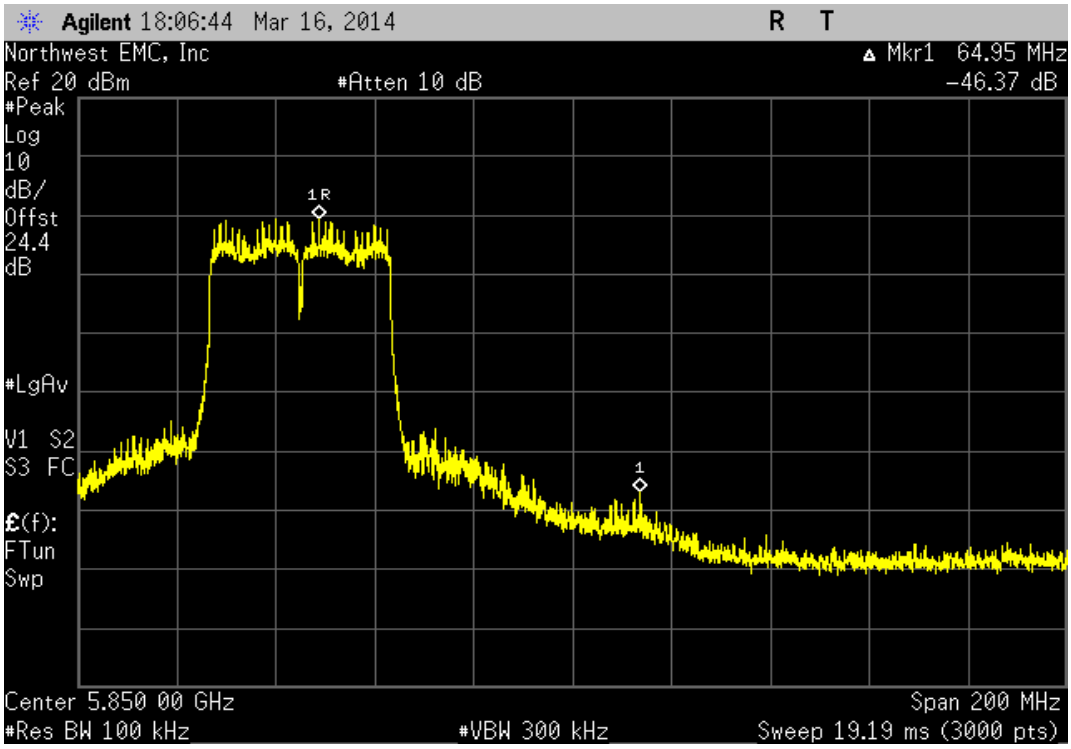
A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-36.63 dBc	≤ -20 dBc	Pass



A IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

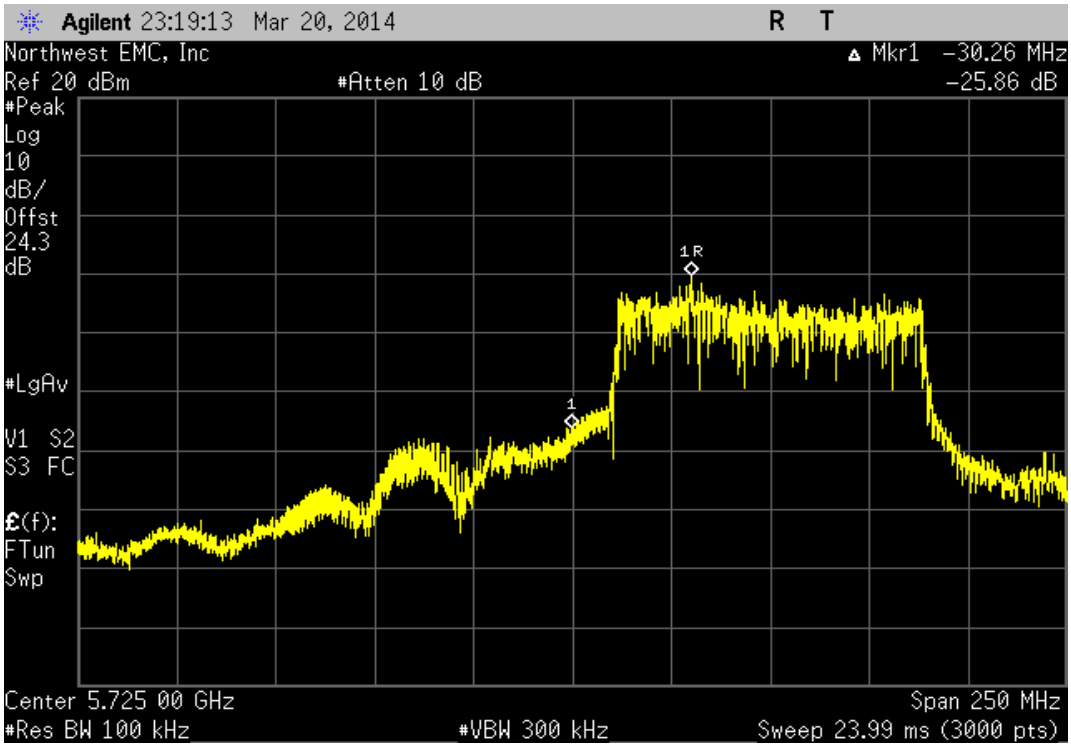
				Value	Limit	Result
				-46.37 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

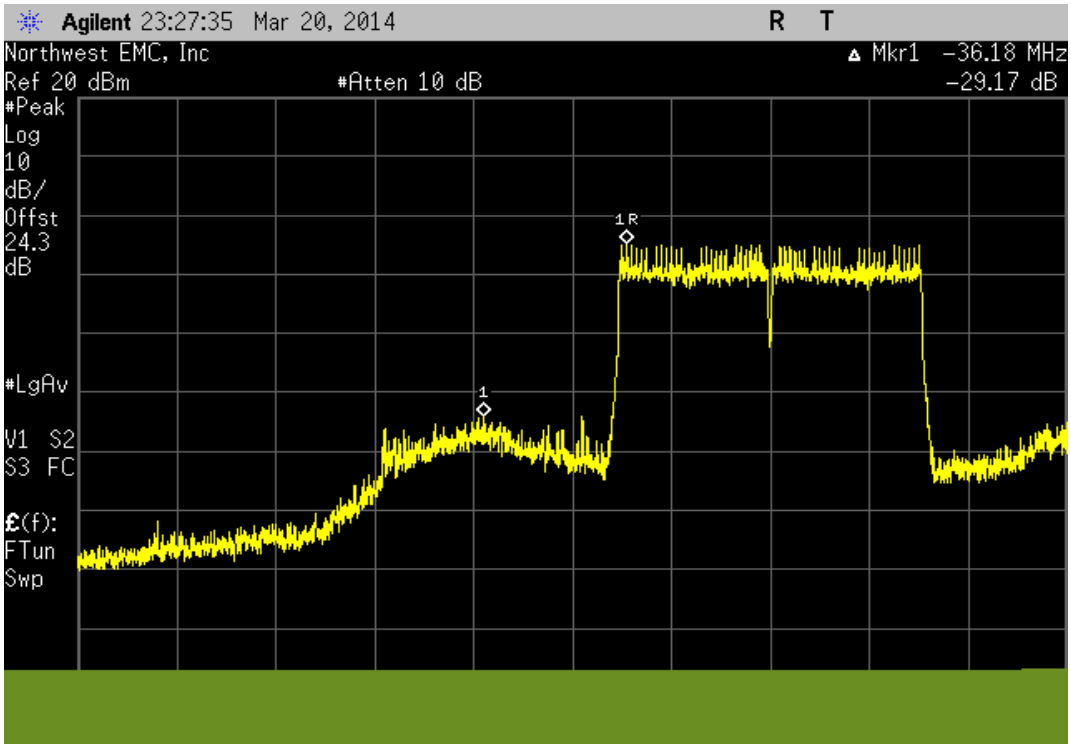
A IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-25.86 dBc	≤ -20 dBc	Pass



A IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

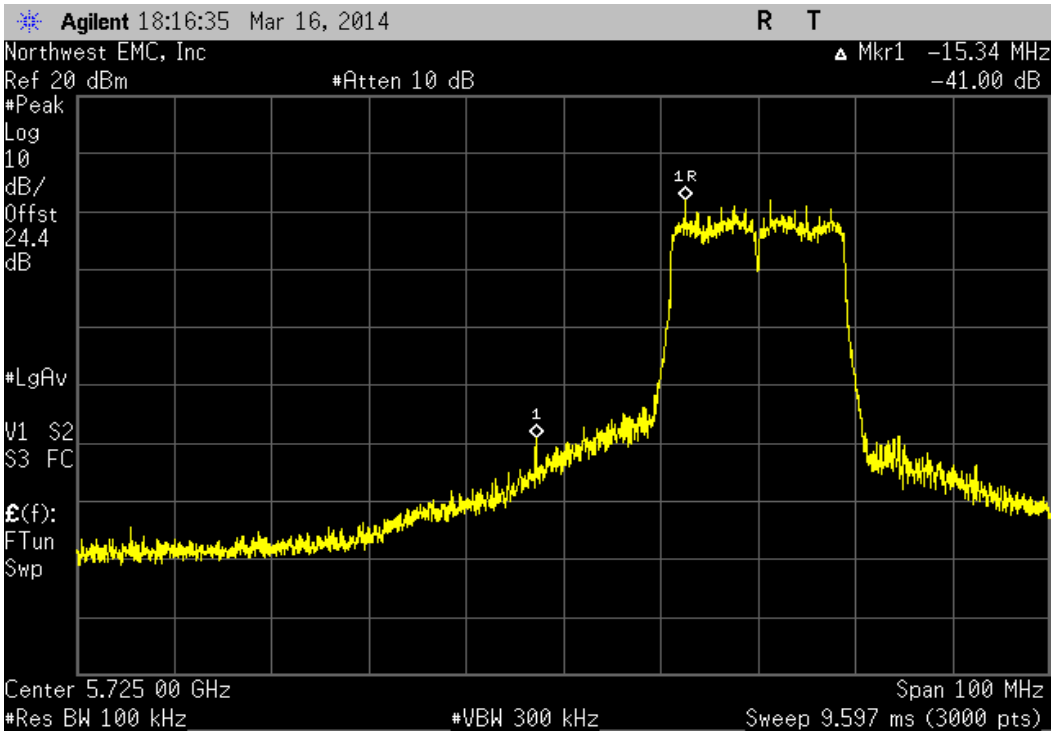
				Value	Limit	Result
				-29.17 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

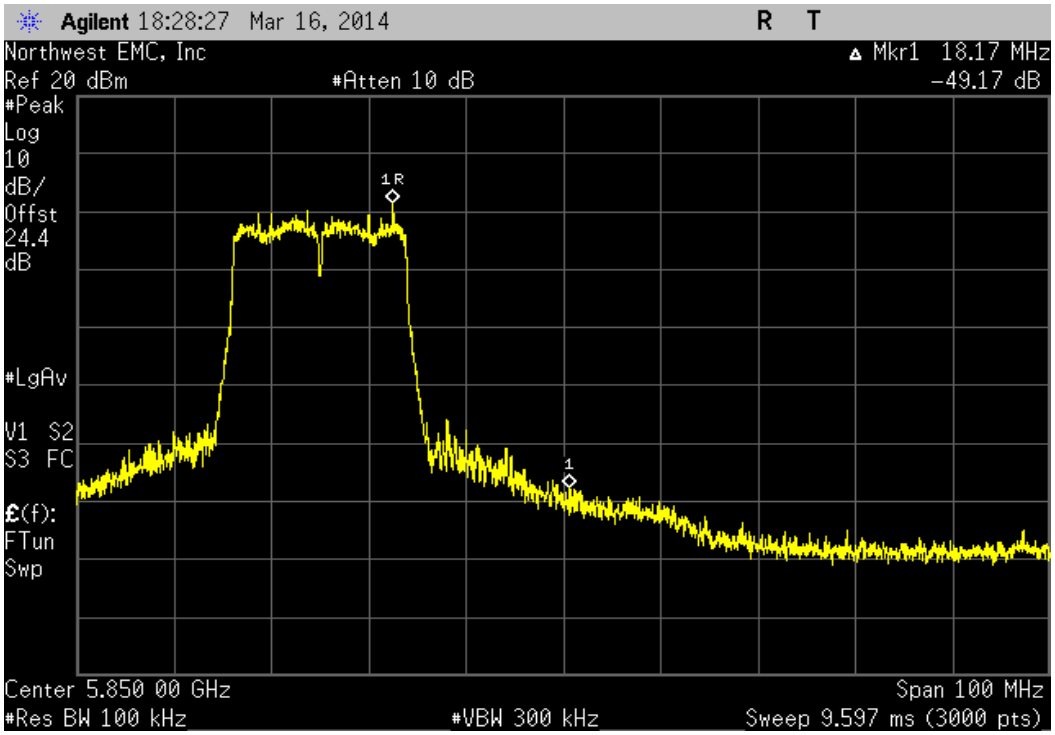
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-41 dBc	≤ -20 dBc	Pass



B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 165, 5825 MHz

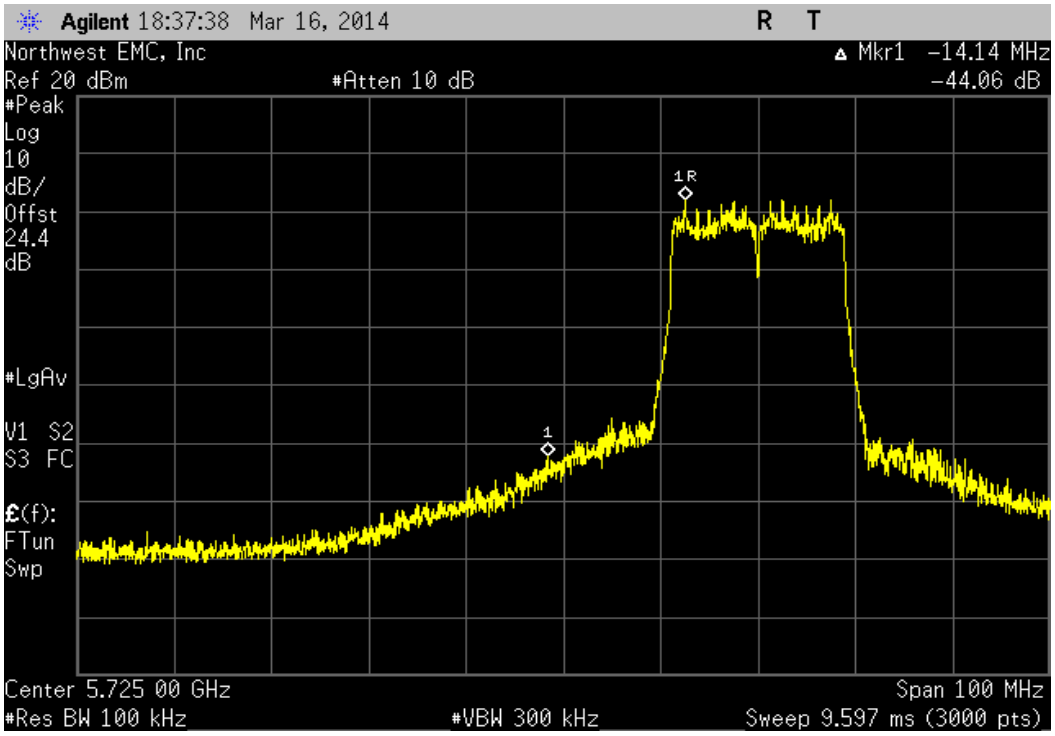
				Value	Limit	Result
				-49.17 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

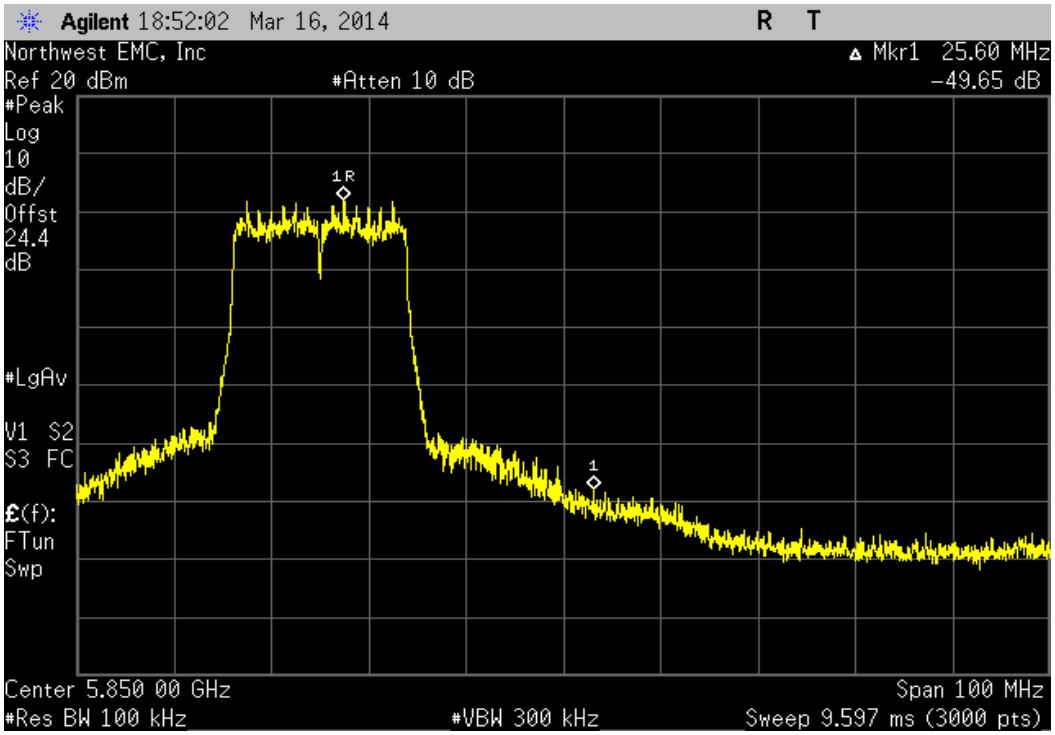
B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-44.06 dBc	≤ -20 dBc	Pass



B IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 165, 5825 MHz

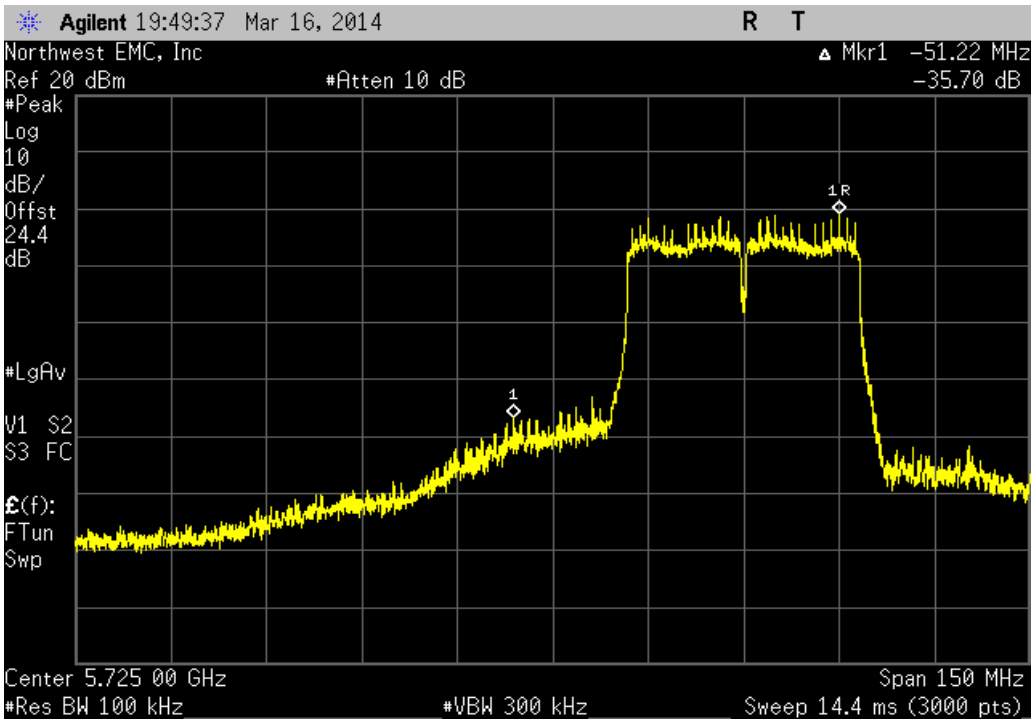
				Value	Limit	Result
				-49.65 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

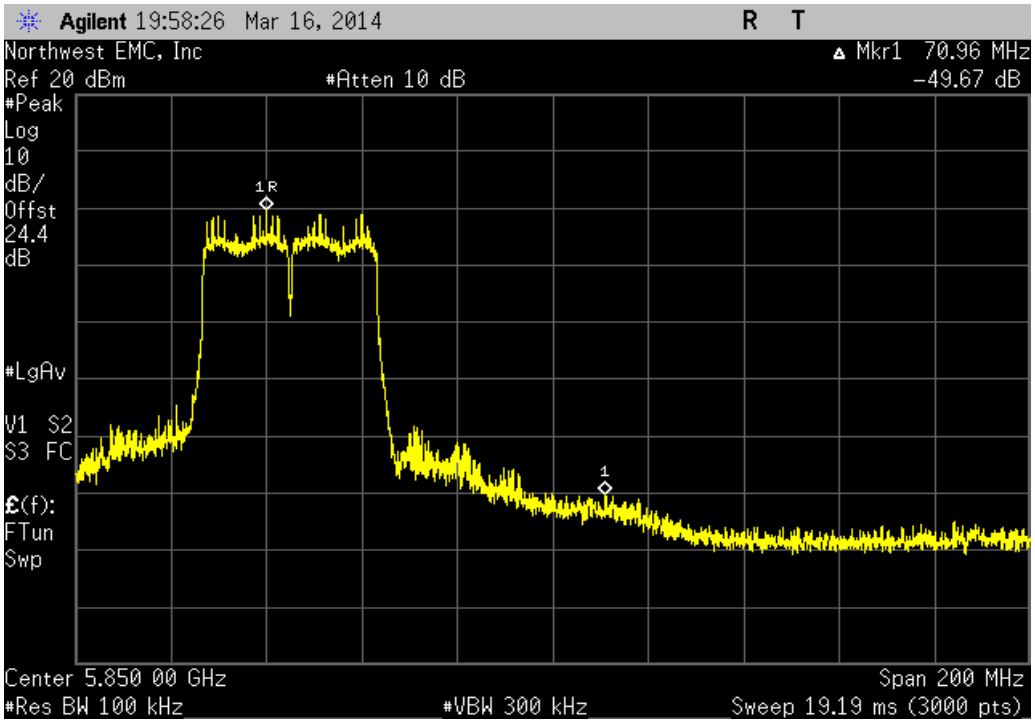
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-35.7 dBc	≤ -20 dBc	Pass



B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS8, High Channel 157/161, 5795 MHz

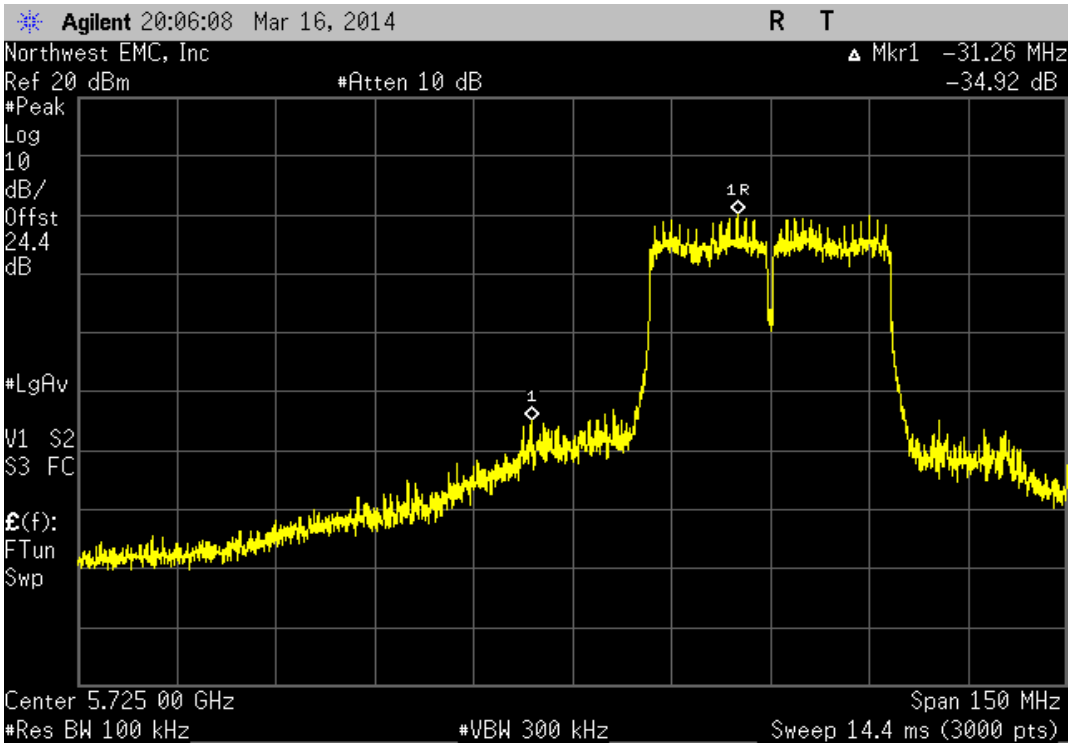
				Value	Limit	Result
				-49.67 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

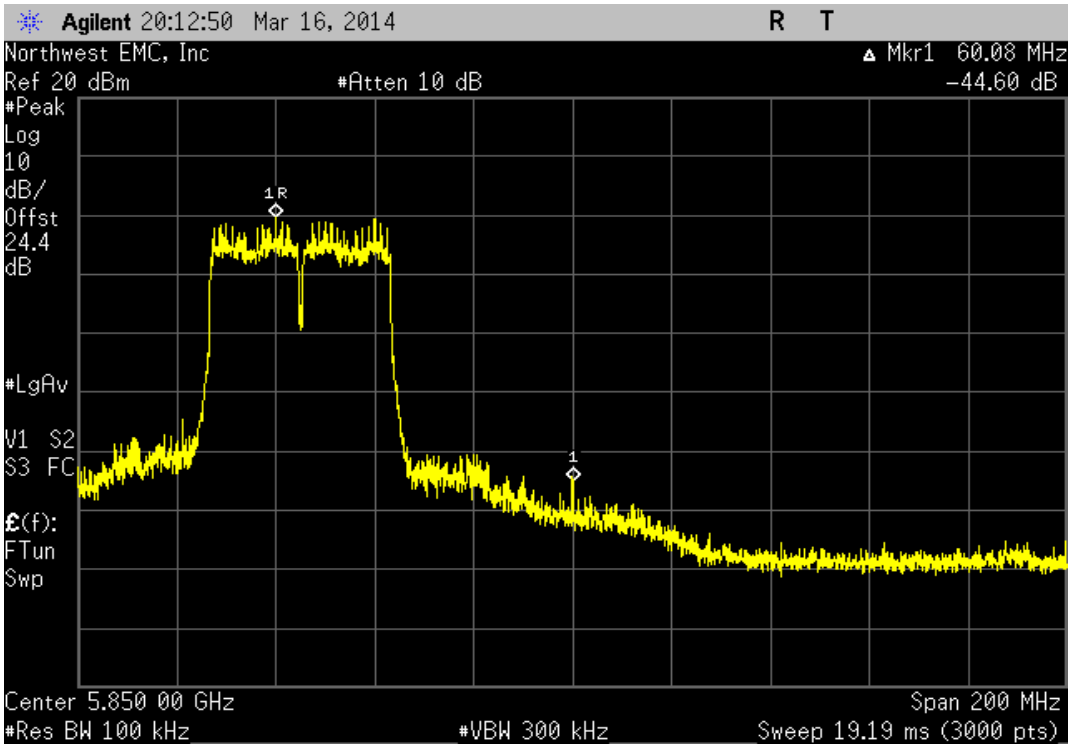
B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-34.92 dBc	≤ -20 dBc	Pass



B IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS15, High Channel 157/161, 5795 MHz

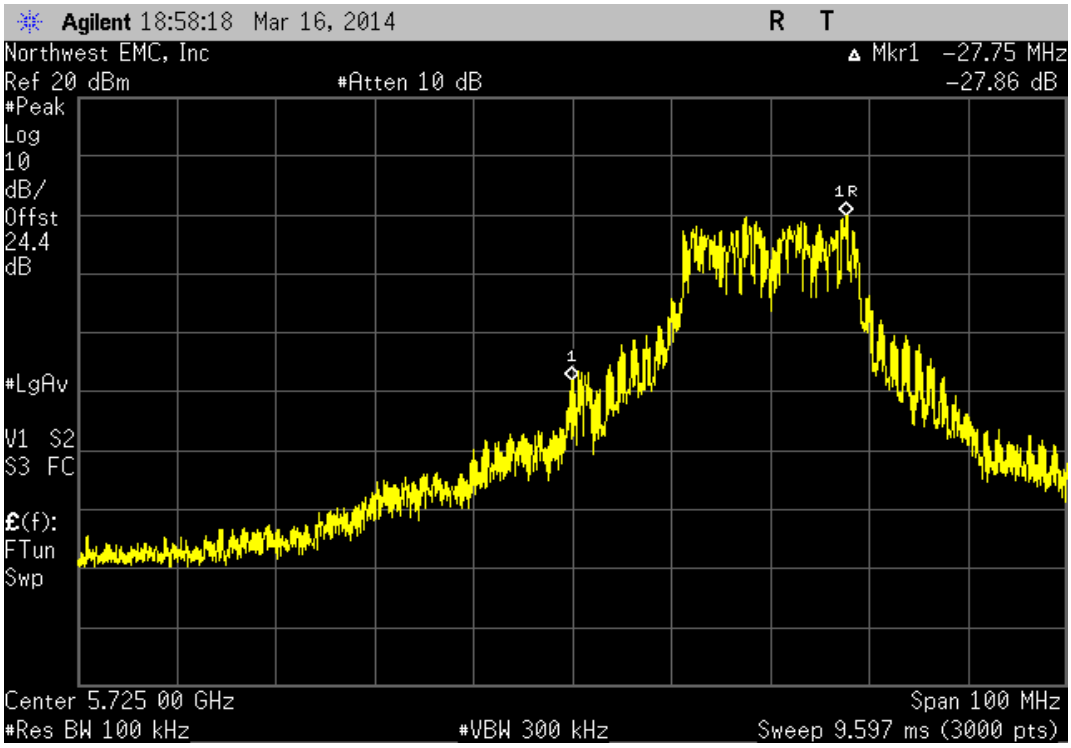
				Value	Limit	Result
				-44.6 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

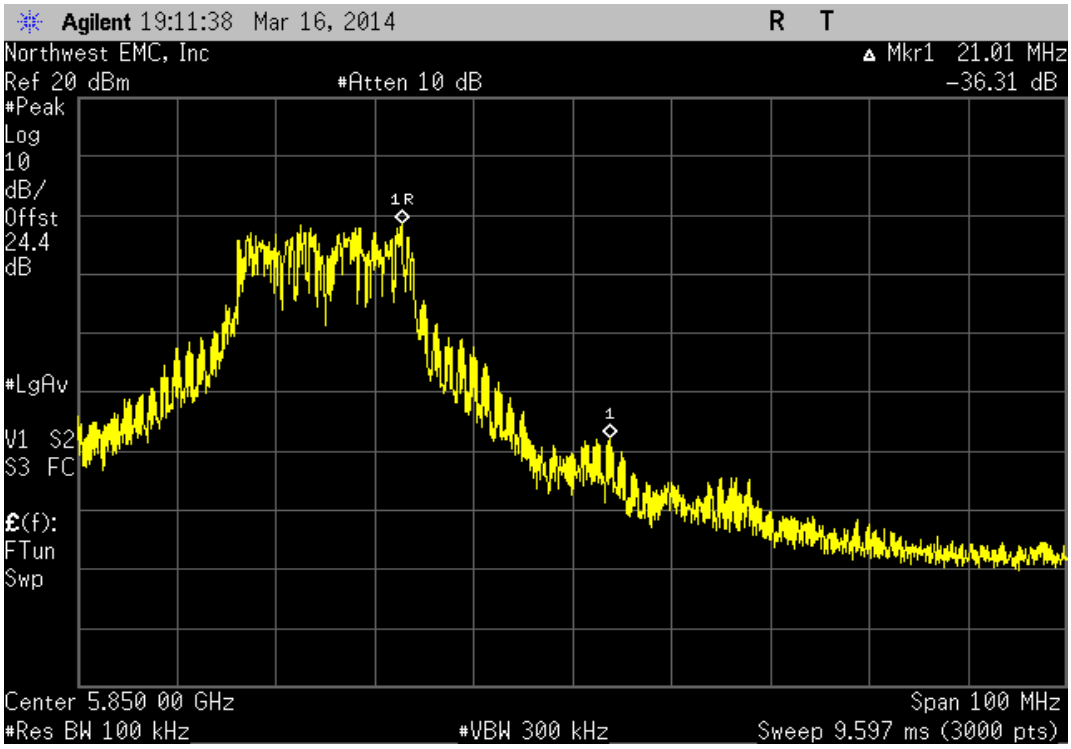
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-27.86 dBc	≤ -20 dBc	Pass



B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

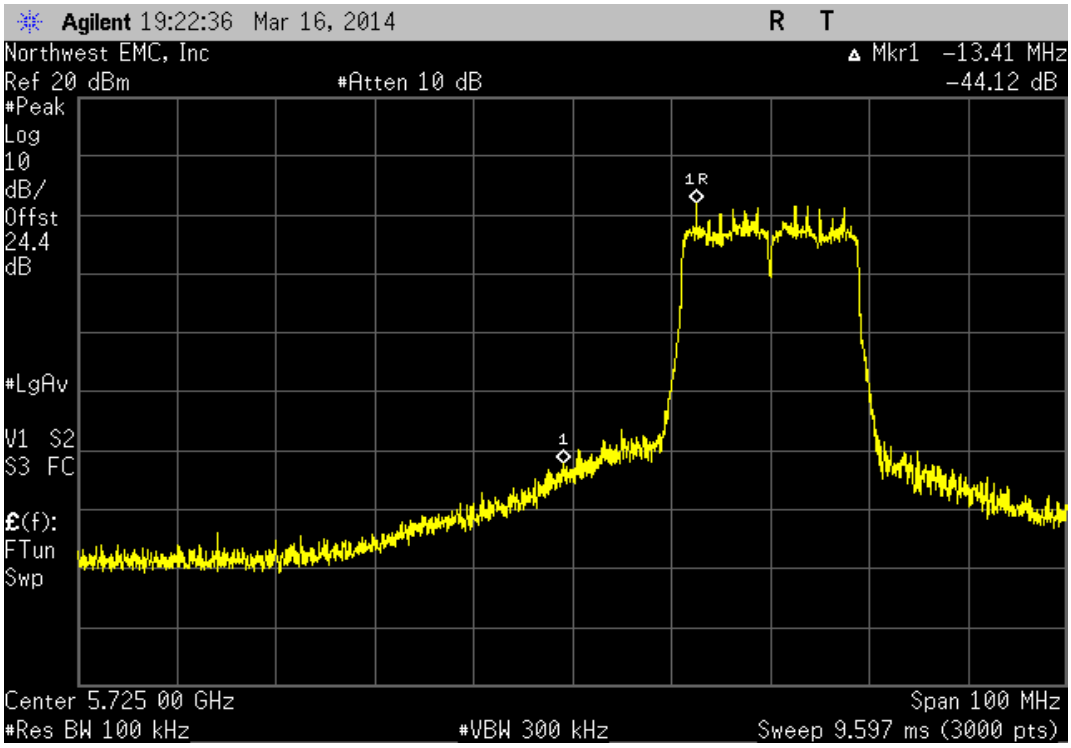
				Value	Limit	Result
				-36.31 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

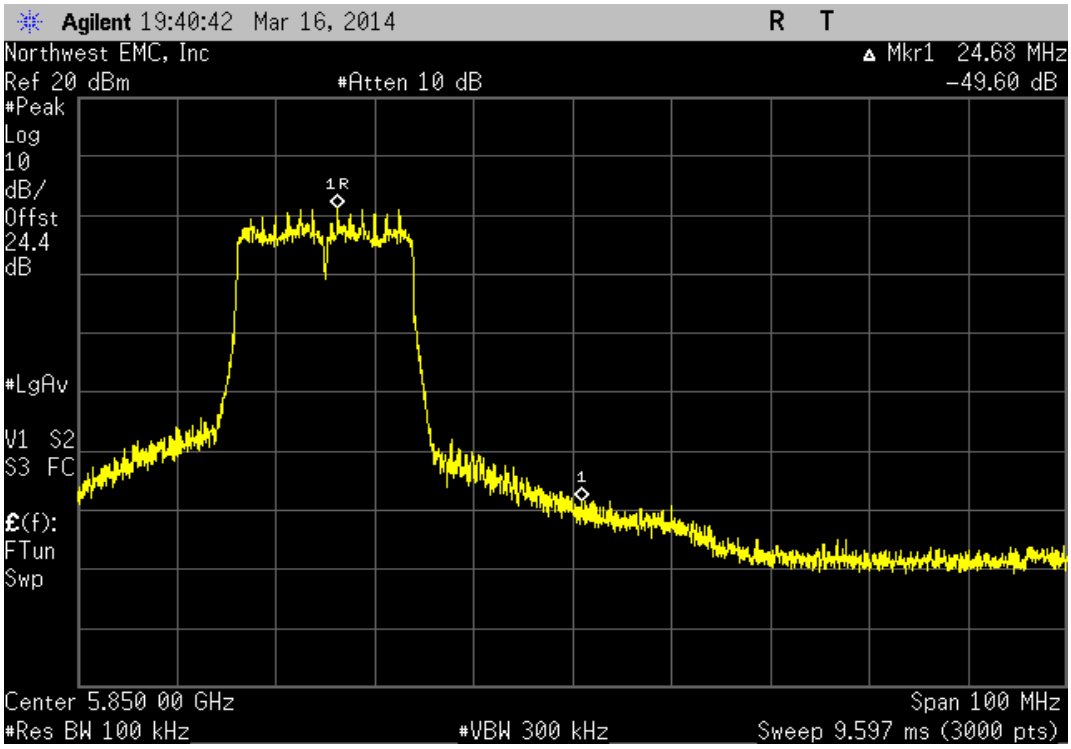
B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-44.12 dBc	≤ -20 dBc	Pass



B IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

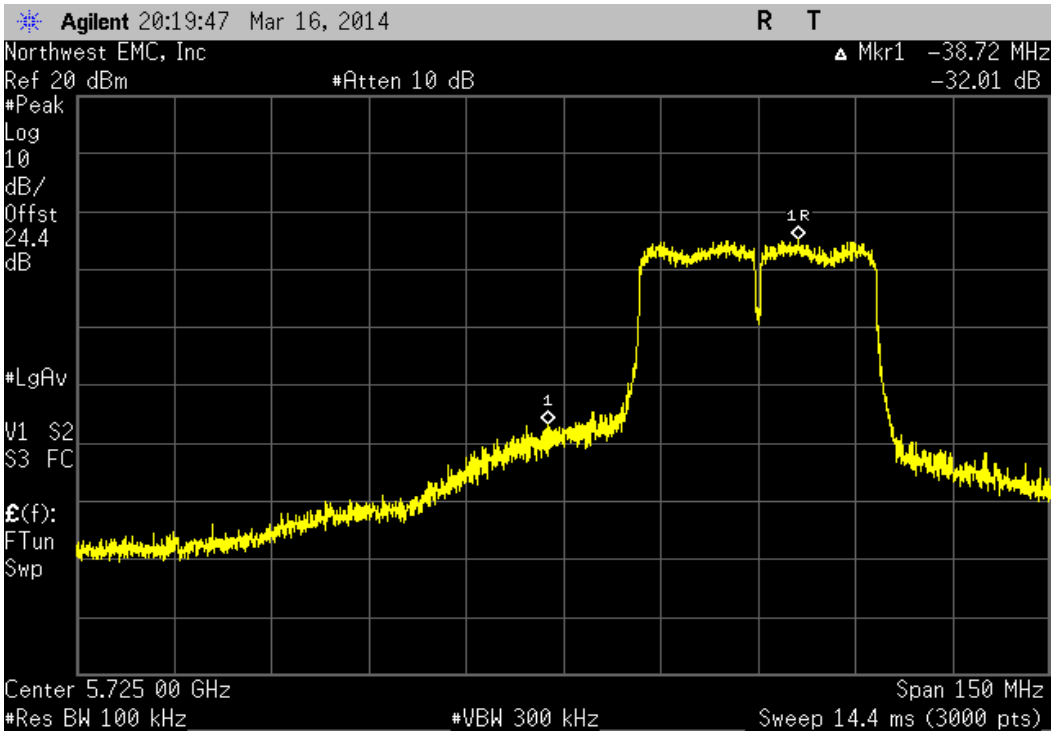
				Value	Limit	Result
				-49.6 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

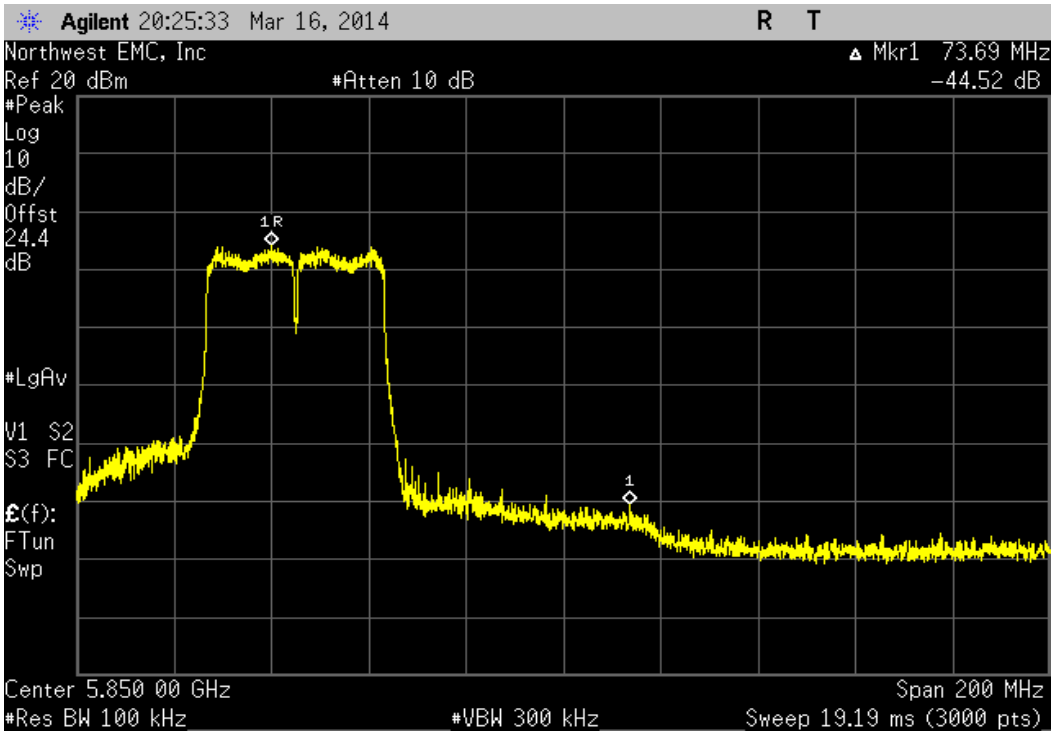
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-32.01 dBc	≤ -20 dBc	Pass



B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

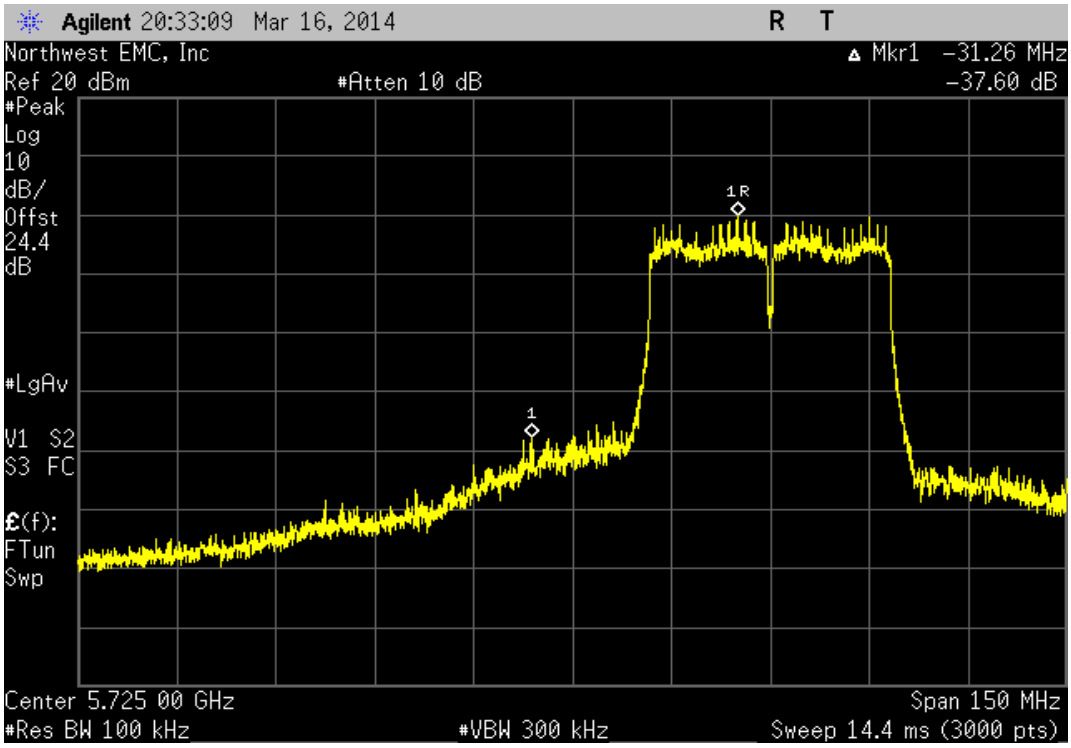
				Value	Limit	Result
				-44.52 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

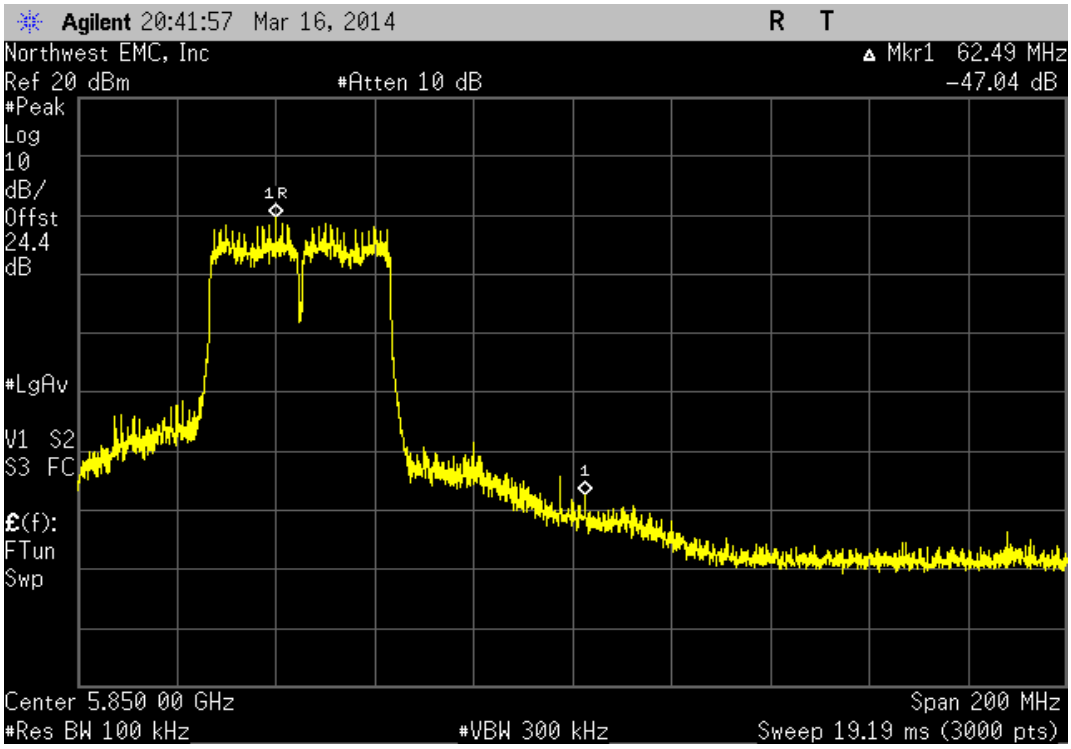
B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-37.61 dBc	≤ -20 dBc	Pass



B IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

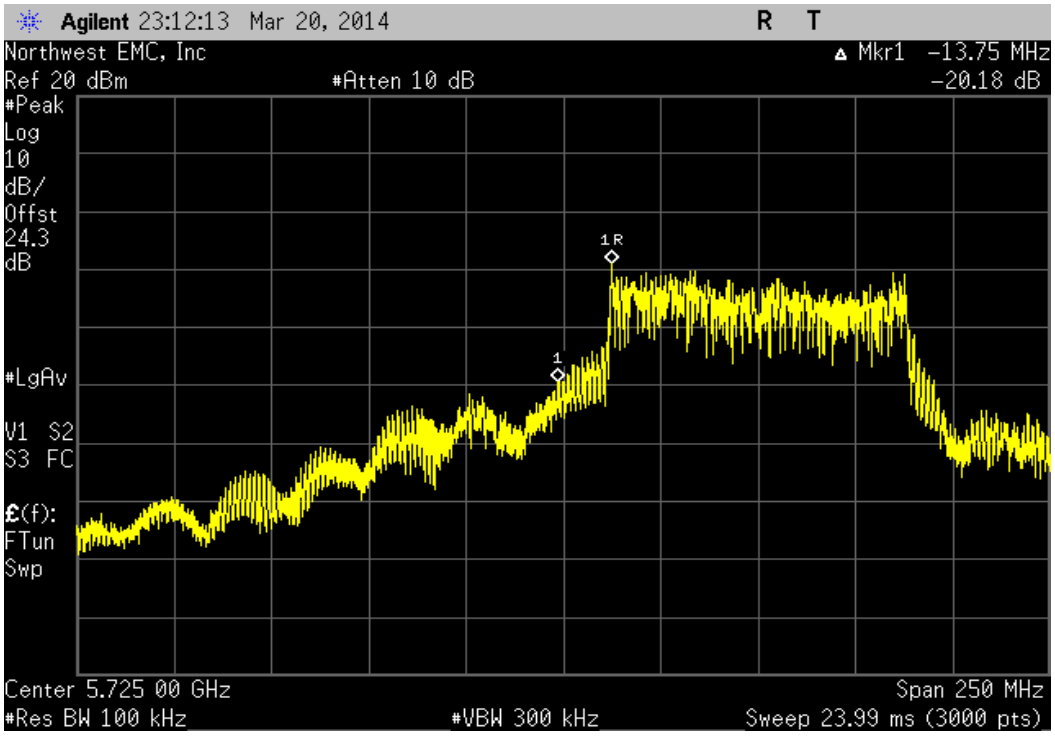
				Value	Limit	Result
				-47.04 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

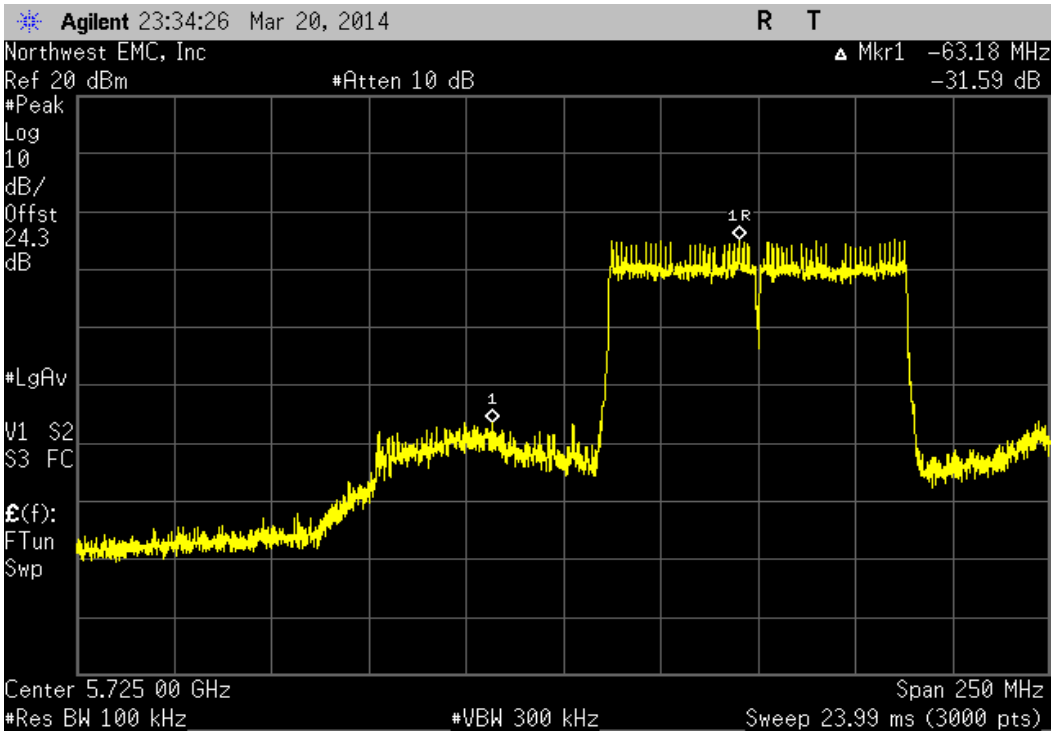
B IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-20.18 dBc	≤ -20 dBc	Pass



B IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-31.59 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

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.)
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

BAND EDGE COMPLIANCE

EUT:	Model 1631			**Work Order:**	MCSO1698
Serial Number:	041148340753			**Date:**	03/22/14
Customer:	Microsoft Corporation			**Temperature:**	21.5°C
Attendees:	None			**Humidity:**	29%
Project:	1631			**Barometric Pres.:**	1007
Tested by:	Brandon Hobbs, Jared Ison	**Power:**	110VAC/60Hz	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation tested were client provided.

DEVIATIONS FROM TEST STANDARD

None

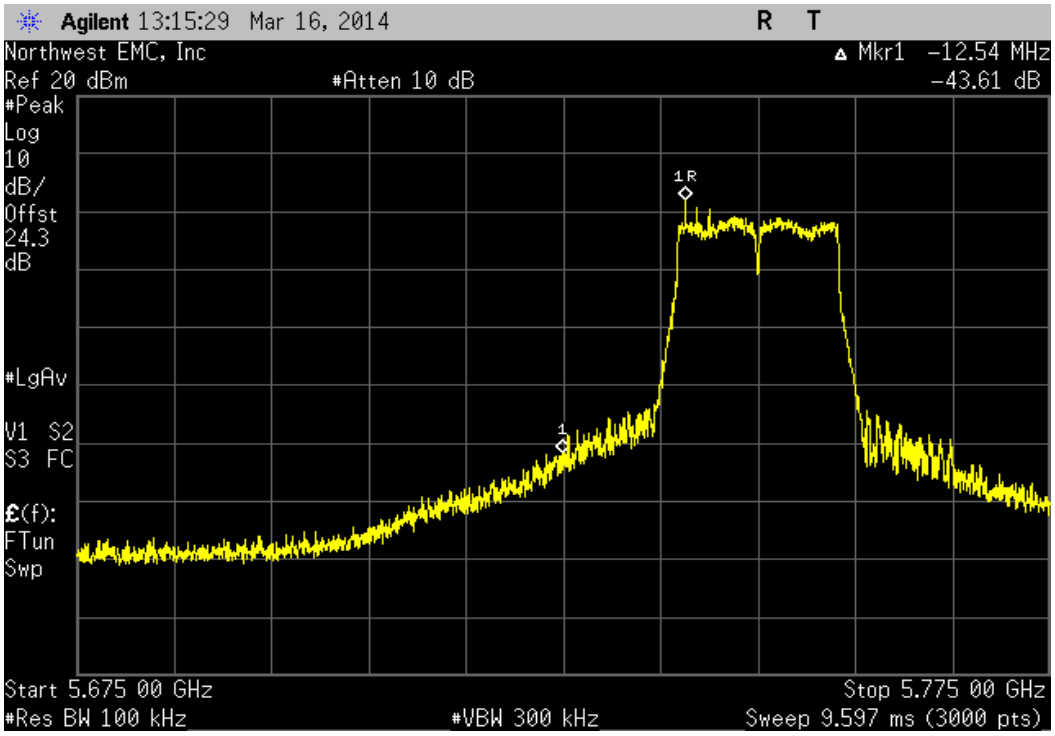
Configuration #	1	Signature

				Value	Limit	Result
IEEE 802.11(a)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			6 Mbps			
			Low Channel 149, 5745 MHz	-43.61 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-48.3 dBc	≤ -20 dBc	Pass
			36 Mbps			
			Low Channel 149, 5745 MHz	-46 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-49.16 dBc	≤ -20 dBc	Pass
			54 Mbps			
			Low Channel 149, 5745 MHz	-46.08 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-47.9 dBc	≤ -20 dBc	Pass
IEEE 802.11(n)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS7			
			Low Channel 149, 5745 MHz	-44.68 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-48.8 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			HT, MCS7			
			Low Channel 149/153, 5755 MHz	-33.81 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-46.66 dBc	≤ -20 dBc	Pass
IEEE 802.11(ac)						
	20 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149, 5745 MHz	-41.3 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-46.71 dBc	≤ -20 dBc	Pass
			VHT, MCS8			
			Low Channel 149, 5745 MHz	-43.49 dBc	≤ -20 dBc	Pass
			High Channel 165, 5825 MHz	-47.32 dBc	≤ -20 dBc	Pass
	40 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153, 5755 MHz	-36.87 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-44.94 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153, 5755 MHz	-35.47 dBc	≤ -20 dBc	Pass
			High Channel 157/161, 5795 MHz	-45.71 dBc	≤ -20 dBc	Pass
	80 MHz					
		5725 MHz - 5850 MHz Band				
			VHT, MCS0			
			Low Channel 149/153/157/161, 5775 MHz	-28.28 dBc	≤ -20 dBc	Pass
			VHT, MCS9			
			Low Channel 149/153/157/161, 5775 MHz	-30.39 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

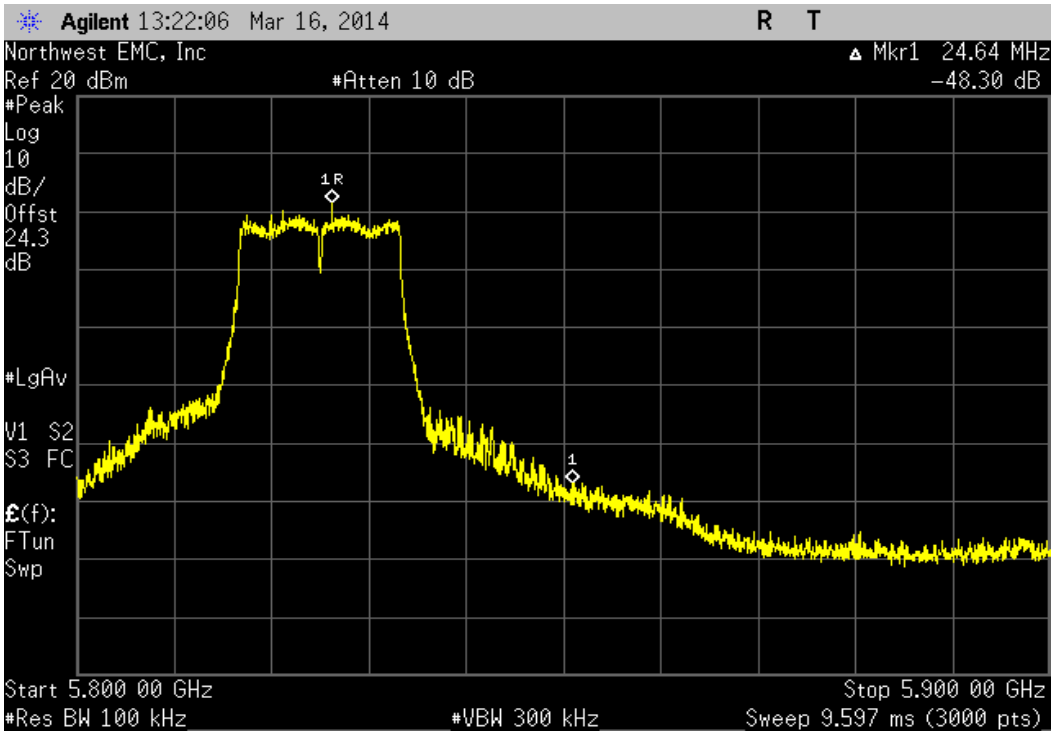
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-43.61 dBc	≤ -20 dBc	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 6 Mbps, High Channel 165, 5825 MHz

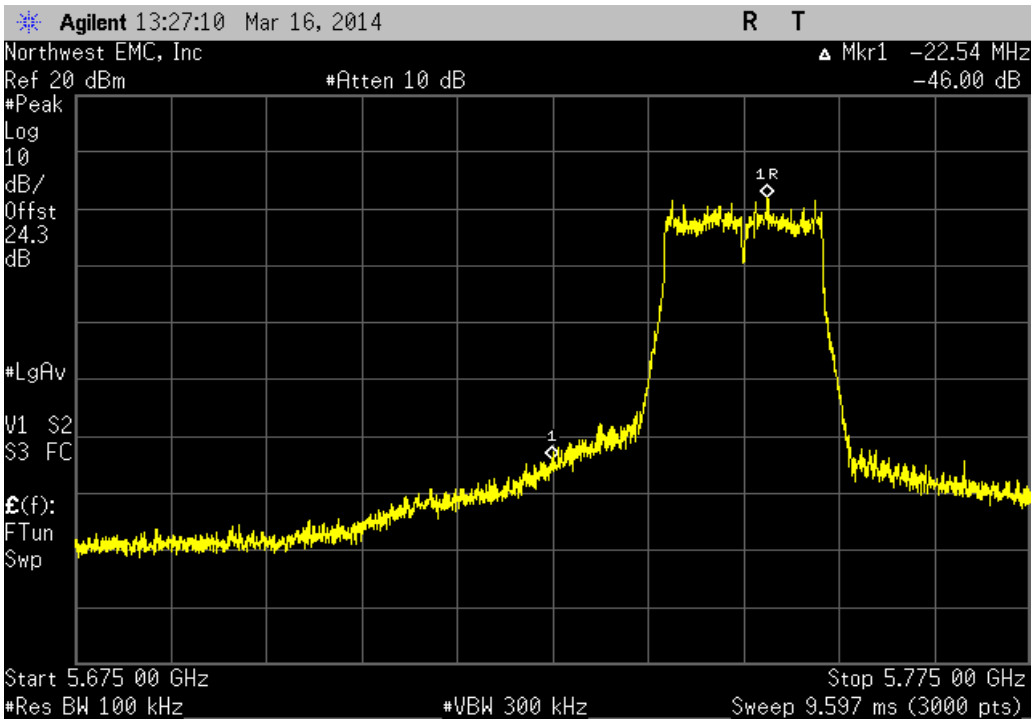
				Value	Limit	Result
				-48.3 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

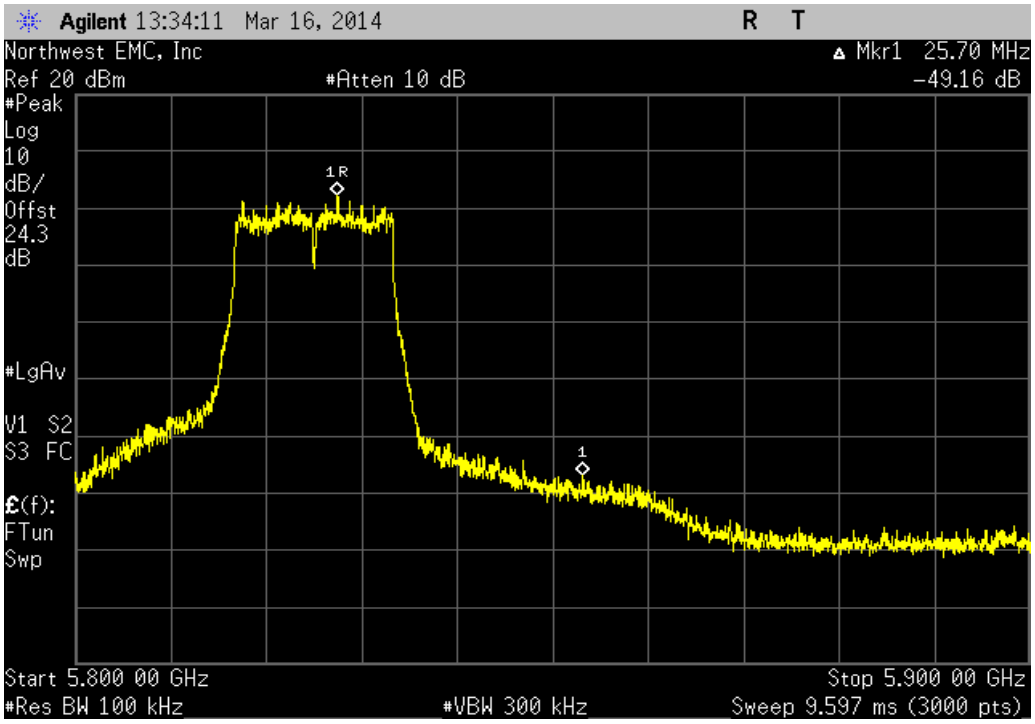
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-46 dBc	≤ -20 dBc	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 36 Mbps, High Channel 165, 5825 MHz

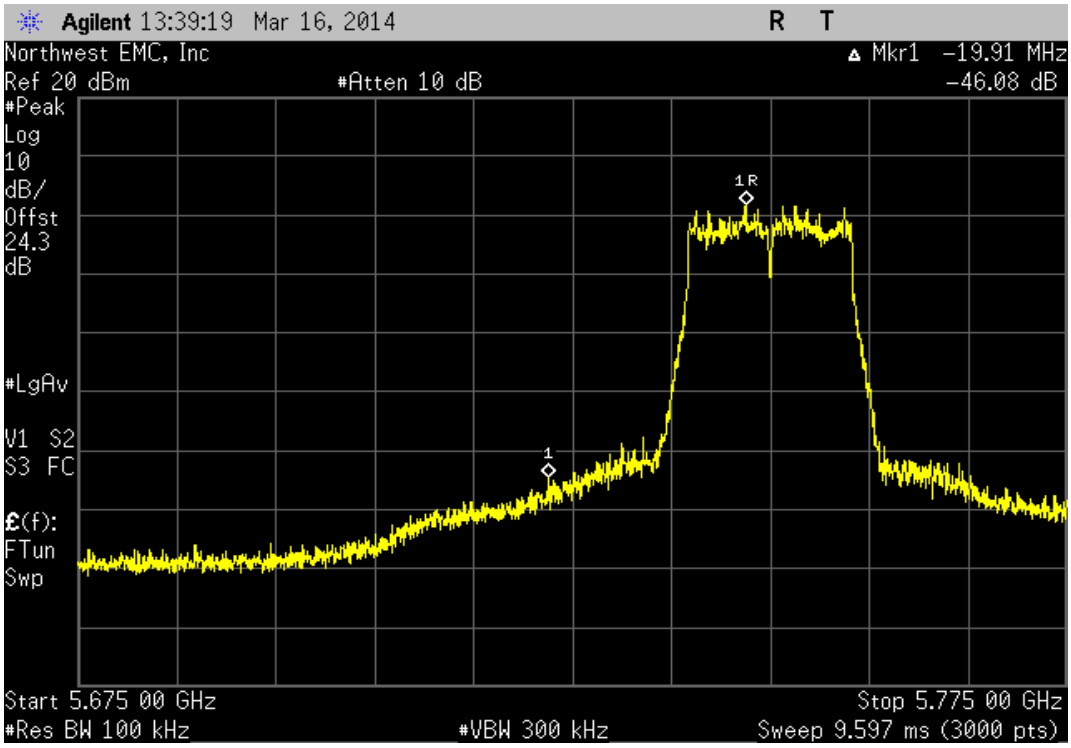
				Value	Limit	Result
				-49.16 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

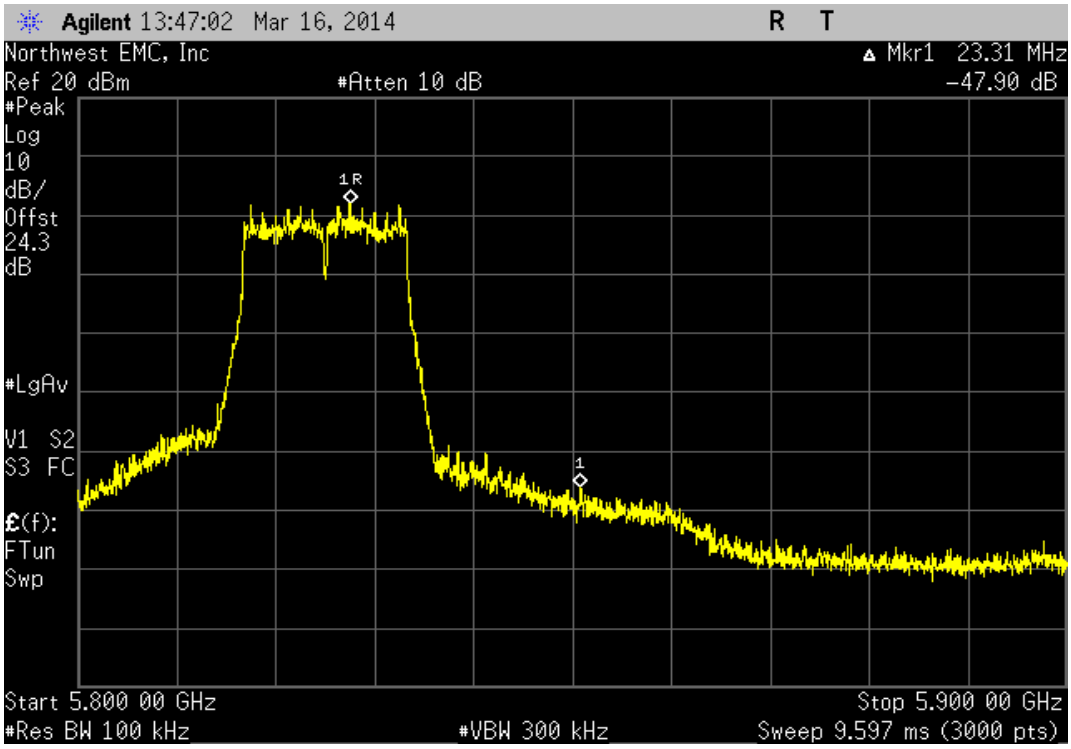
IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-46.08 dBc	≤ -20 dBc	Pass



IEEE 802.11(a), 20 MHz, 5725 MHz - 5850 MHz Band, 54 Mbps, High Channel 165, 5825 MHz

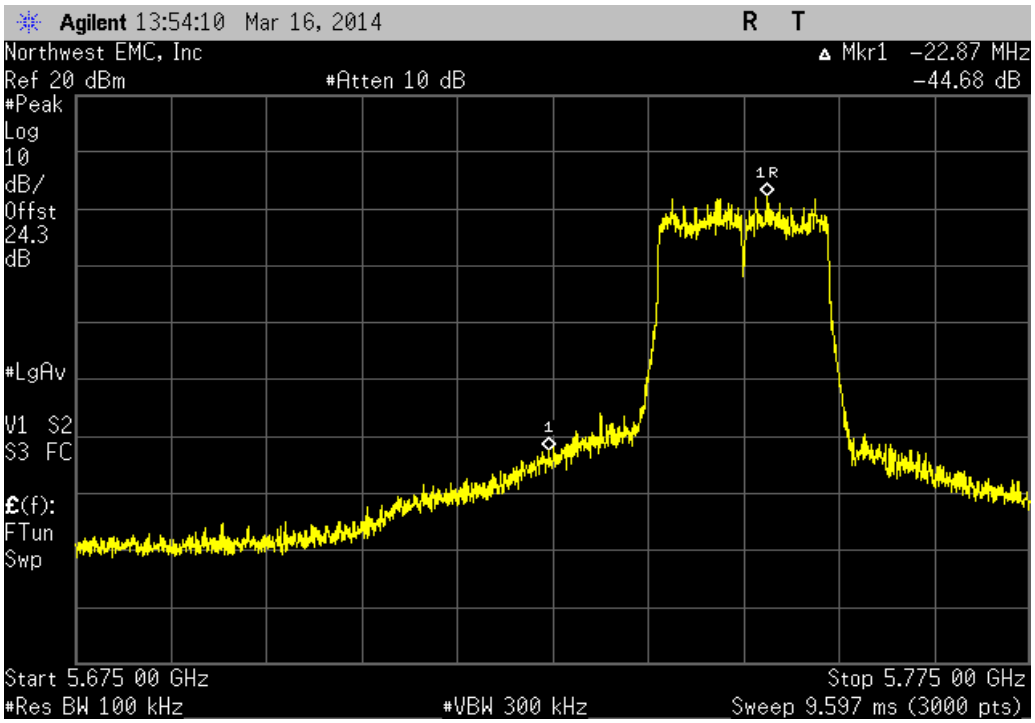
				Value	Limit	Result
				-47.9 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

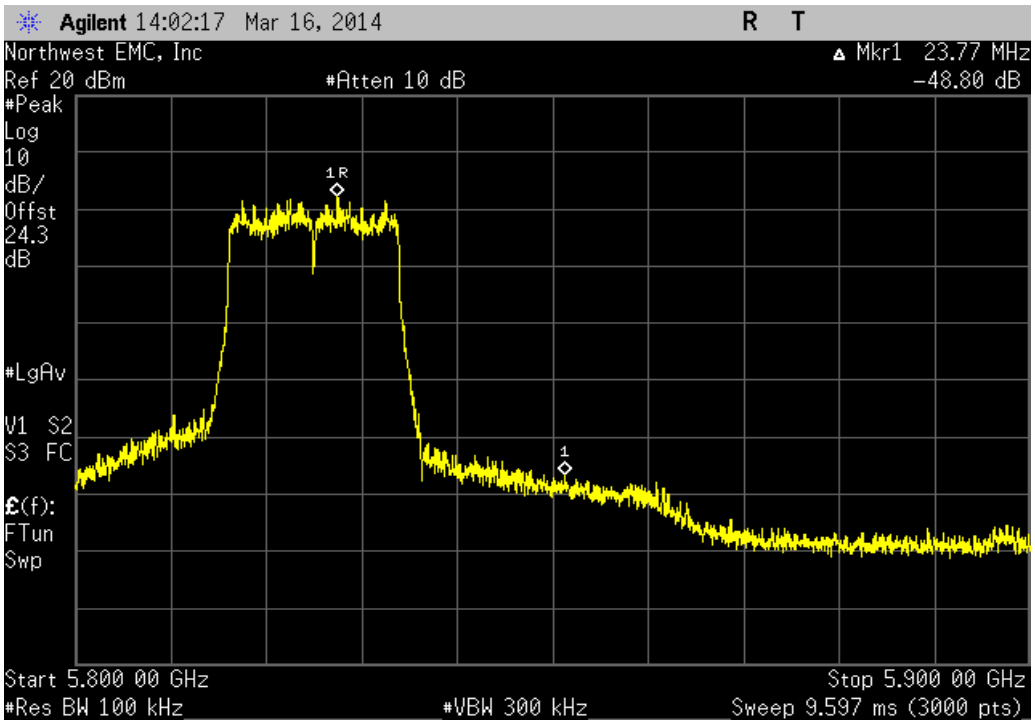
IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-44.68 dBc	≤ -20 dBc	Pass



IEEE 802.11(n), 20 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 165, 5825 MHz

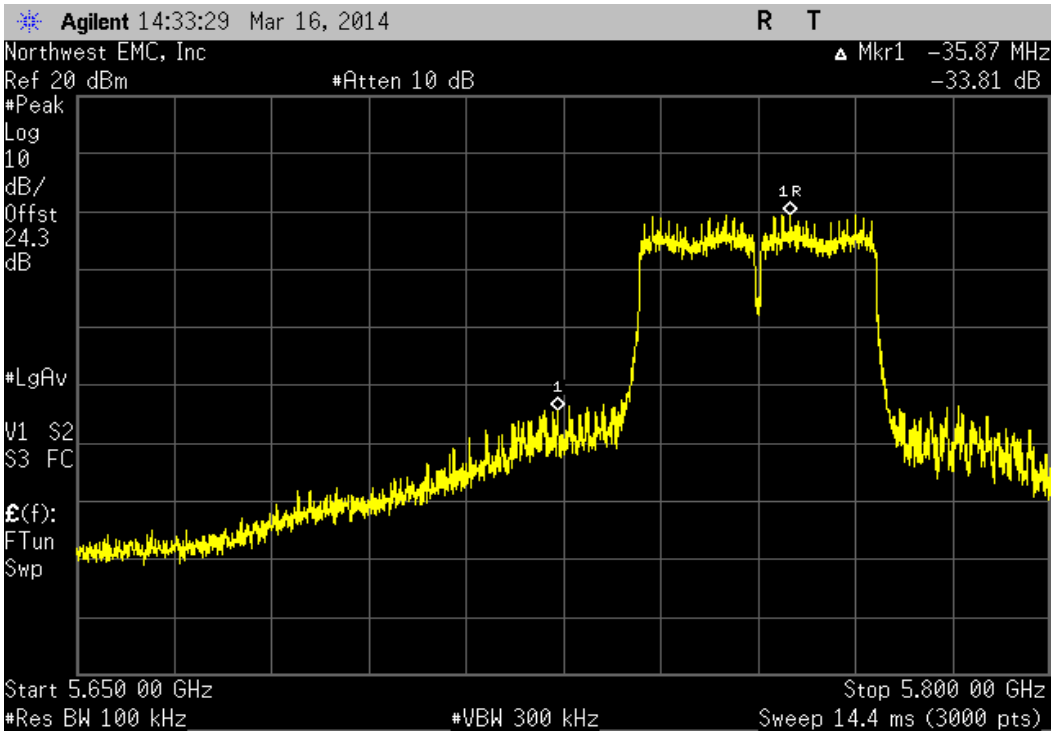
				Value	Limit	Result
				-48.8 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

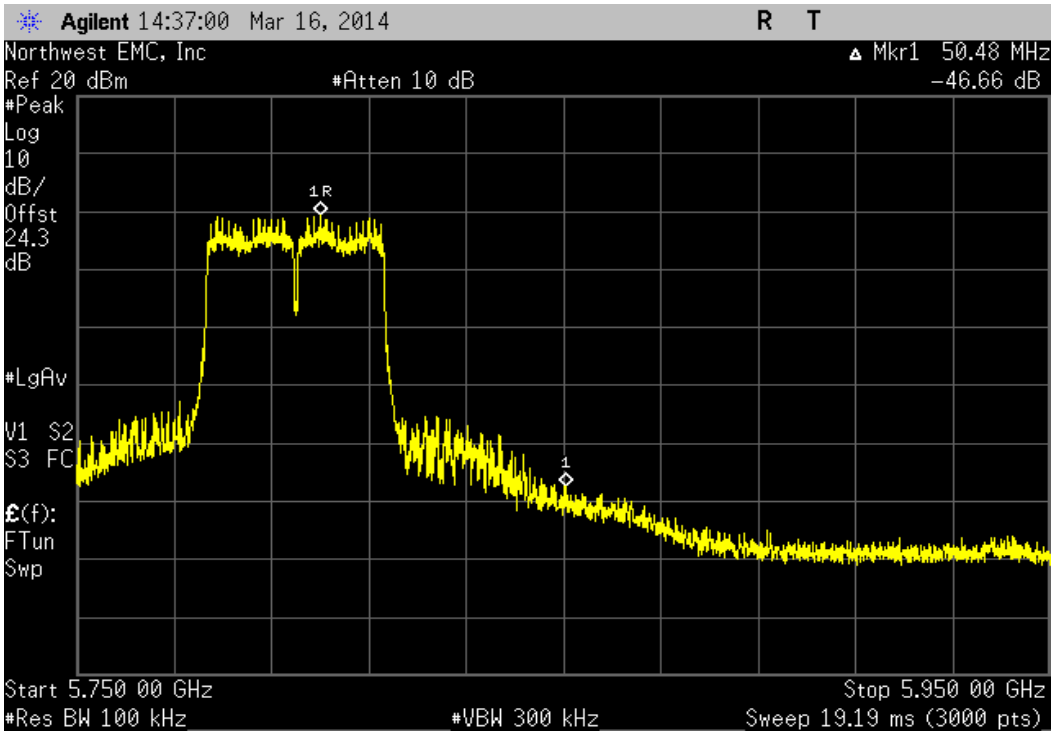
IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-33.81 dBc	≤ -20 dBc	Pass



IEEE 802.11(n), 40 MHz, 5725 MHz - 5850 MHz Band, HT, MCS7, High Channel 157/161, 5795 MHz

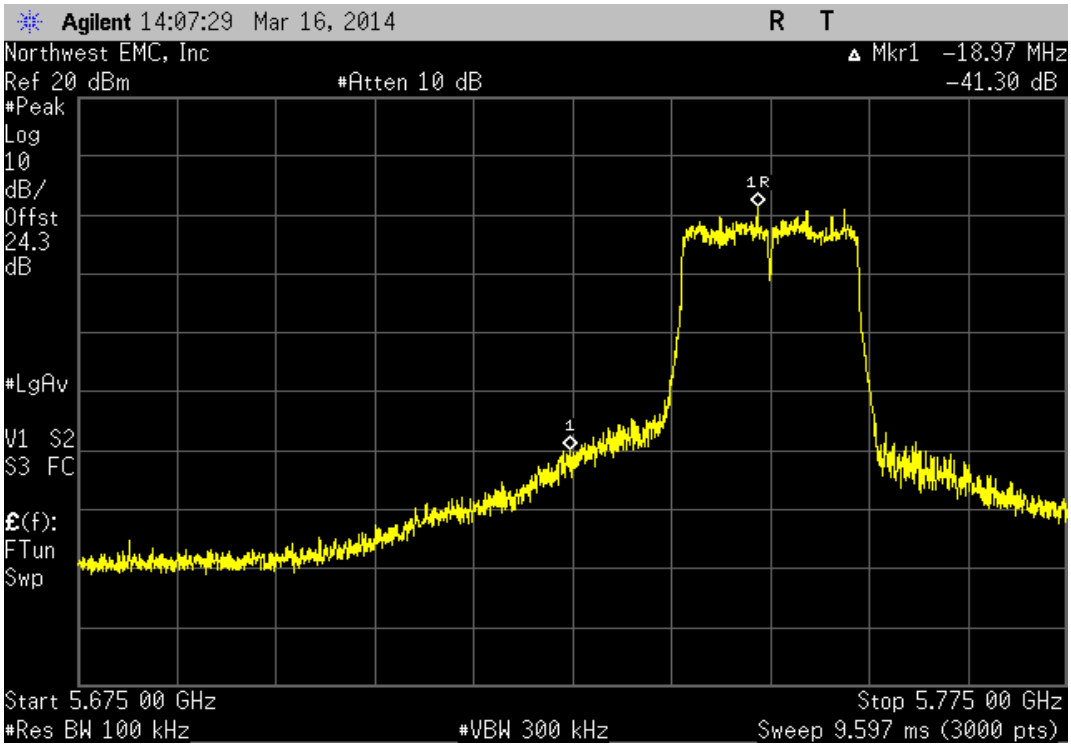
				Value	Limit	Result
				-46.66 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

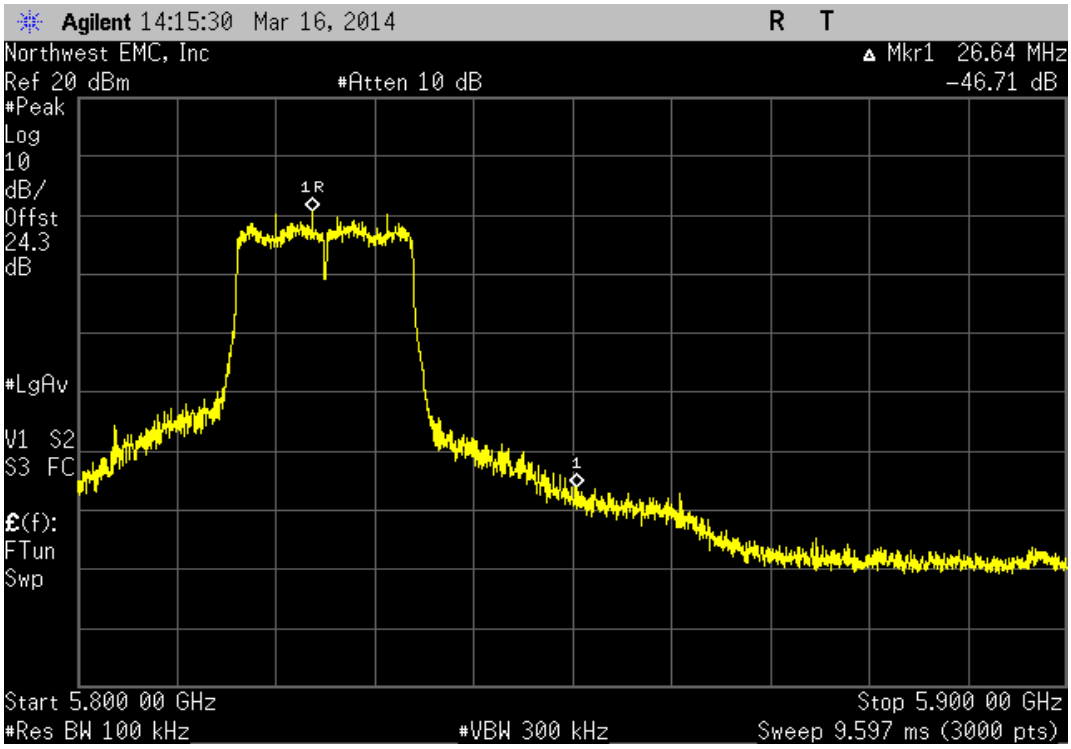
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-41.3 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 165, 5825 MHz

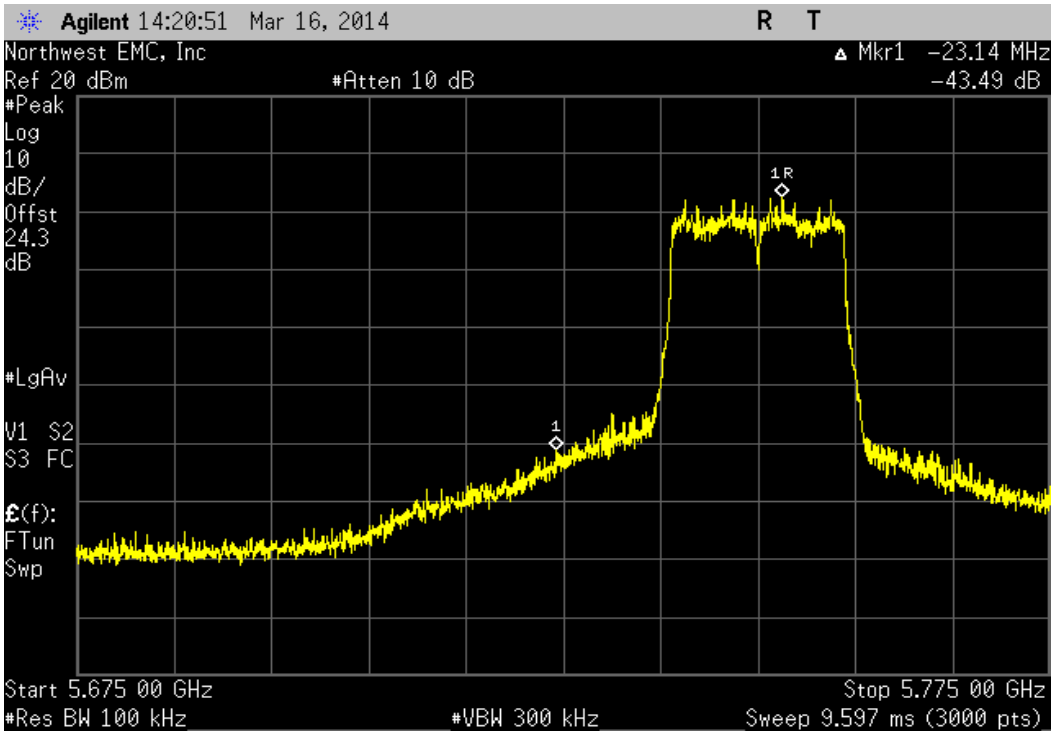
				Value	Limit	Result
				-46.71 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

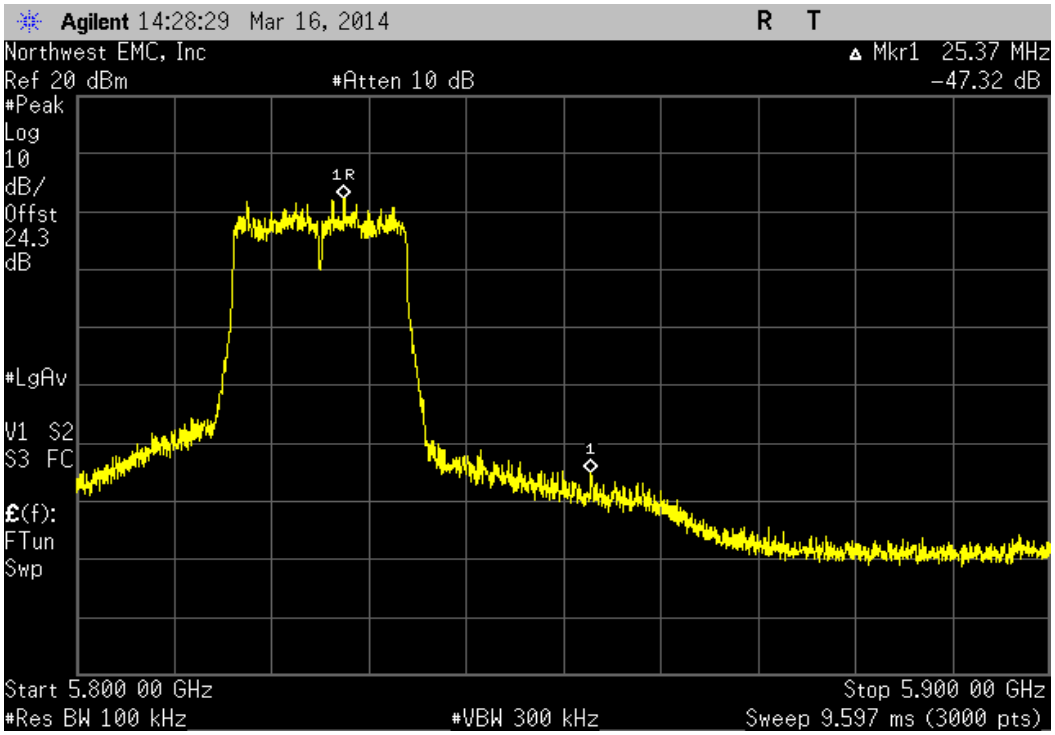
IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-43.49 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 20 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS8, High Channel 165, 5825 MHz

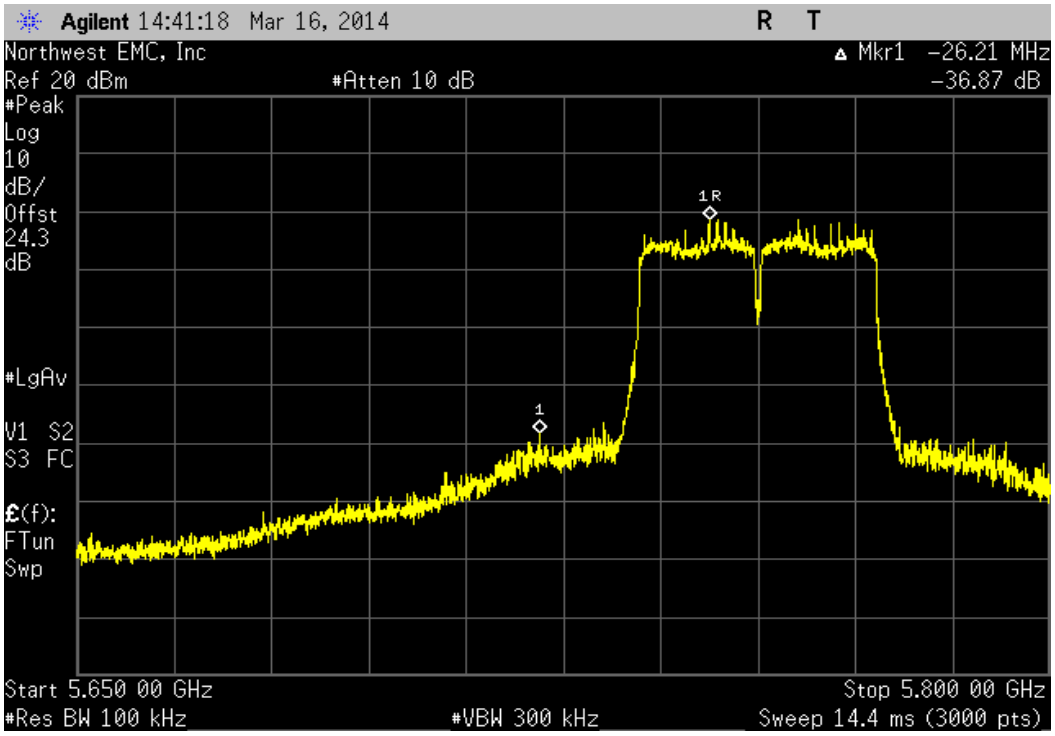
				Value	Limit	Result
				-47.32 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

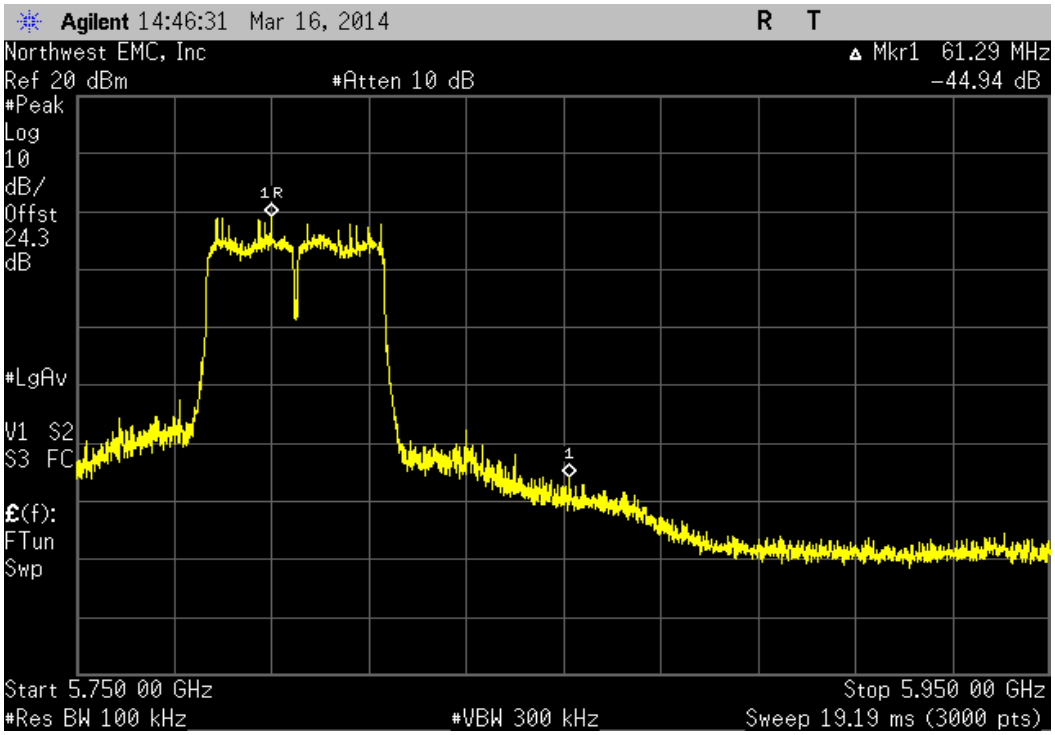
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153, 5755 MHz

				Value	Limit	Result
				-36.87 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, High Channel 157/161, 5795 MHz

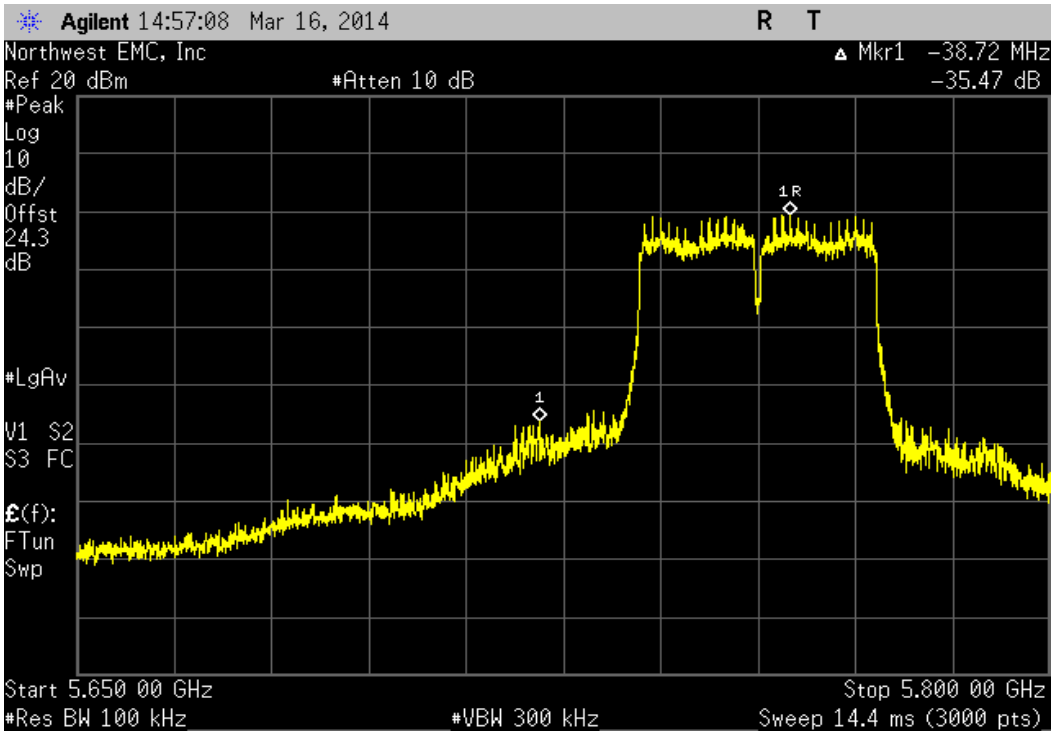
				Value	Limit	Result
				-44.94 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

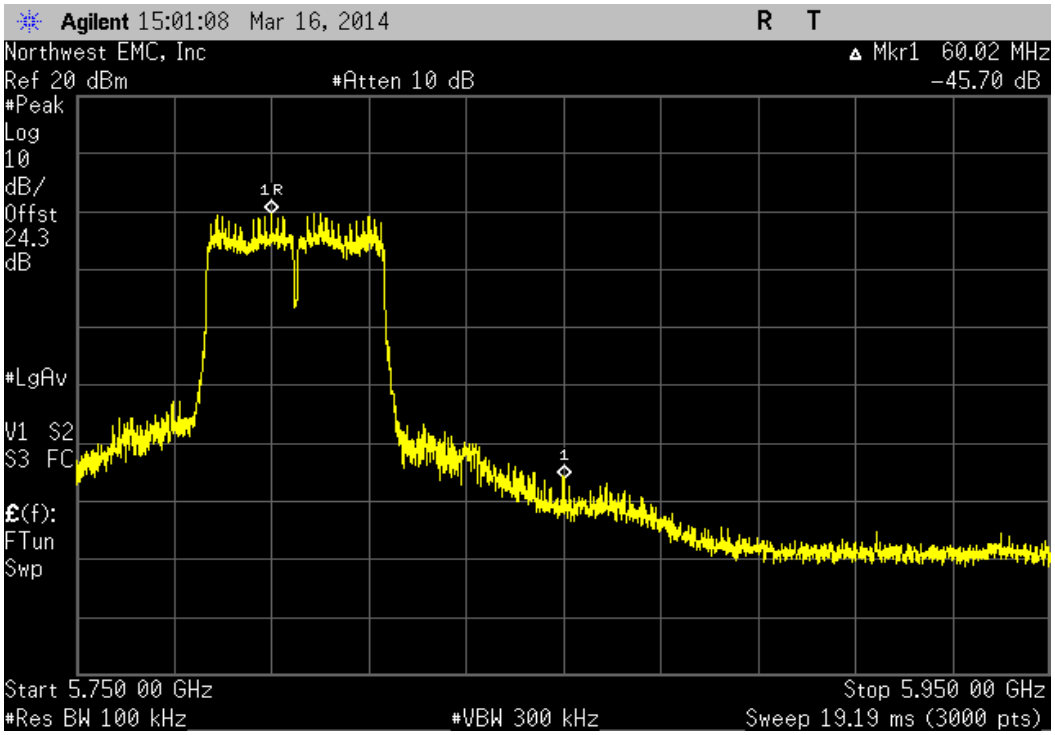
IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153, 5755 MHz

	Value	Limit	Result
	-35.47 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 40 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, High Channel 157/161, 5795 MHz

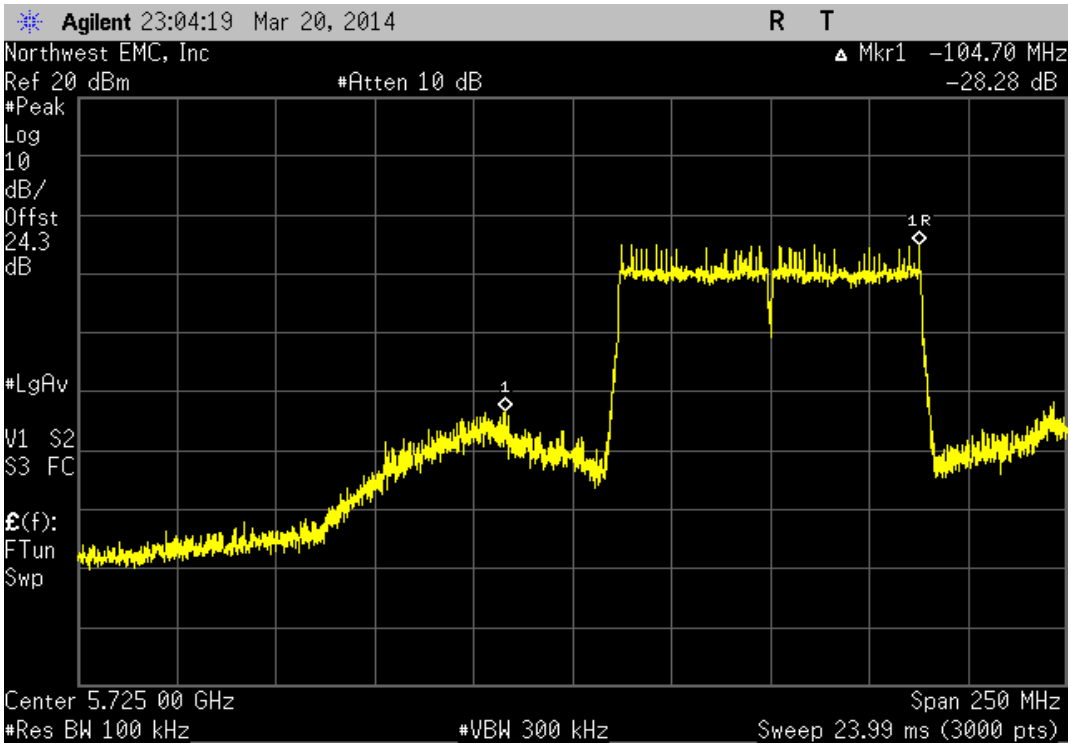
	Value	Limit	Result
	-45.71 dBc	≤ -20 dBc	Pass



BAND EDGE COMPLIANCE

IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS0, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-28.28 dBc	≤ -20 dBc	Pass



IEEE 802.11(ac), 80 MHz, 5725 MHz - 5850 MHz Band, VHT, MCS9, Low Channel 149/153/157/161, 5775 MHz

				Value	Limit	Result
				-30.39 dBc	≤ -20 dBc	Pass