

BAND EDGE COMPLAINT



XMR 2017.12.13

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	10-Oct-18	10-Oct-19
Block - DC	Fairview Microwave	SD3379	AMT	10-Oct-18	10-Oct-19
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	10-Oct-18	10-Oct-19
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-18	19-Mar-19

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 its single channel of operation within the band. 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.

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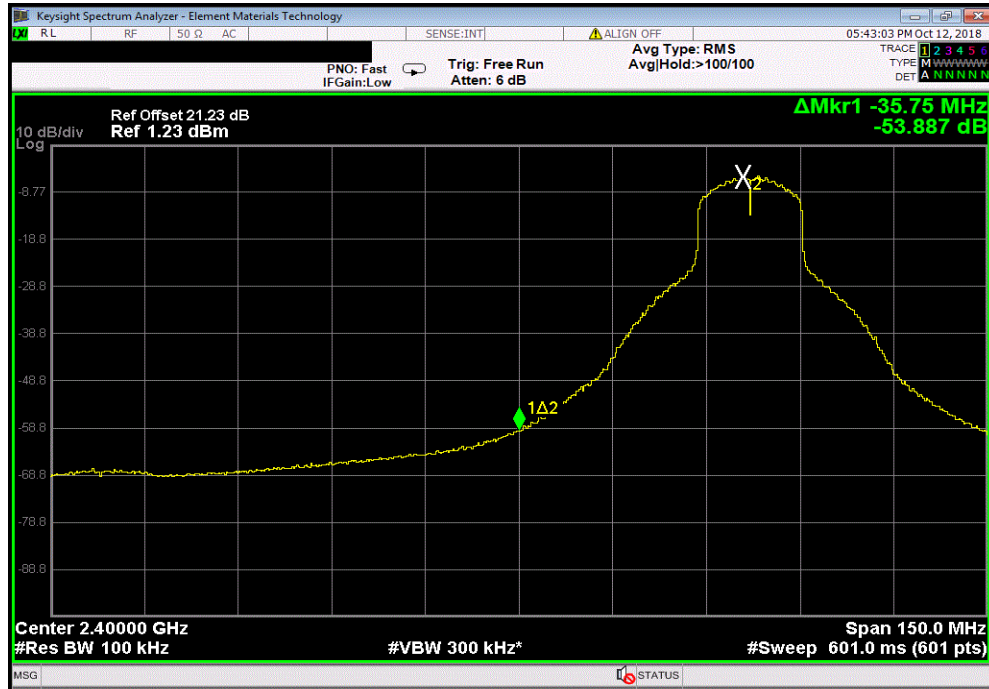
EUT: VISTA WIFI		Work Order: WTVD0001	
Serial Number: WFC1-009113		Date: 12-Oct-18	
Customer: WatchGuard Video		Temperature: 22.4 °C	
Attendees: Navaid Karimi		Humidity: 49.4% RH	
Project: None		Barometric Pres.: 1016 mbar	
Tested by: Jonathan Kiefer		Power: Battery	Job Site: TX09
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2018		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.23 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	<i>Jonathan Kiefer</i>
		Value (dBc)	Limit ≤ (dBc) Result
2400 MHz - 2483.5 MHz Band			
802.11(g) 6 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-53.887	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-57.892	-30 Pass
802.11(g) 9 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-53.83	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-57.82	-30 Pass
802.11(g) 12 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-53.017	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-57.124	-30 Pass
802.11(g) 18 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-53.423	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-58.091	-30 Pass
802.11(g) 24 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-50.778	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-55.314	-30 Pass
802.11(g) 36 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-55.922	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-58.912	-30 Pass
802.11(g) 48 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-56.422	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-57.704	-30 Pass
802.11(g) 54 Mbps			
Single Channel 6, 2437 MHz (2400 MHz Band Edge)		-54.361	-30 Pass
Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)		-56.789	-30 Pass

BAND EDGE COMPLAINT

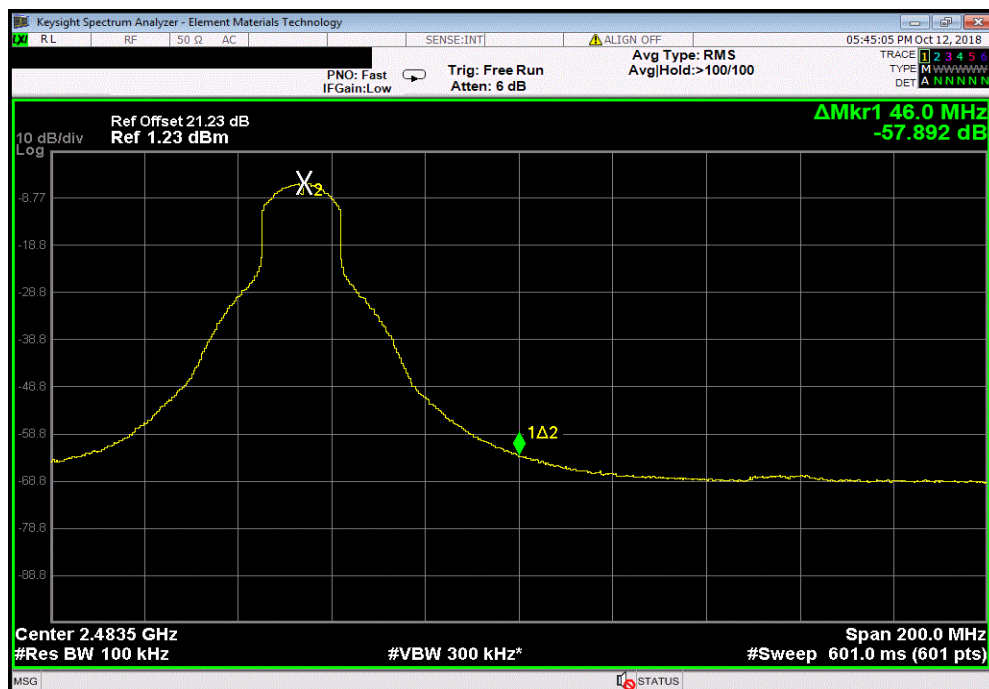


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2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-53.887	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-57.892	-30	Pass			

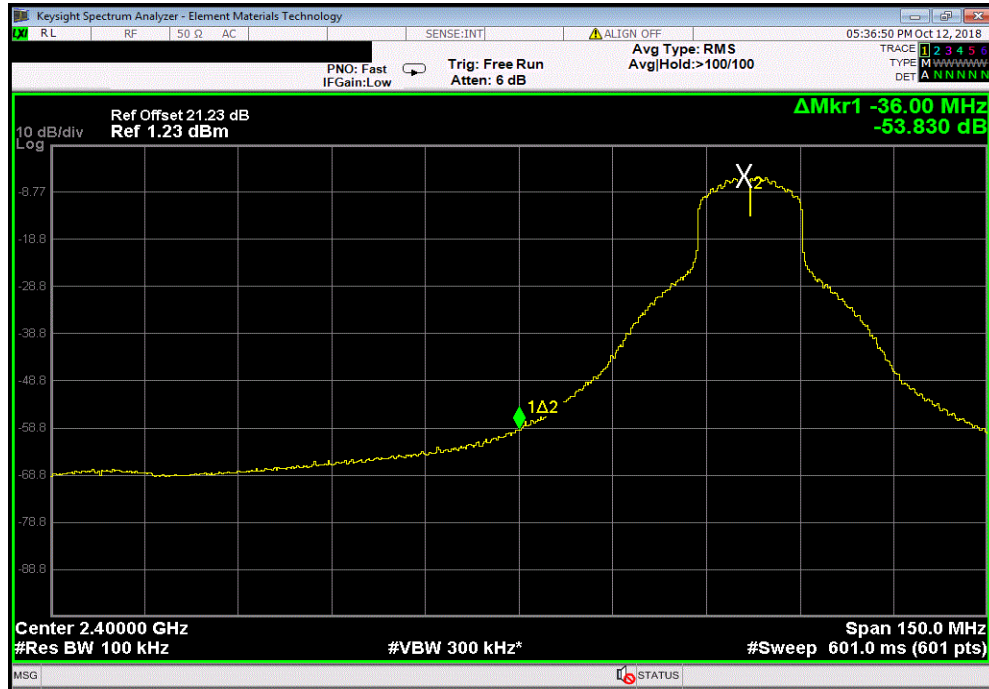


BAND EDGE COMPLAINT

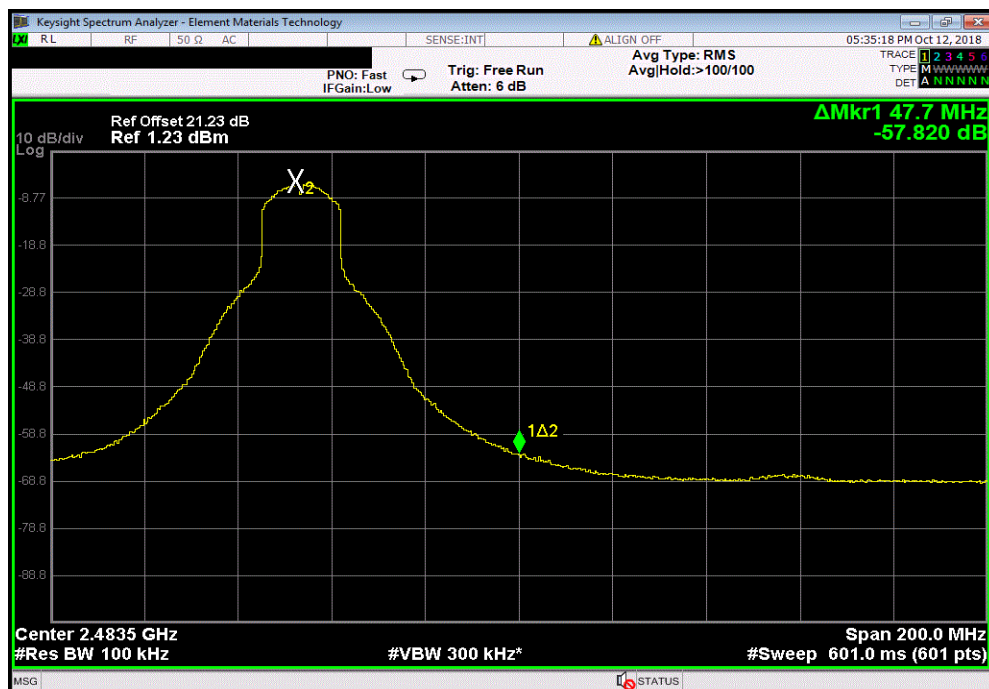


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2400 MHz - 2483.5 MHz Band, 802.11(g) 9 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-53.83	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 9 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-57.82	-30	Pass			

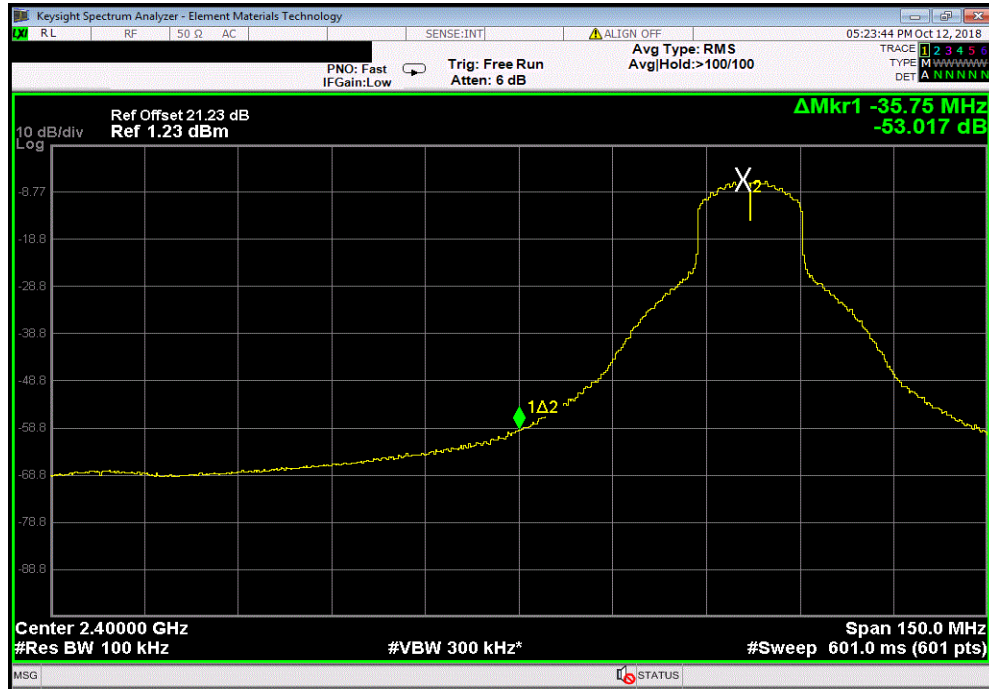


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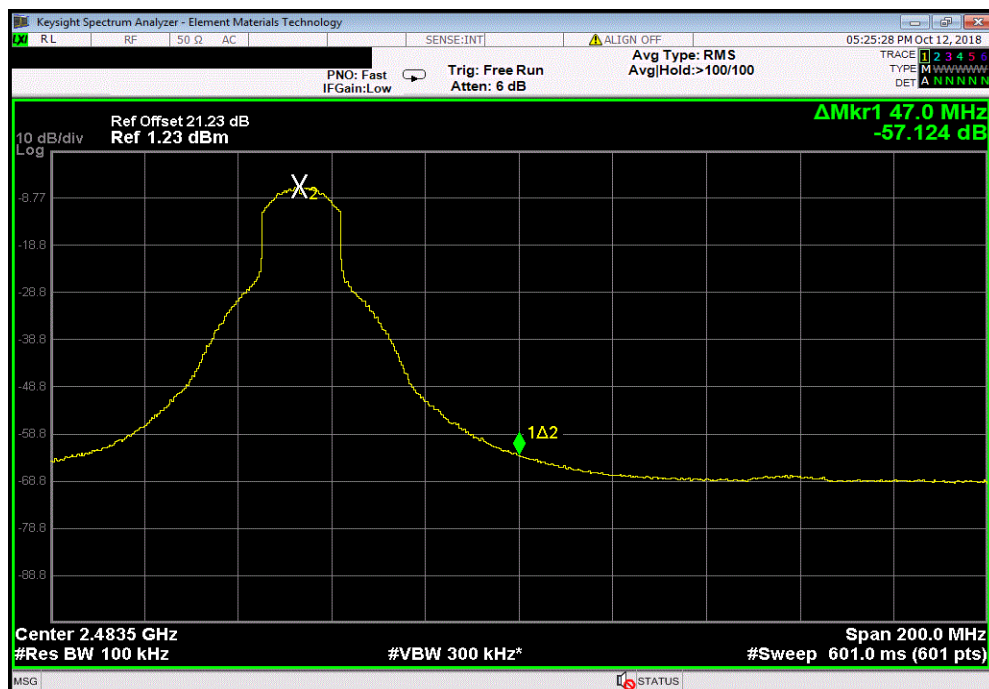


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2400 MHz - 2483.5 MHz Band, 802.11(g) 12 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value	Limit				
	(dBc)	≤ (dBc)	Result			
	-53.017	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 12 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value	Limit				
	(dBc)	≤ (dBc)	Result			
	-57.124	-30	Pass			

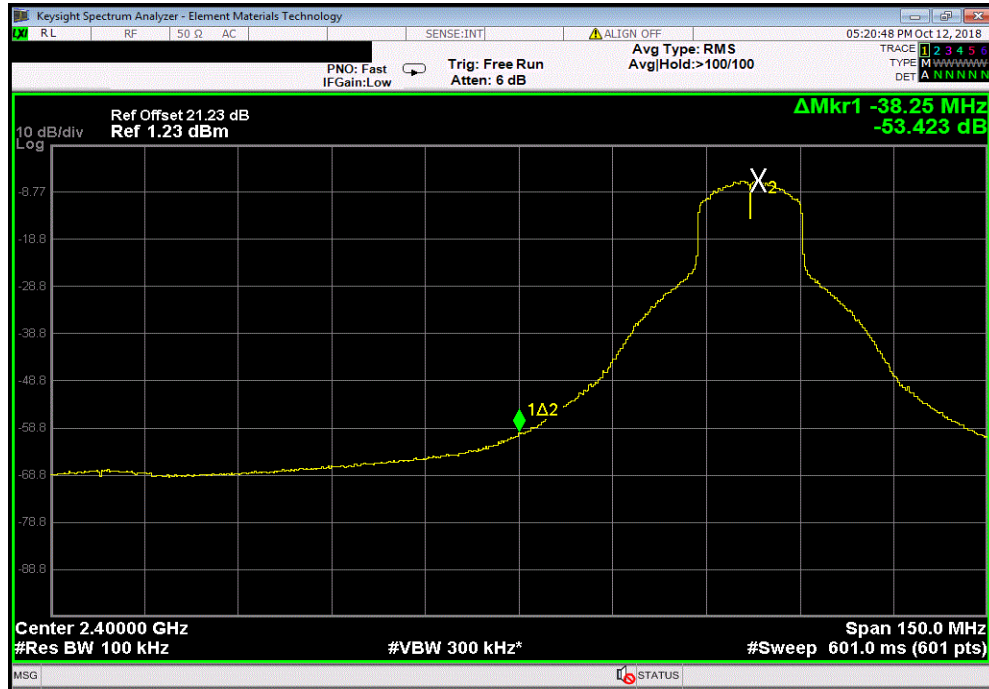


BAND EDGE COMPLAINT

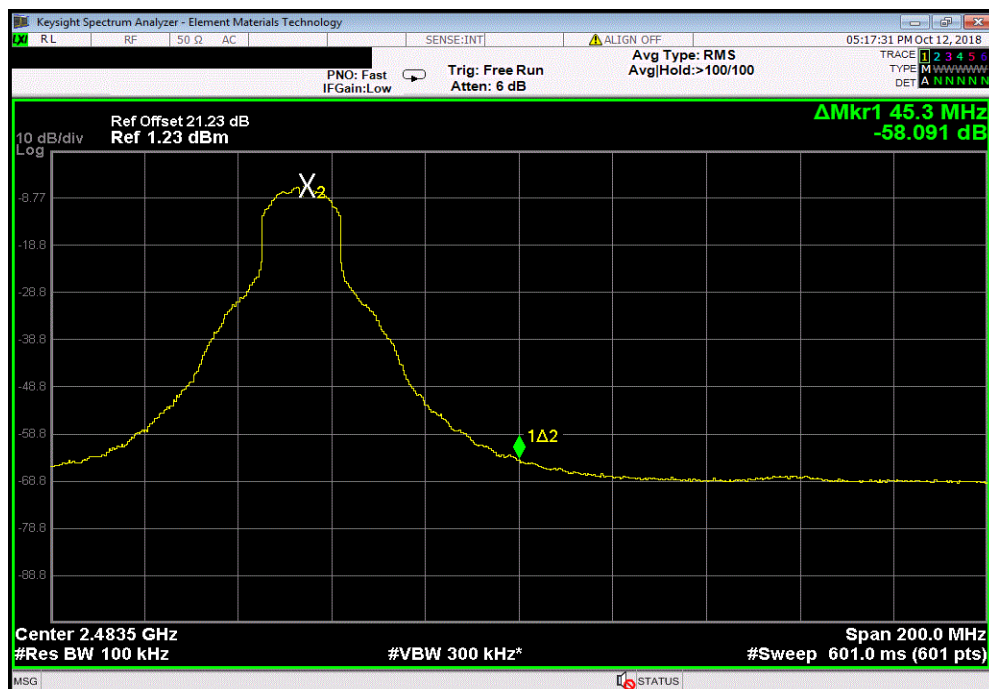


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2400 MHz - 2483.5 MHz Band, 802.11(g) 18 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-53.423	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 18 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-58.091	-30	Pass			

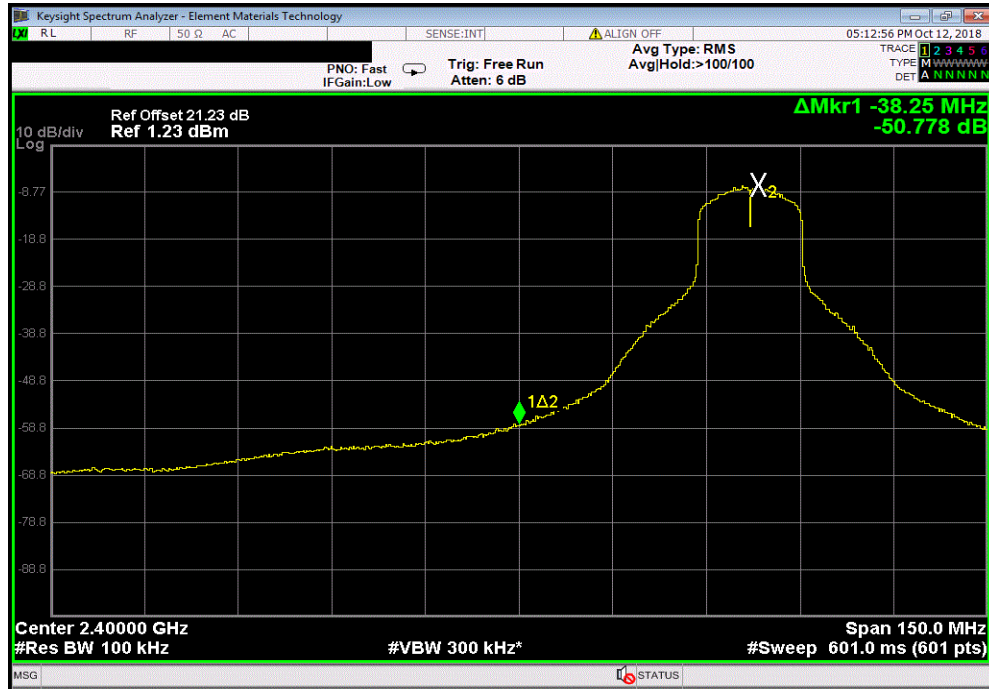


BAND EDGE COMPLAINT

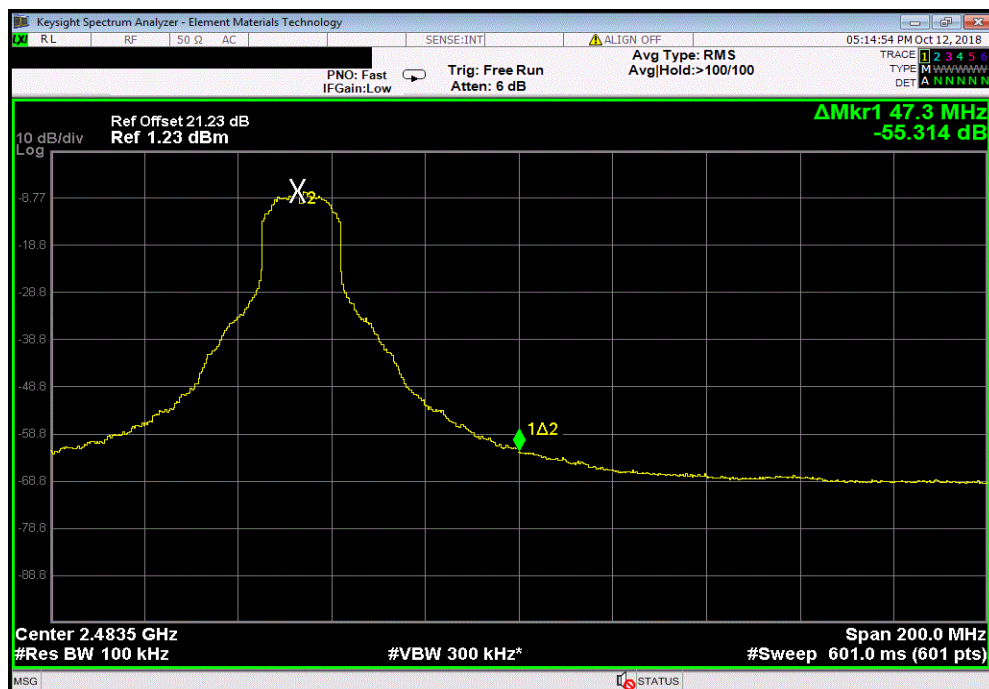


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2400 MHz - 2483.5 MHz Band, 802.11(g) 24 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value	Limit				
	(dBc)	≤ (dBc)	Result			
	-50.778	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 24 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value	Limit				
	(dBc)	≤ (dBc)	Result			
	-55.314	-30	Pass			

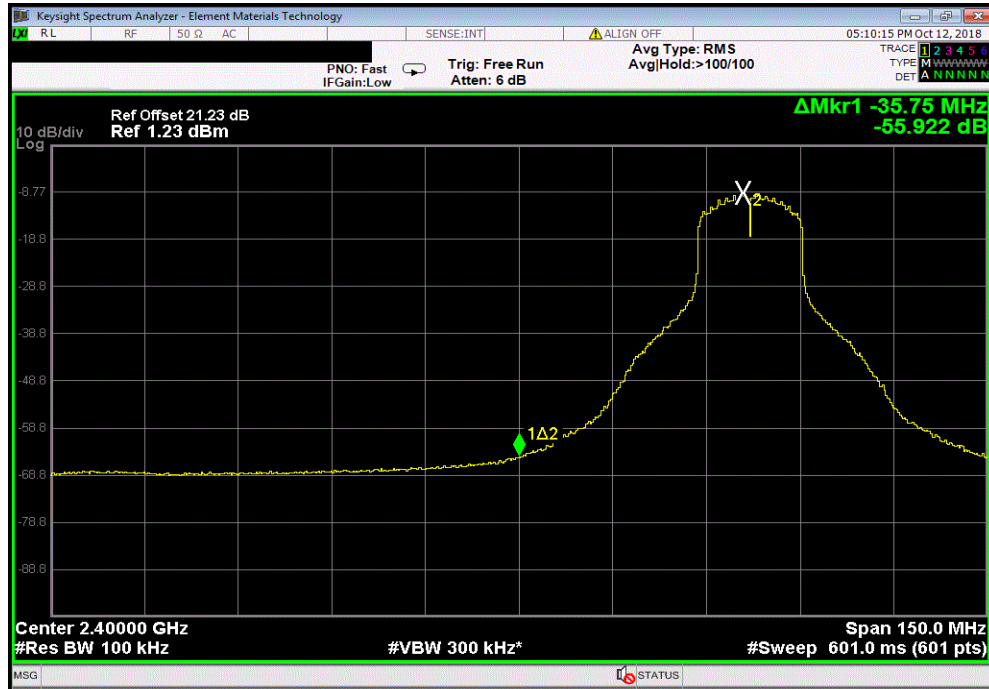


BAND EDGE COMPLAINT

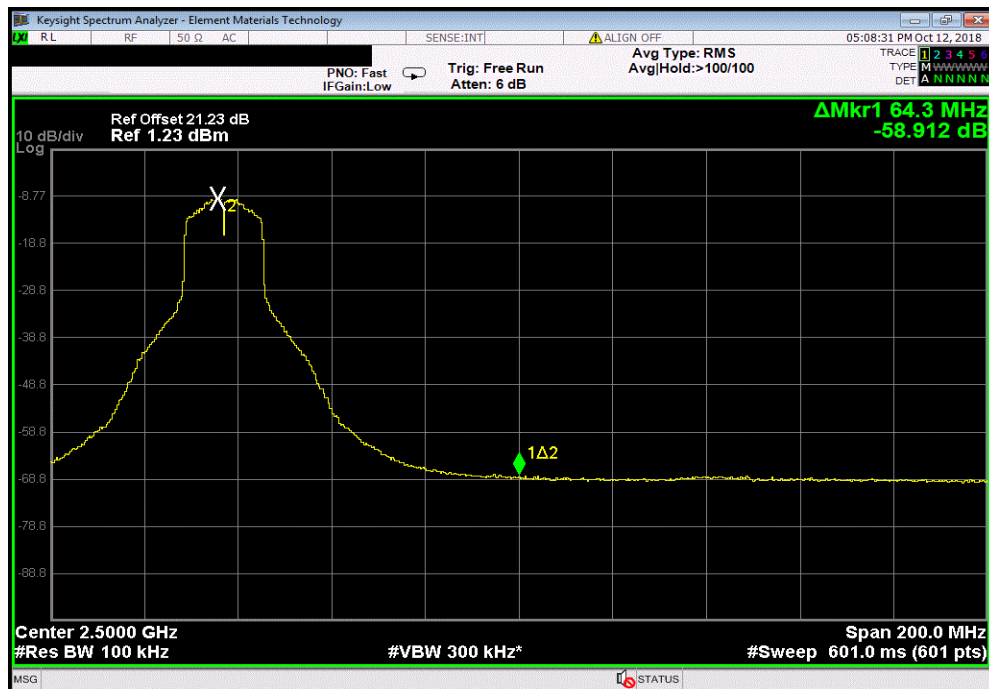


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2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value	Limit	Result			
	(dBc)	≤ (dBc)				
	-55.922	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value	Limit	Result			
	(dBc)	≤ (dBc)				
	-58.912	-30	Pass			

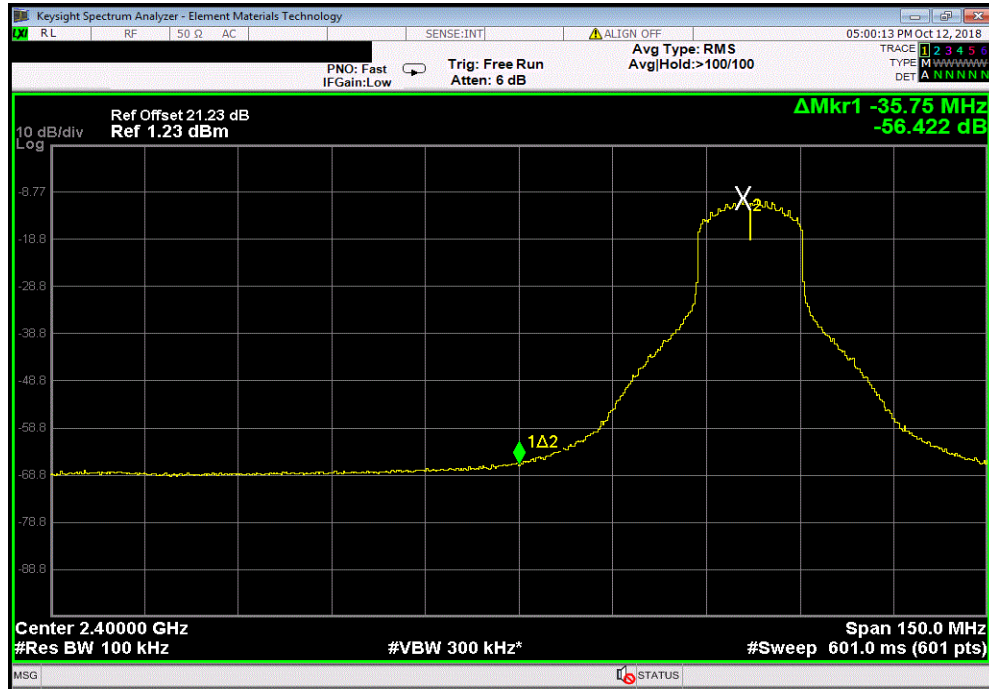


BAND EDGE COMPLAINT

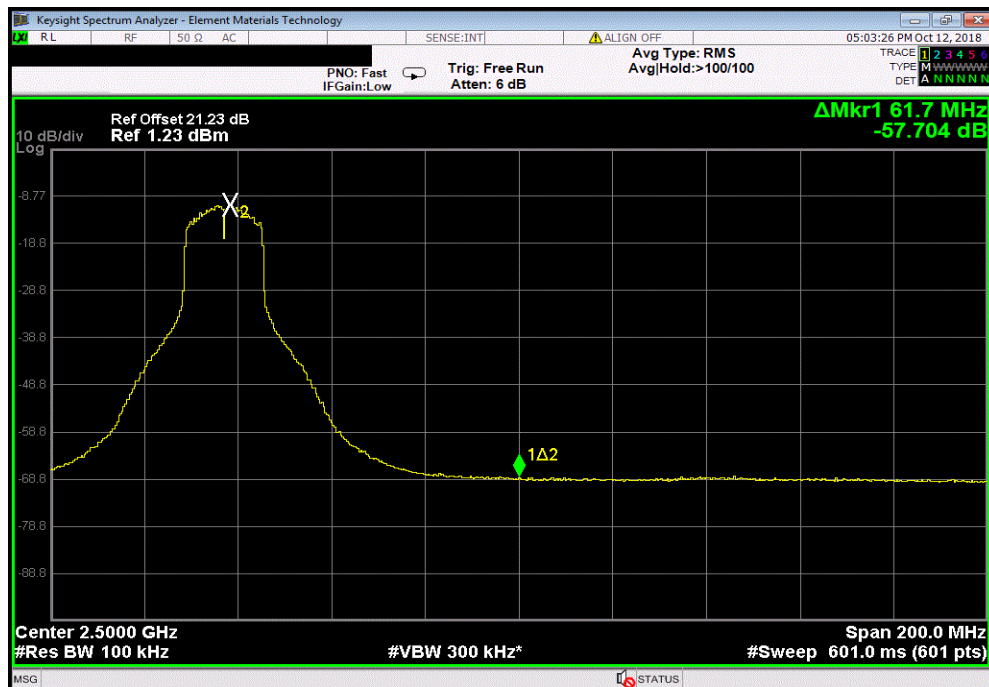


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2400 MHz - 2483.5 MHz Band, 802.11(g) 48 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-56.422	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 48 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value (dBc)	Limit ≤ (dBc)	Result			
	-57.704	-30	Pass			

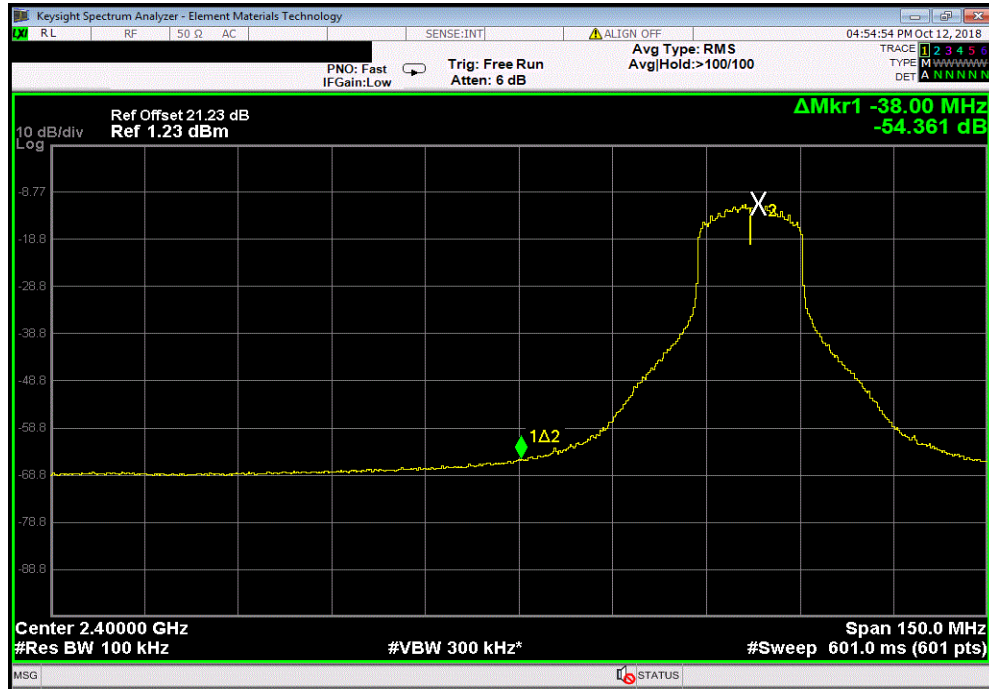


BAND EDGE COMPLAINT

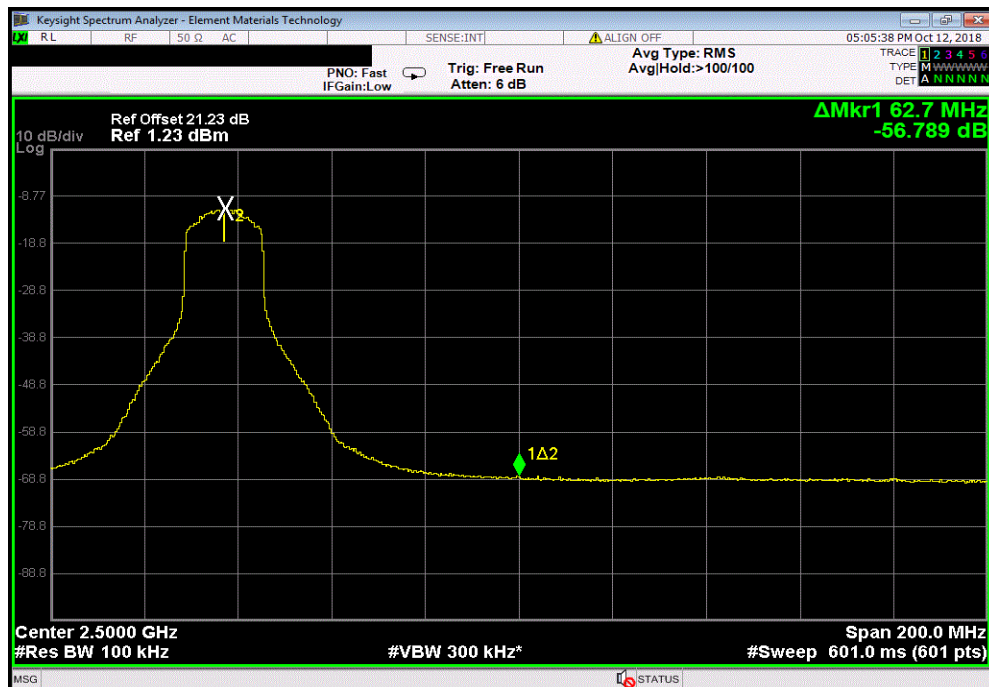


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2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Single Channel 6, 2437 MHz (2400 MHz Band Edge)						
	Value	Limit				
	(dBc)	≤ (dBc)	Result			
	-54.361	-30	Pass			



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Single Channel 6, 2437 MHz (2483.5 MHz Band Edge)						
	Value	Limit				
	(dBc)	≤ (dBc)	Result			
	-56.789	-30	Pass			



SPURIOUS CONDUCTED EMISSIONS



XMIT 2017.12.13

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	10-Oct-18	10-Oct-19
Block - DC	Fairview Microwave	SD3379	AMT	10-Oct-18	10-Oct-19
Cable	Micro-Coax	UFD150A-1-0720-200200	TXG	10-Oct-18	10-Oct-19
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-18	19-Mar-19

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 were measured with the EUT set its single transmit frequency. 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



THxTx 2018.09.13 XMI 2017.12.13

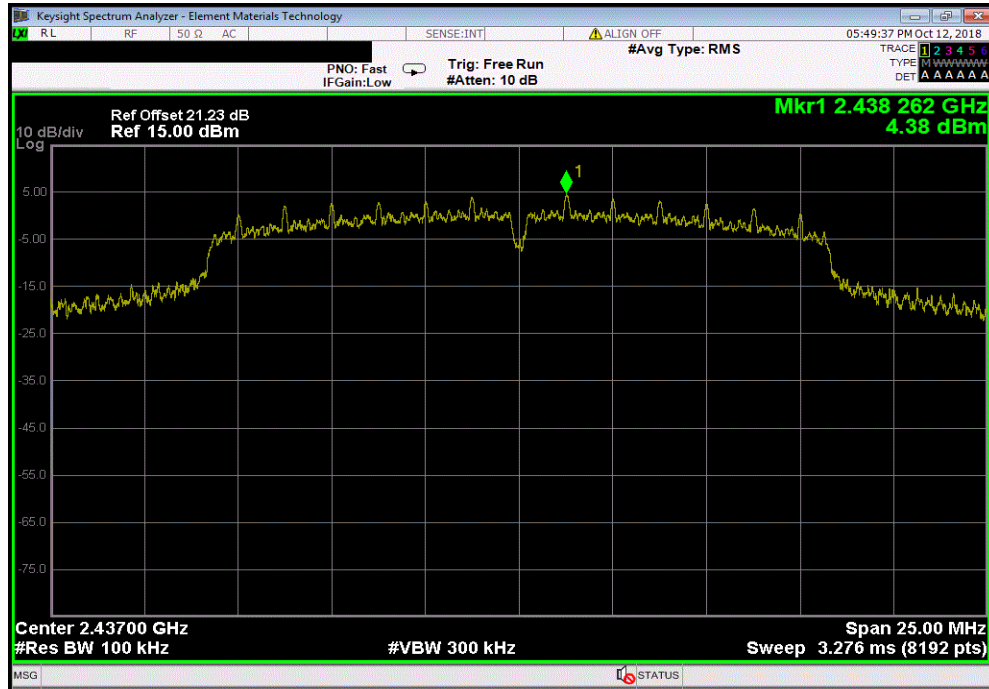
EUT: VISTA WIFI		Work Order: WTVD0001	
Serial Number: WFC1-009113		Date: 12-Oct-18	
Customer: WatchGuard Video		Temperature: 22.2 °C	
Attendees: Navaid Karimi		Humidity: 50.2% RH	
Project: None		Barometric Pres.: 1017 mbar	
Tested by: Jonathan Kiefer		Power: Battery	
Job Site: TX09			
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2018		ANSI C63.10:2013	
COMMENTS			
Reference Offset 21.23 dB (20dB attenuator+dc block+cable).			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Jonathan Kiefer</i>	
		Frequency Range	Measured Freq (MHz)
		Max Value (dBc)	Limit ≤ (dBc)
			Result
2400 MHz - 2483.5 MHz Band			
802.11(g) 6 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.26
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3182.9
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24975.58
			N/A
			-63.21
			-52.56
			-30
			-30
			Pass
			Pass
802.11(g) 9 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.26
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3196.6
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24966.43
			N/A
			-63
			-52.67
			-30
			-30
			Pass
			Pass
802.11(g) 12 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.26
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	5720.74
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24971
			N/A
			-62.98
			-52.43
			-30
			-30
			Pass
			Pass
802.11(g) 18 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.26
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3172.24
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24931.33
			N/A
			-63.3
			-52.89
			-30
			-30
			Pass
			Pass
802.11(g) 24 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.27
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	5764.89
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24960.32
			N/A
			-62.43
			-51.74
			-30
			-30
			Pass
			Pass
802.11(g) 36 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.27
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3169.19
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24871.81
			N/A
			-61.34
			-50.95
			-30
			-30
			Pass
			Pass
802.11(g) 48 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.27
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3167.67
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24913.01
			N/A
			-60.61
			-50.2
			-30
			-30
			Pass
			Pass
802.11(g) 54 Mbps			
	Single Channel 6, 2437 MHz	Fundamental	2438.27
	Single Channel 6, 2437 MHz	30 MHz - 12.5 GHz	2688.12
	Single Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24847.39
			N/A
			-60.19
			-49.14
			-30
			-30
			Pass
			Pass

SPURIOUS CONDUCTED EMISSIONS

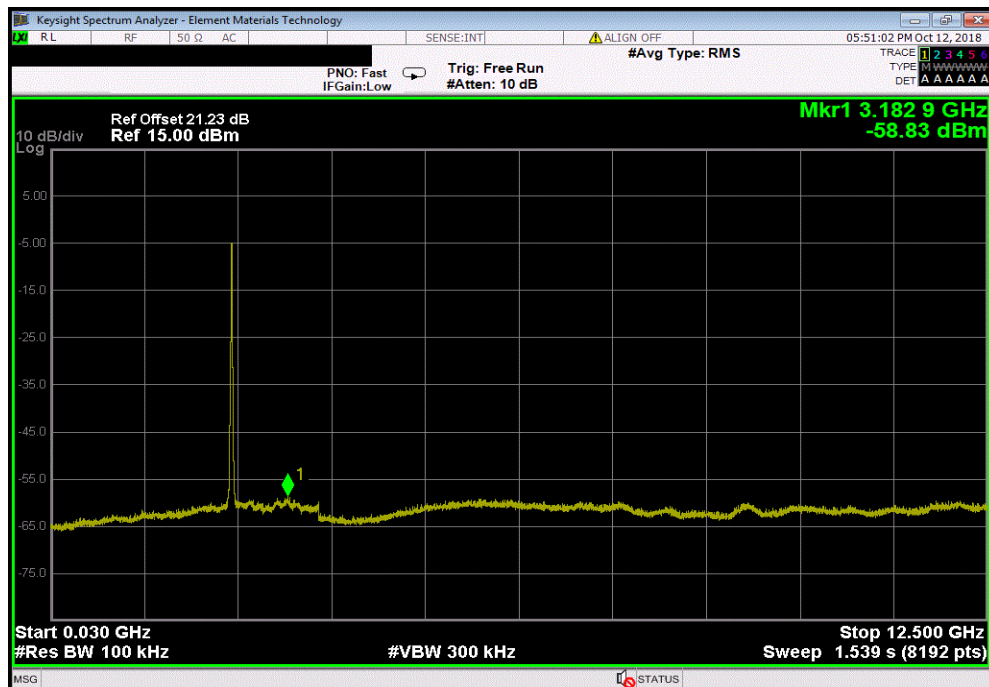


TMTx 2018.09.13 XMI 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	2438.26	N/A	N/A	N/A		



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz	3182.9	-63.21	-30	Pass		

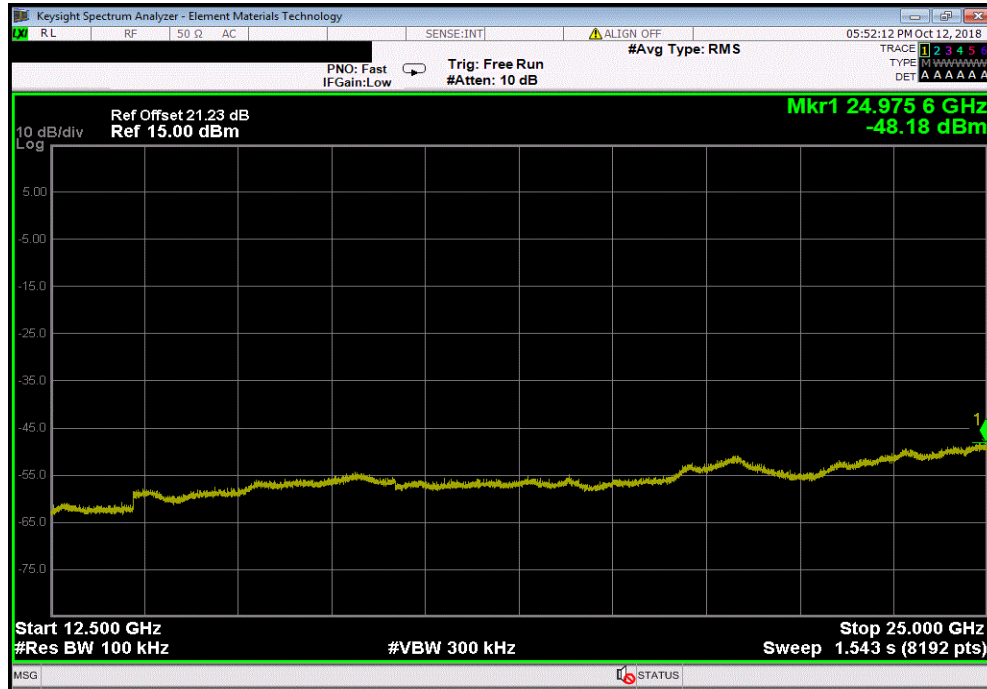


SPURIOUS CONDUCTED EMISSIONS

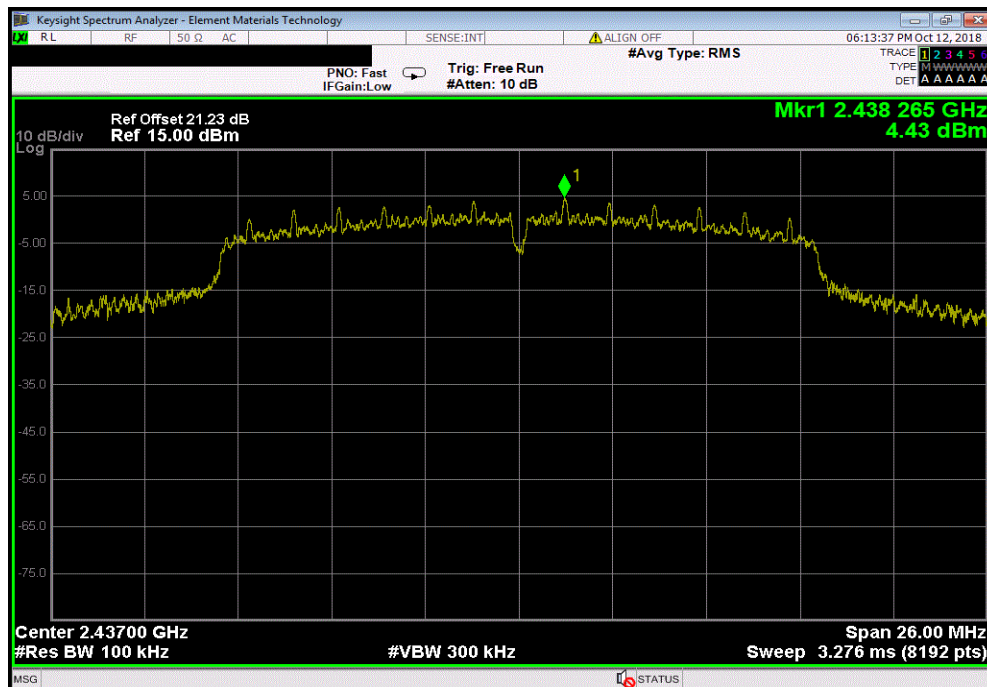


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2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24975.58	-52.56	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 9 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2438.26	N/A	N/A	N/A	

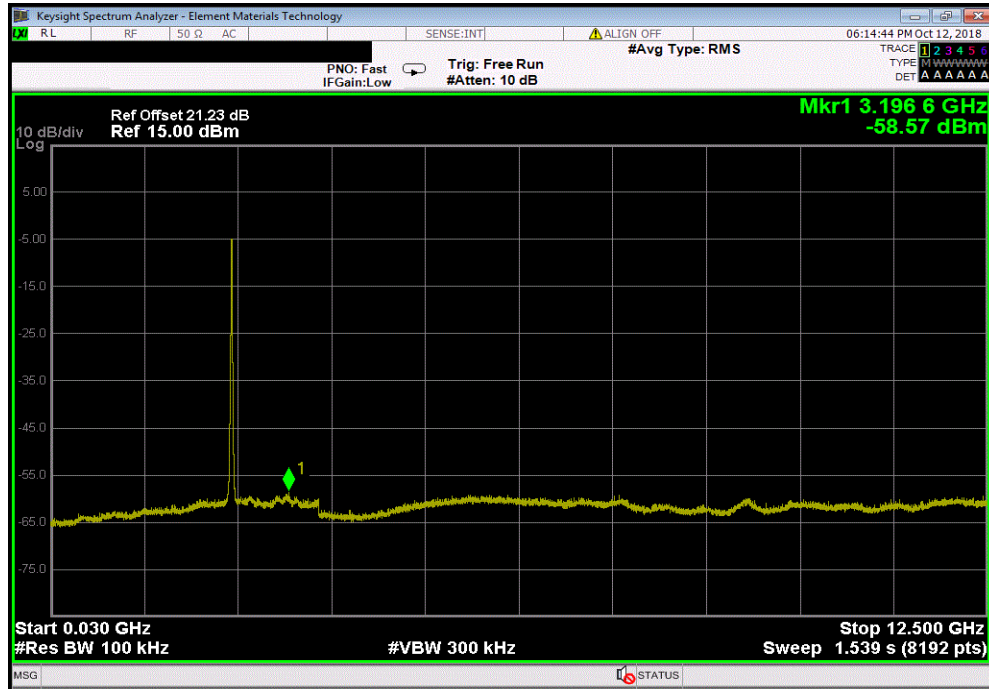


SPURIOUS CONDUCTED EMISSIONS



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2400 MHz - 2483.5 MHz Band, 802.11(g) 9 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3196.6	-63	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 9 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24966.43	-52.67	-30	Pass	

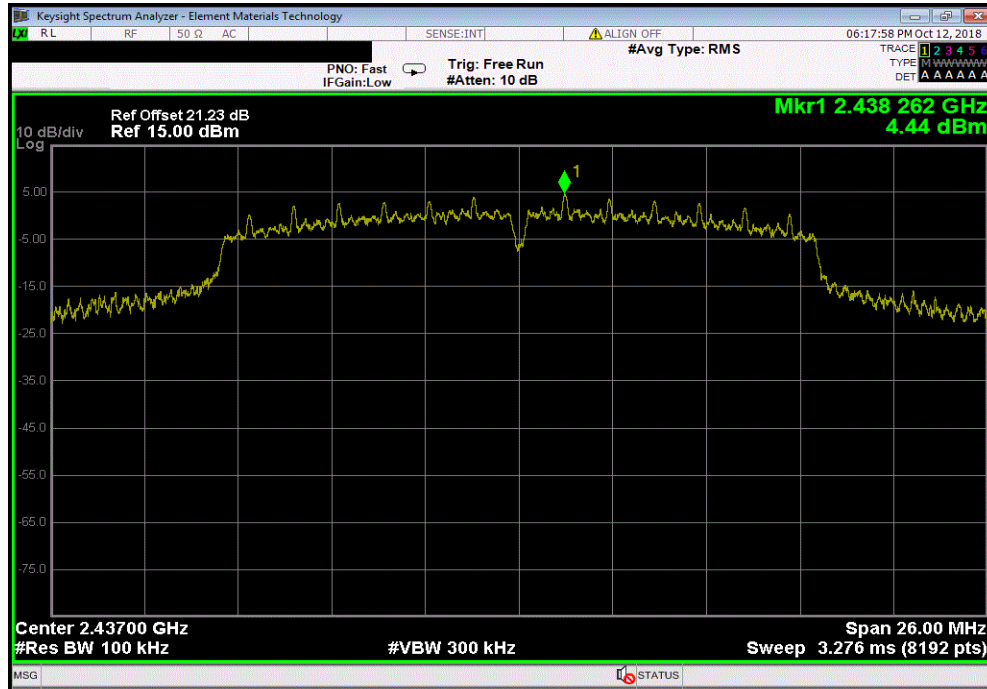


SPURIOUS CONDUCTED EMISSIONS

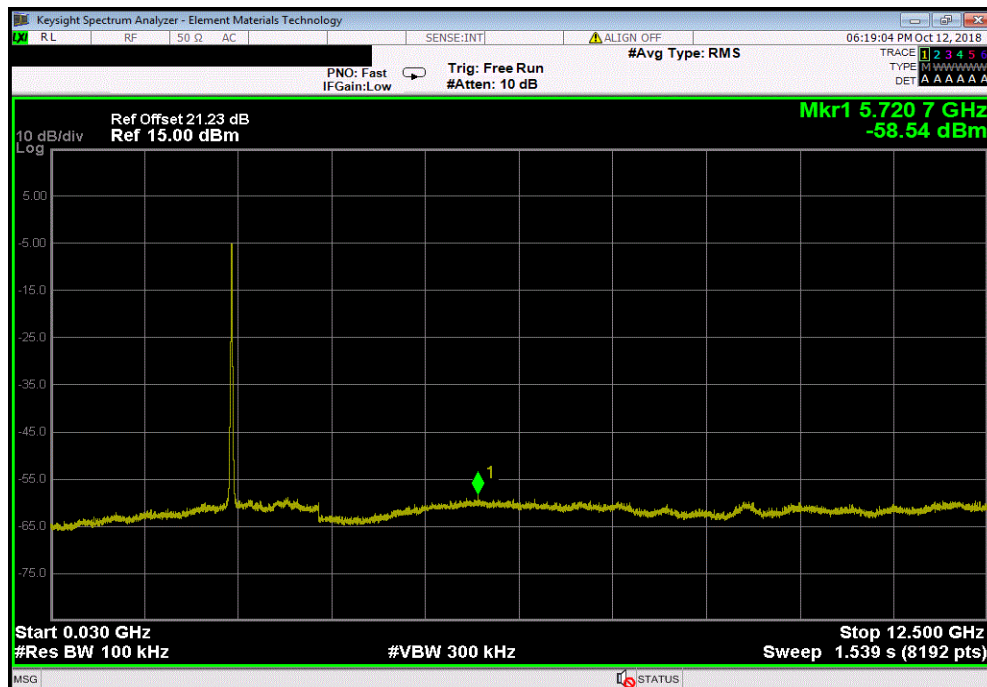


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2400 MHz - 2483.5 MHz Band, 802.11(g) 12 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	2438.26	N/A	N/A	N/A		



2400 MHz - 2483.5 MHz Band, 802.11(g) 12 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz	5720.74	-62.98	-30	Pass		

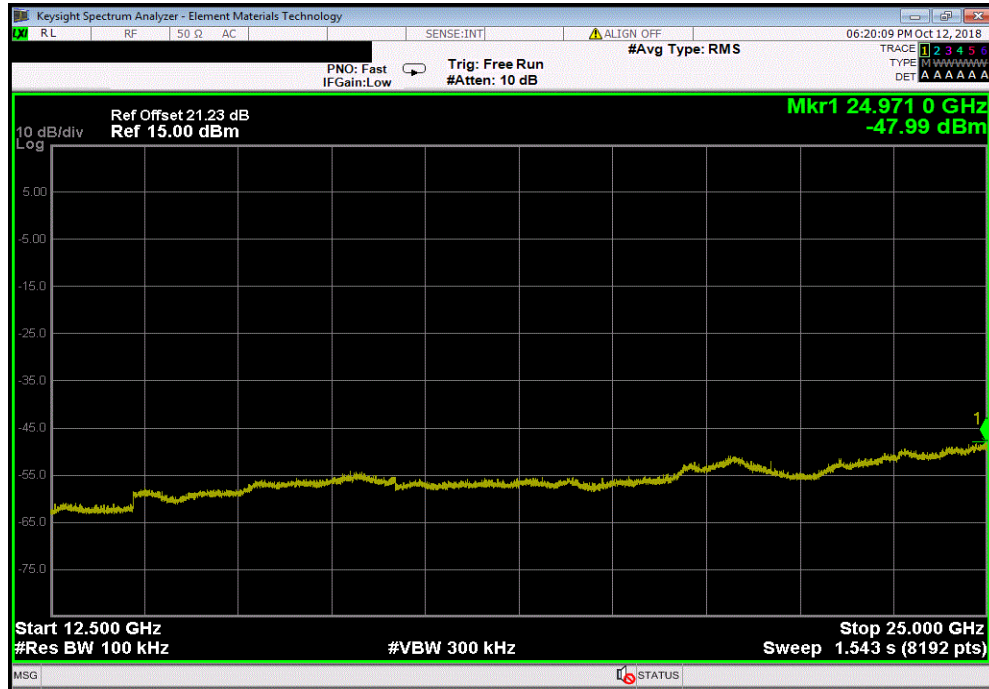


SPURIOUS CONDUCTED EMISSIONS

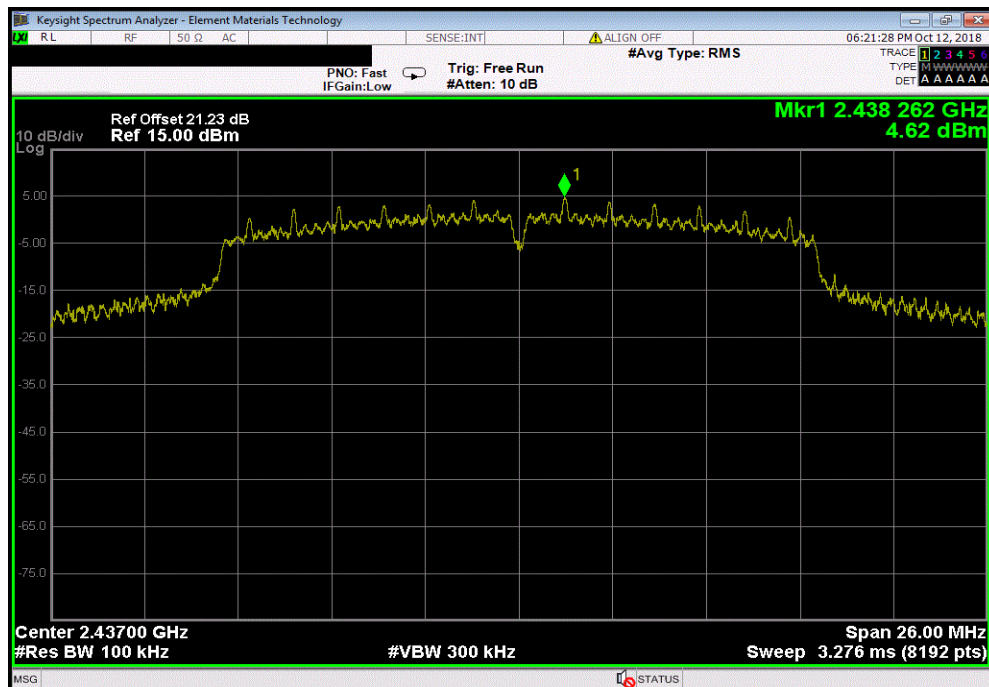


TMTx 2018.09.13 XMI 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 12 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24971	-52.43	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 18 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2438.26	N/A	N/A	N/A	

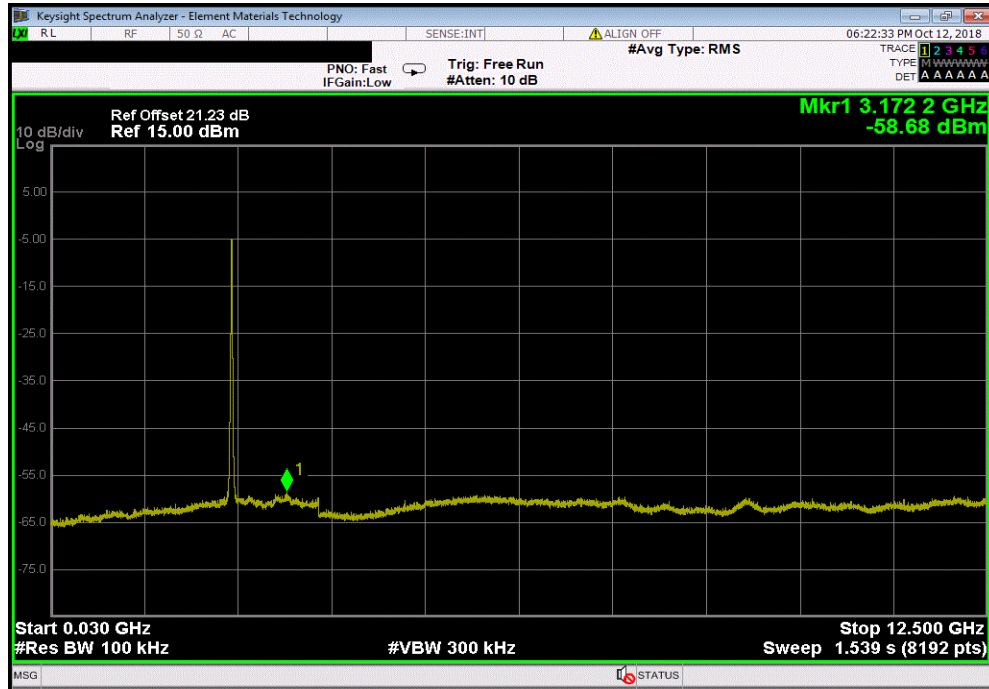


SPURIOUS CONDUCTED EMISSIONS



TMTx 2018.09.13 XMI 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 18 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3172.24	-63.3	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 18 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24931.33	-52.89	-30	Pass	

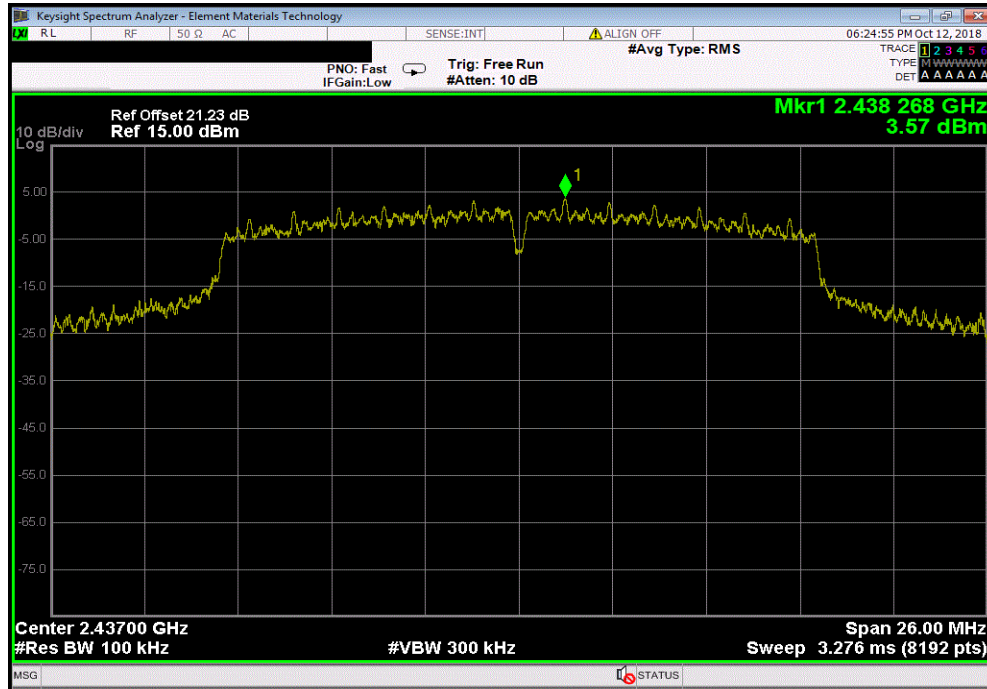


SPURIOUS CONDUCTED EMISSIONS

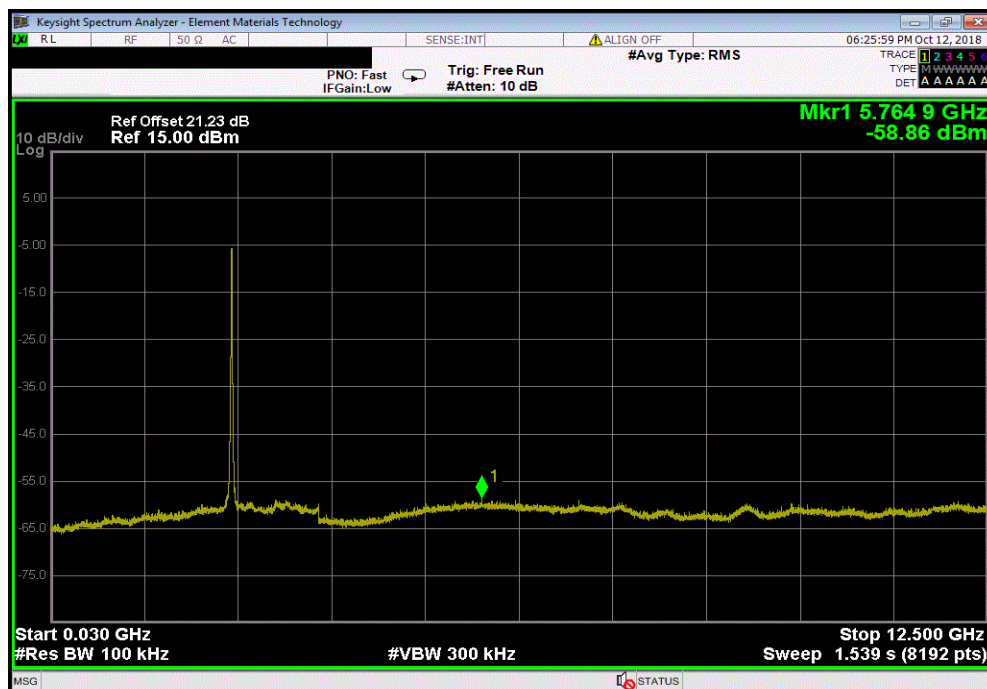


TMTx 2018.09.13 XMI 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 24 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	2438.27	N/A	N/A	N/A		



2400 MHz - 2483.5 MHz Band, 802.11(g) 24 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz	5764.89	-62.43	-30	Pass		

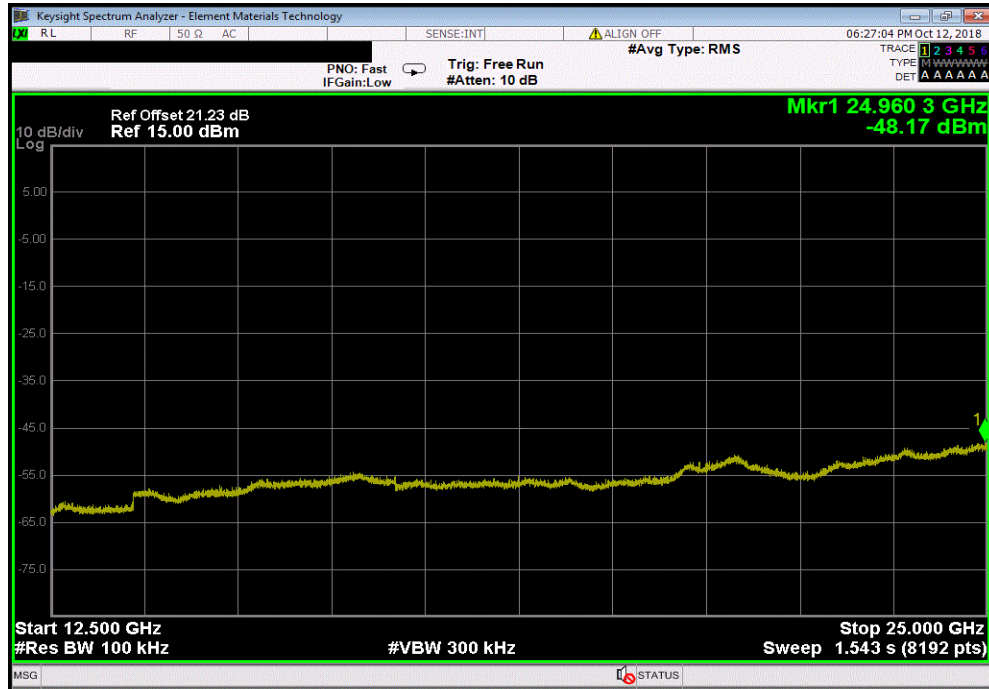


SPURIOUS CONDUCTED EMISSIONS

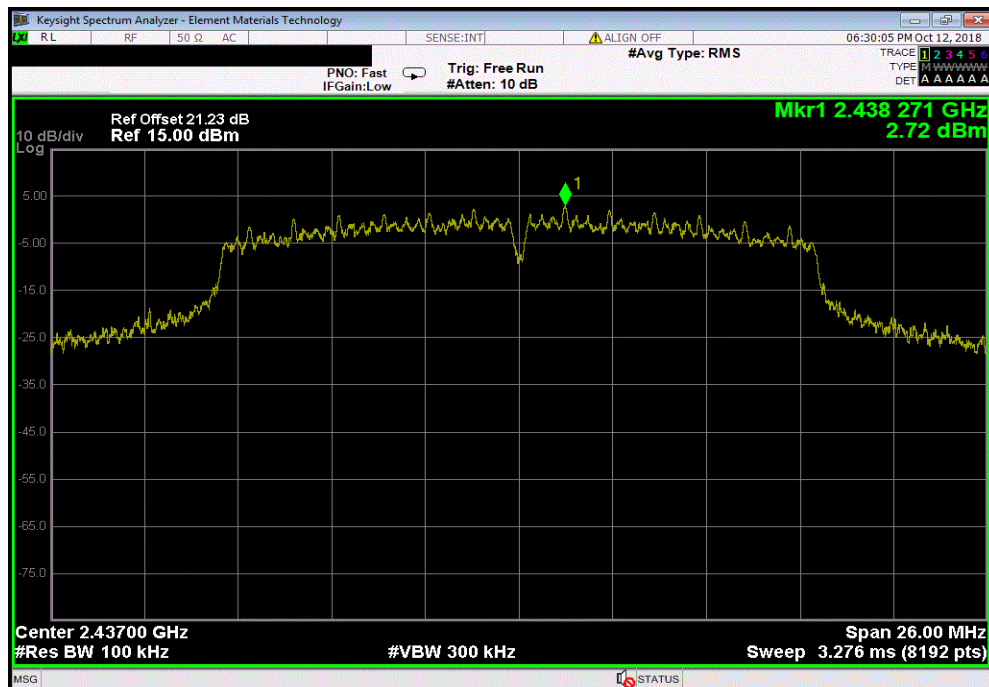


TMTx 2018.09.13 XMI 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 24 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24960.32	-51.74	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2438.27	N/A	N/A	N/A	

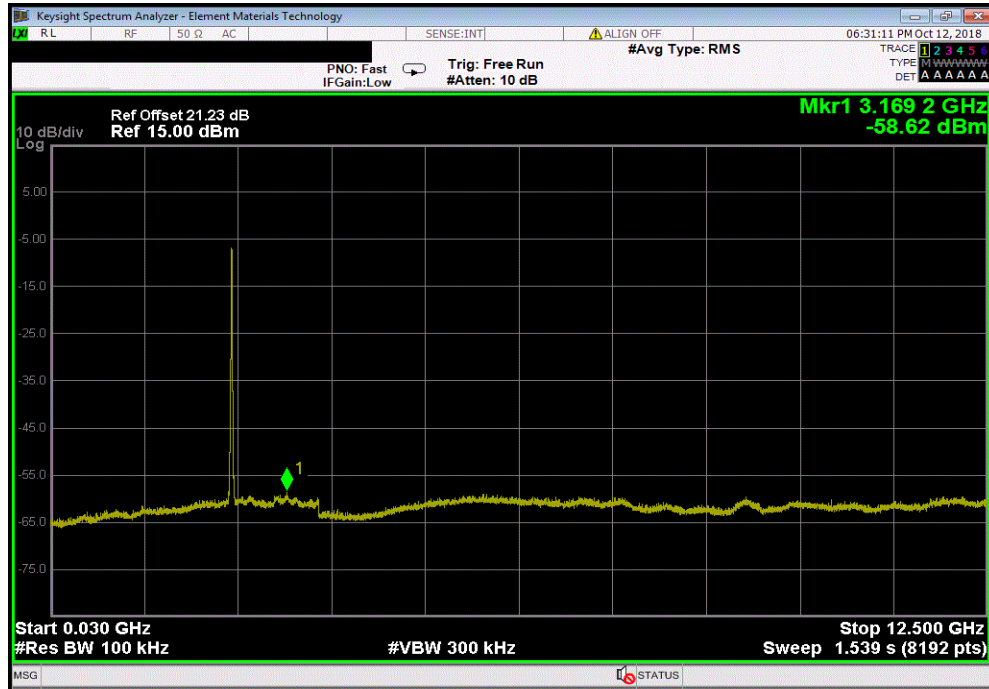


SPURIOUS CONDUCTED EMISSIONS



TMTx 2018.09.13 XMt 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	3169.19	-61.34	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24871.81	-50.95	-30	Pass	

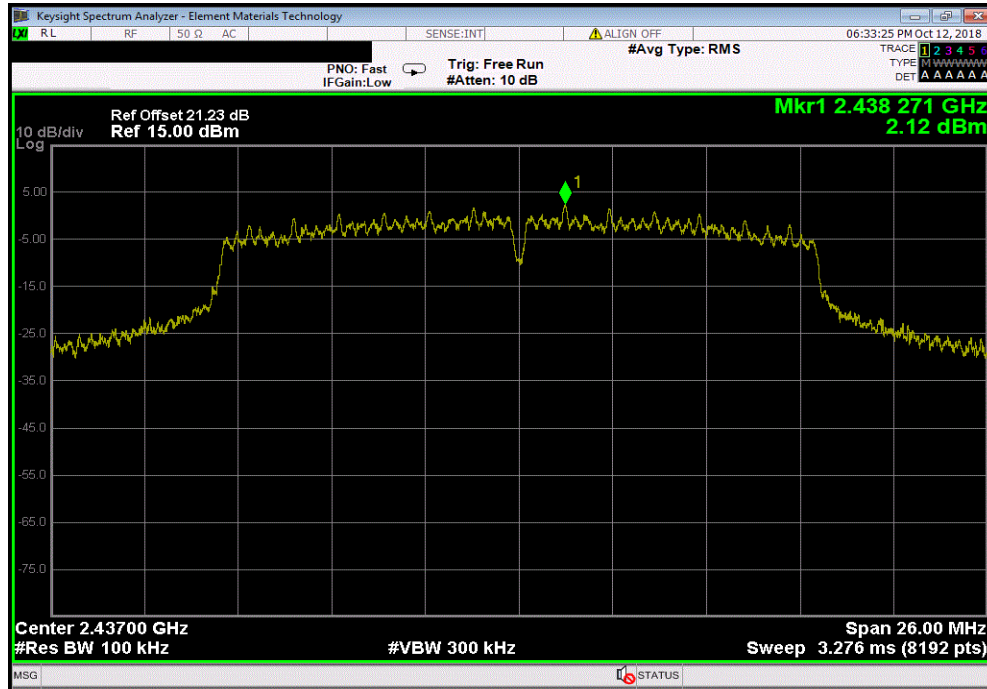


SPURIOUS CONDUCTED EMISSIONS

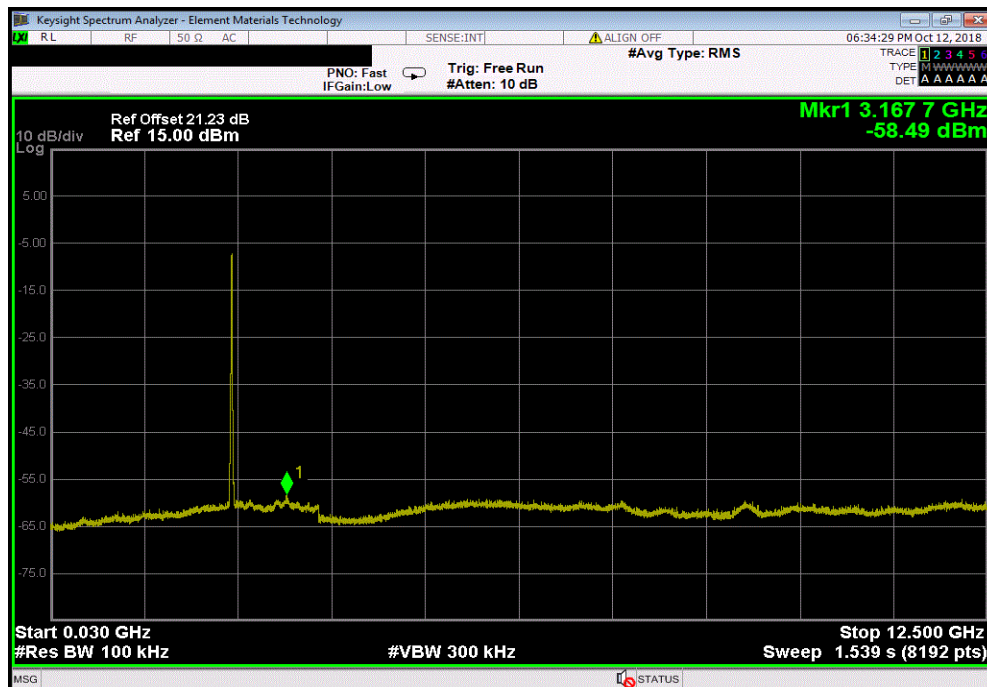


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2400 MHz - 2483.5 MHz Band, 802.11(g) 48 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental	2438.27	N/A	N/A	N/A		



2400 MHz - 2483.5 MHz Band, 802.11(g) 48 Mbps, Single Channel 6, 2437 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz	3167.67	-60.61	-30	Pass		

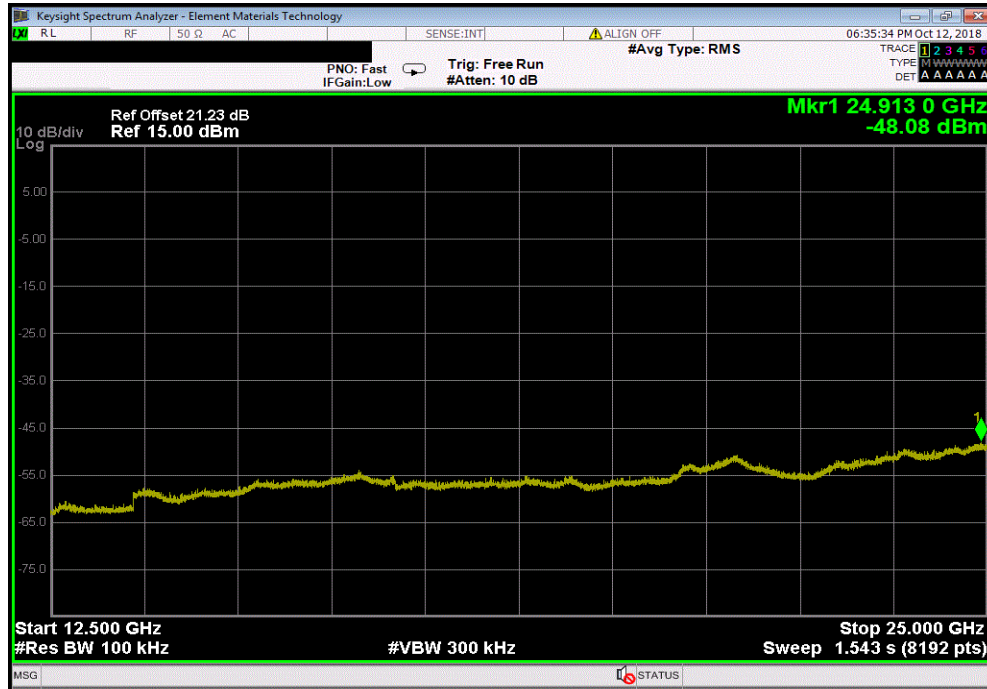


SPURIOUS CONDUCTED EMISSIONS

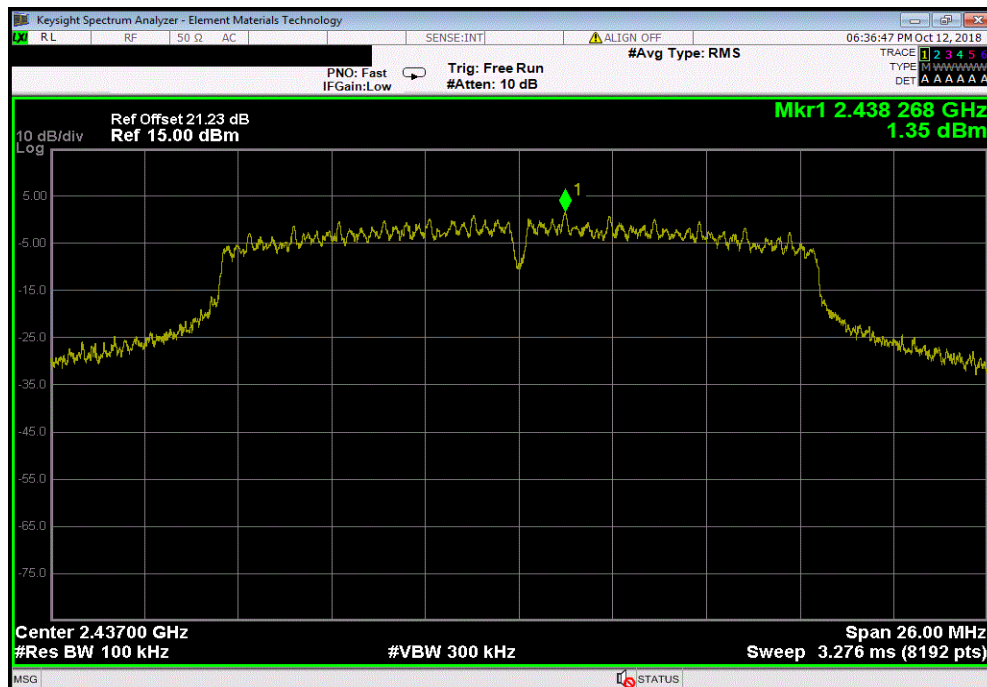


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2400 MHz - 2483.5 MHz Band, 802.11(g) 48 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24913.01	-50.2	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	2438.27	N/A	N/A	N/A	

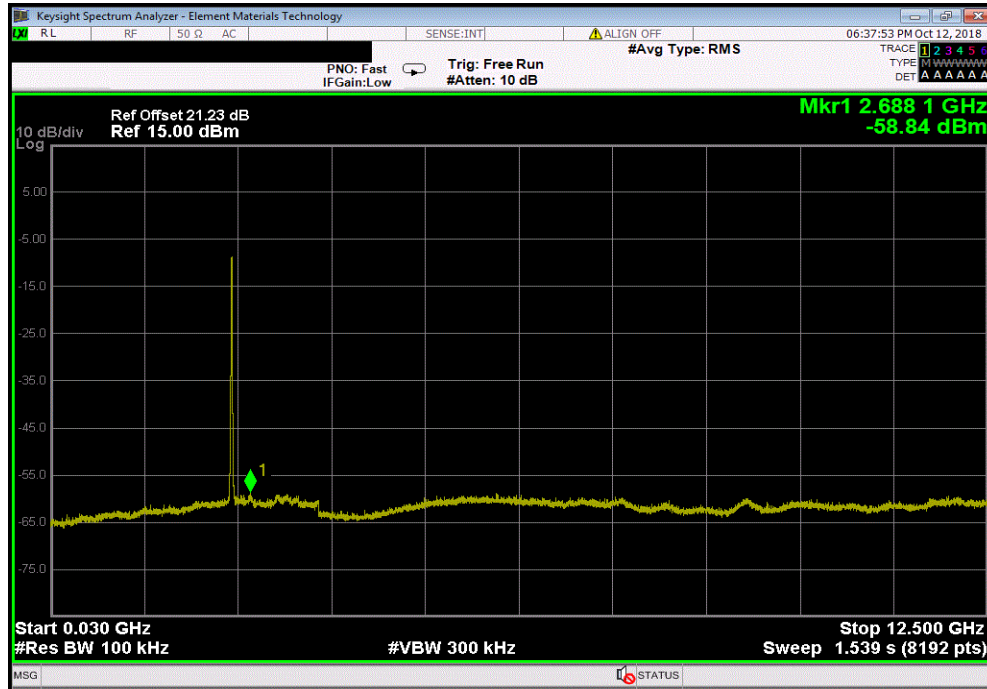


SPURIOUS CONDUCTED EMISSIONS



TMTx 2018.09.13 XMI 2017.12.13

2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	2688.12	-60.19	-30	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Single Channel 6, 2437 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	24847.39	-49.14	-30	Pass	

