

Company: Actiontec Electronics Inc.

Test of: M6240V
To: FCC CFR 47 Part 15 Subpart C 15.247 (DTS)

Report No.: ATEC06-U5a Rev A

CONDUCTED TEST REPORT



CONDUCTED TEST REPORT



Test of: Actiontec Electronics Inc. M6240V
to

To: FCC CFR 47 Part 15 Subpart C 15.247 (DTS)

Test Report Serial No.: ATEC06-U5a Rev A

Note: this report is one of a set of two reports that together address the requirements for FCC 15.247

Report Number	Test Report Type
ATEC06-U5a	Conducted Test Report
ATEC06-U5b	Radiated Test Report

This report supersedes: NONE

Applicant: Actiontec Electronics Inc.
760 N Mary Avenue
Sunnyvale, 94085
USA

Product Function: Gigabit Wireless Router

Issue Date: 28th July 2015

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
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www.micomlabs.com



MiCOM Labs is an ISO 17025 Accredited Testing Laboratory



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1. ACCREDITATION, LISTINGS & RECOGNITION

1.1. TESTING ACCREDITATION

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard ISO/IEC 17025:2005. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-01.pdf>



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1.2. RECOGNITION

MiCOM Labs, Inc has widely recognized wireless testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA countries. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	US0159 Listing #: 4143A-2 4143A-3
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	APEC MRA 2	RCB 210
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	CAB	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	CAB	APEC MRA 1	
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	CAB	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

EU MRA – European Union Mutual Recognition Agreement.

NB – Notified Body

APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement. Recognition agreement under which test lab is accredited to regulatory standards of the APEC member countries.

Phase I - recognition for product testing

Phase II – recognition for both product testing and certification

1.3. PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065:2012. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-02.pdf>



United States of America – Telecommunication Certification Body (TCB)

Industry Canada – Certification Body, CAB Identifier – US0159

Europe – Notified Body (NB), NB Identifier - 2280

Japan – Recognized Certification Body (RCB), RCB Identifier - 210



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2. DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft		
Rev A	28 th July 2015	Initial release.
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In the above table the latest report revision will replace all earlier versions.

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3. TEST RESULT CERTIFICATE

Manufacturer: Actiontec Electronics Inc. 760 N Mary Avenue Sunnyvale 94085 USA	Tested By: MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Model: M6240V	Telephone: +1 925 462 0304 Fax: +1 925 462 0306
Type Of Equipment: Gigabit Wireless Router	
S/N's: 5190700005	
Test Date(s): 17 - 18 June 2015	Website: www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15 Subpart C 15.247 (DTS) Conducted RF Requirements	EQUIPMENT COMPLIES


MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

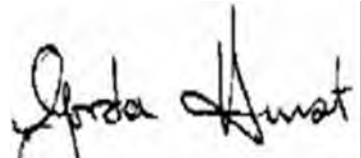
1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:





Graeme Grieve
Quality Manager MiCOM Labs, Inc.



Gordon Hurst
President & CEO MiCOM Labs, Inc.

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4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	KDB 662911	Oct 31 2013	Guidance for measurement of output emission of devices that employ single transmitter with multiple outputs or systems with multiple transmitters operating simultaneously in the same frequency band
II	KDB 558074 D01 V03r03	June 9,2015	DTS Meas Guidance v03r02 Guidance for performing compliance measurements on Digital Transmission Systems (DTS) operating under section 15.247.
III	A2LA	June 2015	Reference to A2LA Accreditation Status – A2LA Advertising Policy
IV	ANSI C63.10	2013	American National Standard for Testing Unlicensed Wireless Devices
V	ANSI C63.4	2014	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
VI	CISPR 22	2008	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
VII	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
VIII	FCC 47 CFR Part 15.247	2014	Radio Frequency Devices; Subpart C – Intentional Radiators
IX	ICES-003	Issue 5 2012	Spectrum Management and Telecommunications; Interference-Causing Equipment Standard. Information Technology Equipment (ITE) – Limits and methods of measurement.
X	M 3003	Edition 3 Nov. 2012	Expression of Uncertainty and Confidence in Measurements
XI	KDB 644545 D03 v01	August 14th 2014	Guidance for IEEE 802.11ac New Rules v01
XII	FCC 47 CFR Part 2.1033	2014	FCC requirements and rules regarding photographs and test setup diagrams.

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4.2. Test and Uncertainty Procedure

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

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5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Actiontec Electronics Inc. M6240V to FCC CFR 47 Part 15 Subpart C 15.247 (DTS). Radio Frequency Devices; Subpart C – Intentional Radiators
Applicant:	Actiontec Electronics Inc. 760 N Mary Avenue Sunnyvale , California 94085, USA
Manufacturer:	As Applicant
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton, California 94566, USA
Test report reference number:	ATEC06-U5a Rev A
Date EUT received:	15th June 2015
Standard(s) applied:	FCC CFR 47 Part 15 Subpart C 15.247 (DTS)
Dates of test (from - to):	17 – 18th June 2015
No of Units Tested:	2
Type of Equipment:	Gigabit Wireless Router
Product Family Name:	GbE 11ac Fiber Gateway
Model(s):	M6240V (Device tested) M6240 M6240L
Location for use:	Indoor
Declared Frequency Range(s):	2400 - 2483.5 MHz;
Primary function of equipment:	Gigabit Wireless Router
Secondary function of equipment:	Residential Gateway
Type of Modulation:	OFDM
EUT Modes of Operation:	2400 - 2483.5 MHz: 802.11b; 802.11g; 802.11n HT-20; 802.11n HT-40;
Declared Nominal Output Power (Ave):	2400 - 2483.5 MHz: 802.11b: -; 802.11g: -; 802.11n HT-20: -; 802.11n HT-40:
Transmit/Receive Operation:	Transceiver - Half Duplex
Rated Input Voltage and Current:	AC/ DC adaptor (adaptor sold with unit) 12 V DC/3.5A
Operating Temperature Range:	Declared Range 0°C to 40°C
ITU Emission Designator:	802.11b 12M1G1D 802.11g 16M5D1D 802.11n HT-20 17M7D1D 802.11n HT-40 36M4D1D
Equipment Dimensions:	11.0 x 1.5 x 7 inches
Weight:	1.6 lbs
Hardware Rev:	AM3
Software Rev:	62.0.10

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5.2. Scope Of Test Program

Actiontec Electronics Inc. M6240V

The scope of the test program was to test the Actiontec Electronics Inc. M6240V configurations in the frequency range 2400 - 2483.5 MHz; for compliance against the following specification:

FCC CFR 47 Part 15 Subpart C 15.247 (DTS)

Radio Frequency Devices; Subpart C – Intentional Radiators

Manufacturers Declaration of Similarity

Re: FCC ID: LNQM6240V

Actiontec Models: M6240V, M6240, M6240L

To whom it may concern:

We, Actiontec Electronics, Inc., hereby declare the above mentioned 3 models have electrically identical Wireless circuitry with the same electromagnetic emissions and electromagnetic compatibility characteristics.

The differences among these 3 models are as follows –

M6240V – GbE 11ac Fiber Gateway with MoCA LAN/WAN and VoIP

M6240 – GbE 11ac Fiber Gateway with MoCA LAN, without MoCA WAN/VoIP

M6240L – GbE 11ac Fiber Gateway with MoCA LAN/VoIP, without MoCA WAN

Actiontec Electronics Inc. M6240V





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5.3. Equipment Model(s) and Serial Number(s)

Type (EUT/Support)	Equipment Description (Including Brand Name)	Mfr	Model No.	Serial No.
EUT	Wireless Router	Actiontec	M6240V	5190700005
EUT	Power Adapter 100 - 240Vac 50/60Hz 1.0A 12 Vdc 3.5 A	Actiontec	NBS40C120350VU	1512
Support	Laptop PC	IBM	Thinkpad	None

5.4. Antenna Details

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
integral	Galtronics	Custom PCB	Dipole	3.0	2.0	360	-	5725 - 5850
integral	Galtronics	Custom PCB	Dipole	4.0	-	360	-	2400 - 2483.5

BF Gain - Beamforming Gain
Dir BW - Directional BeamWidth
X-Pol - Cross Polarization

5.5. Cabling and I/O Ports

Port Type	Max Cable Length	# Of Ports	Screened	Conn Type	Data Type
Ethernet	100m	4	N	RJ45	Packet Data
Ethernet	100m	1	N	RJ45	Packet Data
USB	15m	2	N	USB 3.0	Digital
Optical	SFP	1	N		Digital

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5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s) (802.11a/b/g/n/ac)	Data Rate with Highest Power MBit/s	Channel Frequency (MHz)		
		Low	Mid	High
2400 - 2483.5 MHz				
802.11b	1	2,412.00	2,437.00	2,462.00
802.11g	6	2,412.00	2,437.00	2,462.00
802.11n HT-20	6.5	2,412.00	2,437.00	2,462.00
802.11n HT-40	13.5	2,422.00	2,437.00	2,452.00

5.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. NONE

5.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE



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6. TEST SUMMARY

List of Measurements

Test Header	Result	Data Link
15.247(a)(2) 6 dB & 99% Bandwidth	Complies	View Data
15.247(b), 15.31(e) Conducted Output Power	Complies	View Data
15.247(d) Emissions	-	-
(1) Conducted Emissions	-	-
(i) Conducted Spurious Emissions	Complies	View Data
(ii) Conducted Band-Edge Emissions	Complies	View Data
15.247(e) Power Spectral Density	Complies	View Data

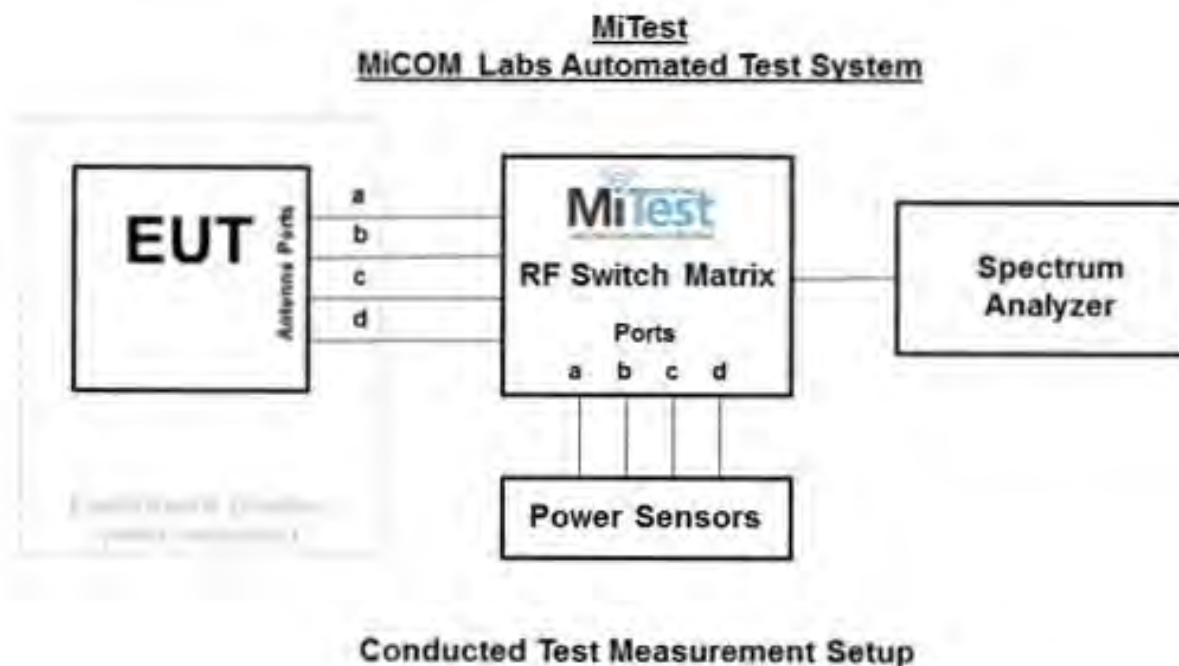
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7. TEST EQUIPMENT CONFIGURATION(S)

7.1. Conducted

Conducted RF Emission Test Set-up(s)

The following tests were performed using the conducted test set-up shown in the diagram below.



A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
158	Barometer/Thermometer	Control Company	4196	E2846	04 Dec 2015
193	Receiver 20 Hz to 7 GHz	Rhode & Schwarz	ESI 7	838496/007	14 Jan 2016
249	Resistance Thermometer	Thermotronics	GR2105-02	9340 #2	30 Oct 2015
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	31 Jul 2015
361	Desktop for RF#1, Labview Software installed	Dell	Vostro 220	WS RF#1	Not Required
378	Rohde & Schwarz 40 GHz Receiver with	Rhode & Schwarz	ESIB40	100107/040	17 Jul 2015

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	Generator				
380	4x4 RF Switch Box	MiCOM Labs	MiTest RF Switch Box	MIC001	20 Dec 2015
390	USB Power Head 50MHz - 24GHz -60 to +20dBm	Agilent	U2002A	MY50000103	17 Oct 2015
398	Test Software	MiCOM	MiTest ATS	Version 1.9	Not Required
405	DC Power Supply 0-60V	Agilent	6654A	MY4001826	Cal when used
408	USB to GPIB interface	National Instruments	GPIB-USB HS	14C0DE9	Not Required
436	USB Wideband Power Sensor	Boonton	55006	8731	31 Jul 2015
437	USB Wideband Power Sensor	Boonton	55006	8759	31 Jul 2015
445	PoE Injector	D-Link	DPE-101GL	QTAH1E2000625	Not Required
75	Environmental Chamber	Thermatron	SE-300-2-2	27946	28 Nov 2015
RF#1 GPIB#1	GPIB cable to Power Supply	HP	GPIB	None	Not Required
RF#1 SMA#1	EUT to Mitest box port 1	Flexco	SMA Cable port1	None	20 Dec 2015
RF#1 SMA#2	EUT to Mitest box port 2	Flexco	SMA Cable port2	None	20 Dec 2015
RF#1 SMA#3	EUT to Mitest box port 3	Flexco	SMA Cable port3	None	20 Dec 2015
RF#1 SMA#4	EUT to Mitest box port 4	Flexco	SMA Cable port4	None	20 Dec 2015
RF#1 SMA SA #452	Precision SMA Male RG-402 Spectrun Analyzer	Fairview Microwave	Precision SMA Male RG 402 coax	None	20 Dec 2015
RF#1 USB#1	USB Cable to Mitest Box	Dynex	USB Cable	None	Not Required

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8. MEASUREMENT AND PRESENTATION OF TEST DATA

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by [MiTest](#). [MiTest](#) is an automated test system developed by MiCOM Labs. [MiTest](#) is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for conducted RF testing.



The MiCOM Labs "[MiTest](#)" Automated Test System" (Patent Pending)

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9. TEST RESULTS

9.1. 6 dB & 99% Bandwidth

Conducted Test Conditions for 6 dB and 99% Bandwidth			
Standard:	FCC CFR 47:15.247	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	6 dB and 99 % Bandwidth	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.247 (a)(2)	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		
<p>Test Procedure for 6 dB and 99% Bandwidth Measurement</p> <p>The bandwidth at 6 dB and 99 % was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.</p> <p>Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.</p> <p>Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.</p> <p>Limits for 6 dB and 99% Bandwidth</p> <p>(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:</p> <p>(2) Systems using digital modulation techniques may operate in the 902-928 MHz and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.</p>			

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Equipment Configuration for 6 dB & 99% Bandwidth

Variant:	802.11b	Duty Cycle (%):	99
Data Rate:	1.00 MBit/s	Antenna Gain (dBi):	4
Modulation:	CCK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
	Port(s)				Highest	Lowest	KHz	MHz
MHz	a	b	c	d				
2412.0	8.577	8.577	8.577		8.577	8.577	≥500.0	-8.08
2437.0	8.577	9.058	9.058		9.058	8.577	≥500.0	-8.08
2462.0	8.577	8.577	8.577		8.577	8.577	≥500.0	-8.08

Test Frequency	Measured 99% Bandwidth (MHz)				Maximum 99% Bandwidth (MHz)		
	Port(s)						
MHz	a	b	c	d			
2412.0	12.024	12.104	12.024		12.104		
2437.0	11.864	12.104	12.104		12.104		
2462.0	11.864	12.024	11.864		12.024		

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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

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Equipment Configuration for 6 dB & 99% Bandwidth

Variant:	802.11g	Duty Cycle (%):	98
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
	Port(s)				Highest	Lowest	KHz	MHz
MHz	a	b	c	d				
2412.0	16.270	15.670	15.670		16.270	15.670	≥500.0	-15.17
2437.0	16.270	16.270	16.270		16.270	16.270	≥500.0	-15.77
2462.0	16.270	16.200	16.200		16.270	16.200	≥500.0	-15.70

Test Frequency	Measured 99% Bandwidth (MHz)				Maximum 99% Bandwidth (MHz)		
	Port(s)						
MHz	a	b	c	d			
2412.0	16.480	16.478	16.472		16.480		
2437.0	16.448	16.510	16.530		16.530		
2462.0	16.432	16.425	16.429		16.432		

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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

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Equipment Configuration for 6 dB & 99% Bandwidth

Variant:	802.11n HT-20	Duty Cycle (%):	97
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
	Port(s)				Highest	Lowest	KHz	MHz
MHz	a	b	c	d				
2412.0	17.470	17.070	16.870		17.470	16.870	≥500.0	-16.37
2437.0	17.530	17.530	17.530		17.530	17.530	≥500.0	-17.03
2462.0	17.470	17.000	17.470		17.470	17.000	≥500.0	-16.50

Test Frequency	Measured 99% Bandwidth (MHz)				Maximum 99% Bandwidth (MHz)		
	Port(s)						
MHz	a	b	c	d			
2412.0	17.666	17.662	17.621		17.666		
2437.0	17.613	17.697	17.705		17.705		
2462.0	17.623	17.599	17.593		17.623		

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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

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Equipment Configuration for 6 dB & 99% Bandwidth

Variant:	802.11n HT-40	Duty Cycle (%):	95
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
	Port(s)				Highest	Lowest	KHz	MHz
MHz	a	b	c	d				
2422.0	35.600	35.070	34.930		35.600	34.930	≥500.0	-34.43
2437.0	36.130	36.130	36.130		36.130	36.130	≥500.0	-35.63
2452.0	36.130	35.870	34.930		36.130	34.930	≥500.0	-34.43

Test Frequency	Measured 99% Bandwidth (MHz)				Maximum 99% Bandwidth (MHz)		
	Port(s)						
MHz	a	b	c	d			
2422.0	36.116	36.194	36.102		36.194		
2437.0	36.186	36.413	36.379		36.413		
2452.0	36.143	36.073	35.998		36.143		

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

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

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9.2. Conducted Output Power

Conducted Test Conditions for Fundamental Emission Output Power			
Standard:	FCC CFR 47:15.247	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	Output Power	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.247 (b) & (c)	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Fundamental Emission Output Power Measurement
In the case of average power measurements an average power sensor was utilized.

For peak power measurements the spectrum analyzer built-in power function was used to integrate peak power over the 20 dB bandwidth.

Testing was performed under ambient conditions at nominal voltage only. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured, summed (Σ) and reported.

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

Supporting Information
Calculated Power = A + G + Y+ 10 log (1/x) dBm

A = Total Power [$10 \cdot \text{Log}_{10} (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})$]
G = Antenna Gain
Y = Beamforming Gain
x = Duty Cycle (average power measurements only)

Limits for Fundamental Emission Output Power
(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following for non-frequency hopping systems:

(3) For systems using digital modulation in the 902-928 MHz and 2400-2483.5 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(c) Operation with directional antenna gains greater than 6 dBi.

(1) Fixed point-to-point operation:

(i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

(iii) Fixed, point-to-point operation, as used in paragraphs (c)(1)(i) and (c)(1)(ii) of this section, excludes the use of point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information. The operator of the spread spectrum or digitally modulated intentional radiator or, if the equipment is professionally installed, the installer is responsible for ensuring that the system is used exclusively for fixed, point-to-point operations. The instruction manual furnished with the intentional radiator shall contain language in the installation

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instructions informing the operator and the installer of this responsibility.

(2) In addition to the provisions in paragraphs (b)(3), (b)(4) and (c)(1)(i) of this section, transmitters operating in the 2400-2483.5 MHz band that emit multiple directional beams, simultaneously or sequentially, for the purpose of directing signals to individual receivers or to groups of receivers provided the emissions comply with the following:

(i) Different information must be transmitted to each receiver.

(ii) If the transmitter employs an antenna system that emits multiple directional beams but does not do emit multiple directional beams simultaneously, the total output power conducted to the array or arrays that comprise the device, i.e., the sum of the power supplied to all antennas, antenna elements, staves, etc. and summed across all carriers or frequency channels, shall not exceed the limit specified in paragraph (b)(1) or (b)(3) of this section, as applicable. However, the total conducted output power shall be reduced by 1 dB below the specified limits for each 3 dB that the directional gain of the antenna/antenna array exceeds 6 dBi. The directional antenna gain shall be computed as follows:

(A) The directional gain shall be calculated as the sum of 10 log (number of array elements or staves) plus the directional gain of the element or stove having the highest gain.

(B) A lower value for the directional gain than that calculated in paragraph (c)(2)(ii)(A) of this section will be accepted if sufficient evidence is presented, e.g., due to shading of the array or coherence loss in the beamforming.

(iii) If a transmitter employs an antenna that operates simultaneously on multiple directional beams using the same or different frequency channels, the power supplied to each emission beam is subject to the power limit specified in paragraph (c)(2)(ii) of this section. If transmitted beams overlap, the power shall be reduced to ensure that their aggregate power does not exceed the limit specified in paragraph (c)(2)(ii) of this section. In addition, the aggregate power transmitted simultaneously on all beams shall not exceed the limit specified in paragraph (c)(2)(ii) of this section by more than 8 dB.

(iv) Transmitters that emit a single directional beam shall operate under the provisions of paragraph (c)(1) of this section.



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Equipment Configuration for Average Output Power

Variant:	802.11b	Duty Cycle (%):	99.0
Data Rate:	1 MBit/s	Antenna Gain (dBi):	4.0
Modulation:	CCK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm)				Calculated Total Power Σ Port(s) + DCCF (+0.04 dB)	Limit	Margin	EUT Power Setting
	Port(s)							
MHz	a	b	c	d	dBm	dBm	dB	
2412.0	24.18	25.41	24.83		29.65	30.00	-0.35	25.00
2437.0	23.49	25.01	24.35		29.14	30.00	-0.86	25.00
2462.0	23.60	24.81	24.39		29.11	30.00	-0.89	25.00

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	± 1.33 dB

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Average Output Power

Variant:	802.11g	Duty Cycle (%):	97.9
Data Rate:	6 MBit/s	Antenna Gain (dBi):	4.0
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm)				Calculated Total Power Σ Port(s) + DCCF (+0.09 dB)	Limit	Margin	EUT Power Setting
	Port(s)							
MHz	a	b	c	d	dBm	dBm	dB	
2412.0	17.7	17.85	18.13		22.78	30	-7.22	21.00
2437.0	21.3	21.35	21.67		26.27	30	-3.73	25.00
2462.0	18.65	18.85	19.07		23.72	30	-6.28	22.00

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	± 1.33 dB

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Average Output Power

Variant:	802.11n HT-20	Duty Cycle (%):	96.5
Data Rate:	6.5 MBit/s	Antenna Gain (dBi):	4.0
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm)				Calculated Total Power Σ Port(s) + DCCF (+0.13 dB)	Limit	Margin	EUT Power Setting
	Port(s)							
MHz	a	b	c	d	dBm	dBm	dB	
2412.0	18.97	19.37	19.4		24.24	30	-5.76	22.00
2437.0	21.82	22.13	22.26		27.02	30	-2.98	25.00
2462.0	18.59	18.76	18.81		23.72	30	-6.28	22.00

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	± 1.33 dB

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Average Output Power

Variant:	802.11n HT-40	Duty Cycle (%):	95.3
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.0
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm)				Calculated Total Power Σ Port(s) + DCCF (+0.22 dB)	Limit	Margin	EUT Power Setting
	Port(s)							
MHz	a	b	c	d	dBm	dBm	dB	
2422.0	15.33	14.58	15.83		20.48	30	-9.52	18.00
2437.0	24.25	24.9	24.67		29.63	30	-0.37	25.00
2452.0	15.24	14.58	15.64		20.38	30	-9.62	18.00

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	± 1.33 dB

DCCF - Duty Cycle Correction Factor

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9.3. Emissions

9.3.1. Conducted Emissions

9.3.1.1. Conducted Spurious Emissions

Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.247	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	Max Unwanted Emission Levels	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.247 (d)	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)).

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Equipment Configuration for Transmitter Conducted Spurious Emissions

Variant:	802.11b	Duty Cycle (%):	99
Data Rate:	6 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	Transmitter Conducted Spurious Emissions (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	-67.372	-31.95	-55.885	-31.39	-66.252	-30.80		
2437.0	30.0 - 26000.0	-67.304	-32.12	-67.439	-31.19	-67.155	-31.21		
2462.0	30.0 - 26000.0	-67.312	-32.02	-67.512	-31.21	-67.207	-31.16		

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).

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Equipment Configuration for Transmitter Conducted Spurious Emissions

Variant:	802.11g	Duty Cycle (%):	98
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	Transmitter Conducted Spurious Emissions (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	-67.327	-34.46	-64.608	-34.26	-67.092	-34.03		
2437.0	30.0 - 26000.0	-64.474	-35.43	-62.530	-35.28	-62.104	-34.99		
2462.0	30.0 - 26000.0	-62.032	-34.52	-64.880	-34.49	-62.537	-34.15		

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).

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Equipment Configuration for Transmitter Conducted Spurious Emissions

Variant:	802.11n HT-20	Duty Cycle (%):	97
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	Transmitter Conducted Spurious Emissions (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	-64.026	-34.35	-62.616	-33.79	-62.576	-33.64		
2437.0	30.0 - 26000.0	-63.094	-35.75	-61.464	-35.33	-61.022	-35.19		
2462.0	30.0 - 26000.0	-62.744	-34.61	-63.188	-34.90	-64.840	-34.56		

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).

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Equipment Configuration for Transmitter Conducted Spurious Emissions

Variant:	802.11n HT-40	Duty Cycle (%):	95
Data Rate:	13.50 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	Transmitter Conducted Spurious Emissions (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
2422.0	30.0 - 26000.0	-64.064	-33.09	-62.547	-31.95	-63.904	-31.93		
2437.0	30.0 - 26000.0	-63.191	-34.08	-66.121	-33.64	-60.579	-33.38		
2452.0	30.0 - 26000.0	-65.196	-35.31	-61.794	-36.61	-63.300	-34.52		

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).

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9.3.1.2. Conducted Band-Edge Emissions

Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.247	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	Max Unwanted Emission Levels	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.247 (d)	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)).

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Equipment Configuration for Conducted Low Band-Edge Emissions - Average
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Variant:	802.11b	Duty Cycle (%):	99
Data Rate:	1.00 MBit/s	Antenna Gain (dBi):	4
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	-49.32	-25.00	2404.30			-4.300
b	-41.30	-24.00	2404.00			-4.000
c	-47.67	-24.00	2404.30			-4.300

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).

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Equipment Configuration for Conducted Low Band-Edge Emissions - Average
--

Variant:	802.11g	Duty Cycle (%):	98
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4
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	-35.94	-28.89	2401.80			-1.800
b	-33.11	-28.06	2401.70			-1.700
c	-34.41	-27.66	2401.80			-1.800

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).

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Equipment Configuration for Conducted Low Band-Edge Emissions - Average
--

Variant:	802.11n HT-20	Duty Cycle (%):	97
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4
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	-35.06	-28.55	2401.60			-1.600
b	-32.36	-28.13	2401.60			-1.600
c	-33.35	-27.69	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).

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Equipment Configuration for Conducted Low Band-Edge Emissions - Average
--

Variant:	802.11n HT-40	Duty Cycle (%):	95
Data Rate:	13.5 MBit/s	Antenna Gain (dBi):	4
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2422.0 MHz					
Band-Edge Frequency:	2400.0 MHz					
Test Frequency Range:	2292.0 - 2442.0 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	-36.75	-30.83	2402.30			-2.300
b	-37.53	-31.15	2402.50			-2.500
c	-34.00	-29.76	2402.50			-2.500

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).

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Equipment Configuration for Conducted High Band-Edge Emissions - Average

Variant:	802.11b	Duty Cycle (%):	99
Data Rate:	1.00 MBit/s	Antenna Gain (dBi):	4
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	-59.26	-25.00	2469.60			-13.900
b	-54.78	-24.00	2469.70			-13.800
c	-56.88	-24.00	2469.50			-14.000

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).

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Equipment Configuration for Conducted High Band-Edge Emissions - Average

Variant:	802.11g	Duty Cycle (%):	98
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4
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	-45.36	-28.19	2472.00			-11.500
b	-44.73	-27.93	2472.00			-11.500
c	-45.51	-27.30	2472.00			-11.500

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).

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Equipment Configuration for Conducted High Band-Edge Emissions - Average

Variant:	802.11n HT-20	Duty Cycle (%):	97
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4
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	-42.83	-28.64	2472.30			-11.200
b	-43.11	-28.19	2472.20			-11.300
c	-43.70	-27.64	2472.20			-11.300

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).

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Equipment Configuration for Conducted High Band-Edge Emissions - Average

Variant:	802.11n HT-40	Duty Cycle (%):	95
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2452.0 MHz					
Band-Edge Frequency:	2483.5 MHz					
Test Frequency Range:	2432.0 - 2582.0 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	-38.20	-31.84	2472.00			-11.500
b	-39.54	-31.80	2471.80			-11.700
c	-36.50	-29.92	2471.80			-11.700

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).

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9.4. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
Standard:	FCC CFR 47:15.247	Ambient Temp. (°C):	24.0 - 27.5
Test Heading:	Power Spectral Density	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.247 (e)	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Power Spectral Density

The transmitter output was connected to a spectrum analyzer and the measured made in a 3 kHz resolution bandwidth using the analyzer auto-coupled sweep-time. A peak value was found over the full emission bandwidth and the spectrum downloaded for post processing purposes.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. The Peak Power Spectral Density is the highest level found across the emission bandwidth. With multiple antenna port measurements the numerical analyzer data from each port is summed (â) and a link to this additional graphic is provided.

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.

Measure and sum the spectra across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The individual spectra are then summed mathematically in linear power units. Unlike in-band power measurements, in which the sum involves a single measured value (output power) from each output, measurements for compliance with PSD limits involve summing entire spectra across corresponding frequency bins on the various outputs. Consistency is maintained for any device with multiple transmitter outputs to be certain the individual outputs are all aligned with the same span and same number of points. In this instance, the linear power spectrum value within the first spectral bin of output 0 is summed with that in the first spectral bin of output 1, and the first spectral bin of output 2, and so on up to the Nth output to obtain the true value for the first frequency bin of the summed spectrum. The summed spectrum value for each frequency bin is computed in this fashion. These summed spectral values were post processed and the resulting numerical and graphical data presented.

NOTE:

It may be observed that the spectrum in some antenna port plots break the limit line however this in itself does NOT constitute a failure. In all cases a spectrum summation plot is provided in order to prove compliance. A failure occurs only after the summation of all spectrum plots have been summed and are found to be greater than the limit line.

Supporting Information

Calculated Power = A + 10 log (1/x) dBm
A = Total Power Spectral Density [10 Log10 (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})]
x = Duty Cycle

Limits Power Spectral Density

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

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Equipment Configuration for Power Spectral Density - Average

Variant:	802.11b	Duty Cycle (%):	99.0
Data Rate:	1.00 MBit/s	Antenna Gain (dBi):	4.00
Modulation:	CCK	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.04 dB)	Limit	Margin
	Port(s) (dBm/3KHz)						
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2412.0	-9.321	-7.875	-8.017		-3.882	8.0	-11.9
2437.0	-9.905	-8.141	-8.662		-4.156	8.0	-12.1
2462.0	-9.986	-8.101	-9.018		-4.453	8.0	-12.4

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density - Average

Variant:	802.11g	Duty Cycle (%):	97.9
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	4.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
	Port(s) (dBm/3KHz)						
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2412.0	-12.330	-12.267	-11.749		-7.321	8.0	-15.3
2437.0	-12.472	-12.236	-11.965		-7.356	8.0	-15.3
2462.0	-12.025	-11.644	-10.704		-6.558	8.0	-14.5

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density - Average

Variant:	802.11n HT-20	Duty Cycle (%):	96.5
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	4.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.15 dB)	Limit	Margin
	Port(s) (dBm/3KHz)						
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2412.0	-12.409	-11.776	-11.746		-7.048	8.0	-15.0
2437.0	-12.704	-12.869	-12.113		-8.145	8.0	-16.1
2462.0	-12.560	-12.606	-12.157		-7.705	8.0	-15.7

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density - Average

Variant:	802.11n HT-40	Duty Cycle (%):	95.3
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	4.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.21 dB)	Limit	Margin
	Port(s) (dBm/3KHz)						
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2422.0	-14.466	-15.370	-13.866		-9.708	8.0	-17.7
2437.0	-13.339	-12.658	-12.004		-7.842	8.0	-15.8
2452.0	-15.183	-15.776	-13.572		-9.761	8.0	-17.7

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

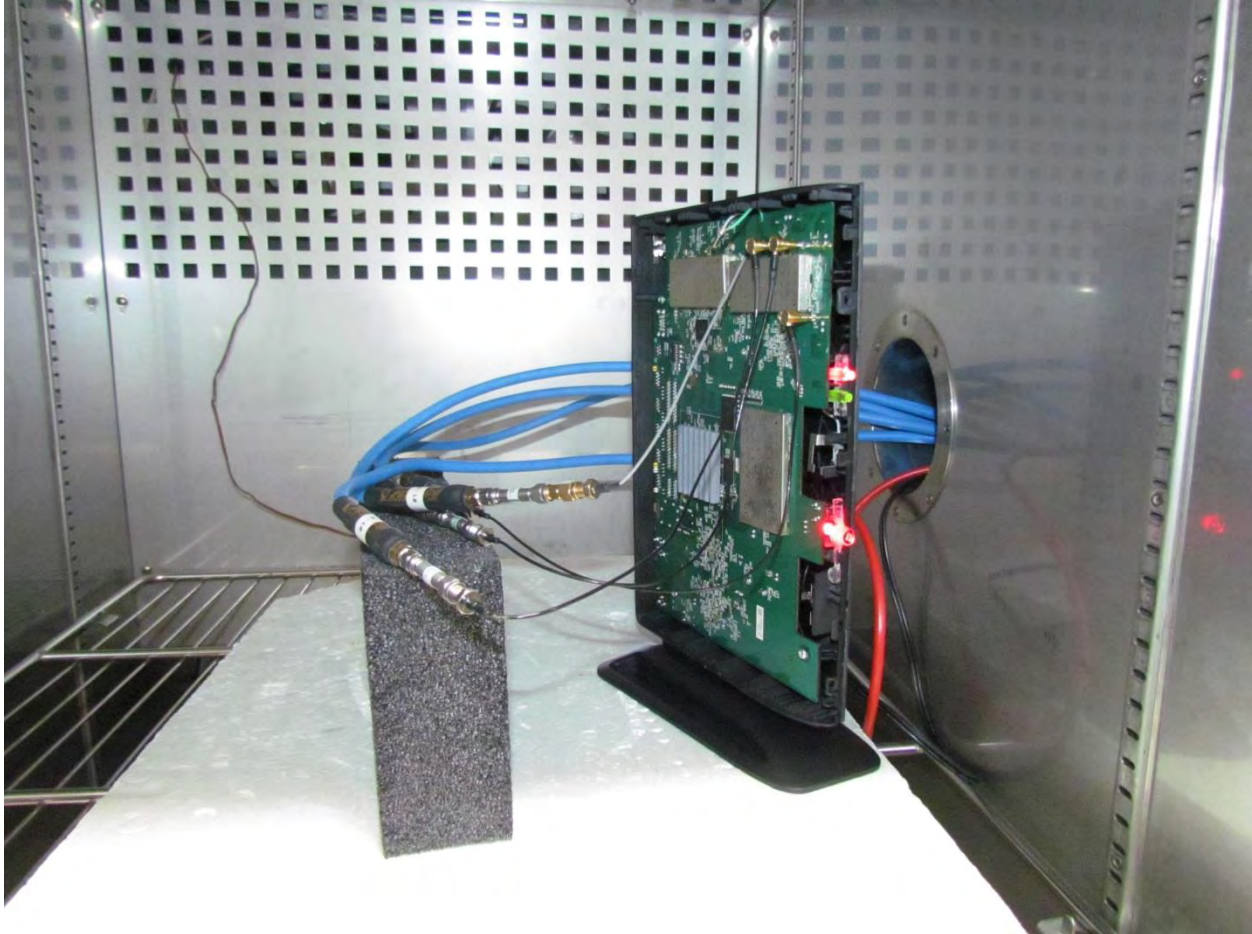
DCCF - Duty Cycle Correction Factor

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

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1. PHOTOGRAPHS

1.1. Conducted Test Setup



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A. APPENDIX - GRAPHICAL IMAGES

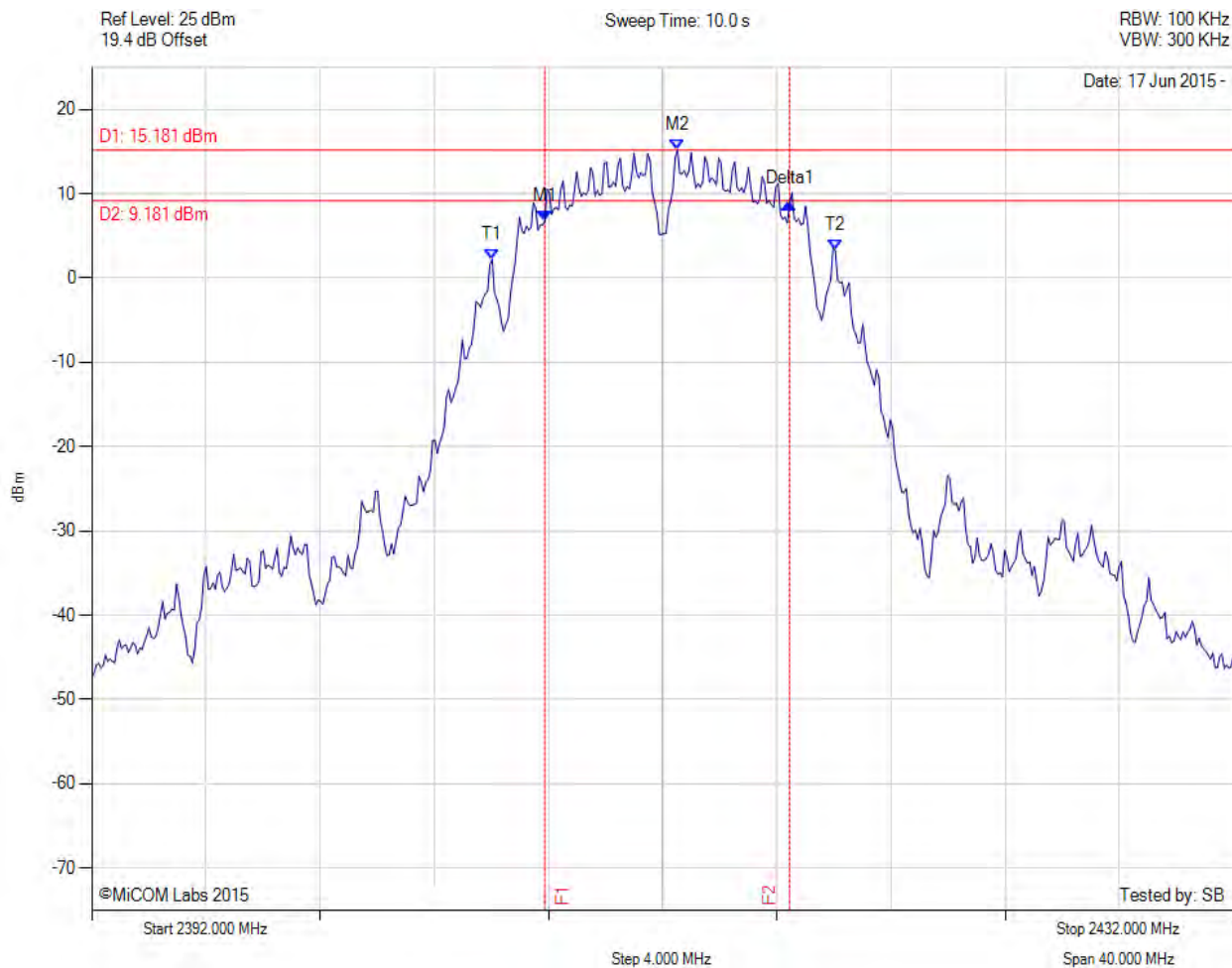
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A.1. 6 dB & 99% Bandwidth



6 dB & 99% BANDWIDTH

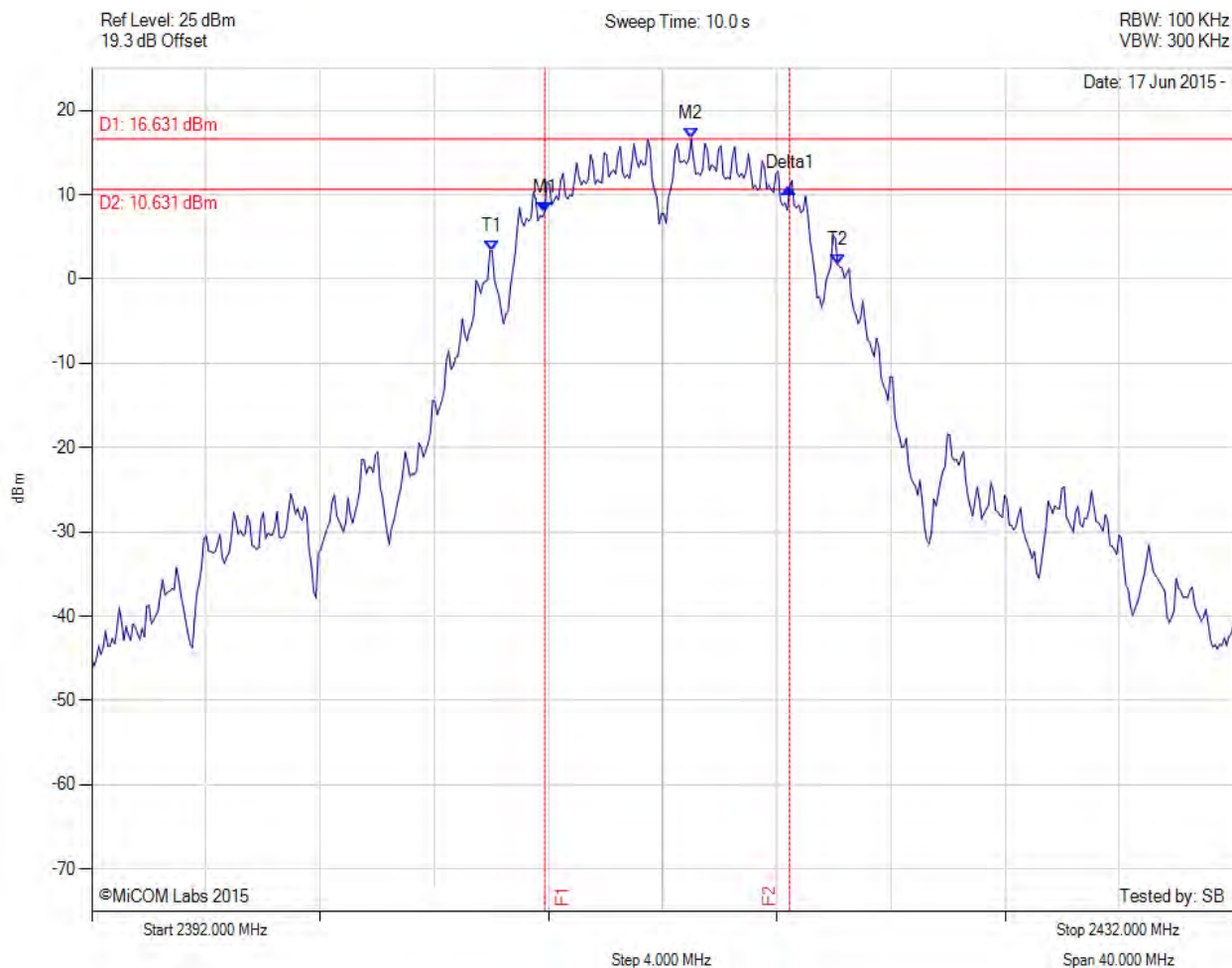
Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.872 MHz : 6.688 dBm M2 : 2412.521 MHz : 15.181 dBm Delta1 : 8.577 MHz : 2.150 dB T1 : 2406.028 MHz : 2.220 dBm T2 : 2418.052 MHz : 3.245 dBm OBW : 12.024 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥500.0 kHz Margin: -8.08 MHz

[back to matrix](#)

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.872 MHz : 7.937 dBm M2 : 2413.002 MHz : 16.631 dBm Delta1 : 8.577 MHz : 2.925 dB T1 : 2406.028 MHz : 3.257 dBm T2 : 2418.132 MHz : 1.716 dBm OBW : 12.104 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥ 500.0 kHz Margin: -8.08 MHz

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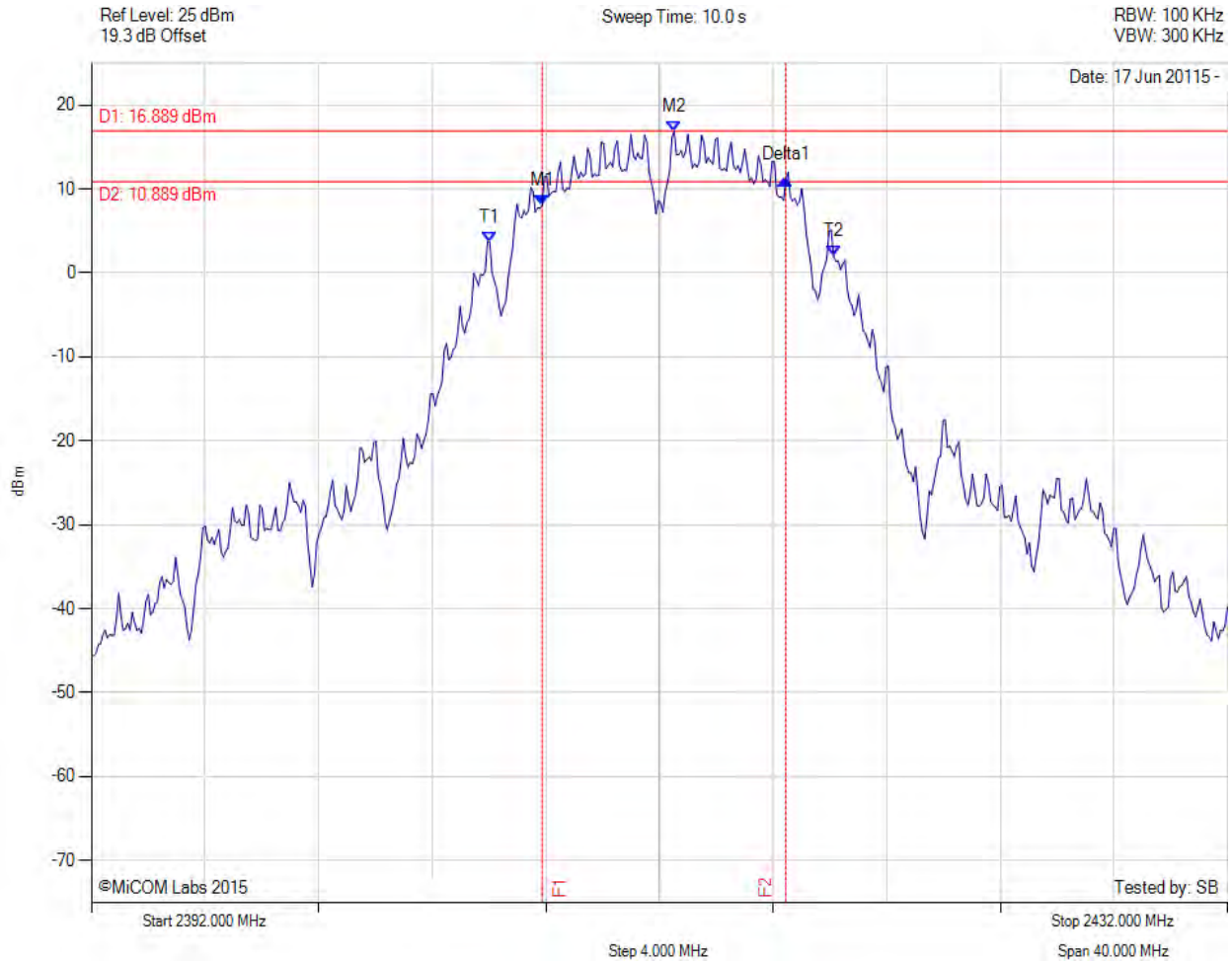


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6 dB & 99% BANDWIDTH

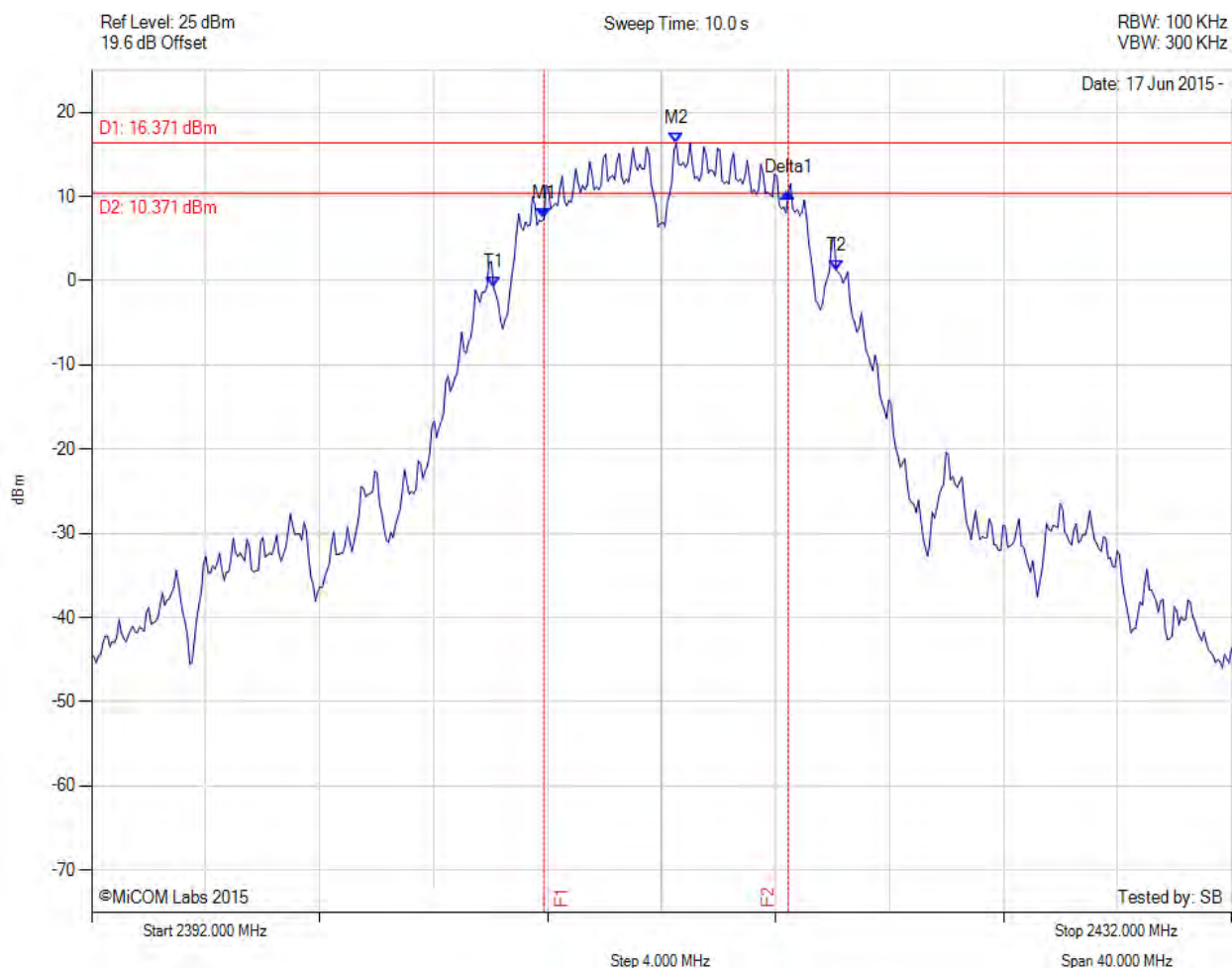
Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.872 MHz : 8.096 dBm M2 : 2412.521 MHz : 16.889 dBm Delta1 : 8.577 MHz : 3.028 dB T1 : 2406.028 MHz : 3.605 dBm T2 : 2418.132 MHz : 1.950 dBm OBW : 12.104 MHz	Channel Frequency: 2412.00 MHz

[back to matrix](#)

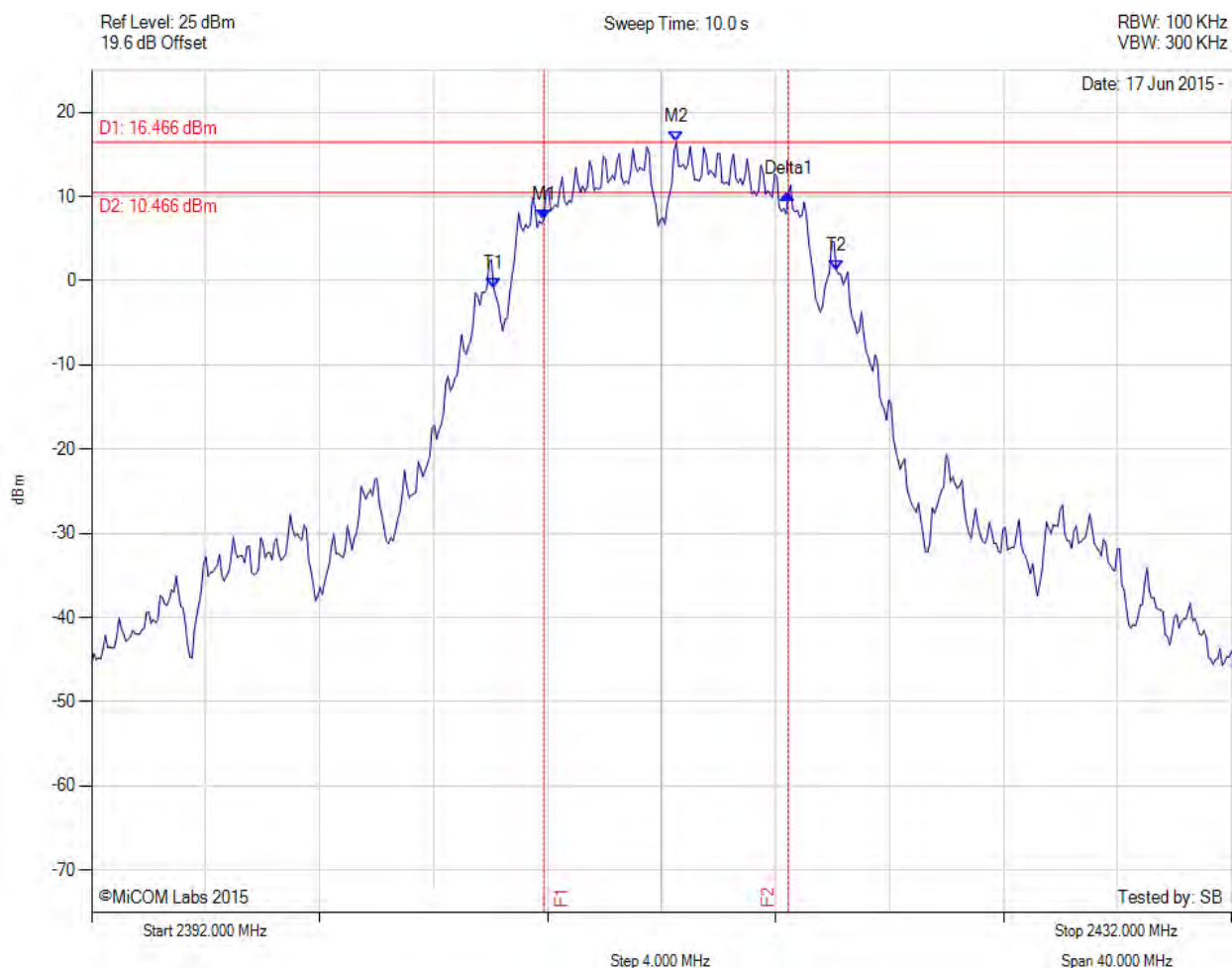
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.872 MHz : 7.317 dBm M2 : 2412.521 MHz : 16.371 dBm Delta1 : 8.577 MHz : 3.195 dB T1 : 2406.108 MHz : -0.780 dBm T2 : 2418.132 MHz : 1.238 dBm OBW : 12.024 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥ 500.0 kHz Margin: -8.08 MHz

[back to matrix](#)

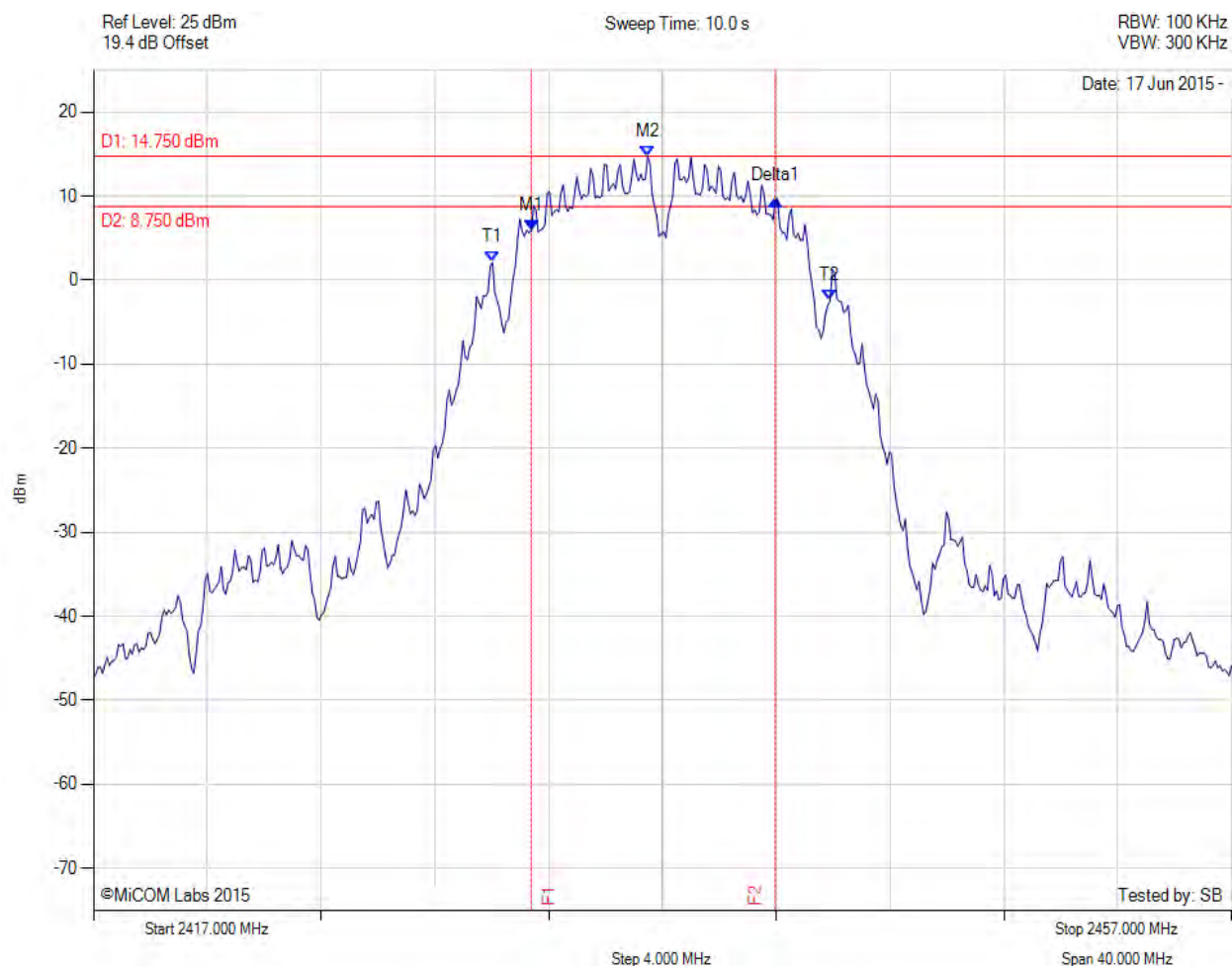
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.872 MHz : 7.274 dBm M2 : 2412.521 MHz : 16.466 dBm Delta1 : 8.577 MHz : 3.110 dB T1 : 2406.108 MHz : -0.881 dBm T2 : 2418.132 MHz : 1.221 dBm OBW : 12.024 MHz	Channel Frequency: 2412.00 MHz

[back to matrix](#)

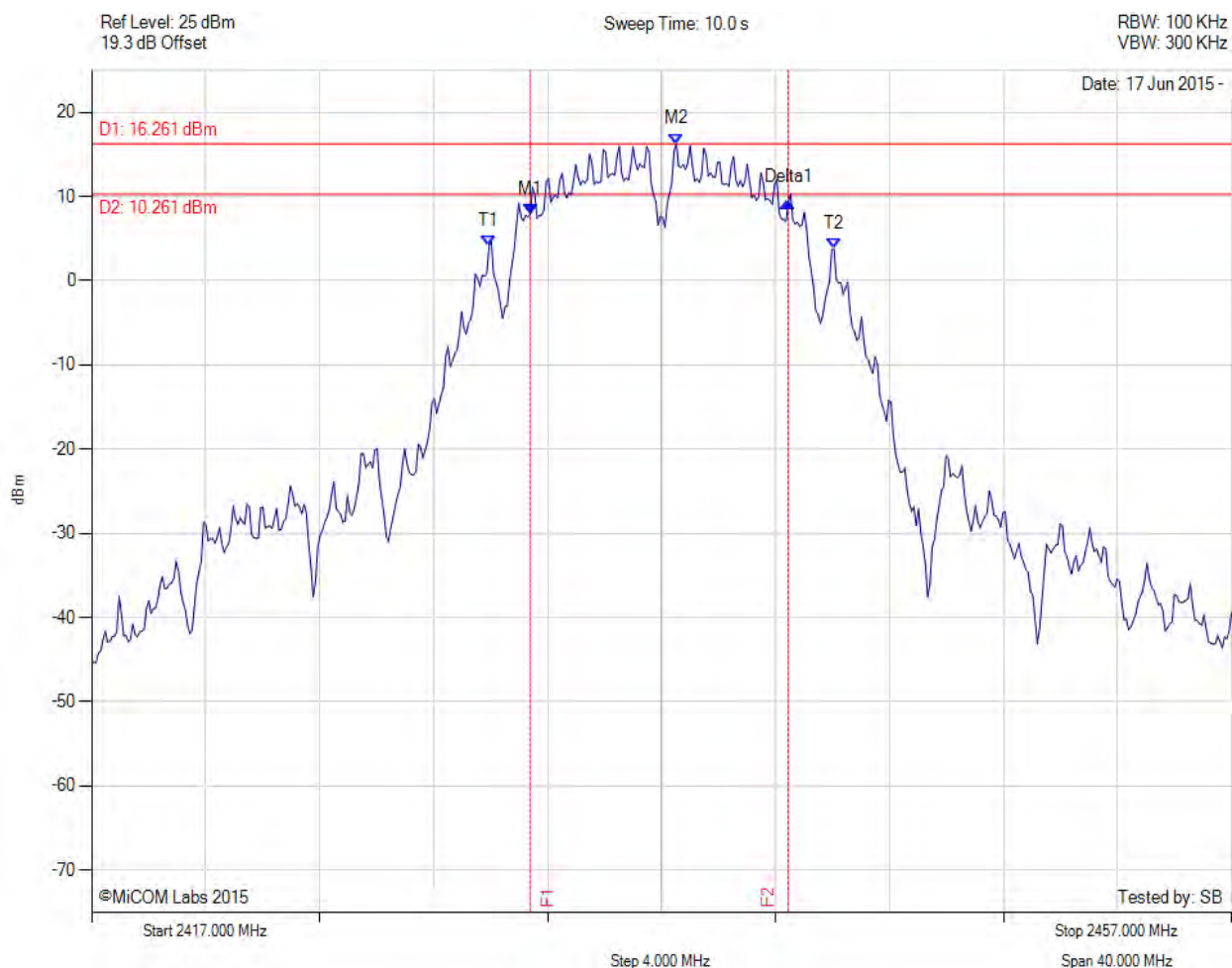
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2432.391 MHz : 5.860 dBm M2 : 2436.479 MHz : 14.750 dBm Delta1 : 8.577 MHz : 3.705 dB T1 : 2431.028 MHz : 2.106 dBm T2 : 2442.892 MHz : -2.447 dBm OBW : 11.864 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥ 500.0 kHz Margin: -8.08 MHz

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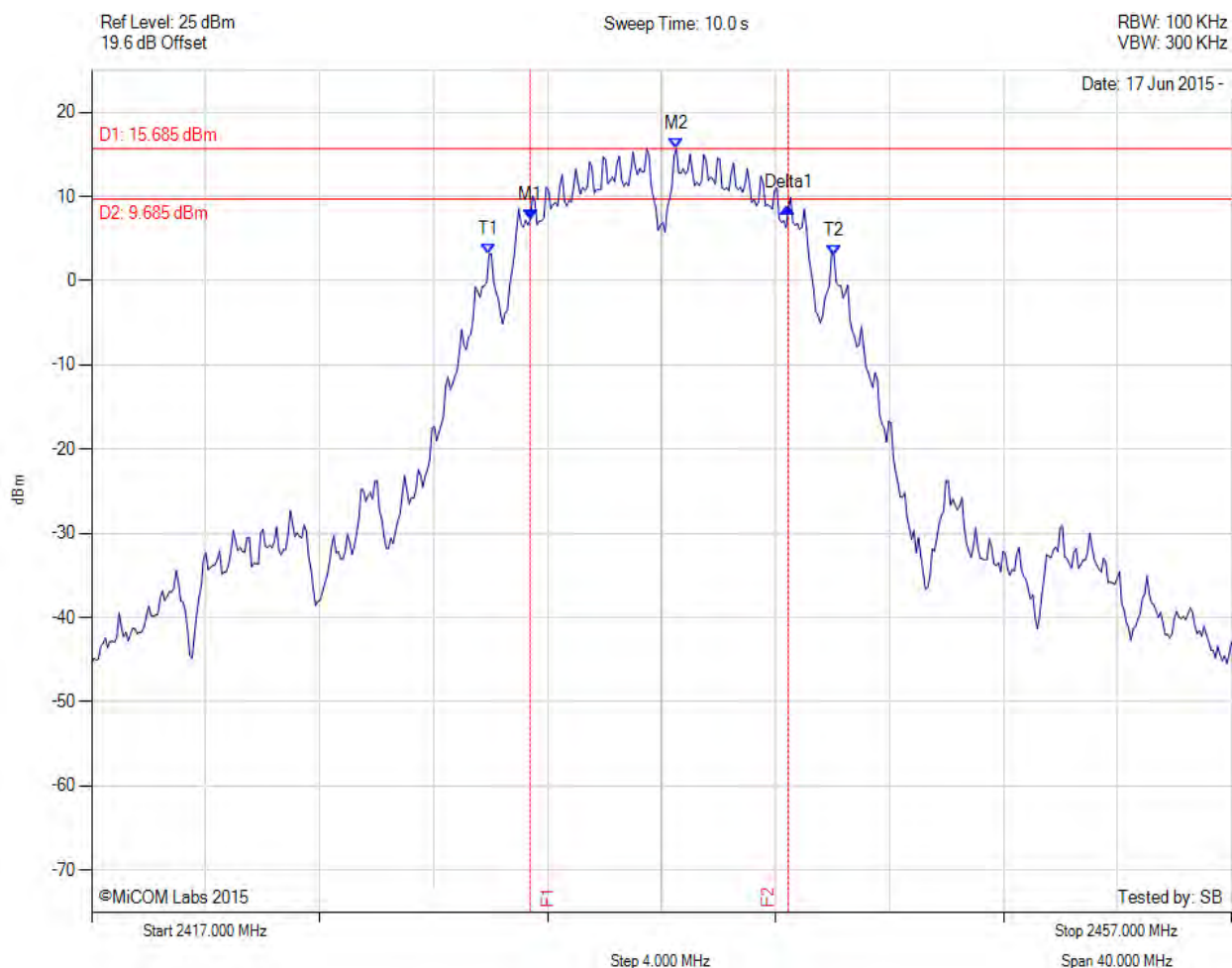
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2432.391 MHz : 7.900 dBm M2 : 2437.521 MHz : 16.261 dBm Delta1 : 9.058 MHz : 1.440 dB T1 : 2430.948 MHz : 4.136 dBm T2 : 2443.052 MHz : 3.762 dBm OBW : 12.104 MHz	Measured 6 dB Bandwidth: 9.058 MHz Limit: ≥ 500.0 kHz Margin: -8.56 MHz

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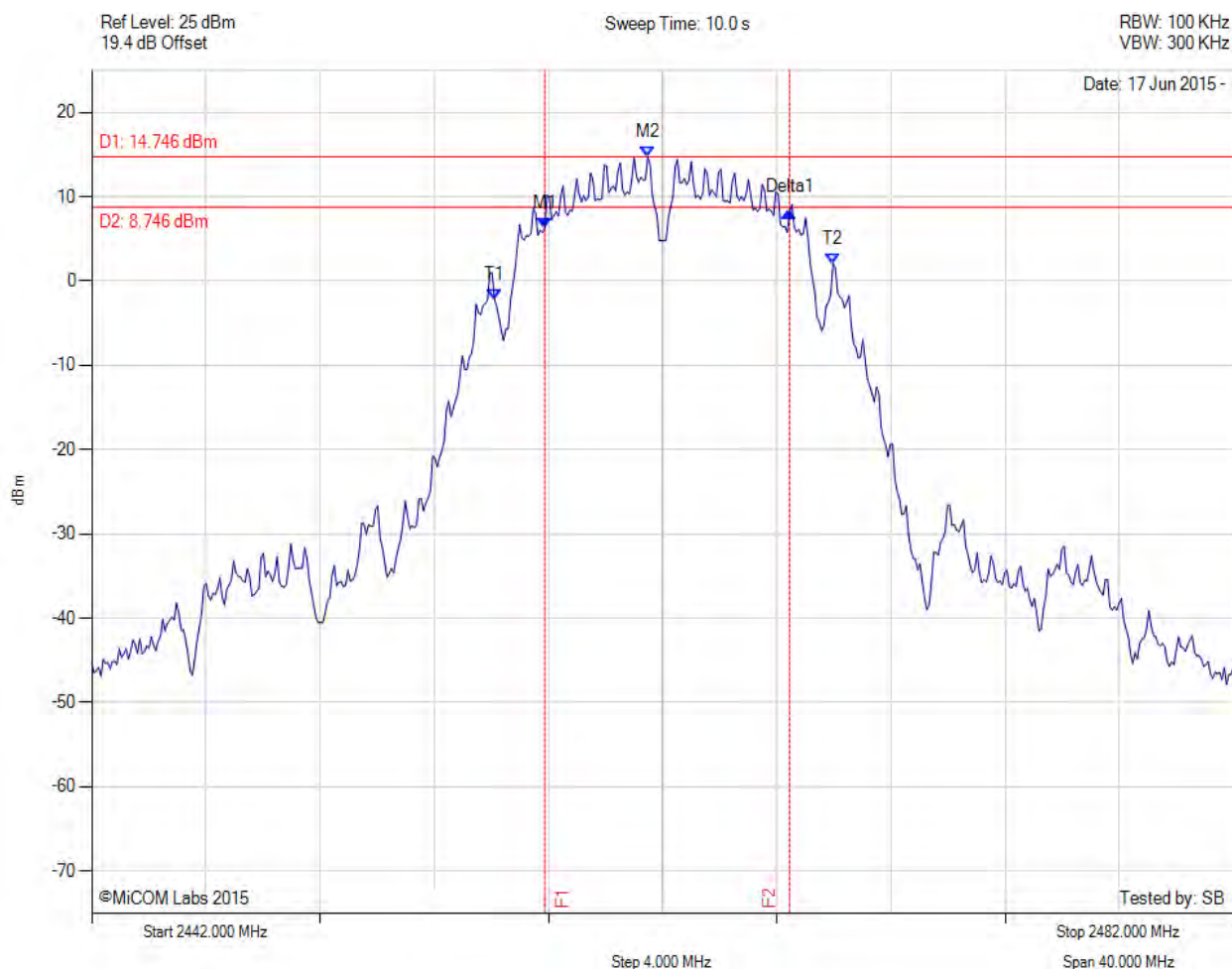
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2432.391 MHz : 7.211 dBm M2 : 2437.521 MHz : 15.685 dBm Delta1 : 9.058 MHz : 1.424 dB T1 : 2430.948 MHz : 3.105 dBm T2 : 2443.052 MHz : 2.922 dBm OBW : 12.104 MHz	Measured 6 dB Bandwidth: 9.058 MHz Limit: ≥ 500.0 kHz Margin: -8.56 MHz

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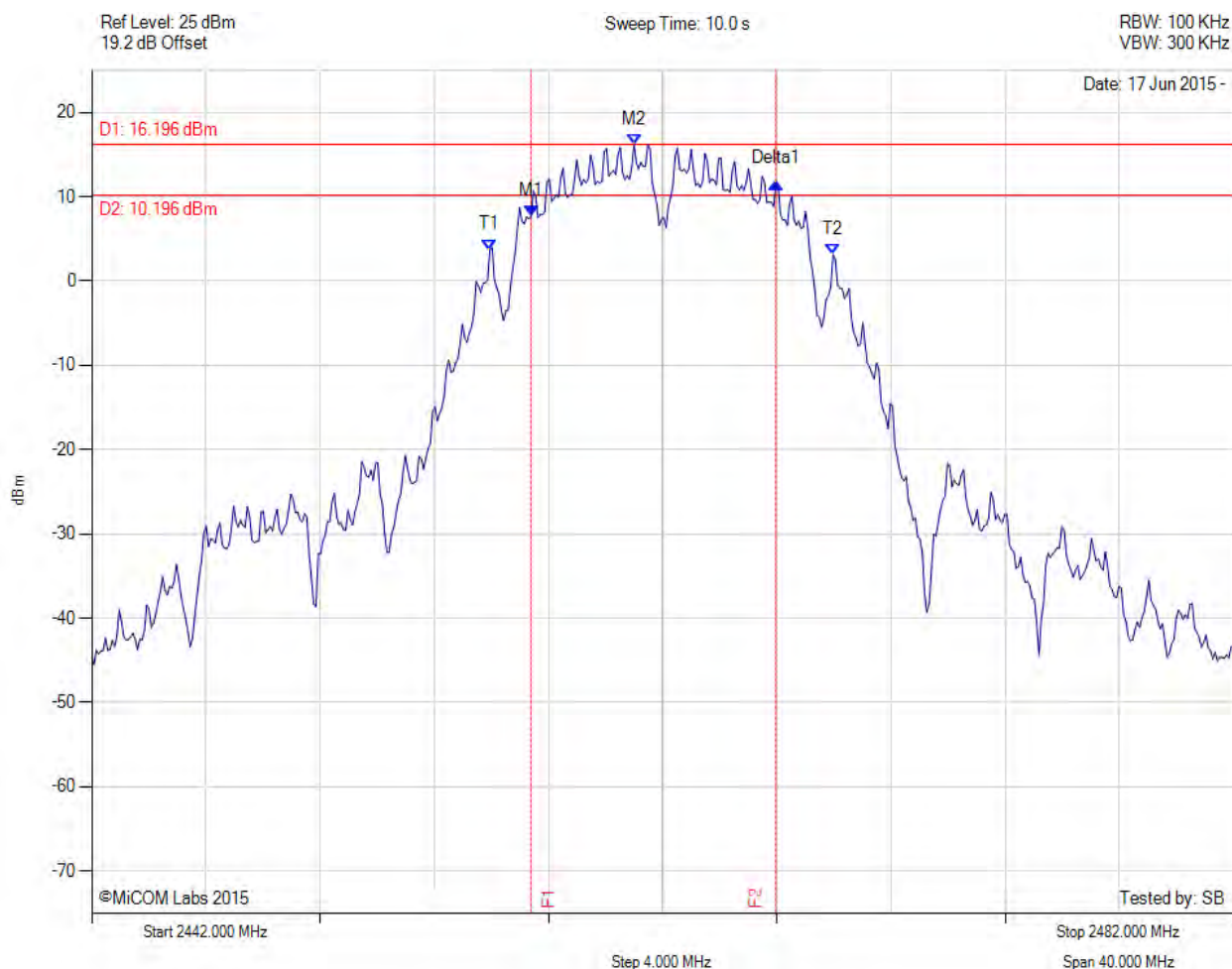
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2457.872 MHz : 6.277 dBm M2 : 2461.479 MHz : 14.746 dBm Delta1 : 8.577 MHz : 1.942 dB T1 : 2456.108 MHz : -2.157 dBm T2 : 2467.972 MHz : 2.065 dBm OBW : 11.864 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥ 500.0 kHz Margin: -8.08 MHz

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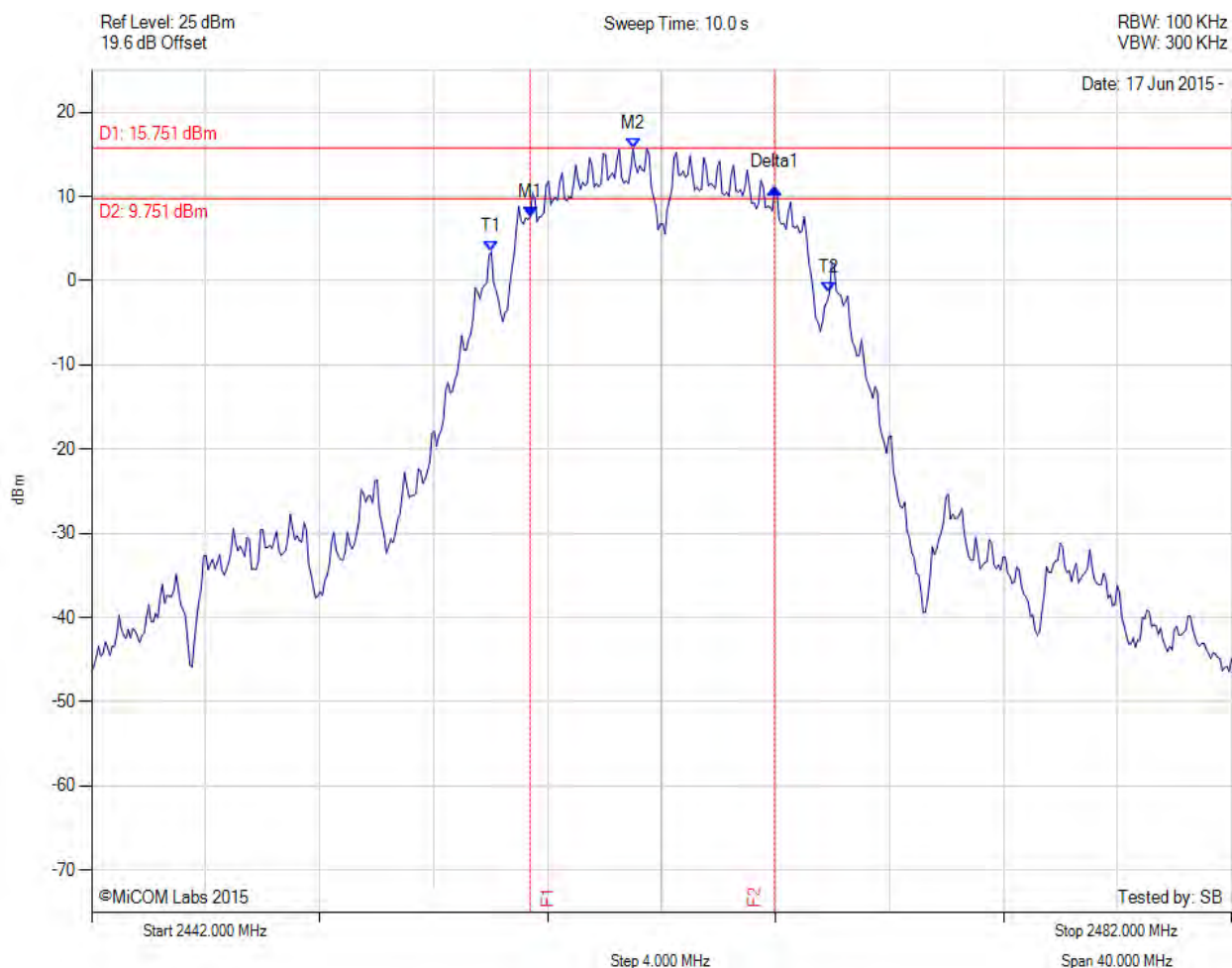
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2457.391 MHz : 7.672 dBm M2 : 2460.998 MHz : 16.196 dBm Delta1 : 8.577 MHz : 3.895 dB T1 : 2455.948 MHz : 3.719 dBm T2 : 2467.972 MHz : 3.129 dBm OBW : 12.024 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥ 500.0 kHz Margin: -8.08 MHz

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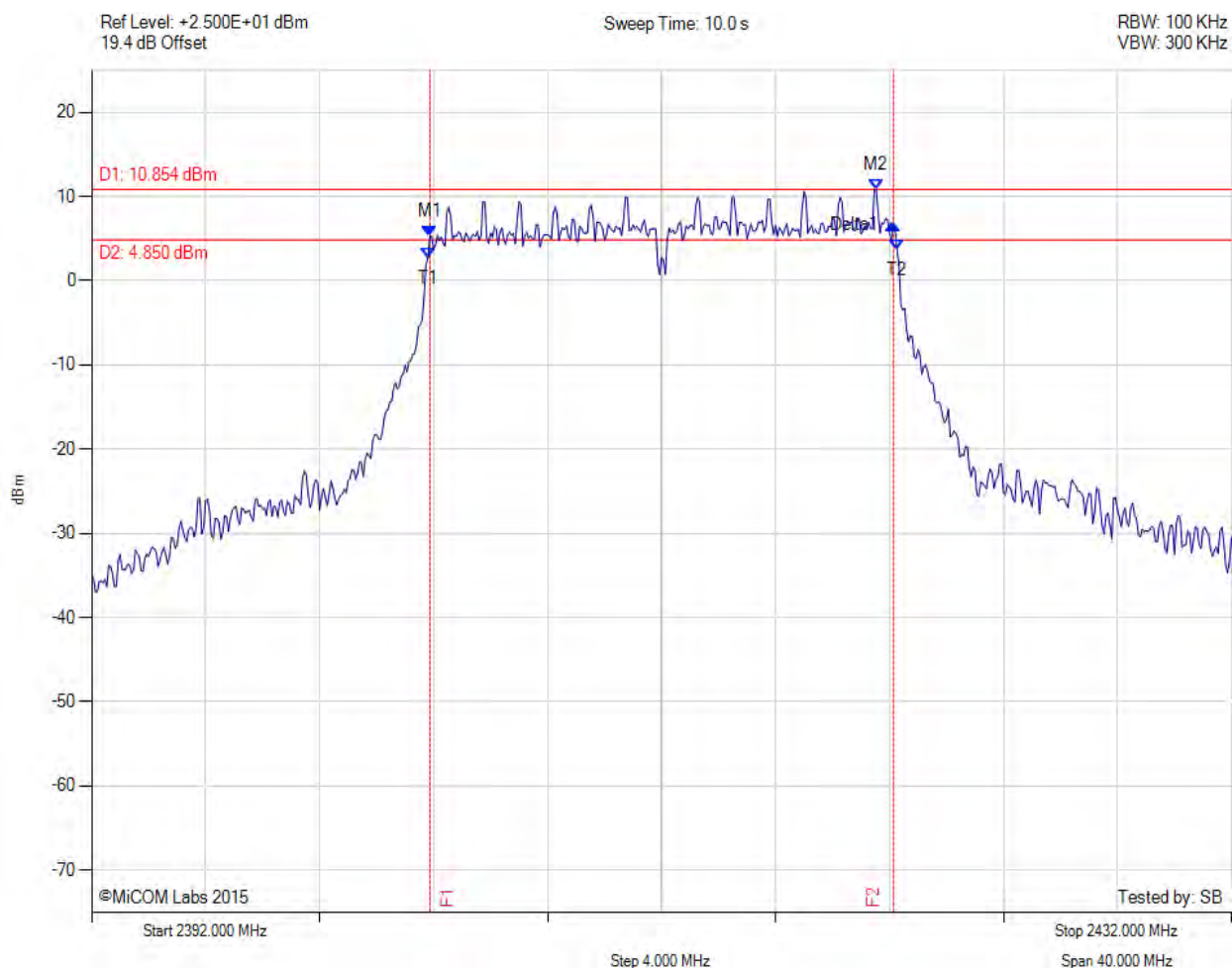
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2457.391 MHz : 7.605 dBm M2 : 2460.998 MHz : 15.751 dBm Delta1 : 8.577 MHz : 3.447 dB T1 : 2456.028 MHz : 3.448 dBm T2 : 2467.892 MHz : -1.408 dBm OBW : 11.864 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥ 500.0 kHz Margin: -8.08 MHz

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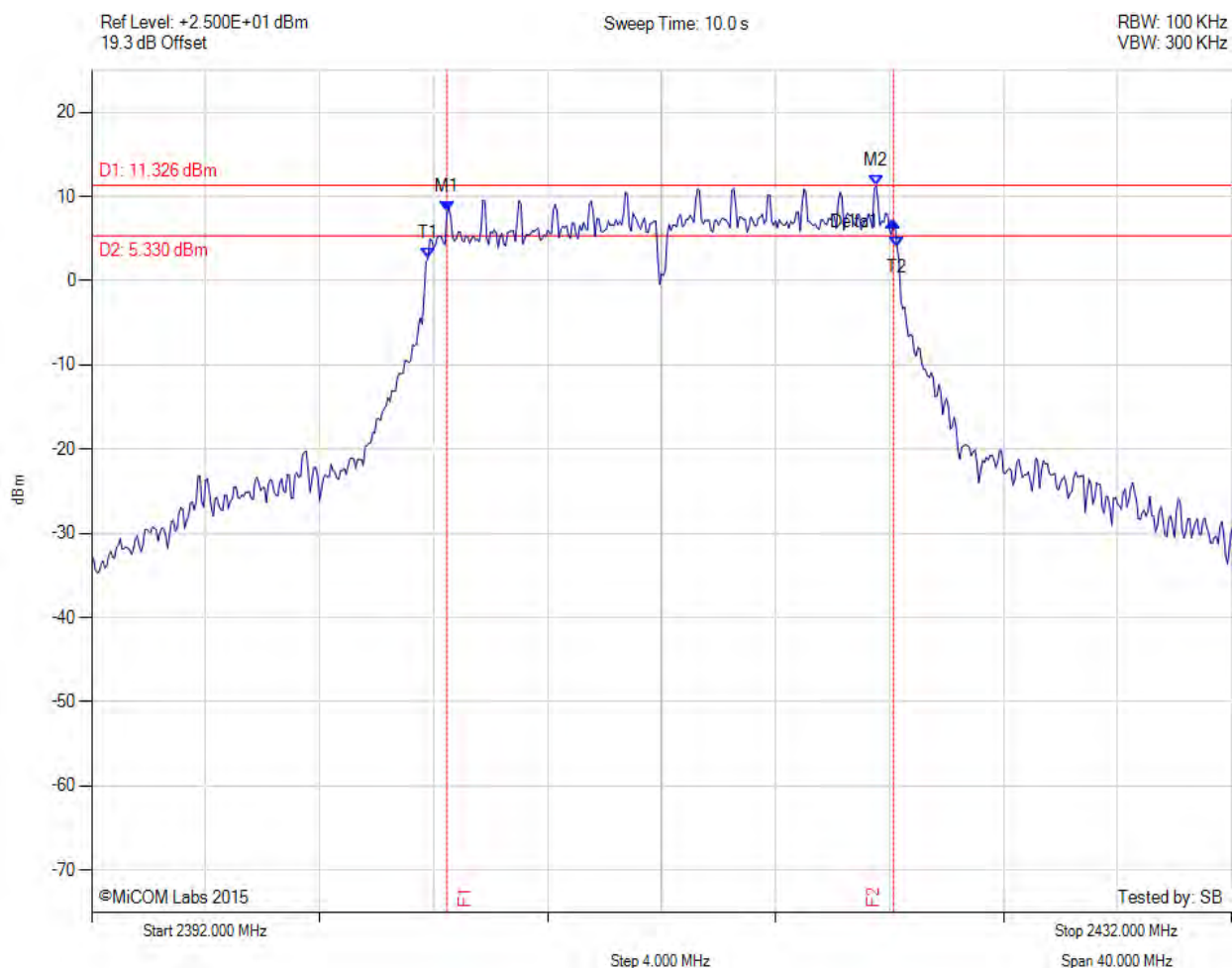
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2403.870 MHz : 5.288 dBm M2 : 2419.530 MHz : 10.854 dBm Delta1 : 16.270 MHz : 1.417 dB T1 : 2403.800 MHz : 2.752 dBm T2 : 2420.267 MHz : 3.723 dBm OBW : 16.480 MHz	Measured 6 dB Bandwidth: 16.270 MHz Limit: ≥ 500.0 kHz Margin: -15.77 MHz

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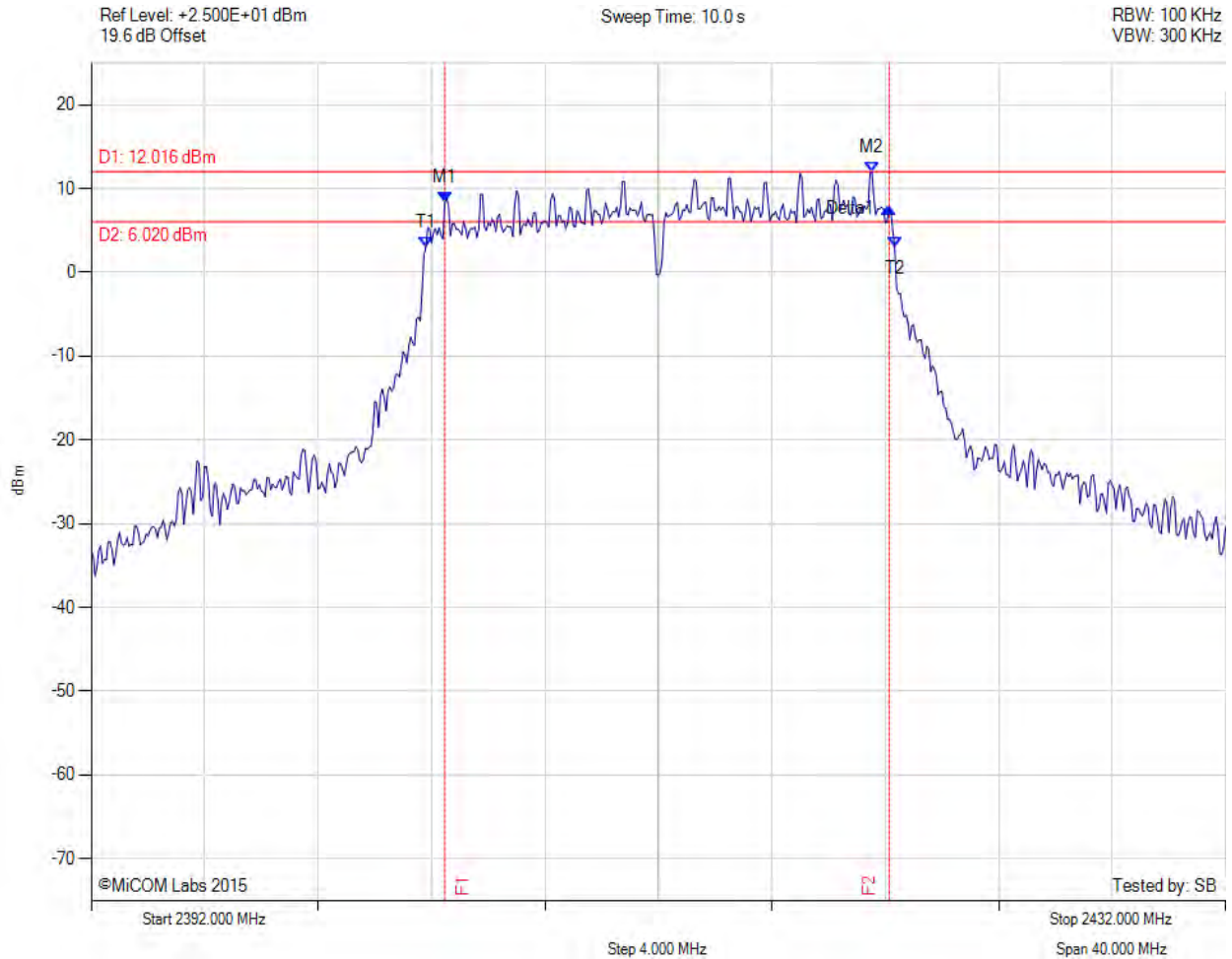
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2404.470 MHz : 8.187 dBm M2 : 2419.530 MHz : 11.326 dBm Delta1 : 15.670 MHz : -1.157 dB T1 : 2403.800 MHz : 2.612 dBm T2 : 2420.267 MHz : 4.009 dBm OBW : 16.478 MHz	Measured 6 dB Bandwidth: 15.670 MHz Limit: ≥ 500.0 kHz Margin: -15.17 MHz

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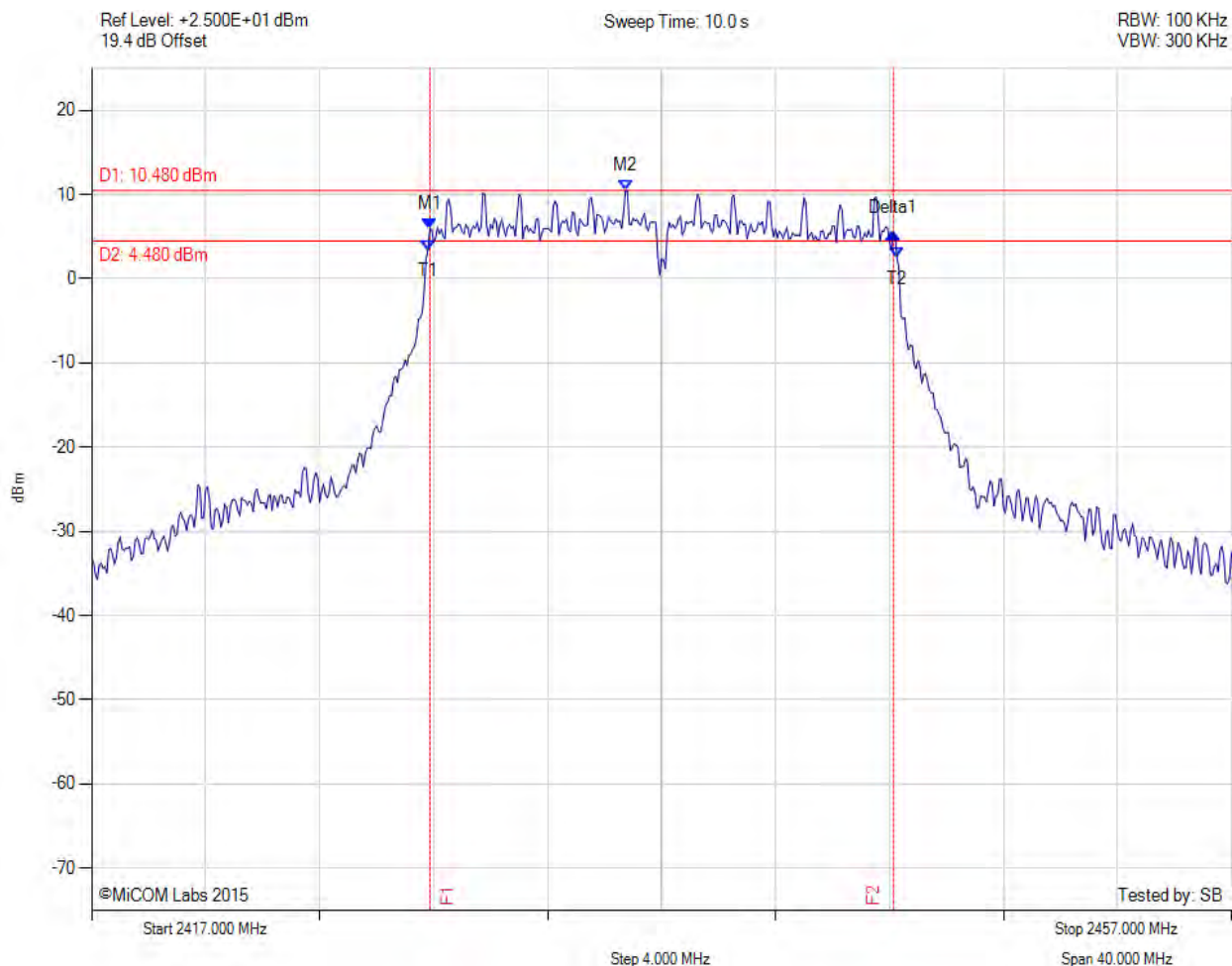
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2404.470 MHz : 8.370 dBm M2 : 2419.530 MHz : 12.016 dBm Delta1 : 15.670 MHz : -0.702 dB T1 : 2403.800 MHz : 3.025 dBm T2 : 2420.333 MHz : 2.946 dBm OBW : 16.472 MHz	Measured 6 dB Bandwidth: 15.670 MHz Limit: ≥ 500.0 kHz Margin: -15.17 MHz

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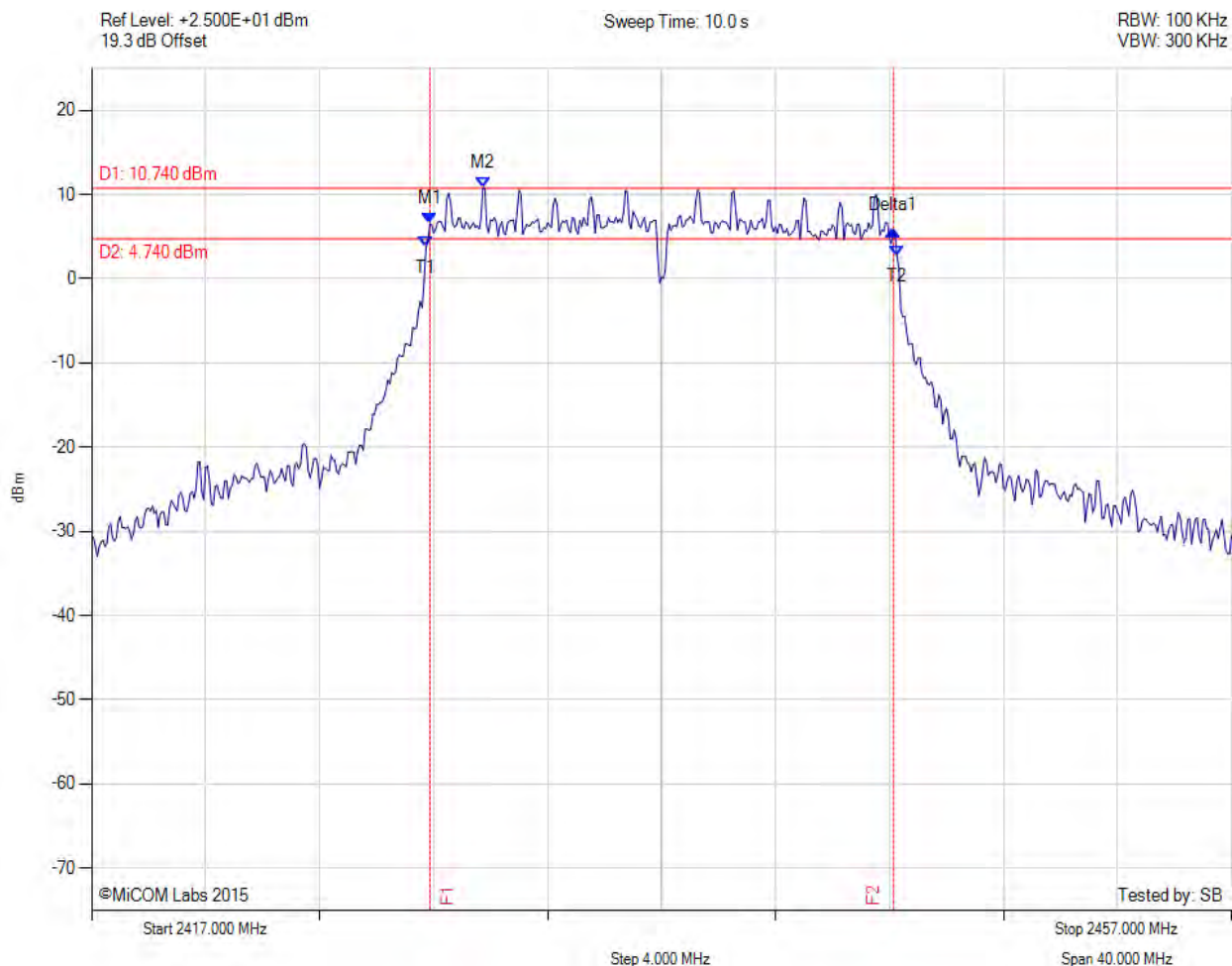
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2428.870 MHz : 5.913 dBm M2 : 2435.730 MHz : 10.480 dBm Delta1 : 16.270 MHz : -0.441 dB T1 : 2428.800 MHz : 3.380 dBm T2 : 2445.267 MHz : 2.510 dBm OBW : 16.448 MHz	Measured 6 dB Bandwidth: 16.270 MHz Limit: ≥ 500.0 kHz Margin: -15.77 MHz

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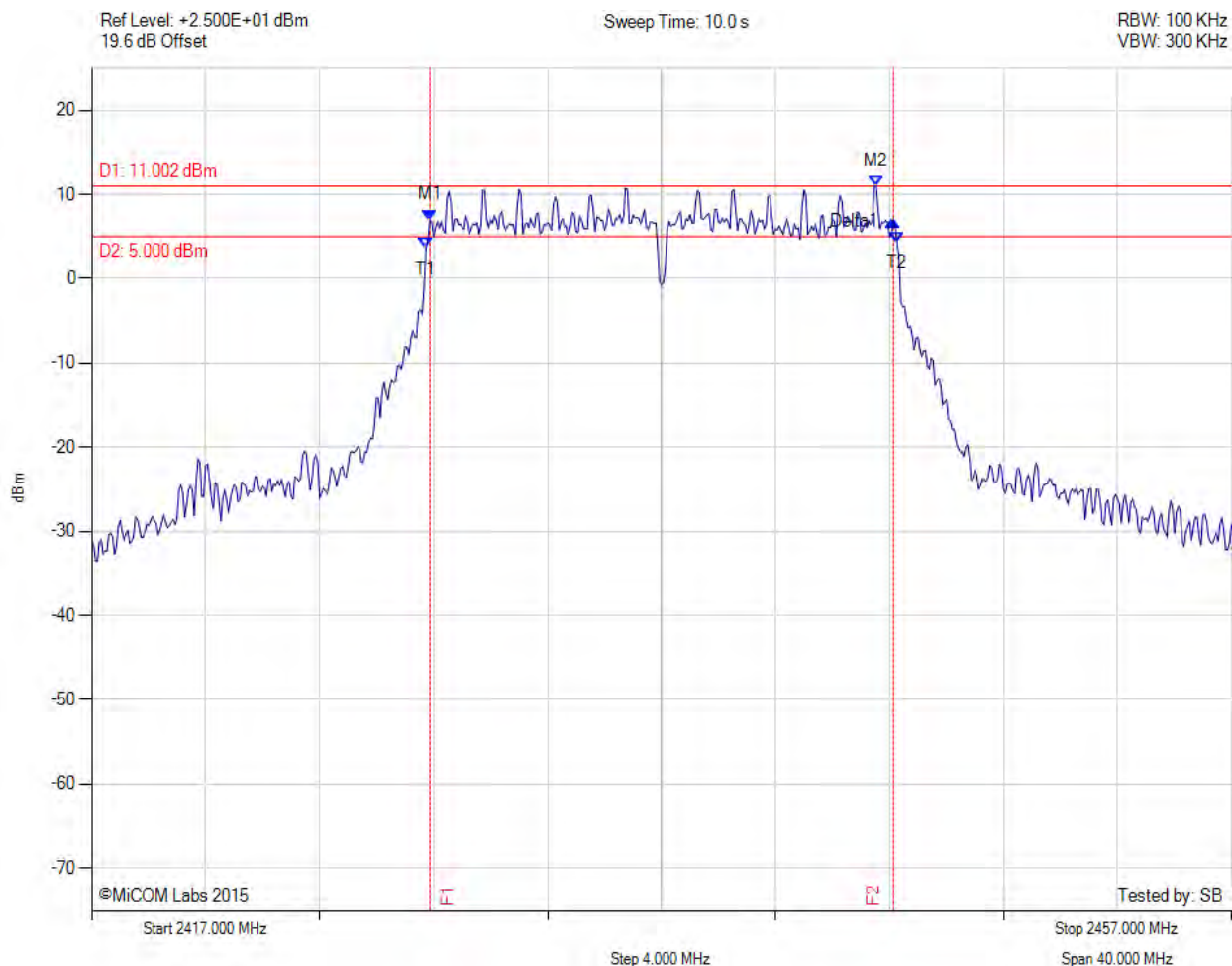
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2428.870 MHz : 6.503 dBm M2 : 2430.730 MHz : 10.740 dBm Delta1 : 16.270 MHz : -0.783 dB T1 : 2428.733 MHz : 3.751 dBm T2 : 2445.267 MHz : 2.696 dBm OBW : 16.510 MHz	Measured 6 dB Bandwidth: 16.270 MHz Limit: ≥ 500.0 kHz Margin: -15.77 MHz

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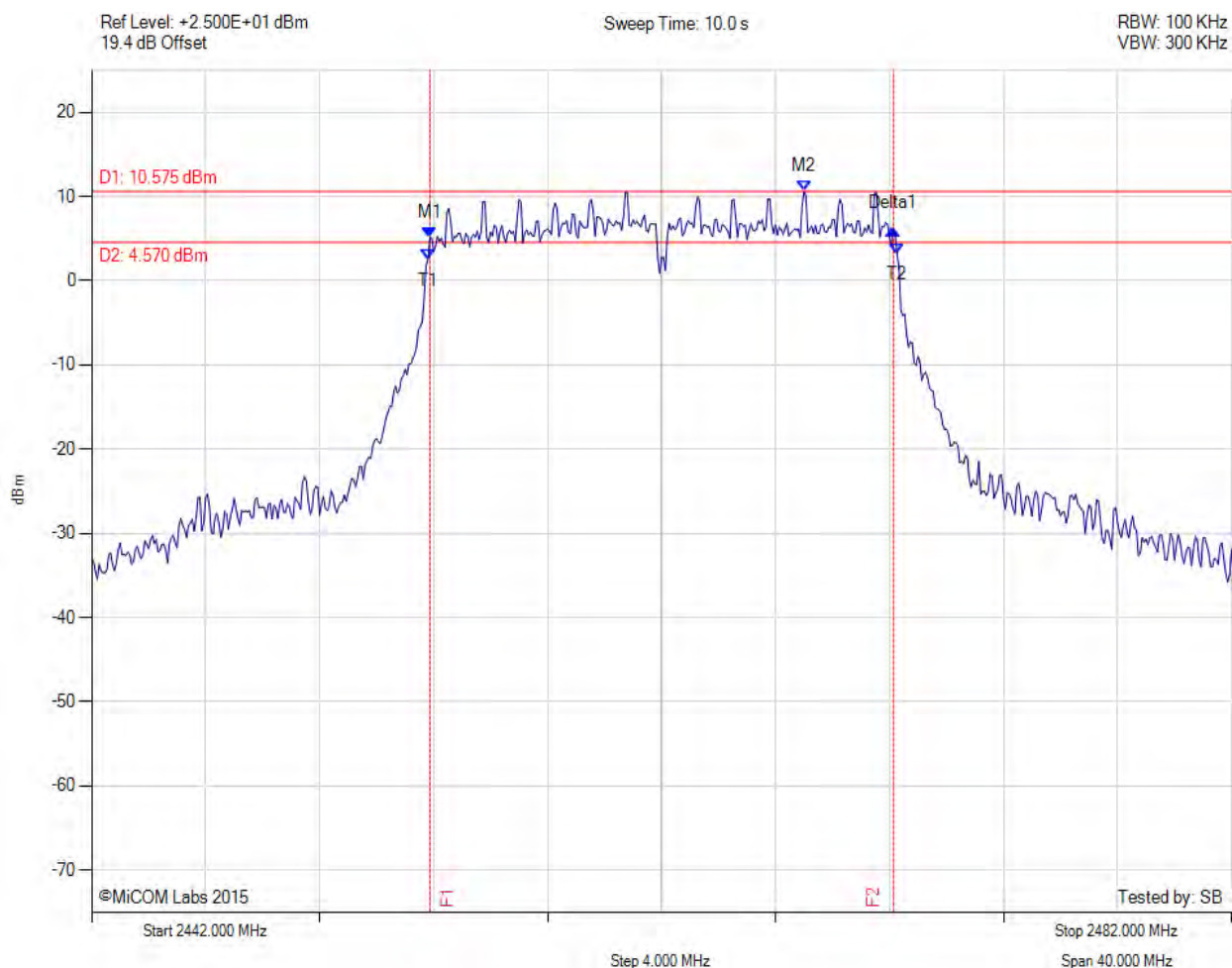
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2428.870 MHz : 6.986 dBm M2 : 2444.530 MHz : 11.002 dBm Delta1 : 16.270 MHz : -0.136 dB T1 : 2428.733 MHz : 3.615 dBm T2 : 2445.267 MHz : 4.367 dBm OBW : 16.530 MHz	Measured 6 dB Bandwidth: 16.270 MHz Limit: ≥500.0 kHz Margin: -15.77 MHz

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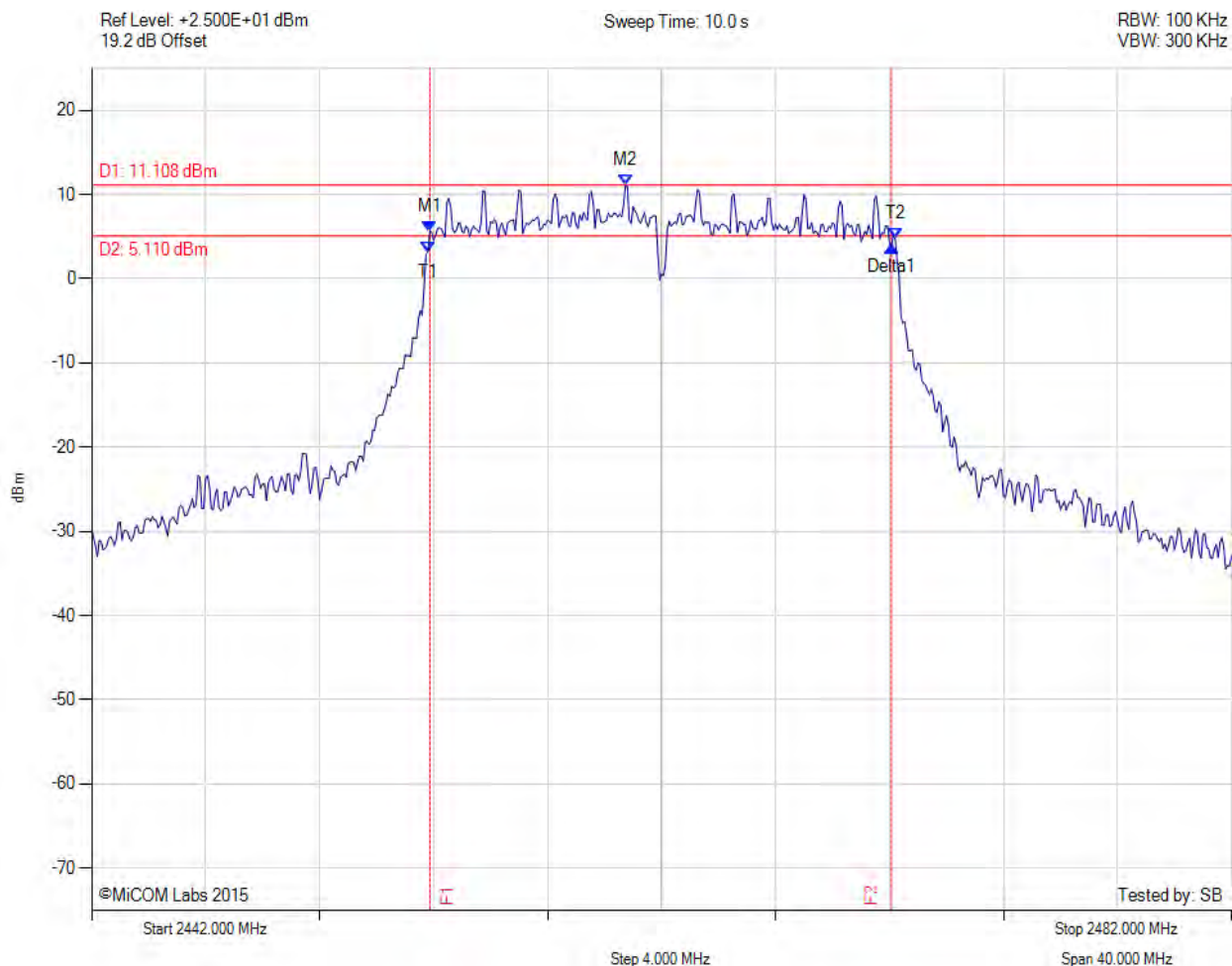
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2453.870 MHz : 5.104 dBm M2 : 2467.000 MHz : 10.575 dBm Delta1 : 16.270 MHz : 1.062 dB T1 : 2453.800 MHz : 2.521 dBm T2 : 2470.267 MHz : 3.215 dBm OBW : 16.432 MHz	Measured 6 dB Bandwidth: 16.270 MHz Limit: ≥ 500.0 kHz Margin: -15.77 MHz

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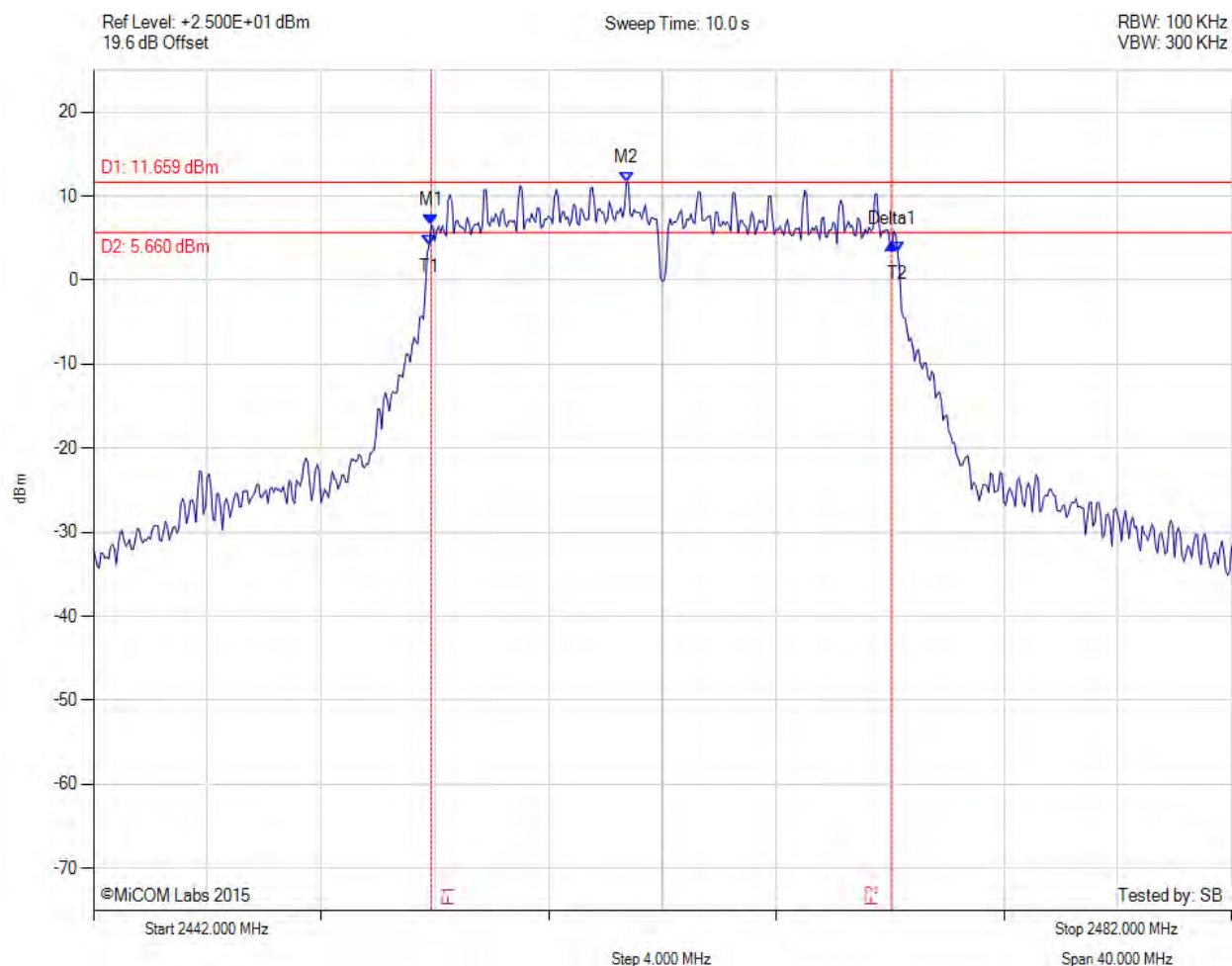
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2453.870 MHz : 5.658 dBm M2 : 2460.730 MHz : 11.108 dBm Delta1 : 16.200 MHz : -1.816 dB T1 : 2453.800 MHz : 3.240 dBm T2 : 2470.200 MHz : 4.749 dBm OBW : 16.425 MHz	Measured 6 dB Bandwidth: 16.200 MHz Limit: ≥ 500.0 kHz Margin: -15.70 MHz

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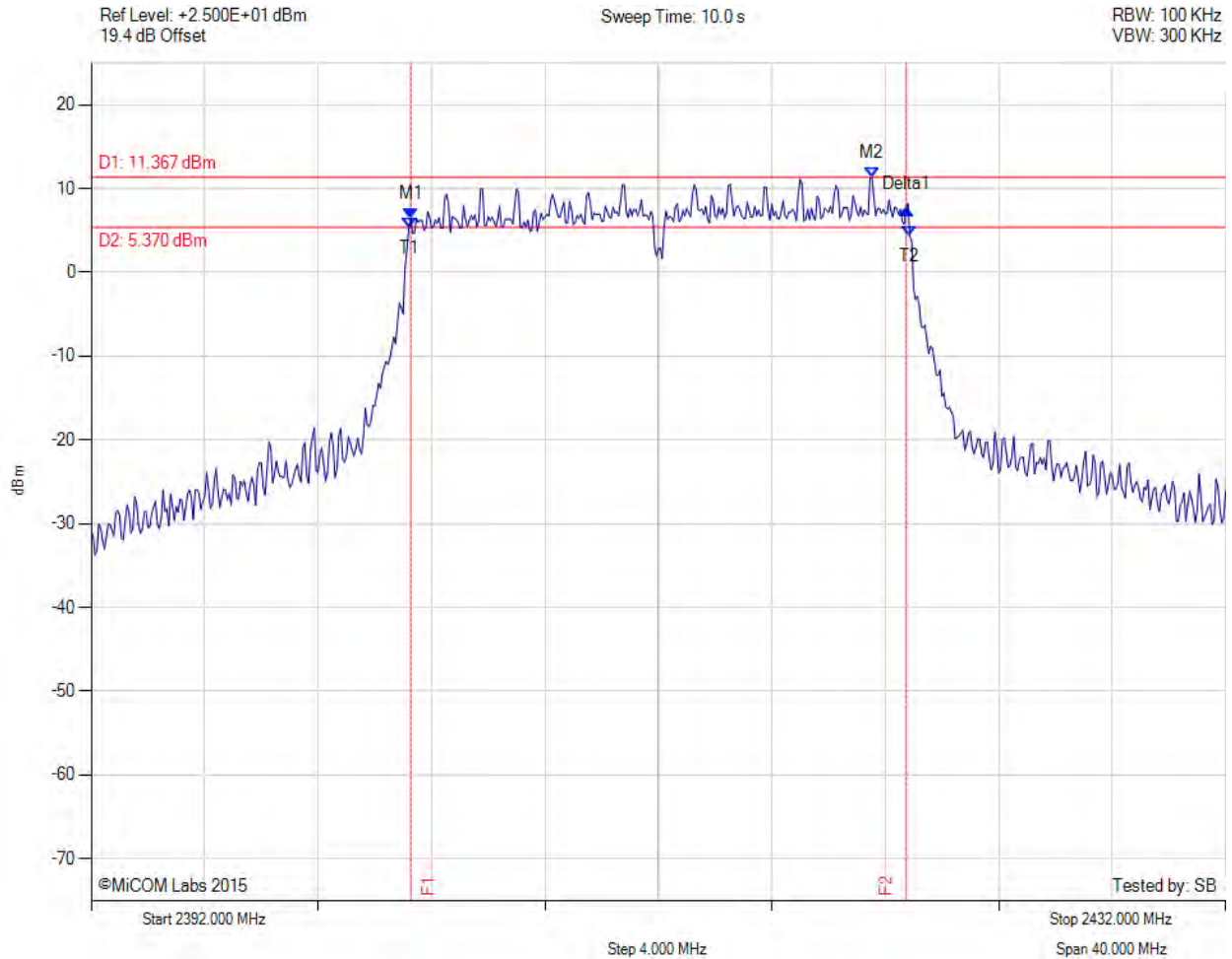
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2453.870 MHz : 6.587 dBm M2 : 2460.730 MHz : 11.659 dBm Delta1 : 16.200 MHz : -2.335 dB T1 : 2453.800 MHz : 4.107 dBm T2 : 2470.267 MHz : 3.305 dBm OBW : 16.429 MHz	Measured 6 dB Bandwidth: 16.200 MHz Limit: ≥ 500.0 kHz Margin: -15.70 MHz

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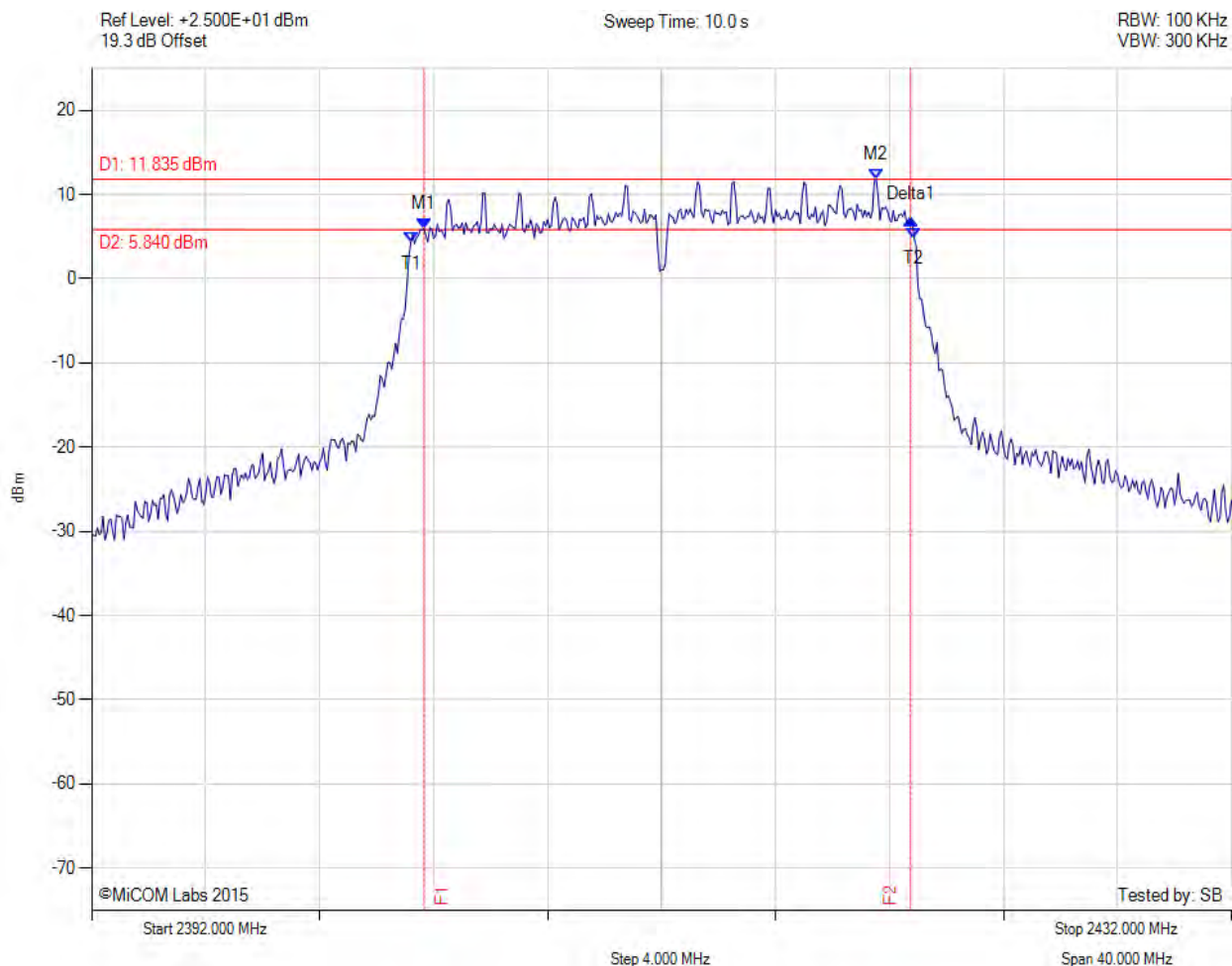
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2403.270 MHz : 6.443 dBm M2 : 2419.530 MHz : 11.367 dBm Delta1 : 17.470 MHz : 1.103 dB T1 : 2403.200 MHz : 5.317 dBm T2 : 2420.867 MHz : 4.360 dBm OBW : 17.666 MHz	Measured 6 dB Bandwidth: 17.470 MHz Limit: ≥500.0 kHz Margin: -16.97 MHz

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2403.670 MHz : 5.888 dBm M2 : 2419.530 MHz : 11.835 dBm Delta1 : 17.070 MHz : 1.150 dB T1 : 2403.200 MHz : 4.282 dBm T2 : 2420.867 MHz : 4.808 dBm OBW : 17.662 MHz	Measured 6 dB Bandwidth: 17.070 MHz Limit: ≥500.0 kHz Margin: -16.57 MHz

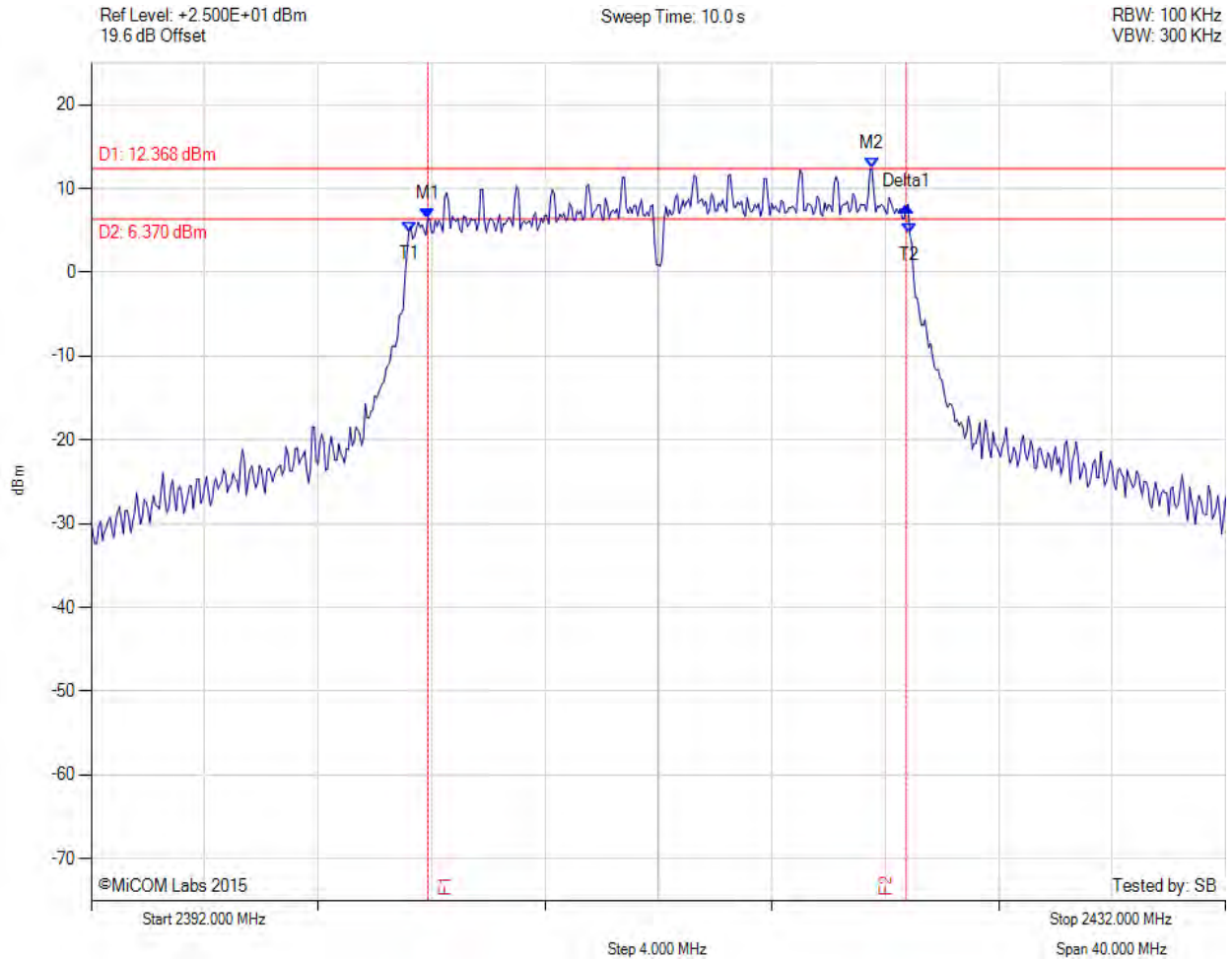
[back to matrix](#)

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6 dB & 99% BANDWIDTH

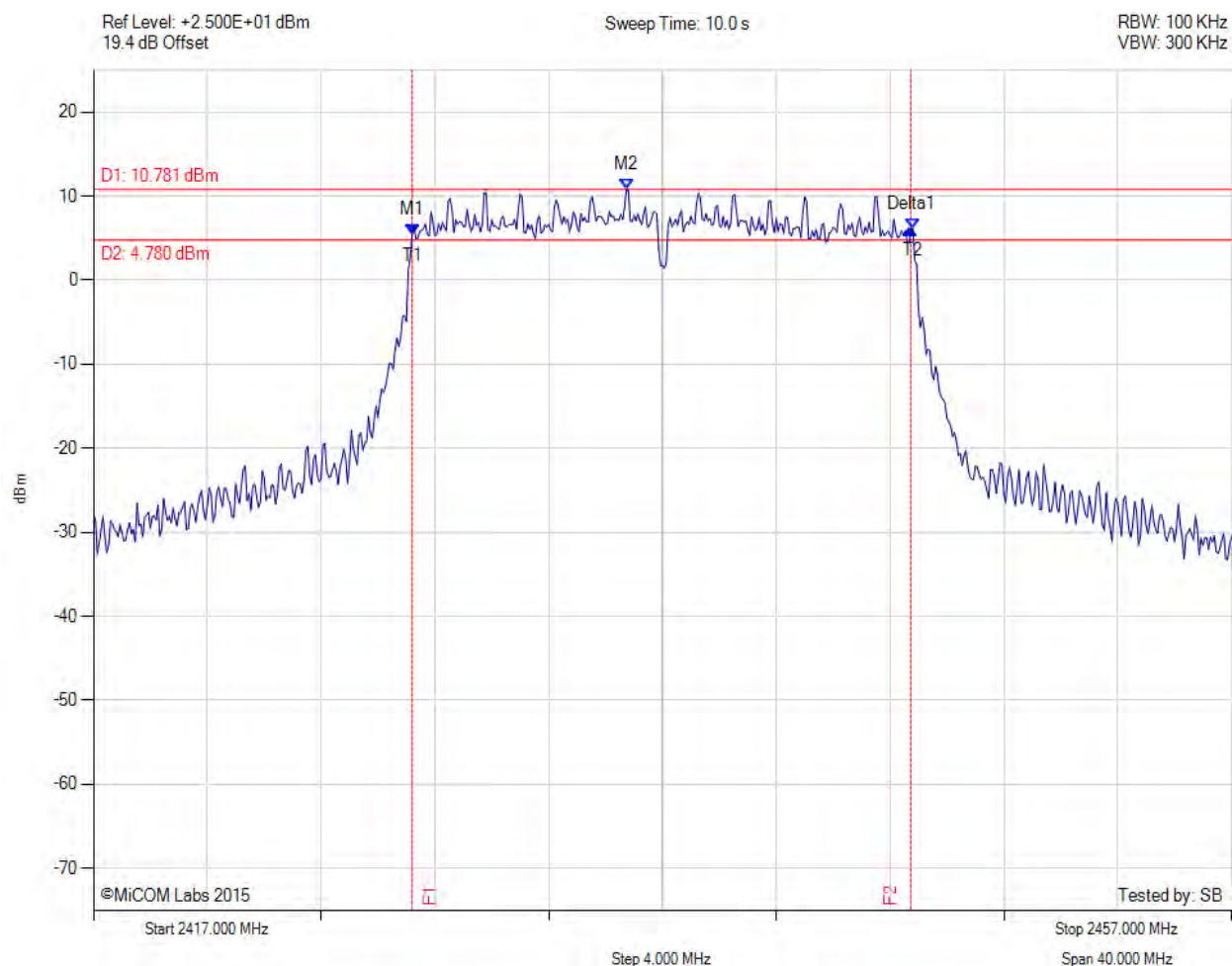
Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2403.870 MHz : 6.403 dBm M2 : 2419.530 MHz : 12.368 dBm Delta1 : 16.870 MHz : 1.496 dB T1 : 2403.200 MHz : 4.782 dBm T2 : 2420.867 MHz : 4.585 dBm OBW : 17.621 MHz	Measured 6 dB Bandwidth: 16.870 MHz Limit: ≥500.0 kHz Margin: -16.37 MHz

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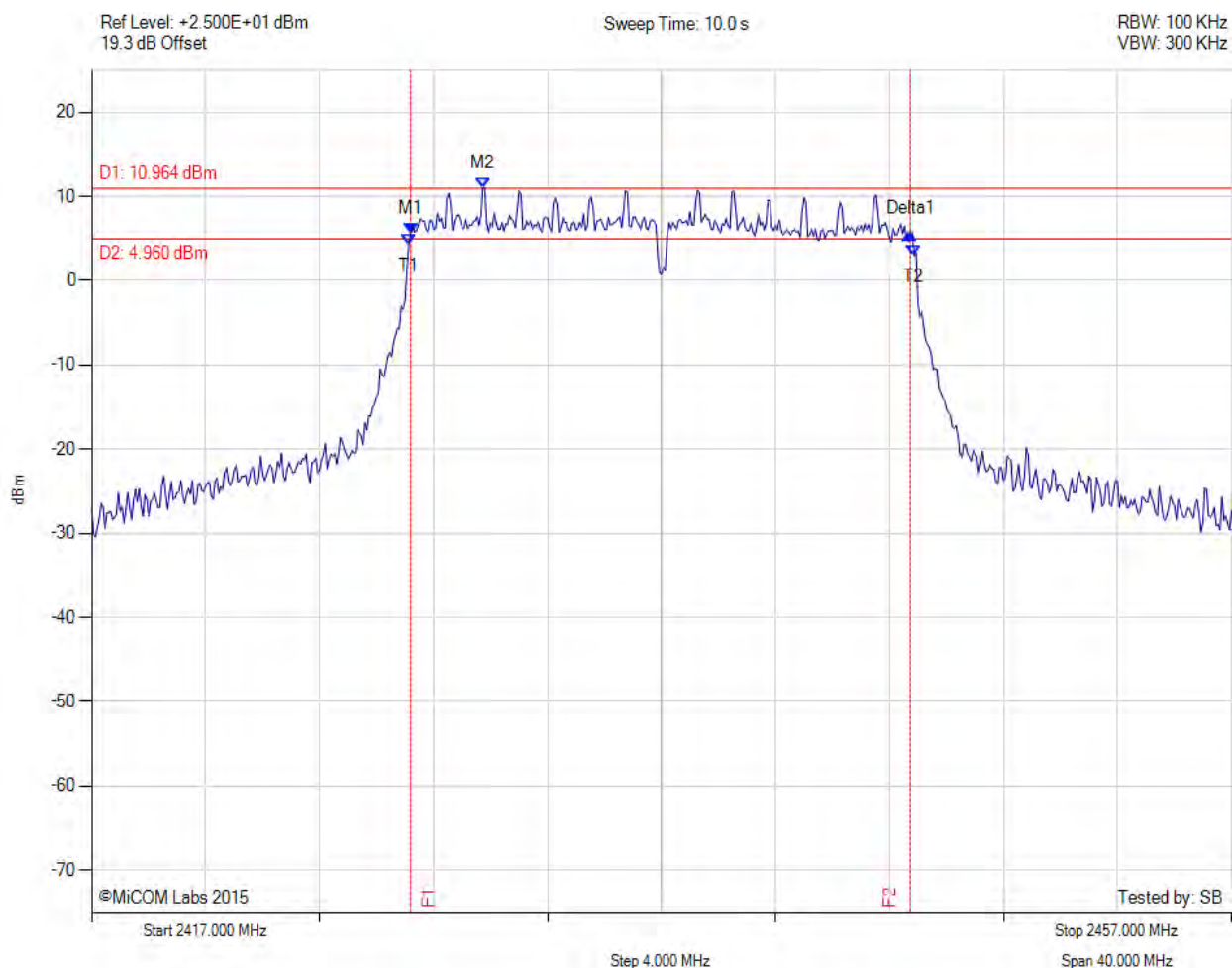
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2428.200 MHz : 5.372 dBm M2 : 2435.730 MHz : 10.781 dBm Delta1 : 17.530 MHz : 0.663 dB T1 : 2428.200 MHz : 5.372 dBm T2 : 2445.800 MHz : 6.091 dBm OBW : 17.613 MHz	Measured 6 dB Bandwidth: 17.530 MHz Limit: ≥ 500.0 kHz Margin: -17.03 MHz

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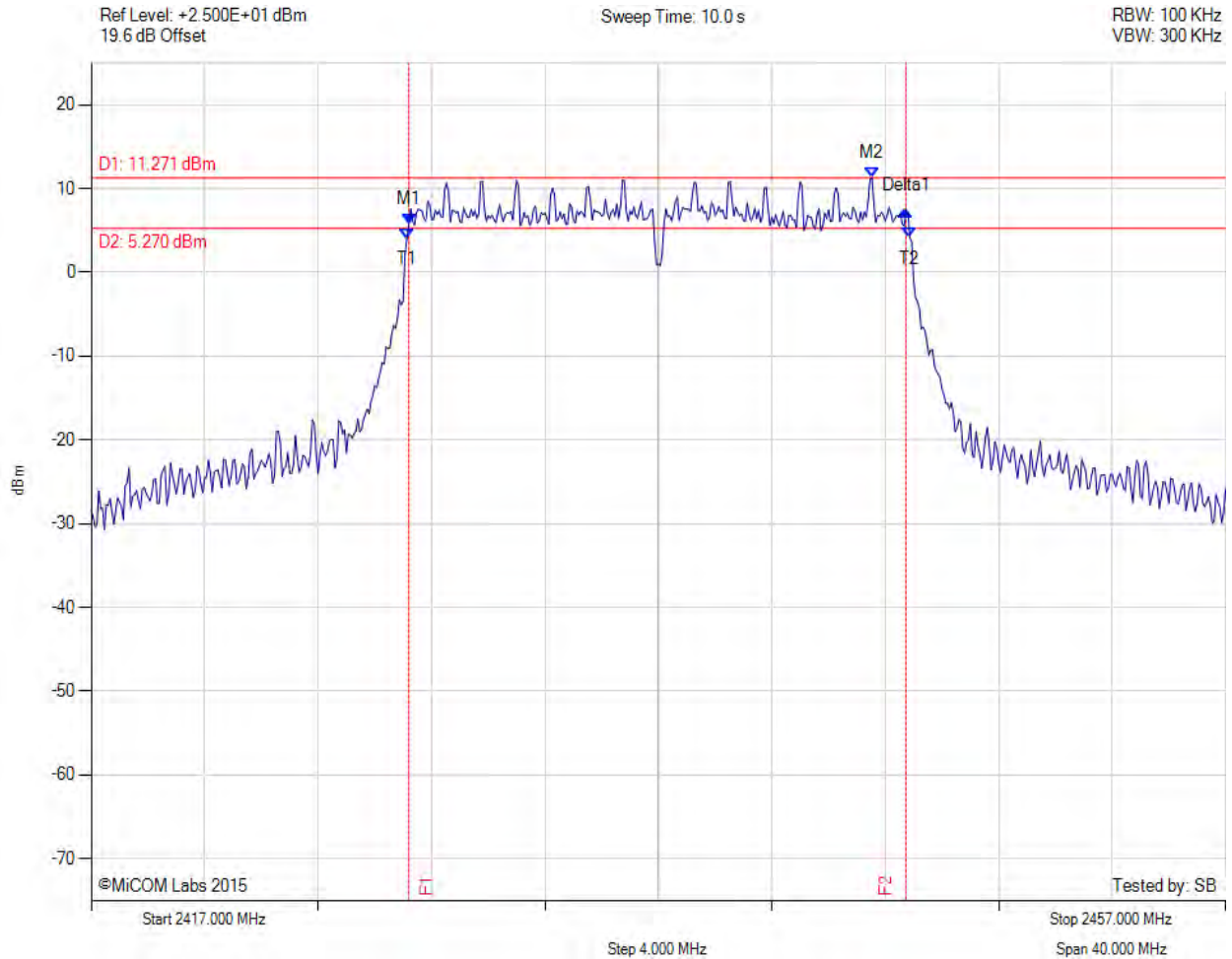
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2428.200 MHz : 5.625 dBm M2 : 2430.730 MHz : 10.964 dBm Delta1 : 17.530 MHz : -0.091 dB T1 : 2428.133 MHz : 4.290 dBm T2 : 2445.867 MHz : 2.990 dBm OBW : 17.697 MHz	Measured 6 dB Bandwidth: 17.530 MHz Limit: ≥ 500.0 kHz Margin: -17.03 MHz

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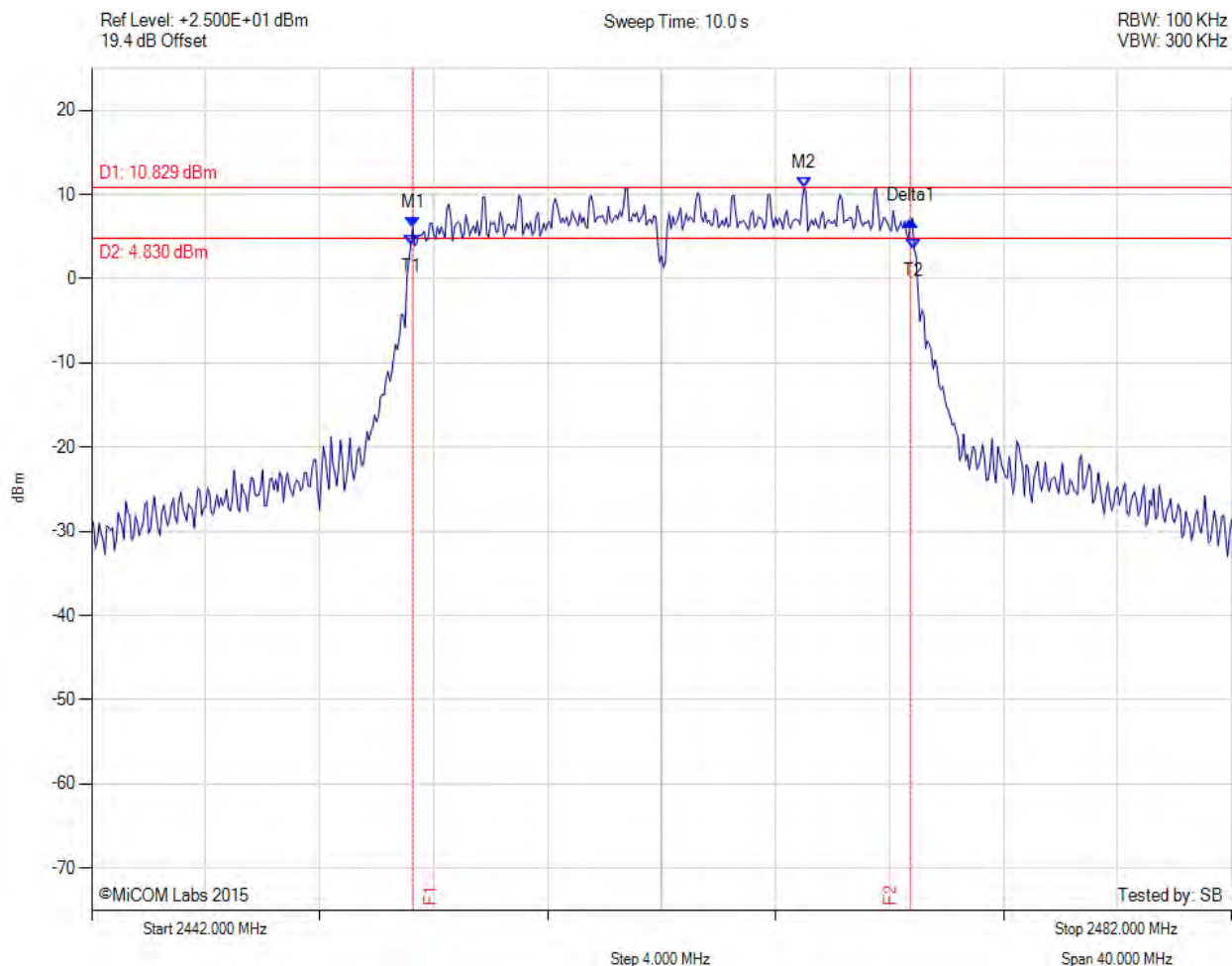
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2428.200 MHz : 5.786 dBm M2 : 2444.530 MHz : 11.271 dBm Delta1 : 17.530 MHz : 1.595 dB T1 : 2428.133 MHz : 4.039 dBm T2 : 2445.867 MHz : 4.127 dBm OBW : 17.705 MHz	Measured 6 dB Bandwidth: 17.530 MHz Limit: ≥ 500.0 kHz Margin: -17.03 MHz

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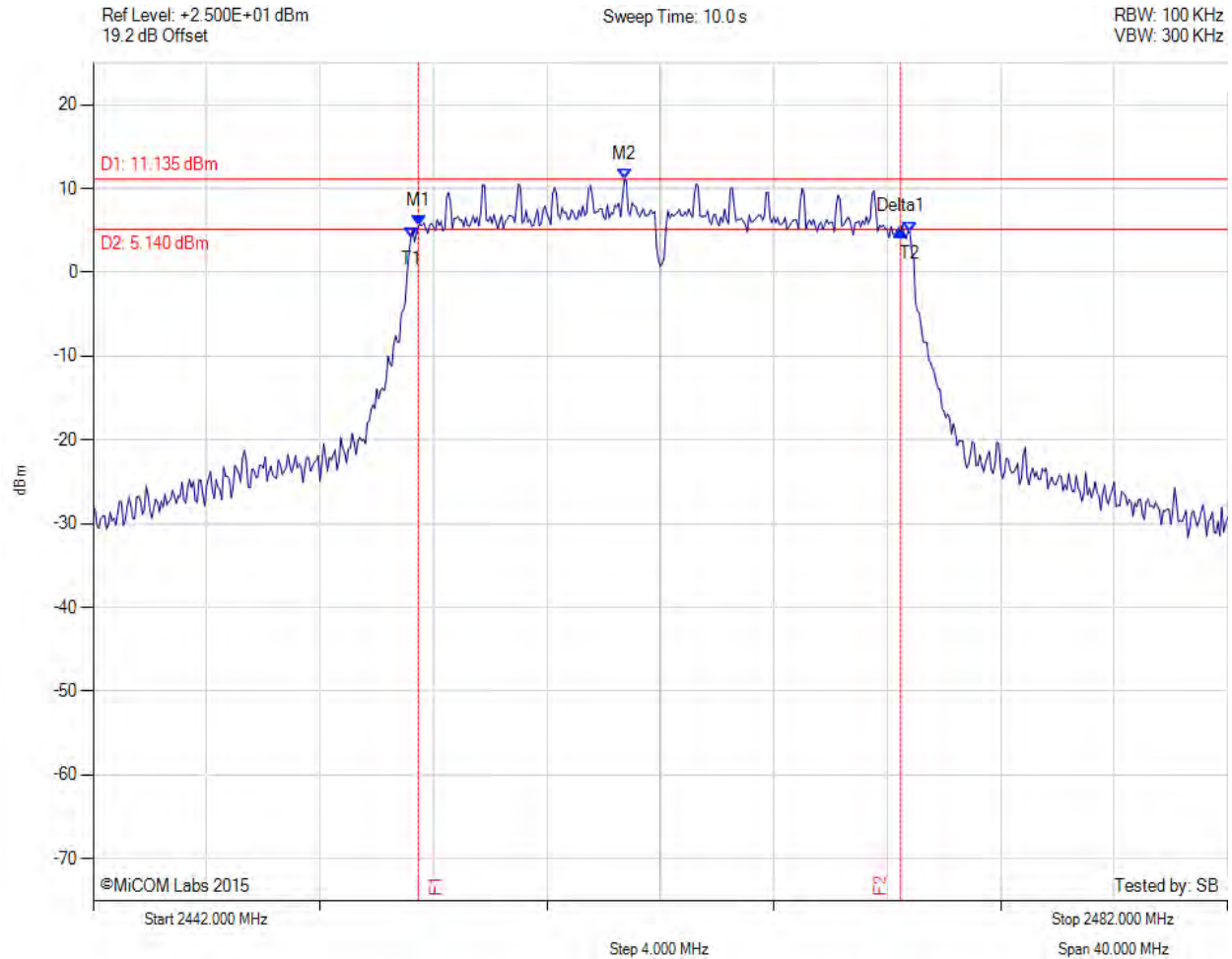
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2453.270 MHz : 6.039 dBm M2 : 2467.000 MHz : 10.829 dBm Delta1 : 17.470 MHz : 0.857 dB T1 : 2453.200 MHz : 3.985 dBm T2 : 2470.867 MHz : 3.497 dBm OBW : 17.623 MHz	Measured 6 dB Bandwidth: 17.470 MHz Limit: ≥ 500.0 kHz Margin: -16.97 MHz

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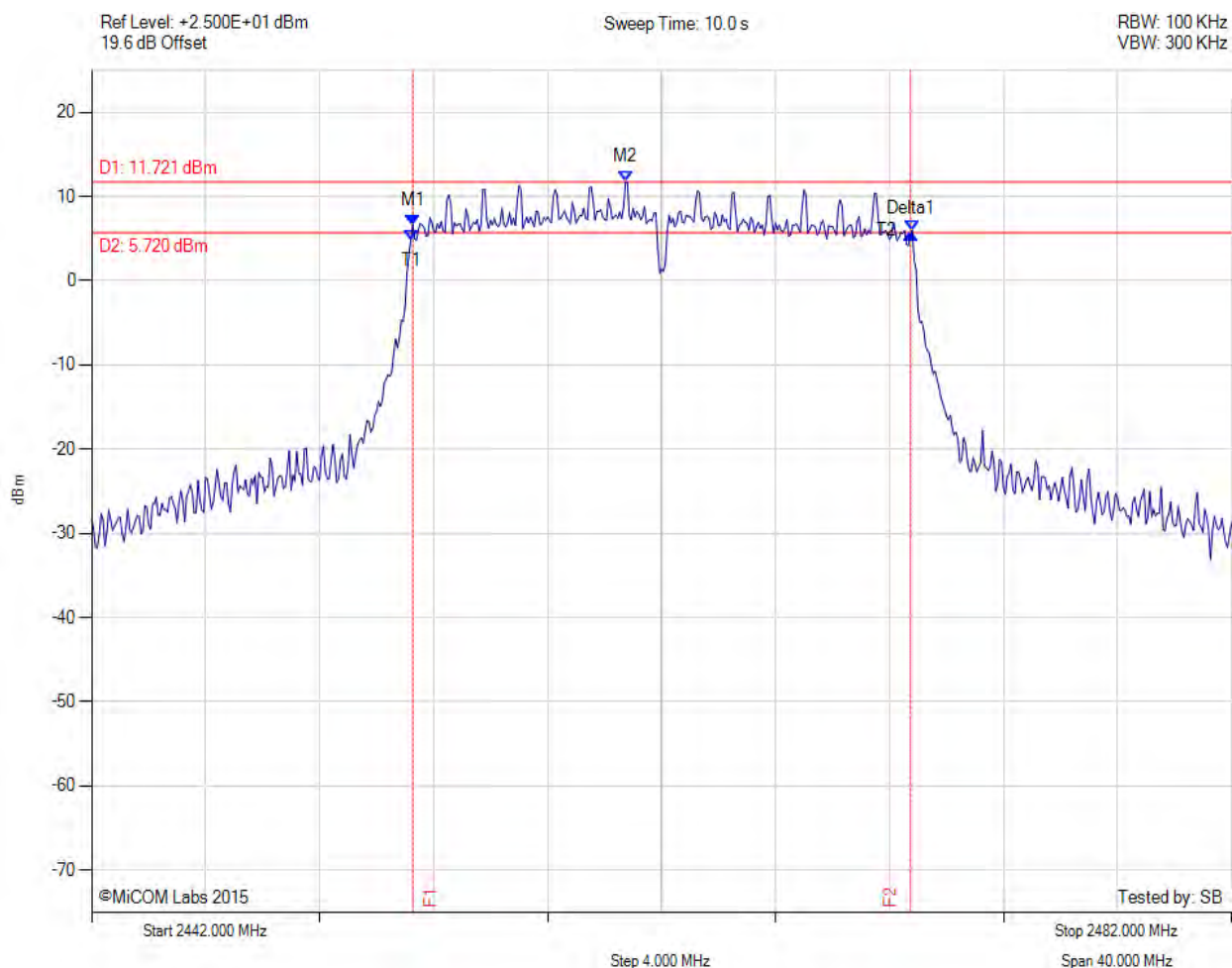
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2453.470 MHz : 5.543 dBm M2 : 2460.730 MHz : 11.135 dBm Delta1 : 17.000 MHz : -0.623 dB T1 : 2453.200 MHz : 4.138 dBm T2 : 2470.800 MHz : 4.769 dBm OBW : 17.599 MHz	Measured 6 dB Bandwidth: 17.000 MHz Limit: ≥ 500.0 kHz Margin: -16.50 MHz

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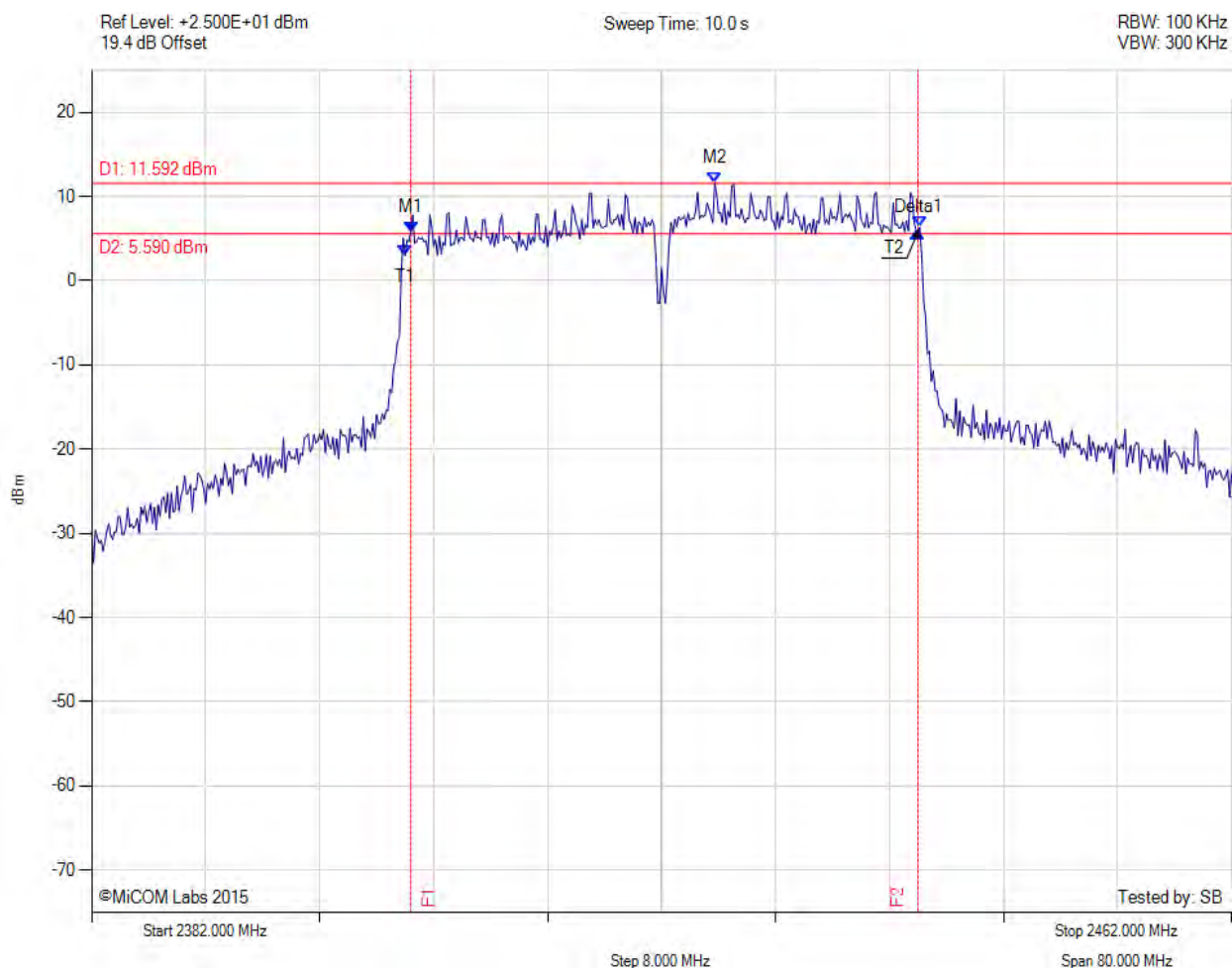
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2453.270 MHz : 6.628 dBm M2 : 2460.730 MHz : 11.721 dBm Delta1 : 17.470 MHz : -0.970 dB T1 : 2453.200 MHz : 4.824 dBm T2 : 2470.800 MHz : 5.993 dBm OBW : 17.593 MHz	Measured 6 dB Bandwidth: 17.470 MHz Limit: ≥500.0 kHz Margin: -16.97 MHz

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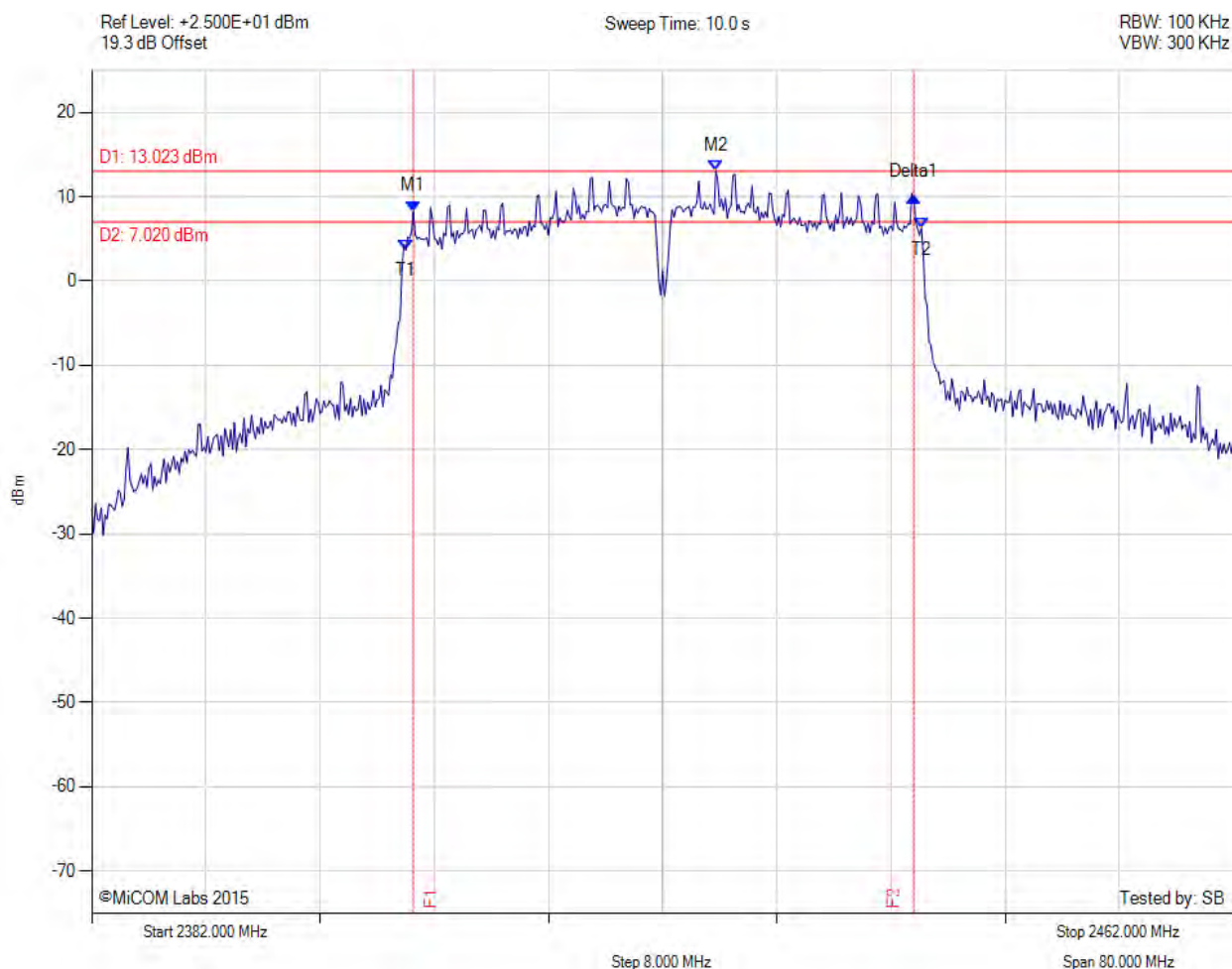
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2404.400 MHz : 5.764 dBm M2 : 2425.730 MHz : 11.592 dBm Delta1 : 35.600 MHz : -0.070 dB T1 : 2404.000 MHz : 2.991 dBm T2 : 2440.133 MHz : 6.345 dBm OBW : 36.116 MHz	Measured 6 dB Bandwidth: 35.600 MHz Limit: ≥ 500.0 kHz Margin: -35.10 MHz

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2404.530 MHz : 8.280 dBm M2 : 2425.730 MHz : 13.023 dBm Delta1 : 35.070 MHz : 1.745 dB T1 : 2404.000 MHz : 3.671 dBm T2 : 2440.133 MHz : 6.238 dBm OBW : 36.194 MHz	Measured 6 dB Bandwidth: 35.070 MHz Limit: ≥ 500.0 kHz Margin: -34.57 MHz

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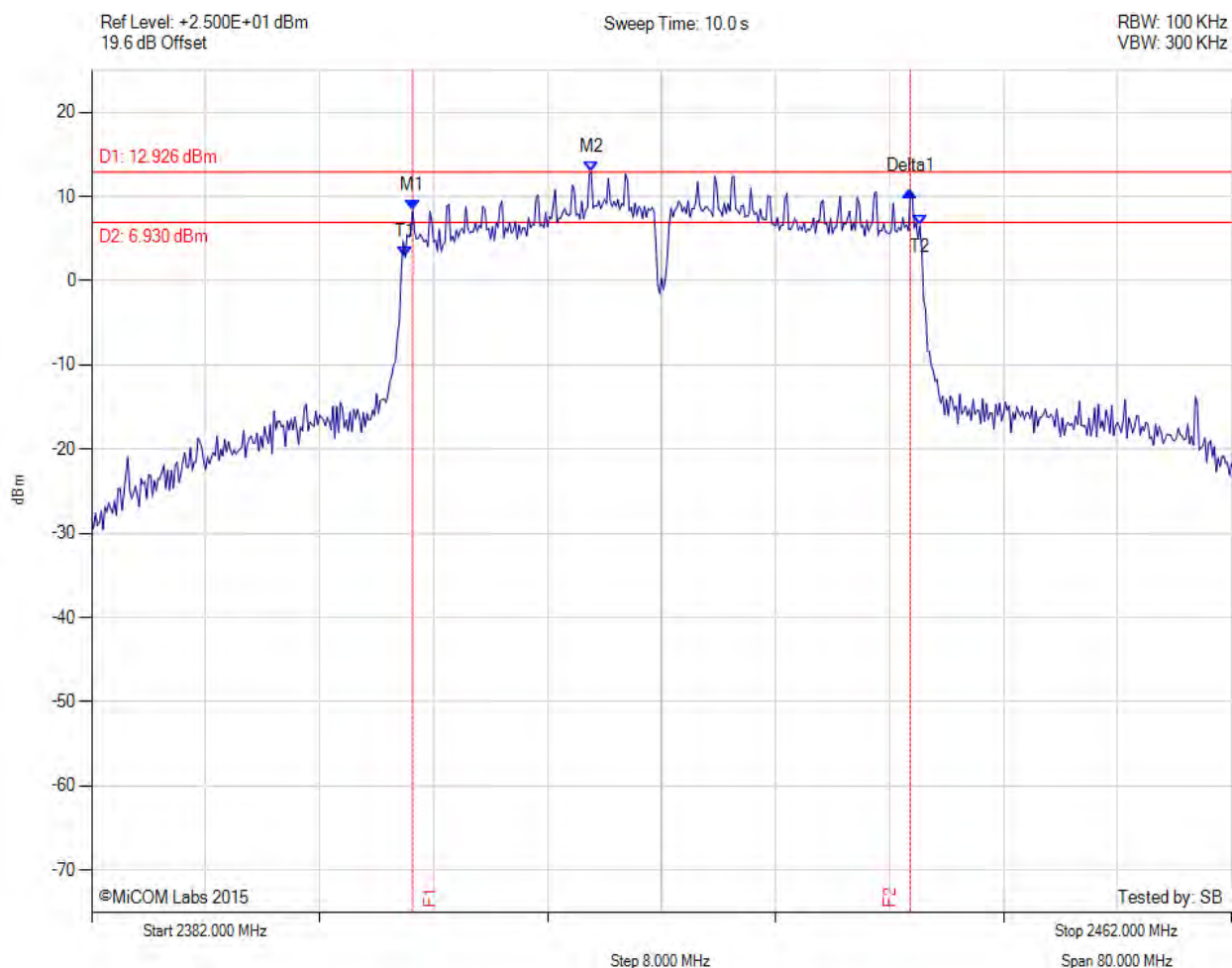


Title: Actiontec Electronics Inc. M6240V
To: FCC CFR 47 Part 15 Subpart C 15.247 (DTS)
Serial #: ATEC06-U5a Rev A
Issue Date: 28th July 2015
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6 dB & 99% BANDWIDTH

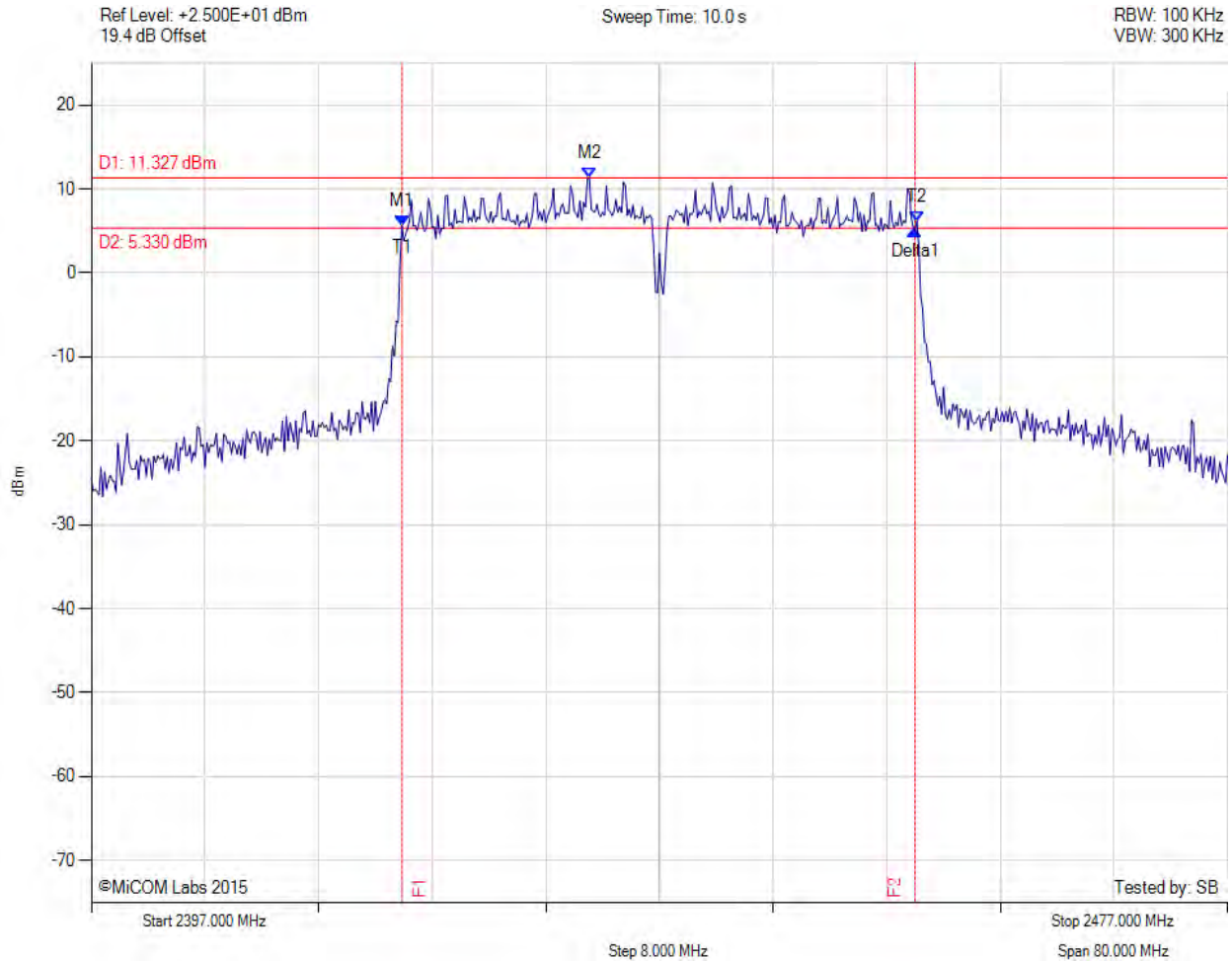
Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2404.530 MHz : 8.353 dBm M2 : 2417.070 MHz : 12.926 dBm Delta1 : 34.930 MHz : 2.231 dB T1 : 2404.000 MHz : 2.815 dBm T2 : 2440.133 MHz : 6.526 dBm OBW : 36.102 MHz	Measured 6 dB Bandwidth: 34.930 MHz Limit: ≥ 500.0 kHz Margin: -34.43 MHz

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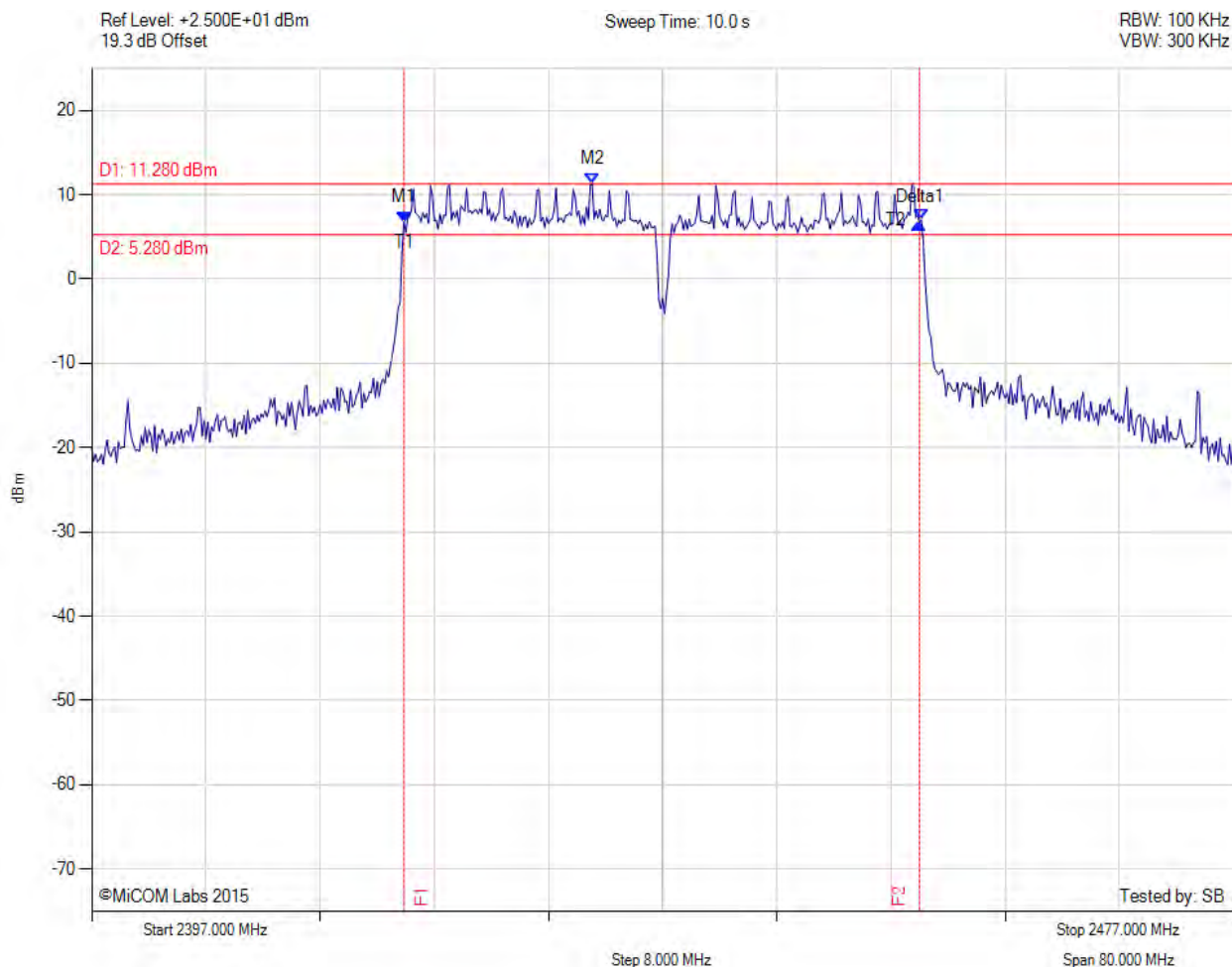
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2418.870 MHz : 5.611 dBm M2 : 2432.070 MHz : 11.327 dBm Delta1 : 36.130 MHz : -0.541 dB T1 : 2418.867 MHz : 5.611 dBm T2 : 2455.133 MHz : 6.151 dBm OBW : 36.186 MHz	Measured 6 dB Bandwidth: 36.130 MHz Limit: ≥ 500.0 kHz Margin: -35.63 MHz

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2418.870 MHz : 6.778 dBm M2 : 2432.070 MHz : 11.280 dBm Delta1 : 36.130 MHz : -0.124 dB T1 : 2418.867 MHz : 6.778 dBm T2 : 2455.133 MHz : 7.015 dBm OBW : 36.413 MHz	Measured 6 dB Bandwidth: 36.130 MHz Limit: ≥ 500.0 kHz Margin: -35.63 MHz

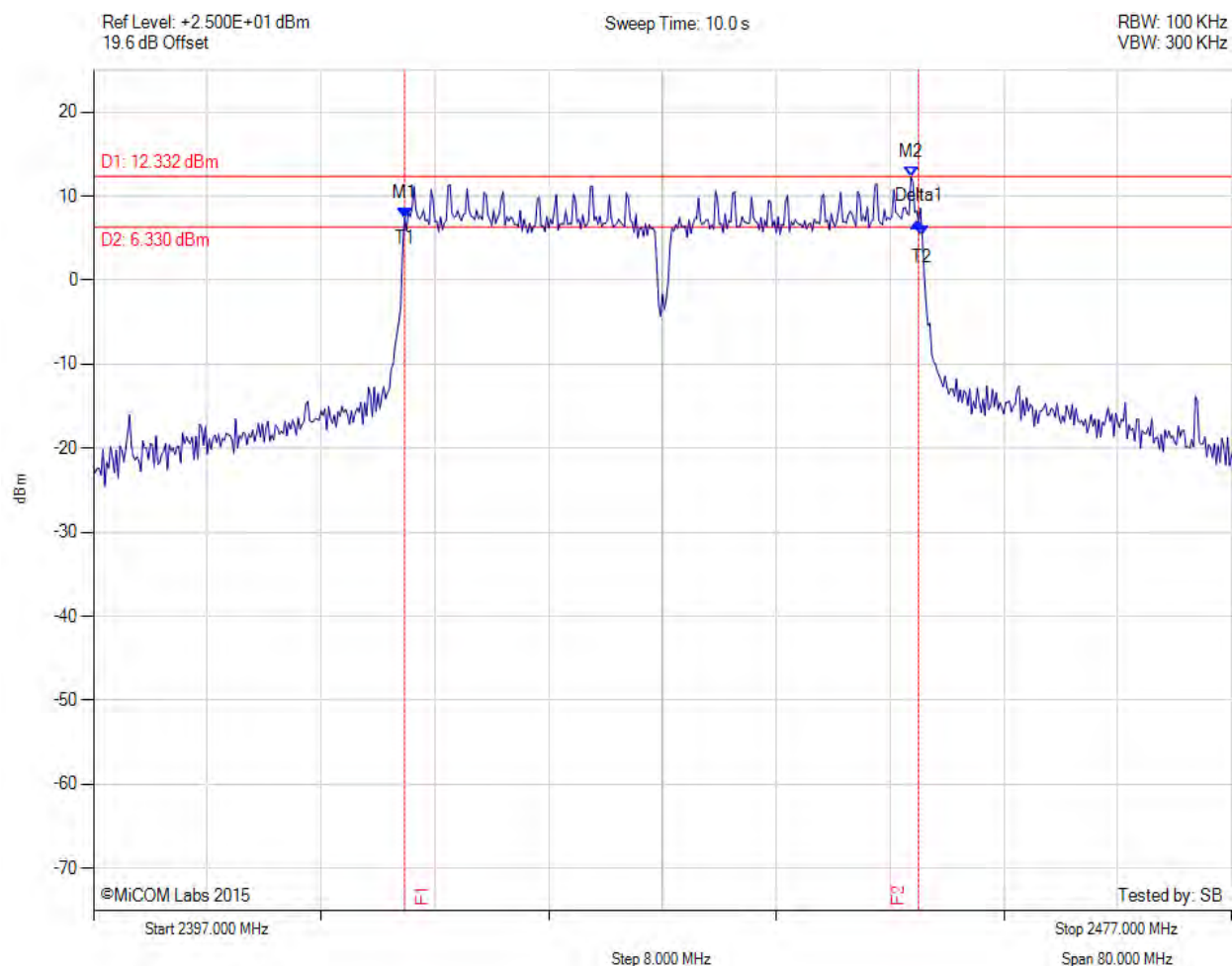
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6 dB & 99% BANDWIDTH

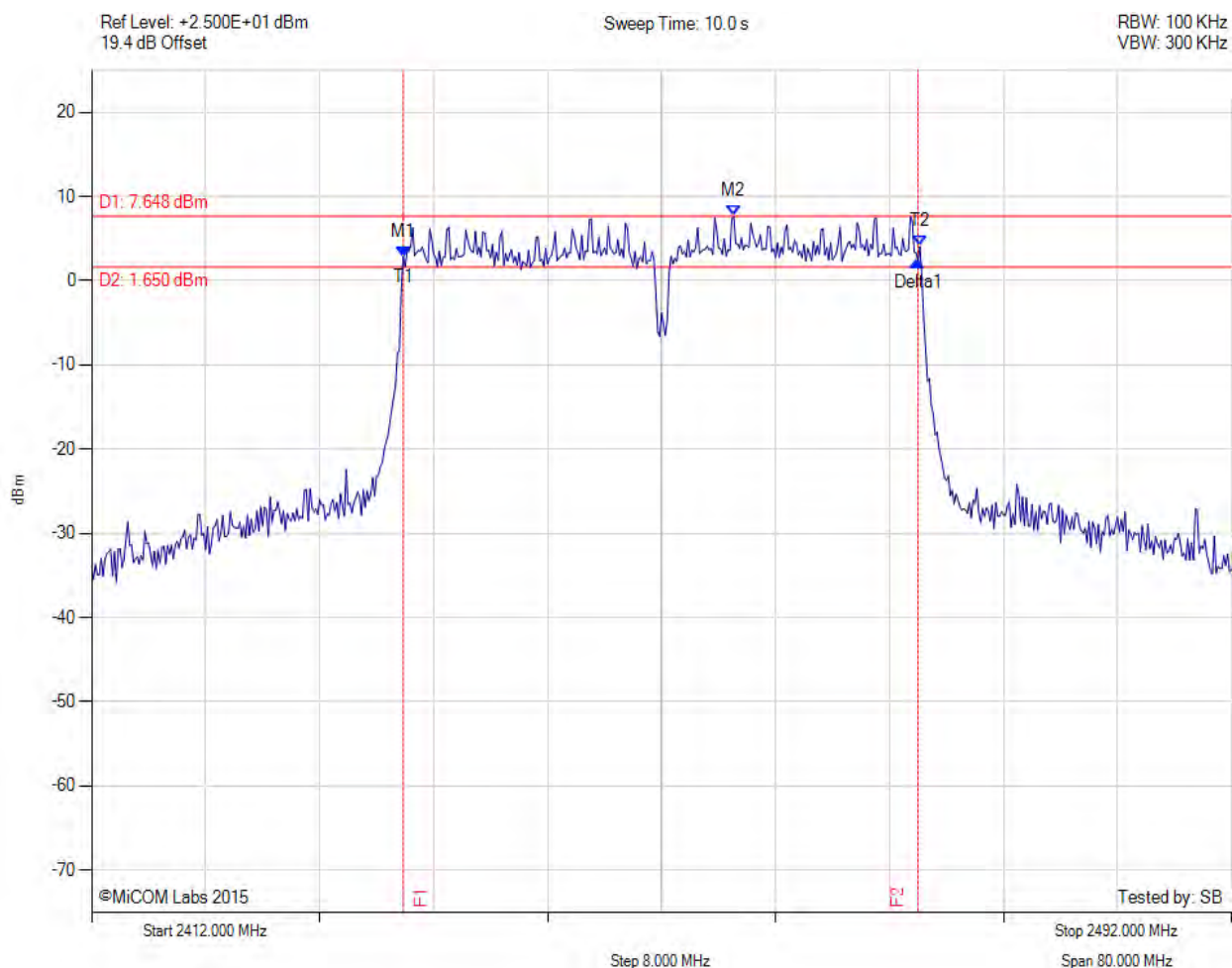
Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2418.870 MHz : 7.426 dBm M2 : 2454.470 MHz : 12.332 dBm Delta1 : 36.130 MHz : -0.445 dB T1 : 2418.867 MHz : 7.426 dBm T2 : 2455.267 MHz : 5.225 dBm OBW : 36.379 MHz	Measured 6 dB Bandwidth: 36.130 MHz Limit: ≥500.0 kHz Margin: -35.63 MHz

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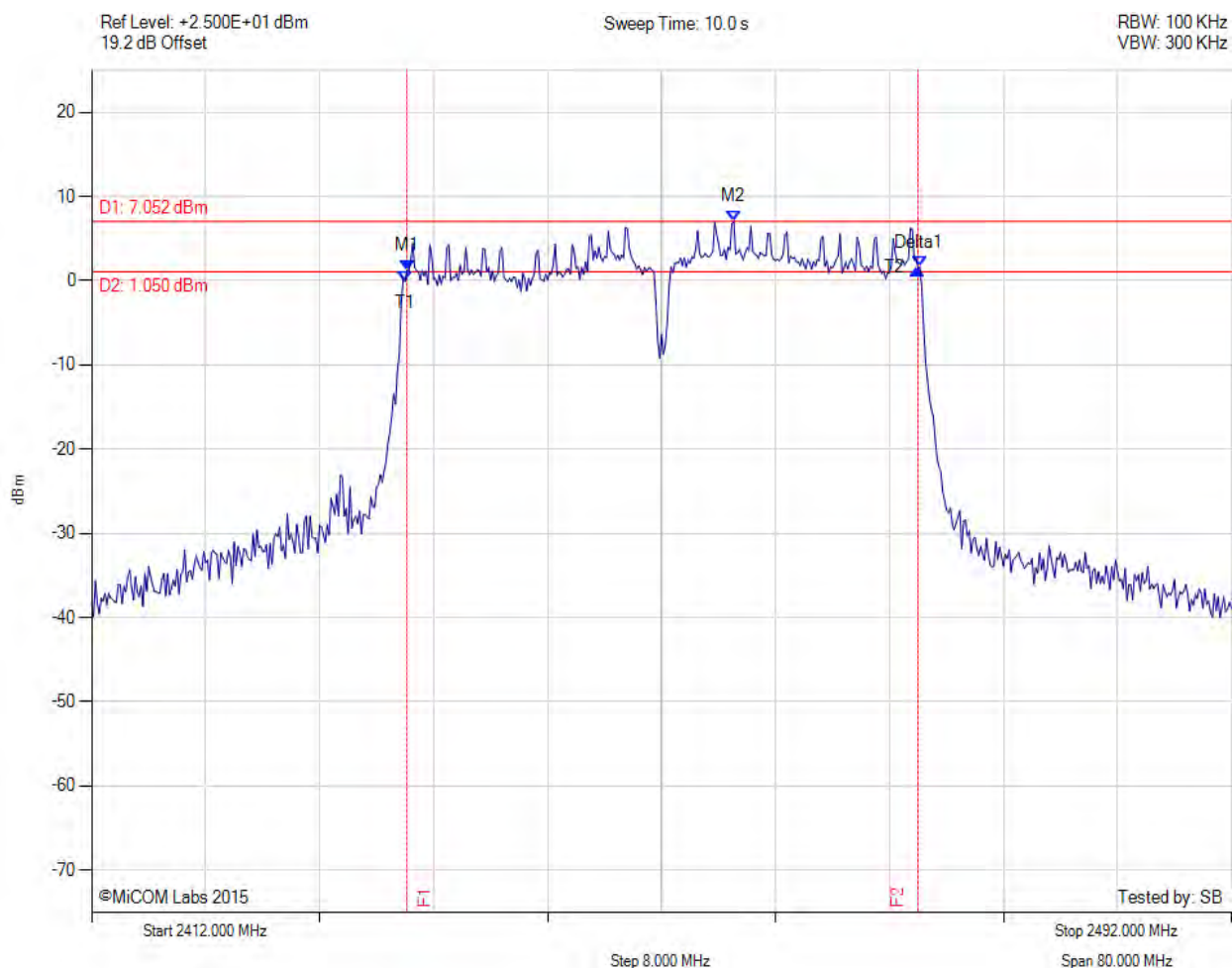
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2433.870 MHz : 2.883 dBm M2 : 2457.070 MHz : 7.648 dBm Delta1 : 36.130 MHz : -0.540 dB T1 : 2433.867 MHz : 2.883 dBm T2 : 2470.133 MHz : 4.066 dBm OBW : 36.143 MHz	Measured 6 dB Bandwidth: 36.130 MHz Limit: ≥500.0 kHz Margin: -35.63 MHz

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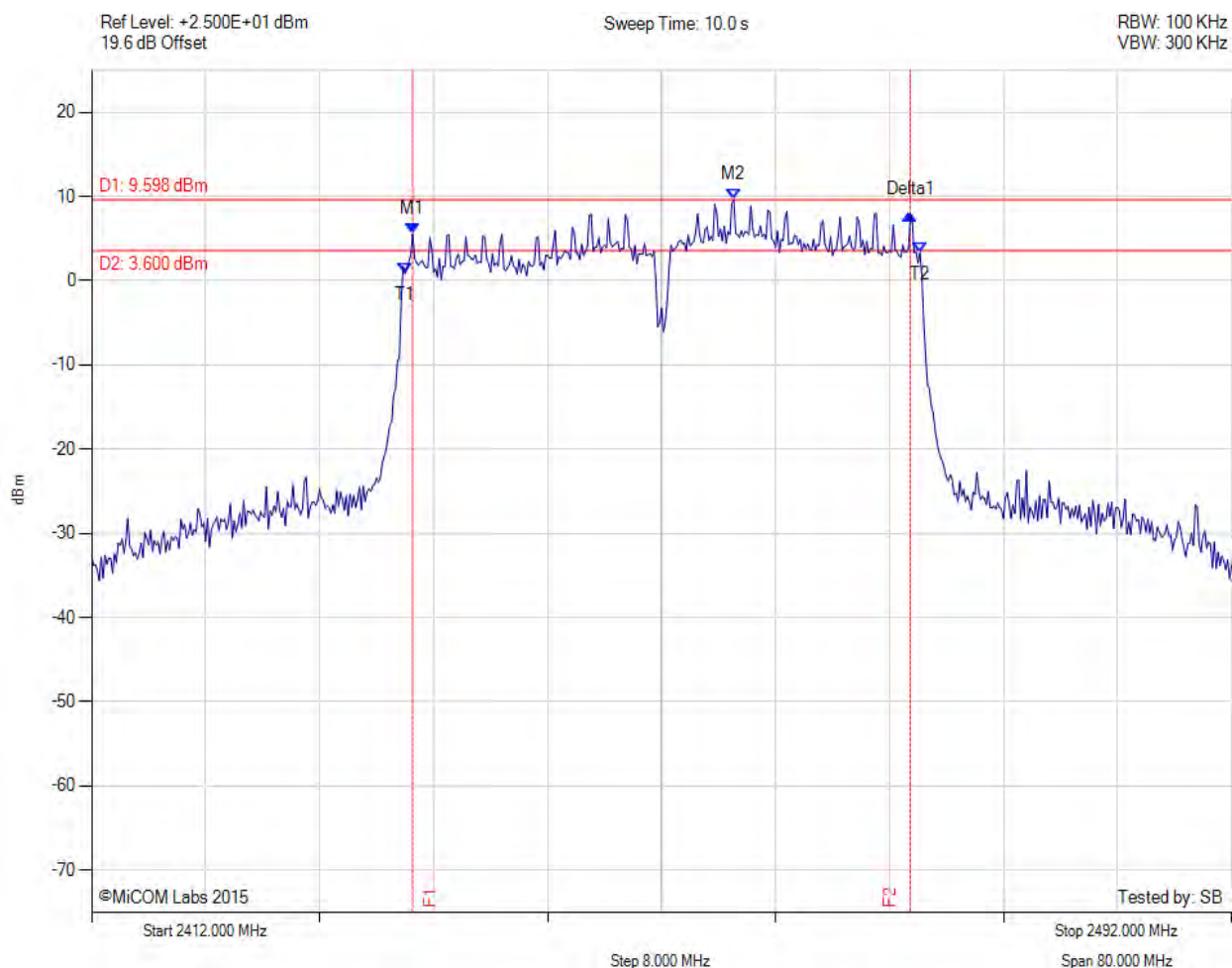
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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2434.130 MHz : 1.221 dBm M2 : 2457.070 MHz : 7.052 dBm Delta1 : 35.870 MHz : 0.231 dB T1 : 2434.000 MHz : -0.083 dBm T2 : 2470.133 MHz : 1.645 dBm OBW : 36.073 MHz	Measured 6 dB Bandwidth: 35.870 MHz Limit: ≥ 500.0 kHz Margin: -35.37 MHz

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Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = POS Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAXH	M1 : 2434.530 MHz : 5.575 dBm M2 : 2457.070 MHz : 9.598 dBm Delta1 : 34.930 MHz : 2.325 dB T1 : 2434.000 MHz : 0.852 dBm T2 : 2470.133 MHz : 3.319 dBm OBW : 35.998 MHz	Measured 6 dB Bandwidth: 34.930 MHz Limit: ≥ 500.0 kHz Margin: -34.43 MHz

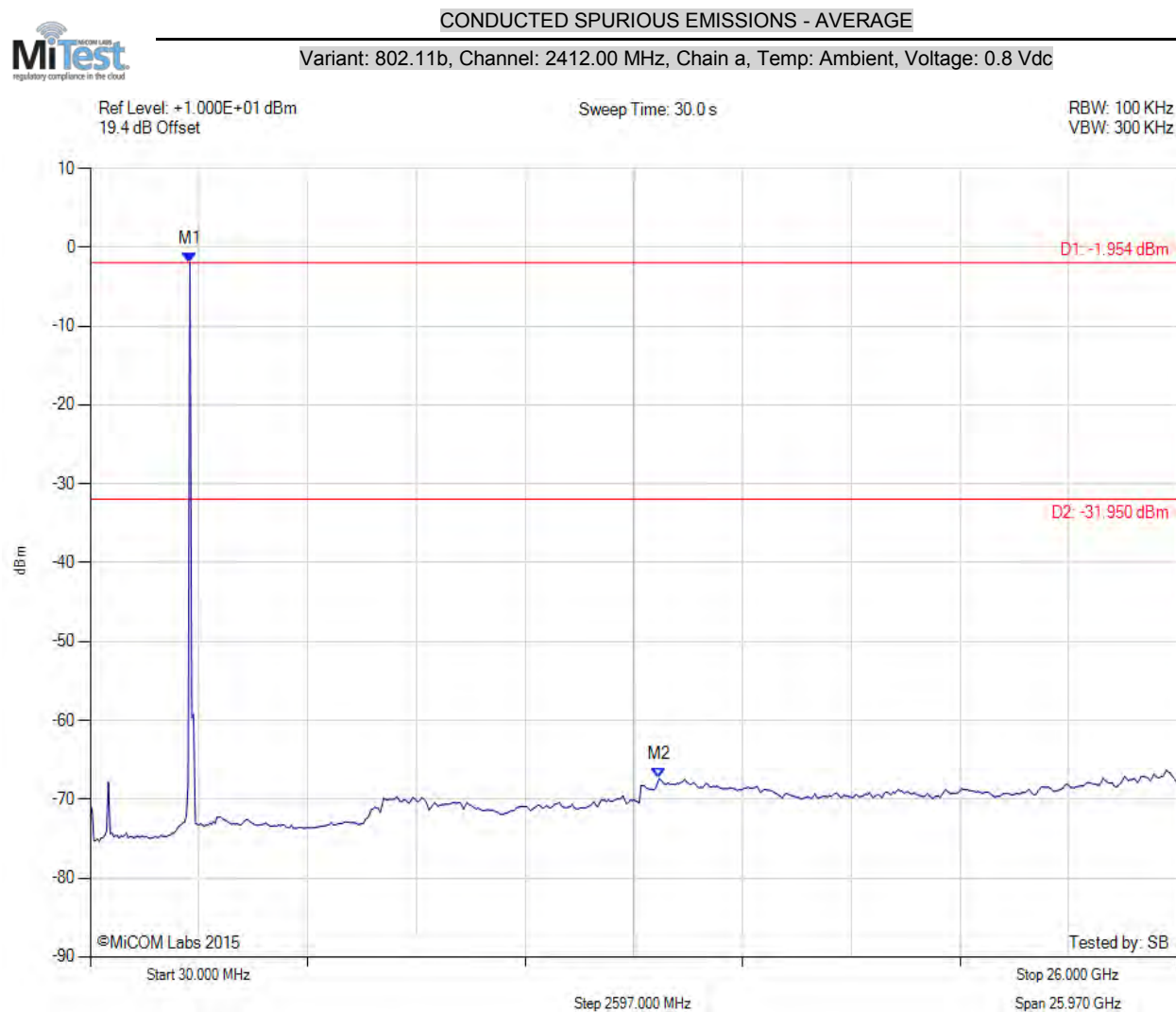
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A.2. Emissions

A.2.1. Conducted Emissions

A.2.1.1. Conducted Spurious Emissions



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -1.954 dBm M2 : 13.620 GHz : -67.372 dBm	Limit: -31.95 dBm Margin: -35.42 dB

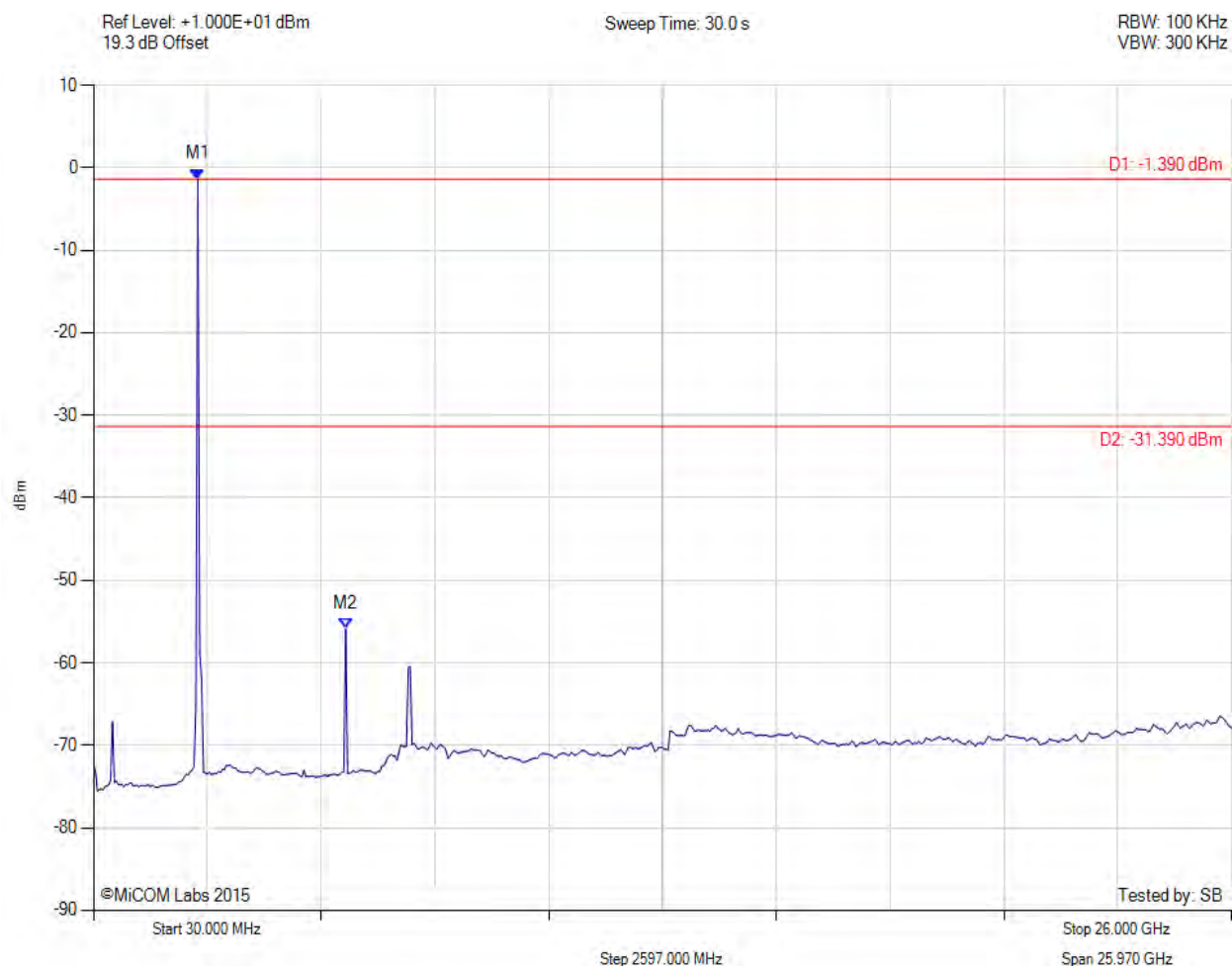
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -1.390 dBm M2 : 5790.000 MHz : -55.885 dBm	Limit: -31.39 dBm Margin: -24.49 dB

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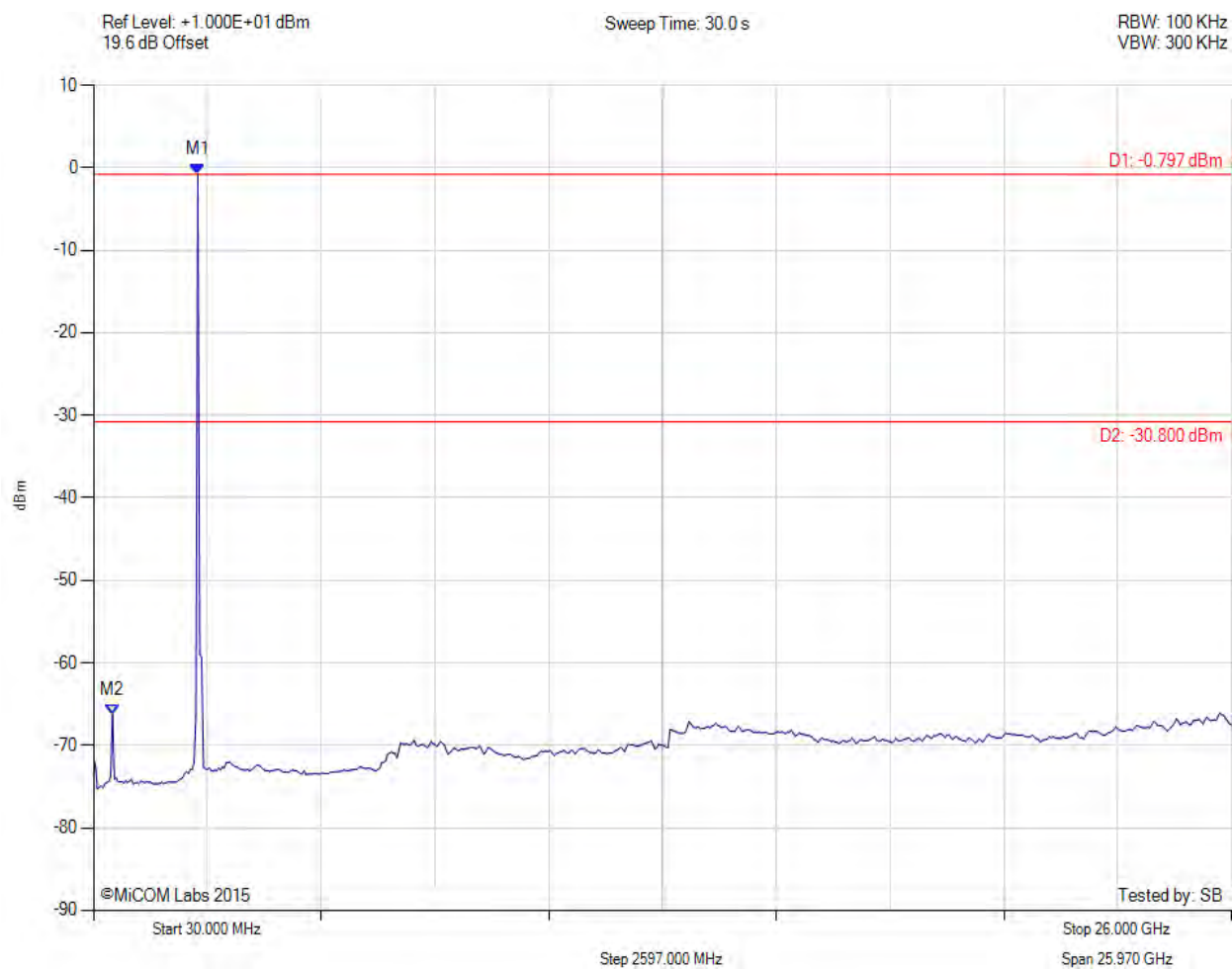


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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -0.797 dBm M2 : 460.000 MHz : -66.252 dBm	Limit: -30.80 dBm Margin: -35.45 dB

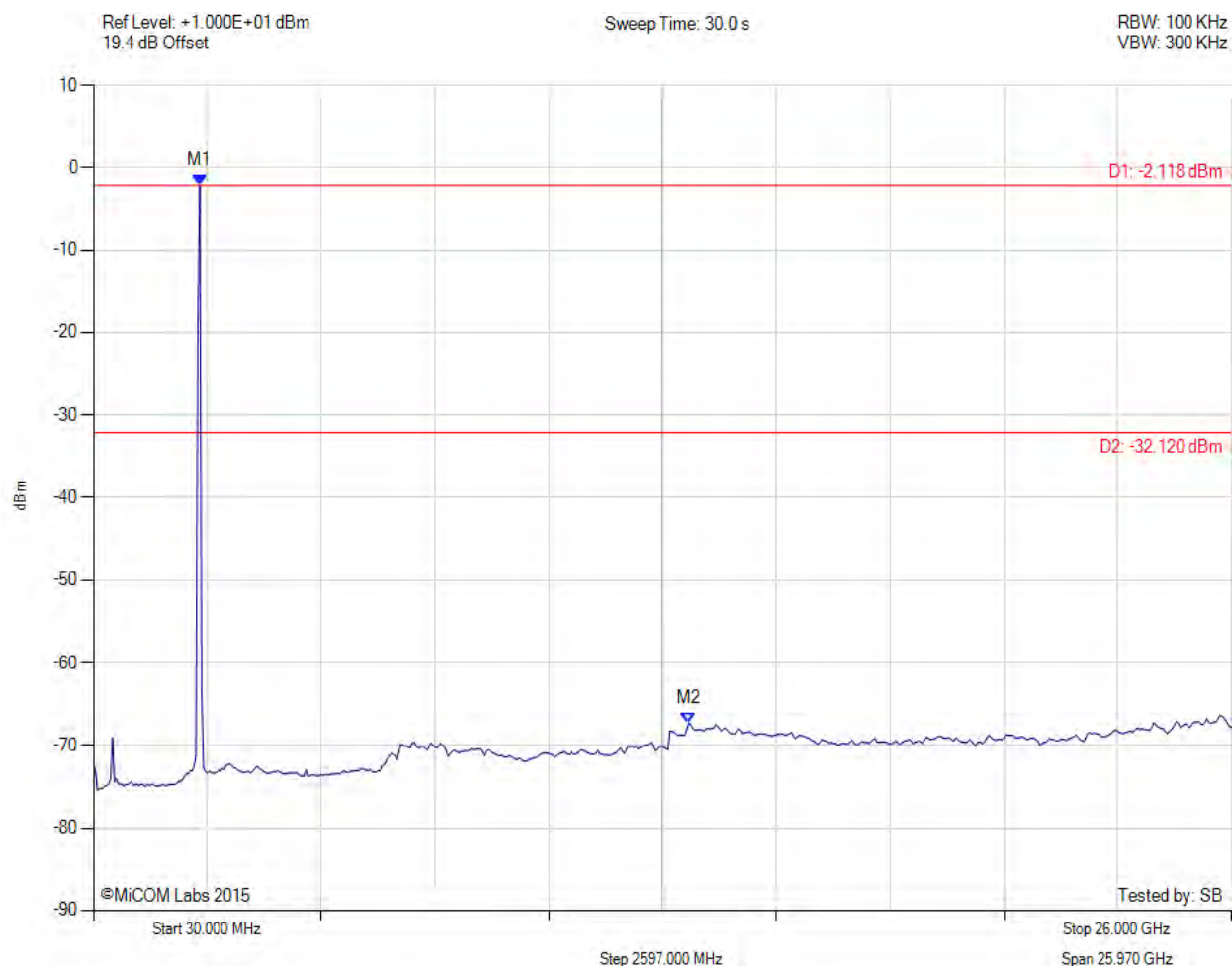
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -2.118 dBm M2 : 13.620 GHz : -67.304 dBm	Limit: -32.12 dBm Margin: -35.18 dB

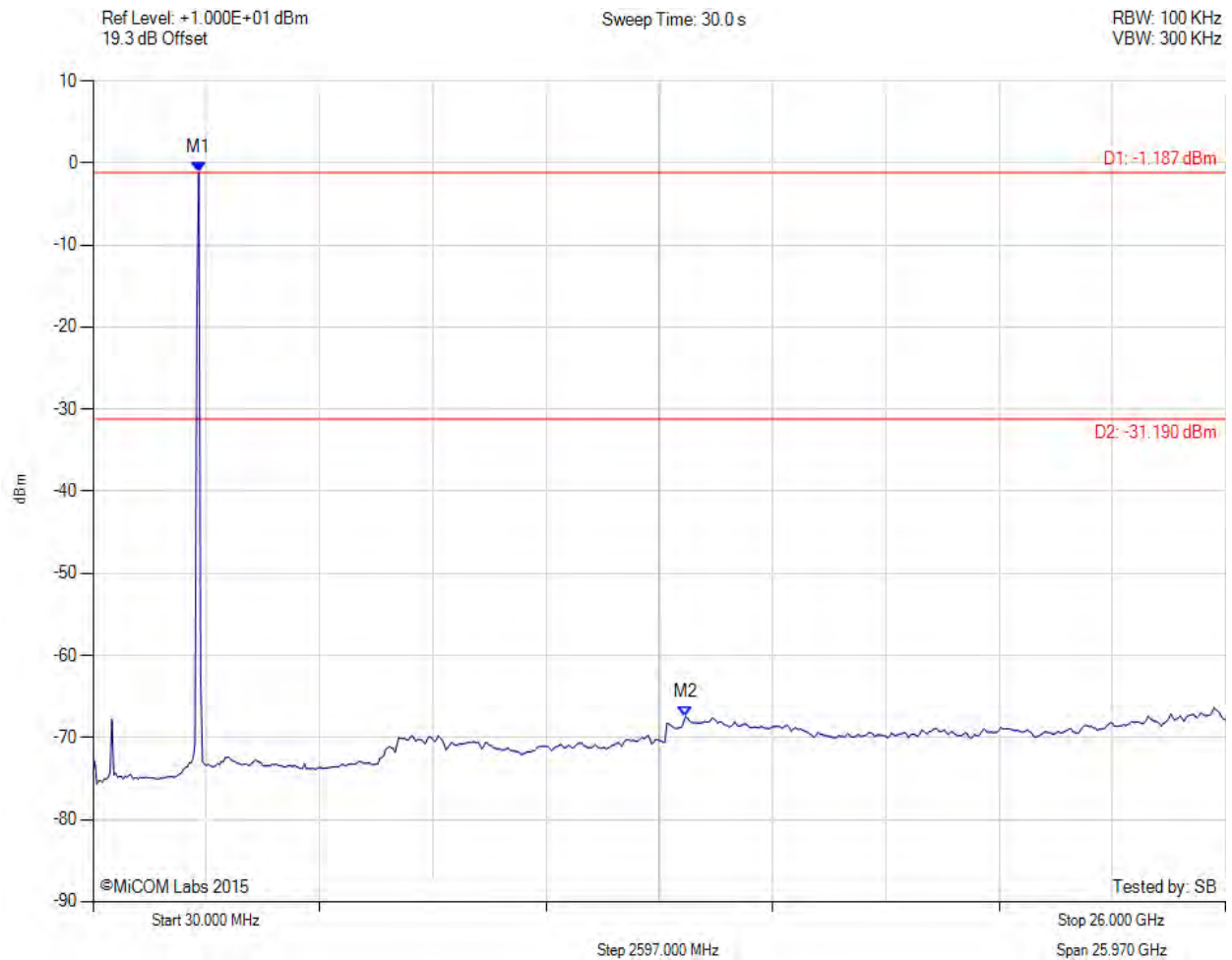
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -1.187 dBm M2 : 13.620 GHz : -67.439 dBm	Limit: -31.19 dBm Margin: -36.25 dB

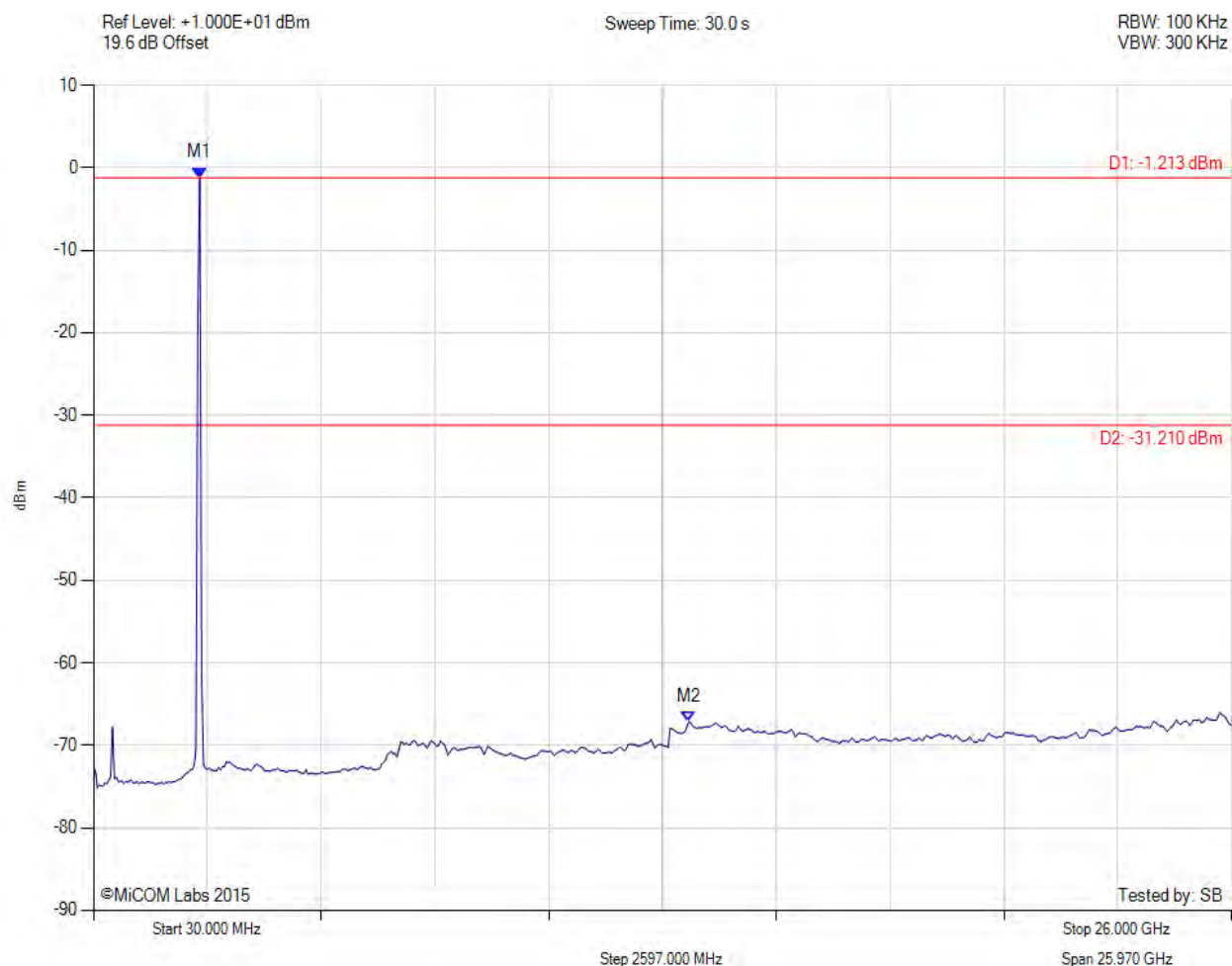
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -1.213 dBm M2 : 13.620 GHz : -67.155 dBm	Limit: -31.21 dBm Margin: -35.95 dB

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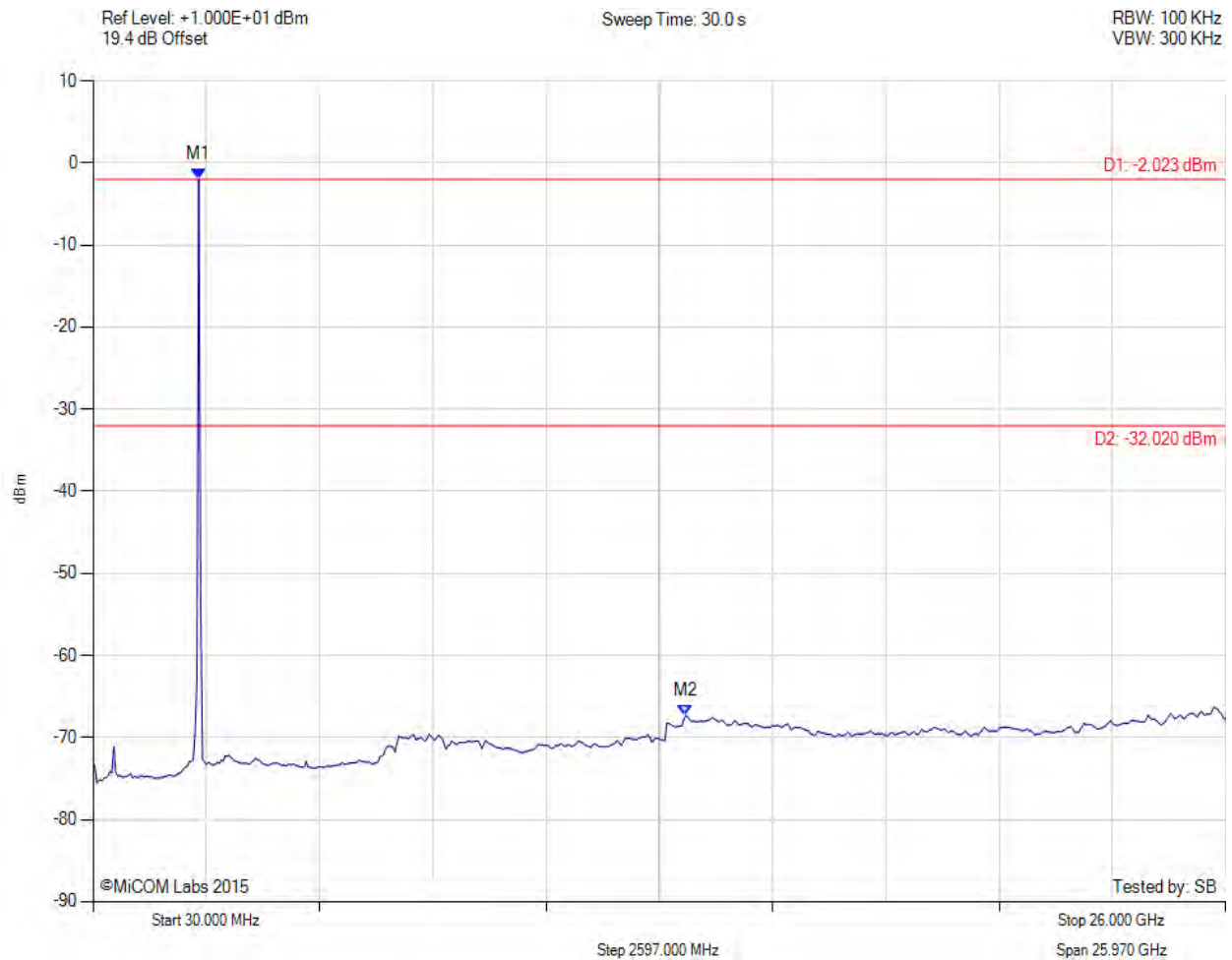


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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -2.023 dBm M2 : 13.620 GHz : -67.312 dBm	Limit: -32.02 dBm Margin: -35.29 dB

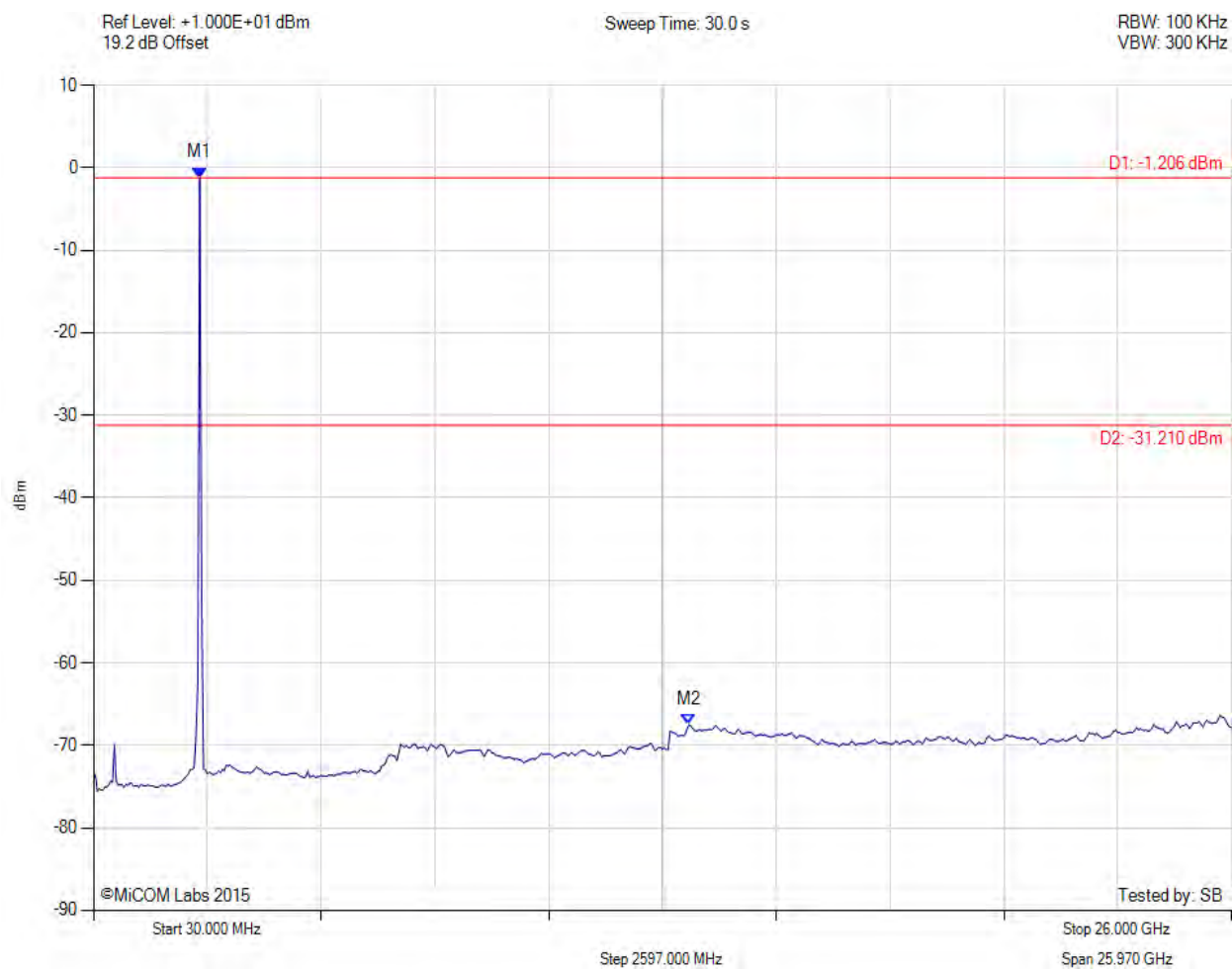
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -1.206 dBm M2 : 13.620 GHz : -67.512 dBm	Limit: -31.21 dBm Margin: -36.30 dB

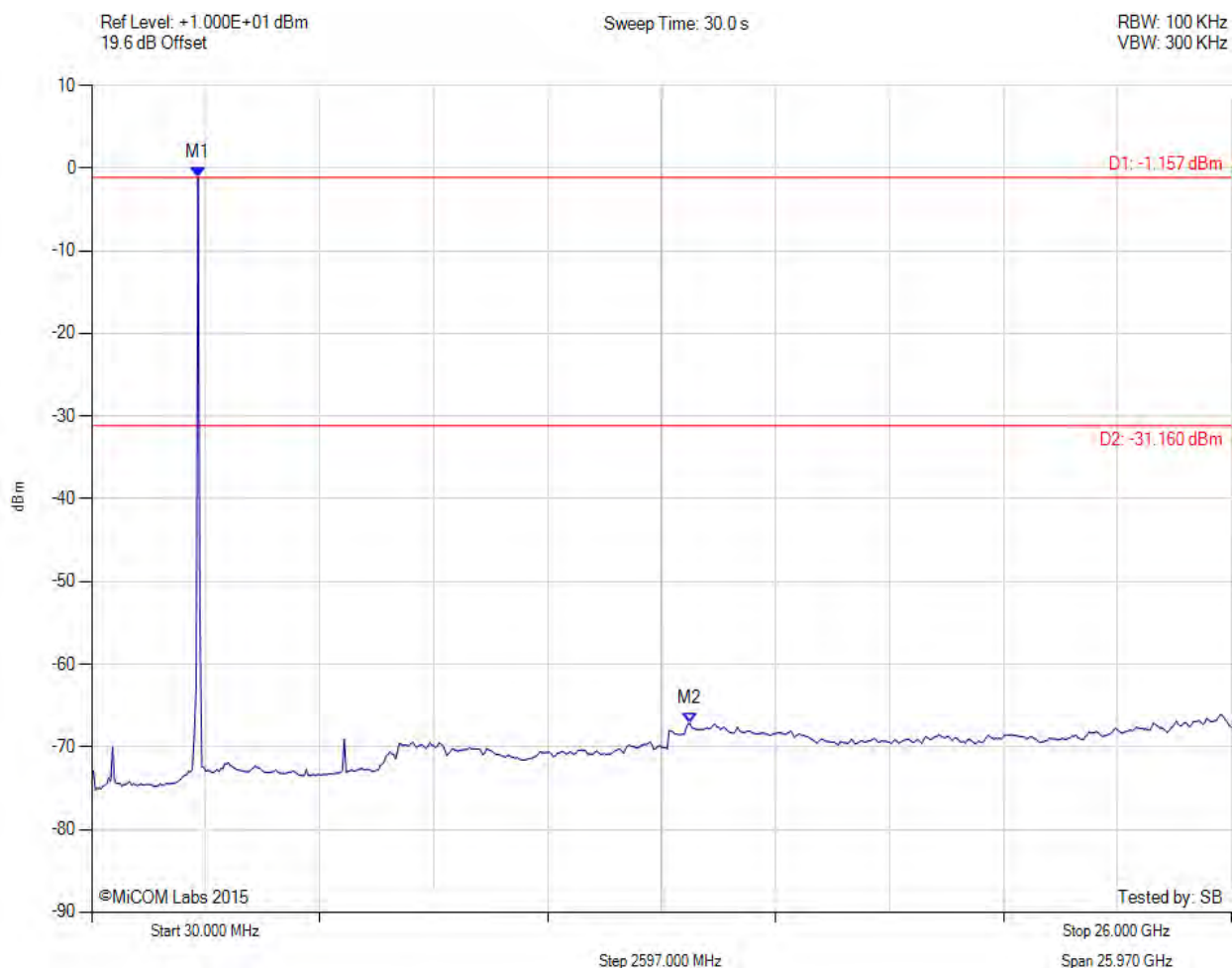
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -1.157 dBm M2 : 13.660 GHz : -67.207 dBm	Limit: -31.16 dBm Margin: -36.05 dB

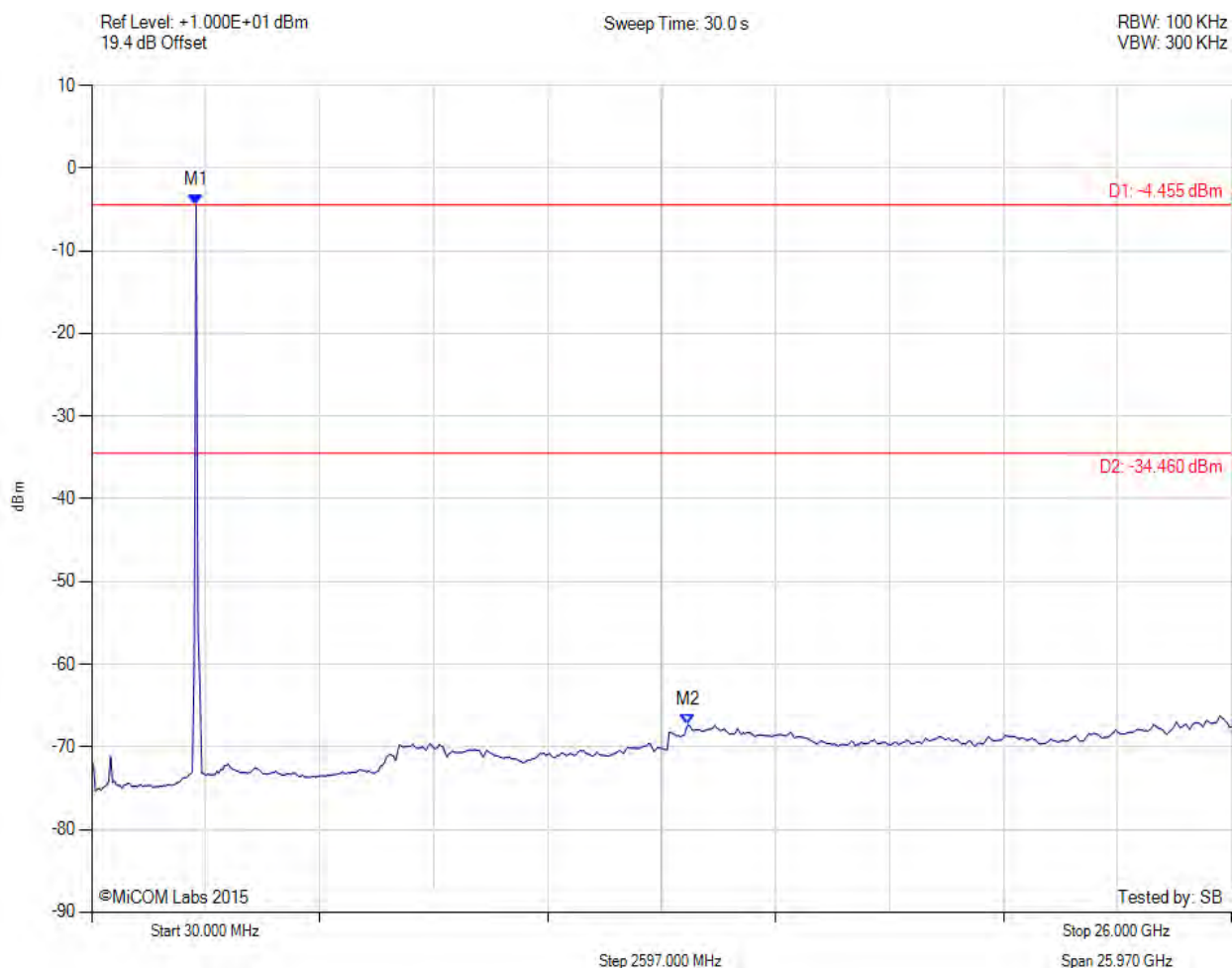
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -4.455 dBm M2 : 13.620 GHz : -67.327 dBm	Limit: -34.46 dBm Margin: -32.87 dB

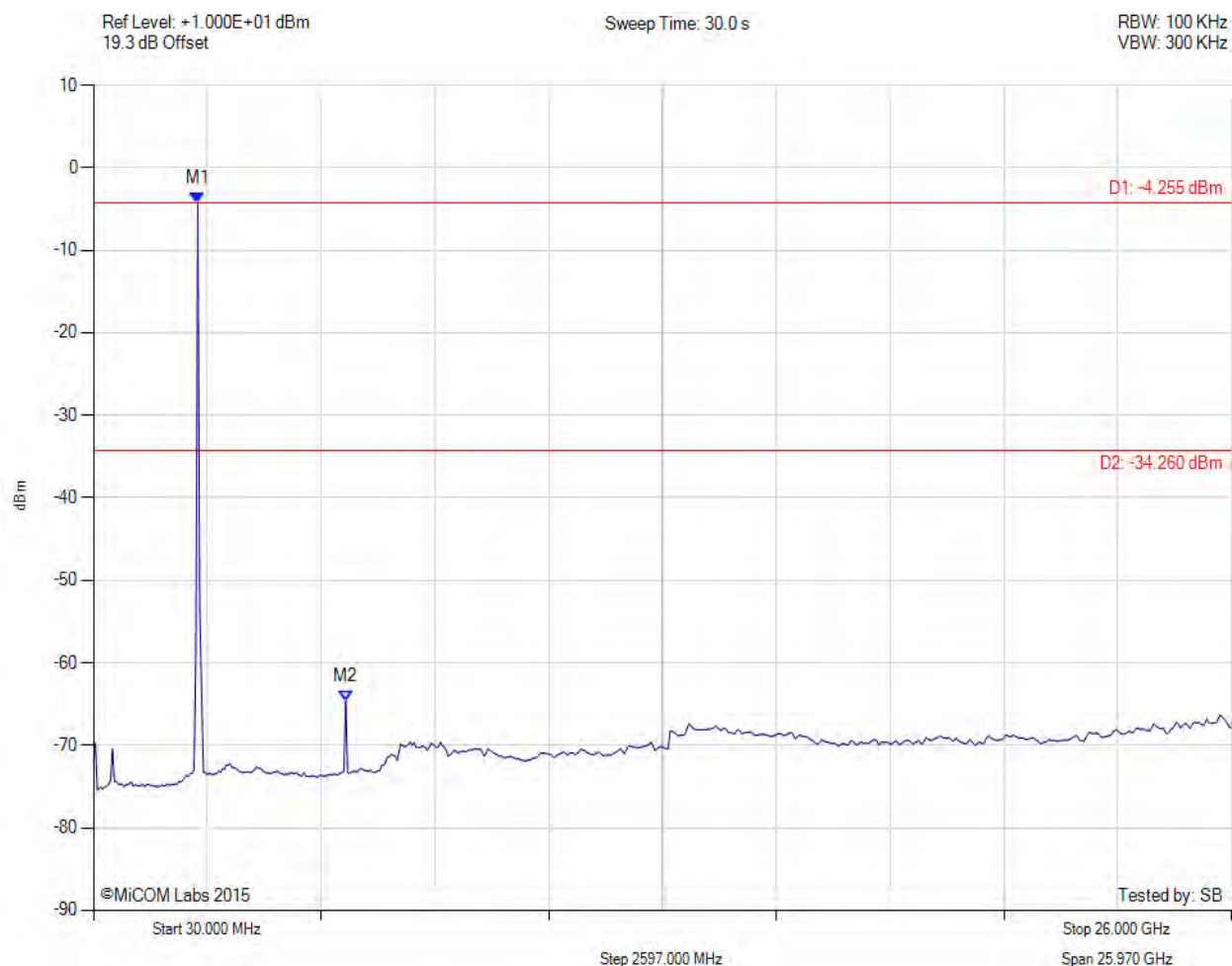
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -4.255 dBm M2 : 5790.000 MHz : -64.608 dBm	Limit: -34.26 dBm Margin: -30.35 dB

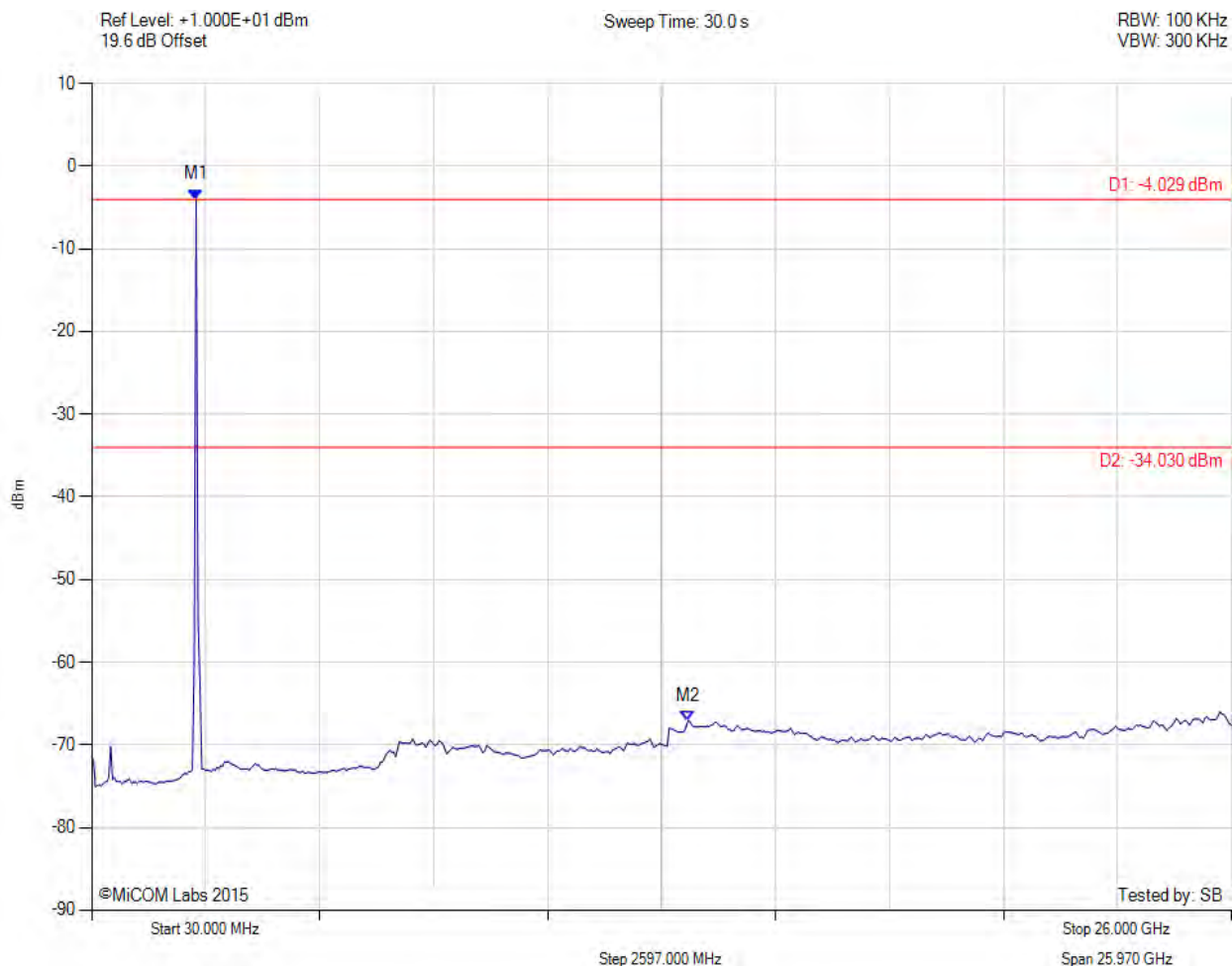
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -4.029 dBm M2 : 13.620 GHz : -67.092 dBm	Limit: -34.03 dBm Margin: -33.06 dB

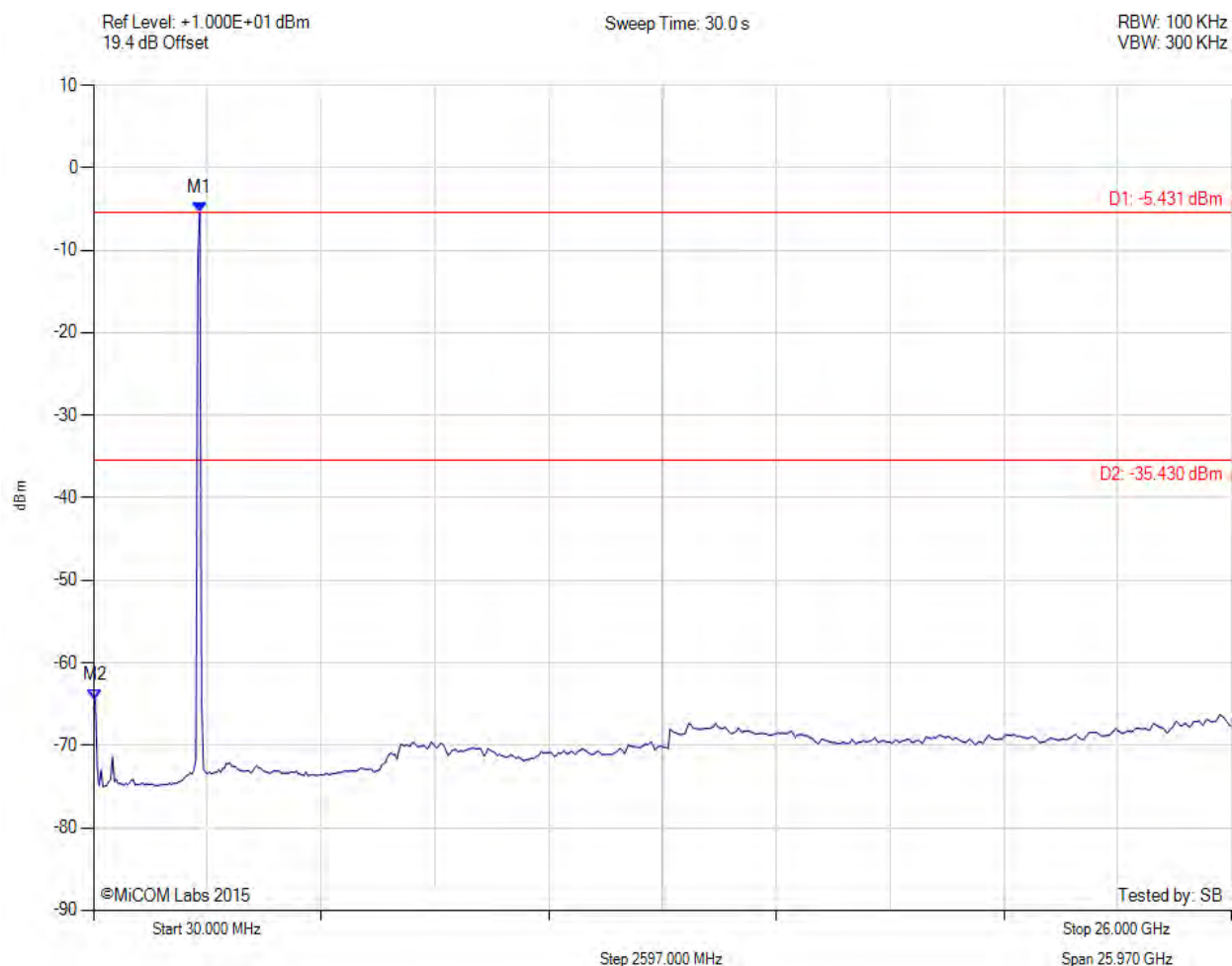
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -5.431 dBm M2 : 70.000 MHz : -64.474 dBm	Limit: -35.43 dBm Margin: -29.04 dB

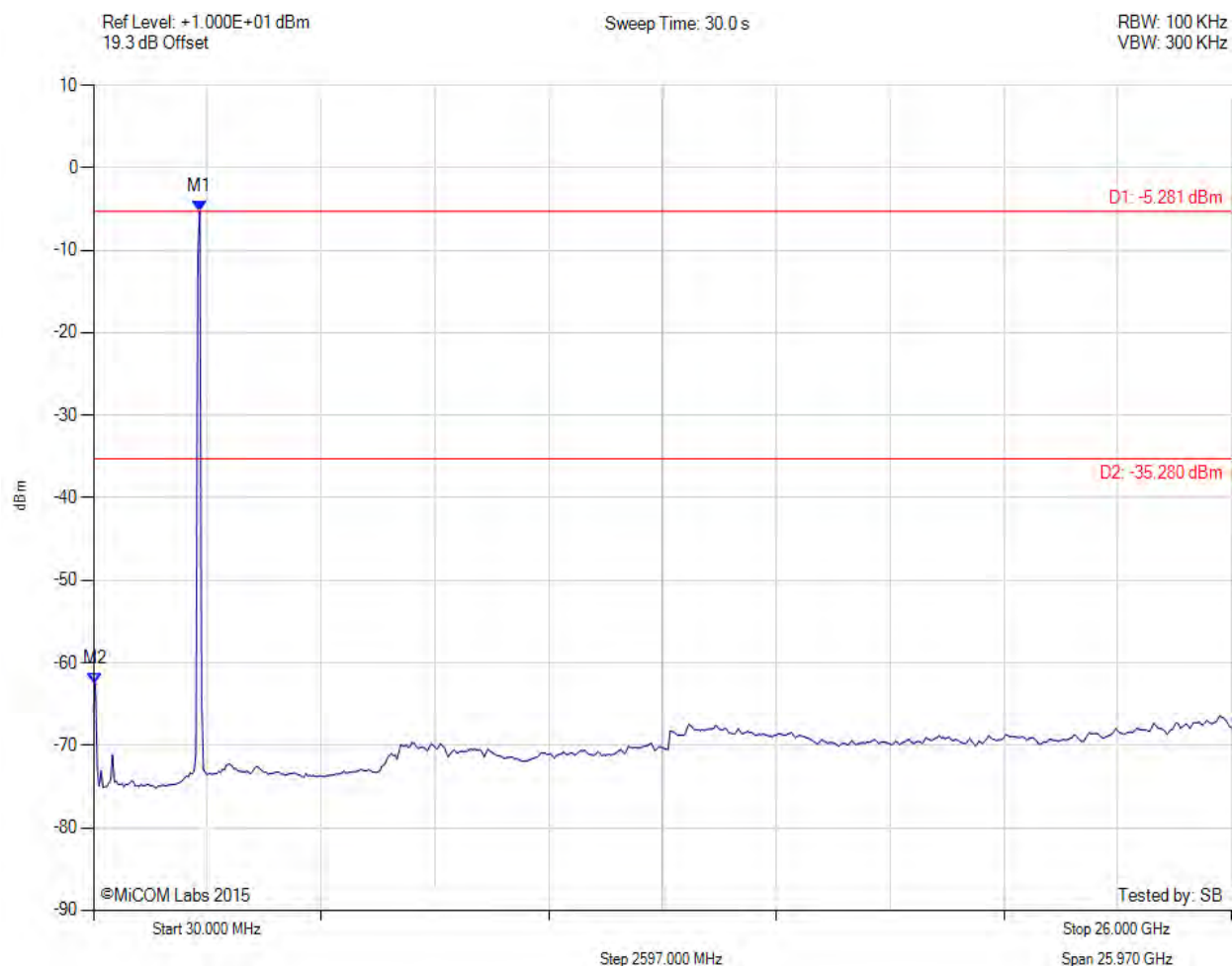
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -5.281 dBm M2 : 70.000 MHz : -62.530 dBm	Limit: -35.28 dBm Margin: -27.25 dB

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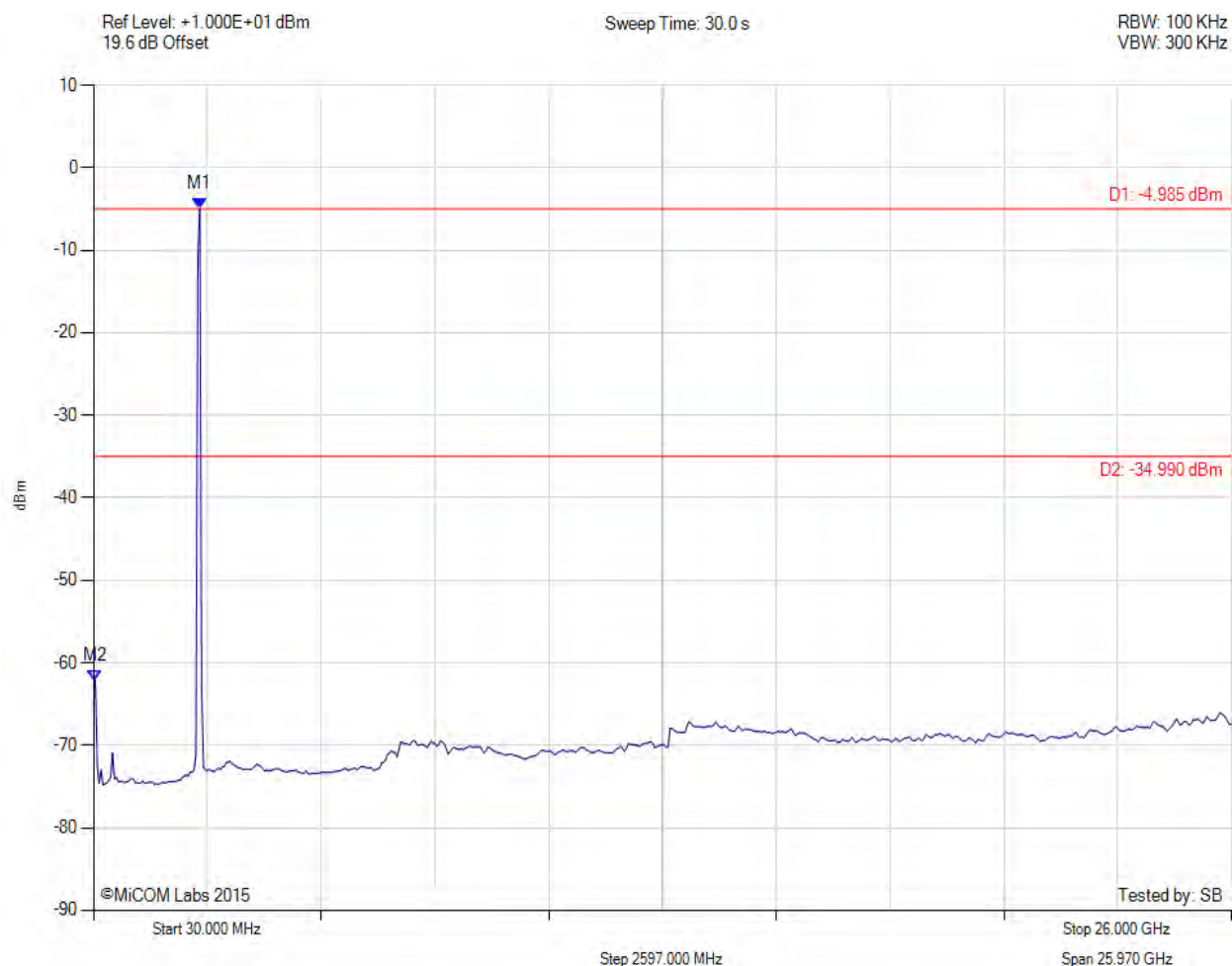


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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.985 dBm M2 : 70.000 MHz : -62.104 dBm	Limit: -34.99 dBm Margin: -27.11 dB

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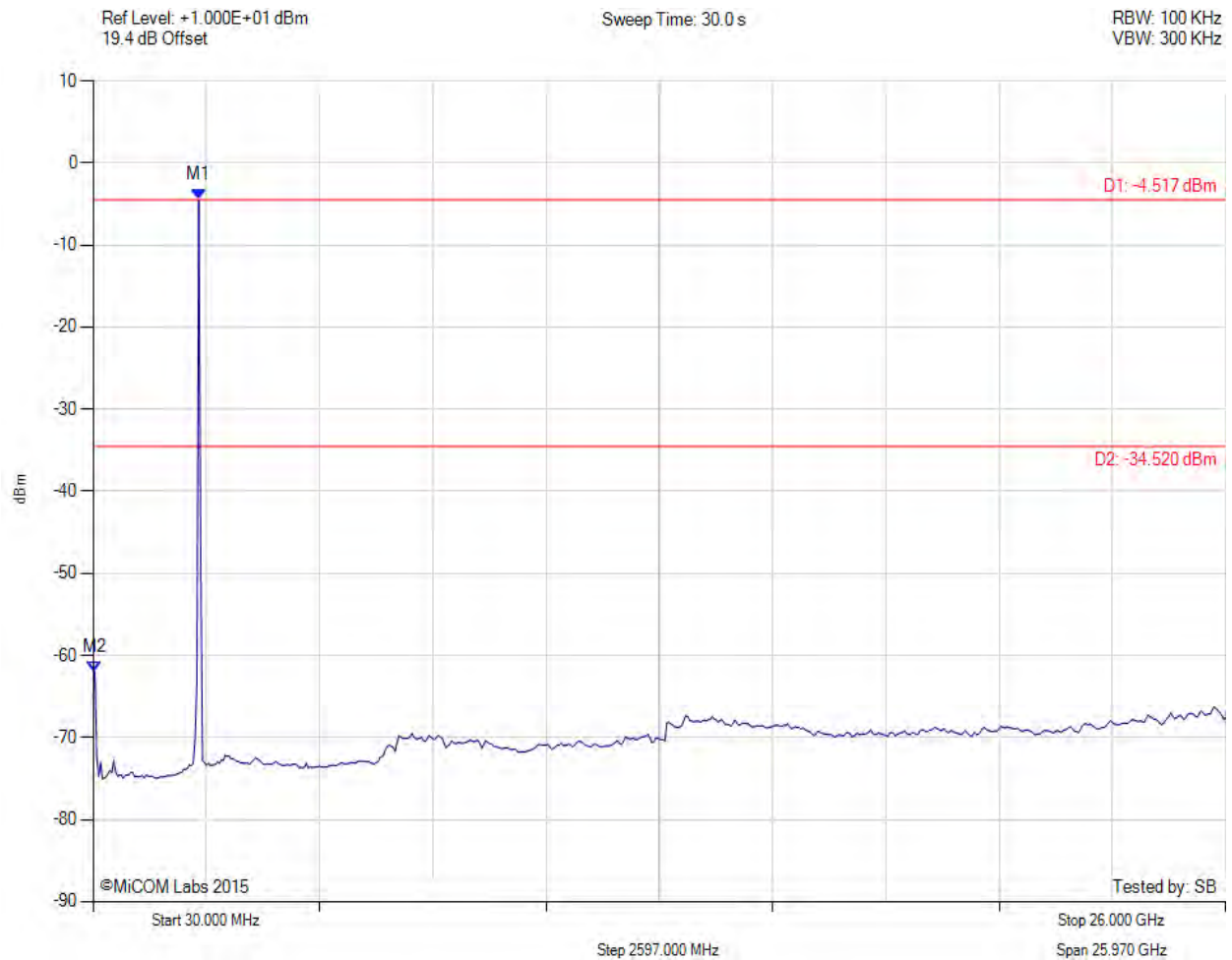


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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.517 dBm M2 : 70.000 MHz : -62.032 dBm	Limit: -34.52 dBm Margin: -27.51 dB

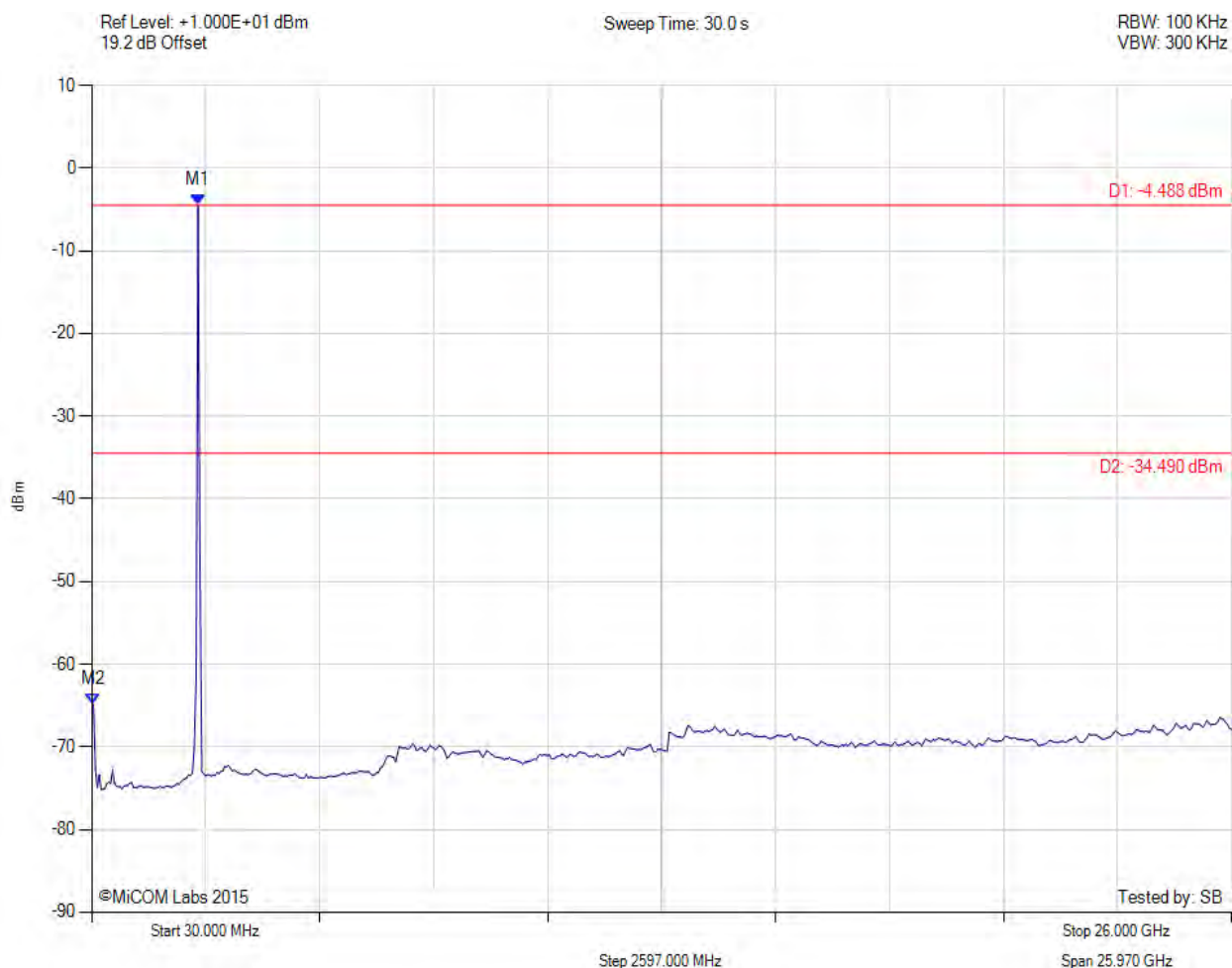
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.488 dBm M2 : 70.000 MHz : -64.880 dBm	Limit: -34.49 dBm Margin: -30.39 dB

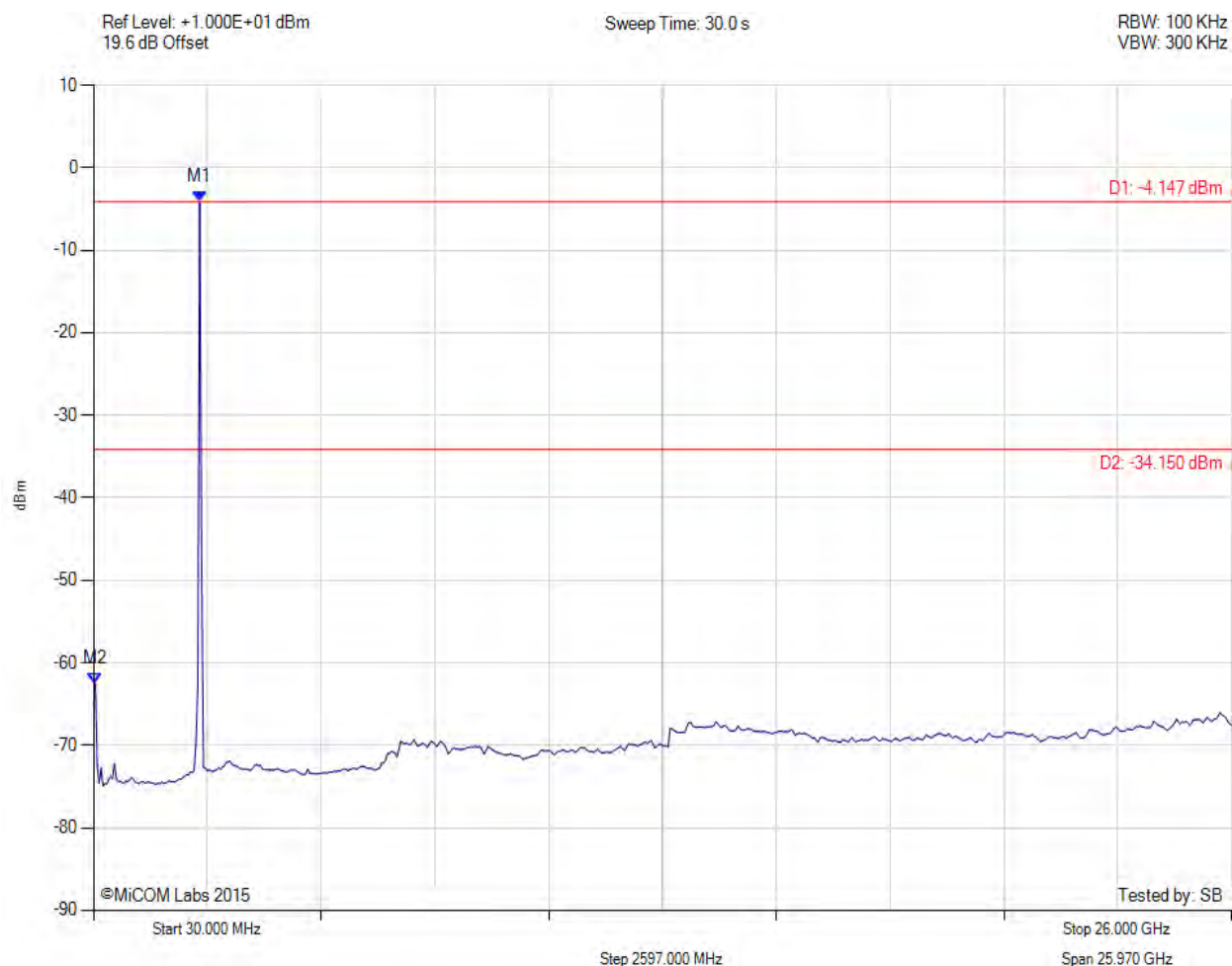
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.147 dBm M2 : 70.000 MHz : -62.537 dBm	Limit: -34.15 dBm Margin: -28.39 dB

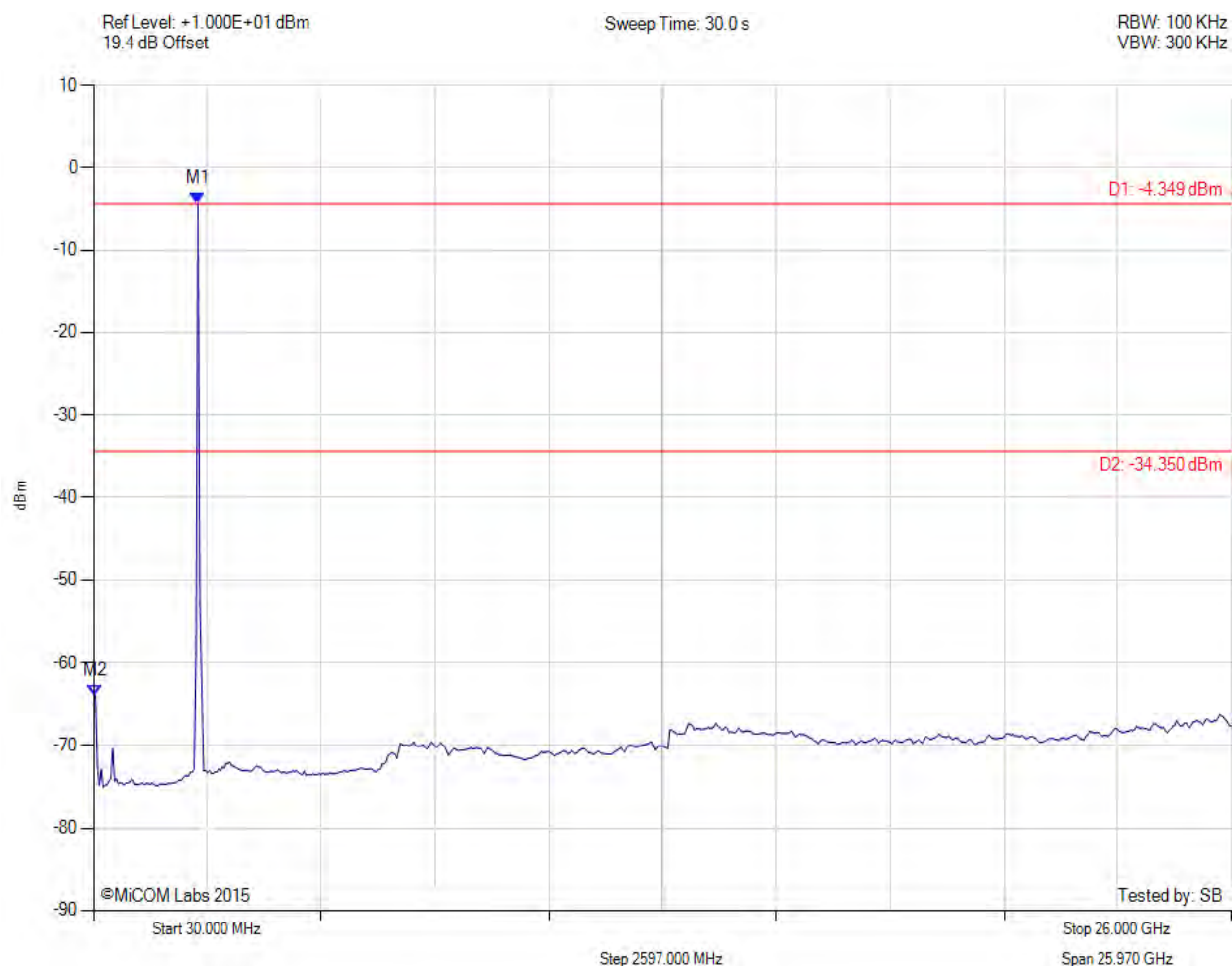
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -4.349 dBm M2 : 70.000 MHz : -64.026 dBm	Limit: -34.35 dBm Margin: -29.68 dB

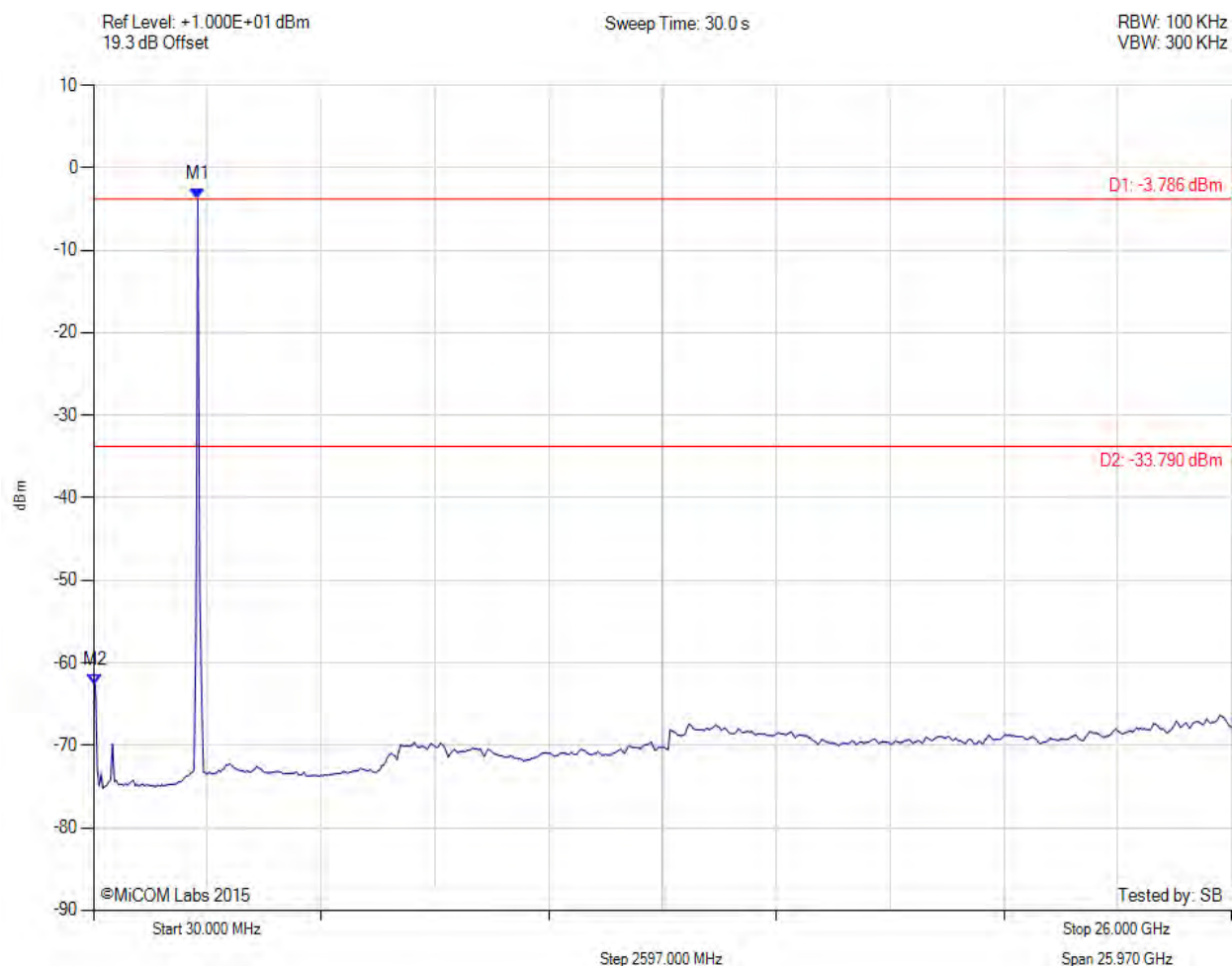
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -3.786 dBm M2 : 70.000 MHz : -62.616 dBm	Limit: -33.79 dBm Margin: -28.83 dB

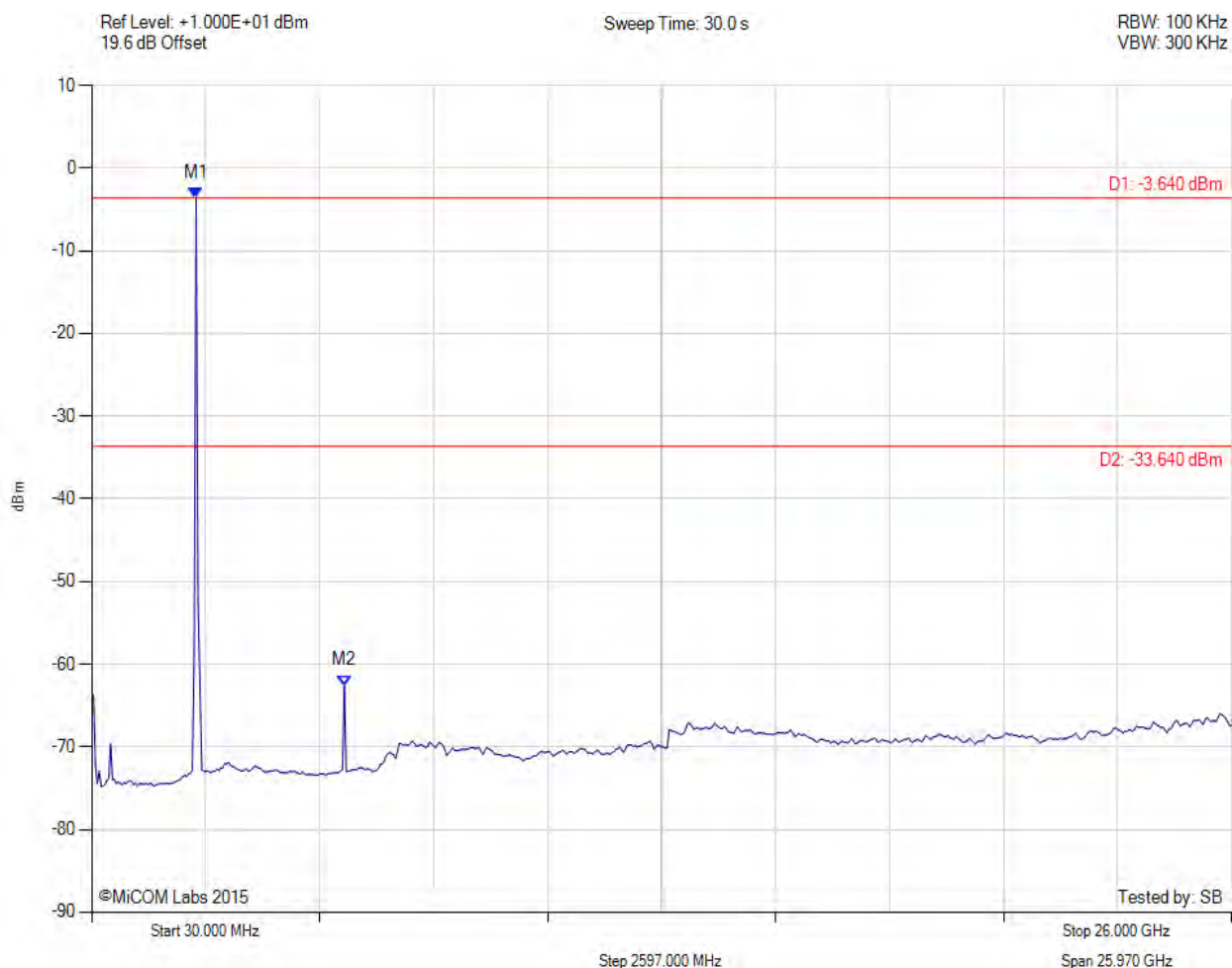
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -3.640 dBm M2 : 5790.000 MHz : -62.576 dBm	Limit: -33.64 dBm Margin: -28.94 dB

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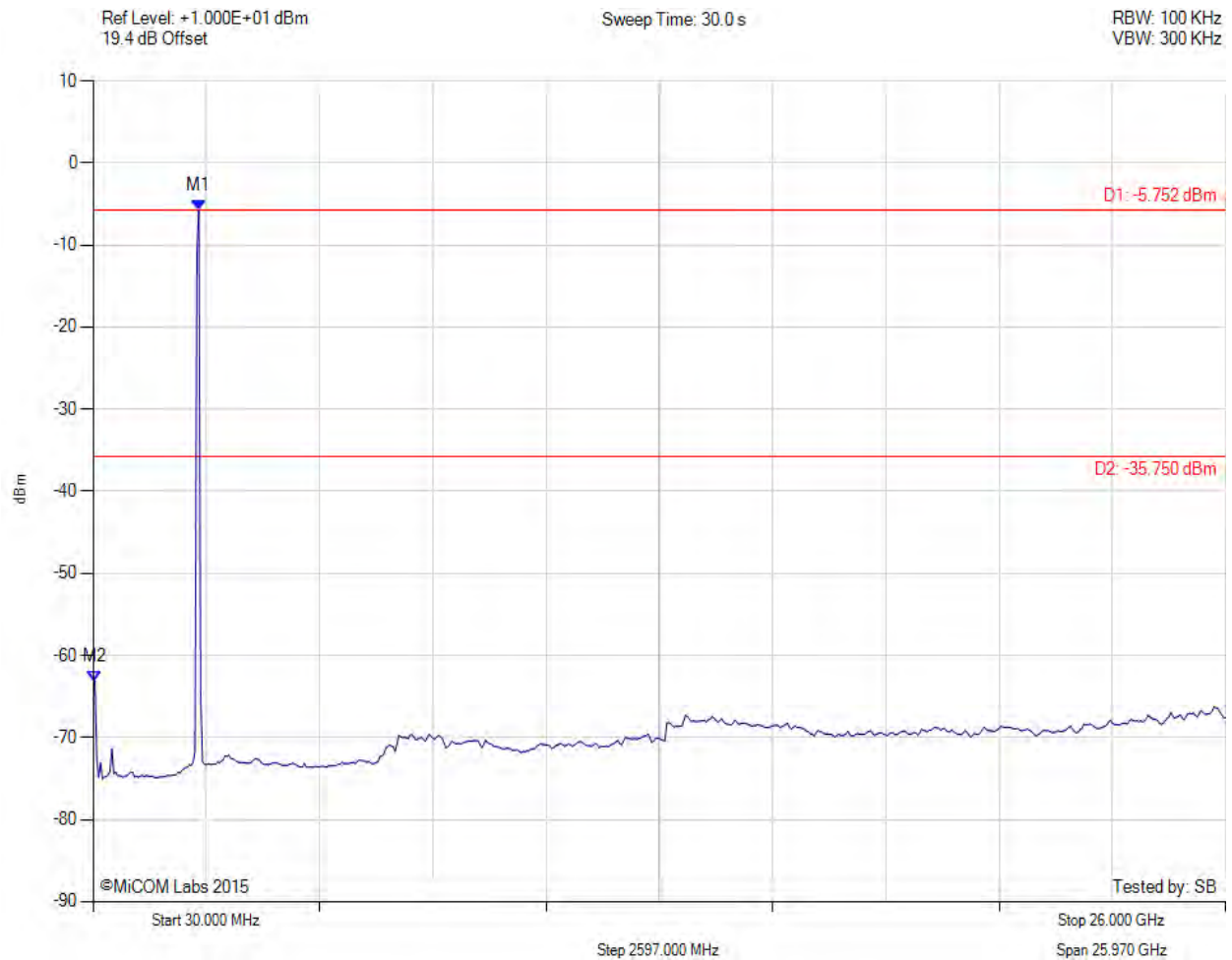


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Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -5.752 dBm M2 : 70.000 MHz : -63.094 dBm	Limit: -35.75 dBm Margin: -27.34 dB

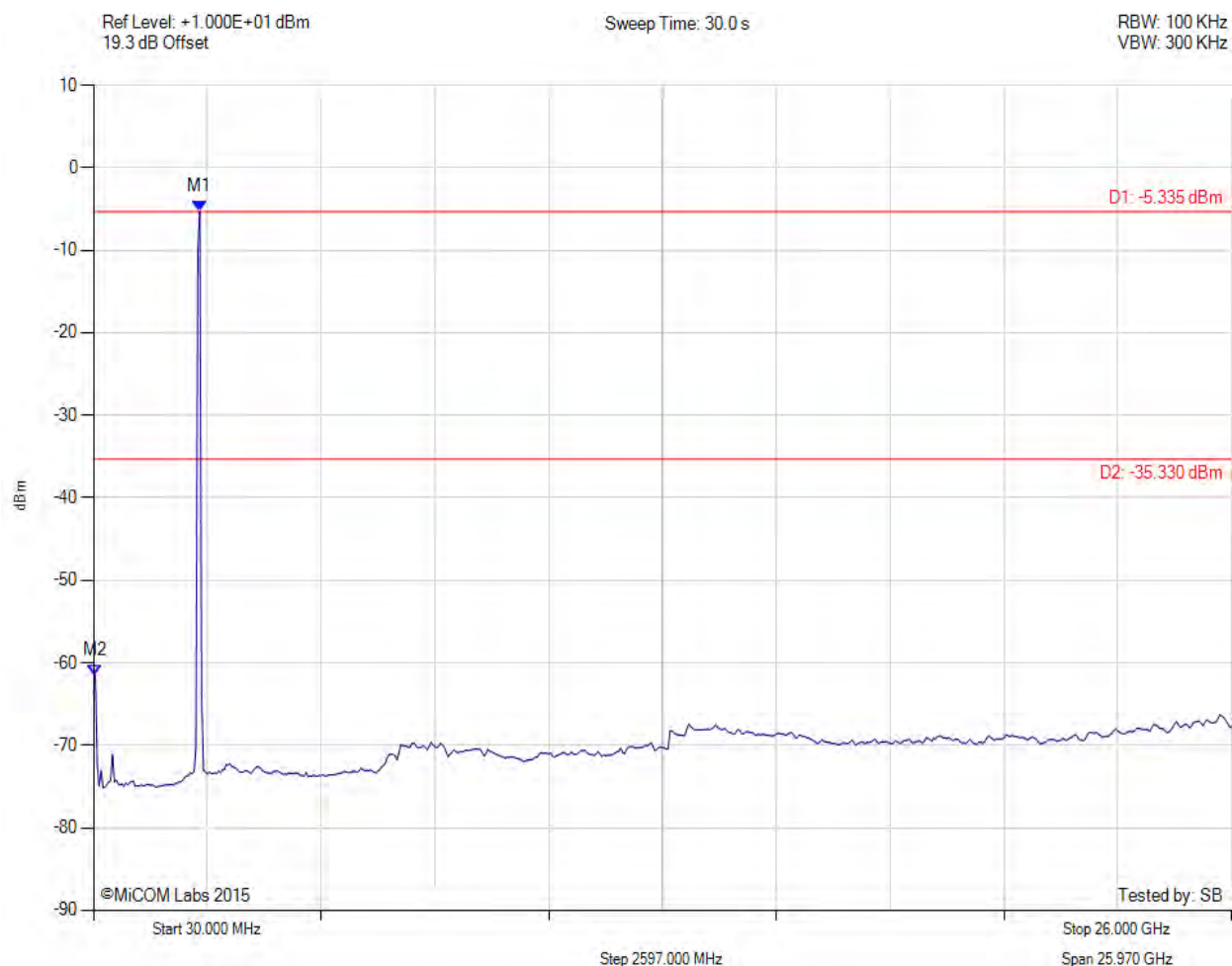
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -5.335 dBm M2 : 70.000 MHz : -61.464 dBm	Limit: -35.33 dBm Margin: -26.13 dB

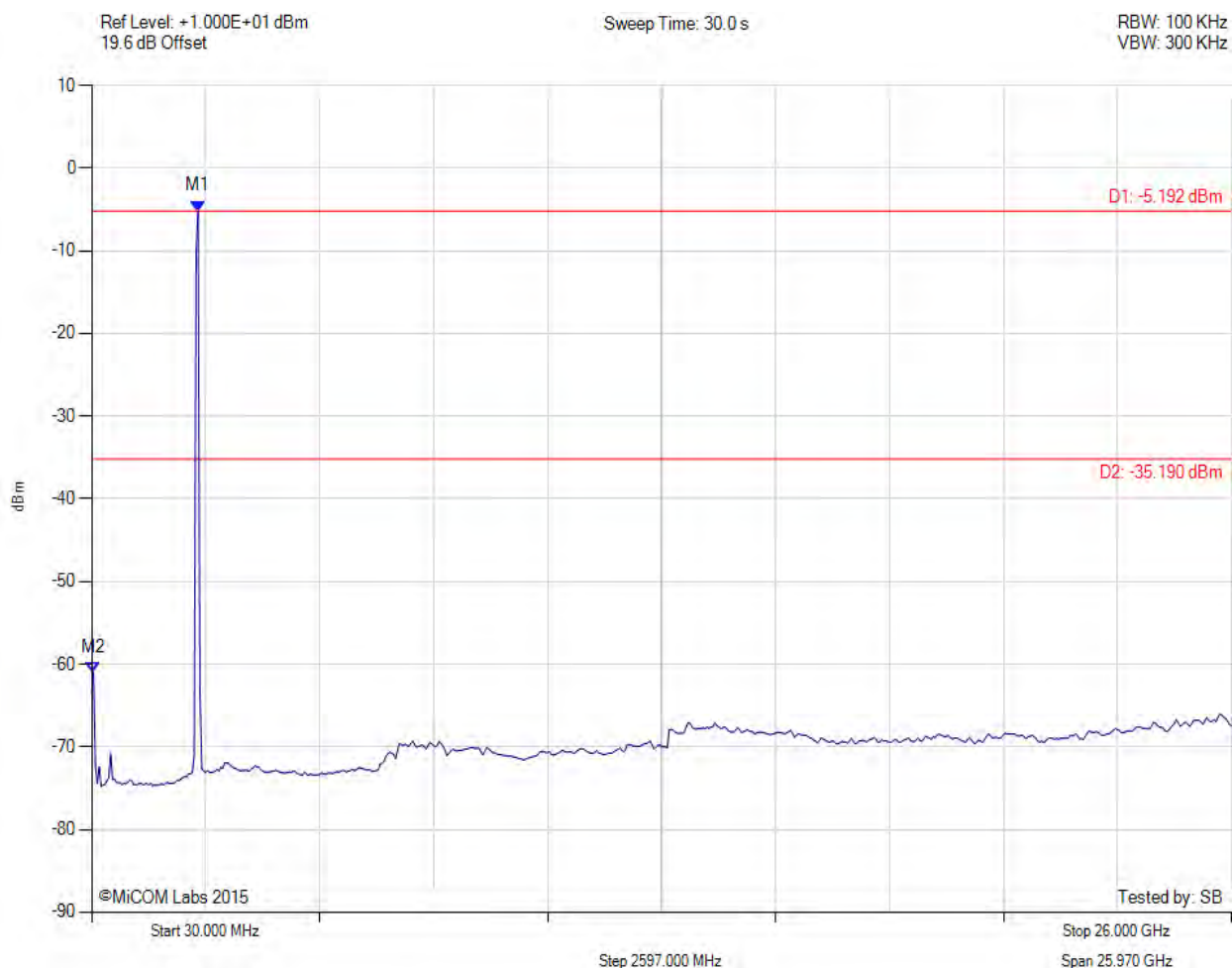
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -5.192 dBm M2 : 70.000 MHz : -61.022 dBm	Limit: -35.19 dBm Margin: -25.83 dB

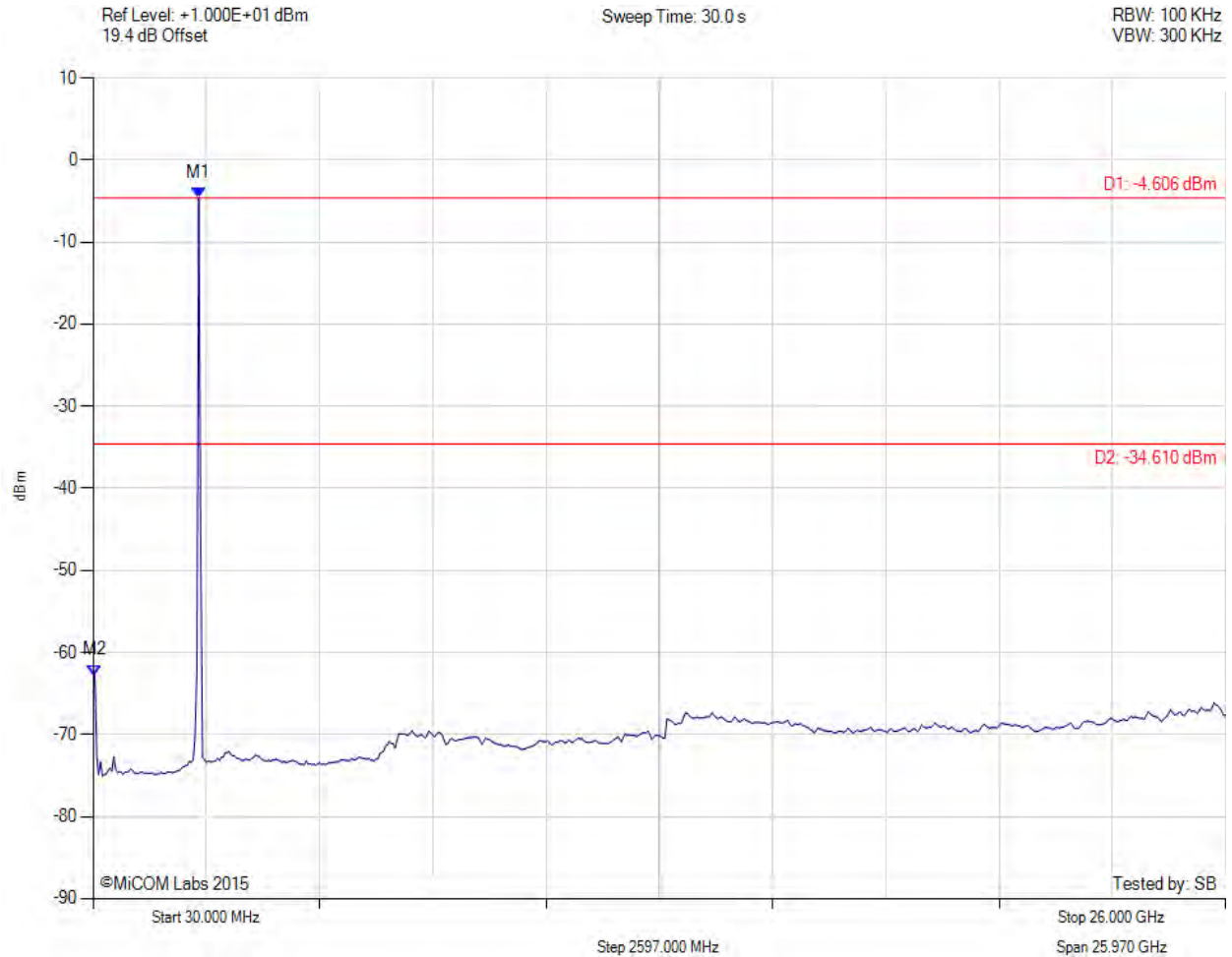
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.606 dBm M2 : 70.000 MHz : -62.744 dBm	Limit: -34.61 dBm Margin: -28.13 dB

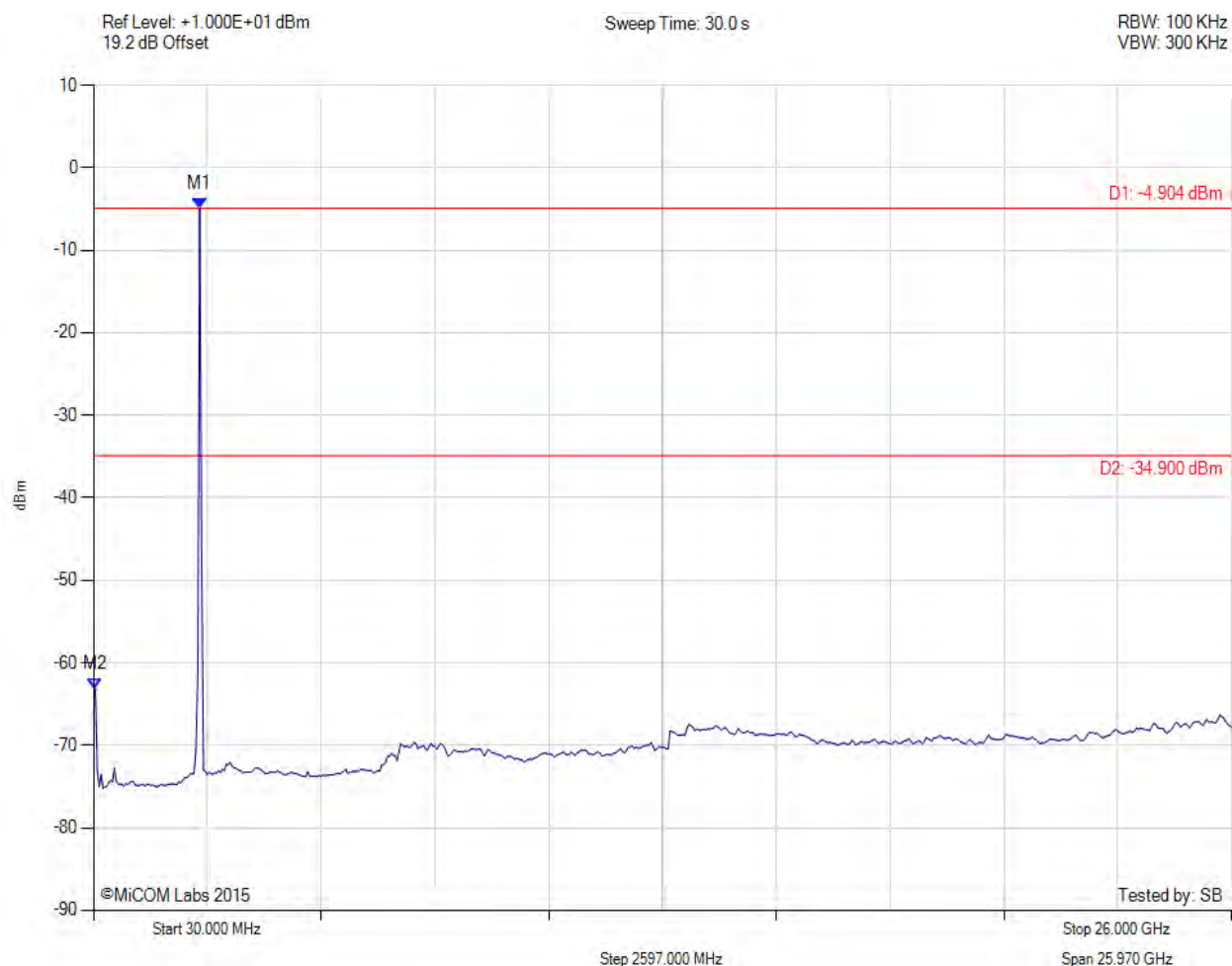
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.904 dBm M2 : 70.000 MHz : -63.188 dBm	Limit: -34.90 dBm Margin: -28.29 dB

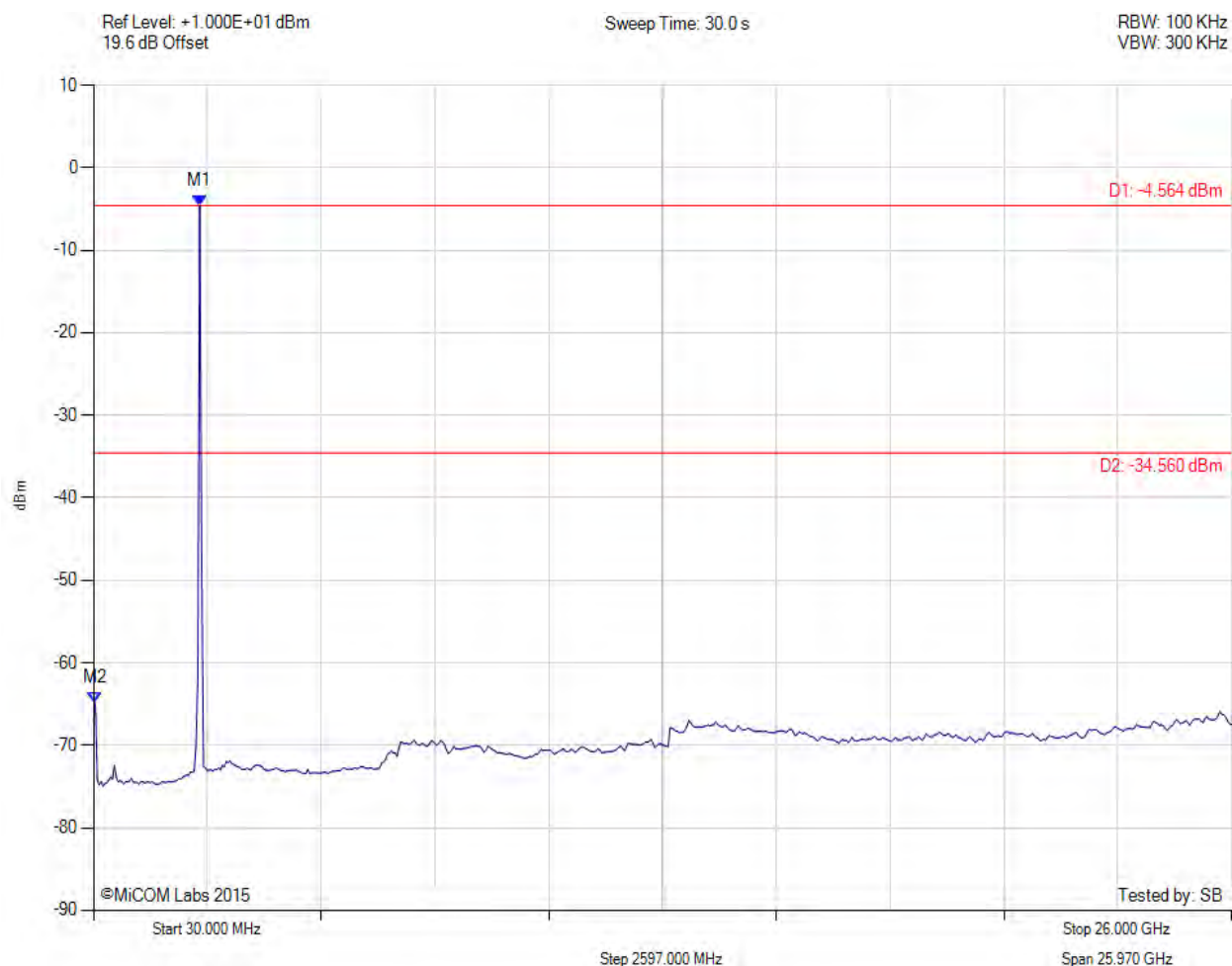
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.564 dBm M2 : 70.000 MHz : -64.840 dBm	Limit: -34.56 dBm Margin: -30.28 dB

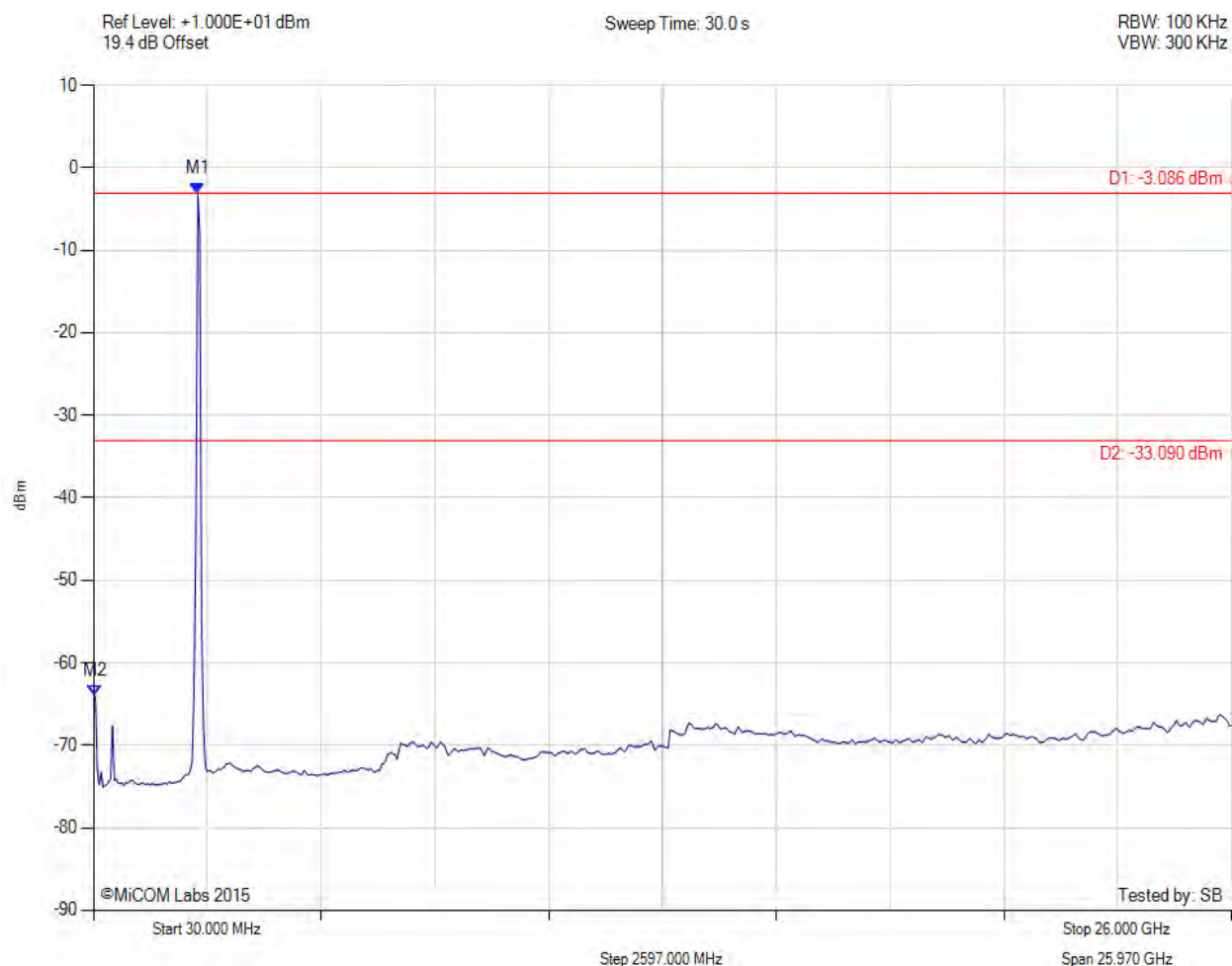
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -3.086 dBm M2 : 70.000 MHz : -64.064 dBm	Limit: -33.09 dBm Margin: -30.97 dB

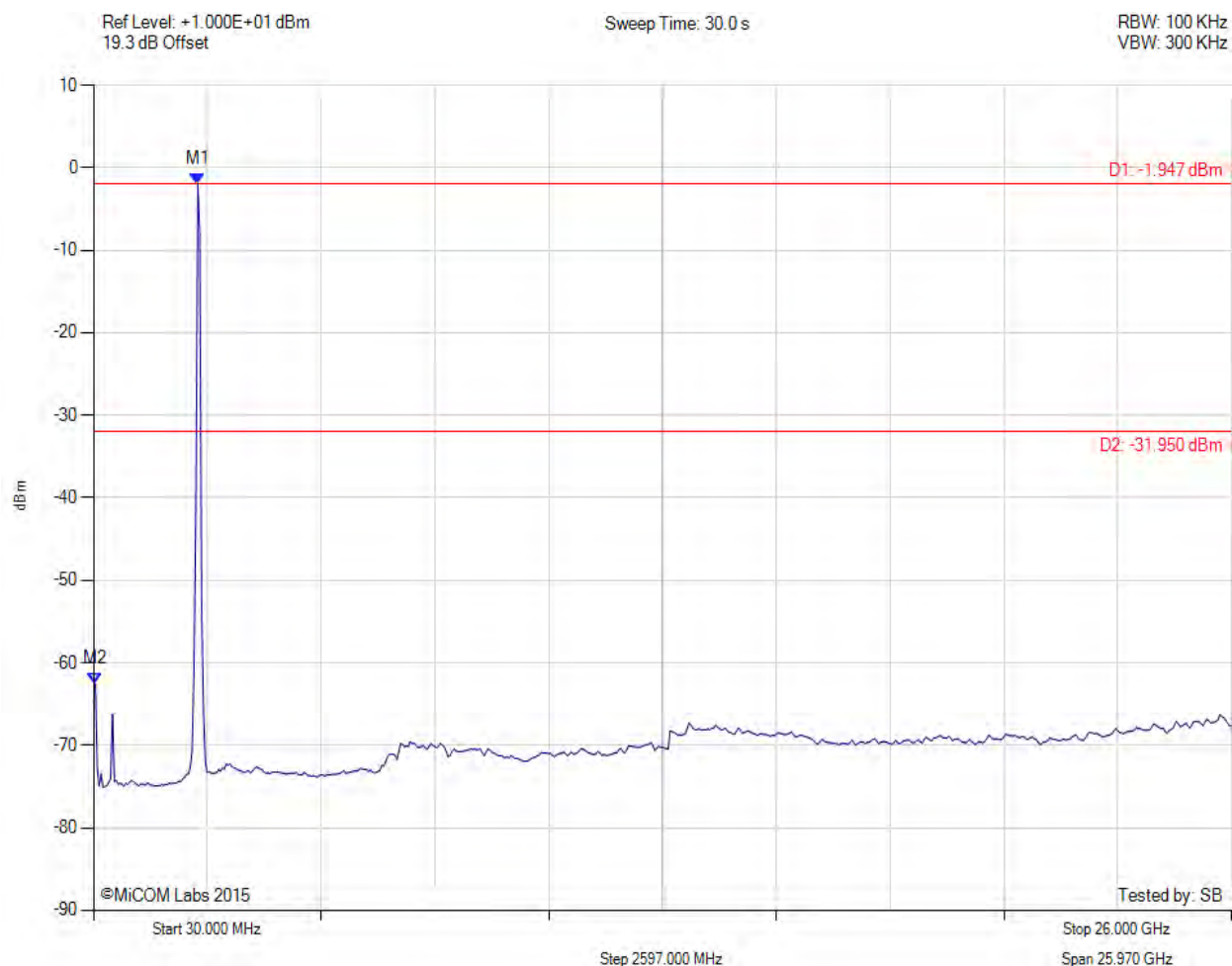
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -1.947 dBm M2 : 70.000 MHz : -62.547 dBm	Limit: -31.95 dBm Margin: -30.60 dB

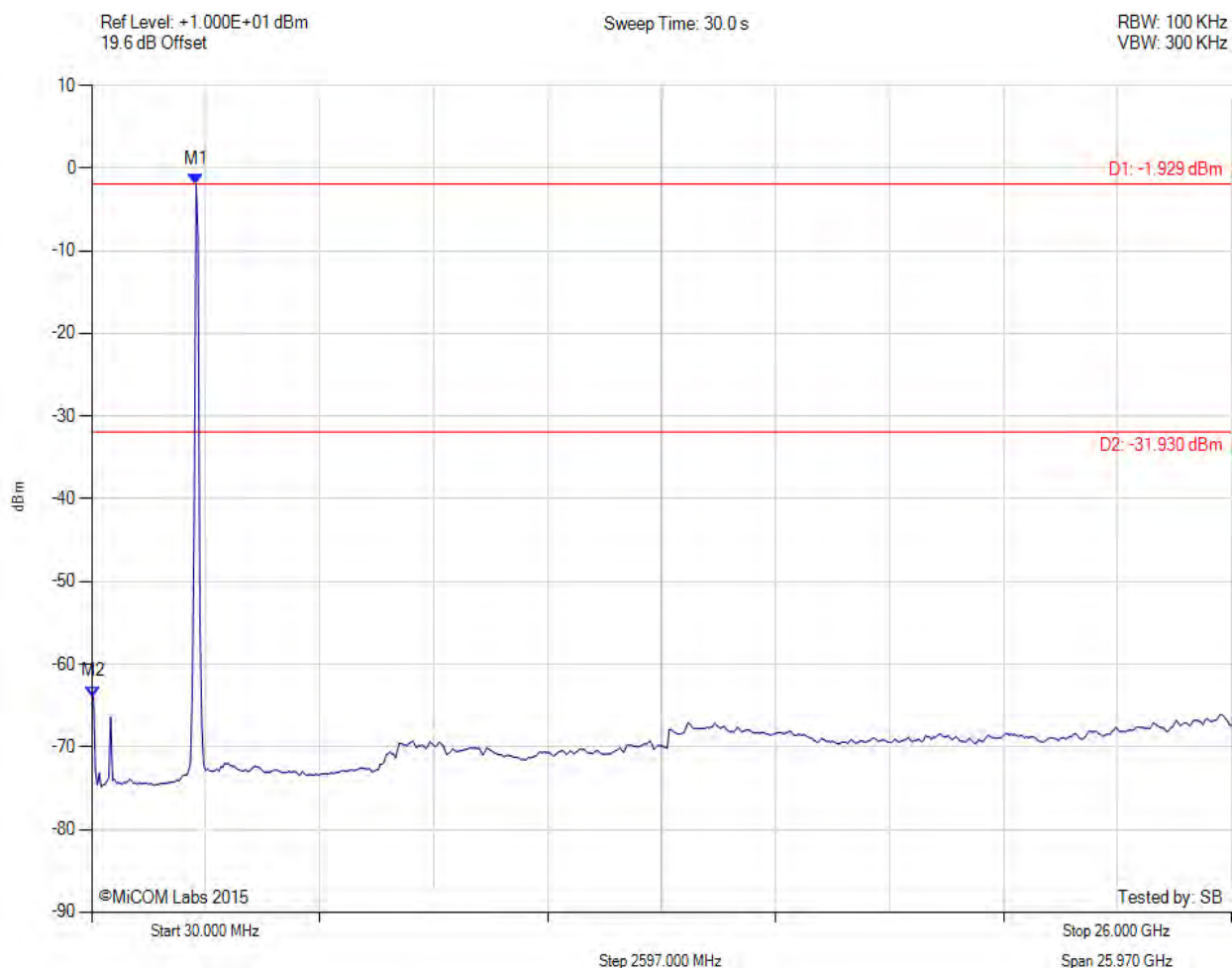
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2410.000 MHz : -1.929 dBm M2 : 70.000 MHz : -63.904 dBm	Limit: -31.93 dBm Margin: -31.97 dB

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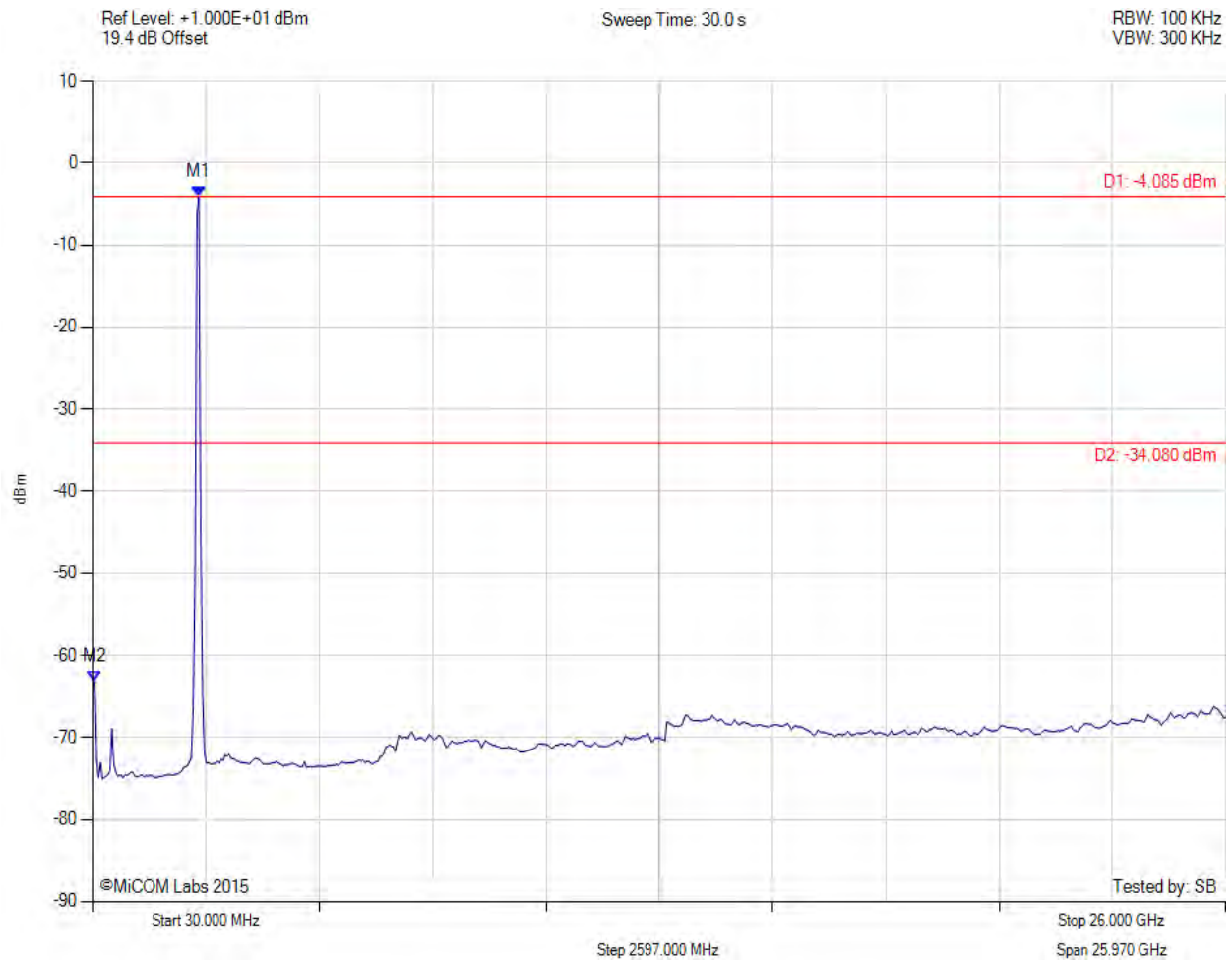


Title: Actiontec Electronics Inc. M6240V
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.085 dBm M2 : 70.000 MHz : -63.191 dBm	Limit: -34.08 dBm Margin: -29.11 dB

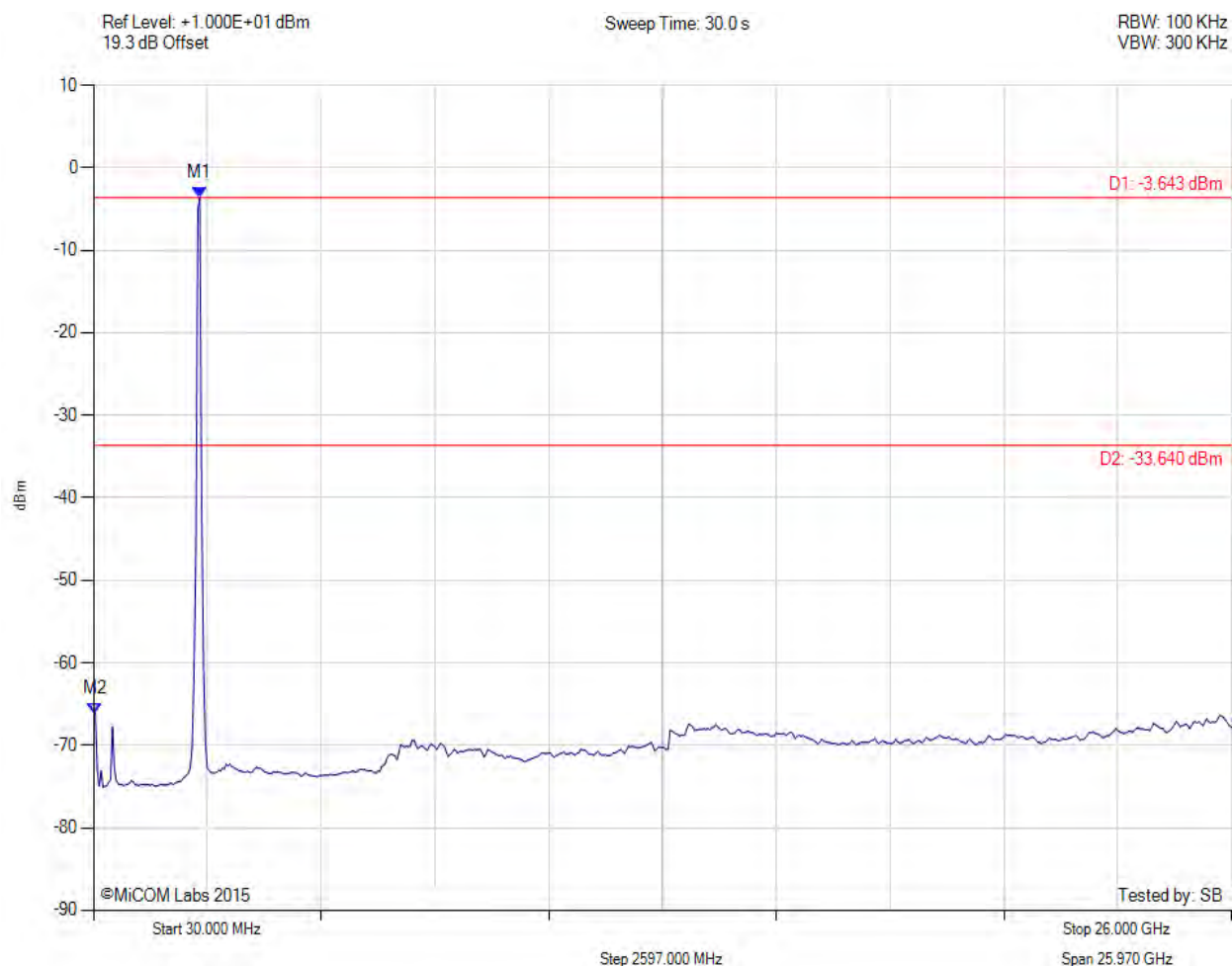
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -3.643 dBm M2 : 70.000 MHz : -66.121 dBm	Limit: -33.64 dBm Margin: -32.48 dB

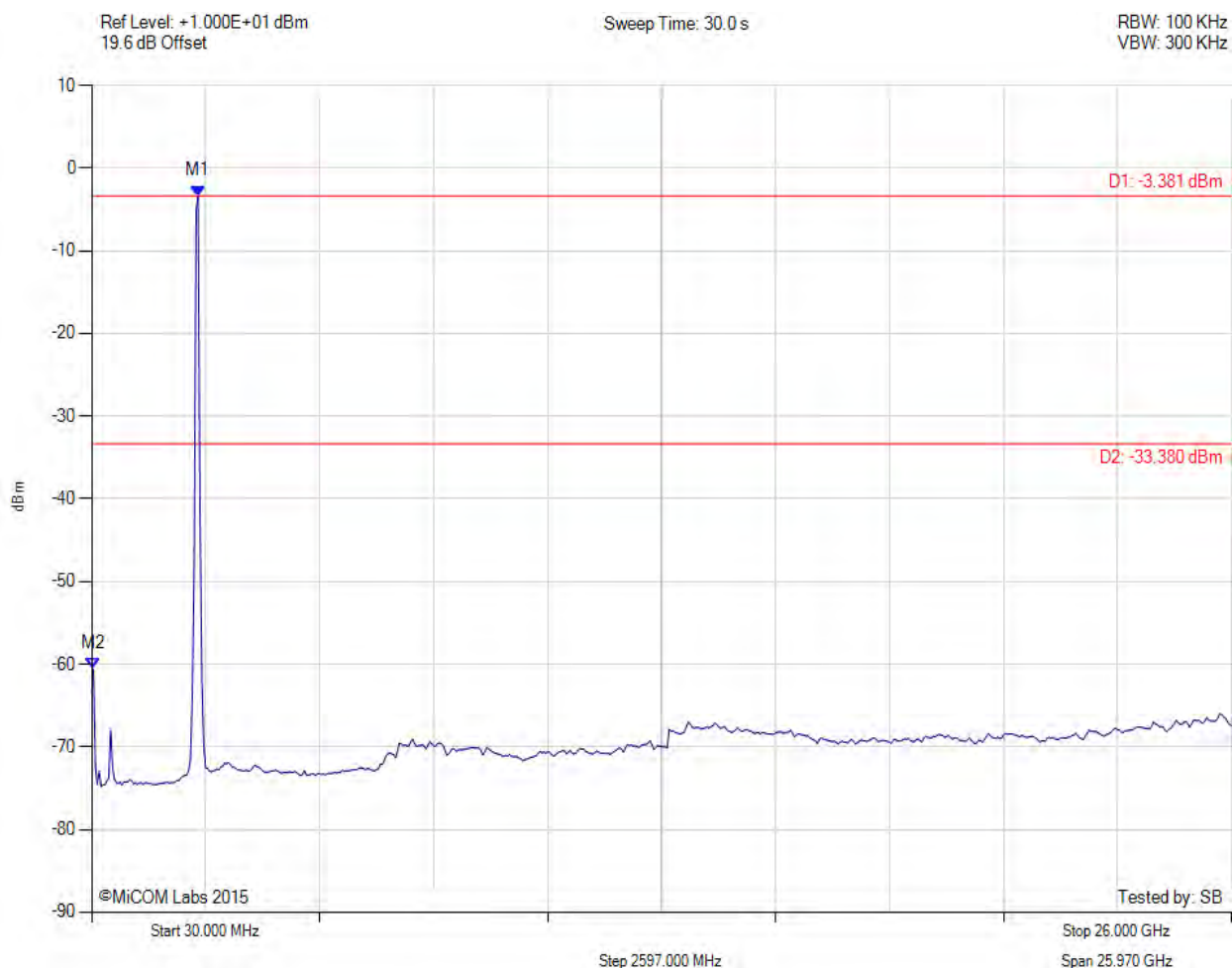
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -3.381 dBm M2 : 70.000 MHz : -60.579 dBm	Limit: -33.38 dBm Margin: -27.20 dB

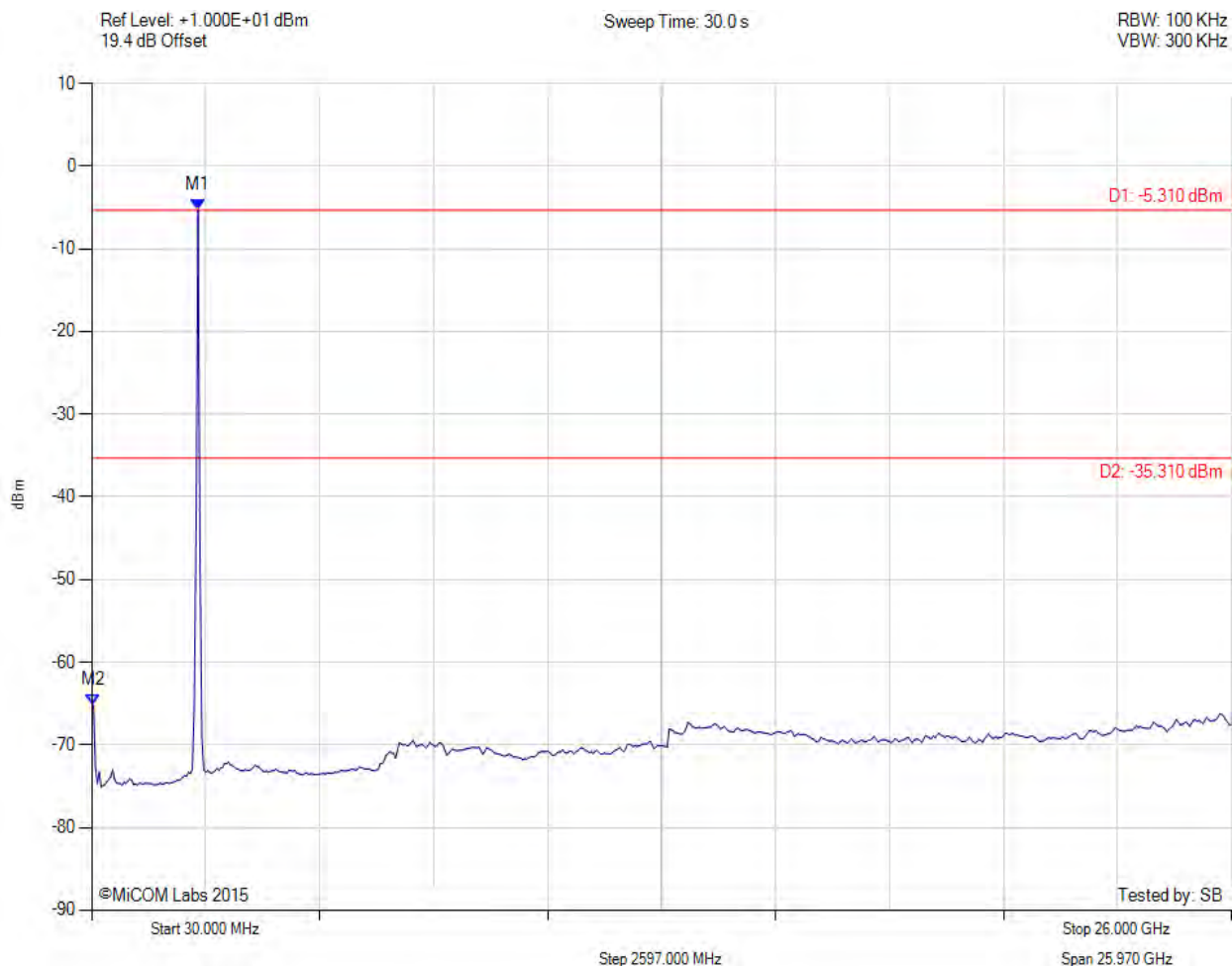
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -5.310 dBm M2 : 70.000 MHz : -65.196 dBm	Limit: -35.31 dBm Margin: -29.89 dB

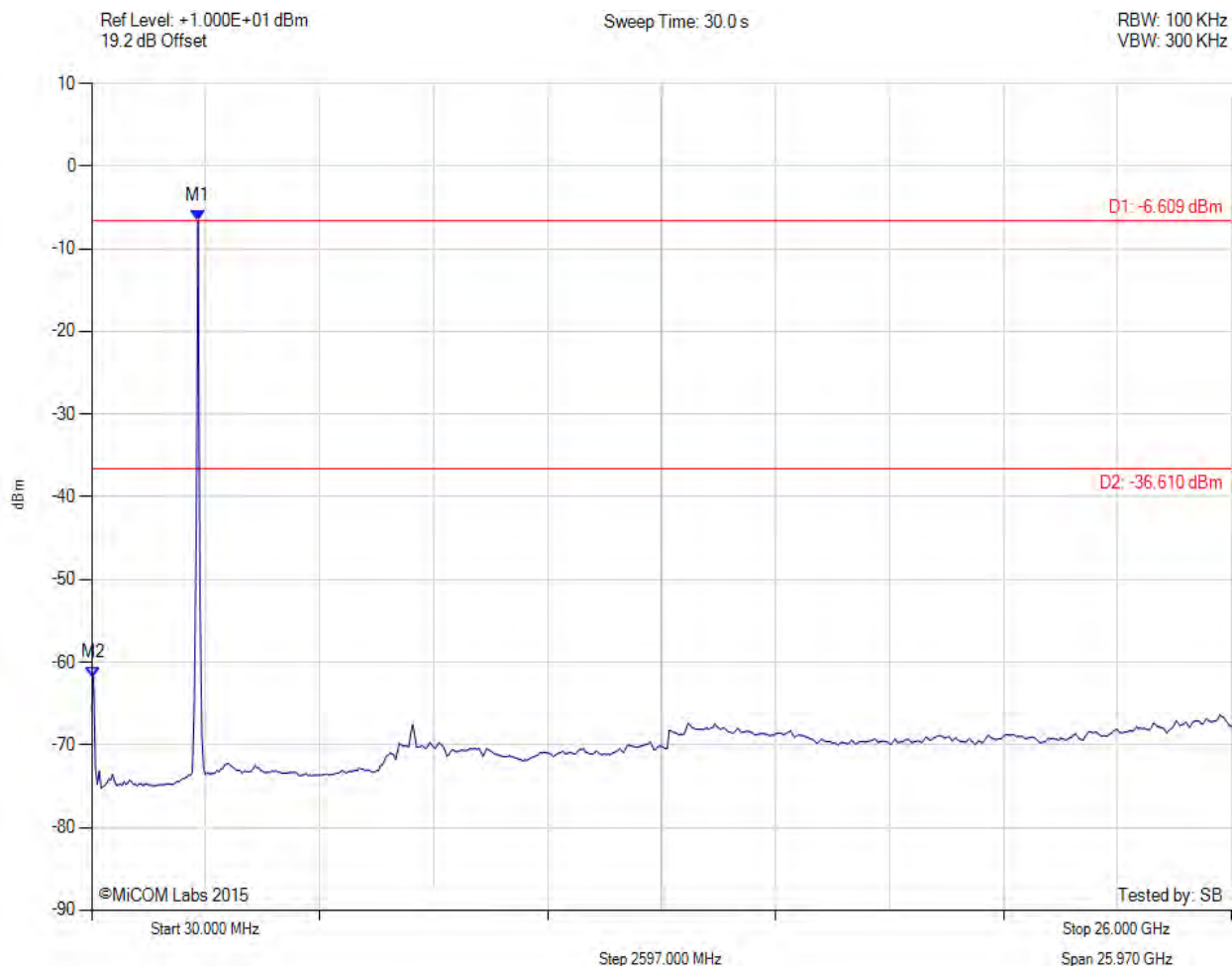
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -6.609 dBm M2 : 70.000 MHz : -61.794 dBm	Limit: -36.61 dBm Margin: -25.18 dB

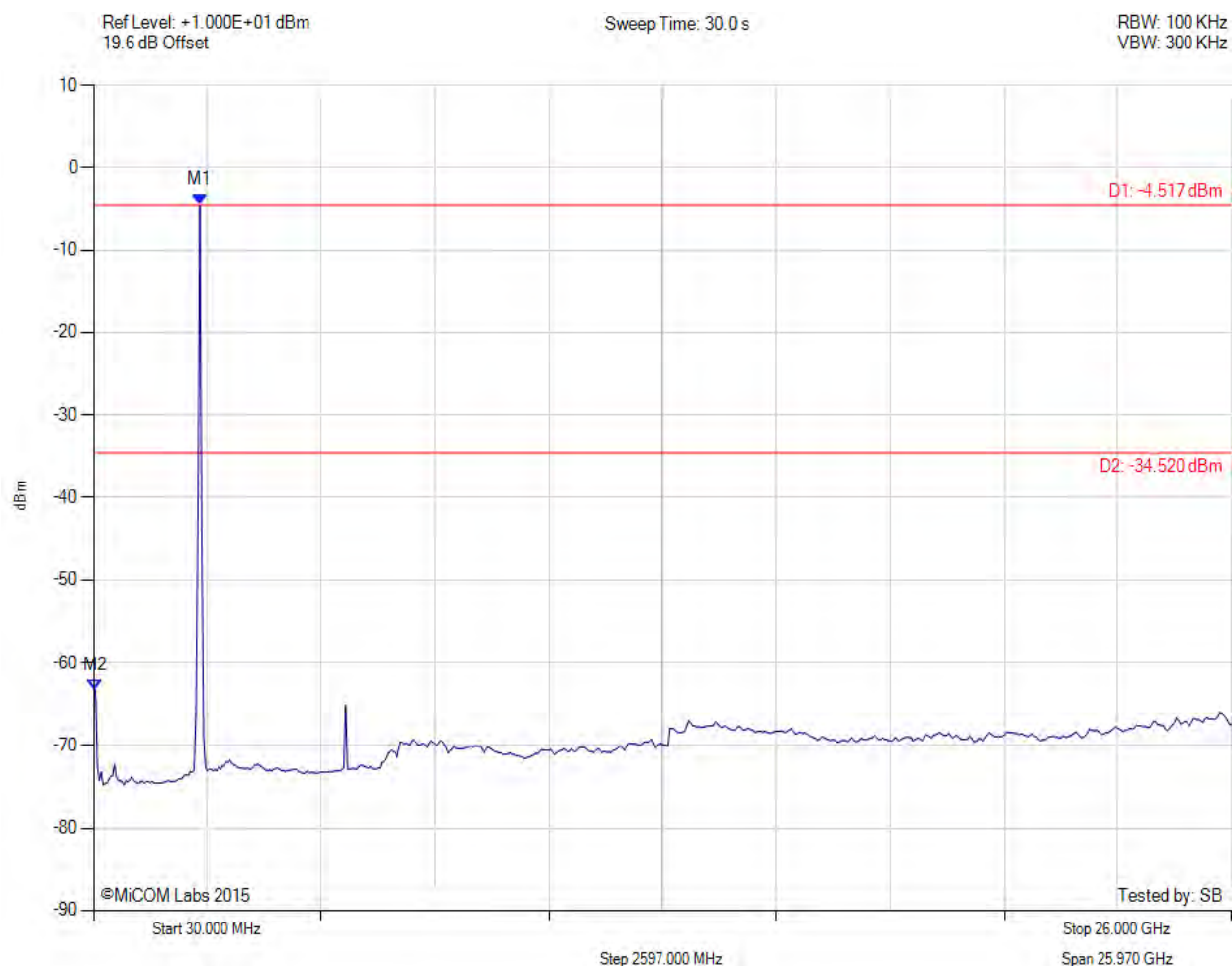
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CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2450.000 MHz : -4.517 dBm M2 : 70.000 MHz : -63.300 dBm	Limit: -34.52 dBm Margin: -28.78 dB

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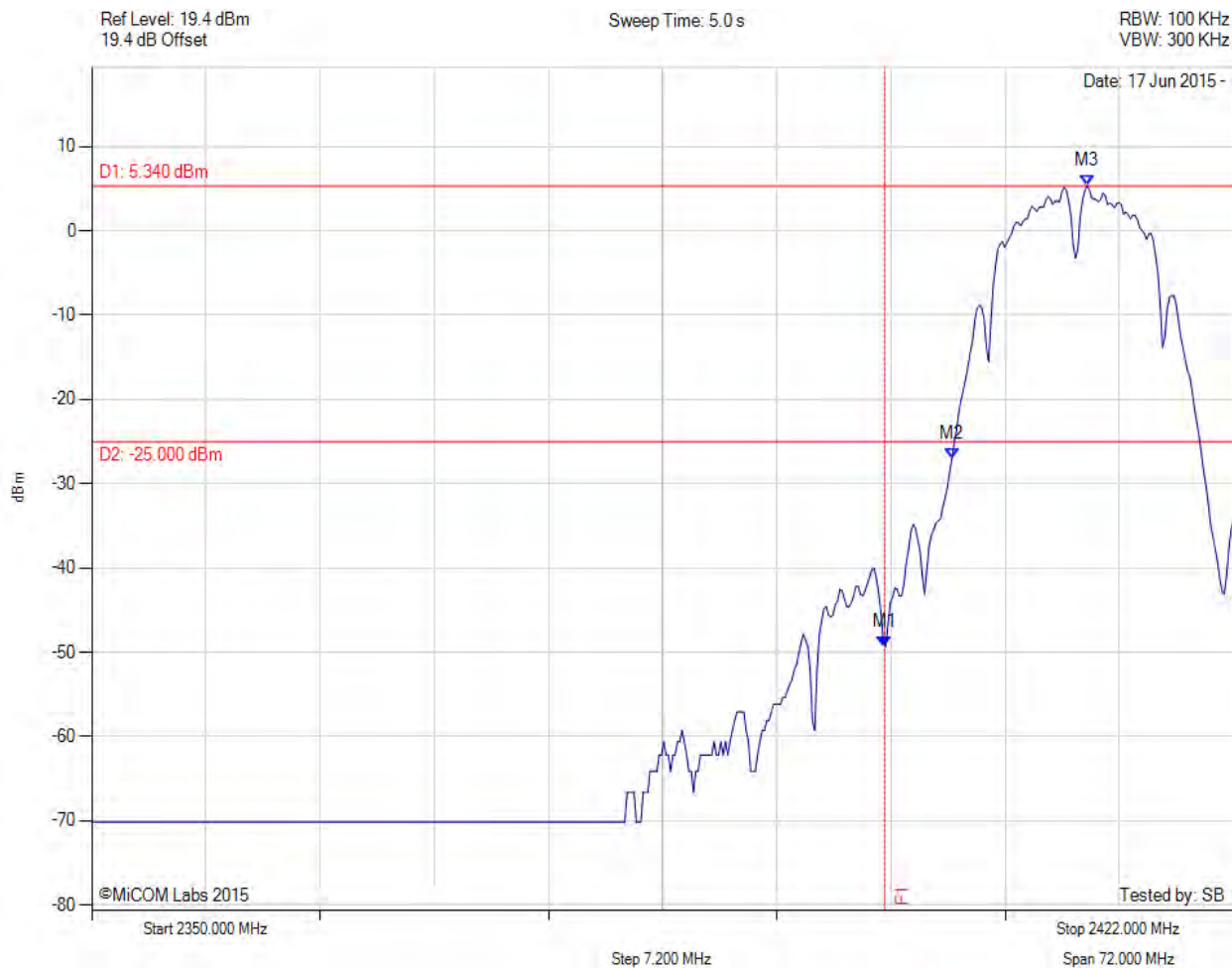
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A.2.1.2. Conducted Band-Edge Emissions



CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -49.317 dBm M2 : 2404.253 MHz : -27.008 dBm M3 : 2412.766 MHz : 5.340 dBm	Channel Frequency: 2412.00 MHz

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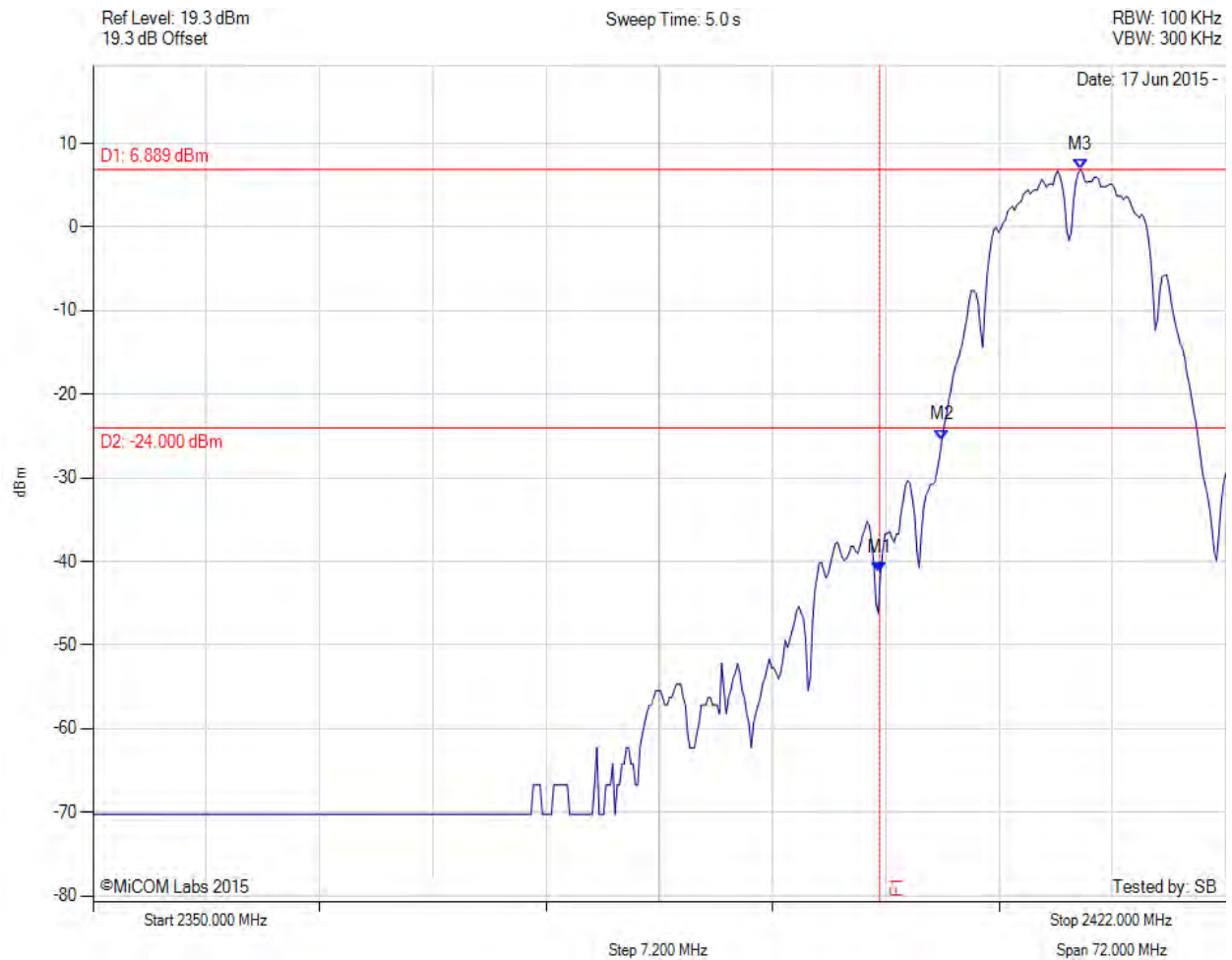


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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -41.302 dBm M2 : 2403.964 MHz : -25.434 dBm M3 : 2412.766 MHz : 6.889 dBm	Channel Frequency: 2412.00 MHz

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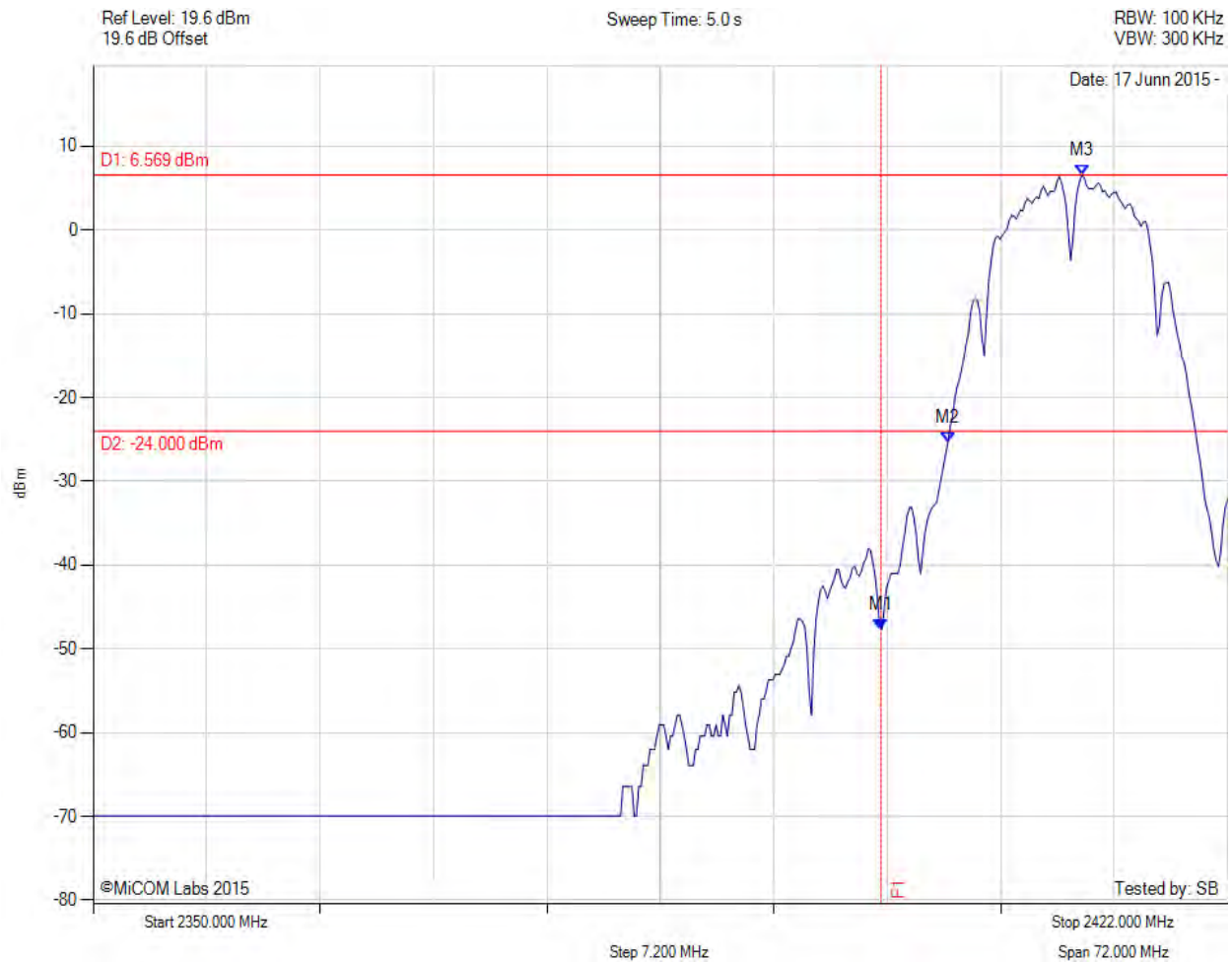


Title: Actiontec Electronics Inc. M6240V
To: FCC CFR 47 Part 15 Subpart C 15.247 (DTS)
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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -47.666 dBm M2 : 2404.253 MHz : -25.361 dBm M3 : 2412.766 MHz : 6.569 dBm	Channel Frequency: 2412.00 MHz

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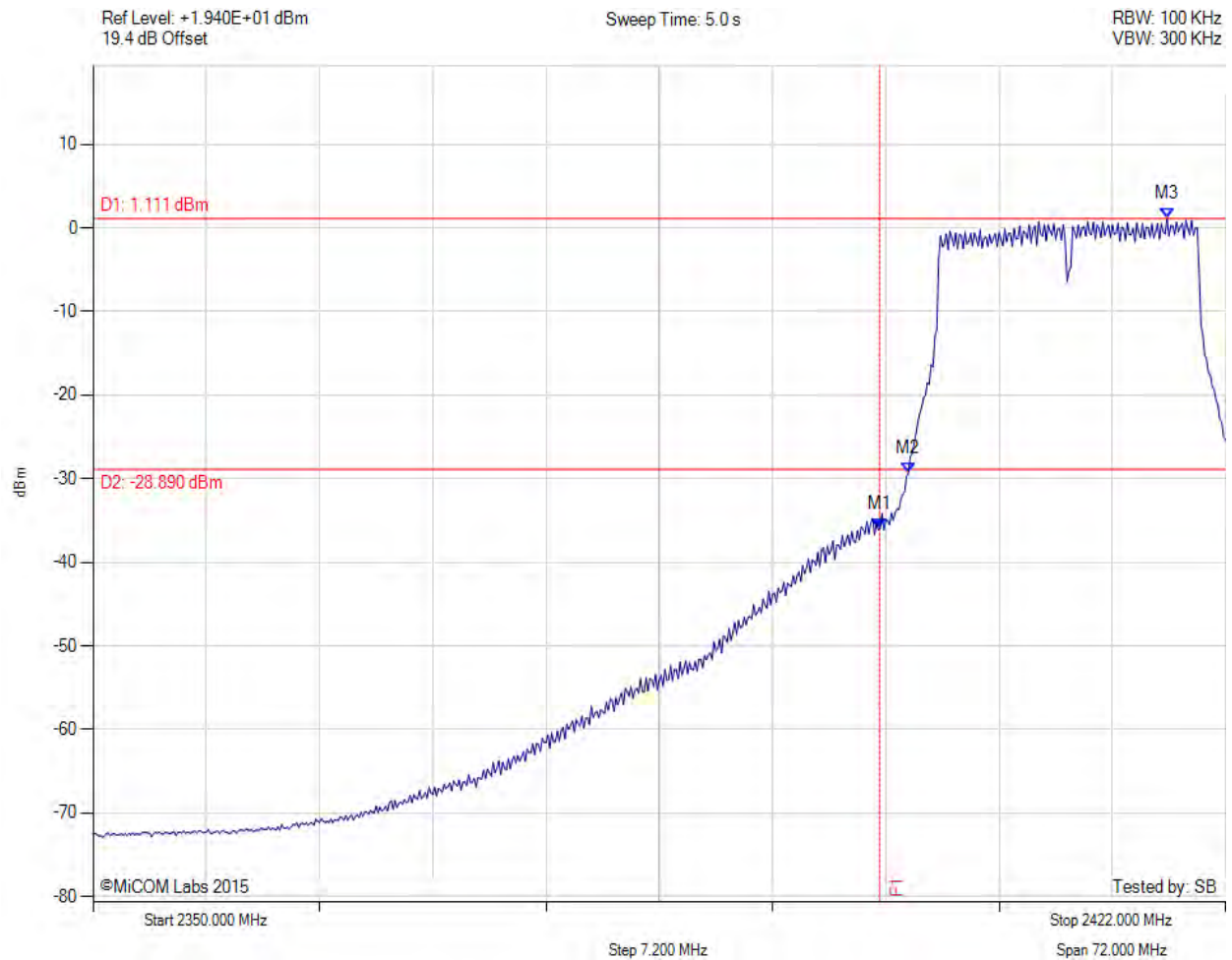


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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -35.939 dBm M2 : 2401.840 MHz : -29.338 dBm M3 : 2418.280 MHz : 1.111 dBm	Channel Frequency: 2412.00 MHz

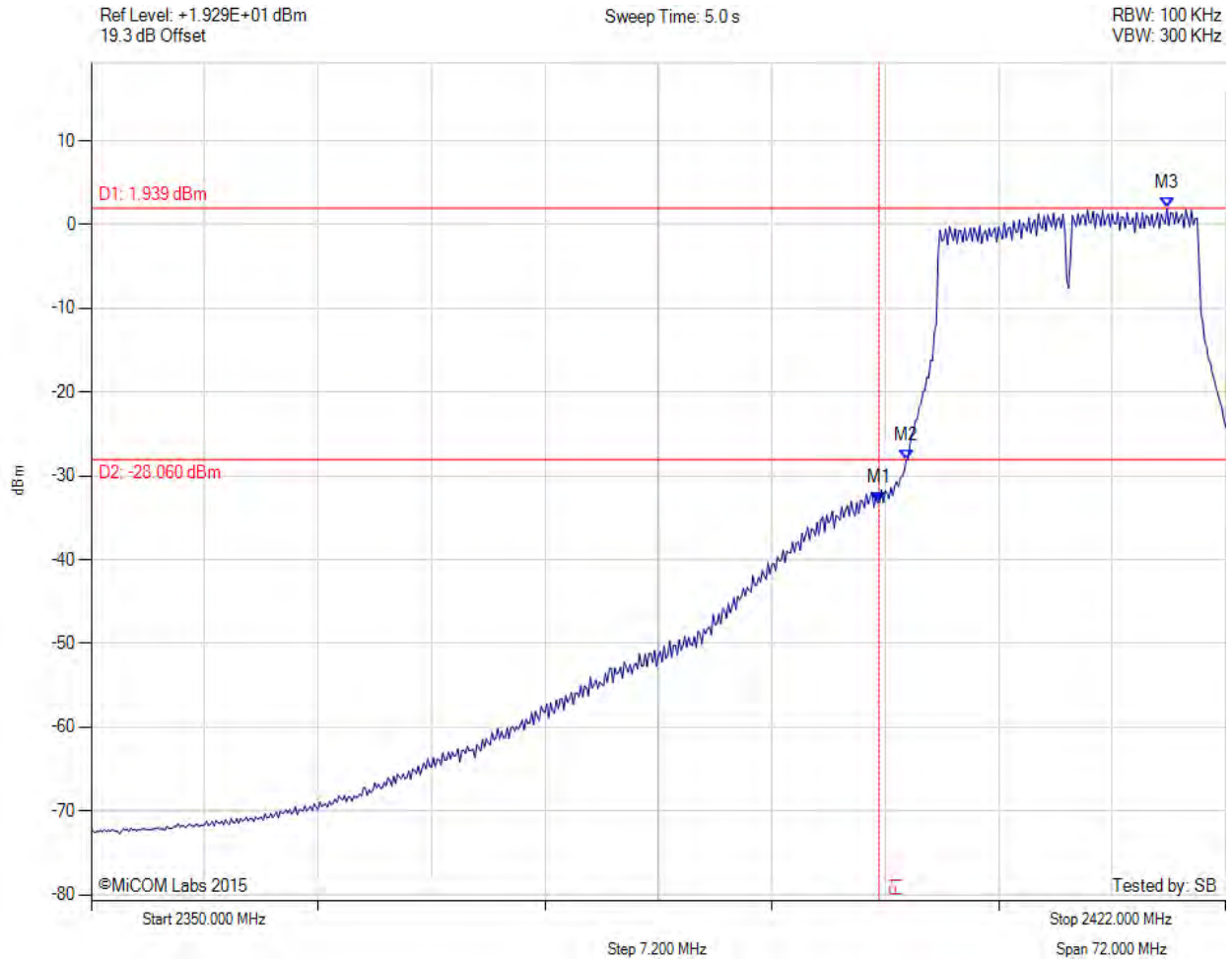
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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



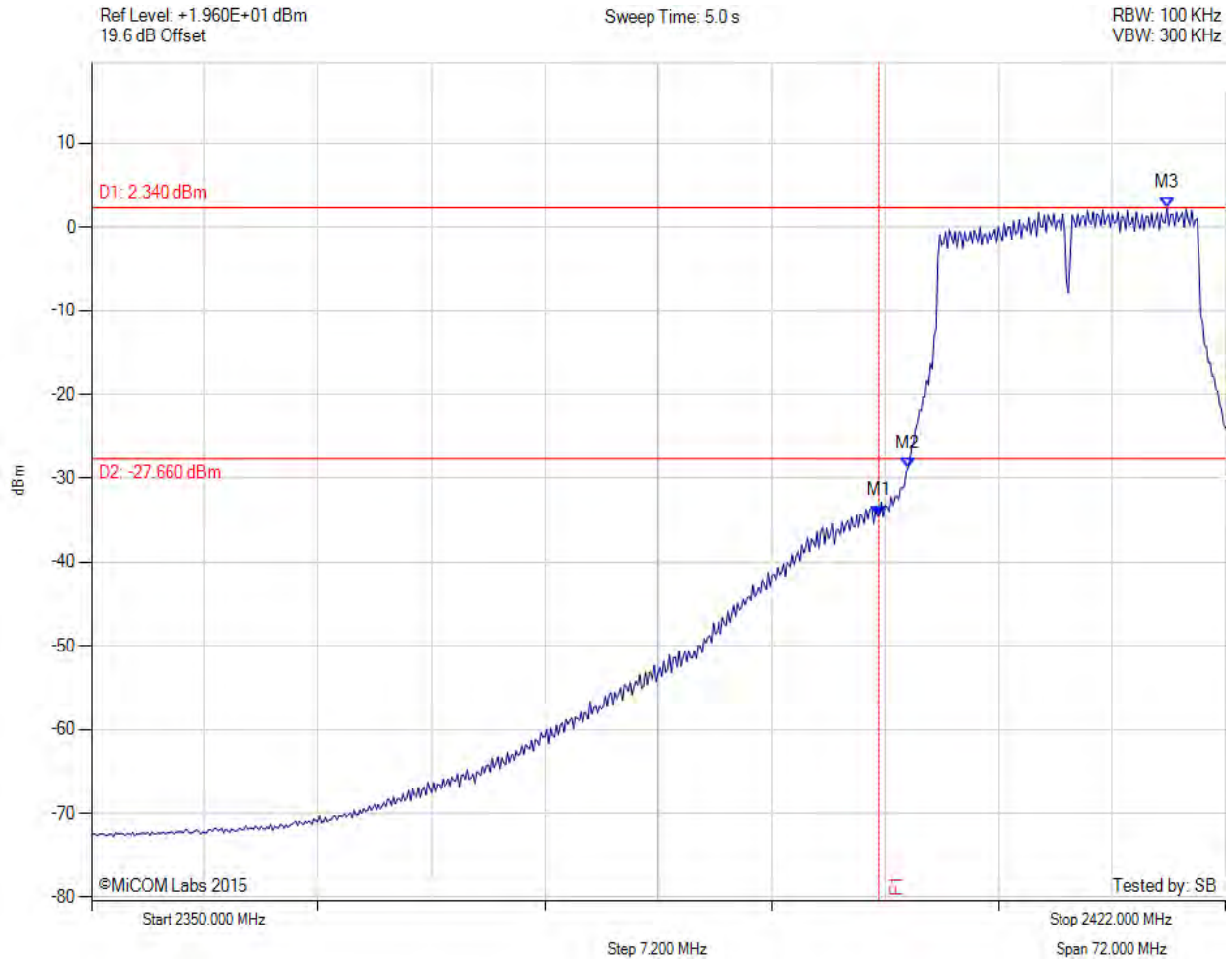
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -33.111 dBm M2 : 2401.720 MHz : -28.179 dBm M3 : 2418.280 MHz : 1.939 dBm	Channel Frequency: 2412.00 MHz

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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -34.410 dBm M2 : 2401.840 MHz : -28.761 dBm M3 : 2418.280 MHz : 2.340 dBm	Channel Frequency: 2412.00 MHz

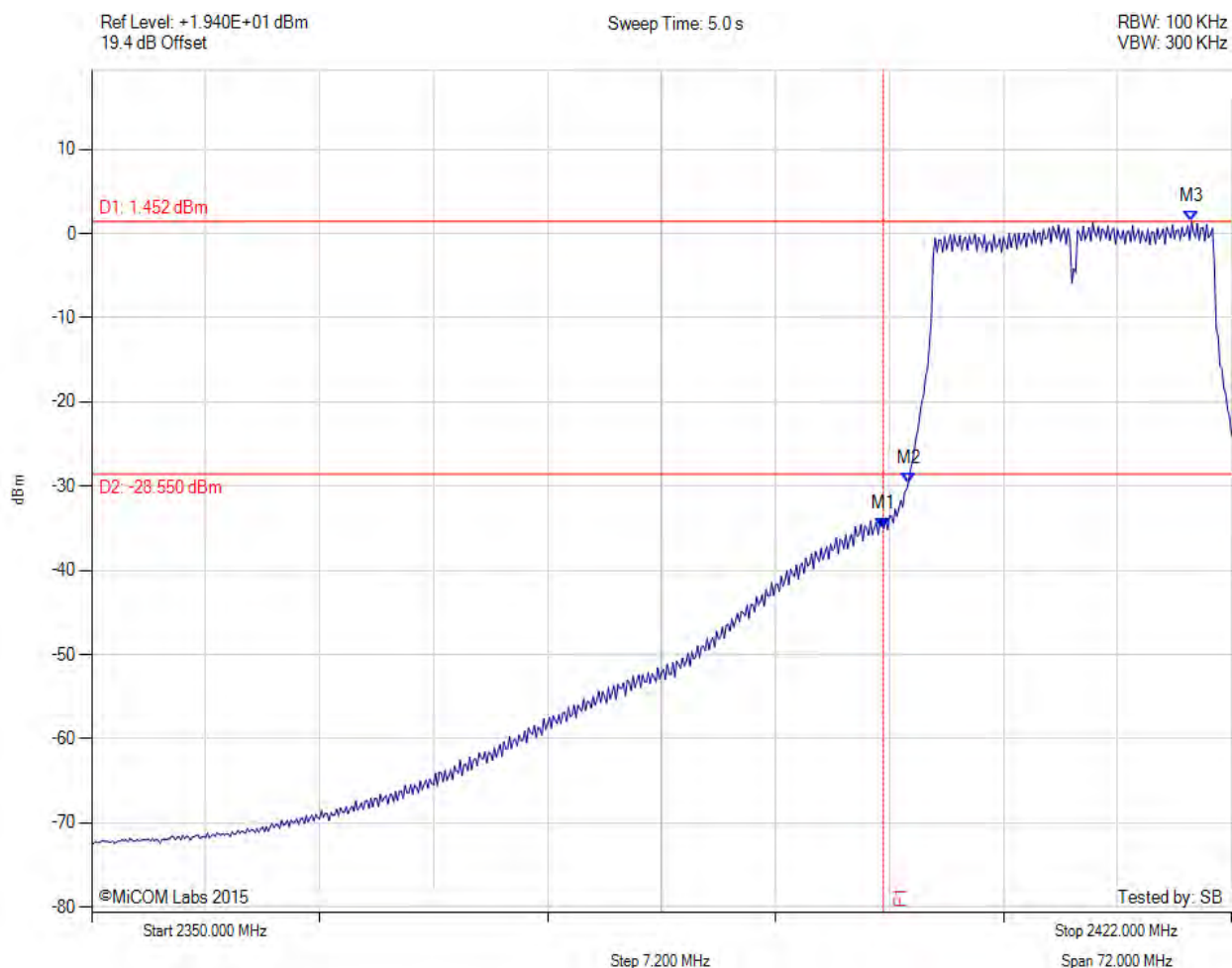
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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -35.057 dBm M2 : 2401.600 MHz : -29.591 dBm M3 : 2419.480 MHz : 1.452 dBm	Channel Frequency: 2412.00 MHz

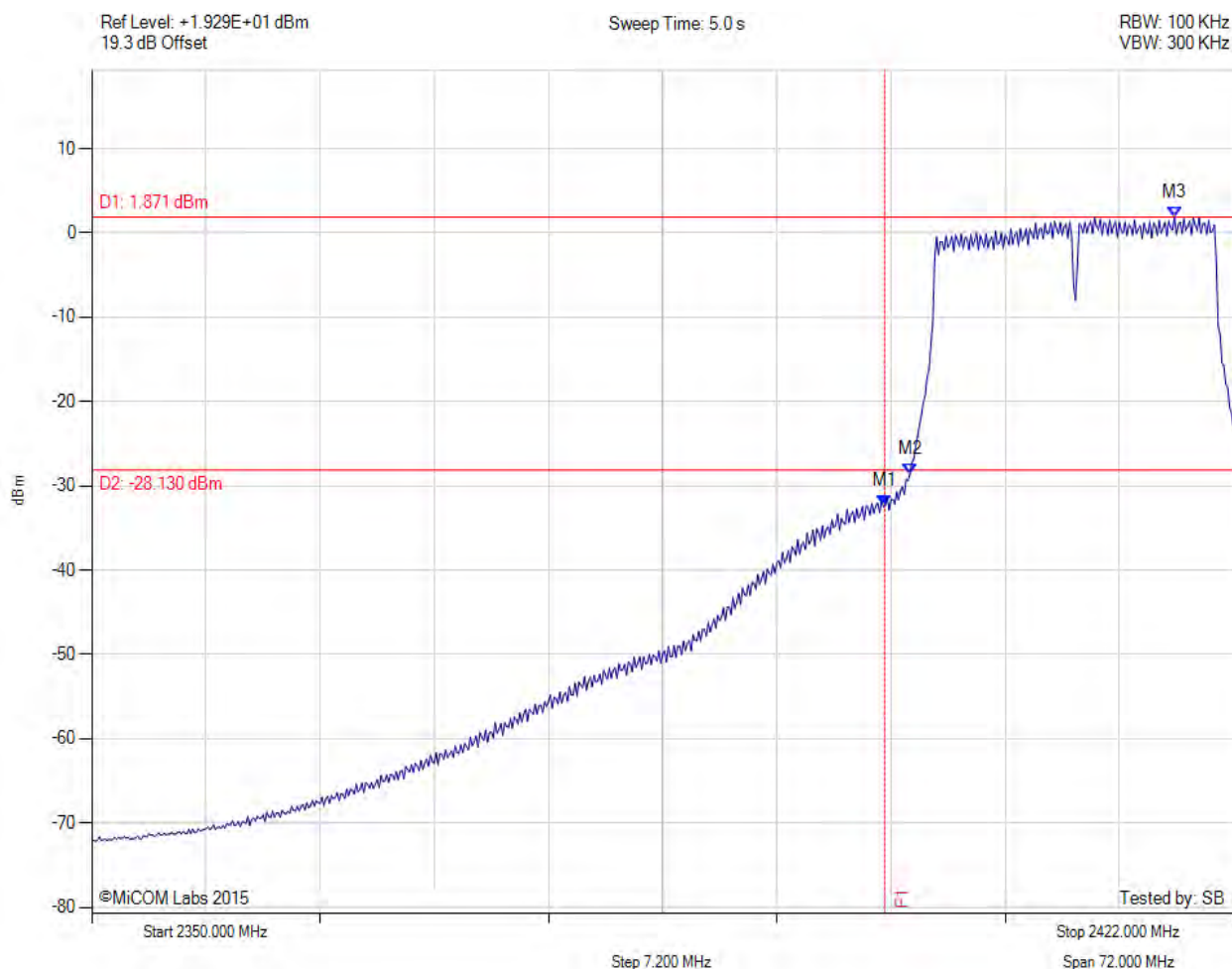
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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



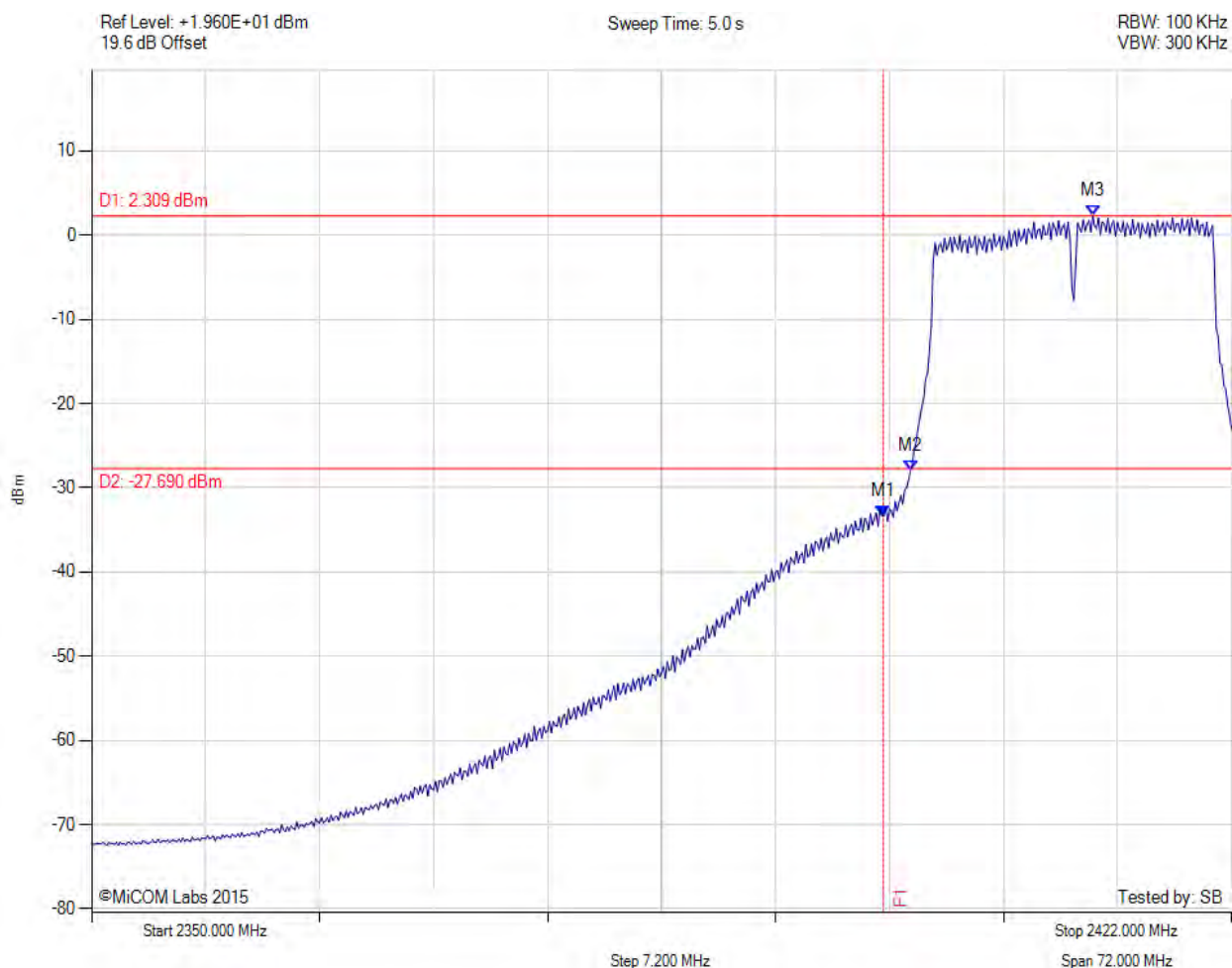
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -32.356 dBm M2 : 2401.600 MHz : -28.563 dBm M3 : 2418.280 MHz : 1.871 dBm	Channel Frequency: 2412.00 MHz

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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



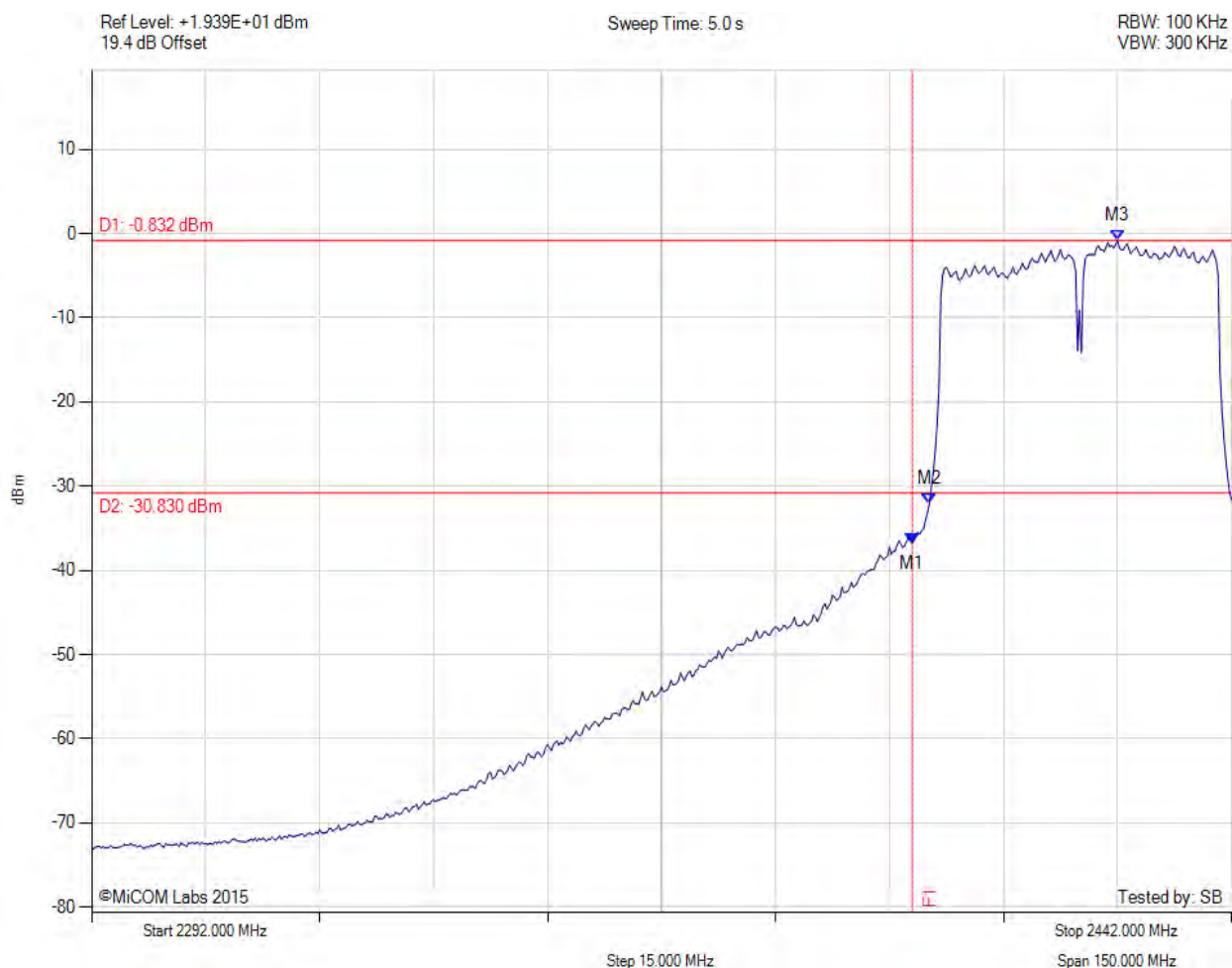
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -33.346 dBm M2 : 2401.720 MHz : -28.011 dBm M3 : 2413.240 MHz : 2.309 dBm	Channel Frequency: 2412.00 MHz

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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -36.750 dBm M2 : 2402.250 MHz : -32.056 dBm M3 : 2427.000 MHz : -0.832 dBm	Channel Frequency: 2422.00 MHz

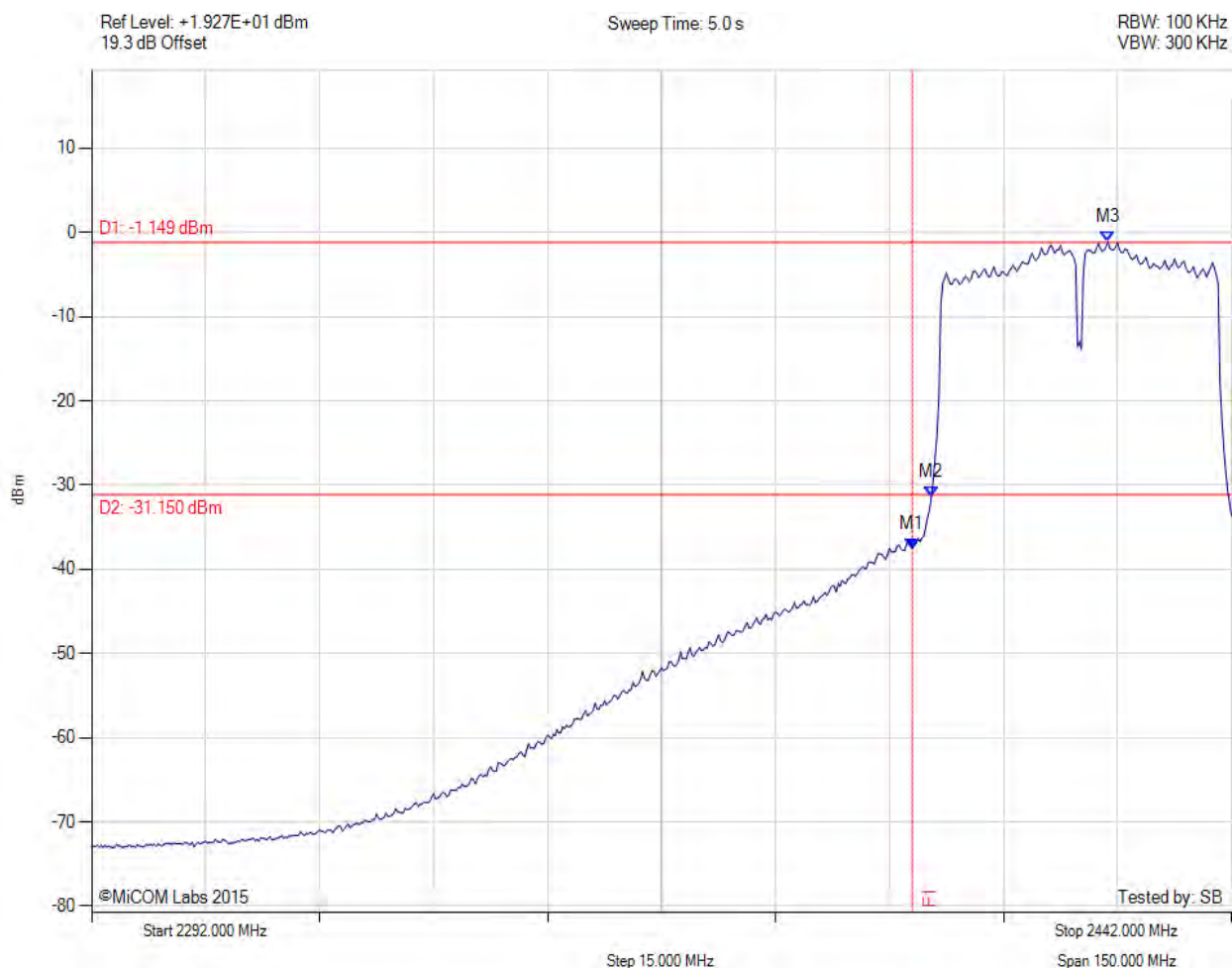
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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



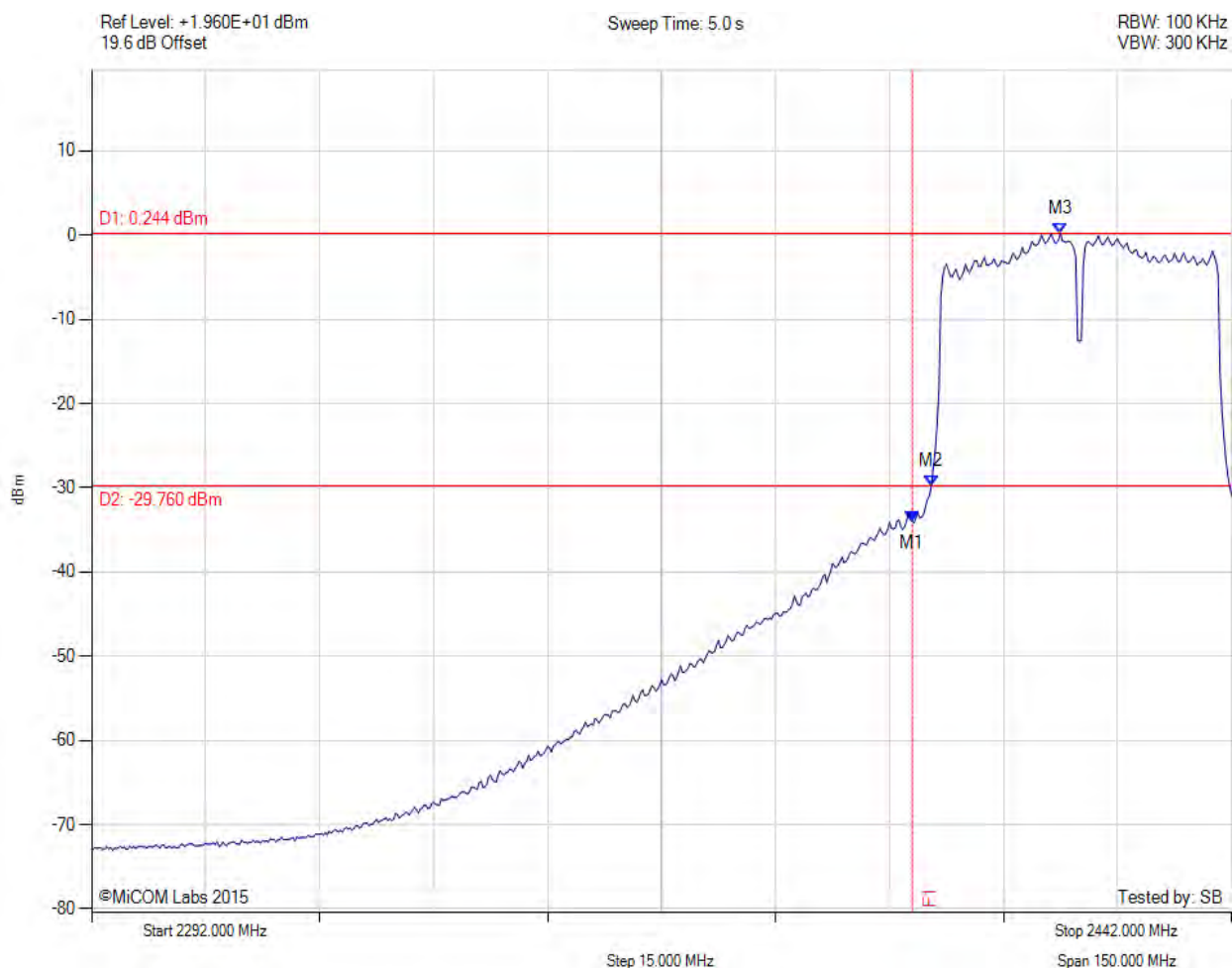
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -37.534 dBm M2 : 2402.500 MHz : -31.445 dBm M3 : 2425.750 MHz : -1.149 dBm	Channel Frequency: 2422.00 MHz

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CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2400.000 MHz : -33.995 dBm M2 : 2402.500 MHz : -29.807 dBm M3 : 2419.500 MHz : 0.244 dBm	Channel Frequency: 2422.00 MHz

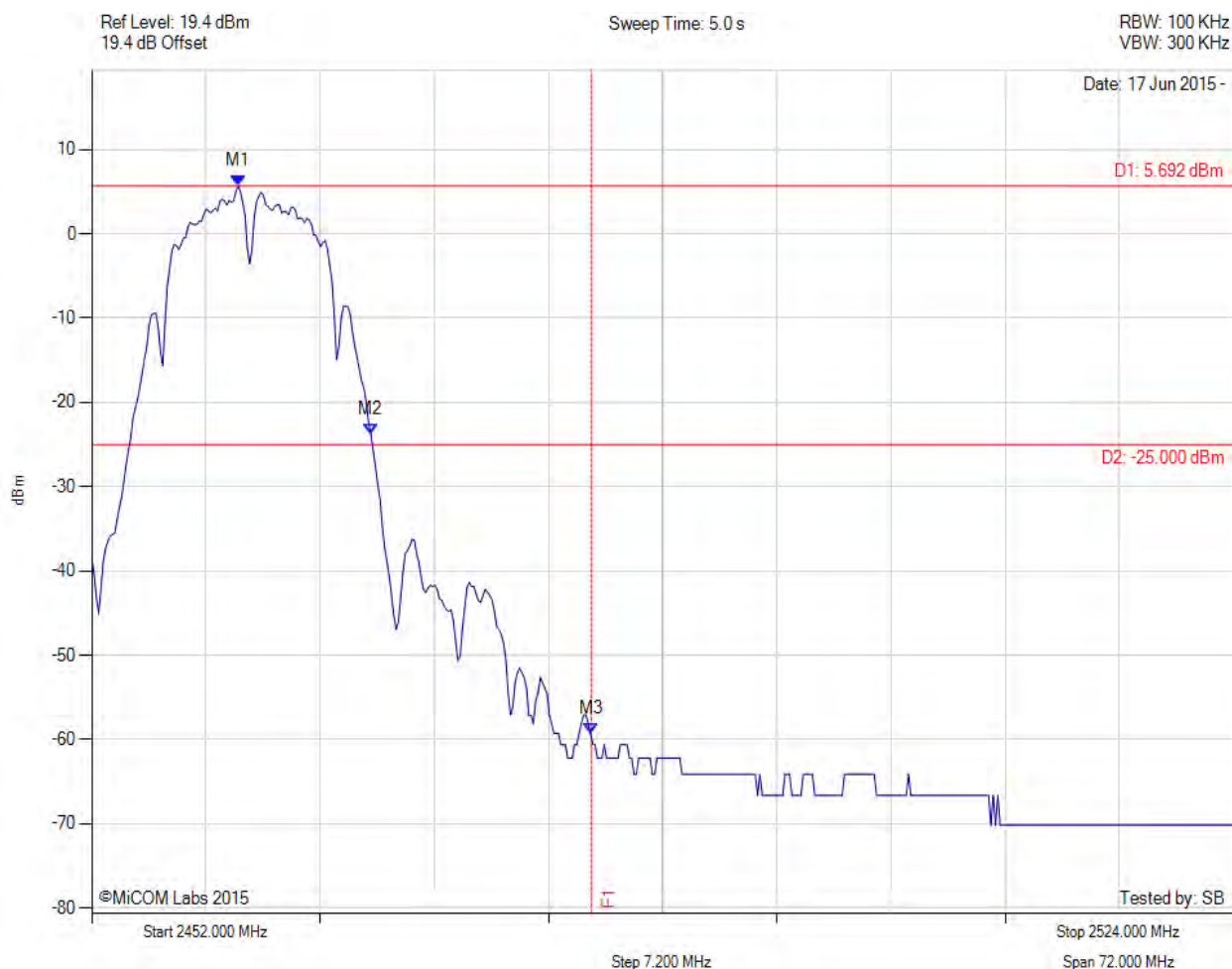
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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2461.234 MHz : 5.692 dBm M2 : 2469.603 MHz : -23.825 dBm M3 : 2483.500 MHz : -59.263 dBm	Channel Frequency: 2462.00 MHz

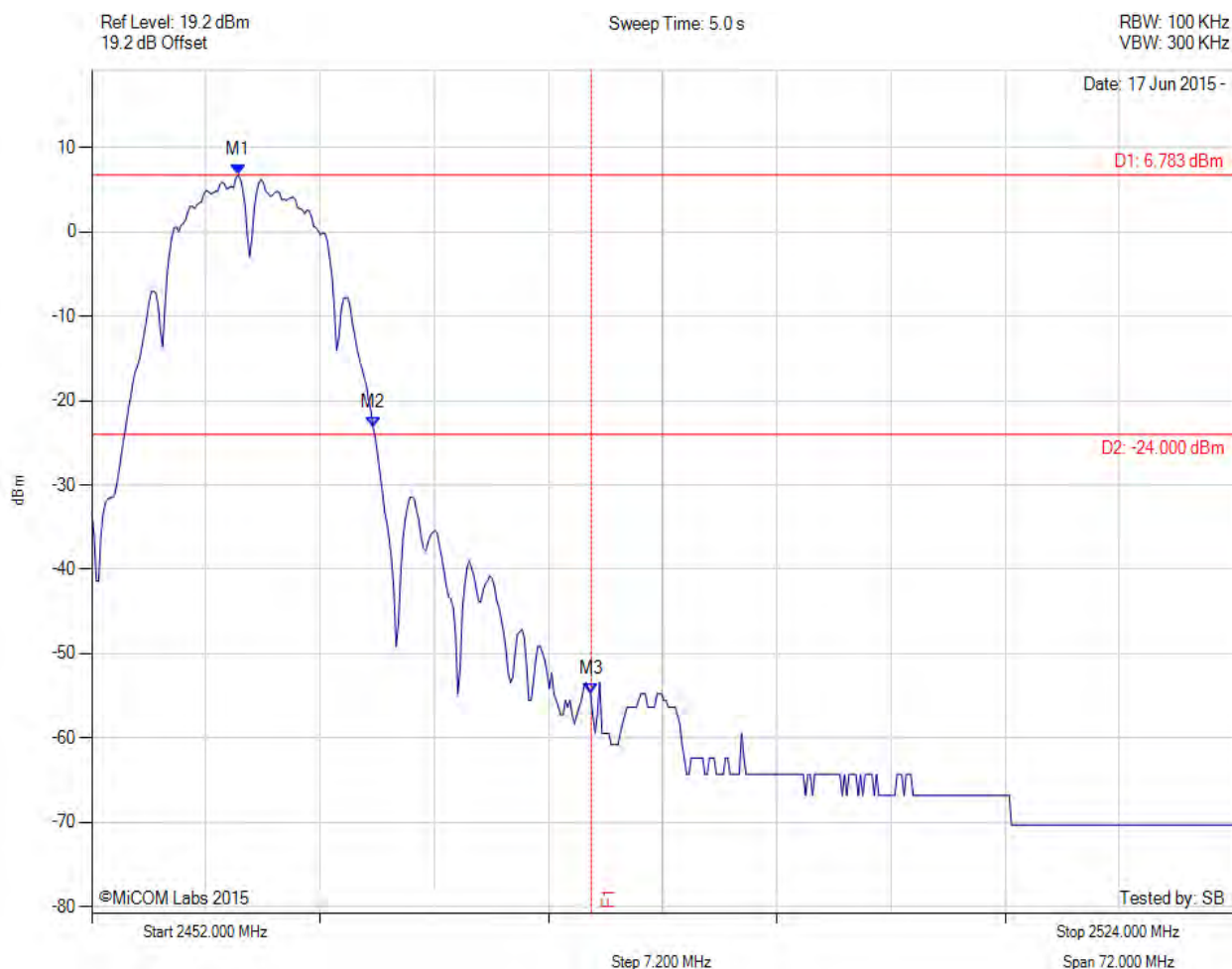
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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2461.234 MHz : 6.783 dBm M2 : 2469.747 MHz : -23.224 dBm M3 : 2483.500 MHz : -54.782 dBm	Channel Frequency: 2462.00 MHz

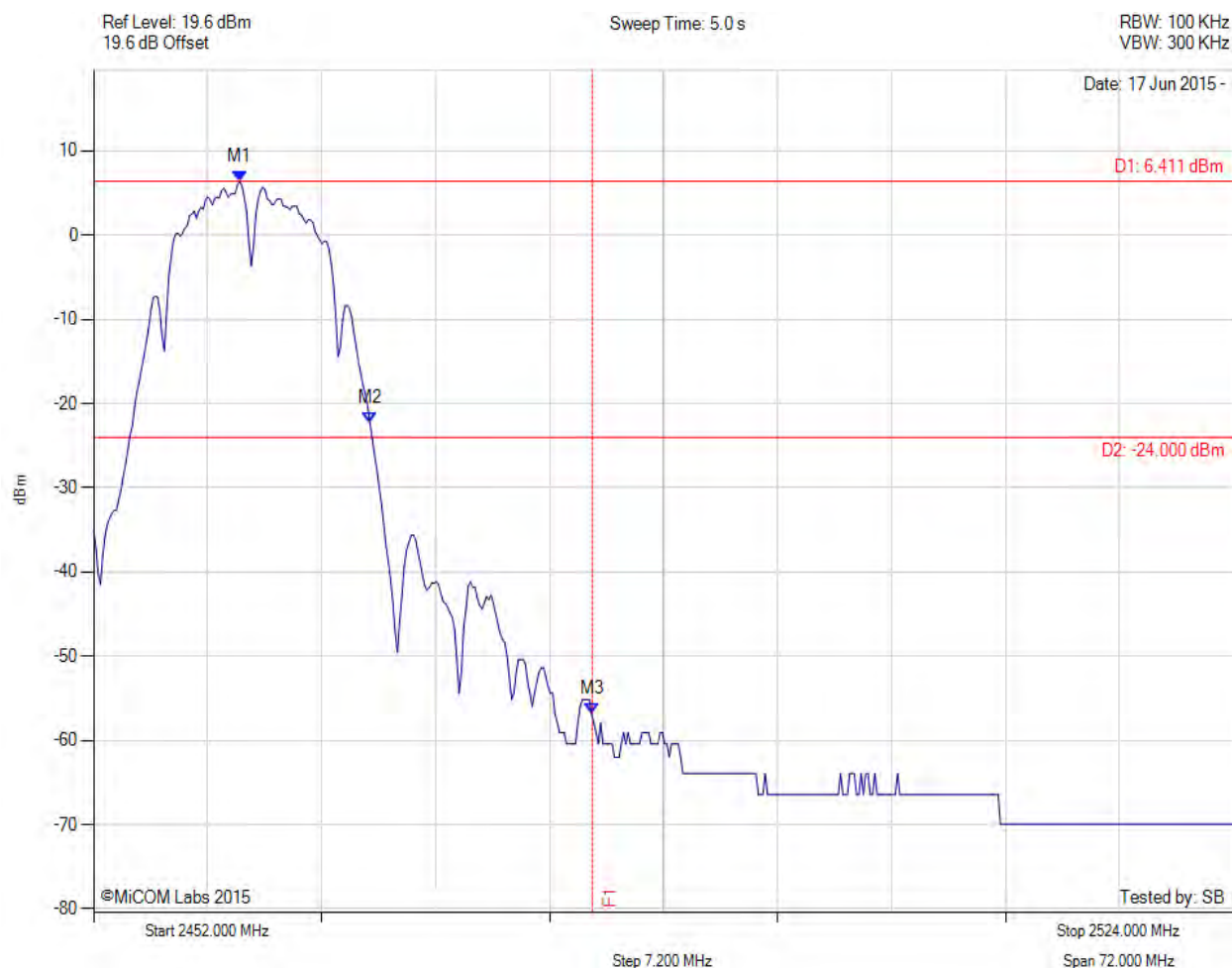
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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



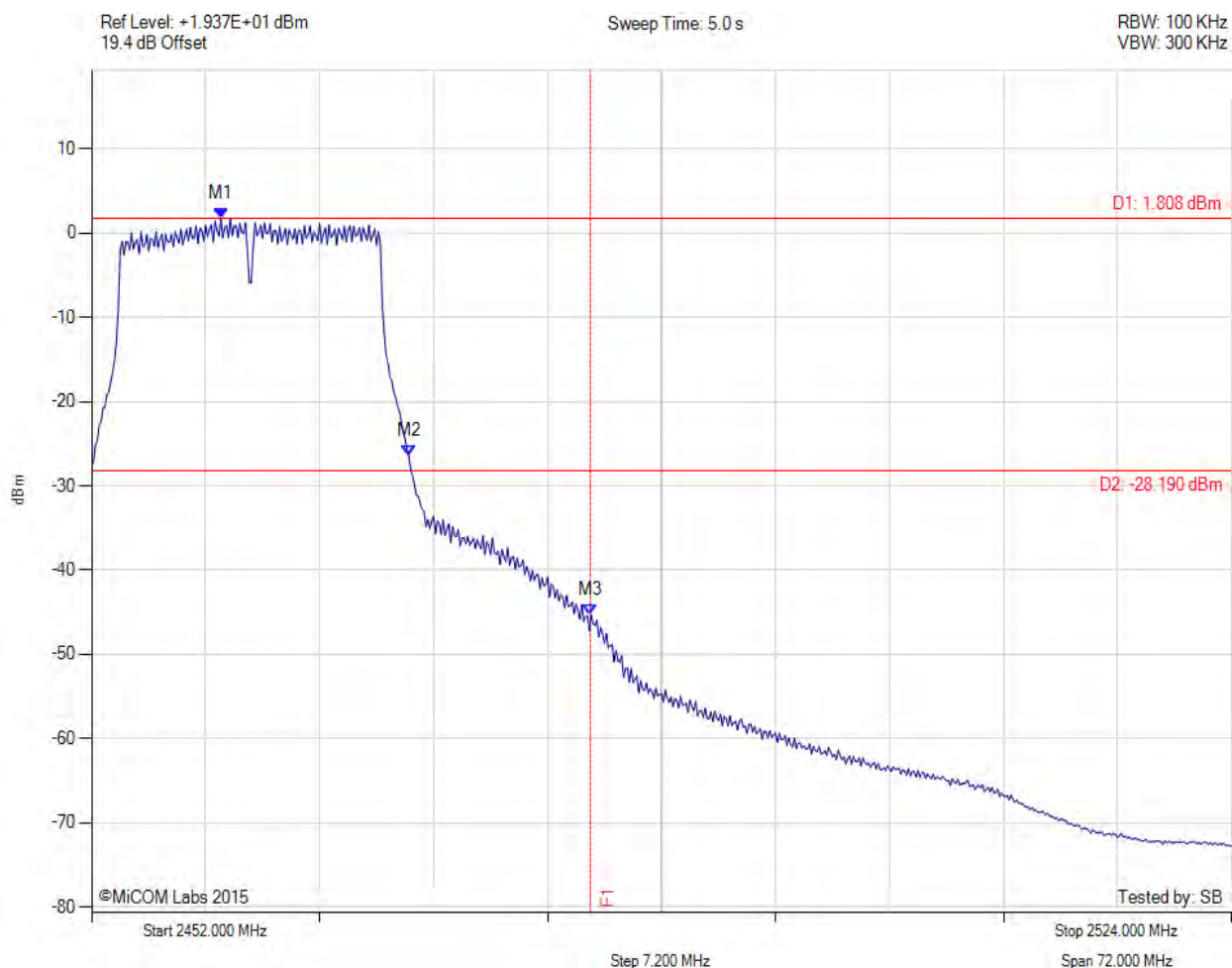
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2461.234 MHz : 6.411 dBm M2 : 2469.459 MHz : -22.322 dBm M3 : 2483.500 MHz : -56.880 dBm	Channel Frequency: 2462.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



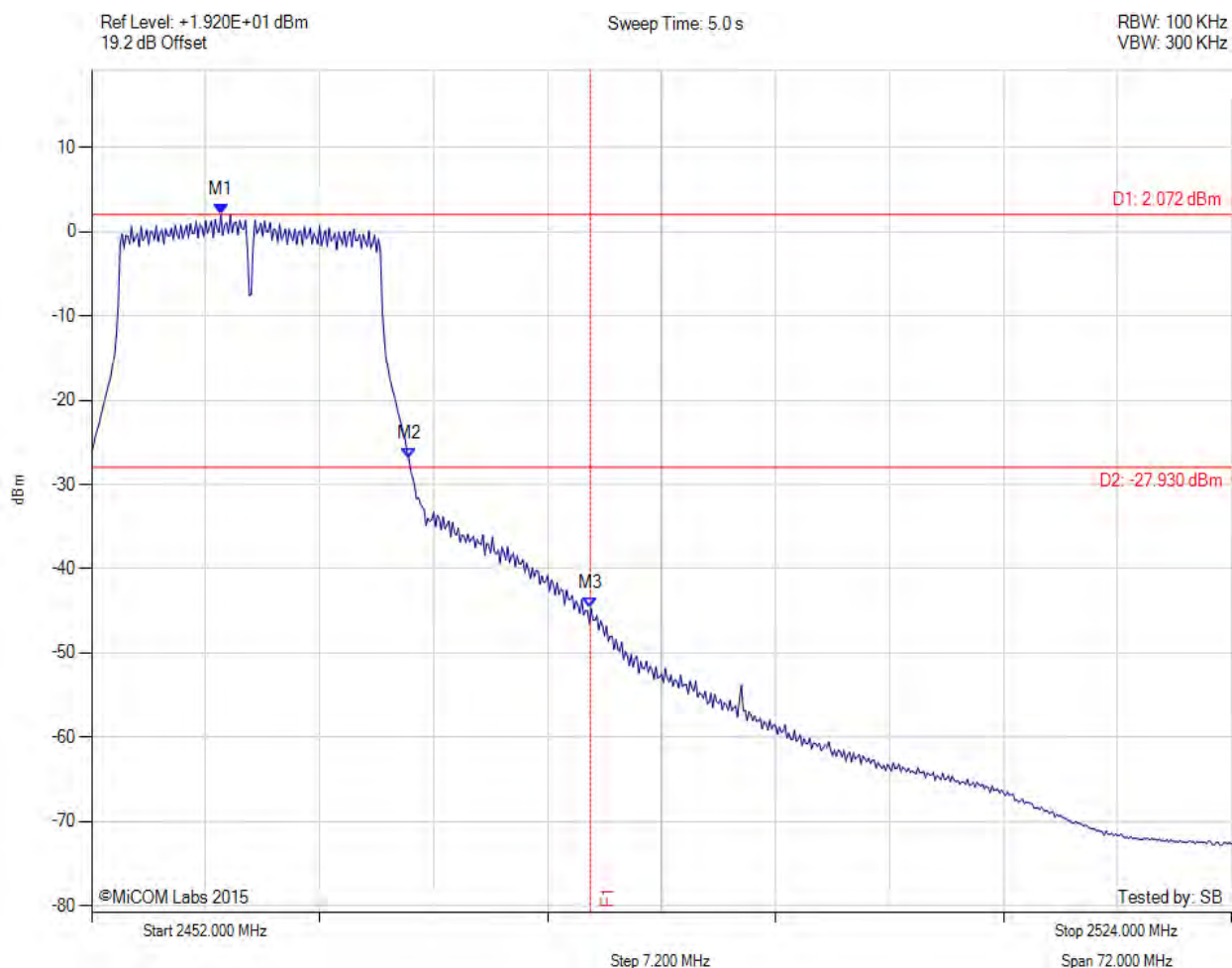
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2460.160 MHz : 1.808 dBm M2 : 2472.040 MHz : -26.432 dBm M3 : 2483.500 MHz : -45.364 dBm	Channel Frequency: 2462.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2460.160 MHz : 2.072 dBm M2 : 2472.040 MHz : -26.962 dBm M3 : 2483.500 MHz : -44.726 dBm	Channel Frequency: 2462.00 MHz

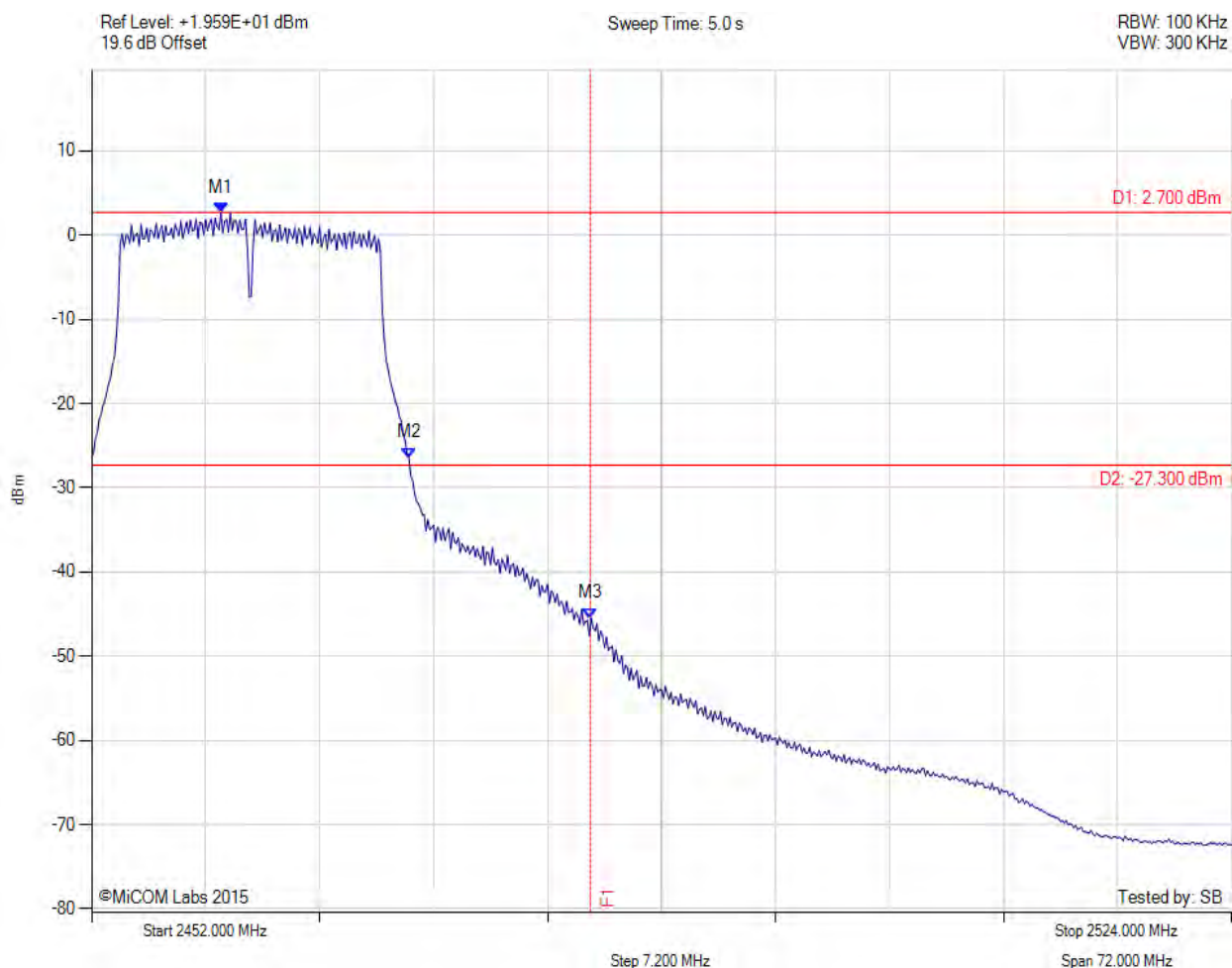
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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



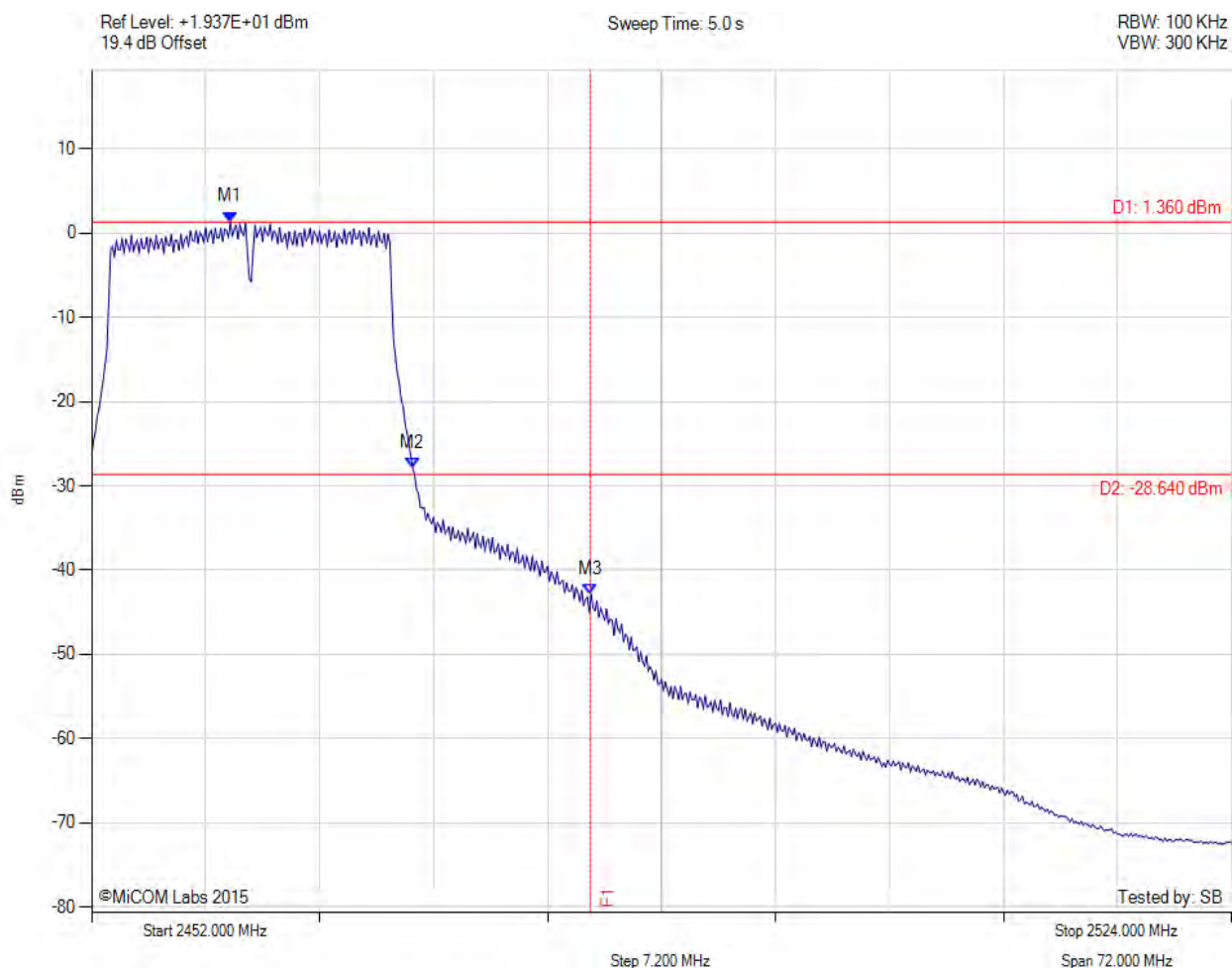
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2460.160 MHz : 2.700 dBm M2 : 2472.040 MHz : -26.446 dBm M3 : 2483.500 MHz : -45.506 dBm	Channel Frequency: 2462.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



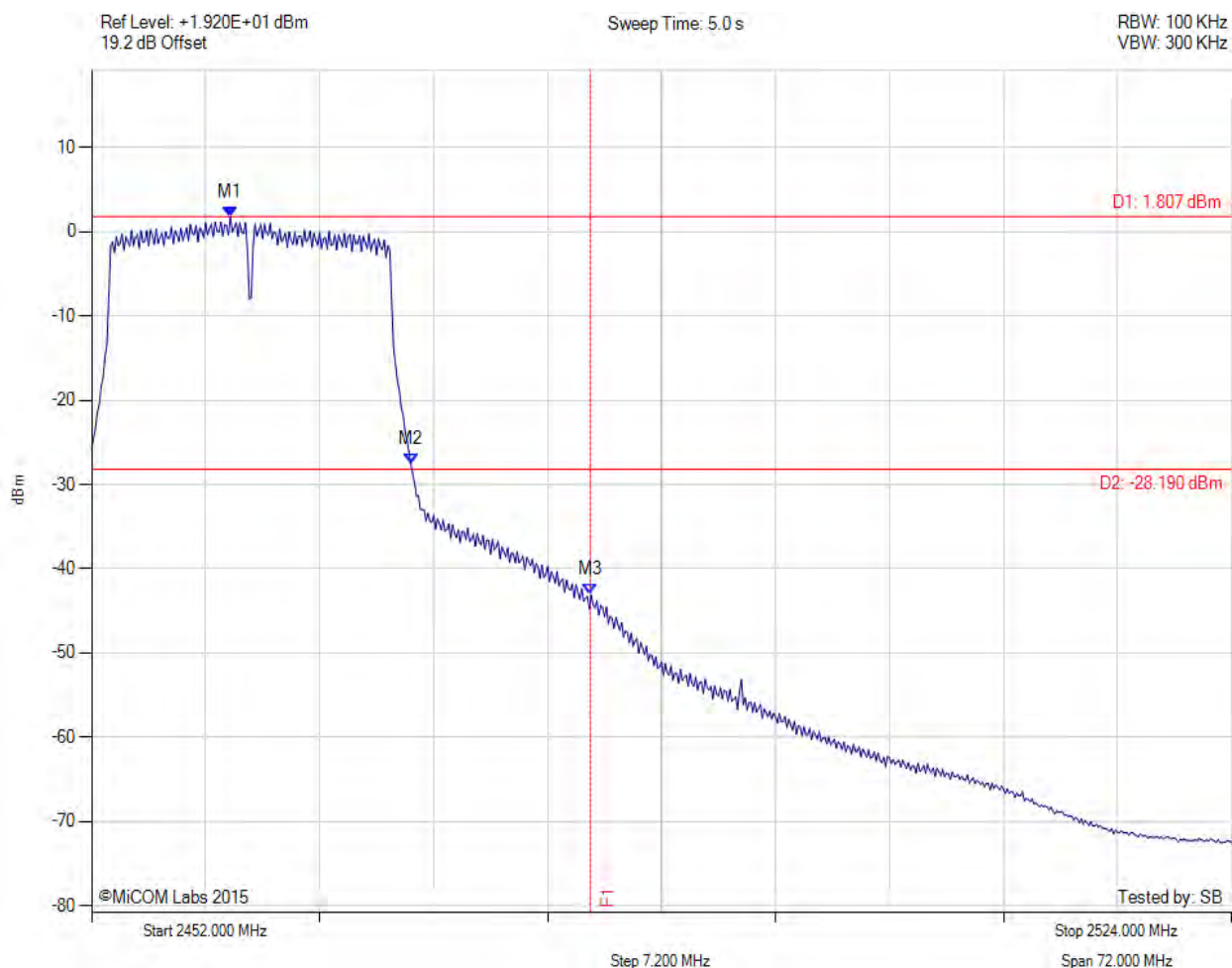
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2460.760 MHz : 1.360 dBm M2 : 2472.280 MHz : -27.866 dBm M3 : 2483.500 MHz : -42.831 dBm	Channel Frequency: 2462.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



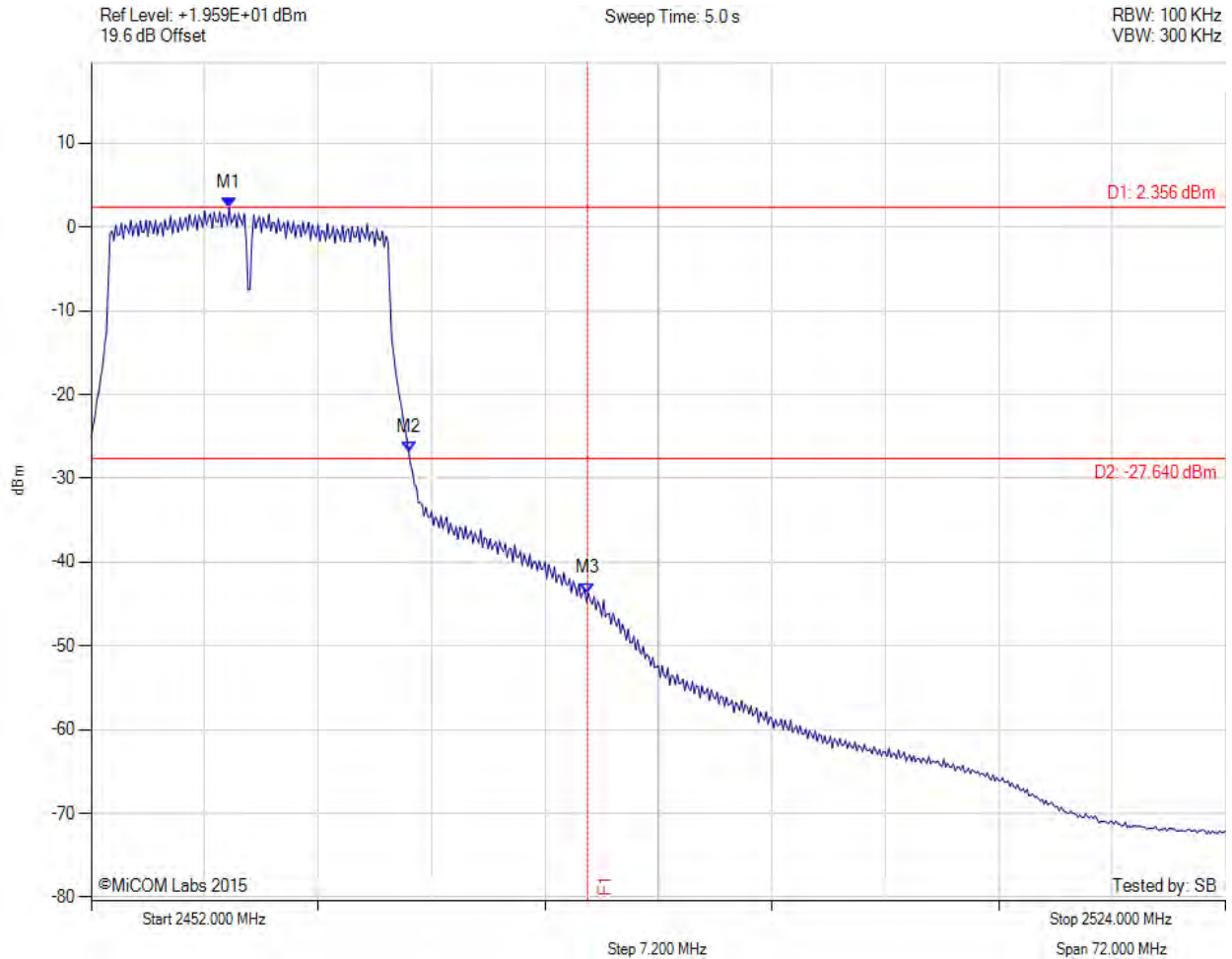
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2460.760 MHz : 1.807 dBm M2 : 2472.160 MHz : -27.534 dBm M3 : 2483.500 MHz : -43.106 dBm	Channel Frequency: 2462.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



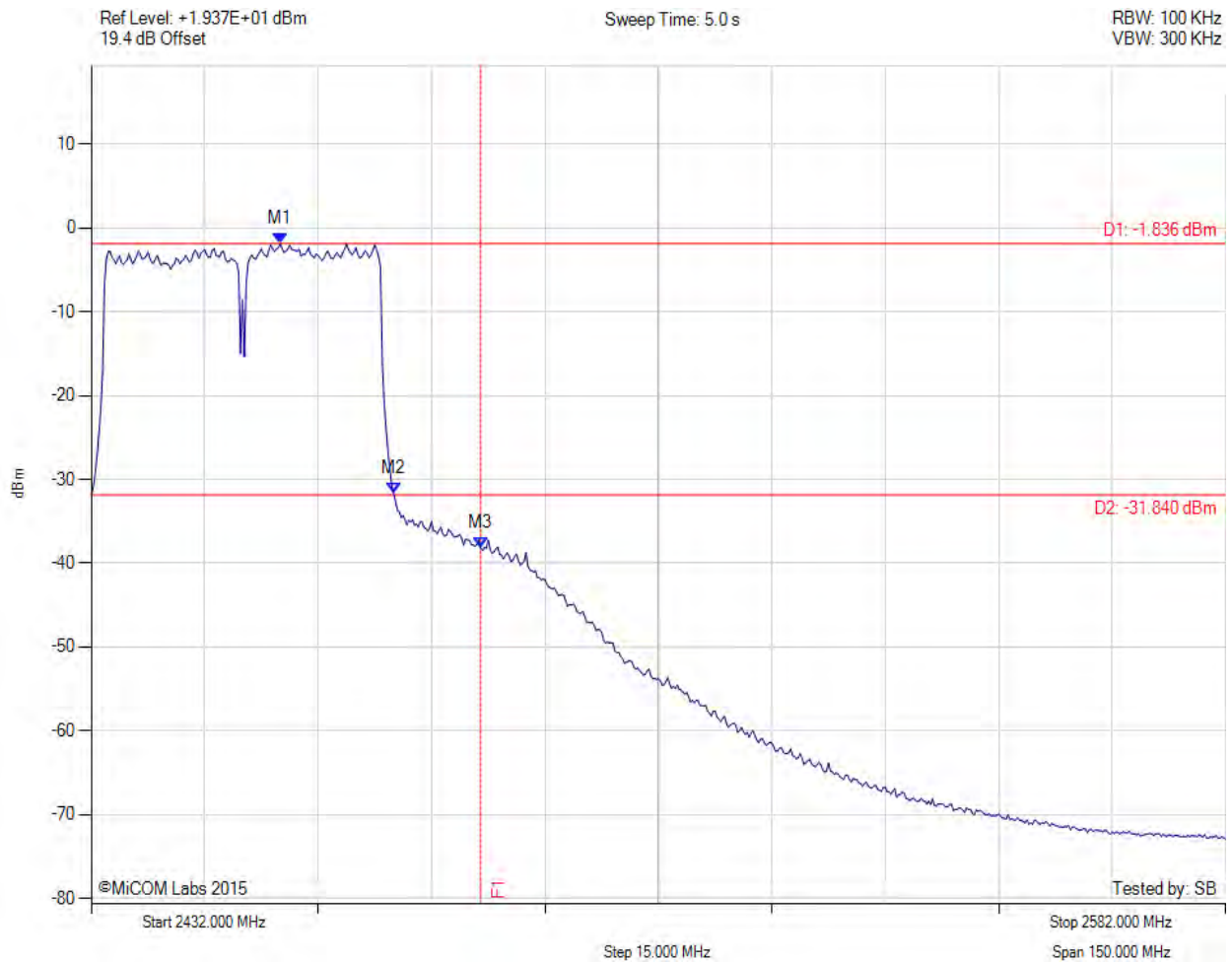
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2460.760 MHz : 2.356 dBm M2 : 2472.160 MHz : -26.861 dBm M3 : 2483.500 MHz : -43.704 dBm	Channel Frequency: 2462.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



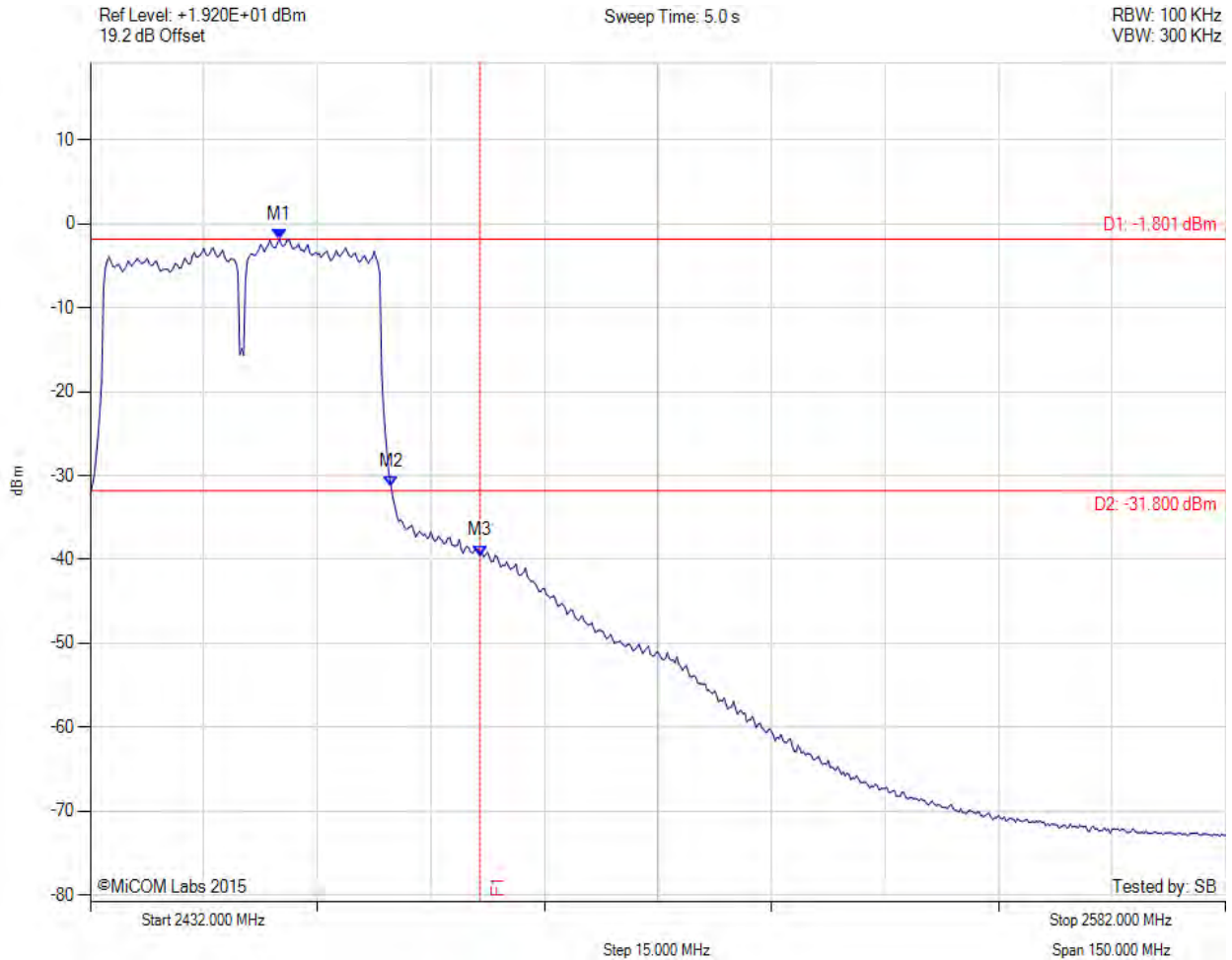
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2452.000 MHz : -1.836 dBm M2 : 2472.000 MHz : -31.662 dBm M3 : 2483.500 MHz : -38.197 dBm	Channel Frequency: 2452.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



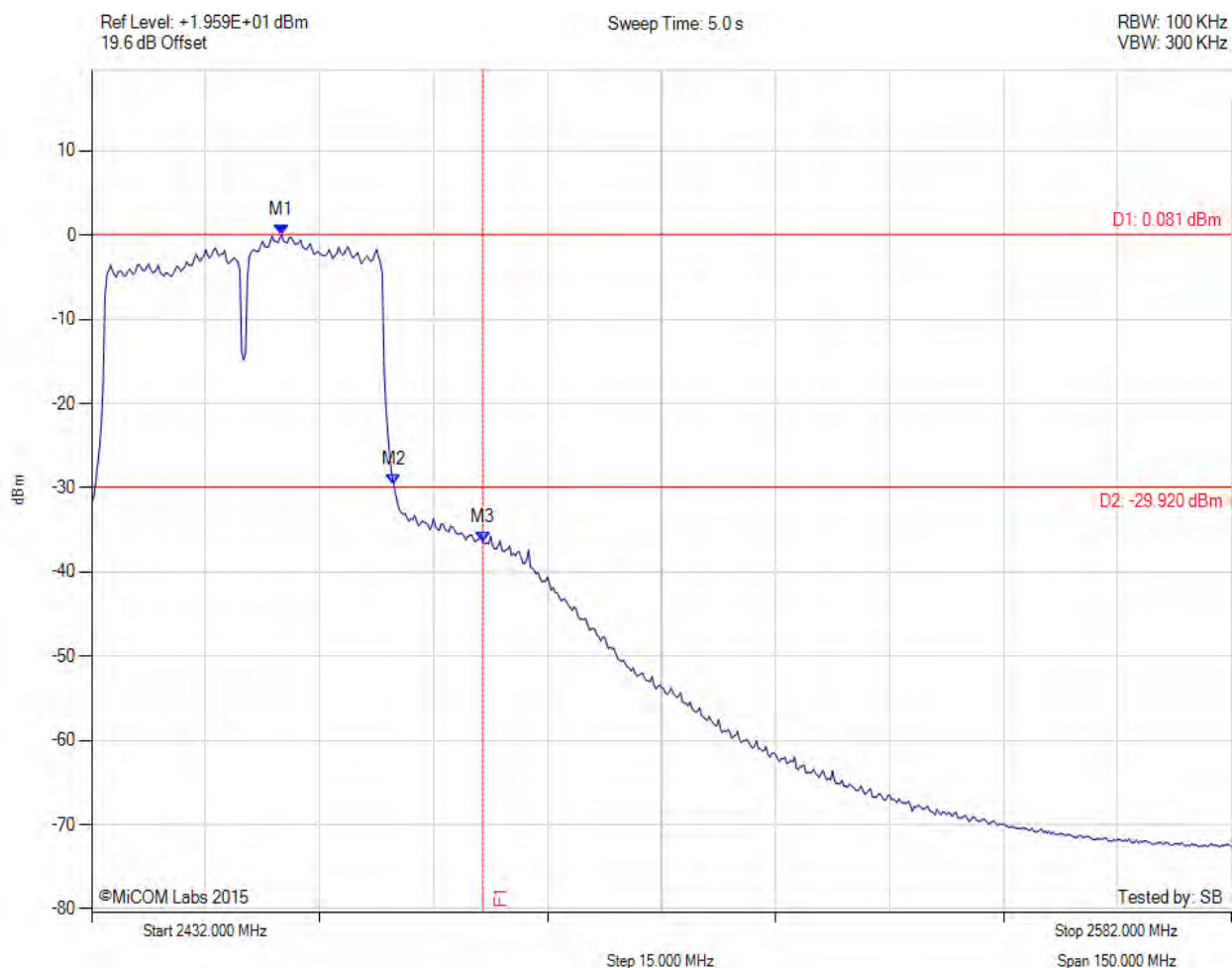
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2457.000 MHz : -1.801 dBm M2 : 2471.750 MHz : -31.386 dBm M3 : 2483.500 MHz : -39.542 dBm	Channel Frequency: 2452.00 MHz

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CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc

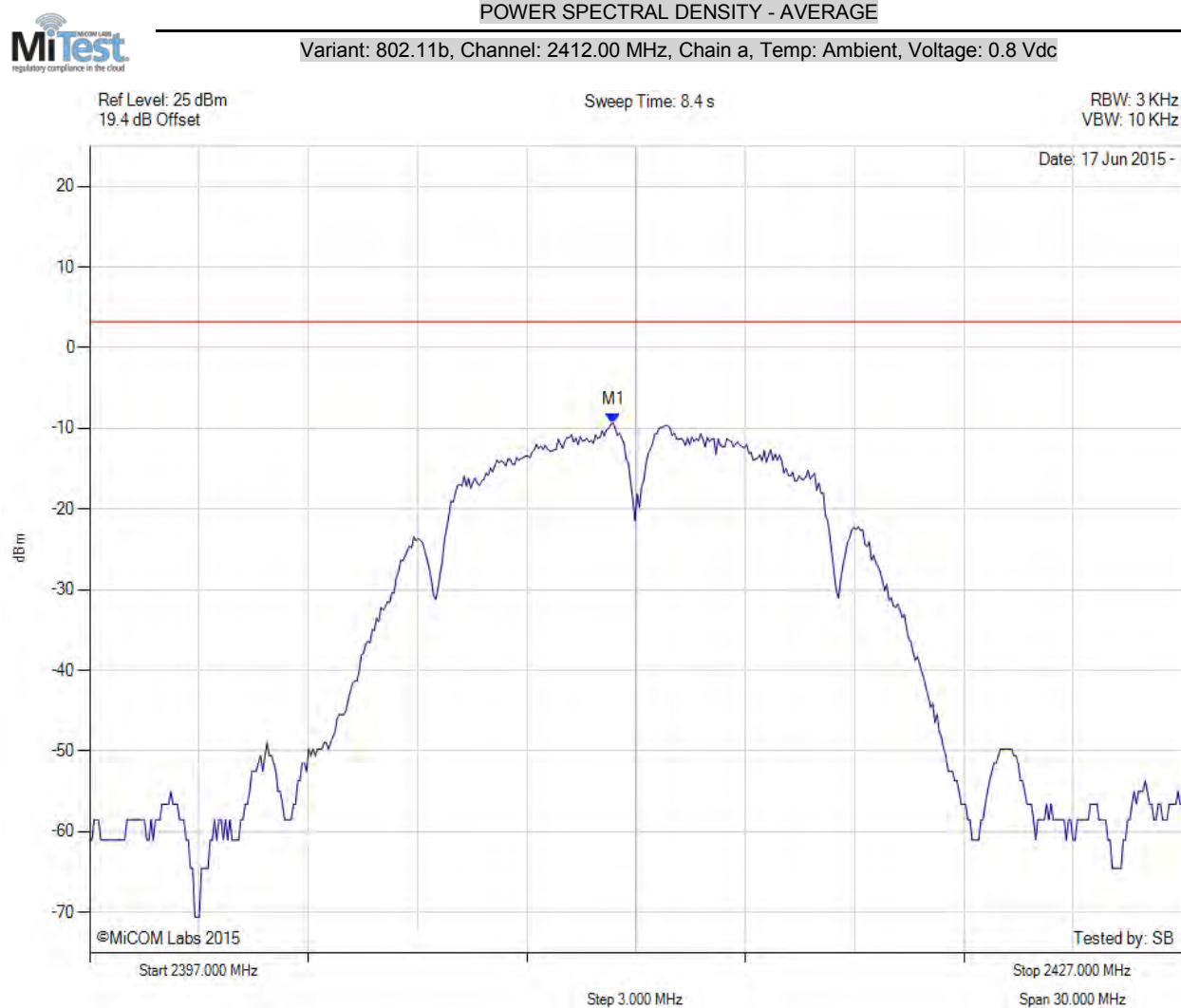


Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 2452.000 MHz : 0.081 dBm M2 : 2471.750 MHz : -29.629 dBm M3 : 2483.500 MHz : -36.504 dBm	Channel Frequency: 2452.00 MHz

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A.3. Power Spectral Density



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2411.369 MHz : -9.321 dBm	Limit: ≤ 3.230 dBm

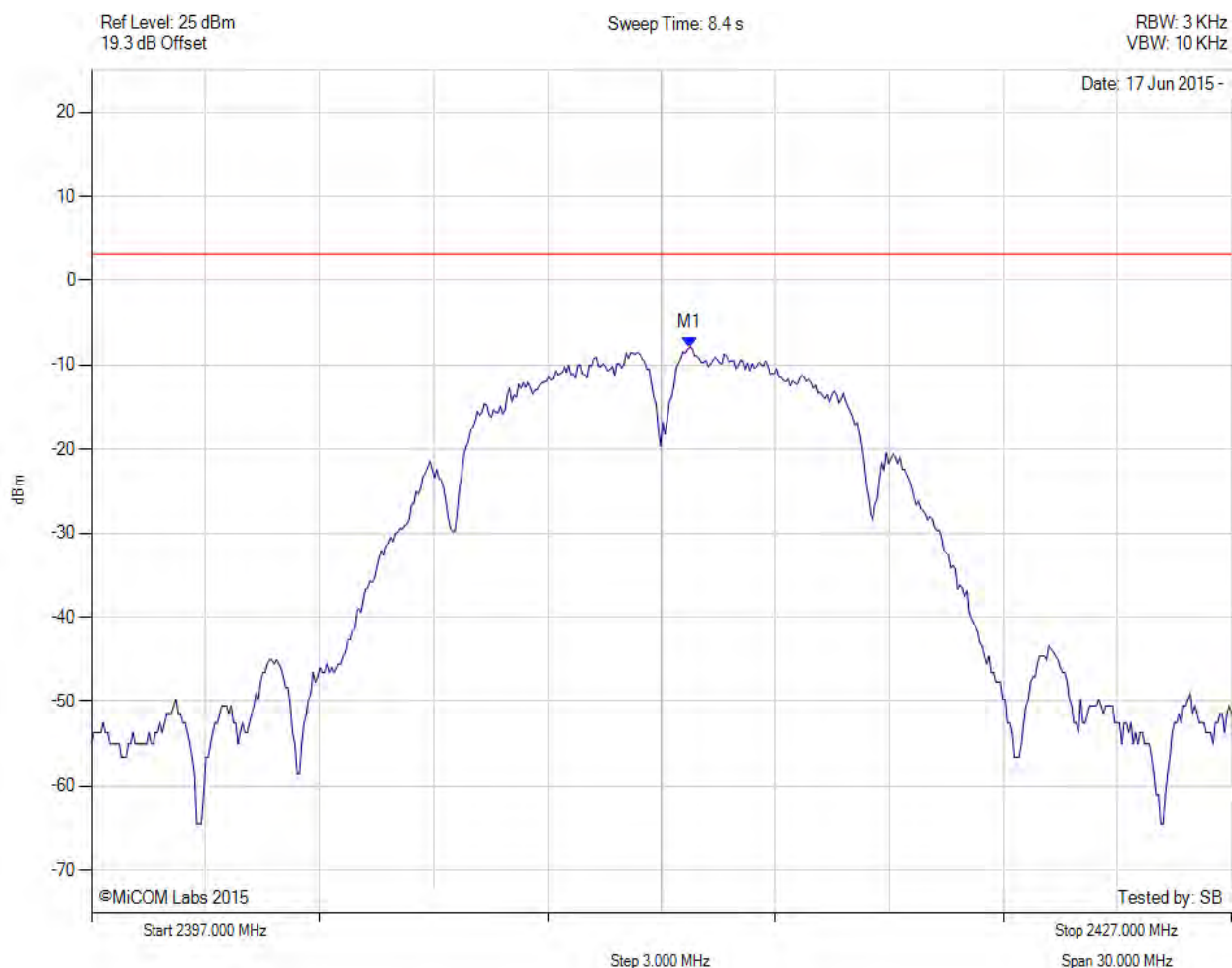
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



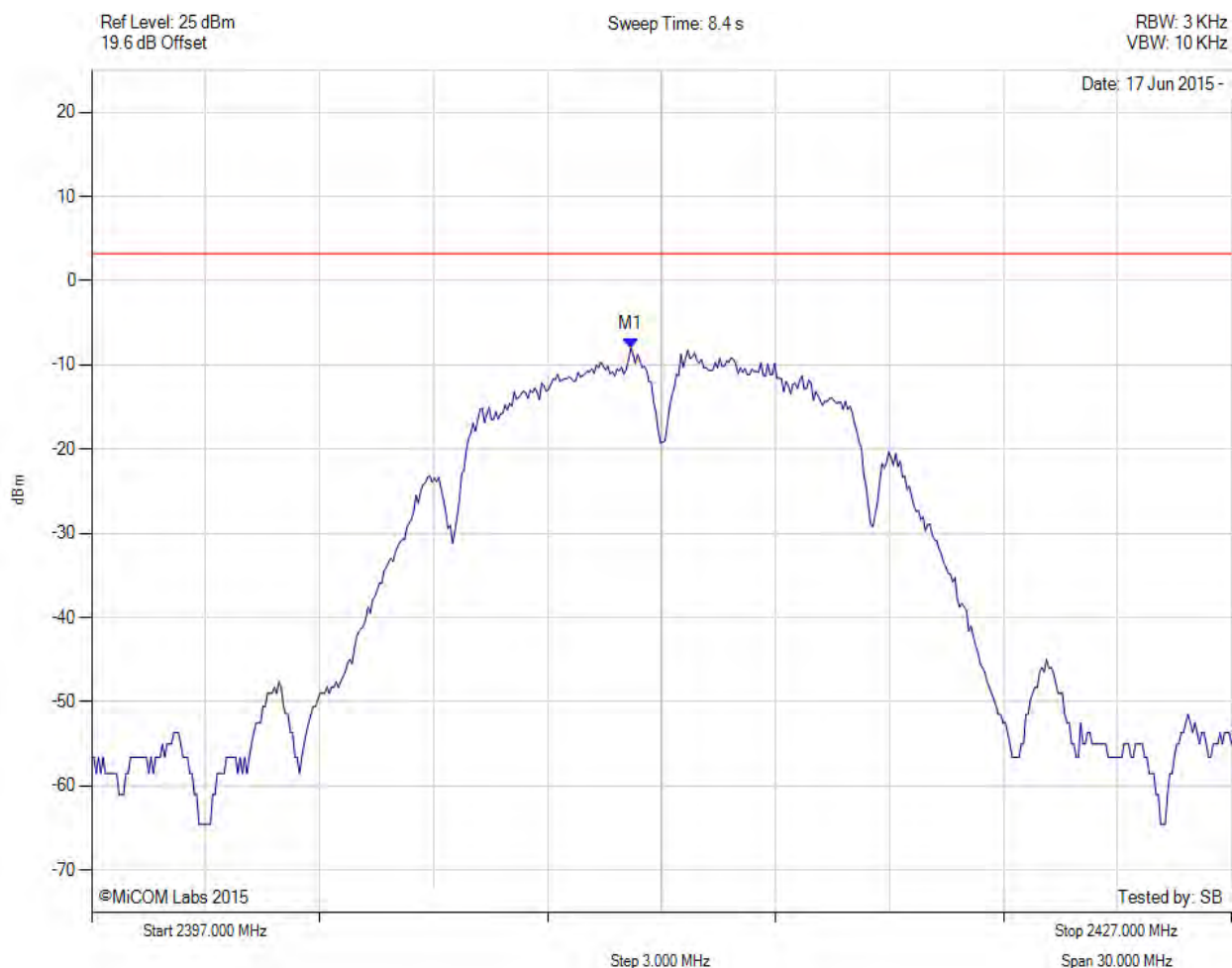
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.752 MHz : -7.875 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2411.188 MHz : -8.017 dBm	Limit: ≤ 3.230 dBm

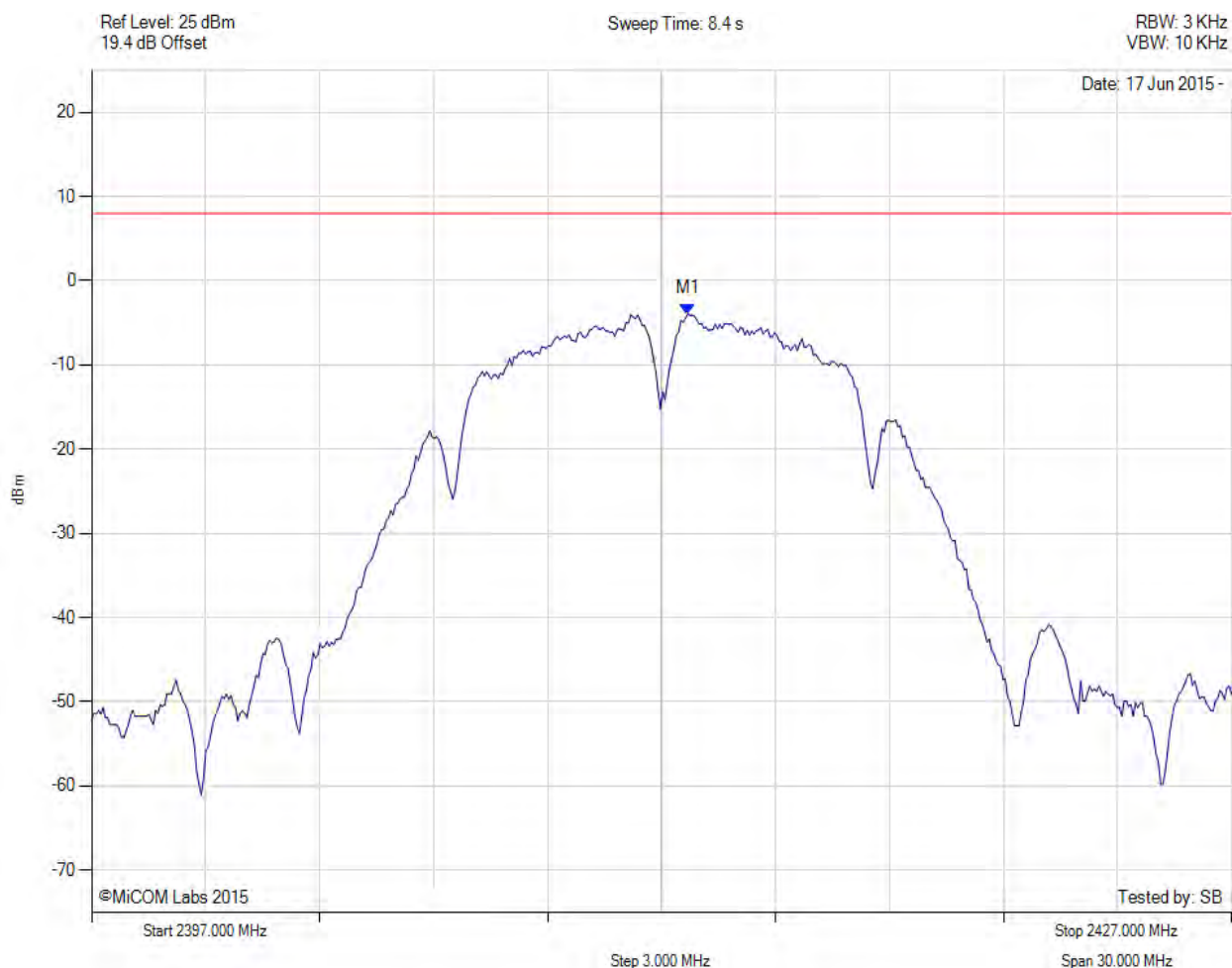
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



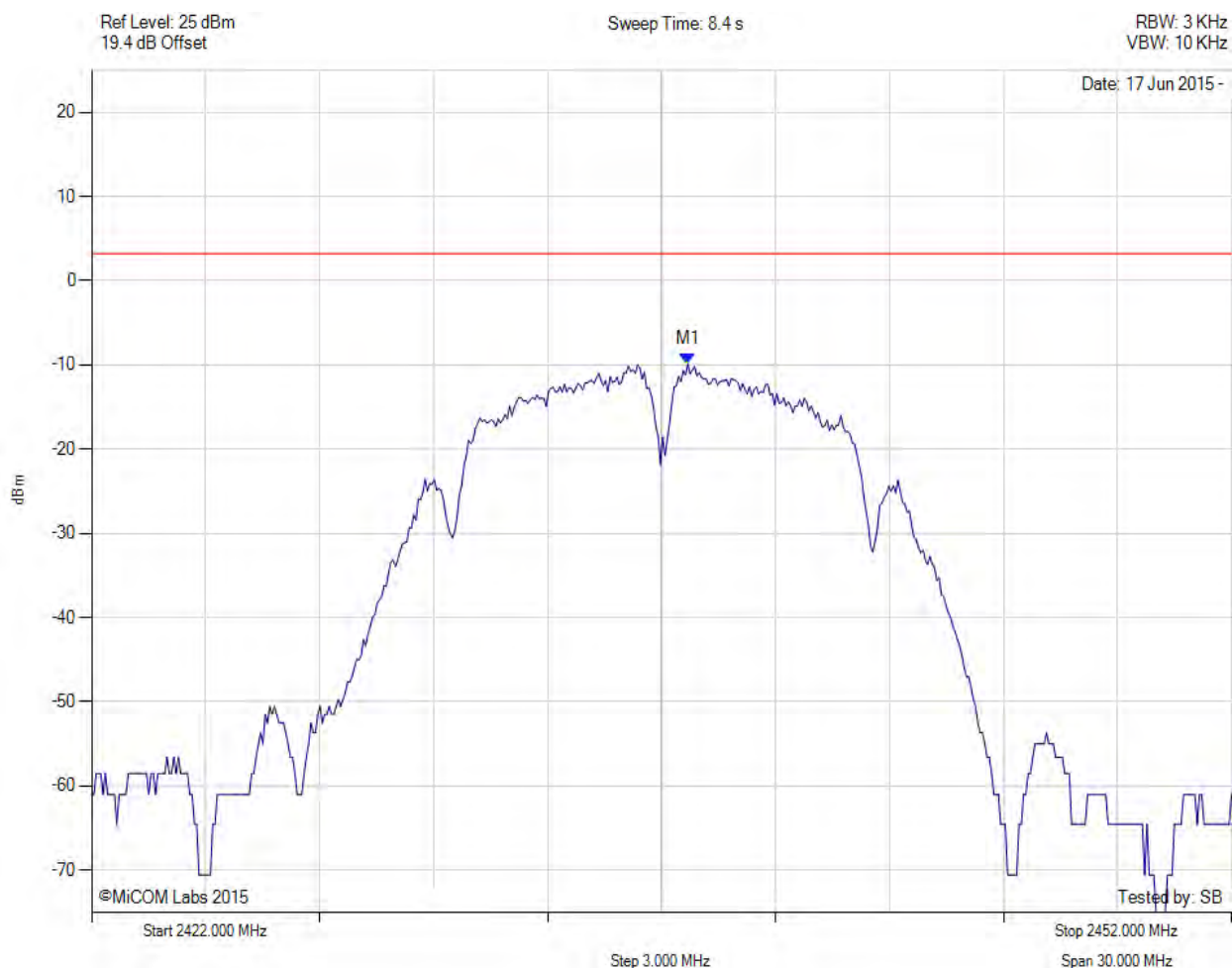
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.700 MHz : -3.926 dBm M1 + DCCF : 2412.700 MHz : -3.882 dBm Duty Cycle Correction Factor : +0.04 dB	Limit: ≤ 8.0 dBm Margin: -11.9 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



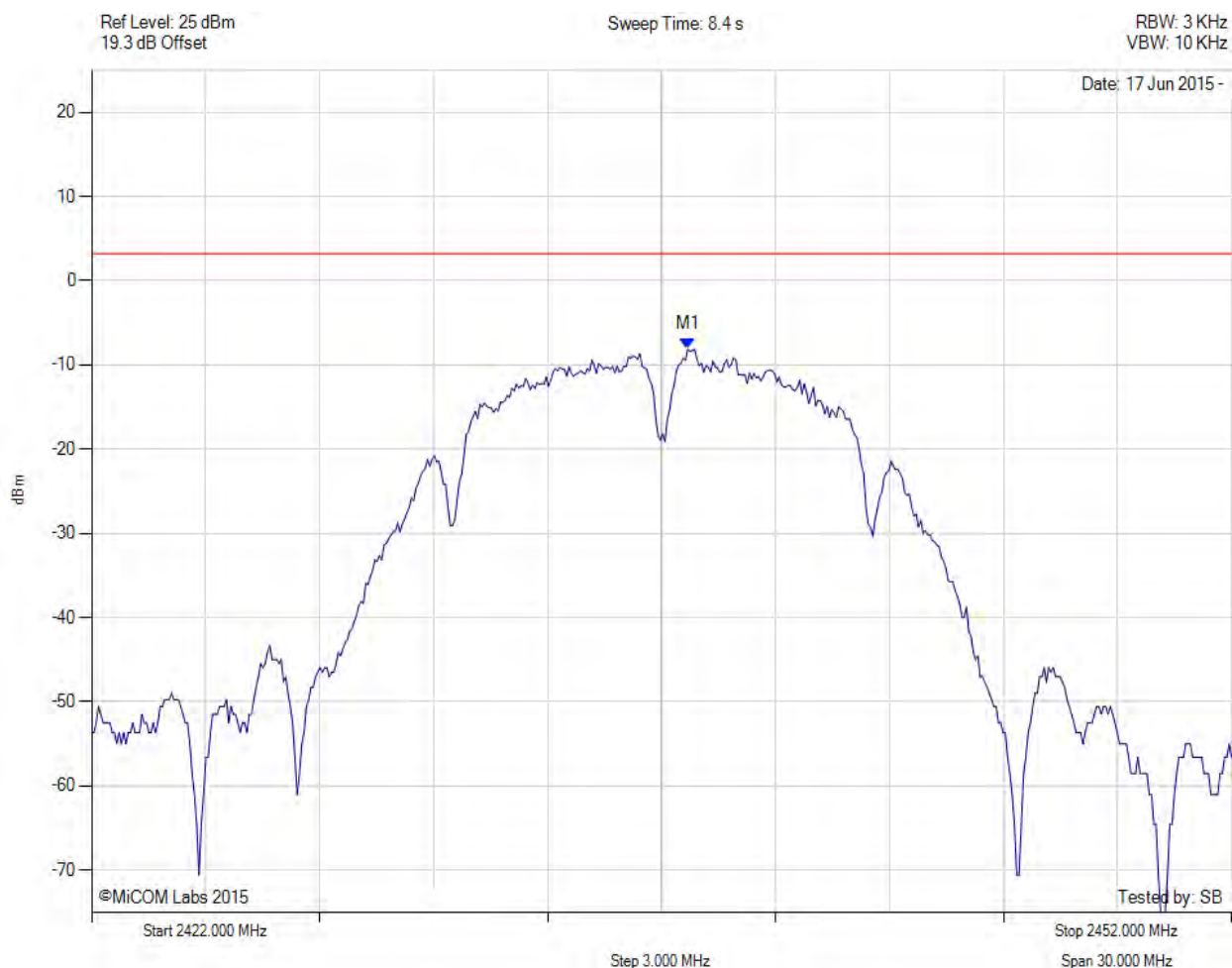
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.691 MHz : -9.905 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



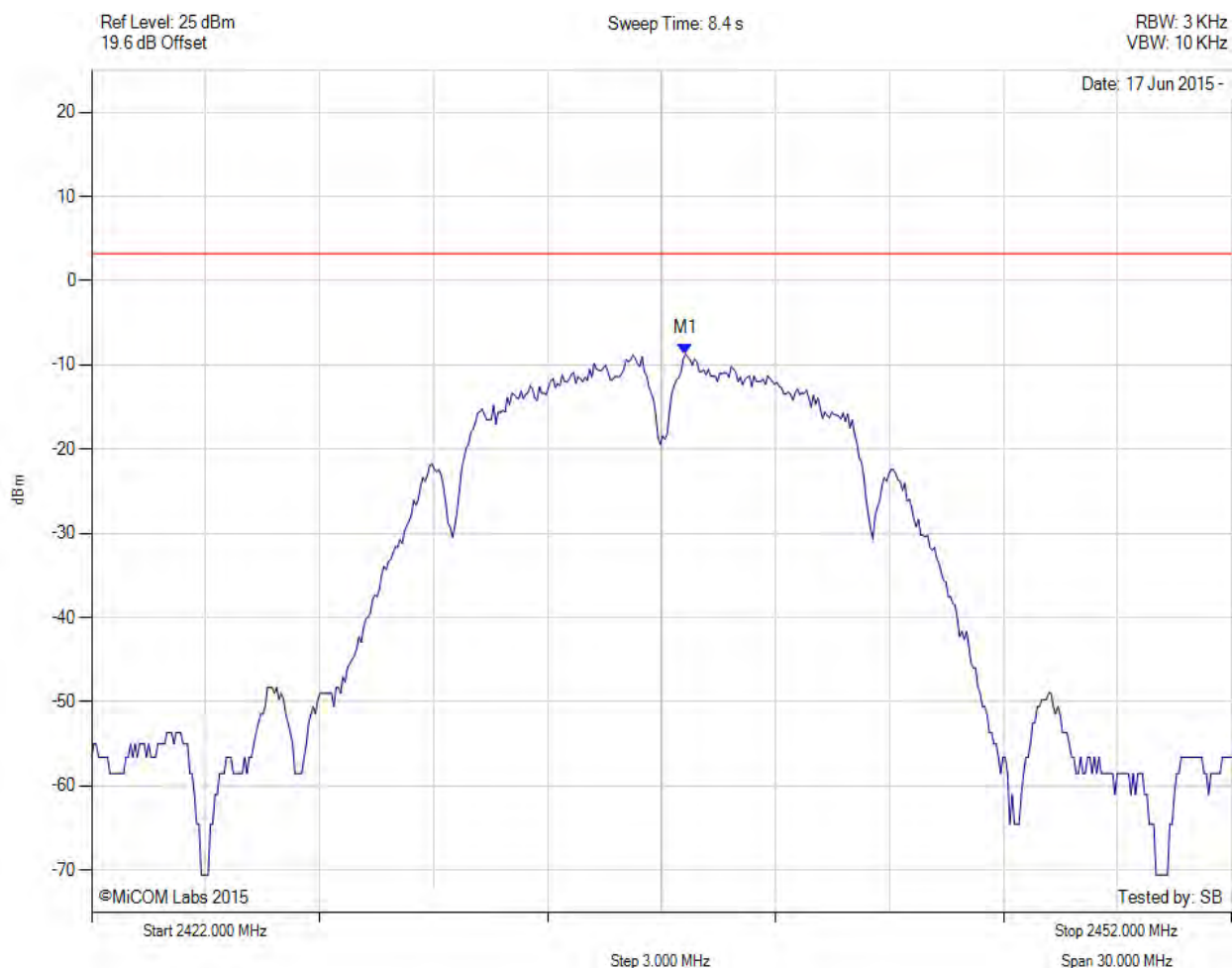
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.691 MHz : -8.141 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.631 MHz : -8.662 dBm	Limit: ≤ 3.230 dBm

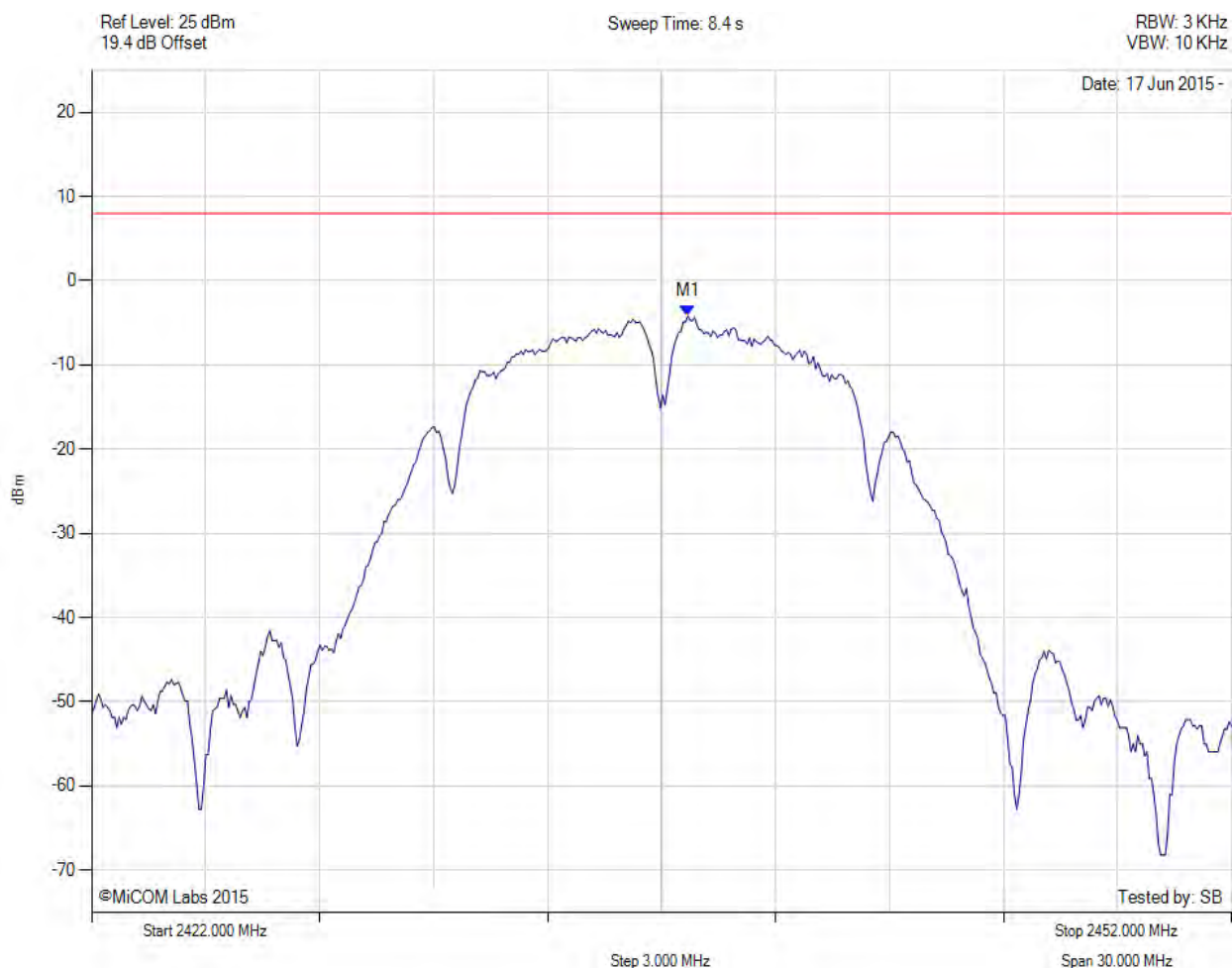
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



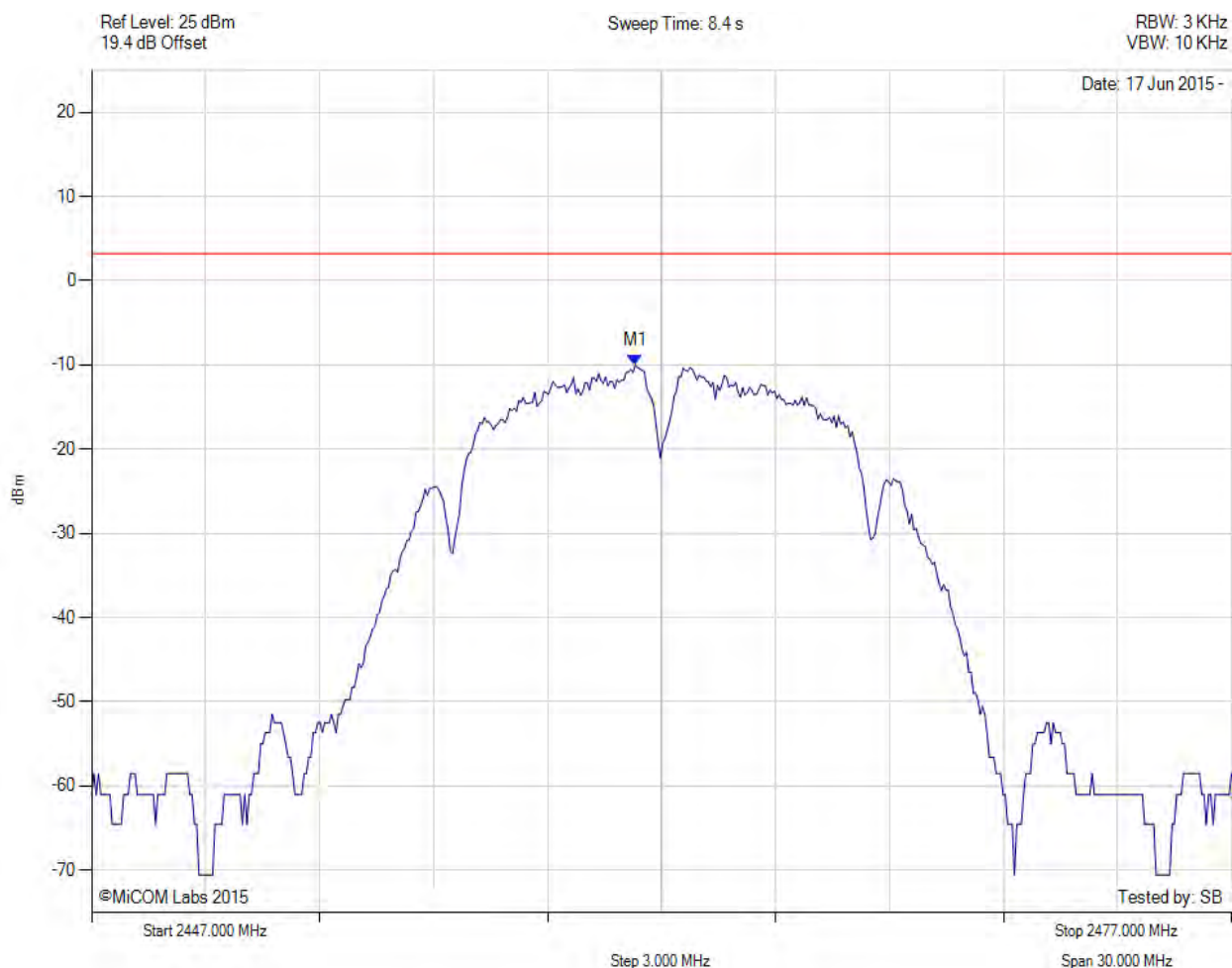
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.700 MHz : -4.200 dBm M1 + DCCF : 2437.700 MHz : -4.156 dBm Duty Cycle Correction Factor : +0.04 dB	Limit: ≤ 8.0 dBm Margin: -12.1 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker: Frequency: Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.309 MHz : -9.986 dBm	Limit: ≤ 3.230 dBm

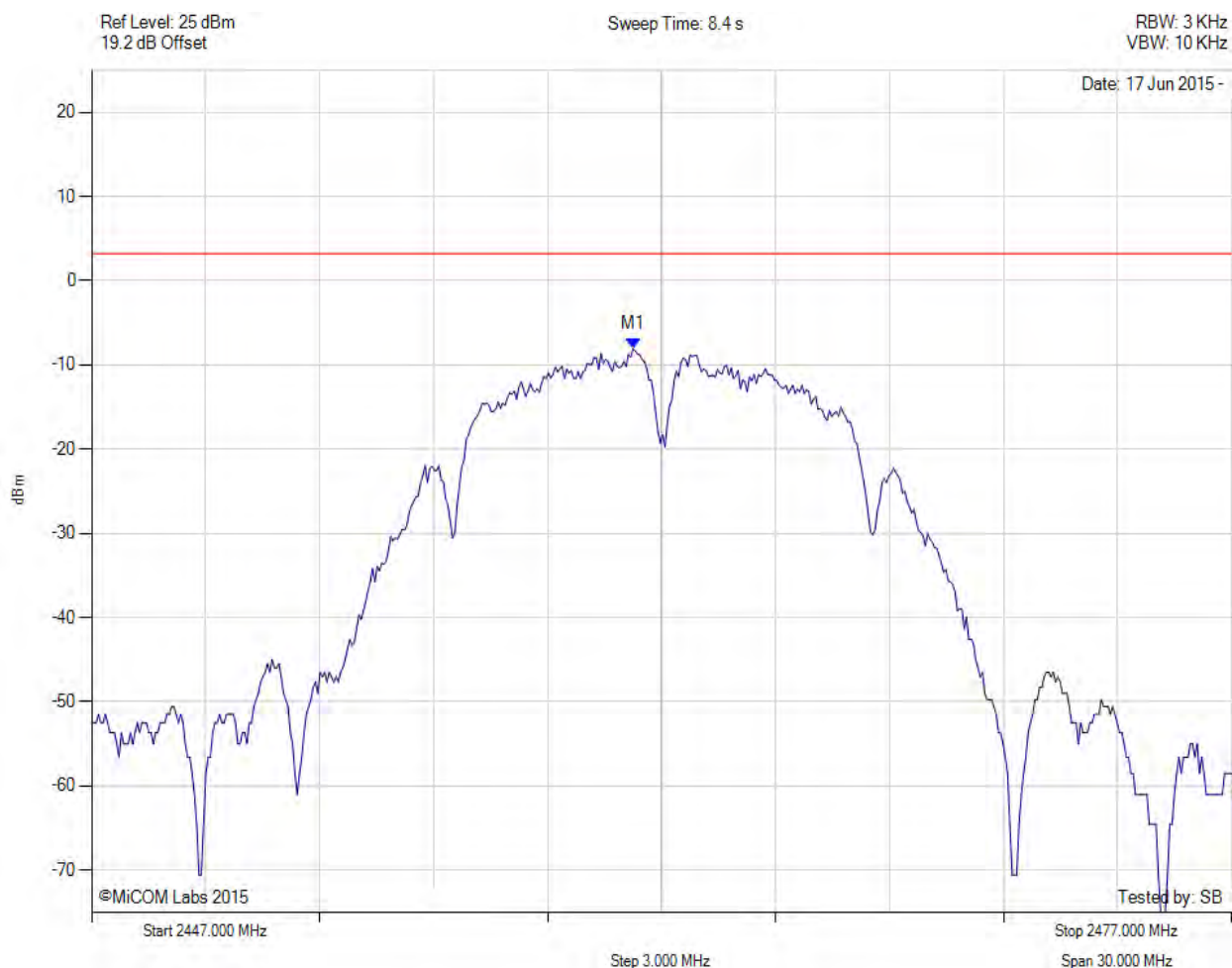
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



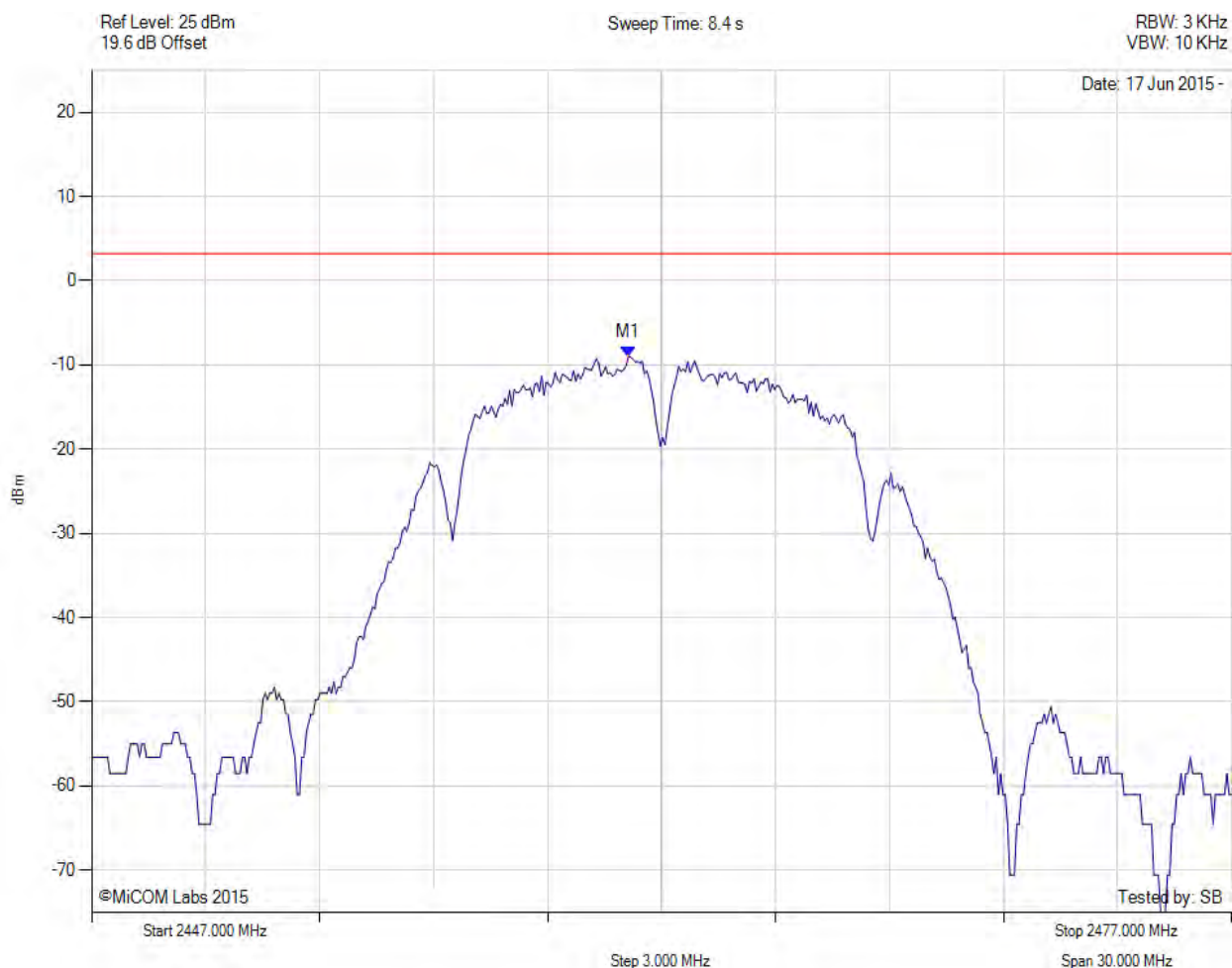
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.248 MHz : -8.101 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.128 MHz : -9.018 dBm	Limit: ≤ 3.230 dBm

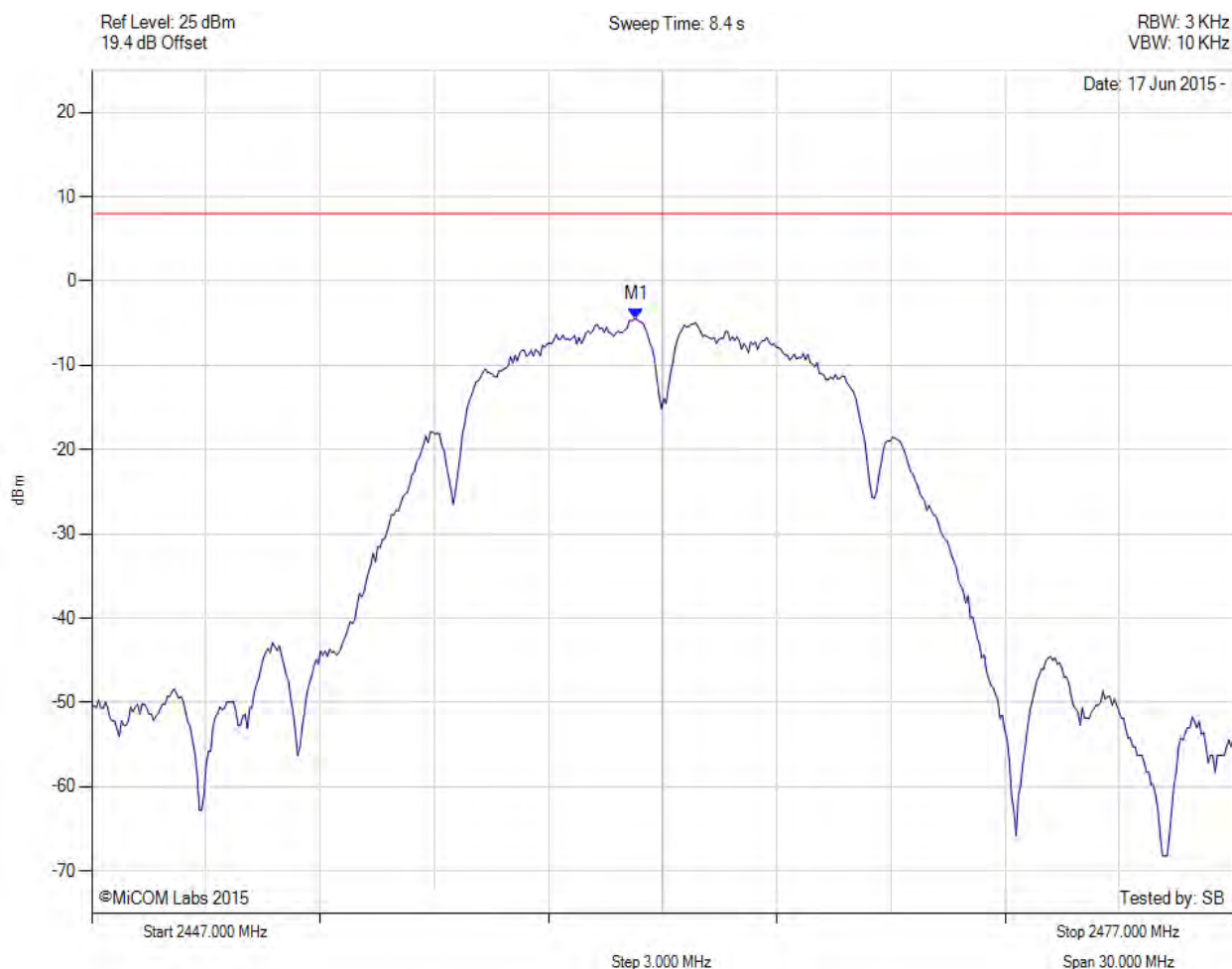
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



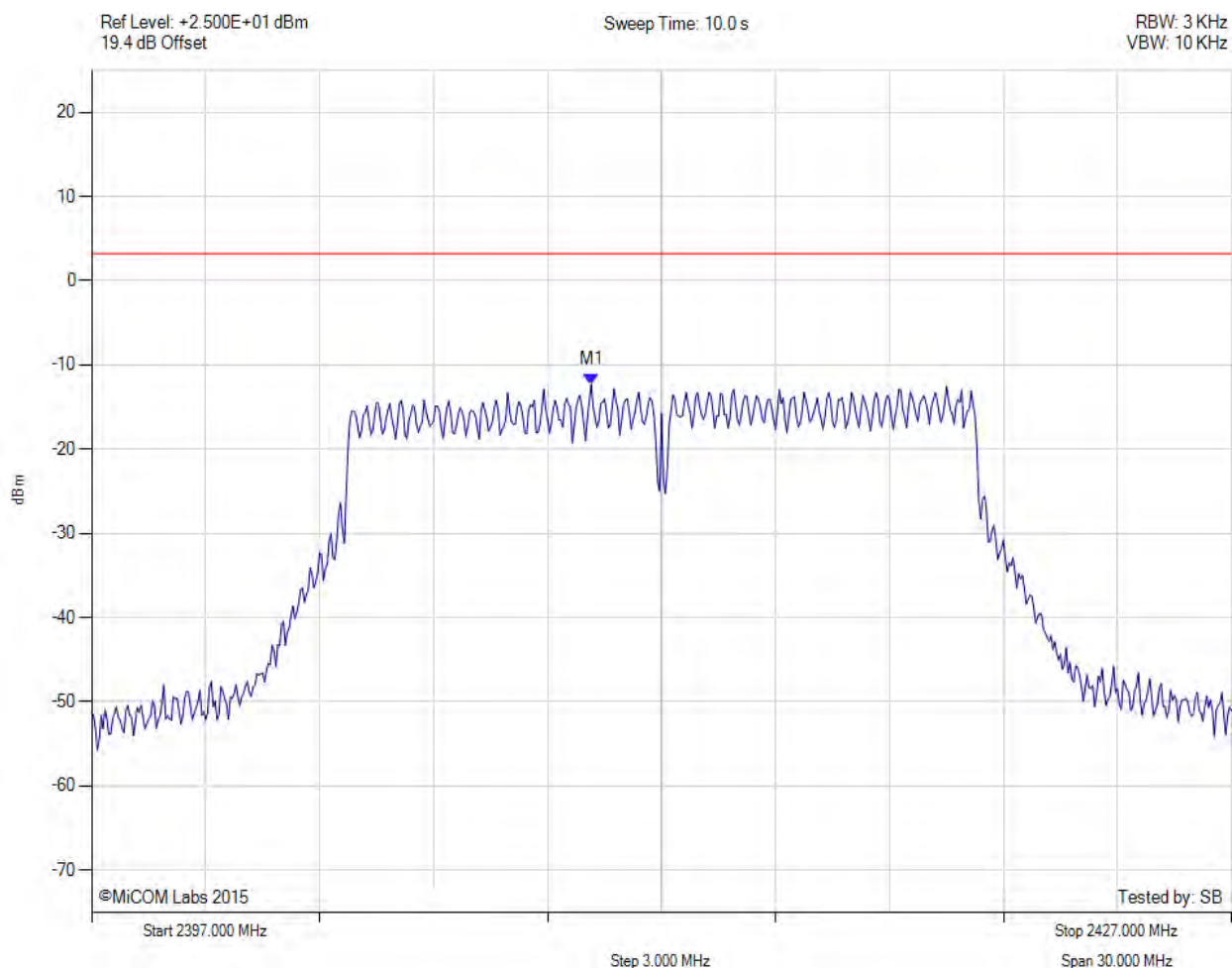
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.300 MHz : -4.497 dBm M1 + DCCF : 2461.300 MHz : -4.453 dBm Duty Cycle Correction Factor : +0.04 dB	Limit: ≤ 8.0 dBm Margin: -12.4 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



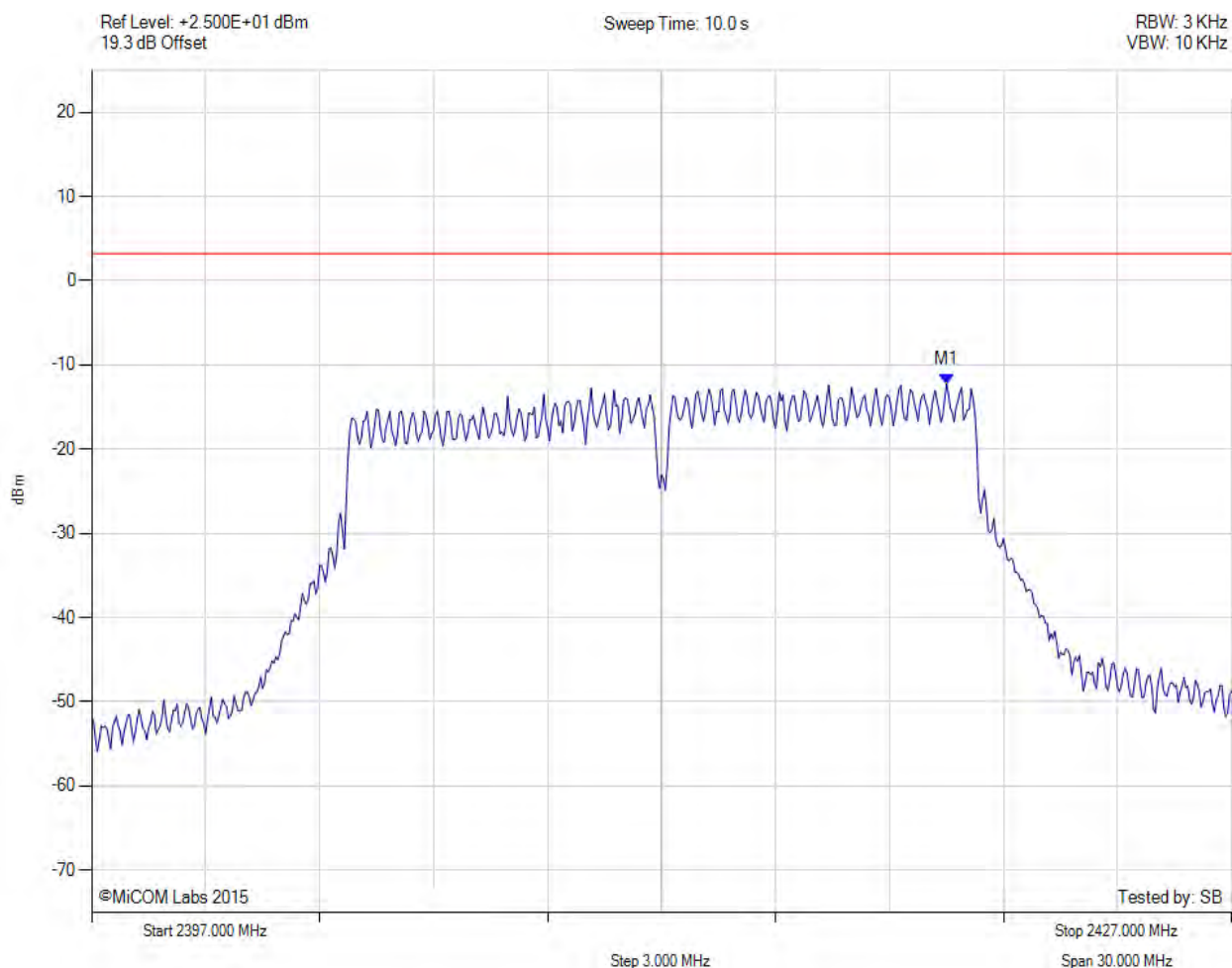
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2410.150 MHz : -12.330 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2419.500 MHz : -12.267 dBm	Limit: ≤ 3.230 dBm

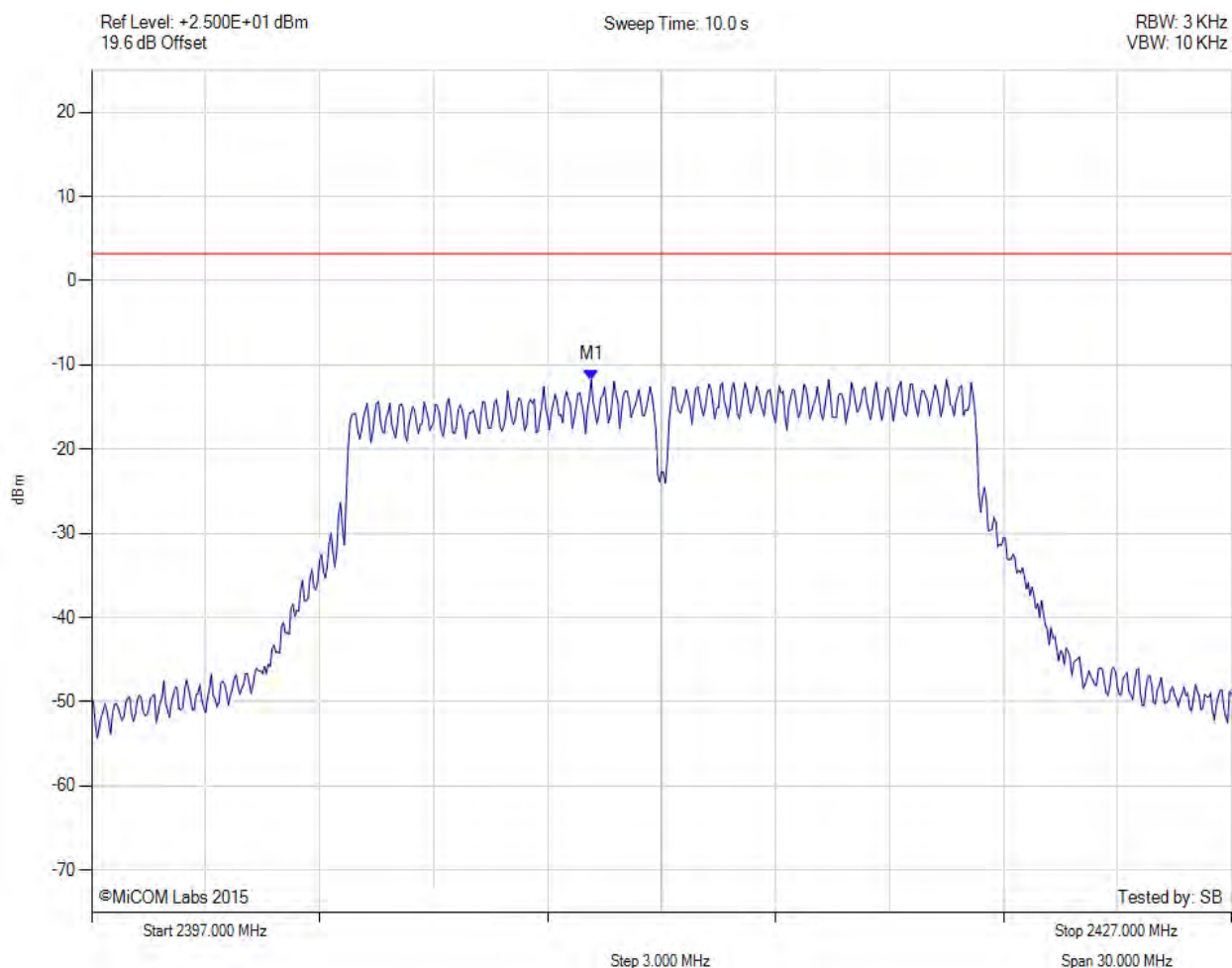
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



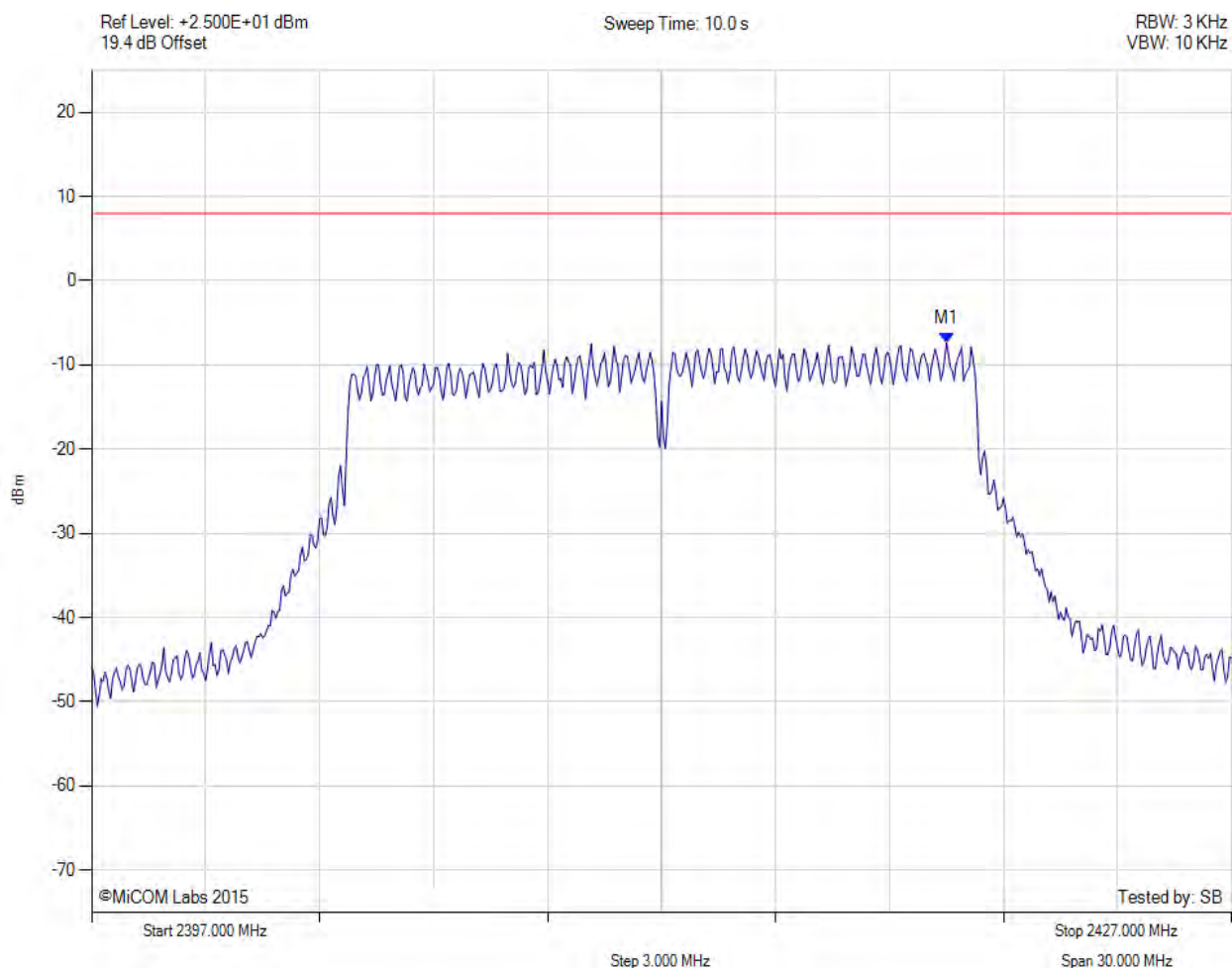
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2410.150 MHz : -11.749 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



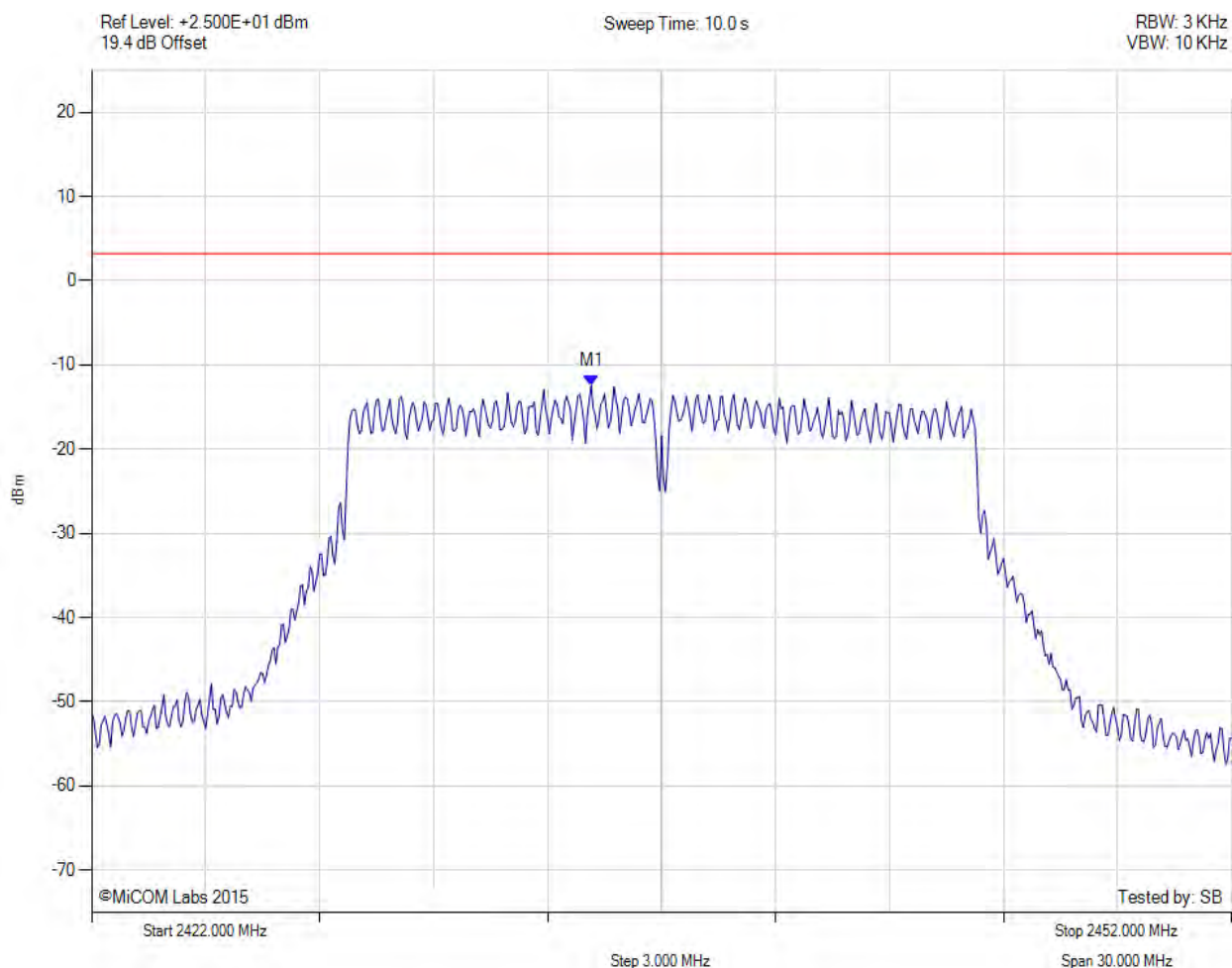
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2419.500 MHz : -7.413 dBm M1 + DCCF : 2419.500 MHz : -7.321 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -15.3 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



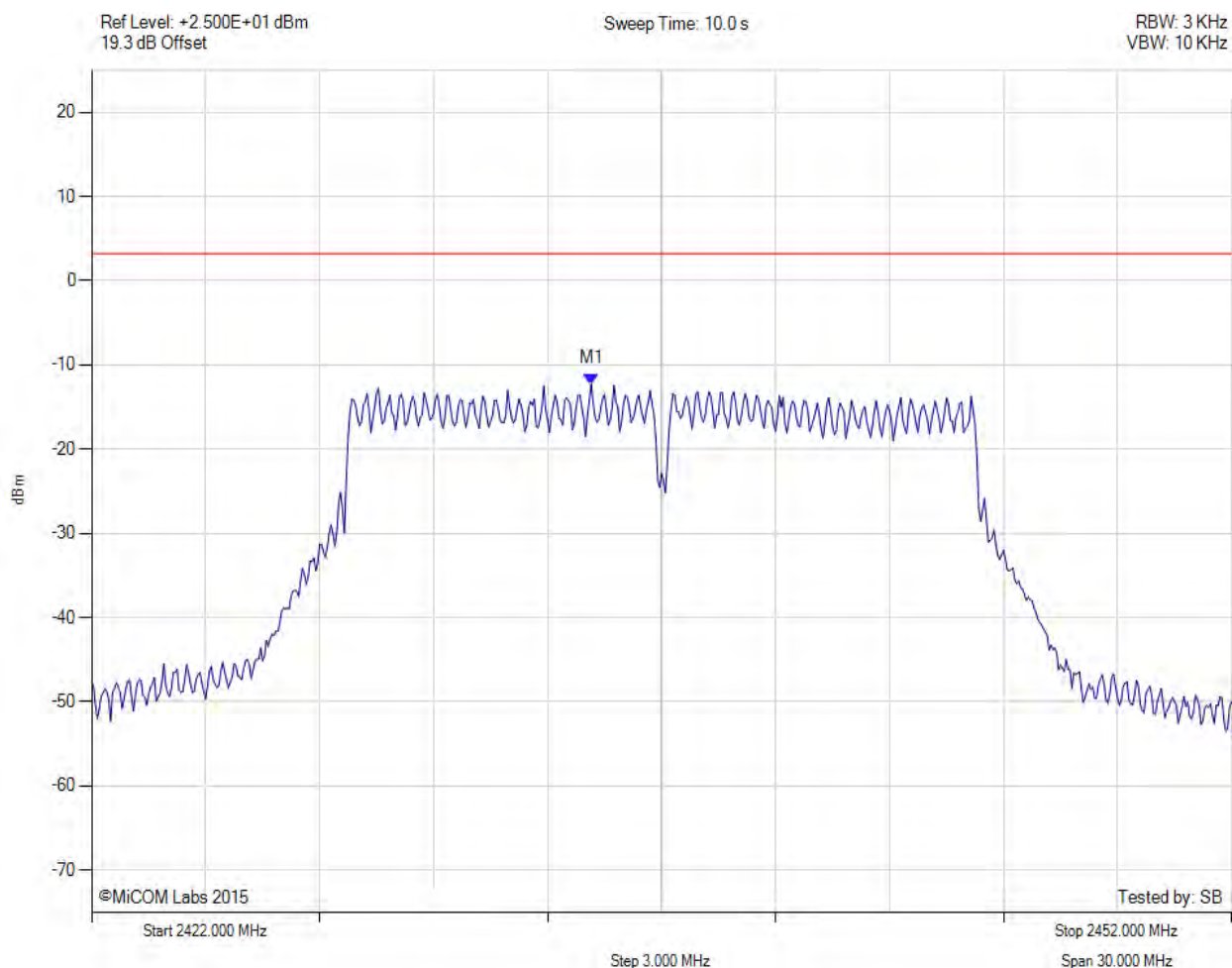
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2435.150 MHz : -12.472 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



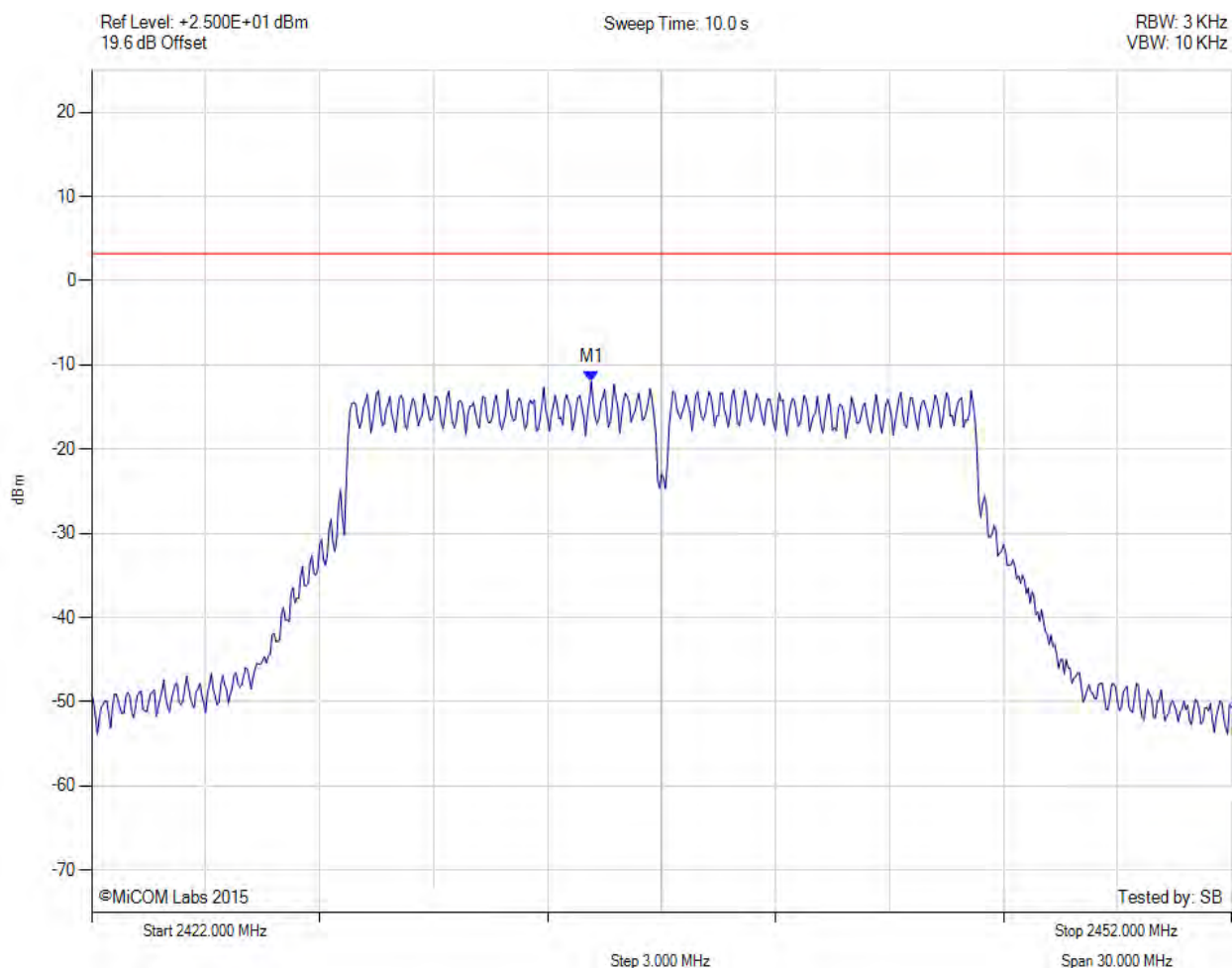
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2435.150 MHz : -12.236 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2435.150 MHz : -11.965 dBm	Limit: ≤ 3.230 dBm

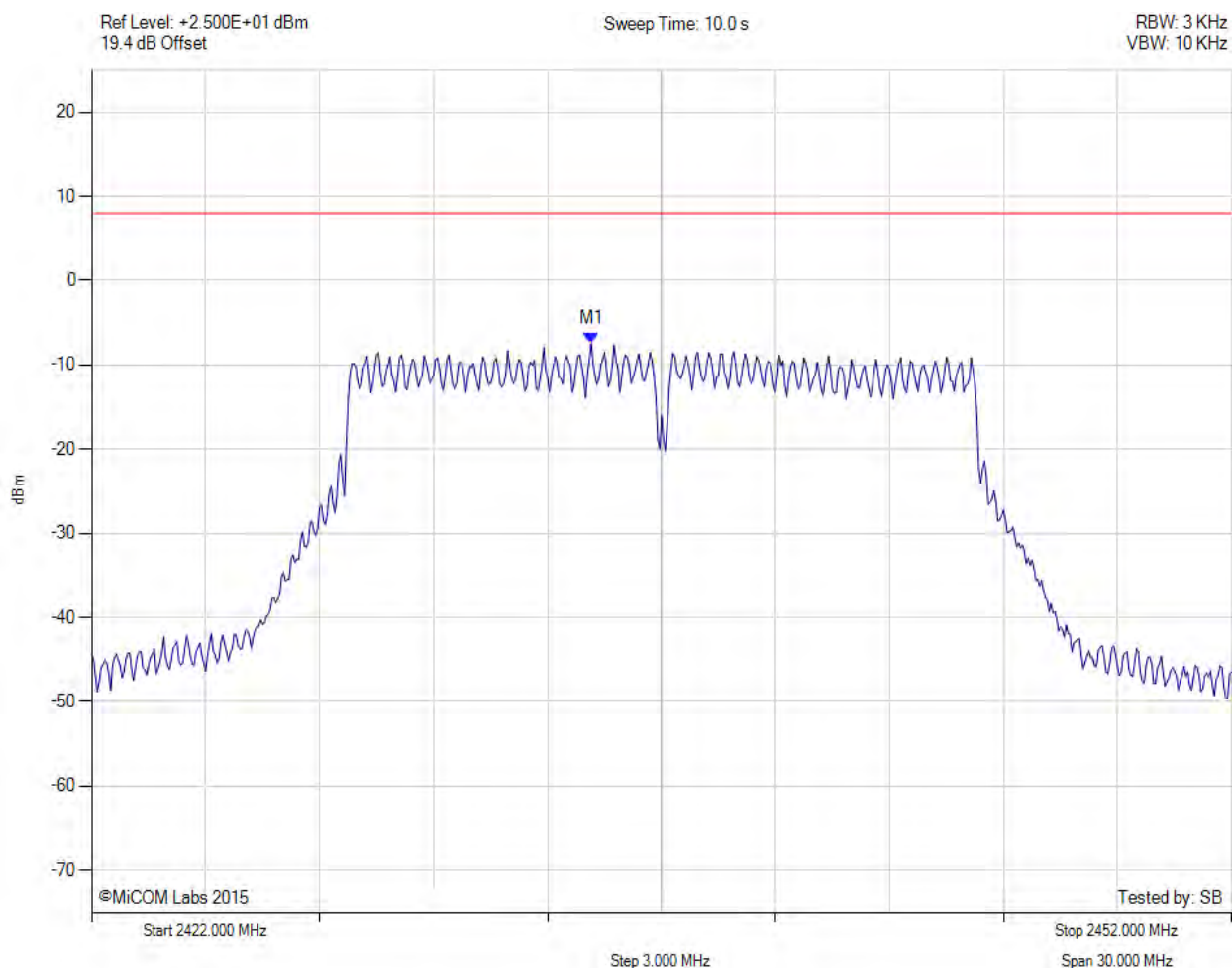
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2435.200 MHz : -7.448 dBm M1 + DCCF : 2435.200 MHz : -7.356 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -15.3 dB

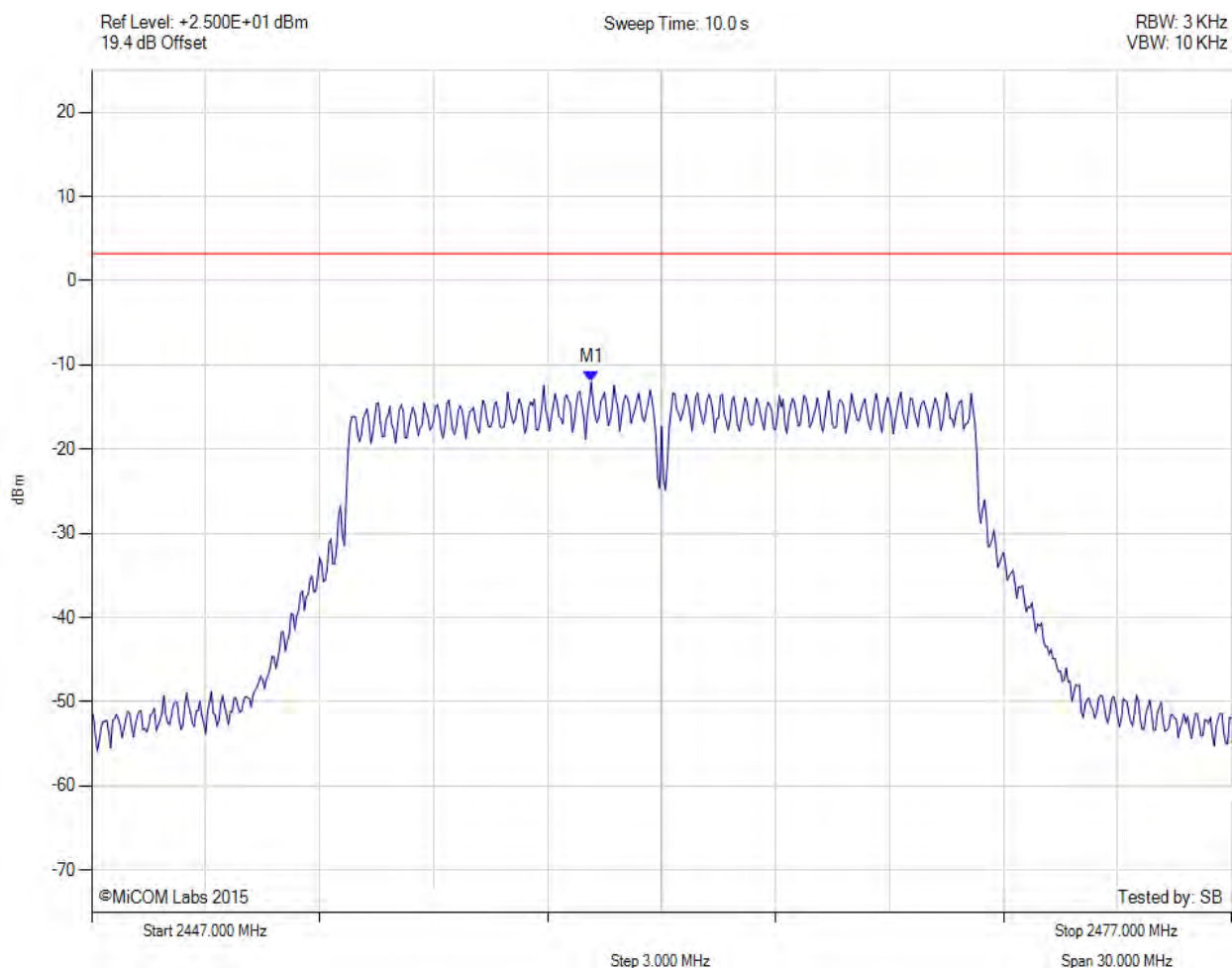
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



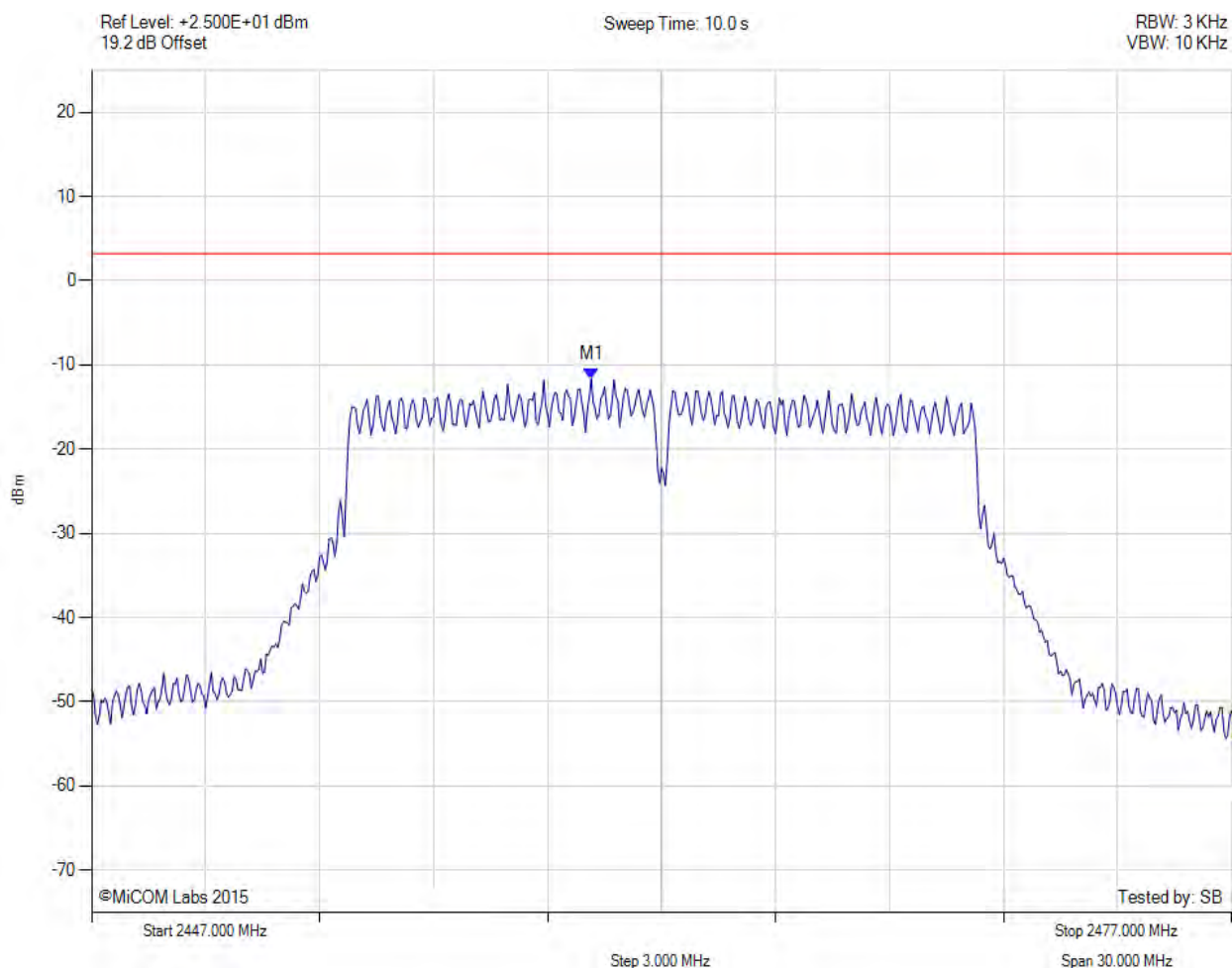
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.150 MHz : -12.025 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



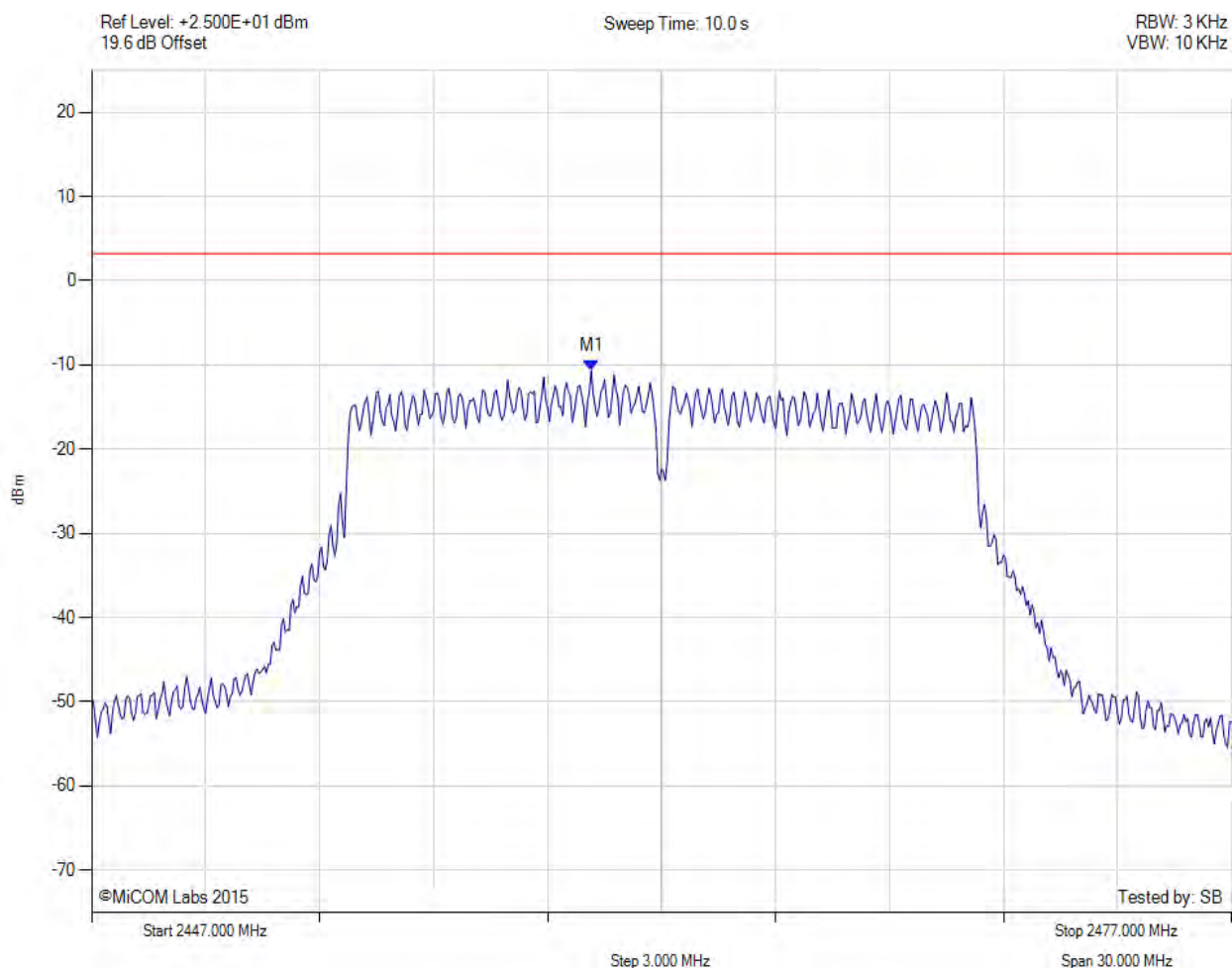
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.150 MHz : -11.644 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



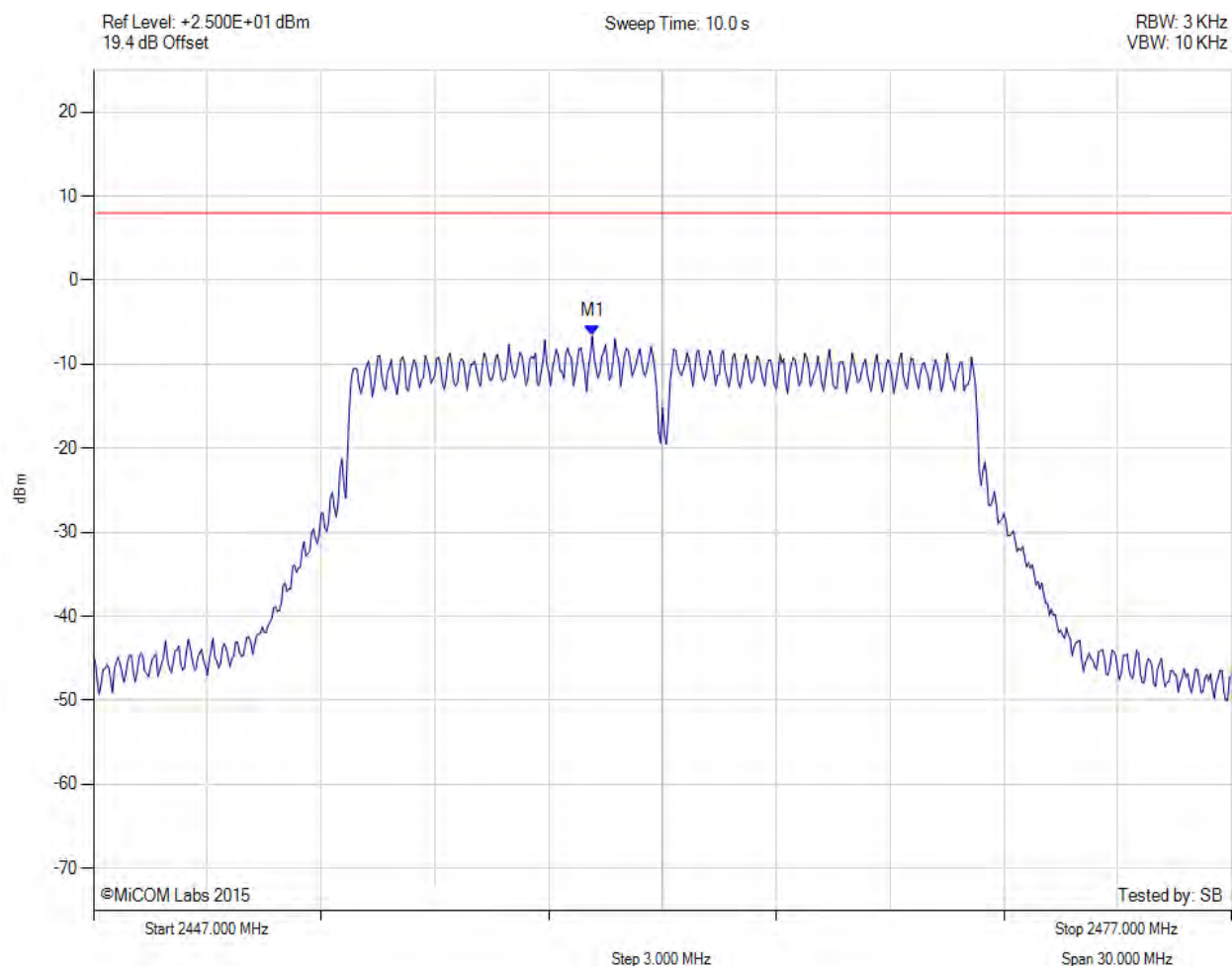
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.150 MHz : -10.704 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.200 MHz : -6.650 dBm M1 + DCCF : 2460.200 MHz : -6.558 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -14.5 dB

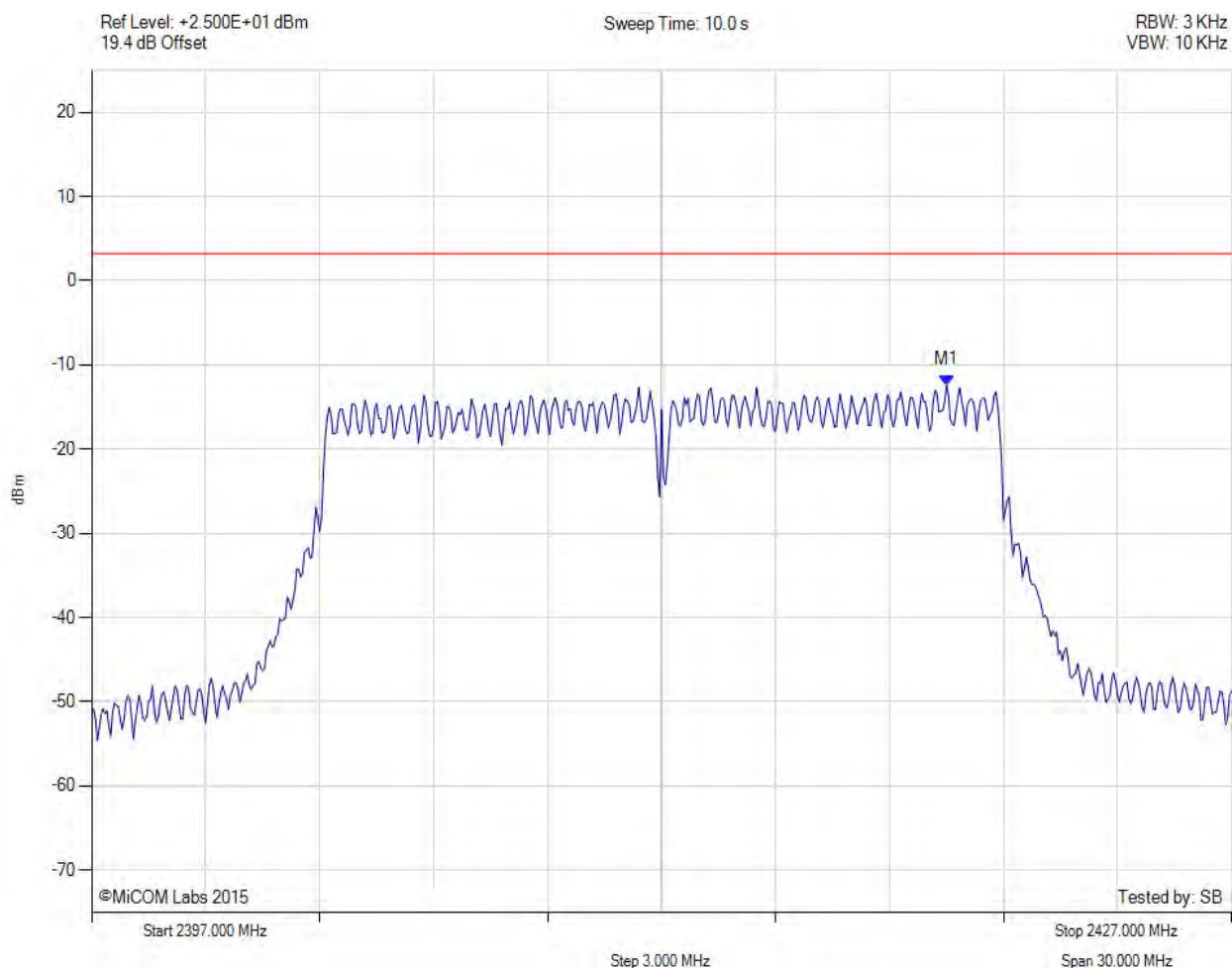
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2419.500 MHz : -12.409 dBm	Limit: ≤ 3.230 dBm

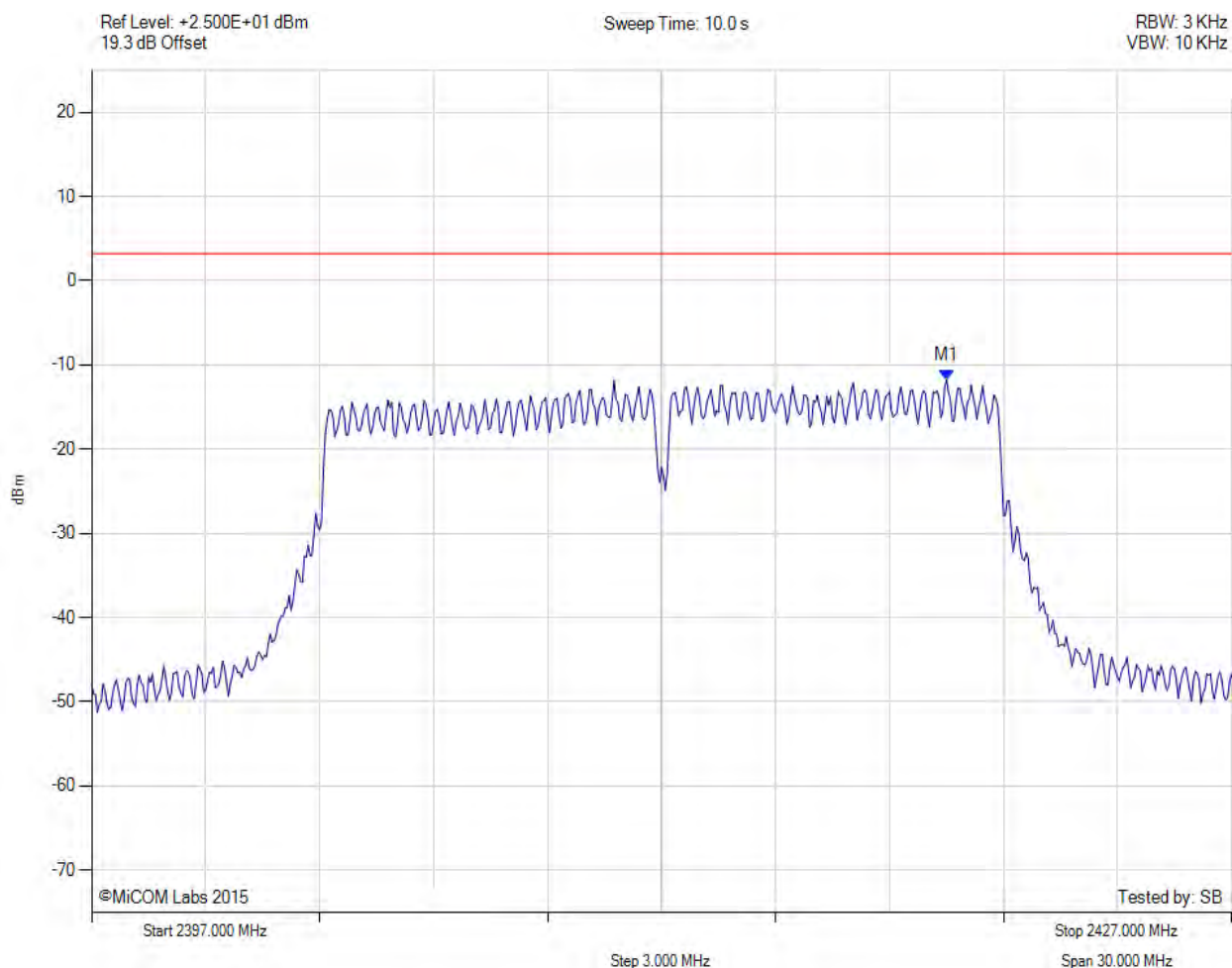
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2419.500 MHz : -11.776 dBm	Limit: ≤ 3.230 dBm

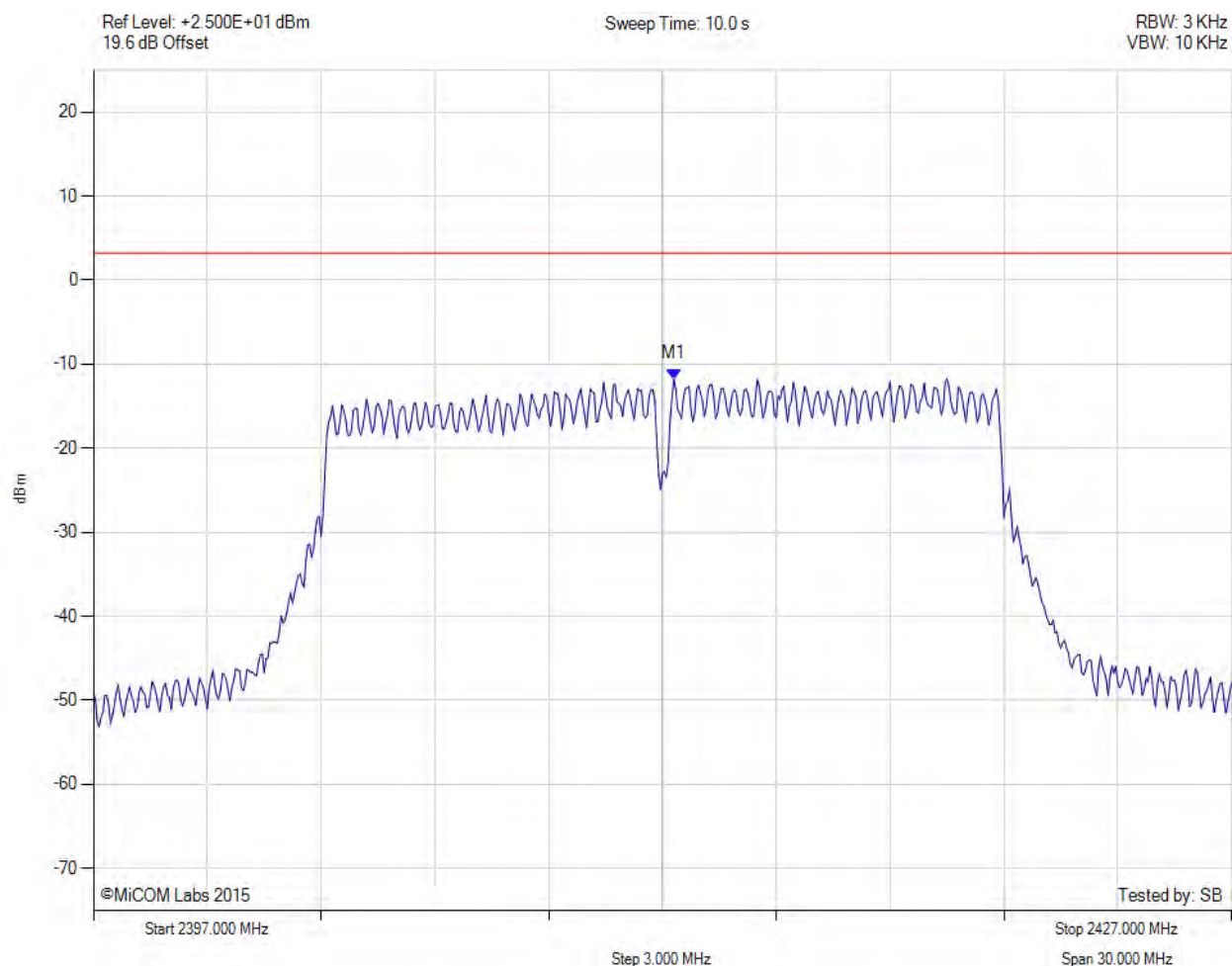
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



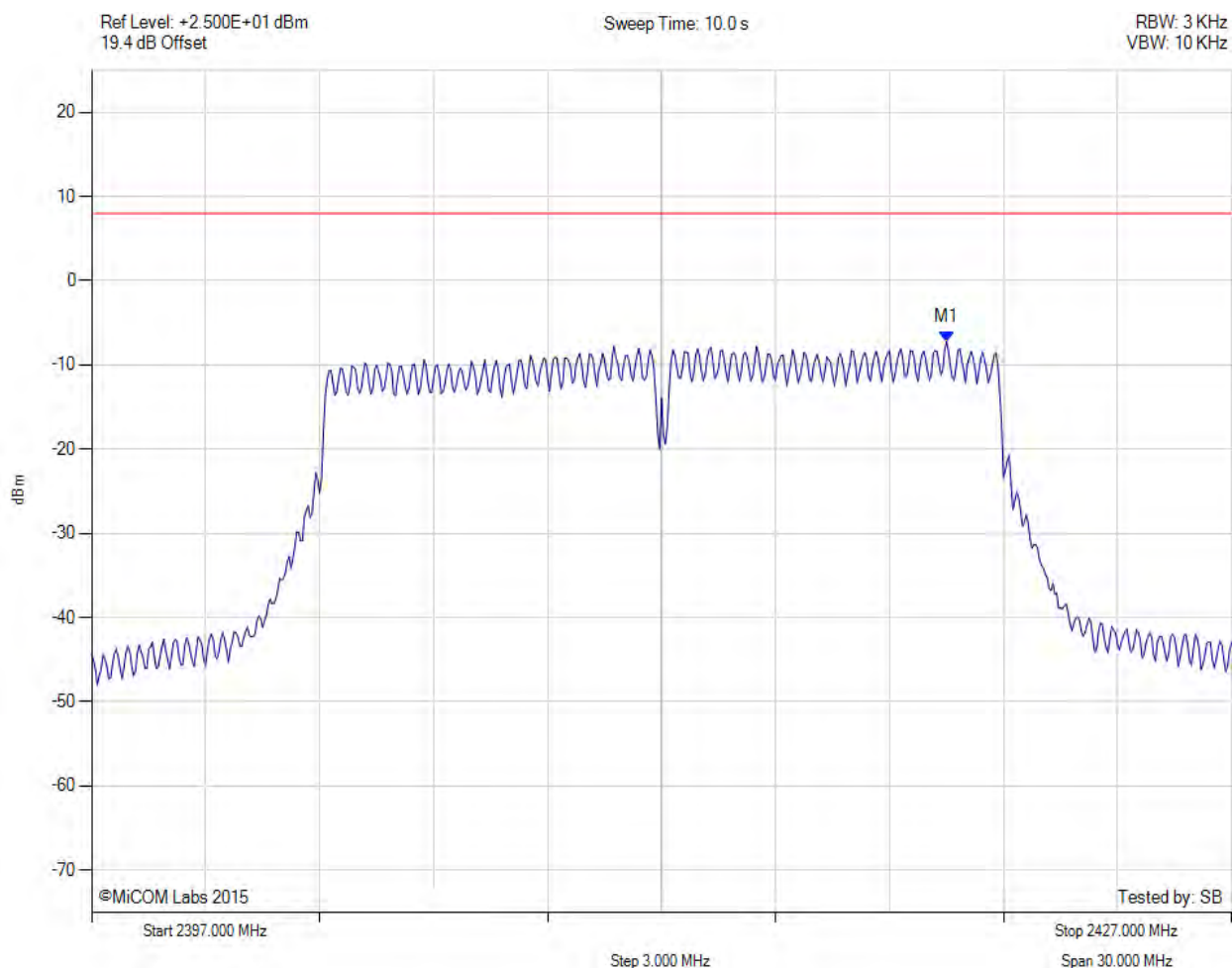
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.300 MHz : -11.746 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



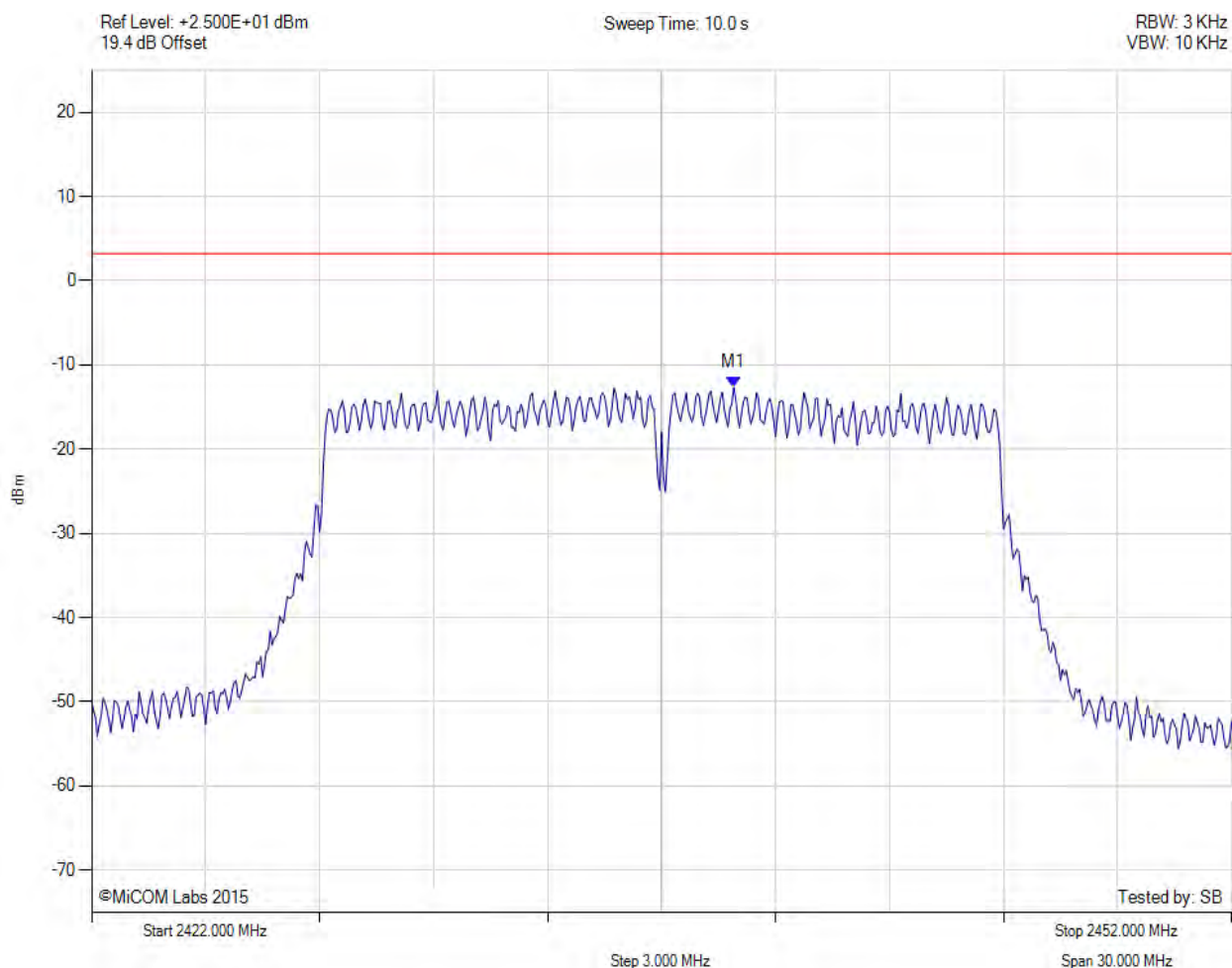
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2419.500 MHz : -7.203 dBm M1 + DCCF : 2419.500 MHz : -7.048 dBm Duty Cycle Correction Factor : +0.15 dB	Limit: ≤ 8.0 dBm Margin: -15.0 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



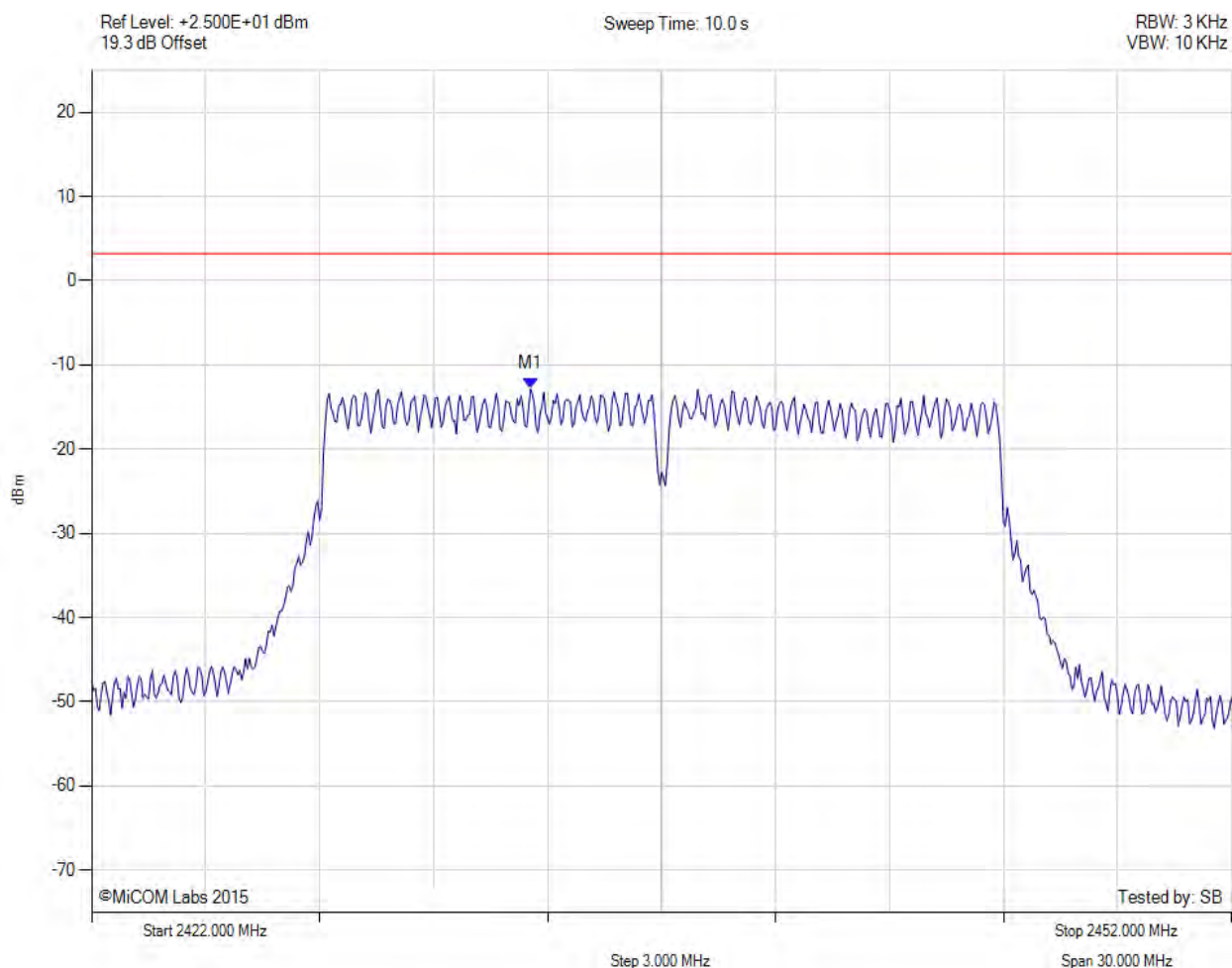
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2438.900 MHz : -12.704 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2433.550 MHz : -12.869 dBm	Limit: ≤ 3.230 dBm

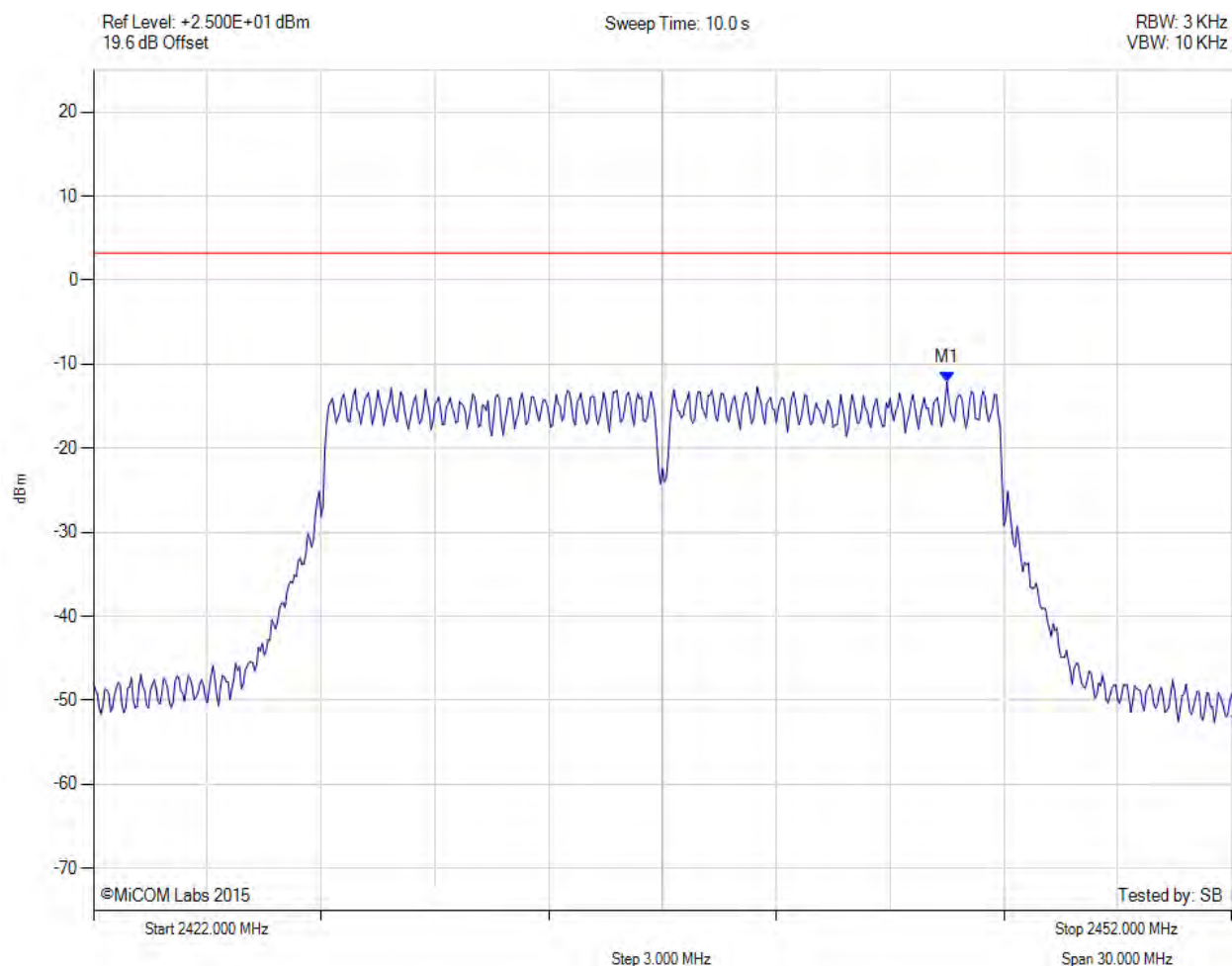
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



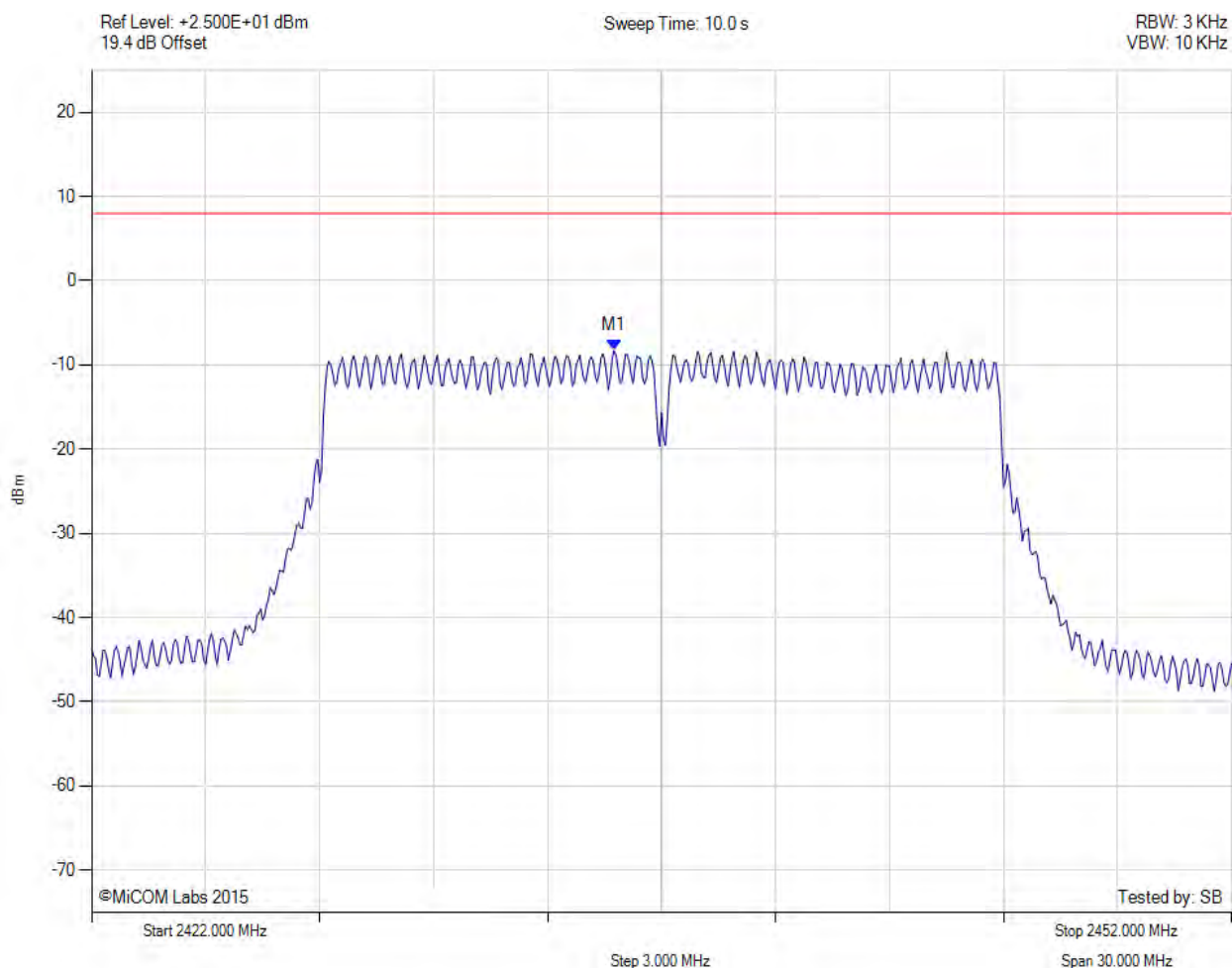
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2444.500 MHz : -12.113 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2435.800 MHz : -8.300 dBm M1 + DCCF : 2435.800 MHz : -8.145 dBm Duty Cycle Correction Factor : +0.15 dB	Limit: ≤ 8.0 dBm Margin: -16.1 dB

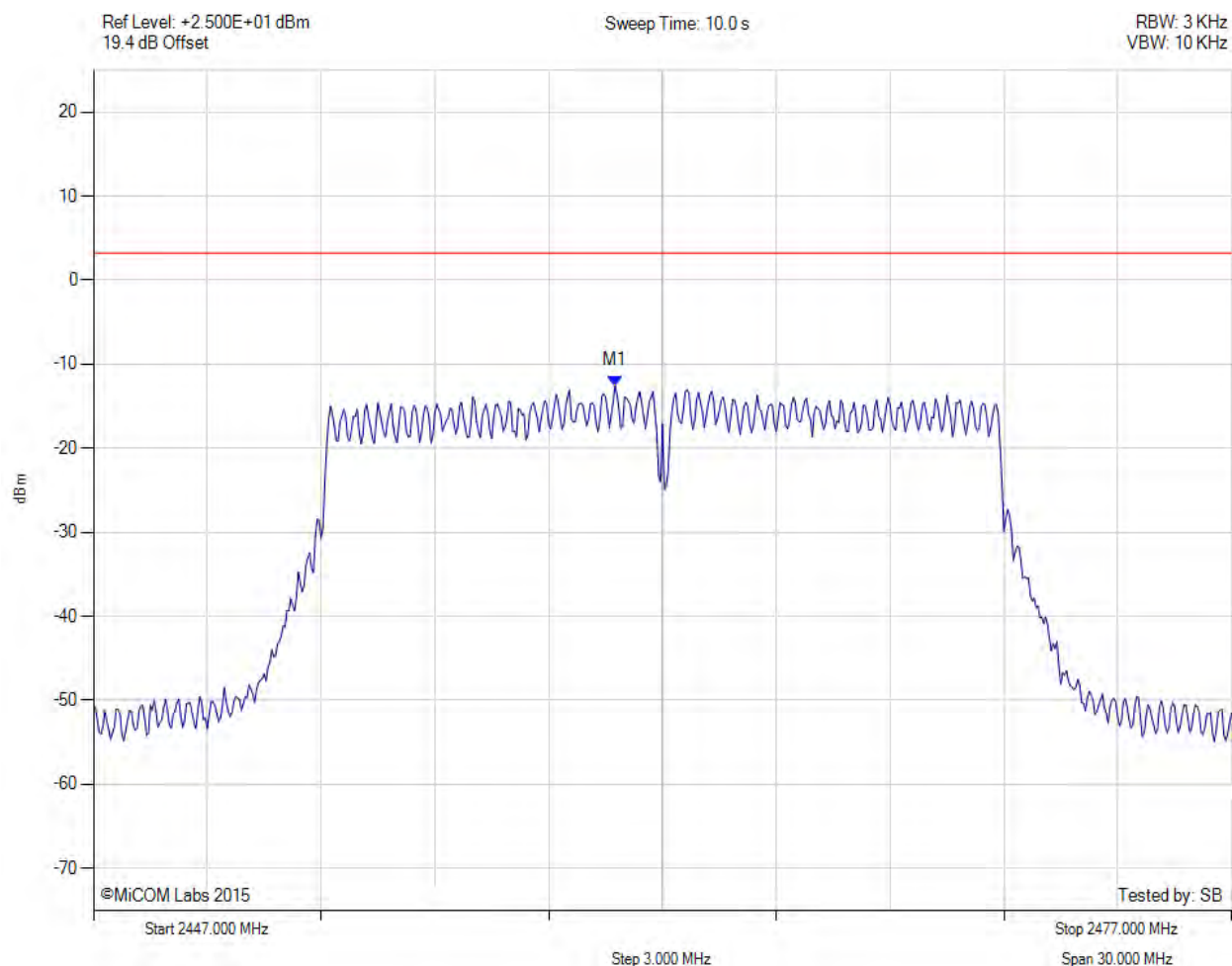
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



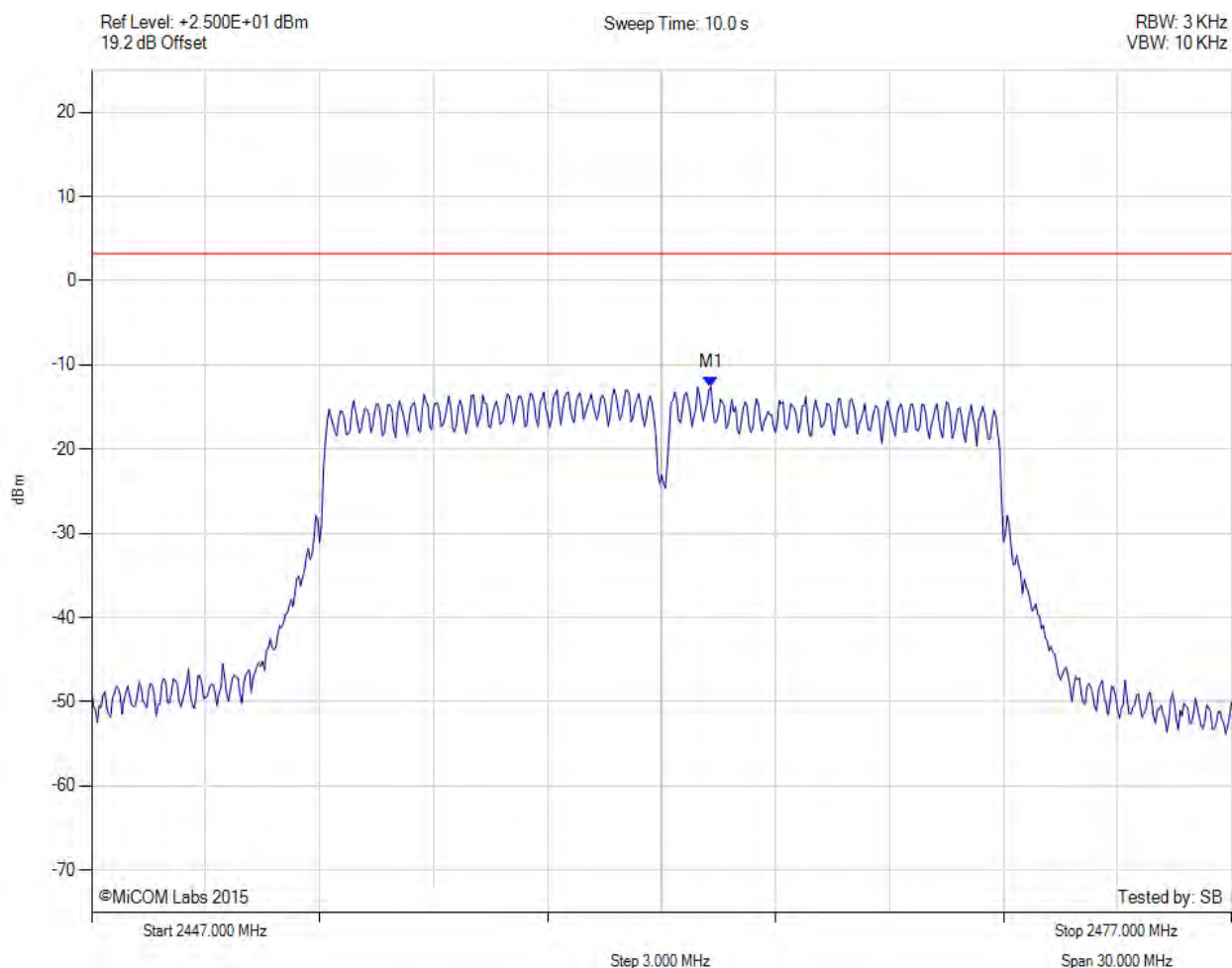
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.750 MHz : -12.560 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2463.300 MHz : -12.606 dBm	Limit: ≤ 3.230 dBm

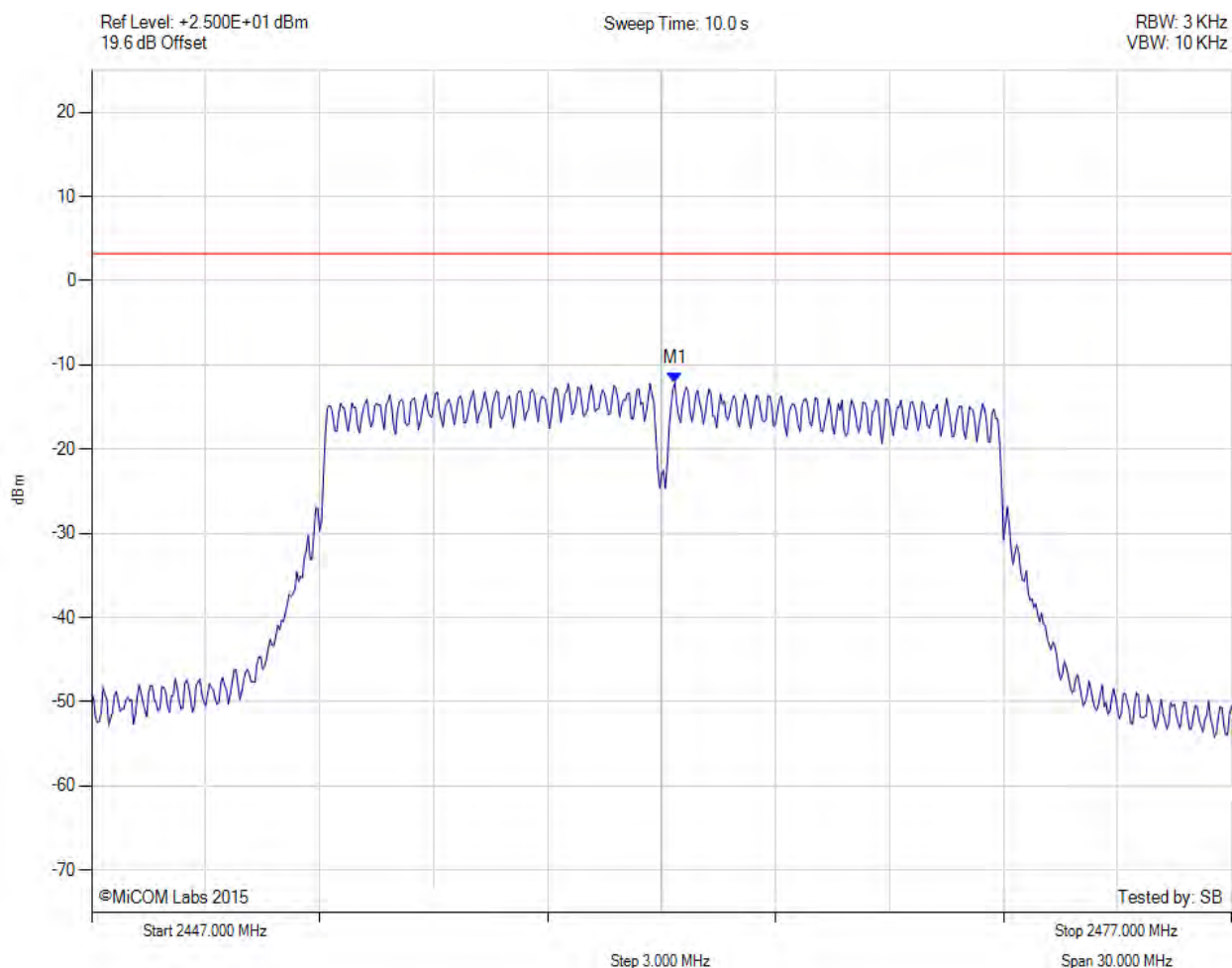
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.350 MHz : -12.157 dBm	Limit: ≤ 3.230 dBm

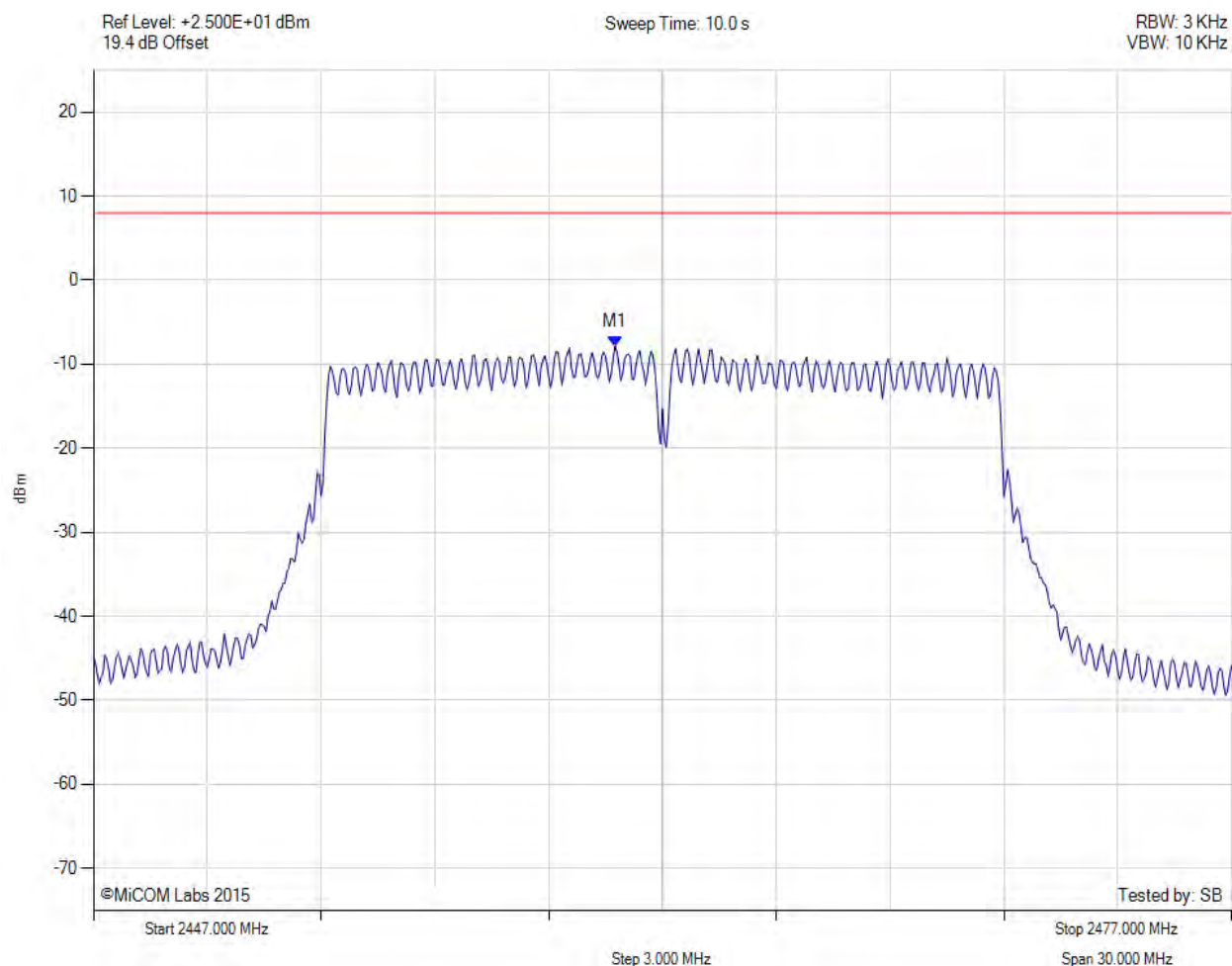
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2460.800 MHz : -7.860 dBm M1 + DCCF : 2460.800 MHz : -7.705 dBm Duty Cycle Correction Factor : +0.15 dB	Limit: ≤ 8.0 dBm Margin: -15.7 dB

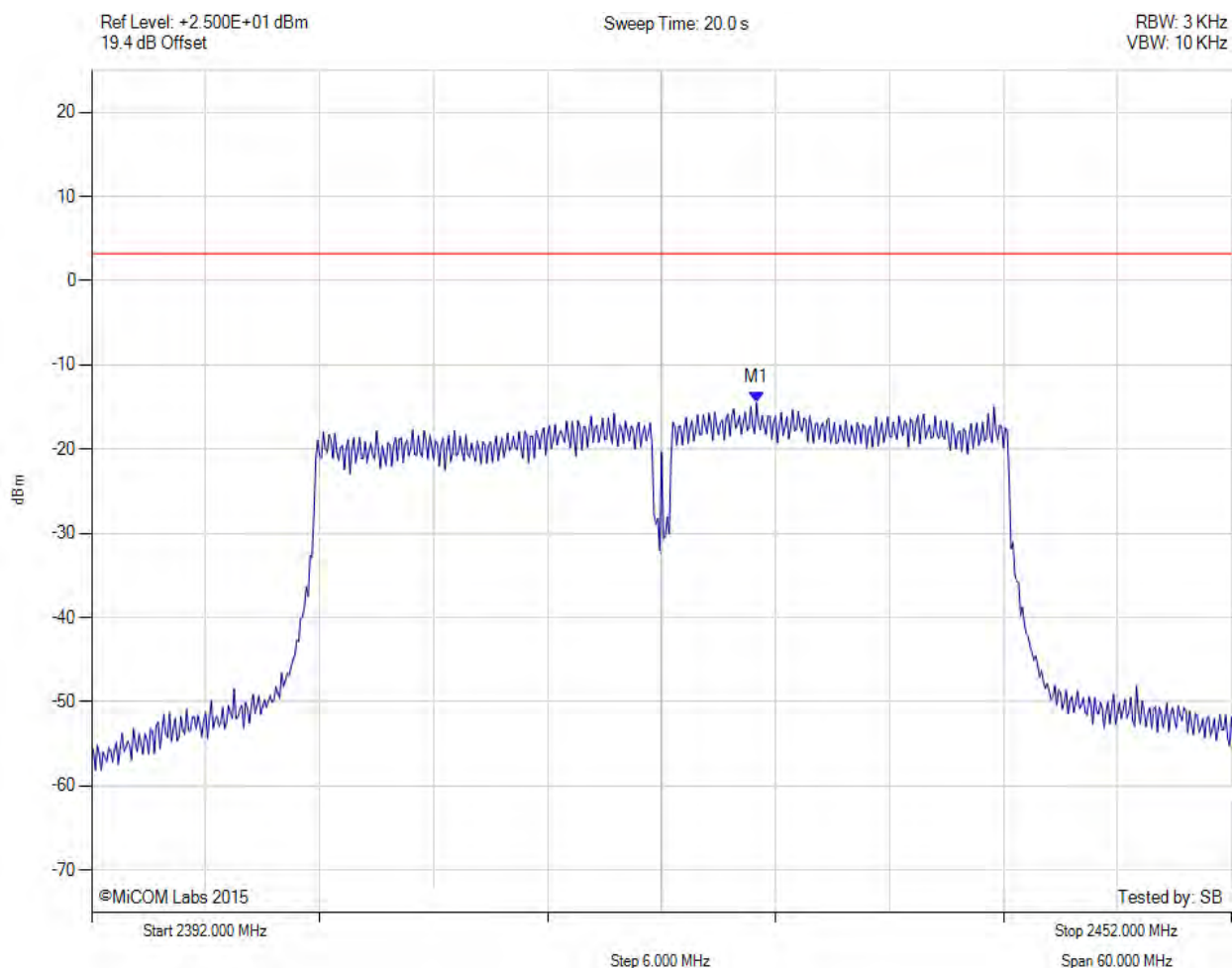
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



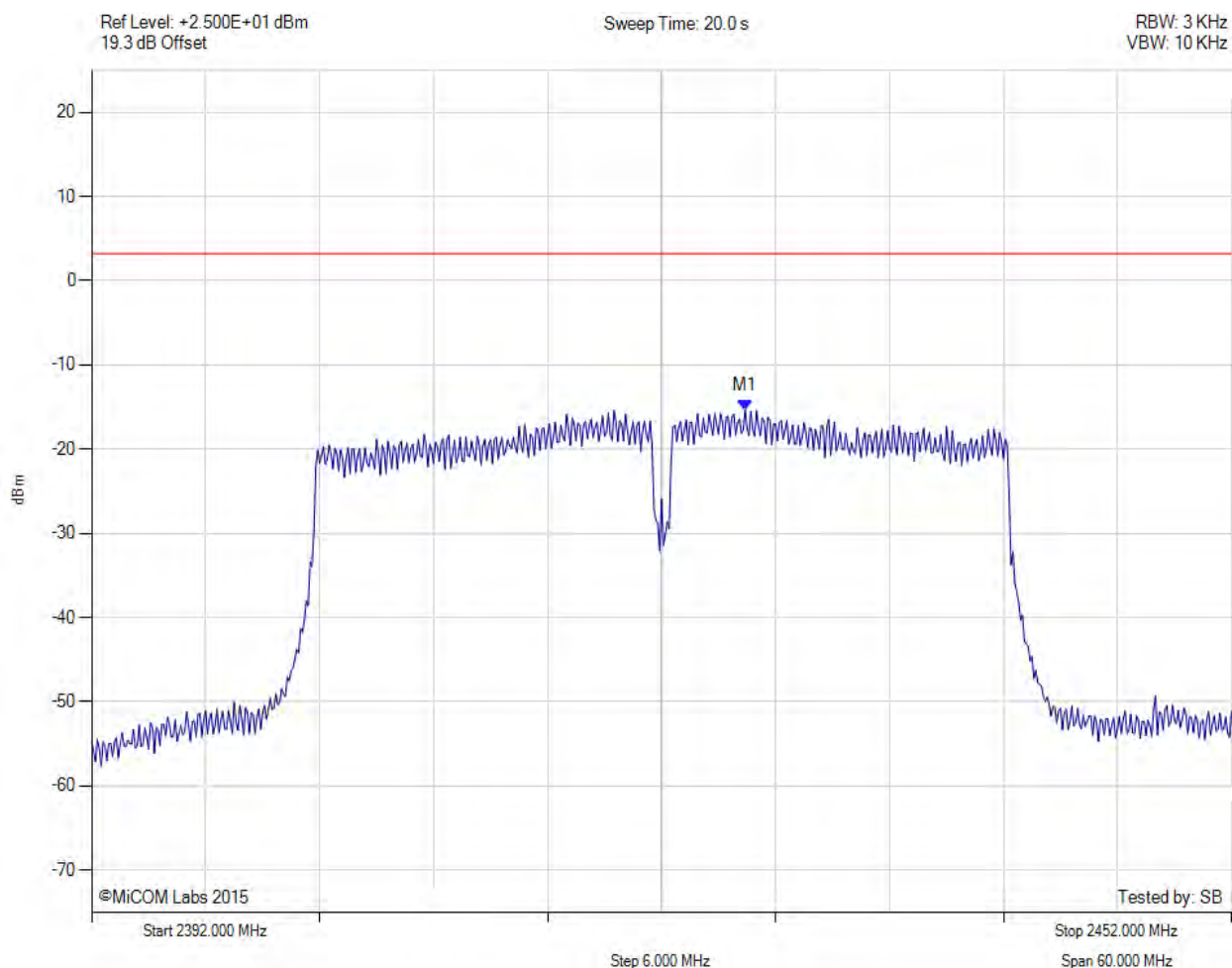
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2427.000 MHz : -14.466 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2426.400 MHz : -15.370 dBm	Limit: ≤ 3.230 dBm

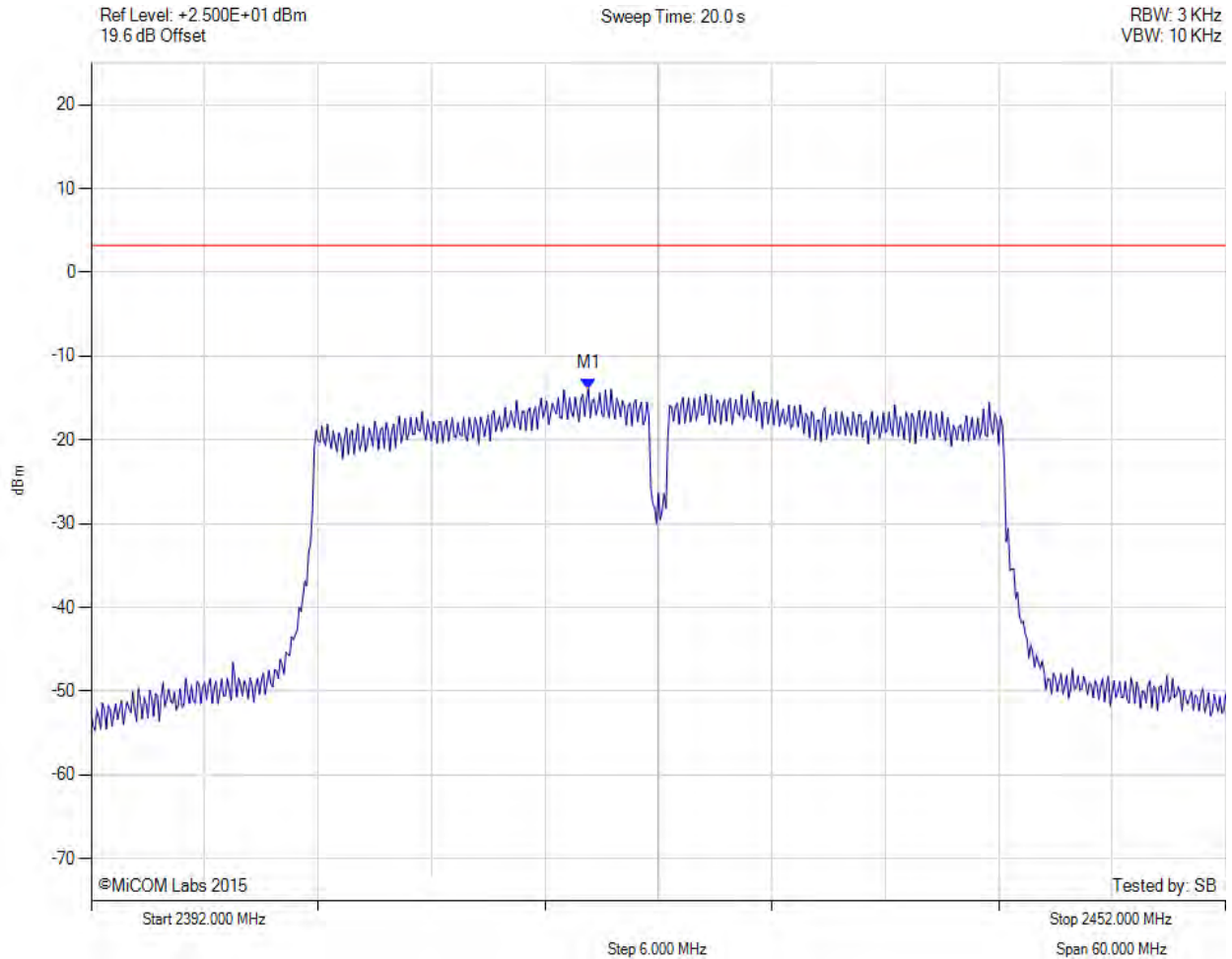
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2418.300 MHz : -13.866 dBm	Limit: ≤ 3.230 dBm

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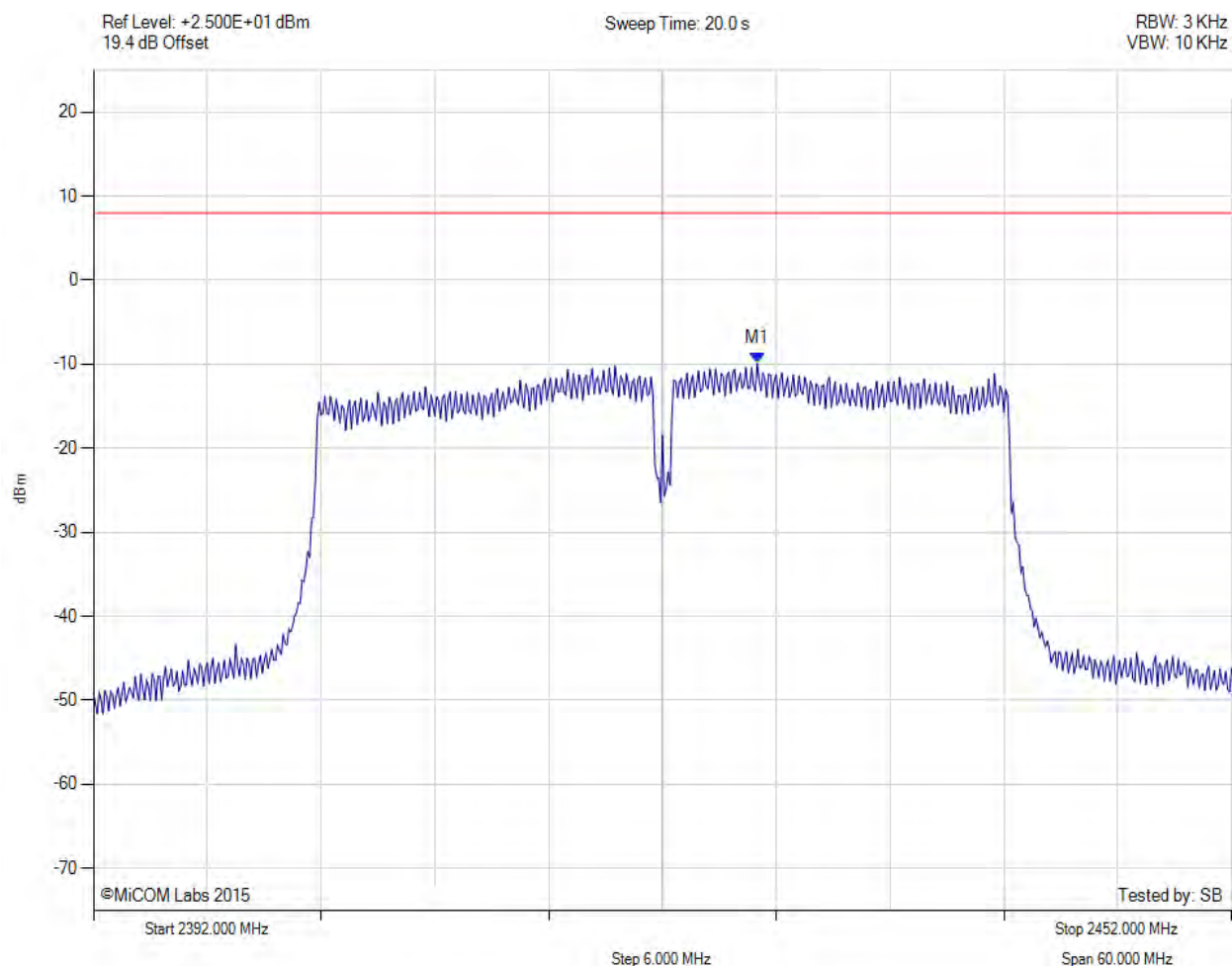


Title: Actiontec Electronics Inc. M6240V
To: FCC CFR 47 Part 15 Subpart C 15.247 (DTS)
Serial #: ATEC06-U5a Rev A
Issue Date: 28th July 2015
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2427.000 MHz : -9.917 dBm M1 + DCCF : 2427.000 MHz : -9.708 dBm Duty Cycle Correction Factor : +0.21 dB	Limit: ≤ 8.0 dBm Margin: -17.7 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2431.700 MHz : -13.339 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2432.000 MHz : -12.658 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2454.500 MHz : -12.004 dBm	Limit: ≤ 3.230 dBm

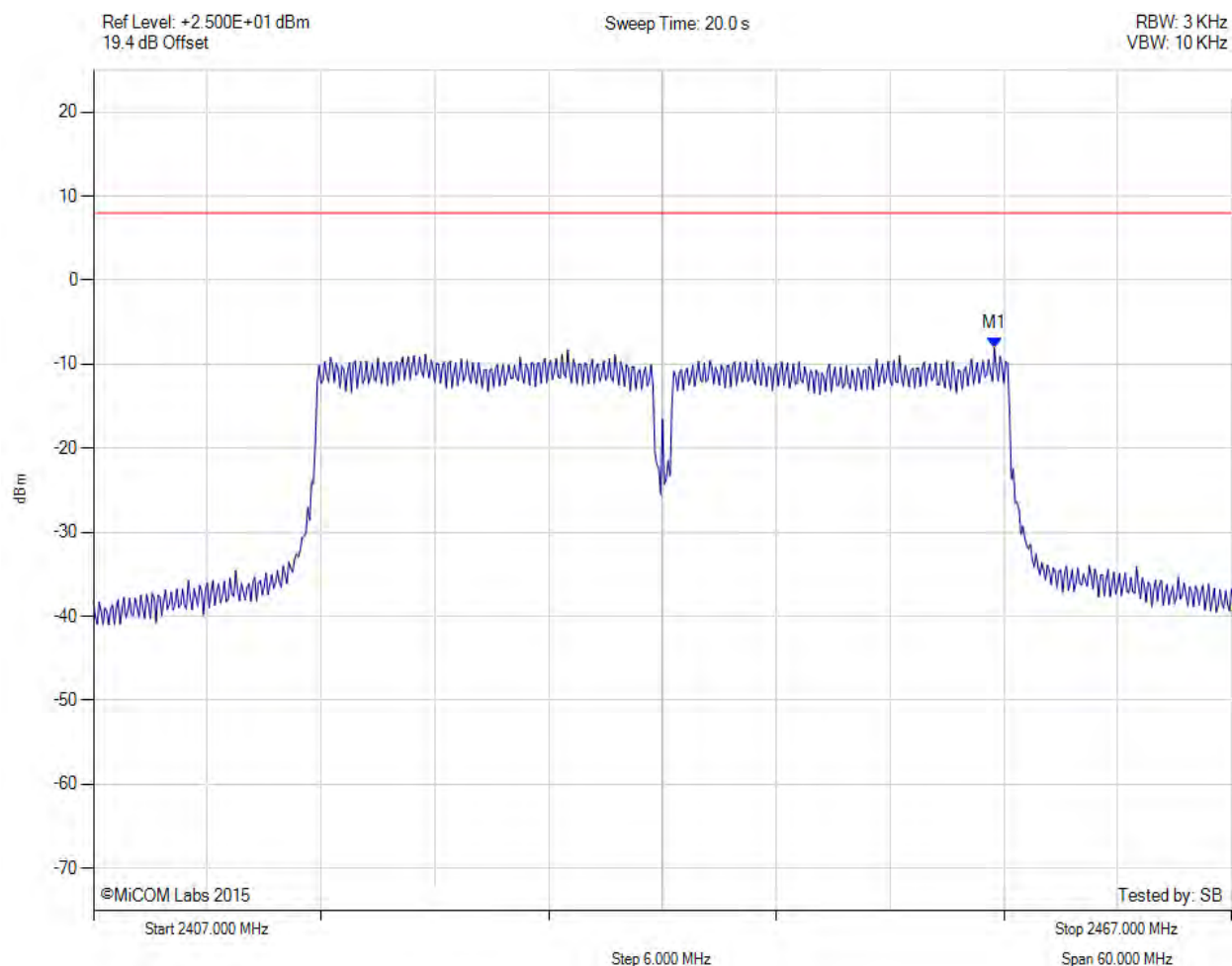
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



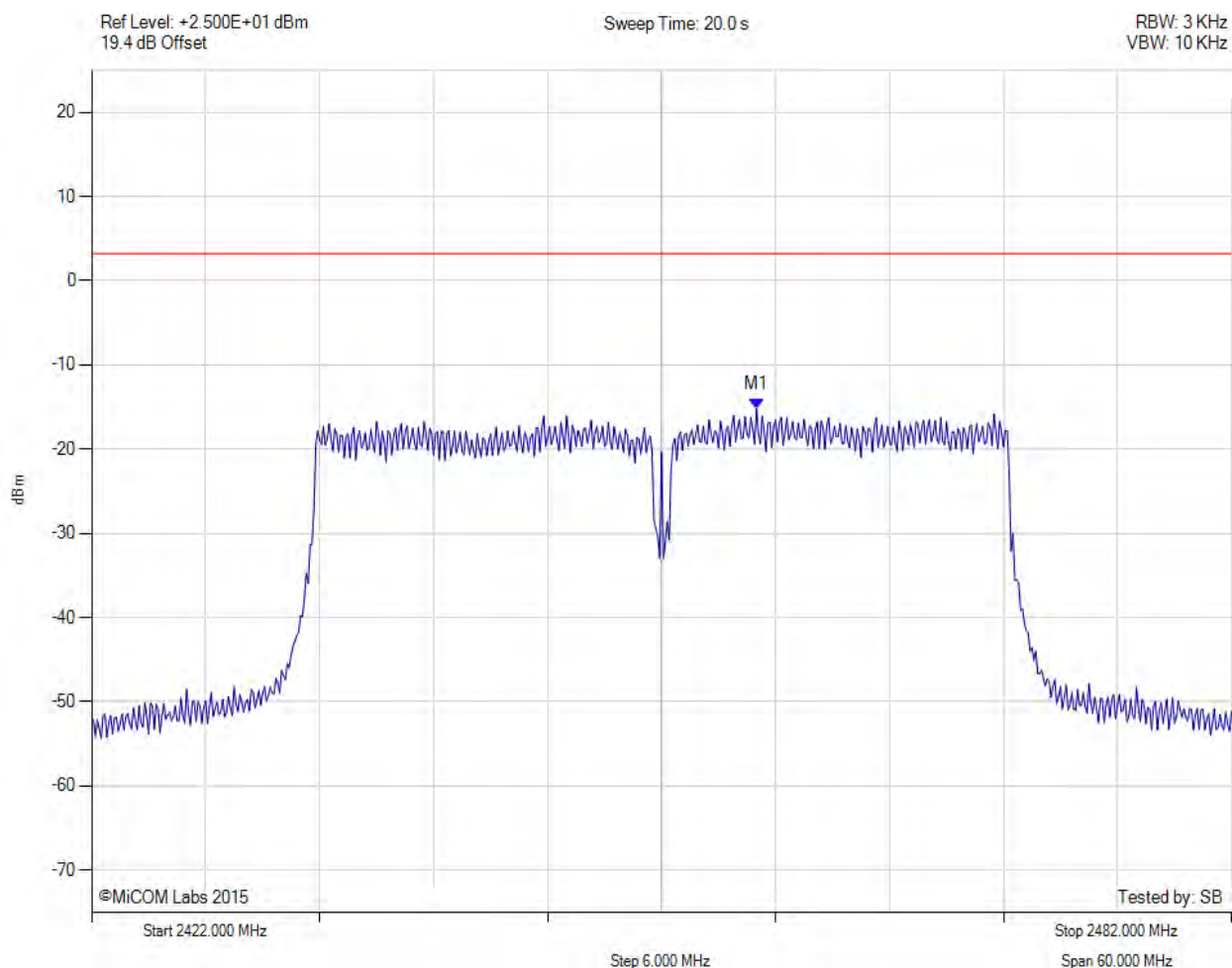
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2454.500 MHz : -8.051 dBm M1 + DCCF : 2454.500 MHz : -7.842 dBm Duty Cycle Correction Factor : +0.21 dB	Limit: ≤ 8.0 dBm Margin: -15.8 dB

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2457.000 MHz : -15.183 dBm	Limit: ≤ 3.230 dBm

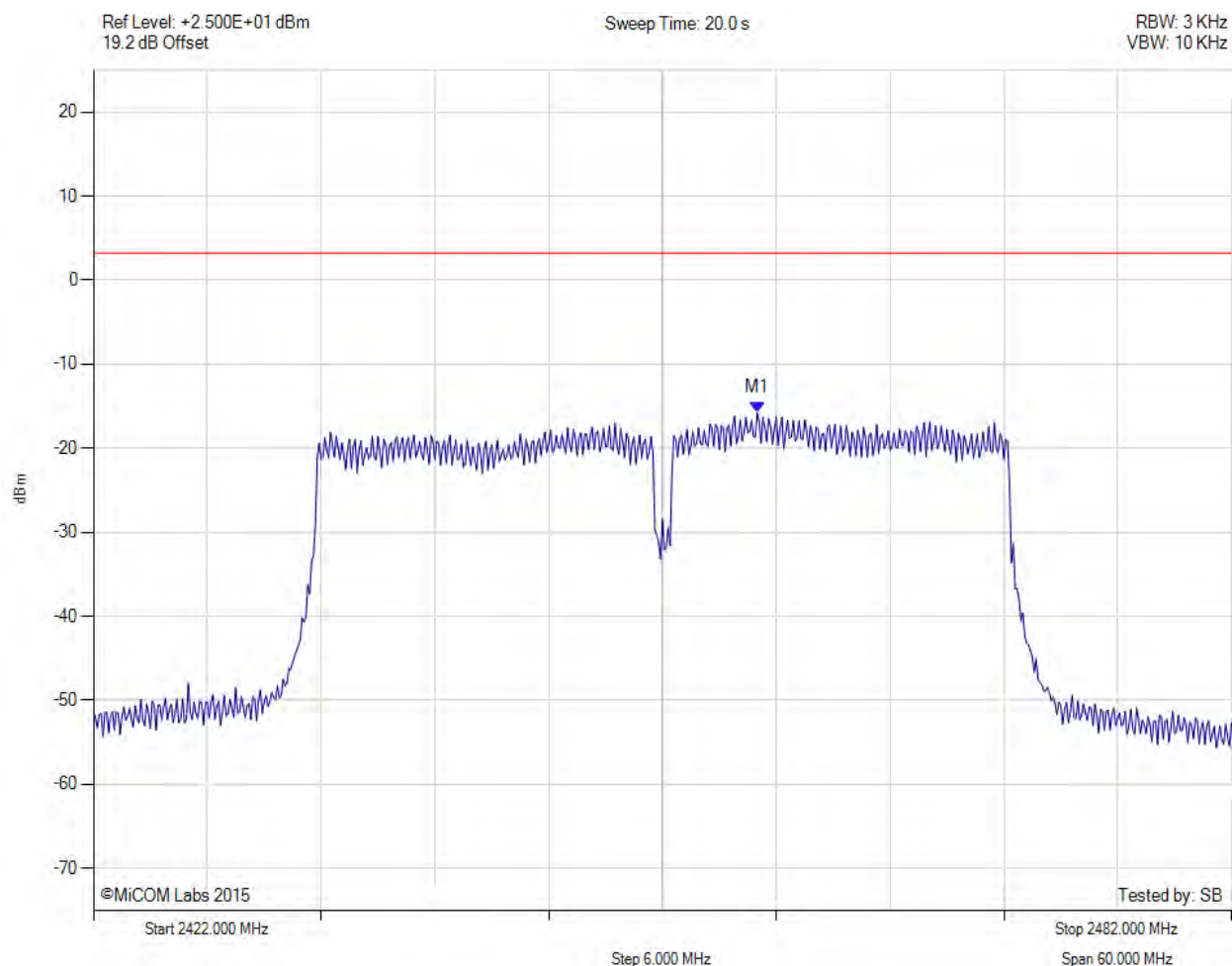
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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2457.000 MHz : -15.776 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain c, Temp: Ambient, Voltage: 0.8 Vdc



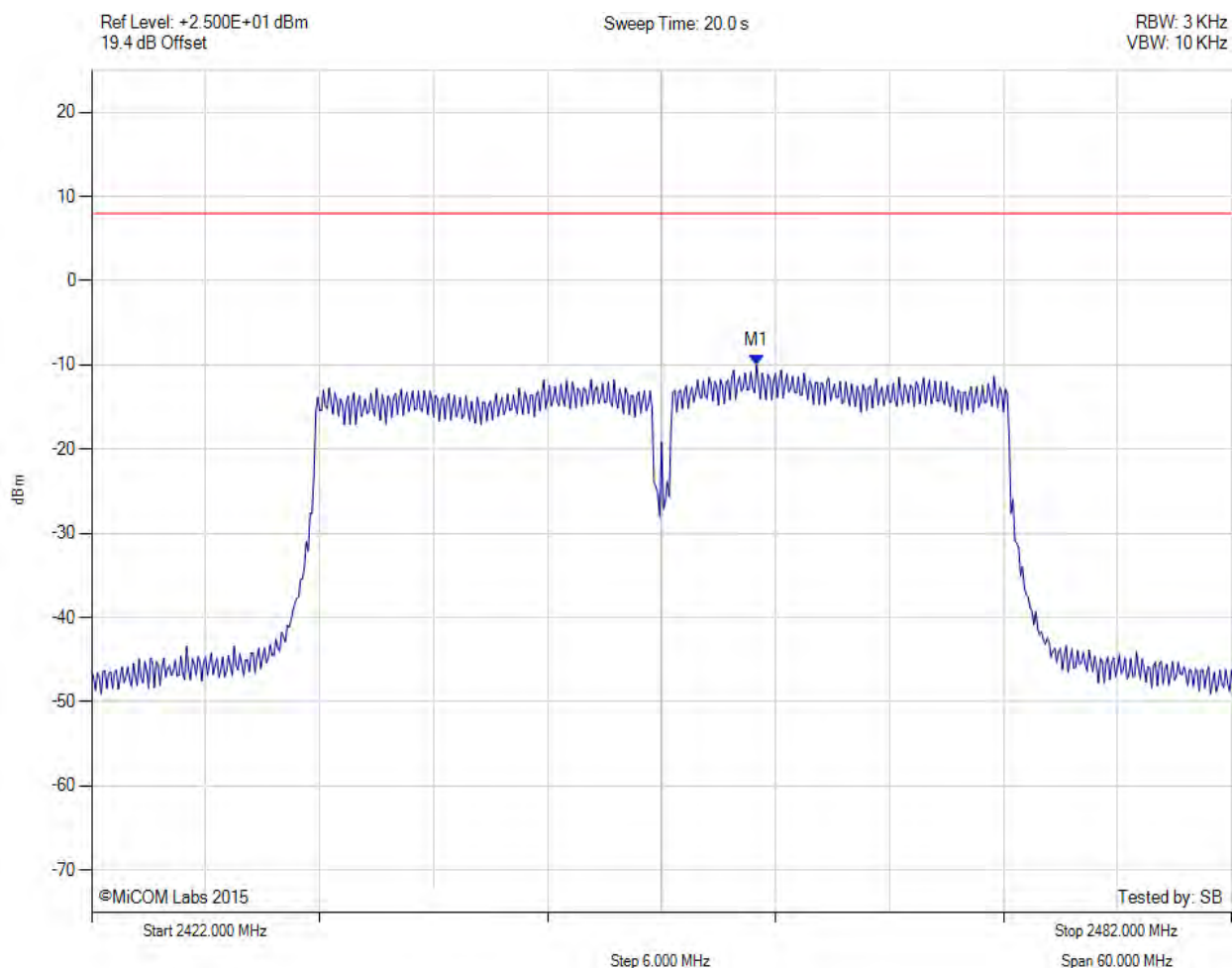
Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2457.000 MHz : -13.572 dBm	Limit: ≤ 3.230 dBm

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POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, SUM, Temp: Ambient, Voltage: 0.8 Vdc



Analyser Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVER Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2457.000 MHz : -9.970 dBm M1 + DCCF : 2457.000 MHz : -9.761 dBm Duty Cycle Correction Factor : +0.21 dB	Limit: ≤ 8.0 dBm Margin: -17.7 dB

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