OUTPUT POWER

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385			**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.2°C
Attendees:	None			**Humidity:**	44%
Project:	None			**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

2x2 MIMO mode, Chain BC (Chains 1 and 2).

DEVIATIONS FROM TEST STANDARD

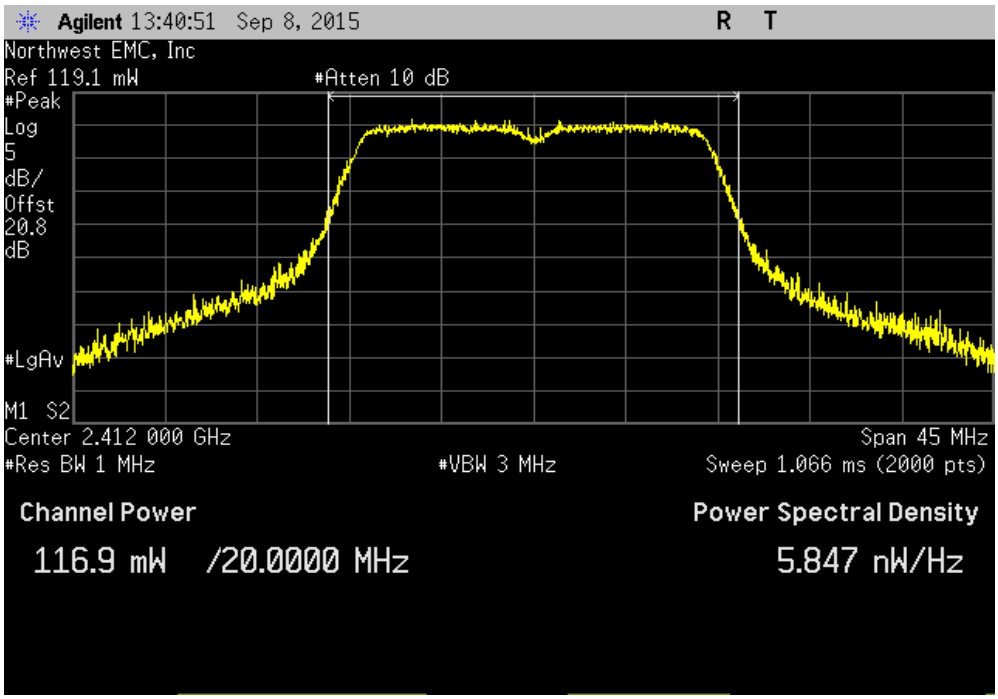
None

Configuration #	5	Signature Jonathan Kiefer

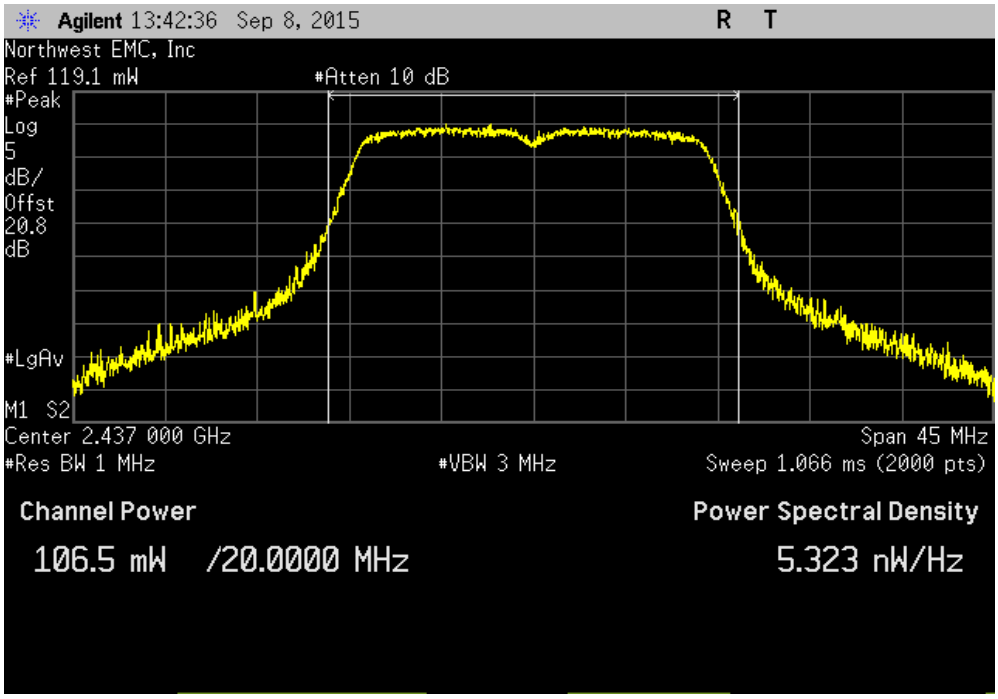
	Value	Limit (<)	Result
Chain B			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz	116.941 mW	1 W	Pass
Mid Channel 6, 2437 MHz	106.459 mW	1 W	Pass
High Channel 11, 2462 MHz	86.474 mW	1 W	Pass
802.11(n) MCS15			
Low Channel 1, 2412 MHz	44.414 mW	1 W	Pass
Mid Channel 6, 2437 MHz	36.318 mW	1 W	Pass
High Channel 11, 2462 MHz	32.57 mW	1 W	Pass
Chain C			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz	107.96 mW	1 W	Pass
Mid Channel 6, 2437 MHz	102.908 mW	1 W	Pass
High Channel 11, 2462 MHz	96.793 mW	1 W	Pass
802.11(n) MCS15			
Low Channel 1, 2412 MHz	35.919 mW	1 W	Pass
Mid Channel 6, 2437 MHz	38.903 mW	1 W	Pass
High Channel 11, 2462 MHz	32.309 mW	1 W	Pass

Power Summing, Chain BC					
20 MHz					
2400 MHz - 2483.5 MHz Band	Chain B	Chain C	Summed Power	Limit	
802.11(n) MCS8	(mW)	(mW)	(dBm)	(dBm)	Result
Low Channel 1, 2412 MHz	116.941	107.96	23.51991386	30	Pass
Mid Channel 6, 2437 MHz	106.459	102.908	23.2090823	30	Pass
High Channel 11, 2462 MHz	86.474	96.793	22.63084271	30	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	44.414	35.919	19.04893986	30	Pass
Mid Channel 6, 2437 MHz	36.318	38.903	18.76339103	30	Pass
High Channel 11, 2462 MHz	32.57	32.309	18.12104147	30	Pass

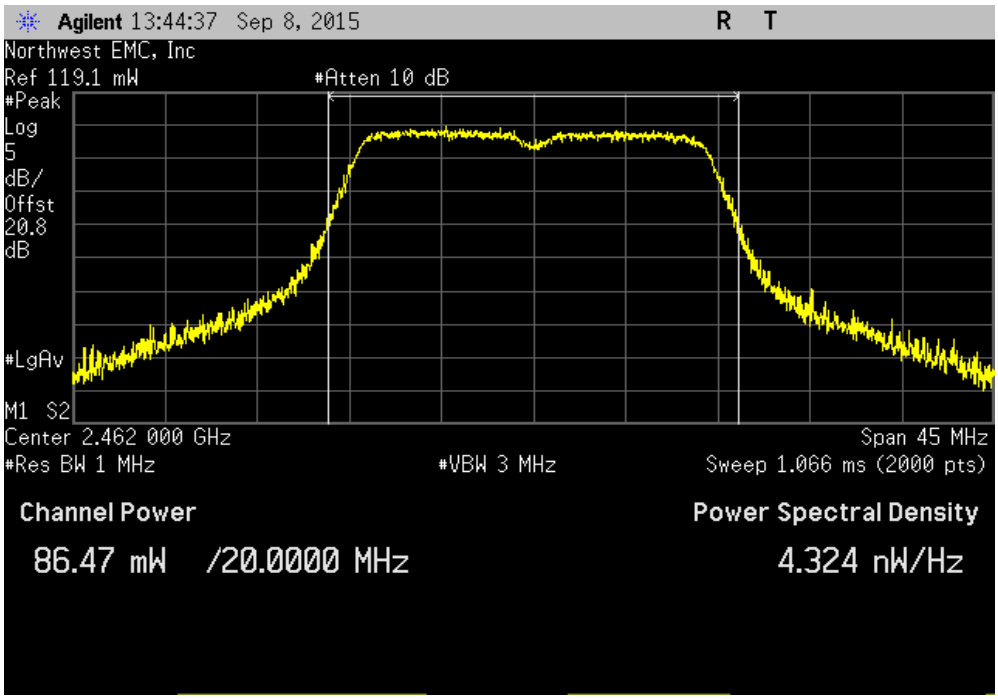
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				116.941 mW	1 W	Pass



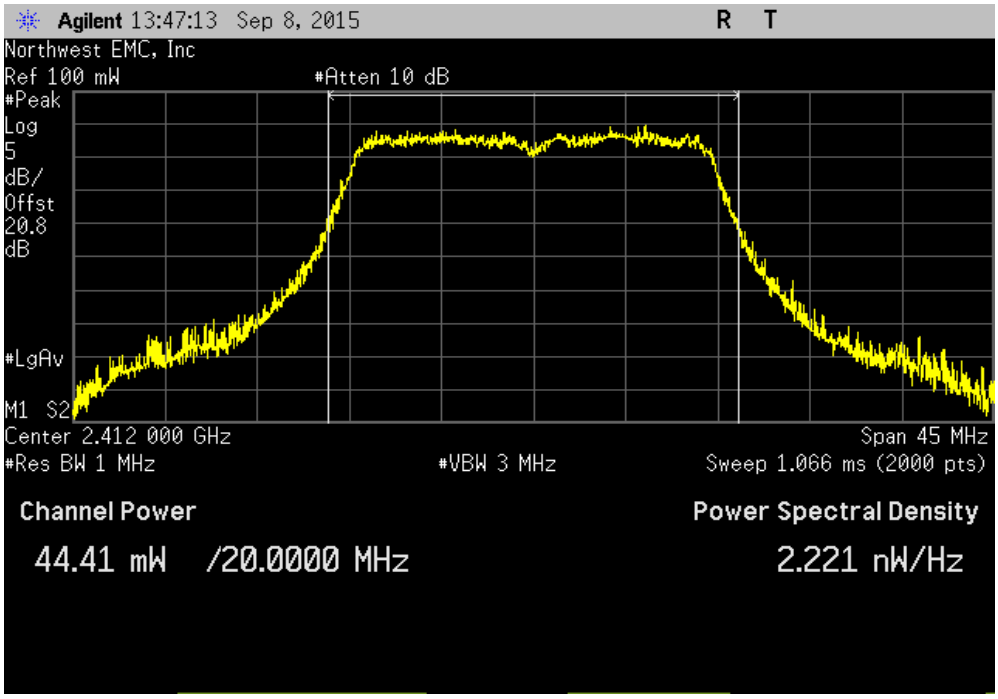
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				106.459 mW	1 W	Pass



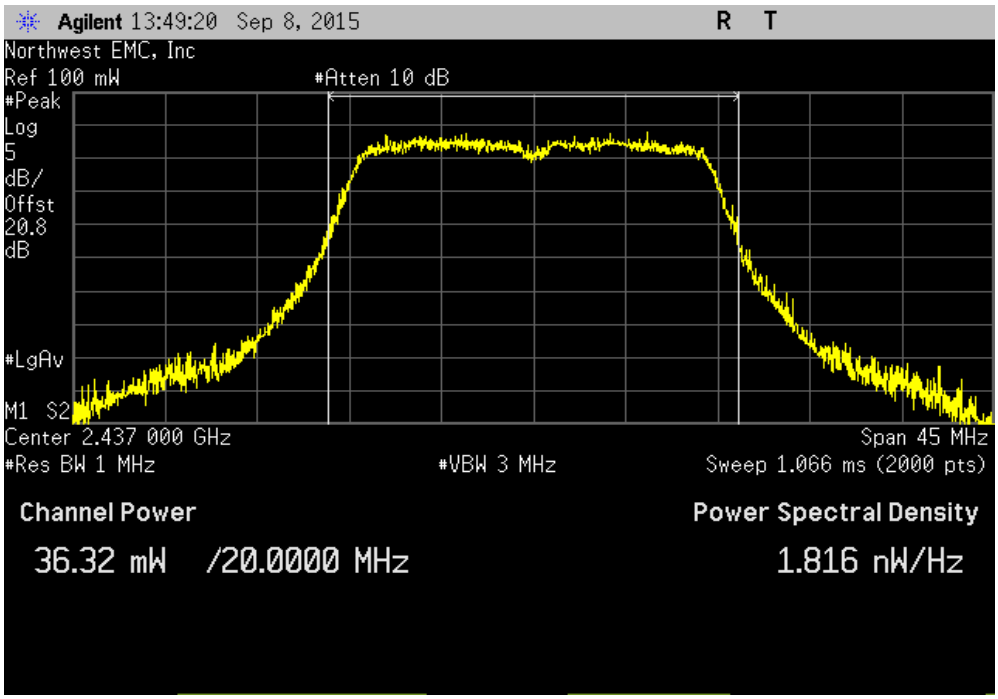
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				86.474 mW	1 W	Pass



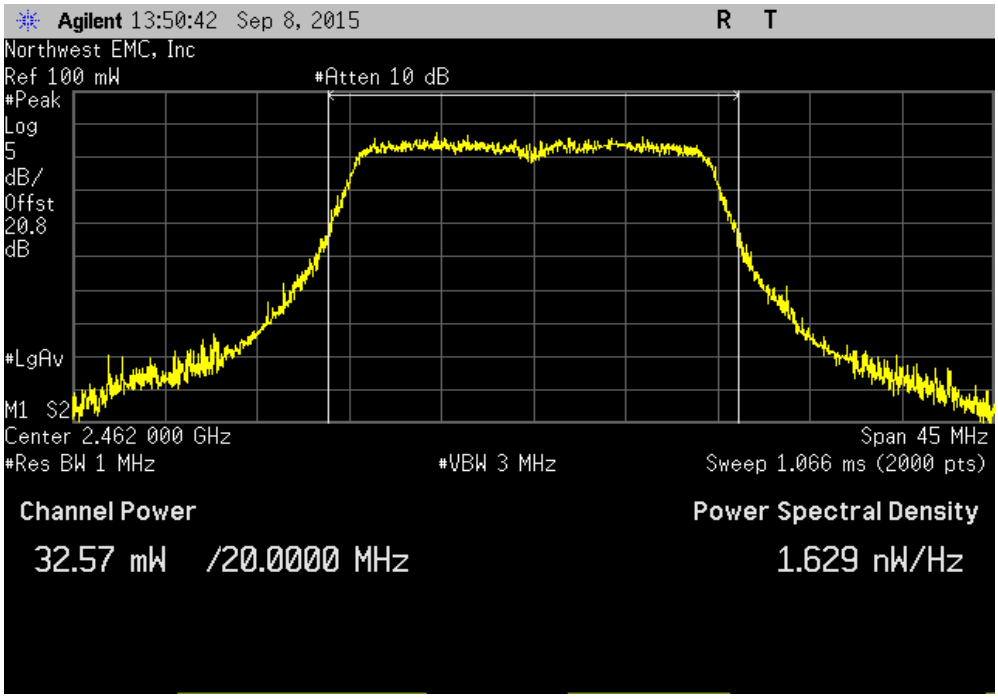
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				44.414 mW	1 W	Pass



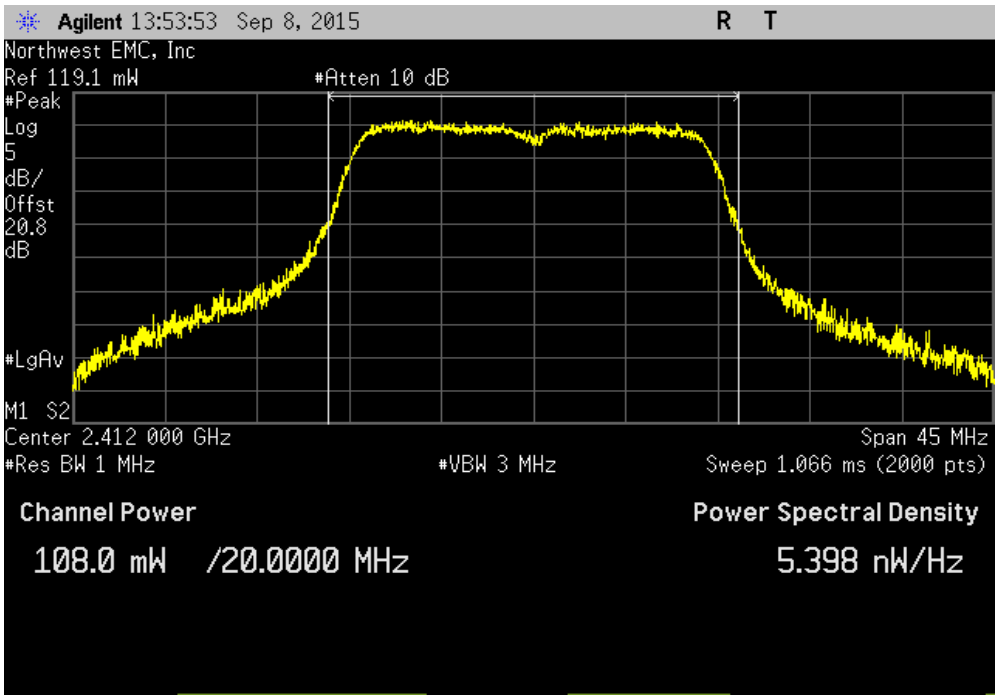
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				36.318 mW	1 W	Pass



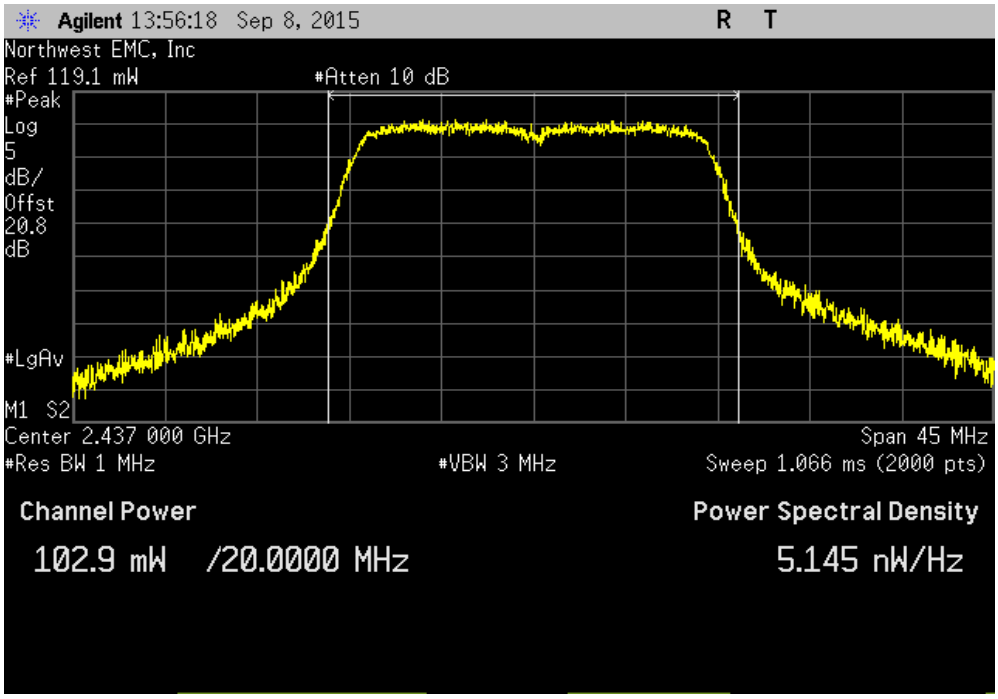
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				32.57 mW	1 W	Pass



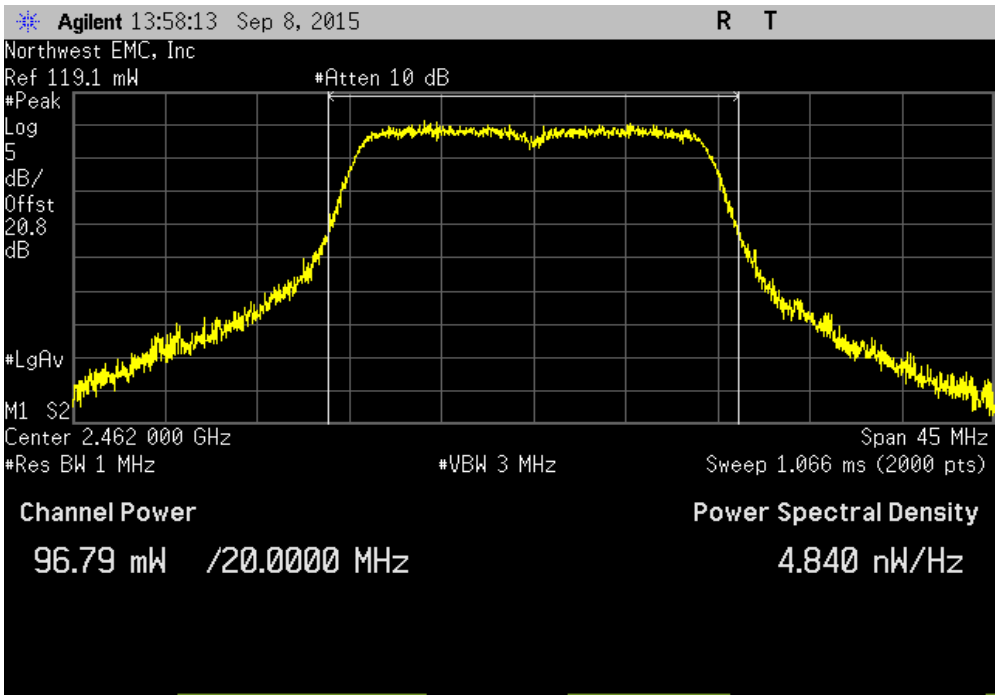
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				107.96 mW	1 W	Pass



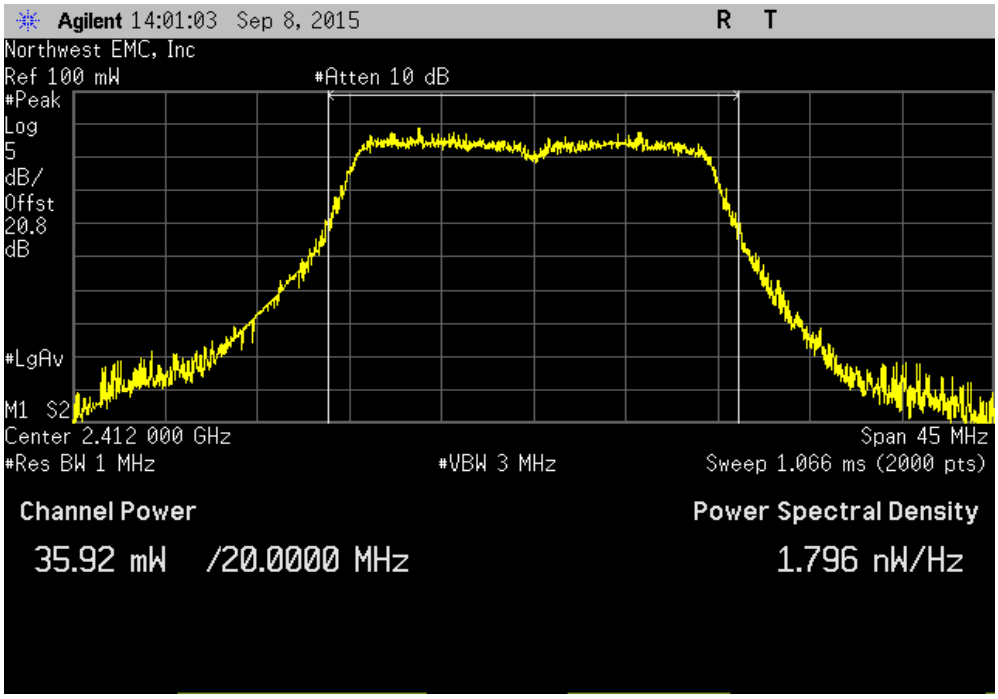
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				102.908 mW	1 W	Pass



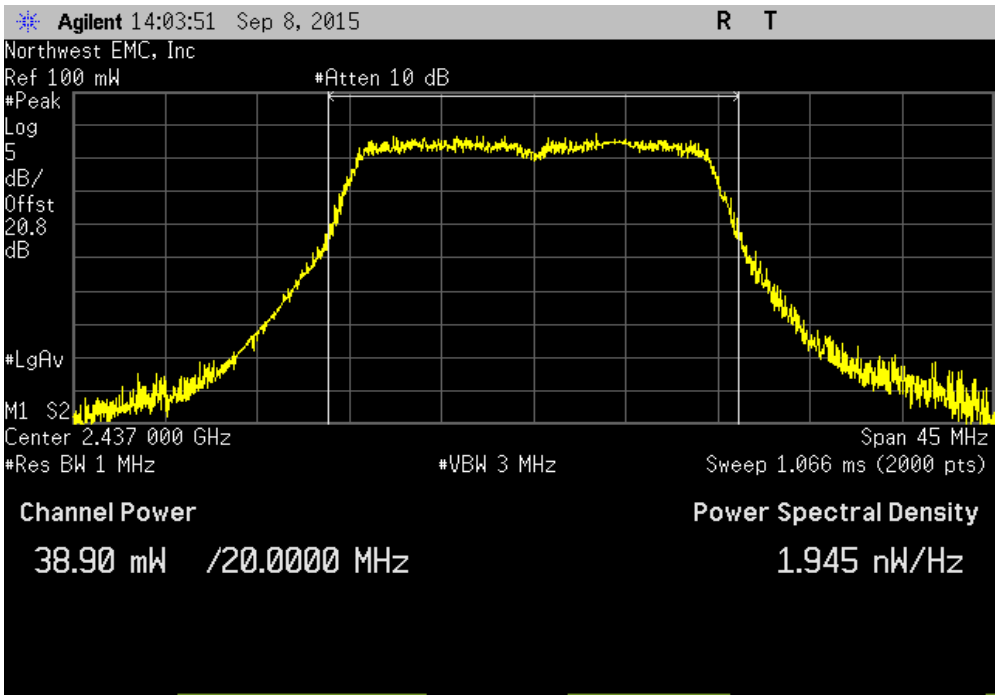
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				96.793 mW	1 W	Pass



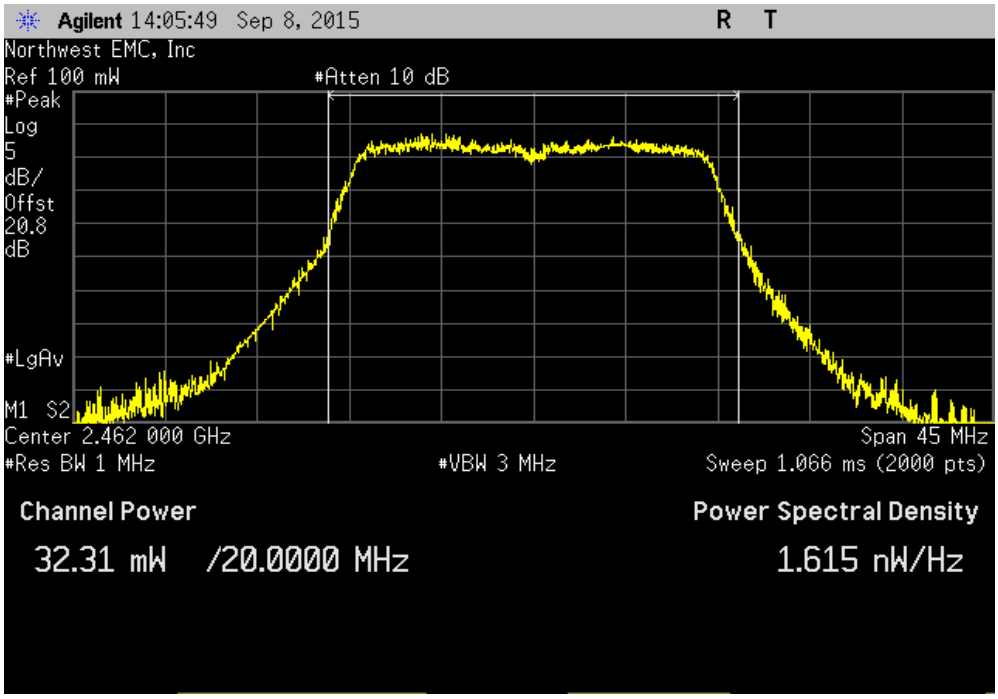
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				35.919 mW	1 W	Pass



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



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



OUTPUT POWER

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)	**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385	**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.	**Temperature:**	24.2°C
Attendees:	None	**Humidity:**	44%
Project:	None	**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:** 110VAC/60Hz	**Job Site:** TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

3x3 MIMO mode, Chain ABC (Chains 0, 1, and 2).

DEVIATIONS FROM TEST STANDARD

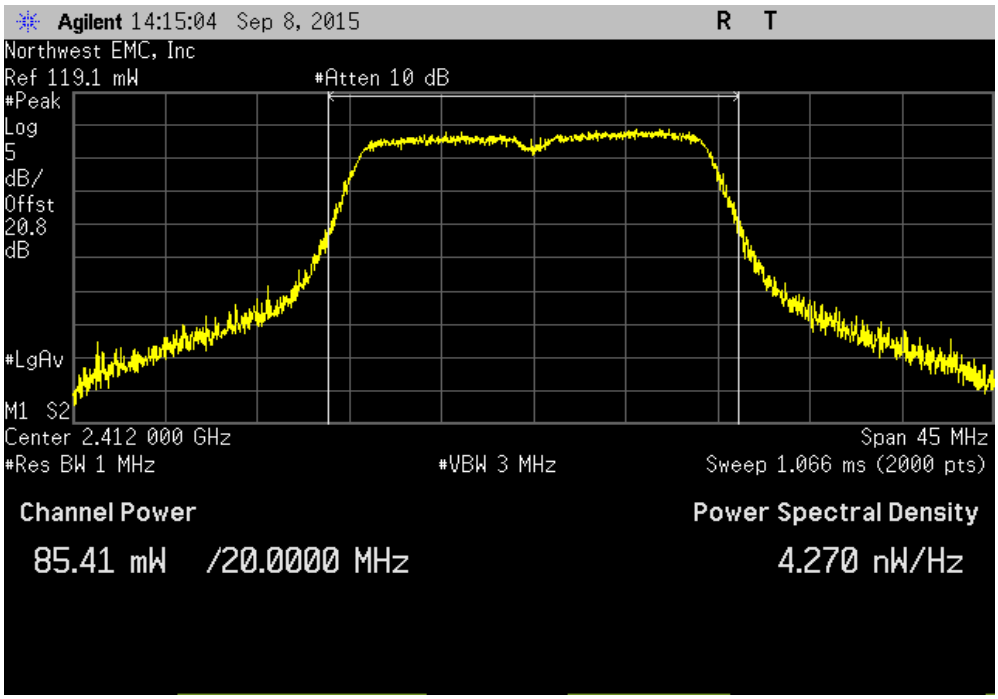
None

Configuration #	5	Signature Jonathan Kiefer

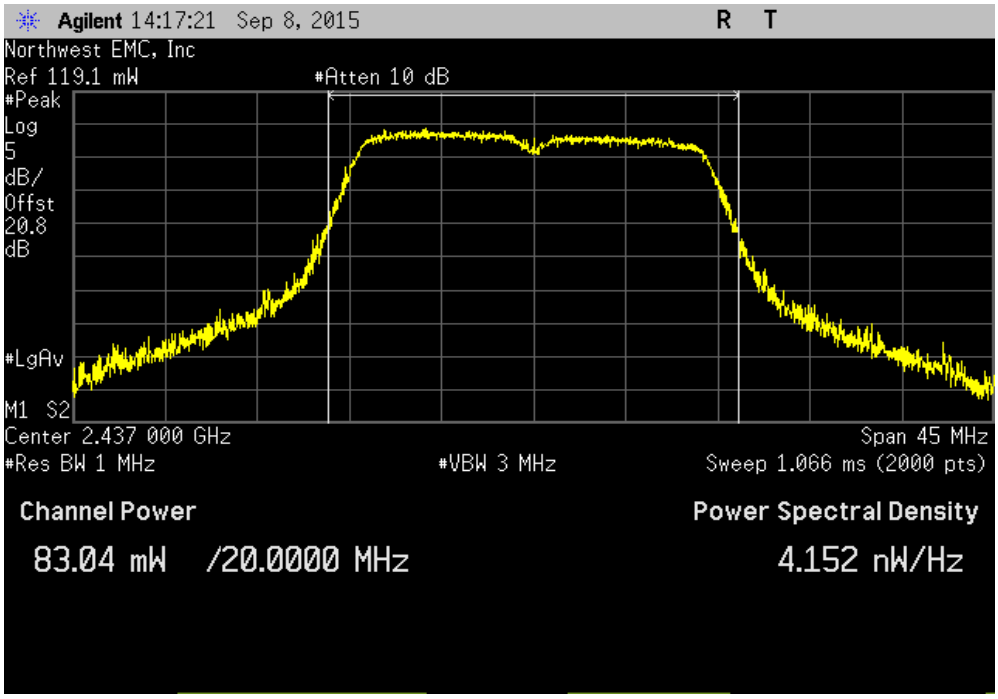
					Value	Limit (<)	Result
Chain A							
	20 MHz						
		2400 MHz - 2483.5 MHz Band					
			802.11(n) MCS16				
				Low Channel 1, 2412 MHz	85.406 mW	1 W	Pass
				Mid Channel 6, 2437 MHz	83.04 mW	1 W	Pass
				High Channel 11, 2462 MHz	86.485 mW	1 W	Pass
			802.11(n) MCS23				
				Low Channel 1, 2412 MHz	24.86 mW	1 W	Pass
				Mid Channel 6, 2437 MHz	27.416 mW	1 W	Pass
				High Channel 11, 2462 MHz	29.131 mW	1 W	Pass
Chain B							
	20 MHz						
		2400 MHz - 2483.5 MHz Band					
			802.11(n) MCS16				
				Low Channel 1, 2412 MHz	130.82 mW	1 W	Pass
				Mid Channel 6, 2437 MHz	96.045 mW	1 W	Pass
				High Channel 11, 2462 MHz	98.419 mW	1 W	Pass
			802.11(n) MCS23				
				Low Channel 1, 2412 MHz	38.474 mW	1 W	Pass
				Mid Channel 6, 2437 MHz	35.914 mW	1 W	Pass
				High Channel 11, 2462 MHz	29.451 mW	1 W	Pass
Chain C							
	20 MHz						
		2400 MHz - 2483.5 MHz Band					
			802.11(n) MCS16				
				Low Channel 1, 2412 MHz	105.991 mW	1 W	Pass
				Mid Channel 6, 2437 MHz	90.617 mW	1 W	Pass
				High Channel 11, 2462 MHz	100.997 mW	1 W	Pass
			802.11(n) MCS23				
				Low Channel 1, 2412 MHz	27.973 mW	1 W	Pass
				Mid Channel 6, 2437 MHz	30.734 mW	1 W	Pass
				High Channel 11, 2462 MHz	31.053 mW	1 W	Pass

Power Summing, Chain ABC								
	20 MHz							
		2400 MHz - 2483.5 MHz Band	Chain A (mW)	Chain B (mW)	Chain C (mW)	Summed Power (dBm)	Limit (dBm)	Result
		802.11(n) MCS16						
		Low Channel 1, 2412 MHz	85.406	130.82	105.991	25.0814845	30	Pass
		Mid Channel 6, 2437 MHz	93.04	96.045	90.617	24.46695572	30	Pass
		High Channel 11, 2462 MHz	86.485	98.419	100.997	24.56215674	30	Pass
		802.11(n) MCS23						
		Low Channel 1, 2412 MHz	24.86	38.474	27.973	19.60504074	30	Pass
		Mid Channel 6, 2437 MHz	27.416	35.914	30.734	19.73423443	30	Pass
		High Channel 11, 2462 MHz	29.131	29.451	31.053	19.52477623	30	Pass

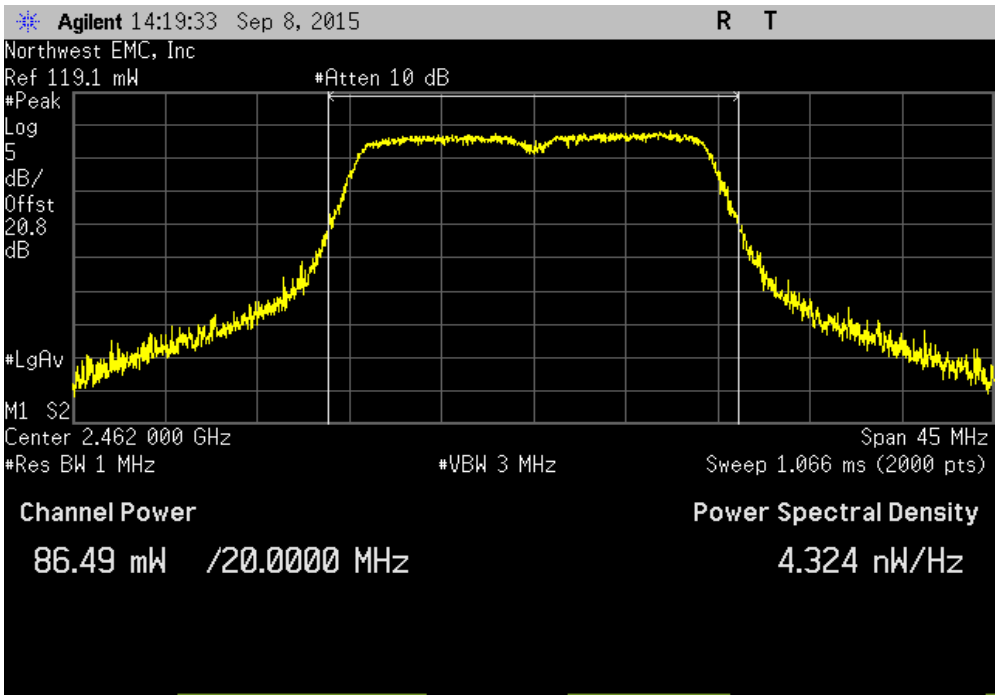
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				85.406 mW	1 W	Pass



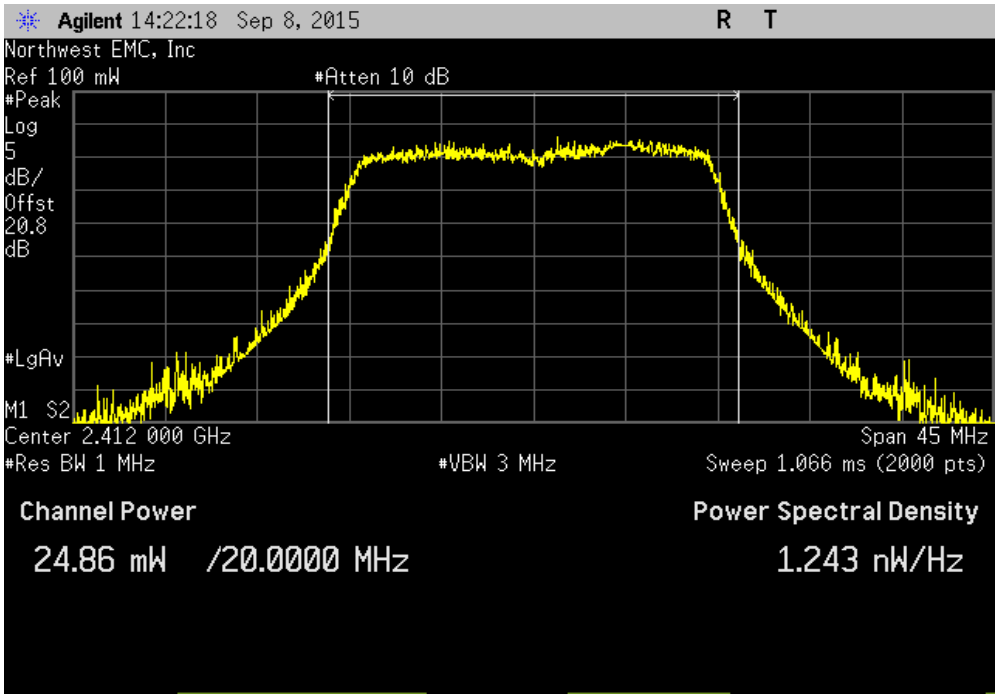
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				83.04 mW	1 W	Pass



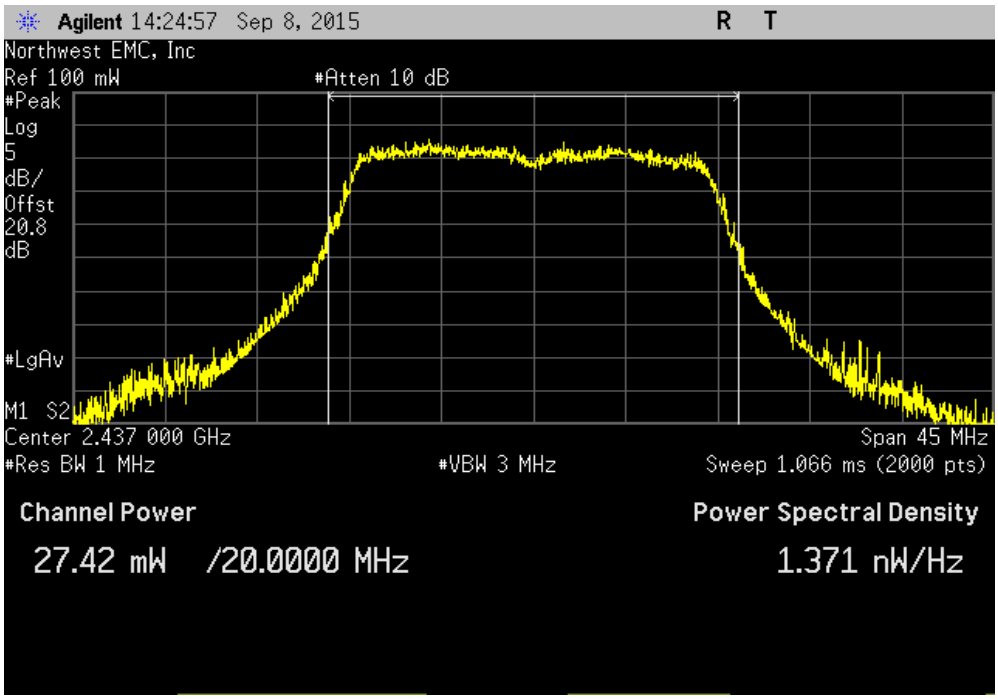
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				86.485 mW	1 W	Pass



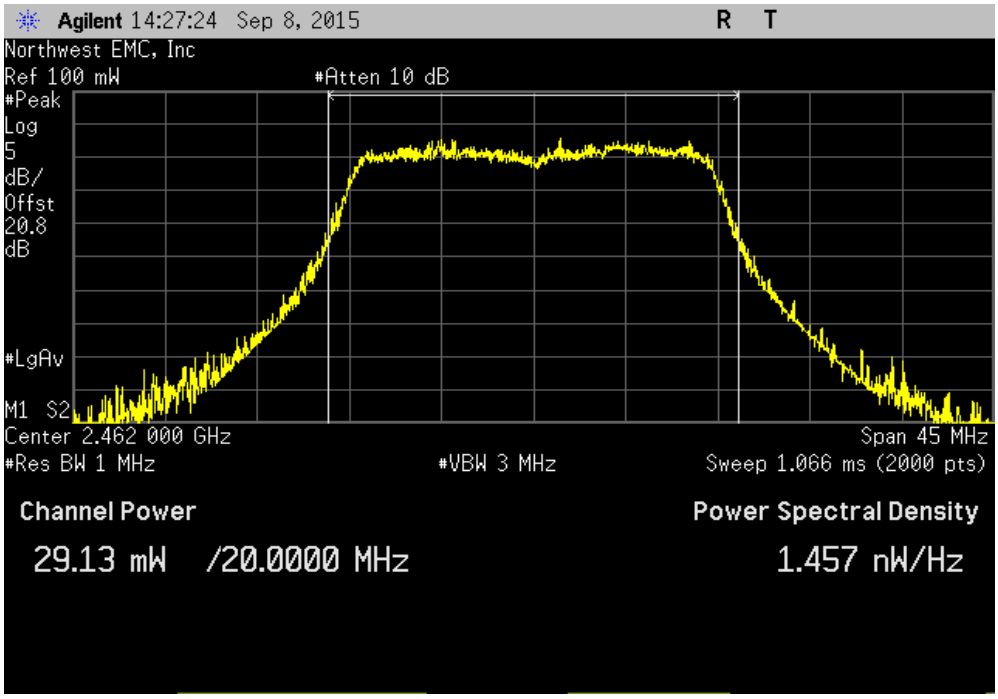
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				24.86 mW	1 W	Pass



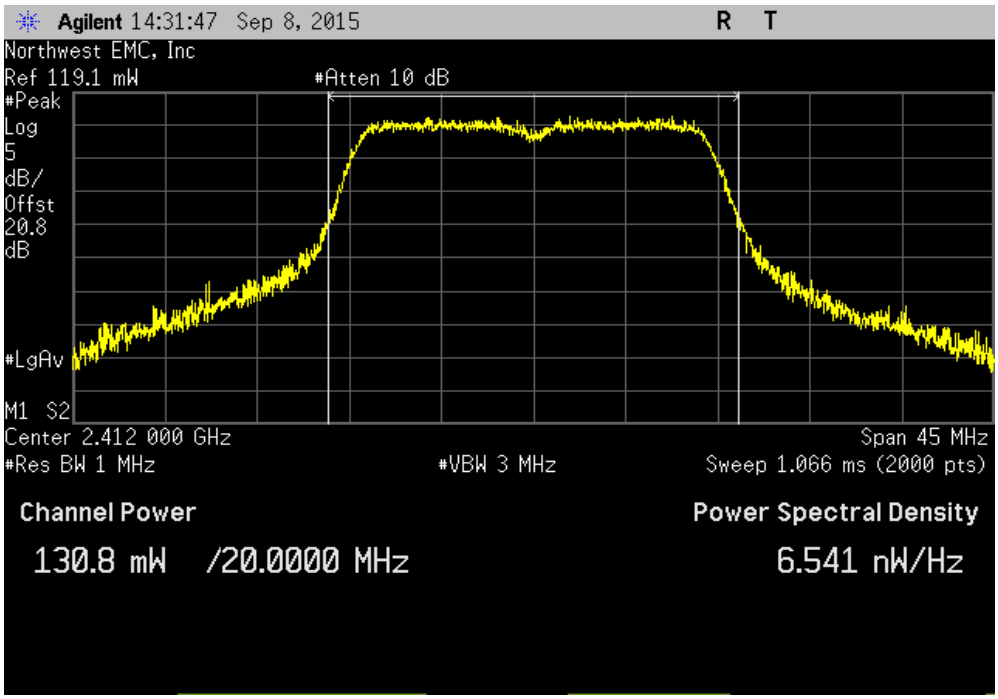
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				27.416 mW	1 W	Pass



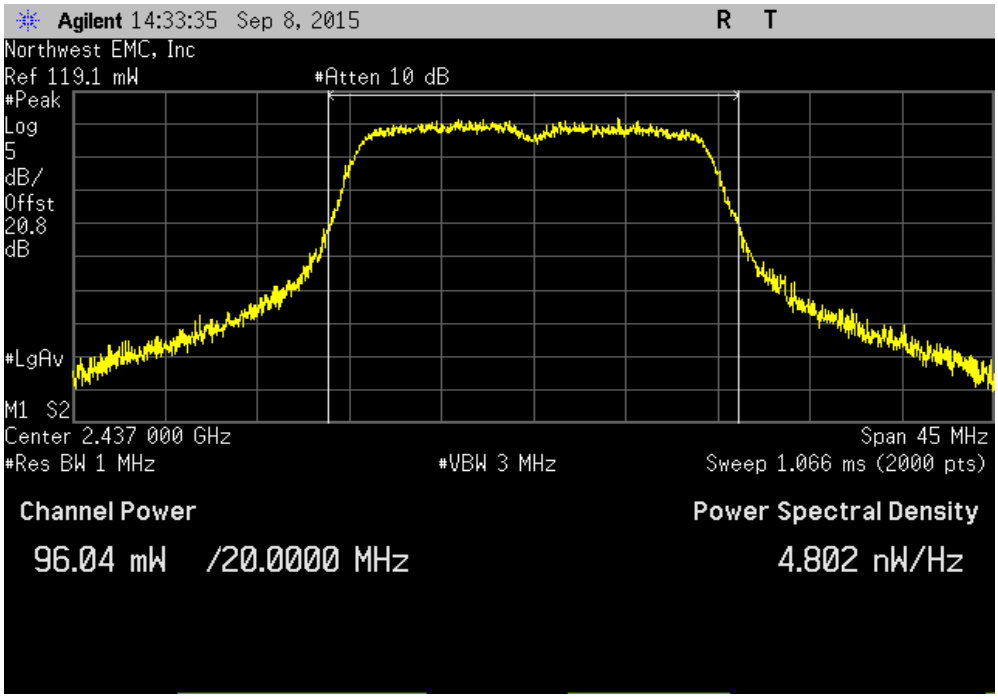
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				29.131 mW	1 W	Pass



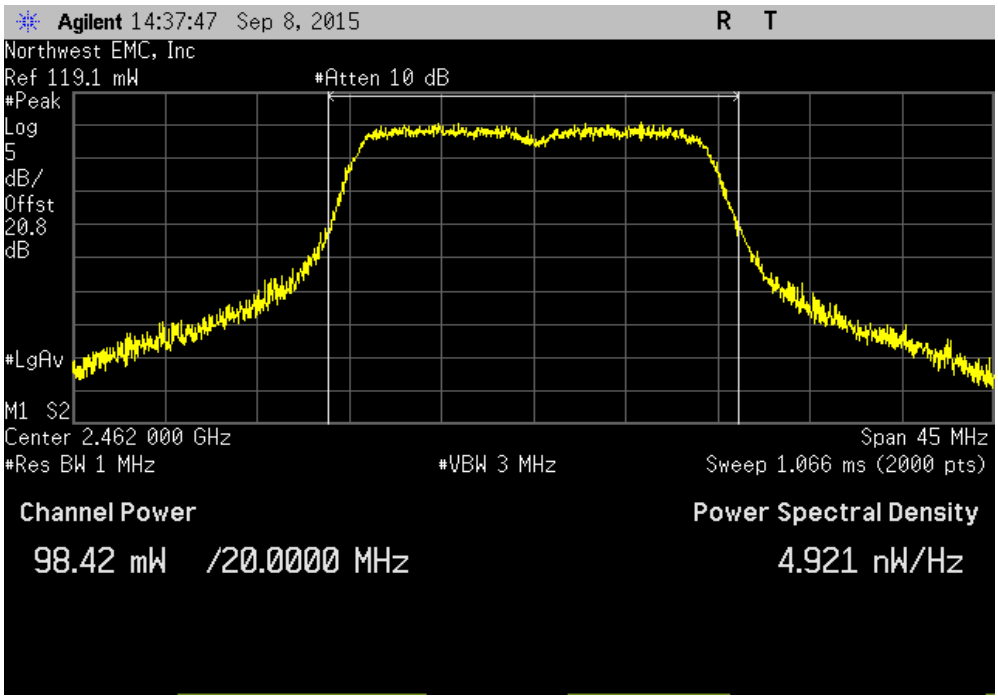
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				130.82 mW	1 W	Pass



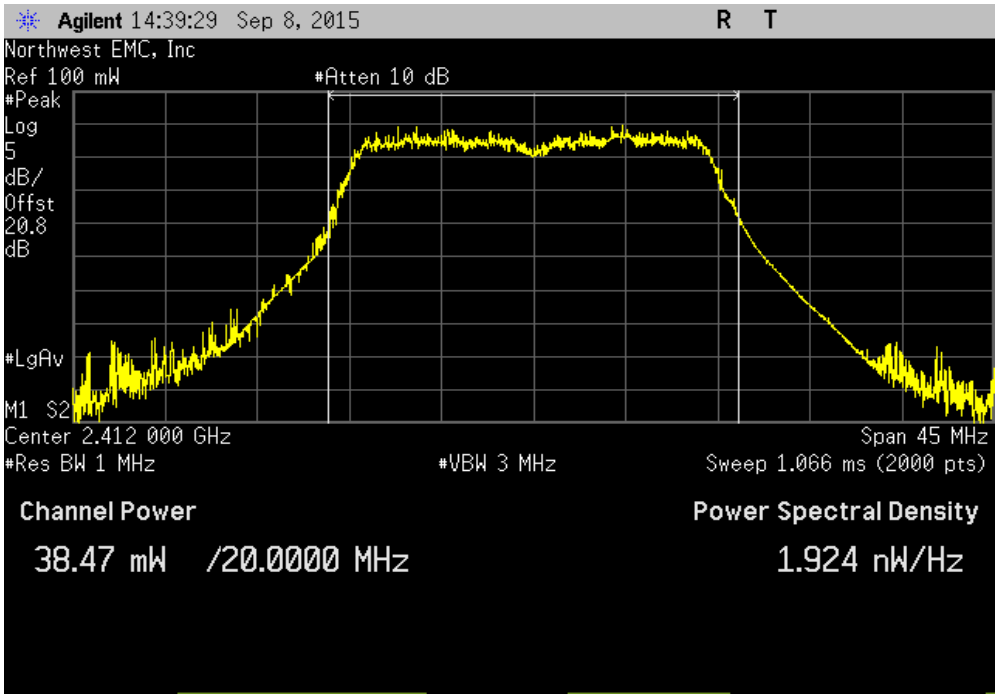
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				96.045 mW	1 W	Pass



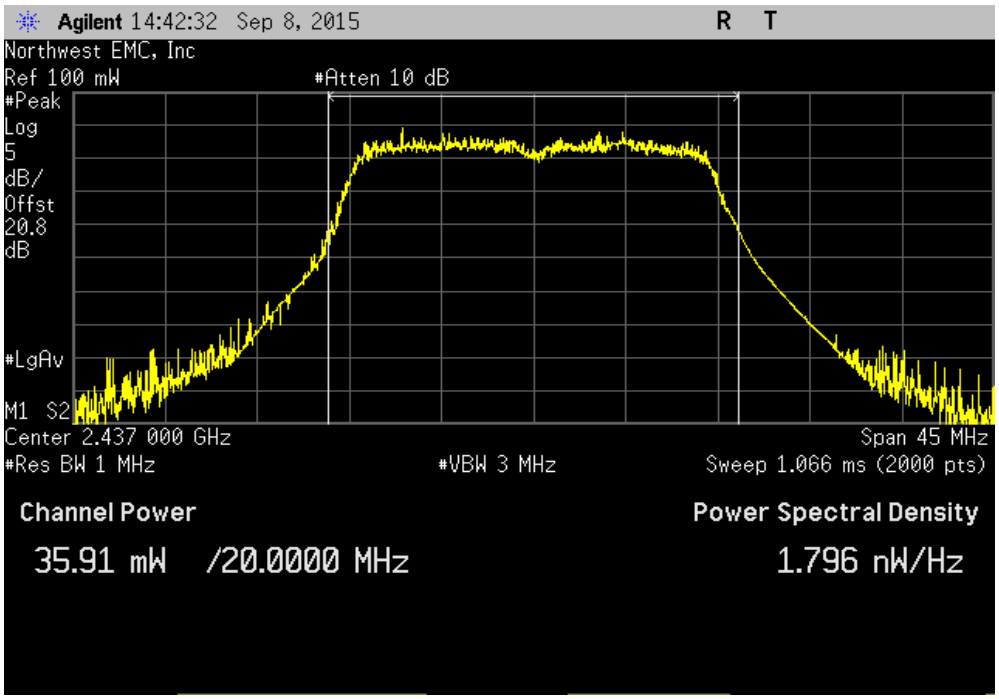
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				98.419 mW	1 W	Pass



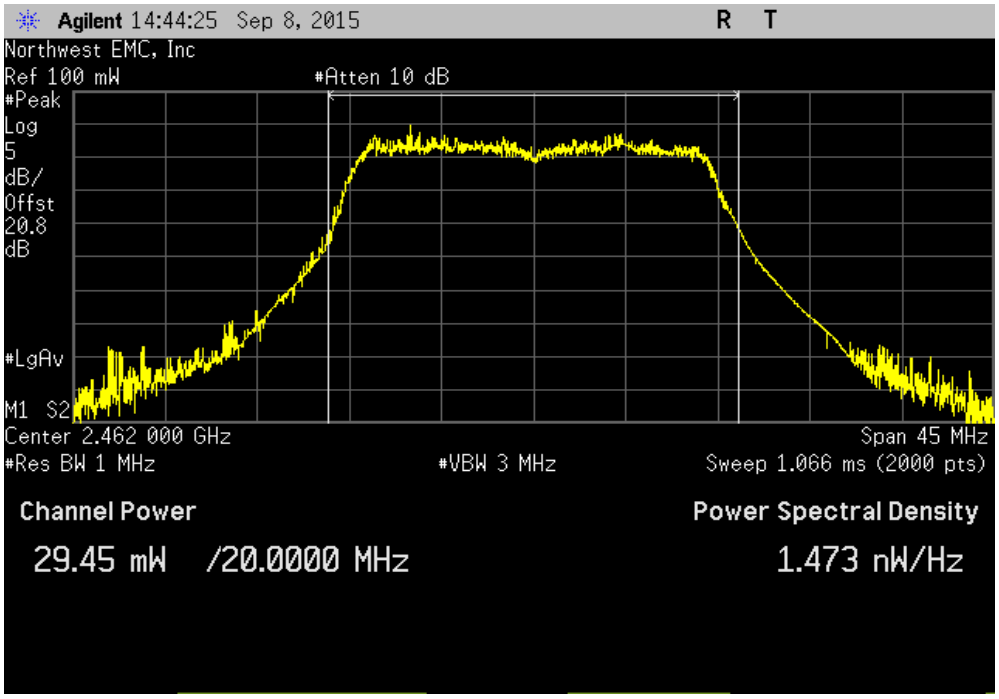
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				38.474 mW	1 W	Pass



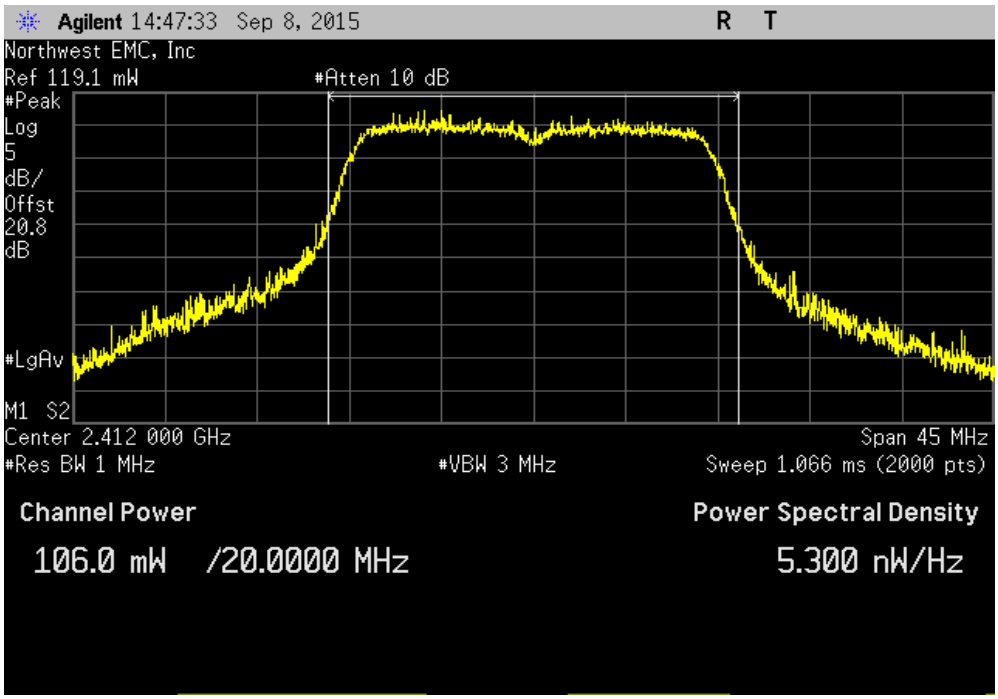
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				35.914 mW	1 W	Pass



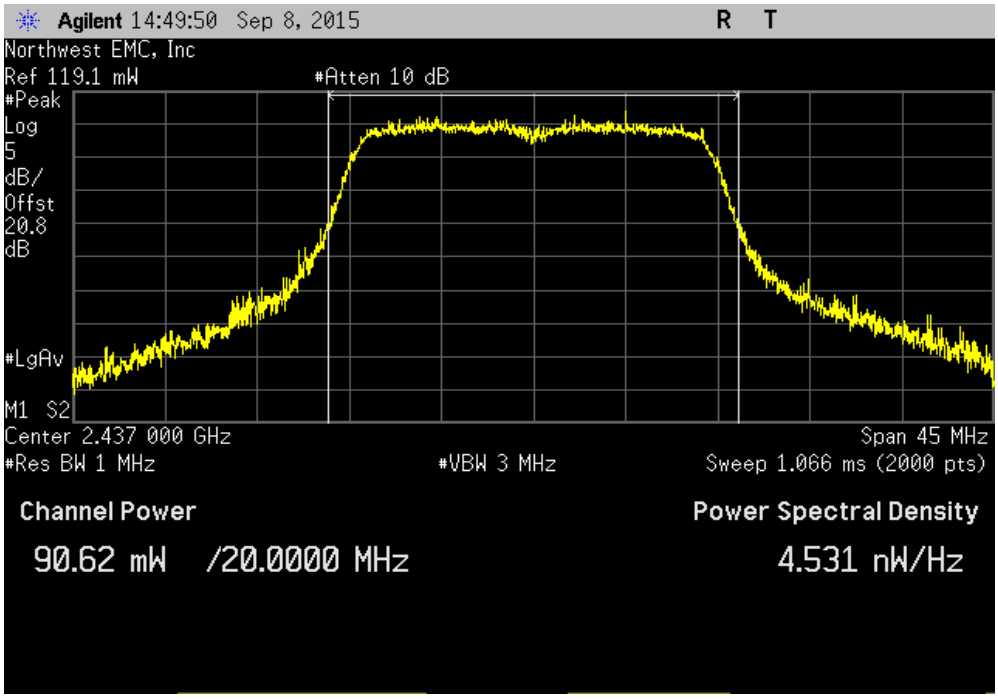
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				29.451 mW	1 W	Pass



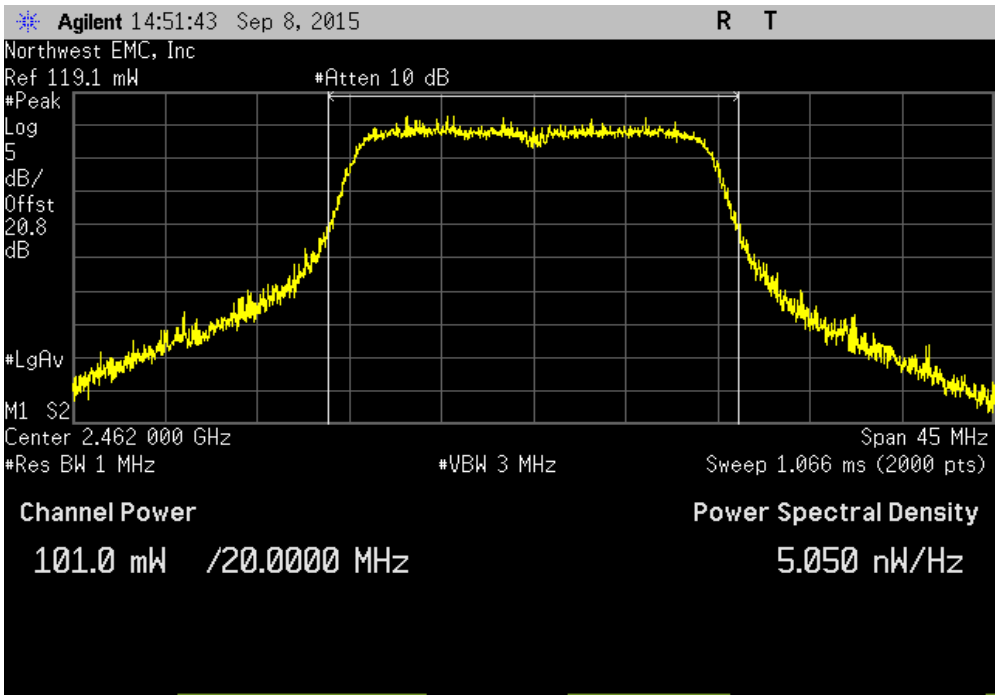
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				105.991 mW	1 W	Pass



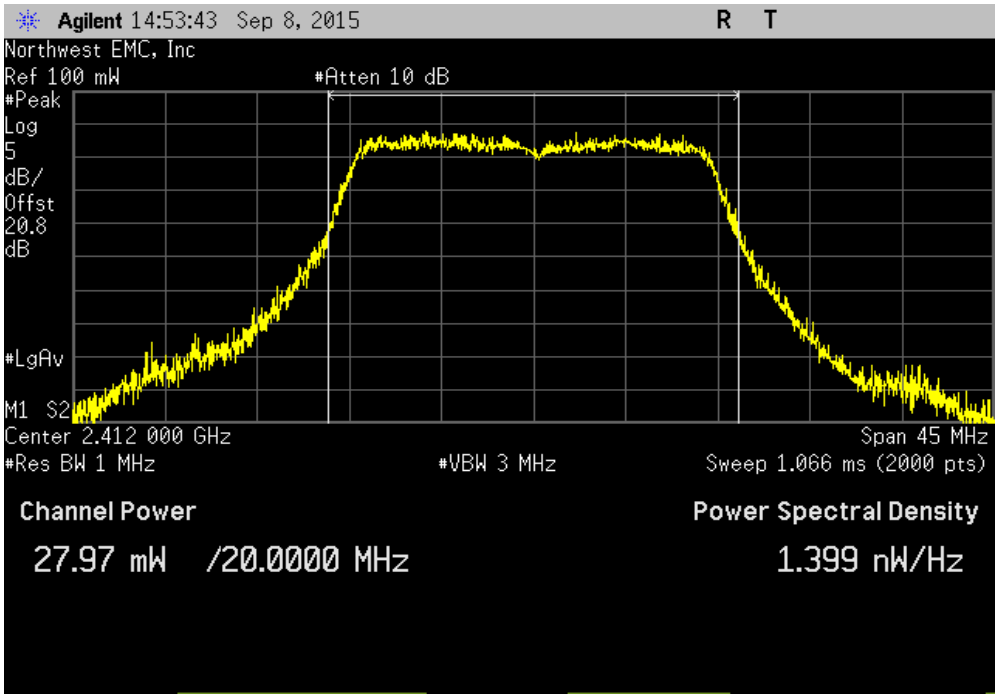
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				90.617 mW	1 W	Pass



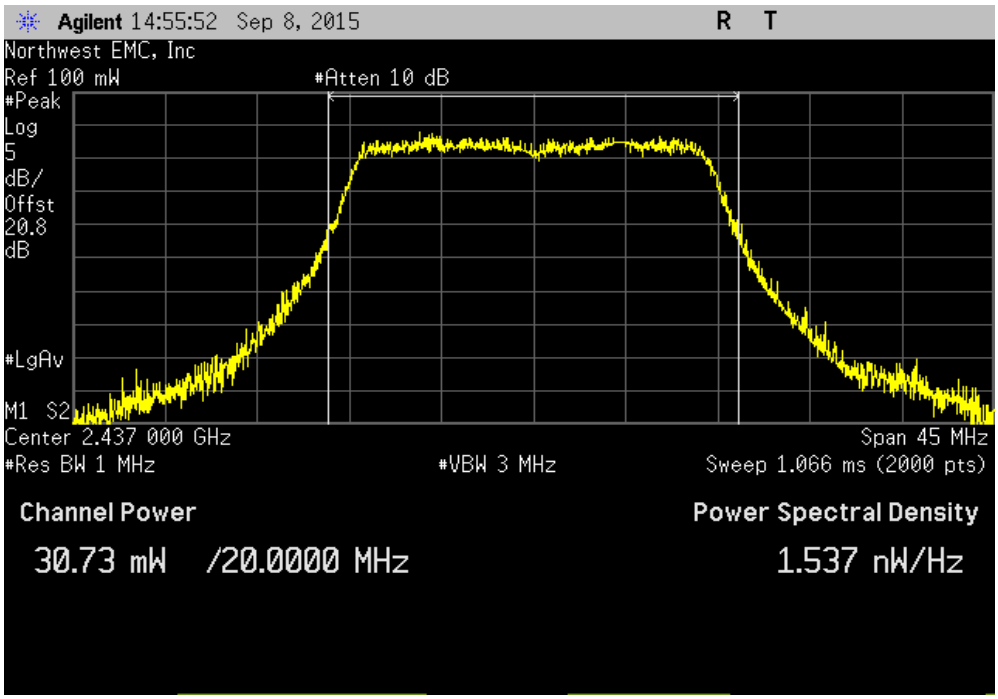
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				100.997 mW	1 W	Pass



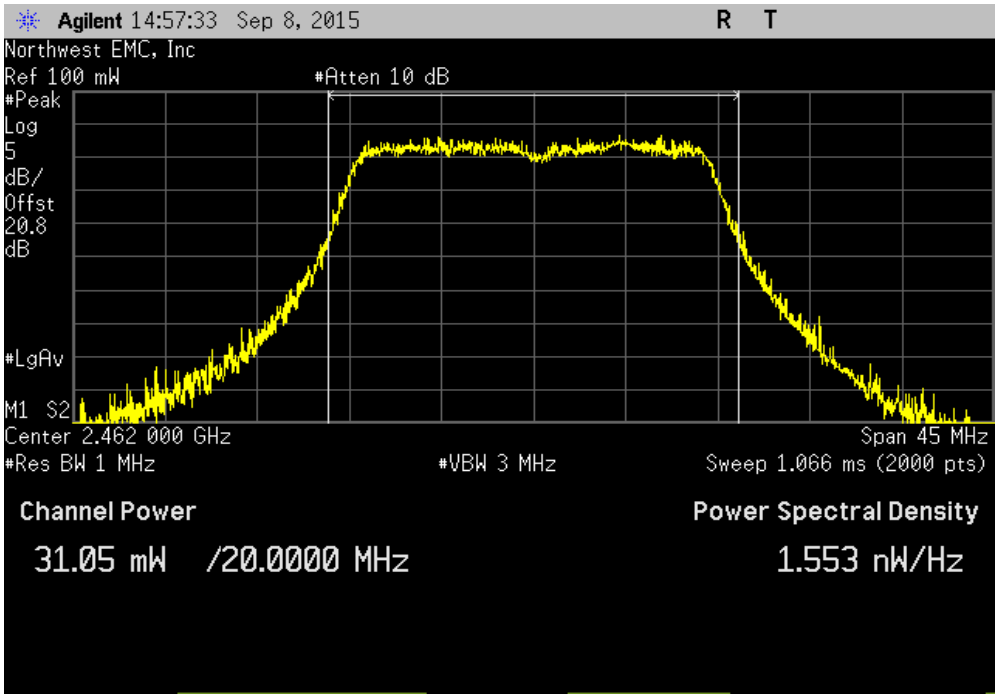
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				27.973 mW	1 W	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				30.734 mW	1 W	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				31.053 mW	1 W	Pass



OUTPUT POWER

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to a value specified in the RF power table. 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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385			**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.2°C
Attendees:	None			**Humidity:**	44%
Project:	None			**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

Reference RF power table for channel power setting. Chains A, B, and C correspond to Chain 0, 1, and 2 respectively.

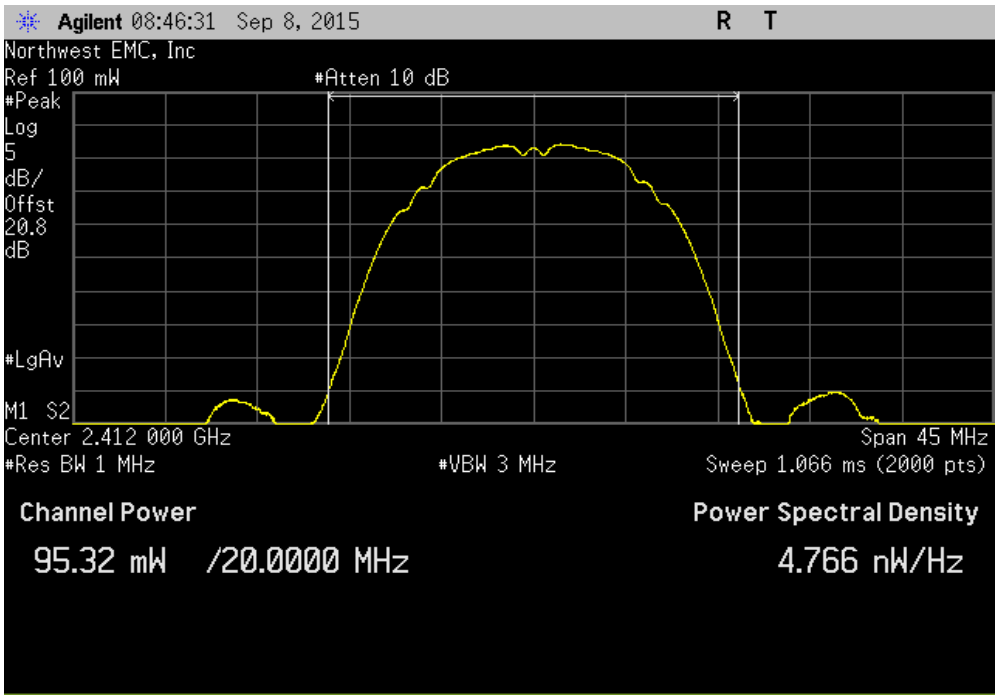
DEVIATIONS FROM TEST STANDARD

None

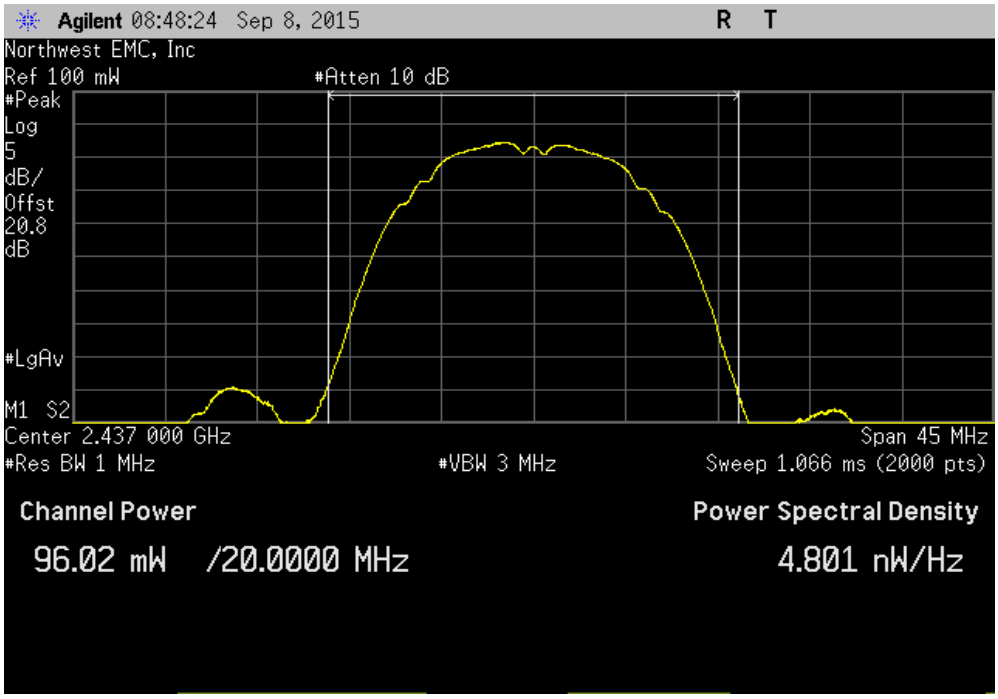
Configuration #	5	Signature Jonathan Kiefer

	Value	Limit (<)	Result
Chain A			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	95.317 mW	1 W	Pass
Mid Channel 6, 2437 MHz	96.019 mW	1 W	Pass
High Channel 11, 2462 MHz	98.456 mW	1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	79.388 mW	1 W	Pass
Mid Channel 6, 2437 MHz	91.698 mW	1 W	Pass
High Channel 11, 2462 MHz	89.169 mW	1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	91.989 mW	1 W	Pass
Mid Channel 6, 2437 MHz	80.118 mW	1 W	Pass
High Channel 11, 2462 MHz	87.044 mW	1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	79.796 mW	1 W	Pass
Mid Channel 6, 2437 MHz	78.215 mW	1 W	Pass
High Channel 11, 2462 MHz	75.581 mW	1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	40.755 mW	1 W	Pass
Mid Channel 6, 2437 MHz	45.718 mW	1 W	Pass
High Channel 11, 2462 MHz	39.716 mW	1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	91.729 mW	1 W	Pass
Mid Channel 6, 2437 MHz	78.918 mW	1 W	Pass
High Channel 11, 2462 MHz	92.166 mW	1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	41.89 mW	1 W	Pass
Mid Channel 6, 2437 MHz	43.217 mW	1 W	Pass
High Channel 11, 2462 MHz	43.143 mW	1 W	Pass
Chain B			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	144.249 mW	1 W	Pass
Mid Channel 6, 2437 MHz	124.659 mW	1 W	Pass
High Channel 11, 2462 MHz	114.381 mW	1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	140.409 mW	1 W	Pass
Mid Channel 6, 2437 MHz	118.789 mW	1 W	Pass
High Channel 11, 2462 MHz	96.502 mW	1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	136.14 mW	1 W	Pass
Mid Channel 6, 2437 MHz	108.428 mW	1 W	Pass
High Channel 11, 2462 MHz	71.25 mW	1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	96.58 mW	1 W	Pass
Mid Channel 6, 2437 MHz	92.617 mW	1 W	Pass
High Channel 11, 2462 MHz	85.372 mW	1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	67.651 mW	1 W	Pass
Mid Channel 6, 2437 MHz	56.533 mW	1 W	Pass
High Channel 11, 2462 MHz	52.528 mW	1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	118.936 mW	1 W	Pass
Mid Channel 6, 2437 MHz	104.49 mW	1 W	Pass
High Channel 11, 2462 MHz	99.717 mW	1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	65.925 mW	1 W	Pass
Mid Channel 6, 2437 MHz	57.027 mW	1 W	Pass
High Channel 11, 2462 MHz	46.748 mW	1 W	Pass
Chain C			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	104.598 mW	1 W	Pass
Mid Channel 6, 2437 MHz	121.775 mW	1 W	Pass
High Channel 11, 2462 MHz	112.018 mW	1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	115.24 mW	1 W	Pass
Mid Channel 6, 2437 MHz	93.465 mW	1 W	Pass
High Channel 11, 2462 MHz	83.43 mW	1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	110.678 mW	1 W	Pass
Mid Channel 6, 2437 MHz	117.94 mW	1 W	Pass
High Channel 11, 2462 MHz	103.908 mW	1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	97.115 mW	1 W	Pass
Mid Channel 6, 2437 MHz	99.655 mW	1 W	Pass
High Channel 11, 2462 MHz	76.816 mW	1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	57.019 mW	1 W	Pass
Mid Channel 6, 2437 MHz	57.832 mW	1 W	Pass
High Channel 11, 2462 MHz	50.227 mW	1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	116.377 mW	1 W	Pass
Mid Channel 6, 2437 MHz	103.516 mW	1 W	Pass
High Channel 11, 2462 MHz	88.94 mW	1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	54.615 mW	1 W	Pass
Mid Channel 6, 2437 MHz	55.973 mW	1 W	Pass
High Channel 11, 2462 MHz	49.218 mW	1 W	Pass

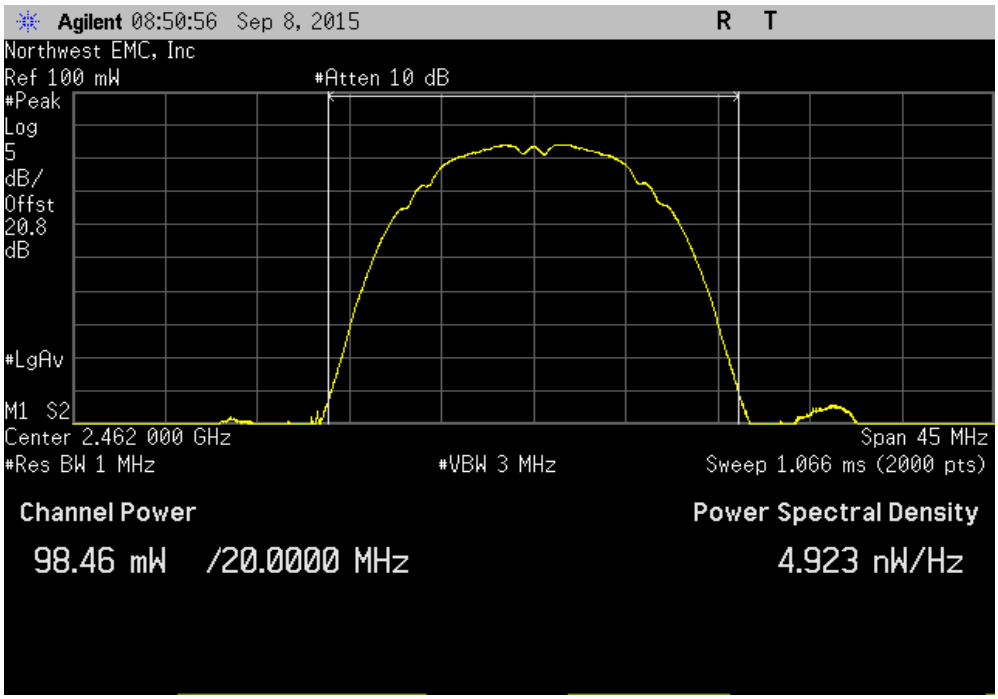
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				95.317 mW	1 W	Pass



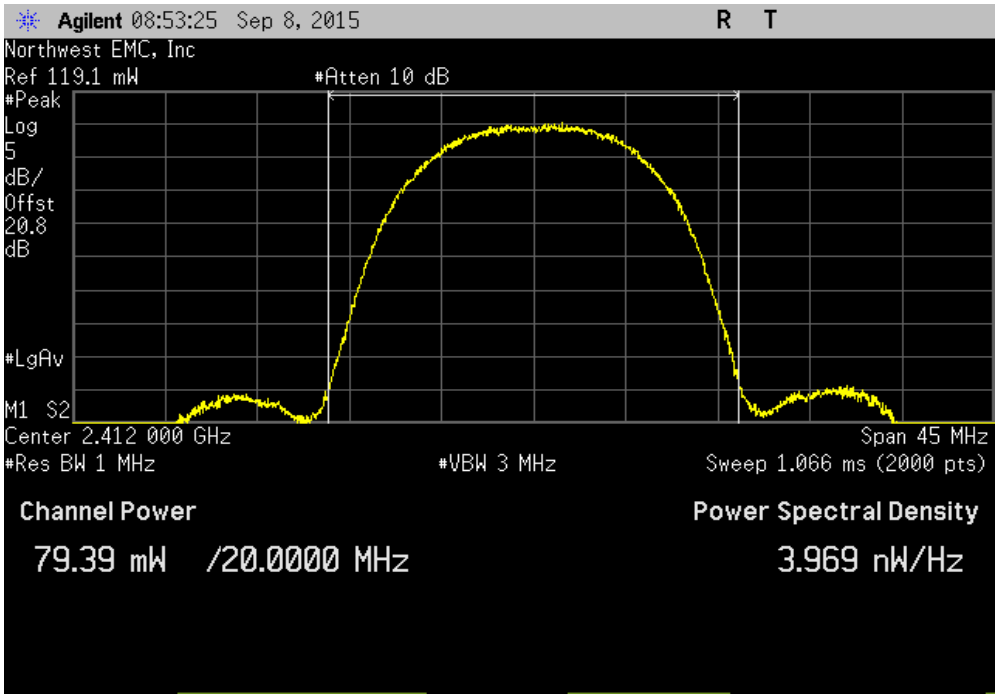
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				96.019 mW	1 W	Pass



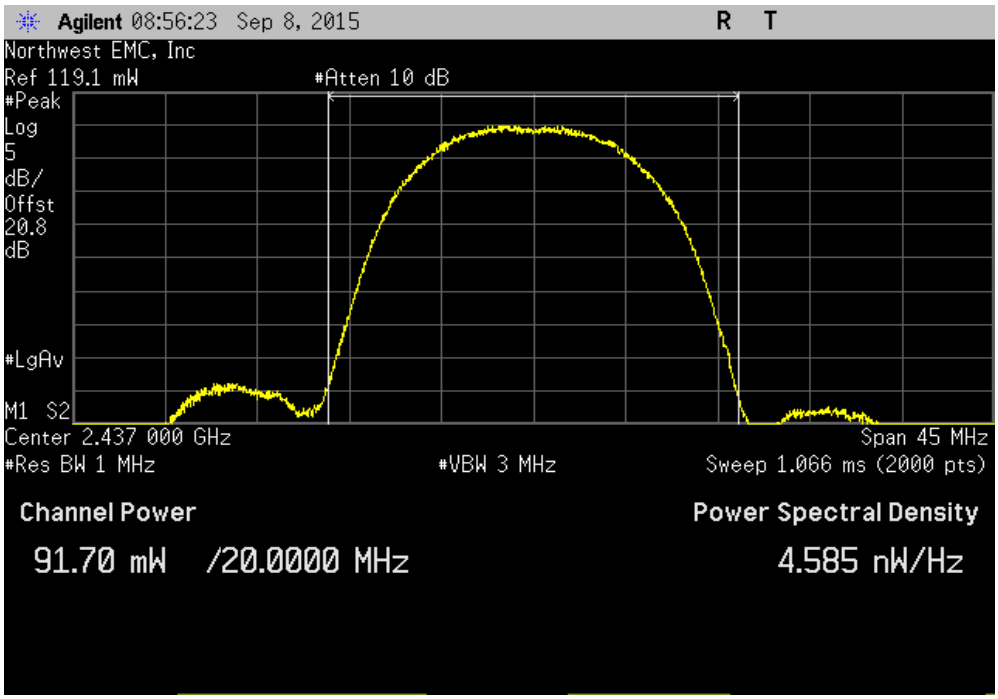
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				98.456 mW	1 W	Pass



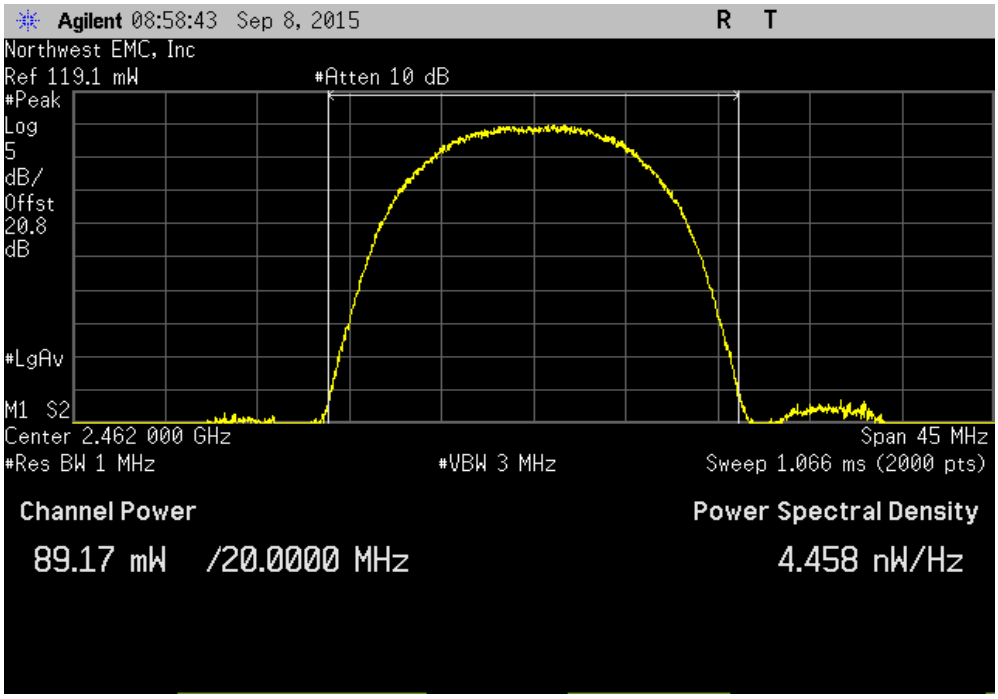
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				79.388 mW	1 W	Pass



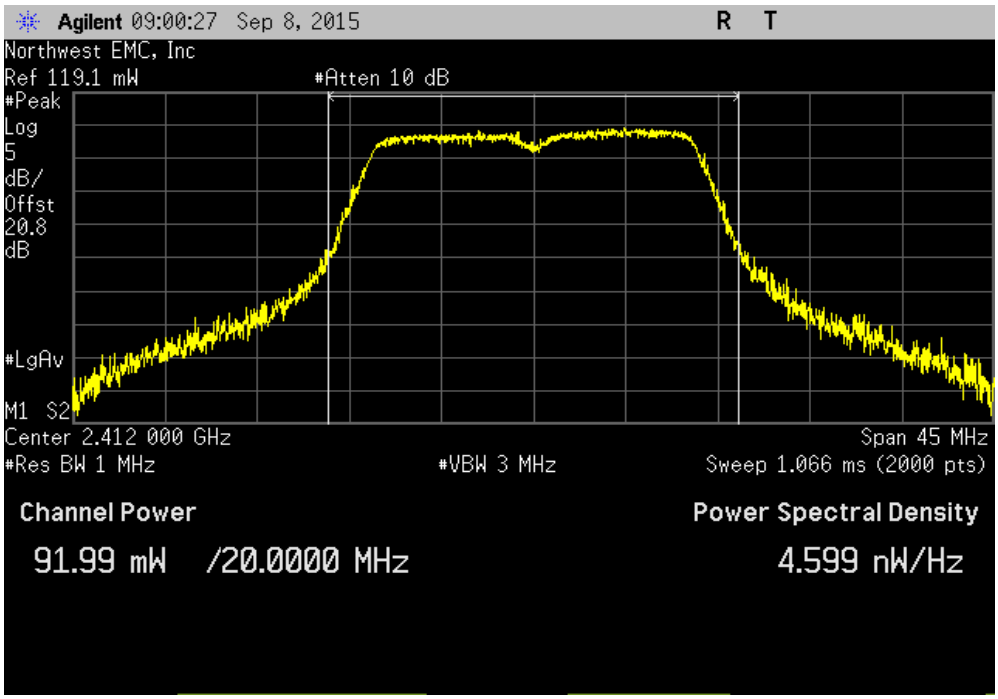
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				91.698 mW	1 W	Pass



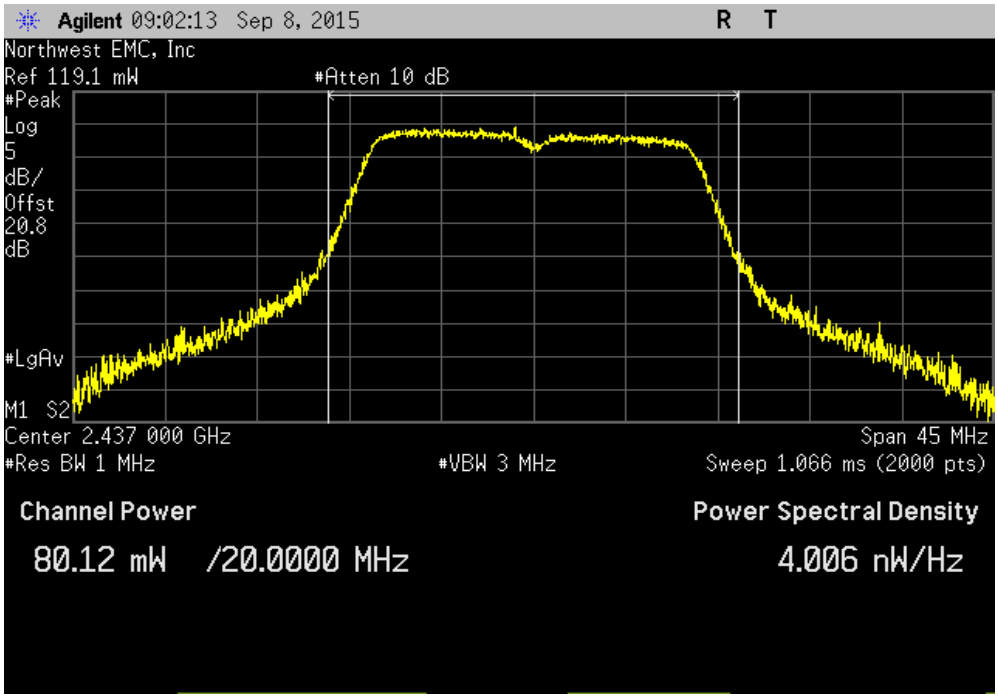
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				89.169 mW	1 W	Pass



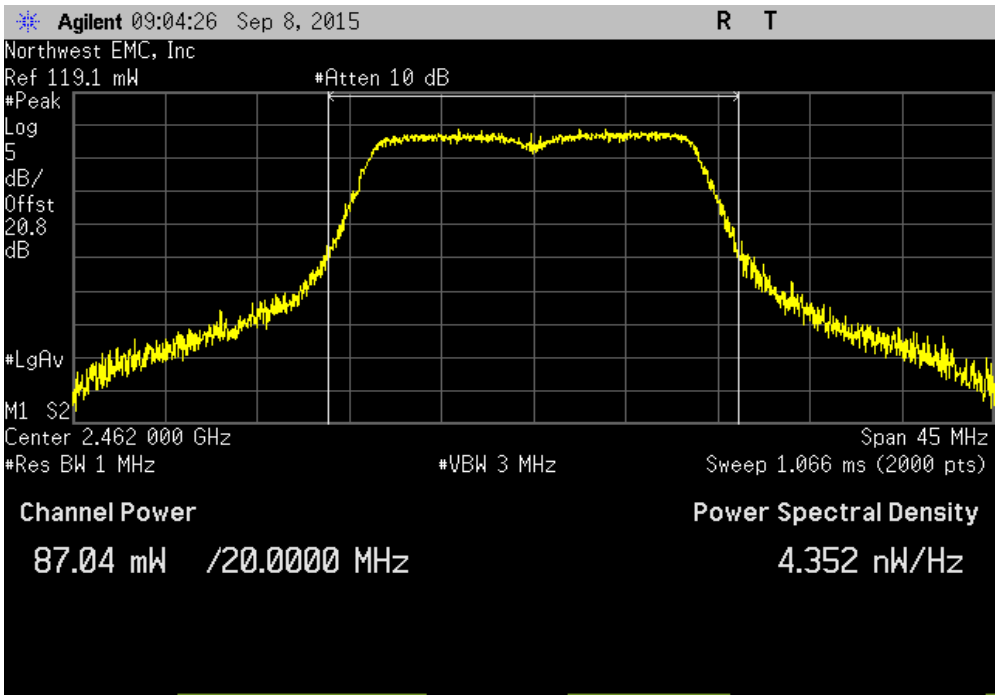
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				91.989 mW	1 W	Pass



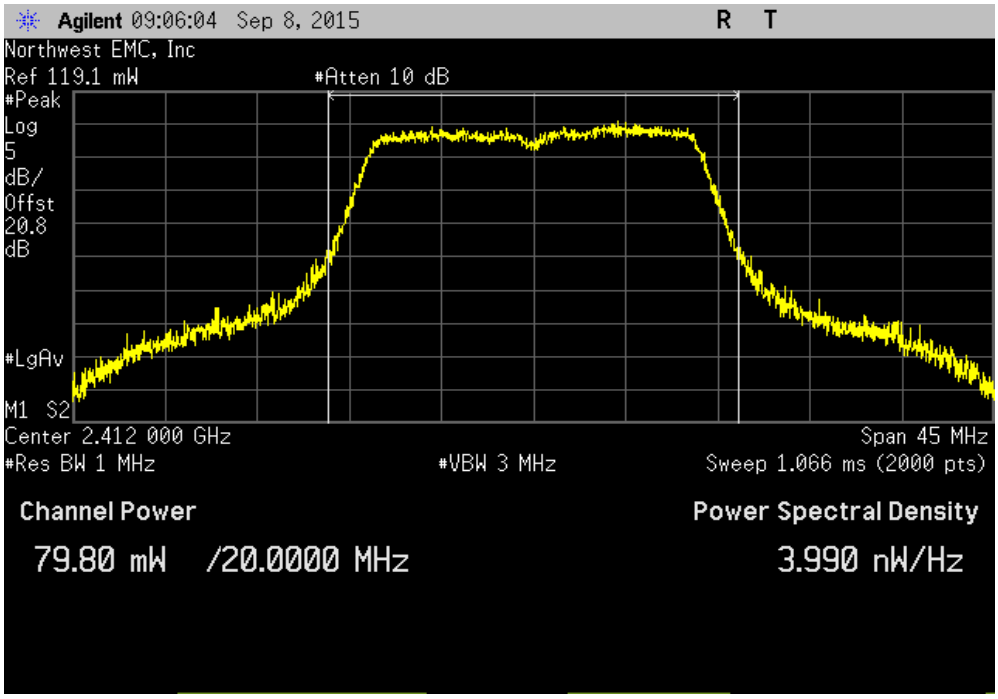
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				80.118 mW	1 W	Pass



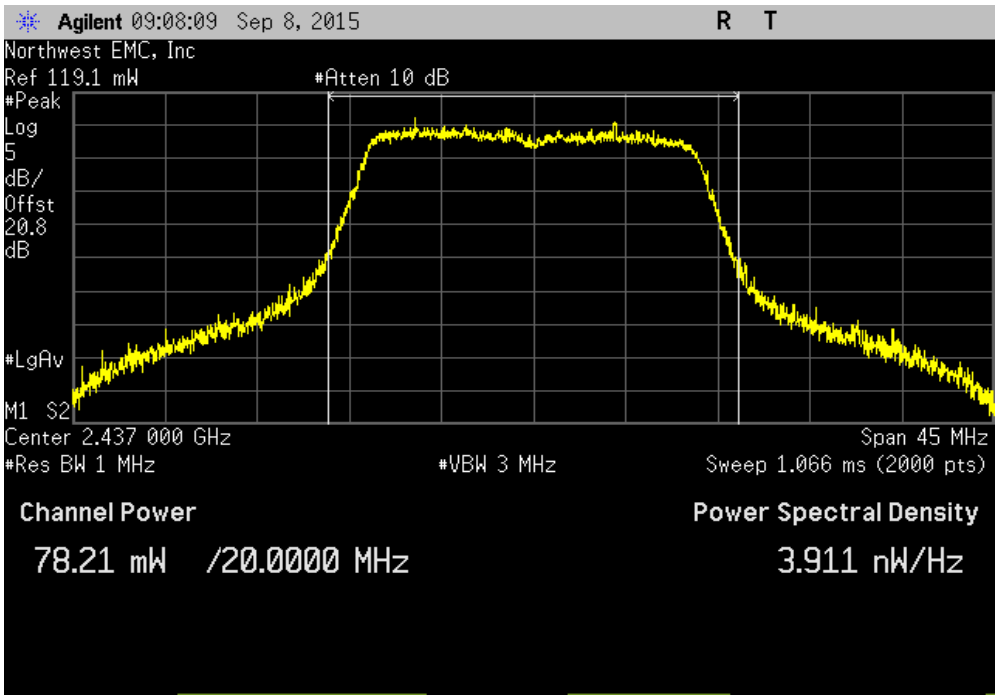
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				87.044 mW	1 W	Pass



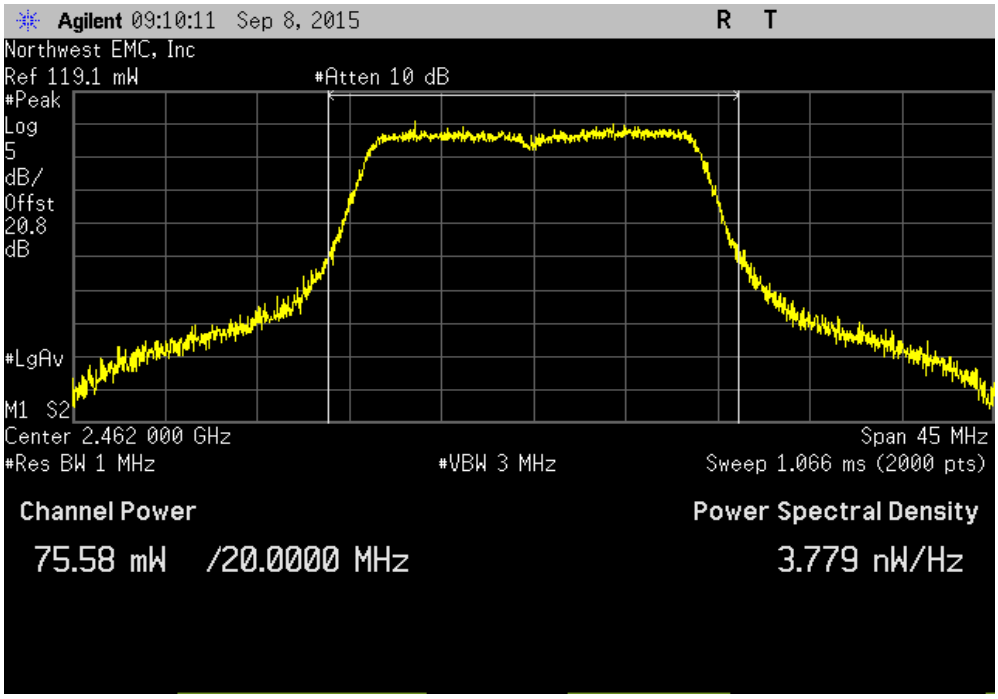
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				79.796 mW	1 W	Pass



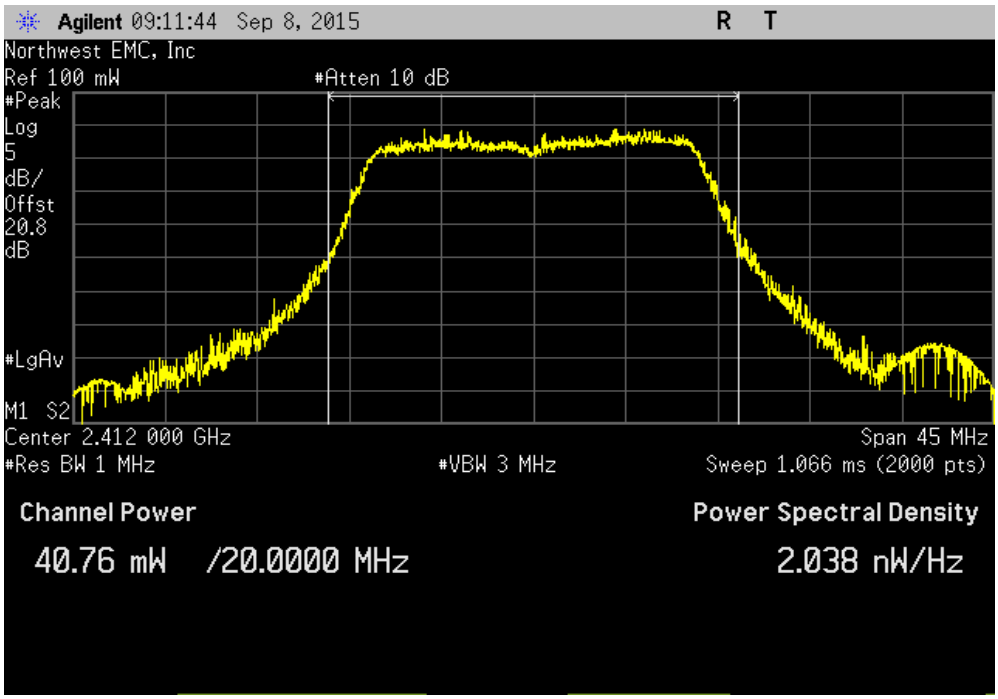
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				78.215 mW	1 W	Pass



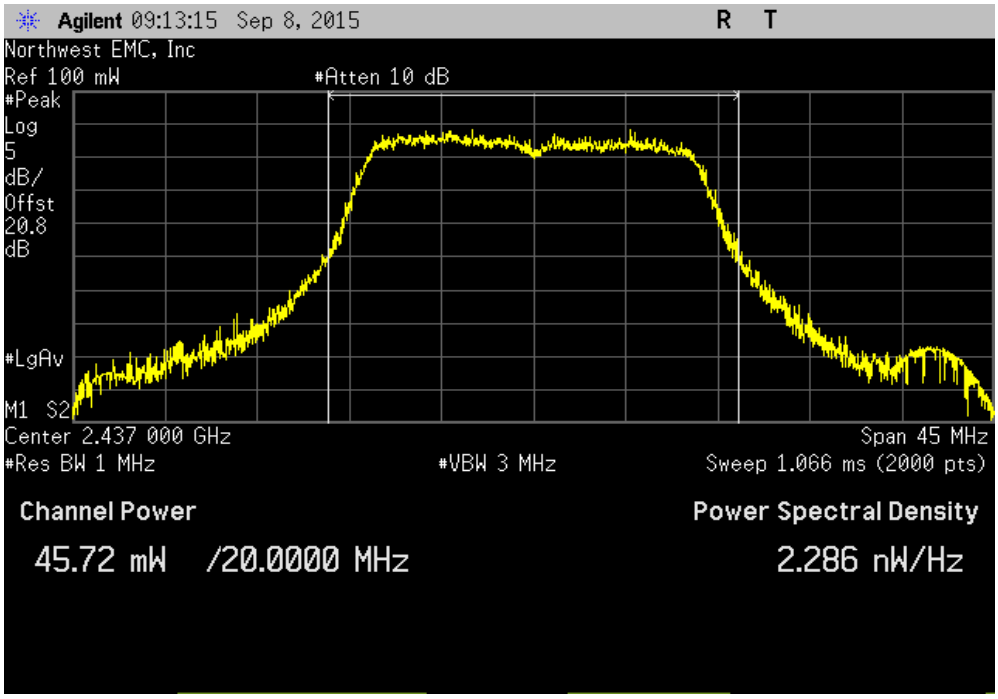
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				75.581 mW	1 W	Pass



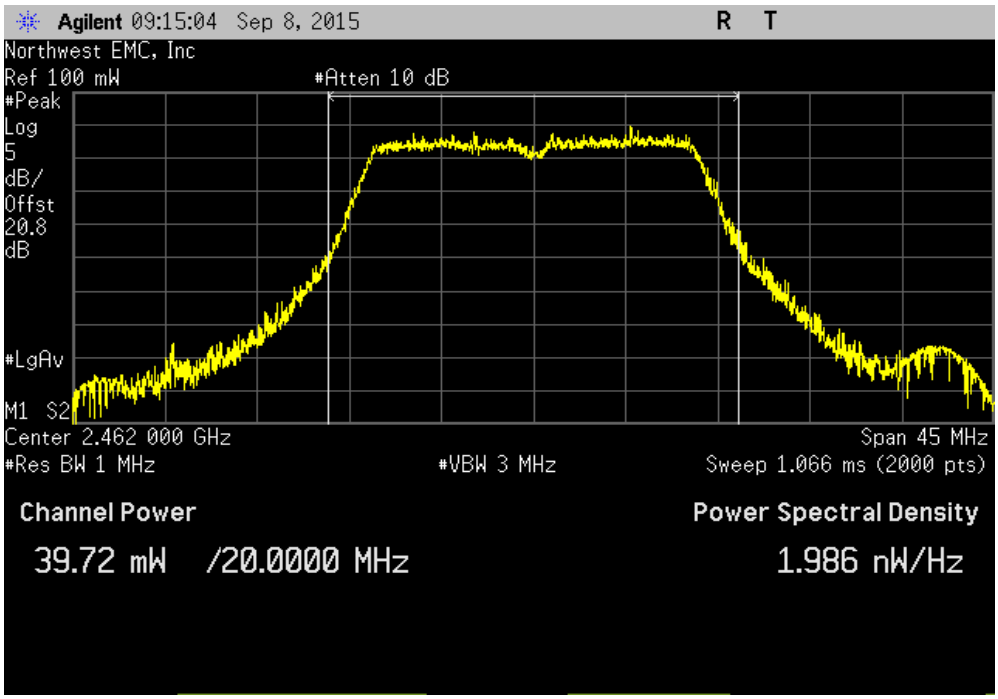
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				40.755 mW	1 W	Pass



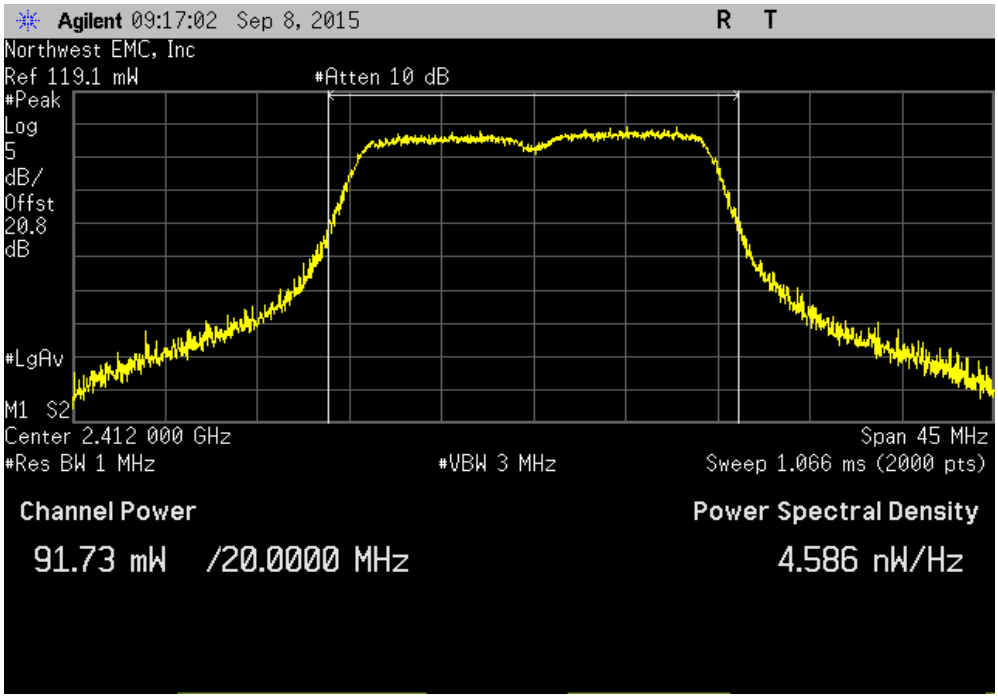
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				45.718 mW	1 W	Pass



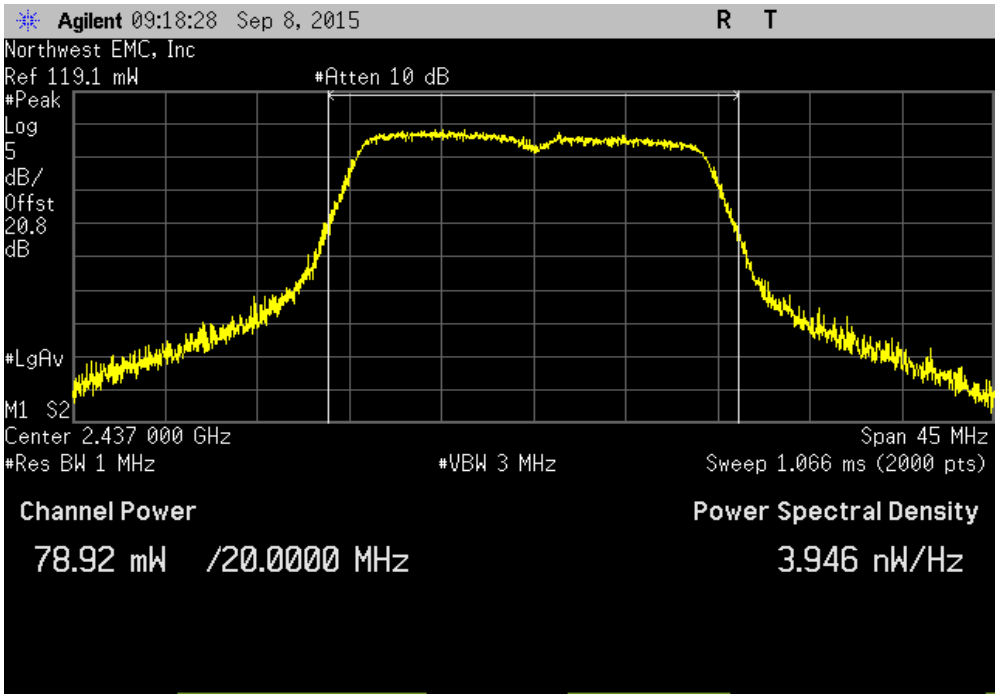
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				39.716 mW	1 W	Pass



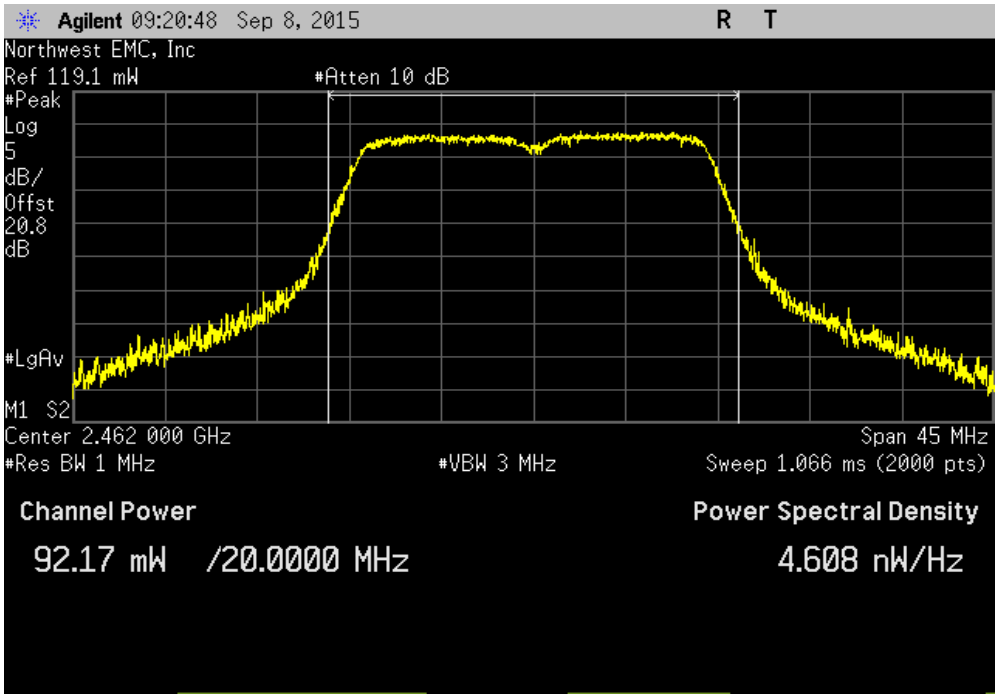
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				91.729 mW	1 W	Pass



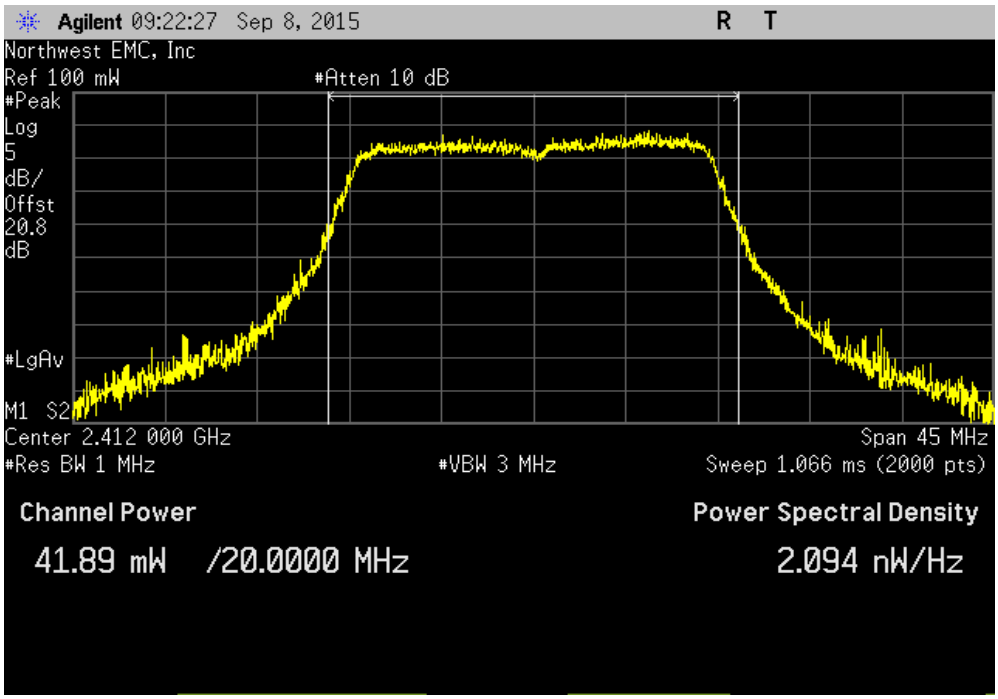
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				78.918 mW	1 W	Pass



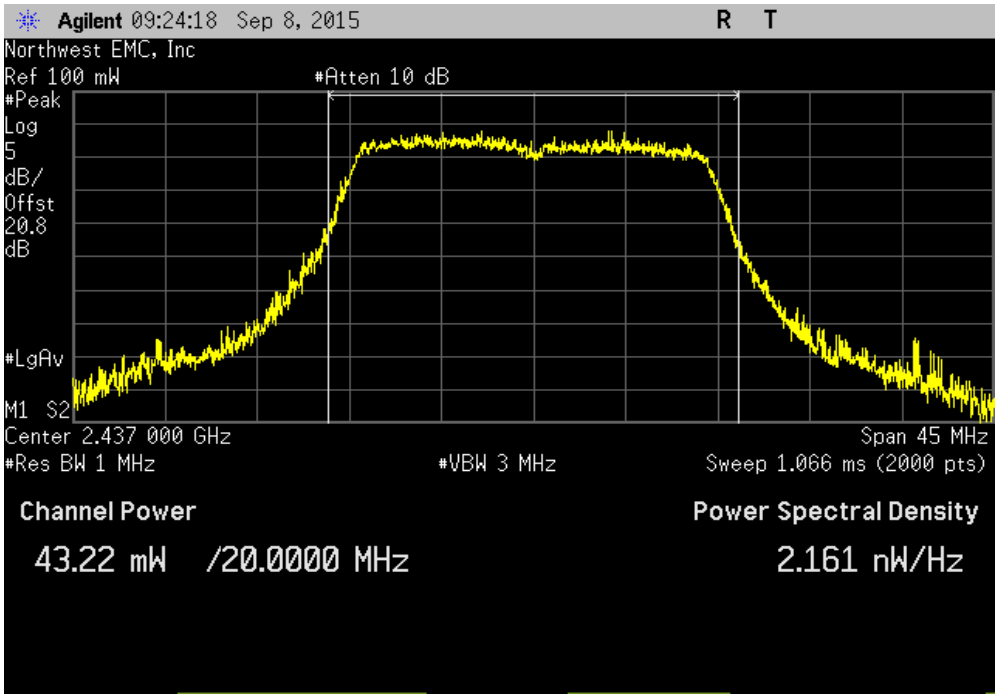
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				92.166 mW	1 W	Pass



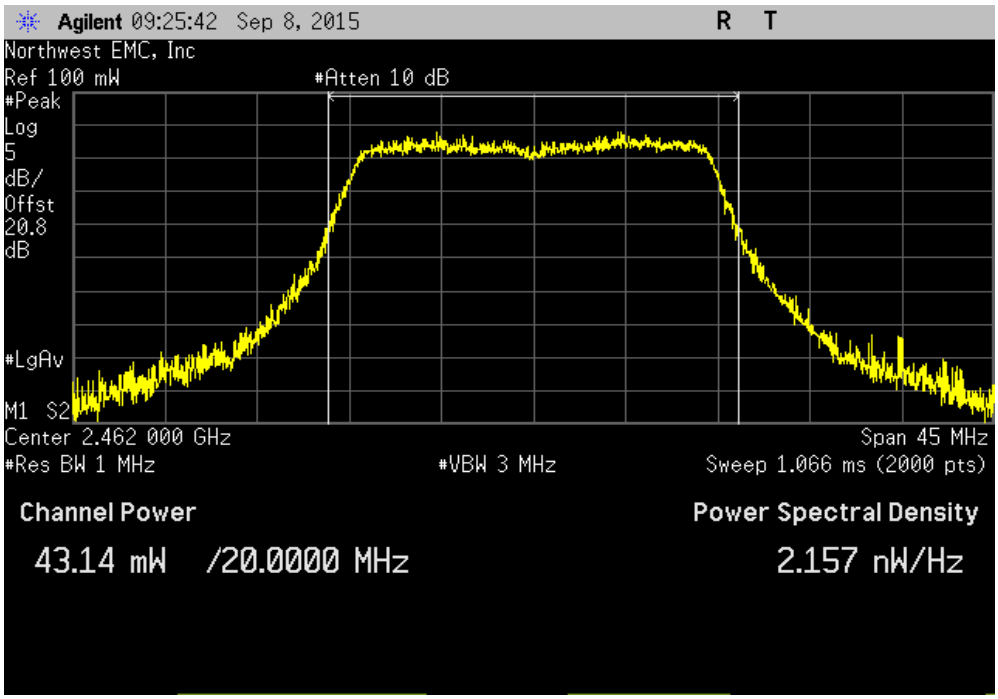
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				41.89 mW	1 W	Pass



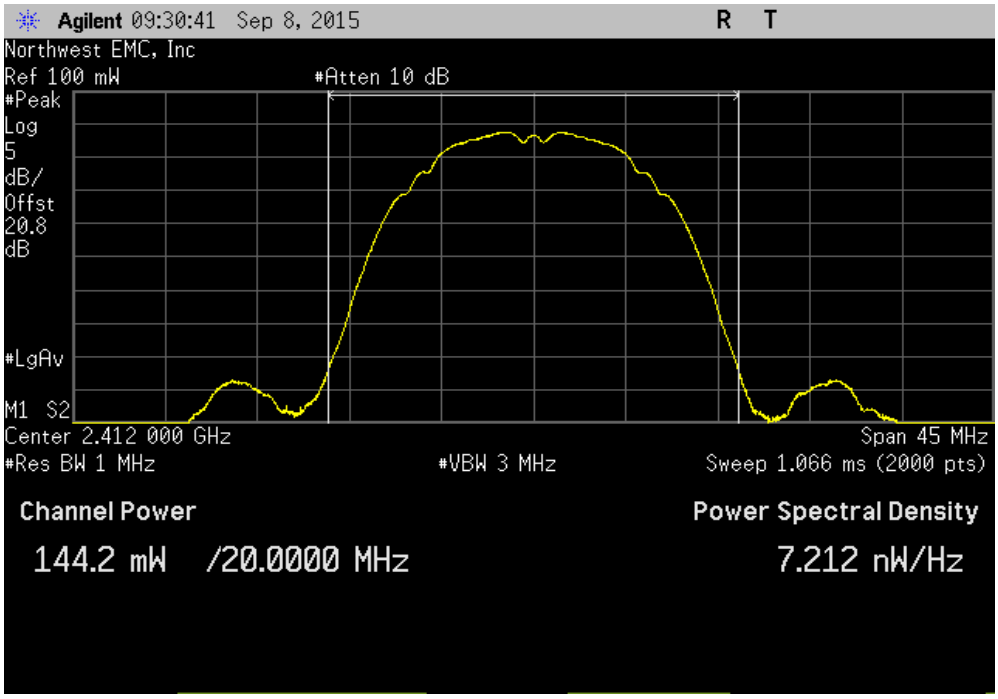
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				43.217 mW	1 W	Pass



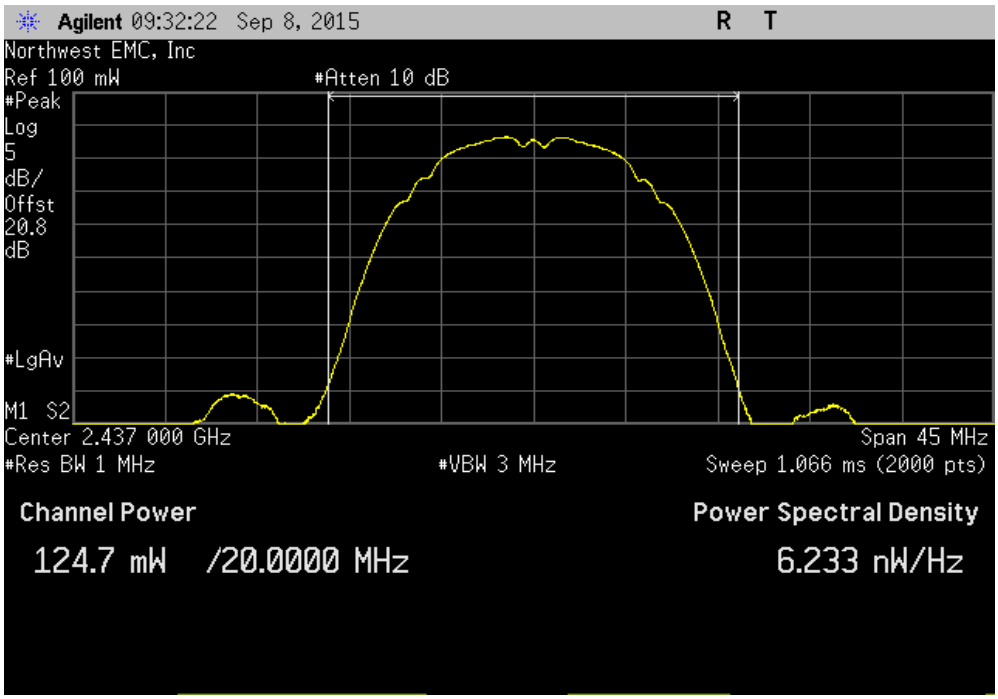
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				43.143 mW	1 W	Pass



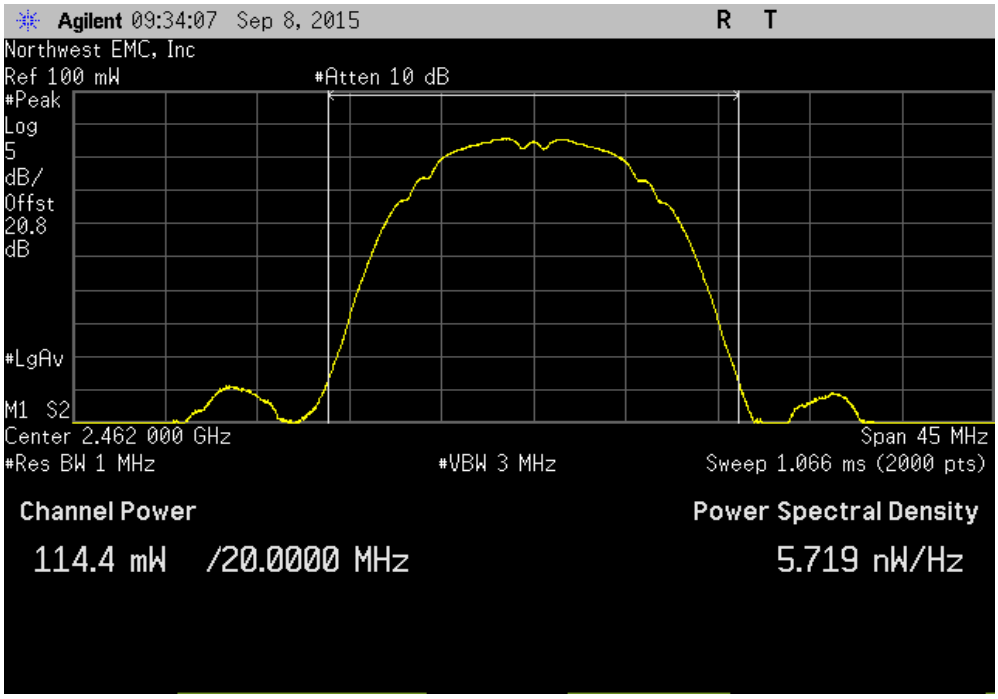
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				144.249 mW	1 W	Pass



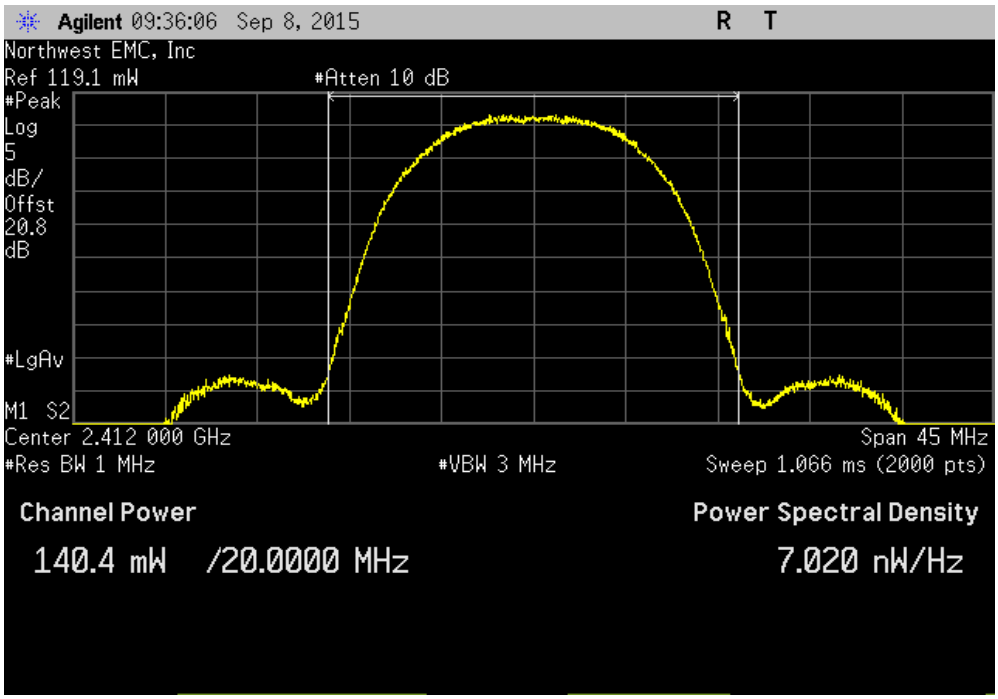
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				124.659 mW	1 W	Pass



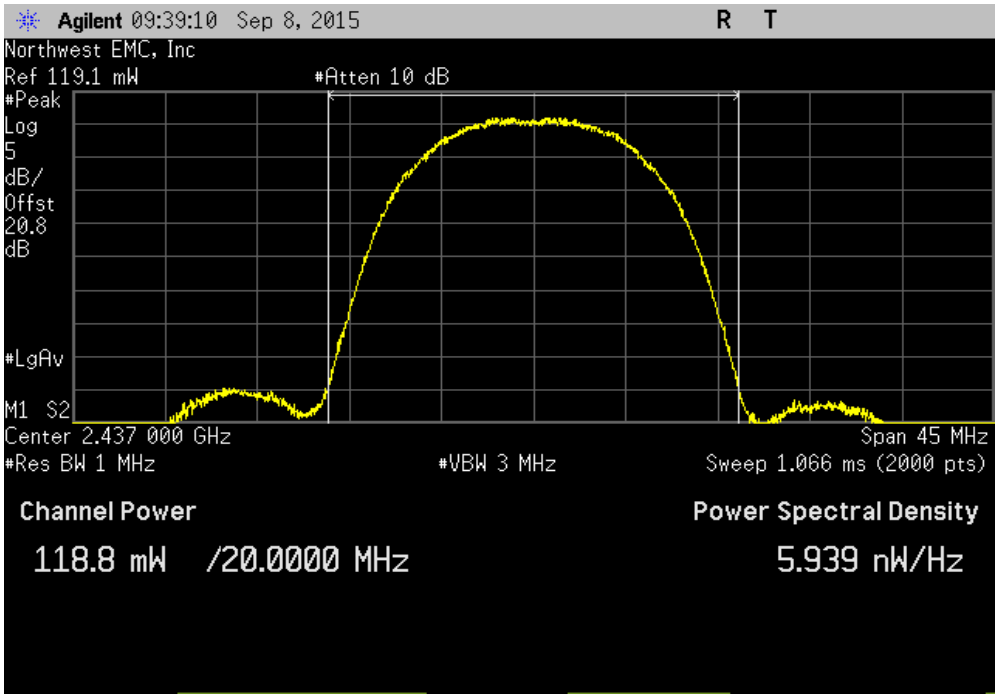
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				114.381 mW	1 W	Pass



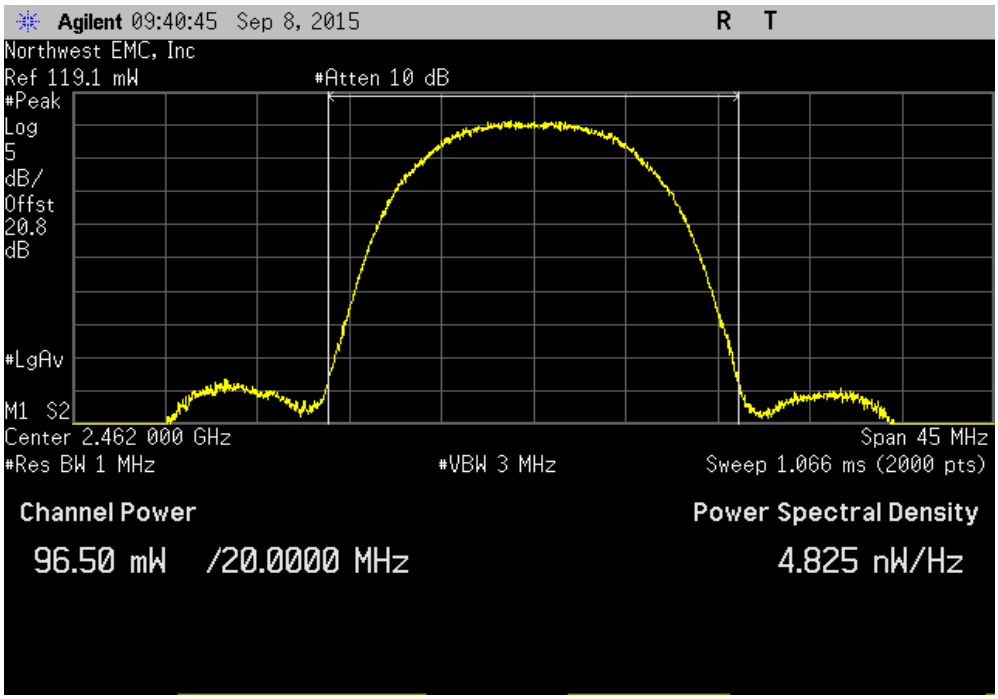
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				140.409 mW	1 W	Pass



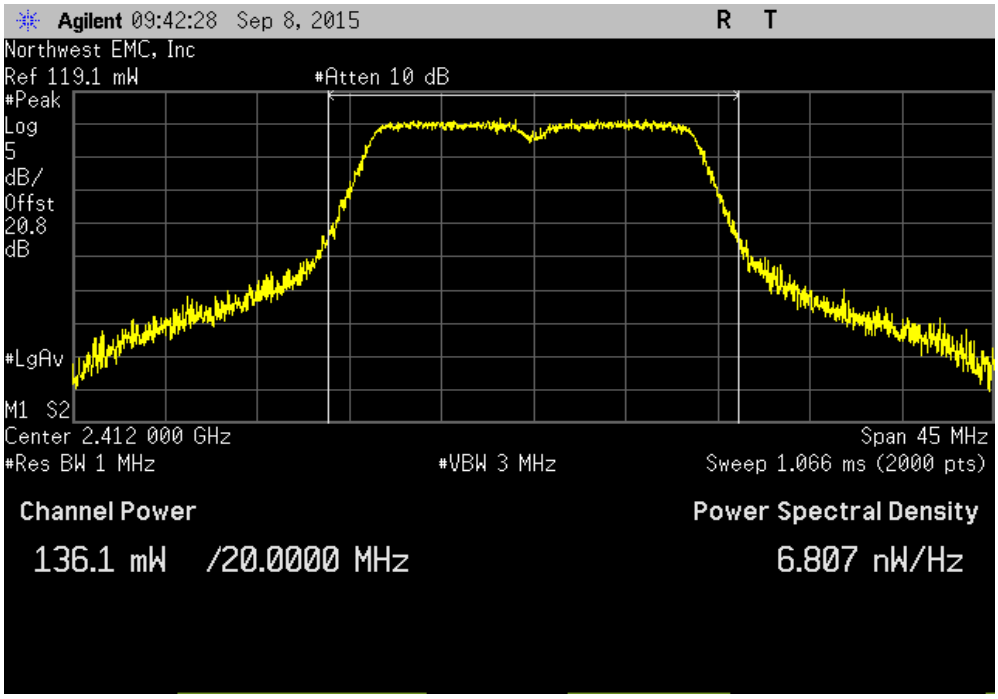
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				118.789 mW	1 W	Pass



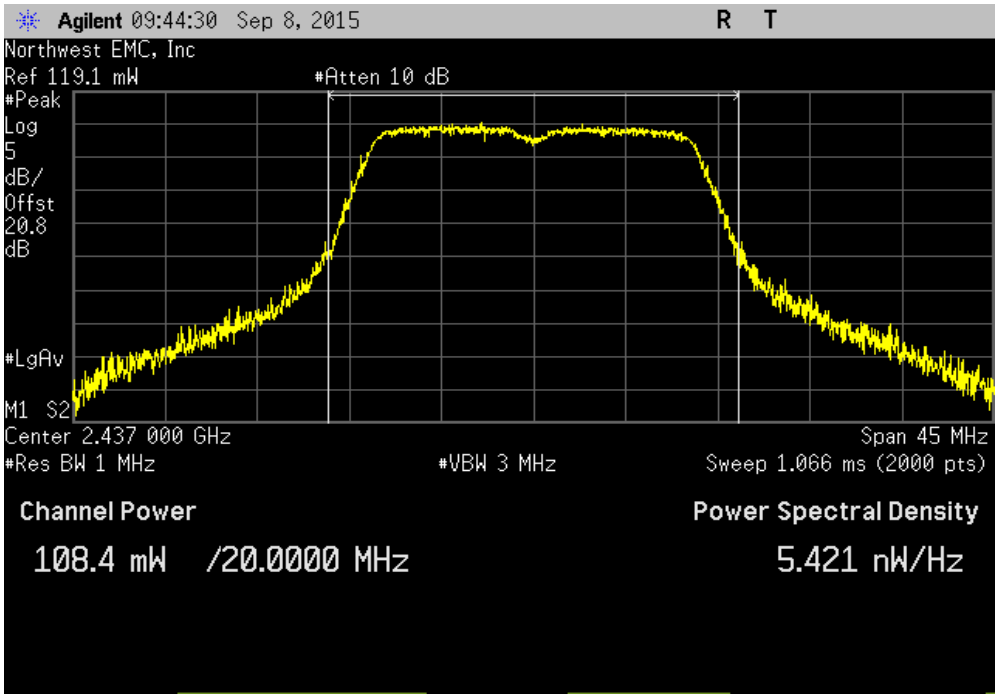
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				96.502 mW	1 W	Pass



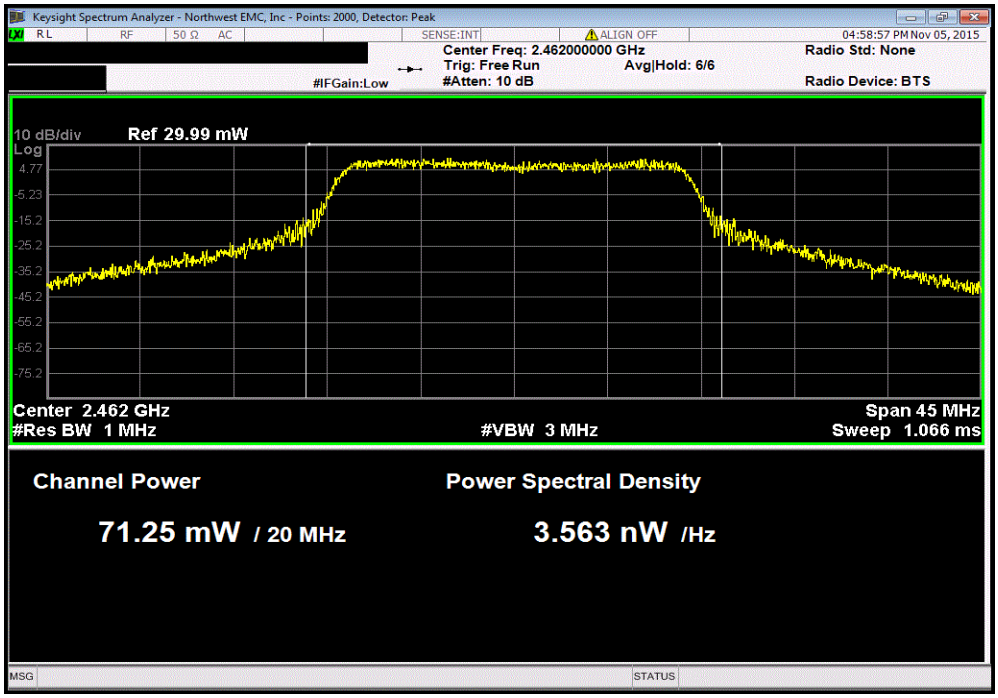
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				136.14 mW	1 W	Pass



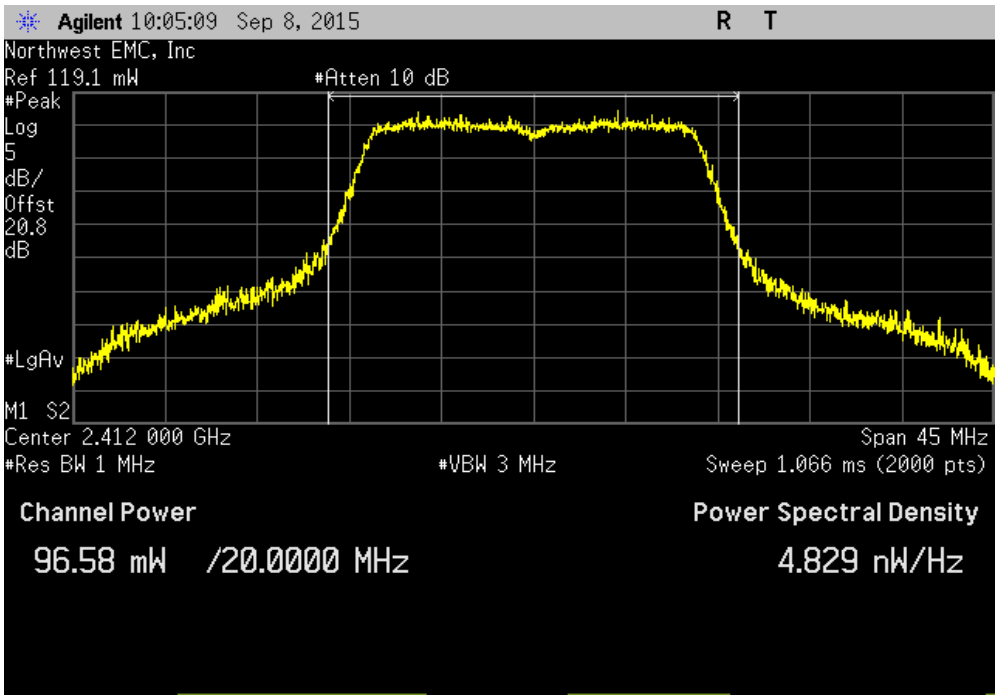
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				108.428 mW	1 W	Pass



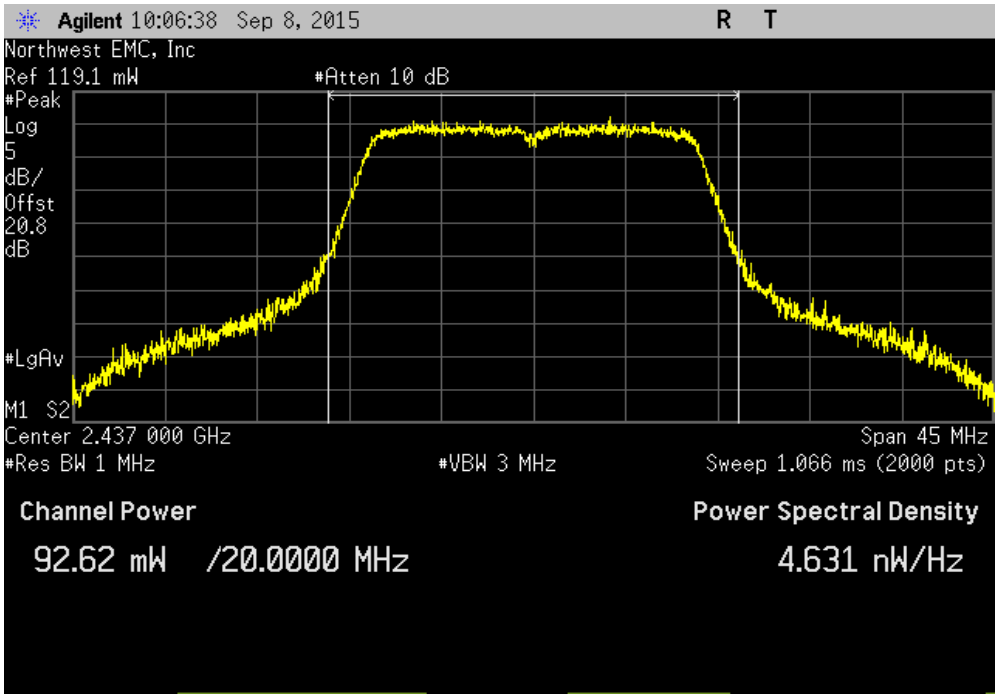
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				71.25 mW	1 W	Pass



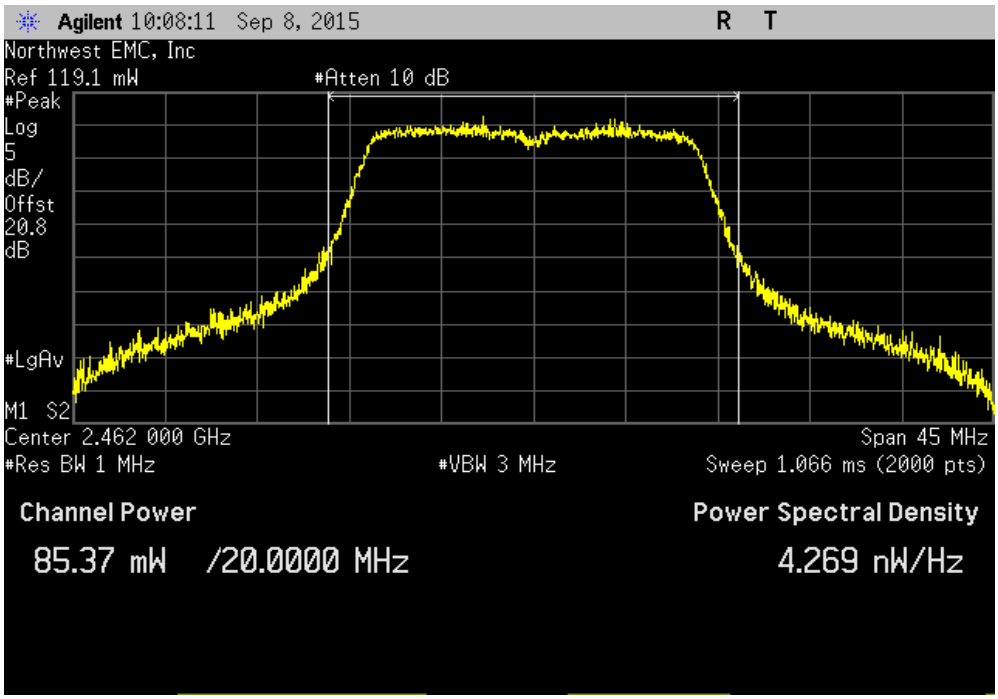
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				96.58 mW	1 W	Pass



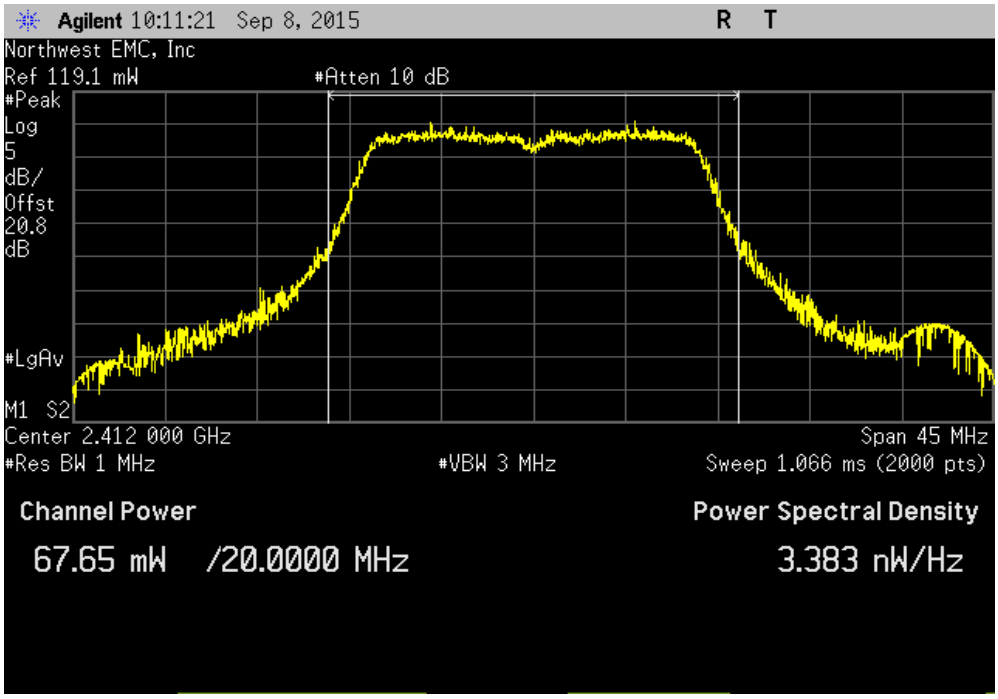
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				92.617 mW	1 W	Pass



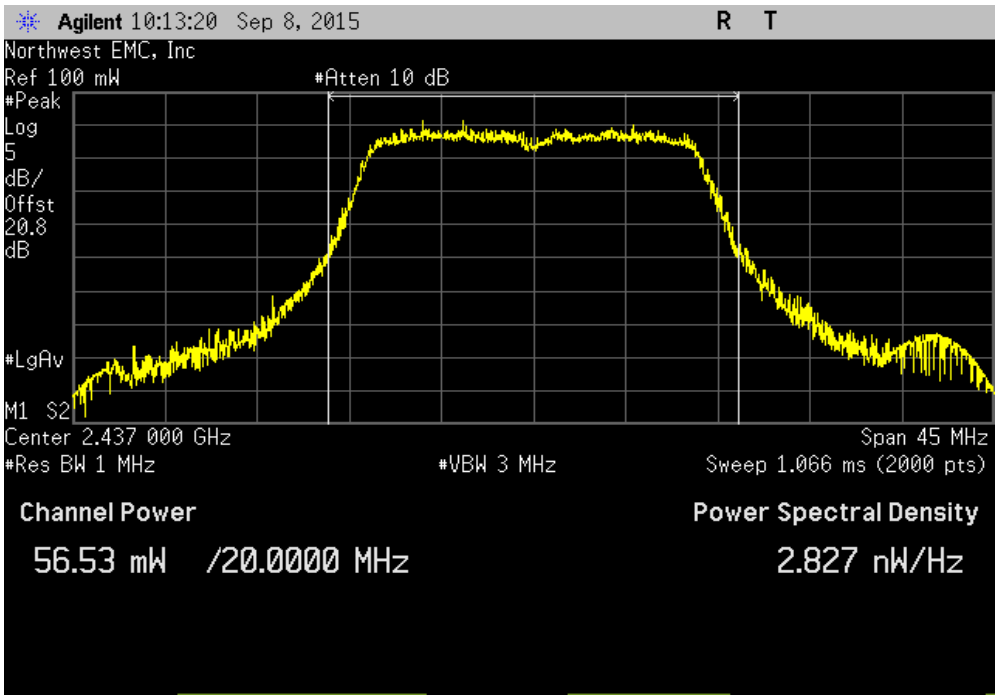
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				85.372 mW	1 W	Pass



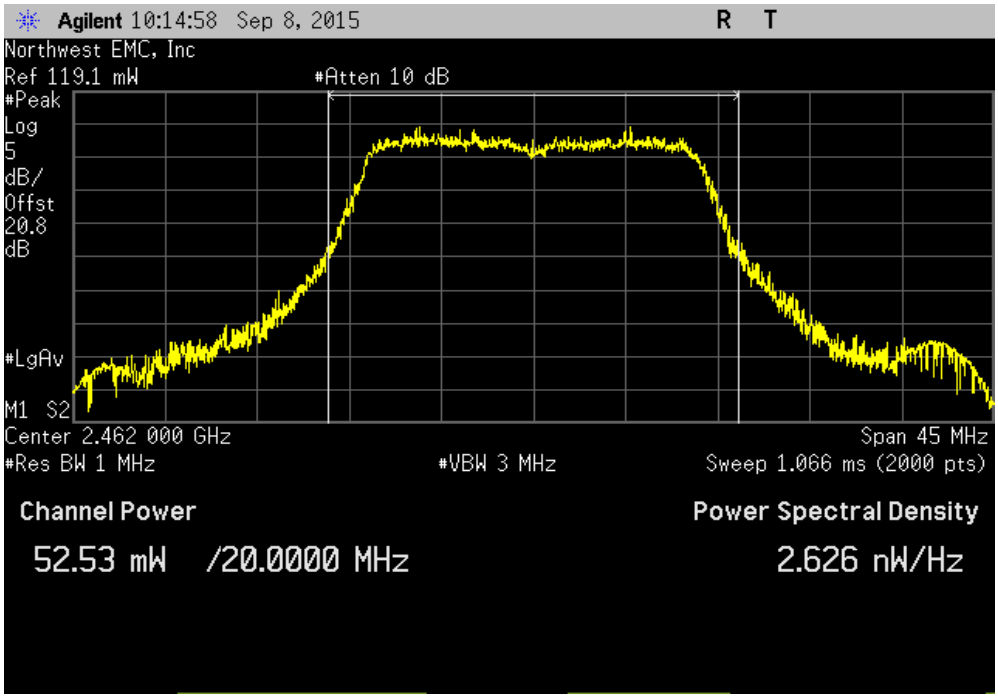
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				67.651 mW	1 W	Pass



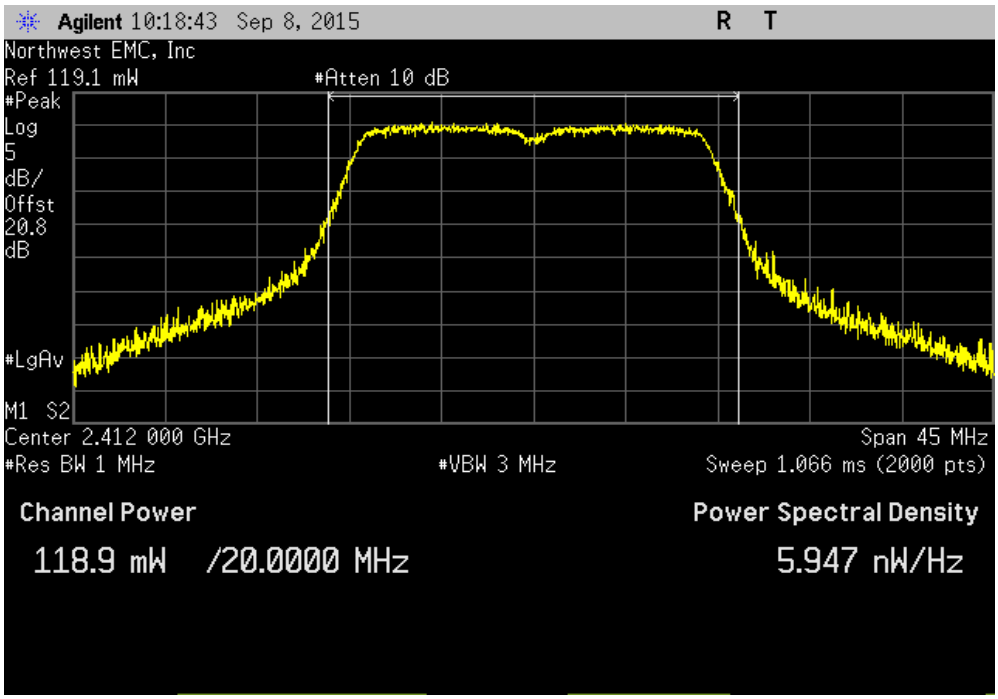
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				56.533 mW	1 W	Pass



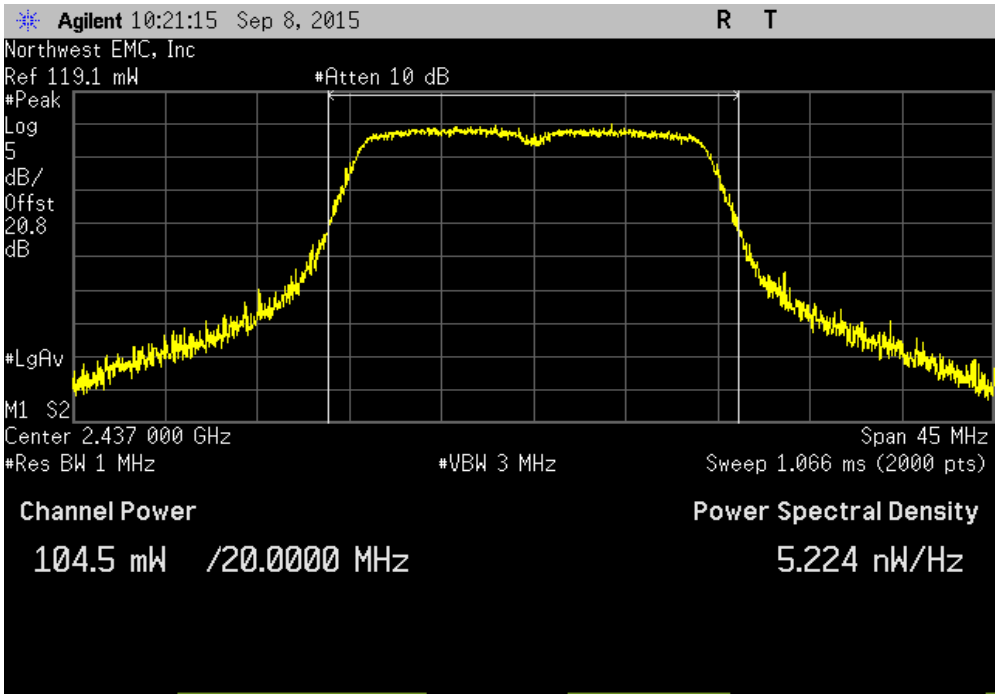
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				52.528 mW	1 W	Pass



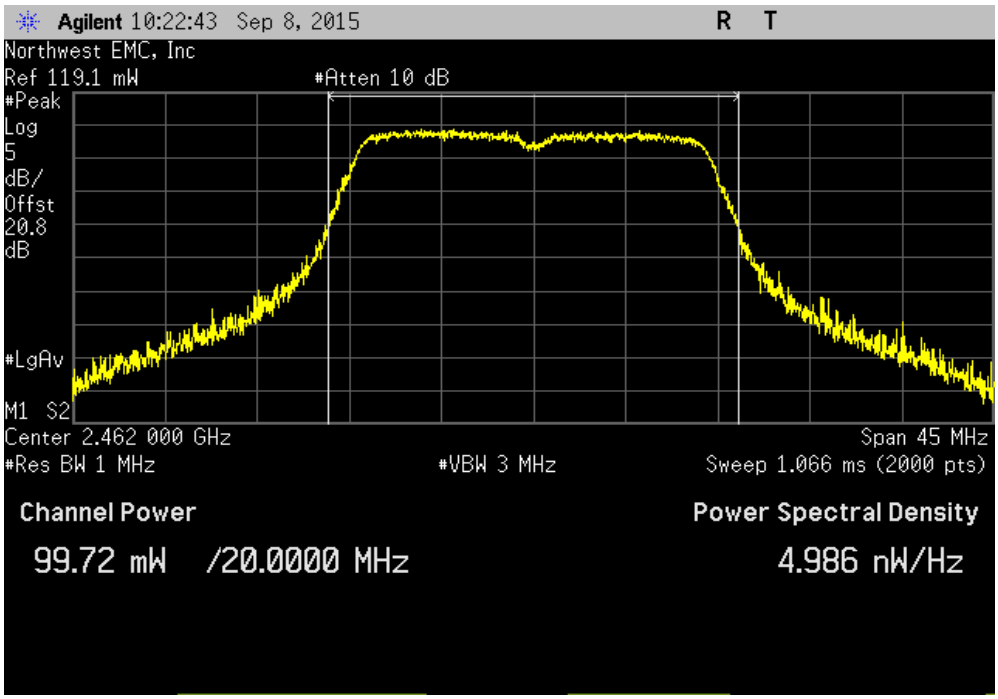
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				118.936 mW	1 W	Pass



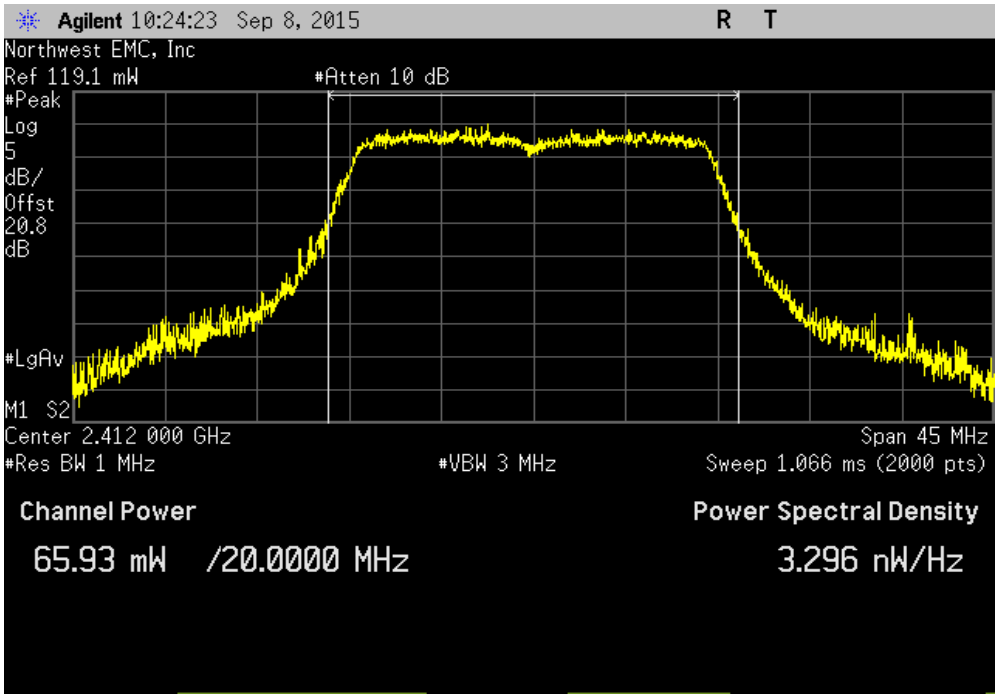
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				104.49 mW	1 W	Pass



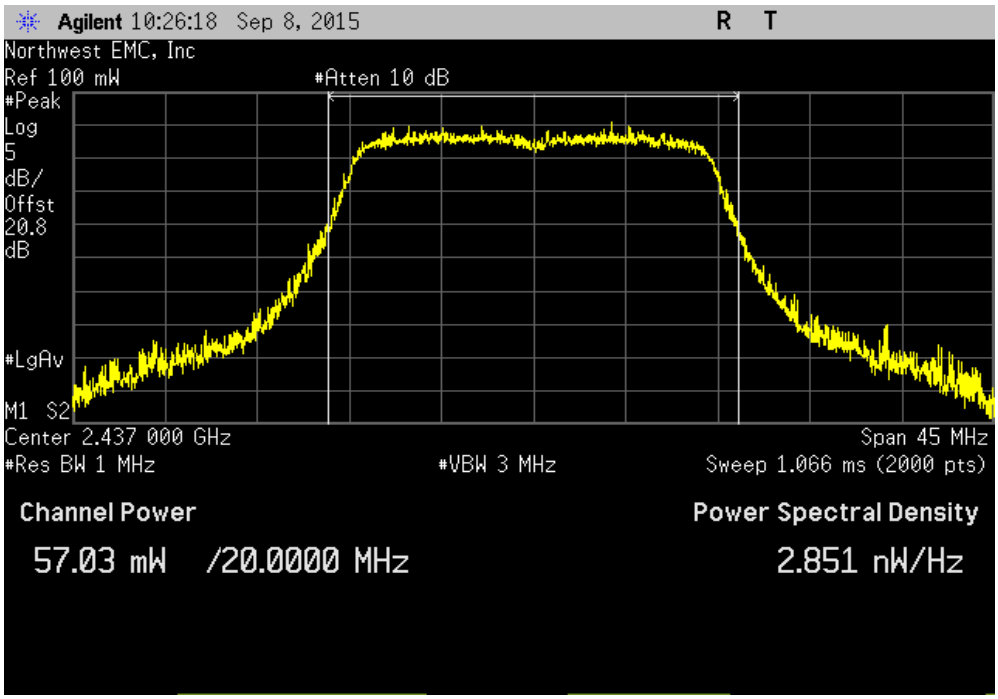
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				99.717 mW	1 W	Pass



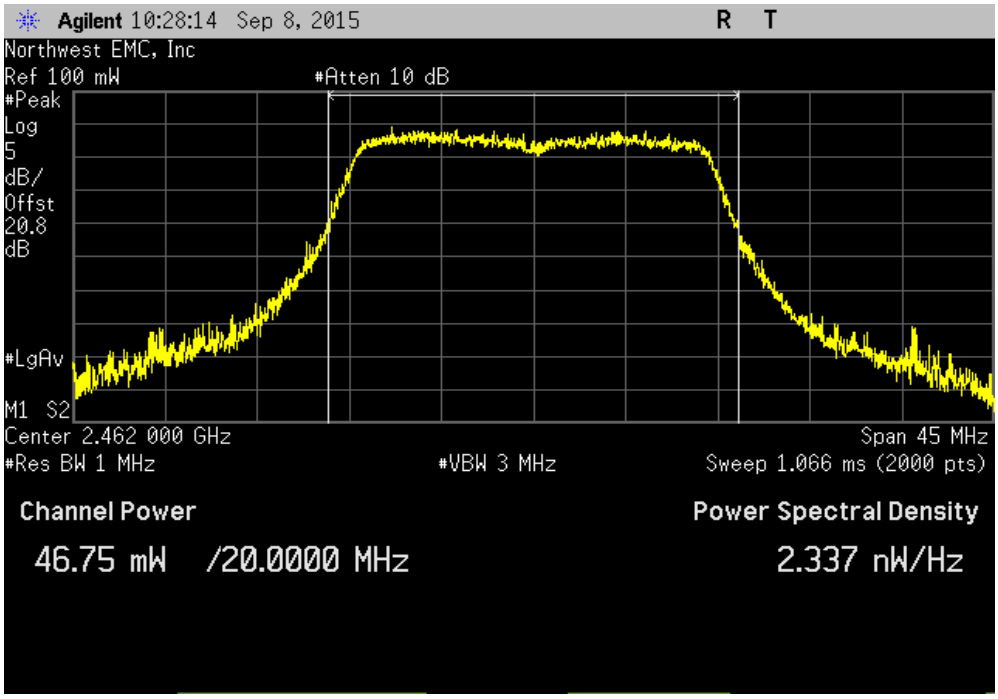
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				65.925 mW	1 W	Pass



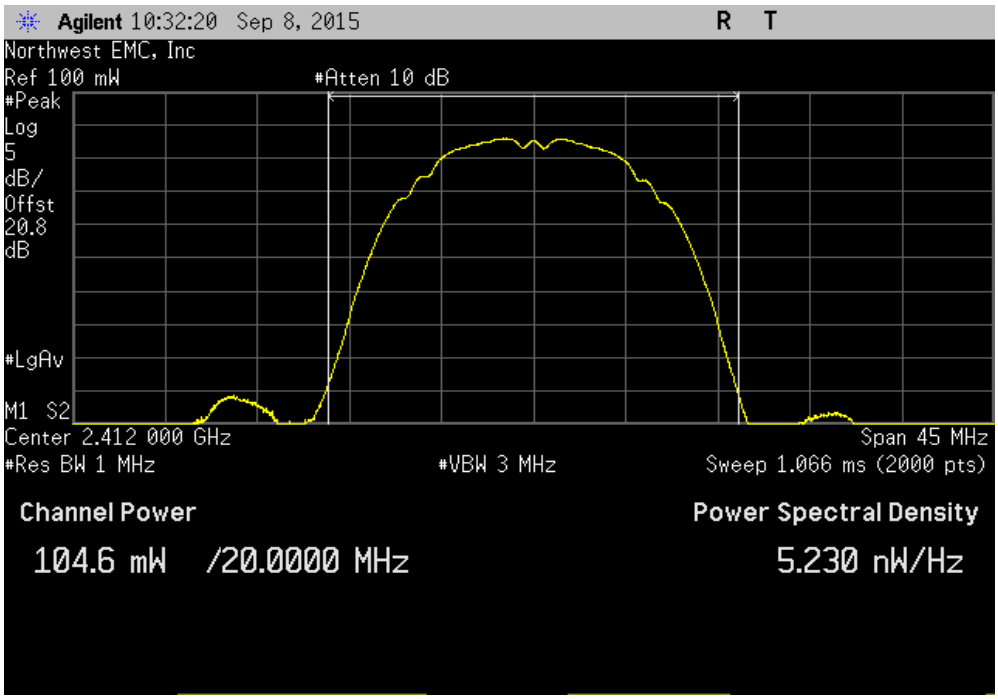
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				57.027 mW	1 W	Pass



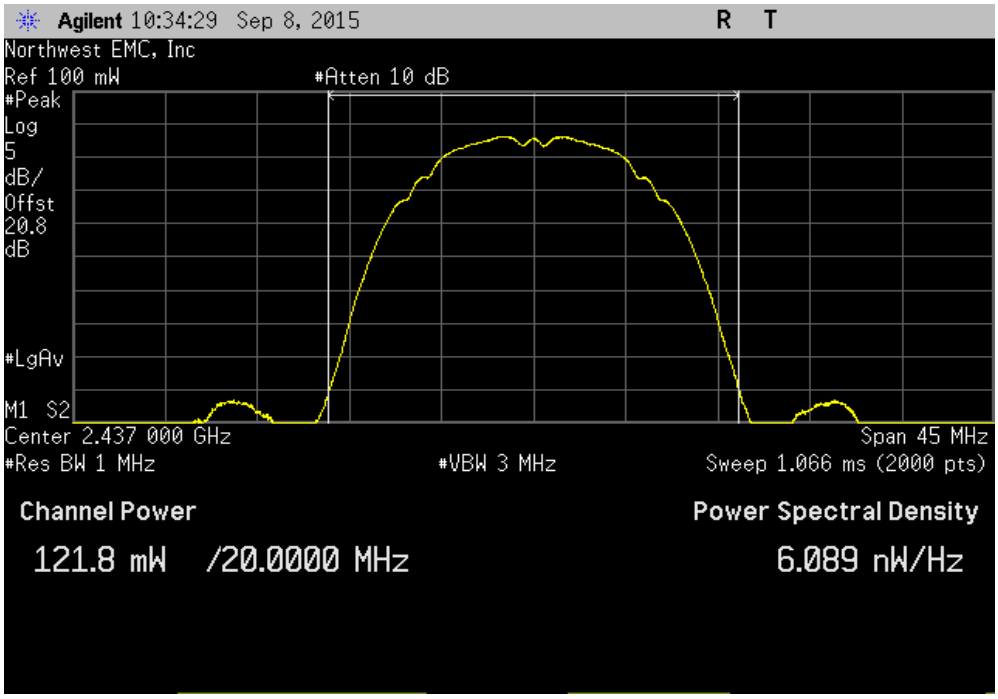
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				46.748 mW	1 W	Pass



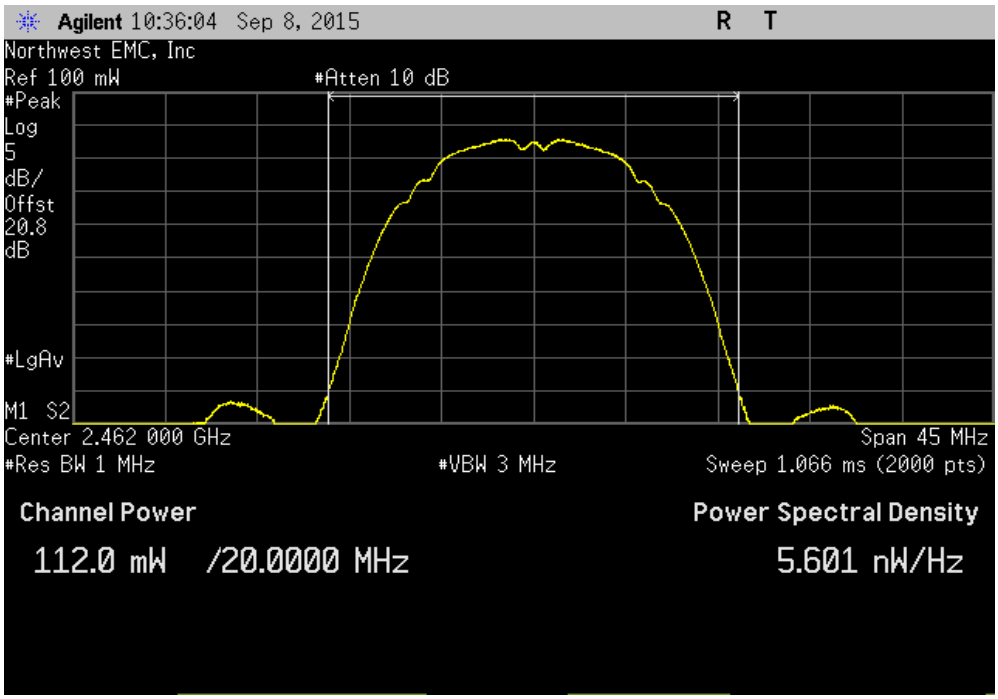
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				104.598 mW	1 W	Pass



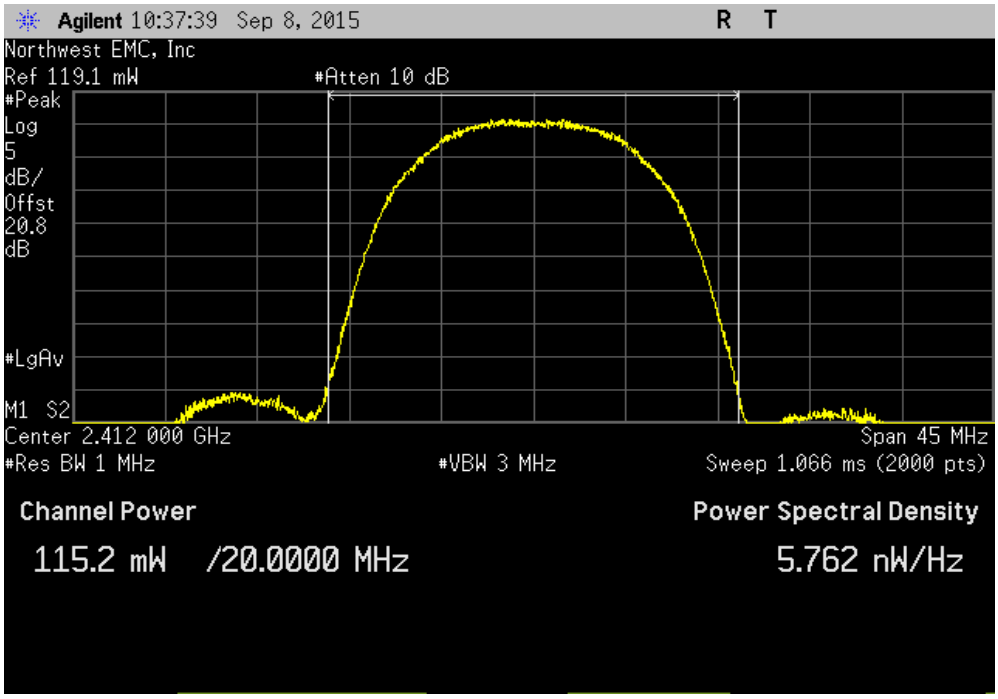
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				121.775 mW	1 W	Pass



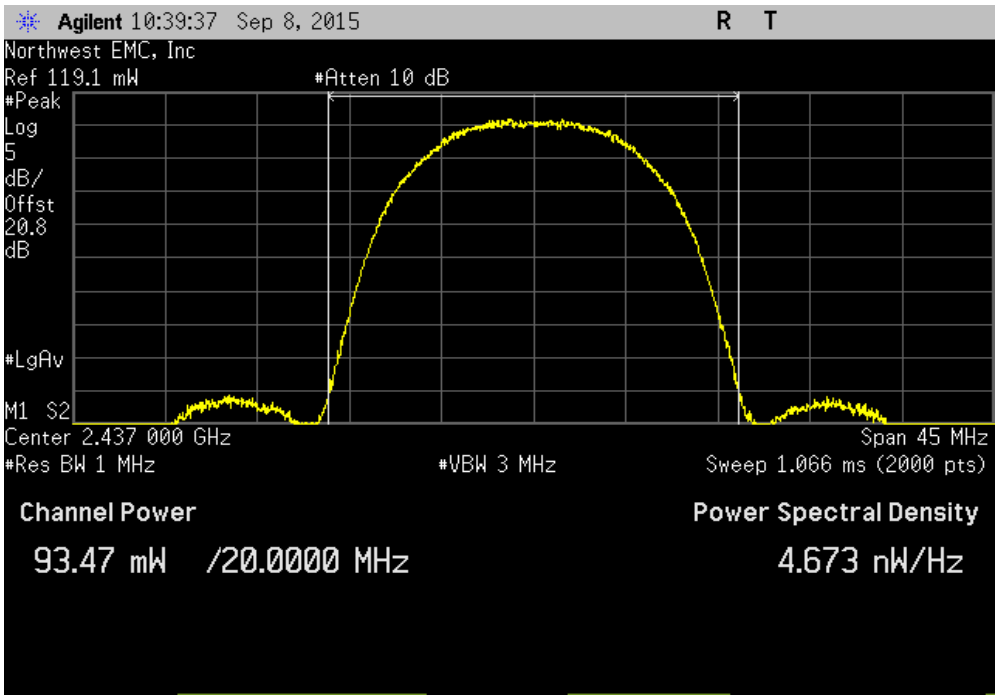
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				112.018 mW	1 W	Pass



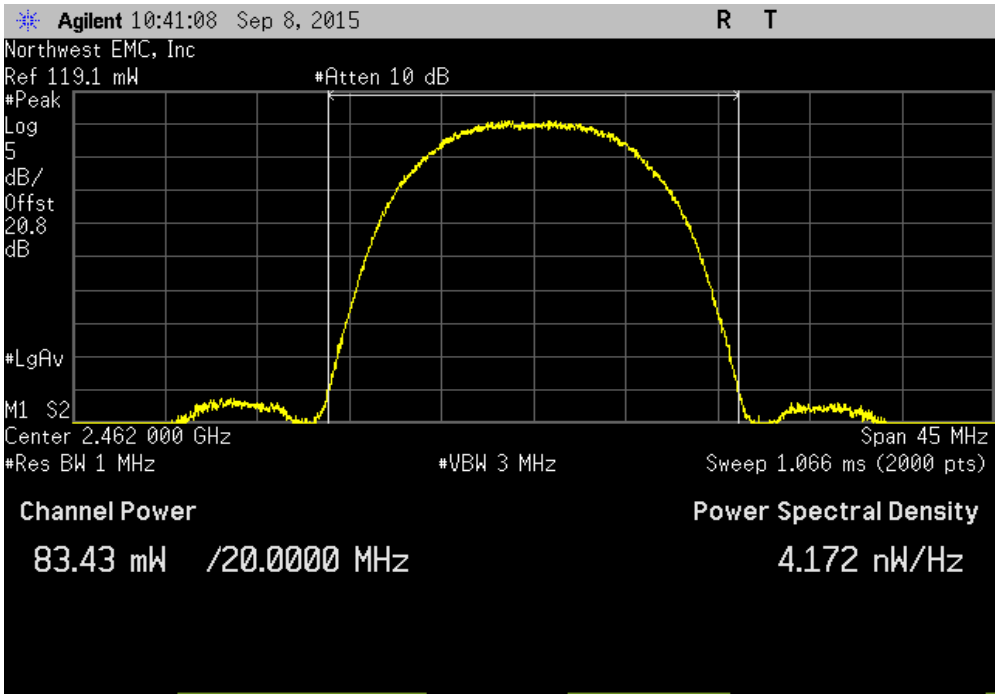
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				115.24 mW	1 W	Pass



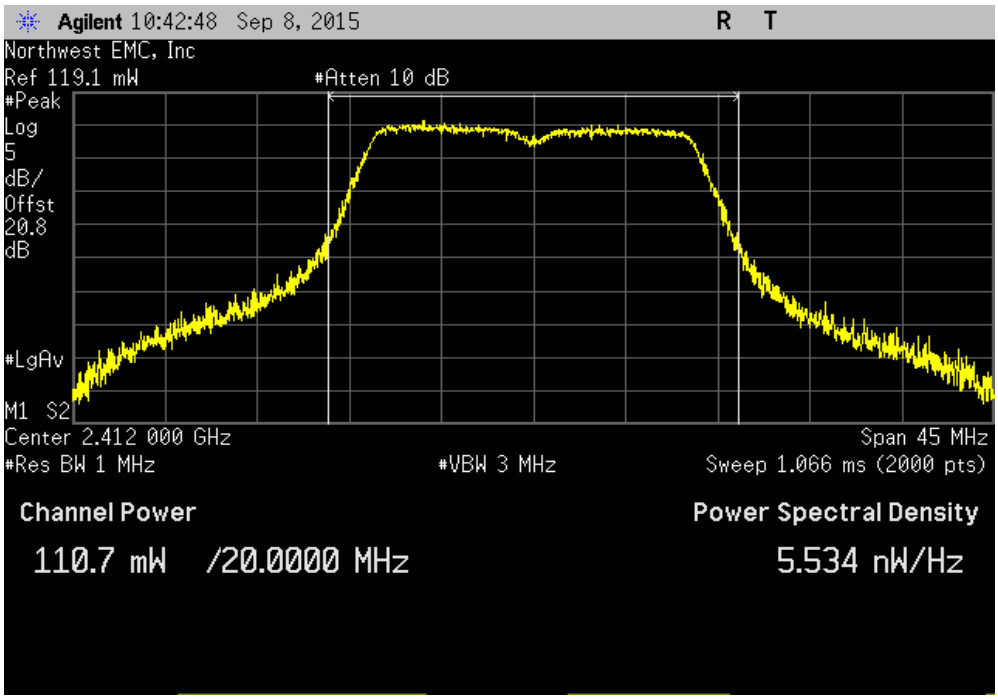
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				93.465 mW	1 W	Pass



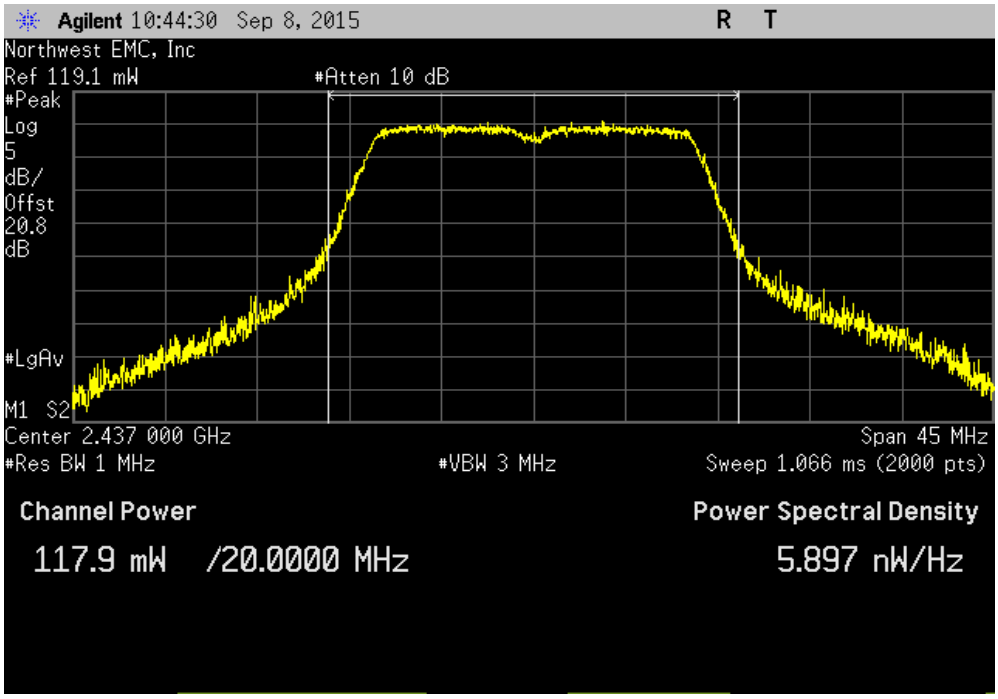
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				83.43 mW	1 W	Pass



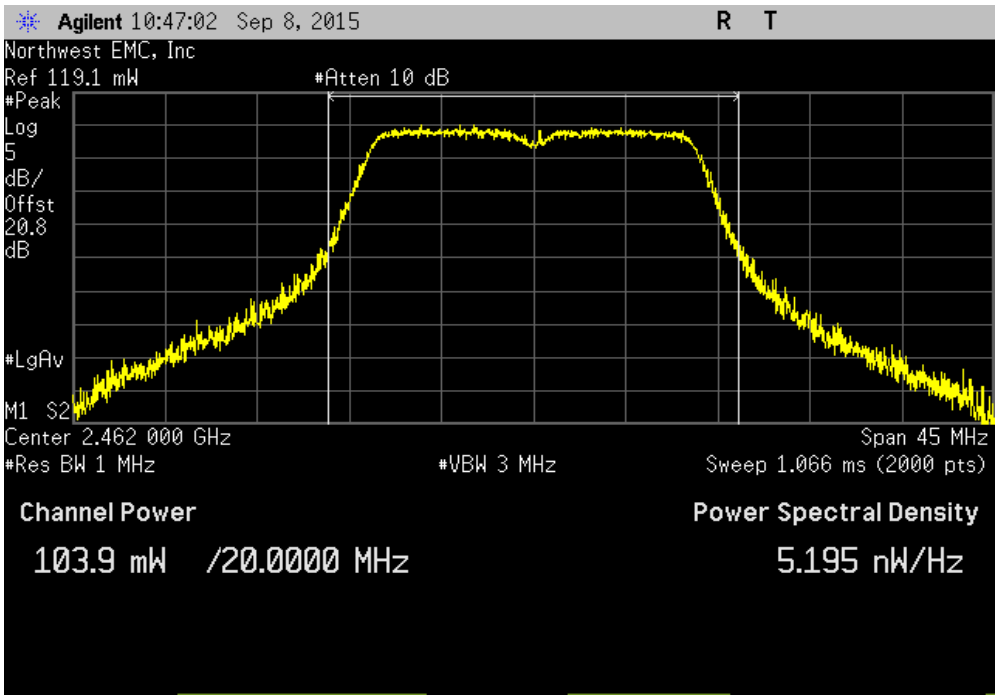
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				110.678 mW	1 W	Pass



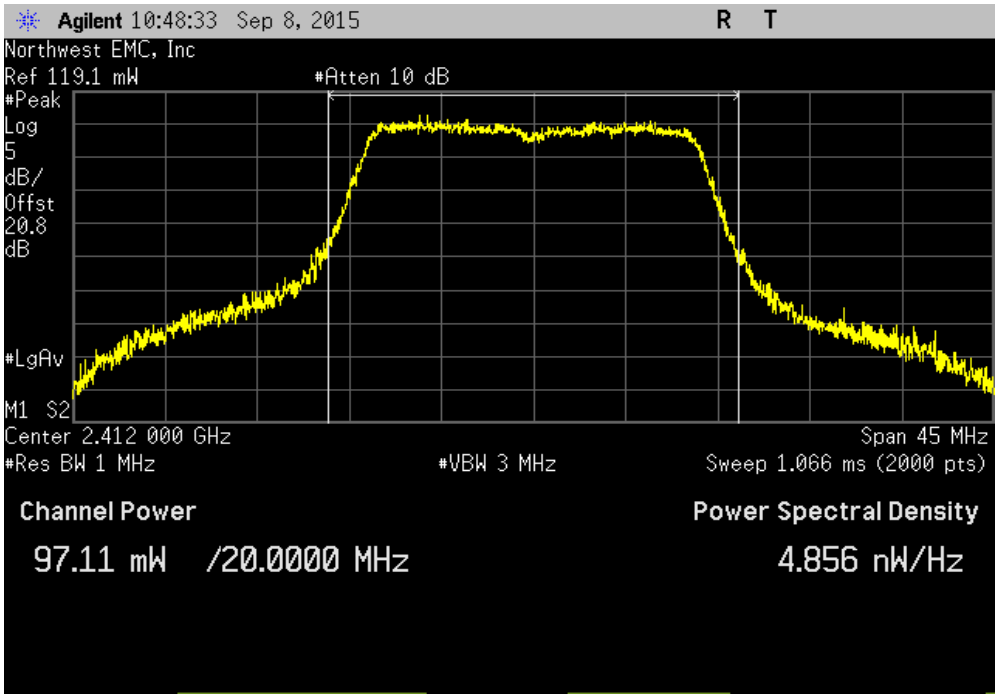
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				117.94 mW	1 W	Pass



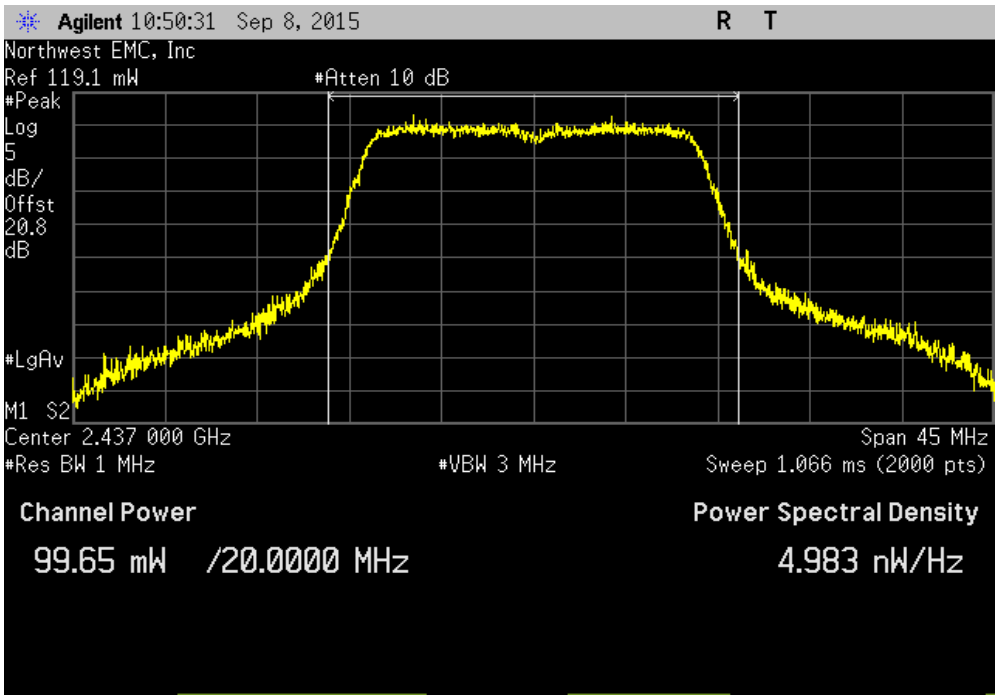
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				103.908 mW	1 W	Pass



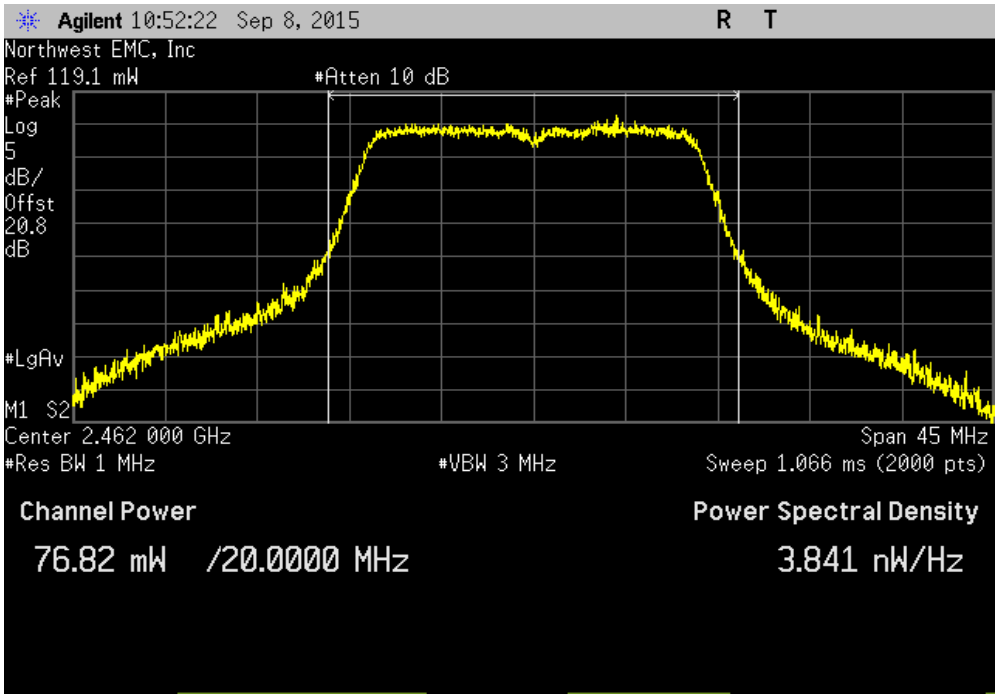
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				97.115 mW	1 W	Pass



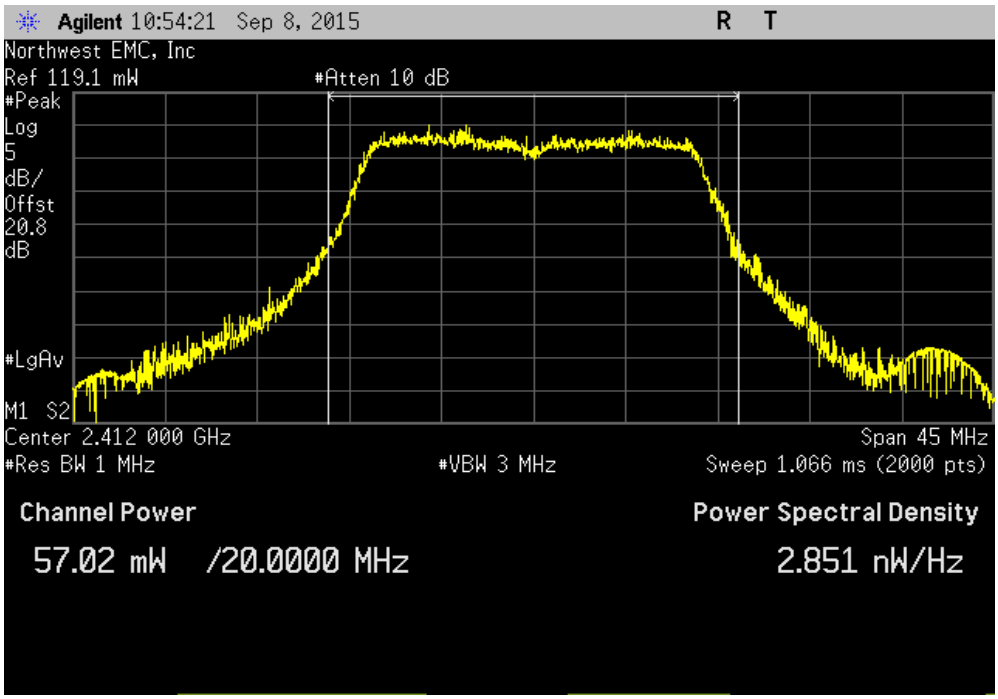
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				99.655 mW	1 W	Pass



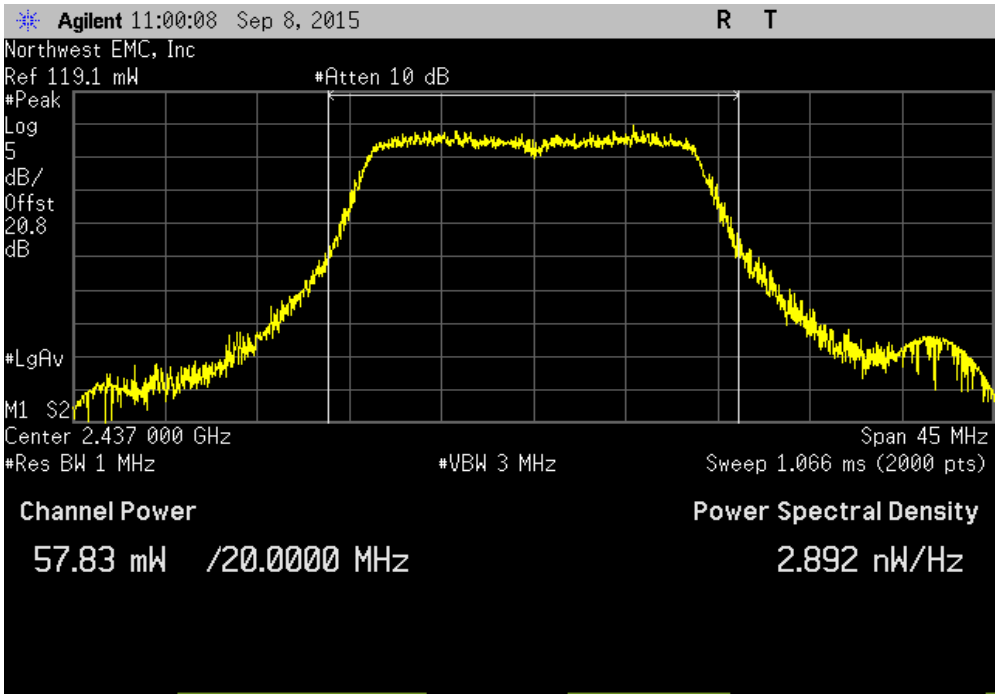
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				76.816 mW	1 W	Pass



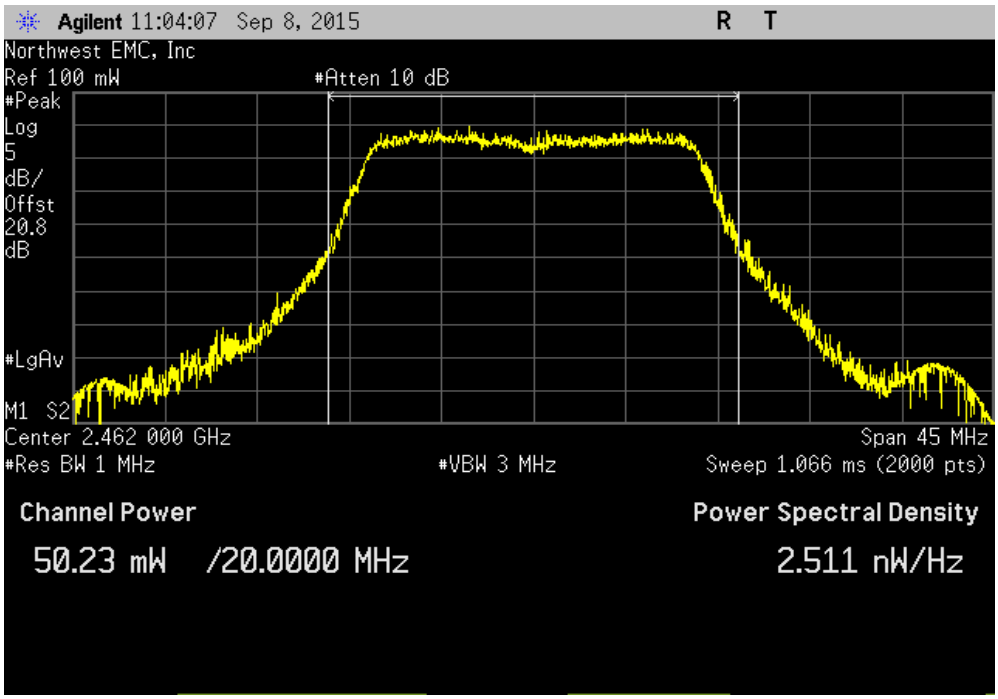
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				57.019 mW	1 W	Pass



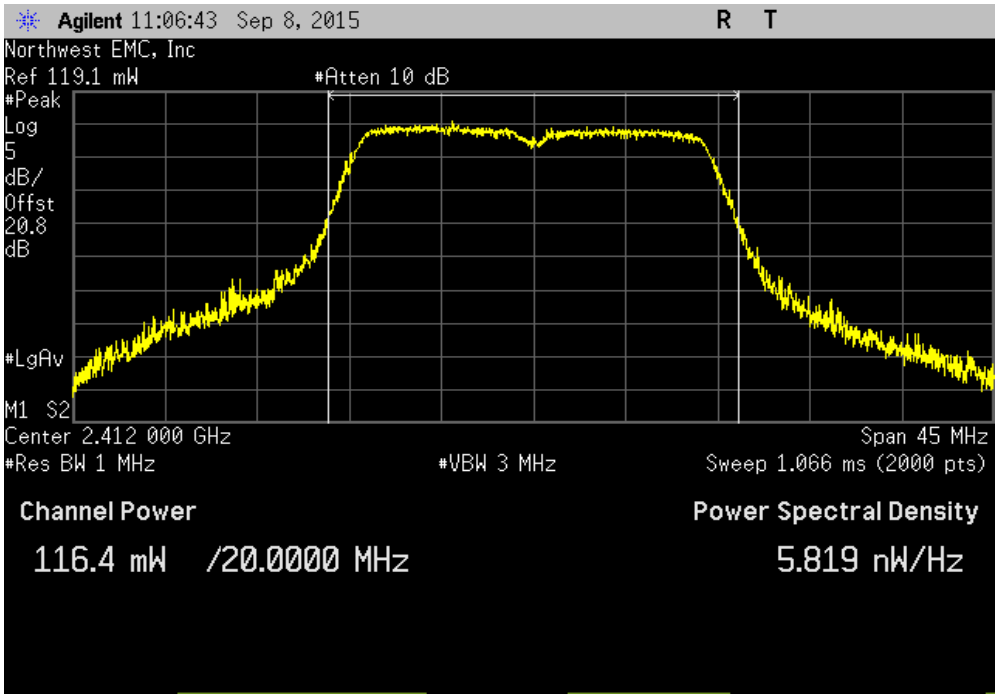
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				57.832 mW	1 W	Pass



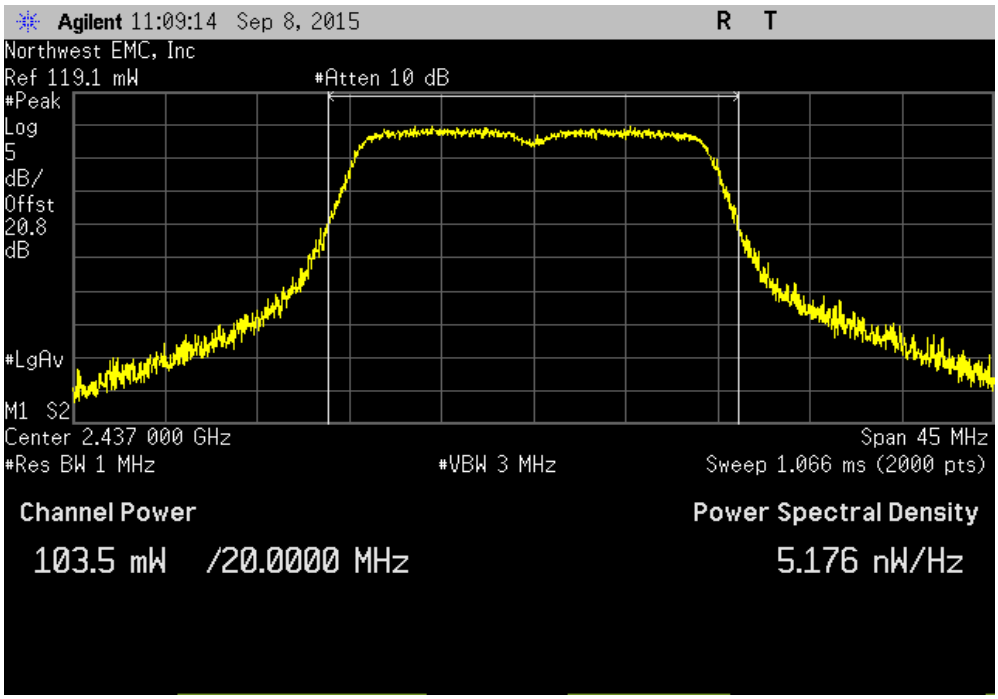
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				50.227 mW	1 W	Pass



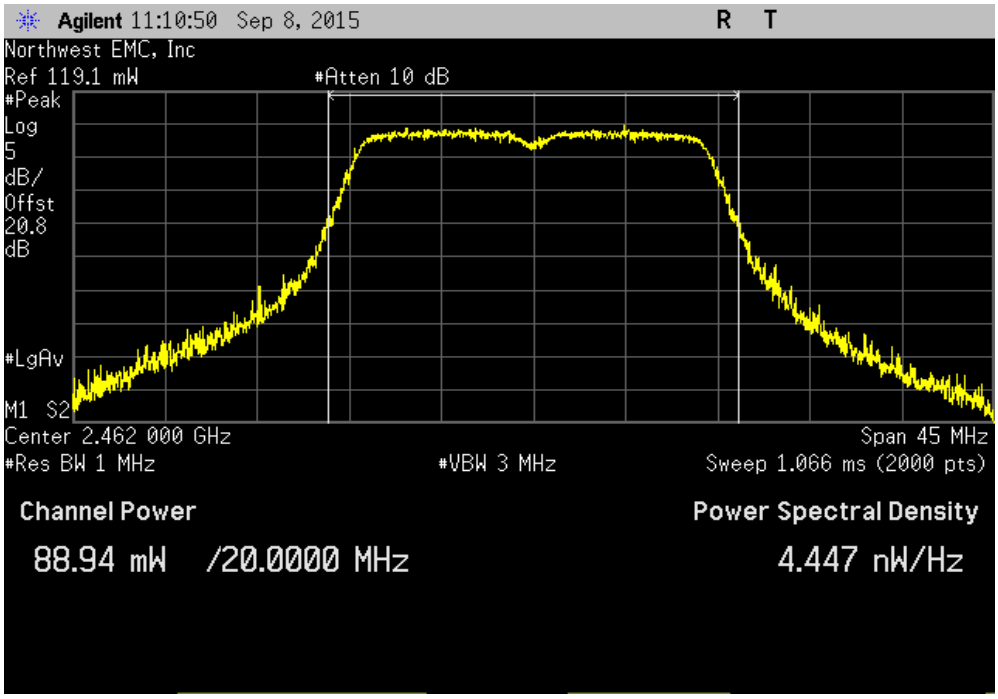
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				116.377 mW	1 W	Pass



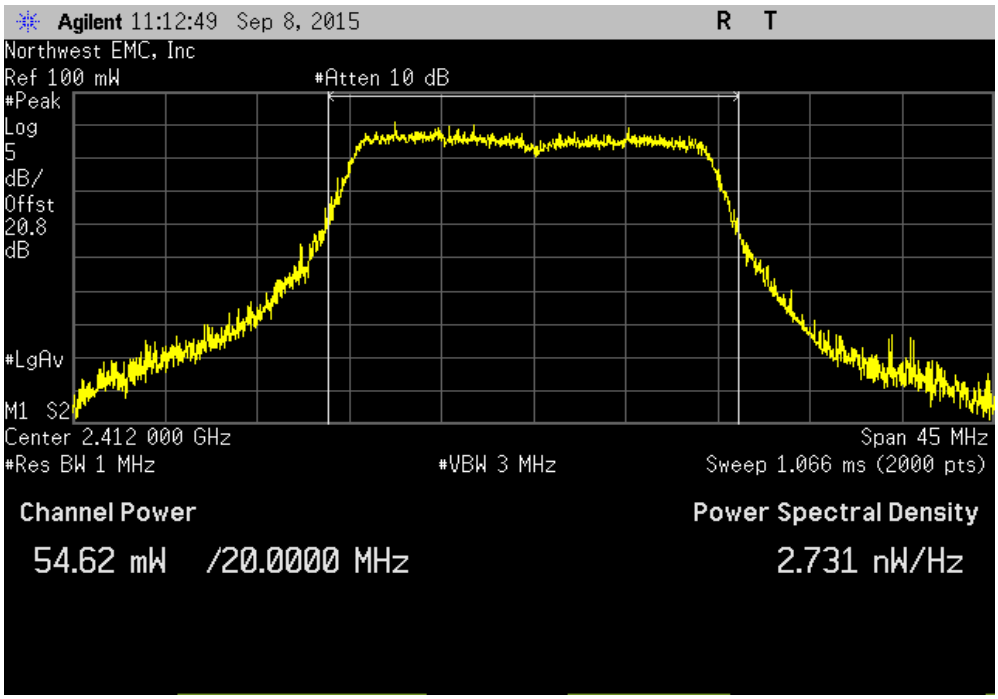
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				103.516 mW	1 W	Pass



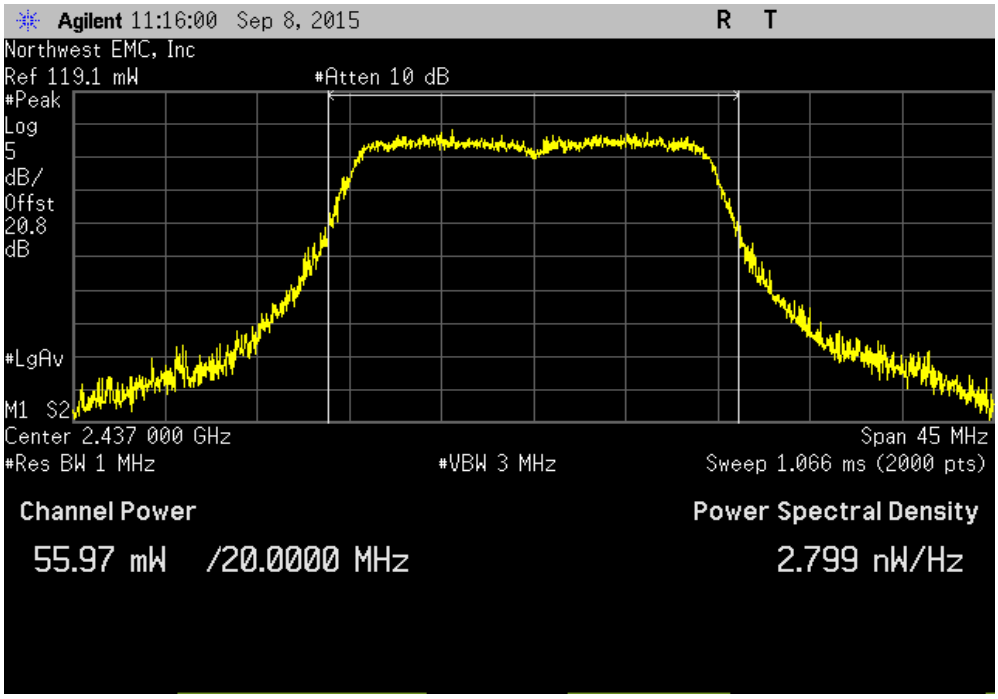
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				88.94 mW	1 W	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				54.615 mW	1 W	Pass



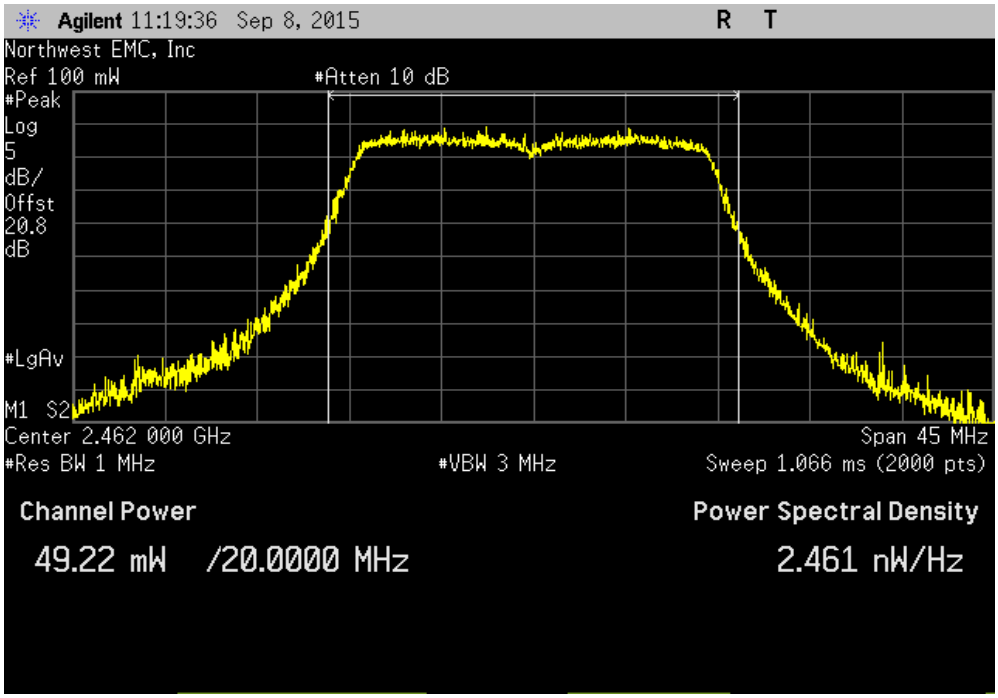
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				55.973 mW	1 W	Pass



OUTPUT POWER

XMit 2015.01.14

Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				49.218 mW	1 W	Pass



POWER SPECTRAL DENSITY

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

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

Per the procedure outlined in ANSI C63.10:2013 Section 11.10.2, the peak power spectral density was measured in a 100 kHz RBW.

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385			**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.2°C
Attendees:	None			**Humidity:**	44%
Project:	None			**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

2x2 MIMO mode, Chain AB (Chains 0 and 1).

DEVIATIONS FROM TEST STANDARD

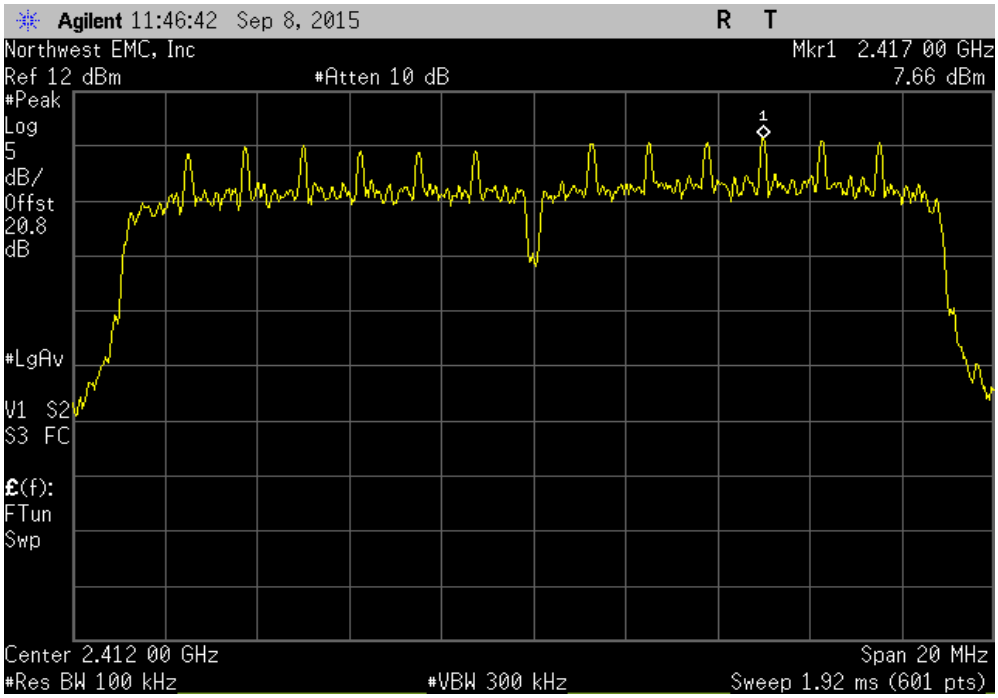
None

Configuration #	5	Signature Jonathan Kiefer

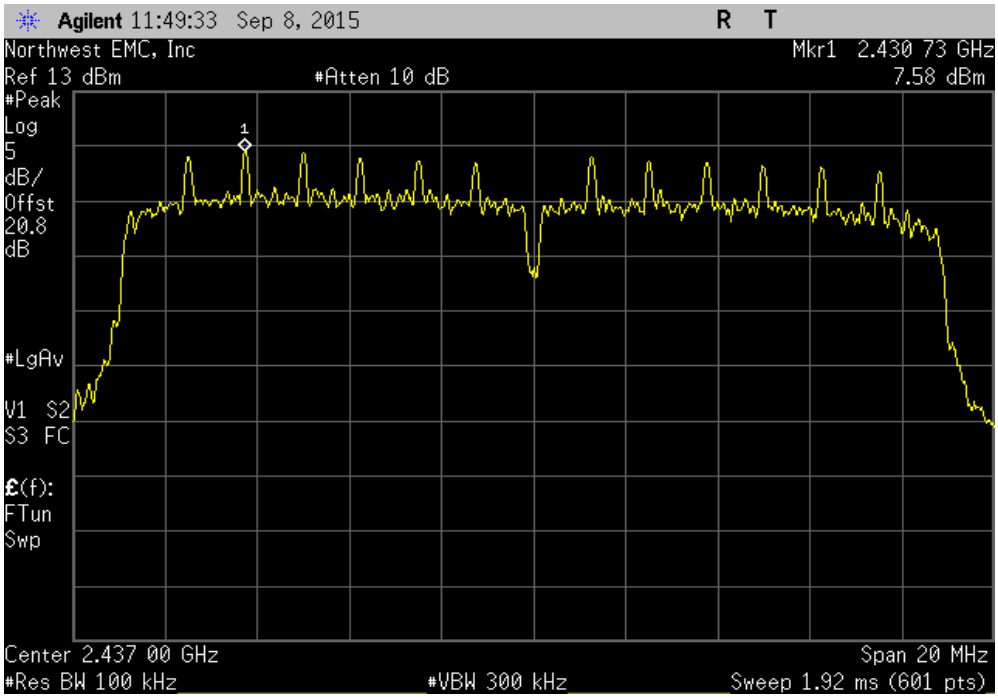
	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	7.657	-15.2	-7.543	8	Pass
Mid Channel 6, 2437 MHz	7.581	-15.2	-7.619	8	Pass
High Channel 11, 2462 MHz	7.483	-15.2	-7.717	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	4.321	-15.2	-10.879	8	Pass
Mid Channel 6, 2437 MHz	4.177	-15.2	-11.023	8	Pass
High Channel 11, 2462 MHz	4.091	-15.2	-11.109	8	Pass
Chain B					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	9.293	-15.2	-5.907	8	Pass
Mid Channel 6, 2437 MHz	8.325	-15.2	-6.875	8	Pass
High Channel 11, 2462 MHz	8.267	-15.2	-6.933	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	6.151	-15.2	-9.049	8	Pass
Mid Channel 6, 2437 MHz	5.054	-15.2	-10.146	8	Pass
High Channel 11, 2462 MHz	5.066	-15.2	-10.134	8	Pass

	Value (dBm/3kHz)	Summing Factor (dBm)	Summed 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	-7.543	3	-4.543	8	Pass
Mid Channel 6, 2437 MHz	-7.619	3	-4.619	8	Pass
High Channel 11, 2462 MHz	-7.717	3	-4.717	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	-10.879	3	-7.879	8	Pass
Mid Channel 6, 2437 MHz	-11.023	3	-8.023	8	Pass
High Channel 11, 2462 MHz	-11.109	3	-8.109	8	Pass
Chain B					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	-5.907	3	-2.907	8	Pass
Mid Channel 6, 2437 MHz	-6.875	3	-3.875	8	Pass
High Channel 11, 2462 MHz	-6.933	3	-3.933	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	-9.049	3	-6.049	8	Pass
Mid Channel 6, 2437 MHz	-10.146	3	-7.146	8	Pass
High Channel 11, 2462 MHz	-10.134	3	-7.134	8	Pass

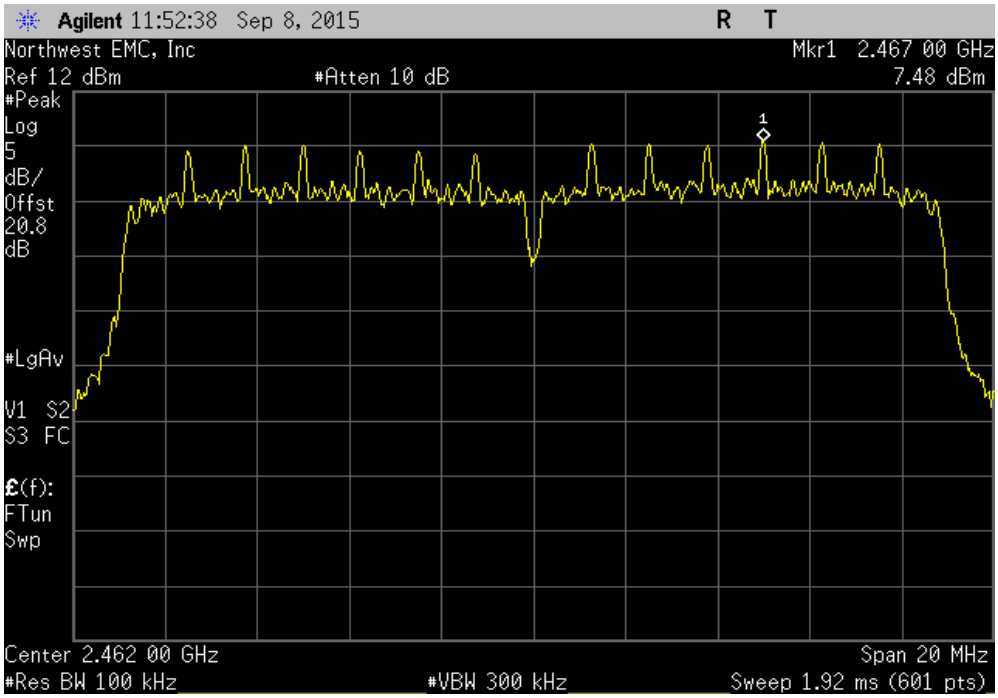
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.657	-15.2	-7.543	8	Pass



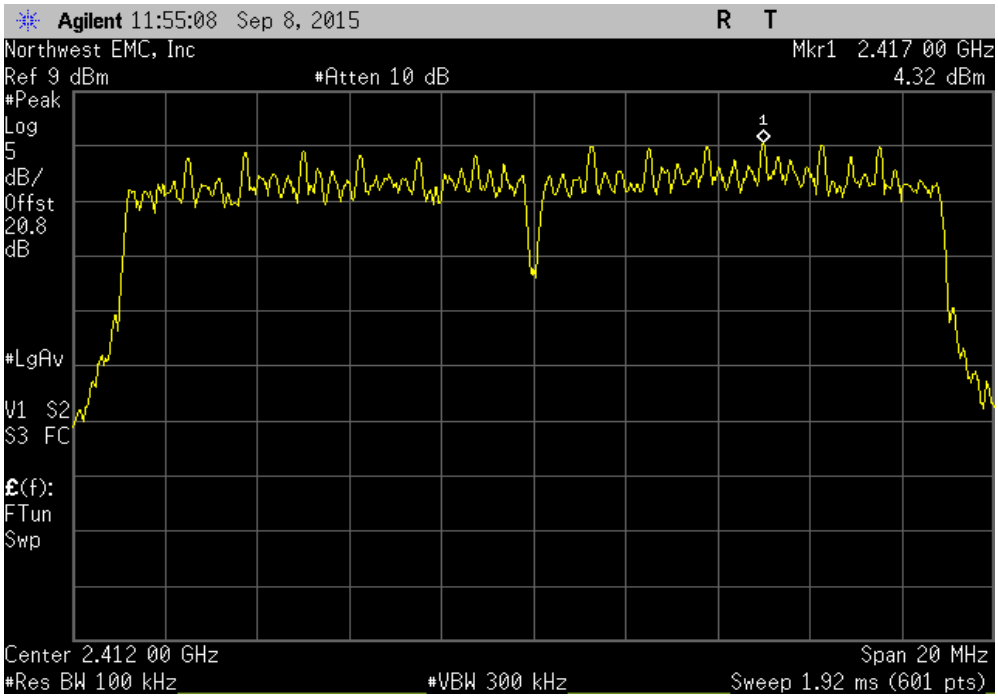
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.581	-15.2	-7.619	8	Pass



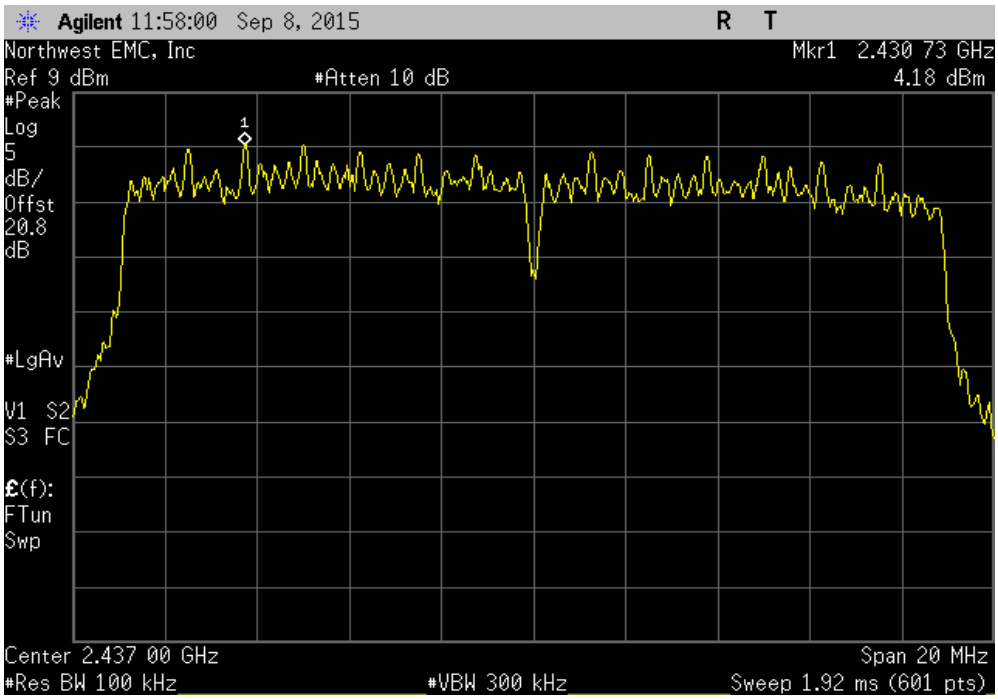
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.483	-15.2	-7.717	8	Pass



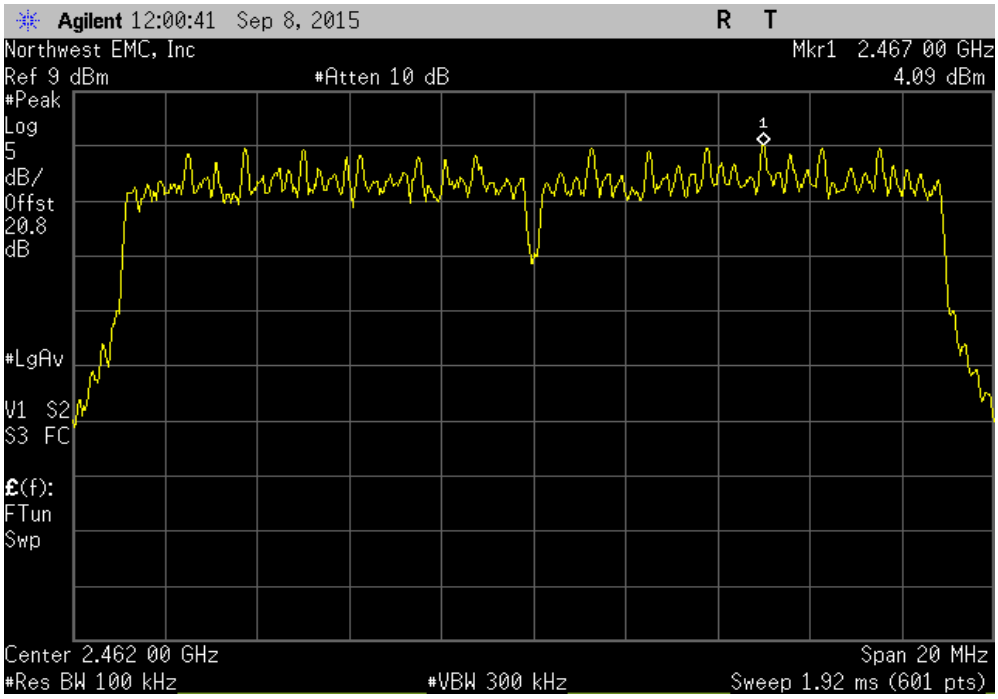
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.321	-15.2	-10.879	8	Pass



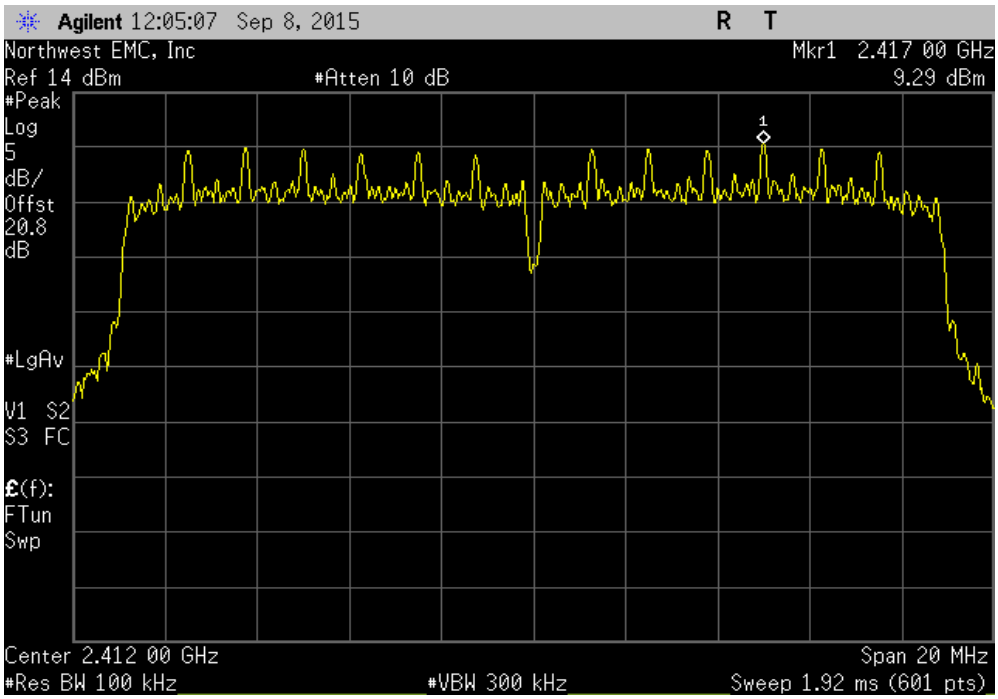
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.177	-15.2	-11.023	8	Pass



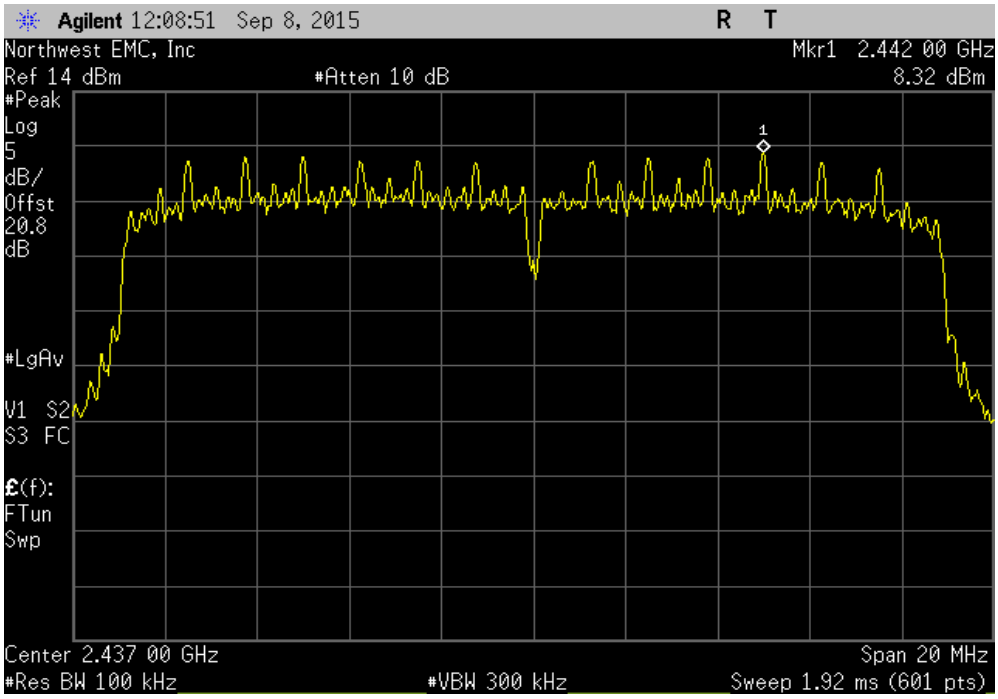
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.091	-15.2	-11.109	8	Pass



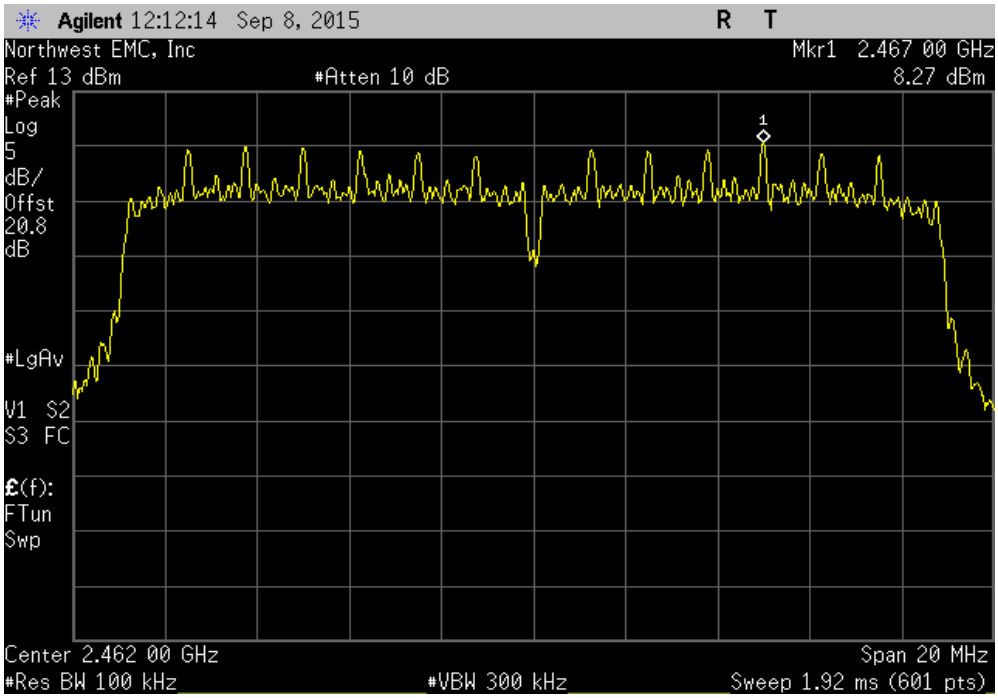
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.293	-15.2	-5.907	8	Pass



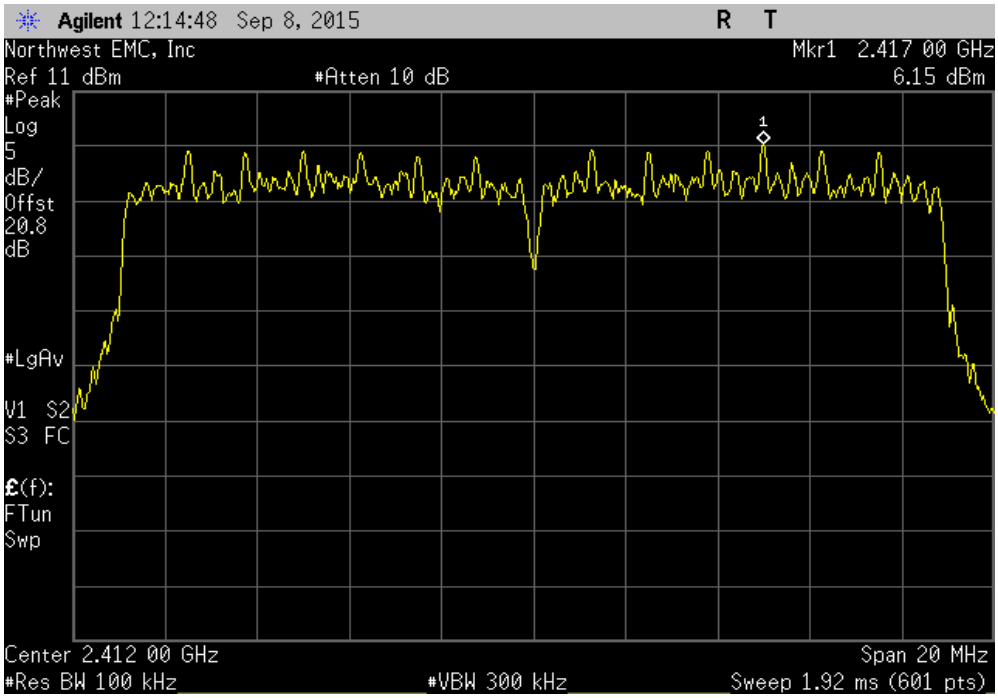
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.325	-15.2	-6.875	8	Pass



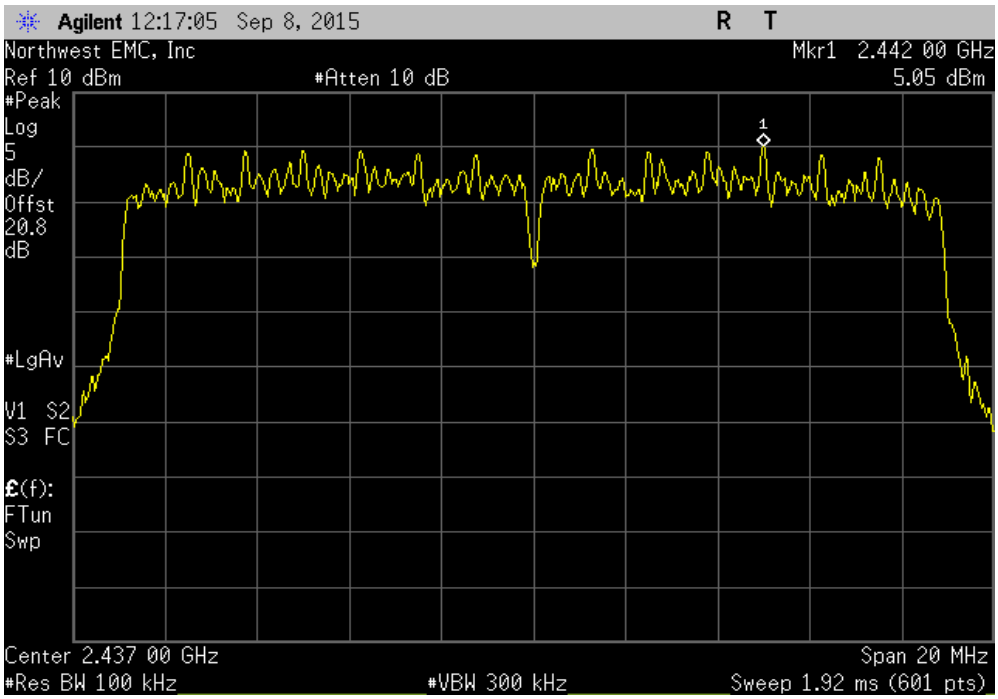
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.267	-15.2	-6.933	8	Pass



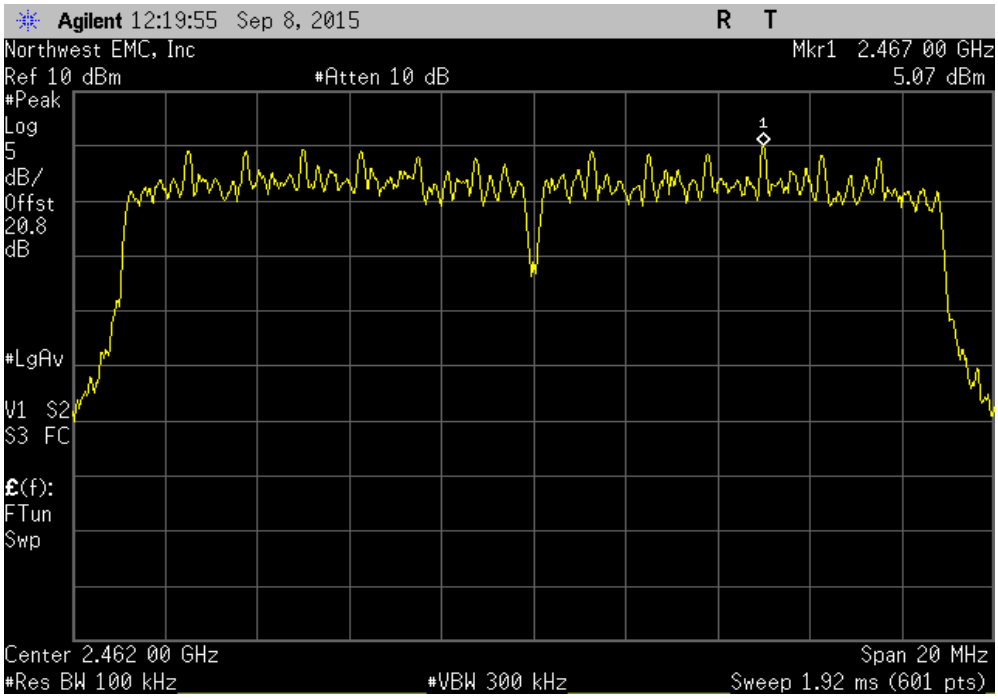
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.151	-15.2	-9.049	8	Pass



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	Results
		5.054	-15.2	-10.146	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	Results
		5.066	-15.2	-10.134	8	Pass



POWER SPECTRAL DENSITY

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

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

Per the procedure outlined in ANSI C63.10:2013 Section 11.10.2, the peak power spectral density was measured in a 100 kHz RBW.

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385			**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.2°C
Attendees:	None			**Humidity:**	44%
Project:	None			**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

2x2 MIMO mode, Chain AC (Chains 0 and 2).

DEVIATIONS FROM TEST STANDARD

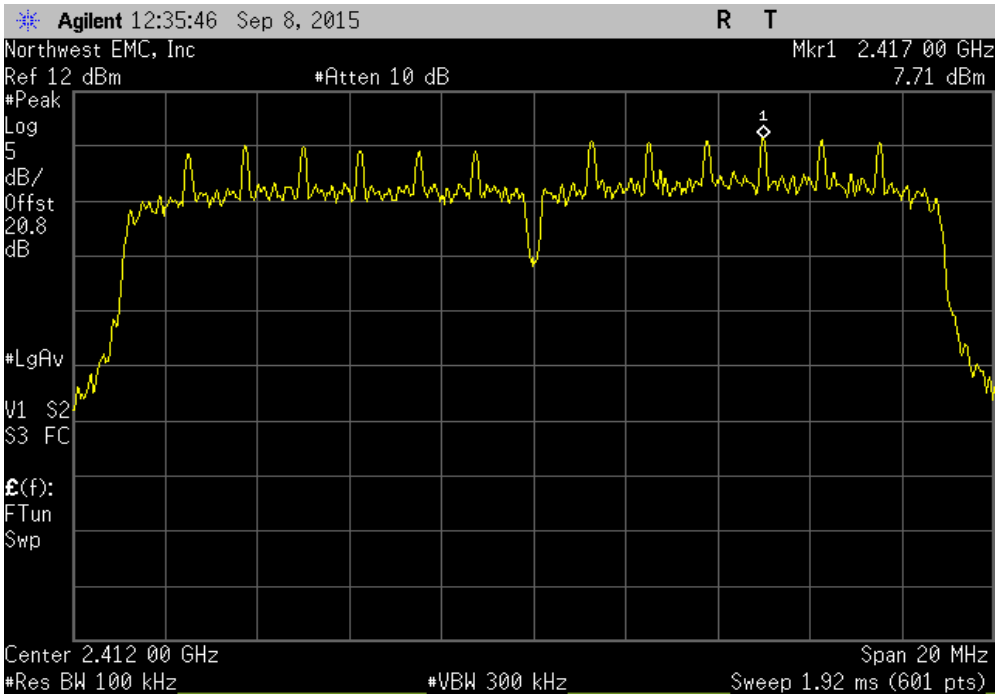
None

Configuration #	5	Signature	Jonathan Kiefer

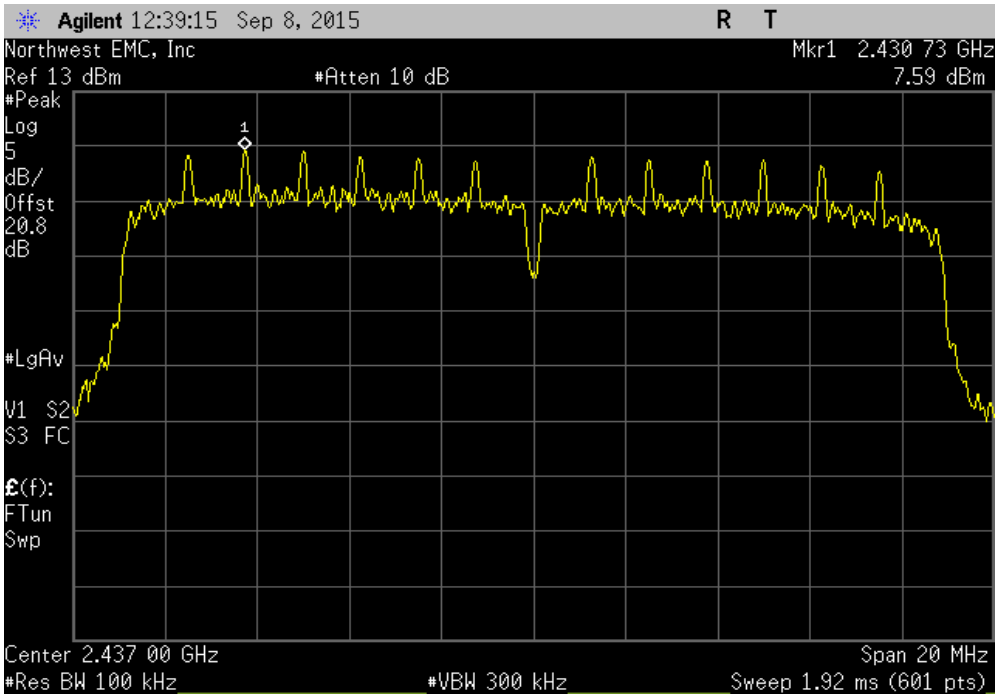
	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	7.711	-15.2	-7.489	8	Pass
Mid Channel 6, 2437 MHz	7.586	-15.2	-7.614	8	Pass
High Channel 11, 2462 MHz	7.638	-15.2	-7.562	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	4.375	-15.2	-10.825	8	Pass
Mid Channel 6, 2437 MHz	4.268	-15.2	-10.932	8	Pass
High Channel 11, 2462 MHz	4.114	-15.2	-11.086	8	Pass
Chain C					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	8.544	-15.2	-6.656	8	Pass
Mid Channel 6, 2437 MHz	8.744	-15.2	-6.456	8	Pass
High Channel 11, 2462 MHz	8.365	-15.2	-6.835	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	5.238	-15.2	-9.962	8	Pass
Mid Channel 6, 2437 MHz	5.306	-15.2	-9.894	8	Pass
High Channel 11, 2462 MHz	4.86	-15.2	-10.34	8	Pass

	Value (dBm/3kHz)	Summing Factor (dBm)	Summed 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	-7.489	3	-4.489	8	Pass
Mid Channel 6, 2437 MHz	-7.614	3	-4.614	8	Pass
High Channel 11, 2462 MHz	-7.562	3	-4.562	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	-10.825	3	-7.825	8	Pass
Mid Channel 6, 2437 MHz	-10.932	3	-7.932	8	Pass
High Channel 11, 2462 MHz	-11.086	3	-8.086	8	Pass
Chain C					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz	-6.656	3	-3.656	8	Pass
Mid Channel 6, 2437 MHz	-6.456	3	-3.456	8	Pass
High Channel 11, 2462 MHz	-6.835	3	-3.835	8	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz	-9.962	3	-6.962	8	Pass
Mid Channel 6, 2437 MHz	-9.894	3	-6.894	8	Pass
High Channel 11, 2462 MHz	-10.34	3	-7.34	8	Pass

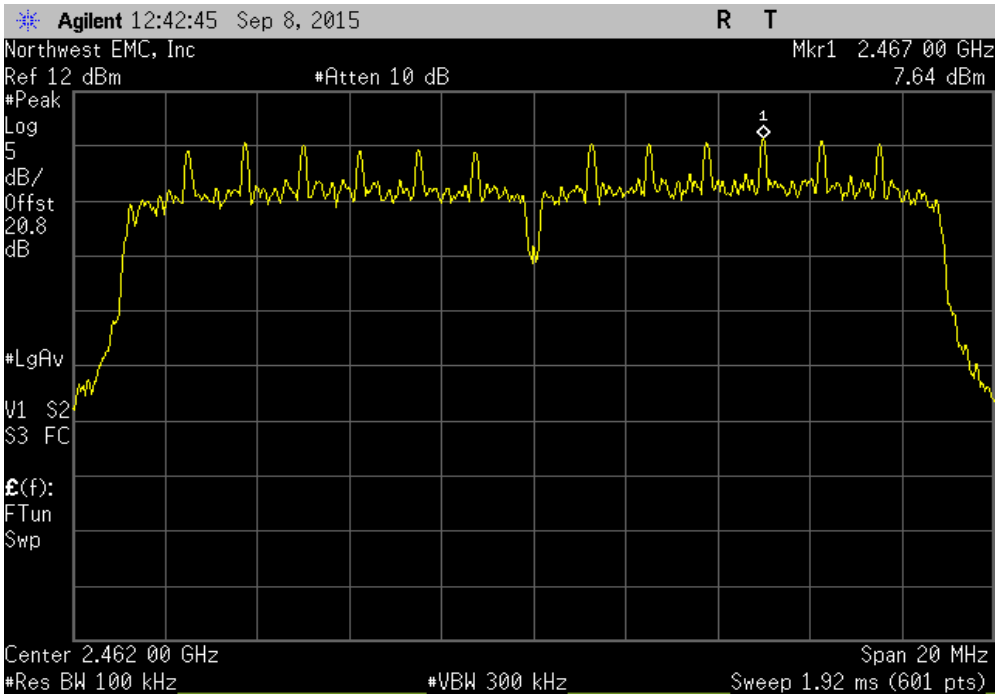
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.711	-15.2	-7.489	8	Pass



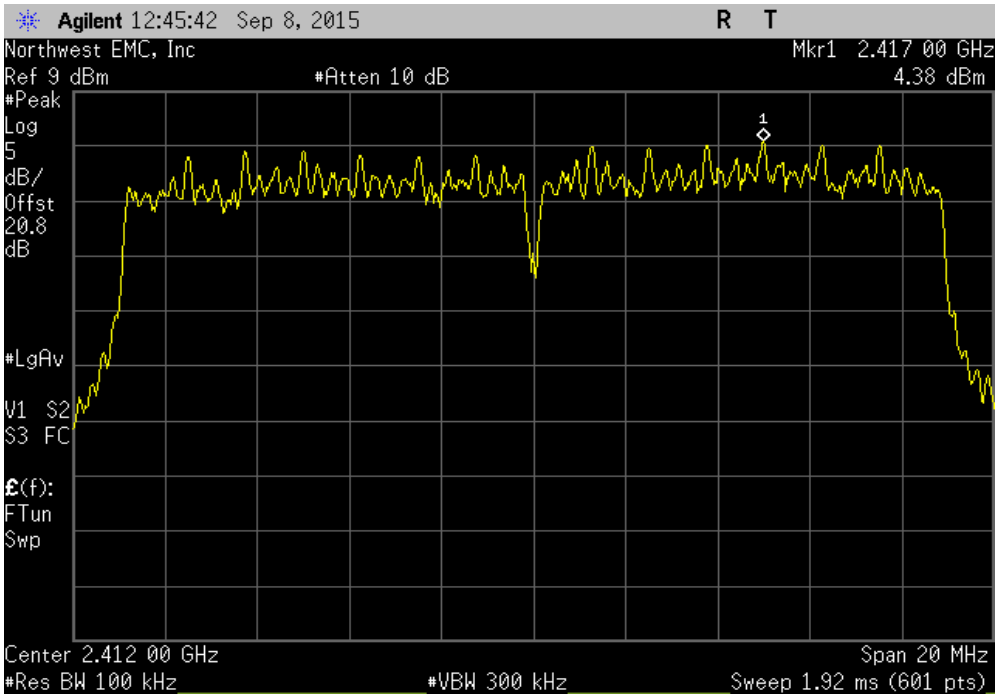
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.586	-15.2	-7.614	8	Pass



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	Results
		7.638	-15.2	-7.562	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	Results
		4.375	-15.2	-10.825	8	Pass



POWER SPECTRAL DENSITY

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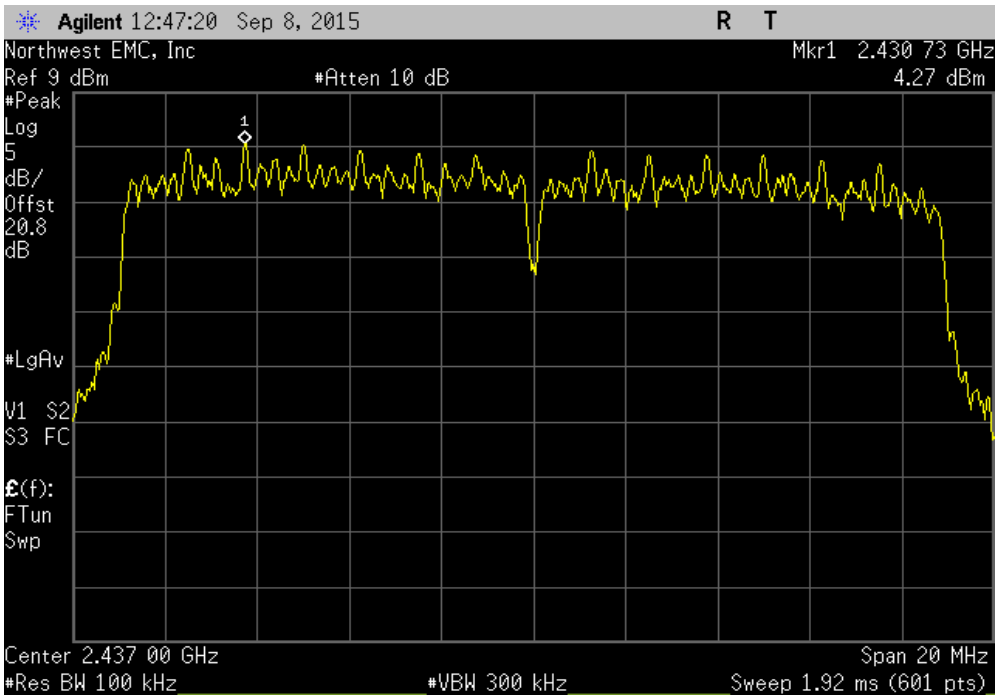
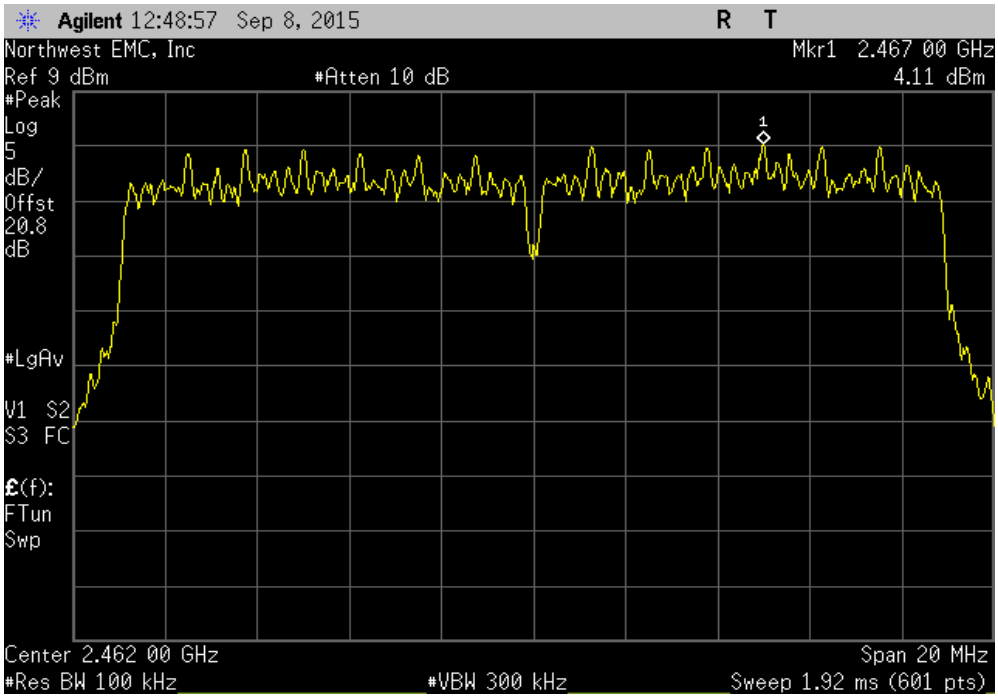
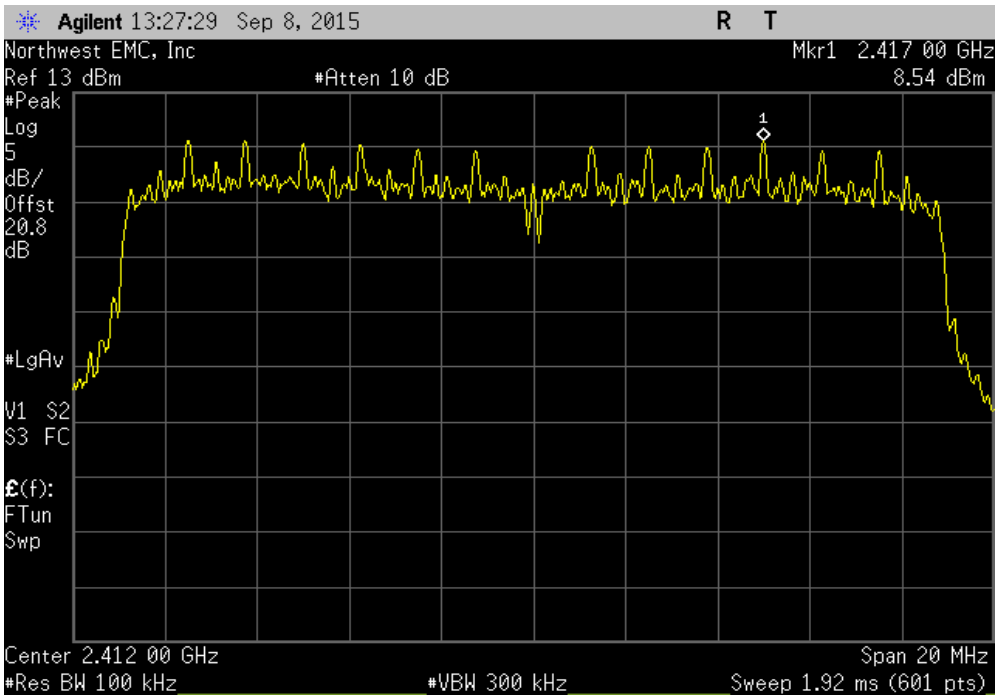
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.268	-15.2	-10.932	8	Pass



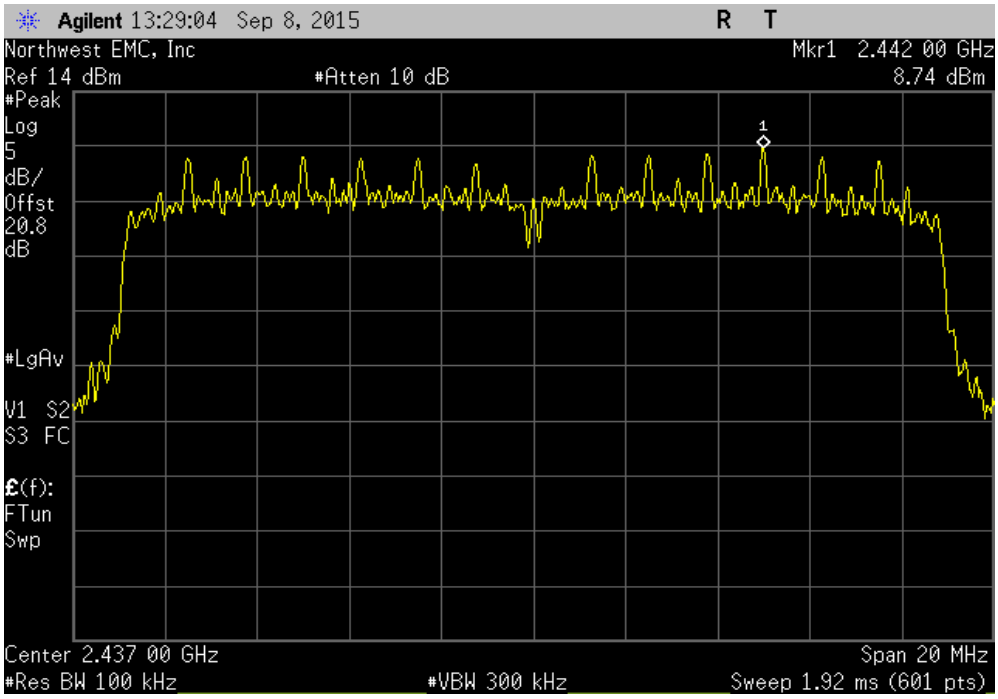
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.114	-15.2	-11.086	8	Pass



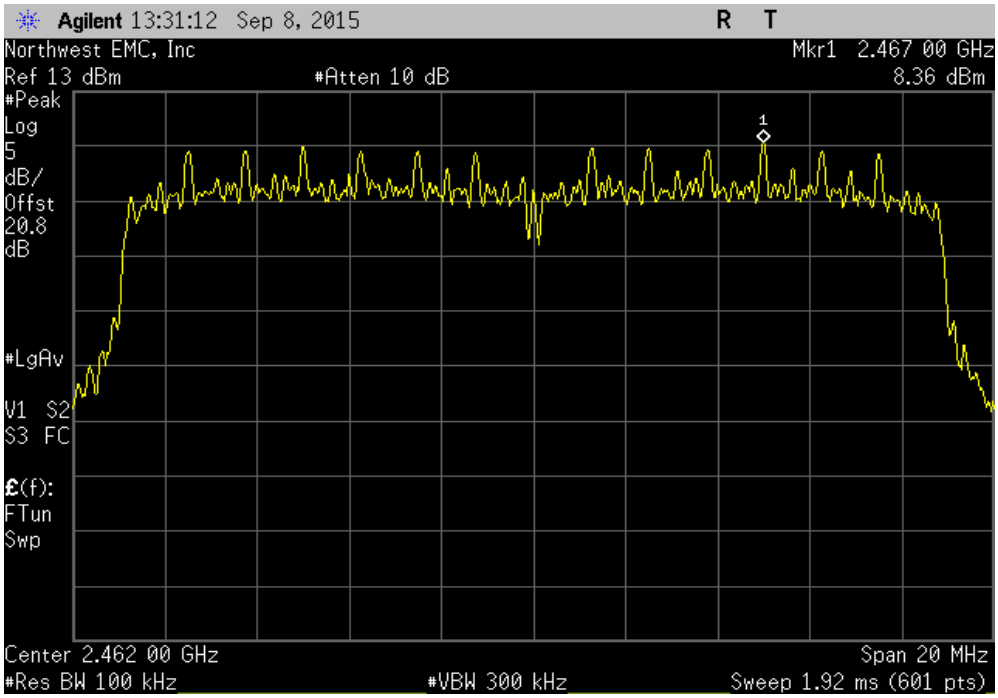
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.544	-15.2	-6.656	8	Pass



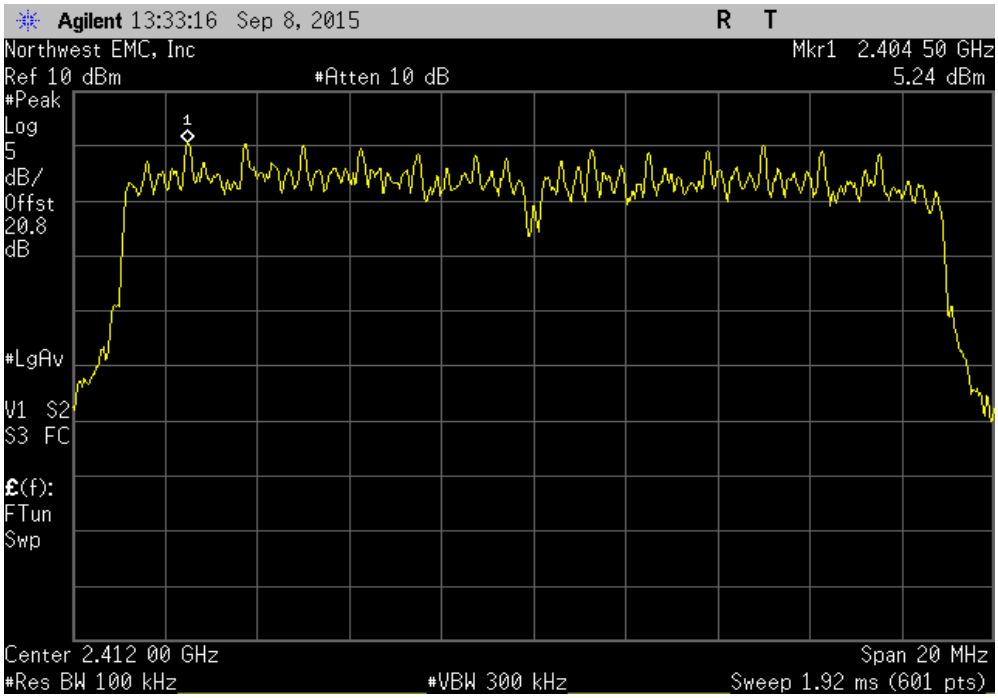
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.744	-15.2	-6.456	8	Pass



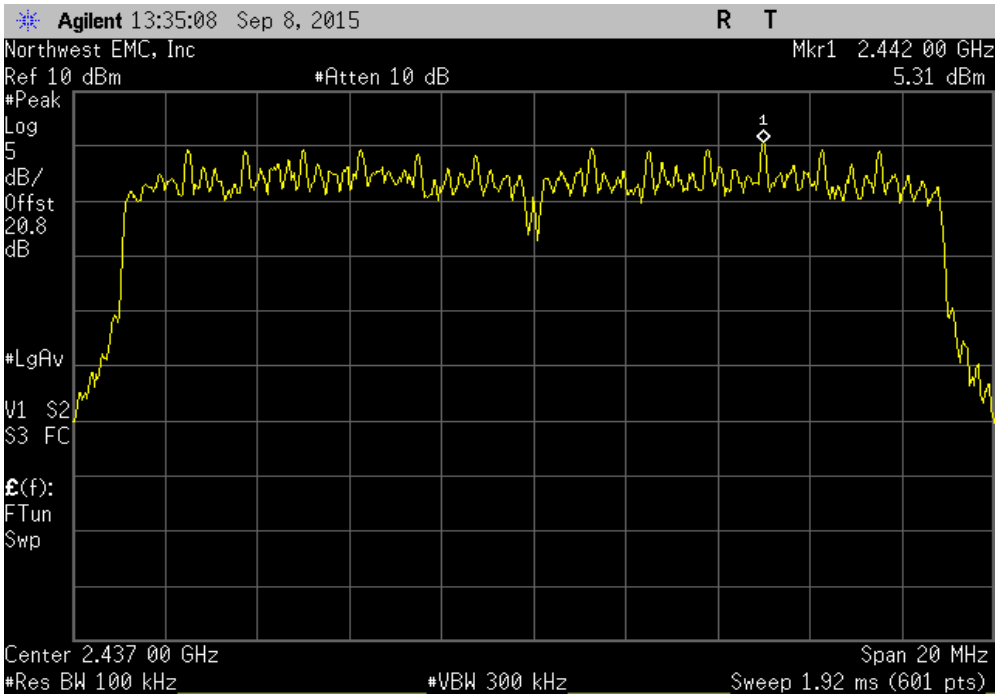
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.365	-15.2	-6.835	8	Pass



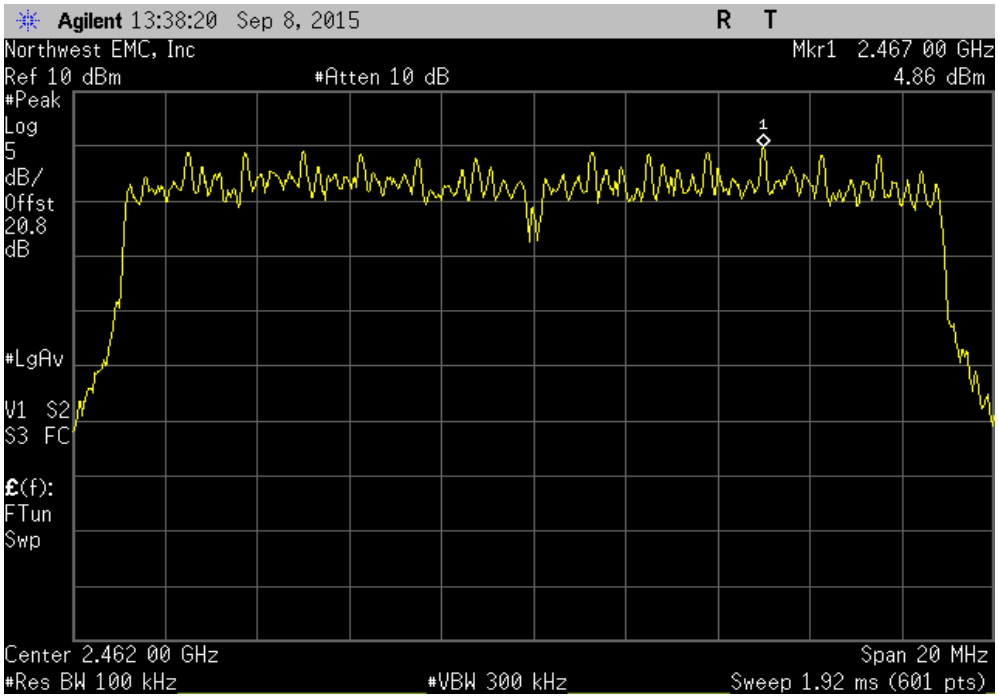
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.238	-15.2	-9.962	8	Pass



Chain C, 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	Results
		5.306	-15.2	-9.894	8	Pass



Chain C, 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	Results
		4.86	-15.2	-10.34	8	Pass



POWER SPECTRAL DENSITY

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

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

Per the procedure outlined in ANSI C63.10:2013 Section 11.10.2, the peak power spectral density was measured in a 100 kHz RBW.

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)	**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385	**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.	**Temperature:**	24.2°C
Attendees:	None	**Humidity:**	44%
Project:	None	**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:** 110VAC/60Hz	**Job Site:** TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

2x2 MIMO mode, Chain BC (Chains 1 and 2).

DEVIATIONS FROM TEST STANDARD

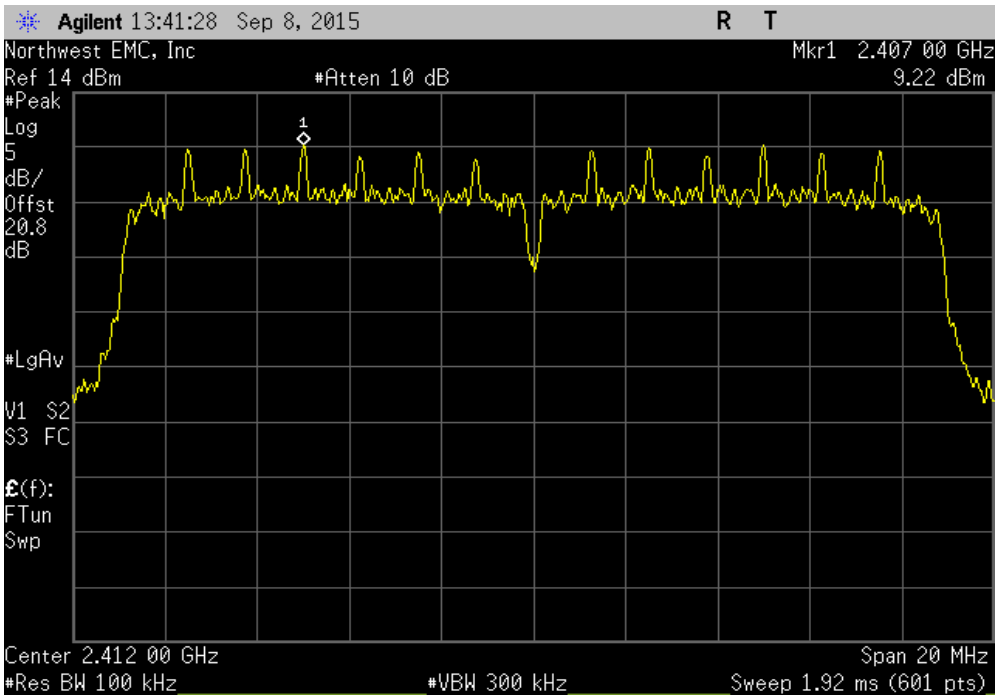
None

Configuration #	5	Signature Jonathan Kiefer

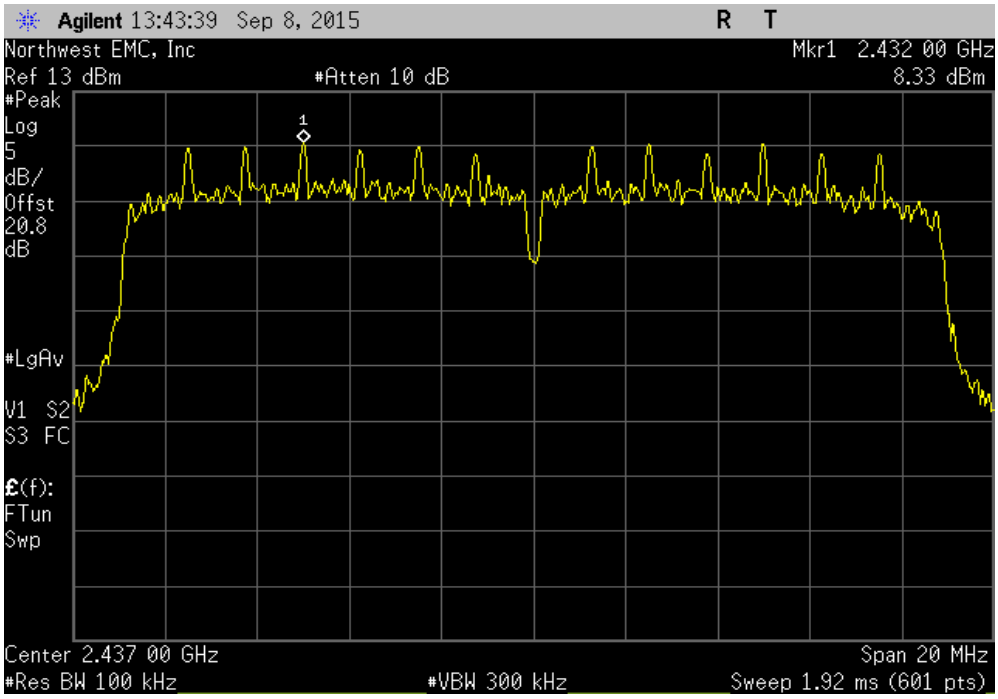
				Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
Chain B								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS8					
			Low Channel 1, 2412 MHz	9.218	-15.2	-5.982	8	Pass
			Mid Channel 6, 2437 MHz	8.326	-15.2	-6.874	8	Pass
			High Channel 11, 2462 MHz	8.153	-15.2	-7.047	8	Pass
			802.11(n) MCS15					
			Low Channel 1, 2412 MHz	6.018	-15.2	-9.182	8	Pass
			Mid Channel 6, 2437 MHz	5.187	-15.2	-10.013	8	Pass
			High Channel 11, 2462 MHz	5.152	-15.2	-10.048	8	Pass
Chain C								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS8					
			Low Channel 1, 2412 MHz	8.718	-15.2	-6.482	8	Pass
			Mid Channel 6, 2437 MHz	8.718	-15.2	-6.482	8	Pass
			High Channel 11, 2462 MHz	8.174	-15.2	-7.026	8	Pass
			802.11(n) MCS15					
			Low Channel 1, 2412 MHz	5.354	-15.2	-9.846	8	Pass
			Mid Channel 6, 2437 MHz	5.289	-15.2	-9.911	8	Pass
			High Channel 11, 2462 MHz	4.957	-15.2	-10.243	8	Pass

				Value (dBm/3kHz)	Summing Factor (dBm)	Summed Value (dBm/3kHz)	Limit (dBm/3kHz)	Result
Chain B								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS8					
			Low Channel 1, 2412 MHz	-5.982	3	-2.982	8	Pass
			Mid Channel 6, 2437 MHz	-6.874	3	-3.874	8	Pass
			High Channel 11, 2462 MHz	-7.047	3	-4.047	8	Pass
			802.11(n) MCS15					
			Low Channel 1, 2412 MHz	-9.182	3	-6.182	8	Pass
			Mid Channel 6, 2437 MHz	-10.013	3	-7.013	8	Pass
			High Channel 11, 2462 MHz	-10.048	3	-7.048	8	Pass
Chain C								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS8					
			Low Channel 1, 2412 MHz	-6.482	3	-3.482	8	Pass
			Mid Channel 6, 2437 MHz	-6.482	3	-3.482	8	Pass
			High Channel 11, 2462 MHz	-7.026	3	-4.026	8	Pass
			802.11(n) MCS15					
			Low Channel 1, 2412 MHz	-9.846	3	-6.846	8	Pass
			Mid Channel 6, 2437 MHz	-9.911	3	-6.911	8	Pass
			High Channel 11, 2462 MHz	-10.243	3	-7.243	8	Pass

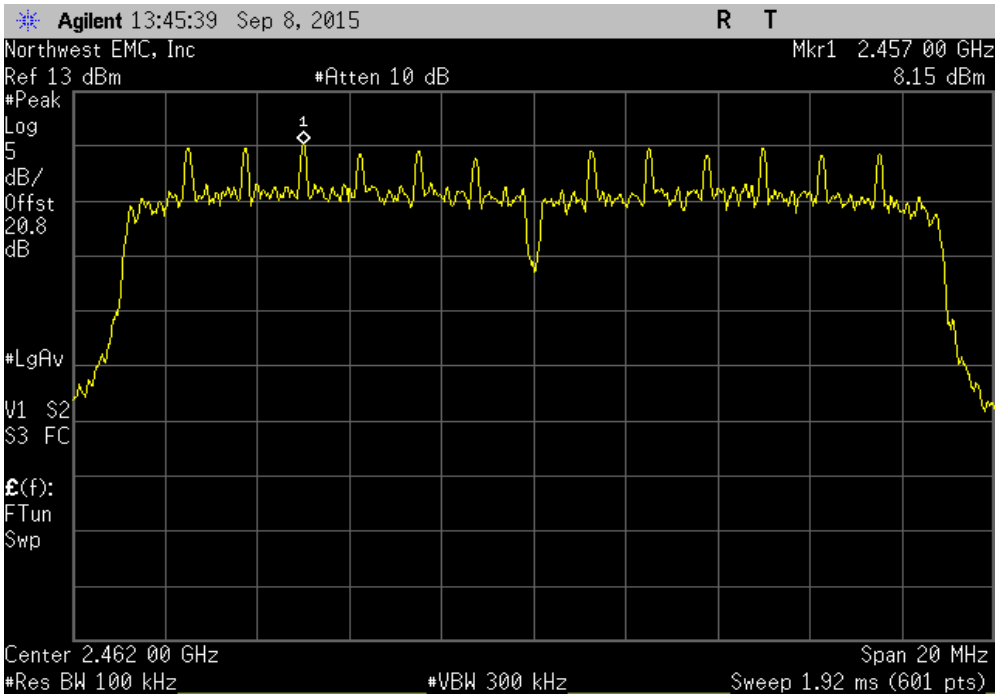
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.218	-15.2	-5.982	8	Pass



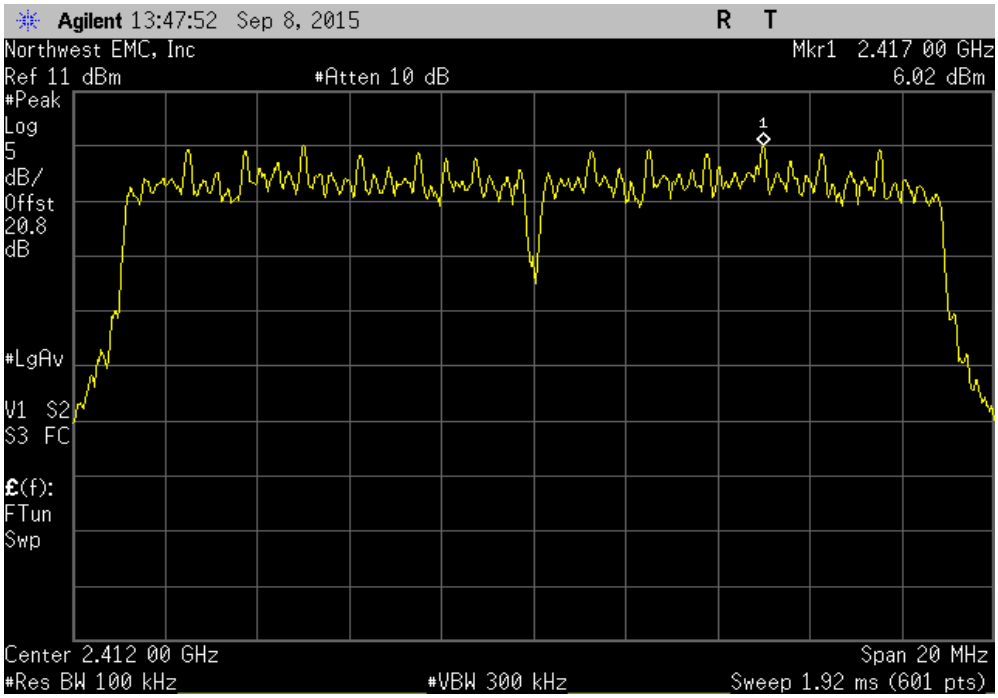
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.326	-15.2	-6.874	8	Pass



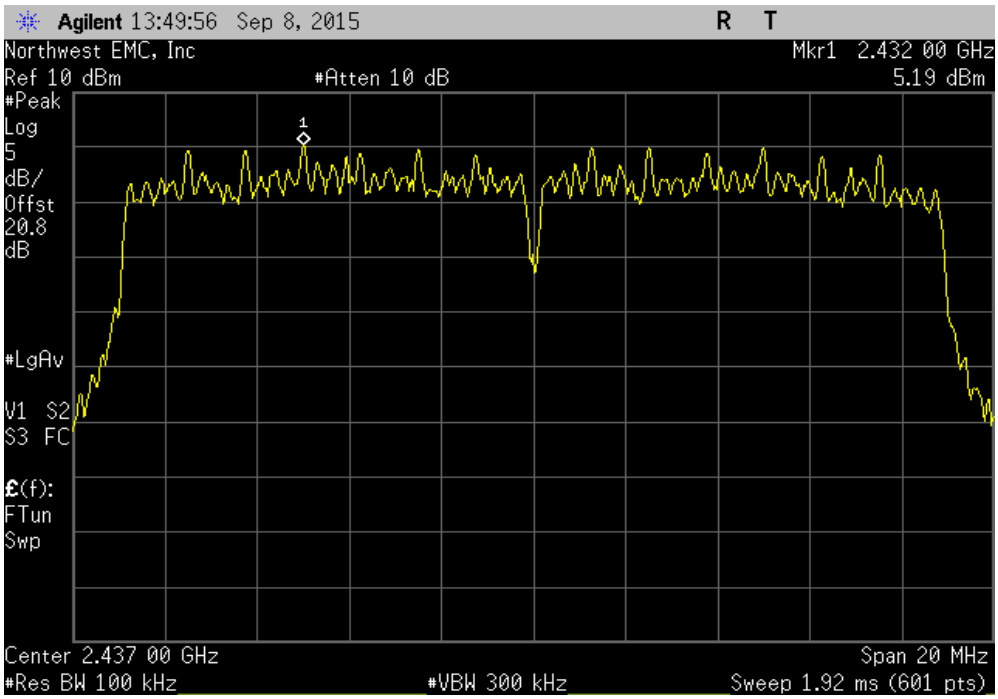
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.153	-15.2	-7.047	8	Pass



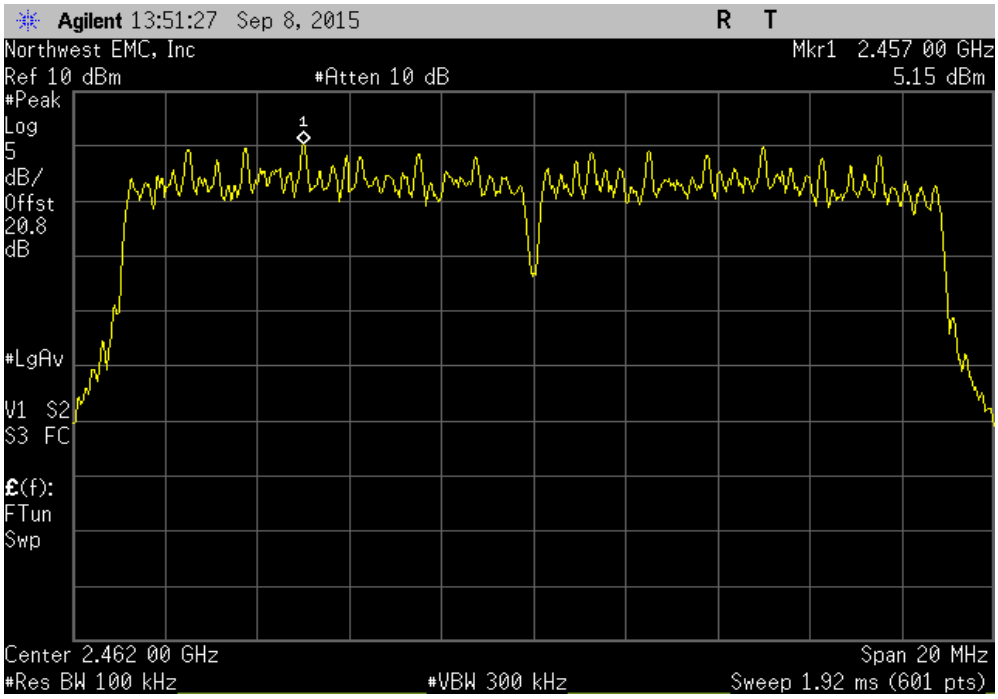
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.018	-15.2	-9.182	8	Pass



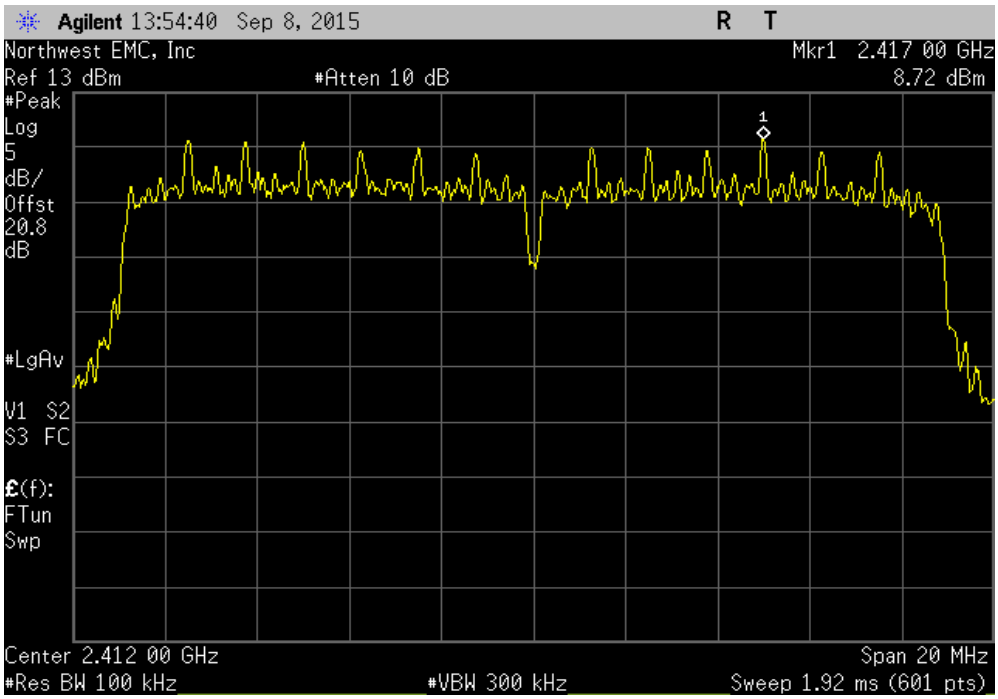
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.187	-15.2	-10.013	8	Pass



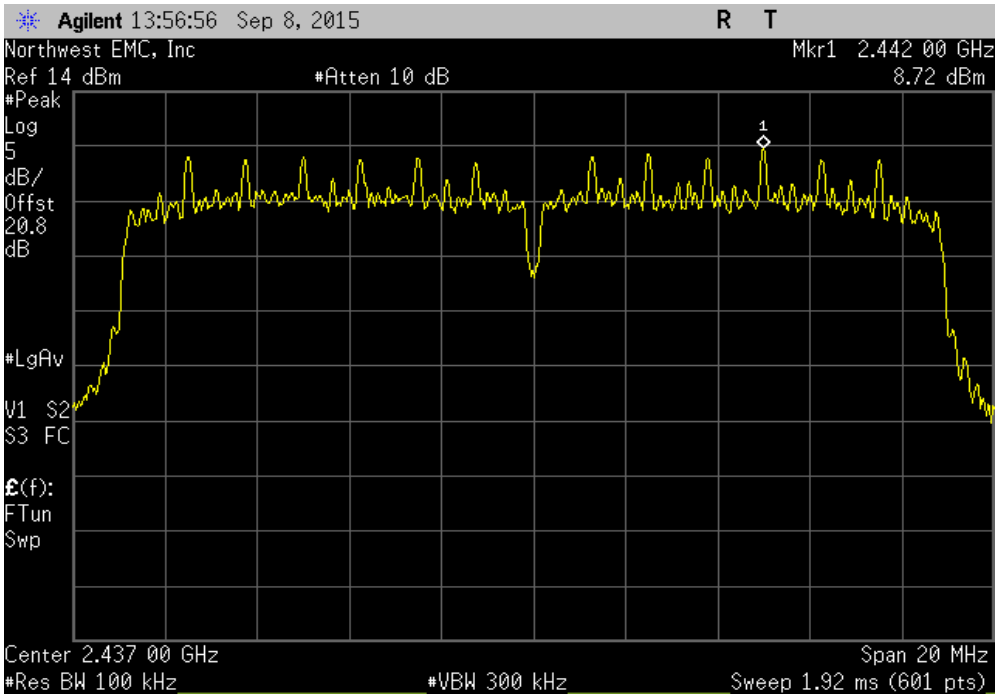
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.152	-15.2	-10.048	8	Pass



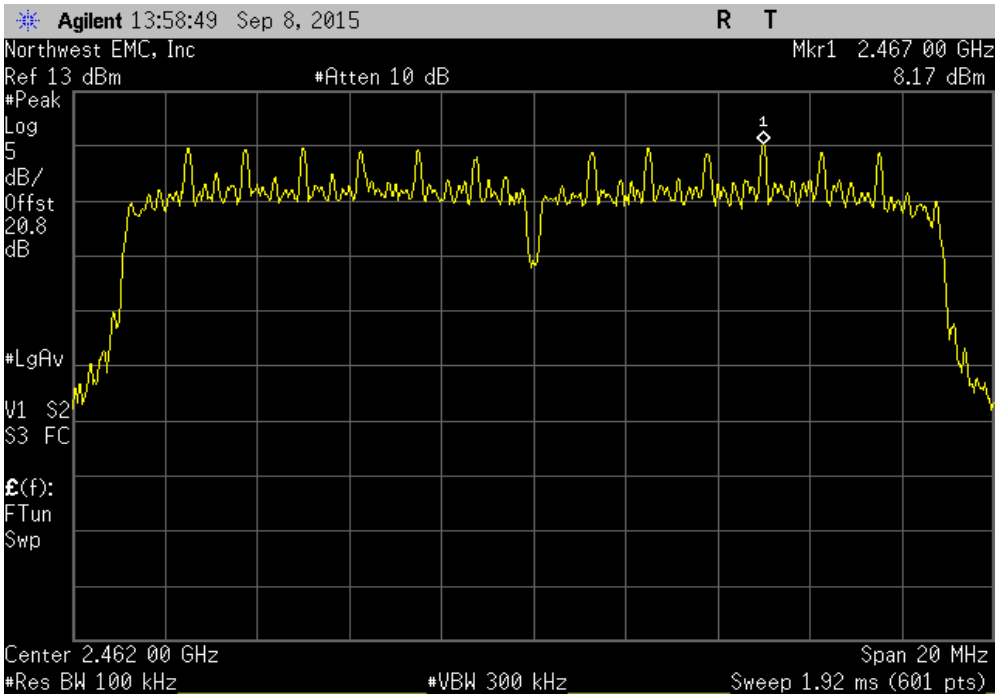
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.718	-15.2	-6.482	8	Pass



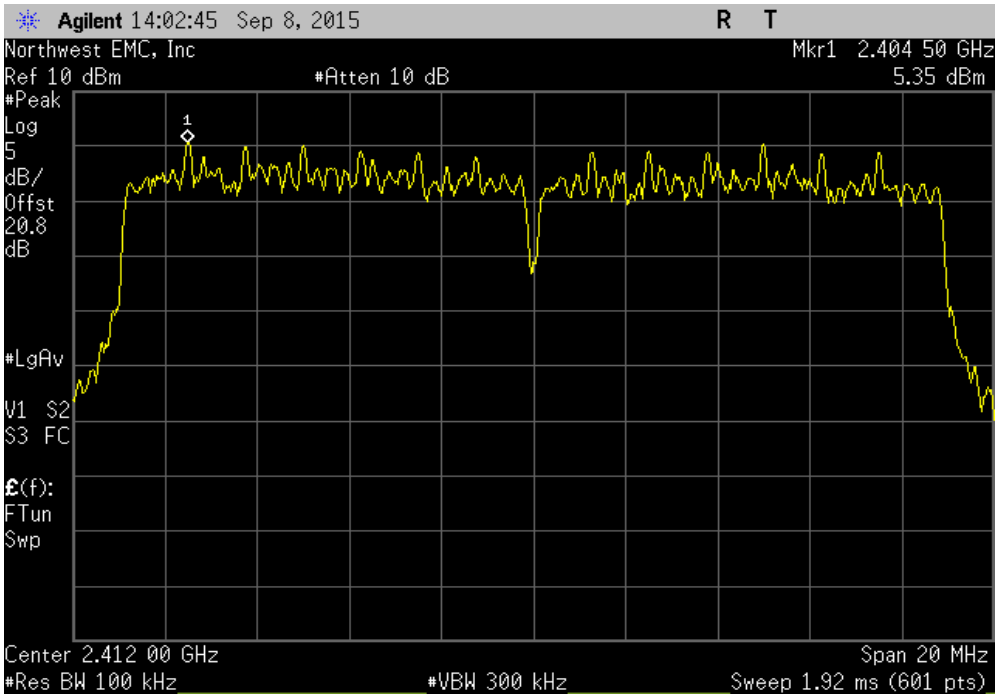
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.718	-15.2	-6.482	8	Pass



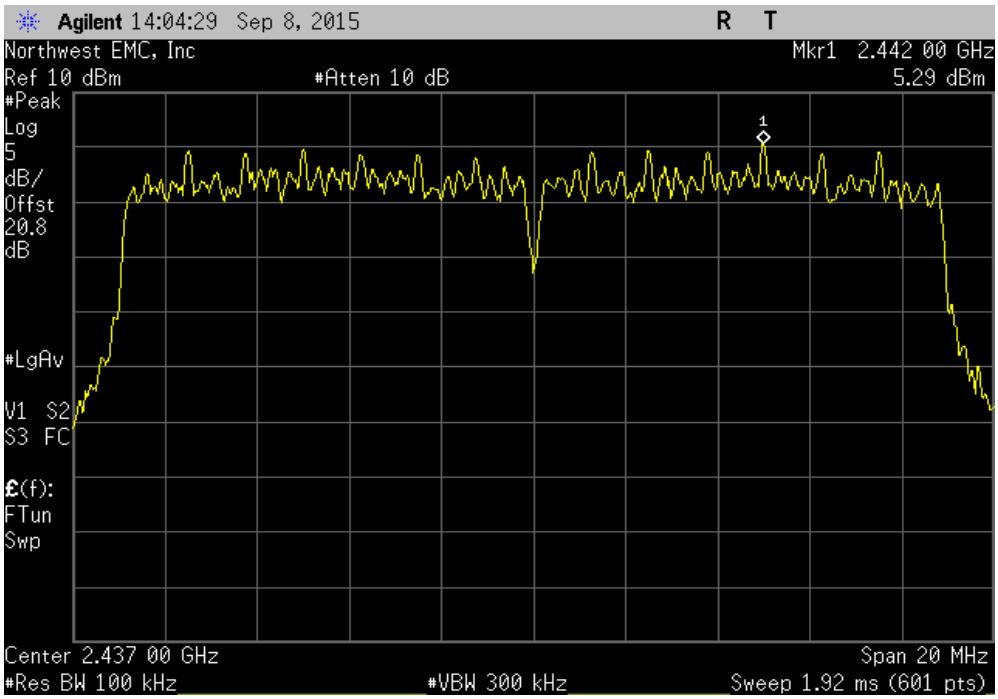
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.174	-15.2	-7.026	8	Pass



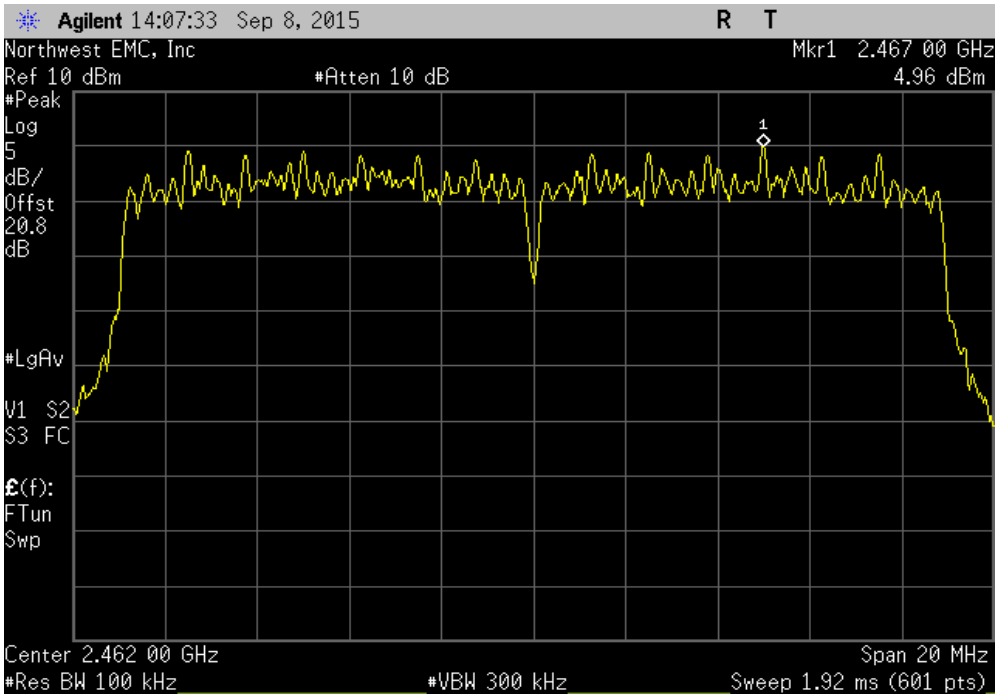
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.354	-15.2	-9.846	8	Pass



Chain C, 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	Results
		5.289	-15.2	-9.911	8	Pass



Chain C, 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	Results
		4.957	-15.2	-10.243	8	Pass



POWER SPECTRAL DENSITY

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

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

Per the procedure outlined in ANSI C63.10:2013 Section 11.10.2, the peak power spectral density was measured in a 100 kHz RBW.

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385			**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.2°C
Attendees:	None			**Humidity:**	44%
Project:	None			**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

3x3 MIMO mode, Chain ABC (Chains 0, 1, and 2).

DEVIATIONS FROM TEST STANDARD

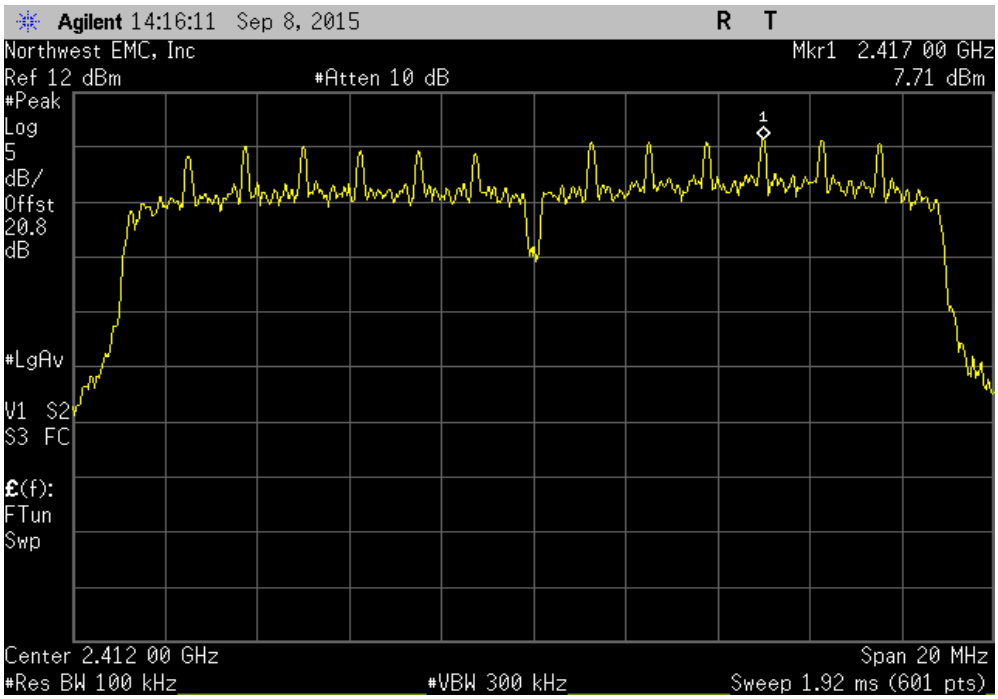
None

Configuration #	5	Signature	Jonathan Kiefer

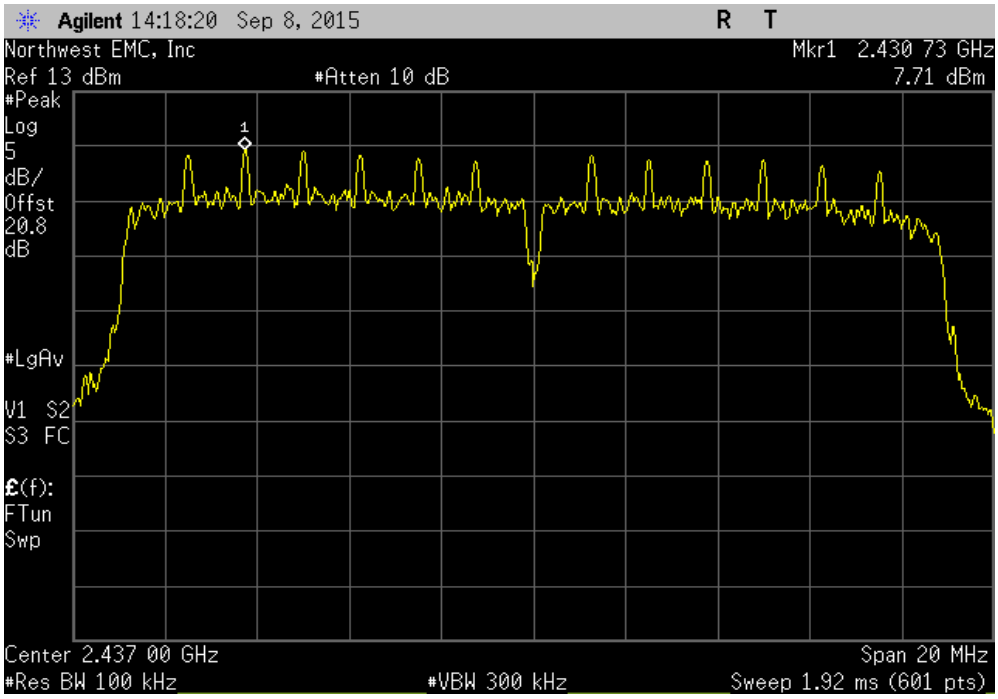
				Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
Chain A								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS16					
			Low Channel 1, 2412 MHz	7.711	-15.2	-7.489	8	Pass
			Mid Channel 6, 2437 MHz	7.712	-15.2	-7.488	8	Pass
			High Channel 11, 2462 MHz	7.696	-15.2	-7.504	8	Pass
			802.11(n) MCS23					
			Low Channel 1, 2412 MHz	4.443	-15.2	-10.757	8	Pass
			Mid Channel 6, 2437 MHz	4.34	-15.2	-10.86	8	Pass
			High Channel 11, 2462 MHz	4.092	-15.2	-11.108	8	Pass
Chain B								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS16					
			Low Channel 1, 2412 MHz	9.24	-15.2	-5.96	8	Pass
			Mid Channel 6, 2437 MHz	8.162	-15.2	-7.038	8	Pass
			High Channel 11, 2462 MHz	7.952	-15.2	-7.248	8	Pass
			802.11(n) MCS23					
			Low Channel 1, 2412 MHz	5.82	-15.2	-9.38	8	Pass
			Mid Channel 6, 2437 MHz	4.974	-15.2	-10.226	8	Pass
			High Channel 11, 2462 MHz	4.792	-15.2	-10.408	8	Pass
Chain C								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS16					
			Low Channel 1, 2412 MHz	8.773	-15.2	-6.427	8	Pass
			Mid Channel 6, 2437 MHz	8.737	-15.2	-6.463	8	Pass
			High Channel 11, 2462 MHz	8.481	-15.2	-6.719	8	Pass
			802.11(n) MCS23					
			Low Channel 1, 2412 MHz	5.316	-15.2	-9.884	8	Pass
			Mid Channel 6, 2437 MHz	5.314	-15.2	-9.886	8	Pass
			High Channel 11, 2462 MHz	5.012	-15.2	-10.188	8	Pass

				Value (dBm/3kHz)	Summing Factor (dBm)	Summed Value (dBm/3kHz)	Limit (dBm/3kHz)	Result
Power Summing Chain A								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS16					
			Low Channel 1, 2412 MHz	-7.489	4.77	-2.719	8	Pass
			Mid Channel 6, 2437 MHz	-7.488	4.77	-2.718	8	Pass
			High Channel 11, 2462 MHz	-7.504	4.77	-2.734	8	Pass
			802.11(n) MCS23					
			Low Channel 1, 2412 MHz	-10.757	4.77	-5.987	8	Pass
			Mid Channel 6, 2437 MHz	-10.86	4.77	-6.09	8	Pass
			High Channel 11, 2462 MHz	-11.108	4.77	-6.338	8	Pass
Power Summing Chain B								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS16					
			Low Channel 1, 2412 MHz	-5.96	4.77	-1.19	8	Pass
			Mid Channel 6, 2437 MHz	-7.038	4.77	-2.268	8	Pass
			High Channel 11, 2462 MHz	-7.248	4.77	-2.478	8	Pass
			802.11(n) MCS23					
			Low Channel 1, 2412 MHz	-9.38	4.77	-4.61	8	Pass
			Mid Channel 6, 2437 MHz	-10.226	4.77	-5.456	8	Pass
			High Channel 11, 2462 MHz	-10.408	4.77	-5.638	8	Pass
Power Summing Chain C								
	20 MHz							
		2400 MHz - 2483.5 MHz Band						
			802.11(n) MCS16					
			Low Channel 1, 2412 MHz	-6.427	4.77	-1.657	8	Pass
			Mid Channel 6, 2437 MHz	-6.463	4.77	-1.693	8	Pass
			High Channel 11, 2462 MHz	-6.719	4.77	-1.949	8	Pass
			802.11(n) MCS23					
			Low Channel 1, 2412 MHz	-9.884	4.77	-5.114	8	Pass
			Mid Channel 6, 2437 MHz	-9.886	4.77	-5.116	8	Pass
			High Channel 11, 2462 MHz	-10.188	4.77	-5.418	8	Pass

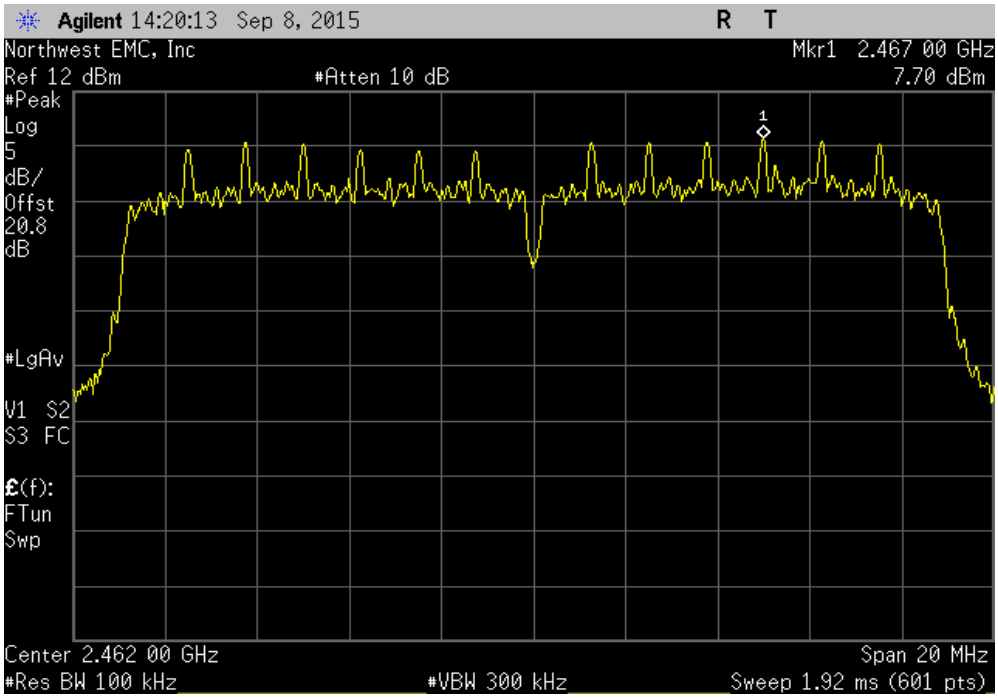
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.711	-15.2	-7.489	8	Pass



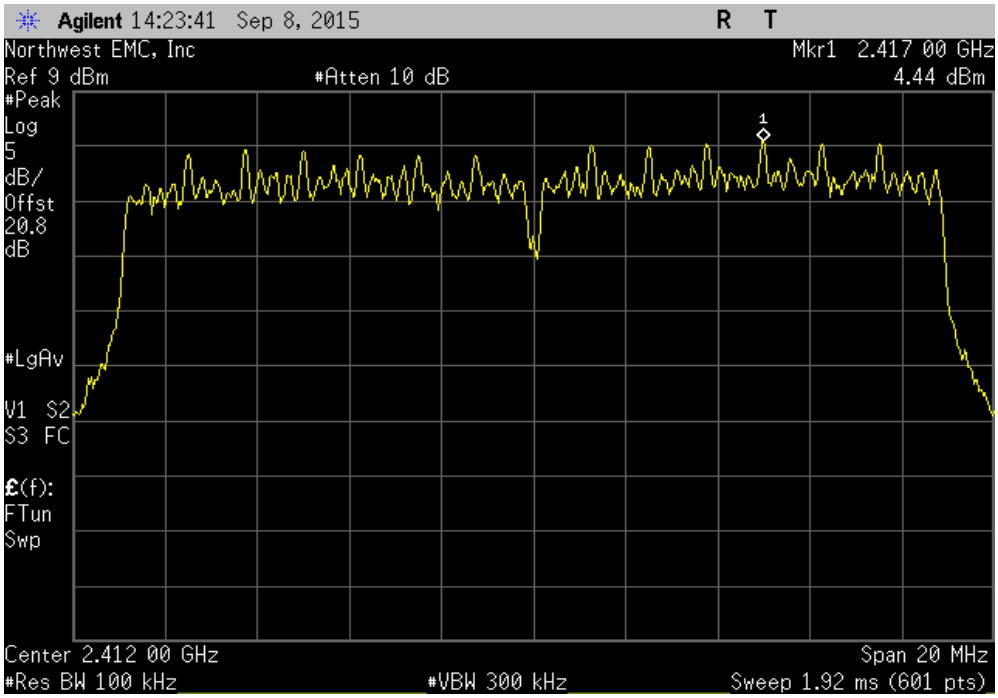
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.712	-15.2	-7.488	8	Pass



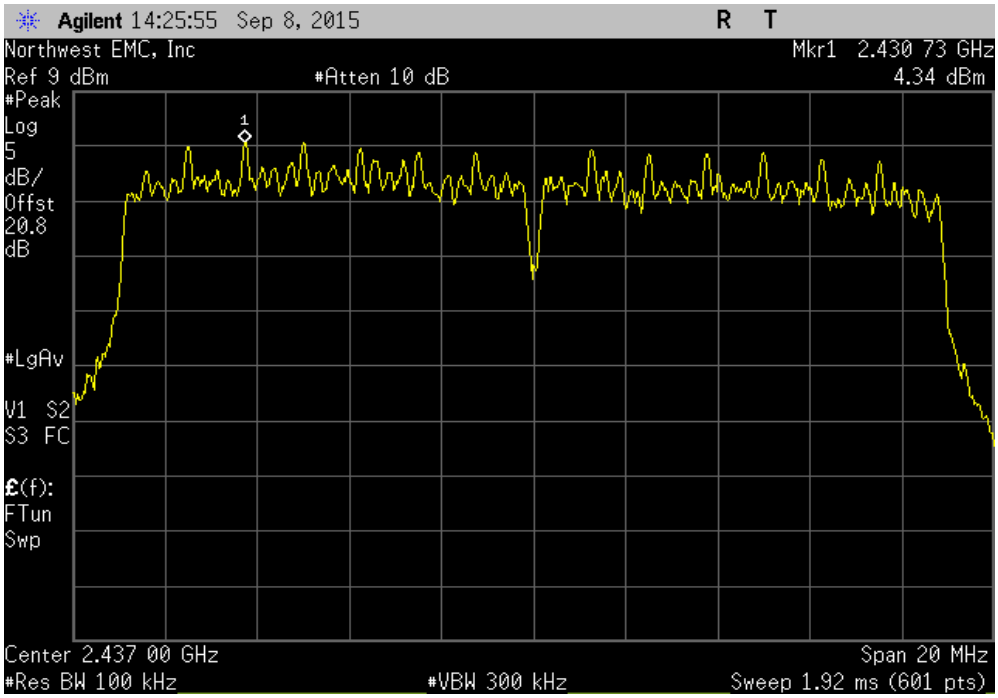
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.696	-15.2	-7.504	8	Pass



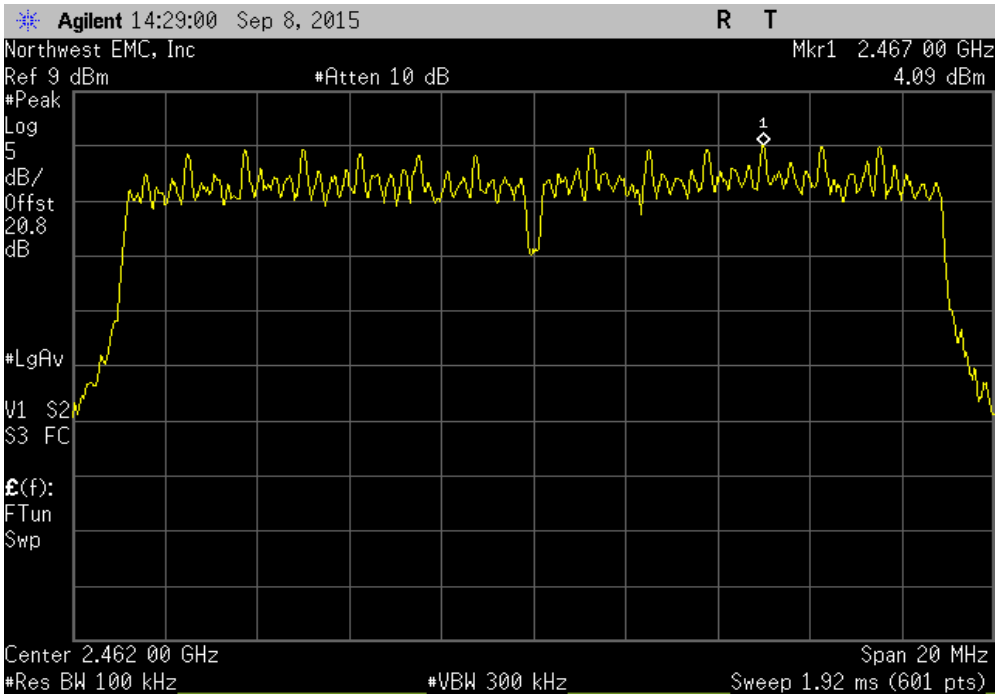
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.443	-15.2	-10.757	8	Pass



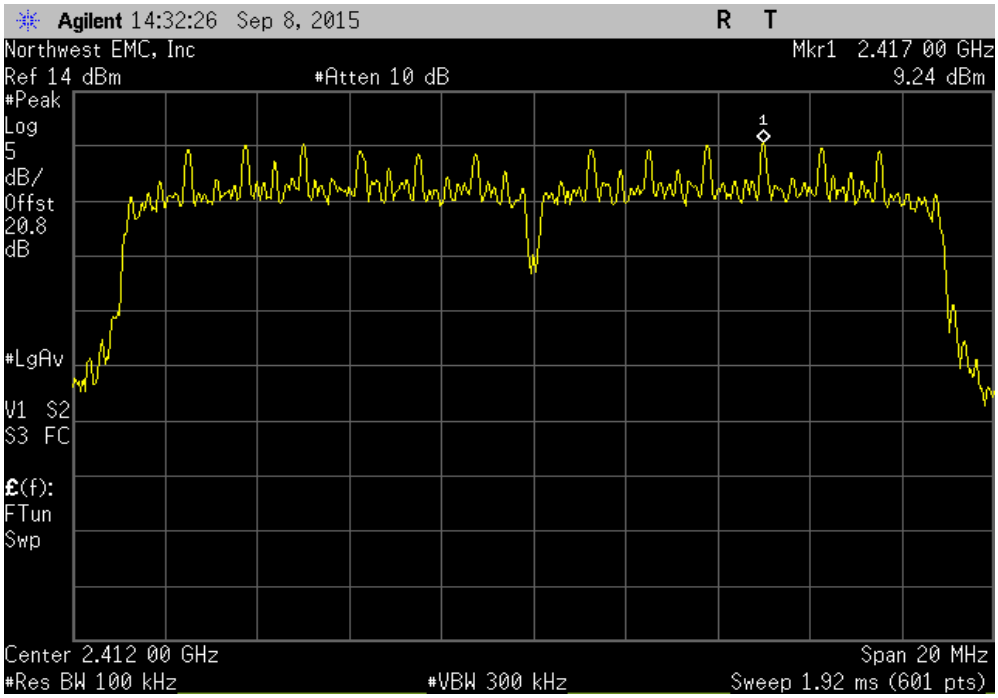
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.34	-15.2	-10.86	8	Pass



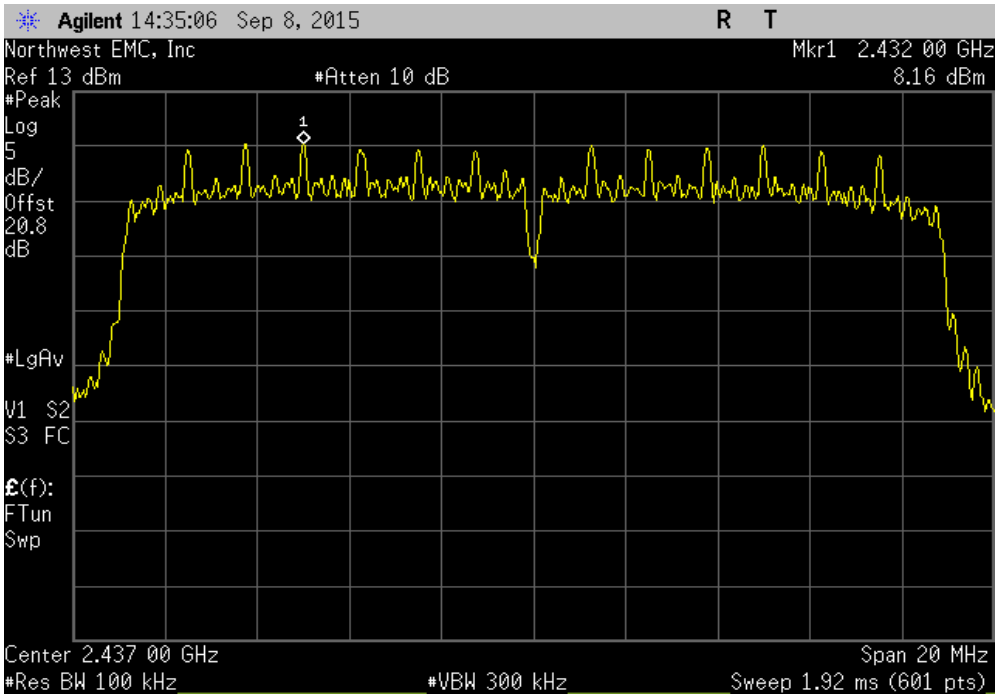
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.092	-15.2	-11.108	8	Pass



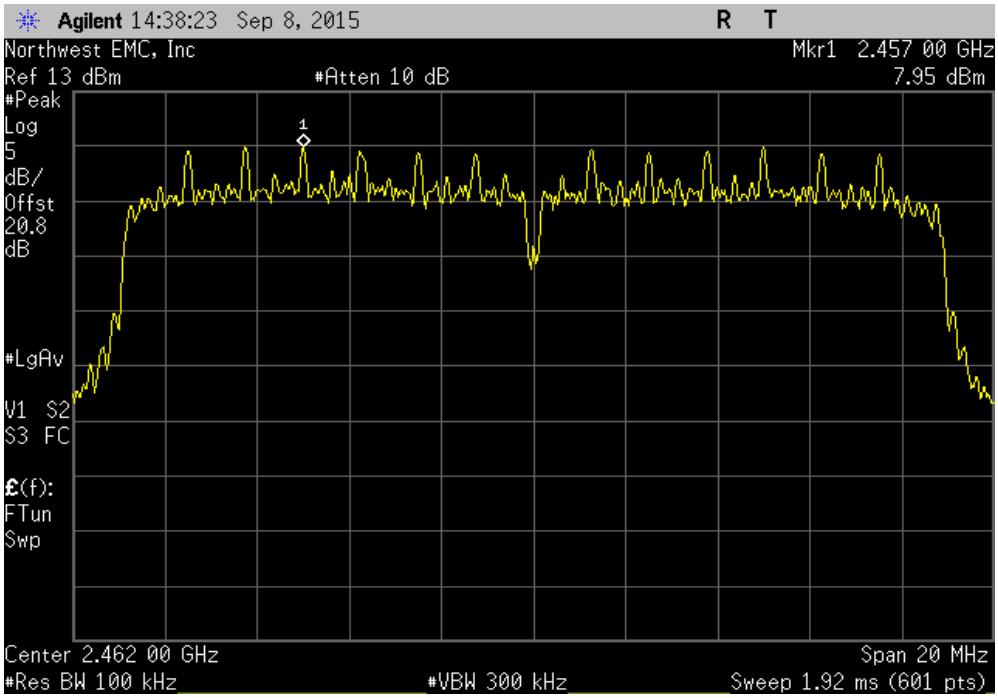
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.24	-15.2	-5.96	8	Pass



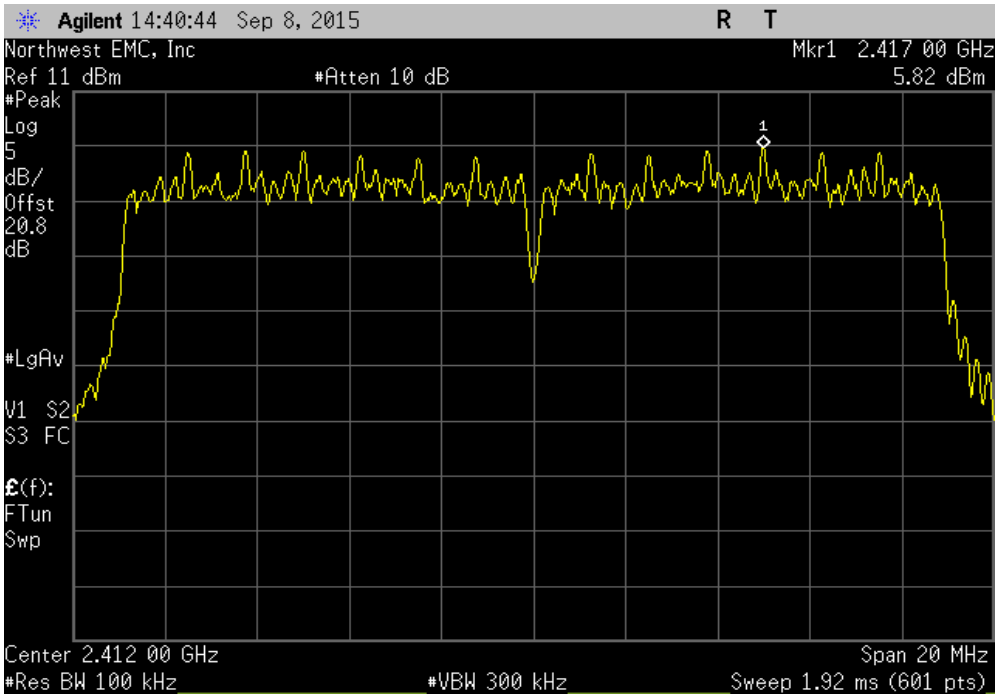
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.162	-15.2	-7.038	8	Pass



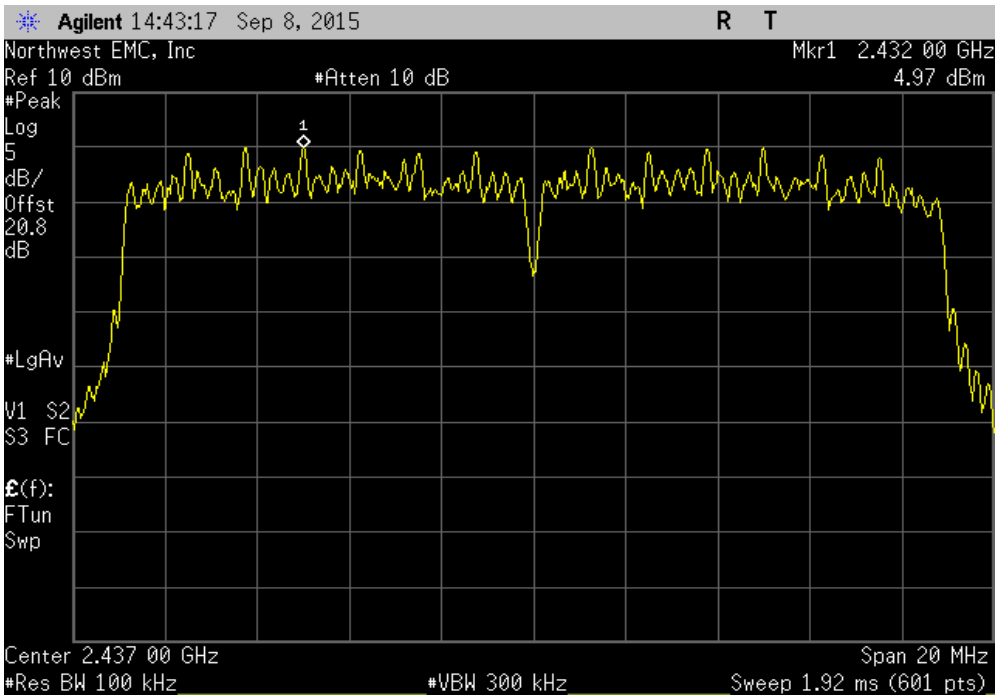
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.952	-15.2	-7.248	8	Pass



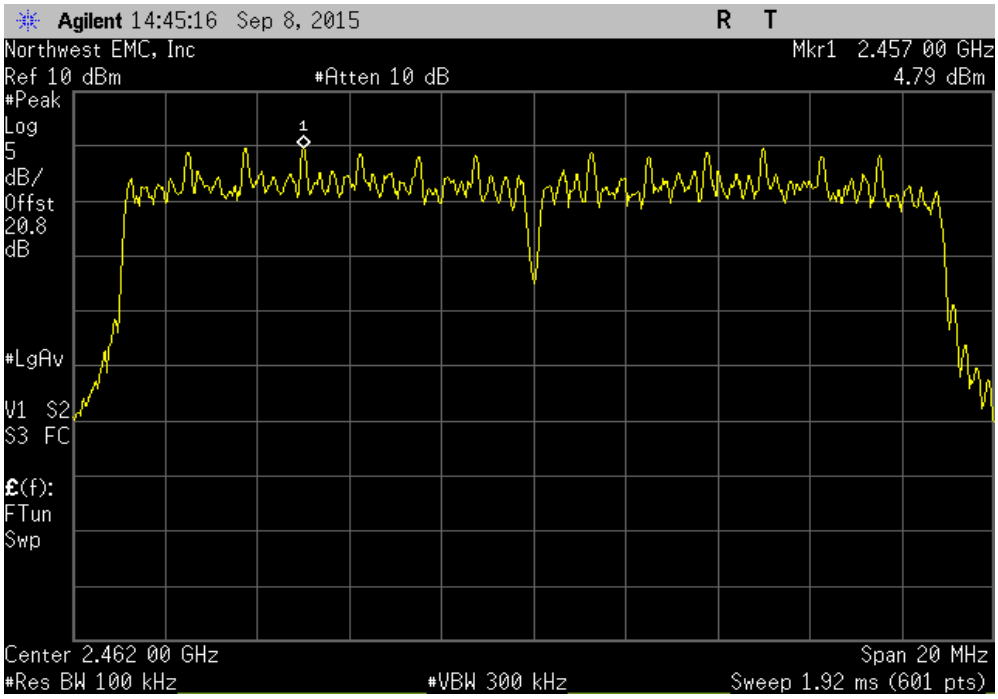
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.82	-15.2	-9.38	8	Pass



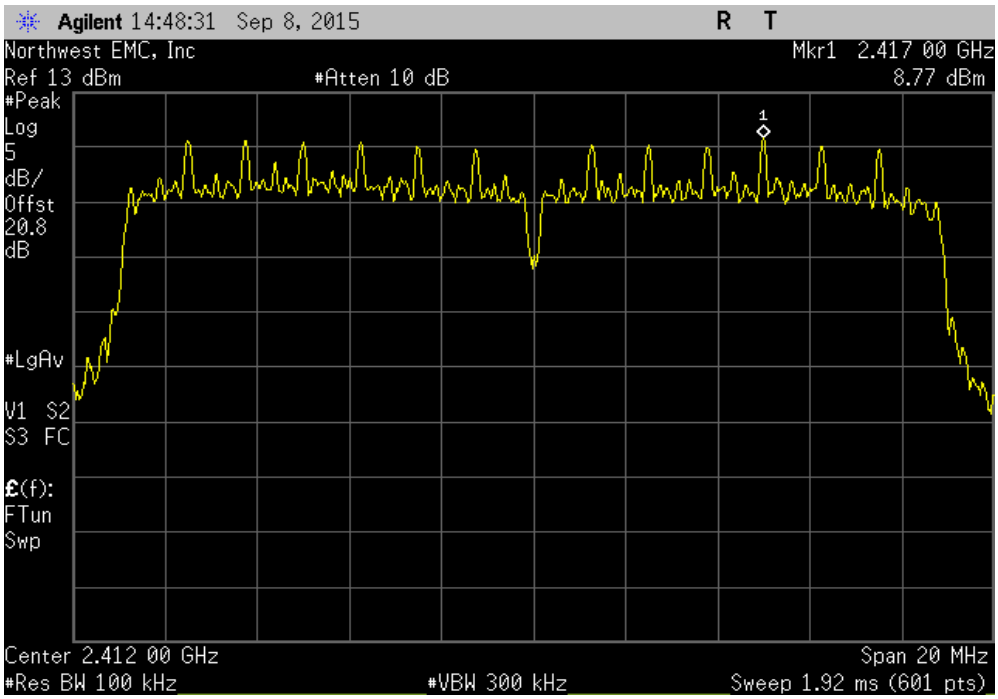
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.974	-15.2	-10.226	8	Pass



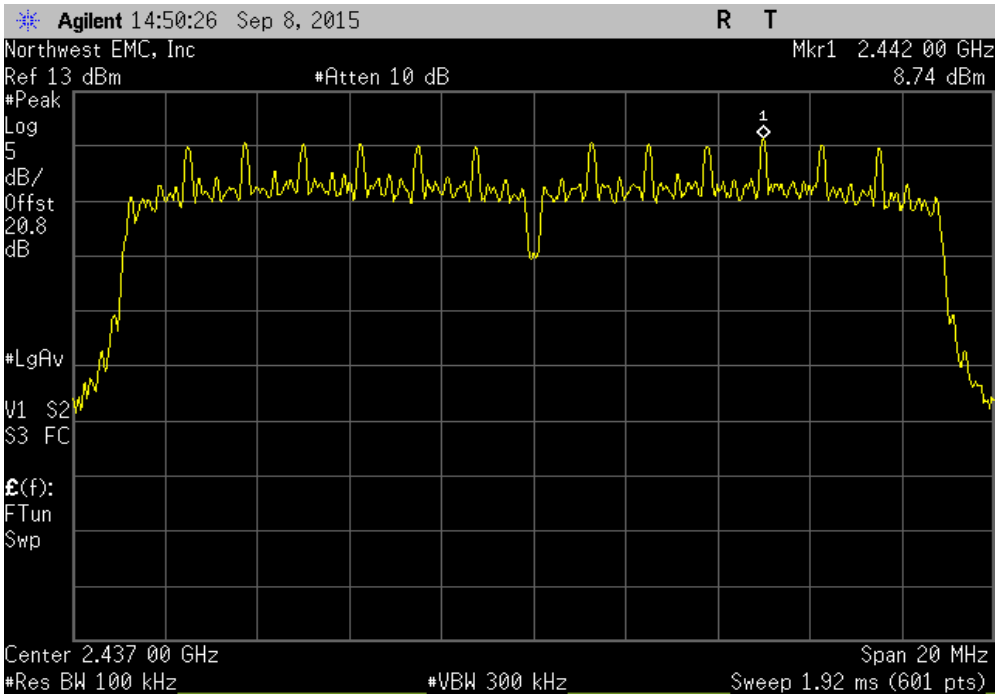
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.792	-15.2	-10.408	8	Pass



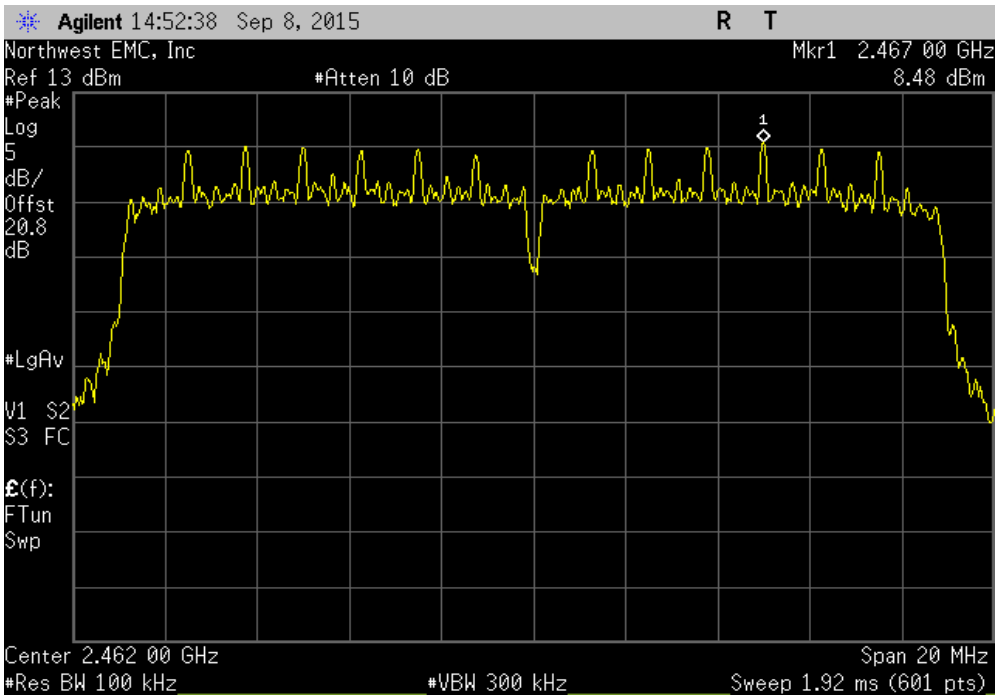
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.773	-15.2	-6.427	8	Pass



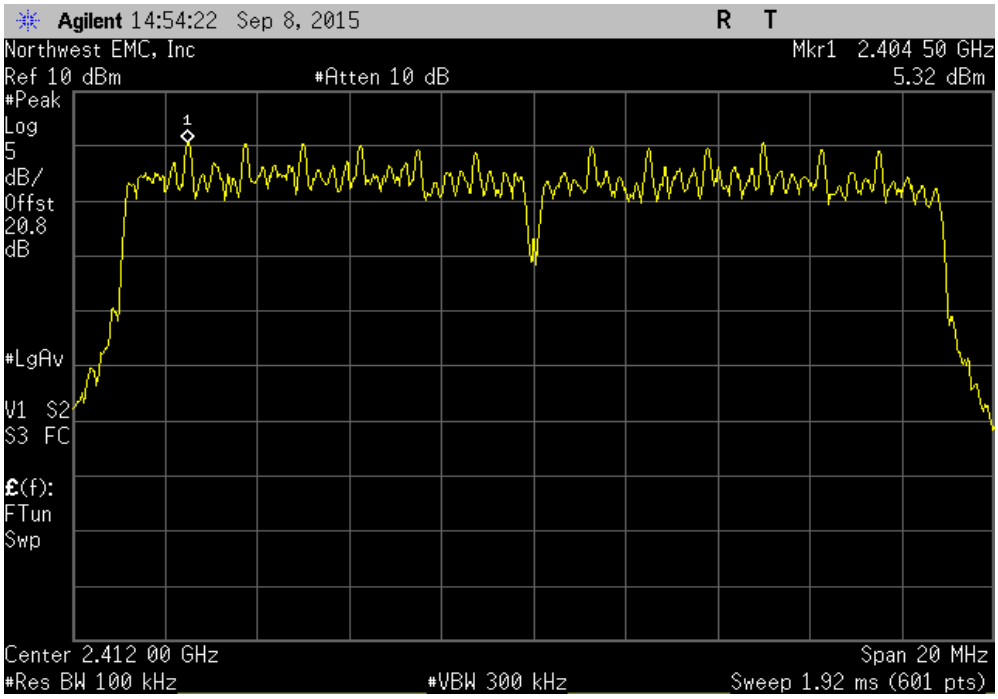
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.737	-15.2	-6.463	8	Pass



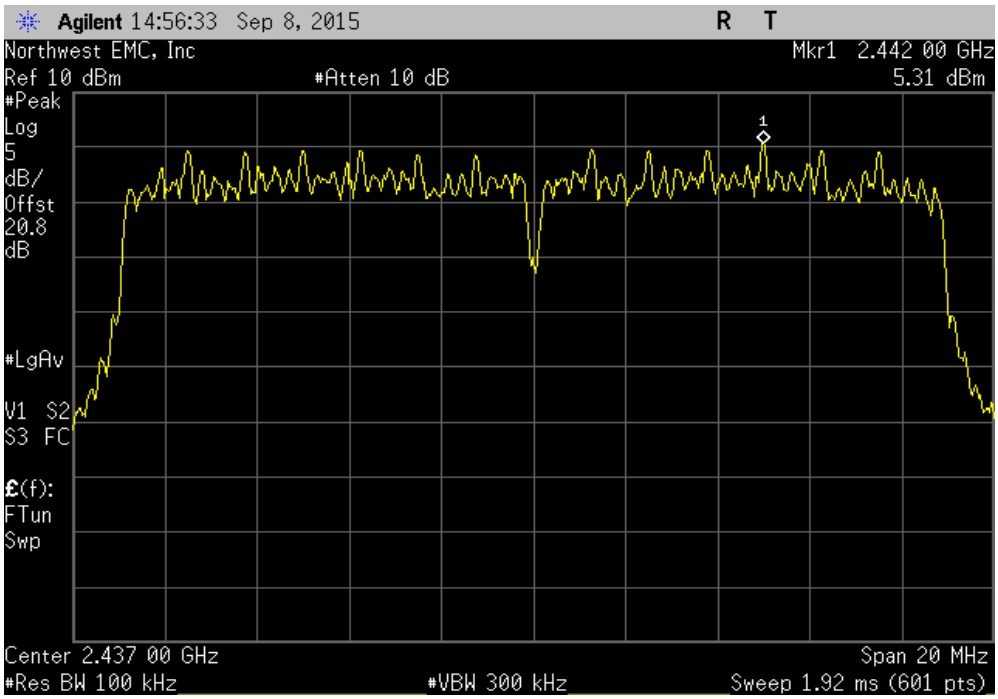
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS16, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.481	-15.2	-6.719	8	Pass



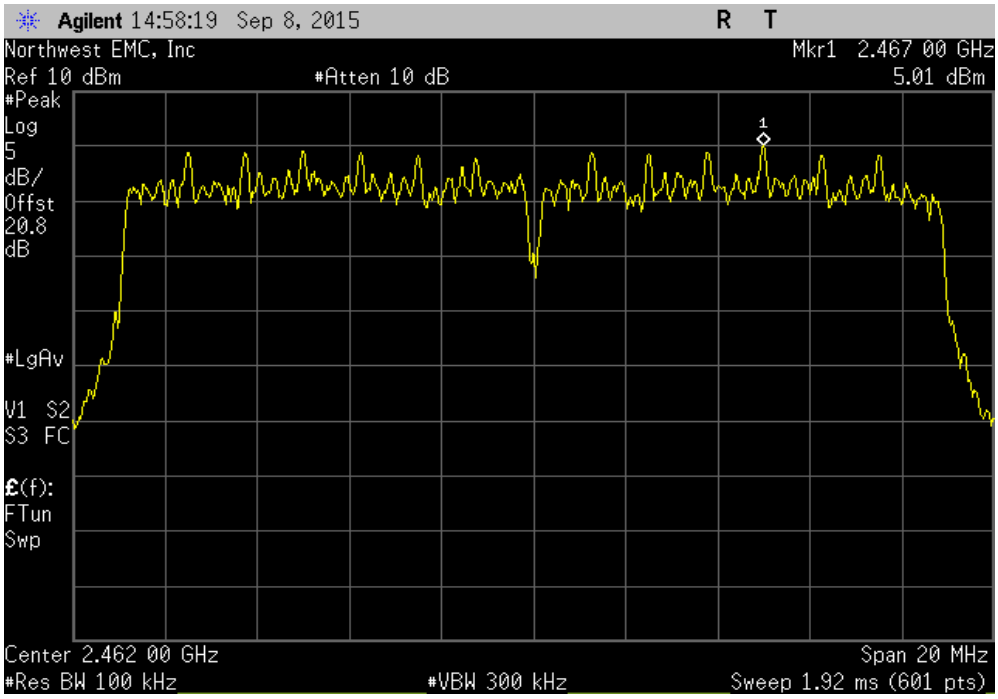
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.316	-15.2	-9.884	8	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.314	-15.2	-9.886	8	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS23, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.012	-15.2	-10.188	8	Pass



POWER SPECTRAL DENSITY

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Block - DC	Fairview Microwave	SD3379	AMM	2/27/2015	12
Attenuator	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Generator - Signal	Agilent	N5173B	TIW	7/15/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/23/2015	12

TEST DESCRIPTION

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

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

Per the procedure outlined in ANSI C63.10:2013 Section 11.10.2, the peak power spectral density was measured in a 100 kHz RBW.

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

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)	**Work Order:**	VDEI0009
Serial Number:	70AF02717-B385	**Date:**	09/08/15
Customer:	WatchGuard Technologies, Inc.	**Temperature:**	24.2°C
Attendees:	None	**Humidity:**	44%
Project:	None	**Barometric Pres.:**	1015 mbar
Tested by:	Jonathan Kiefer	**Power:** 110VAC/60Hz	**Job Site:** TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

Reference RF power table for channel power setting. Chains A, B, and C correspond to Chain 0, 1, and 2 respectively.

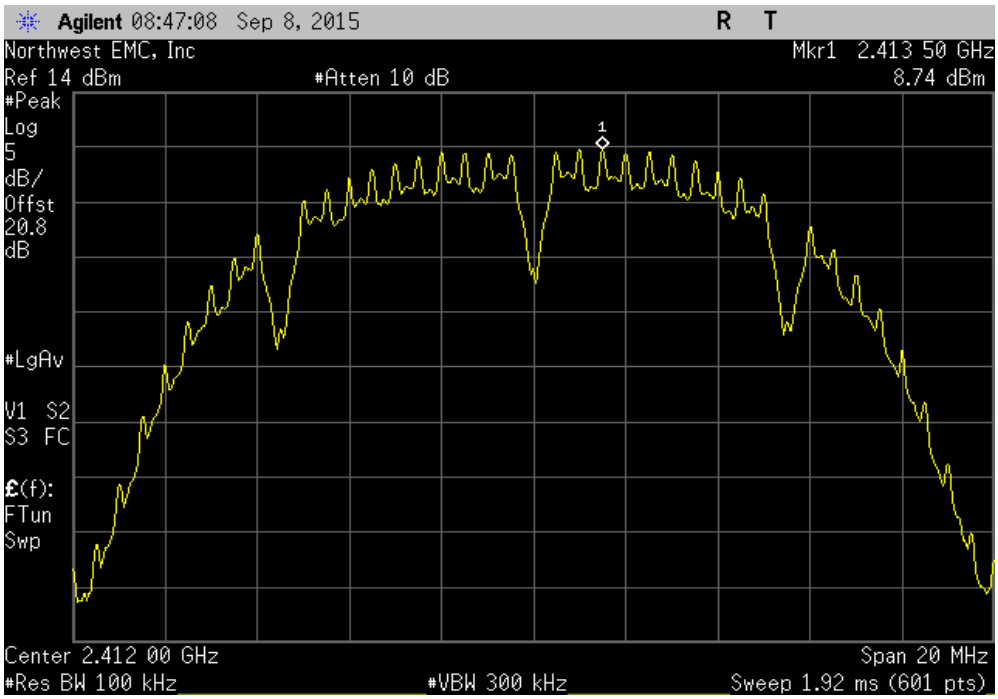
DEVIATIONS FROM TEST STANDARD

None

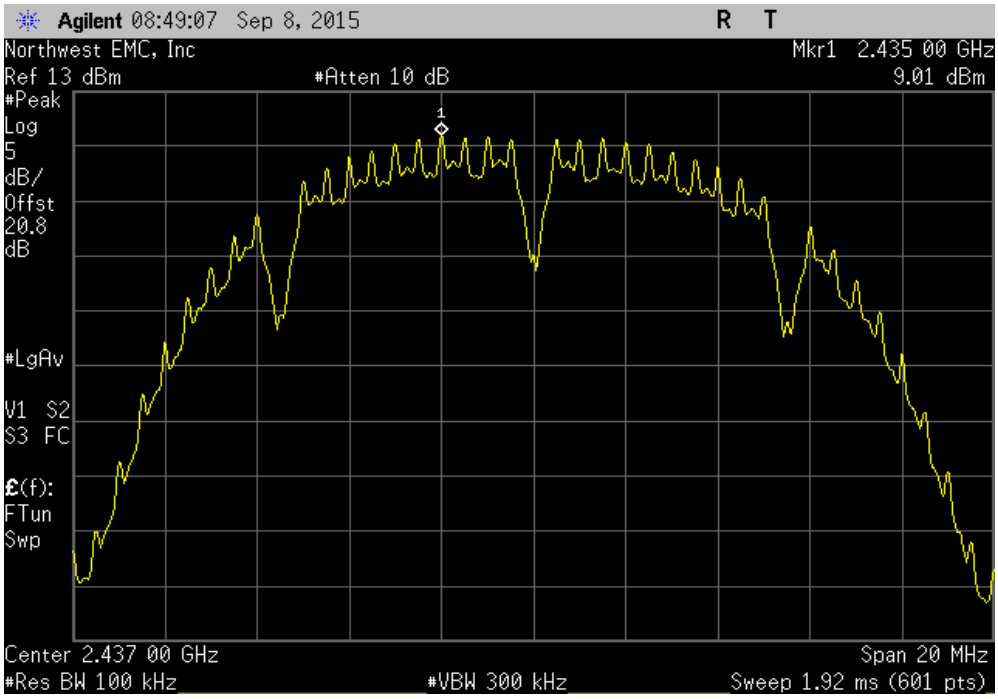
Configuration #	5	Signature: Jonathan Kiefer

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	8.74	-15.2	-6.46	8	Pass
Mid Channel 6, 2437 MHz	9.006	-15.2	-6.194	8	Pass
High Channel 11, 2462 MHz	8.884	-15.2	-6.316	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	9.283	-15.2	-5.917	8	Pass
Mid Channel 6, 2437 MHz	9.18	-15.2	-6.02	8	Pass
High Channel 11, 2462 MHz	9.145	-15.2	-6.055	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	7.564	-15.2	-7.636	8	Pass
Mid Channel 6, 2437 MHz	7.694	-15.2	-7.506	8	Pass
High Channel 11, 2462 MHz	7.424	-15.2	-7.776	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	7.552	-15.2	-7.648	8	Pass
Mid Channel 6, 2437 MHz	7.498	-15.2	-7.702	8	Pass
High Channel 11, 2462 MHz	7.189	-15.2	-8.011	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	5.253	-15.2	-9.947	8	Pass
Mid Channel 6, 2437 MHz	5.187	-15.2	-10.013	8	Pass
High Channel 11, 2462 MHz	5.007	-15.2	-10.193	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	7.501	-15.2	-7.699	8	Pass
Mid Channel 6, 2437 MHz	7.522	-15.2	-7.678	8	Pass
High Channel 11, 2462 MHz	7.409	-15.2	-7.791	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	5.278	-15.2	-9.922	8	Pass
Mid Channel 6, 2437 MHz	5.214	-15.2	-9.986	8	Pass
High Channel 11, 2462 MHz	5.001	-15.2	-10.199	8	Pass
Chain B					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	10.46	-15.2	-4.74	8	Pass
Mid Channel 6, 2437 MHz	10.007	-15.2	-5.193	8	Pass
High Channel 11, 2462 MHz	9.516	-15.2	-5.684	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	10.524	-15.2	-4.676	8	Pass
Mid Channel 6, 2437 MHz	10.207	-15.2	-4.993	8	Pass
High Channel 11, 2462 MHz	9.839	-15.2	-5.361	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	8.984	-15.2	-6.216	8	Pass
Mid Channel 6, 2437 MHz	7.944	-15.2	-7.256	8	Pass
High Channel 11, 2462 MHz	6.24	-15.2	-8.96	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	8.812	-15.2	-6.388	8	Pass
Mid Channel 6, 2437 MHz	7.795	-15.2	-7.405	8	Pass
High Channel 11, 2462 MHz	7.978	-15.2	-7.222	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	6.673	-15.2	-8.527	8	Pass
Mid Channel 6, 2437 MHz	5.93	-15.2	-9.27	8	Pass
High Channel 11, 2462 MHz	5.787	-15.2	-9.413	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	8.8	-15.2	-6.4	8	Pass
Mid Channel 6, 2437 MHz	7.903	-15.2	-7.297	8	Pass
High Channel 11, 2462 MHz	7.946	-15.2	-7.254	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	6.672	-15.2	-8.528	8	Pass
Mid Channel 6, 2437 MHz	5.908	-15.2	-9.292	8	Pass
High Channel 11, 2462 MHz	5.809	-15.2	-9.391	8	Pass
Chain C					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	9.8	-15.2	-5.4	8	Pass
Mid Channel 6, 2437 MHz	9.832	-15.2	-5.368	8	Pass
High Channel 11, 2462 MHz	9.439	-15.2	-5.761	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	9.853	-15.2	-5.347	8	Pass
Mid Channel 6, 2437 MHz	9.737	-15.2	-5.463	8	Pass
High Channel 11, 2462 MHz	9.892	-15.2	-5.308	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	8.568	-15.2	-6.632	8	Pass
Mid Channel 6, 2437 MHz	8.162	-15.2	-7.038	8	Pass
High Channel 11, 2462 MHz	7.951	-15.2	-7.249	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	8.497	-15.2	-6.703	8	Pass
Mid Channel 6, 2437 MHz	8.008	-15.2	-7.192	8	Pass
High Channel 11, 2462 MHz	7.822	-15.2	-7.378	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	6.172	-15.2	-9.028	8	Pass
Mid Channel 6, 2437 MHz	5.658	-15.2	-9.542	8	Pass
High Channel 11, 2462 MHz	5.486	-15.2	-9.714	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	8.517	-15.2	-6.683	8	Pass
Mid Channel 6, 2437 MHz	8.111	-15.2	-7.089	8	Pass
High Channel 11, 2462 MHz	7.888	-15.2	-7.312	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	6.121	-15.2	-9.079	8	Pass
Mid Channel 6, 2437 MHz	5.716	-15.2	-9.484	8	Pass
High Channel 11, 2462 MHz	5.579	-15.2	-9.621	8	Pass

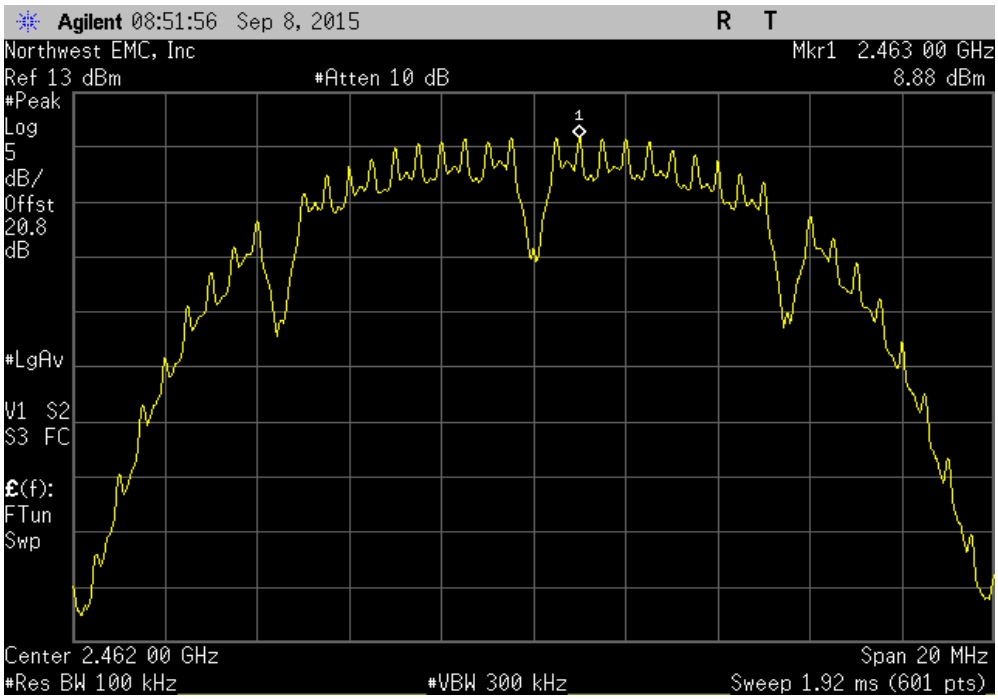
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.74	-15.2	-6.46	8	Pass



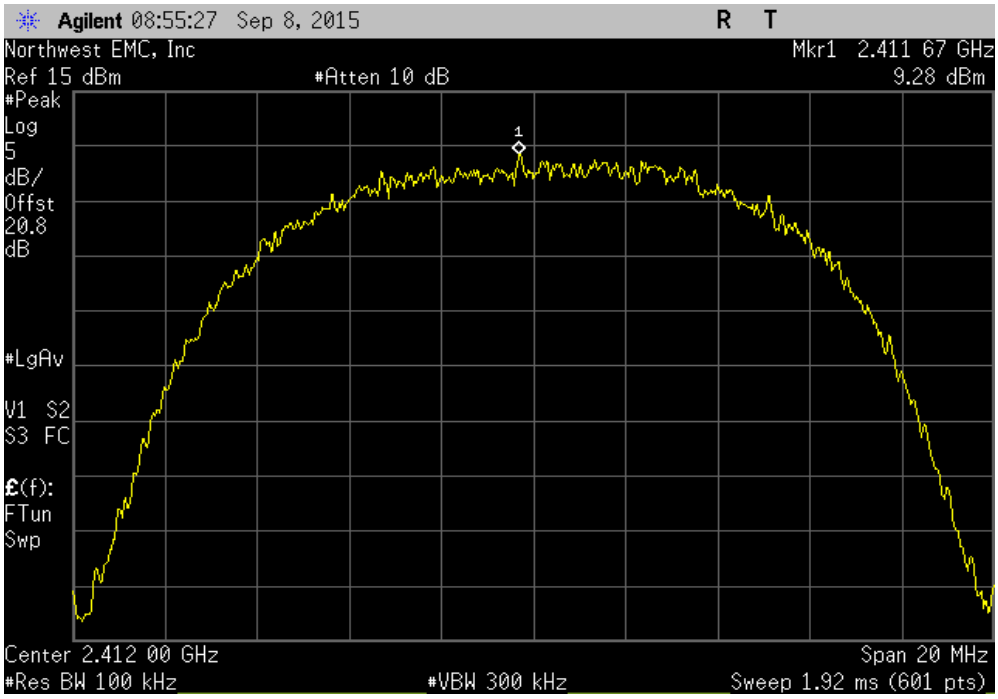
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.006	-15.2	-6.194	8	Pass



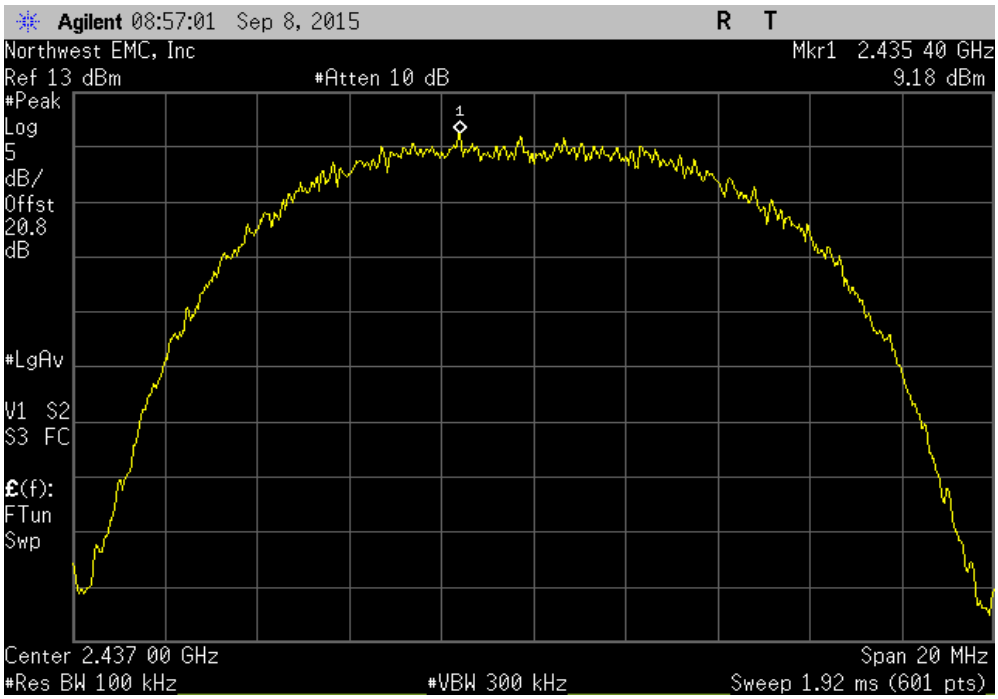
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.884	-15.2	-6.316	8	Pass



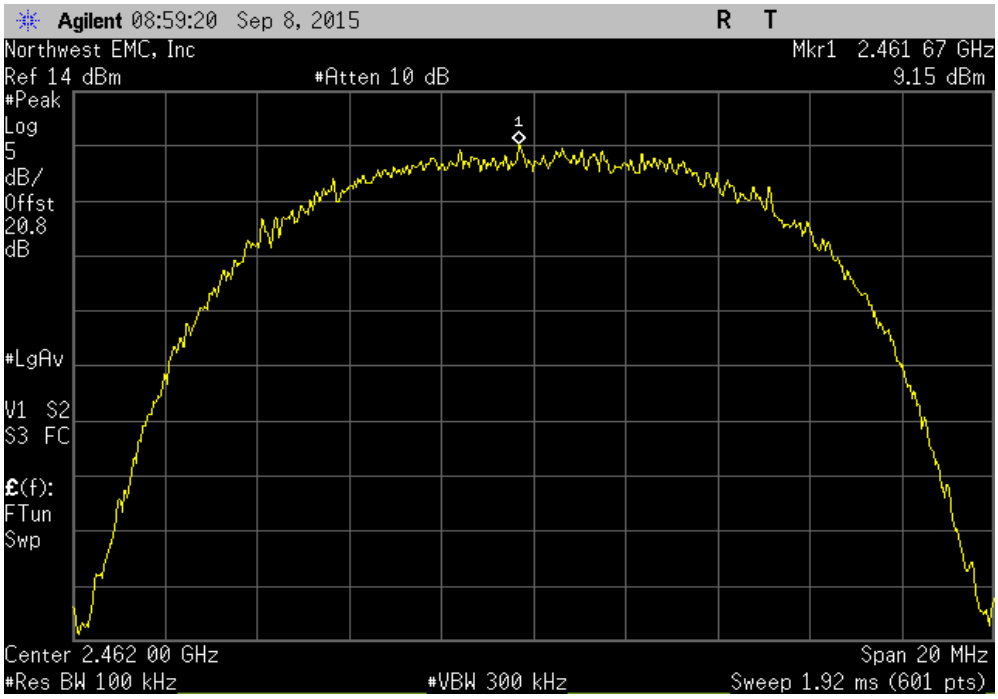
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.283	-15.2	-5.917	8	Pass



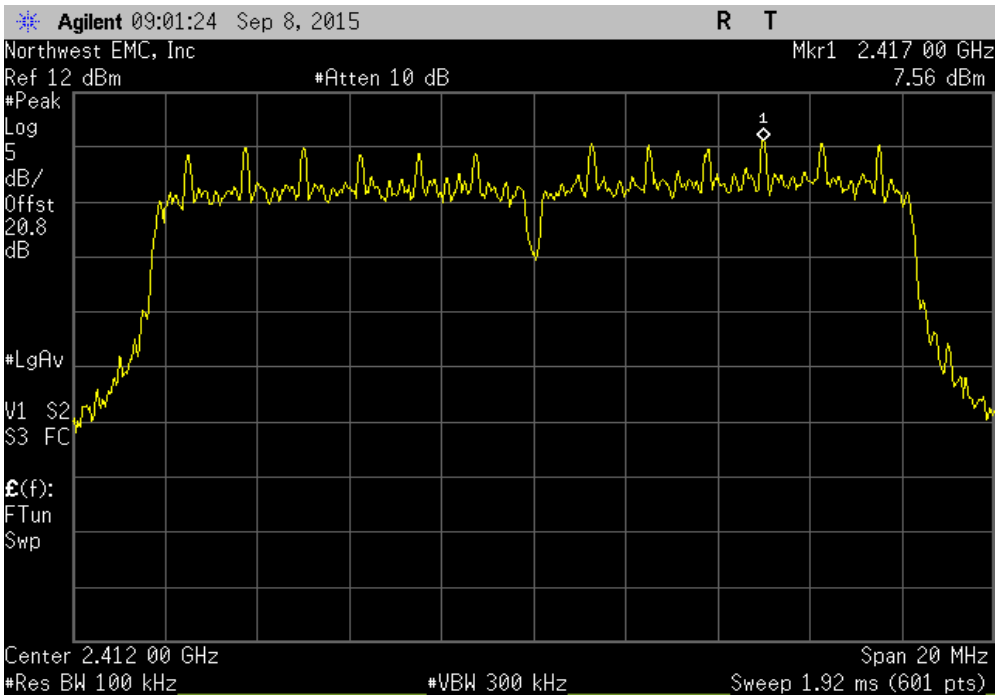
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.18	-15.2	-6.02	8	Pass



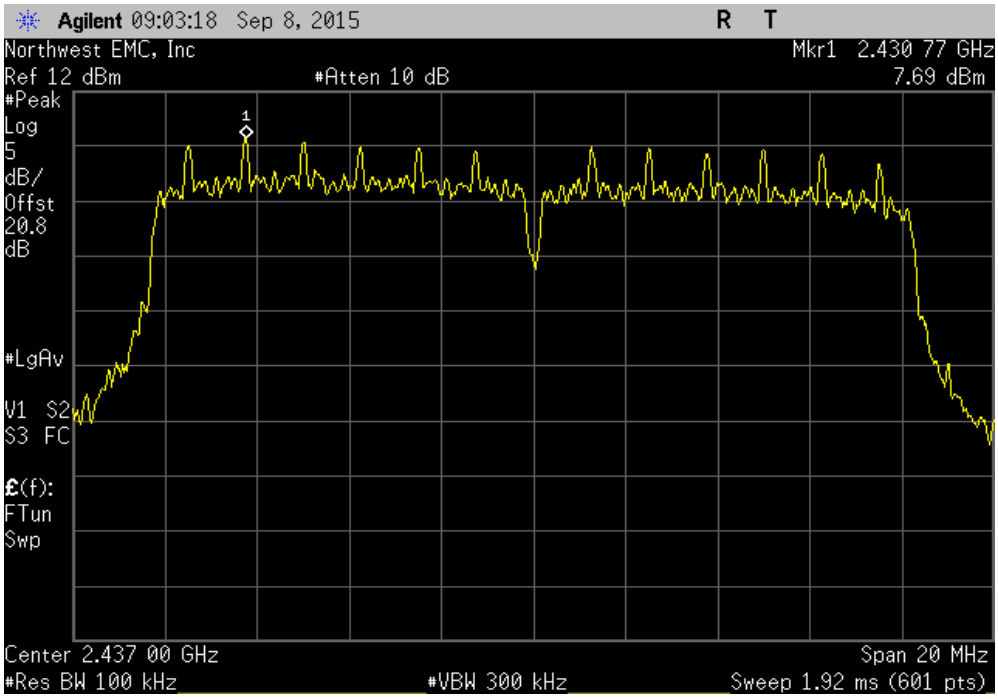
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.145	-15.2	-6.055	8	Pass



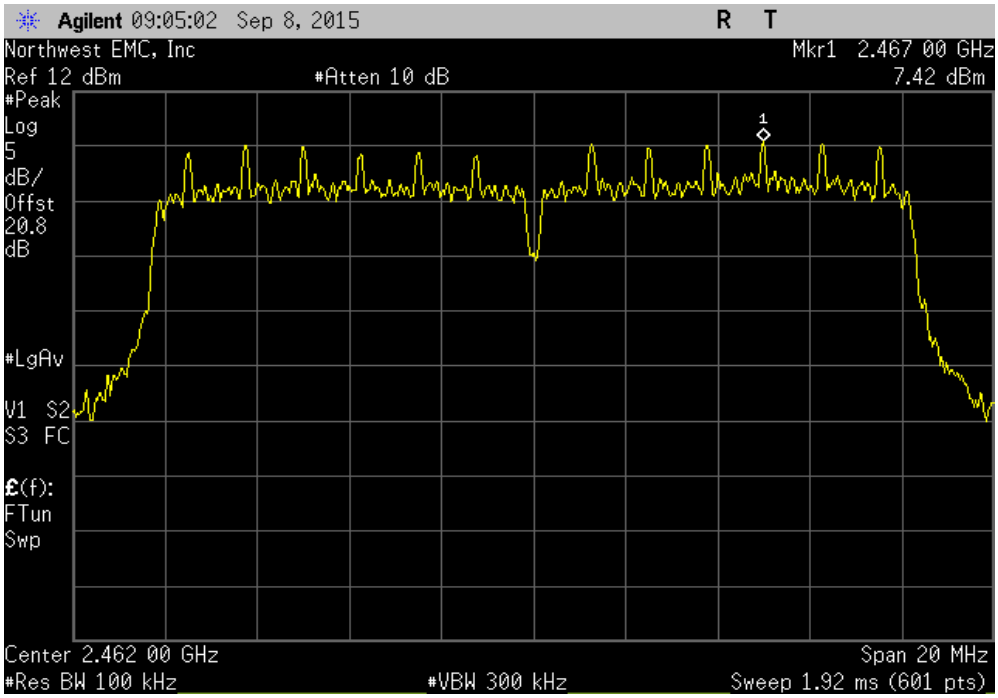
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.564	-15.2	-7.636	8	Pass



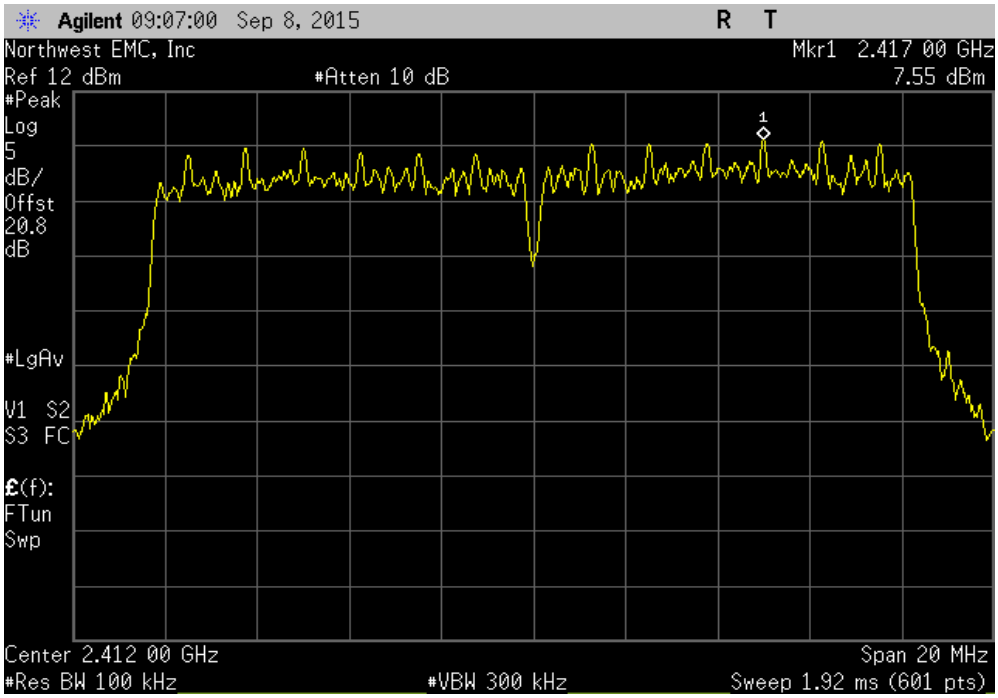
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.694	-15.2	-7.506	8	Pass



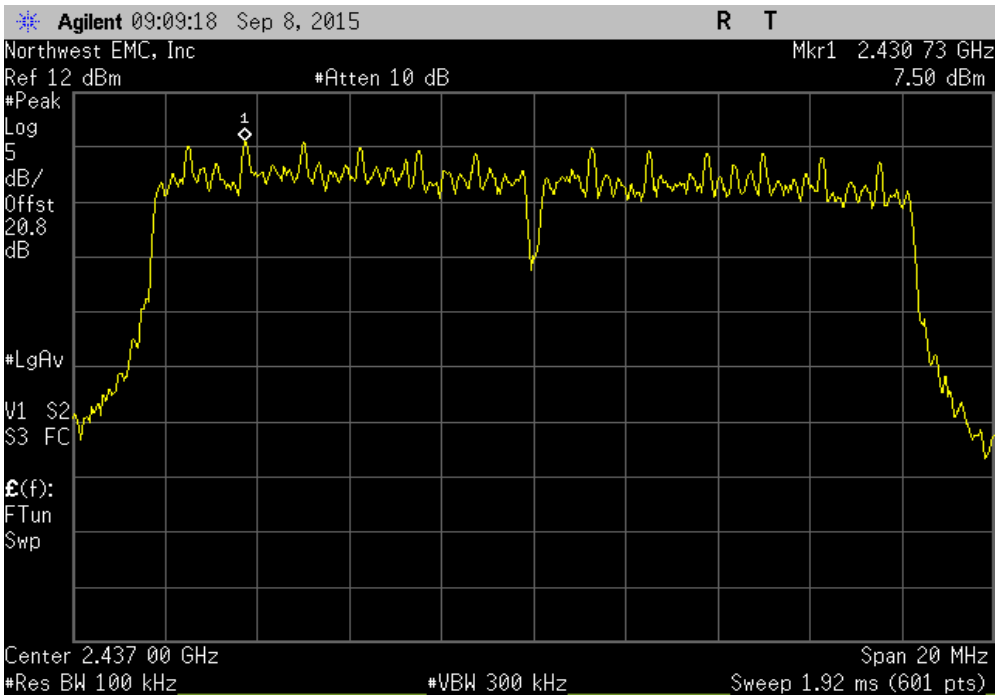
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.424	-15.2	-7.776	8	Pass



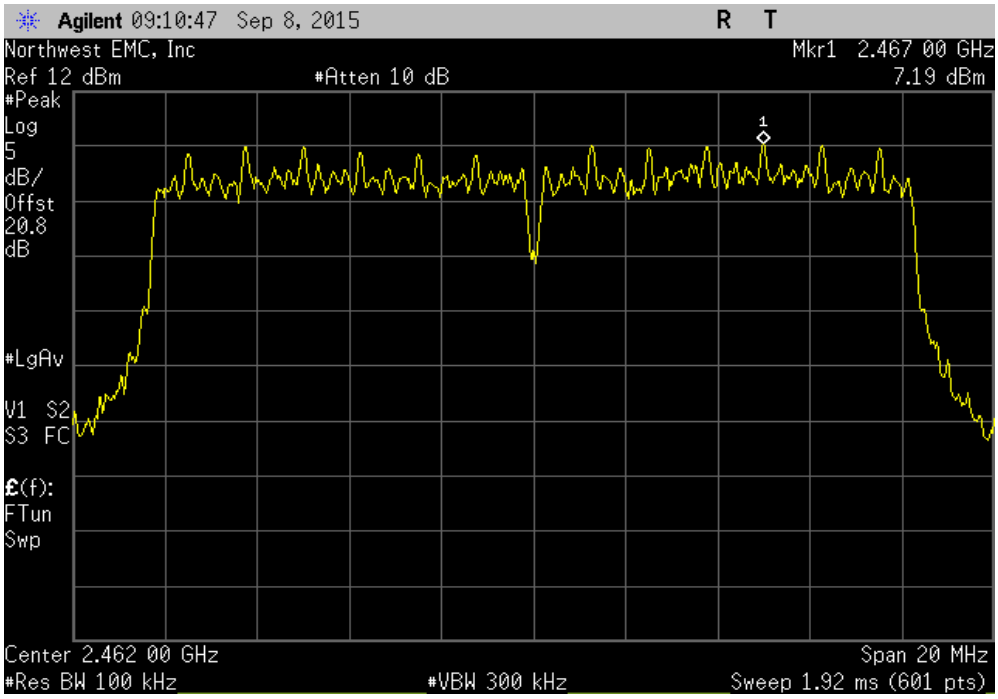
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.552	-15.2	-7.648	8	Pass



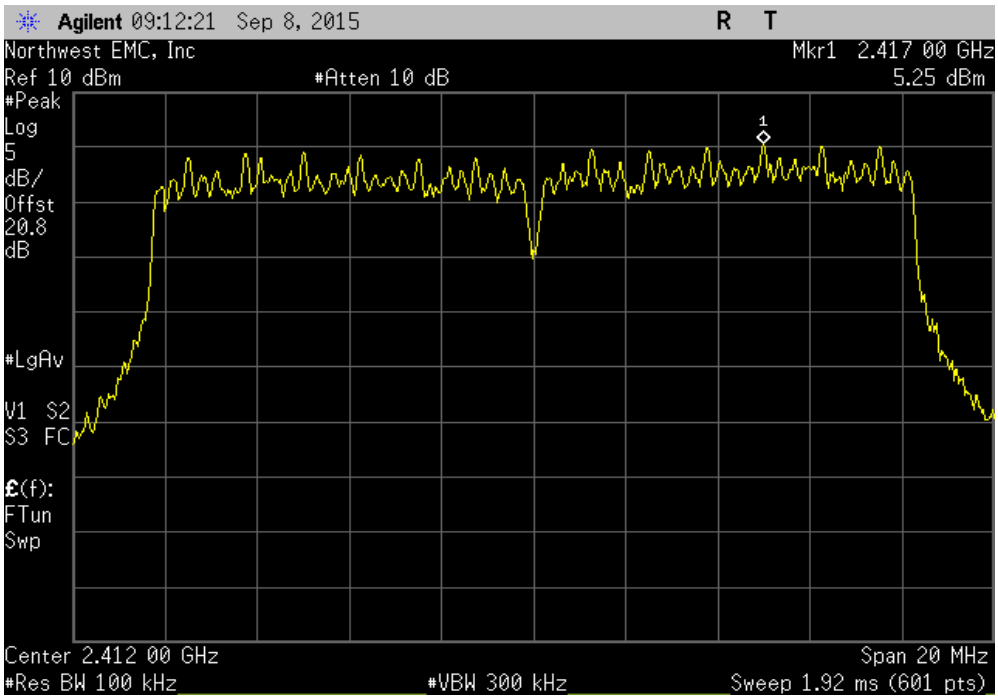
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.498	-15.2	-7.702	8	Pass



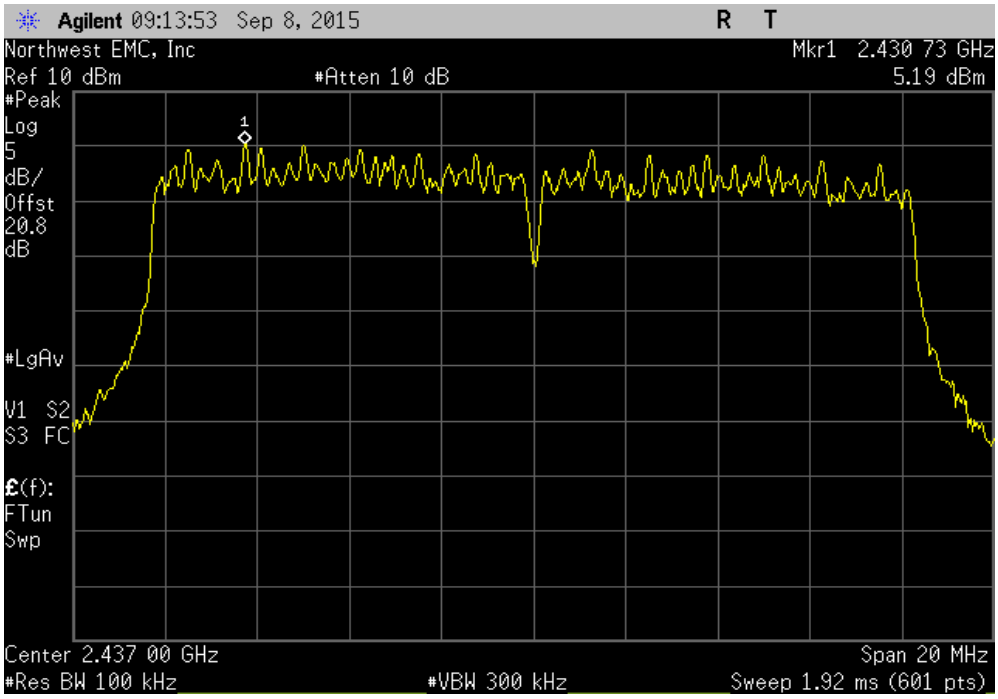
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.189	-15.2	-8.011	8	Pass



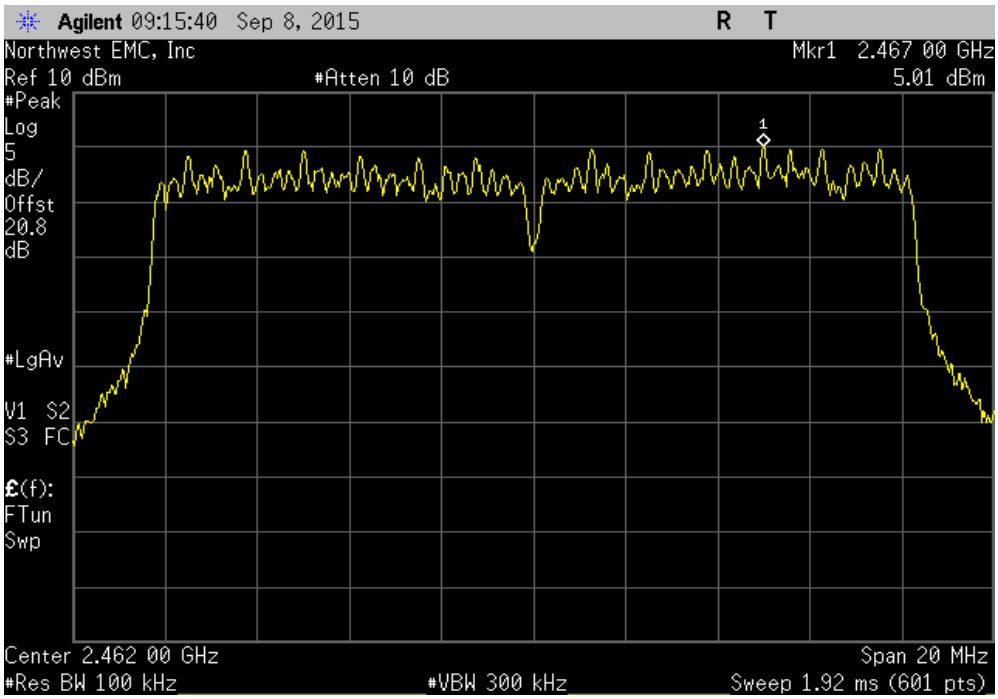
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.253	-15.2	-9.947	8	Pass



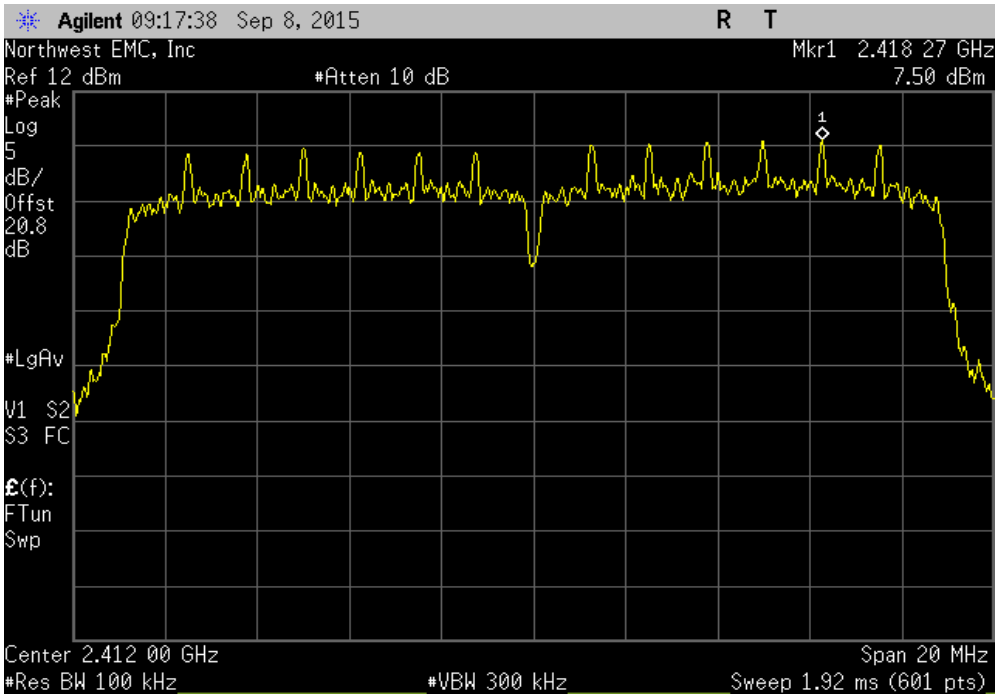
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.187	-15.2	-10.013	8	Pass



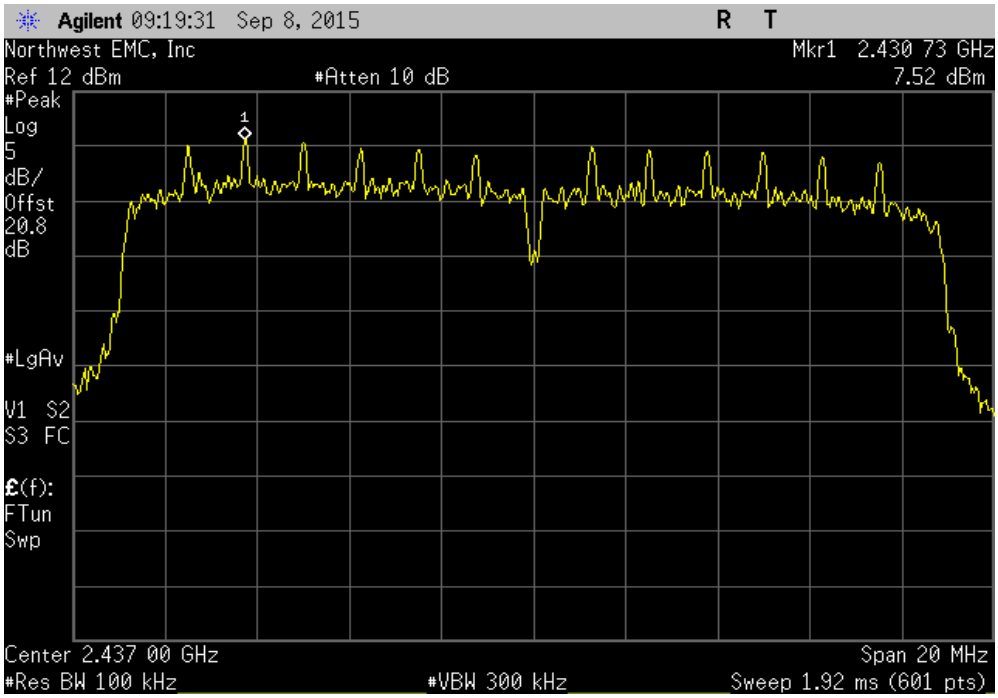
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.007	-15.2	-10.193	8	Pass



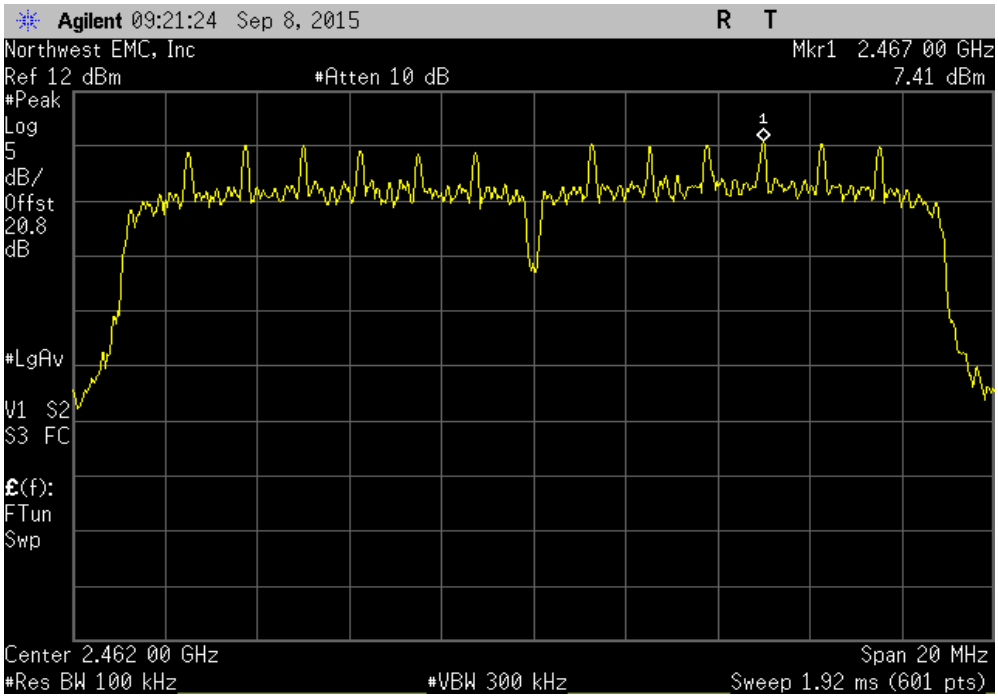
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.501	-15.2	-7.699	8	Pass



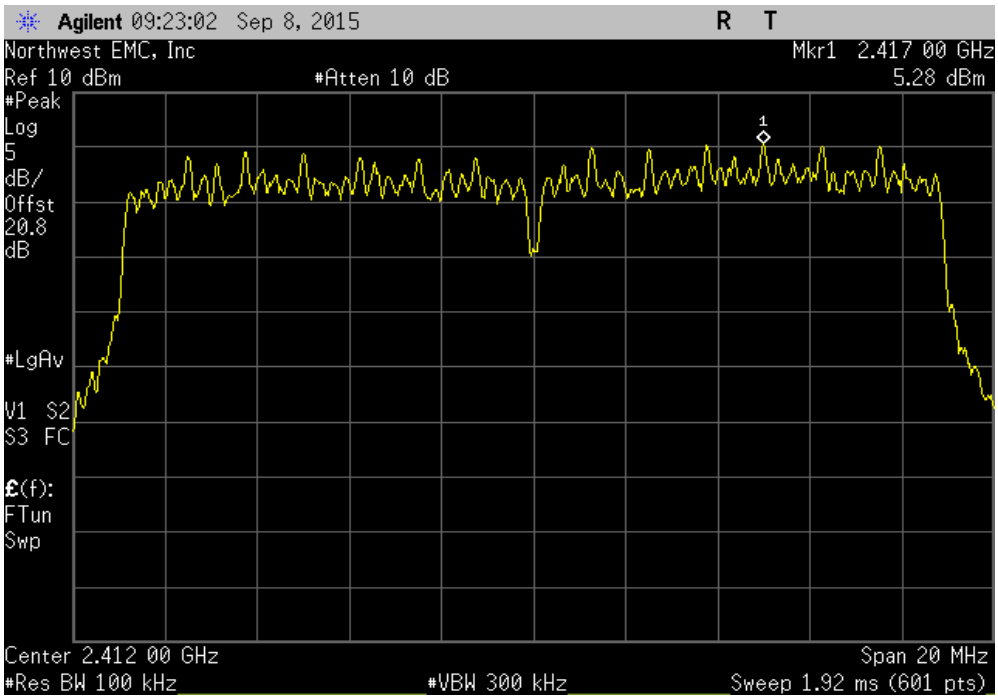
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.522	-15.2	-7.678	8	Pass



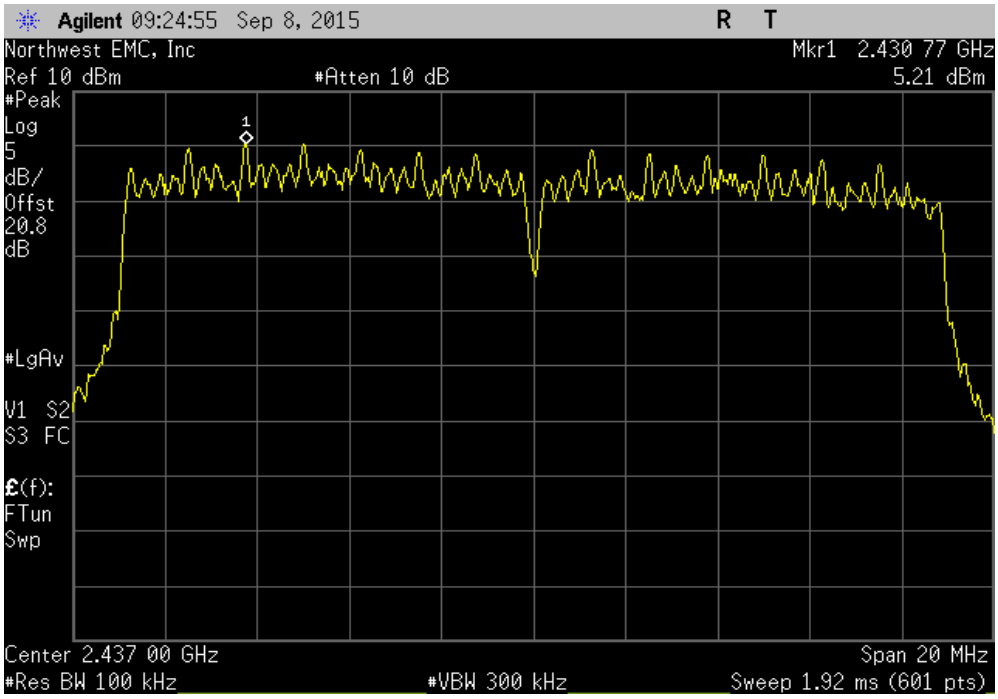
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.409	-15.2	-7.791	8	Pass



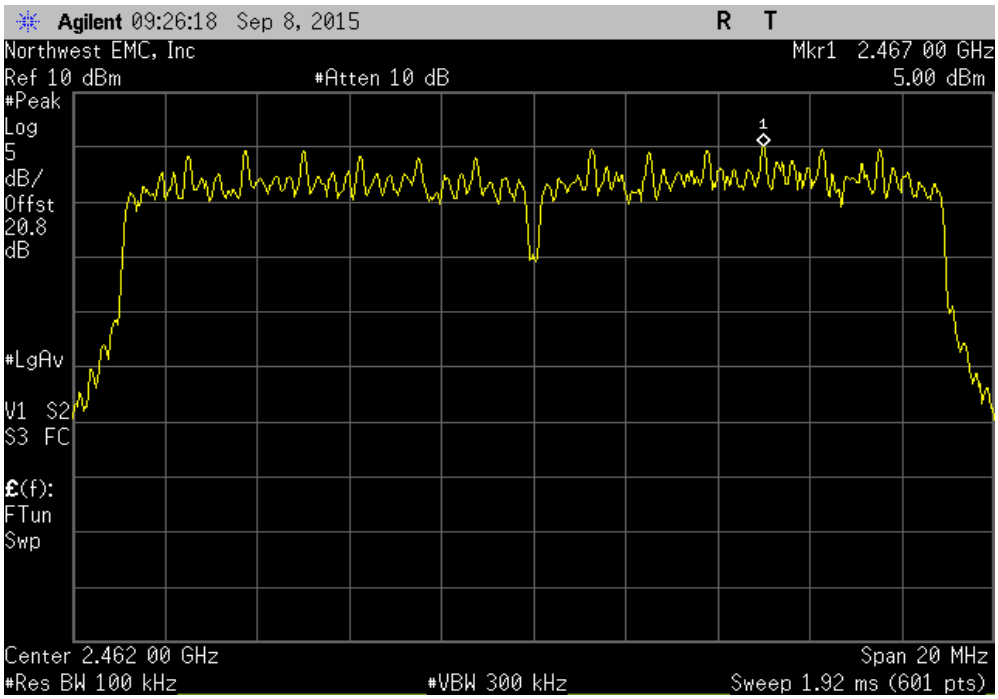
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.278	-15.2	-9.922	8	Pass



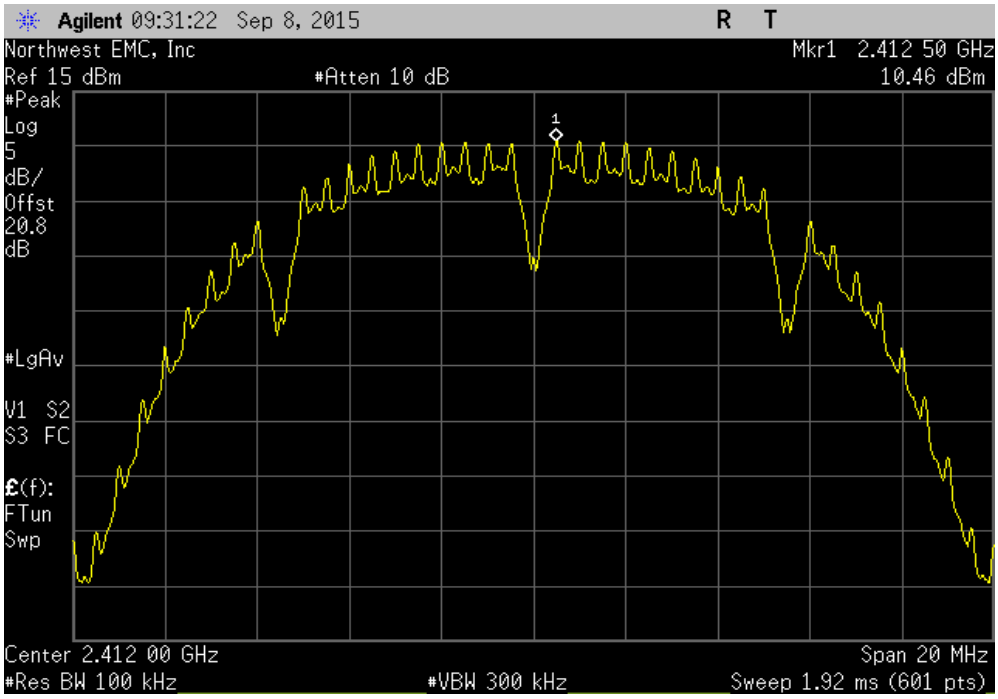
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.214	-15.2	-9.986	8	Pass



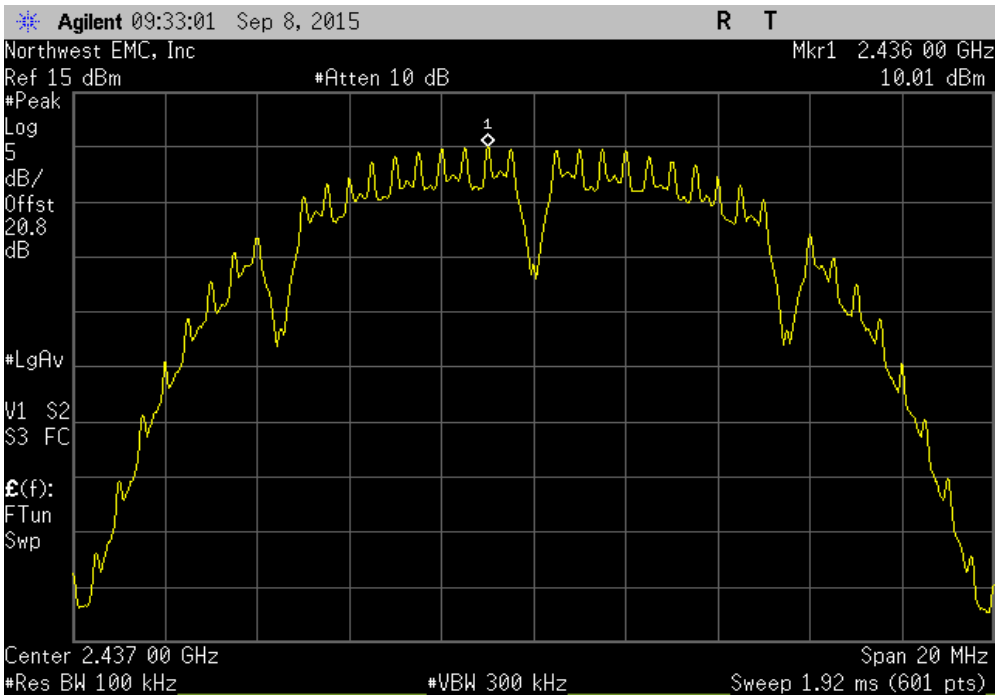
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.001	-15.2	-10.199	8	Pass



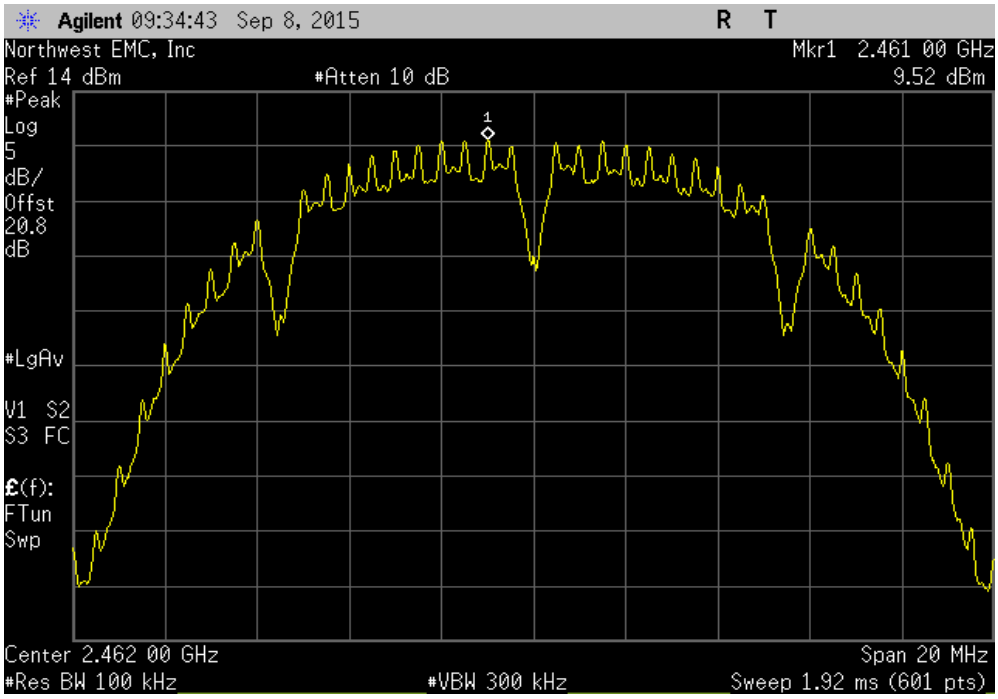
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		10.46	-15.2	-4.74	8	Pass



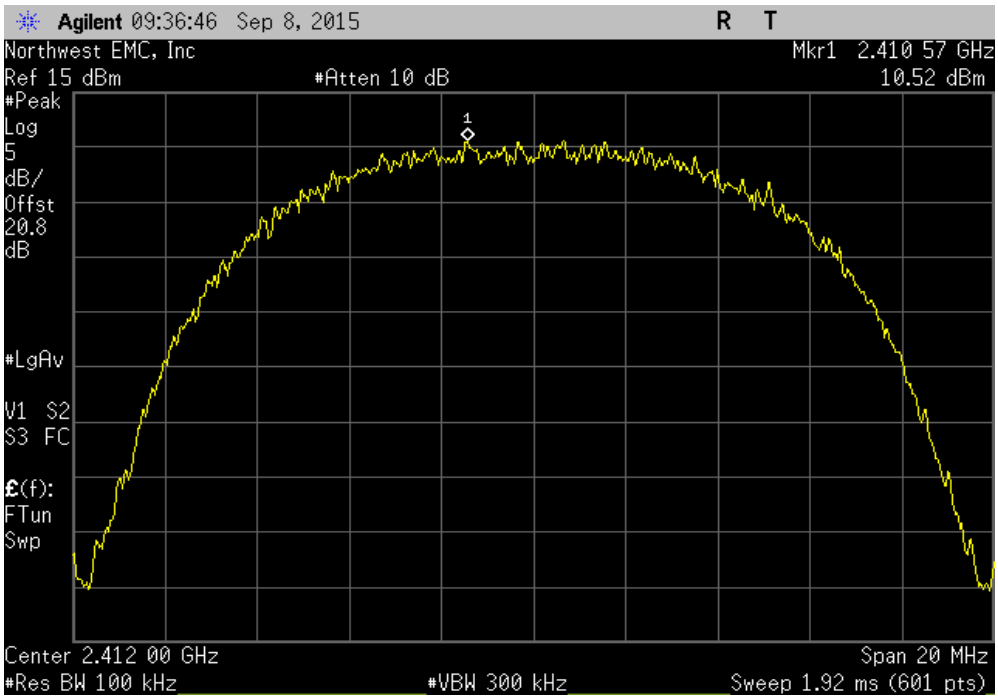
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		10.007	-15.2	-5.193	8	Pass



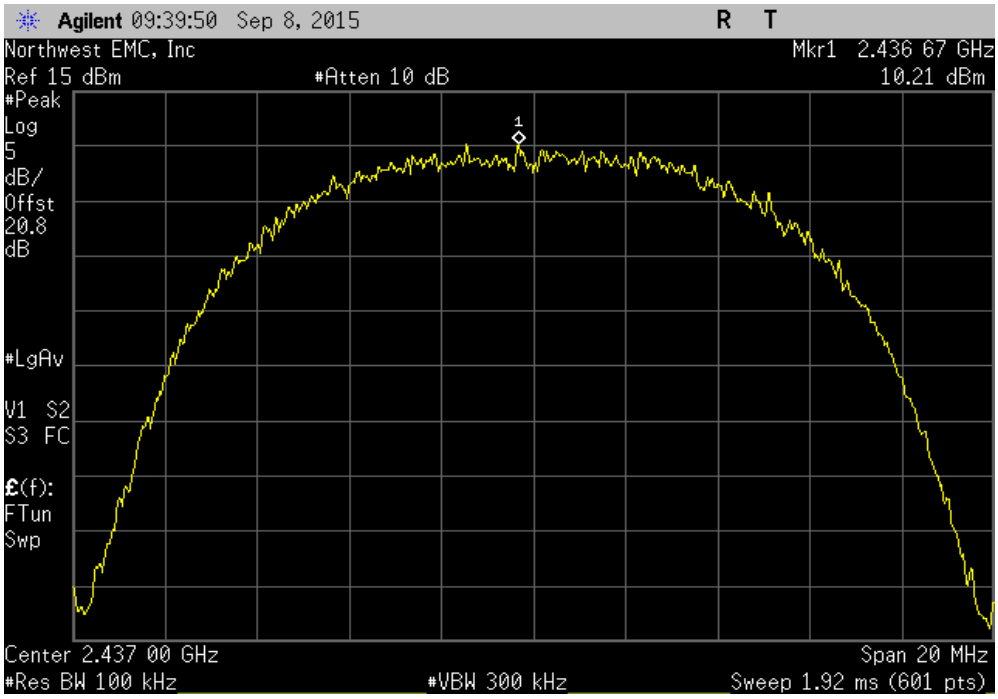
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.516	-15.2	-5.684	8	Pass



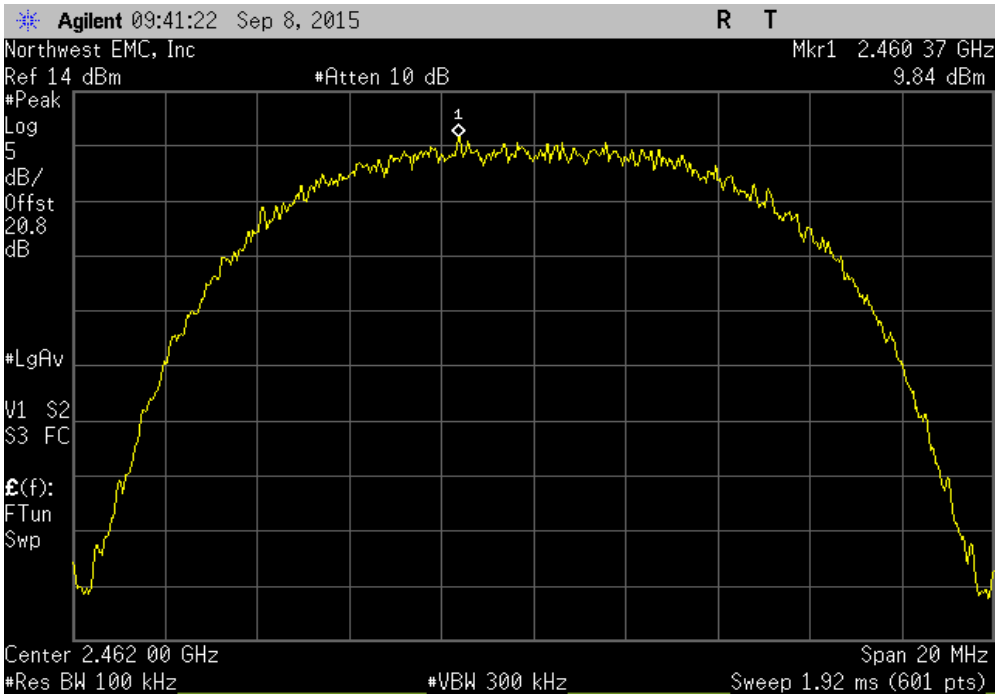
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		10.524	-15.2	-4.676	8	Pass



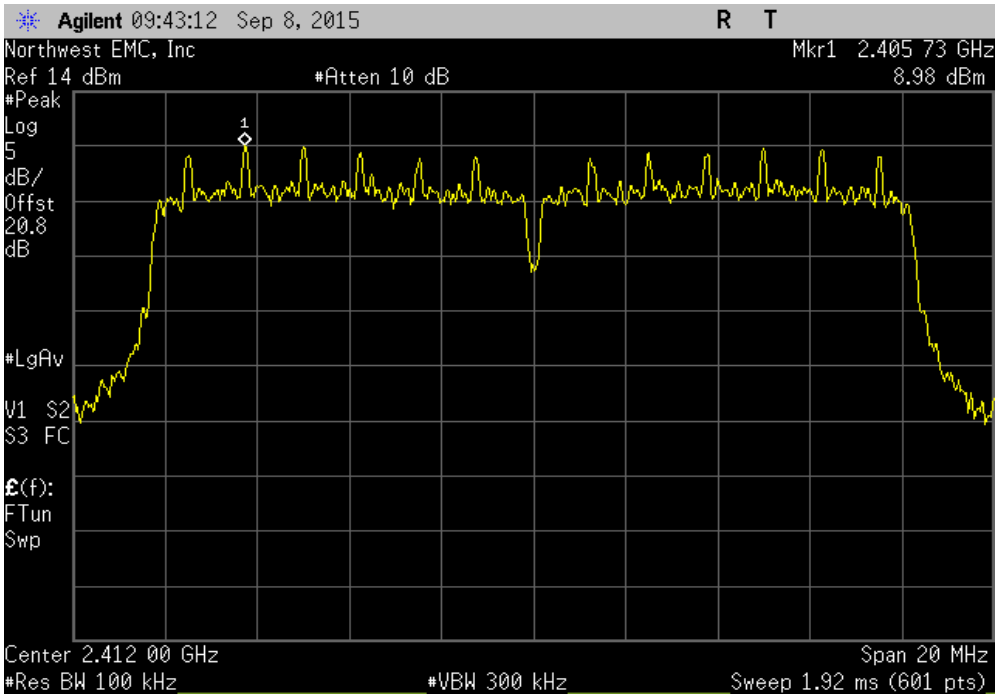
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		10.207	-15.2	-4.993	8	Pass



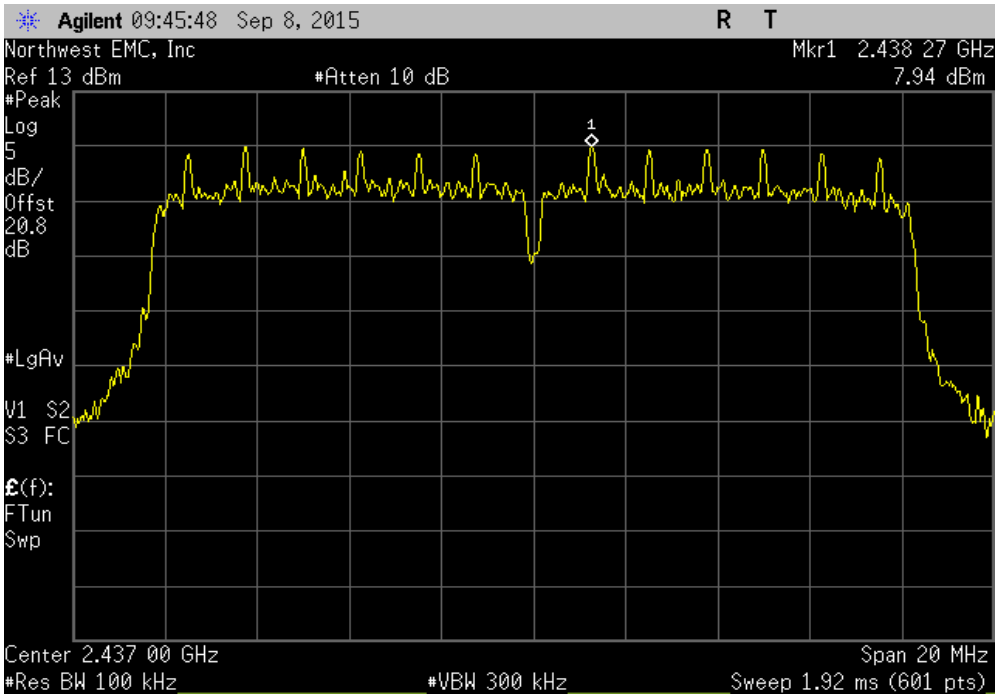
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.839	-15.2	-5.361	8	Pass



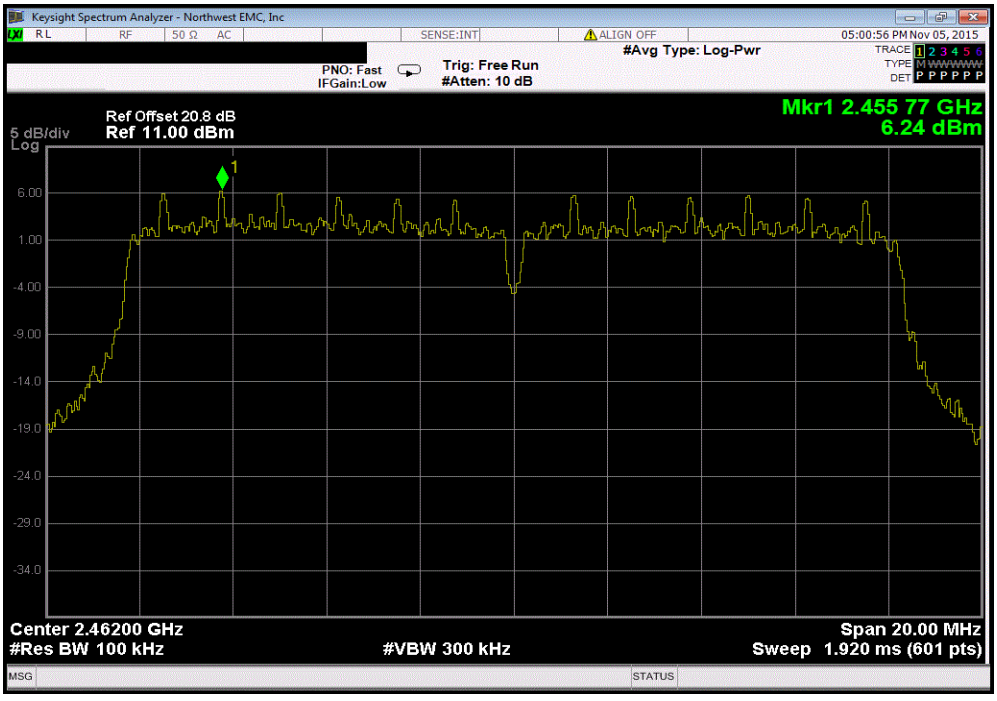
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.984	-15.2	-6.216	8	Pass



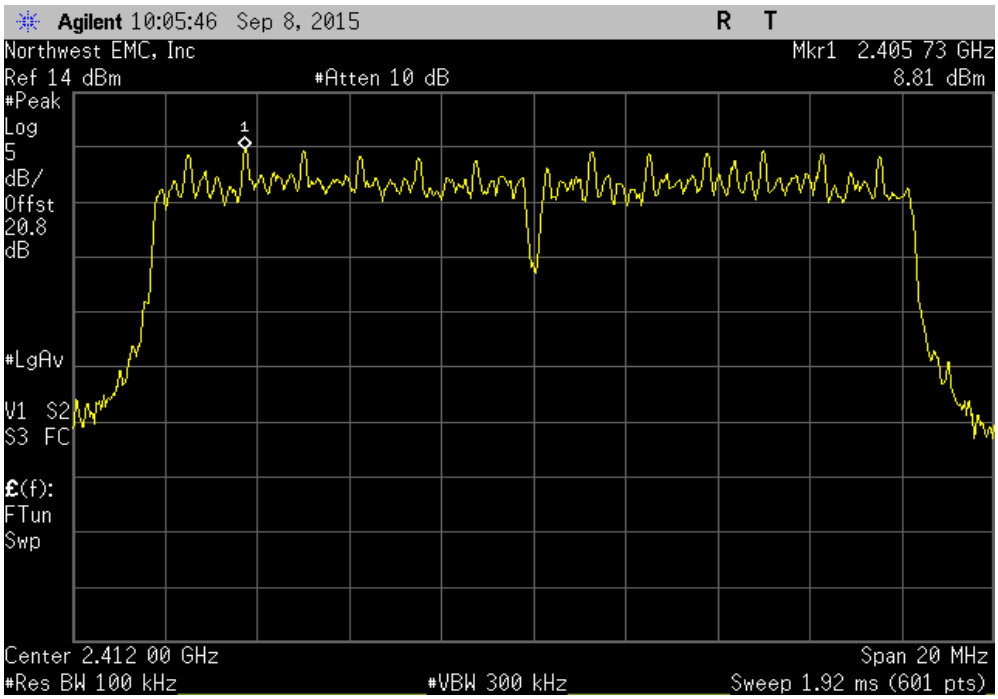
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.944	-15.2	-7.256	8	Pass



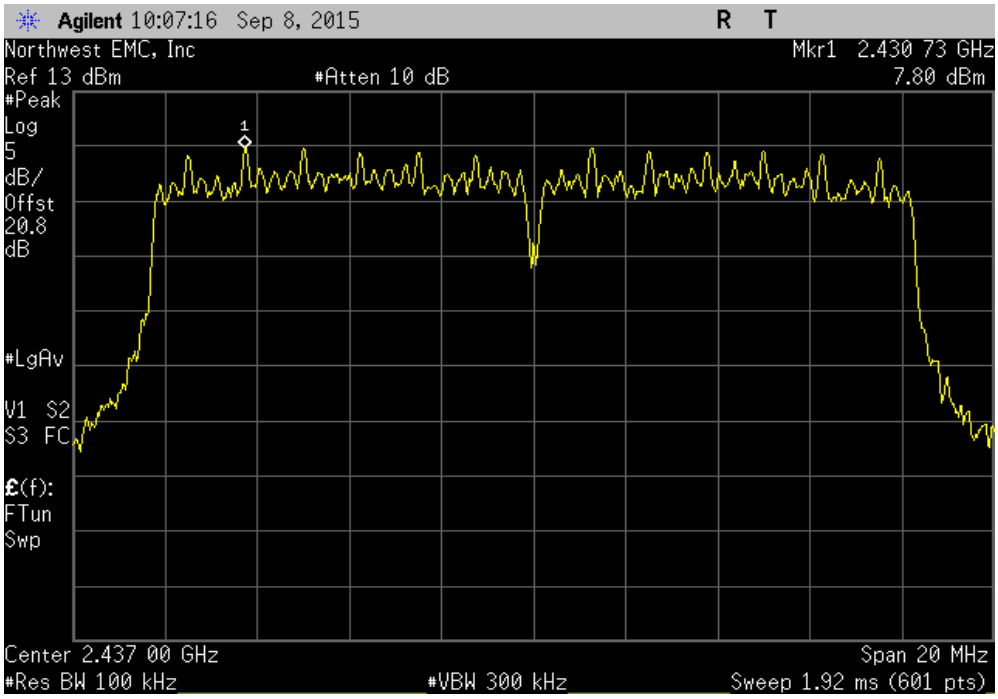
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.24	-15.2	-8.96	8	Pass



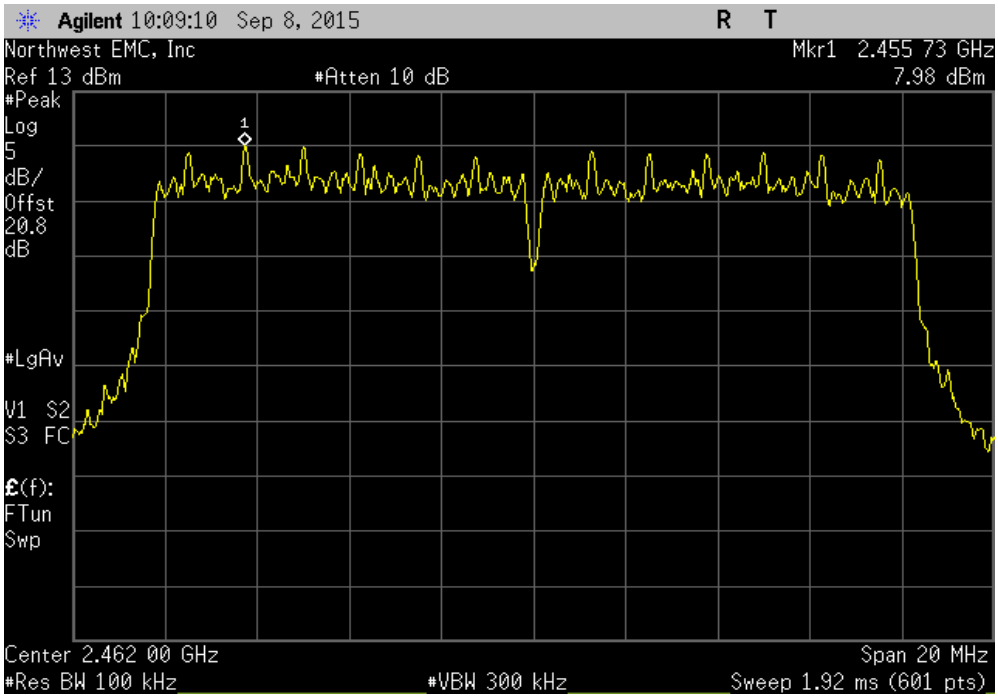
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.812	-15.2	-6.388	8	Pass



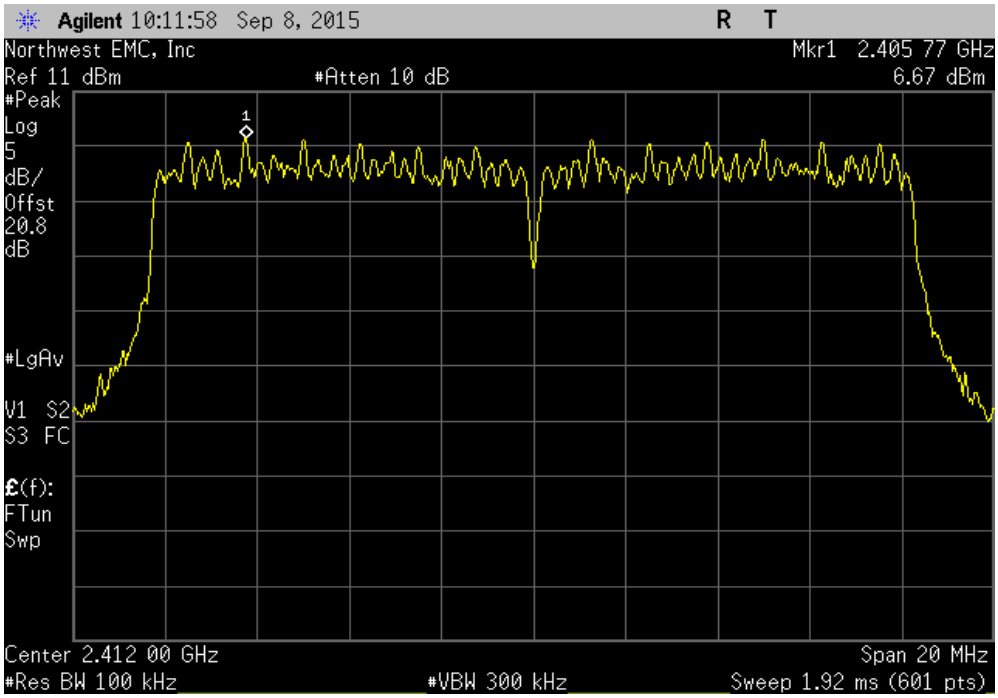
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.795	-15.2	-7.405	8	Pass



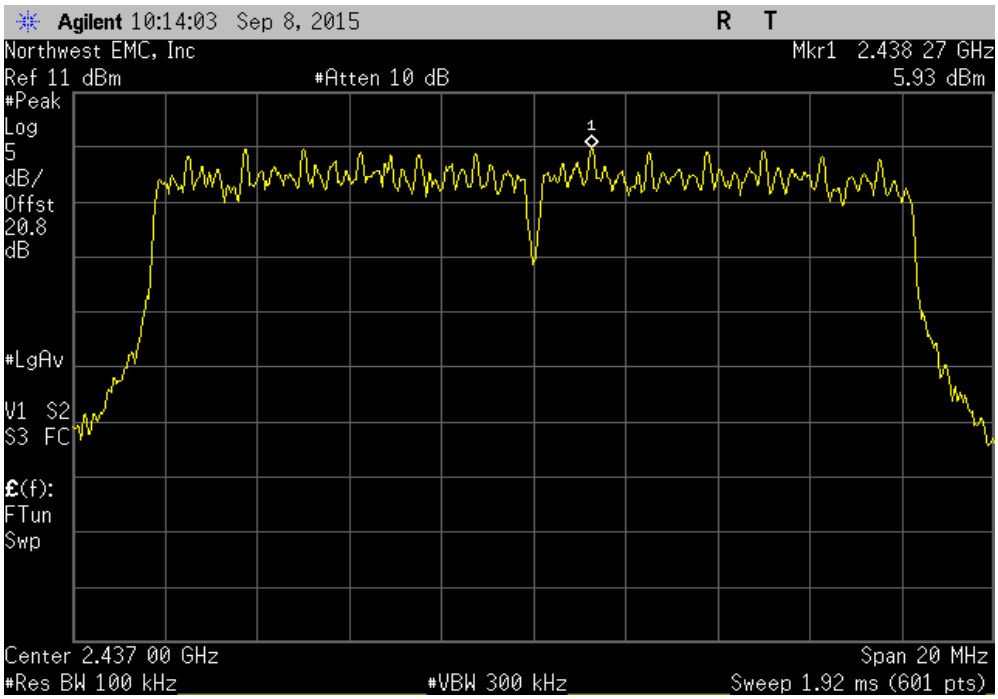
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.978	-15.2	-7.222	8	Pass



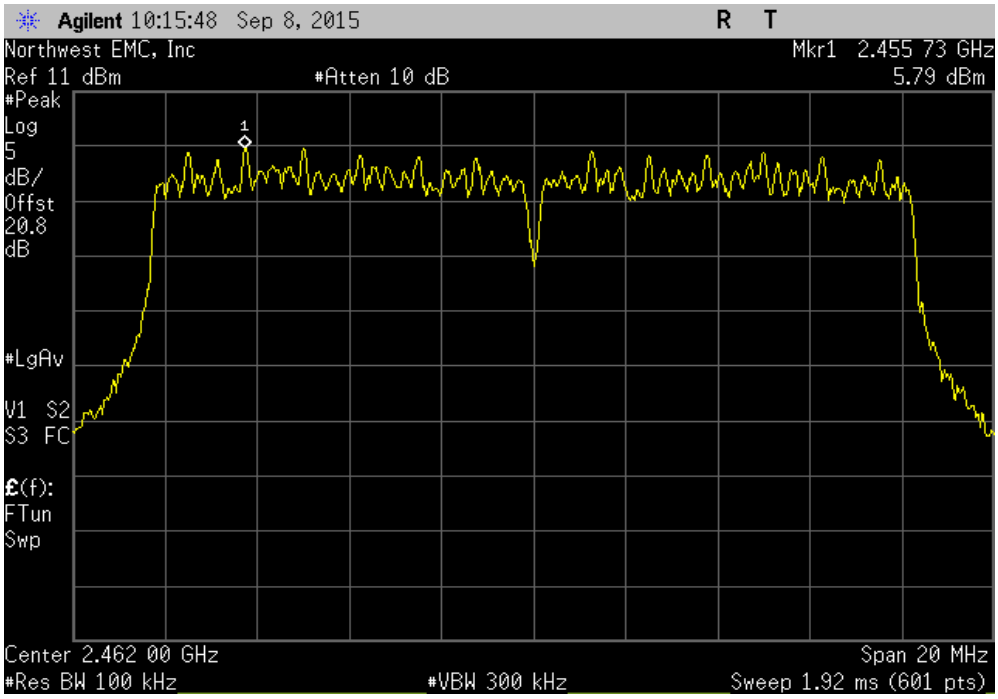
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.673	-15.2	-8.527	8	Pass



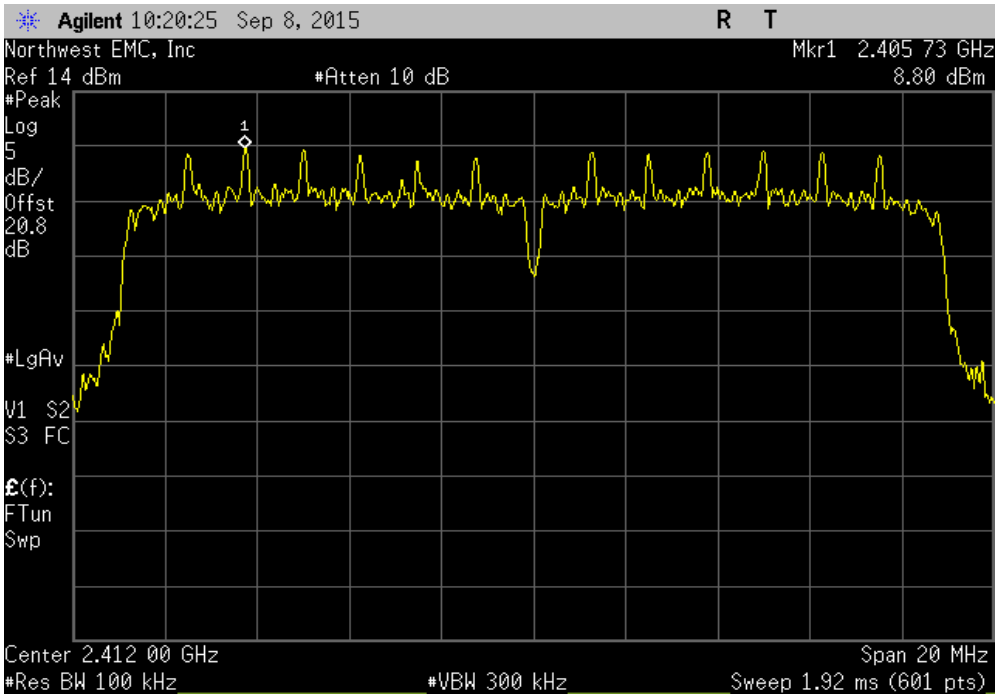
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.93	-15.2	-9.27	8	Pass



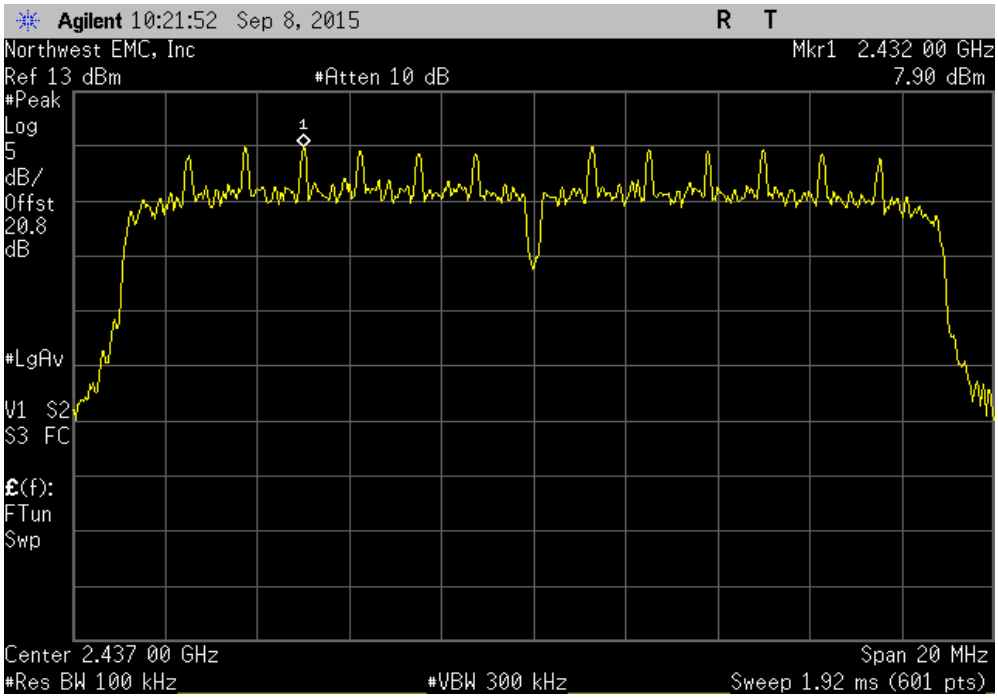
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.787	-15.2	-9.413	8	Pass



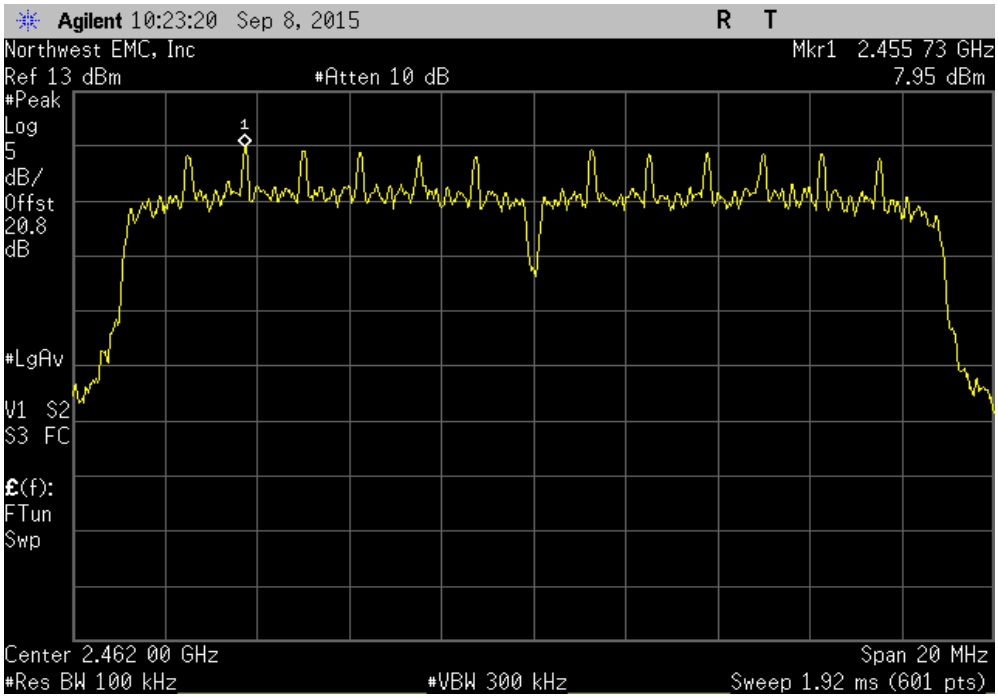
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.8	-15.2	-6.4	8	Pass



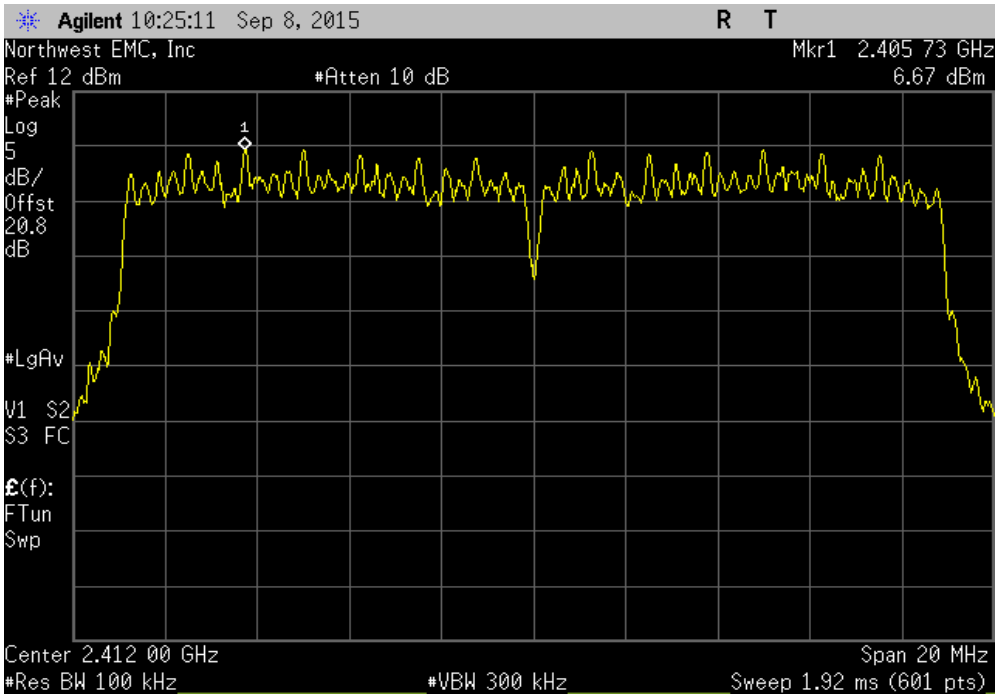
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.903	-15.2	-7.297	8	Pass



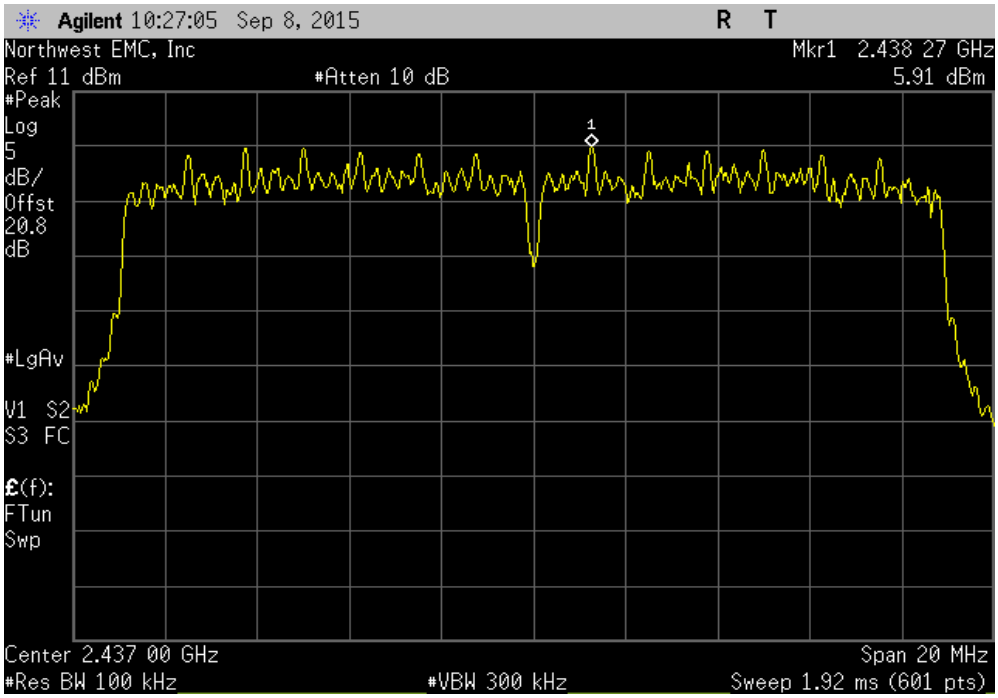
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.946	-15.2	-7.254	8	Pass



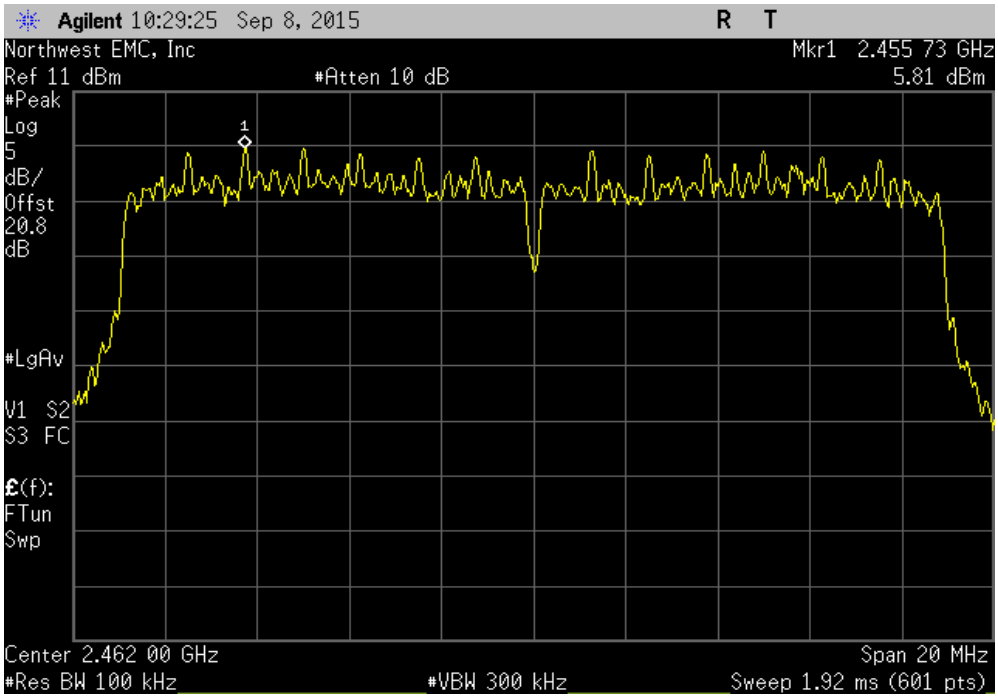
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.672	-15.2	-8.528	8	Pass



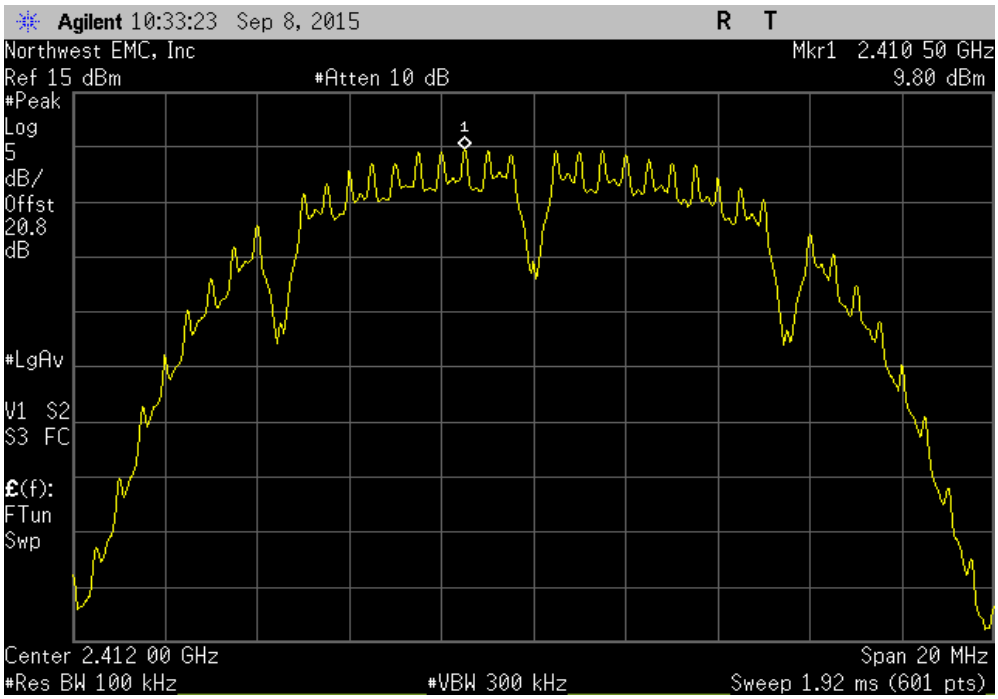
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.908	-15.2	-9.292	8	Pass



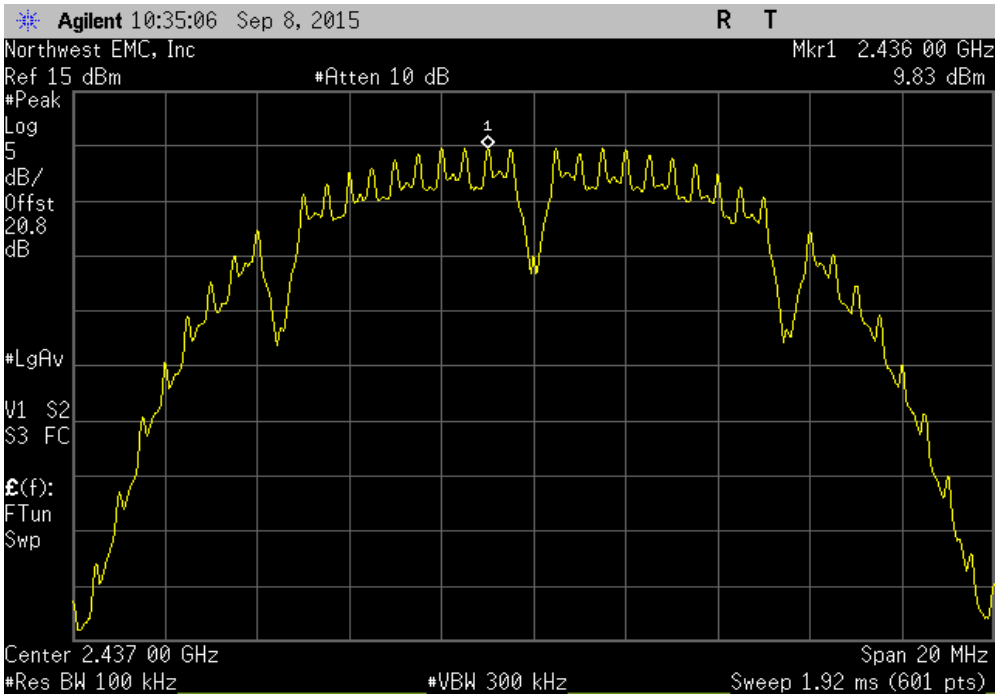
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.809	-15.2	-9.391	8	Pass



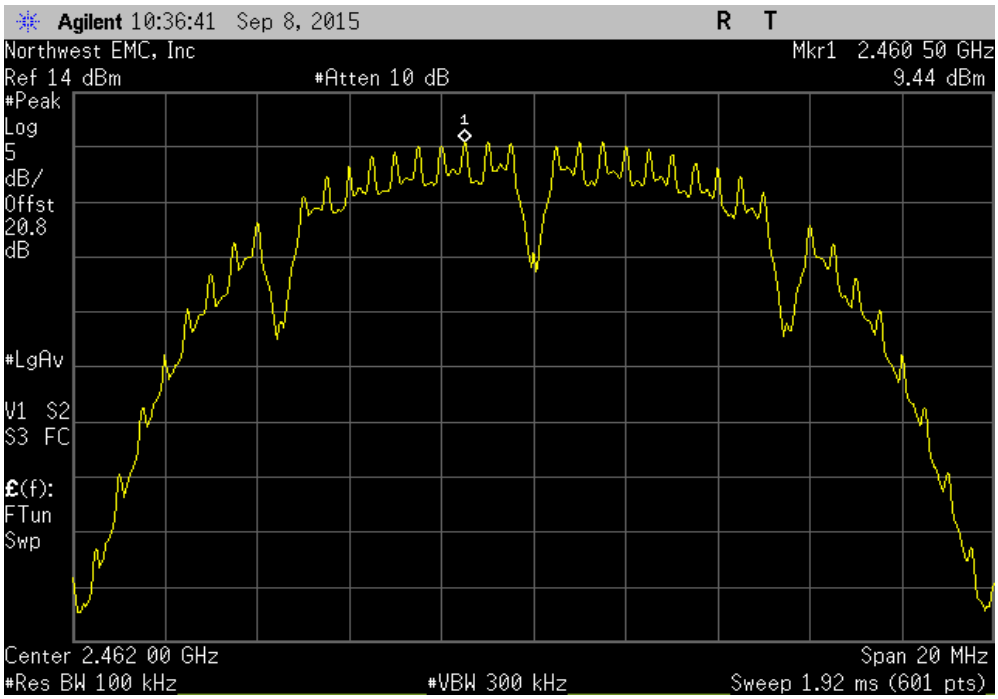
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.8	-15.2	-5.4	8	Pass



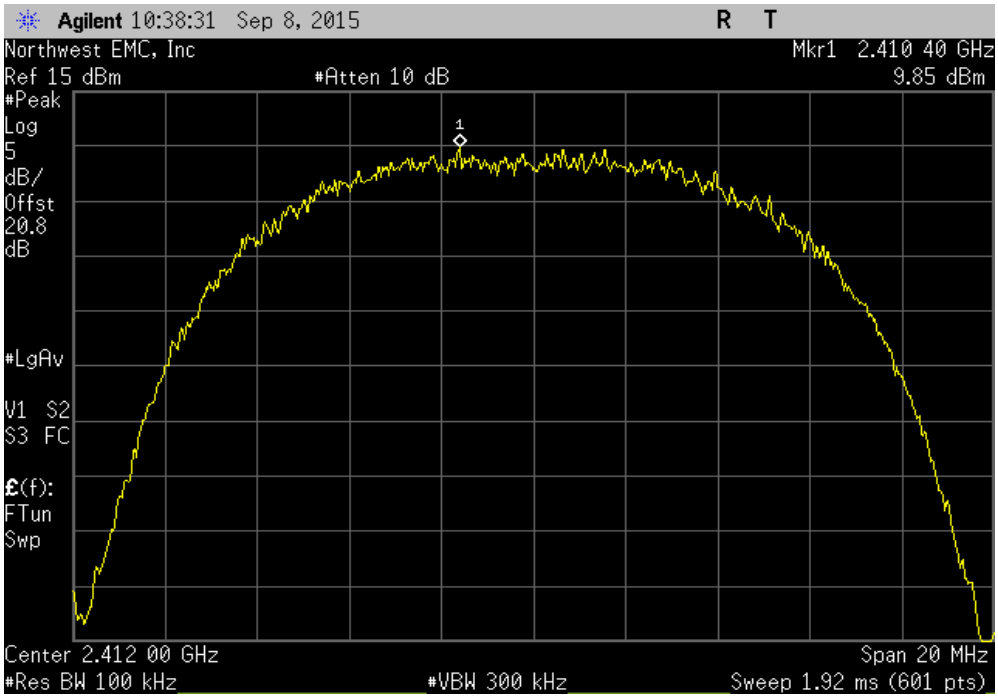
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.832	-15.2	-5.368	8	Pass



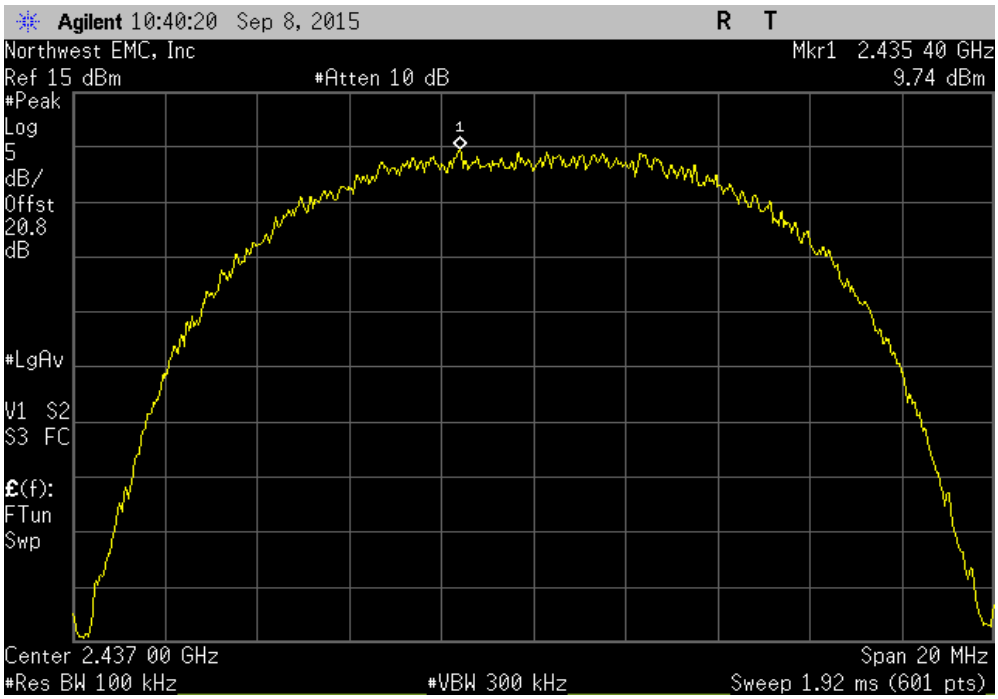
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.439	-15.2	-5.761	8	Pass



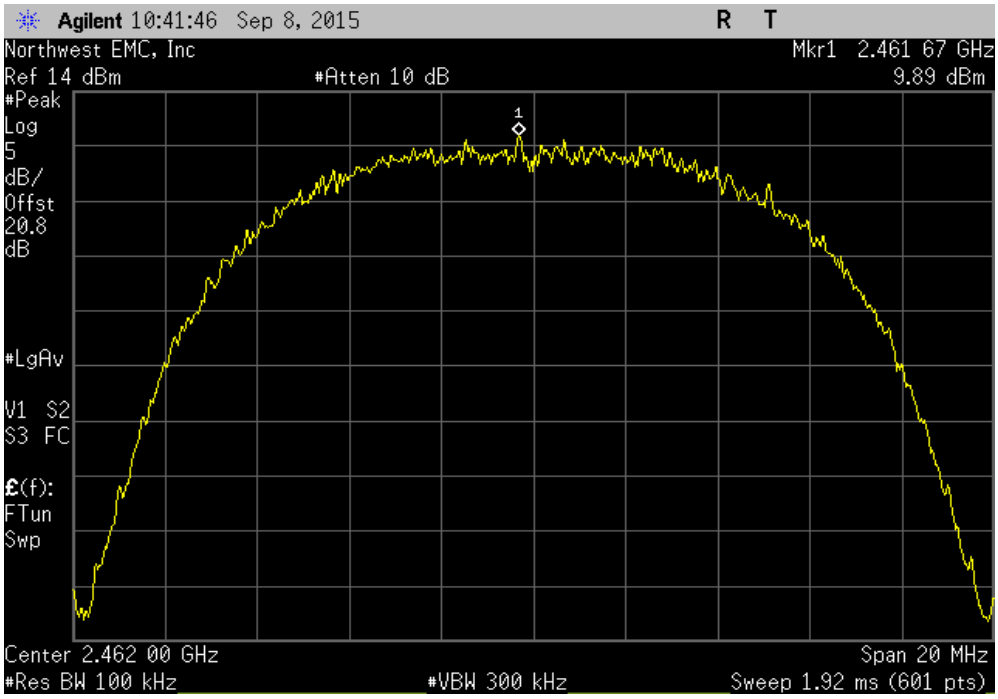
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.853	-15.2	-5.347	8	Pass



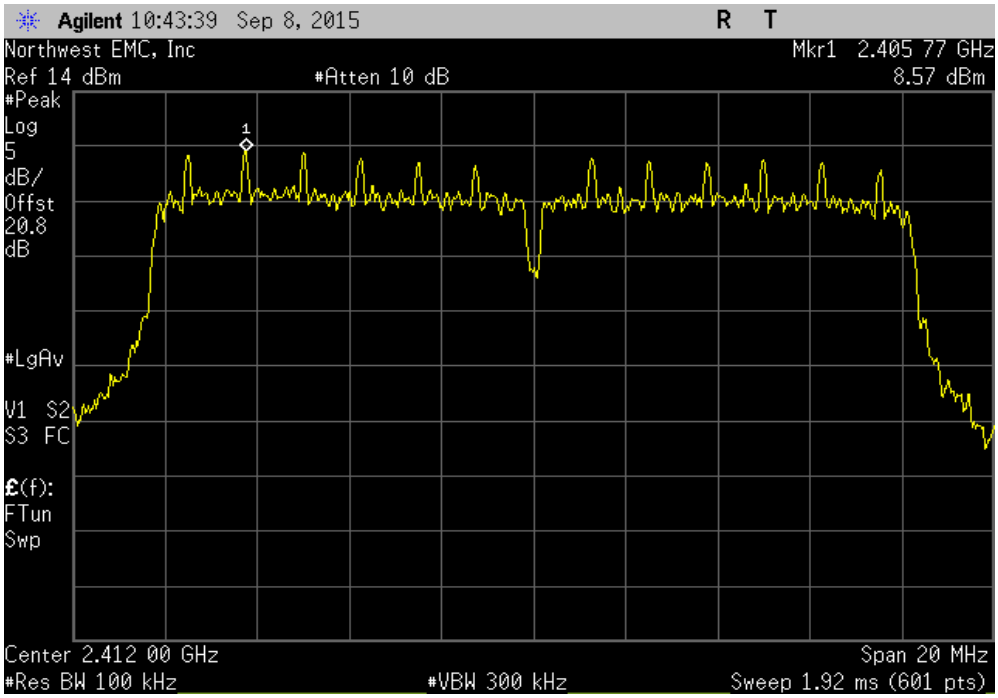
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.737	-15.2	-5.463	8	Pass



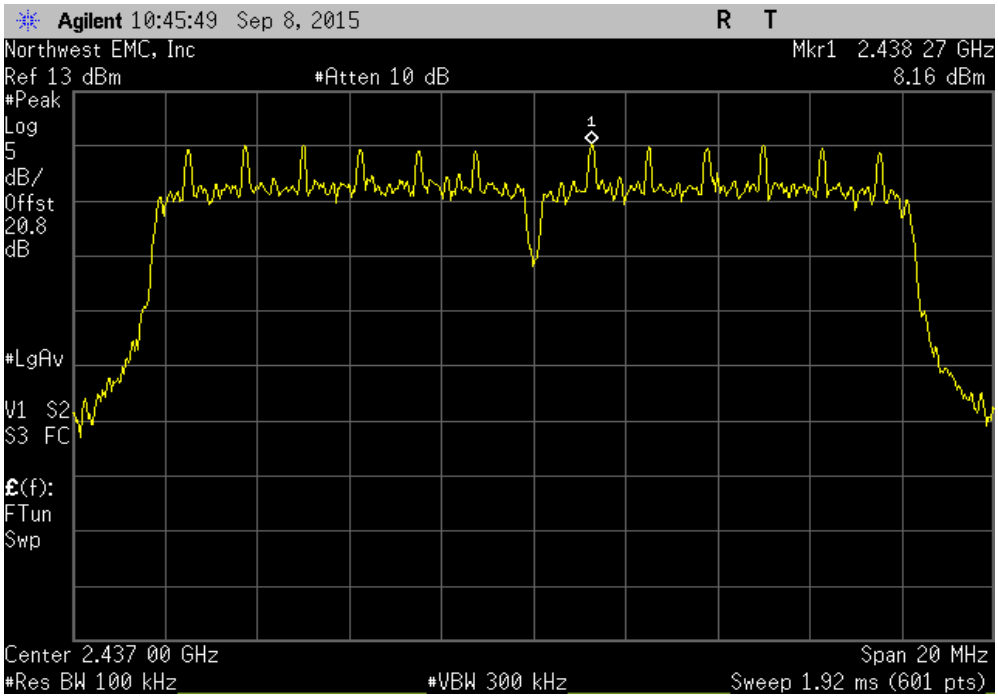
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.892	-15.2	-5.308	8	Pass



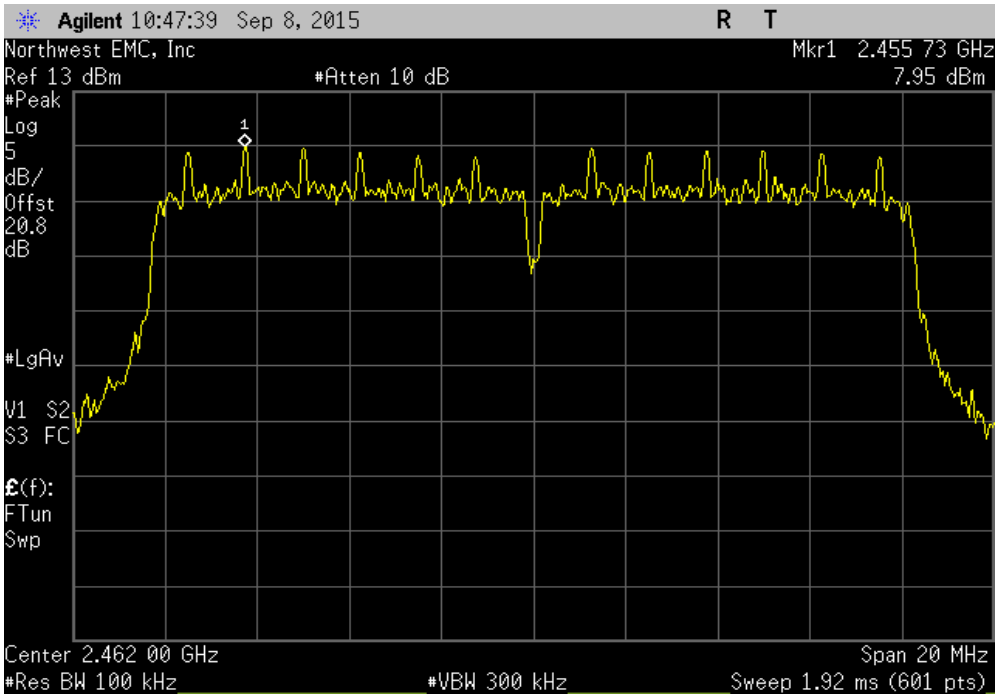
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.568	-15.2	-6.632	8	Pass



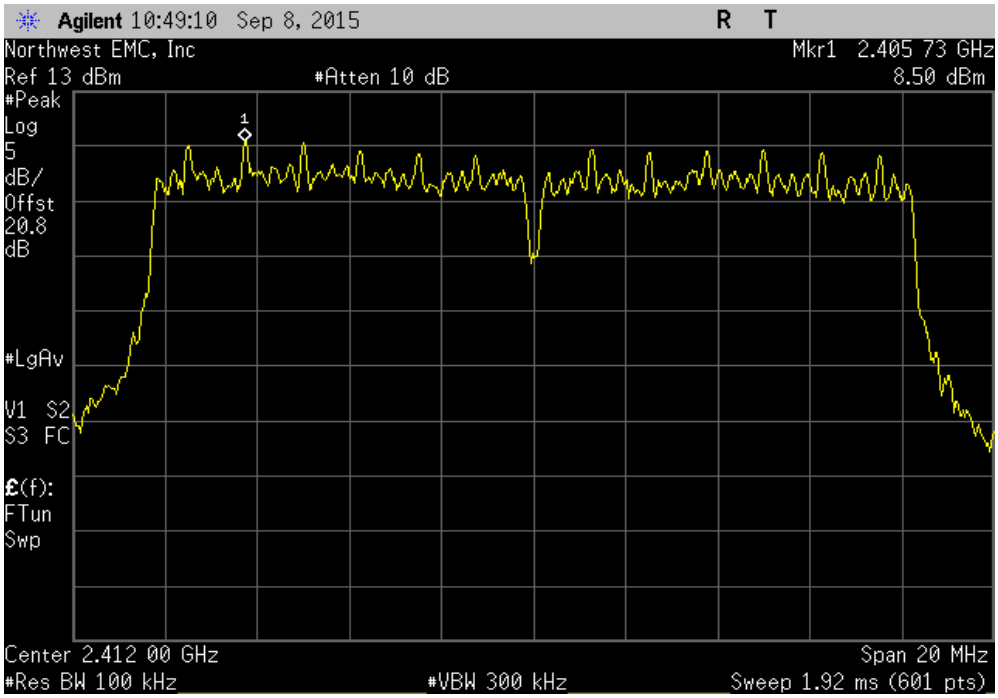
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.162	-15.2	-7.038	8	Pass



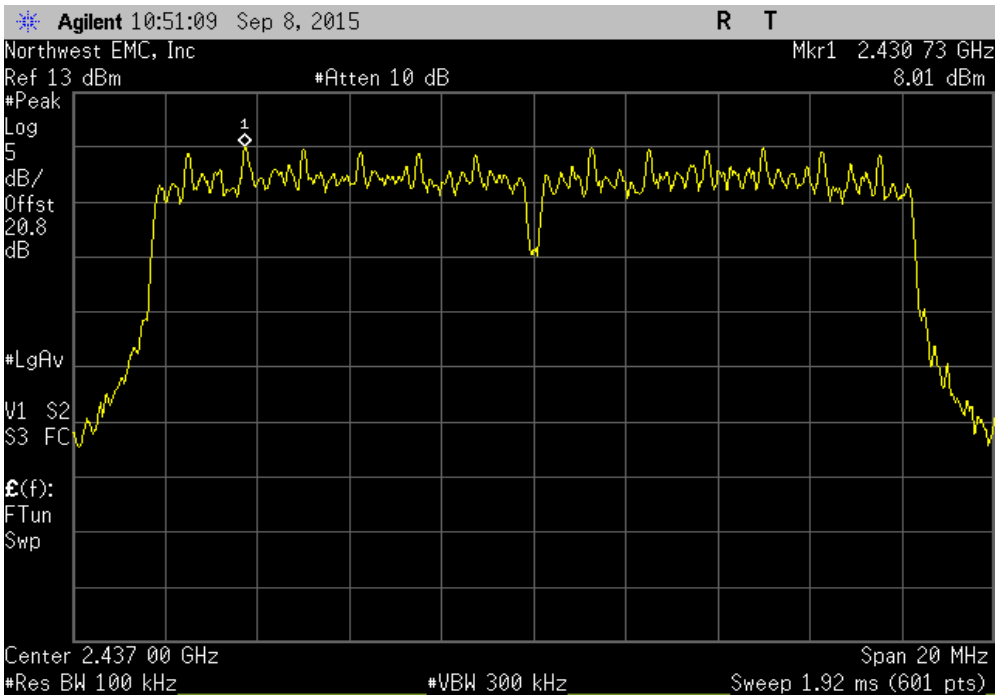
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.951	-15.2	-7.249	8	Pass



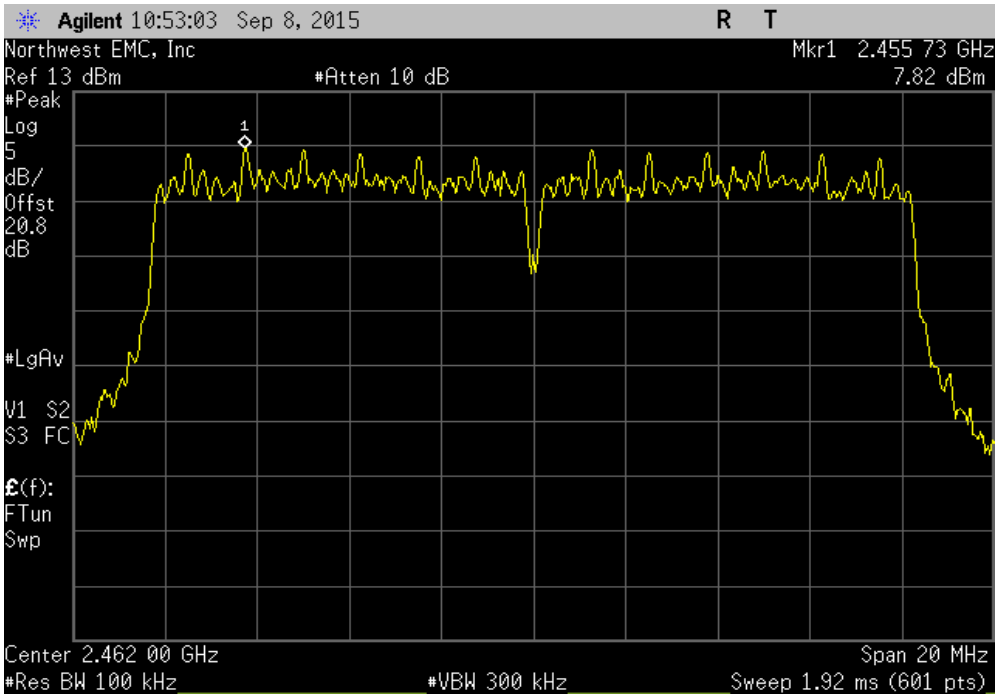
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.497	-15.2	-6.703	8	Pass



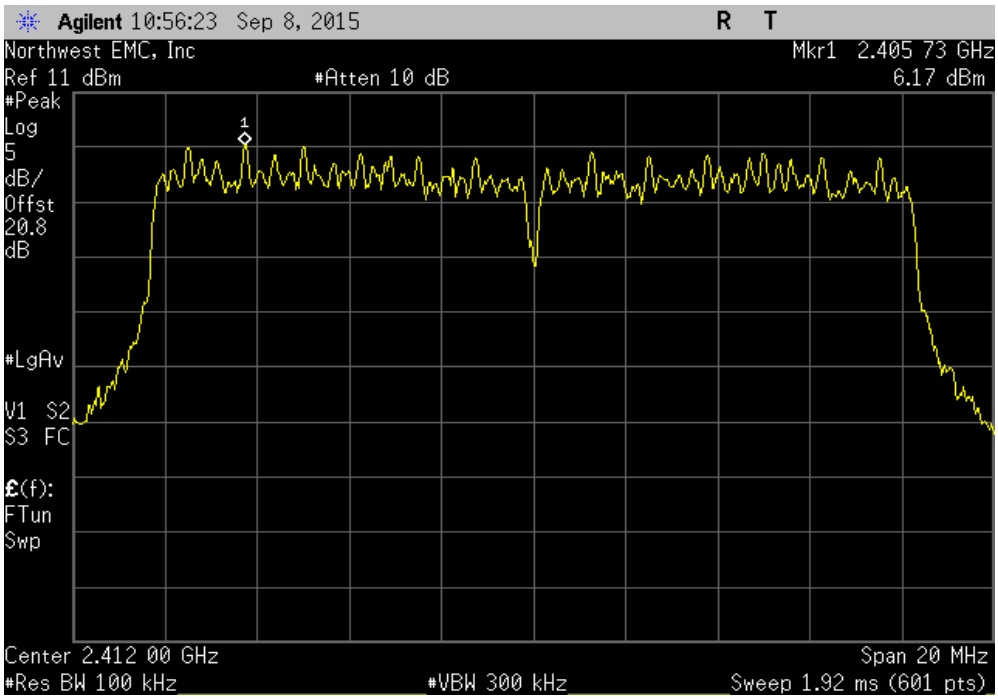
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.008	-15.2	-7.192	8	Pass



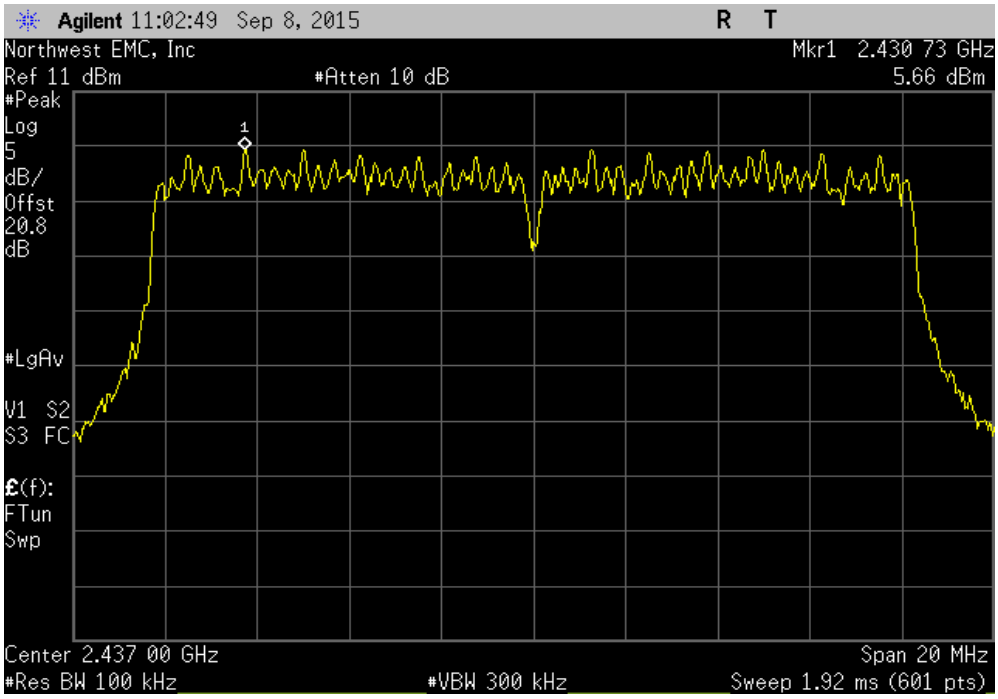
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.822	-15.2	-7.378	8	Pass



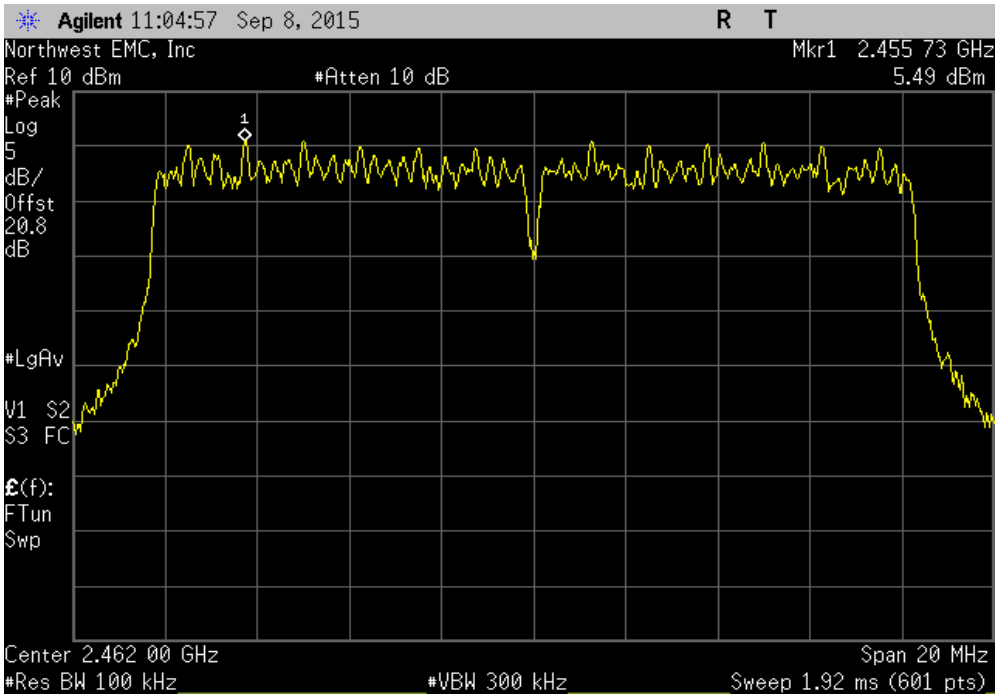
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.172	-15.2	-9.028	8	Pass



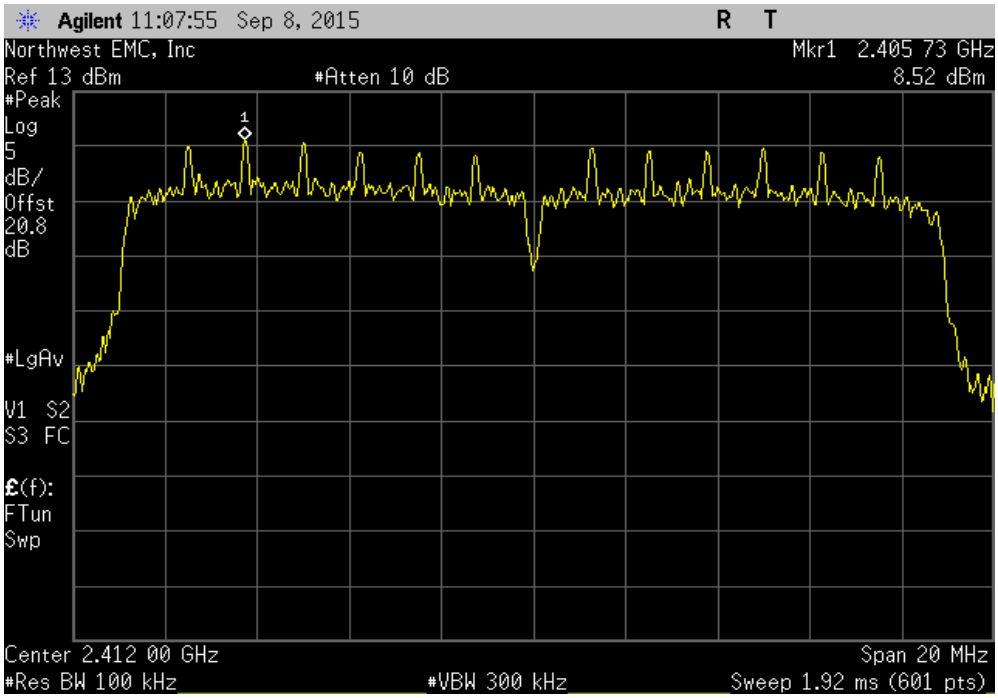
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.658	-15.2	-9.542	8	Pass



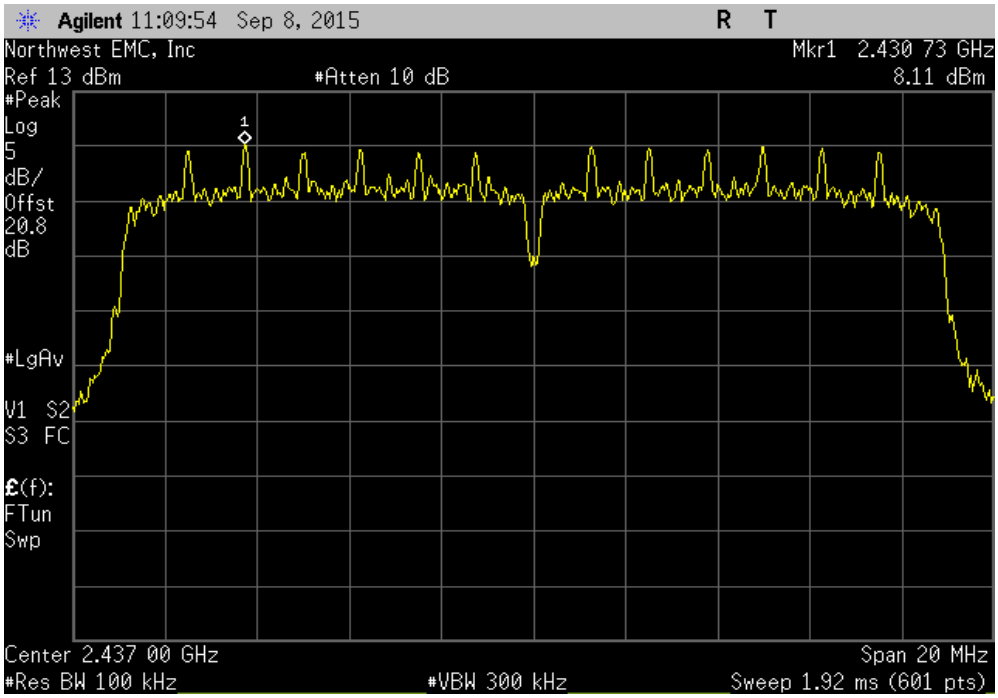
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.486	-15.2	-9.714	8	Pass



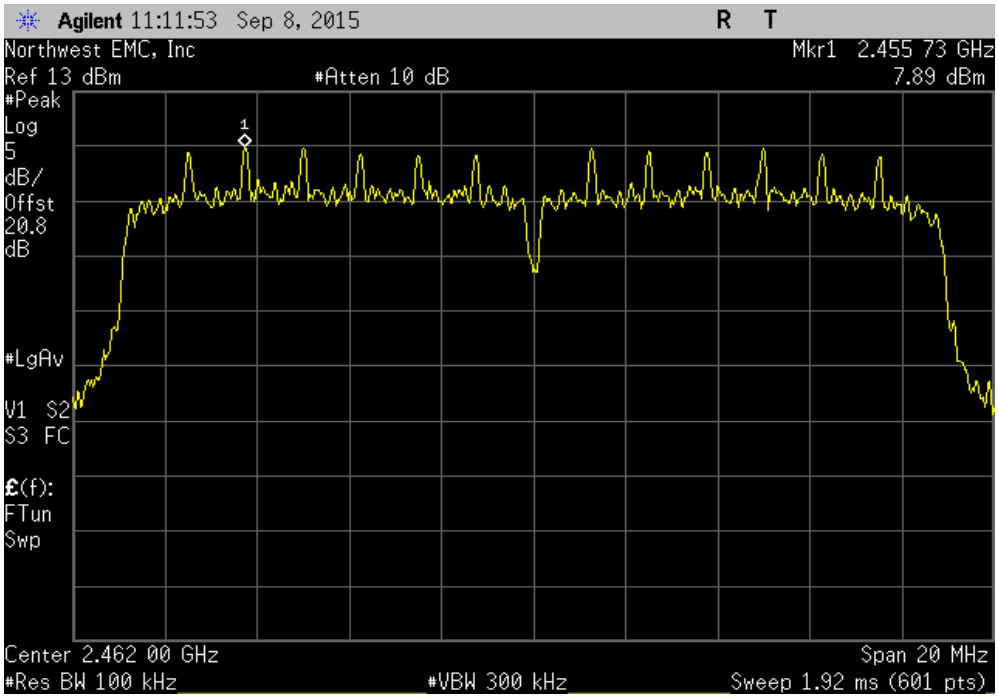
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.517	-15.2	-6.683	8	Pass



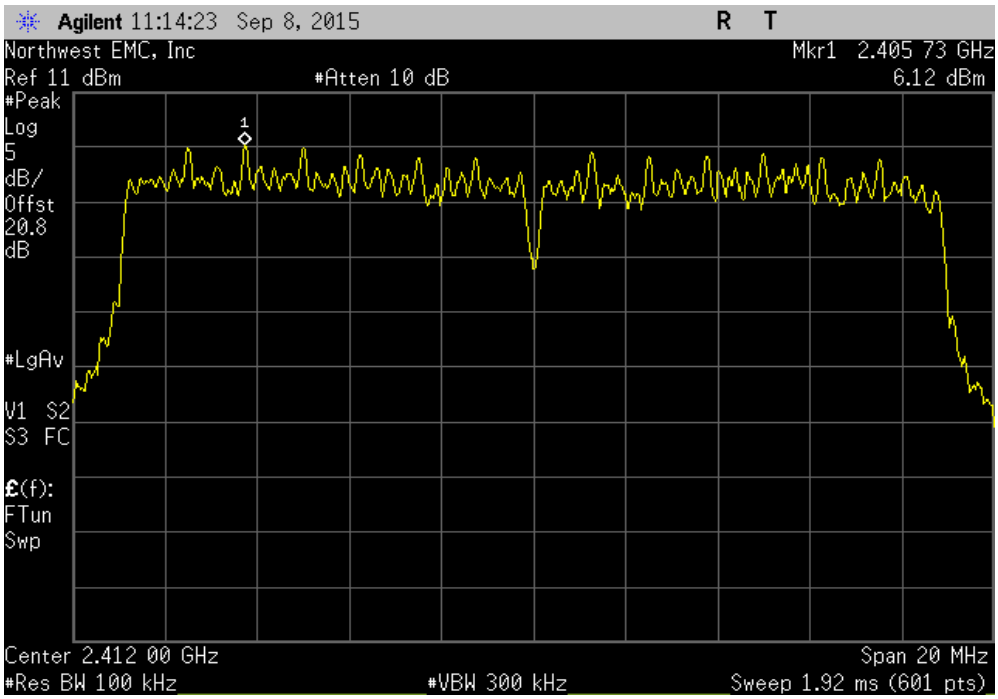
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		8.111	-15.2	-7.089	8	Pass



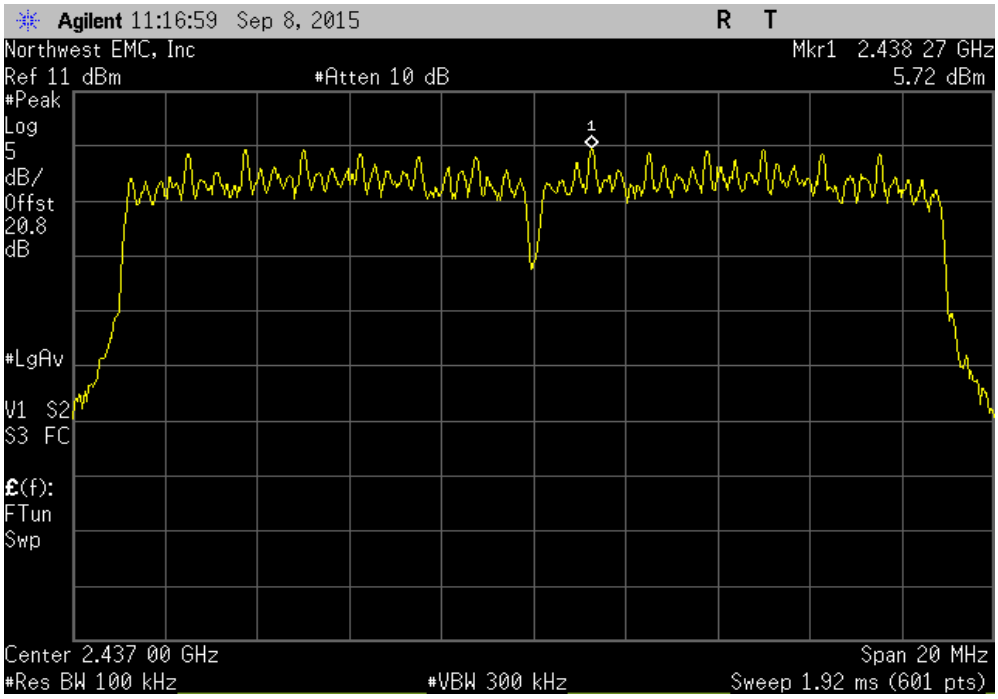
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.888	-15.2	-7.312	8	Pass



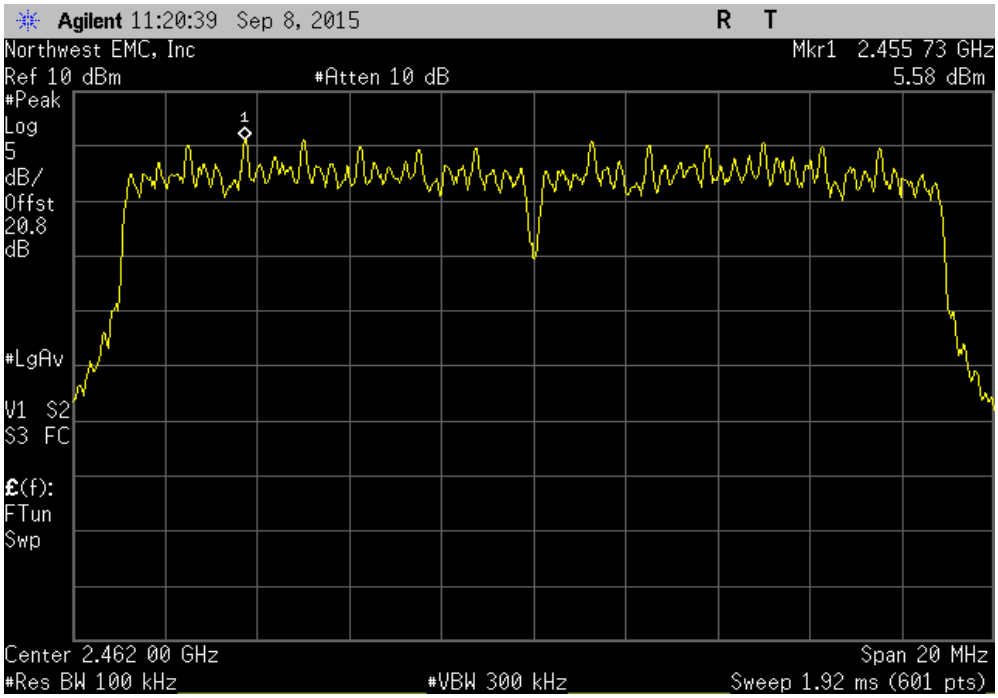
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.121	-15.2	-9.079	8	Pass



Chain C, 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	Results
		5.716	-15.2	-9.484	8	Pass



Chain C, 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	Results
		5.579	-15.2	-9.621	8	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Spectrum Analyzer	Agilent	N9010A	AFL	9/20/2014	12
DC Block, 40 GHz	Fairview Microwave	SD3379	AMM	2/27/2015	12
Attenuator, 20dB, 40 GHz	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Signal Generator, 40 GHz	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

SPURIOUS CONDUCTED EMISSIONS

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF00069-3EB6			**Date:**	07/29/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.9°C
Attendees:	None			**Humidity:**	47%
Project:	None			**Barometric Pres.:**	1014 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

2x2 MIMO mode, Chain AB (Chains 0 and 1). Tested the modulation that produced the highest conducted output power.

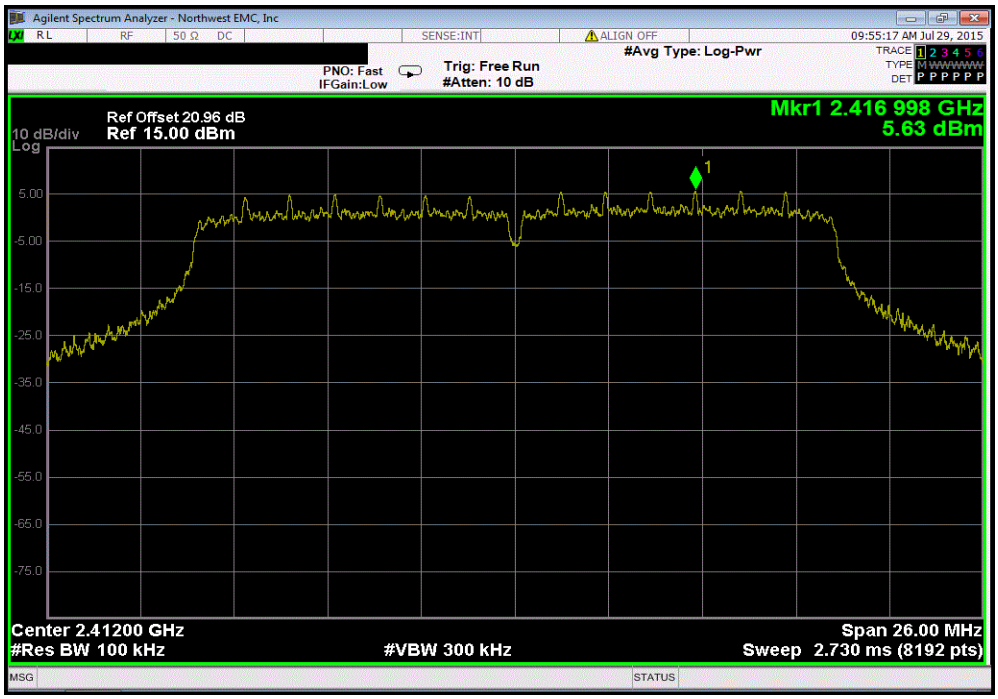
DEVIATIONS FROM TEST STANDARD

None

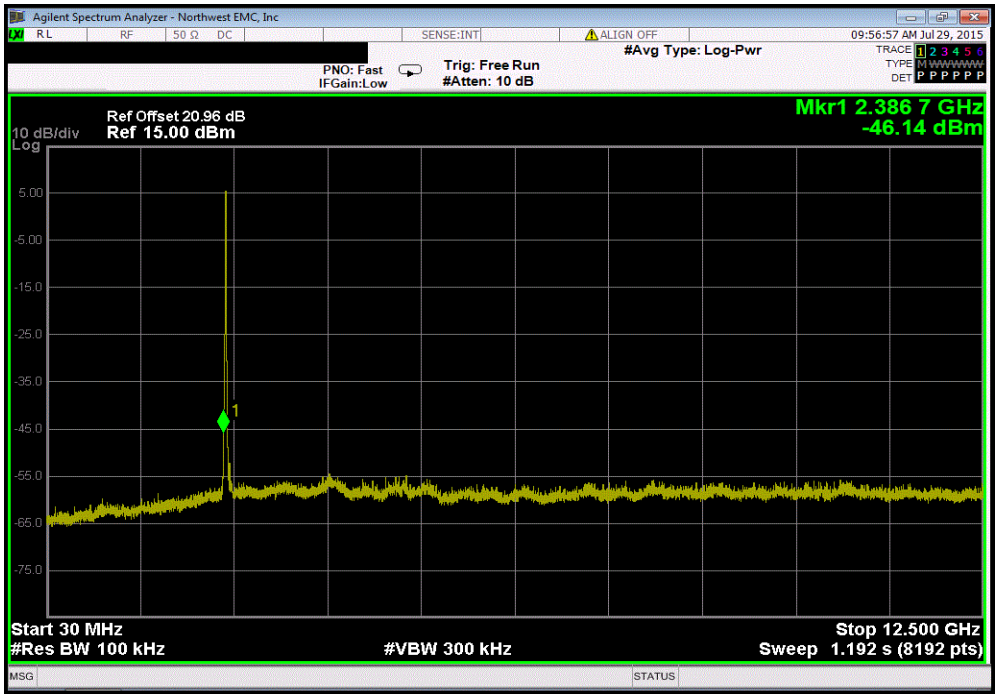
Configuration #	1	Signature Jonathan Kiefer

		Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-51.77	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-57.98	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-60.2	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-57.09	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-60.15	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-56.4	-20	Pass
Chain B					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-52.65	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-57.82	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-59.45	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-57.38	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-59.22	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-57.55	-20	Pass

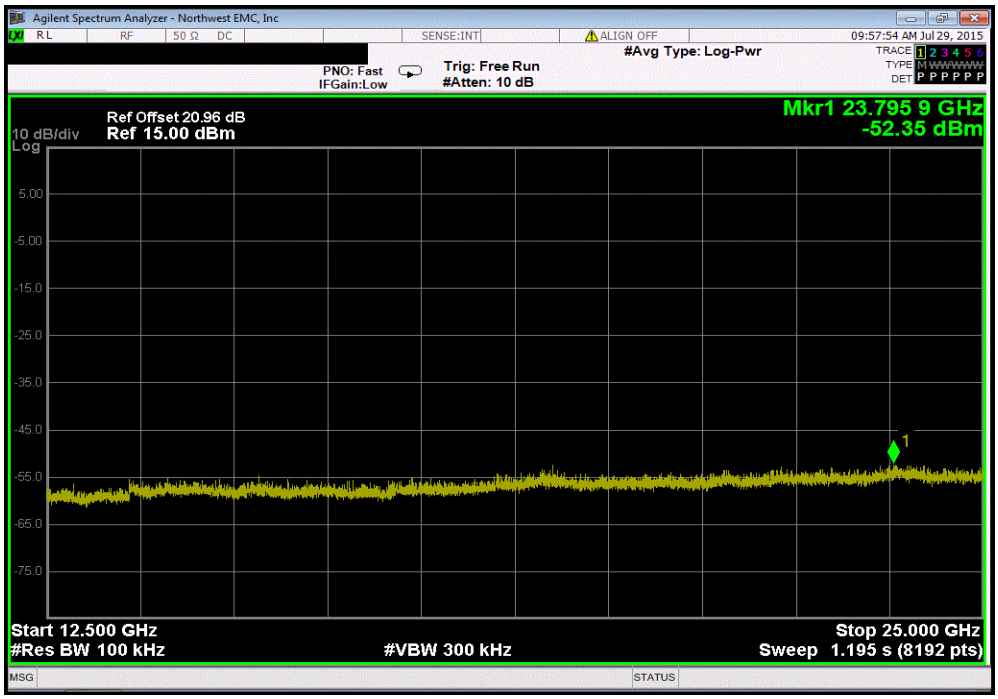
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



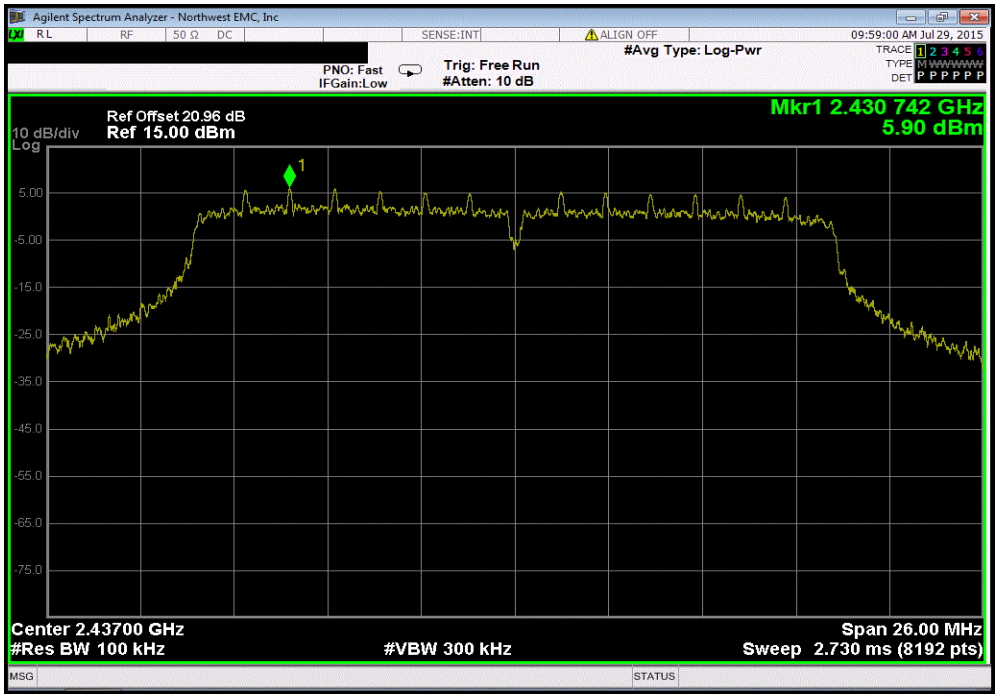
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.77	-20	Pass



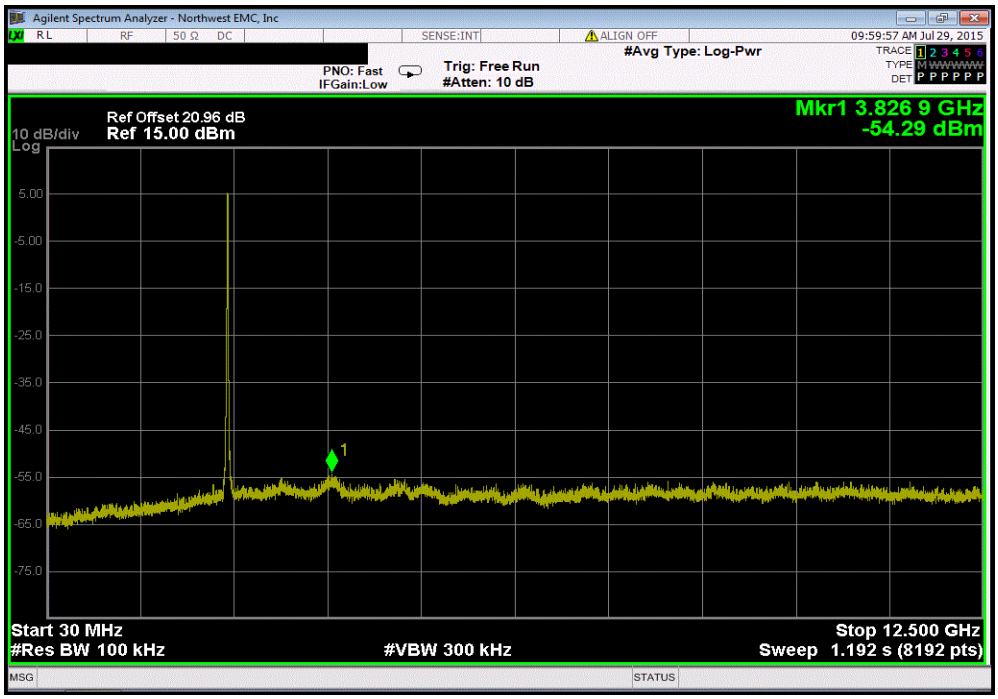
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-57.98	-20	Pass



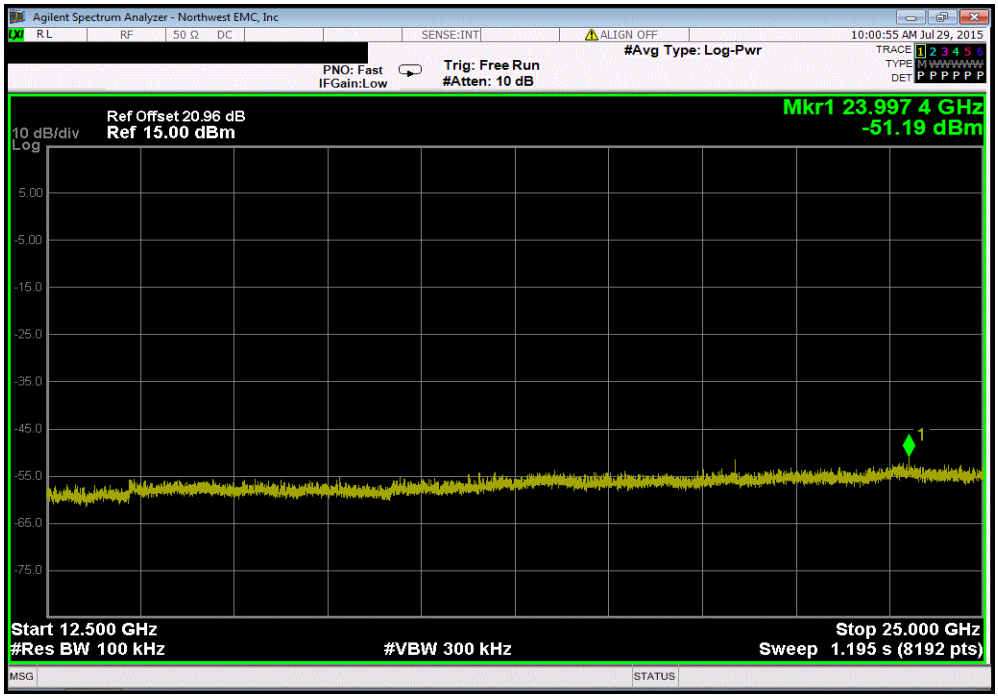
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



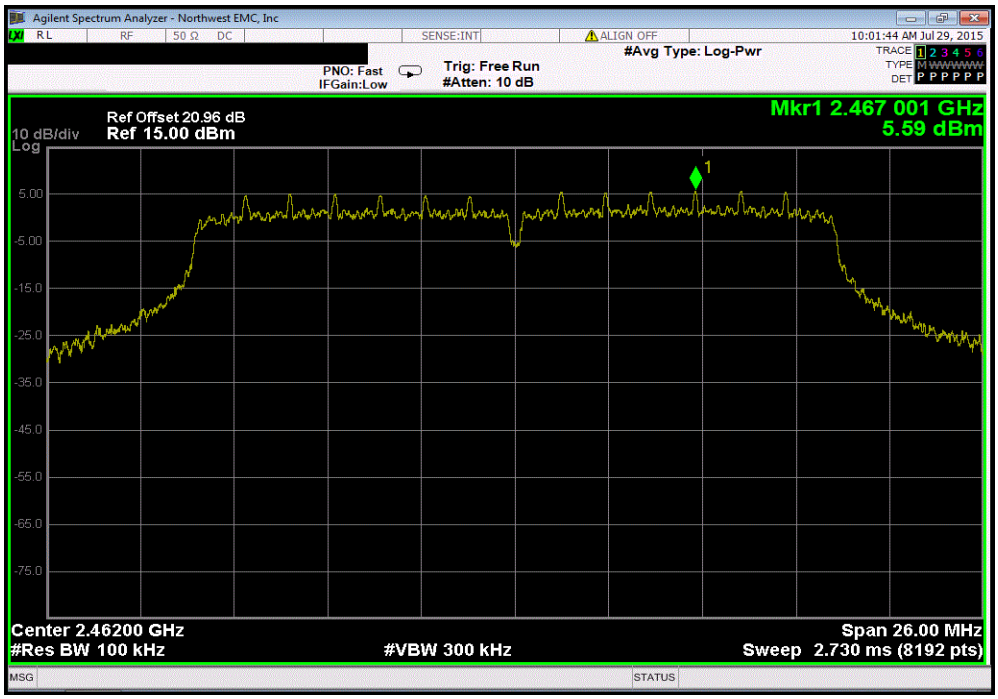
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-60.2	-20	Pass



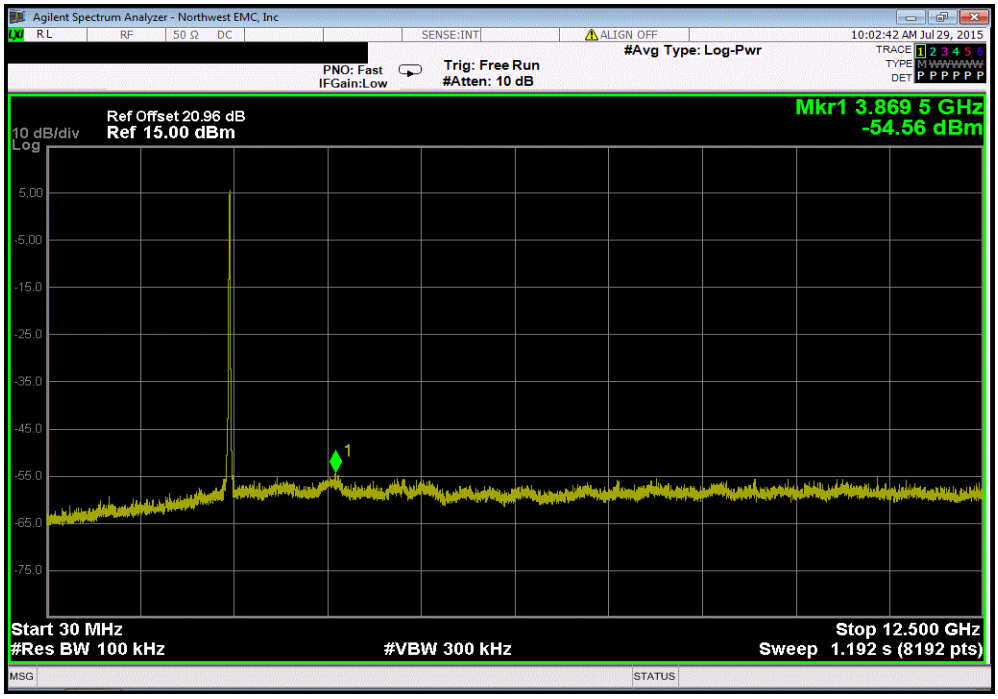
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-57.09	-20	Pass



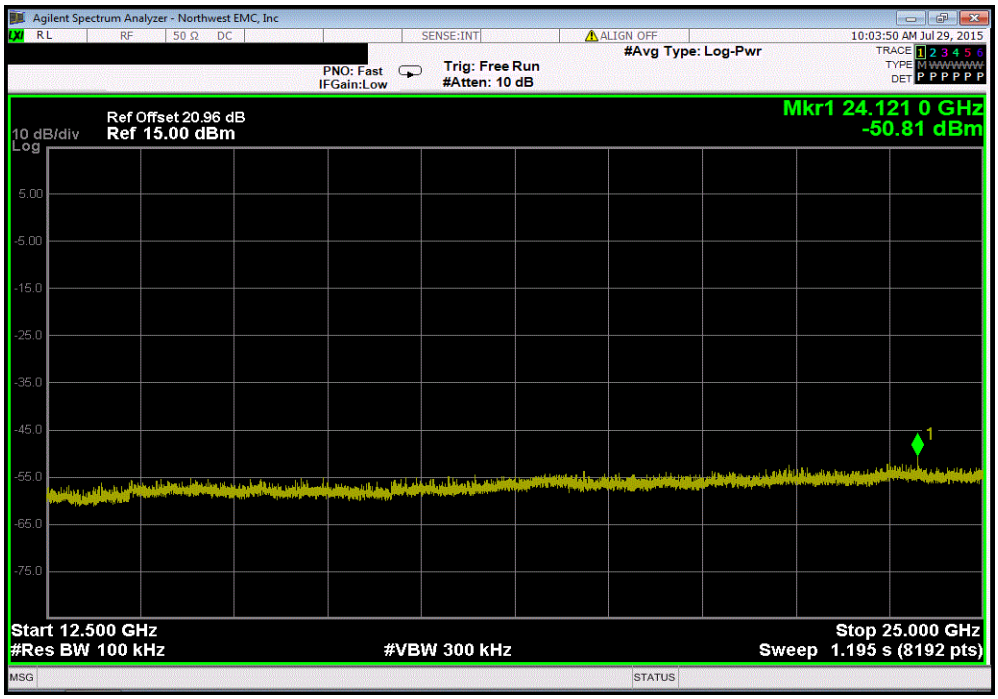
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



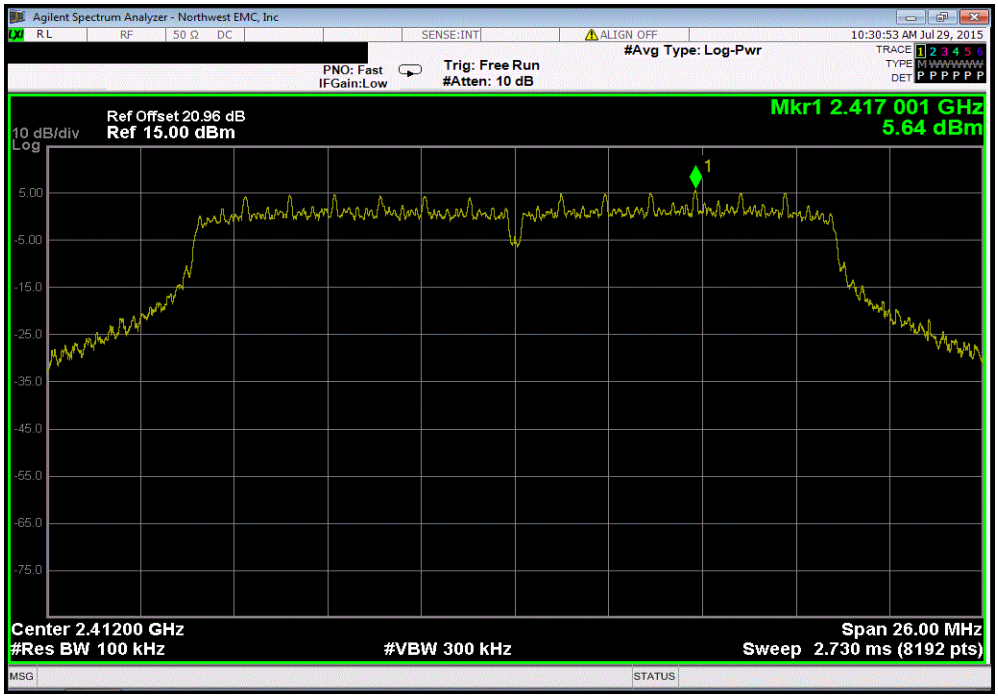
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-60.15	-20	Pass



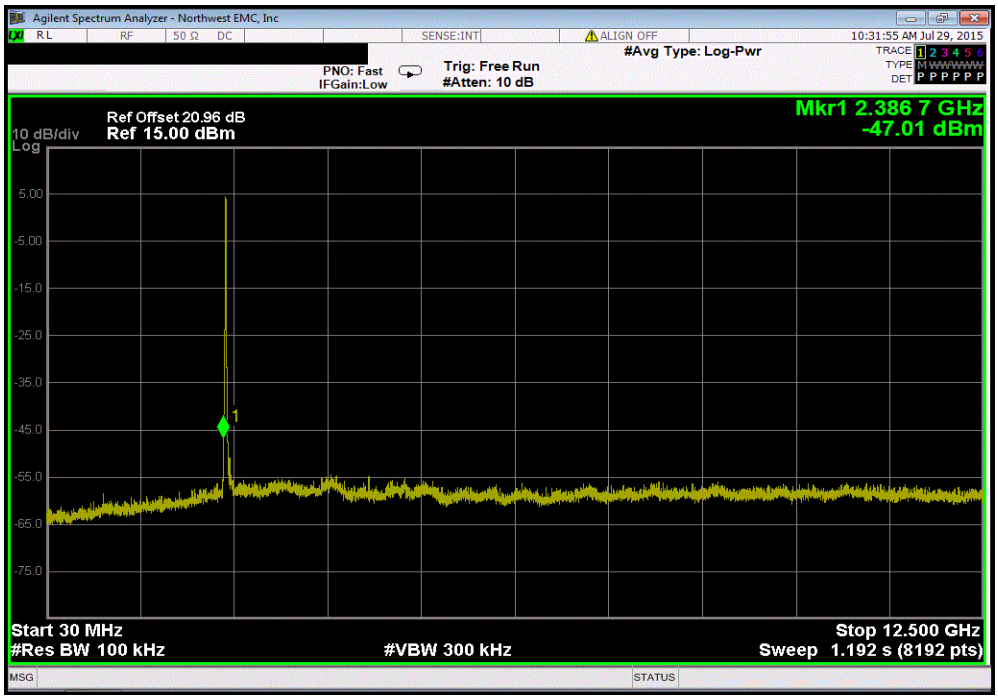
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-56.4	-20	Pass



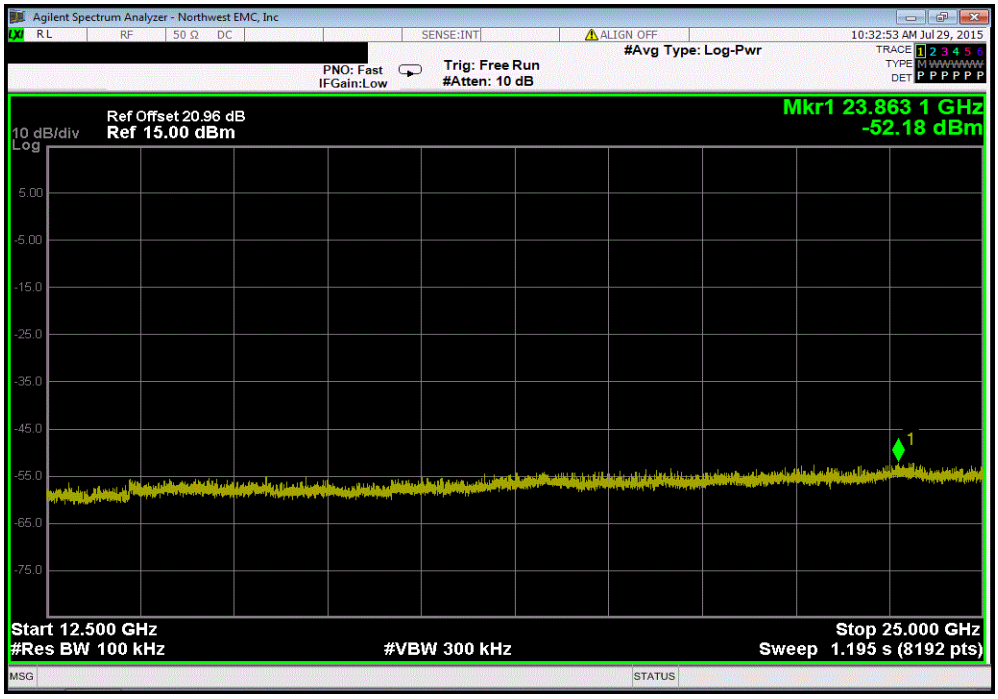
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



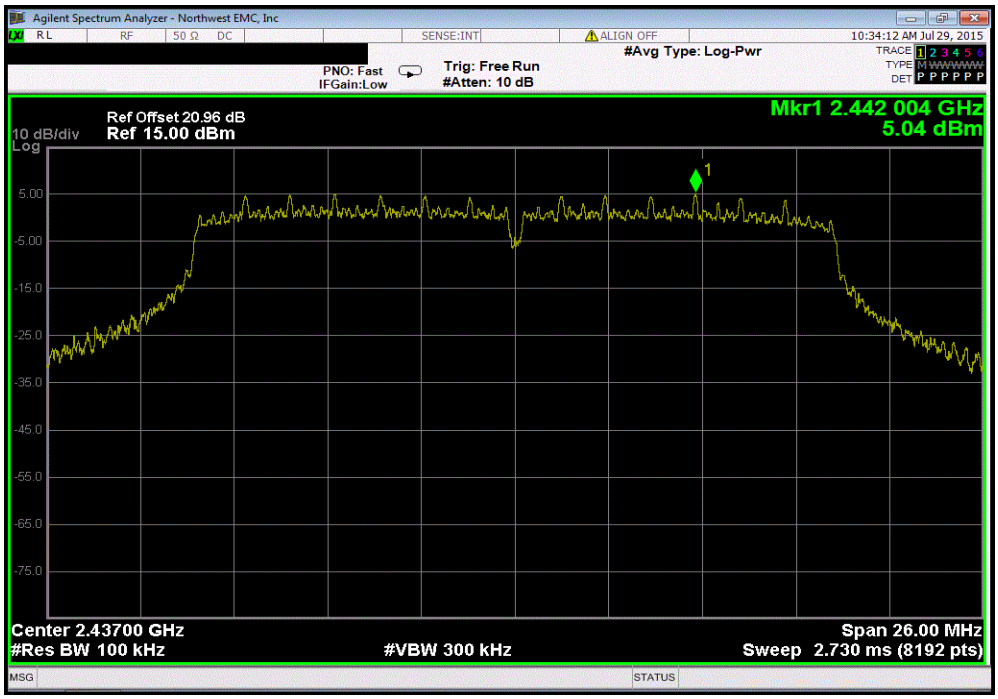
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52.65	-20	Pass



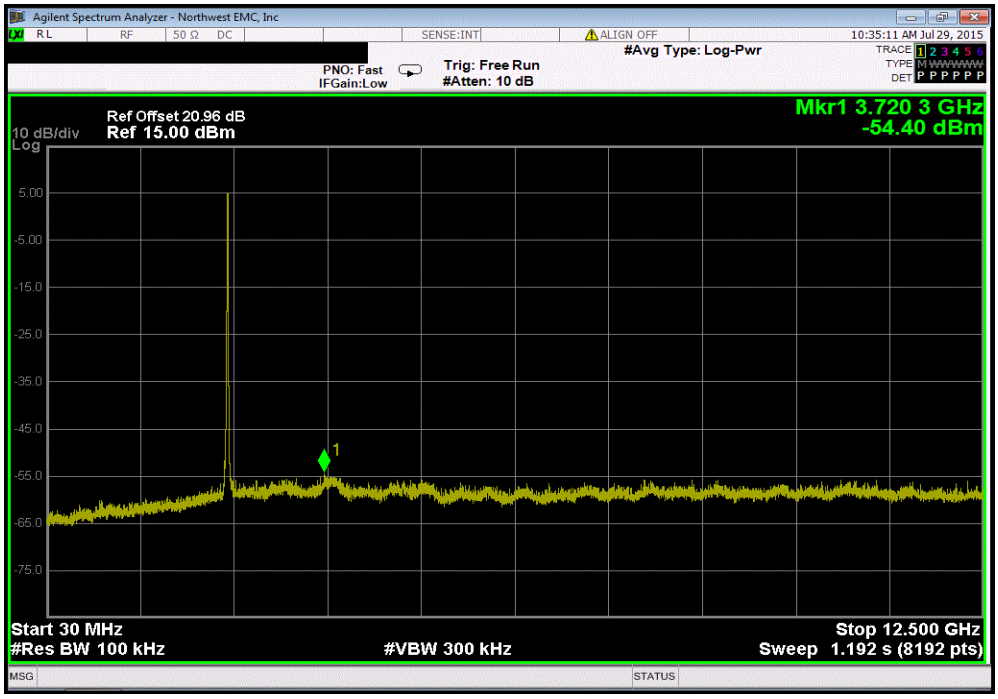
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-57.82	-20	Pass



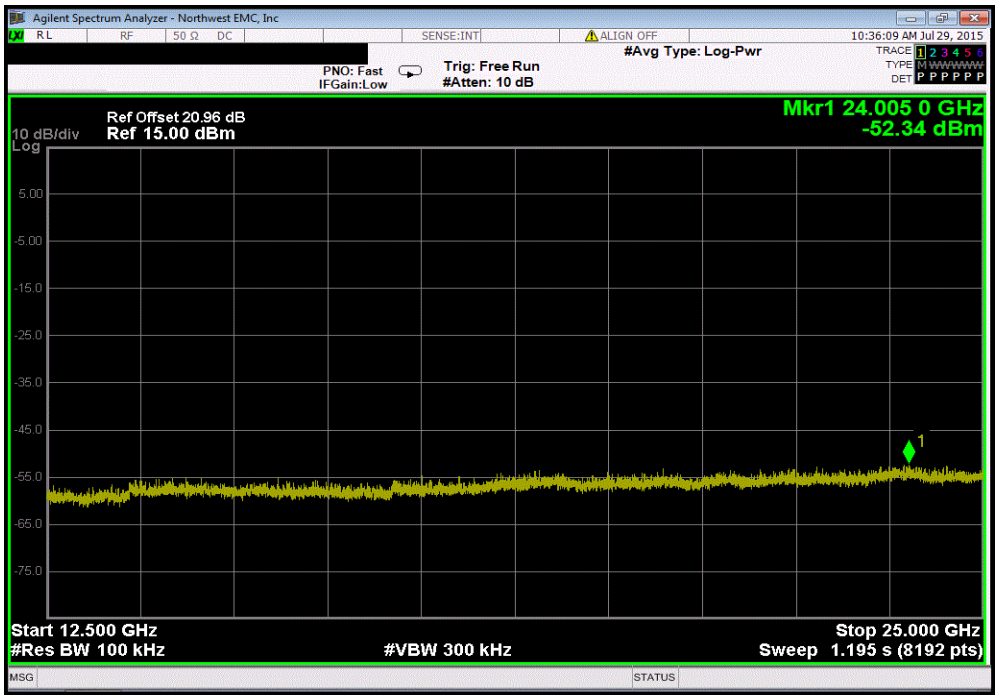
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



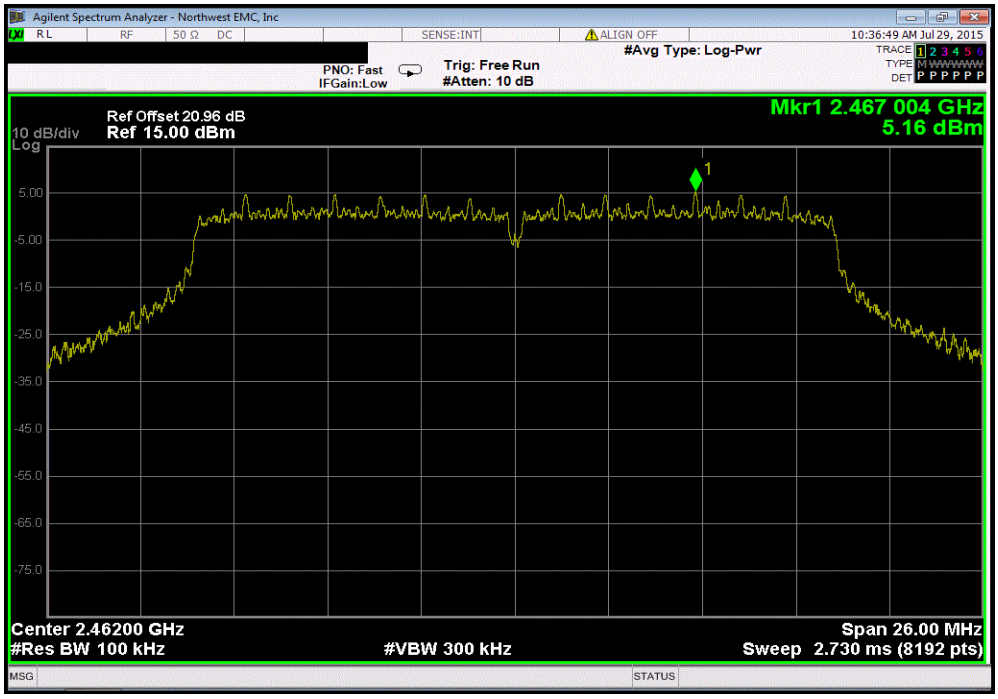
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-59.45	-20	Pass



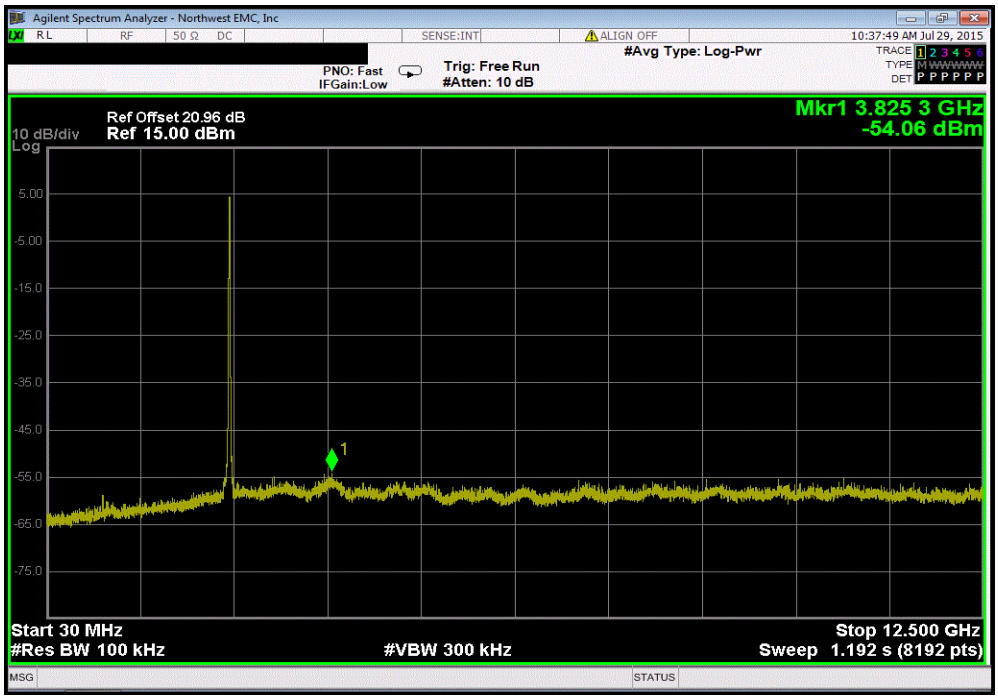
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-57.38	-20	Pass



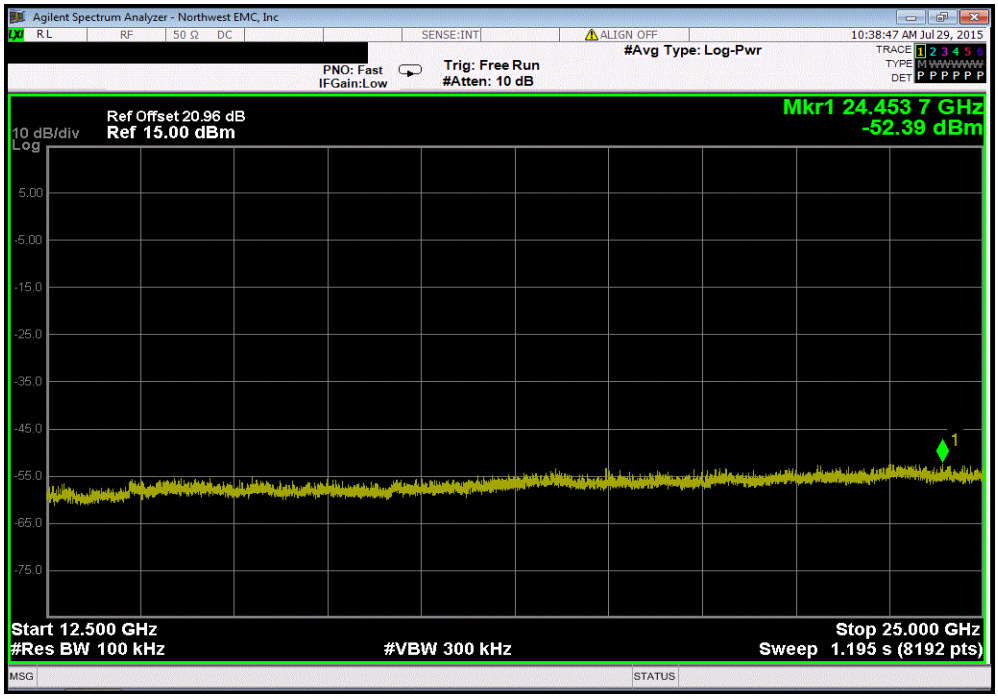
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-59.22	-20	Pass



Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-57.55	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2015.01.14

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mos)
Spectrum Analyzer	Agilent	N9010A	AFL	9/20/2014	12
DC Block, 40 GHz	Fairview Microwave	SD3379	AMM	2/27/2015	12
Attenuator, 20dB, 40 GHz	Fairview Microwave	SA4018-20	TQY	2/27/2015	12
Signal Generator, 40 GHz	Agilent	N5173B	TIW	7/15/2014	36

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

SPURIOUS CONDUCTED EMISSIONS

NORTHWEST EMC

XMit 2015.01.14

EUT:	Firebox T50-W (BS5AE7W)			**Work Order:**	VDEI0009
Serial Number:	70AF00069-3EB6			**Date:**	07/29/15
Customer:	WatchGuard Technologies, Inc.			**Temperature:**	24.9°C
Attendees:	None			**Humidity:**	47%
Project:	None			**Barometric Pres.:**	1014 mbar
Tested by:	Jonathan Kiefer	**Power:**	110VAC/60Hz	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 15.247:2015	ANSI C63.10:2013

COMMENTS

2x2 MIMO mode, Chain AC (Chains 0 and 2). Tested the modulation that produced the highest conducted output power.

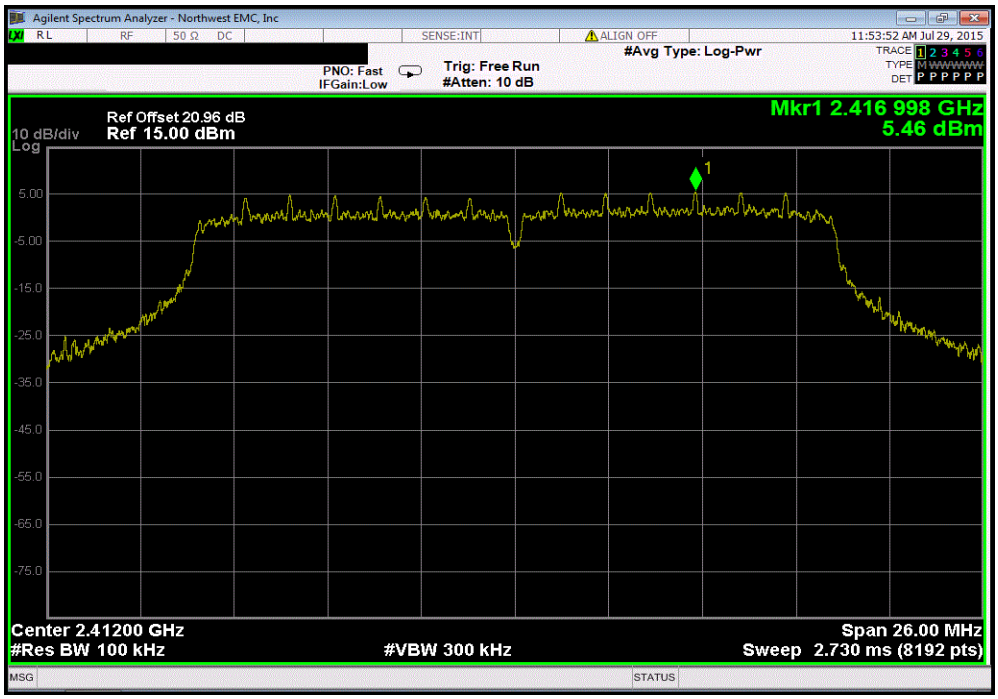
DEVIATIONS FROM TEST STANDARD

None

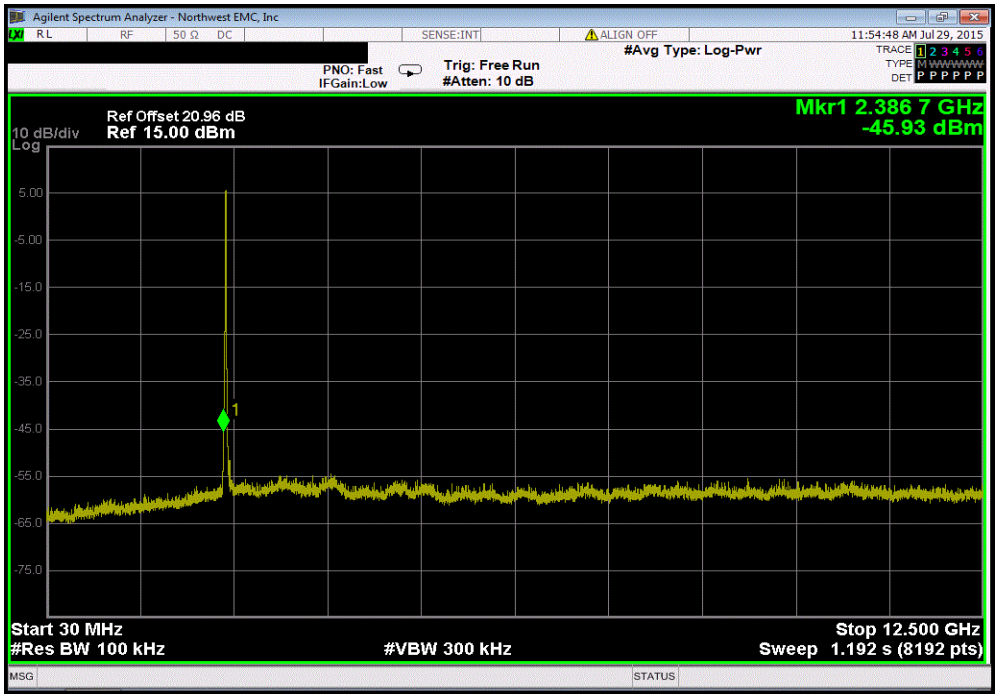
Configuration #	1	Signature Jonathan Kiefer

		Frequency Range	Max Value (dBc)	Limit ≤ (dBc)	Result
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-51.39	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-56.9	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-59.64	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-57.29	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-60.37	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-57.43	-20	Pass
Chain C					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-49.26	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-57.18	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-58.64	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-55.81	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-58.88	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-56.65	-20	Pass

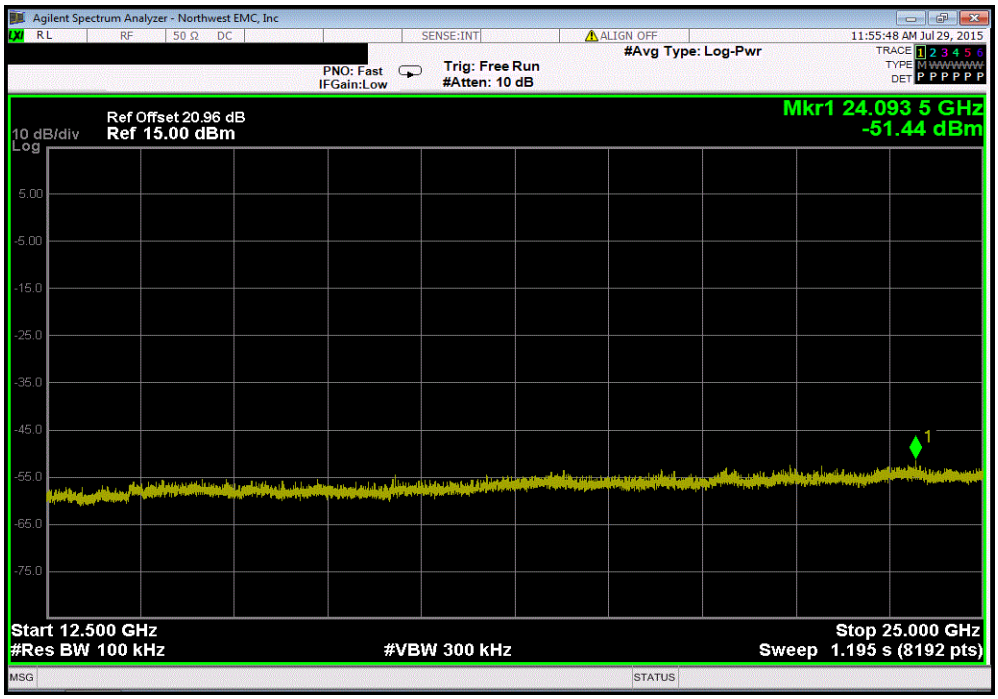
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



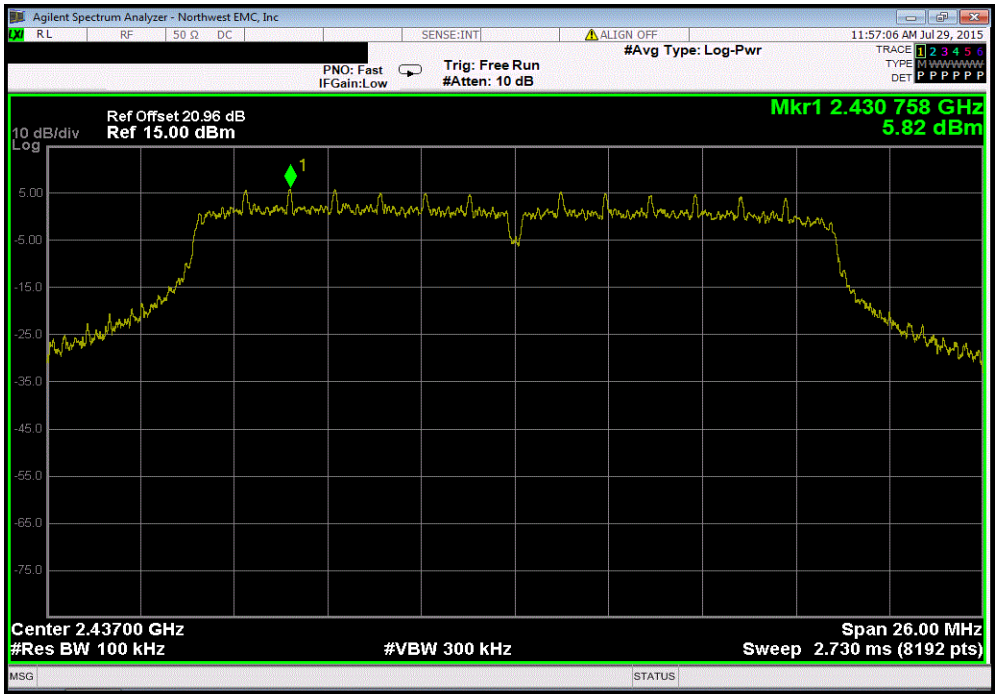
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.39	-20	Pass



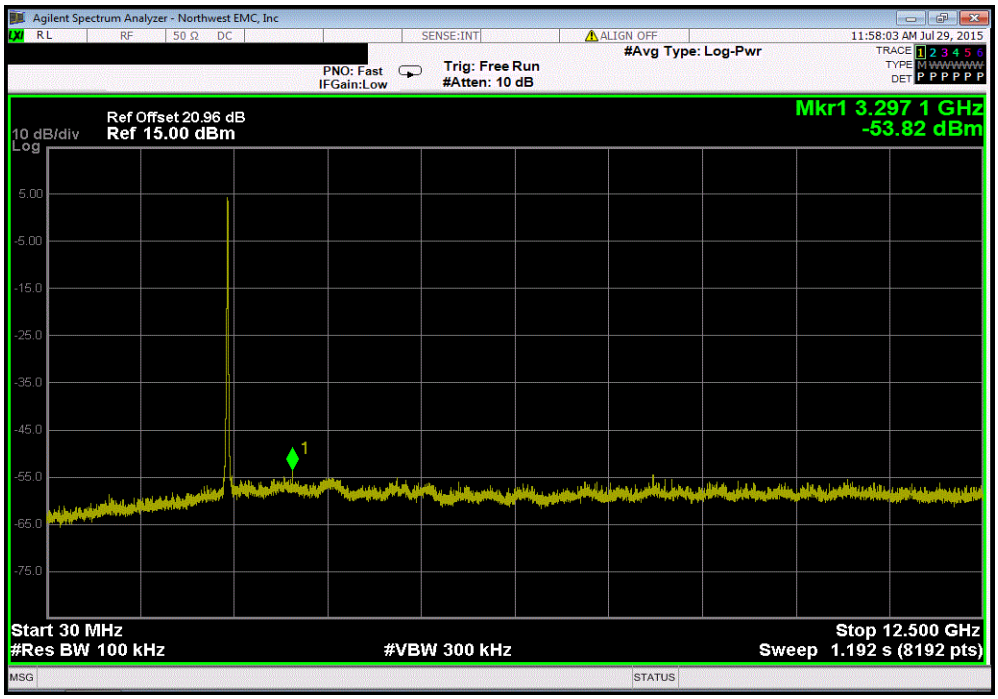
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-56.9	-20	Pass



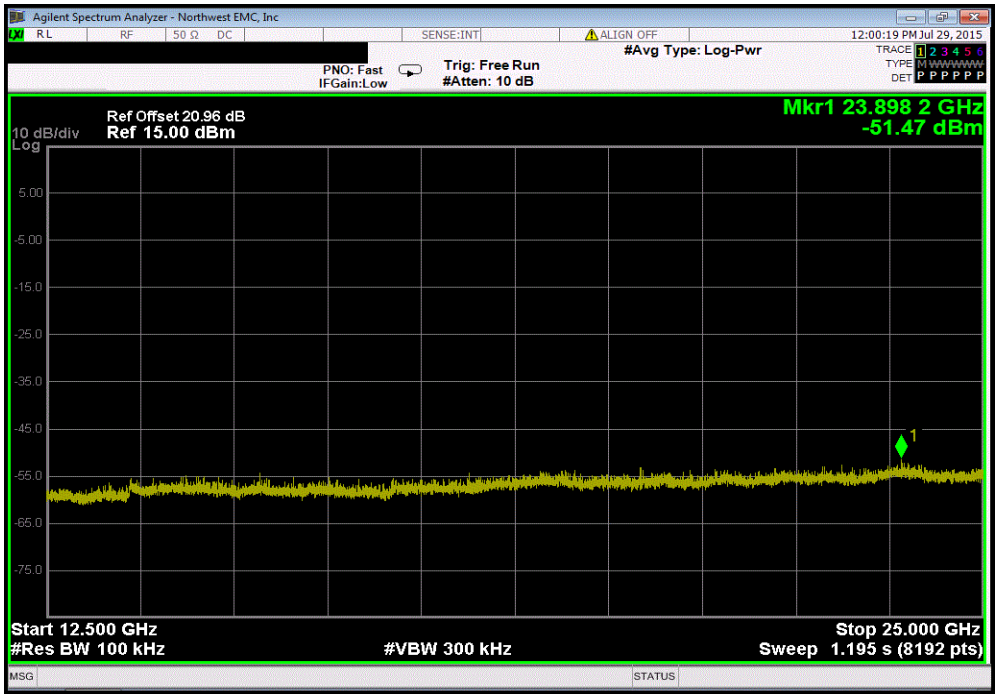
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



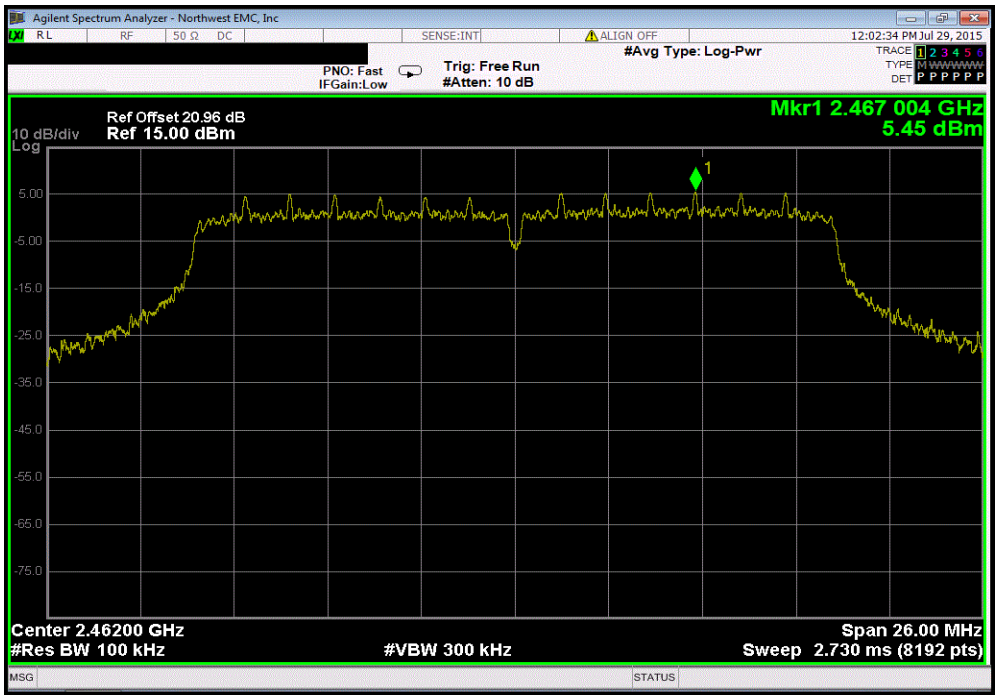
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-59.64	-20	Pass



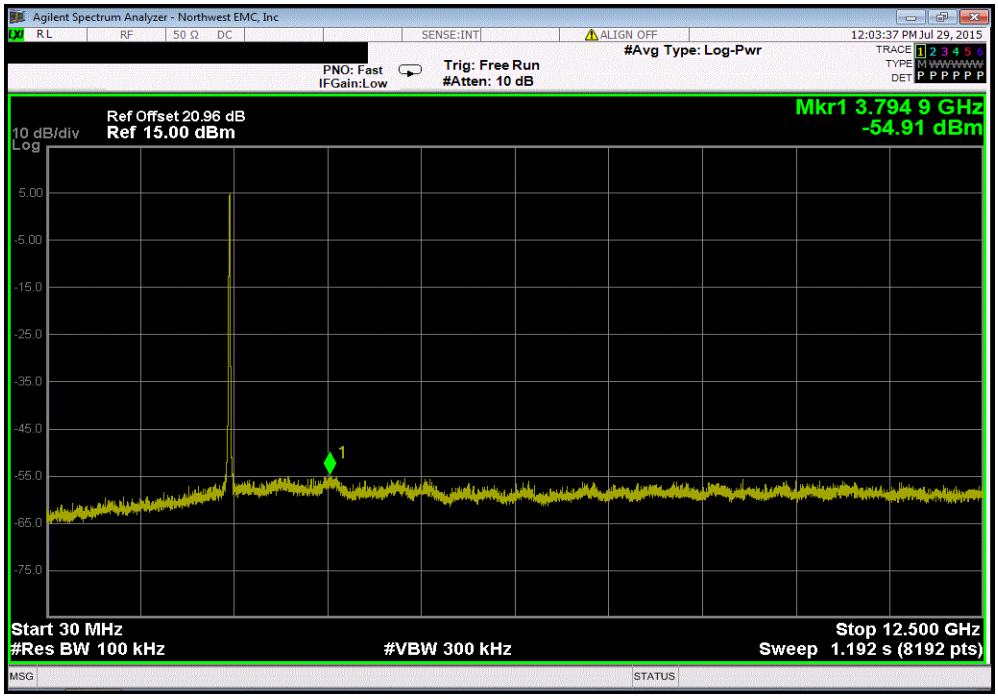
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-57.29	-20	Pass



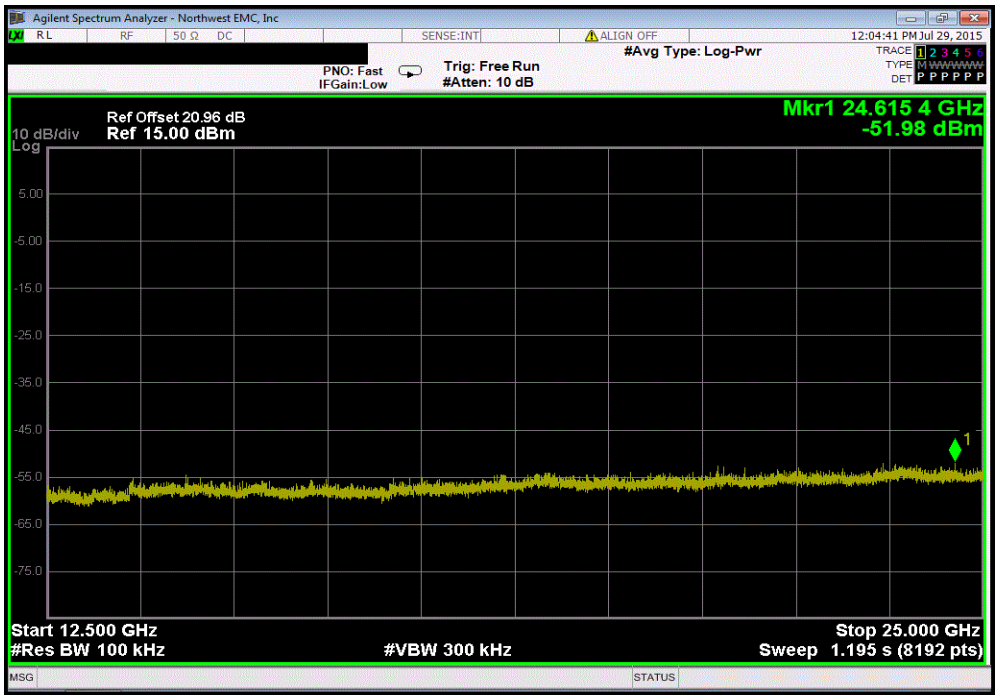
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



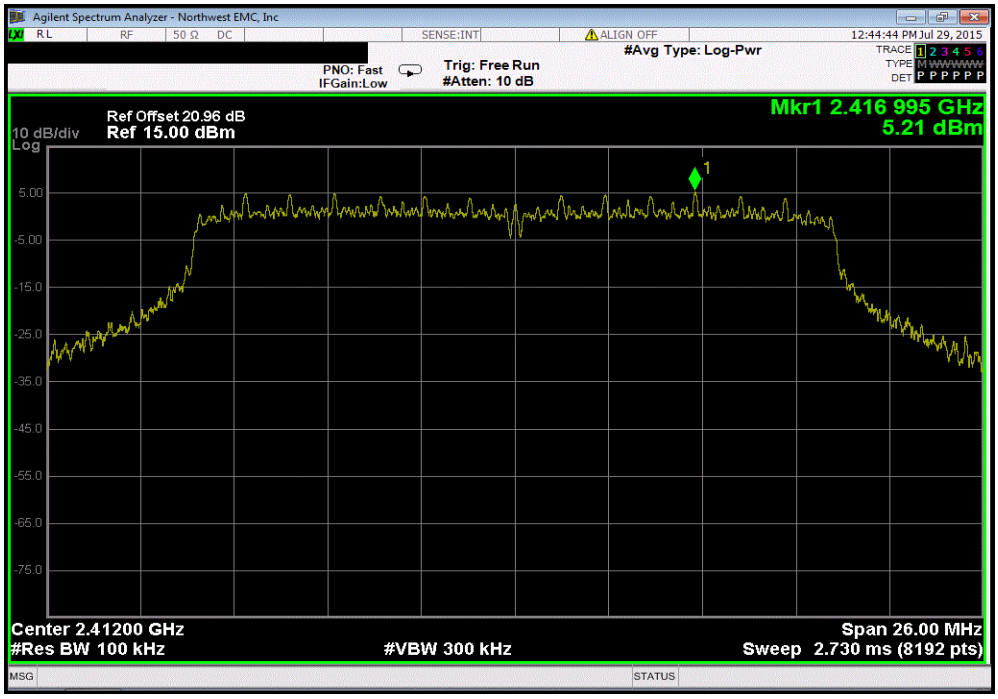
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-60.37	-20	Pass



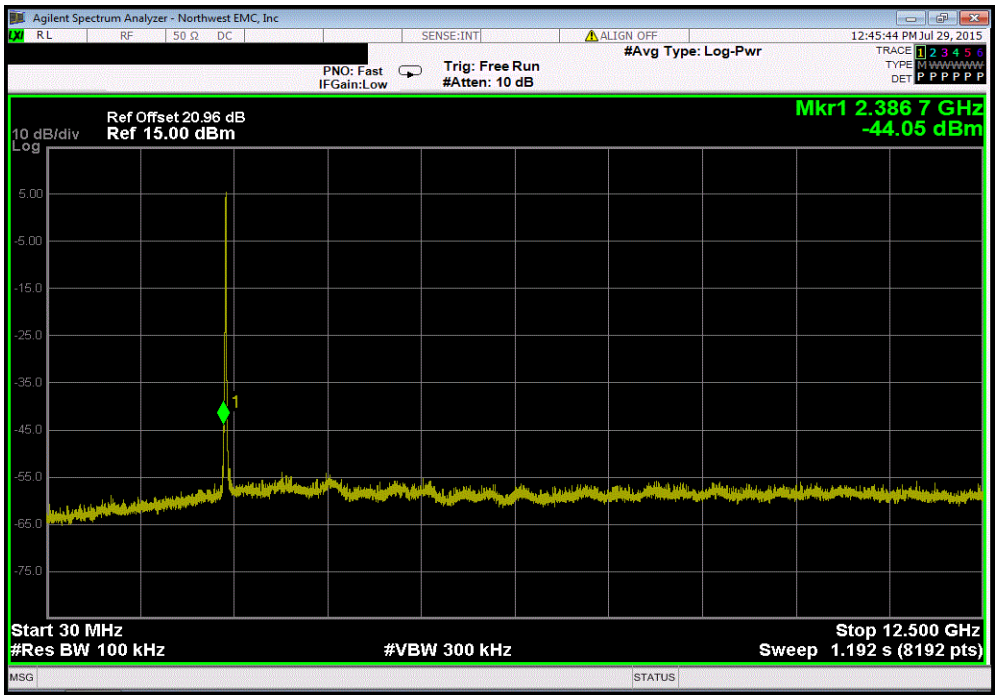
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-57.43	-20	Pass



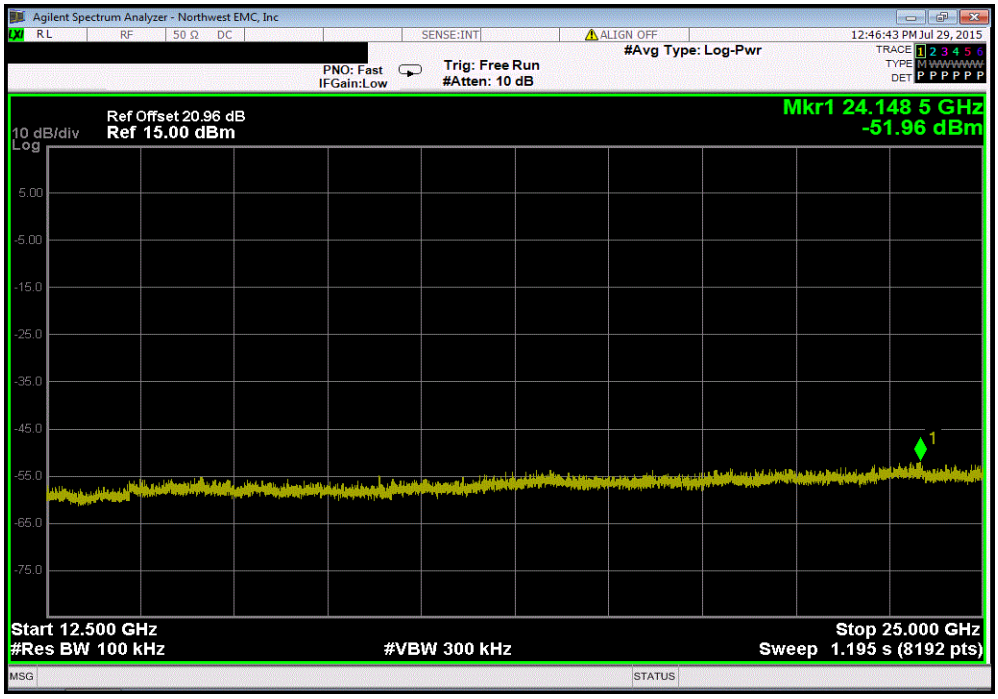
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



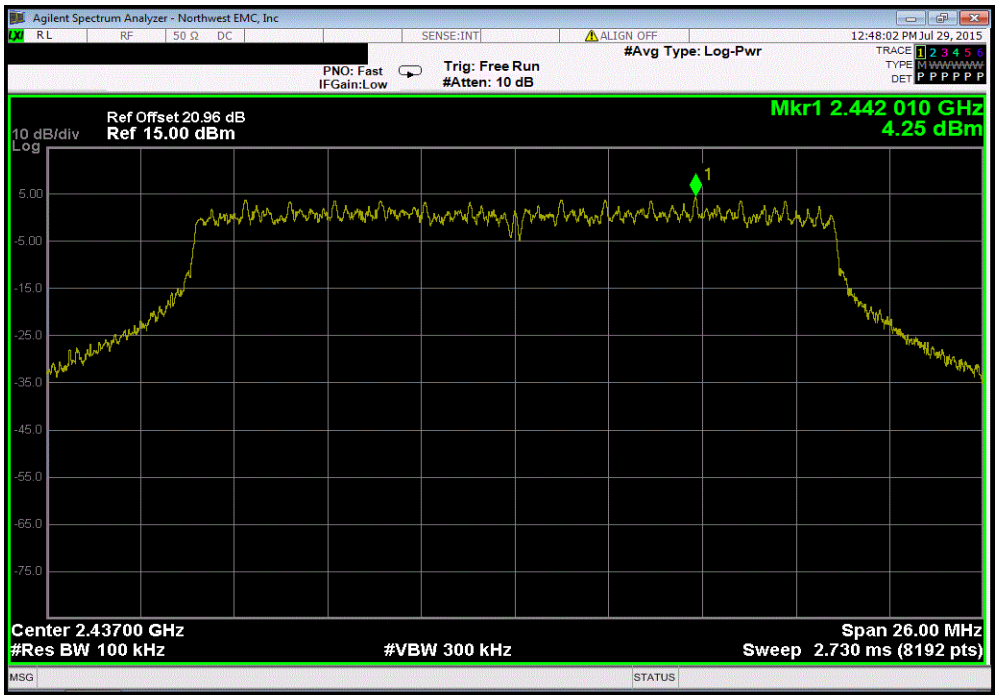
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-49.26	-20	Pass



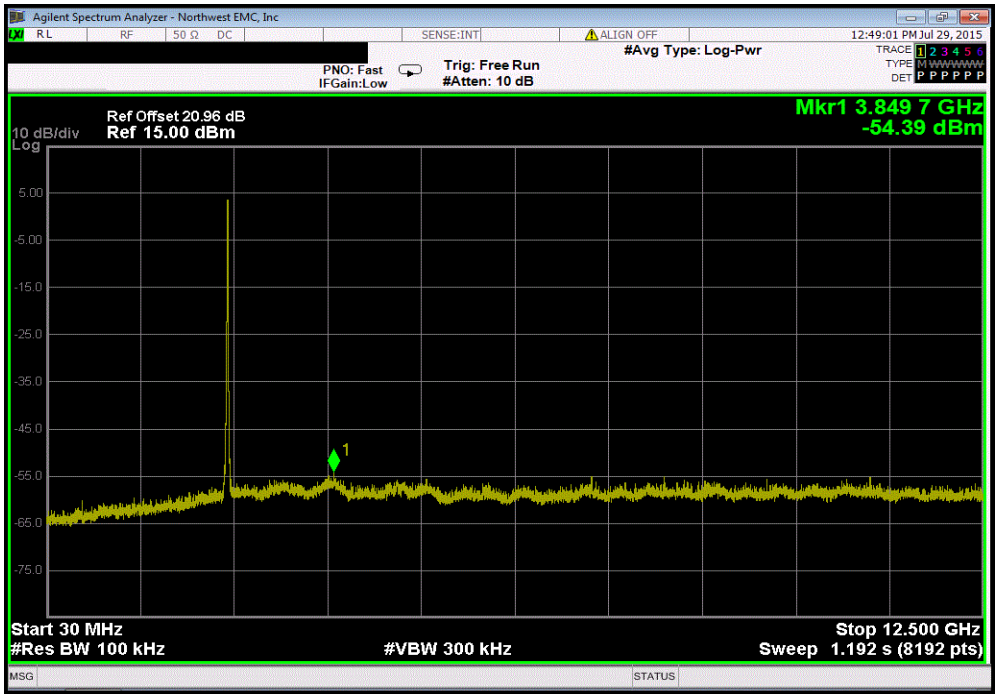
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-57.18	-20	Pass



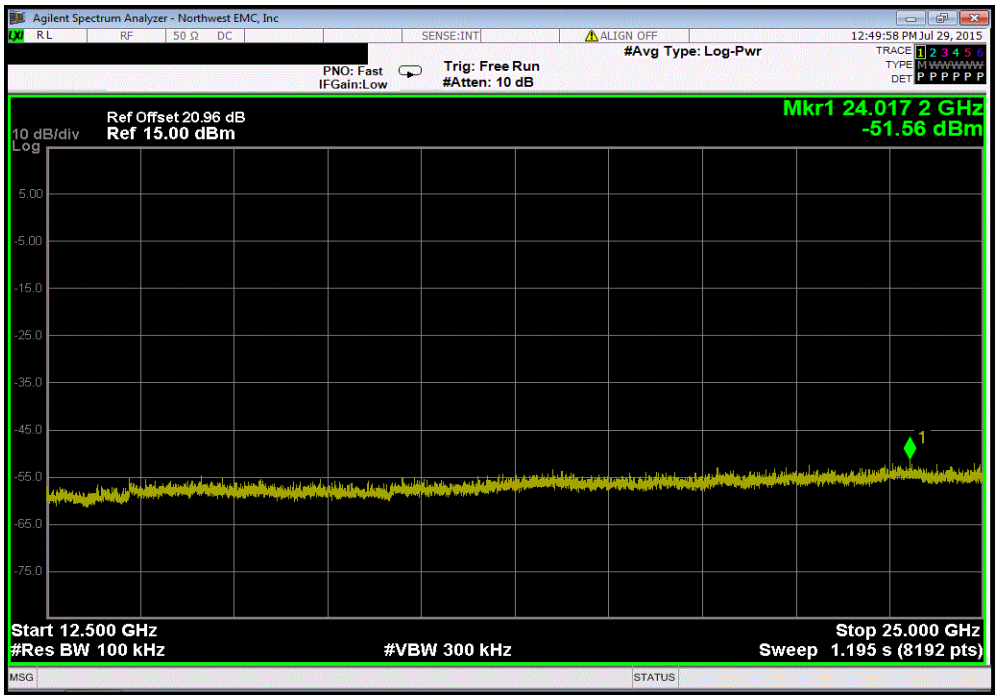
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



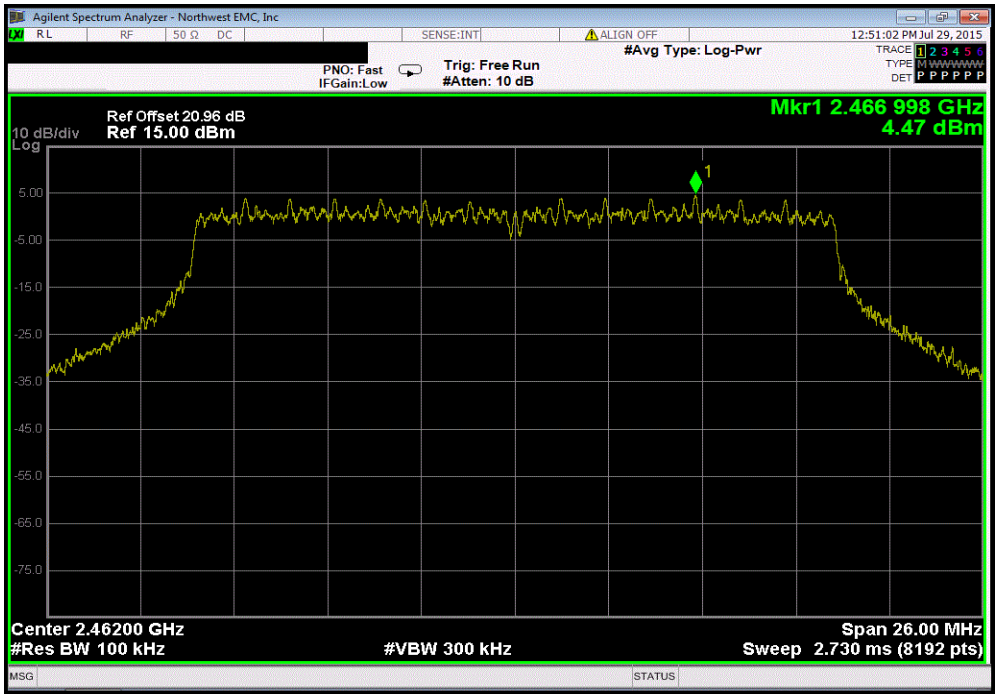
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz					
Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-58.64	-20	Pass



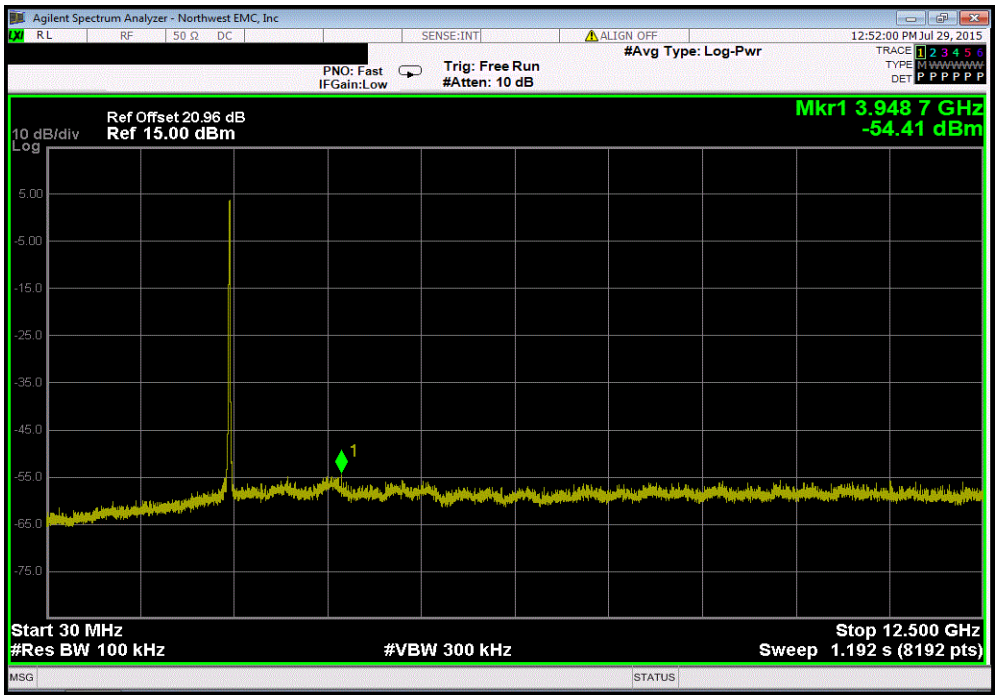
Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz				
Frequency Range		Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-55.81	-20	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
	Frequency Range			Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-58.88	-20	Pass



Chain C, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz				
Frequency Range		**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-56.65	-20	Pass