

Company: Radwin Ltd.

Test of: 5 GHz 802.11ac 3x3 RF Module 5XACMD3C

To: FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247

Report No.: RDWN38-U3 Rev A



TEST REPORT
FROM
MiCOM Labs
opening wireless markets

Test of: Radwin Ltd. 5 GHz 802.11ac 3x3 RF Module 5XACMD3C

to

To: FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247

Test Report Serial No.: RDWN38-U3 Rev A

This report supersedes: NONE

Applicant: Radwin Ltd.
27 Habarzel Street
Tel Aviv 69710
Israel

Product Function: 5 GHz 802.11n/ac 3x3 MIMO RF
Module

Issue Date: 20th August 2015

This Test Report is Issued Under the Authority of:

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



MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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1. ACCREDITATION, LISTINGS & RECOGNITION

1.1. TESTING ACCREDITATION

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



American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

MICOM LABS

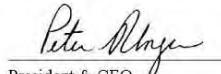
Pleasanton, CA

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 28th day of February 2014.



President & CEO
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2015



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

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Title: Radwin Ltd. 5 GHz 802.11ac 3x3 RF Module 5XACMD3C
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1.2. RECOGNITION

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

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

EU MRA – European Union Mutual Recognition Agreement.

NB – Notified Body

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

Phase I - recognition for product testing

Phase II – recognition for both product testing and certification

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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>



United States of America – Telecommunication Certification Body (TCB)
Industry Canada – Certification Body, CAB Identifier – US0159
Europe – Notified Body (NB), NB Identifier - 2280
Japan – Recognized Certification Body (RCB), RCB Identifier - 210

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2. DOCUMENT HISTORY

| Document History | | |
|------------------|------------------------------|-----------------|
| Revision | Date | Comments |
| Draft | 17 th August 2015 | |
| Draft #2 | 19 th August 2015 | |
| Rev A | 20 th August 2015 | Initial Release |
| . | | |
| . | | |
| . | | |
| . | | |
| . | | |

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

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3. TEST RESULT CERTIFICATE

Manufacturer: Radwin Ltd.
27 Habarzel Street
Tel Aviv 69710
Israel

Tested By: MiCOM Labs, Inc.
575 Boulder Court
Pleasanton
California 94566 USA

Model: 5XACMD3C

Telephone: +1 925 462 0304
Fax: +1 925 462 0306

Type Of Equipment: 5 GHz 802.11ac 3x3 RF Module

S/N's: Prototype

Test Date(s): 27th – 30th July 2015

Website: www.micomlabs.com

STANDARD(S)

TEST RESULTS

FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247

EQUIPMENT COMPLIES

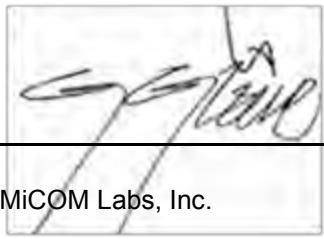
MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

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

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve
Quality Manager MiCOM Labs, Inc.



Gordon Hurst
President & CEO MiCOM Labs, Inc.



TESTING CERT #2381.01

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4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

| REF. | PUBLICATION | YEAR | TITLE |
|------|------------------------|---------------------|---|
| I | KDB 662911 | Oct 31 2013 | Guidance for measurement of output emission of devices that employ single transmitter with multiple outputs or systems with multiple transmitters operating simultaneously in the same frequency band |
| II | KDB 905462 D07 v01 | 10th June 2015 | Test guidance to demonstrate compliance for U-NII devices subject to DFS requirements. |
| III | KDB 926956 DO1 v01r02 | 17th October 2014 | U-NII Device Transition Plan |
| IV | KDB 789033 D02 v01 | 6th June 2014 | General UNII Test Procedures New Rules V01 |
| 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 3 2006 | Memorandum Opinion and Order |
| XI | FCC 47 CFR Part 15.407 | 2014 | Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices |
| XII | ICES-003 | Issue 5 2012 | Spectrum Management and Telecommunications; Interference-Causing Equipment Standard. Information Technology Equipment (ITE) – 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 | 2014 | FCC requirements and rules regarding photographs and test setup diagrams. |

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4.2. Test and Uncertainty Procedure

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

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

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

5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

| Details | Description |
|--------------------------------------|---|
| Purpose: | Test of the Radwin 5XACMD3C to FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247 Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices |
| Applicant: | Radwin Ltd 27 Habarzel Street Tel Aviv 69710 Israel |
| Manufacturer: | As Applicant |
| Laboratory performing the tests: | MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA |
| Test report reference number: | RDWN38 - SDR LMA 5.8GHz FCC IC |
| Date EUT received: | 27th July 2015 |
| Standard(s) applied: | FCC CFR 47 Part 15 Subpart E 15.407, IC RSS-247 Issue 1 |
| Dates of test (from - to): | 27 th – 30 th July 2015 |
| No of Units Tested: | 2 |
| Type of Equipment: | 5 GHz 802.11ac 3x3 RF Module |
| Product Family Name: | 5 GHz 802.11ac 3x3 RF Module |
| Model(s): | 5XACMD3C |
| Location for use: | Indoor and Outdoor |
| Declared Frequency Range(s): | 5725 - 5850 MHz; |
| Primary function of equipment: | 5 GHz 802.11n/ac 3x3 MIMO RF Module |
| Secondary function of equipment: | None Provided |
| Type of Modulation: | OFDM – BPSK, QPSK, 16QAM, 64QAM, 256QAM' |
| EUT Modes of Operation: | 5725 - 5850 MHz; 5 MHz; 10 MHz; 20 MHz; 40 MHz; 80 MHz; |
| Declared Nominal Output Power (Ave): | 5725 - 5850 MHz: +30 dBm |
| Transmit/Receive Operation: | Time Division Duplex |
| Rated Input Voltage and Current: | POE (POE adaptor sold with unit) 55Vdc |
| Operating Temperature Range: | Declared Range -40°C to 60°C |
| ITU Emission Designator: | 5 MHz 5M00W7W 10 MHz 10M0W7W 20 MHz 20M0W7W 40 MHz 40M0W7W 80 MHz 80M0W7W |
| Equipment Dimensions: | 1.9" x 2.0" x 0.3' |
| Weight: | 0.042 lb (19g) |
| Hardware Rev: | Prototype |
| Software Rev: | Prototype |

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5.2. Scope Of Test Program

Radwin 5XACMD3C

The scope of the test program was to test the Radwin Ltd. 5XACMD3C, 5 GHz High Power 802.11n/ac Module configurations in the frequency ranges 5725 - 5850 MHz; for compliance against the following specification(s):

FCC CFR 47 Part 15 Subpart E 15.407

Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices

Industry Canada RSS-247

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



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

| Equipment Type | Equipment Description (Including Brand Name) | Mfr | Model No. | Serial No. |
|----------------|--|------------|---------------|------------|
| EUT | 5 GHz 3x3 RF Module | RADWIN Ltd | 5XACMD3C | Prototype |
| Support | POE 55 Vdc | RADWIN Ltd | CPU55A-270-1 | -- |
| Support | Laptop PC | DELL | LATITUDE D530 | None |

5.4. Antenna Details

| Type | Manufacturer | Model | Family | Gain (dBi) | BF Gain | Dir BW | X-Pol | Frequency Band (MHz) |
|----------|--------------|--------------|-----------|------------|---------|--------|-------|----------------------|
| external | RADWIN Ltd | RW-9521-4958 | Panel | 17.0 | - | 60.0 | - | 5725 - 5850 |
| external | RADWIN Ltd | AT0058760 | Panel | 18.0 | - | 18.0 | - | 5725 - 5850 |
| external | RADWIN Ltd | RW-9401-5002 | Shark Fin | 12.5 | - | 50.0 | - | 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 | 100m | 1 | Y | RJ-45 | Packet Data |

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 |
| 5725 - 5850 MHz | | | | |
| 5 MHz | 19.5 | 5,730.00 | 5,787.00 | 5,845.00 |
| 10 MHz | 39.0 | 5,731.00 | 5,787.00 | 5,844.00 |
| 20 MHz | 78.0 | 5,735.00 | 5,787.00 | 5,844.00 |
| 40 MHz | 180.0 | 5,745.00 | 5,787.00 | 5,830.00 |
| 80 MHz | 390.0 | 5,765.00 | 5,787.00 | 5,810.00 |

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5.7. Equipment Modifications

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

1. NONE

5.8. Deviations from the Test Standard

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

1. NONE



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6. TEST SUMMARY

List of Measurements

| Test Header | Result | Data Link |
|--------------------------------------|----------|---------------------------|
| Conducted Test Data | | |
| (a) Peak Transmit Power | Complies | View Data |
| (a) 26 dB & 99% Bandwidth | Complies | View Data |
| (a)(5) Power Spectral Density | Complies | View Data |
| | | |
| Radiated Test Data | | |
| (b)(2) Radiated | - | - |
| i).. Restricted Band Emissions | Complies | View Data |
| ii).. Restricted Band-Edge Emissions | Complies | View Data |
| iv).. Digital Emissions | Complies | View Data |
| | | |
| ac Wireline Test Data | | |
| ac Wireline Emissions | Complies | View Data |

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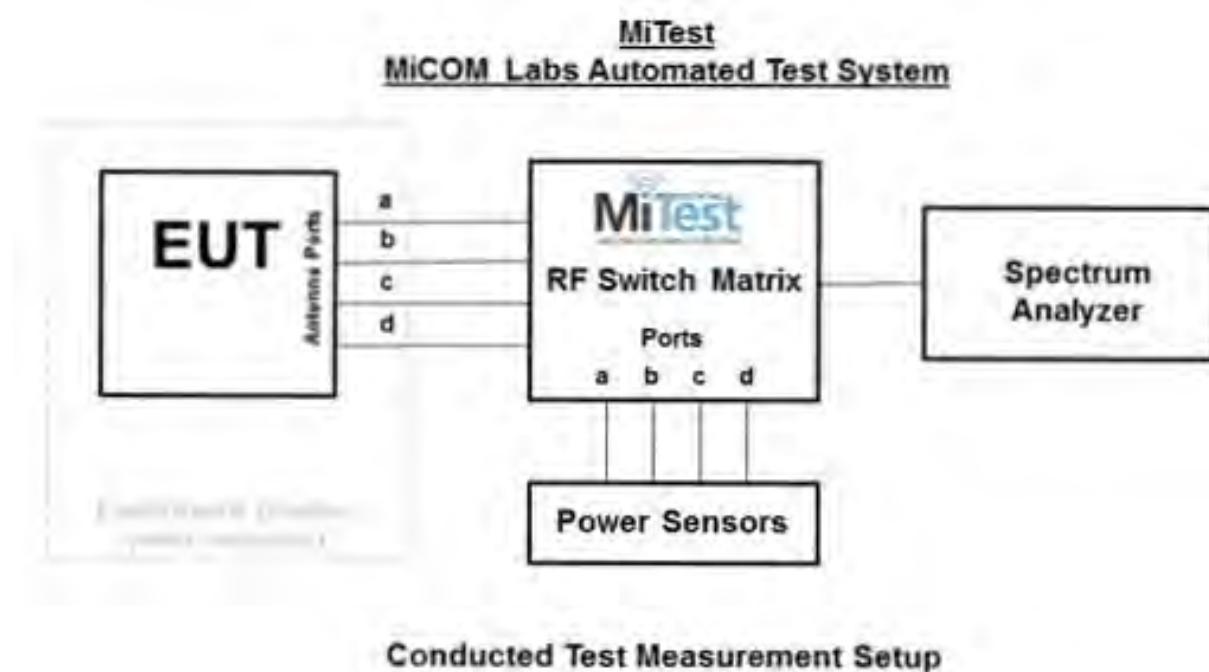
7. TEST EQUIPMENT CONFIGURATION(S)

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;

1. Peak Transmit Power
2. 26 dB and 99% Bandwidth
3. Power Spectral Density



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.



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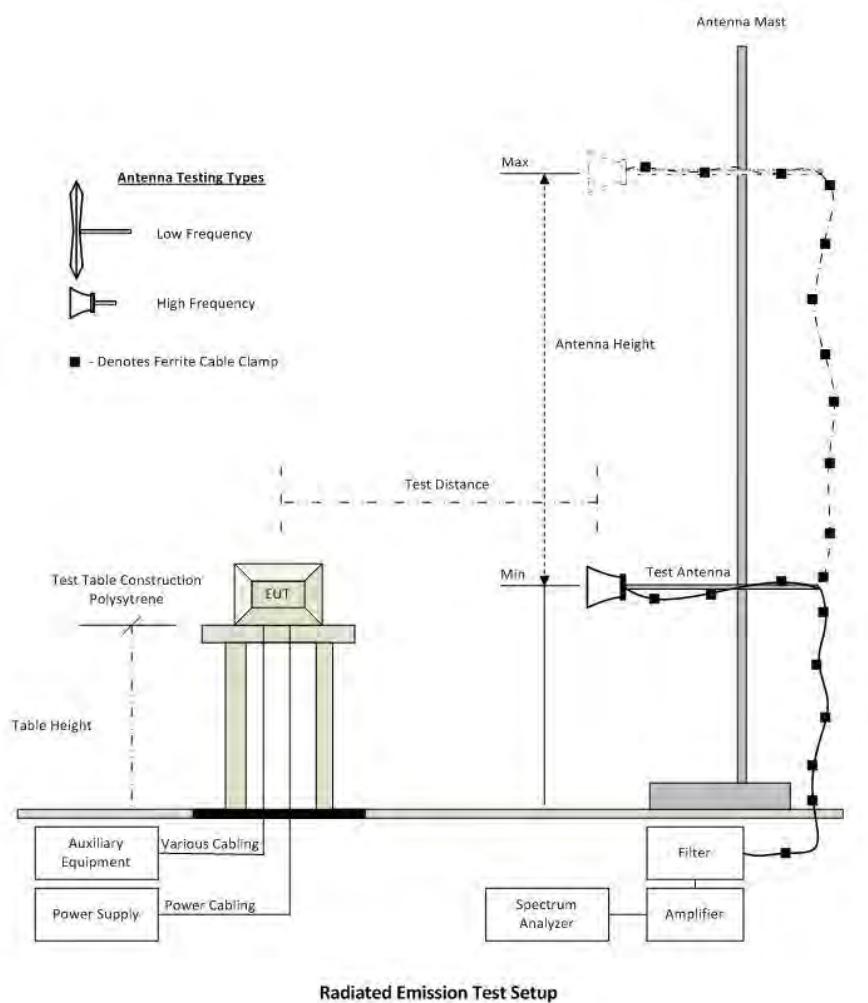
| Asset# | Description | Manufacturer | Model# | Serial# | Calibration Due Date |
|-------------|---|----------------------|----------------------|---------------|----------------------|
| 158 | Barometer/Termometer | Control Company | 4196 | E2846 | 04 Dec 2015 |
| 248 | Resistance Thermometer | Thermotronics | GR2105-02 | 9340 #1 | 30 Oct 2015 |
| 287 | Rohde & Schwarz 40 GHz Receiver | Rhode & Schwarz | ESIB40 | 100201 | 31 Aug 2015 |
| 376 | USB 10MHz - 18GHz Average Power Sensor | Agilent | U2000A | MY51440005 | 28 Oct 2015 |
| 381 | 4x4 RF Switch Box | MiCOM Labs | MiTest RF Switch Box | MIC002 | 20 Dec 2015 |
| 419 | Laptop with Labview Software | Lenova | W520 | TS02 | Not Required |
| 420 | USB to GPIB Interface | National Instruments | GPIB-USB HS | 1346738 | Not Required |
| 435 | USB Wideband Power Sensor | Boonton | 55006 | 8730 | 31 Aug 2015 |
| 440 | USB Wideband Power Sensor | Boonton | 55006 | 9178 | 25 Sep 2015 |
| 441 | USB Wideband Power Sensor | Boonton | 55006 | 9179 | 25 Sep 2015 |
| 442 | USB Wideband Power Sensor | Boonton | 55006 | 9181 | 25 Sep 2015 |
| 445 | PoE Injector | D-Link | DPE-101GL | QTAH1E2000625 | Not Required |
| 460 | Dell Computer with installation of MiTest executable. | Dell | Optiplex330 | BC944G1 | Not Required |
| 74 | Environmental Chamber Chamber 3 | Tenney | TTC | 12808-1 | 30 Sep 2015 |
| RF#2 GPIB#1 | GPIB cable to Power Supply | HP | GPIB | None | Not Required |
| RF#2 SMA#1 | EUT to Mitest box port 1 | Flexco | SMA Cable port1 | None | 20 Dec 2015 |
| RF#2 SMA#2 | EUT to Mitest box port 2 | Flexco | SMA Cable port2 | None | 20 Dec 2015 |
| RF#2 SMA#3 | EUT to Mitest box port 3 | Flexco | SMA Cable port3 | None | 20 Dec 2015 |
| RF#2 SMA#4 | EUT to Mitest box port 3 | Flexco | SMA Cable port4 | None | 20 Dec 2015 |
| RF#2 SMA#SA | Mitest box to SA | Flexco | SMA Cable SA | None | 20 Dec 2015 |
| RF#2 USB#1 | USB Cable to Mitest Box | Dynex | USB Cable | None | Not Required |

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7.2. Radiated Emissions - 3m Chamber

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

1. Section 9.4.1 Spurious Emissions
2. Section 9.4.2 Restricted Band-Edge Emissions
3. Section 9.5 Radiated Digital Emissions



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.

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| Asset# | Description | Manufacturer | Model# | Serial# | Calibration Due Date |
|--------|---|----------------------|-----------------------|-------------|----------------------|
| 158 | Barometer/Thermometer | Control Company | 4196 | E2846 | 04 Dec 2015 |
| 170 | Video System Controller for Semi Anechoic Chamber | Panasonic | WV-CY101 | 04R08507 | Not Required |
| 287 | Rohde & Schwarz 40 GHz Receiver | Rhode & Schwarz | ESIB40 | 100201 | 31 Jul 2016 |
| 310 | SMA Cable | Micro-Coax | UFA210A-0-0787-3G03G0 | 209089-001 | 30 Oct 2015 |
| 338 | Sunol 30 to 3000 MHz Antenna | Sunol | JB3 | A052907 | 14 Aug 2015 |
| 393 | DC - 1050 MHz Low Pass Filter | Microcircuits | VLFX-1050 | N/A | 08 Oct 2015 |
| 397 | Amp 10 - 2500MHz | MiCOM Labs | Amp 10 - 2500 MHz | NA | 23 Oct 2015 |
| 399 | ETS 1-18 GHz Horn Antenna | ETS | 3117 | 00154575 | 10 Oct 2015 |
| 406 | Amplifier for Radiated Emissions | MiCOM Labs | 40dB 1 to 18GHz Amp | 0406 | 28 May 2016 |
| 410 | Desktop Computer | Dell | Inspiron 620 | WS38 | Not Required |
| 411 | Mast/Turntable Controller | Sunol Sciences | SC98V | 060199-1D | Not Required |
| 412 | USB to GPIB Interface | National Instruments | GPIB-USB HS | 11B8DC2 | Not Required |
| 413 | Mast Controller | Sunol Science | TWR95-4 | 030801-3 | Not Required |
| 415 | Turntable Controller | Sunol Sciences | Turntable Controller | None | Not Required |
| 416 | Gigabit ethernet filter | ETS-Lingren | Gigafoil 260366 | None | Not Required |
| 462 | Schwarzbeck cable from Antenna to Amplifier. | Schwarzbeck | AK 9513 | 462 | 25 Aug 2015 |
| 463 | Schwarzbeck cable from Amplifier to Bulkhead. | Schwarzbeck | AK 9513 | 463 | 25 Aug 2015 |
| 464 | Schwarzbeck cable from Bulkhead to Receiver | Schwarzbeck | AK 9513 | 464 | 25 Aug 2015 |
| 465 | Low Pass Filter DC-1000 MHz | Mini-Circuits | NLP-1200+ | VUU01901402 | 25 Aug 2015 |
| 468 | Low pass filter | Mini Circuits | SLP-550 | None | 30 Sep 2015 |
| 469 | Low pass filter | Mini Circuit | SLP-1000 | None | 30 Sep 2015 |
| 470 | High Pass filter | Mini Circuits | SHP-700 | None | 30 Sep 2015 |
| CC05 | Confidence Check | MiCOM | CC05 | None | 1 Aug 2015 |

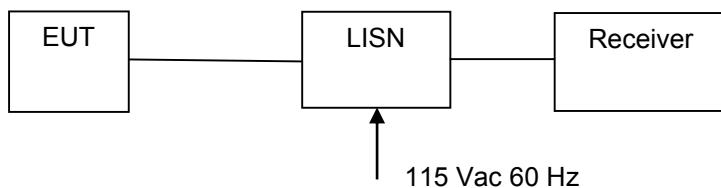
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7.3. ac Wireline Emission Test Set-up

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

1. Section 9.6 ac Wireline Conducted Emissions

Test Measurement Set up



Measurement set up for AC Wireline Conducted Emissions Test

Traceability of Test Equipment Utilized for ac Wireline Emission Testing

| Asset# | Description | Manufacturer | Model# | Serial# | Calibration Due Date |
|--------|---|-----------------|---------|-------------|----------------------|
| 158 | Barometer/Thermometer | Control Company | 4196 | E2846 | 04 Dec 2015 |
| 184 | Pulse Limiter | Rhode & Schwarz | ESH3Z2 | 357.8810.52 | Cal when used |
| 190 | LISN (two-line V-network) | Rhode & Schwarz | ESH3Z5 | 836679/006 | 12 Sep 2015 |
| 287 | Rohde & Schwarz 40 GHz Receiver | Rhode & Schwarz | ESIB40 | 100201 | 31 Jul 2016 |
| 316 | Dell desktop computer workstation with Vasona | Dell | Desktop | WS04 | Not Required |

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8. MEASUREMENT AND PRESENTATION OF TEST DATA

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

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

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



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

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9. TEST RESULTS

9.1. Peak Transmit Power

| Conducted Test Conditions for Maximum Conducted Output Power | | | |
|--|---------------------------------|----------------------------|-------------|
| Standard: | FCC CFR 47:15.407 IC RSS-247 | Ambient Temp. (°C): | 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 $[10 \cdot \log_{10} (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})]$

G = Antenna Gain

Y = Beamforming Gain

x = Duty Cycle (average power measurements only)

Limits 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.

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(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.

Maximum Transmit (Conducted) Power Limits

Limit 5725 – 5850 MHz: +30 dBm (1W)

EUT: Outdoor Fixed Point-Point U-NII Device

Antenna gain: 12.5 dBi

Beamforming Gain: Not Applicable

Modified Conducted Power Levels

During radiated emission testing (spurious and restricted band-edge) the power setting may have been reduced. Any reduction in output power (together with power settings) that was required to bring the EUT into compliance is reflected in the following tables.



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Equipment Configuration for Peak Transmit Power

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | 10 MHz | Duty Cycle (%): | 87.8 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 | dBm | |
| 5731.0 | 15.41 | 17.76 | 16.15 | -- | 21.89 | -- | 30.00 | -8.11 | 18.00 |
| 5787.0 | 22.84 | 25.42 | 23.77 | -- | 29.48 | -- | 30.00 | -0.52 | 27.00 |
| 5844.0 | 17.02 | 17.37 | 18.14 | -- | 22.87 | -- | 30.00 | -7.13 | 18.00 |

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | 20 MHz | Duty Cycle (%): | 85.7 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 | dBm | |
| 5735.0 | 17.17 | 18.59 | 16.66 | -- | 22.99 | -- | 30.00 | -7.01 | 19.00 |
| 5787.0 | 23.31 | 25.45 | 23.61 | -- | 29.67 | -- | 30.00 | -0.33 | 27.00 |
| 5840.0 | 17.54 | 18.41 | 18.96 | -- | 23.78 | -- | 30.00 | -6.22 | 19.00 |

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | 40 MHz | Duty Cycle (%): | 81.3 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 | dBm | |
| 5745.0 | 17.35 | 19.78 | 18.78 | -- | 24.42 | -- | 30.00 | -5.58 | 21.00 |
| 5787.0 | 23.12 | 25.12 | 23.74 | -- | 29.75 | -- | 30.00 | -0.25 | 28.00 |
| 5830.0 | 17.25 | 18.39 | 18.54 | -- | 23.77 | -- | 30.00 | -6.23 | 19.00 |

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | 5 MHz | Duty Cycle (%): | 88.0 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 | dBm | |
| 5730.0 | 19.19 | 21.84 | 20.10 | -- | 25.85 | -- | 30.00 | -4.15 | 23.00 |
| 5787.0 | 23.64 | 25.31 | 23.69 | -- | 29.61 | -- | 30.00 | -0.39 | 28.00 |
| 5845.0 | 18.89 | 19.43 | 19.56 | -- | 24.63 | -- | 30.00 | -5.37 | 21.50 |

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | 80 MHz | Duty Cycle (%): | 74.0 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 | dBm | |
| 5765.0 | 16.24 | 17.71 | 17.73 | -- | 23.36 | -- | 30.00 | -6.64 | 18.50 |
| 5787.0 | 22.90 | 24.87 | 23.55 | -- | 29.93 | -- | 30.00 | -0.07 | 28.00 |
| 5810.0 | 15.29 | 16.21 | 17.10 | -- | 22.34 | -- | 30.00 | -7.66 | 17.00 |

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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9.2. 26 dB & 99% Bandwidth

| Conducted Test Conditions for 26 dB and 99% Bandwidth | | | |
|---|---------------------------------|----------------------------|-------------|
| Standard: | FCC CFR 47:15.407 IC RSS-247 | Ambient Temp. (°C): | 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: | 10 MHz | Duty Cycle (%): | 87.8 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 |
| 5731.0 | 20.240 | 20.541 | 20.391 | -- | 20.541 | 20.240 |
| 5787.0 | 19.539 | 19.489 | 18.236 | -- | 19.539 | 18.236 |
| 5844.0 | 22.695 | 21.393 | 23.547 | -- | 23.547 | 21.393 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | |
|----------------|------------------------------|------------------------|------------------------|----|---------------------|--------|
| | Port(s) | | | | | |
| MHz | a | b | c | d | Highest | Lowest |
| 5731.0 | 11.573 | 12.224 | 11.924 | -- | 12.224 | 11.573 |
| 5787.0 | 11.022 | 11.072 | 9.669 | -- | 11.072 | 9.669 |
| 5844.0 | 13.828 | 12.776 | 16.333 | -- | 16.333 | 12.776 |

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: | 20 MHz | Duty Cycle (%): | 85.7 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 |
| 5735.0 | 40.080 | 35.571 | 43.788 | -- | 43.788 | 35.571 |
| 5787.0 | 33.166 | 35.371 | 32.465 | -- | 35.371 | 32.465 |
| 5840.0 | 41.383 | 41.182 | 44.188 | -- | 44.188 | 41.182 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | |
|----------------|------------------------------|--------|--------|----|---------------------|--------|
| | Port(s) | | | | | |
| MHz | a | b | c | d | Highest | Lowest |
| 5735.0 | 24.449 | 22.846 | 30.962 | -- | 30.962 | 22.846 |
| 5787.0 | 18.938 | 20.140 | 17.735 | -- | 20.140 | 17.735 |
| 5840.0 | 26.653 | 22.445 | 30.261 | -- | 30.261 | 22.445 |

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: | 40 MHz | Duty Cycle (%): | 81.3 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 |
| 5745.0 | 76.353 | 86.573 | 71.142 | -- | 86.573 | 71.142 |
| 5787.0 | 77.154 | 76.353 | 75.150 | -- | 77.154 | 75.150 |
| 5830.0 | 86.172 | 79.158 | 89.579 | -- | 89.579 | 79.158 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | |
|----------------|------------------------------|------------------------|------------------------|----|---------------------|--------|
| | Port(s) | | | | | |
| MHz | a | b | c | d | Highest | Lowest |
| 5745.0 | 43.086 | 46.693 | 40.681 | -- | 46.693 | 40.681 |
| 5787.0 | 45.090 | 43.888 | 41.082 | -- | 45.090 | 41.082 |
| 5830.0 | 59.118 | 48.497 | 65.331 | -- | 65.331 | 48.497 |

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: | 5 MHz | Duty Cycle (%): | 88.0 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 |
| 5730.0 | 10.721 | 10.947 | 10.596 | -- | 10.947 | 10.596 |
| 5787.5 | 10.621 | 9.920 | 10.922 | -- | 10.922 | 9.920 |
| 5845.0 | 11.122 | 11.273 | 11.222 | -- | 11.273 | 11.122 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | |
|-----------------------|-------------------------------------|-----------------------|-----------------------|----------|----------------------------|---------------|
| | Port(s) | | | | | |
| MHz | a | b | c | d | Highest | Lowest |
| 5730.0 | 6.087 | 6.488 | 6.062 | -- | 6.488 | 6.062 |
| 5787.5 | 6.413 | 5.962 | 6.212 | -- | 6.413 | 5.962 |
| 5845.0 | 6.939 | 6.438 | 6.588 | -- | 6.939 | 6.438 |

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: | 80 MHz | Duty Cycle (%): | 74.0 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| 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 |
| 5765.0 | 165.932 | 153.908 | 151.904 | -- | 165.932 | 151.904 |
| 5787.0 | 169.138 | 170.341 | 179.559 | -- | 179.559 | 169.138 |
| 5810.0 | 180.762 | 125.050 | 158.717 | -- | 180.762 | 125.050 |

| Test Frequency | Measured 99% Bandwidth (MHz) | | | | 99% Bandwidth (MHz) | |
|----------------|------------------------------|--------|---------|----|---------------------|--------|
| | Port(s) | | | | | |
| MHz | a | b | c | d | Highest | Lowest |
| 5765.0 | 98.597 | 81.764 | 80.962 | -- | 98.597 | 80.962 |
| 5787.0 | 92.585 | 89.379 | 107.415 | -- | 107.415 | 89.379 |
| 5810.0 | 97.796 | 72.545 | 83.367 | -- | 97.796 | 72.545 |

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 IC RSS-247 | Ambient Temp. (°C): | 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 (a) 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 = $A + 10 \log (1/x) \text{ dBm}$

$A = \text{Total Power Spectral Density} [10^{\text{a}/10} + 10^{\text{b}/10} + 10^{\text{c}/10} + 10^{\text{d}/10}]$

$x = \text{Duty Cycle}$

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.

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(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 $11 \text{ dBm} + 10 \log B$, 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 Power Spectral Density

| | | | |
|--------------------------------|----------------|-----------------------------------|----------------|
| Variant: | 10 MHz | Duty Cycle (%): | 87.8 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| Modulation: | OFDM | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Power Spectral Density | | | | Amplitude Summation + DCCF (+0.56 dB) | Limit | Margin |
|----------------|---------------------------------|-----------------------|-----------------------|----|---------------------------------------|---------|--------|
| | Port(s) (dBm/MHz) | | | | | | |
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5731.0 | 0.364 | 1.922 | 3.815 | -- | 6.863 | 30.0 | -23.13 |
| 5787.0 | 0.434 | 1.918 | 3.603 | -- | 6.664 | 30.0 | -23.33 |
| 5844.0 | 2.873 | 5.569 | 5.927 | -- | 8.892 | 30.0 | -21.10 |

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: | 20 MHz | Duty Cycle (%): | 85.7 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| Modulation: | OFDM | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Power Spectral Density | | | | Amplitude Summation + DCCF (+0.66 dB) | Limit | Margin |
|----------------|---------------------------------|------------------------|-----------------------|----|---------------------------------------|---------|---------|
| | Port(s) (dBm/MHz) | | | | | | |
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5735.0 | 0.291 | -1.353 | 1.475 | -- | 4.143 | 30.0 | -25.857 |
| 5787.0 | -2.997 | -0.872 | 0.466 | -- | 2.879 | 30.0 | -27.121 |
| 5840.0 | -1.209 | 0.078 | 3.550 | -- | 5.256 | 30.0 | -24.744 |

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: | 40 MHz | Duty Cycle (%): | 81.3 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| Modulation: | OFDM | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Power Spectral Density | | | | Amplitude Summation + DCCF (+0.92 dB) | Limit | Margin |
|----------------|---------------------------------|------------------------|------------------------|----|---------------------------------------|---------|---------|
| | Port(s) (dBm/MHz) | | | | | | |
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5745.0 | -5.833 | -4.677 | -3.282 | -- | 0.601 | 30.0 | -29.399 |
| 5787.0 | -7.698 | -5.218 | -4.612 | -- | -1.006 | 30.0 | -31.006 |
| 5830.0 | -6.090 | -4.276 | -0.749 | -- | 1.205 | 30.0 | -28.795 |

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: | 5 MHz | Duty Cycle (%): | 88.0 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| Modulation: | OFDM | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Power Spectral Density | | | | Amplitude Summation + DCCF (+0.56 dB) | Limit | Margin |
|----------------|---------------------------------|-----------------------|-----------------------|----|---------------------------------------|---------|---------|
| | Port(s) (dBm/MHz) | | | | | | |
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5730.0 | 4.858 | 8.284 | 8.111 | -- | 11.552 | 30.0 | -18.448 |
| 5787.5 | 3.279 | 4.556 | 5.822 | -- | 9.254 | 30.0 | -20.746 |
| 5845.0 | 6.770 | 6.181 | 8.791 | -- | 11.592 | 30.0 | -18.408 |

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: | 80 MHz | Duty Cycle (%): | 74.0 |
| Data Rate: | QAM 256 | Antenna Gain (dBi): | 12.50 |
| Modulation: | OFDM | Beam Forming Gain (Y)(dB): | Not Applicable |
| TPC: | Not Applicable | Tested By: | SB |
| Engineering Test Notes: | | | |

Test Measurement Results

| Test Frequency | Measured Power Spectral Density | | | | Amplitude Summation + DCCF (+1.31 dB) | Limit | Margin |
|----------------|---------------------------------|---------|--------|----|---------------------------------------|---------|---------|
| | Port(s) (dBm/MHz) | | | | | | |
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5765.0 | -11.584 | -10.497 | -7.527 | -- | -4.183 | 30.0 | -34.183 |
| 5787.0 | -11.173 | -11.361 | -8.545 | -- | -5.334 | 30.0 | -35.334 |
| 5810.0 | -12.075 | -9.563 | -9.621 | -- | -5.973 | 30.0 | -35.973 |

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 IC RSS-247 | Ambient Temp. (°C): | 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 and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned. Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for 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

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where:

FS = Field Strength

R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss

AG = Amplifier Gain

FO = Distance Falloff Factor

NFL = Notch Filter Loss or Waveguide Loss

Example:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dB μ V/m);

$$E = \frac{1000000 \times \sqrt{30P}}{3} \mu\text{V/m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dB μ V/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 | 73.7-74.6 | 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 |

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| | | | |
|-------------------|-----------|-----------|------------|
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | Above 38.6 |
| 13.36-13.41 | | | |

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

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

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

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

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

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

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

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

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

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

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

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

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

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9.4.1. Restricted Band Emissions

9.4.1.1. RADWIN Ltd AT0058760

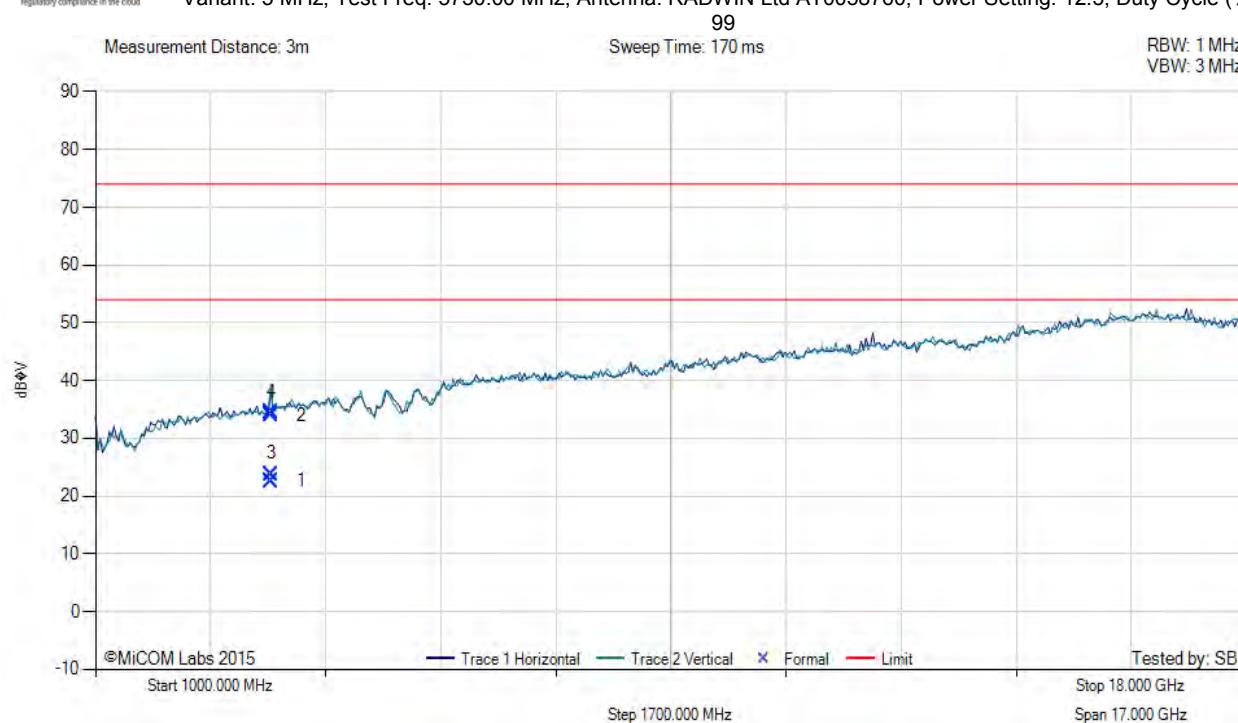
Equipment Configuration for Radiated Spurious - Restricted Band Emissions

| | | | |
|---------------------------------|----------------------|------------------------|---------|
| Antenna: | RADWIN Ltd AT0058760 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 18.0 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5730.00 | Data Rate: | QAM 256 |
| Power Setting: | 12.5 | Tested By: | SB |

Test Measurement Results



RADIATED SPURIOUS - RESTRICTED BAND EMISSIONS
 Variant: 5 MHz, Test Freq: 5730.00 MHz, Antenna: RADWIN Ltd AT0058760, Power Setting: 12.5, Duty Cycle (%): 99



| Num | Frequency MHz | Raw dB μ V | Cable Loss | AF dB | Level dB μ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB μ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1 | 3599.81 | 28.80 | 4.98 | -11.17 | 22.61 | Max Avg | Vertical | 101 | 281 | 54.0 | -31.4 | Pass |
| 2 | 3599.81 | 40.11 | 4.98 | -11.17 | 33.92 | Max Peak | Vertical | 101 | 281 | 74.0 | -40.1 | Pass |
| 3 | 3599.81 | 30.03 | 4.98 | -11.17 | 23.84 | Max Avg | Horizontal | 100 | 331 | 54.0 | -30.2 | Pass |
| 4 | 3599.81 | 40.69 | 4.98 | -11.17 | 34.50 | Max Peak | Horizontal | 100 | 331 | 74.0 | -39.5 | Pass |

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

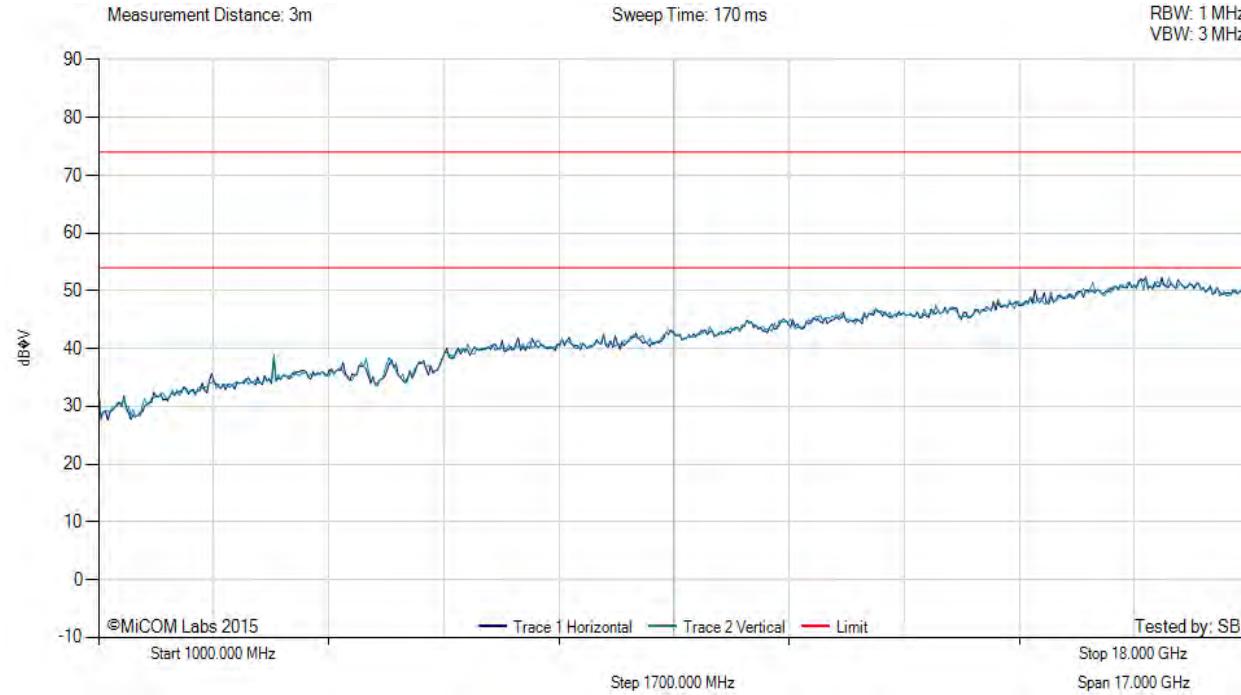
| | | | |
|---------------------------------|----------------------|------------------------|---------|
| Antenna: | RADWIN Ltd AT0058760 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 18.0 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5787.00 | Data Rate: | QAM 256 |
| Power Setting: | 12.5 | Tested By: | SB |

Test Measurement Results

RADIATED SPURIOUS - RESTRICTED BAND EMISSIONS



Variant: 5 MHz, Test Freq: 5787.00 MHz, Antenna: RADWIN Ltd AT0058760, Power Setting: 12.5, Duty Cycle (%): 99



There are no emissions found within 6dB of the limit line.

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

| | | | |
|---------------------------------|----------------------|------------------------|---------|
| Antenna: | RADWIN Ltd AT0058760 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 18.0 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5845.00 | Data Rate: | QAM 256 |
| Power Setting: | 12.5 | Tested By: | SB |

Test Measurement Results

RADIATED SPURIOUS - RESTRICTED BAND EMISSIONS



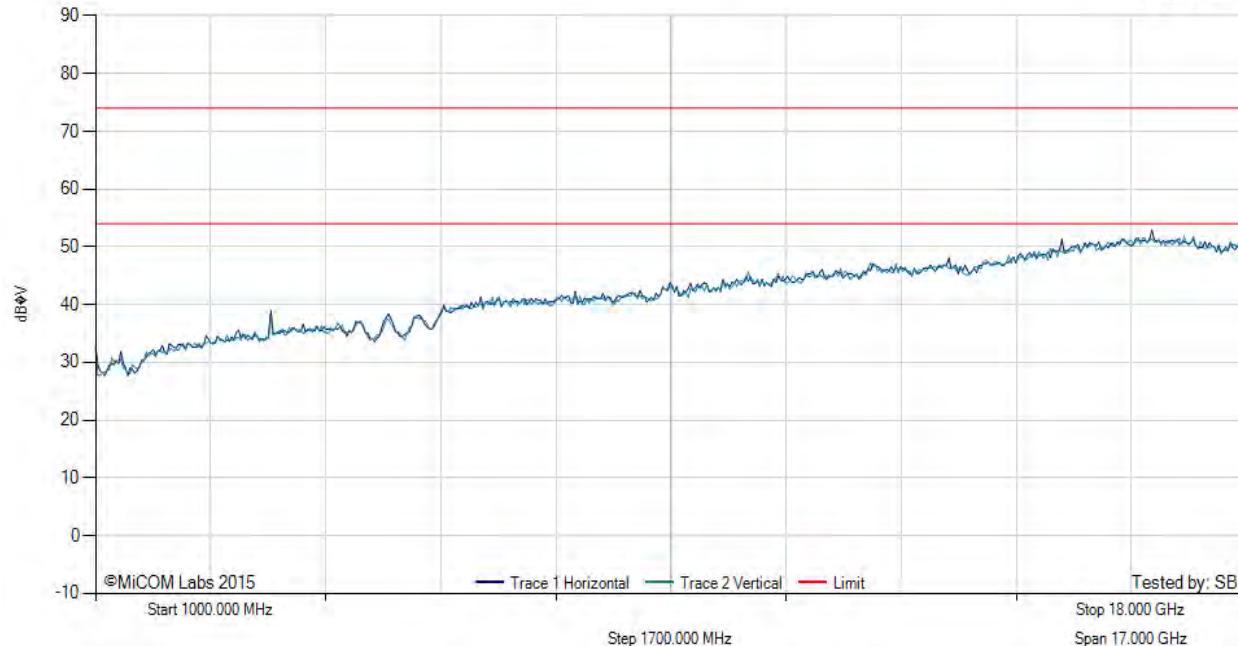
Variant: 5 MHz, Test Freq: 5845.00 MHz, Antenna: RADWIN Ltd AT0058760, Power Setting: 12.5, Duty Cycle (%):

99

Measurement Distance: 3m

Sweep Time: 170 ms

RBW: 1 MHz
VBW: 3 MHz



There are no emissions found within 6dB of the limit line.

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9.4.1.2. RADWIN Ltd RW-9401-5002

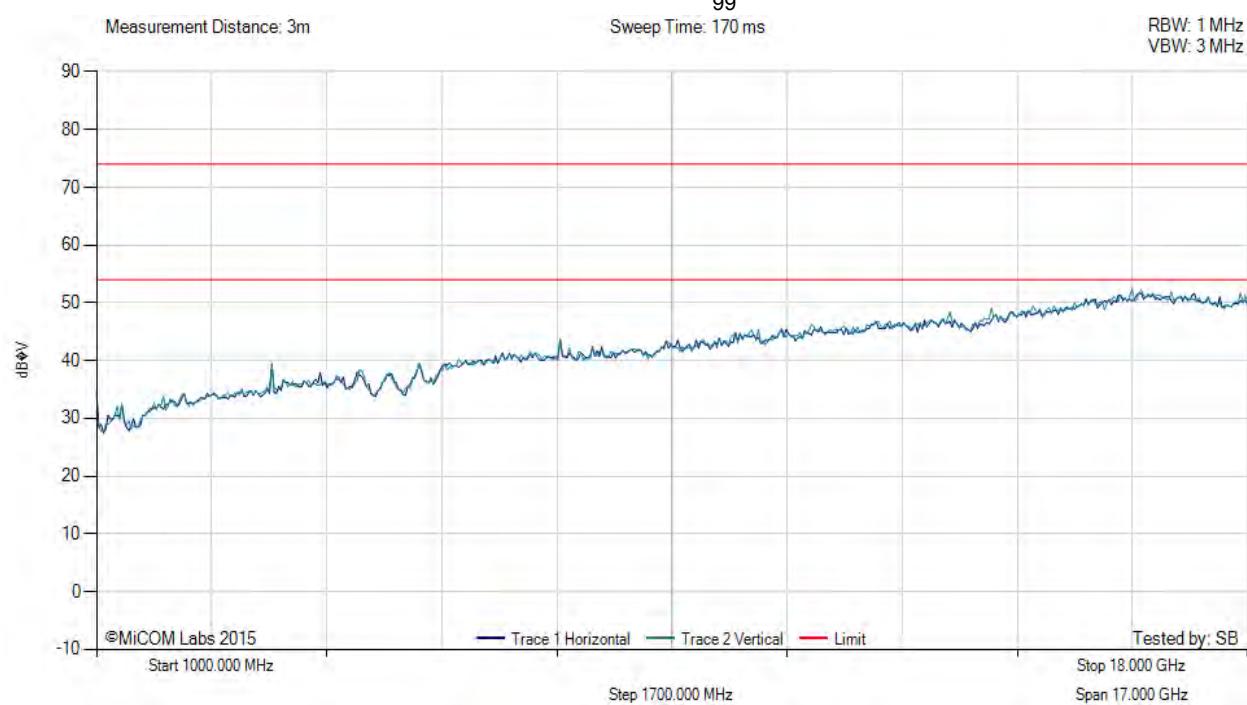
Equipment Configuration for Radiated Spurious - Restricted Band Emissions

| | | | |
|---------------------------------|-------------------------|------------------------|--------|
| Antenna: | RADWIN Ltd RW-9401-5002 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 12.50 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5730.00 | Data Rate: | QAM256 |
| Power Setting: | 23 | Tested By: | SB |

Test Measurement Results



RADIATED SPURIOUS - RESTRICTED BAND EMISSIONS
 Variant: 5 MHz, Test Freq: 5730.00 MHz, Antenna: RADWIN Ltd RW-9401-5002, Power Setting: 23, Duty Cycle (%): 99



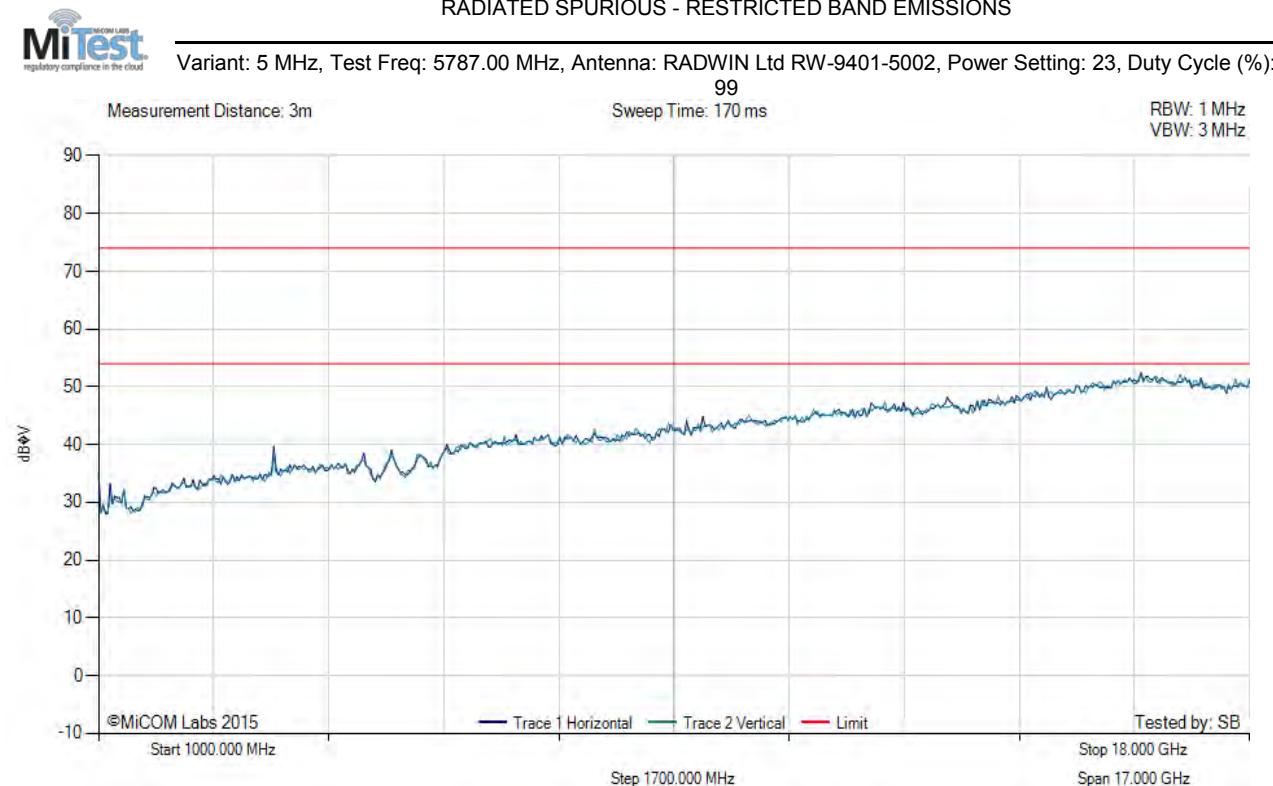
There are no emissions found within 6dB of the limit line.

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

| | | | |
|---------------------------------|-------------------------|------------------------|---------|
| Antenna: | RADWIN Ltd RW-9401-5002 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 12.50 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5787.00 | Data Rate: | QAM 256 |
| Power Setting: | 23 | Tested By: | SB |

Test Measurement Results



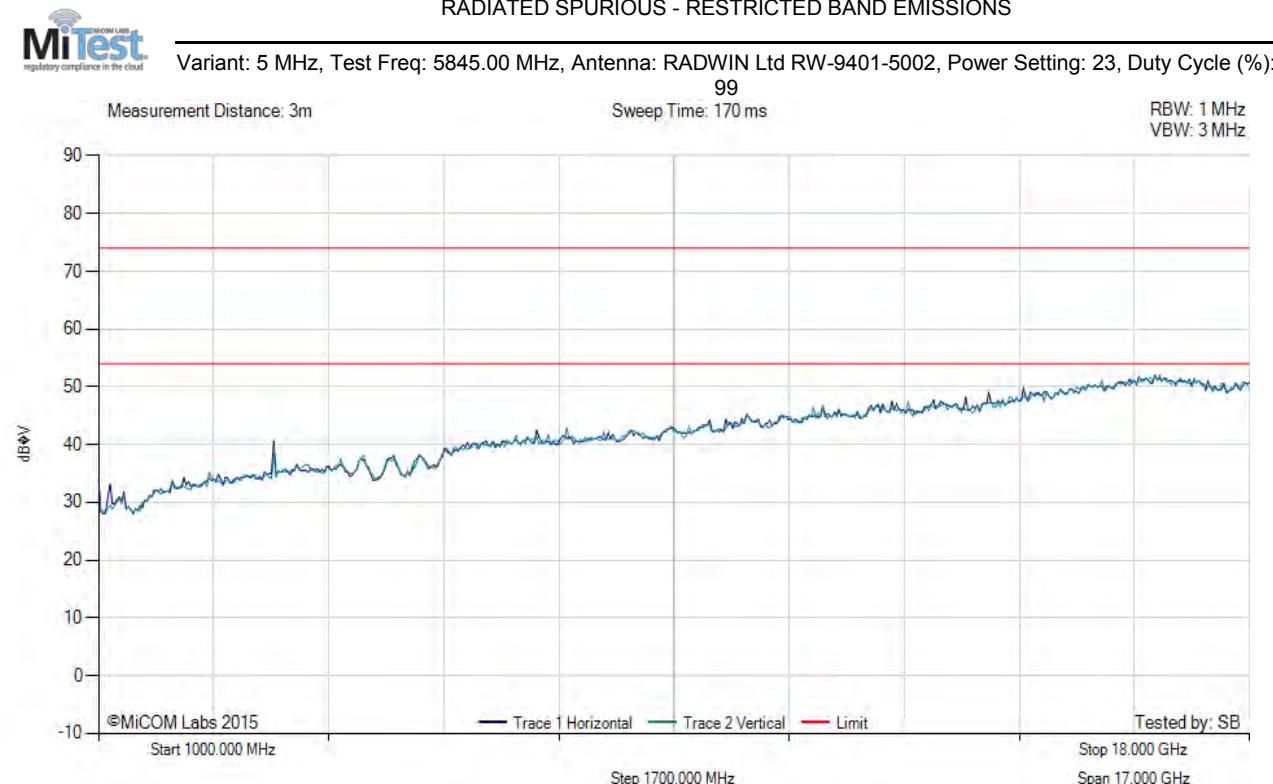
There are no emissions found within 6dB of the limit line.

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Equipment Configuration for Radiated Spurious - Restricted Band Emissions

| | | | |
|---------------------------------|-------------------------|------------------------|---------|
| Antenna: | RADWIN Ltd RW-9401-5002 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 12.50 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5845.00 | Data Rate: | QAM 256 |
| Power Setting: | 23 | Tested By: | SB |

Test Measurement Results



There are no emissions found within 6dB of the limit line.

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9.4.2. Restricted Band-Edge Emissions

9.4.2.3. RADWIN Ltd AT0058760

Peak Limit -27/-17 dBm, Average Limit -41 dBm

| Galtronics Custom PCB | | BandEdge Freq | Peak | Average | Power Setting |
|-----------------------|---------------------------|---------------|---------------|---------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBm | dBm | |
| 5 MHz | 5730 | 5725 | <u>-19.30</u> | -45.42 | 23 |
| 10 MHz | 5731 | 5725 | <u>-19.49</u> | -45.14 | 18 |
| 20 MHz | 5735 | 5725 | <u>-19.49</u> | -43.14 | 19 |
| 40 MHz | 5745 | 5725 | <u>-17.89</u> | -43.84 | 21 |
| 80 MHz | 5765 | 5725 | <u>-19.19</u> | -42.50 | 18.5 |

| Galtronics Custom PCB | | BandEdge Freq | Peak | Average | Power Setting |
|-----------------------|---------------------------|---------------|---------------|---------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBm | dBm | |
| 5 MHz | 5845 | 5850 | <u>-17.43</u> | -42.10 | 21.5 |
| 10 MHz | 5844 | 5850 | <u>-17.24</u> | -44.08 | 18.0 |
| 20 MHz | 5840 | 5850 | <u>-18.47</u> | -43.37 | 17.5 |
| 40 MHz | 5830 | 5850 | <u>-17.26</u> | -44.60 | 19 |
| 80 MHz | 5810 | 5850 | <u>-19.70</u> | -41.71 | 17 |

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9.4.2.4. RADWIN Ltd RW-9401-5002

Peak Limit -27/-17 dBm, Average Limit -41 dBm

| Galtronics Custom PCB | | BandEdge Freq | Peak | Average | Power Setting |
|-----------------------|---------------------------|---------------|---------------|---------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBm | dBm | |
| 5 MHz | 5730 | 5725 | <u>-20.78</u> | -43.84 | 23 |
| 10 MHz | 5731 | 5725 | <u>-17.66</u> | -43.84 | 18 |
| 20 MHz | 5735 | 5725 | <u>-19.05</u> | -43.84 | 19 |
| 40 MHz | 5745 | 5725 | <u>-18.33</u> | -42.50 | 21 |
| 80 MHz | 5765 | 5725 | <u>-24.81</u> | -41.90 | 18.5 |

| Galtronics Custom PCB | | BandEdge Freq | Peak | Average | Power Setting |
|-----------------------|---------------------------|---------------|---------------|---------|---------------|
| Operational Mode | Operating Frequency (MHz) | MHz | dBm | dBm | |
| 5 MHz | 5845 | 5850 | <u>-21.98</u> | -41.70 | 21.5 |
| 10 MHz | 5844 | 5850 | <u>-17.25</u> | -41.50 | 18.0 |
| 20 MHz | 5840 | 5850 | <u>-18.65</u> | -41.12 | 17.5 |
| 40 MHz | 5830 | 5850 | <u>-21.10</u> | -41.12 | 19 |
| 80 MHz | 5810 | 5850 | <u>-28.08</u> | -43.68 | 17 |

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9.4.3. Digital Emissions

| Radiated Test Conditions for Radiated Digital Emissions (0.03 – 1 GHz) | | | |
|--|---------------------------------|----------------------------|-------------|
| Standard: | FCC CFR 47:15.247 IC RSS-247 | Ambient Temp. (°C): | 20.0 - 24.5 |
| Test Heading: | Digital Emissions | Rel. Humidity (%): | 32 - 45 |
| Standard Section(s): | 15.209 | Pressure (mBars): | 999 - 1001 |
| Reference Document(s): | See Normative References | | |

Test Procedure for Radiated Digital Emissions (0.03 – 1 GHz)

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

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

Field Strength Calculation

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

$$FS = R + AF + CORR$$

where:

FS = Field Strength

R = Measured Receiver Input Amplitude

AF = Antenna Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss

AG = Amplifier Gain

For example:

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

$$FS = 51.5 + 8.5 + 1.3 - 26.0 + 1 = 36.3\text{dBmV/m}$$

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

$$\text{Level (dBmV/m)} = 20 * \text{Log (level (mV/m))}$$

$$40 \text{ dBmV/m} = 100\text{mV/m}$$

$$48 \text{ dBmV/m} = 250\text{mV/m}$$

Limits for Radiated Digital Emissions (0.03 – 1 GHz) (15.209)

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

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| Frequency (MHz) | Field Strength | | Measurement Distance (m) |
|-----------------|-------------------------|------------------------------|--------------------------|
| | µV/m (microvolts/meter) | dBµV/m (dB microvolts/meter) | |
| 0.009-0.490 | 2400/F(kHz) | -- | 300 |
| 0.490-1.705 | 24000/F(kHz) | -- | 30 |
| 1.705-30.0 | 30 | 29.5 | 30 |
| 30-88 | 100** | 40 | 3 |
| 88-216 | 150** | 43.5 | 3 |
| 216-960 | 200** | 46.0 | 3 |
| Above 960 | 500 | 54.0 | 3 |

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

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

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Equipment Configuration for Digital Emissions

| | | | |
|---------------------------------|-------------------------|------------------------|---------|
| Antenna: | RADWIN Ltd RW-9401-5002 | Variant: | 5 MHz |
| Antenna Gain (dBi): | 12.50 | Modulation: | OFDM |
| Beam Forming Gain (Y): | Not Applicable | Duty Cycle (%): | 99 |
| Channel Frequency (MHz): | 5730.00 | Data Rate: | QAM 256 |
| Power Setting: | 23 | Tested By: | SB |

Test Measurement Results

| Num | Frequency MHz | Raw dB μ V | Cable Loss | AF dB | Level dB μ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB μ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| #1 | 35.16 | 52.87 | 3.46 | -41.90 | 42.75 | Peak (Scan) | Vertical | 100 | 1 | -- | -- | |
| #2 | 35.16 | 49.50 | 3.46 | -13.58 | 39.38 | MaxQP | Vertical | 100 | 274 | 40.0 | -0.6 | Pass |
| #3 | 35.16 | 33.19 | 3.46 | -13.58 | 23.07 | MaxQP | Horizontal | 120 | 30 | 40.0 | -16.9 | Pass |
| #4 | 62.40 | 59.26 | 3.66 | -23.92 | 39.00 | MaxQP | Vertical | 100 | 292 | 40.0 | -1.0 | Pass |
| #5 | 62.40 | 52.01 | 3.66 | -23.92 | 31.75 | MaxQP | Horizontal | 296 | 202 | 40.0 | -8.3 | Pass |
| #6 | 62.40 | 66.64 | 3.66 | -51.98 | 46.38 | Peak (Scan) | Vertical | | | | | |
| #7 | 109.54 | 58.77 | 3.93 | -46.51 | 43.88 | Peak (Scan) | Vertical | | | | | |
| #8 | 109.54 | 50.95 | 3.93 | -18.82 | 36.06 | MaxQP | Vertical | 103 | 37 | 43.0 | -6.9 | Pass |
| #9 | 109.54 | 42.61 | 3.93 | -18.82 | 27.72 | MaxQP | Horizontal | 153 | 107 | 43.0 | -15.3 | Pass |
| #10 | 159.98 | 53.47 | 4.18 | -46.12 | 38.85 | Peak (Scan) | Horizontal | | | | | |
| #11 | 159.98 | 56.28 | 4.18 | -18.80 | 41.68 | MaxQP | Horizontal | 162 | 282 | 43.0 | -1.34 | Pass |
| #12 | 159.98 | 53.82 | 4.18 | -18.80 | 39.20 | MaxQP | Vertical | 247 | 245 | 43.0 | -3.8 | Pass |
| #13 | 239.95 | 60.02 | 4.50 | -18.95 | 45.57 | MaxQP | Horizontal | 118 | 282 | 46.0 | -0.4 | Pass |
| #14 | 239.95 | 48.44 | 4.50 | -18.95 | 33.99 | MaxQP | Vertical | 100 | 133 | 46.0 | -12.0 | Pass |
| #15 | 239.95 | 58.74 | 4.50 | -45.70 | 44.29 | Peak (Scan) | Horizontal | | | | | |
| #16 | 279.97 | 49.47 | 4.64 | -44.00 | 36.69 | Peak (Scan) | Horizontal | | | | | |
| #17 | 279.97 | 50.47 | 4.64 | -17.42 | 37.69 | MaxQP | Horizontal | 125 | 16 | 46.0 | -8.3 | Pass |
| #18 | 279.97 | 41.24 | 4.64 | -17.42 | 28.46 | MaxQP | Vertical | 100 | 120 | 46.0 | -17.5 | Pass |
| #19 | 299.97 | 47.92 | 4.70 | -17.20 | 35.42 | MaxQP | Horizontal | 104 | 22 | 46.0 | -10.6 | Pass |
| #20 | 299.97 | 38.32 | 4.70 | -17.20 | 25.82 | MaxQP | Vertical | 101 | 195 | 46.0 | -20.2 | Pass |
| #21 | 299.97 | 47.22 | 4.70 | -43.70 | 34.72 | Peak (Scan) | Horizontal | | | | | |
| #22 | 319.98 | 47.98 | 4.77 | -43.05 | 36.09 | Peak (Scan) | Horizontal | | | | | |
| #23 | 319.98 | 52.45 | 4.77 | -16.66 | 40.56 | MaxQP | Horizontal | 100 | 278 | 46.0 | -5.4 | Pass |
| #24 | 319.98 | 44.03 | 4.77 | -16.66 | 32.14 | MaxQP | Vertical | 319 | 185 | 46.0 | -13.9 | Pass |
| #25 | 399.92 | 43.28 | 5.02 | -14.78 | 33.52 | MaxQP | Horizontal | 100 | 353 | 46.0 | -12.5 | Pass |
| #26 | 399.92 | 36.75 | 5.02 | -14.78 | 26.99 | MaxQP | Vertical | 121 | 52 | 46.0 | -19.0 | Pass |
| #27 | 399.92 | 47.27 | 5.02 | -40.74 | 37.51 | Peak (Scan) | Horizontal | | | | | |
| #28 | 439.96 | 47.01 | 5.15 | -40.07 | 38.00 | Peak (Scan) | Horizontal | | | | | |
| #29 | 439.96 | 46.47 | 5.15 | -14.16 | 37.46 | MaxQP | Horizontal | 100 | 352 | 46.0 | -8.5 | Pass |
| #30 | 439.96 | 41.41 | 5.15 | -14.16 | 32.40 | MaxQP | Vertical | 121 | 138 | 46.0 | -13.6 | Pass |
| #31 | 3599.81 | 42.95 | 4.98 | -50.45 | 36.76 | Peak (Scan) | Vertical | | | | | |

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9.5. ac Wireline Emissions

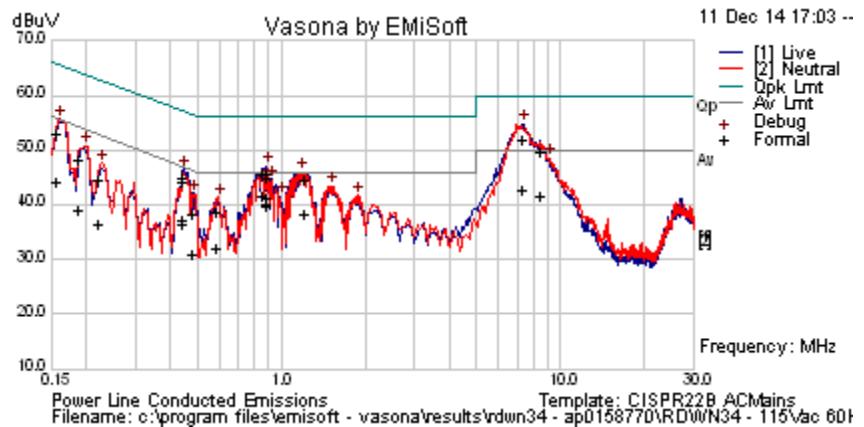
FCC, Part 15 Subpart C §15.207 RSS-247

Test Procedure

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

Measurement Results for ac Wireline Conducted Emissions (150 kHz – 30 MHz)

| | | | |
|---------------|----------------------------------|----------------|-----|
| Test Freq. | N/A | Engineer | GMH |
| Variant | DC Line Emissions | Temp (°C) | 20 |
| Freq. Range | 0.150 MHz - 30 MHz | Rel. Hum.(%) | 75 |
| Power Setting | NA | Press. (mBars) | 999 |
| Antenna | N/A | | |
| Test Notes 1 | POE: Sinpro 115Vac 60 Hz: 55 Vdc | | |
| Test Notes 2 | POE Model #: CPU55A-270-1 | | |



Formally measured emission peaks

| Frequency MHz | Raw dBuV | Cable Loss | Factors dB | Level dBuV | Measurement Type | Line | Limit dBuV | Margin dB | Pass /Fail | Comments |
|---------------|----------|------------|------------|------------|------------------|---------|------------|-----------|------------|----------|
| 0.155 | 34.1 | 9.9 | 0.1 | 44.1 | Average | Neutral | 55.75 | -11.7 | Pass | |
| 0.155 | 43.1 | 9.9 | 0.1 | 53.1 | Quasi Peak | Neutral | 65.75 | -12.6 | Pass | |
| 0.187 | 38.1 | 9.9 | 0.1 | 48.1 | Quasi Peak | Neutral | 64.19 | -16.1 | Pass | |
| 0.187 | 29.2 | 9.9 | 0.1 | 39.1 | Average | Neutral | 54.19 | -15.1 | Pass | |
| 0.217 | 34.7 | 9.9 | 0.1 | 44.7 | Quasi Peak | Neutral | 62.92 | -18.2 | Pass | |
| 0.217 | 26.4 | 9.9 | 0.1 | 36.3 | Average | Neutral | 52.92 | -16.6 | Pass | |
| 0.440 | 34.8 | 9.9 | 0.1 | 44.8 | Quasi Peak | Live | 57.06 | -12.3 | Pass | |
| 0.440 | 27.2 | 9.9 | 0.1 | 37.2 | Average | Live | 47.06 | -9.8 | Pass | |
| 0.440 | 26.4 | 9.9 | 0.1 | 36.4 | Average | Live | 47.06 | -10.7 | Pass | |
| 0.440 | 34.3 | 9.9 | 0.1 | 44.3 | Quasi Peak | Live | 57.06 | -12.8 | Pass | |
| 0.472 | 28.4 | 9.9 | 0.1 | 38.4 | Quasi Peak | Live | 56.47 | -18.1 | Pass | |
| 0.472 | 21.0 | 9.9 | 0.1 | 31.0 | Average | Live | 46.47 | -15.5 | Pass | |
| 0.578 | 28.8 | 9.9 | 0.1 | 38.9 | Quasi Peak | Neutral | 56 | -17.2 | Pass | |
| 0.578 | 21.9 | 9.9 | 0.1 | 31.9 | Average | Neutral | 46 | -14.1 | Pass | |
| 0.843 | 31.6 | 9.9 | 0.1 | 41.6 | Average | Live | 46 | -4.4 | Pass | |

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| | | | | | | | | | | |
|---|------|--|-----|------|------------|---------|----|-------|------|--|
| 0.843 | 35.8 | 9.9 | 0.1 | 45.9 | Quasi Peak | Live | 56 | -10.2 | Pass | |
| 0.873 | 29.9 | 9.9 | 0.1 | 39.9 | Average | Neutral | 46 | -6.1 | Pass | |
| 0.873 | 35.0 | 9.9 | 0.1 | 45.1 | Quasi Peak | Neutral | 56 | -10.9 | Pass | |
| 0.876 | 30.1 | 9.9 | 0.1 | 40.2 | Average | Live | 46 | -5.9 | Pass | |
| 0.876 | 35.5 | 9.9 | 0.1 | 45.5 | Quasi Peak | Live | 56 | -10.5 | Pass | |
| 0.877 | 35.8 | 9.9 | 0.1 | 45.8 | Quasi Peak | Live | 56 | -10.2 | Pass | |
| 0.877 | 31.2 | 9.9 | 0.1 | 41.2 | Average | Live | 46 | -4.8 | Pass | |
| 1.189 | 28.2 | 9.9 | 0.1 | 38.2 | Average | Neutral | 46 | -7.8 | Pass | |
| 1.189 | 34.6 | 9.9 | 0.1 | 44.6 | Quasi Peak | Neutral | 56 | -11.4 | Pass | |
| 7.294 | 41.2 | 10.3 | 0.3 | 51.8 | Quasi Peak | Live | 60 | -8.2 | Pass | |
| 7.294 | 32.0 | 10.3 | 0.3 | 42.6 | Average | Live | 50 | -7.4 | Pass | |
| 8.379 | 39.2 | 10.3 | 0.3 | 49.9 | Quasi Peak | Neutral | 60 | -10.1 | Pass | |
| 8.379 | 30.9 | 10.3 | 0.3 | 41.5 | Average | Neutral | 50 | -8.5 | Pass | |
| <hr/> | | | | | | | | | | |
| Legend: | | DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency | | | | | | | | |
| NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band | | | | | | | | | | |

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Specification

Limits

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu\Omega$ line impedance stabilization network (LISN), see §15.207 (a) matrix below. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

§15.207 (a) Limit Matrix

The lower limit applies at the boundary between frequency ranges

| Frequency of Emission (MHz) | Conducted Limit (dB μ V) | |
|-----------------------------|------------------------------|-----------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

* Decreases with the logarithm of the frequency

Traceability

| Test Methodology | Laboratory Measurement Uncertainty |
|--|------------------------------------|
| Measurements were made per work instruction WI-EMC-01 'Measurement of Conducted Emissions' | ± 2.64 dB |

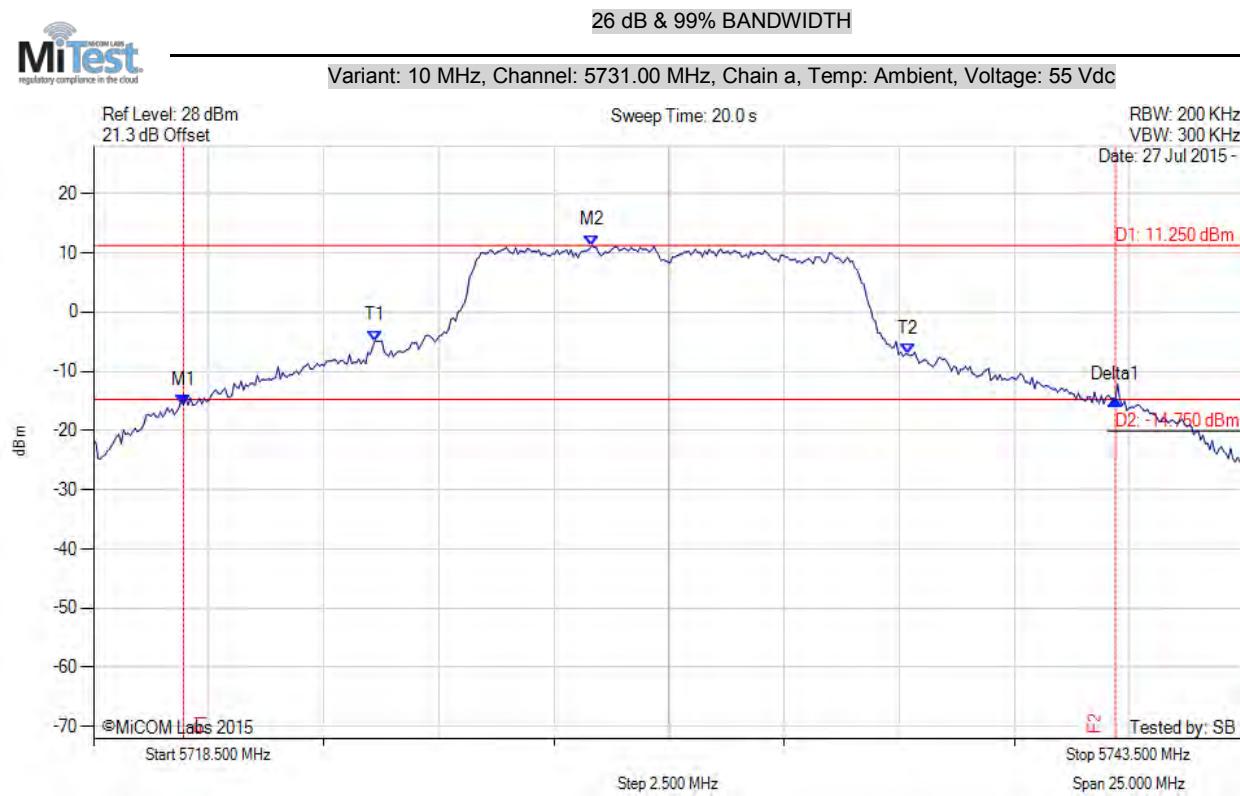


Title: Radwin Ltd. 5 GHz 802.11ac 3x3 RF Module 5XACMD3C
To: FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247
Serial #: RDWN38-U3 Rev A
Issue Date: 20th August 2015
Page: 60 of 235

A. APPENDIX - GRAPHICAL IMAGES

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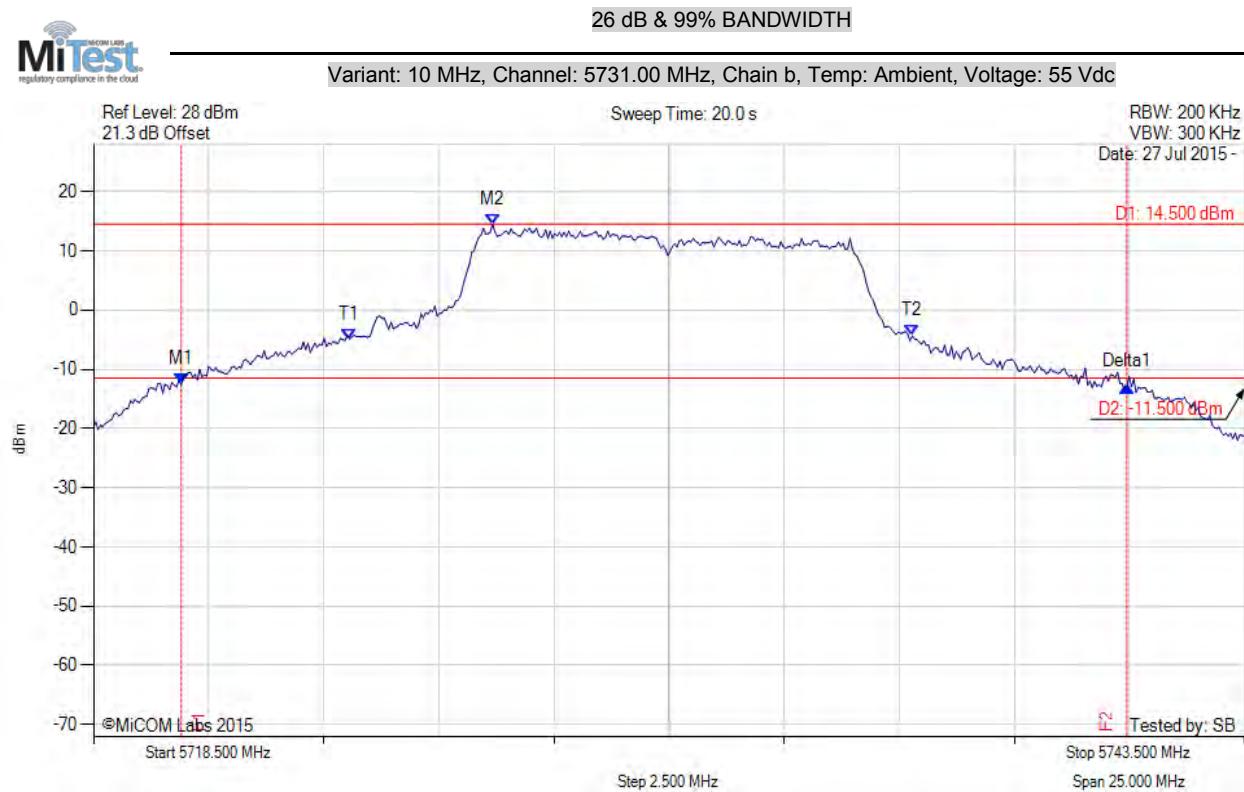
A.1. 26 dB & 99% Bandwidth



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5720.454 MHz : -15.724 dBm M2 : 5729.322 MHz : 11.250 dBm Delta1 : 20.240 MHz : 0.982 dB T1 : 5724.612 MHz : -4.869 dBm T2 : 5736.185 MHz : -7.125 dBm OBW : 11.573 MHz | Measured 26 dB Bandwidth: 20.240 MHz Measured 99% Bandwidth: 11.573 MHz |

[back to matrix](#)

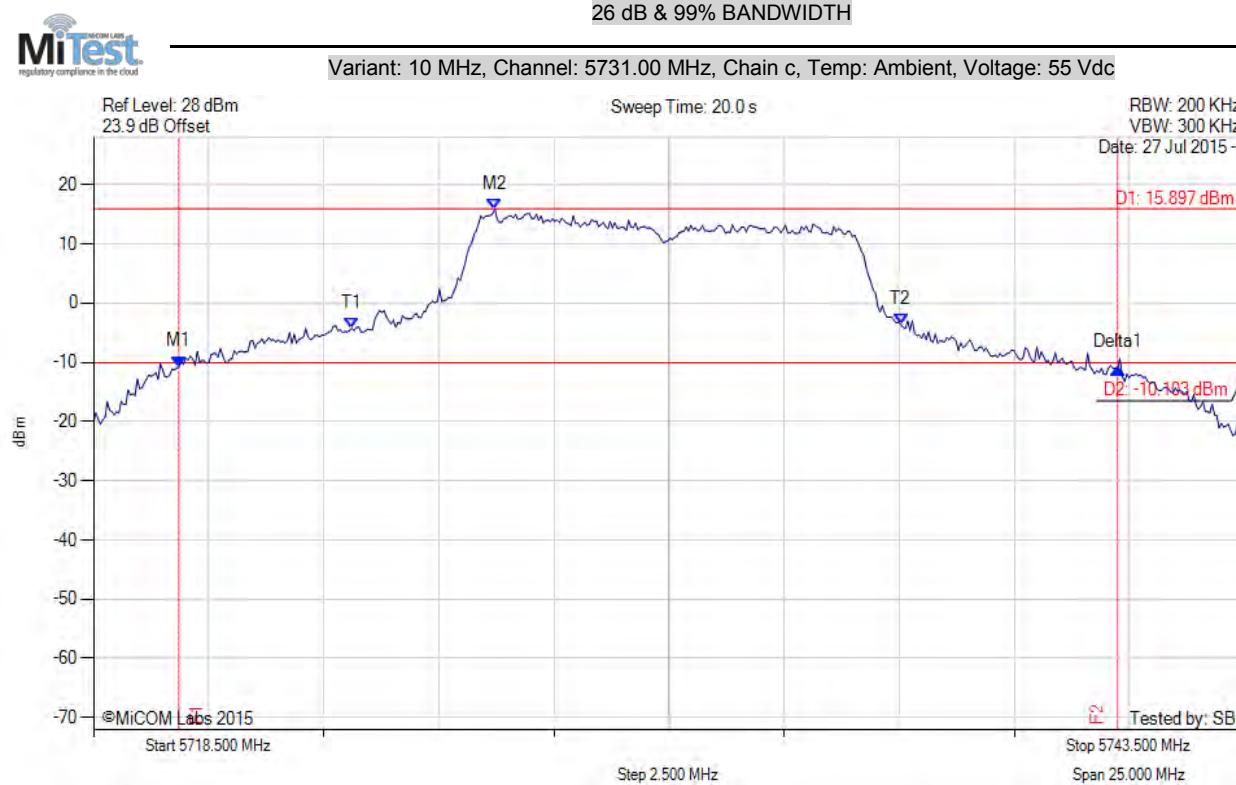
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5720.404 MHz : -12.551 dBm M2 : 5727.167 MHz : 14.500 dBm Delta1 : 20.541 MHz : -0.315 dB T1 : 5724.061 MHz : -4.882 dBm T2 : 5736.286 MHz : -4.359 dBm OBW : 12.224 MHz | Measured 26 dB Bandwidth: 20.541 MHz Measured 99% Bandwidth: 12.224 MHz |

[back to matrix](#)

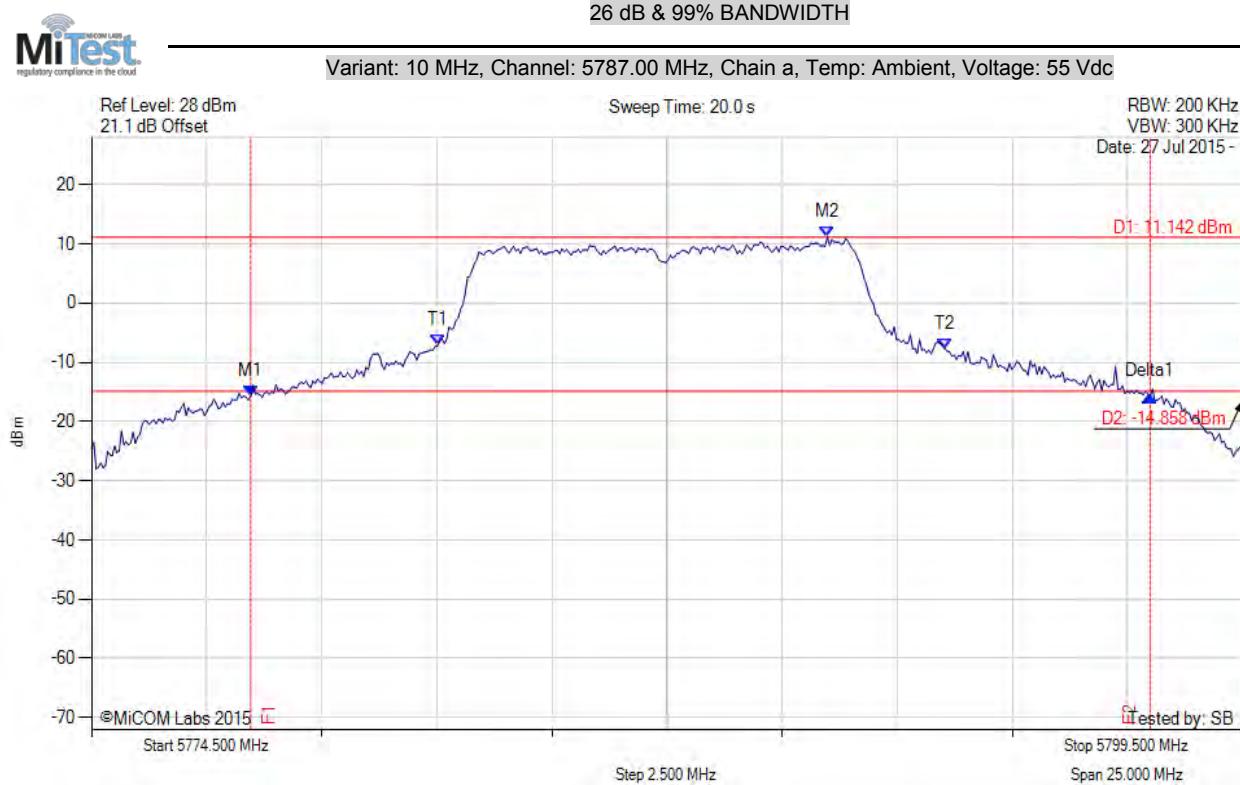
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5720.354 MHz : -10.718 dBm M2 : 5727.217 MHz : 15.897 dBm Delta1 : 20.391 MHz : -0.220 dB T1 : 5724.111 MHz : -4.267 dBm T2 : 5736.035 MHz : -3.613 dBm OBW : 11.924 MHz | Measured 26 dB Bandwidth: 20.391 MHz Measured 99% Bandwidth: 11.924 MHz |

[back to matrix](#)

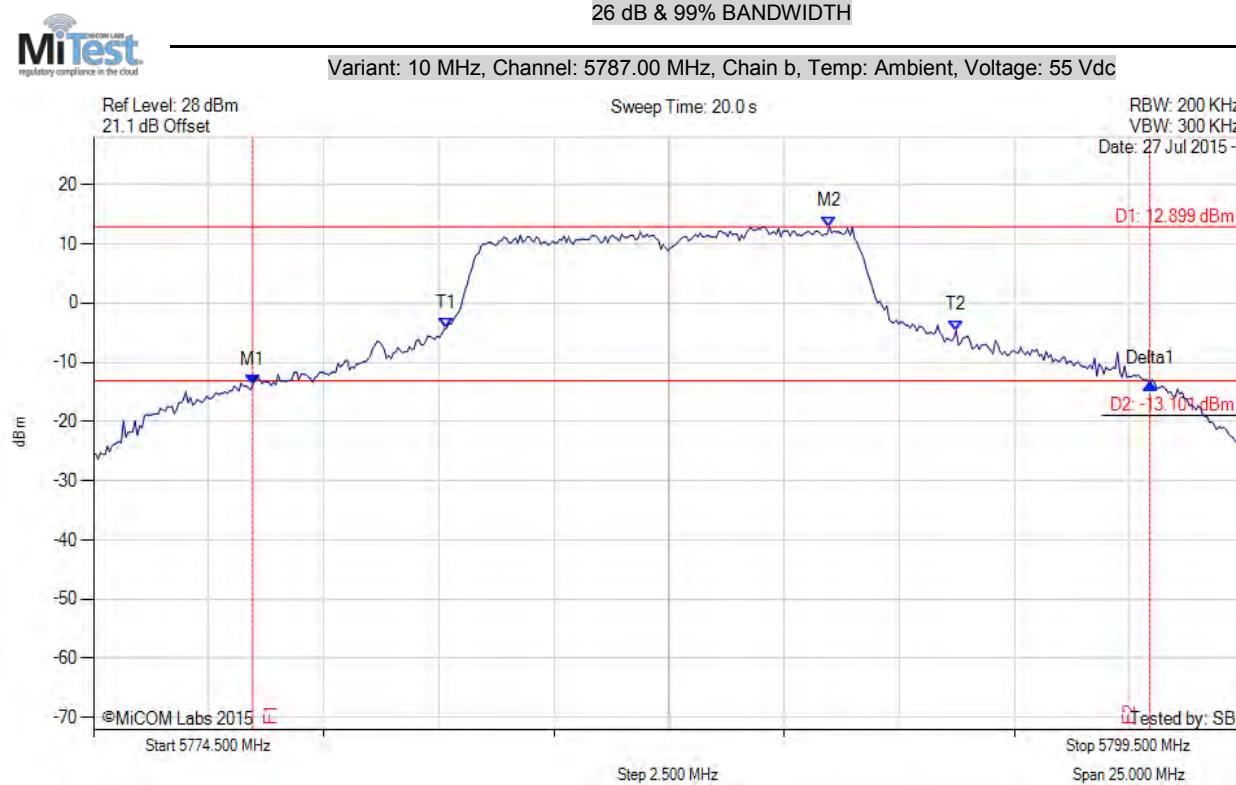
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5777.957 MHz : -15.685 dBm M2 : 5790.482 MHz : 11.142 dBm Delta1 : 19.539 MHz : -0.092 dB T1 : 5782.015 MHz : -7.159 dBm T2 : 5793.037 MHz : -7.713 dBm OBW : 11.022 MHz | Measured 26 dB Bandwidth: 19.539 MHz Measured 99% Bandwidth: 11.022 MHz |

[back to matrix](#)

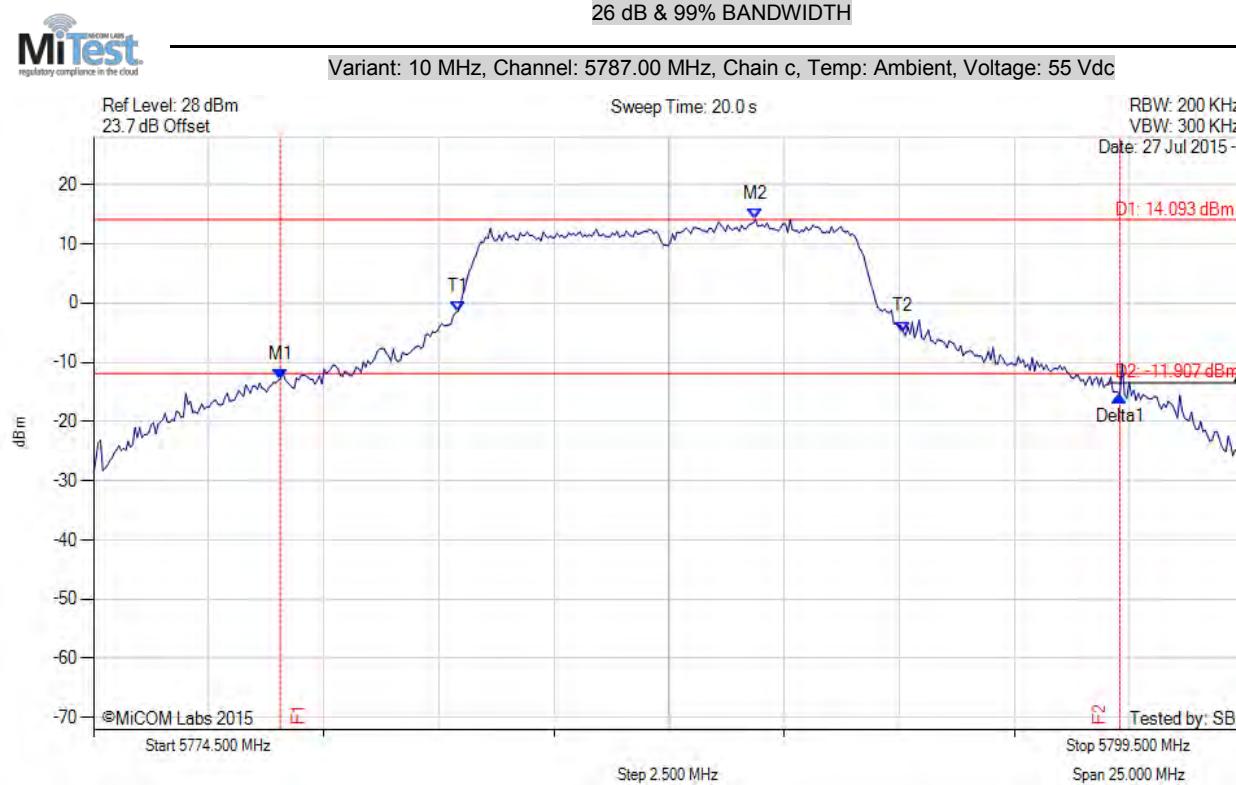
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5777.957 MHz : -13.879 dBm M2 : 5790.482 MHz : 12.899 dBm Delta1 : 19.489 MHz : 0.222 dB T1 : 5782.165 MHz : -4.276 dBm T2 : 5793.237 MHz : -4.644 dBm OBW : 11.072 MHz | Measured 26 dB Bandwidth: 19.489 MHz Measured 99% Bandwidth: 11.072 MHz |

[back to matrix](#)

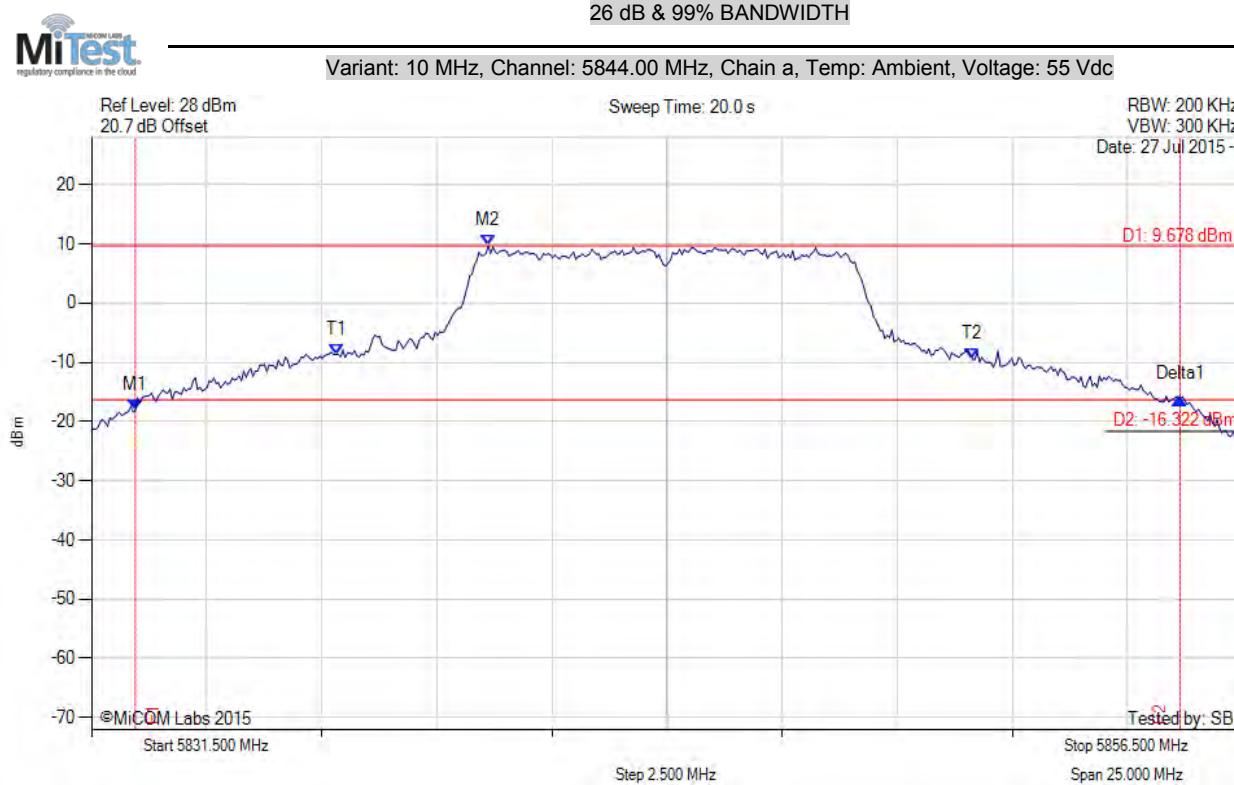
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5778.558 MHz : -12.846 dBm M2 : 5788.879 MHz : 14.093 dBm Delta1 : 18.236 MHz : -2.796 dB T1 : 5782.416 MHz : -1.394 dBm T2 : 5792.085 MHz : -4.869 dBm OBW : 9.669 MHz | Measured 26 dB Bandwidth: 18.236 MHz Measured 99% Bandwidth: 9.669 MHz |

[back to matrix](#)

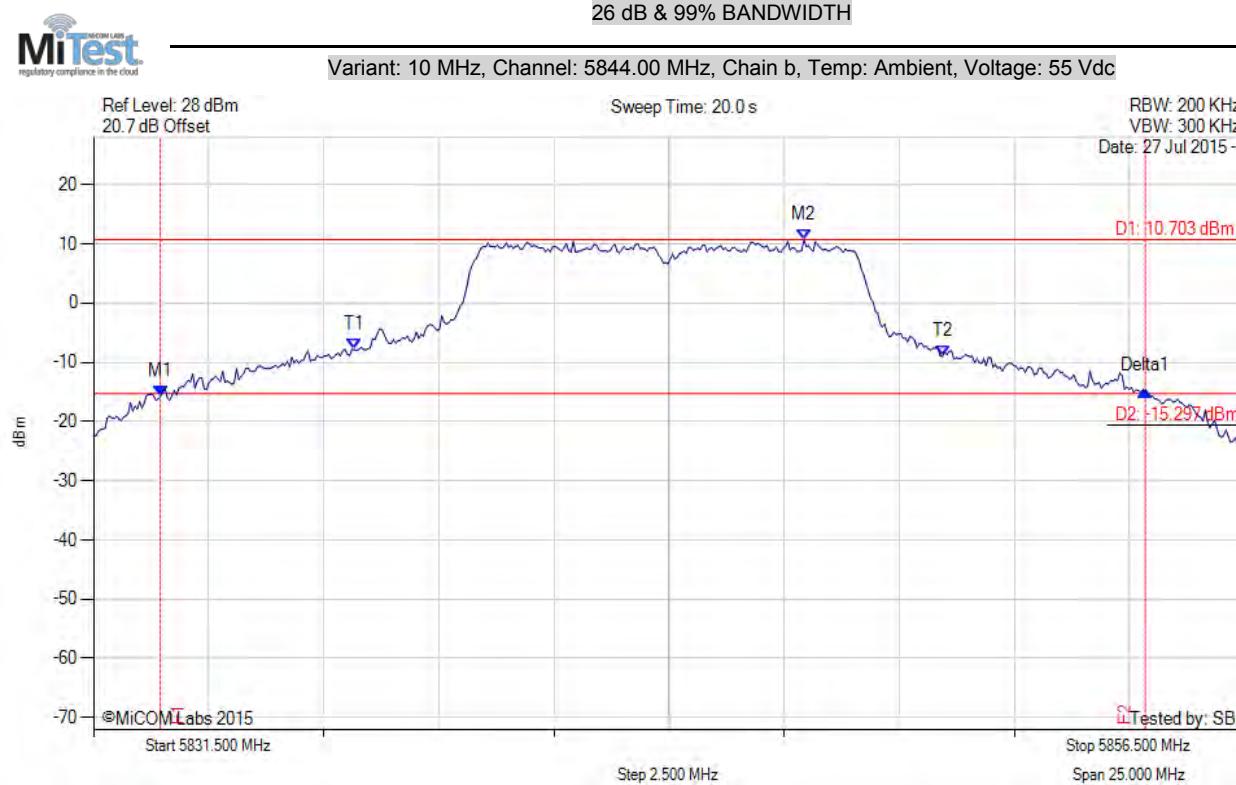
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5832.452 MHz : -18.140 dBm M2 : 5840.117 MHz : 9.678 dBm Delta1 : 22.695 MHz : 1.979 dB T1 : 5836.811 MHz : -8.687 dBm T2 : 5850.638 MHz : -9.451 dBm OBW : 13.828 MHz | Measured 26 dB Bandwidth: 22.695 MHz Measured 99% Bandwidth: 13.828 MHz |

[back to matrix](#)

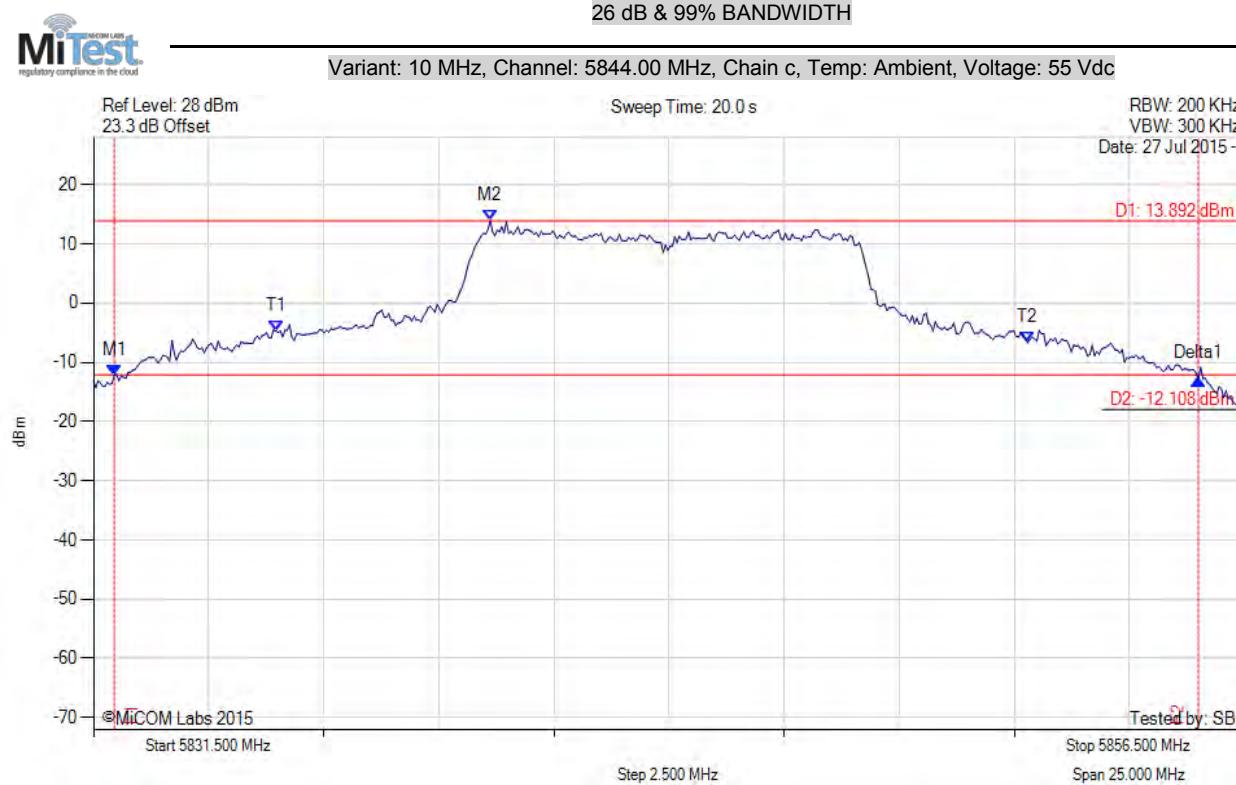
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5832.953 MHz : -15.726 dBm M2 : 5846.931 MHz : 10.703 dBm Delta1 : 21.393 MHz : 0.838 dB T1 : 5837.161 MHz : -7.851 dBm T2 : 5849.937 MHz : -9.022 dBm OBW : 12.776 MHz | Measured 26 dB Bandwidth: 21.393 MHz Measured 99% Bandwidth: 12.776 MHz |

[back to matrix](#)

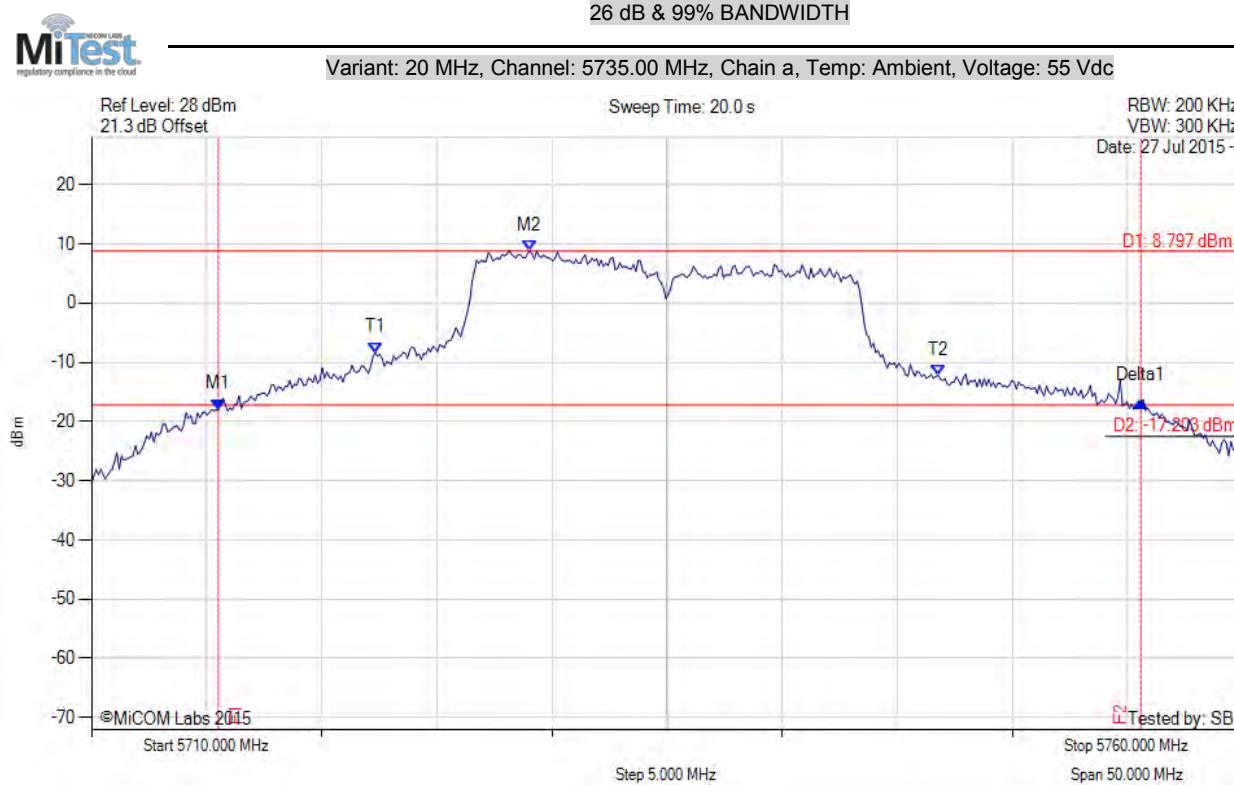
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5831.951 MHz : -12.132 dBm M2 : 5840.117 MHz : 13.892 dBm Delta1 : 23.547 MHz : -0.671 dB T1 : 5835.458 MHz : -4.717 dBm T2 : 5851.791 MHz : -6.684 dBm OBW : 16.333 MHz | Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 16.333 MHz |

[back to matrix](#)

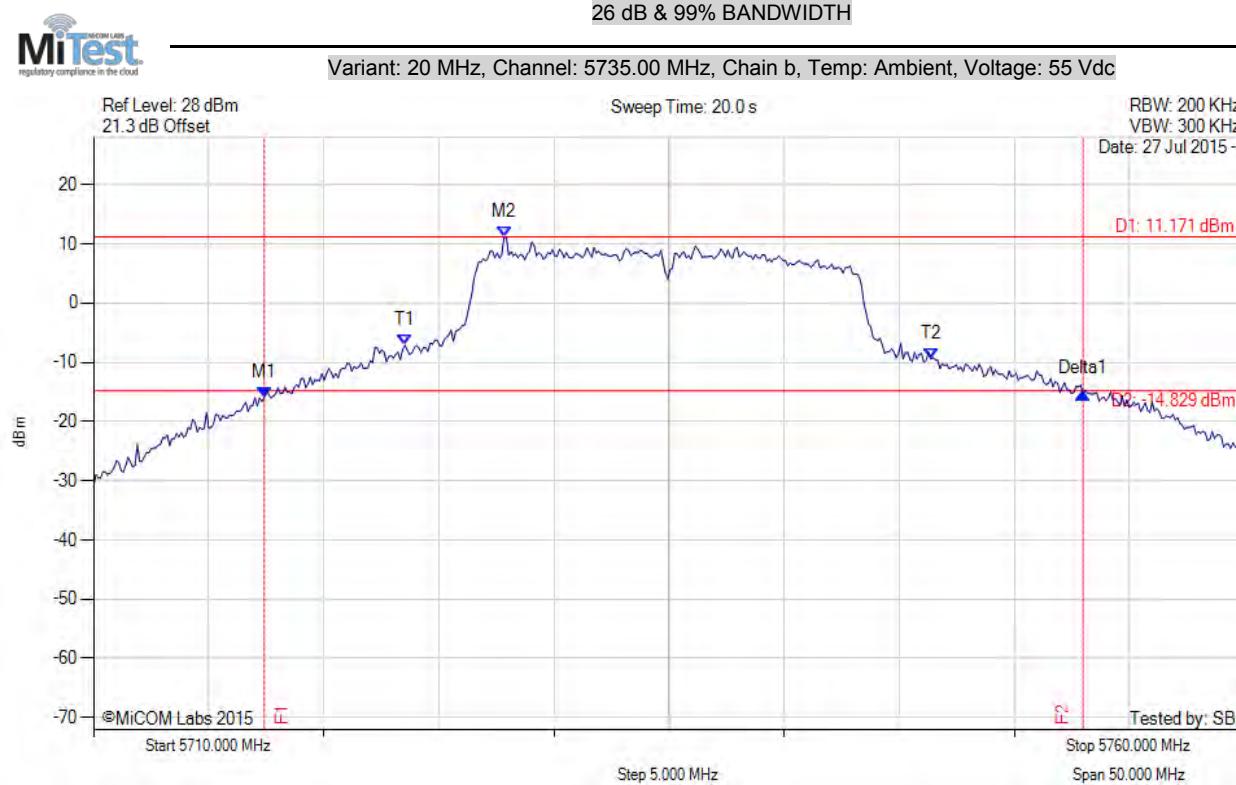
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5715.511 MHz : -17.948 dBm M2 : 5729.038 MHz : 8.797 dBm Delta1 : 40.080 MHz : 1.389 dB T1 : 5722.325 MHz : -8.372 dBm T2 : 5746.774 MHz : -12.189 dBm OBW : 24.449 MHz | Measured 26 dB Bandwidth: 40.080 MHz Measured 99% Bandwidth: 24.449 MHz |

[back to matrix](#)

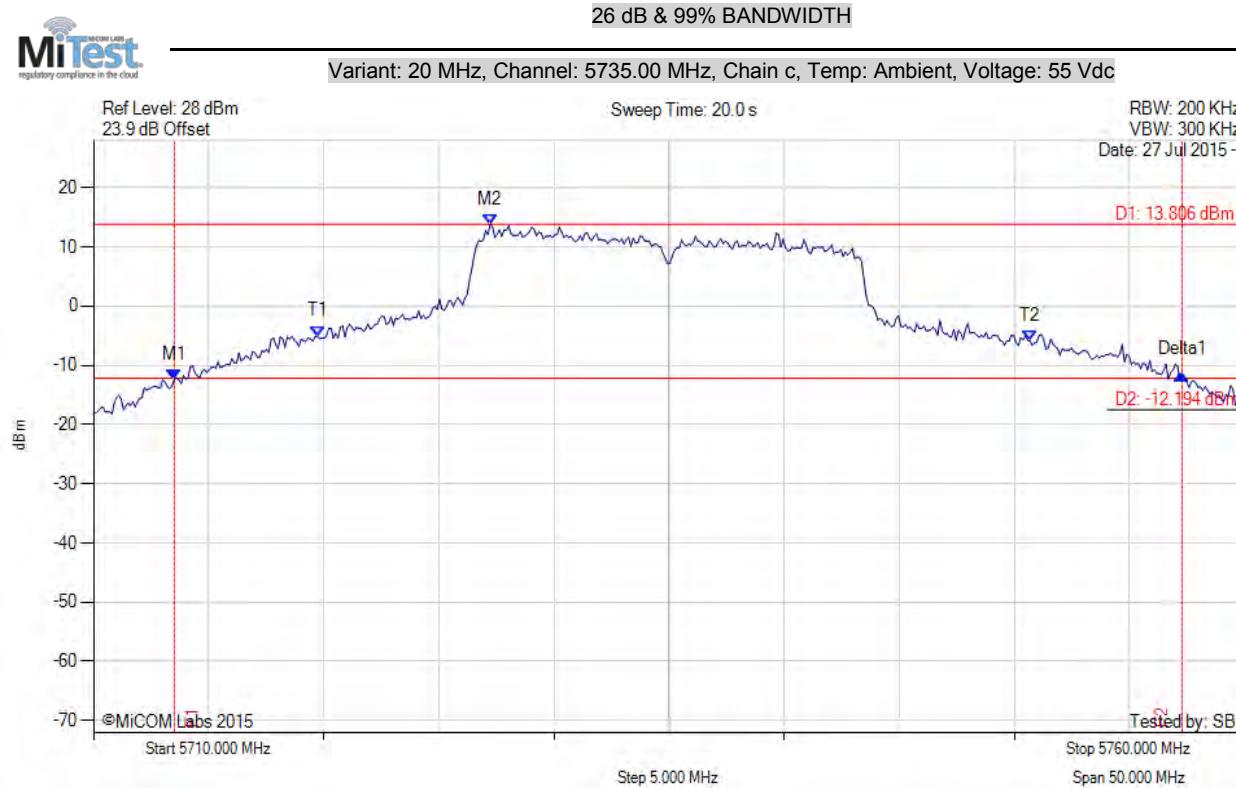
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5717.415 MHz : -15.909 dBm M2 : 5727.836 MHz : 11.171 dBm Delta1 : 35.571 MHz : 0.565 dB T1 : 5723.527 MHz : -7.141 dBm T2 : 5746.373 MHz : -9.429 dBm OBW : 22.846 MHz | Measured 26 dB Bandwidth: 35.571 MHz Measured 99% Bandwidth: 22.846 MHz |

[back to matrix](#)

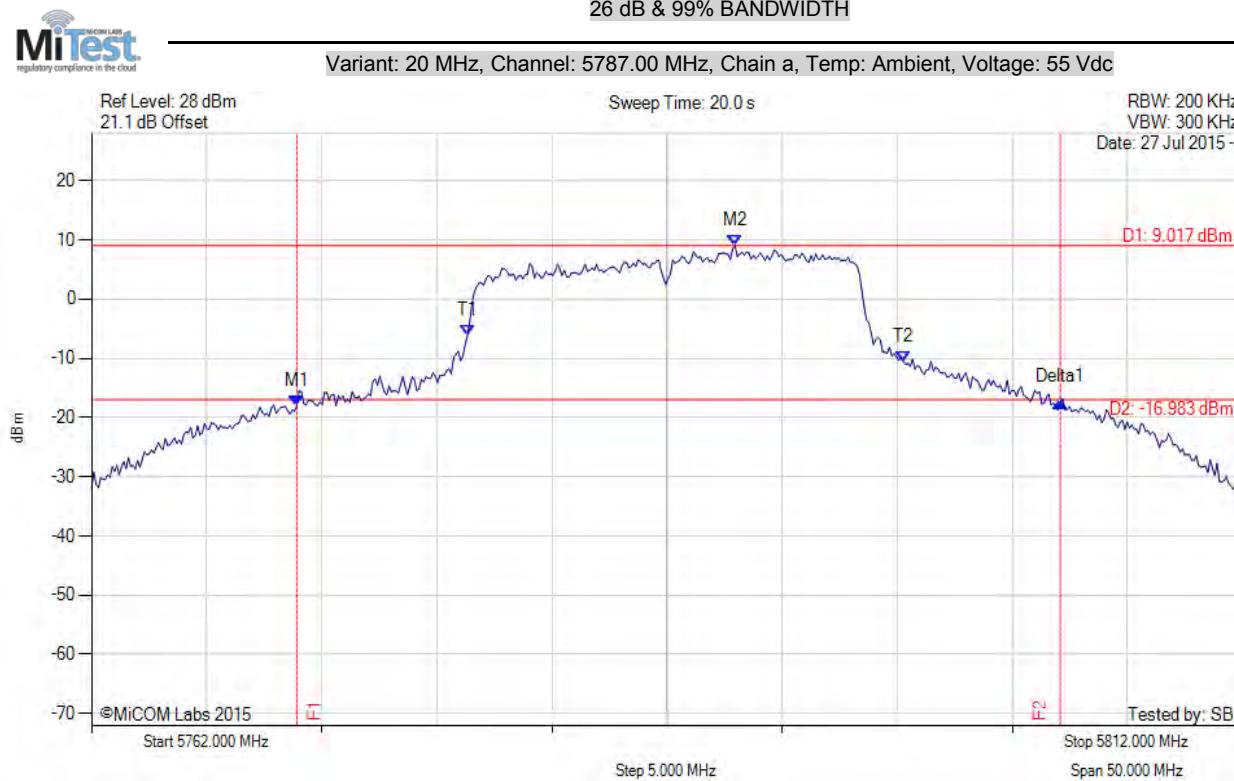
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5713.507 MHz : -12.374 dBm M2 : 5727.234 MHz : 13.806 dBm Delta1 : 43.788 MHz : 0.746 dB T1 : 5719.719 MHz : -5.103 dBm T2 : 5750.681 MHz : -5.886 dBm OBW : 30.962 MHz | Measured 26 dB Bandwidth: 43.788 MHz Measured 99% Bandwidth: 30.962 MHz |

[back to matrix](#)

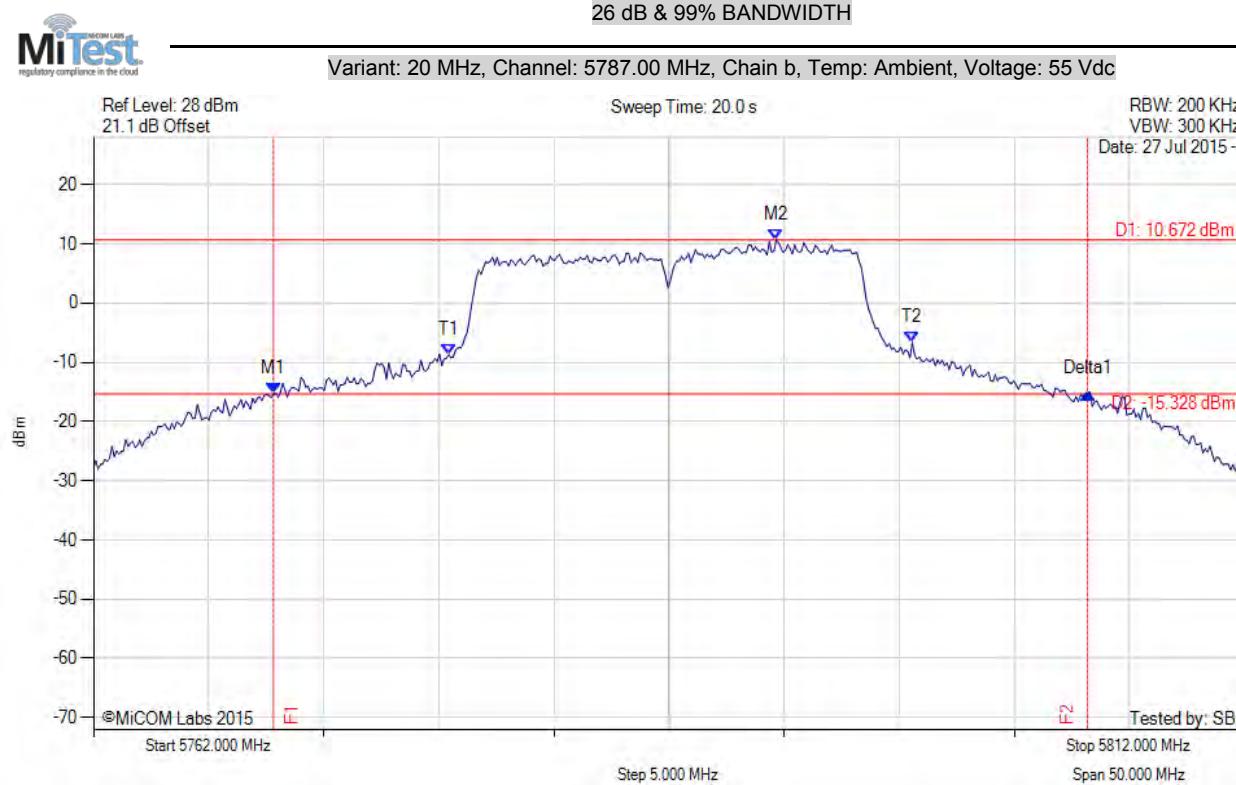
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5770.918 MHz : -18.011 dBm M2 : 5789.956 MHz : 9.017 dBm Delta1 : 33.166 MHz : 0.618 dB T1 : 5778.333 MHz : -6.073 dBm T2 : 5797.271 MHz : -10.527 dBm OBW : 18.938 MHz | Measured 26 dB Bandwidth: 33.166 MHz Measured 99% Bandwidth: 18.938 MHz |

[back to matrix](#)

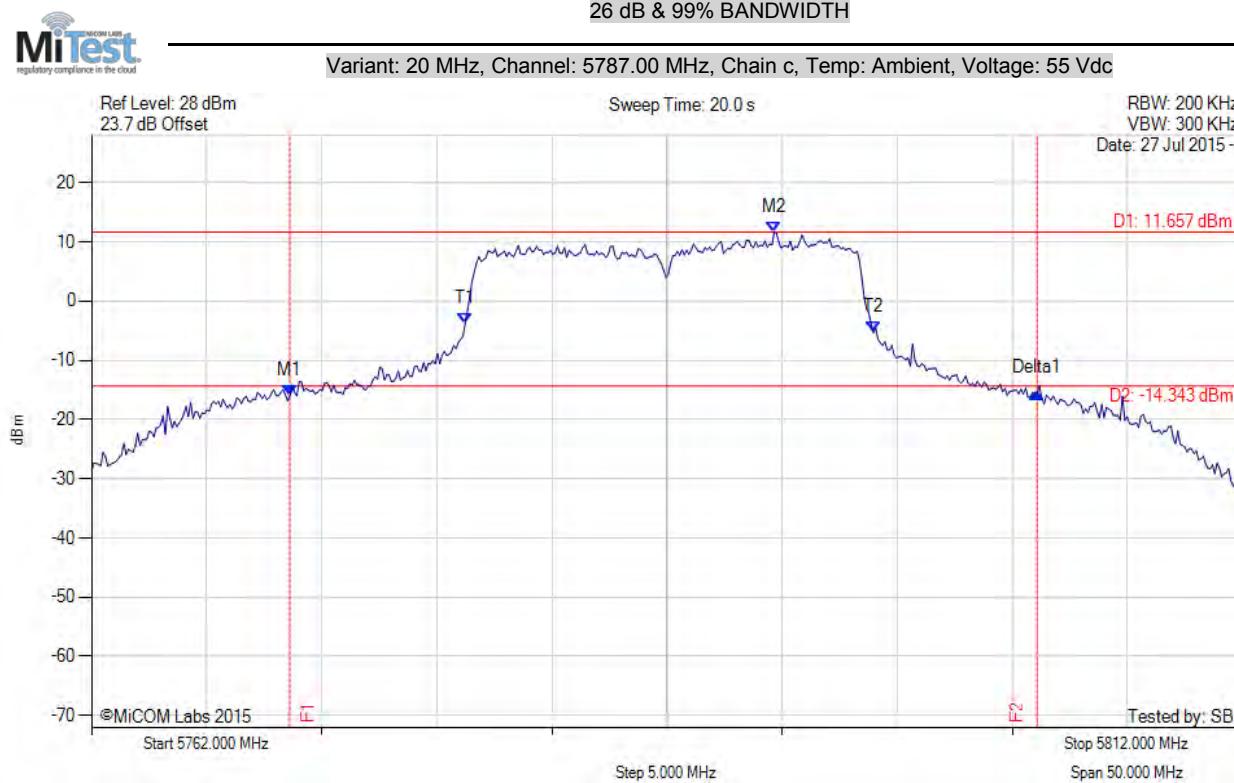
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5769.816 MHz : -15.335 dBm M2 : 5791.659 MHz : 10.672 dBm Delta1 : 35.371 MHz : 0.085 dB T1 : 5777.431 MHz : -8.727 dBm T2 : 5797.571 MHz : -6.635 dBm OBW : 20.140 MHz | Measured 26 dB Bandwidth: 35.371 MHz Measured 99% Bandwidth: 20.140 MHz |

[back to matrix](#)

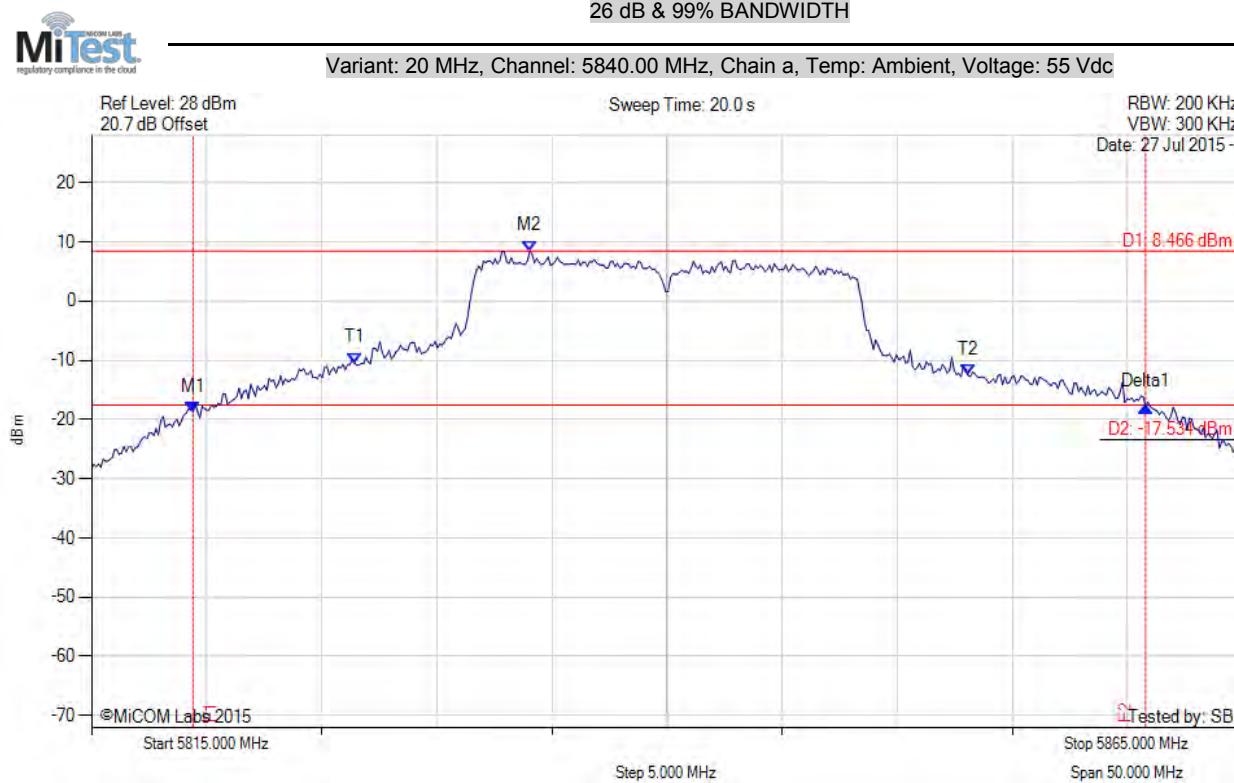
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5770.617 MHz : -15.970 dBm M2 : 5791.659 MHz : 11.657 dBm Delta1 : 32.465 MHz : 0.370 dB T1 : 5778.232 MHz : -3.812 dBm T2 : 5795.968 MHz : -5.309 dBm OBW : 17.735 MHz | Measured 26 dB Bandwidth: 32.465 MHz Measured 99% Bandwidth: 17.735 MHz |

[back to matrix](#)

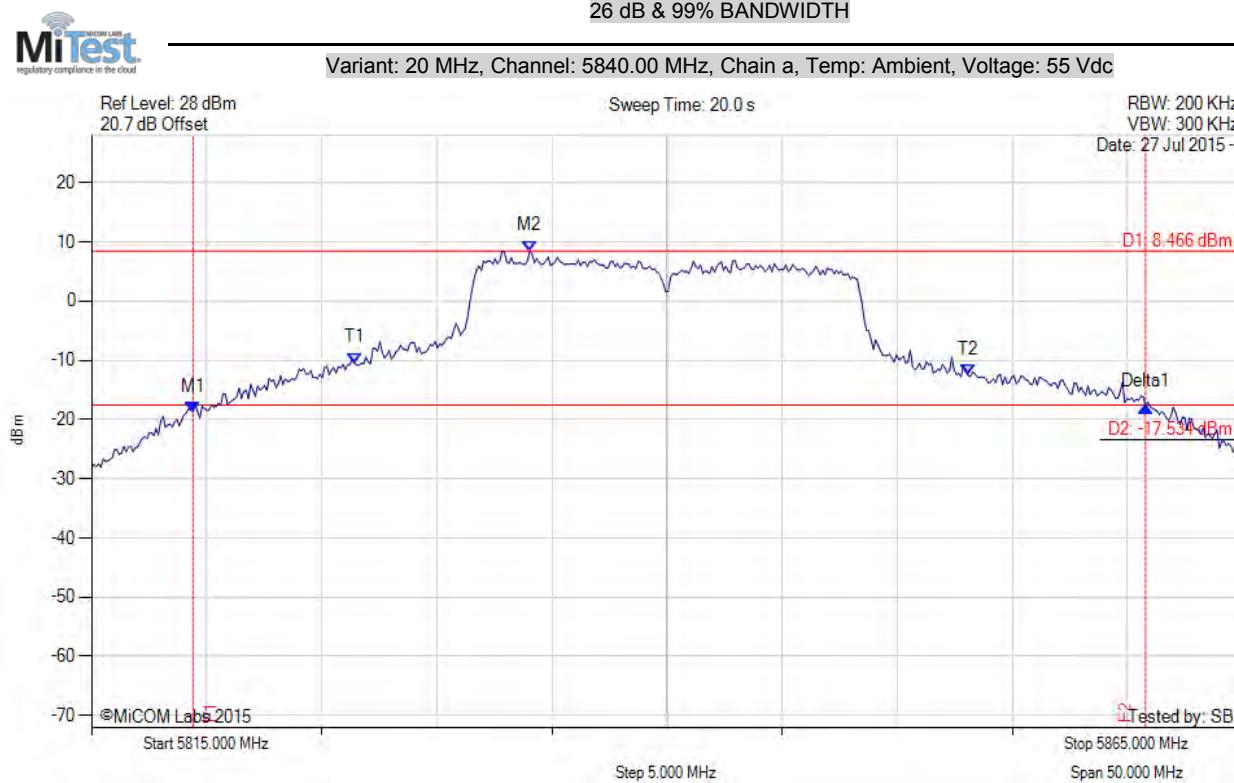
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5819.409 MHz : -18.721 dBm M2 : 5834.038 MHz : 8.466 dBm Delta1 : 41.383 MHz : 0.838 dB T1 : 5826.423 MHz : -10.481 dBm T2 : 5853.076 MHz : -12.476 dBm OBW : 26.653 MHz | Measured 26 dB Bandwidth: 41.383 MHz Measured 99% Bandwidth: 26.653 MHz |

[back to matrix](#)

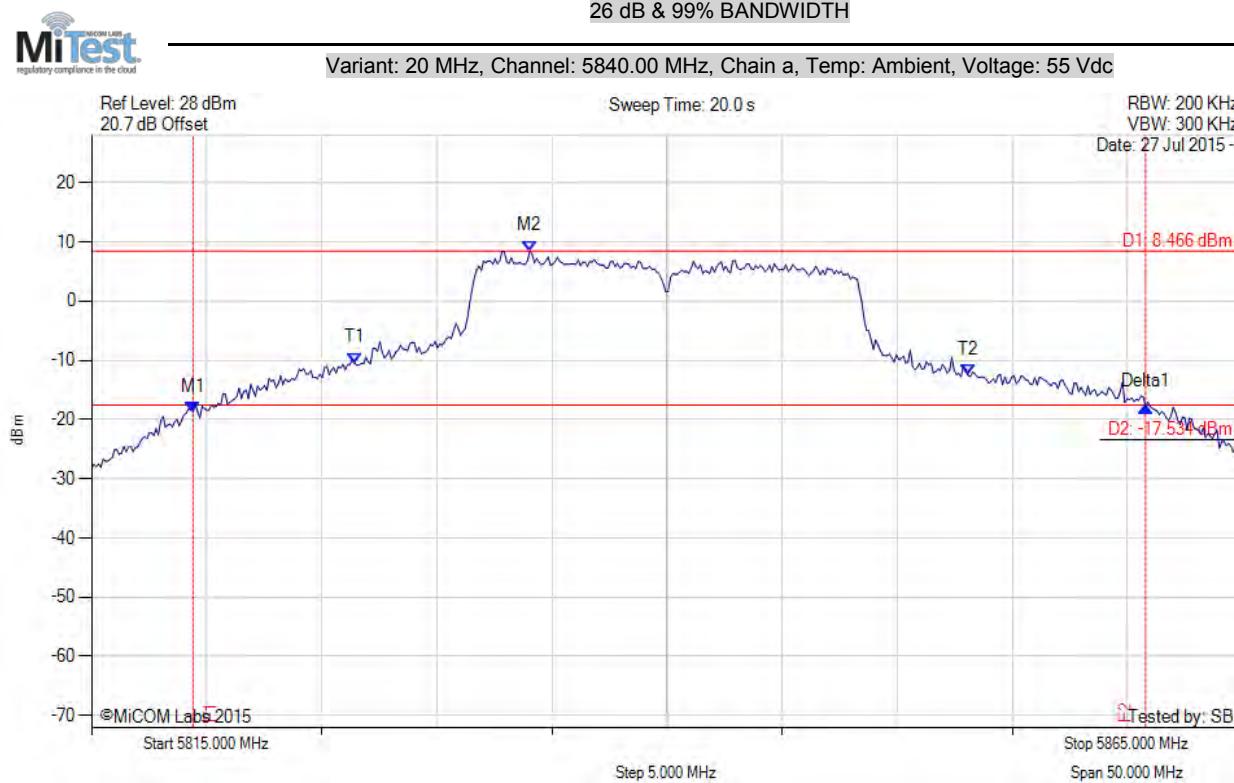
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5819.409 MHz : -18.721 dBm M2 : 5834.038 MHz : 8.466 dBm Delta1 : 41.383 MHz : 0.838 dB T1 : 5826.423 MHz : -10.481 dBm T2 : 5853.076 MHz : -12.476 dBm OBW : 26.653 MHz | Channel Frequency: 5840.00 MHz |

[back to matrix](#)

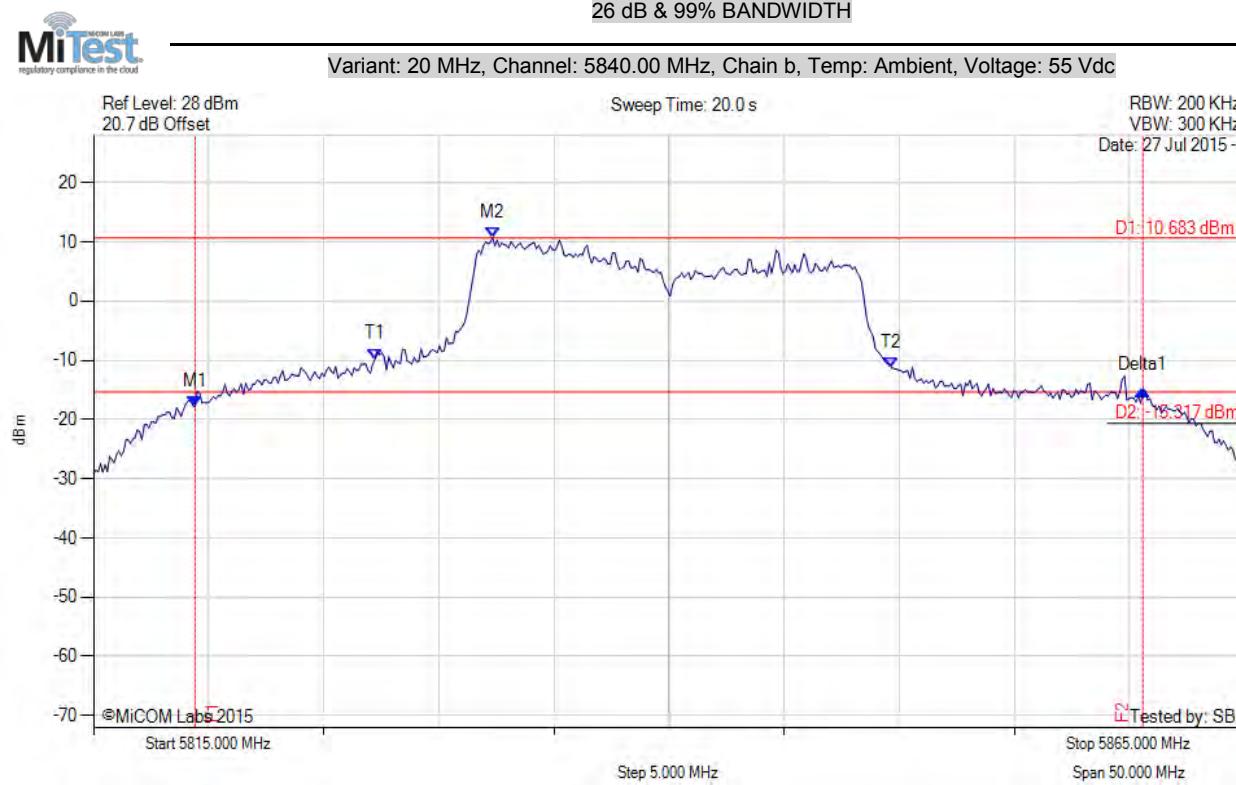
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5819.409 MHz : -18.721 dBm M2 : 5834.038 MHz : 8.466 dBm Delta1 : 41.383 MHz : 0.838 dB T1 : 5826.423 MHz : -10.481 dBm T2 : 5853.076 MHz : -12.476 dBm OBW : 26.653 MHz | Measured 26 dB Bandwidth: 41.383 MHz Measured 99% Bandwidth: 26.653 MHz |

[back to matrix](#)

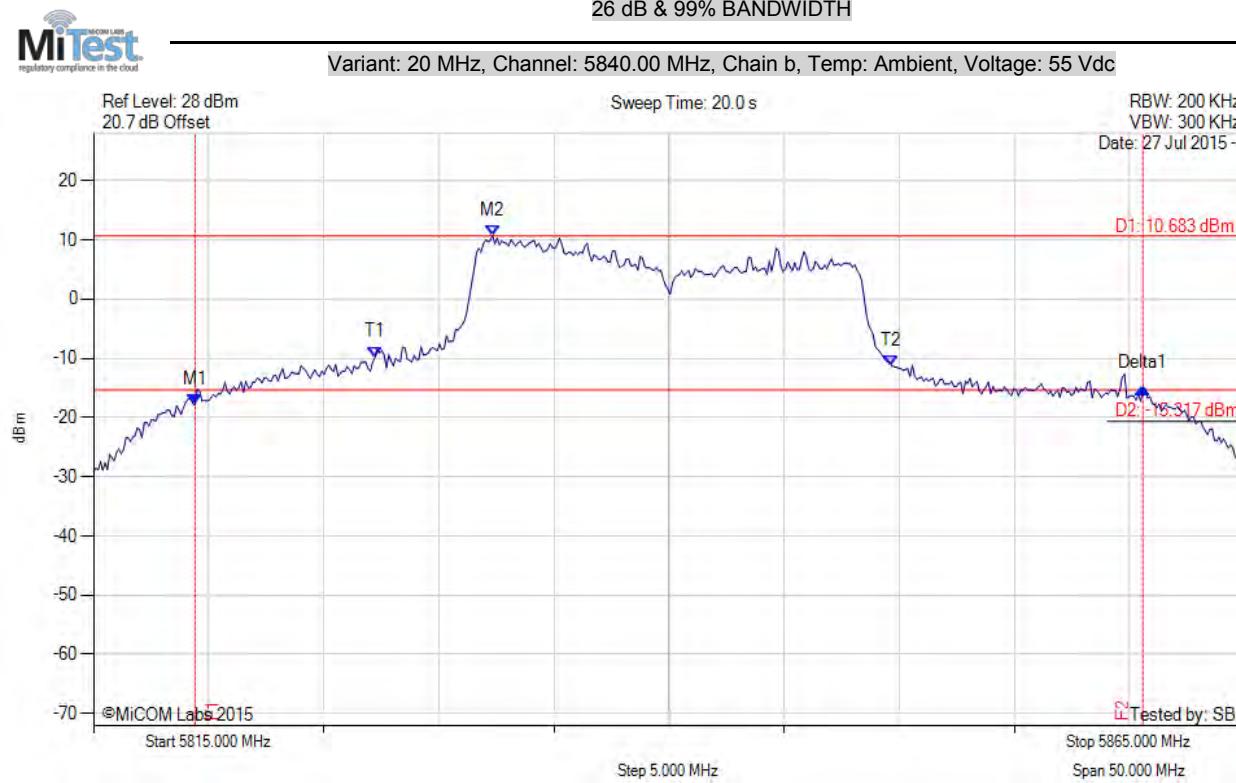
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5819.409 MHz : -17.826 dBm M2 : 5832.335 MHz : 10.683 dBm Delta1 : 41.182 MHz : 2.744 dB T1 : 5827.224 MHz : -9.781 dBm T2 : 5849.669 MHz : -11.231 dBm OBW : 22.445 MHz | Channel Frequency: 5840.00 MHz |

[back to matrix](#)

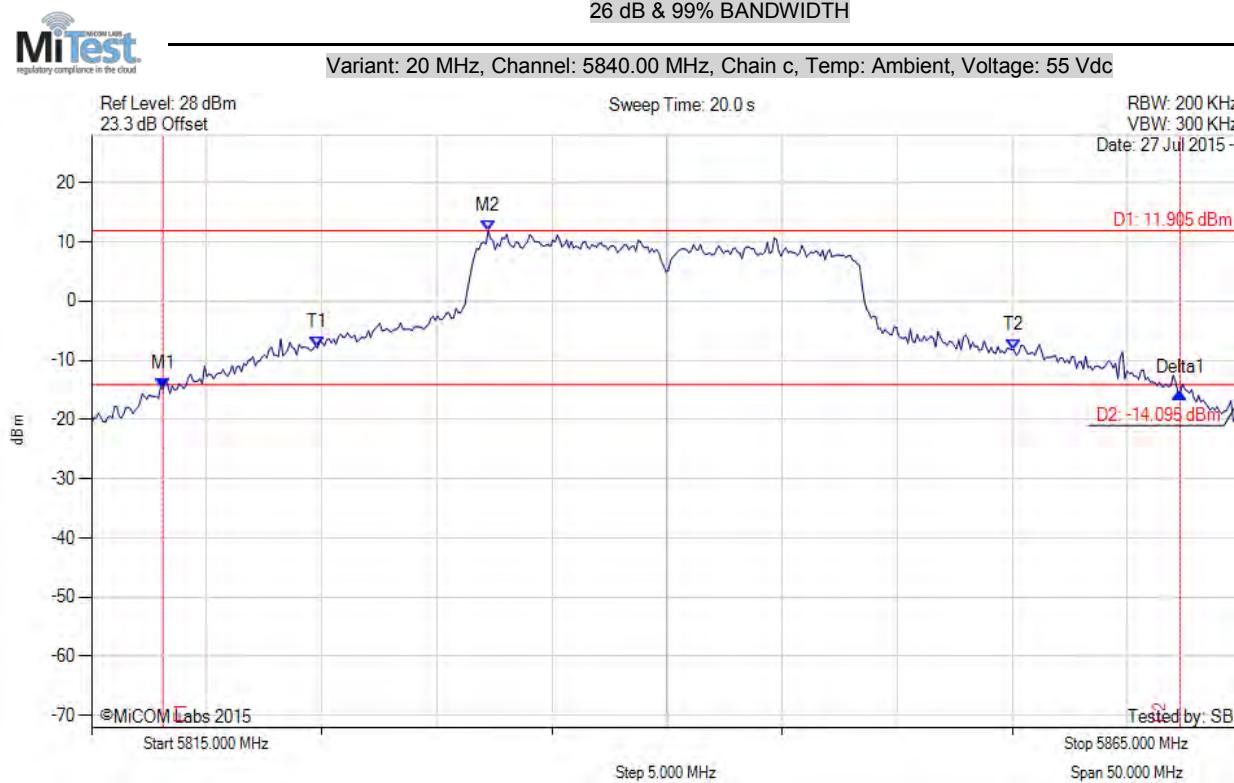
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5819.409 MHz : -17.826 dBm M2 : 5832.335 MHz : 10.683 dBm Delta1 : 41.182 MHz : 2.744 dB T1 : 5827.224 MHz : -9.781 dBm T2 : 5849.669 MHz : -11.231 dBm OBW : 22.445 MHz | Measured 26 dB Bandwidth: 41.182 MHz Measured 99% Bandwidth: 22.445 MHz |

[back to matrix](#)

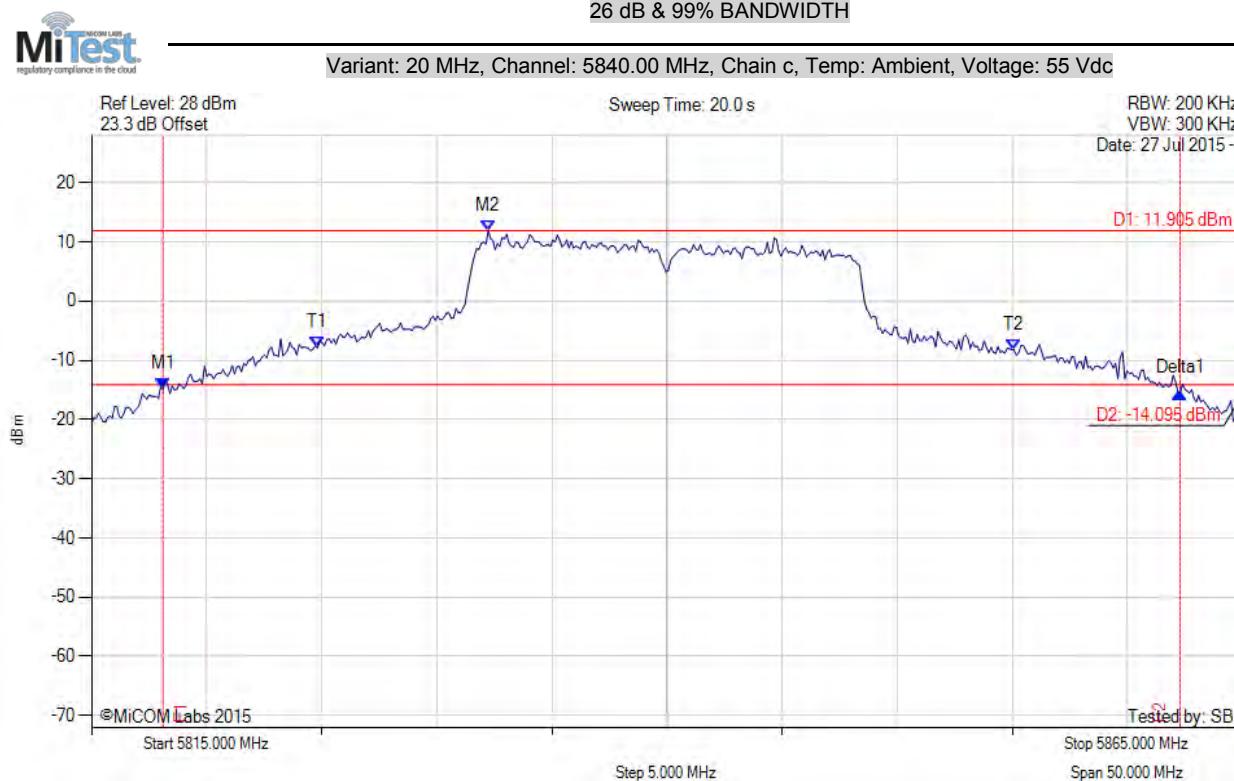
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5818.106 MHz : -14.894 dBm M2 : 5832.234 MHz : 11.905 dBm Delta1 : 44.188 MHz : -0.594 dB T1 : 5824.820 MHz : -7.877 dBm T2 : 5855.080 MHz : -8.266 dBm OBW : 30.261 MHz | Measured 26 dB Bandwidth: 44.188 MHz Measured 99% Bandwidth: 30.261 MHz |

[back to matrix](#)

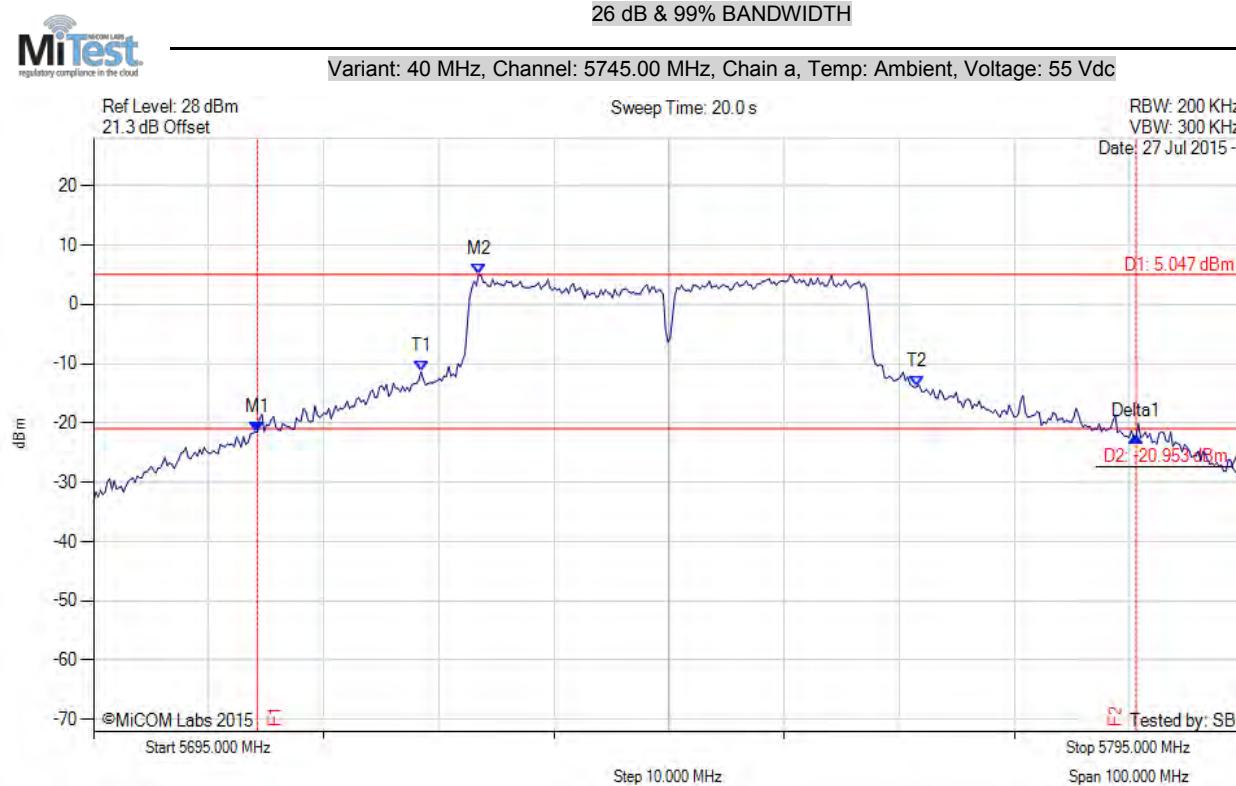
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--------------------------------|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5818.106 MHz : -14.894 dBm M2 : 5832.234 MHz : 11.905 dBm Delta1 : 44.188 MHz : -0.594 dB T1 : 5824.820 MHz : -7.877 dBm T2 : 5855.080 MHz : -8.266 dBm OBW : 30.261 MHz | Channel Frequency: 5840.00 MHz |

[back to matrix](#)

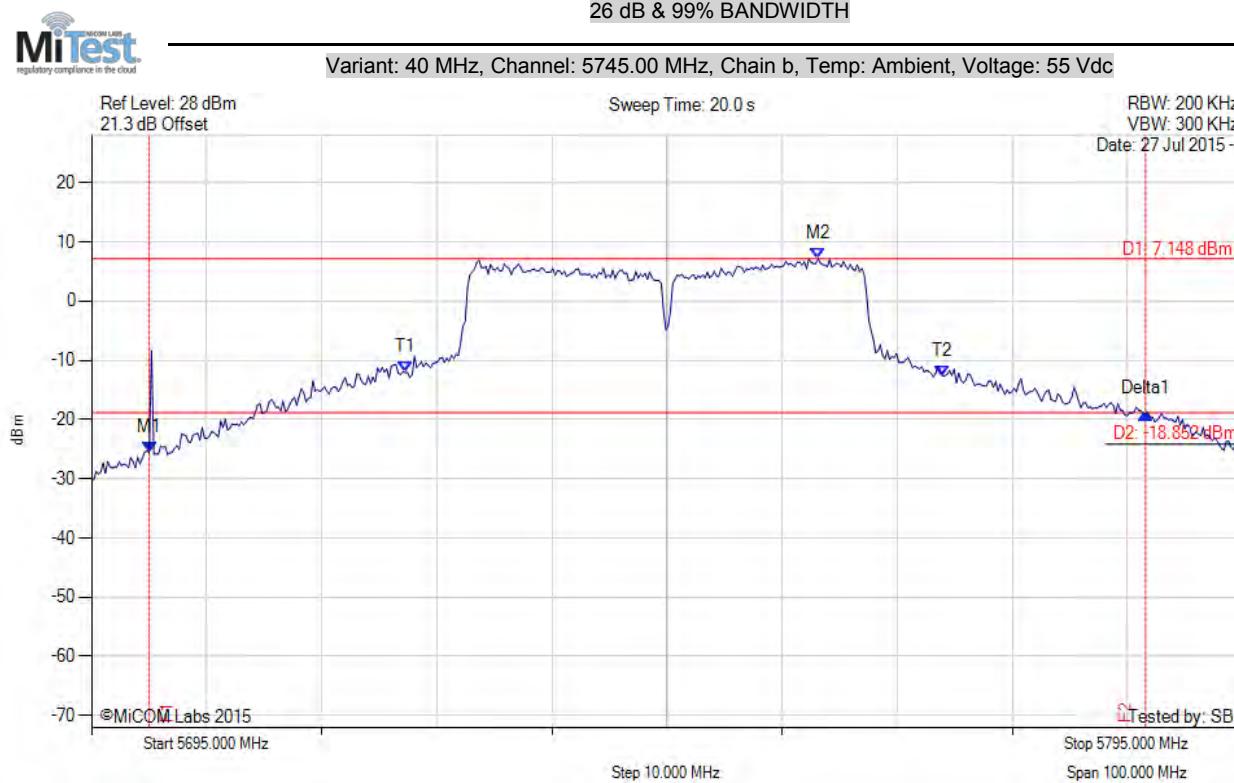
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5709.228 MHz : -21.522 dBm M2 : 5728.467 MHz : 5.047 dBm Delta1 : 76.353 MHz : -0.724 dB T1 : 5723.457 MHz : -11.365 dBm T2 : 5766.543 MHz : -13.877 dBm OBW : 43.086 MHz | Measured 26 dB Bandwidth: 76.353 MHz Measured 99% Bandwidth: 43.086 MHz |

[back to matrix](#)

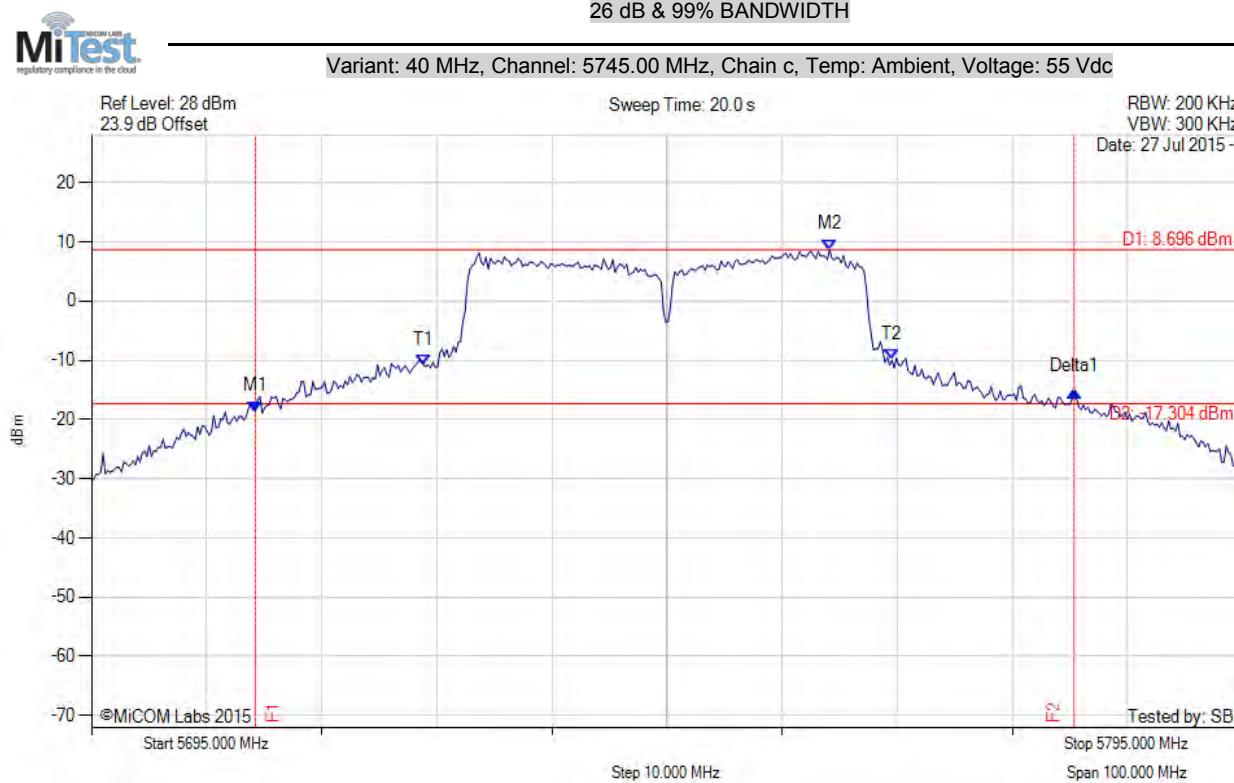
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5700.010 MHz : -25.502 dBm M2 : 5758.126 MHz : 7.148 dBm Delta1 : 86.573 MHz : 6.402 dB T1 : 5722.255 MHz : -12.051 dBm T2 : 5768.948 MHz : -12.651 dBm OBW : 46.693 MHz | Measured 26 dB Bandwidth: 86.573 MHz Measured 99% Bandwidth: 46.693 MHz |

[back to matrix](#)

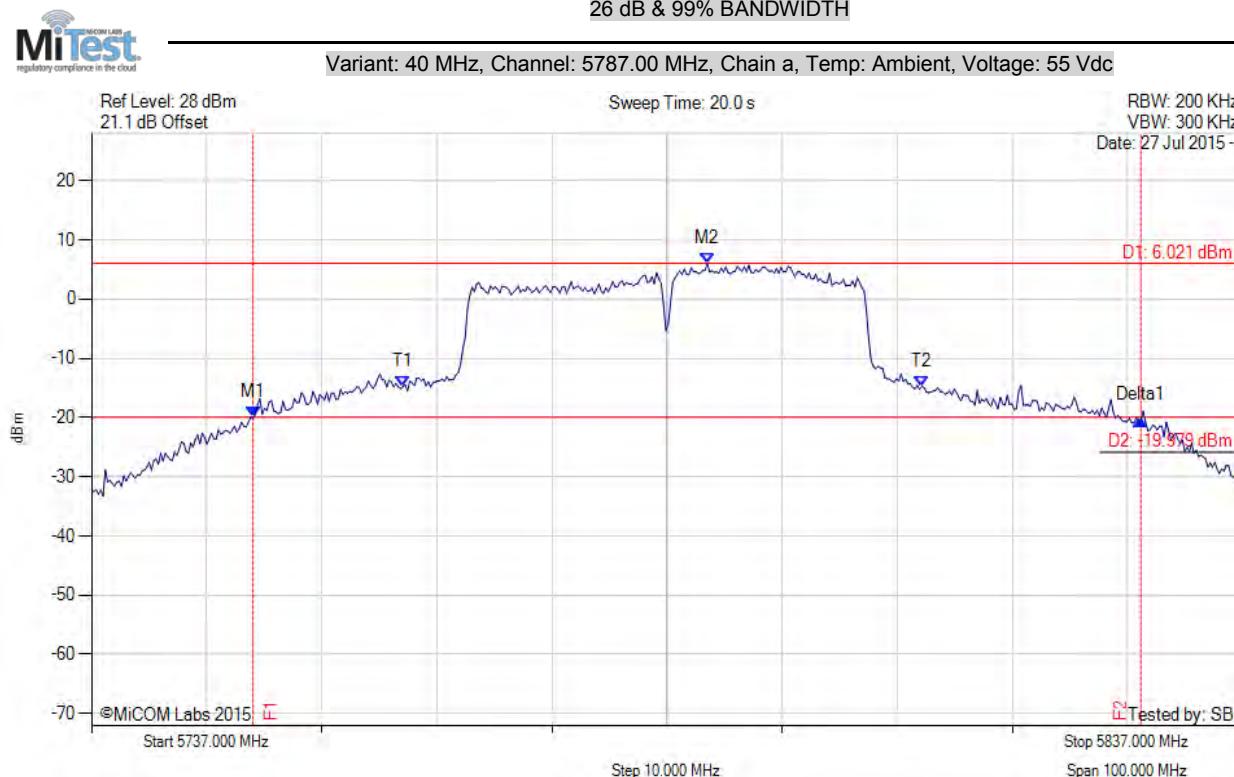
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5709.228 MHz : -18.652 dBm M2 : 5759.128 MHz : 8.696 dBm Delta1 : 71.142 MHz : 3.429 dB T1 : 5723.858 MHz : -10.875 dBm T2 : 5764.539 MHz : -9.980 dBm OBW : 40.681 MHz | Measured 26 dB Bandwidth: 71.142 MHz Measured 99% Bandwidth: 40.681 MHz |

[back to matrix](#)

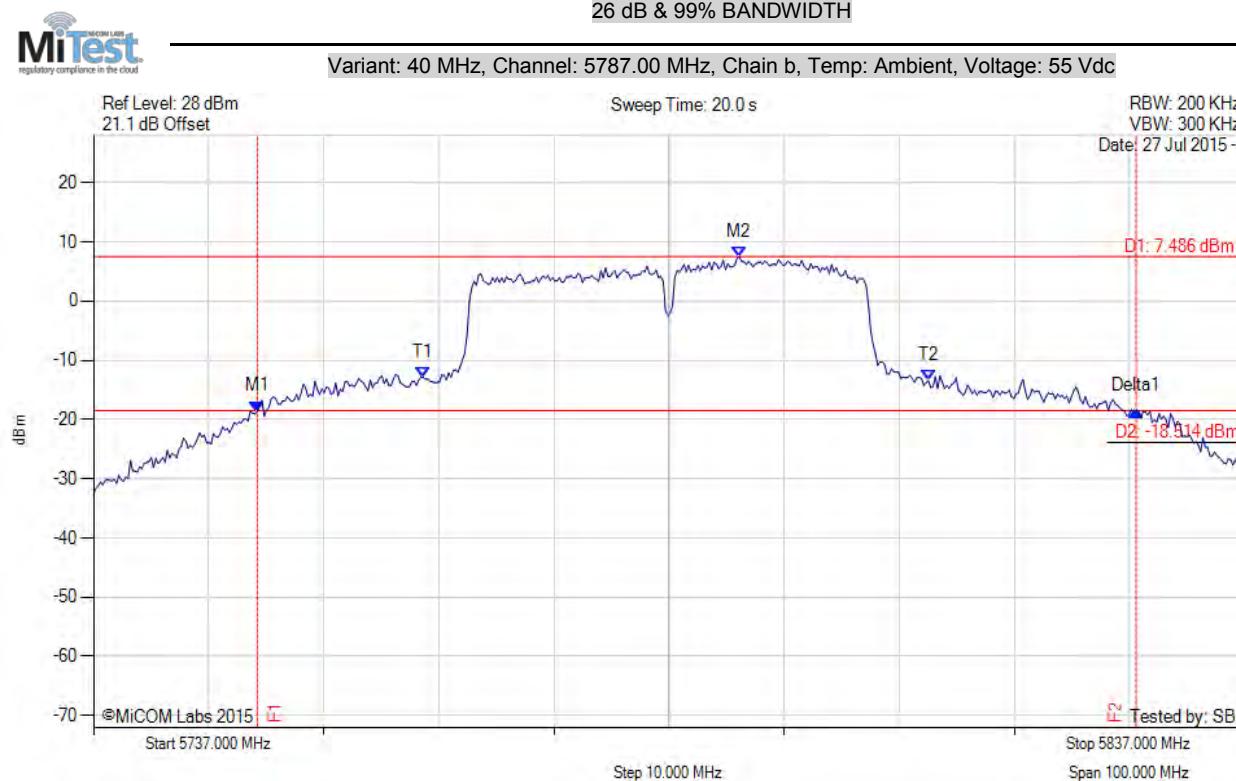
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5751.028 MHz : -20.039 dBm M2 : 5790.507 MHz : 6.021 dBm Delta1 : 77.154 MHz : -0.360 dB T1 : 5764.054 MHz : -14.792 dBm T2 : 5809.144 MHz : -14.723 dBm OBW : 45.090 MHz | Measured 26 dB Bandwidth: 77.154 MHz Measured 99% Bandwidth: 45.090 MHz |

[back to matrix](#)

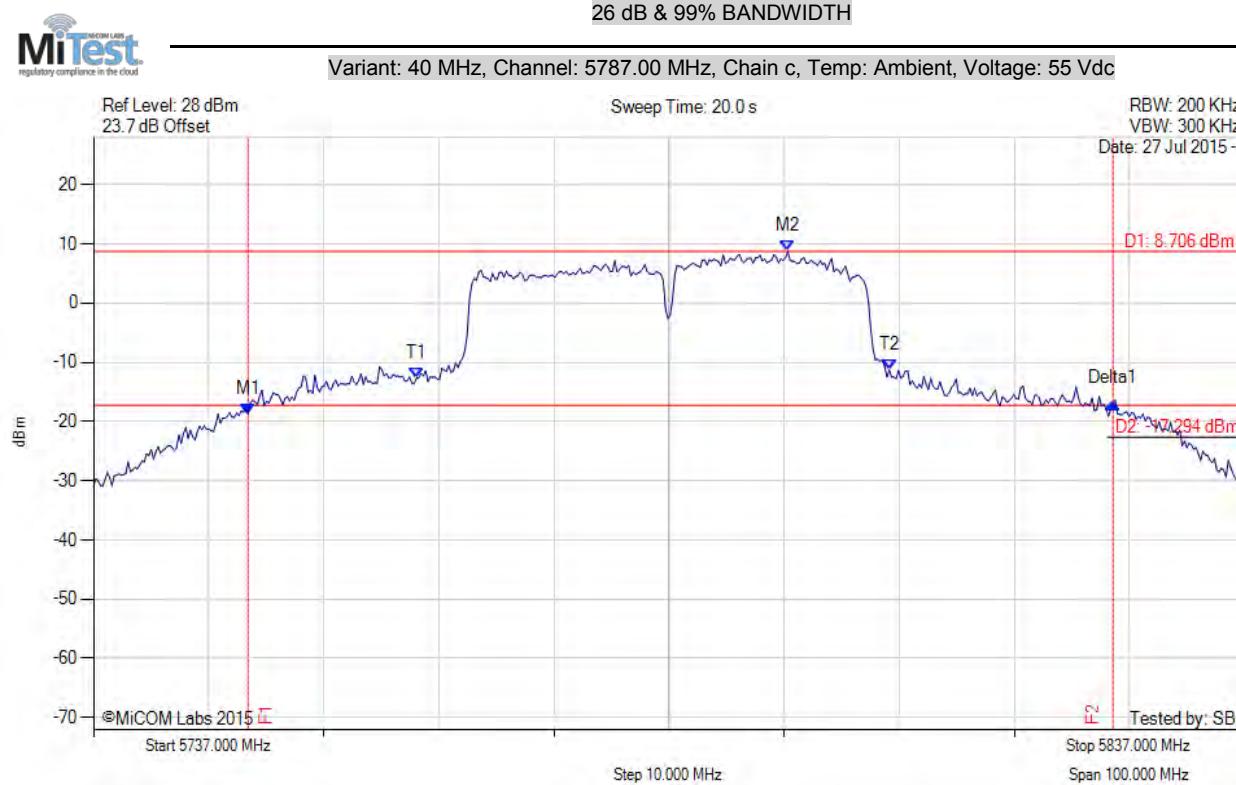
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5751.228 MHz : -18.662 dBm M2 : 5793.112 MHz : 7.486 dBm Delta1 : 76.353 MHz : 0.128 dB T1 : 5765.657 MHz : -12.907 dBm T2 : 5809.545 MHz : -13.456 dBm OBW : 43.888 MHz | Measured 26 dB Bandwidth: 76.353 MHz Measured 99% Bandwidth: 43.888 MHz |

[back to matrix](#)

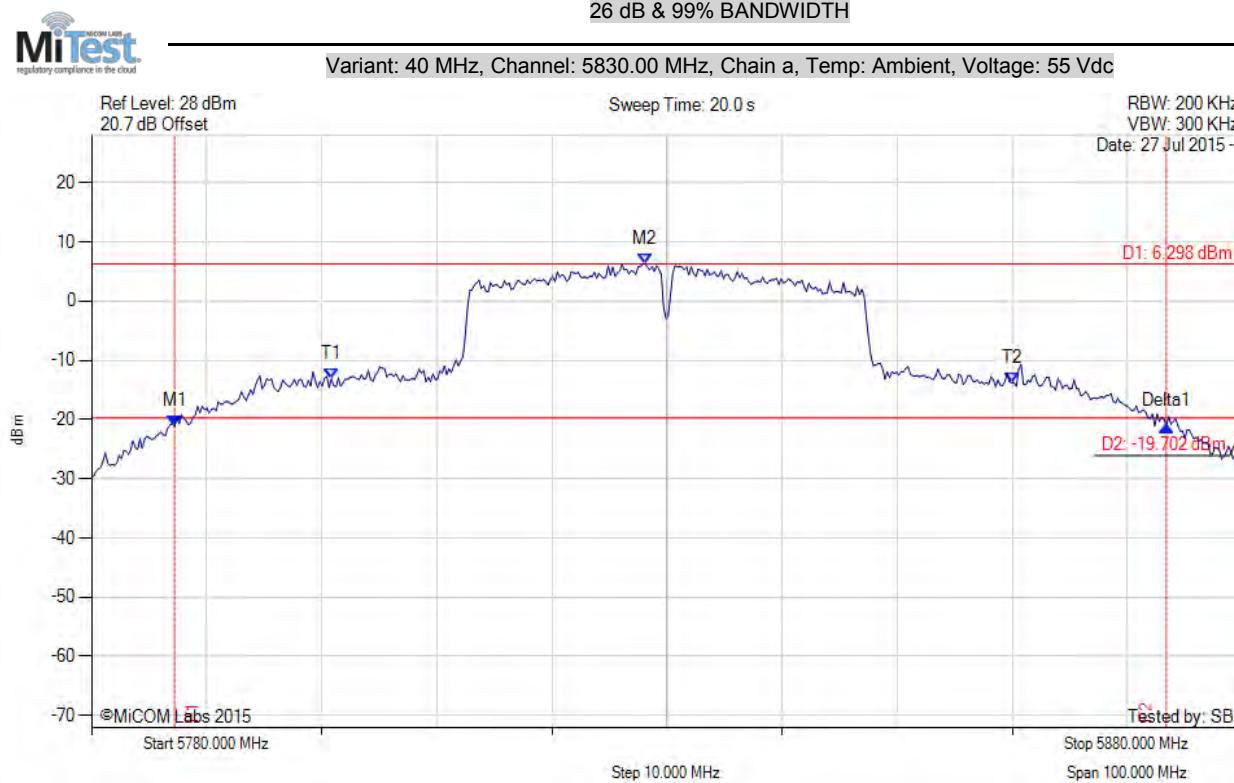
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5750.427 MHz : -18.723 dBm M2 : 5797.321 MHz : 8.706 dBm Delta1 : 75.150 MHz : 1.847 dB T1 : 5765.056 MHz : -12.707 dBm T2 : 5806.138 MHz : -11.298 dBm OBW : 41.082 MHz | Measured 26 dB Bandwidth: 75.150 MHz Measured 99% Bandwidth: 41.082 MHz |

[back to matrix](#)

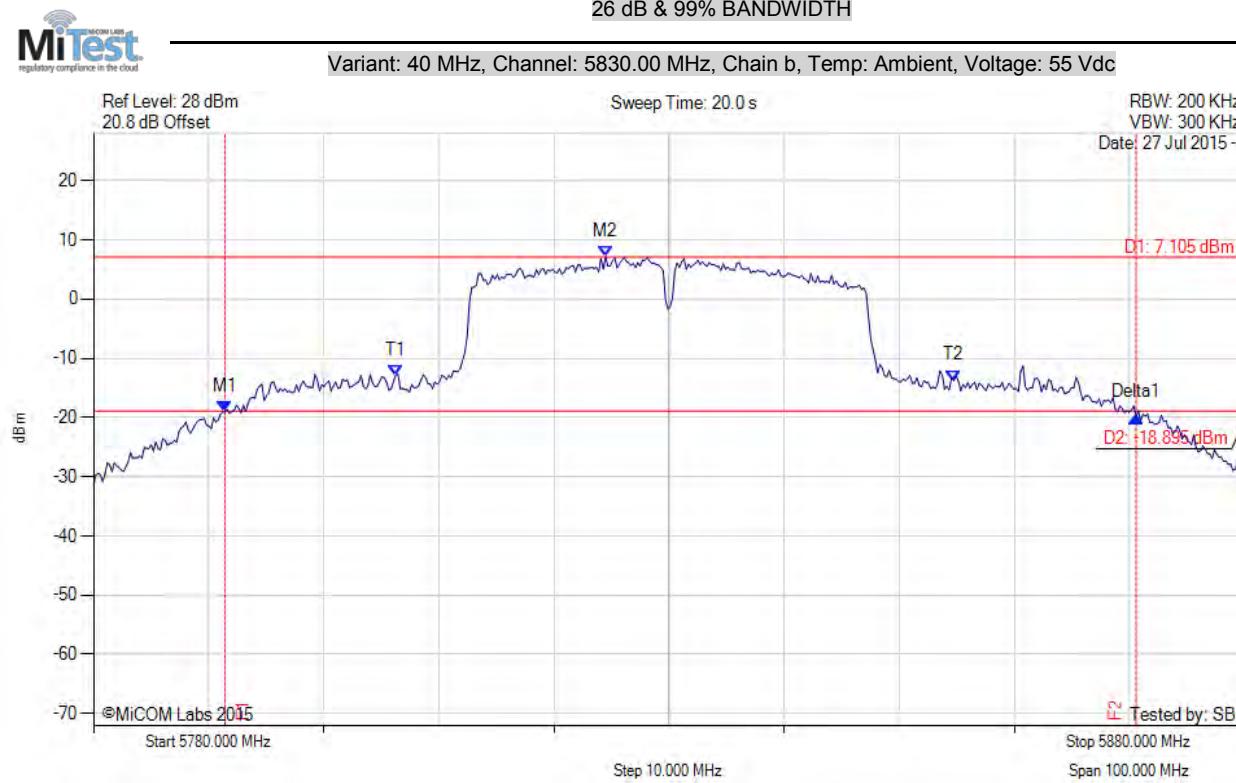
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5787.214 MHz : -21.129 dBm M2 : 5828.096 MHz : 6.298 dBm Delta1 : 86.172 MHz : 0.096 dB T1 : 5800.842 MHz : -13.145 dBm T2 : 5859.960 MHz : -13.796 dBm OBW : 59.118 MHz | Measured 26 dB Bandwidth: 86.172 MHz Measured 99% Bandwidth: 59.118 MHz |

[back to matrix](#)

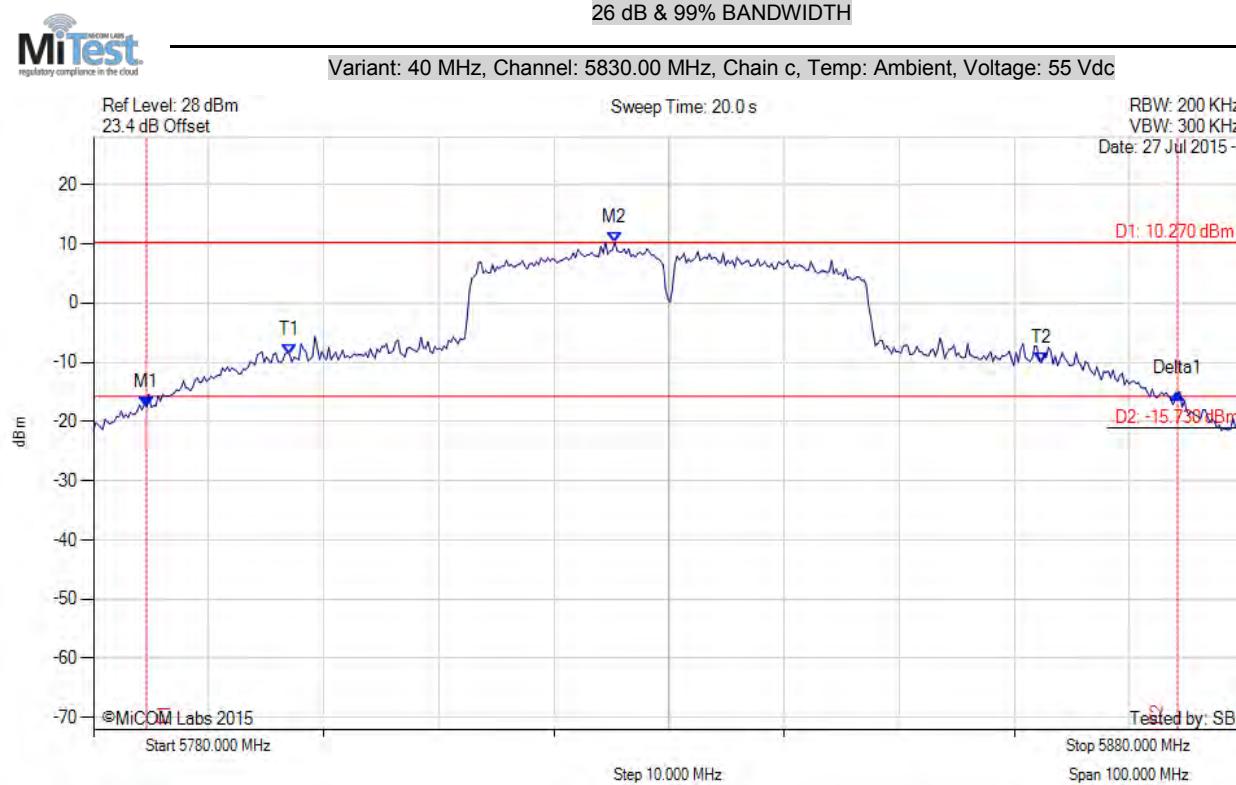
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5791.423 MHz : -18.957 dBm M2 : 5824.489 MHz : 7.105 dBm Delta1 : 79.158 MHz : -0.970 dB T1 : 5806.253 MHz : -12.854 dBm T2 : 5854.749 MHz : -13.743 dBm OBW : 48.497 MHz | Measured 26 dB Bandwidth: 79.158 MHz Measured 99% Bandwidth: 48.497 MHz |

[back to matrix](#)

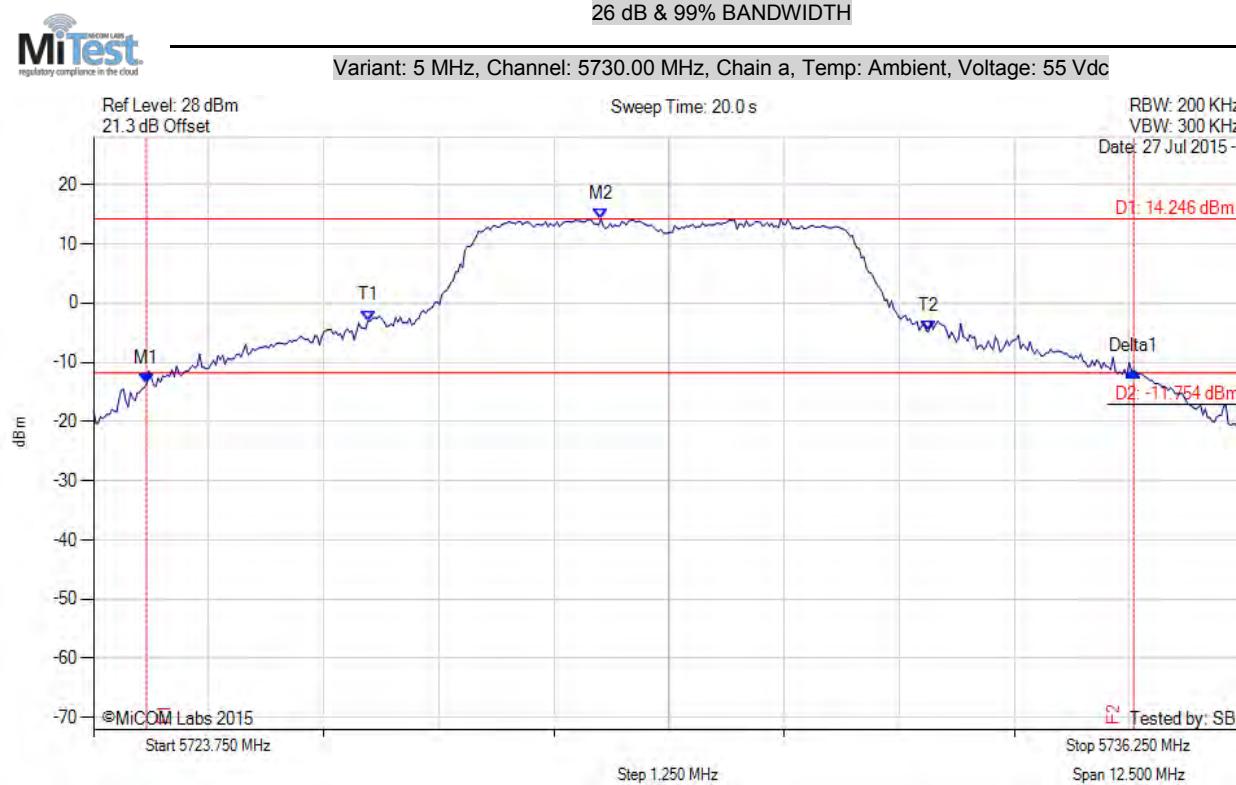
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5784.609 MHz : -17.521 dBm M2 : 5825.291 MHz : 10.270 dBm Delta1 : 89.579 MHz : 2.286 dB T1 : 5797.034 MHz : -8.719 dBm T2 : 5862.365 MHz : -10.055 dBm OBW : 65.331 MHz | Measured 26 dB Bandwidth: 89.579 MHz Measured 99% Bandwidth: 65.331 MHz |

[back to matrix](#)

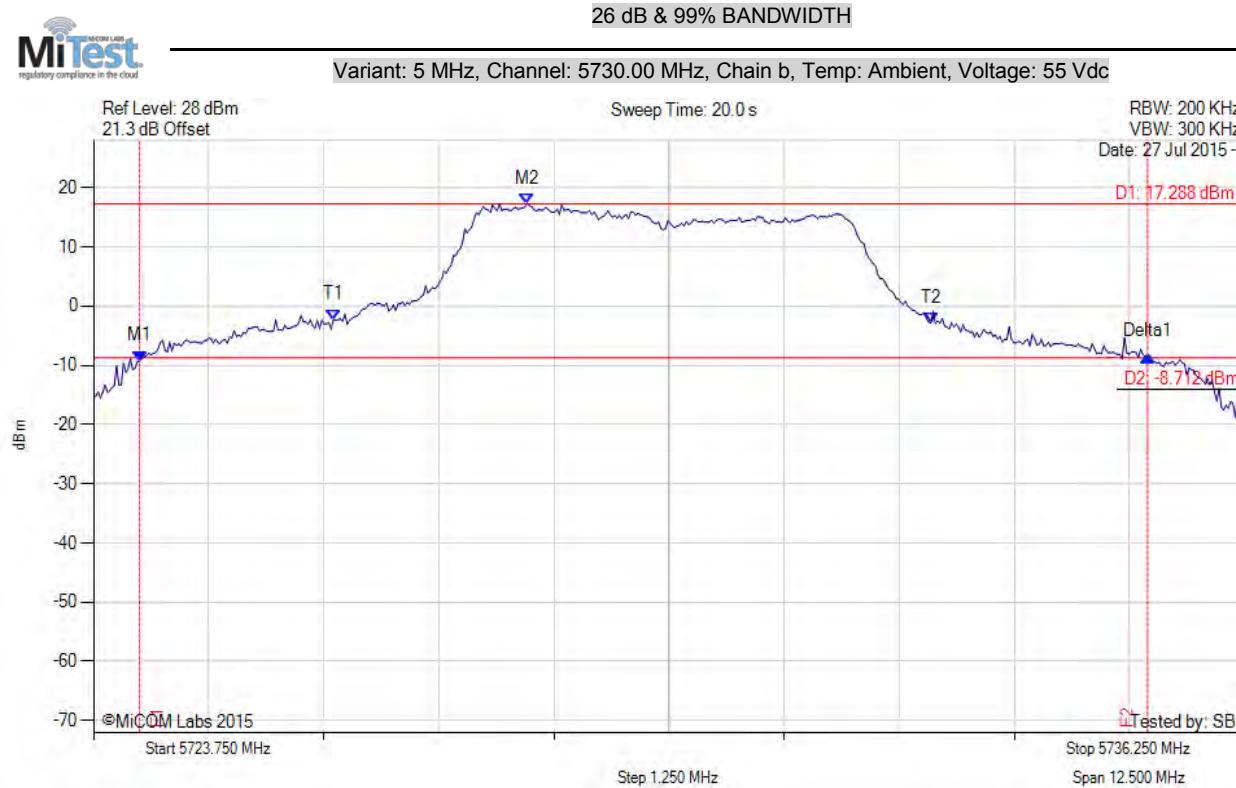
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5724.326 MHz : -13.578 dBm M2 : 5729.261 MHz : 14.246 dBm Delta1 : 10.721 MHz : 2.024 dB T1 : 5726.731 MHz : -2.996 dBm T2 : 5732.818 MHz : -4.841 dBm OBW : 6.087 MHz | Measured 26 dB Bandwidth: 10.721 MHz Measured 99% Bandwidth: 6.087 MHz |

[back to matrix](#)

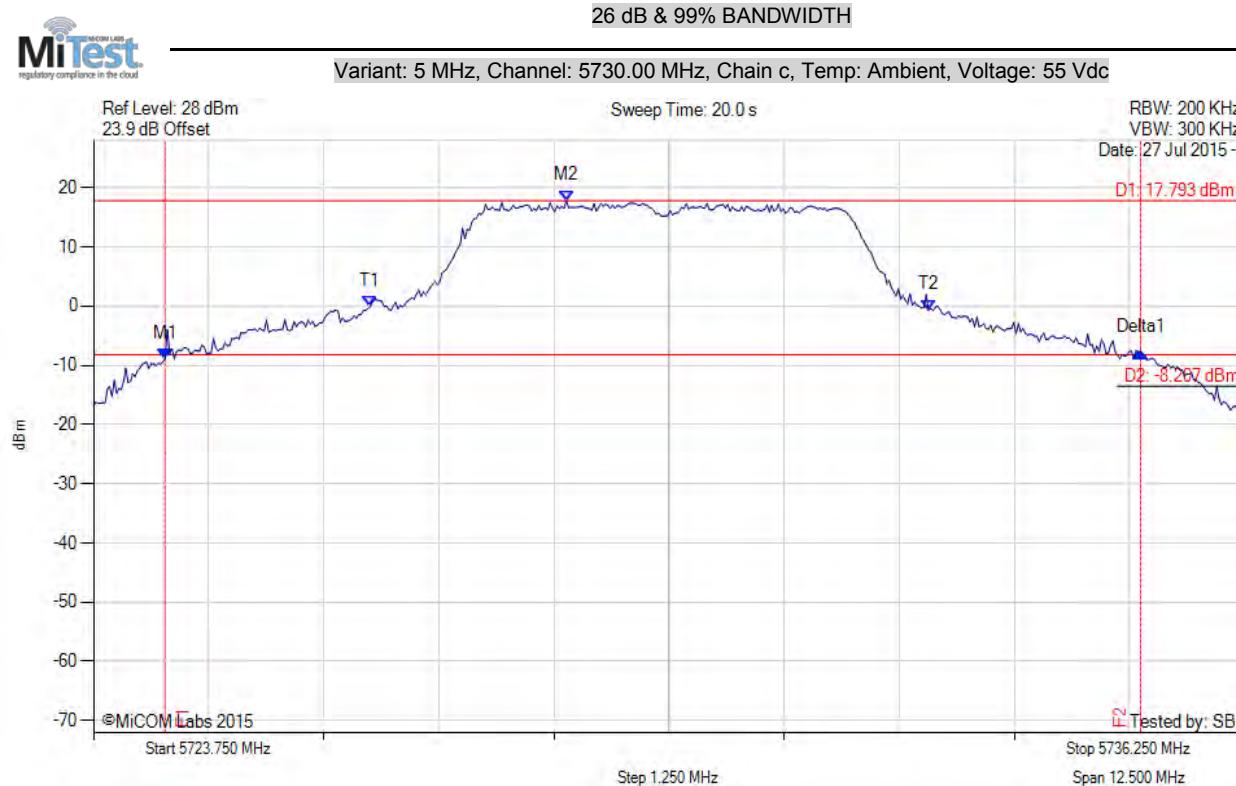
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5724.251 MHz : -9.303 dBm M2 : 5728.459 MHz : 17.288 dBm Delta1 : 10.947 MHz : 0.907 dB T1 : 5726.355 MHz : -2.291 dBm T2 : 5732.843 MHz : -2.832 dBm OBW : 6.488 MHz | Measured 26 dB Bandwidth: 10.947 MHz Measured 99% Bandwidth: 6.488 MHz |

[back to matrix](#)

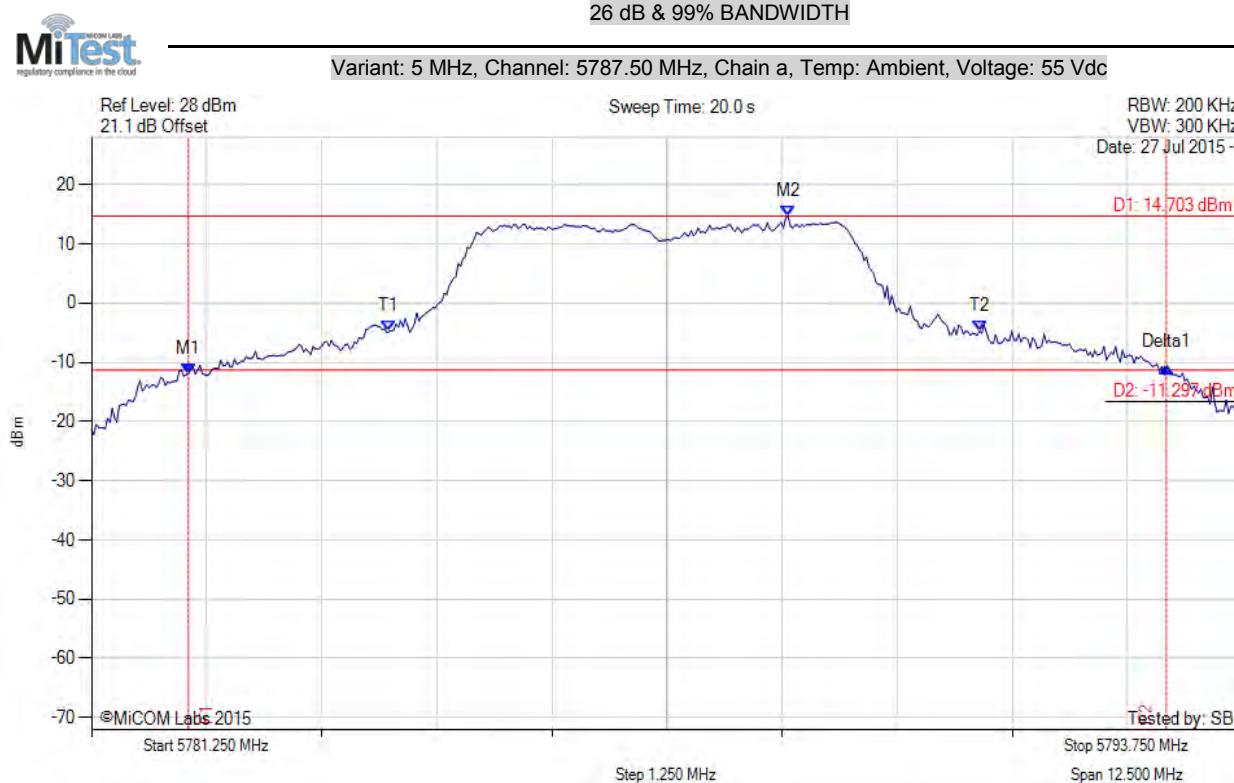
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5724.527 MHz : -8.872 dBm M2 : 5728.885 MHz : 17.793 dBm Delta1 : 10.596 MHz : 1.133 dB T1 : 5726.756 MHz : -0.110 dBm T2 : 5732.818 MHz : -0.664 dBm OBW : 6.062 MHz | Measured 26 dB Bandwidth: 10.596 MHz Measured 99% Bandwidth: 6.062 MHz |

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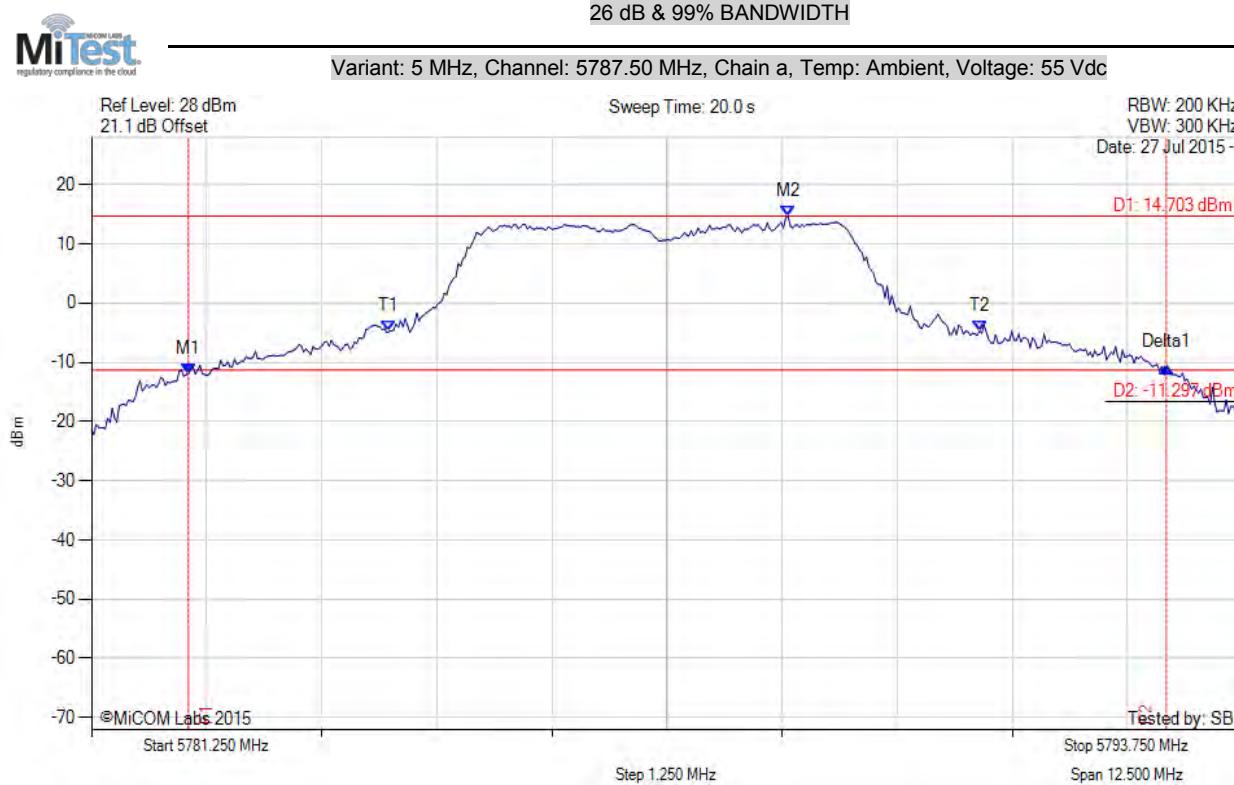
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5782.302 MHz : -11.957 dBm M2 : 5788.815 MHz : 14.703 dBm Delta1 : 10.621 MHz : 1.117 dB T1 : 5784.481 MHz : -4.792 dBm T2 : 5790.894 MHz : -4.717 dBm OBW : 6.413 MHz | Measured 26 dB Bandwidth: 10.621 MHz Measured 99% Bandwidth: 6.413 MHz |

[back to matrix](#)

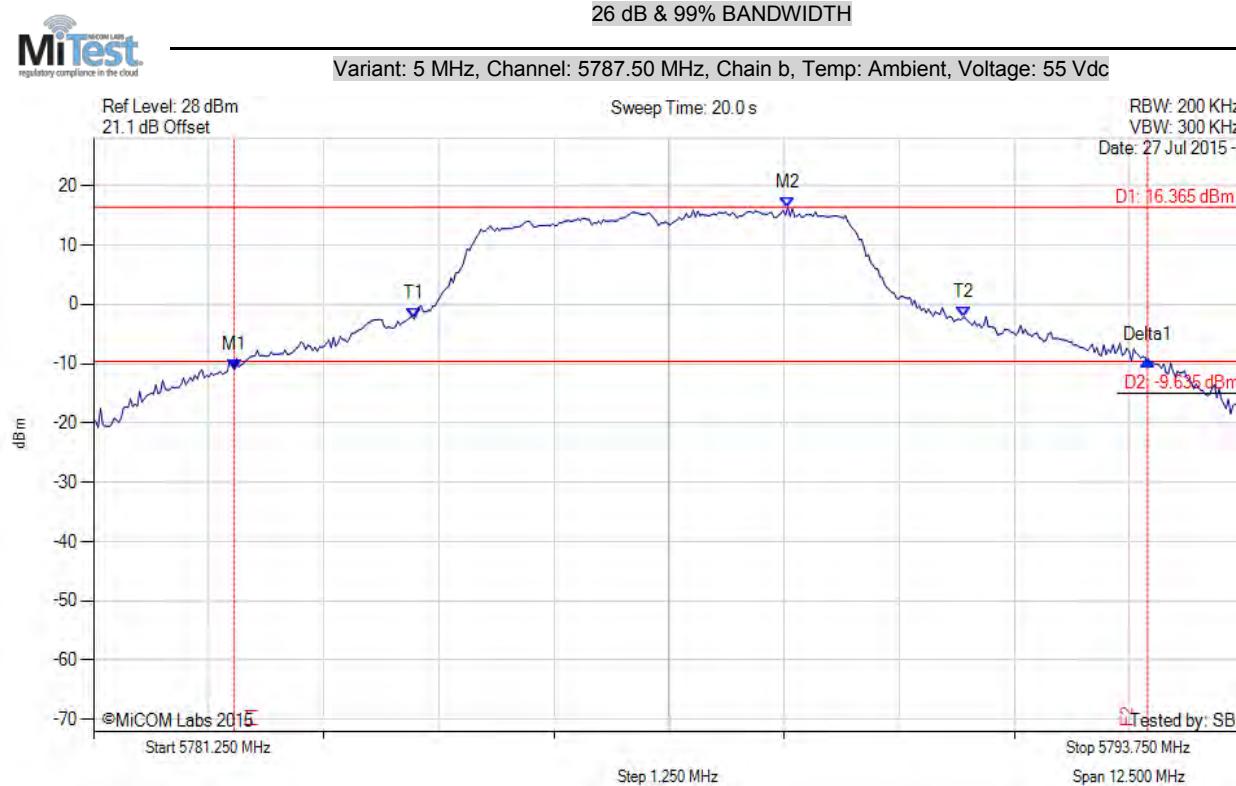
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5782.302 MHz : -11.957 dBm M2 : 5788.815 MHz : 14.703 dBm Delta1 : 10.621 MHz : 1.117 dB T1 : 5784.481 MHz : -4.792 dBm T2 : 5790.894 MHz : -4.717 dBm OBW : 6.413 MHz | Measured 26 dB Bandwidth: 10.621 MHz Measured 99% Bandwidth: 6.413 MHz |

[back to matrix](#)

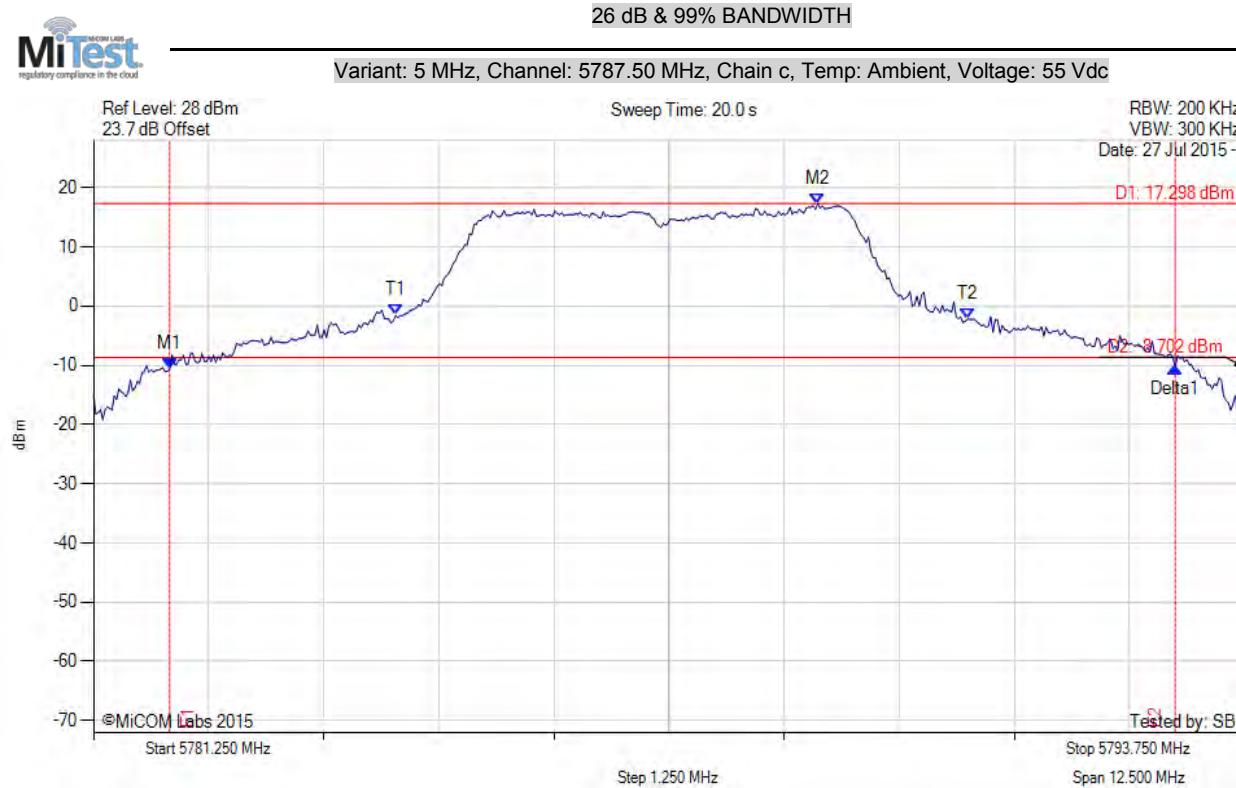
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5782.778 MHz : -11.050 dBm M2 : 5788.790 MHz : 16.365 dBm Delta1 : 9.920 MHz : 1.690 dB T1 : 5784.732 MHz : -2.449 dBm T2 : 5790.694 MHz : -2.211 dBm OBW : 5.962 MHz | Measured 26 dB Bandwidth: 9.920 MHz Measured 99% Bandwidth: 5.962 MHz |

[back to matrix](#)

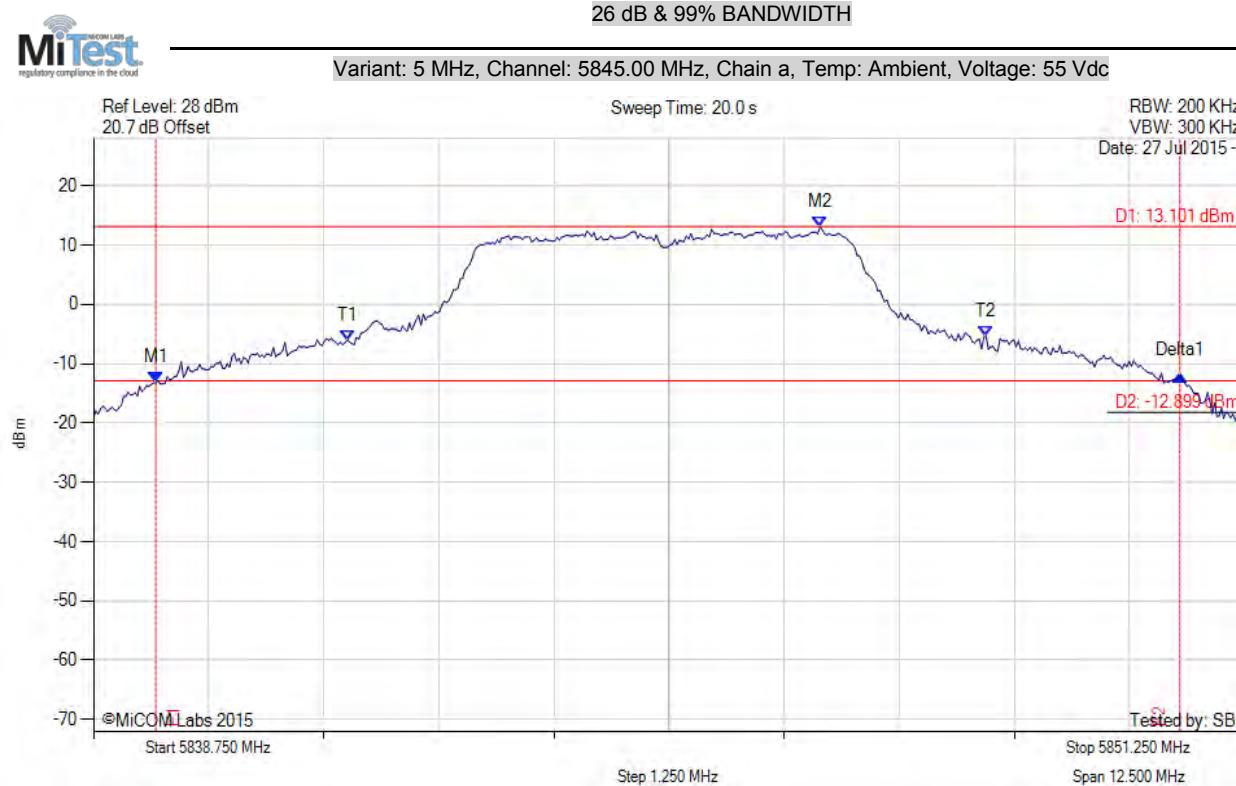
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5782.077 MHz : -10.674 dBm M2 : 5789.116 MHz : 17.298 dBm Delta1 : 10.922 MHz : 0.329 dB T1 : 5784.532 MHz : -1.579 dBm T2 : 5790.744 MHz : -2.199 dBm OBW : 6.212 MHz | Measured 26 dB Bandwidth: 10.922 MHz Measured 99% Bandwidth: 6.212 MHz |

[back to matrix](#)

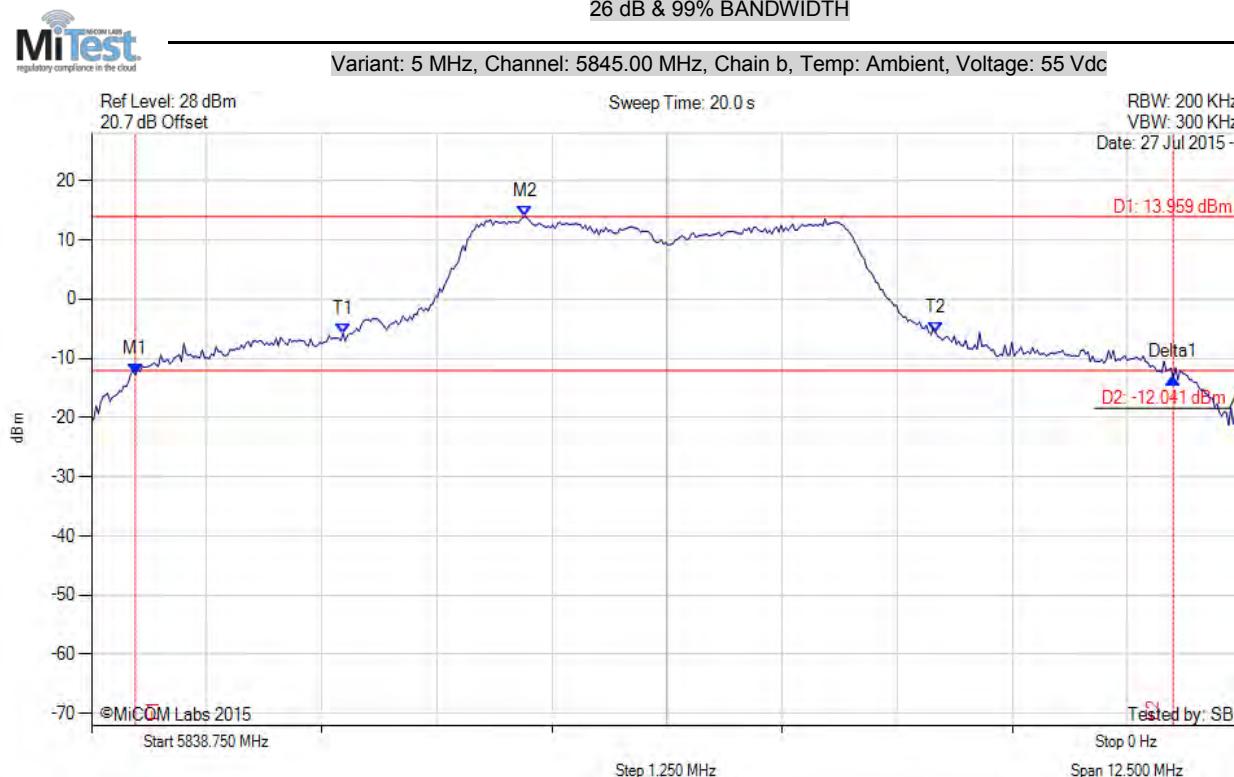
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5839.426 MHz : -13.240 dBm M2 : 5846.641 MHz : 13.101 dBm Delta1 : 11.122 MHz : 1.234 dB T1 : 5841.506 MHz : -6.053 dBm T2 : 5848.444 MHz : -5.427 dBm OBW : 6.939 MHz | Measured 26 dB Bandwidth: 11.122 MHz Measured 99% Bandwidth: 6.939 MHz |

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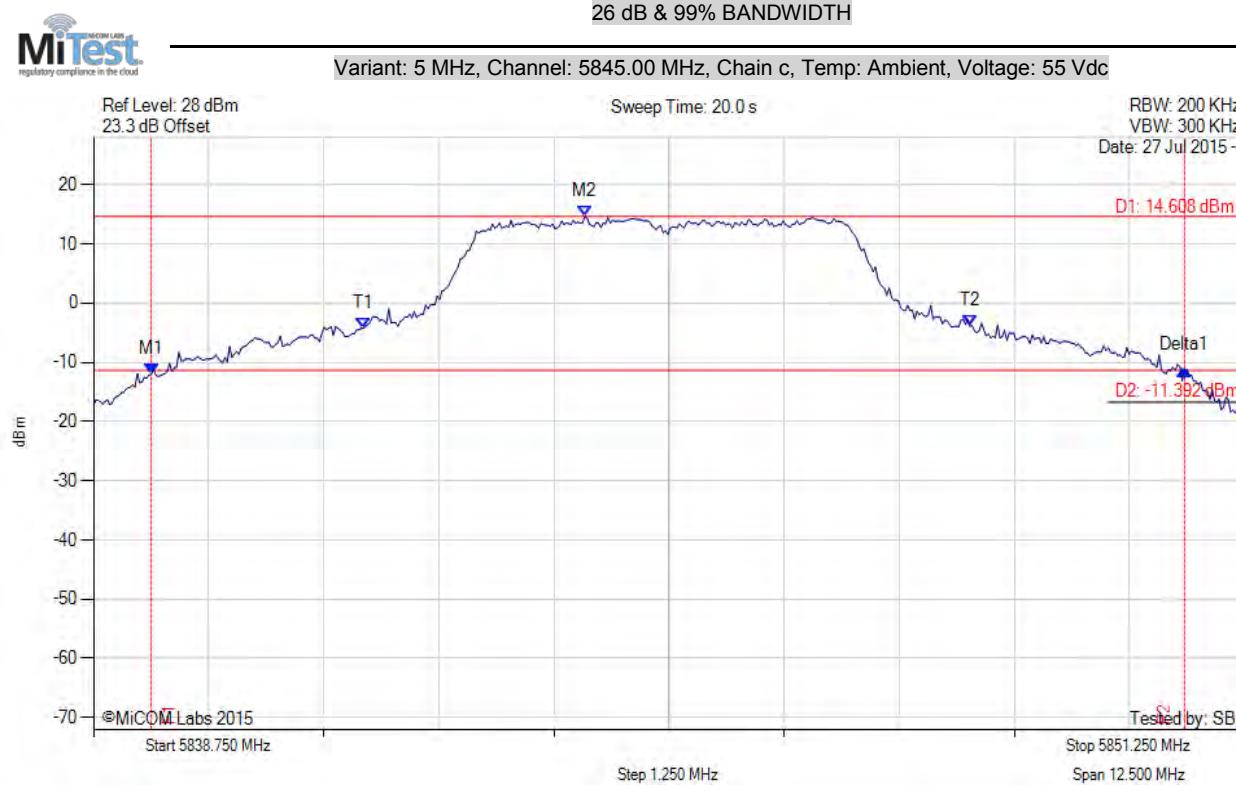
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5839.226 MHz : -12.760 dBm M2 : 5843.459 MHz : 13.959 dBm Delta1 : 11.273 MHz : -0.504 dB T1 : 5841.480 MHz : -5.846 dBm T2 : 5847.918 MHz : -5.665 dBm OBW : 6.438 MHz | Measured 26 dB Bandwidth: 11.273 MHz Measured 99% Bandwidth: 6.438 MHz |

[back to matrix](#)

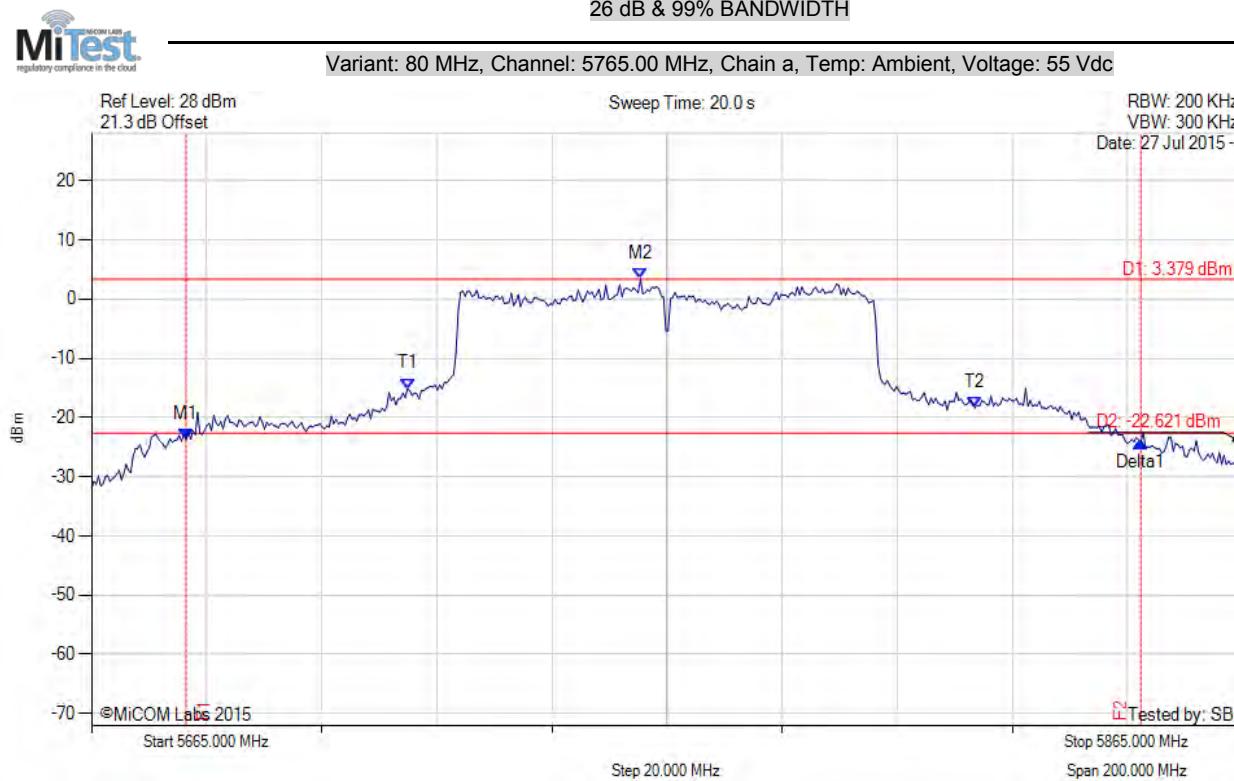
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5839.376 MHz : -11.994 dBm M2 : 5844.086 MHz : 14.608 dBm Delta1 : 11.222 MHz : 0.669 dB T1 : 5841.681 MHz : -4.229 dBm T2 : 5848.269 MHz : -3.912 dBm OBW : 6.588 MHz | Measured 26 dB Bandwidth: 11.222 MHz Measured 99% Bandwidth: 6.588 MHz |

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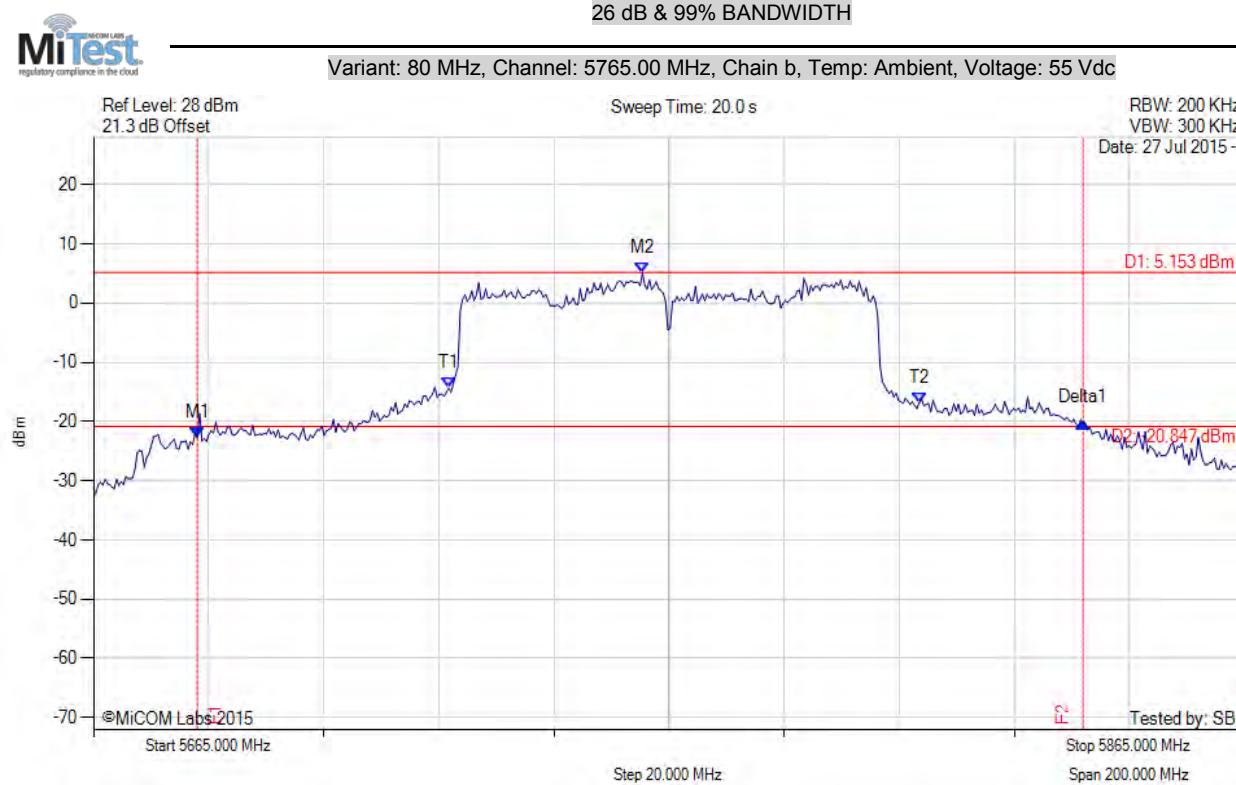
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5681.433 MHz : -23.700 dBm M2 : 5760.391 MHz : 3.379 dBm Delta1 : 165.932 MHz : -0.378 dB T1 : 5719.910 MHz : -15.140 dBm T2 : 5818.507 MHz : -18.373 dBm OBW : 98.597 MHz | Measured 26 dB Bandwidth: 165.932 MHz Measured 99% Bandwidth: 98.597 MHz |

[back to matrix](#)

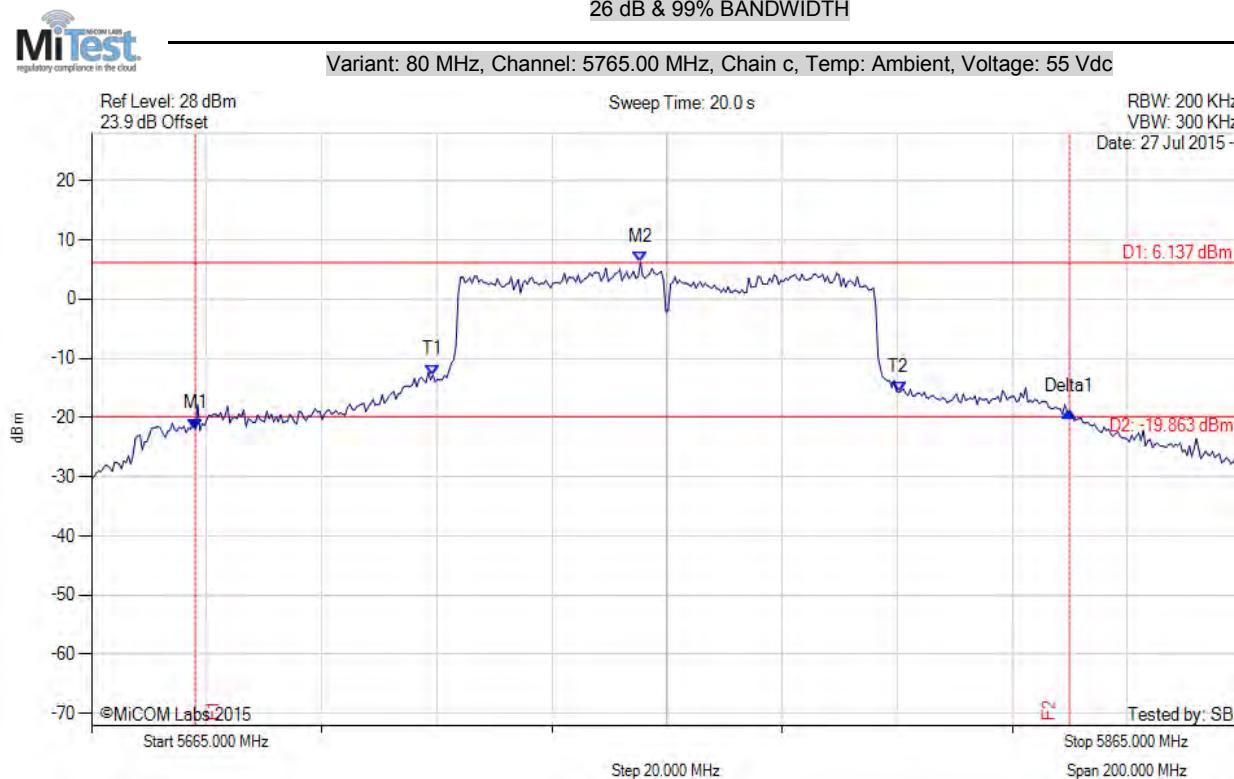
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5683.036 MHz : -22.726 dBm M2 : 5760.391 MHz : 5.153 dBm Delta1 : 153.908 MHz : 2.530 dB T1 : 5726.723 MHz : -14.387 dBm T2 : 5808.487 MHz : -16.836 dBm OBW : 81.764 MHz | Measured 26 dB Bandwidth: 153.908 MHz Measured 99% Bandwidth: 81.764 MHz |

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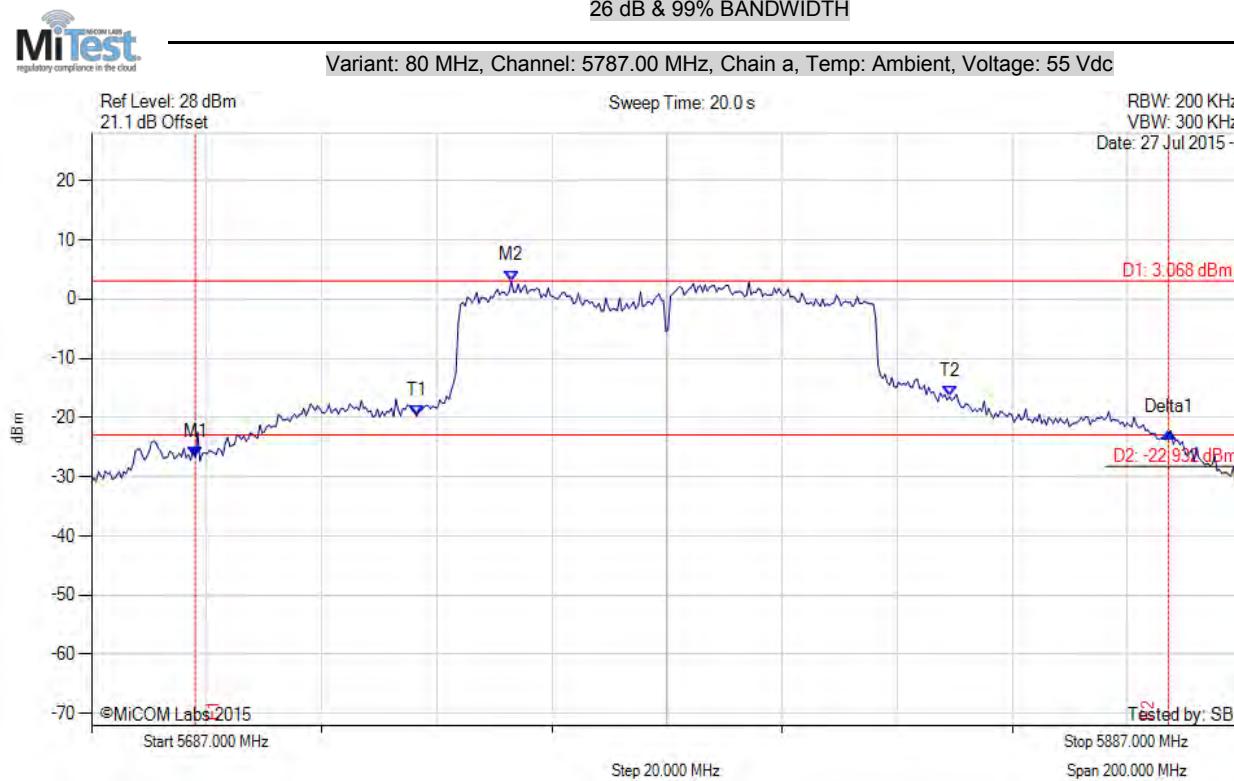
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5683.036 MHz : -21.933 dBm M2 : 5760.391 MHz : 6.137 dBm Delta1 : 151.904 MHz : 2.977 dB T1 : 5724.319 MHz : -12.797 dBm T2 : 5805.281 MHz : -15.738 dBm OBW : 80.962 MHz | Measured 26 dB Bandwidth: 151.904 MHz Measured 99% Bandwidth: 80.962 MHz |

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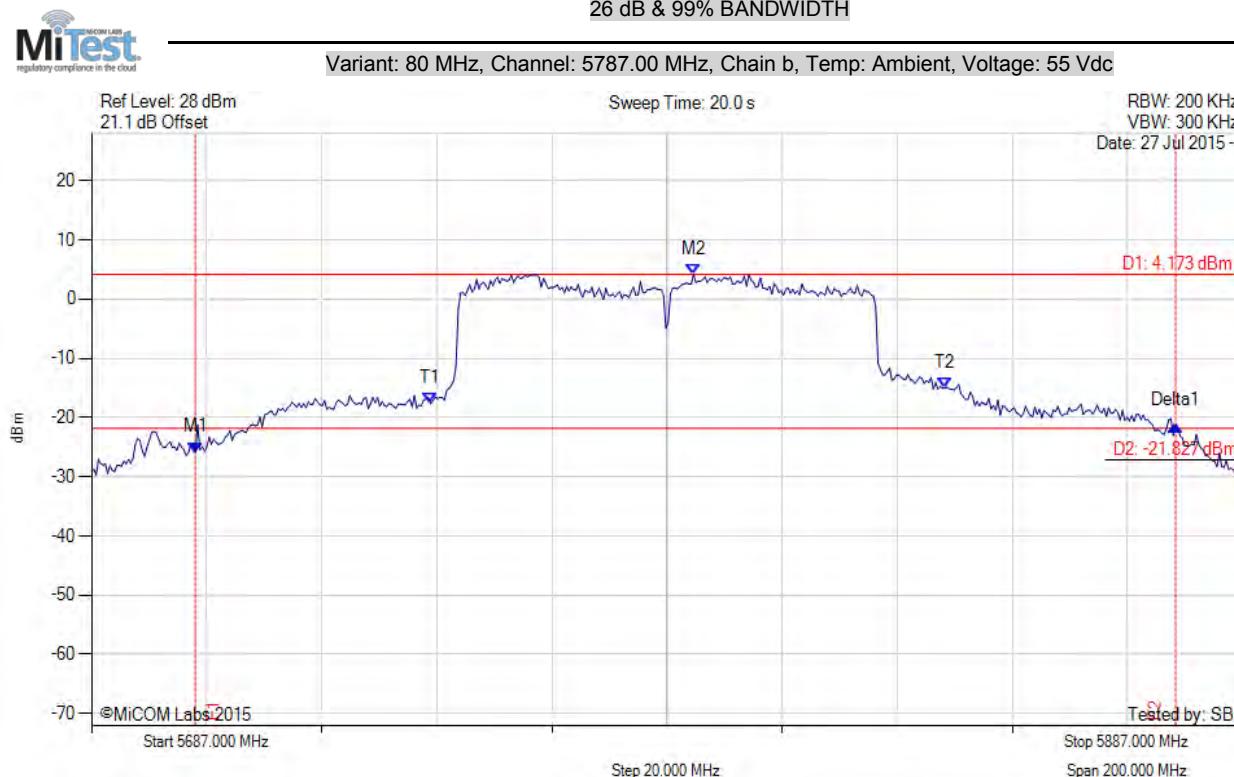
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5705.036 MHz : -26.685 dBm M2 : 5759.946 MHz : 3.068 dBm Delta1 : 169.138 MHz : 4.157 dB T1 : 5743.513 MHz : -19.754 dBm T2 : 5836.098 MHz : -16.486 dBm OBW : 92.585 MHz | Measured 26 dB Bandwidth: 169.138 MHz Measured 99% Bandwidth: 92.585 MHz |

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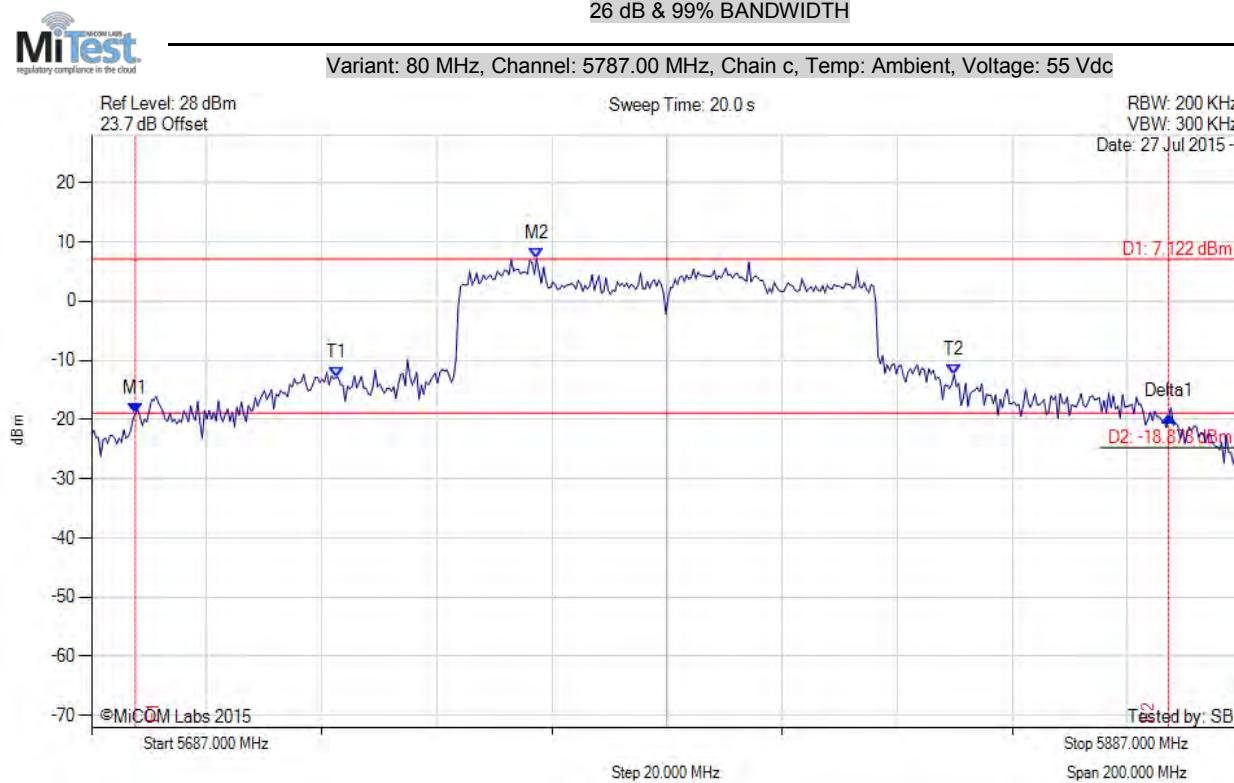
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5705.036 MHz : -25.886 dBm M2 : 5791.609 MHz : 4.173 dBm Delta1 : 170.341 MHz : 4.521 dB T1 : 5745.918 MHz : -17.662 dBm T2 : 5835.297 MHz : -15.018 dBm OBW : 89.379 MHz | Measured 26 dB Bandwidth: 170.341 MHz Measured 99% Bandwidth: 89.379 MHz |

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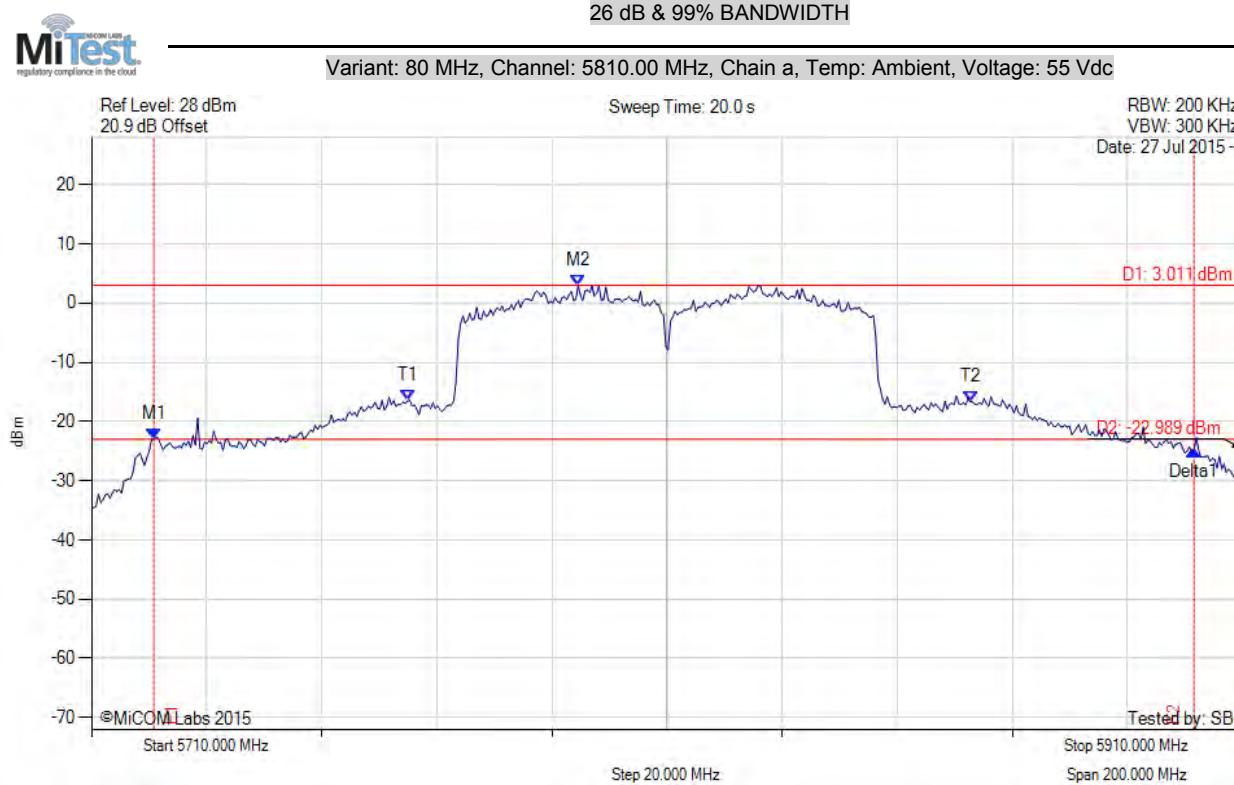
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|--|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5694.615 MHz : -18.957 dBm M2 : 5764.355 MHz : 7.122 dBm Delta1 : 179.559 MHz : -0.545 dB T1 : 5729.485 MHz : -12.909 dBm T2 : 5836.900 MHz : -12.394 dBm OBW : 107.415 MHz | Measured 26 dB Bandwidth: 179.559 MHz Measured 99% Bandwidth: 107.415 MHz |

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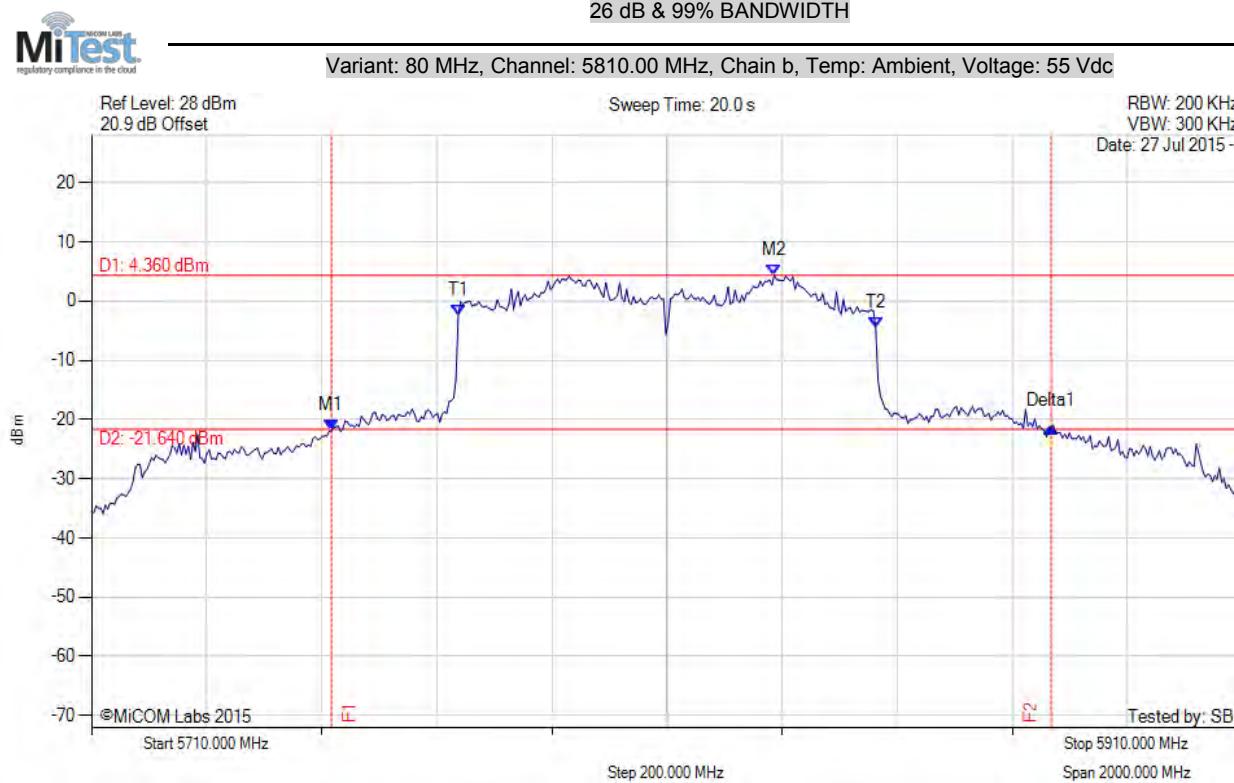
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5720.822 MHz : -23.000 dBm M2 : 5794.569 MHz : 3.011 dBm Delta1 : 180.762 MHz : -1.843 dB T1 : 5764.910 MHz : -16.531 dBm T2 : 5862.705 MHz : -16.594 dBm OBW : 97.796 MHz | Measured 26 dB Bandwidth: 180.762 MHz Measured 99% Bandwidth: 97.796 MHz |

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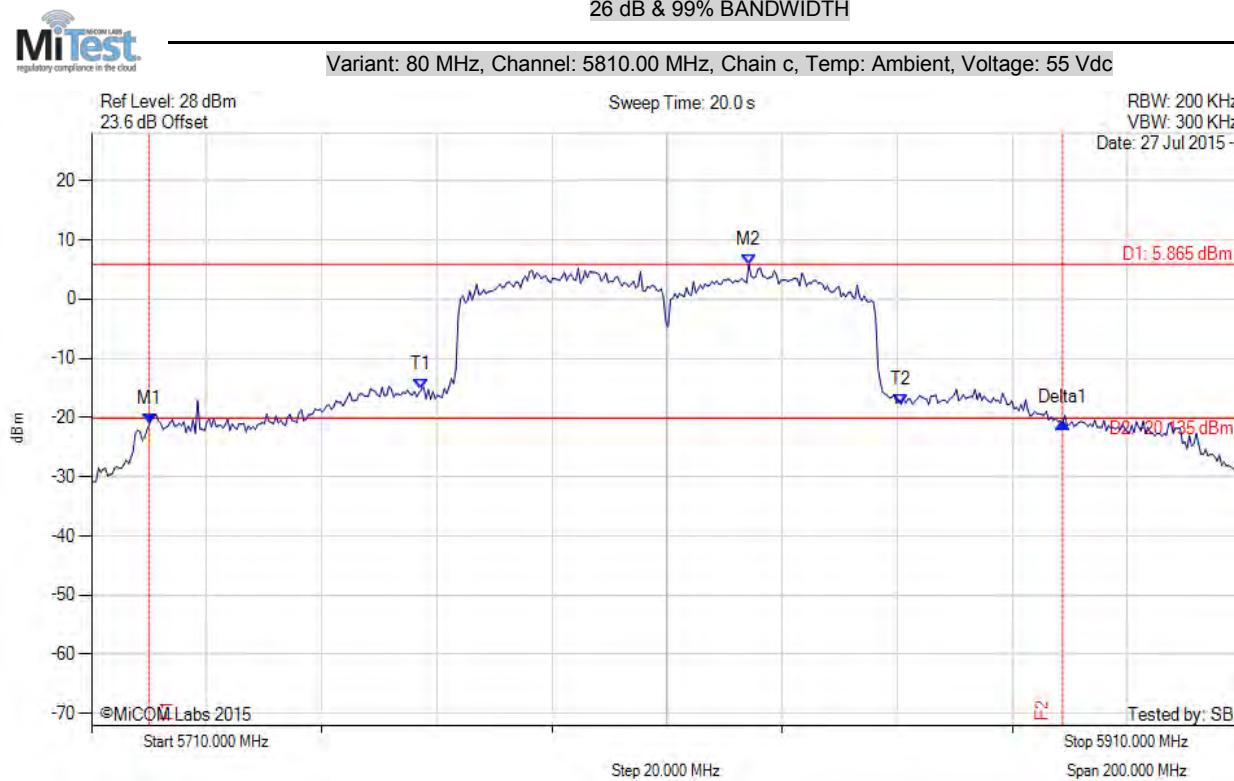
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5751.683 MHz : -21.890 dBm M2 : 5828.637 MHz : 4.360 dBm Delta1 : 125.050 MHz : 0.671 dB T1 : 5773.727 MHz : -2.386 dBm T2 : 5846.273 MHz : -4.572 dBm OBW : 72.545 MHz | Measured 26 dB Bandwidth: 125.050 MHz Measured 99% Bandwidth: 72.545 MHz |

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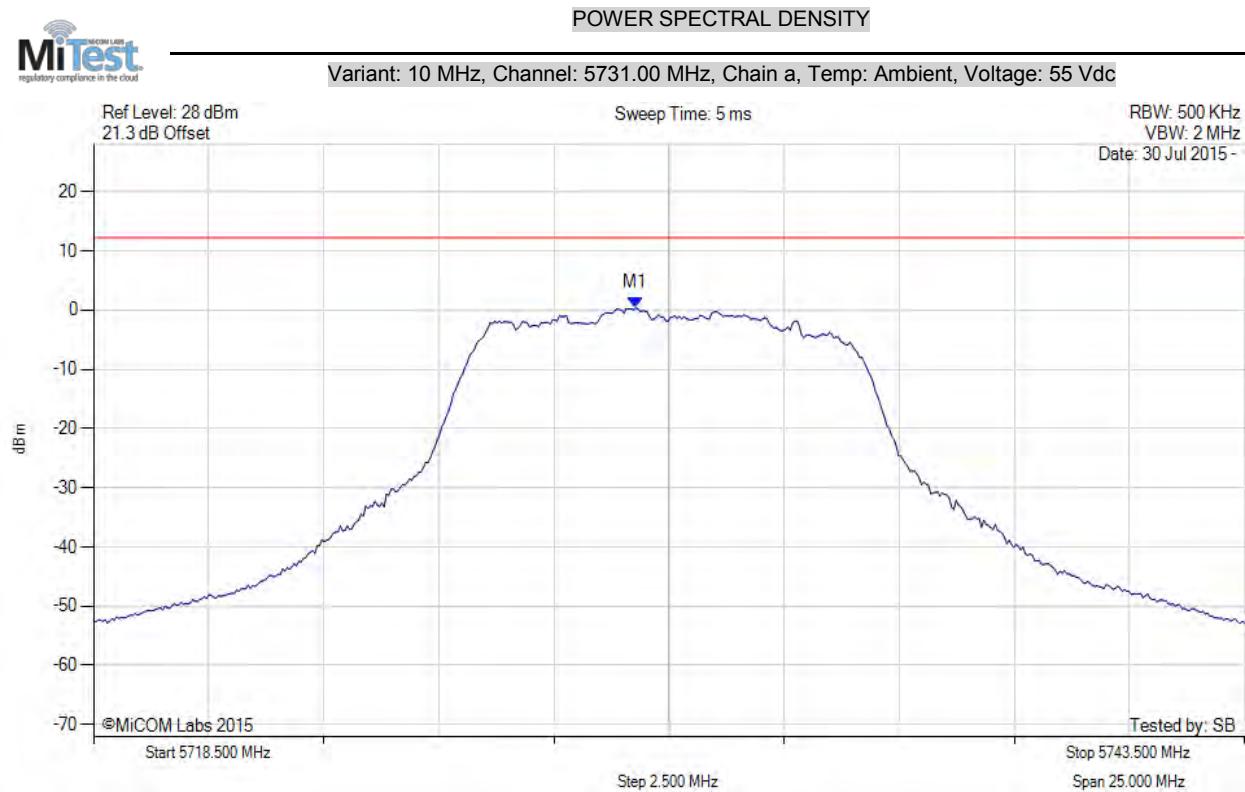


| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|---|--|---|
| Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD | M1 : 5720.020 MHz : -21.186 dBm M2 : 5824.228 MHz : 5.865 dBm Delta1 : 5767.315 MHz : 0.291 dB T1 : 5767.315 MHz : -15.327 dBm T2 : 5850.681 MHz : -17.753 dBm OBW : 83.367 MHz | Measured 26 dB Bandwidth: 158.717 MHz Measured 99% Bandwidth: 83.367 MHz |

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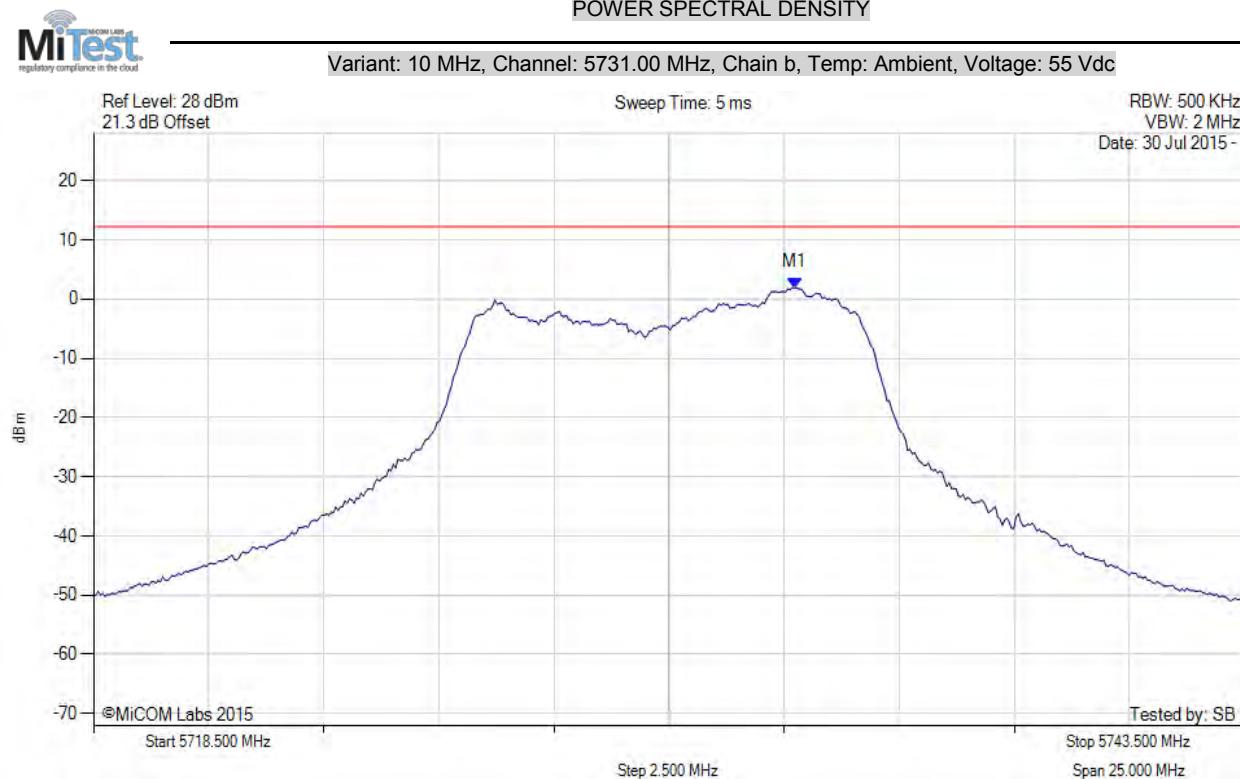
A.2. Power Spectral Density



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5730.274 MHz : 0.364 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

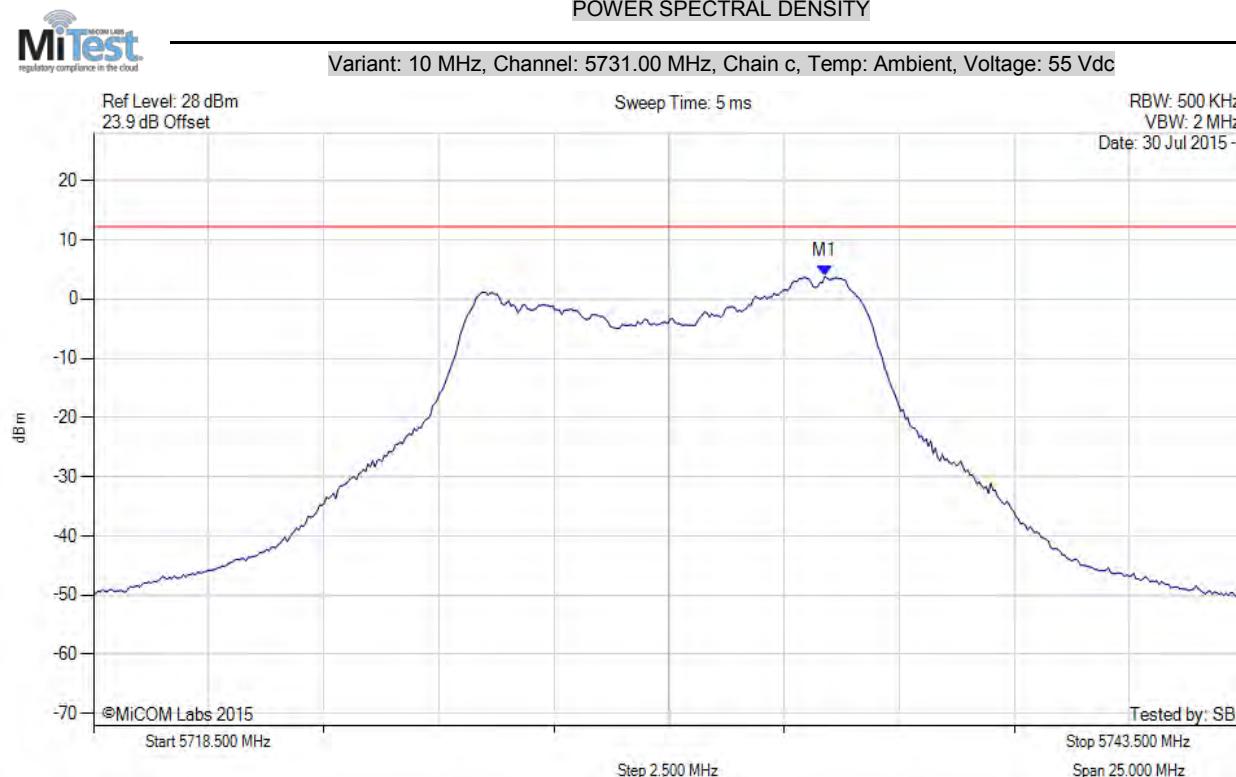
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5733.730 MHz : 1.922 dBm | Limit: ≤ 12.230 dBm |

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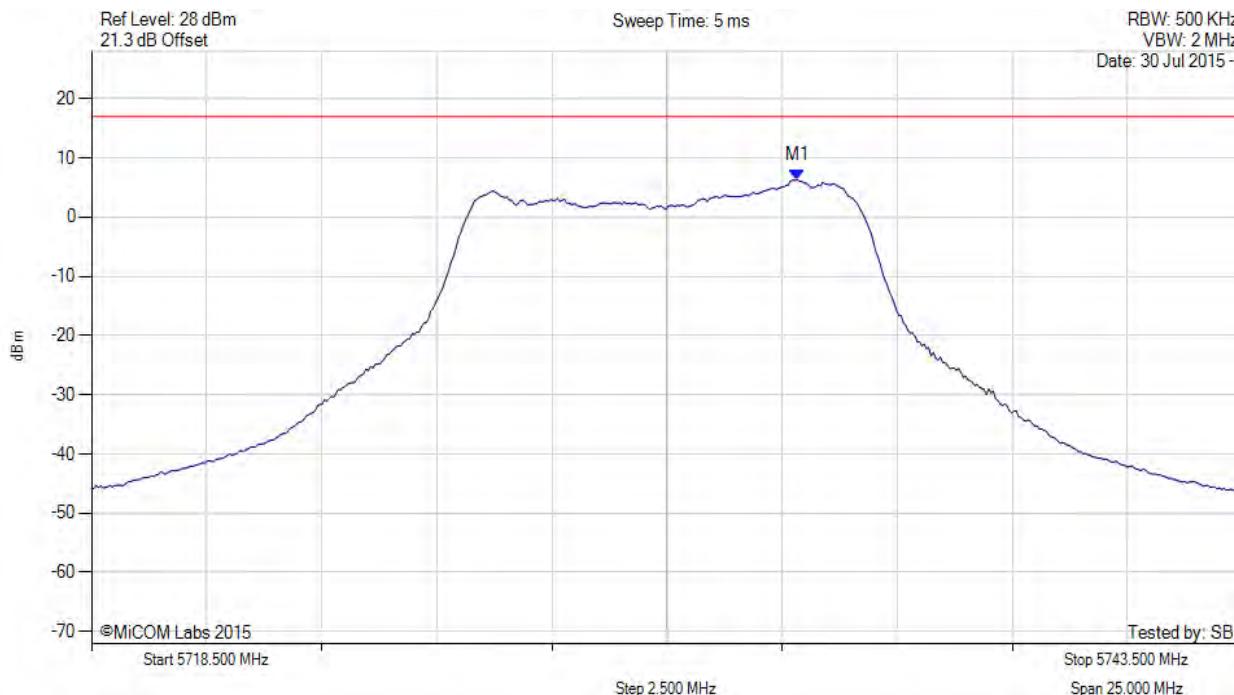
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5734.382 MHz : 3.815 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

Variant: 10 MHz, Channel: 5731.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



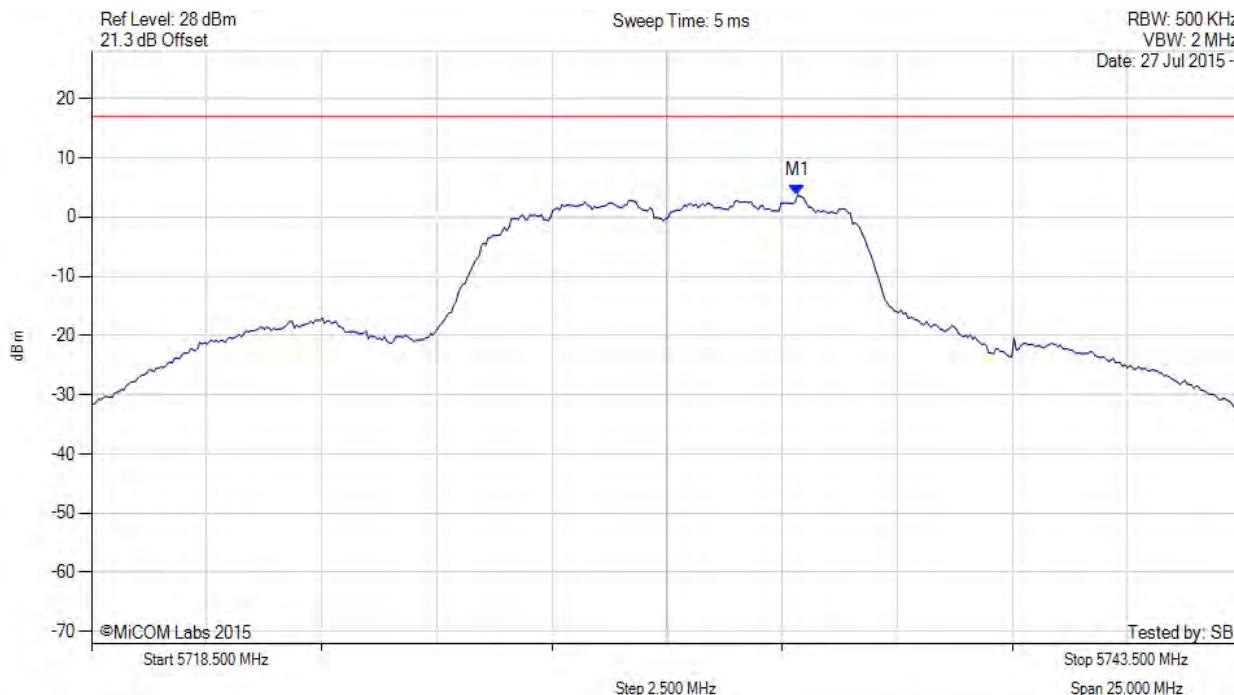
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5733.800 MHz : 6.298 dBm M1 + DCCF : 5733.800 MHz : 6.863 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -10.1 dB |

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POWER SPECTRAL DENSITY

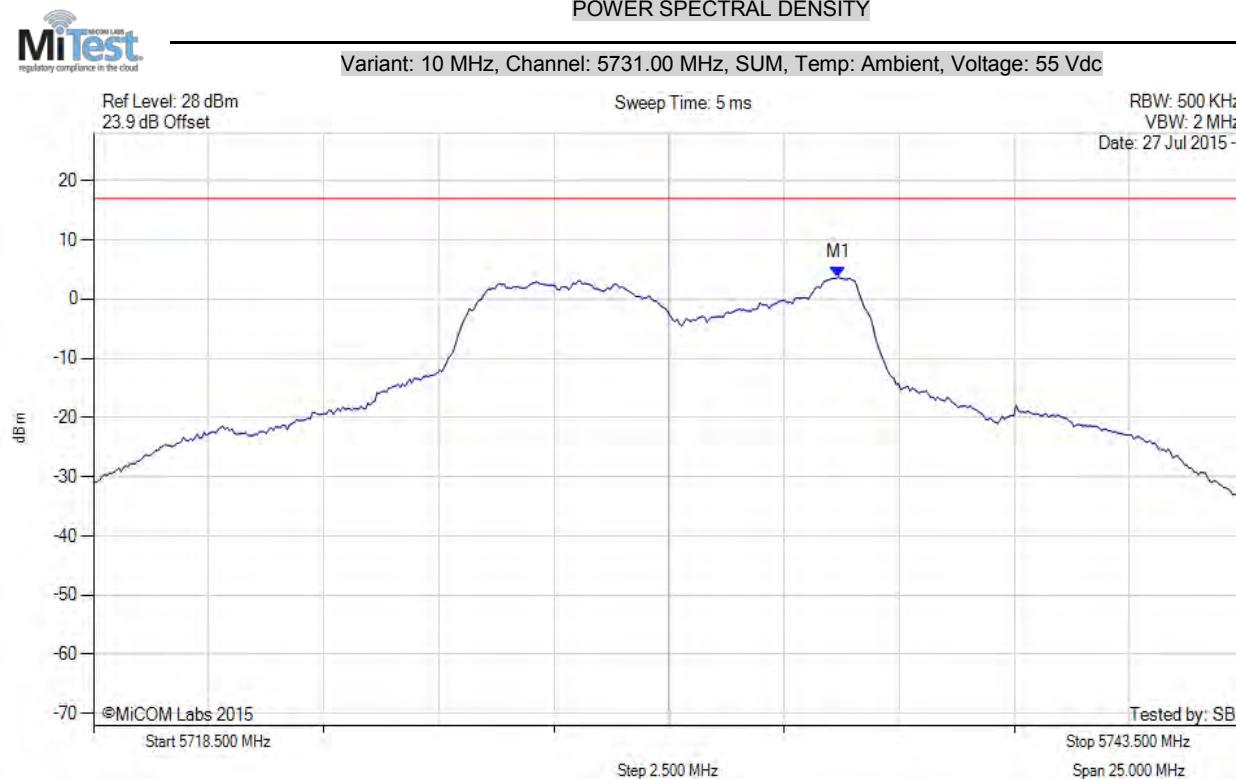
Variant: 10 MHz, Channel: 5731.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5733.800 MHz : 3.608 dBm M1 + DCCF : 5733.800 MHz : 4.173 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -12.8 dB |

[back to matrix](#)

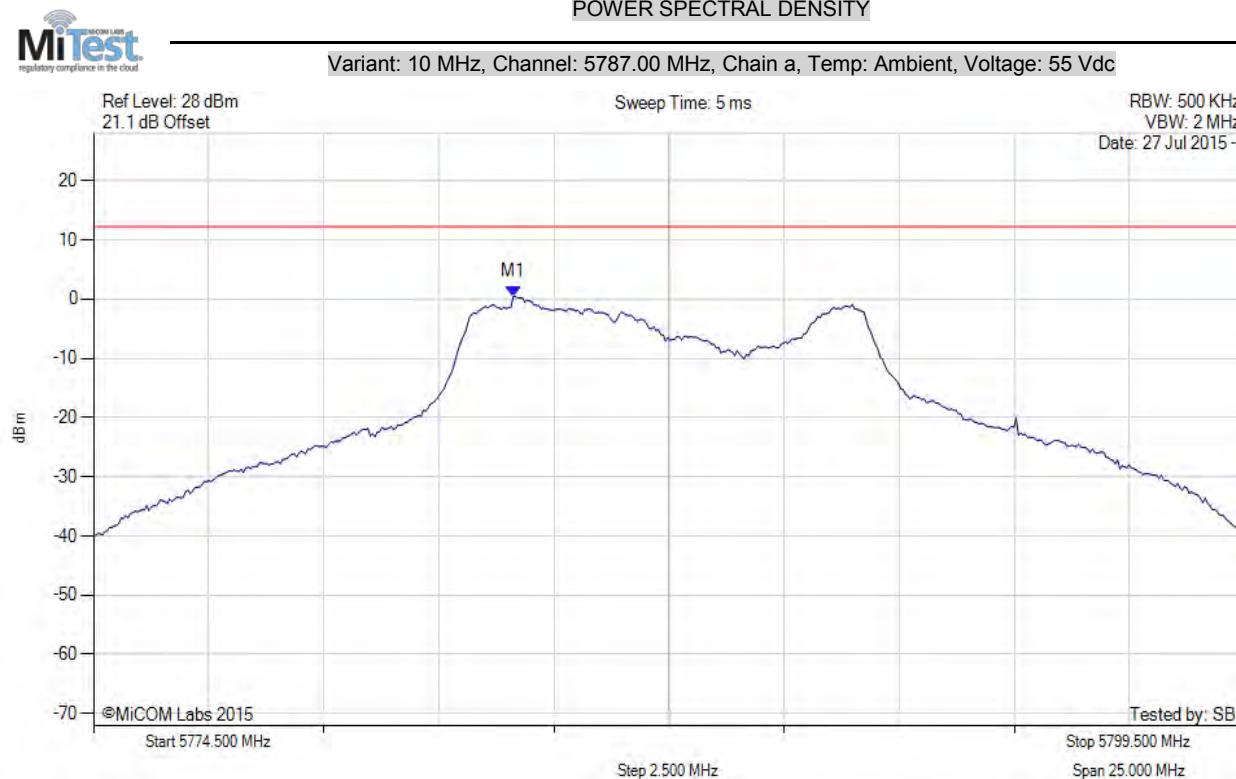
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5734.700 MHz : 3.676 dBm M1 + DCCF : 5734.700 MHz : 4.241 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -12.7 dB |

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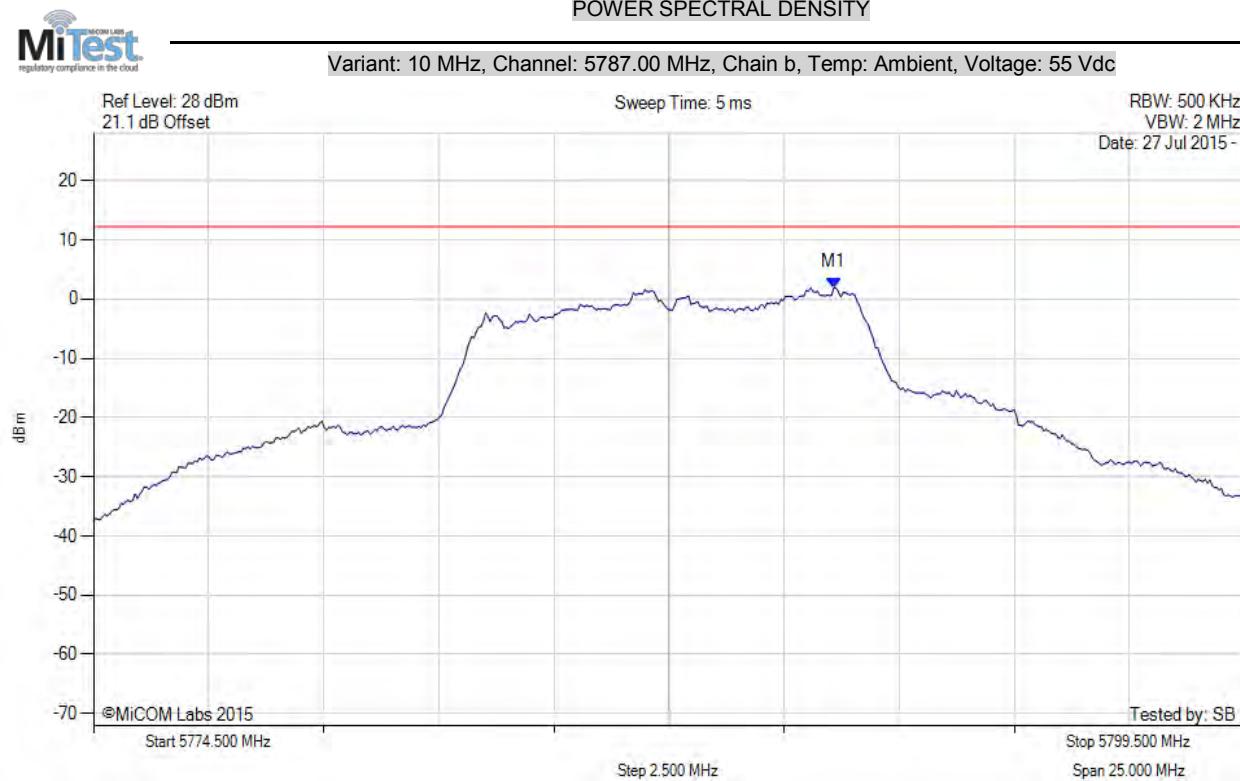
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5783.618 MHz : 0.434 dBm | Limit: ≤ 12.230 dBm |

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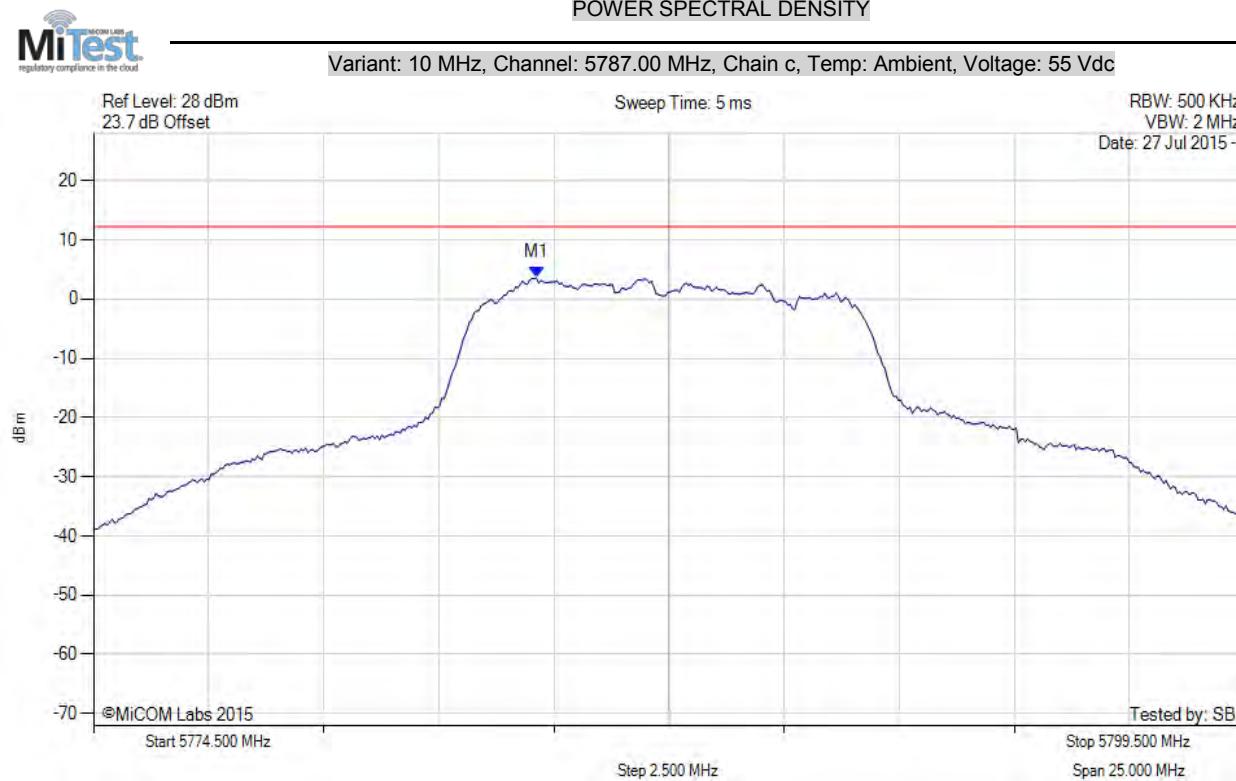
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5790.582 MHz : 1.918 dBm | Channel Frequency: 5787.00 MHz |

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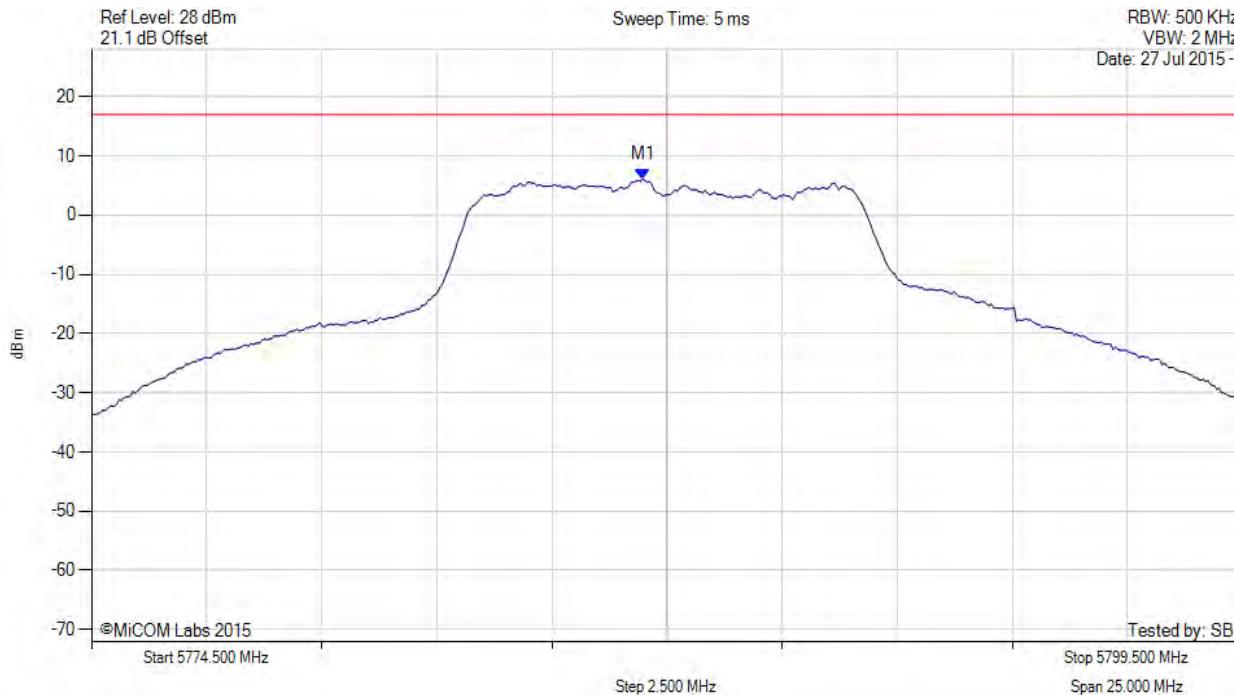
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5784.119 MHz : 3.603 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

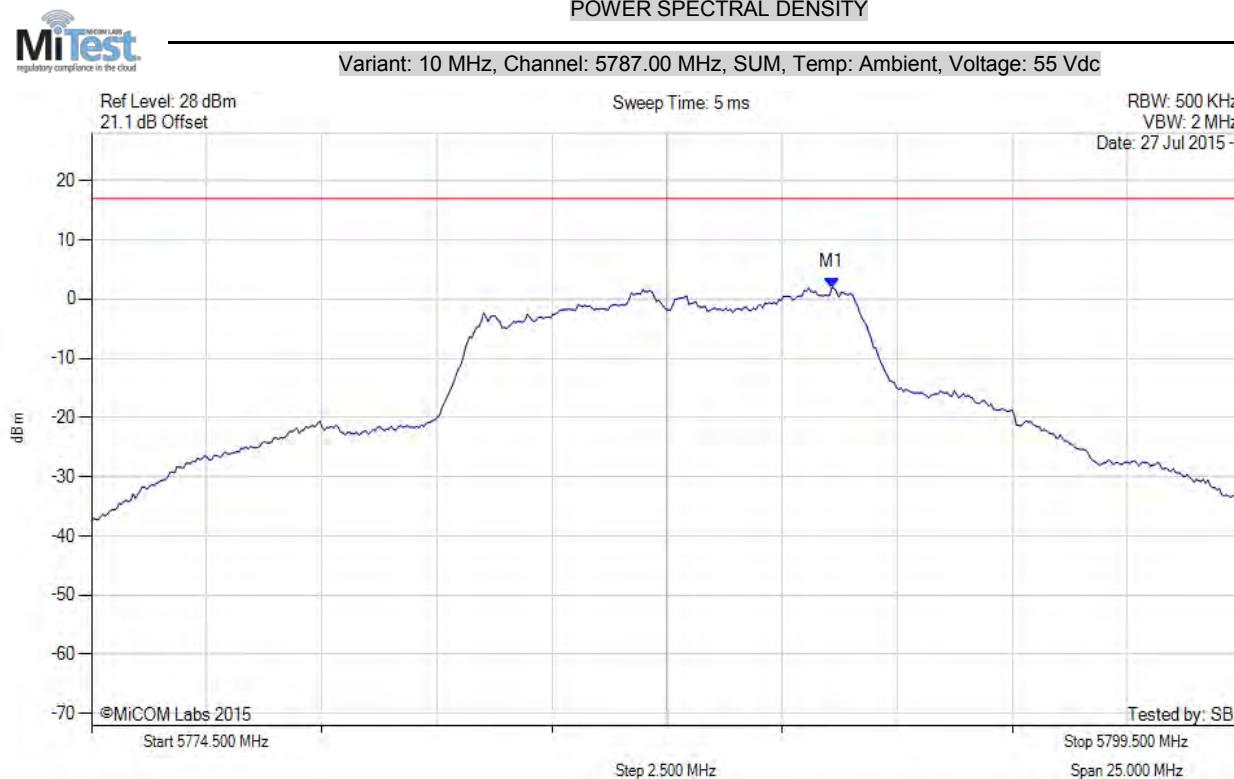
Variant: 10 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5786.500 MHz : 6.099 dBm M1 + DCCF : 5786.500 MHz : 6.664 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -10.3 dB |

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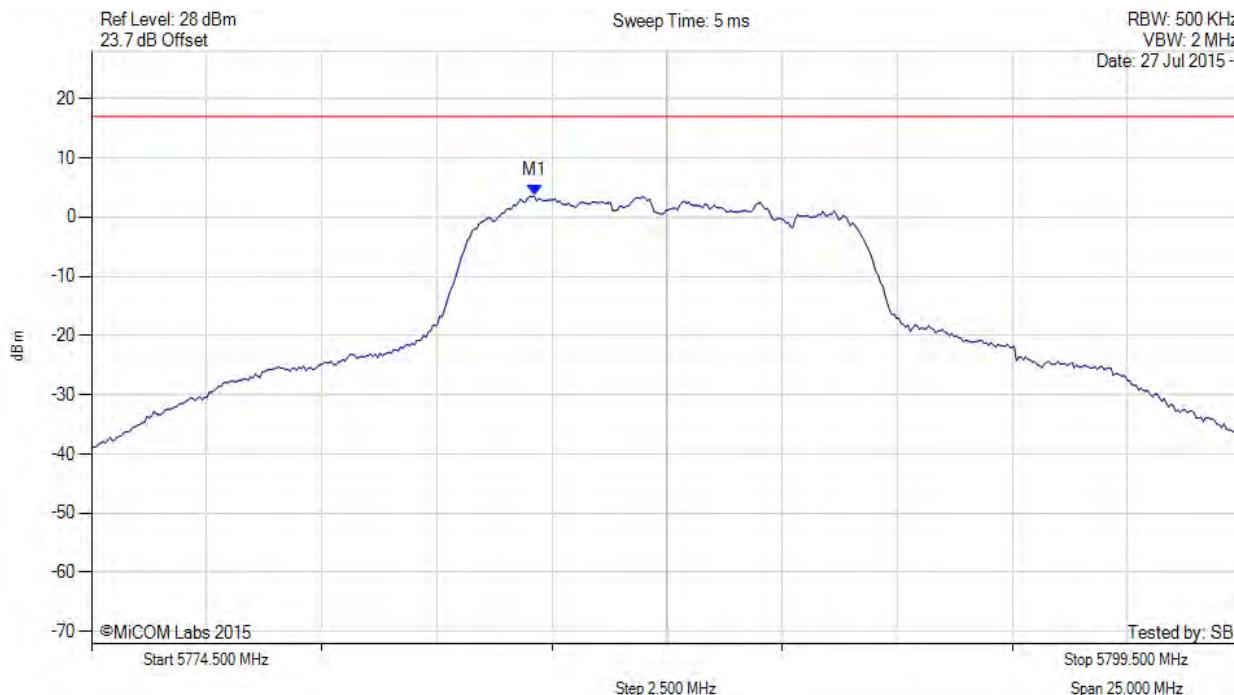
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5790.600 MHz : 1.918 dBm M1 + DCCF : 5790.600 MHz : 2.483 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -14.5 dB |

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POWER SPECTRAL DENSITY

Variant: 10 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



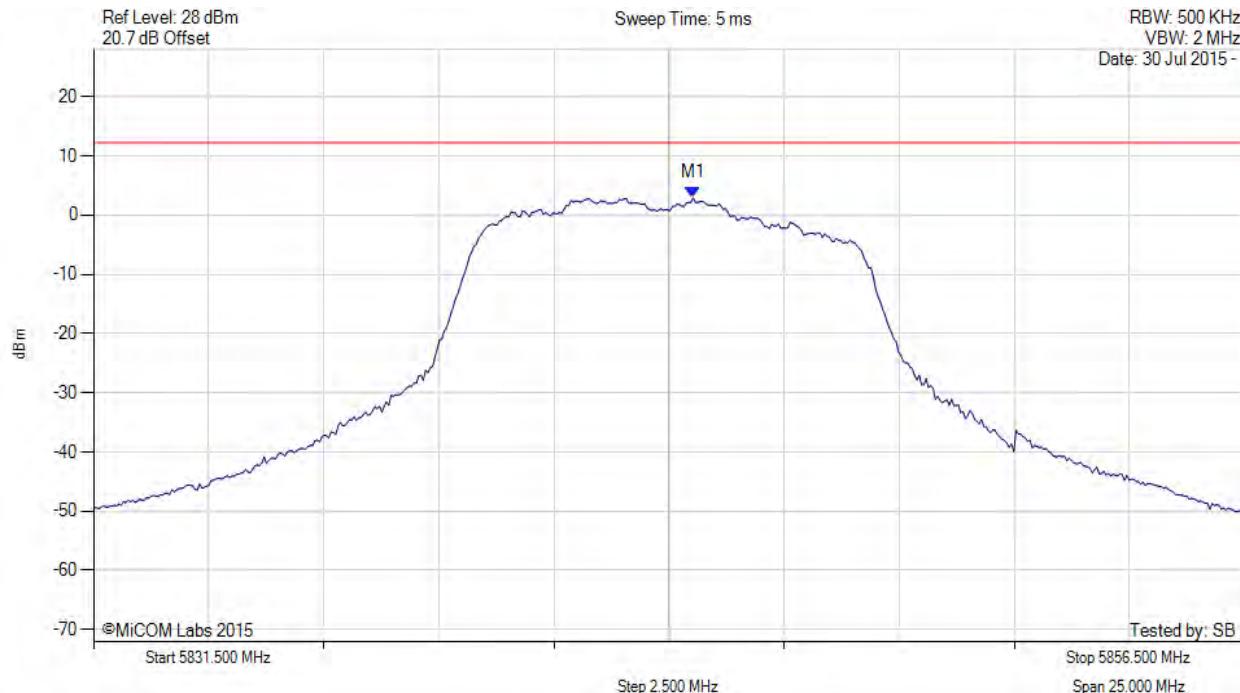
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5784.100 MHz : 3.603 dBm M1 + DCCF : 5784.100 MHz : 4.168 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -12.8 dB |

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POWER SPECTRAL DENSITY

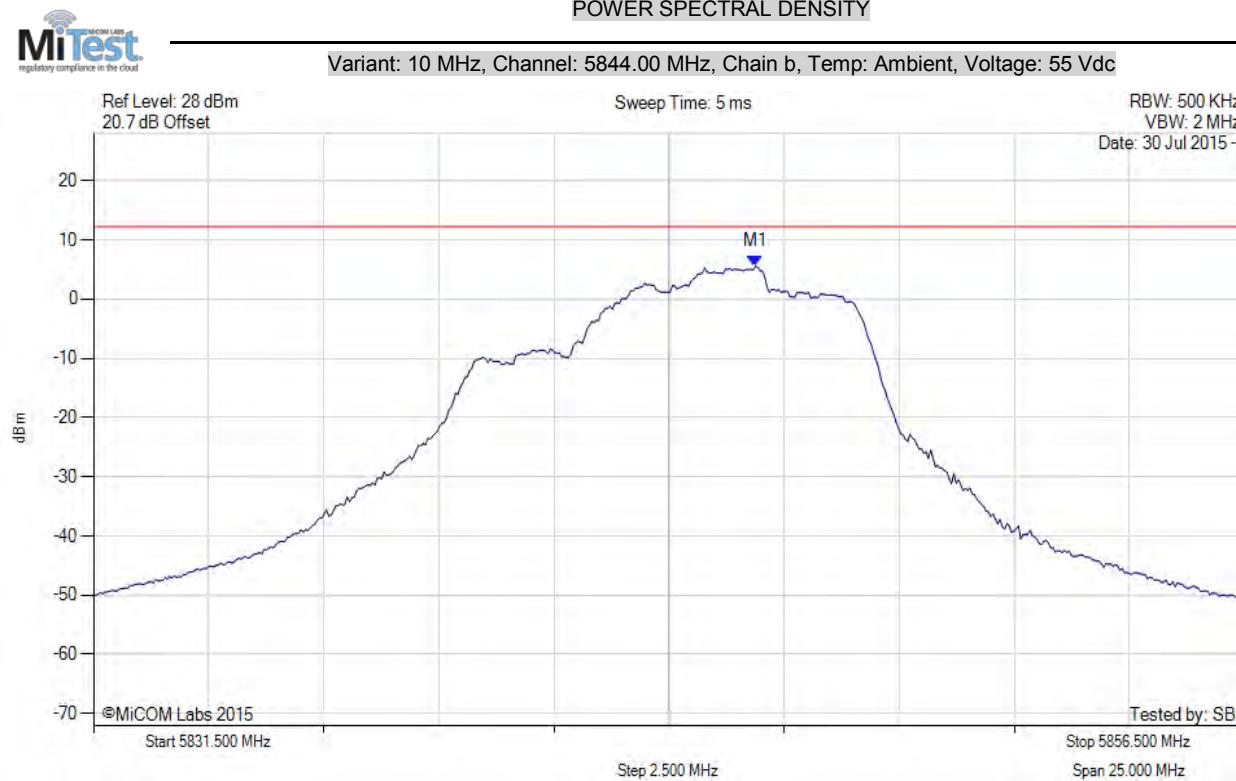
Variant: 10 MHz, Channel: 5844.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5844.526 MHz : 2.873 dBm | Limit: ≤ 12.230 dBm |

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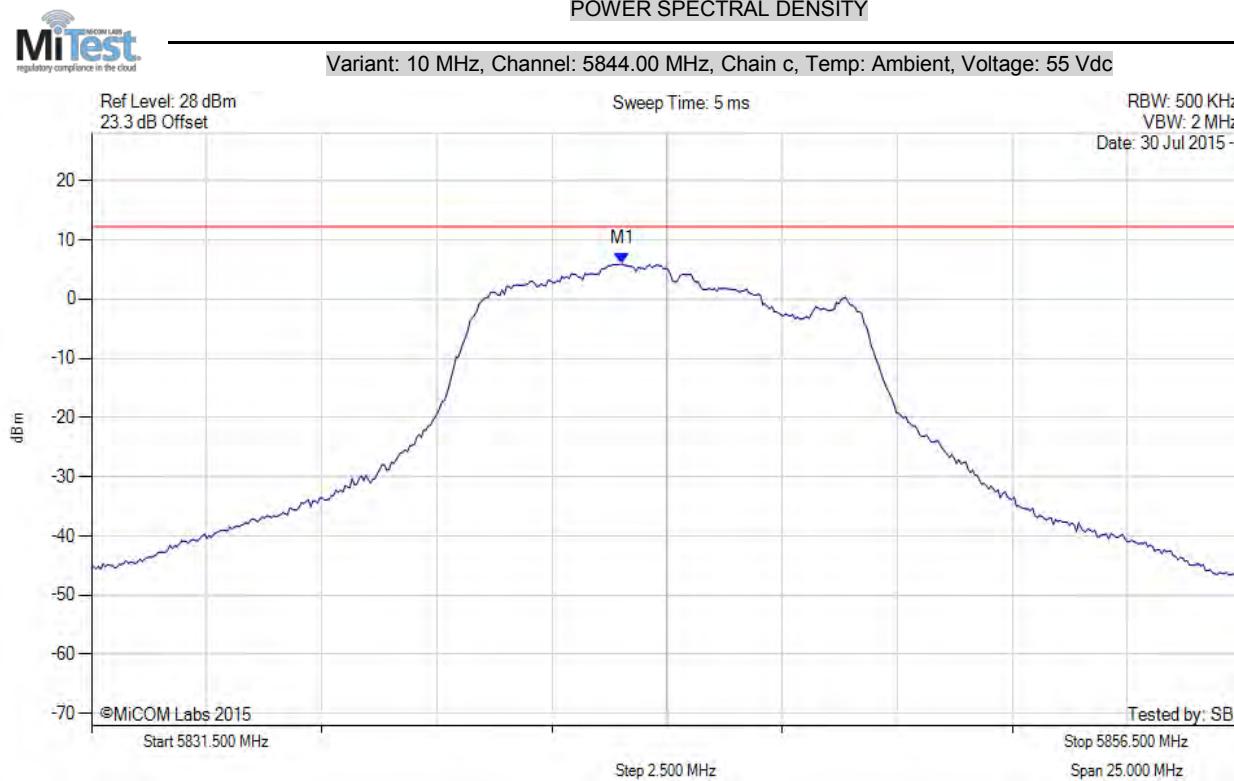
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5845.879 MHz : 5.569 dBm | Limit: ≤ 12.230 dBm |

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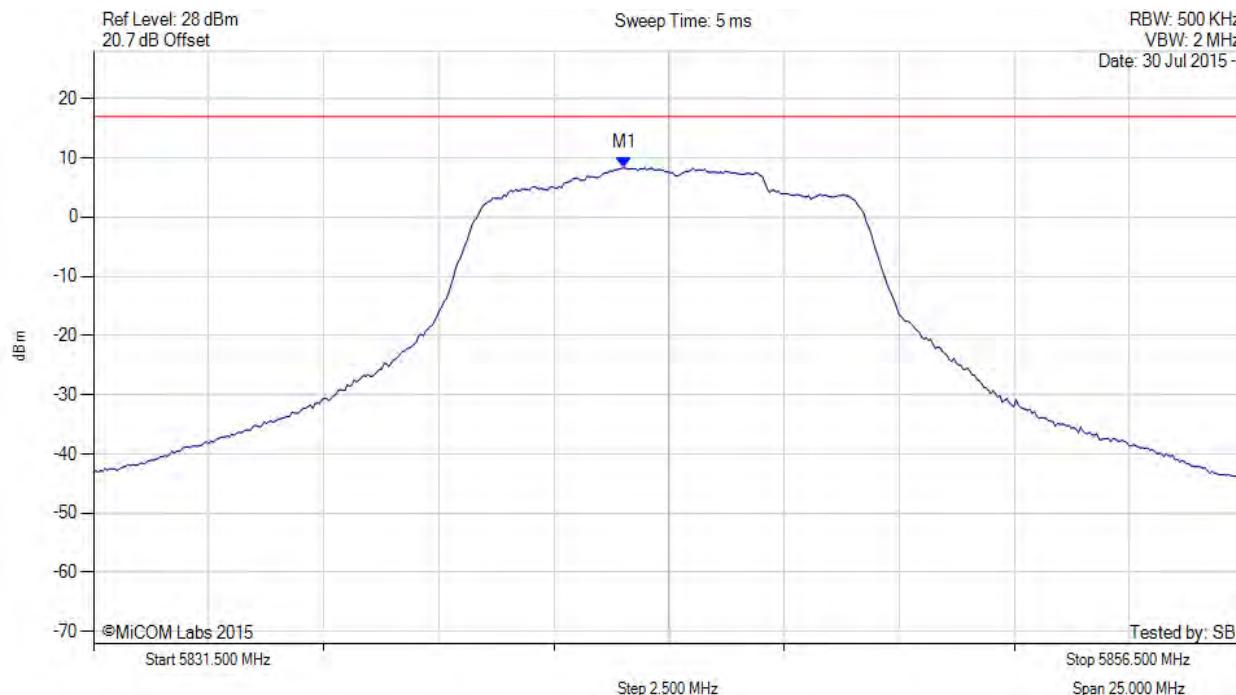
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.023 MHz : 5.927 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

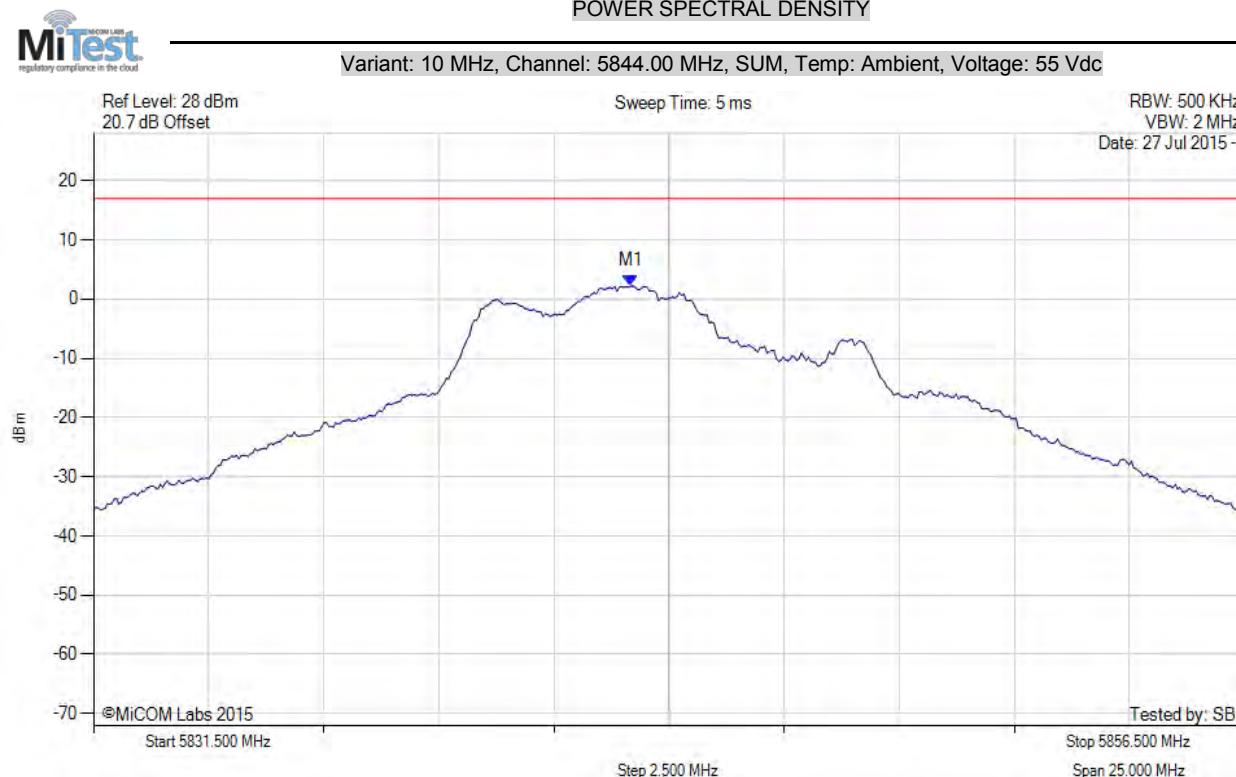
Variant: 10 MHz, Channel: 5844.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|--------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.000 MHz : 8.327 dBm M1 + DCCF : 5843.000 MHz : 8.892 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -8.1 dB |

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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.200 MHz : 2.227 dBm M1 + DCCF : 5843.200 MHz : 2.792 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -14.2 dB |

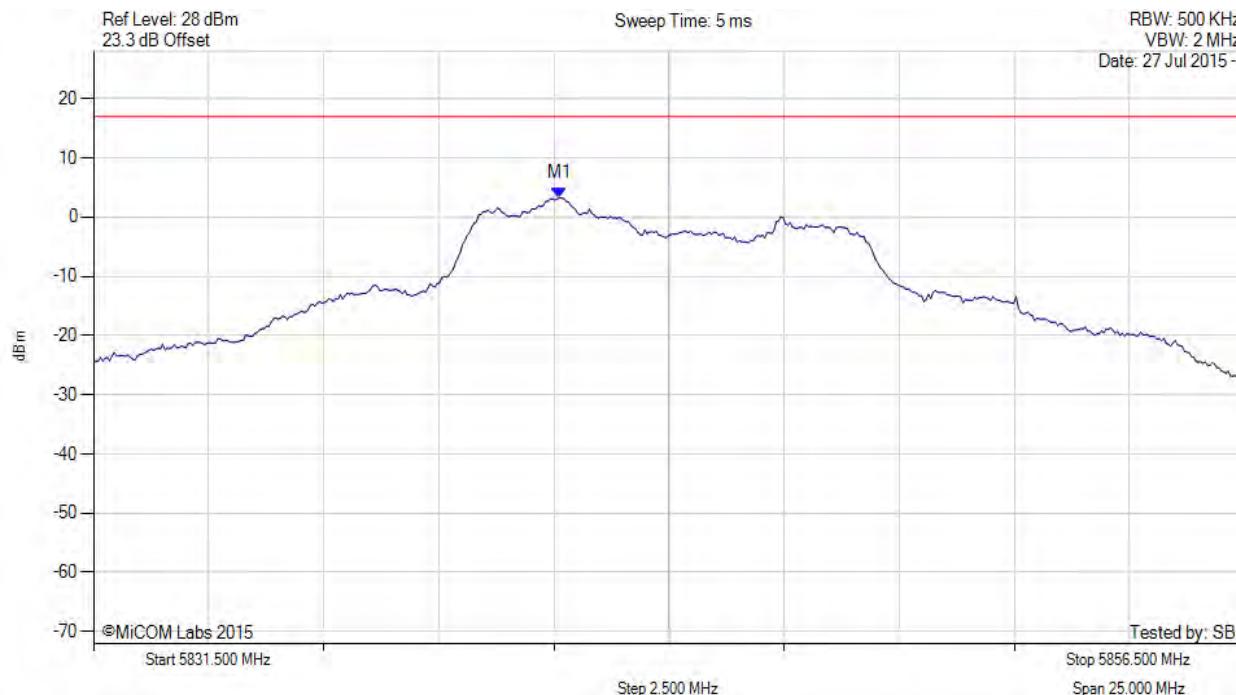
[back to matrix](#)

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POWER SPECTRAL DENSITY

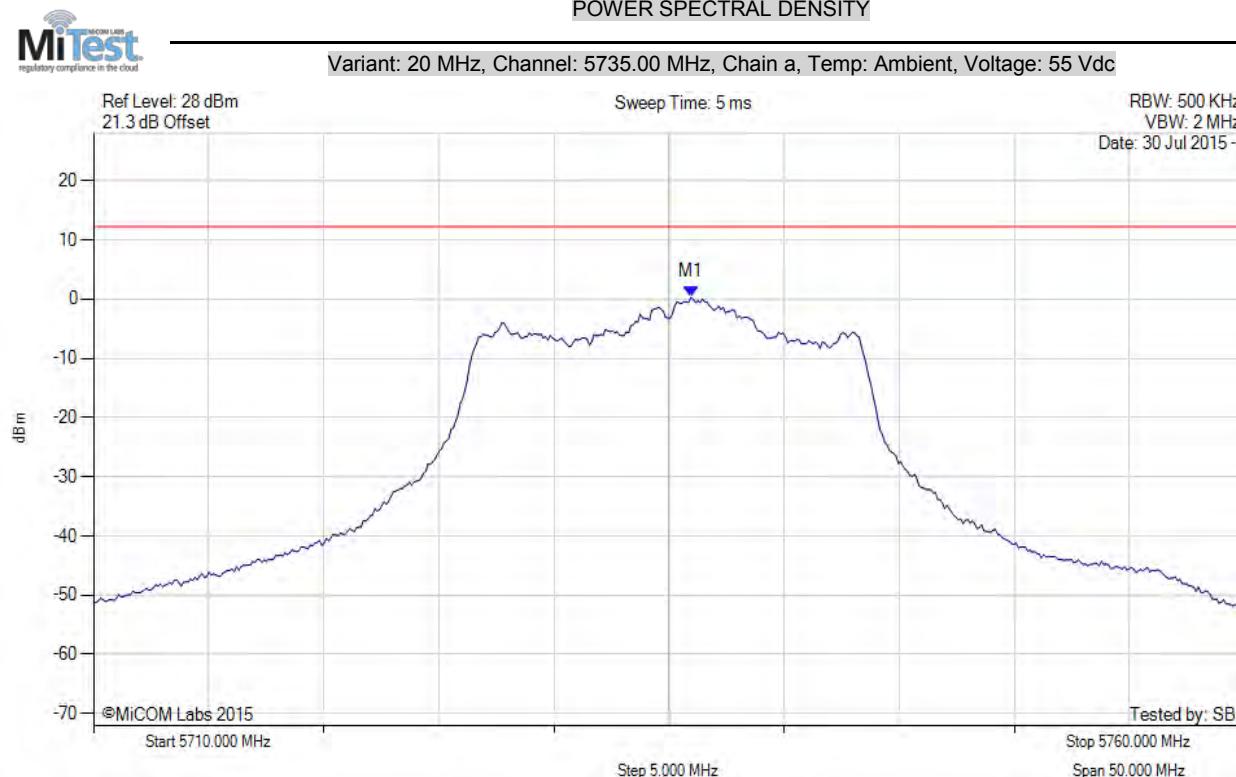
Variant: 10 MHz, Channel: 5844.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5841.600 MHz : 3.287 dBm M1 + DCCF : 5841.600 MHz : 3.852 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -13.1 dB |

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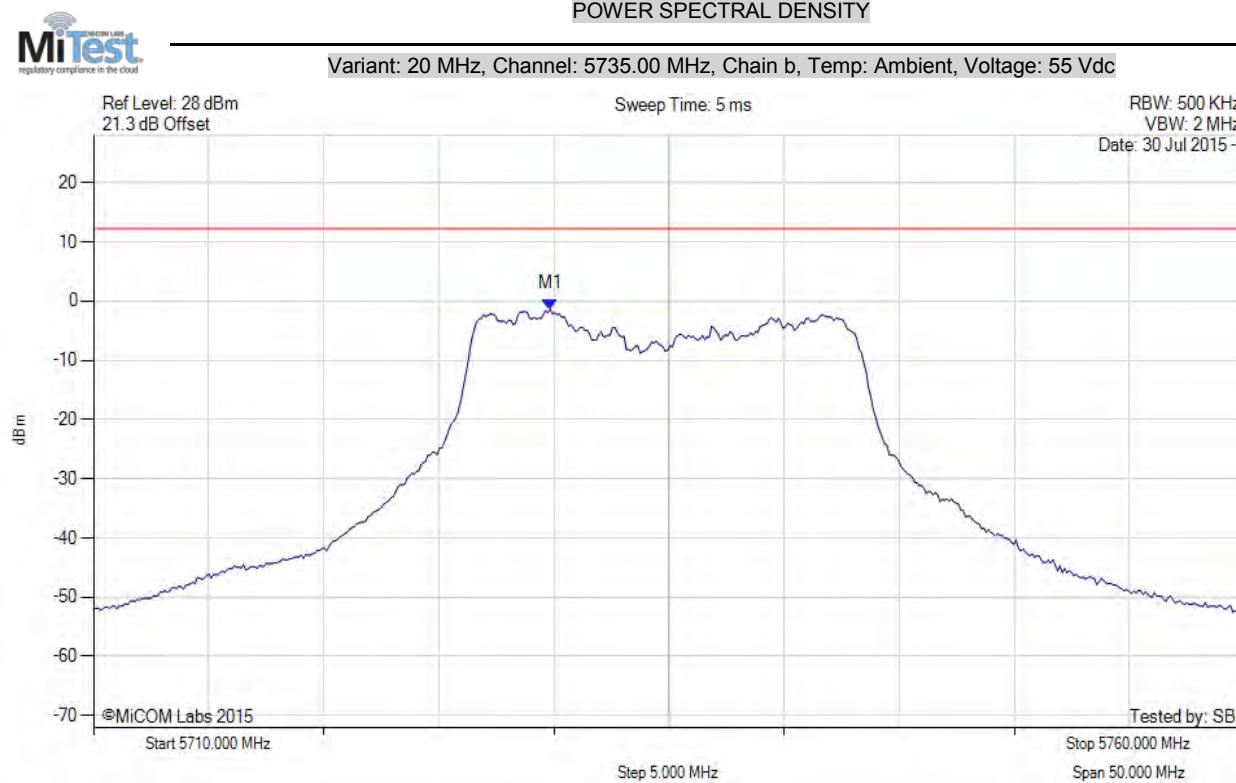
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5735.952 MHz : 0.291 dBm | Limit: ≤ 12.230 dBm |

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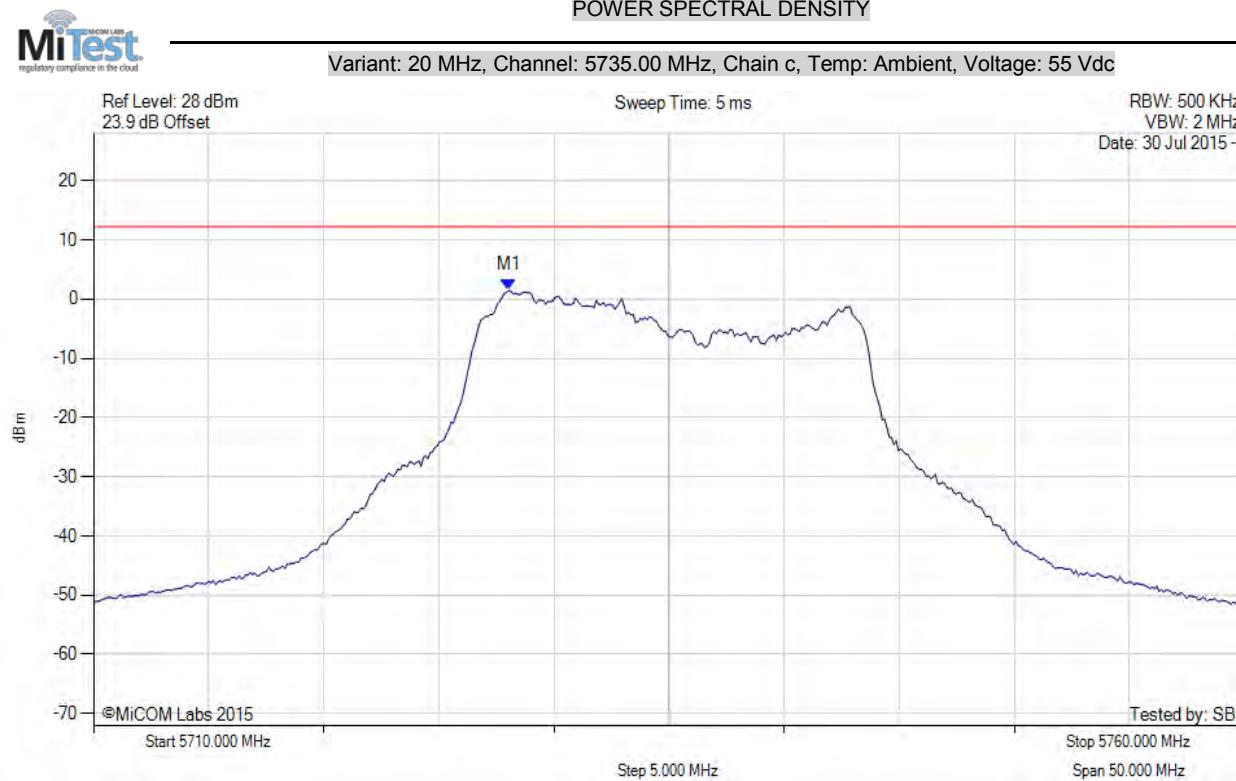
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5729.840 MHz : -1.353 dBm | Limit: ≤ 12.230 dBm |

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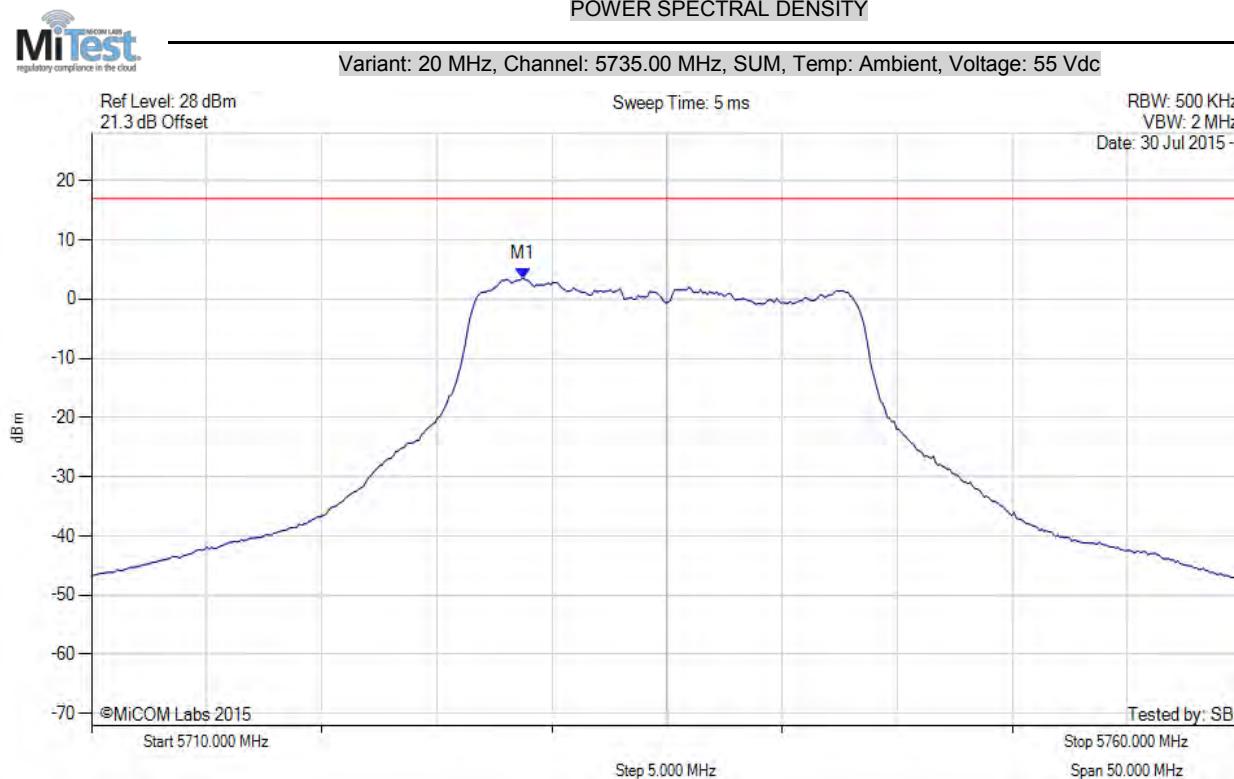
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5728.036 MHz : 1.475 dBm | Limit: ≤ 12.230 dBm |

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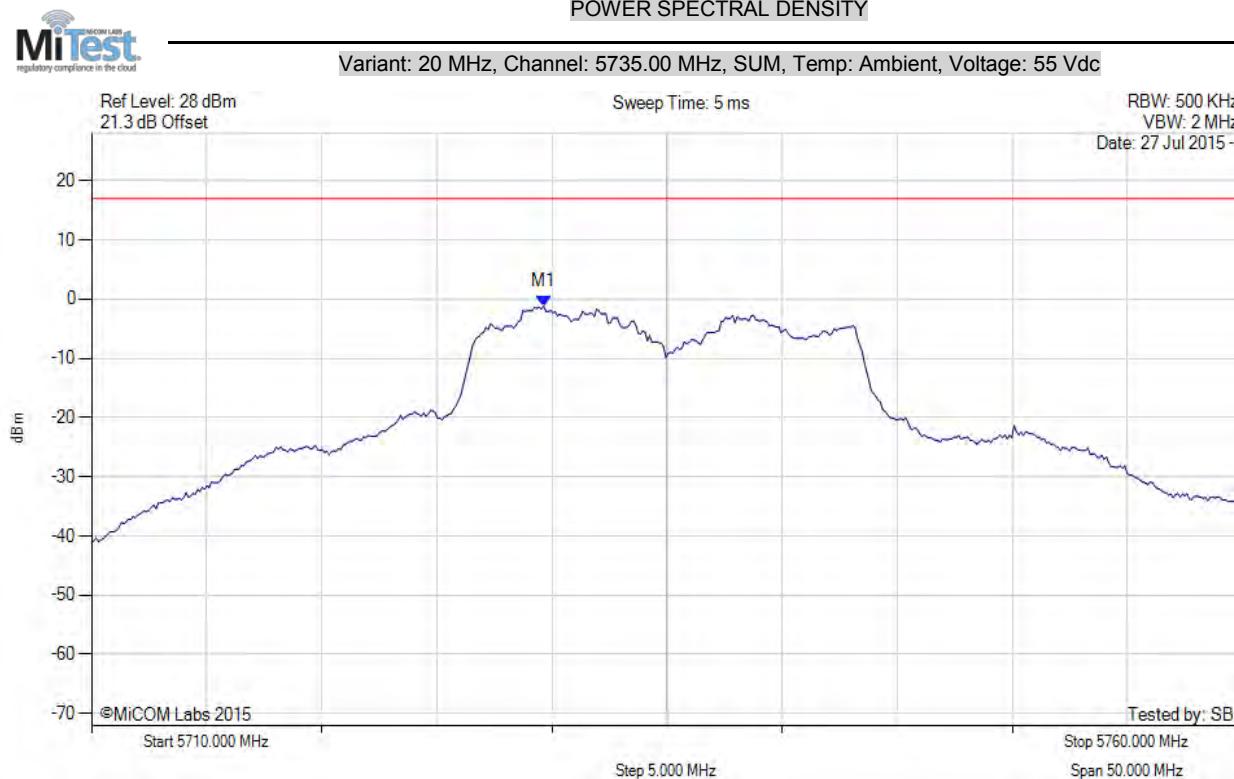
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5728.700 MHz : 3.473 dBm M1 + DCCF : 5728.700 MHz : 4.143 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -12.8 dB |

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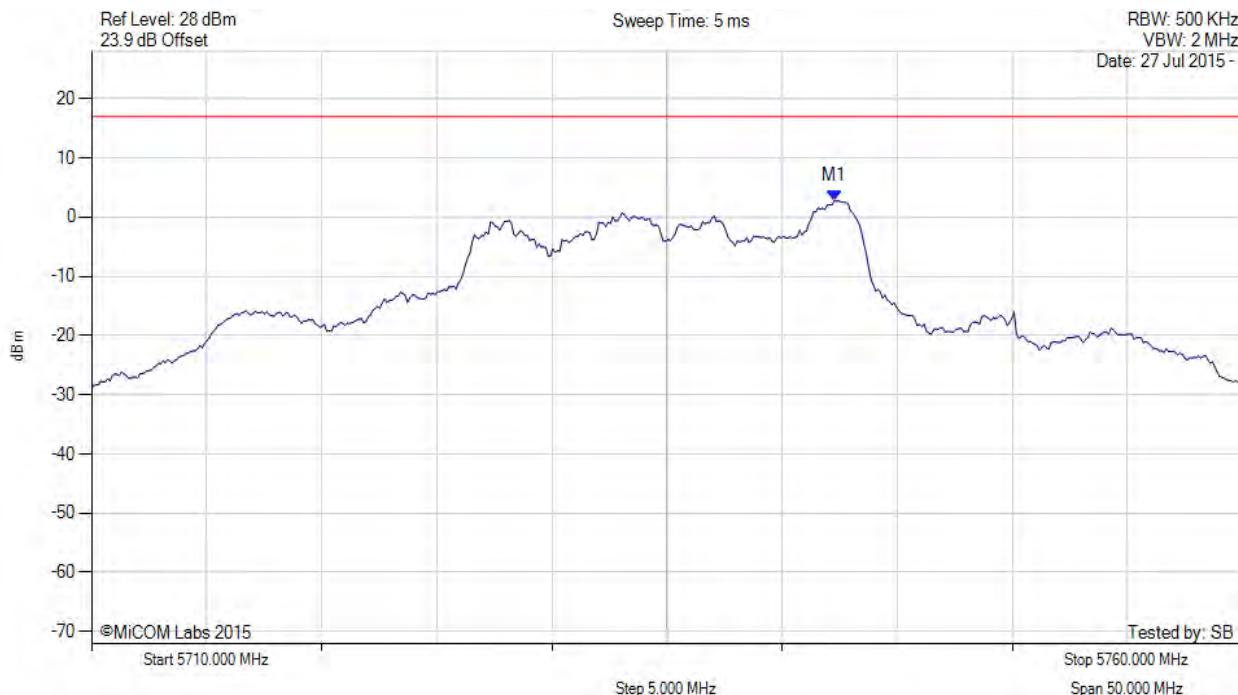
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5729.600 MHz : -1.170 dBm M1 + DCCF : 5729.600 MHz : -0.500 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -17.5 dB |

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POWER SPECTRAL DENSITY

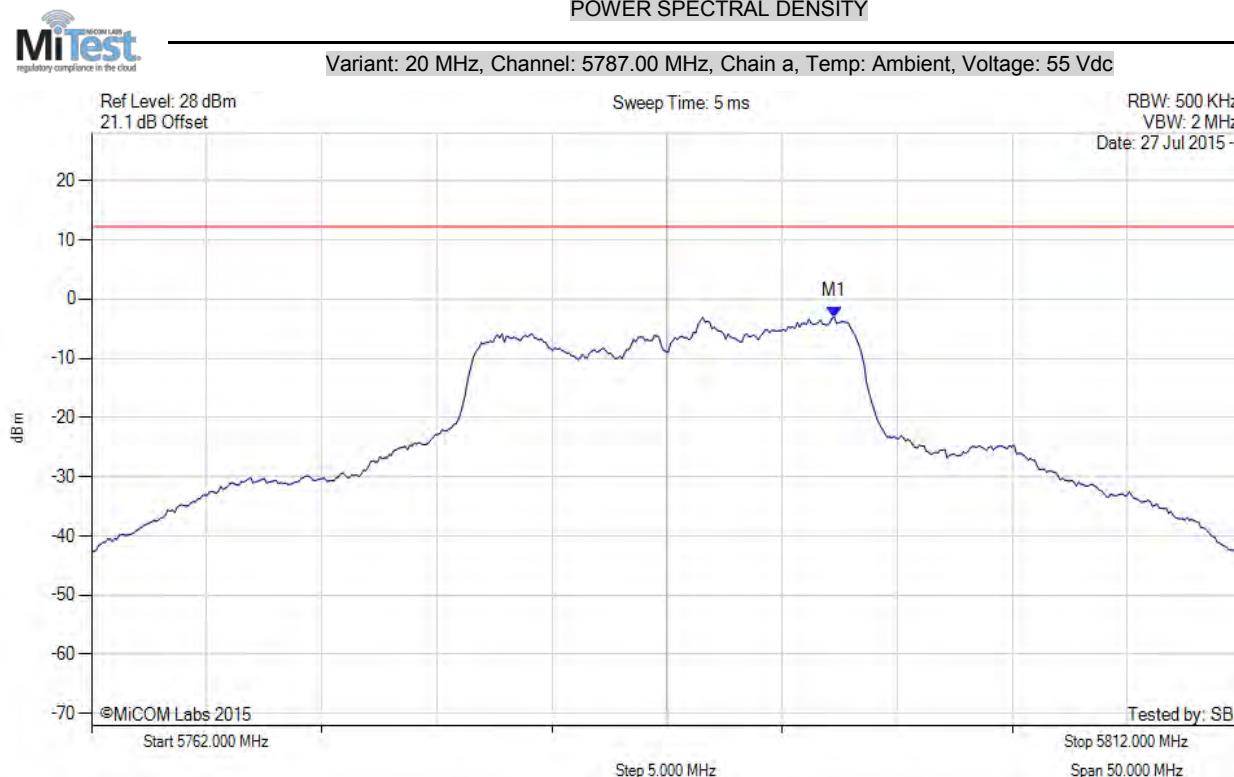
Variant: 20 MHz, Channel: 5735.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5742.300 MHz : 2.768 dBm M1 + DCCF : 5742.300 MHz : 3.438 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -13.5 dB |

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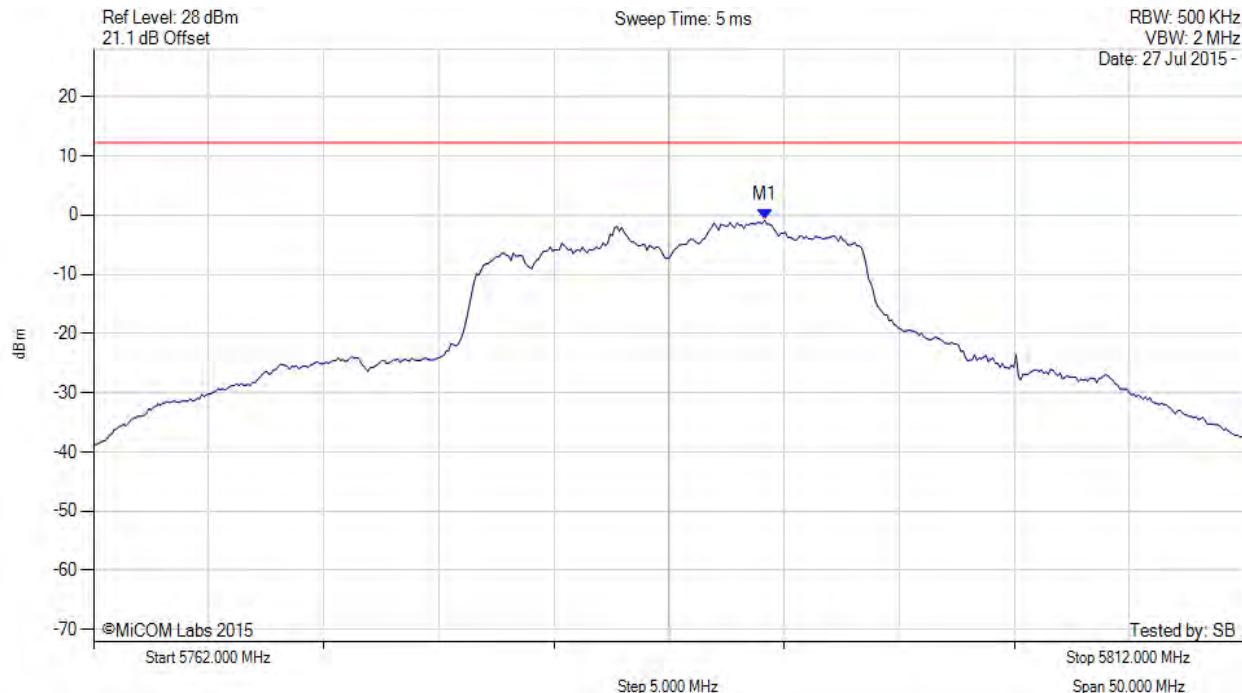
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5794.265 MHz : -2.997 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

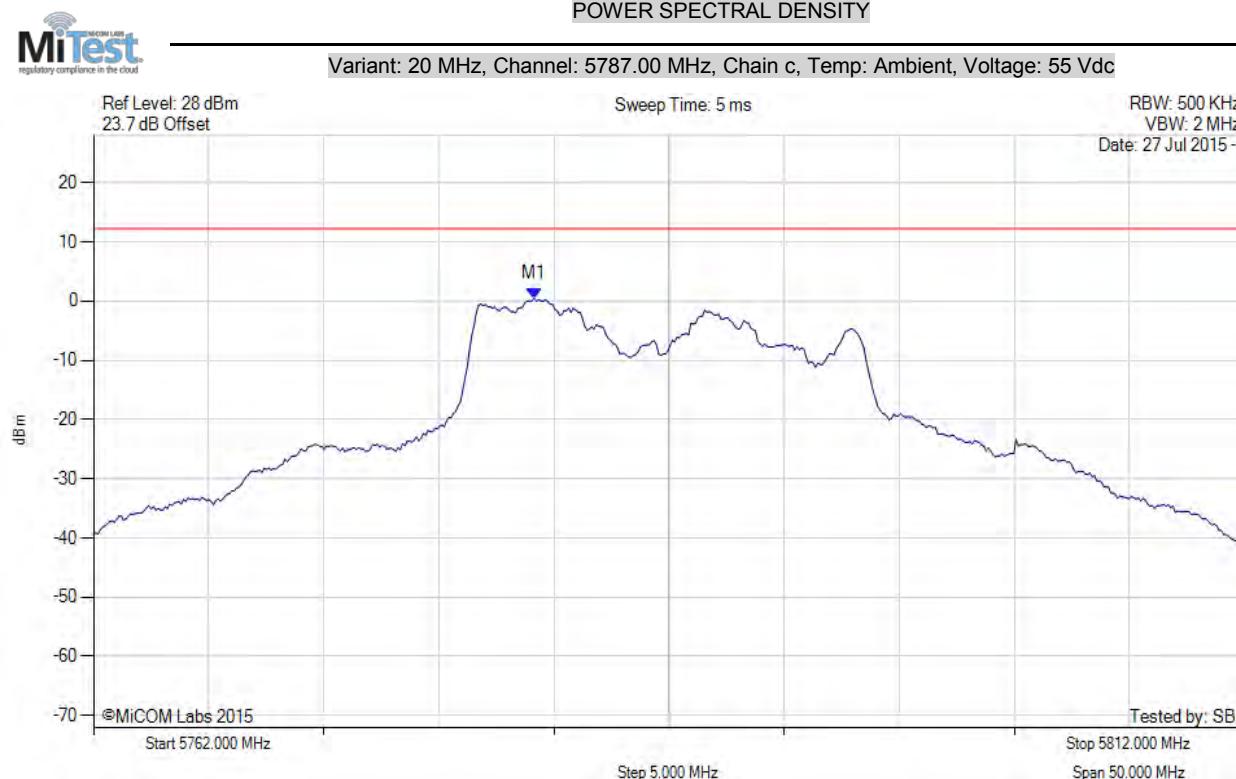
Variant: 20 MHz, Channel: 5787.00 MHz, Chain b, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5791.158 MHz : -0.872 dBm | Channel Frequency: 5787.00 MHz |

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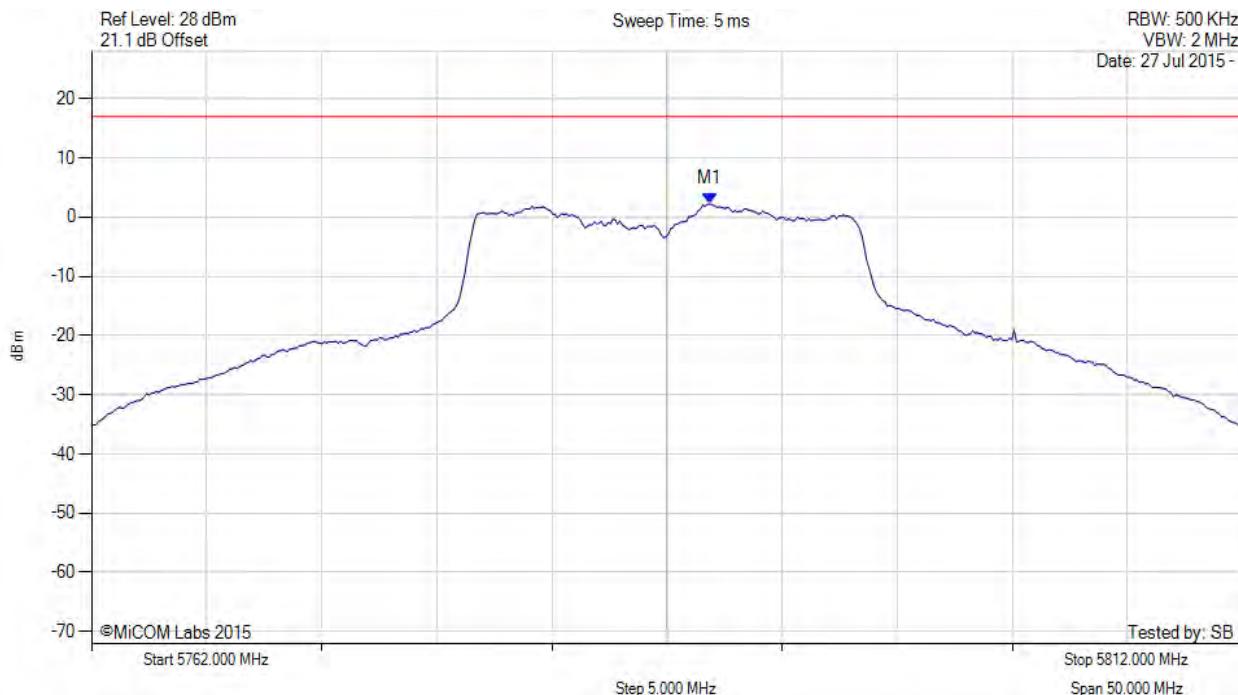
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5781.138 MHz : 0.466 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



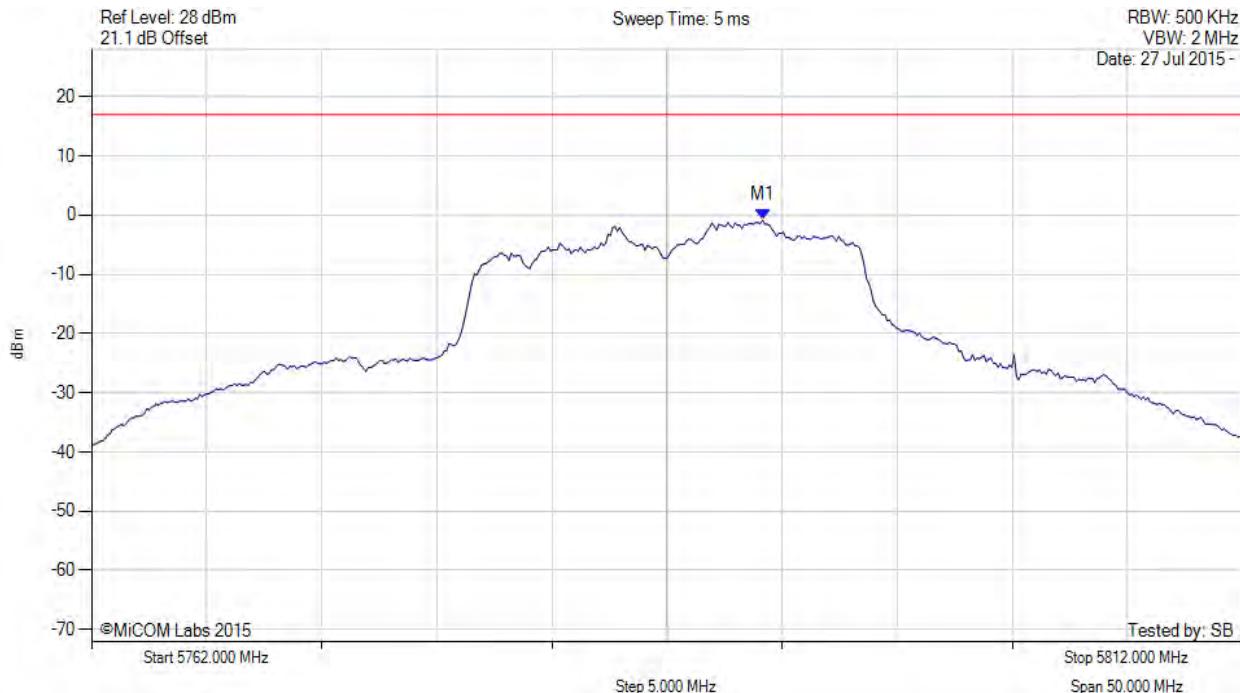
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5788.900 MHz : 2.209 dBm M1 + DCCF : 5788.900 MHz : 2.879 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -14.1 dB |

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POWER SPECTRAL DENSITY

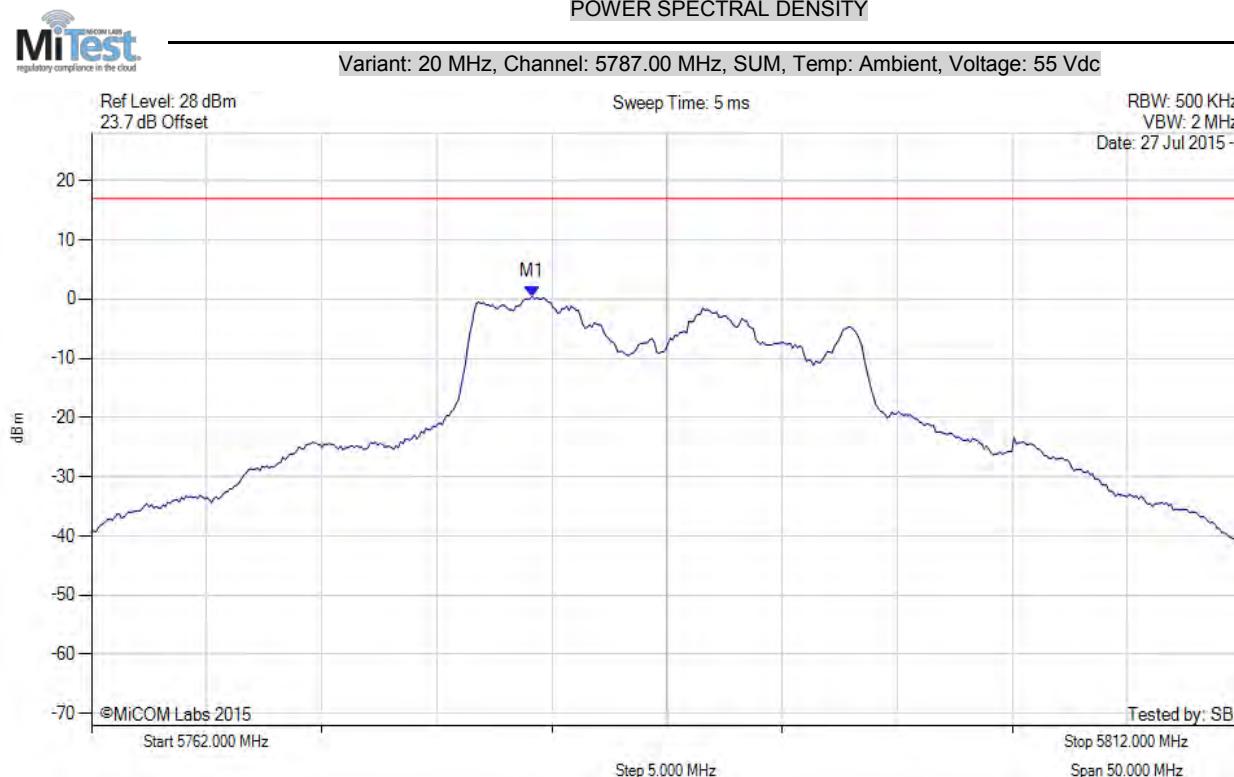
Variant: 20 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5791.200 MHz : -0.872 dBm M1 + DCCF : 5791.200 MHz : -0.202 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -17.2 dB |

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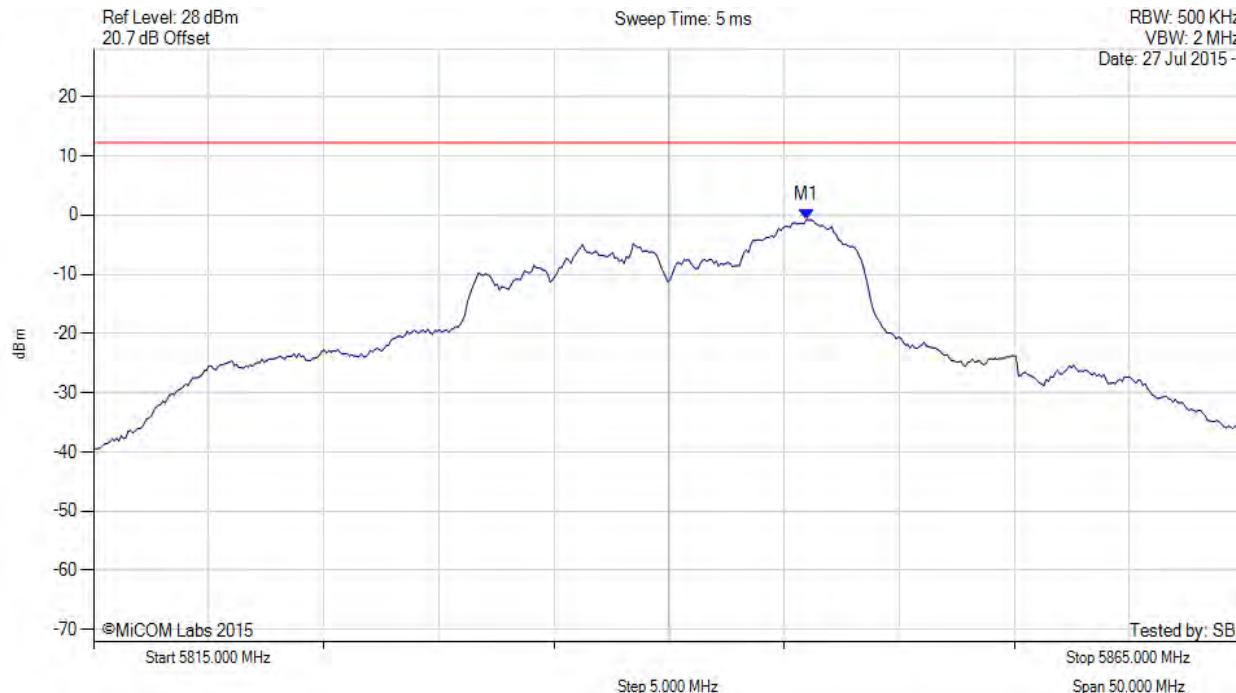
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5781.100 MHz : 0.466 dBm M1 + DCCF : 5781.100 MHz : 1.136 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -15.8 dB |

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POWER SPECTRAL DENSITY

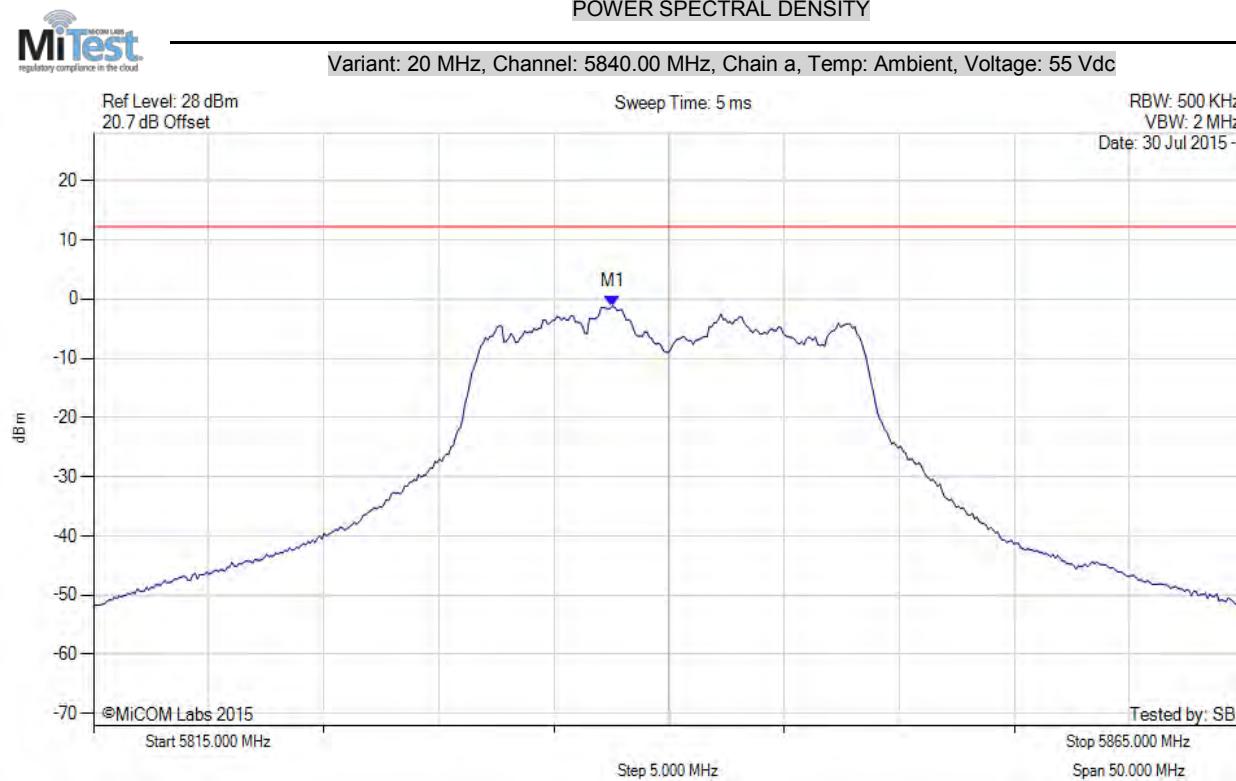
Variant: 20 MHz, Channel: 5840.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5845.962 MHz : -0.800 dBm | Limit: ≤ 12.230 dBm |

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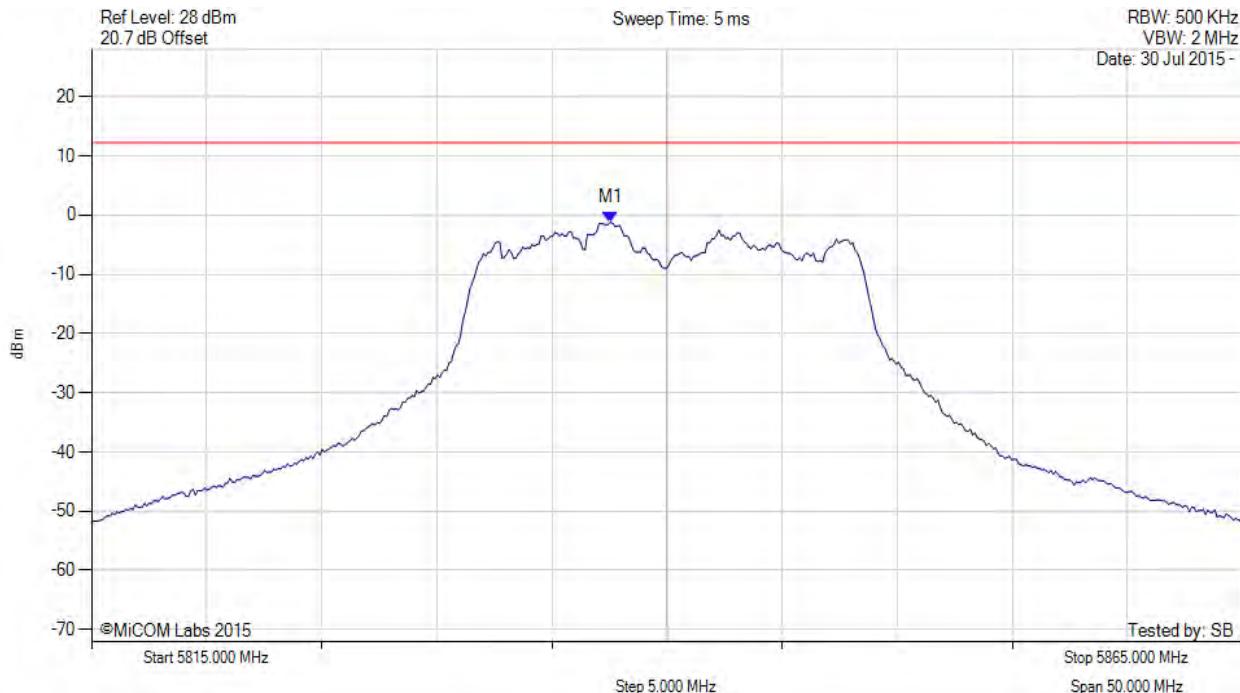
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5837.545 MHz : -1.209 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

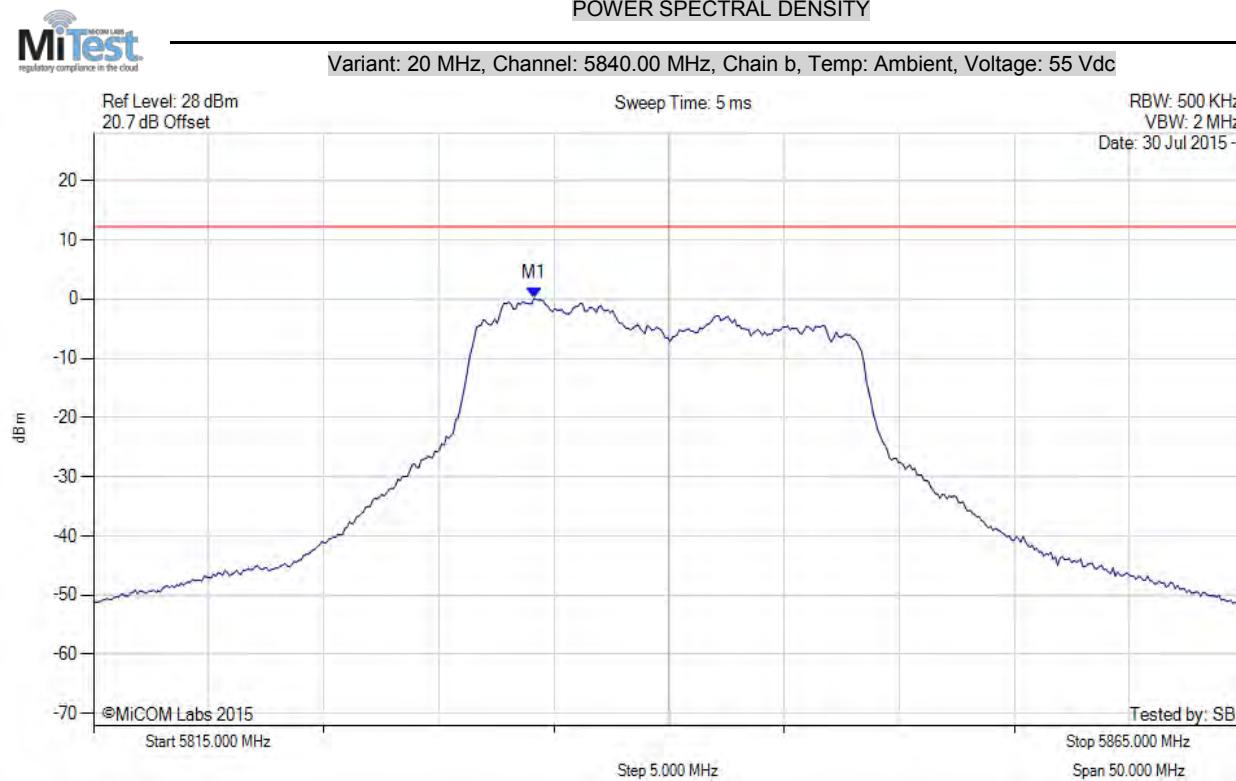
Variant: 20 MHz, Channel: 5840.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5837.545 MHz : -1.209 dBm | Channel Frequency: 5840.00 MHz |

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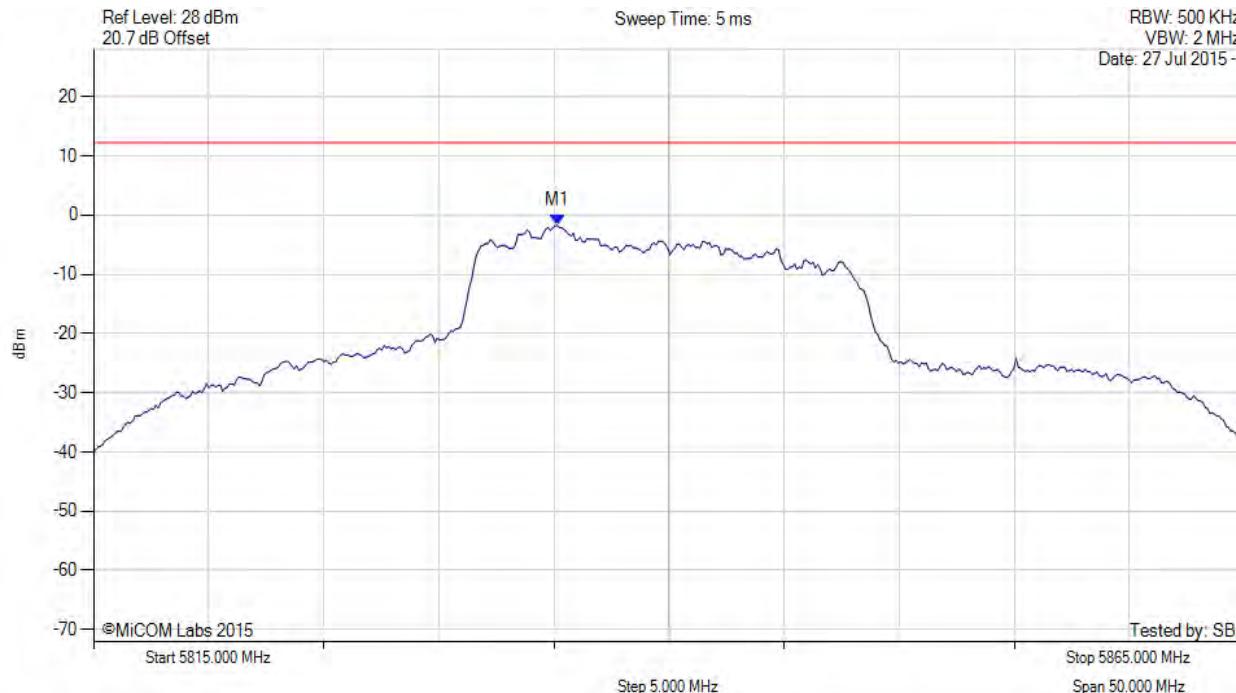
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5834.138 MHz : 0.078 dBm | Channel Frequency: 5840.00 MHz |

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POWER SPECTRAL DENSITY

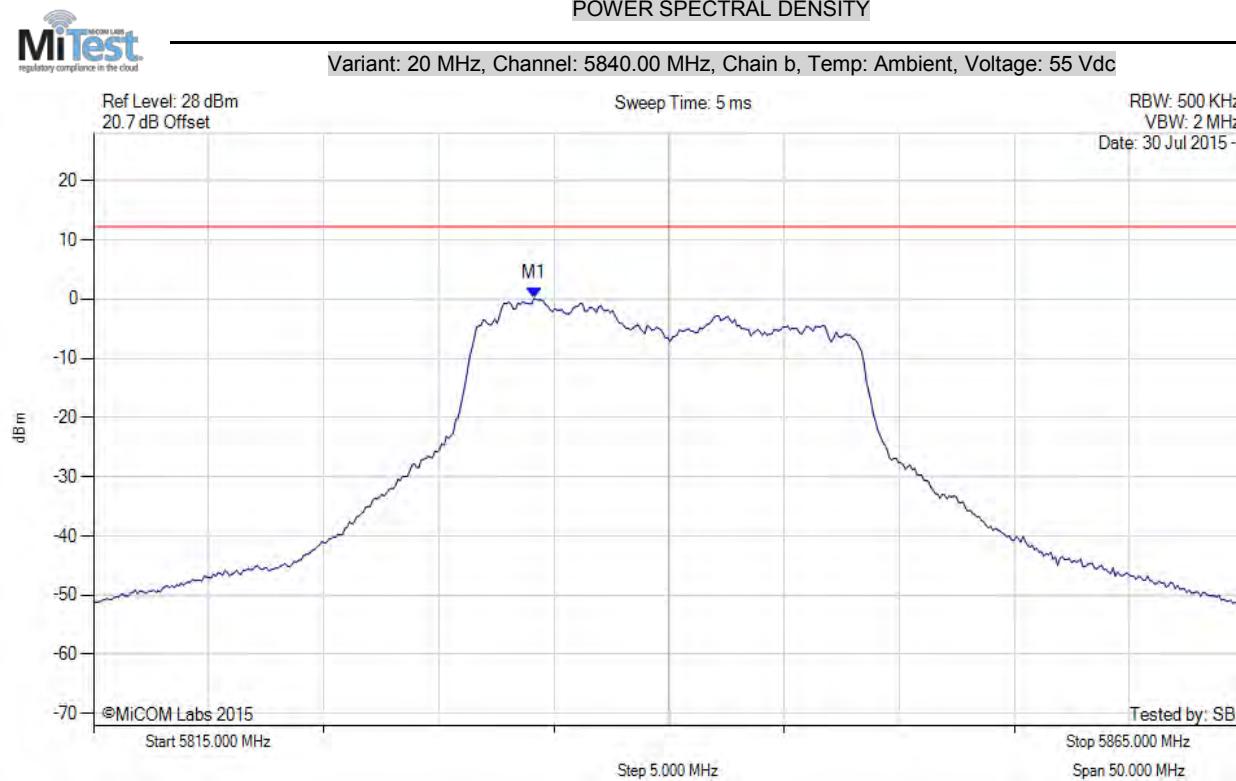
Variant: 20 MHz, Channel: 5840.00 MHz, Chain b, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5835.140 MHz : -1.731 dBm | Limit: ≤ 12.230 dBm |

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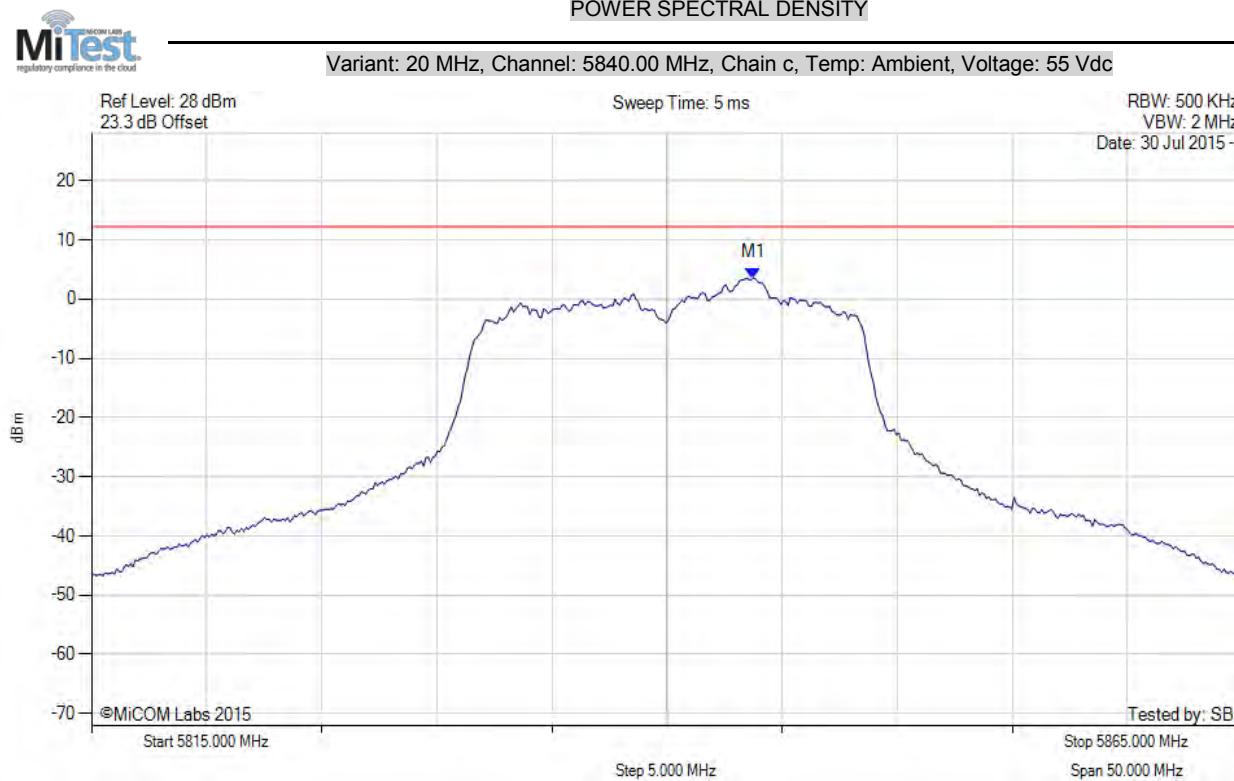
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5834.138 MHz : 0.078 dBm | Limit: ≤ 12.230 dBm |

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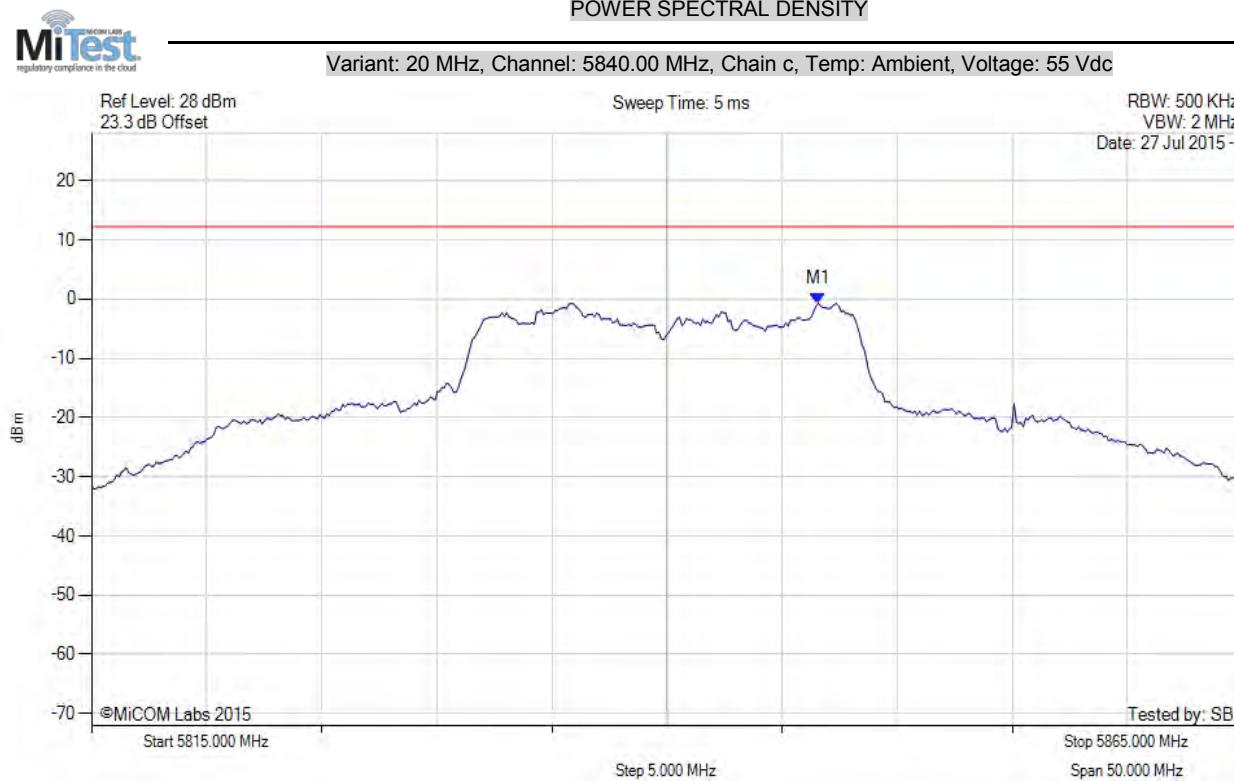
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.758 MHz : 3.550 dBm | Limit: ≤ 12.230 dBm |

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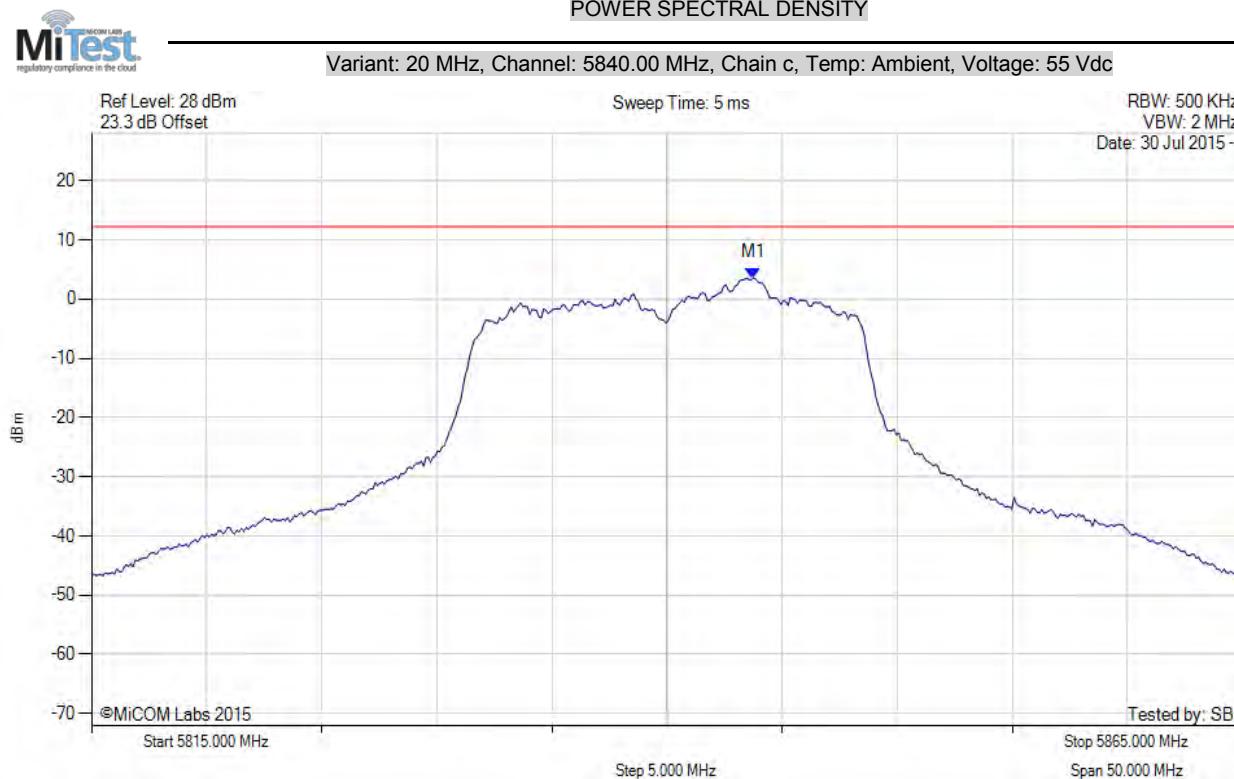
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5846.563 MHz : -0.696 dBm | Limit: ≤ 12.230 dBm |

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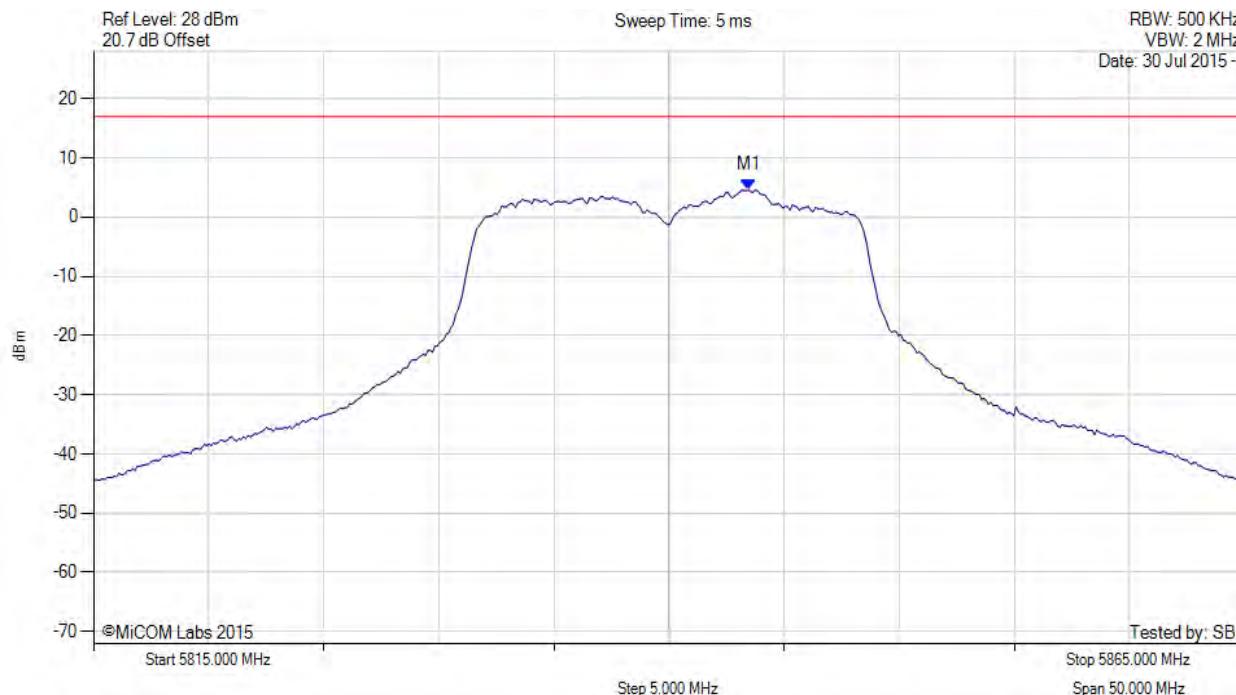
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.758 MHz : 3.550 dBm | Channel Frequency: 5840.00 MHz |

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POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5840.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



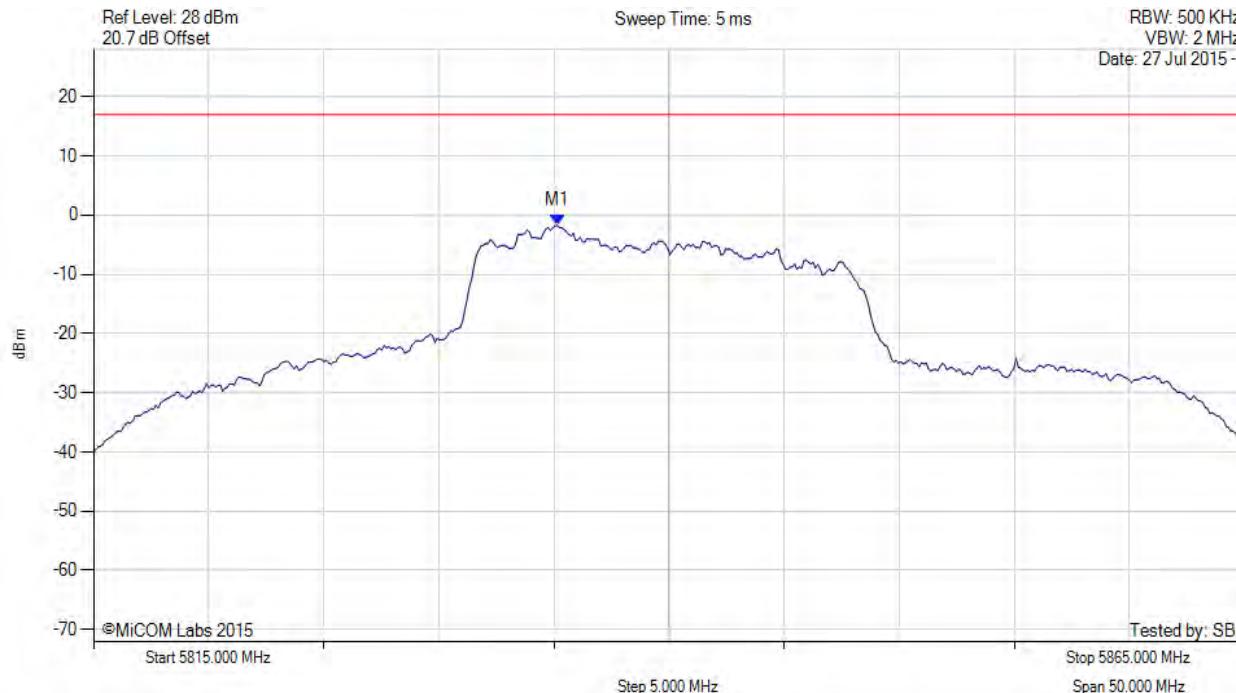
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.457 MHz : 4.586 dBm | Channel Frequency: 5840.00 MHz |

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POWER SPECTRAL DENSITY

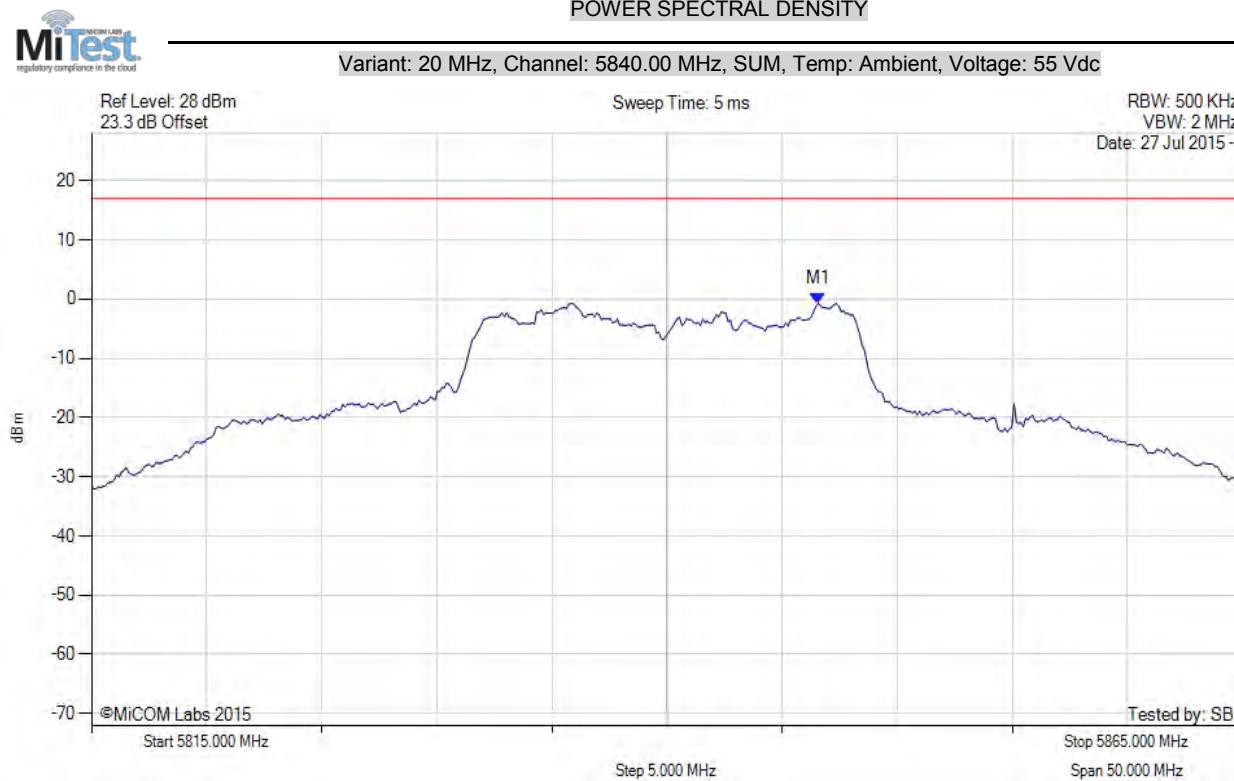
Variant: 20 MHz, Channel: 5840.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5835.100 MHz : -1.731 dBm M1 + DCCF : 5835.100 MHz : -1.061 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -18.0 dB |

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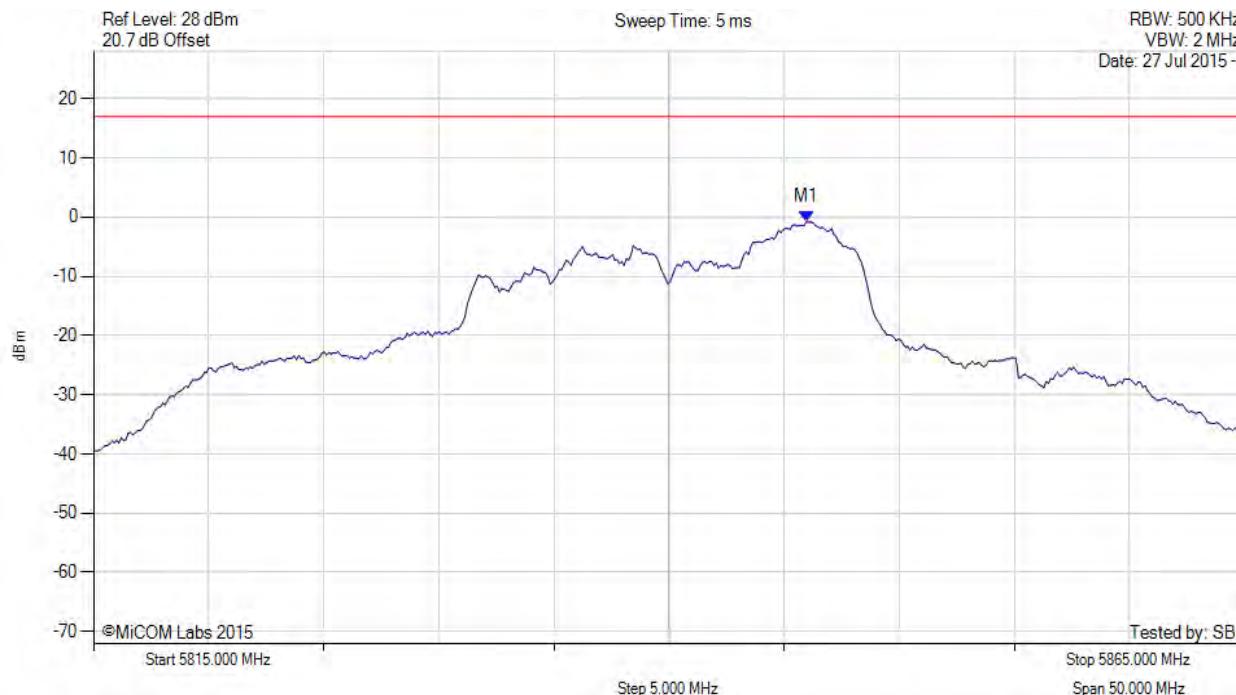
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5846.600 MHz : -0.696 dBm M1 + DCCF : 5846.600 MHz : -0.026 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -17.0 dB |

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POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5840.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



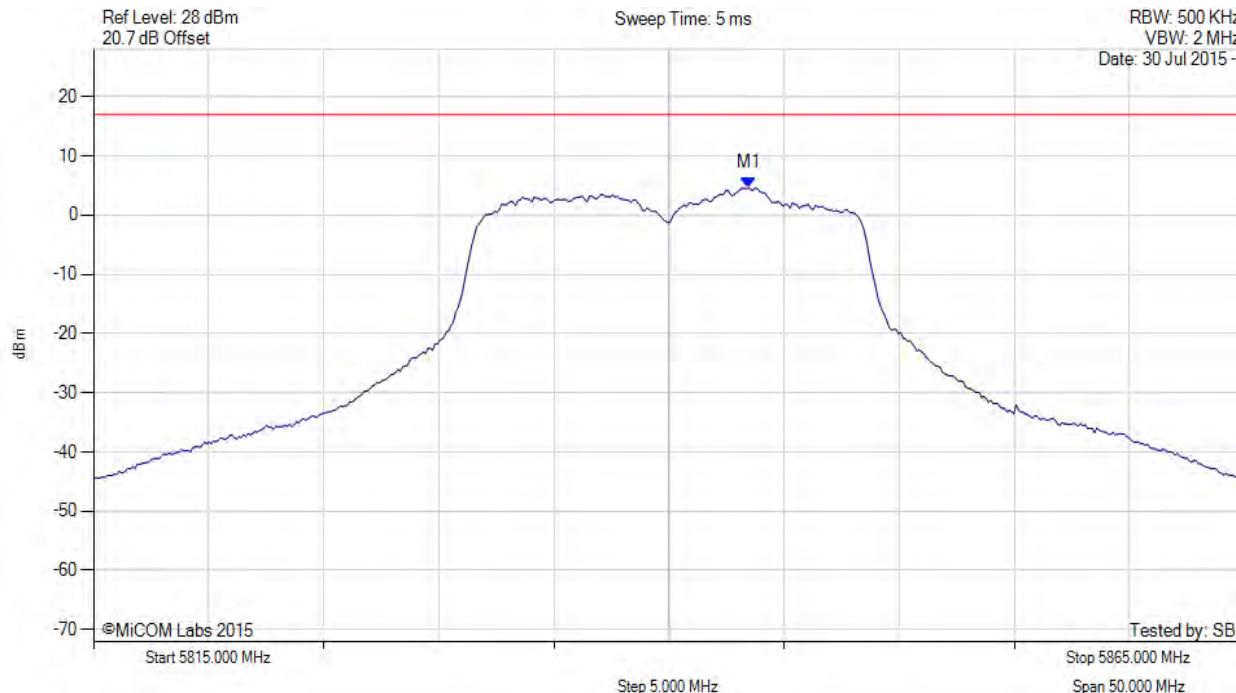
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5846.000 MHz : -0.800 dBm M1 + DCCF : 5846.000 MHz : -0.130 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -17.1 dB |

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POWER SPECTRAL DENSITY

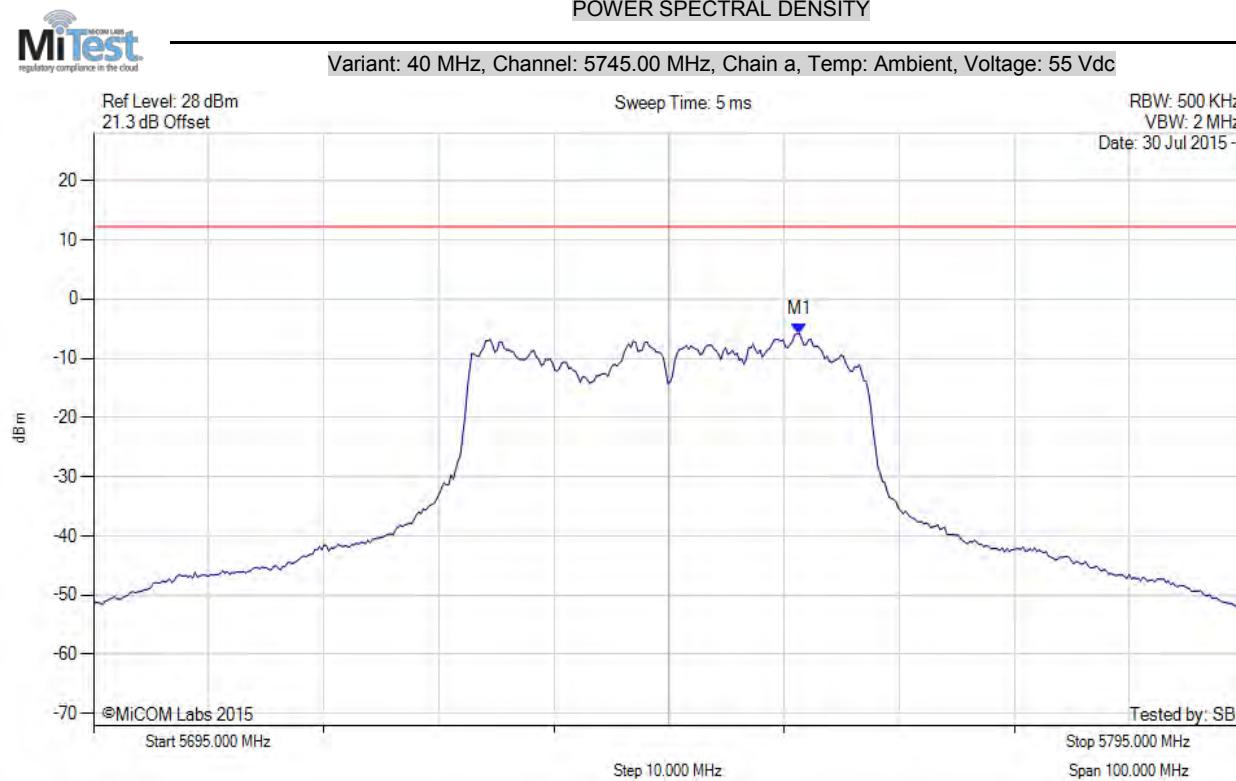
Variant: 20 MHz, Channel: 5840.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.500 MHz : 4.586 dBm M1 + DCCF : 5843.500 MHz : 5.256 dBm Duty Cycle Correction Factor : +0.66 dB | Limit: ≤ 17.0 dBm Margin: -11.7 dB |

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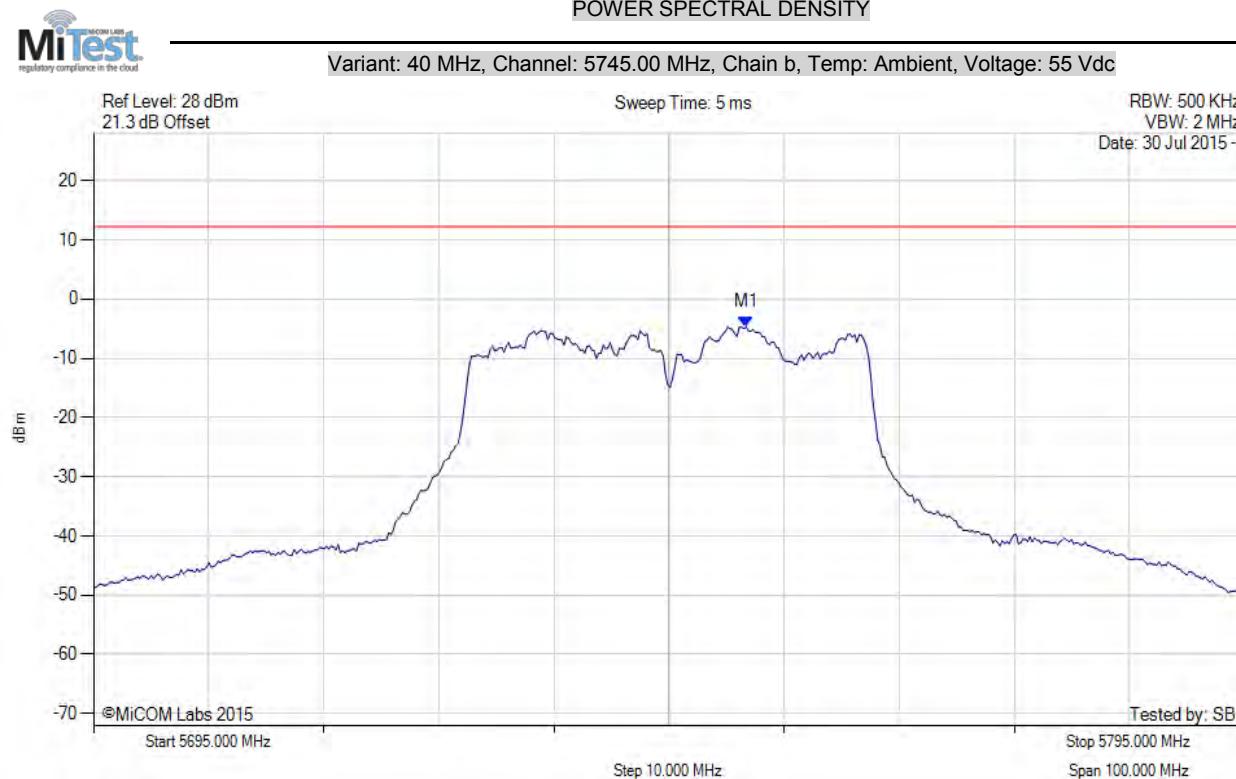
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5756.323 MHz : -5.833 dBm | Limit: ≤ 12.230 dBm |

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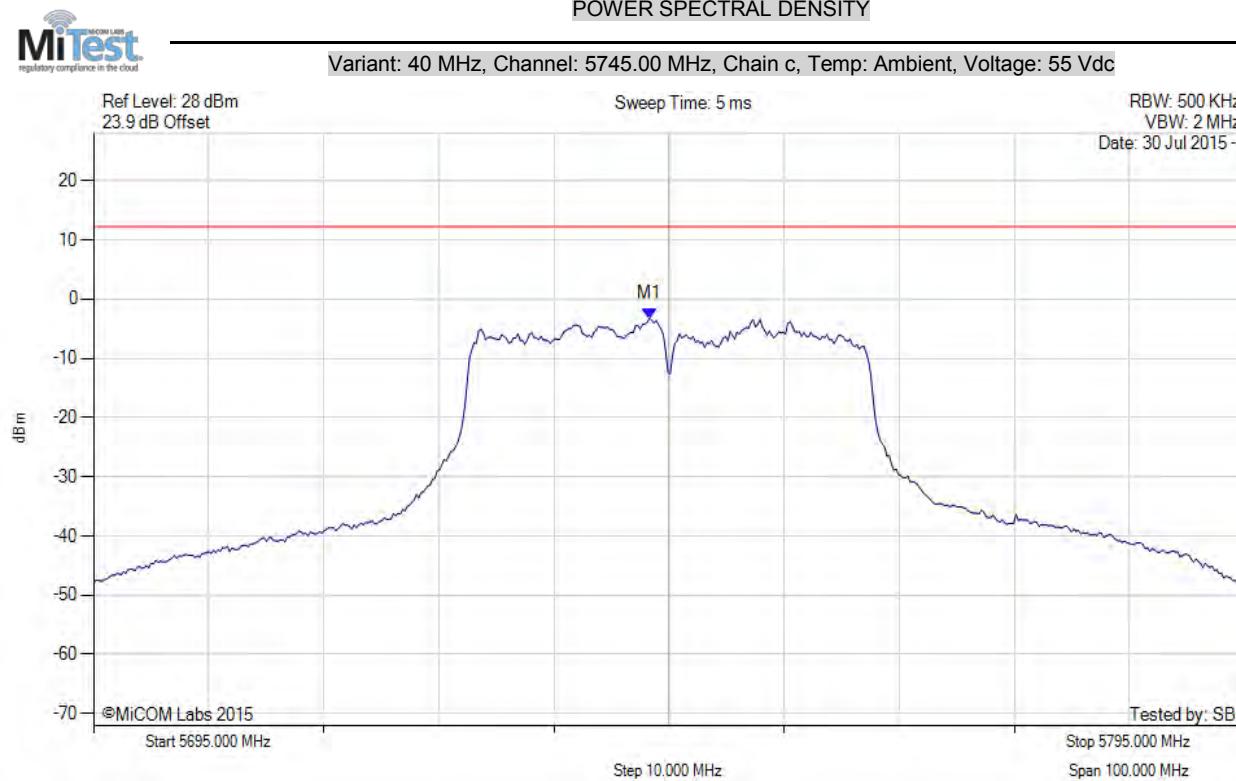
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5751.713 MHz : -4.677 dBm | Limit: ≤ 12.230 dBm |

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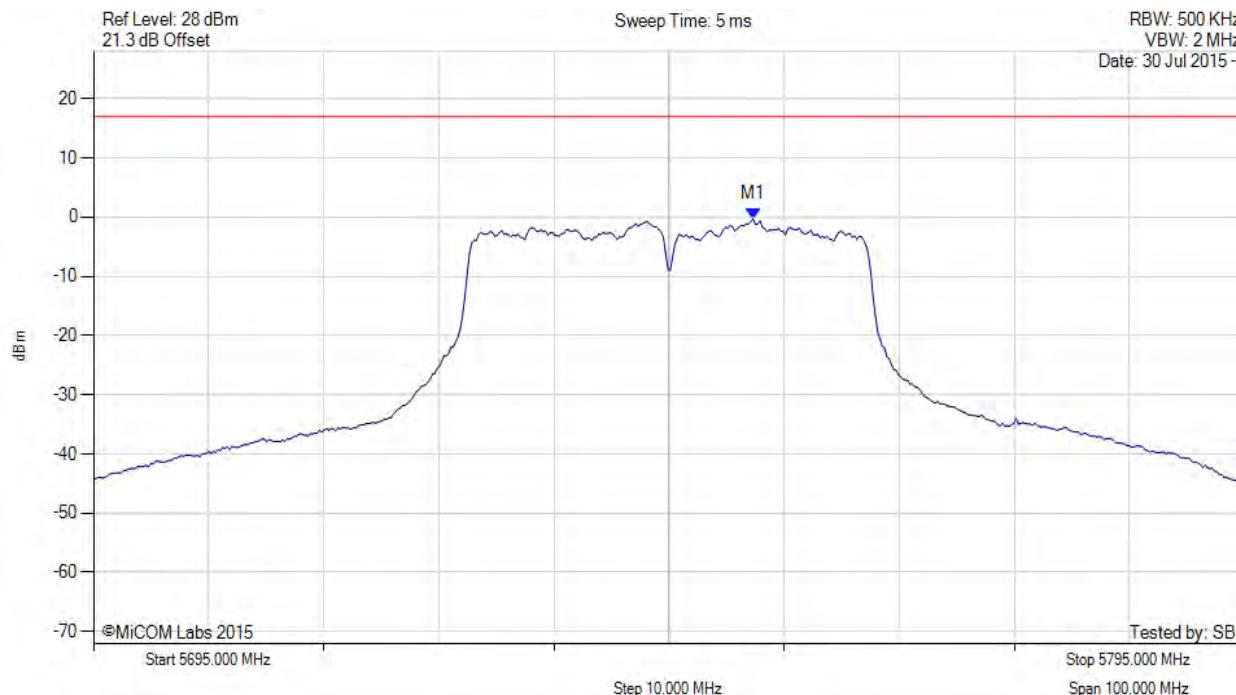
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5743.297 MHz : -3.282 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5745.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



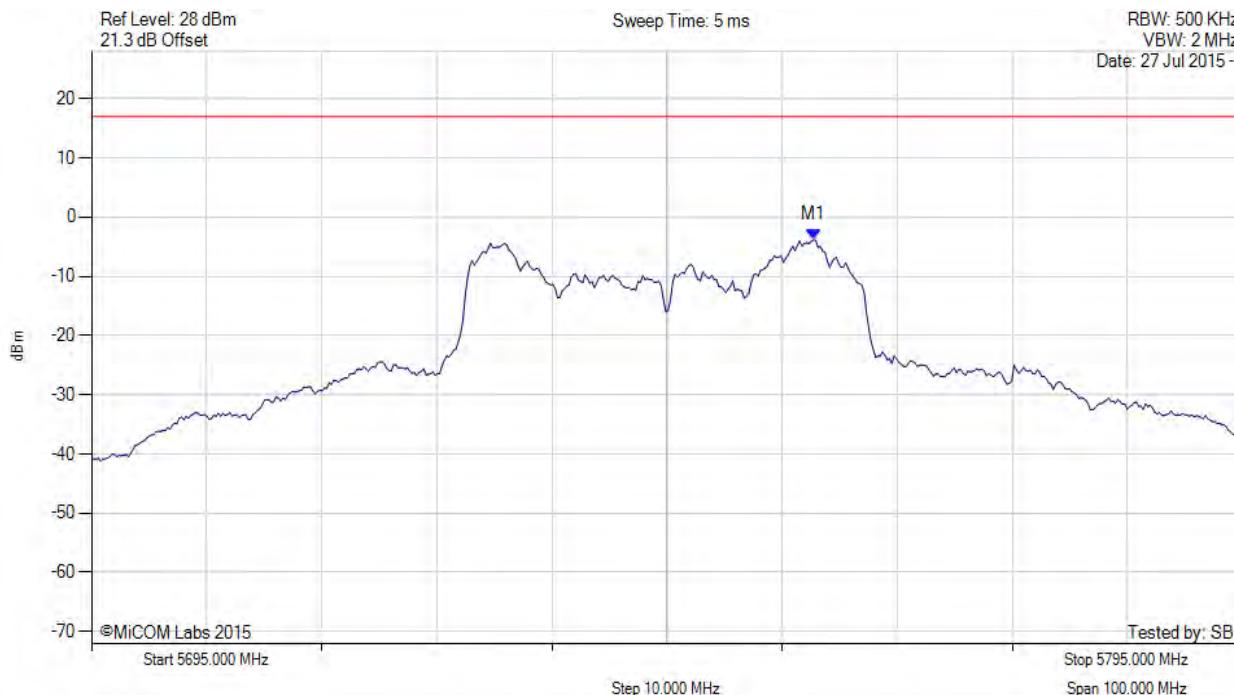
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5752.300 MHz : -0.298 dBm M1 + DCCF : 5752.300 MHz : 0.601 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -16.4 dB |

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POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5745.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



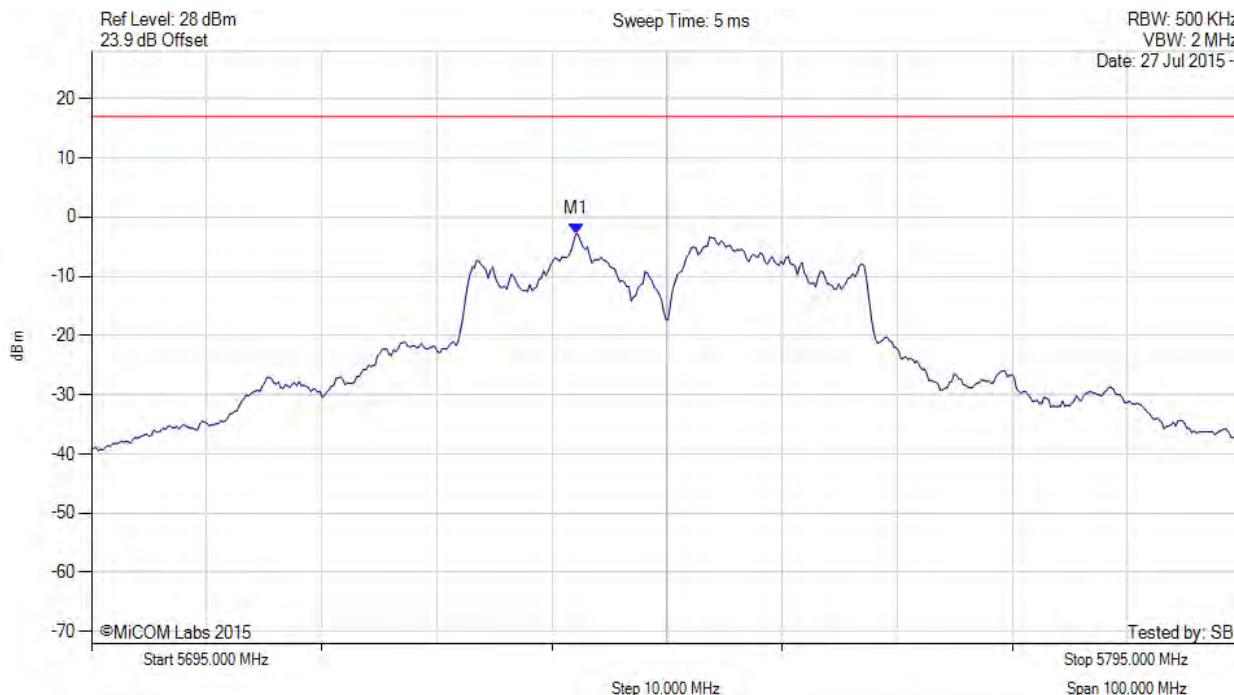
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5757.700 MHz : -3.845 dBm M1 + DCCF : 5757.700 MHz : -2.946 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -19.9 dB |

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POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5745.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



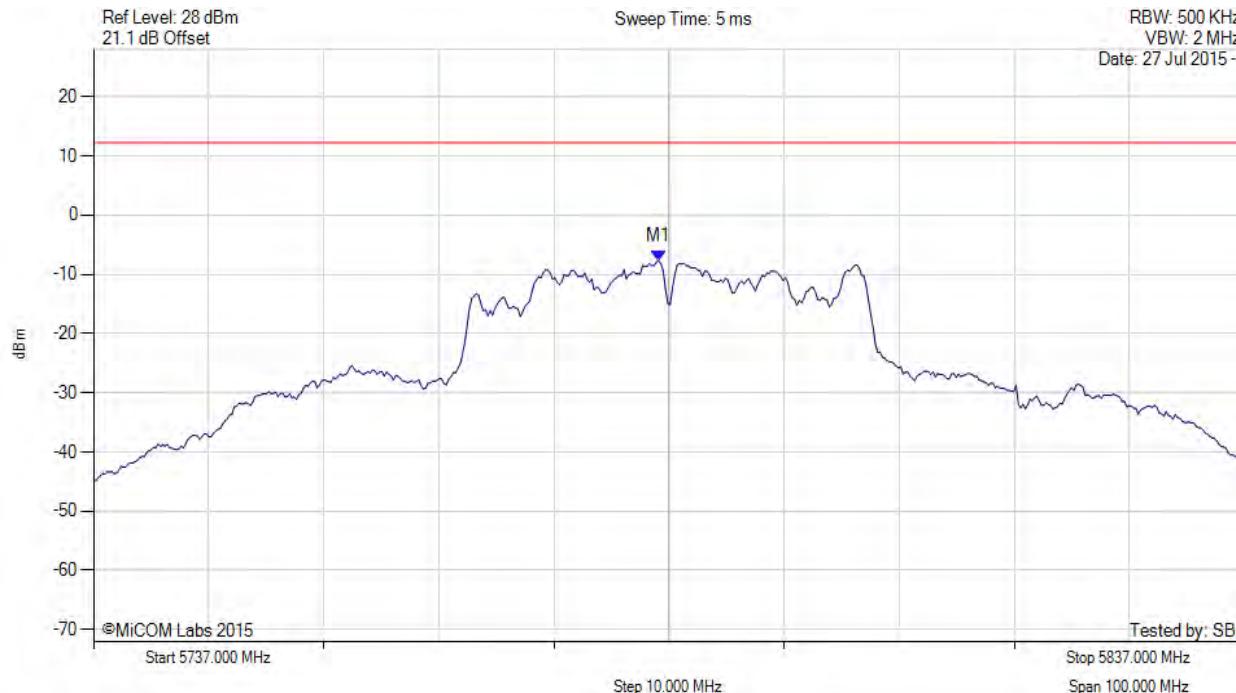
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5737.100 MHz : -2.820 dBm M1 + DCCF : 5737.100 MHz : -1.921 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -18.9 dB |

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POWER SPECTRAL DENSITY

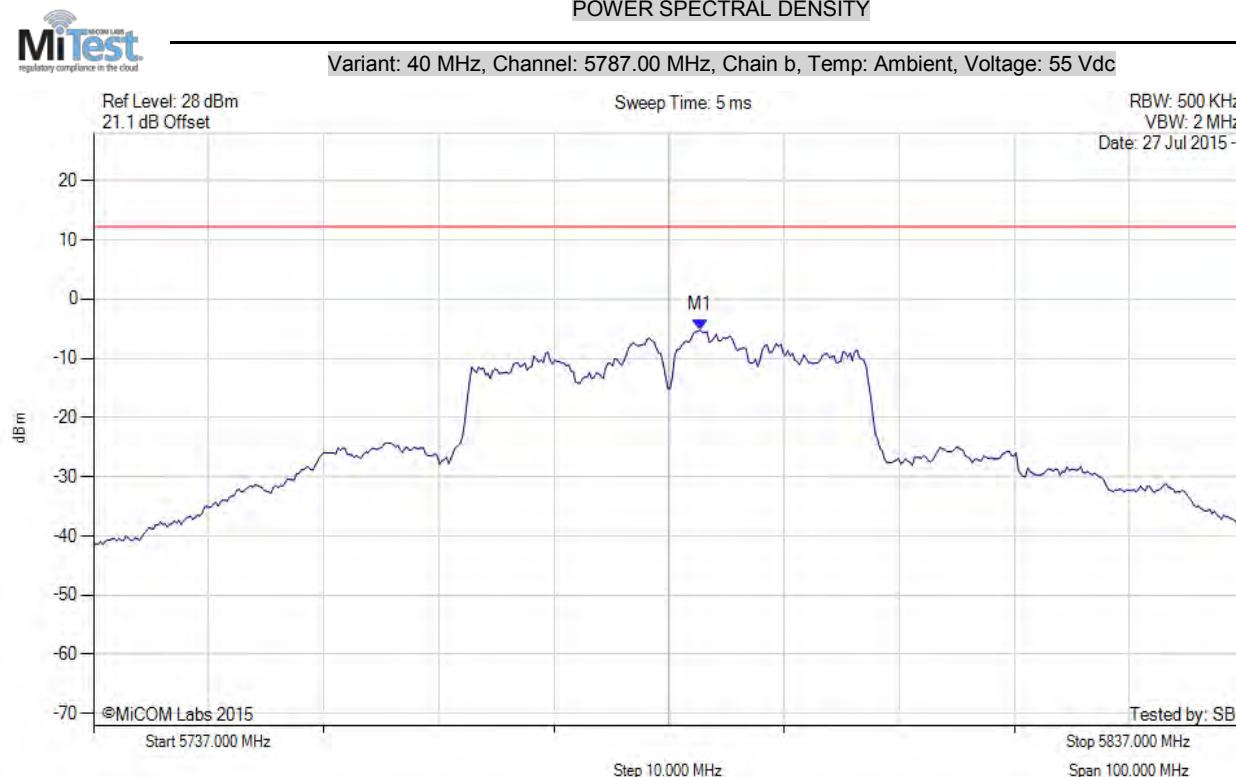
Variant: 40 MHz, Channel: 5787.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5786.098 MHz : -7.698 dBm | Limit: ≤ 12.230 dBm |

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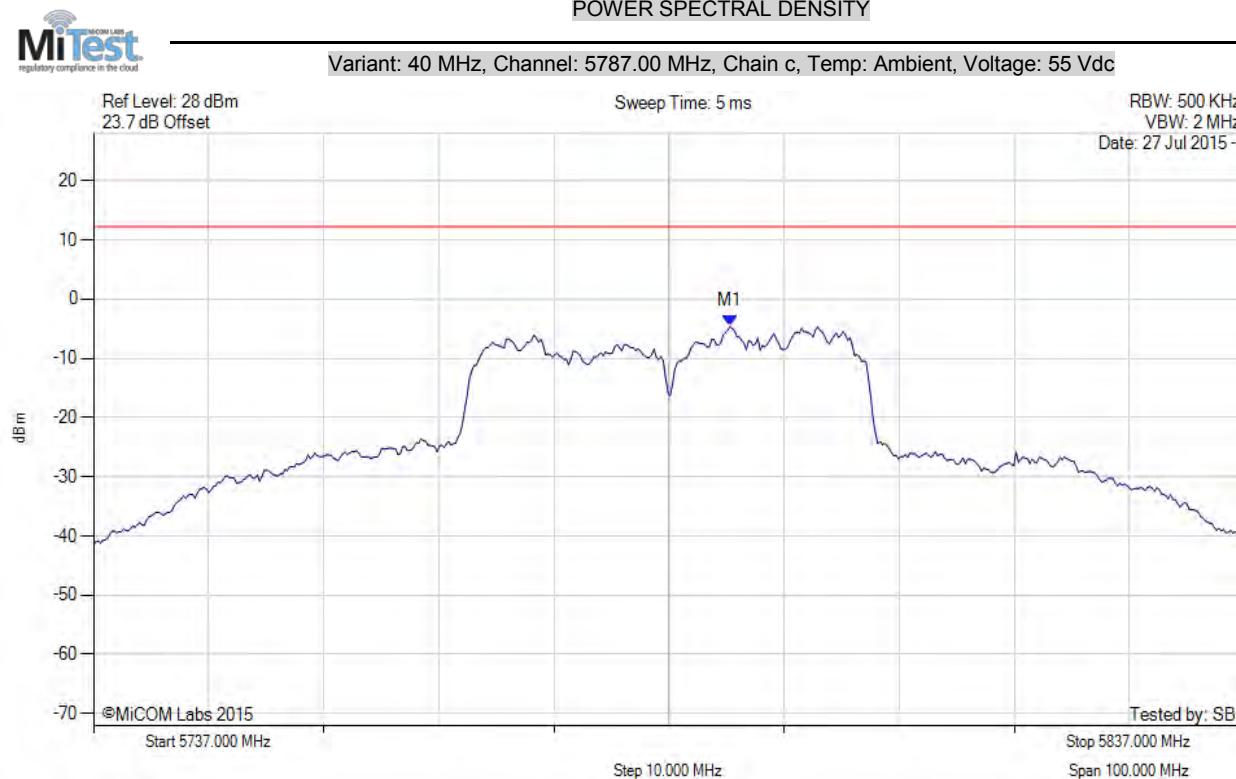
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.705 MHz : -5.218 dBm | Channel Frequency: 5787.00 MHz |

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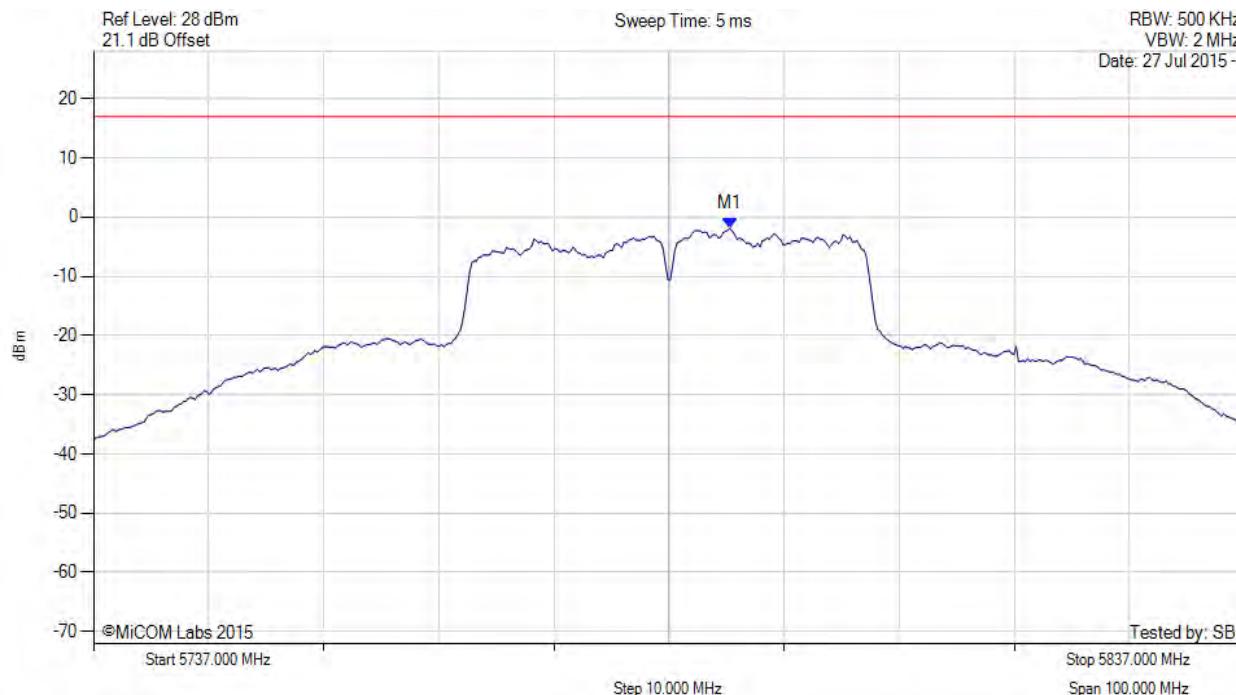
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5792.311 MHz : -4.612 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



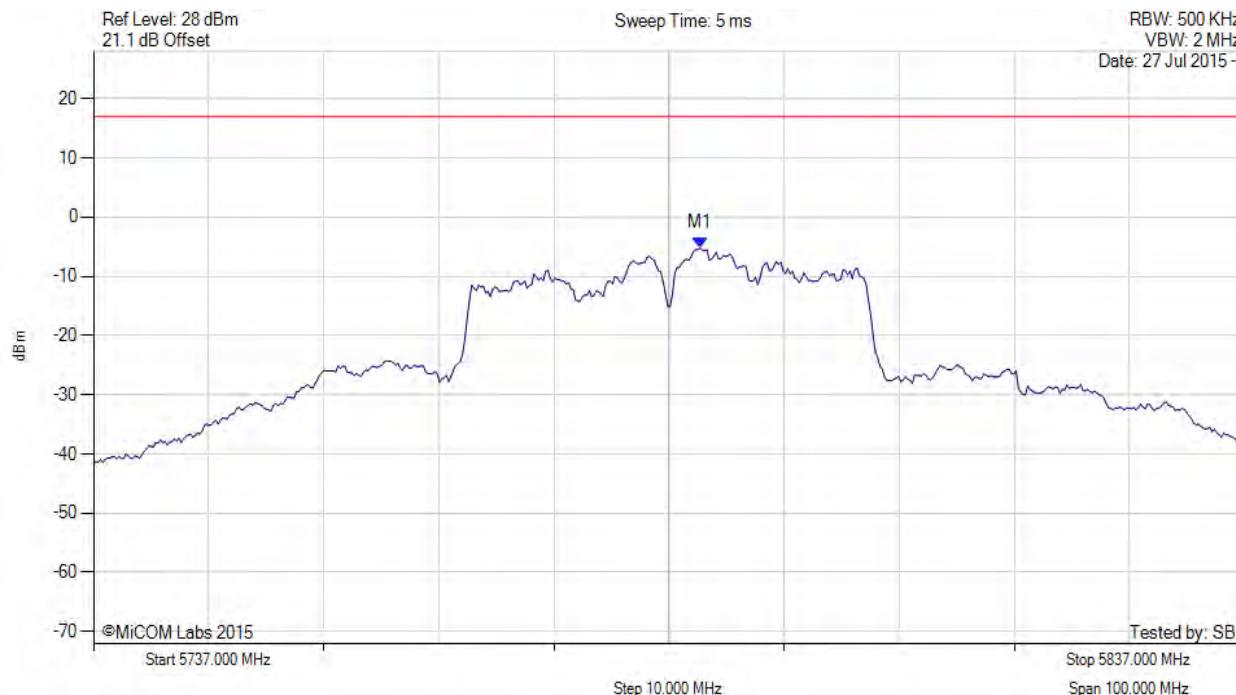
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5792.300 MHz : -1.905 dBm M1 + DCCF : 5792.300 MHz : -1.006 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -18.0 dB |

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POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



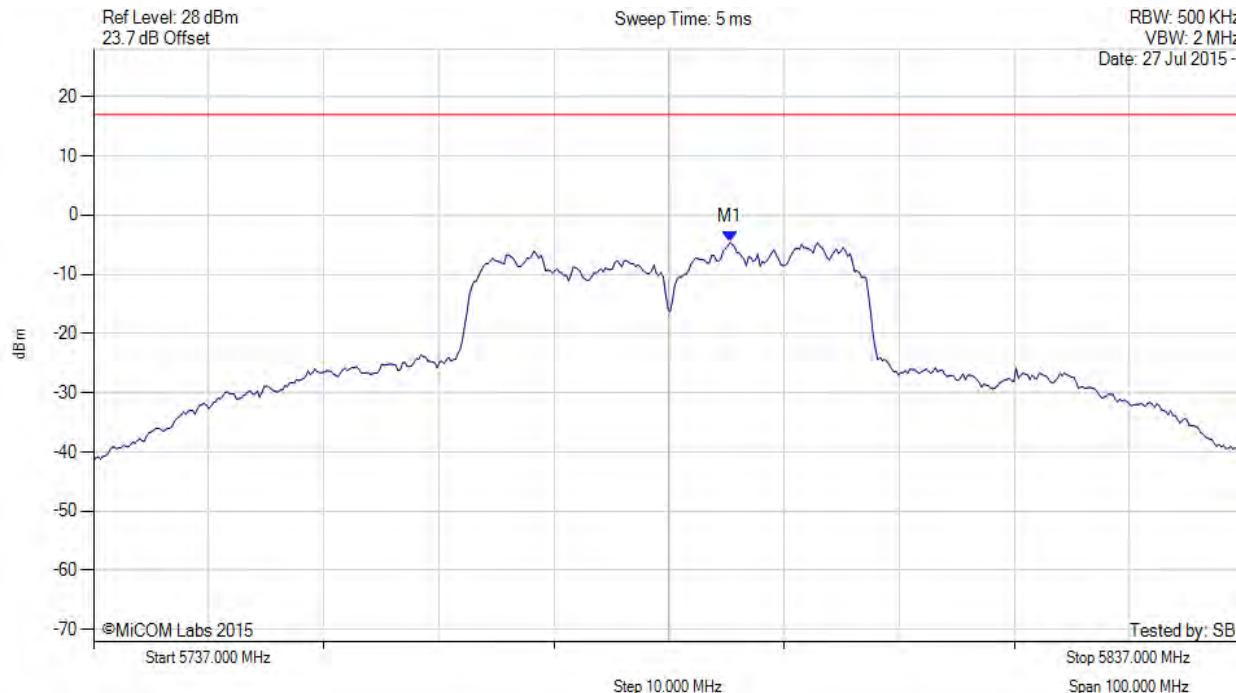
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.700 MHz : -5.218 dBm M1 + DCCF : 5789.700 MHz : -4.319 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -21.3 dB |

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POWER SPECTRAL DENSITY

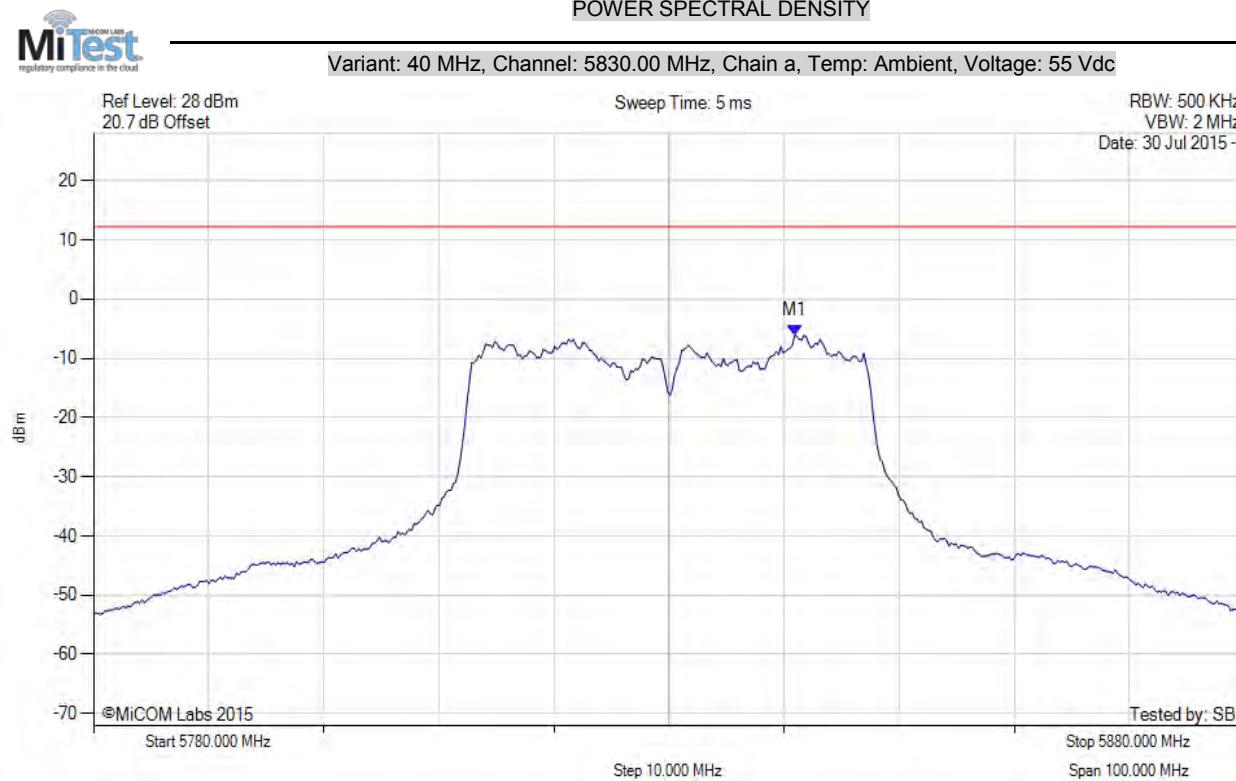
Variant: 40 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5792.300 MHz : -4.612 dBm M1 + DCCF : 5792.300 MHz : -3.713 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -20.7 dB |

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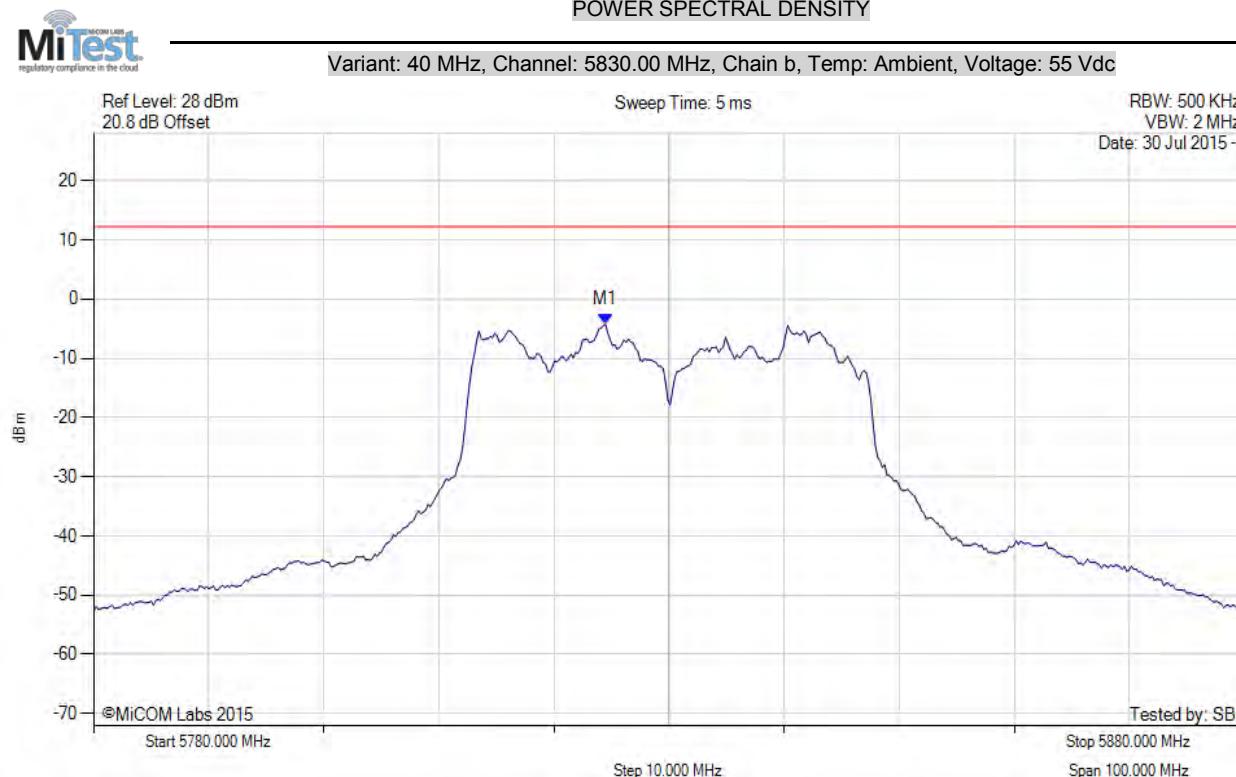
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5840.922 MHz : -6.090 dBm | Limit: ≤ 12.230 dBm |

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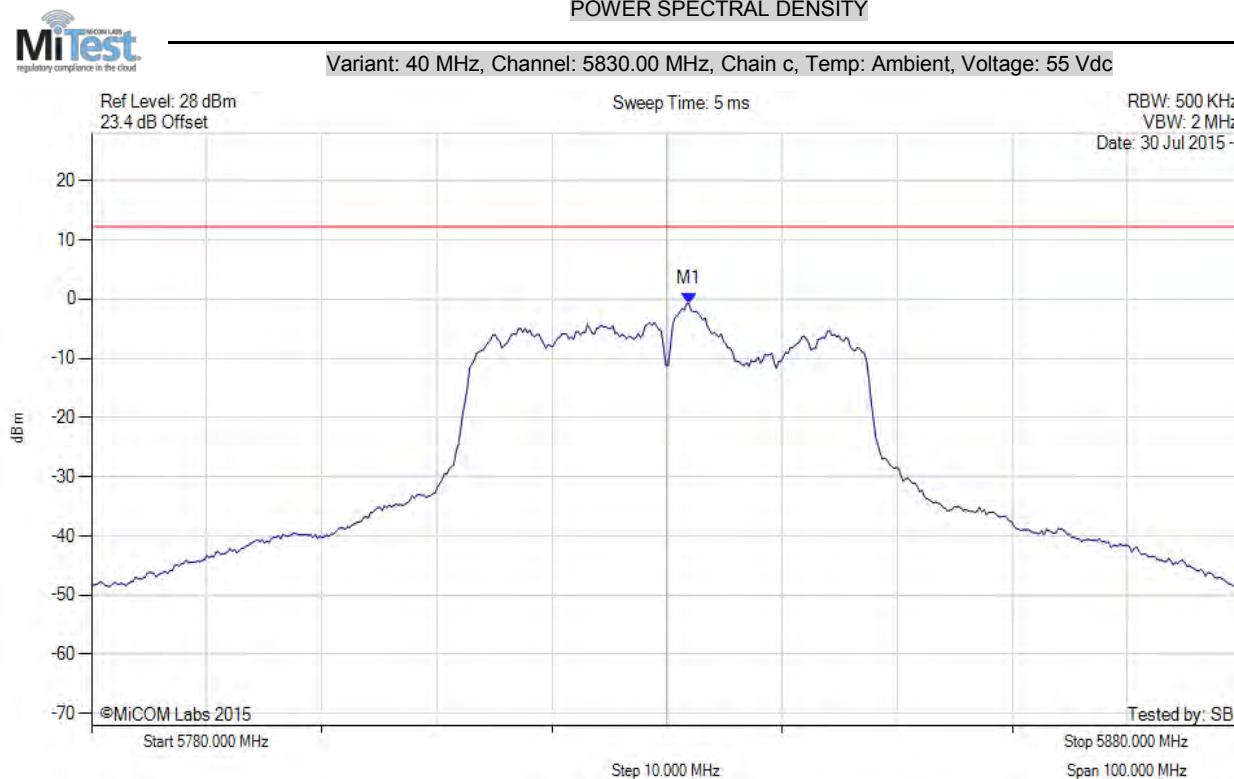
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5824.489 MHz : -4.276 dBm | Limit: ≤ 12.230 dBm |

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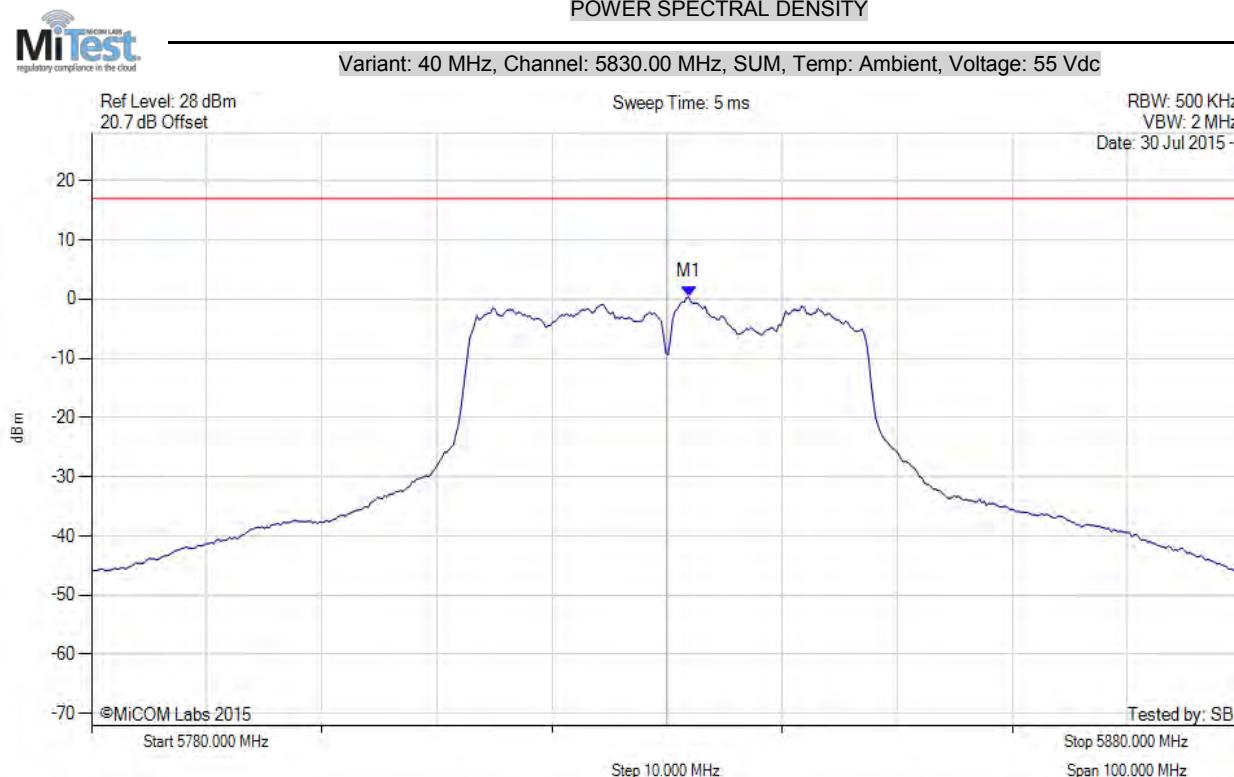
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5831.904 MHz : -0.749 dBm | Limit: ≤ 12.230 dBm |

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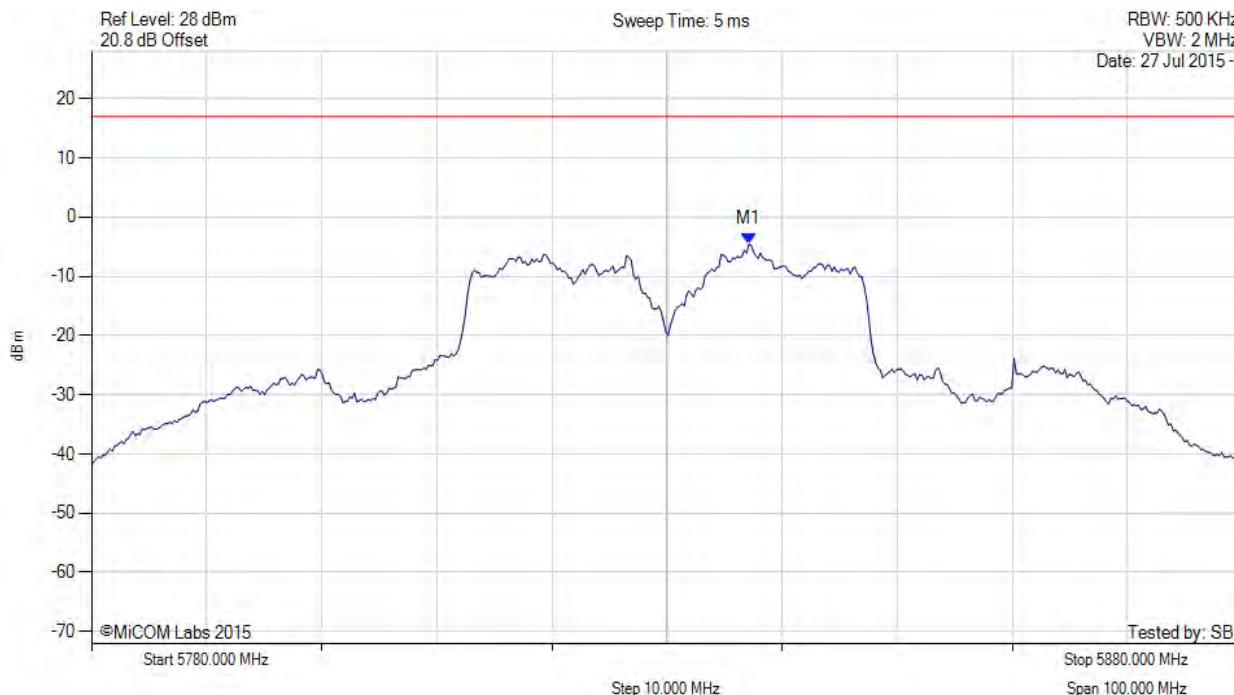
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5831.900 MHz : 0.306 dBm M1 + DCCF : 5831.900 MHz : 1.205 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -15.8 dB |

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POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5830.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



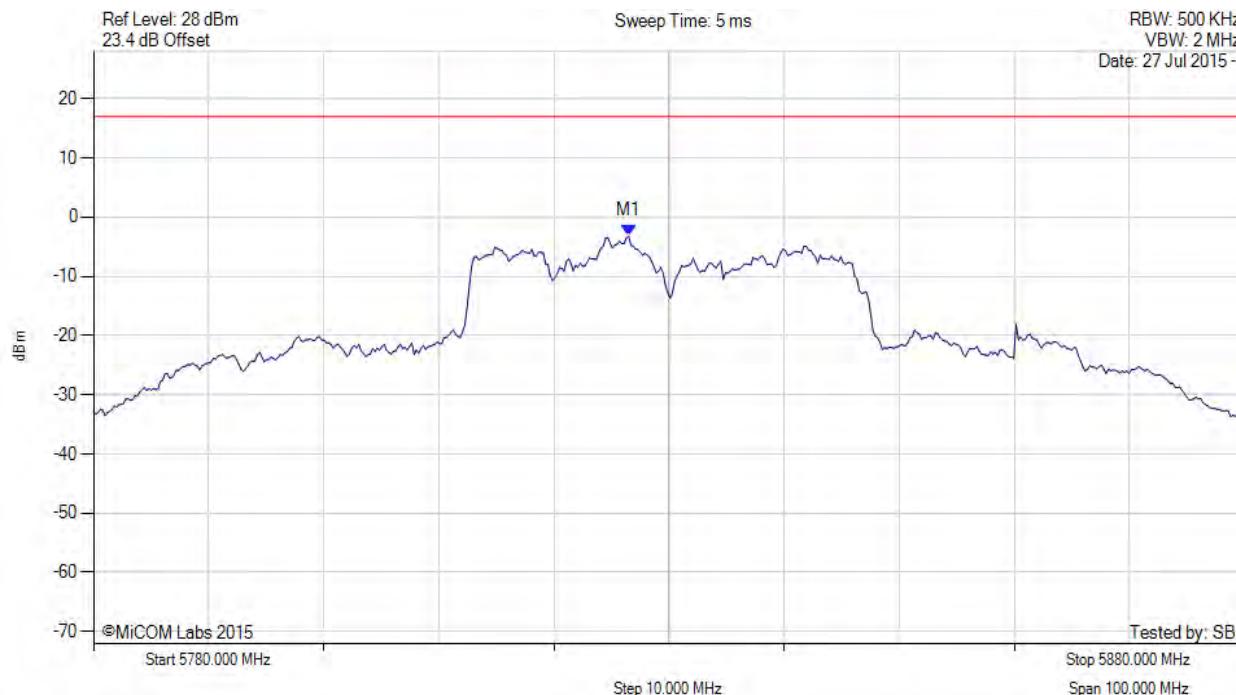
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5837.100 MHz : -4.606 dBm M1 + DCCF : 5837.100 MHz : -3.707 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -20.7 dB |

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POWER SPECTRAL DENSITY

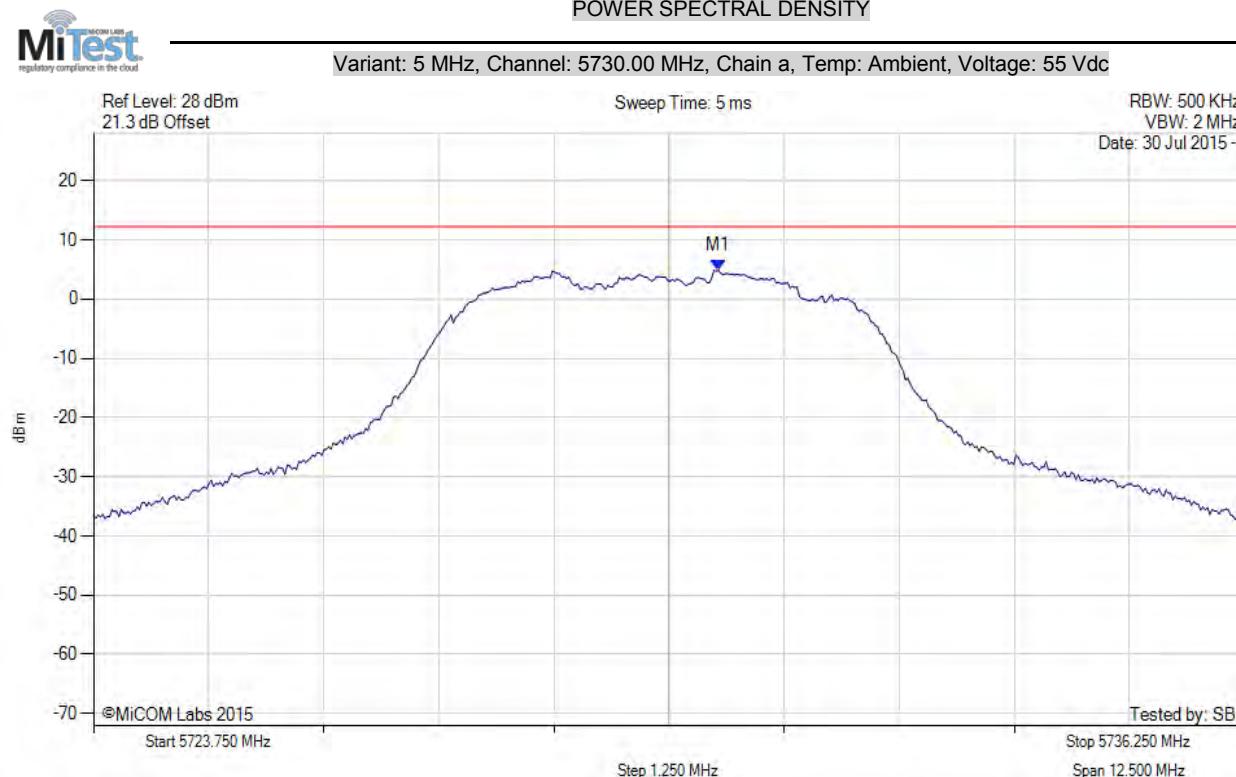
Variant: 40 MHz, Channel: 5830.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5826.500 MHz : -3.205 dBm M1 + DCCF : 5826.500 MHz : -2.306 dBm Duty Cycle Correction Factor : +0.92 dB | Limit: ≤ 17.0 dBm Margin: -19.3 dB |

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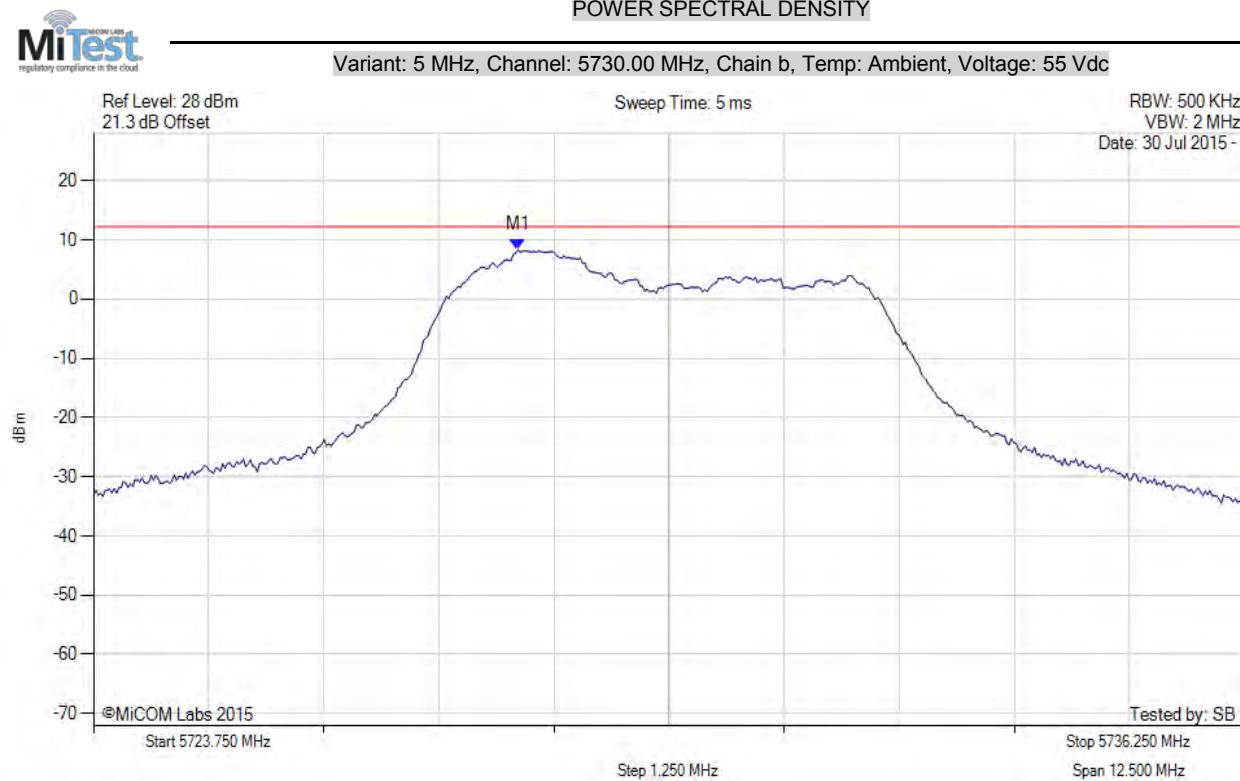
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5730.539 MHz : 4.858 dBm | Limit: ≤ 12.230 dBm |

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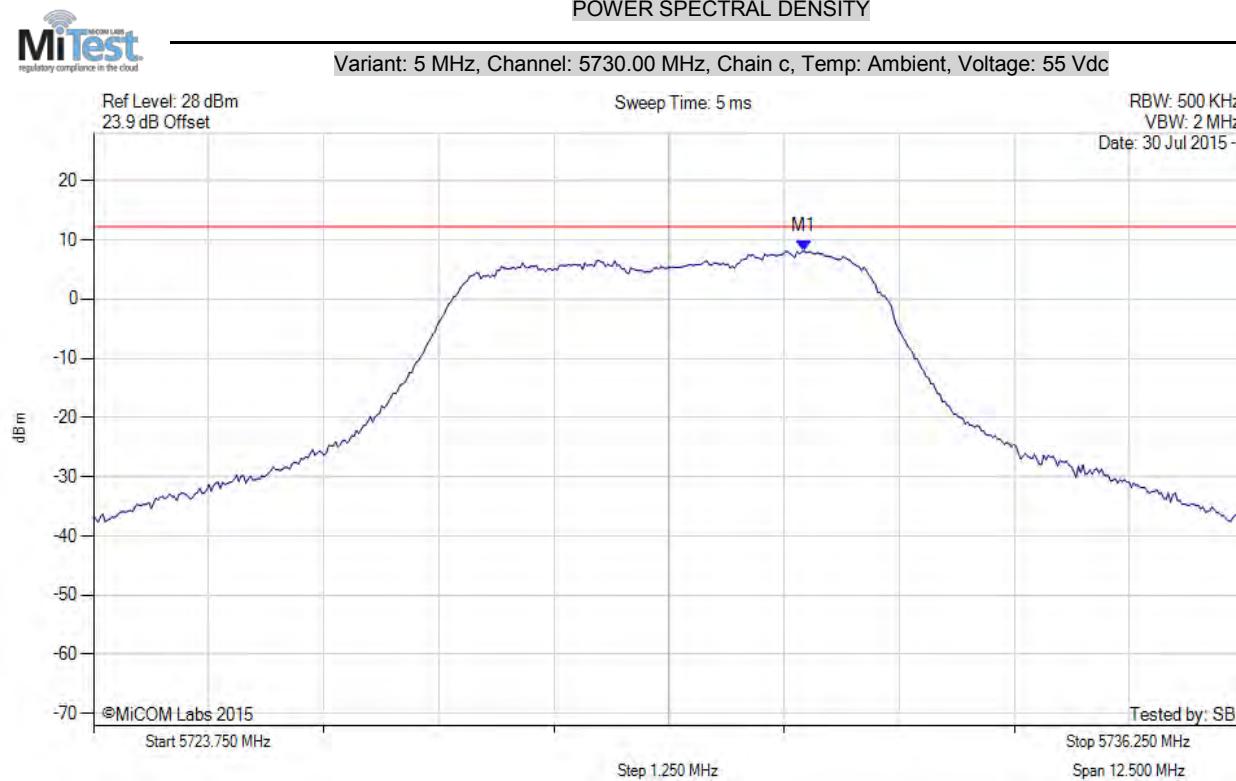
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5728.359 MHz : 8.284 dBm | Limit: ≤ 12.230 dBm |

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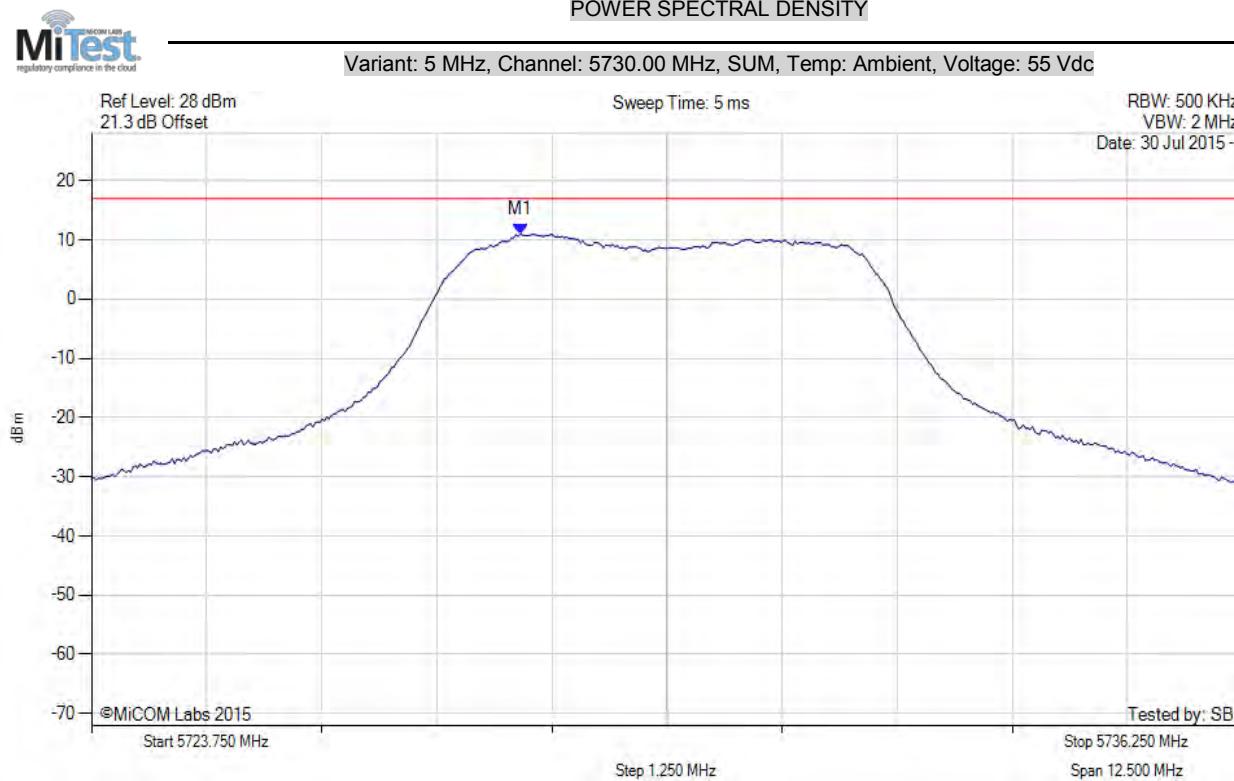
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5731.465 MHz : 8.111 dBm | Limit: ≤ 12.230 dBm |

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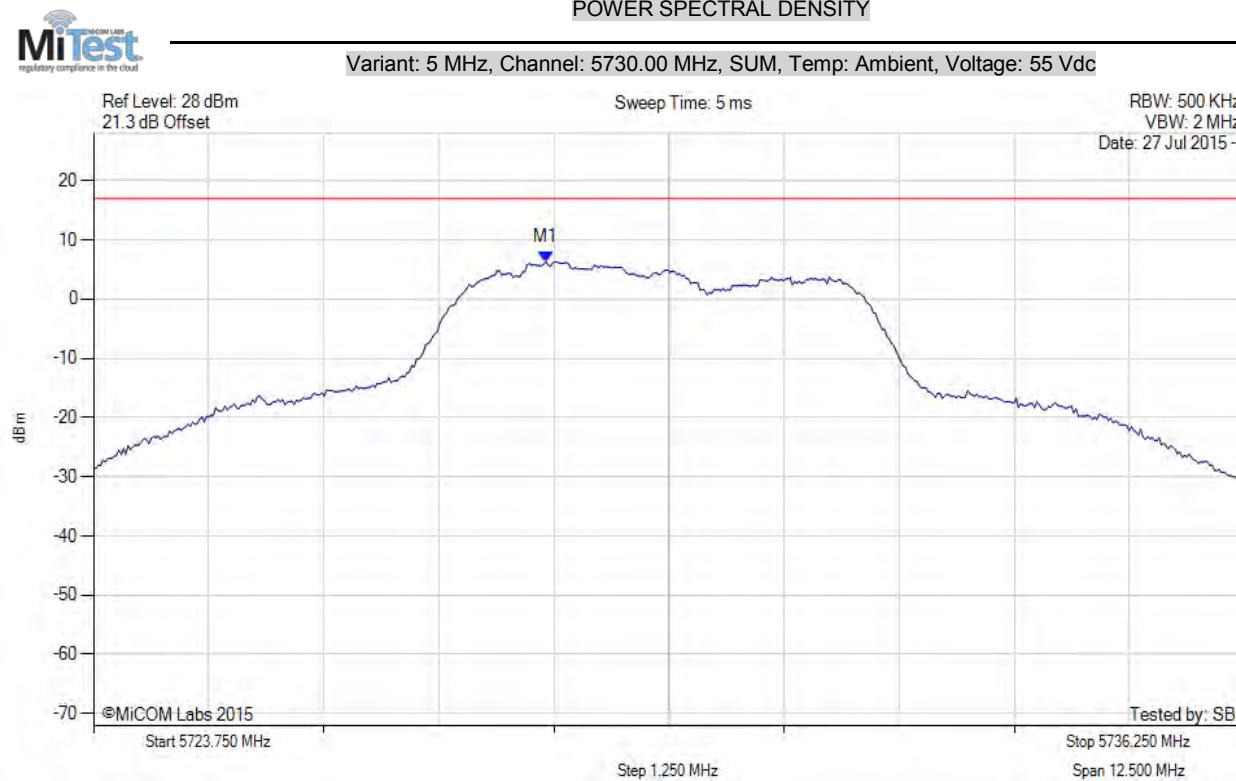
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|--------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5728.400 MHz : 10.997 dBm M1 + DCCF : 5728.400 MHz : 11.552 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -5.4 dB |

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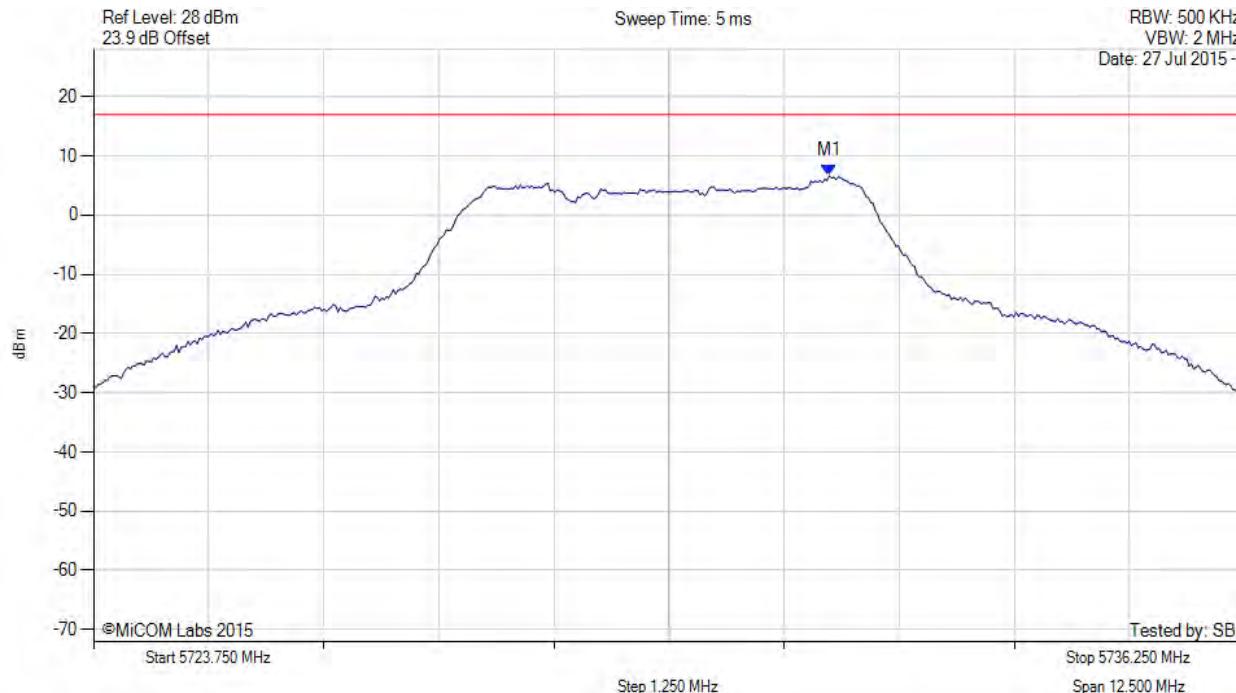
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5728.700 MHz : 6.319 dBm M1 + DCCF : 5728.700 MHz : 6.874 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -10.1 dB |

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POWER SPECTRAL DENSITY

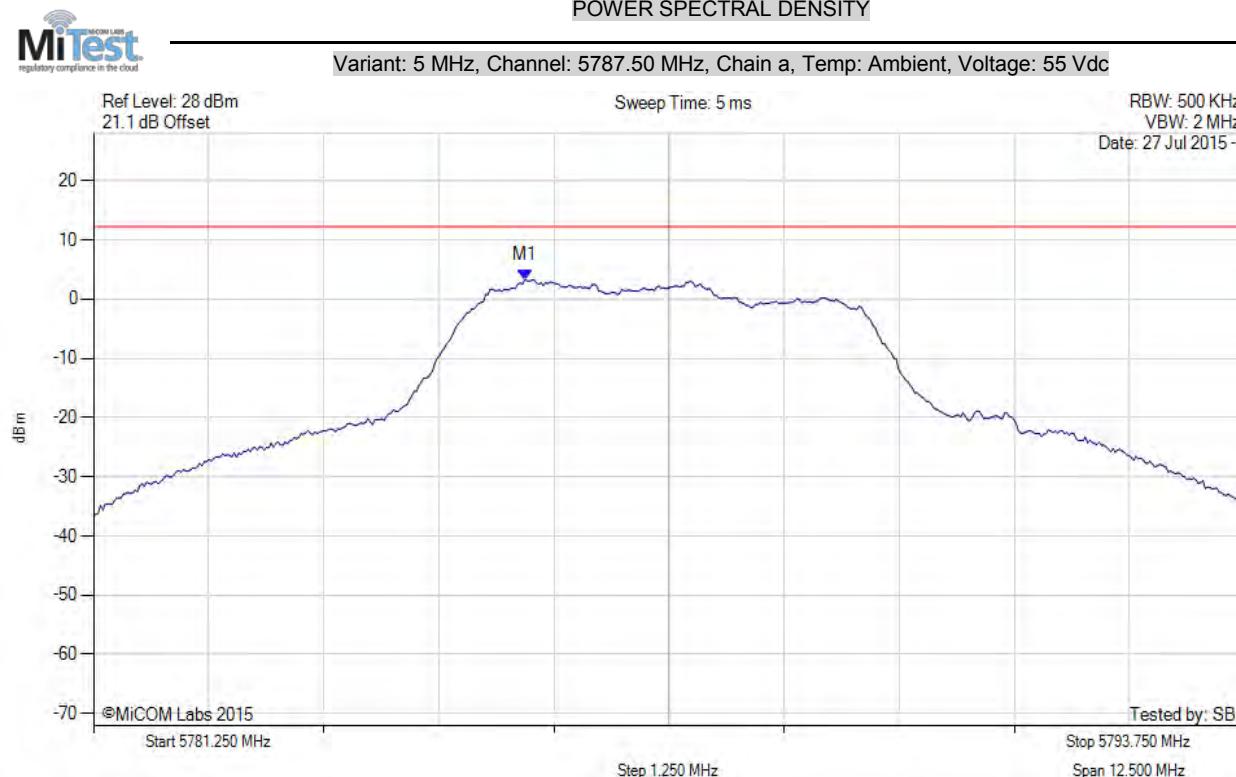
Variant: 5 MHz, Channel: 5730.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|--------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5731.700 MHz : 6.626 dBm M1 + DCCF : 5731.700 MHz : 7.181 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -9.8 dB |

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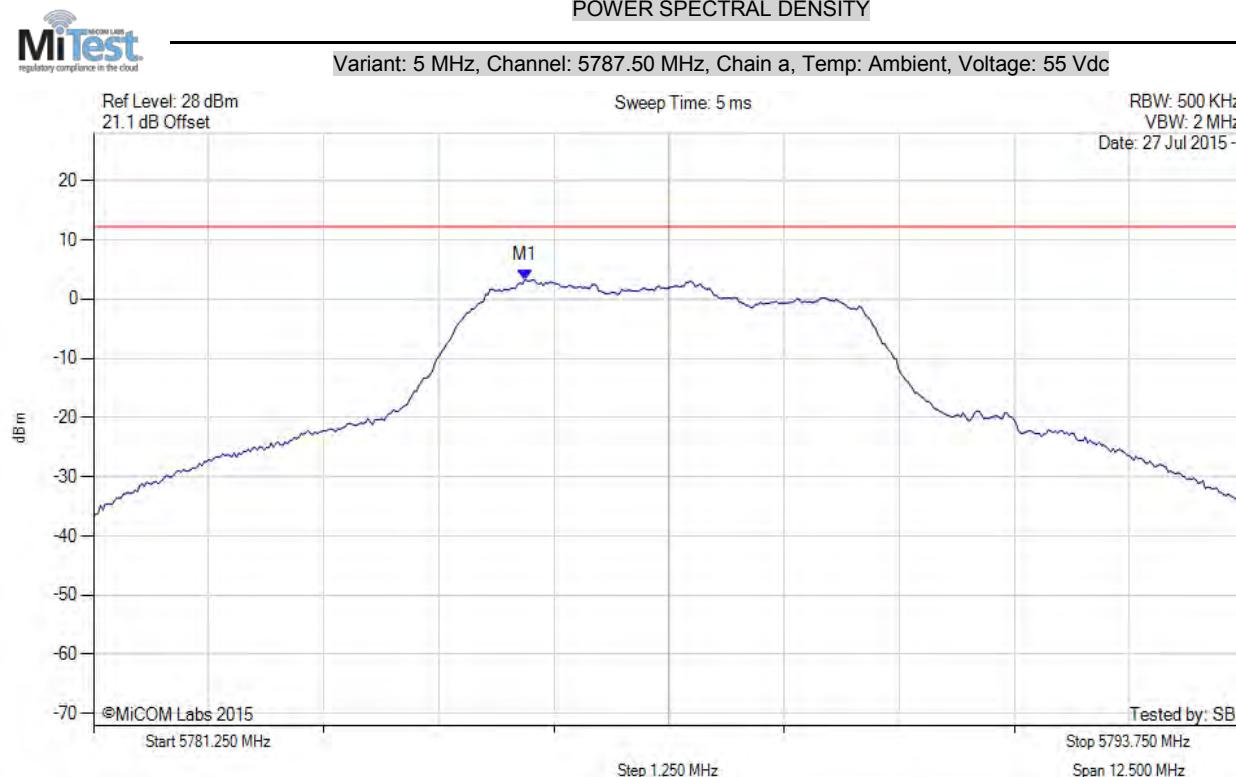
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5785.934 MHz : 3.279 dBm | Limit: ≤ 12.230 dBm |

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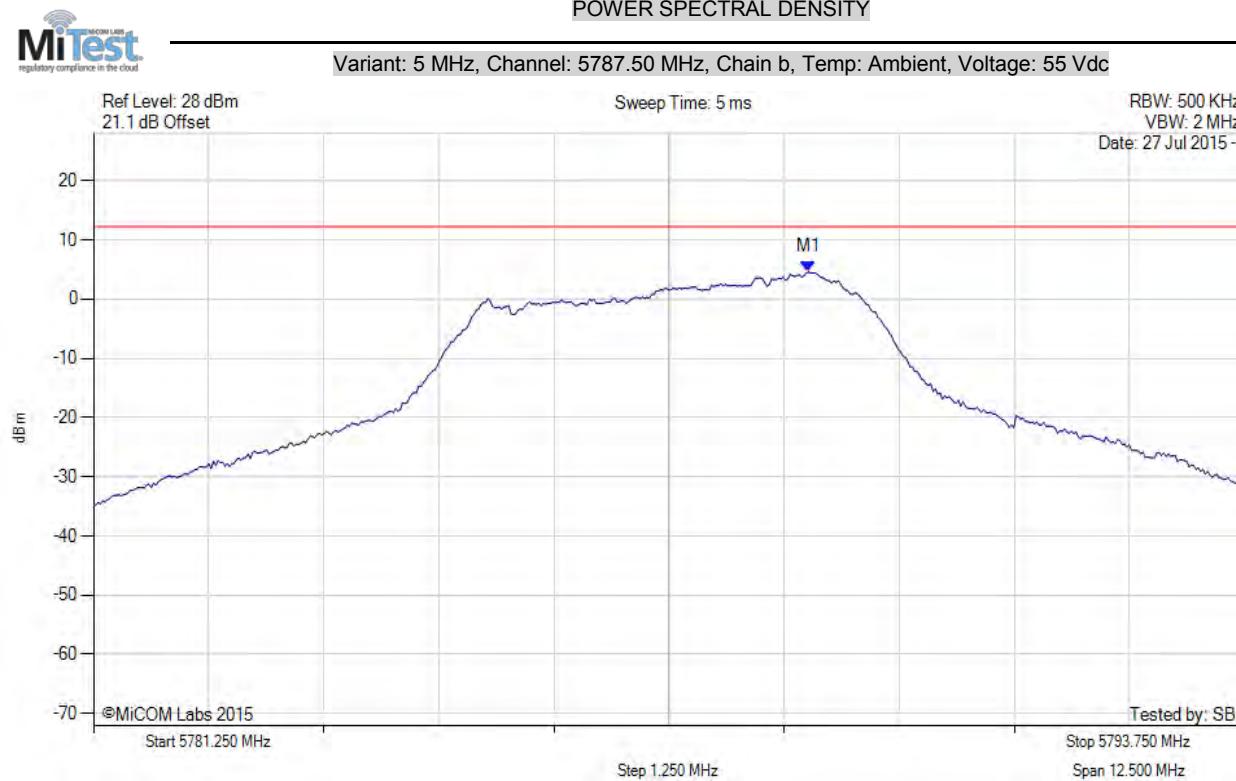
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5785.934 MHz : 3.279 dBm | Limit: ≤ 12.230 dBm |

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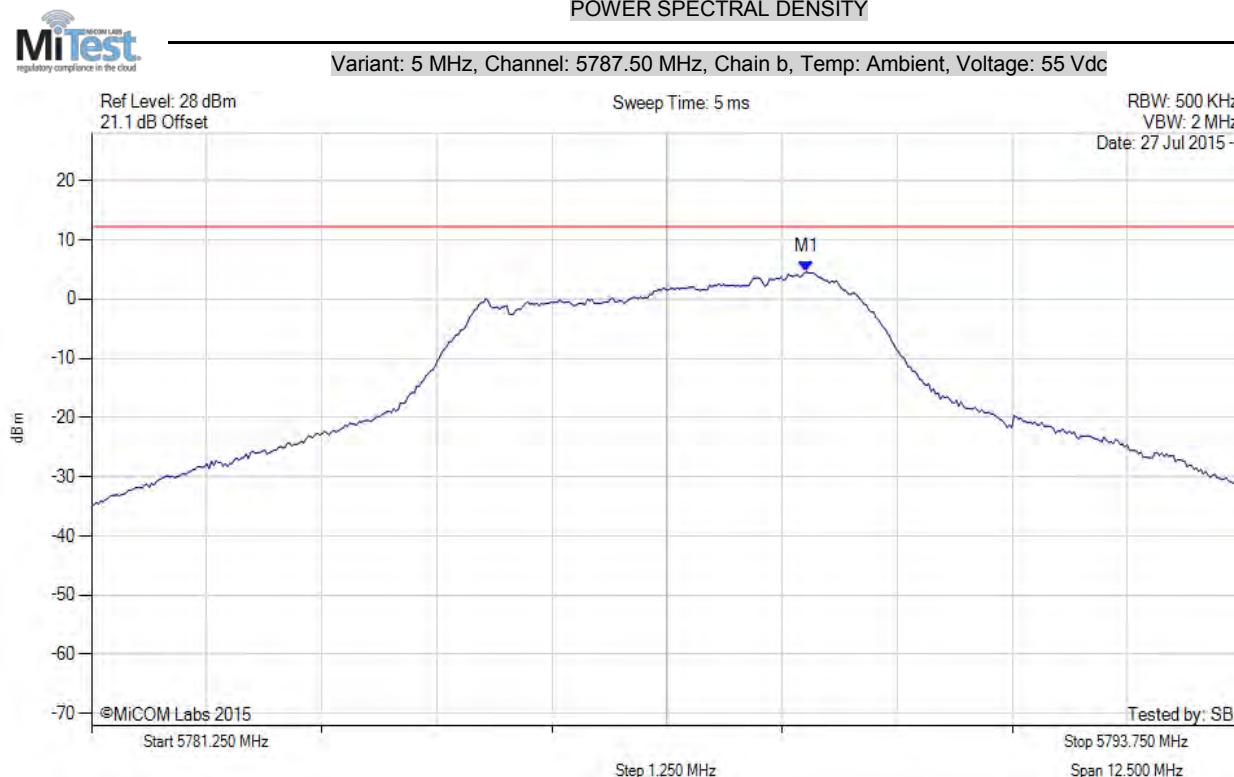
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.016 MHz : 4.556 dBm | Channel Frequency: 5787.50 MHz |

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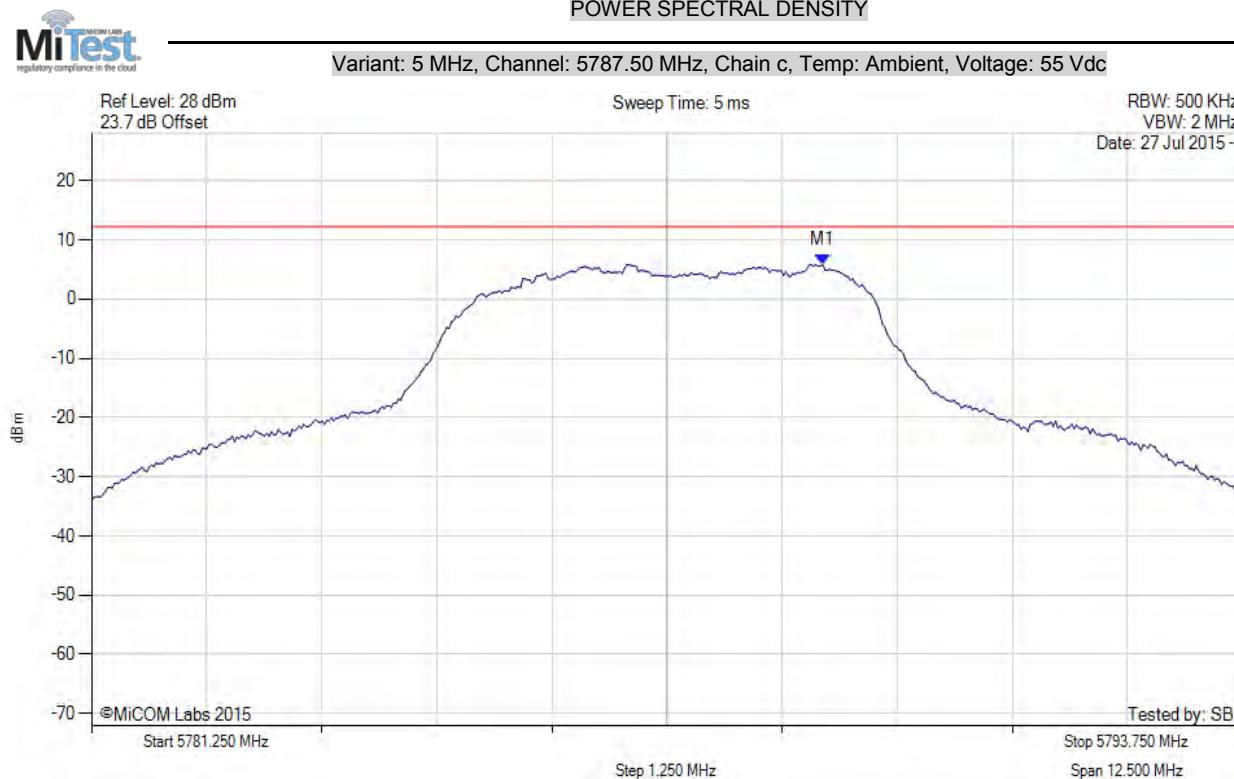
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.016 MHz : 4.556 dBm | Limit: ≤ 12.230 dBm |

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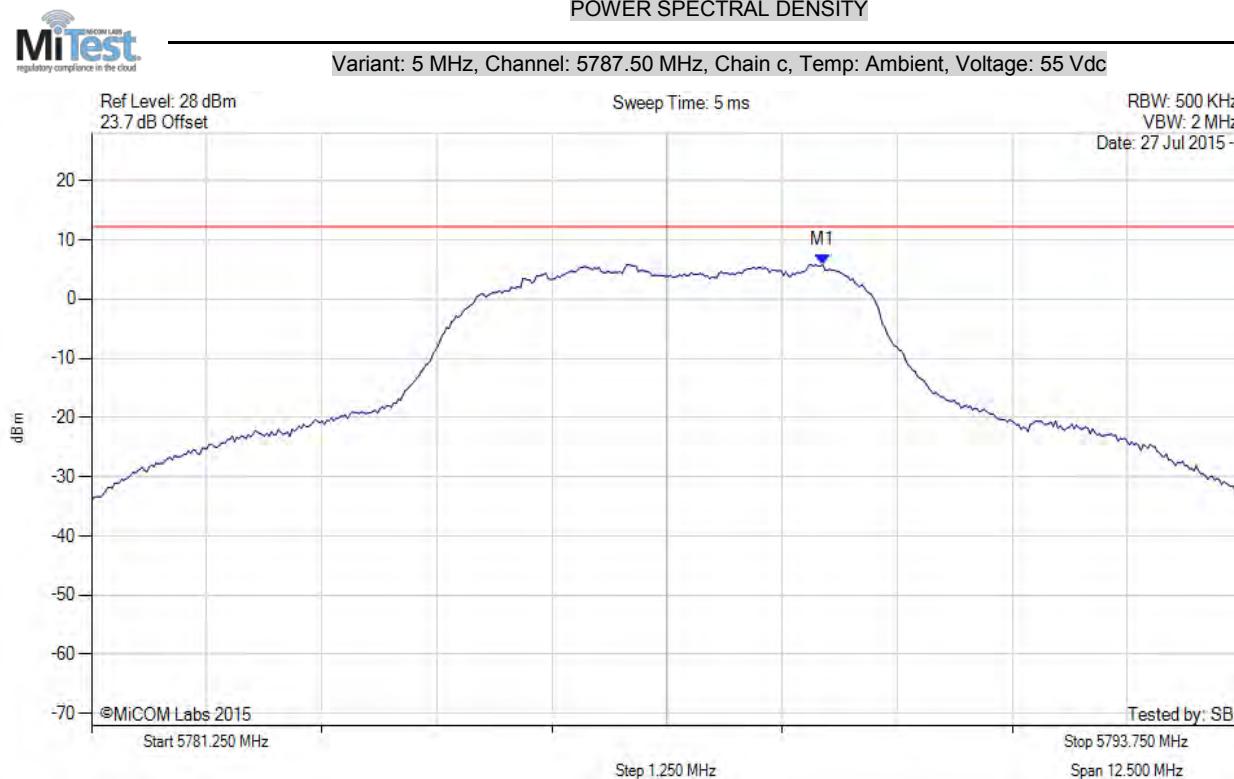
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.191 MHz : 5.822 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

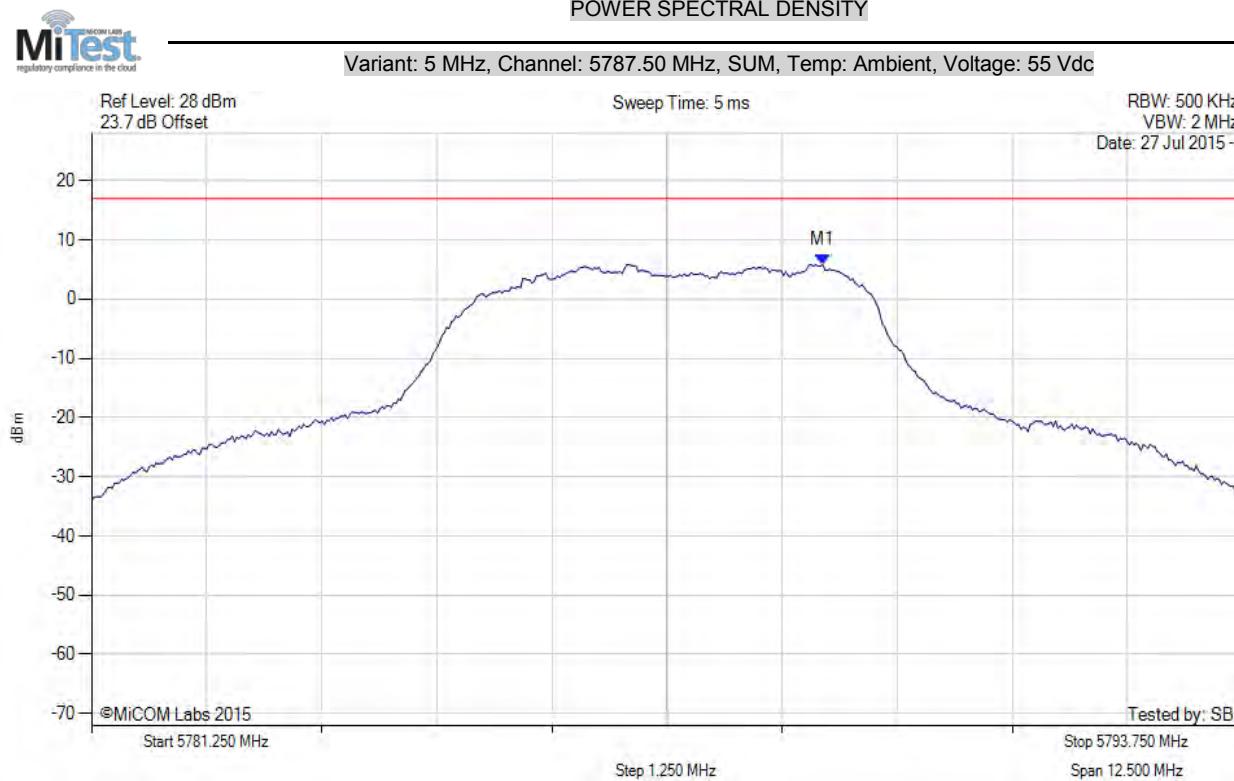
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.191 MHz : 5.822 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

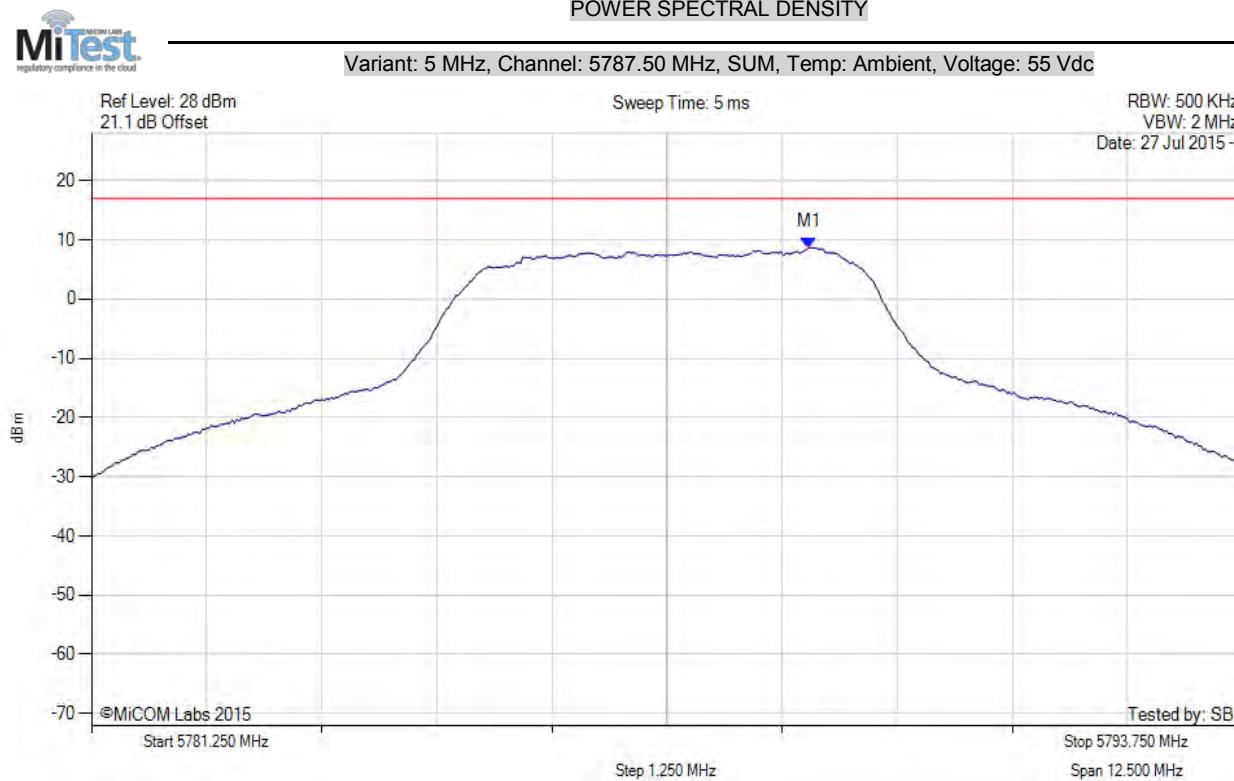
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.200 MHz : 5.822 dBm M1 + DCCF : 5789.200 MHz : 6.377 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -10.6 dB |

[back to matrix](#)

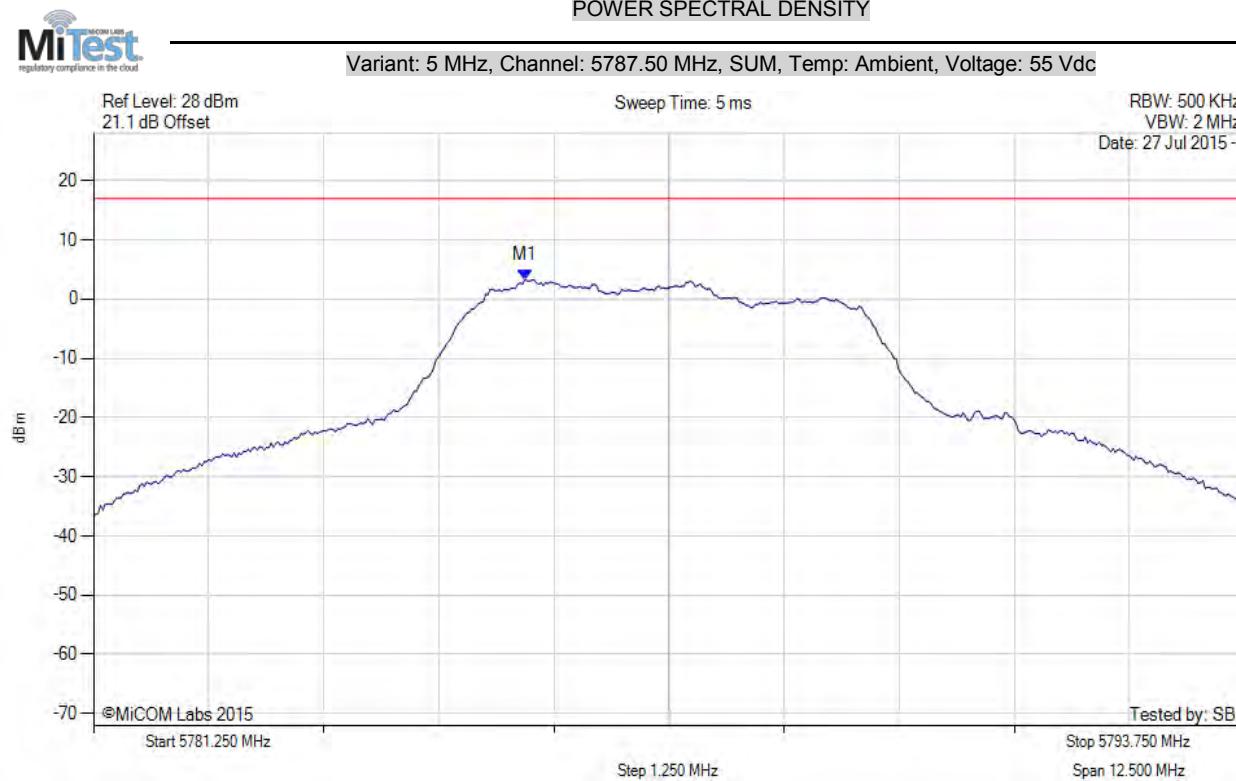
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|--------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.000 MHz : 8.699 dBm M1 + DCCF : 5789.000 MHz : 9.254 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -7.7 dB |

[back to matrix](#)

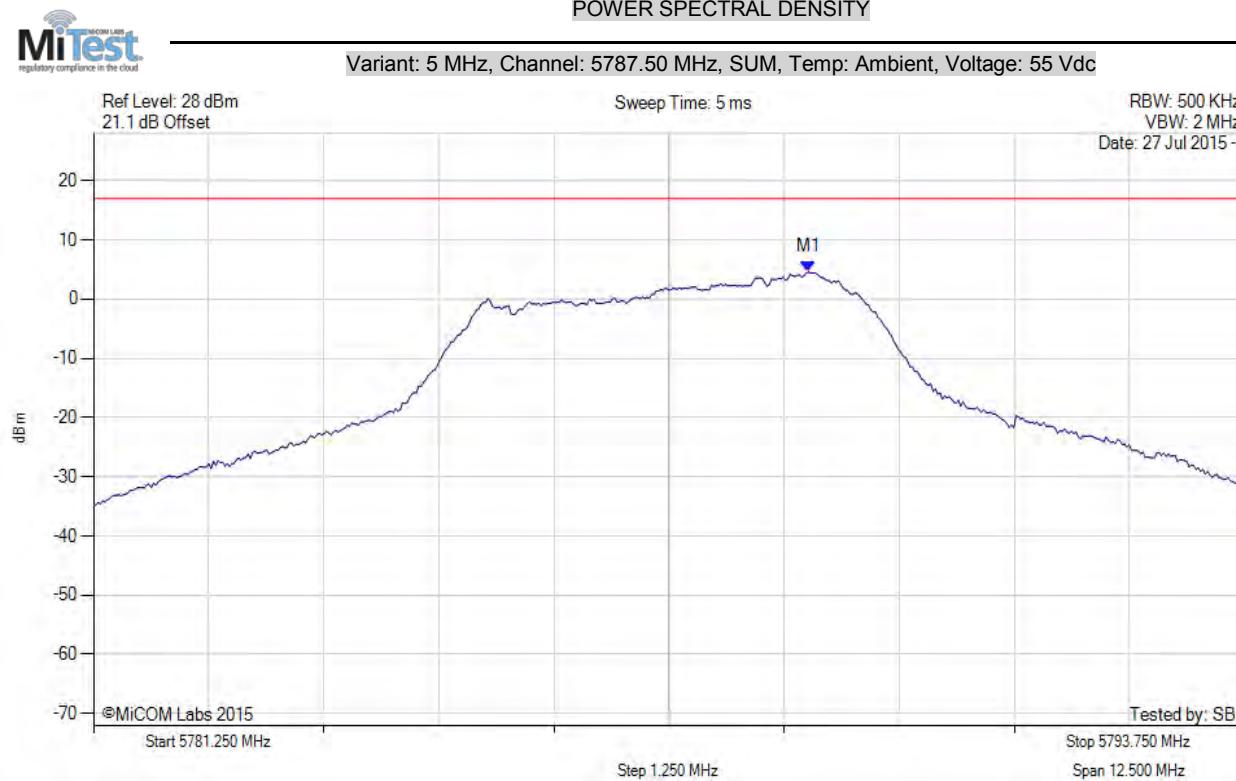
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5785.900 MHz : 3.279 dBm M1 + DCCF : 5785.900 MHz : 3.834 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -13.1 dB |

[back to matrix](#)

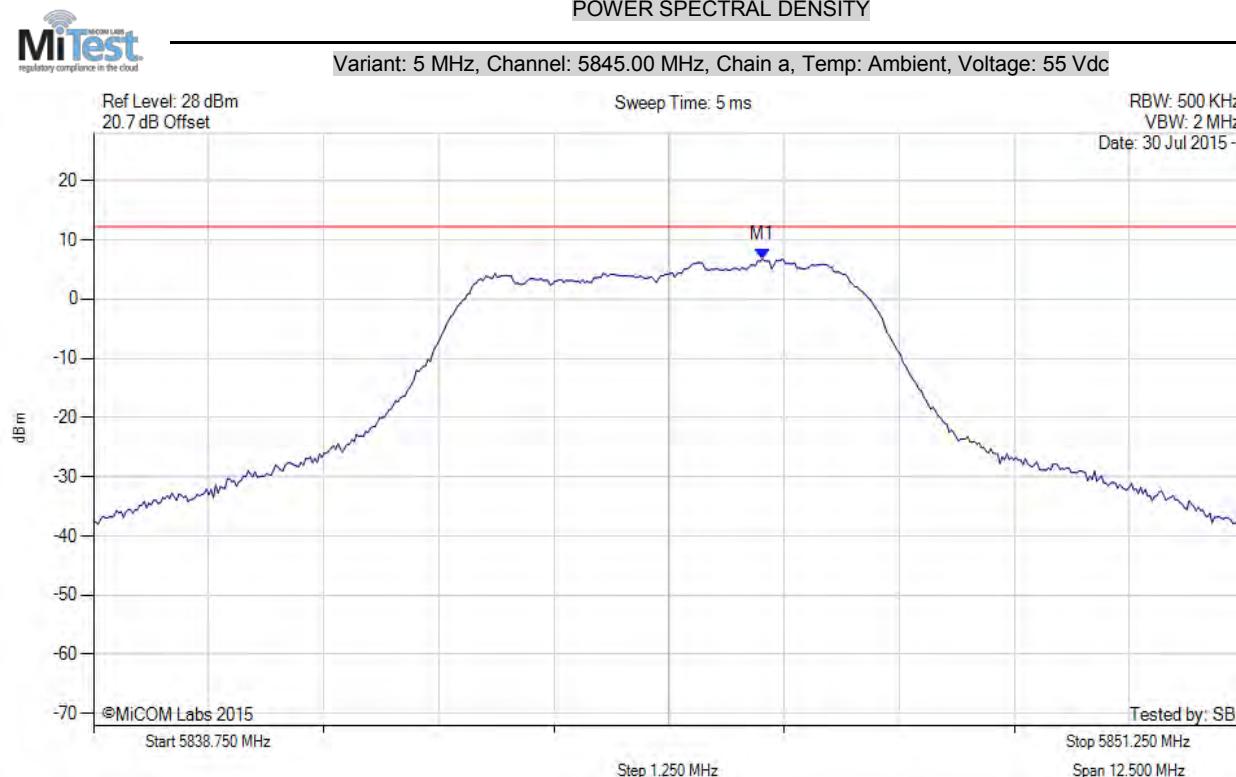
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5789.000 MHz : 4.556 dBm M1 + DCCF : 5789.000 MHz : 5.111 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -11.9 dB |

[back to matrix](#)

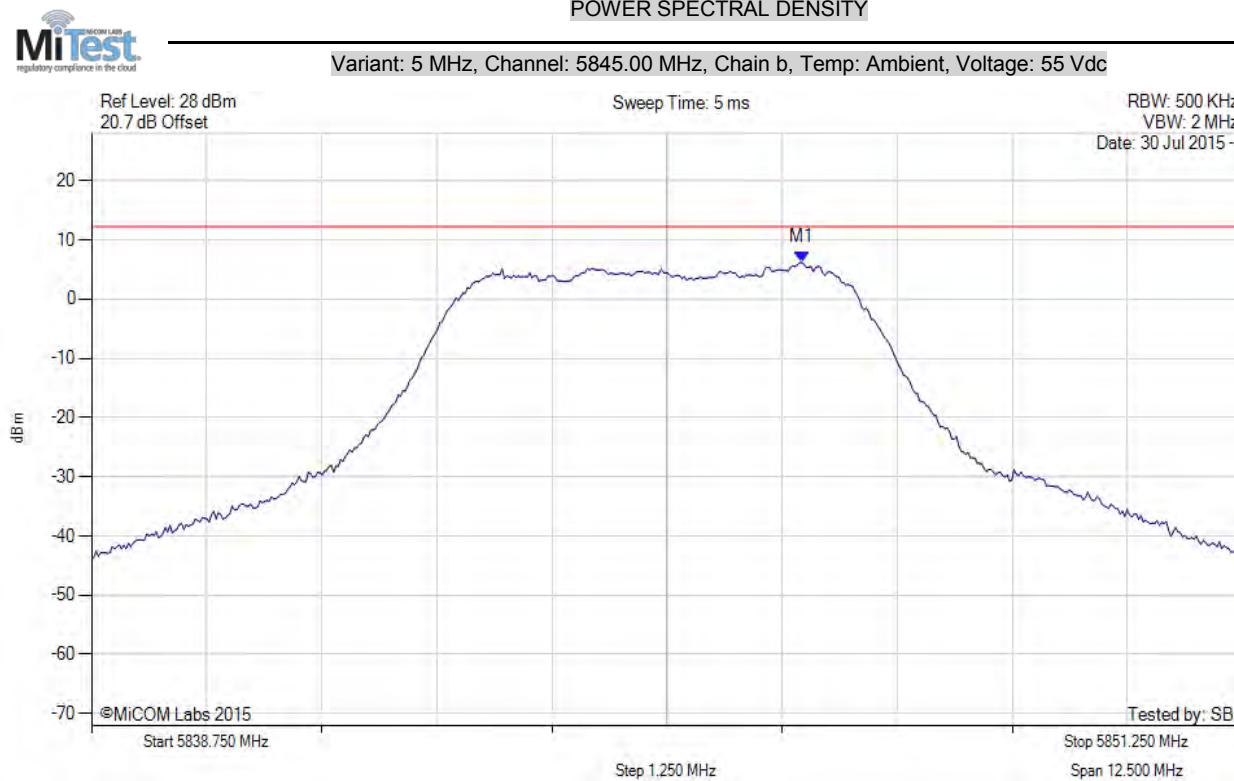
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5846.015 MHz : 6.770 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

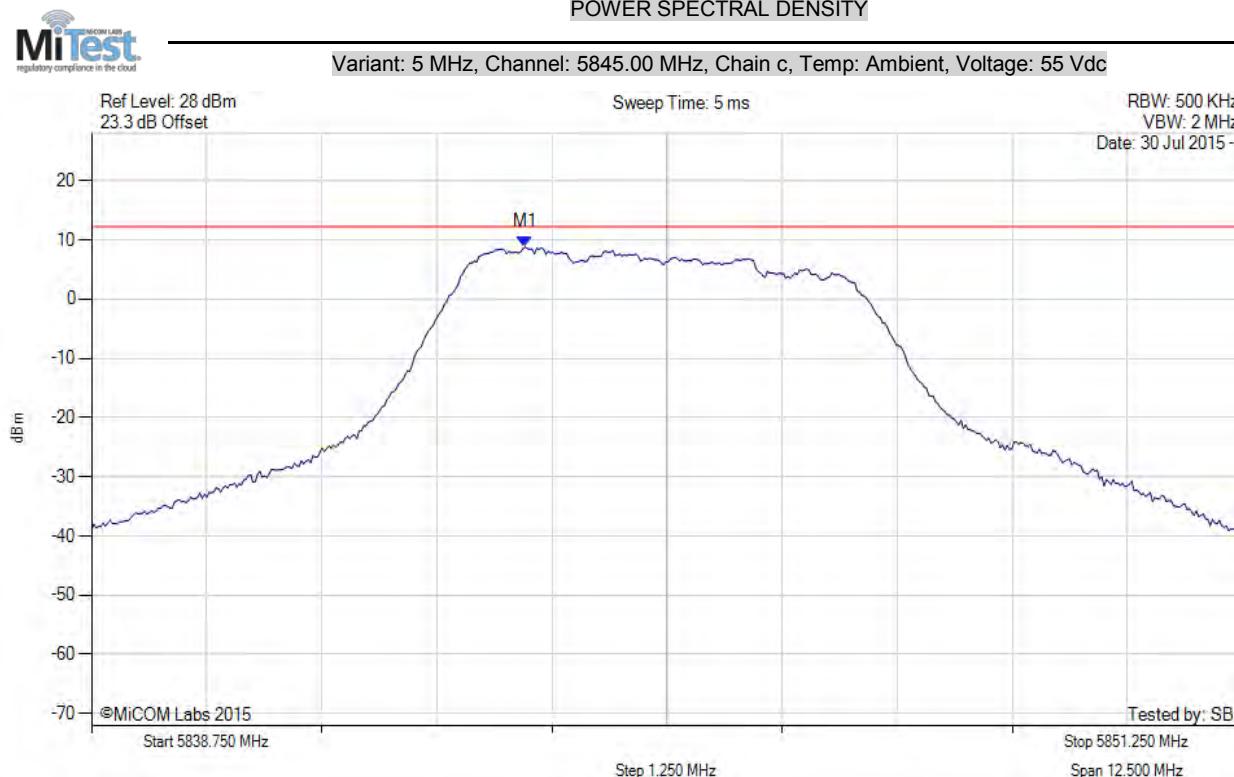
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5846.465 MHz : 6.181 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

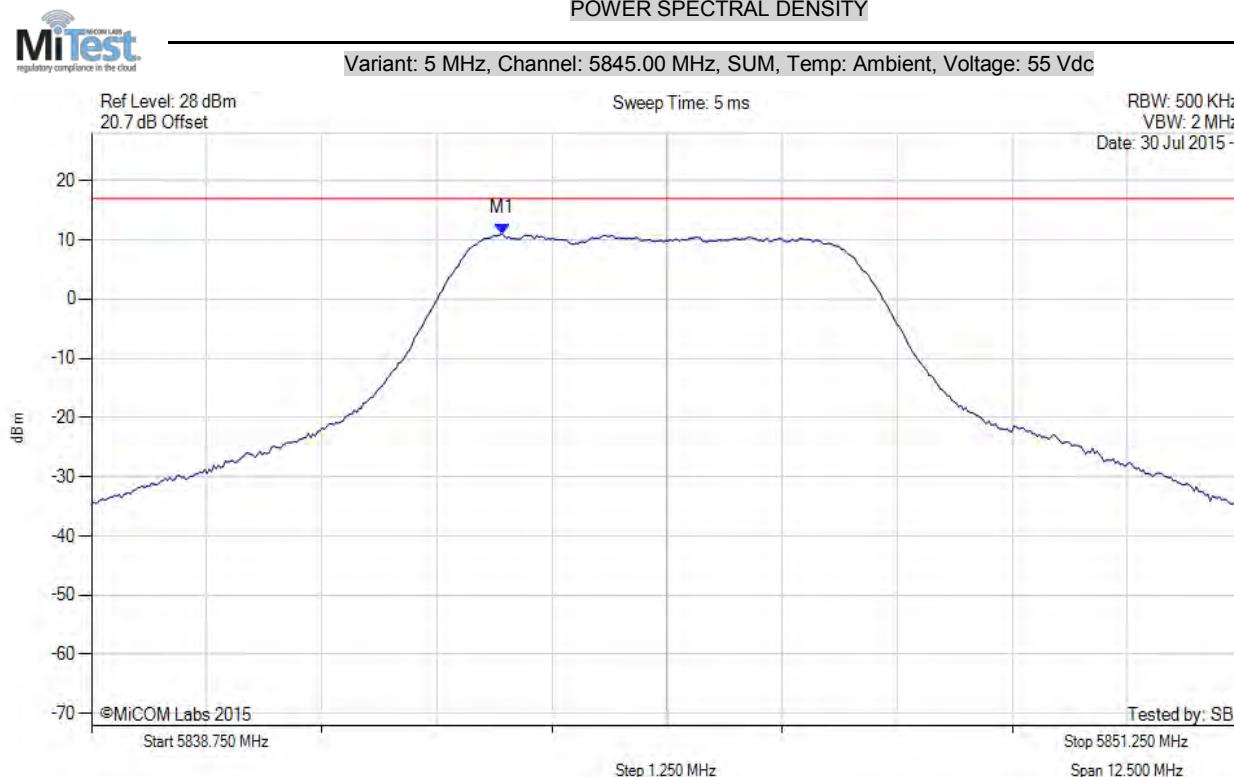
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|-------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.459 MHz : 8.791 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

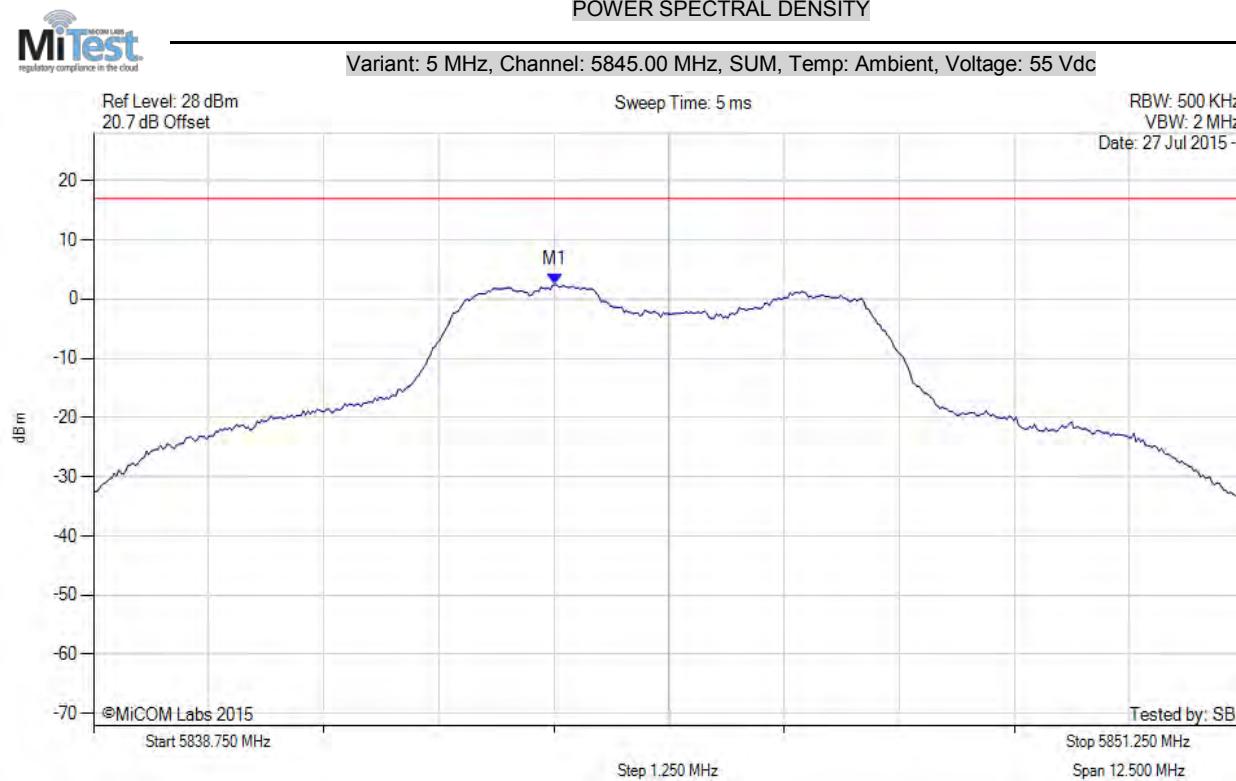
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|--------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.200 MHz : 11.037 dBm M1 + DCCF : 5843.200 MHz : 11.592 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -5.4 dB |

[back to matrix](#)

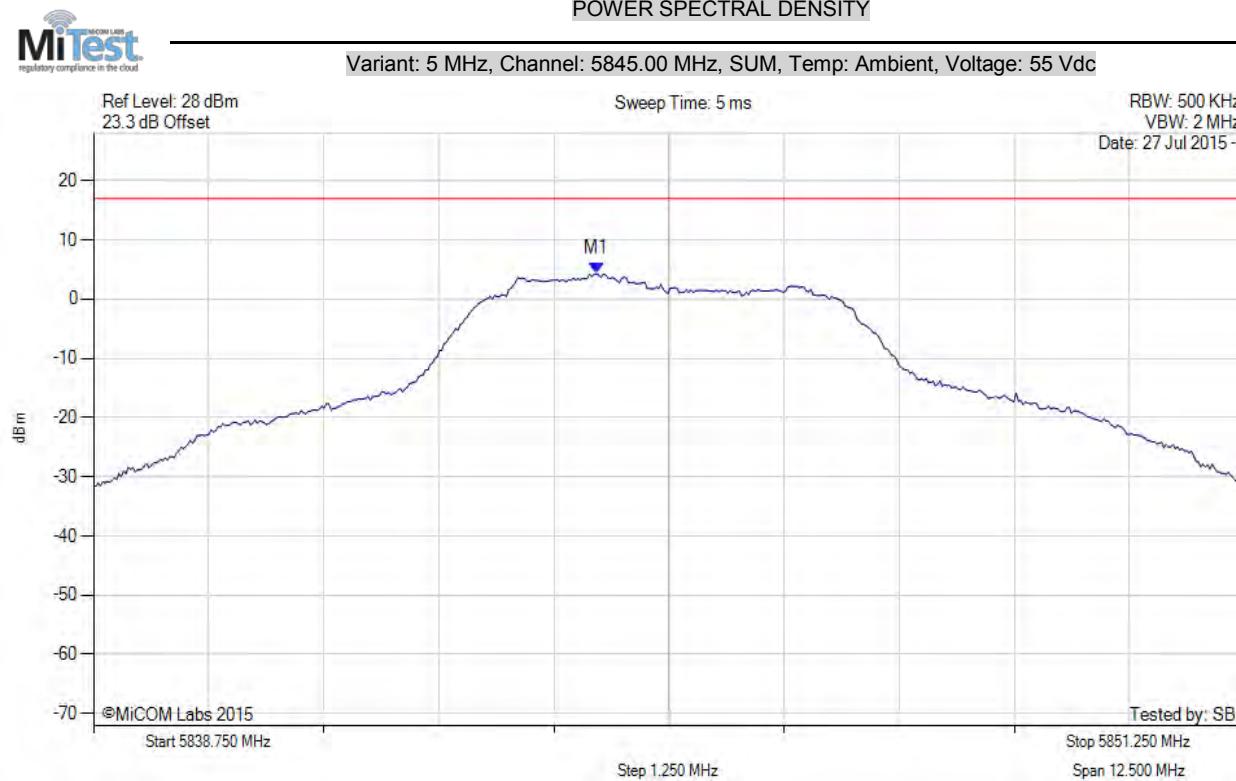
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5843.800 MHz : 2.468 dBm M1 + DCCF : 5843.800 MHz : 3.023 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -13.9 dB |

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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5844.200 MHz : 4.280 dBm M1 + DCCF : 5844.200 MHz : 4.835 dBm Duty Cycle Correction Factor : +0.56 dB | Limit: ≤ 17.0 dBm Margin: -12.1 dB |

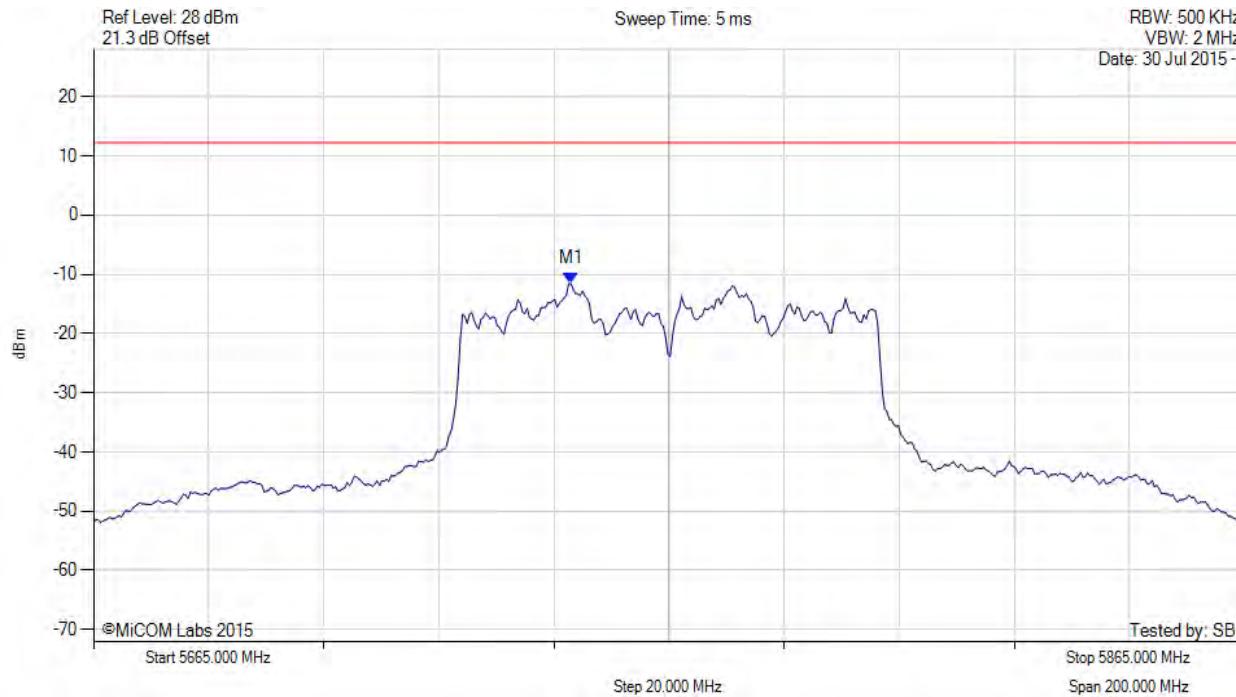
[back to matrix](#)

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POWER SPECTRAL DENSITY

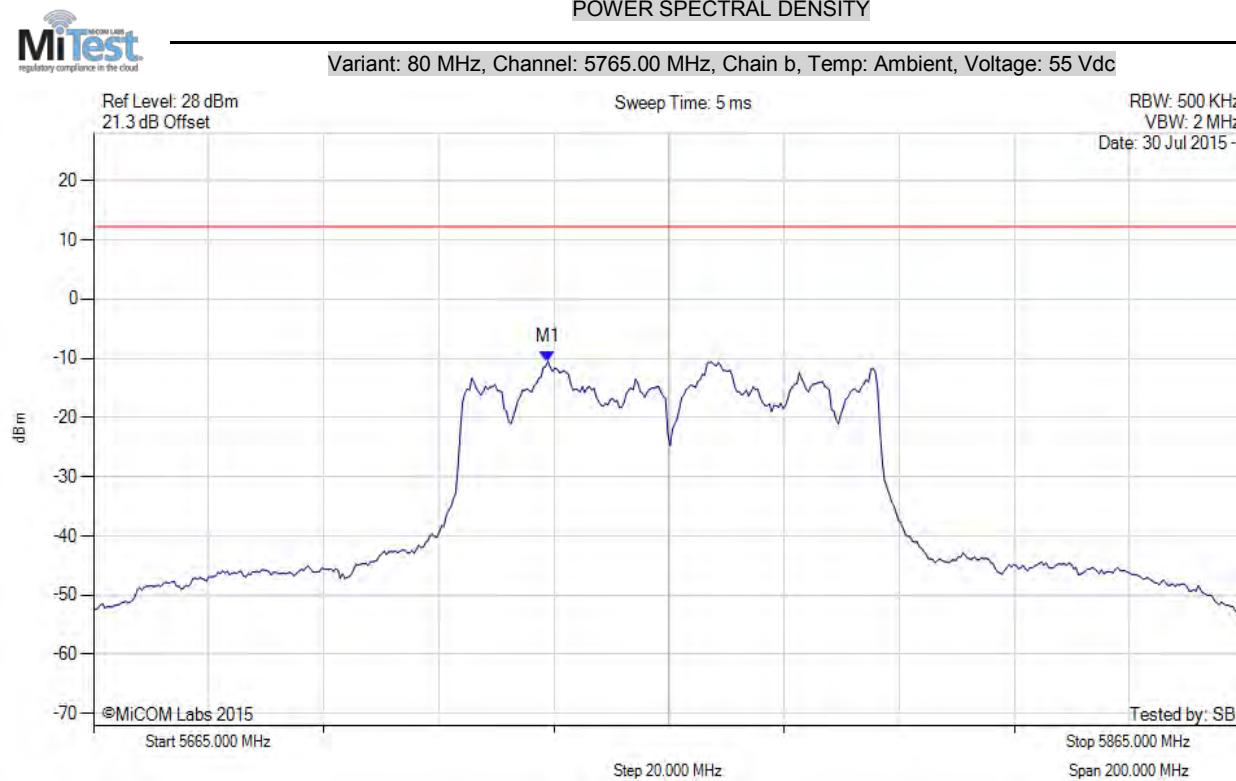
Variant: 80 MHz, Channel: 5765.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5747.966 MHz : -11.584 dBm | Limit: ≤ 12.230 dBm |

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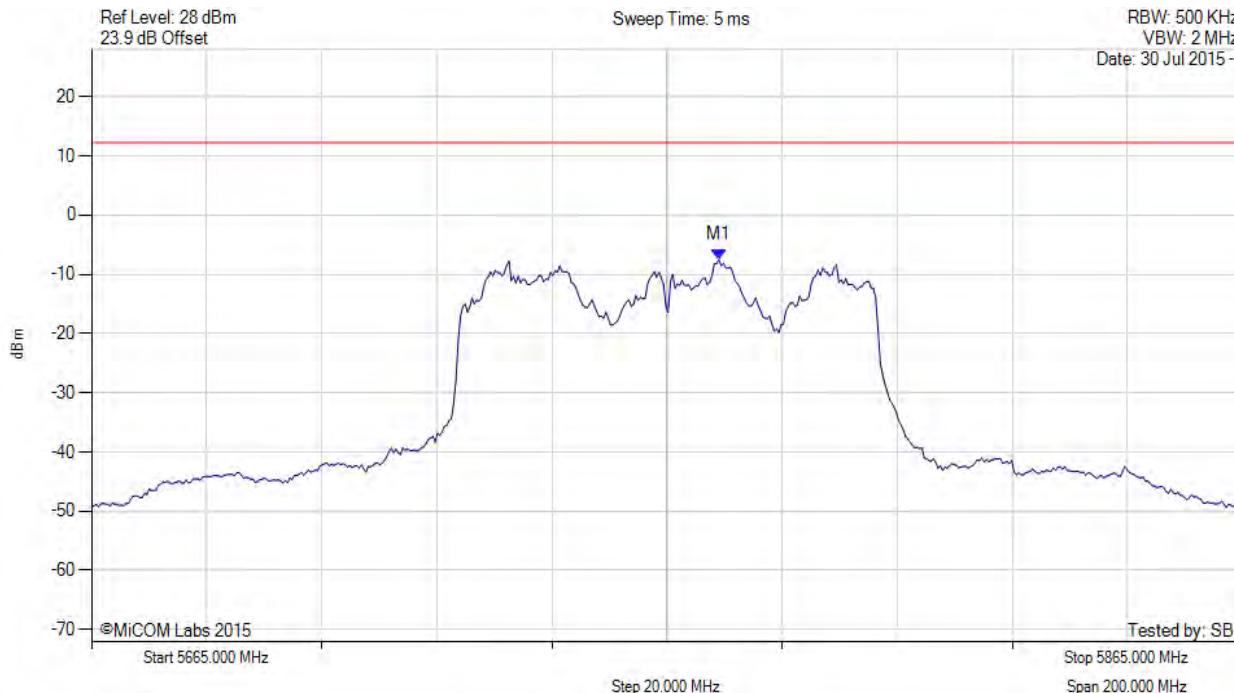
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5743.958 MHz : -10.497 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5765.00 MHz, Chain c, Temp: Ambient, Voltage: 55 Vdc



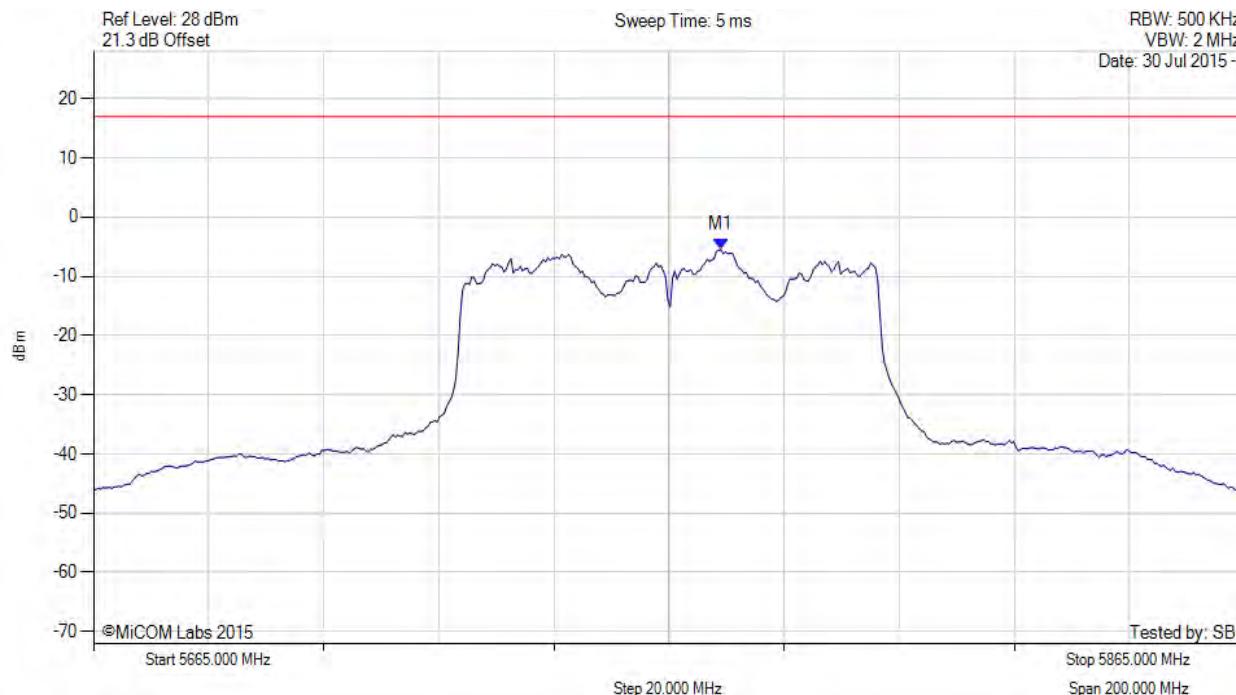
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5774.018 MHz : -7.527 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5765.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



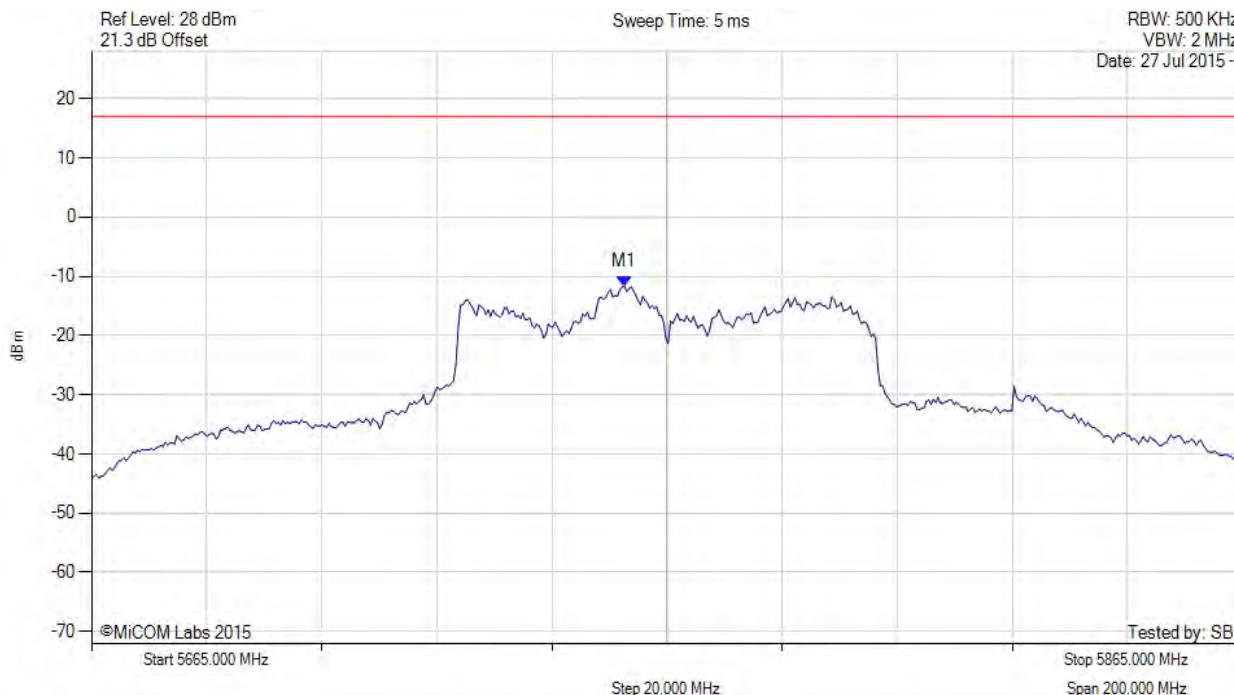
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5774.000 MHz : -5.491 dBm M1 + DCCF : 5774.000 MHz : -4.183 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -21.2 dB |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5765.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



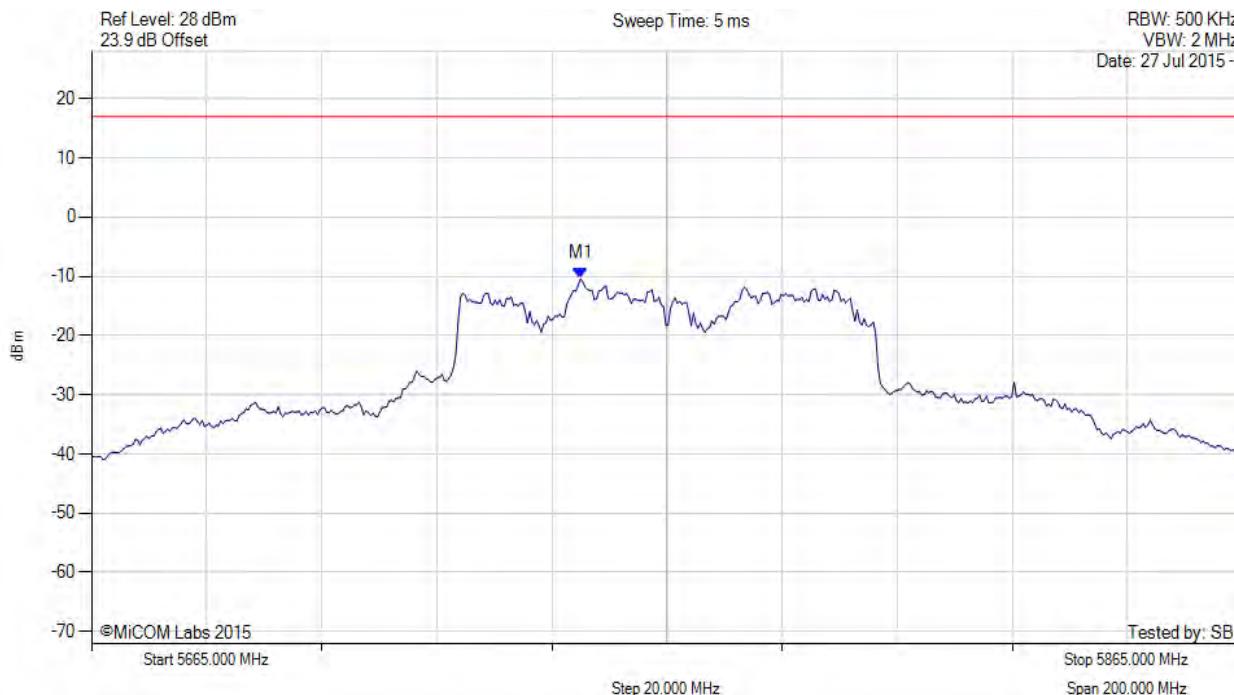
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5757.600 MHz : -11.671 dBm M1 + DCCF : 5757.600 MHz : -10.363 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -27.3 dB |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5765.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



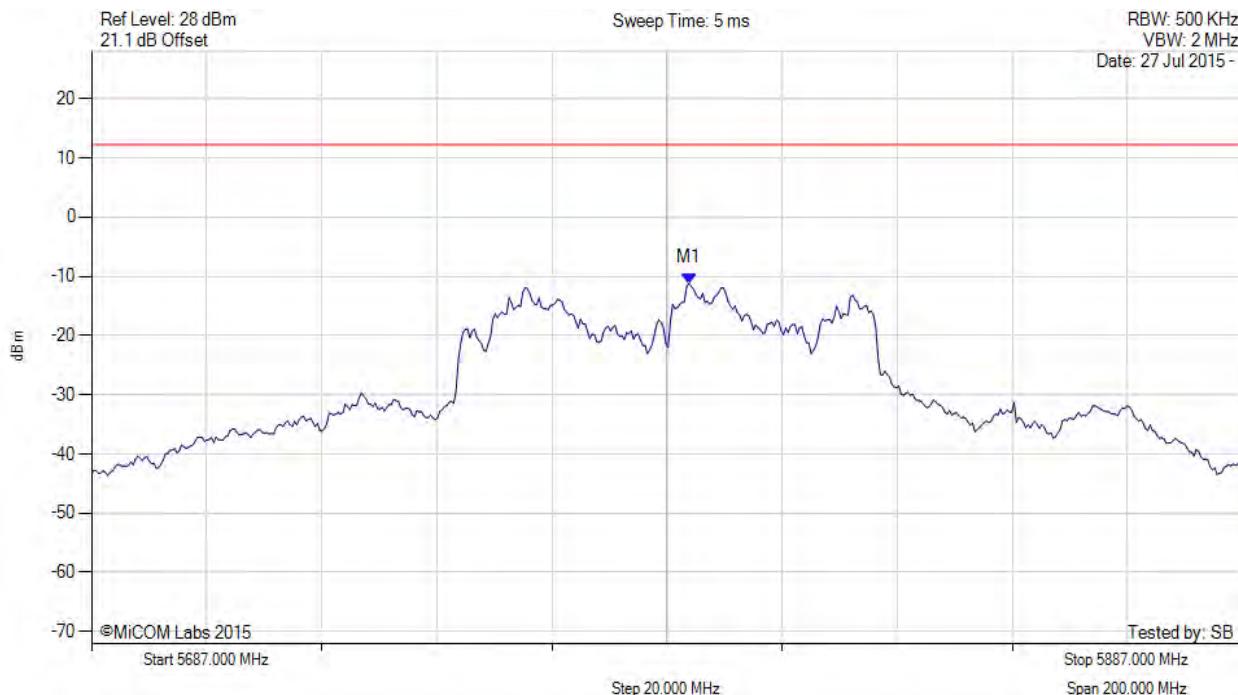
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5750.000 MHz : -10.450 dBm M1 + DCCF : 5750.000 MHz : -9.142 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -26.1 dB |

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POWER SPECTRAL DENSITY

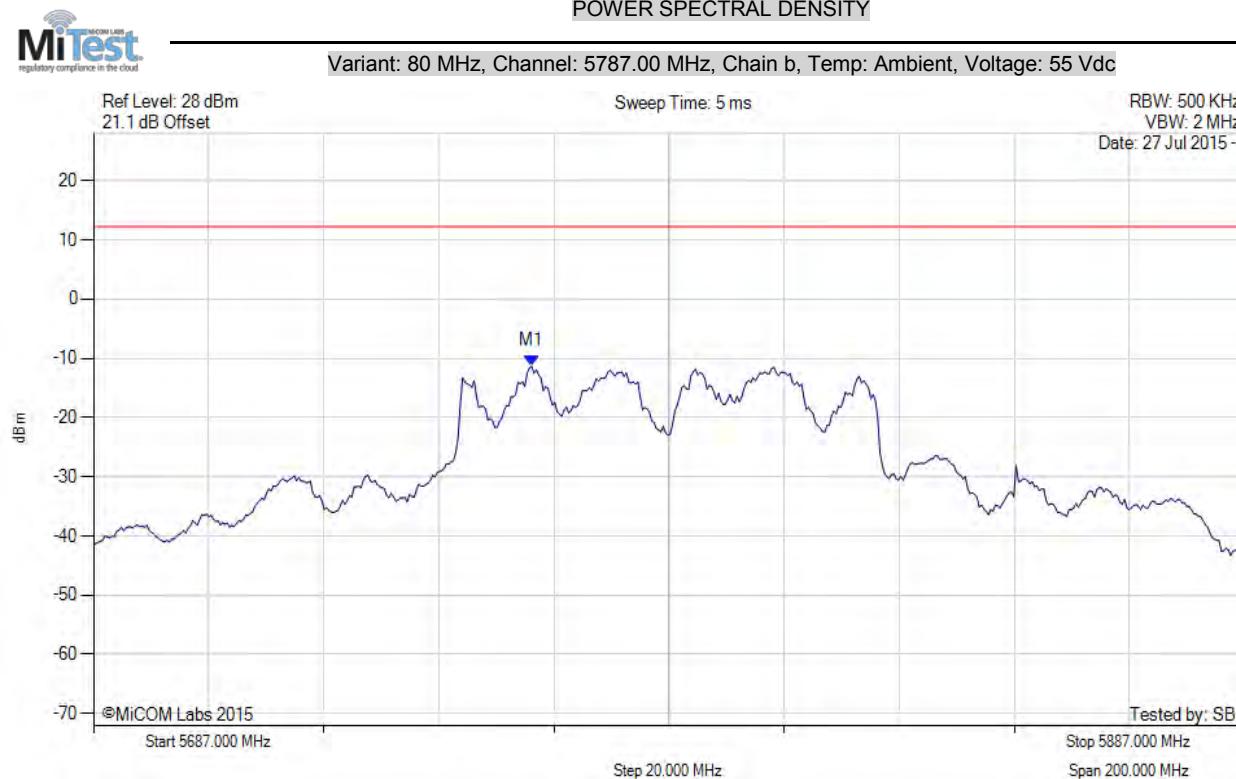
Variant: 80 MHz, Channel: 5787.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5790.808 MHz : -11.173 dBm | Limit: ≤ 12.230 dBm |

[back to matrix](#)

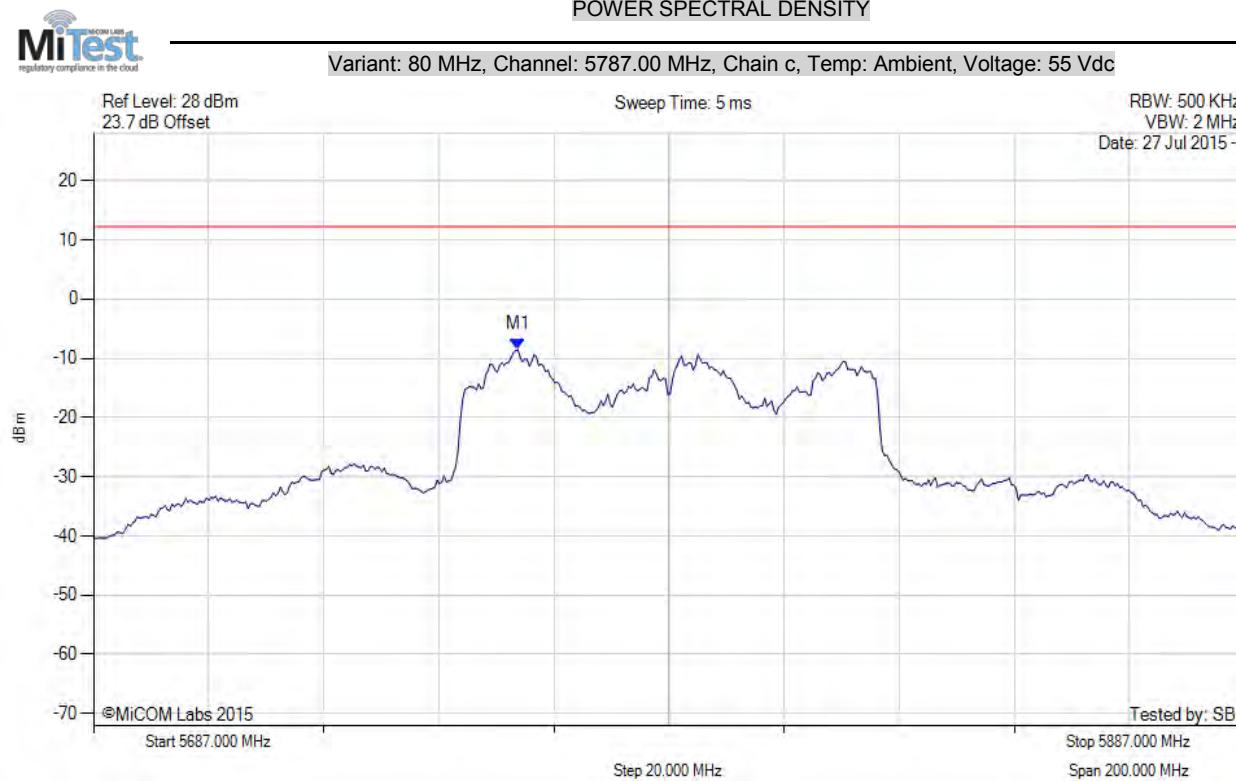
This test report may be reproduced in full only. The document may only be updated by MiCOM Labs personnel. All changes will be noted in the Document History section of the report.



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---------------------------------|--------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5763.152 MHz : -11.361 dBm | Channel Frequency: 5787.00 MHz |

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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5760.747 MHz : -8.545 dBm | Limit: ≤ 12.230 dBm |

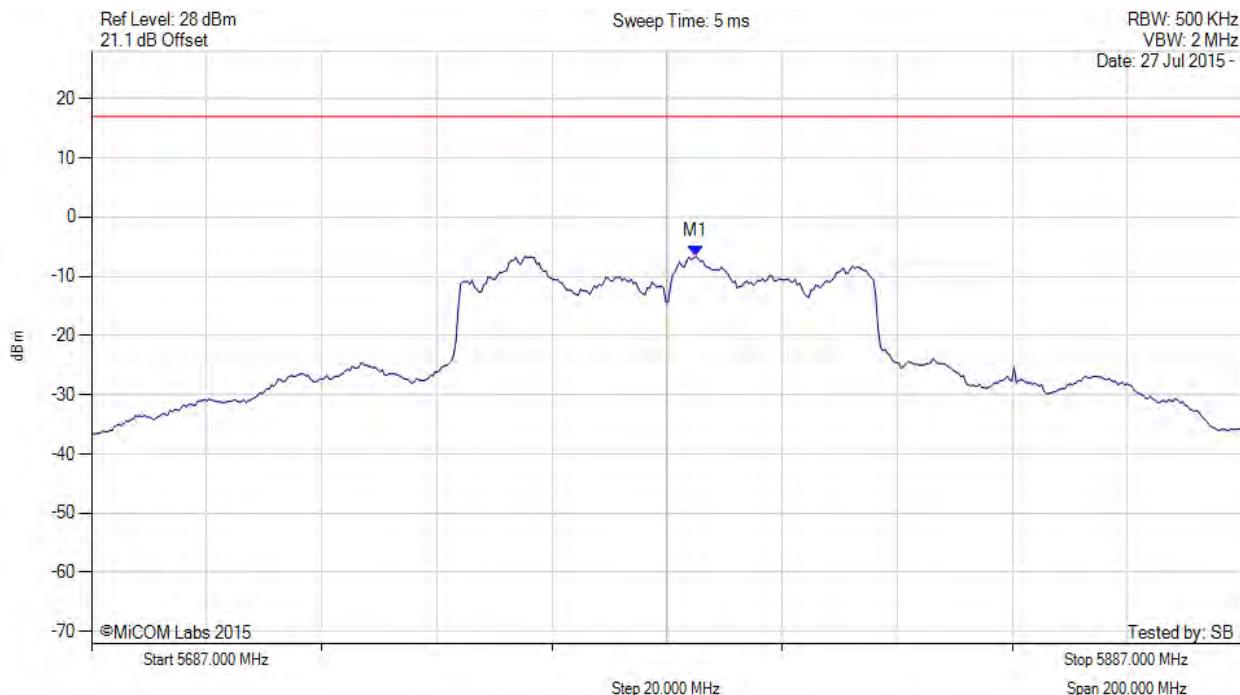
[back to matrix](#)

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



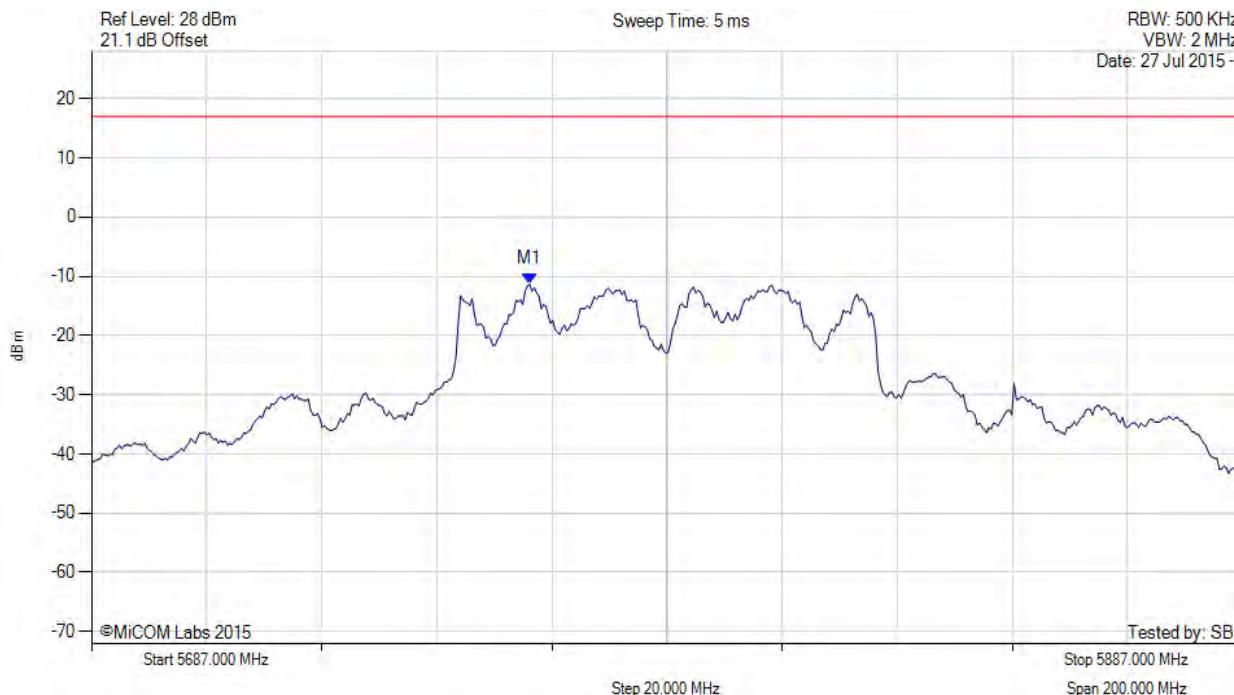
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5792.000 MHz : -6.642 dBm M1 + DCCF : 5792.000 MHz : -5.334 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -22.3 dB |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



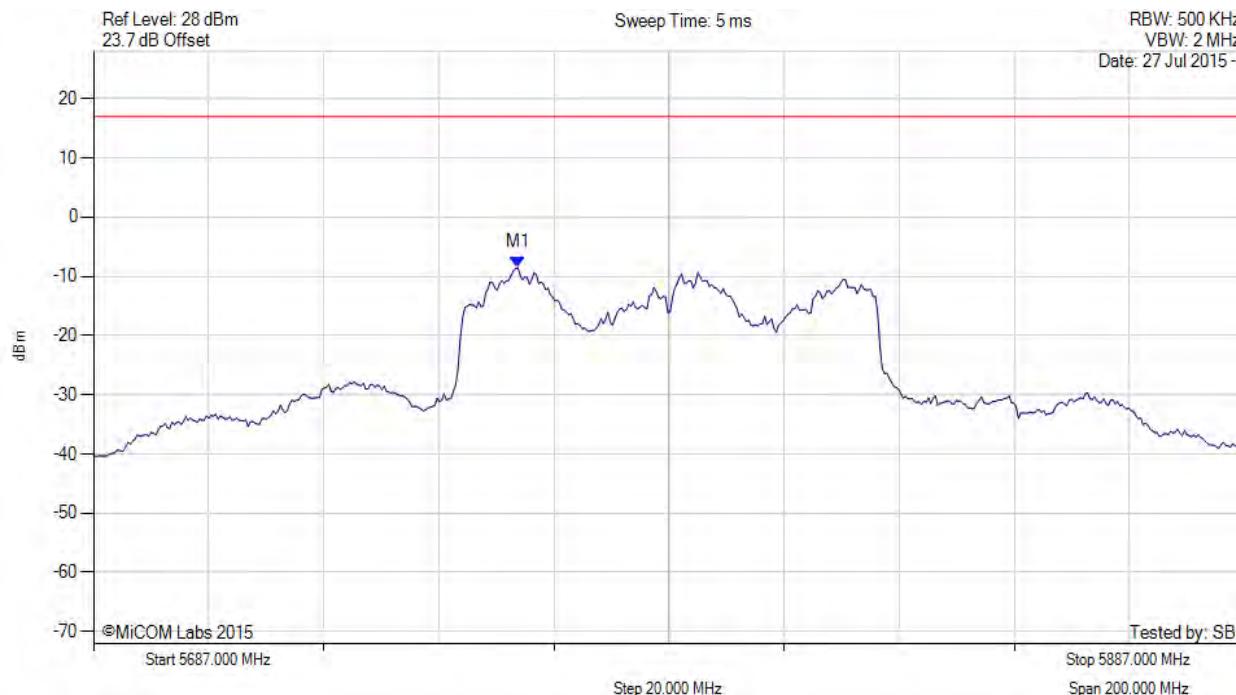
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5763.200 MHz : -11.361 dBm M1 + DCCF : 5763.200 MHz : -10.053 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -27.0 dB |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5787.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



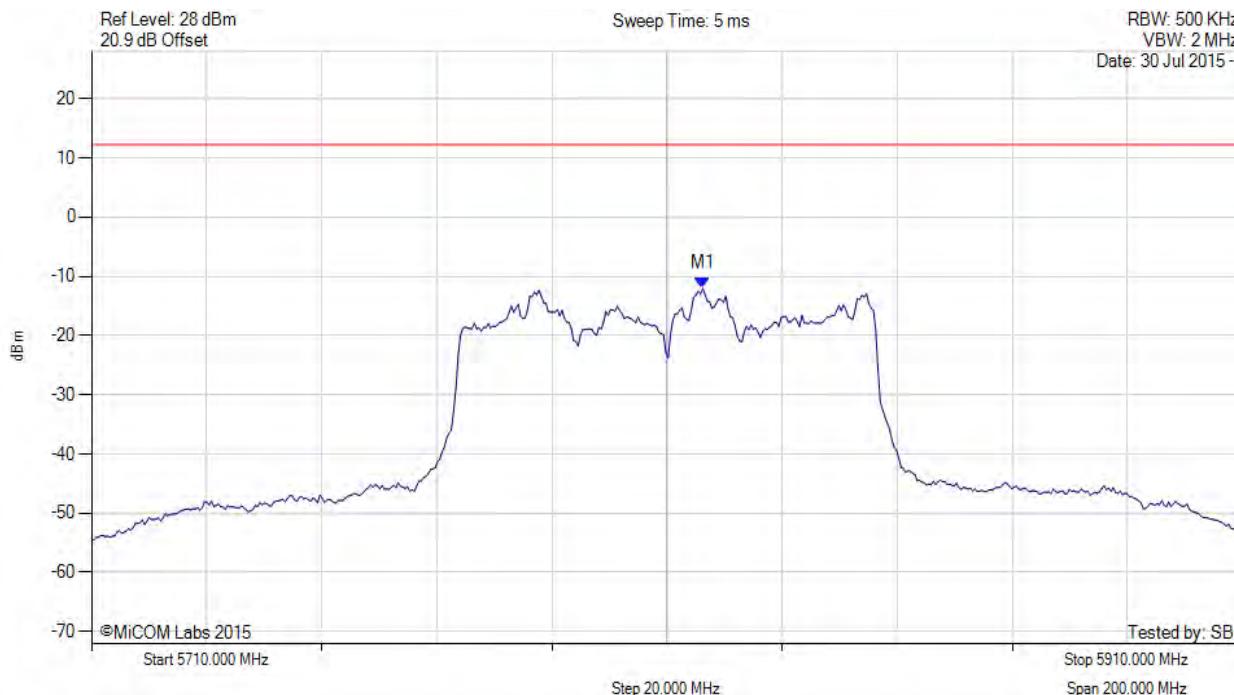
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5760.700 MHz : -8.545 dBm M1 + DCCF : 5760.700 MHz : -7.237 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -24.2 dB |

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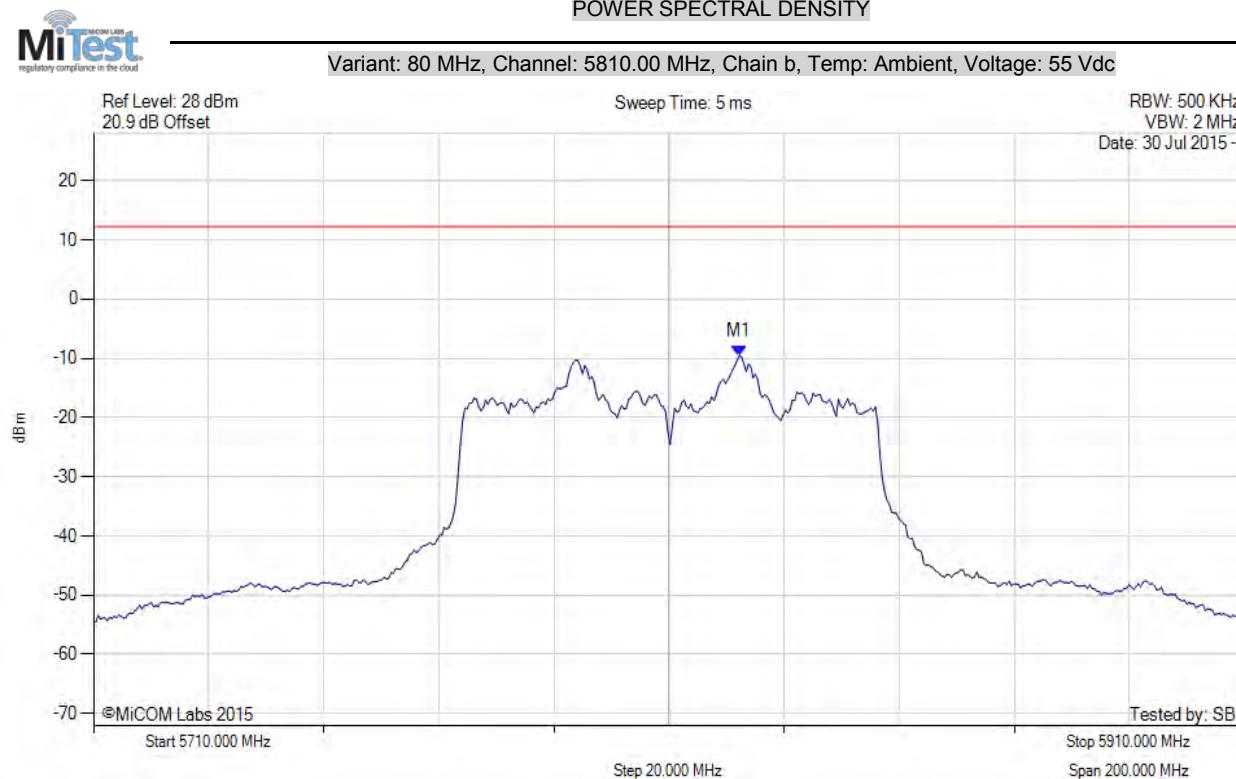
POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5810.00 MHz, Chain a, Temp: Ambient, Voltage: 55 Vdc



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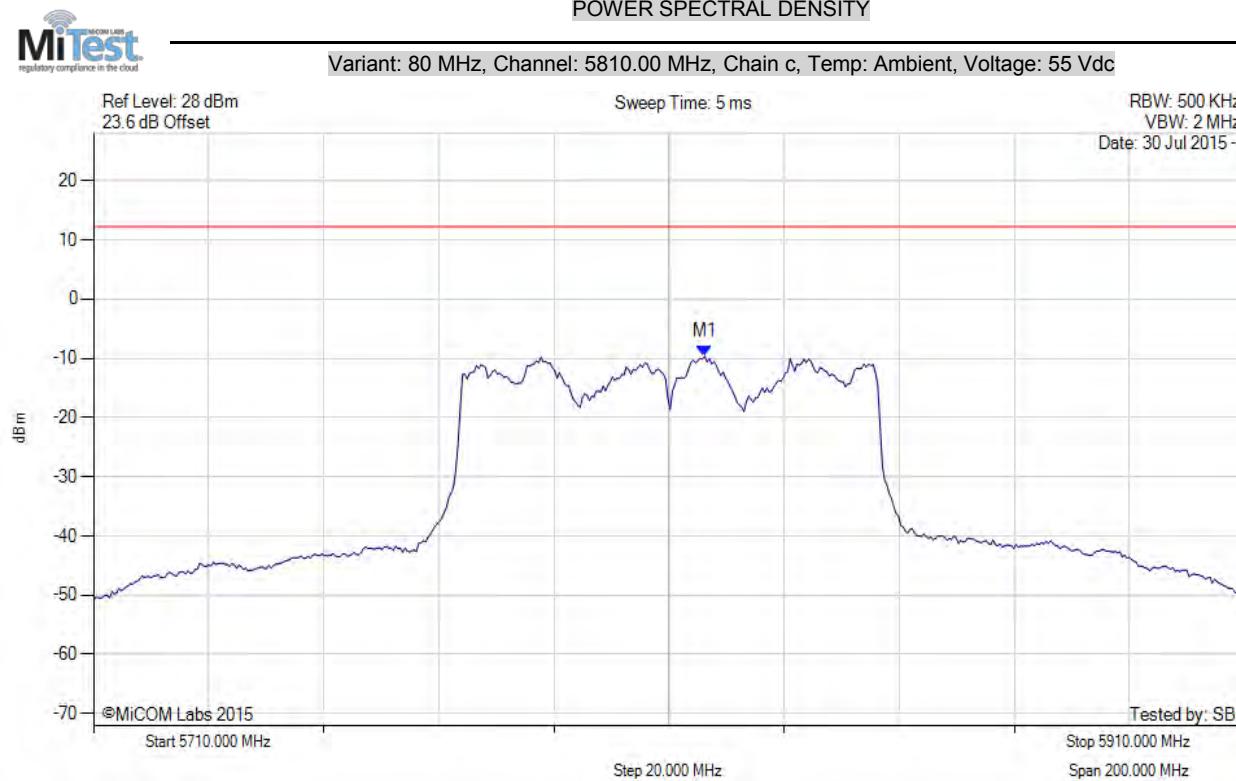
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| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5822.224 MHz : -9.563 dBm | Limit: ≤ 12.230 dBm |

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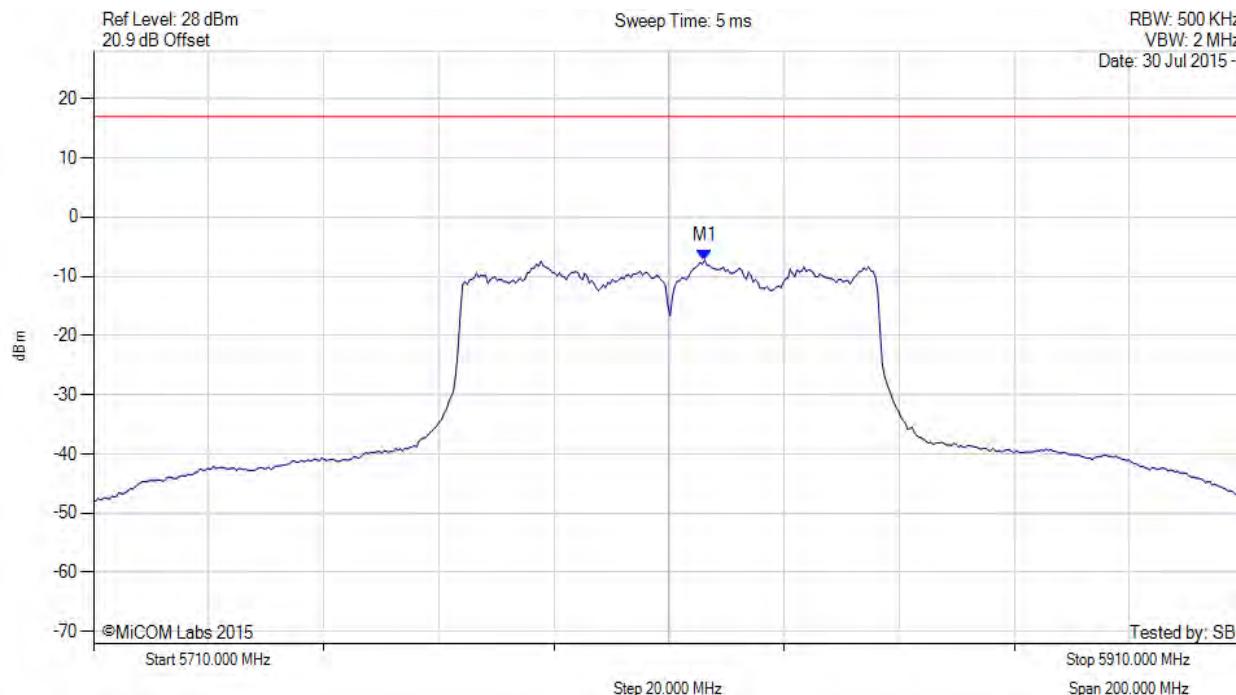
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--------------------------------|---------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5816.212 MHz : -9.621 dBm | Limit: ≤ 12.230 dBm |

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POWER SPECTRAL DENSITY

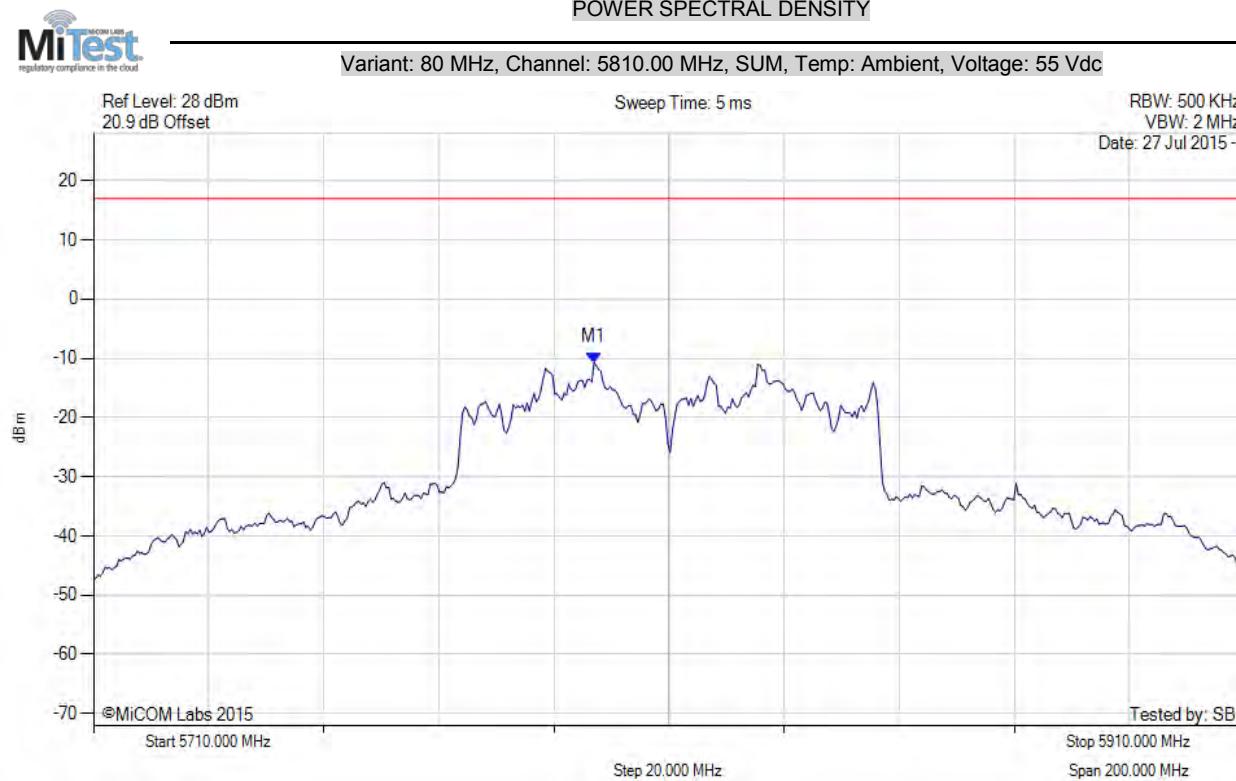
Variant: 80 MHz, Channel: 5810.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|--|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5816.200 MHz : -7.281 dBm M1 + DCCF : 5816.200 MHz : -5.973 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -22.9 dB |

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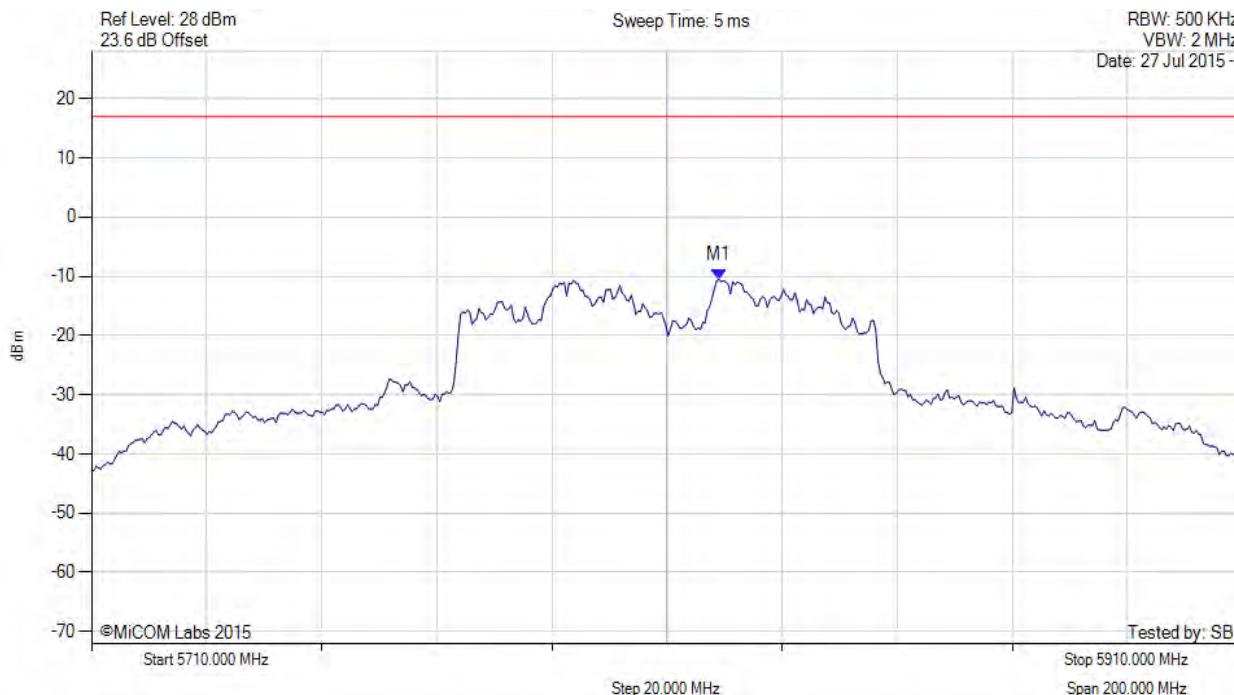
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5797.000 MHz : -10.695 dBm M1 + DCCF : 5797.000 MHz : -9.387 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -26.4 dB |

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POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5810.00 MHz, SUM, Temp: Ambient, Voltage: 55 Vdc



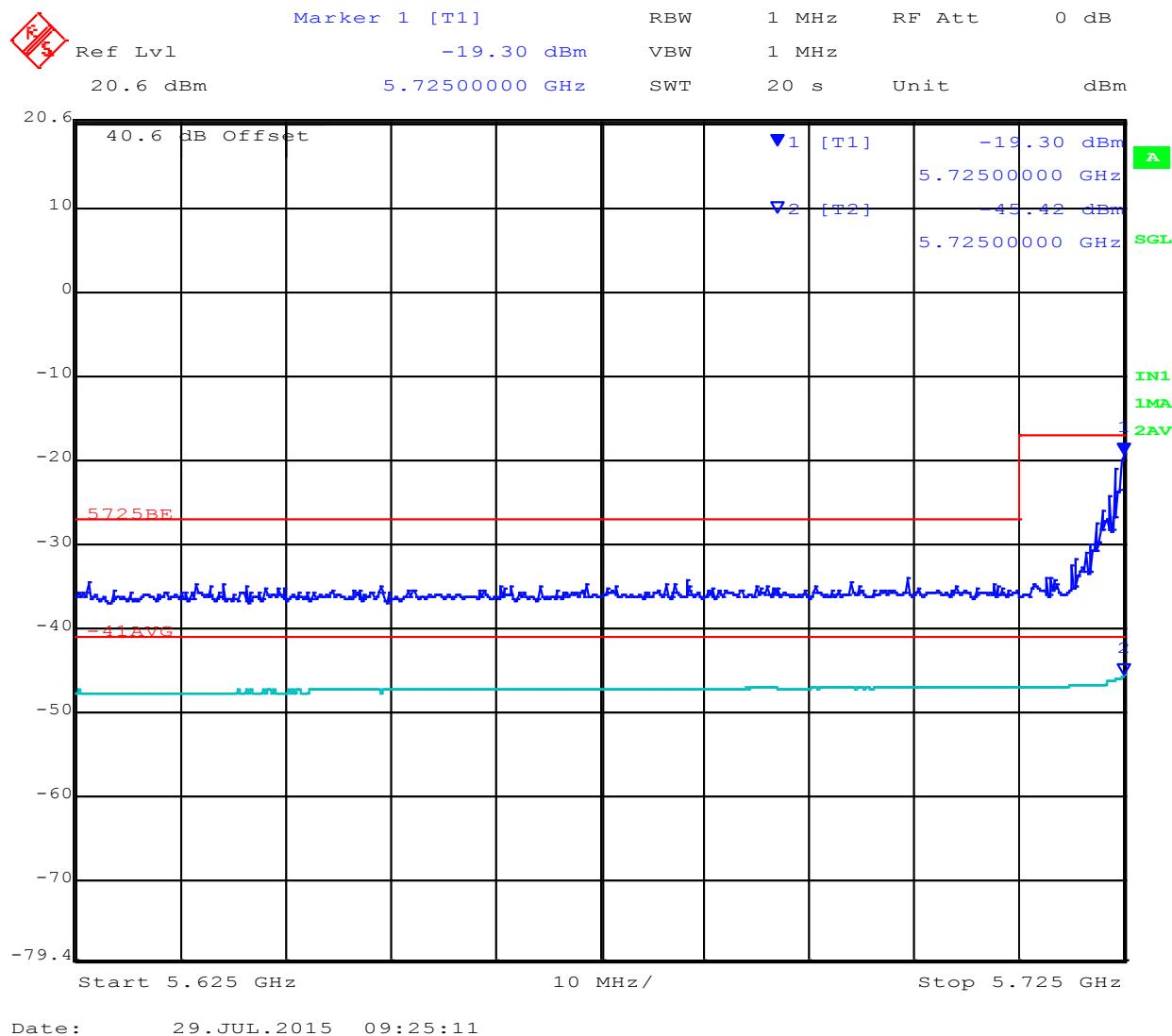
| Analyser Setup | Marker:Frequency:Amplitude | Test Results |
|--|---|---------------------------------------|
| Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW | M1 : 5819.000 MHz : -10.529 dBm M1 + DCCF : 5819.000 MHz : -9.221 dBm Duty Cycle Correction Factor : +1.31 dB | Limit: ≤ 17.0 dBm Margin: -26.2 dB |

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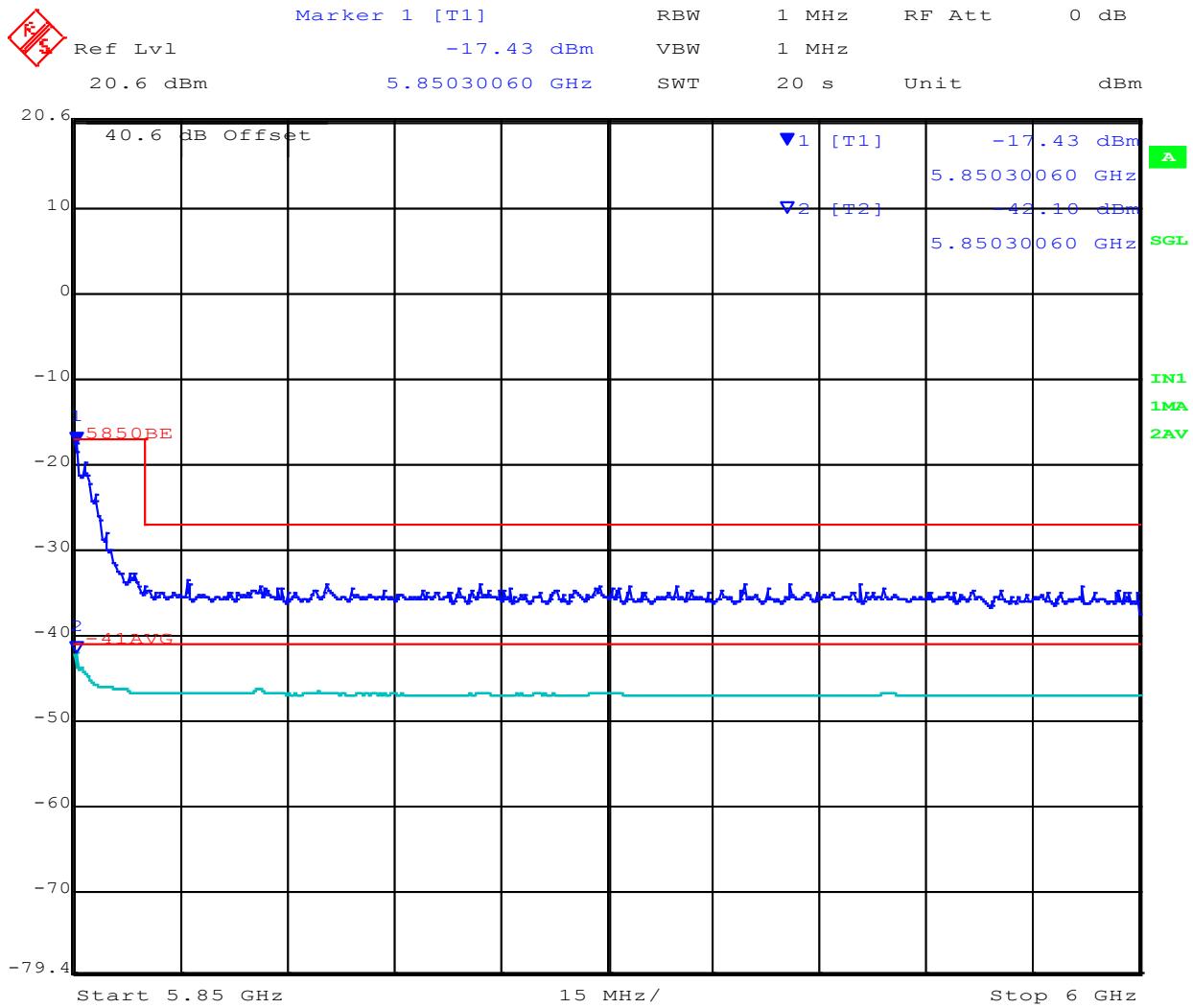
A.3. Radiated Restricted Band-Edge Emissions

A.3.1.1. RADWIN Ltd AT0058760



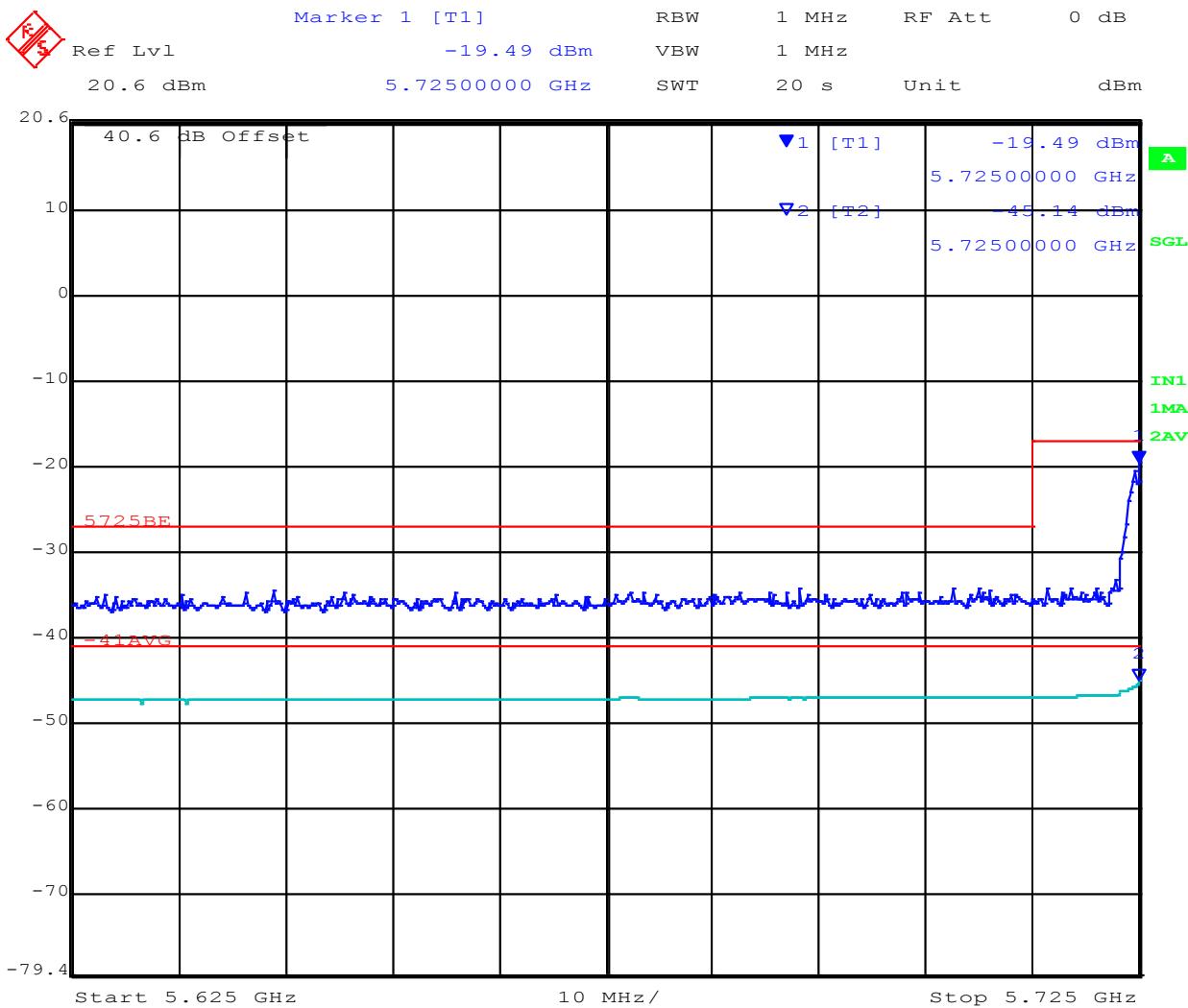
[back to matrix](#)

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Date: 29.JUL.2015 09:43:20

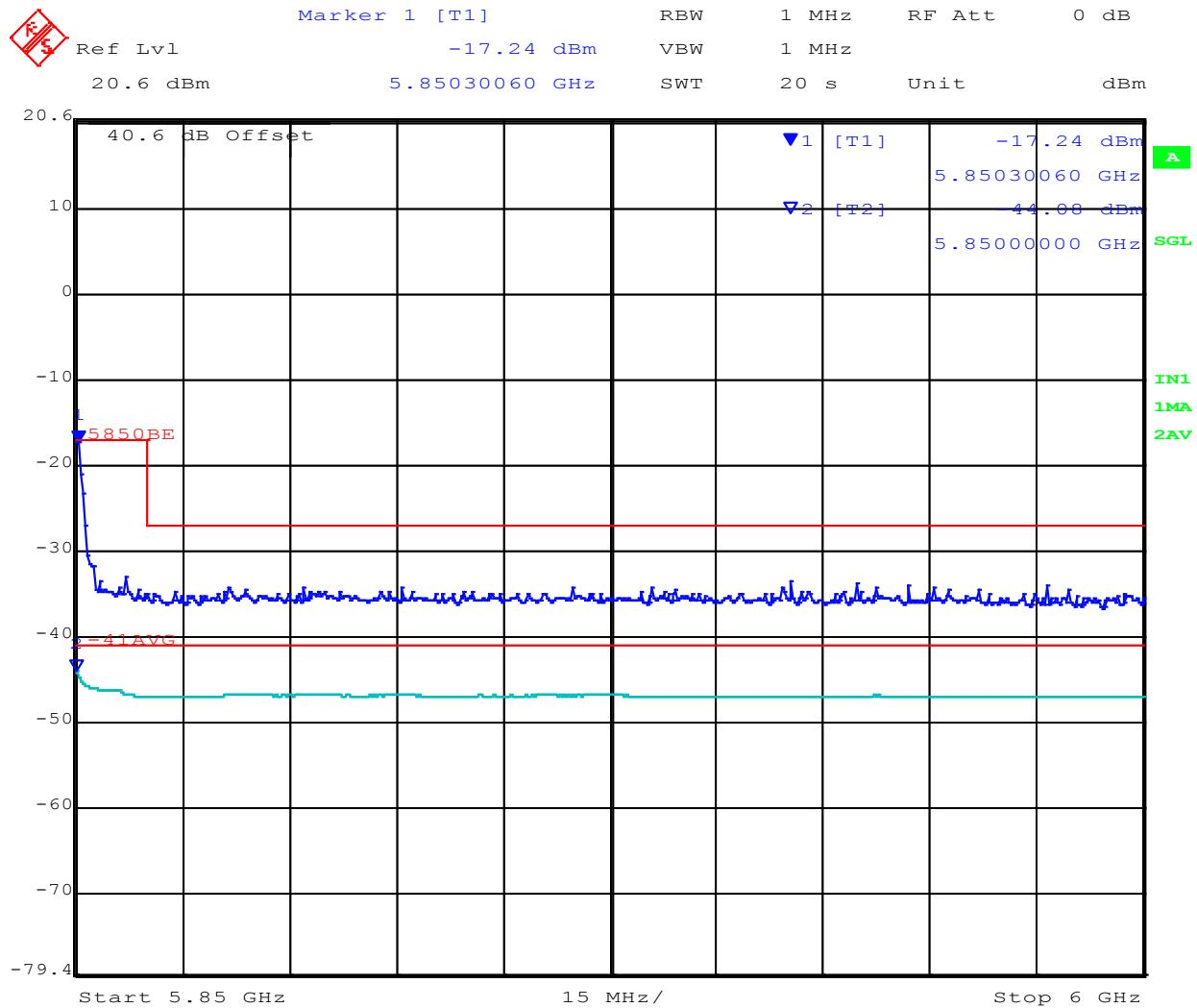
[back to matrix](#)



Date: 29.JUL.2015 09:30:36

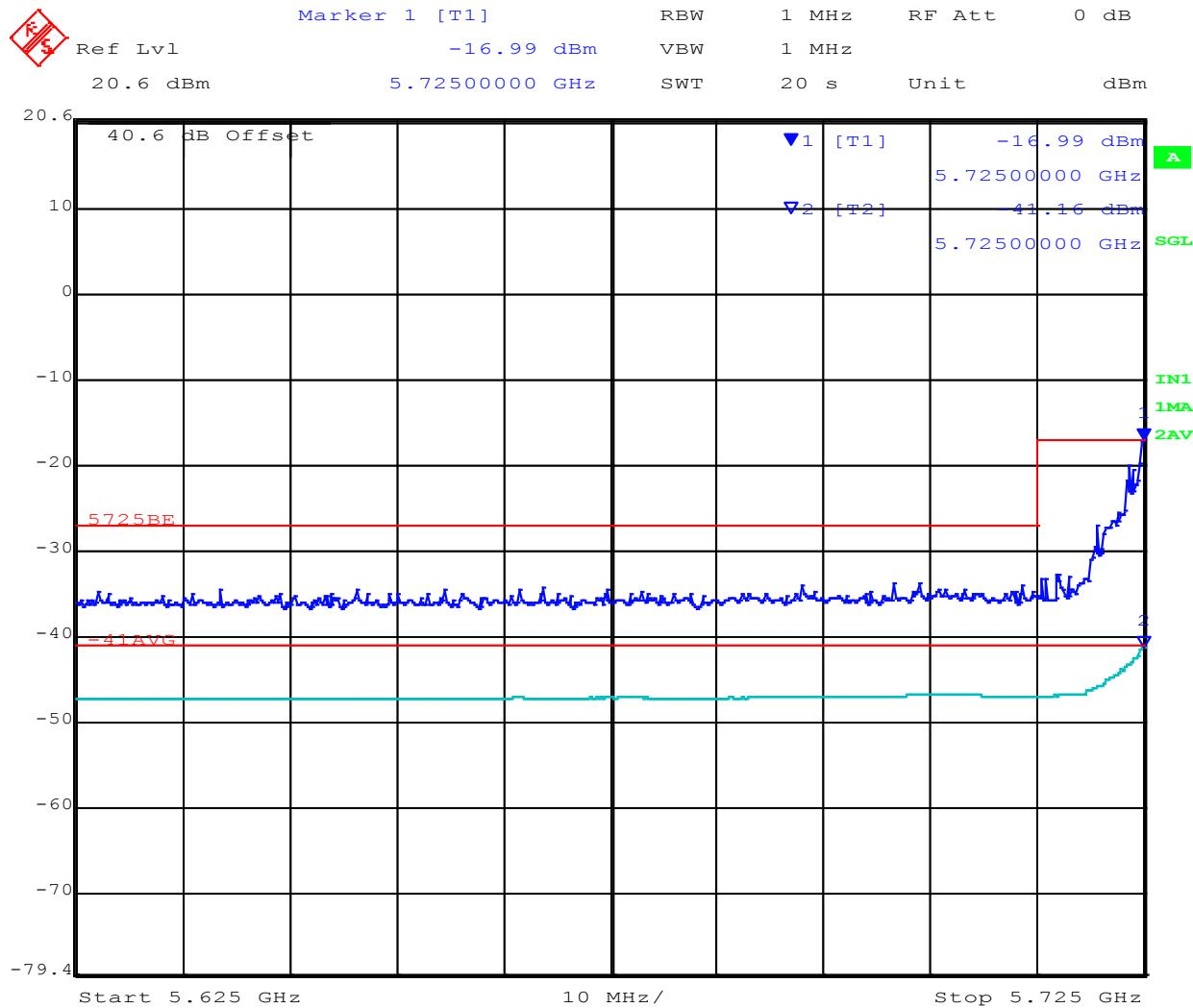
[back to matrix](#)

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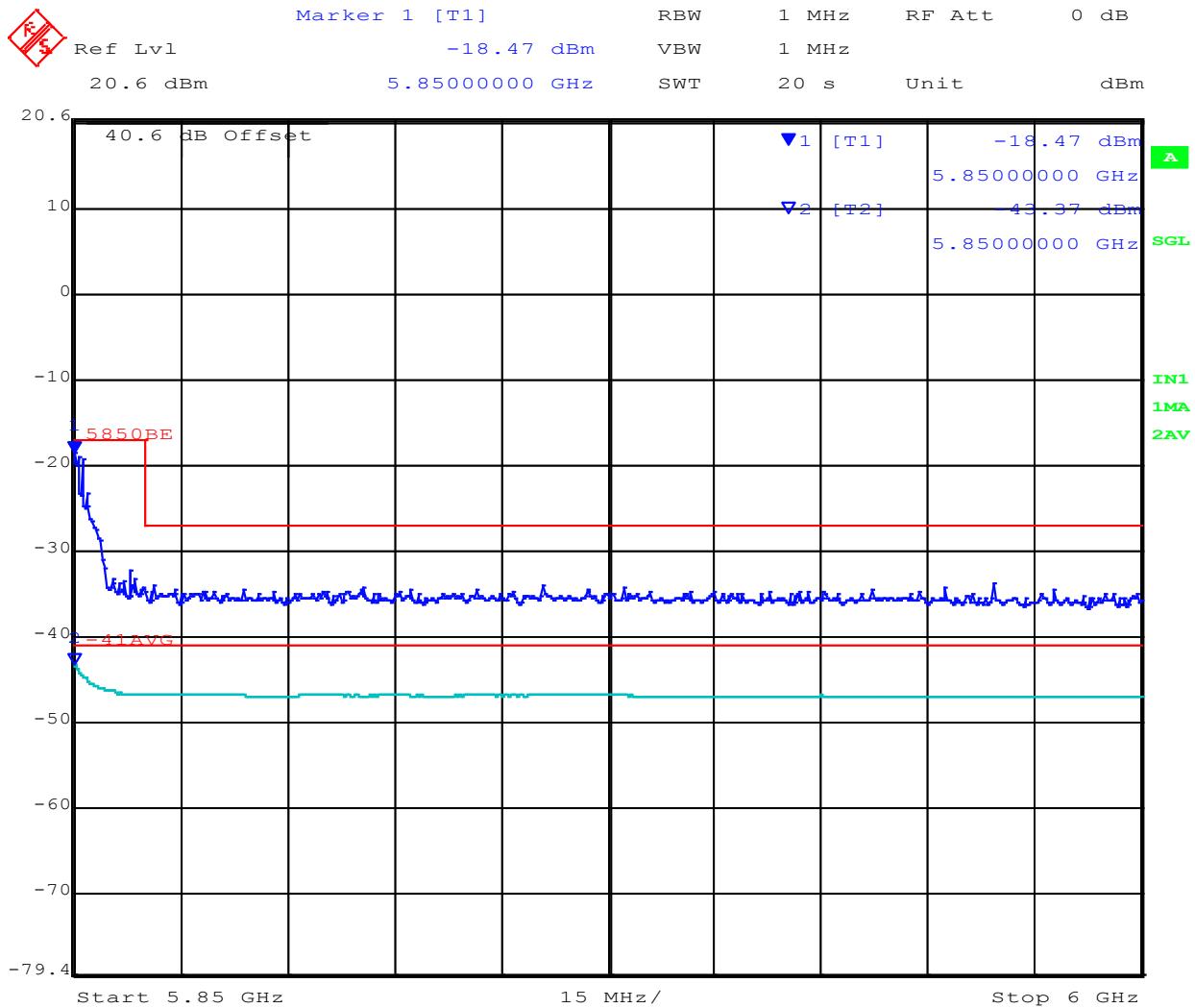
Date: 29.JUL.2015 09:46:38

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Date: 29.JUL.2015 09:33:53

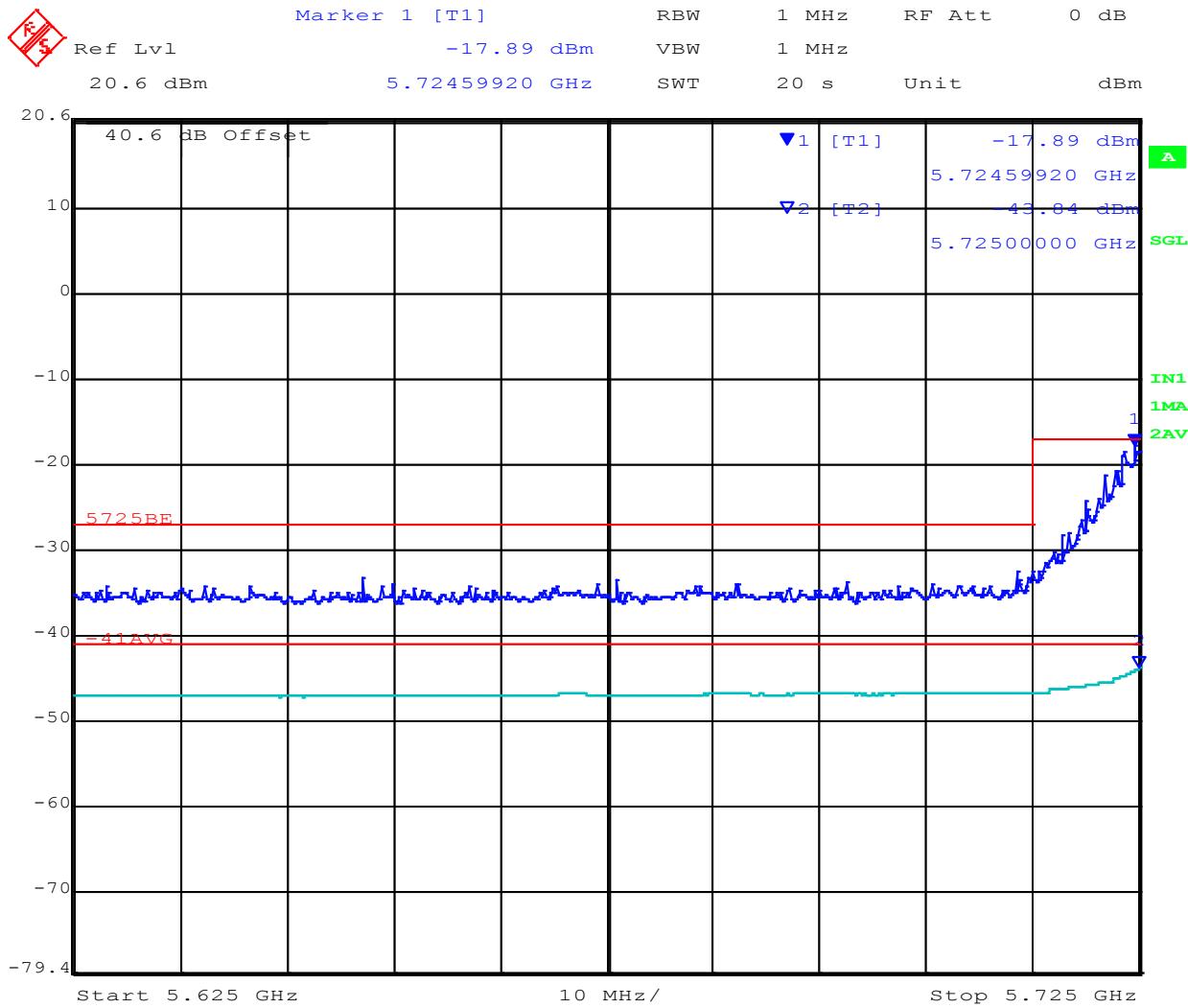
[back to matrix](#)



Date: 29.JUL.2015 09:48:24

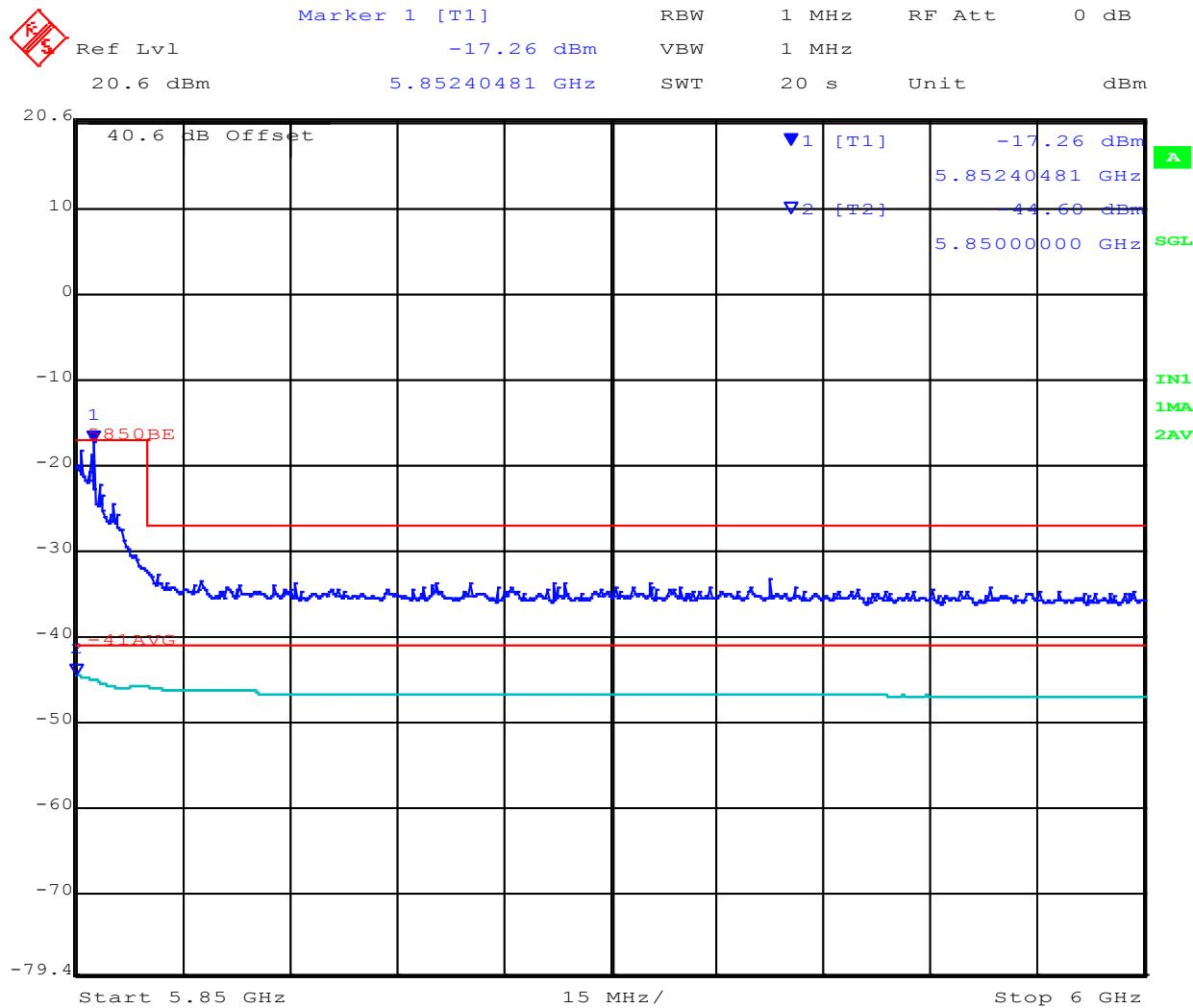
[back to matrix](#)

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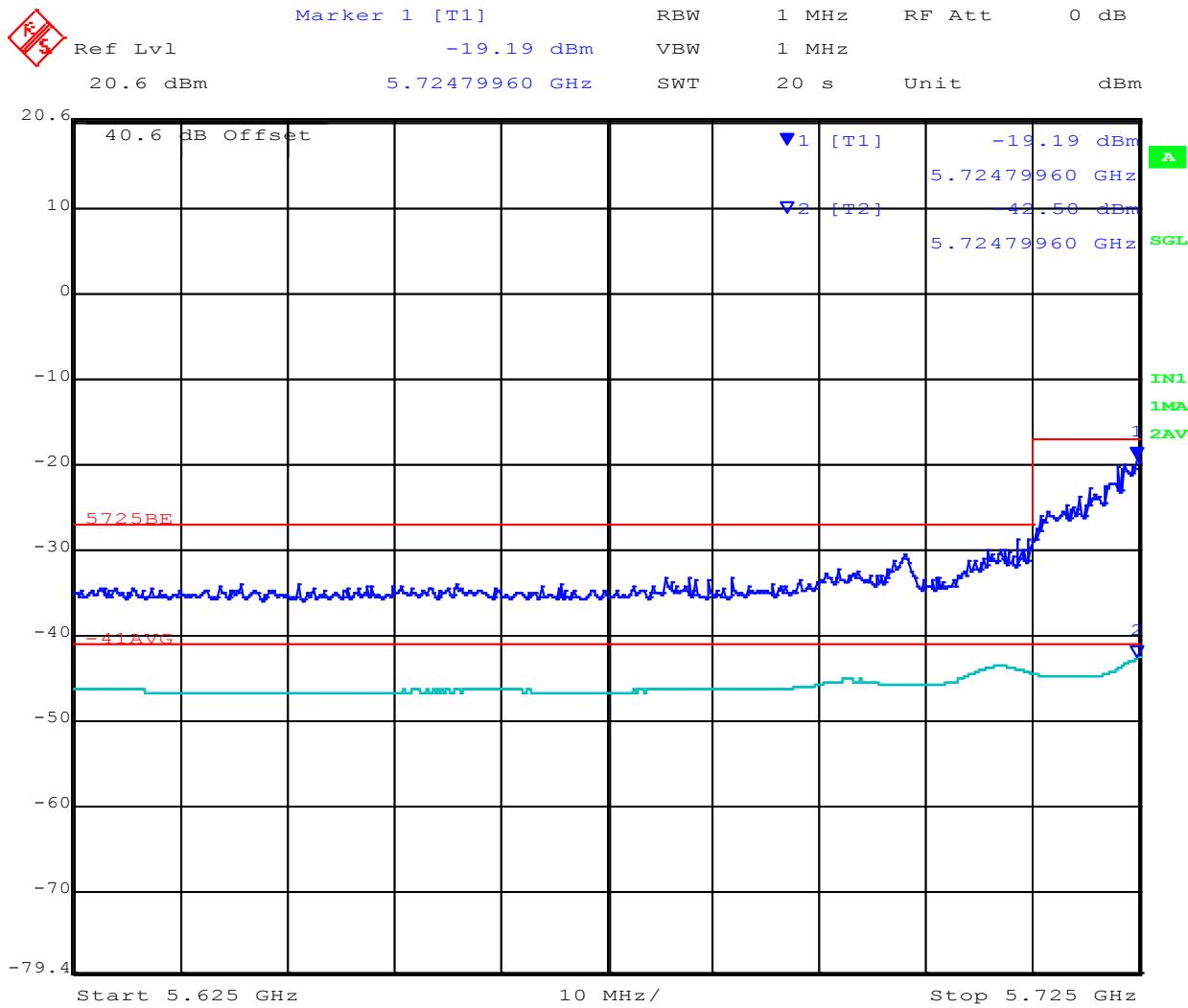
Date: 29.JUL.2015 09:38:12

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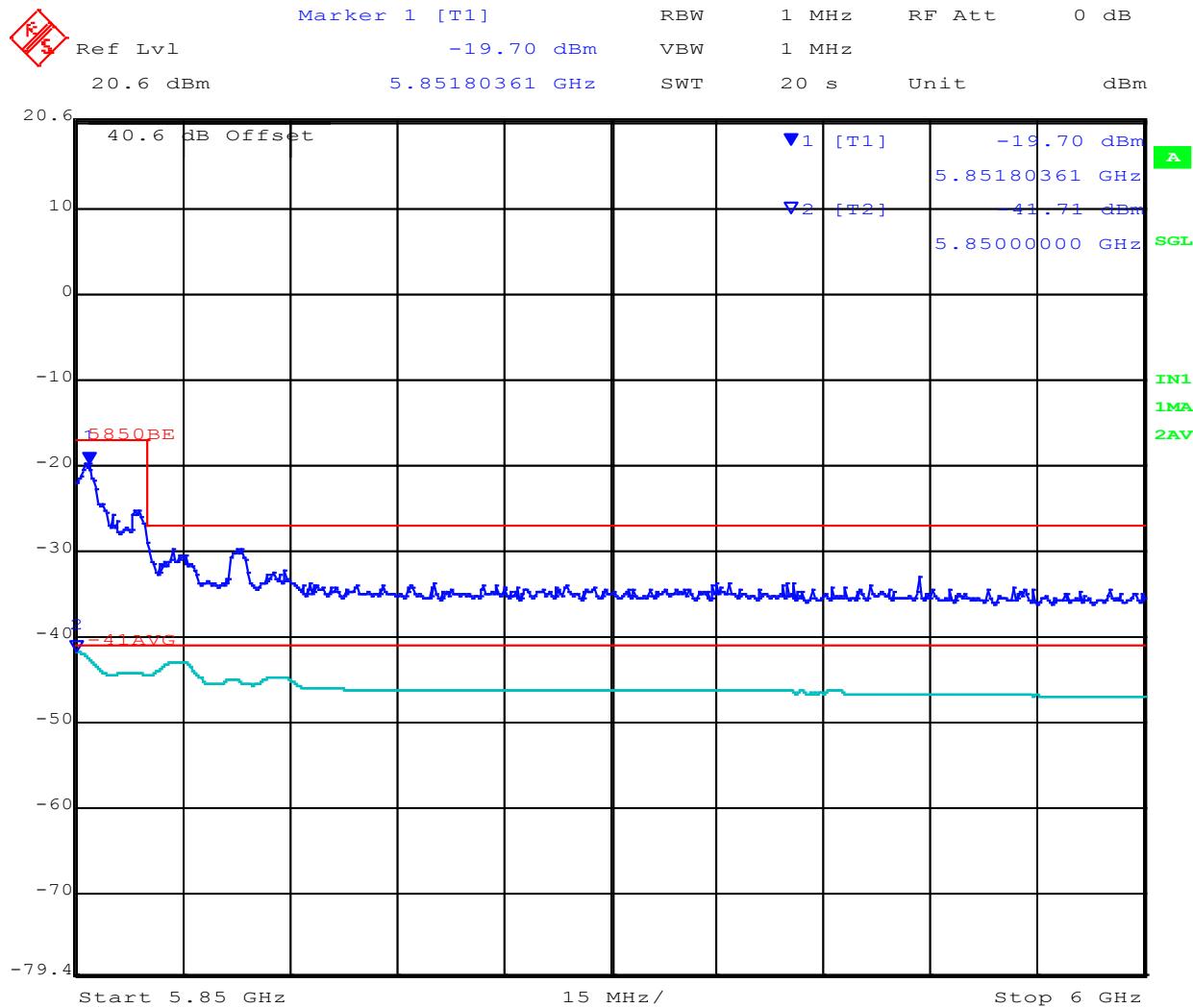
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Date: 29.JUL.2015 09:39:45

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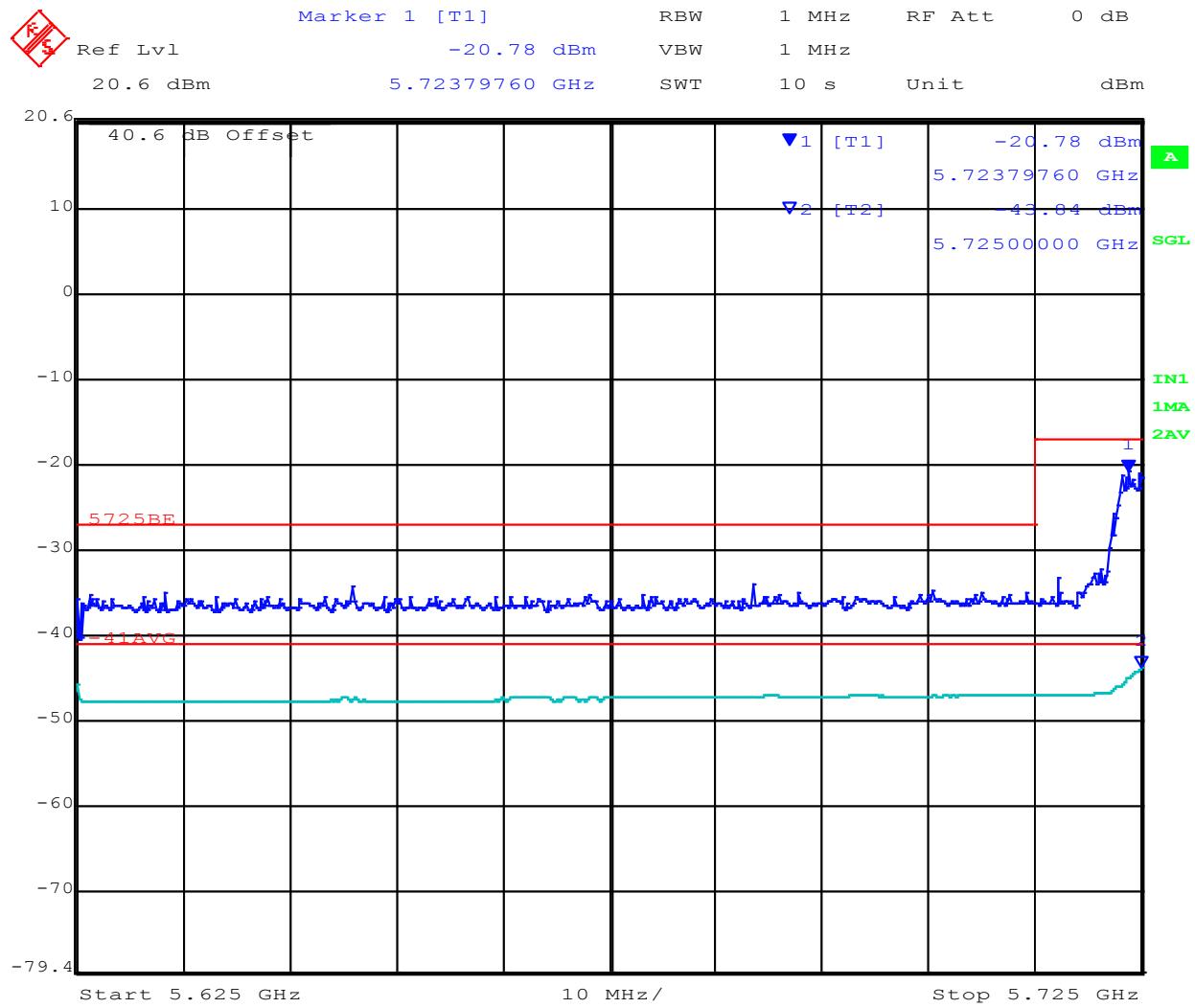
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Date: 29.JUL.2015 09:50:48

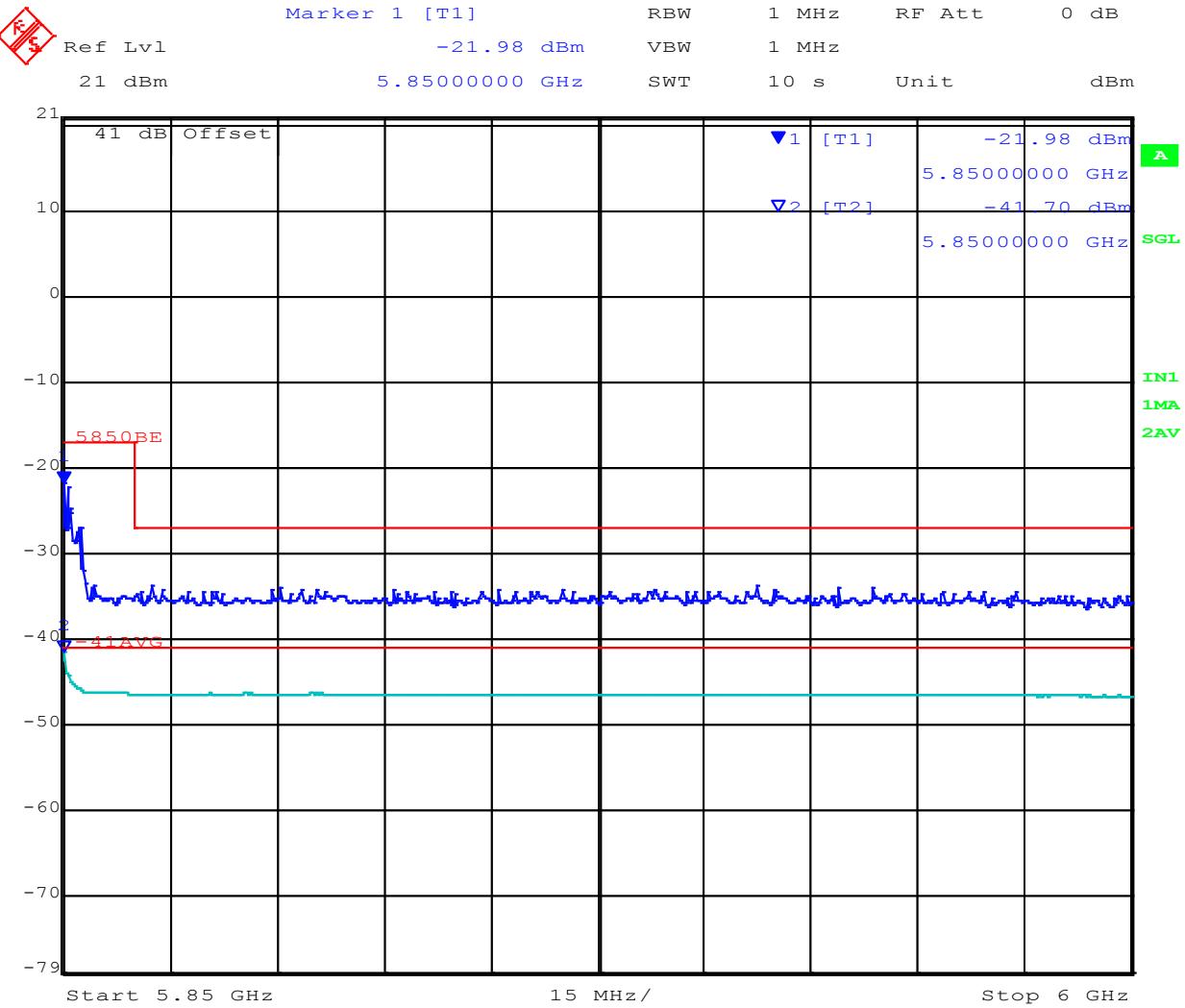
[back to matrix](#)

A.3.1.2. RADWIN Ltd RW-9401-5002



Date: 29.JUL.2015 11:05:03

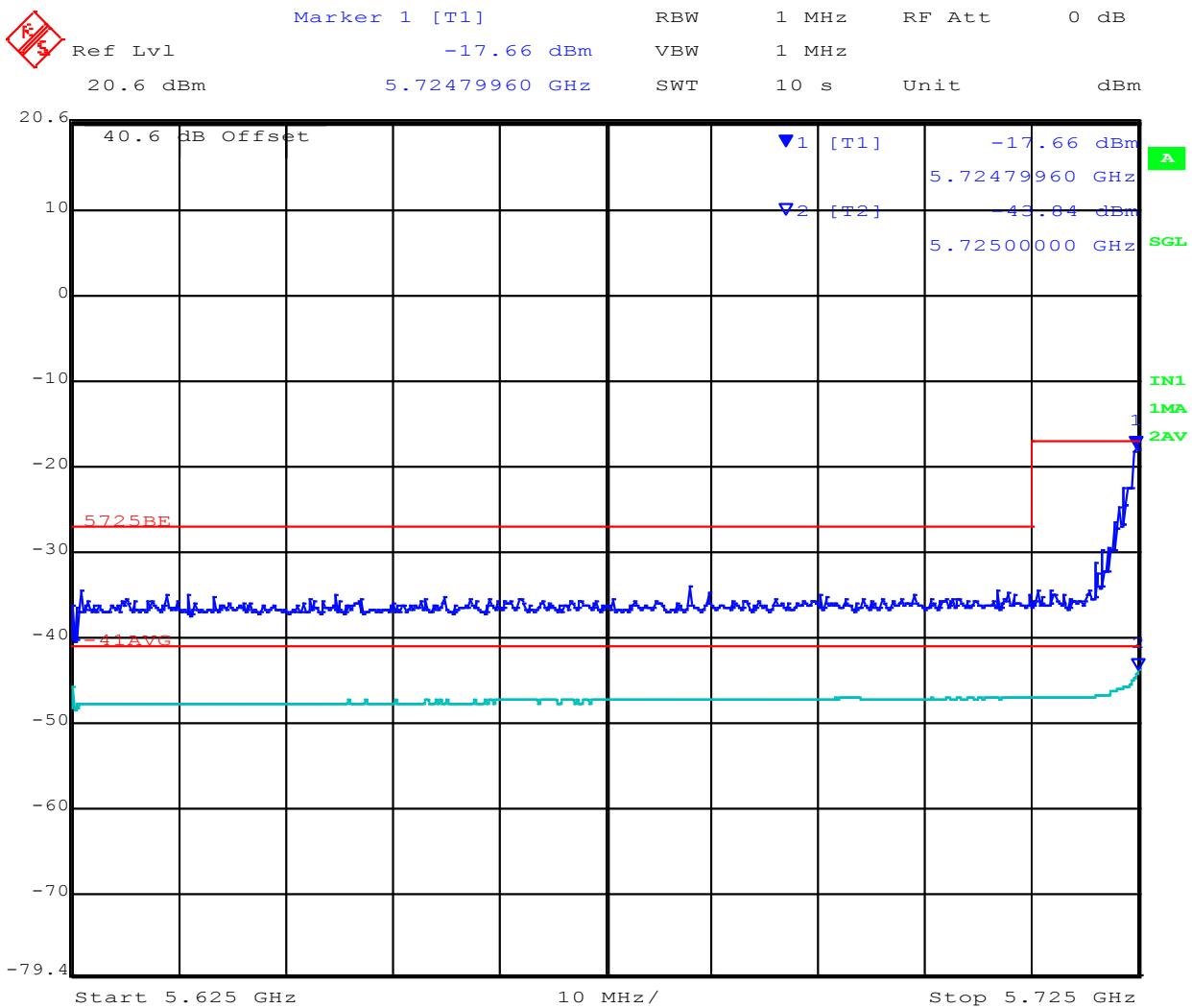
[back to matrix](#)



Date: 29.JUL.2015 11:25:58

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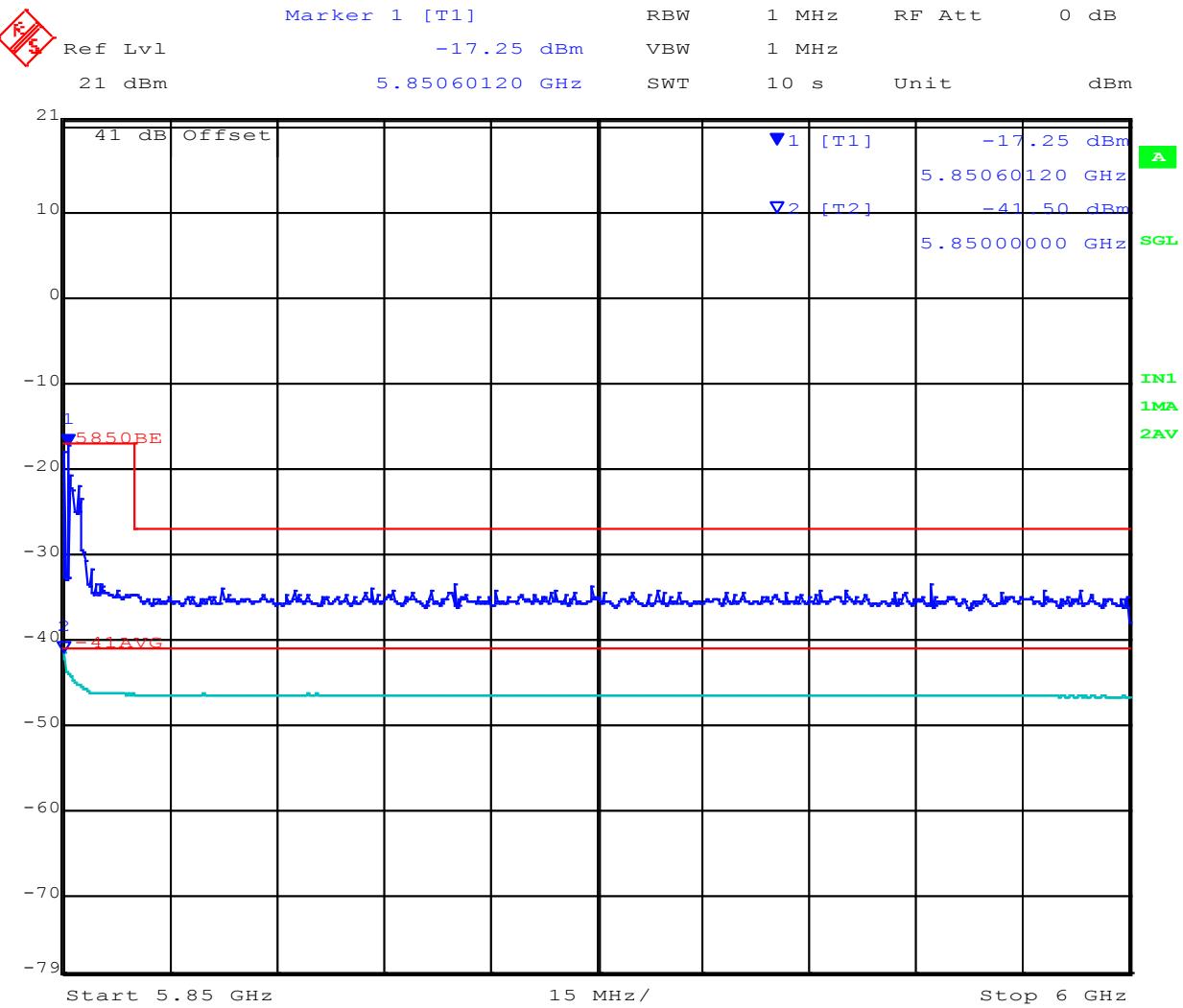
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Date: 29.JUL.2015 11:08:51

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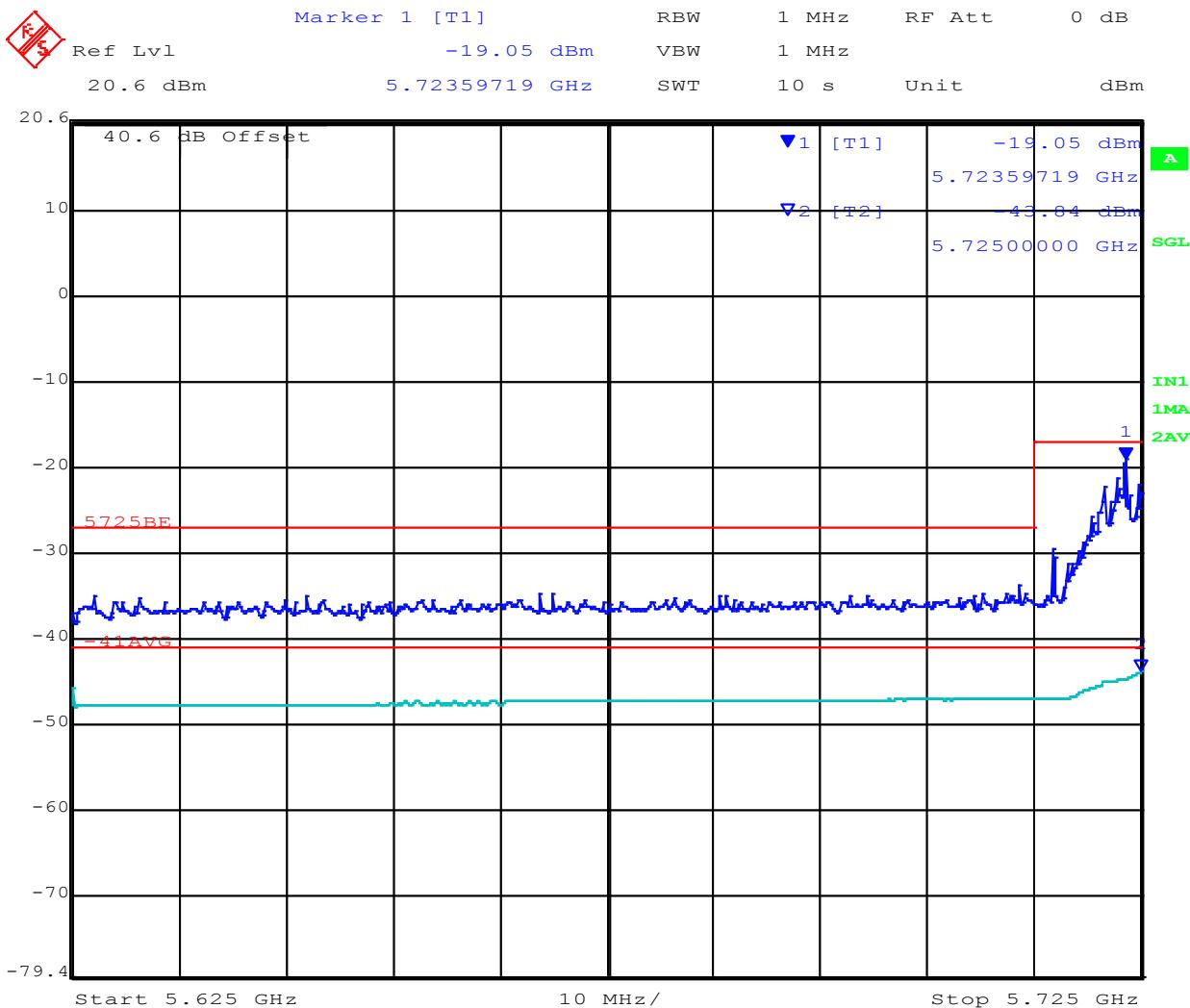
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Date: 29.JUL.2015 11:29:12

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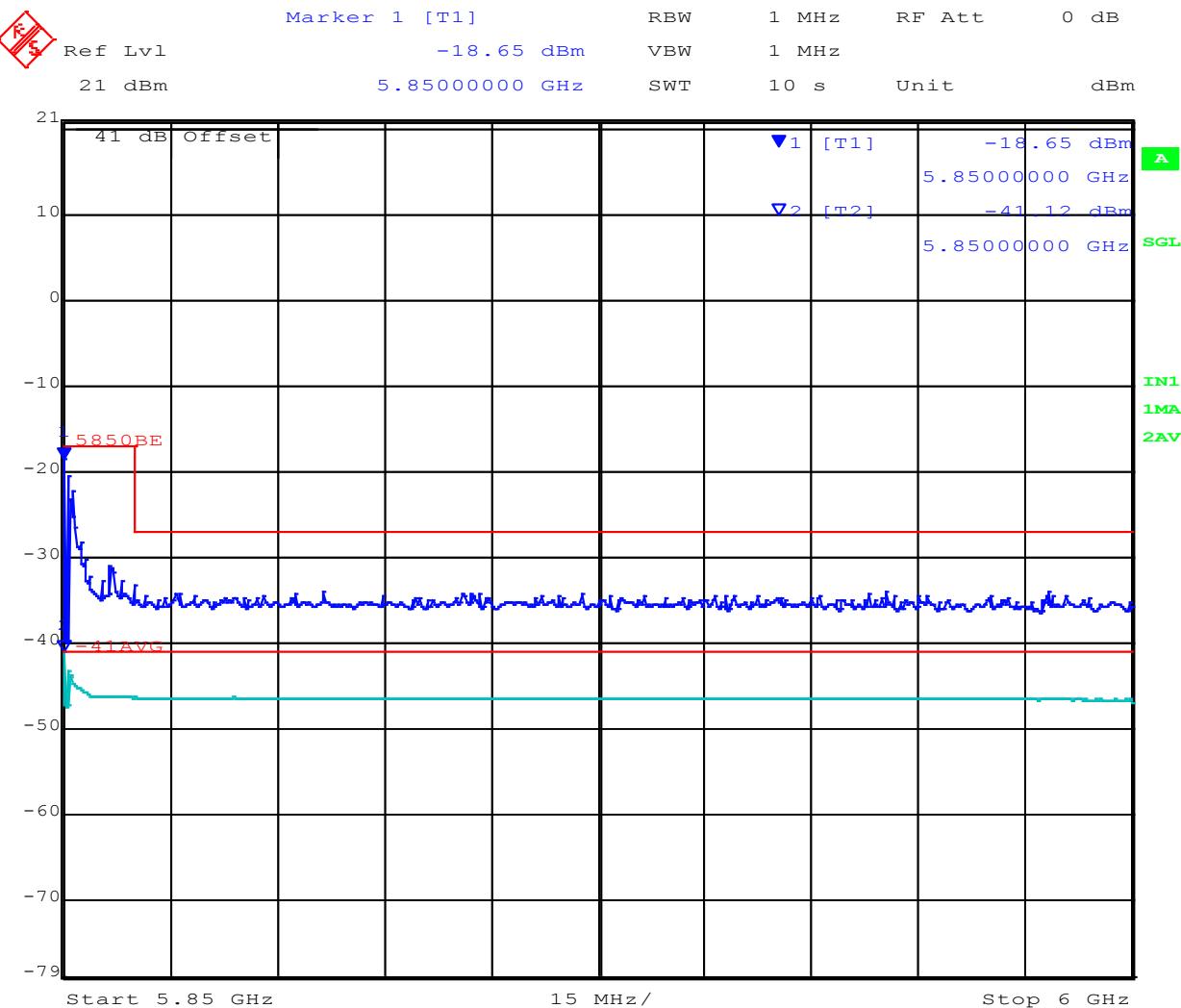
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Date: 29.JUL.2015 11:11:25

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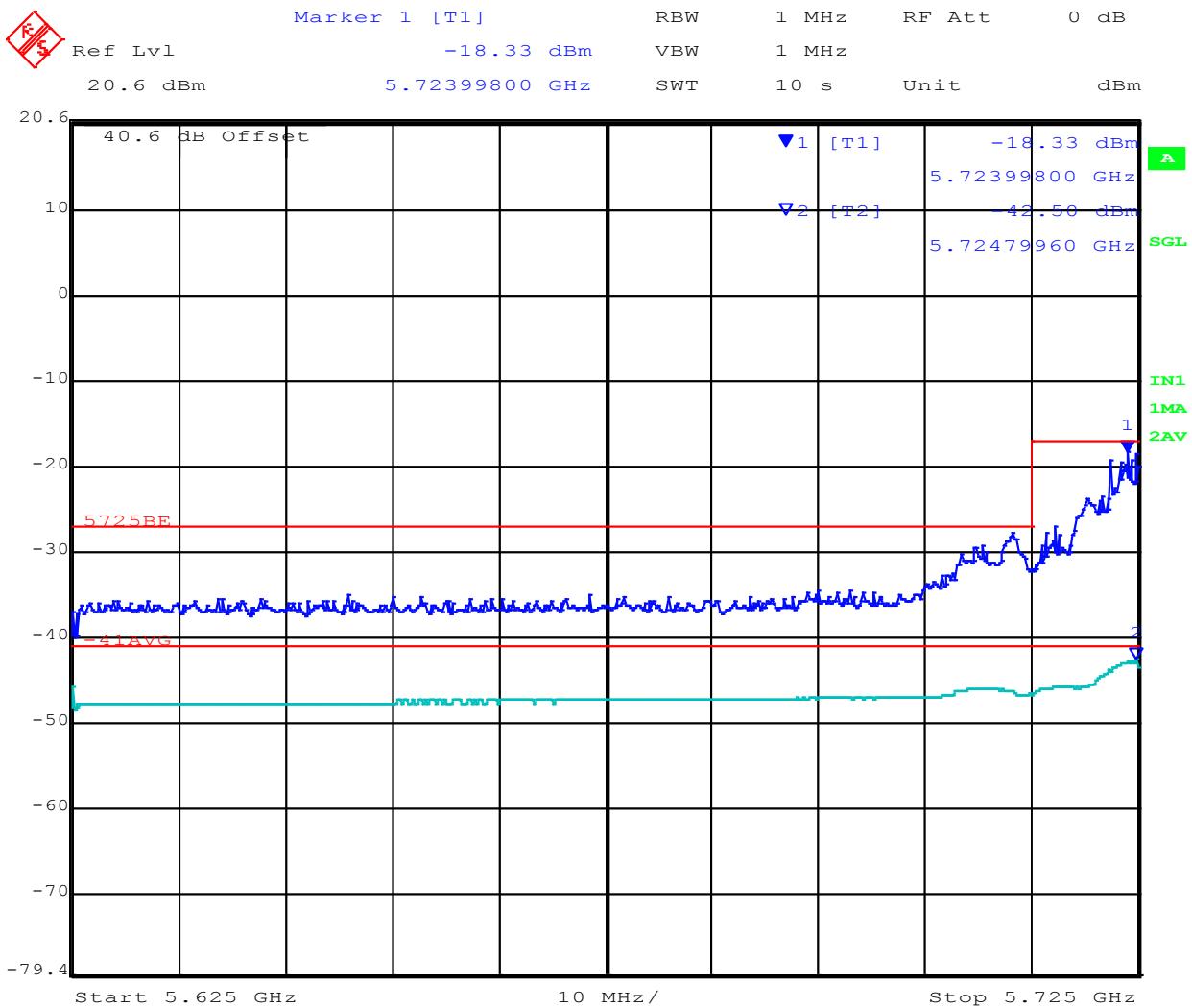
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Date: 29.JUL.2015 11:32:06

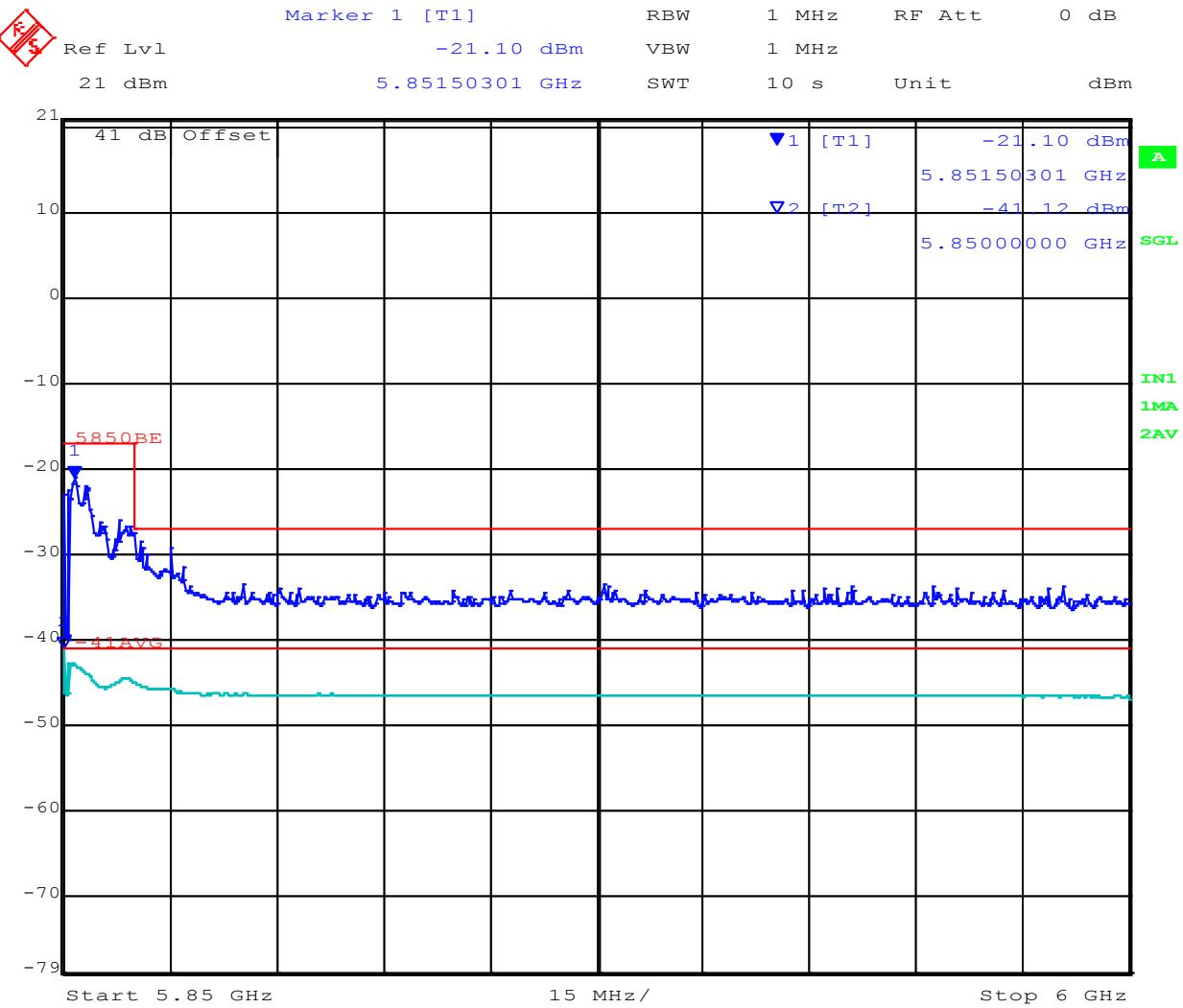
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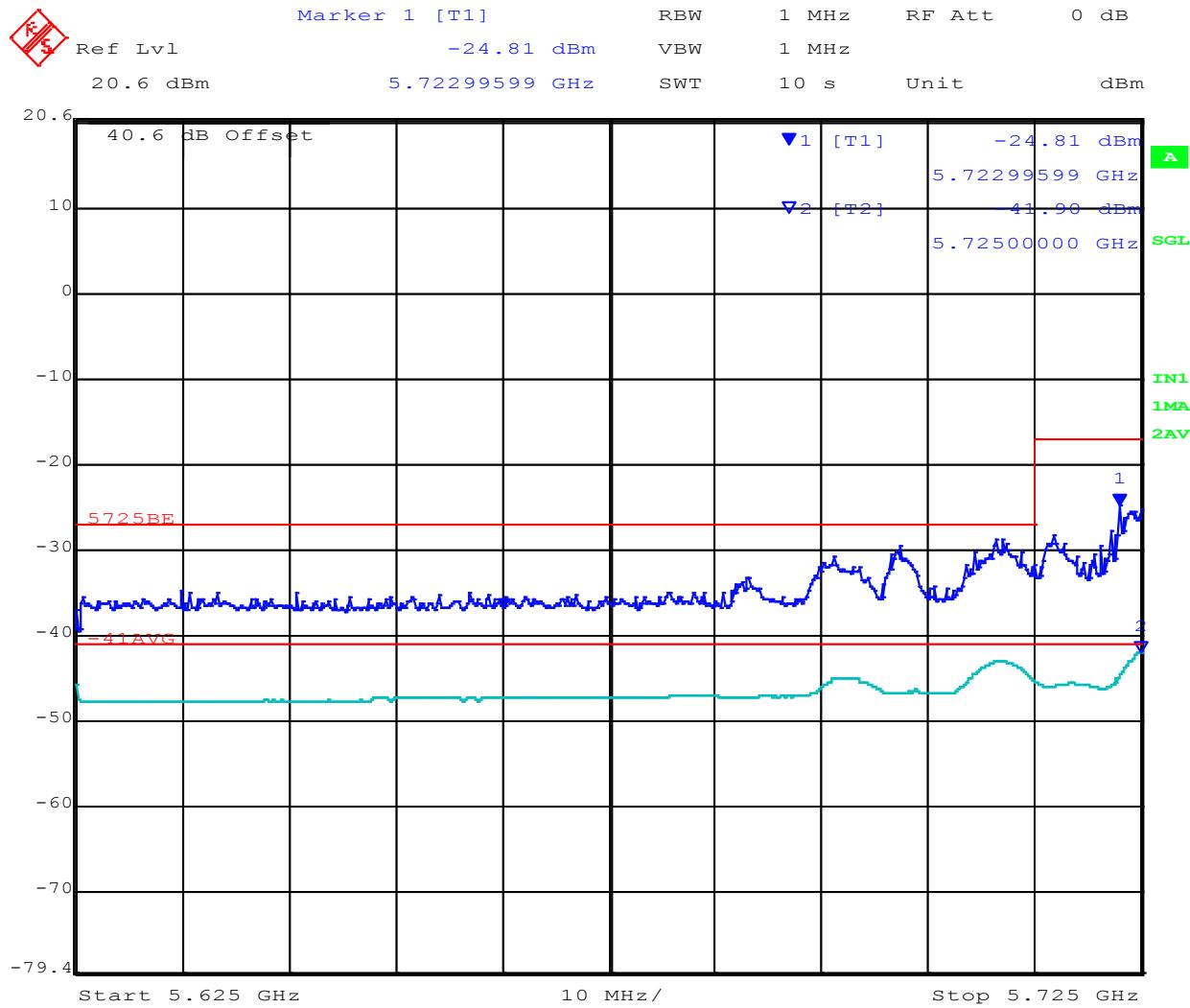
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Date: 29.JUL.2015 11:36:04

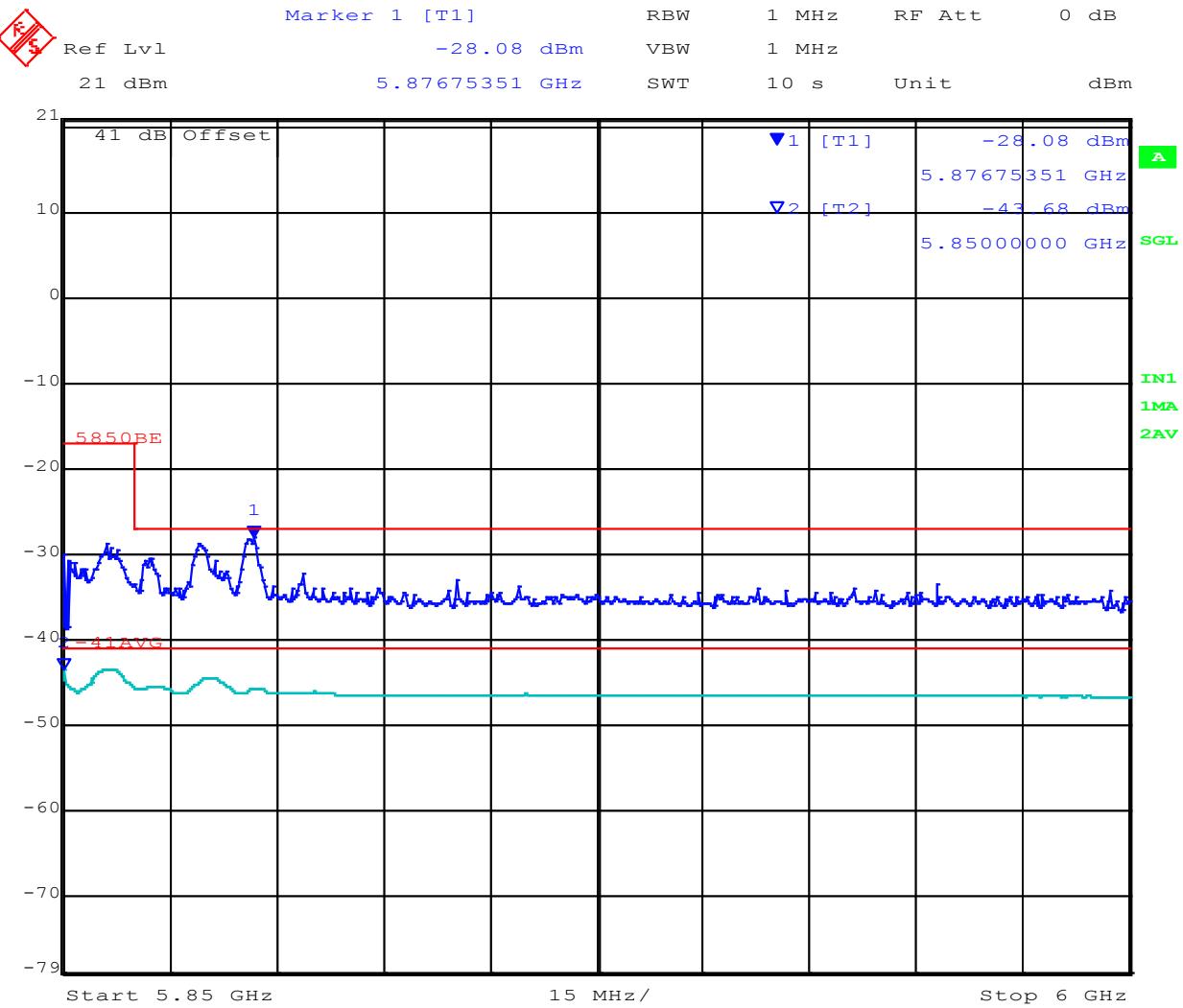
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Date: 29.JUL.2015 11:18:41

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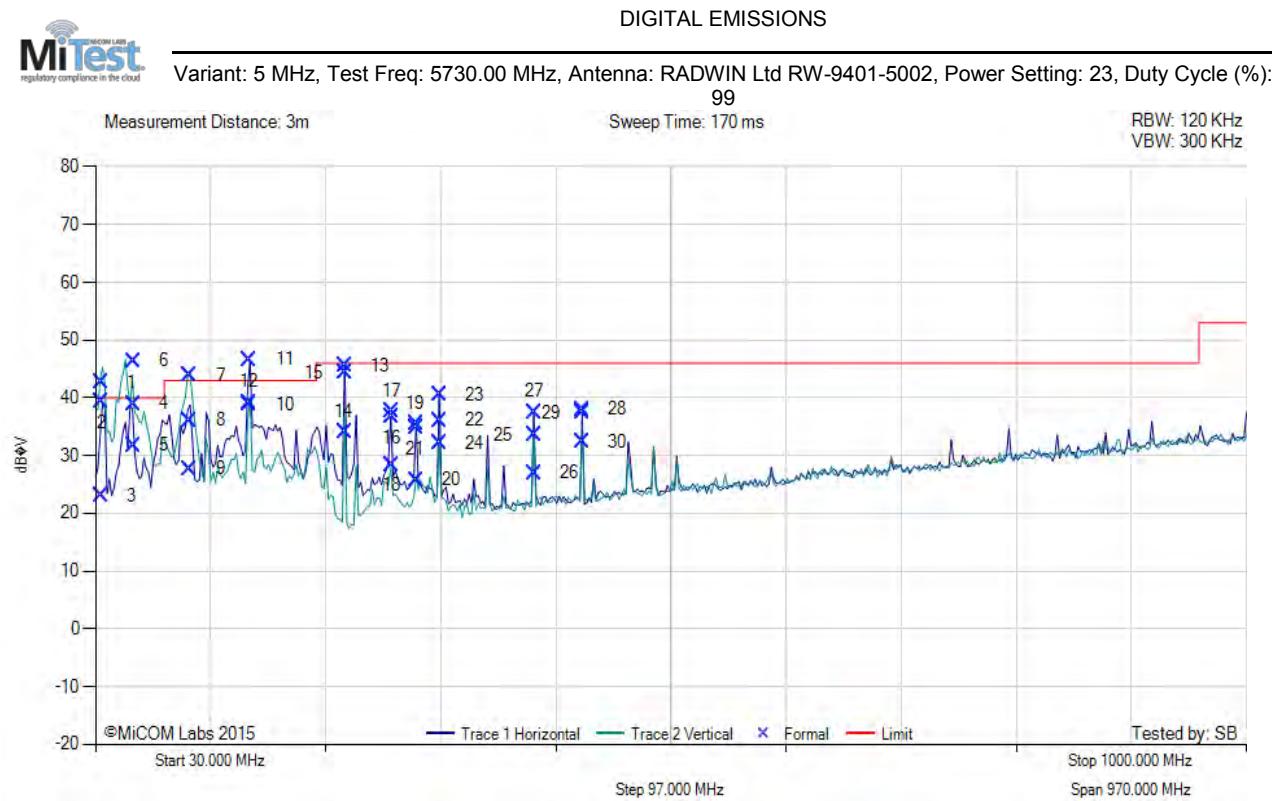


Date: 29.JUL.2015 11:38:10

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A.3.2. Digital Emissions



| Num | Frequency MHz | Raw dB μ V | Cable Loss | AF dB | Level dB μ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB μ V/m | Margin dB | Pass /Fail |
|-----|---------------|----------------|------------|--------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1 | 35.16 | 52.87 | 3.46 | -41.90 | 42.75 | Peak (Scan) | Vertical | | | | | |
| 2 | 35.16 | 49.50 | 3.46 | -13.58 | 39.38 | MaxQP | Vertical | 100 | 274 | 40.0 | -0.6 | Pass |
| 3 | 35.16 | 33.19 | 3.46 | -13.58 | 23.07 | MaxQP | Horizontal | 120 | 30 | 40.0 | -16.9 | Pass |
| 4 | 62.40 | 59.26 | 3.66 | -23.92 | 39.00 | MaxQP | Vertical | 100 | 292 | 40.0 | -1.0 | Pass |
| 5 | 62.40 | 52.01 | 3.66 | -23.92 | 31.75 | MaxQP | Horizontal | 296 | 202 | 40.0 | -8.3 | Pass |
| 6 | 62.40 | 66.64 | 3.66 | -51.98 | 46.38 | Peak (Scan) | Vertical | | | | | |
| 7 | 109.54 | 58.77 | 3.93 | -46.51 | 43.88 | Peak (Scan) | Vertical | | | | | |
| 8 | 109.54 | 50.95 | 3.93 | -18.82 | 36.06 | MaxQP | Vertical | 103 | 37 | 43.0 | -6.9 | Pass |
| 9 | 109.54 | 42.61 | 3.93 | -18.82 | 27.72 | MaxQP | Horizontal | 153 | 107 | 43.0 | -15.3 | Pass |
| 10 | 159.98 | 53.47 | 4.18 | -46.12 | 38.85 | Peak (Scan) | Horizontal | | | | | |
| 11 | 159.98 | 56.28 | 4.18 | -18.80 | 41.68 | MaxQP | Horizontal | 162 | 282 | 43.0 | -1.34 | Pass |
| 12 | 159.98 | 53.82 | 4.18 | -18.80 | 39.20 | MaxQP | Vertical | 247 | 245 | 43.0 | -3.8 | Pass |
| 13 | 239.95 | 60.02 | 4.50 | -18.95 | 45.57 | MaxQP | Horizontal | 118 | 282 | 46.0 | -0.4 | Pass |
| 14 | 239.95 | 48.44 | 4.50 | -18.95 | 33.99 | MaxQP | Vertical | 100 | 133 | 46.0 | -12.0 | Pass |
| 15 | 239.95 | 58.74 | 4.50 | -45.70 | 44.29 | Peak (Scan) | Horizontal | | | | | |
| 16 | 279.97 | 49.47 | 4.64 | -44.00 | 36.69 | Peak (Scan) | Horizontal | | | | | |

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Title: Radwin Ltd. 5 GHz 802.11ac 3x3 RF Module 5XACMD3C
To: FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247
Serial #: RDWN38-U3 Rev A
Issue Date: 20th August 2015
Page: 234 of 235

| | | | | | | | | | | | | |
|----|---------|-------|------|--------|-------|-------------|------------|-----|-----|------|-------|------|
| 17 | 279.97 | 50.47 | 4.64 | -17.42 | 37.69 | MaxQP | Horizontal | 125 | 16 | 46.0 | -8.3 | Pass |
| 18 | 279.97 | 41.24 | 4.64 | -17.42 | 28.46 | MaxQP | Vertical | 100 | 120 | 46.0 | -17.5 | Pass |
| 19 | 299.97 | 47.92 | 4.70 | -17.20 | 35.42 | MaxQP | Horizontal | 104 | 22 | 46.0 | -10.6 | Pass |
| 20 | 299.97 | 38.32 | 4.70 | -17.20 | 25.82 | MaxQP | Vertical | 101 | 195 | 46.0 | -20.2 | Pass |
| 21 | 299.97 | 47.22 | 4.70 | -43.70 | 34.72 | Peak (Scan) | Horizontal | | | | | |
| 22 | 319.98 | 47.98 | 4.77 | -43.05 | 36.09 | Peak (Scan) | Horizontal | | | | | |
| 23 | 319.98 | 52.45 | 4.77 | -16.66 | 40.56 | MaxQP | Horizontal | 100 | 278 | 46.0 | -5.4 | Pass |
| 24 | 319.98 | 44.03 | 4.77 | -16.66 | 32.14 | MaxQP | Vertical | 319 | 185 | 46.0 | -13.9 | Pass |
| 25 | 399.92 | 43.28 | 5.02 | -14.78 | 33.52 | MaxQP | Horizontal | 100 | 353 | 46.0 | -12.5 | Pass |
| 26 | 399.92 | 36.75 | 5.02 | -14.78 | 26.99 | MaxQP | Vertical | 121 | 52 | 46.0 | -19.0 | Pass |
| 27 | 399.92 | 47.27 | 5.02 | -40.74 | 37.51 | Peak (Scan) | Horizontal | | | | | |
| 28 | 439.96 | 47.01 | 5.15 | -40.07 | 38.00 | Peak (Scan) | Horizontal | | | | | |
| 29 | 439.96 | 46.47 | 5.15 | -14.16 | 37.46 | MaxQP | Horizontal | 100 | 352 | 46.0 | -8.5 | Pass |
| 30 | 439.96 | 41.41 | 5.15 | -14.16 | 32.40 | MaxQP | Vertical | 121 | 138 | 46.0 | -13.6 | Pass |
| 31 | 3599.81 | 42.95 | 4.98 | -50.45 | 36.76 | Peak (Scan) | Vertical | | | | | |

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