Company: Hewlett Packard Enterprise

Test of: APINR203, APINP203 (2x2)

To: FCC CFR 47 Part 15 Subpart E 15.407

Report No.: HPEN96–U12 Rev A (2x2)

**TEST REPORT (CONDUCTED & RADIATED DATA)**

MiCOM Labs

opening wireless markets

# TEST REPORT

FROM

MiCOM Labs
opening wireless markets

Test of: Hewlett Packard Enterprise APINR203, APINP203 (2x2)

to

To: FCC CFR 47 Part 15 Subpart E 15.407

Test Report Serial No.: HPEN96–U12 Rev A (2x2)

This report supersedes: NONE

As a result of the 6 Mbyte FCC file size limitation potentially large test reports require to be split into smaller components This DFS report combined with the reports listed in the table below demonstrate compliance with the 15.407 standard.

| Test Reports |
|---|
| HPEN96-U12_DFS |
| HPEN96-U12 Rev A (1x1) Conducted & Radiated Data |
| HPEN96-U12 Rev A (2x2) Conducted & Radiated Data |

Applicant: Hewlett Packard Enterprise
3000 Hanover St.
Palo Alto, California 94034
USA

Product Function Wireless LAN Access Point

Issue Date: 13th June 2017

**This Test Report is Issued Under the Authority of:**

**MiCOM Labs, Inc.**
575 Boulder Court
Pleasanton California 94566
USA
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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 8 January 2009*).

Presented this 4th day of February 2016.

Senior Director of Quality & Communications
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2017

*For the tests or types of 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<br>Listing #: 102167 |
| Canada | Industry Canada (IC) | FCB | APEC MRA 2 | US0159<br>Listing #: 4143A-2<br>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)<br>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

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## 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 accreditation demonstrates technical competence for a defined scope and the operation of a management system.

Presented this 4th day of February 2016.

Senior Director of Quality & Communications
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2017

*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 | | | |
|---|---|---|---|
| **Document** | **Revision** | **Date** | **Comments** |
| HPEN96-U12_DFS | Draft | 23rd May 2017 | Draft for client review |
| HPEN96-U12 Rev A (2x2) | Draft | 23rd May 2017 | Draft for client review (Conducted & Radiated Data) |
| | | | |
| HPEN96-U12_DFS | Rev A | 13th June 2017 | Initial release (1x1 & 2x2 Data) |
| HPEN96-U12 Rev A (2x2) | Rev A | 13th June 2017 | Initial release (Conducted & Radiated Data) |
| | | | |
| | | | |
| | | | |

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# 3. TEST RESULT CERTIFICATE

| | | | |
|---|---|---|---|
| **Manufacturer:** | Hewlett Packard Enterprise<br>3000 Hanover St.<br>Palo Alto<br>California 94034 USA | **Tested By:** | MiCOM Labs, Inc.<br>575 Boulder Court<br>Pleasanton<br>California 94566 USA |
| **Model:** | APINR203, APINP203 | **Telephone:** | +1 925 462 0304 |
| **Type Of Equipment:** | Wireless Access Point | **Fax:** | +1 925 462 0306 |
| **S/N's:** | CNCPK2T006, CNCPK2T00L<br>CNCQK2T03Y (DFS) | | |
| **Test Date(s):** | 26 January - 21 February 2017<br>12 April – 19 May 2017 (DFS) | **Website:** | www.micomlabs.com |

| STANDARD(S) | TEST RESULTS |
|---|---|
| **FCC CFR 47 Part 15 Subpart E 15.407** | **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.

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.

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# 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 905462 D07 v02 | 22nd August 2016 | Test guidance to demonstrate compliance for U-NII devices subject to DFS requirements. |
| III | KDB 926956 D01 v02 | 22nd August 2016 | U-NII Device Transition Plan |
| IV | KDB 789033 D02 v01r03 | 22nd August 2016 | General UNII Test Procedures New Rules |
| V | A2LA | June 2015 | R105 - Requirement's When Making Reference to A2LA Accreditation Status |
| VI | ANSI C63.10 | 2013 | American National Standard for Testing Unlicensed Wireless Devices |
| VII | 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 |
| VIII | CISPR 22 | 2008 | Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement |
| IX | 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 |
| X | FCC 06-96 | Jun 30 2006 | Memorandum Opinion and Order |
| XI | FCC 47 CFR Part 15.407 | 2016 | Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices |
| XII | ICES-003 | Issue 6 Jan 2016 | Spectrum Management and Telecommunications; Interference-Causing Equipment Standard. Information Technology Equipment (Including Digital Apparatus) – Limits and methods of measurement. |
| XIII | M 3003 | Edition 3 Nov.2012 | Expression of Uncertainty and Confidence in Measurements |
| XIV | RSS-247 Issue 1 | May 2015 | Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and Licence-Exempt Local Area Network (LE-LEN) Devices |
| XV | RSS-Gen Issue 4 | November 2014 | General Requirements and Information for the Certification of Radiocommunication Equipment |
| XVI | KDB 644545 D03 v01 | August 14th 2014 | Guidance for IEEE 802.11ac New Rules |
| XVII | FCC 47 CFR Part 2.1033 | 2016 | FCC requirements and rules regarding photographs and test setup diagrams. |

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## 4.2. Test and Uncertainty Procedure

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

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

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

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# 5. PRODUCT DETAILS AND TEST CONFIGURATIONS

## 5.1. Technical Details

| Details | Description |
|---|---|
| Purpose: | Test of the Hewlett Packard Enterprise APINR203 / APINP203 (2x2 mode) to FCC CFR 47 Part 15 Subpart E 15.407.<br>Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices |
| Applicant: | Hewlett Packard Enterprise<br>3000 Hanover St.<br>Palo Alto California 94034 USA |
| Manufacturer: | Hewlett Packard Enterprise |
| Laboratory performing the tests: | MiCOM Labs, Inc.<br>575 Boulder Court<br>Pleasanton California 94566 USA |
| Test report reference number: | HPEN96-U12 Draft 2X2 |
| Date EUT received: | 23rd January 2017 |
| Standard(s) applied: | FCC CFR 47 Part 15 Subpart E 15.407 |
| Dates of test (from - to): | 26 January - 21 February 2017 |
| No of Units Tested: | 3 |
| Product Family Name: | Access Point |
| Model(s): | APINR203 / APINP203 |
| Location for use: | Indoors |
| Declared Frequency Range(s): | 5250 - 5350 MHz; 5470 - 5725 MHz; |
| Type of Modulation: | OFDM |
| EUT Modes of Operation: | 5250 - 5350 MHz: 802.11a; ac-80; HT-20; HT-40<br>5470 - 5725 MHz: 802.11a; ac-80; HT-20; HT-40 |
| Declared Nominal Output Power (dBm) | +24 dBm |
| Transmit/Receive Operation: | Transceiver - Full Duplex |
| Rated Input Voltage and Current: | Ac 100-240V, APINR203: 0.3A, APINP203: 0.6A |
| Operating Temperature Range: | Nominal: 20 ºC Max: 40 ºC Min: 0 ºC |
| ITU Emission Designator: | 802.11a: 18M8D1D<br>802.11n - HT20: 18M0D1D<br>802.11n - HT40: 40M7D1D<br>802.11ac-80: 77M0D1D |
| Equipment Dimensions: | 155mm x 50mm x 95mm |
| Weight: | 0.320 kg (AP-203R) & 0.340 kg (AP-203RP) |
| Hardware Rev: | 1 |
| Software Rev: | 6.5.4.0<br>6.5.4.0 Build 59274 (DFS) |

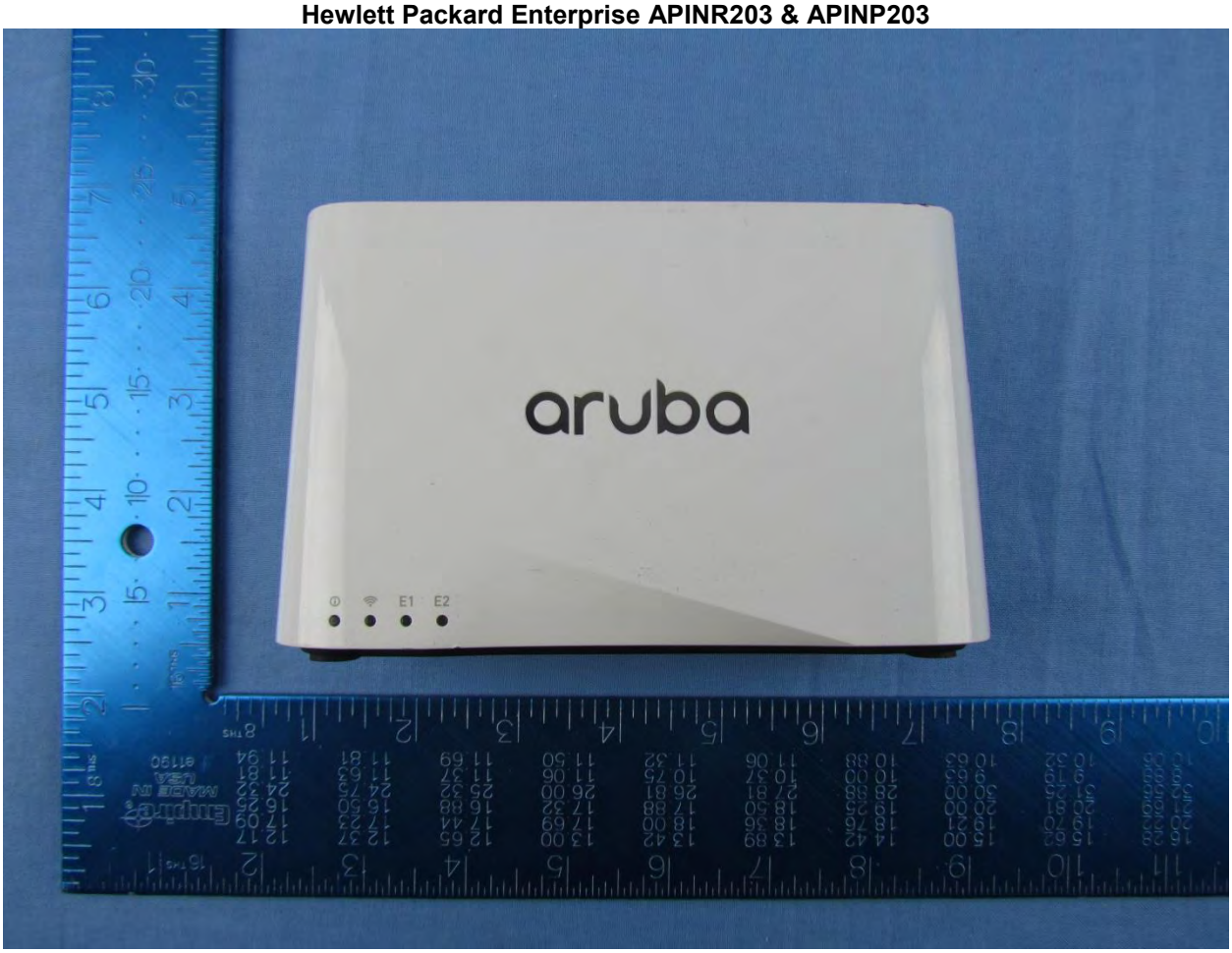
## 5.2. Scope Of Test Program

**Hewlett Packard Enterprise APINR203 & APINP203**

The scope of the test program was to test the Hewlett Packard Enterprise APINR203 & APINP203 configurations in the frequency ranges 5250 - 5350 MHz; 5470 - 5725 MHz; 5725 in 2x2 antenna mode for compliance against the following specification:

**FCC CFR 47 Part 15 Subpart E 15.407**
Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices.

**Hewlett Packard Enterprise APINR203 & APINP203**



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

| Type (EUT/ Support) | Equipment Description (Including Brand Name) | Mfr | Model No. | Serial No. |
|---|---|---|---|---|
| EUT | 802.11a/b/g/n | Hewlett Packard Enterprises | APINP203 | CNCPK2T006 |
| EUT | 802.11a/b/g/n | Hewlett Packard Enterprises | APINP203 | CNCPK2T00L |
| EUT | 802.11a/b/g/n | Hewlett Packard Enterprises | APINP203 | CNCQK2T03Y (for DFS Testing) |
| Support | Laptop PC | Dell | E5550 | None |

## 5.4. Antenna Details

| Type | Manufacturer | Model | Family | Gain (dBi) | BF Gain | Dir BW | X-Pol | Frequency Band (MHz) |
|---|---|---|---|---|---|---|---|---|
| integral | HPE | Metal Sheet | 5 | 2.9 | 3.0 | 360 | - | 5150 - 5250 |
| integral | HPE | Metal Sheet | 5 | 2.9 | 3.0 | 360 | - | 5250 - 5350 |
| integral | HPE | Metal Sheet | 5 | 2.9 | 3.0 | 360 | - | 5470 - 5725 |
| integral | HPE | Metal Sheet | 5 | 2.9 | 3.0 | 360 | - | 5725 - 5850 |

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

## 5.5. Cabling and I/O Ports

| Port Type | Max Cable Length | # Of Ports | Screened | Conn Type | Data Type |
|---|---|---|---|---|---|
| Ethernet | 100 | 3 | N | RJ45 | Packet Data |
| AC Input | N/A | 1 | N | AC Wire | -- |
| USB | Configuration | 1 | No | Micro USB | Data |
| USB | Mgmt only | 1 | No | USB | Data |

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## 5.6. Test Configurations

Results for the following configurations are provided in this report:

| Operational Mode(s) (802.11a/b/g/n/ac) | Data Rate with Highest Power MBit/s | Channel Frequency (MHz) | | |
|---|---|---|---|---|
| | | Low | Mid | High |
| **5250 - 5350 MHz** | | | | |
| a | 6 | 5,260.00 | 5,300.00 | 5,320.00 |
| ac-80 | 29.3 | -- | -- | 5,290.00 |
| HT-20 | 6.5 | 5,260.00 | 5,300.00 | 5,320.00 |
| HT-40 | 13.5 | 5,270.00 | -- | 5,310.00 |
| **5470 - 5725 MHz** | | | | |
| a | 6 | 5,500.00 | 5,580.00 | 5,720.00 |
| ac-80 | 29.3 | 5,530.00 | 5,610.00 | 5,690.00 |
| HT-20 | 6.5 | 5,500.00 | 5,580.00 | 5,720.00 |
| HT-40 | 13.5 | 5,510.00 | 5,550.00 | 5,710.00 |

## 5.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:
1. Software updated to 6.5.3.0:59515 in order to bring DFS Probability of Detection into compliance.

## 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 |
|---|---|---|
| Peak Transmit Power | Complies | View Data |
| 26 dB & 99% Bandwidth | Complies | View Data |
| Power Spectral Density | Complies | View Data |
| Dynamic Frequency Selection (DFS) | Complies | HPEN96-U12_DFS |
| Radiated | Complies | - |
| TX Spurious & Restricted Band Emissions | Complies | View Data |
| Restricted Edge & Band-Edge Emissions | Complies | View Data |

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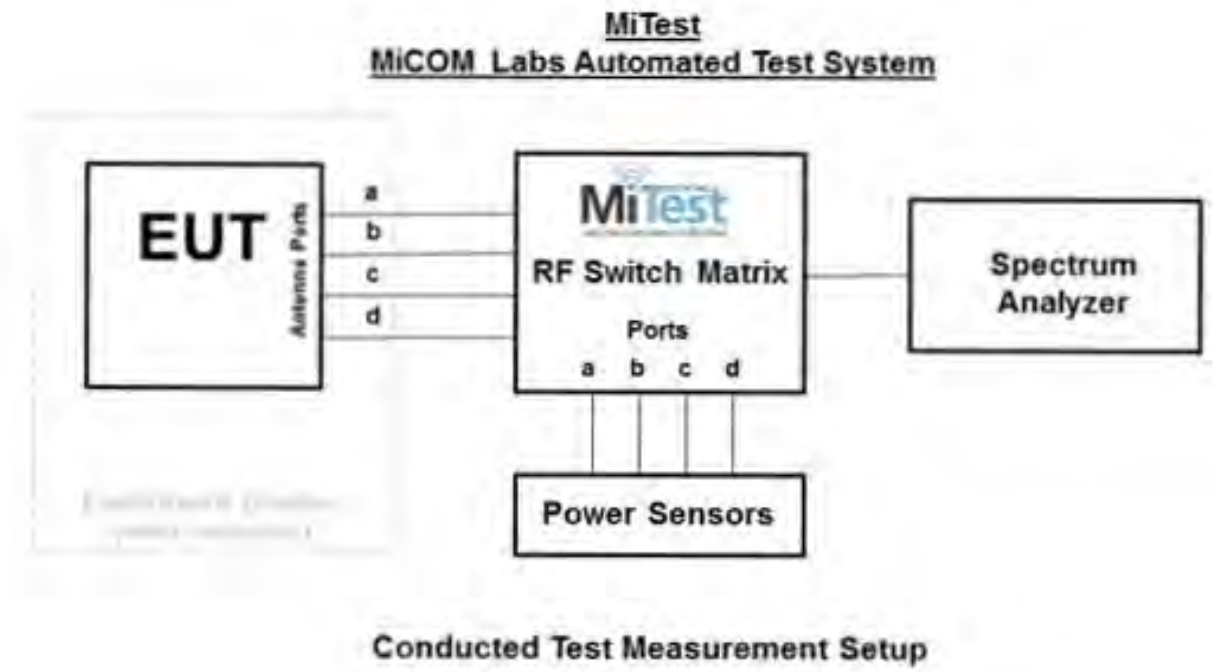
# 7. TEST EQUIPMENT CONFIGURATION(S)

## 7.1. Conducted

Conducted RF Emission Test Set-up(s) The following tests were performed using the conducted test set-up shown in the diagram below.




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

| Asset# | Description | Manufacturer | Model# | Serial# | Calibration Due Date |
|---|---|---|---|---|---|
| #3 SA | MiTest Box to SA | Fairview Microwave | SCA1814-0101-72 | #3 SA | 2 Jun 2017 |
| #3P1 | EUT to MiTest box port 1 | Fairview Microwave | SCA1814-0101-72 | #3P1 | 2 Jun 2017 |
| #3P2 | EUT to MiTest box port 2 | Fairview Microwave | SCA1814-0101-72 | #3P2 | 2 Jun 2017 |
| #3P3 | EUT to MiTest box port 3 | Fairview Microwave | SCA1814-0101-72 | #3P3 | 2 Jun 2017 |
| #3P4 | EUT to MiTest box port 4 | Fairview Microwave | SCA1812-0101-72 | #3P4 | 2 Jun 2017 |
| 158 | Barometer/Thermometer | Control Company | 4196 | E2846 | 30 Nov 2017 |
| 249 | Resistance Thermometer | Thermotronics | GR2105-02 | 9340 #2 | 23 Oct 2017 |
| 287 | Rohde & Schwarz 40 | Rhode & | ESIB40 | 100201 | 2 May 2018 |

| | | | | | |
|---|---|---|---|---|---|
| | GHz Receiver | Schwarz | | | |
| 361 | Desktop for RF#1, Labview Software installed | Dell | Vostro 220 | WS RF#1 | Not Required |
| 378 | Rohde & Schwarz 40 GHz Receiver with Generator | Rhode & Schwarz | ESIB40 | 100107/040 | 4 Aug 2017 |
| 390 | USB Power Head 50MHz - 24GHz -60 to +20dBm | Agilent | U2002A | MY50000103 | 17 Oct 2017 |
| 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 |
| 435 | USB Wideband Power Sensor | Boonton | 55006 | 8730 | 31 Jul 2017 |
| 436 | USB Wideband Power Sensor | Boonton | 55006 | 8731 | 14 Sep 2017 |
| 441 | USB Wideband Power Sensor | Boonton | 55006 | 9179 | 25 Sep 2017 |
| 443 | 4x4 RF Switch Box | MiCOM Labs | MiTest 4X4 RF Switch Box | MIC003 | 2 Jun 2017 |
| 445 | PoE Injector | D-Link | DPE-101GL | QTAH1E2000625 | Not Required |
| 461 | Spectrum Analyzer | Agilent | E4440A | MY46185537 | 13 Aug 2017 |
| 75 | Environmental Chamber | Thermatron | SE-300-2-2 | 27946 | 24 Nov 2017 |

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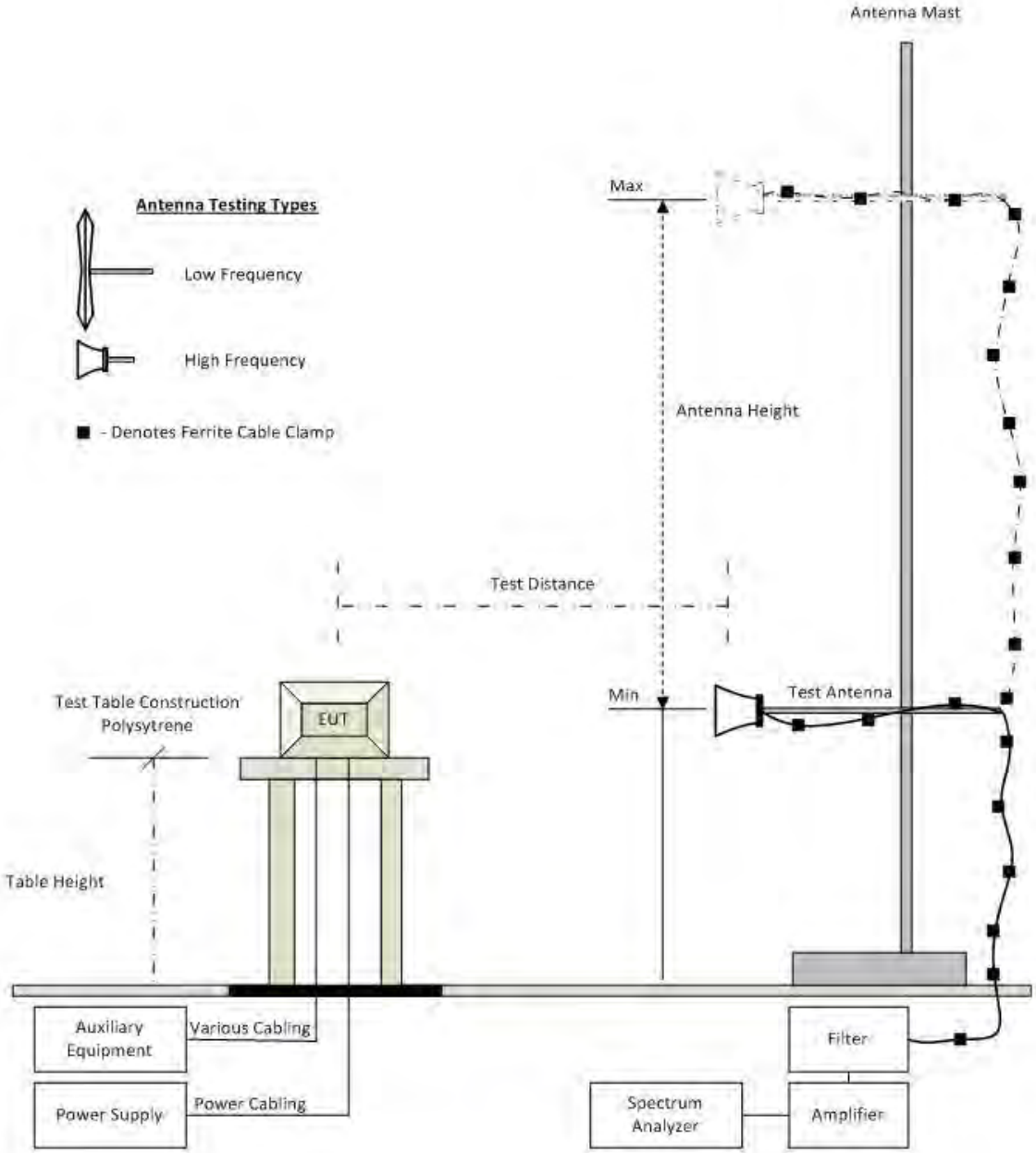
## 7.2. Radiated Emissions - 3m Chamber

The following tests were performed using the radiated test set-up shown in the diagram below.
Radiated emissions below 1GHz & Radiated Emissions above 1GHz.




**Radiated Emission 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 |
|---|---|---|---|---|---|
| 158 | Barometer/Thermometer | Control Company | 4196 | E2846 | 30 Nov 2017 |
| 170 | Video System Controller for Semi Anechoic Chamber | Panasonic | WV-CU101 | 04R08507 | Not Required |
| 287 | Rohde & Schwarz 40 GHz Receiver | Rhode & Schwarz | ESIB40 | 100201 | 2 May 2018 |
| 330 | Variac 0-280 Vac | Staco Energy Co | 3PN1020B | 0546 | Cal when used |
| 336 | Active loop Ant 10kHz to 30 MHz | EMCO | EMCO 6502 | 00060498 | 26 Sep 2017 |
| 338 | Sunol 30 to 3000 MHz Antenna | Sunol | JB3 | A052907 | 15 Aug 2017 |
| 373 | 26III RMS Multimeter | Fluke | Fluke 26 series III | 76080720 | 26 Oct 2017 |
| 377 | Band Rejection Filter 5150 to 5880MHz | Microtronics | BRM50716 | 034 | 16 Aug 2017 |
| 378 | Rohde & Schwarz 40 GHz Receiver with Generator | Rhode & Schwarz | ESIB40 | 100107/040 | 4 Aug 2017 |
| 396 | 2.4 GHz Notch Filter | Microtronics | BRM50701 | 001 | 16 Aug 2017 |
| 397 | Amp 10 - 2500MHz | MiCOM Labs | Amp 10 - 2500 MHz | NA | 9 Jun 2017 |
| 399 | ETS 1-18 GHz Horn Antenna | ETS | 3117 | 00154575 | 10 Jul 2017 |
| 406 | Amplifier for Radiated Emissions | MiCOM Labs | 40dB 1 to 18GHz Amp | 0406 | 9 Jun 2017 |
| 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 |
| 414 | DC Power Supply 0-60V | HP | 6274 | 1029A01285 | Cal when used |
| 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 | 31 May 2017 |

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| | | | | | |
|---|---|---|---|---|---|
| 463 | Schwarzbeck cable from Amplifier to Bulkhead. | Schwarzbeck | AK 9513 | 463 | 31 May 2017 |
| 464 | Schwarzbeck cable from Bulkhead to Receiver | Schwarzbeck | AK 9513 | 464 | 31 May 2017 |
| 480 | Cable - Bulkhead to Amp | SRC Haverhill | 157-157-3050360 | 480 | 2 Jun 2017 |
| 481 | Cable - Bulkhead to Receiver | SRC Haverhill | 151-151-3050787 | 481 | 2 Jun 2017 |
| 482 | Cable - Amp to Antenna | SRC Haverhill | 157-157-3051574 | 482 | 2 Jun 2017 |
| 87 | Uninterruptible Power Supply | Falcon Electric | ED2000-1/2LC | F3471 02/01 | Cal when used |
| VLF-1700 | Low pass filter DC-1700 MHz | Mini Circuits | VLF-1700 | None | 31 May 2017 |

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# 8. MEASUREMENT AND PRESENTATION OF TEST DATA

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

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

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

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

# 9. TEST RESULTS

## 9.1. Peak Transmit Power

| Conducted Test Conditions for Maximum Conducted Output Power | | | |
|---|---|---|---|
| **Standard:** | FCC CFR 47:15.407 | **Ambient Temp. (ºC):** | 24.0 - 27.5 |
| **Test Heading:** | Maximum Conducted Output Power | **Rel. Humidity (%):** | 32 - 45 |
| **Standard Section(s):** | 15.407 (a) | **Pressure (mBars):** | 999 - 1001 |
| **Reference Document(s):** | See Normative References | | |

**Test Procedure for Maximum Conducted Output Power Measurement**
Method PM (Measurement using an RF average power meter). KDB 789033 defines a methodology using an average wideband power meter. Measurements were made while the EUT was operating in a continuous transmission mode (100% duty cycle) at the appropriate center frequency. All operational modes and frequency bands were measured independently and the resultant calculated. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported separately. A summation (Σ) of each antenna port output power is provided which includes any offset due to Duty Cycle Correction Factor (DCCF). Testing was performed under ambient conditions at nominal voltage.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section 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 Maximum Conducted Output Power**

**Operating Frequency Band 5150-5250 MHz**

15. 407 (a)(1)
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Operating Frequency Band 5250-5350 and 5470 – 5725 MHz**

15. 407 (a)(2)
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Operating Frequency Band 5725 – 5850 MHz**

15. 407 (a)(3)
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5260.0** | 16.65 | 16.35 | | | 19.51 | 29.820 | 24.00 | -4.49 | 72.00 |
| **5300.0** | 16.13 | 15.85 | | | 19.00 | 34.629 | 24.00 | -5.00 | 72.00 |
| **5320.0** | 14.74 | 14.54 | | | 17.65 | 34.709 | 24.00 | -6.35 | 62.00 |

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

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 80.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5290.0** | 12.41 | 11.79 | | | 15.12 | 147.495 | 24.00 | -8.88 | 53.00 |

| **Traceability to Industry Recognized Test Methodologies** | |
|---|---|
| Work Instruction: | WI-01 MEASURING RF OUTPUT POWER |
| Measurement Uncertainty: | |

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 81.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | | |
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5260.0** | 14.16 | 13.51 | | | 16.86 | 21.563 | 24.00 | -7.14 | 72.00 |
| **5300.0** | 14.08 | 13.52 | | | 16.82 | 24.289 | 24.00 | -7.18 | 72.00 |
| **5320.0** | 14.01 | 13.61 | | | 16.82 | 24.289 | 24.00 | -7.18 | 72.00 |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 71.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| 5270.0 | 14.86 | 13.68 | | | 17.32 | 76.313 | 24.00 | -6.68 | 72.00 |
| 5310.0 | 10.93 | 10.05 | | | 13.52 | 76.152 | 24.00 | -10.48 | 56.00 |

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

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5500.0** | 14.42 | 14.86 | | | 17.66 | 33.988 | 24.00 | -6.34 | 62.00 |
| **5580.0** | 16.20 | 16.33 | | | 19.28 | 33.988 | 24.00 | -4.72 | 72.00 |
| **5720.0** | 16.34 | 16.25 | | | 19.31 | 35.832 | 24.00 | -4.69 | 72.00 |

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

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 80.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5530.0** | 11.43 | 11.70 | | | 14.58 | 77.275 | 24.00 | -9.42 | 63.00 |
| **5610.0** | 14.77 | 15.43 | | | 18.12 | 85.932 | 24.00 | -5.88 | 72.00 |
| **5690.0** | 14.68 | 15.38 | | | 18.05 | 77.595 | 24.00 | -5.95 | 72.00 |

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

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 81.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5500.0** | 14.06 | 14.23 | | | 17.16 | 28.377 | 24.00 | -6.84 | 72.00 |
| **5580.0** | 14.41 | 14.30 | | | 17.37 | 27.655 | 24.00 | -6.63 | 72.00 |
| **5720.0** | 14.39 | 14.12 | | | 17.27 | 26.613 | 24.00 | -6.73 | 72.00 |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 89.8 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5510.0** | 15.01 | 14.43 | | | 17.74 | 41.042 | 24.00 | -6.26 | 62.00 |
| **5550.0** | 14.75 | 14.60 | | | 17.69 | 40.721 | 24.00 | -6.31 | 72.00 |
| **5710.0** | 14.74 | 14.46 | | | 17.61 | 43.607 | 24.00 | -6.39 | 72.00 |

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

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

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## 9.2. 26 dB & 99% Bandwidth

| Conducted Test Conditions for 26 dB and 99% Bandwidth | | | |
|---|---|---|---|
| **Standard:** | FCC CFR 47:15.407 | **Ambient Temp. (ºC):** | 24.0 - 27.5 |
| **Test Heading:** | 26 dB and 99 % Bandwidth | **Rel. Humidity (%):** | 32 - 45 |
| **Standard Section(s):** | 15.407 (a) | **Pressure (mBars):** | 999 - 1001 |
| **Reference Document(s):** | See Normative References | | |

**Test Procedure for 26 dB and 99% Bandwidth Measurement**
The bandwidth at 26 dB and 99 % is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The Resolution Bandwidth was set to approximately 1% of the emission bandwidth.
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 section specified in this document.

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 33.667 | 29.820 | | | 33.667 | 29.820 | | |
| **5300.0** | 34.709 | 34.629 | | | 34.709 | 34.629 | | |
| **5320.0** | 34.870 | 34.709 | | | 34.870 | 34.709 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 17.555 | 17.395 | | | 17.555 | 17.395 | | |
| **5300.0** | 18.838 | 18.758 | | | 18.838 | 18.758 | | |
| **5320.0** | 19.158 | 18.597 | | | 19.158 | 18.597 | | |

**Traceability to Industry Recognized Test Methodologies**

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 82.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

| Test Measurement Results | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Test Frequency** | **Measured 26 dB Bandwidth (MHz)** | | | | **26 dB Bandwidth (MHz)** | | | |
| | **Port(s)** | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5290.0** | 147.495 | 147.495 | | | 147.495 | 147.495 | | |
| | | | | | | | | |
| **Test Frequency** | **Measured 99% Bandwidth (MHz)** | | | | **99% Bandwidth (MHz)** | | | |
| | **Port(s)** | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5290.0** | 76.954 | 76.633 | | | 76.954 | 76.633 | | |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 81.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 23.487 | 21.563 | | | 23.487 | 21.563 | | |
| **5300.0** | 25.571 | 24.289 | | | 25.571 | 24.289 | | |
| **5320.0** | 26.052 | 24.289 | | | 26.052 | 24.289 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 17.876 | 17.956 | | | 17.956 | 17.876 | | |
| **5300.0** | 18.036 | 18.036 | | | 18.036 | 18.036 | | |
| **5320.0** | 18.036 | 18.036 | | | 18.036 | 18.036 | | |

**Traceability to Industry Recognized Test Methodologies**

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 71.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5270.0** | 77.916 | 76.313 | | | 77.916 | 76.313 | | |
| **5310.0** | 76.152 | 76.313 | | | 76.313 | 76.152 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5270.0** | 43.768 | 41.363 | | | 43.768 | 41.363 | | |
| **5310.0** | 40.882 | 39.599 | | | 40.882 | 39.599 | | |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | ±2.81 dB |

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

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | Highest | Lowest | | |
| 5500.0 | 35.431 | 33.988 | | | 35.431 | 33.988 | | |
| 5580.0 | 33.988 | 34.870 | | | 34.870 | 33.988 | | |
| 5720.0 | 35.912 | 35.832 | | | 35.912 | 35.832 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| MHz | a | b | c | d | Highest | Lowest | | |
| 5500.0 | 17.876 | 17.956 | | | 17.956 | 17.876 | | |
| 5580.0 | 18.838 | 19.399 | | | 19.399 | 18.838 | | |
| 5720.0 | 19.399 | 20.681 | | | 20.681 | 19.399 | | |

**Traceability to Industry Recognized Test Methodologies**

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

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

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 63.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5530.0** | 150.060 | 154.870 | | | 154.870 | 150.060 | | |
| **5610.0** | 154.549 | 79.679 | | | 154.549 | 79.679 | | |
| **5690.0** | 152.625 | 155.190 | | | 155.190 | 152.625 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5530.0** | 77.275 | 80.160 | | | 80.160 | 77.275 | | |
| **5610.0** | 85.932 | 100.040 | | | 100.040 | 85.932 | | |
| **5690.0** | 77.595 | 83.046 | | | 83.046 | 77.595 | | |

**Traceability to Industry Recognized Test Methodologies**

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

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

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 81.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5500.0** | 28.377 | 31.343 | | | 31.343 | 28.377 | | |
| **5580.0** | 27.655 | 27.655 | | | 27.655 | 27.655 | | |
| **5720.0** | 26.613 | 28.056 | | | 28.056 | 26.613 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5500.0** | 18.036 | 18.116 | | | 18.116 | 18.036 | | |
| **5580.0** | 18.036 | 18.116 | | | 18.116 | 18.036 | | |
| **5720.0** | 18.116 | 18.196 | | | 18.196 | 18.116 | | |

**Traceability to Industry Recognized Test Methodologies**

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

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

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**Equipment Configuration for 26 dB & 99% Occupied Bandwidth**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 71.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5510.0** | 76.313 | 76.633 | | | 76.633 | 76.313 | | |
| **5550.0** | 76.313 | 76.473 | | | 76.473 | 76.313 | | |
| **5710.0** | 76.633 | 77.595 | | | 77.595 | 76.633 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| | Port(s) | | | | | | | |
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5510.0** | 41.042 | 43.607 | | | 43.607 | 41.042 | | |
| **5550.0** | 40.721 | 42.485 | | | 42.485 | 40.721 | | |
| **5710.0** | 43.607 | 48.577 | | | 48.577 | 43.607 | | |

**Traceability to Industry Recognized Test Methodologies**

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

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

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## 9.3. Power Spectral Density

| Conducted Test Conditions for Power Spectral Density | | | |
|---|---|---|---|
| **Standard:** | FCC CFR 47:15.407 | **Ambient Temp. (ºC):** | 24.0 - 27.5 |
| **Test Heading:** | Power Spectral Density | **Rel. Humidity (%):** | 32 - 45 |
| **Standard Section(s):** | 15.407 (a) | **Pressure (mBars):** | 999 - 1001 |
| **Reference Document(s):** | See Normative References | | |

**Test Procedure for Power Spectral Density**
The in-band power spectral density was measured using the test technique specified in KDB 789033. A 1 MHz measurement bandwidth was implemented for the analyzer sweep. Once the sweep is complete the analyzer trace data is downloaded and used 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.

Test configuration and setup used for the measurement was per the Conducted Test Set-up section 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 spectrum in some 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**

**Operating Frequency Band 5150-5250 MHz**

15. 407 (a)(1)
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the

frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Operating Frequency Band 5250-5350 and 5470 – 5725 MHz**

15. 407 (a)(2)
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**Operating Frequency Band 5725 – 5850 MHz**

15. 407 (a)(3)
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5260.0 | 4.021 | 4.007 | | | 6.999 | 11.0 | -4.0 |
| 5300.0 | 4.161 | 4.199 | | | 7.189 | 11.0 | -3.8 |
| 5320.0 | 4.071 | 3.628 | | | 6.889 | 11.0 | -4.1 |

| 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 | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 82.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | |
| **TPC:** | Not Applicable | **Tested By:** | SB |
| **Engineering Test Notes:** | | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.86 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5290.0 | -8.128 | -14.864 | | | -6.532 | 11.0 | -17.5 |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | 2.81 dB |

DCCF - Duty Cycle Correction Factor

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

| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 81.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+0.92 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5260.0 | -1.231 | -2.989 | | | 0.997 | 11.0 | -10.0 |
| 5300.0 | -1.356 | -1.221 | | | 1.547 | 11.0 | -9.5 |
| 5320.0 | -1.054 | -2.352 | | | 0.698 | 11.0 | -10.3 |

| 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 | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 71.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+1.49 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **dBm/MHz** | **dBm/MHz** | **dB** |
| **5270.0** | -7.255 | -8.312 | | | -4.483 | 11.0 | -15.5 |
| **5310.0** | -6.021 | -8.859 | | | -3.185 | 11.0 | -14.2 |

| 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).

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5500.0 | 5.808 | 5.868 | | | 8.569 | 11.0 | -2.4 |
| 5580.0 | 4.220 | 4.724 | | | 7.166 | 11.0 | -3.8 |
| 5720.0 | 2.924 | 3.098 | | | 5.991 | 11.0 | -5.0 |

| 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 | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 63.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+2.01 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5530.0 | -12.902 | -14.593 | | | -10.048 | 11.0 | -21.1 |
| 5610.0 | -14.727 | -13.339 | | | -9.880 | 11.0 | -20.9 |
| 5690.0 | -5.863 | -12.801 | | | -3.421 | 11.0 | -14.4 |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | 2.81 dB |

DCCF - Duty Cycle Correction Factor

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

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**Equipment Configuration for Power Spectral Density**

| | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 81.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+0.92 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5500.0 | -1.135 | -0.924 | | | 2.416 | 11.0 | -8.6 |
| 5580.0 | -1.362 | -2.806 | | | 1.396 | 11.0 | -9.6 |
| 5720.0 | -0.937 | -3.856 | | | 1.119 | 11.0 | -9.9 |

**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 | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 71.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 2.90 |
| **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/MHz) | | | | Summation Peak Marker + DCCF (+1.49 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5510.0 | -6.553 | -5.521 | | | -1.865 | 11.0 | -12.9 |
| 5550.0 | -5.381 | -5.965 | | | -2.346 | 11.0 | -13.4 |
| 5710.0 | -8.868 | -9.524 | | | -5.455 | 11.0 | -16.5 |

| Traceability to Industry Recognized Test Methodologies | |
|---|---|
| Work Instruction: | WI-03 MEASURING RF SPECTRUM MASK |
| Measurement Uncertainty: | 2.81 dB |

DCCF - Duty Cycle Correction Factor

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

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## 9.4. Radiated

| Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions | | | |
|---|---|---|---|
| **Standard:** | FCC CFR 47:15.407 | **Ambient Temp. (ºC):** | 20.0 - 24.5 |
| **Test Heading:** | Radiated Spurious and Band-Edge Emissions | **Rel. Humidity (%):** | 32 - 45 |
| **Standard Section(s):** | 15.407 (b), 15.205, 15.209 | **Pressure (mBars):** | 999 - 1001 |
| **Reference Document(s):** | See Normative References | | |

**Test Procedure for Radiated Spurious and Band-Edge Emissions**
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 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 Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

**Limits for Restricted Bands (15.205, 15.209)**
**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**

**Example:**
**The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dBµV/m);**

$$E = {}^{1000000 \times \sqrt{30P}}\!/_{3} \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dBuV/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 |

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| | | | |
|---|---|---|---|
| 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).

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### 9.4.1. TX Spurious & Restricted Band Emissions

Equipment Configuration for TX Spurious & Restricted Band Emissions

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5260.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5261.44 | 72.32 | 3.66 | -11.29 | 64.69 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| #2 | 10519.94 | 50.02 | 5.43 | -4.21 | 51.24 | Peak (NRB) | Vertical | 151 | 7 | -- | -- | Pass |
| Test Notes: APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5300.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5295.84 | 73.38 | 3.79 | -11.11 | 66.06 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| #2 | 10604.94 | 55.48 | 5.56 | -3.92 | 57.12 | Max Peak | Horizontal | 185 | 193 | 74.0 | -16.9 | Pass |
| #3 | 10604.94 | 41.15 | 5.56 | -3.92 | 42.79 | Max Avg | Horizontal | 185 | 193 | 54.0 | -11.2 | Pass |
| Test Notes: APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

**Equipment Configuration for TX Spurious & Restricted Band Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5320.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5323.73 | 72.98 | 3.74 | -11.06 | 65.66 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| #2 | 10640.33 | 51.07 | 5.39 | -3.89 | 52.57 | Max Peak | Vertical | 98 | 18 | 74.0 | -21.4 | Pass |
| #3 | 10640.33 | 37.71 | 5.39 | -3.89 | 39.21 | Max Avg | Vertical | 98 | 18 | 54.0 | -14.8 | Pass |
| Test Notes: APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

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**Equipment Configuration for TX Spurious & Restricted Band Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5500.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5504.21 | 62.41 | 3.75 | -11.18 | 54.98 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| #2 | 10995.83 | 51.77 | 5.60 | -4.26 | 53.11 | Max Peak | Vertical | 155 | 267 | 74.0 | -20.9 | Pass |
| #3 | 10995.83 | 38.37 | 5.60 | -4.26 | 39.71 | Max Avg | Vertical | 155 | 267 | 54.0 | -14.3 | Pass |
| Test Notes: APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

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**Equipment Configuration for TX Spurious & Restricted Band Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5580.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5576.21 | 69.56 | 3.81 | -11.21 | 62.16 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| #2 | 11157.98 | 50.94 | 5.94 | -4.06 | 52.82 | Max Peak | Vertical | 140 | 357 | 74.0 | -21.2 | Pass |
| #3 | 11157.98 | 37.39 | 5.94 | -4.06 | 39.27 | Max Avg | Vertical | 140 | 357 | 54.0 | -14.7 | Pass |
| Test Notes: APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

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**Equipment Configuration for TX Spurious & Restricted Band Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5720.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5715.24 | 59.08 | 3.81 | -10.76 | 52.13 | Fundamental | Vertical | 100 | 0 | -- | -- | |
| #2 | 11439.80 | 55.80 | 5.35 | -4.93 | 56.22 | Max Peak | Horizontal | 187 | 304 | 74.0 | -17.8 | Pass |
| #3 | 11439.80 | 44.98 | 5.35 | -4.93 | 45.40 | Max Avg | Horizontal | 187 | 304 | 54.0 | -8.6 | Pass |
| Test Notes: APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

### 9.4.2. Restricted Edge & Band-Edge Emissions

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5250 - 5350 MHz

| HPE Metal Sheet | | Band-Edge Freq | Limit 74.0dBµV/m | Limit 54.0dBµV/m | Power Setting |
|---|---|---|---|---|---|
| Operational Mode | Operating Frequency (MHz) | MHz | dBµV/m | dBµV/m | |
| 802.11a | 5320.00 | 5350.00 | 73.89 | 53.08 | 62 |
| 802.11ac-80 | 5290.00 | 5350.00 | 73.74 | 48.74 | 53 |
| 802.11n HT-20 | 5320.00 | 5350.00 | 70.72 | 52.44 | 72 |
| 802.11n HT-40 | 5310.00 | 5350.00 | 72.94 | 51.74 | 56 |

5470 - 5725 MHz

| HPE Metal Sheet | | Restricted-Edge Freq | Limit 74.0dBµV/m | Limit 54.0dBµV/m | Power Setting |
|---|---|---|---|---|---|
| Operational Mode | Operating Frequency (MHz) | MHz | dBµV/m | dBµV/m | |
| 802.11a | 5500.00 | 5460.00 | 72.63 | 53.88 | 62 |
| 802.11ac-80 | 5530.00 | 5460.00 | 72.51 | 50.63 | 63 |
| 802.11n HT-20 | 5500.00 | 5460.00 | 71.55 | 52.89 | 72 |
| 802.11n HT-40 | 5510.00 | 5460.00 | 73.35 | 52.01 | 62 |

| HPE Metal Sheet | | Band-Edge Freq | Limit 68.23dBµV/m | Power Setting |
|---|---|---|---|---|
| Operational Mode | Operating Frequency (MHz) | MHz | dBµV/m | |
| 802.11a | 5500.00 | 5470.00 | 58.15 | 62 |
| 802.11ac-80 | 5530.00 | 5470.00 | 52.46 | 63 |
| 802.11n HT-20 | 5500.00 | 5470.00 | 56.59 | 72 |
| 802.11n HT-40 | 5510.00 | 5470.00 | 56.86 | 62 |

Click on the links to view the data.

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**Equipment Configuration for Restricted Upper Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5320.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 62 | **Tested By:** | JMH |

**Test Measurement Results**

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #2 | 5351.28 | 14.86 | 3.71 | 34.51 | 53.08 | Max Avg | Horizontal | 169 | 353 | 54.0 | -0.9 | Pass |
| #3 | 5352.57 | 35.68 | 3.71 | 34.50 | 73.89 | Max Peak | Horizontal | 169 | 353 | 74.0 | -0.1 | Pass |
| #1 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 62 to meet band edge limits. | | | | | | | | | | | | |

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**Equipment Configuration for Restricted Upper Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11ac-80 |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 3.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5290.00 | **Data Rate:** | 29.30 MBit/s |
| **Power Setting:** | 53 | **Tested By:** | JMH |

**Test Measurement Results**

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #2 | 5362.18 | 10.56 | 3.70 | 34.48 | 48.74 | Max Avg | Horizontal | 169 | 353 | 54.0 | -5.3 | Pass |
| #3 | 5366.03 | 35.58 | 3.69 | 34.47 | 73.74 | Max Peak | Horizontal | 169 | 353 | 74.0 | -0.3 | Pass |
| #1 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 53 to meet band edge limit. | | | | | | | | | | | | |

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**Equipment Configuration for Restricted Upper Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11n HT-20 |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 3.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5320.00 | **Data Rate:** | 6.50 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5350.00 | 14.23 | 3.70 | 34.51 | 52.44 | Max Avg | Horizontal | 169 | 353 | 54.0 | -1.6 | Pass |
| #3 | 5351.60 | 32.50 | 3.71 | 34.51 | 70.72 | Max Peak | Horizontal | 169 | 353 | 74.0 | -3.3 | Pass |
| #2 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

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**Equipment Configuration for Restricted Upper Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11n HT-40 |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 3.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5310.00 | **Data Rate:** | 13.50 MBit/s |
| **Power Setting:** | 56 | **Tested By:** | JMH |

**Test Measurement Results**

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #2 | 5350.64 | 13.52 | 3.71 | 34.51 | 51.74 | Max Avg | Horizontal | 169 | 353 | 54.0 | -2.3 | Pass |
| #3 | 5356.09 | 34.73 | 3.71 | 34.50 | 72.94 | Max Peak | Horizontal | 169 | 353 | 74.0 | -1.1 | Pass |
| #1 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 56 to meet band edge limit. | | | | | | | | | | | | |

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**Equipment Configuration for Restricted Lower Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11a |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | Not Applicable | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5500.00 | **Data Rate:** | 6.00 MBit/s |
| **Power Setting:** | 62 | **Tested By:** | JMH |

**Test Measurement Results**

| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5460.00 | 15.78 | 3.79 | 34.31 | 53.88 | Max Avg | Horizontal | 163 | 354 | 54.0 | -0.1 | Pass |
| #2 | 5460.00 | 34.53 | 3.79 | 34.31 | 72.63 | Max Peak | Horizontal | 163 | 354 | 74.0 | -1.4 | Pass |
| #4 | 5470.00 | 20.07 | 3.76 | 34.32 | 58.15 | Max Avg | Horizontal | 163 | 354 | 68.2 | -10.1 | Pass |
| #3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| #5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 62 to meet band edge limit. | | | | | | | | | | | | |

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**Equipment Configuration for Restricted Lower Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11ac-80 |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 3.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5530.00 | **Data Rate:** | 29.30 MBit/s |
| **Power Setting:** | 63 | **Tested By:** | JMH |

**Test Measurement Results**

| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5454.59 | 34.42 | 3.79 | 34.30 | 72.51 | Max Peak | Horizontal | 163 | 354 | 74.0 | -1.5 | Pass |
| #2 | 5460.00 | 12.53 | 3.79 | 34.31 | 50.63 | Max Avg | Horizontal | 163 | 354 | 54.0 | -3.4 | Pass |
| #4 | 5466.39 | 14.38 | 3.77 | 34.31 | 52.46 | Max Avg | Horizontal | 163 | 354 | 68.2 | -15.7 | Pass |
| #3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| #5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 63 to meet band edge limit. | | | | | | | | | | | | |

**Equipment Configuration for Restricted Lower Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11n HT-20 |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 3.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5500.00 | **Data Rate:** | 6.50 MBit/s |
| **Power Setting:** | 72 | **Tested By:** | JMH |

**Test Measurement Results**

| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5455.49 | 33.46 | 3.79 | 34.30 | 71.55 | Max Peak | Horizontal | 163 | 354 | 74.0 | -2.5 | Pass |
| #2 | 5460.00 | 14.79 | 3.79 | 34.31 | 52.89 | Max Avg | Horizontal | 163 | 354 | 54.0 | -1.1 | Pass |
| #4 | 5467.90 | 18.51 | 3.76 | 34.32 | 56.59 | Max Avg | Horizontal | 163 | 354 | 68.2 | -11.6 | Pass |
| #3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| #5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. | | | | | | | | | | | | |

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**Equipment Configuration for Restricted Lower Band-Edge Emissions**

| | | | |
|---|---|---|---|
| **Antenna:** | HPE Metal Sheet | **Variant:** | 802.11n HT-40 |
| **Antenna Gain (dBi):** | 2.90 | **Modulation:** | OFDM |
| **Beam Forming Gain (Y):** | 3.00 | **Duty Cycle (%):** | 99 |
| **Channel Frequency (MHz):** | 5510.00 | **Data Rate:** | 13.50 MBit/s |
| **Power Setting:** | 62 | **Tested By:** | JMH |

**Test Measurement Results**

| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| #1 | 5452.18 | 35.27 | 3.78 | 34.30 | 73.35 | Max Peak | Horizontal | 163 | 354 | 74.0 | -0.7 | Pass |
| #2 | 5457.90 | 13.91 | 3.80 | 34.30 | 52.01 | Max Avg | Horizontal | 163 | 354 | 54.0 | -2.0 | Pass |
| #4 | 5467.60 | 18.78 | 3.76 | 34.32 | 56.86 | Max Avg | Horizontal | 163 | 354 | 68.2 | -11.3 | Pass |
| #3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| #5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |
| Test Notes: EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 62 to meet band edge limit. | | | | | | | | | | | | |

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# A. APPENDIX - GRAPHICAL IMAGES

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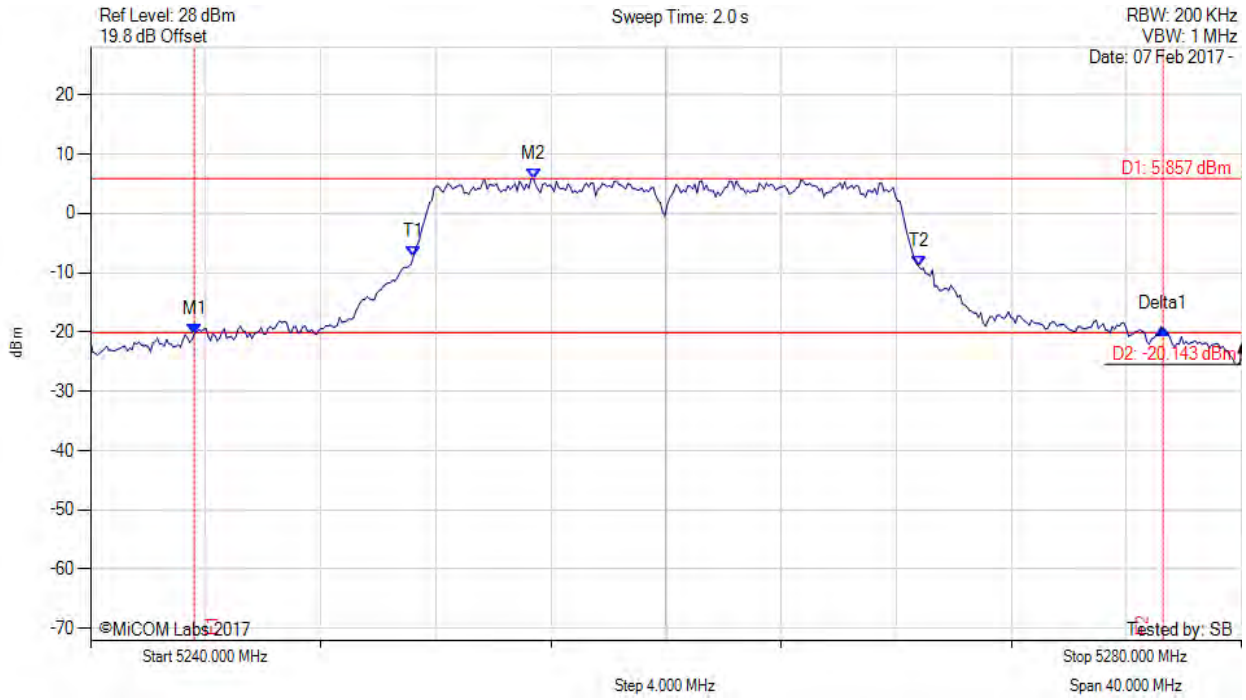
## A.1. 26 dB & 99% Bandwidth

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

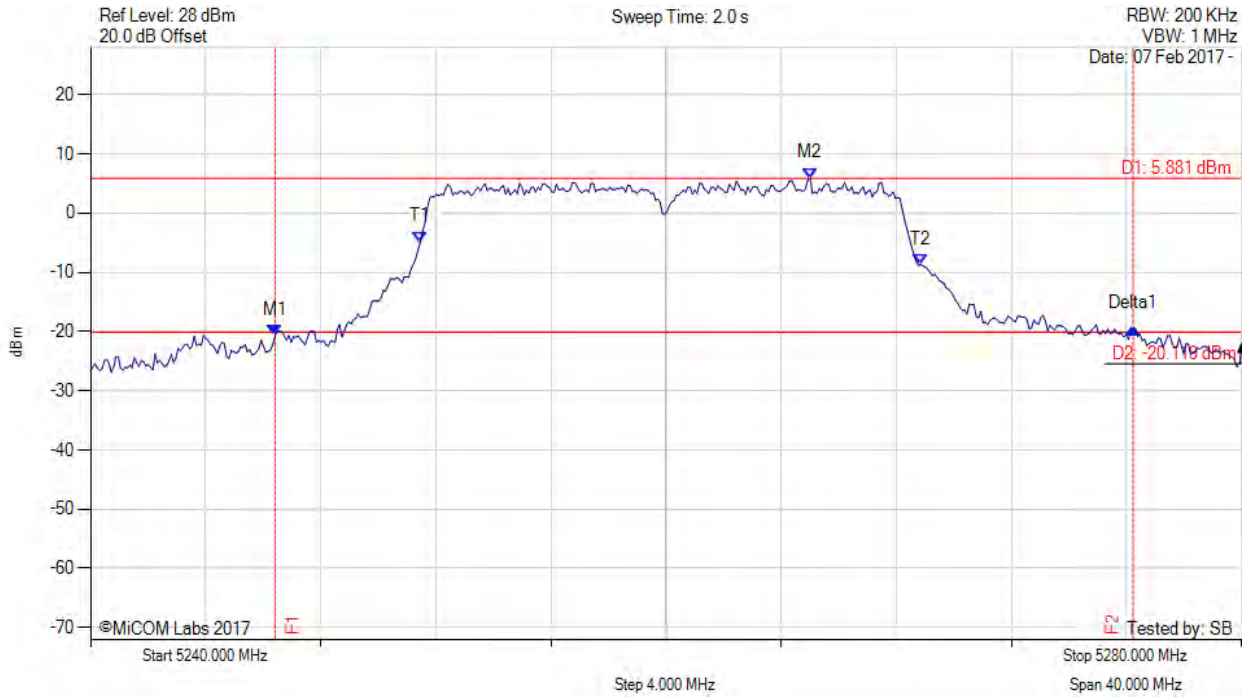



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5243.607 MHz : -20.426 dBm<br>M2 : 5255.391 MHz : 5.857 dBm<br>Delta1 : 33.667 MHz : 0.964 dB<br>T1 : 5251.222 MHz : -7.296 dBm<br>T2 : 5268.778 MHz : -8.931 dBm<br>OBW : 17.555 MHz | Measured 26 dB Bandwidth: 33.667 MHz<br>Measured 99% Bandwidth: 17.555 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

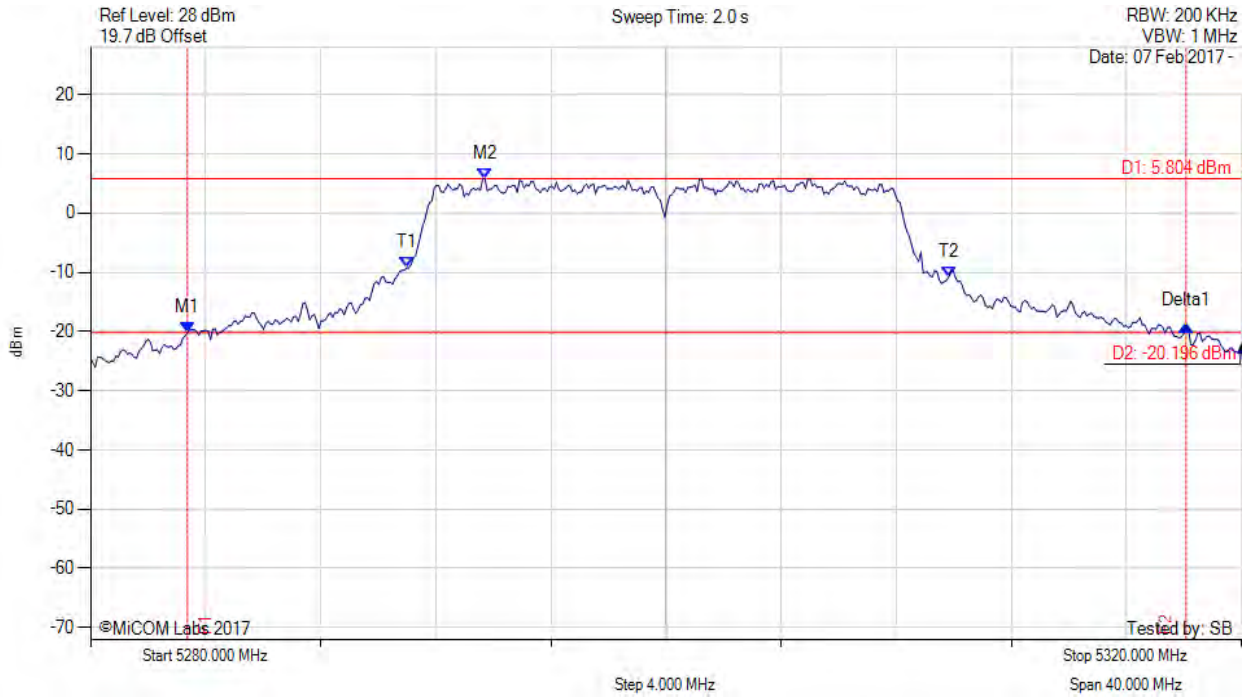



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5246.413 MHz : -20.692 dBm<br>M2 : 5265.010 MHz : 5.881 dBm<br>Delta1 : 29.820 MHz : 1.198 dB<br>T1 : 5251.463 MHz : -4.861 dBm<br>T2 : 5268.858 MHz : -8.731 dBm<br>OBW : 17.395 MHz | Measured 26 dB Bandwidth: 29.820 MHz<br>Measured 99% Bandwidth: 17.395 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

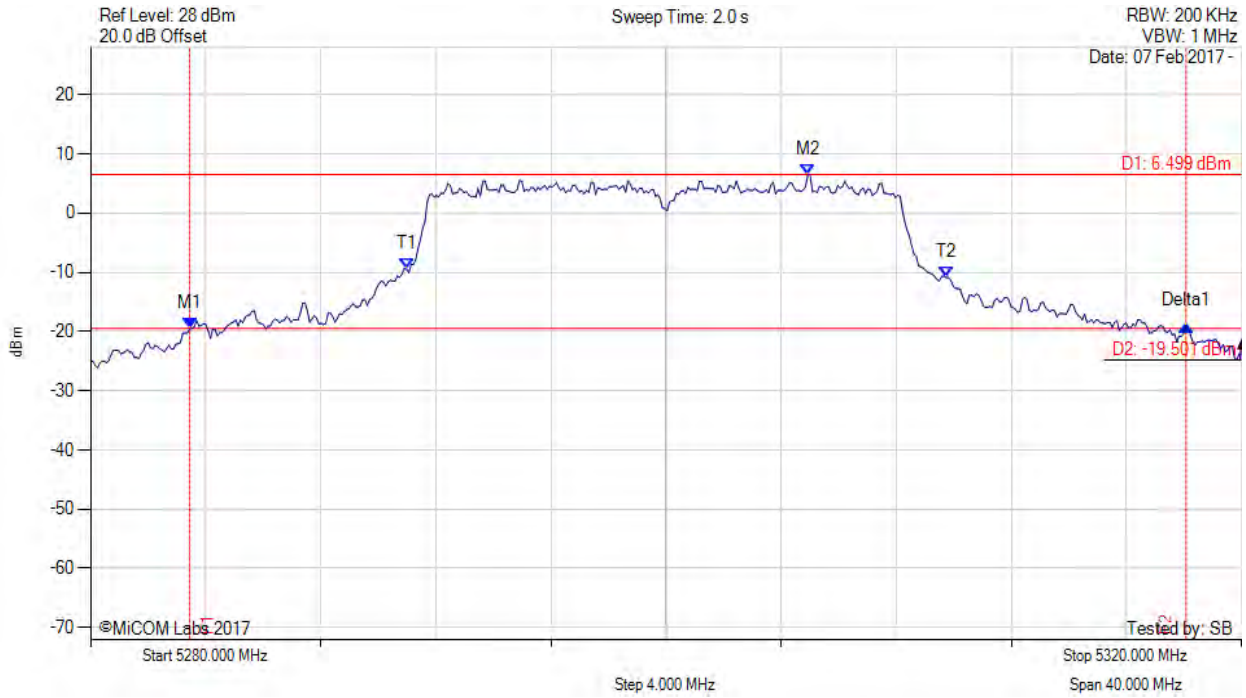



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5283.367 MHz : -20.212 dBm<br>M2 : 5293.707 MHz : 5.804 dBm<br>Delta1 : 34.709 MHz : 1.163 dB<br>T1 : 5290.982 MHz : -9.279 dBm<br>T2 : 5309.820 MHz : -10.804 dBm<br>OBW : 18.838 MHz | Measured 26 dB Bandwidth: 34.709 MHz<br>Measured 99% Bandwidth: 18.838 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

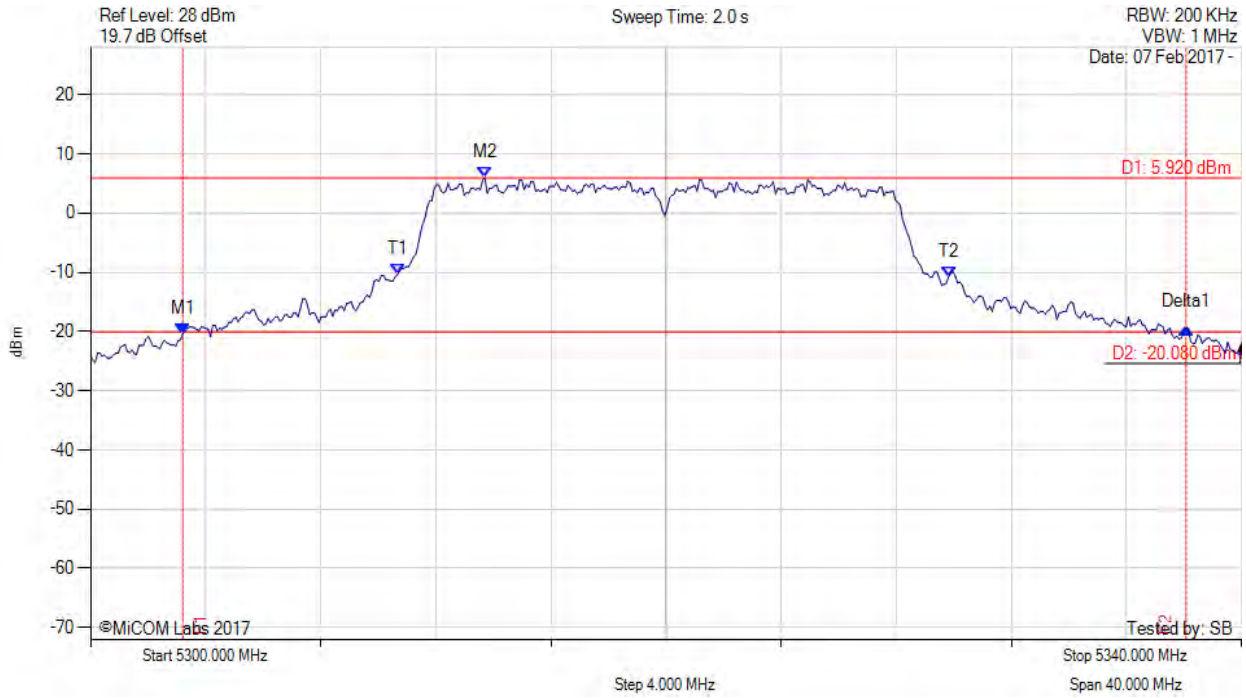



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5283.447 MHz : -19.549 dBm<br>M2 : 5304.930 MHz : 6.499 dBm<br>Delta1 : 34.629 MHz : 0.545 dB<br>T1 : 5290.982 MHz : -9.474 dBm<br>T2 : 5309.739 MHz : -10.918 dBm<br>OBW : 18.758 MHz | Measured 26 dB Bandwidth: 34.629 MHz<br>Measured 99% Bandwidth: 18.758 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

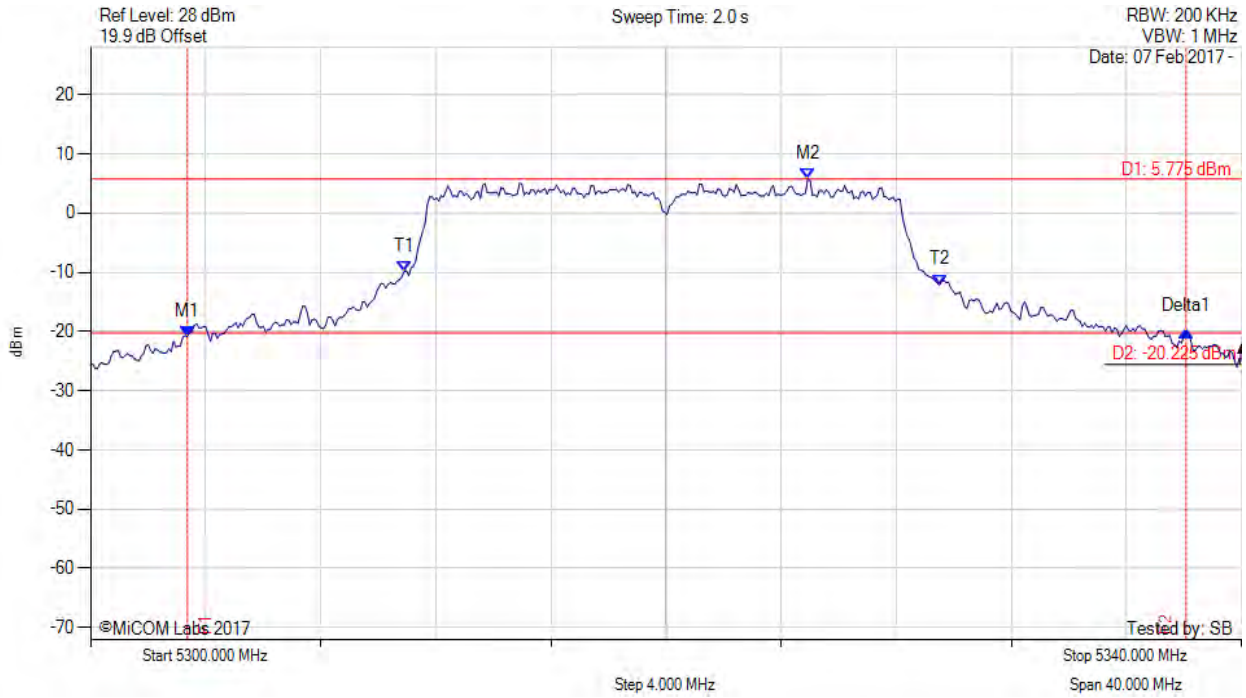



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5303.206 MHz : -20.360 dBm<br>M2 : 5313.707 MHz : 5.920 dBm<br>Delta1 : 34.870 MHz : 1.007 dB<br>T1 : 5310.661 MHz : -10.428 dBm<br>T2 : 5329.820 MHz : -10.765 dBm<br>OBW : 19.158 MHz | Measured 26 dB Bandwidth: 34.870 MHz<br>Measured 99% Bandwidth: 19.158 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

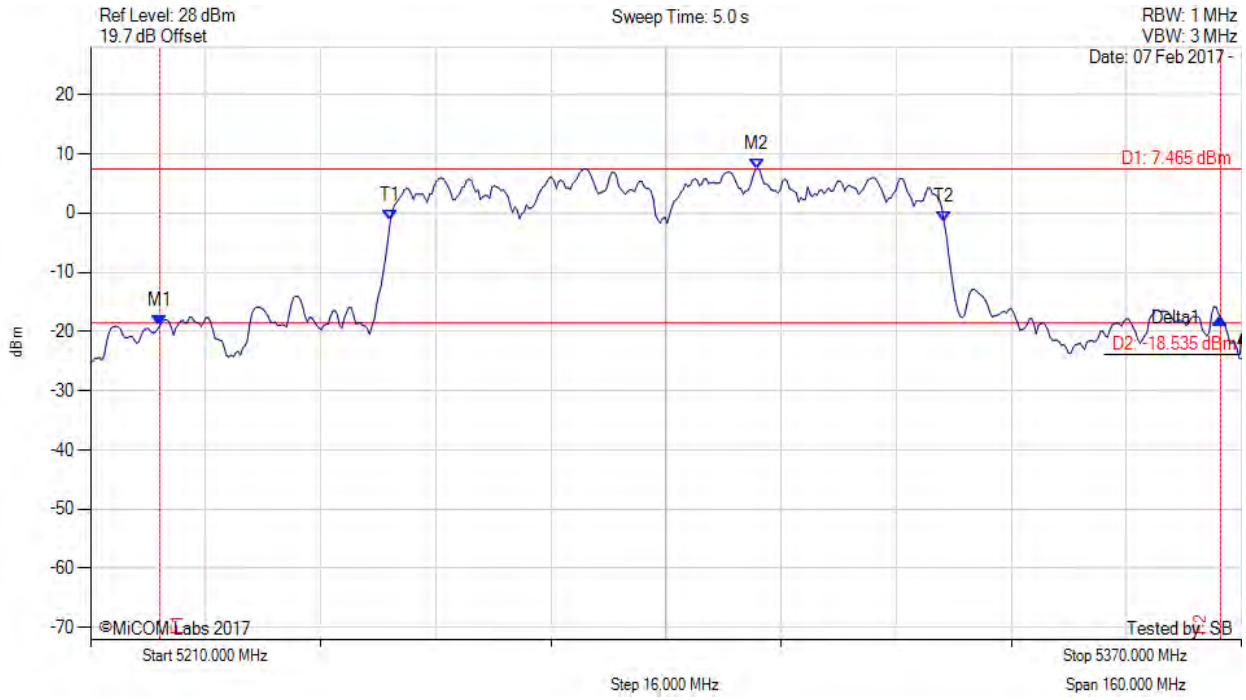



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5303.367 MHz : -20.826 dBm<br>M2 : 5324.930 MHz : 5.775 dBm<br>Delta1 : 34.709 MHz : 0.805 dB<br>T1 : 5310.902 MHz : -9.852 dBm<br>T2 : 5329.499 MHz : -12.120 dBm<br>OBW : 18.597 MHz | Measured 26 dB Bandwidth: 34.709 MHz<br>Measured 99% Bandwidth: 18.597 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

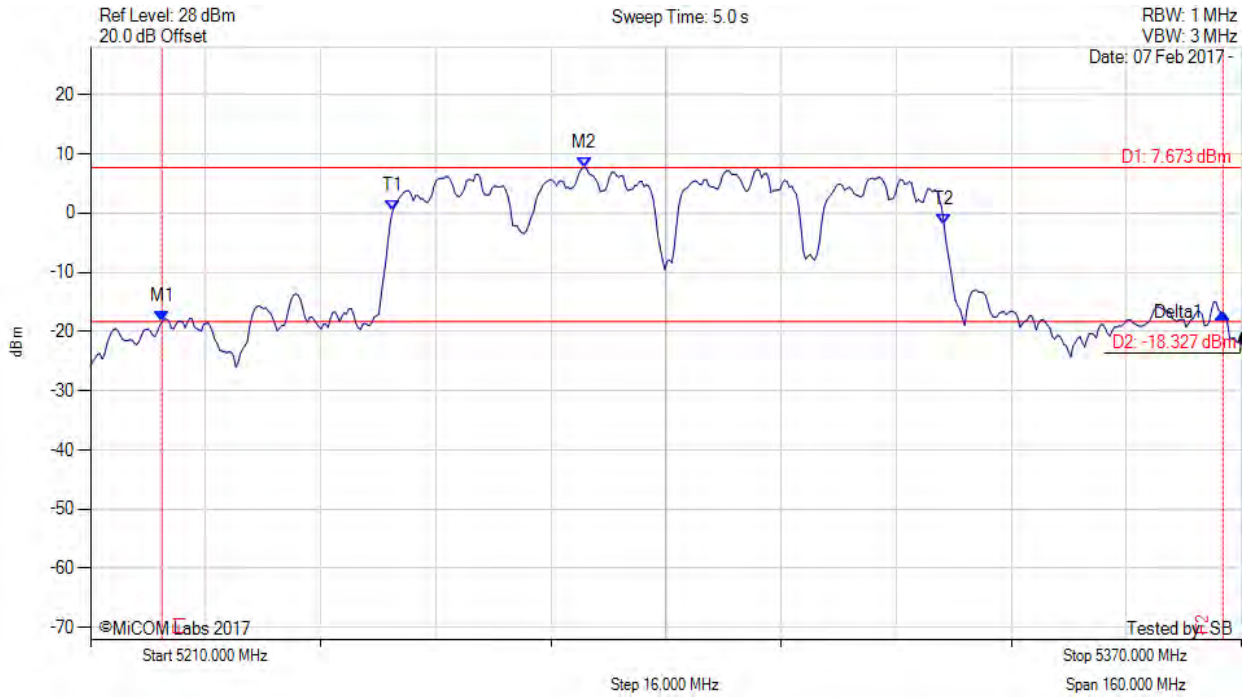



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5219.619 MHz : -19.022 dBm<br>M2 : 5302.665 MHz : 7.465 dBm<br>Delta1 : 147.495 MHz : 1.310 dB<br>T1 : 5251.683 MHz : -1.286 dBm<br>T2 : 5328.637 MHz : -1.422 dBm<br>OBW : 76.954 MHz | Measured 26 dB Bandwidth: 147.495 MHz<br>Measured 99% Bandwidth: 76.954 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

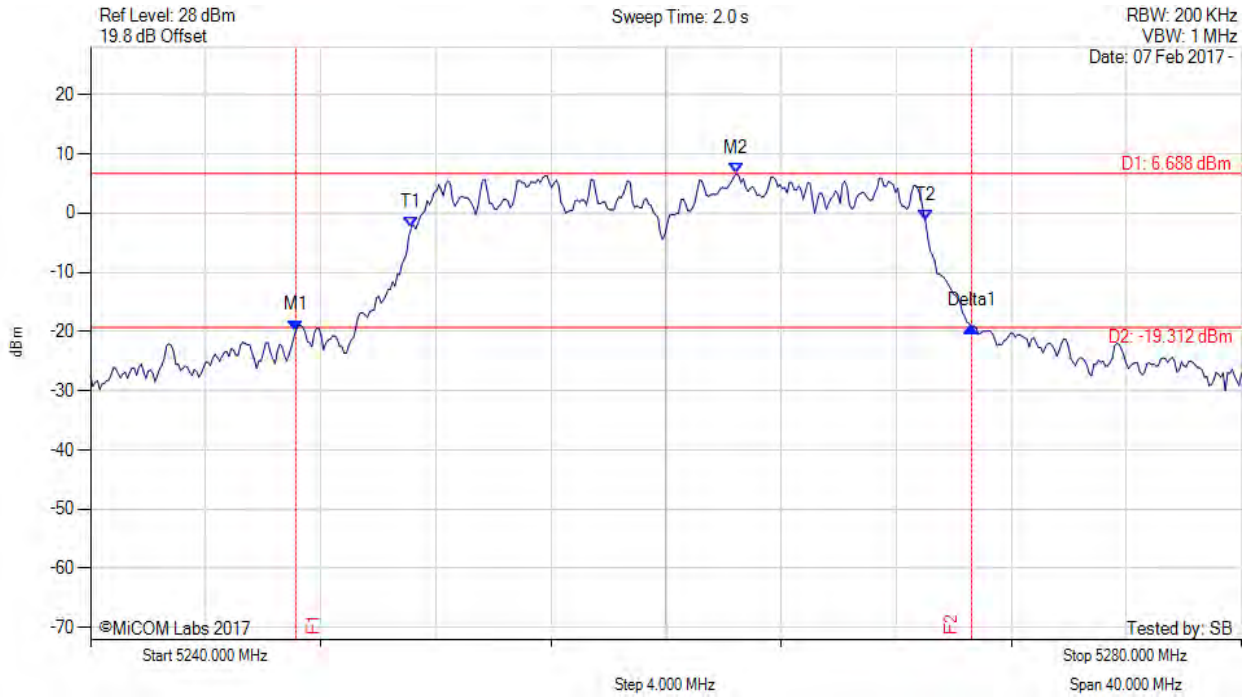



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5219.940 MHz : -18.335 dBm<br>M2 : 5278.617 MHz : 7.673 dBm<br>Delta1 : 147.495 MHz : 1.489 dB<br>T1 : 5252.004 MHz : 0.426 dBm<br>T2 : 5328.637 MHz : -1.861 dBm<br>OBW : 76.633 MHz | Measured 26 dB Bandwidth: 147.495 MHz<br>Measured 99% Bandwidth: 76.633 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

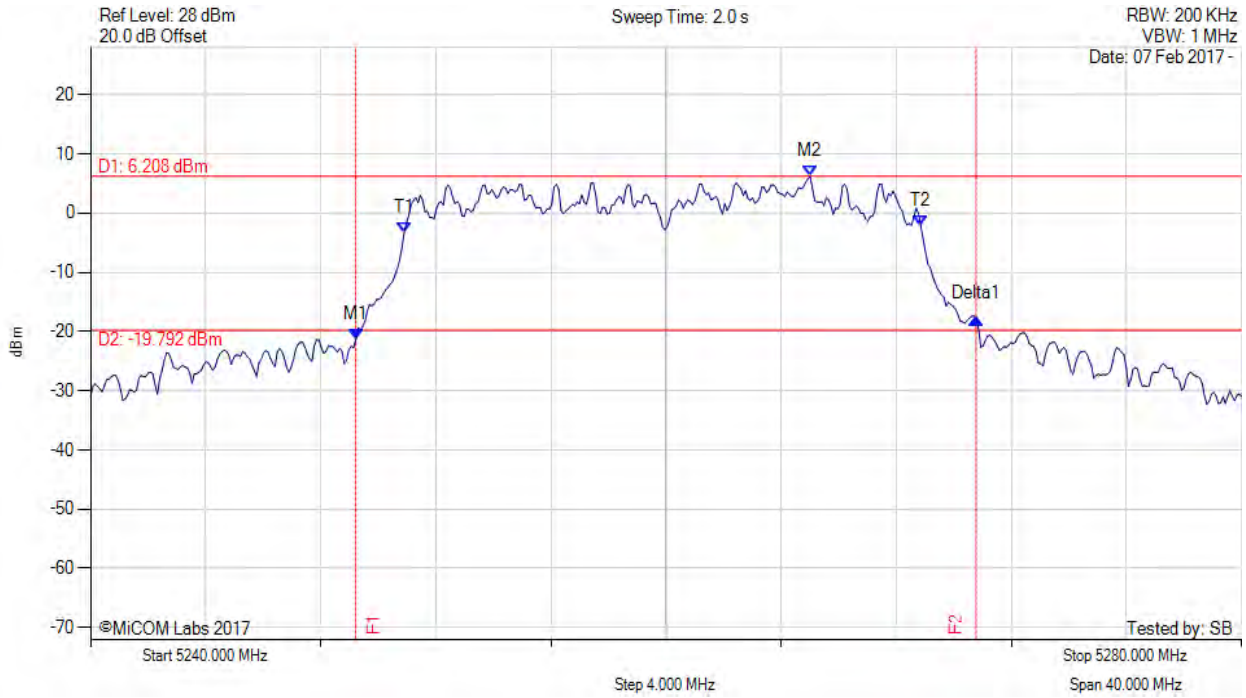



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5247.134 MHz : -19.826 dBm<br>M2 : 5262.445 MHz : 6.688 dBm<br>Delta1 : 23.487 MHz : 0.694 dB<br>T1 : 5251.142 MHz : -2.500 dBm<br>T2 : 5269.018 MHz : -1.321 dBm<br>OBW : 17.876 MHz | Measured 26 dB Bandwidth: 23.487 MHz<br>Measured 99% Bandwidth: 17.876 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

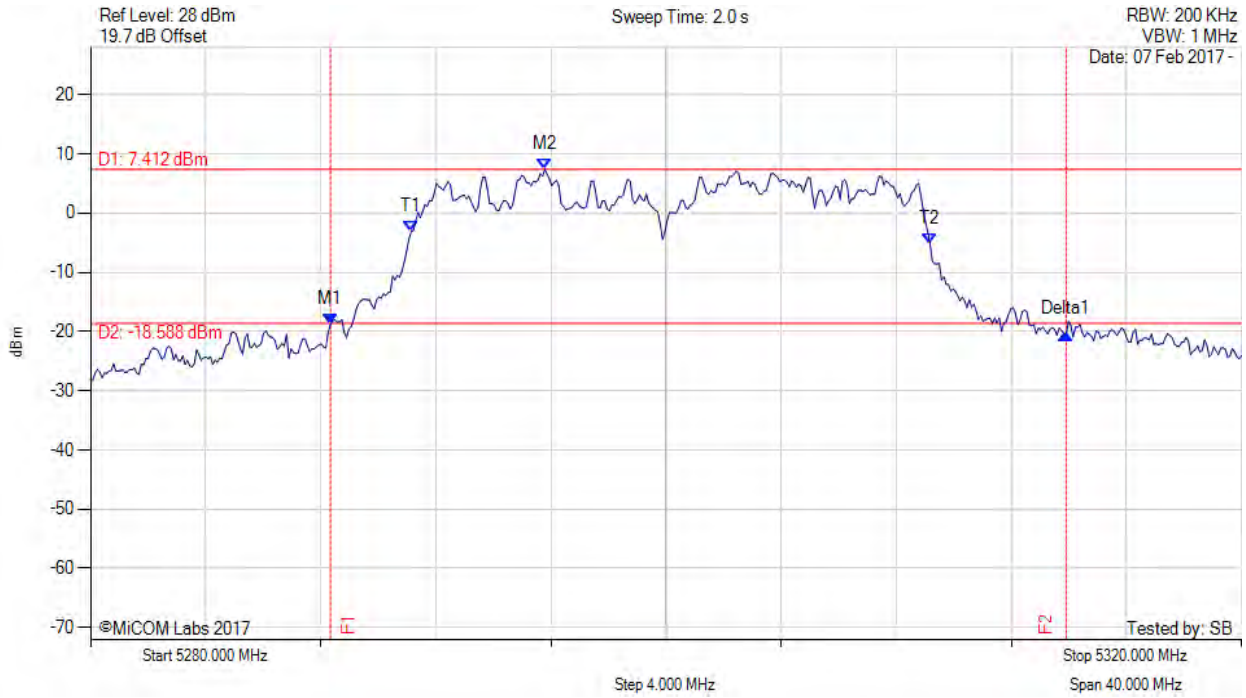



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5249.218 MHz : -21.367 dBm<br>M2 : 5265.010 MHz : 6.208 dBm<br>Delta1 : 21.563 MHz : 3.594 dB<br>T1 : 5250.902 MHz : -3.326 dBm<br>T2 : 5268.858 MHz : -2.171 dBm<br>OBW : 17.956 MHz | Measured 26 dB Bandwidth: 21.563 MHz<br>Measured 99% Bandwidth: 17.956 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

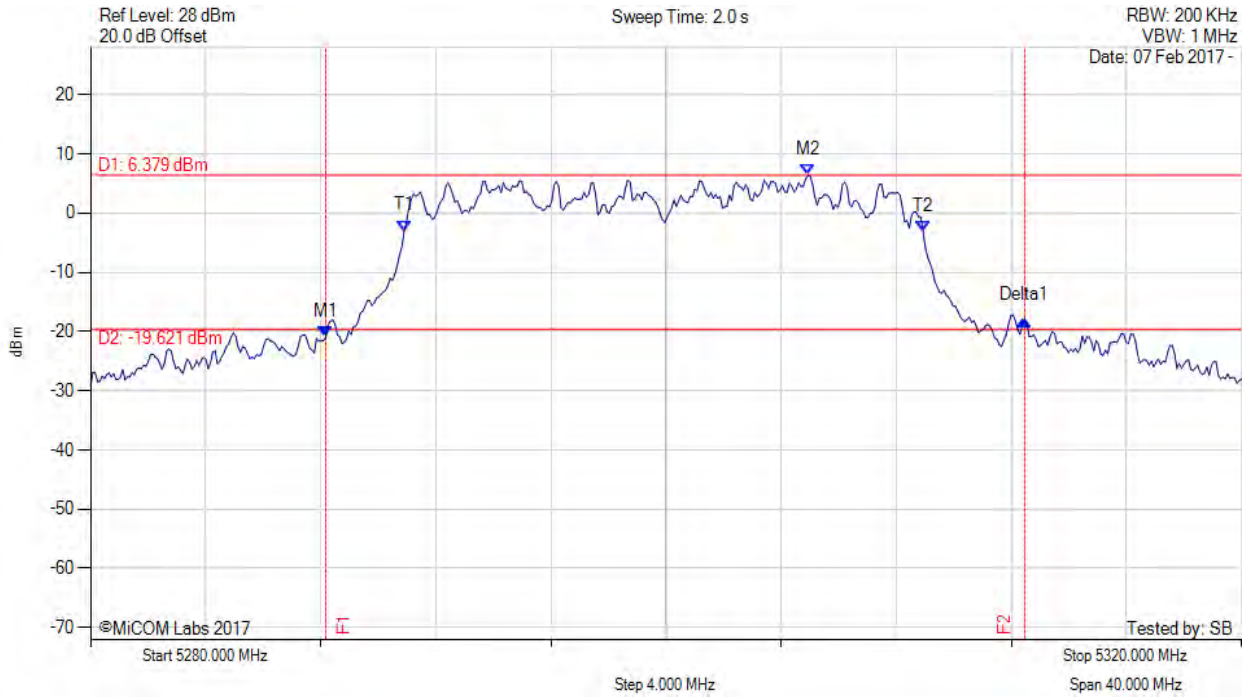



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5288.337 MHz : -18.860 dBm<br>M2 : 5295.792 MHz : 7.412 dBm<br>Delta1 : 25.571 MHz : -1.635 dB<br>T1 : 5291.142 MHz : -3.143 dBm<br>T2 : 5309.178 MHz : -5.276 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 25.571 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

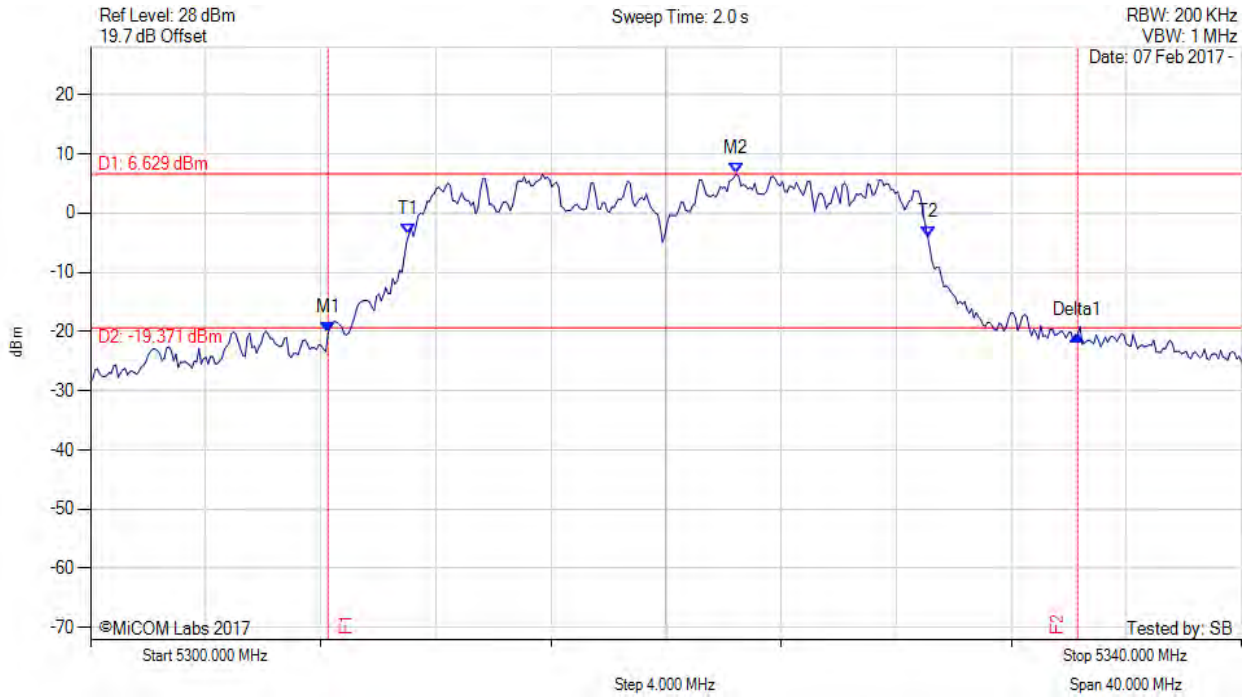



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5288.176 MHz : -20.934 dBm<br>M2 : 5304.930 MHz : 6.379 dBm<br>Delta1 : 24.289 MHz : 2.803 dB<br>T1 : 5290.902 MHz : -2.982 dBm<br>T2 : 5308.938 MHz : -3.169 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 24.289 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

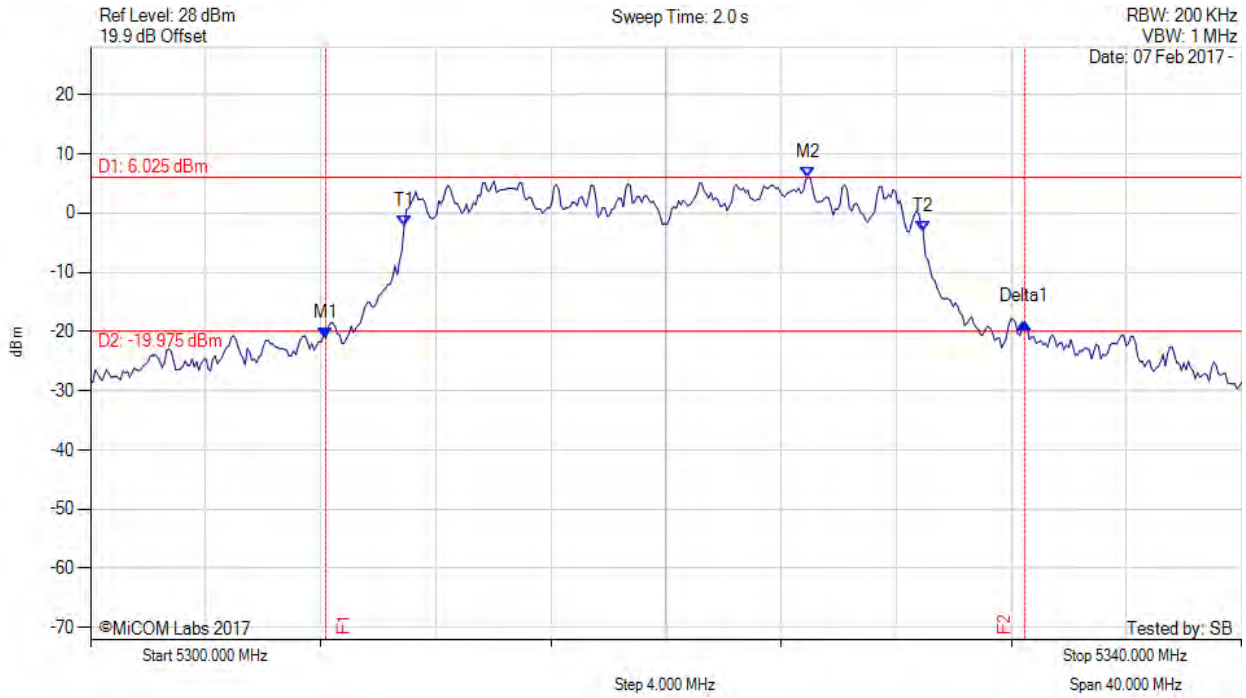



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5308.257 MHz : -20.261 dBm<br>M2 : 5322.445 MHz : 6.629 dBm<br>Delta1 : 26.052 MHz : -0.311 dB<br>T1 : 5311.062 MHz : -3.669 dBm<br>T2 : 5329.098 MHz : -4.003 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 26.052 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

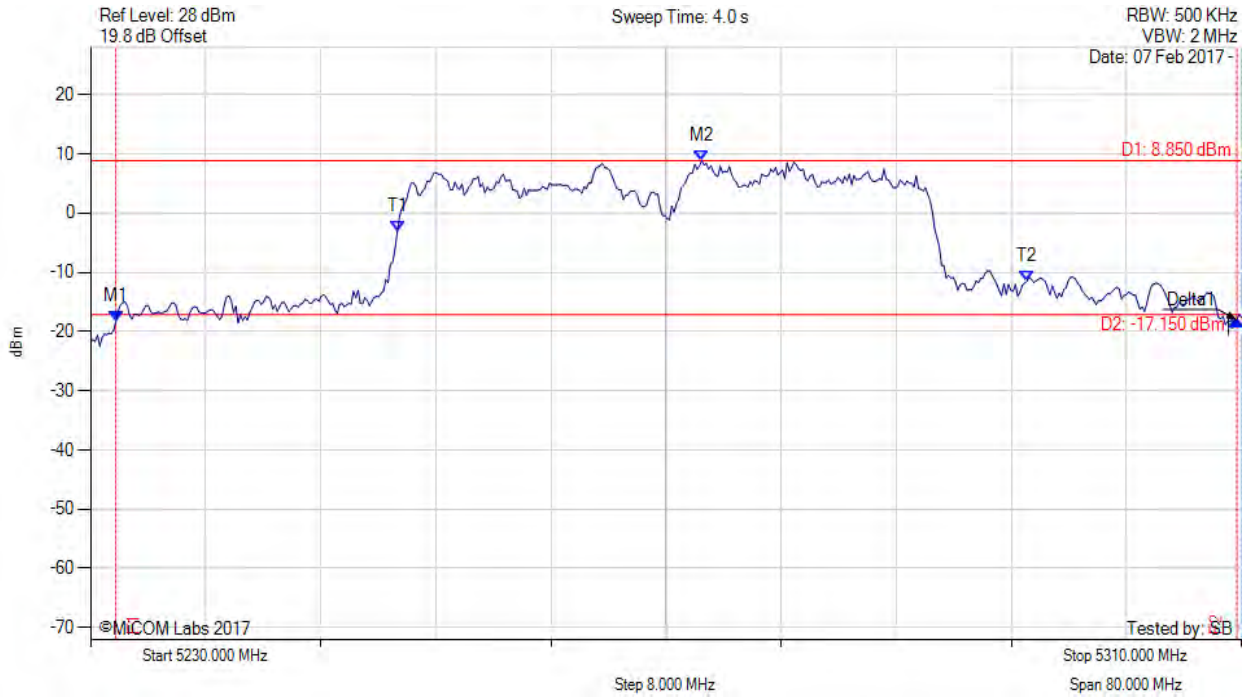



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5308.176 MHz : -21.107 dBm<br>M2 : 5324.930 MHz : 6.025 dBm<br>Delta1 : 24.289 MHz : 2.691 dB<br>T1 : 5310.902 MHz : -2.223 dBm<br>T2 : 5328.938 MHz : -3.086 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 24.289 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

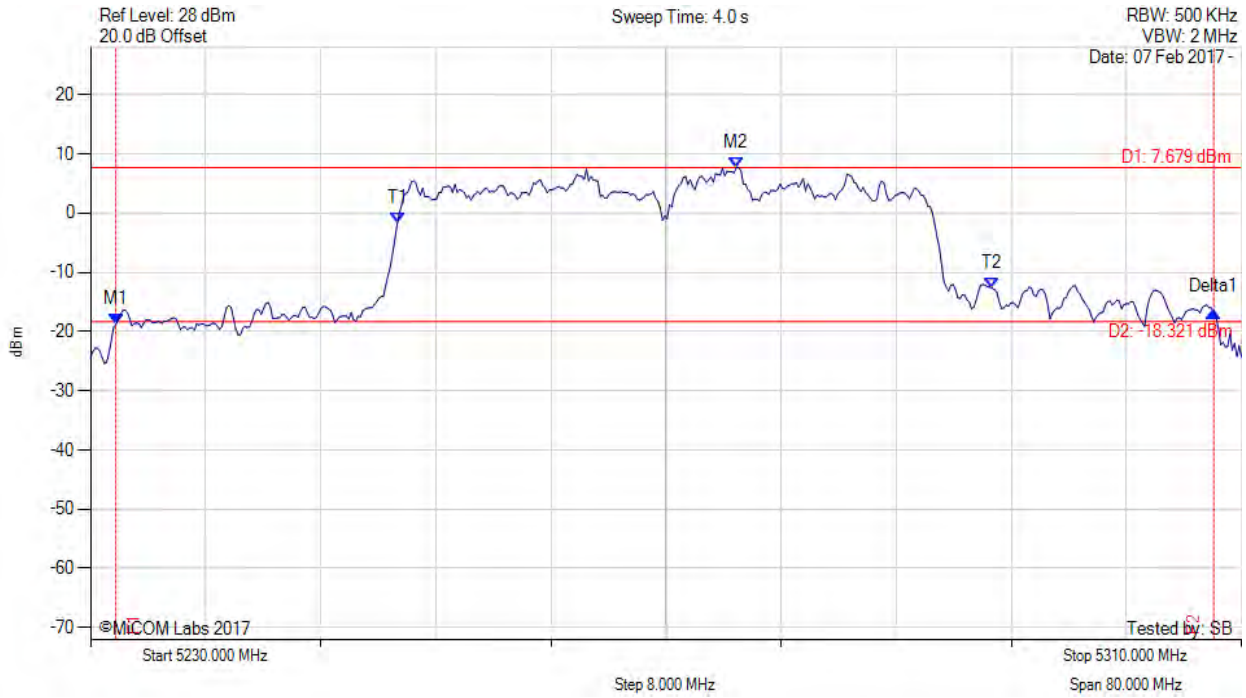



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5231.764 MHz : -18.256 dBm<br>M2 : 5272.485 MHz : 8.850 dBm<br>Delta1 : 77.916 MHz : 0.232 dB<br>T1 : 5251.323 MHz : -3.102 dBm<br>T2 : 5295.090 MHz : -11.467 dBm<br>OBW : 43.768 MHz | Measured 26 dB Bandwidth: 77.916 MHz<br>Measured 99% Bandwidth: 43.768 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

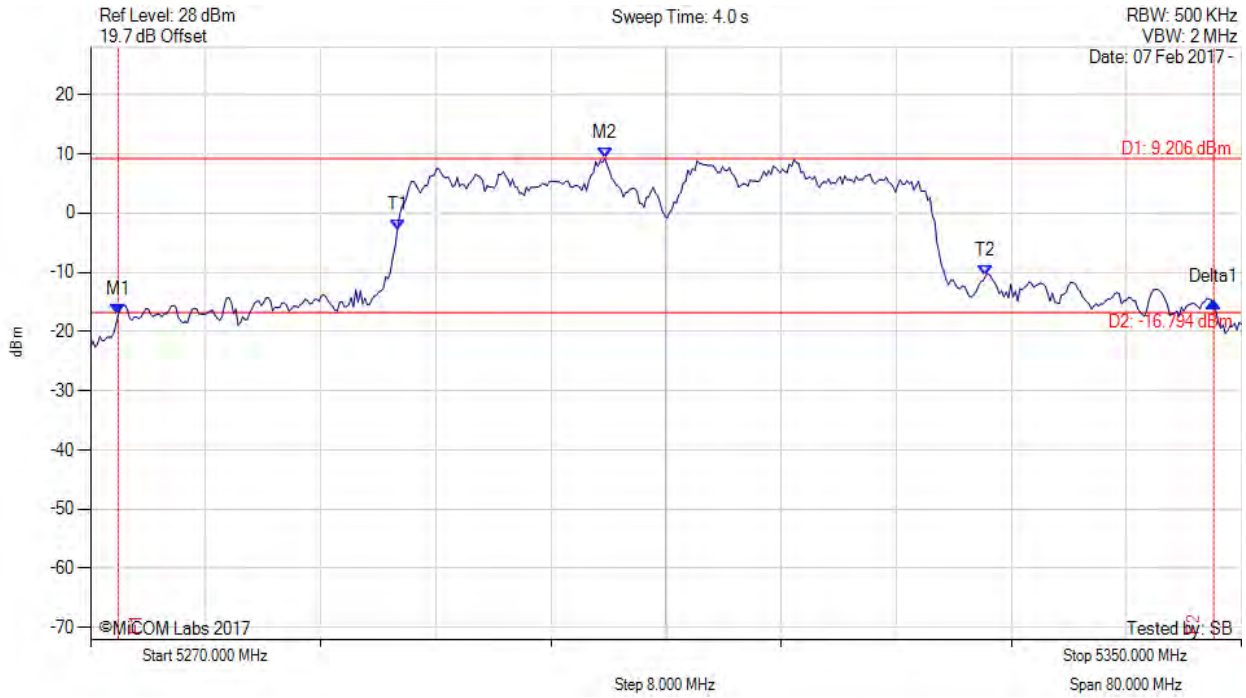



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5231.764 MHz : -18.786 dBm<br>M2 : 5274.890 MHz : 7.679 dBm<br>Delta1 : 76.313 MHz : 2.140 dB<br>T1 : 5251.323 MHz : -1.715 dBm<br>T2 : 5292.685 MHz : -12.718 dBm<br>OBW : 41.363 MHz | Measured 26 dB Bandwidth: 76.313 MHz<br>Measured 99% Bandwidth: 41.363 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

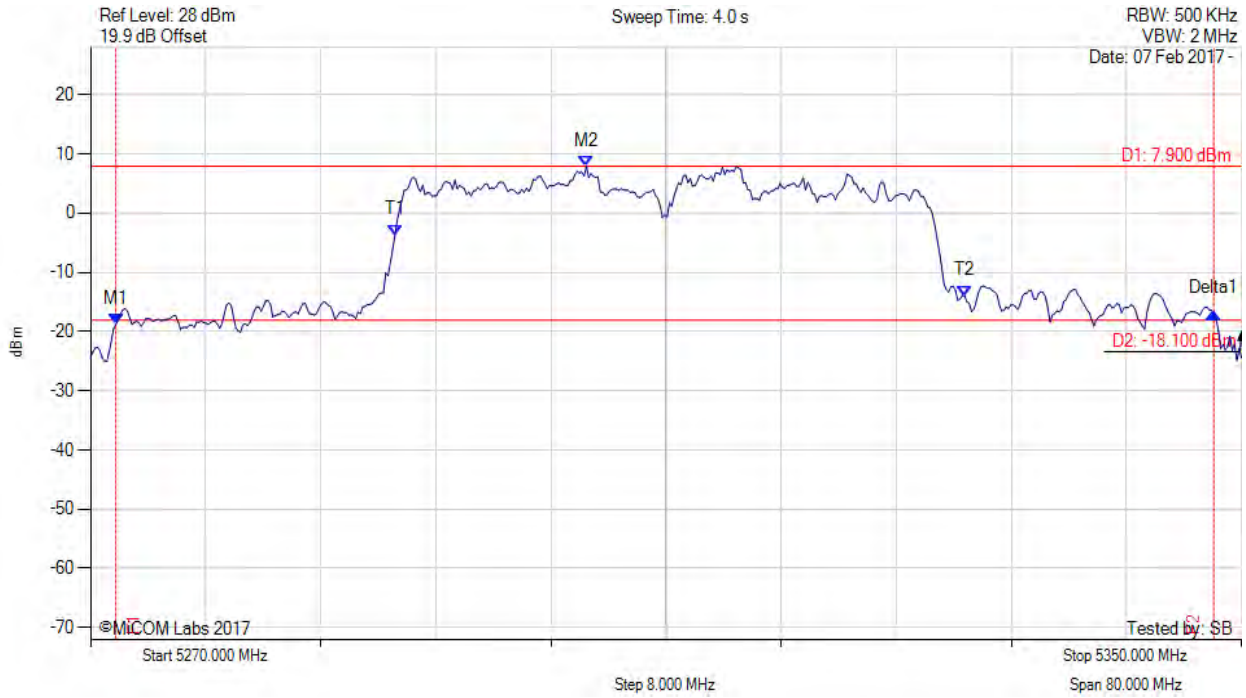



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5271.924 MHz : -17.135 dBm<br>M2 : 5305.752 MHz : 9.206 dBm<br>Delta1 : 76.152 MHz : 2.087 dB<br>T1 : 5291.323 MHz : -2.903 dBm<br>T2 : 5332.204 MHz : -10.645 dBm<br>OBW : 40.882 MHz | Measured 26 dB Bandwidth: 76.152 MHz<br>Measured 99% Bandwidth: 40.882 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

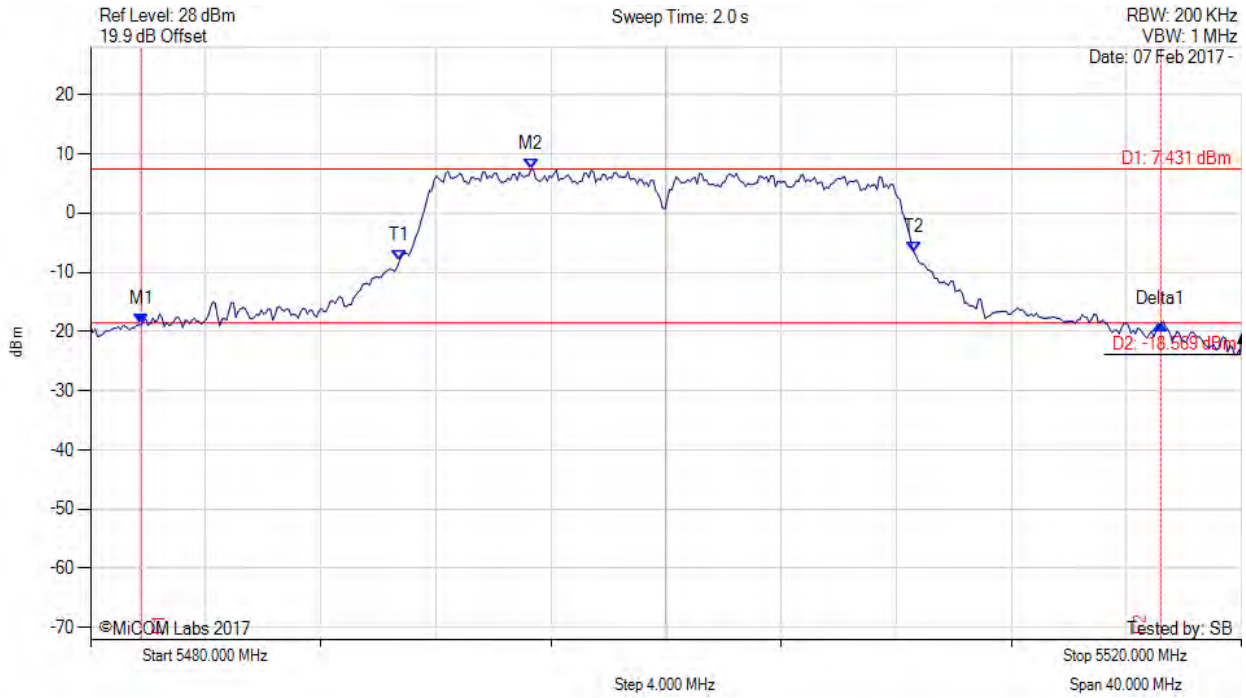



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5271.764 MHz : -18.855 dBm<br>M2 : 5304.469 MHz : 7.900 dBm<br>Delta1 : 76.313 MHz : 1.930 dB<br>T1 : 5291.162 MHz : -3.704 dBm<br>T2 : 5330.762 MHz : -13.972 dBm<br>OBW : 39.599 MHz | Measured 26 dB Bandwidth: 76.313 MHz<br>Measured 99% Bandwidth: 39.599 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

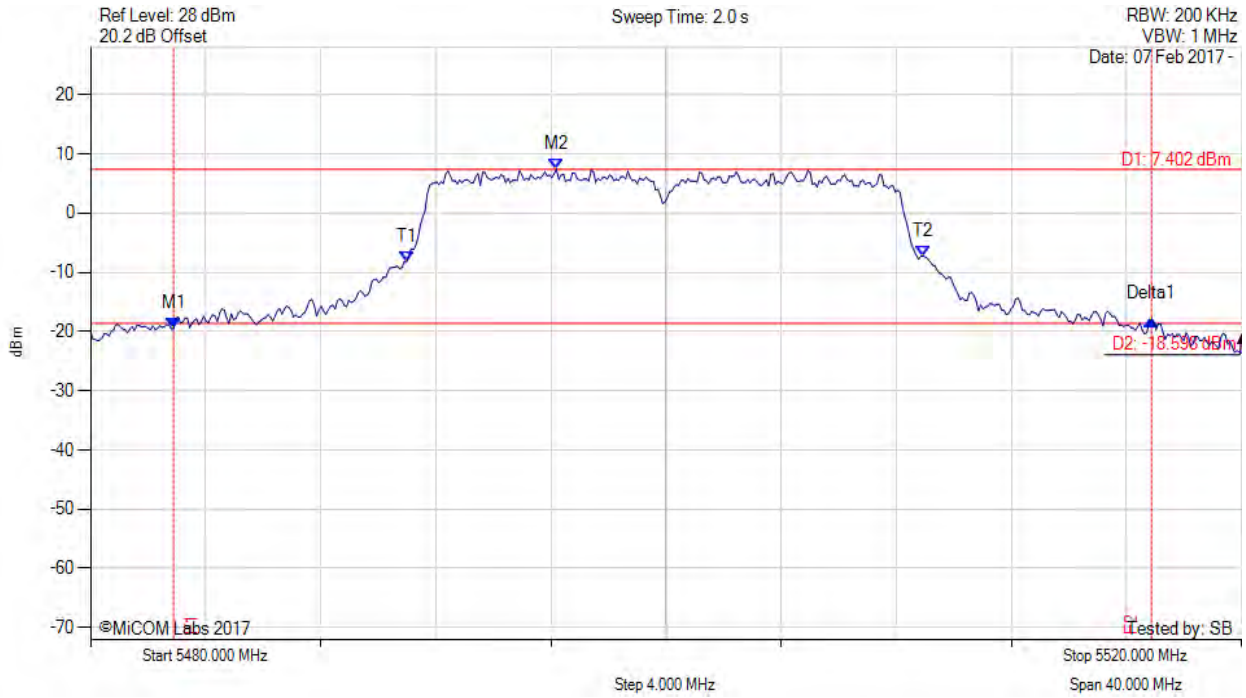



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5481.764 MHz : -18.862 dBm<br>M2 : 5495.311 MHz : 7.431 dBm<br>Delta1 : 35.431 MHz : 0.118 dB<br>T1 : 5490.741 MHz : -8.036 dBm<br>T2 : 5508.617 MHz : -6.622 dBm<br>OBW : 17.876 MHz | Measured 26 dB Bandwidth: 35.431 MHz<br>Measured 99% Bandwidth: 17.876 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

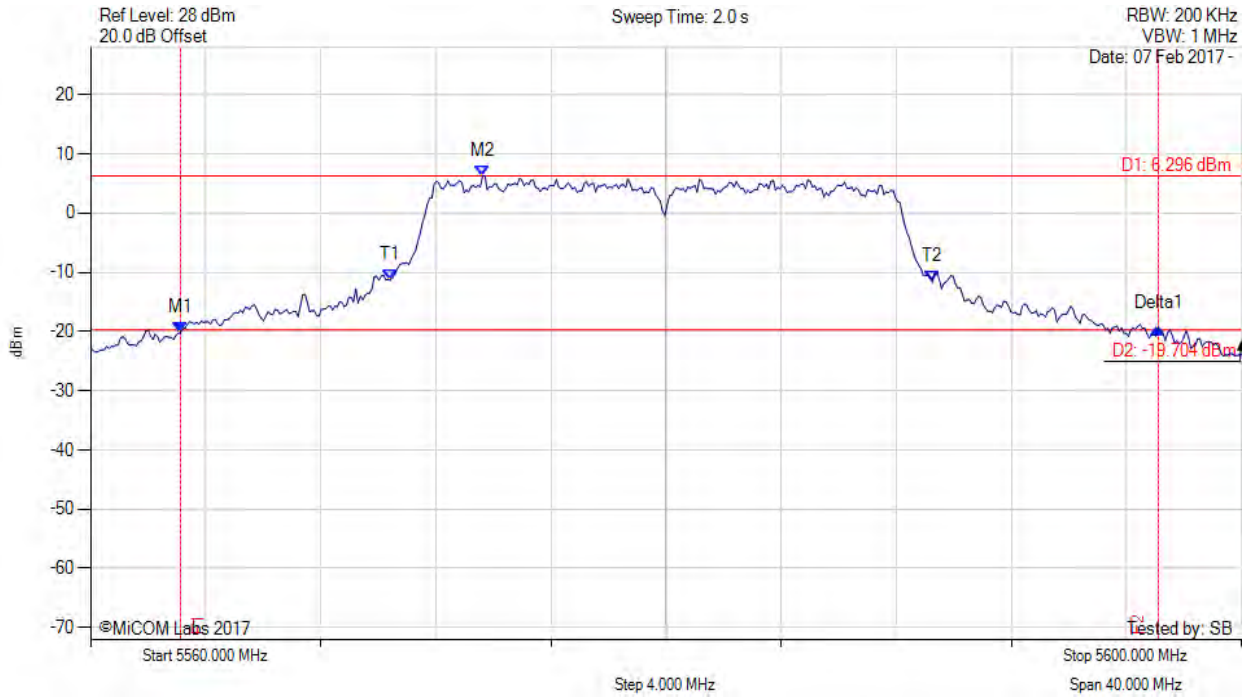



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5482.886 MHz : -19.569 dBm<br>M2 : 5496.192 MHz : 7.402 dBm<br>Delta1 : 33.988 MHz : 1.629 dB<br>T1 : 5490.982 MHz : -8.254 dBm<br>T2 : 5508.938 MHz : -7.255 dBm<br>OBW : 17.956 MHz | Measured 26 dB Bandwidth: 33.988 MHz<br>Measured 99% Bandwidth: 17.956 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

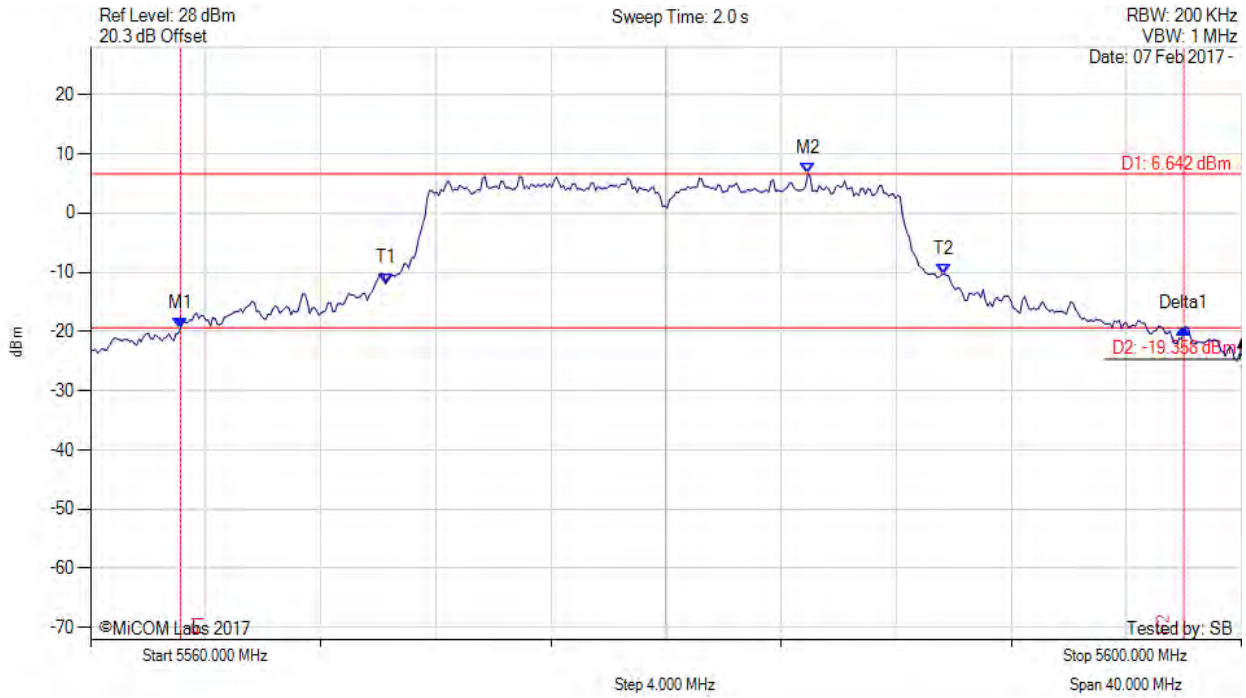



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5563.126 MHz : -20.245 dBm<br>M2 : 5573.627 MHz : 6.296 dBm<br>Delta1 : 33.988 MHz : 0.716 dB<br>T1 : 5570.421 MHz : -11.335 dBm<br>T2 : 5589.259 MHz : -11.628 dBm<br>OBW : 18.838 MHz | Measured 26 dB Bandwidth: 33.988 MHz<br>Measured 99% Bandwidth: 18.838 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

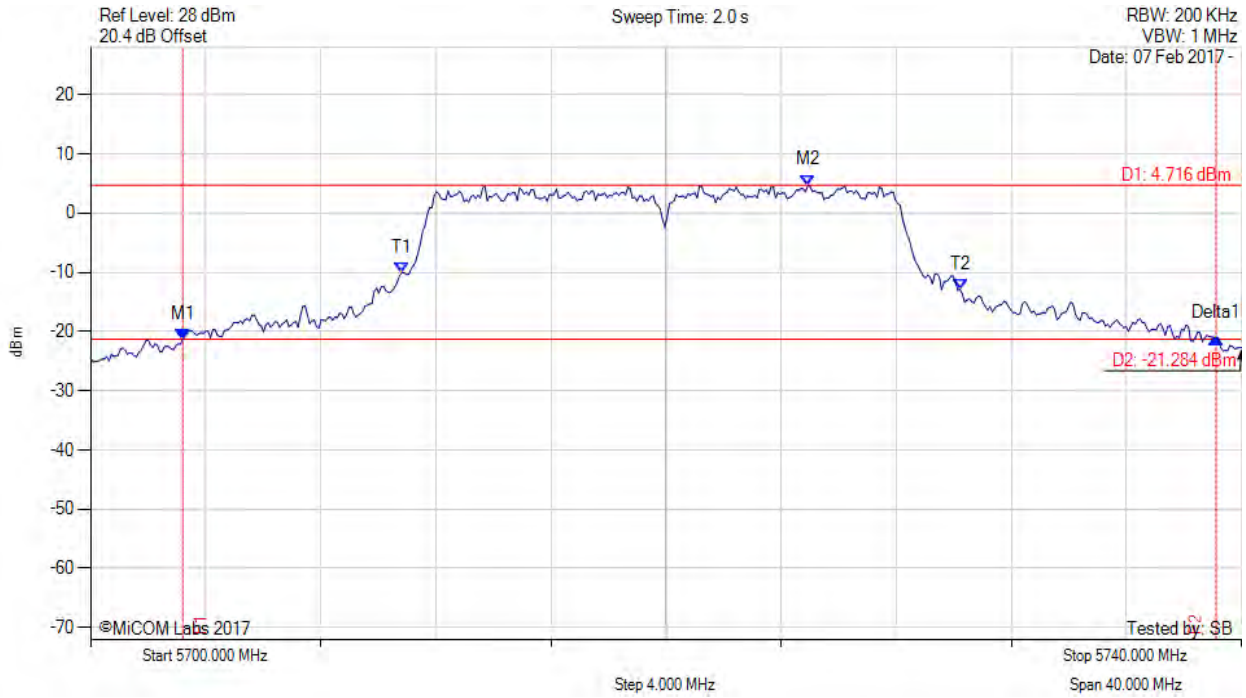



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5563.126 MHz : -19.429 dBm<br>M2 : 5584.930 MHz : 6.642 dBm<br>Delta1 : 34.870 MHz : -0.081 dB<br>T1 : 5570.261 MHz : -11.876 dBm<br>T2 : 5589.659 MHz : -10.263 dBm<br>OBW : 19.399 MHz | Measured 26 dB Bandwidth: 34.870 MHz<br>Measured 99% Bandwidth: 19.399 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

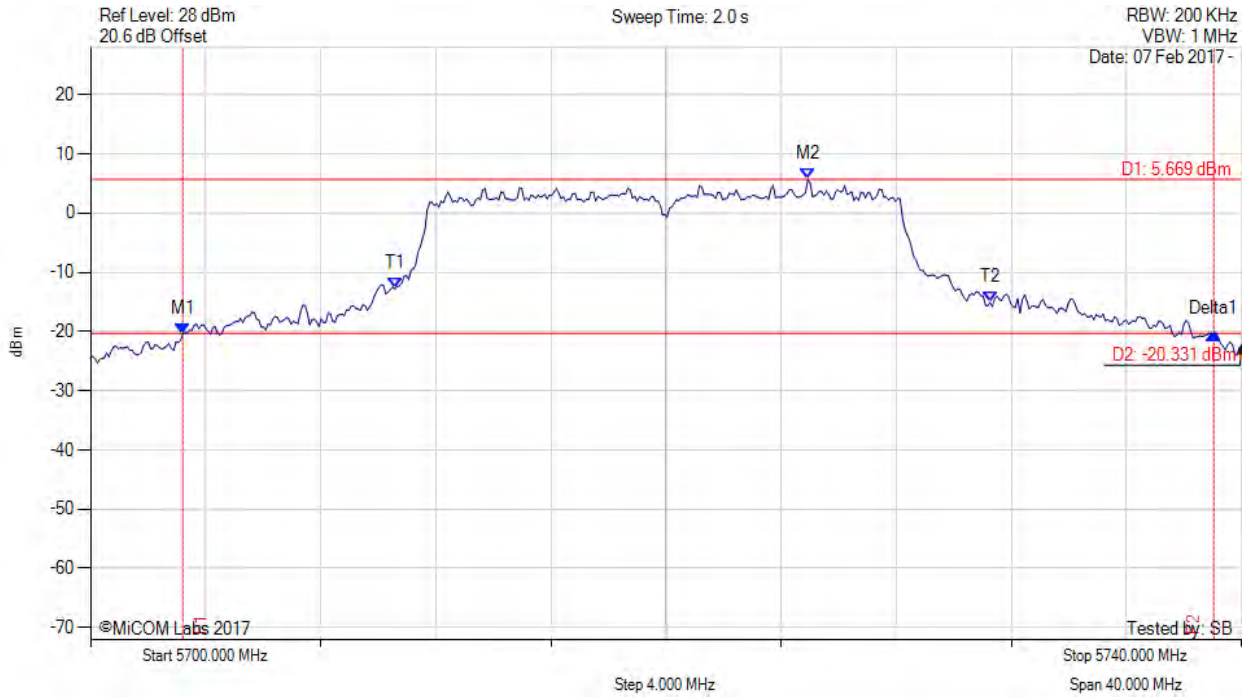



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5703.206 MHz : -21.316 dBm<br>M2 : 5724.930 MHz : 4.716 dBm<br>Delta1 : 35.912 MHz : 0.246 dB<br>T1 : 5710.822 MHz : -10.082 dBm<br>T2 : 5730.220 MHz : -12.907 dBm<br>OBW : 19.399 MHz | Measured 26 dB Bandwidth: 35.912 MHz<br>Measured 99% Bandwidth: 19.399 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

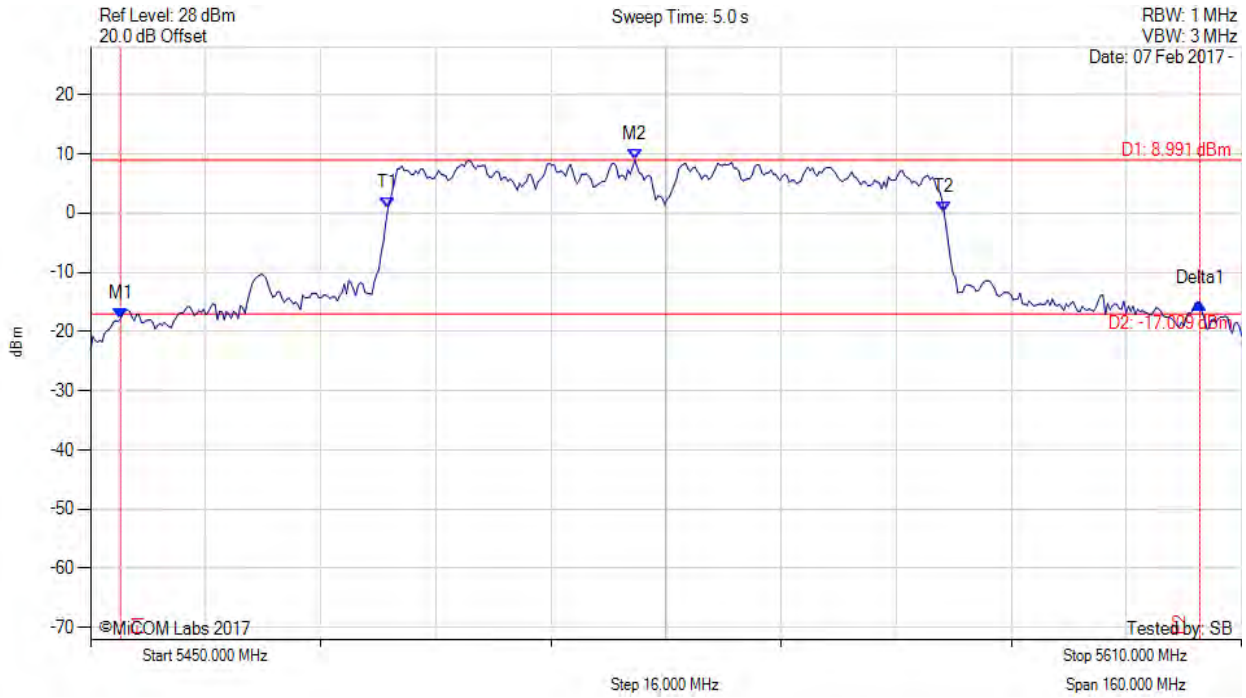



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5703.206 MHz : -20.350 dBm<br>M2 : 5724.930 MHz : 5.669 dBm<br>Delta1 : 35.832 MHz : -0.047 dB<br>T1 : 5710.581 MHz : -12.783 dBm<br>T2 : 5731.263 MHz : -15.103 dBm<br>OBW : 20.681 MHz | Measured 26 dB Bandwidth: 35.832 MHz<br>Measured 99% Bandwidth: 20.681 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

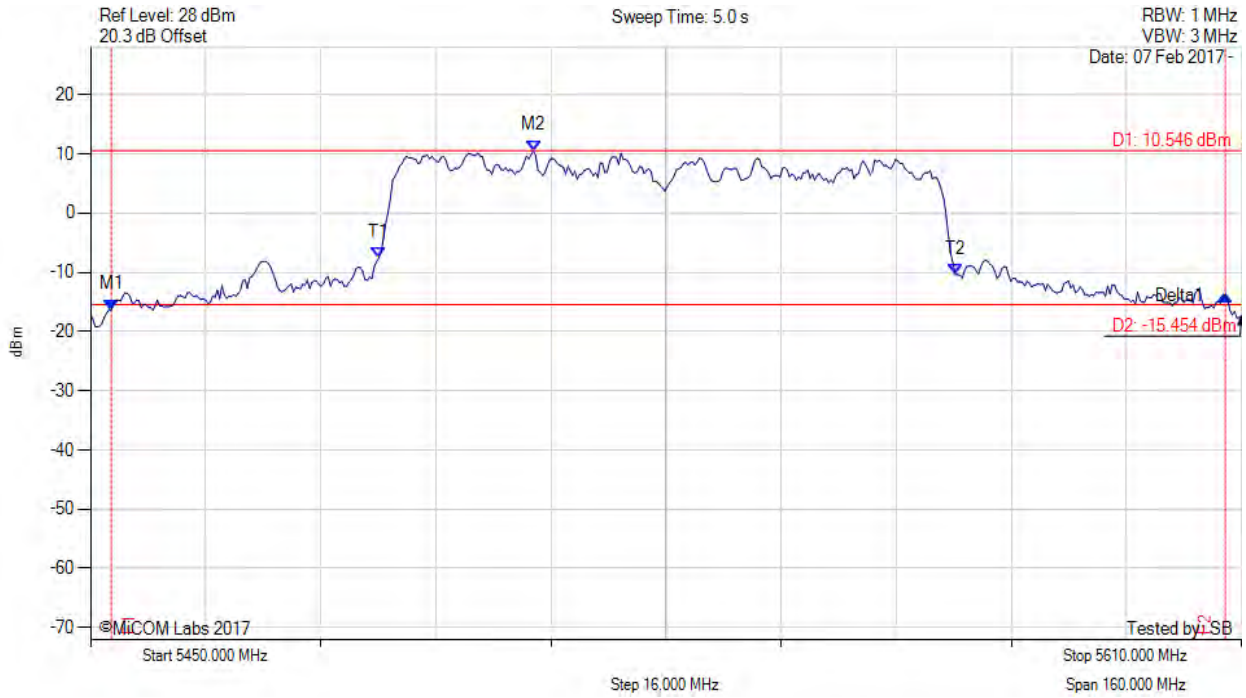



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5454.168 MHz : -17.820 dBm<br>M2 : 5525.671 MHz : 8.991 dBm<br>Delta1 : 150.060 MHz : 2.648 dB<br>T1 : 5491.363 MHz : 0.937 dBm<br>T2 : 5568.637 MHz : 0.193 dBm<br>OBW : 77.275 MHz | Measured 26 dB Bandwidth: 150.060 MHz<br>Measured 99% Bandwidth: 77.275 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

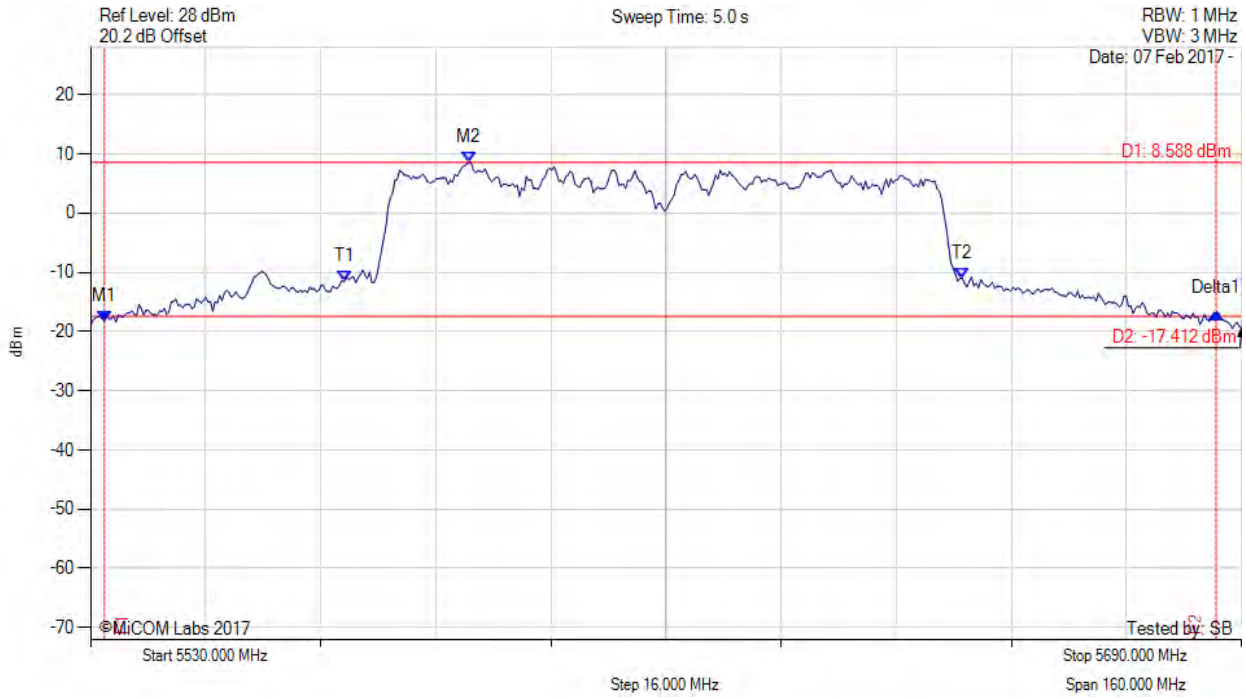



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5452.886 MHz : -16.317 dBm<br>M2 : 5511.563 MHz : 10.546 dBm<br>Delta1 : 154.870 MHz : 2.455 dB<br>T1 : 5490.080 MHz : -7.591 dBm<br>T2 : 5570.240 MHz : -10.401 dBm<br>OBW : 80.160 MHz | Measured 26 dB Bandwidth: 154.870 MHz<br>Measured 99% Bandwidth: 80.160 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

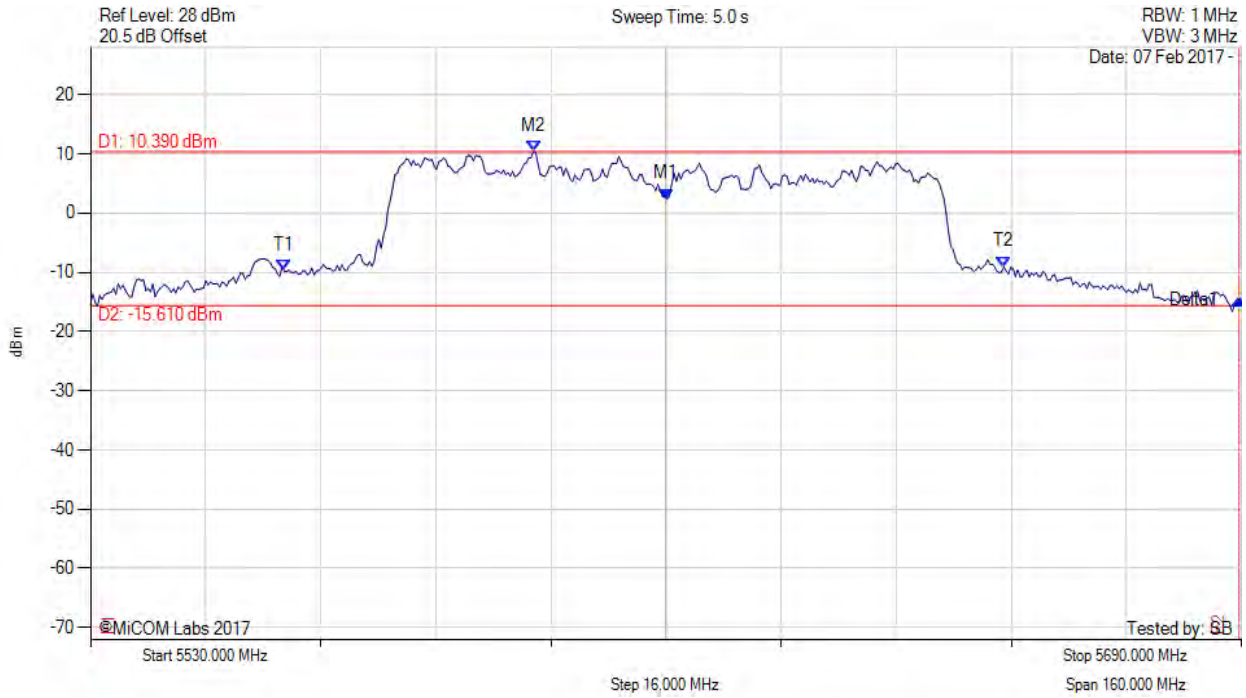



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5531.924 MHz : -18.217 dBm<br>M2 : 5582.585 MHz : 8.588 dBm<br>Delta1 : 154.549 MHz : 1.407 dB<br>T1 : 5565.271 MHz : -11.597 dBm<br>T2 : 5651.202 MHz : -11.024 dBm<br>OBW : 85.932 MHz | Measured 26 dB Bandwidth: 154.549 MHz<br>Measured 99% Bandwidth: 85.932 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

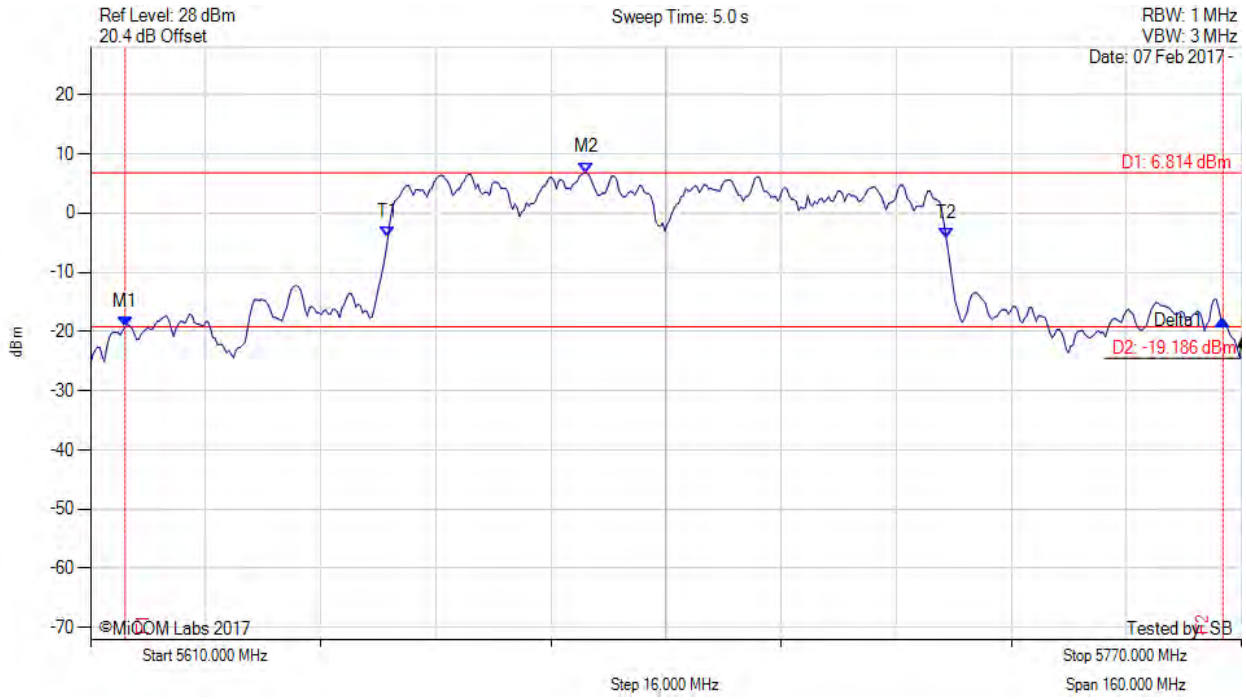



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5610.000 MHz : 2.371 dBm<br>M2 : 5591.563 MHz : 10.390 dBm<br>Delta1 : 79.679 MHz : -16.925 dB<br>T1 : 5556.934 MHz : -9.746 dBm<br>T2 : 5656.974 MHz : -9.069 dBm<br>OBW : 100.040 MHz | Measured 26 dB Bandwidth: 79.679 MHz<br>Measured 99% Bandwidth: 100.040 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

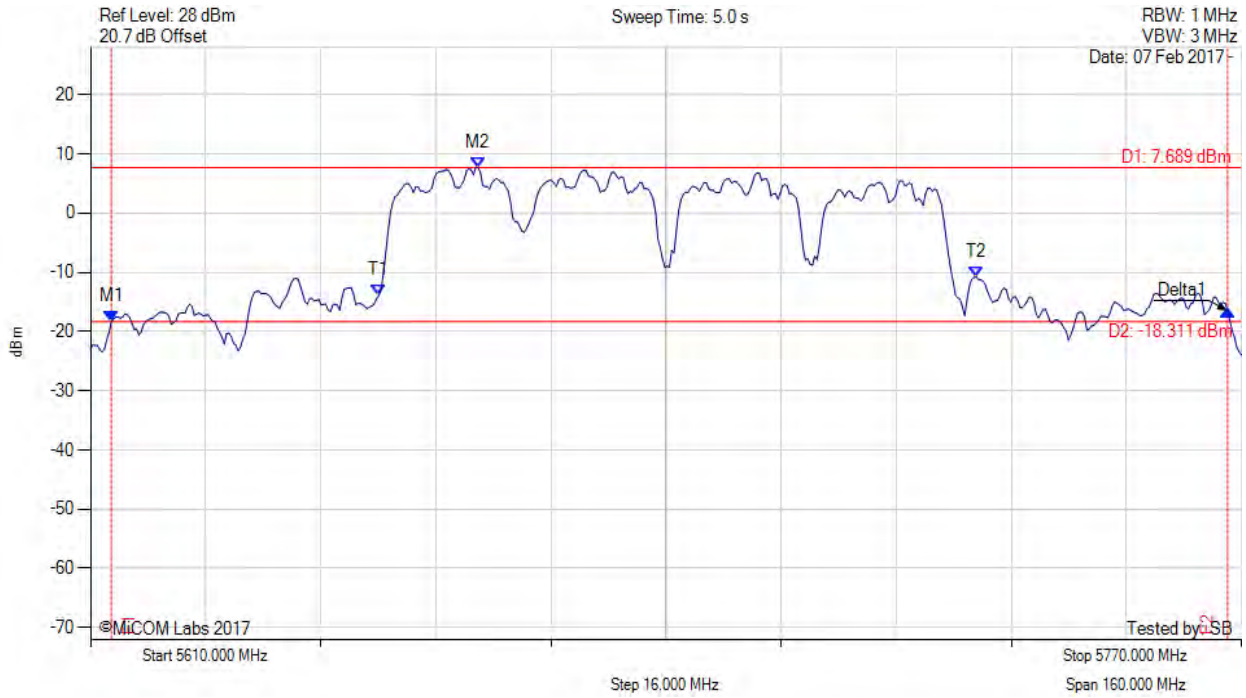



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5614.810 MHz : -19.220 dBm<br>M2 : 5678.938 MHz : 6.814 dBm<br>Delta1 : 152.625 MHz : 1.139 dB<br>T1 : 5651.363 MHz : -4.017 dBm<br>T2 : 5728.958 MHz : -4.200 dBm<br>OBW : 77.595 MHz | Measured 26 dB Bandwidth: 152.625 MHz<br>Measured 99% Bandwidth: 77.595 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

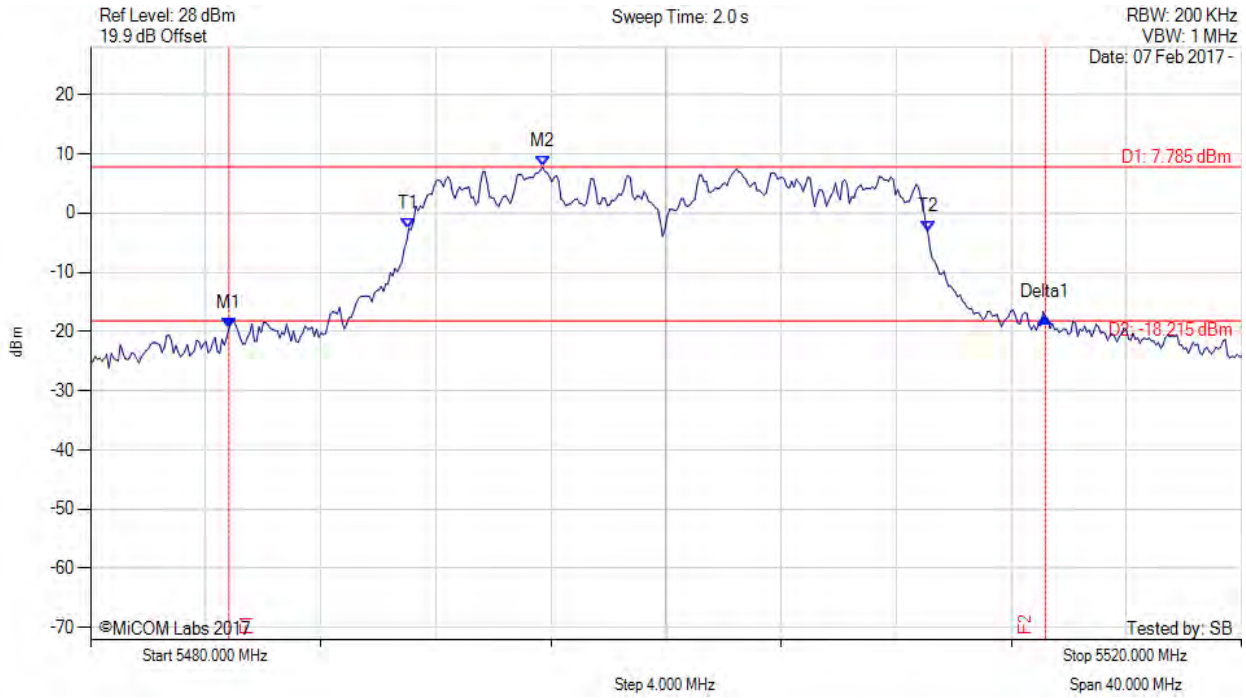



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5612.886 MHz : -18.373 dBm<br>M2 : 5663.868 MHz : 7.689 dBm<br>Delta1 : 155.190 MHz : 1.869 dB<br>T1 : 5650.080 MHz : -13.930 dBm<br>T2 : 5733.126 MHz : -10.814 dBm<br>OBW : 83.046 MHz | Measured 26 dB Bandwidth: 155.190 MHz<br>Measured 99% Bandwidth: 83.046 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5484.810 MHz : -19.419 dBm<br>M2 : 5495.711 MHz : 7.785 dBm<br>Delta1 : 28.377 MHz : 1.843 dB<br>T1 : 5491.062 MHz : -2.671 dBm<br>T2 : 5509.098 MHz : -3.206 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 28.377 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

back to matrix

26 dB & 99% BANDWIDTH

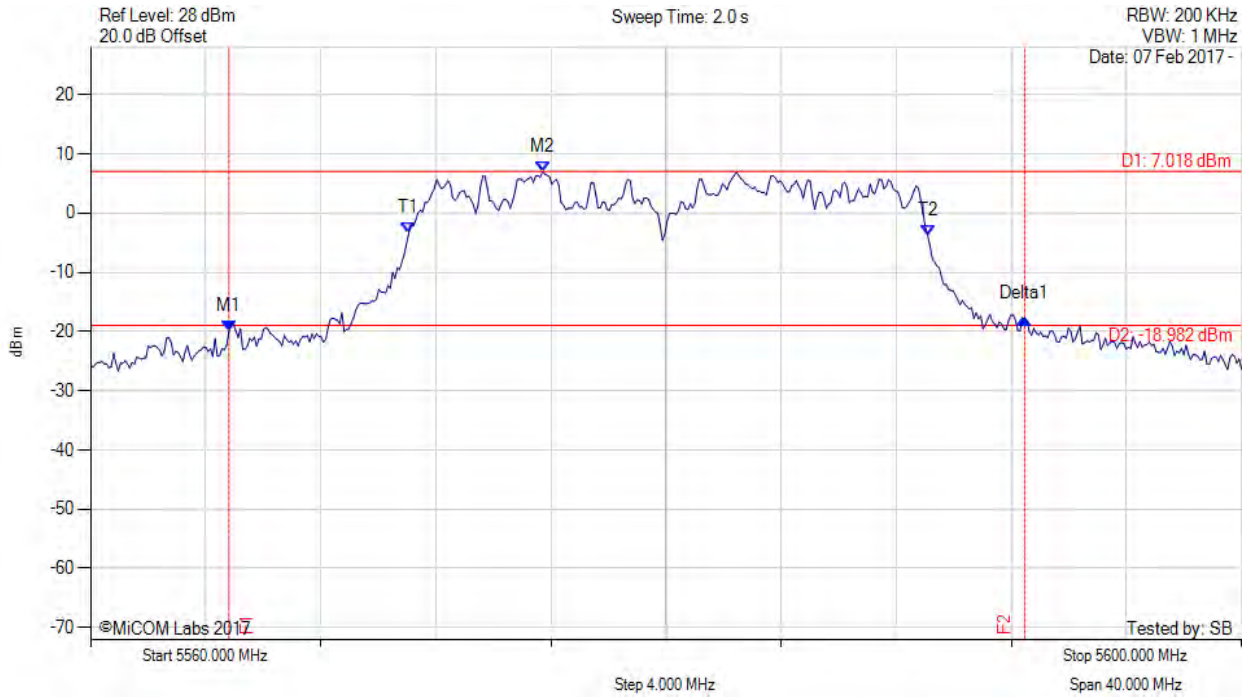
Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5484.810 MHz : -19.057 dBm<br>M2 : 5504.930 MHz : 7.362 dBm<br>Delta1 : 31.343 MHz : 0.931 dB<br>T1 : 5490.822 MHz : -2.929 dBm<br>T2 : 5508.938 MHz : -2.789 dBm<br>OBW : 18.116 MHz | Measured 26 dB Bandwidth: 31.343 MHz<br>Measured 99% Bandwidth: 18.116 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

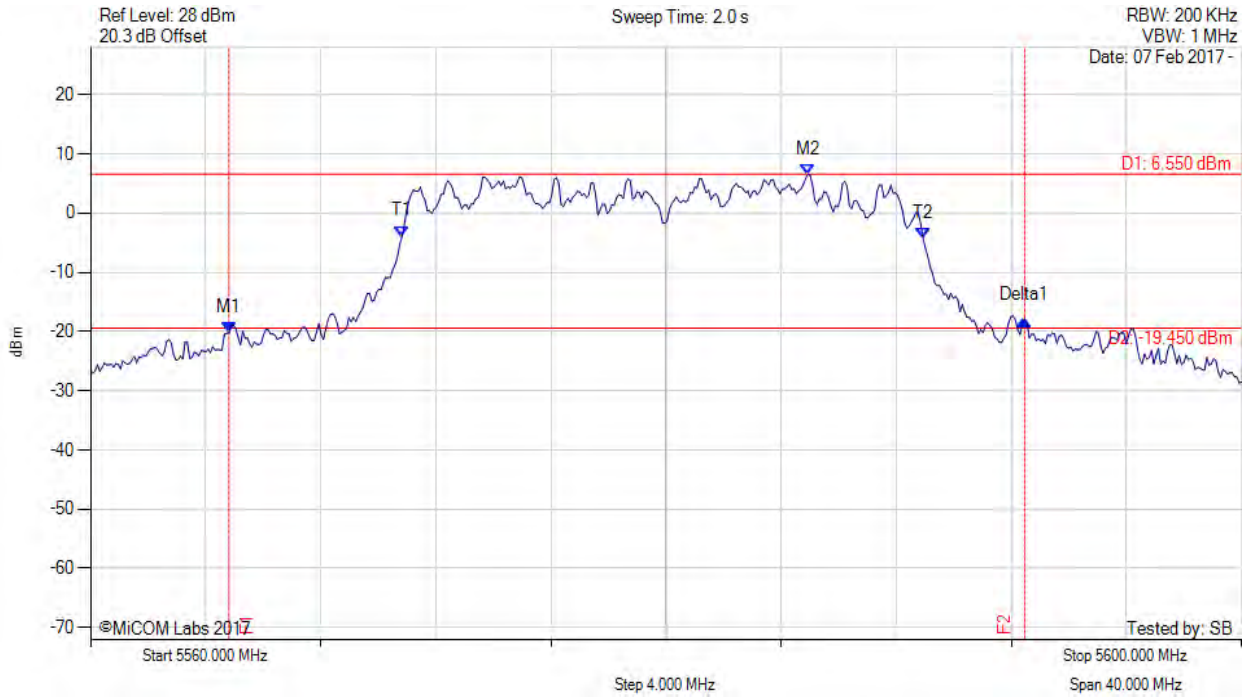



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5564.810 MHz : -19.889 dBm<br>M2 : 5575.711 MHz : 7.018 dBm<br>Delta1 : 27.655 MHz : 2.054 dB<br>T1 : 5571.062 MHz : -3.375 dBm<br>T2 : 5589.098 MHz : -3.820 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 27.655 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

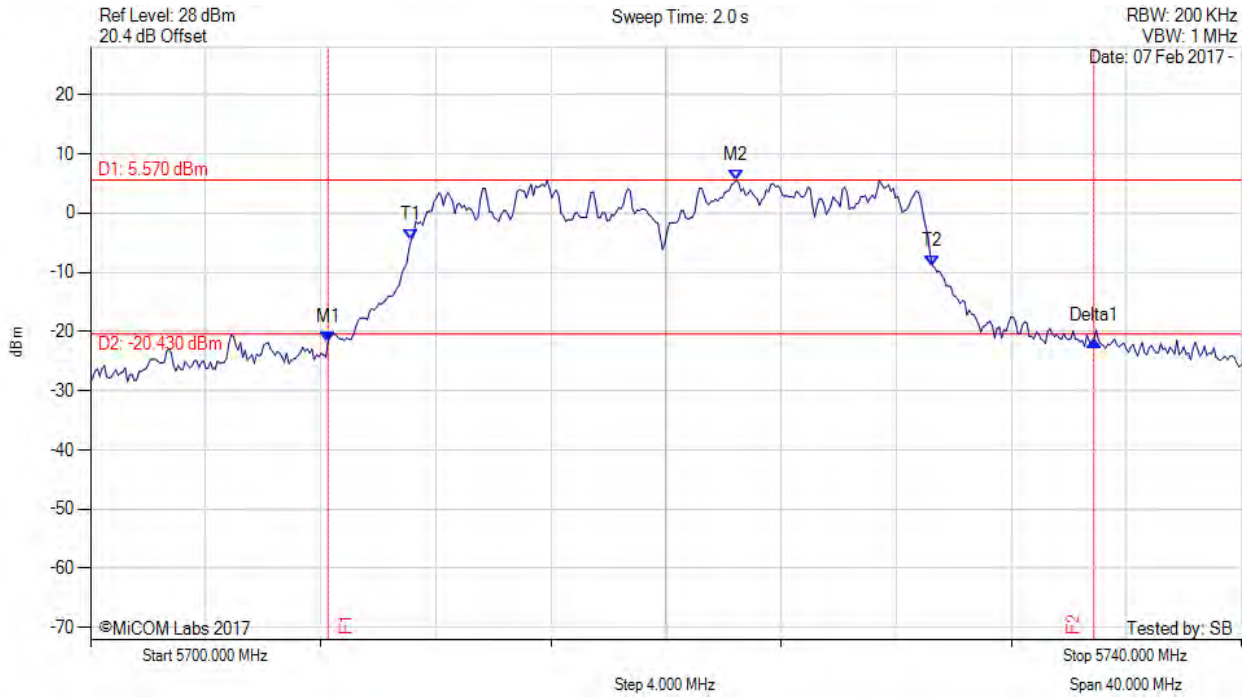



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5564.810 MHz : -20.212 dBm<br>M2 : 5584.930 MHz : 6.550 dBm<br>Delta1 : 27.655 MHz : 2.207 dB<br>T1 : 5570.822 MHz : -3.936 dBm<br>T2 : 5588.938 MHz : -4.249 dBm<br>OBW : 18.116 MHz | Measured 26 dB Bandwidth: 27.655 MHz<br>Measured 99% Bandwidth: 18.116 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

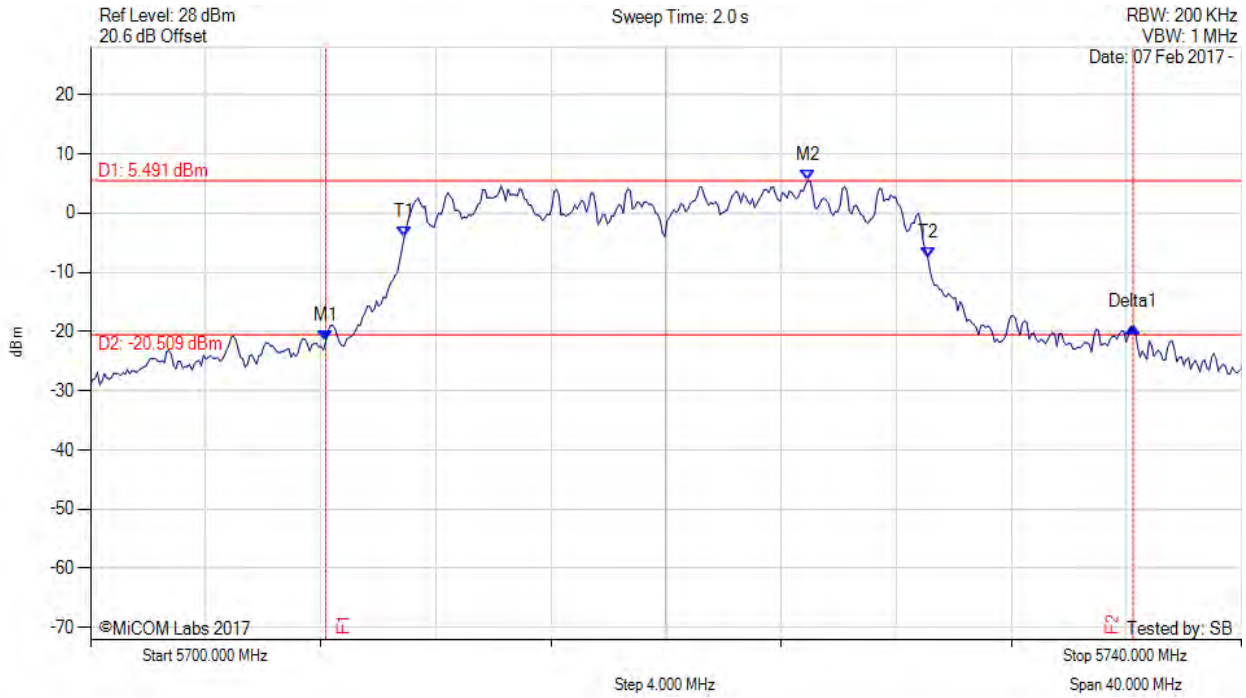



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5708.257 MHz : -21.731 dBm<br>M2 : 5722.445 MHz : 5.570 dBm<br>Delta1 : 26.613 MHz : 0.181 dB<br>T1 : 5711.142 MHz : -4.475 dBm<br>T2 : 5729.259 MHz : -8.908 dBm<br>OBW : 18.116 MHz | Measured 26 dB Bandwidth: 26.613 MHz<br>Measured 99% Bandwidth: 18.116 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

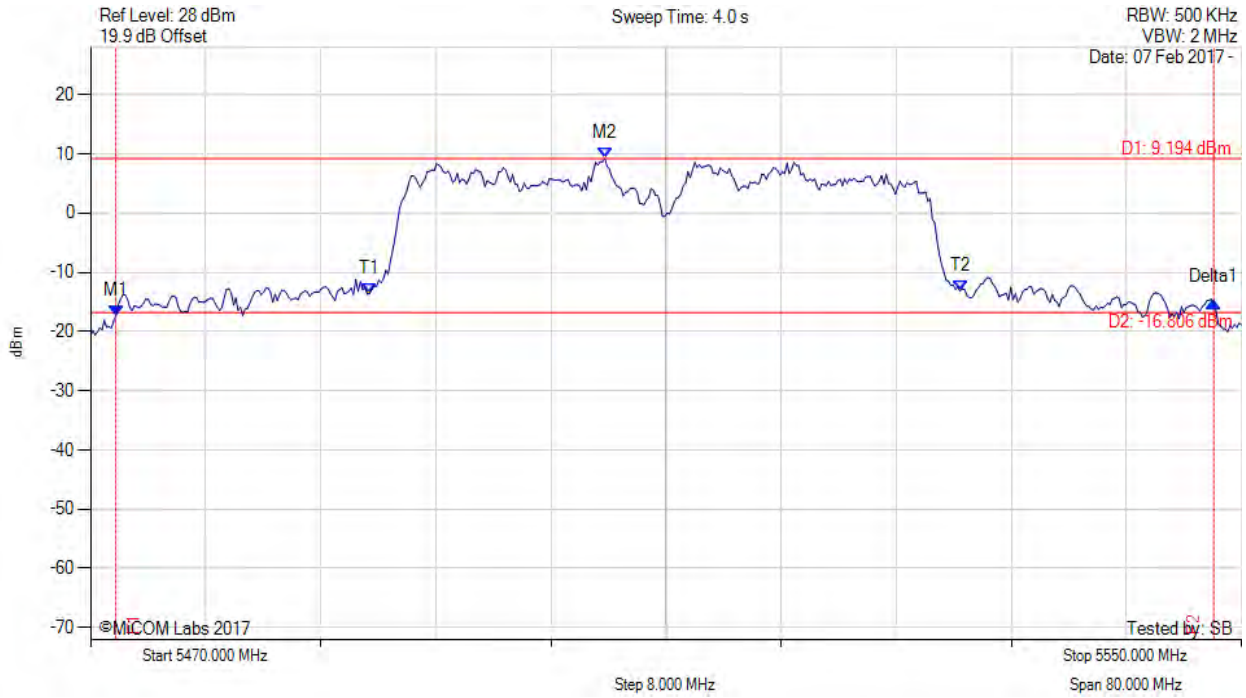



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5708.176 MHz : -21.640 dBm<br>M2 : 5724.930 MHz : 5.491 dBm<br>Delta1 : 28.056 MHz : 2.323 dB<br>T1 : 5710.902 MHz : -4.123 dBm<br>T2 : 5729.098 MHz : -7.511 dBm<br>OBW : 18.196 MHz | Measured 26 dB Bandwidth: 28.056 MHz<br>Measured 99% Bandwidth: 18.196 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

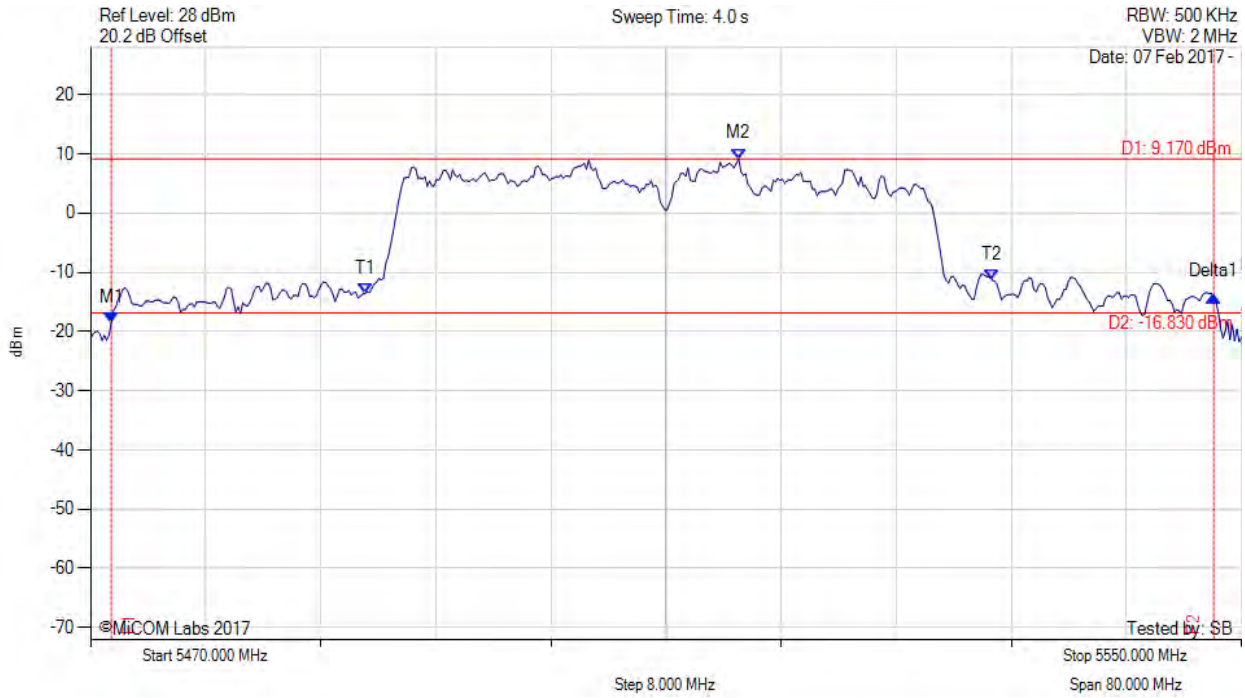



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5471.764 MHz : -17.363 dBm<br>M2 : 5505.752 MHz : 9.194 dBm<br>Delta1 : 76.313 MHz : 2.404 dB<br>T1 : 5489.399 MHz : -13.564 dBm<br>T2 : 5530.441 MHz : -13.147 dBm<br>OBW : 41.042 MHz | Measured 26 dB Bandwidth: 76.313 MHz<br>Measured 99% Bandwidth: 41.042 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

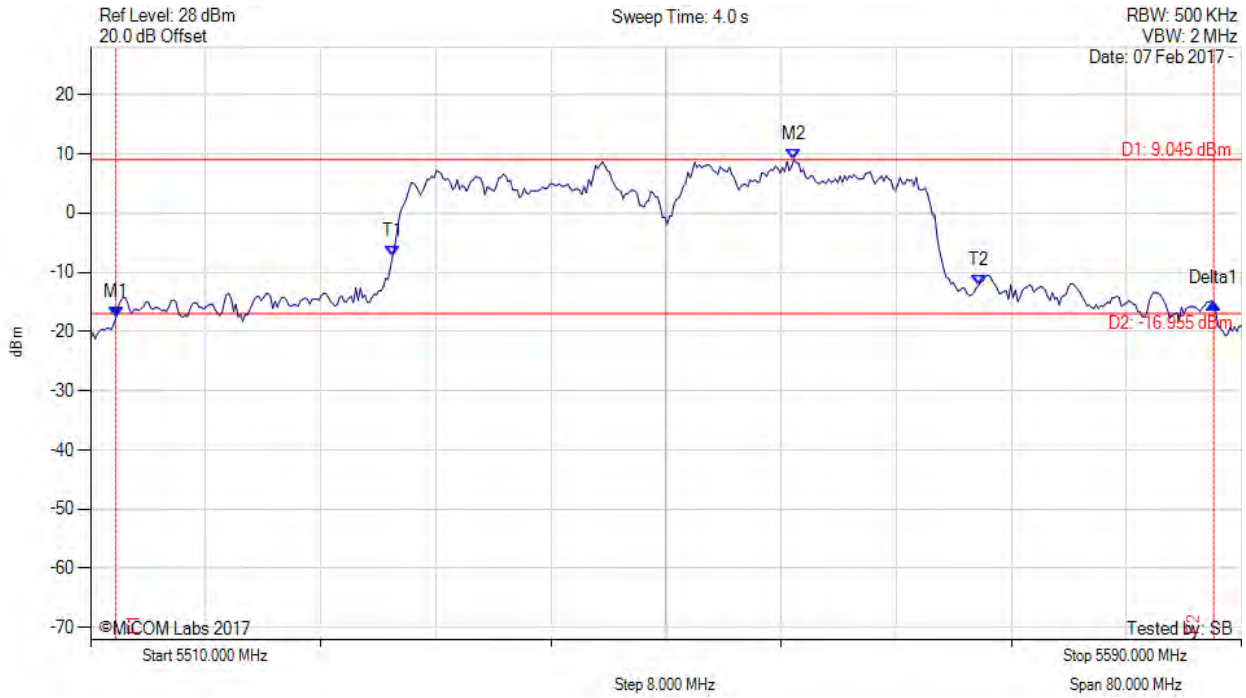



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5471.443 MHz : -18.563 dBm<br>M2 : 5515.050 MHz : 9.170 dBm<br>Delta1 : 76.633 MHz : 4.511 dB<br>T1 : 5489.078 MHz : -13.541 dBm<br>T2 : 5532.685 MHz : -11.296 dBm<br>OBW : 43.607 MHz | Measured 26 dB Bandwidth: 76.633 MHz<br>Measured 99% Bandwidth: 43.607 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

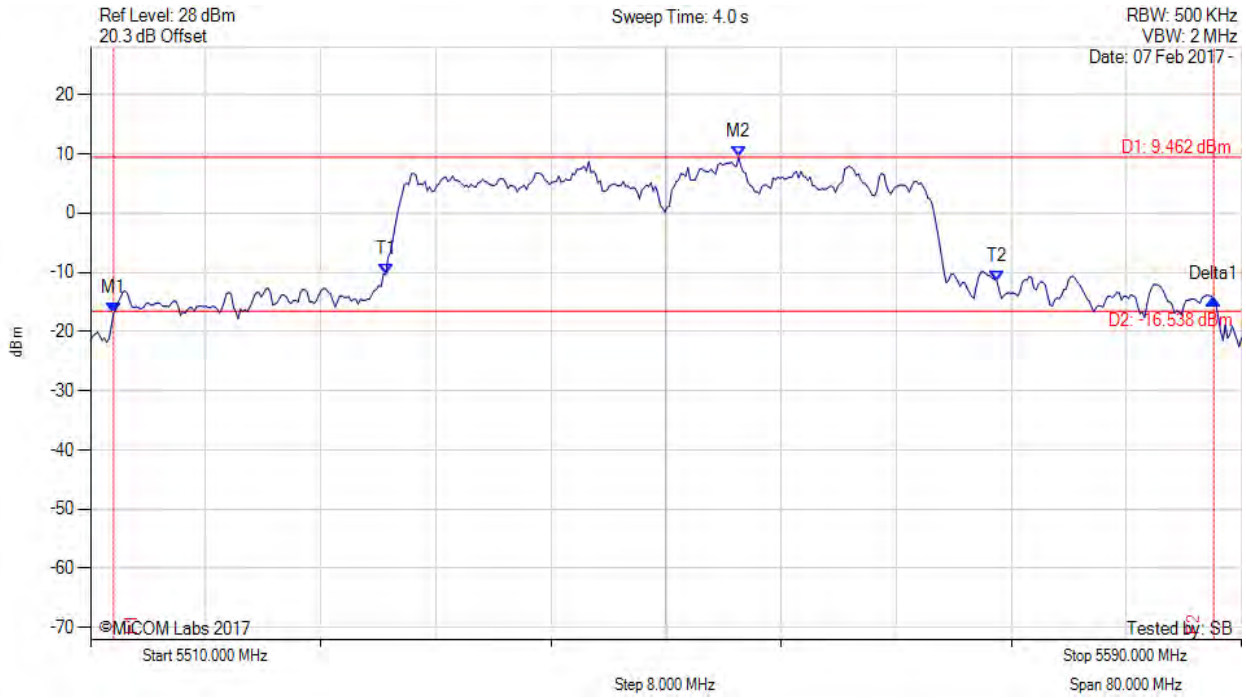



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5511.764 MHz : -17.643 dBm<br>M2 : 5558.898 MHz : 9.045 dBm<br>Delta1 : 76.313 MHz : 2.473 dB<br>T1 : 5531.002 MHz : -7.259 dBm<br>T2 : 5571.723 MHz : -12.252 dBm<br>OBW : 40.721 MHz | Measured 26 dB Bandwidth: 76.313 MHz<br>Measured 99% Bandwidth: 40.721 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

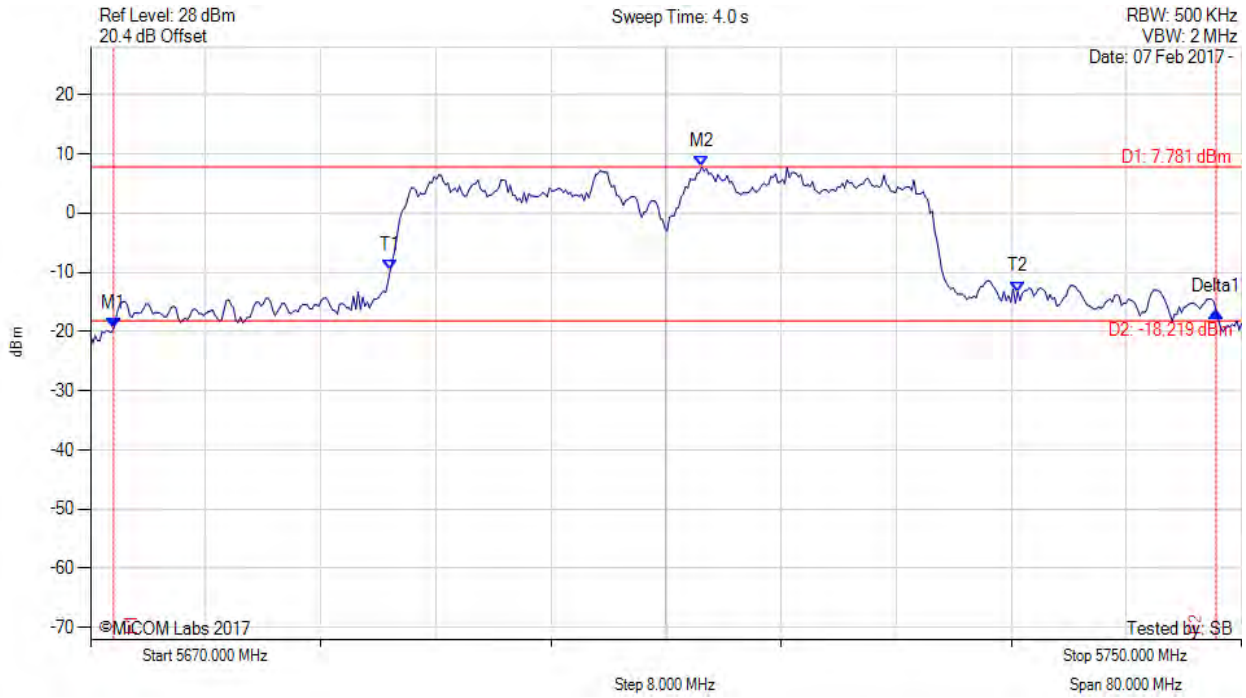



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5511.603 MHz : -16.828 dBm<br>M2 : 5555.050 MHz : 9.462 dBm<br>Delta1 : 76.473 MHz : 2.339 dB<br>T1 : 5530.521 MHz : -10.363 dBm<br>T2 : 5573.006 MHz : -11.518 dBm<br>OBW : 42.485 MHz | Measured 26 dB Bandwidth: 76.473 MHz<br>Measured 99% Bandwidth: 42.485 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

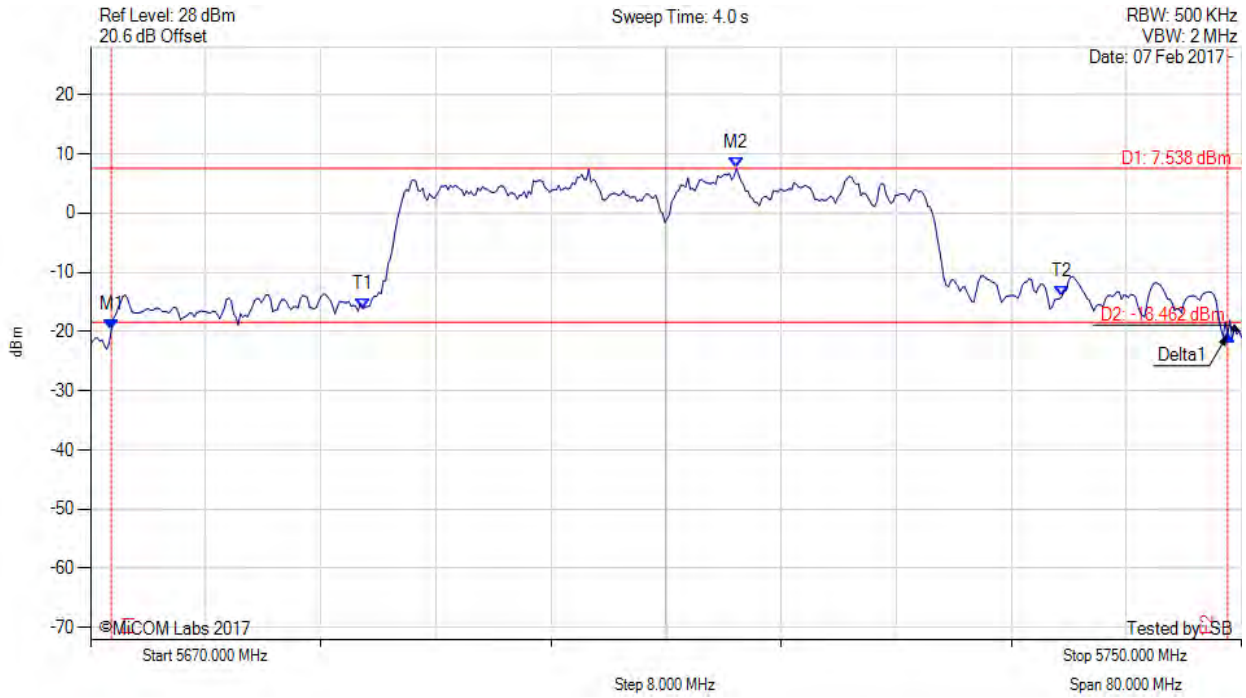



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5671.603 MHz : -19.486 dBm<br>M2 : 5712.485 MHz : 7.781 dBm<br>Delta1 : 76.633 MHz : 2.900 dB<br>T1 : 5690.842 MHz : -9.612 dBm<br>T2 : 5734.449 MHz : -13.281 dBm<br>OBW : 43.607 MHz | Measured 26 dB Bandwidth: 76.633 MHz<br>Measured 99% Bandwidth: 43.607 MHz |

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac



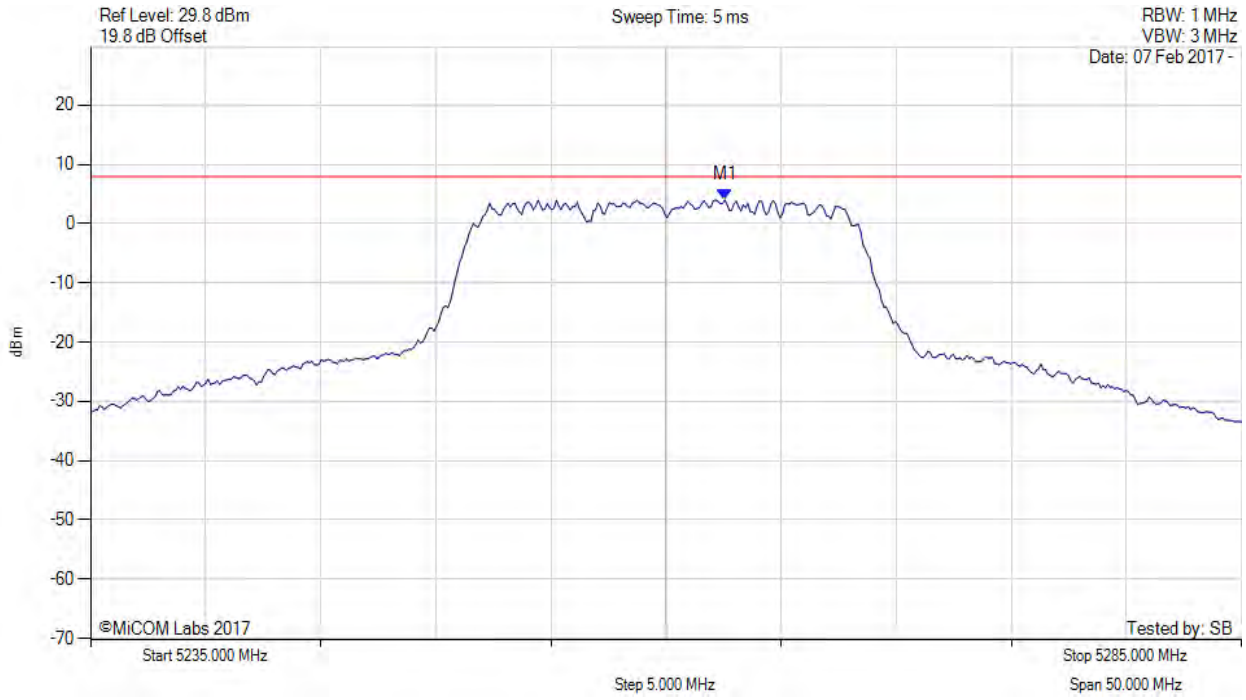

| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5671.443 MHz : -19.760 dBm<br>M2 : 5714.890 MHz : 7.538 dBm<br>Delta1 : 77.595 MHz : -0.801 dB<br>T1 : 5688.918 MHz : -16.136 dBm<br>T2 : 5737.495 MHz : -14.180 dBm<br>OBW : 48.577 MHz | Measured 26 dB Bandwidth: 77.595 MHz<br>Measured 99% Bandwidth: 48.577 MHz |

back to matrix

## A.2. Power Spectral Density

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

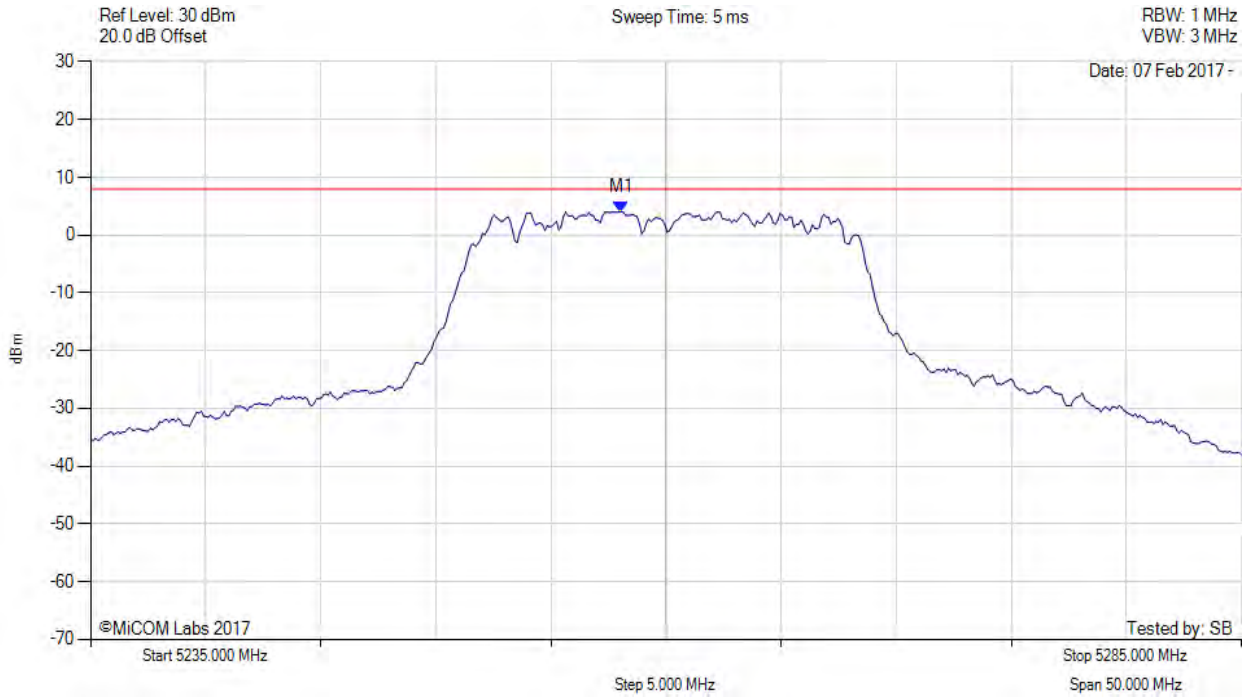



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5262.555 MHz : 4.021 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

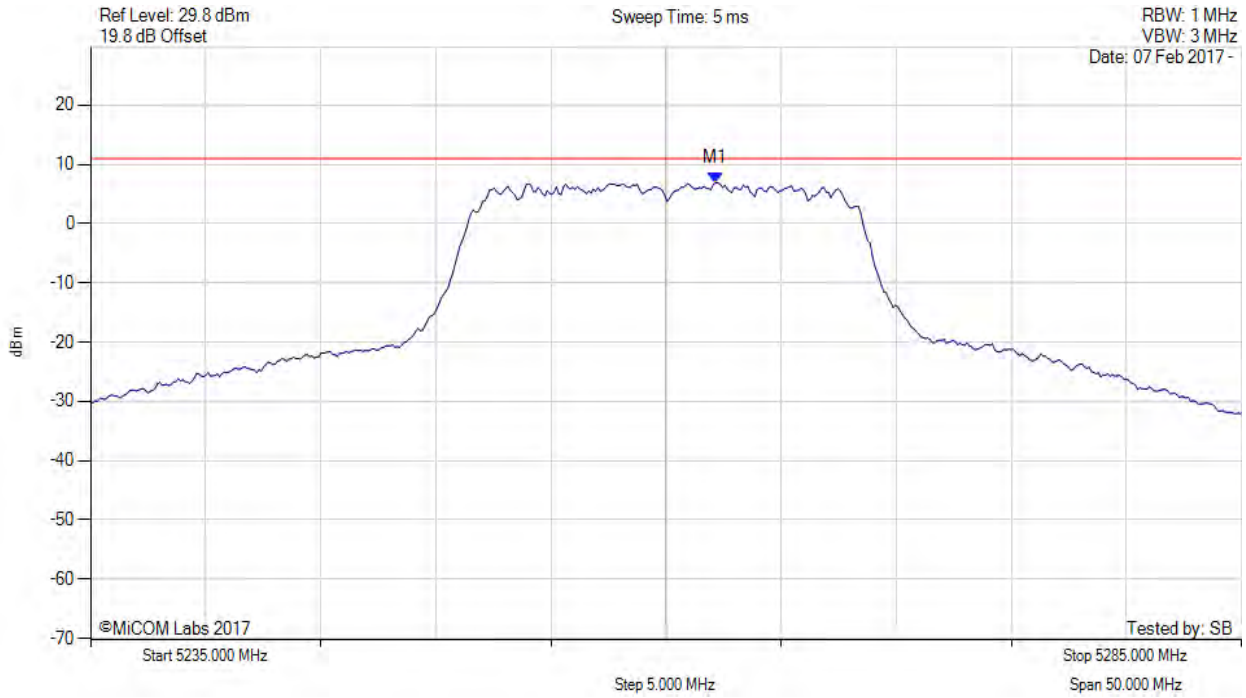



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = AVERAGE | M1 : 5258.046 MHz : 4.007 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5260.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

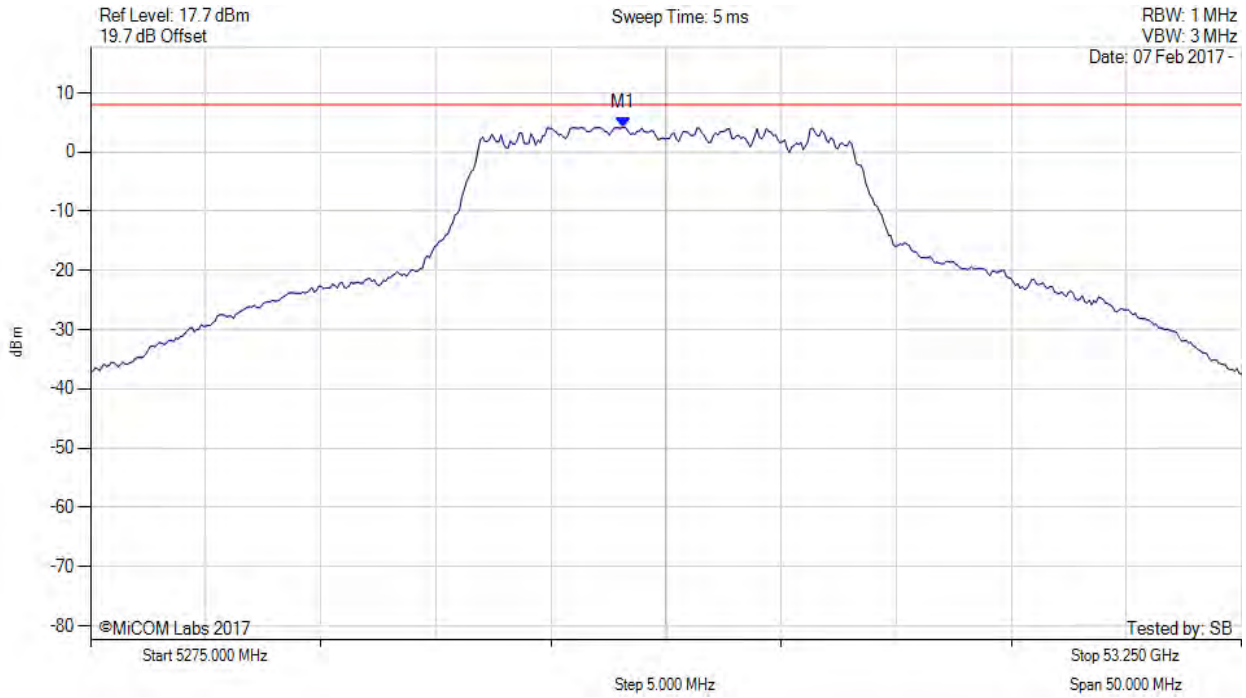



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5262.200 MHz : 6.955 dBm<br>M1 + DCCF : 5262.200 MHz : 6.999 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -4.0 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

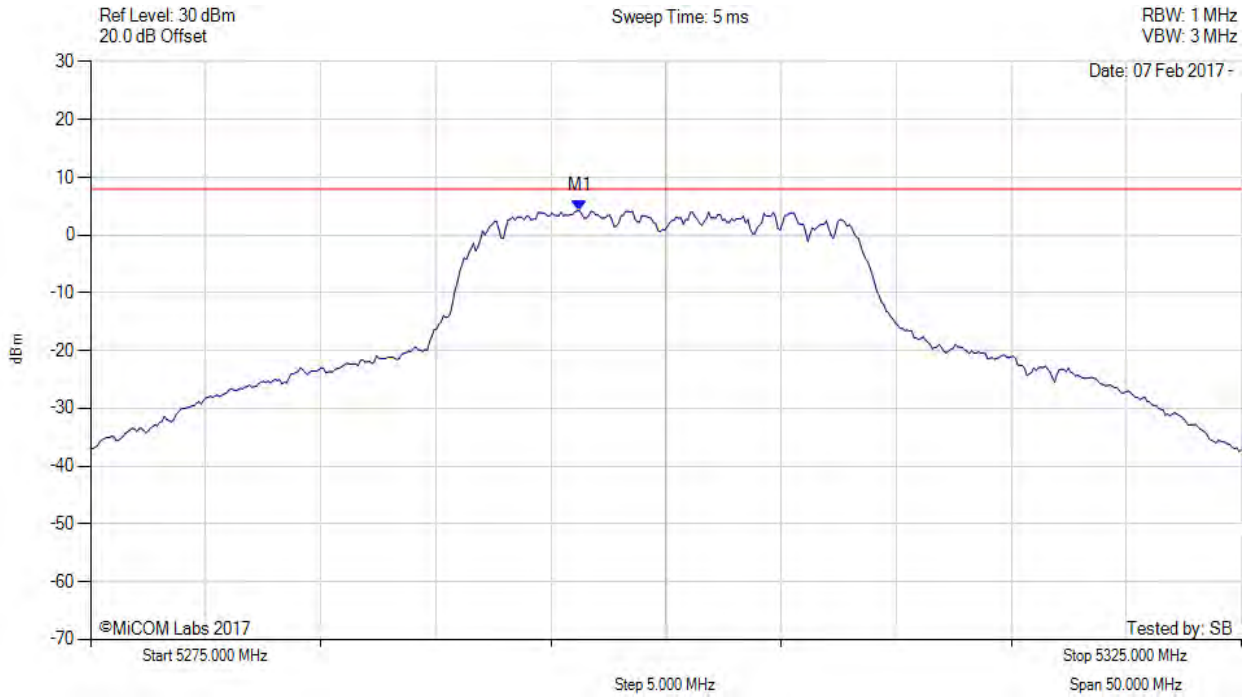



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5298.146 MHz : 4.161 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

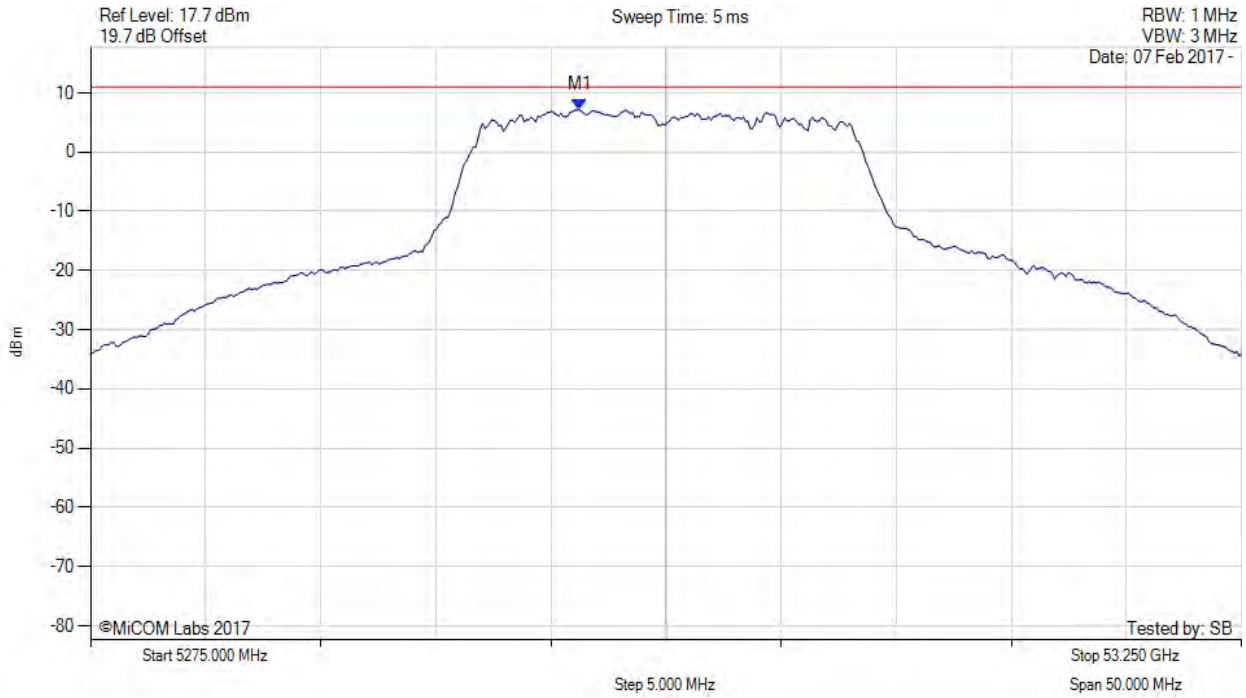



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5296.242 MHz : 4.199 dBm | Channel Frequency: 5300.00 MHz |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5300.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

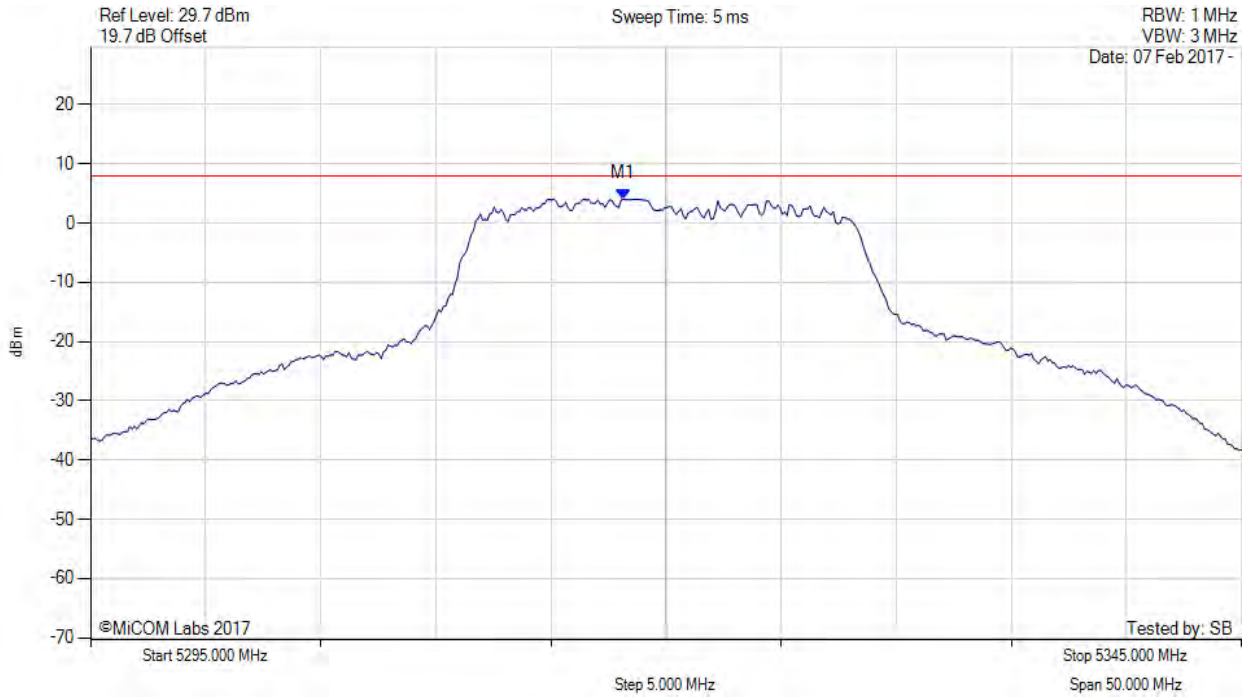



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5296.200 MHz : 7.145 dBm<br>M1 + DCCF : 5296.200 MHz : 7.189 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -3.8 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

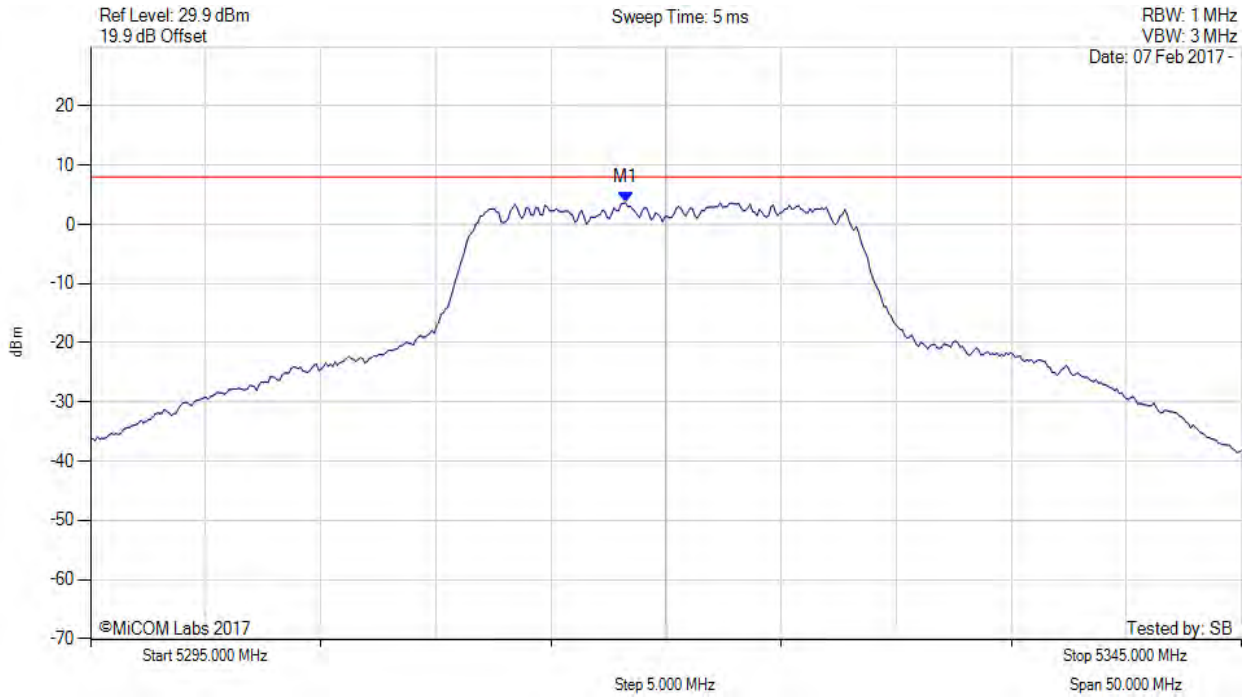



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5318.146 MHz : 4.071 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

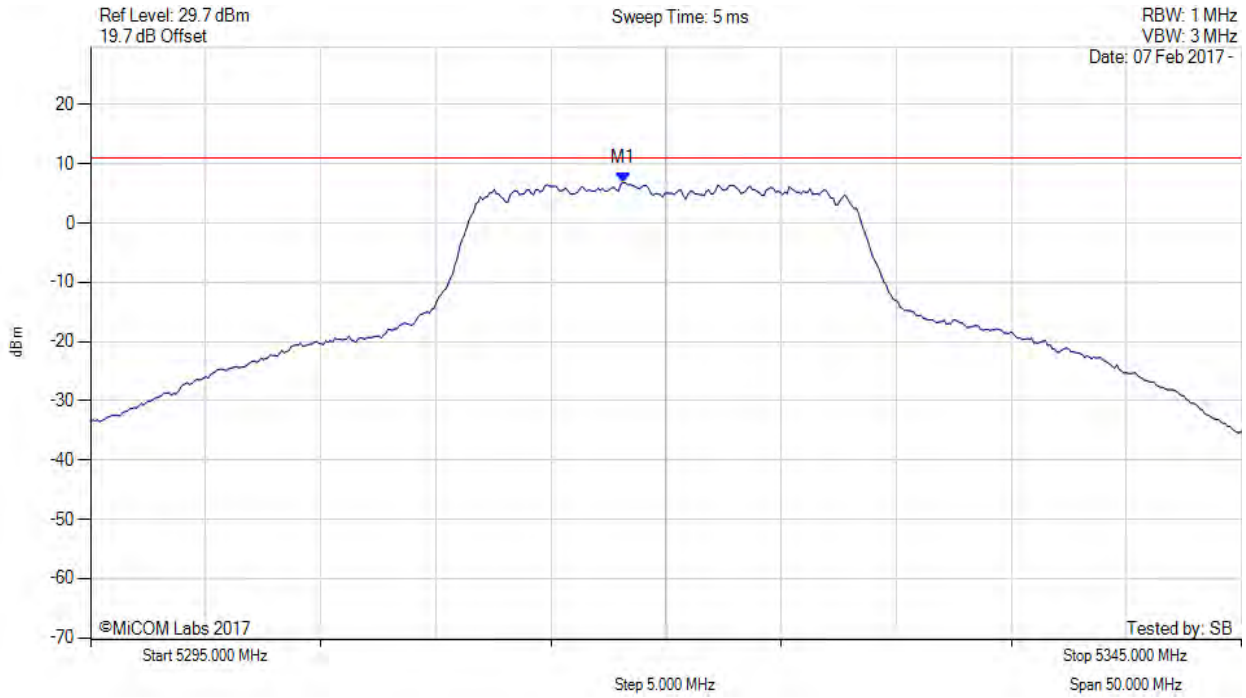



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5318.246 MHz : 3.628 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5320.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

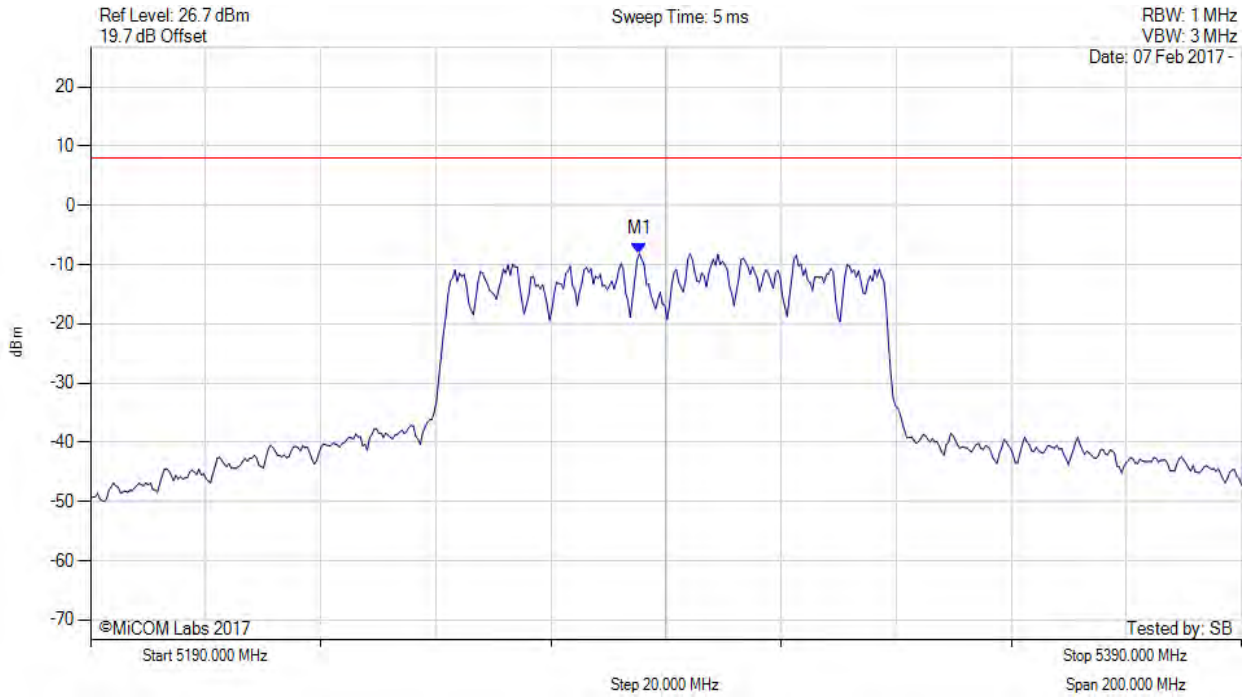



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5318.100 MHz : 6.845 dBm<br>M1 + DCCF : 5318.100 MHz : 6.889 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -4.1 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

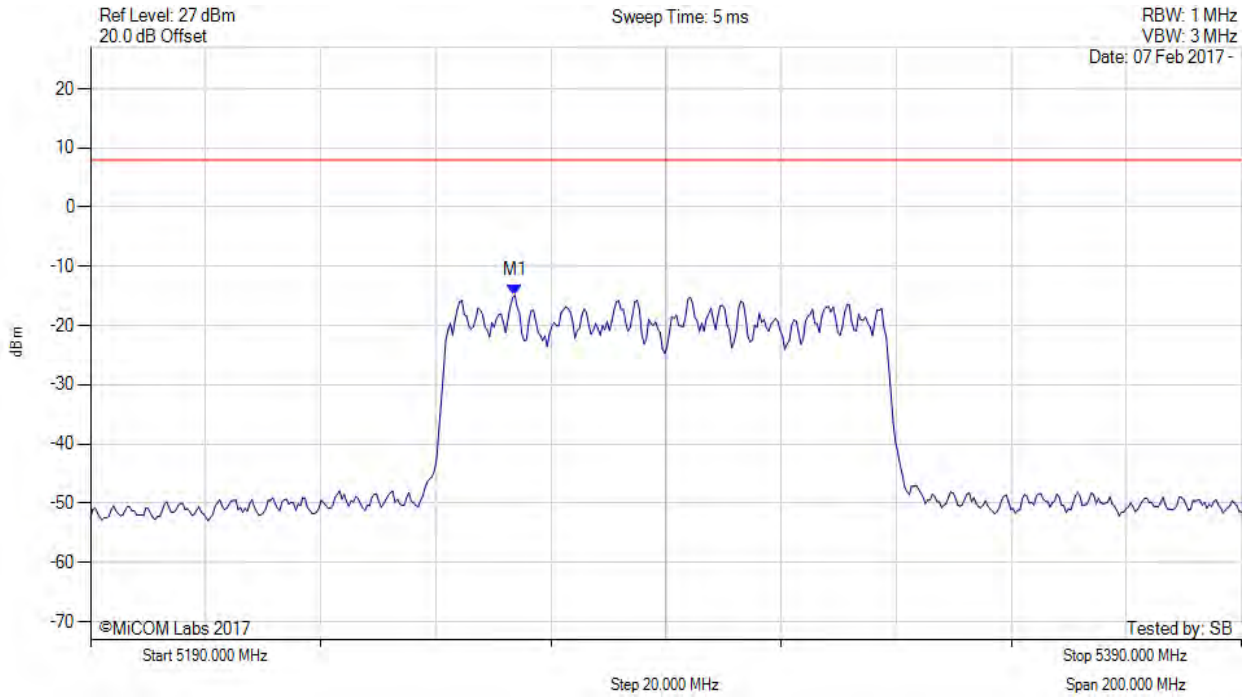



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5285.391 MHz : -8.128 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

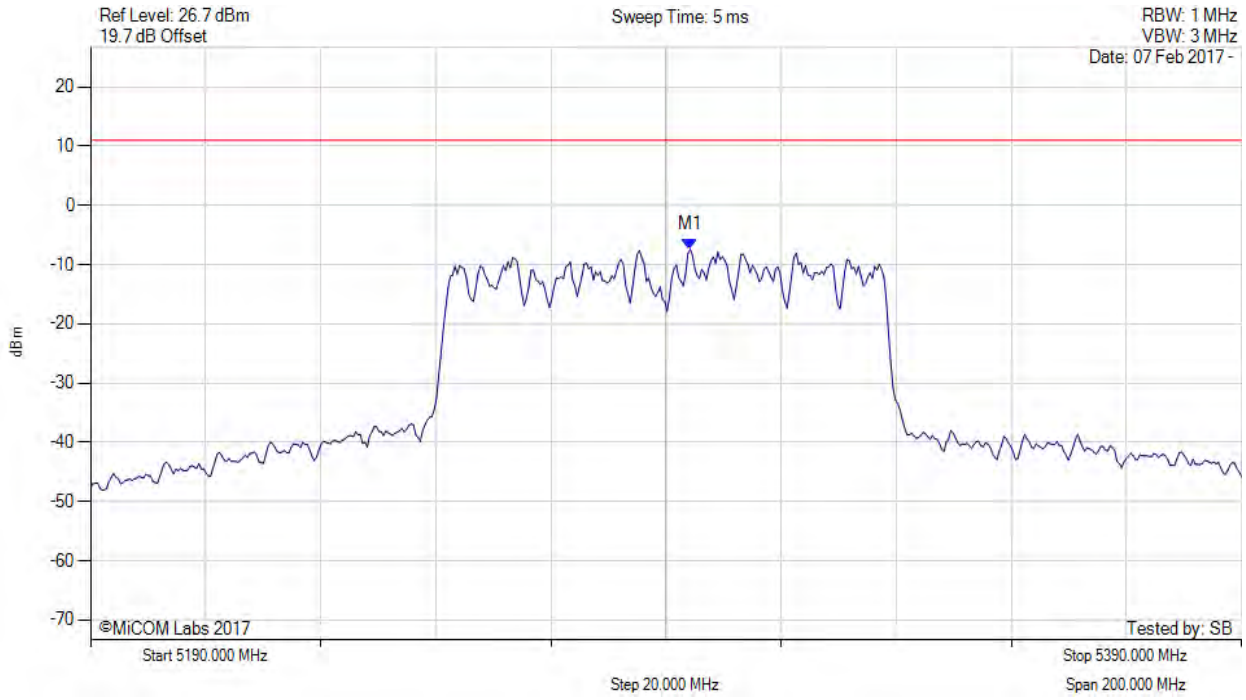



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5263.747 MHz : -14.864 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

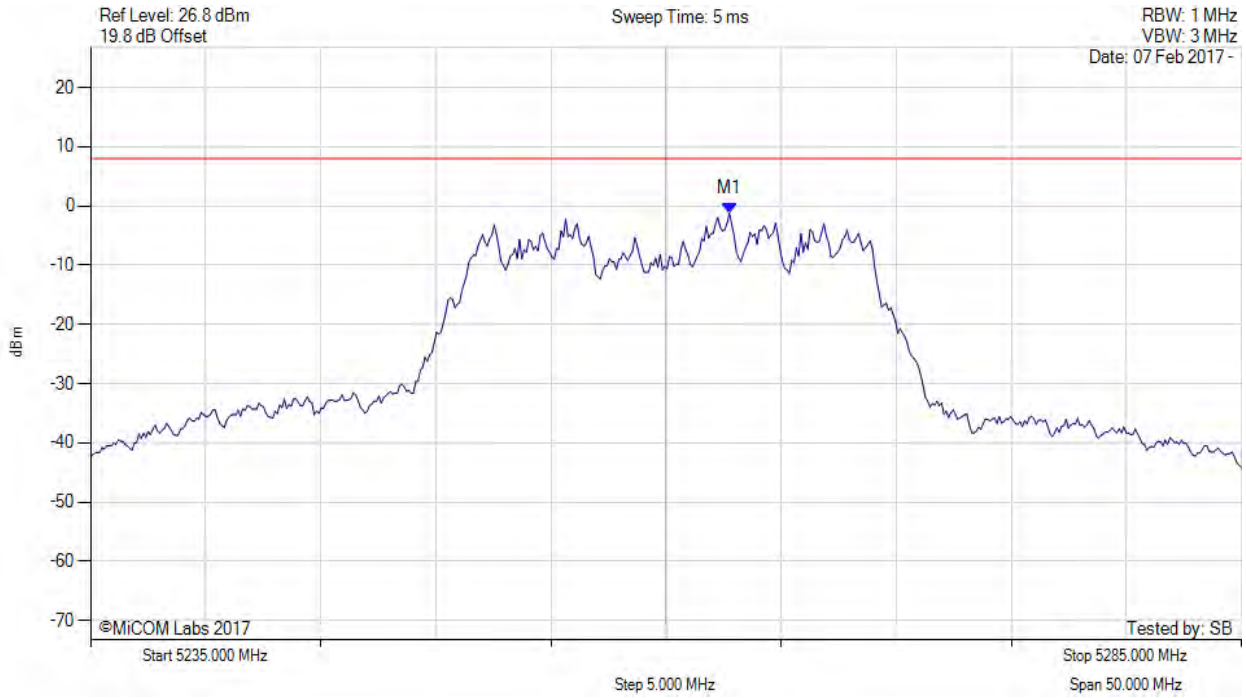



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5294.200 MHz : -7.394 dBm<br>M1 + DCCF : 5294.200 MHz : -6.532 dBm<br>Duty Cycle Correction Factor : +0.86 dB | Limit: ≤ 11.0 dBm<br>Margin: -17.5 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

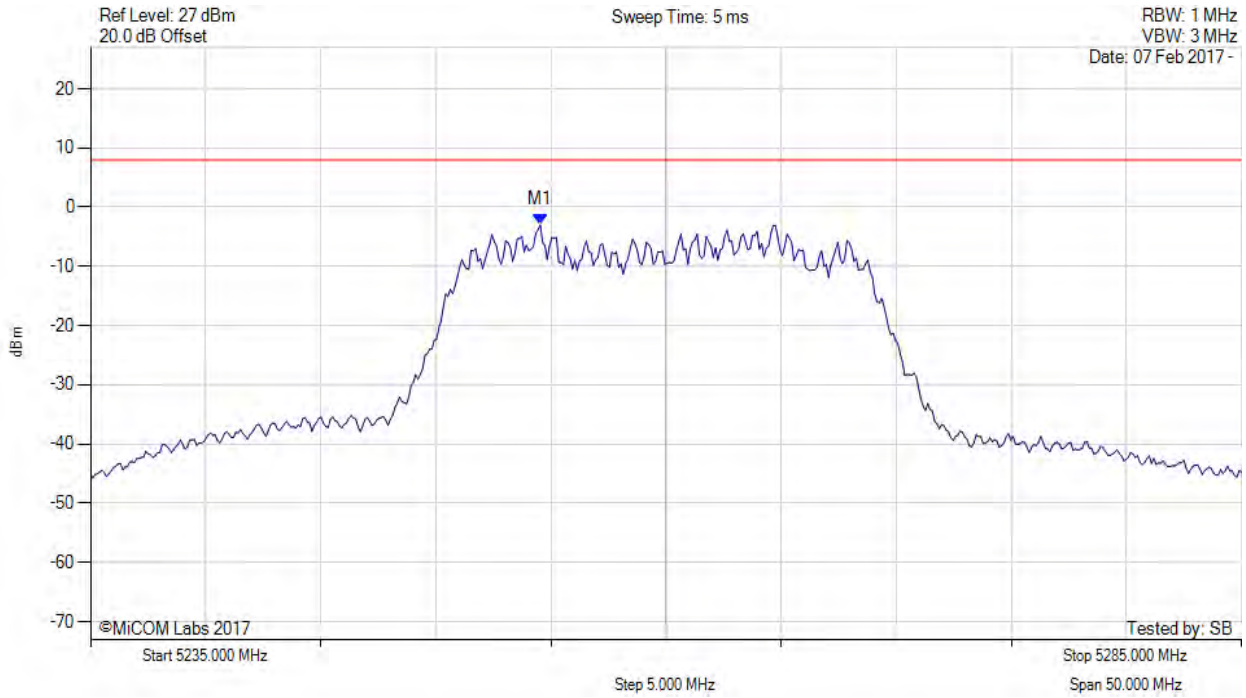



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5262.756 MHz : -1.231 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

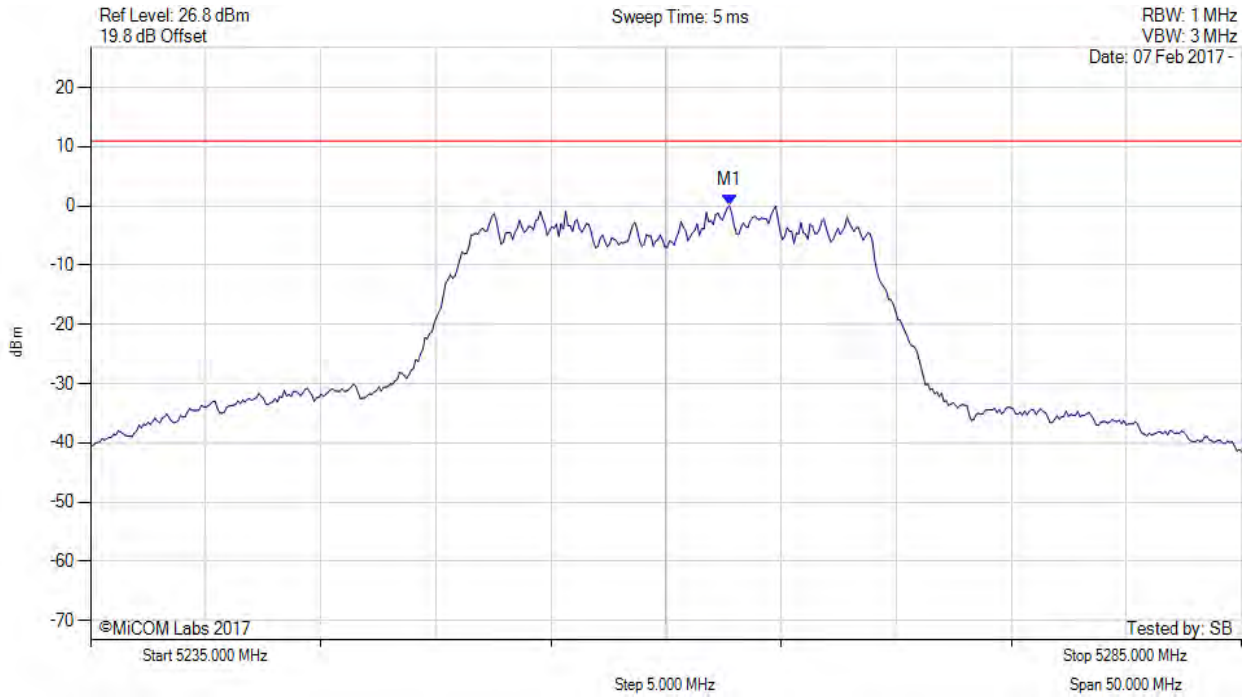



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5254.539 MHz : -2.989 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5260.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

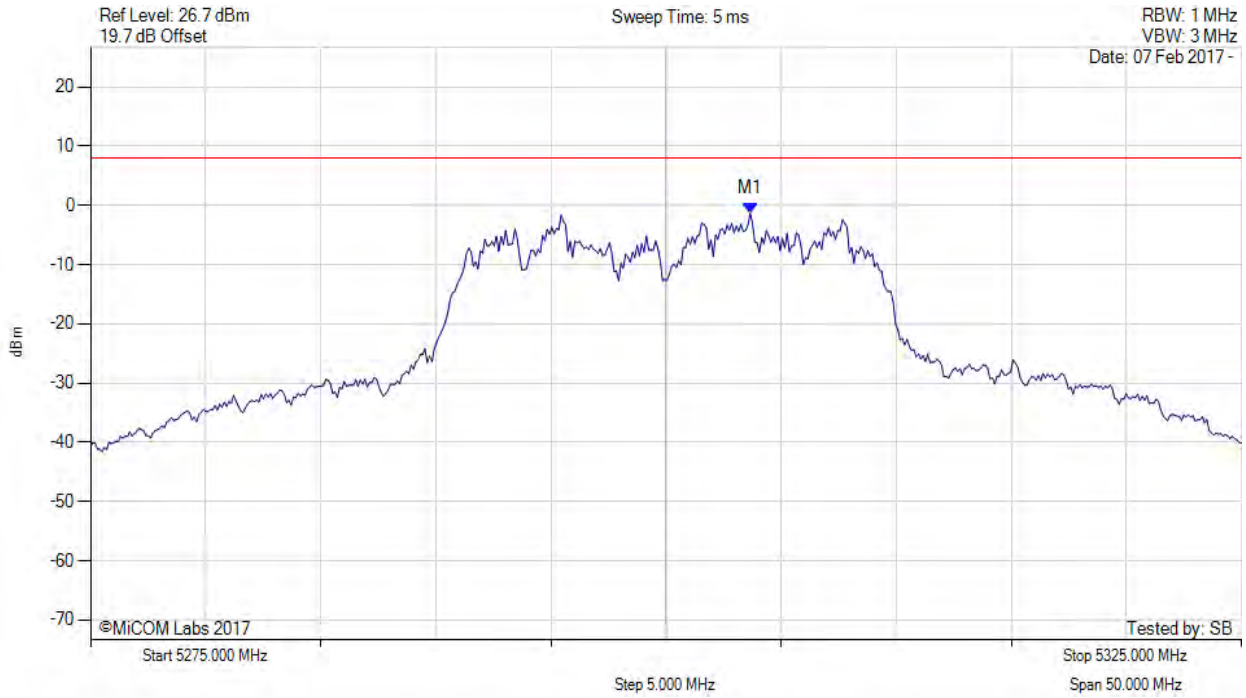



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5262.800 MHz : 0.082 dBm<br>M1 + DCCF : 5262.800 MHz : 0.997 dBm<br>Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 11.0 dBm<br>Margin: -10.0 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

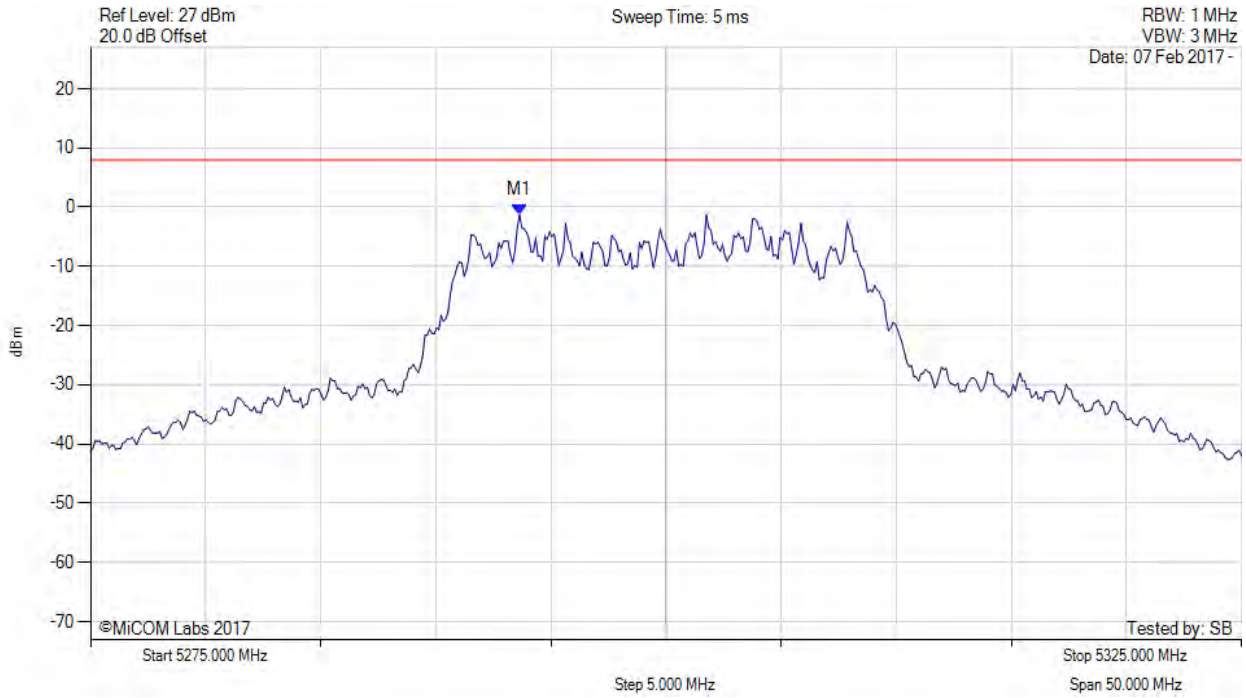



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5303.657 MHz : -1.356 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

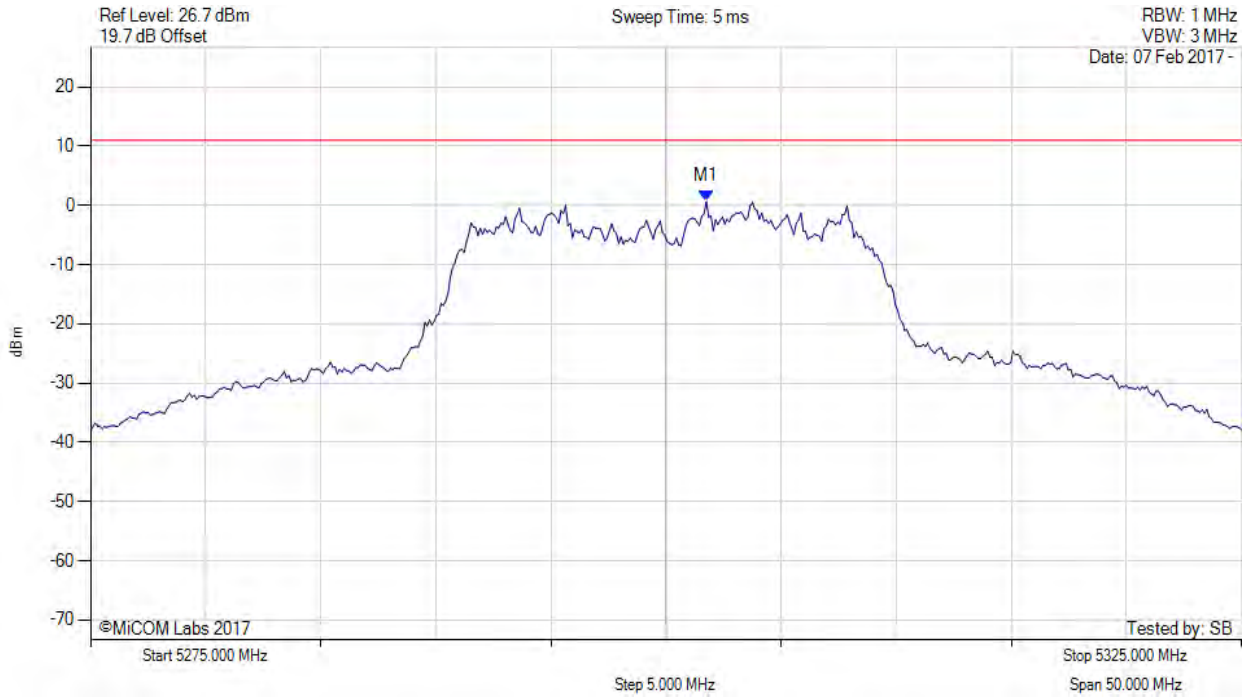



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5293.637 MHz : -1.221 dBm | Channel Frequency: 5300.00 MHz |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5300.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

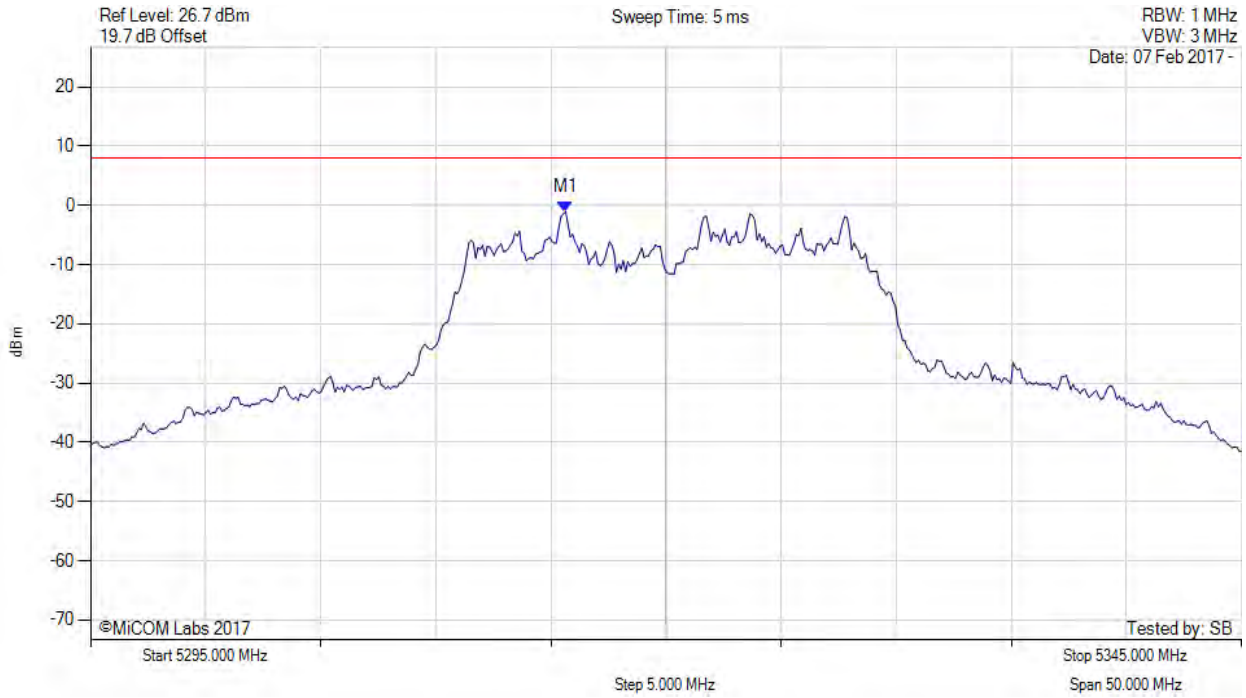



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5301.800 MHz : 0.632 dBm<br>M1 + DCCF : 5301.800 MHz : 1.547 dBm<br>Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 11.0 dBm<br>Margin: -9.5 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

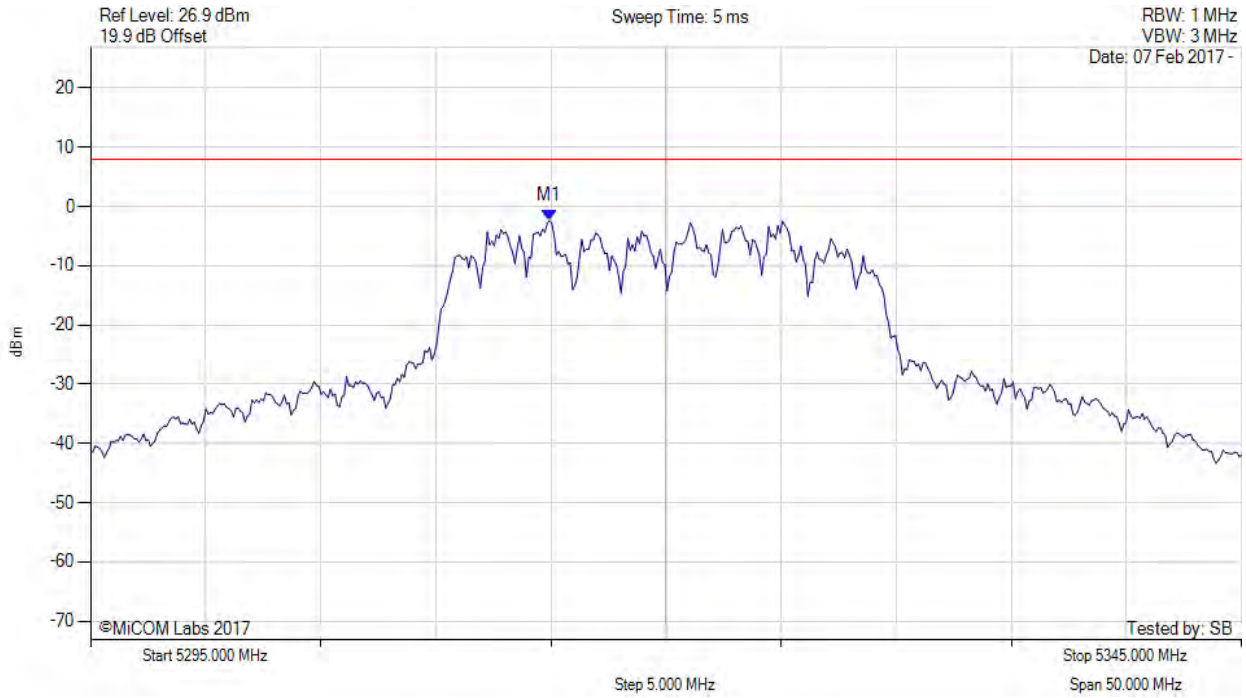



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5315.641 MHz : -1.054 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

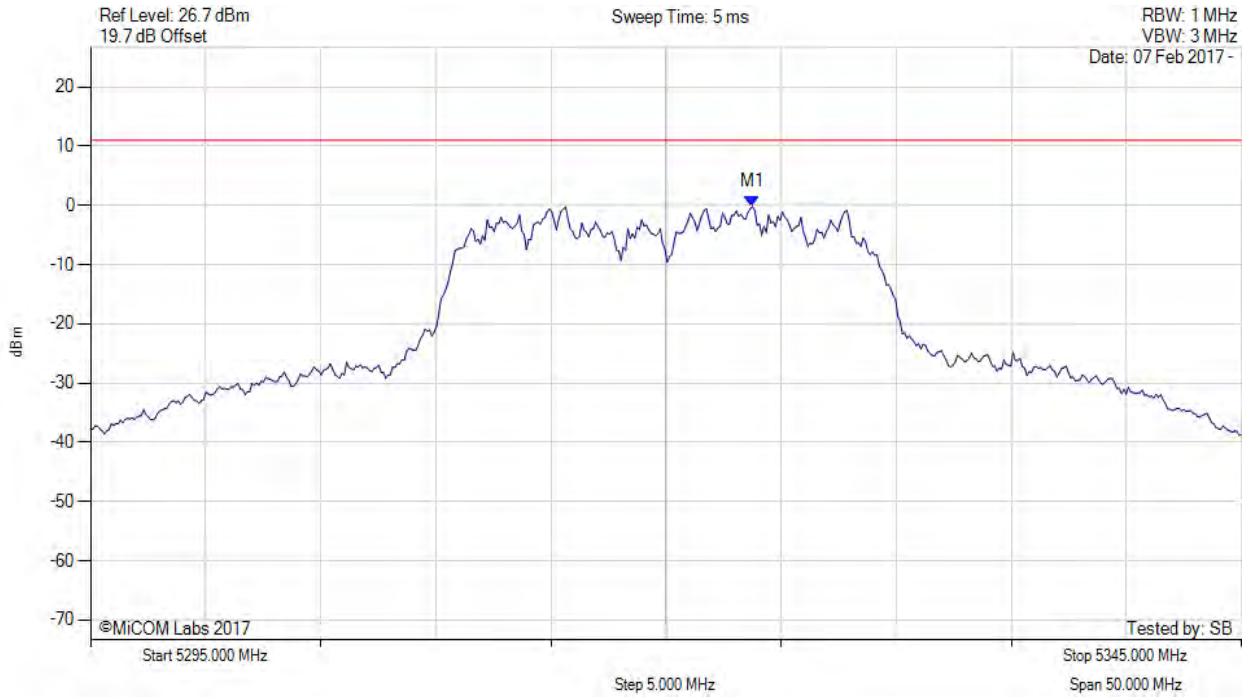



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5314.940 MHz : -2.352 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5320.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

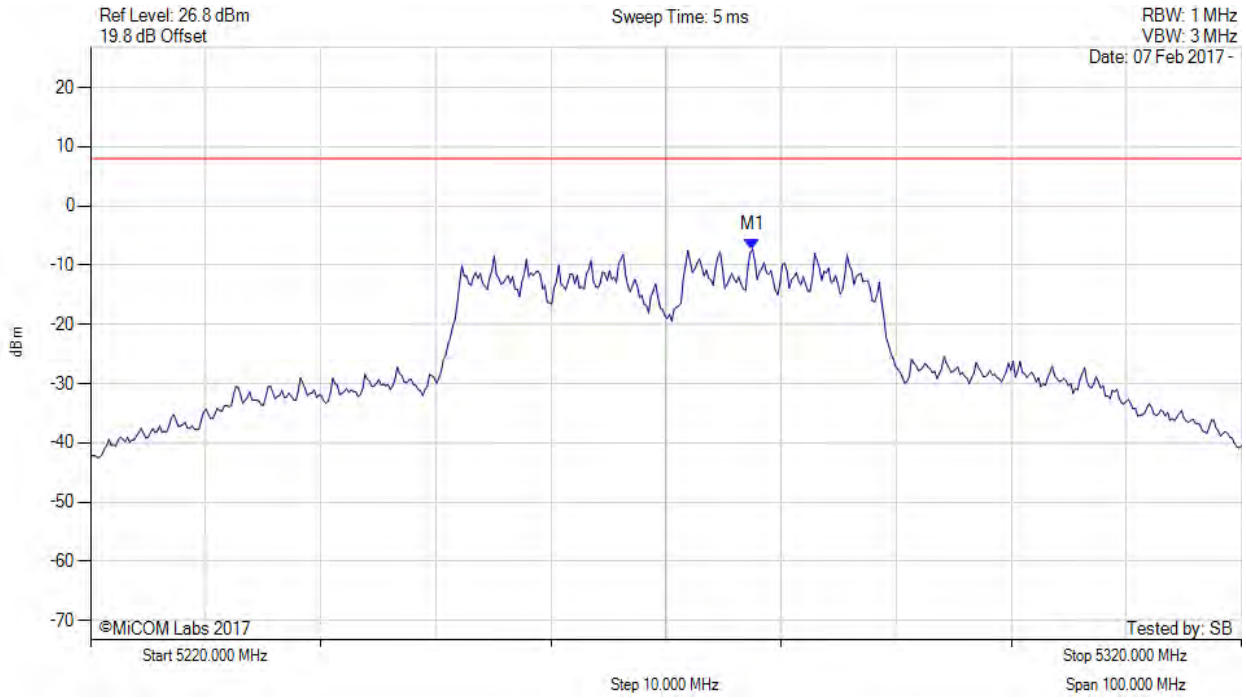



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5323.800 MHz : -0.217 dBm<br>M1 + DCCF : 5323.800 MHz : 0.698 dBm<br>Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 11.0 dBm<br>Margin: -10.3 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

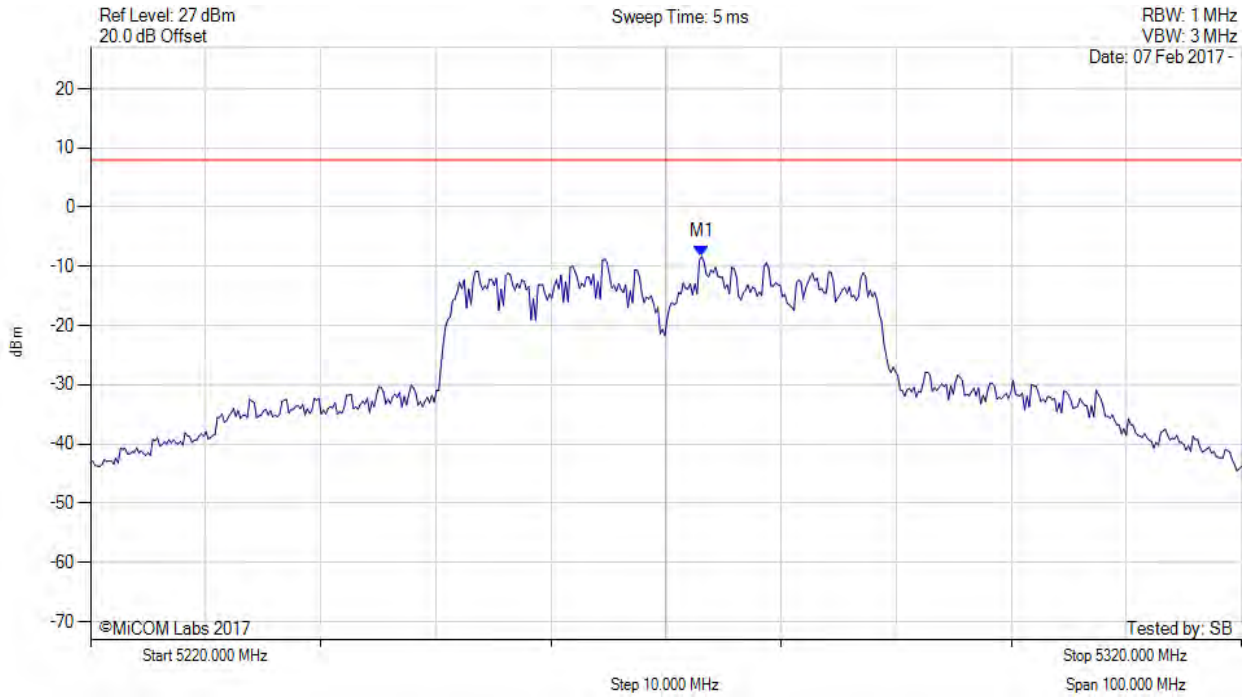



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5277.515 MHz : -7.255 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

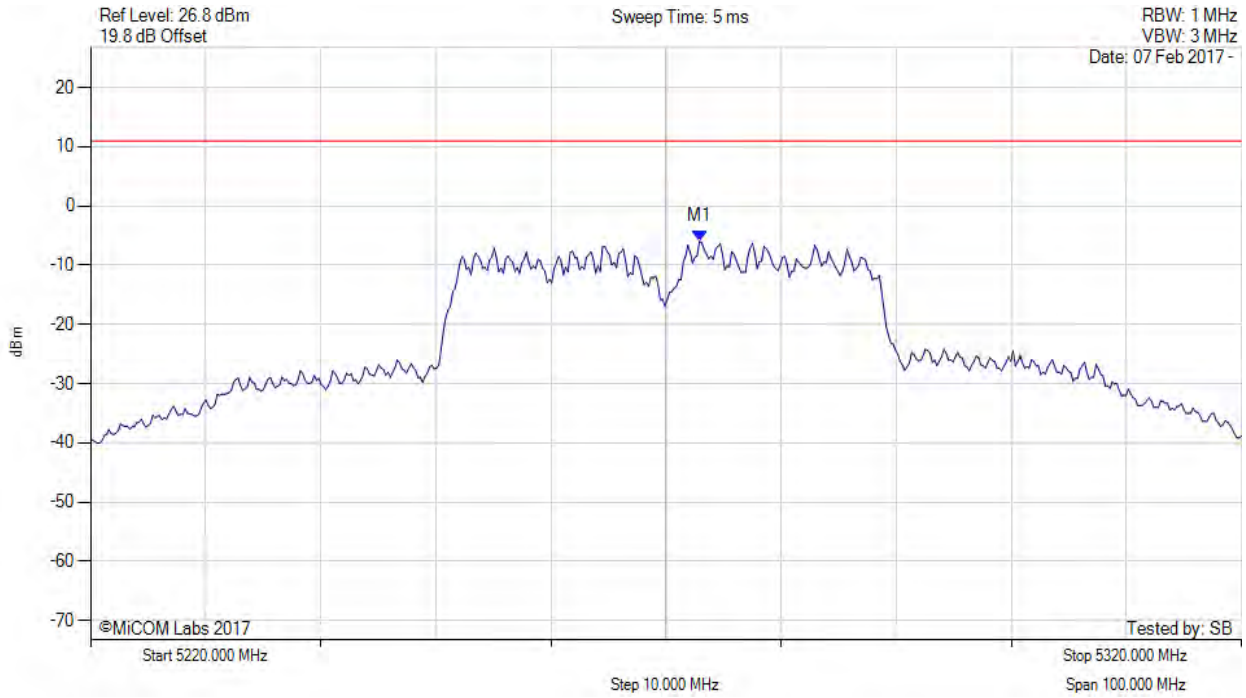



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5273.106 MHz : -8.312 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5270.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

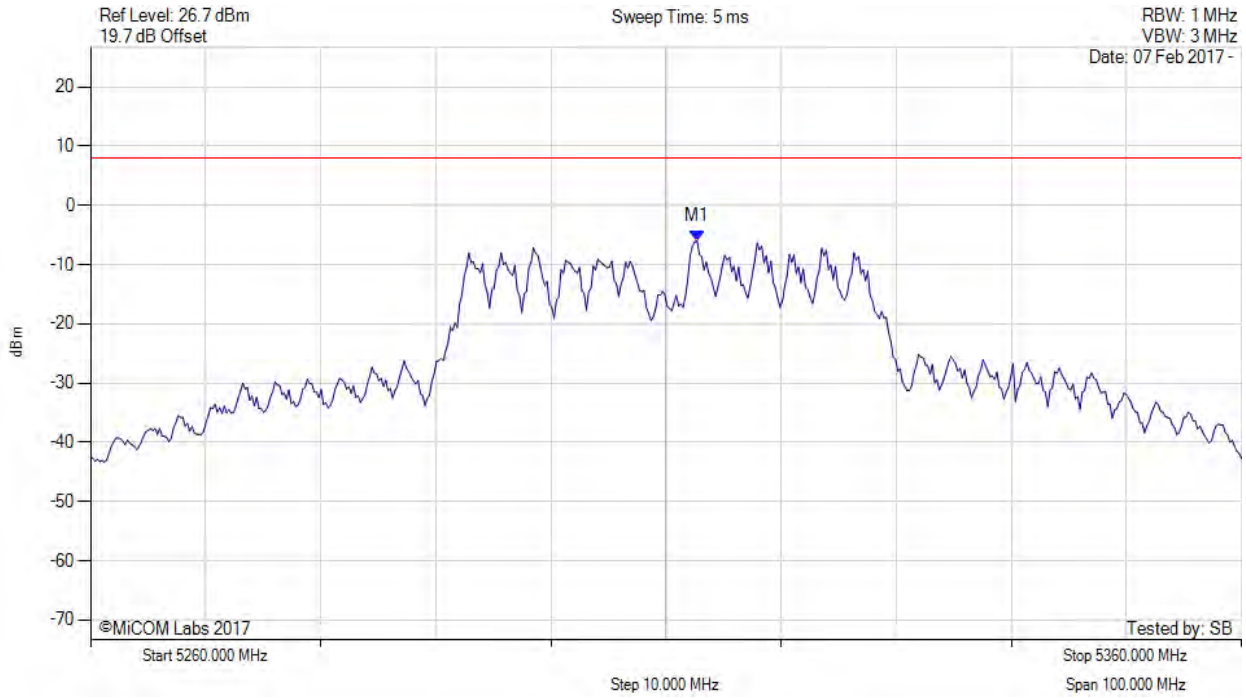



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5272.900 MHz : -5.970 dBm<br>M1 + DCCF : 5272.900 MHz : -4.483 dBm<br>Duty Cycle Correction Factor : +1.49 dB | Limit: ≤ 11.0 dBm<br>Margin: -15.5 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

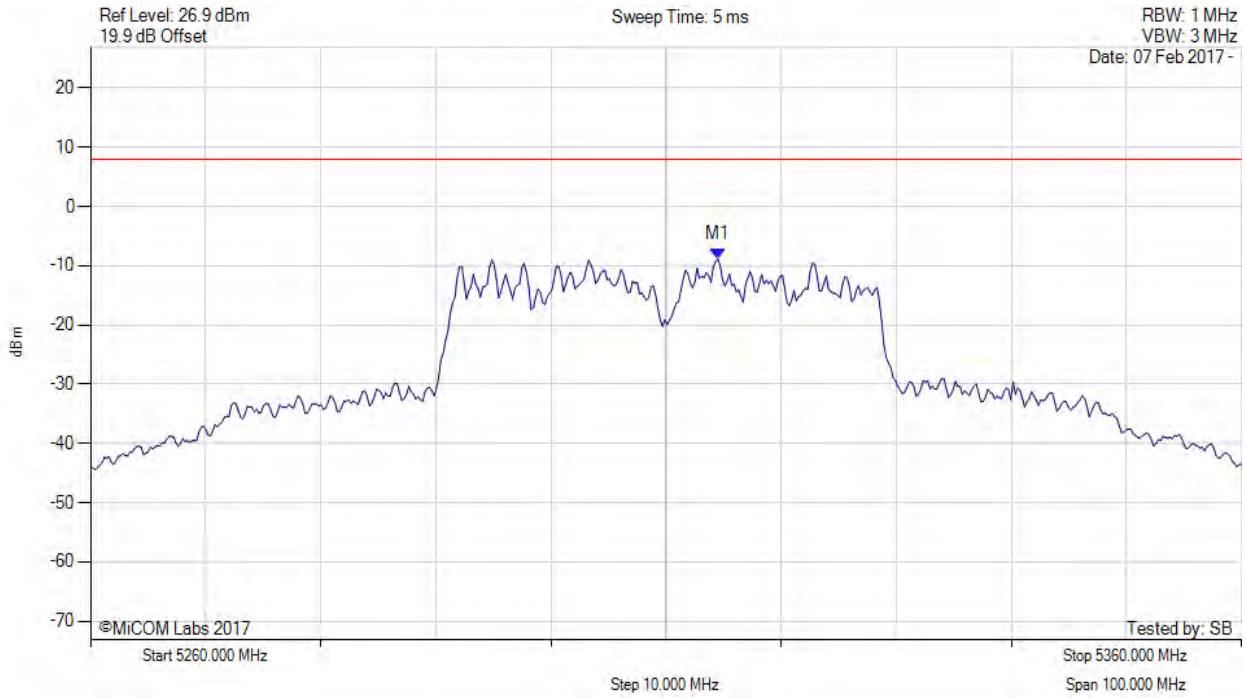



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5312.705 MHz : -6.021 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

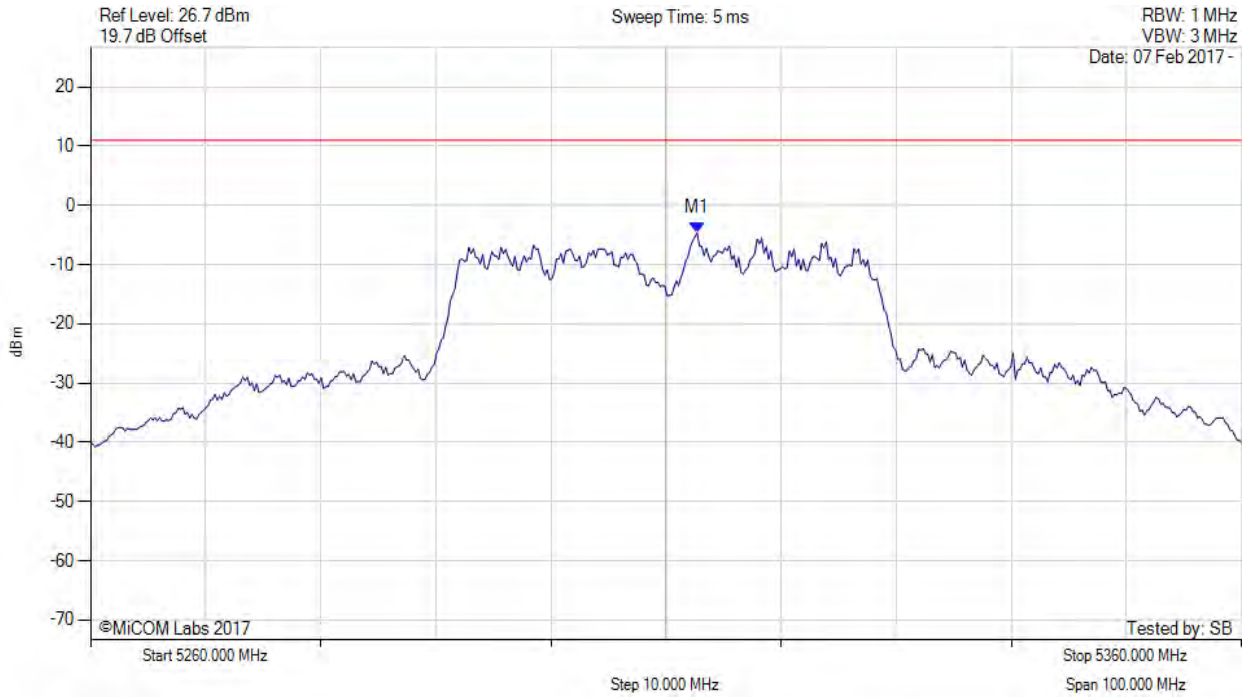



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5314.509 MHz : -8.859 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5310.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

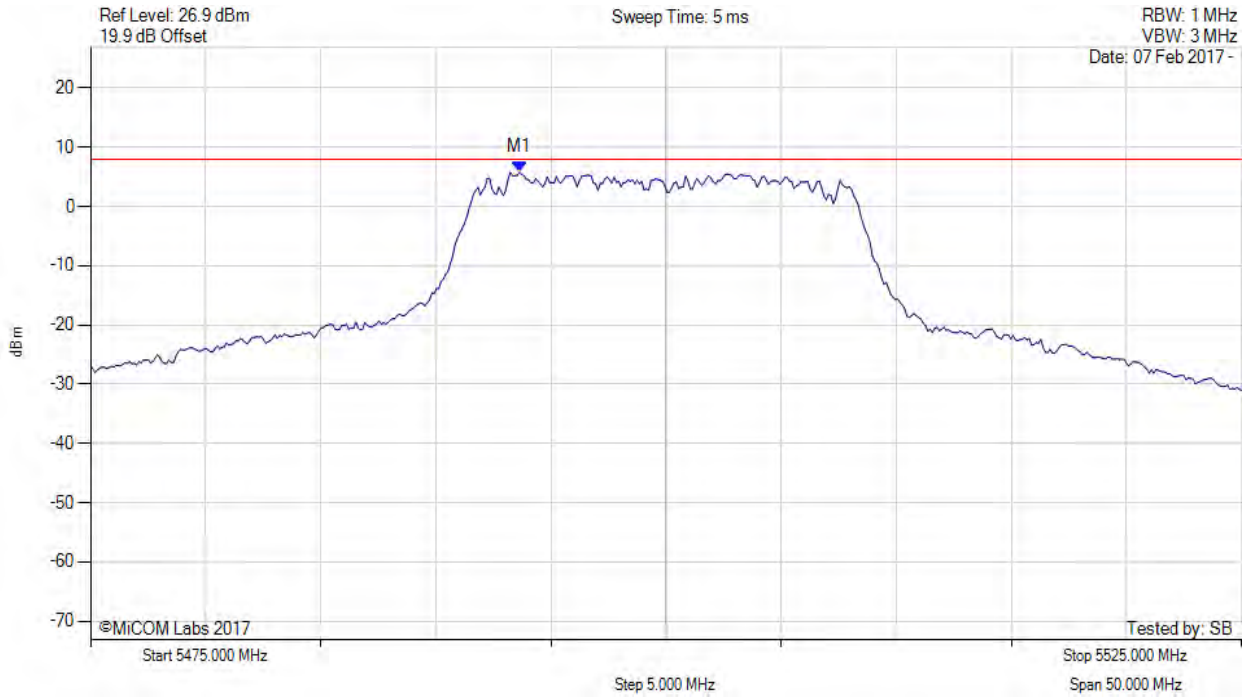



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5312.700 MHz : -4.672 dBm<br>M1 + DCCF : 5312.700 MHz : -3.185 dBm<br>Duty Cycle Correction Factor : +1.49 dB | Limit: ≤ 11.0 dBm<br>Margin: -14.2 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

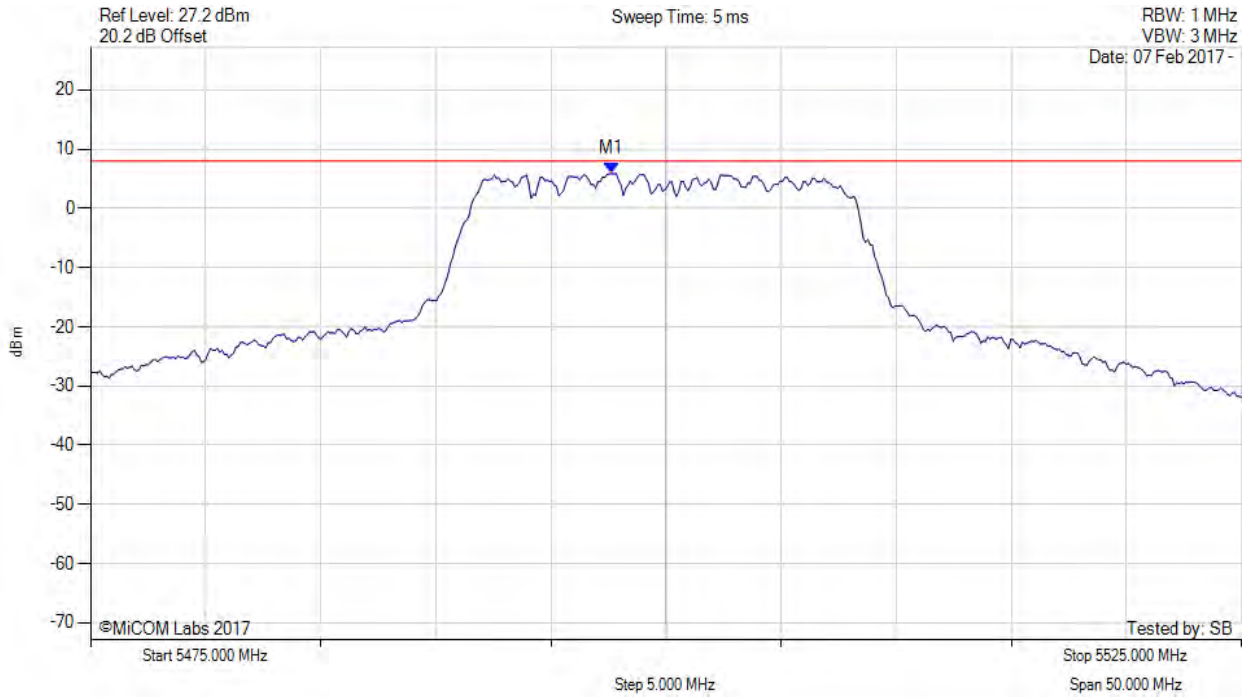



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5493.637 MHz : 5.808 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

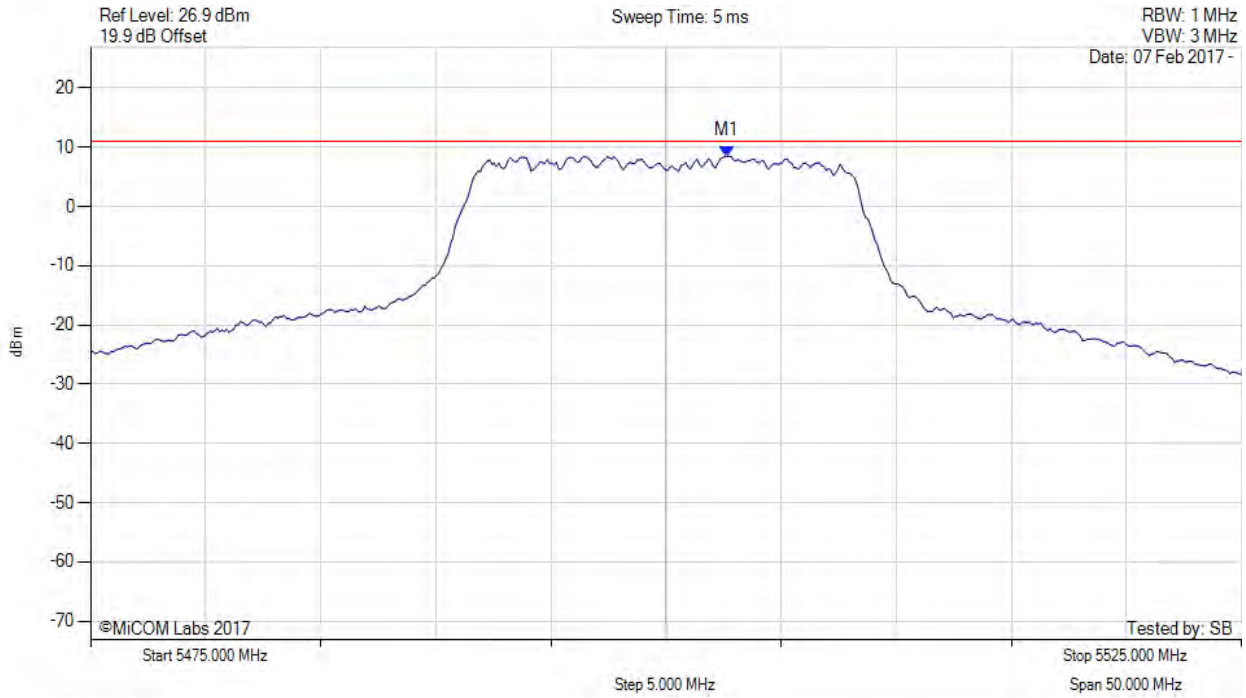



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5497.645 MHz : 5.868 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5500.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

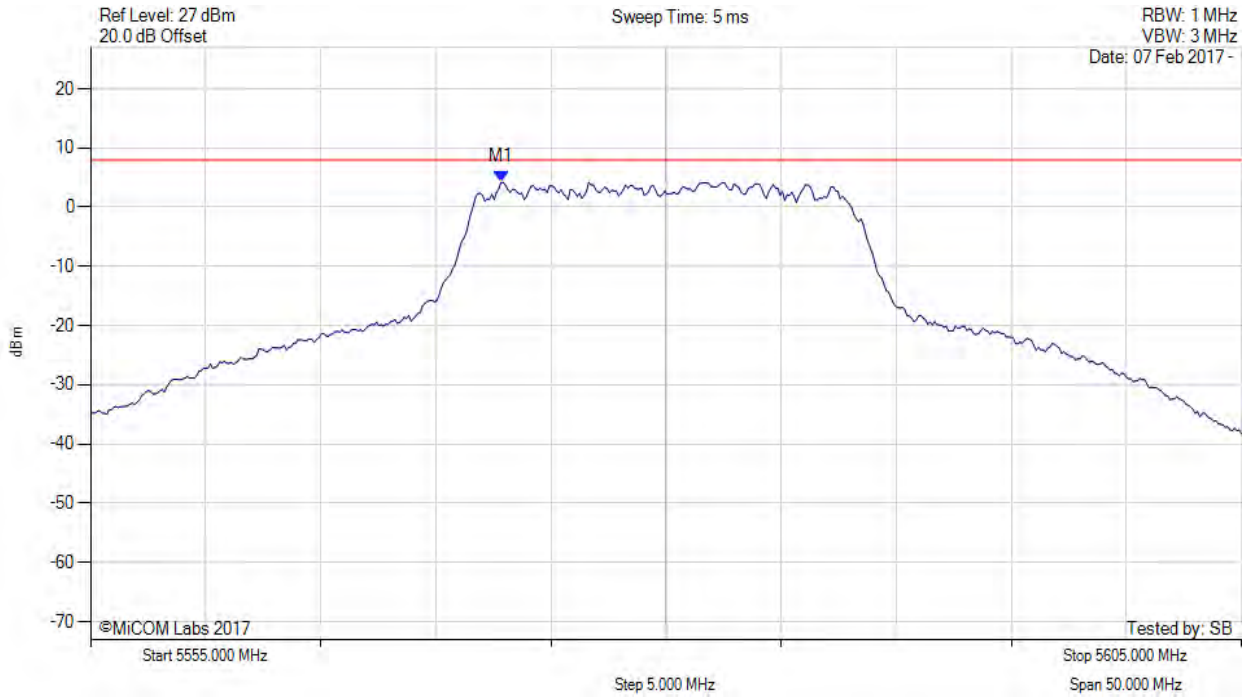



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5502.700 MHz : 8.525 dBm<br>M1 + DCCF : 5502.700 MHz : 8.569 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -2.4 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

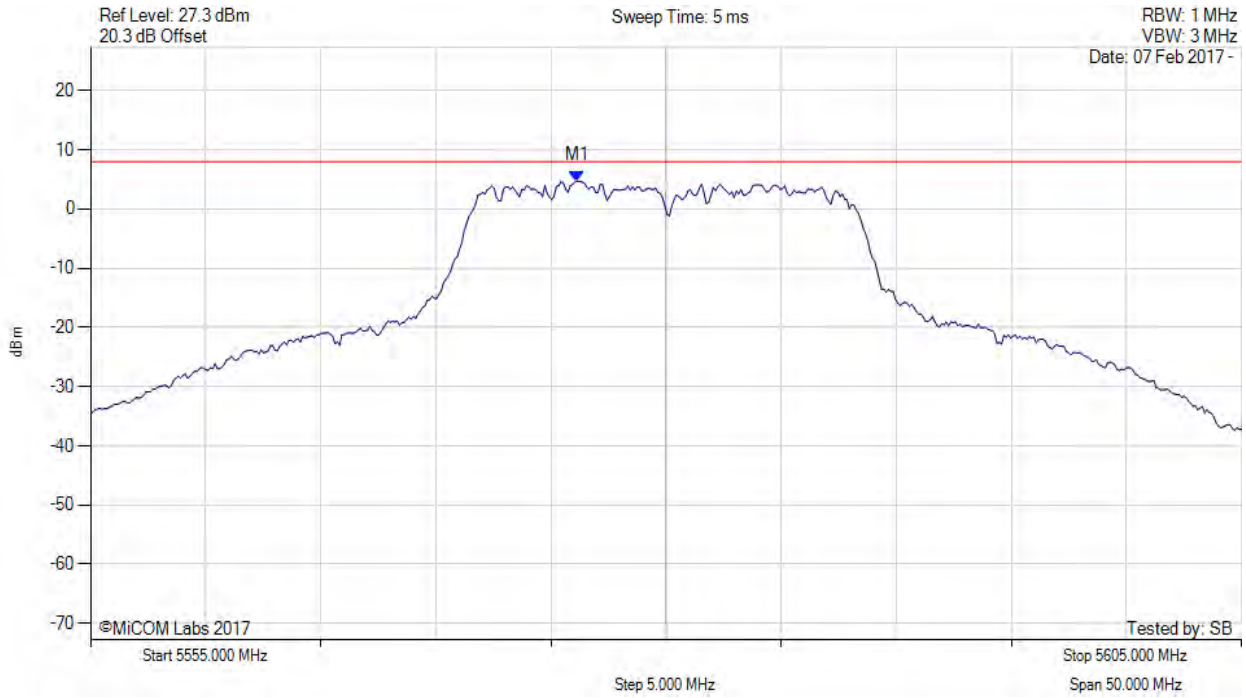



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5572.836 MHz : 4.220 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

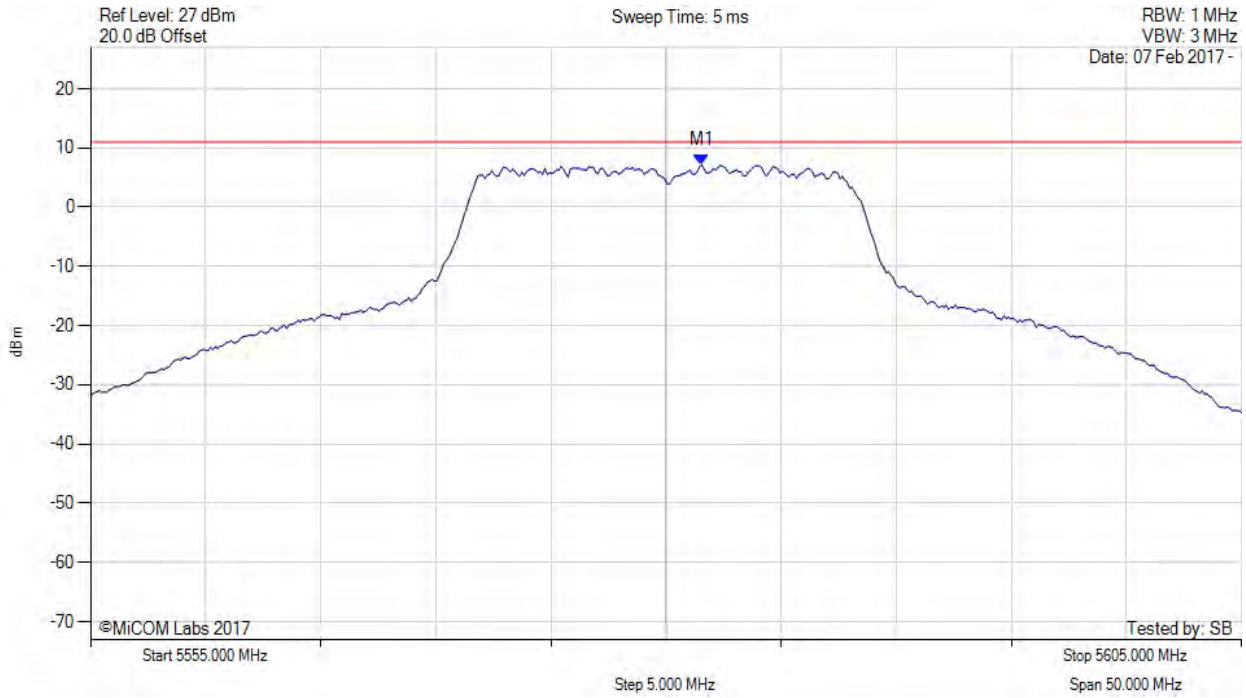



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5576.142 MHz : 4.724 dBm | Channel Frequency: 5580.00 MHz |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5580.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

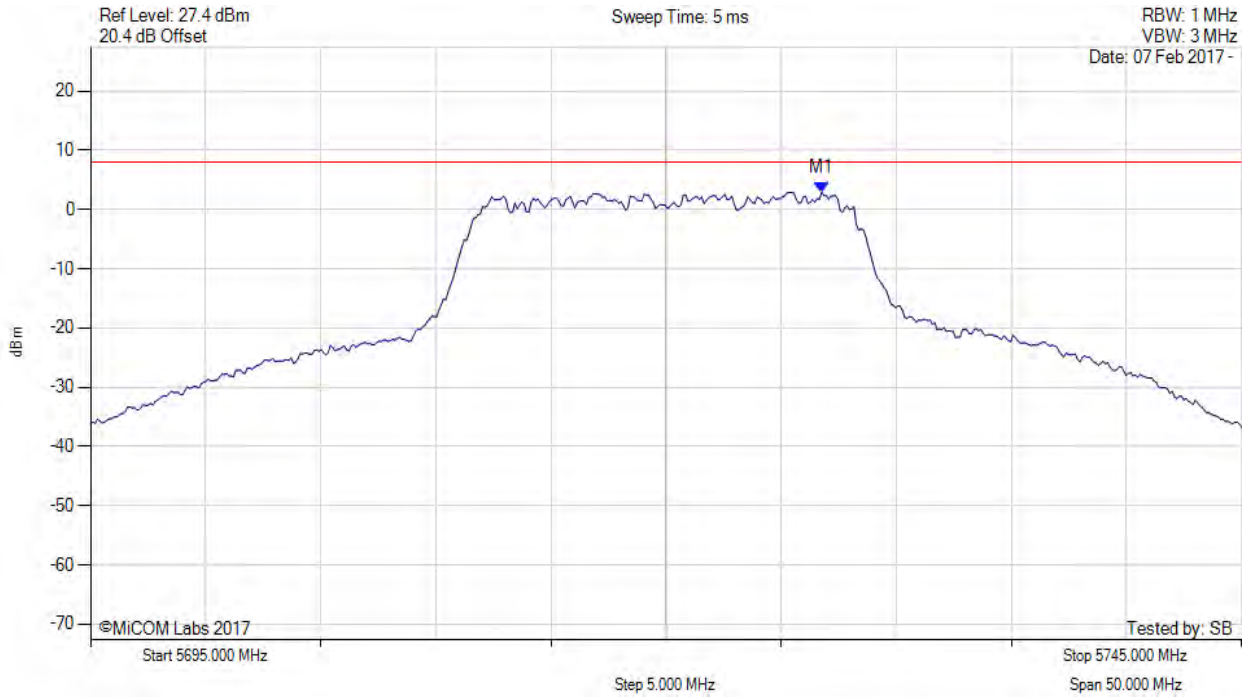



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5581.600 MHz : 7.122 dBm<br>M1 + DCCF : 5581.600 MHz : 7.166 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -3.8 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

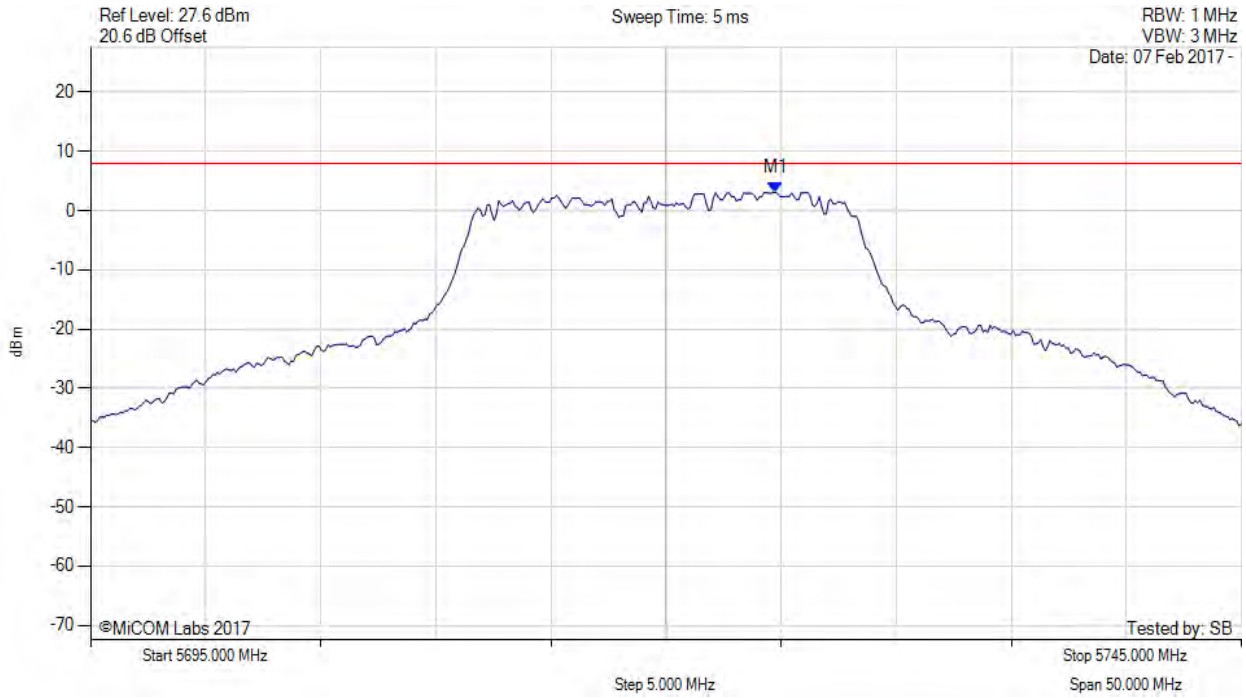



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5726.764 MHz : 2.924 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

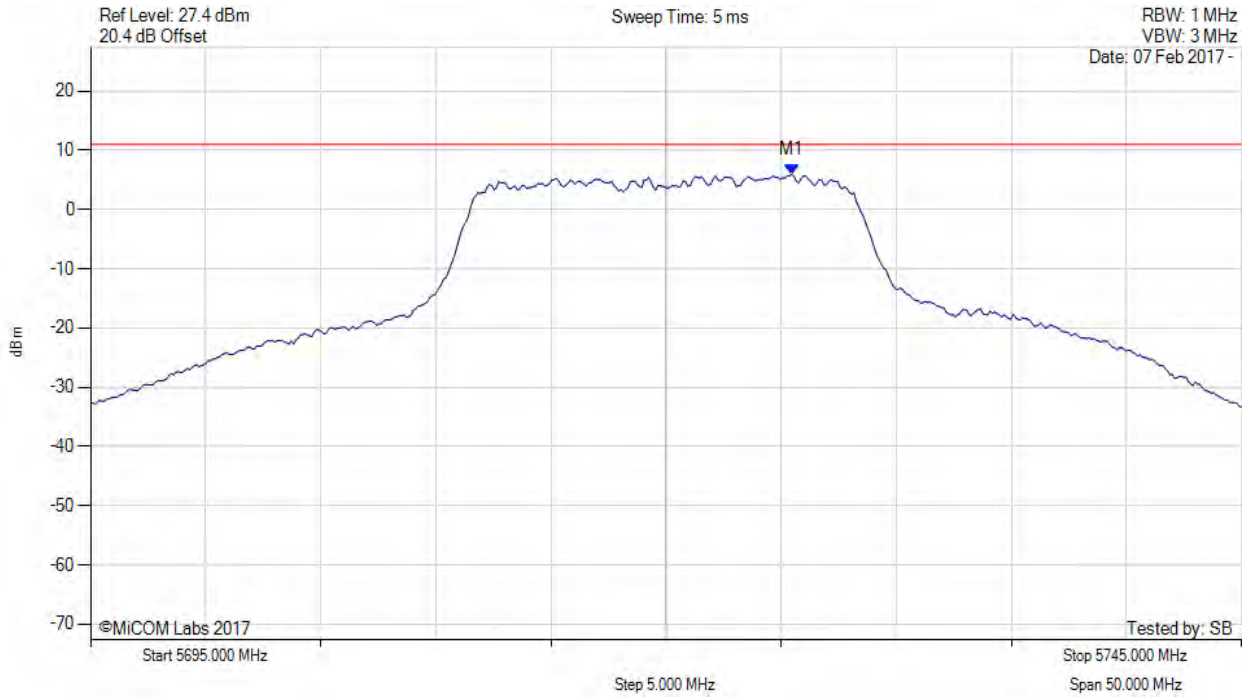



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5724.760 MHz : 3.098 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5720.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

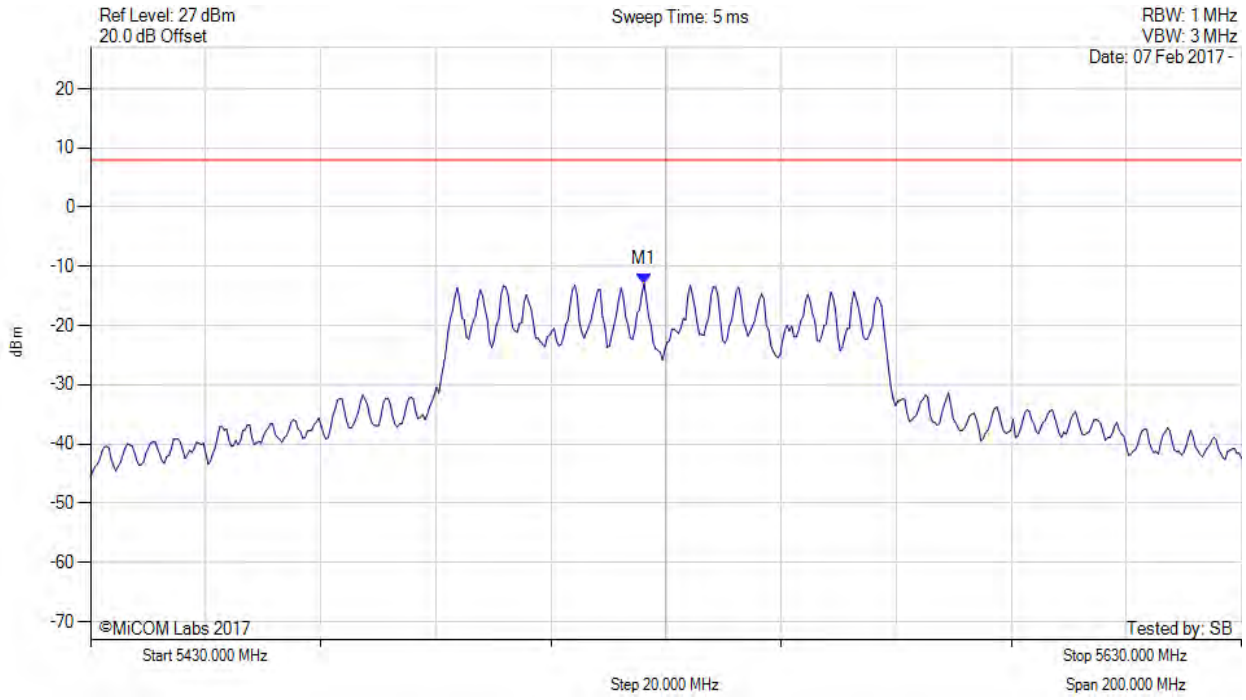



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5725.500 MHz : 5.947 dBm<br>M1 + DCCF : 5725.500 MHz : 5.991 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -5.0 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

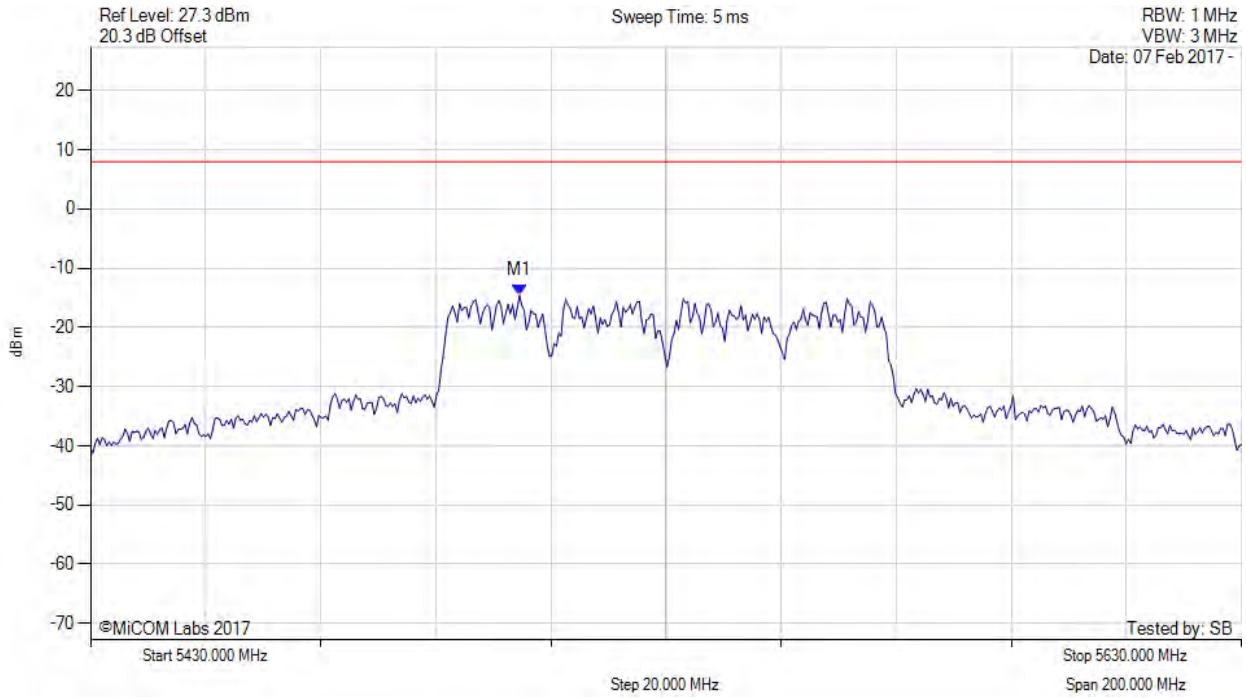



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5526.192 MHz : -12.902 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

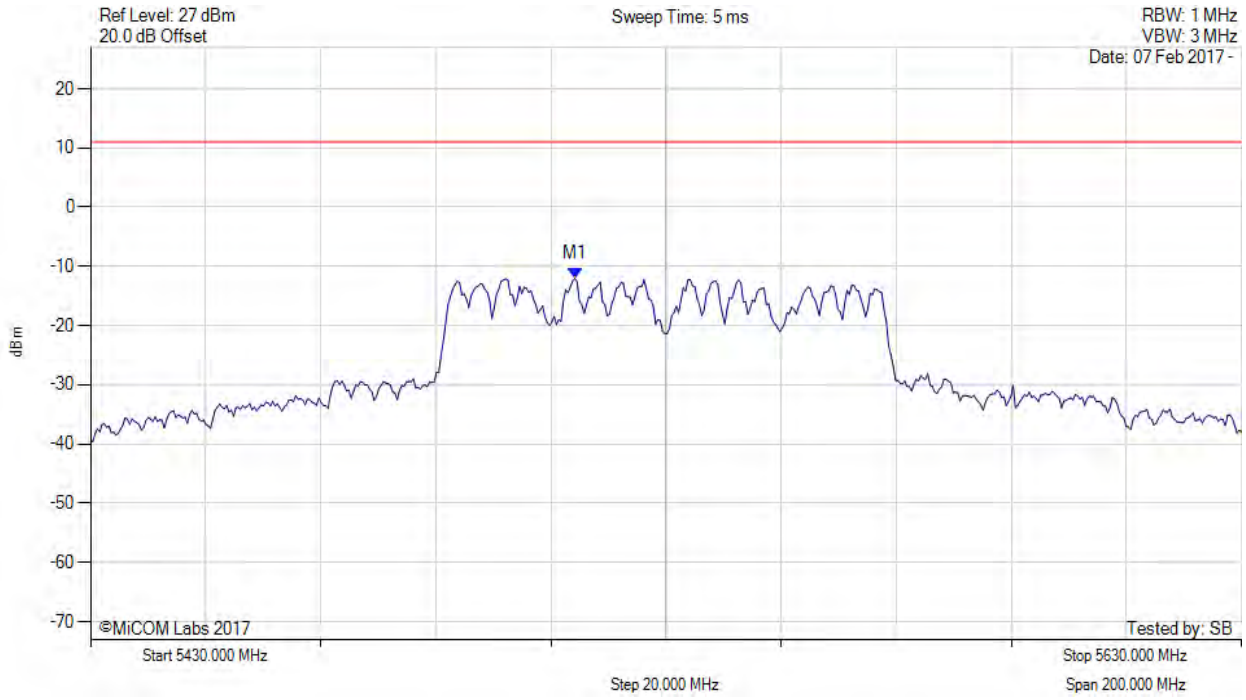



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5504.549 MHz : -14.593 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

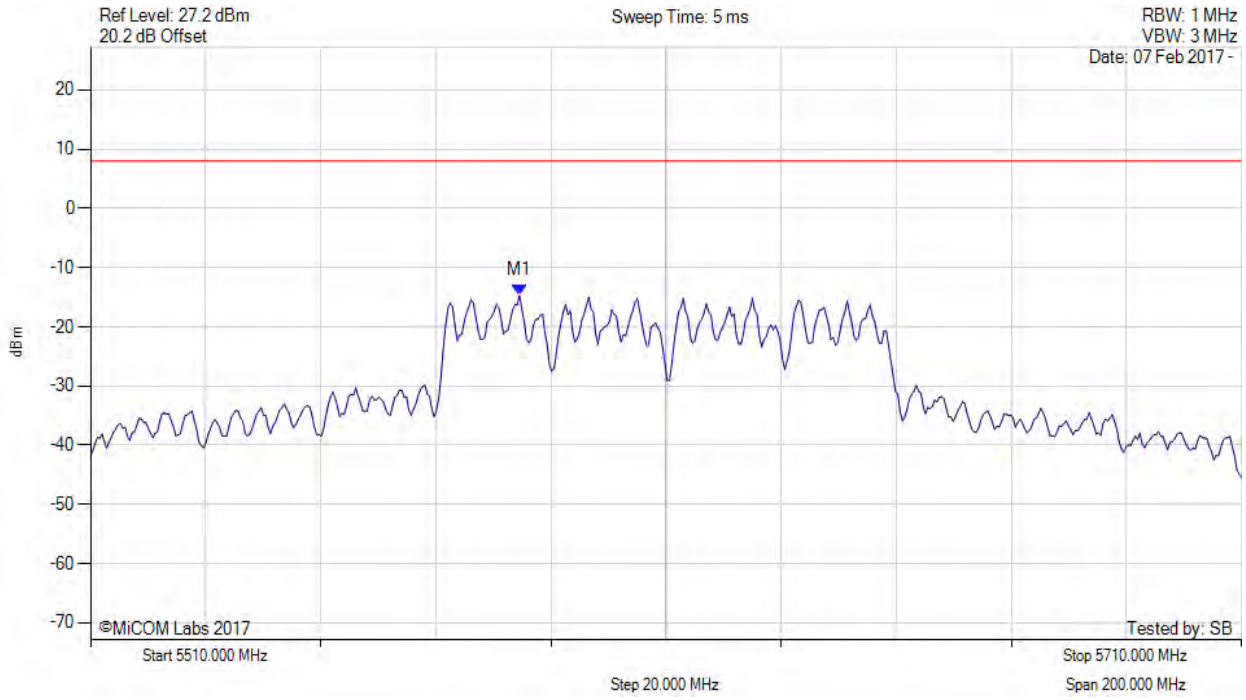



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5514.200 MHz : -12.055 dBm<br>M1 + DCCF : 5514.200 MHz : -10.048 dBm<br>Duty Cycle Correction Factor : +2.01 dB | Limit: ≤ 11.0 dBm<br>Margin: -21.1 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

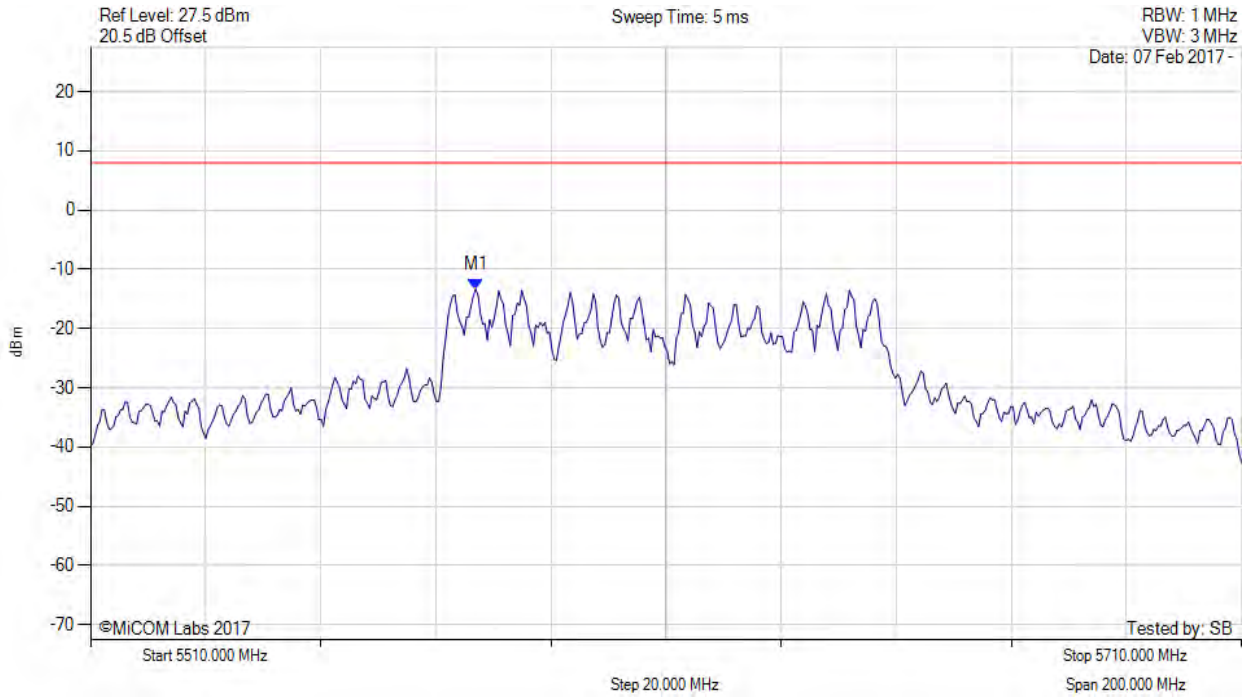



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5584.549 MHz : -14.727 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

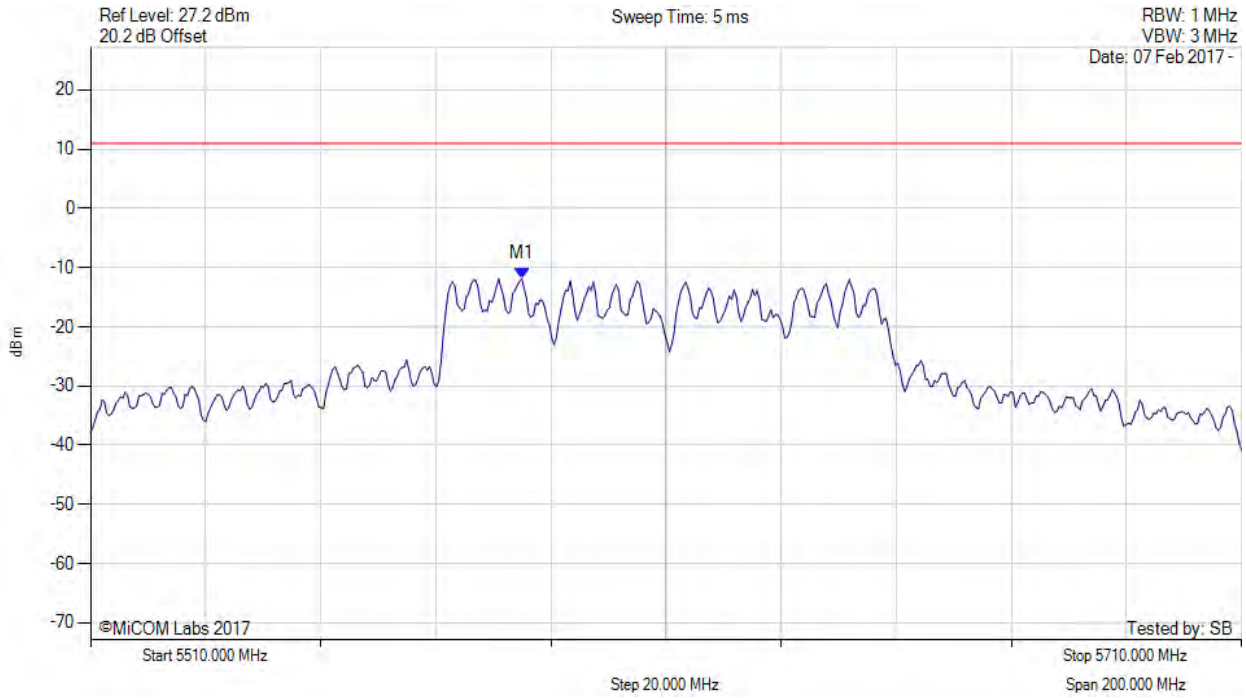



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5576.934 MHz : -13.339 dBm | Channel Frequency: 5610.00 MHz |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

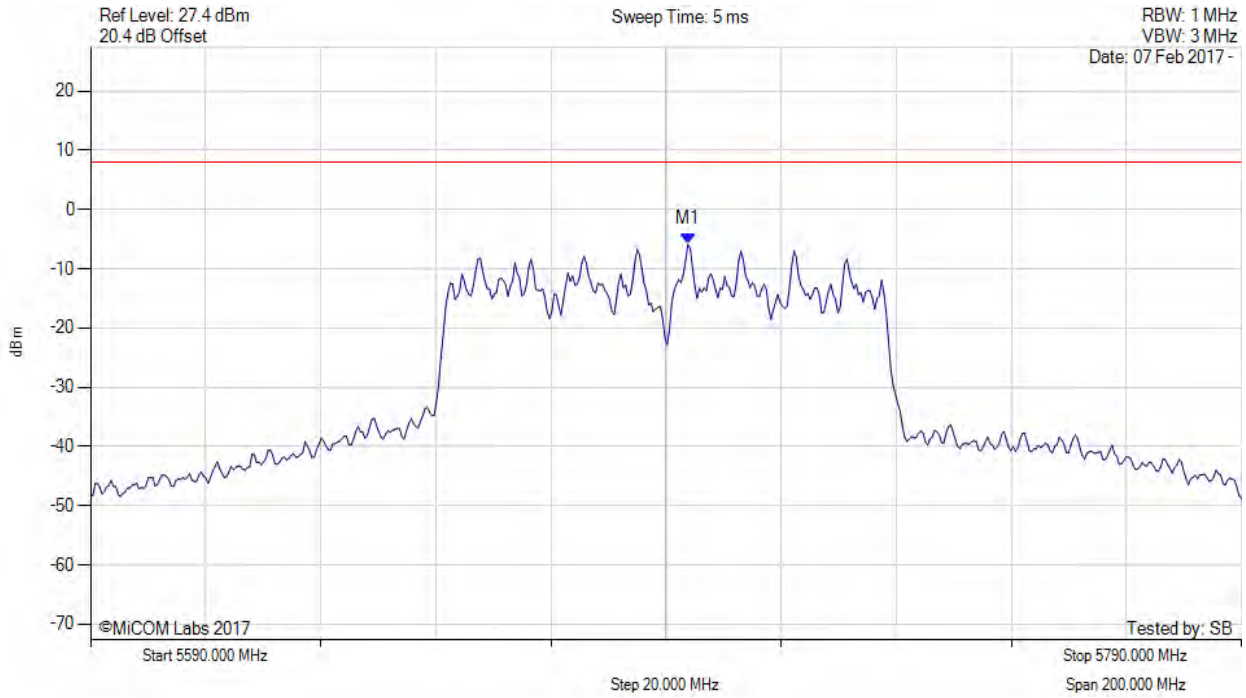



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5584.900 MHz : -11.887 dBm<br>M1 + DCCF : 5584.900 MHz : -9.880 dBm<br>Duty Cycle Correction Factor : +2.01 dB | Limit: ≤ 11.0 dBm<br>Margin: -20.9 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

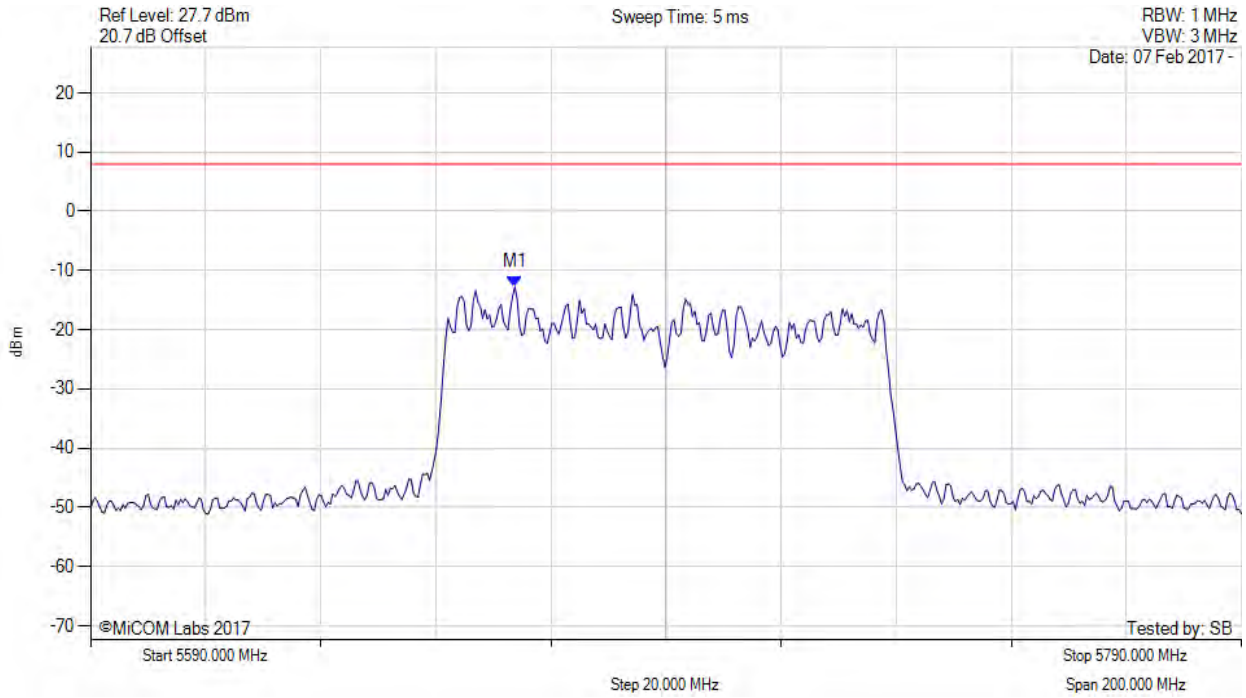



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5693.808 MHz : -5.863 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

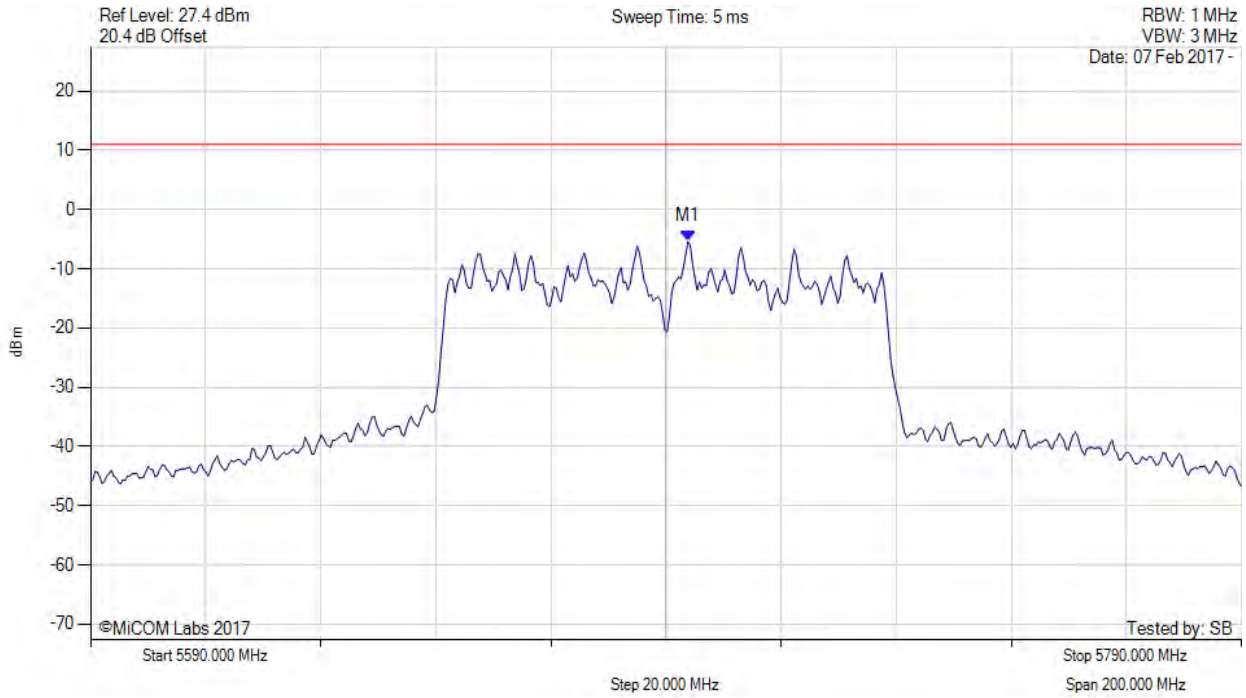



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5663.747 MHz : -12.801 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

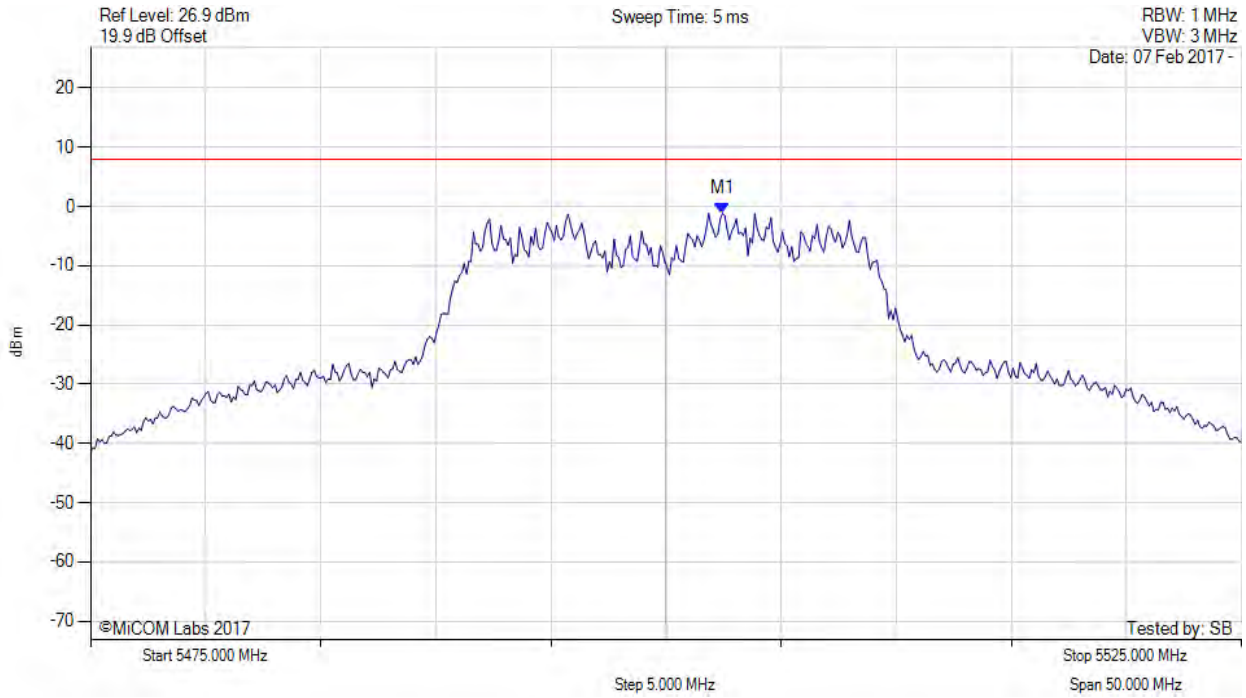



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5693.800 MHz : -5.428 dBm<br>M1 + DCCF : 5693.800 MHz : -3.421 dBm<br>Duty Cycle Correction Factor : +2.01 dB | Limit: ≤ 11.0 dBm<br>Margin: -14.4 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

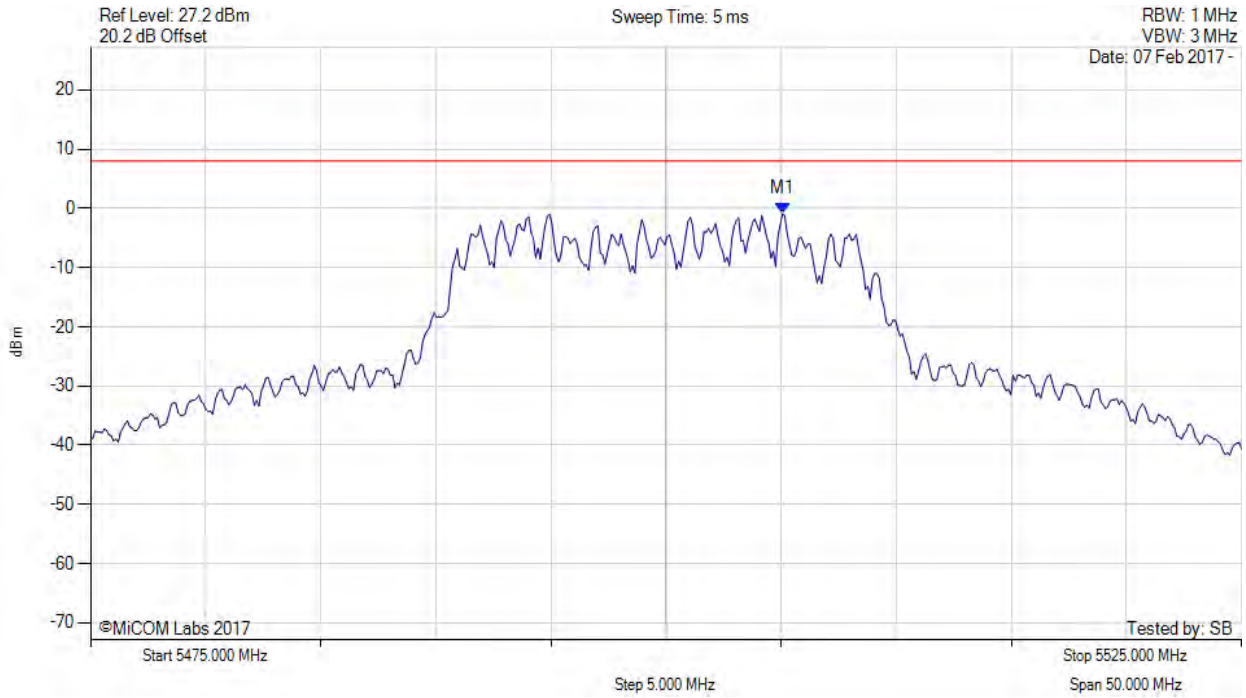



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5502.455 MHz : -1.135 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

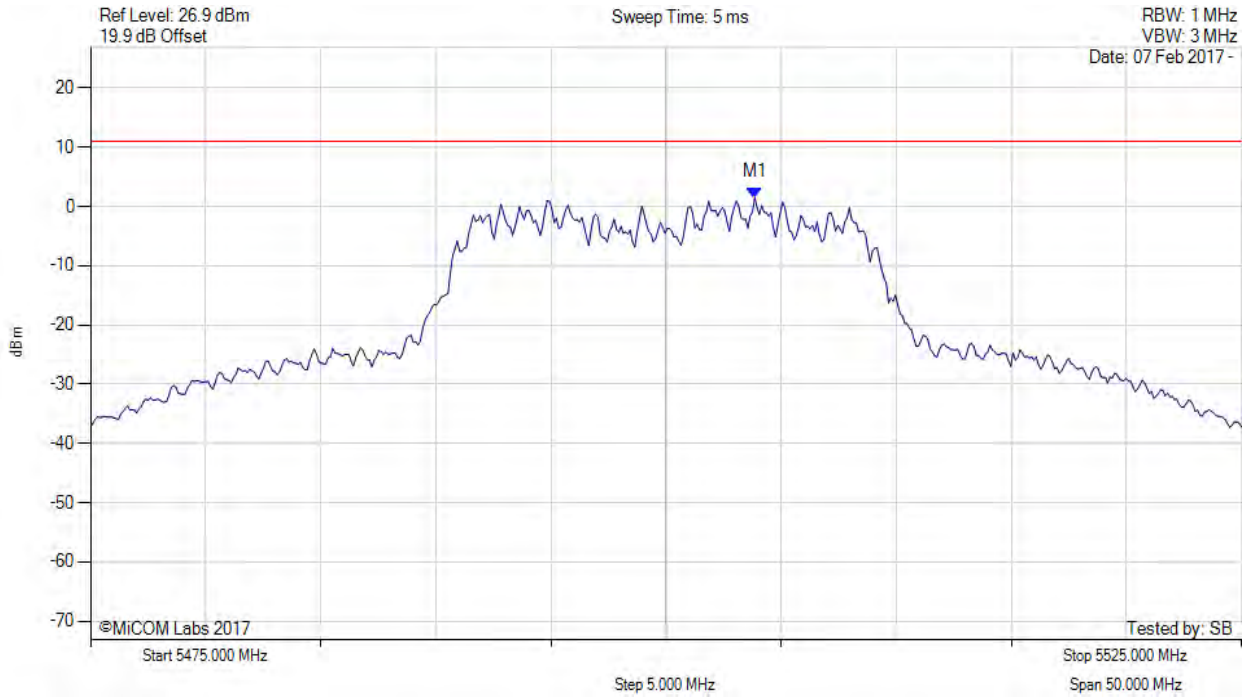



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5505.060 MHz : -0.924 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5500.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

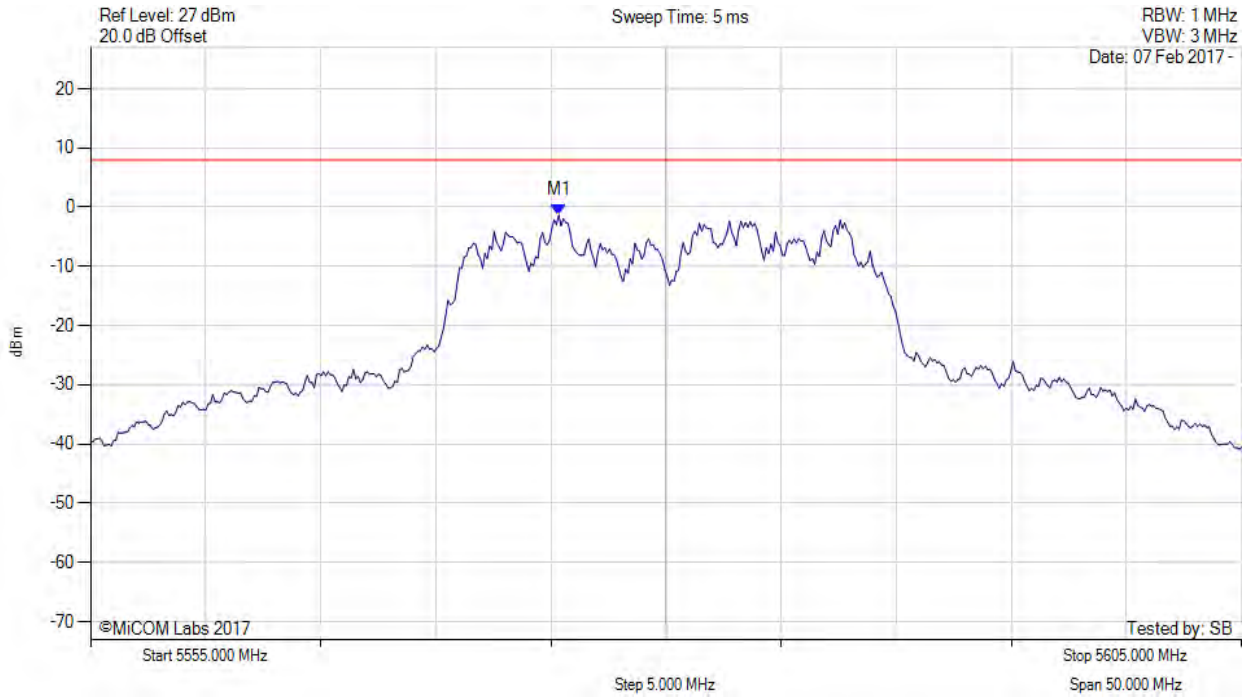



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5503.900 MHz : 1.501 dBm<br>M1 + DCCF : 5503.900 MHz : 2.416 dBm<br>Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 11.0 dBm<br>Margin: -8.6 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

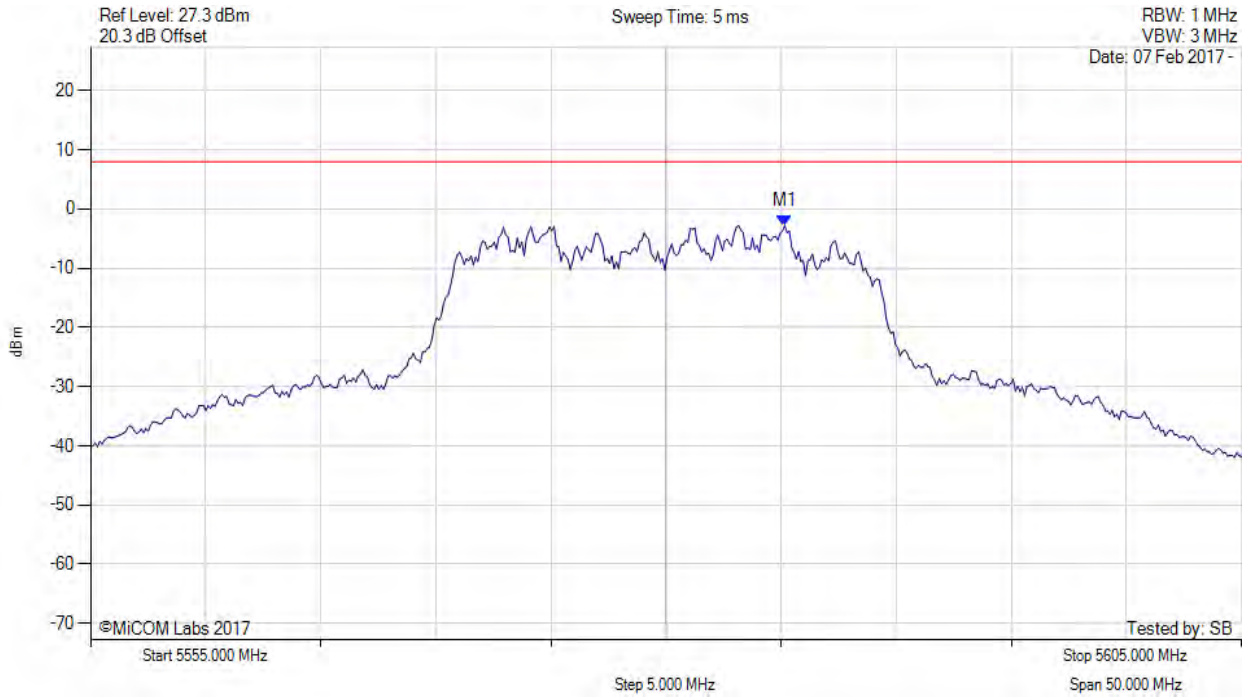



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5575.341 MHz : -1.362 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

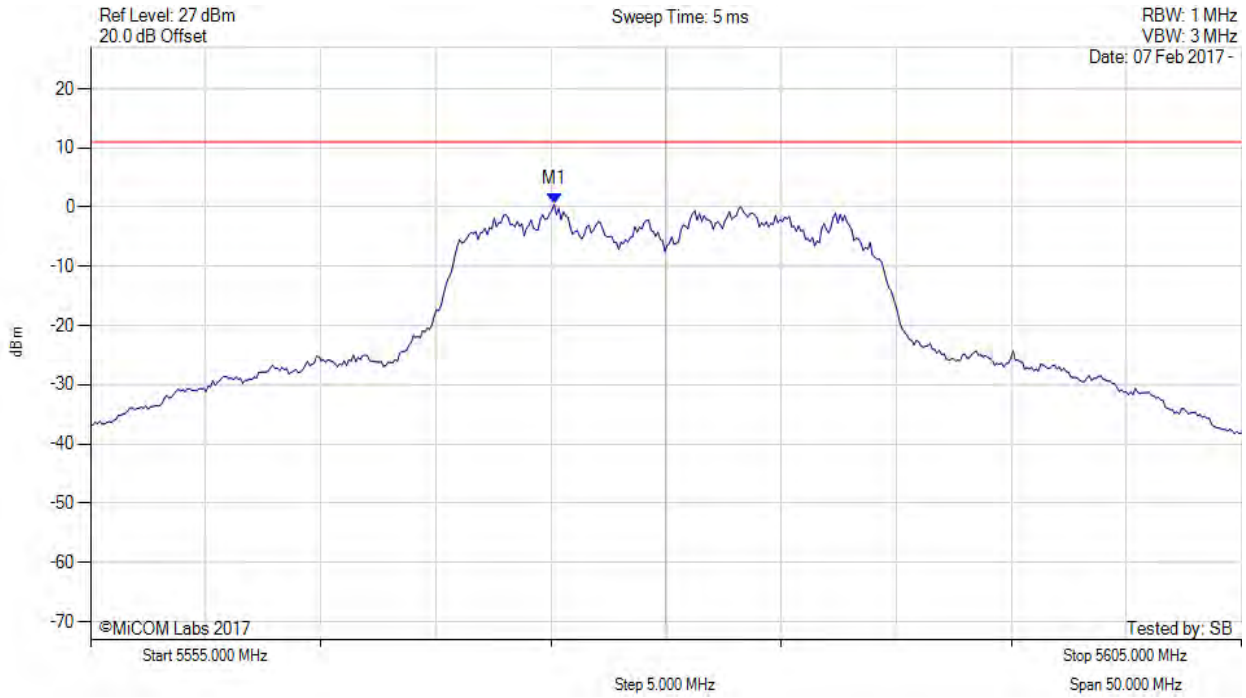



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5585.160 MHz : -2.806 dBm | Channel Frequency: 5580.00 MHz |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5580.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

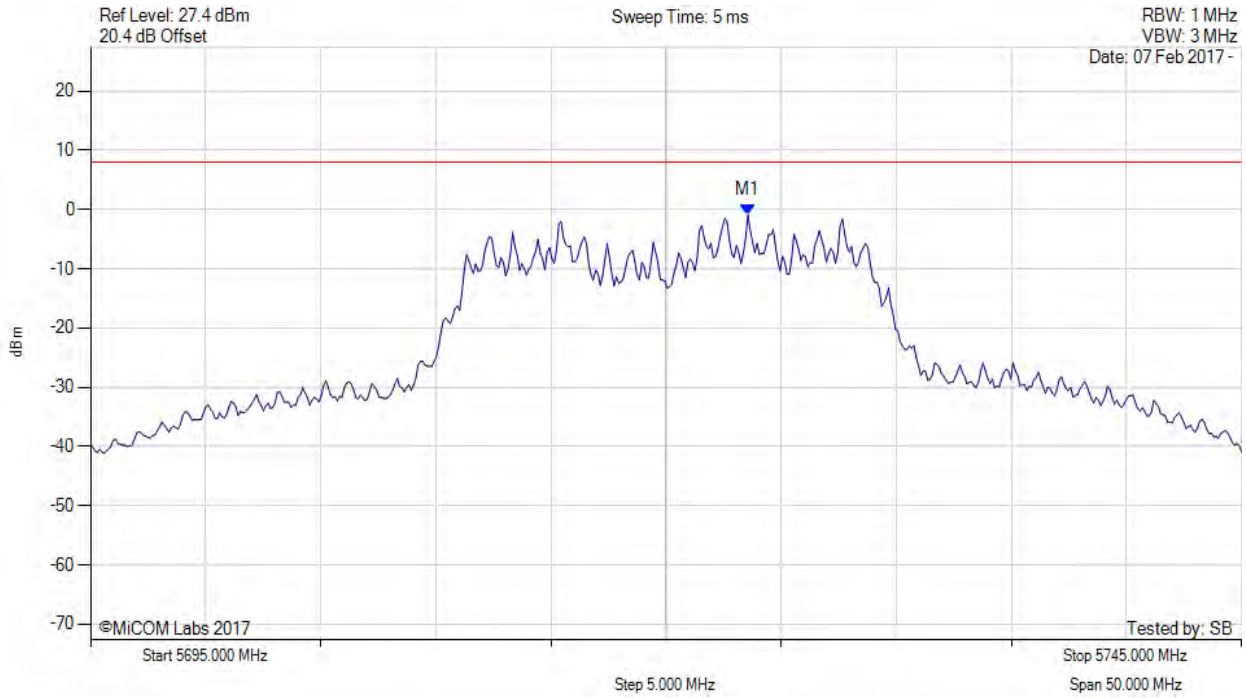



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5575.100 MHz : 0.481 dBm<br>M1 + DCCF : 5575.100 MHz : 1.396 dBm<br>Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 11.0 dBm<br>Margin: -9.6 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

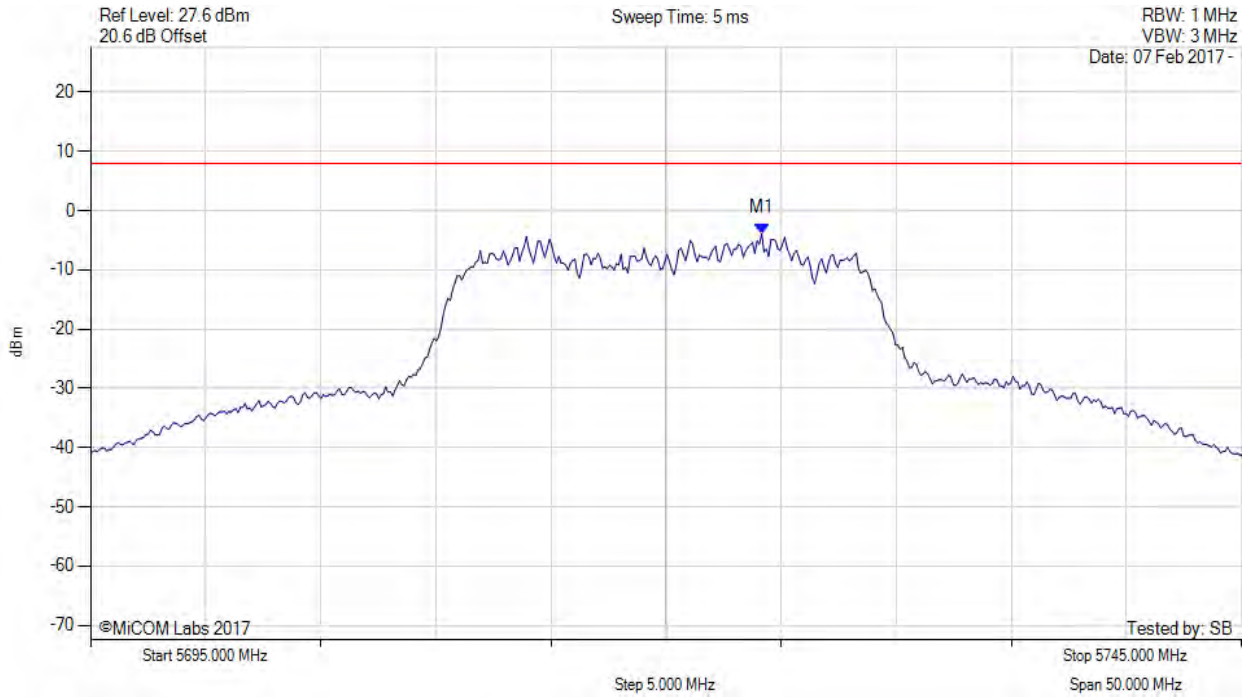



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5723.557 MHz : -0.937 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

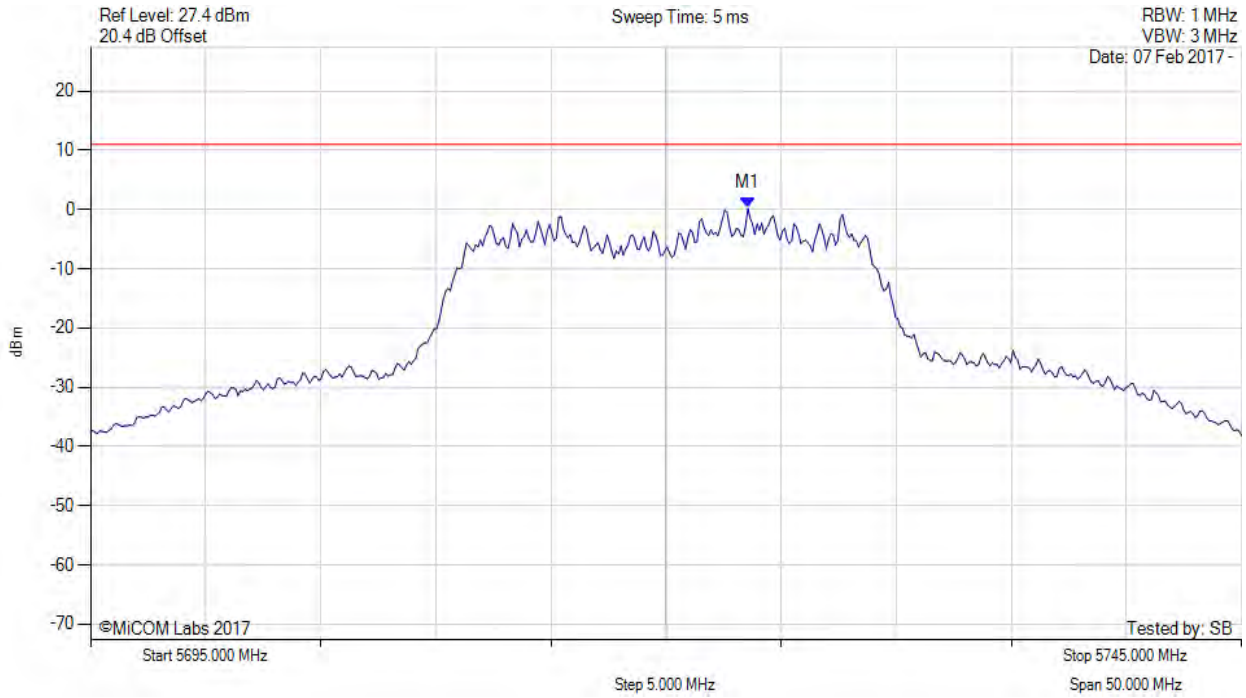



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5724.158 MHz : -3.856 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5720.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

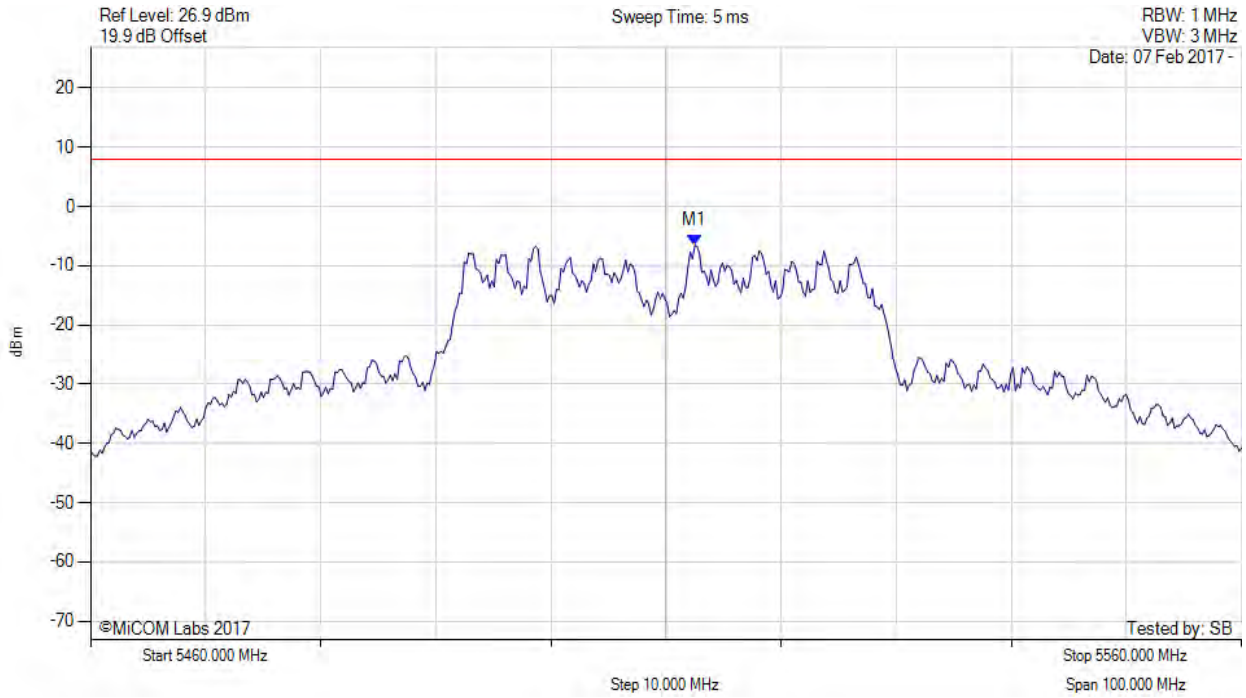



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5723.600 MHz : 0.204 dBm<br>M1 + DCCF : 5723.600 MHz : 1.119 dBm<br>Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 11.0 dBm<br>Margin: -9.9 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

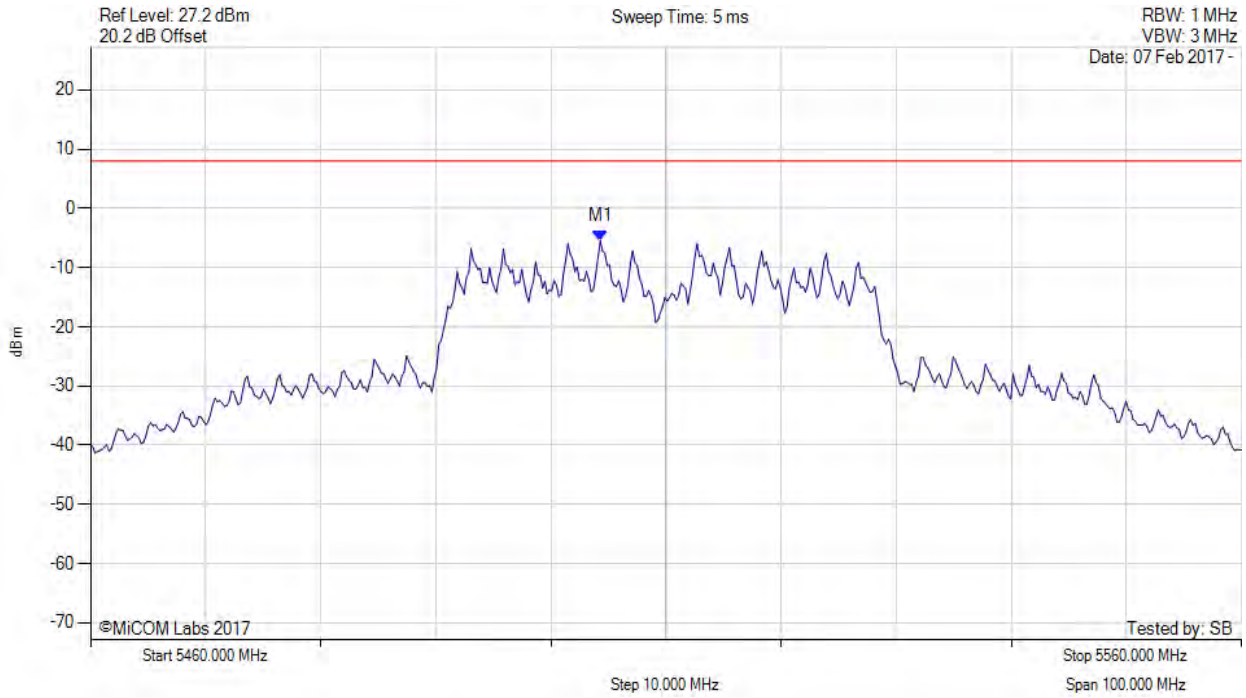



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5512.505 MHz : -6.553 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

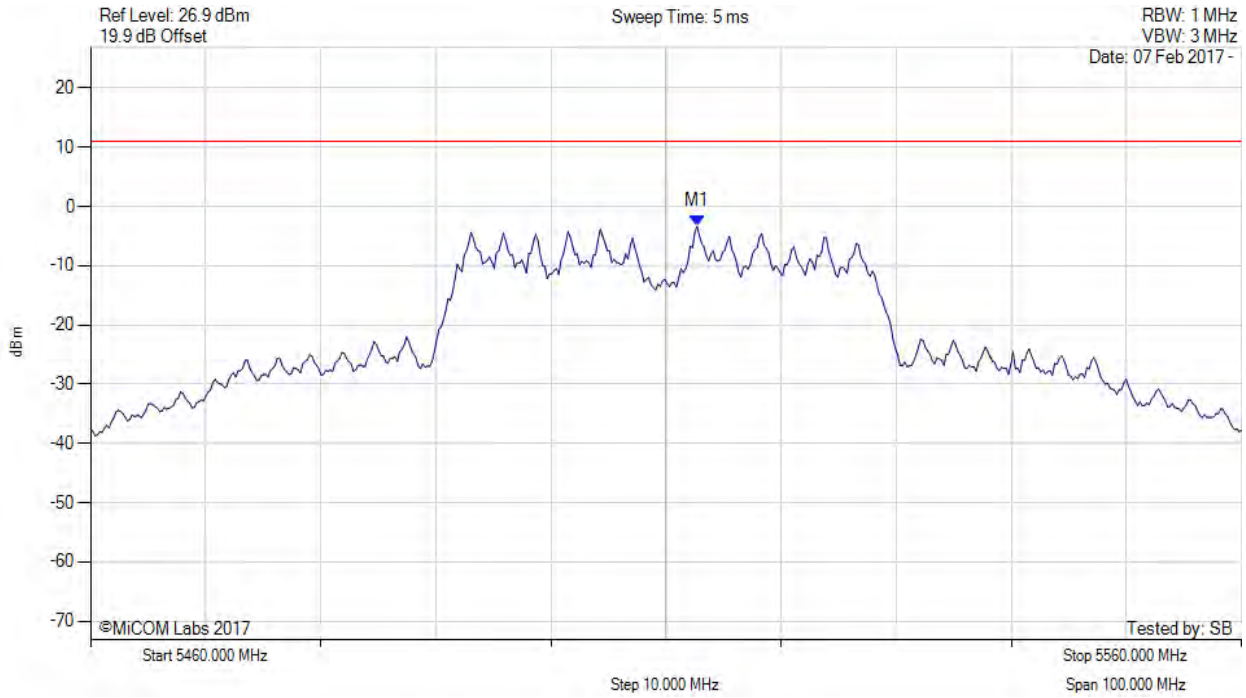



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5504.289 MHz : -5.521 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5510.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

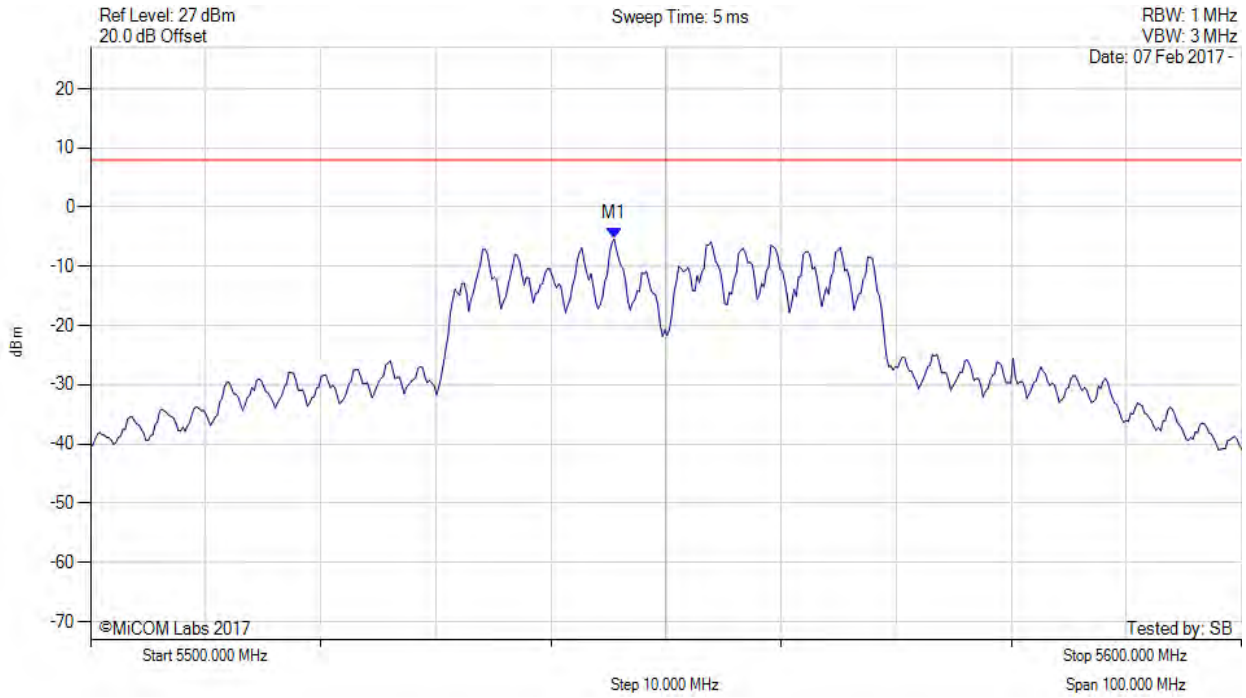



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5512.700 MHz : -3.352 dBm<br>M1 + DCCF : 5512.700 MHz : -1.865 dBm<br>Duty Cycle Correction Factor : +1.49 dB | Limit: ≤ 11.0 dBm<br>Margin: -12.9 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

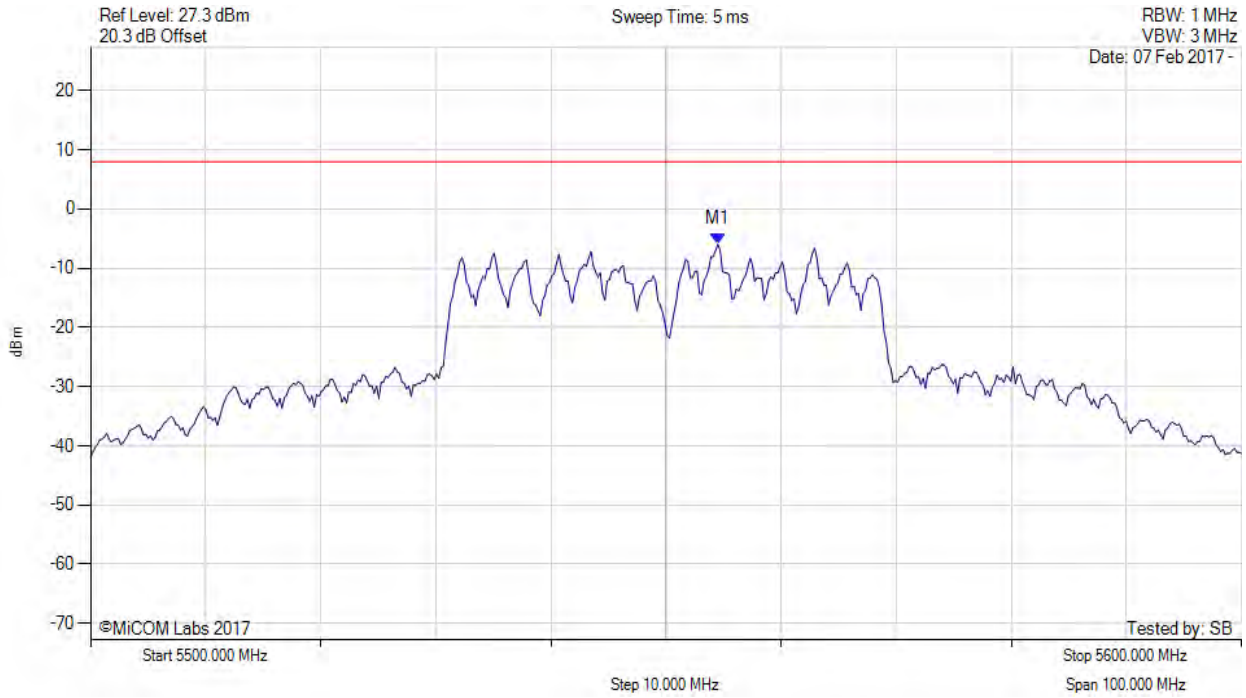



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5545.491 MHz : -5.381 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

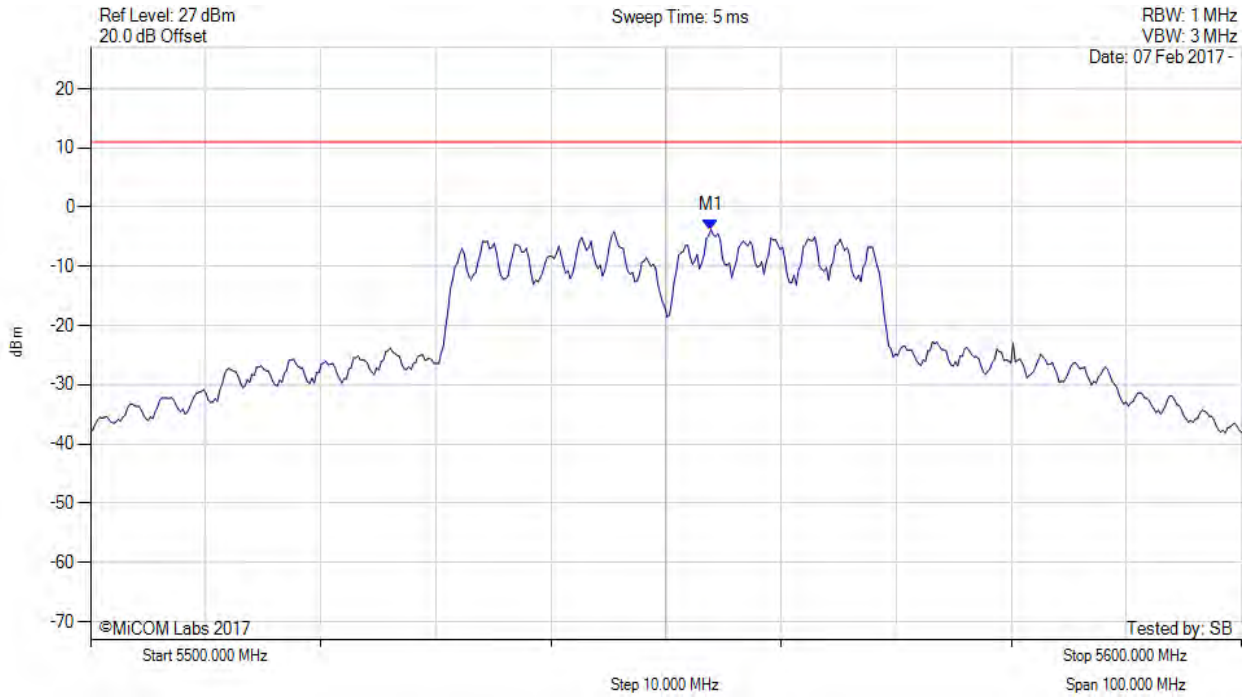



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5554.509 MHz : -5.965 dBm | Channel Frequency: 5550.00 MHz |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5550.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

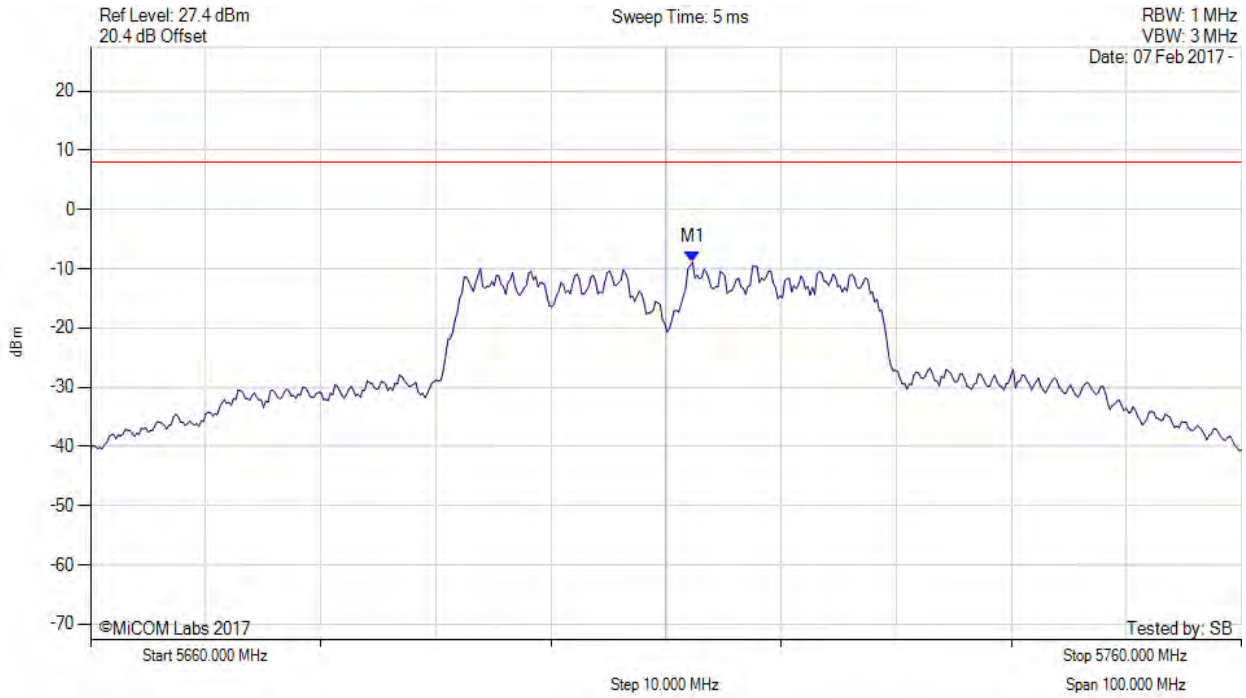



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5553.900 MHz : -3.833 dBm<br>M1 + DCCF : 5553.900 MHz : -2.346 dBm<br>Duty Cycle Correction Factor : +1.49 dB | Limit: ≤ 11.0 dBm<br>Margin: -13.4 dB |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain a, Temp: 20, Voltage: 110 Vac

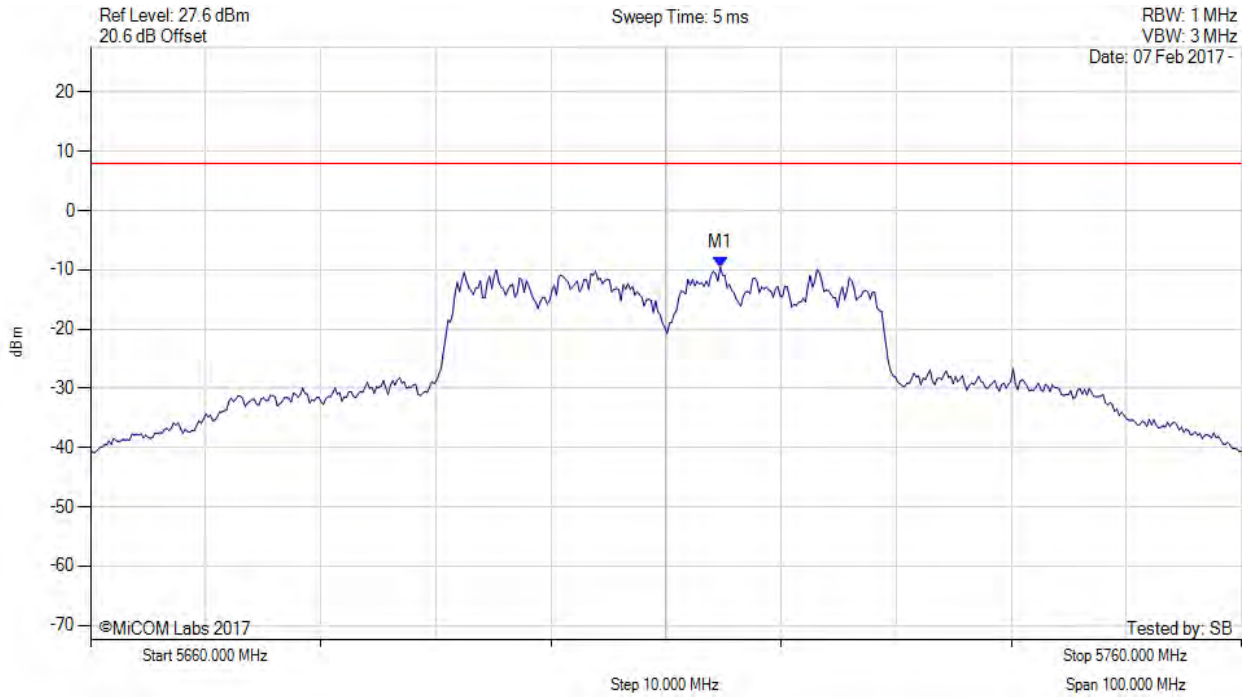



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5712.305 MHz : -8.868 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain b, Temp: 20, Voltage: 110 Vac

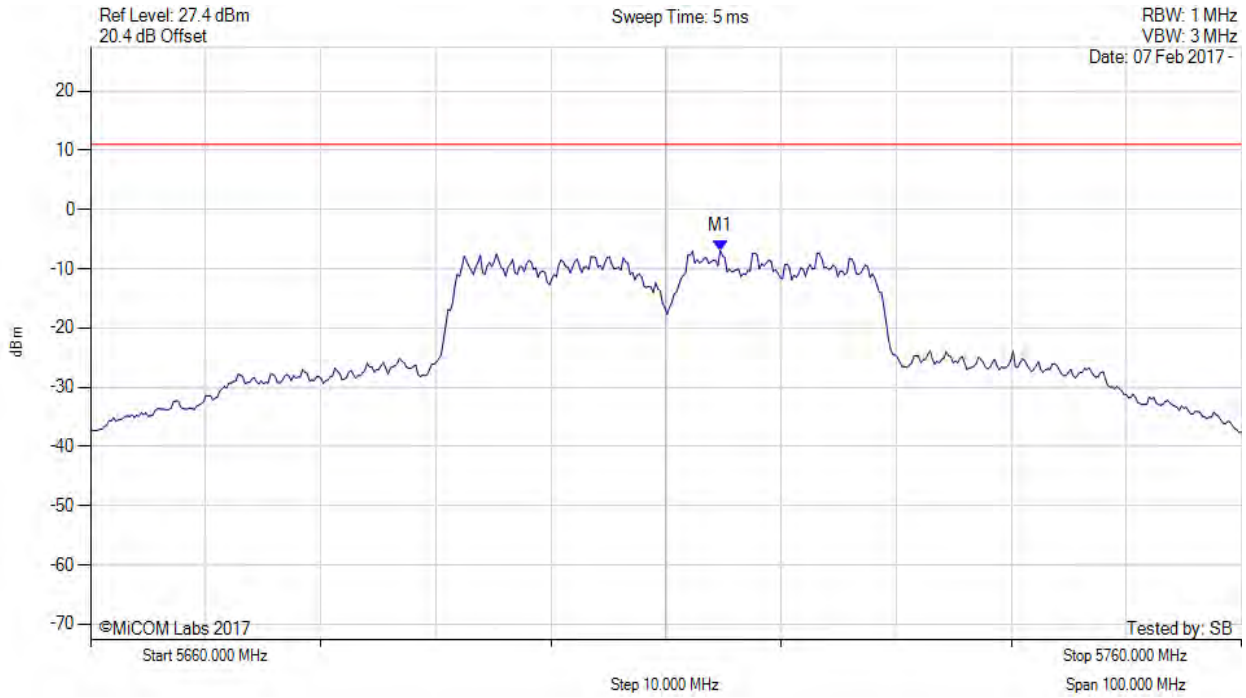



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5714.709 MHz : -9.524 dBm | Limit: ≤ 7.990 dBm |

back to matrix

POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5710.00 MHz, SUM, Temp: 20, Voltage: 110 Vac

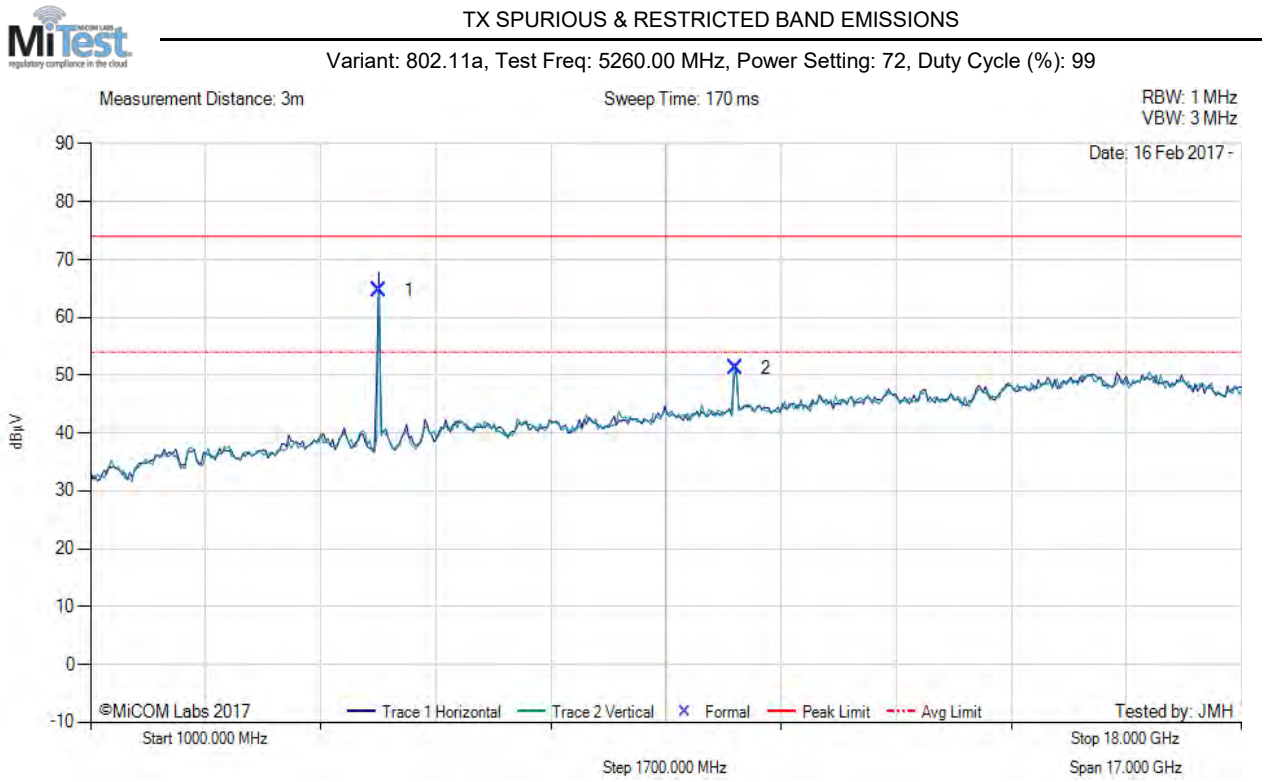



| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5714.700 MHz : -6.942 dBm<br>M1 + DCCF : 5714.700 MHz : -5.455 dBm<br>Duty Cycle Correction Factor : +1.49 dB | Limit: ≤ 11.0 dBm<br>Margin: -16.5 dB |

back to matrix

## A.3. Radiated

### A.3.1. TX Spurious & Restricted Band Emissions



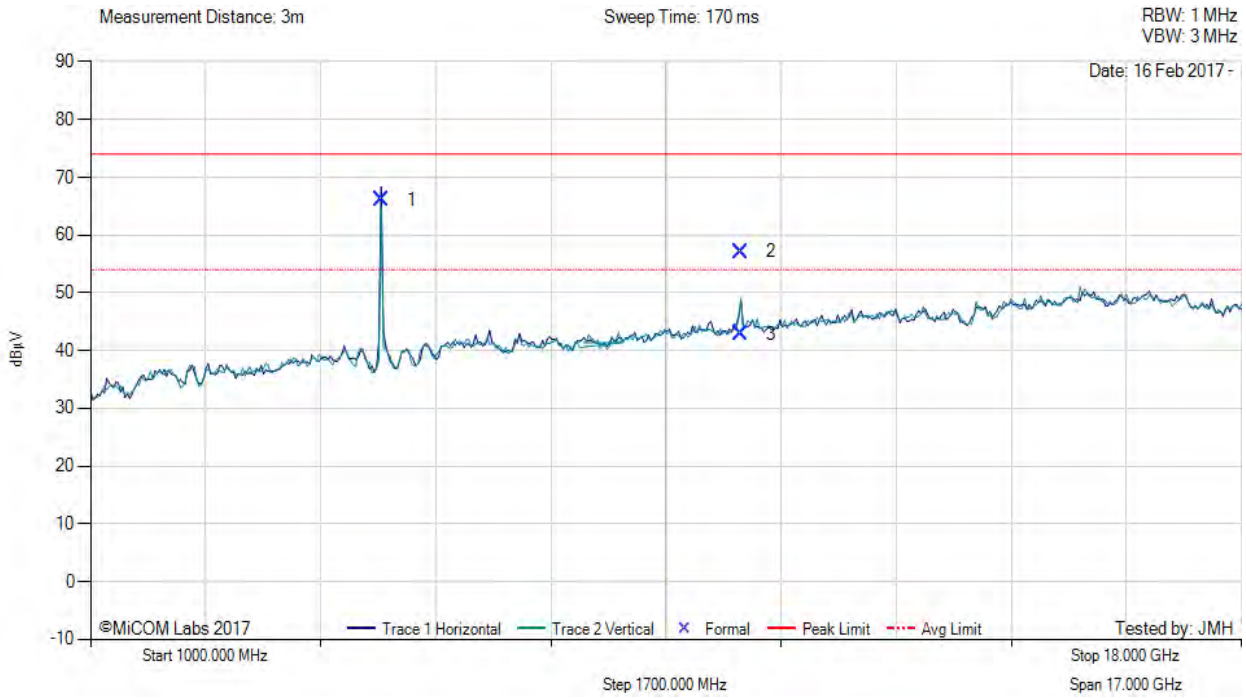

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5261.44 | 72.32 | 3.66 | -11.29 | 64.69 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| 2 | 10519.94 | 50.02 | 5.43 | -4.21 | 51.24 | Peak (NRB) | Vertical | 151 | 7 | -- | -- | Pass |

**Test Notes:** APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5300.00 MHz, Power Setting: 72, Duty Cycle (%): 99



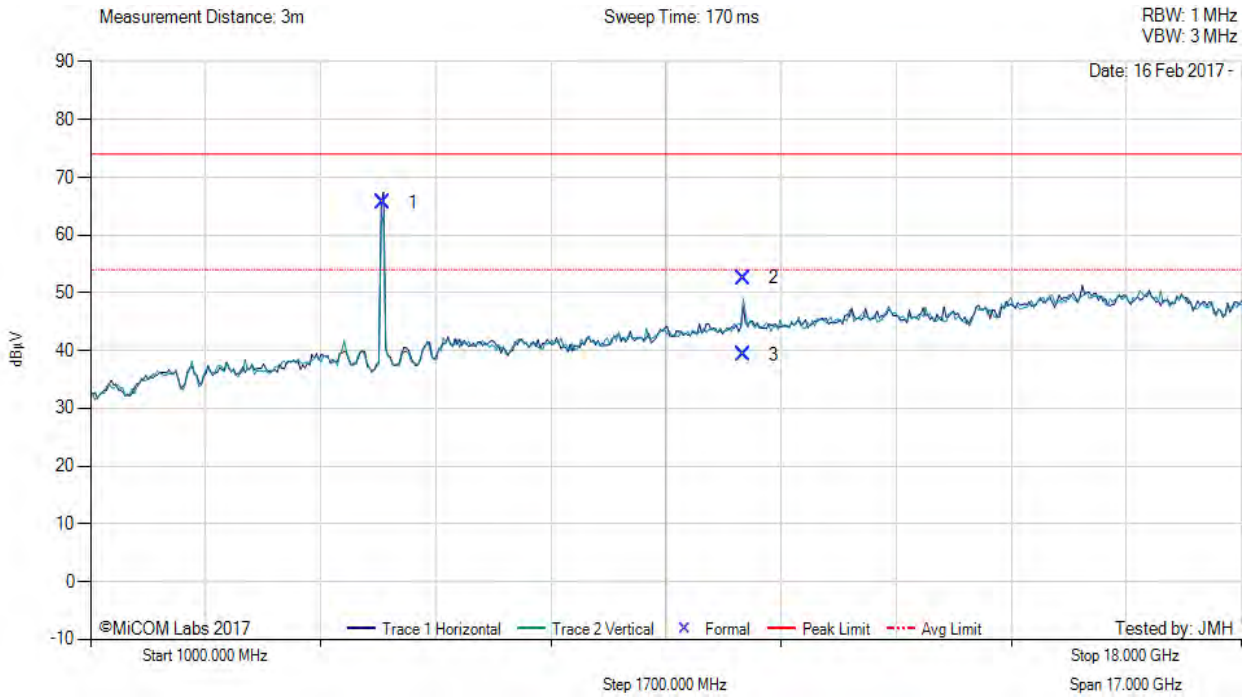

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5295.84 | 73.38 | 3.79 | -11.11 | 66.06 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| 2 | 10604.94 | 55.48 | 5.56 | -3.92 | 57.12 | Max Peak | Horizontal | 185 | 193 | 74.0 | -16.9 | Pass |
| 3 | 10604.94 | 41.15 | 5.56 | -3.92 | 42.79 | Max Avg | Horizontal | 185 | 193 | 54.0 | -11.2 | Pass |

**Test Notes:** APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5320.00 MHz, Power Setting: 72, Duty Cycle (%): 99



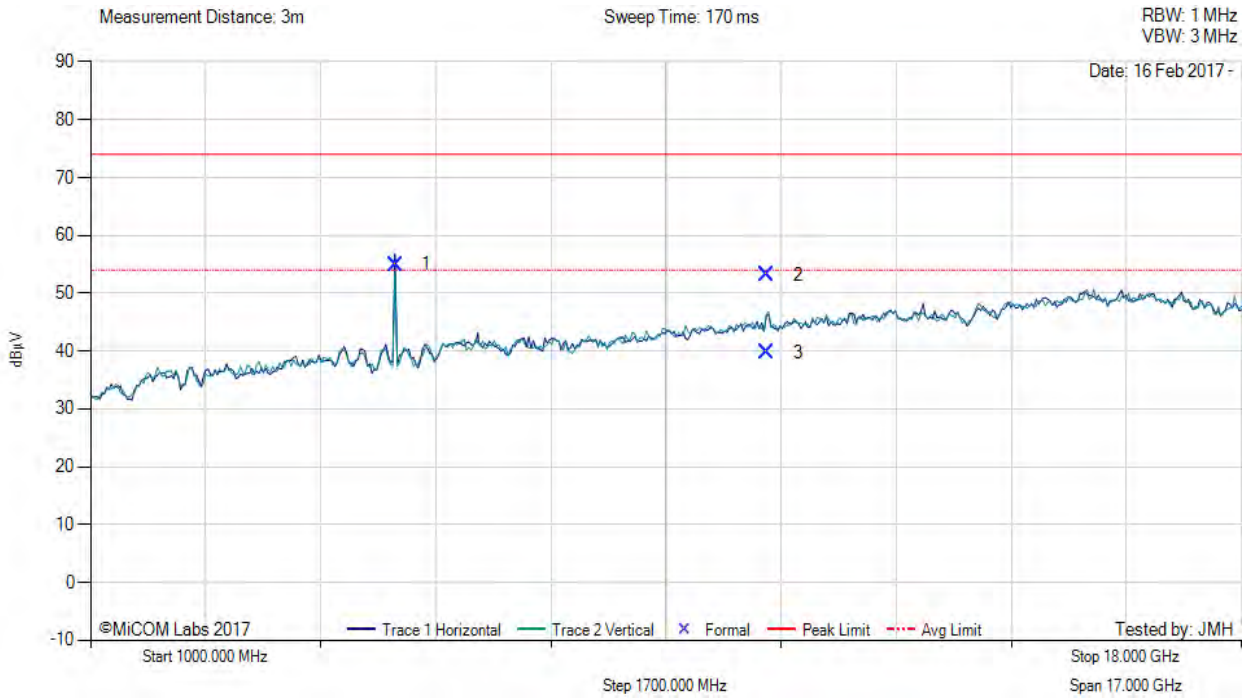

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5323.73 | 72.98 | 3.74 | -11.06 | 65.66 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| 2 | 10640.33 | 51.07 | 5.39 | -3.89 | 52.57 | Max Peak | Vertical | 98 | 18 | 74.0 | -21.4 | Pass |
| 3 | 10640.33 | 37.71 | 5.39 | -3.89 | 39.21 | Max Avg | Vertical | 98 | 18 | 54.0 | -14.8 | Pass |

**Test Notes:** APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5500.00 MHz, Power Setting: 72, Duty Cycle (%): 99



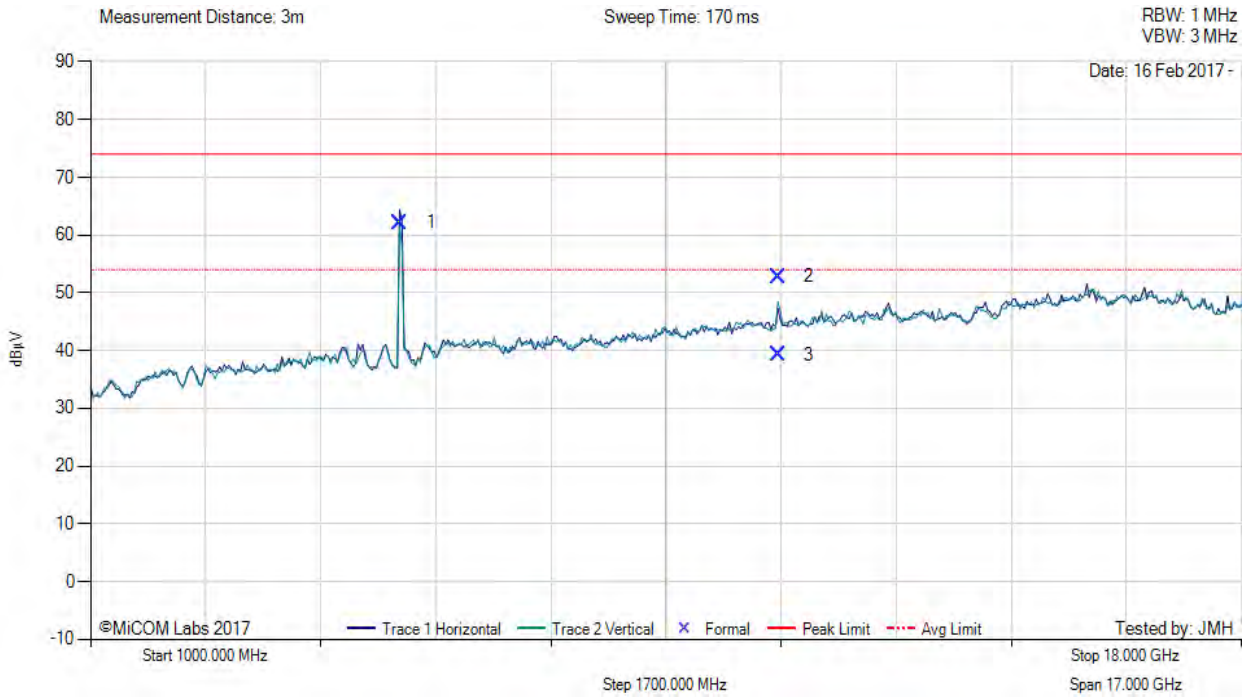

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5504.21 | 62.41 | 3.75 | -11.18 | 54.98 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| 2 | 10995.83 | 51.77 | 5.60 | -4.26 | 53.11 | Max Peak | Vertical | 155 | 267 | 74.0 | -20.9 | Pass |
| 3 | 10995.83 | 38.37 | 5.60 | -4.26 | 39.71 | Max Avg | Vertical | 155 | 267 | 54.0 | -14.3 | Pass |

**Test Notes:** APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5580.00 MHz, Power Setting: 72, Duty Cycle (%): 99



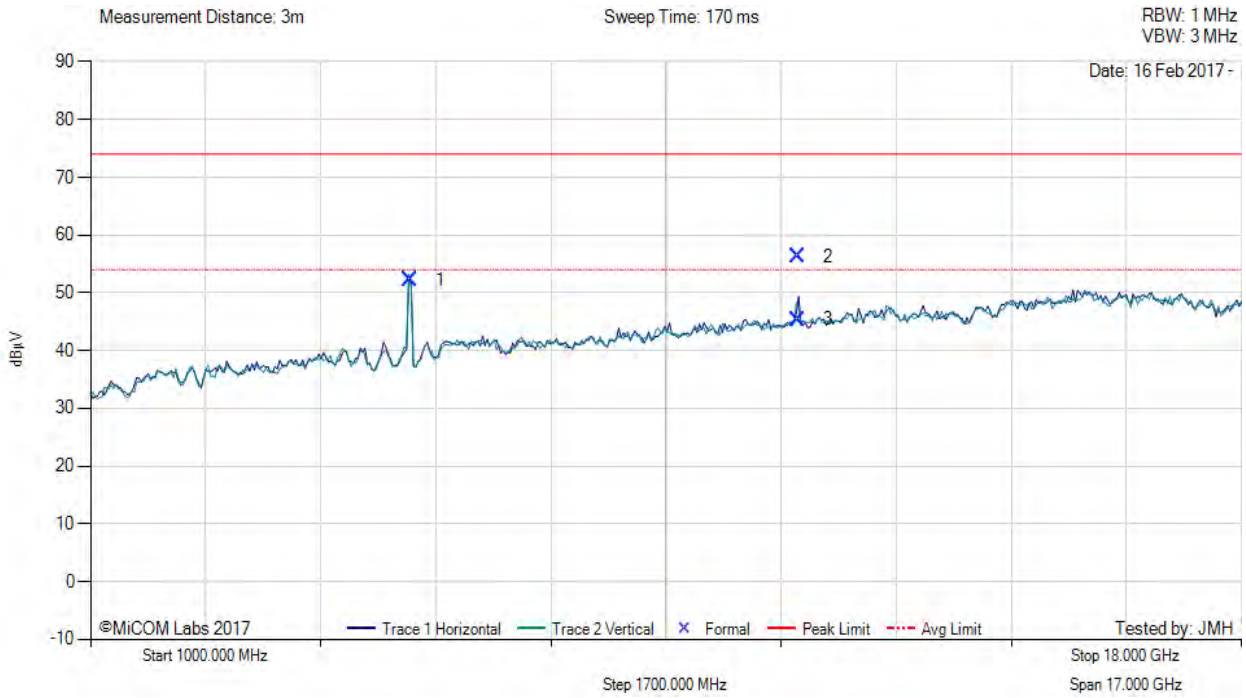

| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5576.21 | 69.56 | 3.81 | -11.21 | 62.16 | Fundamental | Horizontal | 100 | 0 | -- | -- | |
| 2 | 11157.98 | 50.94 | 5.94 | -4.06 | 52.82 | Max Peak | Vertical | 140 | 357 | 74.0 | -21.2 | Pass |
| 3 | 11157.98 | 37.39 | 5.94 | -4.06 | 39.27 | Max Avg | Vertical | 140 | 357 | 54.0 | -14.7 | Pass |

**Test Notes:** APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 802.11a, Test Freq: 5720.00 MHz, Power Setting: 72, Duty Cycle (%): 99

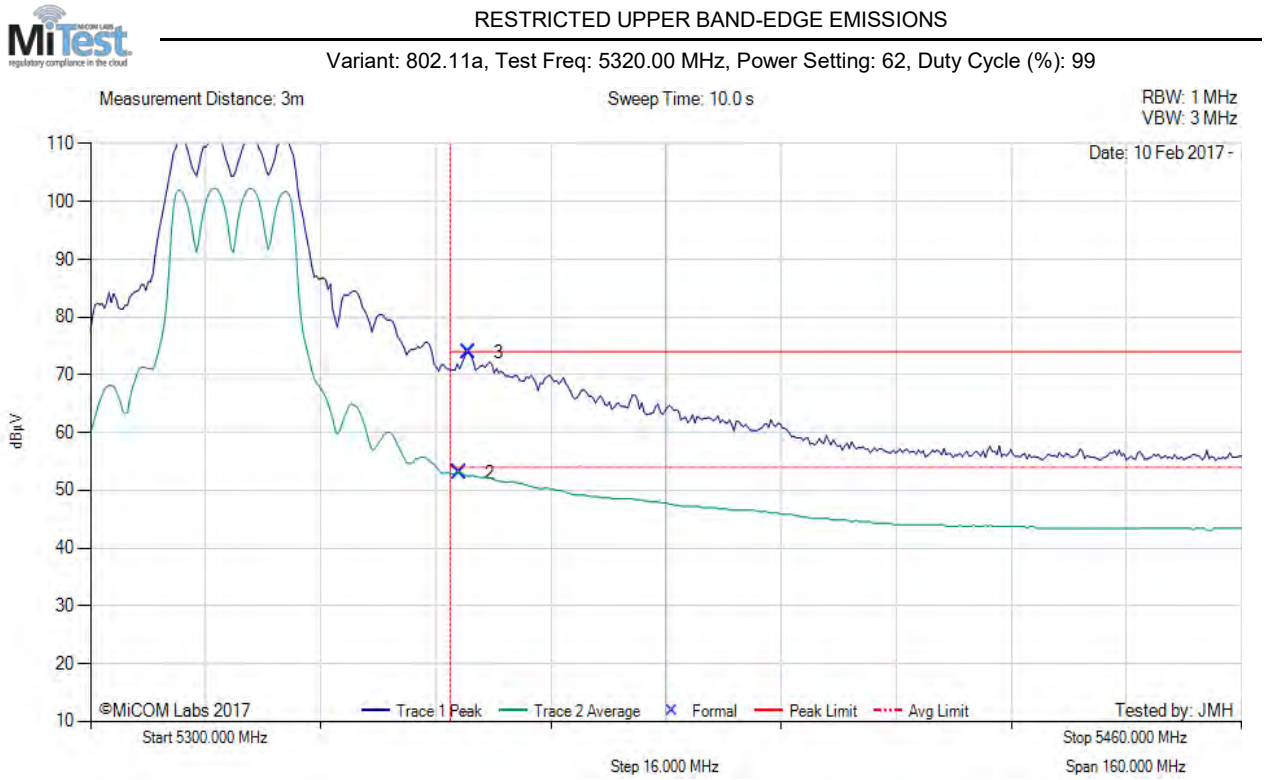



| 1000.00 - 18000.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5715.24 | 59.08 | 3.81 | -10.76 | 52.13 | Fundamental | Vertical | 100 | 0 | -- | -- | |
| 2 | 11439.80 | 55.80 | 5.35 | -4.93 | 56.22 | Max Peak | Horizontal | 187 | 304 | 74.0 | -17.8 | Pass |
| 3 | 11439.80 | 44.98 | 5.35 | -4.93 | 45.40 | Max Avg | Horizontal | 187 | 304 | 54.0 | -8.6 | Pass |

**Test Notes:** APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

### A.3.2. Restricted Edge & Band-Edge Emissions



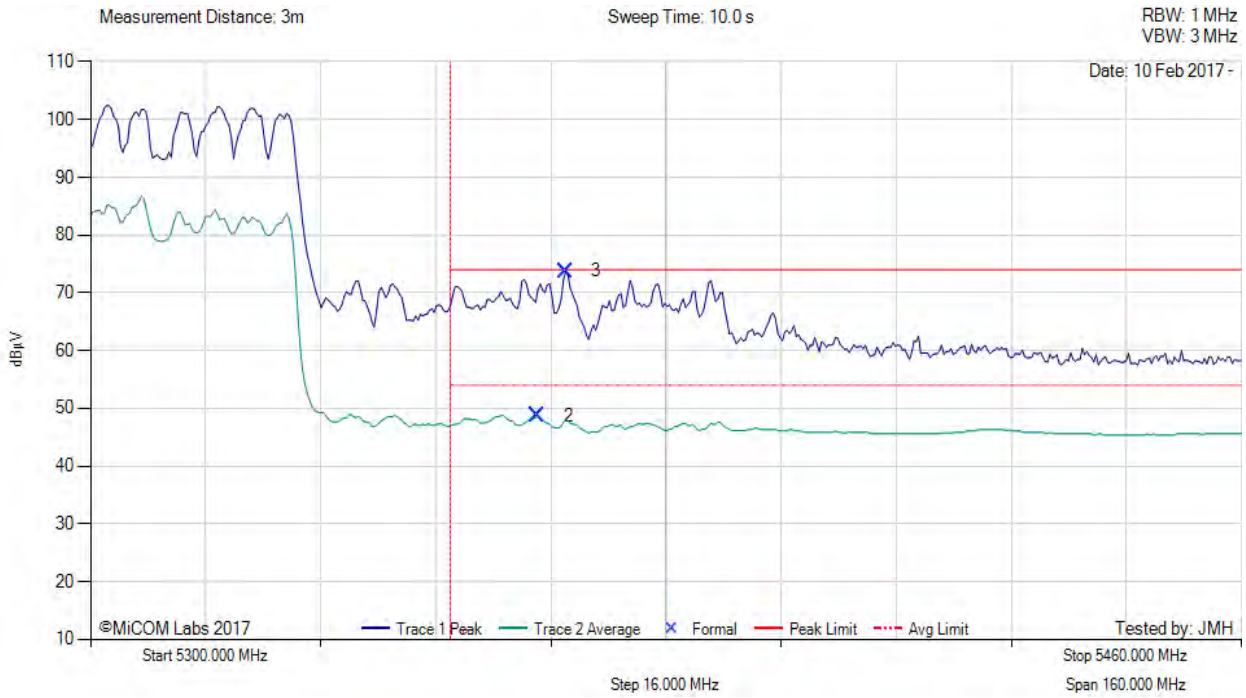

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 2 | 5351.28 | 14.86 | 3.71 | 34.51 | 53.08 | Max Avg | Horizontal | 169 | 353 | 54.0 | -0.9 | Pass |
| 3 | 5352.57 | 35.68 | 3.71 | 34.50 | 73.89 | Max Peak | Horizontal | 169 | 353 | 74.0 | -0.1 | Pass |
| 1 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 62 to meet band edge limits.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5290.00 MHz, Power Setting: 53, Duty Cycle (%): 99



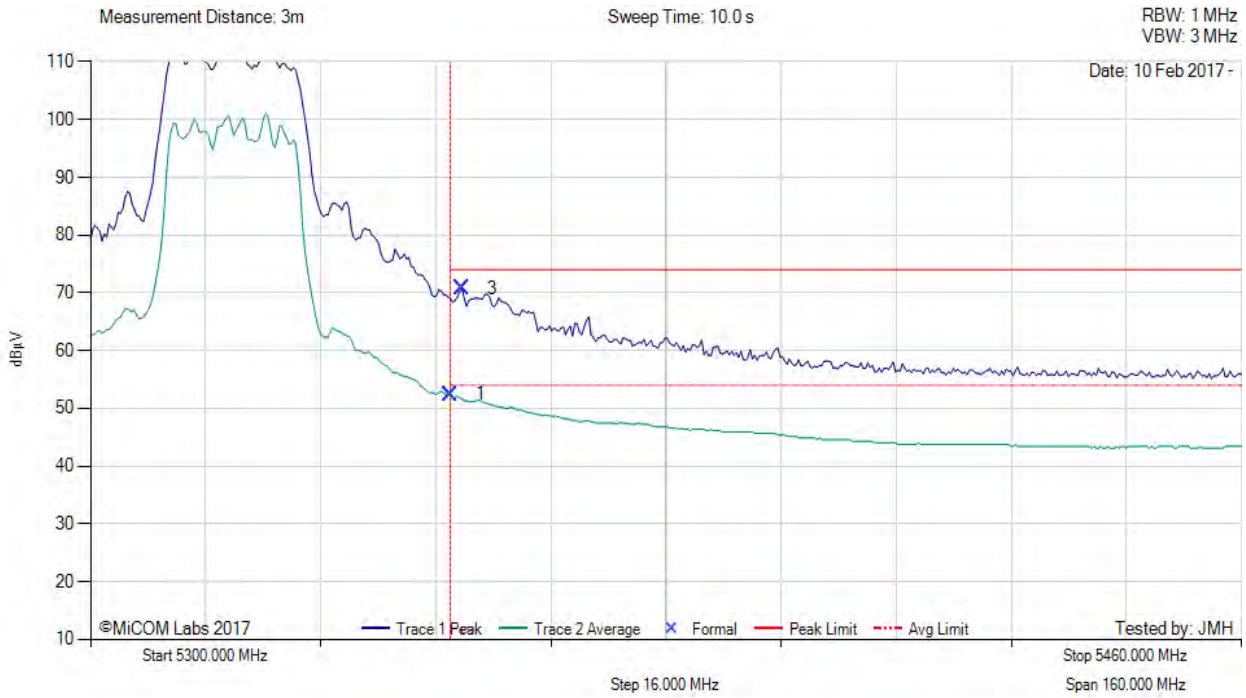

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 2 | 5362.18 | 10.56 | 3.70 | 34.48 | 48.74 | Max Avg | Horizontal | 169 | 353 | 54.0 | -5.3 | Pass |
| 3 | 5366.03 | 35.58 | 3.69 | 34.47 | 73.74 | Max Peak | Horizontal | 169 | 353 | 74.0 | -0.3 | Pass |
| 1 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 53 to meet band edge limit.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5320.00 MHz, Power Setting: 72, Duty Cycle (%): 99



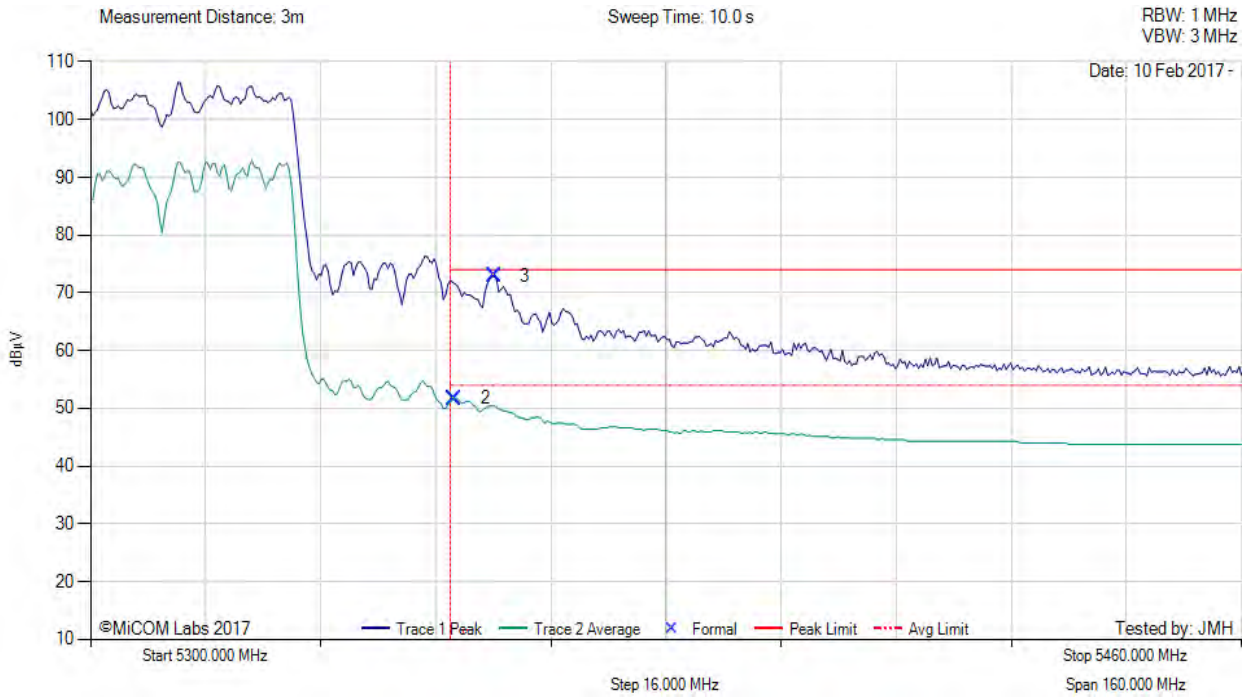

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5350.00 | 14.23 | 3.70 | 34.51 | 52.44 | Max Avg | Horizontal | 169 | 353 | 54.0 | -1.6 | Pass |
| 3 | 5351.60 | 32.50 | 3.71 | 34.51 | 70.72 | Max Peak | Horizontal | 169 | 353 | 74.0 | -3.3 | Pass |
| 2 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 802.11n HT-40, Test Freq: 5310.00 MHz, Power Setting: 56, Duty Cycle (%): 99



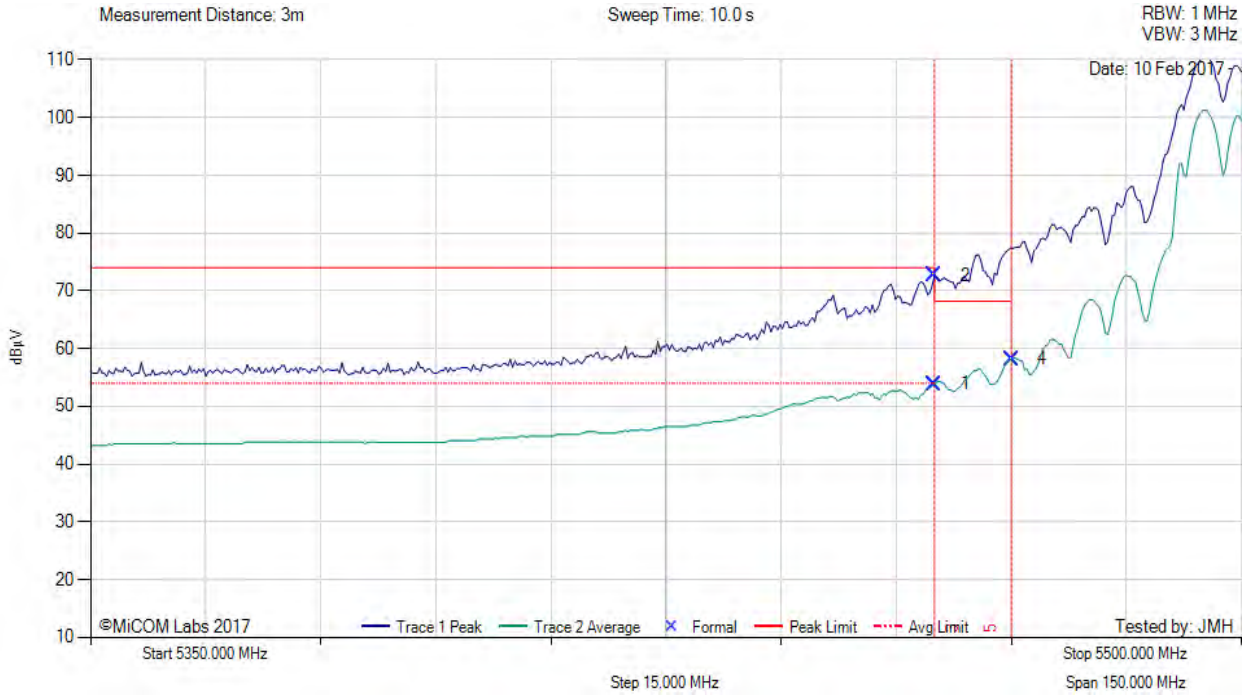

| 5300.00 - 5460.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 2 | 5350.64 | 13.52 | 3.71 | 34.51 | 51.74 | Max Avg | Horizontal | 169 | 353 | 54.0 | -2.3 | Pass |
| 3 | 5356.09 | 34.73 | 3.71 | 34.50 | 72.94 | Max Peak | Horizontal | 169 | 353 | 74.0 | -1.1 | Pass |
| 1 | 5350.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 56 to meet band edge limit.

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11a, Test Freq: 5500.00 MHz, Power Setting: 62, Duty Cycle (%): 99




| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5460.00 | 15.78 | 3.79 | 34.31 | 53.88 | Max Avg | Horizontal | 163 | 354 | 54.0 | -0.1 | Pass |
| 2 | 5460.00 | 34.53 | 3.79 | 34.31 | 72.63 | Max Peak | Horizontal | 163 | 354 | 74.0 | -1.4 | Pass |
| 4 | 5470.00 | 20.07 | 3.76 | 34.32 | 58.15 | Max Avg | Horizontal | 163 | 354 | 68.2 | -10.1 | Pass |
| 3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| 5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 62 to meet band edge limit.

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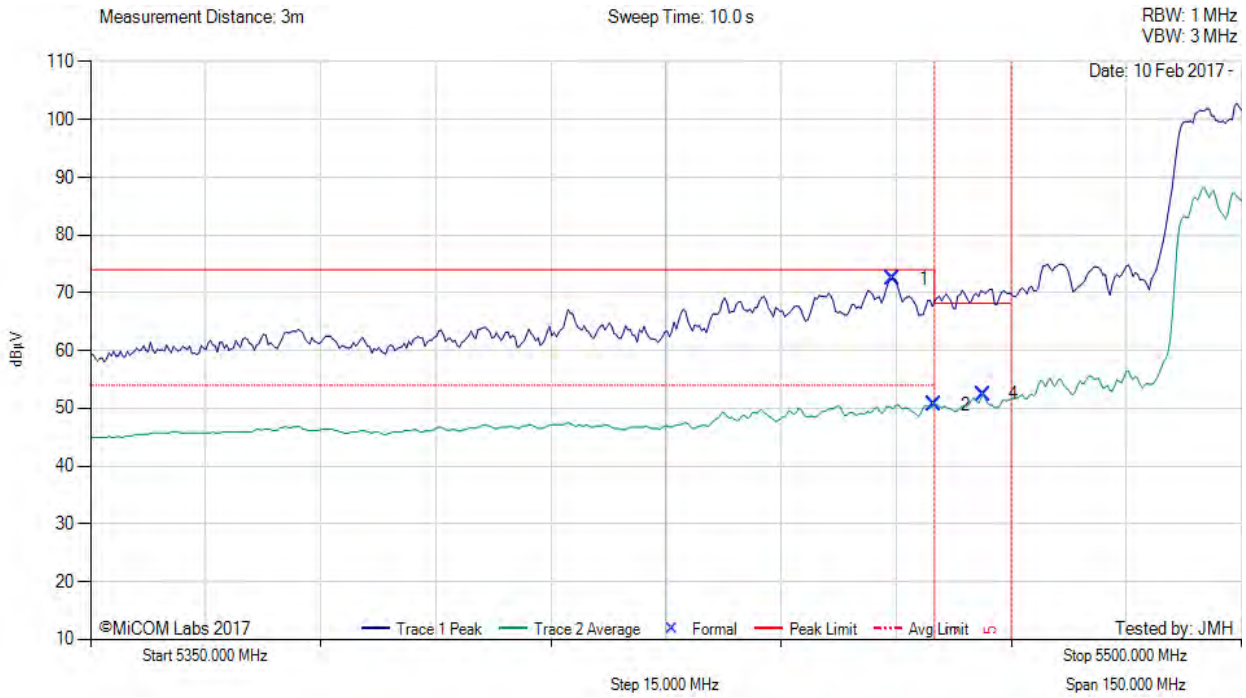
RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11ac-80, Test Freq: 5530.00 MHz, Power Setting: 63, Duty Cycle (%): 99




| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5454.59 | 34.42 | 3.79 | 34.30 | 72.51 | Max Peak | Horizontal | 163 | 354 | 74.0 | -1.5 | Pass |
| 2 | 5460.00 | 12.53 | 3.79 | 34.31 | 50.63 | Max Avg | Horizontal | 163 | 354 | 54.0 | -3.4 | Pass |
| 4 | 5466.39 | 14.38 | 3.77 | 34.31 | 52.46 | Max Avg | Horizontal | 163 | 354 | 68.2 | -15.7 | Pass |
| 3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| 5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 63 to meet band edge limit.

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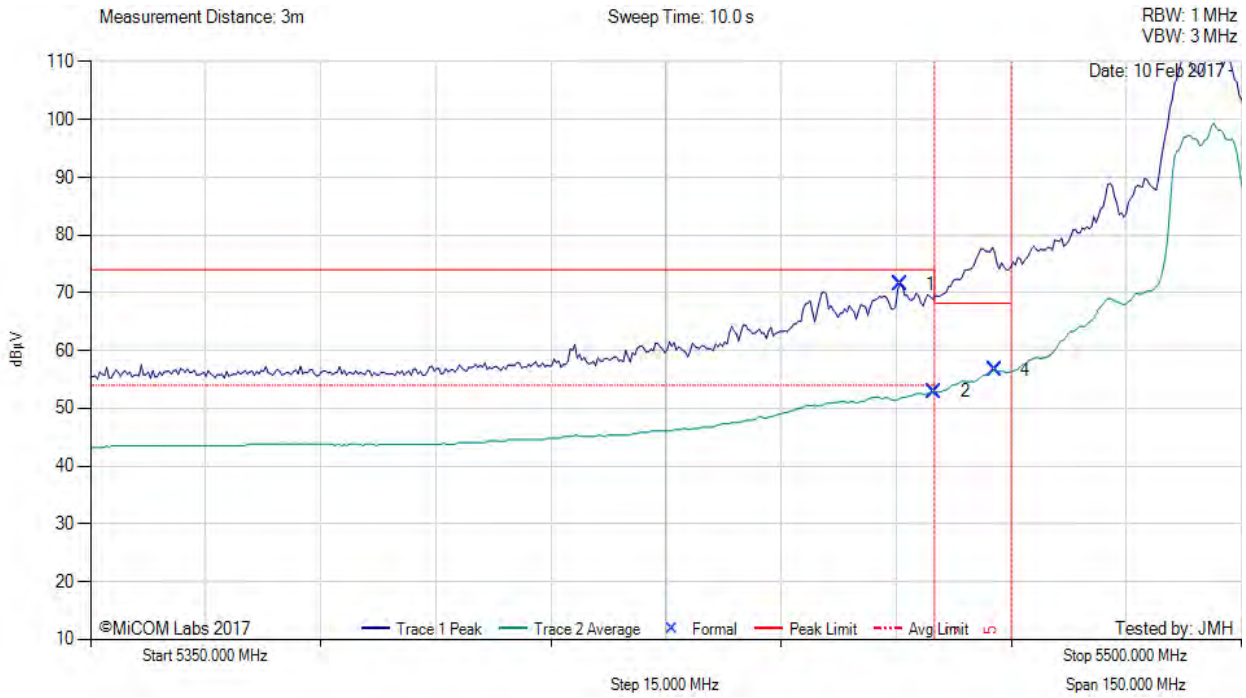
RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11n HT-20, Test Freq: 5500.00 MHz, Power Setting: 72, Duty Cycle (%): 99




| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5455.49 | 33.46 | 3.79 | 34.30 | 71.55 | Max Peak | Horizontal | 163 | 354 | 74.0 | -2.5 | Pass |
| 2 | 5460.00 | 14.79 | 3.79 | 34.31 | 52.89 | Max Avg | Horizontal | 163 | 354 | 54.0 | -1.1 | Pass |
| 4 | 5467.90 | 18.51 | 3.76 | 34.32 | 56.59 | Max Avg | Horizontal | 163 | 354 | 68.2 | -11.6 | Pass |
| 3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| 5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC.

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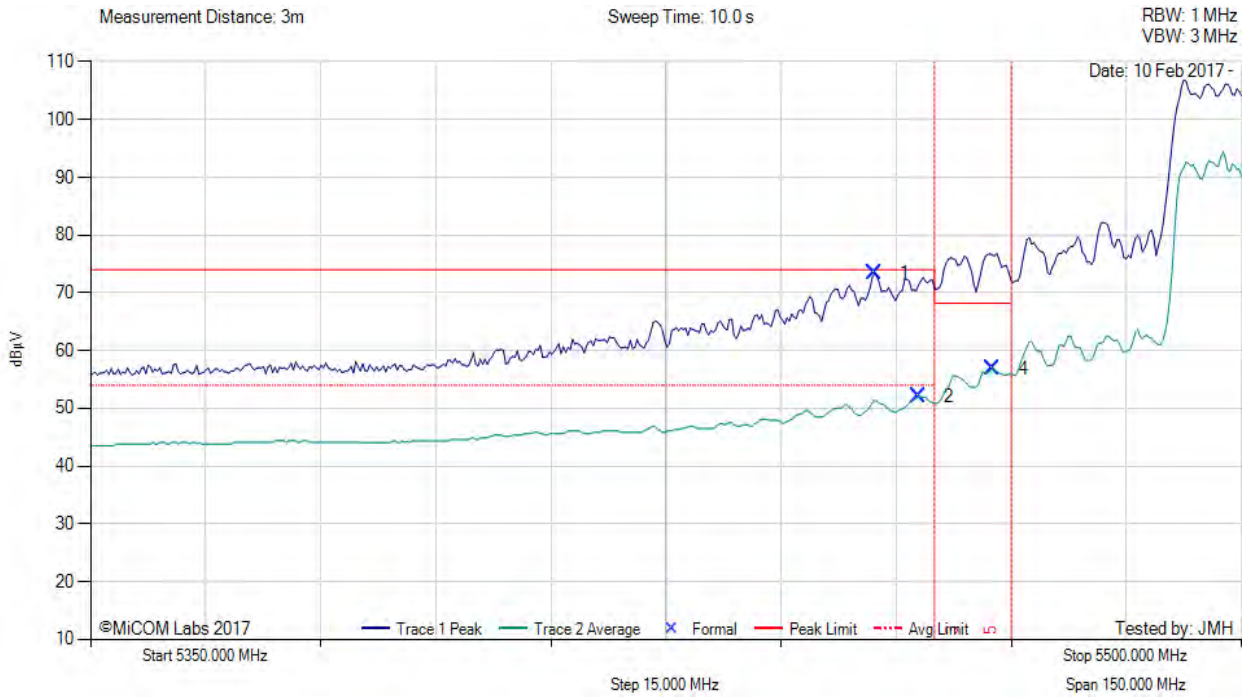
RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 802.11n HT-40, Test Freq: 5510.00 MHz, Power Setting: 62, Duty Cycle (%): 99




| 5350.00 - 5500.00 MHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Num** | **Frequency MHz** | **Raw dBµV** | **Cable Loss dB** | **AF dB** | **Level dBµV/m** | **Measurement Type** | **Pol** | **Hgt cm** | **Azt Deg** | **Limit dBµV/m** | **Margin dB** | **Pass /Fail** |
| 1 | 5452.18 | 35.27 | 3.78 | 34.30 | 73.35 | Max Peak | Horizontal | 163 | 354 | 74.0 | -0.7 | Pass |
| 2 | 5457.90 | 13.91 | 3.80 | 34.30 | 52.01 | Max Avg | Horizontal | 163 | 354 | 54.0 | -2.0 | Pass |
| 4 | 5467.60 | 18.78 | 3.76 | 34.32 | 56.86 | Max Avg | Horizontal | 163 | 354 | 68.2 | -11.3 | Pass |
| 3 | 5460.00 | -- | -- | -- | -- | Restricted-Band | -- | -- | -- | -- | -- | -- |
| 5 | 5470.00 | -- | -- | -- | -- | Band-Edge | -- | -- | -- | -- | -- | -- |

**Test Notes:** EUT APINP203 SN# CNCPK2T00L on 150cm table powered by AC. Power reduced to 62 to meet band edge limit.

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