SPURIOUS CONDUCTED EMISSIONS

XMit 2020.03.25.0

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
Generator - Signal	Keysight	N5182B	TFX	28-Apr-20	28-Apr-23
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20
Attenuator	S.M. Electronics	SA26B-20	RFW	10-Feb-20	10-Feb-21
Block - DC	Fairview Microwave	SD3379	AMI	5-Aug-20	5-Aug-21
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	21-Dec-19	21-Dec-20

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. 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

element

TbtTx 2019.08.30.0 XMit 2020.03.25.0

EUT:	**USB to WiFi Adapter**			**Work Order:**	**TRNE0022**
Serial Number:	**0022A301FF5D**			**Date:**	**24-Aug-20**
Customer:	**Trane**			**Temperature:**	**22 °C**
Attendees:	**Chris Vanderkoy**			**Humidity:**	**57.4% RH**
Project:	**None**			**Barometric Pres.:**	**1017 mbar**
Tested by:	**Dustin Sparks**	**Power:**	**5VDC via USB**	**Job Site:**	**MN08**

TEST SPECIFICATIONS	**Test Method**
FCC 15.247:2020	**ANSI C63.10:2013**

COMMENTS

Measurement cable, DC block, and 20 dB attenuator included in reference level offset.

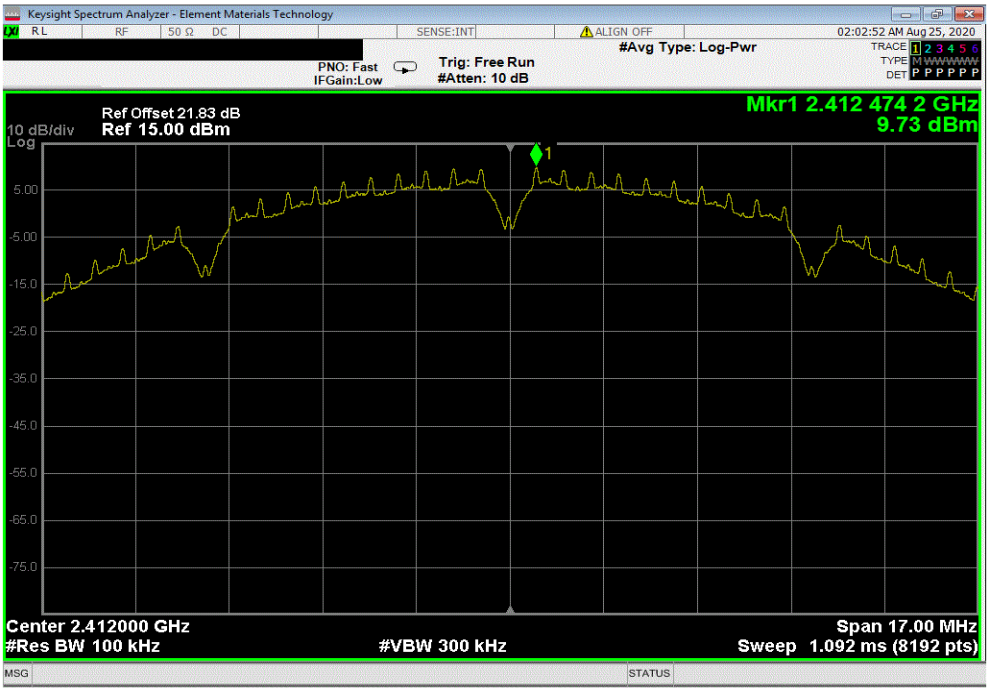
DEVIATIONS FROM TEST STANDARD

None

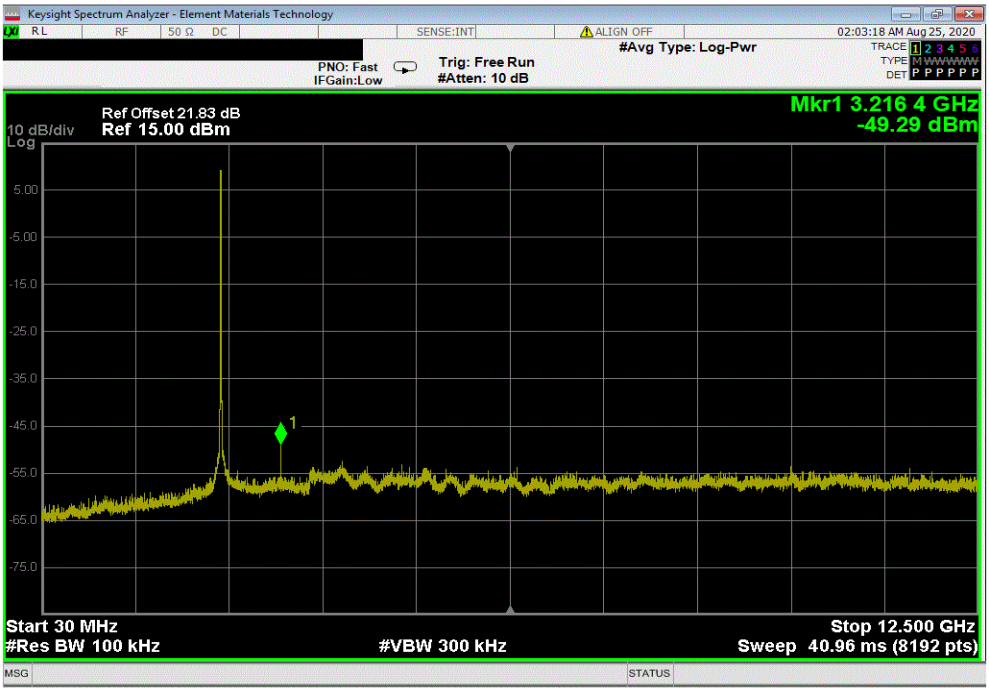
Configuration #	**3**	*Signature* Dustin Sparks

	Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	Fundamental	2412.47	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	3216.39	-59.02	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	23931.75	-60.26	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2437.47	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3249.88	-61.82	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24005.01	-59.96	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2461.47	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2514.56	-59.81	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	24293.43	-58.97	-30	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	Fundamental	2412.28	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	3216.39	-59.1	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	23892.08	-60.17	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2436.63	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3249.88	-60.53	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	23757.78	-59.48	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2462.62	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2513.04	-58.95	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	23815.77	-58.48	-30	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	Fundamental	2414.47	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	3216.39	-55.6	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	22210.35	-55.77	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2439.47	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3249.88	-57.65	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	23852.4	-55.62	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2464.48	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2513.04	-52.51	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	24014.16	-50.25	-30	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	Fundamental	2405.71	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	2383.63	-48.55	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	23794.41	-54.36	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2441.96	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	2362.32	-51.5	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24128.62	-54.03	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2455.72	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2514.56	-51.11	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	23721.16	-49.82	-30	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	Fundamental	2405.72	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	2380.59	-49.83	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	23902.76	-51.44	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2441.97	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3249.88	-55.51	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24934.38	-52.75	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2455.71	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2509.99	-50.68	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	23406.79	-49.94	-30	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	Fundamental	2410.7	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	2386.68	-56.03	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	24446.04	-55.82	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2439.47	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3249.88	-57.07	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	24951.17	-55.25	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2464.47	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2516.08	-50.82	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	24122.51	-49.77	-30	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	Fundamental	2405.72	N/A	N/A	N/A
Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	2386.68	-50.75	-30	Pass
Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	24105.73	-53.1	-30	Pass
Mid Channel 6, 2437 MHz	Fundamental	2441.97	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	3249.88	-54.39	-30	Pass
Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	23650.96	-53.08	-30	Pass
High Channel 11, 2462 MHz	Fundamental	2466.97	N/A	N/A	N/A
High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	2509.99	-49.62	-30	Pass
High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	24011.11	-49.04	-30	Pass

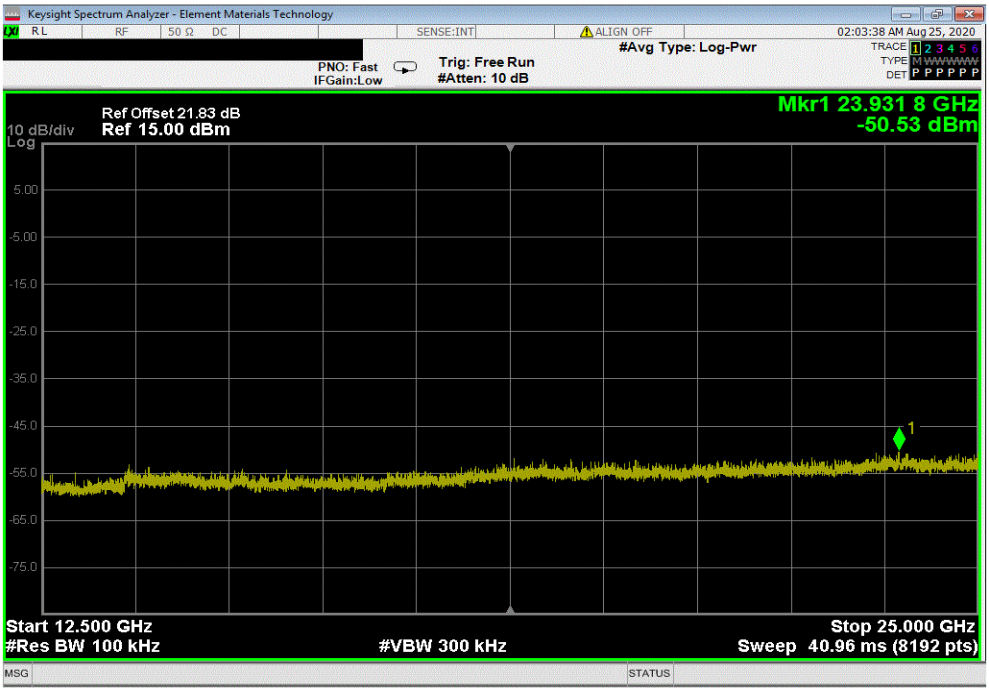
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2412.47	N/A	N/A	N/A



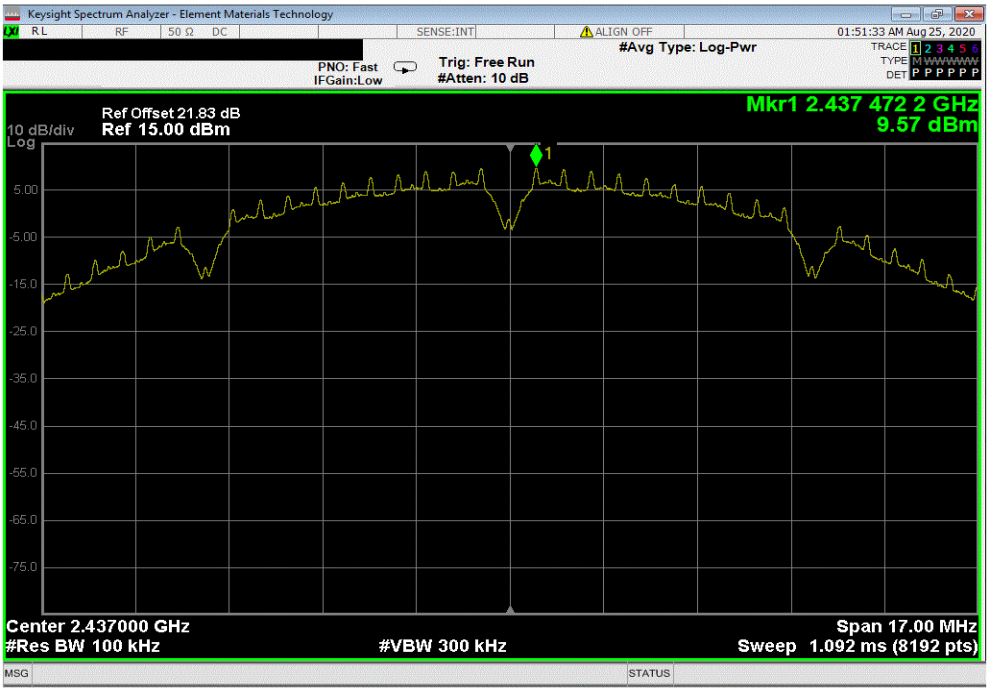
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3216.39	-59.02	-30	Pass



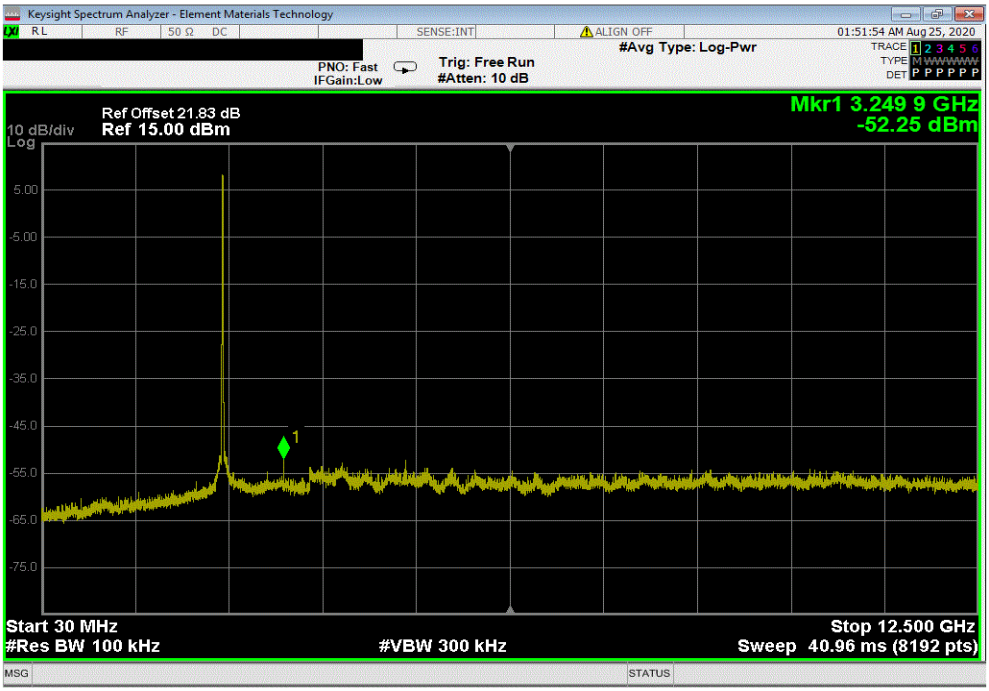
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23931.75	-60.26	-30	Pass



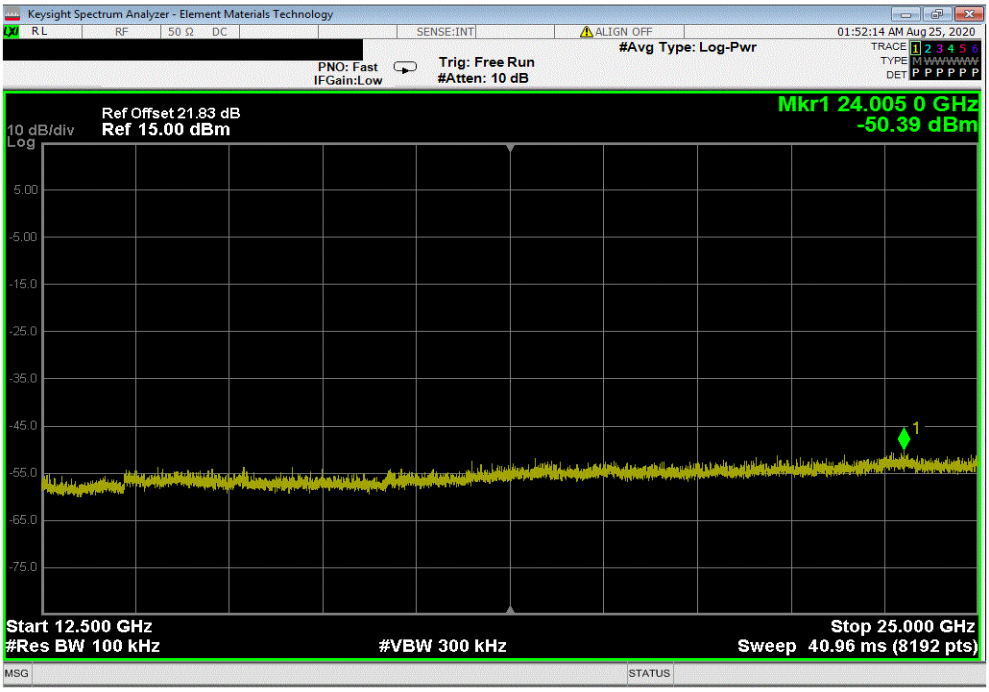
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
Fundamental	2437.47	N/A	N/A	N/A



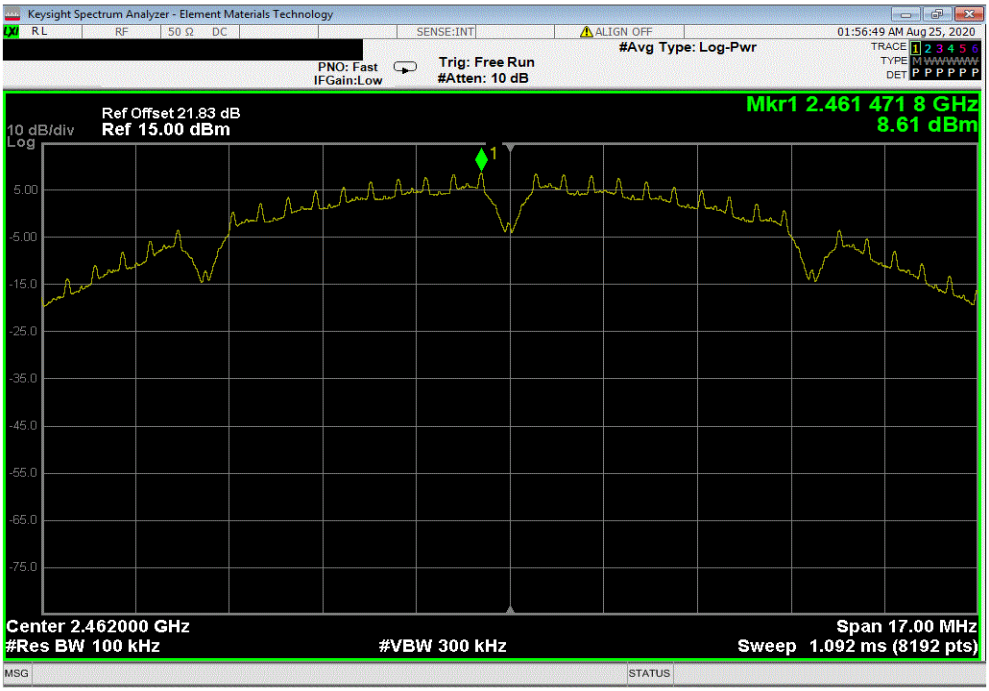
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	3249.88	-61.82	-30	Pass



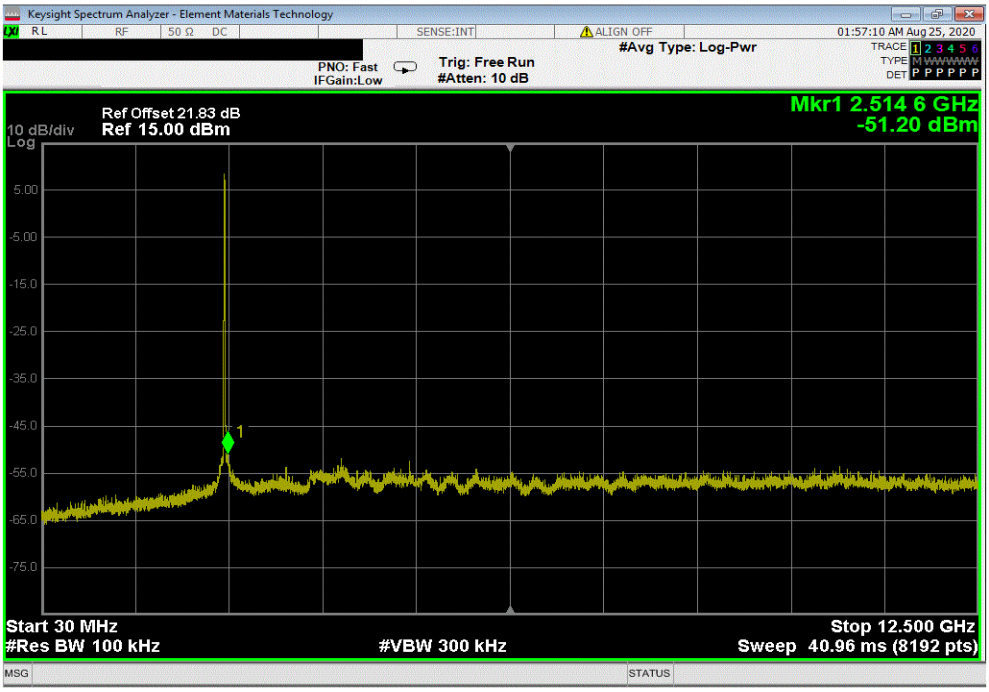
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24005.01	-59.96	-30	Pass



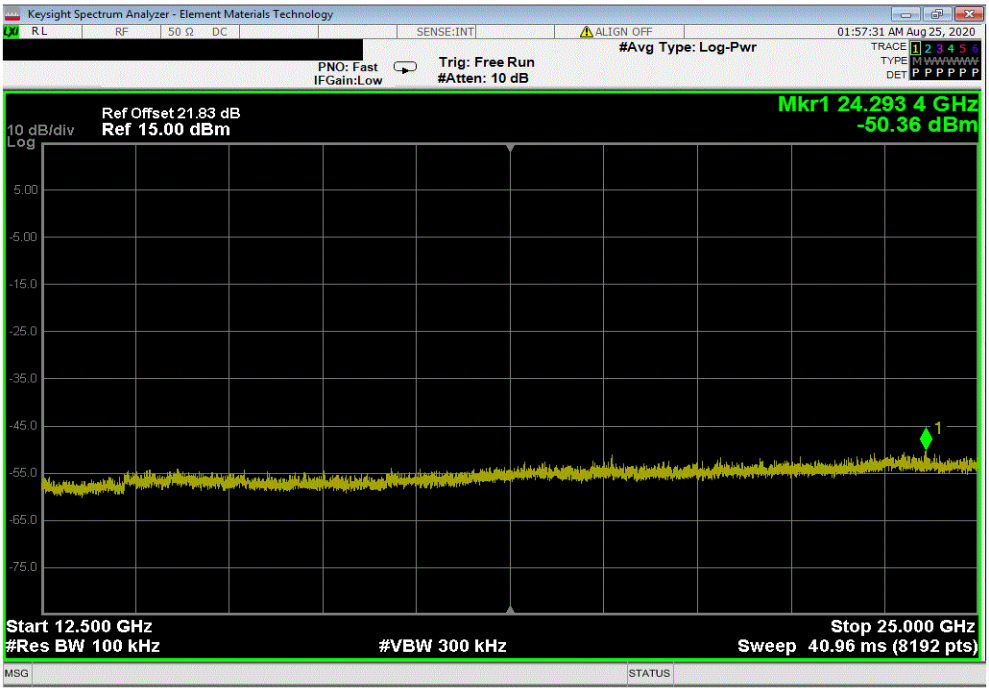
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2461.47	N/A	N/A	N/A



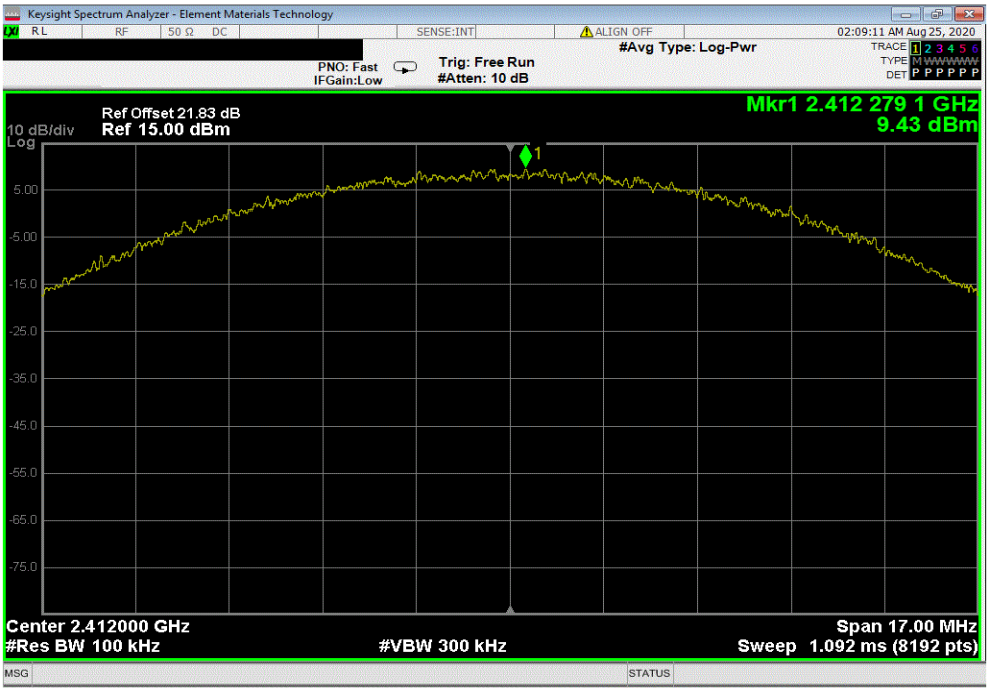
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2514.56	-59.81	-30	Pass



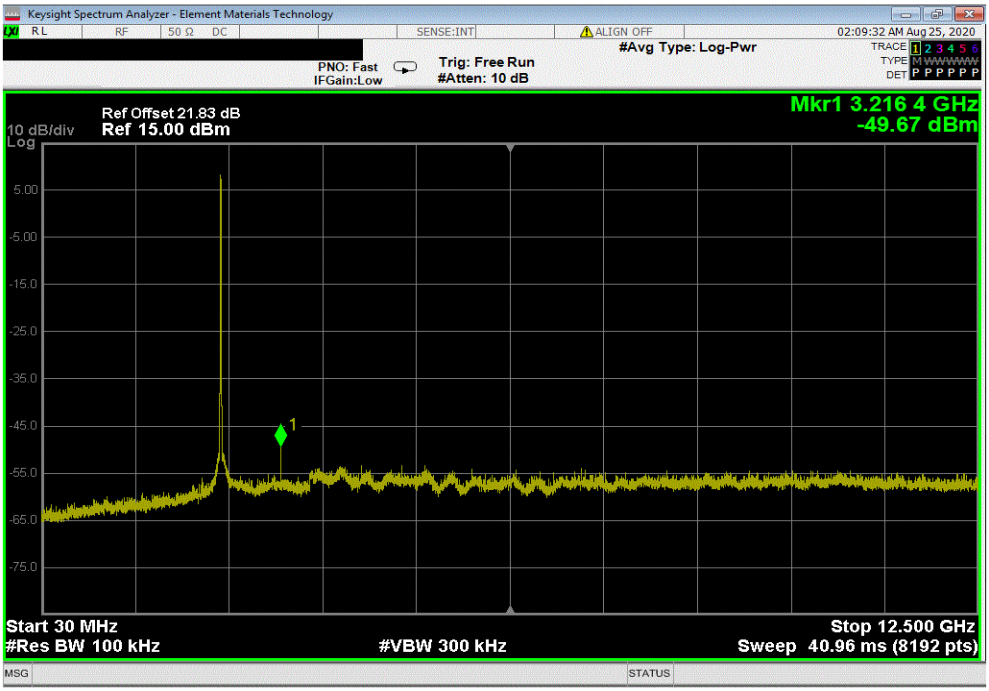
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24293.43	-58.97	-30	Pass



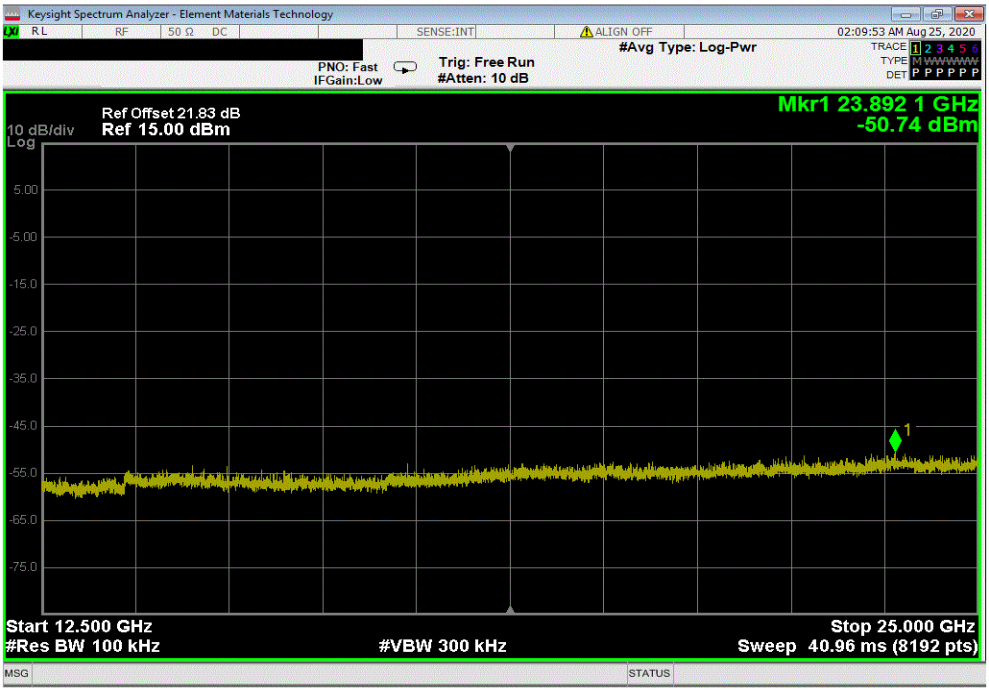
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2412.28	N/A	N/A	N/A



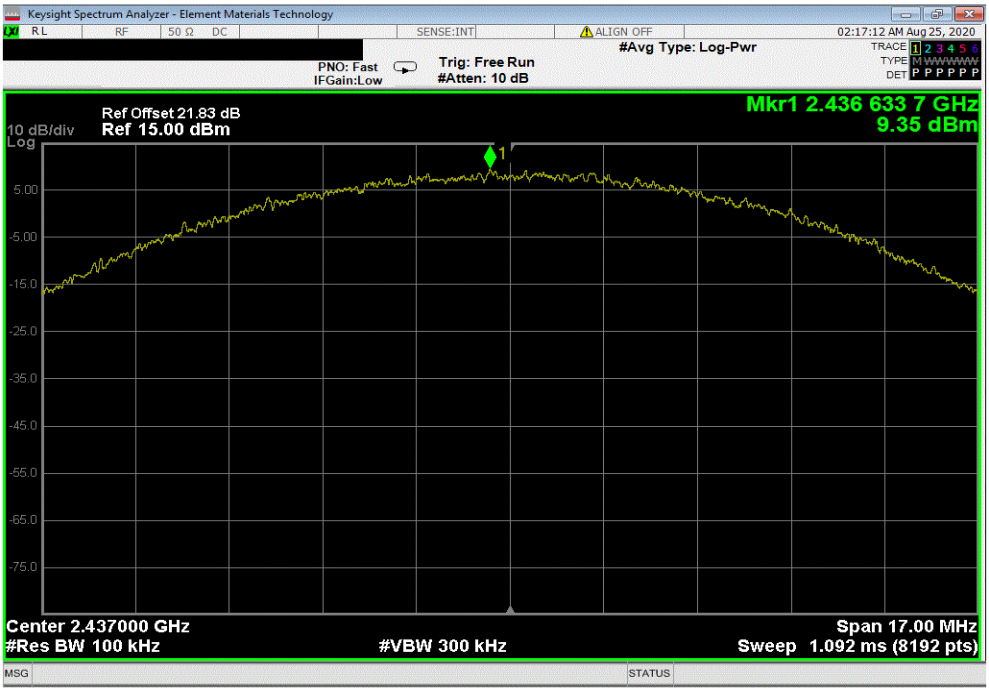
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	3216.39	-59.1	-30	Pass



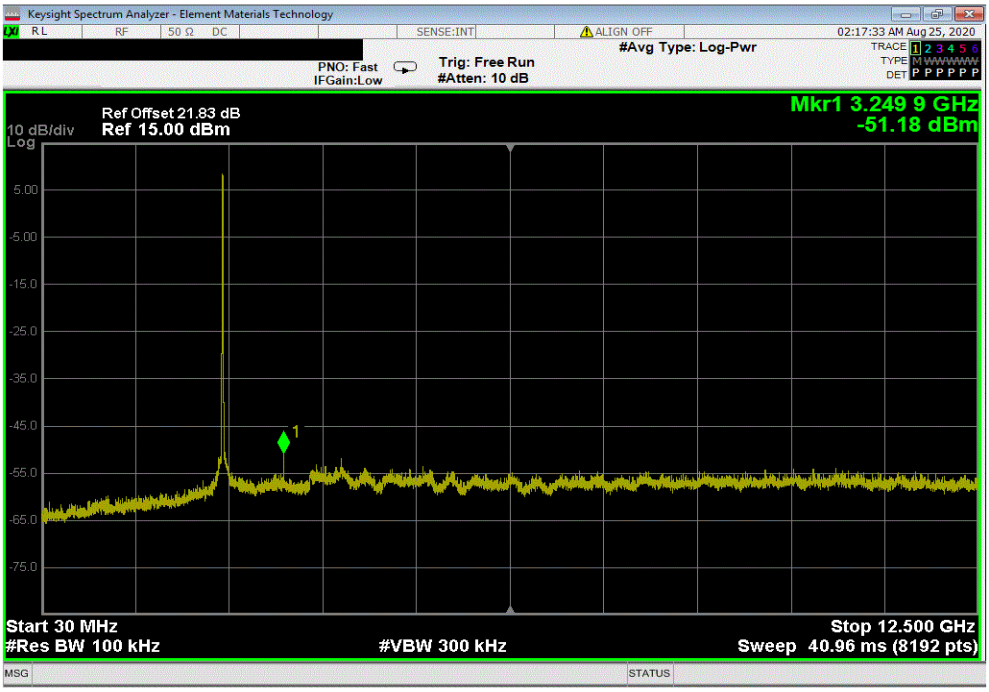
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23892.08	-60.17	-30	Pass



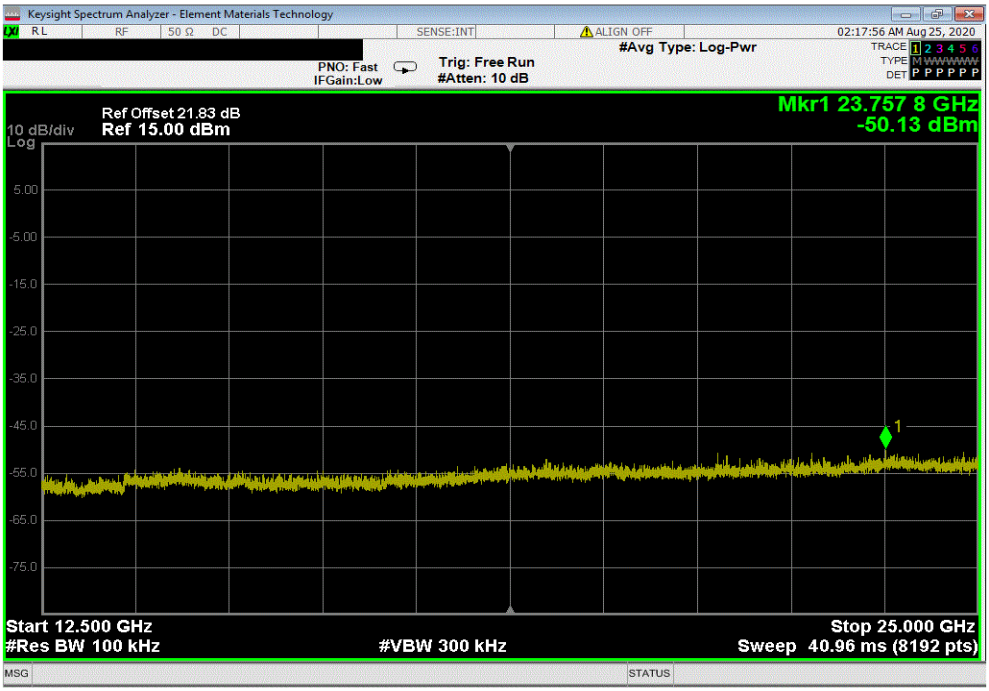
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2436.63	N/A	N/A	N/A



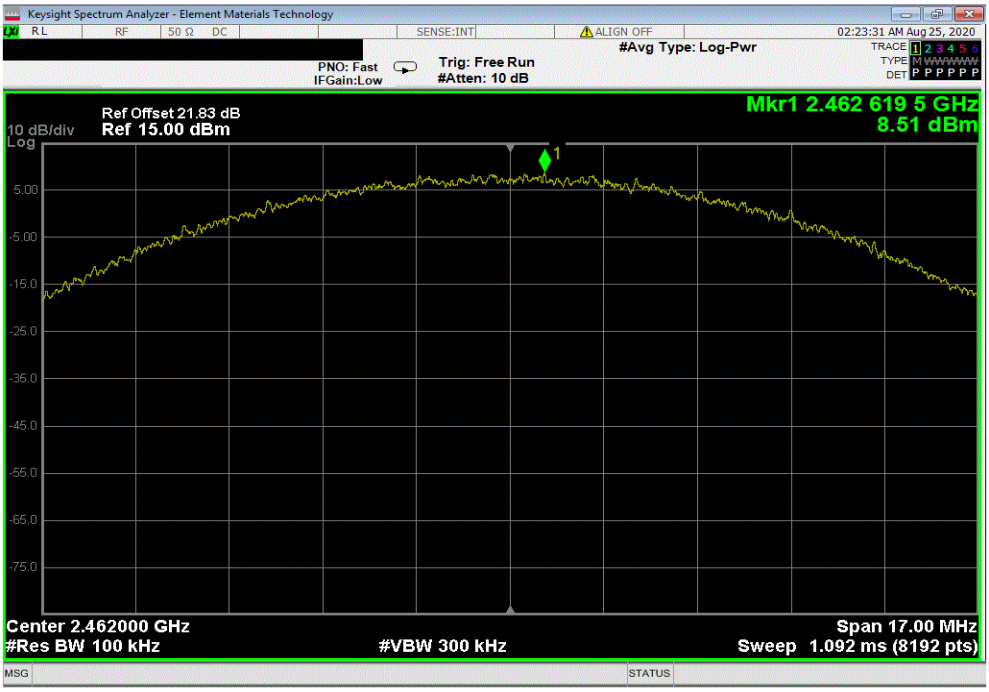
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3249.88	-60.53	-30	Pass



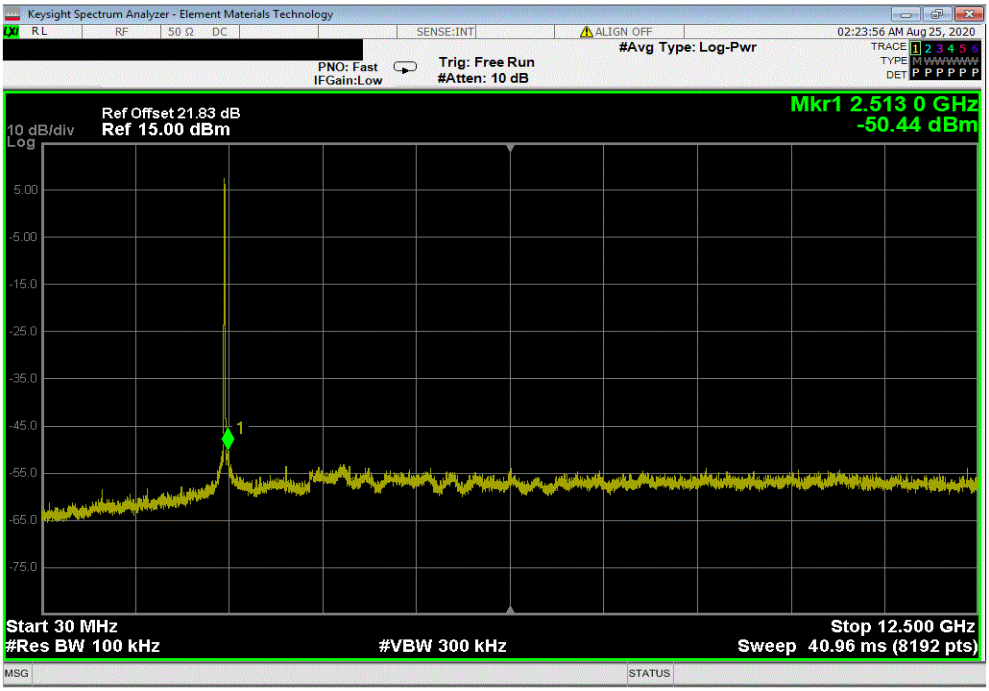
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23757.78	-59.48	-30	Pass



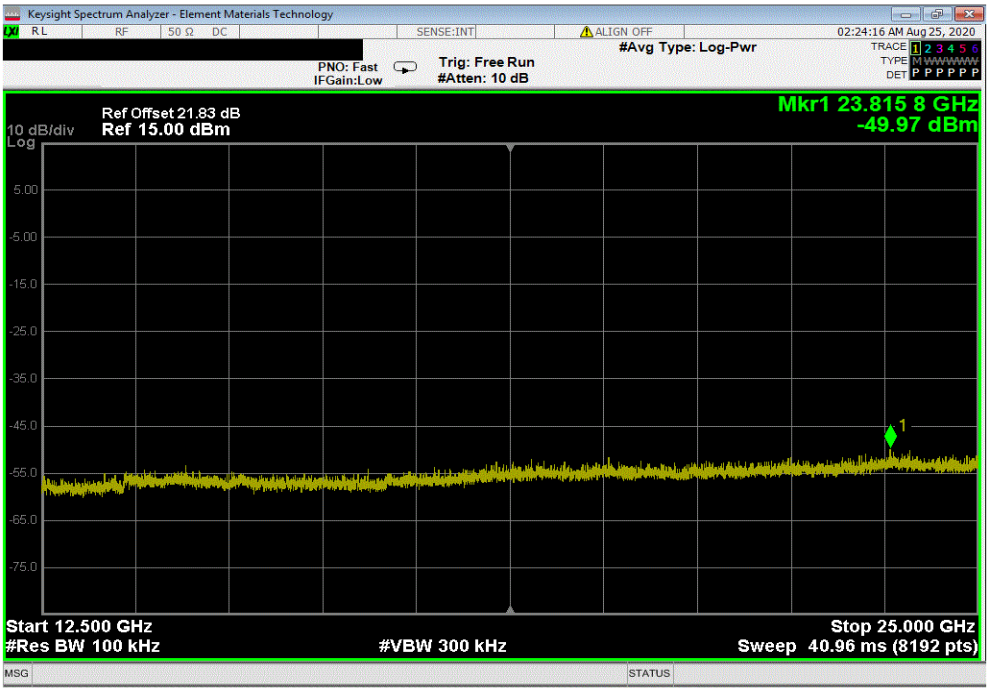
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz					
Frequency Range		**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental	2462.62	N/A	N/A	N/A



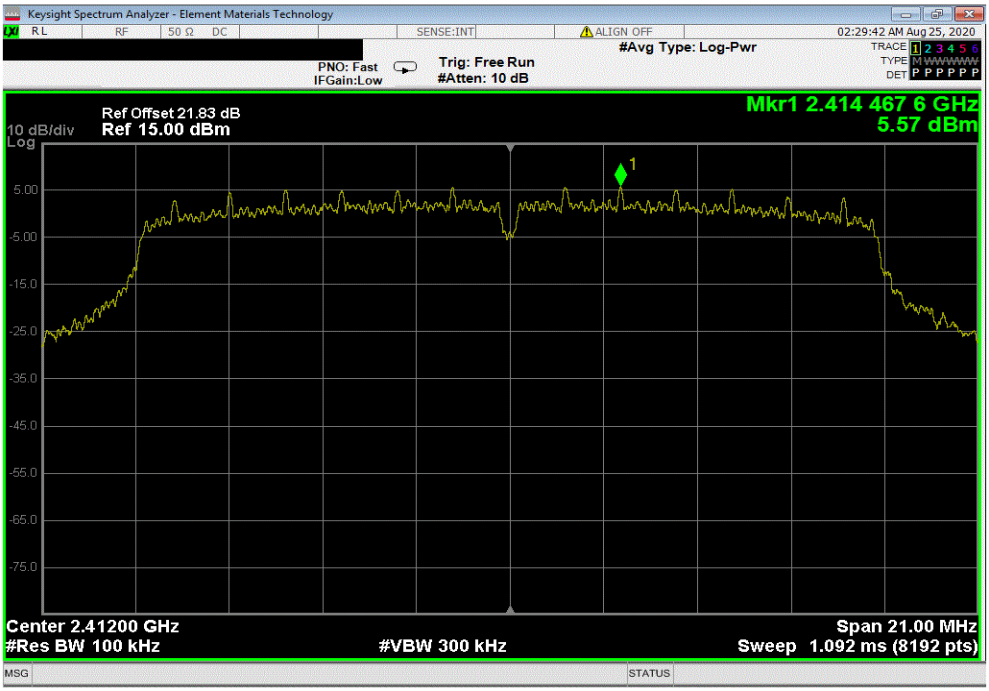
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	2513.04	-58.95	-30	Pass



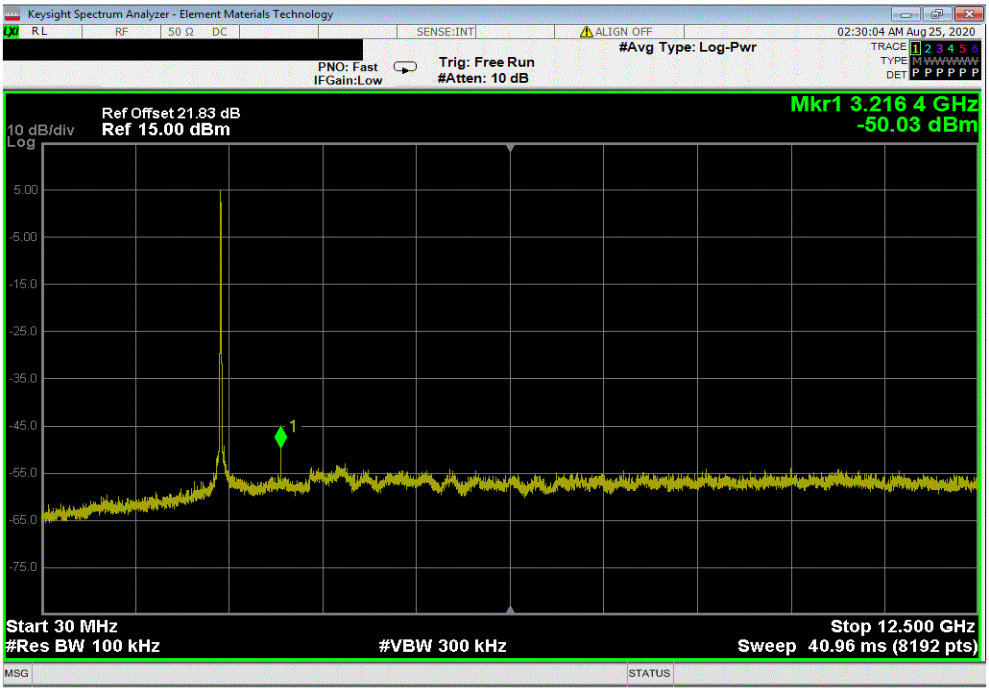
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23815.77	-58.48	-30	Pass



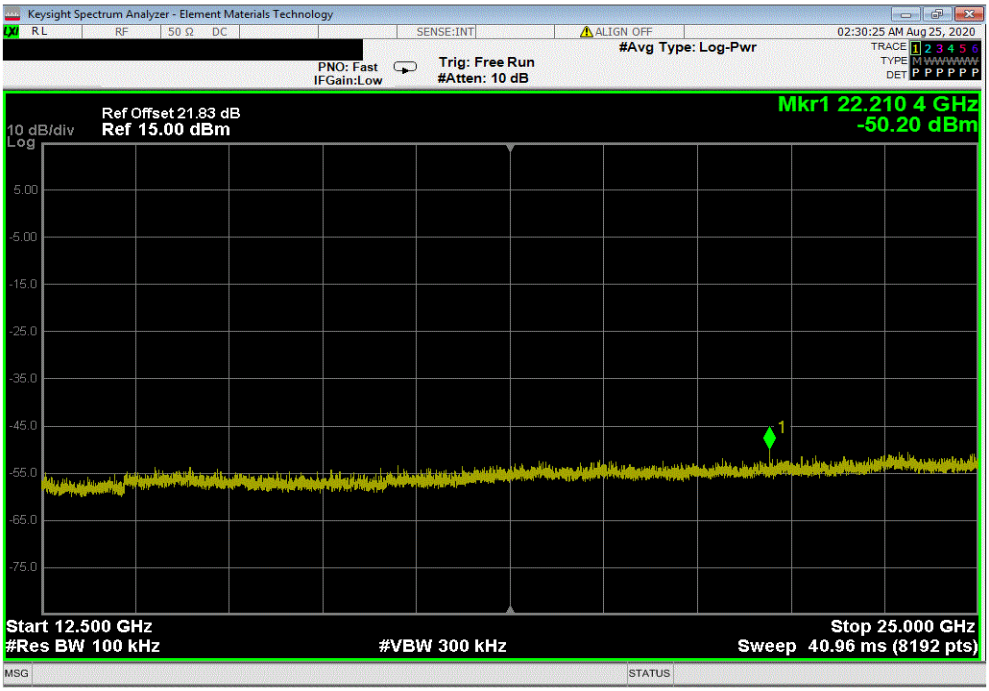
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2414.47	N/A	N/A	N/A



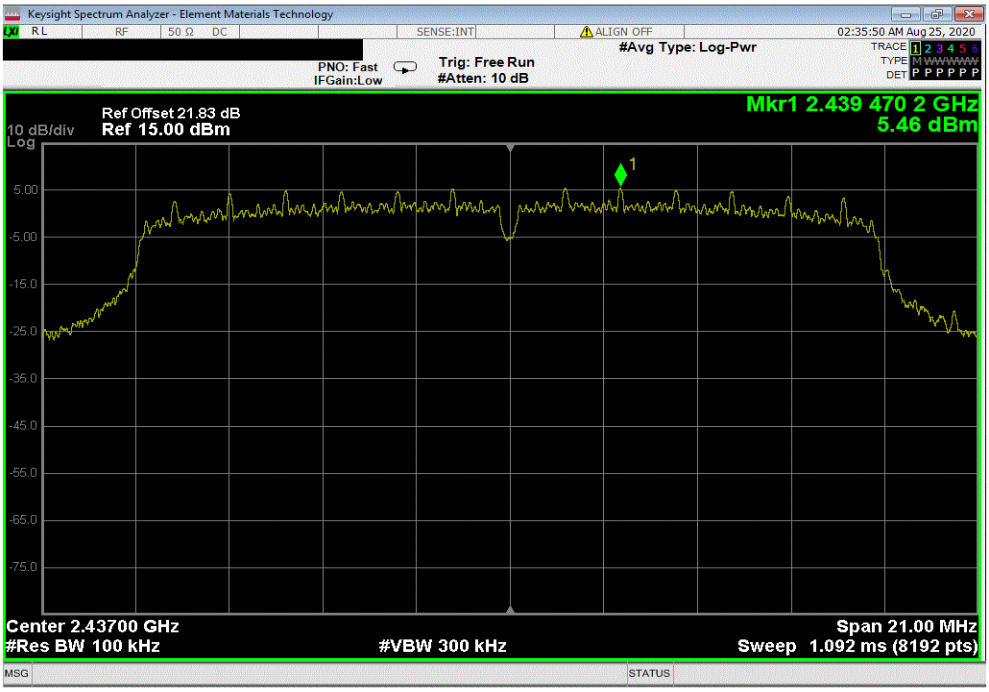
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3216.39	-55.6	-30	Pass



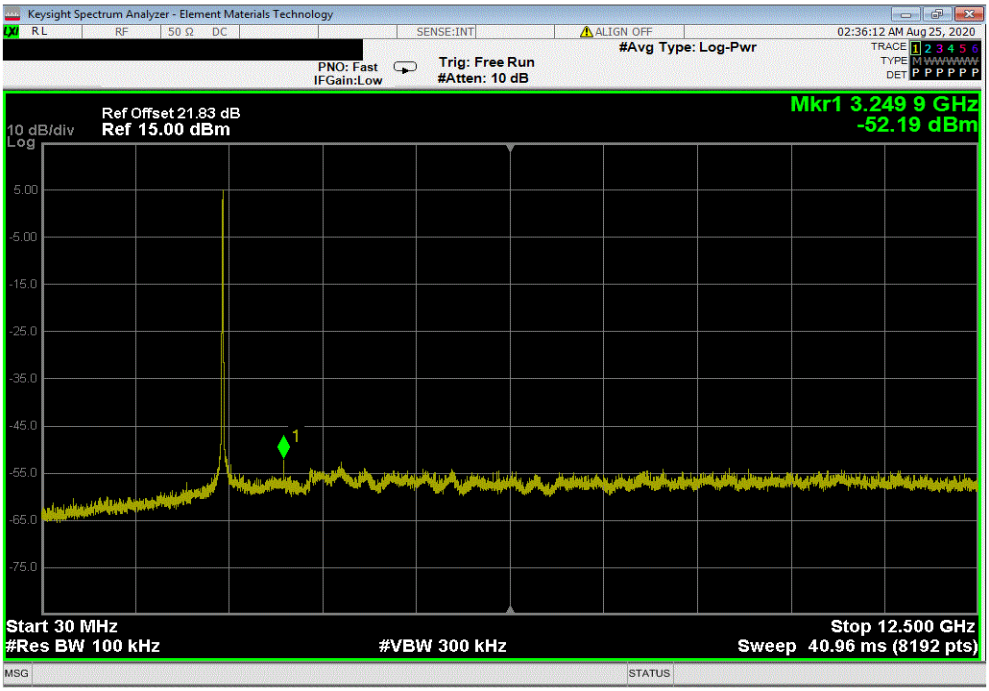
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	22210.35	-55.77	-30	Pass



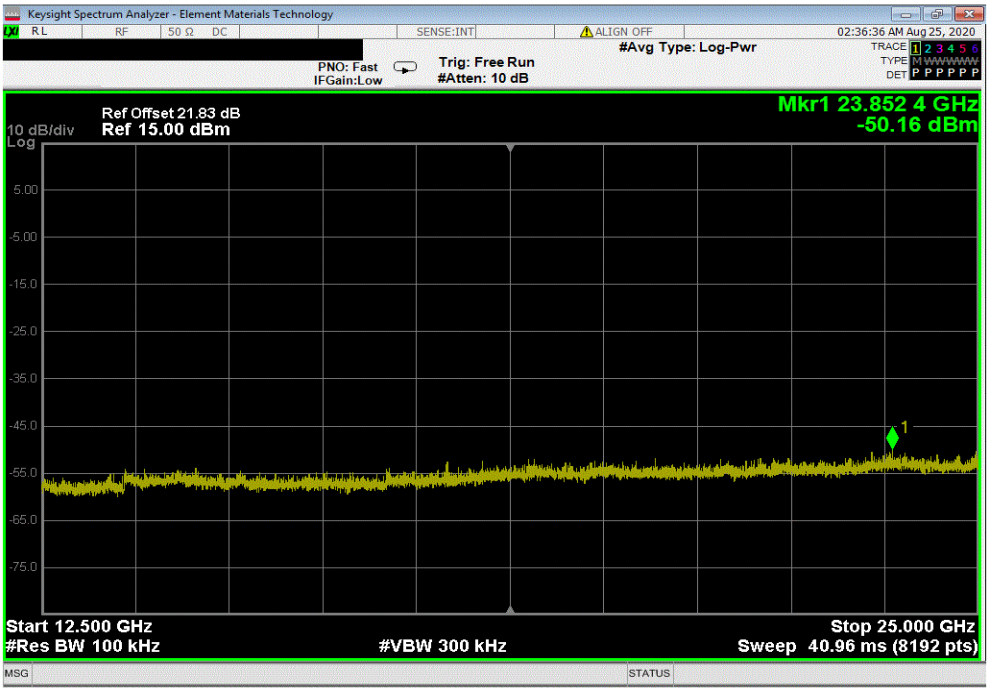
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
Fundamental	2439.47	N/A	N/A	N/A



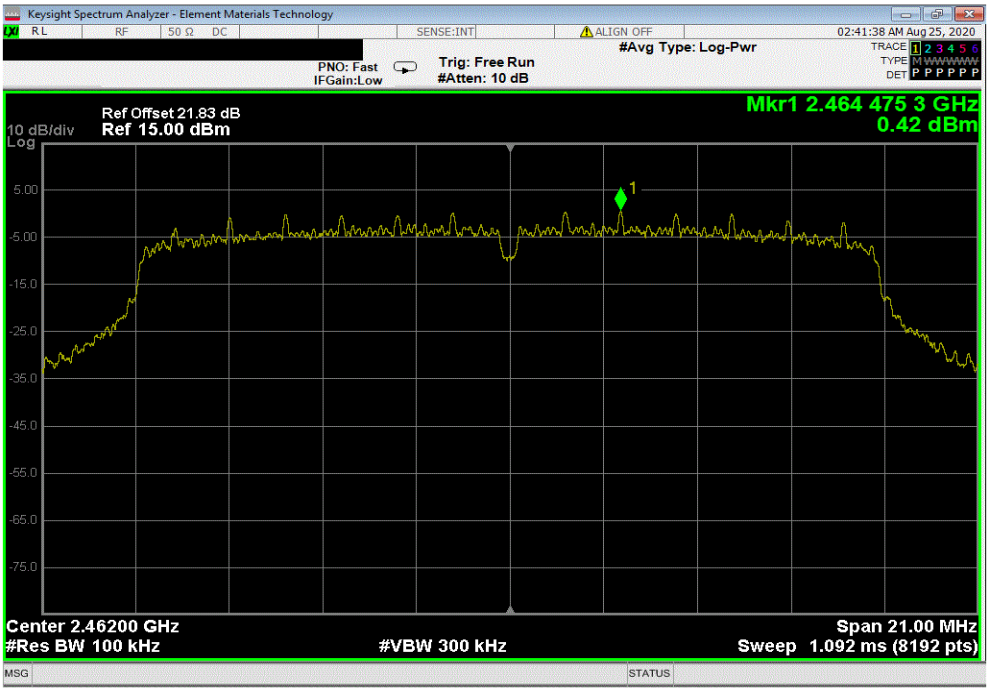
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	3249.88	-57.65	-30	Pass



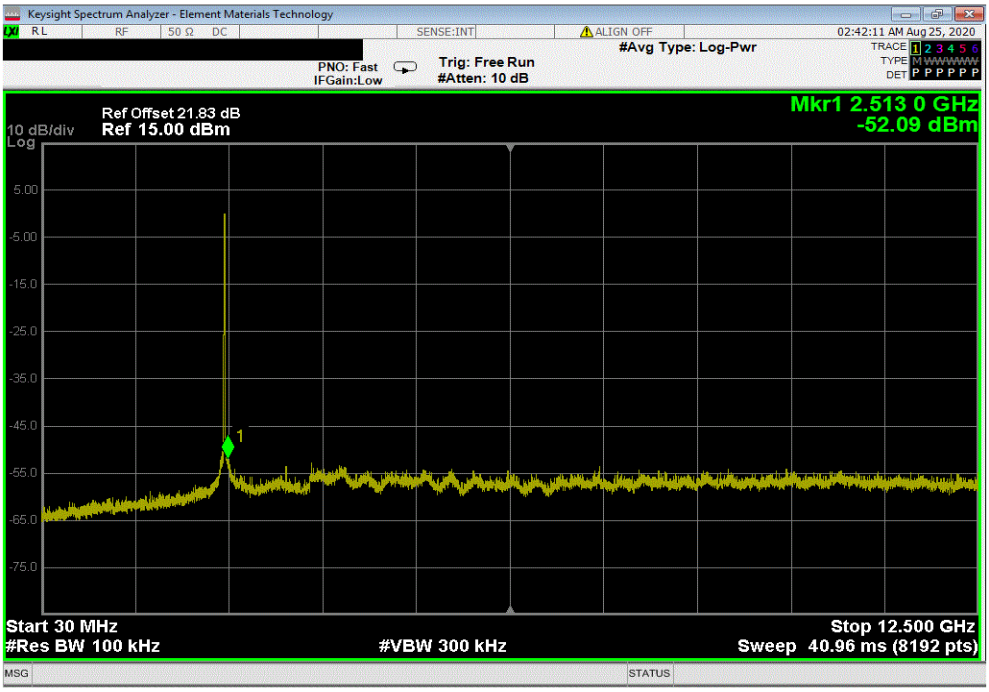
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23852.4	-55.62	-30	Pass



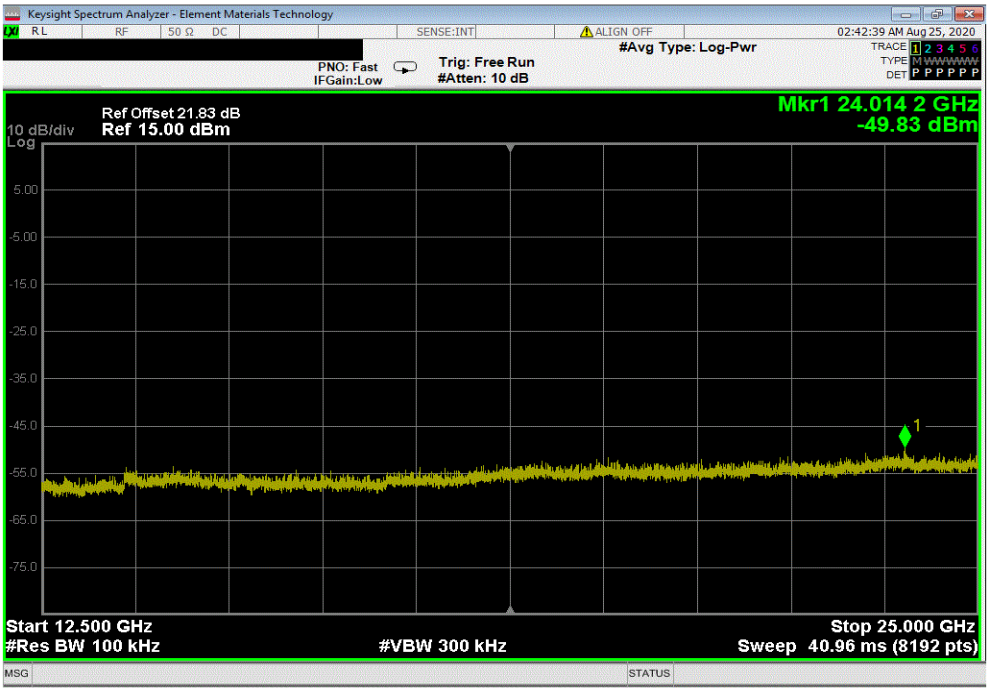
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2464.48	N/A	N/A	N/A



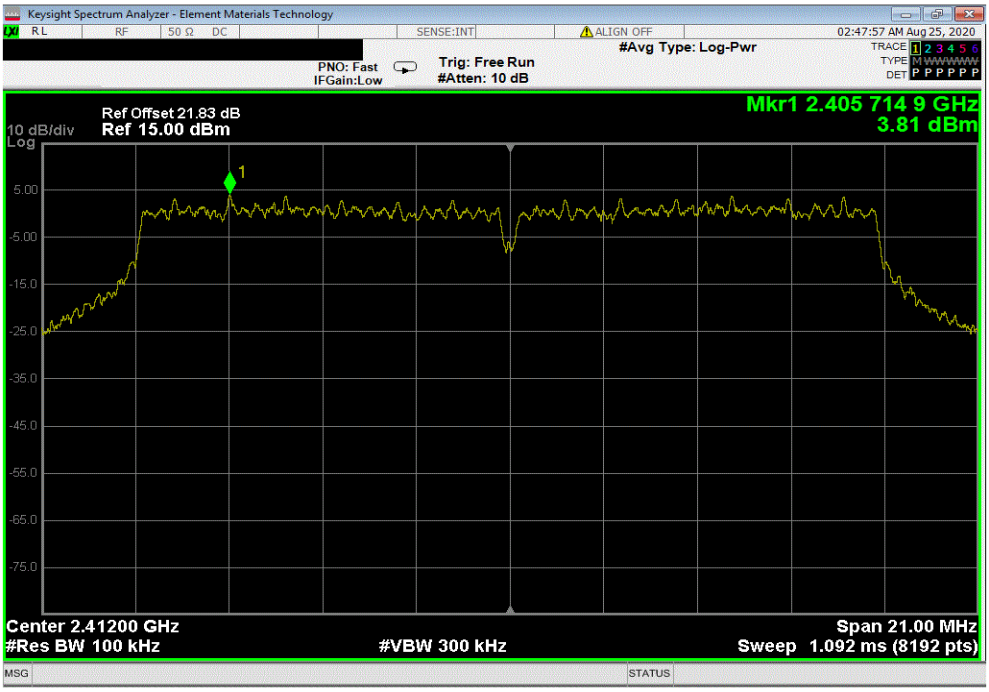
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2513.04	-52.51	-30	Pass



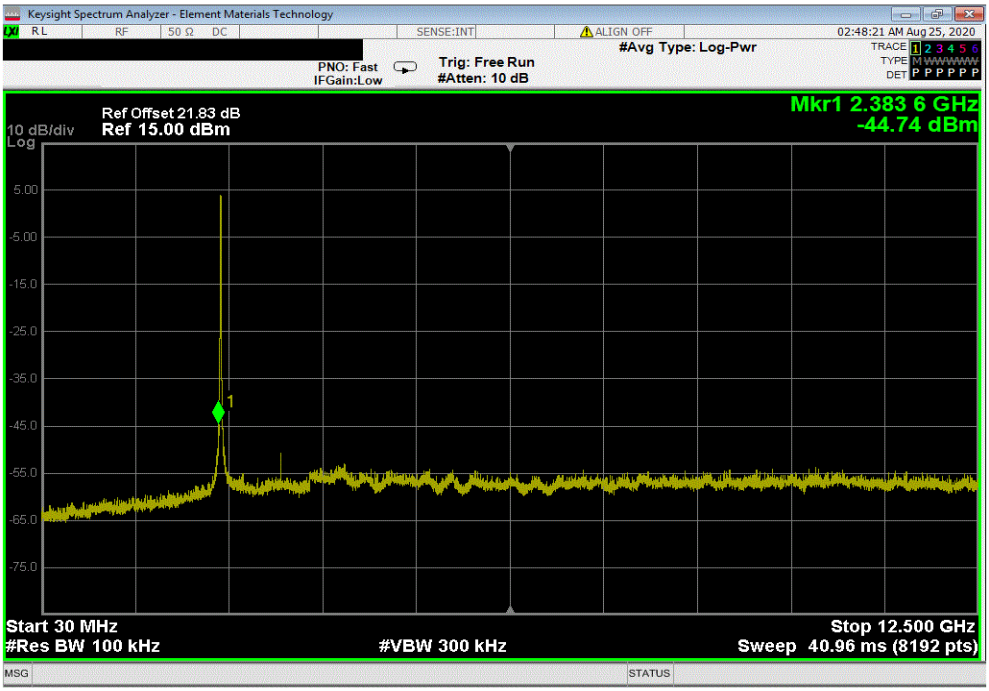
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24014.16	-50.25	-30	Pass



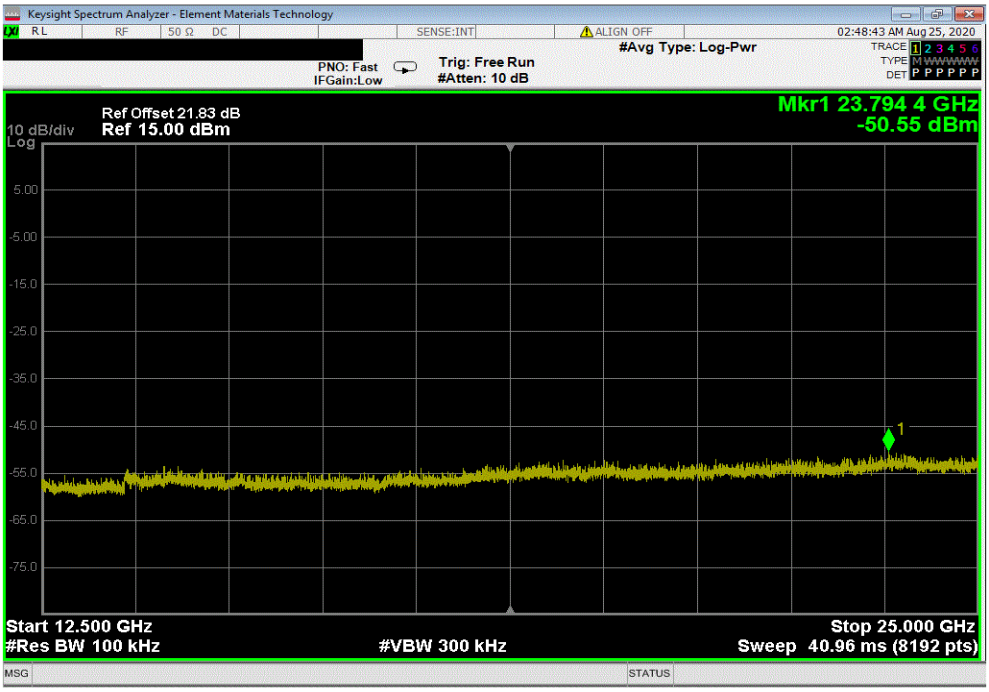
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
Fundamental	2405.71	N/A	N/A	N/A



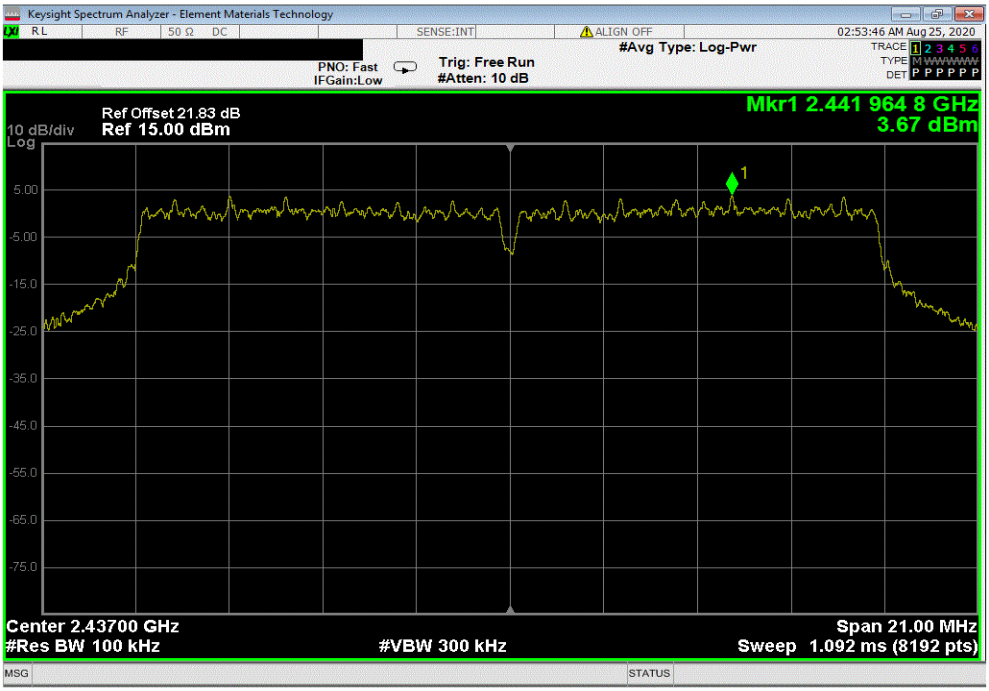
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	2383.63	-48.55	-30	Pass



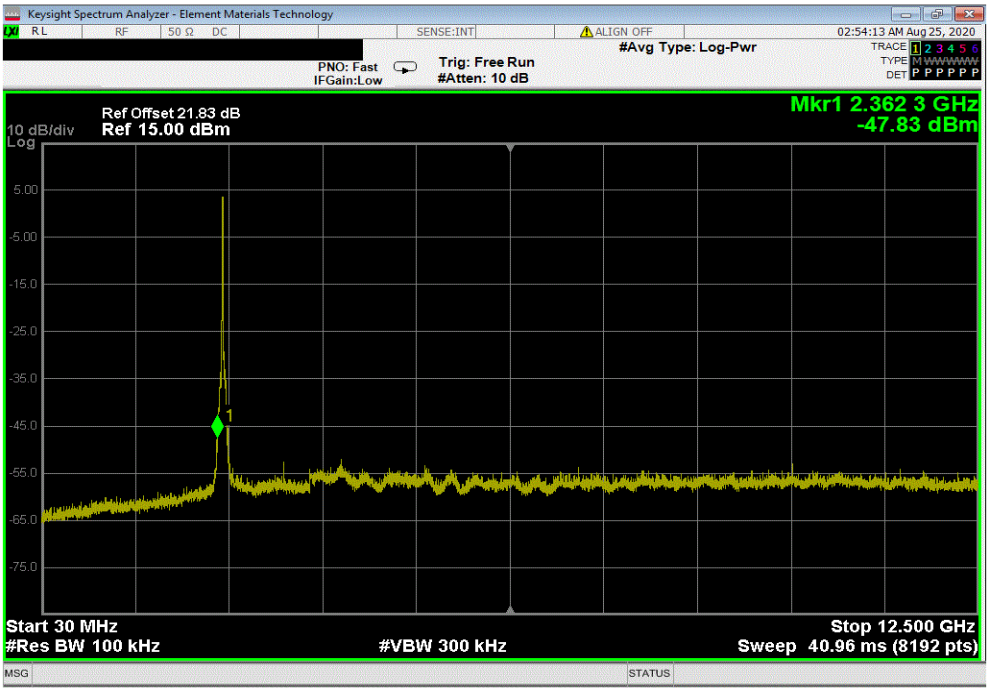
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23794.41	-54.36	-30	Pass



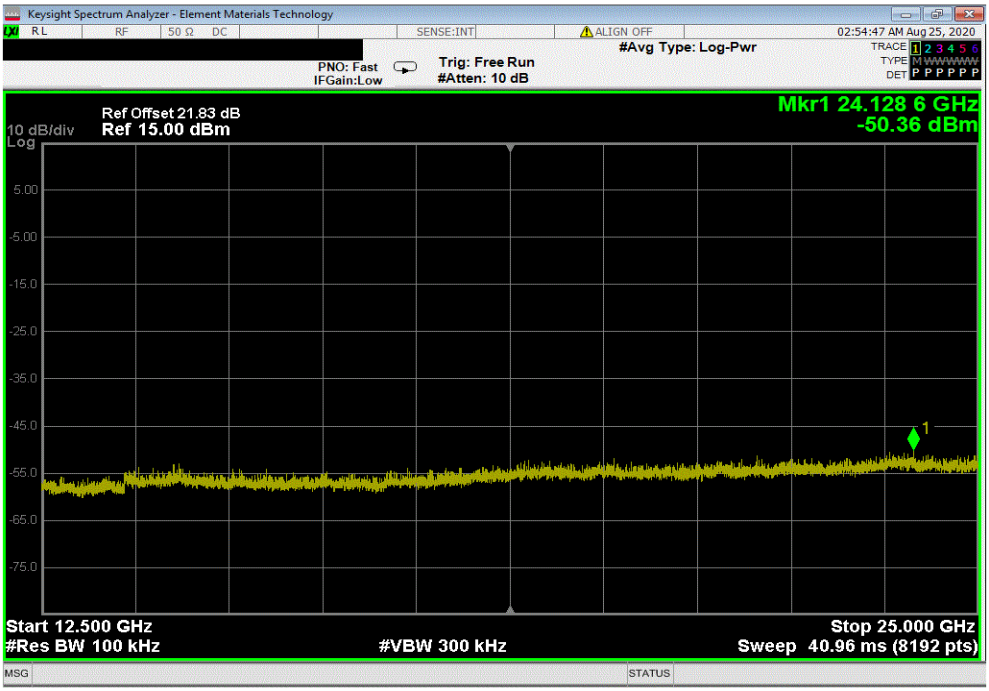
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2441.96	N/A	N/A	N/A



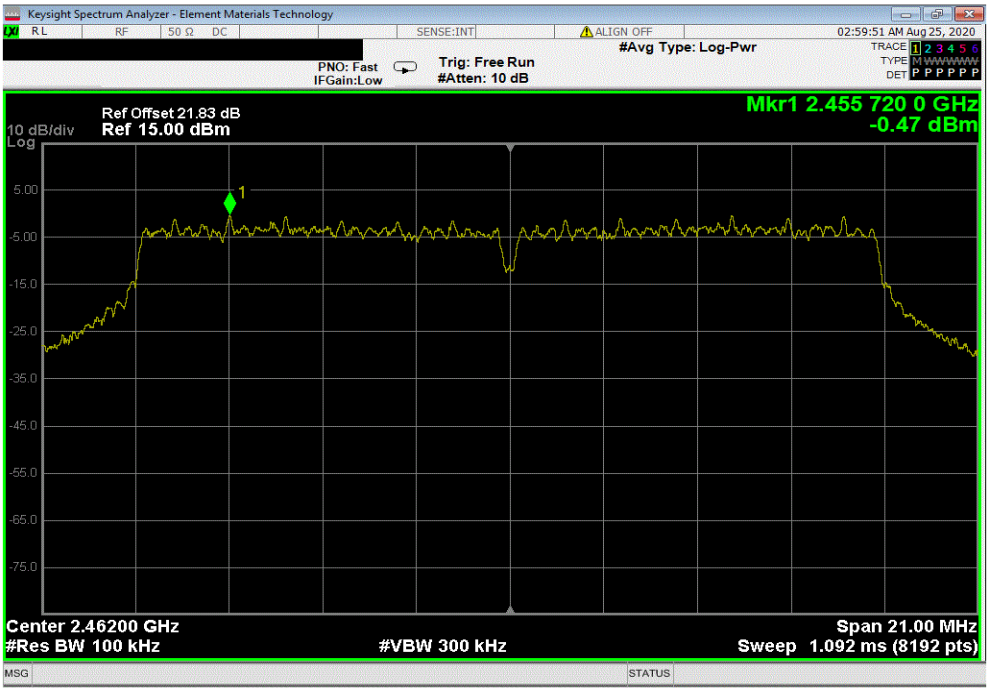
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2362.32	-51.5	-30	Pass



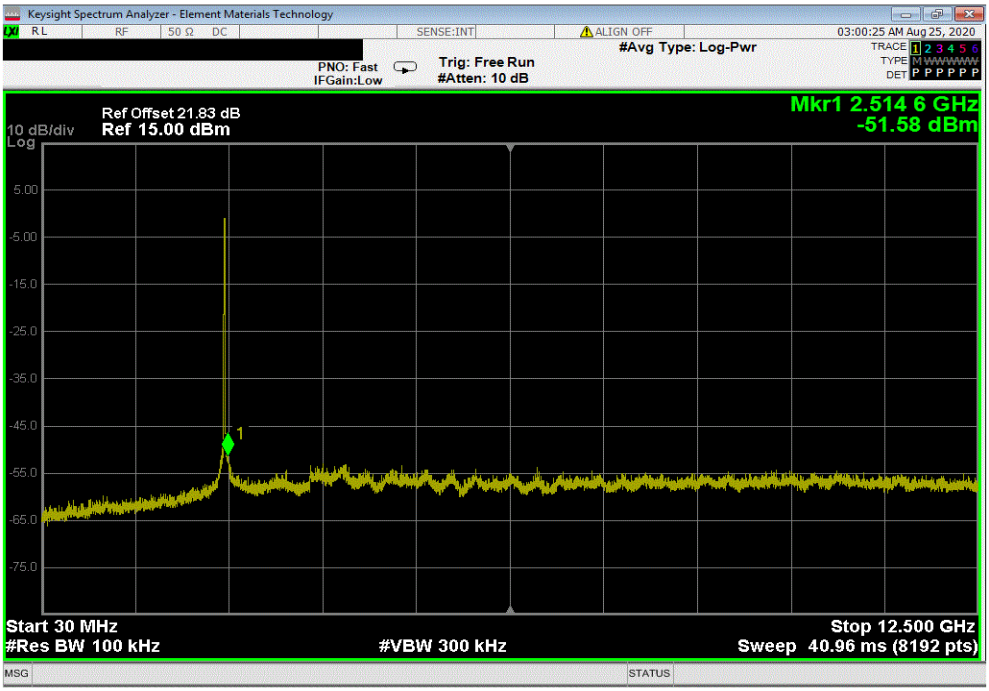
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24128.62	-54.03	-30	Pass



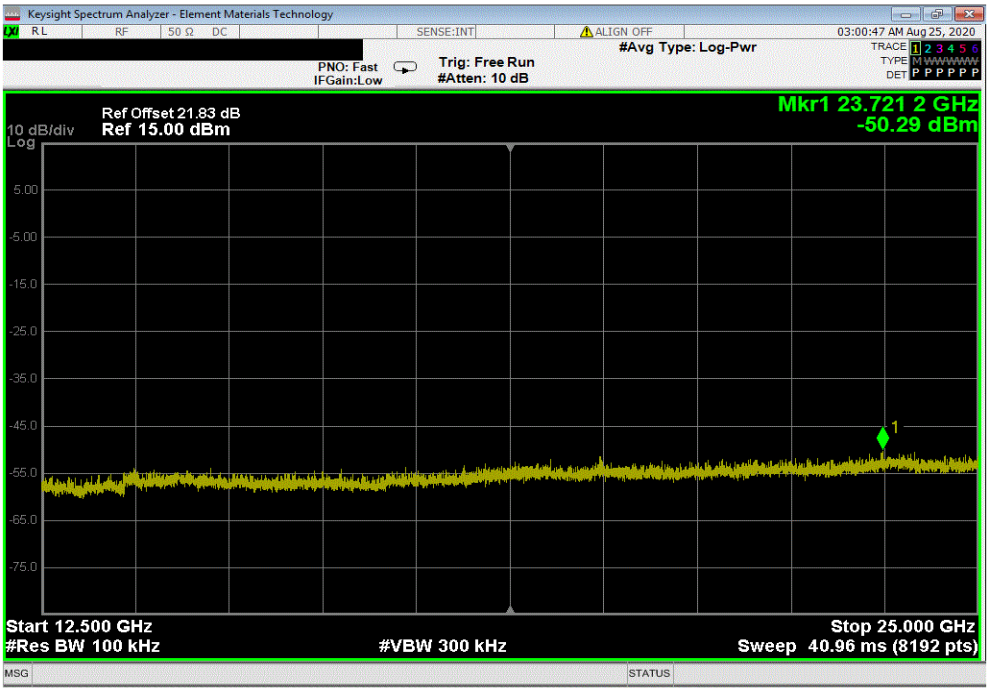
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2455.72	N/A	N/A	N/A



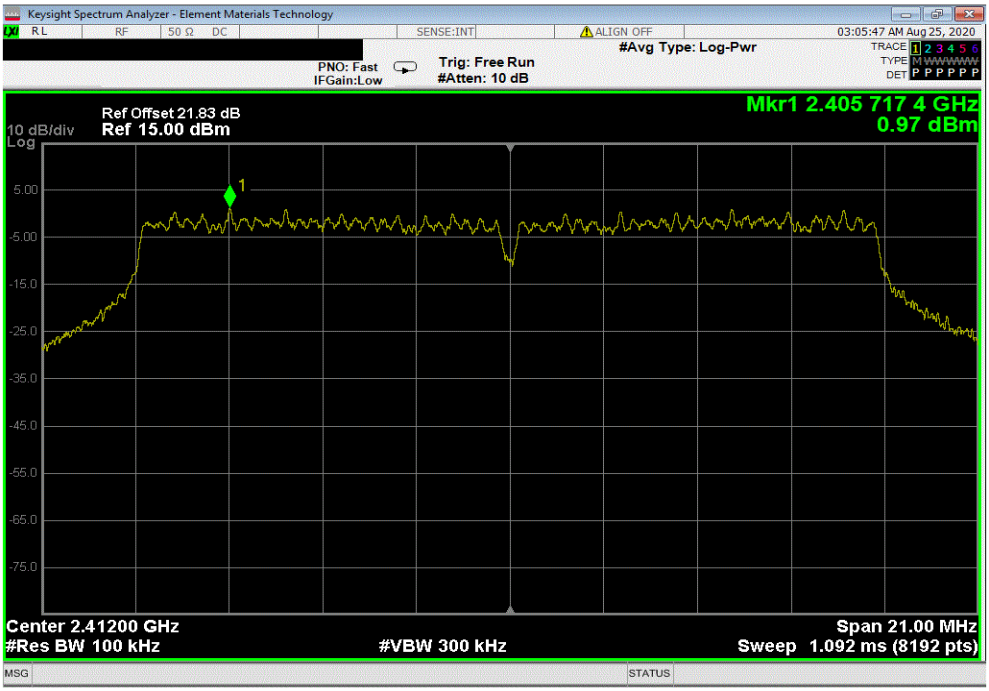
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	2514.56	-51.11	-30	Pass



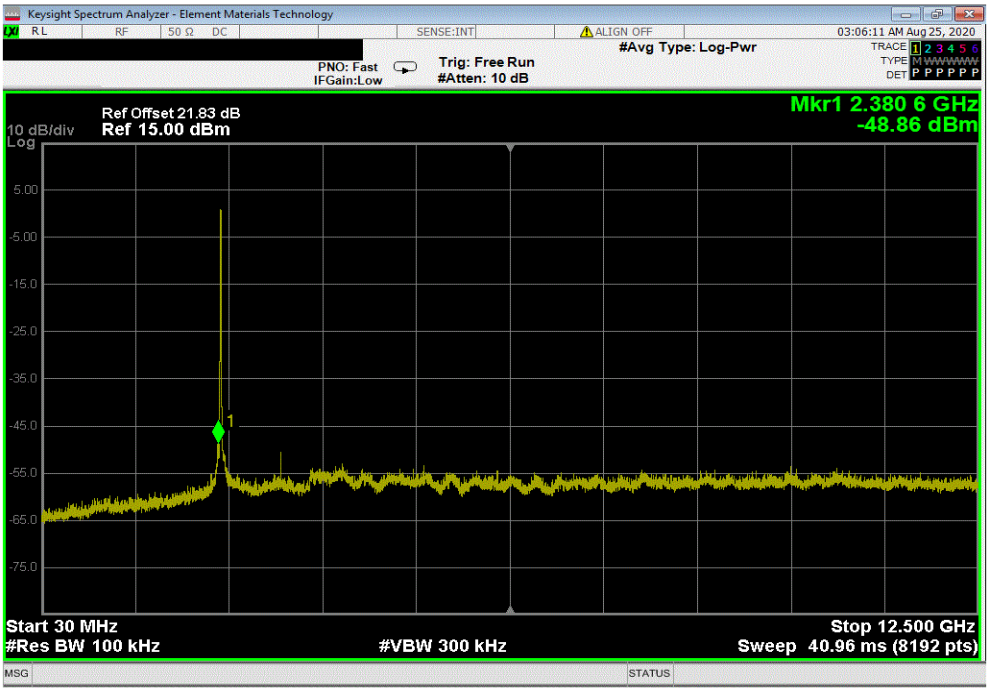
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23721.16	-49.82	-30	Pass



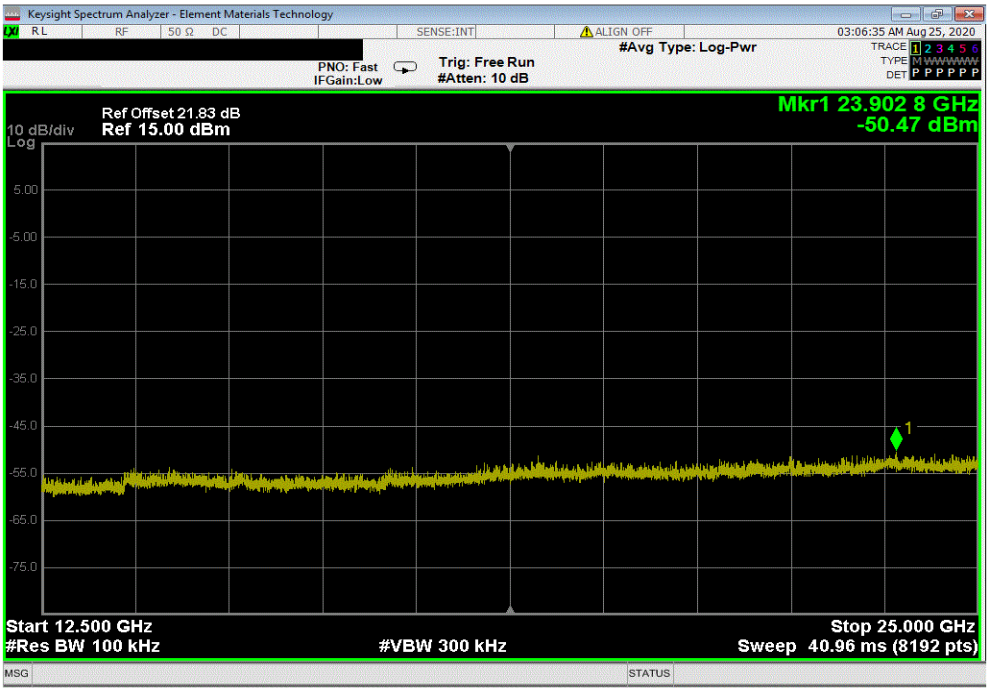
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2405.72	N/A	N/A	N/A



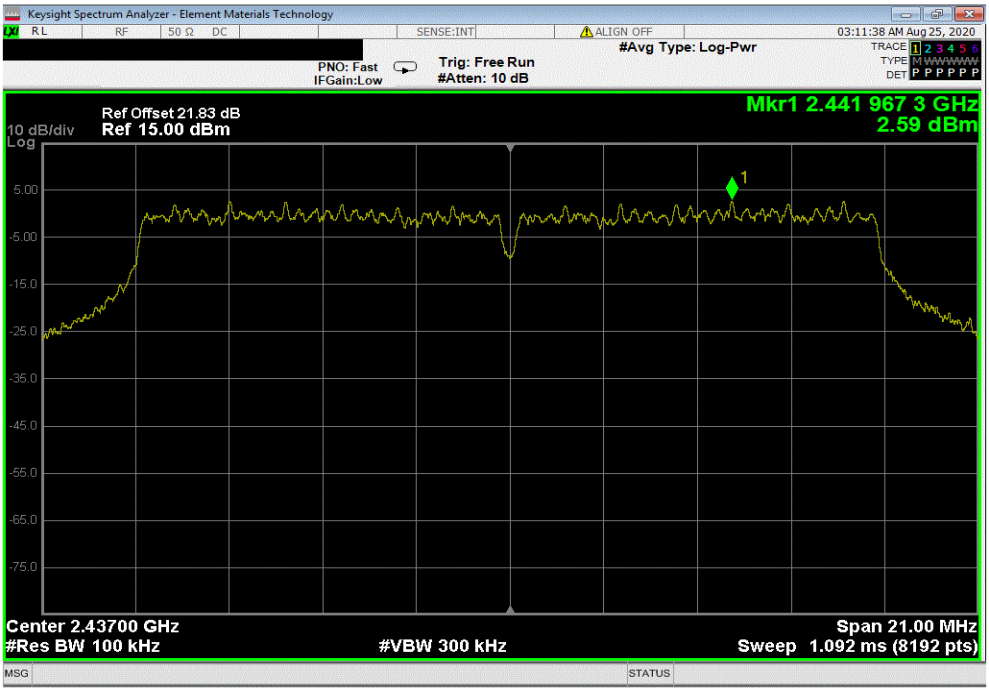
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2380.59	-49.83	-30	Pass



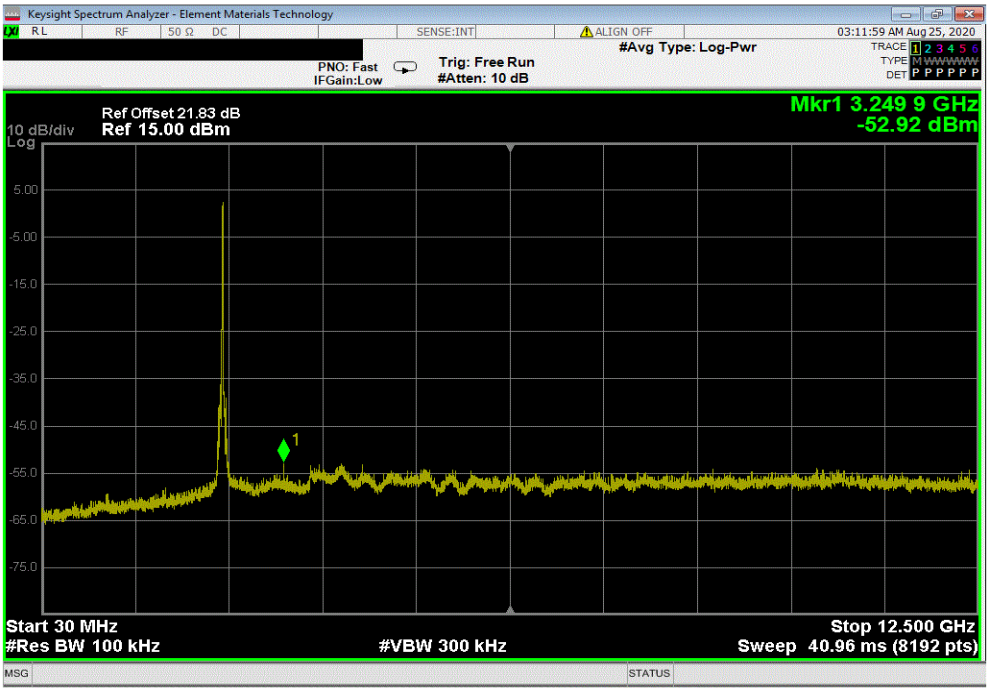
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	23902.76	-51.44	-30	Pass



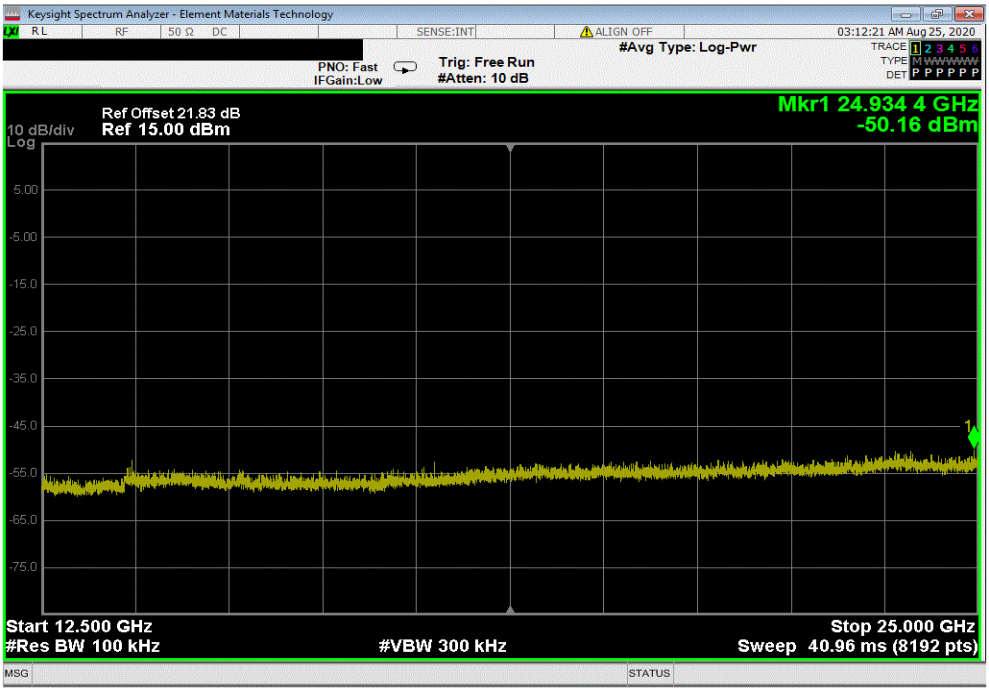
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2441.97	N/A	N/A	N/A



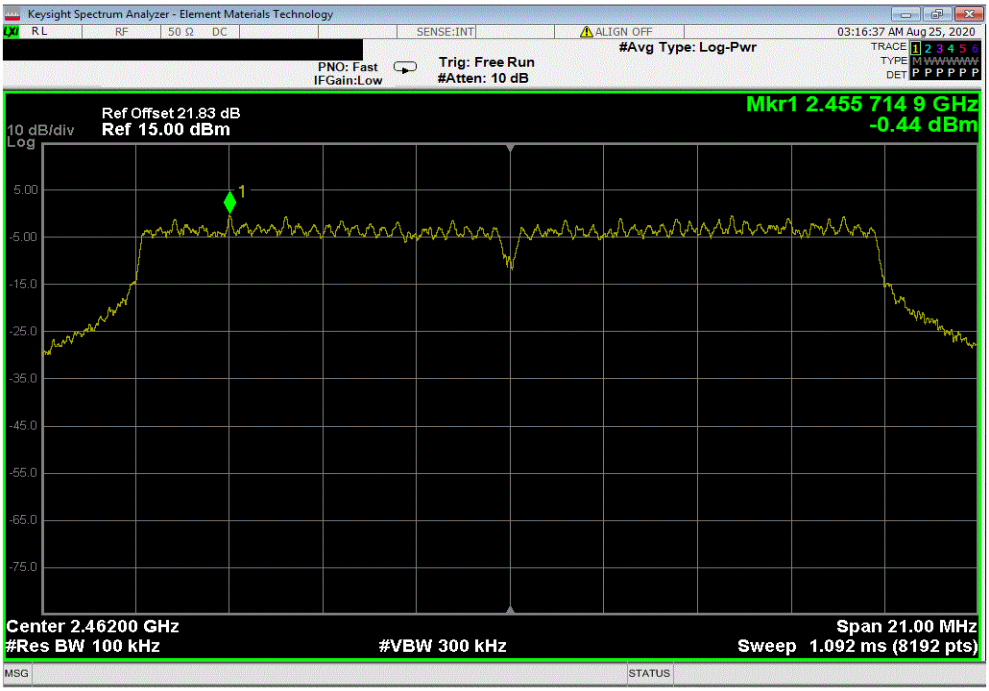
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	3249.88	-55.51	-30	Pass



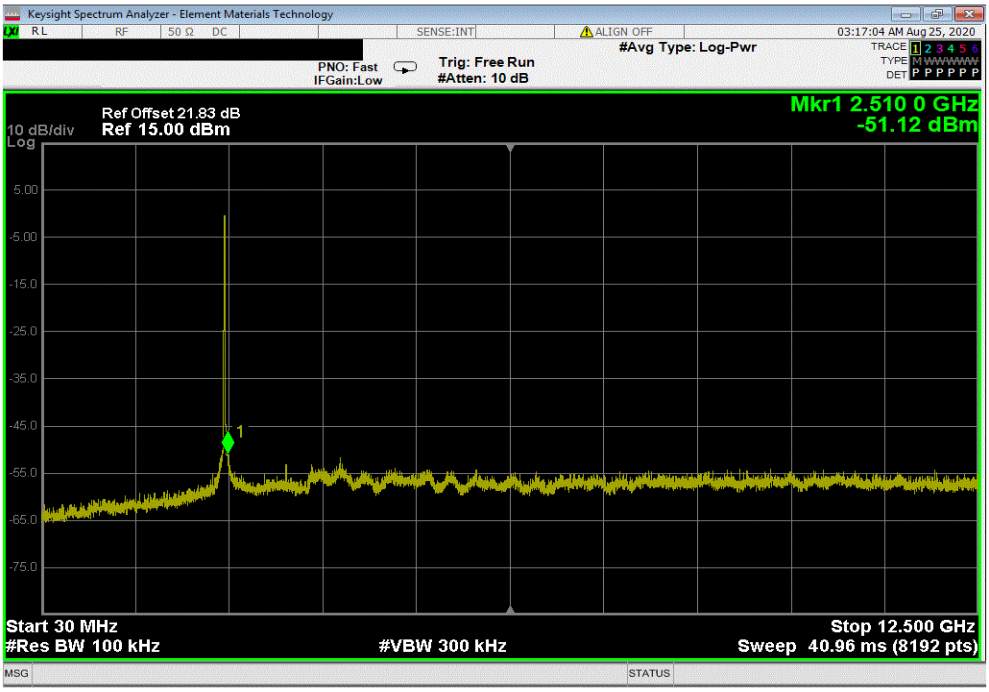
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24934.38	-52.75	-30	Pass



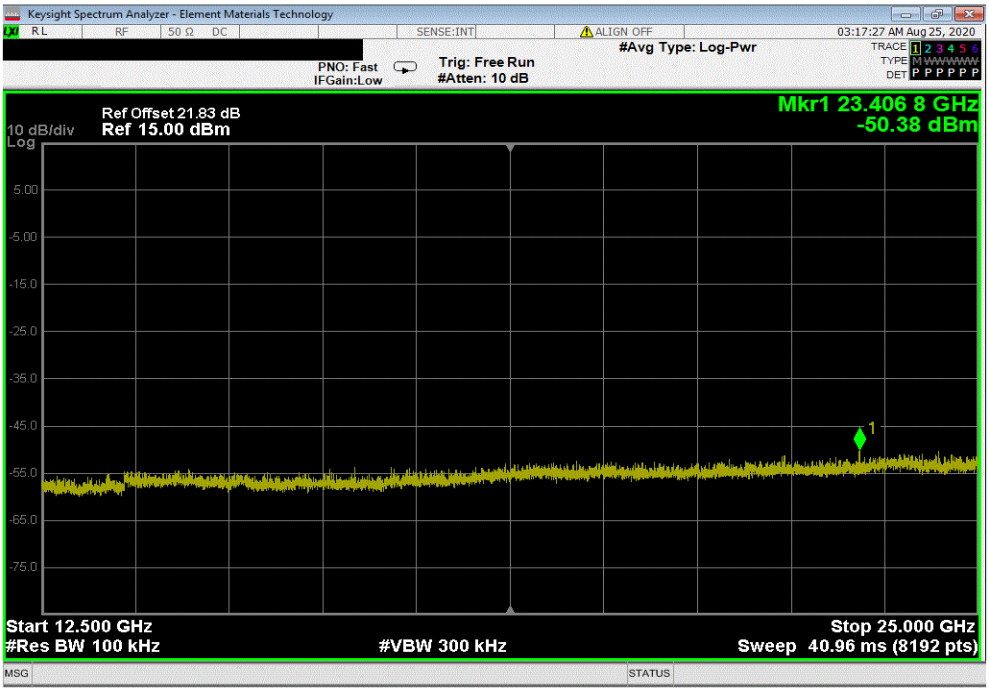
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2455.71	N/A	N/A	N/A



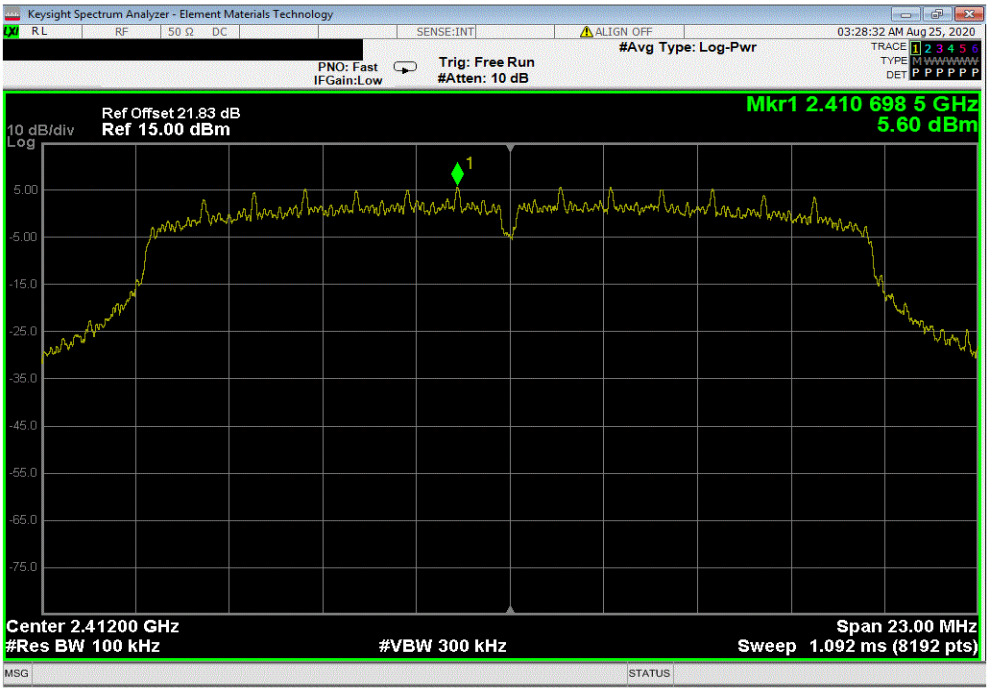
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2509.99	-50.68	-30	Pass



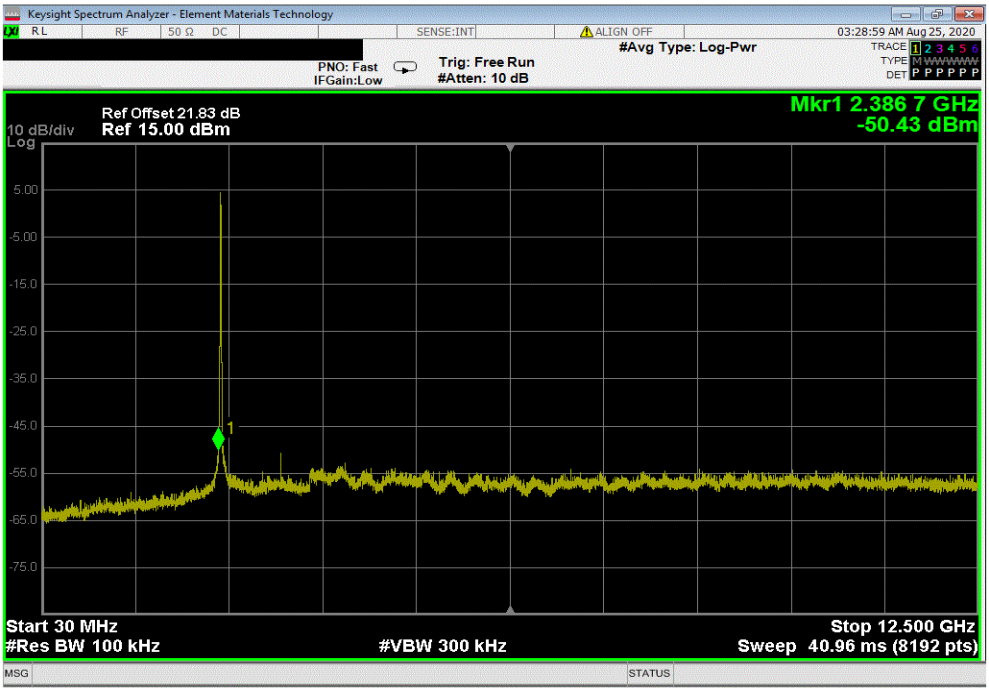
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	23406.79	-49.94	-30	Pass



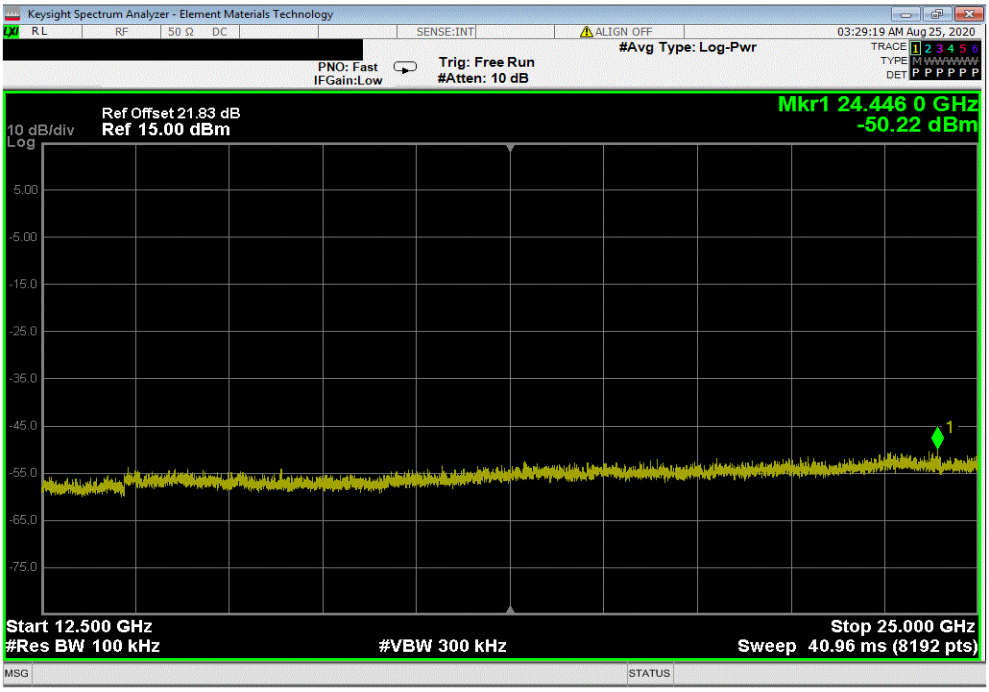
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2410.7	N/A	N/A	N/A



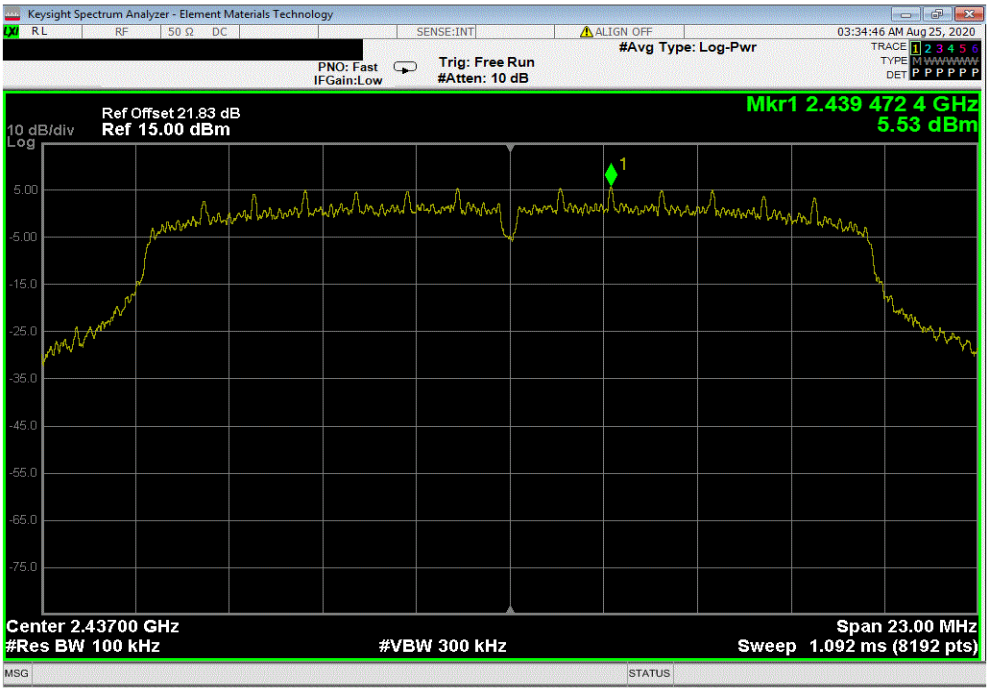
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	2386.68	-56.03	-30	Pass



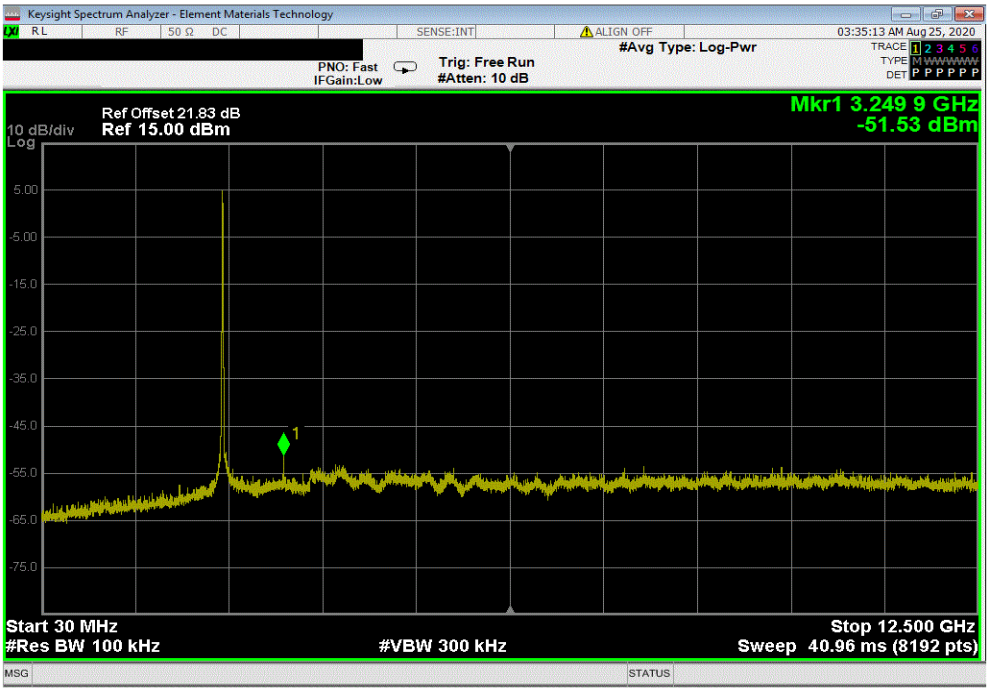
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24446.04	-55.82	-30	Pass



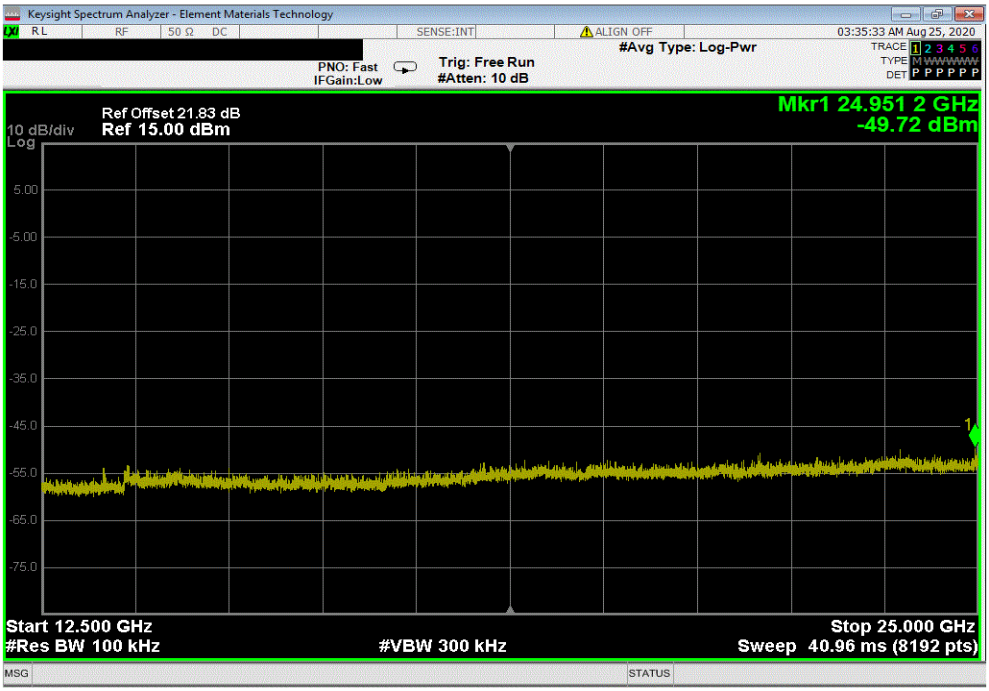
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2439.47	N/A	N/A	N/A



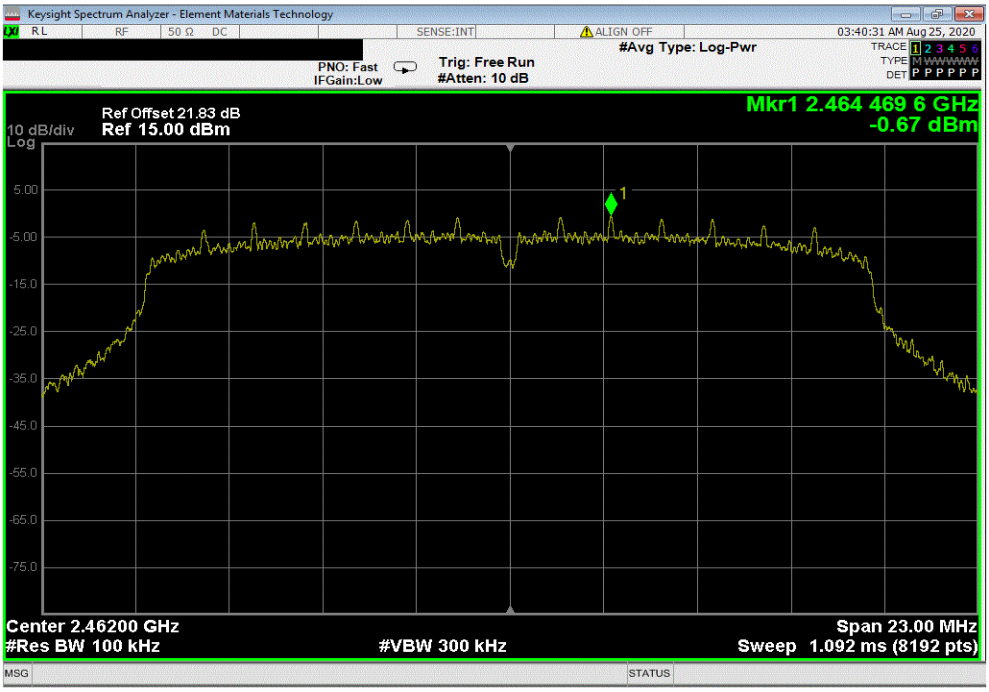
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	3249.88	-57.07	-30	Pass



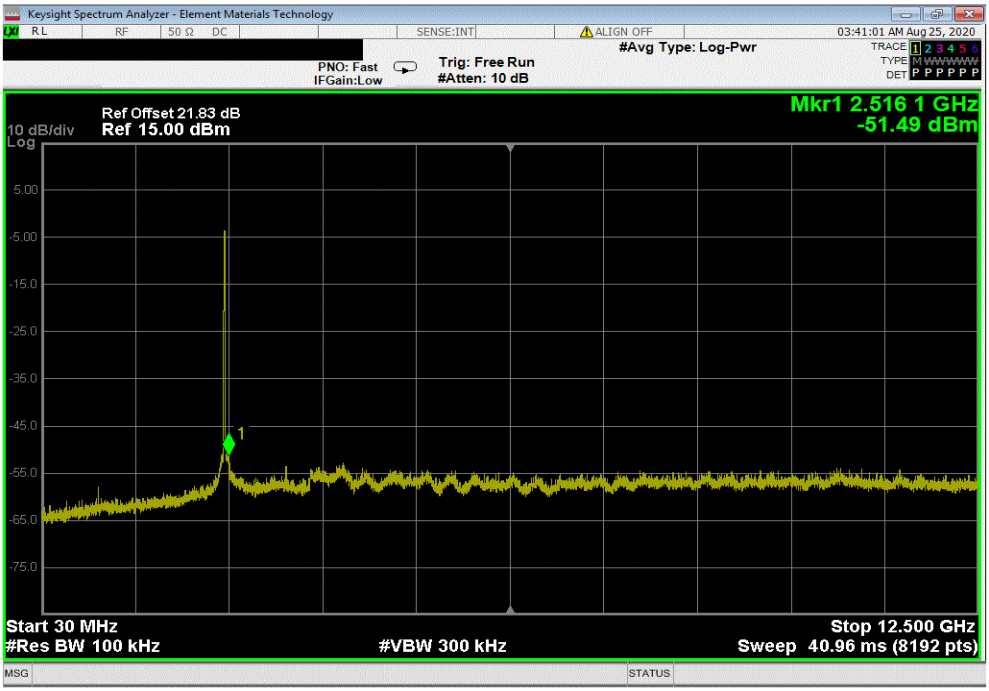
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24951.17	-55.25	-30	Pass



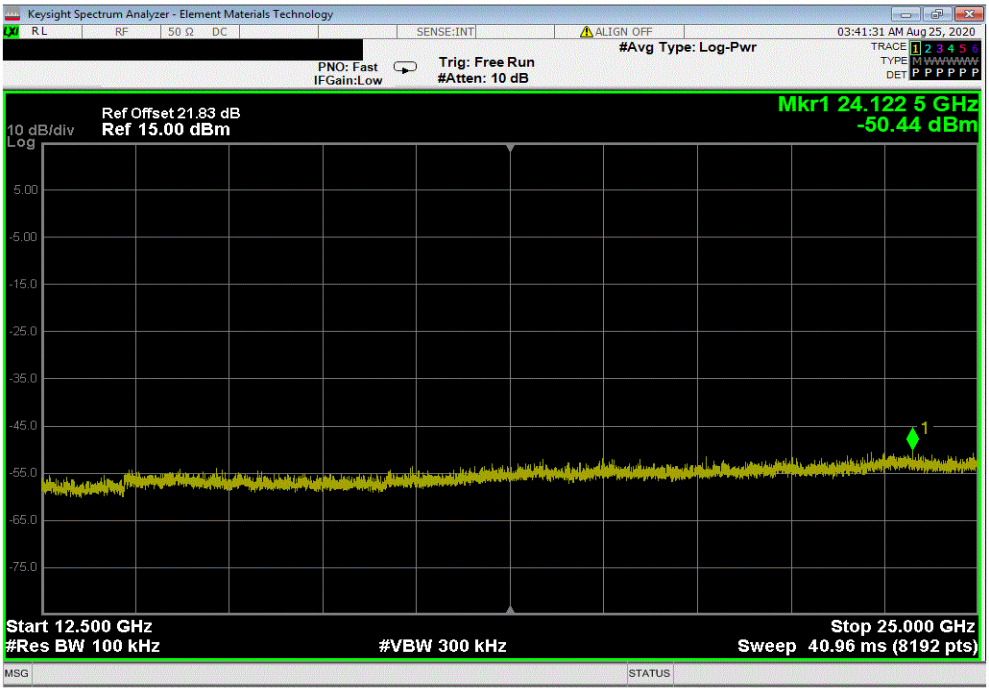
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2464.47	N/A	N/A	N/A



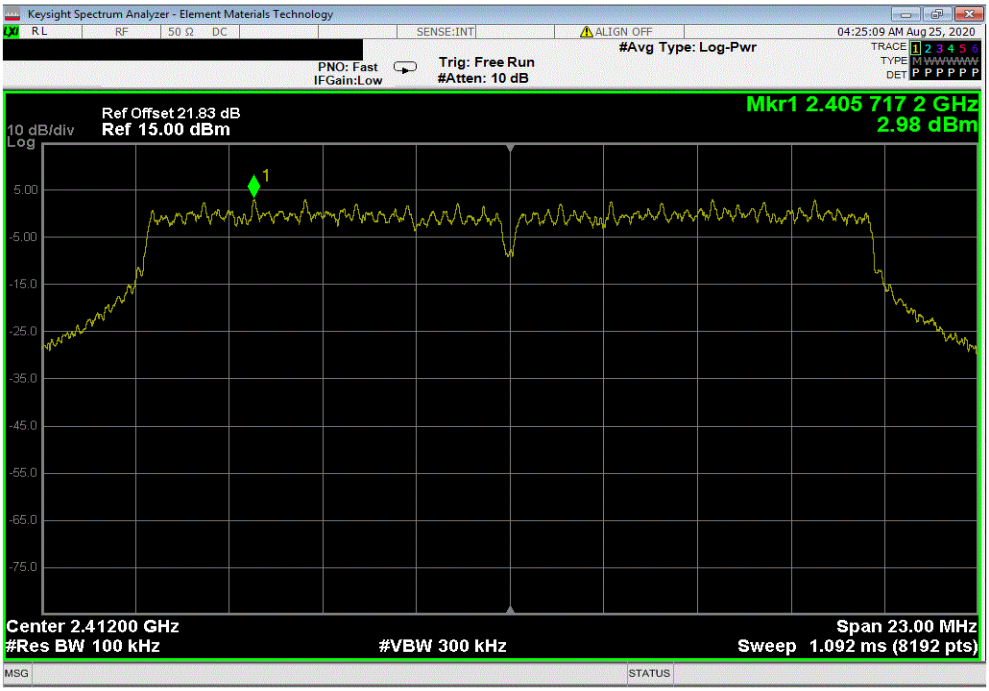
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	2516.08	-50.82	-30	Pass



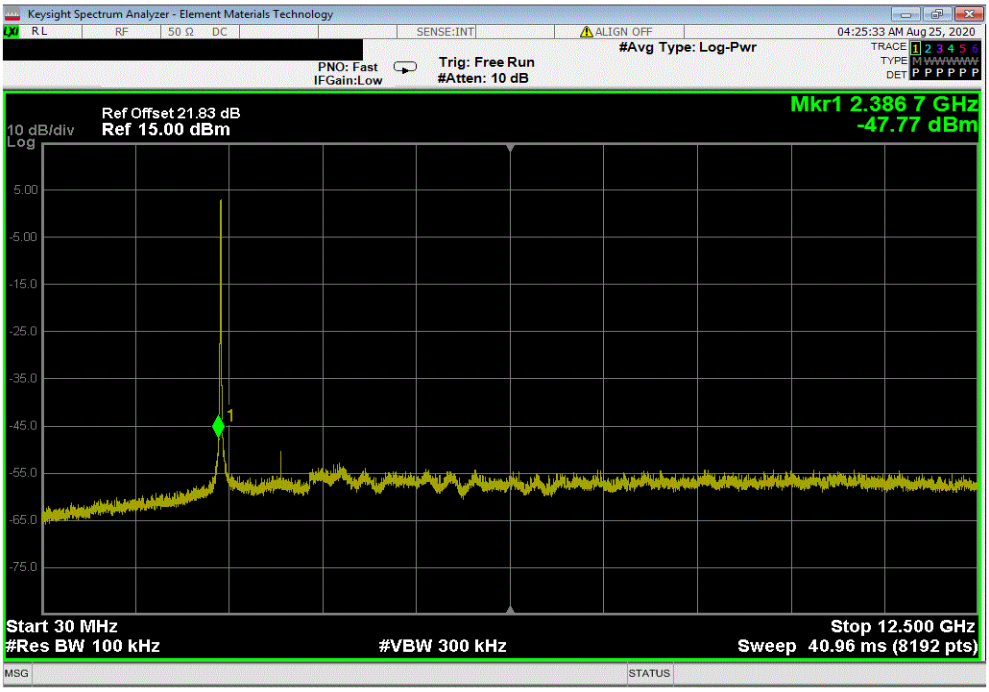
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24122.51	-49.77	-30	Pass



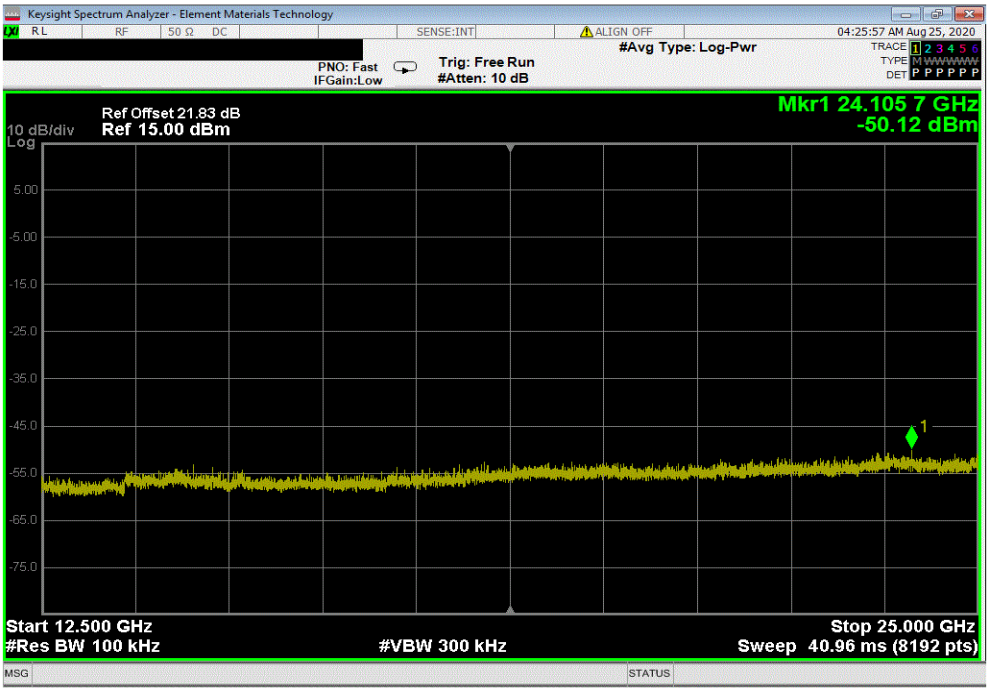
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2405.72	N/A	N/A	N/A



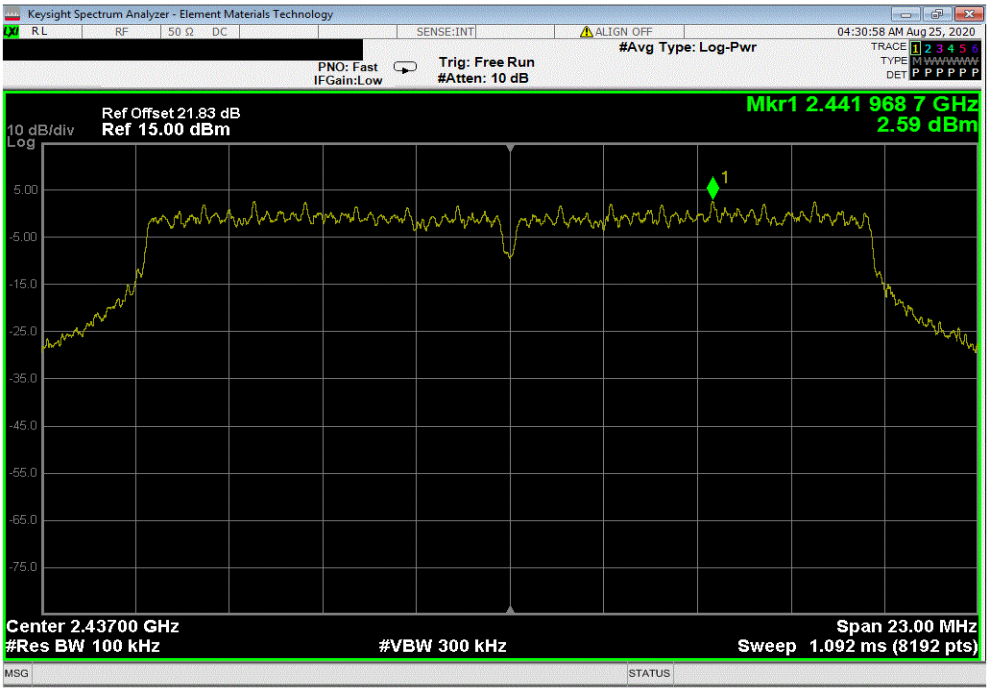
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2386.68	-50.75	-30	Pass



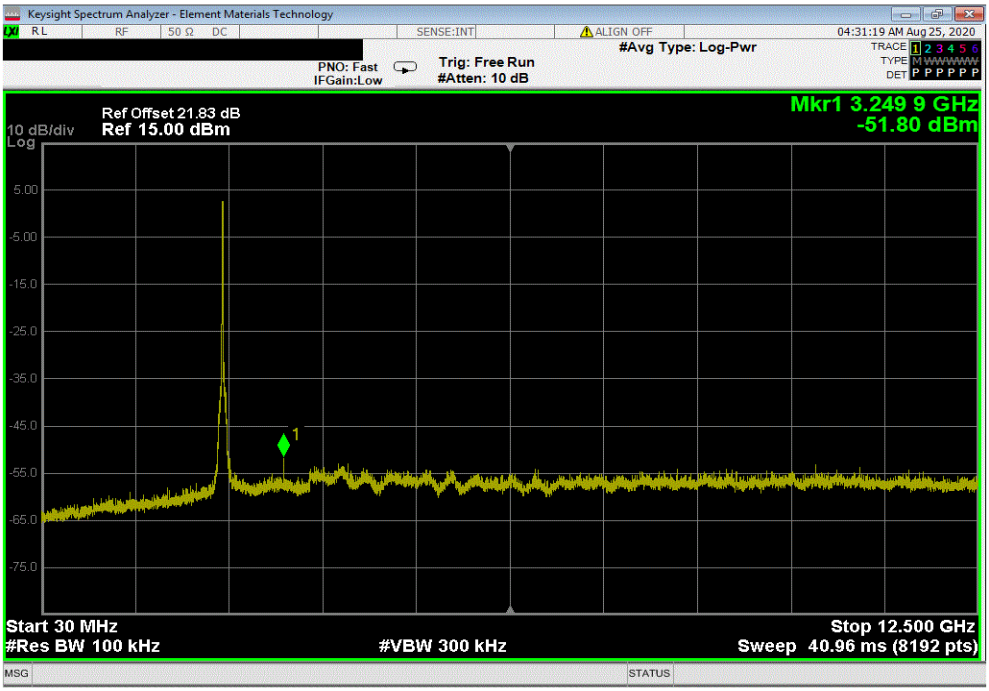
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24105.73	-53.1	-30	Pass



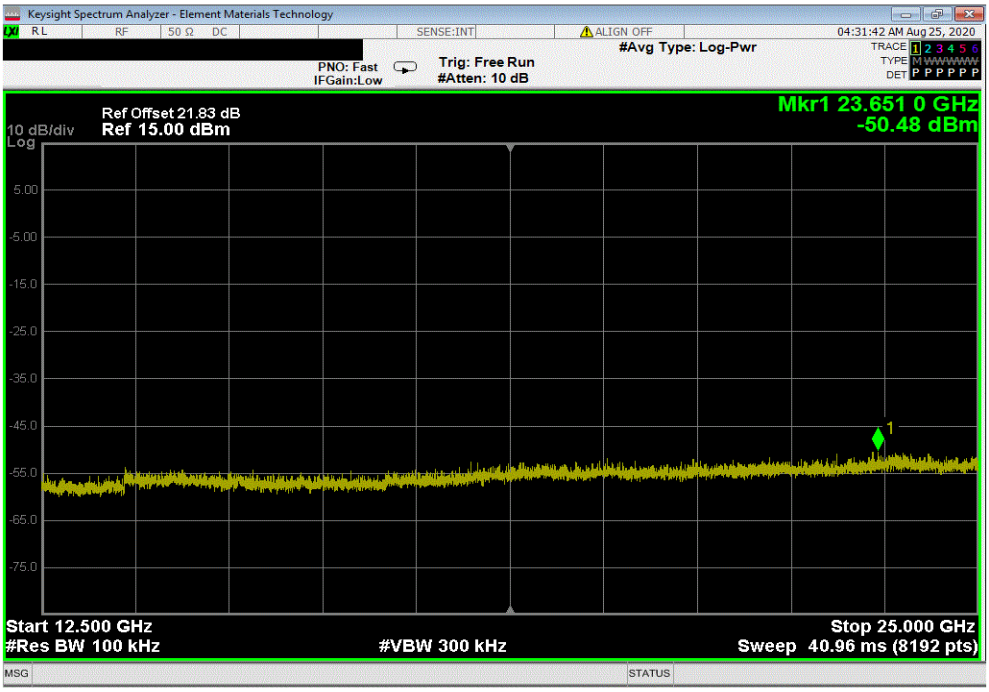
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2441.97	N/A	N/A	N/A



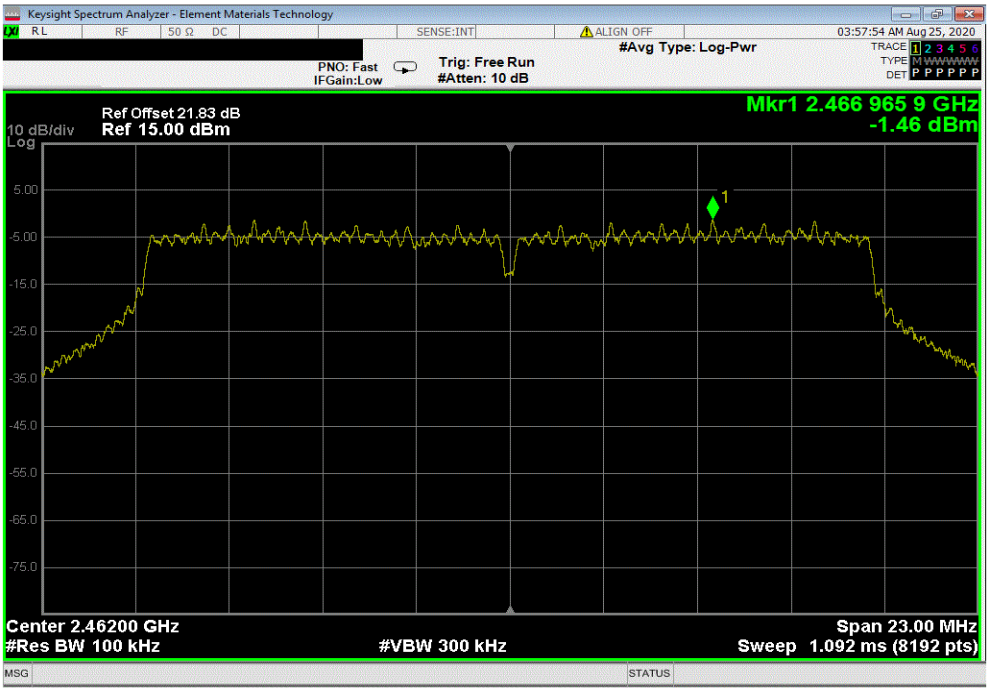
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz	3249.88	-54.39	-30	Pass



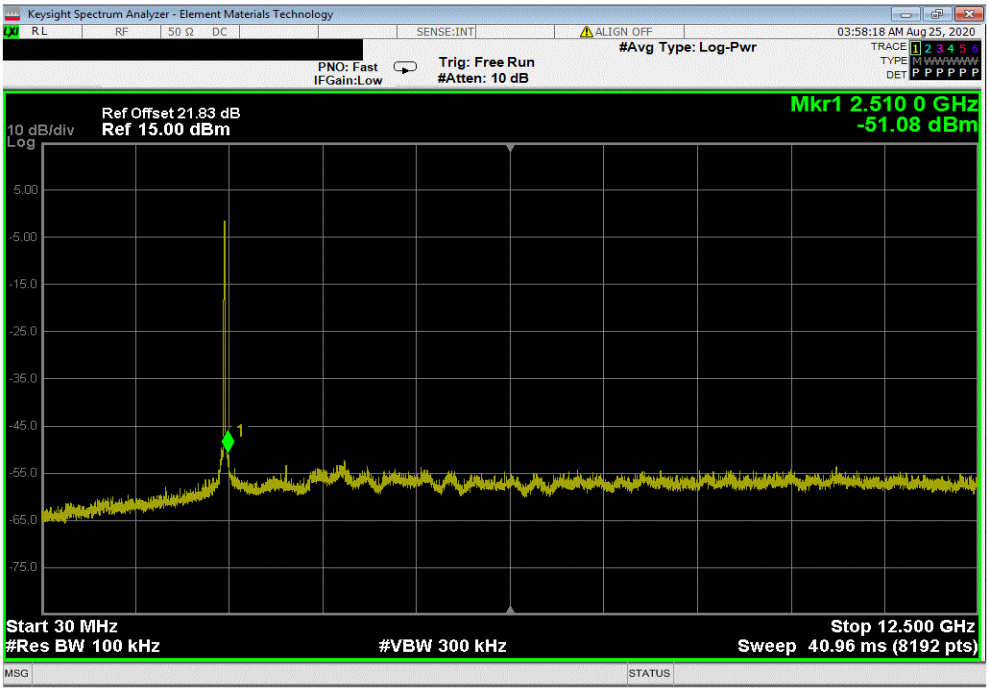
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	23650.96	-53.08	-30	Pass



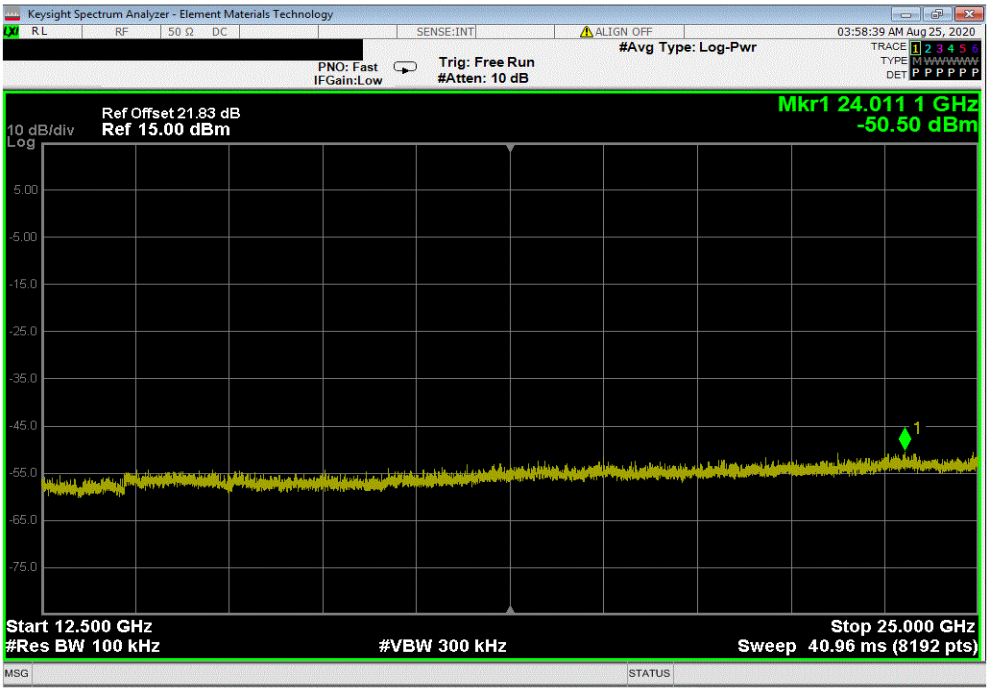
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2466.97	N/A	N/A	N/A



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2509.99	-49.62	-30	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz				
Frequency Range	**Measured Freq (MHz)**	**Max Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz	24011.11	-49.04	-30	Pass



SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2020.04.03.0

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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting 802.11bgn - low channel (2412 MHz), mid channel (2437 MHz), and high channel (2462 MHz); 1 Mbps, 11 Mbps, 6 Mbps, 24 Mbps, 36 Mbps, 48 Mbps, 54 Mbps, MCS0, MCS4, MCS5, and MCS7 data rates

Transmitting 802.11bgn - low channel (2412 MHz), mid channel (2437 MHz), and high channel (2462 MHz); 1 Mbps, 11 Mbps, 6 Mbps, 36 Mbps, 54 Mbps, MCS0, and MCS7 data rates

POWER SETTINGS INVESTIGATED

5VDC via USB

CONFIGURATIONS INVESTIGATED

TRNE0022 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26500 MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2019-09-17	12 mo
Attenuator	Coaxicom	3910-20	AXY	2019-09-17	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HFM	2019-09-18	12 mo
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2019-09-11	12 mo
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2019-09-11	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2019-10-18	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	2019-10-18	12 mo
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2019-09-03	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2019-12-23	12 mo
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-12001800-30-10P	PAP	2020-02-18	12 mo
Antenna - Standard Gain	ETS-Lindgren	3160-08	AJP	NCR	0 mo
Cable	Element	Standard Gain Cable	MNW	2020-02-18	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2020-02-18	12 mo
Antenna - Standard Gain	ETS-Lindgren	3160-07	AJJ	NCR	0 mo
Cable	Element	Double Ridge Guide Horn Cables	MNV	2020-02-18	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	2020-02-18	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIB	2018-08-27	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2020-04-14	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

SPURIOUS RADIATED EMISSIONS

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*log(1/dc).

SPURIOUS RADIATED EMISSIONS

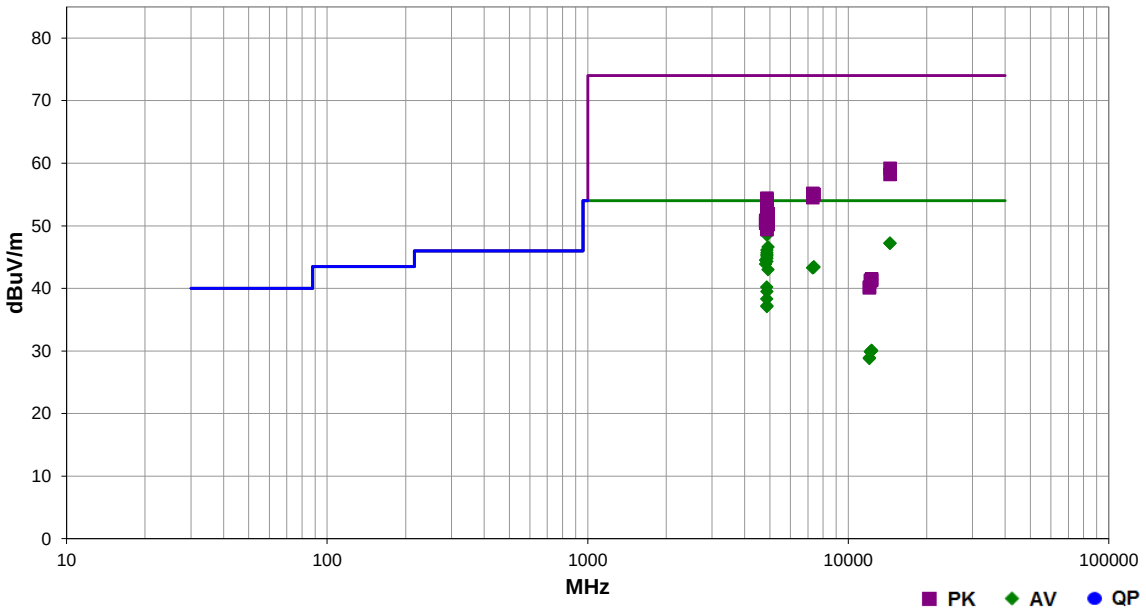
element

EmiR5 2020.04.20.0 PSA-ESCI 2020.04.03.0

Work Order:	TRNE0022	**Date:**	2020-08-27		
Project:	None	**Temperature:**	22.1 °C		
Job Site:	MN09	**Humidity:**	53.6% RH		
Serial Number:	E19M60061	**Barometric Pres.:**	1020 mbar	**Tested by:**	Dustin Sparks
EUT:	USB to WiFi Adapter				
Configuration:	1				
Customer:	Trane				
Attendees:	Chris Vanderkoy				
EUT Power:	5VDC via USB				
Operating Mode:	Transmitting 802.11bgn - low channel (2412 MHz), mid channel (2437 MHz), and high channel (2462 MHz); 1 Mbps, 11 Mbps, 6 Mbps, 36 Mbps, 54 Mbps, MCS0, and MCS7 data rates				
Deviations:	None				
Comments:	30-1000 MHz and 18-26.5 GHz ranges were investigated on 8/27/2020 in MN05. Duty cycle correction factor (DCCF) was added to the average measurement points using the formula 10 * log10(1/DC).				

Test Specifications	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

Run #	15	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4873.942	45.0	5.3	2.0	244.0	0.0	0.0	Horz	AV	0.0	50.3	54.0	-3.7	Mid ch, 1 Mbps, EUT on side
4874.000	43.2	5.3	2.1	246.0	0.0	0.0	Horz	AV	0.0	48.5	54.0	-5.5	Mid ch, 1 Mbps, EUT on side
14471.580	31.4	15.8	1.5	286.0	0.0	0.0	Horz	AV	0.0	47.2	54.0	-6.8	Low ch, 1 Mbps, EUT on side
14472.180	31.4	15.8	4.0	130.0	0.0	0.0	Vert	AV	0.0	47.2	54.0	-6.8	Low ch, 1 Mbps, EUT on side
4923.958	41.2	5.4	2.7	224.0	0.0	0.0	Vert	AV	0.0	46.6	54.0	-7.4	High ch, 1 Mbps, EUT on side
4873.933	40.8	5.3	4.0	224.0	0.0	0.0	Vert	AV	0.0	46.1	54.0	-7.9	Mid ch, 1 Mbps, EUT vert
4873.983	40.4	5.3	3.7	216.0	0.0	0.0	Vert	AV	0.0	45.7	54.0	-8.3	Mid ch, 1 Mbps, EUT on side
4873.900	40.1	5.3	1.5	0.0	0.0	0.0	Horz	AV	0.0	45.4	54.0	-8.6	Mid ch, 1 Mbps, EUT horz
4873.942	39.9	5.3	3.0	163.0	0.0	0.0	Horz	AV	0.0	45.2	54.0	-8.8	Mid ch, 1 Mbps, EUT vert
4873.950	39.5	5.3	2.6	235.0	0.0	0.0	Vert	AV	0.0	44.8	54.0	-9.2	Mid ch, 1 Mbps, EUT horz
4823.942	39.3	5.2	4.0	217.0	0.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	Low ch, 1 Mbps, EUT on side
4874.025	39.0	5.3	2.0	244.0	0.3	0.0	Horz	AV	0.0	44.3	54.0	-9.7	Mid ch, 11 Mbps, EUT on side
4823.992	38.7	5.2	1.9	238.0	0.0	0.0	Horz	AV	0.0	43.9	54.0	-10.1	Low ch, 1 Mbps, EUT on side
7387.833	29.1	14.3	1.4	267.0	0.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	High ch, 1 Mbps, EUT on side
7386.542	29.1	14.3	1.5	114.0	0.0	0.0	Vert	AV	0.0	43.4	54.0	-10.6	High ch, 1 Mbps, EUT on side
7313.375	29.4	13.9	2.7	57.0	0.0	0.0	Horz	AV	0.0	43.3	54.0	-10.7	Mid ch, 1 Mbps, EUT on side
7313.417	29.4	13.9	4.0	283.0	0.0	0.0	Vert	AV	0.0	43.3	54.0	-10.7	Mid ch, 1 Mbps, EUT on side
4923.950	37.6	5.4	2.3	265.0	0.0	0.0	Horz	AV	0.0	43.0	54.0	-11.0	High ch, 1 Mbps, EUT on side
4873.250	34.9	5.3	2.0	244.0	0.2	0.0	Horz	AV	0.0	40.2	54.0	-13.8	Mid ch, 6 Mbps, EUT on side
4874.342	34.2	5.3	2.0	244.0	0.2	0.0	Horz	AV	0.0	39.5	54.0	-14.5	Mid ch, MCS0, EUT on side
14470.000	43.4	15.8	4.0	130.0		0.0	Vert	PK	0.0	59.2	74.0	-14.8	Low ch, 1 Mbps, EUT on side
4873.242	33.0	5.3	2.0	244.0	1.1	0.0	Horz	AV	0.0	38.3	54.0	-15.7	Mid ch, 36 Mbps, EUT on side

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
14472.760	42.4	15.8	1.5	286.0		0.0	Horz	PK	0.0	58.2	74.0	-15.8	Low ch, 1 Mbps, EUT on side
4873.800	31.9	5.3	2.0	244.0	1.5	0.0	Horz	AV	0.0	37.2	54.0	-16.8	Mid ch, 54 Mbps, EUT on side
4875.342	31.8	5.3	2.0	244.0	1.7	0.0	Horz	AV	0.0	37.1	54.0	-16.9	Mid ch, MCS7, EUT on side
7312.050	41.3	13.9	4.0	283.0		0.0	Vert	PK	0.0	55.2	74.0	-18.8	Mid ch, 1 Mbps, EUT on side
7385.542	40.7	14.3	1.4	267.0		0.0	Horz	PK	0.0	55.0	74.0	-19.0	High ch, 1 Mbps, EUT on side
7386.883	40.7	14.3	1.5	114.0		0.0	Vert	PK	0.0	55.0	74.0	-19.0	High ch, 1 Mbps, EUT on side
7310.525	40.6	13.9	2.7	57.0		0.0	Horz	PK	0.0	54.5	74.0	-19.5	Mid ch, 1 Mbps, EUT on side
4874.008	49.1	5.3	2.0	244.0		0.0	Horz	PK	0.0	54.4	74.0	-19.6	Mid ch, 1 Mbps, EUT on side
4873.958	48.9	5.3	2.0	244.0		0.0	Horz	PK	0.0	54.2	74.0	-19.8	Mid ch, 11 Mbps, EUT on side
4874.908	48.3	5.3	2.0	244.0		0.0	Horz	PK	0.0	53.6	74.0	-20.4	Mid ch, 6 Mbps, EUT on side
4873.925	47.6	5.3	2.1	246.0		0.0	Horz	PK	0.0	52.9	74.0	-21.1	Mid ch, 1 Mbps, EUT on side
4872.600	47.5	5.3	2.0	244.0		0.0	Horz	PK	0.0	52.8	74.0	-21.2	Mid ch, MCS0, EUT on side
4874.033	46.6	5.3	4.0	224.0		0.0	Vert	PK	0.0	51.9	74.0	-22.1	Mid ch, 1 Mbps, EUT vert
4923.858	46.5	5.4	2.7	224.0		0.0	Vert	PK	0.0	51.9	74.0	-22.1	High ch, 1 Mbps, EUT on side
4873.850	45.9	5.3	3.0	163.0		0.0	Horz	PK	0.0	51.2	74.0	-22.8	Mid ch, 1 Mbps, EUT vert
4873.942	45.8	5.3	1.5	0.0		0.0	Horz	PK	0.0	51.1	74.0	-22.9	Mid ch, 1 Mbps, EUT horz
4874.017	45.8	5.3	3.7	216.0		0.0	Vert	PK	0.0	51.1	74.0	-22.9	Mid ch, 1 Mbps, EUT on side
4873.850	45.7	5.3	2.6	235.0		0.0	Vert	PK	0.0	51.0	74.0	-23.0	Mid ch, 1 Mbps, EUT horz
4824.192	45.7	5.2	1.9	238.0		0.0	Horz	PK	0.0	50.9	74.0	-23.1	Low ch, 1 Mbps, EUT on side
4873.483	45.2	5.3	2.0	244.0		0.0	Horz	PK	0.0	50.5	74.0	-23.5	Mid ch, 36 Mbps, EUT on side
4823.767	45.2	5.2	4.0	217.0		0.0	Vert	PK	0.0	50.4	74.0	-23.6	Low ch, 1 Mbps, EUT on side
4924.025	44.8	5.4	2.3	265.0		0.0	Horz	PK	0.0	50.2	74.0	-23.8	High ch, 1 Mbps, EUT on side
12307.760	30.5	-0.4	1.5	126.0	0.0	0.0	Horz	AV	0.0	30.1	54.0	-23.9	High ch, 1 Mbps, EUT on side
12310.350	30.4	-0.4	1.5	188.0	0.0	0.0	Vert	AV	0.0	30.0	54.0	-24.0	High ch, 1 Mbps, EUT on side
12185.650	30.3	-0.4	2.1	95.0	0.0	0.0	Horz	AV	0.0	29.9	54.0	-24.1	Mid ch, 1 Mbps, EUT on side
12185.730	30.3	-0.4	1.5	13.0	0.0	0.0	Vert	AV	0.0	29.9	54.0	-24.1	Mid ch, 1 Mbps, EUT on side
4874.375	44.3	5.3	2.0	244.0		0.0	Horz	PK	0.0	49.6	74.0	-24.4	Mid ch, MCS7, EUT on side
4875.967	44.1	5.3	2.0	244.0		0.0	Horz	PK	0.0	49.4	74.0	-24.6	Mid ch, 54 Mbps, EUT on side
12060.820	30.4	-1.5	1.5	211.0	0.0	0.0	Horz	AV	0.0	28.9	54.0	-25.1	Low ch, 1 Mbps, EUT on side
12061.830	30.3	-1.5	3.6	50.0	0.0	0.0	Vert	AV	0.0	28.8	54.0	-25.2	Low ch, 1 Mbps, EUT on side
12309.540	41.9	-0.4	1.5	188.0		0.0	Vert	PK	0.0	41.5	74.0	-32.5	High ch, 1 Mbps, EUT on side
12186.820	41.7	-0.4	1.5	13.0		0.0	Vert	PK	0.0	41.3	74.0	-32.7	Mid ch, 1 Mbps, EUT on side
12309.560	41.7	-0.4	1.5	126.0		0.0	Horz	PK	0.0	41.3	74.0	-32.7	High ch, 1 Mbps, EUT on side
12185.290	41.6	-0.4	2.1	95.0		0.0	Horz	PK	0.0	41.2	74.0	-32.8	Mid ch, 1 Mbps, EUT on side
12059.440	41.7	-1.5	1.5	211.0		0.0	Horz	PK	0.0	40.2	74.0	-33.8	Low ch, 1 Mbps, EUT on side
12060.680	41.6	-1.5	3.6	50.0		0.0	Vert	PK	0.0	40.1	74.0	-33.9	Low ch, 1 Mbps, EUT on side

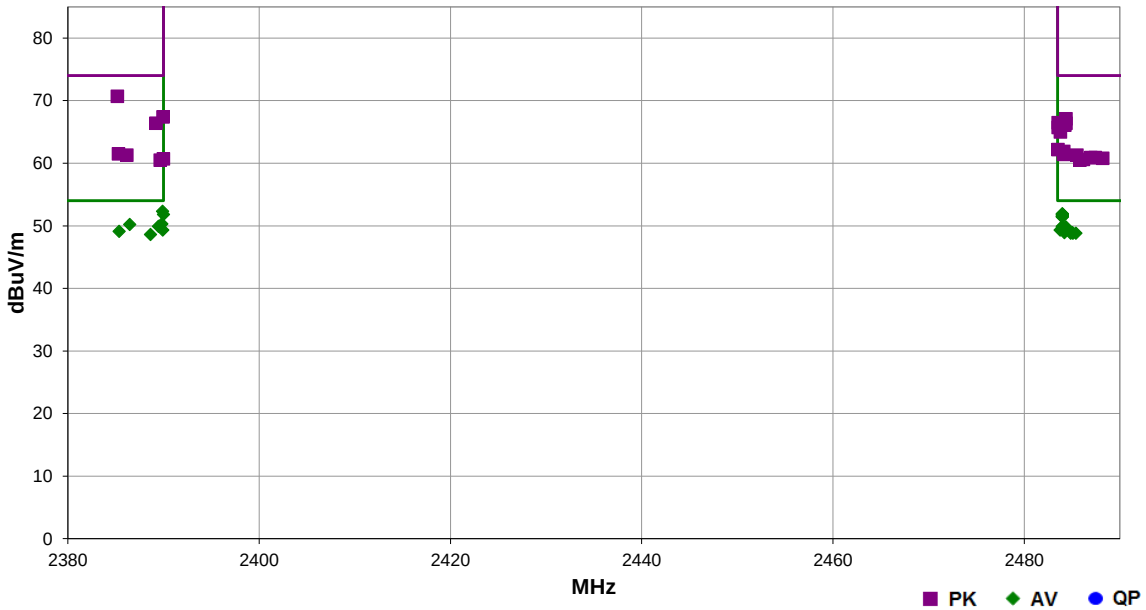
SPURIOUS RADIATED EMISSIONS

EmiR5 2020.04.20.0 PSA-ESCI 2020.04.03.0

Work Order:	TRNE0022	**Date:**	2020-08-27		
Project:	None	**Temperature:**	22.1 °C		
Job Site:	MN09	**Humidity:**	53.6% RH		
Serial Number:	E19M60061	**Barometric Pres.:**	1020 mbar	**Tested by:**	Dustin Sparks
EUT:	USB to WiFi Adapter				
Configuration:	1				
Customer:	Trane				
Attendees:	Chris Vanderkoy				
EUT Power:	5VDC via USB				
Operating Mode:	Transmitting 802.11bgn - low channel (2412 MHz), mid channel (2437 MHz), and high channel (2462 MHz); 1 Mbps, 11 Mbps, 6 Mbps, 24 Mbps, 36 Mbps, 48 Mbps, 54 Mbps, MCS0, MCS4, MCS5, and MCS7 data rates				
Deviations:	None				
Comments:	Duty cycle correction factor (DCCF) was added to the average measurement points using the formula 10 * log10(1/DC).				

Test Specifications	**Test Method**
FCC 15.247:2020	ANSI C63.10:2013

Run #	18	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2389.908	33.8	-3.2	1.5	314.0	1.7	20.0	Horz	AV	0.0	52.3	54.0	-1.7	Low ch, MCS7, EUT horz
2484.000	33.3	-2.9	1.5	293.0	1.5	20.0	Horz	AV	0.0	51.9	54.0	-2.1	High ch, 54 Mbps, EUT horz
2484.000	33.1	-2.9	1.5	293.0	1.7	20.0	Horz	AV	0.0	51.9	54.0	-2.1	High ch, MCS7, EUT horz
2484.000	33.3	-2.9	1.5	293.0	1.4	20.0	Horz	AV	0.0	51.8	54.0	-2.2	High ch, 48 Mbps, EUT horz
2389.992	33.9	-3.2	2.35	310.0	1.1	20.0	Horz	AV	0.0	51.8	54.0	-2.2	Low ch, 36 Mbps, EUT horz
2484.000	33.1	-2.9	1.5	293.0	1.4	20.0	Horz	AV	0.0	51.6	54.0	-2.4	High ch, MCS5, EUT horz
2484.000	33.3	-2.9	1.5	293.0	1.1	20.0	Horz	AV	0.0	51.5	54.0	-2.5	High ch, 36 Mbps, EUT horz
2484.000	33.2	-2.9	1.5	293.0	1.2	20.0	Horz	AV	0.0	51.5	54.0	-2.5	High ch, MCS4, EUT horz
2484.000	33.5	-2.9	1.5	293.0	0.8	20.0	Horz	AV	0.0	51.4	54.0	-2.6	High ch, 24 Mbps, EUT horz
2385.167	53.9	-3.2	2.35	310.0		20.0	Horz	PK	0.0	70.7	74.0	-3.3	Low ch, 36 Mbps, EUT horz
2389.833	32.0	-3.2	1.5	268.0	1.5	20.0	Horz	AV	0.0	50.3	54.0	-3.7	Low ch, 54 Mbps, EUT horz
2386.458	32.0	-3.2	1.5	268.0	1.4	20.0	Horz	AV	0.0	50.2	54.0	-3.8	Low ch, 48 Mbps, EUT horz
2484.000	32.6	-2.9	1.5	293.0	0.2	20.0	Horz	AV	0.0	49.9	54.0	-4.1	High ch, 6 Mbps, EUT horz
2389.483	32.9	-3.2	2.84	302.0	0.2	20.0	Horz	AV	0.0	49.9	54.0	-4.1	Low ch, MCS0, EUT horz
2484.000	32.5	-2.9	1.5	293.0	0.2	20.0	Horz	AV	0.0	49.8	54.0	-4.2	High ch, MCS0, EUT horz
2484.383	32.4	-2.9	1.5	293.0	0.3	20.0	Horz	AV	0.0	49.8	54.0	-4.2	High ch, 11 Mbps, EUT horz
2389.917	32.3	-3.2	1.37	307.0	0.2	20.0	Horz	AV	0.0	49.3	54.0	-4.7	Low ch, 6 Mbps, EUT horz
2483.758	32.2	-2.9	1.5	293.0	0.0	20.0	Horz	AV	0.0	49.3	54.0	-4.7	High ch, 1 Mbps, EUT horz
2385.350	32.1	-3.2	2.53	269.0	0.2	20.0	Horz	AV	0.0	49.1	54.0	-4.9	Low ch, 11 Mbps, EUT horz
2484.200	31.8	-2.9	1.5	226.0	0.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	High ch, 1 Mbps, EUT on side
2485.042	31.8	-2.9	3.34	89.0	0.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	High ch, 1 Mbps, EUT vert
2484.875	31.7	-2.9	1.5	359.0	0.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	High ch, 1 Mbps, EUT horz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2485.417	31.7	-2.9	1.5	79.0	0.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	High ch, 1 Mbps, EUT on side
2485.100	31.7	-2.9	1.5	77.0	0.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	High ch, 1 Mbps, EUT vert
2388.642	31.8	-3.2	2.7	253.0	0.0	20.0	Horz	AV	0.0	48.6	54.0	-5.4	Low ch, 1 Mbps, EUT horz
2389.942	50.6	-3.2	1.5	314.0		20.0	Horz	PK	0.0	67.4	74.0	-6.6	Low ch, MCS7, EUT horz
2484.362	50.0	-2.9	1.5	293.0		20.0	Horz	PK	0.0	67.1	74.0	-6.9	High ch, MCS4, EUT horz
2483.550	49.4	-2.9	1.5	293.0		20.0	Horz	PK	0.0	66.5	74.0	-7.5	High ch, 54 Mbps, EUT horz
2484.357	49.3	-2.9	1.5	293.0		20.0	Horz	PK	0.0	66.4	74.0	-7.6	High ch, MCS7, EUT horz
2483.628	49.3	-2.9	1.5	293.0		20.0	Horz	PK	0.0	66.4	74.0	-7.6	High ch, 48 Mbps, EUT horz
2389.208	49.6	-3.2	1.5	268.0		20.0	Horz	PK	0.0	66.4	74.0	-7.6	Low ch, 54 Mbps, EUT horz
2484.243	49.0	-2.9	1.5	293.0		20.0	Horz	PK	0.0	66.1	74.0	-7.9	High ch, 24 Mbps, EUT horz
2483.547	48.6	-2.9	1.5	293.0		20.0	Horz	PK	0.0	65.7	74.0	-8.3	High ch, 36 Mbps, EUT horz
2483.777	47.9	-2.9	1.5	293.0		20.0	Horz	PK	0.0	65.0	74.0	-9.0	High ch, MCS5, EUT horz
2483.522	45.1	-2.9	1.5	293.0		20.0	Horz	PK	0.0	62.2	74.0	-11.8	High ch, 6 Mbps, EUT horz
2484.138	44.8	-2.9	1.5	293.0		20.0	Horz	PK	0.0	61.9	74.0	-12.1	High ch, MCS0, EUT horz
2385.275	44.7	-3.2	2.84	302.0		20.0	Horz	PK	0.0	61.5	74.0	-12.5	Low ch, MCS0, EUT horz
2484.117	44.3	-2.9	3.34	89.0		20.0	Horz	PK	0.0	61.4	74.0	-12.6	High ch, 1 Mbps, EUT vert
2485.500	44.2	-2.9	1.5	293.0		20.0	Horz	PK	0.0	61.3	74.0	-12.7	High ch, 1 Mbps, EUT horz
2386.150	44.5	-3.2	1.5	268.0		20.0	Horz	PK	0.0	61.3	74.0	-12.7	Low ch, 48 Mbps, EUT horz
2487.433	43.8	-2.9	1.5	77.0		20.0	Vert	PK	0.0	60.9	74.0	-13.1	High ch, 1 Mbps, EUT vert
2486.958	43.8	-2.9	1.5	293.0		20.0	Horz	PK	0.0	60.9	74.0	-13.1	High ch, 11 Mbps, EUT horz
2488.208	43.8	-3.0	1.5	359.0		20.0	Vert	PK	0.0	60.8	74.0	-13.2	High ch, 1 Mbps, EUT horz
2389.975	43.9	-3.2	2.7	253.0		20.0	Horz	PK	0.0	60.7	74.0	-13.3	Low ch, 1 Mbps, EUT horz
2486.183	43.5	-2.9	1.5	226.0		20.0	Horz	PK	0.0	60.6	74.0	-13.4	High ch, 1 Mbps, EUT on side
2485.808	43.4	-2.9	1.5	79.0		20.0	Vert	PK	0.0	60.5	74.0	-13.5	High ch, 1 Mbps, EUT on side
2389.658	43.7	-3.2	2.53	269.0		20.0	Horz	PK	0.0	60.5	74.0	-13.5	Low ch, 11 Mbps, EUT horz