POWER SPECTRAL DENSITY

XMit 2019.09.05

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.	Cal. Due
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

POWER SPECTRAL DENSITY

element

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	**V300**			**Work Order:**	**WTVD0027**
Serial Number:	**63**			**Date:**	**8-Nov-19**
Customer:	**WatchGuard Video**			**Temperature:**	**23.2 °C**
Attendees:	**Navaid Karimi**			**Humidity:**	**26.2% RH**
Project:	**None**			**Barometric Pres.:**	**1035 mbar**
Tested by:	**Jonathan Kiefer**	**Power:**	**Battery**	**Job Site:**	**TX09**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

Reference Offset 21.22 dB (20dB attenuator+dc block+cable).

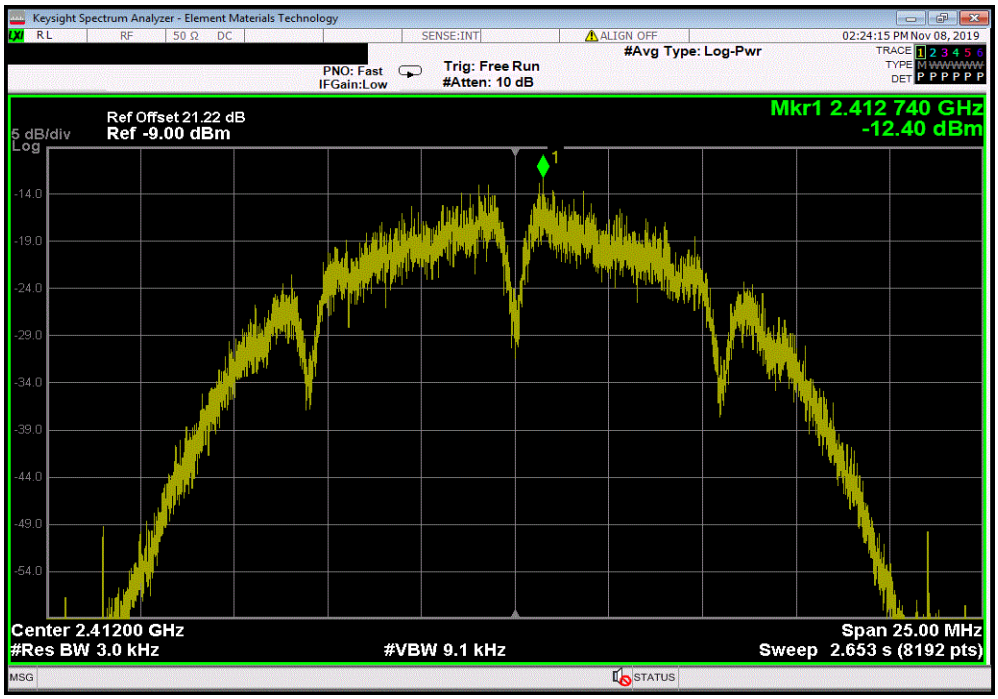
DEVIATIONS FROM TEST STANDARD

None

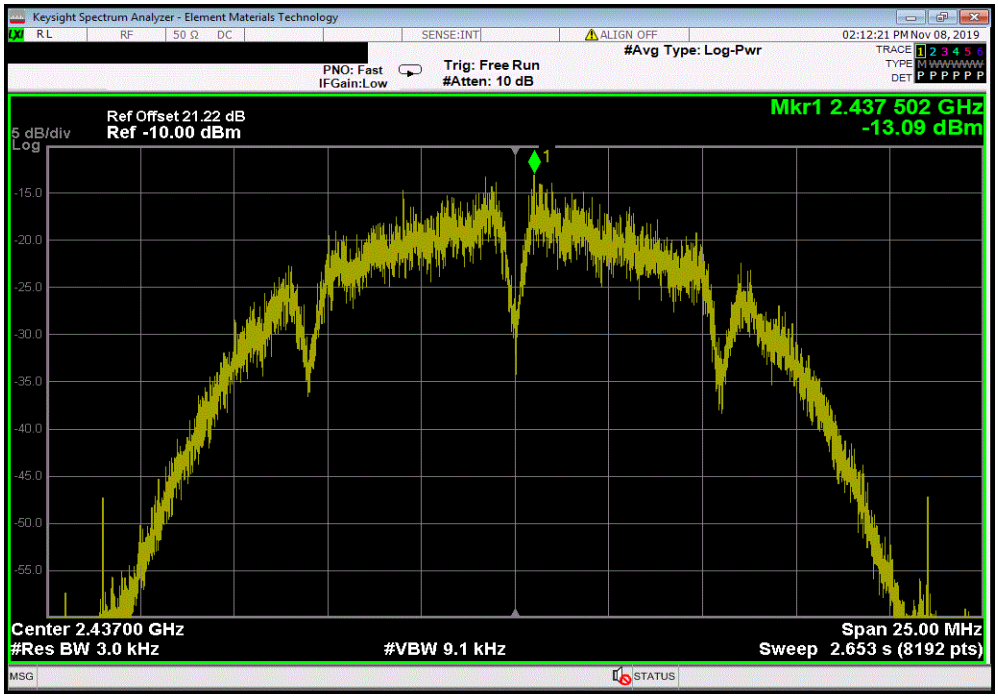
Configuration #	**3**	*Signature* Jonathan Kiefer

	Value dBm/3kHz	**Limit < dBm/3kHz**	**Results**
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	-12.397	8	Pass
Mid Channel 6, 2437 MHz	-13.086	8	Pass
High Channel 11, 2462 MHz	-13.08	8	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	-13.062	8	Pass
Mid Channel 6, 2437 MHz	-13.915	8	Pass
High Channel 11, 2462 MHz	-14.372	8	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	-19.054	8	Pass
Mid Channel 6, 2437 MHz	-19.18	8	Pass
High Channel 11, 2462 MHz	-19.914	8	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	-19.227	8	Pass
Mid Channel 6, 2437 MHz	-19.358	8	Pass
High Channel 11, 2462 MHz	-18.49	8	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	-17.999	8	Pass
Mid Channel 6, 2437 MHz	-19.728	8	Pass
High Channel 11, 2462 MHz	-20.206	8	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	-20.102	8	Pass
Mid Channel 6, 2437 MHz	-19.818	8	Pass
High Channel 11, 2462 MHz	-21.137	8	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	-20.151	8	Pass
Mid Channel 6, 2437 MHz	-19.984	8	Pass
High Channel 11, 2462 MHz	-21.128	8	Pass

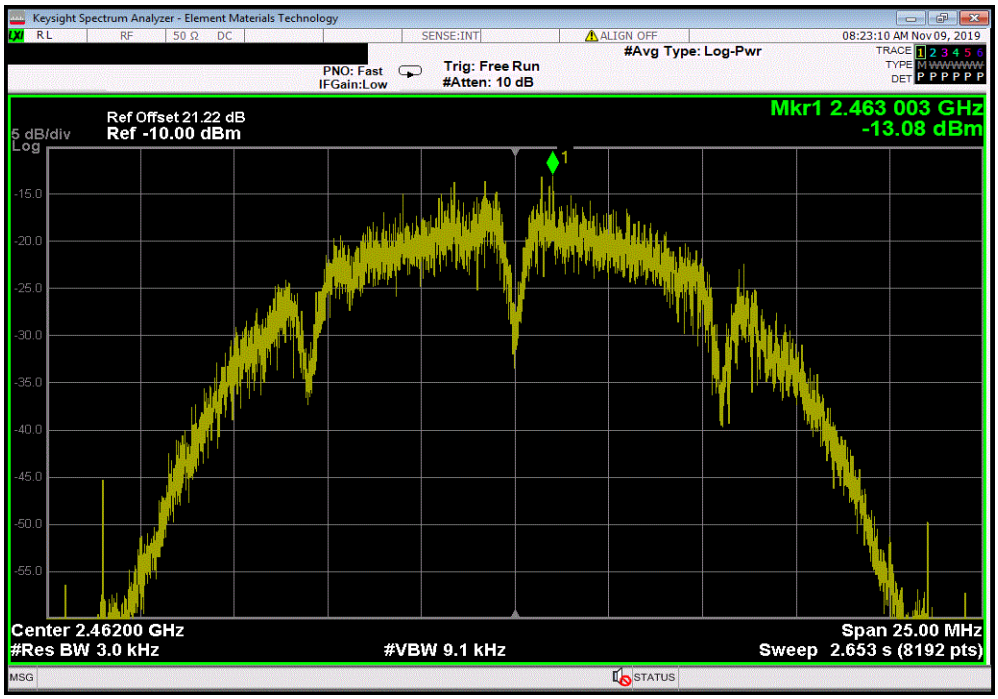
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-12.397	8	Pass



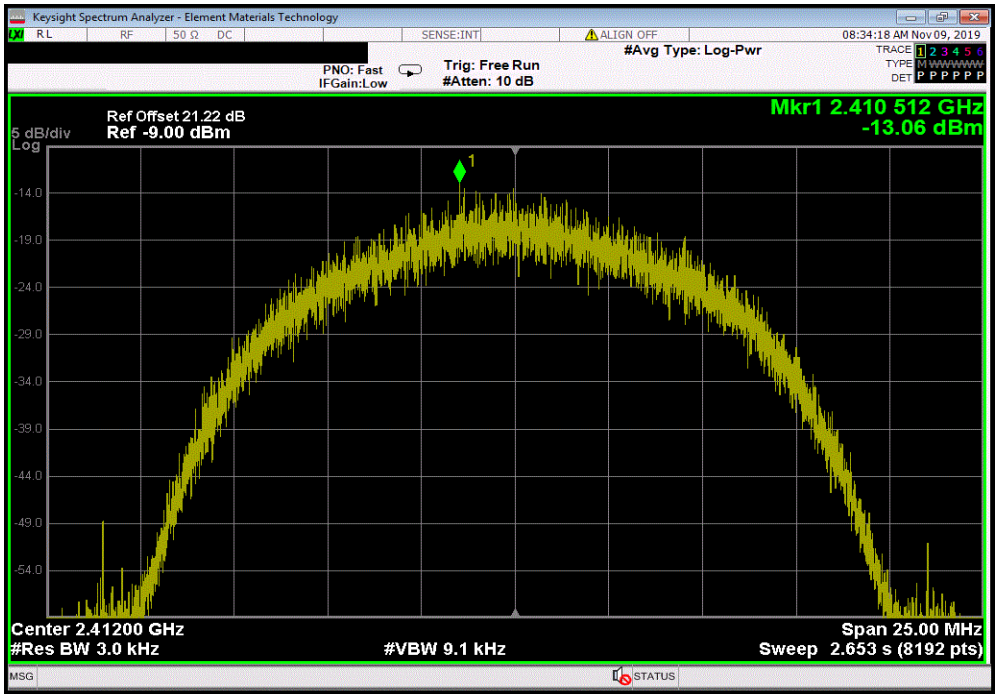
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-13.086	8	Pass



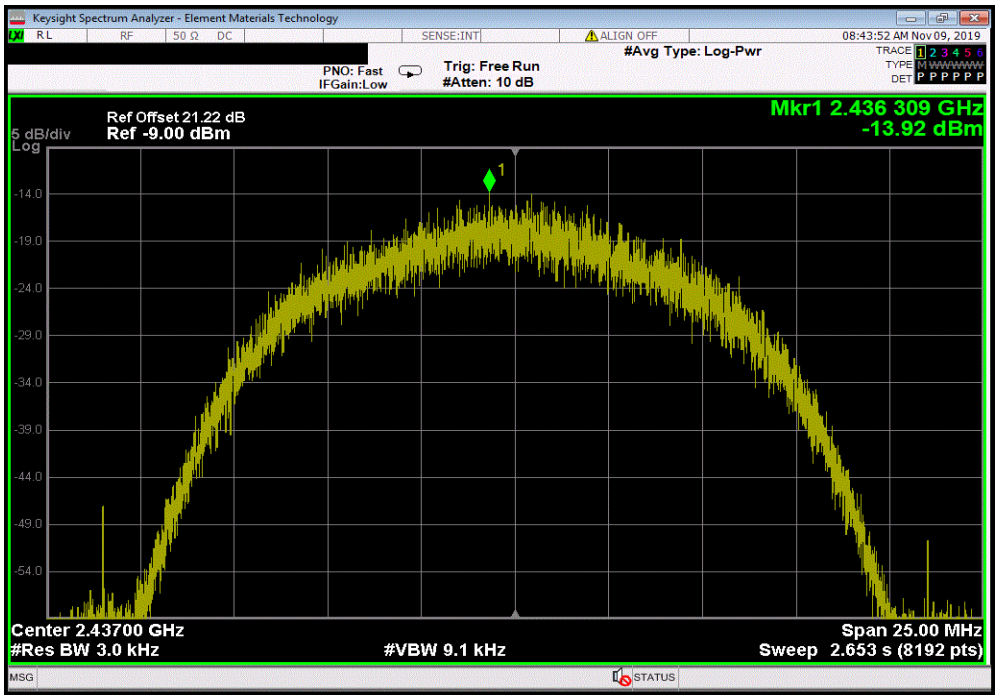
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-13.08	8	Pass



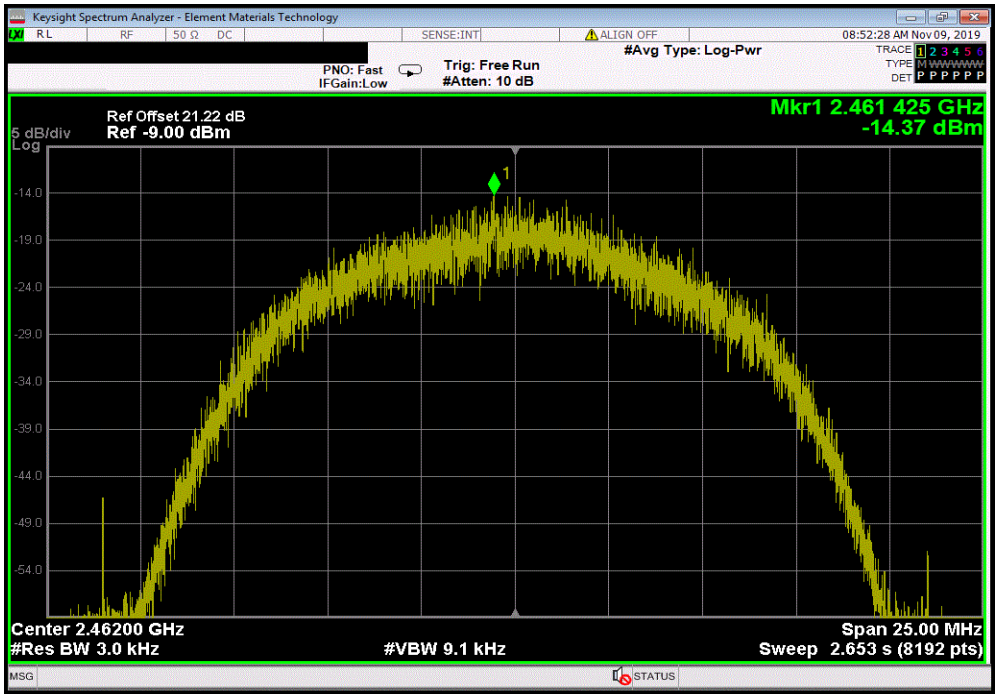
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-13.062	8	Pass



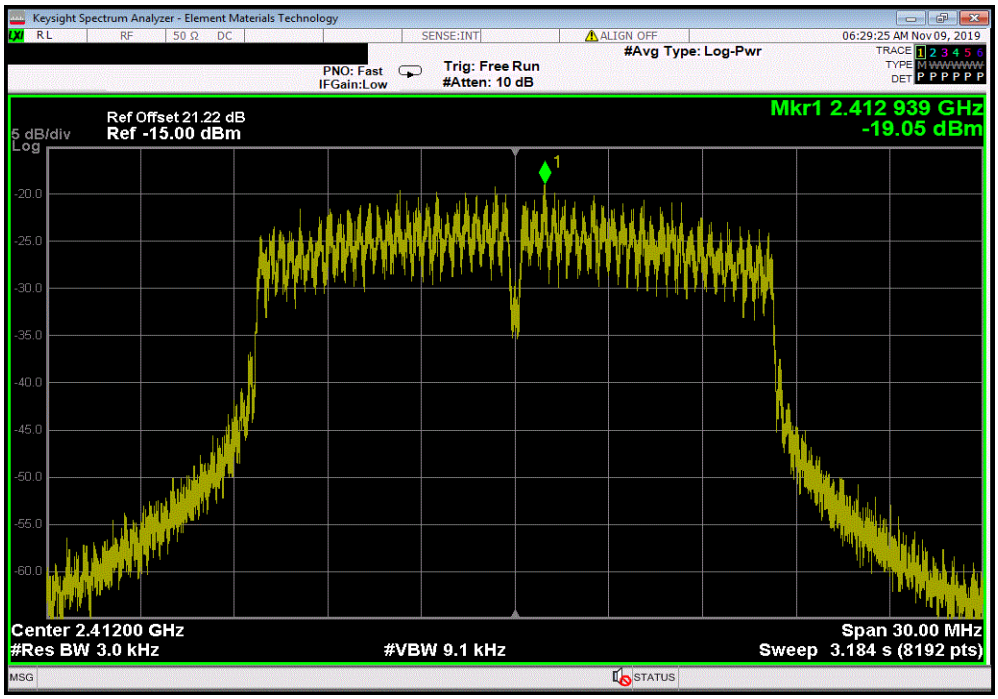
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-13.915	8	Pass



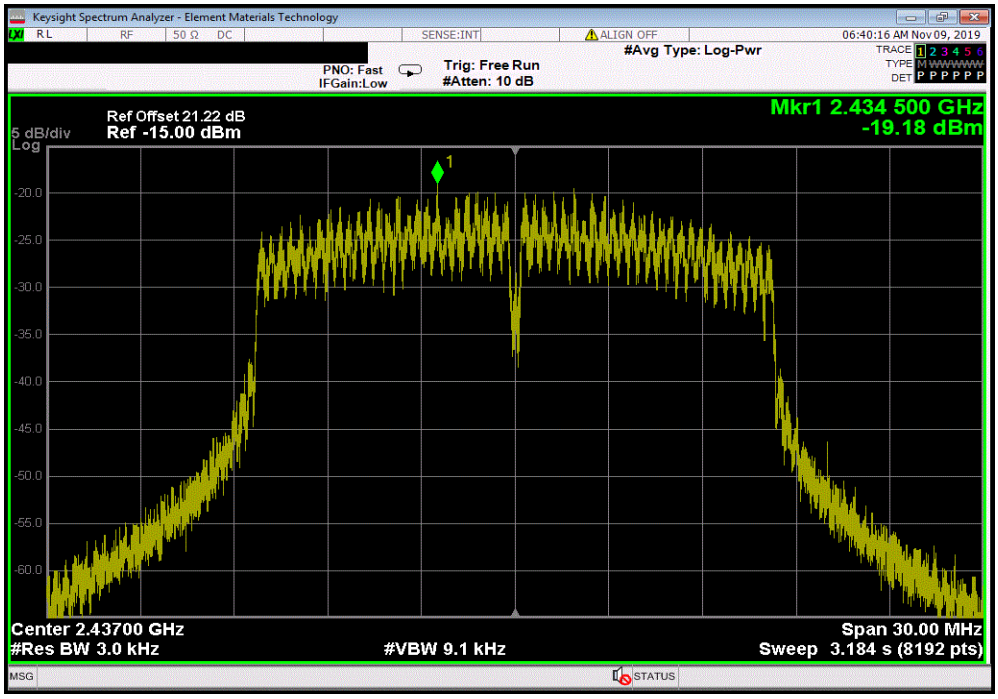
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-14.372	8	Pass



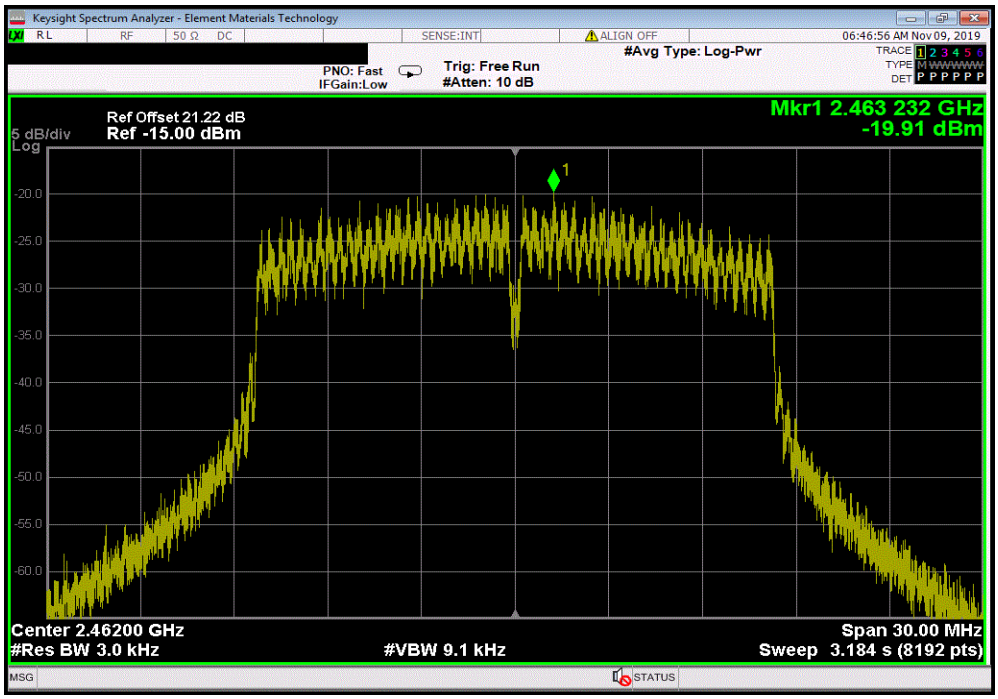
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.054	8	Pass



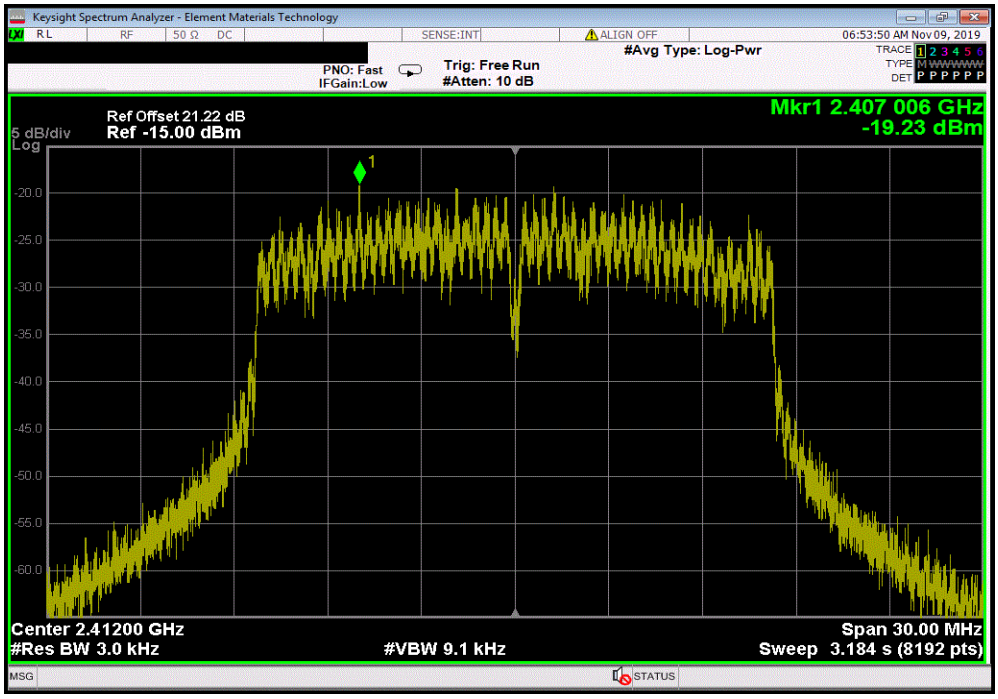
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.18	8	Pass



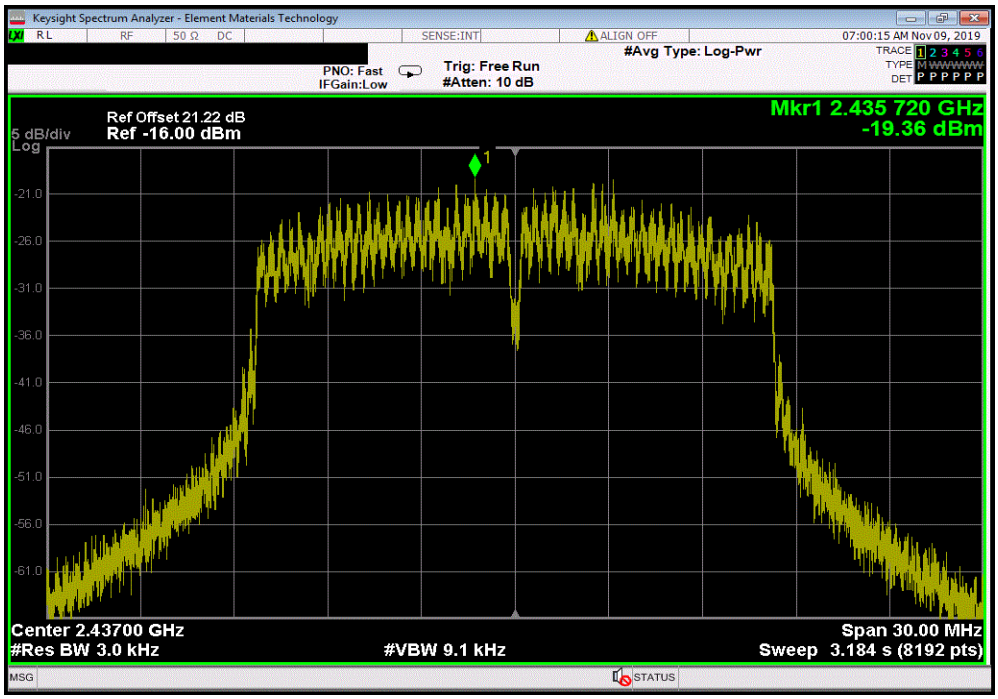
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.914	8	Pass



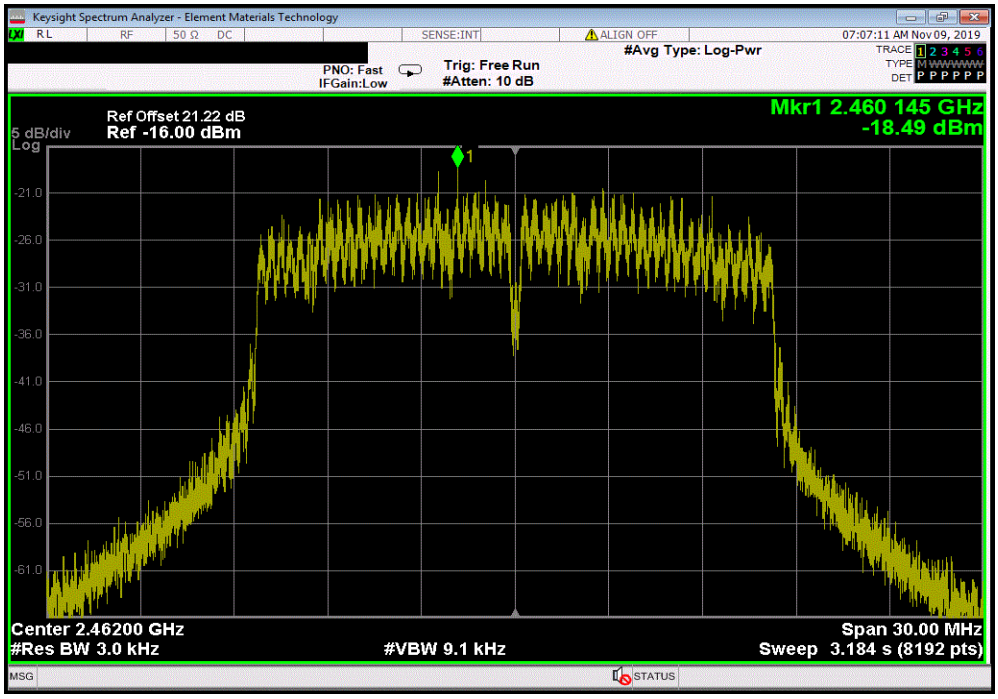
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.227	8	Pass



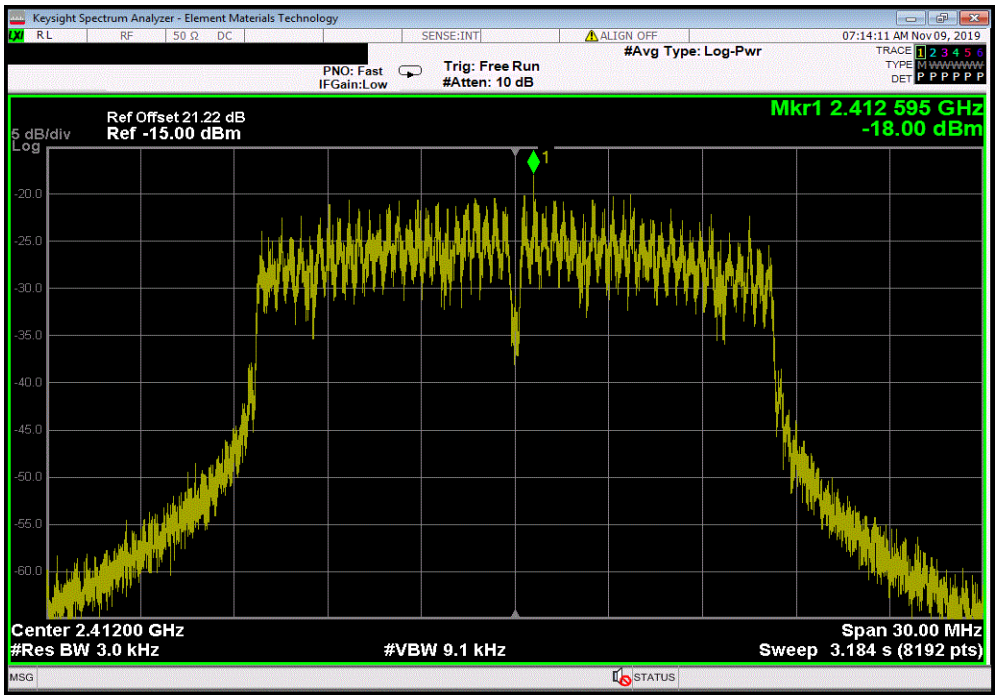
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.358	8	Pass



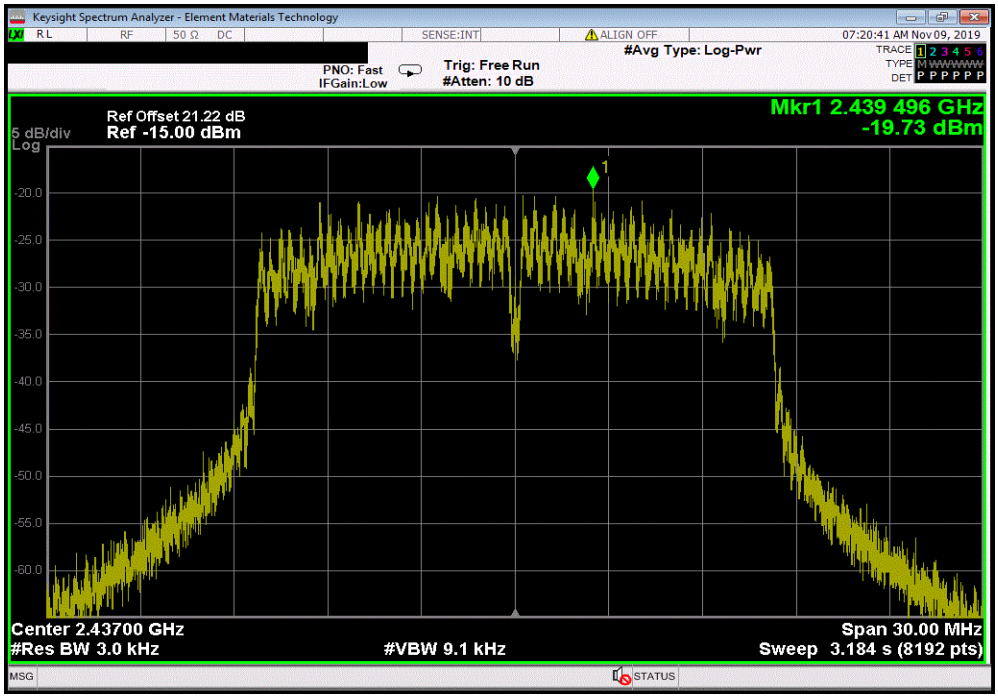
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-18.49	8	Pass



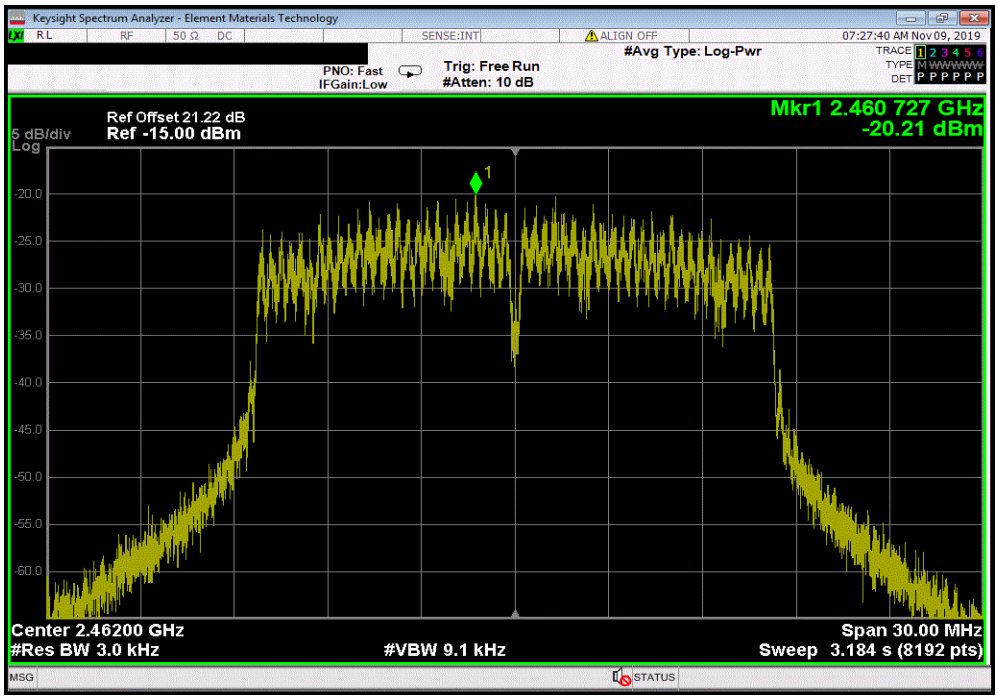
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-17.999	8	Pass



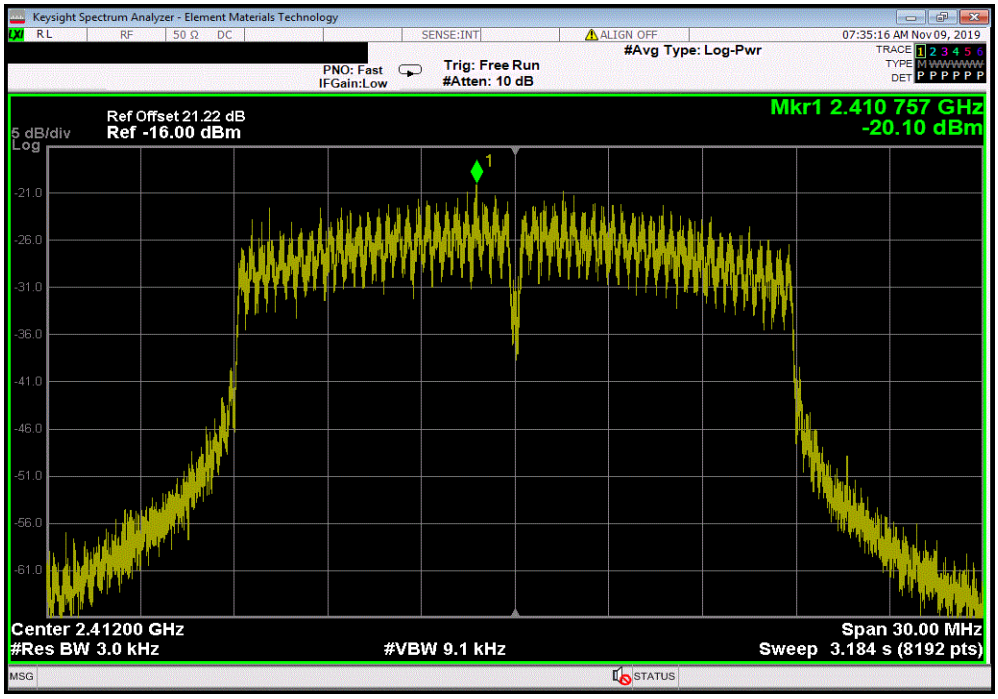
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.728	8	Pass



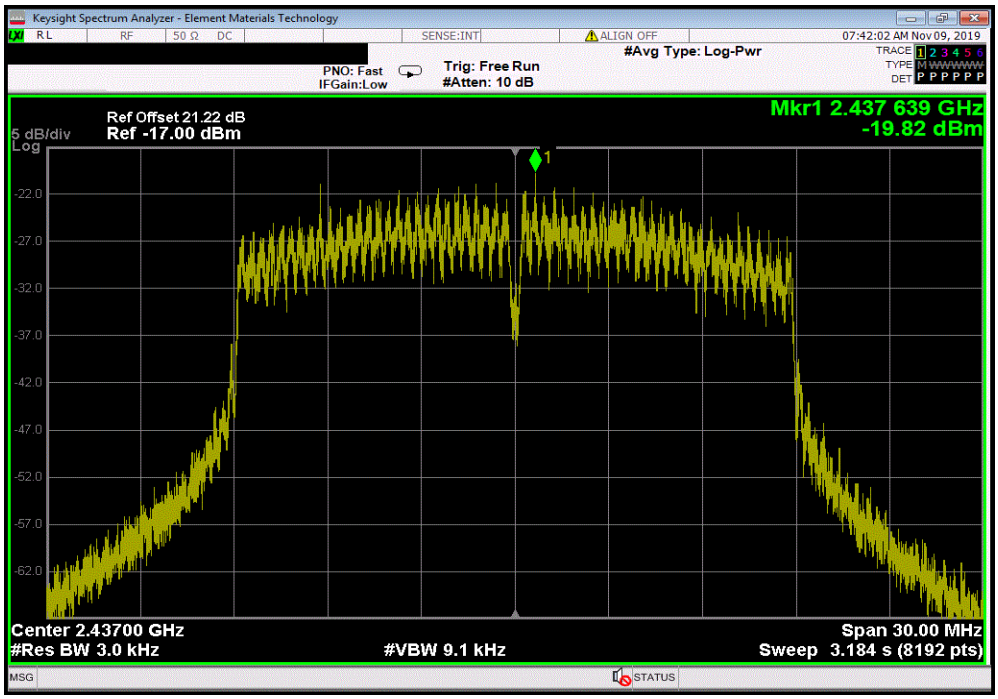
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-20.206	8	Pass



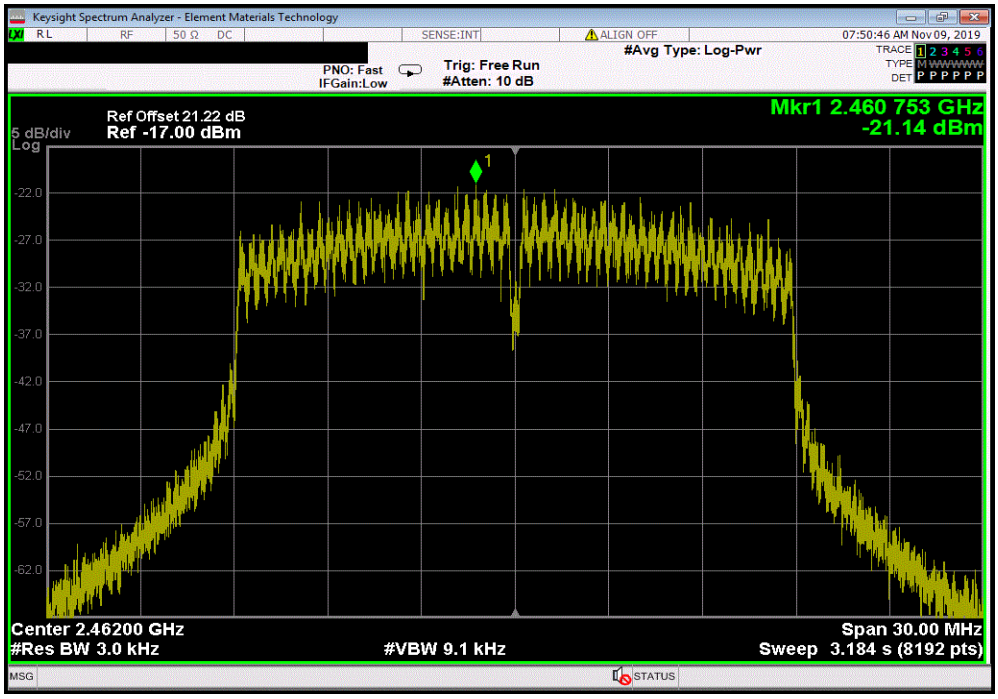
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-20.102	8	Pass



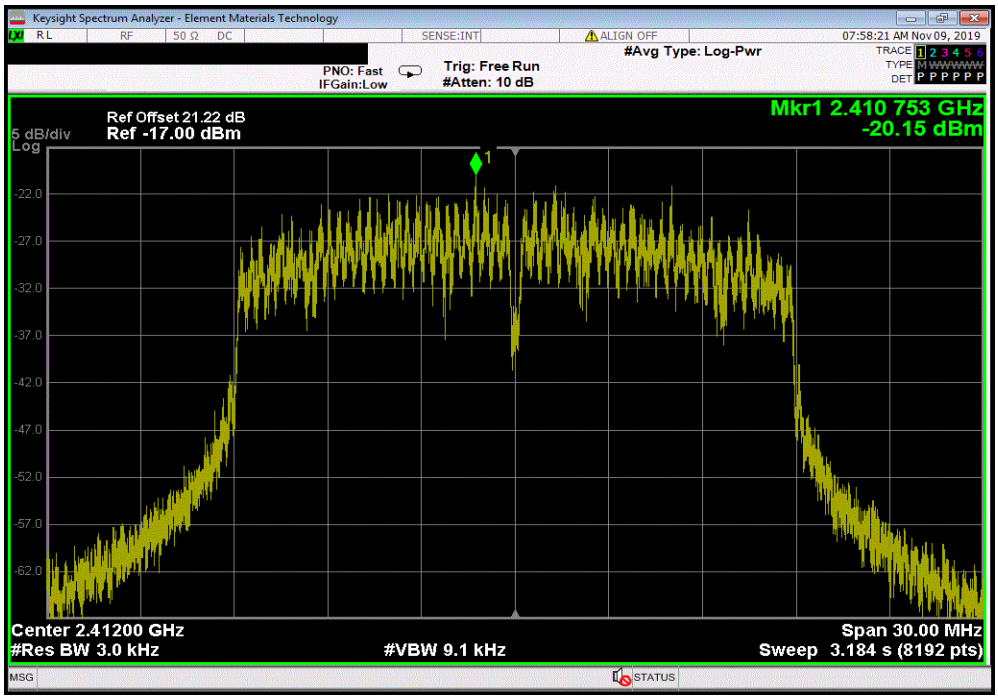
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.818	8	Pass



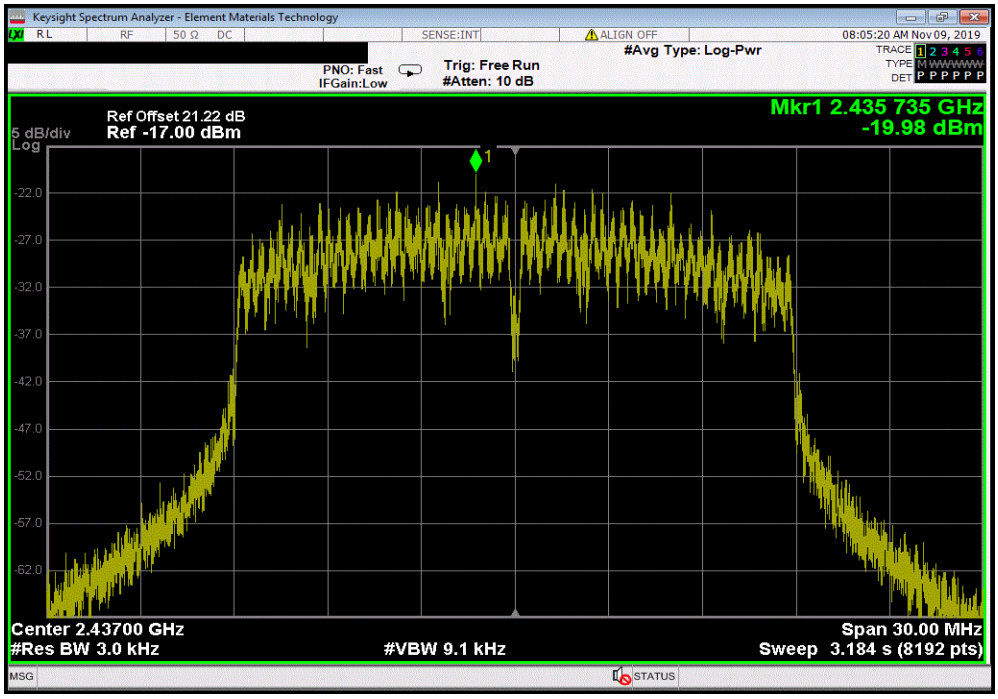
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-21.137	8	Pass



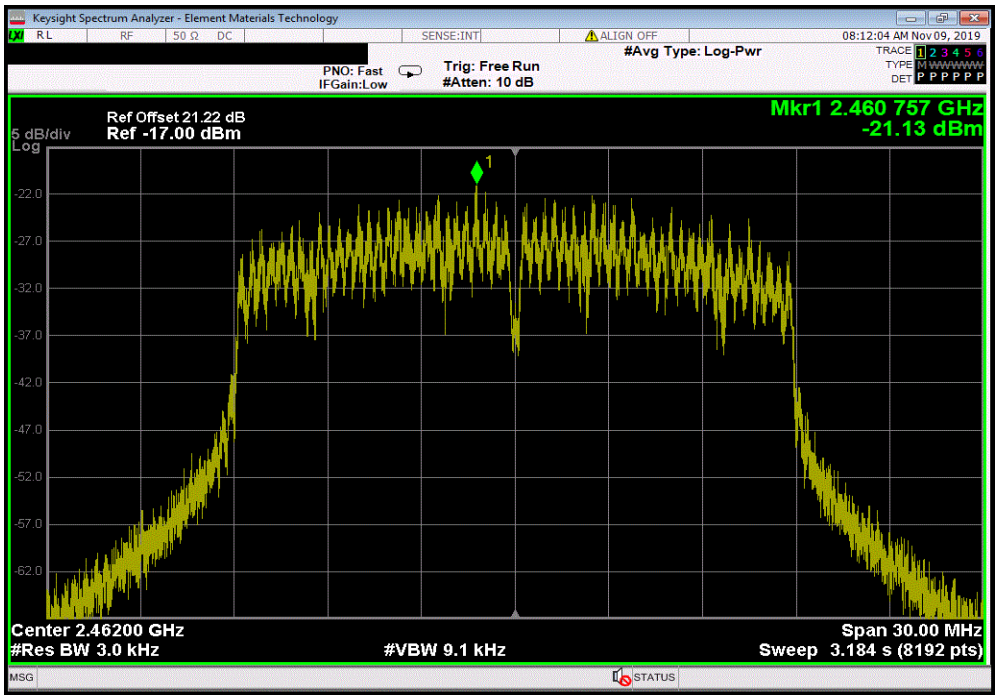
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-20.151	8	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-19.984	8	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value dBm/3kHz	Limit < dBm/3kHz	Results
				-21.128	8	Pass



BAND EDGE COMPLIANCE

XMit 2019.09.05

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.	Cal. Due
Attenuator	Fairview Microwave	SA4018-20	TYE	18-Sep-19	18-Sep-20
Block - DC	Fairview Microwave	SD3379	AMT	18-Sep-19	18-Sep-20
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	18-Sep-19	18-Sep-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	5-May-19	5-May-20

TEST DESCRIPTION

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

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

An RMS detector was used to match the method called out for Output Power. Because the reference level was taken with an RMS detector, the attenuation requirement is -30 dBc.

BAND EDGE COMPLIANCE

element

TbtTx 2019.08.30.0 XMit 2019.09.05

EUT:	V300			**Work Order:**	WTVD0027
Serial Number:	63			**Date:**	15-Nov-19
Customer:	WatchGuard Video			**Temperature:**	22.8 °C
Attendees:	Navaid Karimi			**Humidity:**	37.7% RH
Project:	None			**Barometric Pres.:**	1030 mbar
Tested by:	Marty Martin	**Power:**	Battery	**Job Site:**	TX02

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2019	ANSI C63.10:2013

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

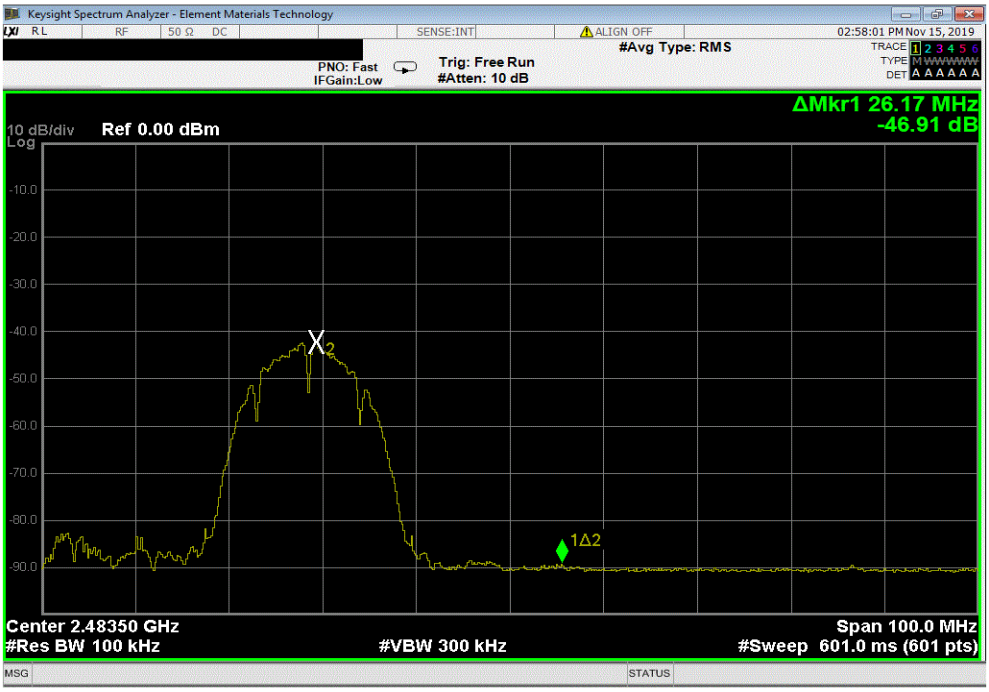
None

Configuration #	3	*Signature* Marty Martin

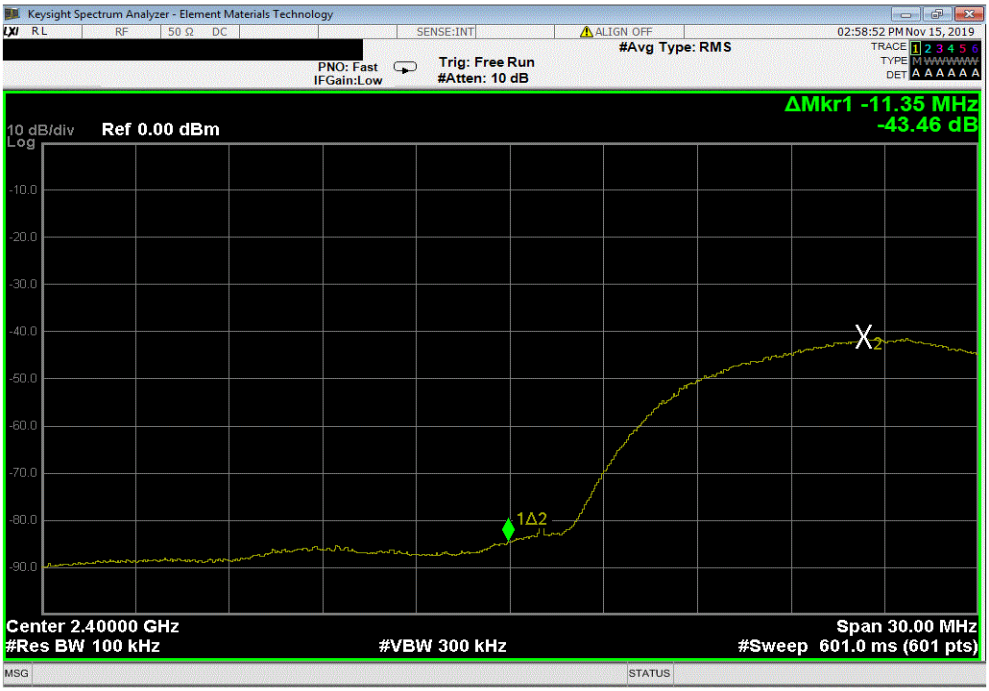
	Value (dBc)	Limit ≤ (dBc)	Result
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	-41.21	-30	Pass
High Channel 11, 2462 MHz	-46.91	-30	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	-43.47	-30	Pass
High Channel 11, 2462 MHz	-46.02	-30	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	-33.35	-30	Pass
High Channel 11, 2462 MHz	-40.39	-30	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	-34.32	-30	Pass
High Channel 11, 2462 MHz	-39.82	-30	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	-34.55	-30	Pass
High Channel 11, 2462 MHz	-39.99	-30	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	-33.72	-30	Pass
High Channel 11, 2462 MHz	-38.77	-30	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	-35.73	-30	Pass
High Channel 11, 2462 MHz	-38.23	-30	Pass

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-41.21	-30	Pass

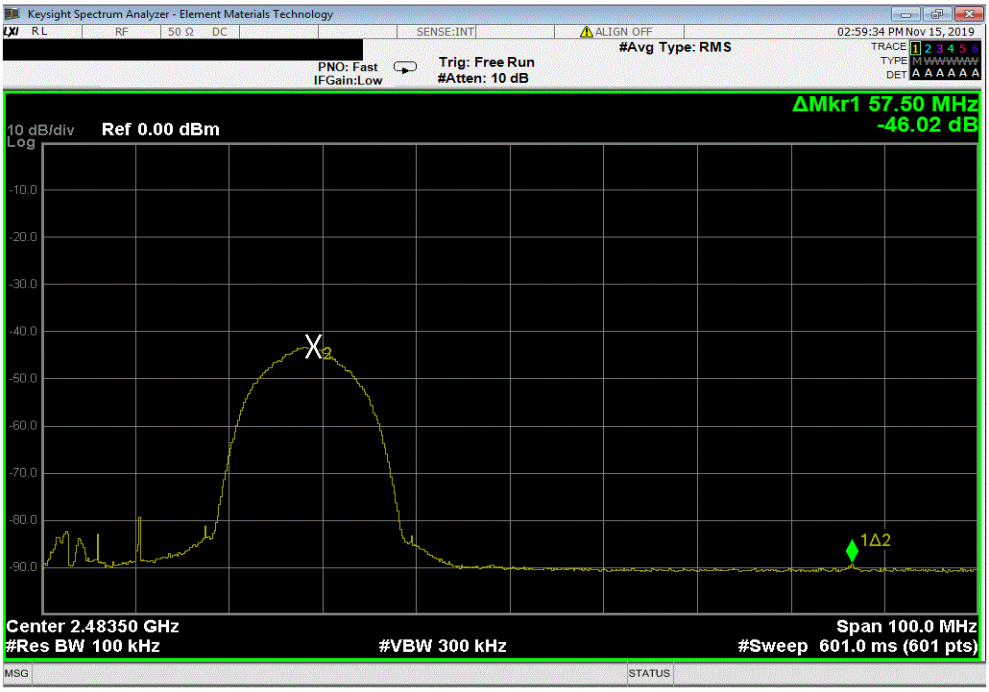
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-46.91	-30	Pass



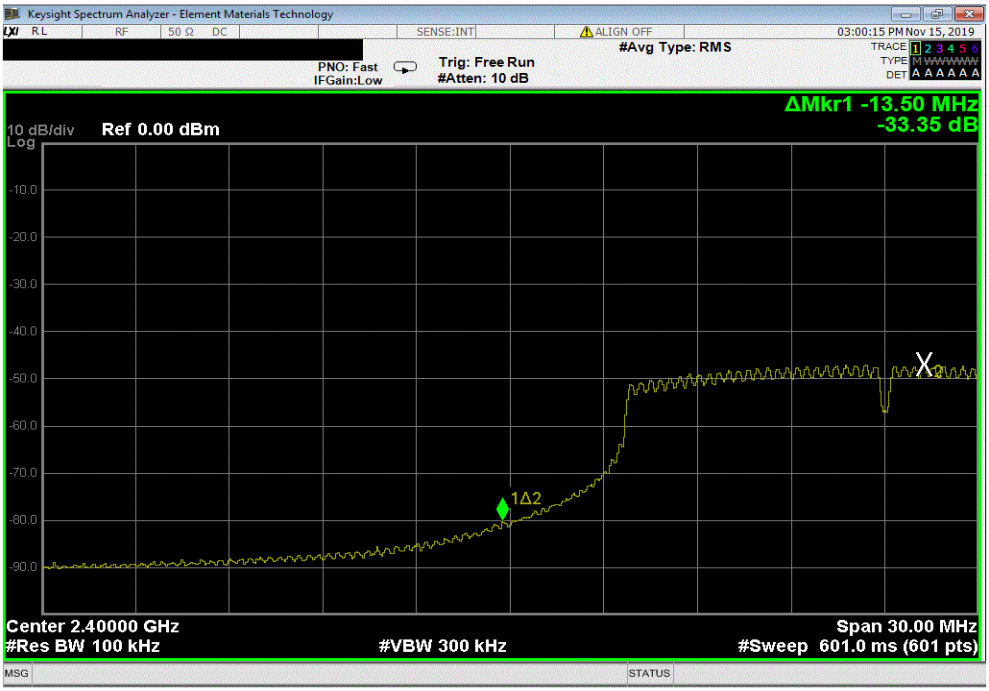
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-43.47	-30	Pass



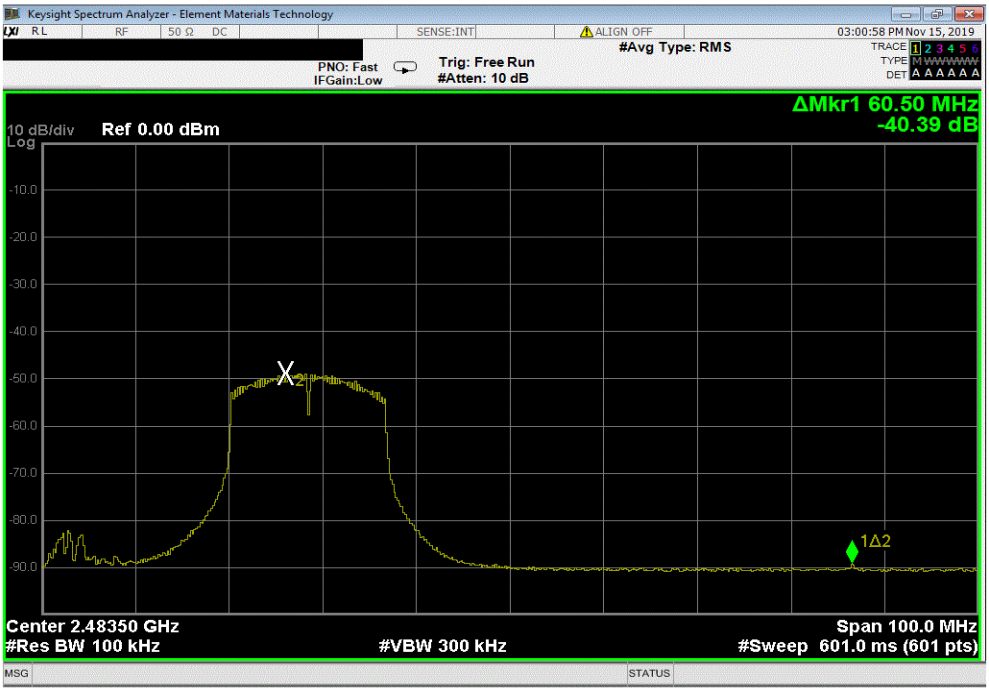
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-46.02	-30	Pass



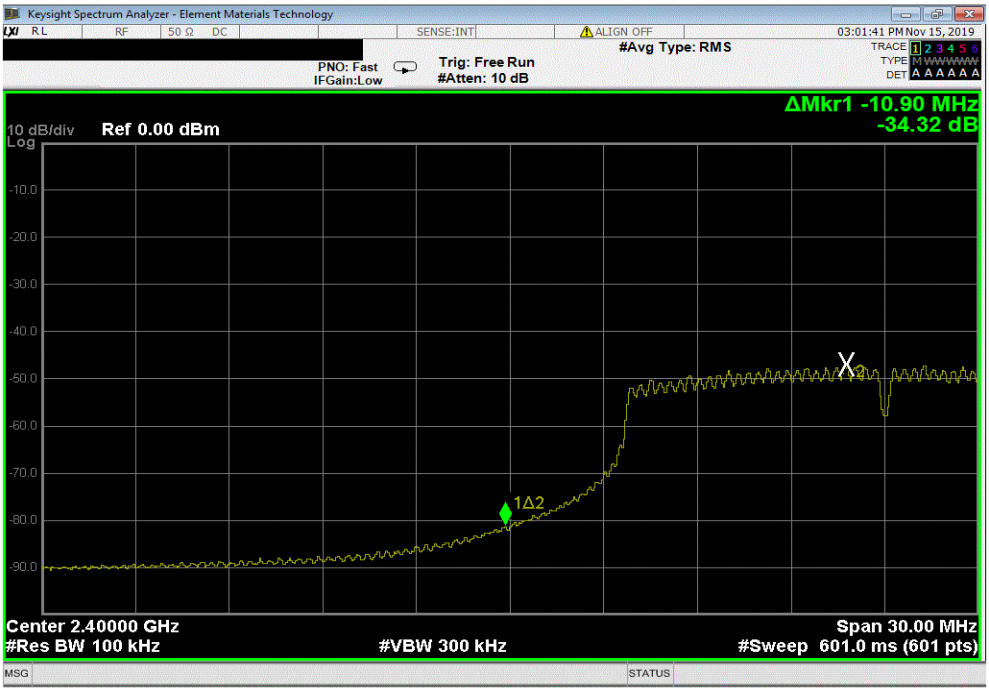
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-33.35	-30	Pass



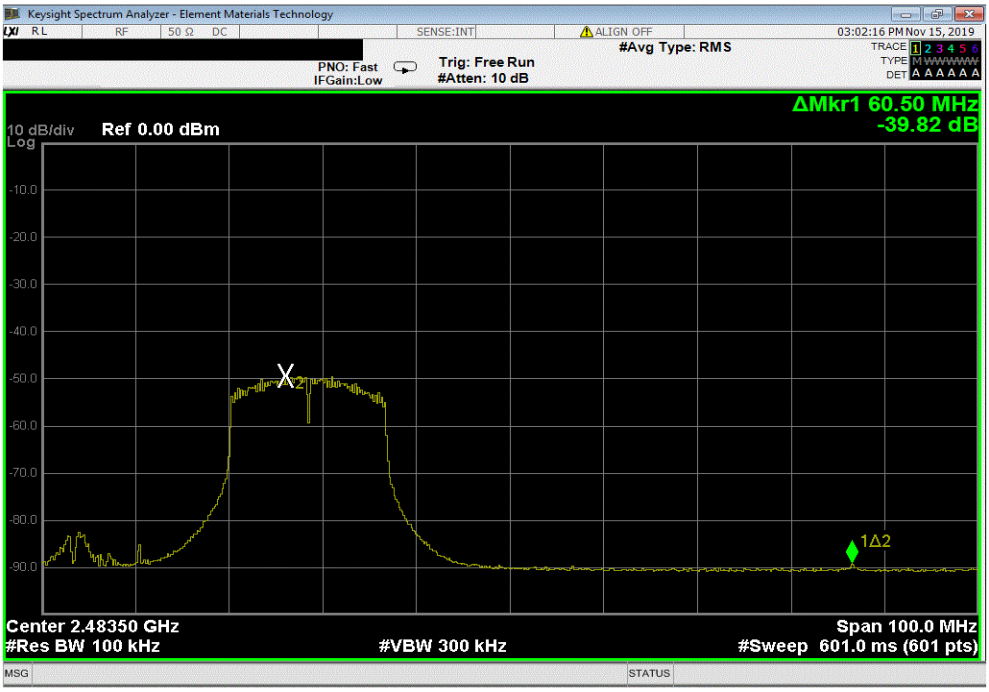
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-40.39	-30	Pass



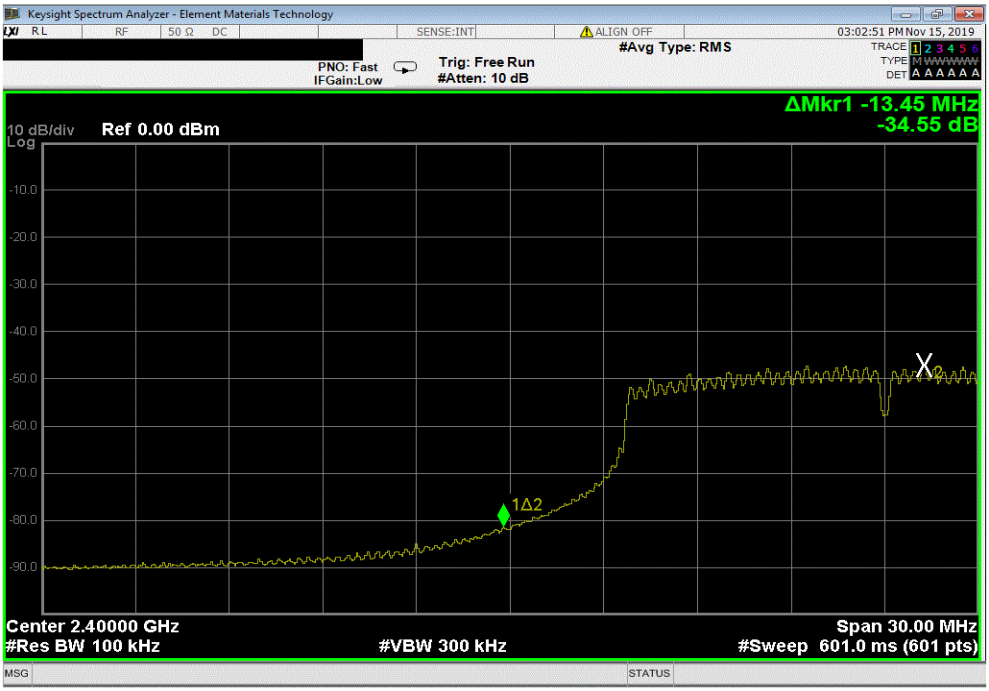
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-34.32	-30	Pass



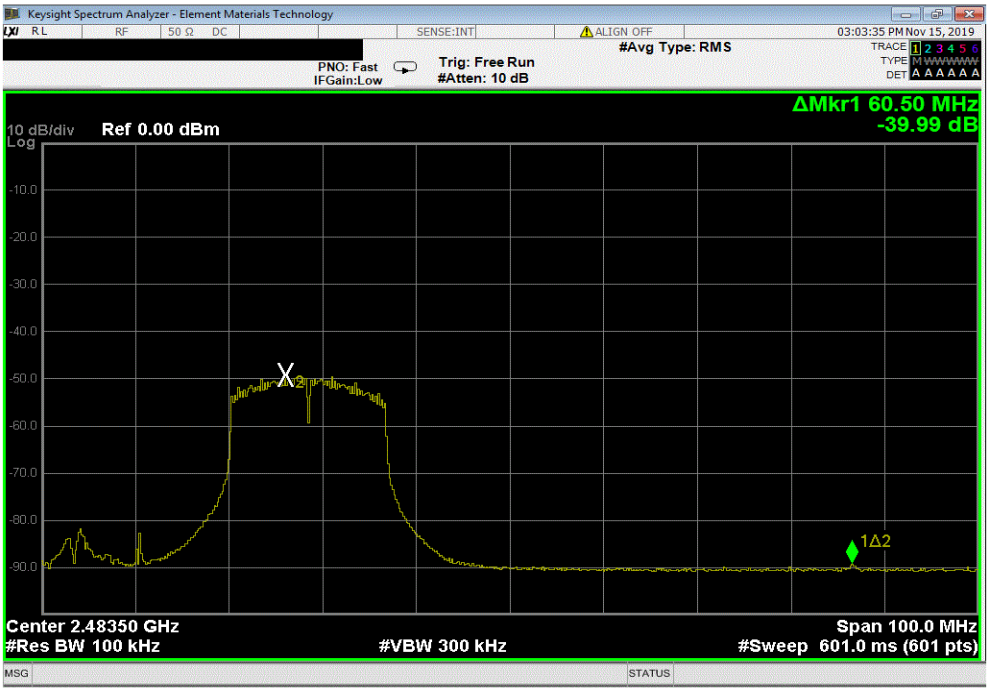
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-39.82	-30	Pass



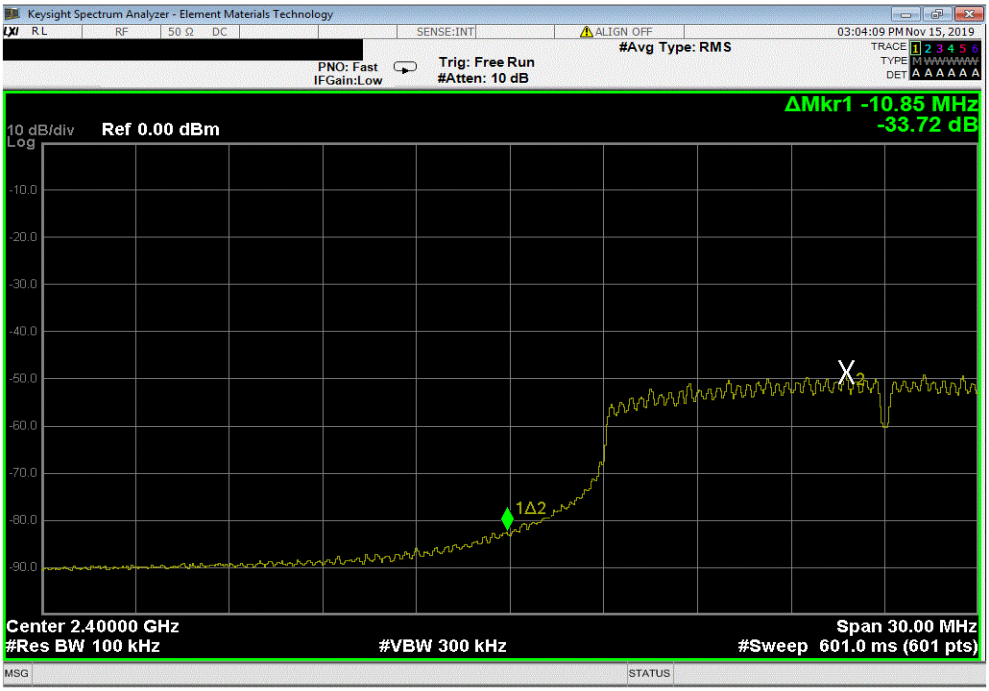
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-34.55	-30	Pass



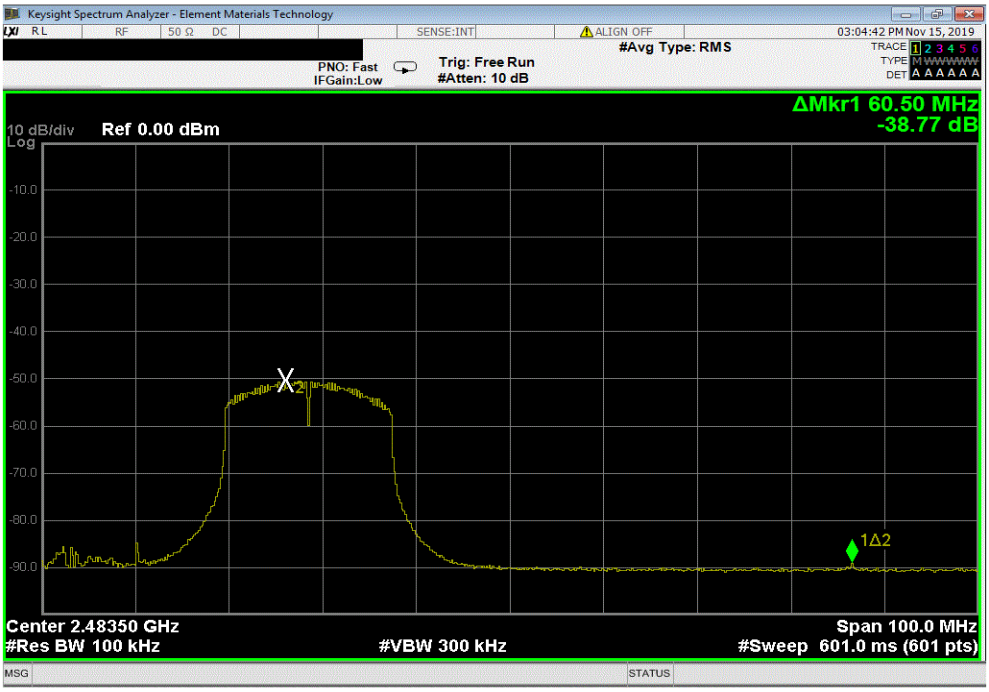
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-39.99	-30	Pass



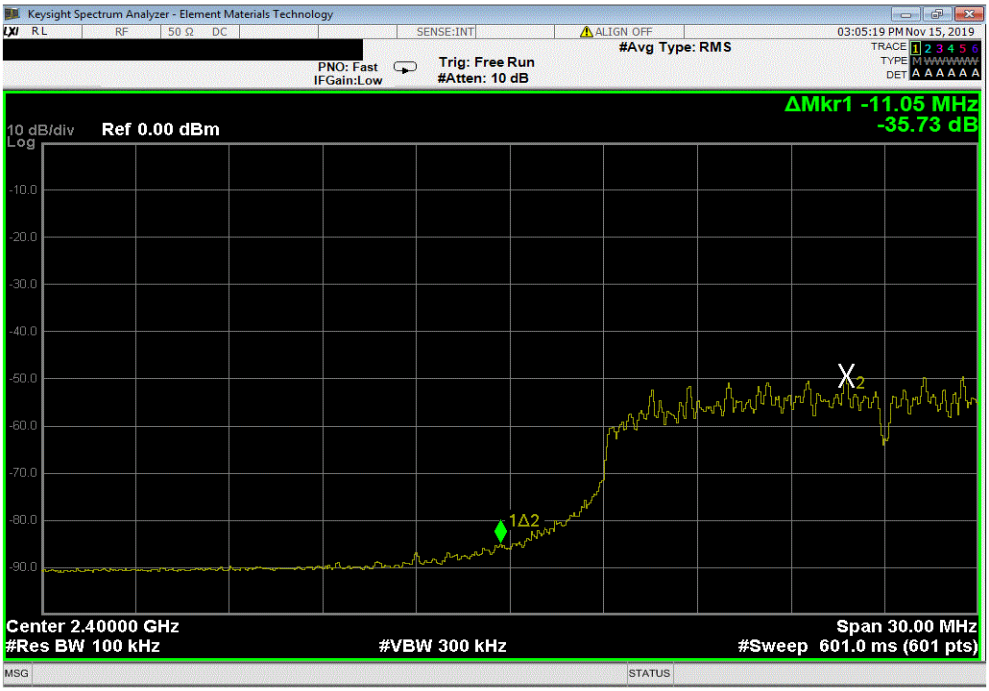
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-33.72	-30	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.77	-30	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-35.73	-30	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.23	-30	Pass