REGULATORY COMPLIANCE TEST REPORT

FCC CFR 47 15.247, RSS-247 Issue 2

Report No.: MIKO95-U2 Rev A

Company: Mikrotikls SIA (MikroTik)

Test of: RBD23UGS-5HPacD2HnD-NM-US
Marketing Name: NetMetal ac²

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

Report No.: MIKO95-U2 Rev A

COMPLETE TEST REPORT

FROM

Test of: Mikrotikls SIA (MikroTik) RBD23UGS-5HPacD2HnD-NM-US

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

Test Report Serial No.: MIKO95-U2 Rev A

This report supersedes: NONE

Applicant: Mikrotikls SIA (MikroTik)
Brivibas gatve 214i
Riga, LV-1039
Latvia

Issue Date: 10th February 2020

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
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Pleasanton California 94566
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ACCREDITED
TESTING CERT #2381.01

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

Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 14th day of May 2018.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.01
Valid to February 29, 2020
Revised November 7, 2019

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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

Accredited Product Certification Body

A2LA has accredited

MiCOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 *Requirements for bodies certifying products, processes and services*. This product certification body also meets the *A2LA R322 – Specific Requirements – Notified Body Accreditation Requirements* and *A2LA R308 - Specific Requirements - ISO-IEC 17065 - Telecommunication Certification Body Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.

Presented this 14th day of May 2018

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.02
Valid to February 29, 2020
Revised November 7, 2019

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

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

2. DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	25th November 2019	
Rev A	10th February 2020	Initial Release

In the above table the latest report revision will replace all earlier versions.

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

3. TEST RESULT CERTIFICATE

Manufacturer:	Mikrotikls SIA (MikroTik) Brivibas gatve 214i Riga, LV-1039 Latvia	**Tested By:**	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Model:	RBD23UGS-5HPacD2HnD-NM-US	**Telephone:**	+1 925 462 0304
Type Of Equipment:	RBD23UGS-5HPacD2HnD-NM-US	**Fax:**	+1 925 462 0306
S/N's:	744D28F89F6F		
Test Date(s):	30th October – 7th November 2019	**Website:**	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15 Subpart C 15.247 (DTS) **ISED RSS-247 Issue 2**	**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.

A2LA ACCREDITED
TESTING CERT #2381.01

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve
Quality Manager MiCOM Labs, Inc.

Gordon Hurst
President & CEO MiCOM Labs, Inc.

4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	KDB 662911 D01 & D02	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 v05	24th August 2018	Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices operating under section 15.247 of the FCC Rules.
III	A2LA	August 2018	R105 - Requirement's When Making Reference to A2LA Accreditation Status
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 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements
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	2016	Radio Frequency Devices; Subpart C – Intentional Radiators
IX	ICES-003	Issue 6 Jan 2016; Updated April 2019	Information Technology Equipment (Including Digital Apparatus) – Limits and methods of measurement.
X	M 3003	Edition 3 Nov.2012	Expression of Uncertainty and Confidence in Measurements
XI	RSS-247 Issue 2	Feb 2017	Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and Licence-Exempt Local Area Network (LE-LEN) Devices
XII	RSS-Gen Issue 5	March 2019 Amendment 1	General Requirements for Compliance of Radio Apparatus
XIII	FCC 47 CFR Part 2.1033	2016	FCC requirements and rules regarding photographs and test setup diagrams.
XIV	KDB 789033 D02 V02r01	14th December, 2017	Guidelines For Compliance Testing Of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E

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.

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

5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Mikrotikls SIA (MikroTik) RBD23UGS-5HPacD2HnD-NM-US to FCC CFR 47 Part 15 Subpart C 15.247 (DTS). Radio Frequency Devices; Subpart C – Intentional Radiators
Applicant:	Mikrotikls SIA (MikroTik) Brivibas gatve 214i Riga, LV-1039 Latvia
Manufacturer:	Mikrotikls SIA (MikroTik)
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Test report reference number:	MIKO95-U2
Date EUT received:	21st October 2019
Standard(s) applied:	FCC CFR 47 Part 15 Subpart C 15.247 (DTS)
Dates of test (from - to):	30th October – 7th November 2019
No of Units Tested:	1
Product Family Name:	NetMetal ac²
Model(s):	RBD23UGS-5HPacD2HnD-NM-US -US
Location for use:	Indoors & Outdoors
Declared Frequency Range(s):	2400 - 2483.5 MHz;
Type of Modulation:	CCK, OFDM
EUT Modes of Operation:	802.11b; g; HT-20; HT-40;
Declared Nominal Output Power (dBm):	2400 - 2483.5 MHz: 21.00 dBm
Transmit/Receive Operation:	Transceiver
Rated Input Voltage and Current:	AC Input 100-240V 50/60 Hz DC Output: 48V 0.95A POE Input 24-57V DC 0.95 A
Operating Temperature Range:	-40 to 70 ºC
ITU Emission Designator:	802.11b (1 Mbit/s) 13M1G1D 802.11g 16M4D1D 802.11n – HT-20 17M6D1D 802.11n – HT-40 36M2D1D
Equipment Dimensions:	140 / 50 / 2450 mm
Weight:	0.8 Kg
Hardware Rev:	R1
Software Rev:	RouterOS 6.45.6

5.2. Scope Of Test Program

Mikrotikls SIA (MikroTik) RBD23UGS-5HPacD2HnD-NM-US

The scope of the test program was to test the Mikrotikls SIA (MikroTik) RBD23UGS-5HPacD2HnD-NM-US, configurations in the frequency ranges 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

ISED RSS-247 Issue 2
Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and Licence-Exempt Local Area Network (LE-LEN) Devices

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

Type (EUT/ Support)	Equipment Description	Manufacturer	Model No.	Serial No.
EUT	Access Point	MikroTik	RBD23UGS-5HPacD2HnD-NM-US	744D28F89F6F
Support	48V AC/DC Power Supply	Golden Profit Electronics Technology Ltd.	MT48-480095-11DGU	-
Support	Laptop	Dell	D620	

5.4. Antenna Details

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
external	MikroTik	DA-2450-05RP-SMA-01 (ACOMNIRPSMA)	Dipole	5.0	-	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	Bit Rate	Environment
USB	3m	1	Yes	USB-A	Digital	None	End-User|Admin|
dc Jack		1	No	dc jack	Analog	None	Power
SFP	>30m	1		SFP+	Packet Data	10,100,1000,10000	End-User|
SIM Cards		1		SIM	Digital	None	End-User|
Ethernet PoE IN	>30m	1		RJ45	Packet Data	10,100,1000	End-User|

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				
b	1	2,412.00	2,437.00	2,462.00
g	6	2,412.00	2,437.00	2,462.00
HT-20	6.5	2,412.00	2,437.00	2,462.00
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

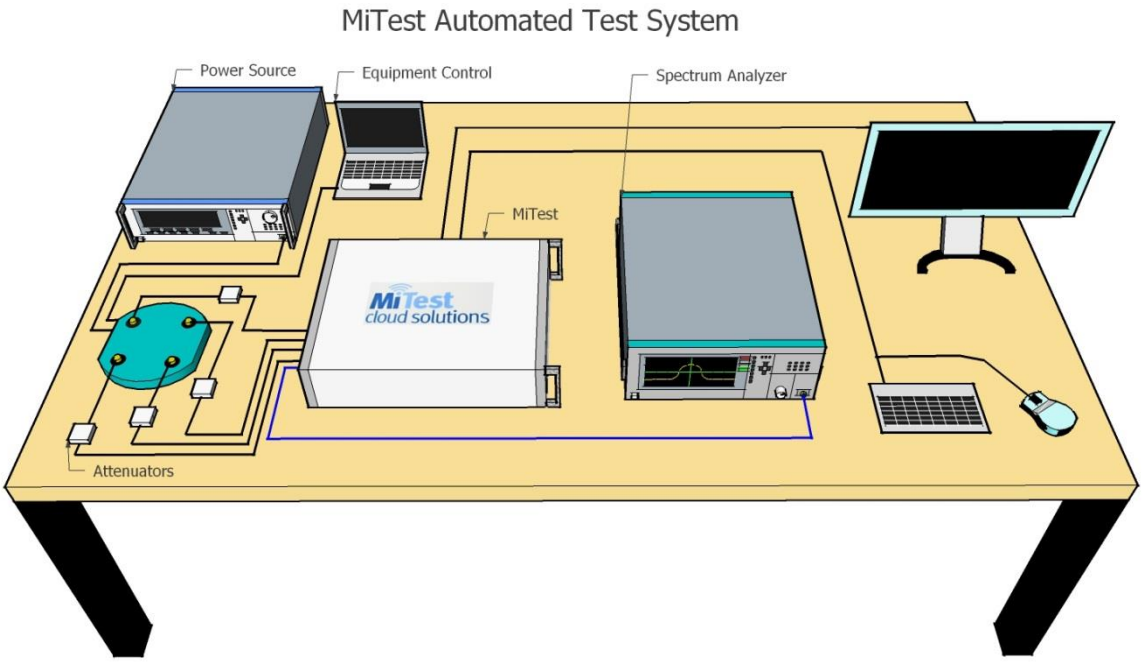
6. TEST SUMMARY

List of Measurements

Test Header	Result	Data Link
6 dB & 99% Bandwidth	Complies	View Data
Conducted Output Power	Complies	View Data
Power Spectral Density	Complies	View Data
Emissions	Complies	-
(1) Conducted Emissions	Complies	-
(i) Conducted Spurious Emissions	Complies	View Data
(ii) Conducted Band-Edge Emissions	Complies	View Data
(2) Radiated Emissions	Complies	-
(i) TX Spurious & Restricted Band Emissions	Complies	View Data
(ii) Restricted Edge & Band-Edge Emissions	Complies	View Data
(3) Digital Emissions (0.03 - 1 GHz)	Complies	View Data
(4) AC Wireline Emissions	Complies	View Data

7. TEST EQUIPMENT CONFIGURATION(S)

7.1. RF Conducted Testing

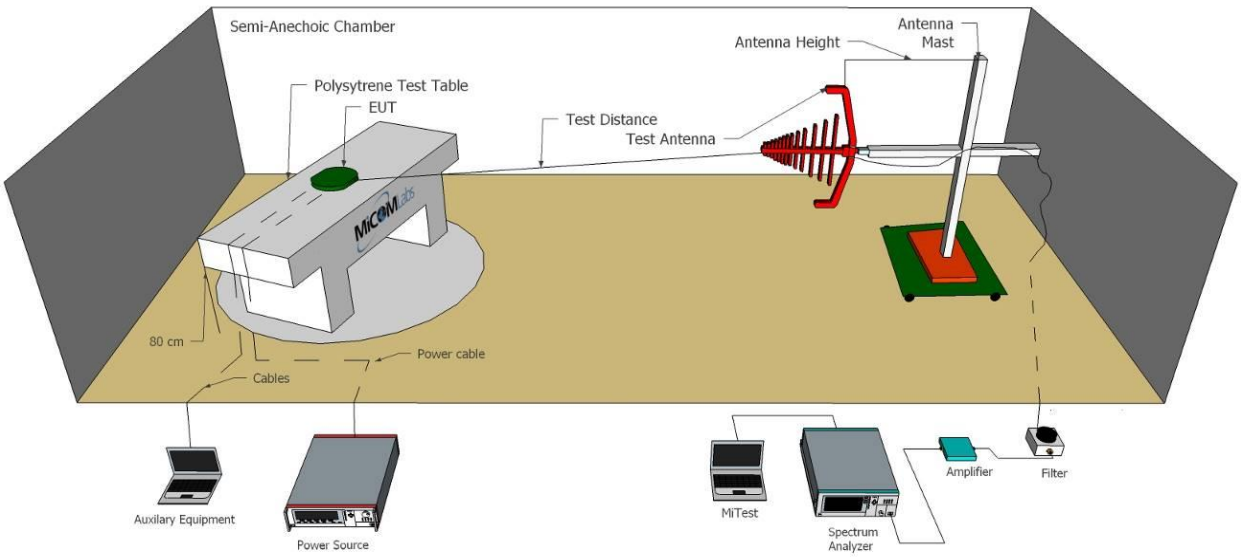


Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
#3 SA	MiTest Box to SA	Fairview Microwave	SCA1814-0101-72	#3 SA	9 Mar 2020
#3P1	EUT to MiTest box port 1	Fairview Microwave	SCA1814-0101-72	#3P1	9 Mar 2020
#3P2	EUT to MiTest box port 2	Fairview Microwave	SCA1814-0101-72	#3P2	9 Mar 2020
#3P3	EUT to MiTest box port 3	Fairview Microwave	SCA1814-0101-72	#3P3	9 Mar 2020
#3P4	EUT to MiTest box port 4	Fairview Microwave	SCA1812-0101-72	#3P4	9 Mar 2020
249	Resistance Thermometer	Thermotronics	GR2105-02	9340 #2	30 Oct 2020
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	8 Oct 2020
378	Rohde & Schwarz 40 GHz Receiver with Generator	Rhode & Schwarz	ESIB40	100107/040	12 Oct 2020
398	MiTest RF Conducted Test Software	MiCOM	MiTest ATS	Version 4.1	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

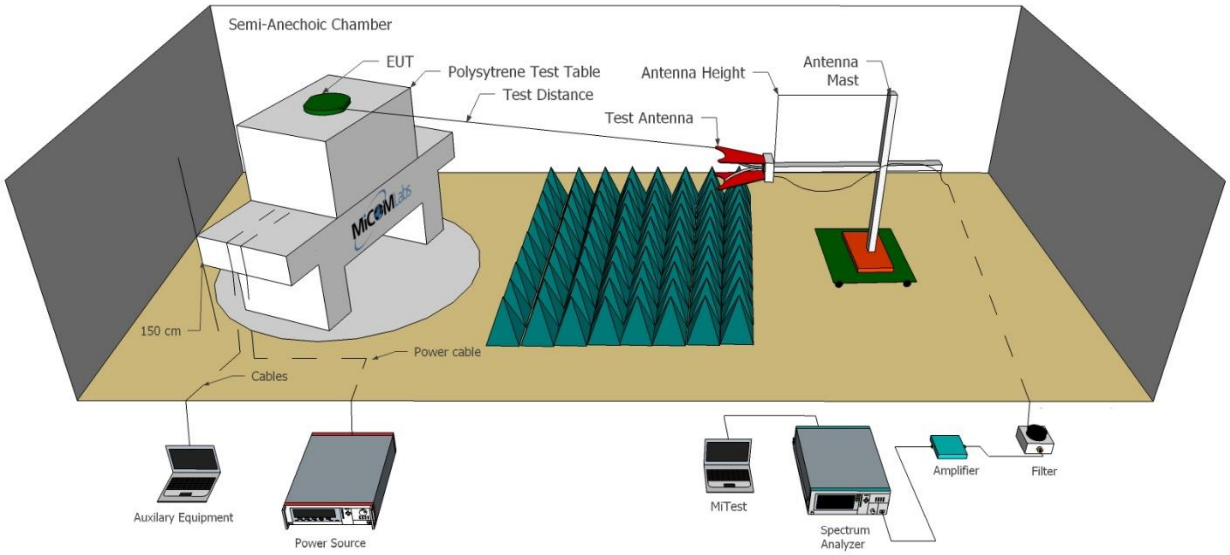
7.2. Radiated Emissions - 3m Chamber

Test Setup for Radiated Emissions for above and below 1 GHz

Radiated Emissions Below 1GHz Test Setup



Radiated Emissions Above 1GHz Test Setup



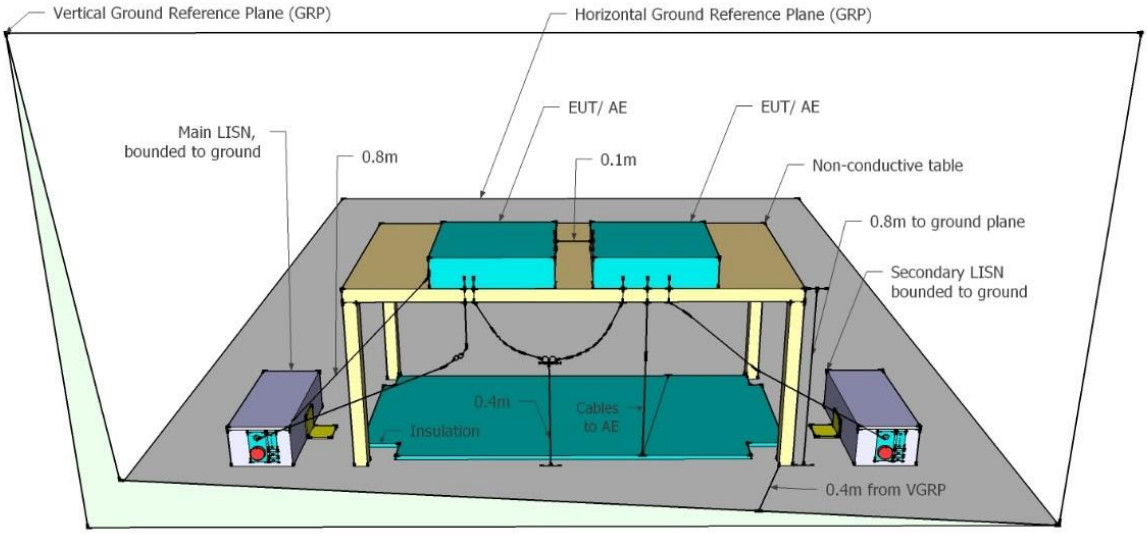
A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CU101	04R08507	Not Required
298	3M Radiated Emissions Chamber Maintenance Check	MiCOM	3M Chamber	298	25 Jan 2020
338	Sunol 30 to 3000 MHz Antenna	Sunol	JB3	A052907	4 Apr 2020
346	1.6 TO 10GHz High Pass Filter	EWT	EWT-57-0112	H1	3 Sep 2020
373	26III RMS Multimeter	Fluke	Fluke 26 series III	76080720	21 Nov 2019
378	Rohde & Schwarz 40 GHz Receiver with Generator	Rhode & Schwarz	ESIB40	100107/040	12 Oct 2020
397	Amp 10 - 2500MHz	MiCOM Labs	Amp 10 - 2500 MHz	NA	6 Sep 2020
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	12 Nov 2019
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	9 Sep 2020
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
416	Gigabit ethernet filter	ETS-Lingren	Gigafoil 260366	None	Not Required
447	MiTest Rad Emissions Test Software	MiCOM	Rad Emissions Test Software Version 1.0	447	Not Required
462	Schwarzbeck cable from Antenna to Amplifier.	Schwarzbeck	AK 9513	462	5 Sep 2020
463	Schwarzbeck cable from Amplifier to Bulkhead.	Schwarzbeck	AK 9513	463	5 Sep 2020
464	Schwarzbeck cable from Bulkhead to Receiver	Schwarzbeck	AK 9513	464	9 Sep 2020
466	Low Pass Filter DC-1500 MHz	Mini-Circuits	NLP-1750+	VUU10401438	3 Sep 2020
480	Cable - Bulkhead to Amp	SRC Haverhill	157-3050360	480	9 Sep 2020
481	Cable - Bulkhead to Receiver	SRC Haverhill	151-3050787	481	9 Sep 2020
510	Barometer/Thermometer	Control Company	68000-49	170871375	20 Dec 2019
518	Cable - Amp to Antenna	SRC Haverhill	157-3051574	518	9 Sep 2020
87	Uninterruptible Power Supply	Falcon Electric	ED2000-1/2LC	F3471 02/01	Cal when used
CC05	Confidence Check	MiCOM	CC05	None	4 Apr 2020

7.3. ac Wireline

The ac Wireline Conducted Emissions test was performed using the conducted test set-up shown in the diagram below.

Test Measurement Set up



Assets Utilized for ac Wireline Emission Testing

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
184	Pulse Limiter	Rhode & Schwarz	ESH3Z2	357.8810.52	28 Feb 2020
190	LISN (two-line V-network)	Rhode & Schwarz	ESH3Z5	836679/006	18 Oct 2020
287	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100201	8 Oct 2020
295	Conducted Emissions Chamber Maintenance Check	MiCOM	Conducted Emissions Chamber	295	20 Dec 2019
307	BNC-CABLE	Megaphase	1689 1GVT4	15F50B002	11 Sep 2020
316	Dell desktop computer workstation	Dell	Desktop	WS04	Not Required
372	AC Variable PS	California Instruments	1251P	L06951	Cal when used
378	Rohde & Schwarz 40 GHz Receiver with Generator	Rhode & Schwarz	ESIB40	100107/040	12 Oct 2020
389	LISN (3 Phase) 9kHz - 30 MHz for support equipment	Rohde & Schwarz	ESH2-Z5	881493/013	Not Required
496	MiTest Conducted Emissions test software.	MiCOM	Conducted Emissions Test Software Version 1.0	496	Not Required
510	Barometer/Thermometer	Control Company	68000-49	170871375	20 Dec 2019
CCEMC01	Confidence Check.	MiCOM	CCEMC01	None	28 Feb 2020

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)

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. (ºC):**	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		

Test Procedure for 6 dB and 99% Bandwidth Measurement
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.

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.

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

Limits for 6 dB and 99% Bandwidth

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(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.

Equipment Configuration for 6 dB & 99% Bandwidth			
Variant:	802.11b	**Duty Cycle (%):**	99
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

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

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
2412.0	13.066	13.146	--	--	13.146		
2437.0	12.986	12.986	--	--	12.986		
2462.0	13.066	13.066	--	--	13.066		

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).

Equipment Configuration for 6 dB & 99% Bandwidth			
Variant:	802.11g	**Duty Cycle (%):**	98
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz) Port(s)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	KHz	MHz
2412.0	16.353	16.353	--	--	16.353	16.353	≥500.0	-15.85
2437.0	16.273	16.353	--	--	16.353	16.273	≥500.0	-15.77
2462.0	16.353	16.353	--	--	16.353	16.353	≥500.0	-15.85

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
2412.0	16.433	16.433	--	--	16.433		
2437.0	16.353	16.433	--	--	16.433		
2462.0	16.433	16.433	--	--	16.433		

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).

Equipment Configuration for 6 dB & 99% Bandwidth			
Variant:	802.11n HT-20	**Duty Cycle (%):**	98
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz) Port(s)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	KHz	MHz
2412.0	17.315	17.555	--	--	17.555	17.315	≥500.0	-16.82
2437.0	17.315	17.555	--	--	17.555	17.315	≥500.0	-16.82
2462.0	17.555	17.555	--	--	17.555	17.555	≥500.0	-17.06

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
2412.0	17.555	17.555	--	--	17.555		
2437.0	17.555	17.555	--	--	17.555		
2462.0	17.635	17.555	--	--	17.635		

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).

Equipment Configuration for 6 dB & 99% Bandwidth			
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)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 6 dB Bandwidth (MHz) Port(s)				6 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	KHz	MHz
2422.0	35.110	35.110	--	--	35.110	35.110	≥500.0	-34.61
2437.0	35.110	35.110	--	--	35.110	35.110	≥500.0	-34.61
2452.0	35.110	35.110	--	--	35.110	35.110	≥500.0	-34.61

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
2422.0	35.912	35.912	--	--	35.912		
2437.0	35.912	35.912	--	--	35.912		
2452.0	35.912	36.232	--	--	36.232		

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).

9.2. Conducted Output Power

Conducted Test Conditions for Fundamental Emission Output Power			
Standard:	FCC CFR 47:15.247	**Ambient Temp. (ºC):**	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
Power measurements were made using an average power sensor.

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*Log10 ($10^{a/10}$ + $10^{b/10}$ + $10^{c/10}$ + $10^{d/10}$)]
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 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 stave 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.

Equipment Configuration for Average Output Power			
Variant:	802.11b	**Duty Cycle (%):**	99.0
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	5.00
Modulation:	CCK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
2412.0	17.06	21.10	--	--	22.54	30.00	-7.46	25.00
2437.0	20.88	21.15	--	--	24.03	30.00	-5.97	25.00
2462.0	21.12	21.08	--	--	24.11	30.00	-5.89	25.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

Power measurements were performed using an average power sensor. The above measurements are true pulse readings and therefore a Duty Cycling correction factor was not required.

Equipment Configuration for Average Output Power			
Variant:	802.11g	**Duty Cycle (%):**	98.0
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	5.00
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
2412.0	19.26	19.54	--	--	22.41	30.00	-7.59	24.00
2437.0	19.46	19.38	--	--	22.43	30.00	-7.57	24.00
2462.0	19.27	19.45	--	--	22.37	30.00	-7.63	24.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

Power measurements were performed using an average power sensor. The above measurements are true pulse readings and therefore a Duty Cycling correction factor was not required.

Equipment Configuration for Average Output Power			
Variant:	802.11n HT-20	**Duty Cycle (%):**	98.0
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	5.00
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
2412.0	20.83	21.23	--	--	24.04	30.00	-5.96	26.00
2437.0	21.09	21.39	--	--	24.25	30.00	-5.75	26.00
2462.0	21.15	21.30	--	--	24.24	30.00	-5.76	26.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

Power measurements were performed using an average power sensor. The above measurements are true pulse readings and therefore a Duty Cycling correction factor was not required.

Equipment Configuration for Average Output Power			
Variant:	802.11n HT-40	**Duty Cycle (%):**	95.0
Data Rate:	13.50 MBit/s	**Antenna Gain (dBi):**	5.00
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
2422.0	20.47	20.54	--	--	23.52	30.00	-6.48	23.00
2437.0	20.31	20.27	--	--	23.30	30.00	-6.70	23.00
2452.0	20.28	20.17	--	--	23.24	30.00	-6.76	23.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

Power measurements were performed using an average power sensor. The above measurements are true pulse readings and therefore a Duty Cycling correction factor was not required.

9.3. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
Standard:	FCC CFR 47:15.247	**Ambient Temp. (ºC):**	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 (å) 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.

Equipment Configuration for Power Spectral Density - Average			
Variant:	802.11b	**Duty Cycle (%):**	99.0
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	5.00
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 Port(s) (dBm/3KHz)				Amplitude Summation + DCCF (+0.04 dB)	Limit	Margin
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2412.0	-6.514	-6.383	--	--	-3.538	8.0	-11.5
2437.0	-6.087	-6.102	--	--	-3.519	8.0	-11.5
2462.0	-5.713	-6.321	--	--	-3.257	8.0	-11.3

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 (%):**	98.0
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	5.00
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 Port(s) (dBm/3KHz)				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2412.0	-13.322	-12.859	--	--	-10.131	8.0	-18.1
2437.0	-12.996	-12.504	--	--	-9.882	8.0	-17.9
2462.0	-13.033	-12.917	--	--	-10.222	8.0	-18.2

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).

Equipment Configuration for Power Spectral Density - Average			
Variant:	802.11n HT-20	**Duty Cycle (%):**	98.0
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	5.00
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 Port(s) (dBm/3KHz)				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2412.0	-13.932	-13.390	--	--	-10.811	8.0	-18.8
2437.0	-13.546	-13.620	--	--	-10.601	8.0	-18.6
2462.0	-13.350	-13.737	--	--	-10.730	8.0	-18.7

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).

Equipment Configuration for Power Spectral Density - Average			
Variant:	802.11n HT-40	**Duty Cycle (%):**	95.0
Data Rate:	13.50 MBit/s	**Antenna Gain (dBi):**	5.00
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 Port(s) (dBm/3KHz)				Amplitude Summation + DCCF (+0.22 dB)	Limit	Margin
MHz	a	b	c	d	dBm/3KHz	dBm/3KHz	dB
2422.0	-14.440	-14.787	--	--	-11.398	8.0	-19.4
2437.0	-14.880	-14.494	--	--	-11.693	8.0	-19.7
2452.0	-14.568	-14.446	--	--	-11.544	8.0	-19.6

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).

9.4. Emissions

9.4.1. Conducted Emissions

9.4.1.1. Conducted Spurious Emissions

Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.247	**Ambient Temp. (ºC):**	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)).

Equipment Configuration for Conducted Spurious Emissions - Average			
Variant:	802.11b	**Duty Cycle (%):**	99
Data Rate:	1.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	CCK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Average (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	-40.461	-13.15	-37.512	-14.16	--	--	--	--
2437.0	30.0 - 26000.0	-39.284	-14.19	-35.824	-13.50	--	--	--	--
2462.0	30.0 - 26000.0	-38.318	-13.54	-35.688	-13.92	--	--	--	--

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

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

Equipment Configuration for Conducted Spurious Emissions - Average			
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	Conducted Spurious Emissions - Average (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	-41.041	-19.37	-41.730	-20.58	--	--	--	--
2437.0	30.0 - 26000.0	-40.219	-18.69	-39.971	-18.95	--	--	--	--
2462.0	30.0 - 26000.0	-39.603	-18.22	-39.389	-21.79	--	--	--	--

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 Spurious Emissions - Average			
Variant:	802.11n HT-20	**Duty Cycle (%):**	98
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Conducted Spurious Emissions - Average (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	-41.505	-18.49	-41.703	-20.96	--	--	--	--
2437.0	30.0 - 26000.0	-40.343	-20.94	-39.782	-21.58	--	--	--	--
2462.0	30.0 - 26000.0	-39.400	-22.01	-39.843	-18.65	--	--	--	--

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

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

Equipment Configuration for Conducted Spurious Emissions - Average			
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	Conducted Spurious Emissions - Average (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	-41.435	-18.84	-42.234	-20.45	--	--	--	--
2437.0	30.0 - 26000.0	-40.246	-19.13	-40.843	-20.55	--	--	--	--
2452.0	30.0 - 26000.0	-39.551	-20.97	-41.249	-19.87	--	--	--	--

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).

9.4.1.2. Conducted Band-Edge Emissions

9.4.1.2.1. Conducted Low Band-Edge Emissions

Equipment Configuration for Conducted Low Band-Edge Emissions - Average

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

Test Measurement Results

Channel Frequency:	2412.0 MHz					
Band-Edge Frequency:	2400.0 MHz					
Test Frequency Range:	2350.0 - 2422.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M1 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	17.91	-12.09	2403.20	--	--	-3.200
b	-40.05	-12.40	2402.80	--	--	-2.800

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

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

Equipment Configuration for Conducted Low Band-Edge Emissions - Average

Variant:	802.11g	**Duty Cycle (%):**	98.0
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

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

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-28.73	-18.42	2401.70	--	--	-1.700
b	-28.42	-17.94	2401.50	--	--	-1.500

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

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

Equipment Configuration for Conducted Low Band-Edge Emissions - Average

Variant:	802.11n HT-20	**Duty Cycle (%):**	98.0
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	2412.0 MHz					
Band-Edge Frequency:	2400.0 MHz					
Test Frequency Range:	2350.0 - 2422.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M1 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-28.60	-18.33	2401.20	--	--	-1.200
b	-28.82	-17.95	2401.20	--	--	-1.200

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 (%):**	95.0
Data Rate:	13.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	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	-25.92	-18.52	2402.00	--	--	-2.000
b	-23.27	-17.91	2402.00	--	--	-2.000

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).

9.4.1.2.2. Conducted High Band-Edge Emissions

Equipment Configuration for Conducted High Band-Edge Emissions - Average

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

Test Measurement Results

Channel Frequency:	2462.0 MHz					
Band-Edge Frequency:	2483.5 MHz					
Test Frequency Range:	2452.0 - 2524.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-42.10	-12.26	2470.60	--	--	-12.900
b	-43.27	-12.10	2470.90	--	--	-12.600

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

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

Equipment Configuration for Conducted High Band-Edge Emissions - Average			
Variant:	802.11g	**Duty Cycle (%):**	98.0
Data Rate:	6.00 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

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

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-42.48	-18.13	2472.10	--	--	-11.400
b	-42.85	-18.04	2472.30	--	--	-11.200

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

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

Equipment Configuration for Conducted High Band-Edge Emissions - Average			
Variant:	802.11n HT-20	**Duty Cycle (%):**	98.0
Data Rate:	6.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

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

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M3 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-42.91	-18.17	2472.60	--	--	-10.900
b	-42.67	-18.07	2472.60	--	--	-10.900

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

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

Equipment Configuration for Conducted High Band-Edge Emissions - Average			
Variant:	802.11n HT-40	**Duty Cycle (%):**	95.0
Data Rate:	13.50 MBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OFDM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	SB
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	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	-27.65	-18.07	2471.70	--	--	-11.800
b	-28.65	-17.99	2471.70	--	--	-11.800

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).

9.4.2. Radiated Emissions

9.4.2.3. TX Spurious & Restricted Band Emissions

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions (Restricted Bands)			
Standard:	FCC CFR 47 Part 15 Subpart C 15.247 (DTS)	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.205, 15.209	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

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

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

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

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

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

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

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

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

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

Frequency Band			
MHz	**MHz**	**MHz**	**GHz**
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75

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

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

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

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

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

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

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

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

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

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

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

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

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

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

Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11b
Antenna Gain (dBi):	5.00	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2412.00	**Data Rate:**	1.00 MBit/s
Power Setting:	26	**Tested By:**	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	1731.97	52.52	1.68	-15.58	38.62	Max Peak	Vertical	101	267	74.0	-35.4	Pass
#2	1731.97	39.40	1.68	-15.58	25.50	Max Avg	Vertical	101	267	54.0	-28.5	Pass
#3	2262.81	60.51	1.99	-12.68	49.82	Max Peak	Vertical	119	346	74.0	-24.2	Pass
#4	2262.81	47.20	1.99	-12.68	36.51	Max Avg	Vertical	119	346	54.0	-17.5	Pass
#5	4785.10	53.35	2.79	-12.42	43.72	Max Peak	Vertical	106	18	74.0	-30.3	Pass
#6	4785.10	40.52	2.79	-12.42	30.89	Max Avg	Vertical	106	18	54.0	-23.1	Pass
#7	7235.46	59.04	3.61	-7.95	54.70	Max Peak	Vertical	101	206	74.0	-19.3	Pass
#8	7235.46	52.32	3.61	-7.95	47.98	Max Avg	Vertical	101	206	54.0	-6.0	Pass

Spurious emissions were measured up to 25 GHz, no emissions were found.

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11b
Antenna Gain (dBi):	5.00	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2437.00	**Data Rate:**	1.00 MBit/s
Power Setting:	26	**Tested By:**	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2270.41	61.40	1.97	-12.81	50.56	Max Peak	Vertical	101	350	74.0	-23.4	Pass
#2	2270.41	47.46	1.97	-12.81	36.62	Max Avg	Vertical	101	350	54.0	-17.4	Pass
#3	2437.97	60.63	2.00	-12.22	50.41	Fundamental	Vertical	100	0	--	--	
#4	7309.38	59.27	3.62	-7.89	55.00	Max Peak	Vertical	133	185	74.0	-19.0	Pass
#5	7309.38	52.82	3.62	-7.89	48.55	Max Avg	Vertical	133	185	54.0	-5.5	Pass

Spurious emissions were measured up to 25 GHz, no emissions were found.

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11b
Antenna Gain (dBi):	5.00	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2462.00	**Data Rate:**	1.00 MBit/s
Power Setting:	26	**Tested By:**	SB

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2266.16	60.01	1.98	-12.73	49.26	Max Peak	Vertical	157	349	74.0	-24.7	Pass
#2	2266.16	46.39	1.98	-12.73	35.64	Max Avg	Vertical	157	349	54.0	-18.4	Pass
#3	2462.56	54.50	2.04	-12.43	44.11	Fundamental	Horizontal	137	0	--	--	
#4	7384.68	57.18	3.59	-7.82	52.95	Max Peak	Vertical	98	213	74.0	-21.1	Pass
#5	7384.68	50.77	3.59	-7.82	46.54	Max Avg	Vertical	98	213	54.0	-7.5	Pass
#6	7387.00	53.70	3.59	-7.80	49.49	Max Peak	Horizontal	108	200	74.0	-24.5	Pass
#7	7387.00	42.85	3.59	-7.80	38.64	Max Avg	Horizontal	108	200	54.0	-15.4	Pass

Spurious emissions were measured up to 25 GHz, no emissions were found.

9.4.2.4. Restricted Edge & Band-Edge Emissions

MikroTik DA-2450-05RP-SMA-01		Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11b	2412.00	2390.00	60.51	45.70	25
802.11g	2412.00	2390.00	65.24	52.18	24
802.11n HT-20	2412.00	2390.00	63.04	51.26	26
802.11n HT-40	2422.00	2390.00	67.22	53.76	23

MikroTik DA-2450-05RP-SMA-01		Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
802.11b	2462.00	2483.50	60.35	48.15	25
802.11g	2462.00	2483.50	61.19	48.82	24
802.11n HT-20	2462.00	2483.50	65.91	52.56	26
802.11n HT-40	2452.00	2483.50	68.34	53.77	23

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11b
Antenna Gain (dBi):	5.00	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2412.00	**Data Rate:**	1.00 MBit/s
Power Setting:	25	**Tested By:**	SB

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2363.52	26.72	1.97	31.82	60.51	Max Peak	Vertical	155	208	74.0	-13.5	Pass
#2	2390.00	11.72	2.02	31.96	45.70	Max Avg	Vertical	155	208	54.0	-8.3	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11g
Antenna Gain (dBi):	5.00	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2412.00	**Data Rate:**	6.00 MBit/s
Power Setting:	24	**Tested By:**	SB

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2390.00	18.20	2.02	31.96	52.18	Max Avg	Vertical	155	208	54.0	-1.8	Pass
#2	2390.00	31.26	2.02	31.96	65.24	Max Peak	Vertical	155	208	74.0	-8.8	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	5.00	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2412.00	**Data Rate:**	6.50 MBit/s
Power Setting:	26	**Tested By:**	SB

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2387.53	29.07	2.02	31.95	63.04	Max Peak	Horizontal	150	212	74.0	-11.0	Pass
#2	2390.00	17.28	2.02	31.96	51.26	Max Avg	Horizontal	150	212	54.0	-2.7	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Lower Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11n HT-40
Antenna Gain (dBi):	5.00	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2422.00	**Data Rate:**	13.50 MBit/s
Power Setting:	23	**Tested By:**	SB

Test Measurement Results

2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2389.33	33.25	2.02	31.95	67.22	Max Peak	Horizontal	150	212	74.0	-6.8	Pass
#2	2390.00	19.78	2.02	31.96	53.76	Max Avg	Horizontal	150	212	54.0	-0.2	Pass
#3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11b
Antenna Gain (dBi):	Not Applicable	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2462.00	**Data Rate:**	1.00 MBit/s
Power Setting:	25	**Tested By:**	SB

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#2	2486.50	26.00	2.02	32.33	60.35	Max Peak	Vertical	156	206	74.0	-13.7	Pass
#3	2496.04	13.79	2.04	32.32	48.15	Max Avg	Vertical	156	206	54.0	-5.9	Pass
#1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11g
Antenna Gain (dBi):	5.00	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2462.00	**Data Rate:**	6.00 MBit/s
Power Setting:	24	**Tested By:**	SB

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2483.50	14.46	2.03	32.33	48.82	Max Avg	Vertical	156	206	54.0	-5.2	Pass
#2	2483.50	26.83	2.03	32.33	61.19	Max Peak	Vertical	156	206	74.0	-12.8	Pass
#3	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11n HT-20
Antenna Gain (dBi):	5.00	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2462.00	**Data Rate:**	6.50 MBit/s
Power Setting:	26	**Tested By:**	SB

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2483.50	18.20	2.03	32.33	52.56	Max Avg	Vertical	156	206	54.0	-1.4	Pass
#3	2483.77	31.55	2.03	32.33	65.91	Max Peak	Vertical	156	206	74.0	-8.1	Pass
#2	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Equipment Configuration for Radiated - Upper Restricted Band-Edge Emissions

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	802.11n HT-40
Antenna Gain (dBi):	5.00	**Modulation:**	OFDM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2452.00	**Data Rate:**	13.50 MBit/s
Power Setting:	23	**Tested By:**	SB

Test Measurement Results

2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	2483.50	19.41	2.03	32.33	53.77	Max Avg	Vertical	156	206	54.0	-0.2	Pass
#3	2487.18	33.99	2.02	32.33	68.34	Max Peak	Vertical	156	206	74.0	-5.7	Pass
#2	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

9.4.3. Digital Emissions (0.03 - 1 GHz)

Radiated Test Conditions for Radiated Digital Emissions (0.03 – 1 GHz)			
Standard:	FCC CFR 47:15.247	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Digital Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.209	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Digital Emissions (0.03 – 1 GHz)
Testing 30M-1 GHz was performed in a 3-meter anechoic chamber using a CISPR compliant receiver. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. To further maximize emissions the receive antenna was varied between 1 and 4 meters. The emissions are recorded with receiver in peak hold mode. Emissions closest to the limits are measured in the quasi-peak mode with the tuned receiver using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed.

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

Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. In this test facility, the Antenna Factor, Cable Loss, and Amplifier Gains are loaded into the Rohde & Schwarz Receiver and the corrected field strength can be read directly on the receiver.

FS = R + AF + CORR

where:
FS = Field Strength
R = Measured Receiver Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain

For example:
Given a Receiver input reading of 51.5dBmV; Antenna Factor of 8.5dB; Cable Loss of 1.3dB; Falloff Factor of 0dB, an Amplifier Gain of 26dB and Notch Filter Loss of 1dB. The Field Strength of the measured emission is:

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

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are done as:

Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100mV/m
48 dBmV/m = 250mV/m

Limits for Radiated Digital Emissions (0.03 – 1 GHz)

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength		Measurement Distance (m)
	µV/m (microvolts/meter)	dBµV/m (dB microvolts/meter)	
0.009-0.490	2400/F(kHz)	--	300
0.490-1.705	24000/F(kHz)	--	30

1.705-30.0	30	29.5	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46.0	3
Above 960	500	54.0	3

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

Equipment Configuration for Digital Emissions (0.03 - 1 GHz)

Antenna:	MikroTik DA-2450-05RP-SMA-01	**Variant:**	OFDM
Antenna Gain (dBi):	5.00	**Modulation:**	CCK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	2437.00	**Data Rate:**	1.00 MBit/s
Power Setting:	26	**Tested By:**	SB

Test Measurement Results

30.00 - 1000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	31.43	44.64	3.55	-8.71	39.48	MaxQP	Vertical	111	173	40.0	-0.5	Pass
#2	31.43	24.13	3.55	-8.71	18.97	MaxQP	Horizontal	101	218	40.0	-21.0	Pass
#3	43.86	52.15	3.67	-17.38	38.44	MaxQP	Vertical	100	338	40.0	-1.6	Pass
#4	43.86	36.74	3.67	-17.38	23.03	MaxQP	Horizontal	134	201	40.0	-17.0	Pass
#5	64.83	52.38	3.84	-20.75	35.47	MaxQP	Vertical	114	355	40.0	-4.5	Pass
#6	64.83	38.62	3.84	-20.75	21.71	MaxQP	Horizontal	151	293	40.0	-18.3	Pass
#7	182.74	44.31	4.46	-17.11	31.66	MaxQP	Horizontal	198	0	43.0	-11.3	Pass
#8	535.06	32.54	5.69	-9.34	28.89	MaxQP	Horizontal	104	185	46.0	-17.1	Pass

9.4.4. AC Wireline Emissions

Test Conditions for ac Wireline Emissions (0.15 – 30 MHz)			
Standard:	FCC CFR 47:15.247	Ambient Temp. (ºC):	20.0 - 24.5
Test Heading:	Conducted (ac Wireline Emissions)	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.207	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for ac Wireline Emissions (0.15 – 30 MHz)
The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

Test configuration and setup for ac Wireline Emission Measurement were per the ac Wireline Test Set-up specified in this document.

Limits for ac Wireline Emissions

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

Limits for conducted disturbance at the mains ports of class B ITE

Frequency of emission (MHz)	Quasi-peak dBuV	Average dBuV
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50
Note 1	* Decreases with the logarithm of the frequency	
Note 2	* The lower limit applies at the boundary between frequency ranges	

Limits for conducted disturbance at the mains ports of class A ITE

Frequency of emission (MHz)	Quasi-peak dBuV	Average dBuV
0.15–0.5	79	66
0.5–30	73	60
Note 1	* The lower limit shall apply at the transition frequency.	

The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

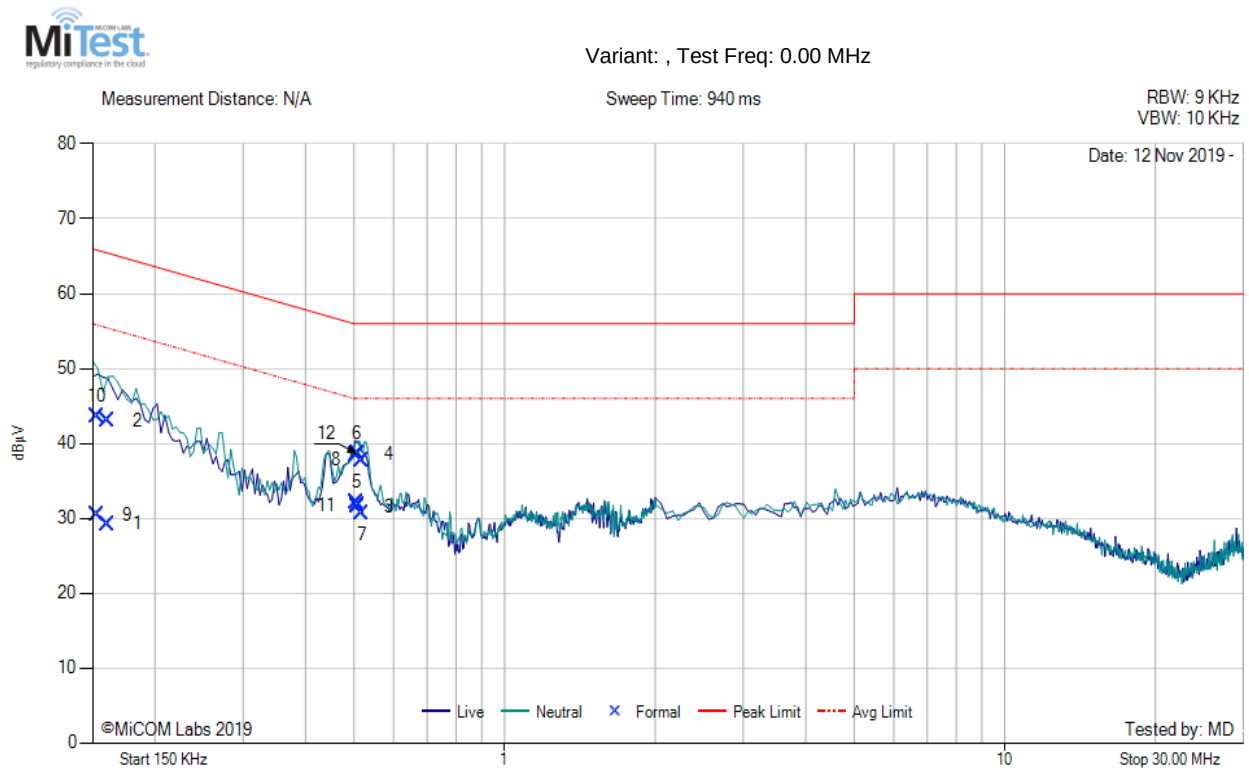
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μV within the frequency band 535-1705 kHz, as measured using a 50 μH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

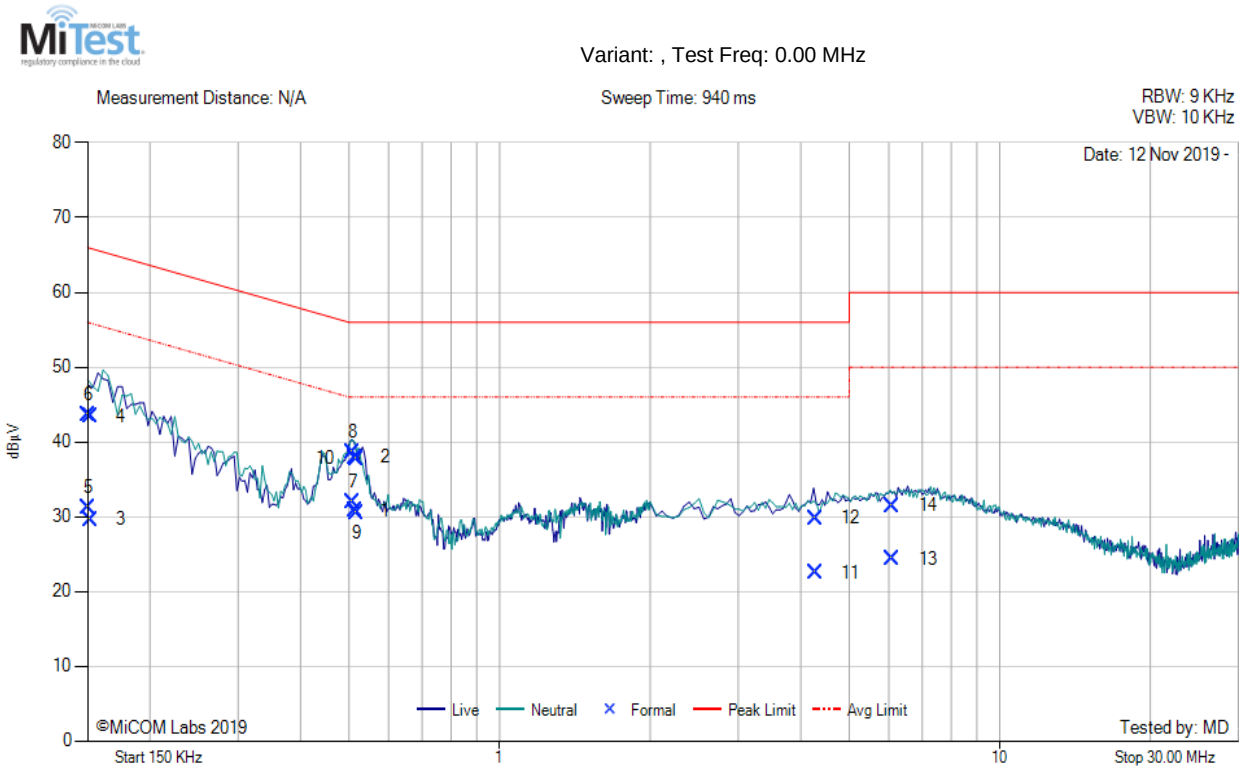
Model:	NetMetal ac²	Configuration tested:	PoE Powered
Input power:	120V_{AC}/60Hz	Standard:	FCC 15B



Num	Frequency MHz	Raw dBµV	Cable Loss dB	Factor dB	Total Correction dBµV	Corrected Value dBµV	Measurement Type	Line	Limit dBµV/m	Margin dB	Pass /Fail
1	0.160	19.25	0.05	9.92	9.97	29.22	Max Avg	Neutral	55.7	-26.5	Pass
2	0.160	33.04	0.05	9.92	9.97	43.01	Max Qp	Neutral	65.7	-22.7	Pass
3	0.510	21.56	0.09	9.92	10.01	31.57	Max Avg	Live	46.0	-14.4	Pass
4	0.510	28.57	0.09	9.92	10.01	38.58	Max Qp	Live	56.0	-17.4	Pass
5	0.505	22.14	0.09	9.92	10.01	32.15	Max Avg	Neutral	46.0	-13.9	Pass
6	0.505	28.48	0.09	9.92	10.01	38.49	Max Qp	Neutral	56.0	-17.5	Pass
7	0.519	20.59	0.09	9.92	10.01	30.60	Max Avg	Neutral	46.0	-15.4	Pass
8	0.519	27.73	0.09	9.92	10.01	37.74	Max Qp	Neutral	56.0	-18.3	Pass
9	0.153	20.47	0.05	9.92	9.97	30.44	Max Avg	Live	55.9	-25.5	Pass
10	0.153	33.68	0.05	9.92	9.97	43.65	Max Qp	Live	65.9	-22.3	Pass
11	0.508	21.72	0.09	9.92	10.01	31.73	Max Avg	Live	46.0	-14.3	Pass
12	0.508	28.57	0.09	9.92	10.01	38.58	Max Qp	Live	56.0	-17.4	Pass

Test Notes: 120 POE AC Mains

Model:	NetMetal ac²	Configuration tested:	AC/DC PS Powered
Input power:	120V_{AC}/60Hz	Standard:	FCC 15B



Num	Frequency MHz	Raw dBµV	Cable Loss dB	Factor dB	Total Correction dBµV	Corrected Value dBµV	Measurement Type	Line	Limit dBµV/m	Margin dB	Pass /Fail
1	0.514	20.87	0.09	9.92	10.01	30.88	Max Avg	Neutral	46.0	-15.1	Pass
2	0.514	27.95	0.09	9.92	10.01	37.96	Max Qp	Neutral	56.0	-18.0	Pass
3	0.152	19.67	0.05	9.92	9.97	29.64	Max Avg	Neutral	55.9	-26.3	Pass
4	0.152	33.46	0.05	9.92	9.97	43.43	Max Qp	Neutral	65.9	-22.5	Pass
5	0.151	21.23	0.05	9.92	9.97	31.20	Max Avg	Live	56.0	-24.8	Pass
6	0.151	33.66	0.05	9.92	9.97	43.63	Max Qp	Live	66.0	-22.3	Pass
7	0.509	21.96	0.09	9.92	10.01	31.97	Max Avg	Live	46.0	-14.0	Pass
8	0.509	28.64	0.09	9.92	10.01	38.65	Max Qp	Live	56.0	-17.4	Pass
9	0.518	20.55	0.09	9.92	10.01	30.56	Max Avg	Neutral	46.0	-15.4	Pass
10	0.518	27.73	0.09	9.92	10.01	37.74	Max Qp	Neutral	56.0	-18.3	Pass
11	4.277	12.20	0.24	10.06	10.30	22.50	Max Avg	Live	46.0	-23.5	Pass
12	4.277	19.49	0.24	10.06	10.30	29.79	Max Qp	Live	56.0	-26.2	Pass
13	6.110	13.90	0.34	10.15	10.49	24.39	Max Avg	Live	50.0	-25.6	Pass
14	6.110	21.00	0.34	10.15	10.49	31.49	Max Qp	Live	60.0	-28.5	Pass

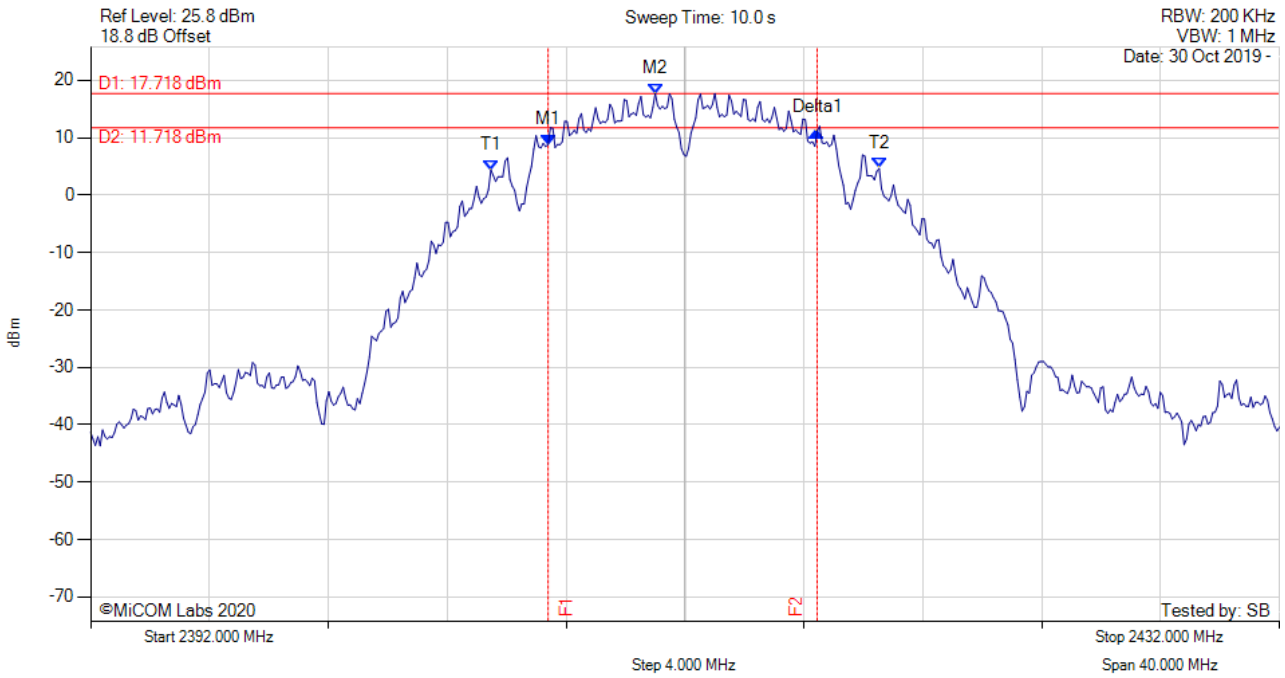
Test Notes: 120 PS AC Mains

A. APPENDIX - GRAPHICAL IMAGES

A.1. 6 dB & 99% Bandwidth

6 dB & 99% BANDWIDTH

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

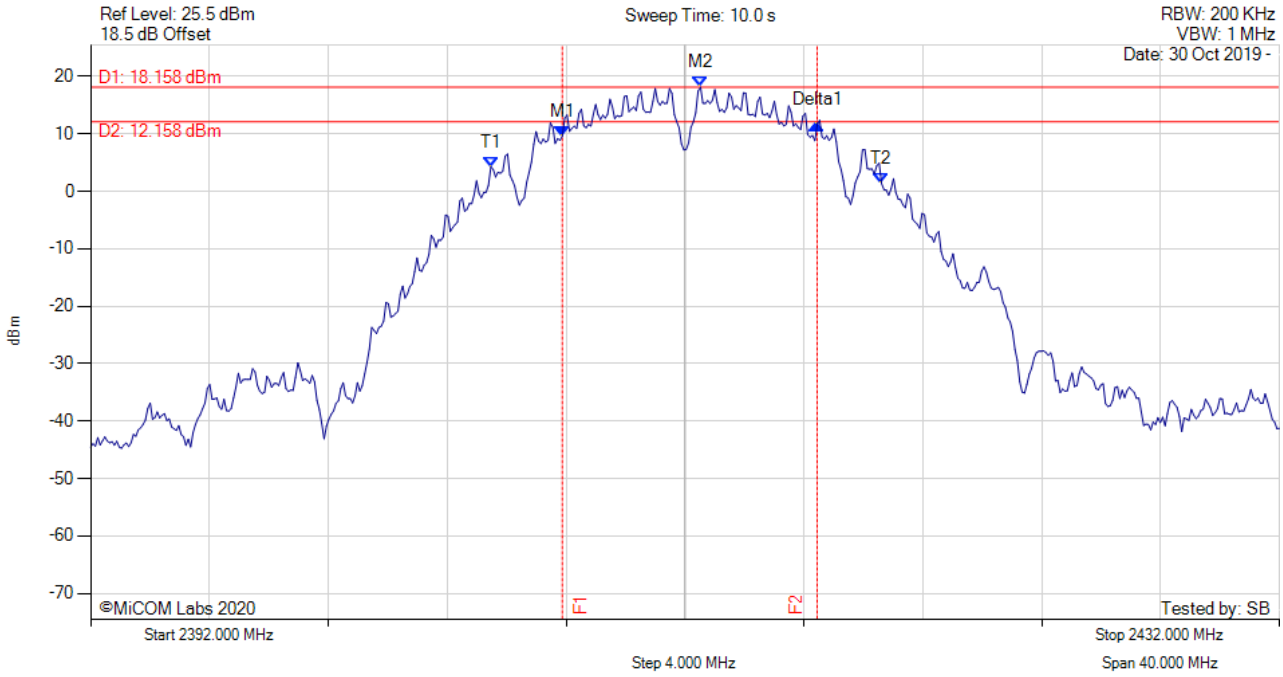


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.391 MHz : 8.814 dBm M2 : 2410.998 MHz : 17.718 dBm Delta1 : 9.058 MHz : 2.321 dB T1 : 2405.467 MHz : 4.393 dBm T2 : 2418.533 MHz : 4.655 dBm OBW : 13.066 MHz	Measured 6 dB Bandwidth: 9.058 MHz Limit: ≥500.0 kHz Margin: -8.56 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

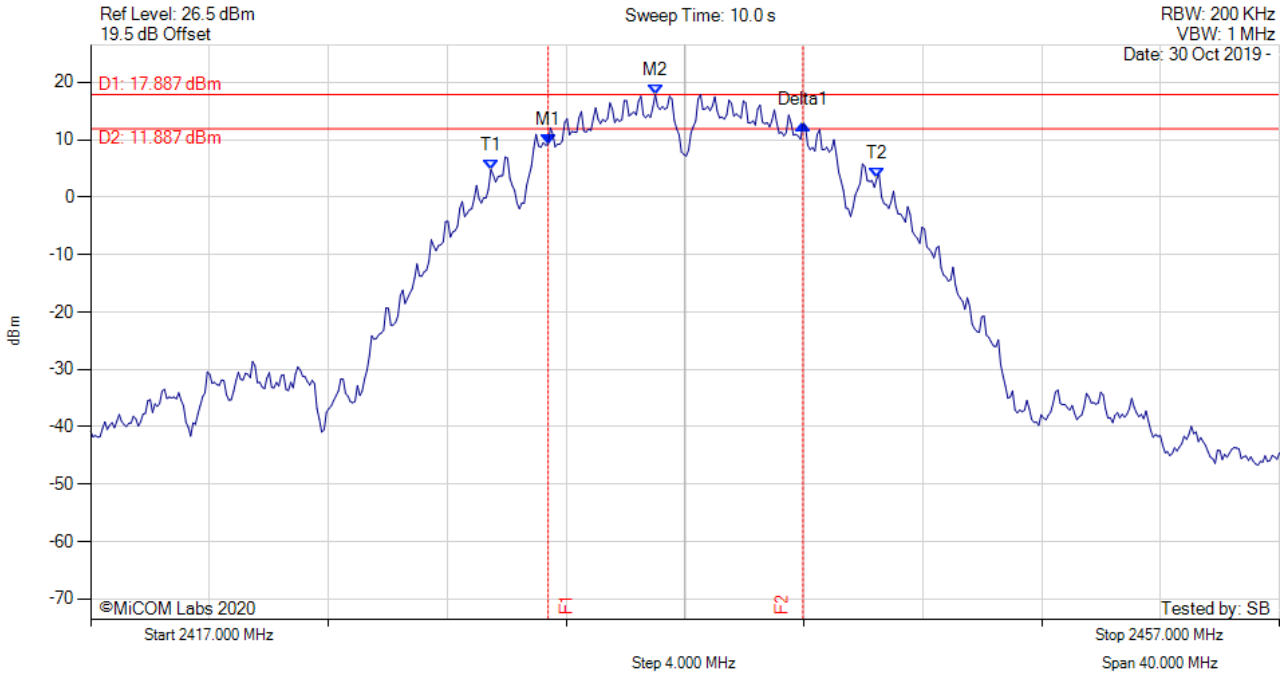


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2407.872 MHz : 9.584 dBm M2 : 2412.521 MHz : 18.158 dBm Delta1 : 8.577 MHz : 2.058 dB T1 : 2405.467 MHz : 4.306 dBm T2 : 2418.613 MHz : 1.394 dBm OBW : 13.146 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥500.0 kHz Margin: -8.08 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

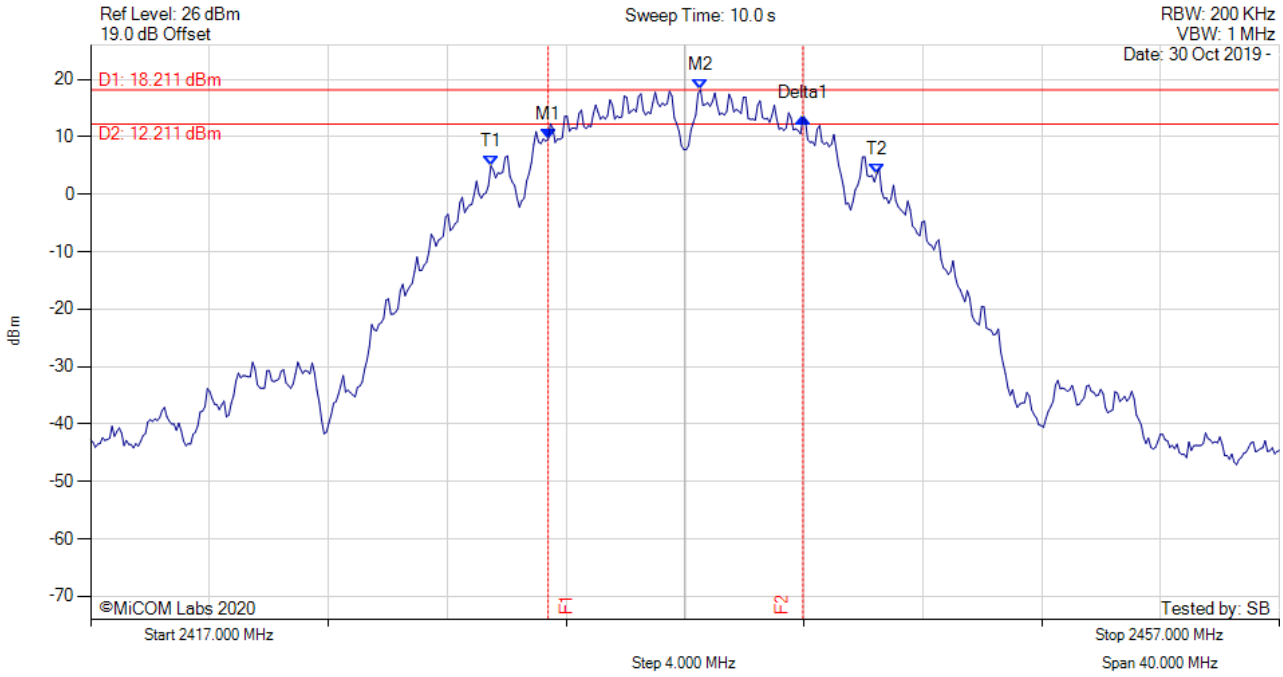


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2432.391 MHz : 9.175 dBm M2 : 2435.998 MHz : 17.887 dBm Delta1 : 8.577 MHz : 3.533 dB T1 : 2430.467 MHz : 4.830 dBm T2 : 2443.453 MHz : 3.317 dBm OBW : 12.986 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥500.0 kHz Margin: -8.08 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

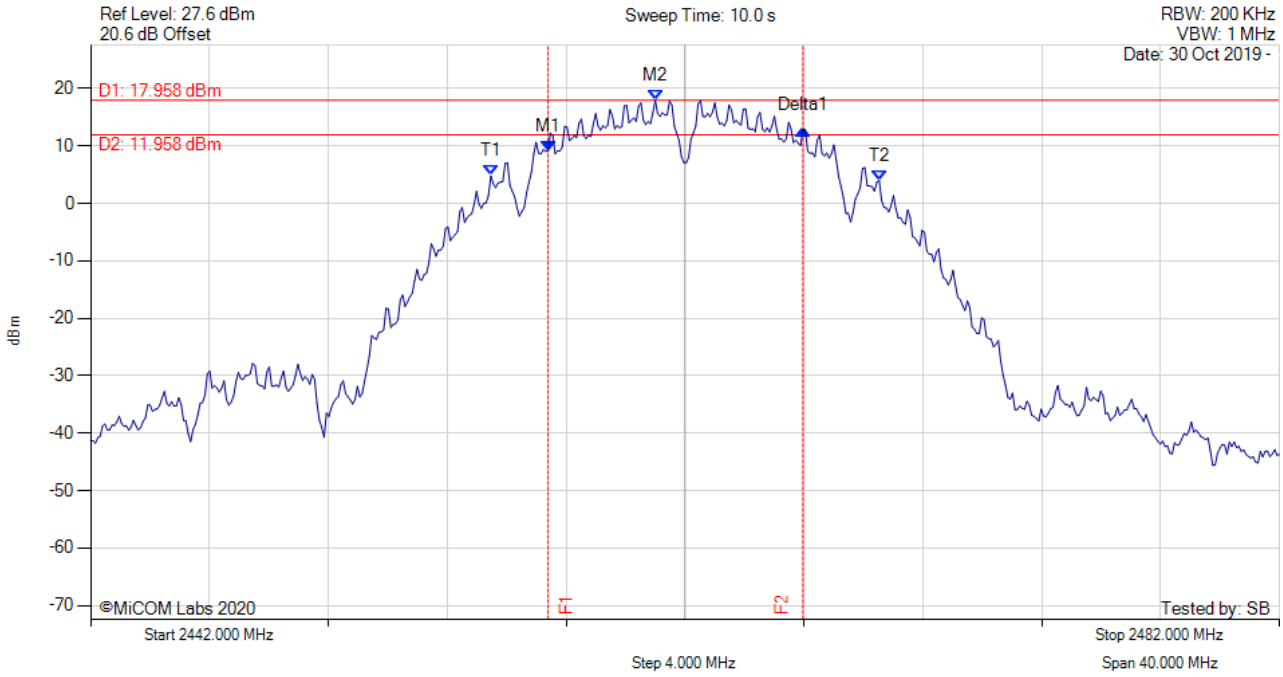


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2432.391 MHz : 9.561 dBm M2 : 2437.521 MHz : 18.211 dBm Delta1 : 8.577 MHz : 3.862 dB T1 : 2430.467 MHz : 4.969 dBm T2 : 2443.453 MHz : 3.598 dBm OBW : 12.986 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥500.0 kHz Margin: -8.08 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

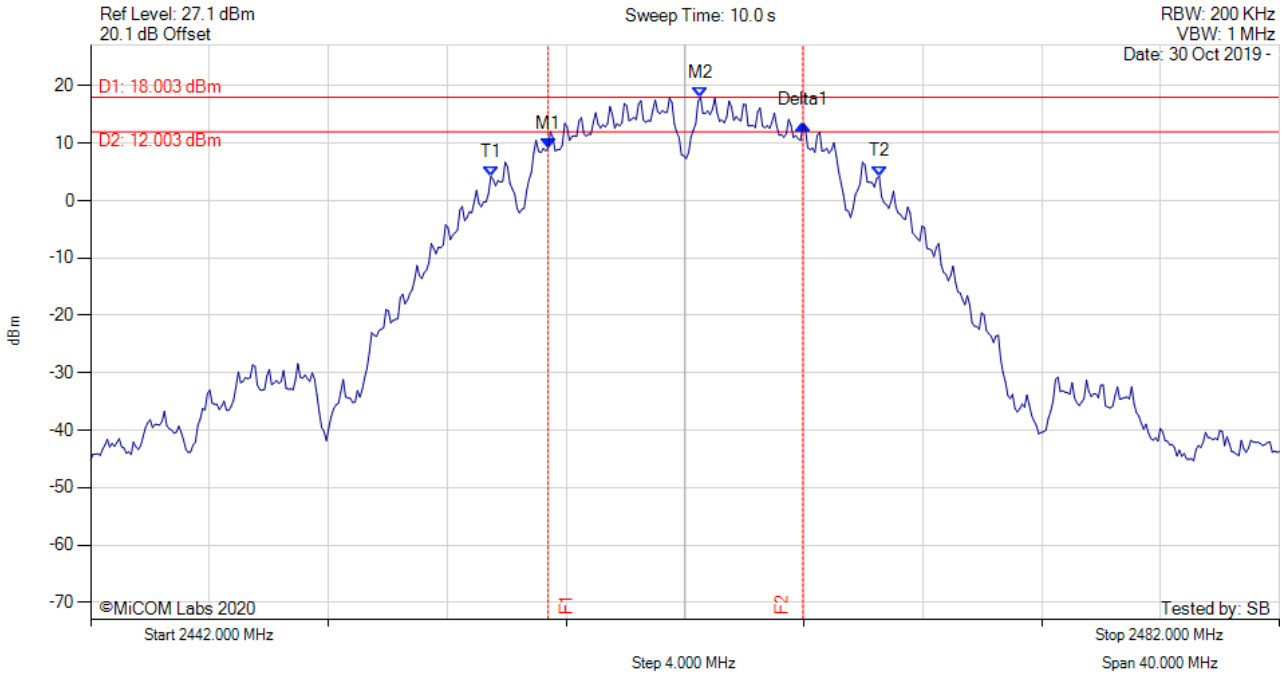


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2457.391 MHz : 9.152 dBm M2 : 2460.998 MHz : 17.958 dBm Delta1 : 8.577 MHz : 3.760 dB T1 : 2455.467 MHz : 4.802 dBm T2 : 2468.533 MHz : 4.029 dBm OBW : 13.066 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥500.0 kHz Margin: -8.08 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

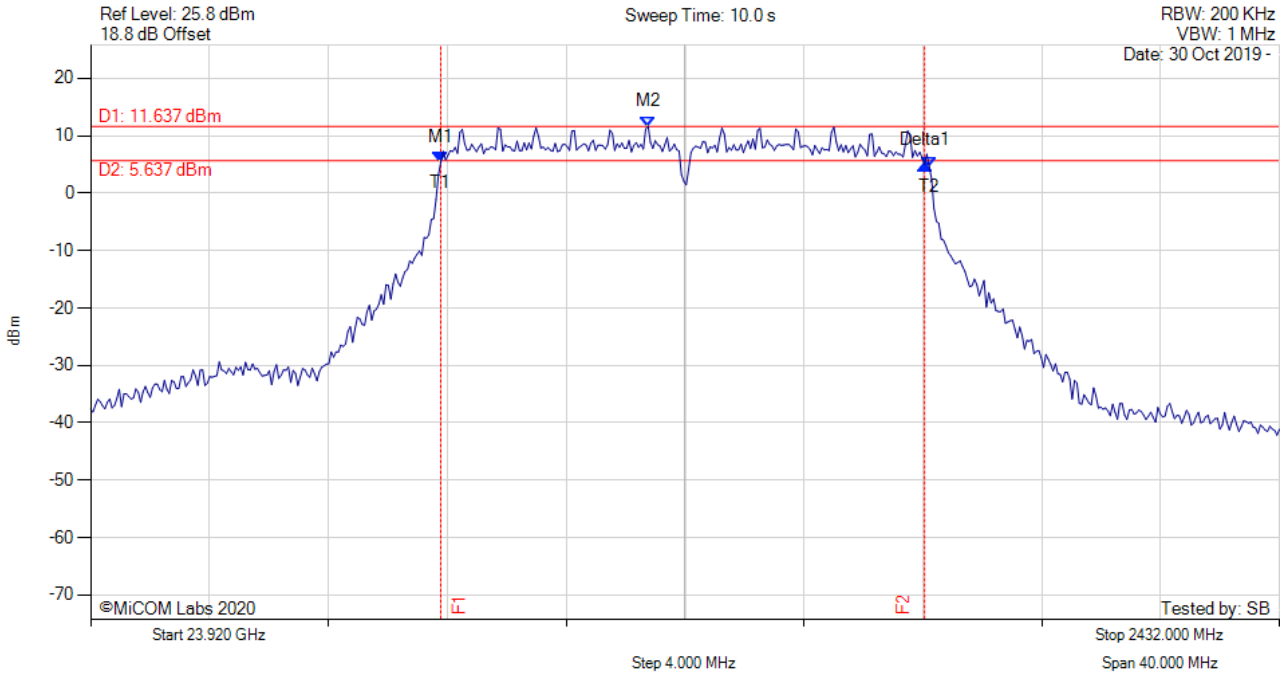


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2457.391 MHz : 9.140 dBm M2 : 2462.521 MHz : 18.003 dBm Delta1 : 8.577 MHz : 4.167 dB T1 : 2455.467 MHz : 4.226 dBm T2 : 2468.533 MHz : 4.292 dBm OBW : 13.066 MHz	Measured 6 dB Bandwidth: 8.577 MHz Limit: ≥500.0 kHz Margin: -8.08 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

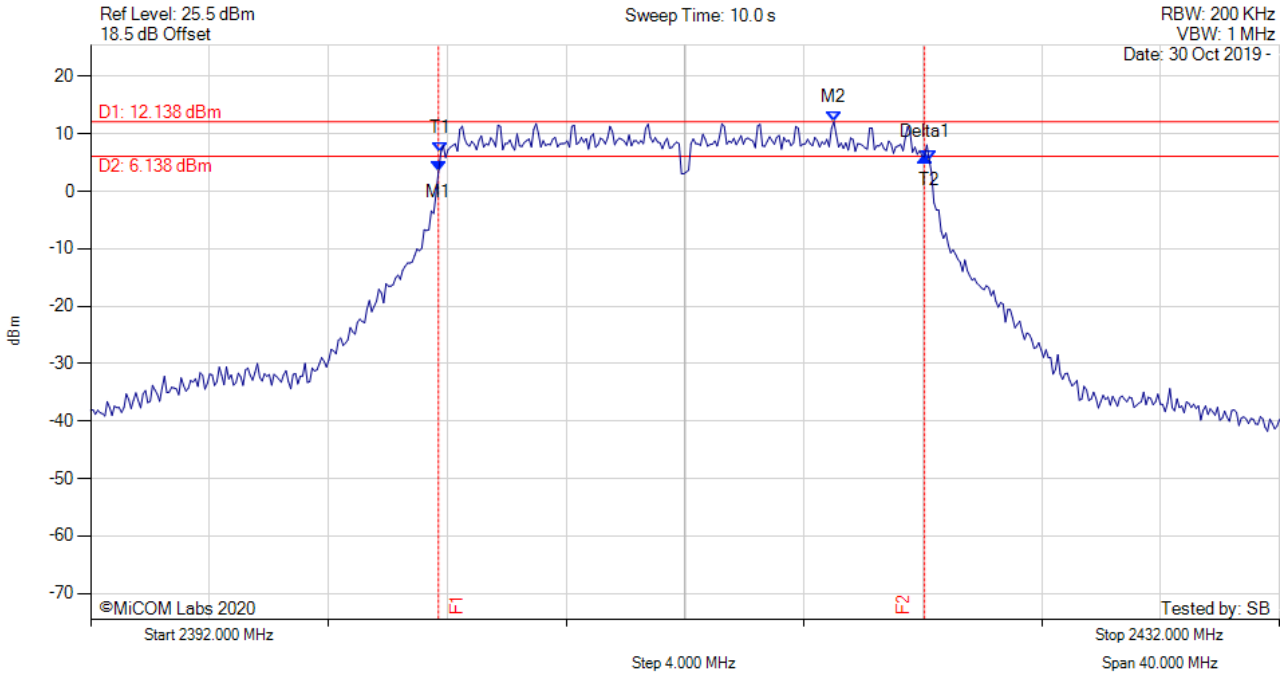


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2403.784 MHz : 5.418 dBm M2 : 2410.758 MHz : 11.637 dBm Delta1 : 16.273 MHz : -0.421 dB T1 : 2403.784 MHz : 5.418 dBm T2 : 2420.216 MHz : 4.541 dBm OBW : 16.433 MHz	Channel Frequency: 2412.00 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

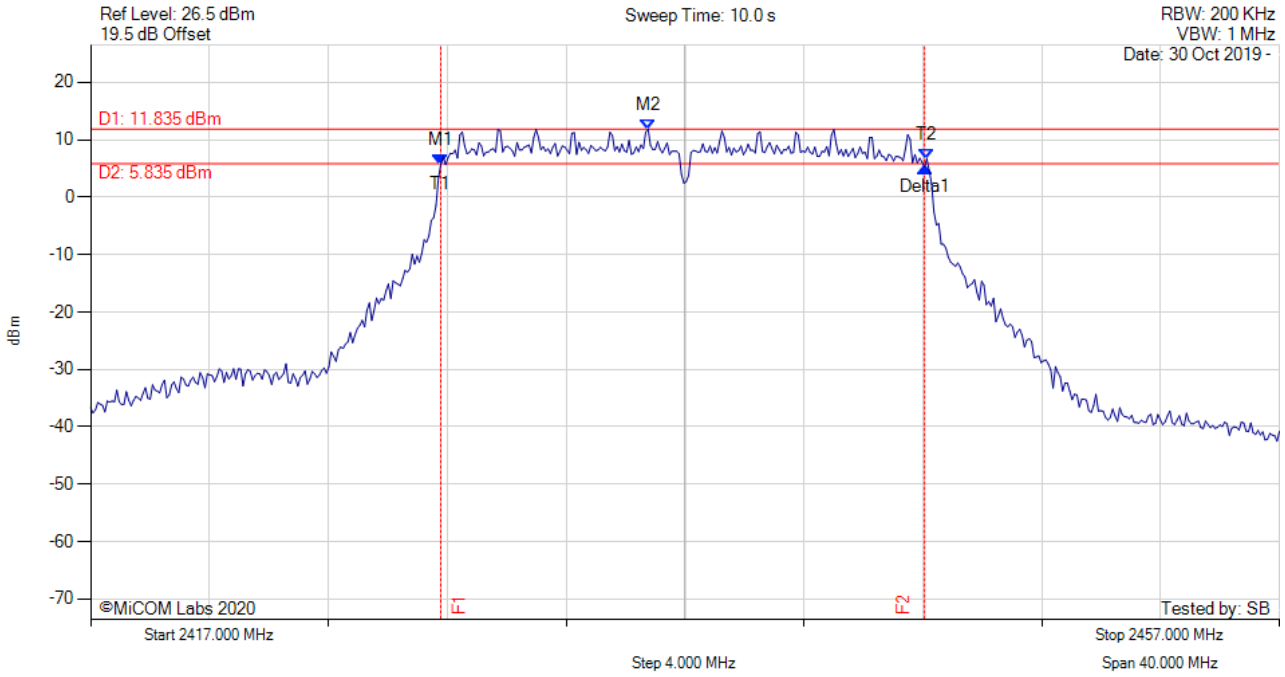


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	ERROR!!! MULTIPLE TEST RESULTS MATCHES...	Measured 6 dB Bandwidth: 16.353 MHz Limit: ≥500.0 kHz Margin: -15.85 MHz ERROR!!! MULTIPLE TEST RESULTS MATCHES...

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11g, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

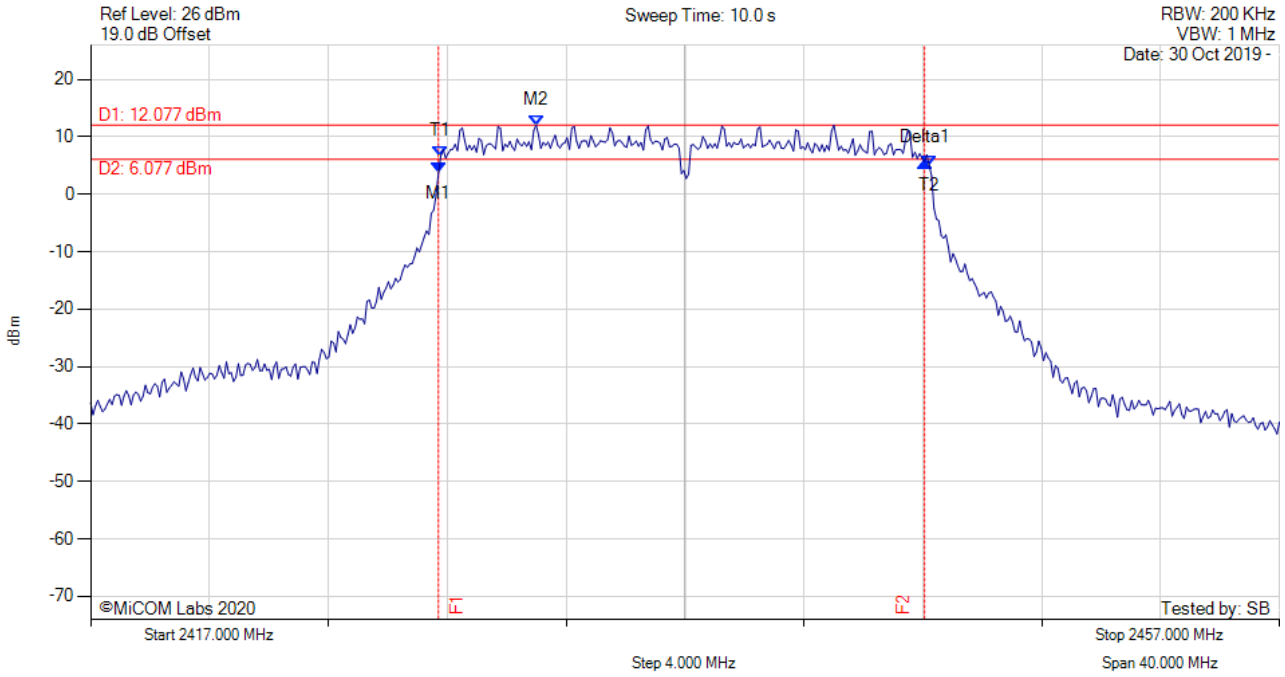


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2428.784 MHz : 5.768 dBm M2 : 2435.758 MHz : 11.835 dBm Delta1 : 16.273 MHz : -0.474 dB T1 : 2428.784 MHz : 5.768 dBm T2 : 2445.136 MHz : 6.691 dBm OBW : 16.353 MHz	Measured 6 dB Bandwidth: 16.273 MHz Limit: ≥500.0 kHz Margin: -15.77 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11g, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

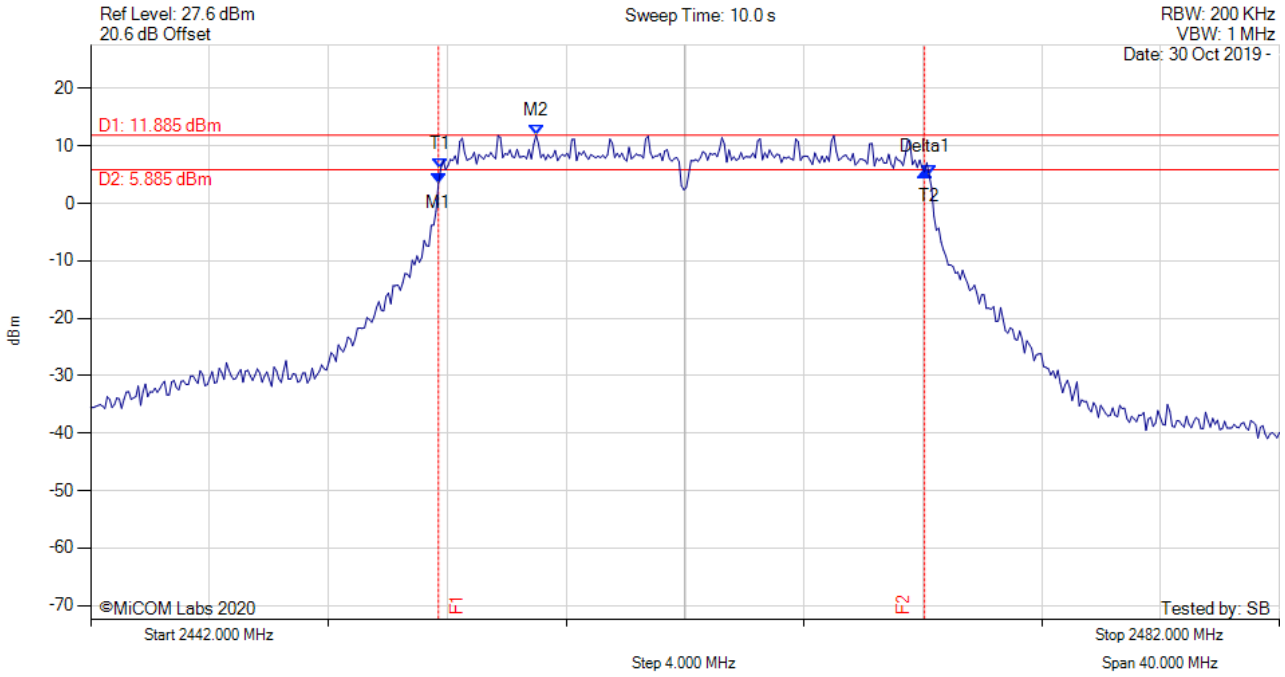


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2428.703 MHz : 3.682 dBm M2 : 2431.990 MHz : 12.077 dBm Delta1 : 16.353 MHz : 2.007 dB T1 : 2428.784 MHz : 6.677 dBm T2 : 2445.216 MHz : 5.022 dBm OBW : 16.433 MHz	Measured 6 dB Bandwidth: 16.353 MHz Limit: ≥500.0 kHz Margin: -15.85 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

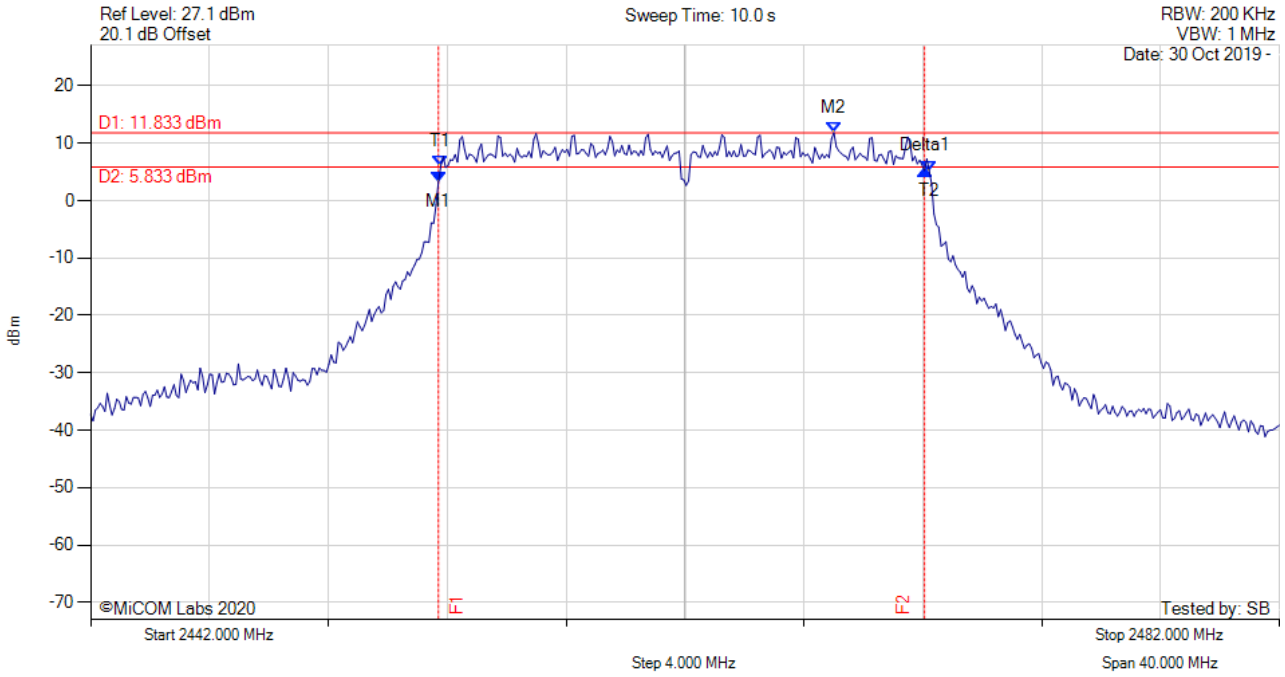


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2453.703 MHz : 3.602 dBm M2 : 2456.990 MHz : 11.885 dBm Delta1 : 16.353 MHz : 1.930 dB T1 : 2453.784 MHz : 6.046 dBm T2 : 2470.216 MHz : 4.800 dBm OBW : 16.433 MHz	Measured 6 dB Bandwidth: 16.353 MHz Limit: ≥500.0 kHz Margin: -15.85 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

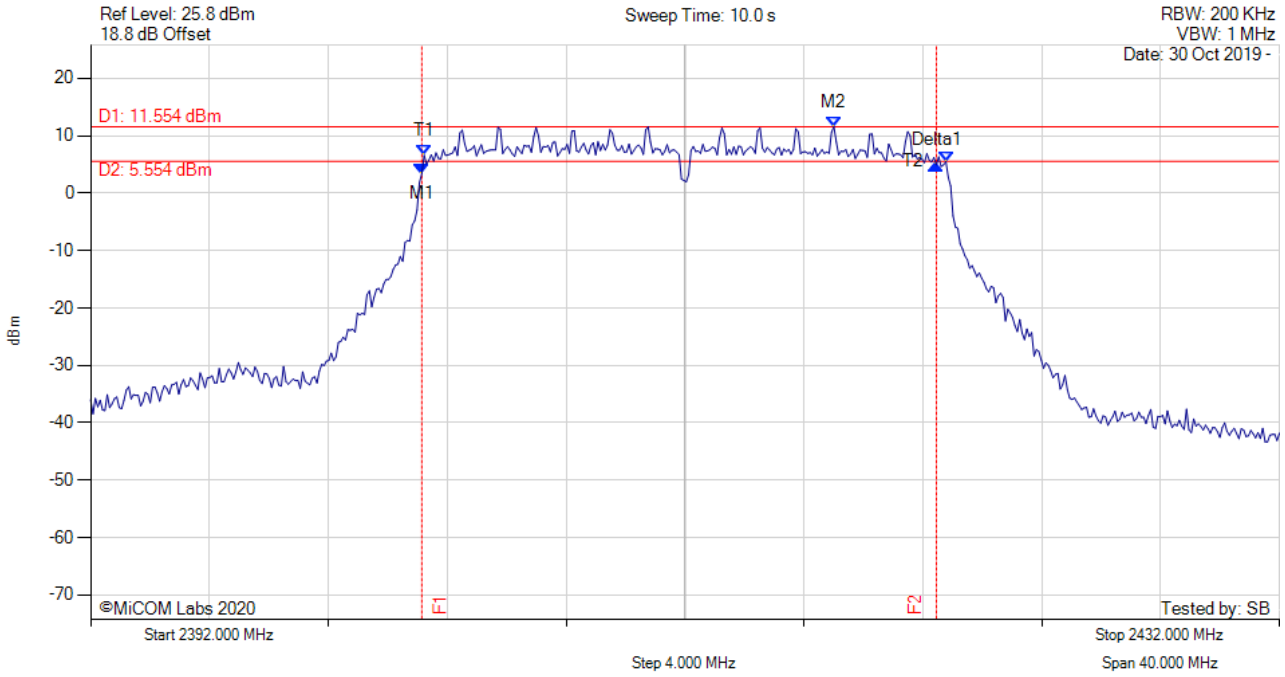


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2453.703 MHz : 3.350 dBm M2 : 2467.010 MHz : 11.833 dBm Delta1 : 16.353 MHz : 1.916 dB T1 : 2453.784 MHz : 6.036 dBm T2 : 2470.216 MHz : 5.217 dBm OBW : 16.433 MHz	Measured 6 dB Bandwidth: 16.353 MHz Limit: ≥500.0 kHz Margin: -15.85 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

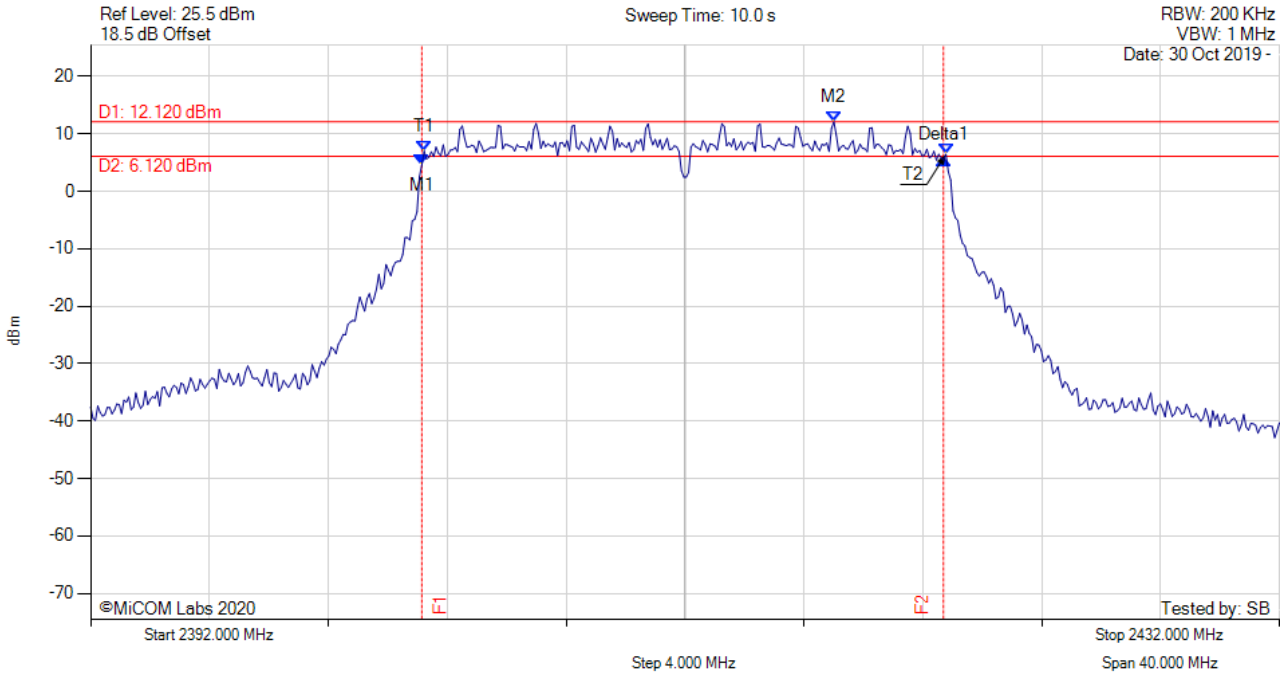


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2403.142 MHz : 3.376 dBm M2 : 2417.010 MHz : 11.554 dBm Delta1 : 17.315 MHz : 1.562 dB T1 : 2403.222 MHz : 6.595 dBm T2 : 2420.778 MHz : 5.489 dBm OBW : 17.555 MHz	Measured 6 dB Bandwidth: 17.315 MHz Limit: ≥500.0 kHz Margin: -16.82 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

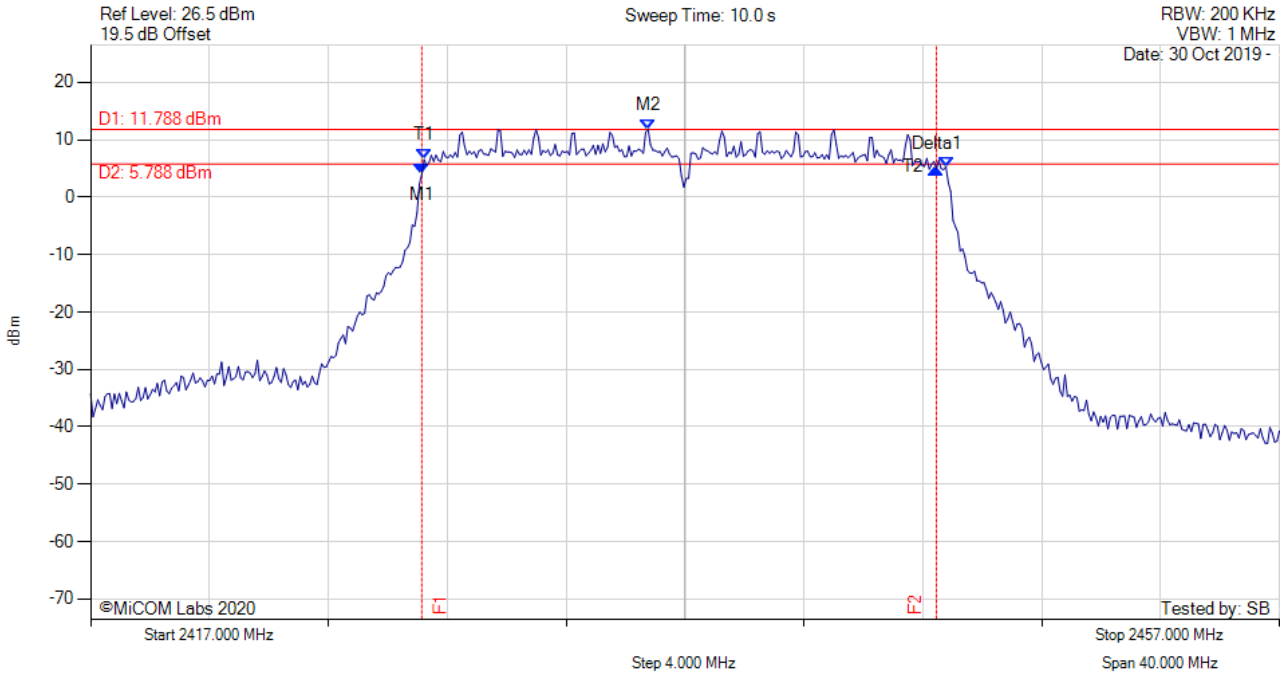


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2403.142 MHz : 4.605 dBm M2 : 2417.010 MHz : 12.120 dBm Delta1 : 17.555 MHz : 0.907 dB T1 : 2403.222 MHz : 7.030 dBm T2 : 2420.778 MHz : 6.480 dBm OBW : 17.555 MHz	Measured 6 dB Bandwidth: 17.555 MHz Limit: ≥500.0 kHz Margin: -17.06 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

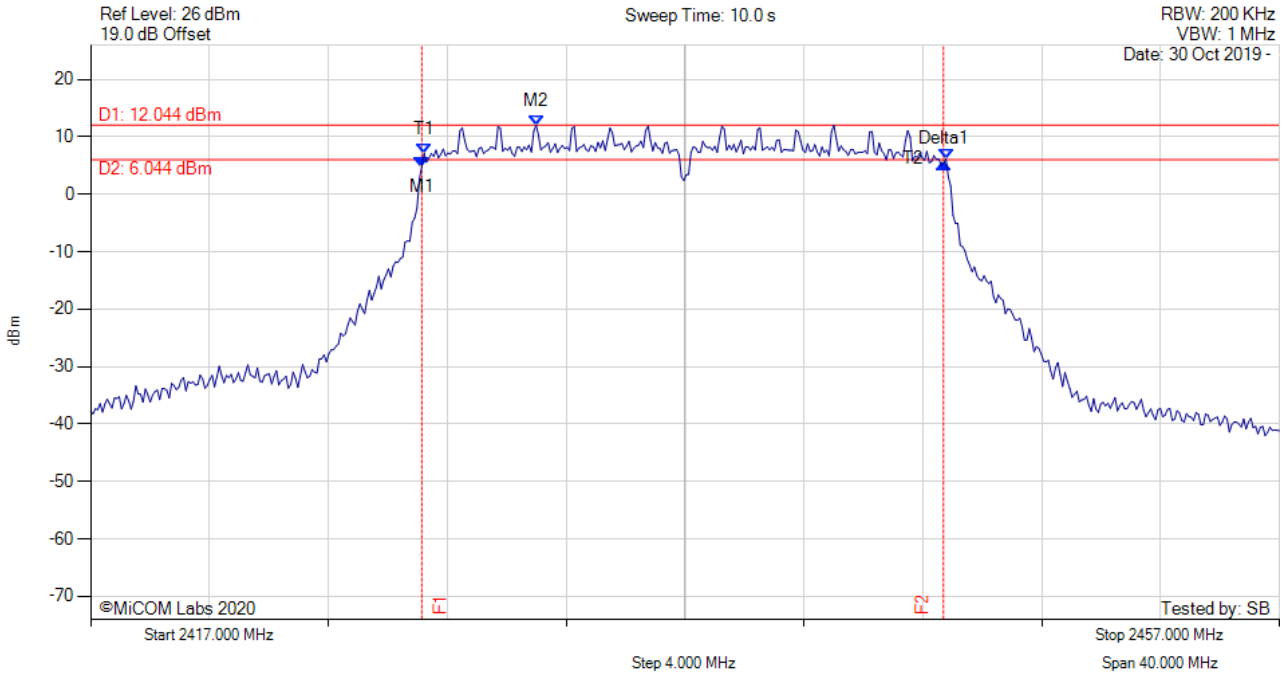


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2428.142 MHz : 3.936 dBm M2 : 2435.758 MHz : 11.788 dBm Delta1 : 17.315 MHz : 1.025 dB T1 : 2428.222 MHz : 6.559 dBm T2 : 2445.778 MHz : 5.321 dBm OBW : 17.555 MHz	Measured 6 dB Bandwidth: 17.315 MHz Limit: ≥500.0 kHz Margin: -16.82 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

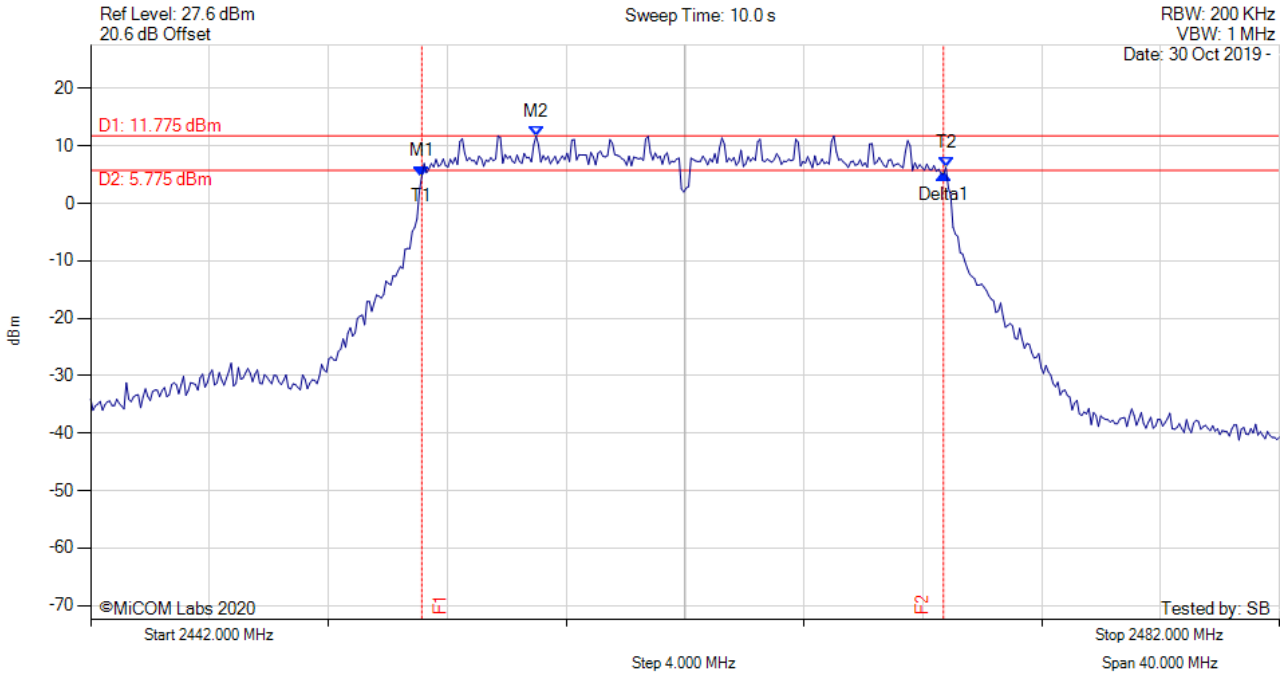


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2428.142 MHz : 4.804 dBm M2 : 2431.990 MHz : 12.044 dBm Delta1 : 17.555 MHz : 0.553 dB T1 : 2428.222 MHz : 7.121 dBm T2 : 2445.778 MHz : 6.171 dBm OBW : 17.555 MHz	Measured 6 dB Bandwidth: 17.555 MHz Limit: ≥500.0 kHz Margin: -17.06 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2453.142 MHz : 4.777 dBm M2 : 2456.990 MHz : 11.775 dBm Delta1 : 17.555 MHz : 0.327 dB T1 : 2453.142 MHz : 4.777 dBm T2 : 2470.778 MHz : 6.294 dBm OBW : 17.635 MHz	Measured 6 dB Bandwidth: 17.555 MHz Limit: ≥500.0 kHz Margin: -17.06 MHz

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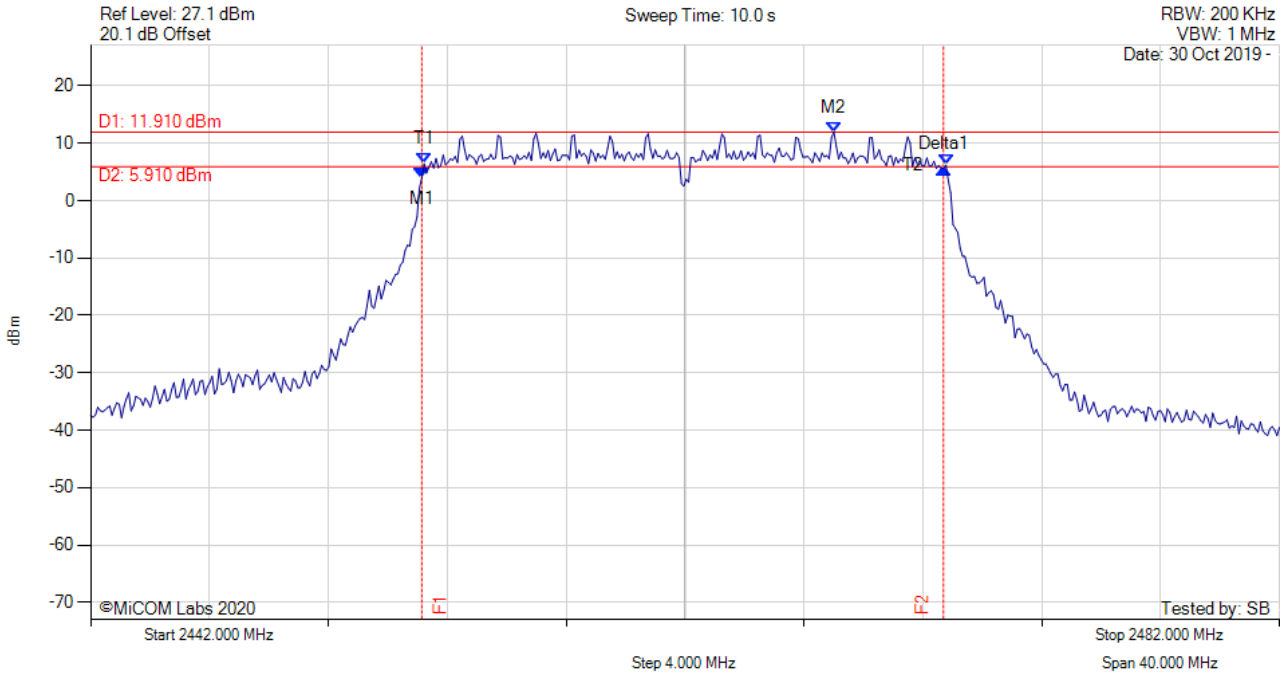
6 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

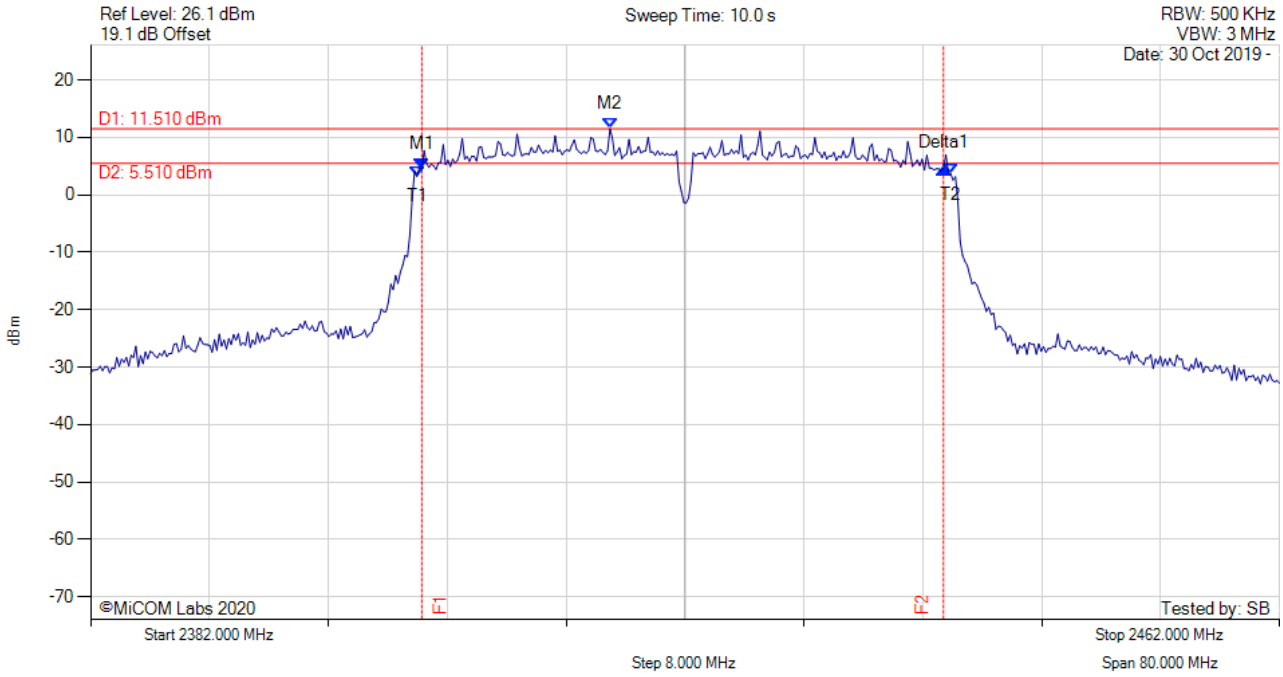


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2453.142 MHz : 3.940 dBm M2 : 2467.010 MHz : 11.910 dBm Delta1 : 17.555 MHz : 1.719 dB T1 : 2453.222 MHz : 6.421 dBm T2 : 2470.778 MHz : 6.197 dBm OBW : 17.555 MHz	Measured 6 dB Bandwidth: 17.555 MHz Limit: ≥500.0 kHz Margin: -17.06 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

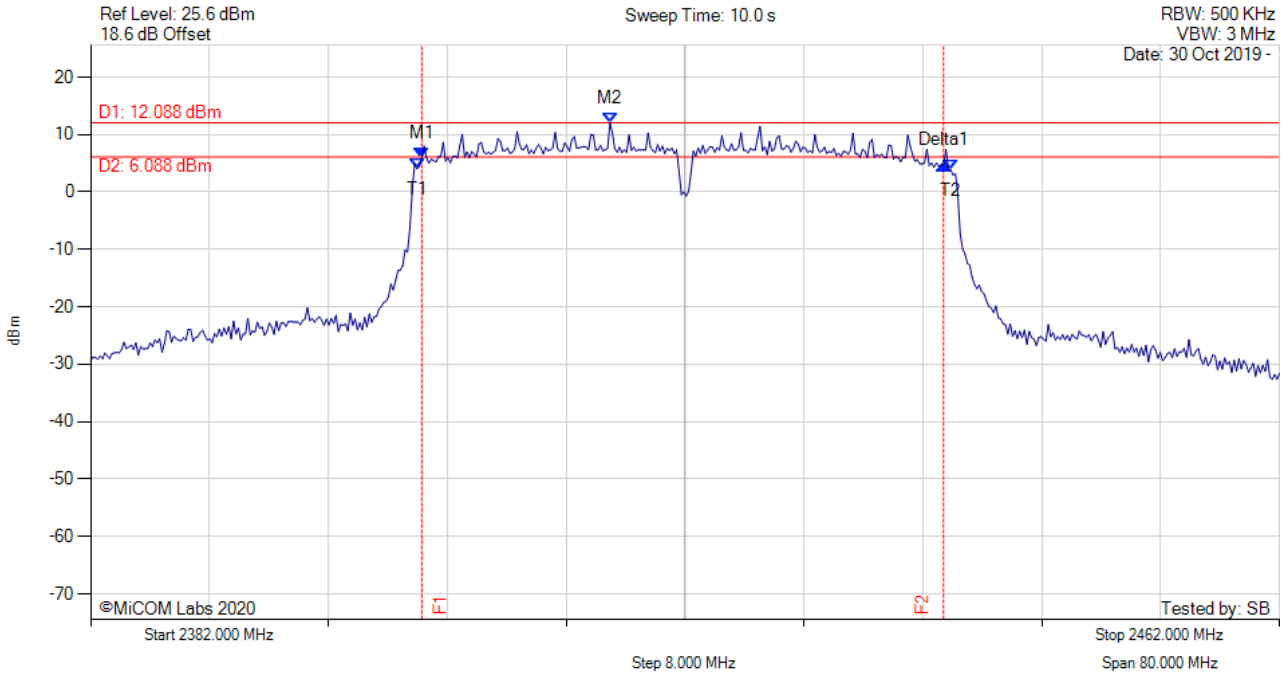


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2404.285 MHz : 4.559 dBm M2 : 2416.950 MHz : 11.510 dBm Delta1 : 35.110 MHz : 0.128 dB T1 : 2403.964 MHz : 3.224 dBm T2 : 2439.876 MHz : 3.660 dBm OBW : 35.912 MHz	Measured 6 dB Bandwidth: 35.110 MHz Limit: ≥500.0 kHz Margin: -34.61 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

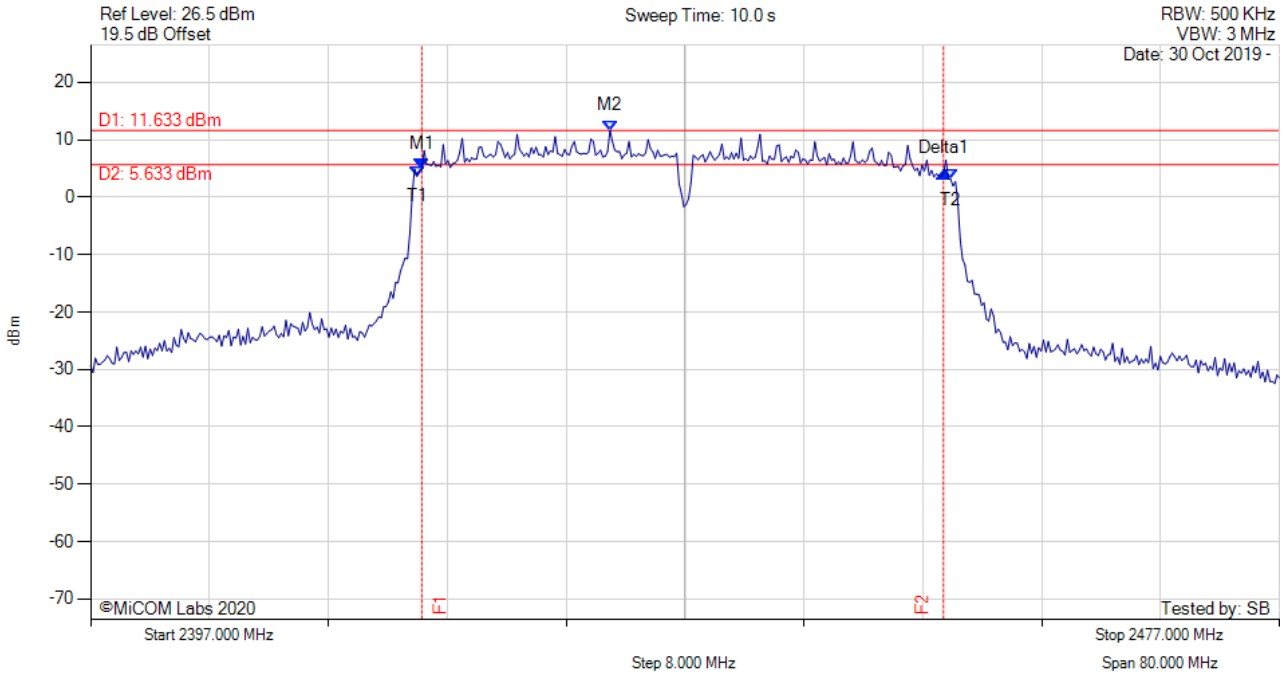


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2404.285 MHz : 5.989 dBm M2 : 2416.950 MHz : 12.088 dBm Delta1 : 35.110 MHz : -1.289 dB T1 : 2403.964 MHz : 4.032 dBm T2 : 2439.876 MHz : 3.817 dBm OBW : 35.912 MHz	Measured 6 dB Bandwidth: 35.110 MHz Limit: ≥500.0 kHz Margin: -34.61 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

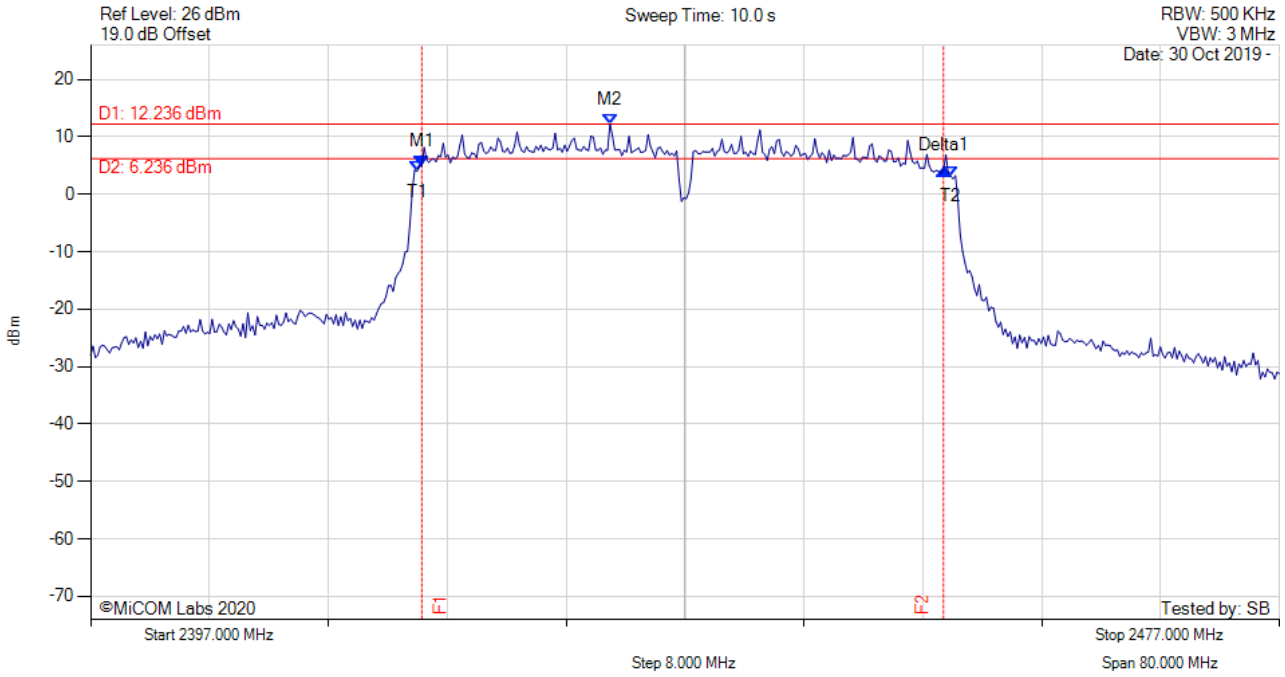


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2419.285 MHz : 4.912 dBm M2 : 2431.950 MHz : 11.633 dBm Delta1 : 35.110 MHz : -0.679 dB T1 : 2418.964 MHz : 3.639 dBm T2 : 2454.876 MHz : 3.077 dBm OBW : 35.912 MHz	Measured 6 dB Bandwidth: 35.110 MHz Limit: ≥500.0 kHz Margin: -34.61 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

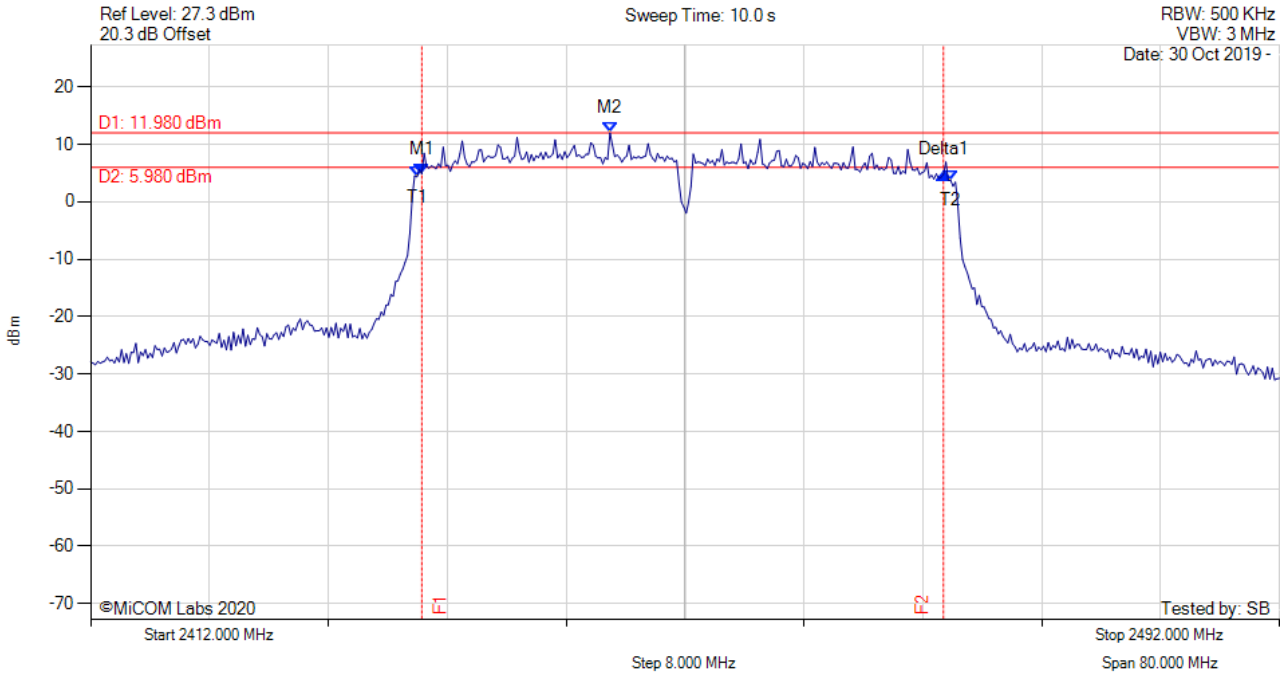


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2419.285 MHz : 4.998 dBm M2 : 2431.950 MHz : 12.236 dBm Delta1 : 35.110 MHz : -0.757 dB T1 : 2418.964 MHz : 4.005 dBm T2 : 2454.876 MHz : 3.181 dBm OBW : 35.912 MHz	Measured 6 dB Bandwidth: 35.110 MHz Limit: ≥500.0 kHz Margin: -34.61 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

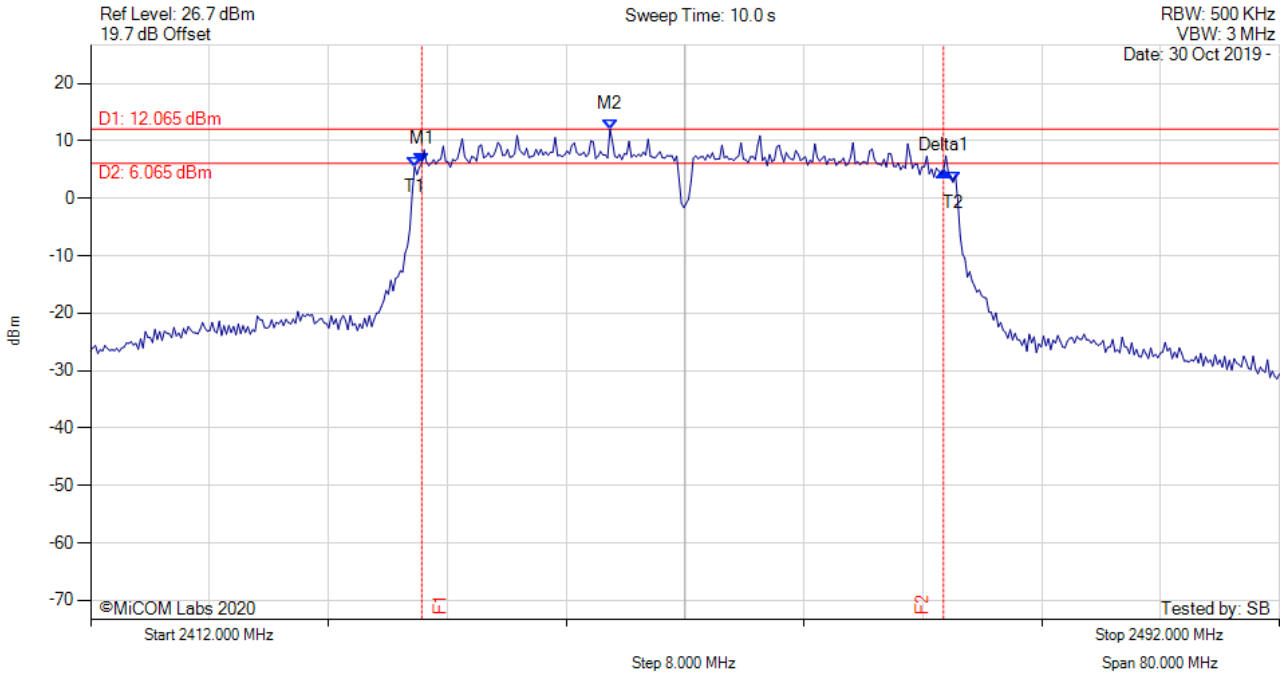


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2434.285 MHz : 4.856 dBm M2 : 2446.950 MHz : 11.980 dBm Delta1 : 35.110 MHz : -0.092 dB T1 : 2433.964 MHz : 4.341 dBm T2 : 2469.876 MHz : 3.717 dBm OBW : 35.912 MHz	Measured 6 dB Bandwidth: 35.110 MHz Limit: ≥500.0 kHz Margin: -34.61 MHz

back to matrix

6 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc



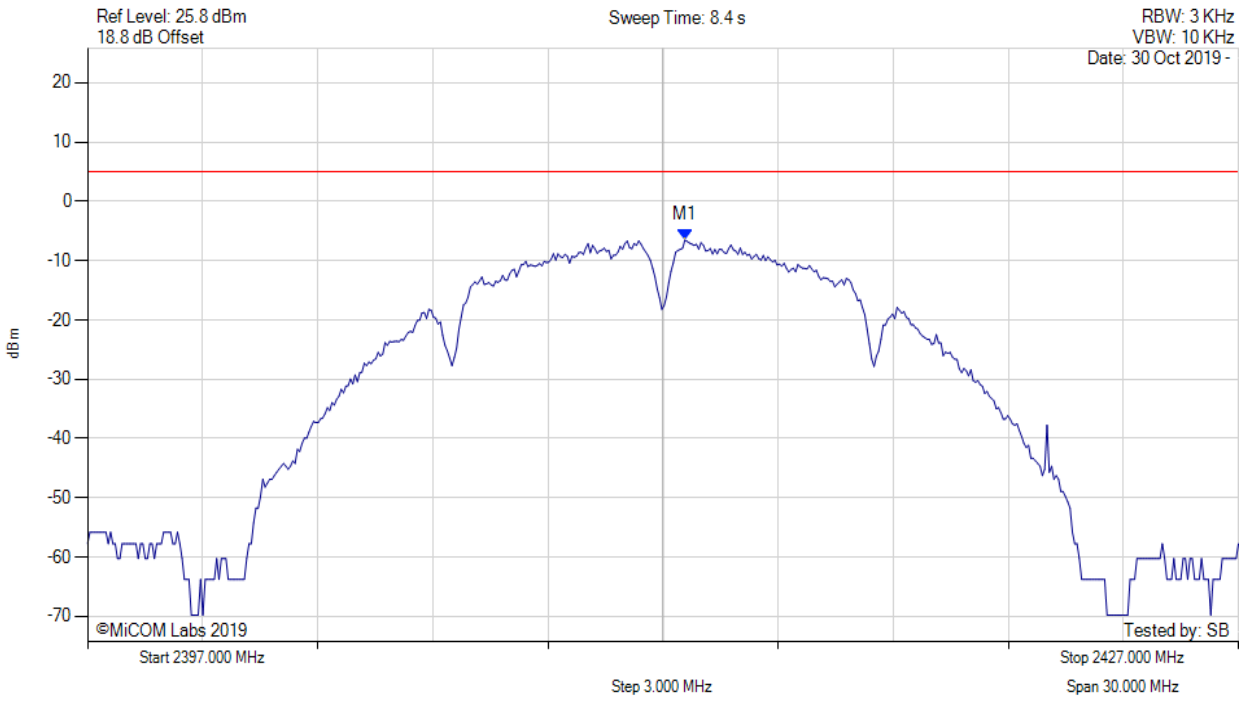
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 2434.285 MHz : 6.053 dBm M2 : 2446.950 MHz : 12.065 dBm Delta1 : 35.110 MHz : -1.222 dB T1 : 2433.804 MHz : 5.519 dBm T2 : 2470.036 MHz : 2.787 dBm OBW : 36.232 MHz	Measured 6 dB Bandwidth: 35.110 MHz Limit: ≥500.0 kHz Margin: -34.61 MHz

back to matrix

A.2. Power Spectral Density

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

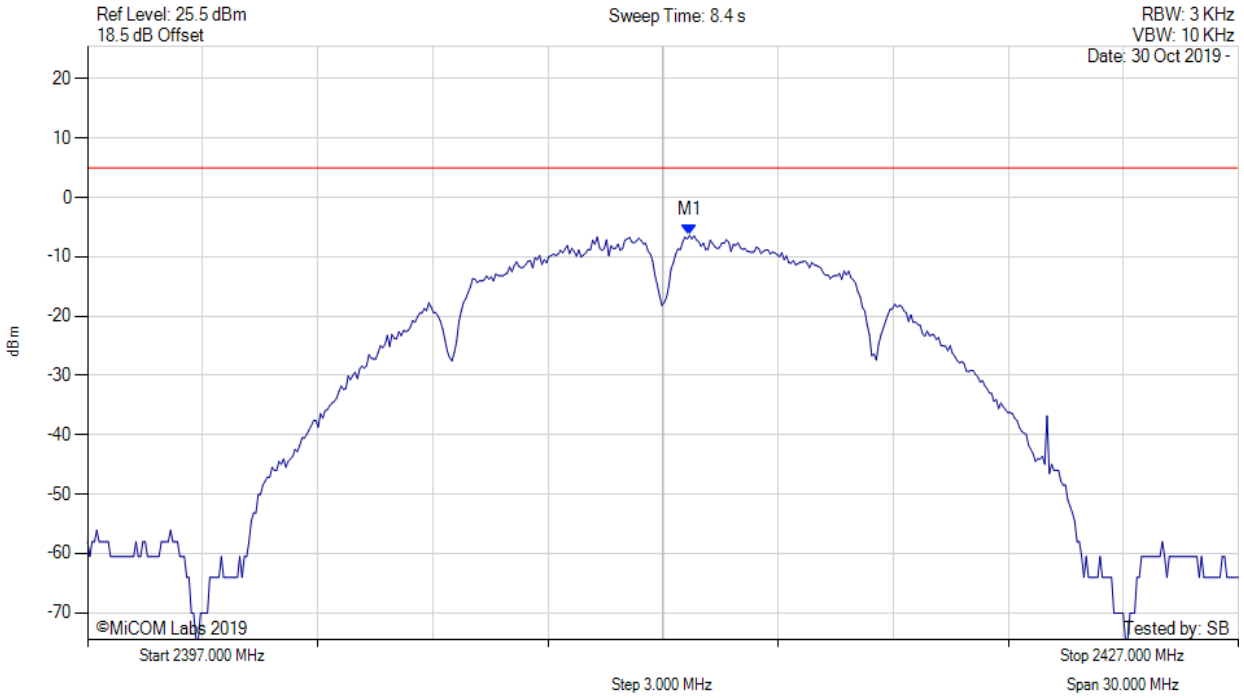


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.571 MHz : -6.514 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

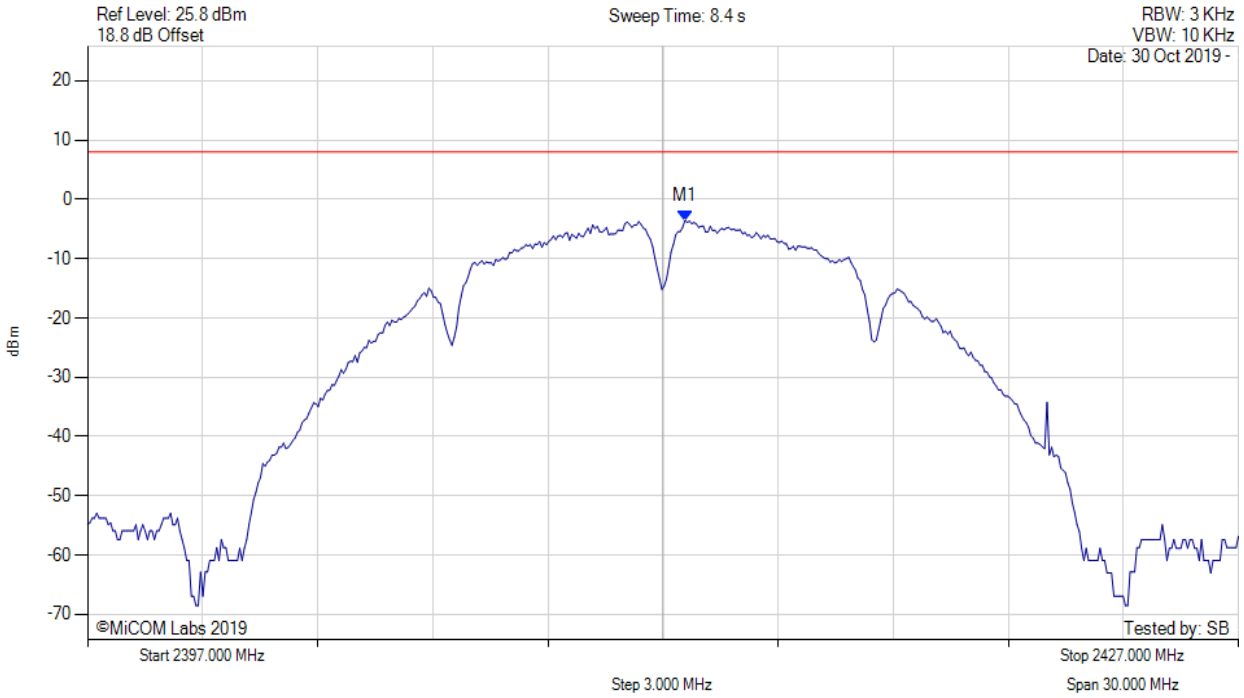


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.691 MHz : -6.383 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

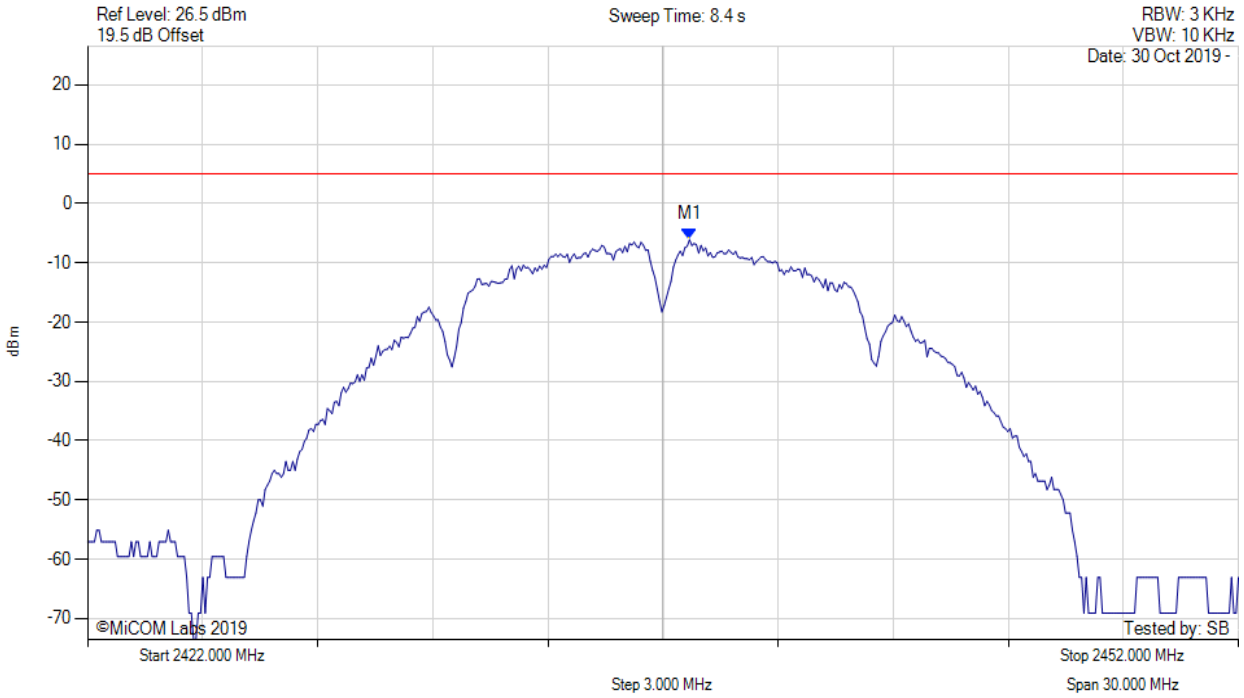


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.600 MHz : -3.582 dBm M1 + DCCF : 2412.600 MHz : -3.538 dBm Duty Cycle Correction Factor : +0.04 dB	Limit: ≤ 8.0 dBm Margin: -11.5 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

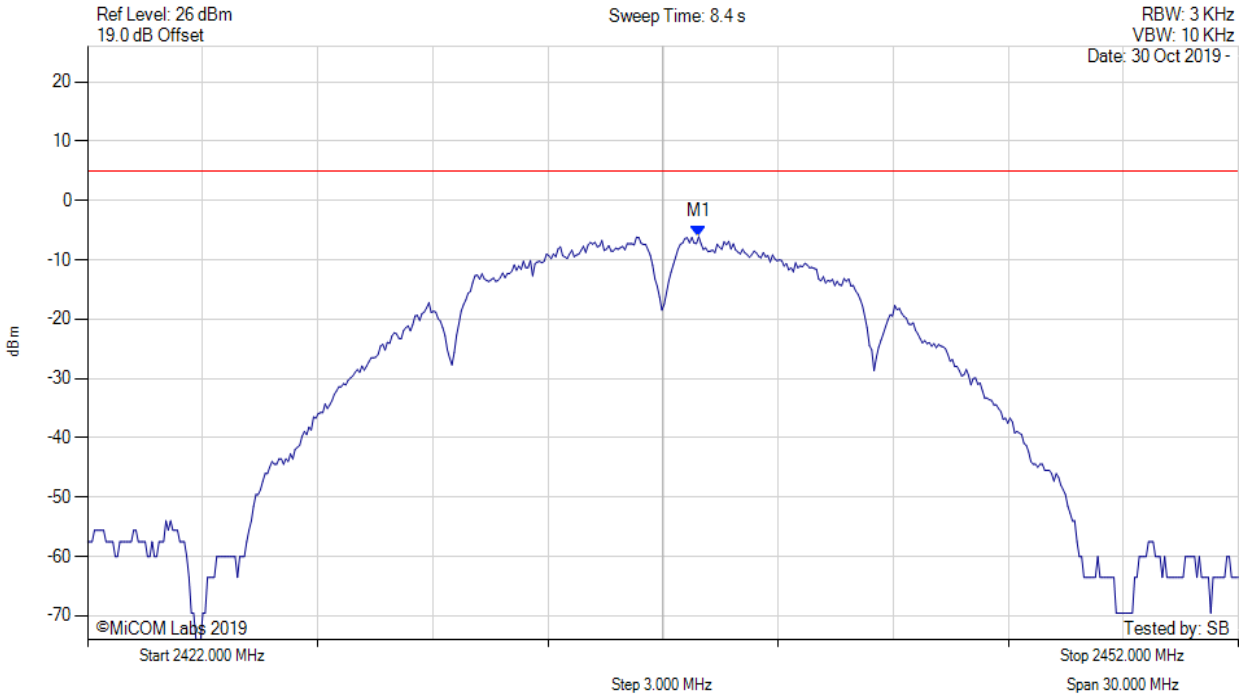


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.691 MHz : -6.087 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

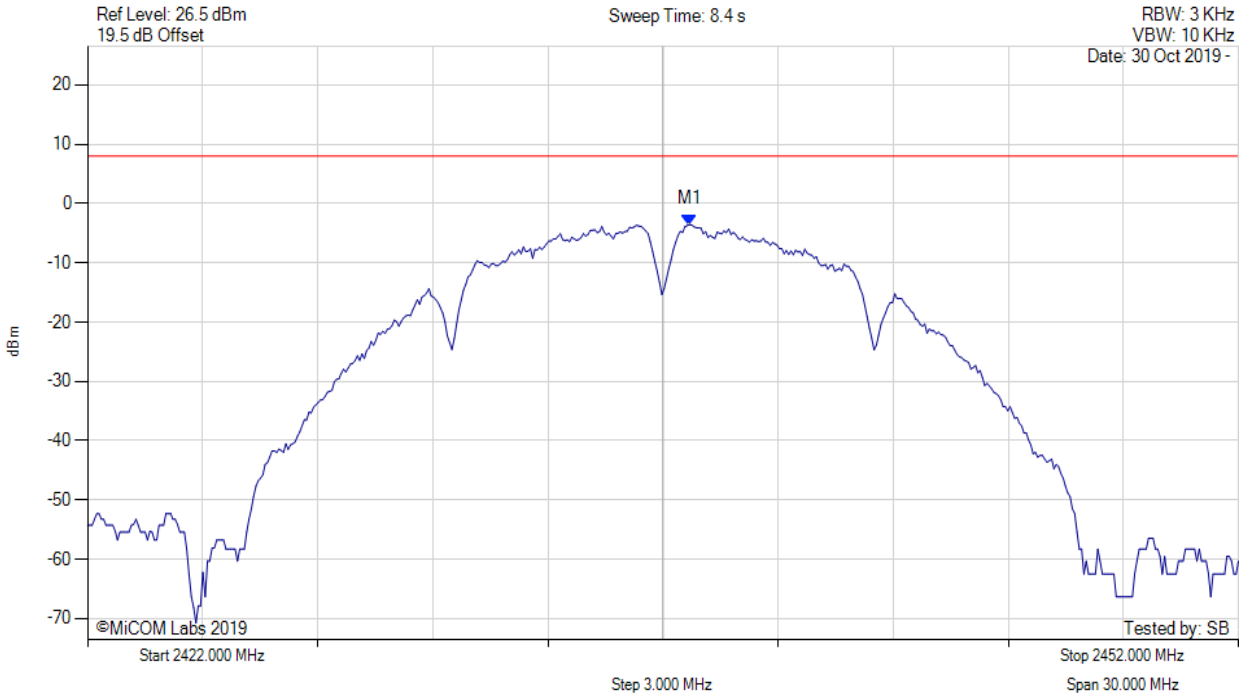


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.932 MHz : -6.102 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

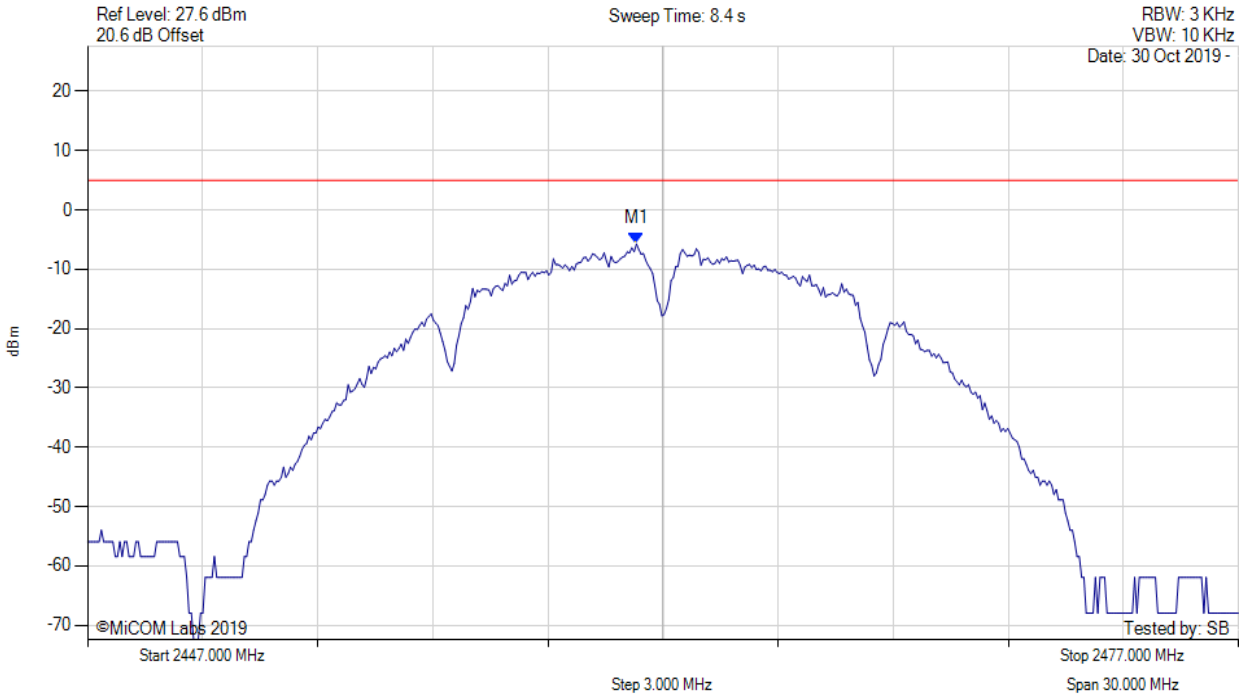


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.700 MHz : -3.563 dBm M1 + DCCF : 2437.700 MHz : -3.519 dBm Duty Cycle Correction Factor : +0.04 dB	Limit: ≤ 8.0 dBm Margin: -11.5 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

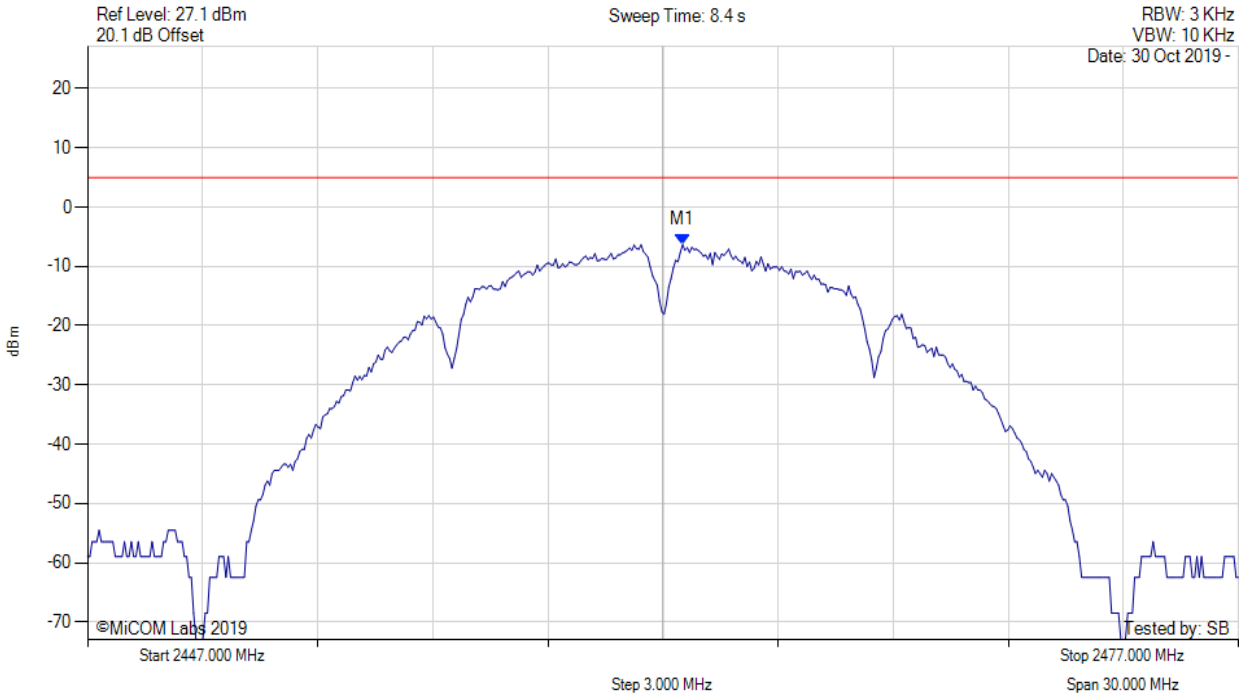


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.309 MHz : -5.713 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

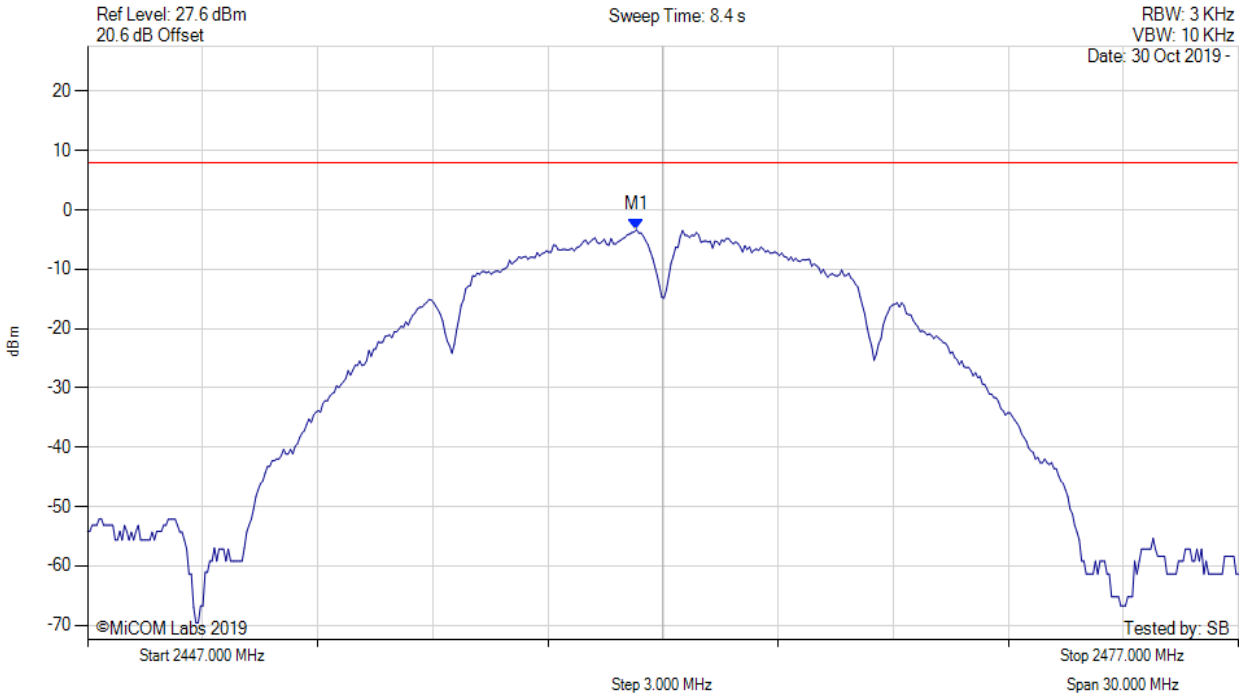


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.511 MHz : -6.321 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

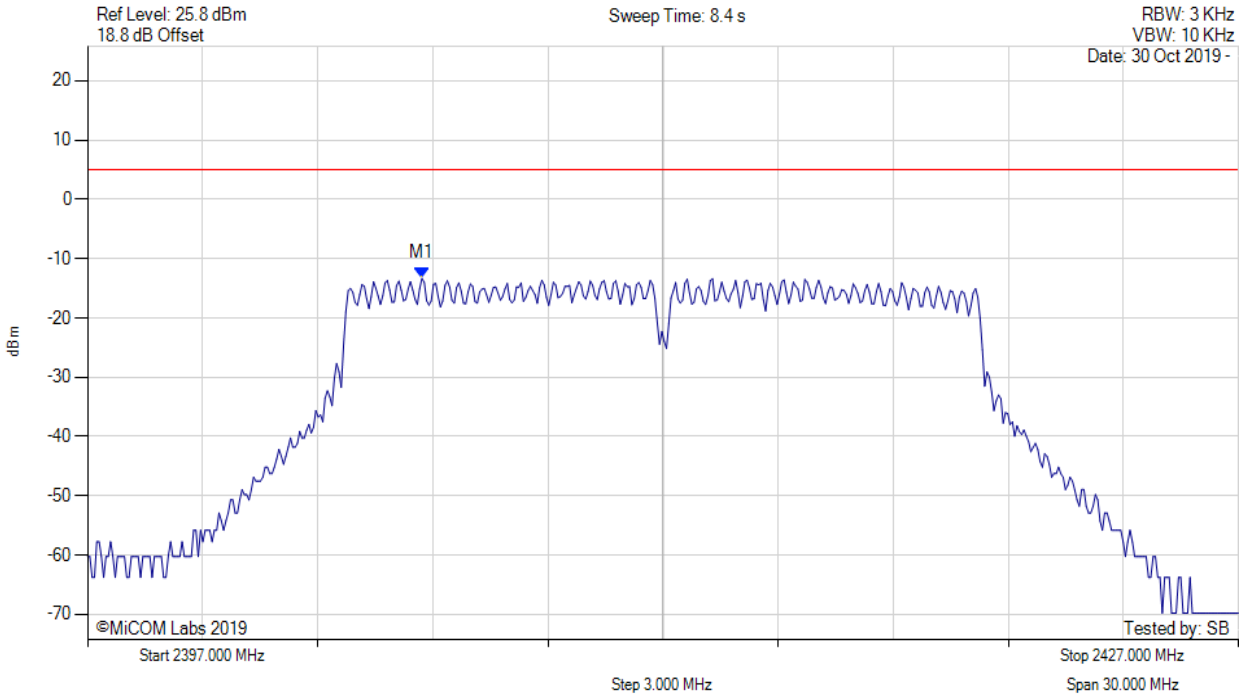


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.300 MHz : -3.301 dBm M1 + DCCF : 2461.300 MHz : -3.257 dBm Duty Cycle Correction Factor : +0.04 dB	Limit: ≤ 8.0 dBm Margin: -11.3 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

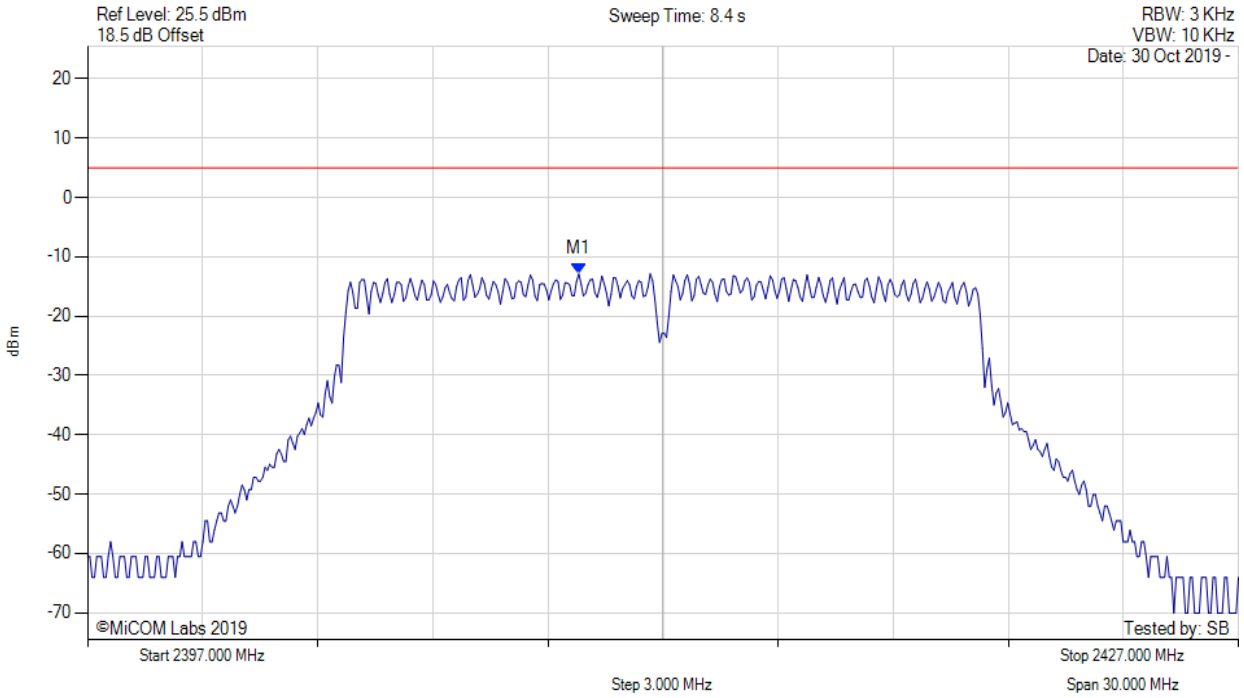


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2405.717 MHz : -13.322 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

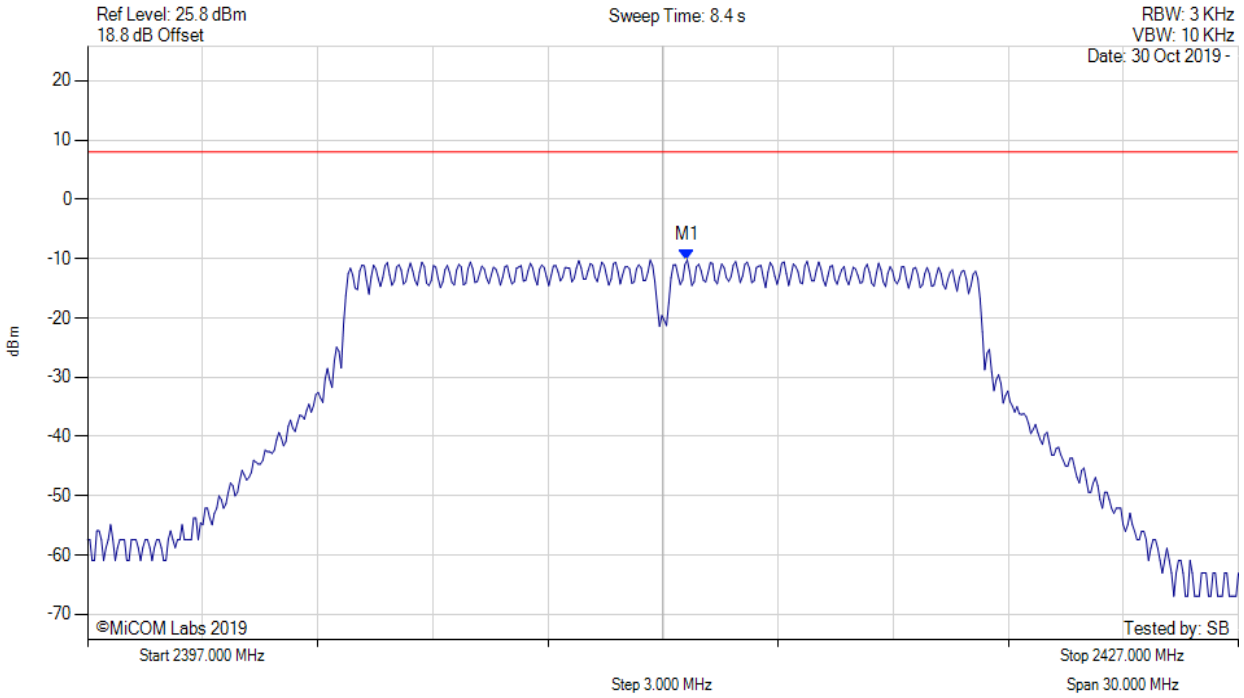


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2409.806 MHz : -12.859 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

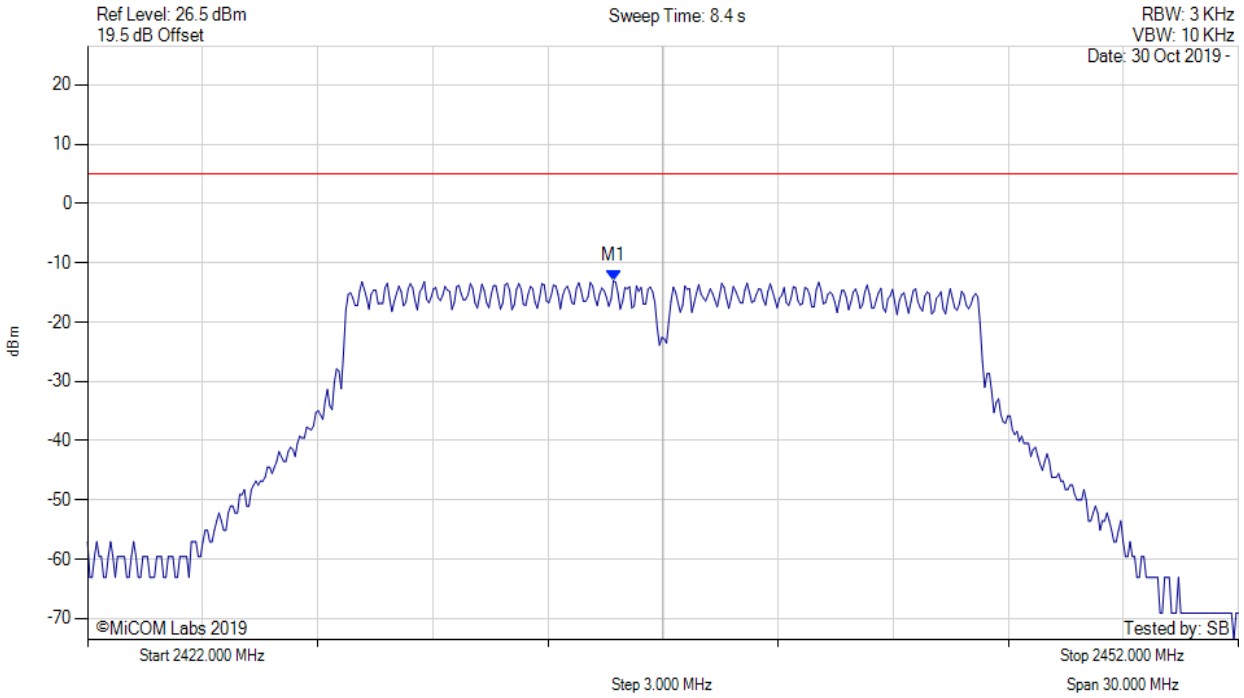


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.600 MHz : -10.219 dBm M1 + DCCF : 2412.600 MHz : -10.131 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -18.1 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

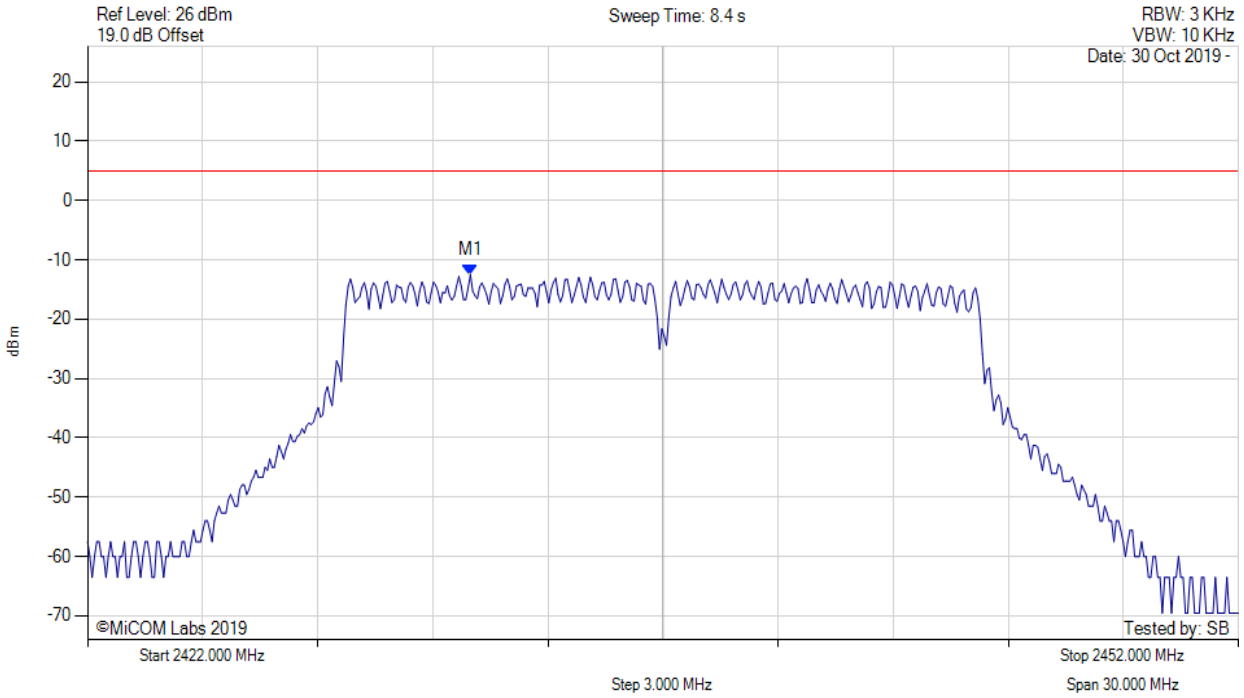


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2435.707 MHz : -12.996 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

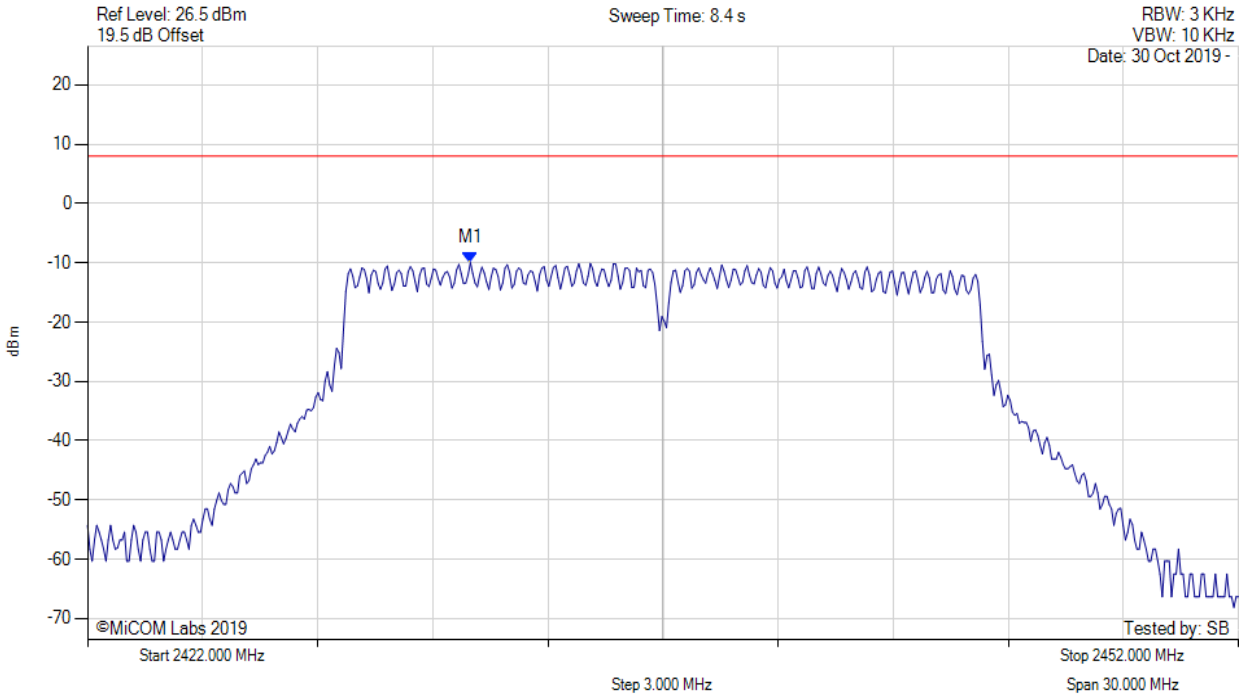


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2431.980 MHz : -12.504 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

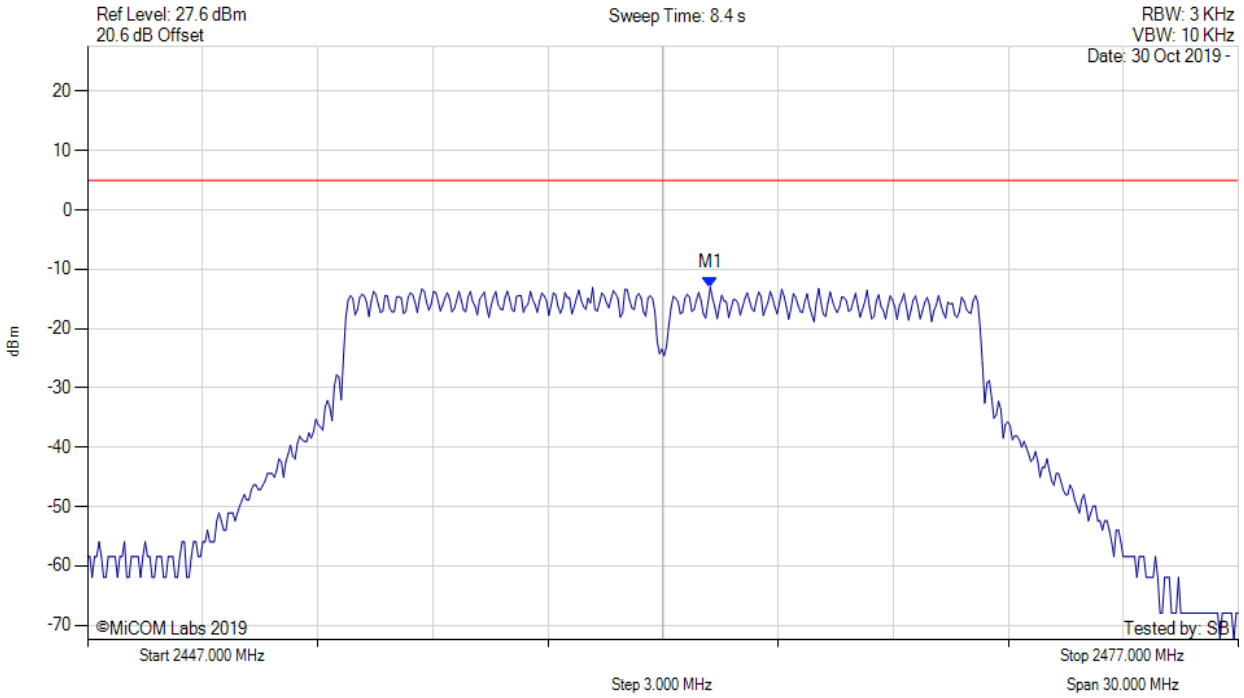


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2432.000 MHz : -9.970 dBm M1 + DCCF : 2432.000 MHz : -9.882 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -17.9 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

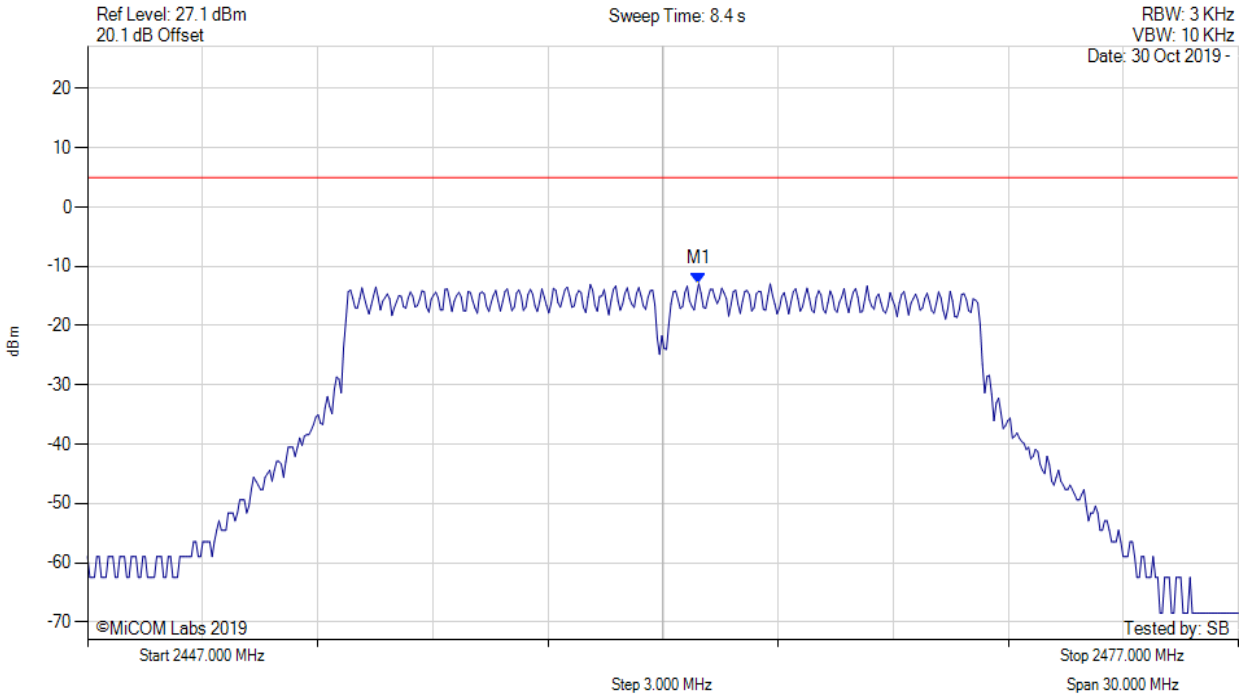


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2463.232 MHz : -13.033 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

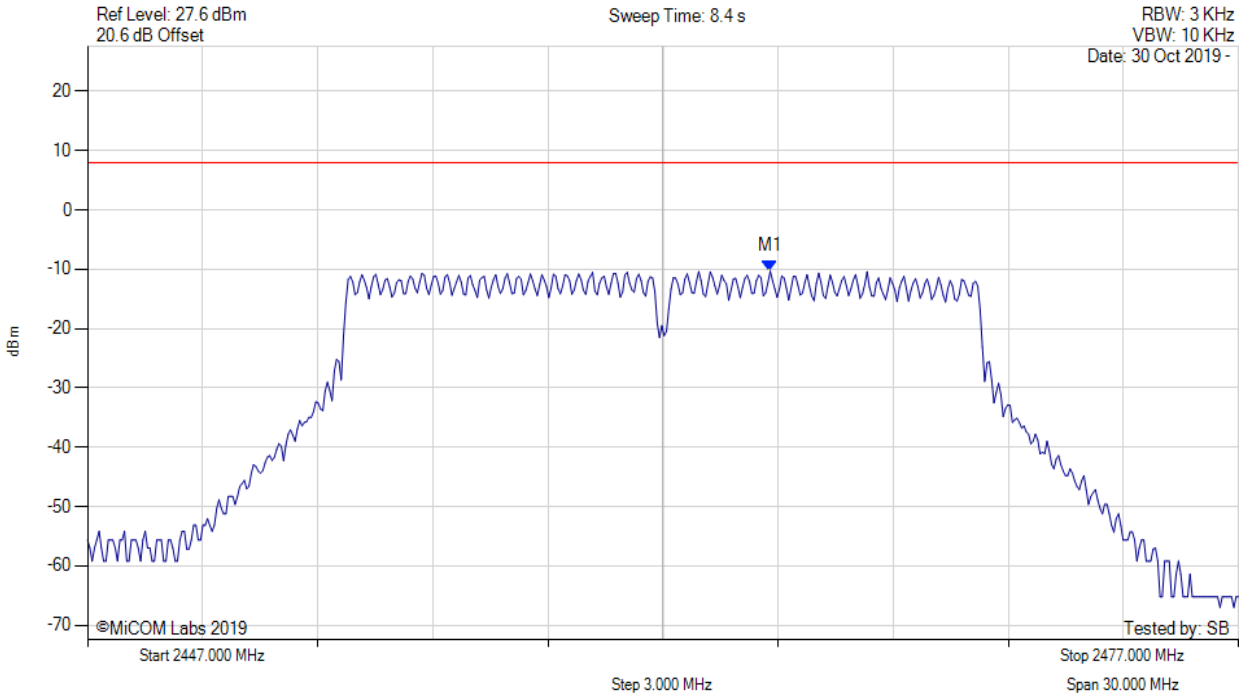


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.932 MHz : -12.917 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

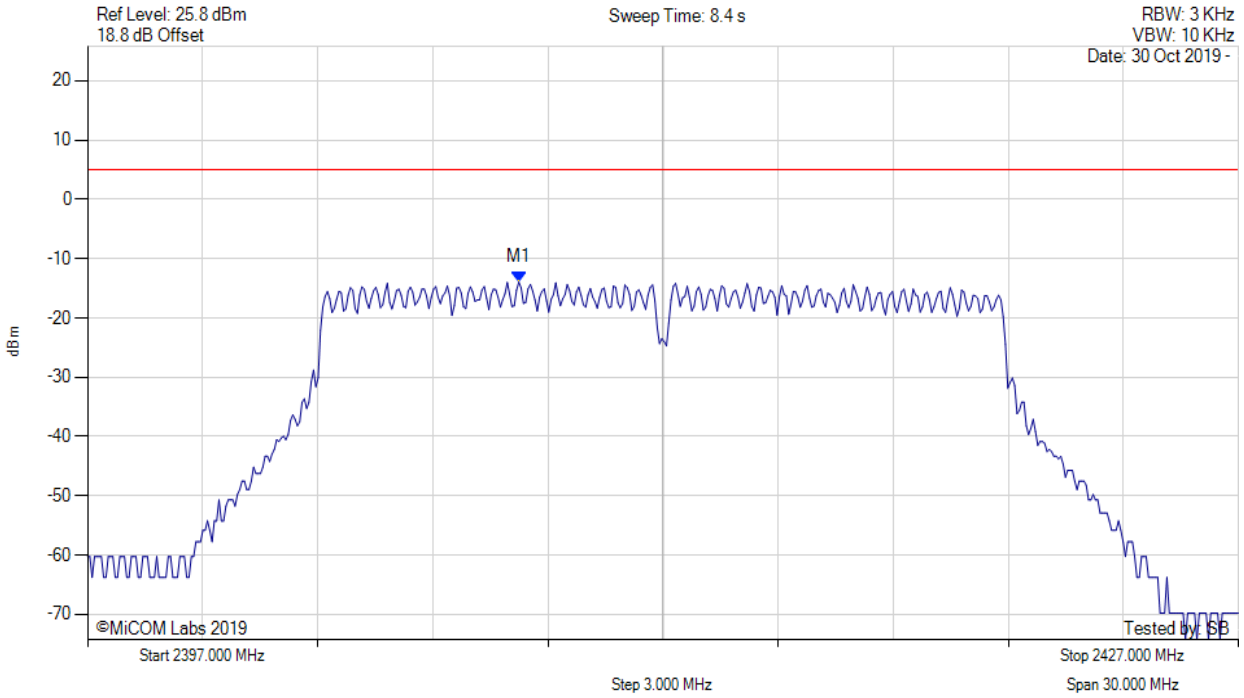


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2464.800 MHz : -10.310 dBm M1 + DCCF : 2464.800 MHz : -10.222 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -18.2 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

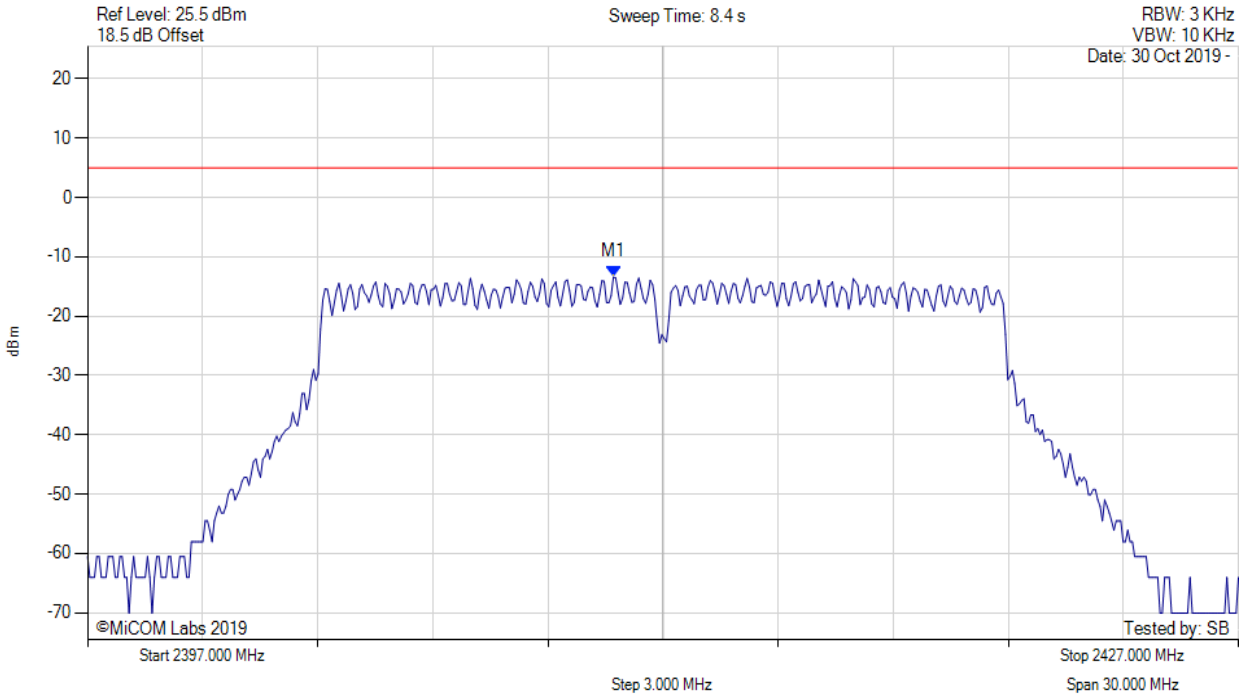


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2408.242 MHz : -13.932 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

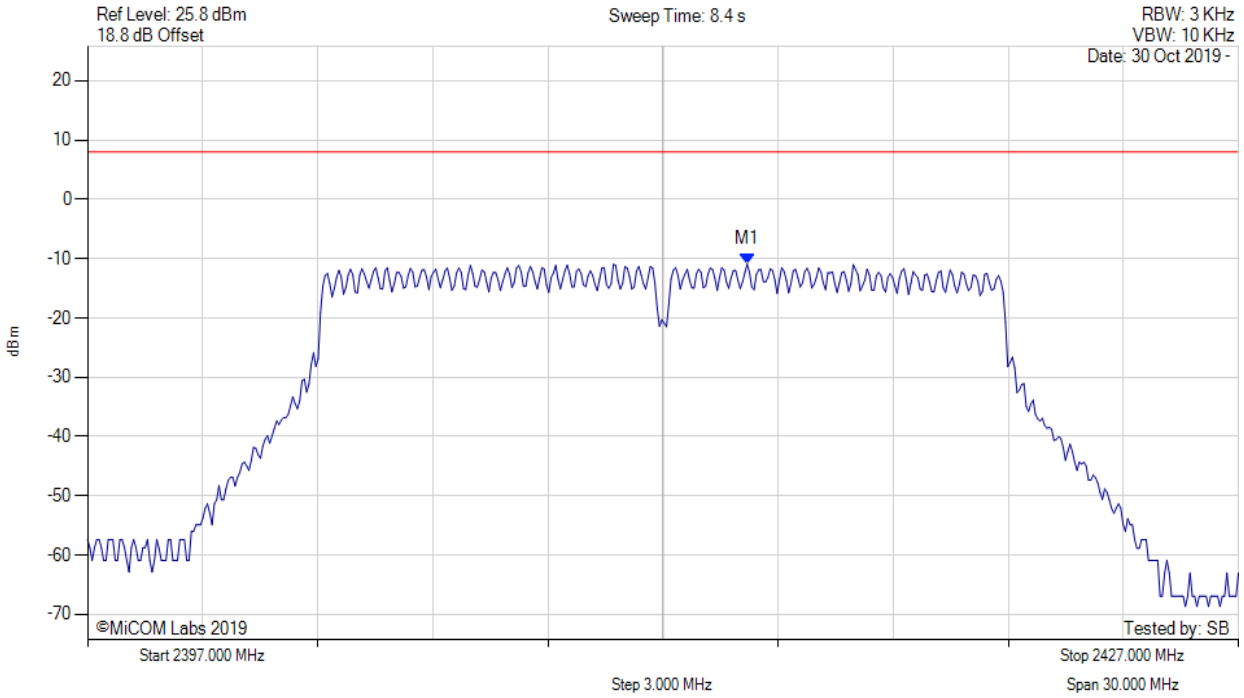


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2410.707 MHz : -13.390 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

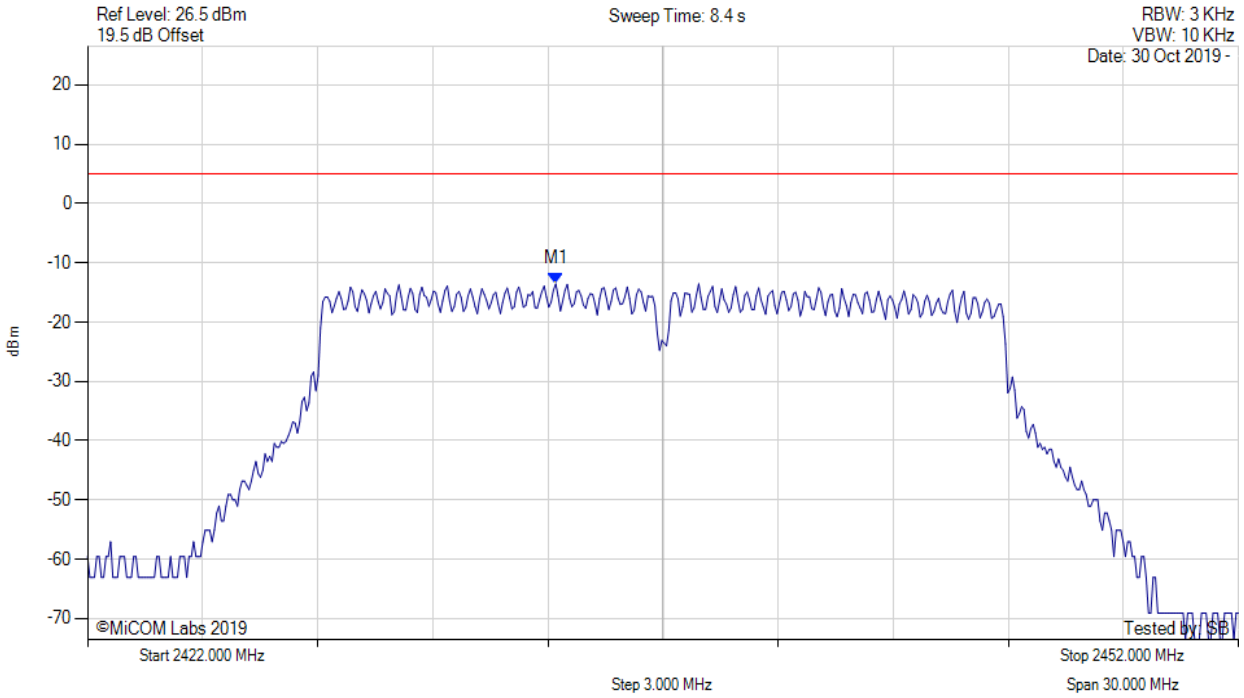


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2414.200 MHz : -10.899 dBm M1 + DCCF : 2414.200 MHz : -10.811 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -18.8 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

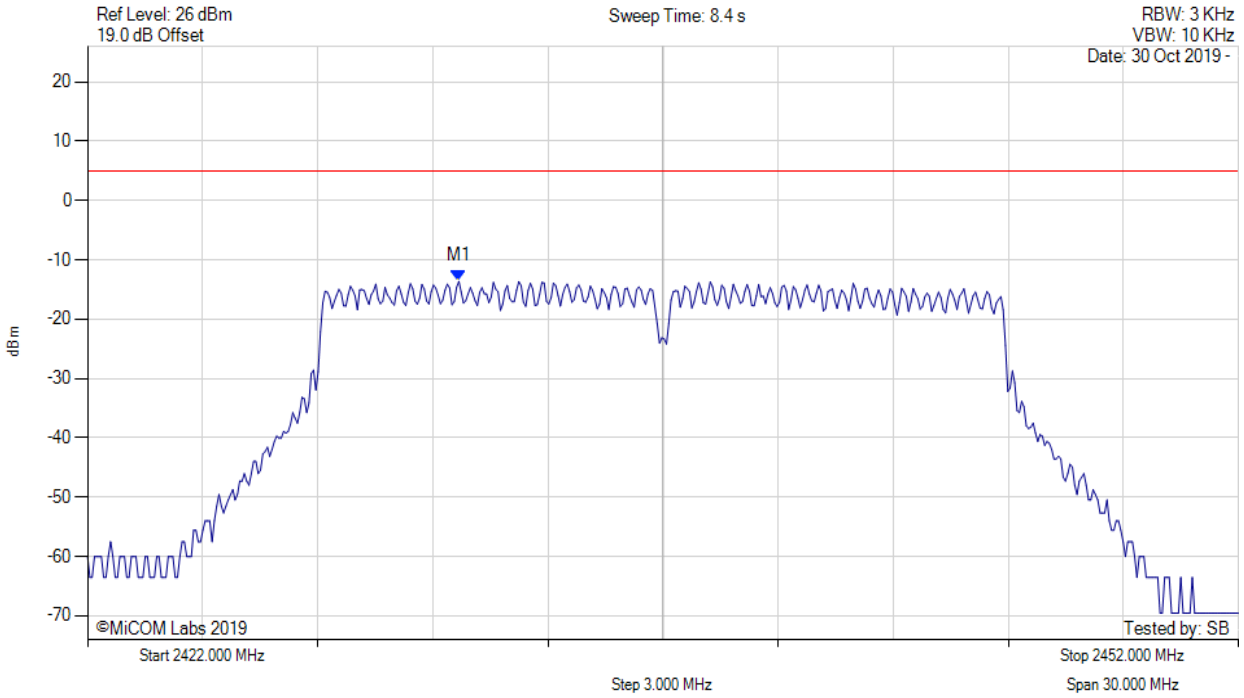


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2434.204 MHz : -13.546 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

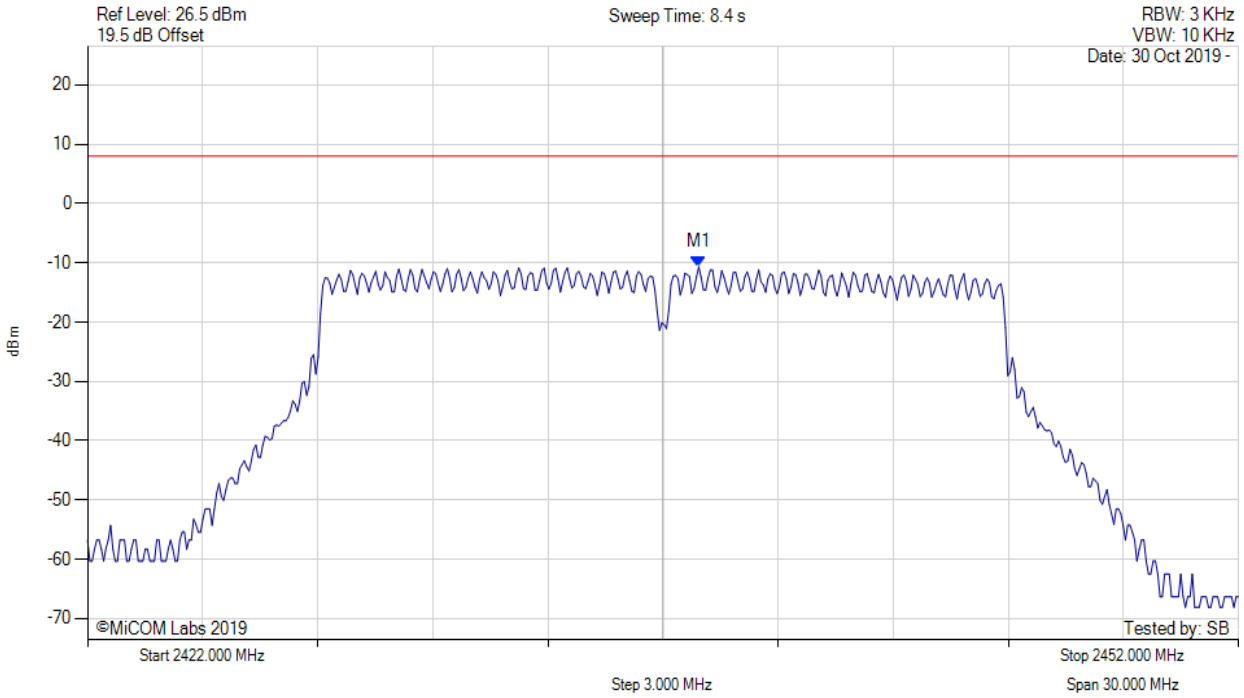


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2431.679 MHz : -13.620 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

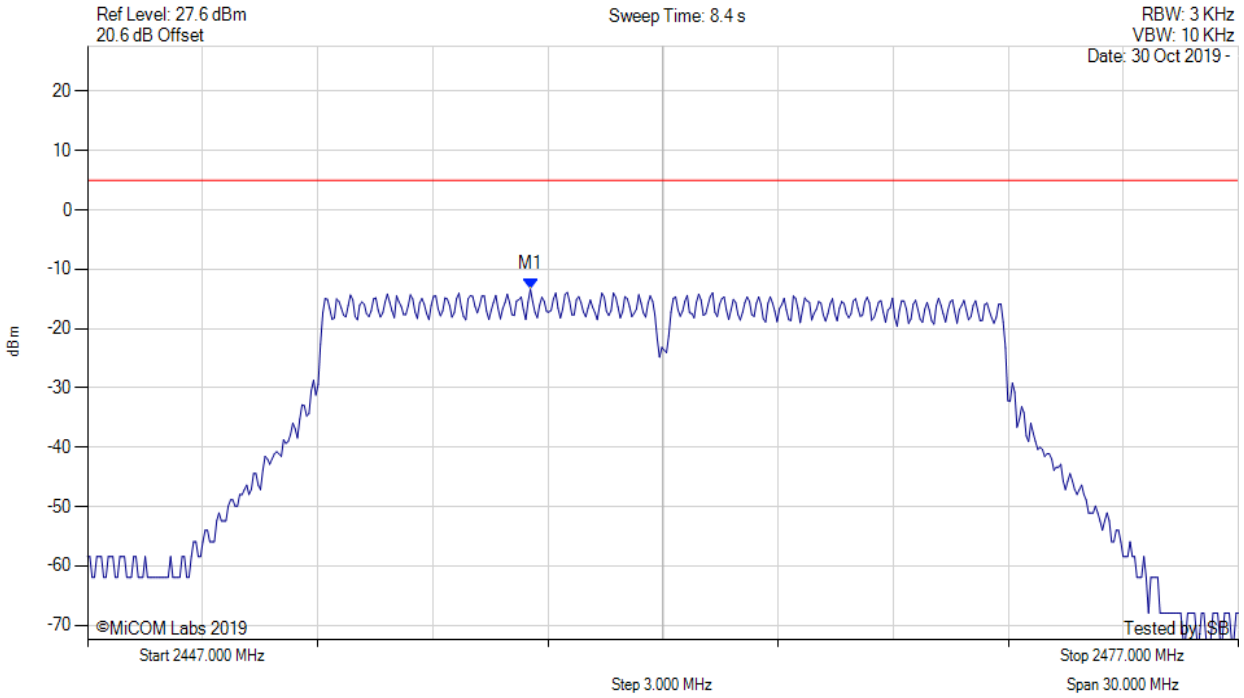


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2437.900 MHz : -10.689 dBm M1 + DCCF : 2437.900 MHz : -10.601 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -18.6 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

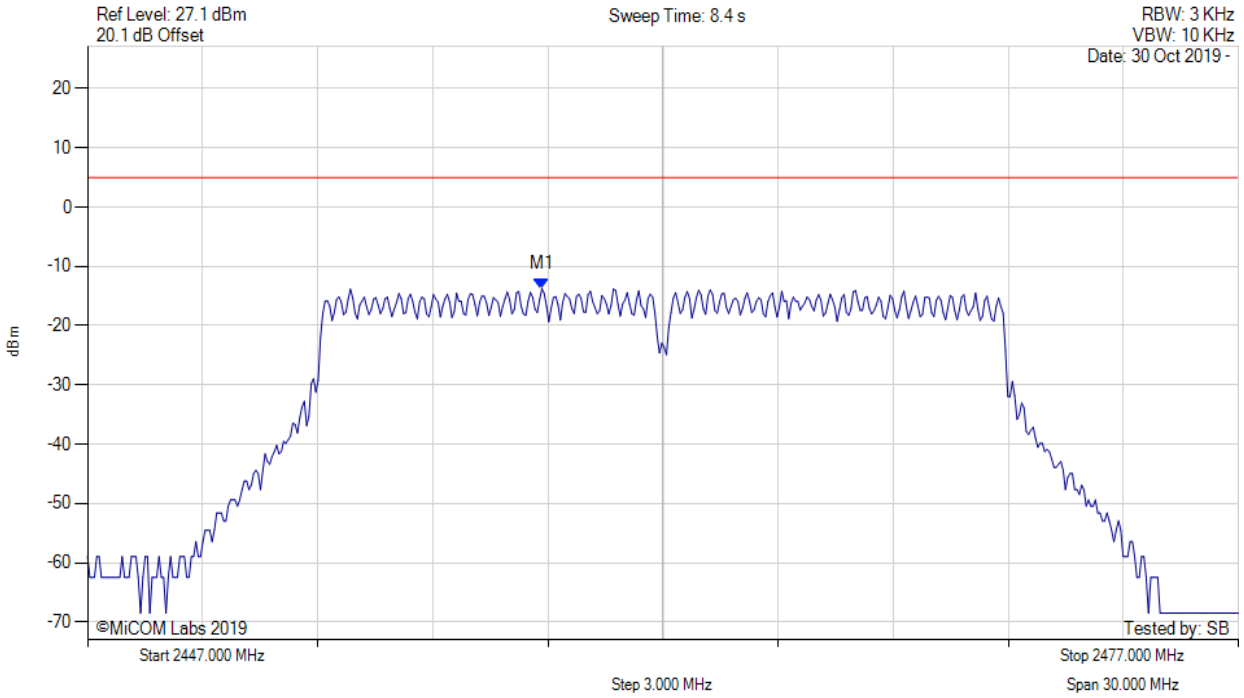


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2458.543 MHz : -13.350 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

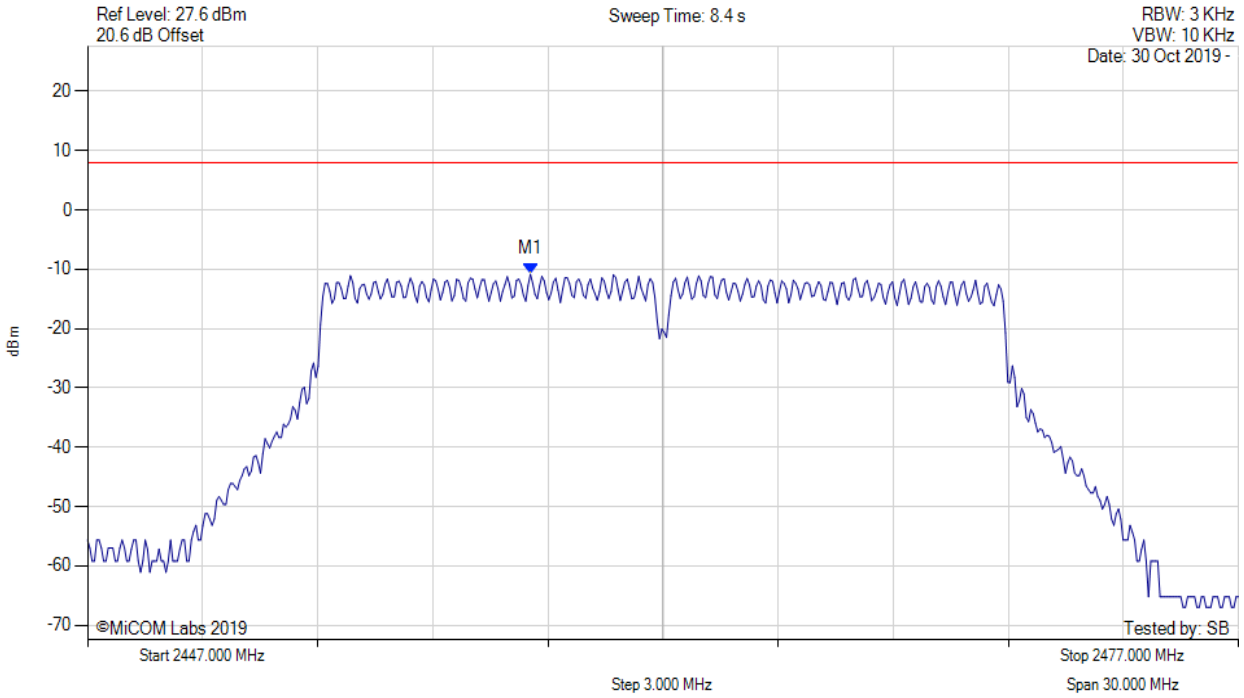


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2458.844 MHz : -13.737 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

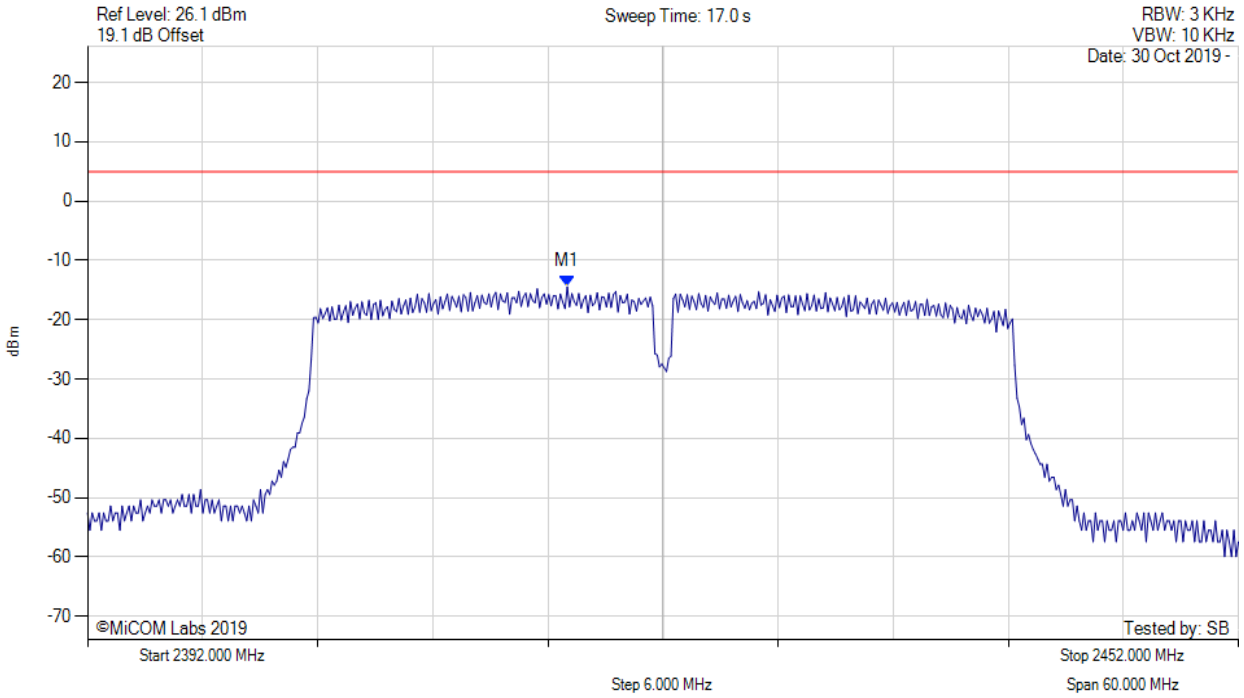


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2458.500 MHz : -10.818 dBm M1 + DCCF : 2458.500 MHz : -10.730 dBm Duty Cycle Correction Factor : +0.09 dB	Limit: ≤ 8.0 dBm Margin: -18.7 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

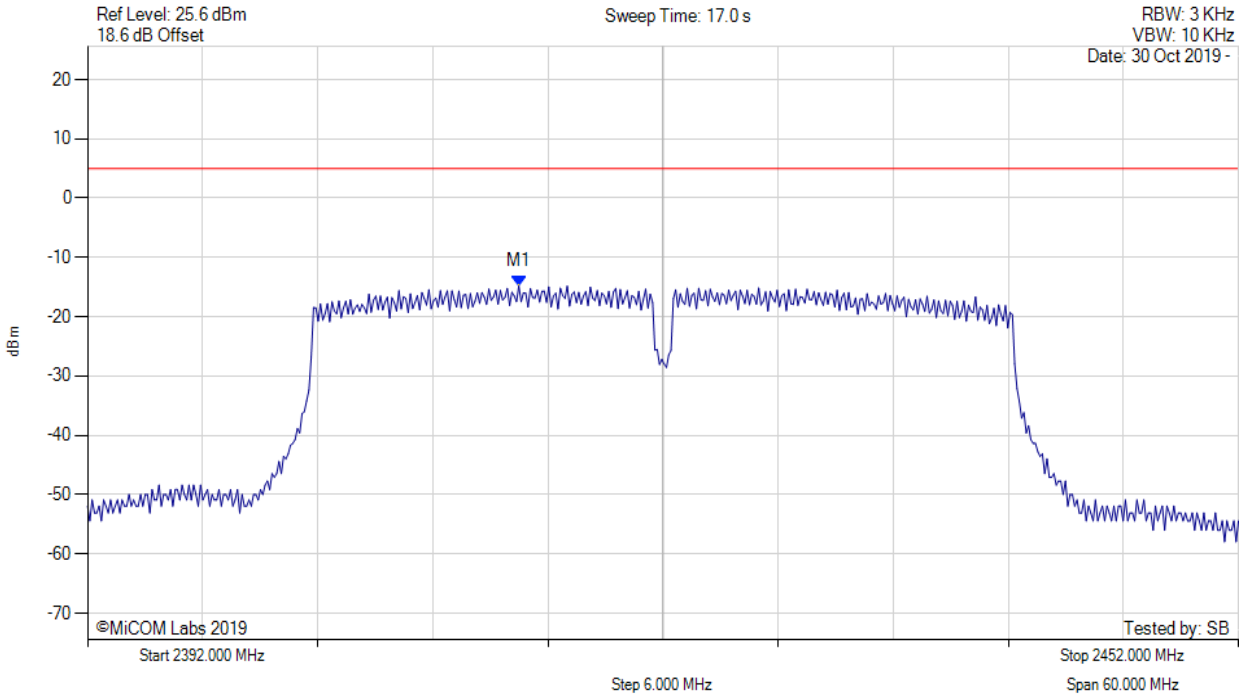


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2417.010 MHz : -14.440 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

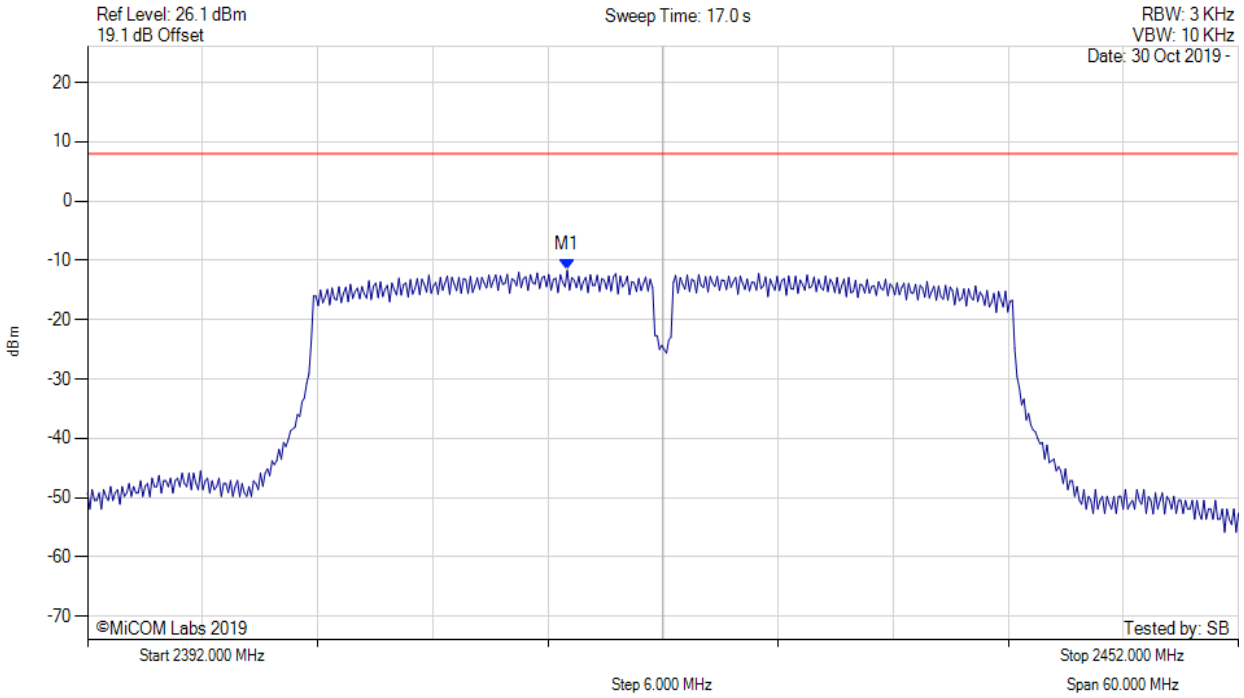


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2414.485 MHz : -14.787 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

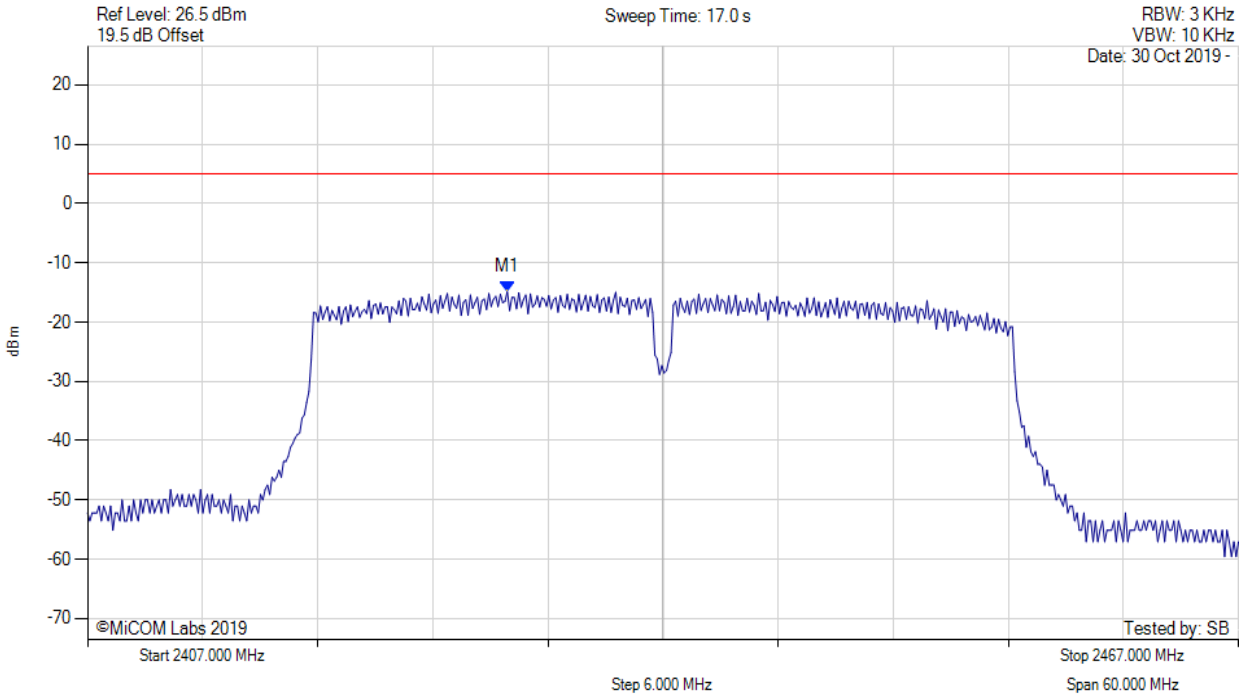


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2417.000 MHz : -11.621 dBm M1 + DCCF : 2417.000 MHz : -11.398 dBm Duty Cycle Correction Factor : +0.22 dB	Limit: ≤ 8.0 dBm Margin: -19.4 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

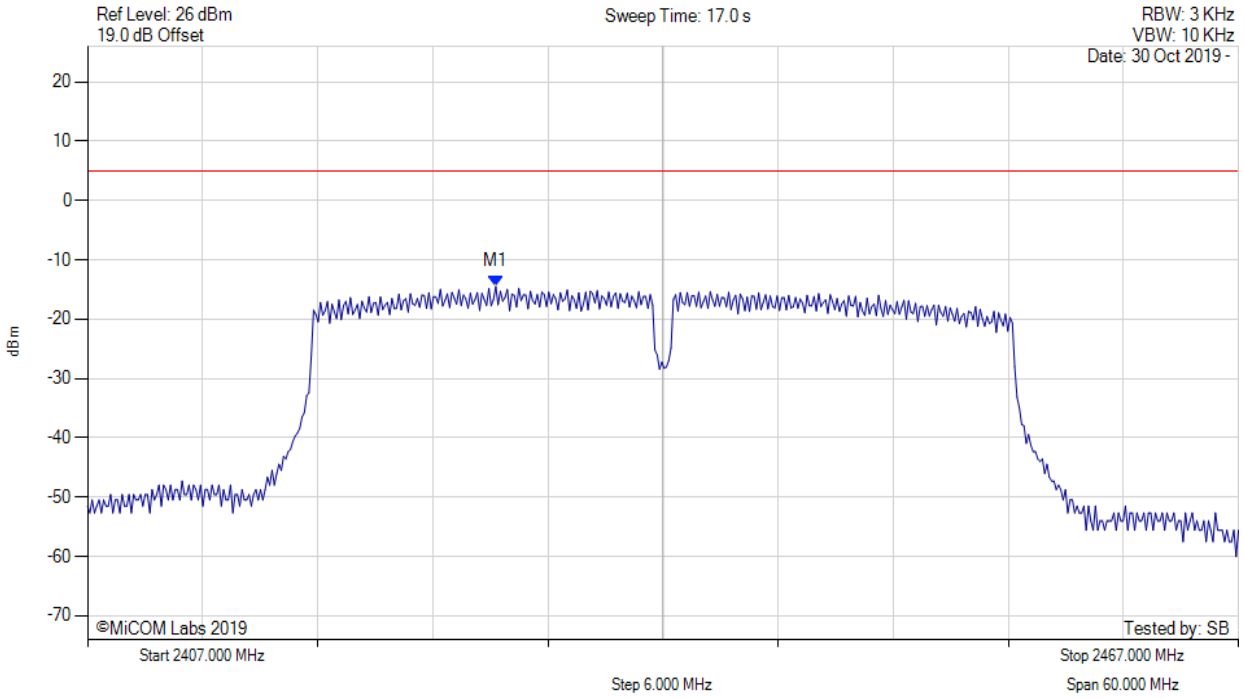


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2428.884 MHz : -14.880 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

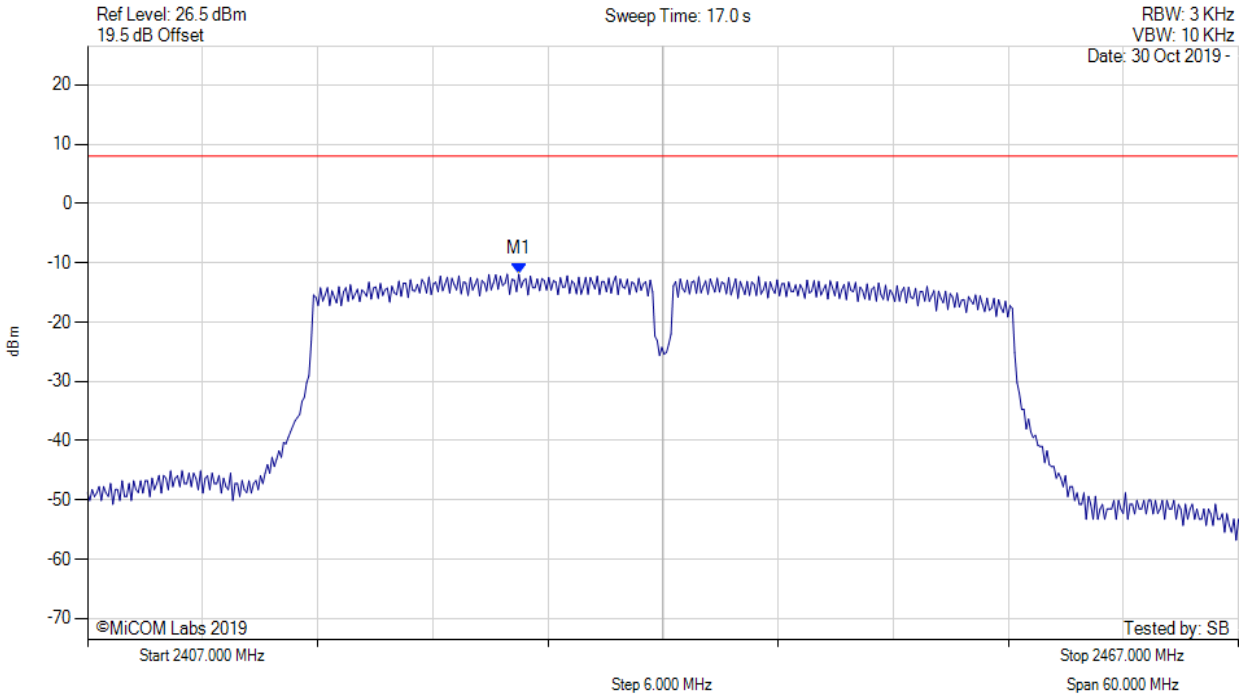


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2428.283 MHz : -14.494 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc

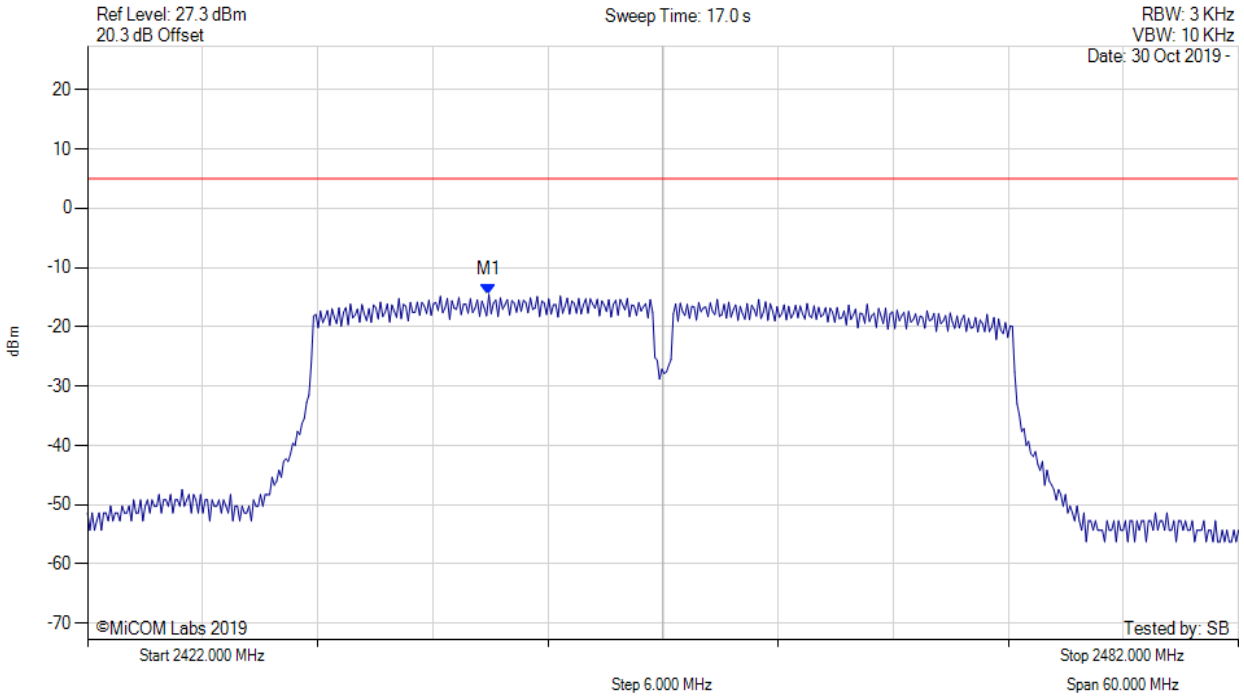


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2429.500 MHz : -11.916 dBm M1 + DCCF : 2429.500 MHz : -11.693 dBm Duty Cycle Correction Factor : +0.22 dB	Limit: ≤ 8.0 dBm Margin: -19.7 dB

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

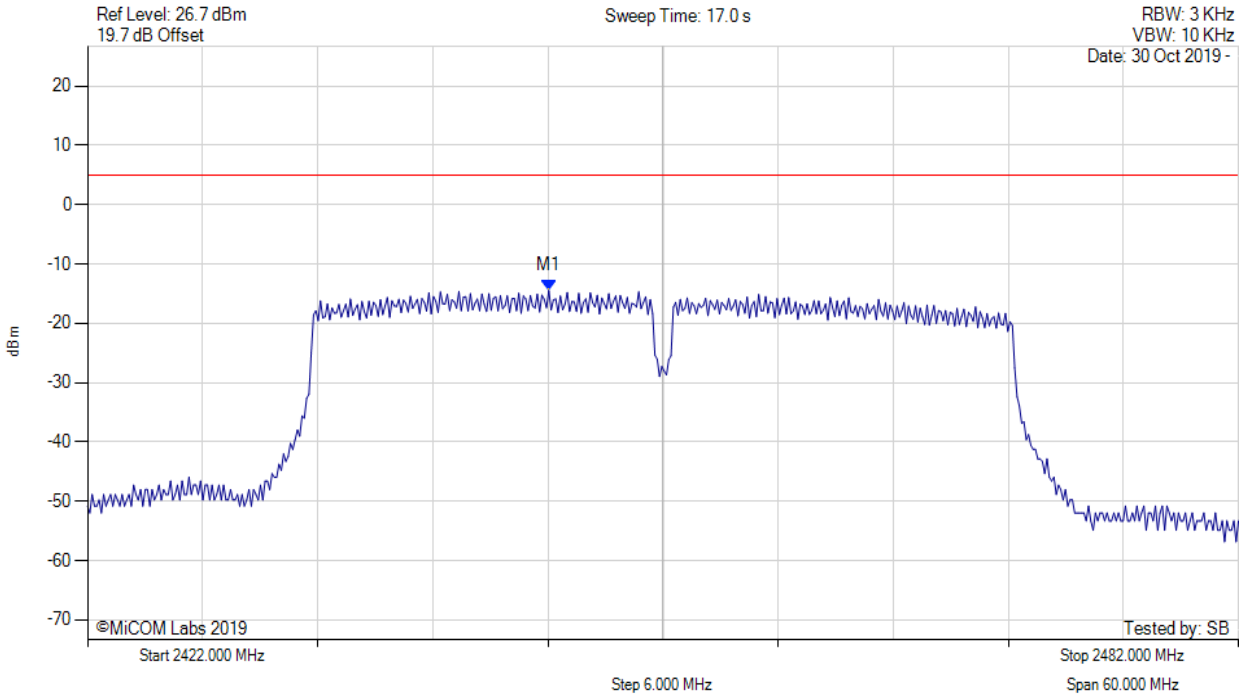


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2442.922 MHz : -14.568 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

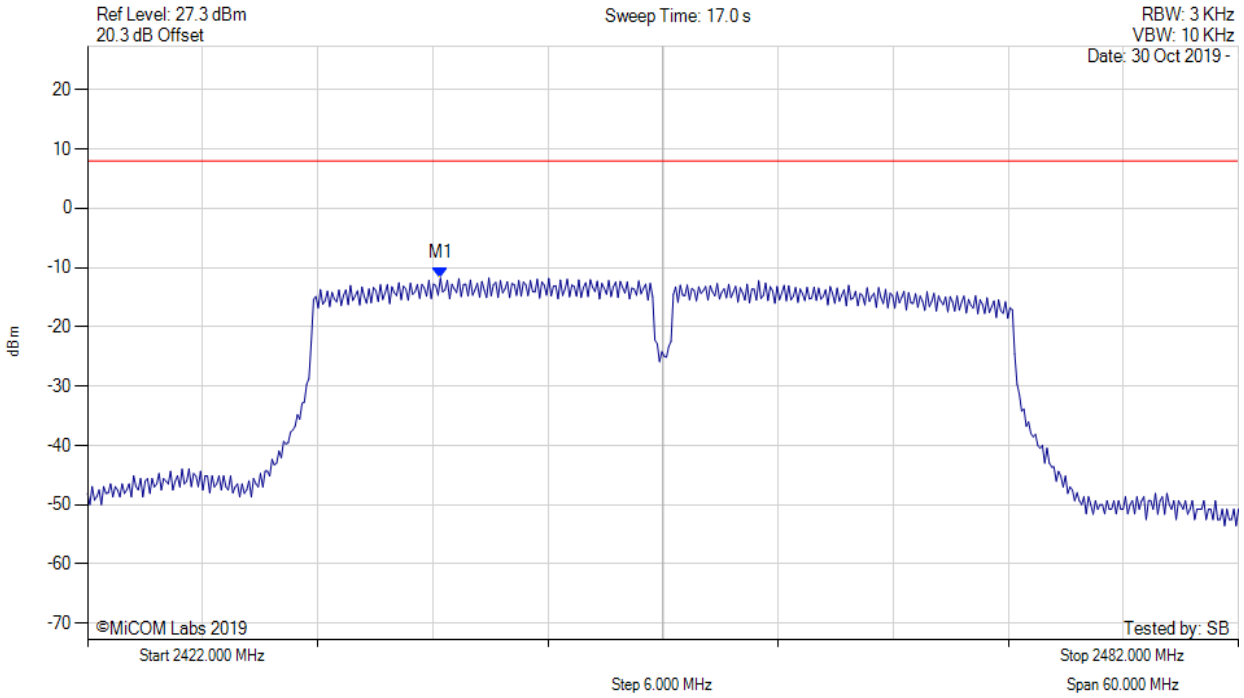


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2446.048 MHz : -14.446 dBm	Limit: ≤ 4.990 dBm

back to matrix

POWER SPECTRAL DENSITY - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc



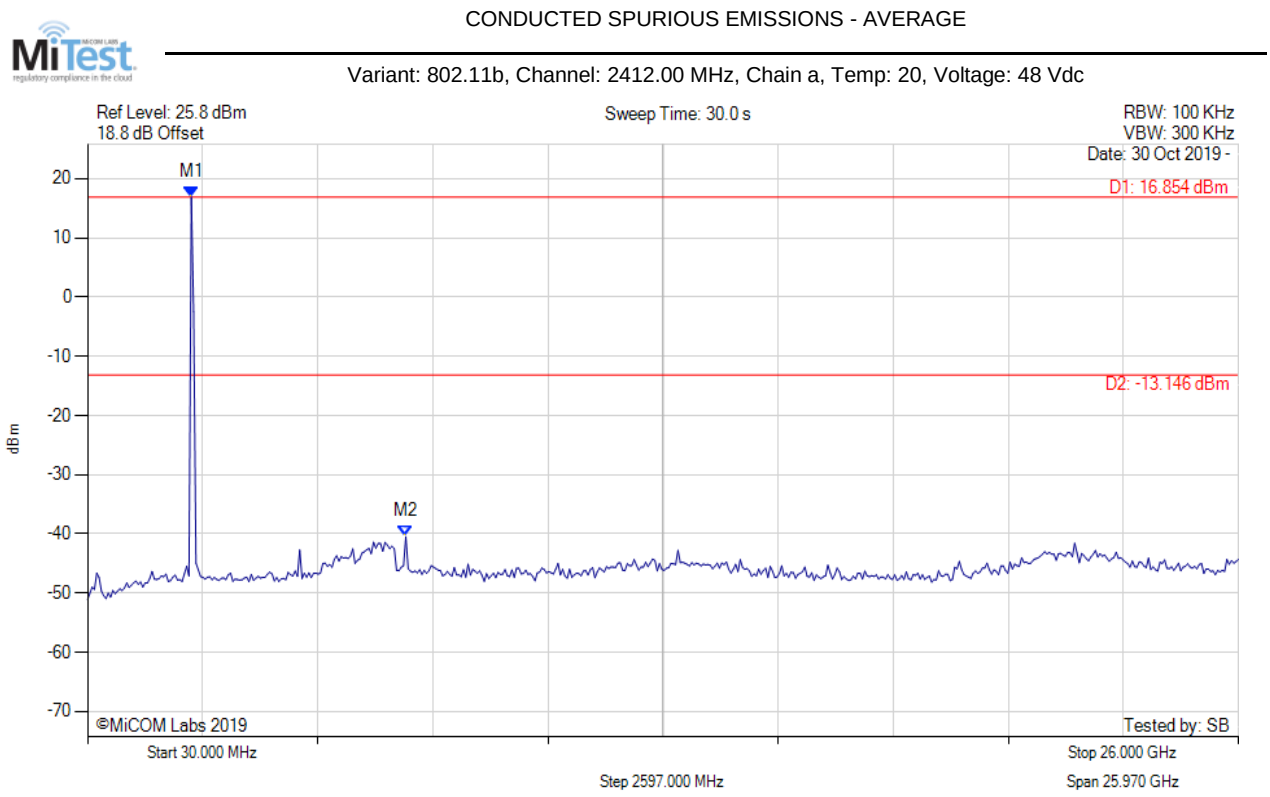
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = AVERAGE Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2440.400 MHz : -11.767 dBm M1 + DCCF : 2440.400 MHz : -11.544 dBm Duty Cycle Correction Factor : +0.22 dB	Limit: ≤ 8.0 dBm Margin: -19.6 dB

back to matrix

A.3. Emissions

A.3.1. Conducted Emissions

A.3.1.1. Conducted Spurious Emissions

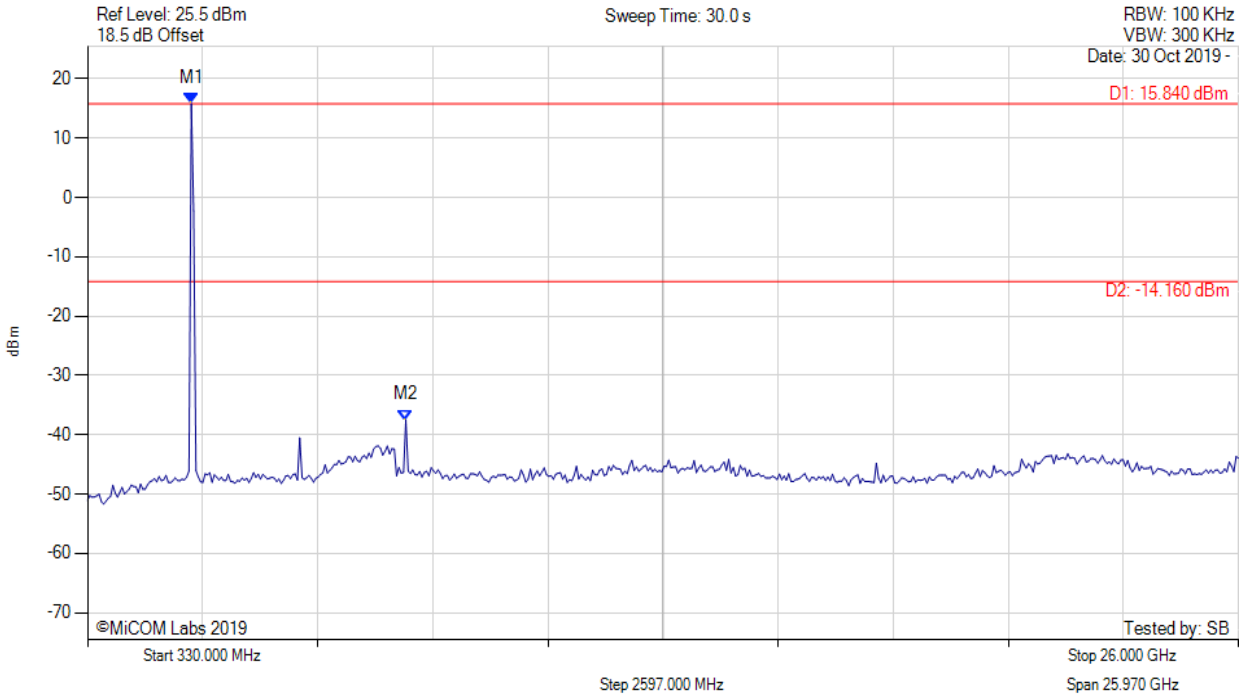


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 16.854 dBm M2 : 7212.084 MHz : -40.461 dBm	Limit: -13.15 dBm Margin: -27.31 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

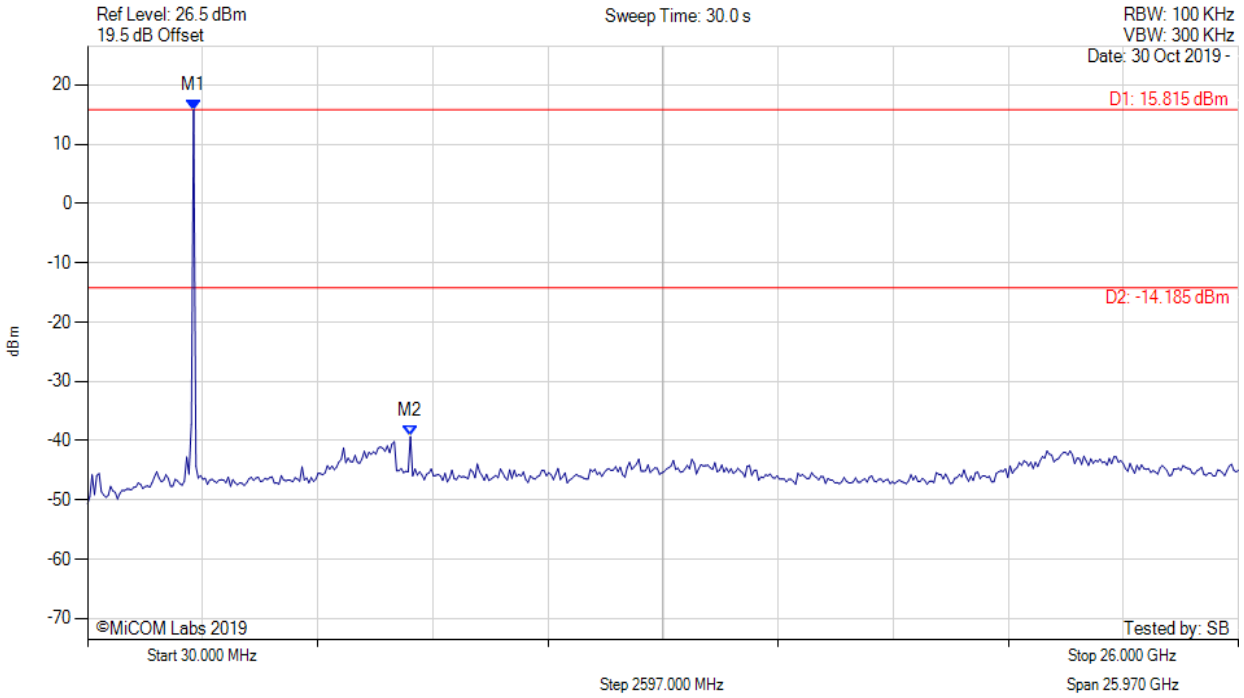


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 15.840 dBm M2 : 7212.084 MHz : -37.512 dBm	Limit: -14.16 dBm Margin: -23.35 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

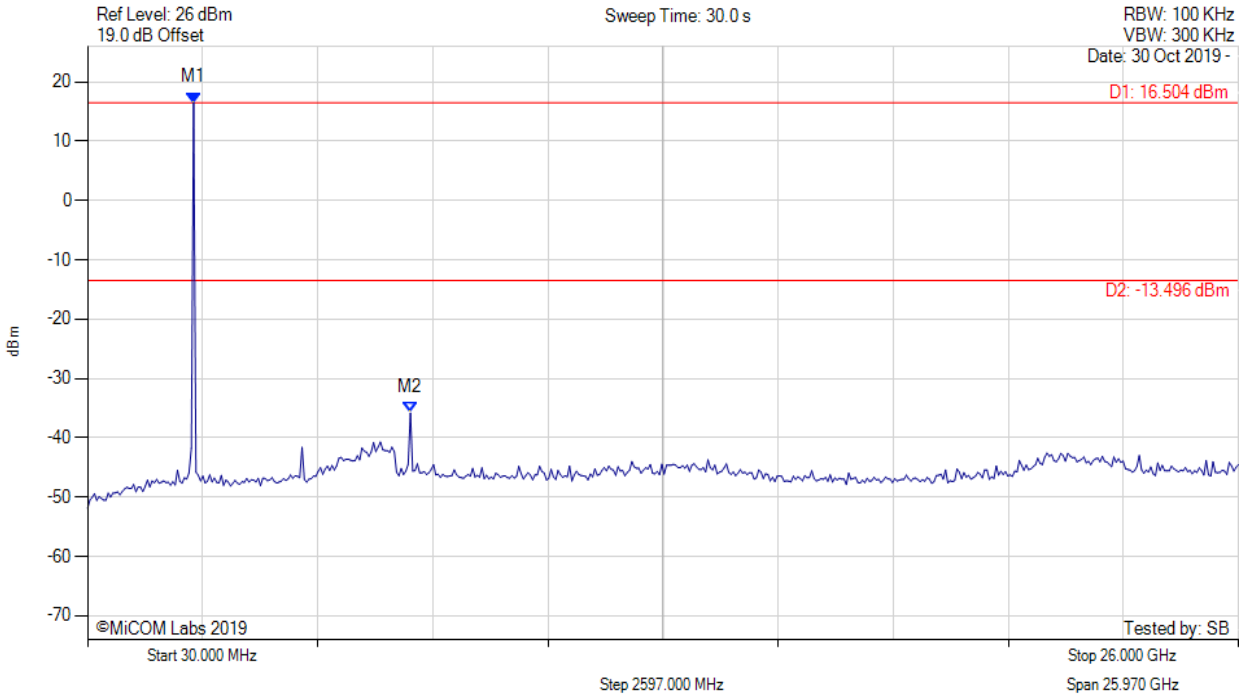


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 15.815 dBm M2 : 7316.172 MHz : -39.284 dBm	Limit: -14.19 dBm Margin: -25.09 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

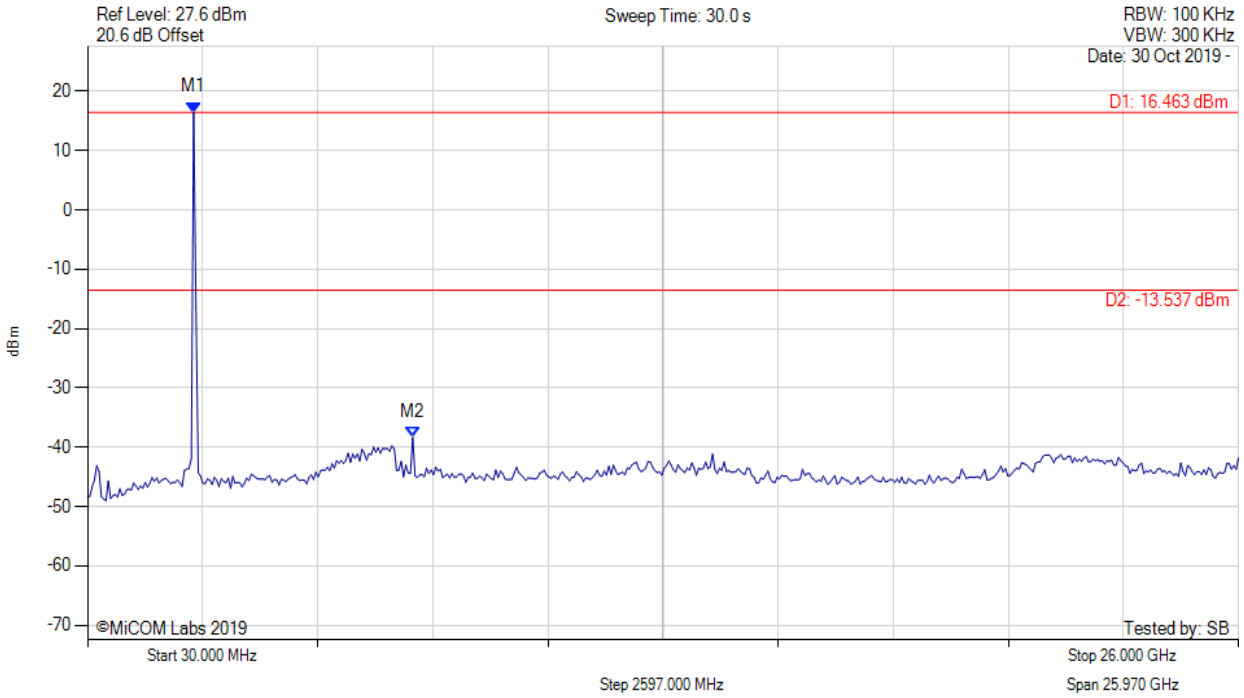


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 16.504 dBm M2 : 7316.172 MHz : -35.824 dBm	Limit: -13.50 dBm Margin: -22.32 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

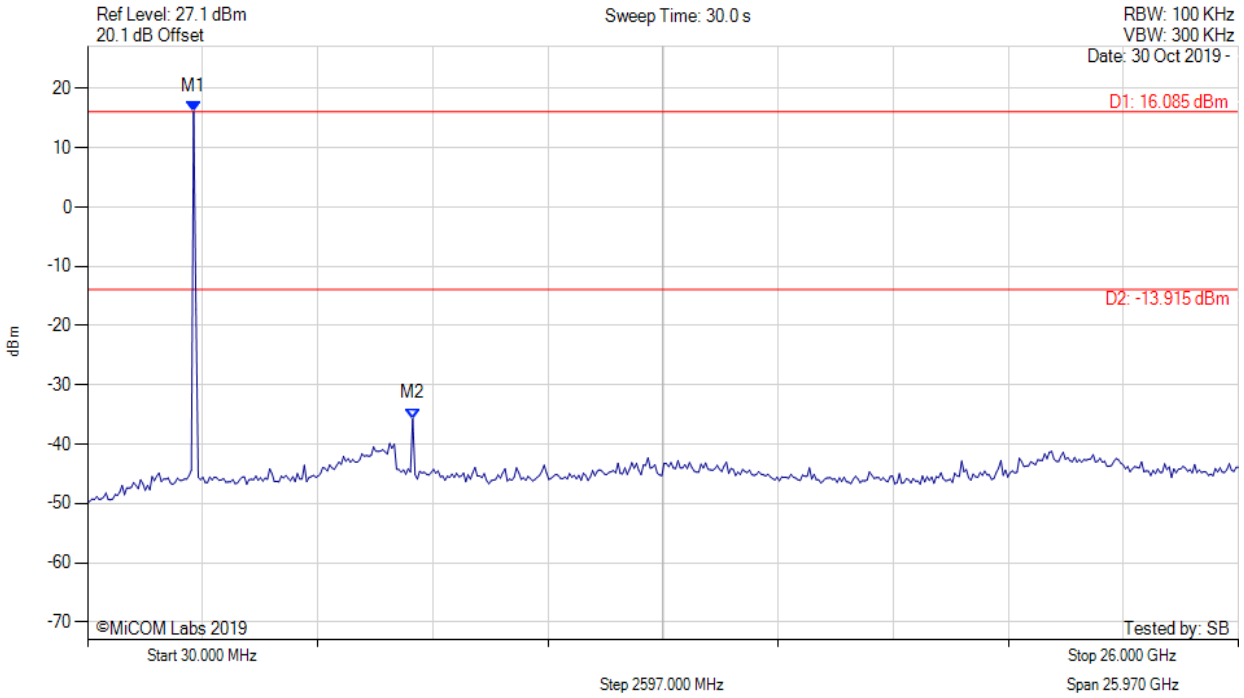


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 16.463 dBm M2 : 7368.216 MHz : -38.318 dBm	Limit: -13.54 dBm Margin: -24.78 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

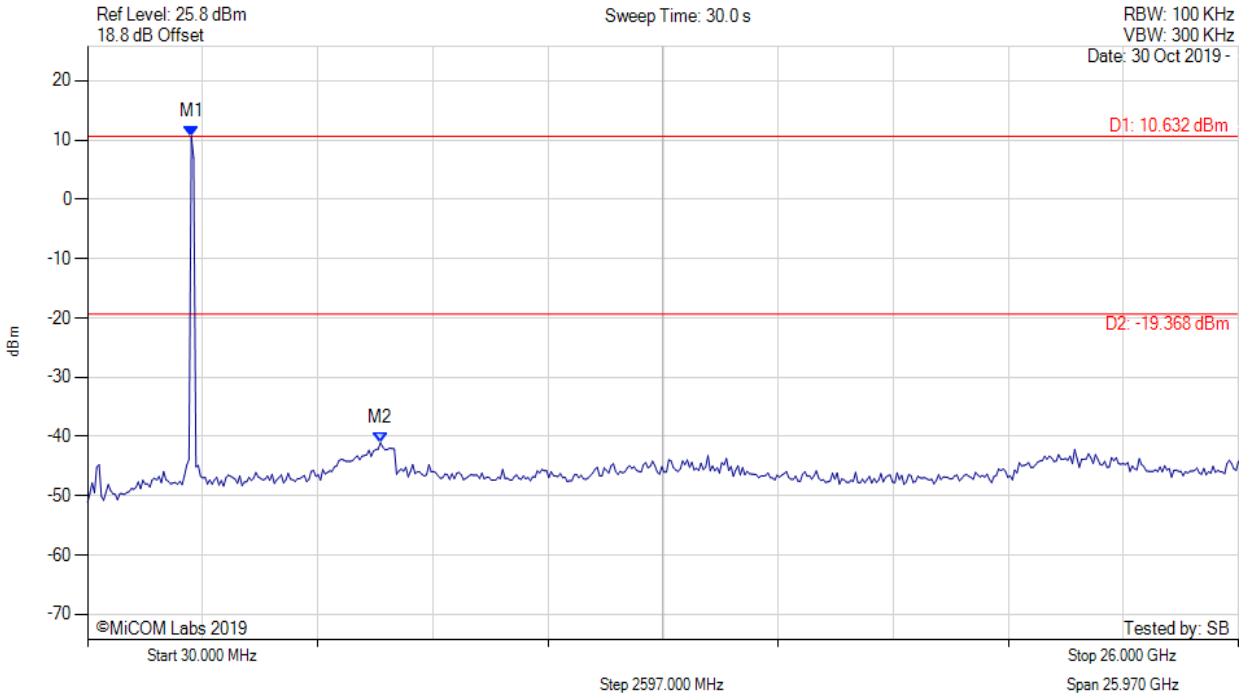


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 16.085 dBm M2 : 7368.216 MHz : -35.688 dBm	Limit: -13.92 dBm Margin: -21.77 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

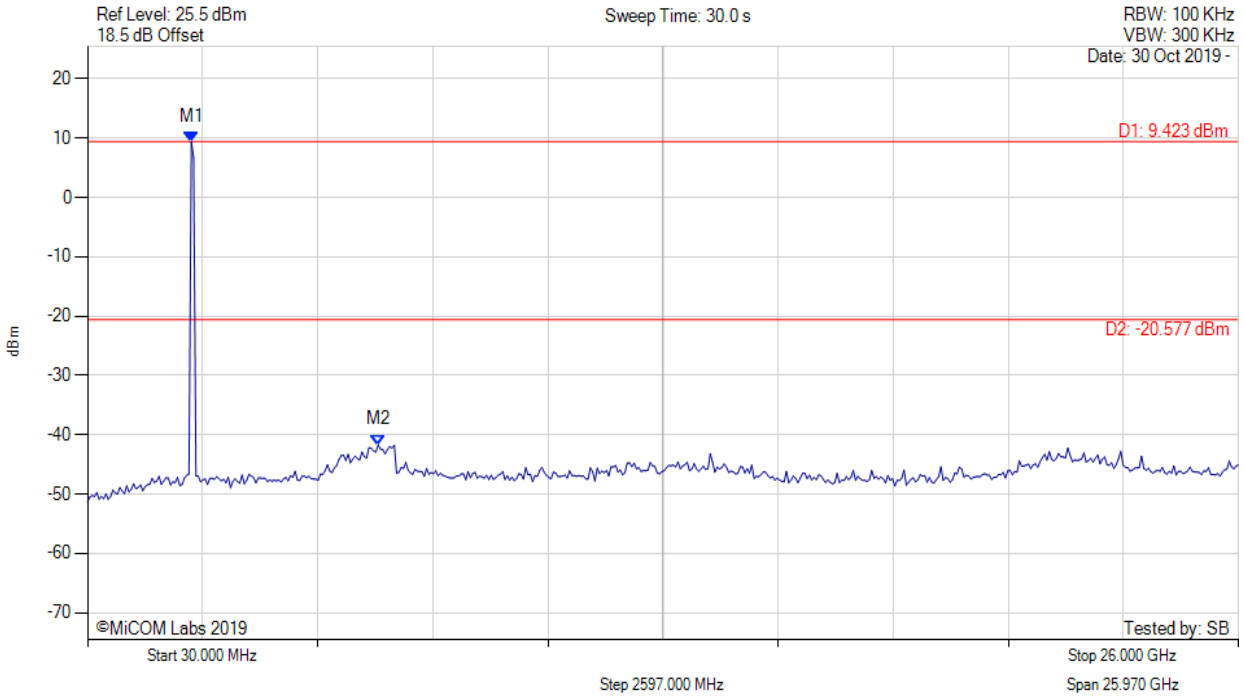


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 10.632 dBm M2 : 6639.599 MHz : -41.041 dBm	Limit: -19.37 dBm Margin: -21.67 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

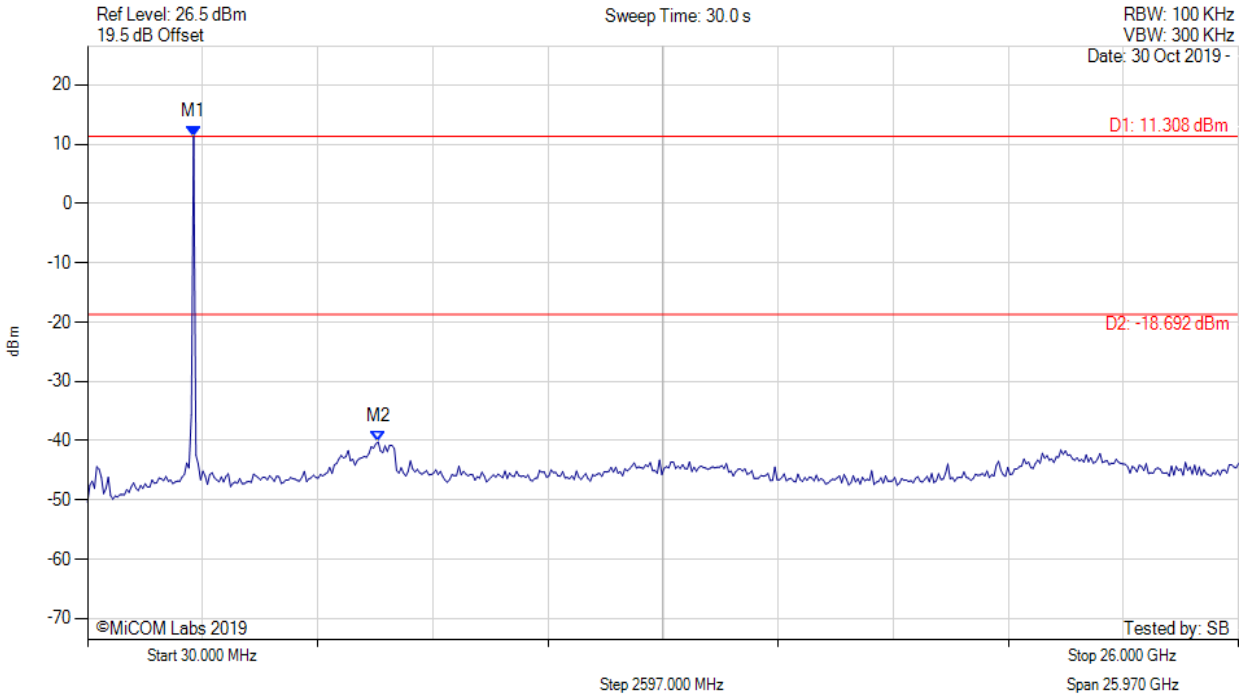


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 9.423 dBm M2 : 6587.555 MHz : -41.730 dBm	Limit: -20.58 dBm Margin: -21.15 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

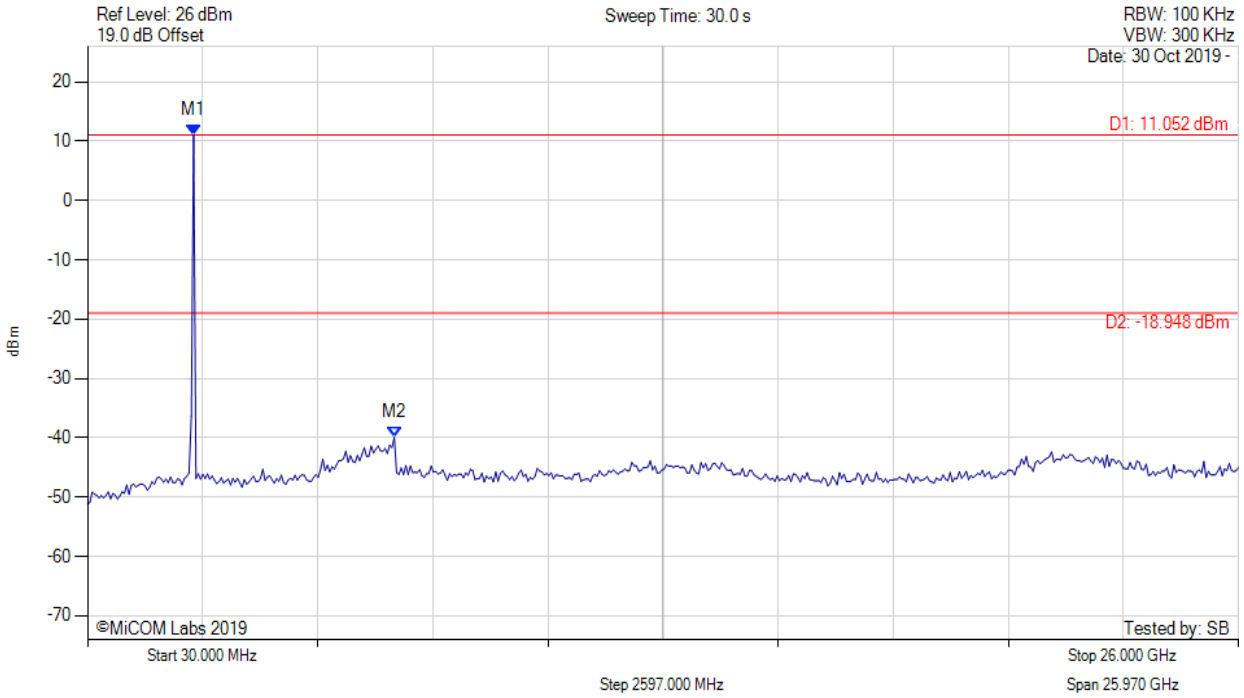


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 11.308 dBm M2 : 6587.555 MHz : -40.219 dBm	Limit: -18.69 dBm Margin: -21.53 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

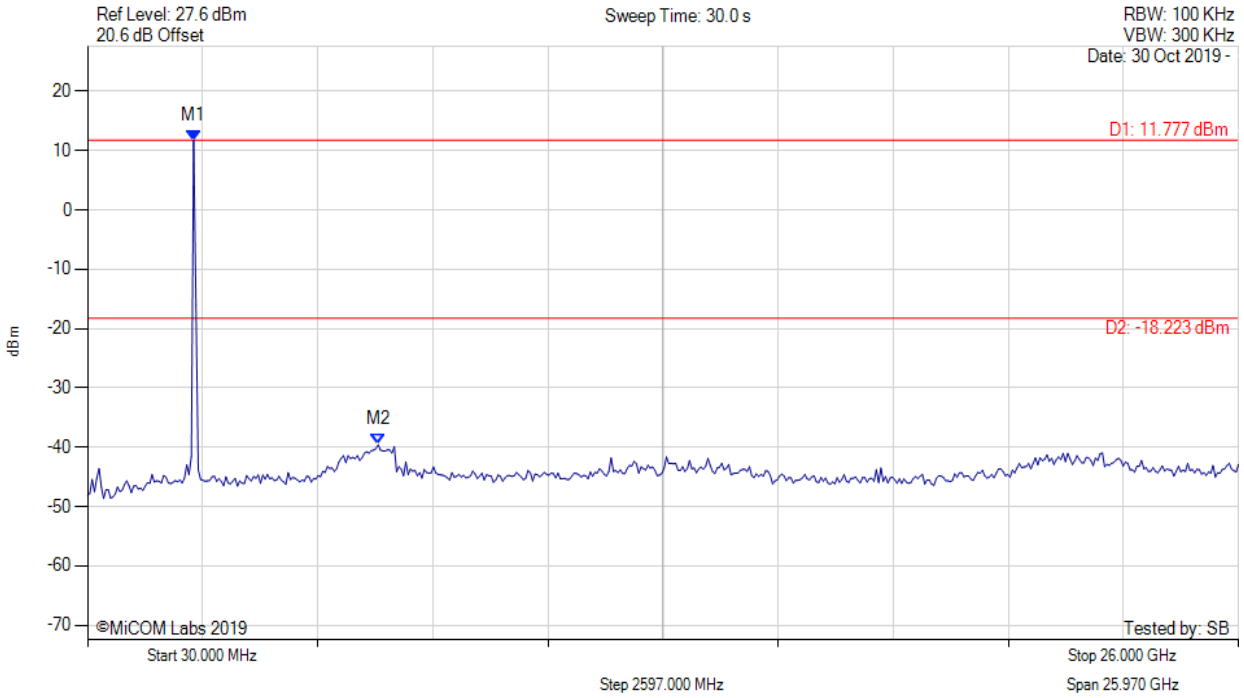


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 11.052 dBm M2 : 6951.864 MHz : -39.971 dBm	Limit: -18.95 dBm Margin: -21.02 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

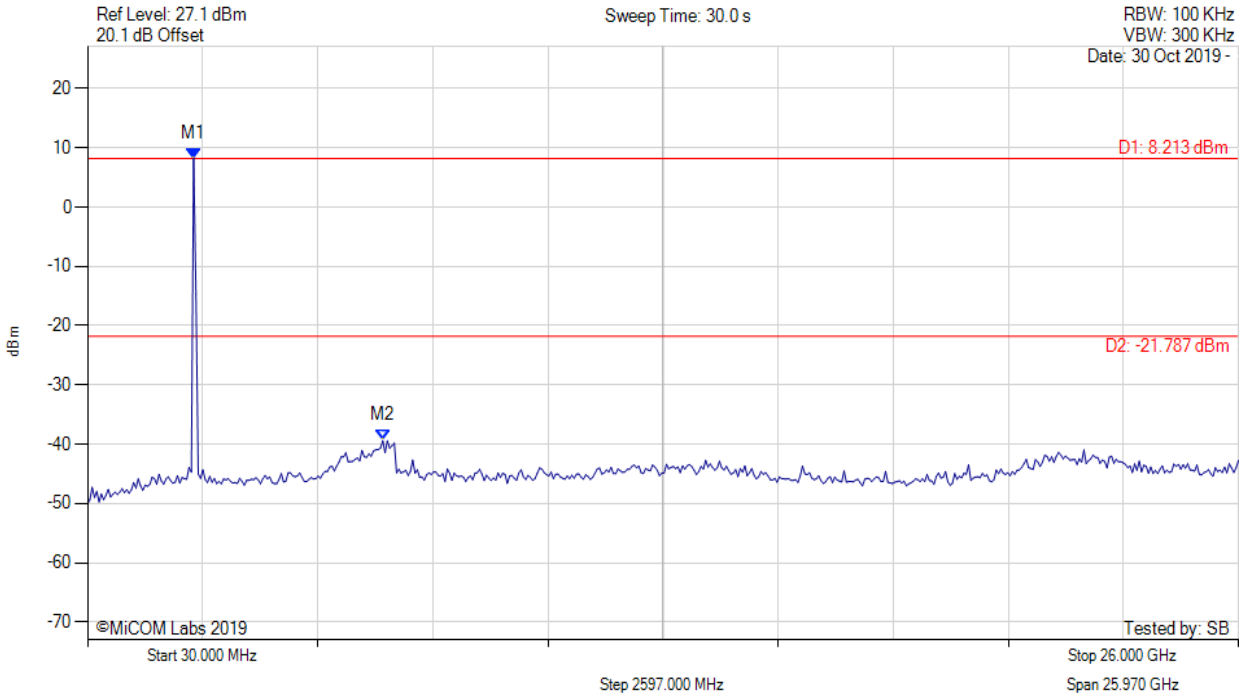


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 11.777 dBm M2 : 6587.555 MHz : -39.603 dBm	Limit: -18.22 dBm Margin: -21.38 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

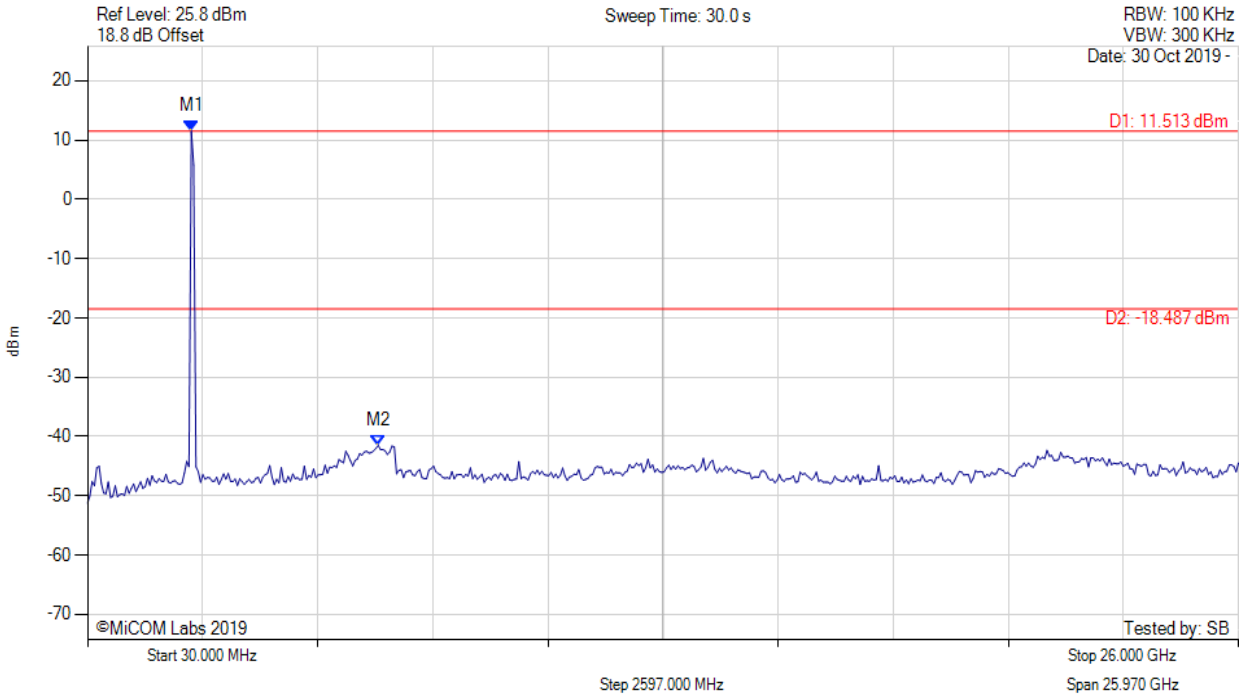


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 8.213 dBm M2 : 6691.643 MHz : -39.389 dBm	Limit: -21.79 dBm Margin: -17.60 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

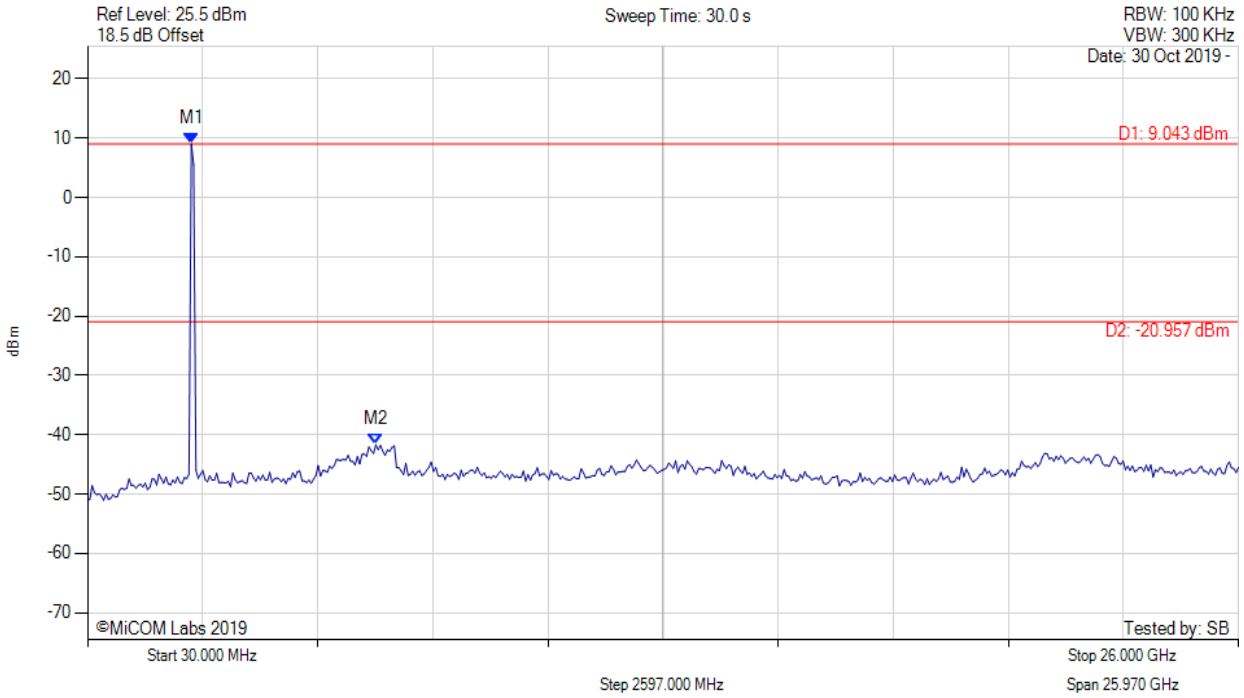


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 11.513 dBm M2 : 6587.555 MHz : -41.505 dBm	Limit: -18.49 dBm Margin: -23.02 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

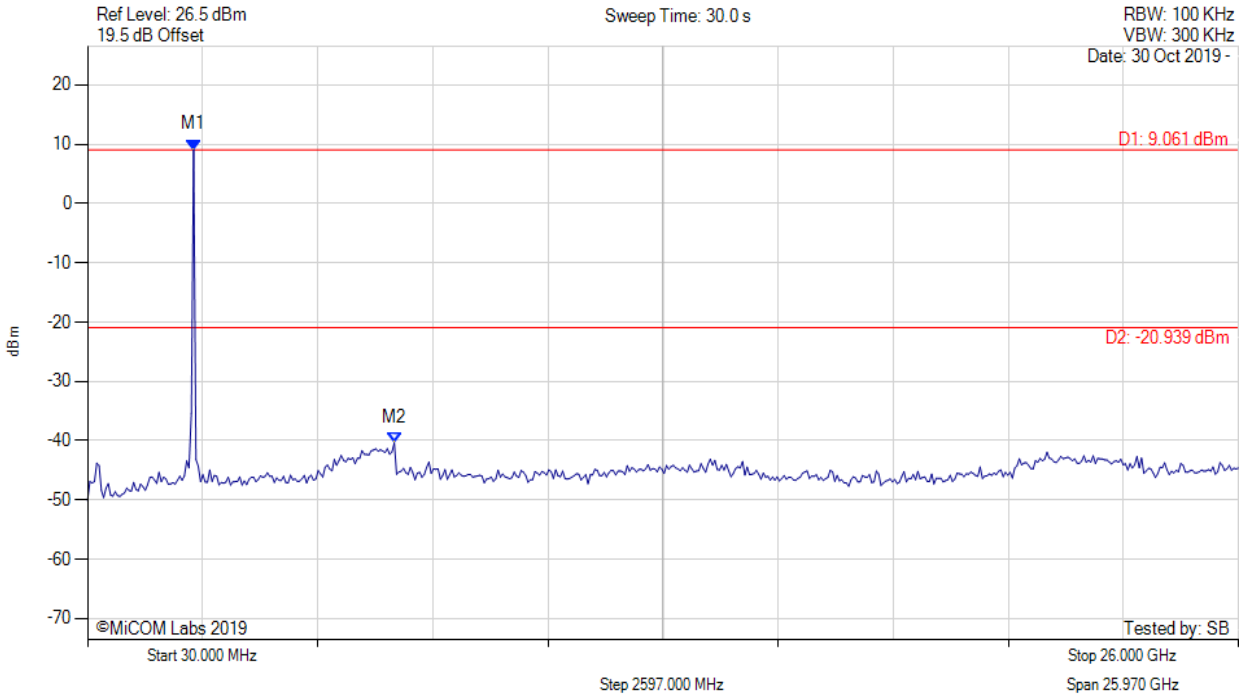


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 9.043 dBm M2 : 6535.511 MHz : -41.703 dBm	Limit: -20.96 dBm Margin: -20.74 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

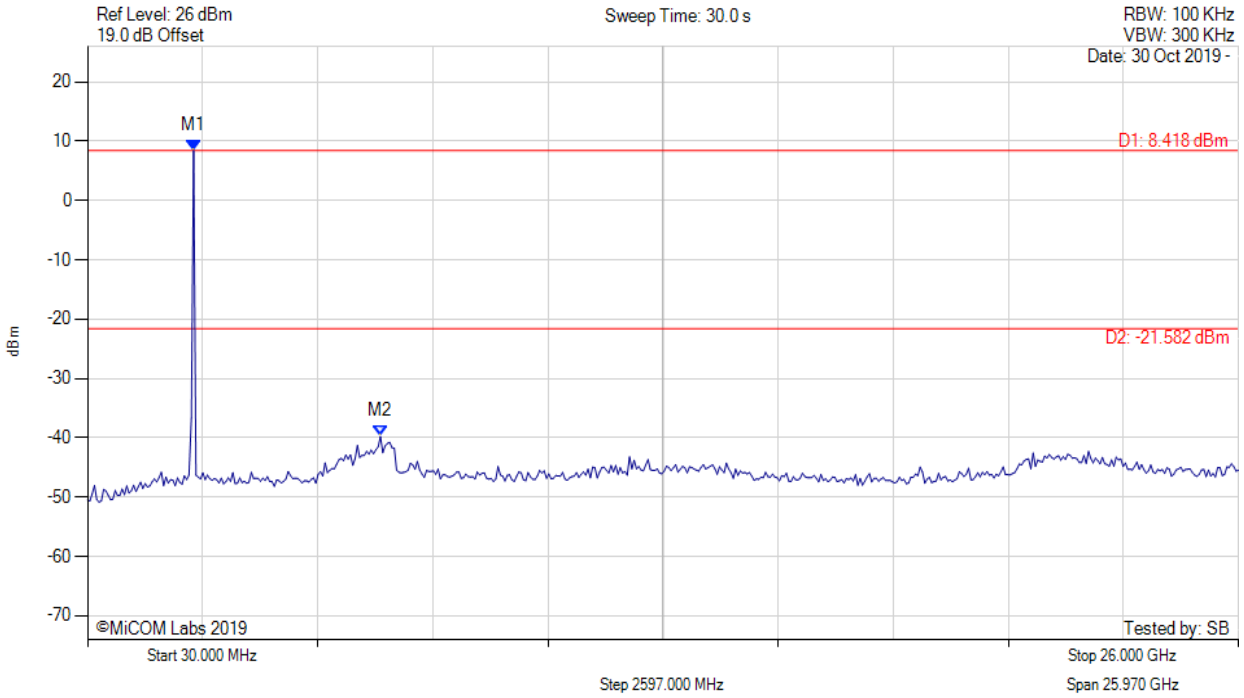


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 9.061 dBm M2 : 6951.864 MHz : -40.343 dBm	Limit: -20.94 dBm Margin: -19.40 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

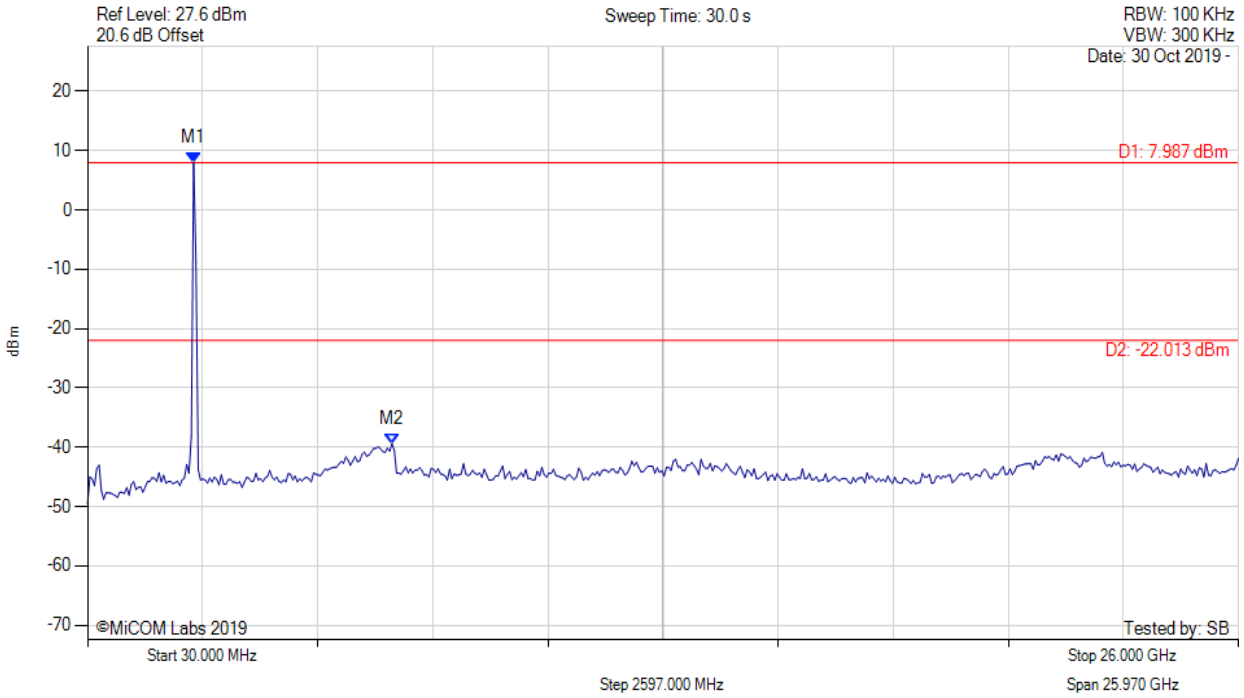


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 8.418 dBm M2 : 6639.599 MHz : -39.782 dBm	Limit: -21.58 dBm Margin: -18.20 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

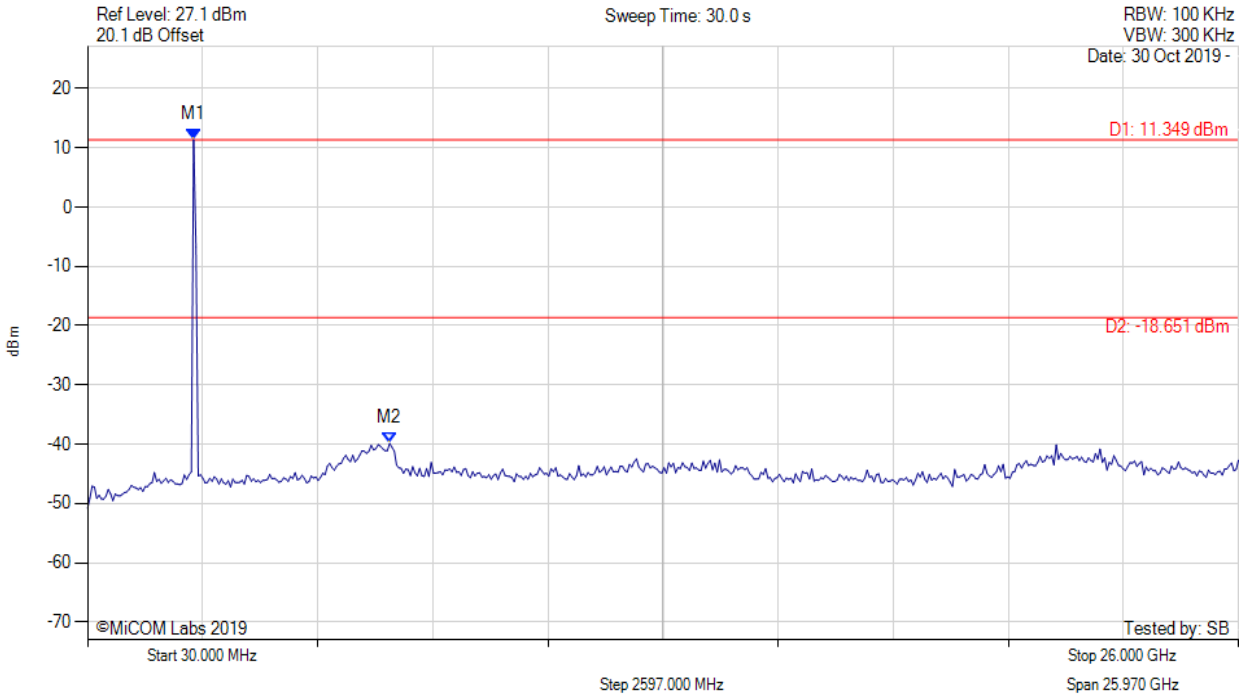


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 7.987 dBm M2 : 6899.820 MHz : -39.400 dBm	Limit: -22.01 dBm Margin: -17.39 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

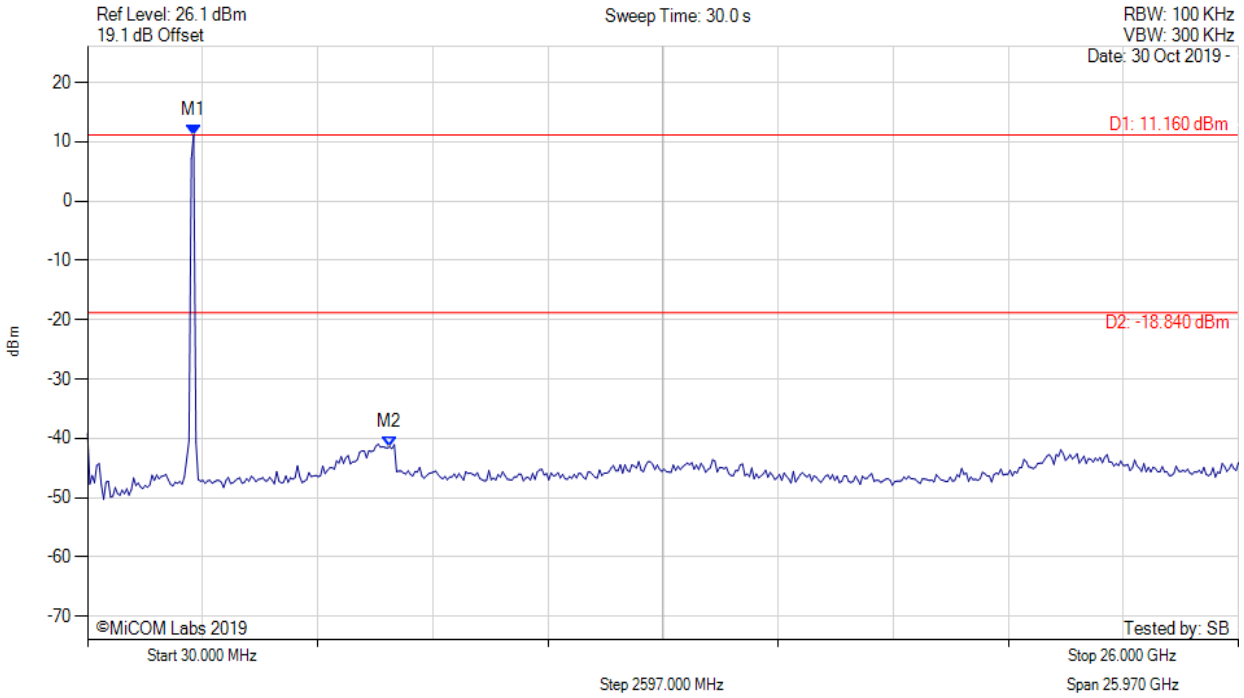


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 11.349 dBm M2 : 6847.776 MHz : -39.843 dBm	Limit: -18.65 dBm Margin: -21.19 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

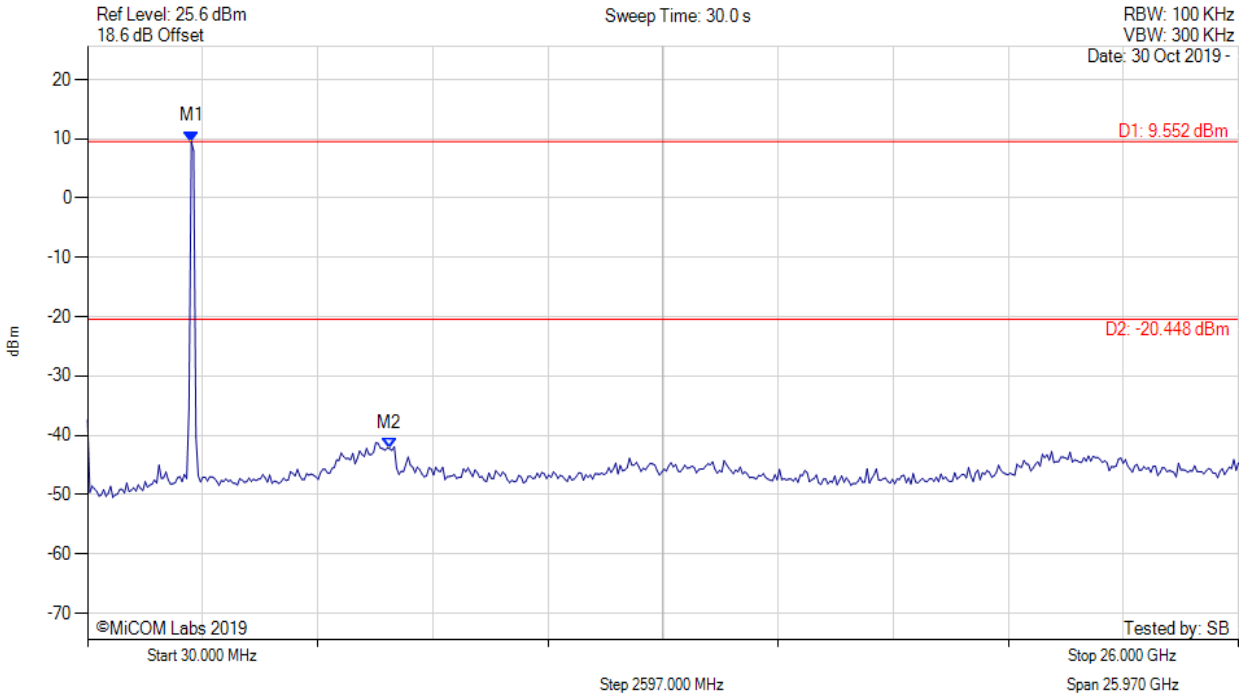


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 11.160 dBm M2 : 6847.776 MHz : -41.435 dBm	Limit: -18.84 dBm Margin: -22.60 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

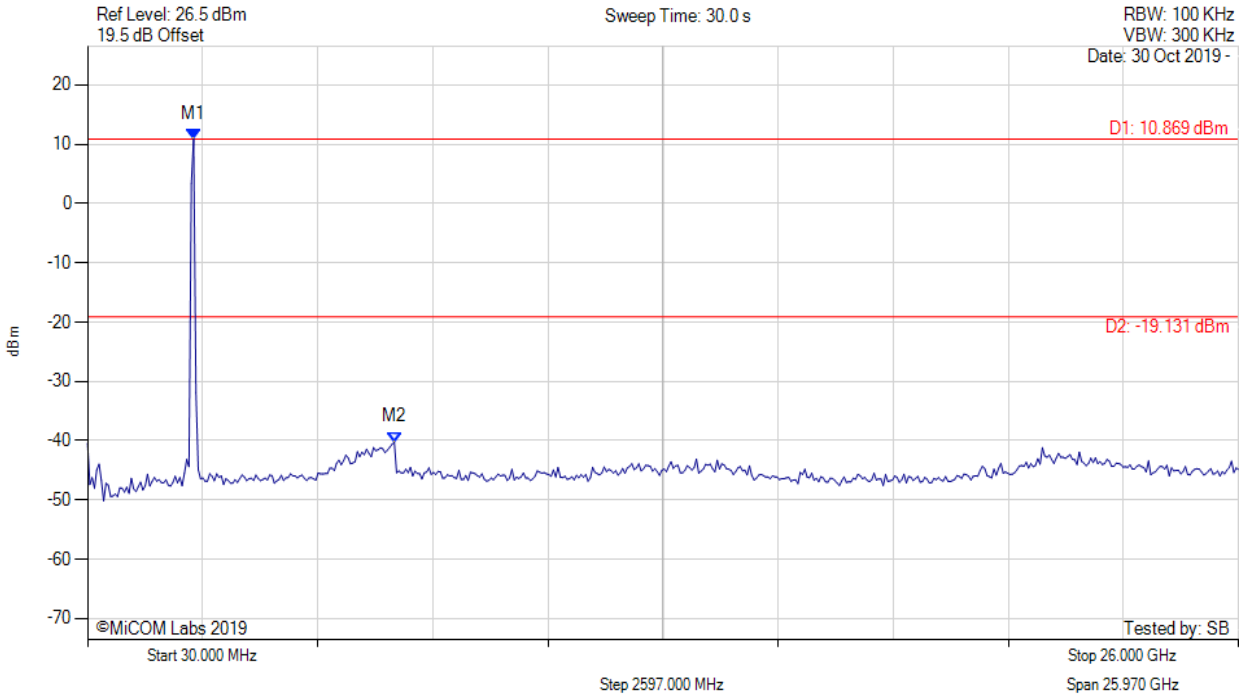


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2371.984 MHz : 9.552 dBm M2 : 6847.776 MHz : -42.234 dBm	Limit: -20.45 dBm Margin: -21.78 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

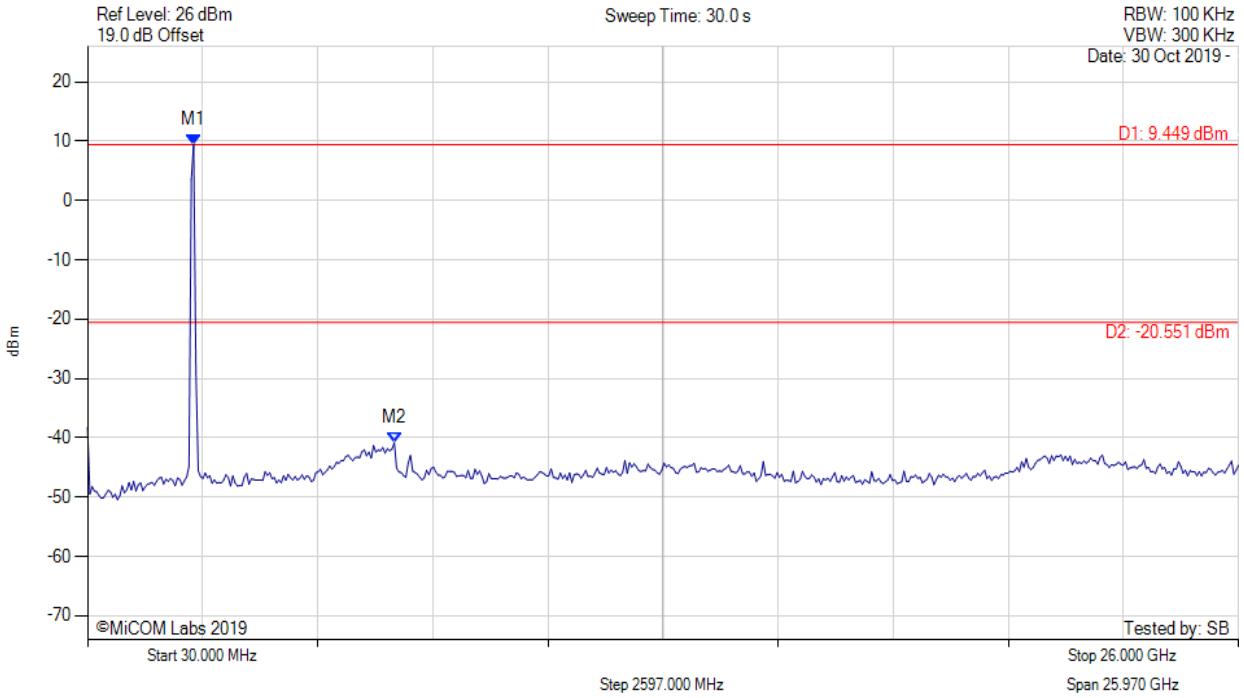


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 10.869 dBm M2 : 6951.864 MHz : -40.246 dBm	Limit: -19.13 dBm Margin: -21.12 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2437.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

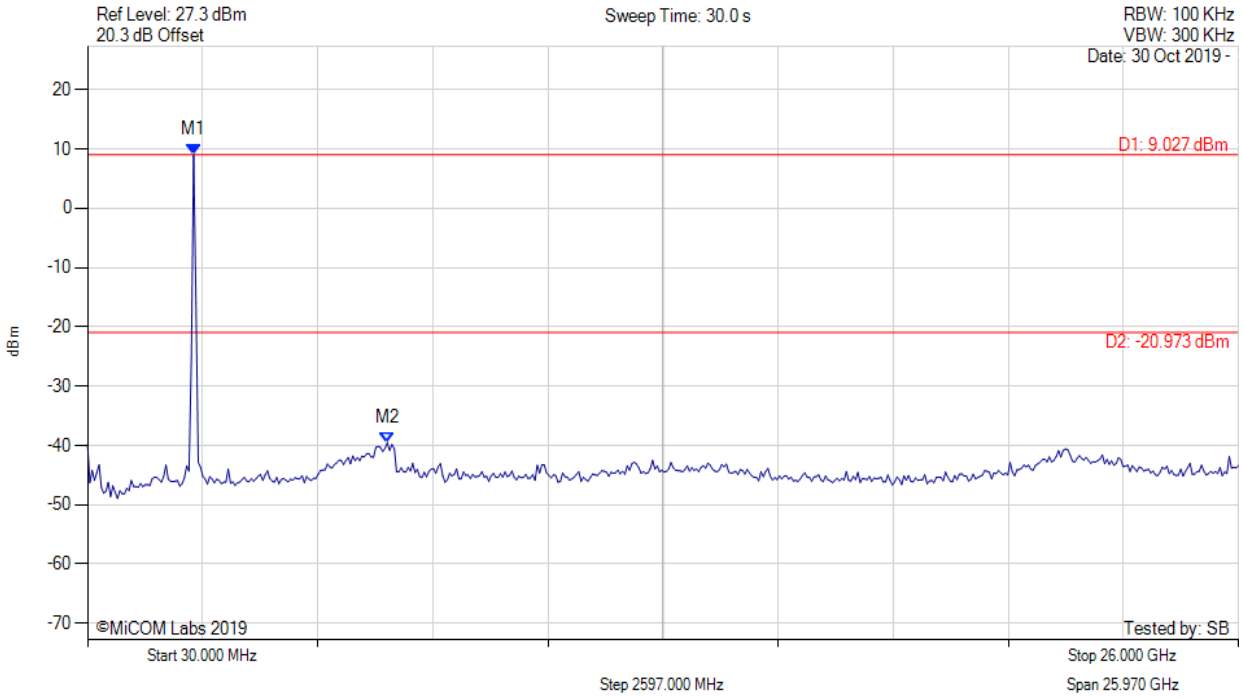


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 9.449 dBm M2 : 6951.864 MHz : -40.843 dBm	Limit: -20.55 dBm Margin: -20.29 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

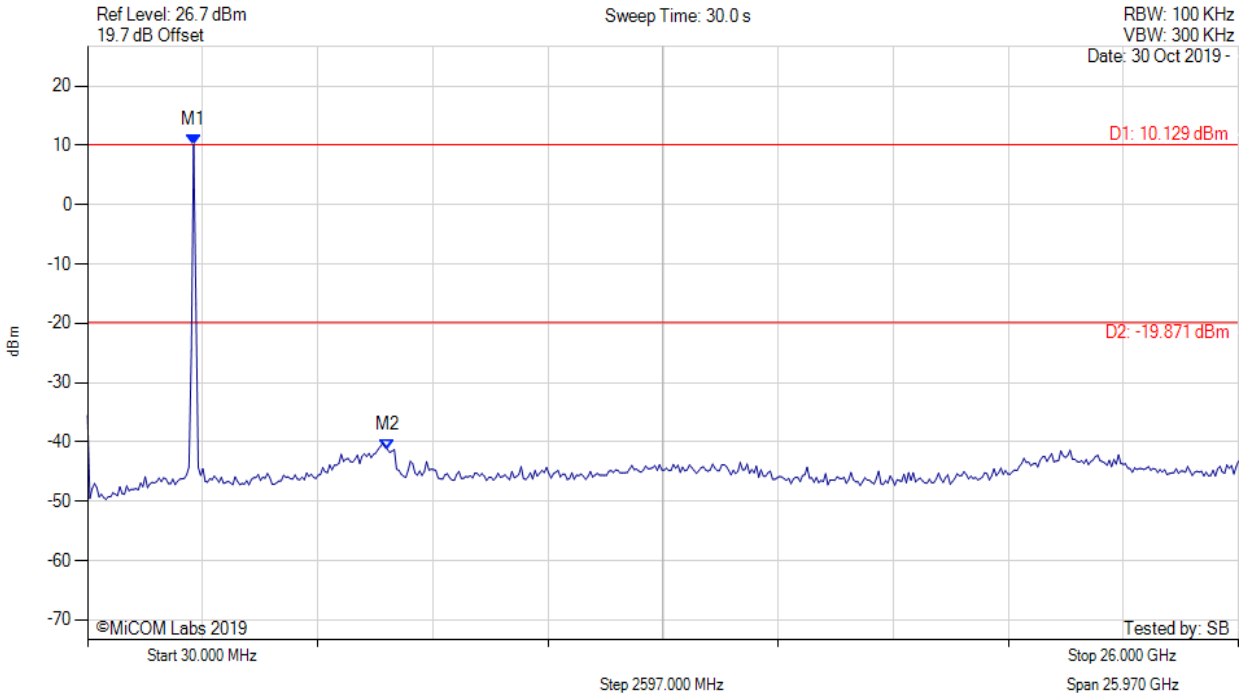


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 9.027 dBm M2 : 6795.731 MHz : -39.551 dBm	Limit: -20.97 dBm Margin: -18.58 dB

back to matrix

CONDUCTED SPURIOUS EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc



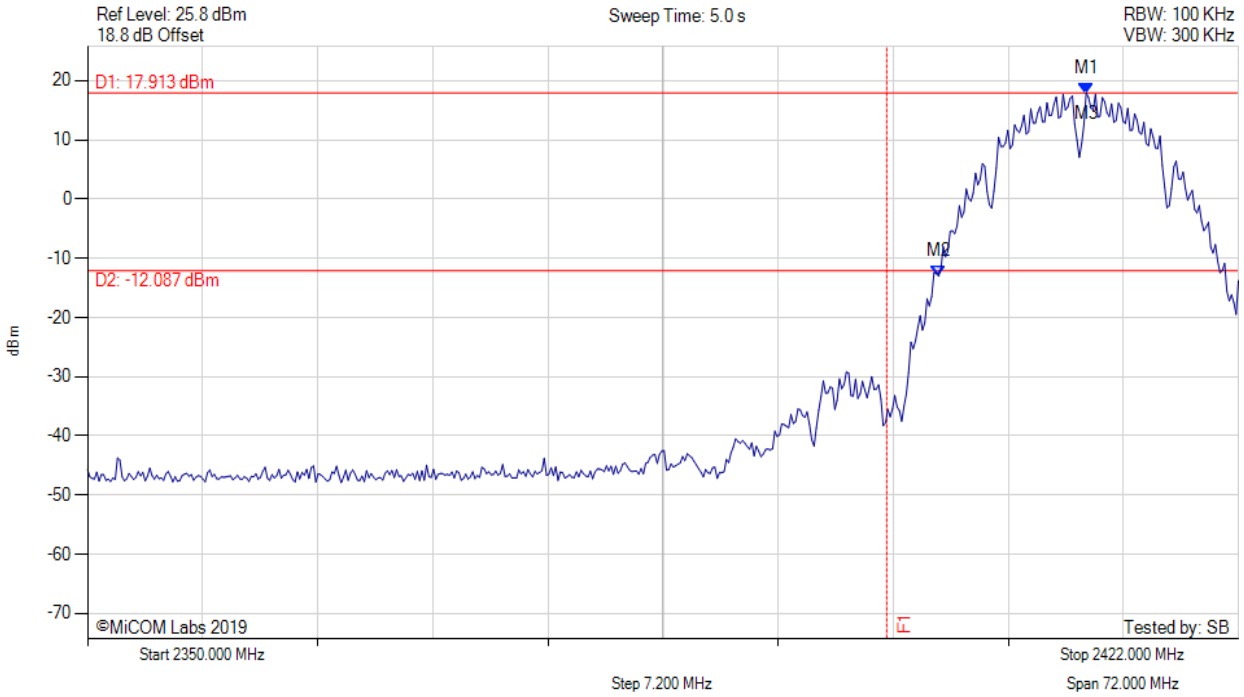
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2424.028 MHz : 10.129 dBm M2 : 6795.731 MHz : -41.249 dBm	Limit: -19.87 dBm Margin: -21.38 dB

back to matrix

A.3.1.2. Conducted Band-Edge Emissions

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

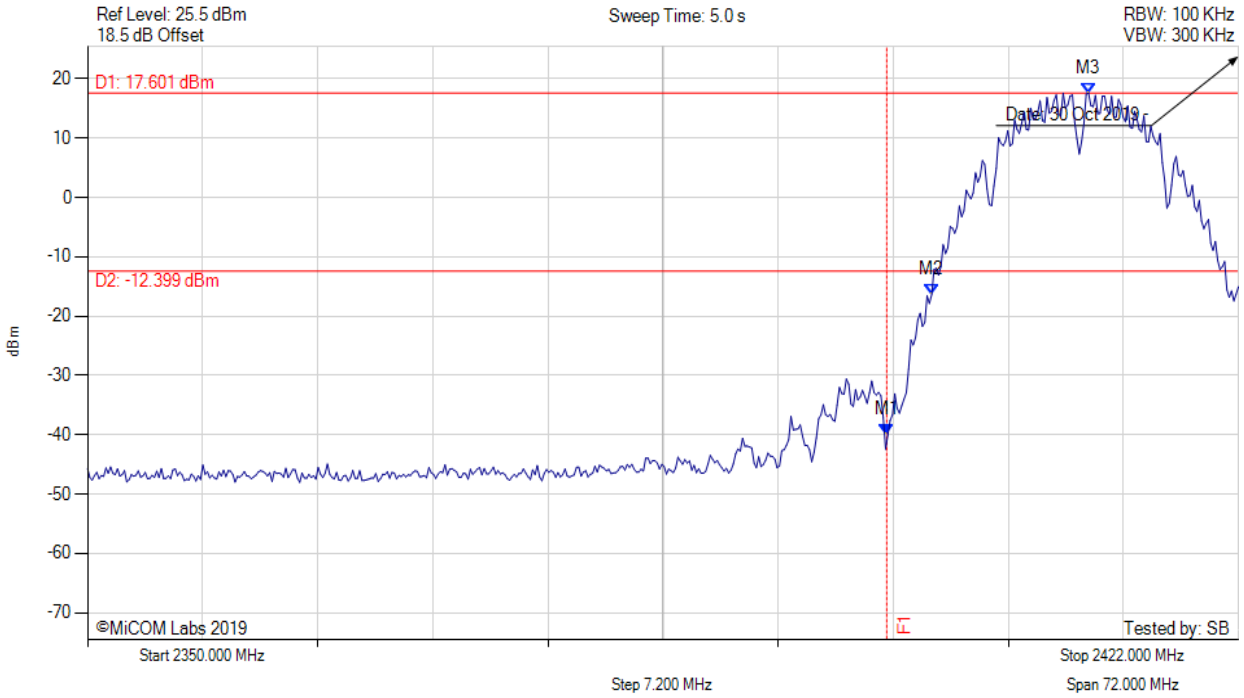


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2412.477 MHz : 17.913 dBm M2 : 2403.242 MHz : -13.010 dBm M3 : 2412.477 MHz : 17.913 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

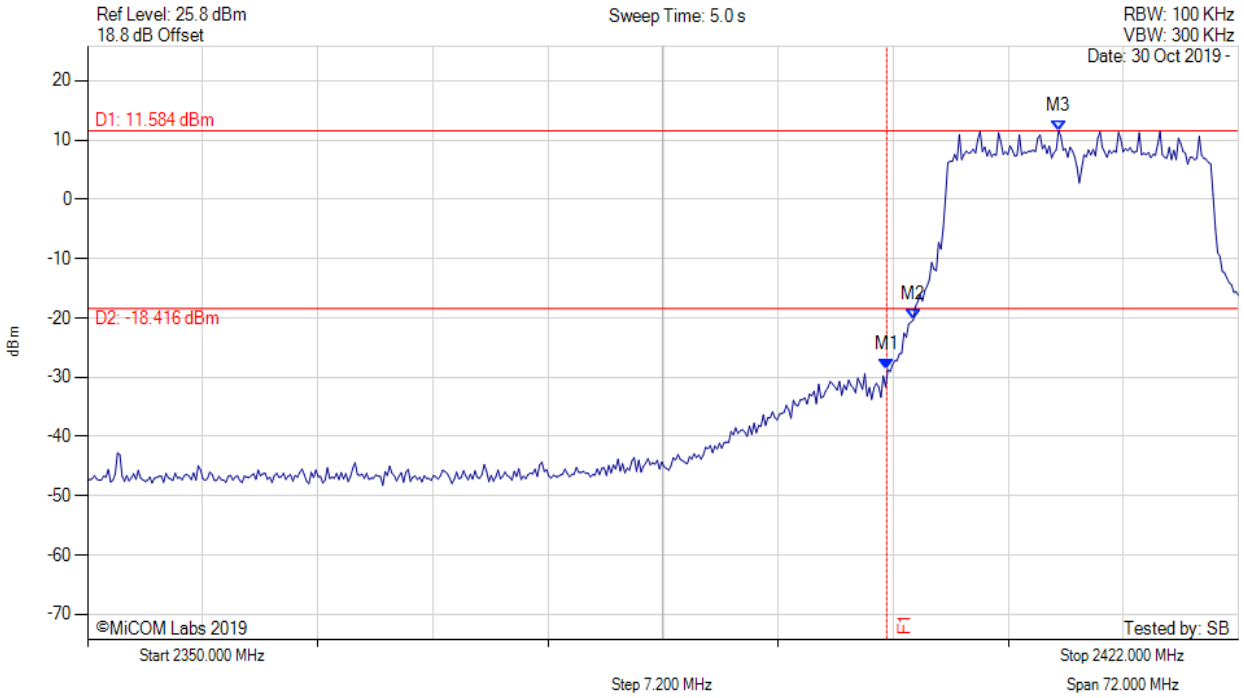


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -40.054 dBm M2 : 2402.810 MHz : -16.354 dBm M3 : 2412.621 MHz : 17.601 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

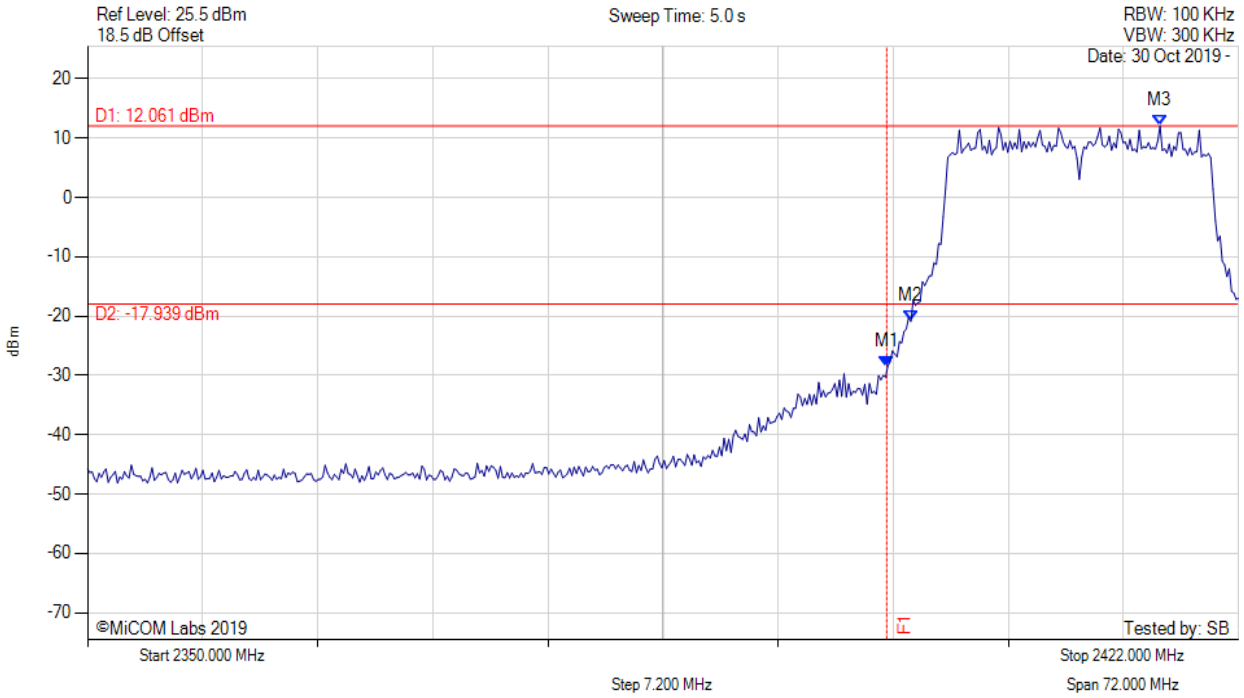


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -28.729 dBm M2 : 2401.655 MHz : -20.350 dBm M3 : 2410.745 MHz : 11.584 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

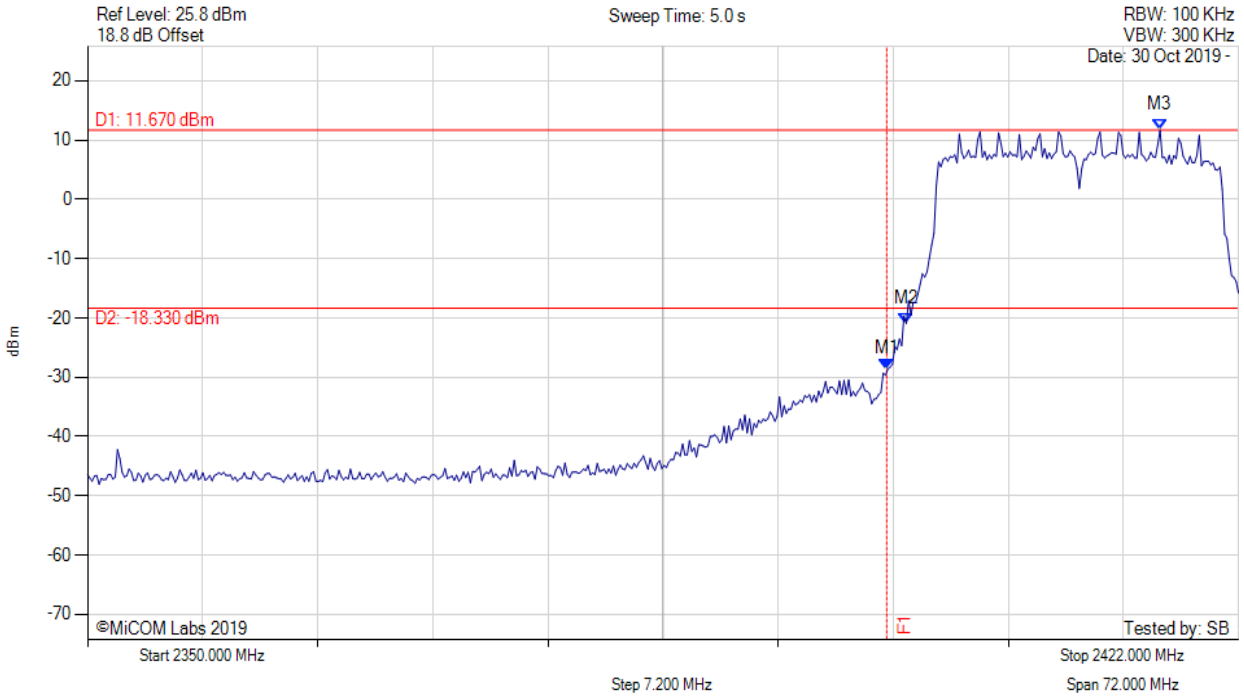


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -28.417 dBm M2 : 2401.511 MHz : -20.871 dBm M3 : 2417.094 MHz : 12.061 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

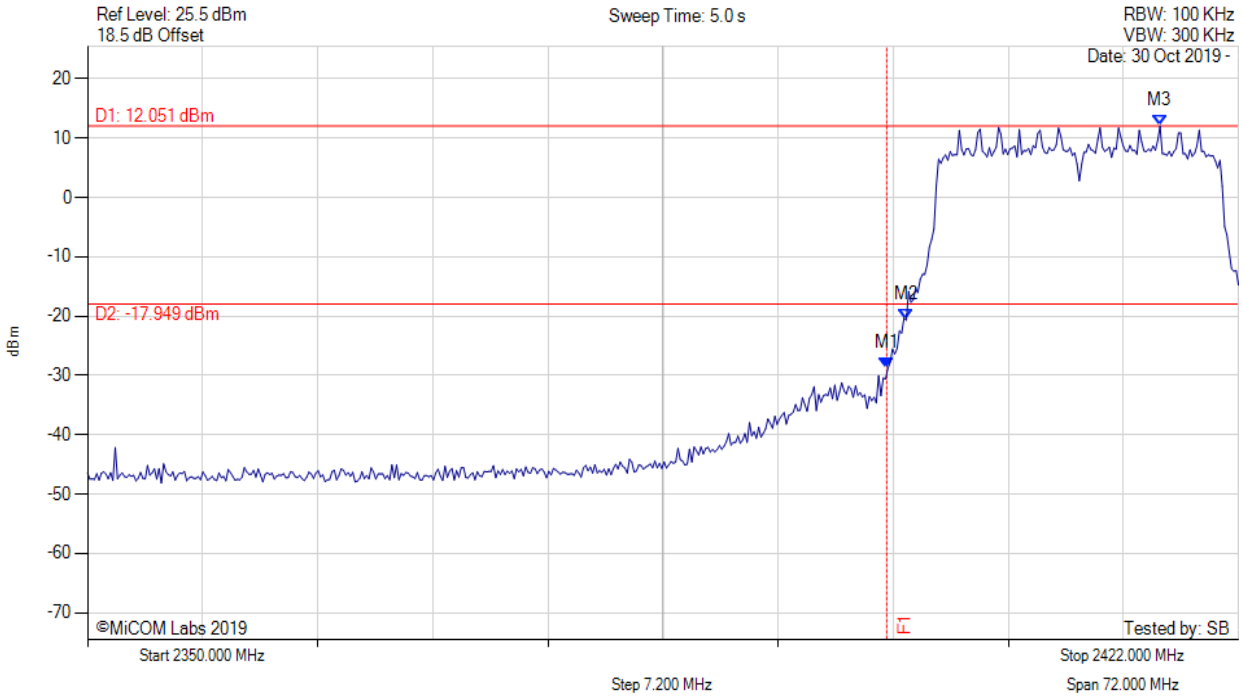


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -28.597 dBm M2 : 2401.222 MHz : -20.968 dBm M3 : 2417.094 MHz : 11.670 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2412.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

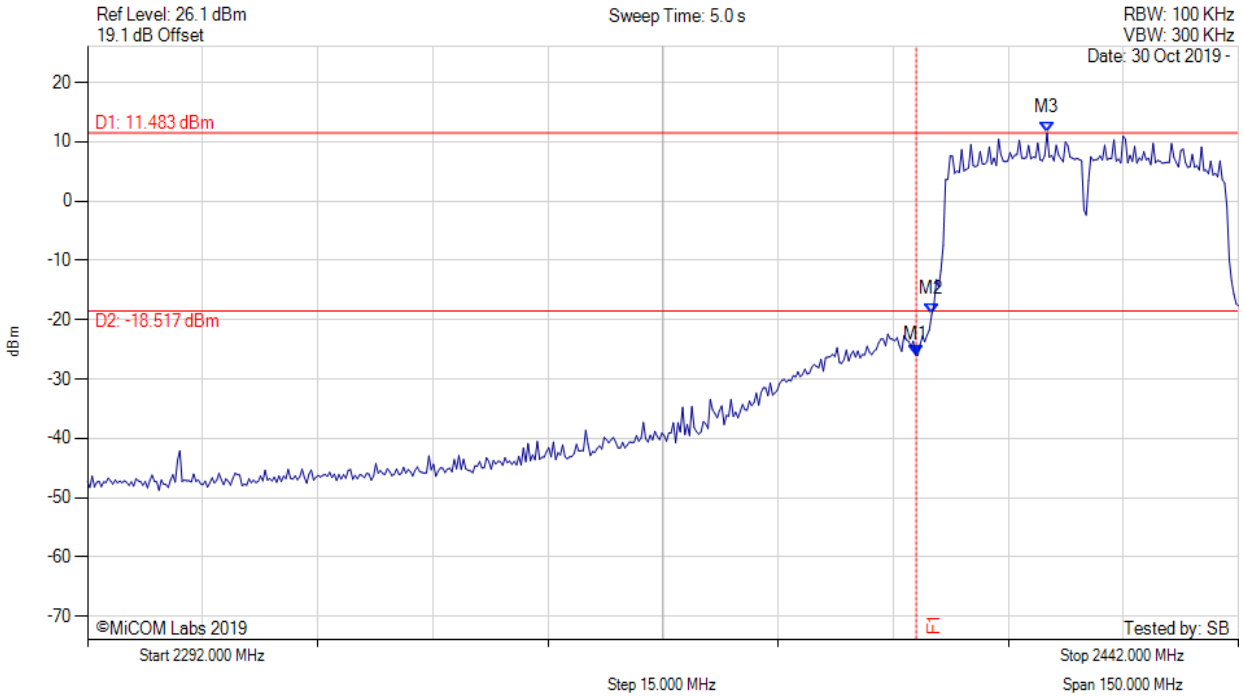


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -28.815 dBm M2 : 2401.222 MHz : -20.646 dBm M3 : 2417.094 MHz : 12.051 dBm	Channel Frequency: 2412.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

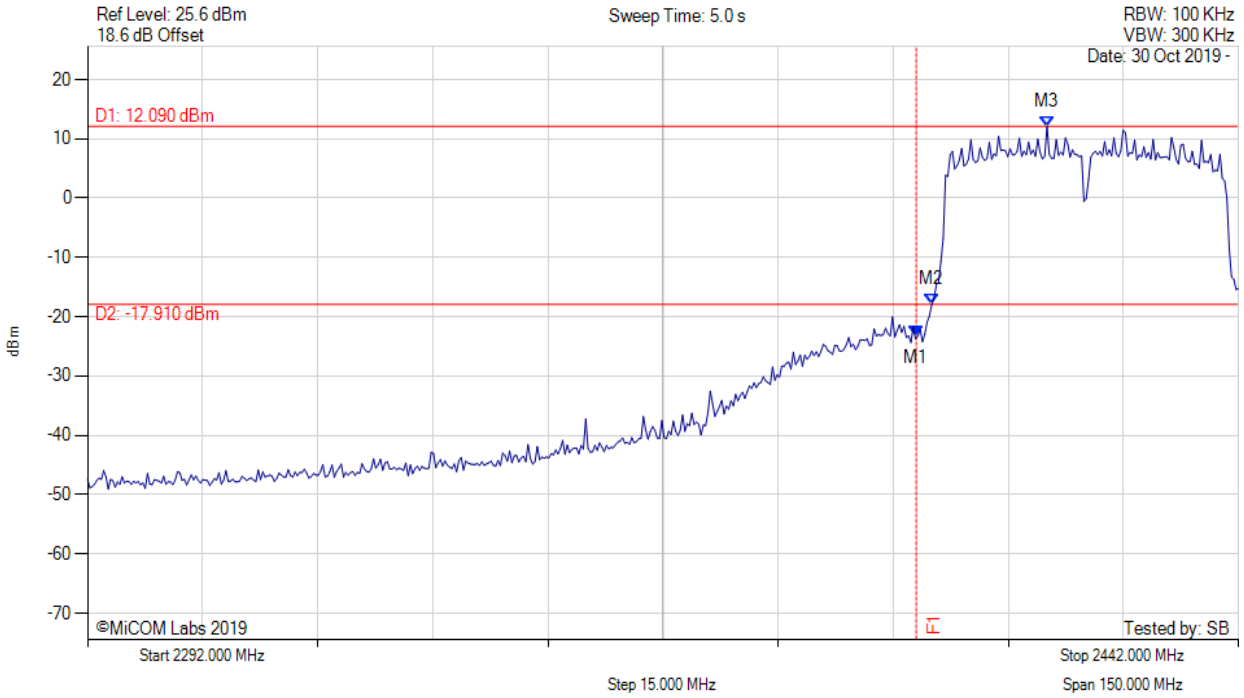


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -25.919 dBm M2 : 2402.020 MHz : -19.104 dBm M3 : 2417.050 MHz : 11.483 dBm	Channel Frequency: 2422.00 MHz

back to matrix

CONDUCTED LOW BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2422.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

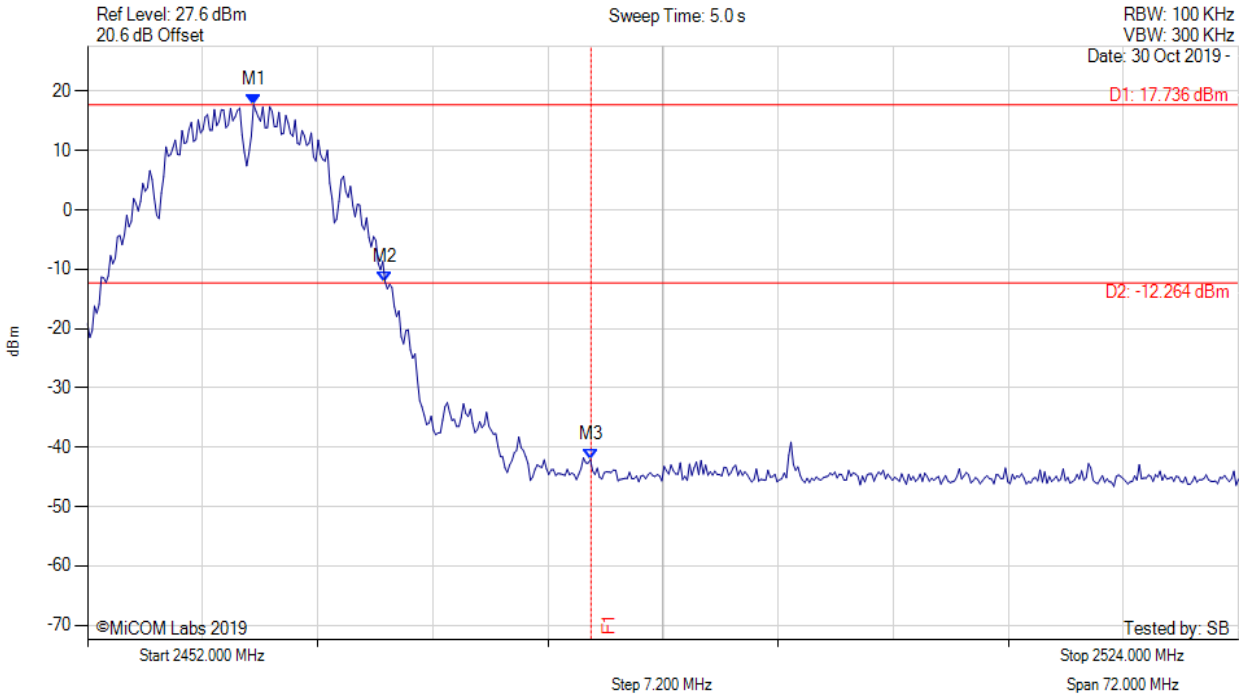


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2400.000 MHz : -23.267 dBm M2 : 2402.020 MHz : -17.965 dBm M3 : 2417.050 MHz : 12.090 dBm	Channel Frequency: 2422.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

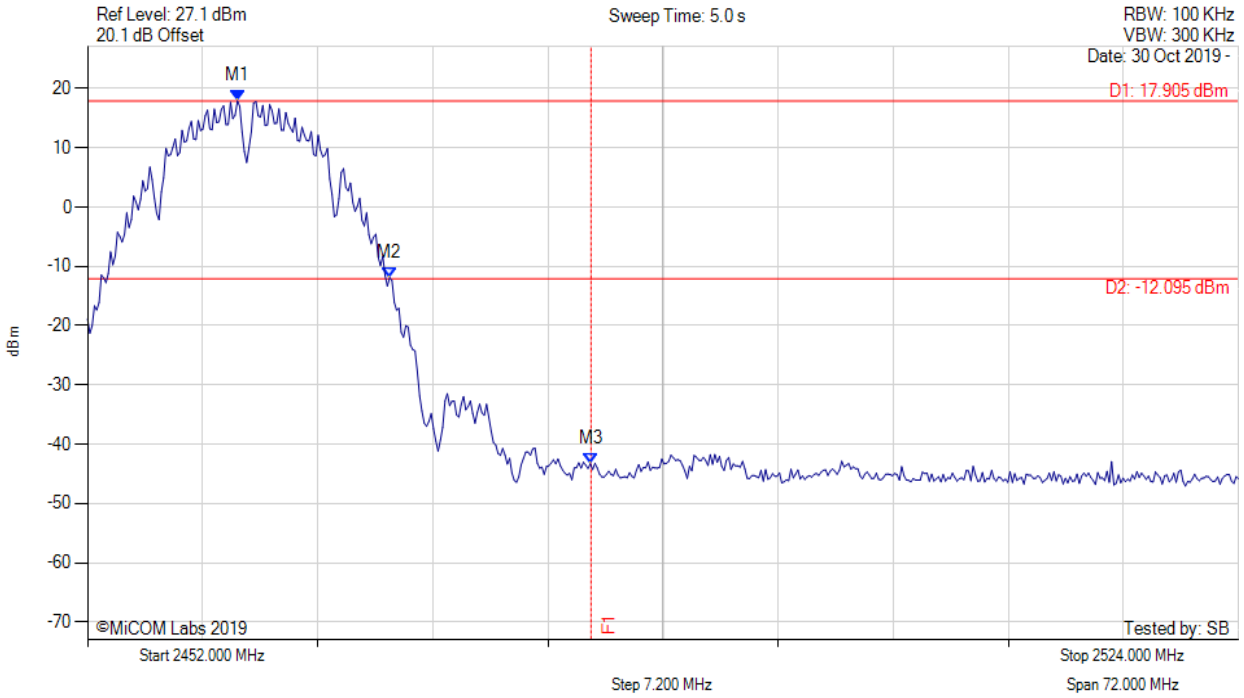


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2462.389 MHz : 17.736 dBm M2 : 2470.613 MHz : -12.105 dBm M3 : 2483.500 MHz : -42.103 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11b, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

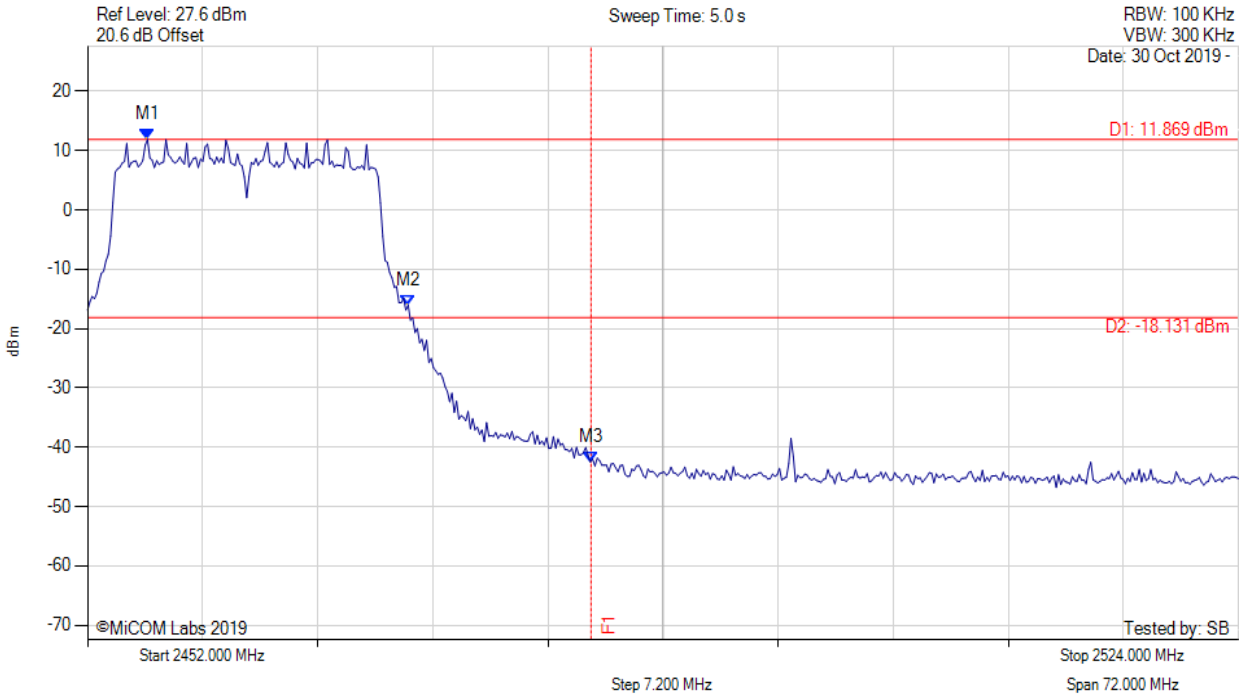


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2461.379 MHz : 17.905 dBm M2 : 2470.902 MHz : -11.919 dBm M3 : 2483.500 MHz : -43.266 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

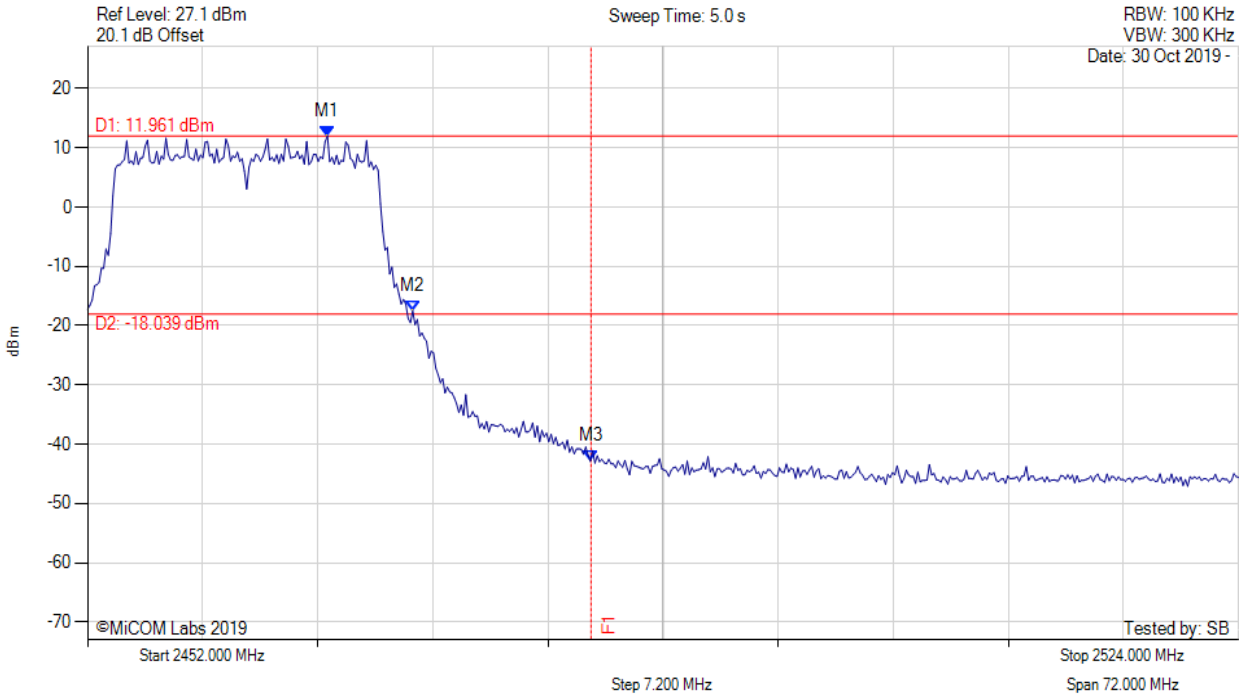


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2455.752 MHz : 11.869 dBm M2 : 2472.056 MHz : -16.040 dBm M3 : 2483.500 MHz : -42.479 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11g, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

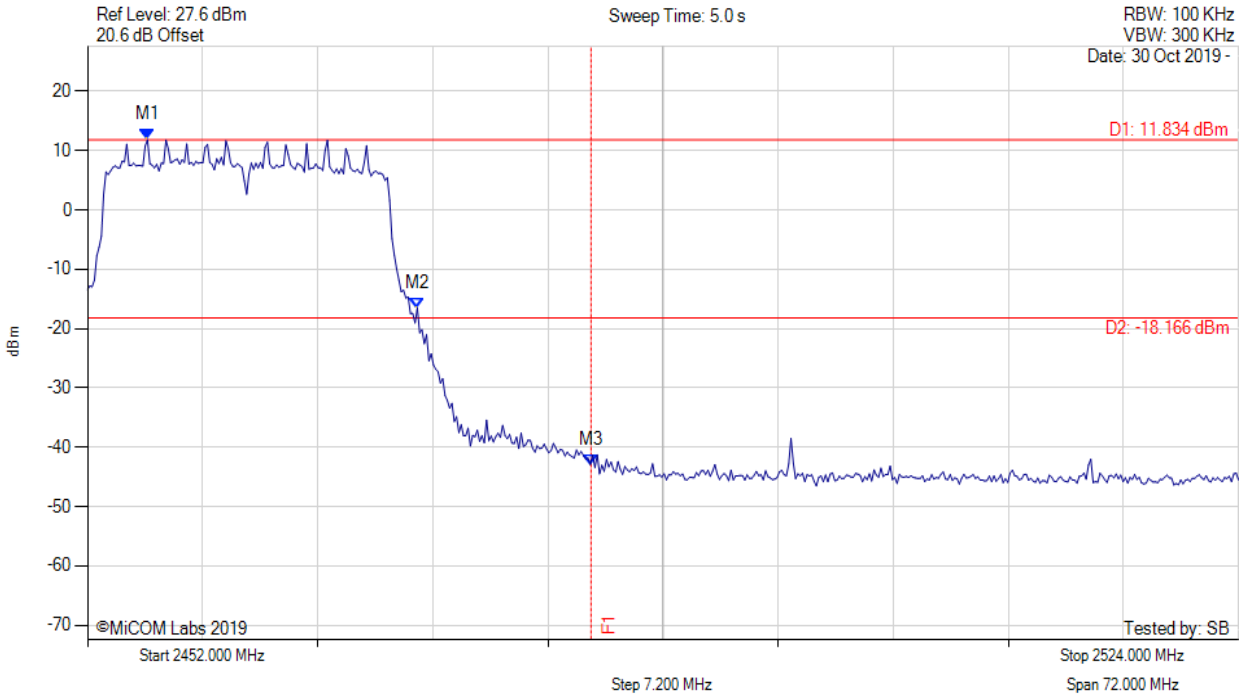


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2467.006 MHz : 11.961 dBm M2 : 2472.345 MHz : -17.514 dBm M3 : 2483.500 MHz : -42.851 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

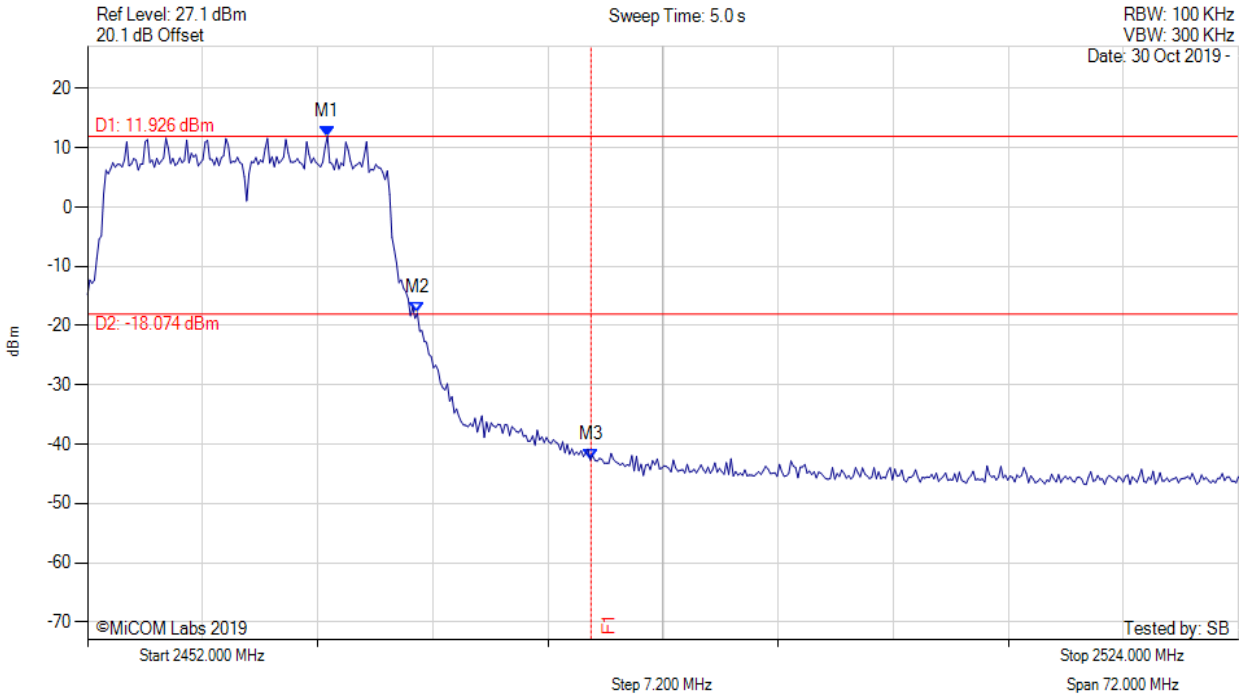


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2455.752 MHz : 11.834 dBm M2 : 2472.633 MHz : -16.498 dBm M3 : 2483.500 MHz : -42.914 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-20, Channel: 2462.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

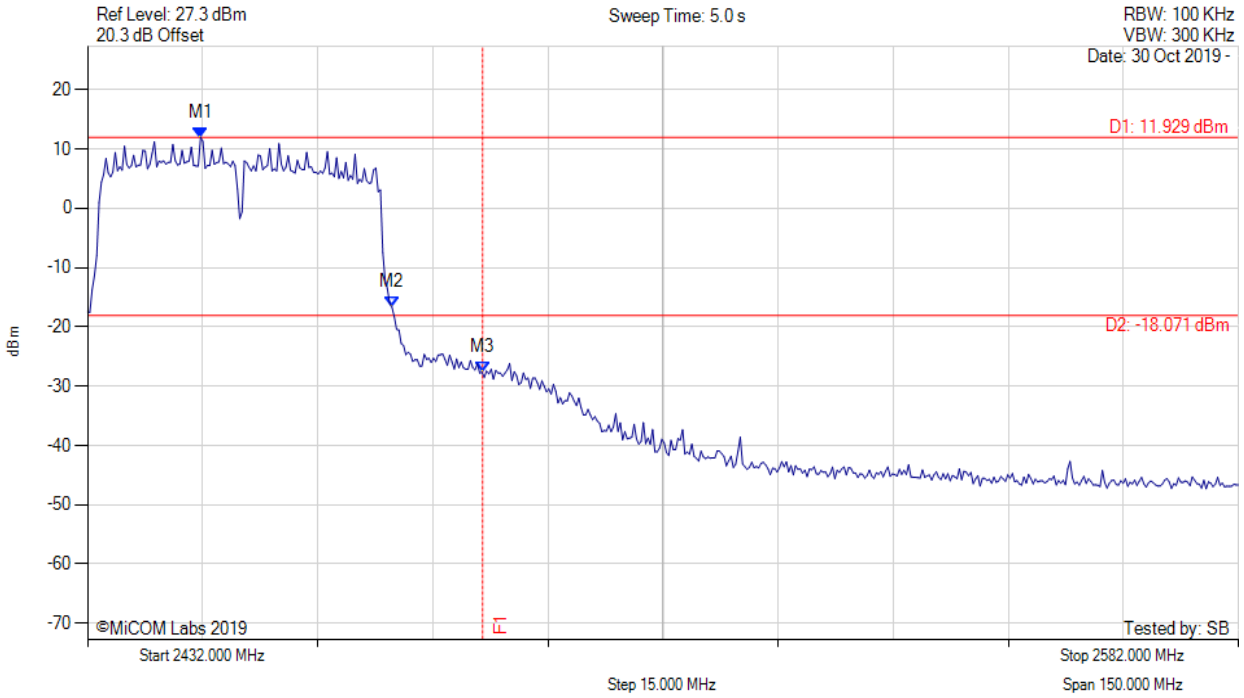


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2467.006 MHz : 11.926 dBm M2 : 2472.633 MHz : -17.872 dBm M3 : 2483.500 MHz : -42.674 dBm	Channel Frequency: 2462.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc

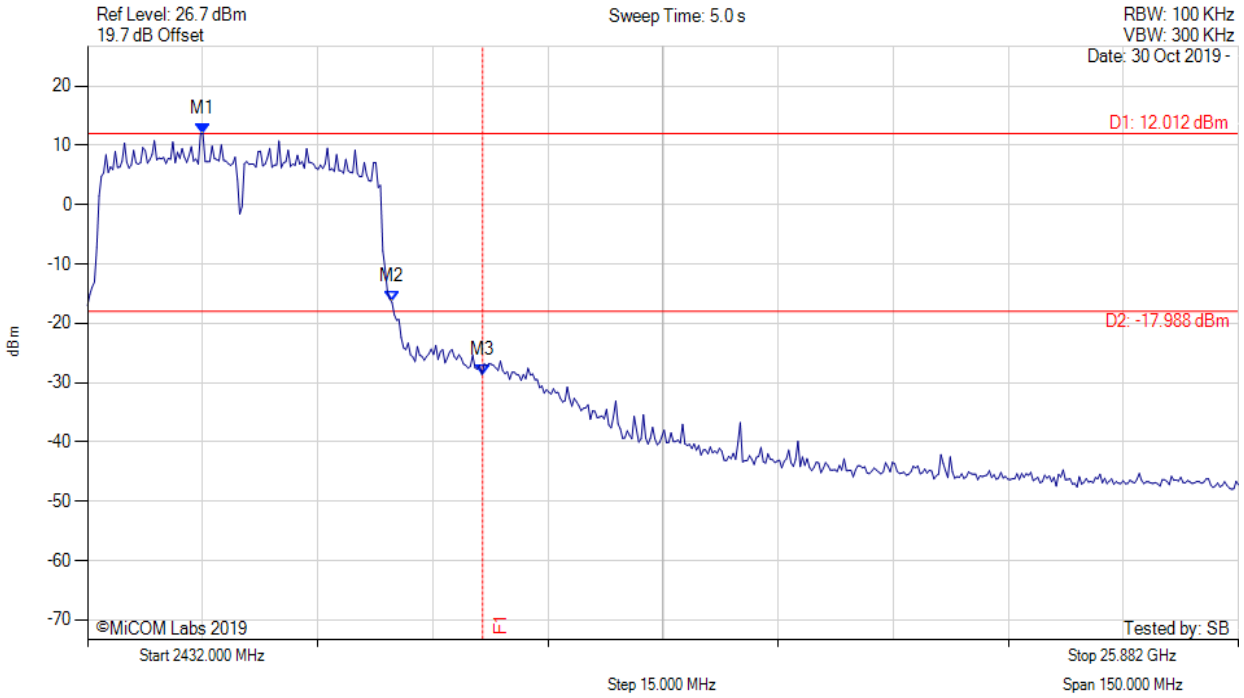


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2446.729 MHz : 11.929 dBm M2 : 2471.679 MHz : -16.706 dBm M3 : 2483.500 MHz : -27.650 dBm	Channel Frequency: 2452.00 MHz

back to matrix

CONDUCTED HIGH BAND-EDGE EMISSIONS - AVERAGE

Variant: 802.11n HT-40, Channel: 2452.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc

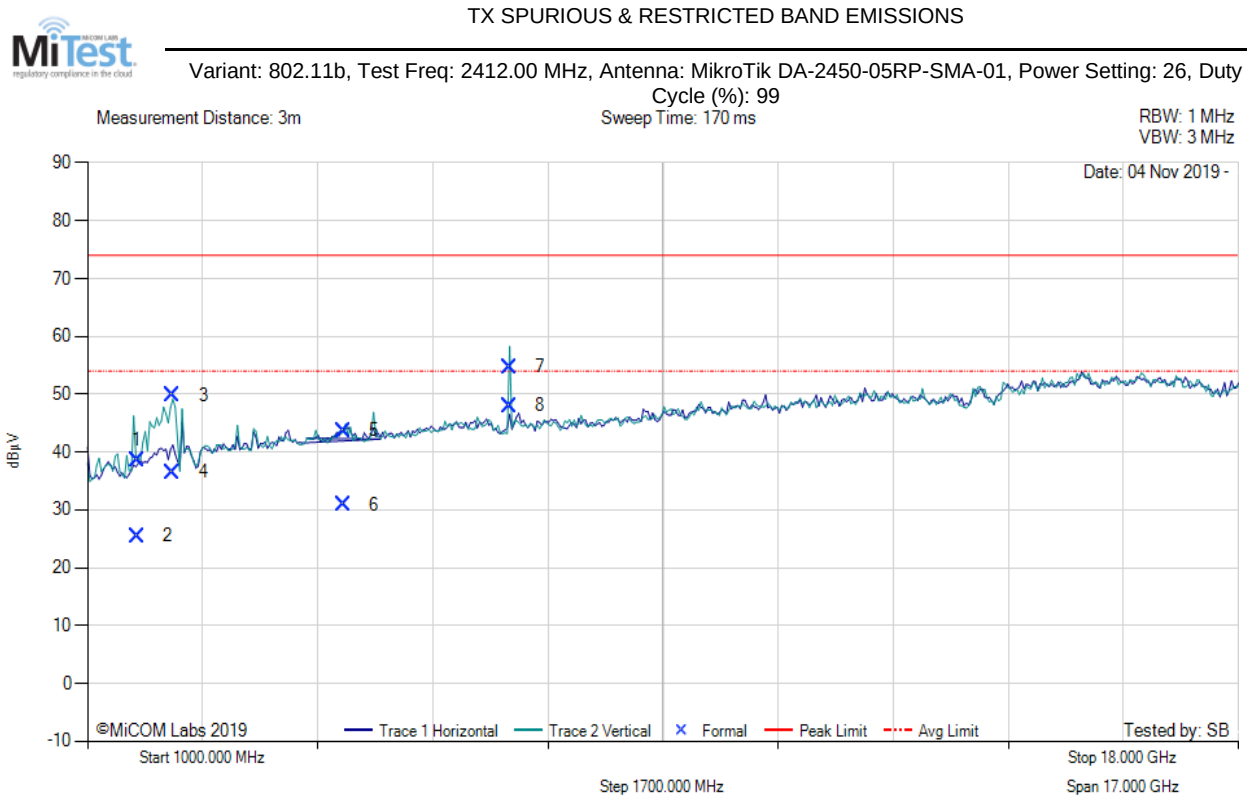


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 2447.030 MHz : 12.012 dBm M2 : 2471.679 MHz : -16.428 dBm M3 : 2483.500 MHz : -28.654 dBm	Channel Frequency: 2452.00 MHz

back to matrix

A.3.2. Radiated Emissions

A.3.2.3. TX Spurious & Restricted Band Emissions

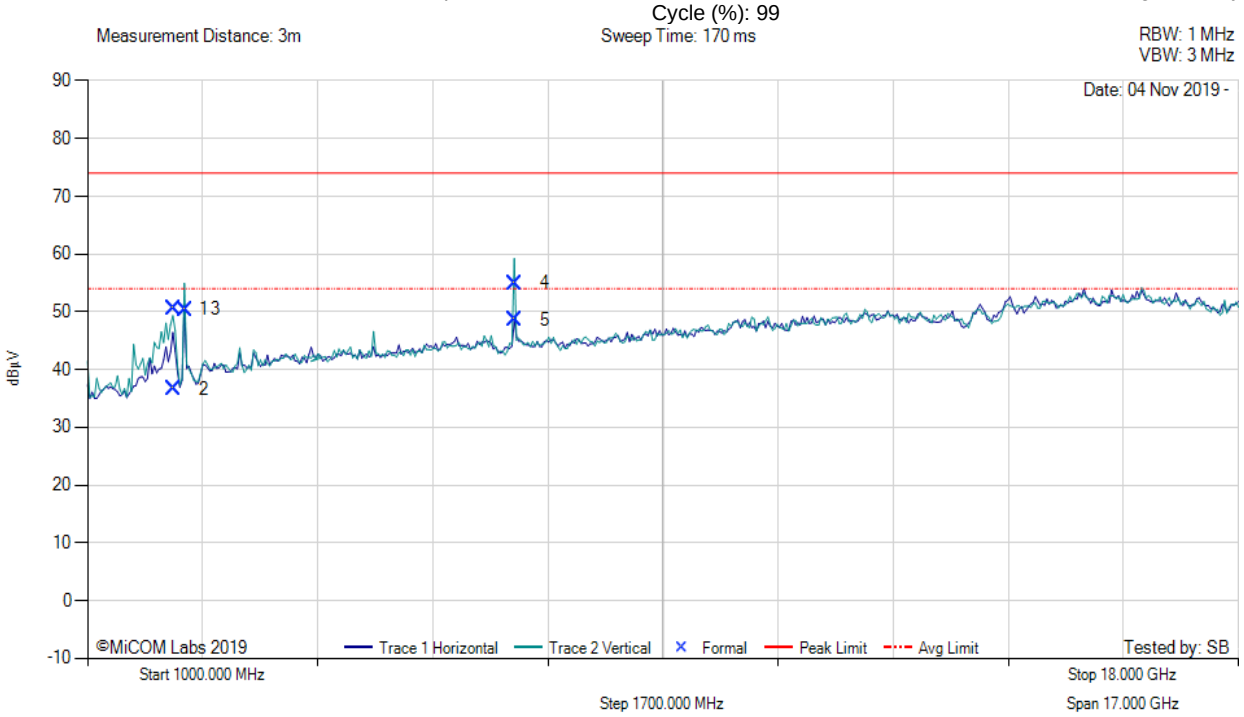


1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1731.97	52.52	1.68	-15.58	38.62	Max Peak	Vertical	101	267	74.0	-35.4	Pass
2	1731.97	39.40	1.68	-15.58	25.50	Max Avg	Vertical	101	267	54.0	-28.5	Pass
3	2262.81	60.51	1.99	-12.68	49.82	Max Peak	Vertical	119	346	74.0	-24.2	Pass
4	2262.81	47.20	1.99	-12.68	36.51	Max Avg	Vertical	119	346	54.0	-17.5	Pass
5	4785.10	53.35	2.79	-12.42	43.72	Max Peak	Vertical	106	18	74.0	-30.3	Pass
6	4785.10	40.52	2.79	-12.42	30.89	Max Avg	Vertical	106	18	54.0	-23.1	Pass
7	7235.46	59.04	3.61	-7.95	54.70	Max Peak	Vertical	101	206	74.0	-19.3	Pass
8	7235.46	52.32	3.61	-7.95	47.98	Max Avg	Vertical	101	206	54.0	-6.0	Pass

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2437.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 26, Duty Cycle (%): 99

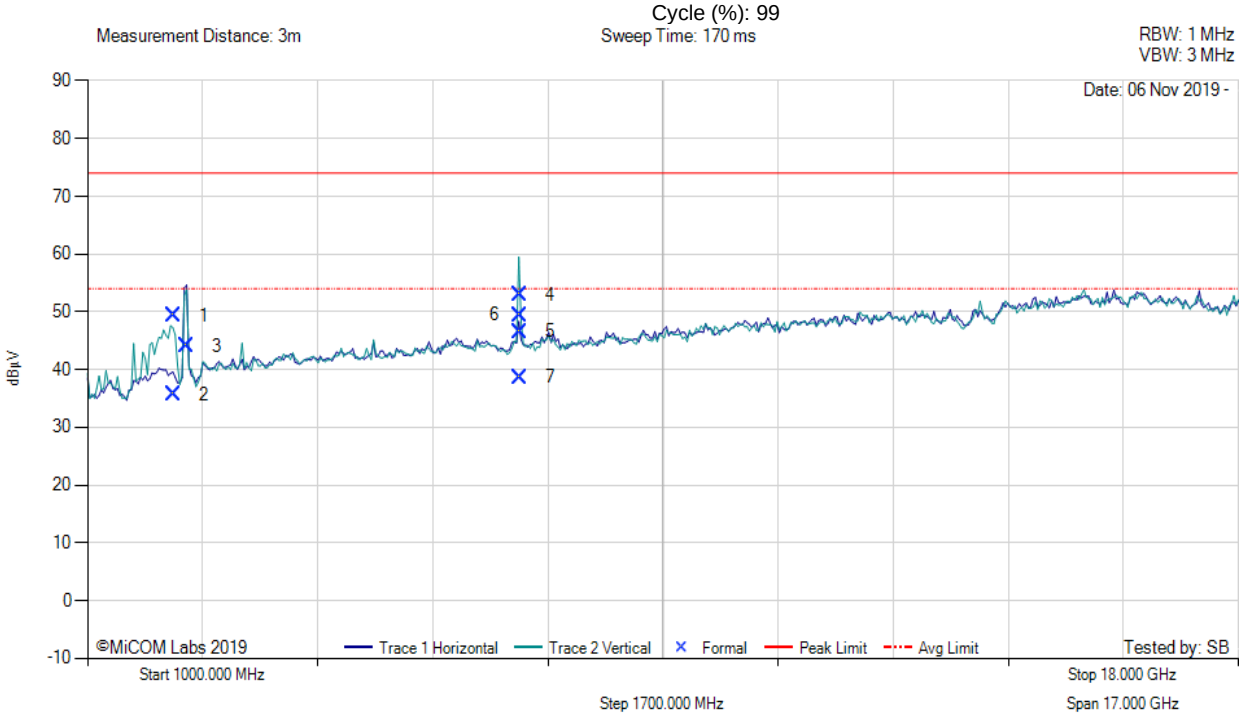


1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2270.41	61.40	1.97	-12.81	50.56	Max Peak	Vertical	101	350	74.0	-23.4	Pass
2	2270.41	47.46	1.97	-12.81	36.62	Max Avg	Vertical	101	350	54.0	-17.4	Pass
3	2437.97	60.63	2.00	-12.22	50.41	Fundamental	Vertical	100	0	--	--	
4	7309.38	59.27	3.62	-7.89	55.00	Max Peak	Vertical	133	185	74.0	-19.0	Pass
5	7309.38	52.82	3.62	-7.89	48.55	Max Avg	Vertical	133	185	54.0	-5.5	Pass

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 26, Duty Cycle (%): 99



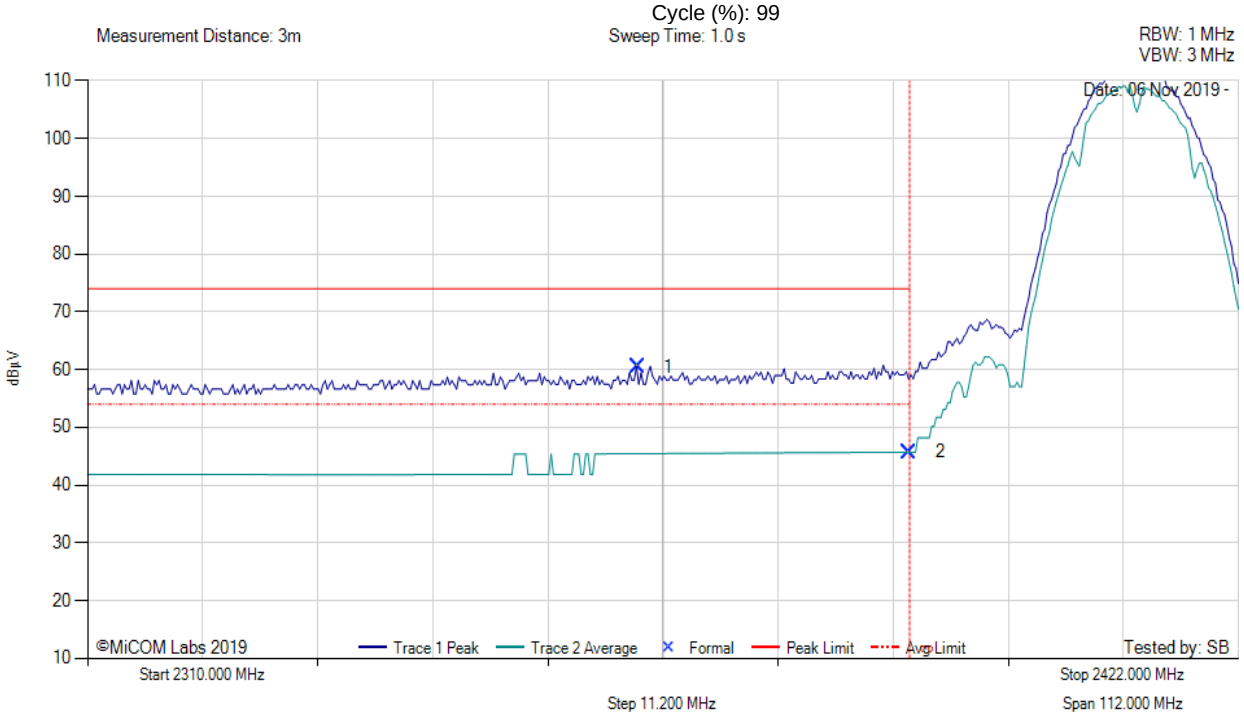
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2266.16	60.01	1.98	-12.73	49.26	Max Peak	Vertical	157	349	74.0	-24.7	Pass
2	2266.16	46.39	1.98	-12.73	35.64	Max Avg	Vertical	157	349	54.0	-18.4	Pass
3	2462.56	54.50	2.04	-12.43	44.11	Fundamental	Horizontal	137	0	--	--	
4	7384.68	57.18	3.59	-7.82	52.95	Max Peak	Vertical	98	213	74.0	-21.1	Pass
5	7384.68	50.77	3.59	-7.82	46.54	Max Avg	Vertical	98	213	54.0	-7.5	Pass
6	7387.00	53.70	3.59	-7.80	49.49	Max Peak	Horizontal	108	200	74.0	-24.5	Pass
7	7387.00	42.85	3.59	-7.80	38.64	Max Avg	Horizontal	108	200	54.0	-15.4	Pass

back to matrix

A.3.2.4. Restricted Edge & Band-Edge Emissions

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2412.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 25, Duty Cycle (%): 99

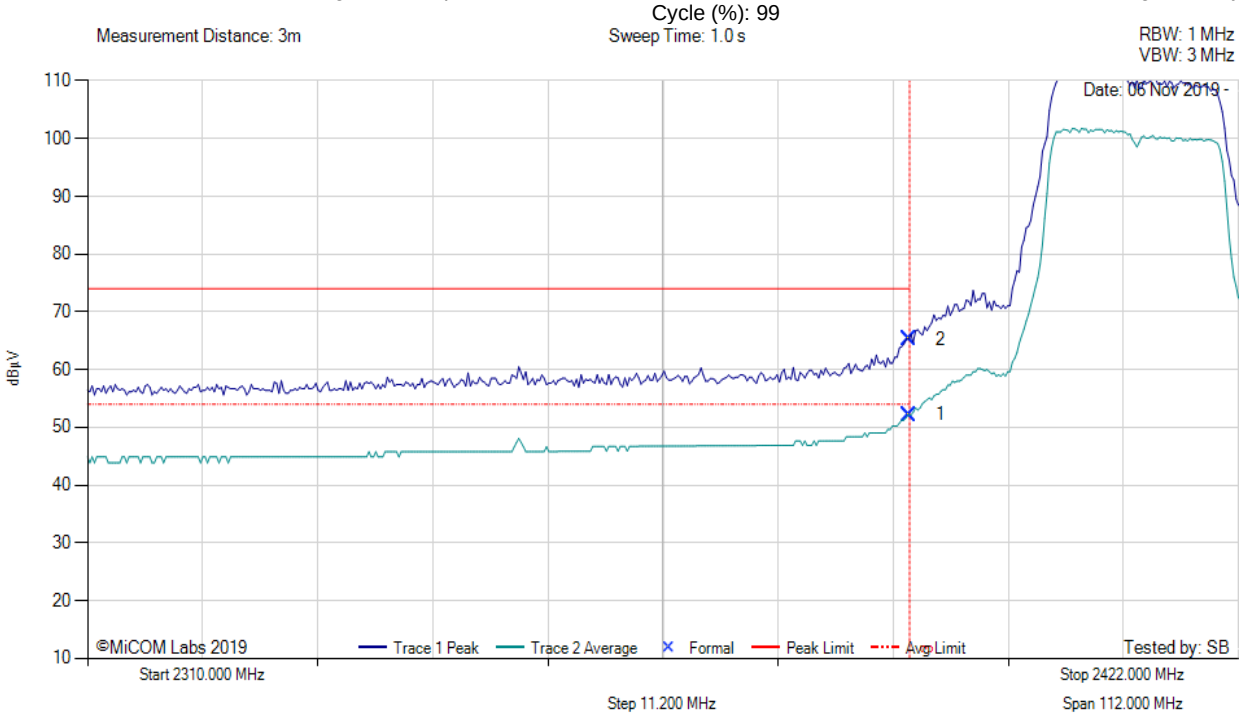


2310.00 - 2422.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2363.52	26.72	1.97	31.82	60.51	Max Peak	Vertical	155	208	74.0	-13.5	Pass
2	2390.00	11.72	2.02	31.96	45.70	Max Avg	Vertical	155	208	54.0	-8.3	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11g, Test Freq: 2412.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 24, Duty Cycle (%): 99

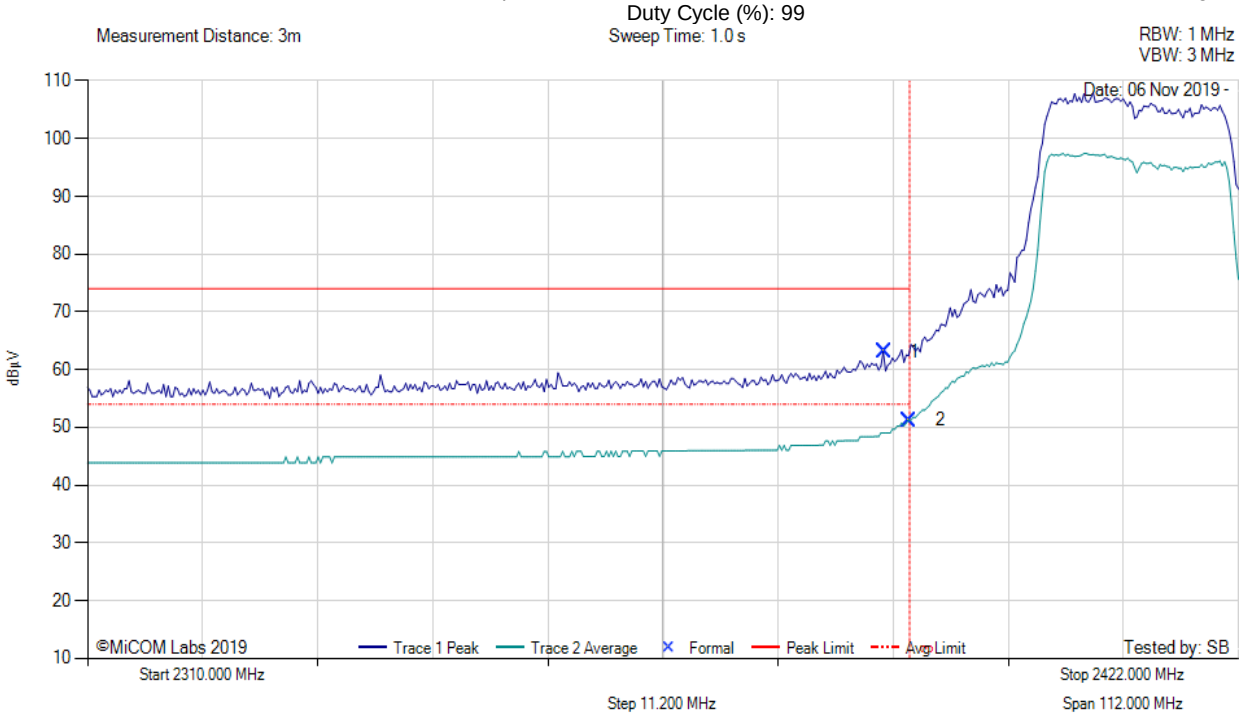


2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2390.00	18.20	2.02	31.96	52.18	Max Avg	Vertical	155	208	54.0	-1.8	Pass
2	2390.00	31.26	2.02	31.96	65.24	Max Peak	Vertical	155	208	74.0	-8.8	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 2412.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 26, Duty Cycle (%): 99

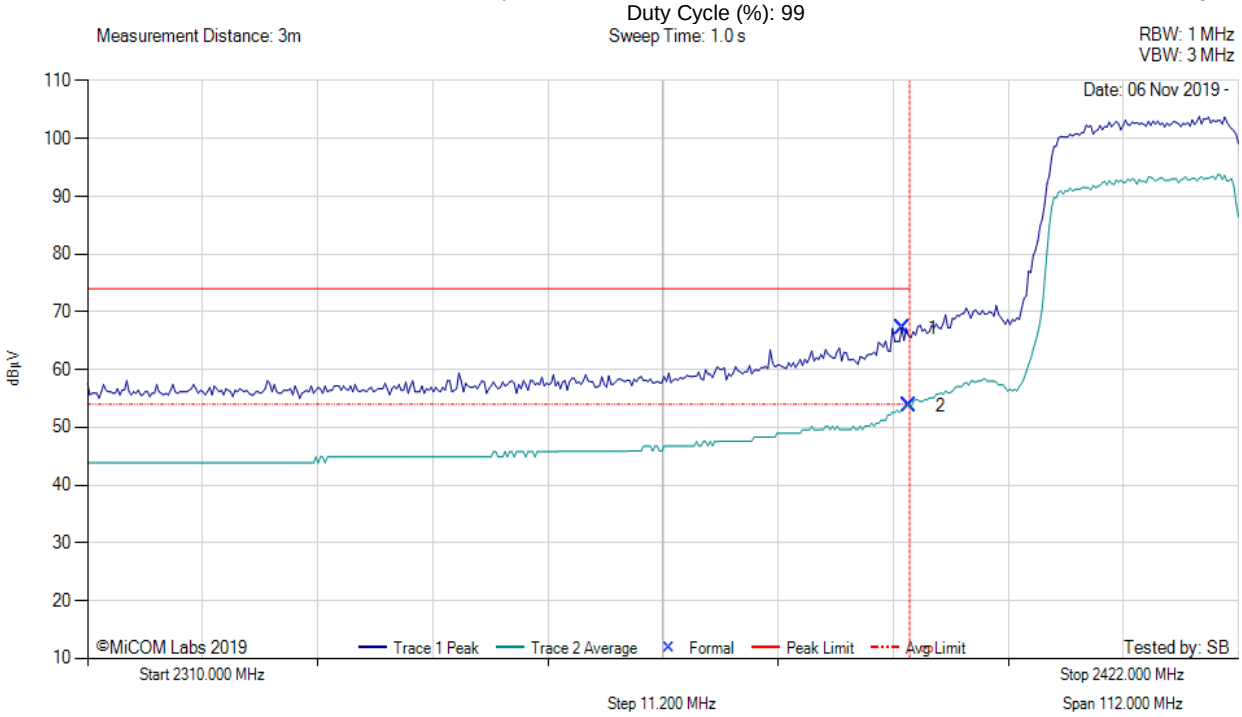


2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2387.53	29.07	2.02	31.95	63.04	Max Peak	Horizontal	150	212	74.0	-11.0	Pass
2	2390.00	17.28	2.02	31.96	51.26	Max Avg	Horizontal	150	212	54.0	-2.7	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - LOWER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11n HT-40, Test Freq: 2422.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 23, Duty Cycle (%): 99

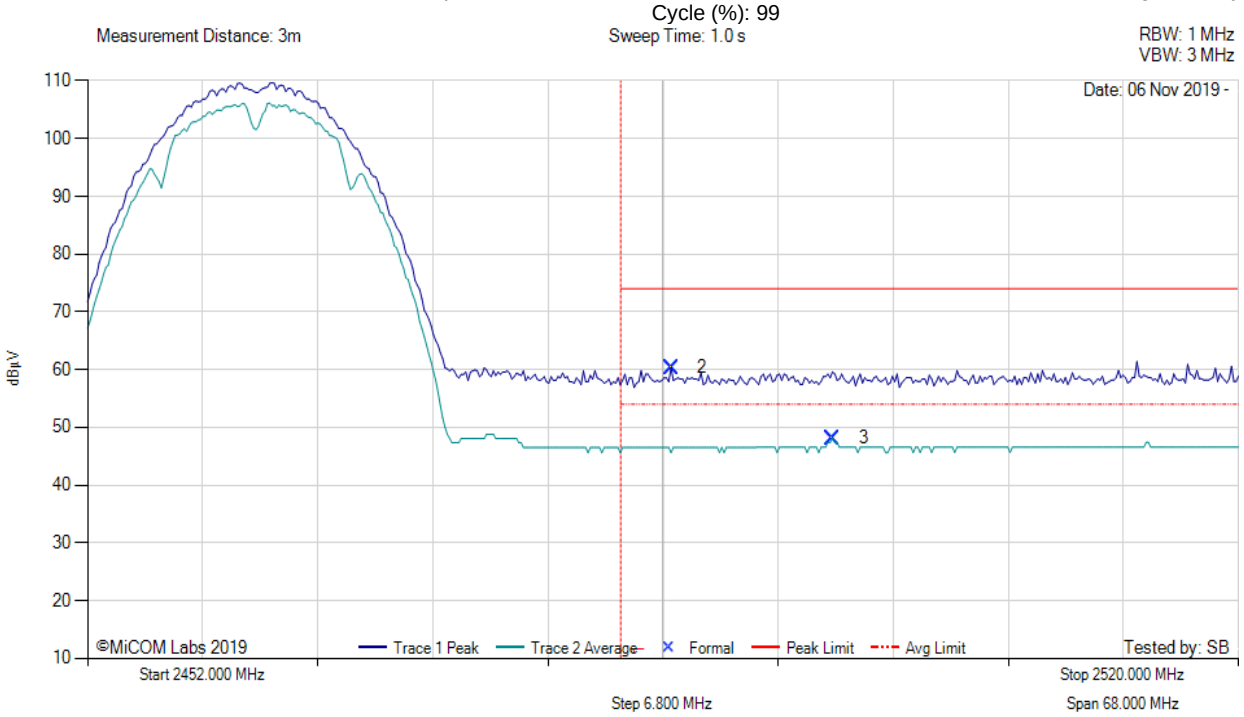


2310.00 - 2422.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2389.33	33.25	2.02	31.95	67.22	Max Peak	Horizontal	150	212	74.0	-6.8	Pass
2	2390.00	19.78	2.02	31.96	53.76	Max Avg	Horizontal	150	212	54.0	-0.2	Pass
3	2390.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11b, Test Freq: 2462.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 25, Duty Cycle (%): 99

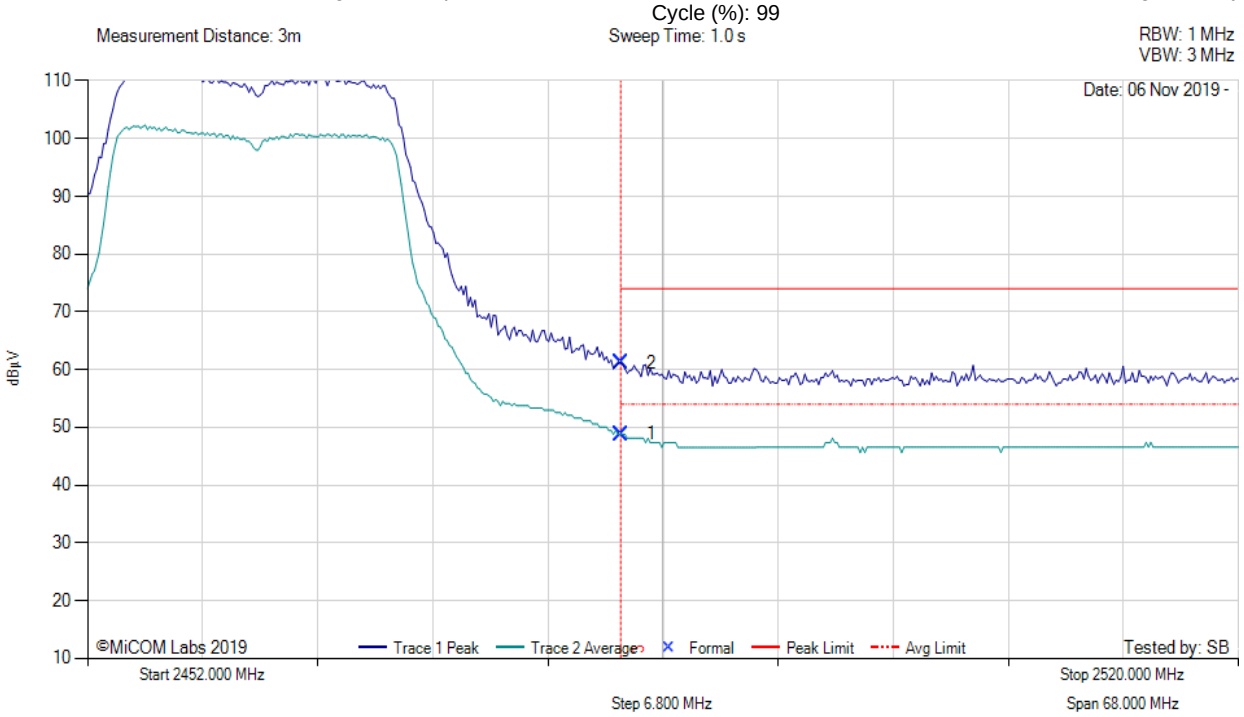


2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
2	2486.50	26.00	2.02	32.33	60.35	Max Peak	Vertical	156	206	74.0	-13.7	Pass
3	2496.04	13.79	2.04	32.32	48.15	Max Avg	Vertical	156	206	54.0	-5.9	Pass
1	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11g, Test Freq: 2462.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 24, Duty Cycle (%): 99

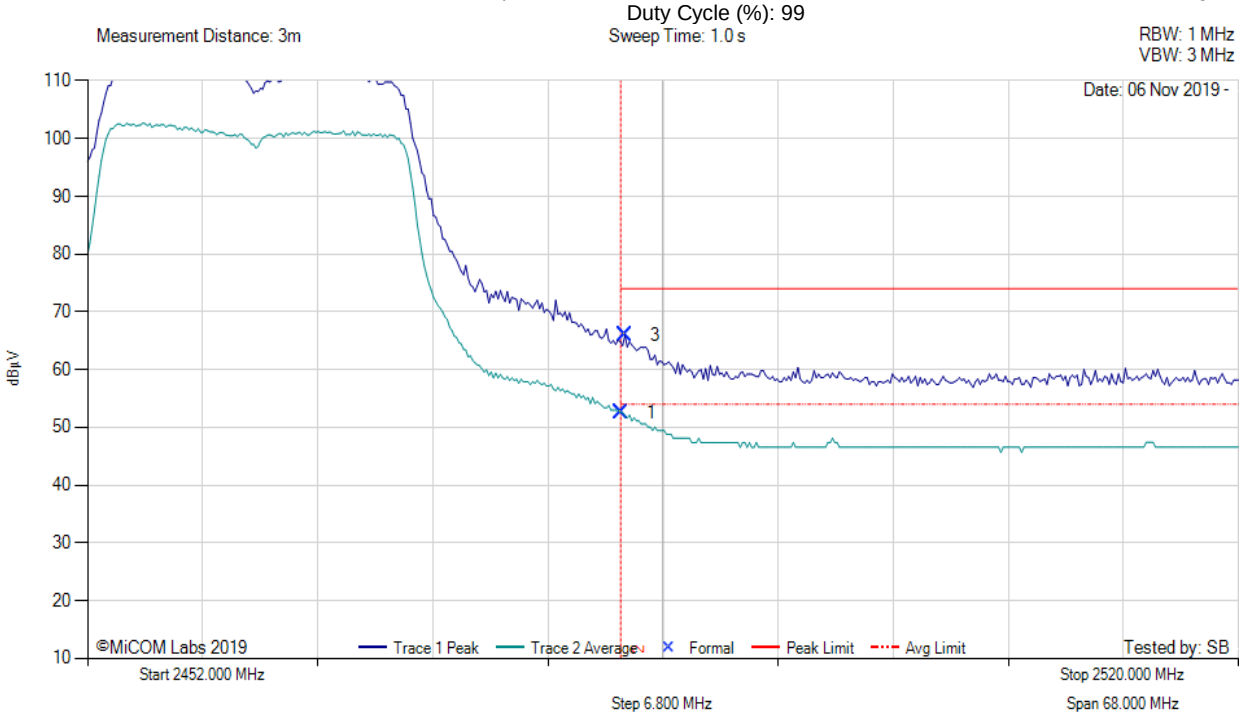


2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2483.50	14.46	2.03	32.33	48.82	Max Avg	Vertical	156	206	54.0	-5.2	Pass
2	2483.50	26.83	2.03	32.33	61.19	Max Peak	Vertical	156	206	74.0	-12.8	Pass
3	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 2462.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 26, Duty Cycle (%): 99

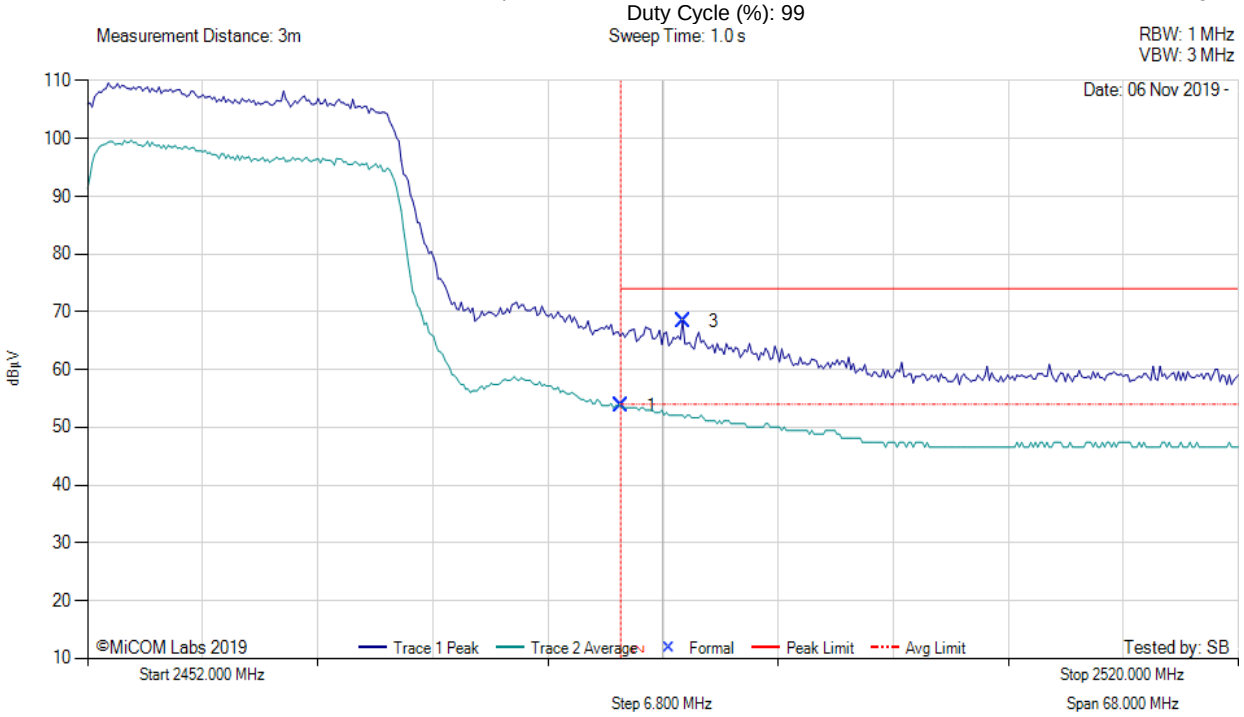


2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2483.50	18.20	2.03	32.33	52.56	Max Avg	Vertical	156	206	54.0	-1.4	Pass
3	2483.77	31.55	2.03	32.33	65.91	Max Peak	Vertical	156	206	74.0	-8.1	Pass
2	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

RADIATED - UPPER RESTRICTED BAND-EDGE EMISSIONS

Variant: 802.11n HT-40, Test Freq: 2452.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 23, Duty Cycle (%): 99



2452.00 - 2520.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	2483.50	19.41	2.03	32.33	53.77	Max Avg	Vertical	156	206	54.0	-0.2	Pass
3	2487.18	33.99	2.02	32.33	68.34	Max Peak	Vertical	156	206	74.0	-5.7	Pass
2	2483.50	--	--	--	--	Restricted-Band	--	--	--	--	--	--

back to matrix

A.3.3. Digital Emissions (0.03 - 1 GHz)

DIGITAL EMISSIONS (0.03 - 1 GHz)

Variant: OFDM, Test Freq: 2437.00 MHz, Antenna: MikroTik DA-2450-05RP-SMA-01, Power Setting: 26, Duty Cycle (%): 99

30.00 - 1000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	31.43	44.64	3.55	-8.71	39.48	MaxQP	Vertical	111	173	40.0	-0.5	Pass
2	31.43	24.13	3.55	-8.71	18.97	MaxQP	Horizontal	101	218	40.0	-21.0	Pass
3	43.86	52.15	3.67	-17.38	38.44	MaxQP	Vertical	100	338	40.0	-1.6	Pass
4	43.86	36.74	3.67	-17.38	23.03	MaxQP	Horizontal	134	201	40.0	-17.0	Pass
5	64.83	52.38	3.84	-20.75	35.47	MaxQP	Vertical	114	355	40.0	-4.5	Pass
6	64.83	38.62	3.84	-20.75	21.71	MaxQP	Horizontal	151	293	40.0	-18.3	Pass
7	182.74	44.31	4.46	-17.11	31.66	MaxQP	Horizontal	198	0	43.0	-11.3	Pass
8	535.06	32.54	5.69	-9.34	28.89	MaxQP	Horizontal	104	185	46.0	-17.1	Pass

back to matrix

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