ADDENDUM - EMISSIONS

Test of: Sonos Inc S23

To: FCC CFR47 Part 15 Subpart C 15.247 (DTS), RSS-247 Issue 2

Test Report Serial No.: TUVR116-U4_Emissions Rev B

Generated Reports	Document Number
Master:	☐TUVR116-U4_Master
Radiated:	☒ TUVR116-U4_Emissions Addendum

Date: 16th July 2019

Table of Contents

1. TEST RESULTS

1.1. Emissions

1.1.1. Conducted Emissions

1.1.1.1. Conducted Spurious Emissions

Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.247 RSS-247 Issue 2	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Max Unwanted Emission Levels	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.247 (d), KDB 558074 D01, ANSI 63.10 Section 11.11 RSS-247 Section 5.5	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Transmitter Conducted Spurious and Band-Edge Emissions Measurement
Transmitter Conducted Spurious and Band-Edge emissions were measured at a limit of 30 dBc (average detector) or 20 dBc (peak detector) below the highest in-band spectral density measured with a spectrum analyzer connected to the antenna terminal. Measurements were made while EUT was operating in transmit mode of operation at the appropriate centre frequency closest to the band-edge. Emissions were maximized during the measurement and limits derived from the peak spectral power and drawn on each plot.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. Testing was performed under ambient conditions at nominal voltage only.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits Transmitter Conducted Spurious and Band-Edge Emissions
(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Equipment Configuration for Conducted Spurious Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	48
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
2412.0	30.0 - 26000.0	-54.762	-43.58	-55.030	-41.89	-53.792	-41.04	-53.747	-38.74
2437.0	30.0 - 26000.0	-54.611	-44.36	-55.192	-43.08	-54.534	-40.70	-53.766	-40.02
2462.0	30.0 - 26000.0	-54.088	-46.24	-54.741	-42.83	-54.601	-42.87	-53.634	-42.09

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Spurious Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	29
Data Rate:	2.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
2412.0	30.0 - 26000.0	-54.359	-43.14	-54.082	-39.04	-54.971	-38.12	-54.410	-37.43
2437.0	30.0 - 26000.0	-54.501	-41.49	-55.304	-38.02	-54.457	-38.47	-53.749	-39.96
2462.0	30.0 - 26000.0	-54.511	-42.07	-55.219	-39.42	-53.564	-38.54	-53.416	-40.20

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

Equipment Configuration for Conducted Spurious Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	20
Data Rate:	5.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
2412.0	30.0 - 26000.0	-54.680	-40.92	-54.910	-38.21	-53.912	-35.74	-54.107	-34.50
2437.0	30.0 - 26000.0	-53.737	-38.96	-54.804	-38.00	-54.623	-36.04	-54.327	-34.12
2462.0	30.0 - 26000.0	-54.930	-39.00	-54.560	-38.67	-54.526	-38.13	-54.168	-35.68

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Spurious Emissions - Peak			
Variant:	802.11g	**Duty Cycle (%):**	51
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
2412.0	30.0 - 26000.0	-54.941	-49.50	-55.209	-41.98	-54.932	-43.39	-54.134	-43.44
2437.0	30.0 - 26000.0	-54.491	-45.38	-55.376	-42.13	-54.959	-41.44	-54.016	-40.81
2462.0	30.0 - 26000.0	-54.654	-46.03	-55.355	-44.25	-54.855	-43.63	-54.048	-43.10

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

Equipment Configuration for Conducted Spurious Emissions - Peak			
Variant:	802.11n HT-20	**Duty Cycle (%):**	47
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
2412.0	30.0 - 26000.0	-54.756	-46.02	-55.290	-42.23	-54.105	-41.63	-54.138	-41.90
2437.0	30.0 - 26000.0	-54.660	-45.53	-55.154	-42.92	-53.881	-40.14	-54.050	-41.42
2462.0	30.0 - 26000.0	-54.404	-48.59	-54.792	-44.17	-53.521	-44.24	-54.209	-44.94

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

1.1.1.2. Conducted Band-Edge Emissions

Equipment Configuration for Conducted Low Band-Edge Emissions - Peak

Variant:	802.11b	**Duty Cycle (%):**	48.3
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2412.0 MHz
Band-Edge Frequency:	2400.0 MHz
Test Frequency Range:	2350.0 - 2422.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-44.66	-28.06	2403.20	--	--	-3.200
b	-45.48	-29.72	2403.40	--	--	-3.400
c	-46.32	-28.92	2403.00	--	--	-3.000
d	-43.82	-27.32	2403.00	--	--	-3.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted High Band-Edge Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	48.3
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2462.0 MHz
Band-Edge Frequency:	2483.5 MHz
Test Frequency Range:	2452.0 - 2524.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-46.70	-28.41	2471.00	--	--	-12.500
b	-45.43	-30.05	2471.00	--	--	-12.500
c	-47.56	-29.77	2471.00	--	--	-12.500
d	-47.07	-28.50	2471.00	--	--	-12.500

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	29.2
Data Rate:	2.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2412.0 MHz
Band-Edge Frequency:	2400.0 MHz
Test Frequency Range:	2350.0 - 2422.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-45.48	-25.01	2403.10	--	--	-3.100
b	-43.63	-25.97	2403.10	--	--	-3.100
c	-44.05	-25.51	2403.10	--	--	-3.100
d	-43.82	-24.35	2402.80	--	--	-2.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted High Band-Edge Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	29.2
Data Rate:	2.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2462.0 MHz
Band-Edge Frequency:	2483.5 MHz
Test Frequency Range:	2452.0 - 2524.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-46.85	-25.80	2470.90	--	--	-12.600
b	-46.71	-26.52	2471.00	--	--	-12.500
c	-47.46	-25.66	2470.90	--	--	-12.600
d	-46.19	-25.48	2471.20	--	--	-12.300

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	19.9
Data Rate:	5.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2412.0 MHz
Band-Edge Frequency:	2400.0 MHz
Test Frequency Range:	2350.0 - 2422.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-42.22	-23.23	2403.20	--	--	-3.200
b	-37.70	-23.90	2403.10	--	--	-3.100
c	-42.09	-23.02	2403.10	--	--	-3.100
d	-32.88	-21.98	2403.00	--	--	-3.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted High Band-Edge Emissions - Peak			
Variant:	802.11b	**Duty Cycle (%):**	19.9
Data Rate:	5.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2462.0 MHz
Band-Edge Frequency:	2483.5 MHz
Test Frequency Range:	2452.0 - 2524.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-47.37	-23.47	2470.80	--	--	-12.700
b	-46.44	-24.03	2470.90	--	--	-12.600
c	-47.57	-23.80	2470.80	--	--	-12.700
d	-46.69	-23.08	2471.20	--	--	-12.300

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions - Peak

Variant:	802.11g	**Duty Cycle (%):**	50.6
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2412.0 MHz
Band-Edge Frequency:	2400.0 MHz
Test Frequency Range:	2350.0 - 2422.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-41.14	-29.41	2402.20	--	--	-2.200
b	-43.42	-30.09	2402.20	--	--	-2.200
c	-43.55	-29.64	2402.20	--	--	-2.200
d	-37.79	-28.72	2402.10	--	--	-2.100

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted High Band-Edge Emissions - Peak			
Variant:	802.11g	**Duty Cycle (%):**	50.6
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2462.0 MHz
Band-Edge Frequency:	2483.5 MHz
Test Frequency Range:	2452.0 - 2524.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-43.64	-28.05	2471.90	--	--	-11.600
b	-42.25	-28.33	2471.90	--	--	-11.600
c	-44.04	-27.83	2471.90	--	--	-11.600
d	-38.57	-27.90	2472.10	--	--	-11.400

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions - Peak

Variant:	802.11n HT-20	**Duty Cycle (%):**	46.9
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2412.0 MHz
Band-Edge Frequency:	2400.0 MHz
Test Frequency Range:	2350.0 - 2422.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-36.62	-27.42	2401.80	--	--	-1.800
b	-35.76	-27.78	2401.90	--	--	-1.900
c	-37.86	-26.93	2401.90	--	--	-1.900
d	-30.40	-26.42	2401.70	--	--	-1.700

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted High Band-Edge Emissions - Peak			
Variant:	802.11n HT-20	**Duty Cycle (%):**	46.9
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2462.0 MHz
Band-Edge Frequency:	2483.5 MHz
Test Frequency Range:	2452.0 - 2524.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-46.333	-29.15	2472.10	--	--	-11.400
b	-46.24	-29.32	2472.10	--	--	-11.400
c	-46.74	-28.88	2472.10	--	--	-11.400
d	-45.68	-28.73	2472.10	--	--	-11.400

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

1.1.2. Radiated Emissions

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions (Restricted Bands)			
Standard:	FCC CFR 47 Part 15 Subpart C RSS-GEN Issue 5	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.205, 15.209 RSS-Gen 8.9	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Spurious and Band-Edge Emissions (Restricted Bands)
Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned. Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Radiated Spurious and Band-Edge Measurement were per the Radiated Test Set-up specified in this document.

Limits for Restricted Bands
Peak emission: 74 dBuV/m
Average emission: 54 dBuV/m

Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.
FS = R + AF + CORR - FO

where:
FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

Example:
Given receiver input reading of 51.5 dBmV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength (FS) of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBmV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:
Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100 mV/m
48 dBmV/m = 250 mV/m
Restricted Bands of Operation (15.205)
(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Frequency Band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to §15.213.

(4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.

(5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.

(6) Transmitters operating under the provisions of subparts D or F of this part.

(7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.

(8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this

section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).

§15.209 Radiated emission limits; general requirements.
(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

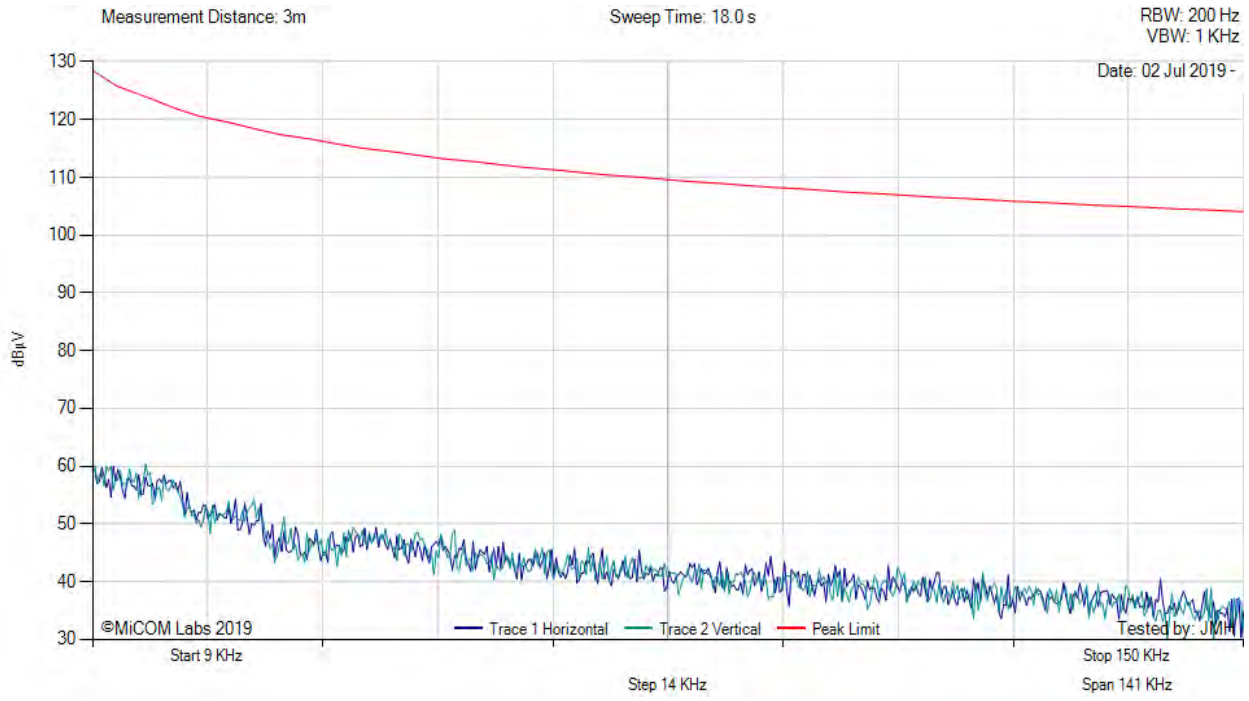
**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permItted under other sections of this part, e.g., §§15.231 and 15.241.
(b) In the emission table above, the tighter limit applies at the band edges.
(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
(e) The provisions in §§15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.
(f) In accordance with §15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in §15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in §15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in §15.109 that are applicable to the incorporated digital device.
(g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.

1.1.2.1. Tx Spurious 9 kHz – 30 MHz

TX Spurious Emissions 9 KHz – 30 MHz

No Emissions found within 20 dB of Limit. Per 15.31 (o) The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this part.

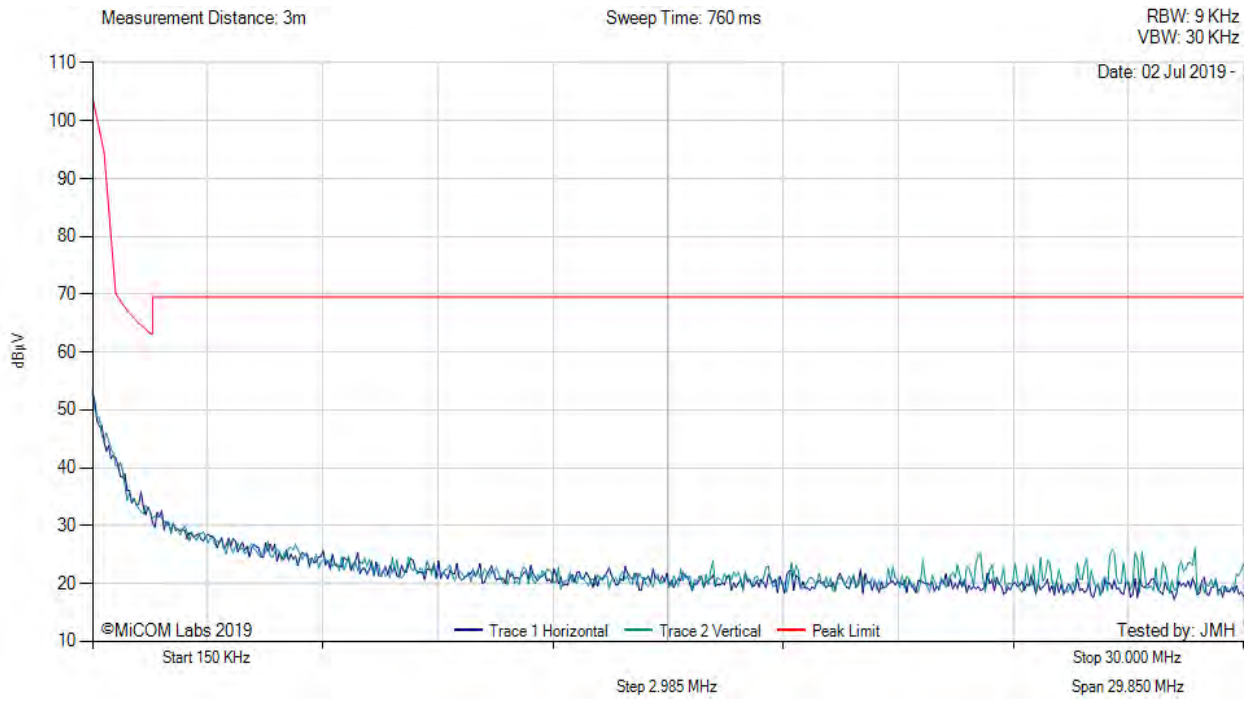
Variant: , Test Freq: 2412.00 MHz, Power Setting: max



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 2.4G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. EUT Transmitting at Maximum Power

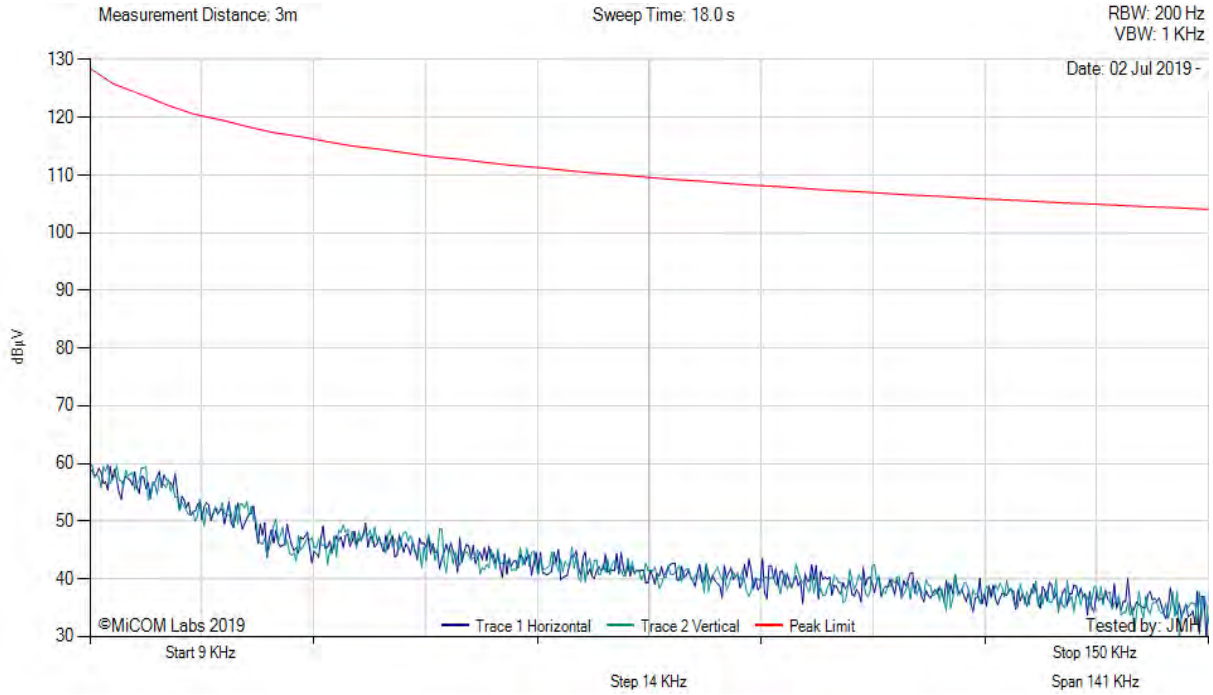
Variant: , Test Freq: 2412.00 MHz, Power Setting: max



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 2.4G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. EUT Transmitting at Maximum Power

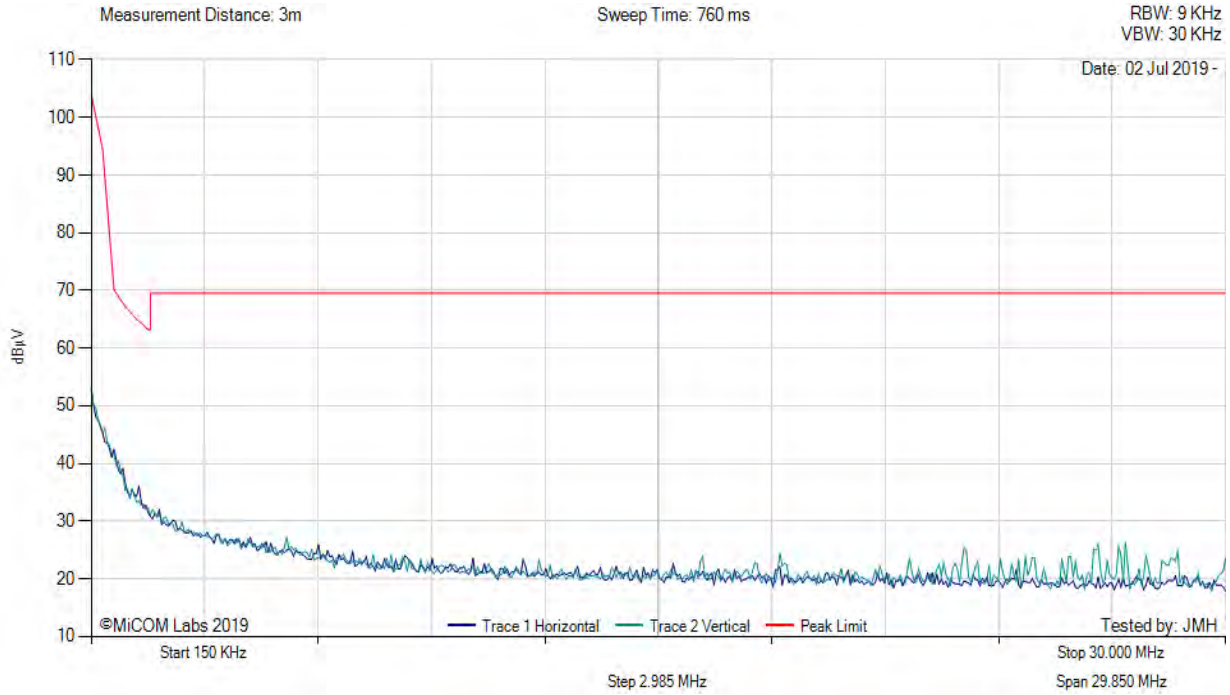
Variant: , Test Freq: 2437.00 MHz, Power Setting: max



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 2.4G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. EUT Transmitting at Maximum Power

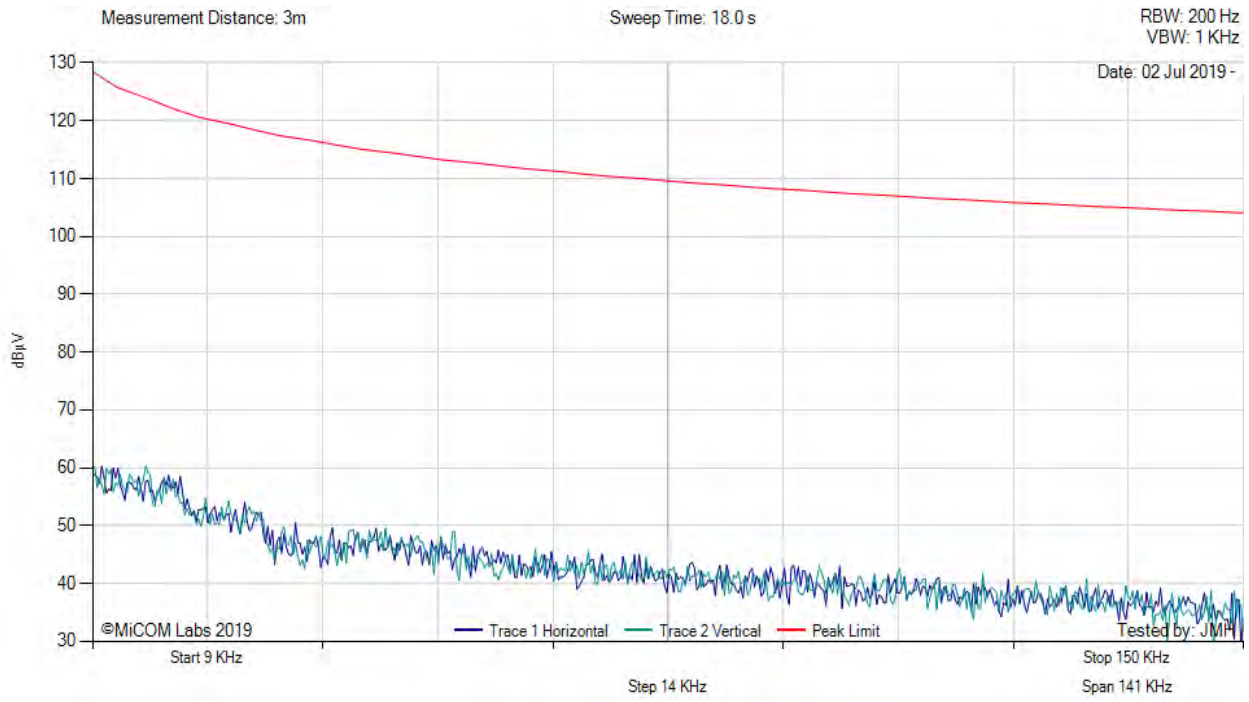
Variant: , Test Freq: 2437.00 MHz, Power Setting: max



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 2.4G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. EUT Transmitting at Maximum Power

Variant: , Test Freq: 2462.00 MHz, Power Setting: max



There are no emissions found within 20dB of the limit line.

Test Notes: Eut powered by AC/DC PS. 2.4G WiFi. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back. EUT Transmitting at Maximum Power

1.1.2.2. Tx Spurious 1 – 18 GHz

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna Gains:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2412.00	**Data Rate:**	1.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4824.03	72.86	-2.53	-12.42	57.91	Max Peak	Vertical	134	93	74.0	-16.1	Pass
#2	4824.03	65.07	-2.53	-12.42	53.12	Max Avg	Vertical	134	93	54.0	-0.9	Pass

Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. Average Emissions include DC correction of 3 dB

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	27
Channel Frequency (MHz):	2412.00	**Data Rate:**	2.00 MBit/s
Power Setting:	16.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4823.94	77.47	-2.52	-12.43	62.52	Max Peak	Vertical	110	99	74.0	-11.5	Pass
#2	4823.94	68.49	-2.52	-12.43	53.54	Max Avg	Vertical	110	99	54.0	-0.5	Pass
#3	7234.66	57.47	-3.09	-7.59	46.79	Peak (NRB)	Vertical	100	0	--	--	Pass
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	20
Channel Frequency (MHz):	2412.00	**Data Rate:**	5.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4818.48	77.36	-2.52	-12.45	62.39	Max Peak	Horizontal	125	172	74.0	-11.6	Pass
#2	4818.48	62.11	-2.52	-12.45	47.14	Max Avg	Horizontal	125	172	54.0	-6.9	Pass

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. DC correction +6.9 dB

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2437.00	**Data Rate:**	1.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2434.99	57.76	-1.77	-12.12	43.87	Fundamental	Vertical	151	0	--	--	
#2	4873.90	73.45	-2.51	-12.61	58.33	Max Peak	Vertical	149	139	74.0	-15.7	Pass
#3	4873.90	65.59	-2.51	-12.61	53.47	Max Avg	Vertical	149	139	54.0	-0.5	Pass
Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. Average Emissions include DC correction of 3 dB												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	27
Channel Frequency (MHz):	2437.00	**Data Rate:**	2.00 MBit/s
Power Setting:	16.5	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2438.72	61.69	-1.78	-12.10	47.81	Fundamental	Vertical	100	0	--	--	
#2	4874.00	78.09	-2.51	-12.61	61.97	Max Peak	Vertical	149	142	74.0	-12.0	Pass
#3	4874.00	68.63	-2.51	-12.61	53.51	Max Avg	Vertical	149	142	54.0	-0.5	Pass
#4	7309.50	65.43	-2.99	-7.92	53.52	Max Peak	Vertical	114	357	74.0	-20.5	Pass
#5	7309.50	51.27	-2.99	-7.92	40.36	Max Avg	Vertical	114	357	54.0	-13.6	Pass
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	20
Channel Frequency (MHz):	2437.00	**Data Rate:**	5.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2439.40	64.66	-1.78	-12.10	50.78	Fundamental	Horizontal	100	0	--	--	
#2	4874.02	77.27	-2.51	-12.00	62.16	Max Peak	Vertical	113	95	74.0	-11.8	Pass
#3	4874.02	63.65	-2.51	-12.00	48.54	Max Avg	Vertical	113	95	54.0	-5.5	Pass
#4	7310.05	64.52	-2.99	-7.92	53.61	Max Peak	Vertical	186	124	74.0	-20.4	Pass
#5	7310.05	52.92	-2.99	-7.92	42.01	Max Avg	Vertical	186	124	54.0	-12.0	Pass
Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. DC correction +6.9 dB												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2462.00	**Data Rate:**	1.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2462.89	58.38	-1.79	-11.96	44.63	Fundamental	Vertical	100	0	--	--	
#2	4923.91	72.88	-2.56	-12.35	57.97	Max Peak	Vertical	98	96	74.0	-16.0	Pass
#3	4923.91	65.08	-2.56	-12.35	53.17	Max Avg	Vertical	98	96	54.0	-0.8	Pass

Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. Average Emissions include DC correction of 3 dB

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	27
Channel Frequency (MHz):	2462.00	**Data Rate:**	2.00 MBit/s
Power Setting:	16.5	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2459.52	63.70	-1.79	-11.94	49.97	Fundamental	Vertical	100	55	--	--	
#2	4923.94	77.23	-2.56	-12.35	63.32	Max Peak	Vertical	106	102	74.0	-10.7	Pass
#3	4923.94	68.27	-2.56	-12.35	53.36	Max Avg	Vertical	106	102	54.0	-0.6	Pass
#4	7383.55	62.00	-3.04	-8.06	51.50	Max Peak	Horizontal	106	178	74.0	-22.5	Pass
#5	7383.55	53.21	-3.04	-8.06	42.11	Max Avg	Horizontal	106	178	54.0	-11.9	Pass
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	20
Channel Frequency (MHz):	2462.00	**Data Rate:**	5.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2459.25	61.88	-1.79	-11.94	48.15	Fundamental	Vertical	151	0	--	--	
#2	4923.95	76.45	-2.56	-12.35	61.54	Max Peak	Vertical	118	92	74.0	-12.5	Pass
#3	4923.95	63.09	-2.56	-12.35	48.18	Max Avg	Vertical	118	92	54.0	-5.8	Pass
#4	7384.38	63.33	-3.05	-8.04	52.24	Max Peak	Vertical	134	297	74.0	-21.8	Pass
#5	7384.38	52.79	-3.05	-8.04	41.70	Max Avg	Vertical	134	297	54.0	--	Pass

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. DC correction +6.9 dB

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11g
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2412.00	**Data Rate:**	6.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4828.76	77.19	-2.53	-12.40	62.26	Max Peak	Horizontal	98	173	74.0	-11.7	Pass
#2	4828.76	61.71	-2.53	-12.40	46.78	Max Avg	Horizontal	98	173	54.0	-7.2	Pass
#3	7238.40	61.19	-3.08	-7.67	50.44	Peak (NRB)	Vertical	100	0	--	--	Pass
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11g
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2437.00	**Data Rate:**	6.00 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2438.74	60.66	-1.78	-12.10	46.78	Fundamental	Horizontal	100	0	--	--	
#2	4879.30	75.58	-2.50	-12.51	60.57	Max Peak	Vertical	101	50	74.0	-13.4	Pass
#3	4879.30	60.49	-2.50	-12.51	45.48	Max Avg	Vertical	101	50	54.0	-8.5	Pass
#4	7312.96	68.72	-3.00	-7.90	57.82	Max Peak	Vertical	100	100	74.0	-16.2	Pass
#5	7312.96	52.97	-3.00	-7.90	42.07	Max Avg	Vertical	100	100	54.0	-11.9	Pass
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

Equipment Configuration for Restricted Band Spurious Emissions 1 – 18.0 GHz

Antenna:	See Antenna Details (Master)	**Variant:**	802.11g
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2462.00	**Data Rate:**	6.00 MBit/s
Power Setting:	15	**Tested By:**	JMH

Test Measurement Results

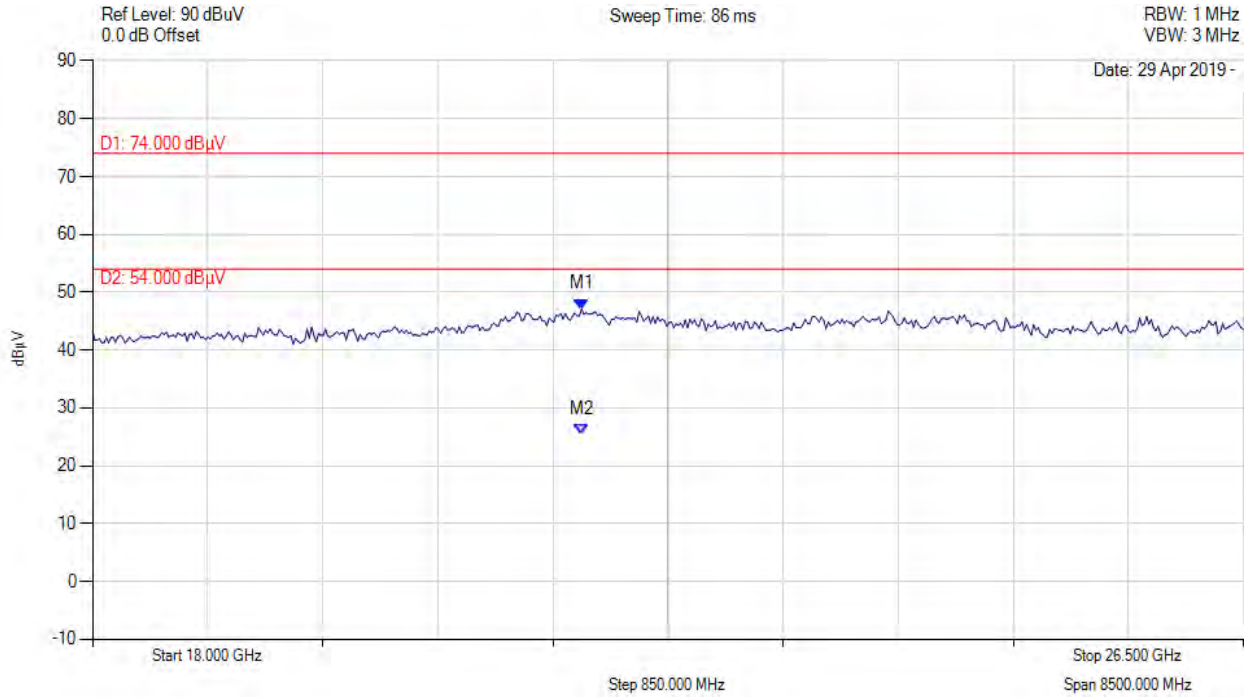
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2463.77	62.65	-1.79	-11.96	48.90	Fundamental	Horizontal	151	0	--	--	
#2	4926.90	76.17	-2.58	-12.36	61.23	Max Peak	Vertical	153	92	74.0	-12.8	Pass
#3	4926.90	57.99	-2.58	-12.36	46.05	Max Avg	Vertical	153	92	54.0	-8.0	Pass
#4	7387.25	67.57	-3.08	-7.98	56.51	Max Peak	Vertical	98	273	74.0	-17.5	Pass
#5	7387.25	49.15	-3.08	-7.98	41.09	Max Avg	Vertical	98	273	54.0	-12.9	Pass
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

1.1.2.3. Tx Spurious 18 - 26 GHz

Equipment Configuration for Restricted Band Spurious Emissions 18.0-26.5 GHz

Antenna Gains:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2412.00	**Data Rate:**	1.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results
Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. Average Emissions include DC correction of 3 dB



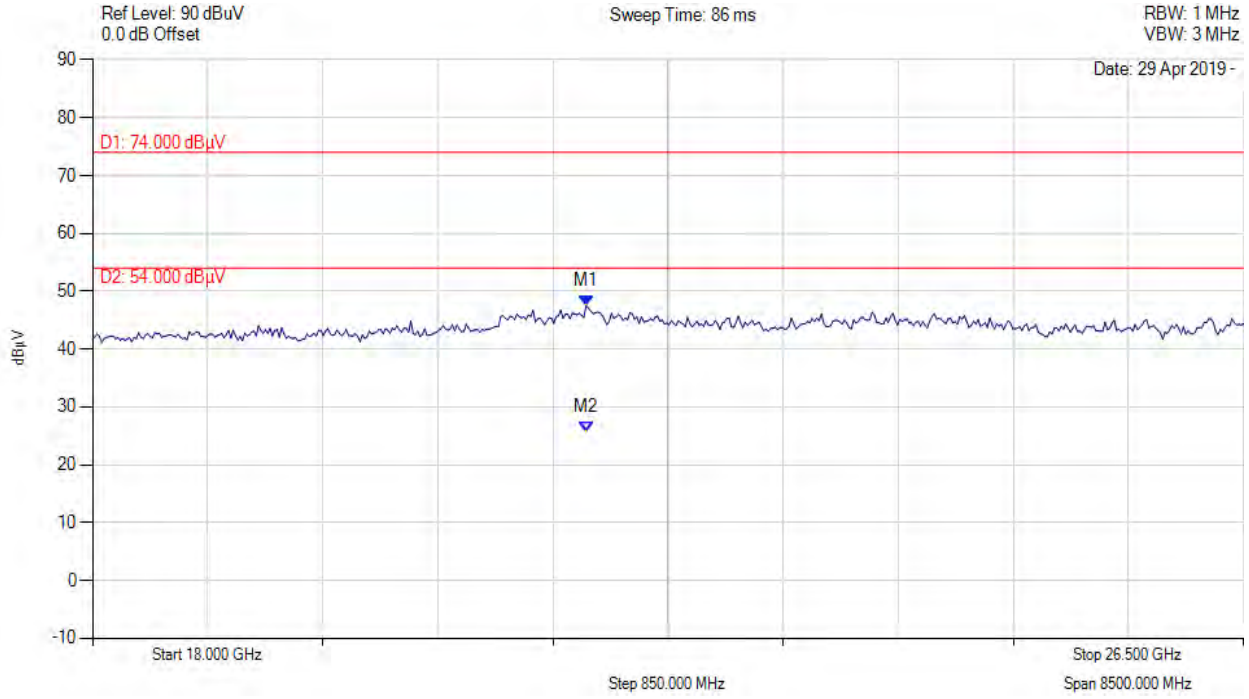
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.611 GHz : 47.075 dBµV M2 : 21.611 GHz : 25.347 dBµV	Channel Frequency: 2412.00 MHz

*Trace is max hold composite of vertical and horizontal orientations

Equipment Configuration for Restricted Band Spurious Emissions 18.0-26.5 GHz

Antenna Gains:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2437.00	**Data Rate:**	1.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results
Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. Average Emissions include DC correction of 3 dB

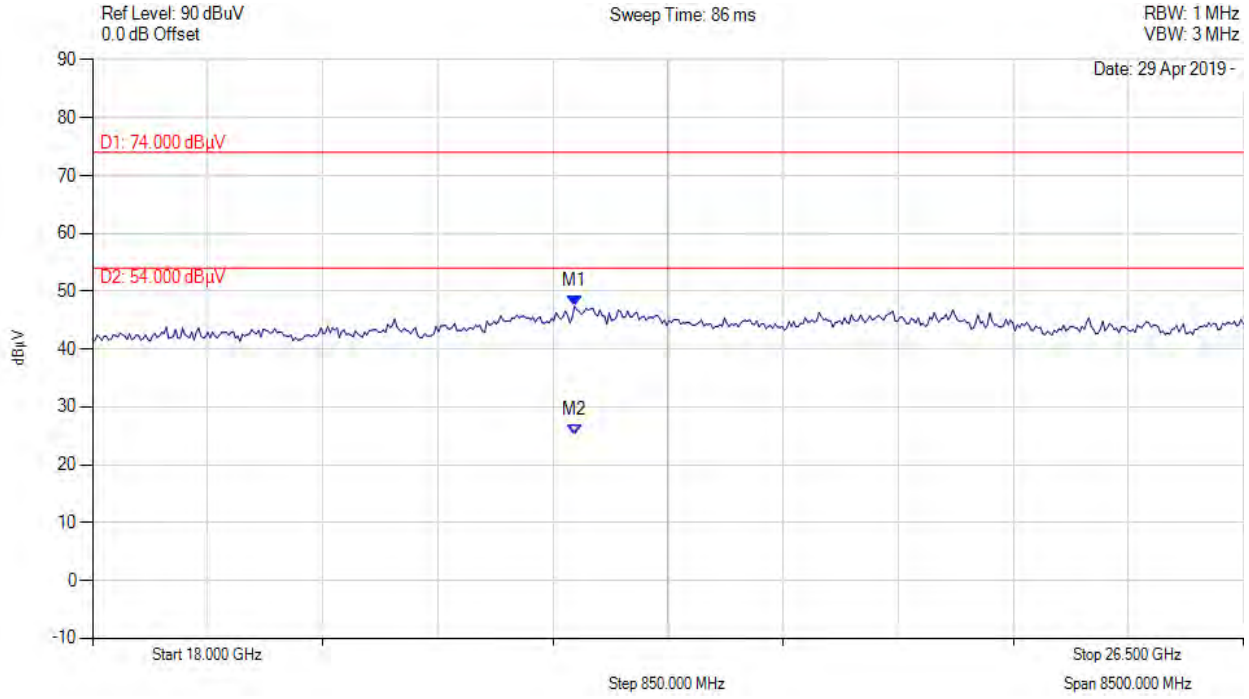


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.645 GHz : 47.492 dBµV M2 : 21.645 GHz : 25.622 dBµV	Channel Frequency: 2437.00 MHz

Equipment Configuration for Restricted Band Spurious Emissions 18.0-26.5 GHz

Antenna Gains:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2462.00	**Data Rate:**	1.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results
Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. Average Emissions include DC correction of 3 dB



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 21.560 GHz : 47.425 dBµV M2 : 21.560 GHz : 25.154 dBµV	Channel Frequency: 2462.00 MHz

1.1.2.4. Restricted Edge & Band-Edge Emissions

Low Channel

ICT Antenna(s)		Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11b (1 Mbit/s)	2412.00	2390.00	52.94	42.12	13
802.11b (2.2 Mbit/s)	2412.00	2390.00	54.32	43.98	16
802.11b (5.5 Mbit/s)	2412.00	2390.00	63.59	44.97	18
802.11g	2412.00	2390.00	72.37	52.33	13
802.11n HT-20	2412.00	2390.00	72.03	51.29	15.5

High Channel

ICT Antenna(s)		Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11b (1 Mbit/s)	2462.00	2483.50	54.21	42.51	13
802.11b (2.2 Mbit/s)	2462.00	2483.50	55.78	45.11	16.5
802.11b (5.5 Mbit/s)	2462.00	2483.50	62.74	44.94	18
802.11g	2462.00	2483.50	73.36	49.66	15
802.11n HT-20	2462.00	2483.50	72.51	48.16	14

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2412.00	**Data Rate:**	1.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2387.21	22.77	-1.77	31.94	52.94	Max Peak	Vertical	200	200	74.0	-21.1	Pass
#2	2389.90	8.93	-1.77	31.96	42.12	Max Avg	Vertical	200	200	54.0	-11.9	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. Data Rate 1 Mbit/s. DC Corr +3 dB

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	27
Channel Frequency (MHz):	2412.00	**Data Rate:**	2.00 MBit/s
Power Setting:	16	**Tested By:**	JMH

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2388.11	13.80	-1.77	31.95	43.98	Max Avg	Vertical	196	201	54.0	-10.0	Pass
#2	2389.68	24.13	-1.77	31.96	54.32	Max Peak	Vertical	196	201	74.0	-19.7	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate												

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	20
Channel Frequency (MHz):	2412.00	**Data Rate:**	5.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2331.32	14.98	-1.74	31.73	44.97	Max Avg	Vertical	198	208	54.0	-9.0	Pass
#2	2376.44	33.46	-1.75	31.88	63.59	Max Peak	Vertical	198	208	74.0	-10.4	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. Data Rate 5.5 Mbit/s. DC correction +6.9 dB

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11g
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2412.00	**Data Rate:**	6.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2389.90	22.14	-1.77	31.96	52.33	Max Avg	Vertical	200	200	54.0	-1.7	Pass
#2	2389.90	42.18	-1.77	31.96	72.37	Max Peak	Vertical	200	200	74.0	-1.6	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11n HT-20
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2412.00	**Data Rate:**	6.50 MBit/s
Power Setting:	15.5	**Tested By:**	JMH

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2387.21	41.86	-1.77	31.94	72.03	Max Peak	Vertical	200	200	74.0	-2.0	Pass
#2	2387.66	21.11	-1.77	31.95	51.29	Max Avg	Vertical	200	200	54.0	-2.7	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2462.00	**Data Rate:**	1.00 MBit/s
Power Setting:	13	**Tested By:**	JMH

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	2484.43	23.66	-1.78	32.33	54.21	Max Peak	Vertical	174	175	74.0	-19.8	Pass
#3	2491.11	8.97	-1.78	32.32	42.51	Max Avg	Vertical	174	175	54.0	-11.5	Pass
#1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. Data Rate 1 Mbit/s Data Rate 1 Mbit/s. DC Corr +3 dB												

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	27
Channel Frequency (MHz):	2462.00	**Data Rate:**	2.00 MBit/s
Power Setting:	16.5	**Tested By:**	JMH

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	2483.89	25.23	-1.78	32.33	55.78	Max Peak	Vertical	196	149	74.0	-18.2	Pass
#3	2487.98	14.56	-1.78	32.33	45.11	Max Avg	Vertical	196	149	54.0	-8.9	Pass
#1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate												

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	20
Channel Frequency (MHz):	2462.00	**Data Rate:**	5.50 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	2496.15	32.21	-1.79	32.32	62.74	Max Peak	Horizontal	127	165	74.0	-11.3	Pass
#3	2498.33	14.42	-1.79	32.31	44.94	Max Avg	Horizontal	127	165	54.0	-9.1	Pass
#1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. Data Rate 5.5 Mbit/s. DC correction +6.9 dB

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11g
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2462.00	**Data Rate:**	6.00 MBit/s
Power Setting:	15	**Tested By:**	JMH

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	2484.71	19.11	-1.78	32.33	49.66	Max Avg	Vertical	174	175	54.0	-4.3	Pass
#3	2485.52	42.81	-1.78	32.33	73.36	Max Peak	Vertical	174	175	74.0	-0.6	Pass
#1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	See Antenna Details (Master)	**Variant:**	802.11n HT-20
Antenna Gains (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	50
Channel Frequency (MHz):	2462.00	**Data Rate:**	6.50 MBit/s
Power Setting:	14	**Tested By:**	JMH

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	2483.62	17.61	-1.78	32.33	48.16	Max Avg	Vertical	174	175	54.0	-5.8	Pass
#3	2484.57	41.96	-1.78	32.33	72.51	Max Peak	Vertical	174	175	74.0	-1.5	Pass
#1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB												

1.1.3. Digital Emissions / Radiated Spurious Emissions (0.03 - 1 GHz)

Test Conditions for Digital Emissions			
Standard:	FCC CFR 47:15.109 ICES-003 Issue 6	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Radiated Emissions Limits	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.109 (a) ICES-003 6.2.1	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Emissions Measurement
Test Procedure
Testing 30 – 1,000 MHz was performed in an anechoic chamber using a CISPR compliant receiver. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. To further maximize emissions the receive antenna was varied between 1 and 4 meters. The emissions are recorded with receiver in peak hold mode.

Emissions nearest the limits were chosen for maximization and formal measurement using a CISPR Compliant receiver. Emissions from 30 MHz – 1000 MHz are measured utilizing a CISPR compliant quasi-peak detector with a tuned receiver, using a bandwidth of 120 kHz.. Only the highest emissions relative to the limit are listed.

15.109 Radiated limits.
((a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Quasi-peak Limit (dBµV/m)	Measurement Distance (meters)
30 to 88	40	3
88-216	43.5	3
216-960	46	3
960-1000	54	3

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency(MHz)	Quasi-peak Limit (dBµV/m)	Measurement Distance (meters)
30 to 88	49.5	3
88-216	54	3
216-960	56.5	3
960-1000	60	3

Traceability

Laboratory Measurement Uncertainty	
Measurement uncertainty	+5.6/ -4.5 dB

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (0.03 - 1 GHz)			
Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gain (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2412.00	**Data Rate:**	1.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.08	27.98	3.53	-8.70	22.86	MaxQP	Vertical	118	348	40.0	-17.1	Pass
#2	98.23	46.01	4.00	-18.60	31.41	MaxQP	Vertical	107	8	43.0	-11.6	Pass
#3	124.46	40.20	4.12	-14.60	29.72	MaxQP	Vertical	105	80	43.0	-13.1	Pass
#4	146.74	46.67	4.23	-15.90	35.00	MaxQP	Vertical	102	172	43.0	-8.0	Pass
#5	338.57	41.36	4.98	-13.70	32.64	MaxQP	Horizontal	107	252	46.0	-13.4	Pass
#6	361.56	40.26	5.06	-12.66	32.56	MaxQP	Horizontal	105	267	46.0	-13.4	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

No spurious emissions found.
Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (0.03 - 1 GHz)

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gain (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2437.00	**Data Rate:**	1.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.34	29.18	3.53	-8.70	24.01	MaxQP	Vertical	118	348	40.0	-16.0	Pass
#2	98.12	47.26	4.00	-18.60	32.66	MaxQP	Vertical	103	5	43.0	-10.3	Pass
#3	124.26	39.93	4.12	-14.60	29.45	MaxQP	Vertical	101	77	43.0	-13.6	Pass
#4	146.34	47.05	4.23	-15.90	35.38	MaxQP	Vertical	101	177	43.0	-7.6	Pass
#5	338.75	40.98	4.98	-13.70	32.26	MaxQP	Horizontal	104	251	46.0	-13.7	Pass
#6	361.34	40.55	5.06	-12.70	32.91	MaxQP	Horizontal	99	280	46.0	-13.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

No spurious emissions found.
Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Digital Emissions / Radiated Spurious Emissions (0.03 - 1 GHz)

Antenna:	See Antenna Details (Master)	**Variant:**	802.11b
Antenna Gain (dBi):	2.0, 2.6, 3.6, 2.2	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	49
Channel Frequency (MHz):	2462.00	**Data Rate:**	1.00 MBit/s
Power Setting:	18	**Tested By:**	JMH

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.08	27.98	3.53	-8.70	22.86	MaxQP	Vertical	118	348	40.0	-17.1	Pass
#2	98.23	46.01	4.00	-18.60	31.41	MaxQP	Vertical	107	8	43.0	-11.6	Pass
#3	124.46	40.20	4.12	-14.60	29.72	MaxQP	Vertical	105	80	43.0	-13.1	Pass
#4	146.74	46.67	4.23	-15.90	35.00	MaxQP	Vertical	102	172	43.0	-8.0	Pass
#5	338.57	41.36	4.98	-13.70	32.64	MaxQP	Horizontal	107	252	46.0	-13.4	Pass
#6	361.56	40.26	5.06	-12.66	32.56	MaxQP	Horizontal	105	267	46.0	-13.4	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

No spurious emissions found.
Note: click the links in the above matrix to view the graphical image (plot).

1.1.4. AC Wireline Emissions

Test Conditions for AC Mains Conducted Emissions			
Standard:	FCC CFR 47:15.107 ICES-003	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	AC Mains Conducted Limits	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.107 (a) ICES-003 6.1	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Method

The test method shall be in accordance with ANSI C63.4 and the Artificial Mains Networks (AMNs) shall be connected to the AC mains power source. The measurement frequency range extends from 150 kHz to 30 MHz. When the EUT is a transmitter operating at frequencies below 30 MHz, then the exclusion band for transmitters applies for measurements in the transmit mode of operation.

Test Procedure for AC Mains Conducted Emissions Measurement
The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

15.107 Conducted limits.
(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

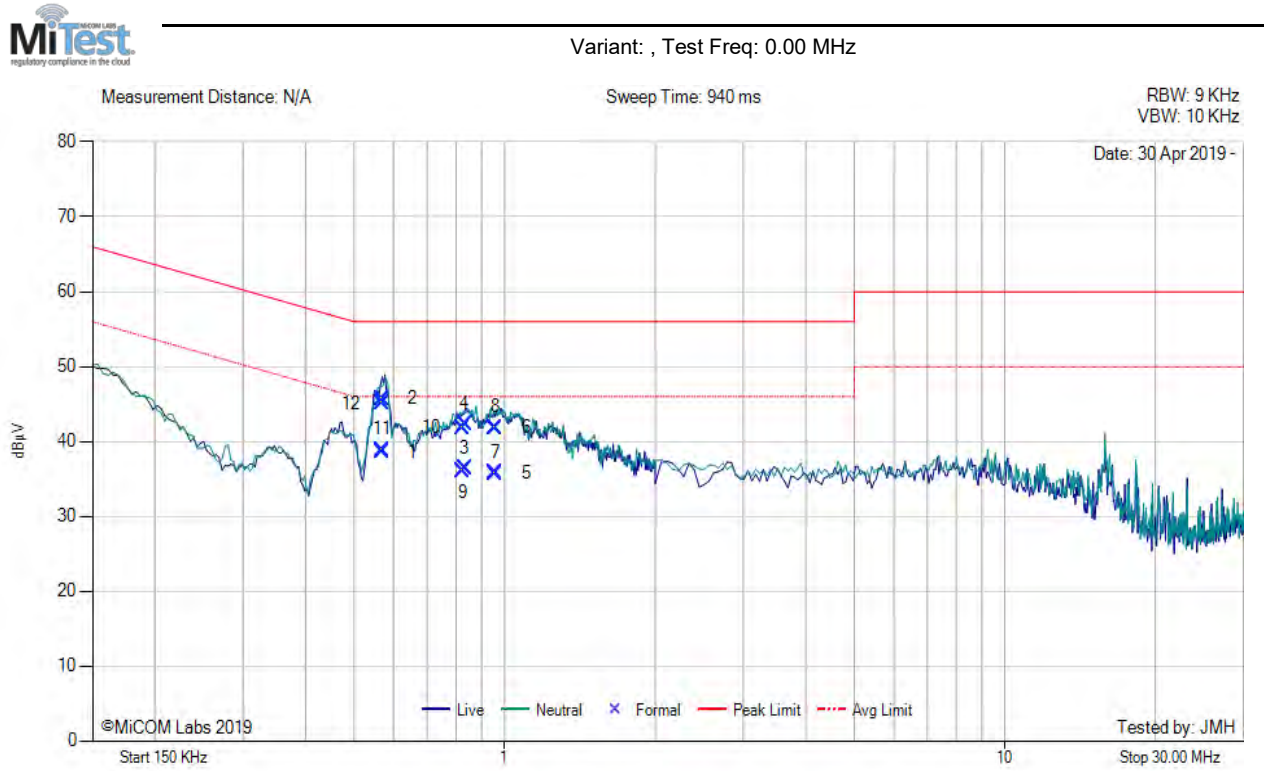
(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms LISN. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

Traceability
All conducted emission measurements are traceable to national standards. The uncertainty of measurement at a confidence level of not less than 95 %, with a coverage factor of k=2, in the range 9 kHz – 30 MHz (Average & Quasi-peak) is ±2.64 dB.

Laboratory Measurement Uncertainty	
Measurement uncertainty	±2.64 dB

Model:	S23	Configuration tested:	AC/DC PS
Input power:	120V_{AC}/60Hz	Standard:	FCC



Num	Frequency MHz	Raw dBµV	Cable Loss dB	Factor dB	Total Correction dBµV	Corrected Value dBµV	Measurement Type	Line	Limit dBµV/m	Margin dB	Pass /Fail
1	0.570	28.56	0.10	9.92	10.02	38.58	Max Avg	Live	46.0	-7.4	Pass
2	0.570	35.69	0.10	9.92	10.02	45.71	Max Qp	Live	56.0	-10.3	Pass
3	0.833	26.28	0.10	9.94	10.04	36.32	Max Avg	Neutral	46.0	-9.7	Pass
4	0.833	32.28	0.10	9.94	10.04	42.32	Max Qp	Neutral	56.0	-13.7	Pass
5	0.960	25.79	0.08	9.93	10.01	35.80	Max Avg	Neutral	46.0	-10.2	Pass
6	0.960	31.85	0.08	9.93	10.01	41.86	Max Qp	Neutral	56.0	-14.1	Pass
7	0.959	25.73	0.08	9.93	10.01	35.74	Max Avg	Live	46.0	-10.3	Pass
8	0.959	31.83	0.08	9.93	10.01	41.84	Max Qp	Live	56.0	-14.2	Pass
9	0.825	25.96	0.10	9.94	10.04	36.00	Max Avg	Live	46.0	-10.0	Pass
10	0.825	31.77	0.10	9.94	10.04	41.81	Max Qp	Live	56.0	-14.2	Pass
11	0.569	28.86	0.10	9.92	10.02	38.88	Max Avg	Live	46.0	-7.1	Pass
12	0.569	35.05	0.10	9.92	10.02	45.07	Max Qp	Live	56.0	-10.9	Pass

Test Notes: EUT powered by AC/DC PS 120V 60 Hz, connected to laptop via ethernet. 2nd ethernet cable connected to hub with traffic. Transmitting 2412b WiFi and BLE for maximum load. Audio ports looped back

A. APPENDIX - GRAPHICAL IMAGES

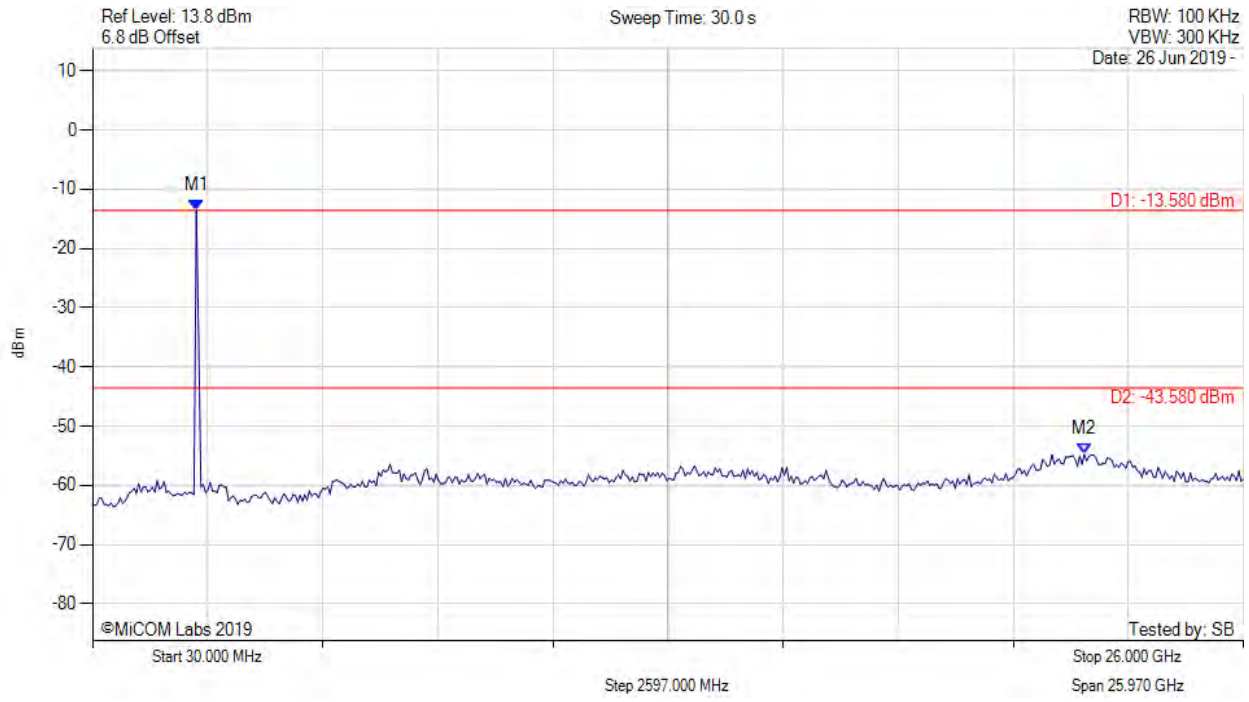
A.1. Emissions

A.1.1. Conducted Emissions

A.1.1.1. Conducted Spurious Emissions

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

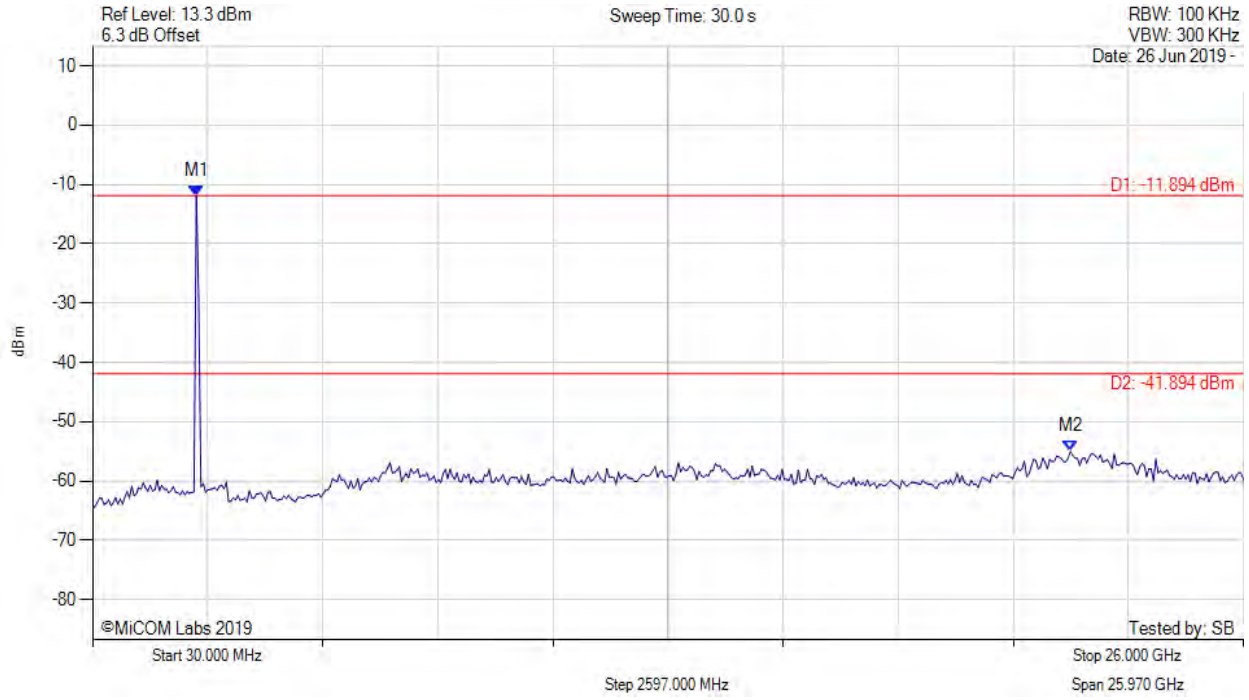


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -13.580 dBm M2 : 22.409 GHz : -54.762 dBm	Limit: -43.58 dBm Margin: -11.18 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

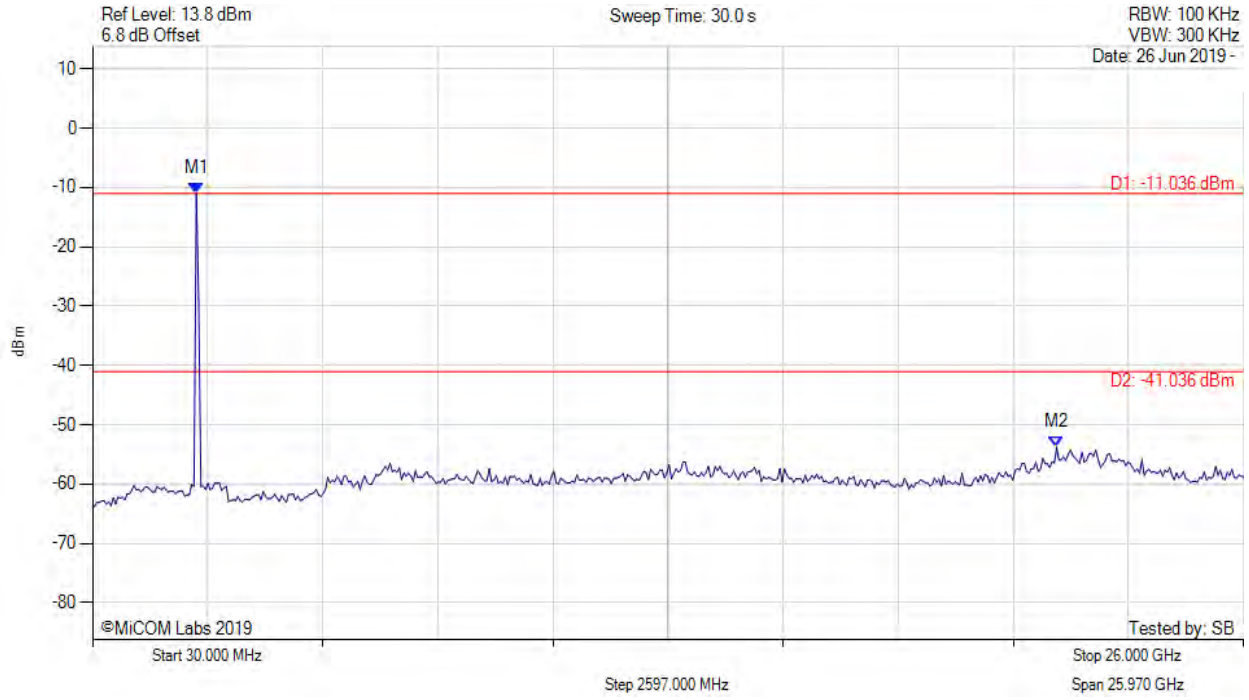


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -11.894 dBm M2 : 22.097 GHz : -55.030 dBm	Limit: -41.89 dBm Margin: -13.14 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

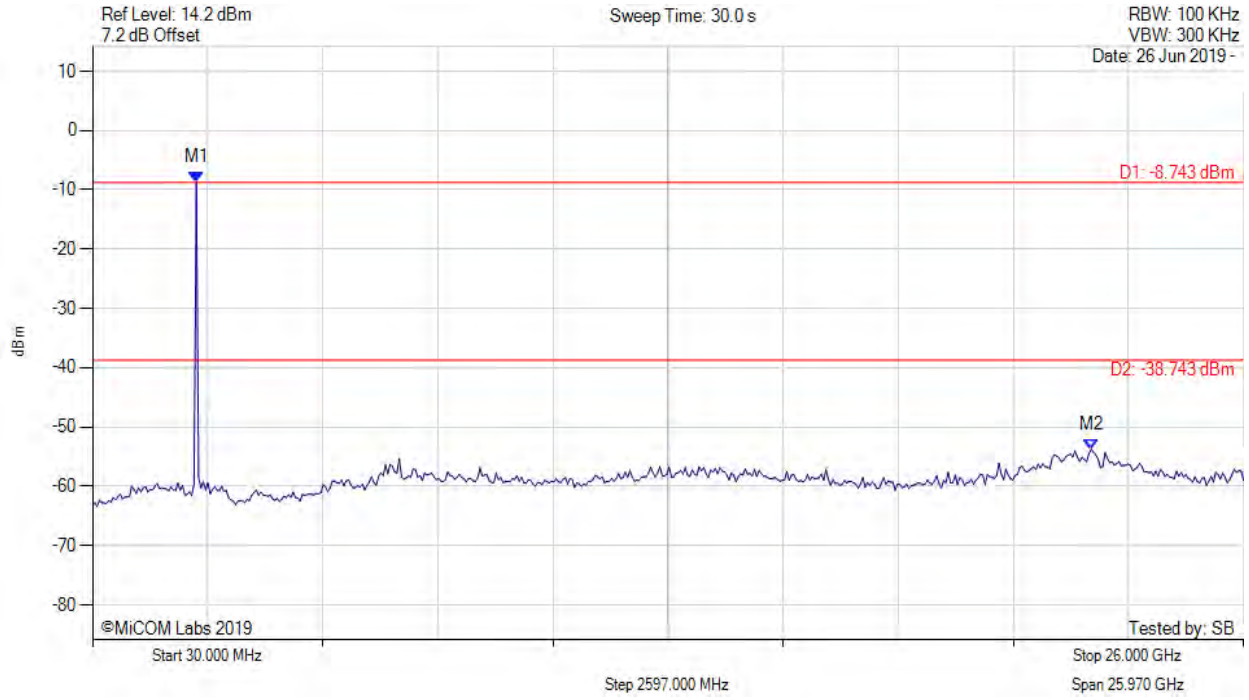


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -11.036 dBm M2 : 21.784 GHz : -53.792 dBm	Limit: -41.04 dBm Margin: -12.75 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

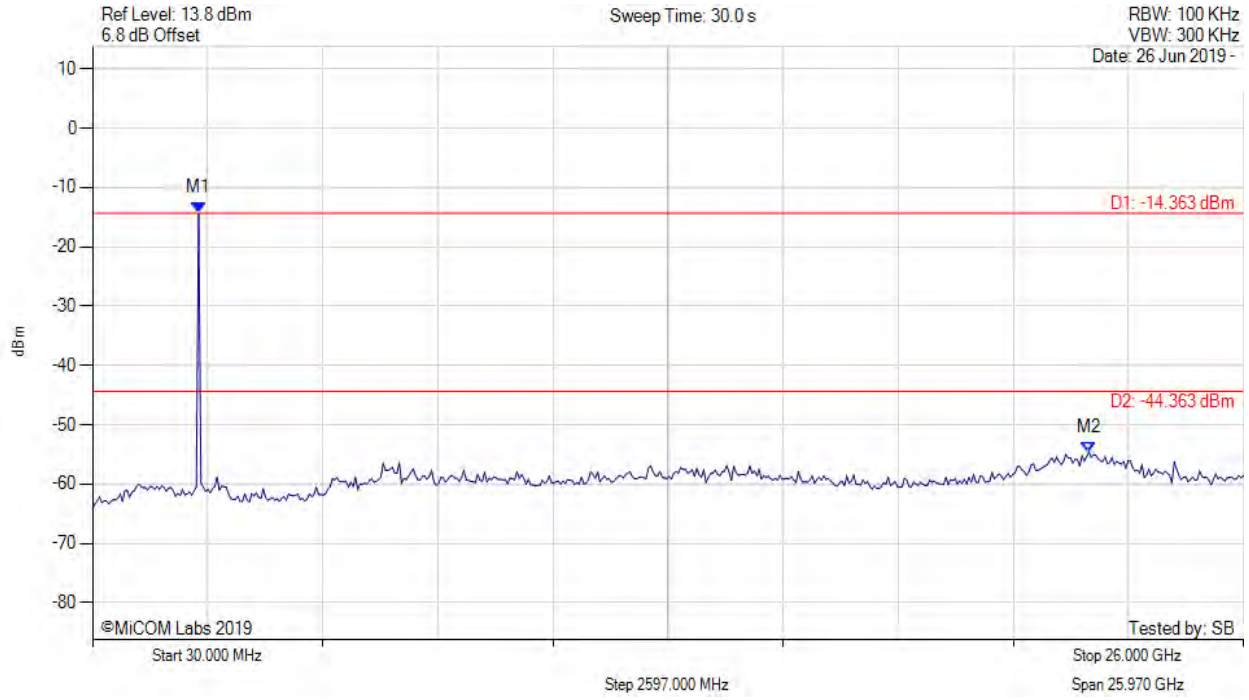


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -8.743 dBm M2 : 22.565 GHz : -53.747 dBm	Limit: -38.74 dBm Margin: -15.01 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

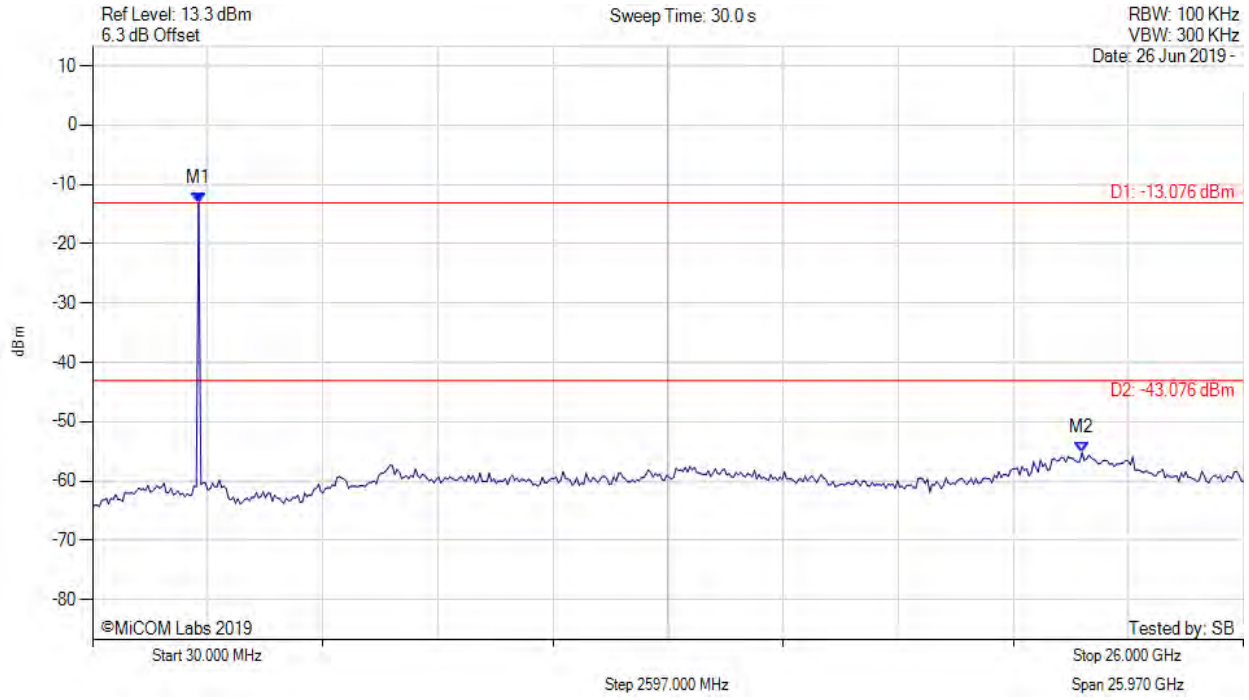


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -14.363 dBm M2 : 22.513 GHz : -54.611 dBm	Limit: -44.36 dBm Margin: -10.25 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

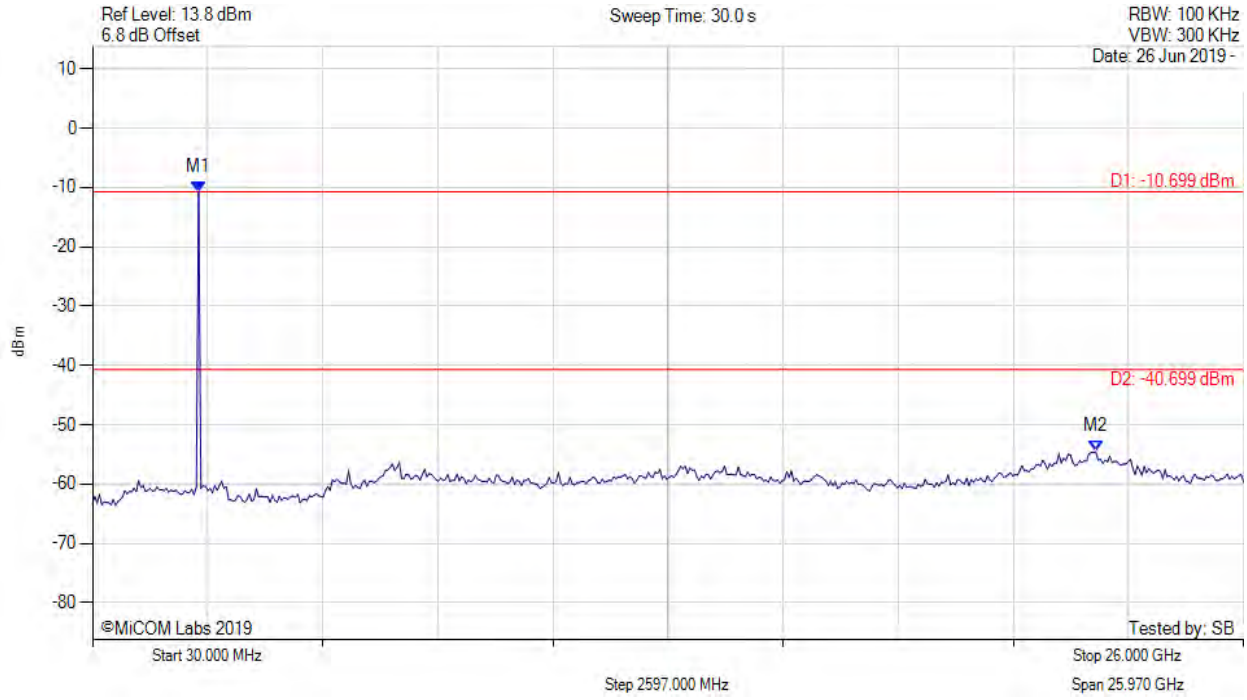


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -13.076 dBm M2 : 22.357 GHz : -55.192 dBm	Limit: -43.08 dBm Margin: -12.11 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

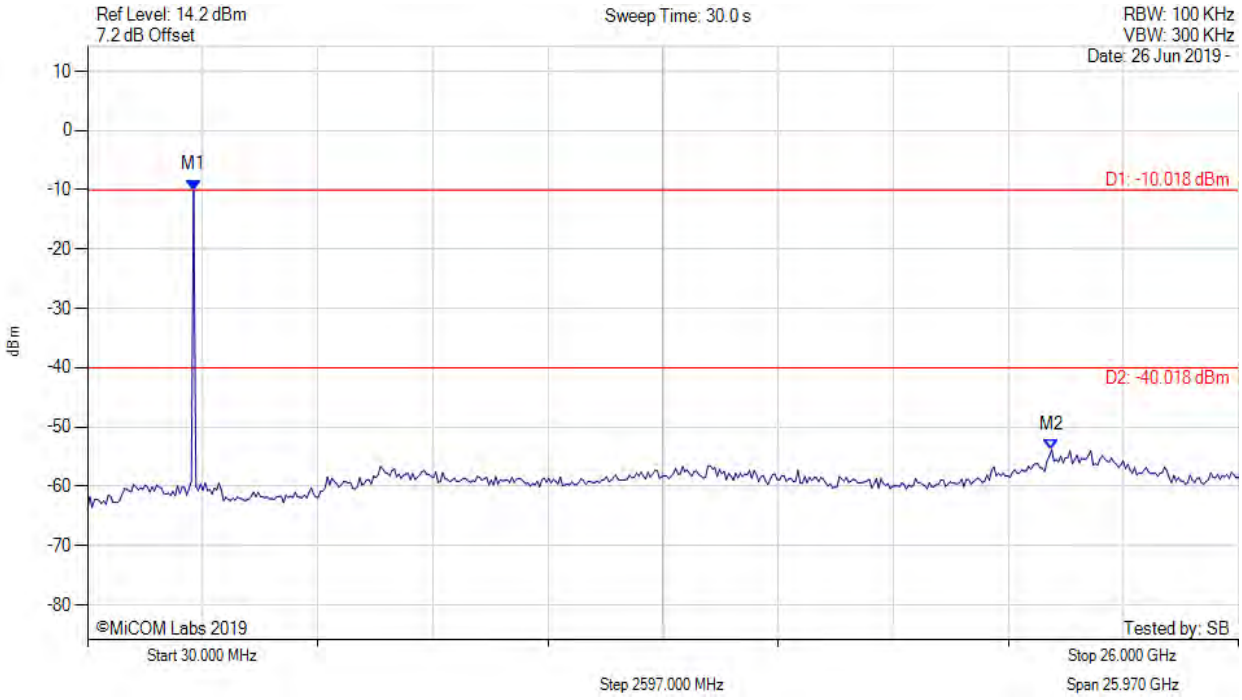


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -10.699 dBm M2 : 22.669 GHz : -54.534 dBm	Limit: -40.70 dBm Margin: -13.83 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

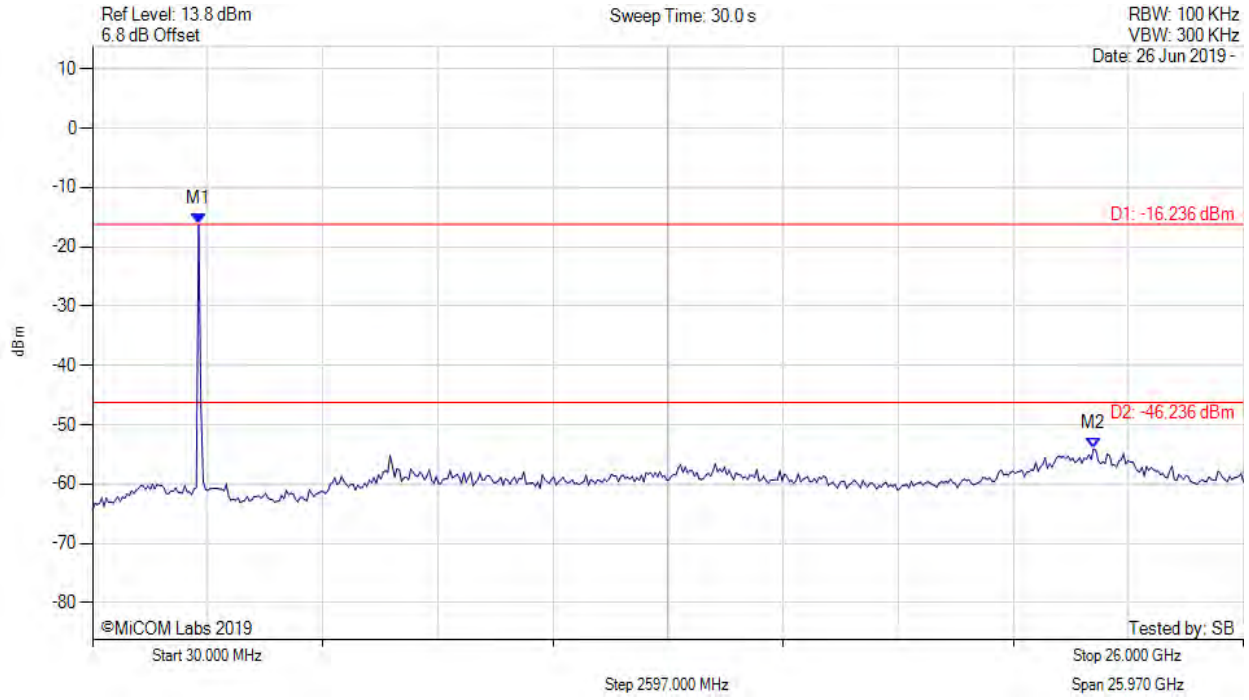


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -10.018 dBm M2 : 21.784 GHz : -53.766 dBm	Limit: -40.02 dBm Margin: -13.75 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

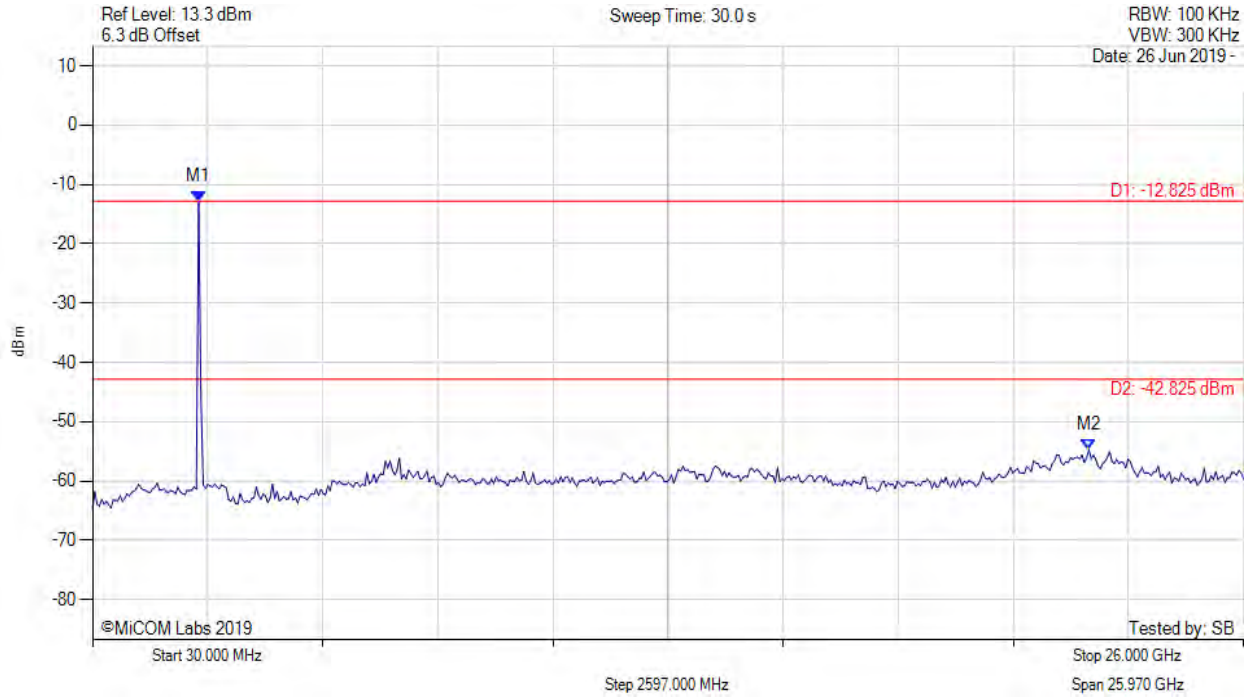


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -16.236 dBm M2 : 22.617 GHz : -54.088 dBm	Limit: -46.24 dBm Margin: -7.85 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

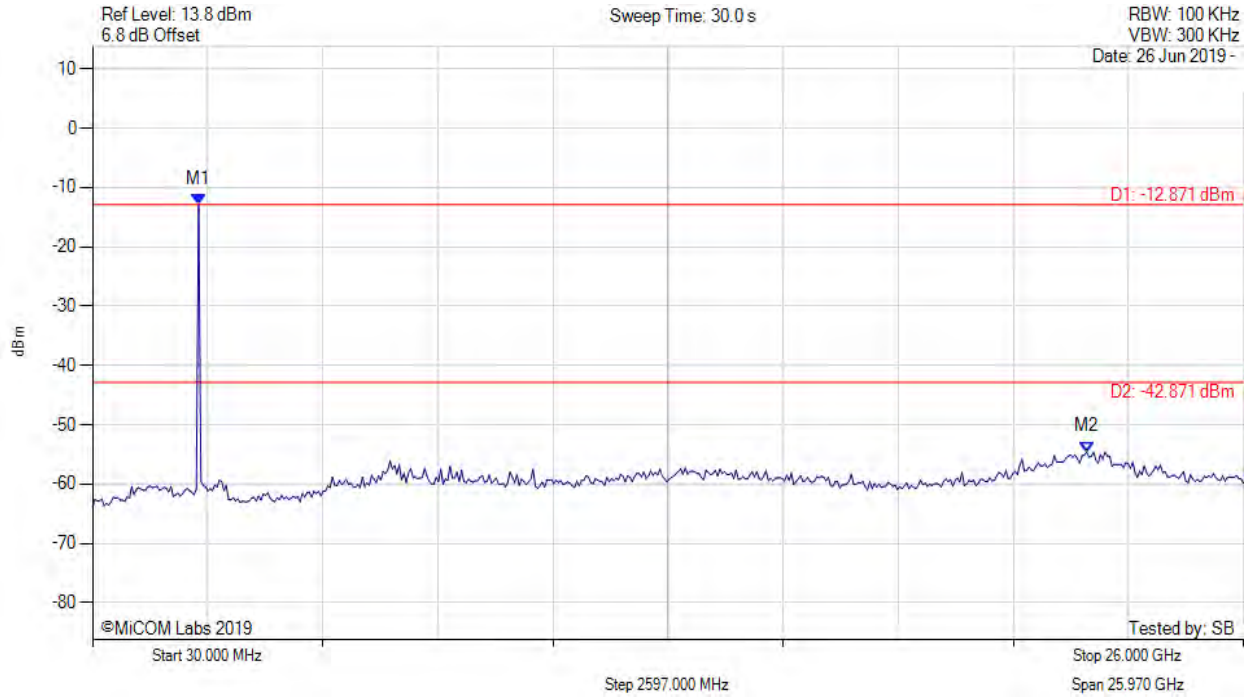


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -12.825 dBm M2 : 22.513 GHz : -54.741 dBm	Limit: -42.83 dBm Margin: -11.91 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

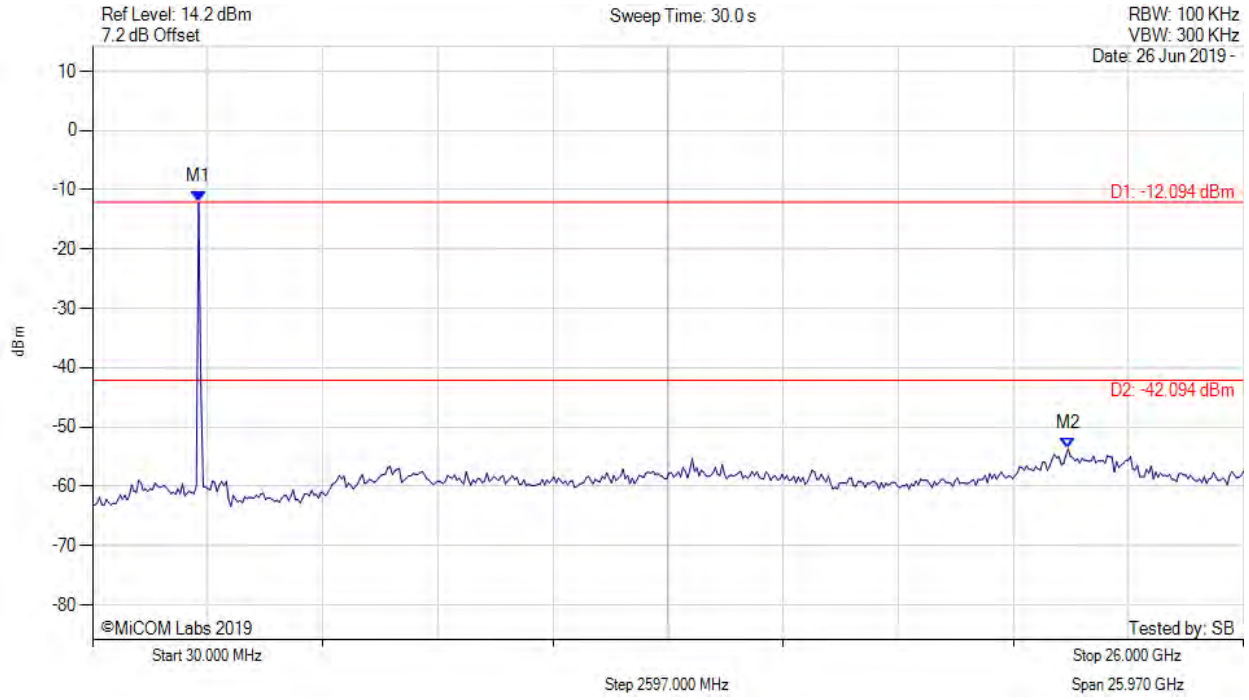


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -12.871 dBm M2 : 22.461 GHz : -54.601 dBm	Limit: -42.87 dBm Margin: -11.73 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

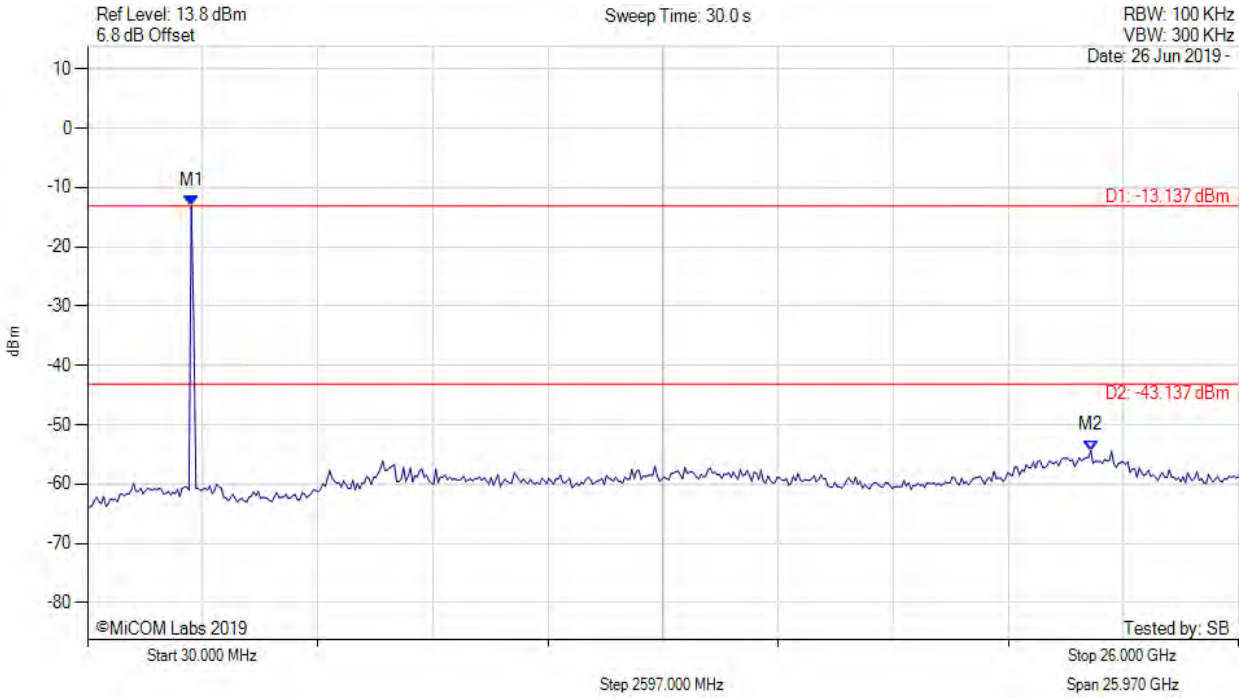


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -12.094 dBm M2 : 22.045 GHz : -53.634 dBm	Limit: -42.09 dBm Margin: -11.54 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

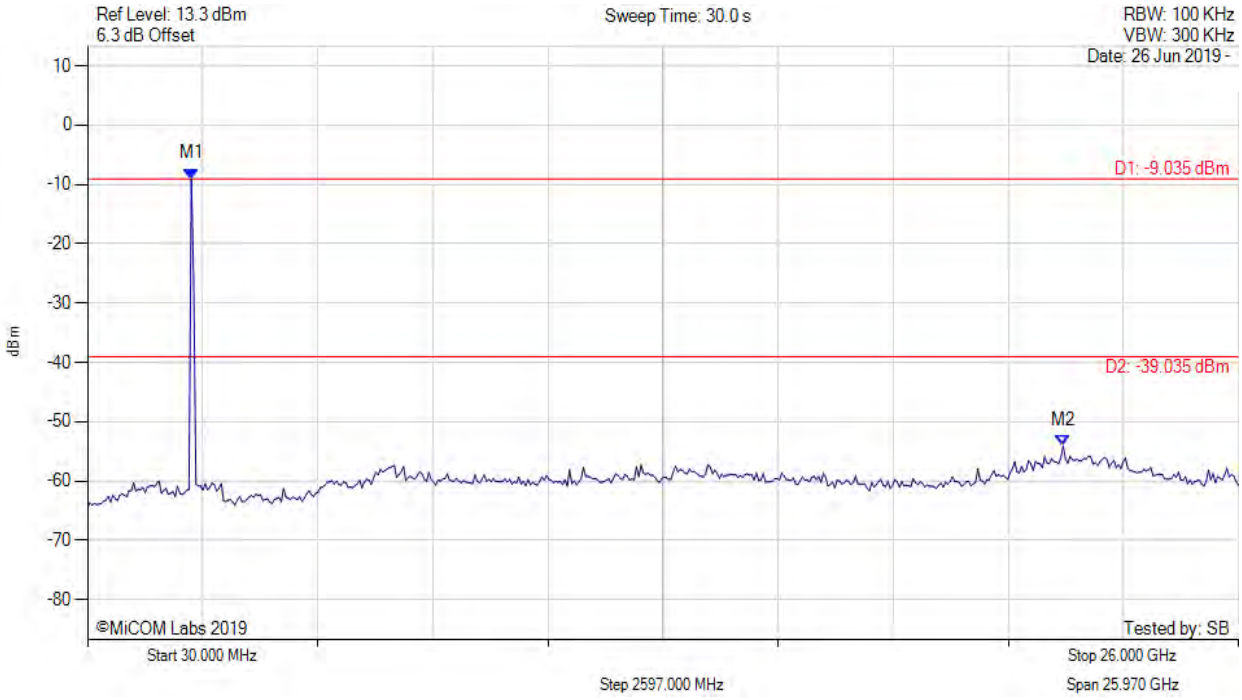


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -13.137 dBm M2 : 22.669 GHz : -54.359 dBm	Limit: -43.14 dBm Margin: -11.22 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

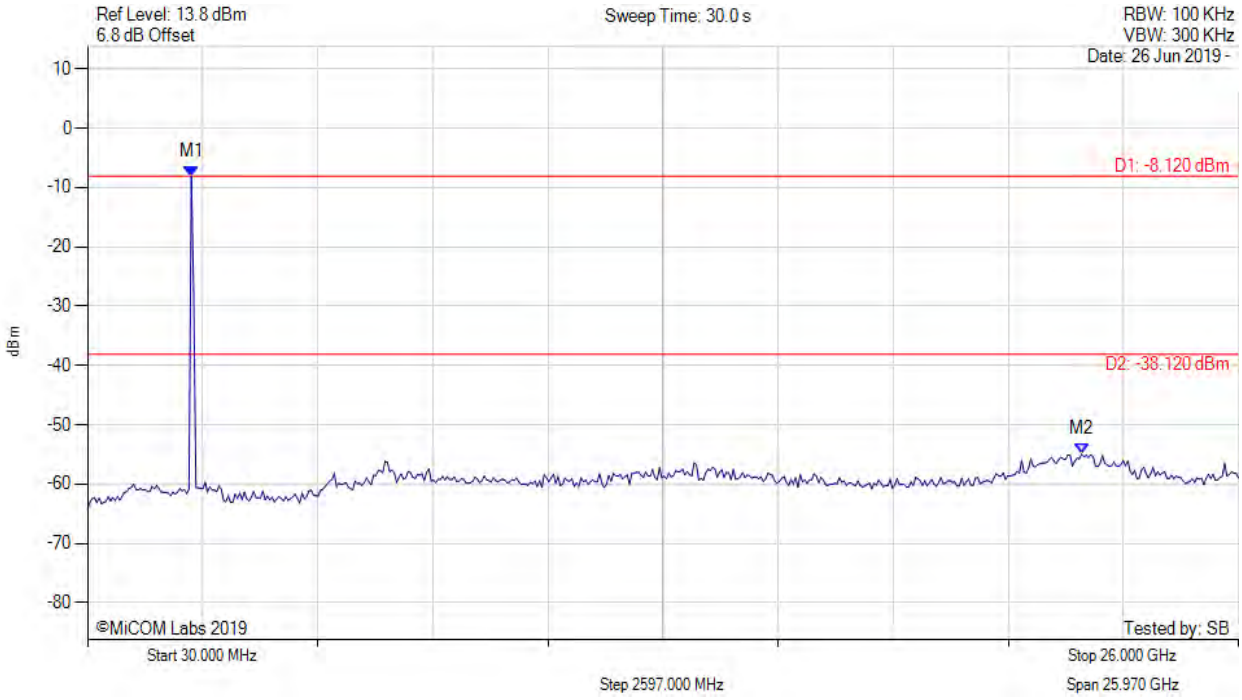


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -9.035 dBm M2 : 22.045 GHz : -54.082 dBm	Limit: -39.04 dBm Margin: -15.04 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

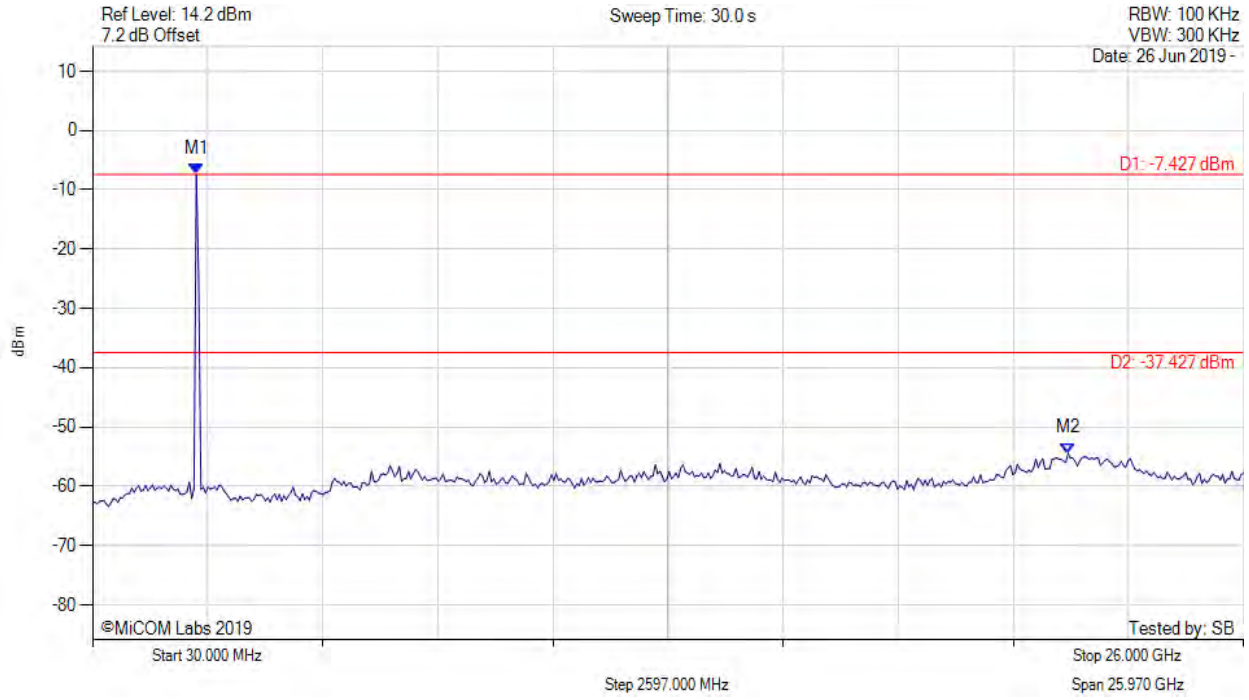


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -8.120 dBm M2 : 22.461 GHz : -54.971 dBm	Limit: -38.12 dBm Margin: -16.85 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

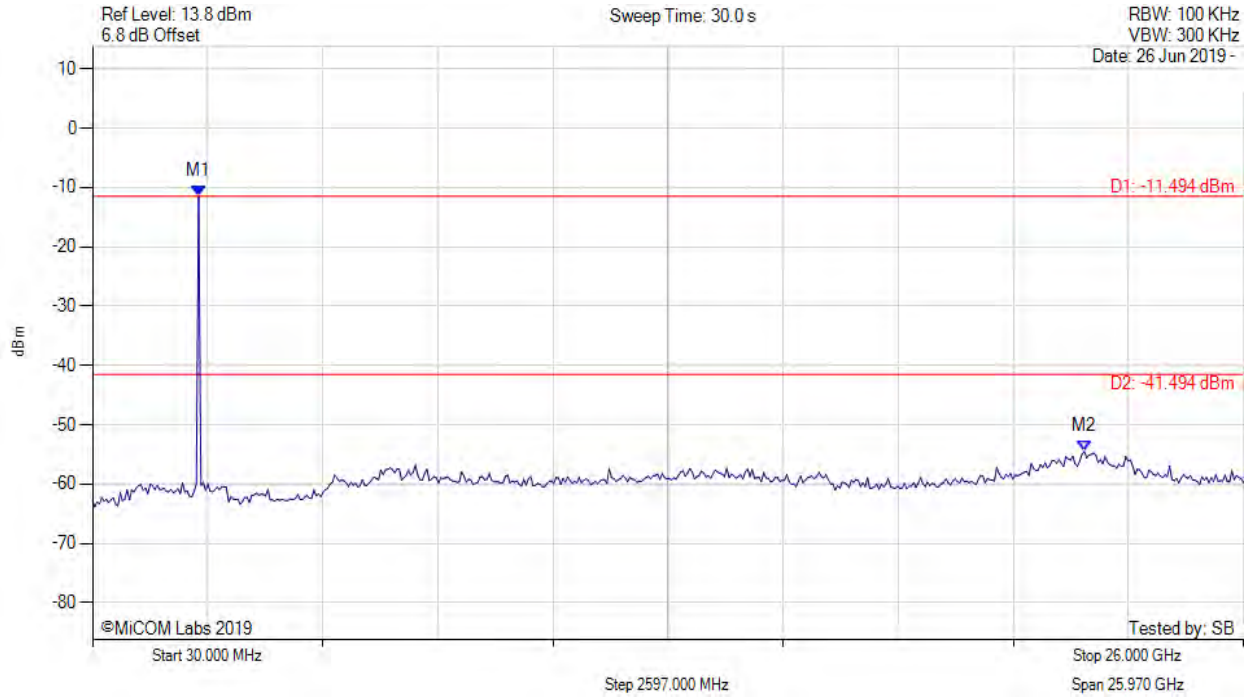


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -7.427 dBm M2 : 22.045 GHz : -54.410 dBm	Limit: -37.43 dBm Margin: -16.98 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

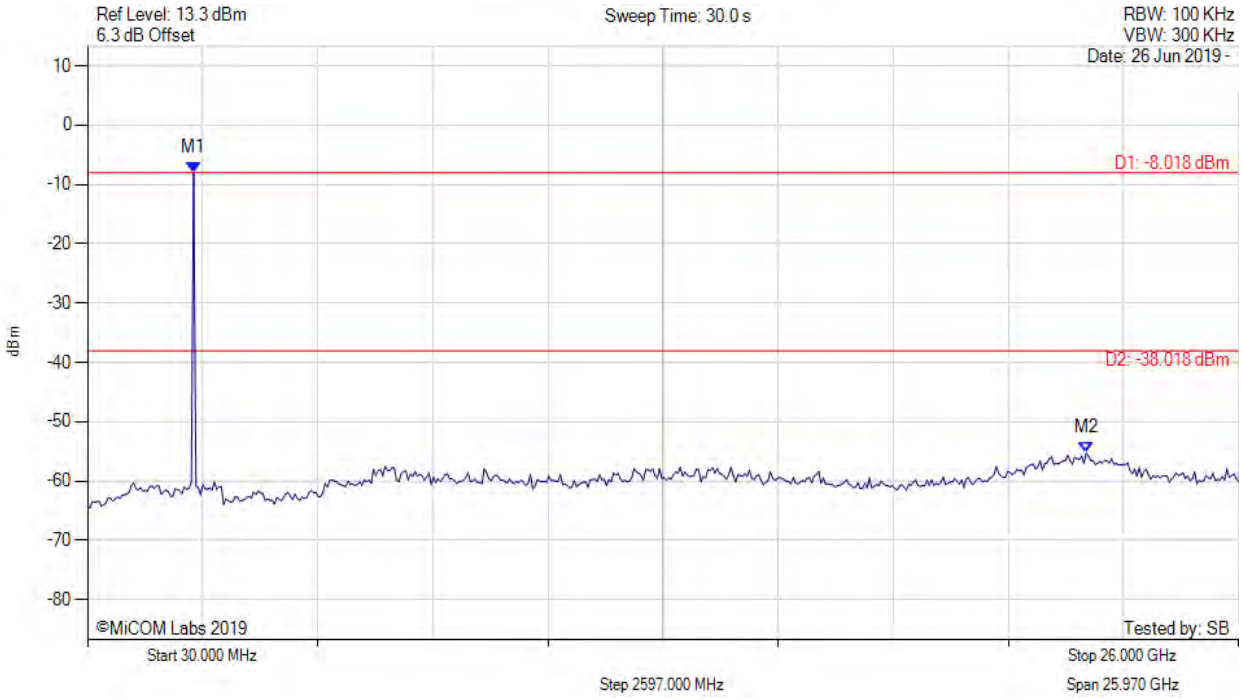


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -11.494 dBm M2 : 22.409 GHz : -54.501 dBm	Limit: -41.49 dBm Margin: -13.01 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

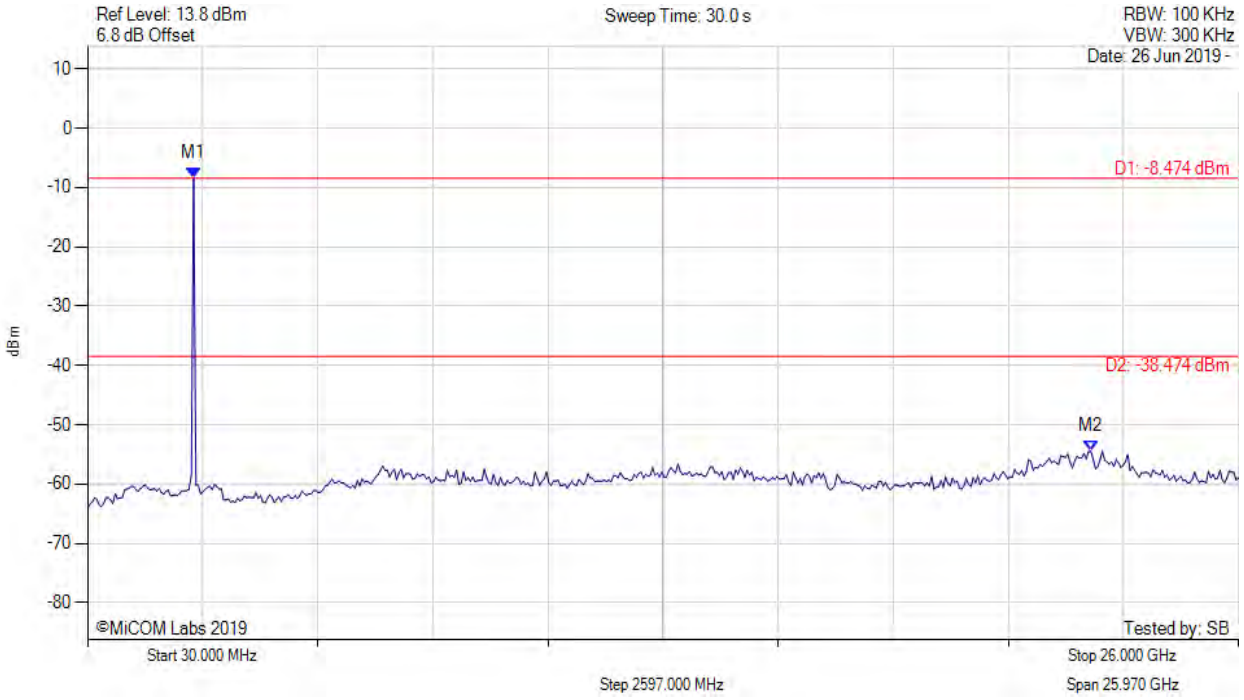


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.018 dBm M2 : 22.565 GHz : -55.304 dBm	Limit: -38.02 dBm Margin: -17.28 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

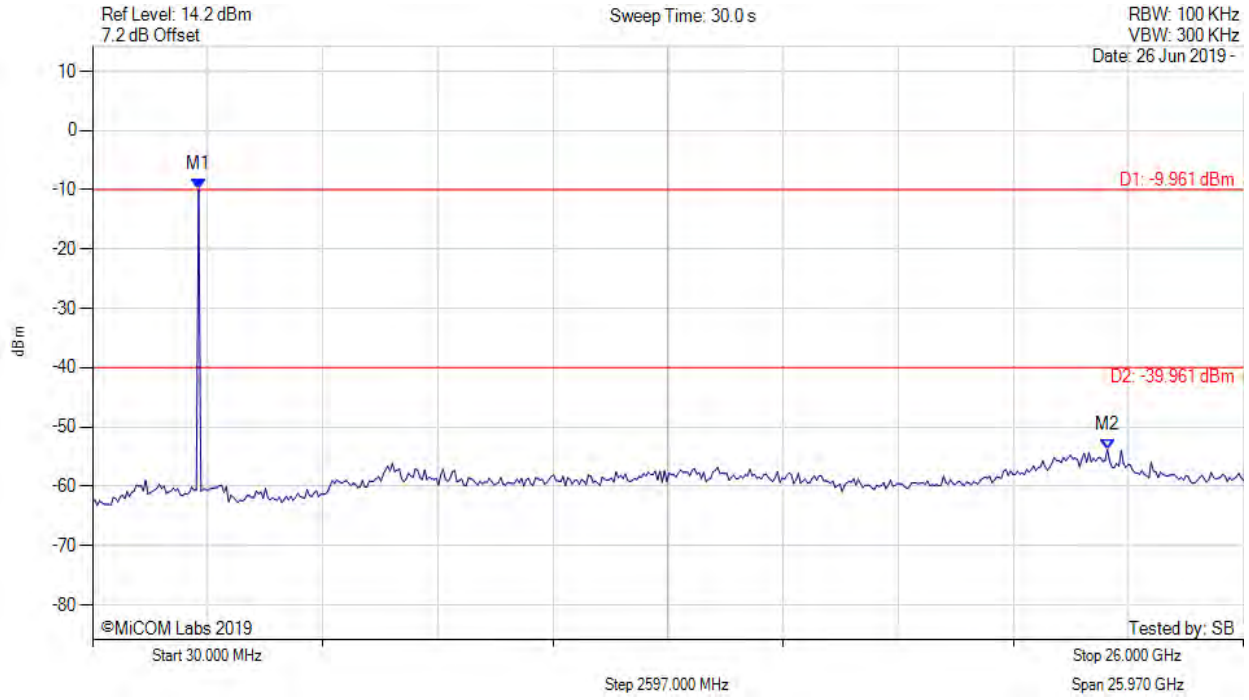


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.474 dBm M2 : 22.669 GHz : -54.457 dBm	Limit: -38.47 dBm Margin: -15.99 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

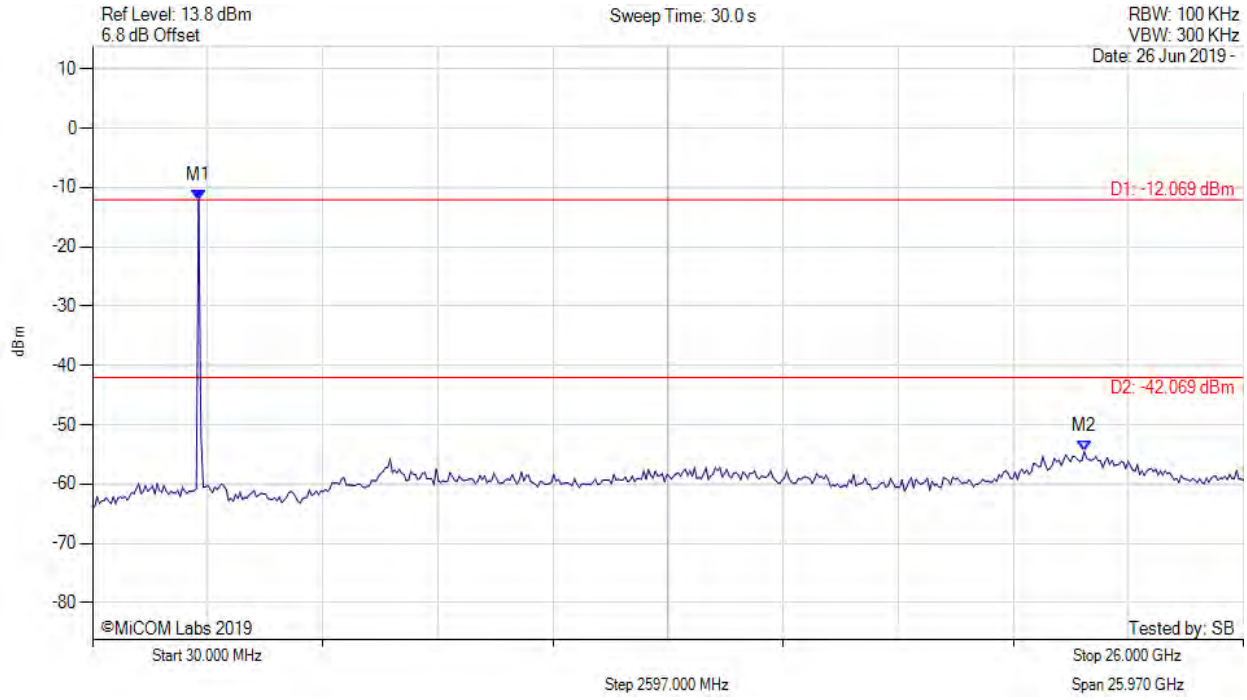


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -9.961 dBm M2 : 22.929 GHz : -53.749 dBm	Limit: -39.96 dBm Margin: -13.79 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

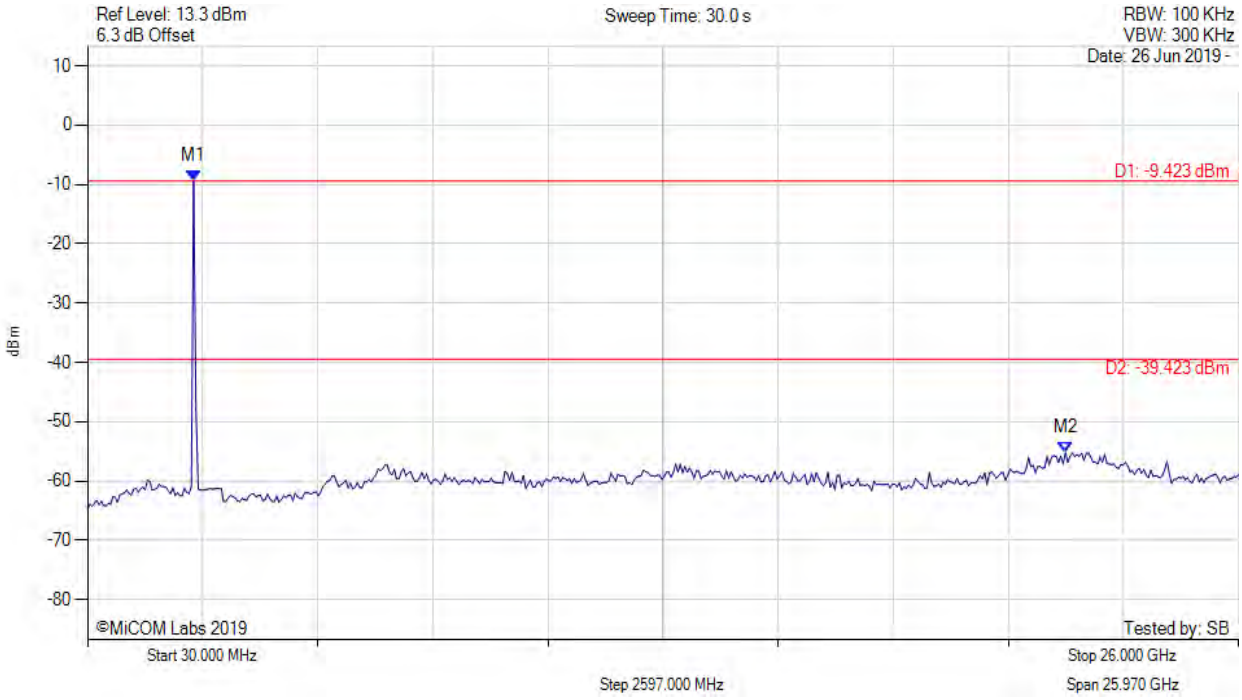


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -12.069 dBm M2 : 22.409 GHz : -54.511 dBm	Limit: -42.07 dBm Margin: -12.44 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

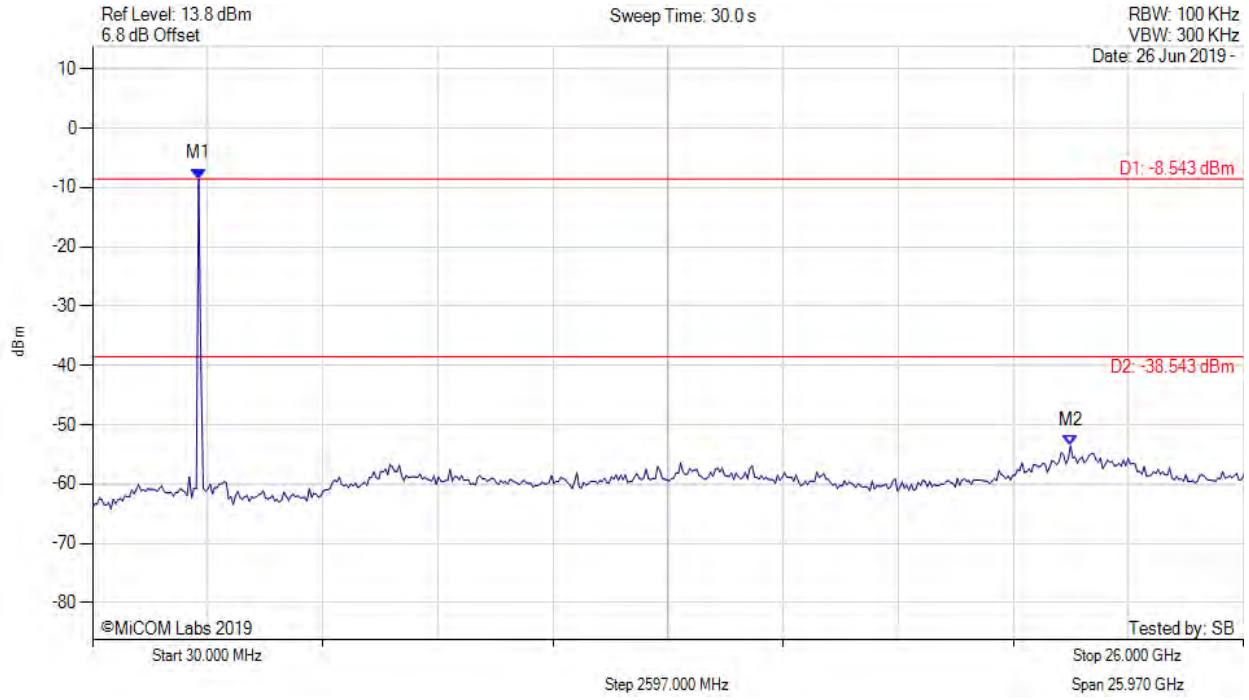


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -9.423 dBm M2 : 22.097 GHz : -55.219 dBm	Limit: -39.42 dBm Margin: -15.80 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

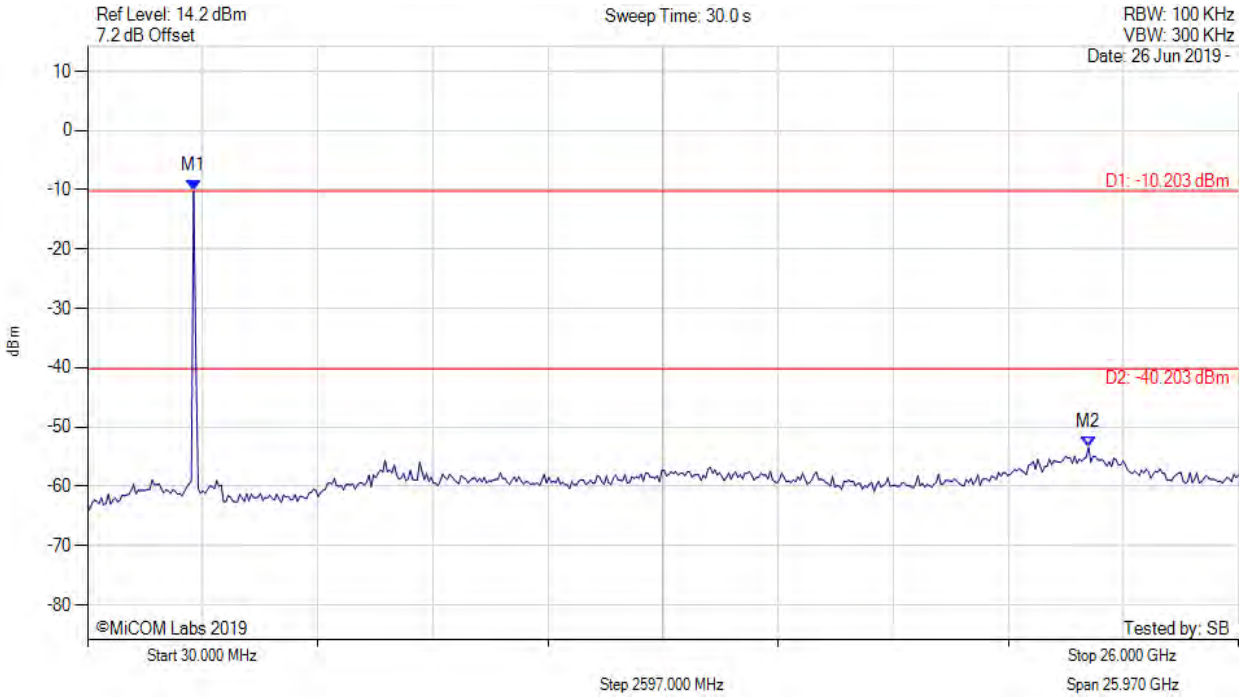


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.543 dBm M2 : 22.097 GHz : -53.564 dBm	Limit: -38.54 dBm Margin: -15.02 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

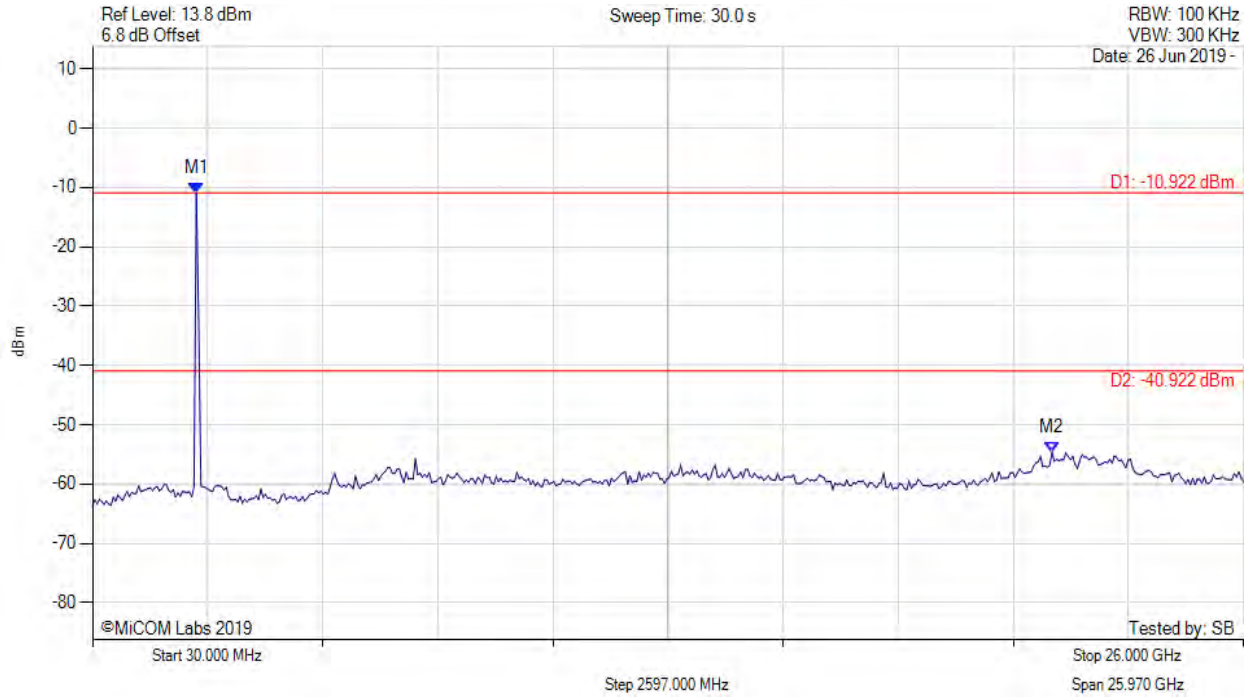


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -10.203 dBm M2 : 22.617 GHz : -53.416 dBm	Limit: -40.20 dBm Margin: -13.22 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

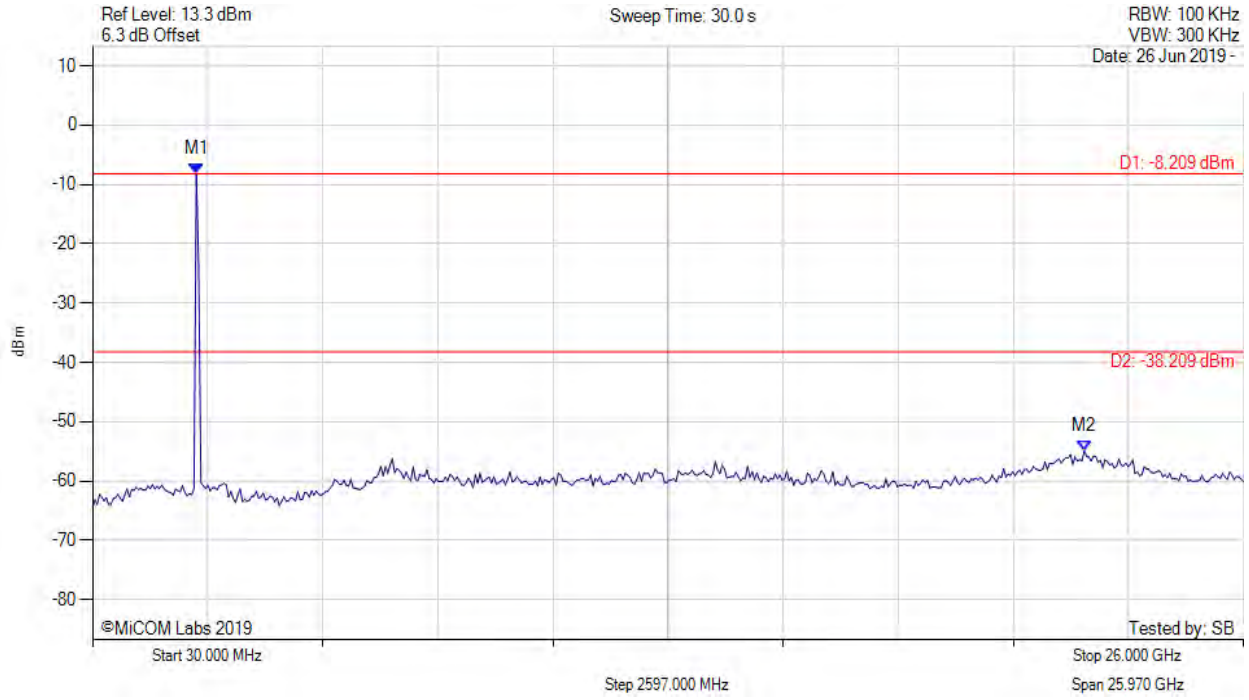


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -10.922 dBm M2 : 21.680 GHz : -54.680 dBm	Limit: -40.92 dBm Margin: -13.76 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

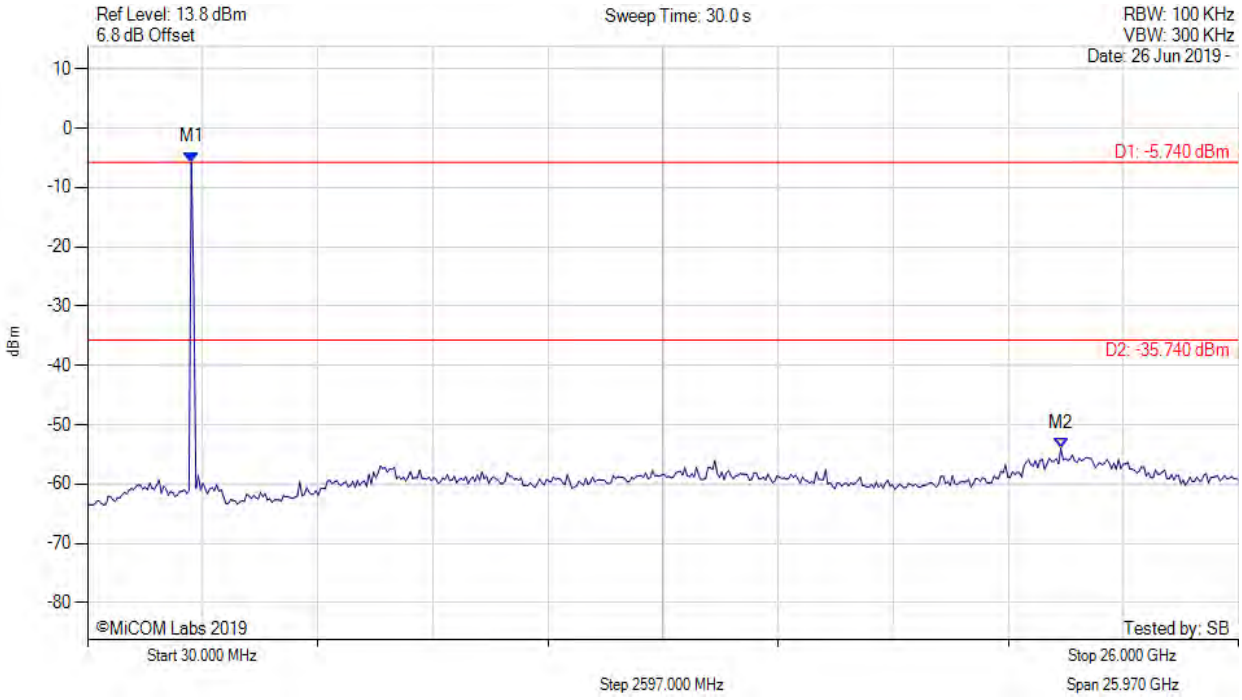


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -8.209 dBm M2 : 22.409 GHz : -54.910 dBm	Limit: -38.21 dBm Margin: -16.70 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

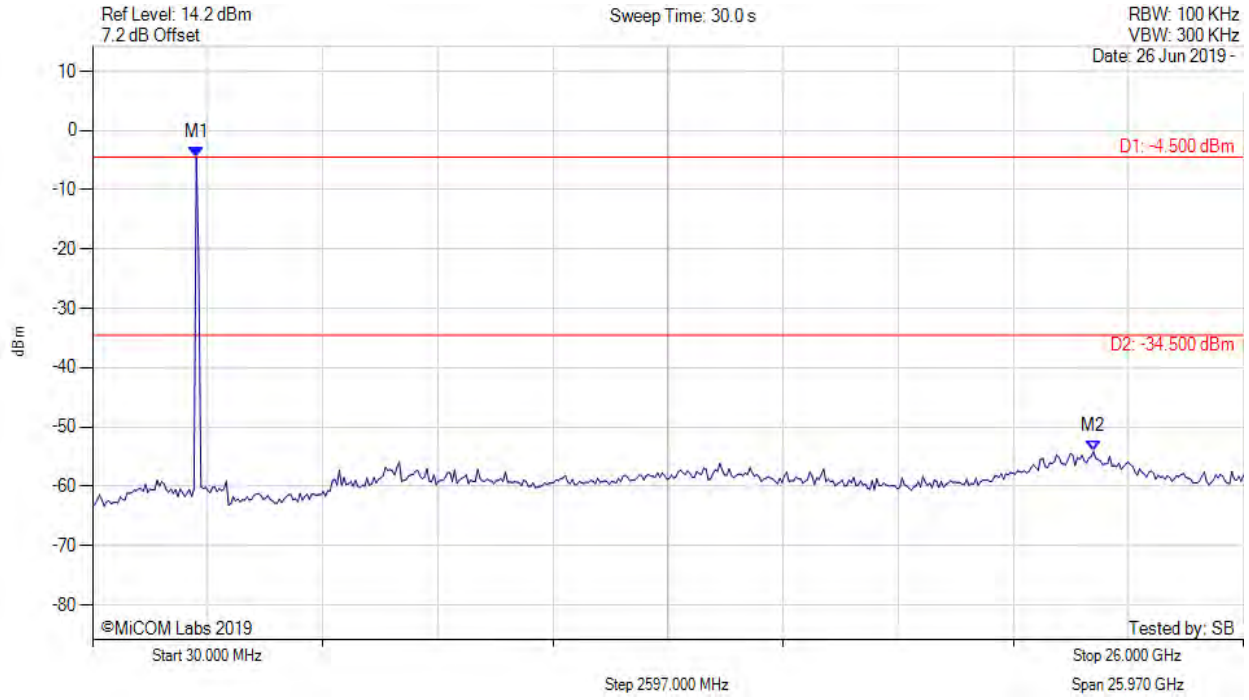


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -5.740 dBm M2 : 21.993 GHz : -53.912 dBm	Limit: -35.74 dBm Margin: -18.17 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

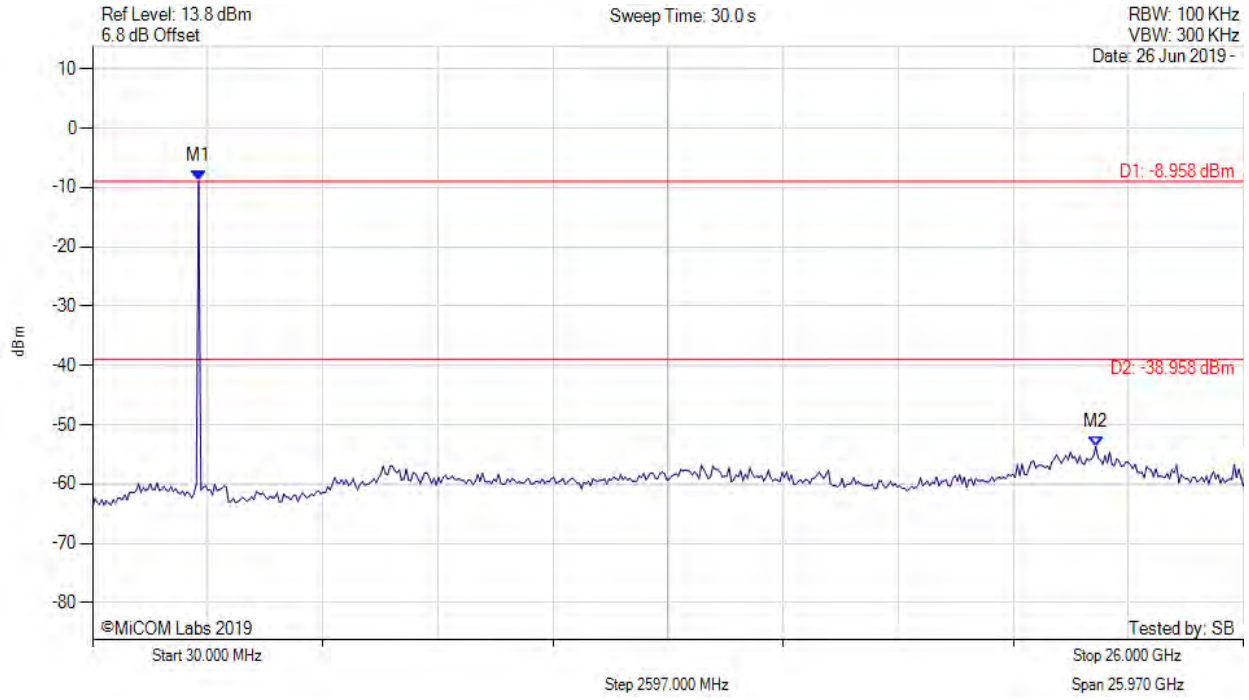


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -4.500 dBm M2 : 22.617 GHz : -54.107 dBm	Limit: -34.50 dBm Margin: -19.61 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

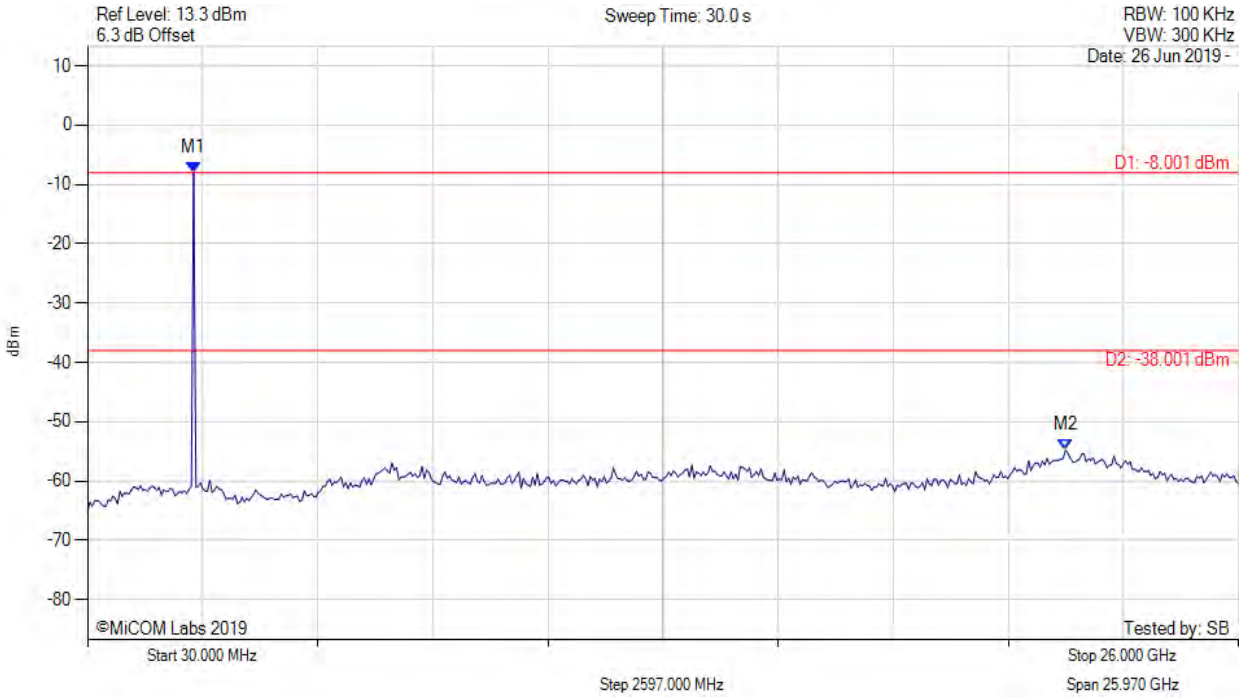


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.958 dBm M2 : 22.669 GHz : -53.737 dBm	Limit: -38.96 dBm Margin: -14.78 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

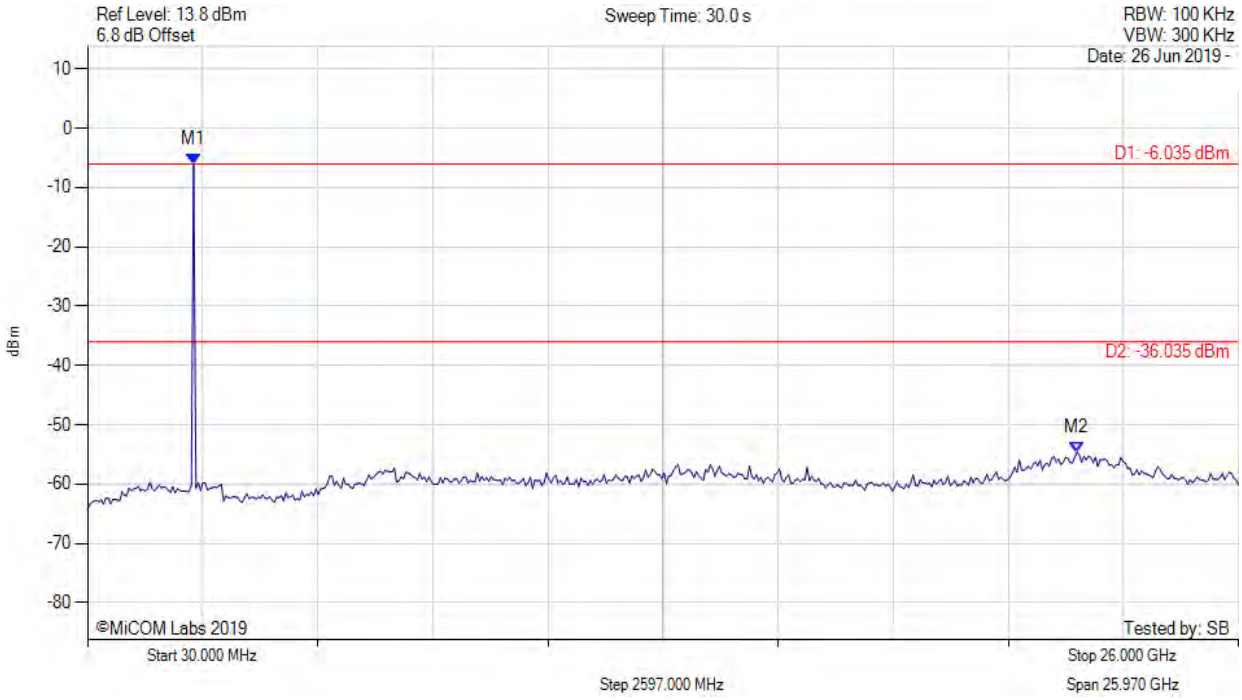


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.001 dBm M2 : 22.097 GHz : -54.804 dBm	Limit: -38.00 dBm Margin: -16.80 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

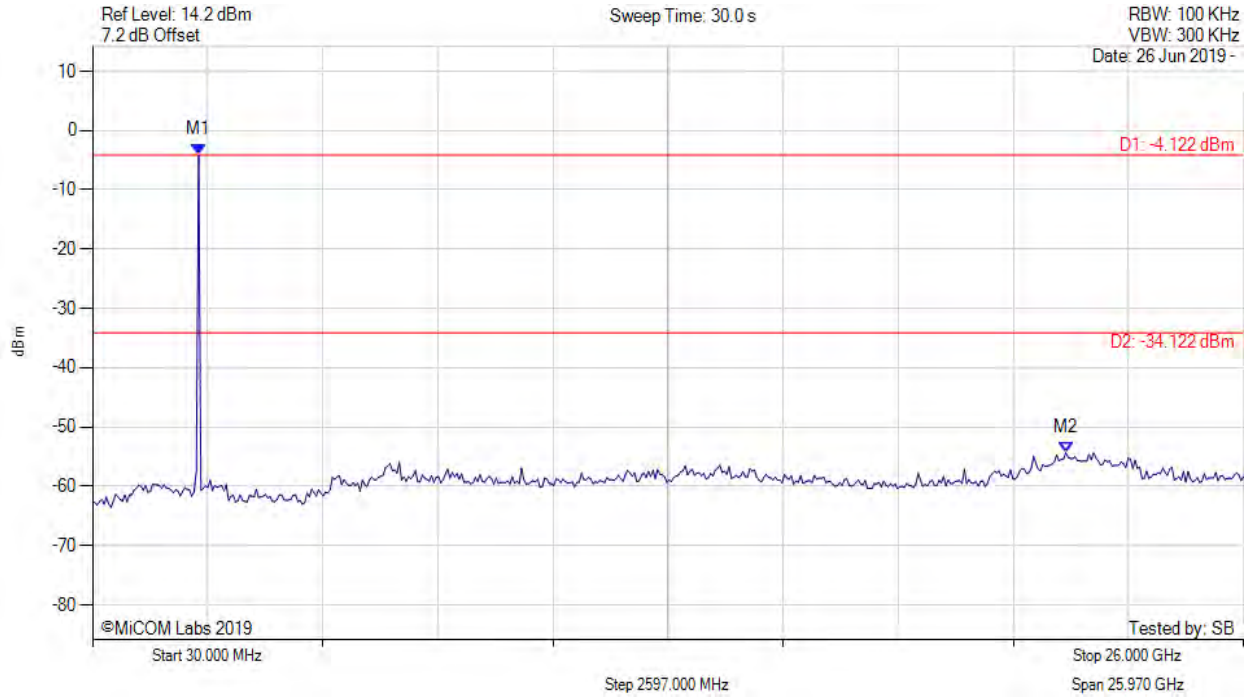


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -6.035 dBm M2 : 22.357 GHz : -54.623 dBm	Limit: -36.04 dBm Margin: -18.58 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2437.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

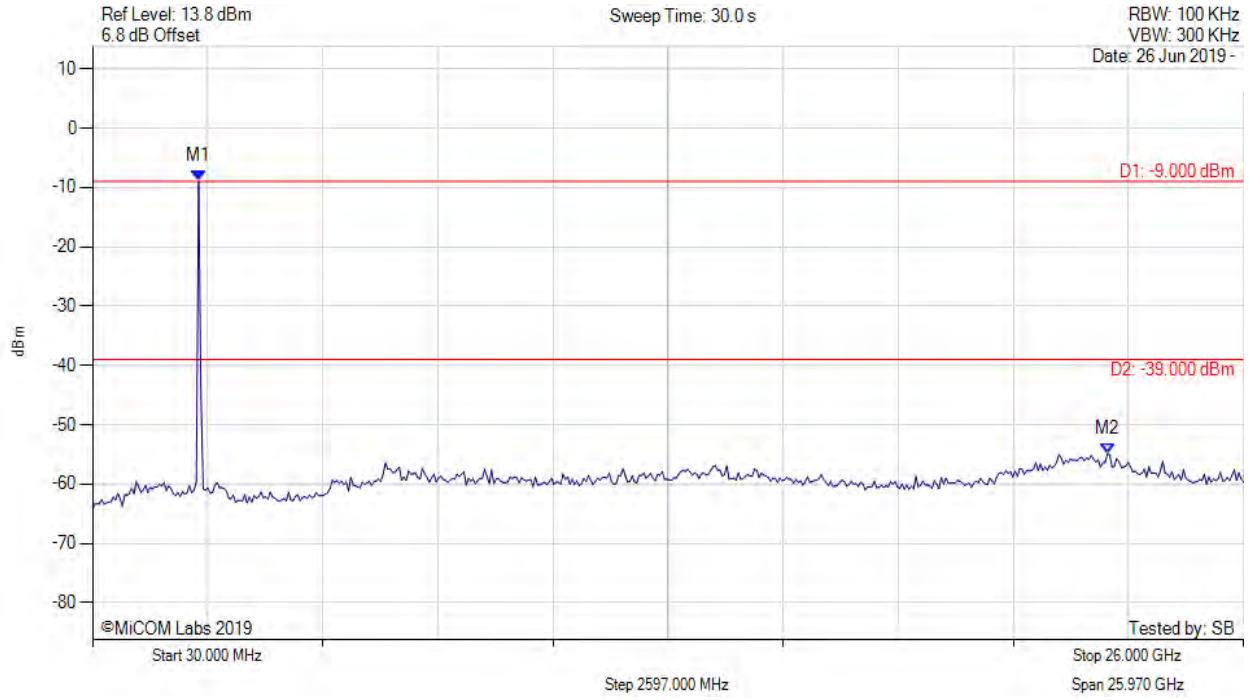


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -4.122 dBm M2 : 21.993 GHz : -54.327 dBm	Limit: -34.12 dBm Margin: -20.21 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

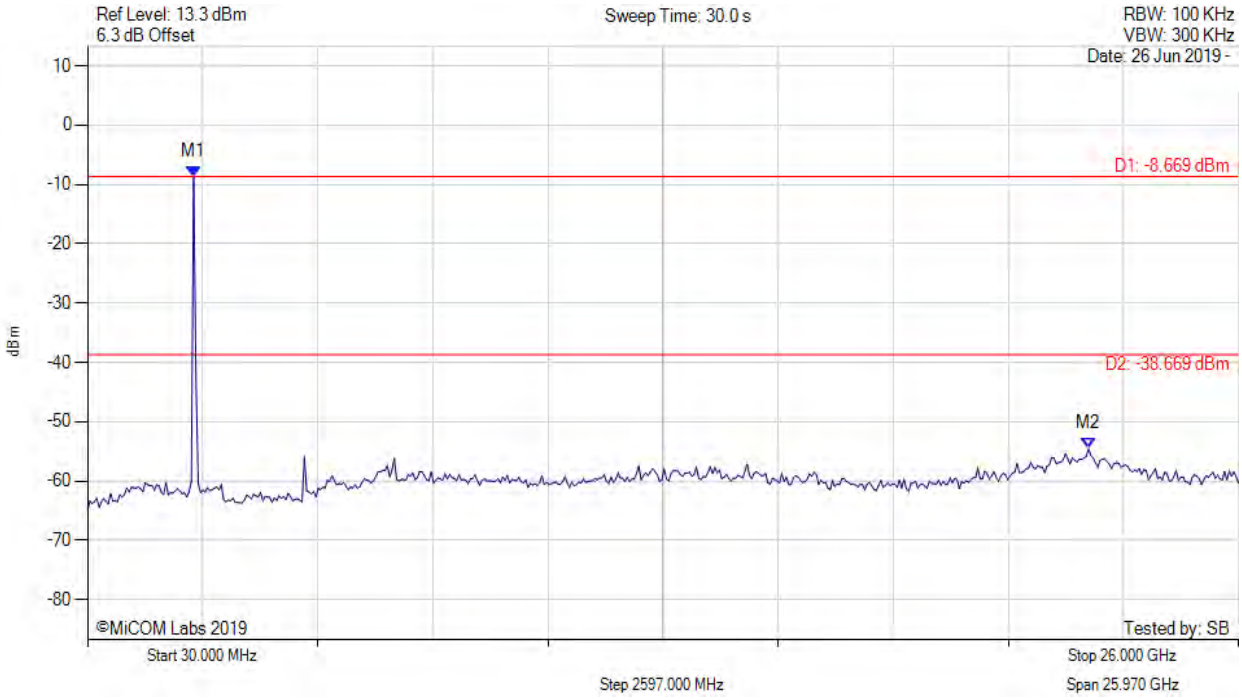


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -9.000 dBm M2 : 22.929 GHz : -54.930 dBm	Limit: -39.00 dBm Margin: -15.93 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

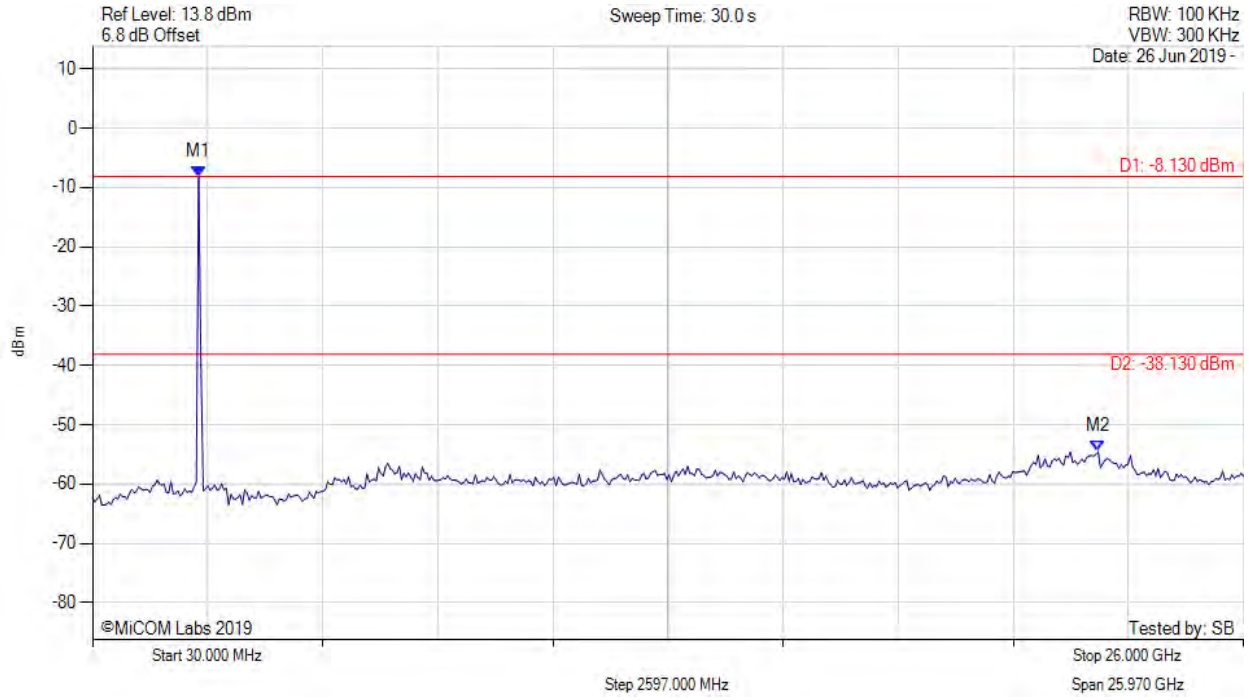


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.669 dBm M2 : 22.617 GHz : -54.560 dBm	Limit: -38.67 dBm Margin: -15.89 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

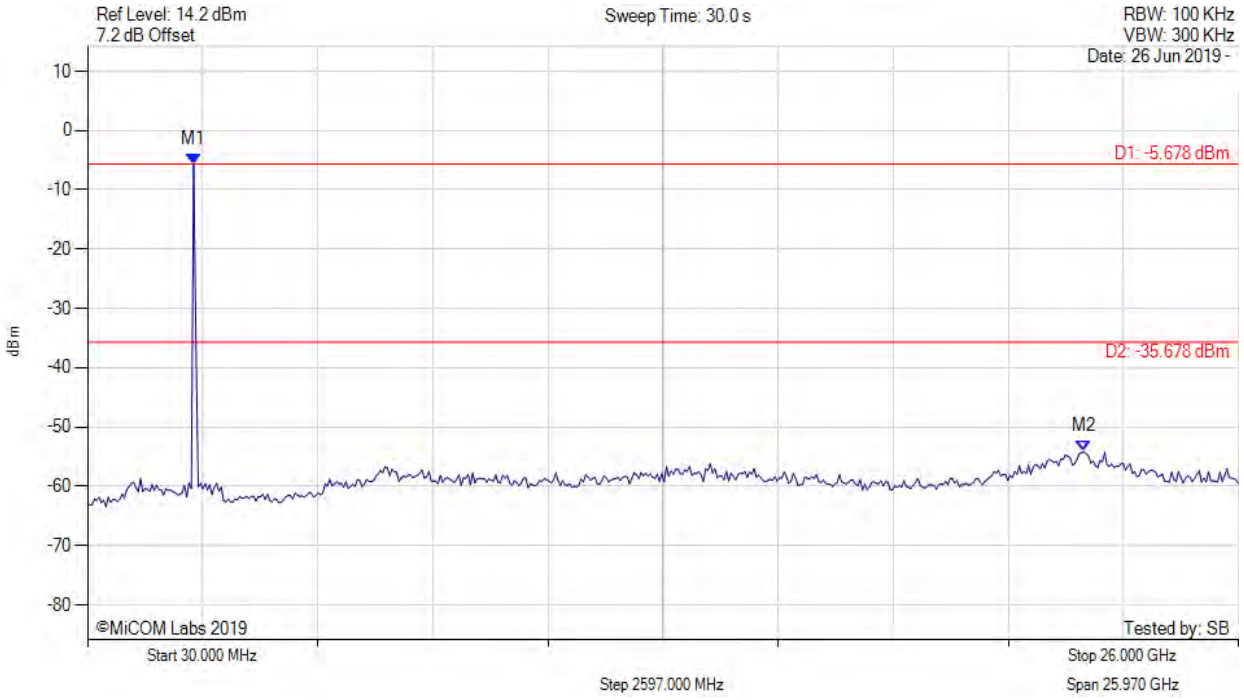


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -8.130 dBm M2 : 22.721 GHz : -54.526 dBm	Limit: -38.13 dBm Margin: -16.40 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

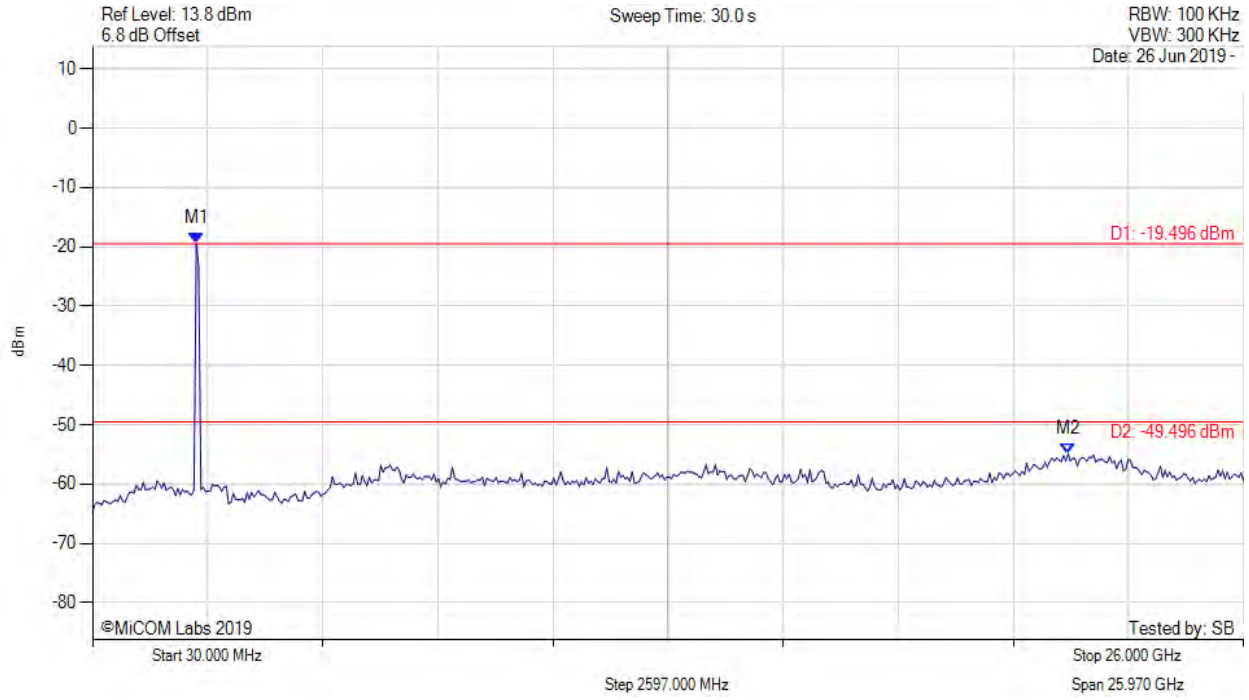


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -5.678 dBm M2 : 22.513 GHz : -54.168 dBm	Limit: -35.68 dBm Margin: -18.49 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

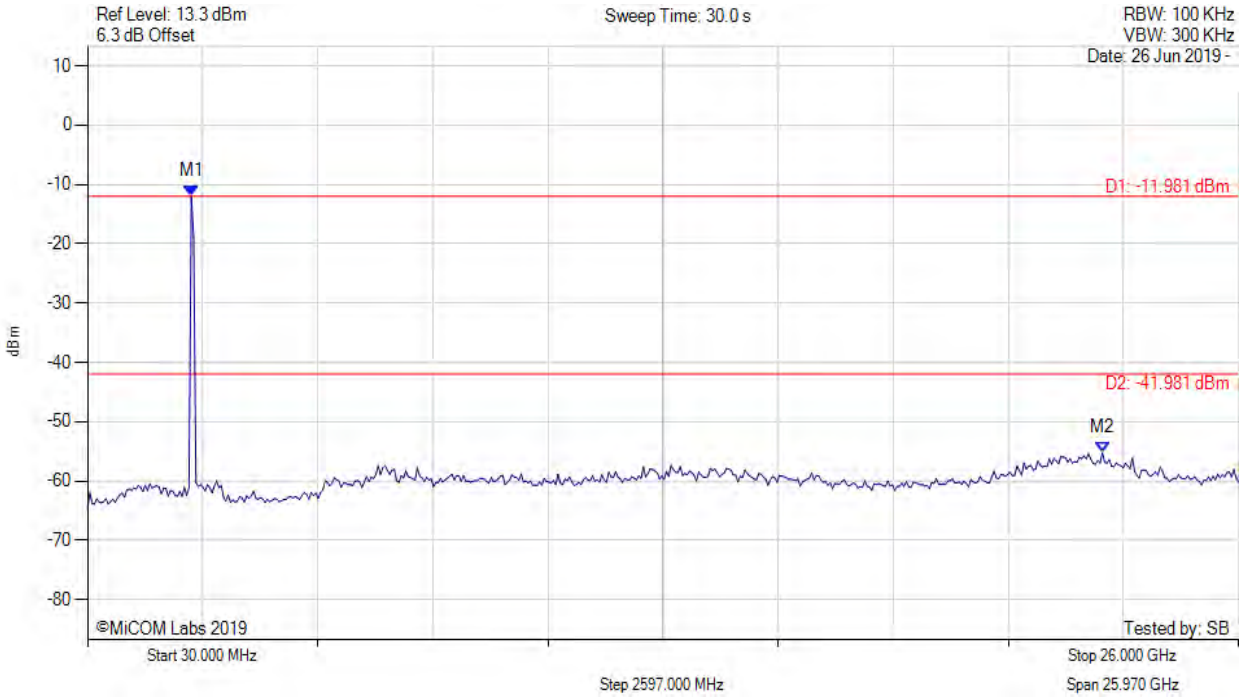


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -19.496 dBm M2 : 22.045 GHz : -54.941 dBm	Limit: -49.50 dBm Margin: -5.44 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

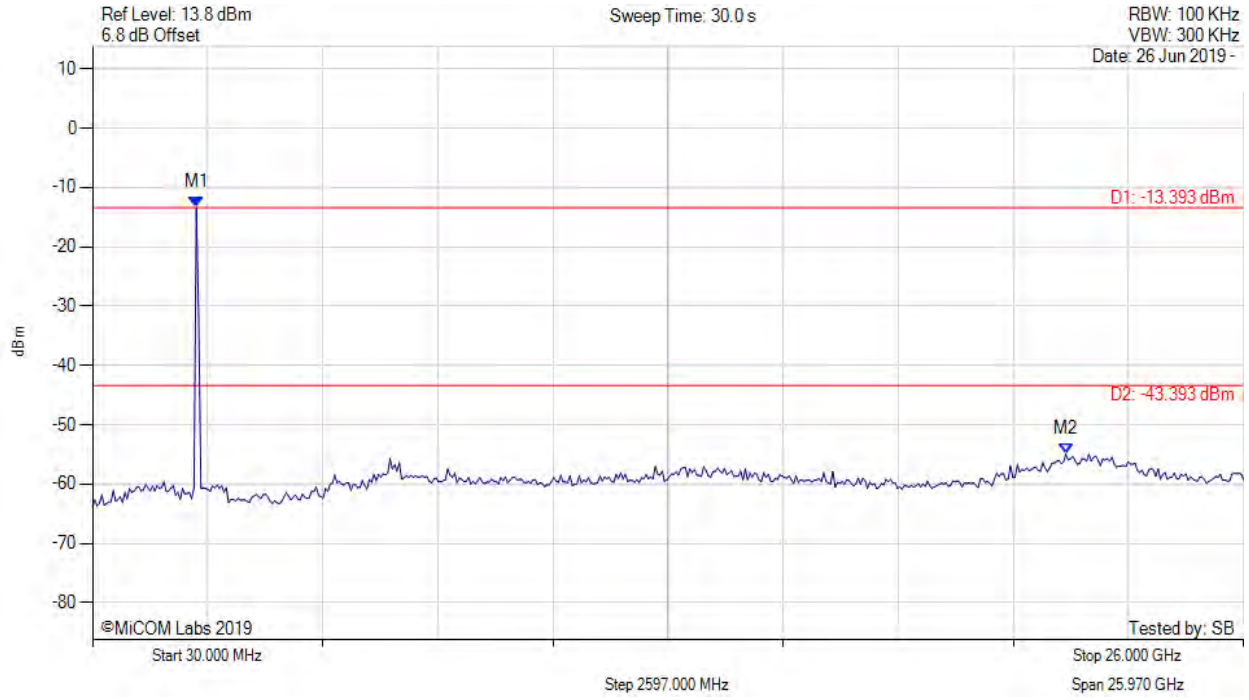


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -11.981 dBm M2 : 22.929 GHz : -55.209 dBm	Limit: -41.98 dBm Margin: -13.23 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

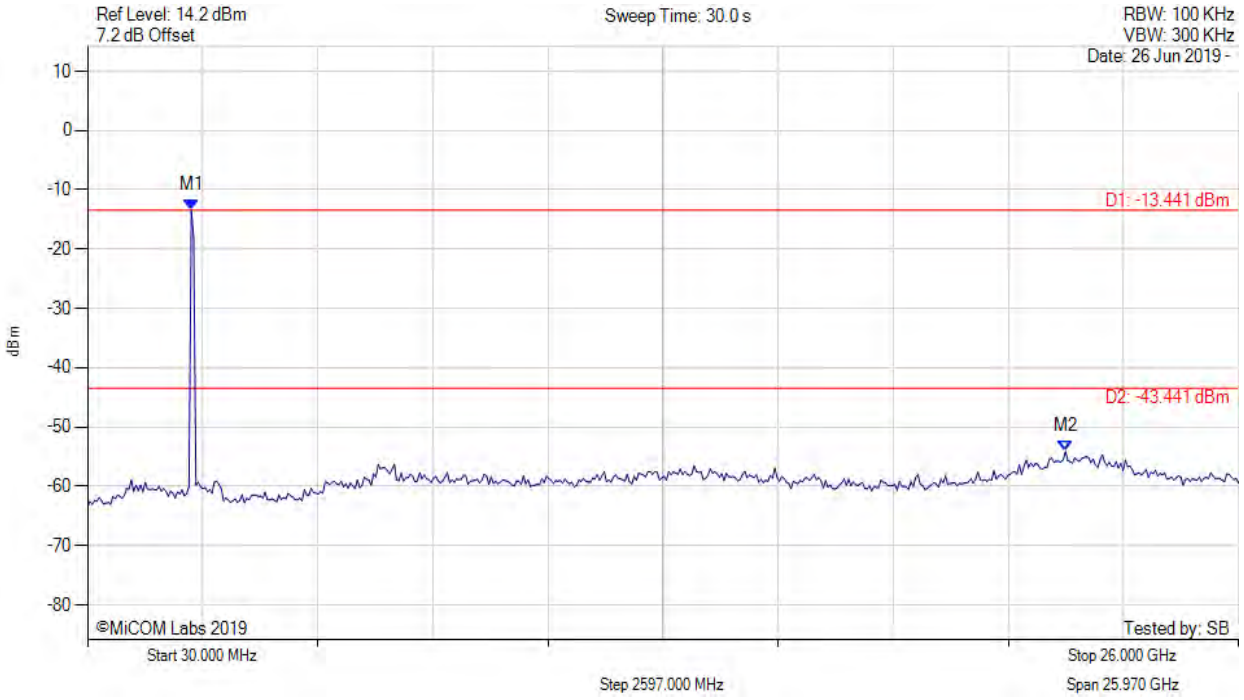


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -13.393 dBm M2 : 21.993 GHz : -54.932 dBm	Limit: -43.39 dBm Margin: -11.54 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

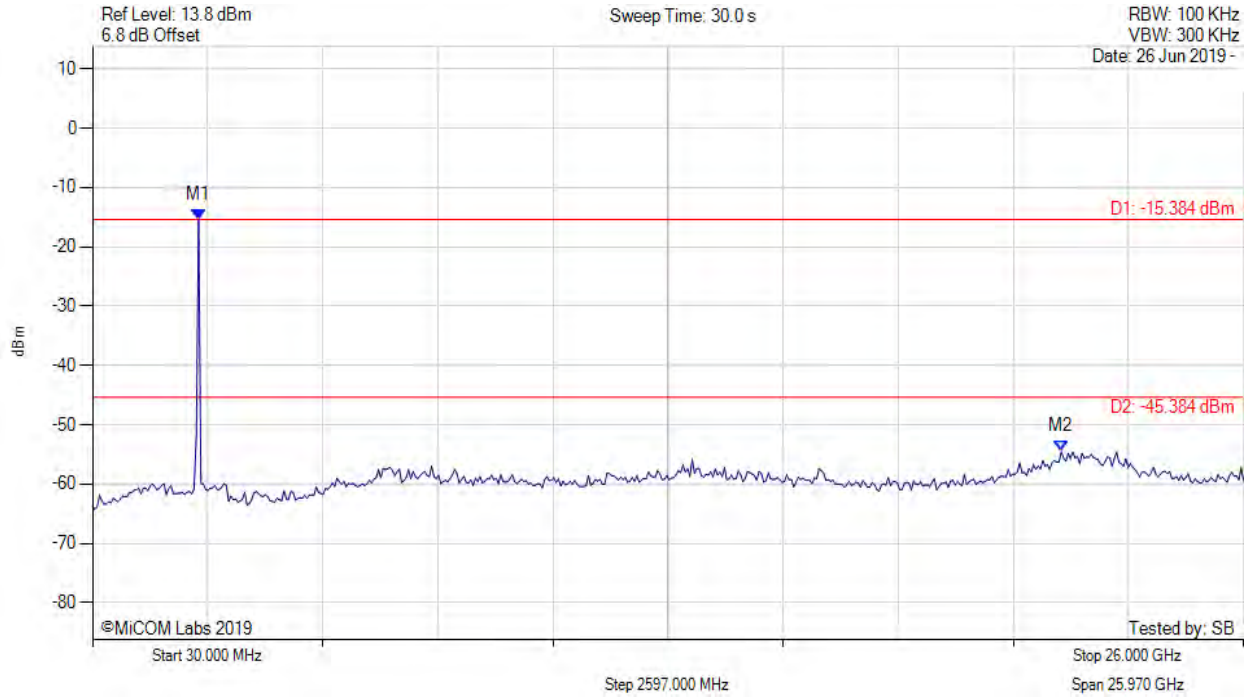


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -13.441 dBm M2 : 22.097 GHz : -54.134 dBm	Limit: -43.44 dBm Margin: -10.69 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

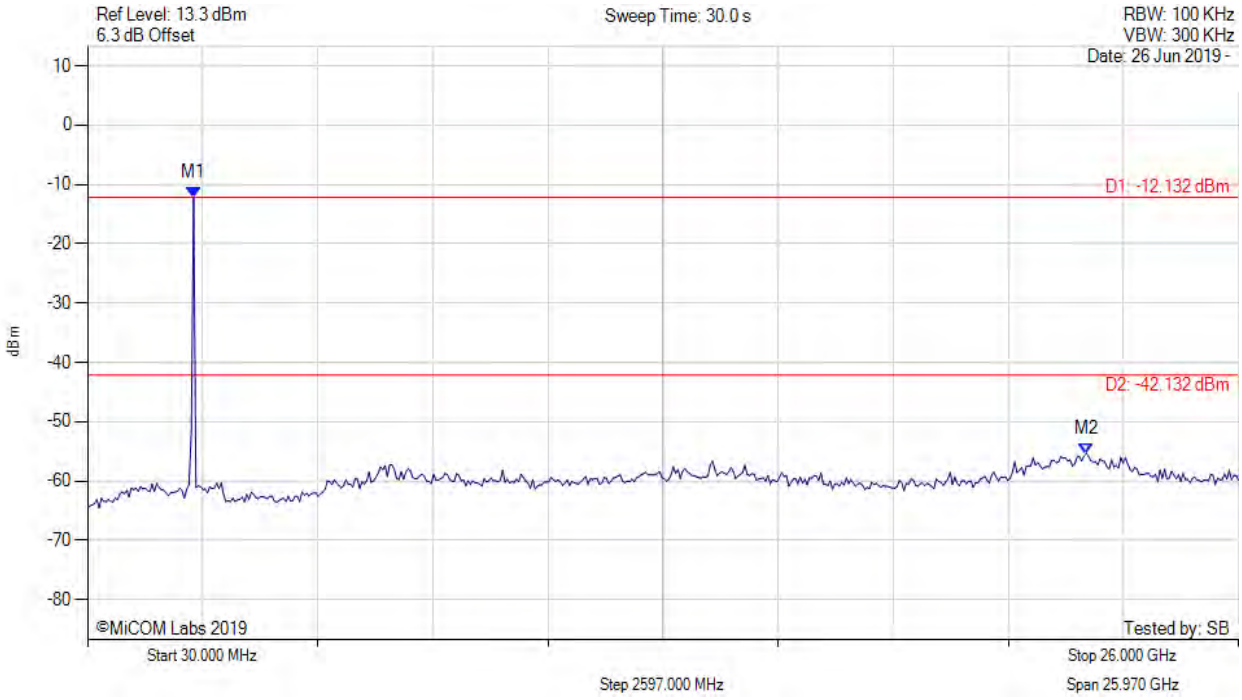


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -15.384 dBm M2 : 21.889 GHz : -54.491 dBm	Limit: -45.38 dBm Margin: -9.11 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

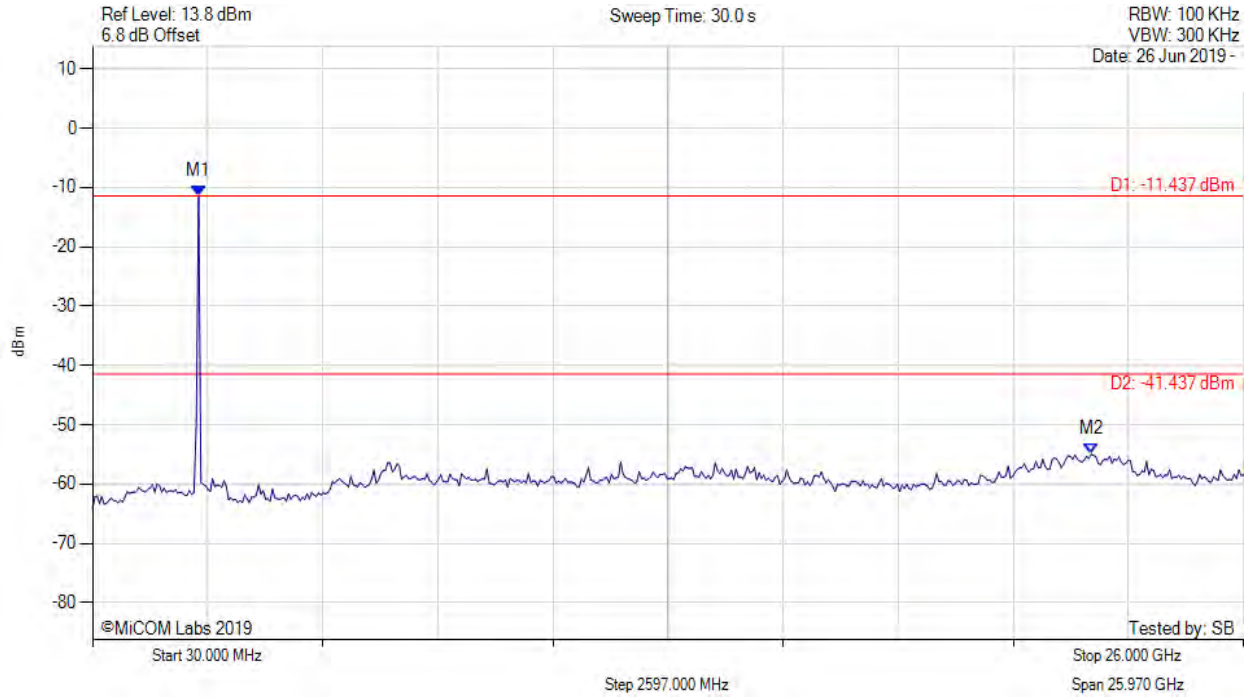


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -12.132 dBm M2 : 22.565 GHz : -55.376 dBm	Limit: -42.13 dBm Margin: -13.25 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2437.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

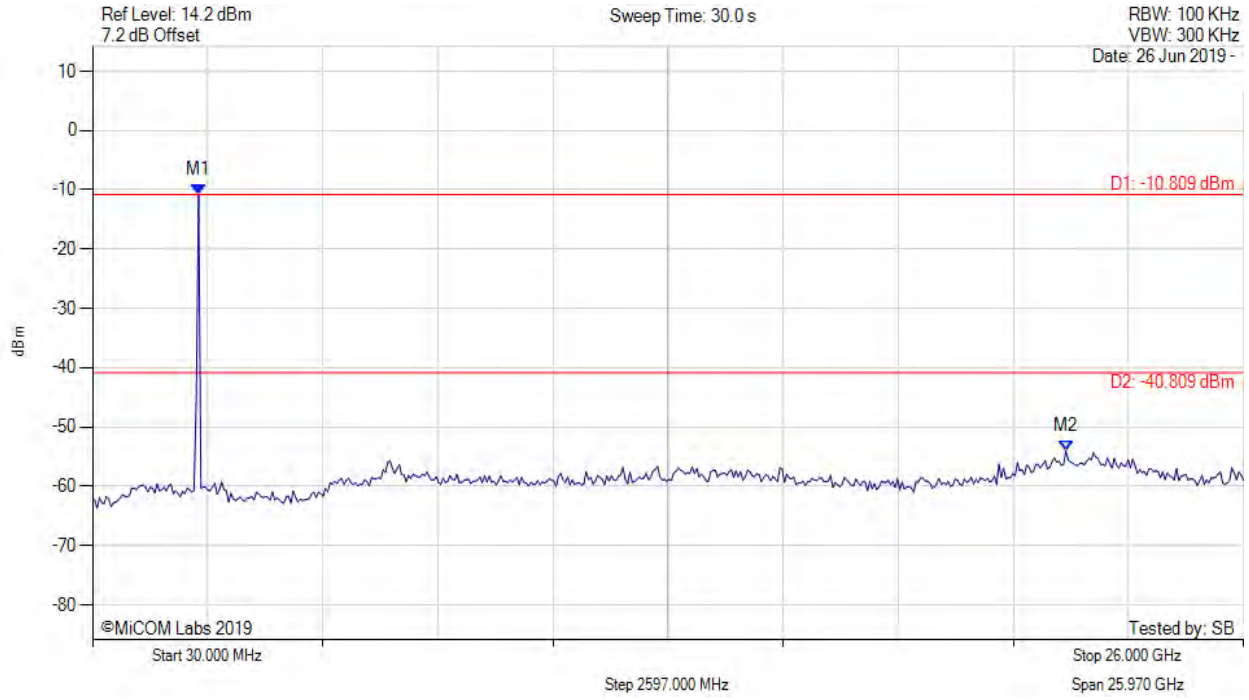


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -11.437 dBm M2 : 22.565 GHz : -54.959 dBm	Limit: -41.44 dBm Margin: -13.52 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2437.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

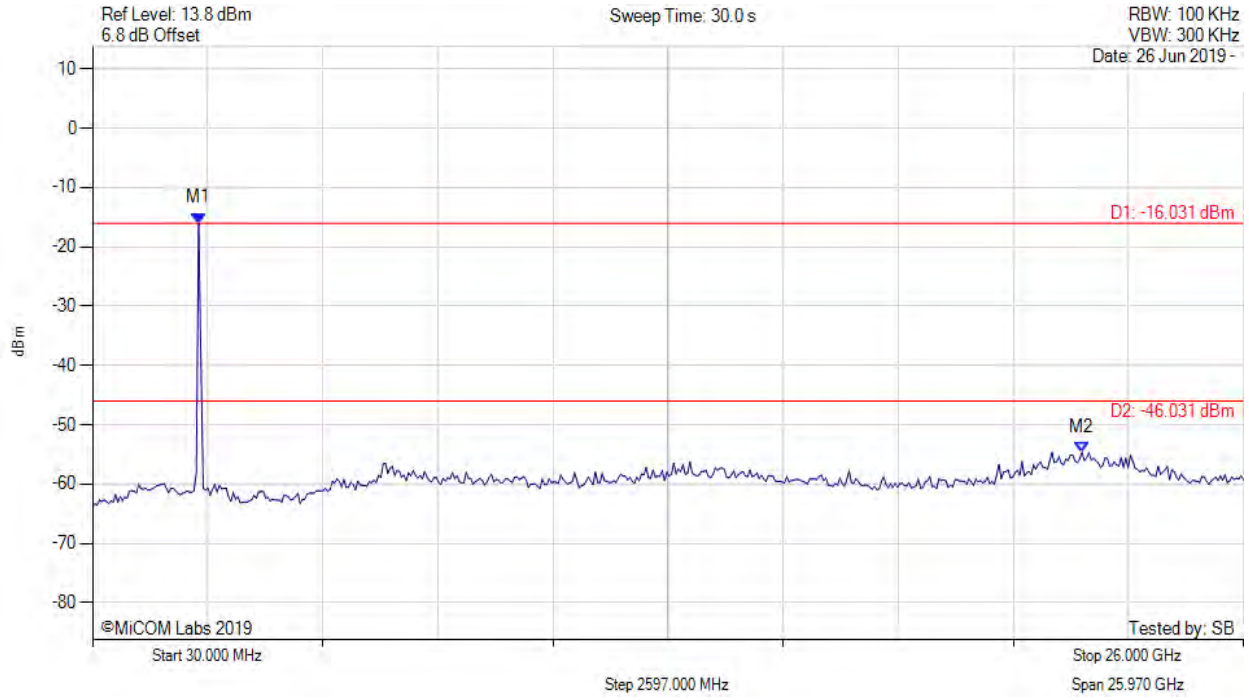


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -10.809 dBm M2 : 21.993 GHz : -54.016 dBm	Limit: -40.81 dBm Margin: -13.21 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

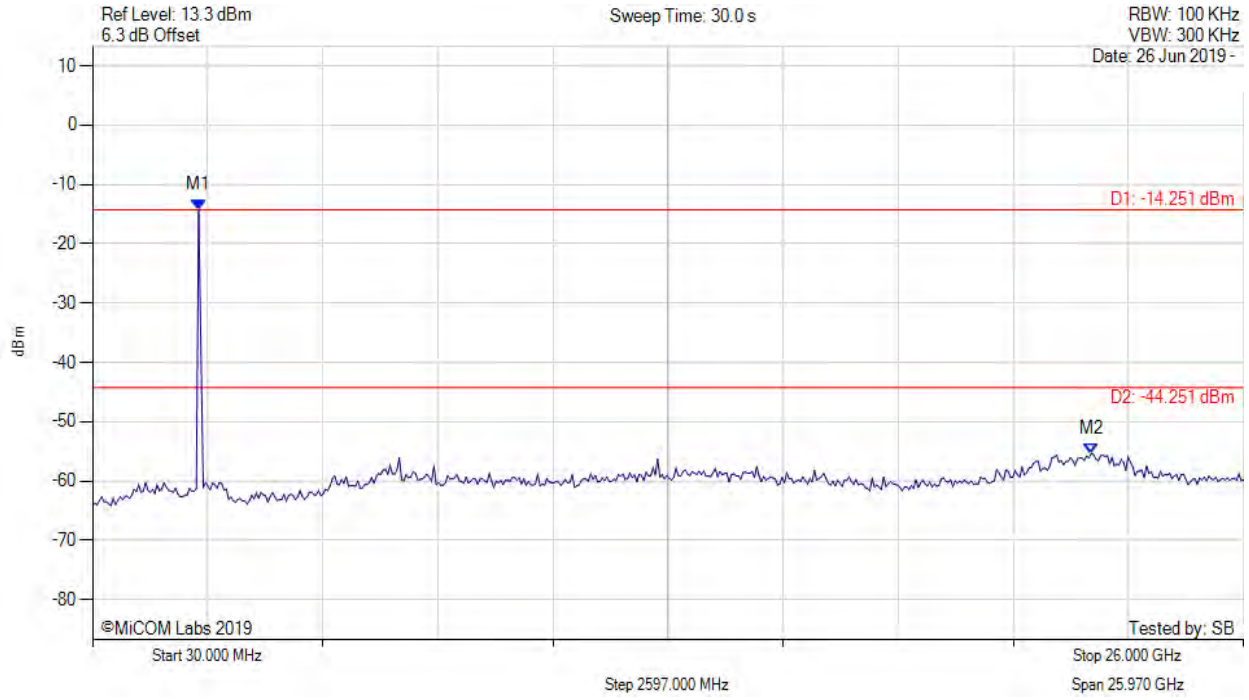


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -16.031 dBm M2 : 22.357 GHz : -54.654 dBm	Limit: -46.03 dBm Margin: -8.62 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

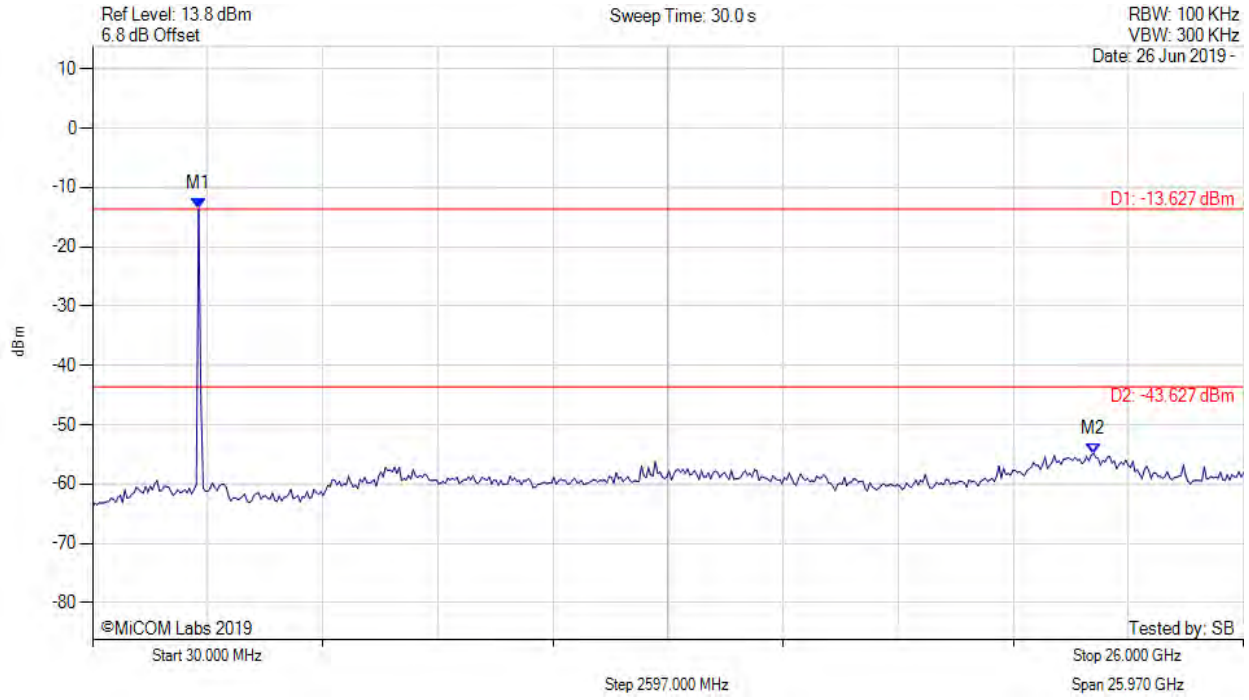


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -14.251 dBm M2 : 22.565 GHz : -55.355 dBm	Limit: -44.25 dBm Margin: -11.10 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

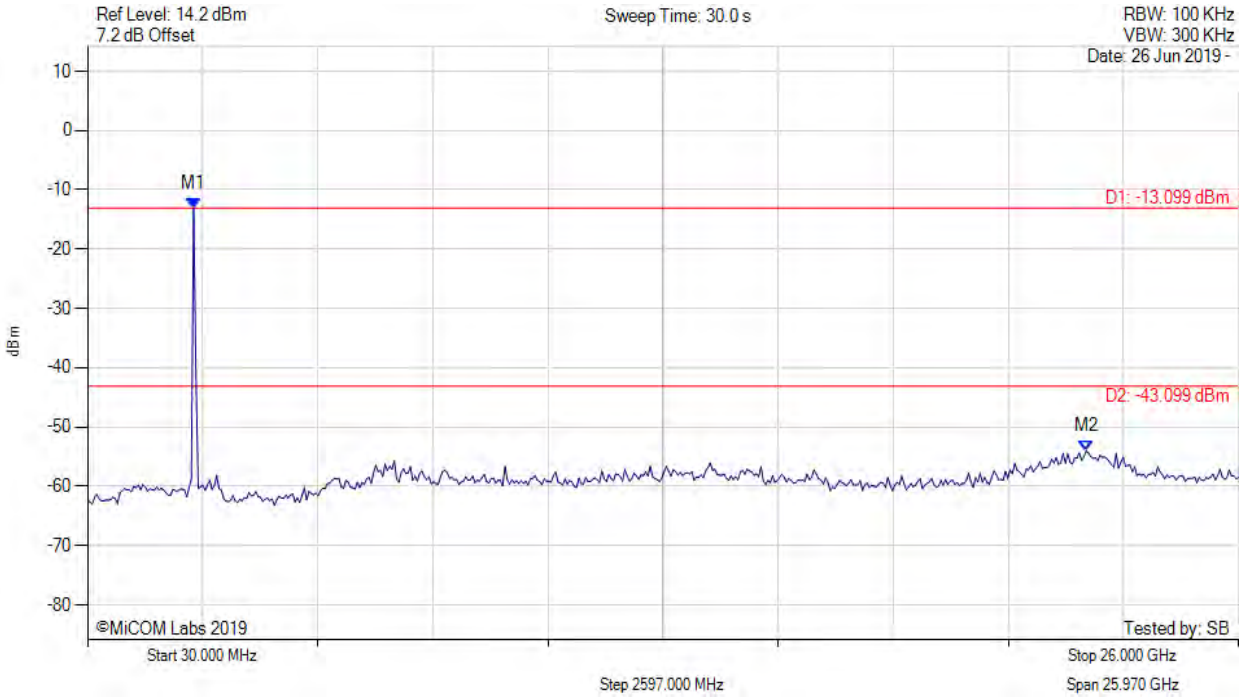


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -13.627 dBm M2 : 22.617 GHz : -54.855 dBm	Limit: -43.63 dBm Margin: -11.22 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

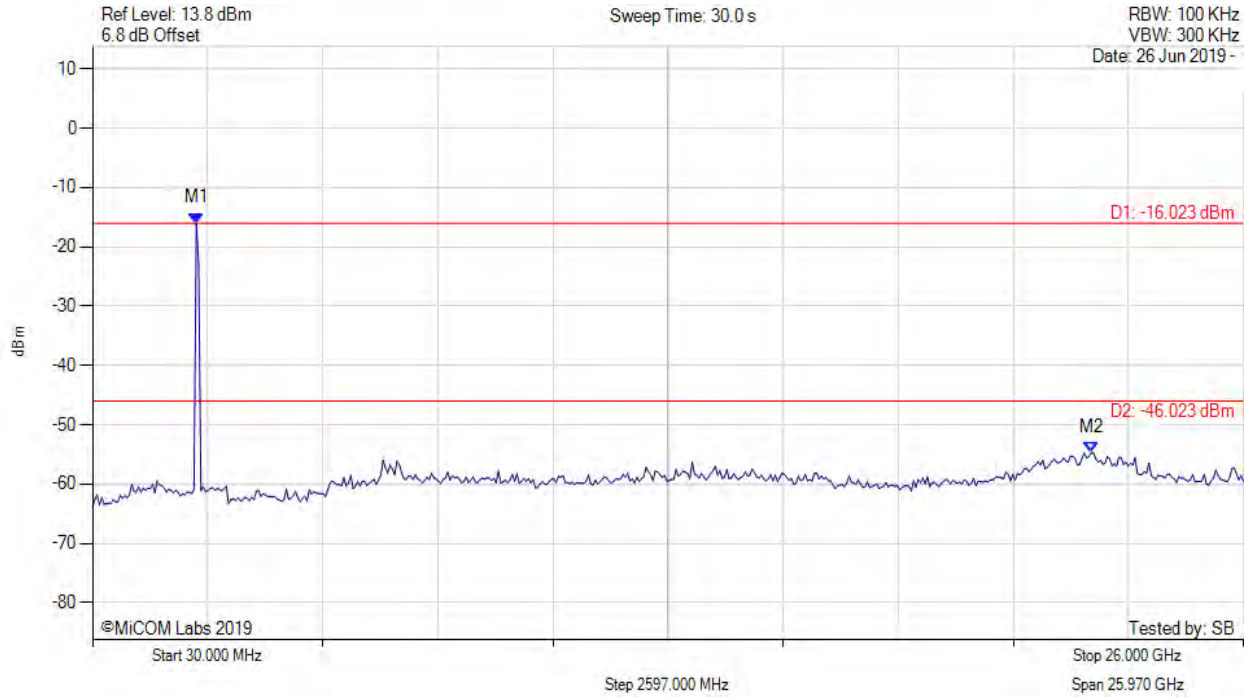


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -13.099 dBm M2 : 22.565 GHz : -54.048 dBm	Limit: -43.10 dBm Margin: -10.95 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

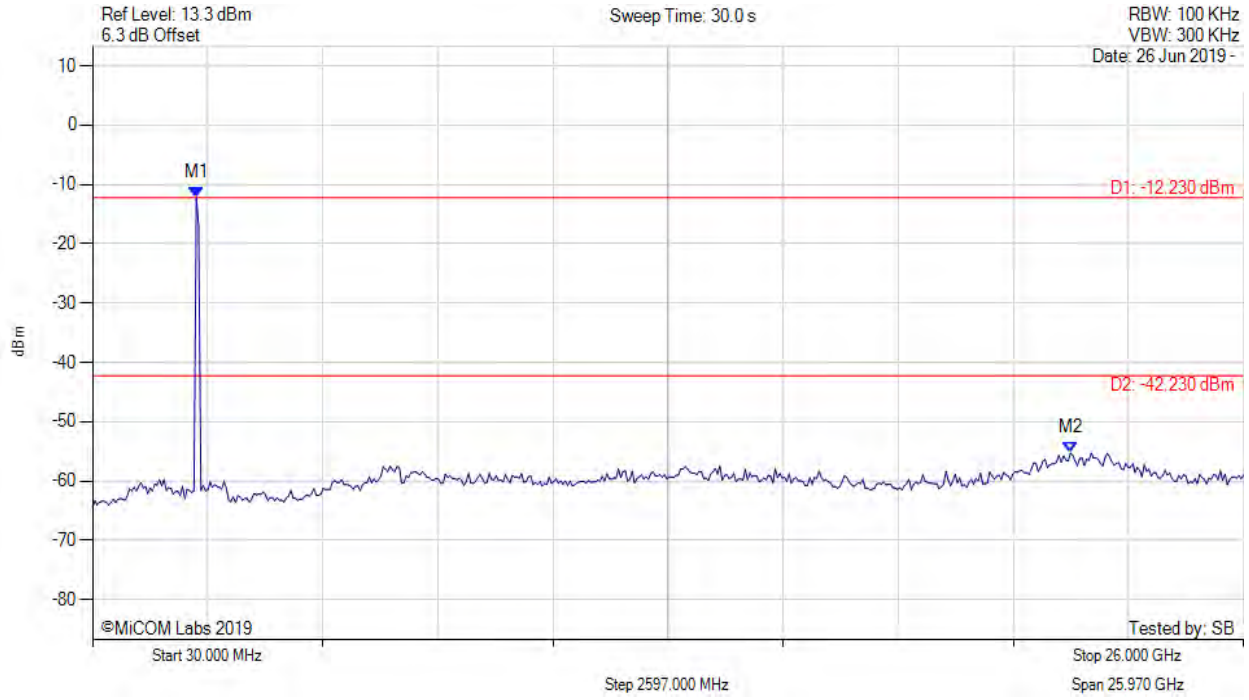


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -16.023 dBm M2 : 22.565 GHz : -54.756 dBm	Limit: -46.02 dBm Margin: -8.74 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

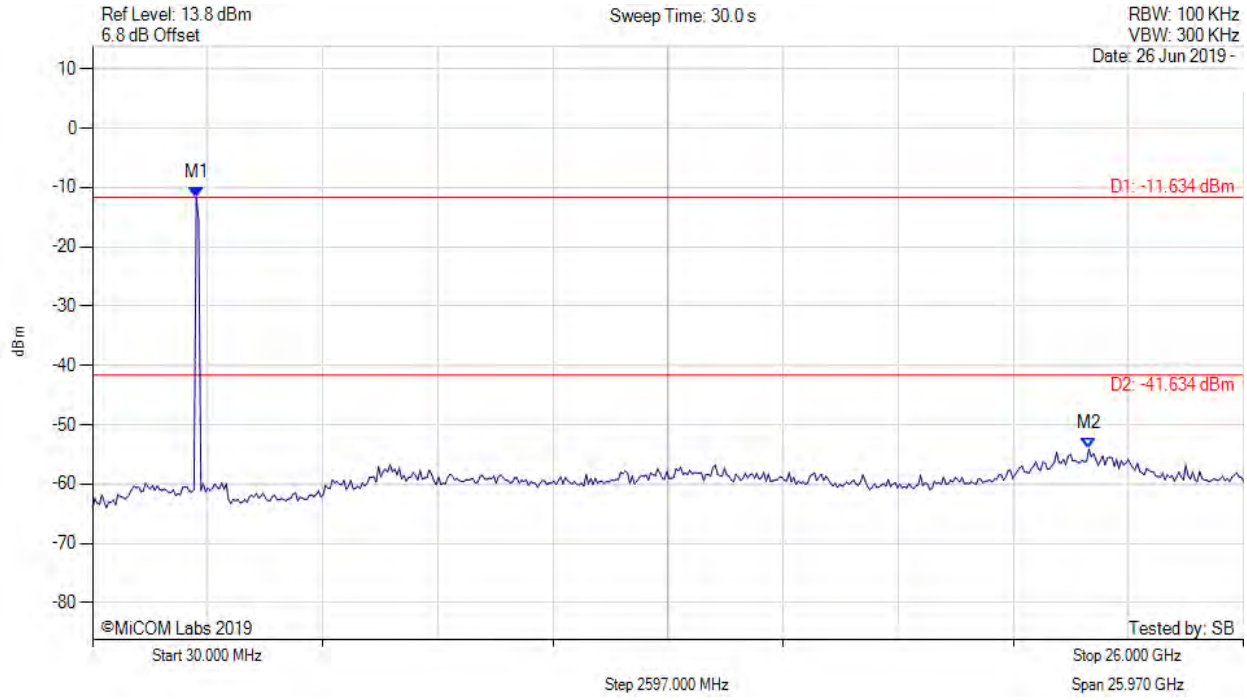


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -12.230 dBm M2 : 22.097 GHz : -55.290 dBm	Limit: -42.23 dBm Margin: -13.06 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

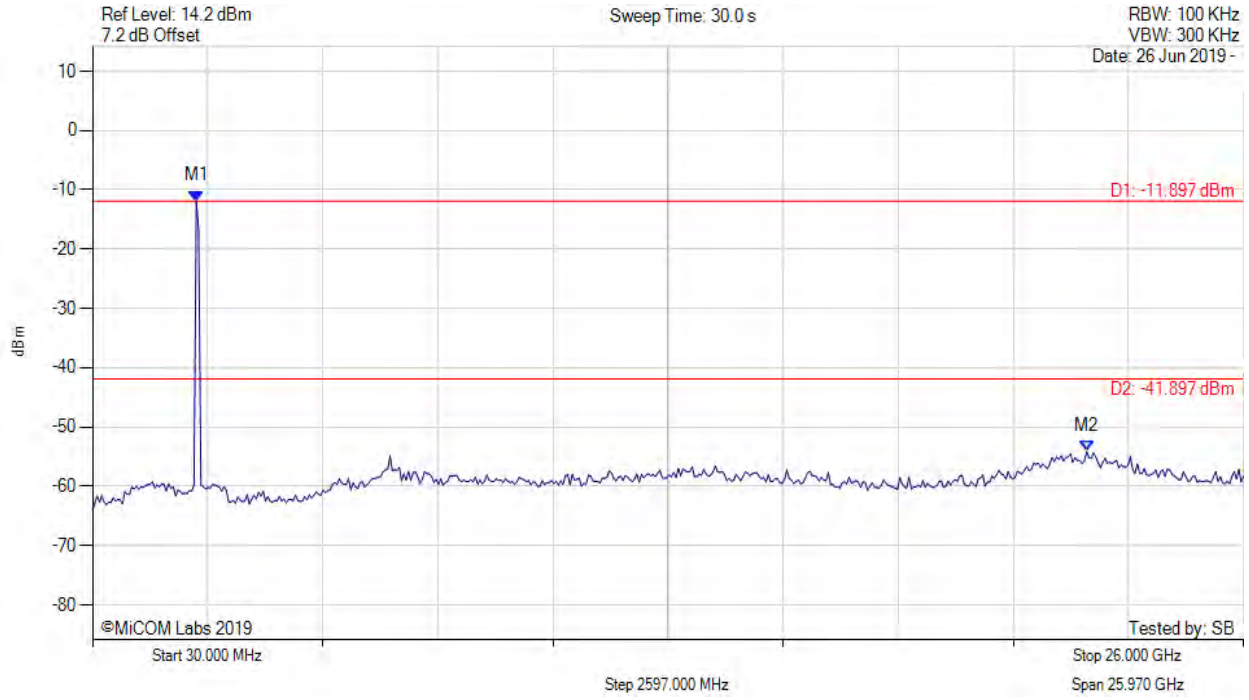


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -11.634 dBm M2 : 22.513 GHz : -54.105 dBm	Limit: -41.63 dBm Margin: -12.47 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

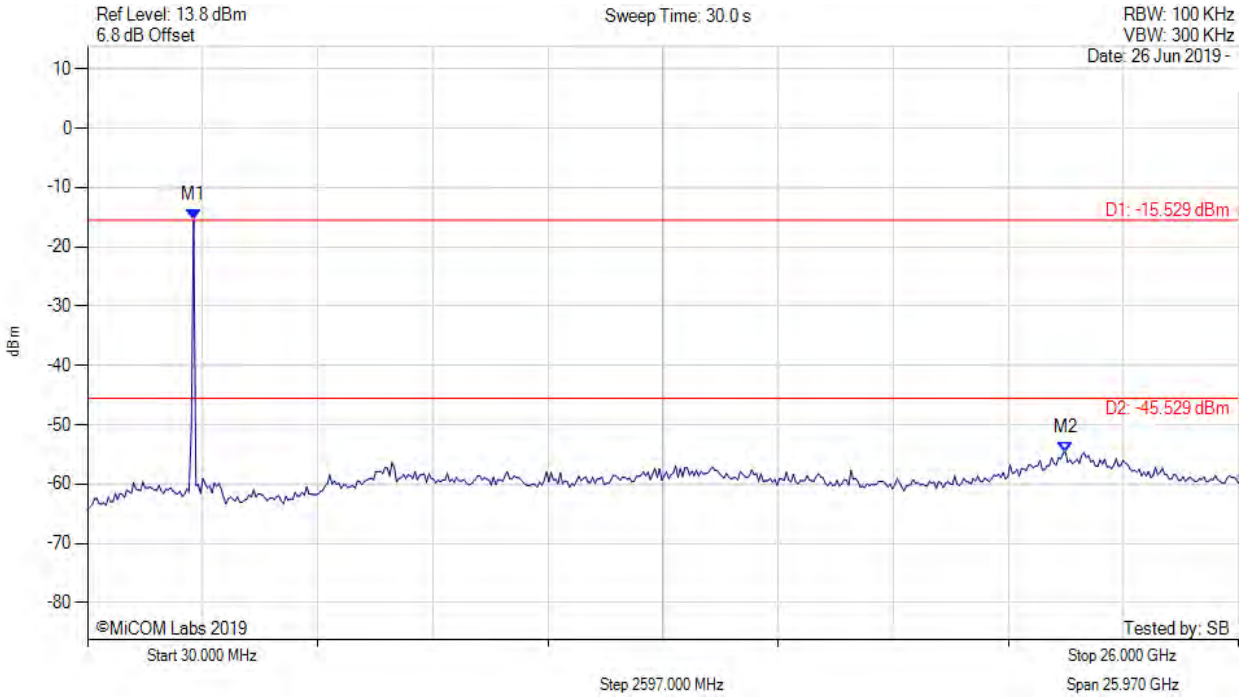


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : -11.897 dBm M2 : 22.461 GHz : -54.138 dBm	Limit: -41.90 dBm Margin: -12.24 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

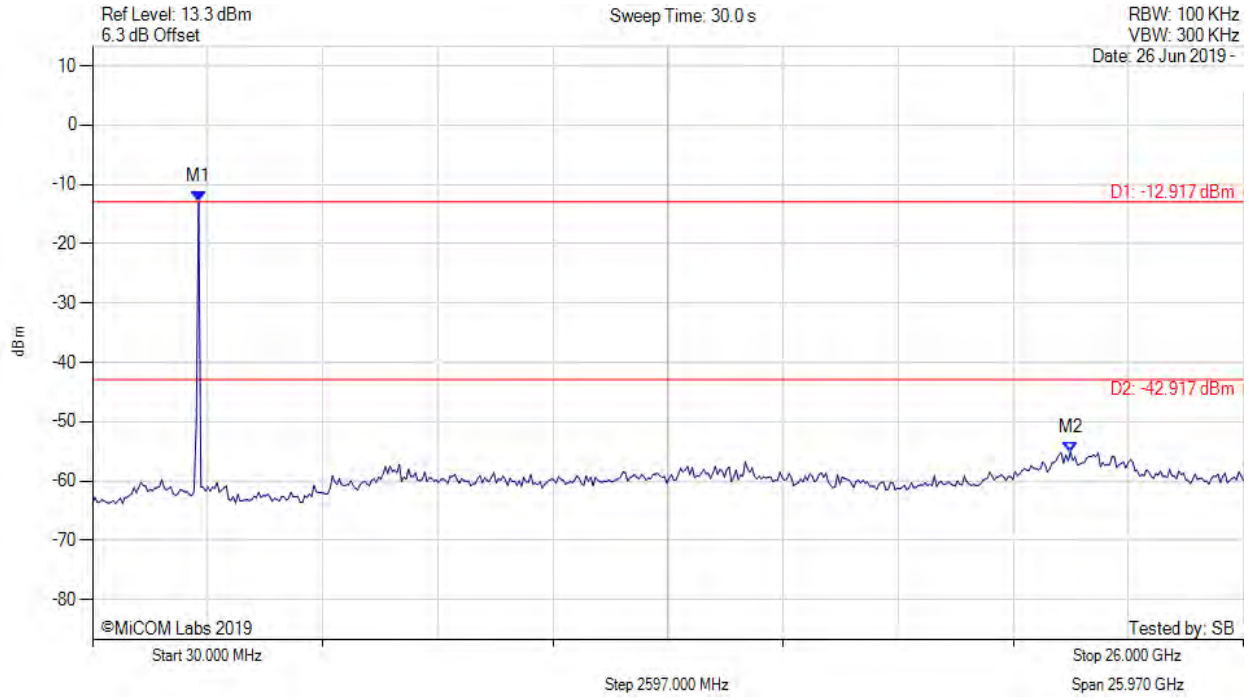


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -15.529 dBm M2 : 22.097 GHz : -54.660 dBm	Limit: -45.53 dBm Margin: -9.13 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

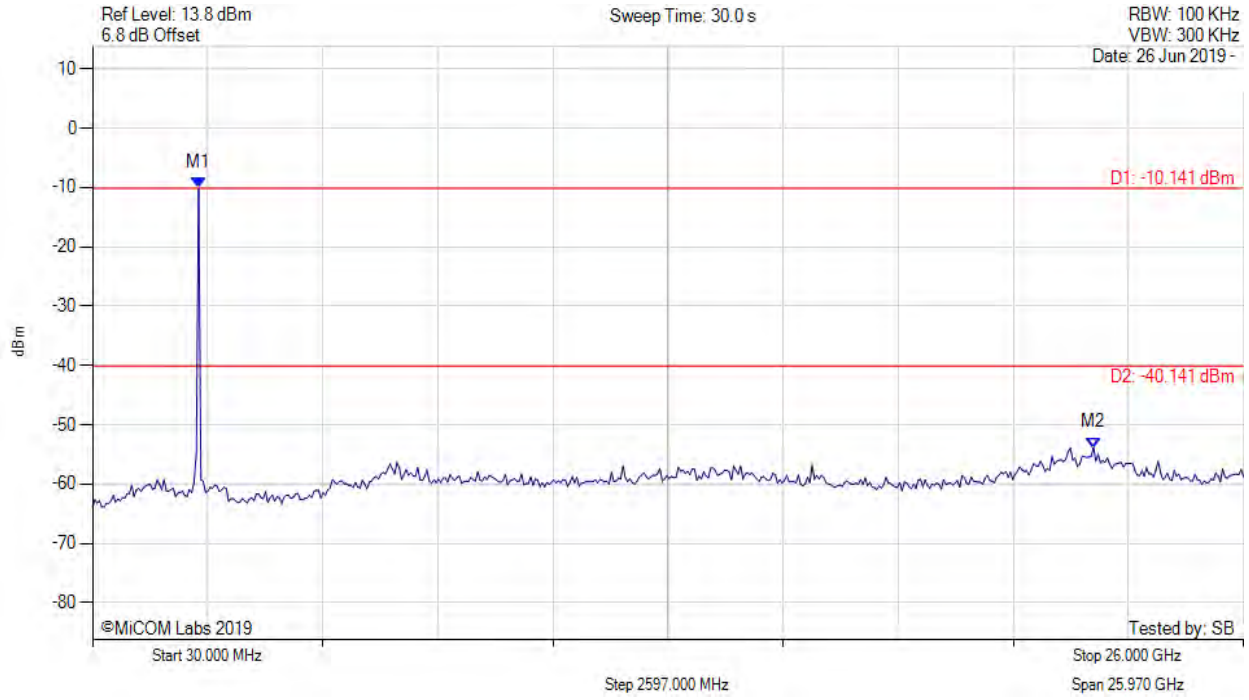


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -12.917 dBm M2 : 22.097 GHz : -55.154 dBm	Limit: -42.92 dBm Margin: -12.23 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

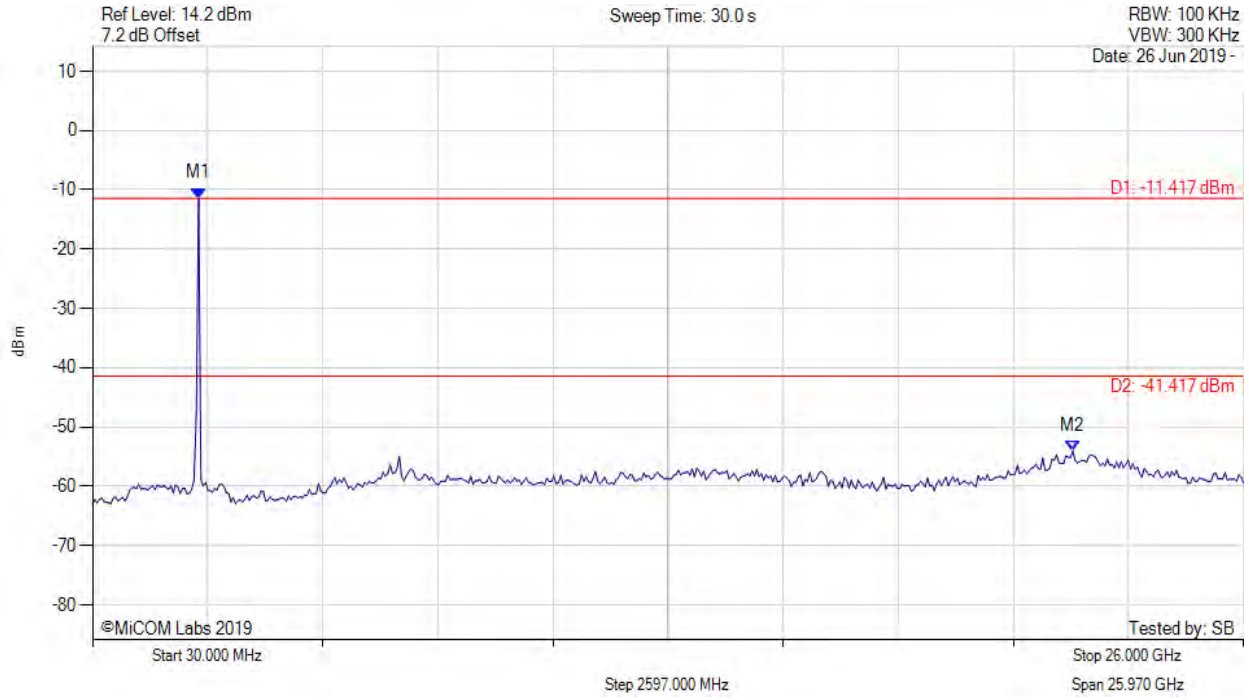


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -10.141 dBm M2 : 22.617 GHz : -53.881 dBm	Limit: -40.14 dBm Margin: -13.74 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

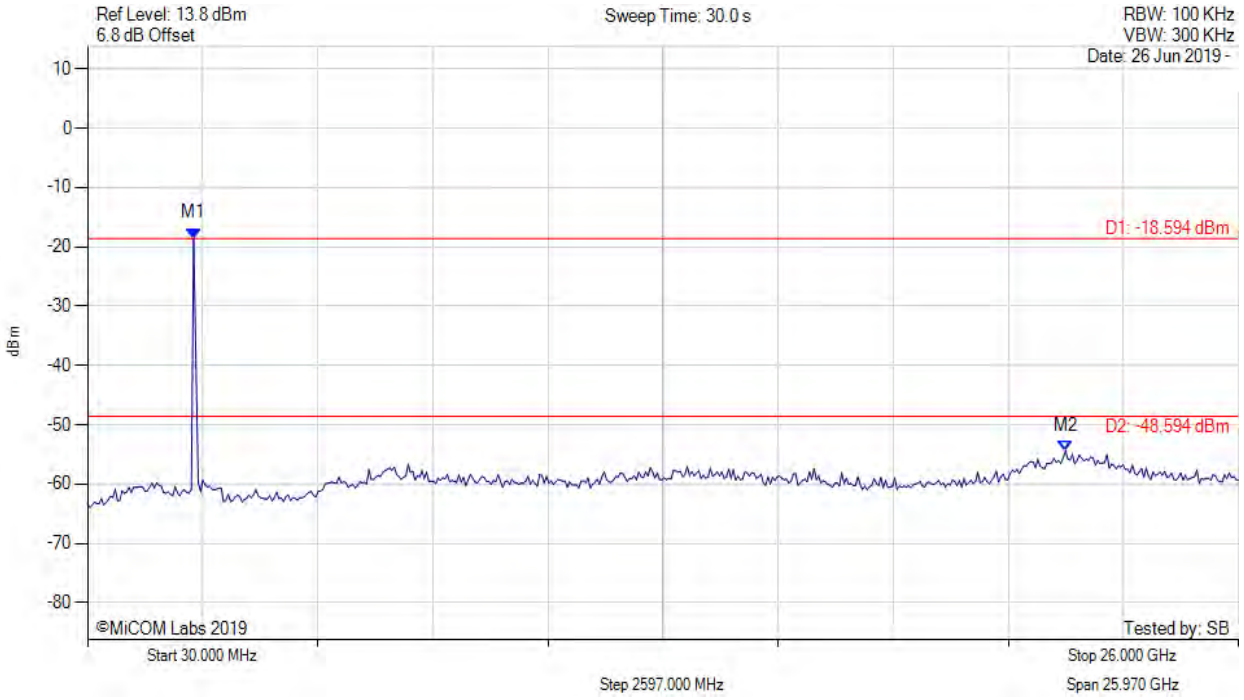


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -11.417 dBm M2 : 22.149 GHz : -54.050 dBm	Limit: -41.42 dBm Margin: -12.63 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

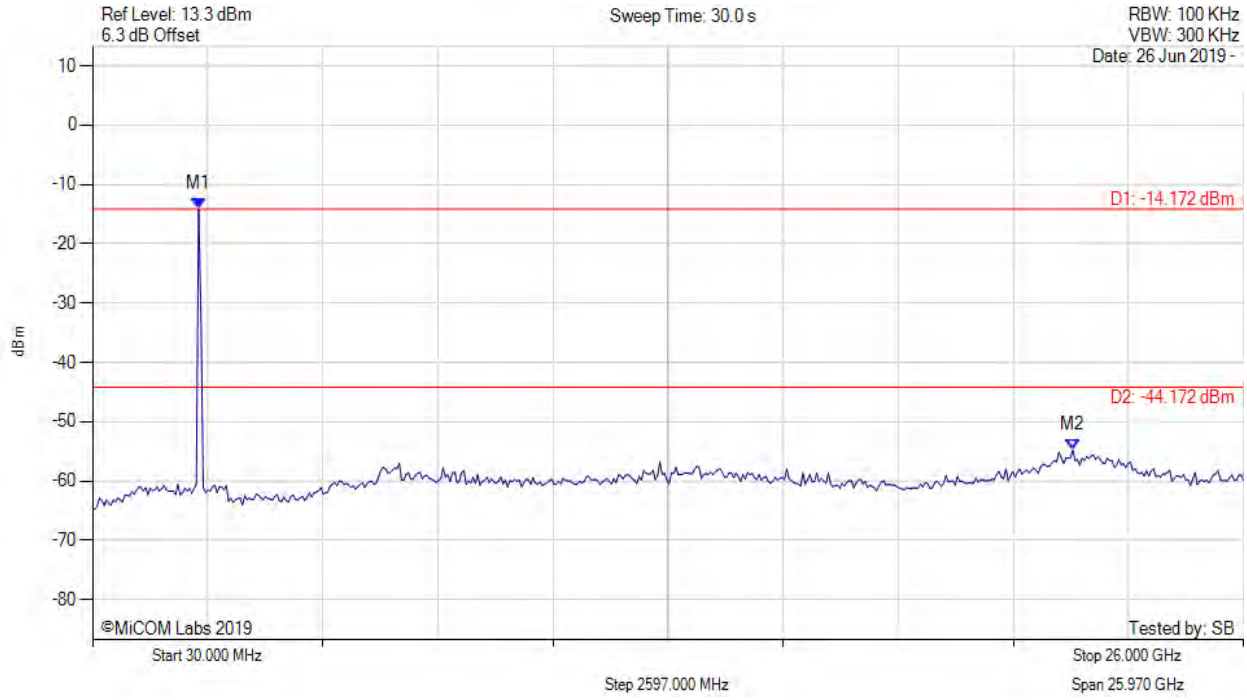


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -18.594 dBm M2 : 22.097 GHz : -54.404 dBm	Limit: -48.59 dBm Margin: -5.81 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

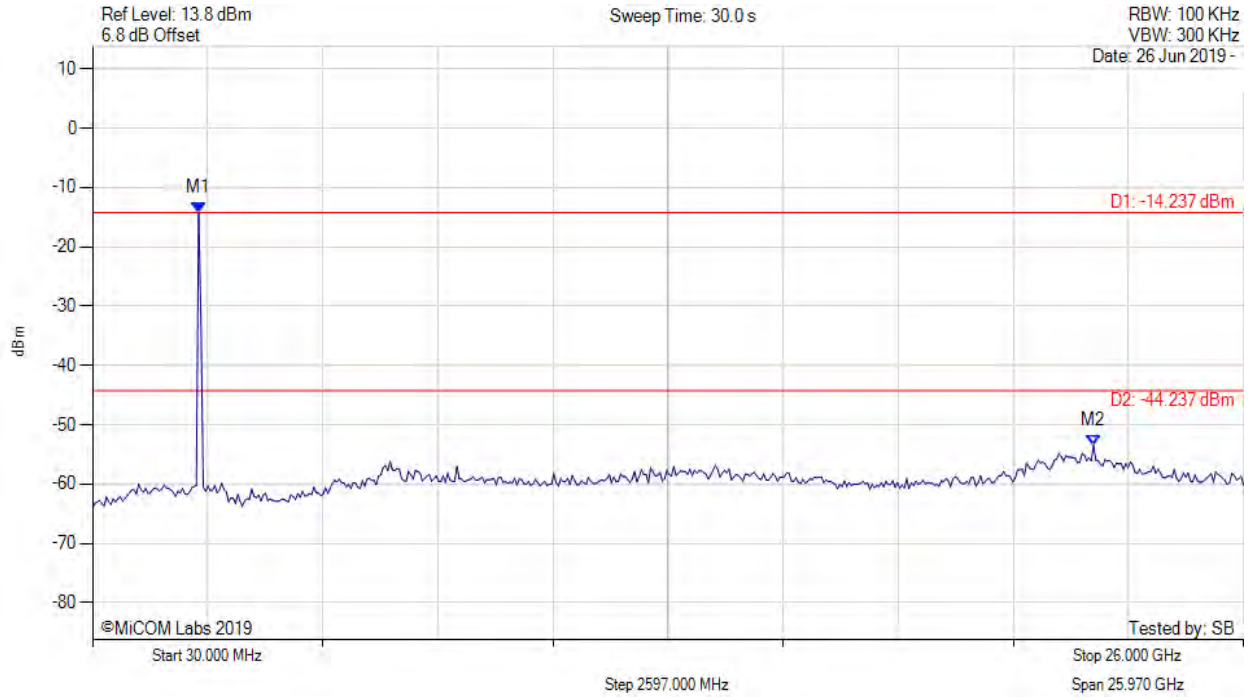


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -14.172 dBm M2 : 22.149 GHz : -54.792 dBm	Limit: -44.17 dBm Margin: -10.62 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

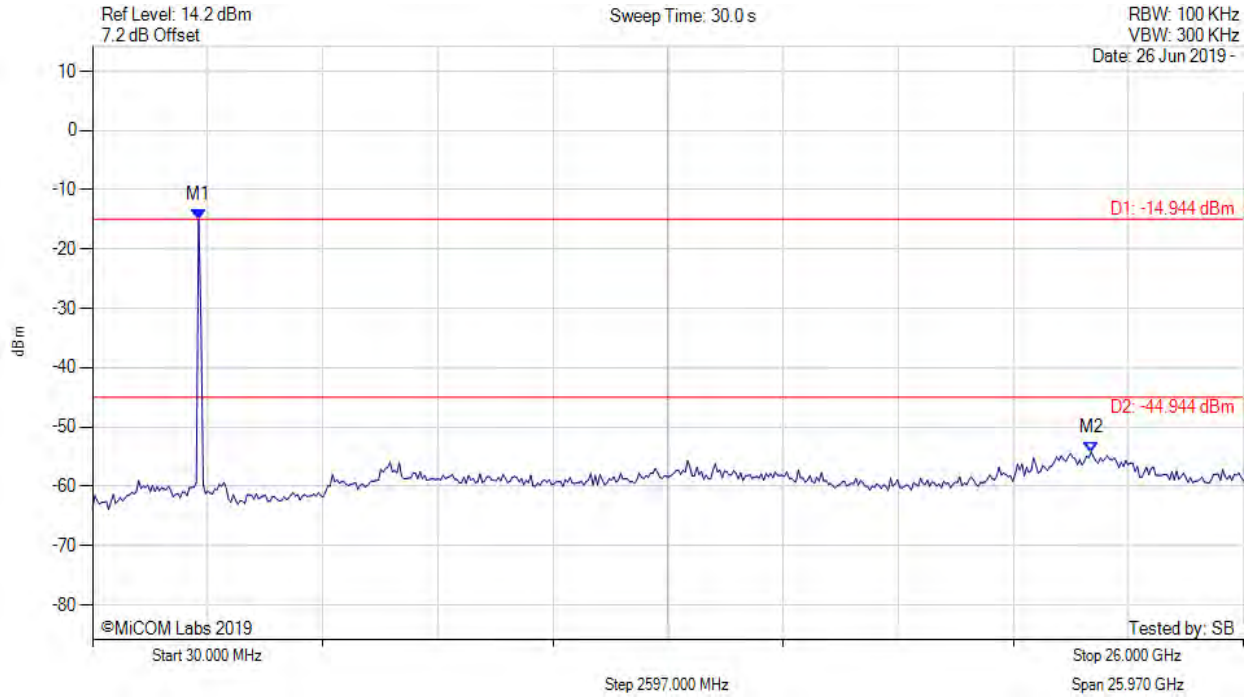


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -14.237 dBm M2 : 22.617 GHz : -53.521 dBm	Limit: -44.24 dBm Margin: -9.28 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc



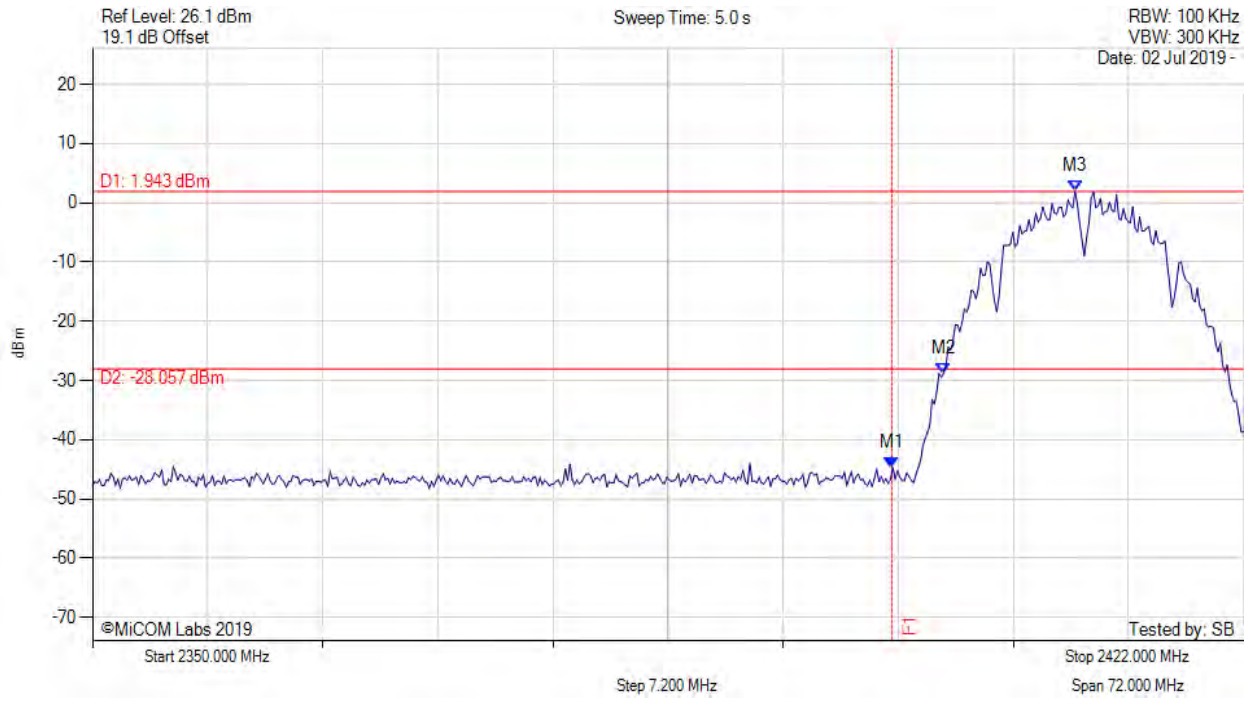
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : -14.944 dBm M2 : 22.565 GHz : -54.209 dBm	Limit: -44.94 dBm Margin: -9.27 dB

back to matrix

A.1.1.2. Conducted Band-Edge Emissions

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

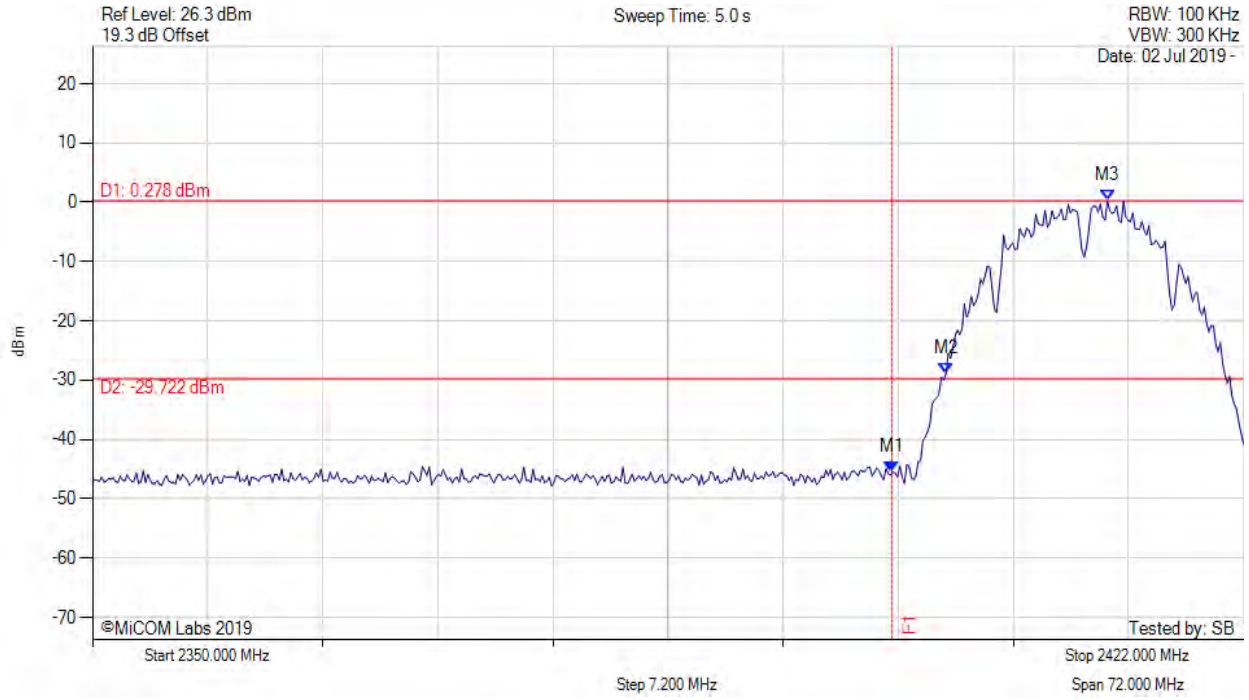


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -44.656 dBm M2 : 2403.242 MHz : -28.785 dBm M3 : 2411.467 MHz : 1.943 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

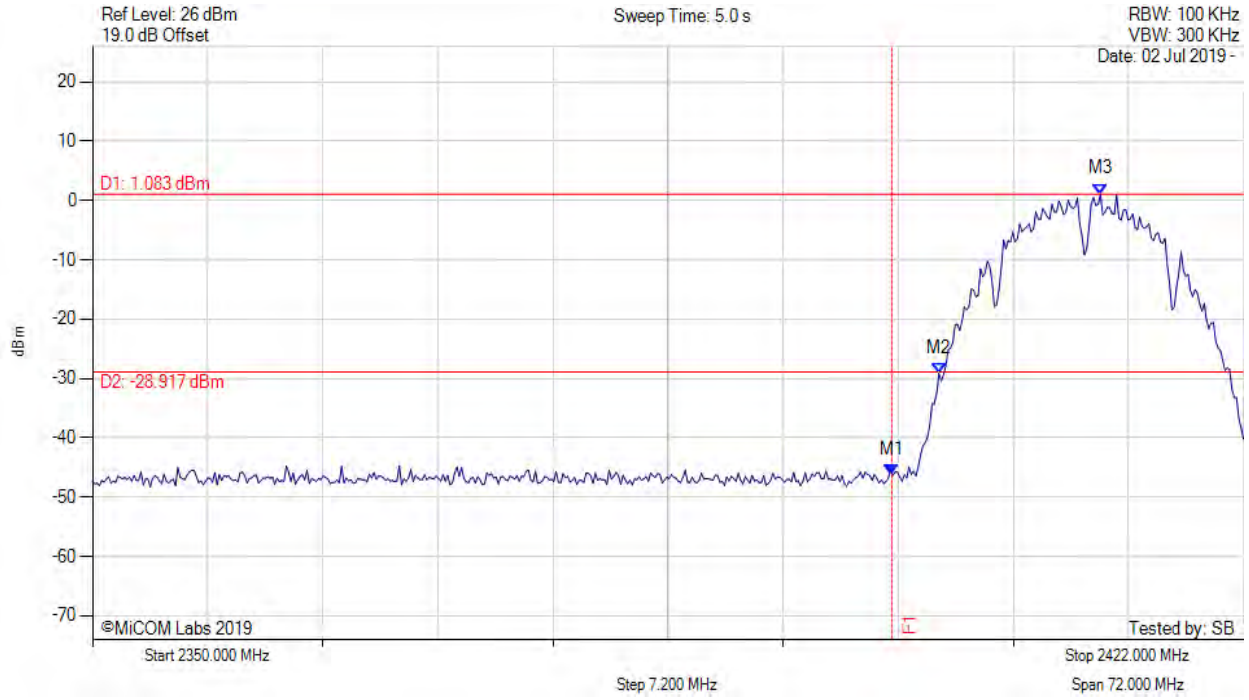


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -45.477 dBm M2 : 2403.387 MHz : -28.912 dBm M3 : 2413.487 MHz : 0.278 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

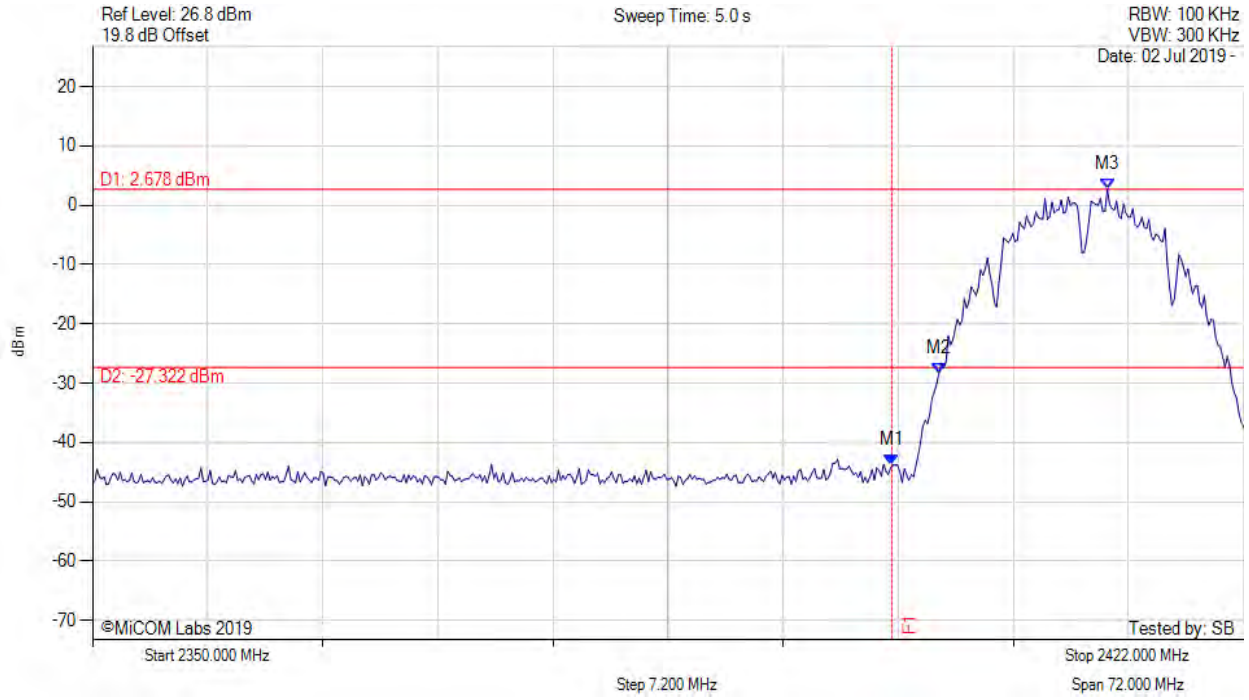


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -46.320 dBm M2 : 2402.954 MHz : -29.169 dBm M3 : 2413.054 MHz : 1.083 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

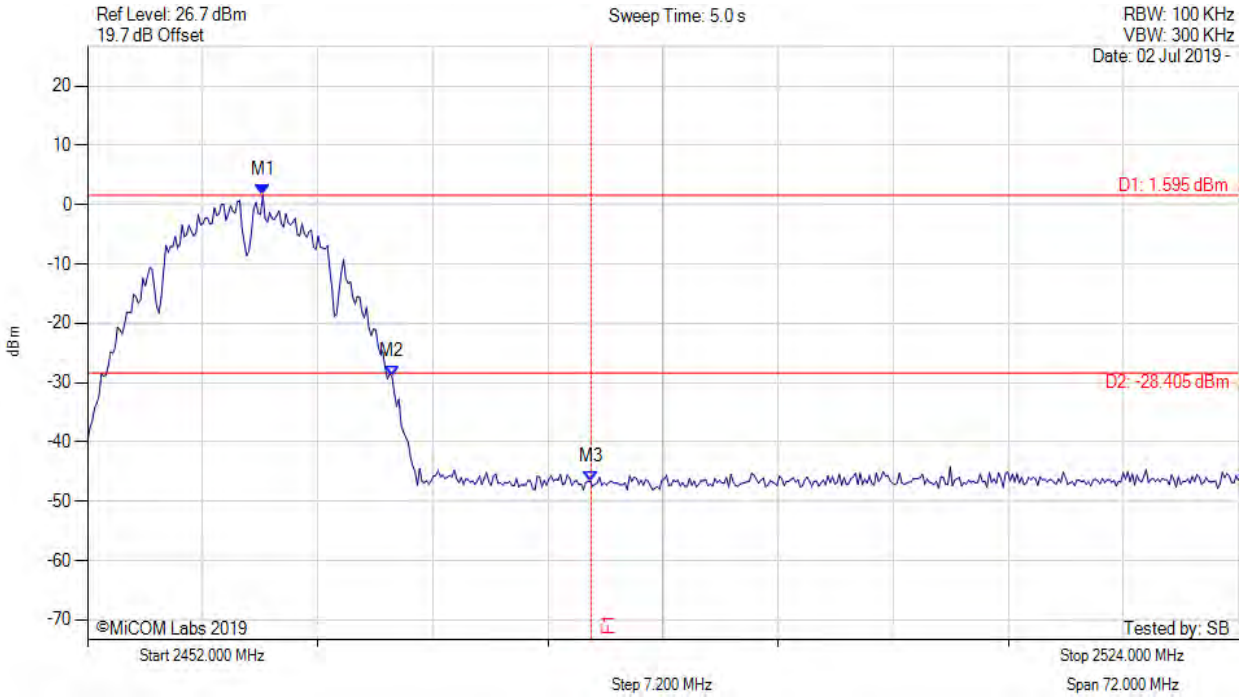


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -43.824 dBm M2 : 2402.954 MHz : -28.302 dBm M3 : 2413.487 MHz : 2.678 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

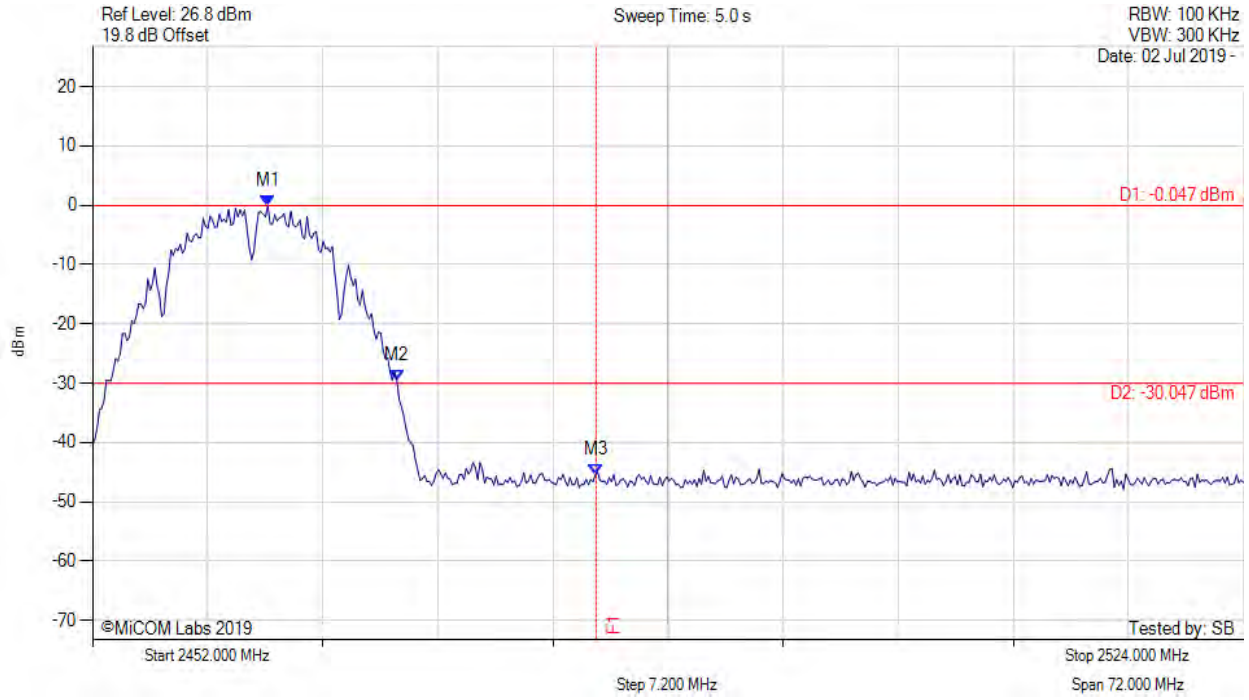


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.966 MHz : 1.595 dBm M2 : 2471.046 MHz : -28.921 dBm M3 : 2483.500 MHz : -46.696 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

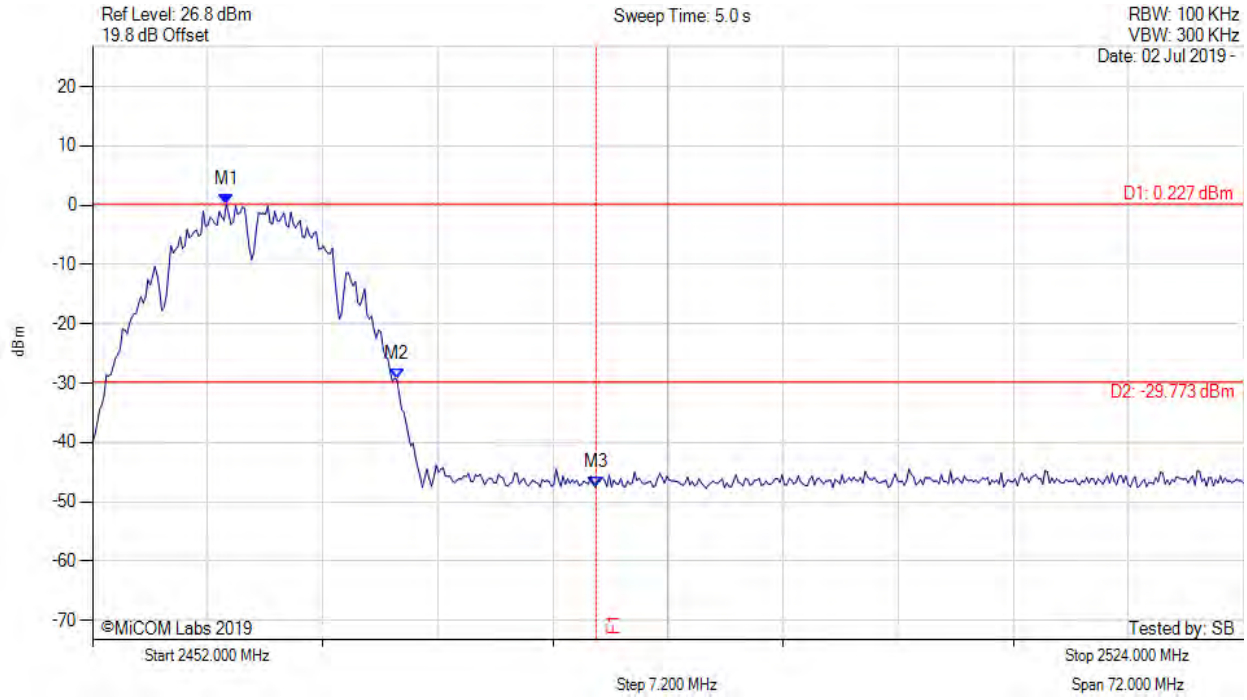


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.966 MHz : -0.047 dBm M2 : 2471.046 MHz : -29.571 dBm M3 : 2483.500 MHz : -45.426 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

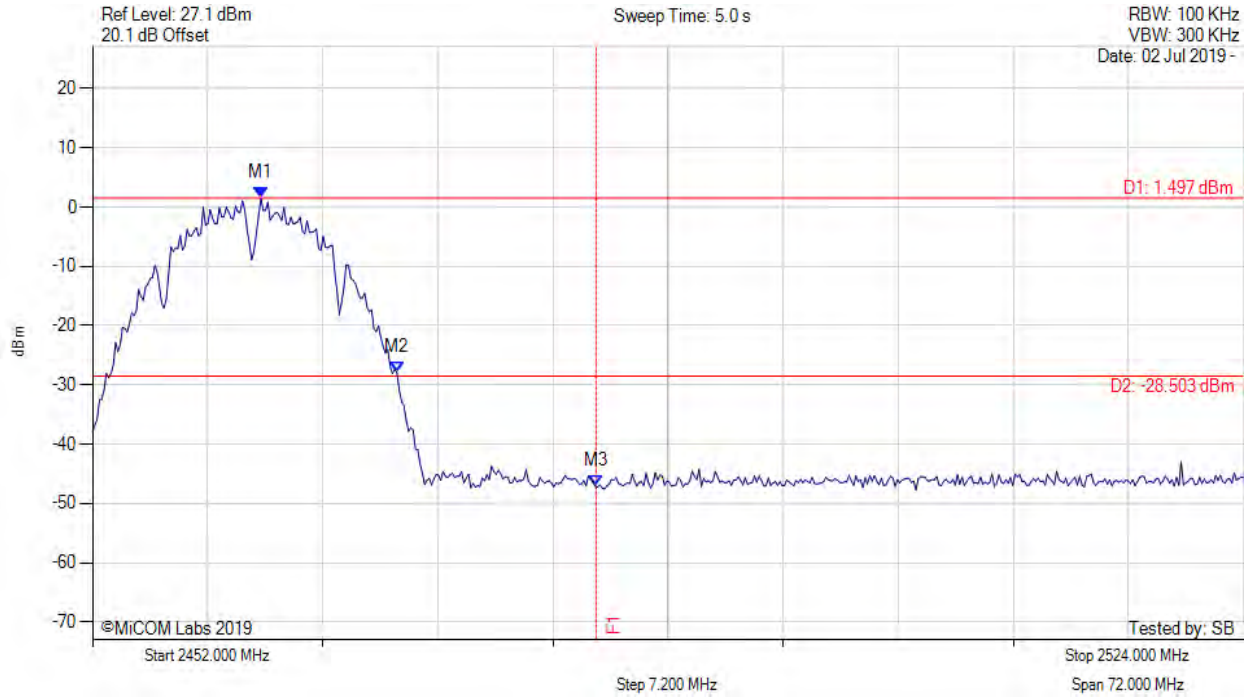


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.369 MHz : 0.227 dBm M2 : 2471.046 MHz : -29.390 dBm M3 : 2483.500 MHz : -47.562 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

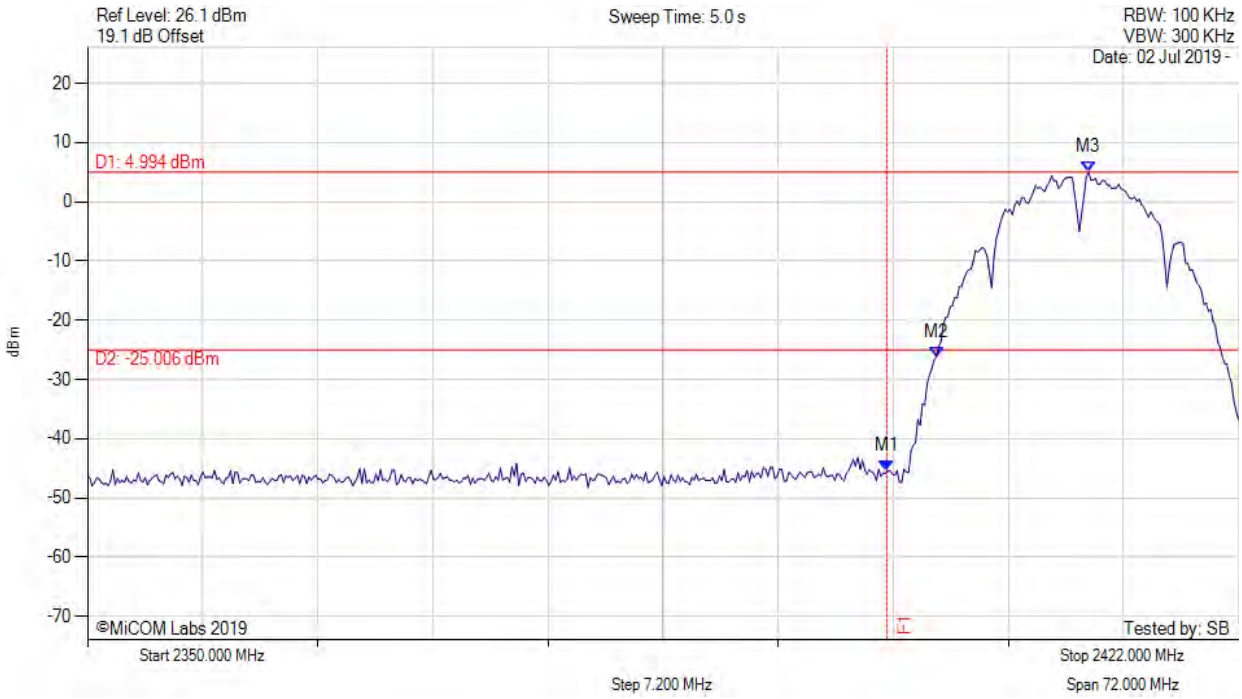


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.533 MHz : 1.497 dBm M2 : 2471.046 MHz : -27.927 dBm M3 : 2483.500 MHz : -47.065 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

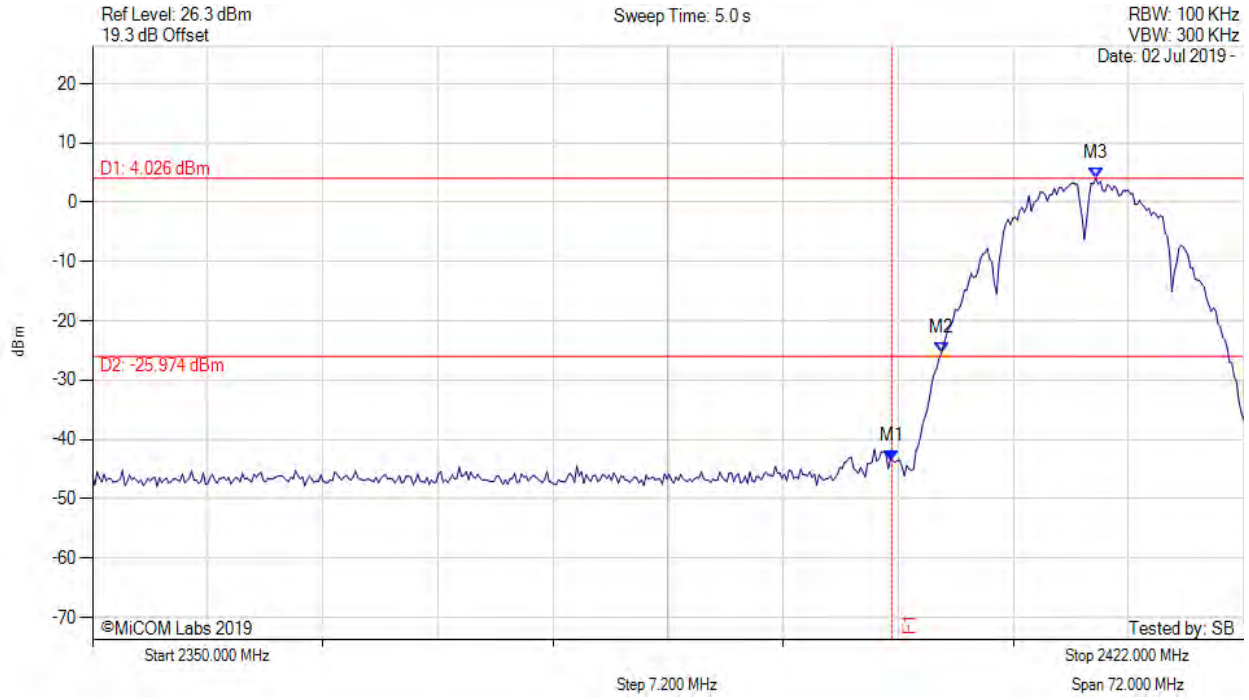


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -45.478 dBm M2 : 2403.098 MHz : -26.188 dBm M3 : 2412.621 MHz : 4.994 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

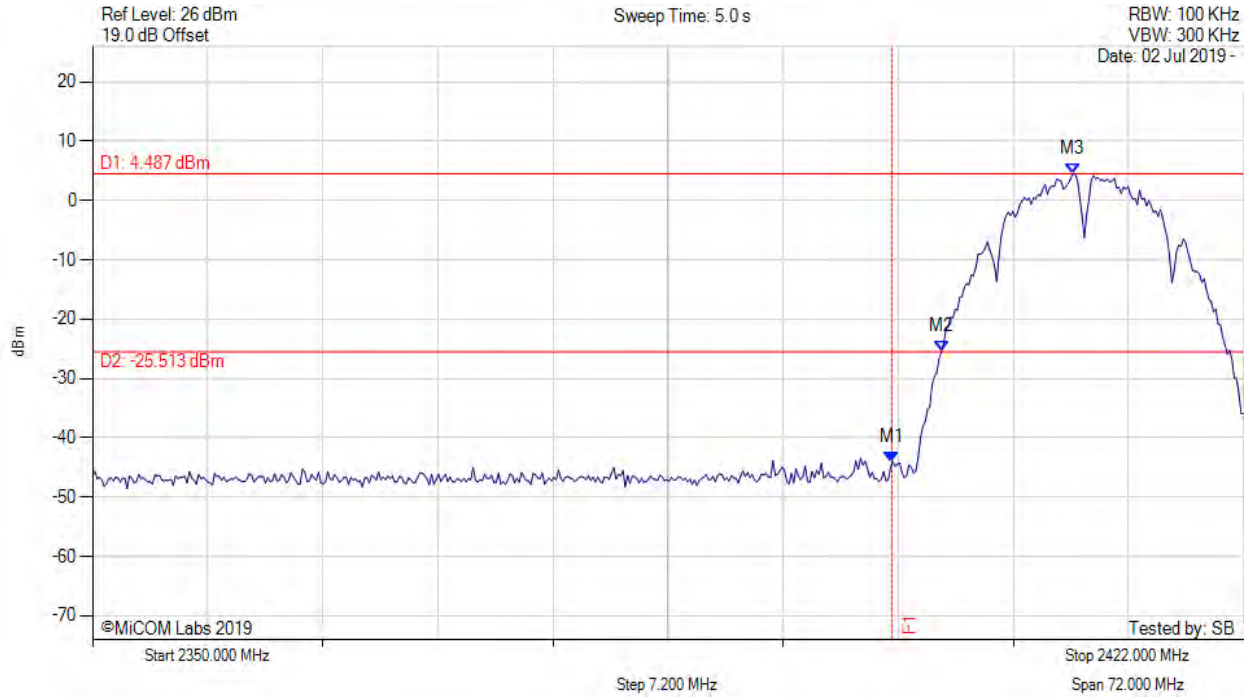


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -43.632 dBm M2 : 2403.098 MHz : -25.412 dBm M3 : 2412.766 MHz : 4.026 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

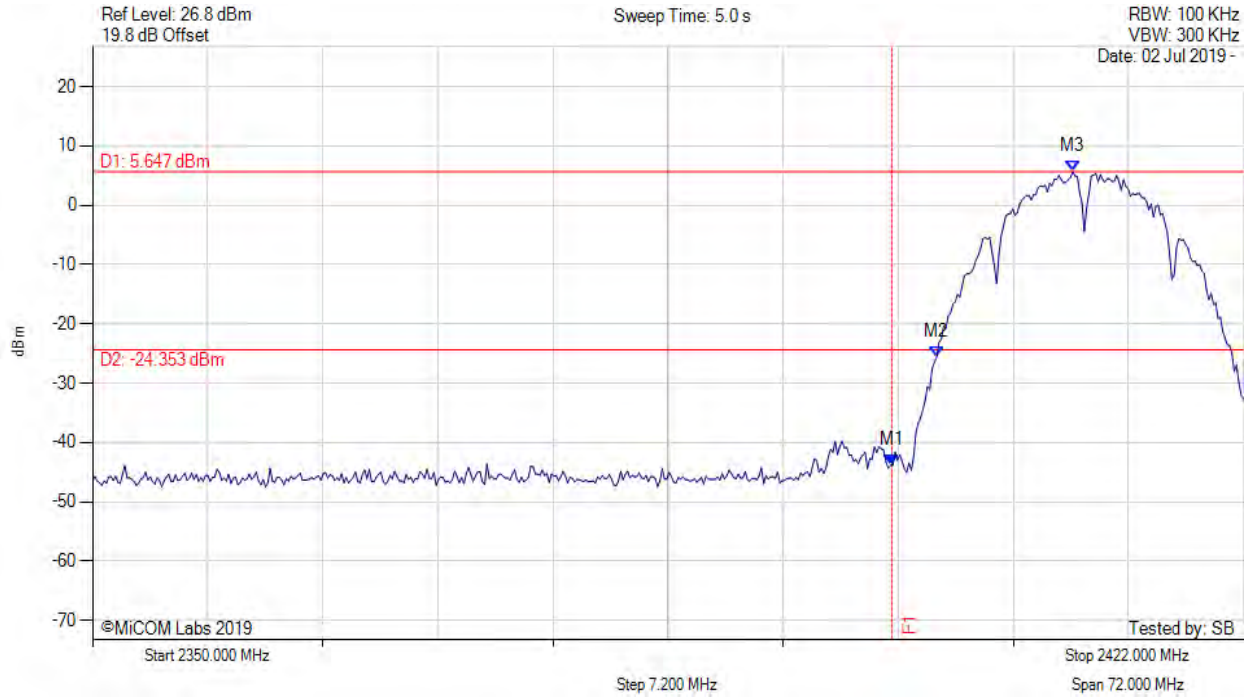


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -44.052 dBm M2 : 2403.098 MHz : -25.509 dBm M3 : 2411.323 MHz : 4.487 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

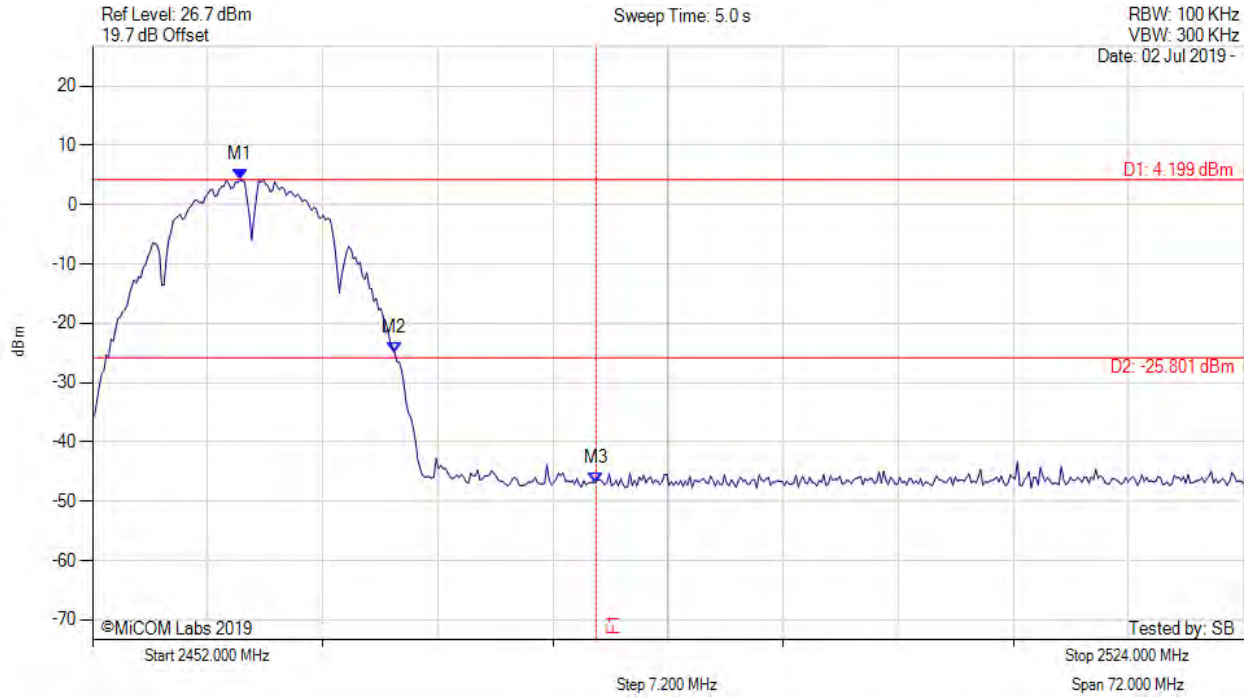


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -43.818 dBm M2 : 2402.810 MHz : -25.587 dBm M3 : 2411.323 MHz : 5.647 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

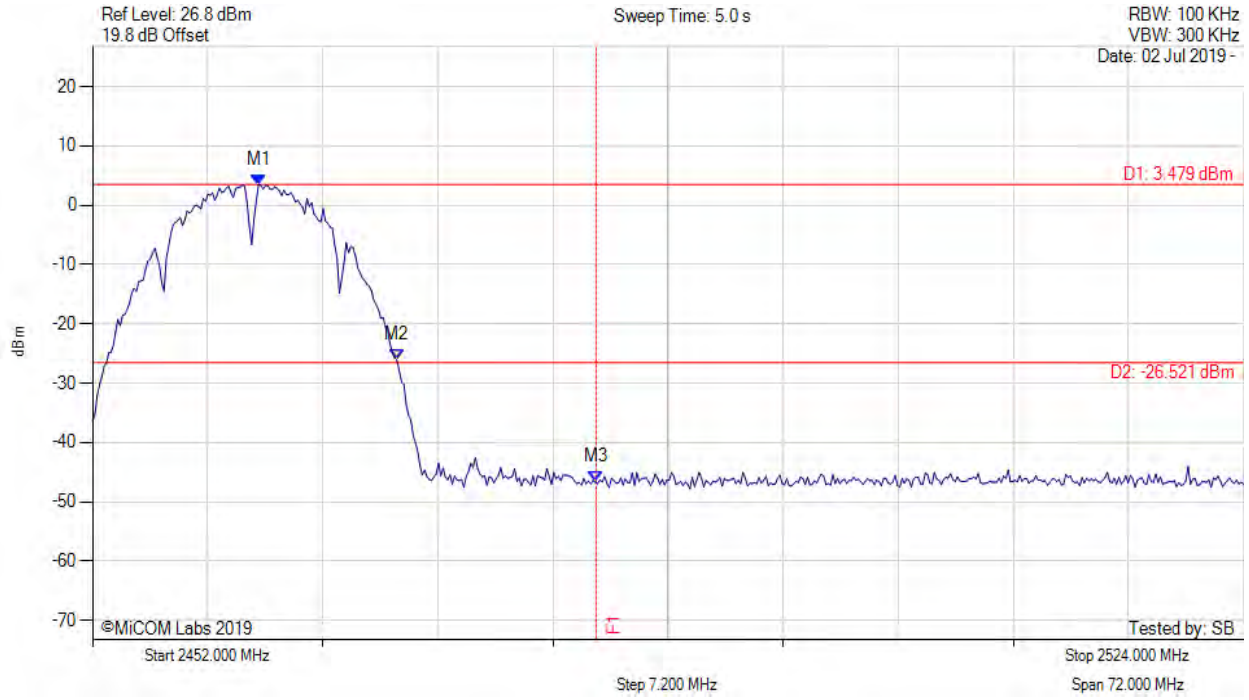


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.234 MHz : 4.199 dBm M2 : 2470.902 MHz : -24.908 dBm M3 : 2483.500 MHz : -46.848 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

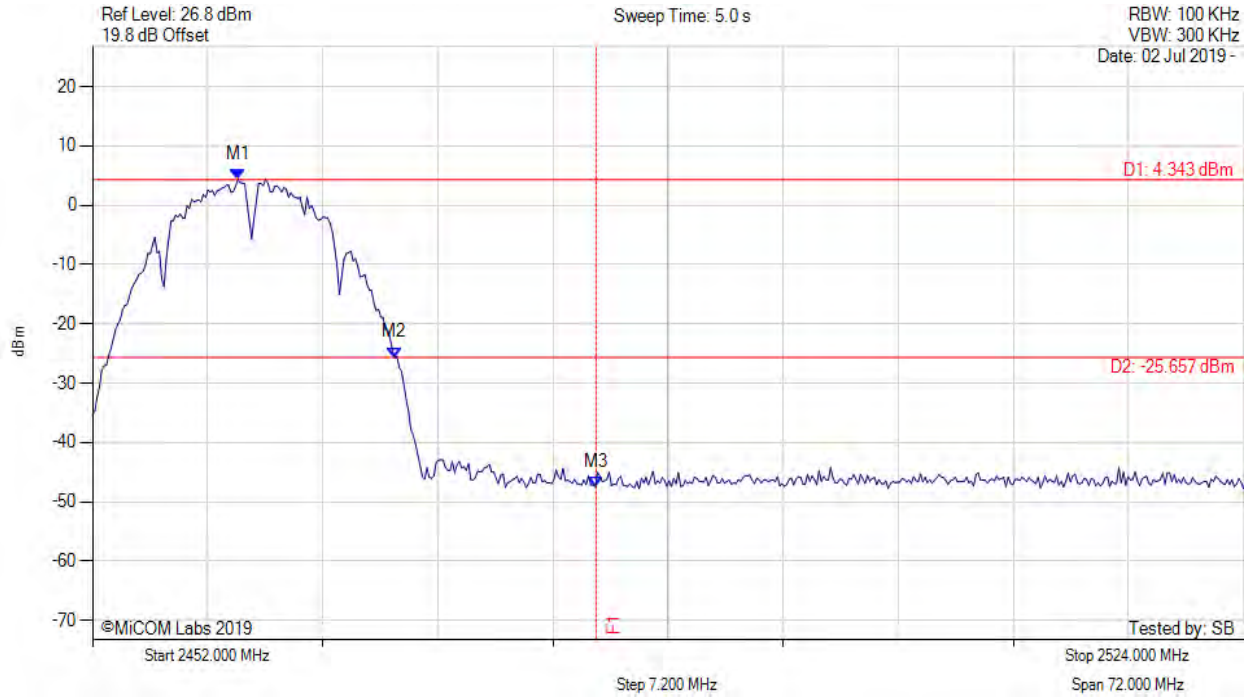


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.389 MHz : 3.479 dBm M2 : 2471.046 MHz : -26.134 dBm M3 : 2483.500 MHz : -46.714 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

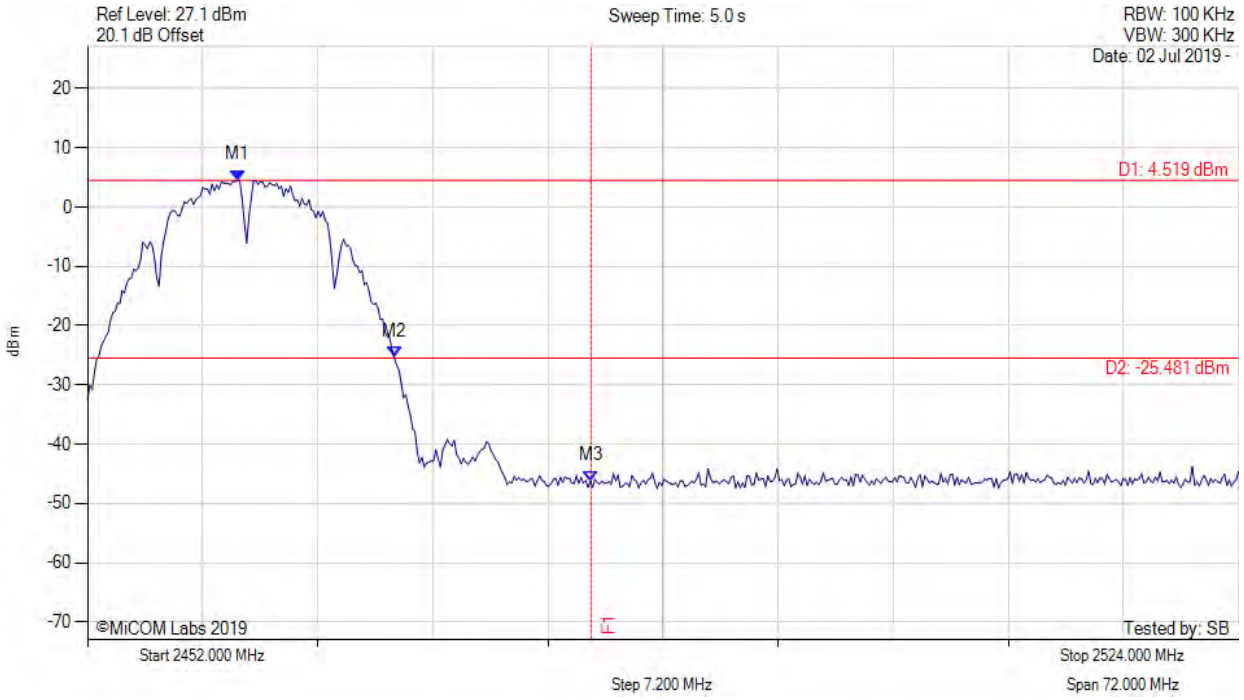


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.090 MHz : 4.343 dBm M2 : 2470.902 MHz : -25.691 dBm M3 : 2483.500 MHz : -47.462 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

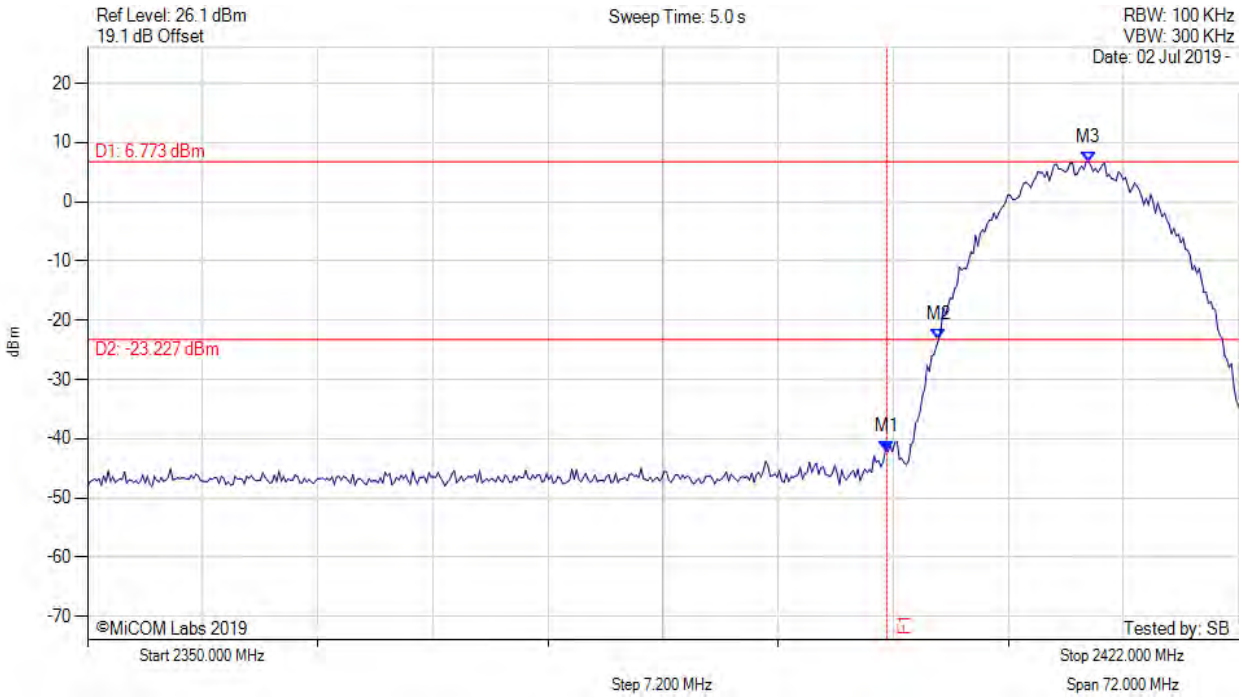


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.379 MHz : 4.519 dBm M2 : 2471.190 MHz : -25.379 dBm M3 : 2483.500 MHz : -46.186 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

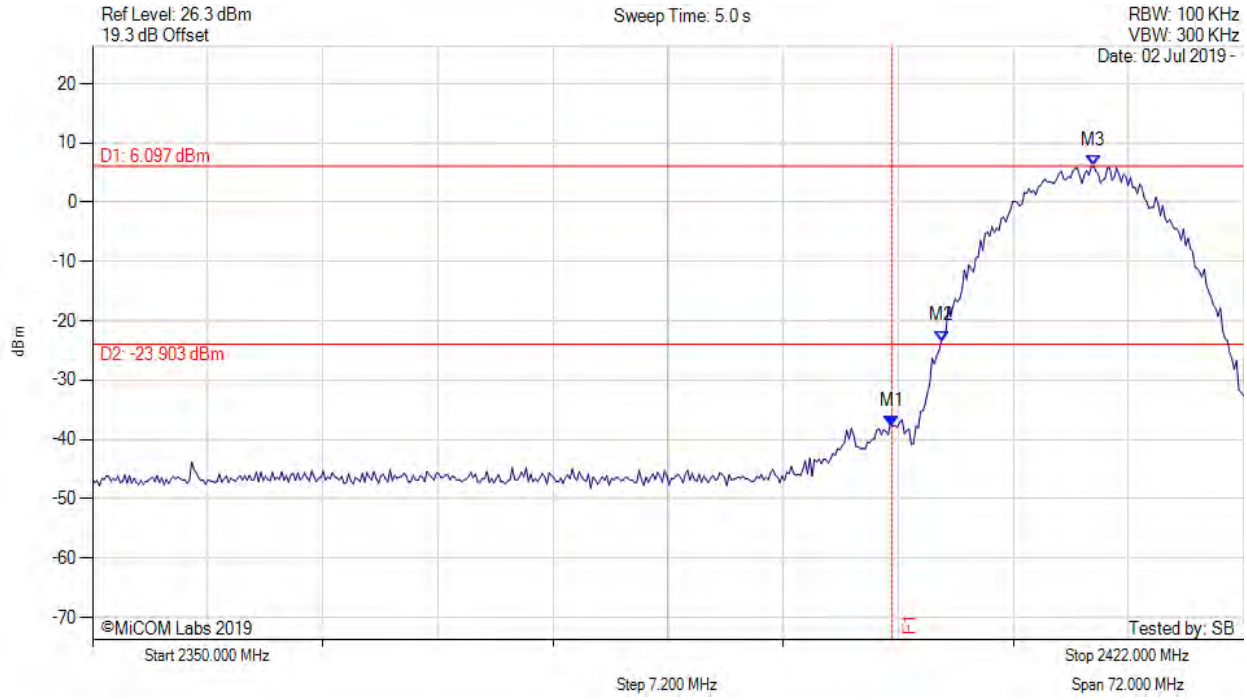


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -42.220 dBm M2 : 2403.242 MHz : -23.290 dBm M3 : 2412.621 MHz : 6.773 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

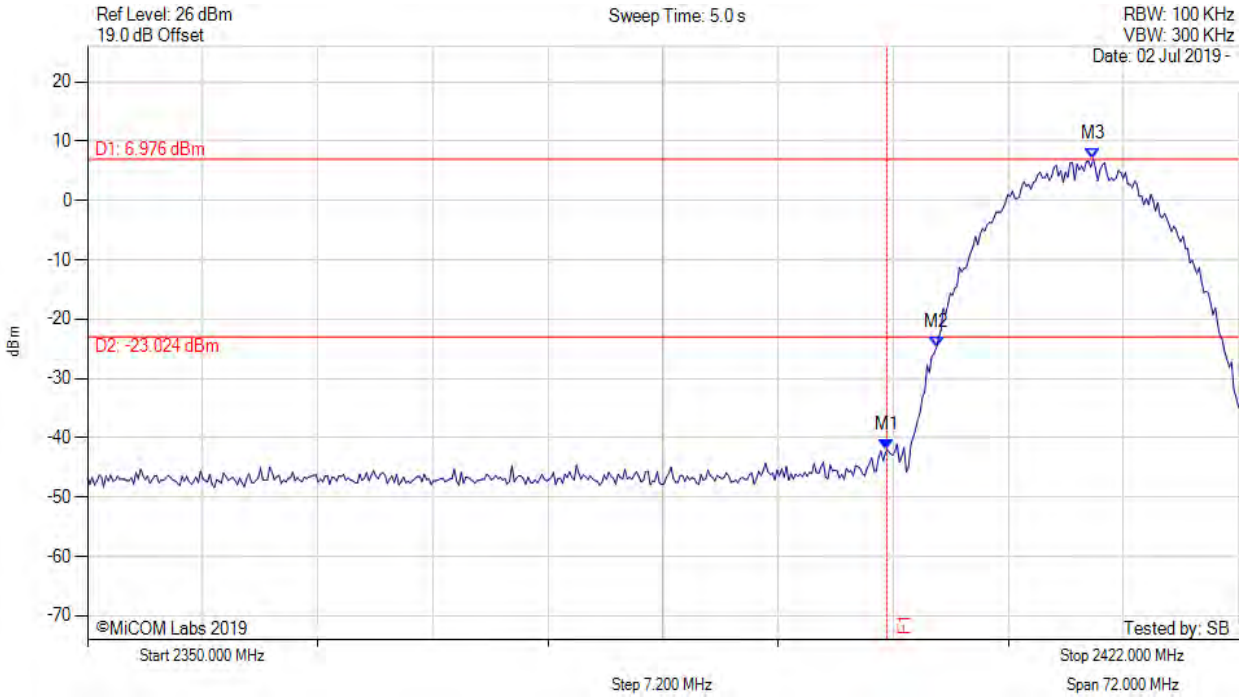


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -37.696 dBm M2 : 2403.098 MHz : -23.386 dBm M3 : 2412.621 MHz : 6.097 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

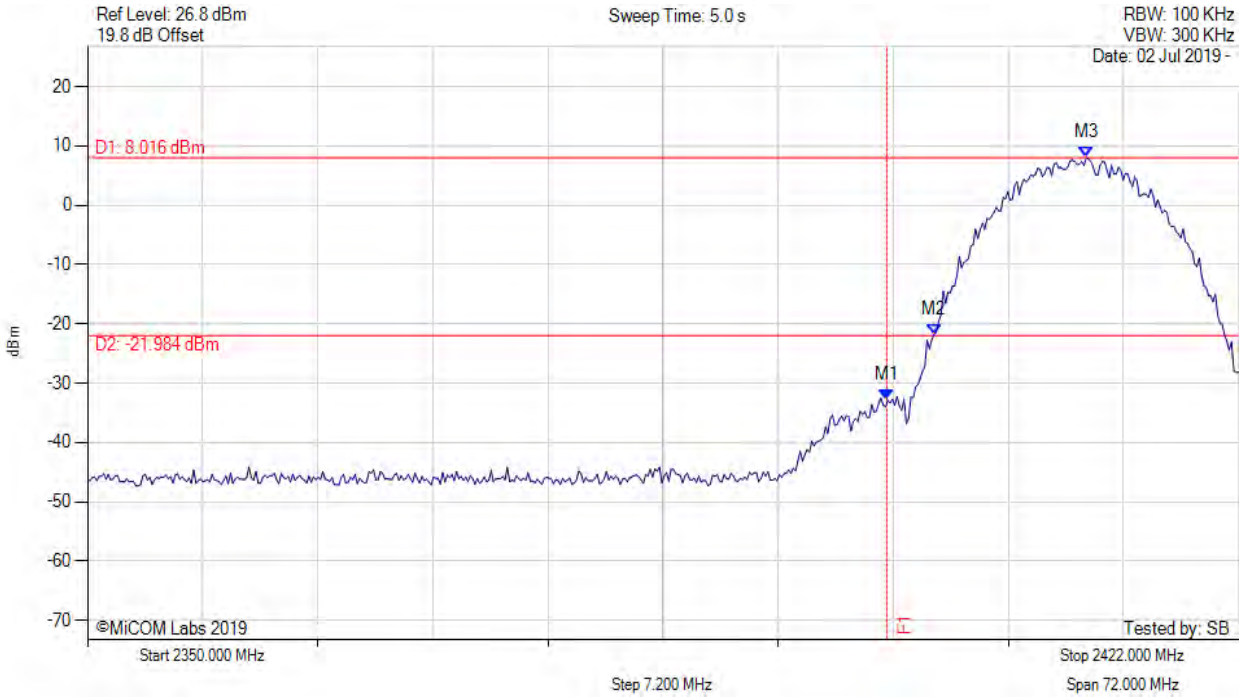


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -42.086 dBm M2 : 2403.098 MHz : -24.844 dBm M3 : 2412.910 MHz : 6.976 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

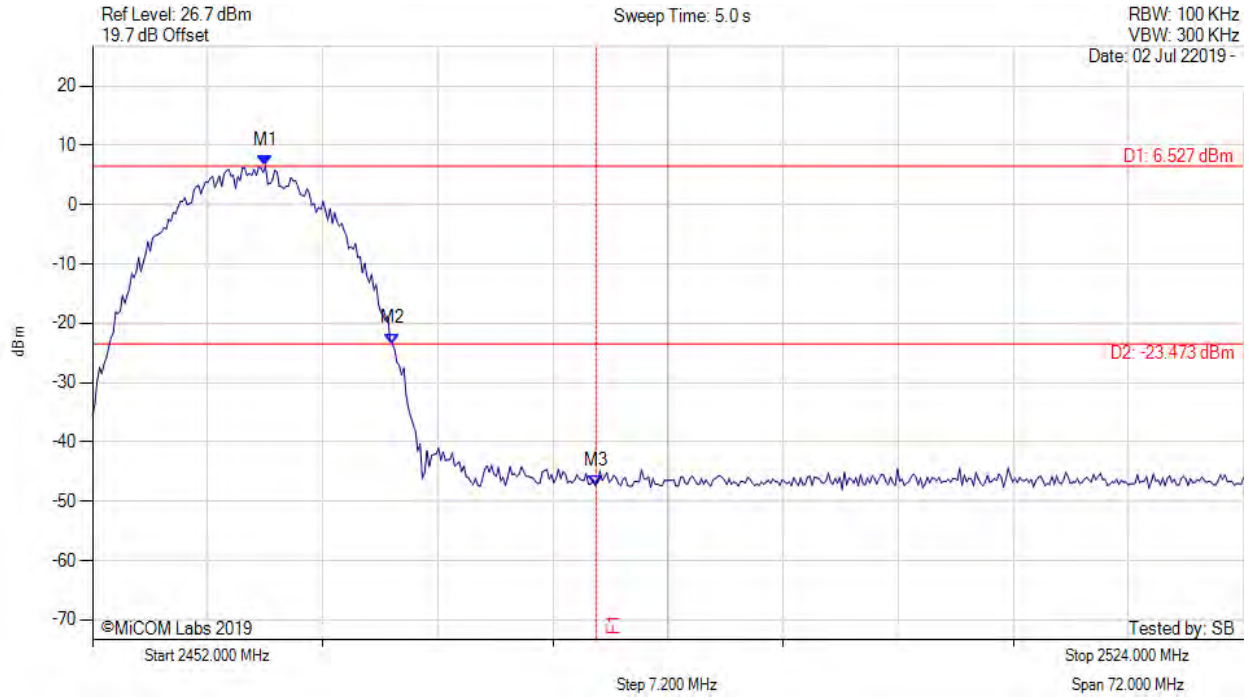


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -32.884 dBm M2 : 2402.954 MHz : -21.815 dBm M3 : 2412.477 MHz : 8.016 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

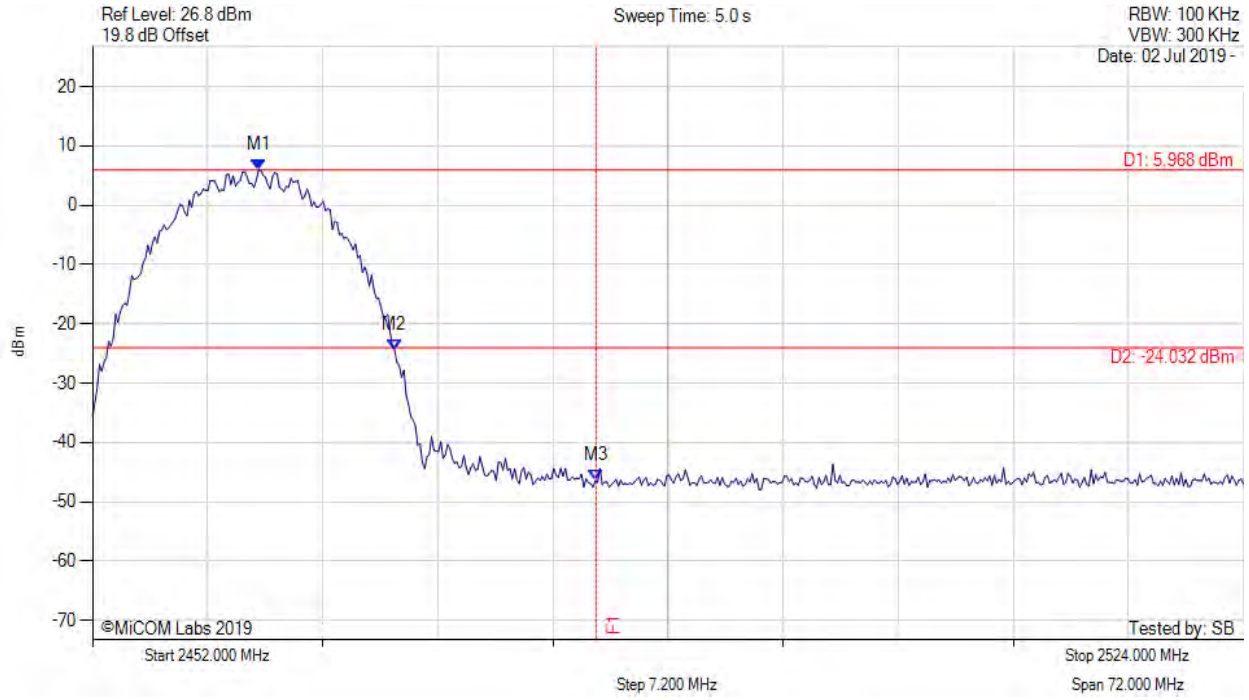


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.822 MHz : 6.527 dBm M2 : 2470.758 MHz : -23.458 dBm M3 : 2483.500 MHz : -47.369 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

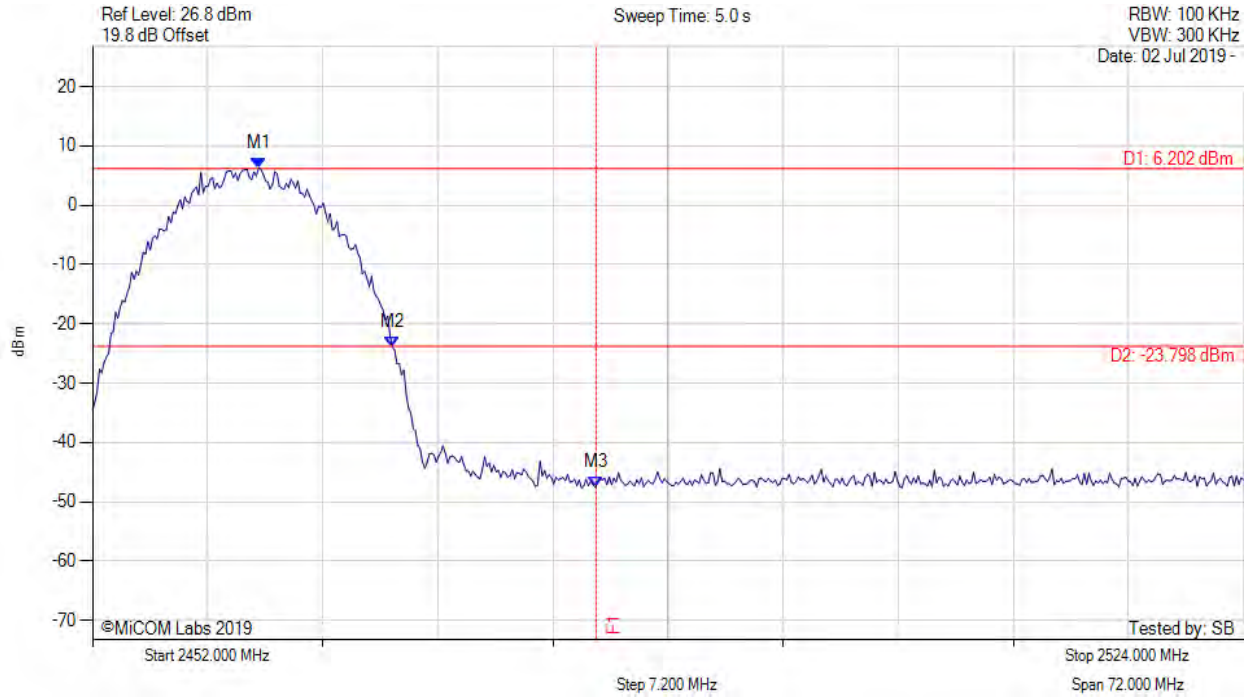


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.389 MHz : 5.968 dBm M2 : 2470.902 MHz : -24.471 dBm M3 : 2483.500 MHz : -46.437 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

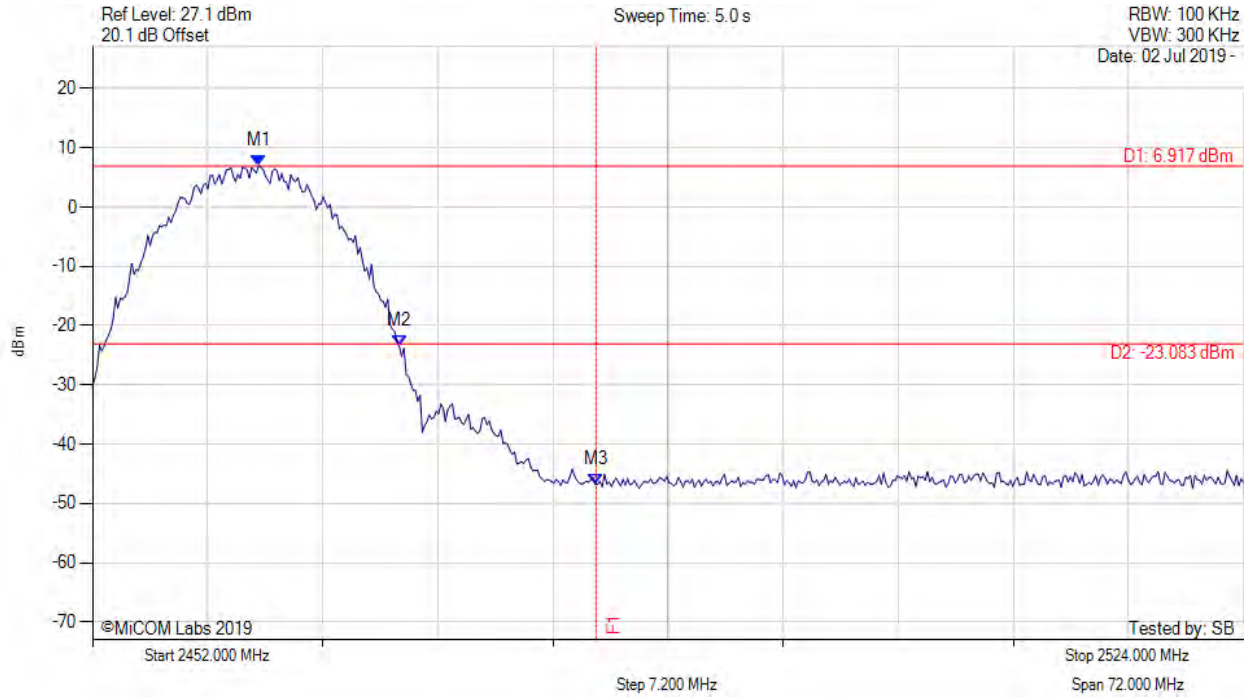


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.389 MHz : 6.202 dBm M2 : 2470.758 MHz : -23.893 dBm M3 : 2483.500 MHz : -47.566 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11b, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

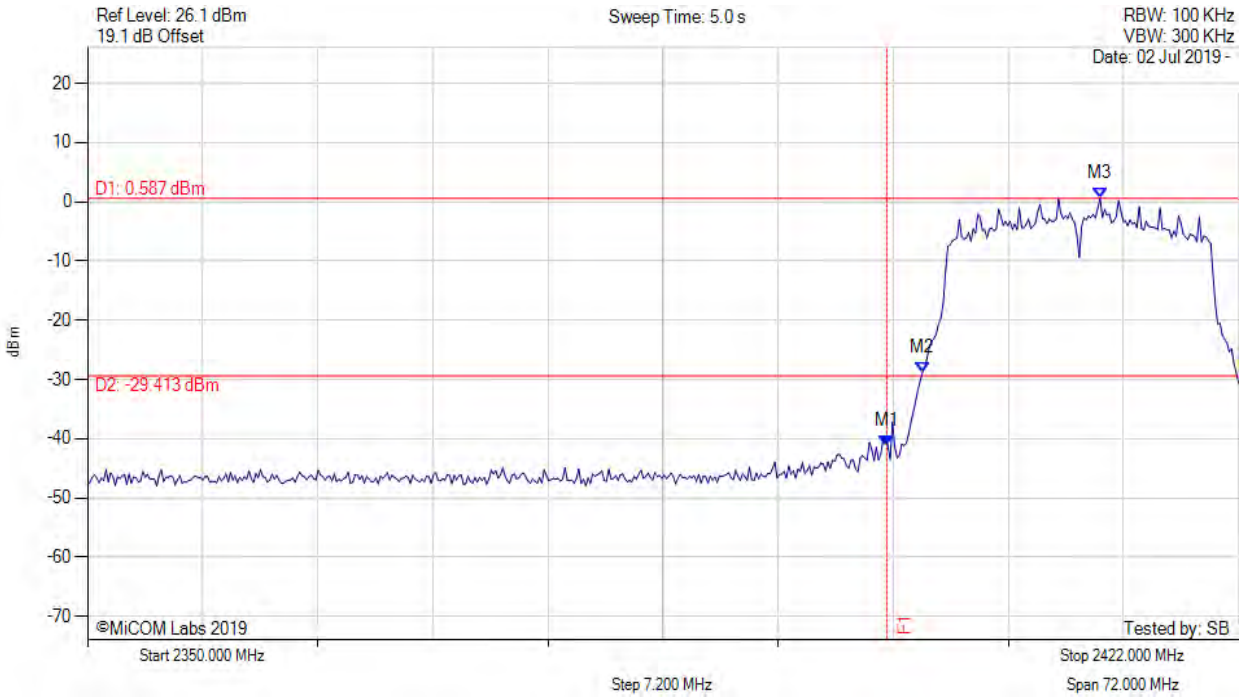


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.389 MHz : 6.917 dBm M2 : 2471.190 MHz : -23.504 dBm M3 : 2483.500 MHz : -46.688 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

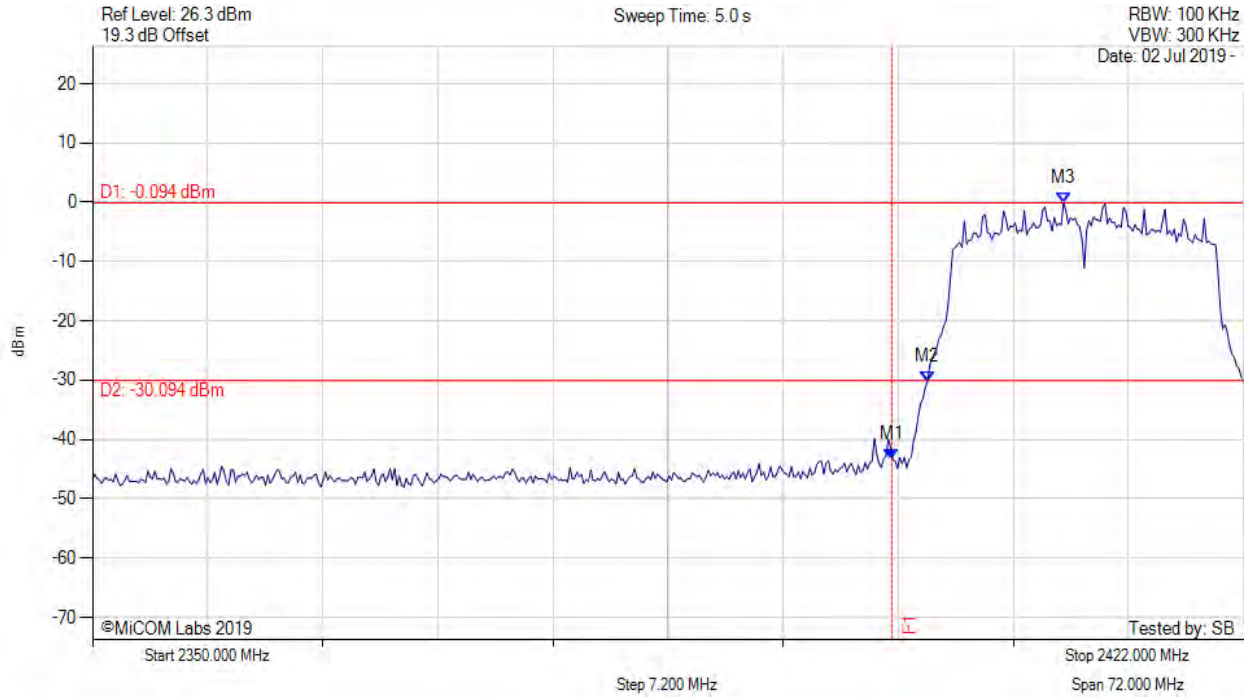


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -41.140 dBm M2 : 2402.232 MHz : -28.803 dBm M3 : 2413.343 MHz : 0.587 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

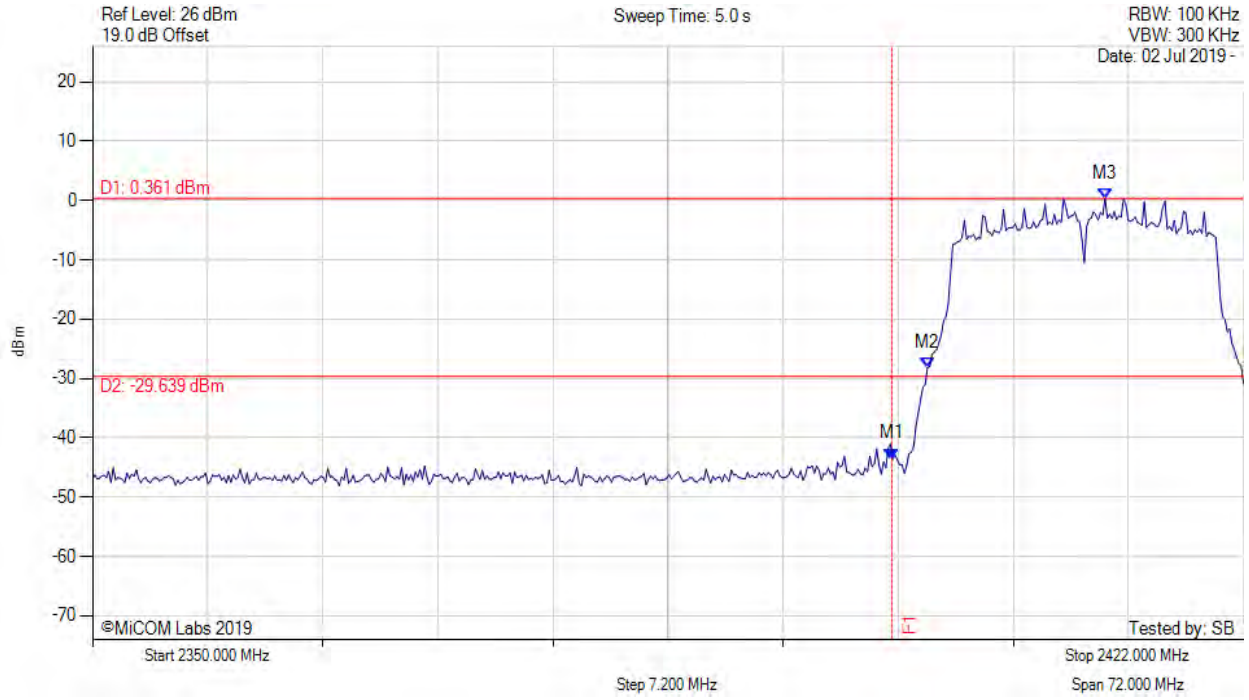


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -43.415 dBm M2 : 2402.232 MHz : -30.206 dBm M3 : 2410.745 MHz : -0.094 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

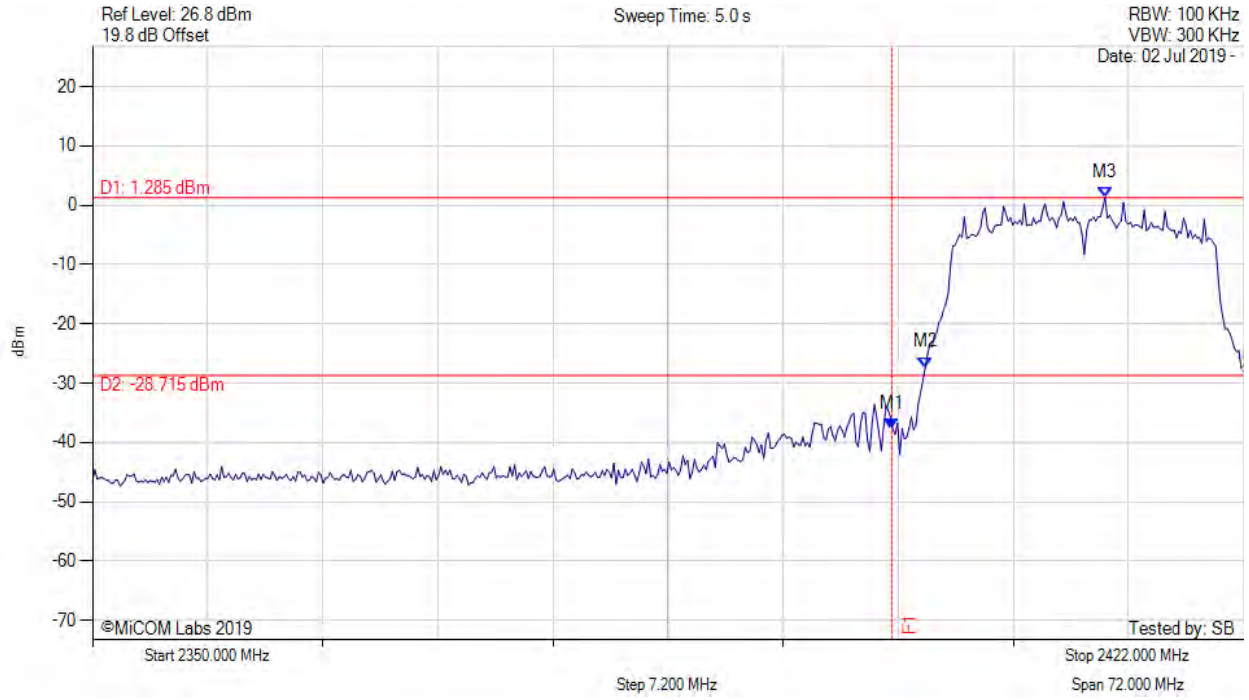


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -43.552 dBm M2 : 2402.232 MHz : -28.197 dBm M3 : 2413.343 MHz : 0.361 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

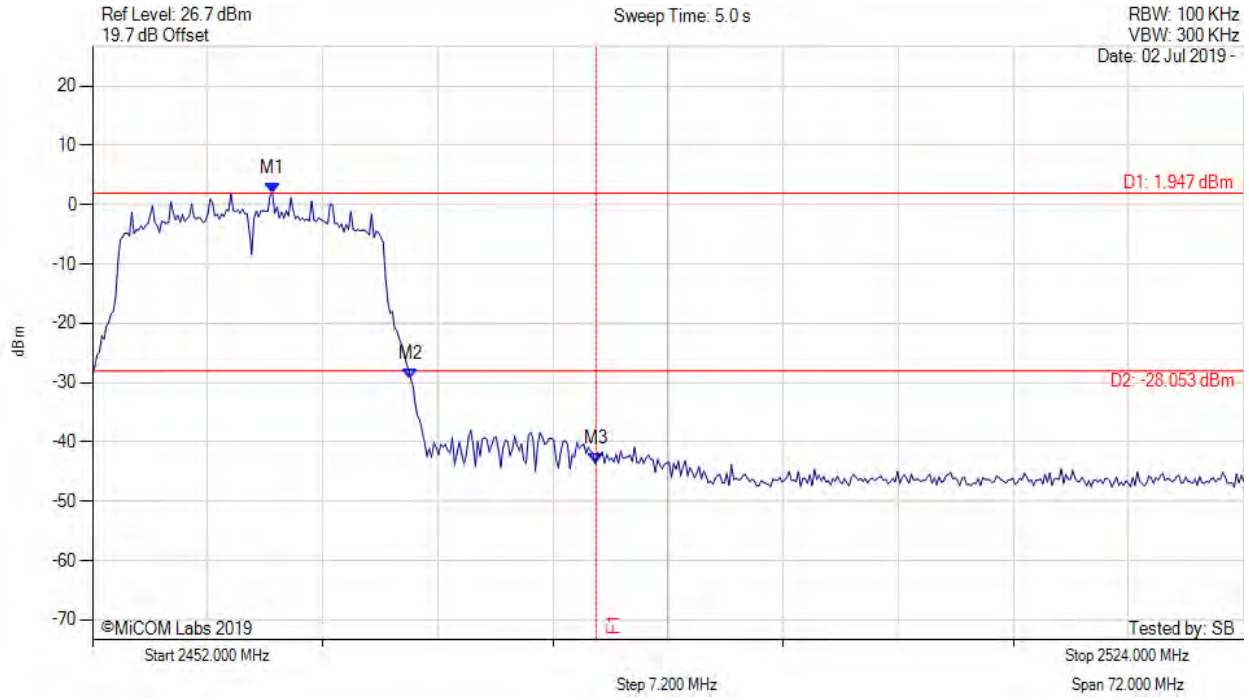


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -37.794 dBm M2 : 2402.088 MHz : -27.334 dBm M3 : 2413.343 MHz : 1.285 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

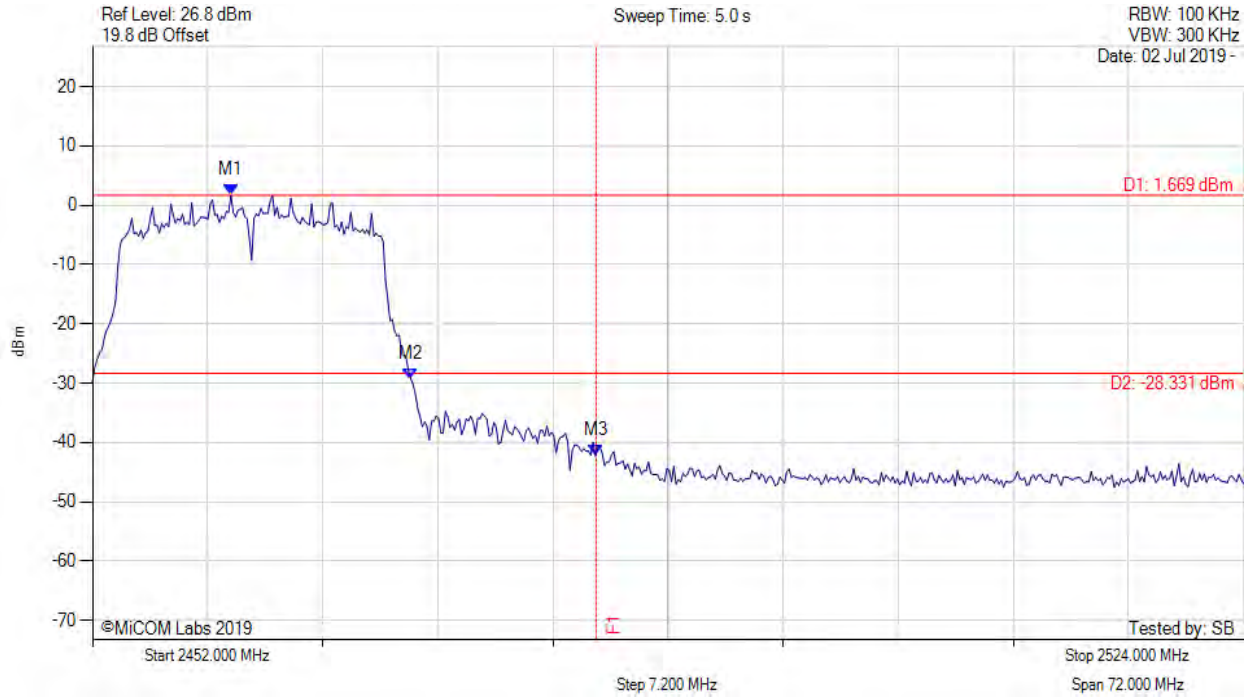


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2463.255 MHz : 1.947 dBm M2 : 2471.912 MHz : -29.411 dBm M3 : 2483.500 MHz : -43.643 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

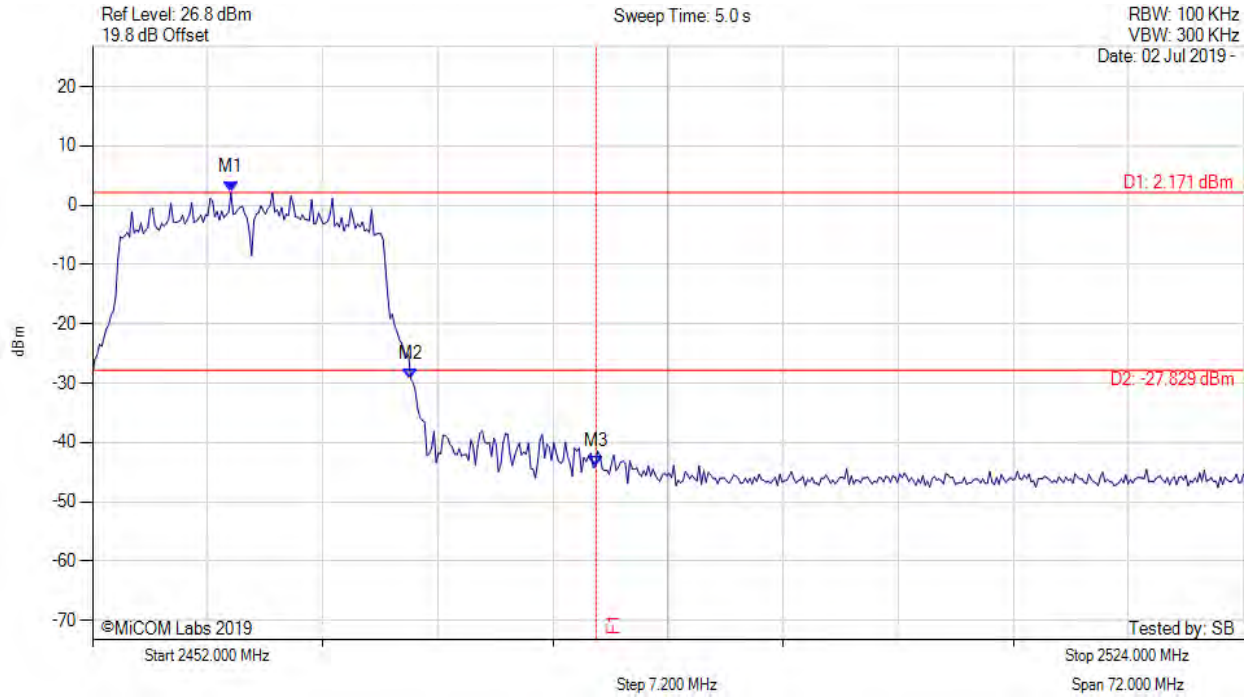


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.657 MHz : 1.669 dBm M2 : 2471.912 MHz : -29.218 dBm M3 : 2483.500 MHz : -42.248 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

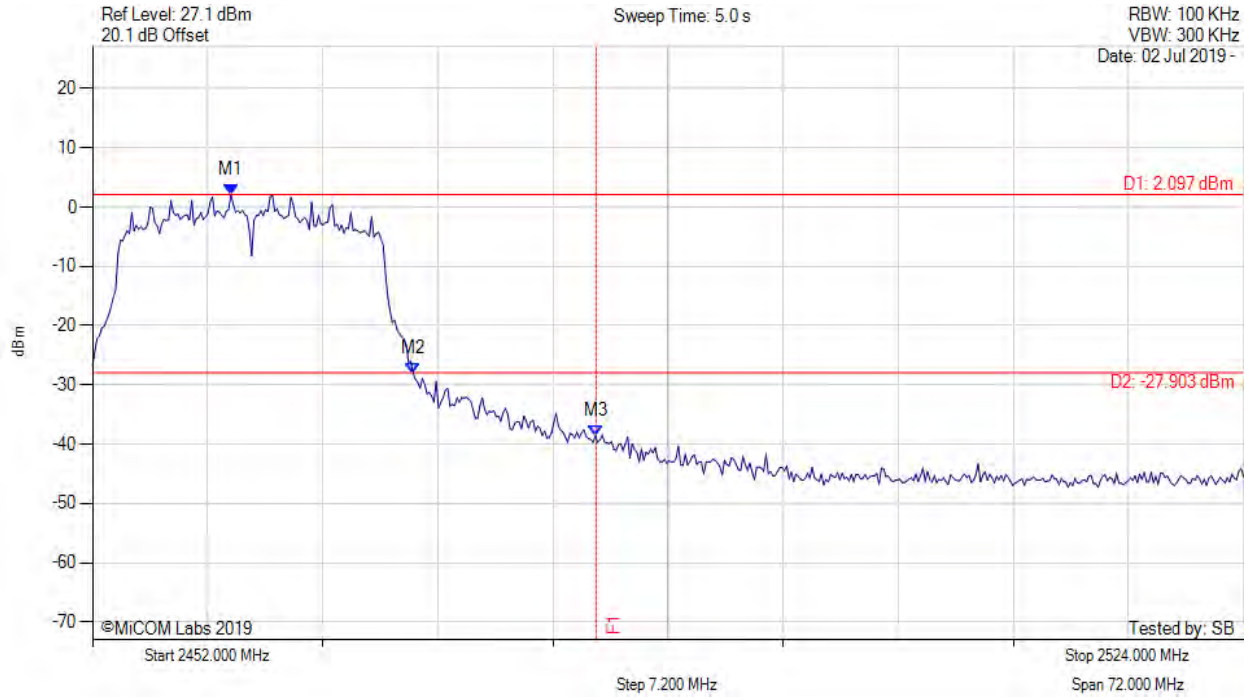


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.657 MHz : 2.171 dBm M2 : 2471.912 MHz : -29.285 dBm M3 : 2483.500 MHz : -44.044 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11g, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

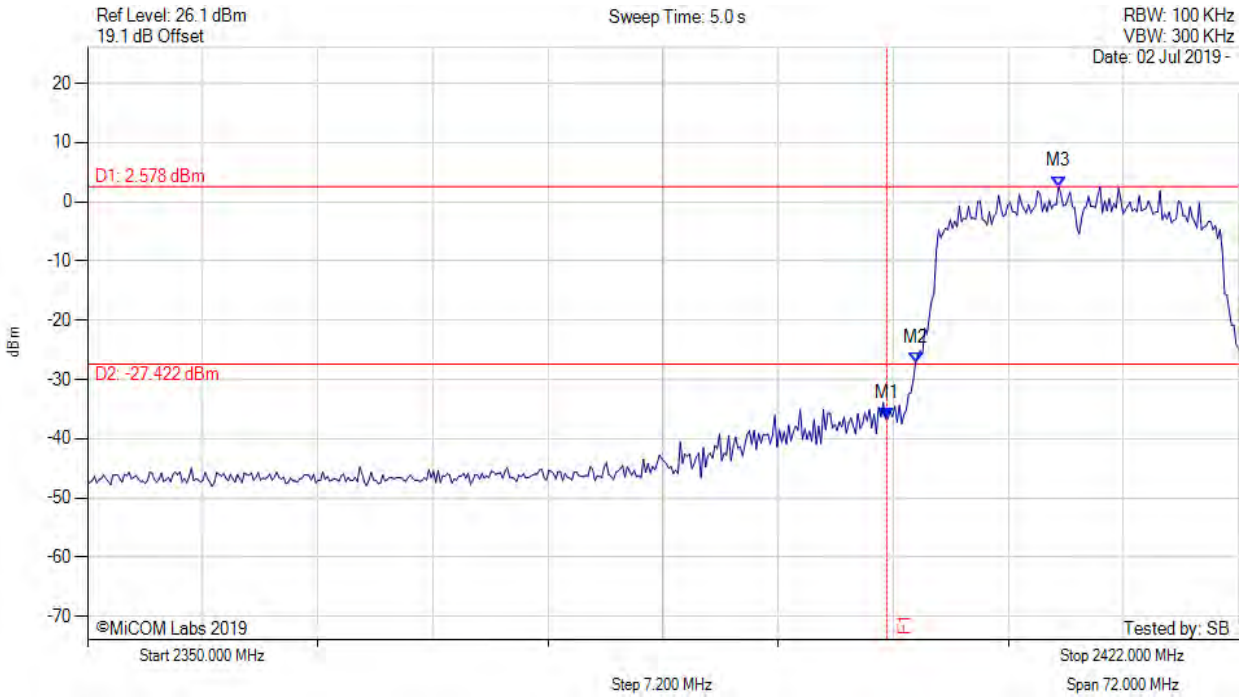


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.657 MHz : 2.097 dBm M2 : 2472.056 MHz : -28.071 dBm M3 : 2483.500 MHz : -38.574 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

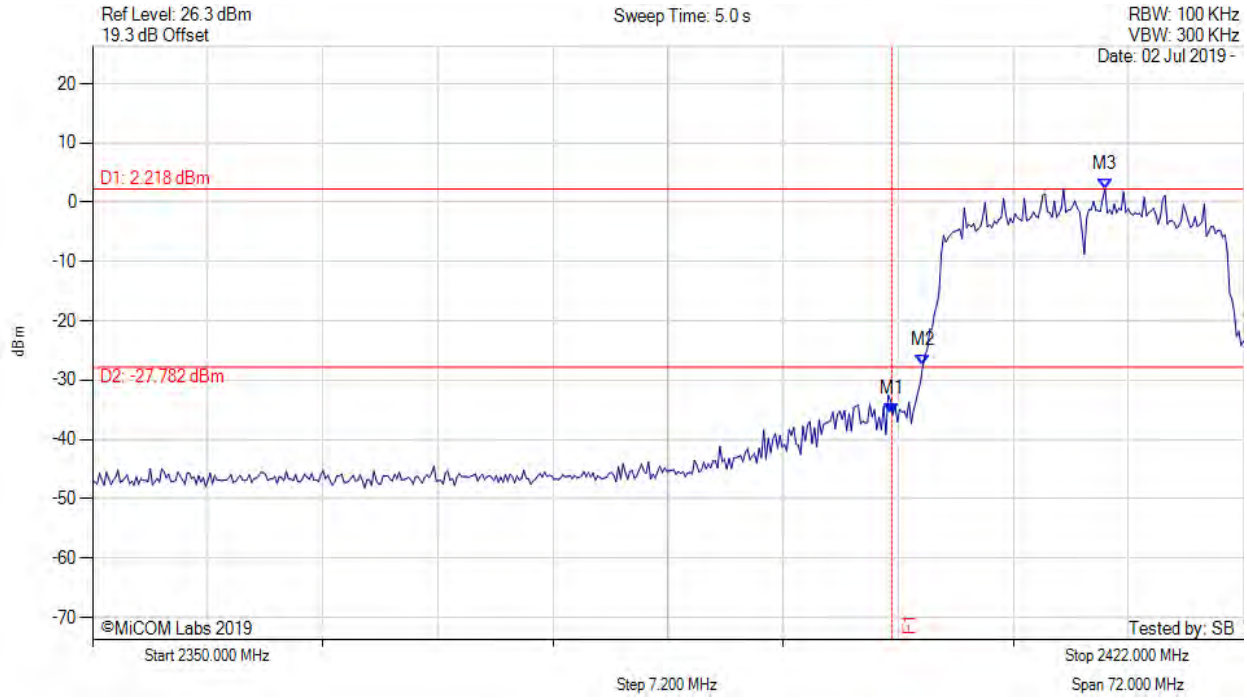


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -36.619 dBm M2 : 2401.800 MHz : -27.119 dBm M3 : 2410.745 MHz : 2.578 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

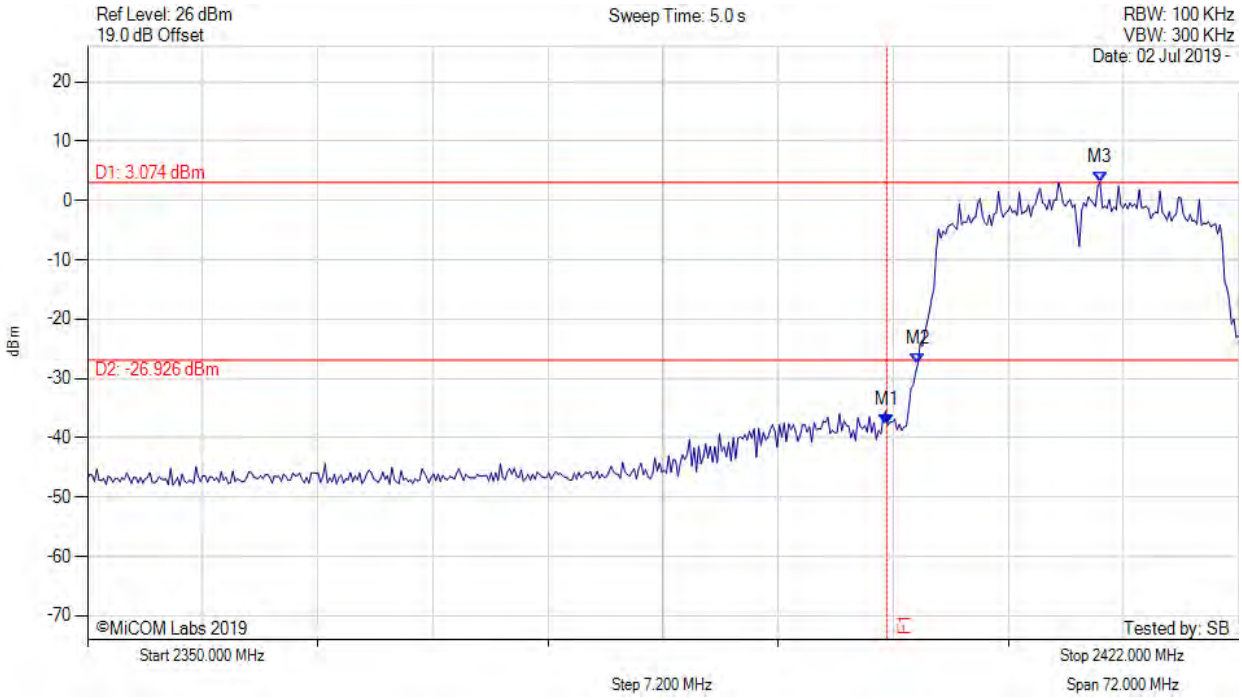


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -35.764 dBm M2 : 2401.944 MHz : -27.423 dBm M3 : 2413.343 MHz : 2.218 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

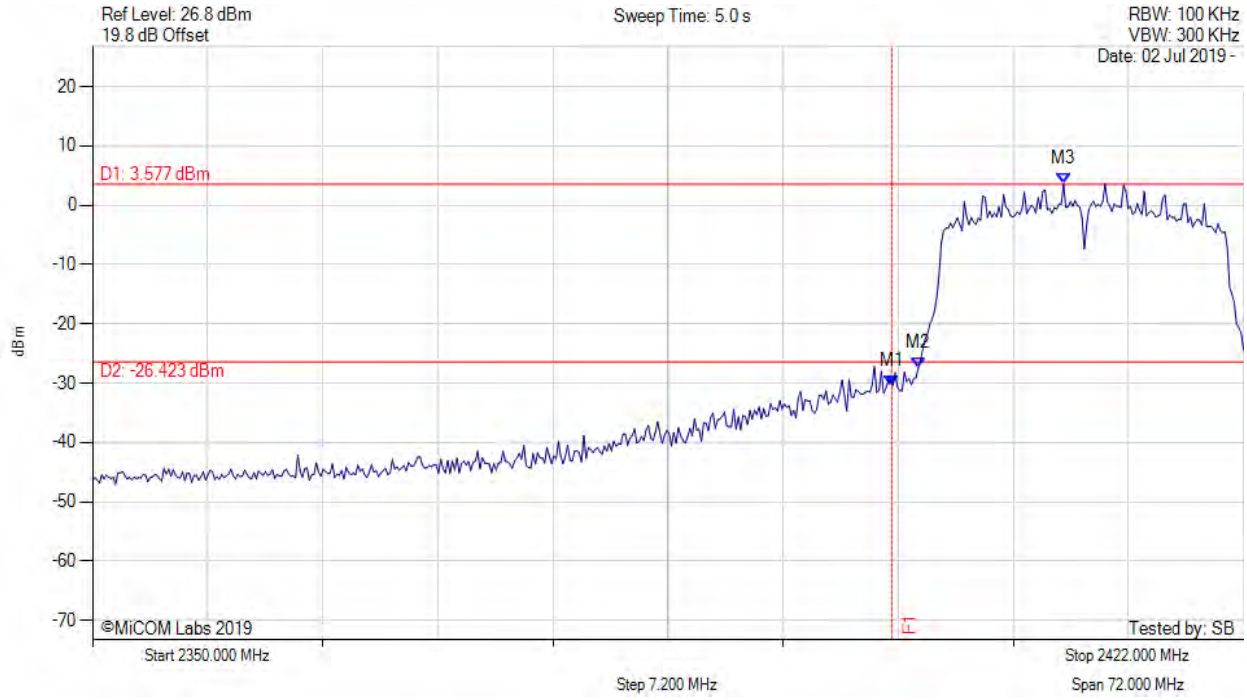


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -37.856 dBm M2 : 2401.944 MHz : -27.634 dBm M3 : 2413.343 MHz : 3.074 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc

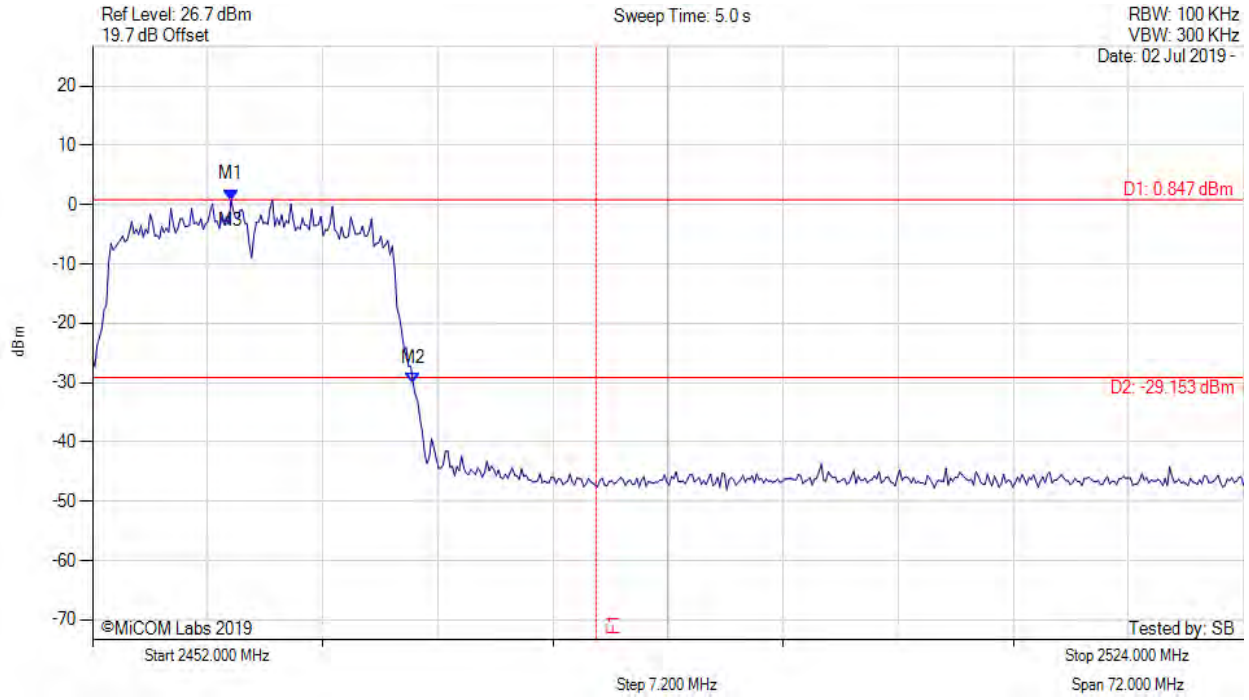


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -30.397 dBm M2 : 2401.655 MHz : -27.464 dBm M3 : 2410.745 MHz : 3.577 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc

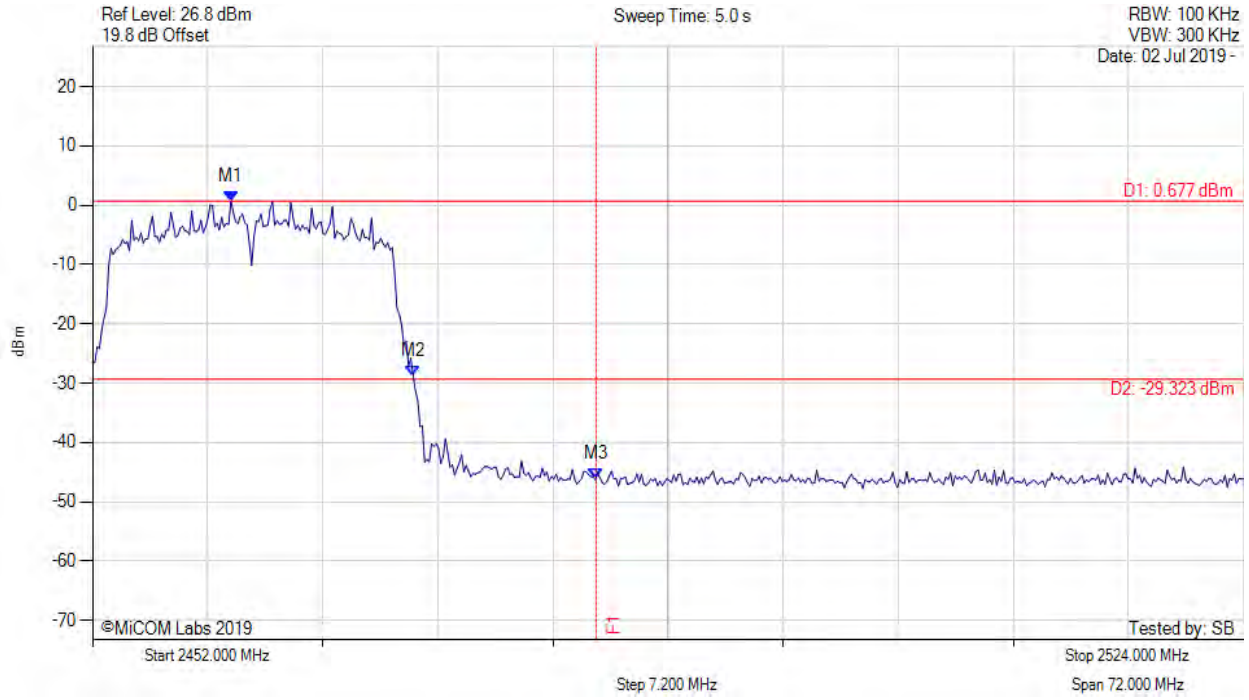


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.657 MHz : 0.847 dBm M2 : 2472.056 MHz : -30.208 dBm M3 : 2460.657 MHz : -46.333 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 12 Vdc

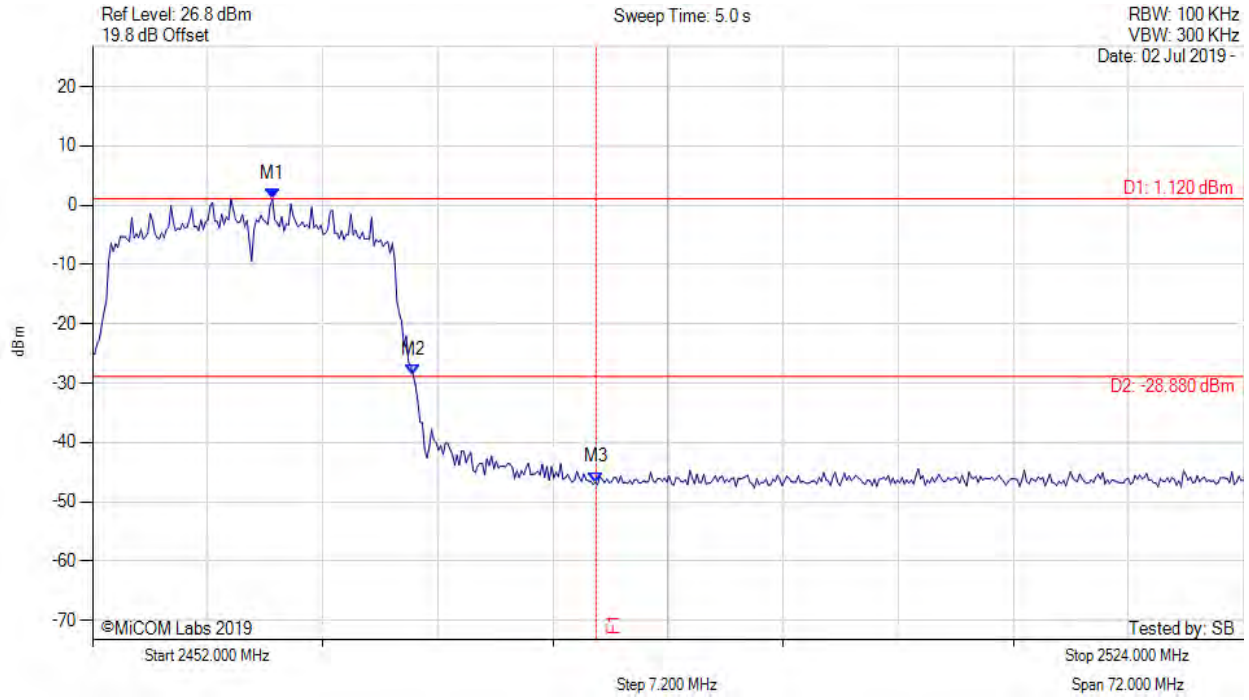


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.657 MHz : 0.677 dBm M2 : 2472.056 MHz : -28.756 dBm M3 : 2483.500 MHz : -46.236 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain c, Temp: 20, Voltage: 12 Vdc

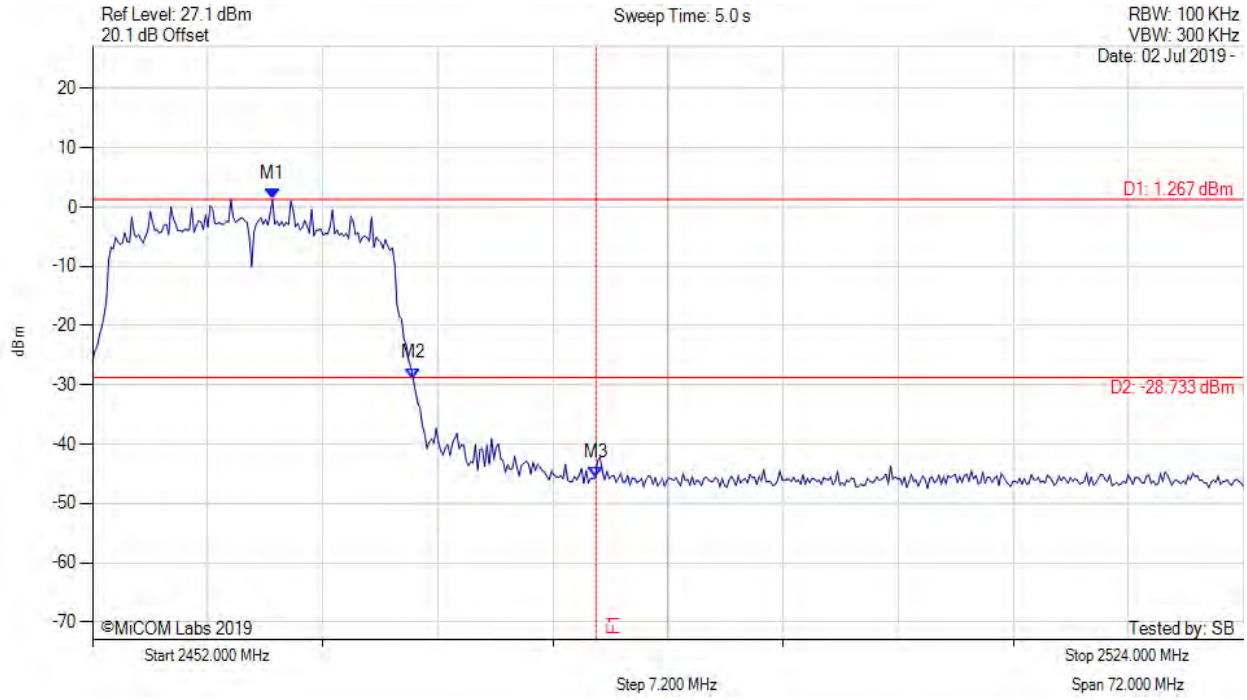


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2463.255 MHz : 1.120 dBm M2 : 2472.056 MHz : -28.634 dBm M3 : 2483.500 MHz : -46.742 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSION - PEAK

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc



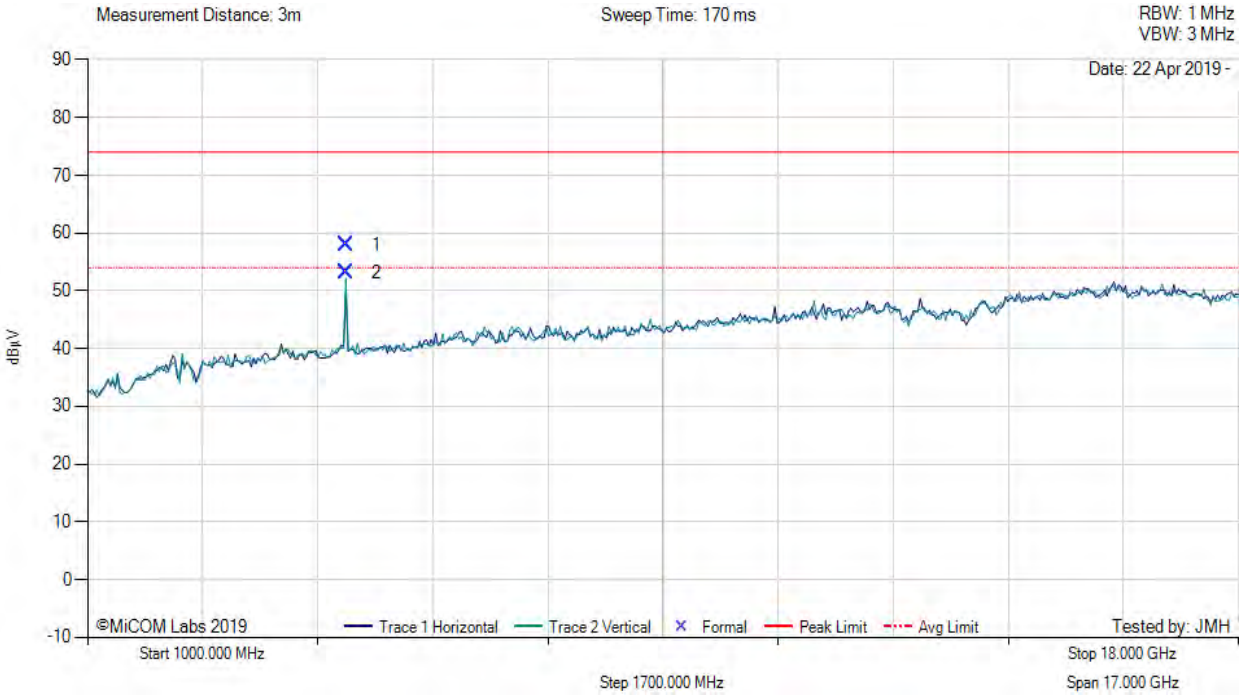
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2463.255 MHz : 1.267 dBm M2 : 2472.056 MHz : -28.893 dBm M3 : 2483.500 MHz : -45.678 dBm	Channel Frequency: 2462.00 MHz

back to matrix

A.1.2. Radiated Emissions

A.1.2.3. TX Spurious & Restricted Band Emissions

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 13, Duty Cycle (%): 49



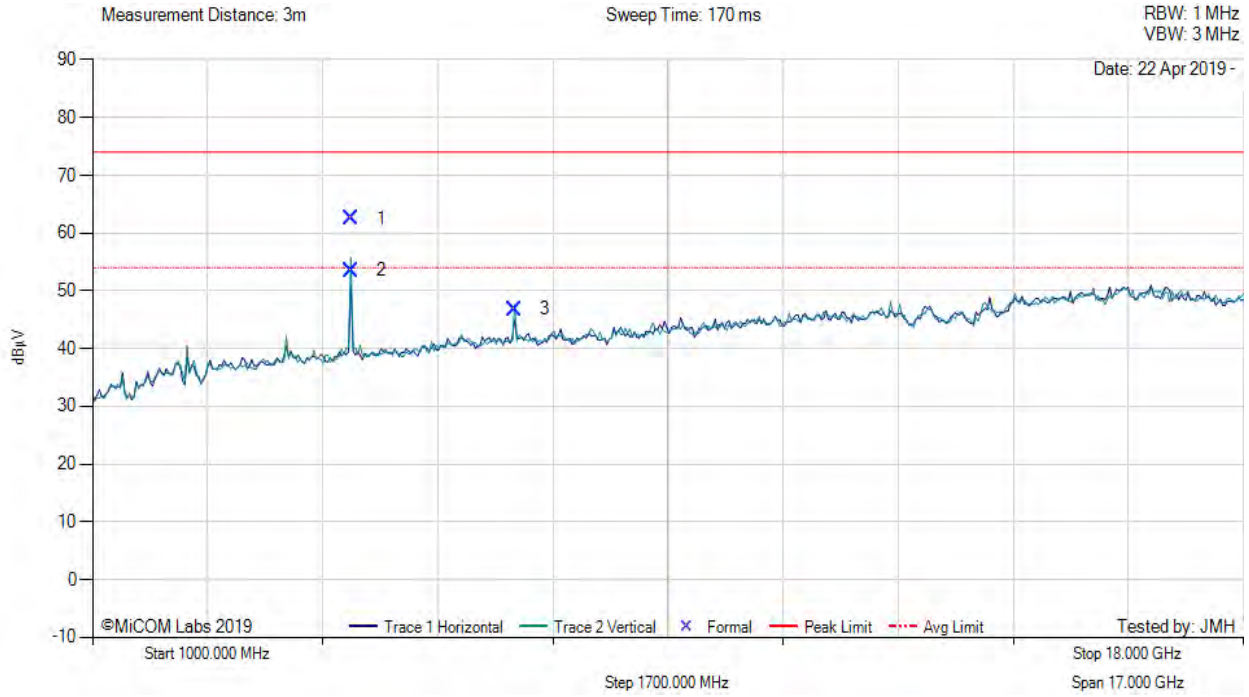
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	4824.03	72.86	-2.53	-12.42	57.91	Max Peak	Vertical	134	93	74.0	-16.1	Pass
2	4824.03	65.07	-2.53	-12.42	53.12	Max Avg	Vertical	134	93	54.0	-0.9	Pass

Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. 1 Mbit/s data rate. DC correction of 3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 16.0, Duty Cycle (%): 27



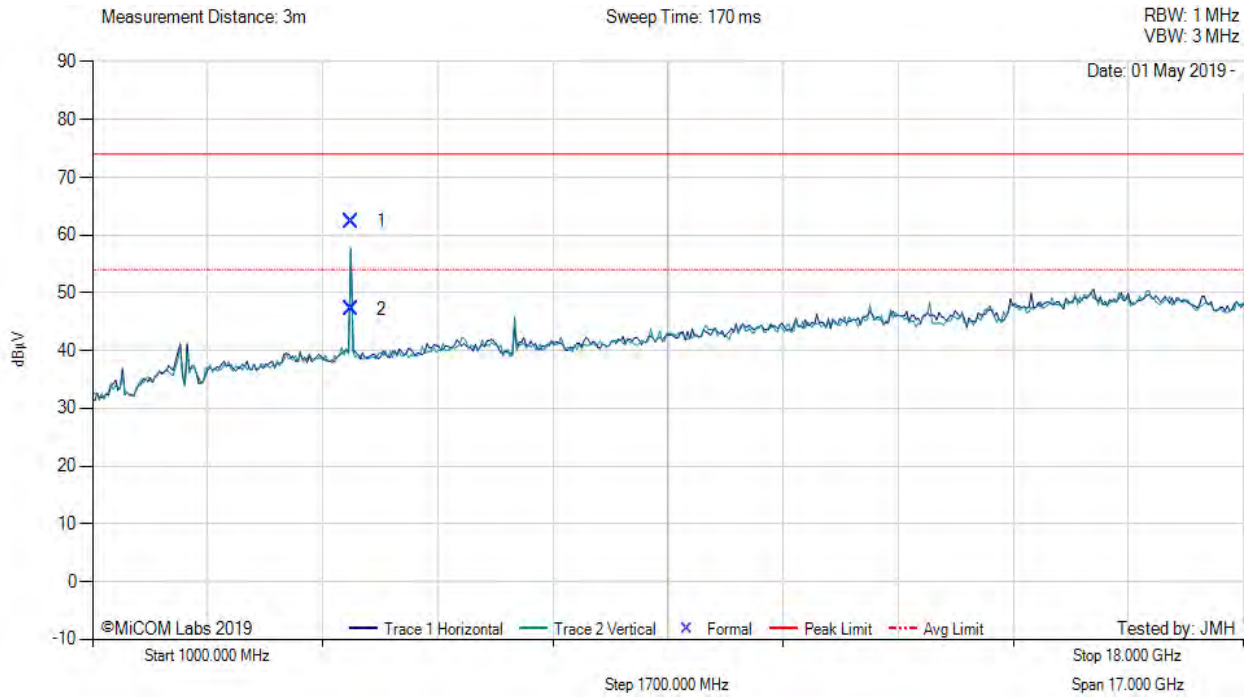
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	4823.94	77.47	-2.52	-12.43	62.52	Max Peak	Vertical	110	99	74.0	-11.5	Pass
2	4823.94	68.49	-2.52	-12.43	53.54	Max Avg	Vertical	110	99	54.0	-0.5	Pass
3	7234.66	57.47	-3.09	-7.59	46.79	Peak (NRB)	Vertical	100	0	--	--	Pass

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 18, Duty Cycle (%): 20

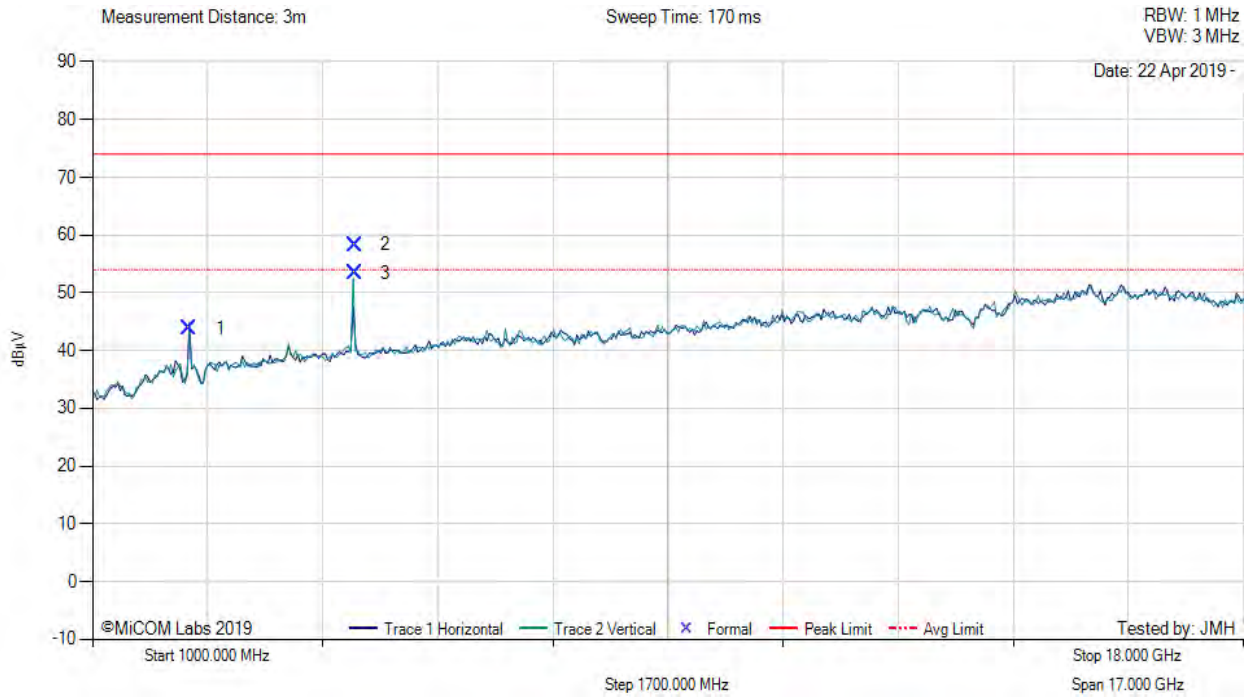


1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4818.48	77.36	-2.52	-12.45	62.39	Max Peak	Horizontal	125	172	74.0	-11.6	Pass
2	4818.48	62.11	-2.52	-12.45	47.14	Max Avg	Horizontal	125	172	54.0	-6.9	Pass

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. 5.5 Mbit/s data rate. 5.5 Mbit/s data rate. DC correction +6.9 dB

back to matrix

Variant: 802.11b, Test Freq: 2437.00 MHz, Antenna: ICT Custom, Power Setting: 13, Duty Cycle (%): 50



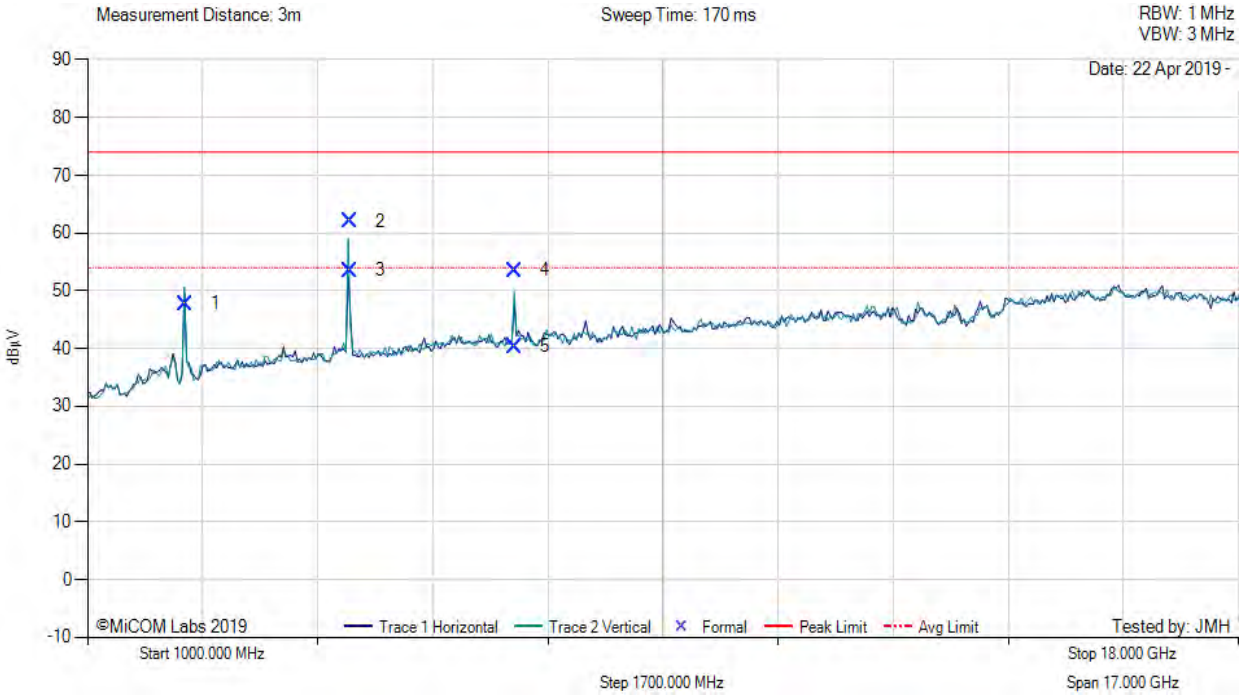
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2434.99	57.76	-1.77	-12.12	43.87	Fundamental	Vertical	151	0	--	--	
2	4873.90	73.45	-2.51	-12.61	58.33	Max Peak	Vertical	149	139	74.0	-15.7	Pass
3	4873.90	65.59	-2.51	-12.61	53.47	Max Avg	Vertical	149	139	54.0	-0.5	Pass

Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. 1 Mbit/s data rate. DC Corr. + 3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2437.00 MHz, Antenna: ICT Custom, Power Setting: 16.5, Duty Cycle (%): 27



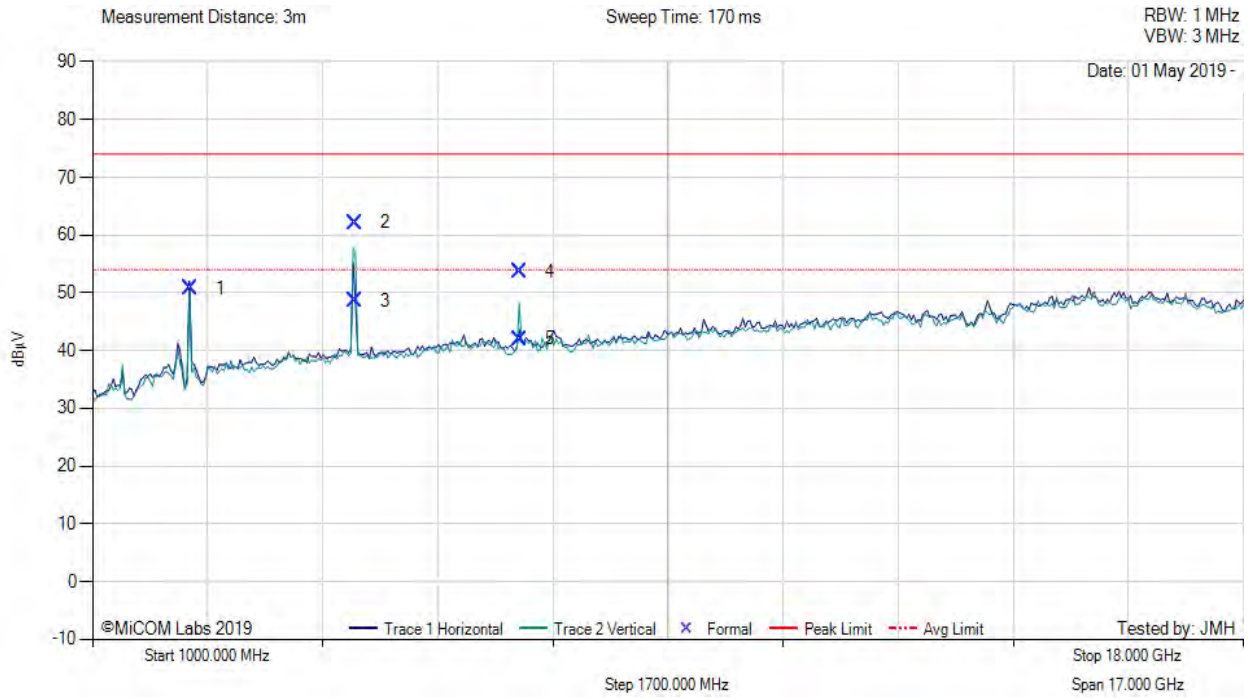
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2438.72	61.69	-1.78	-12.10	47.81	Fundamental	Vertical	100	0	--	--	
2	4874.00	78.09	-2.51	-12.61	61.97	Max Peak	Vertical	149	142	74.0	-12.0	Pass
3	4874.00	68.63	-2.51	-12.61	53.51	Max Avg	Vertical	149	142	54.0	-0.5	Pass
4	7309.50	65.43	-2.99	-7.92	53.52	Max Peak	Vertical	114	357	74.0	-20.5	Pass
5	7309.50	51.27	-2.99	-7.92	40.36	Max Avg	Vertical	114	357	54.0	-13.6	Pass

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2437.00 MHz, Antenna: ICT Custom, Power Setting: 18, Duty Cycle (%): 20

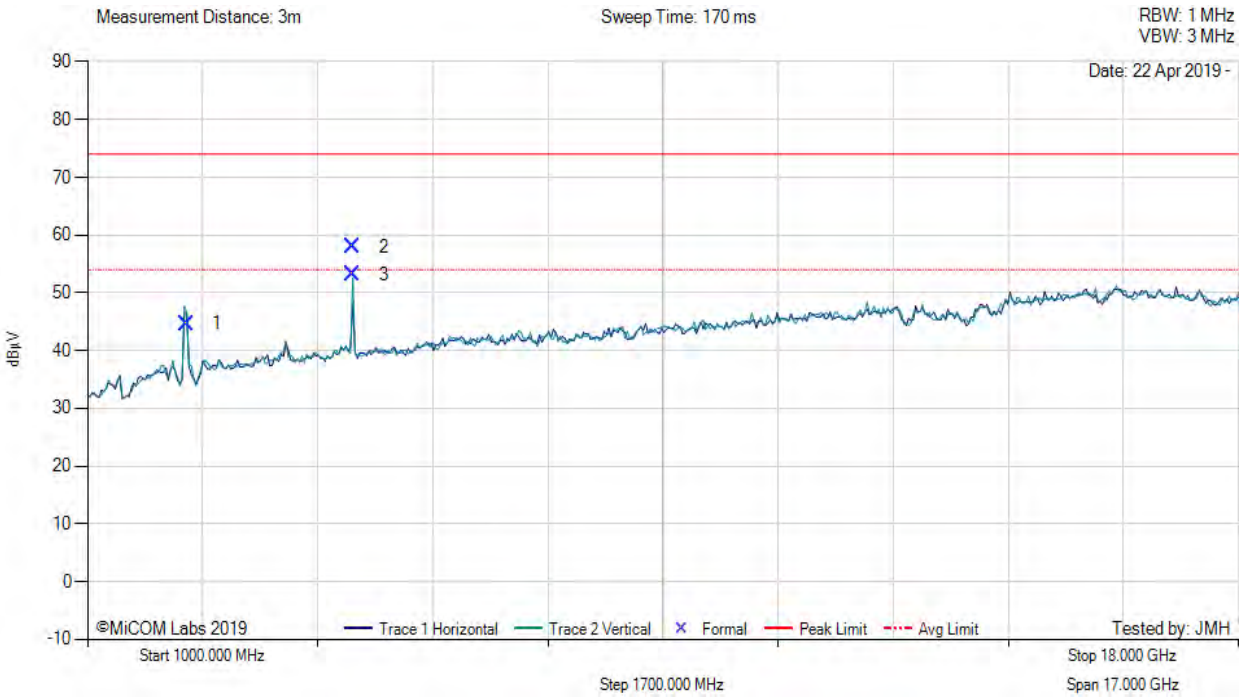


1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2439.40	64.66	-1.78	-12.10	50.78	Fundamental	Horizontal	100	0	--	--	
2	4874.02	77.27	-2.51	-12.60	62.16	Max Peak	Vertical	113	95	74.0	-11.8	Pass
3	4874.02	63.65	-2.51	-12.60	48.54	Max Avg	Vertical	113	95	54.0	-5.5	Pass
4	7310.05	64.52	-2.99	-7.92	53.61	Max Peak	Vertical	186	124	74.0	-20.4	Pass
5	7310.05	52.92	-2.99	-7.92	42.01	Max Avg	Vertical	186	124	54.0	-12.0	Pass

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. 5.5 Mbit/s data rate. DC correction +6.9 dB

back to matrix

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 13, Duty Cycle (%): 50



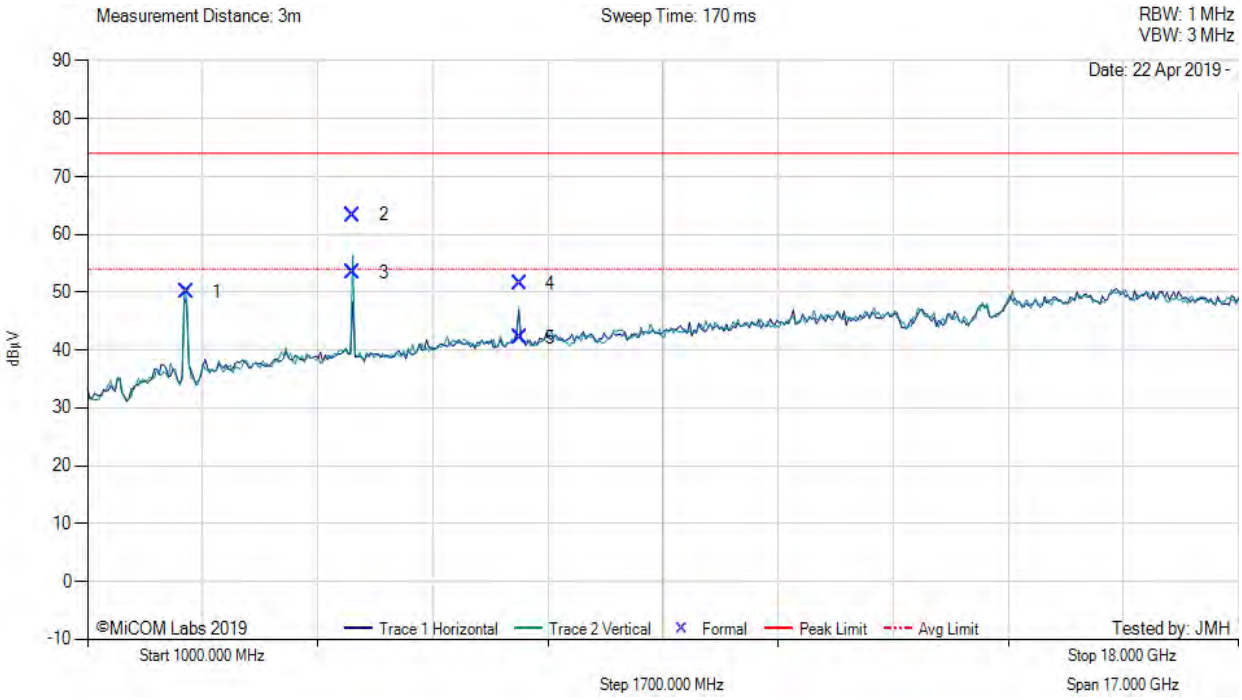
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2462.89	58.38	-1.79	-11.96	44.63	Fundamental	Vertical	100	0	--	--	
2	4923.91	72.88	-2.56	-12.35	57.97	Max Peak	Vertical	98	96	74.0	-16.0	Pass
3	4923.91	65.08	-2.56	-12.35	53.17	Max Avg	Vertical	98	96	54.0	-0.8	Pass

Test Notes: EUT powered by ps, connected via ethernet to laptop outside chamber. Unit one. 2.4G notch in front of amp to prevent overload. 1 Mbit/s data rate. DC Corr. 3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 16.5, Duty Cycle (%): 27



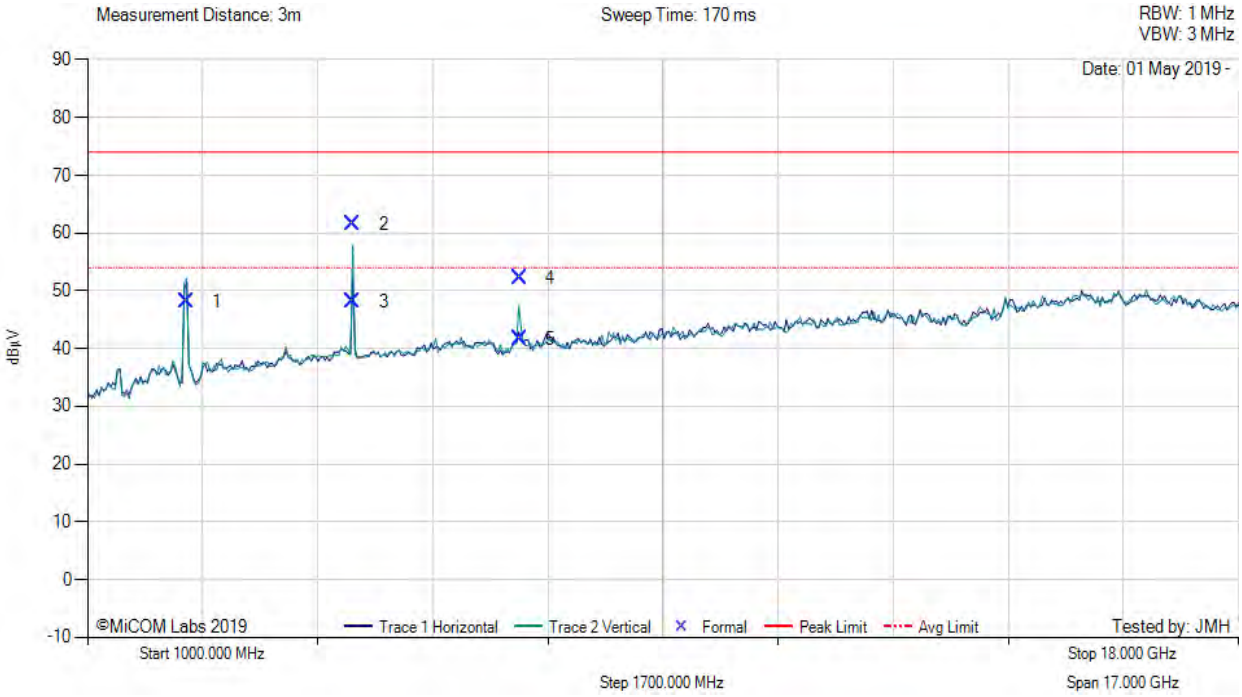
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2459.52	63.70	-1.79	-11.94	49.97	Fundamental	Vertical	100	55	--	--	
2	4923.94	77.23	-2.56	-12.35	63.32	Max Peak	Vertical	106	102	74.0	-10.7	Pass
3	4923.94	68.27	-2.56	-12.35	53.36	Max Avg	Vertical	106	102	54.0	-0.6	Pass
4	7383.55	62.00	-3.04	-8.06	51.50	Max Peak	Horizontal	106	178	74.0	-22.5	Pass
5	7383.55	53.21	-3.04	-8.06	42.11	Max Avg	Horizontal	106	178	54.0	-11.9	Pass

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 18, Duty Cycle (%): 20



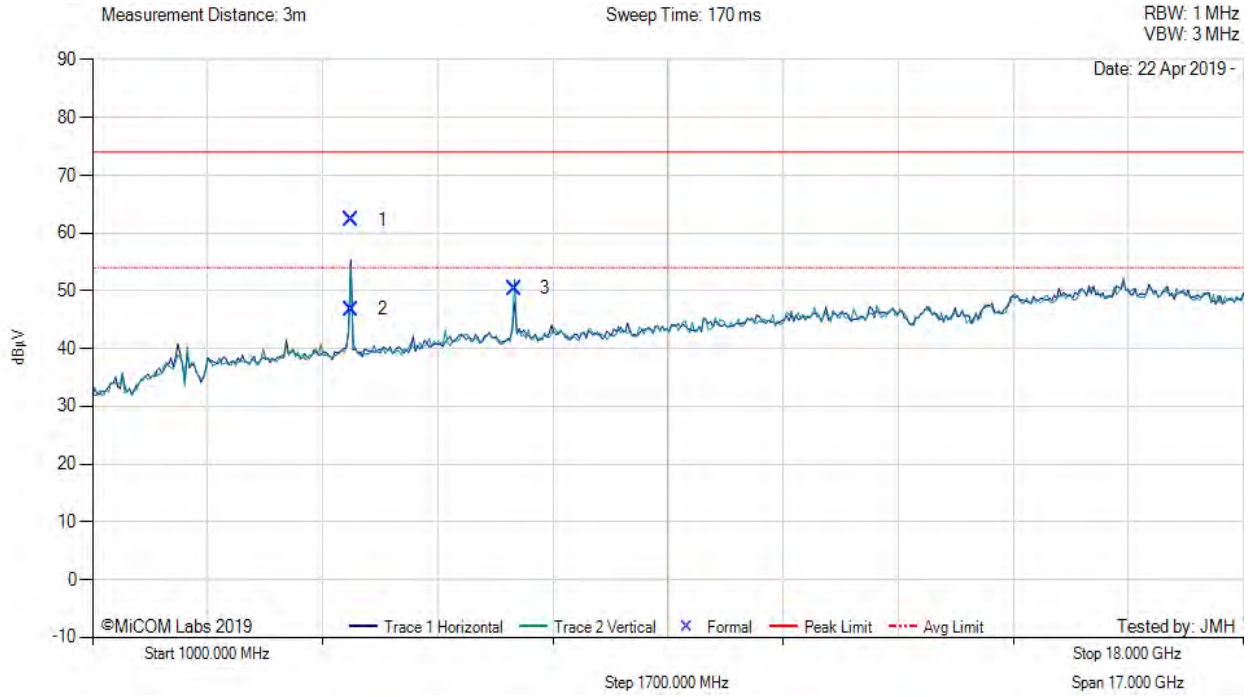
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2459.25	61.88	-1.79	-11.94	48.15	Fundamental	Vertical	151	0	--	--	
2	4923.95	76.45	-2.56	-12.35	61.54	Max Peak	Vertical	118	92	74.0	-12.5	Pass
3	4923.95	63.09	-2.56	-12.35	48.18	Max Avg	Vertical	118	92	54.0	-5.8	Pass
4	7384.38	63.33	-3.05	-8.04	52.24	Max Peak	Vertical	134	297	74.0	-21.8	Pass
5	7384.38	52.79	-3.05	-8.04	41.70	Max Avg	Vertical	134	297	54.0	--	Pass

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. 5.5 Mbit/s data rate. DC correction +6.9 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11g, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 16, Duty Cycle (%): 50



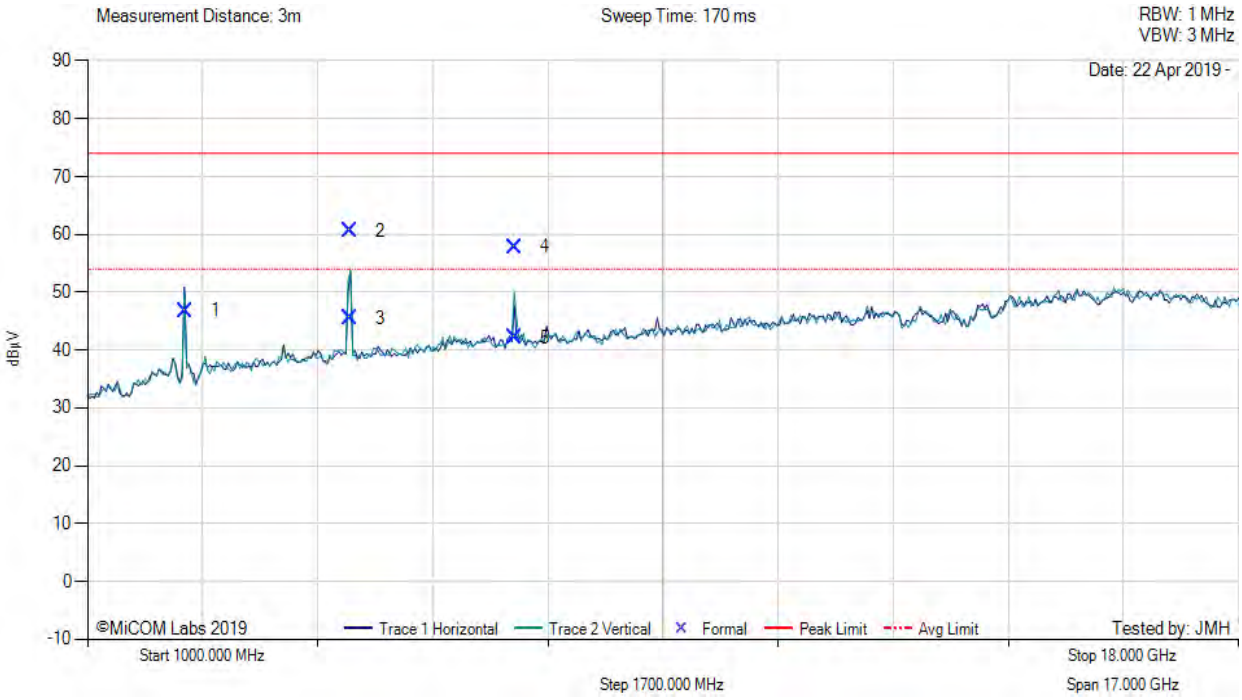
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4828.76	77.19	-2.53	-12.40	62.26	Max Peak	Horizontal	98	173	74.0	-11.7	Pass
2	4828.76	61.71	-2.53	-12.40	46.78	Max Avg	Horizontal	98	173	54.0	-7.2	Pass
3	7238.40	61.19	-3.08	-7.67	50.44	Peak (NRB)	Vertical	100	0	--	--	Pass

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11g, Test Freq: 2437.00 MHz, Antenna: ICT Custom, Power Setting: 16, Duty Cycle (%): 50



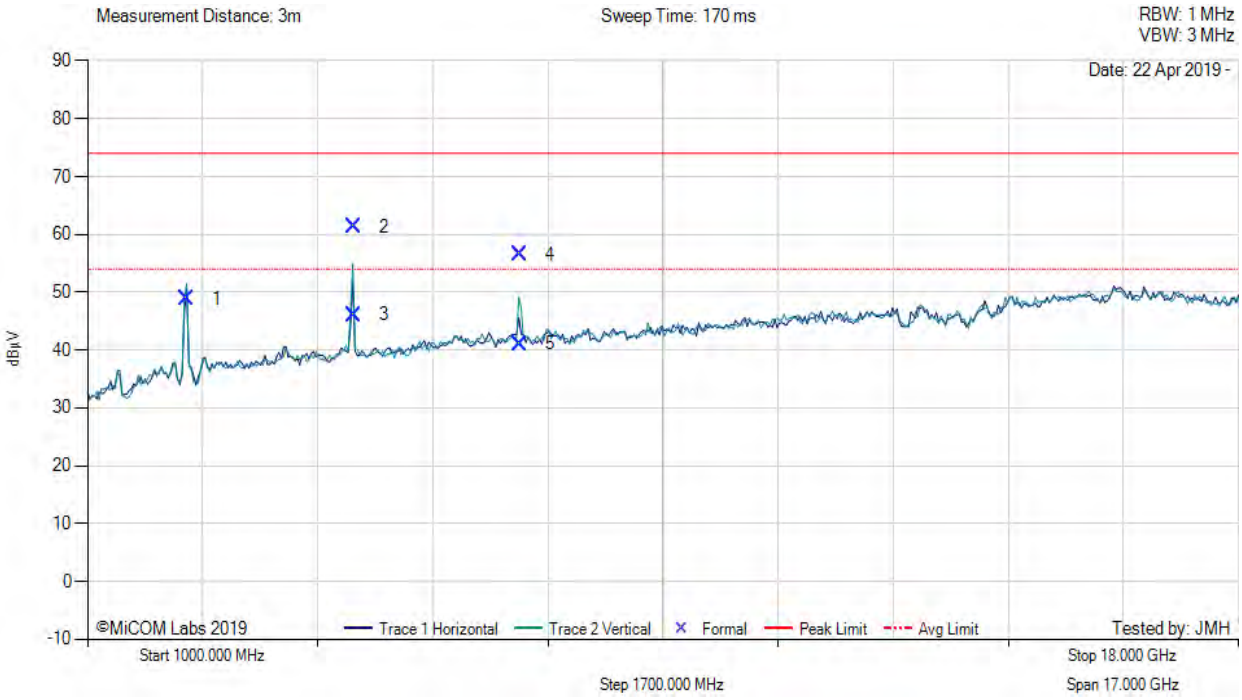
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2438.74	60.66	-1.78	-12.10	46.78	Fundamental	Horizontal	100	0	--	--	
2	4879.30	75.58	-2.50	-12.51	60.57	Max Peak	Vertical	101	50	74.0	-13.4	Pass
3	4879.30	60.49	-2.50	-12.51	45.48	Max Avg	Vertical	101	50	54.0	-8.5	Pass
4	7312.96	68.72	-3.00	-7.90	57.82	Max Peak	Vertical	100	100	74.0	-16.2	Pass
5	7312.96	52.97	-3.00	-7.90	42.07	Max Avg	Vertical	100	100	54.0	-11.9	Pass

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11g, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 16, Duty Cycle (%): 50



1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2463.77	62.65	-1.79	-11.96	48.90	Fundamental	Horizontal	151	0	--	--	
2	4926.90	76.17	-2.58	-12.36	61.23	Max Peak	Vertical	153	92	74.0	-12.8	Pass
3	4926.90	57.99	-2.58	-12.36	46.05	Max Avg	Vertical	153	92	54.0	-8.0	Pass
4	7387.25	67.57	-3.08	-7.98	56.51	Max Peak	Vertical	98	273	74.0	-17.5	Pass
5	7387.25	49.15	-3.08	-7.98	41.09	Max Avg	Vertical	98	273	54.0	-12.9	Pass

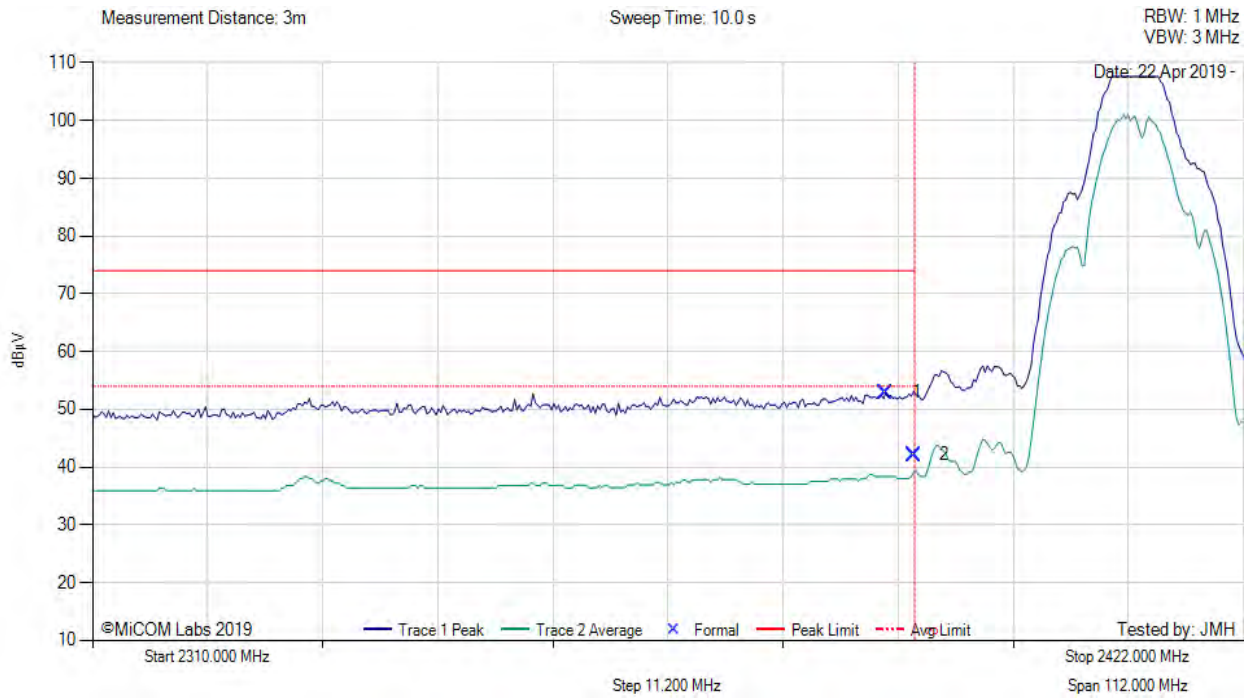
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

A.1.2.4. Restricted Edge & Band-Edge Emissions

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 13, Duty Cycle (%): 50



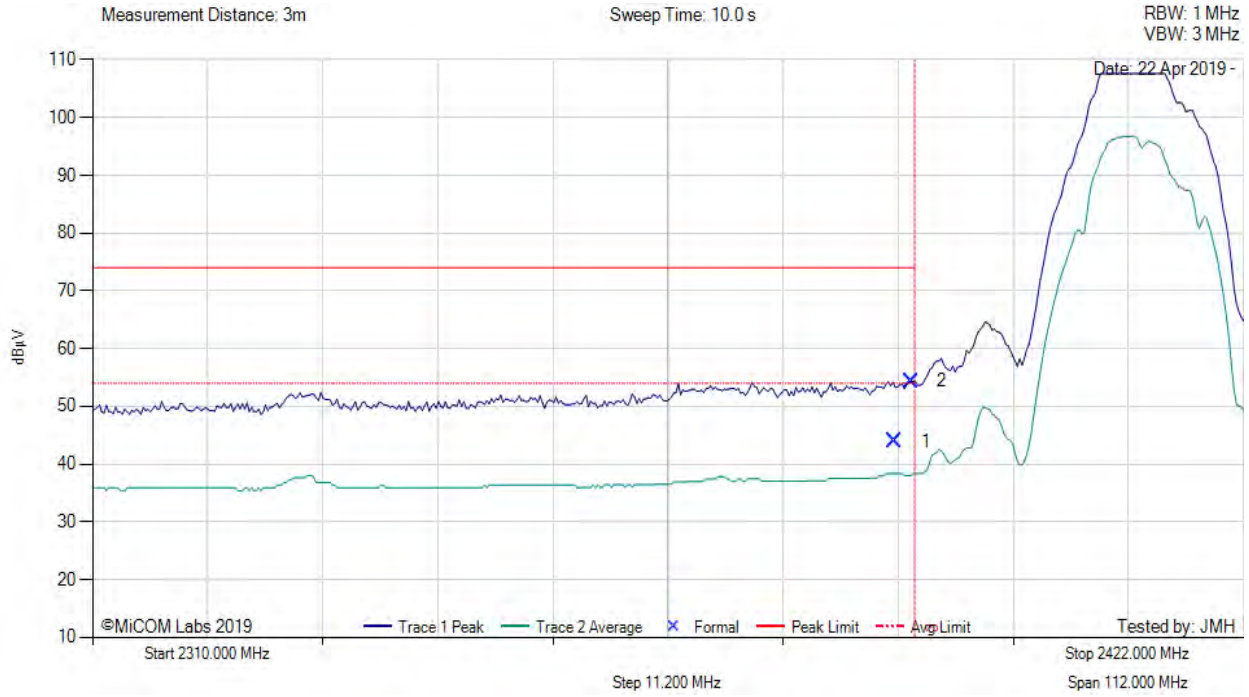
2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2387.21	22.77	-1.77	31.94	52.94	Max Peak	Vertical	200	200	74.0	-21.1	Pass
2	2389.90	8.93	-1.77	31.96	42.12	Max Avg	Vertical	200	200	54.0	-11.9	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. Data Rate 1 Mbit/s. DC Corr +3 dB

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 16, Duty Cycle (%): 27



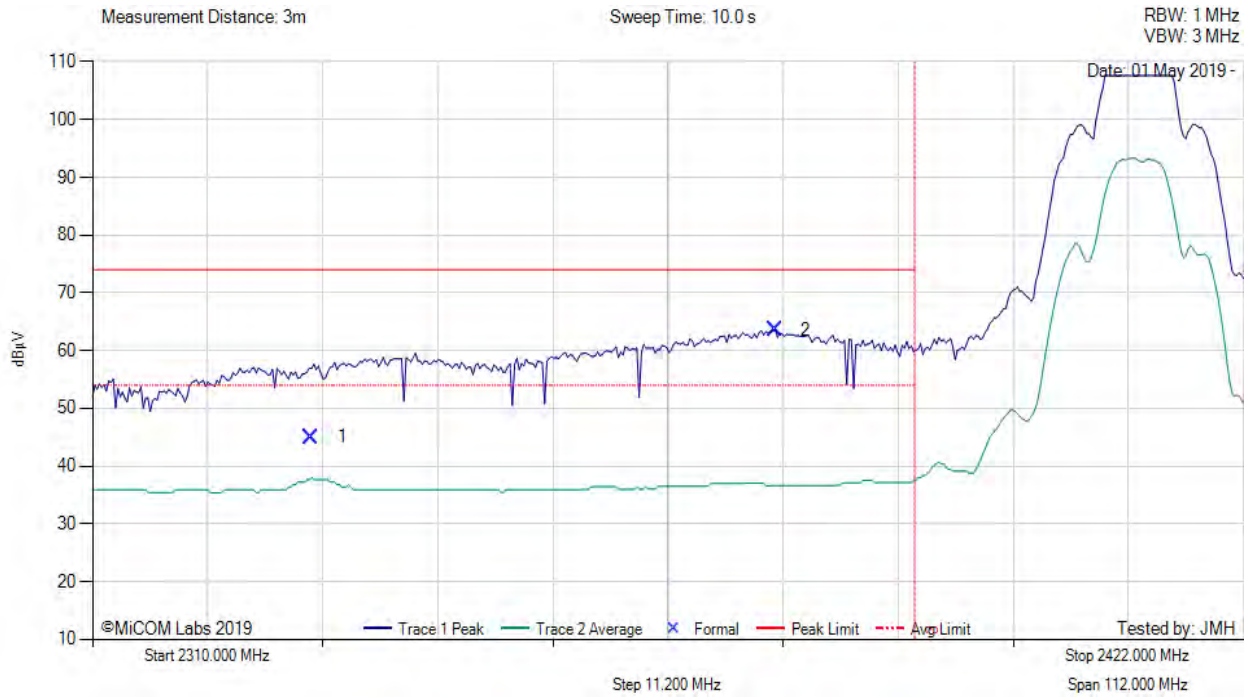
2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2388.11	13.80	-1.77	31.95	43.98	Max Avg	Vertical	196	201	54.0	-10.0	Pass
2	2389.68	24.13	-1.77	31.96	54.32	Max Peak	Vertical	196	201	74.0	-19.7	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 18, Duty Cycle (%): 20



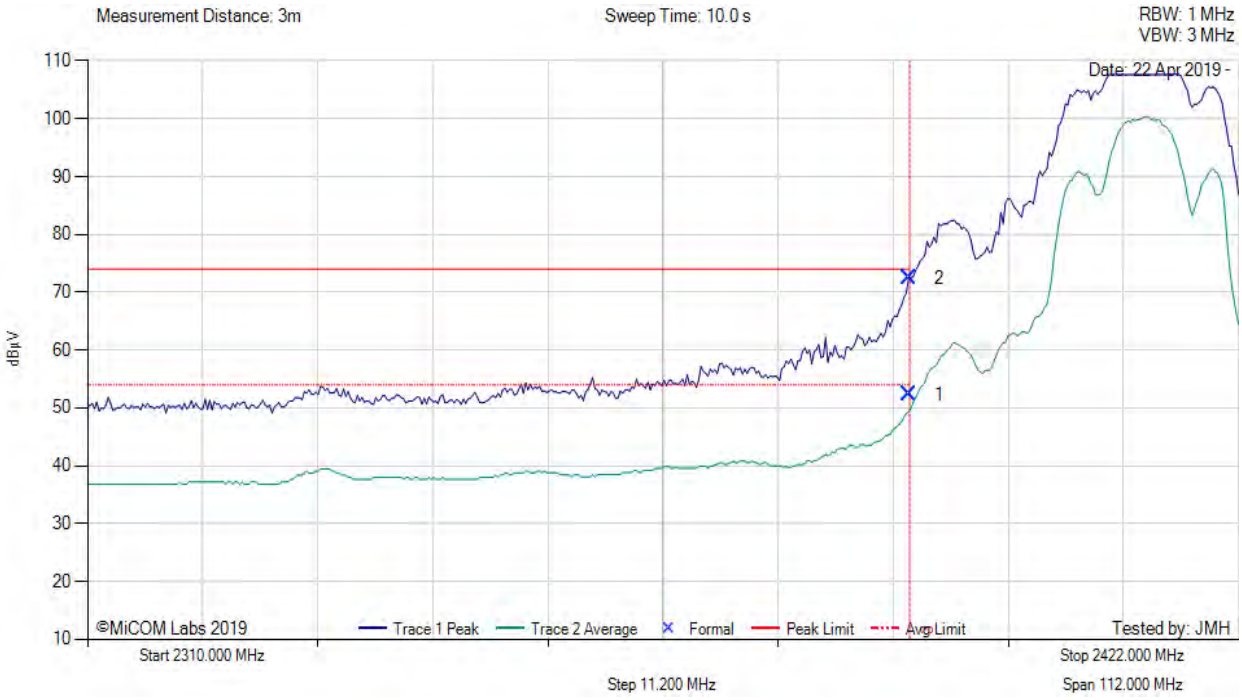
2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2331.32	14.98	-1.74	31.73	44.97	Max Avg	Vertical	198	208	54.0	-9.0	Pass
2	2376.44	33.46	-1.75	31.88	63.59	Max Peak	Vertical	198	208	74.0	-10.4	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. Data Rate 5.5 Mbit/s. DC correction +6.9 dB

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11g, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 13, Duty Cycle (%): 50



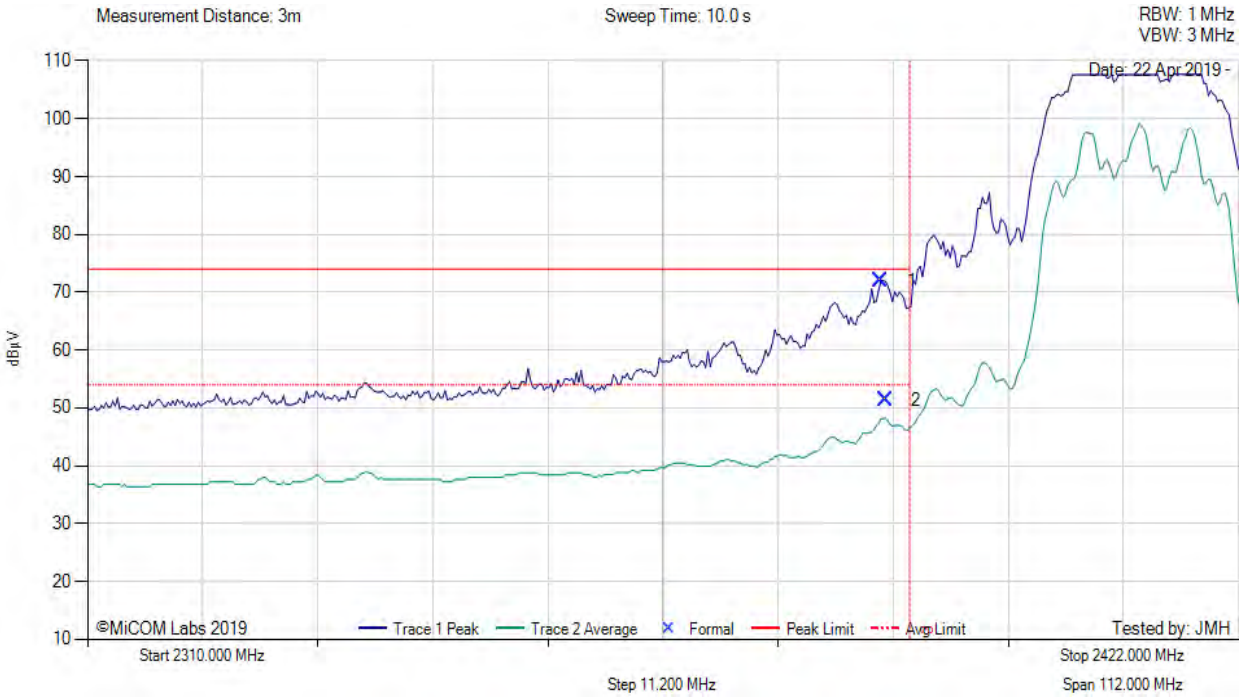
2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2389.90	22.14	-1.77	31.96	52.33	Max Avg	Vertical	200	200	54.0	-1.7	Pass
2	2389.90	42.18	-1.77	31.96	72.37	Max Peak	Vertical	200	200	74.0	-1.6	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 2412.00 MHz, Antenna: ICT Custom, Power Setting: 15.5, Duty Cycle (%): 50



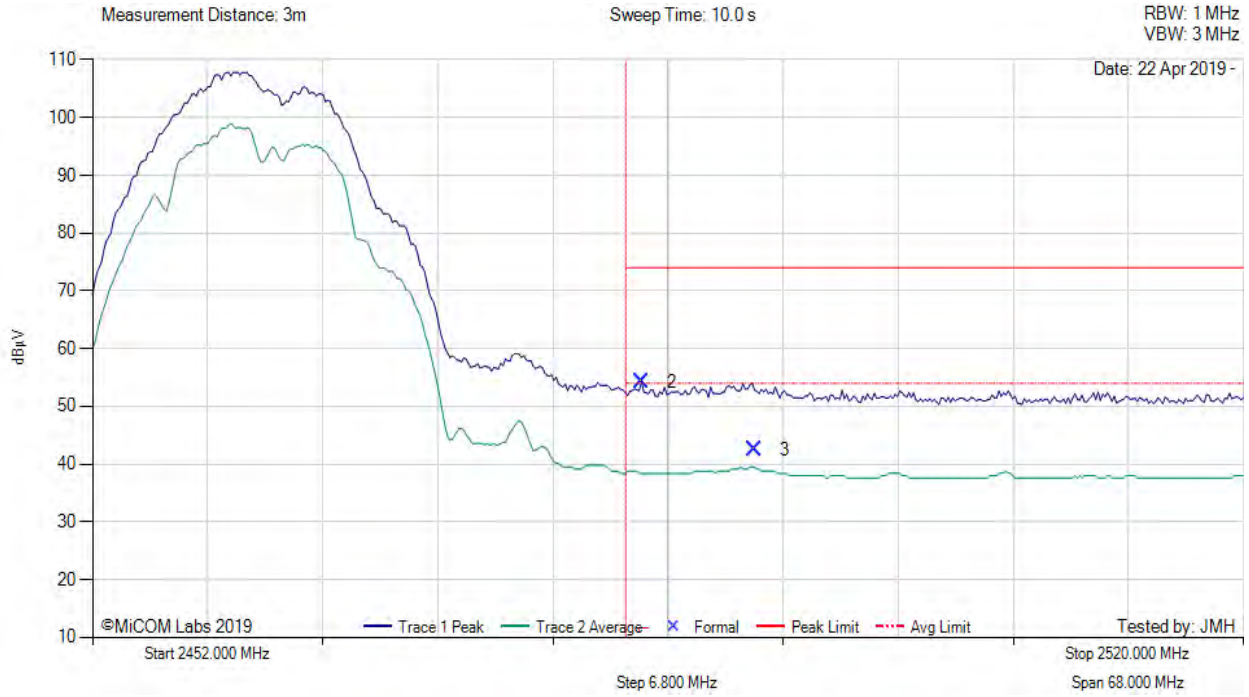
2310.00 - 2422.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2387.21	41.86	-1.77	31.94	72.03	Max Peak	Vertical	200	200	74.0	-2.0	Pass
2	2387.66	21.11	-1.77	31.95	51.29	Max Avg	Vertical	200	200	54.0	-2.7	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna:ICT Custom, Power Setting: 13, Duty Cycle (%): 50



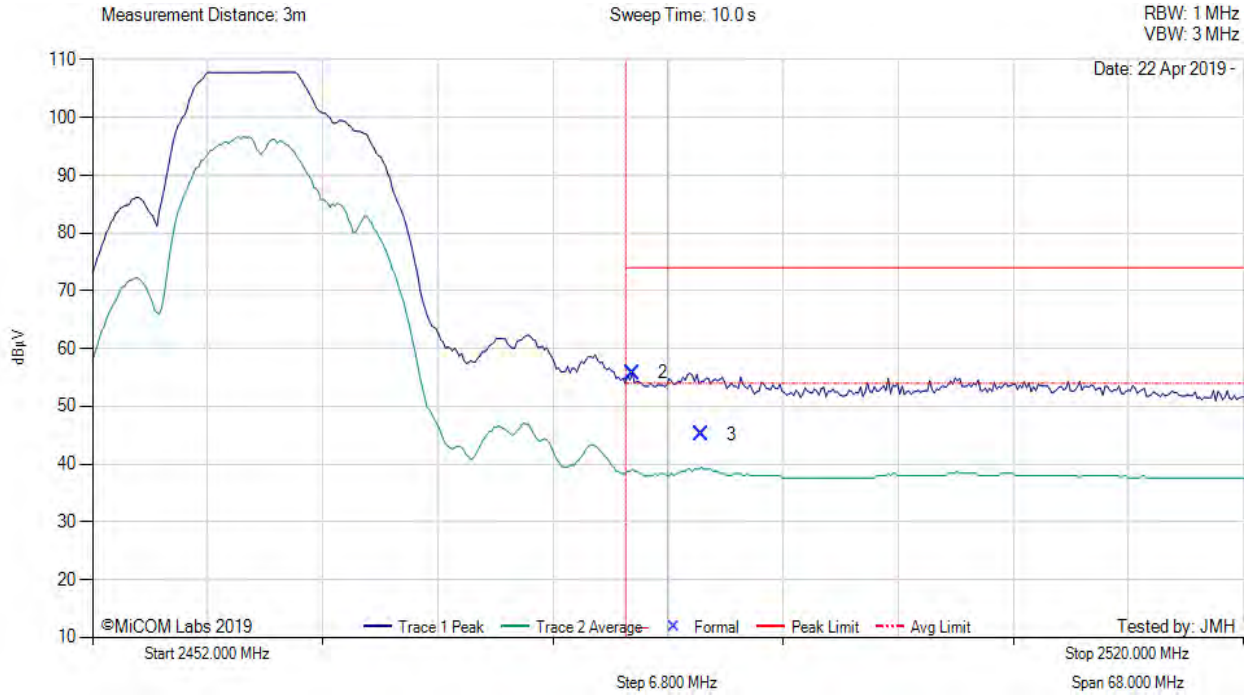
2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	2484.43	23.66	-1.78	32.33	54.21	Max Peak	Vertical	174	175	74.0	-19.8	Pass
3	2491.11	8.97	-1.78	32.32	42.51	Max Avg	Vertical	174	175	54.0	-11.5	Pass
1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. Data Rate 1 Mbit/s. DC Corr +3 dB

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 16.5, Duty Cycle (%): 27



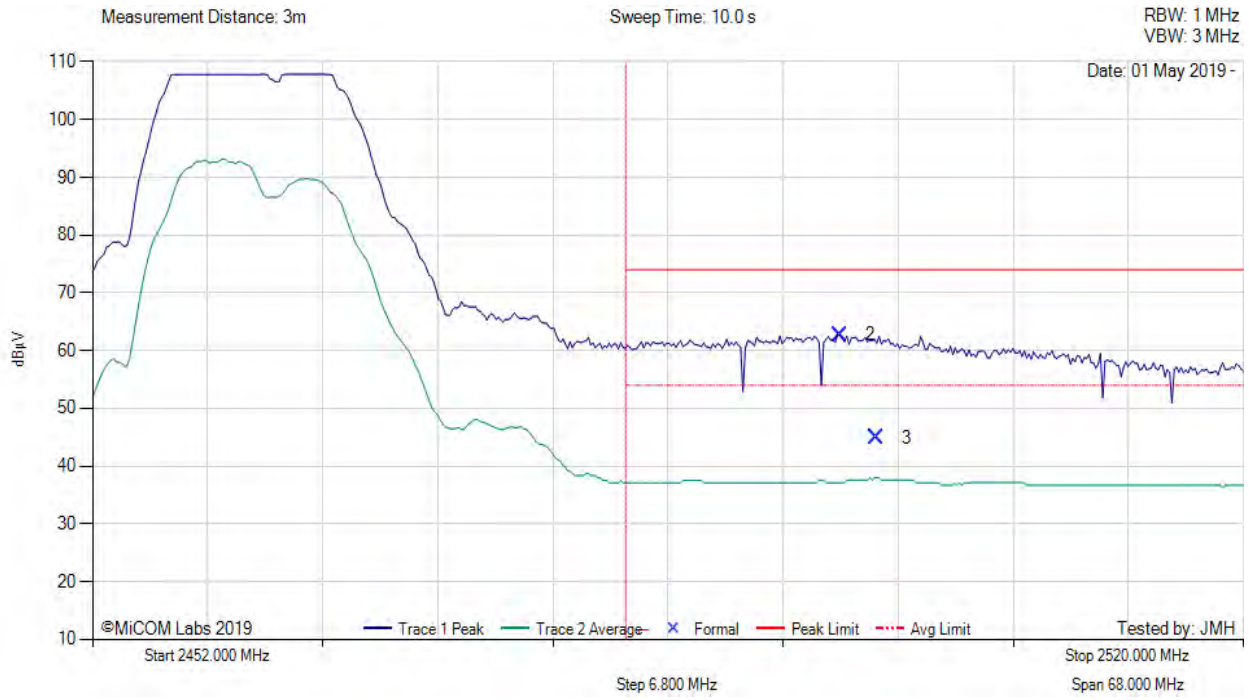
2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	2483.89	25.23	-1.78	32.33	55.78	Max Peak	Vertical	196	149	74.0	-18.2	Pass
3	2487.98	14.56	-1.78	32.33	45.11	Max Avg	Vertical	196	149	54.0	-8.9	Pass
1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +5.6 dB, 2 Mbit/s data rate

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 18, Duty Cycle (%): 20



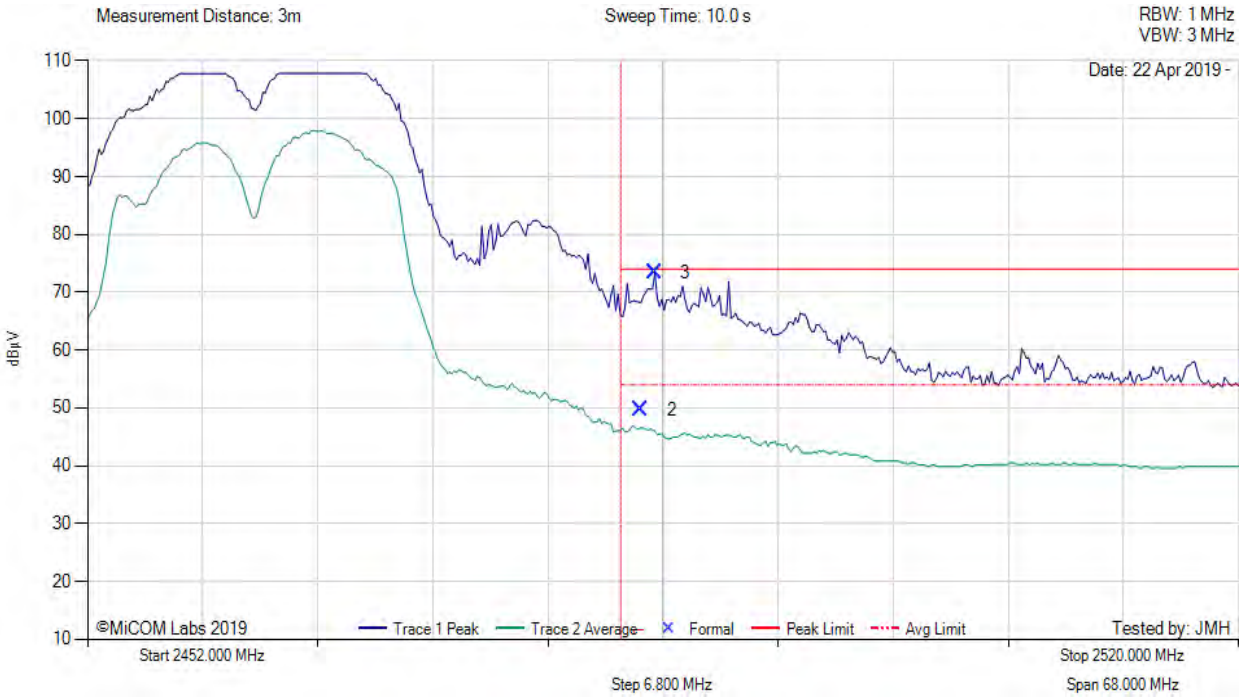
2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	2496.15	32.21	-1.79	32.32	62.74	Max Peak	Horizontal	127	165	74.0	-11.3	Pass
3	2498.33	14.42	-1.79	32.31	44.94	Max Avg	Horizontal	127	165	54.0	-9.1	Pass
1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by AC/DC PS, connected to laptop via ethernet. 2.4 G notch in front of amp to prevent overload. Data Rate 5.5 Mbit/s. DC correction +6.9 dB

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11g, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 15, Duty Cycle (%): 50



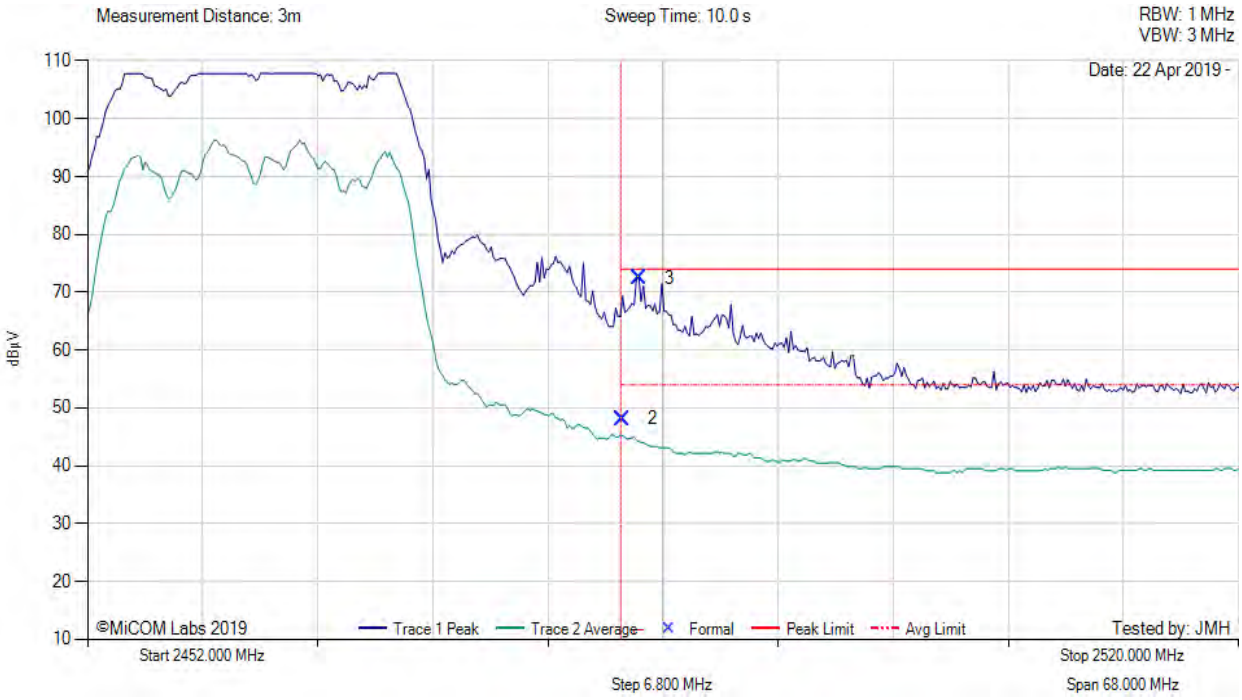
2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	2484.71	19.11	-1.78	32.33	49.66	Max Avg	Vertical	174	175	54.0	-4.3	Pass
3	2485.52	42.81	-1.78	32.33	73.36	Max Peak	Vertical	174	175	74.0	-0.6	Pass
1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 2462.00 MHz, Antenna: ICT Custom, Power Setting: 14, Duty Cycle (%): 50



2452.00 - 2520.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
2	2483.62	17.61	-1.78	32.33	48.16	Max Avg	Vertical	174	175	54.0	-5.8	Pass
3	2484.57	41.96	-1.78	32.33	72.51	Max Peak	Vertical	174	175	74.0	-1.5	Pass
1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

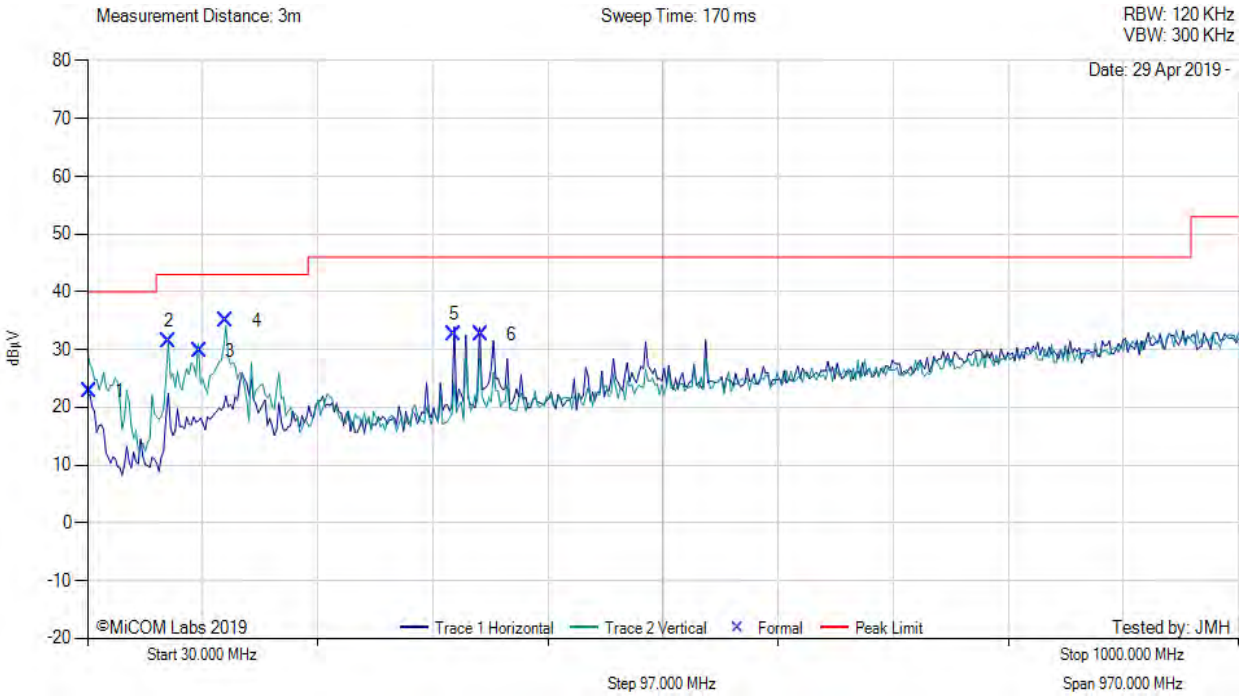
Test Notes: EUT Powered by PS, connected to laptop outside chamber via ethernet. DC Corr +3 dB

back to matrix

A.1.3. Digital Emissions (0.03 - 1 GHz)

DIGITAL EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: AMPHENOL Custom A1, Power Setting: 18, Duty Cycle (%): 49



30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	31.08	27.98	3.53	-8.70	22.86	MaxQP	Vertical	118	348	40.0	-17.1	Pass
2	98.23	46.01	4.00	-18.60	31.41	MaxQP	Vertical	107	8	43.0	-11.6	Pass
3	124.46	40.20	4.12	-14.60	29.72	MaxQP	Vertical	105	80	43.0	-13.1	Pass
4	146.74	46.67	4.23	-15.90	35.00	MaxQP	Vertical	102	172	43.0	-8.0	Pass
5	338.57	41.36	4.98	-13.70	32.64	MaxQP	Horizontal	107	252	46.0	-13.4	Pass
6	361.56	40.26	5.06	-12.66	32.56	MaxQP	Horizontal	105	267	46.0	-13.4	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11b, Test Freq: 2437.00 MHz, Antenna: AMPHENOL Custom A1, Power Setting: 18, Duty Cycle (%): 49

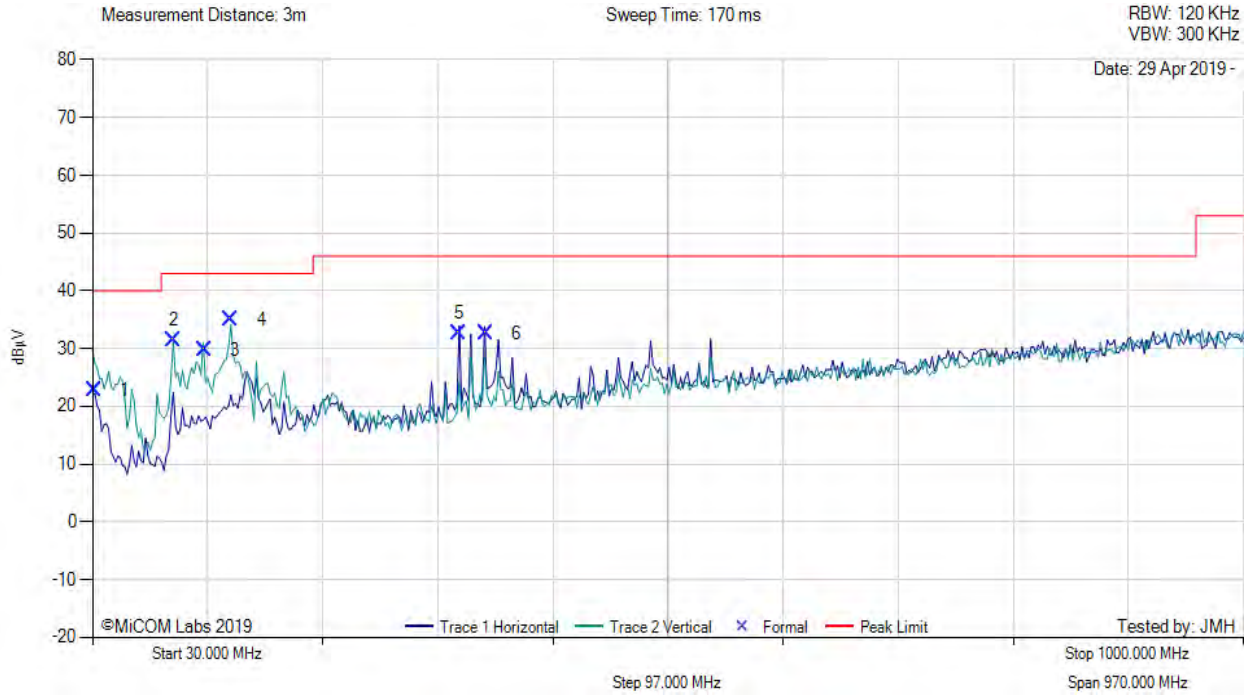
30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	31.34	29.18	3.53	-8.70	24.01	MaxQP	Vertical	118	348	40.0	-16.0	Pass
2	98.12	47.26	4.00	-18.60	32.66	MaxQP	Vertical	103	5	43.0	-10.3	Pass
3	124.26	39.93	4.12	-14.60	29.45	MaxQP	Vertical	101	77	43.0	-13.6	Pass
4	146.34	47.05	4.23	-15.90	35.38	MaxQP	Vertical	101	177	43.0	-7.6	Pass
5	338.75	40.98	4.98	-13.70	32.26	MaxQP	Horizontal	104	251	46.0	-13.7	Pass
6	361.34	40.55	5.06	-12.70	32.91	MaxQP	Horizontal	99	280	46.0	-13.1	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

DIGITAL EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: AMPHENOL Custom A1, Power Setting: 18, Duty Cycle (%): 49



30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	31.08	27.98	3.53	-8.70	22.86	MaxQP	Vertical	118	348	40.0	-17.1	Pass
2	98.23	46.01	4.00	-18.60	31.41	MaxQP	Vertical	107	8	43.0	-11.6	Pass
3	124.46	40.20	4.12	-14.60	29.72	MaxQP	Vertical	105	80	43.0	-13.1	Pass
4	146.74	46.67	4.23	-15.90	35.00	MaxQP	Vertical	102	172	43.0	-8.0	Pass
5	338.57	41.36	4.98	-13.70	32.64	MaxQP	Horizontal	107	252	46.0	-13.4	Pass
6	361.56	40.26	5.06	-12.66	32.56	MaxQP	Horizontal	105	267	46.0	-13.4	Pass

Test Notes: EUT powered by AC/DC PS. Connected to laptop outside chamber via ENET. 2nd ENET connected to Hub with data transferring. Audio ports looped back.

back to matrix

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