Company: Hewlett Packard Enterprise

Test of: APINH303
To: FCC CFR 47 Part 15 Subpart E 15.407(DFS)

Report No.: HWPD85-U12_Conducted Rev A

**TEST REPORT ADDENDUM - CONDUCTED**

Issue Date: 4th December 2016

| Master Document Number | Addendum Reports |
|---|---|
| HWPD85-U12_Master | HWPD85-U12_Conducted |
| | HWPD85-U12_Radiated |
| | HWPD85-G4 (FCC Part 15B & ICES-003) |

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# 1. 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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## 2. TEST SUMMARY

List of Measurements

| Test Header | Result | Data Link |
|---|---|---|
| (a) Peak Transmit Power | Complies | View Data |
| (a) 26 dB & 99% Bandwidth | Complies | View Data |
| (a)(5) Power Spectral Density | Complies | View Data |

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# 3. TEST RESULTS

## 3.1. Peak Transmit Power

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

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

Test configuration and setup used for the measurement was per the Conducted Test Set-up section specified in this document.
Supporting Information
Calculated Power = A + G + Y+ 10 log (1/x) dBm

A = Total Power [10*Log10 ($10^{a/10}$ + $10^{b/10}$ + $10^{c/10}$ + $10^{d/10}$)]
G = Antenna Gain
Y = Beamforming Gain
x = Duty Cycle (average power measurements only)

**Limits Maximum Conducted Output Power**

**Operating Frequency Band 5150-5250 MHz**

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

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

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

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that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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

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

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

**Operating Frequency Band 5725 – 5850 MHz**

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

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5260.0** | 15.95 | 16.71 | -- | -- | 19.36 | 35.190 | 24.00 | -4.64 | 19.00 |
| **5300.0** | 15.91 | 16.55 | -- | -- | 19.25 | 32.786 | 24.00 | -4.75 | 19.00 |
| **5320.0** | 13.31 | 13.94 | -- | -- | 16.65 | 19.800 | 23.97 | -7.32 | 16.00 |

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

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

| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5290.0** | 8.59 | 9.40 | -- | -- | 12.02 | 82.725 | 24.00 | -11.98 | 11.50 |

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

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

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5260.0** | 16.00 | 16.74 | -- | -- | 19.40 | 37.034 | 24.00 | -4.60 | 19.00 |
| **5300.0** | 15.95 | 16.63 | -- | -- | 19.31 | 32.786 | 24.00 | -4.69 | 19.00 |
| **5320.0** | 13.31 | 13.99 | -- | -- | 16.67 | 20.762 | 24.00 | -7.33 | 16.00 |

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

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

| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5270.0** | 15.46 | 16.38 | -- | -- | 18.95 | 72.305 | 24.00 | -5.05 | 18.00 |
| **5310.0** | 9.51 | 10.31 | -- | -- | 12.94 | 39.599 | 24.00 | -11.06 | 12.00 |

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

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

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5500.0** | 15.52 | 15.98 | -- | -- | 18.77 | 27.575 | 24.00 | -5.23 | 18.00 |
| **5580.0** | 17.16 | 17.92 | -- | -- | 20.57 | 37.675 | 24.00 | -3.43 | 20.00 |
| **5720.0** | 17.23 | 18.49 | -- | -- | 20.92 | 38.397 | 24.00 | -3.08 | 20.00 |

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

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

| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5530.0** | 9.73 | 10.16 | -- | -- | 12.96 | 83.046 | 24.00 | -11.04 | 12.00 |
| **5610.0** | 15.39 | 16.34 | -- | -- | 18.90 | 151.022 | 24.00 | -5.10 | 18.00 |
| **5690.0** | 15.56 | 16.65 | -- | -- | 19.15 | 147.495 | 24.00 | -4.85 | 18.00 |

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

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

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| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5500.0** | 14.73 | 15.11 | -- | -- | 17.93 | 22.525 | 24.00 | -6.07 | 17.00 |
| **5580.0** | 16.22 | 17.10 | -- | -- | 19.69 | 35.591 | 24.00 | -4.31 | 19.00 |
| **5720.0** | 16.45 | 17.75 | -- | -- | 20.16 | 37.515 | 24.00 | -3.84 | 19.00 |

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

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

| Equipment Configuration for Peak Transmit Power | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Conducted Output Power (dBm) Port(s) | | | | Calculated Total Power | Minimum 26 dB Bandwidth | Limit | Margin | EUT Power Setting |
|---|---|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | Σ Port(s) dBm | MHz | dBm | dB | |
| **5510.0** | 13.10 | 13.44 | -- | -- | 16.28 | 40.080 | 24.00 | -7.72 | 15.00 |
| **5550.0** | 15.91 | 16.61 | -- | -- | 19.28 | 76.313 | 24.00 | -4.72 | 19.00 |
| **5710.0** | 16.16 | 17.18 | -- | -- | 19.71 | 77.114 | 24.00 | -4.29 | 19.00 |

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

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

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## 3.2. 26 dB & 99% Bandwidth

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

**Test Procedure for 26 dB and 99% Bandwidth Measurement**
The bandwidth at 26 dB and 99 % is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The Resolution Bandwidth was set to approximately 1% of the emission bandwidth.
Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 35.190 | 38.156 | -- | -- | 38.156 | 35.190 | | |
| **5300.0** | 32.786 | 36.553 | -- | -- | 36.553 | 32.786 | | |
| **5320.0** | 19.800 | 21.002 | -- | -- | 21.002 | 19.800 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 17.796 | 19.479 | -- | -- | 19.479 | 17.796 | | |
| **5300.0** | 17.074 | 19.319 | -- | -- | 19.319 | 17.074 | | |
| **5320.0** | 16.513 | 16.513 | -- | -- | 16.513 | 16.513 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5290.0** | 82.725 | 83.367 | -- | -- | 83.367 | 82.725 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5290.0** | 75.992 | 75.992 | -- | -- | 75.992 | 75.992 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 37.034 | 39.359 | -- | -- | 39.359 | 37.034 | | |
| **5300.0** | 32.786 | 38.156 | -- | -- | 38.156 | 32.786 | | |
| **5320.0** | 20.762 | 21.242 | -- | -- | 21.242 | 20.762 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5260.0** | 18.437 | 19.880 | -- | -- | 19.880 | 18.437 | | |
| **5300.0** | 18.036 | 19.960 | -- | -- | 19.960 | 18.036 | | |
| **5320.0** | 17.635 | 17.635 | -- | -- | 17.635 | 17.635 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5270.0** | 72.305 | 77.595 | -- | -- | 77.595 | 72.305 | | |
| **5310.0** | 39.760 | 39.599 | -- | -- | 39.760 | 39.599 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5270.0** | 36.553 | 37.675 | -- | -- | 37.675 | 36.553 | | |
| **5310.0** | 36.072 | 36.072 | -- | -- | 36.072 | 36.072 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5500.0** | 30.782 | 27.575 | -- | -- | 30.782 | 27.575 | | |
| **5580.0** | 38.557 | 37.675 | -- | -- | 38.557 | 37.675 | | |
| **5720.0** | 38.397 | 39.599 | -- | -- | 39.599 | 38.397 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5500.0** | 16.834 | 16.673 | -- | -- | 16.834 | 16.673 | | |
| **5580.0** | 22.044 | 20.922 | -- | -- | 22.044 | 20.922 | | |
| **5720.0** | 22.525 | 24.128 | -- | -- | 24.128 | 22.525 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5530.0** | 83.046 | 84.329 | -- | -- | 84.329 | 83.046 | | |
| **5610.0** | 151.343 | 151.022 | -- | -- | 151.343 | 151.022 | | |
| **5690.0** | 147.495 | 154.228 | -- | -- | 154.228 | 147.495 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5530.0** | 75.992 | 76.313 | -- | -- | 76.313 | 75.992 | | |
| **5610.0** | 76.954 | 77.275 | -- | -- | 77.275 | 76.954 | | |
| **5690.0** | 76.954 | 77.595 | -- | -- | 77.595 | 76.954 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5500.0** | 25.892 | 22.525 | -- | -- | 25.892 | 22.525 | | |
| **5580.0** | 35.591 | 35.752 | -- | -- | 35.752 | 35.591 | | |
| **5720.0** | 37.515 | 38.798 | -- | -- | 38.798 | 37.515 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5500.0** | 17.796 | 17.796 | -- | -- | 17.796 | 17.796 | | |
| **5580.0** | 18.277 | 18.357 | -- | -- | 18.357 | 18.277 | | |
| **5720.0** | 18.517 | 20.200 | -- | -- | 20.200 | 18.517 | | |

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

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

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| Equipment Configuration for 26 dB & 99% Occupied Bandwidth | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured 26 dB Bandwidth (MHz) Port(s) | | | | 26 dB Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5510.0** | 40.080 | 40.080 | -- | -- | 40.080 | 40.080 | | |
| **5550.0** | 76.954 | 76.313 | -- | -- | 76.954 | 76.313 | | |
| **5710.0** | 78.557 | 77.114 | -- | -- | 78.557 | 77.114 | | |

| Test Frequency | Measured 99% Bandwidth (MHz) Port(s) | | | | 99% Bandwidth (MHz) | | | |
|---|---|---|---|---|---|---|---|---|
| **MHz** | **a** | **b** | **c** | **d** | **Highest** | **Lowest** | | |
| **5510.0** | 36.072 | 36.072 | -- | -- | 36.072 | 36.072 | | |
| **5550.0** | 36.713 | 36.874 | -- | -- | 36.874 | 36.713 | | |
| **5710.0** | 36.874 | 37.355 | -- | -- | 37.355 | 36.874 | | |

| 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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## 3.3. Power Spectral Density

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

**Test Procedure for Power Spectral Density**
The in-band power spectral density was measured using the test technique specified in KDB 789033. A 1 MHz measurement bandwidth was implemented for the analyzer sweep. Once the sweep is complete the analyzer trace data is downloaded and used for post processing purposes.
Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. The Peak Power Spectral Density is the highest level found across the emission bandwidth. With multiple antenna port measurements the numerical analyzer data from each port is summed (å) and a link to this additional graphic is provided.

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

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

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

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

**Limits Power Spectral Density**

**Operating Frequency Band 5150-5250 MHz**

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

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

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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 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:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5260.0 | 4.946 | 4.506 | -- | -- | 7.465 | 11.0 | -3.5 |
| 5300.0 | 5.532 | 4.182 | -- | -- | 7.149 | 11.0 | -3.9 |
| 5320.0 | 3.103 | 2.012 | -- | -- | 5.048 | 11.0 | -6.0 |

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

DCCF - Duty Cycle Correction Factor

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

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5290.0 | -8.114 | -9.562 | -- | -- | -6.382 | 9.4 | -15.8 |

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

DCCF - Duty Cycle Correction Factor

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5260.0 | 5.116 | 4.162 | -- | -- | 7.693 | 9.4 | -1.7 |
| 5300.0 | 5.383 | 4.328 | -- | -- | 7.922 | 9.4 | -1.5 |
| 5320.0 | 2.580 | 1.506 | -- | -- | 5.102 | 9.4 | -4.3 |

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

DCCF - Duty Cycle Correction Factor

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5270.0 | 1.417 | 1.174 | -- | -- | 4.065 | 9.4 | -5.3 |
| 5310.0 | -3.760 | -5.091 | -- | -- | -1.776 | 9.4 | -11.2 |

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

DCCF - Duty Cycle Correction Factor

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11a | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.00 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | Not Applicable |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5500.0 | 5.011 | 3.520 | -- | -- | 6.869 | 11.0 | -4.1 |
| 5580.0 | 7.004 | 5.429 | -- | -- | 9.170 | 11.0 | -1.8 |
| 5720.0 | 7.745 | 6.157 | -- | -- | 9.815 | 11.0 | -1.2 |

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

DCCF - Duty Cycle Correction Factor

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11ac-80 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 29.30 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5530.0 | -7.215 | -9.526 | -- | -- | -5.684 | 9.4 | -15.1 |
| 5610.0 | -1.699 | -2.663 | -- | -- | 0.536 | 9.4 | -8.9 |
| 5690.0 | -0.981 | -2.633 | -- | -- | 1.258 | 9.4 | -8.2 |

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

DCCF - Duty Cycle Correction Factor

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-20 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 6.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5500.0 | 4.126 | 1.923 | -- | -- | 5.963 | 9.4 | -3.4 |
| 5580.0 | 6.074 | 4.501 | -- | -- | 8.302 | 9.4 | -1.1 |
| 5720.0 | 6.512 | 5.365 | -- | -- | 9.031 | 9.4 | -0.4 |

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

DCCF - Duty Cycle Correction Factor

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| Equipment Configuration for Power Spectral Density | | | |
|---|---|---|---|
| **Variant:** | 802.11n HT-40 | **Duty Cycle (%):** | 99.0 |
| **Data Rate:** | 13.50 MBit/s | **Antenna Gain (dBi):** | 4.60 |
| **Modulation:** | OFDM | **Beam Forming Gain (Y)(dB):** | 3.00 |
| **TPC:** | Not Applicable | **Tested By:** | CC |
| **Engineering Test Notes:** | None | | |

**Test Measurement Results**

| Test Frequency | Measured Power Spectral Density Port(s) (dBm/MHz) | | | | Summation Peak Marker + DCCF (+0.04 dB) | Limit | Margin |
|---|---|---|---|---|---|---|---|
| MHz | a | b | c | d | dBm/MHz | dBm/MHz | dB |
| 5510.0 | -0.711 | -2.635 | -- | -- | 1.430 | 9.4 | -8.0 |
| 5550.0 | 2.751 | 1.123 | -- | -- | 4.518 | 9.4 | -4.9 |
| 5710.0 | 3.646 | 1.699 | -- | -- | 5.586 | 9.4 | -3.8 |

| 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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# A. APPENDIX - GRAPHICAL IMAGES

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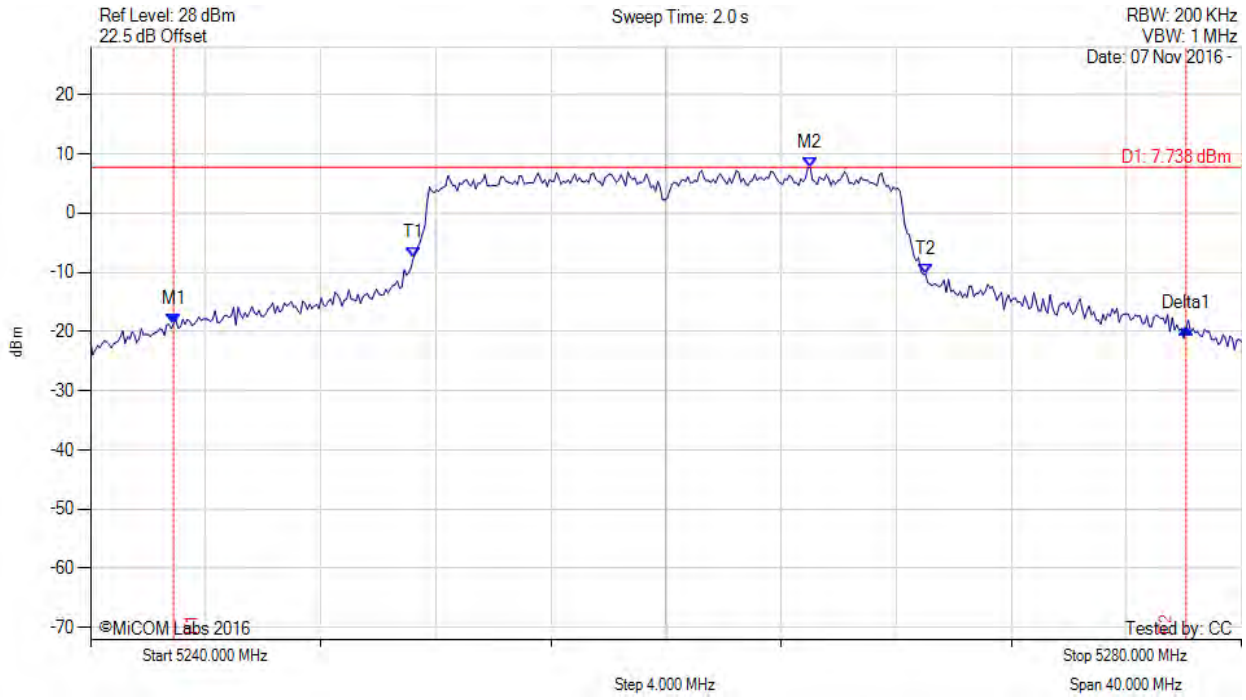
## A.1. 26 dB & 99% Bandwidth

26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5242.886 MHz : -18.672 dBm<br>M2 : 5265.010 MHz : 7.738 dBm<br>Delta1 : 35.190 MHz : -0.722 dB<br>T1 : 5251.222 MHz : -7.576 dBm<br>T2 : 5269.018 MHz : -10.324 dBm<br>OBW : 17.796 MHz | Measured 26 dB Bandwidth: 35.190 MHz<br>Measured 99% Bandwidth: 17.796 MHz |

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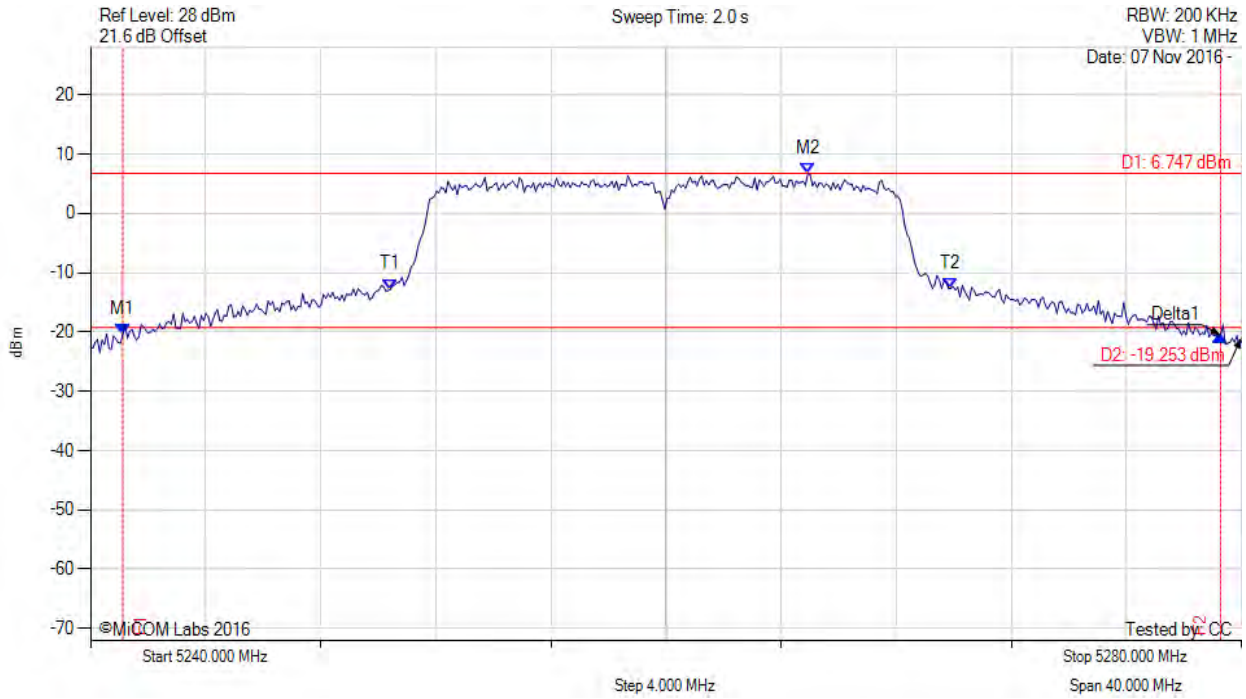
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5241.122 MHz : -20.303 dBm<br>M2 : 5264.930 MHz : 6.747 dBm<br>Delta1 : 38.156 MHz : -0.242 dB<br>T1 : 5250.421 MHz : -12.823 dBm<br>T2 : 5269.900 MHz : -12.638 dBm<br>OBW : 19.479 MHz | Measured 26 dB Bandwidth: 38.156 MHz<br>Measured 99% Bandwidth: 19.479 MHz |

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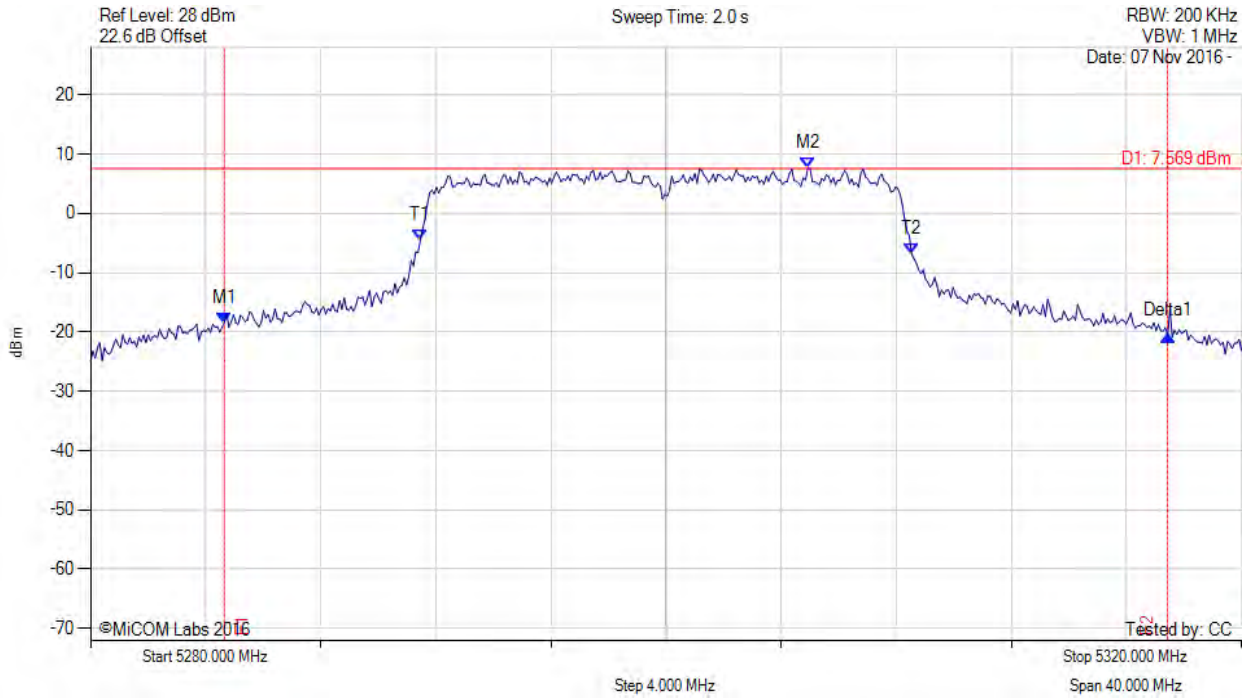
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5284.649 MHz : -18.467 dBm<br>M2 : 5304.930 MHz : 7.569 dBm<br>Delta1 : 32.786 MHz : -2.131 dB<br>T1 : 5291.463 MHz : -4.503 dBm<br>T2 : 5308.537 MHz : -6.810 dBm<br>OBW : 17.074 MHz | Measured 26 dB Bandwidth: 32.786 MHz<br>Measured 99% Bandwidth: 17.074 MHz |

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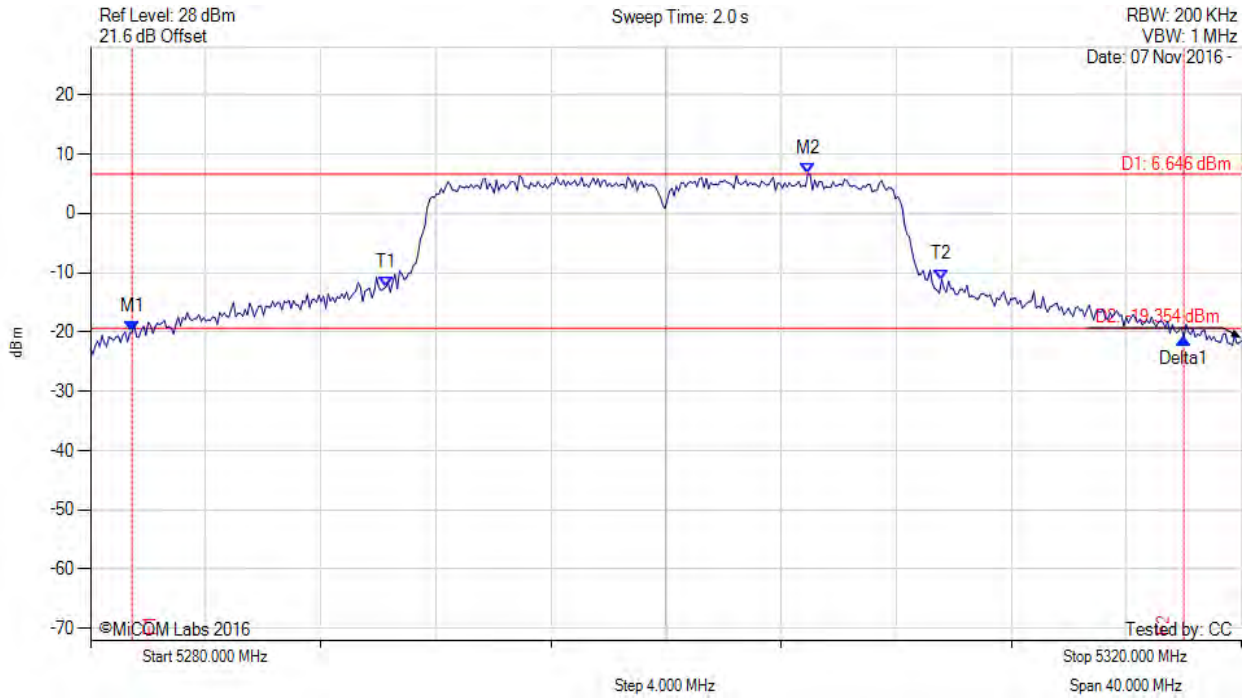
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5281.443 MHz : -19.984 dBm<br>M2 : 5304.930 MHz : 6.646 dBm<br>Delta1 : 36.553 MHz : -1.068 dB<br>T1 : 5290.261 MHz : -12.435 dBm<br>T2 : 5309.579 MHz : -11.170 dBm<br>OBW : 19.319 MHz | Measured 26 dB Bandwidth: 36.553 MHz<br>Measured 99% Bandwidth: 19.319 MHz |

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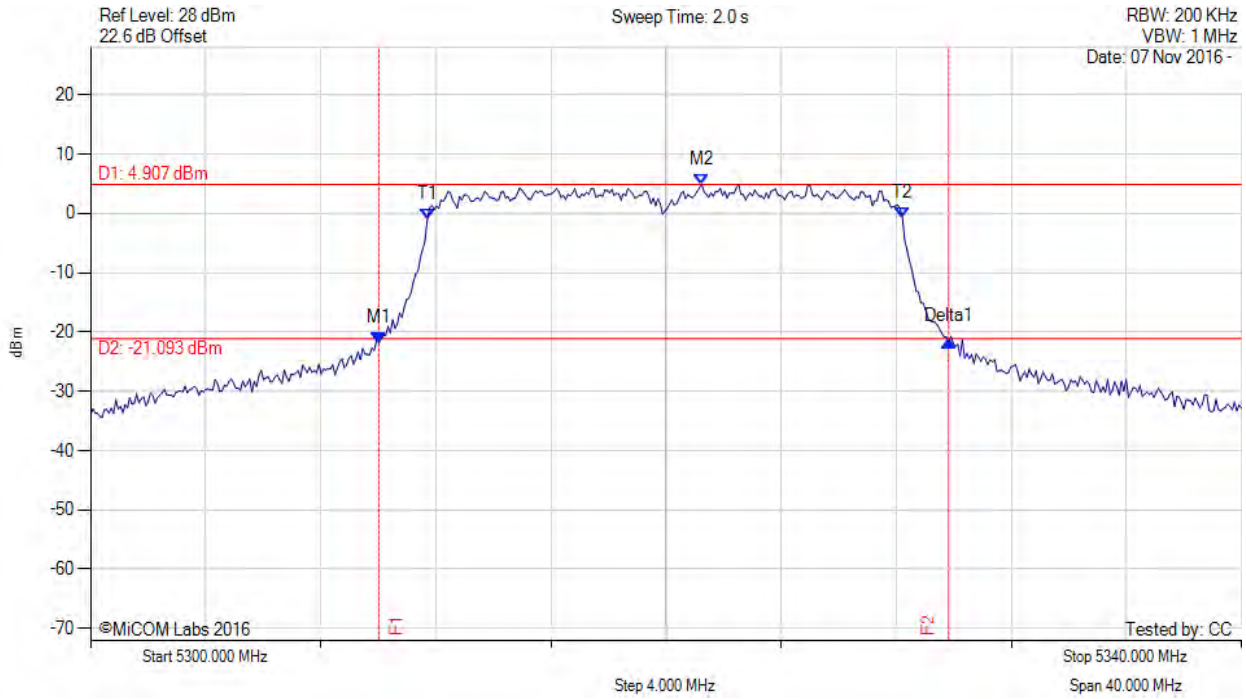
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5310.020 MHz : -21.800 dBm<br>M2 : 5321.242 MHz : 4.907 dBm<br>Delta1 : 19.800 MHz : 0.254 dB<br>T1 : 5311.703 MHz : -1.022 dBm<br>T2 : 5328.216 MHz : -0.767 dBm<br>OBW : 16.513 MHz | Measured 26 dB Bandwidth: 19.800 MHz<br>Measured 99% Bandwidth: 16.513 MHz |

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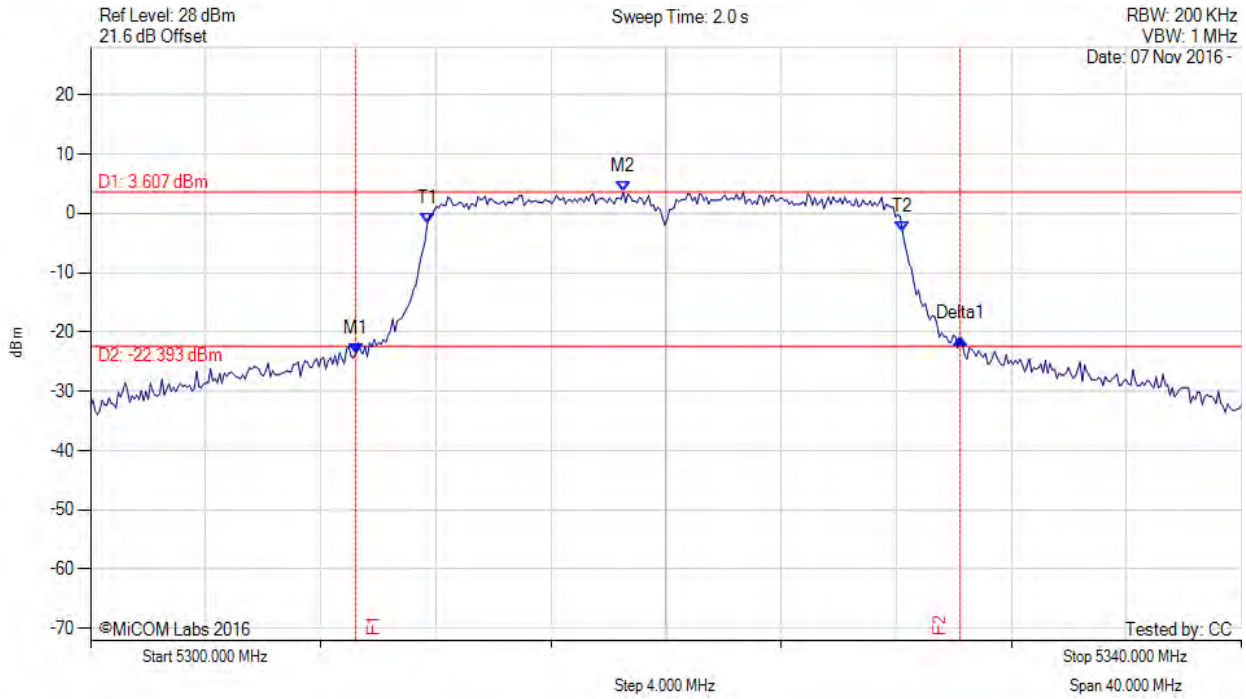
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5309.218 MHz : -23.663 dBm<br>M2 : 5318.517 MHz : 3.607 dBm<br>Delta1 : 21.002 MHz : 2.524 dB<br>T1 : 5311.703 MHz : -1.727 dBm<br>T2 : 5328.216 MHz : -3.080 dBm<br>OBW : 16.513 MHz | Measured 26 dB Bandwidth: 21.002 MHz<br>Measured 99% Bandwidth: 16.513 MHz |

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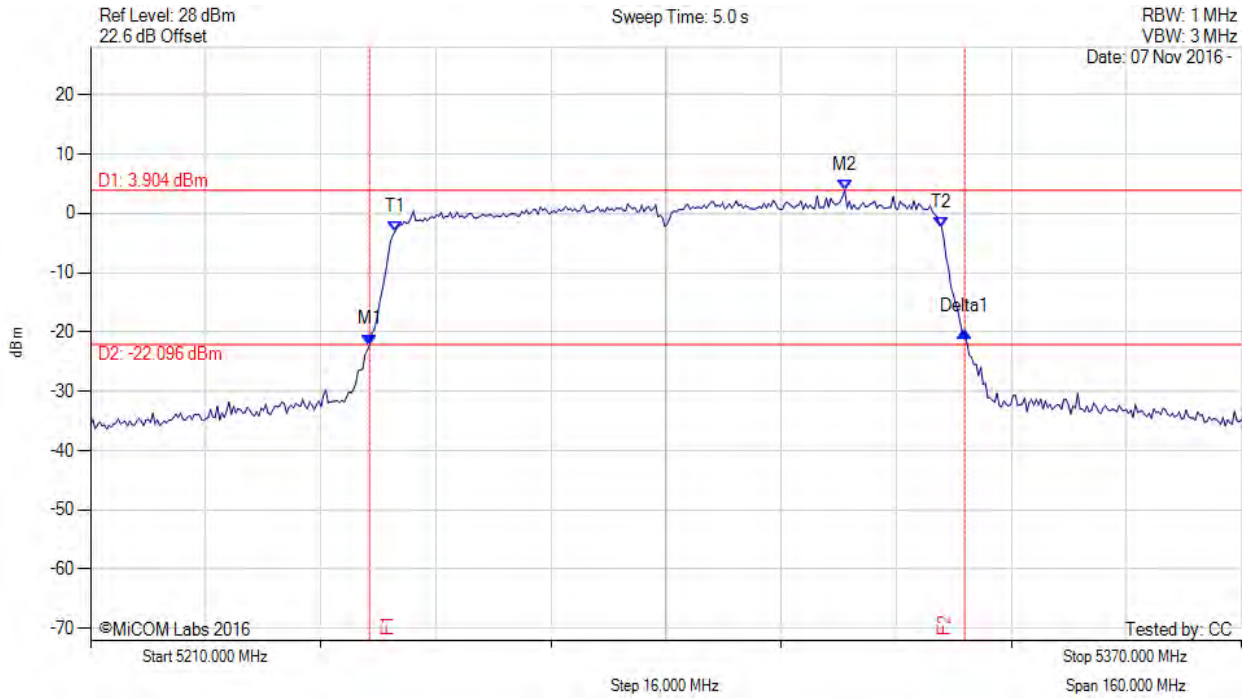
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5248.798 MHz : -22.152 dBm<br>M2 : 5314.850 MHz : 3.904 dBm<br>Delta1 : 82.725 MHz : 2.221 dB<br>T1 : 5252.325 MHz : -3.029 dBm<br>T2 : 5328.317 MHz : -2.309 dBm<br>OBW : 75.992 MHz | Measured 26 dB Bandwidth: 82.725 MHz<br>Measured 99% Bandwidth: 75.992 MHz |

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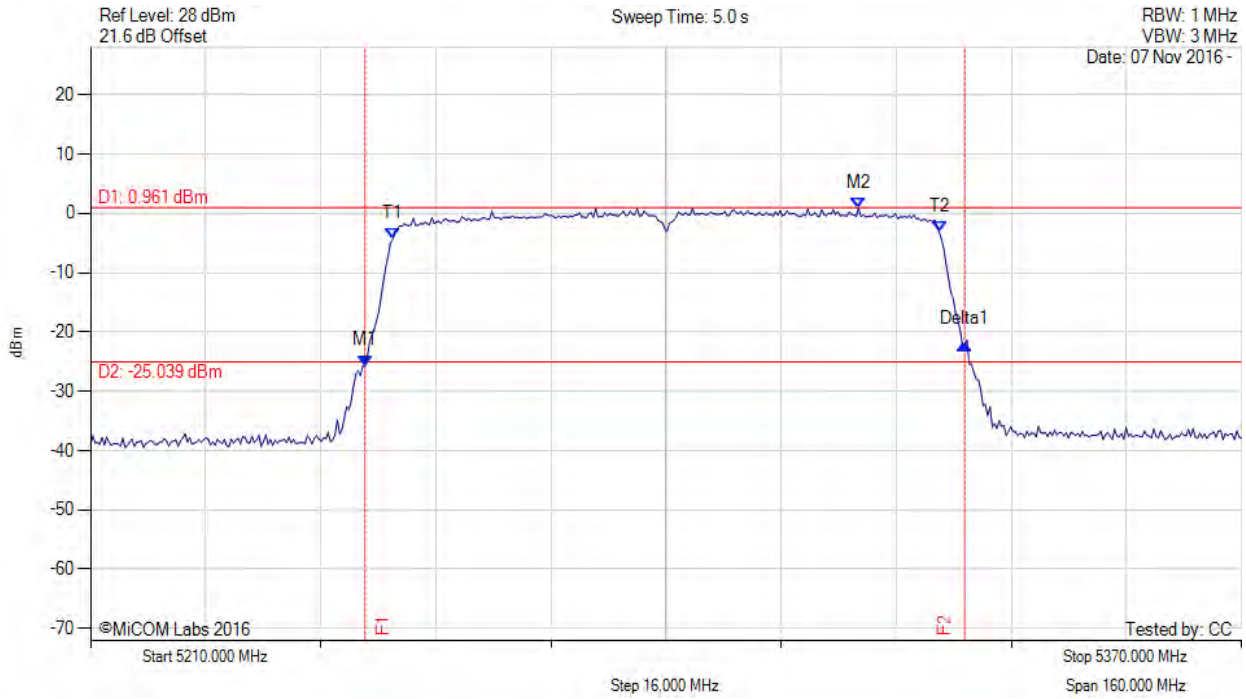
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5248.156 MHz : -25.658 dBm<br>M2 : 5316.774 MHz : 0.961 dBm<br>Delta1 : 83.367 MHz : 3.514 dB<br>T1 : 5252.004 MHz : -4.369 dBm<br>T2 : 5327.996 MHz : -3.192 dBm<br>OBW : 75.992 MHz | Measured 26 dB Bandwidth: 83.367 MHz<br>Measured 99% Bandwidth: 75.992 MHz |

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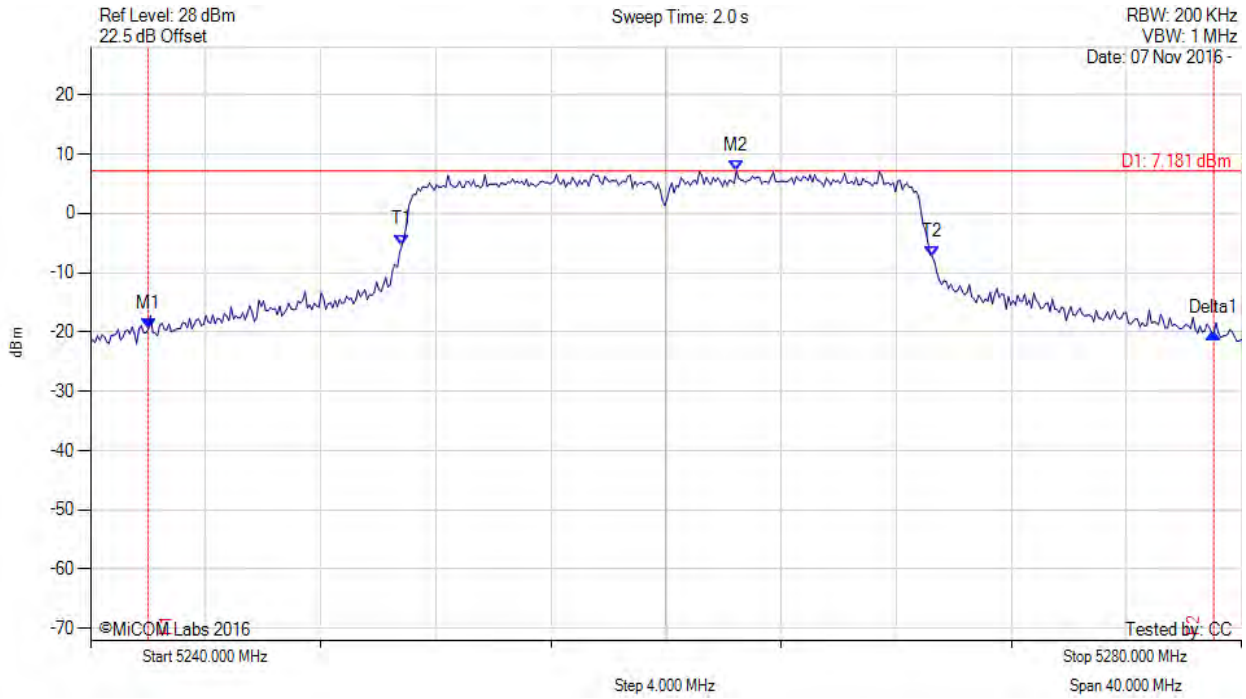
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5242.004 MHz : -19.535 dBm<br>M2 : 5262.445 MHz : 7.181 dBm<br>Delta1 : 37.034 MHz : -0.675 dB<br>T1 : 5250.822 MHz : -5.329 dBm<br>T2 : 5269.259 MHz : -7.314 dBm<br>OBW : 18.437 MHz | Measured 26 dB Bandwidth: 37.034 MHz<br>Measured 99% Bandwidth: 18.437 MHz |

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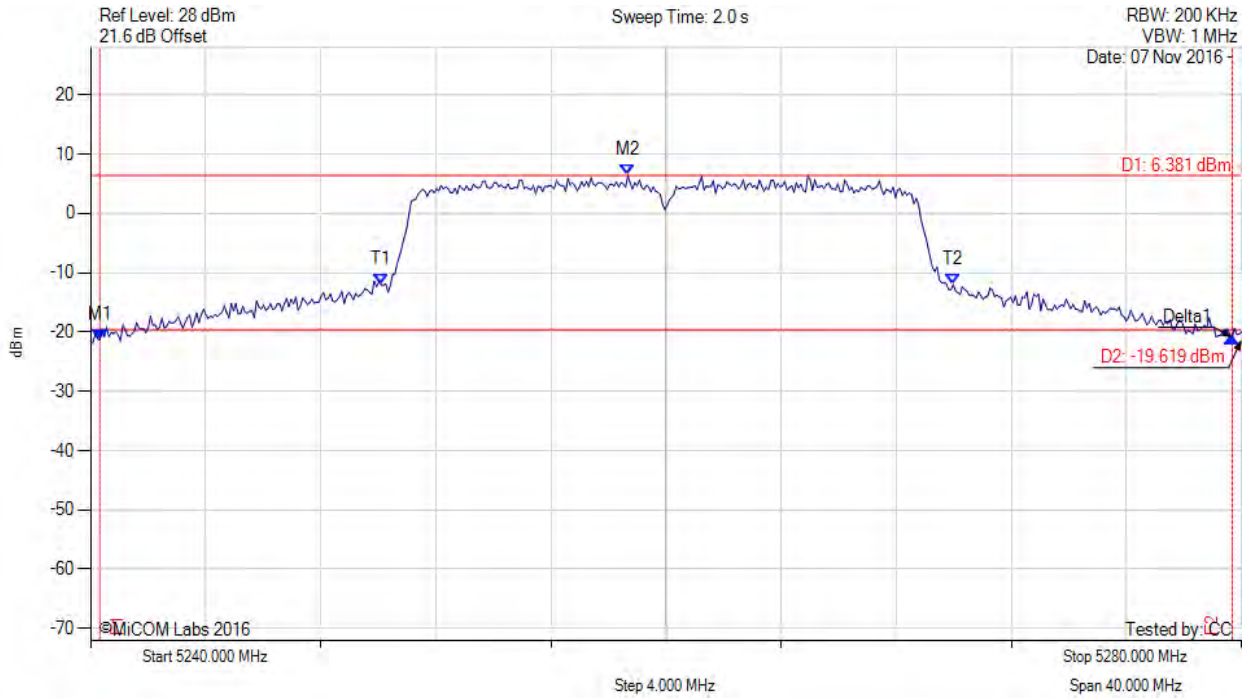
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5240.321 MHz : -21.326 dBm<br>M2 : 5258.677 MHz : 6.381 dBm<br>Delta1 : 39.359 MHz : 0.425 dB<br>T1 : 5250.100 MHz : -12.022 dBm<br>T2 : 5269.980 MHz : -12.006 dBm<br>OBW : 19.880 MHz | Measured 26 dB Bandwidth: 39.359 MHz<br>Measured 99% Bandwidth: 19.880 MHz |

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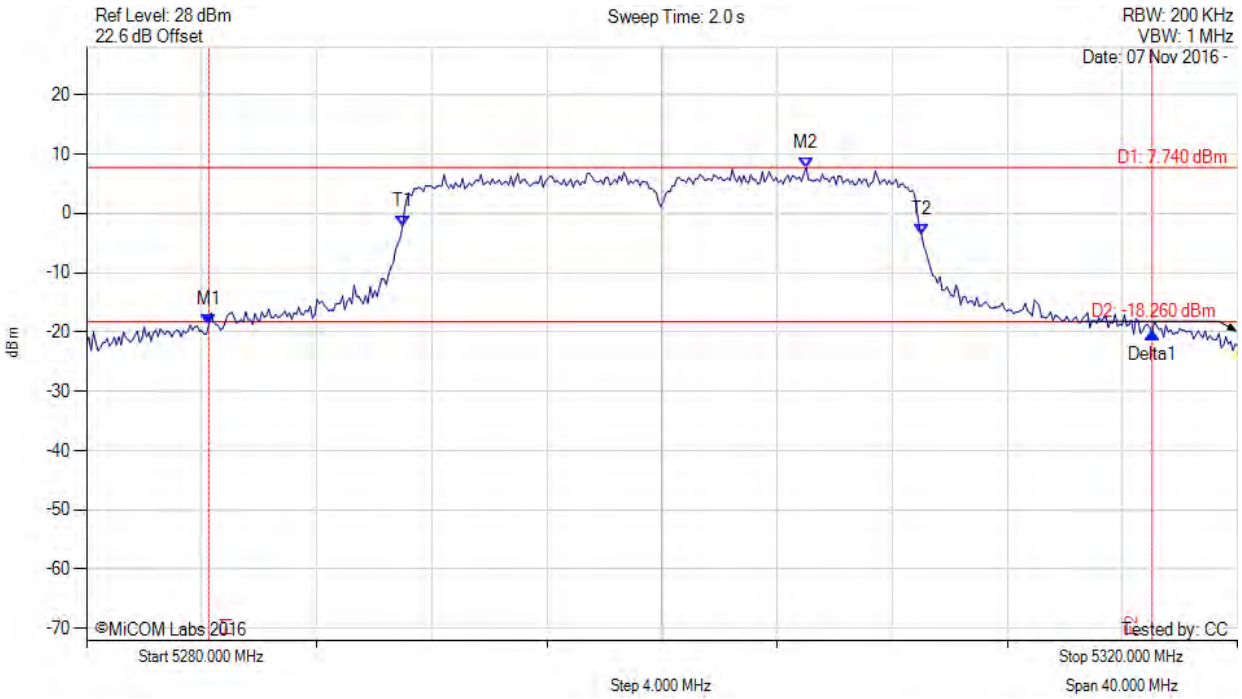
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5284.248 MHz : -18.839 dBm<br>M2 : 5305.010 MHz : 7.740 dBm<br>Delta1 : 32.786 MHz : -1.322 dB<br>T1 : 5290.982 MHz : -2.114 dBm<br>T2 : 5309.018 MHz : -3.515 dBm<br>OBW : 18.036 MHz | Measured 26 dB Bandwidth: 32.786 MHz<br>Measured 99% Bandwidth: 18.036 MHz |

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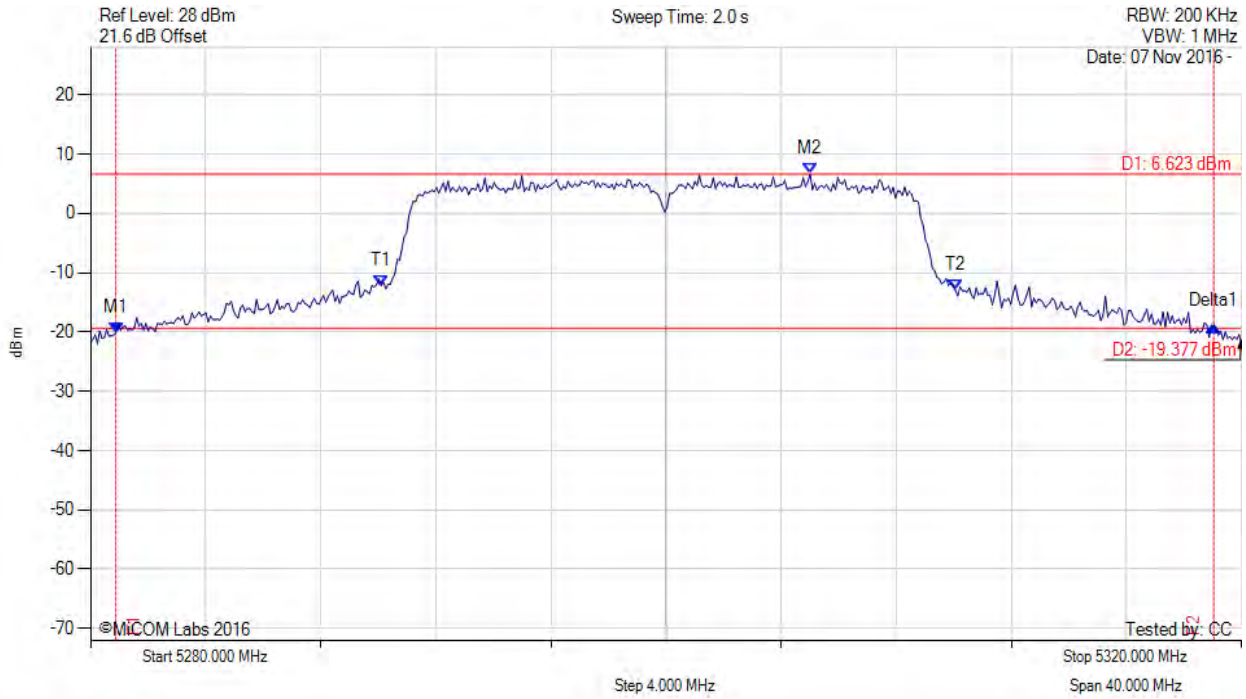
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5280.882 MHz : -20.080 dBm<br>M2 : 5305.010 MHz : 6.623 dBm<br>Delta1 : 38.156 MHz : 1.023 dB<br>T1 : 5290.100 MHz : -12.191 dBm<br>T2 : 5310.060 MHz : -12.954 dBm<br>OBW : 19.960 MHz | Measured 26 dB Bandwidth: 38.156 MHz<br>Measured 99% Bandwidth: 19.960 MHz |

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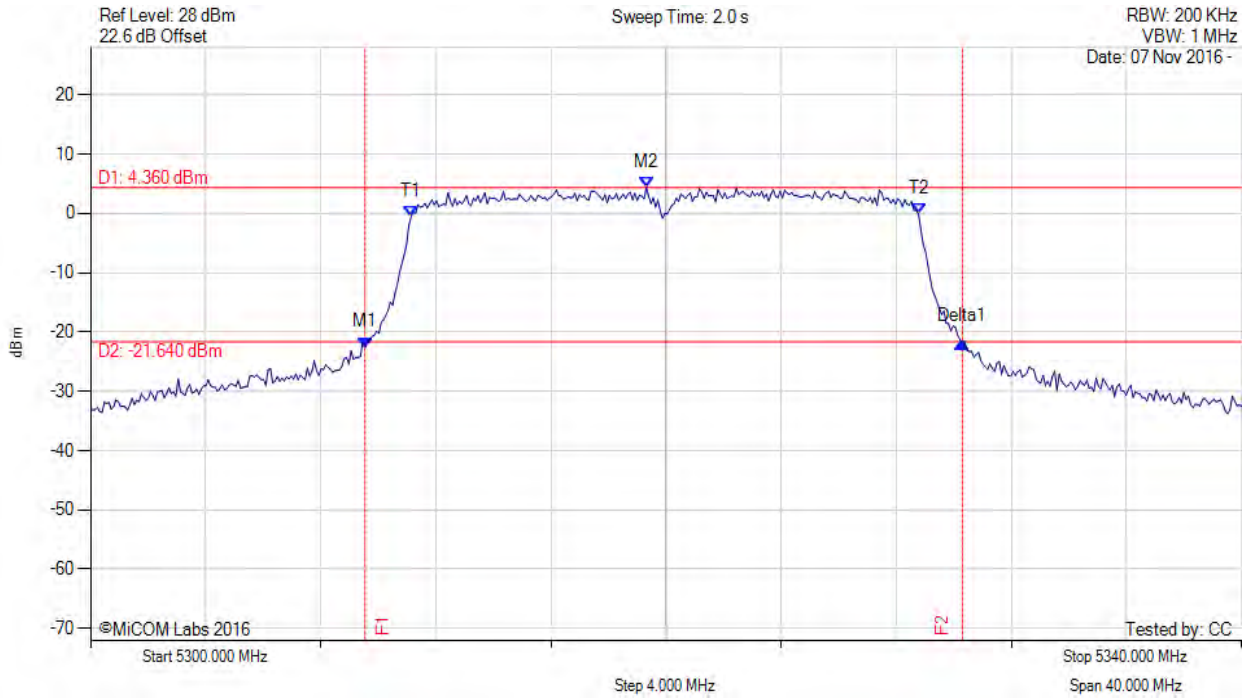
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5309.539 MHz : -22.630 dBm<br>M2 : 5319.319 MHz : 4.360 dBm<br>Delta1 : 20.762 MHz : 0.952 dB<br>T1 : 5311.142 MHz : -0.511 dBm<br>T2 : 5328.778 MHz : -0.119 dBm<br>OBW : 17.635 MHz | Measured 26 dB Bandwidth: 20.762 MHz<br>Measured 99% Bandwidth: 17.635 MHz |

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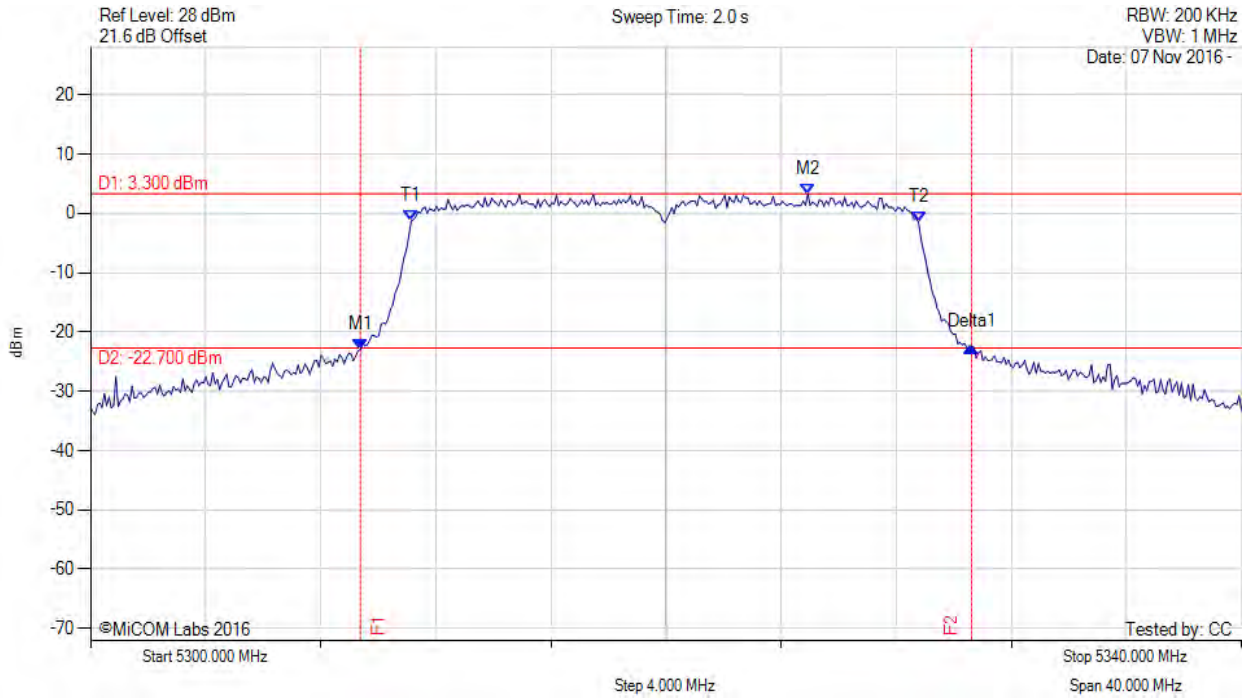
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5309.379 MHz : -22.968 dBm<br>M2 : 5324.930 MHz : 3.300 dBm<br>Delta1 : 21.242 MHz : 0.488 dB<br>T1 : 5311.142 MHz : -1.323 dBm<br>T2 : 5328.778 MHz : -1.479 dBm<br>OBW : 17.635 MHz | Measured 26 dB Bandwidth: 21.242 MHz<br>Measured 99% Bandwidth: 17.635 MHz |

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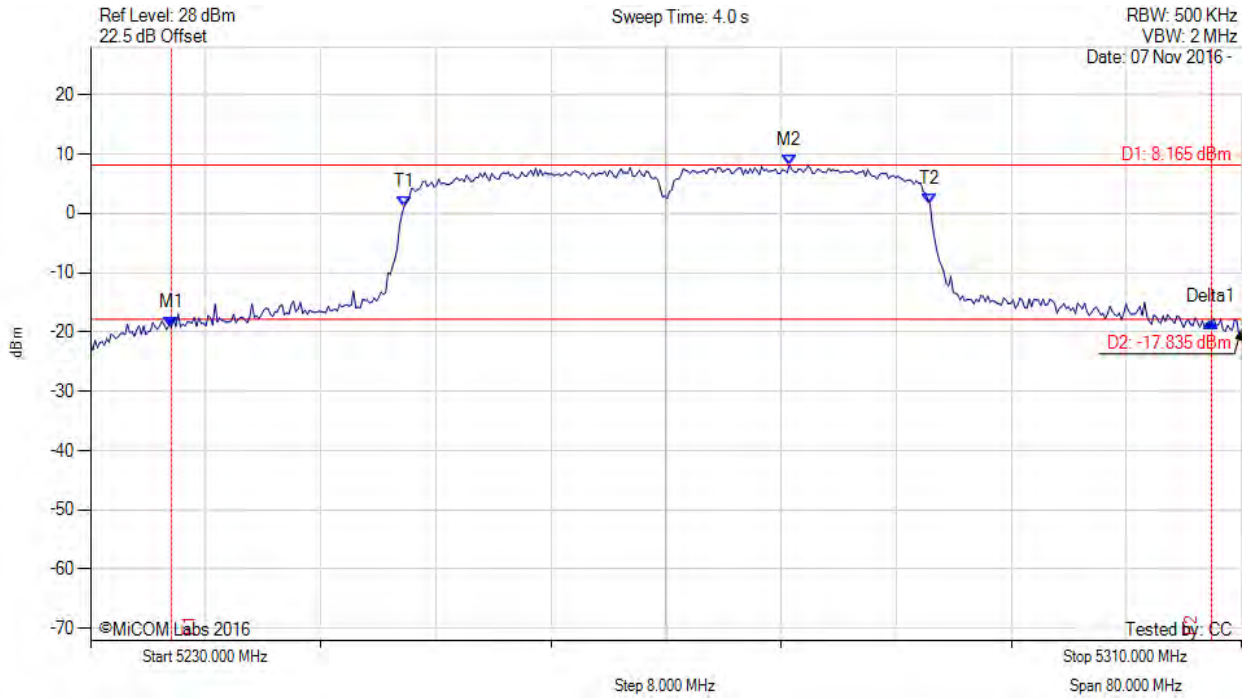
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5235.611 MHz : -19.217 dBm<br>M2 : 5278.577 MHz : 8.165 dBm<br>Delta1 : 72.305 MHz : 0.988 dB<br>T1 : 5251.804 MHz : 1.177 dBm<br>T2 : 5288.357 MHz : 1.569 dBm<br>OBW : 36.553 MHz | Measured 26 dB Bandwidth: 72.305 MHz<br>Measured 99% Bandwidth: 36.553 MHz |

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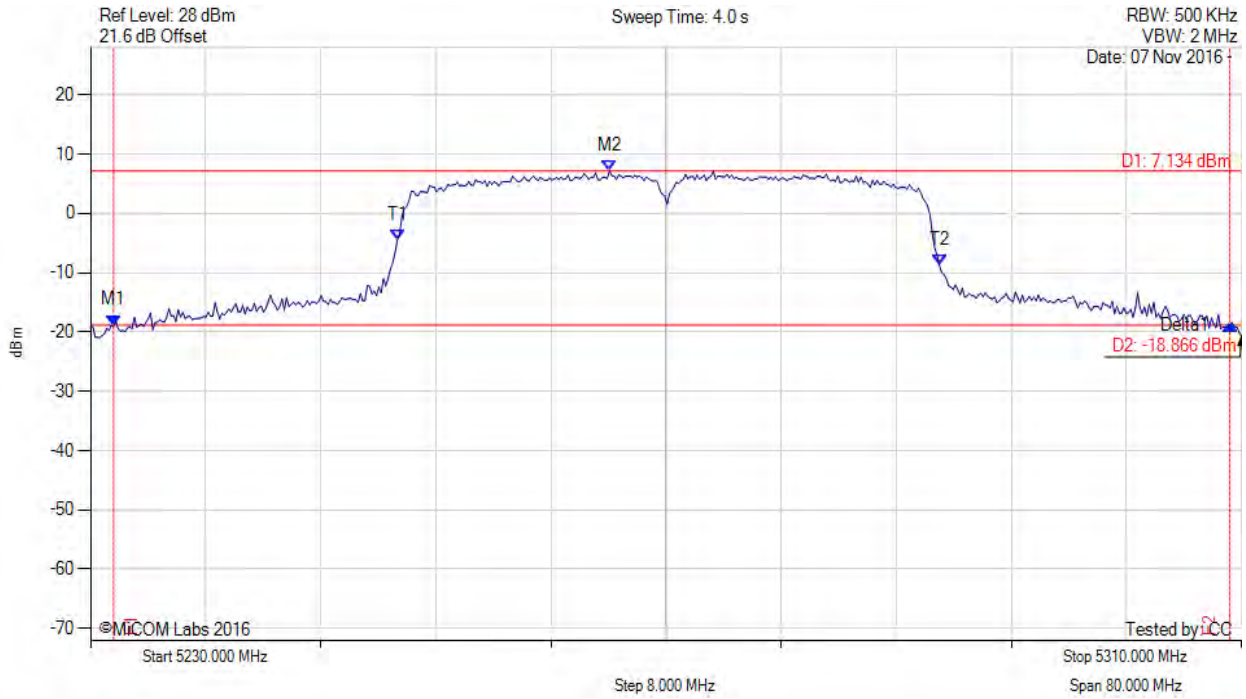
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5231.603 MHz : -18.890 dBm<br>M2 : 5266.072 MHz : 7.134 dBm<br>Delta1 : 77.595 MHz : 0.130 dB<br>T1 : 5251.323 MHz : -4.461 dBm<br>T2 : 5288.998 MHz : -8.658 dBm<br>OBW : 37.675 MHz | Measured 26 dB Bandwidth: 77.595 MHz<br>Measured 99% Bandwidth: 37.675 MHz |

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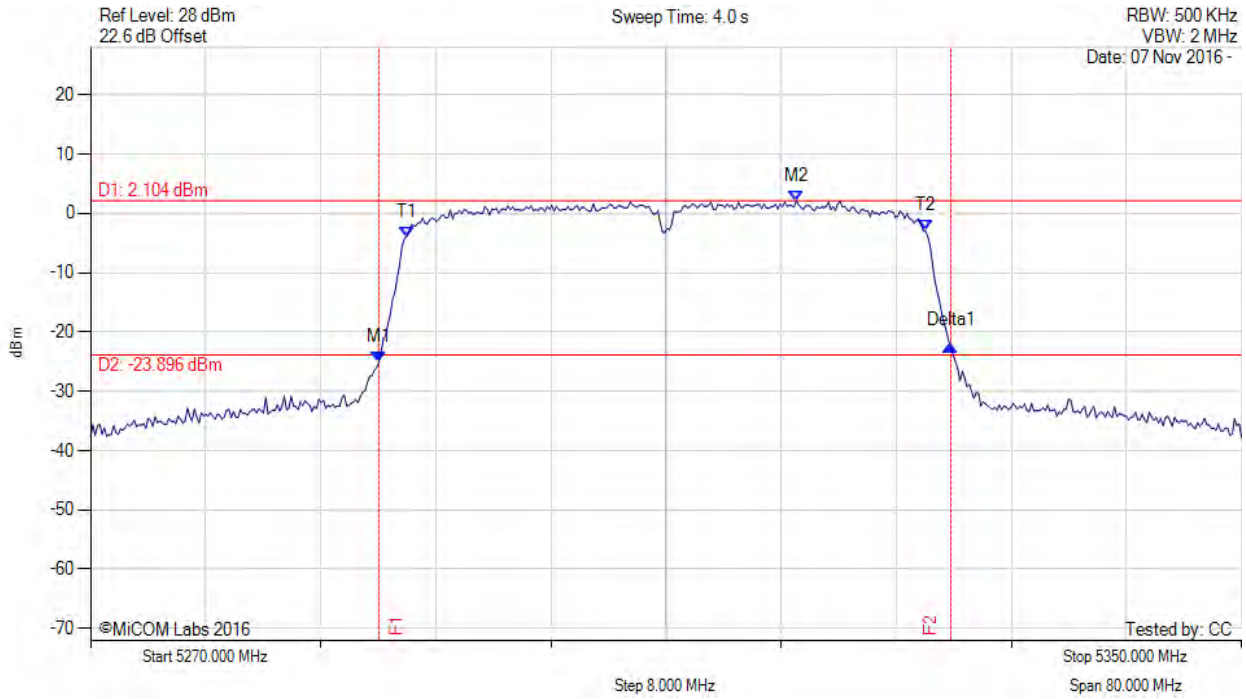
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5290.040 MHz : -25.132 dBm<br>M2 : 5319.058 MHz : 2.104 dBm<br>Delta1 : 39.760 MHz : 2.920 dB<br>T1 : 5291.964 MHz : -3.946 dBm<br>T2 : 5328.036 MHz : -2.917 dBm<br>OBW : 36.072 MHz | Measured 26 dB Bandwidth: 39.760 MHz<br>Measured 99% Bandwidth: 36.072 MHz |

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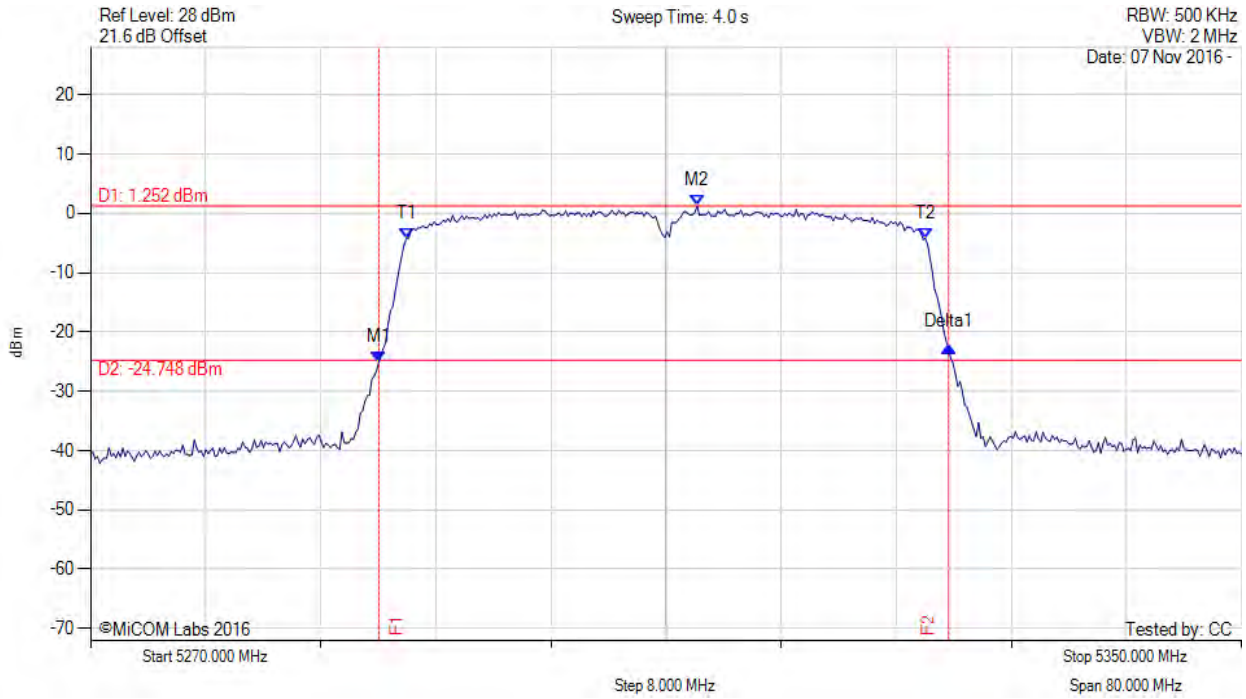
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5290.040 MHz : -25.069 dBm<br>M2 : 5312.164 MHz : 1.252 dBm<br>Delta1 : 39.599 MHz : 2.499 dB<br>T1 : 5291.964 MHz : -4.206 dBm<br>T2 : 5328.036 MHz : -4.263 dBm<br>OBW : 36.072 MHz | Measured 26 dB Bandwidth: 39.599 MHz<br>Measured 99% Bandwidth: 36.072 MHz |

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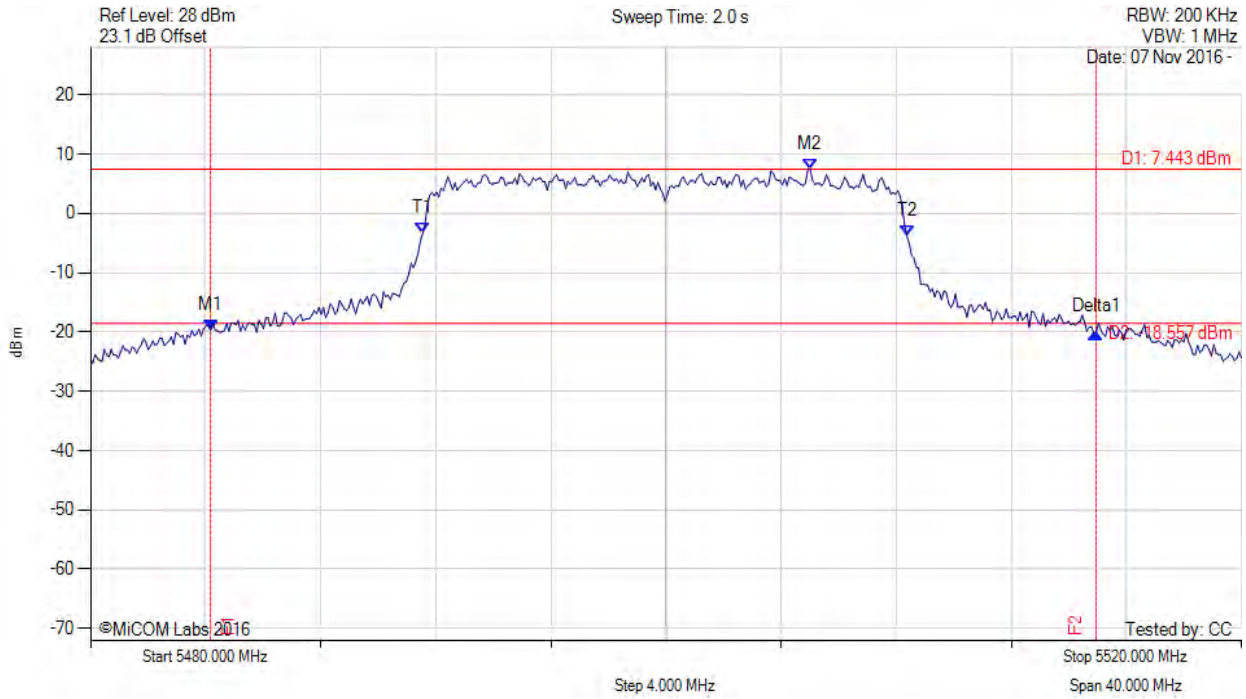
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5484.168 MHz : -19.638 dBm<br>M2 : 5505.010 MHz : 7.443 dBm<br>Delta1 : 30.782 MHz : -0.423 dB<br>T1 : 5491.543 MHz : -3.336 dBm<br>T2 : 5508.377 MHz : -3.834 dBm<br>OBW : 16.834 MHz | Measured 26 dB Bandwidth: 30.782 MHz<br>Measured 99% Bandwidth: 16.834 MHz |

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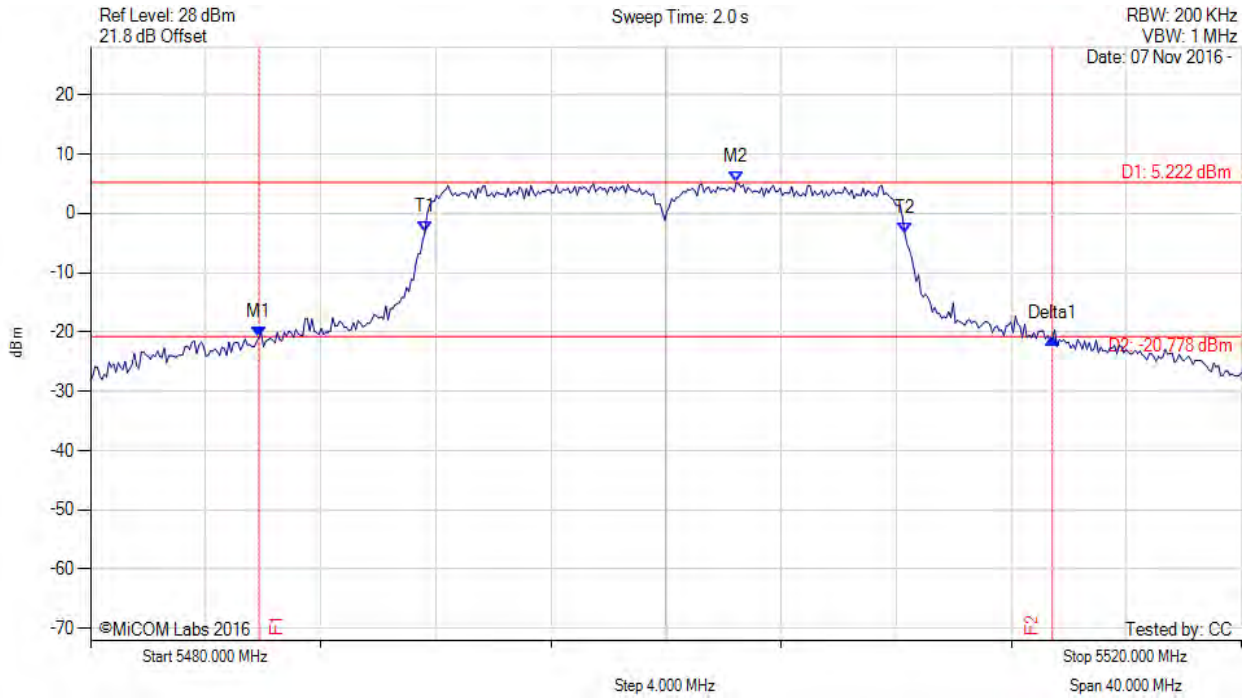
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5485.852 MHz : -20.938 dBm<br>M2 : 5502.445 MHz : 5.222 dBm<br>Delta1 : 27.575 MHz : -0.081 dB<br>T1 : 5491.623 MHz : -3.173 dBm<br>T2 : 5508.297 MHz : -3.342 dBm<br>OBW : 16.673 MHz | Measured 26 dB Bandwidth: 27.575 MHz<br>Measured 99% Bandwidth: 16.673 MHz |

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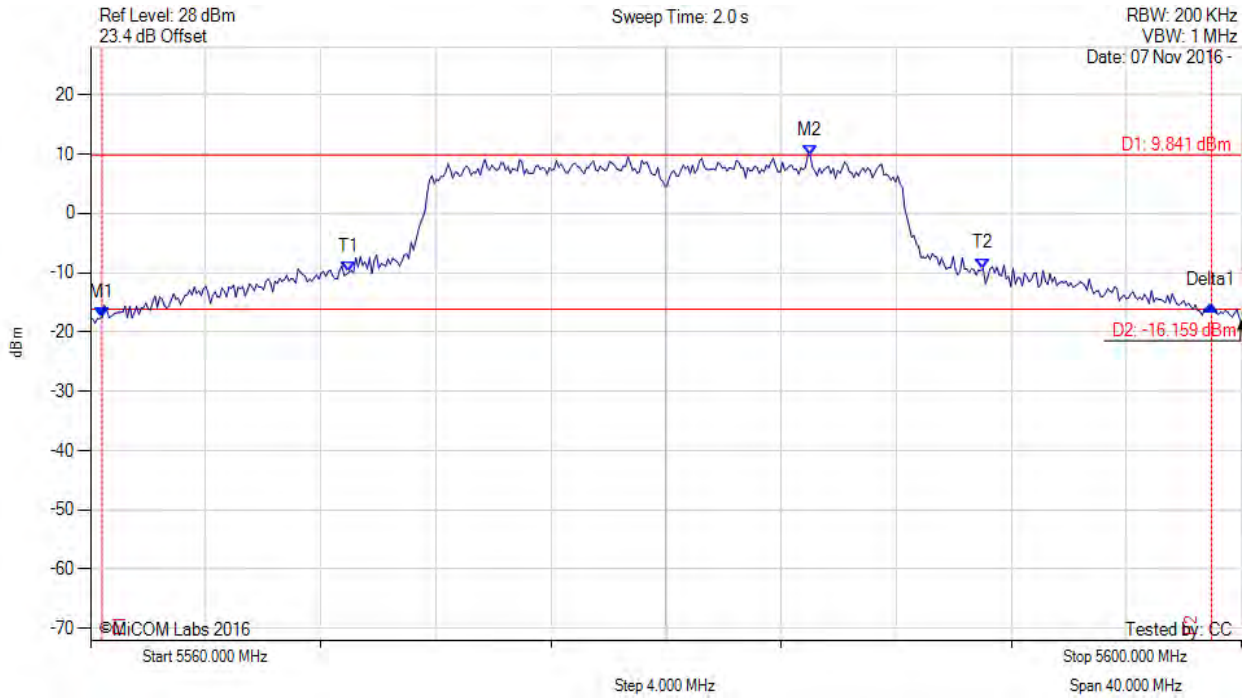
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5560.401 MHz : -17.550 dBm<br>M2 : 5585.010 MHz : 9.841 dBm<br>Delta1 : 38.557 MHz : 2.024 dB<br>T1 : 5568.978 MHz : -9.944 dBm<br>T2 : 5591.022 MHz : -9.299 dBm<br>OBW : 22.044 MHz | Measured 26 dB Bandwidth: 38.557 MHz<br>Measured 99% Bandwidth: 22.044 MHz |

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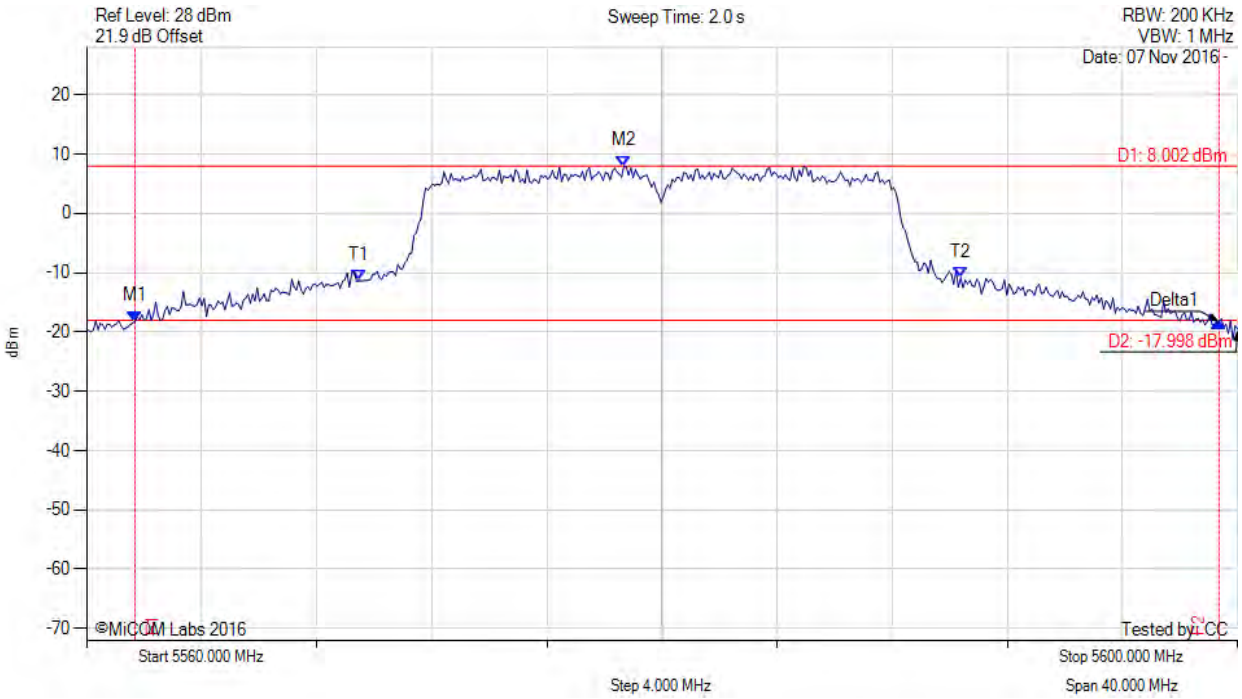
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5561.683 MHz : -18.180 dBm<br>M2 : 5578.677 MHz : 8.002 dBm<br>Delta1 : 37.675 MHz : -0.071 dB<br>T1 : 5569.459 MHz : -11.335 dBm<br>T2 : 5590.381 MHz : -10.810 dBm<br>OBW : 20.922 MHz | Measured 26 dB Bandwidth: 37.675 MHz<br>Measured 99% Bandwidth: 20.922 MHz |

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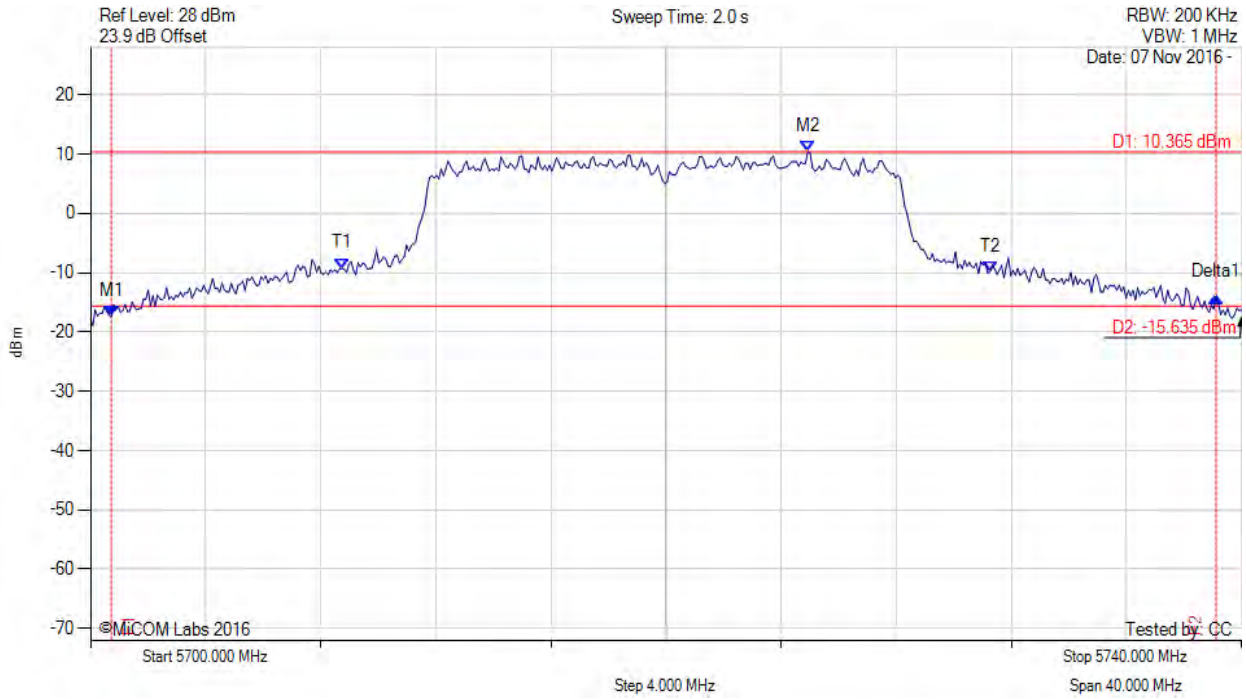
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5700.721 MHz : -17.328 dBm<br>M2 : 5724.930 MHz : 10.365 dBm<br>Delta1 : 38.397 MHz : 3.183 dB<br>T1 : 5708.737 MHz : -9.293 dBm<br>T2 : 5731.263 MHz : -9.791 dBm<br>OBW : 22.525 MHz | Measured 26 dB Bandwidth: 38.397 MHz<br>Measured 99% Bandwidth: 22.525 MHz |

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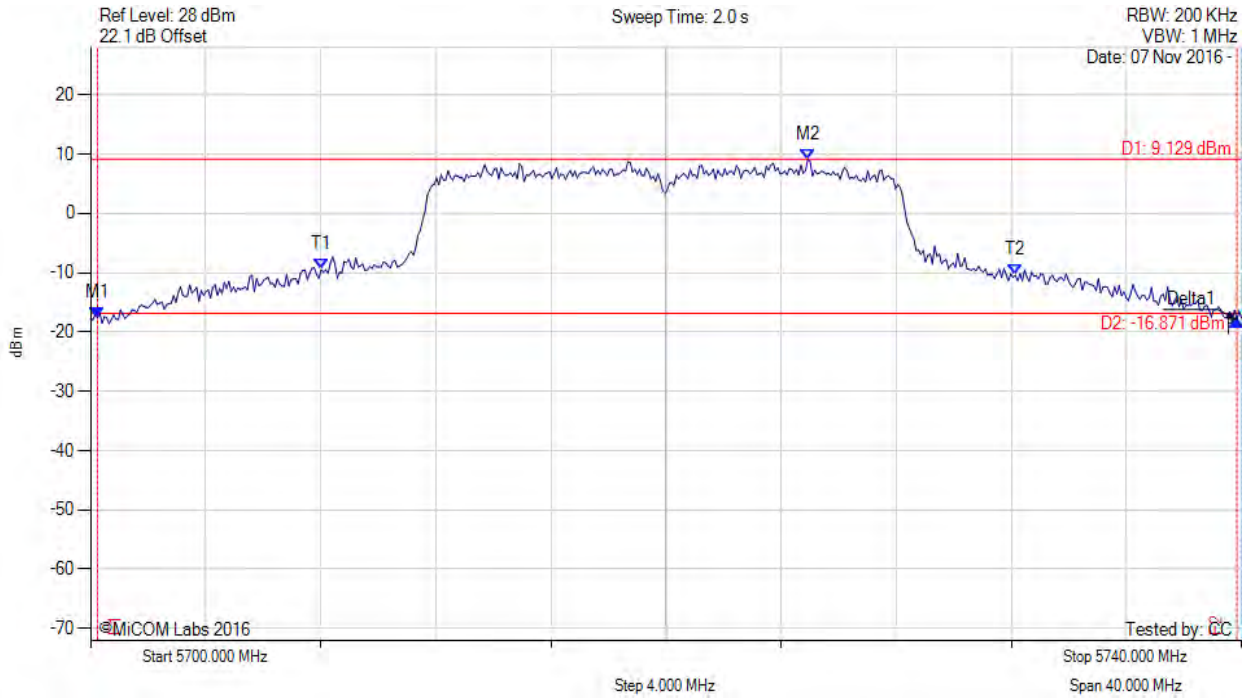
26 dB & 99% BANDWIDTH

Variant: 802.11a, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5700.240 MHz : -17.629 dBm<br>M2 : 5724.930 MHz : 9.129 dBm<br>Delta1 : 39.599 MHz : -0.332 dB<br>T1 : 5708.016 MHz : -9.512 dBm<br>T2 : 5732.144 MHz : -10.438 dBm<br>OBW : 24.128 MHz | Measured 26 dB Bandwidth: 39.599 MHz<br>Measured 99% Bandwidth: 24.128 MHz |

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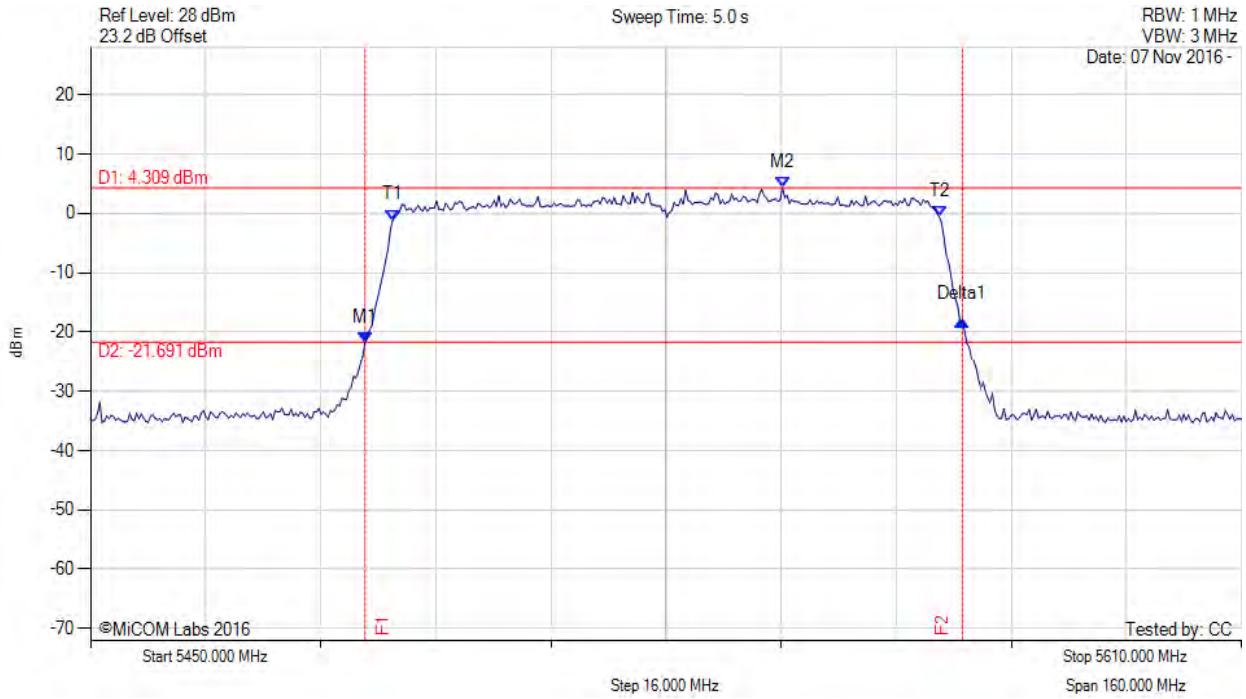
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5488.156 MHz : -21.749 dBm<br>M2 : 5546.192 MHz : 4.309 dBm<br>Delta1 : 83.046 MHz : 3.805 dB<br>T1 : 5492.004 MHz : -1.135 dBm<br>T2 : 5567.996 MHz : -0.599 dBm<br>OBW : 75.992 MHz | Measured 26 dB Bandwidth: 83.046 MHz<br>Measured 99% Bandwidth: 75.992 MHz |

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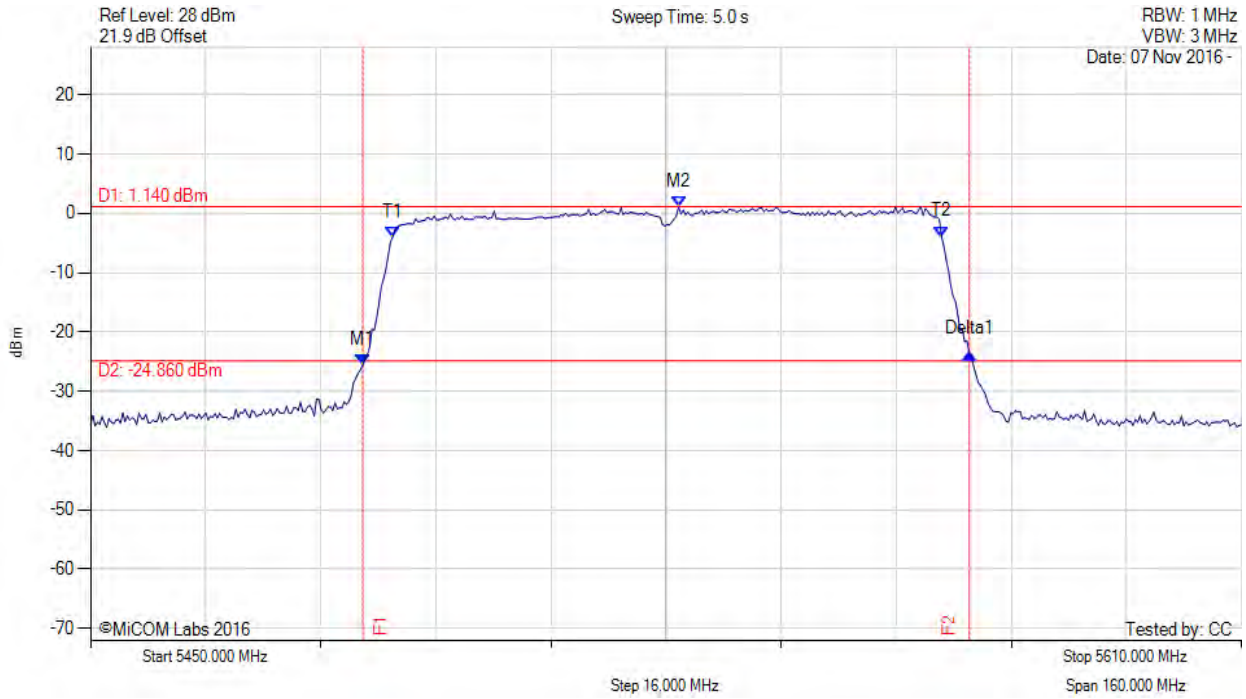
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5487.836 MHz : -25.603 dBm<br>M2 : 5531.764 MHz : 1.140 dBm<br>Delta1 : 84.329 MHz : 1.871 dB<br>T1 : 5492.004 MHz : -4.046 dBm<br>T2 : 5568.317 MHz : -3.922 dBm<br>OBW : 76.313 MHz | Measured 26 dB Bandwidth: 84.329 MHz<br>Measured 99% Bandwidth: 76.313 MHz |

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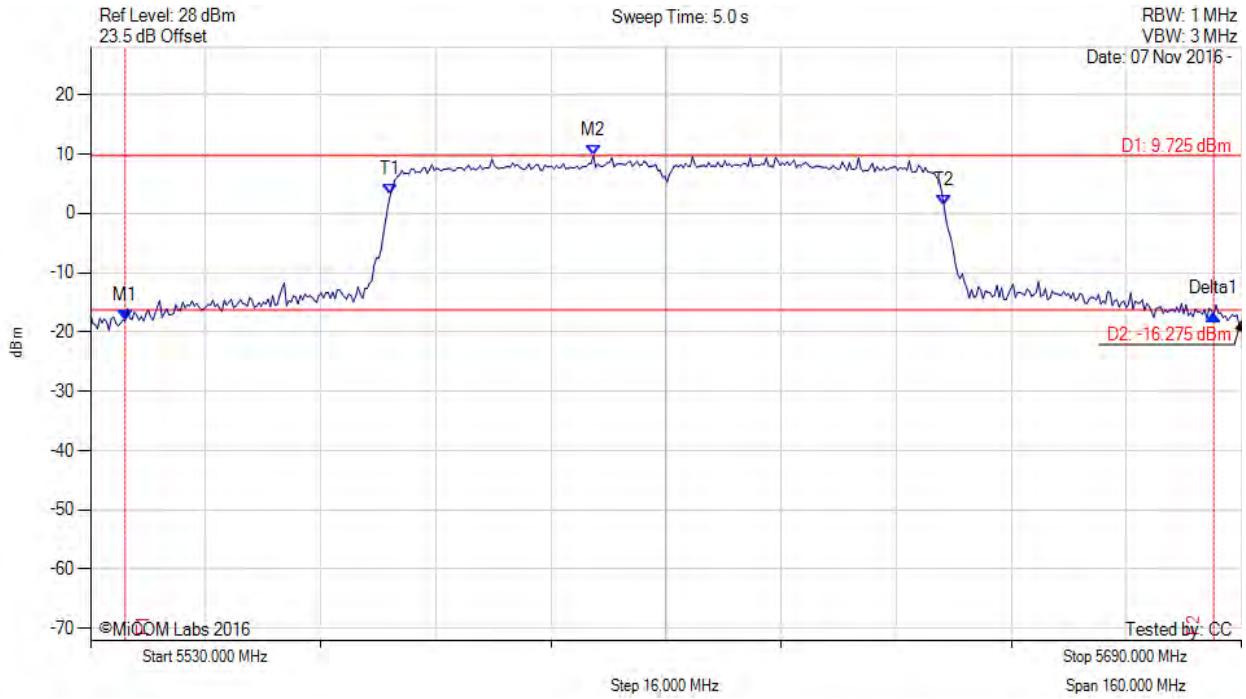
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5534.810 MHz : -18.109 dBm<br>M2 : 5599.900 MHz : 9.725 dBm<br>Delta1 : 151.343 MHz : 1.080 dB<br>T1 : 5571.683 MHz : 3.111 dBm<br>T2 : 5648.637 MHz : 1.401 dBm<br>OBW : 76.954 MHz | Measured 26 dB Bandwidth: 151.343 MHz<br>Measured 99% Bandwidth: 76.954 MHz |

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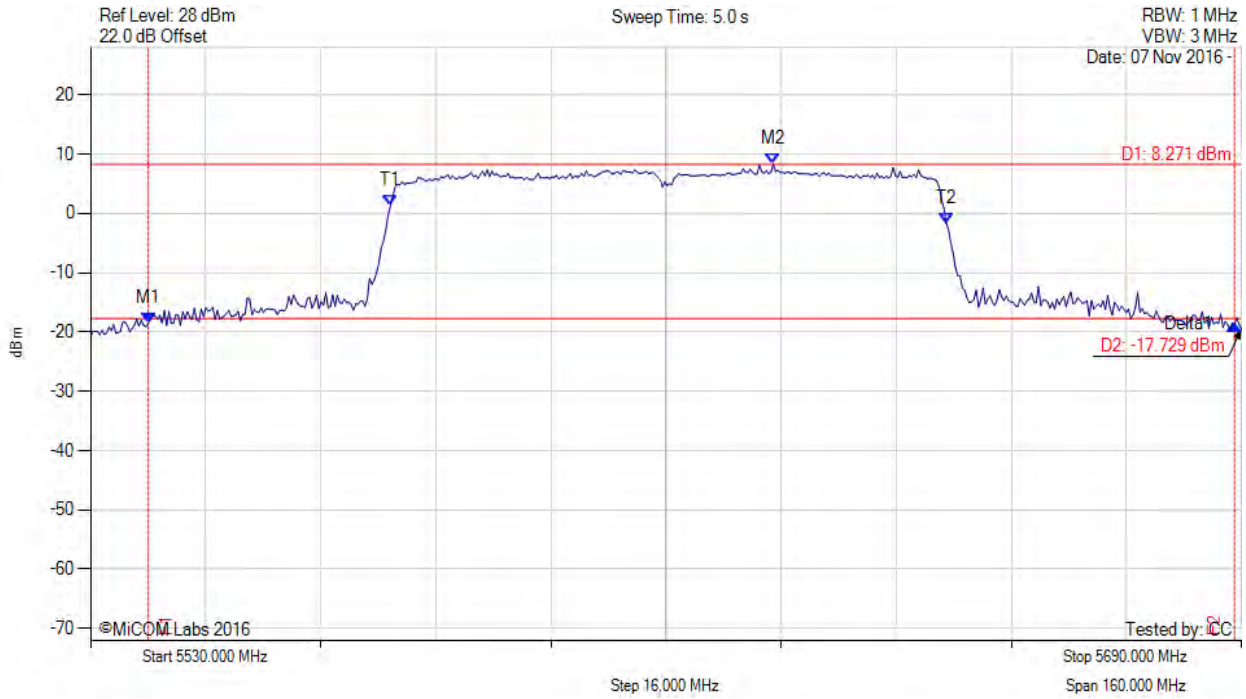
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5538.016 MHz : -18.569 dBm<br>M2 : 5624.910 MHz : 8.271 dBm<br>Delta1 : 151.022 MHz : -0.100 dB<br>T1 : 5571.683 MHz : 1.254 dBm<br>T2 : 5648.958 MHz : -1.670 dBm<br>OBW : 77.275 MHz | Measured 26 dB Bandwidth: 151.022 MHz<br>Measured 99% Bandwidth: 77.275 MHz |

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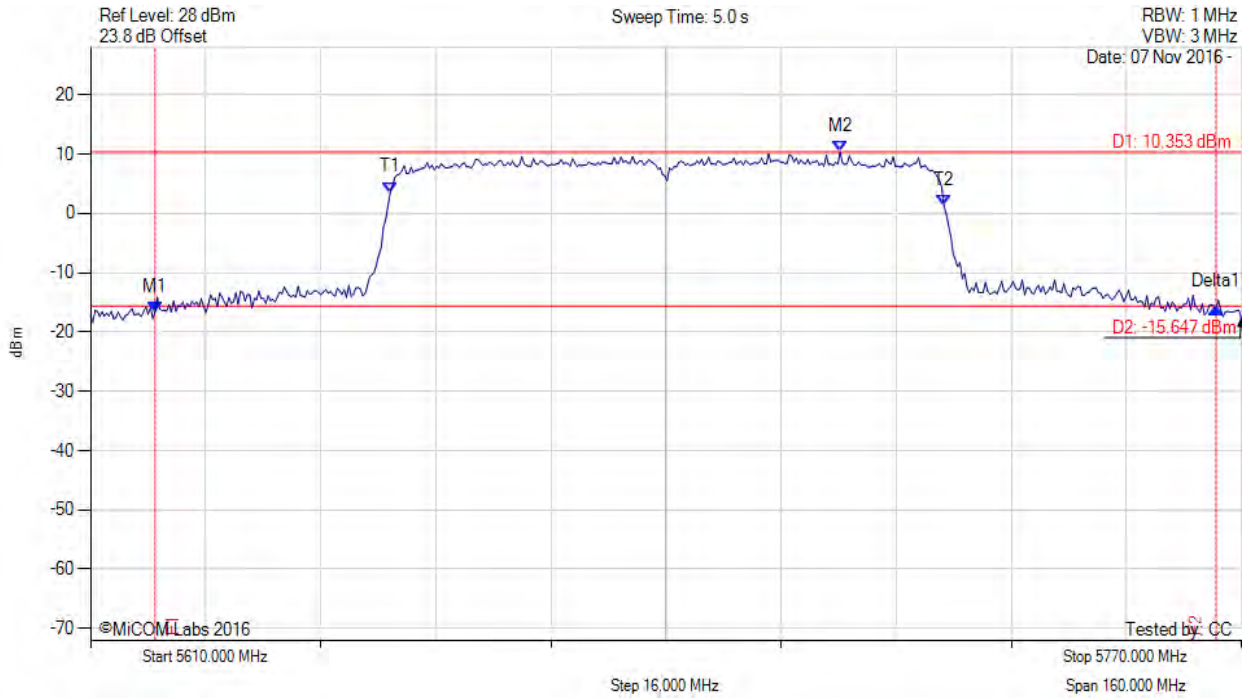
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5618.978 MHz : -16.600 dBm<br>M2 : 5714.208 MHz : 10.353 dBm<br>Delta1 : 147.495 MHz : 0.748 dB<br>T1 : 5651.683 MHz : 3.558 dBm<br>T2 : 5728.637 MHz : 1.356 dBm<br>OBW : 76.954 MHz | Measured 26 dB Bandwidth: 147.495 MHz<br>Measured 99% Bandwidth: 76.954 MHz |

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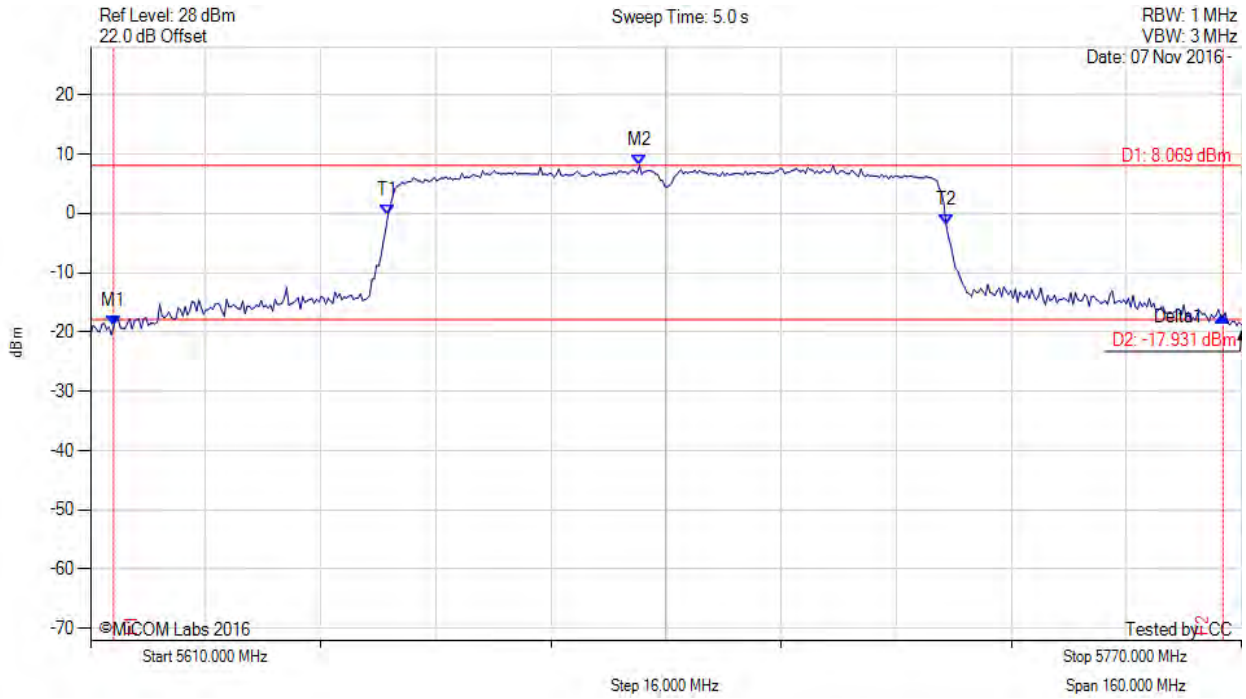
26 dB & 99% BANDWIDTH

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5613.206 MHz : -19.100 dBm<br>M2 : 5686.313 MHz : 8.069 dBm<br>Delta1 : 154.228 MHz : 1.651 dB<br>T1 : 5651.363 MHz : -0.226 dBm<br>T2 : 5728.958 MHz : -2.004 dBm<br>OBW : 77.595 MHz | Measured 26 dB Bandwidth: 154.228 MHz<br>Measured 99% Bandwidth: 77.595 MHz |

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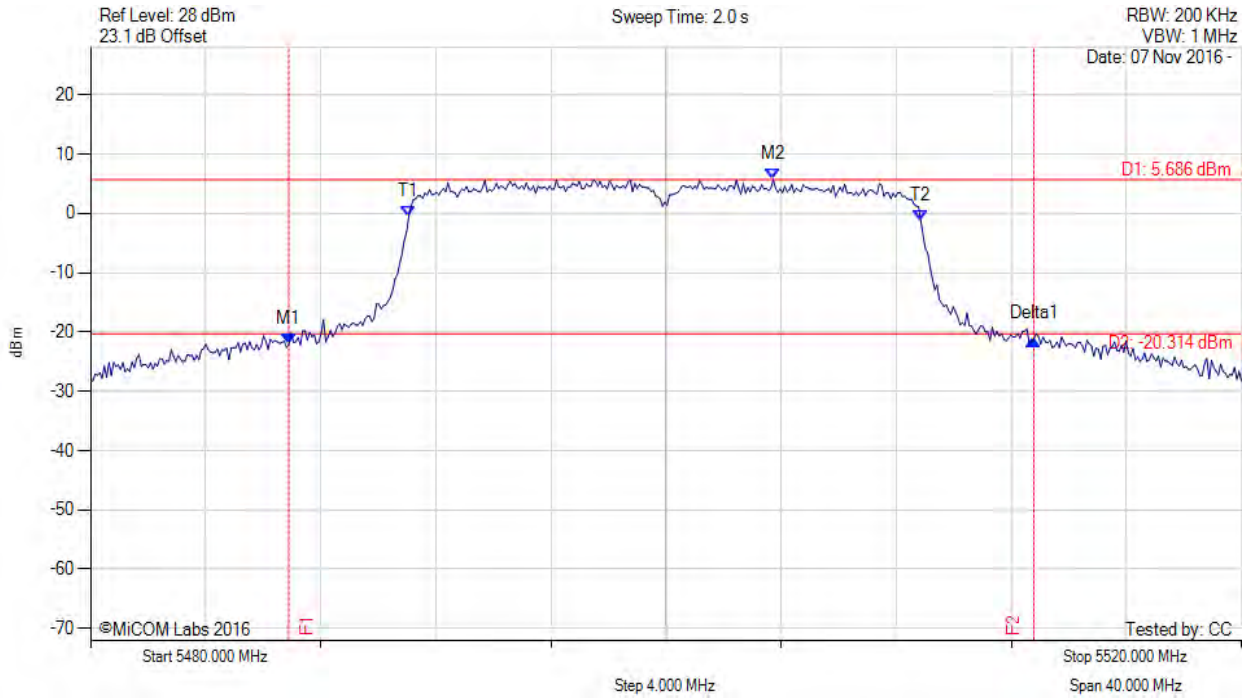
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5486.894 MHz : -22.103 dBm<br>M2 : 5503.727 MHz : 5.686 dBm<br>Delta1 : 25.892 MHz : 0.875 dB<br>T1 : 5491.062 MHz : -0.556 dBm<br>T2 : 5508.858 MHz : -1.341 dBm<br>OBW : 17.796 MHz | Measured 26 dB Bandwidth: 25.892 MHz<br>Measured 99% Bandwidth: 17.796 MHz |

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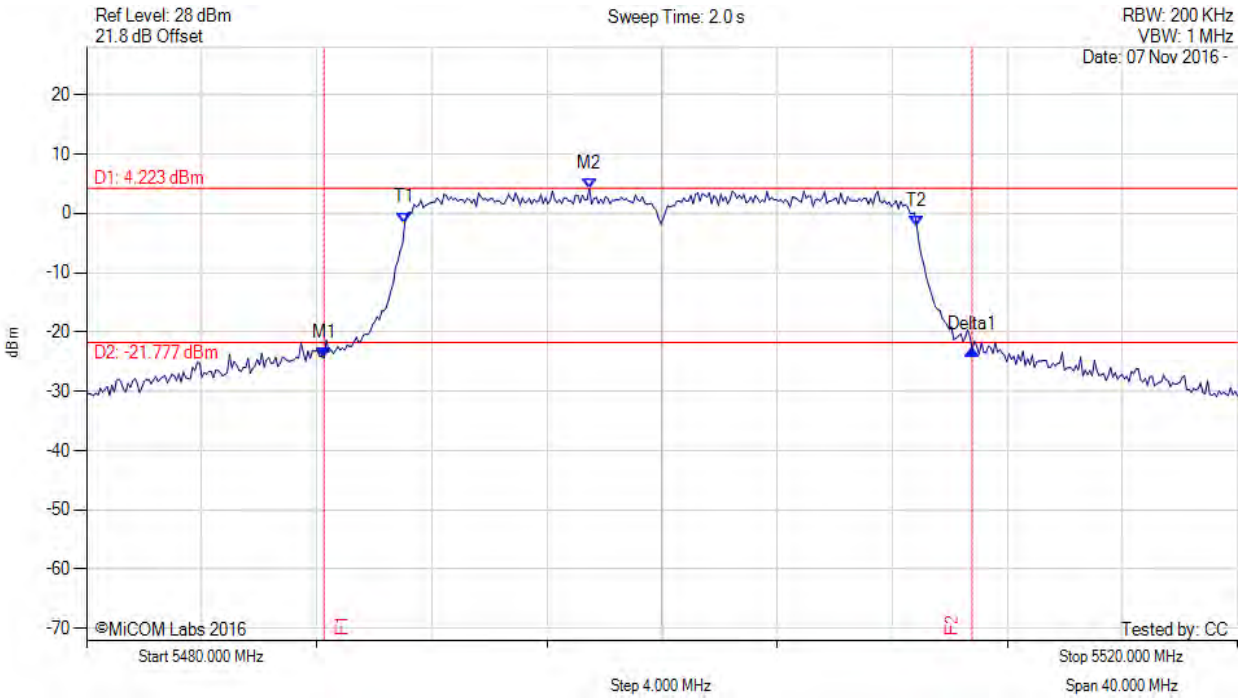
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5488.257 MHz : -24.332 dBm<br>M2 : 5497.475 MHz : 4.223 dBm<br>Delta1 : 22.525 MHz : 1.342 dB<br>T1 : 5491.062 MHz : -1.591 dBm<br>T2 : 5508.858 MHz : -2.276 dBm<br>OBW : 17.796 MHz | Measured 26 dB Bandwidth: 22.525 MHz<br>Measured 99% Bandwidth: 17.796 MHz |

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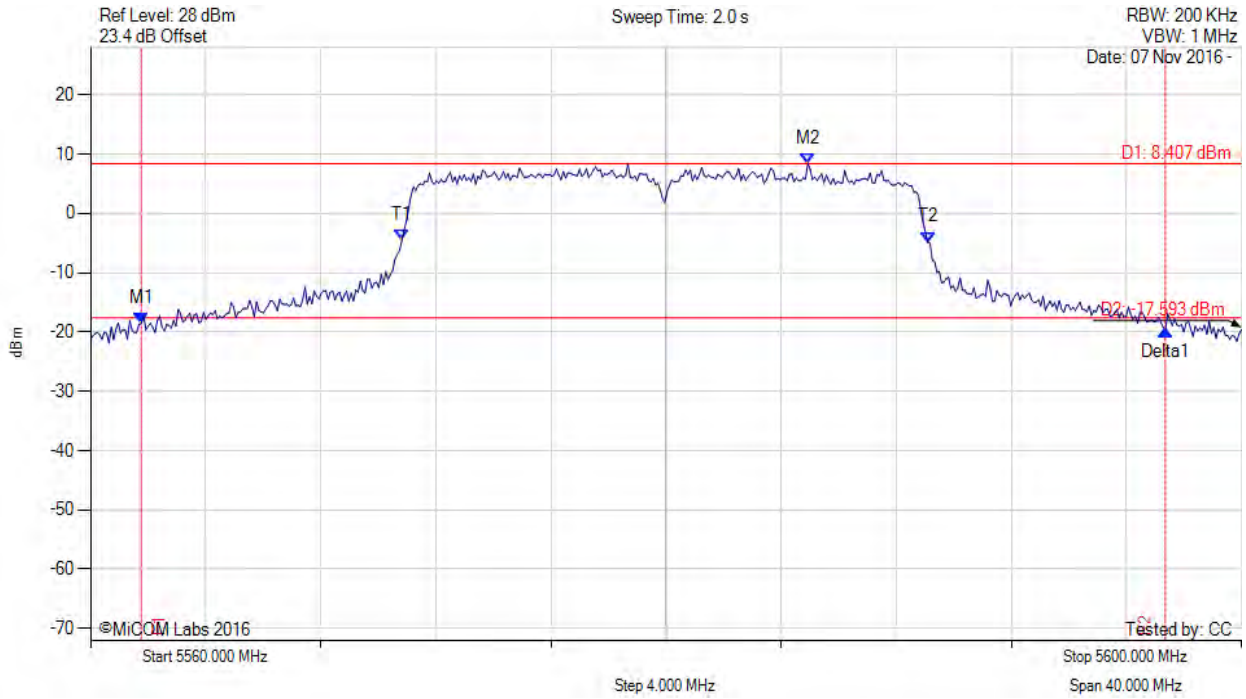
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5561.764 MHz : -18.569 dBm<br>M2 : 5584.930 MHz : 8.407 dBm<br>Delta1 : 35.591 MHz : -1.184 dB<br>T1 : 5570.822 MHz : -4.489 dBm<br>T2 : 5589.098 MHz : -4.853 dBm<br>OBW : 18.277 MHz | Measured 26 dB Bandwidth: 35.591 MHz<br>Measured 99% Bandwidth: 18.277 MHz |

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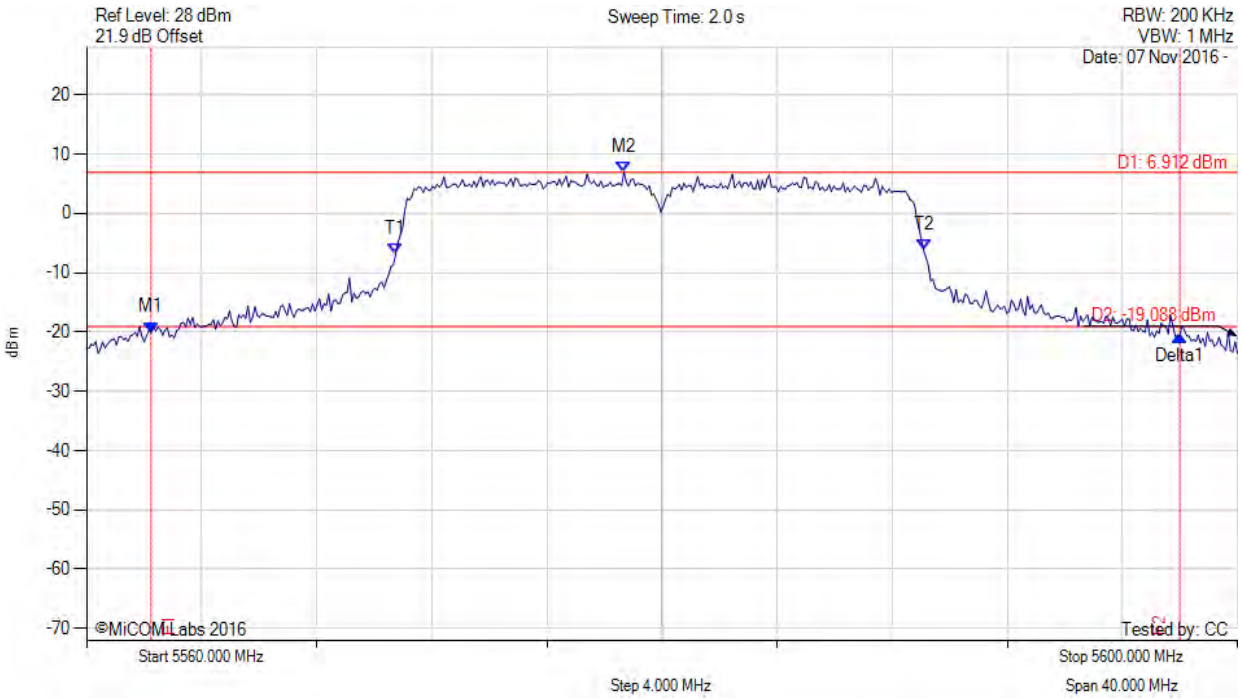
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5562.244 MHz : -20.070 dBm<br>M2 : 5578.677 MHz : 6.912 dBm<br>Delta1 : 35.752 MHz : -0.476 dB<br>T1 : 5570.741 MHz : -6.917 dBm<br>T2 : 5589.098 MHz : -6.252 dBm<br>OBW : 18.357 MHz | Measured 26 dB Bandwidth: 35.752 MHz<br>Measured 99% Bandwidth: 18.357 MHz |

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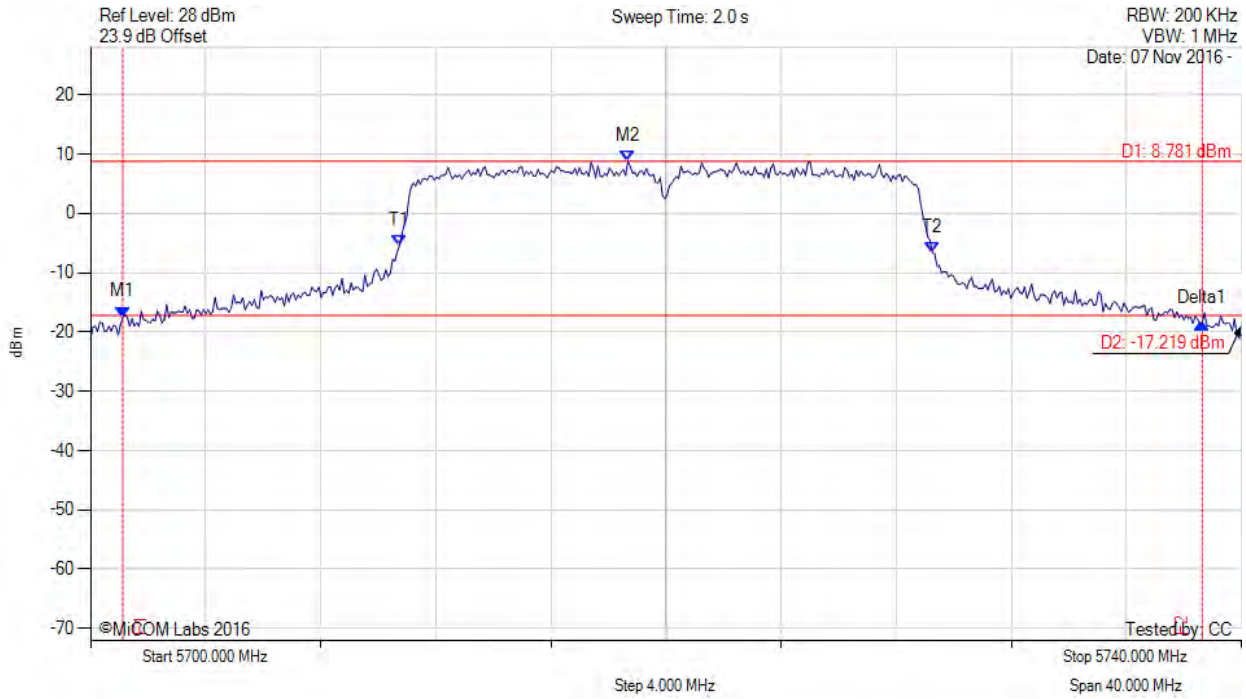
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5701.122 MHz : -17.497 dBm<br>M2 : 5718.677 MHz : 8.781 dBm<br>Delta1 : 37.515 MHz : -0.960 dB<br>T1 : 5710.741 MHz : -5.425 dBm<br>T2 : 5729.259 MHz : -6.633 dBm<br>OBW : 18.517 MHz | Measured 26 dB Bandwidth: 37.515 MHz<br>Measured 99% Bandwidth: 18.517 MHz |

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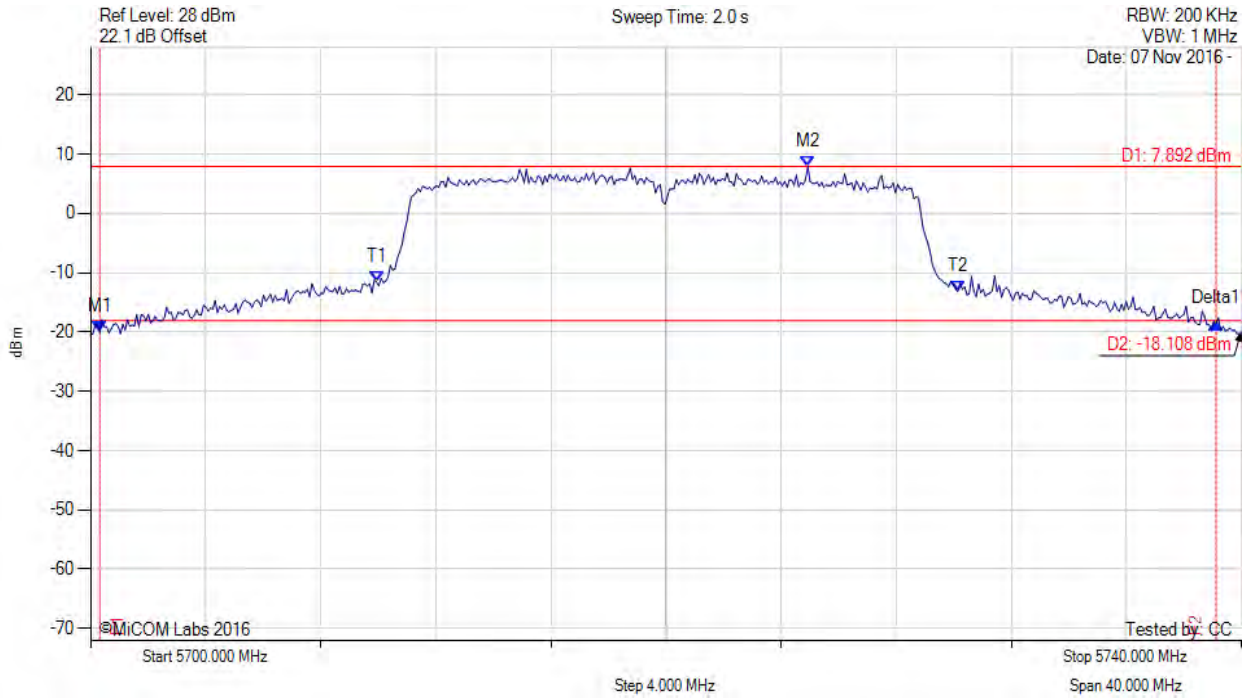
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5700.321 MHz : -20.023 dBm<br>M2 : 5724.930 MHz : 7.892 dBm<br>Delta1 : 38.798 MHz : 1.454 dB<br>T1 : 5709.940 MHz : -11.567 dBm<br>T2 : 5730.140 MHz : -13.173 dBm<br>OBW : 20.200 MHz | Measured 26 dB Bandwidth: 38.798 MHz<br>Measured 99% Bandwidth: 20.200 MHz |

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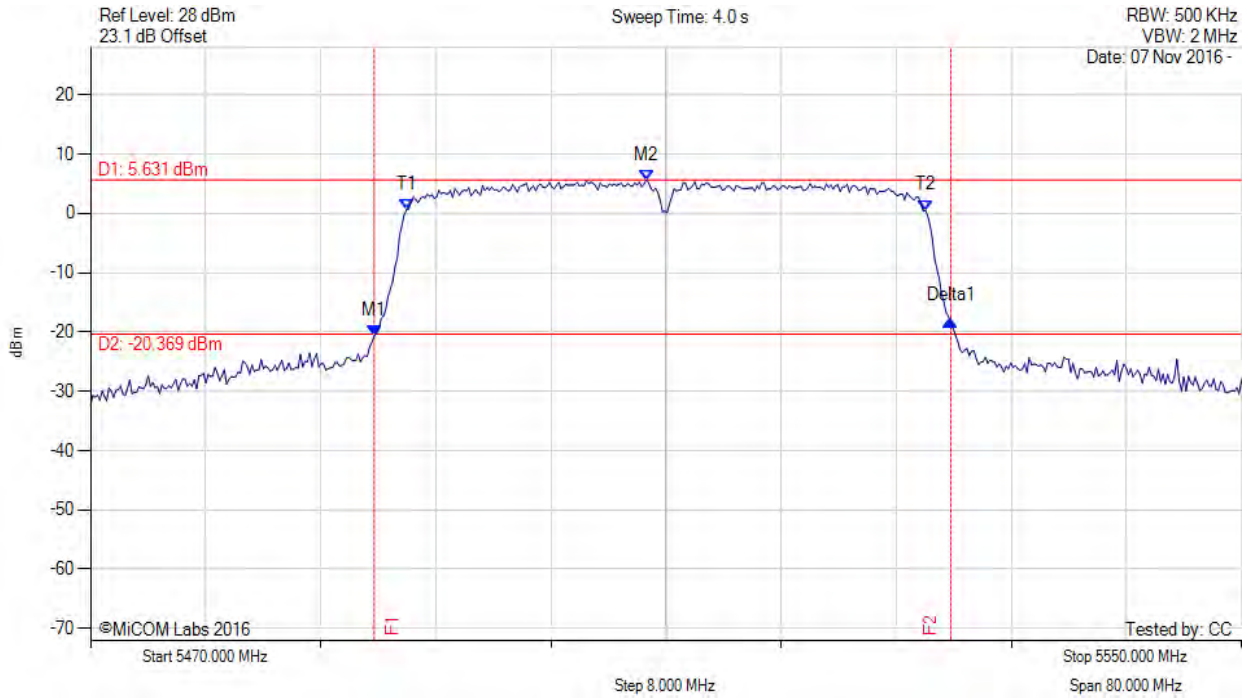
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5489.719 MHz : -20.666 dBm<br>M2 : 5508.637 MHz : 5.631 dBm<br>Delta1 : 40.080 MHz : 2.540 dB<br>T1 : 5491.964 MHz : 0.618 dBm<br>T2 : 5528.036 MHz : 0.508 dBm<br>OBW : 36.072 MHz | Measured 26 dB Bandwidth: 40.080 MHz<br>Measured 99% Bandwidth: 36.072 MHz |

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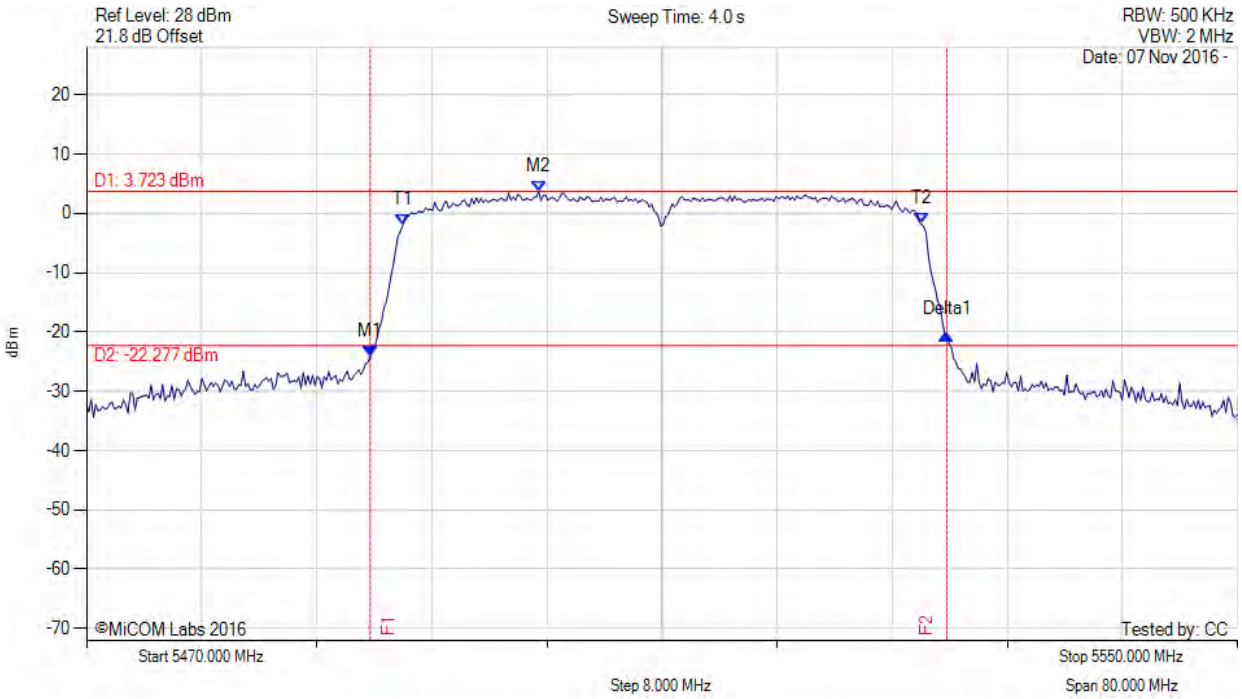
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5489.719 MHz : -24.084 dBm<br>M2 : 5501.423 MHz : 3.723 dBm<br>Delta1 : 40.080 MHz : 3.614 dB<br>T1 : 5491.964 MHz : -2.040 dBm<br>T2 : 5528.036 MHz : -1.809 dBm<br>OBW : 36.072 MHz | Measured 26 dB Bandwidth: 40.080 MHz<br>Measured 99% Bandwidth: 36.072 MHz |

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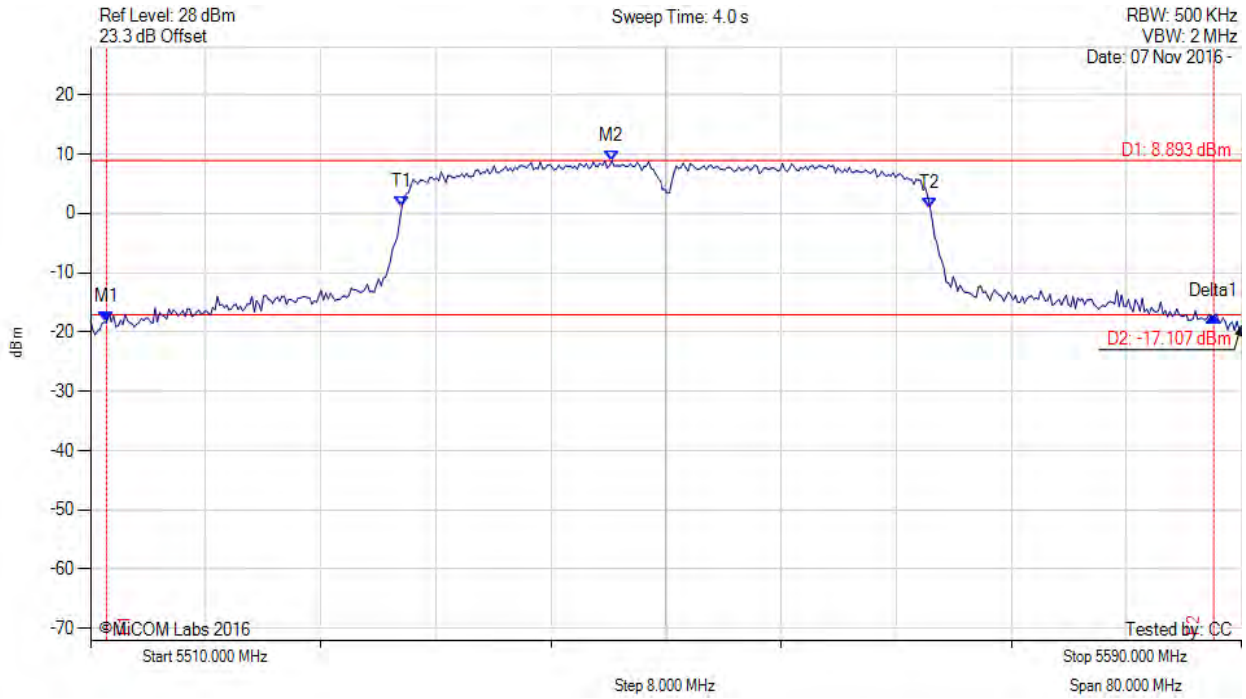
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5511.122 MHz : -18.382 dBm<br>M2 : 5546.232 MHz : 8.893 dBm<br>Delta1 : 76.954 MHz : 0.919 dB<br>T1 : 5531.643 MHz : 1.132 dBm<br>T2 : 5568.357 MHz : 0.896 dBm<br>OBW : 36.713 MHz | Measured 26 dB Bandwidth: 76.954 MHz<br>Measured 99% Bandwidth: 36.713 MHz |

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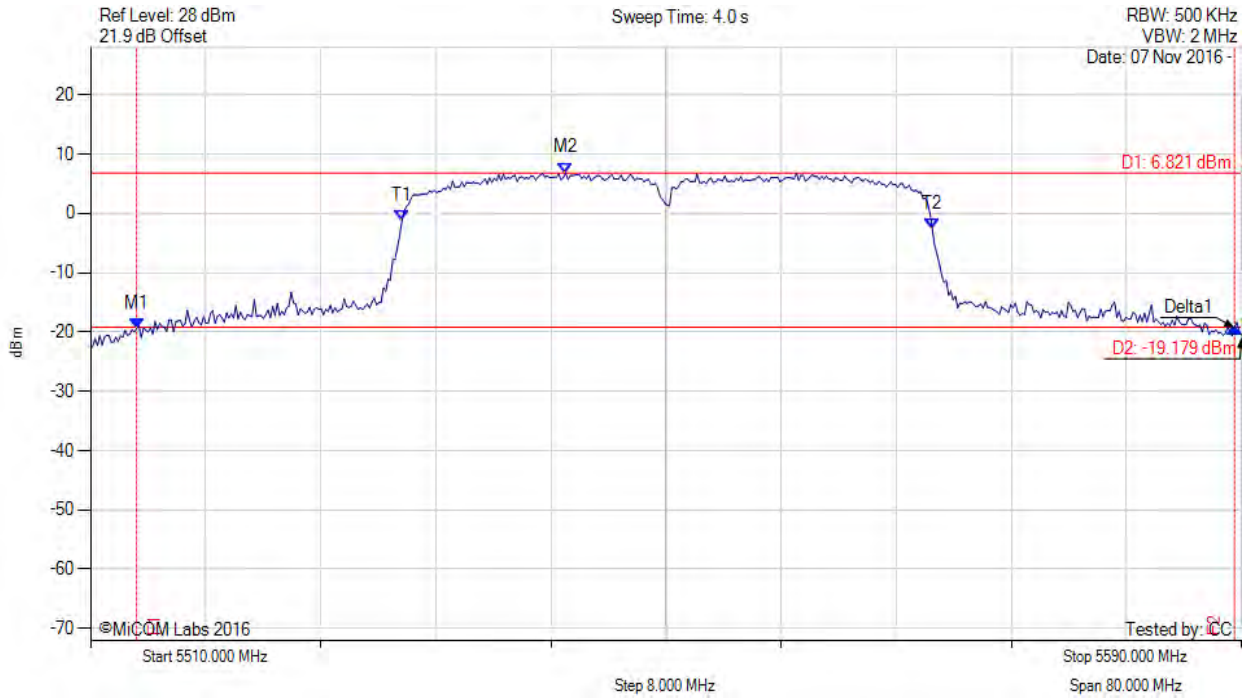
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5513.206 MHz : -19.407 dBm<br>M2 : 5543.026 MHz : 6.821 dBm<br>Delta1 : 76.313 MHz : 0.140 dB<br>T1 : 5531.643 MHz : -1.274 dBm<br>T2 : 5568.517 MHz : -2.728 dBm<br>OBW : 36.874 MHz | Measured 26 dB Bandwidth: 76.313 MHz<br>Measured 99% Bandwidth: 36.874 MHz |

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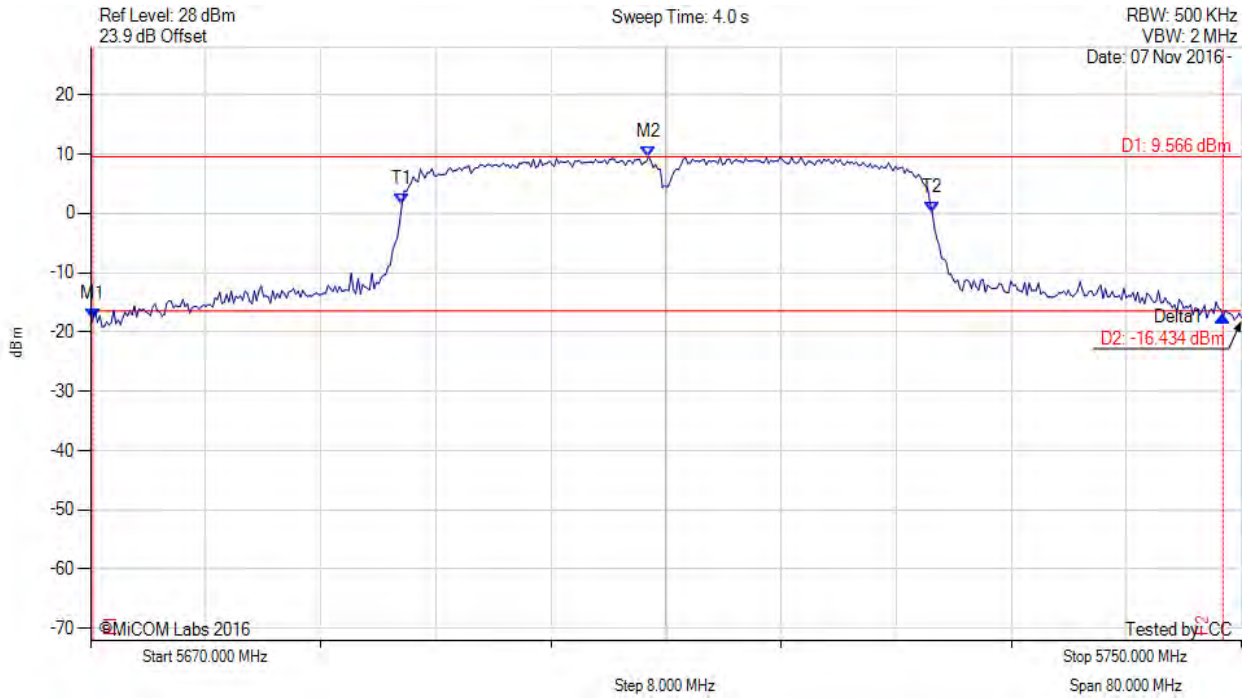
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5670.160 MHz : -17.757 dBm<br>M2 : 5708.798 MHz : 9.566 dBm<br>Delta1 : 78.557 MHz : 0.338 dB<br>T1 : 5691.643 MHz : 1.519 dBm<br>T2 : 5728.517 MHz : 0.073 dBm<br>OBW : 36.874 MHz | Measured 26 dB Bandwidth: 78.557 MHz<br>Measured 99% Bandwidth: 36.874 MHz |

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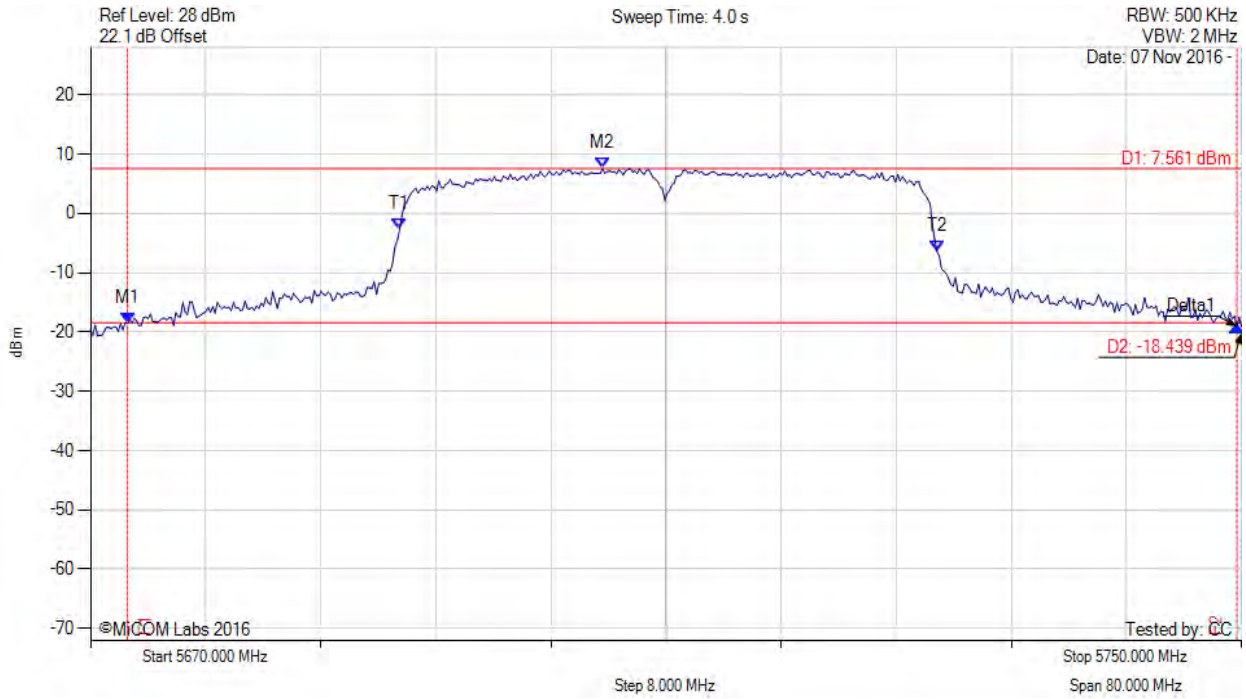
26 dB & 99% BANDWIDTH

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 20<br>Trace Mode = MAX HOLD | M1 : 5672.565 MHz : -18.512 dBm<br>M2 : 5705.591 MHz : 7.561 dBm<br>Delta1 : 77.114 MHz : -0.537 dB<br>T1 : 5691.483 MHz : -2.689 dBm<br>T2 : 5728.838 MHz : -6.395 dBm<br>OBW : 37.355 MHz | Measured 26 dB Bandwidth: 77.114 MHz<br>Measured 99% Bandwidth: 37.355 MHz |

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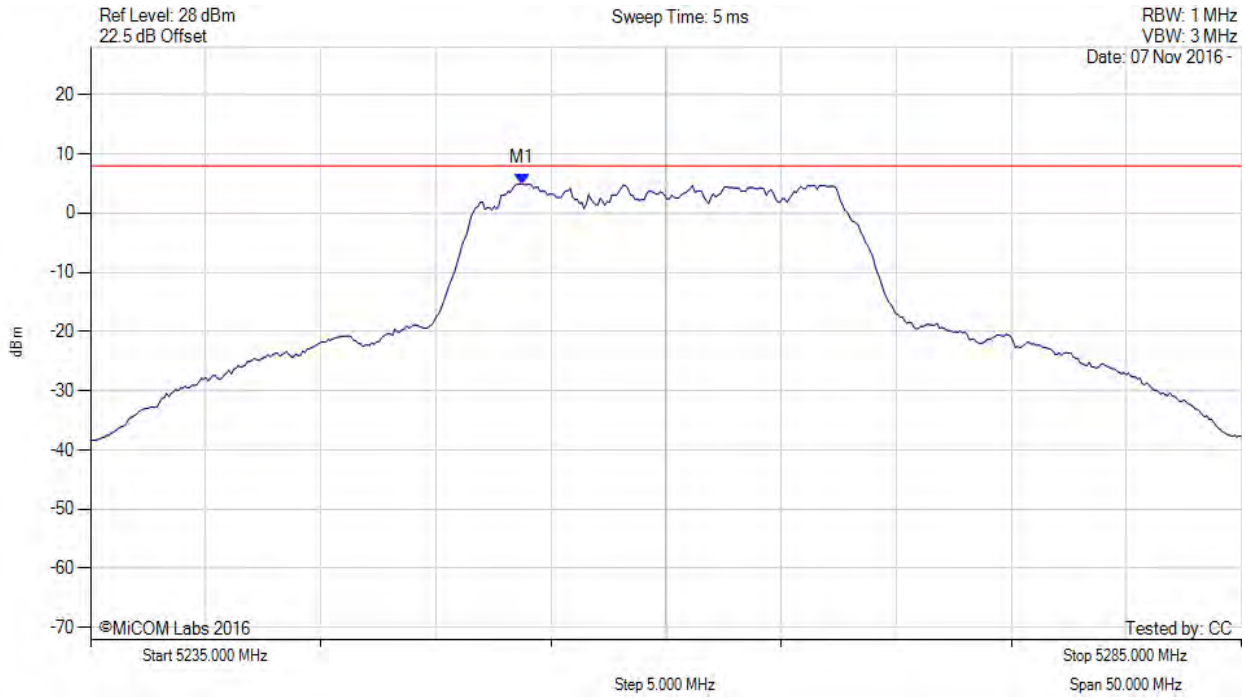
## A.2. Power Spectral Density

POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5253.737 MHz : 4.946 dBm | Limit: ≤ 7.990 dBm |

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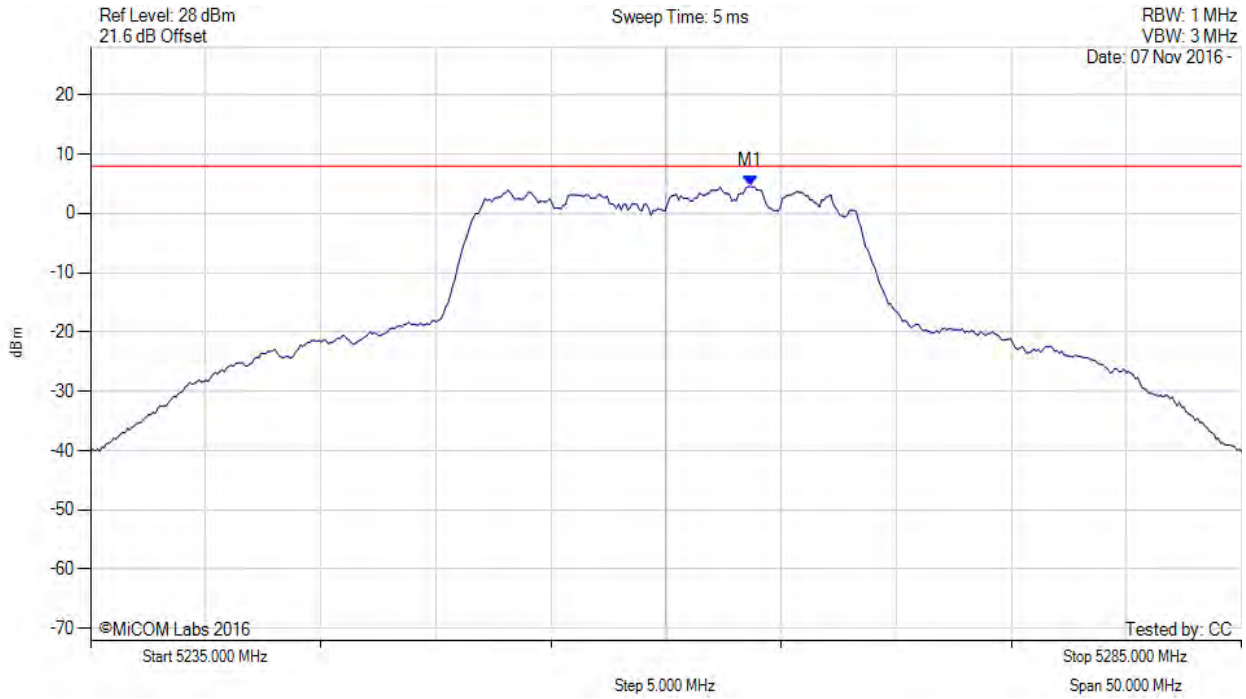
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5263.657 MHz : 4.506 dBm | Limit: ≤ 7.990 dBm |

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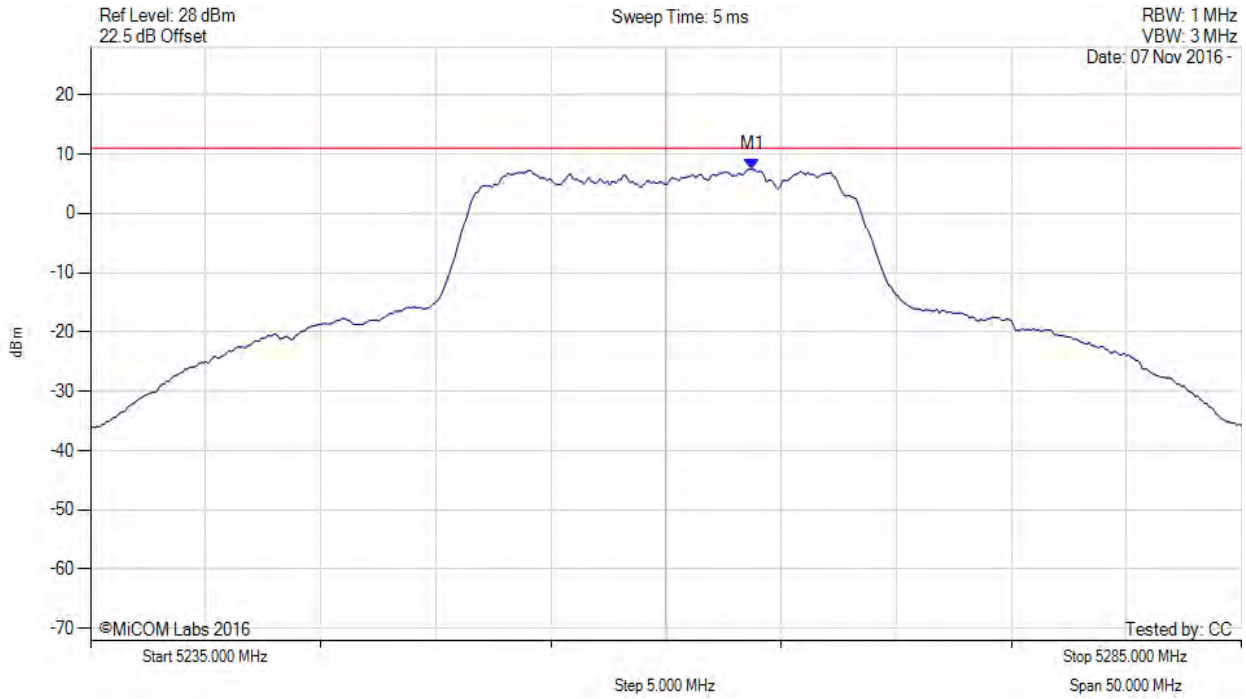
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5260.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5263.800 MHz : 7.421 dBm<br>M1 + DCCF : 5263.800 MHz : 7.465 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -3.5 dB |

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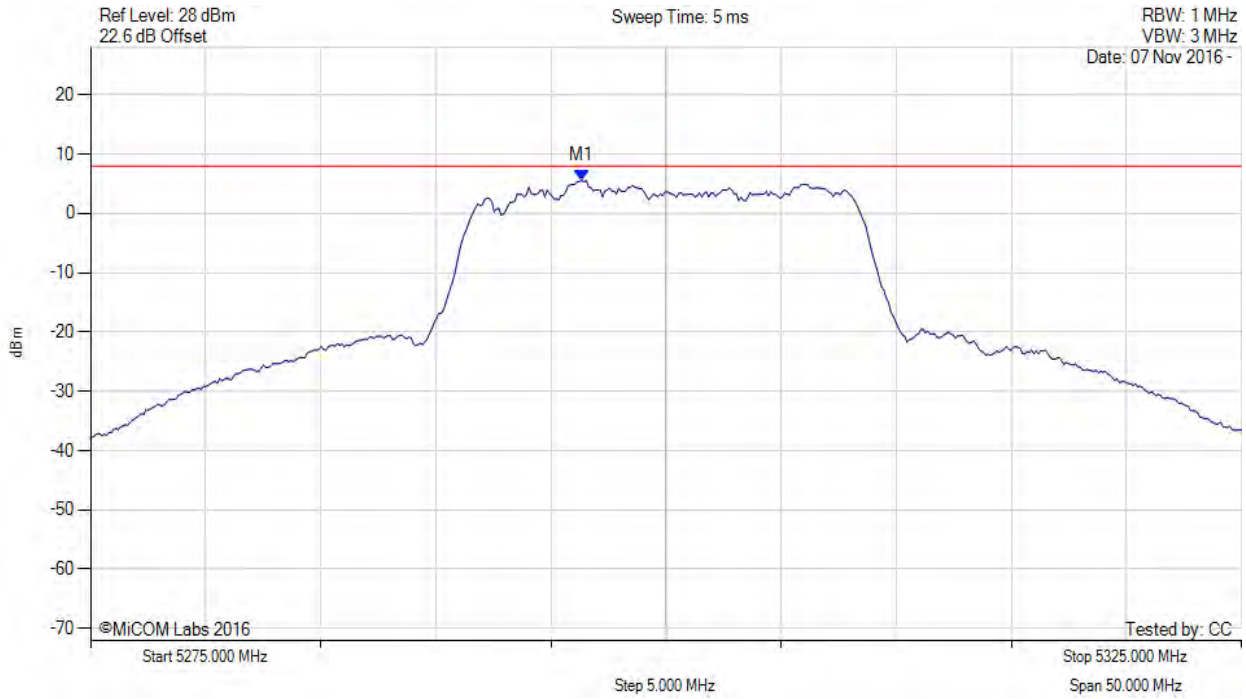
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5296.343 MHz : 5.532 dBm | Limit: ≤ 7.990 dBm |

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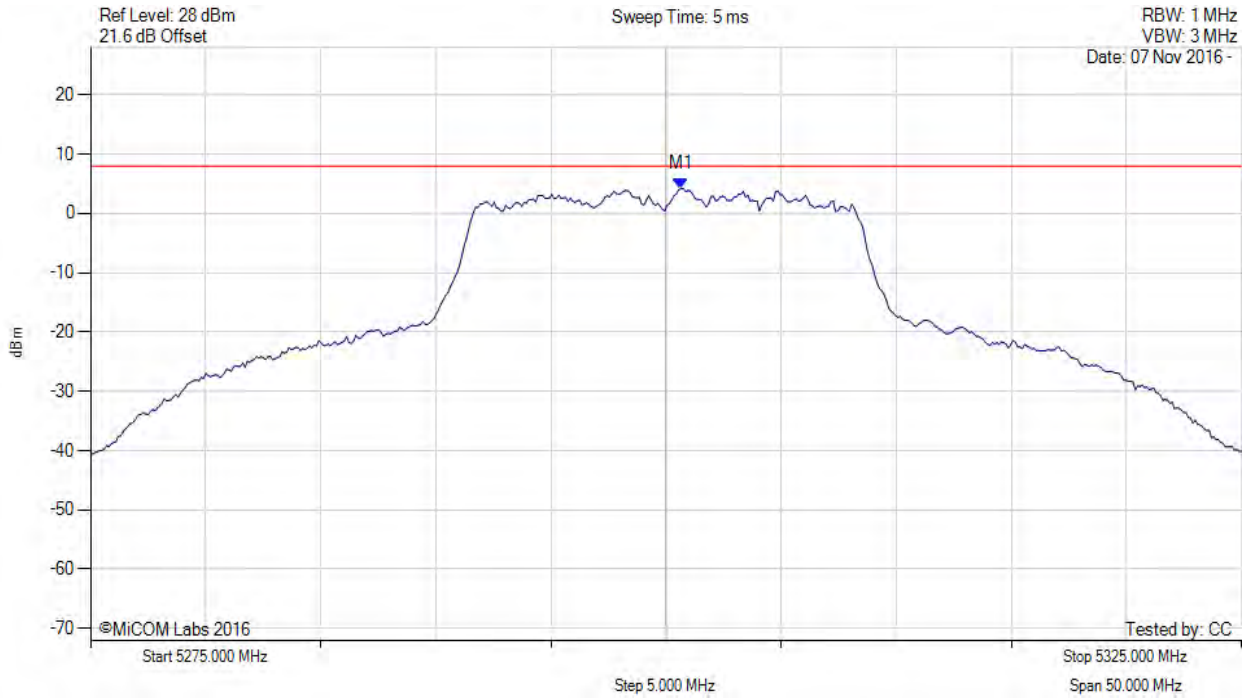
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5300.651 MHz : 4.182 dBm | Channel Frequency: 5300.00 MHz |

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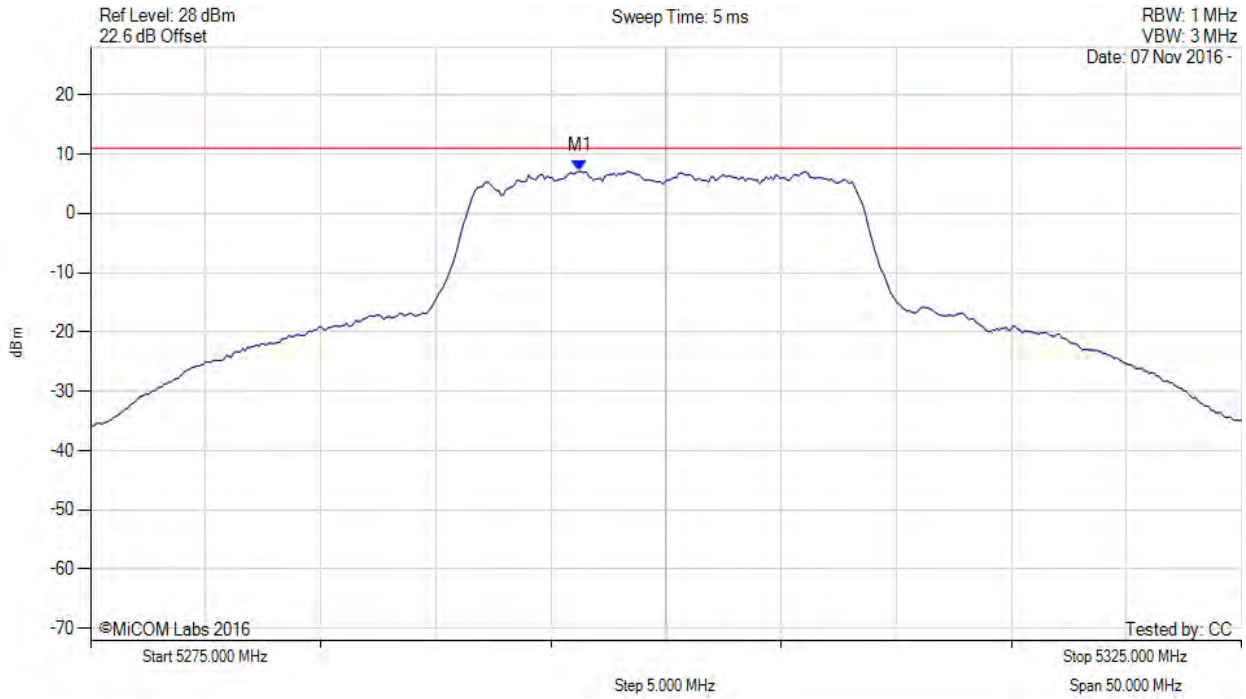
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5300.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5296.200 MHz : 7.105 dBm<br>M1 + DCCF : 5296.200 MHz : 7.149 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -3.9 dB |

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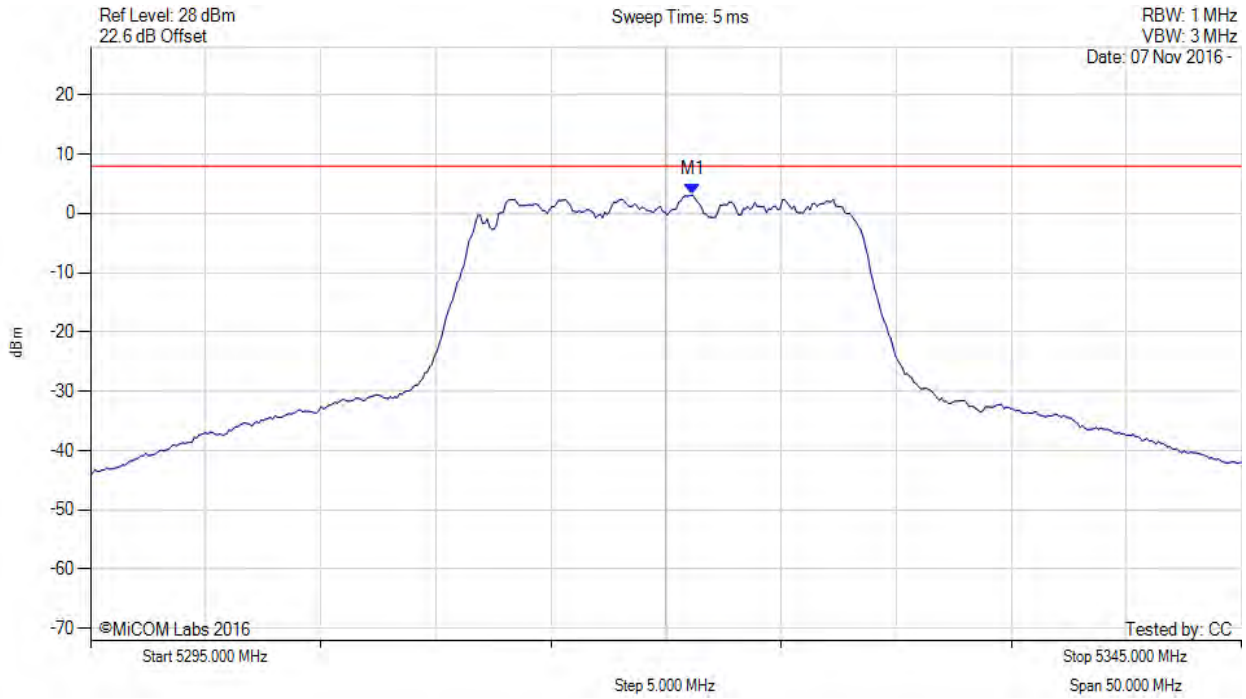
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5321.152 MHz : 3.103 dBm | Limit: ≤ 7.990 dBm |

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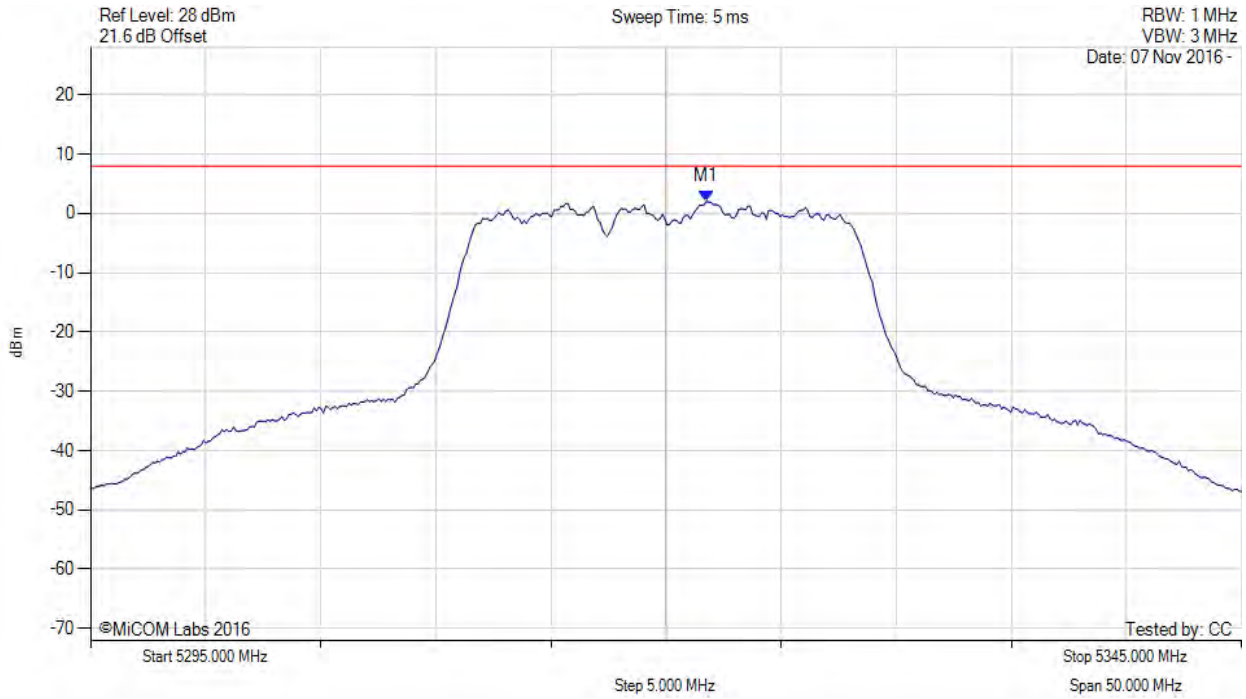
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5321.754 MHz : 2.012 dBm | Limit: ≤ 7.990 dBm |

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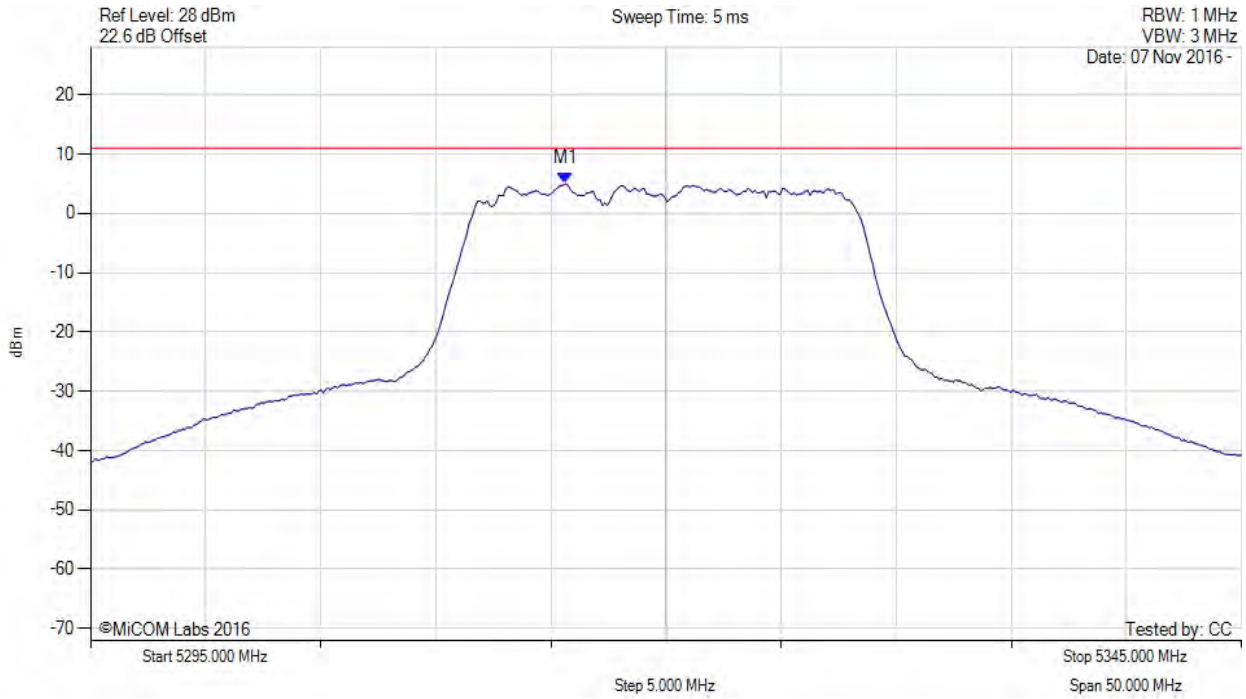
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5320.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5315.600 MHz : 5.004 dBm<br>M1 + DCCF : 5315.600 MHz : 5.048 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -6.0 dB |

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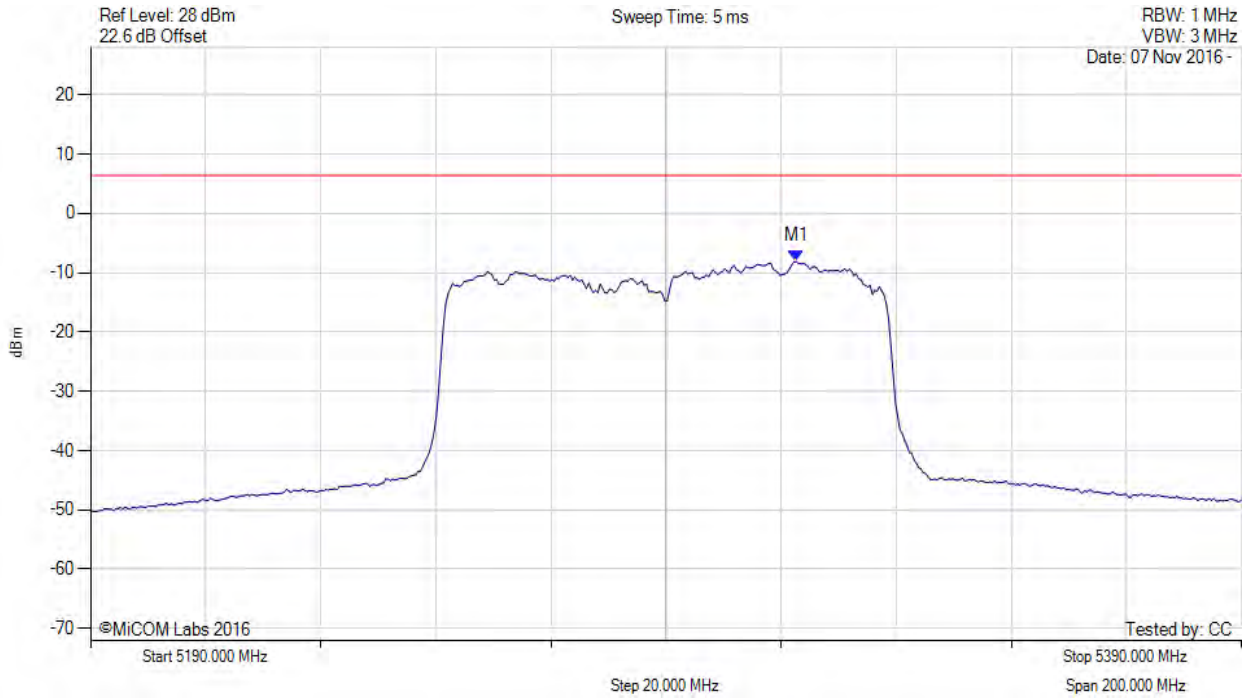
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5312.645 MHz : -8.114 dBm | Limit: ≤ 6.390 dBm |

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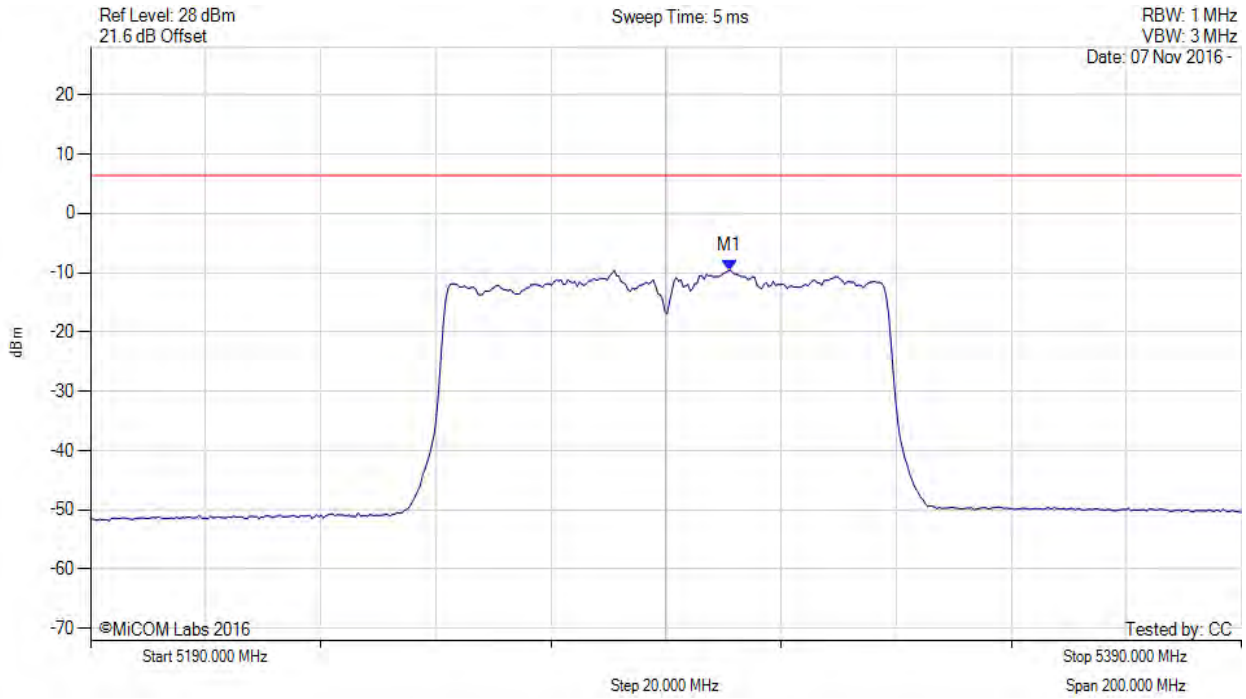
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5301.022 MHz : -9.562 dBm | Limit: ≤ 6.390 dBm |

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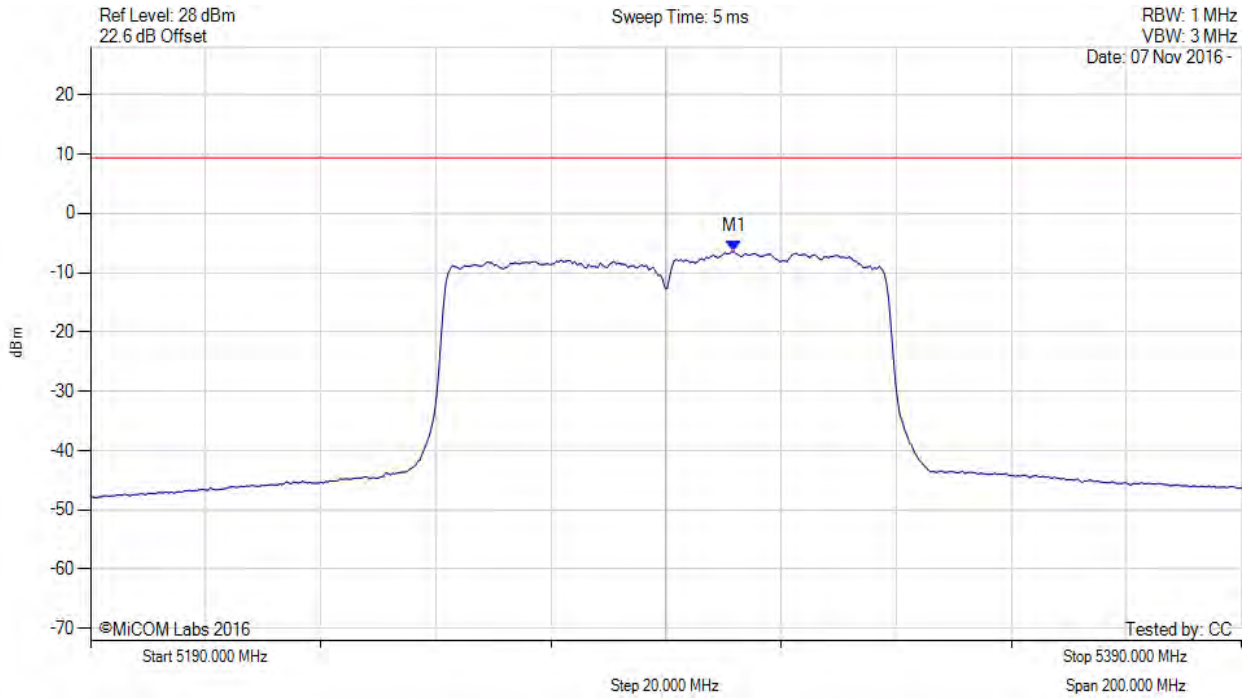
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5290.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5301.800 MHz : -6.426 dBm<br>M1 + DCCF : 5301.800 MHz : -6.382 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -15.8 dB |

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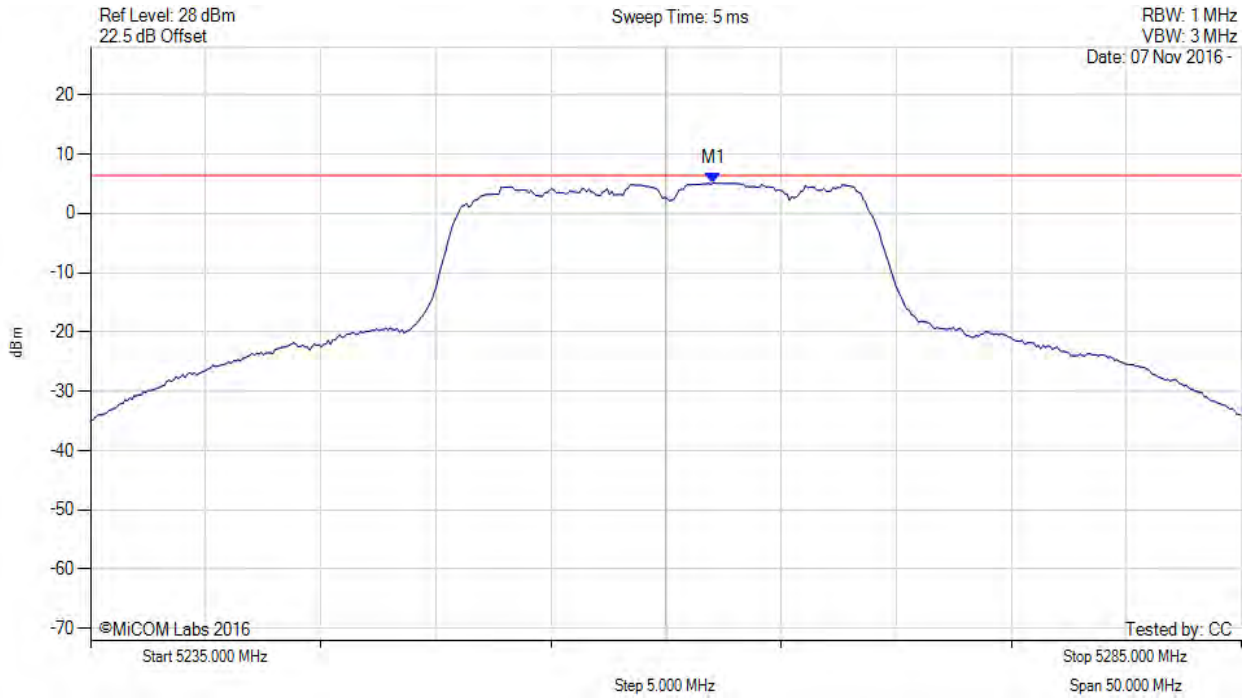
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5262.054 MHz : 5.116 dBm | Limit: ≤ 6.390 dBm |

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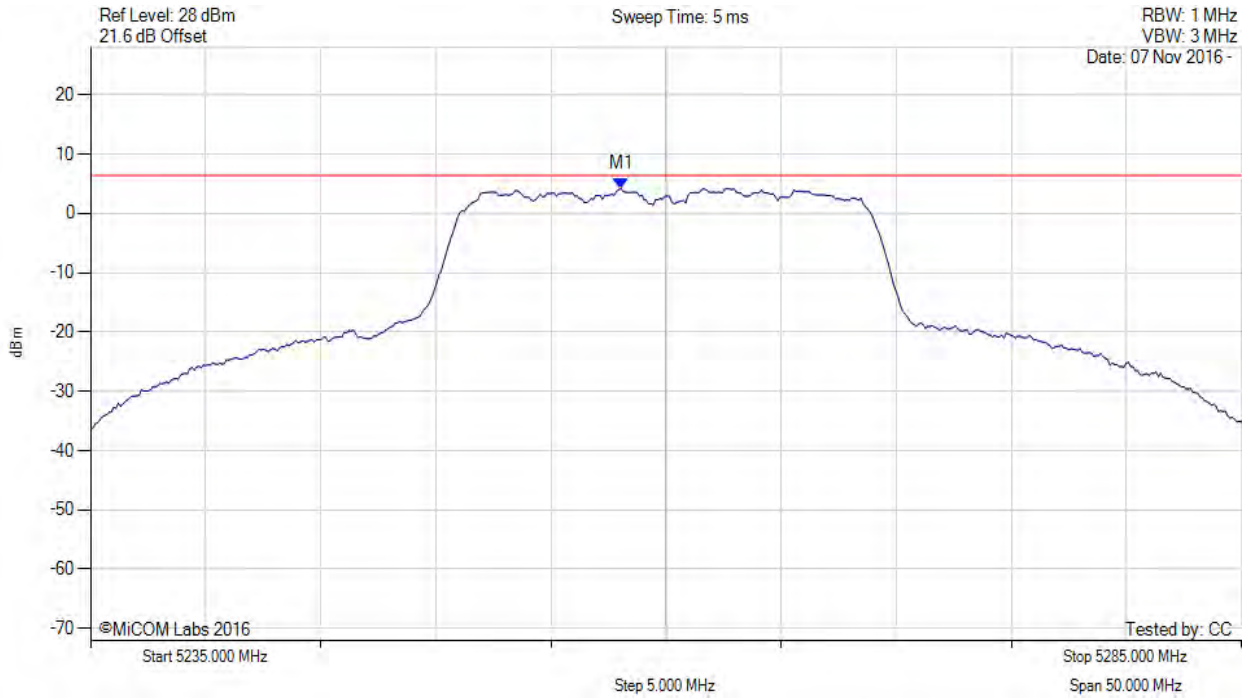
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5260.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5258.046 MHz : 4.162 dBm | Limit: ≤ 6.390 dBm |

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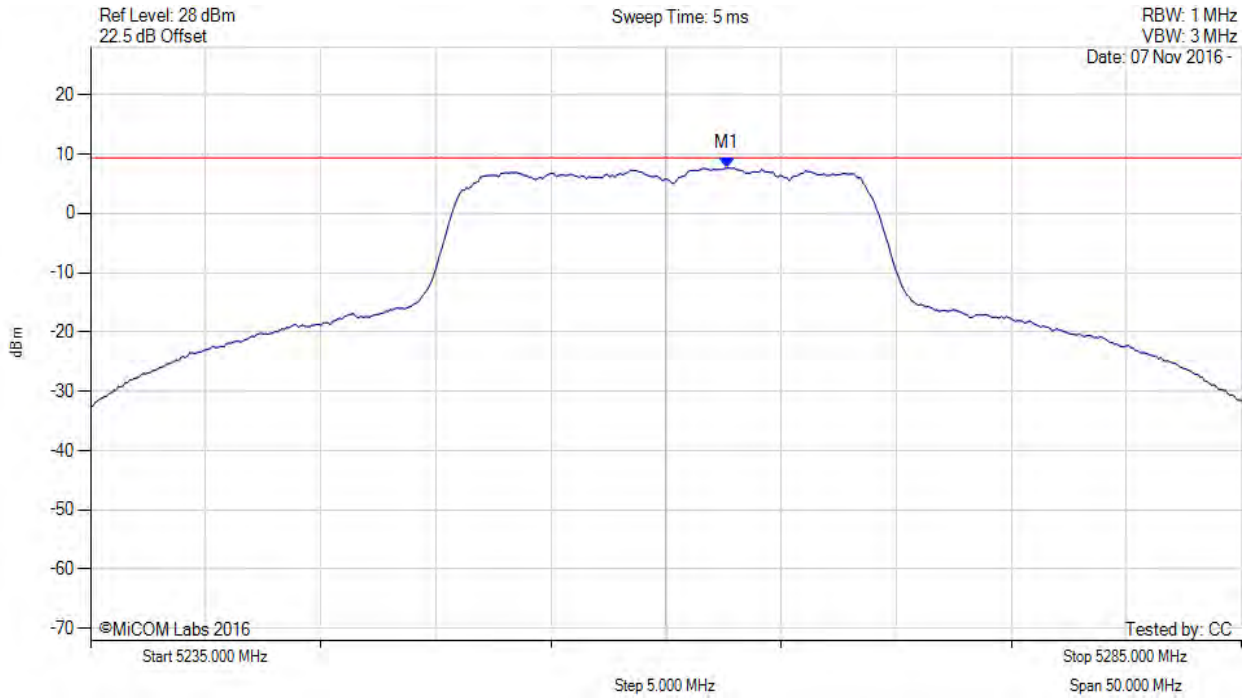
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5260.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5262.700 MHz : 7.649 dBm<br>M1 + DCCF : 5262.700 MHz : 7.693 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -1.7 dB |

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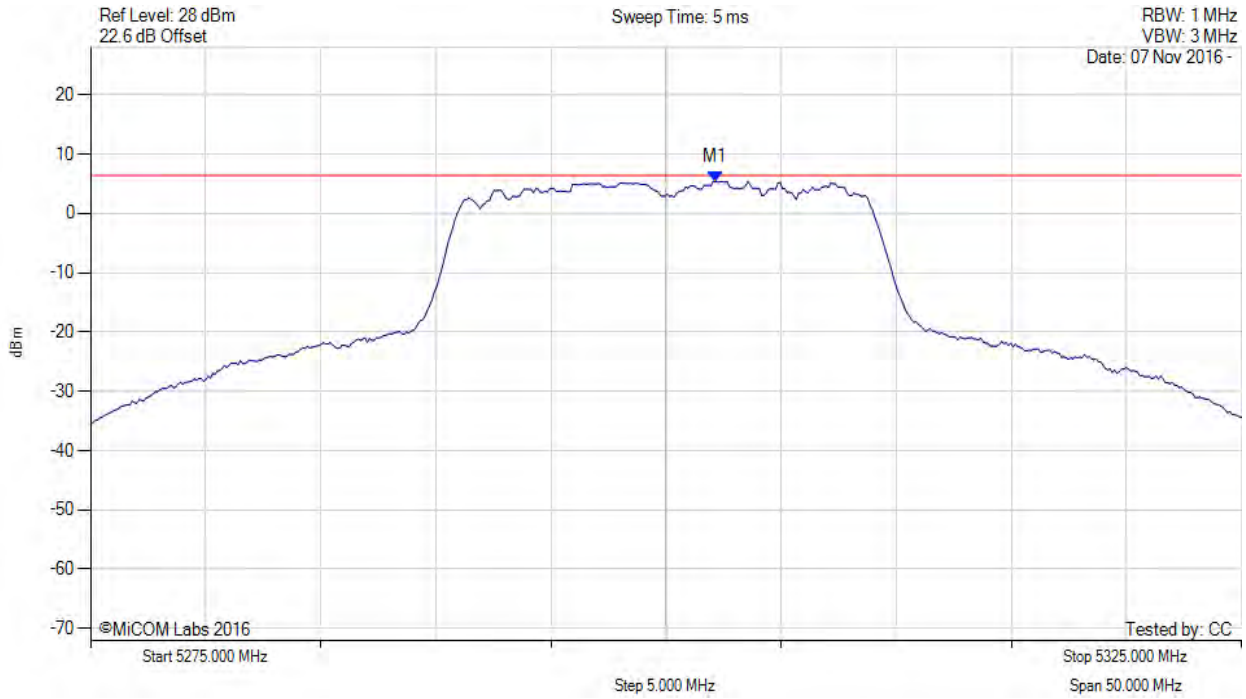
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5302.154 MHz : 5.383 dBm | Limit: ≤ 6.390 dBm |

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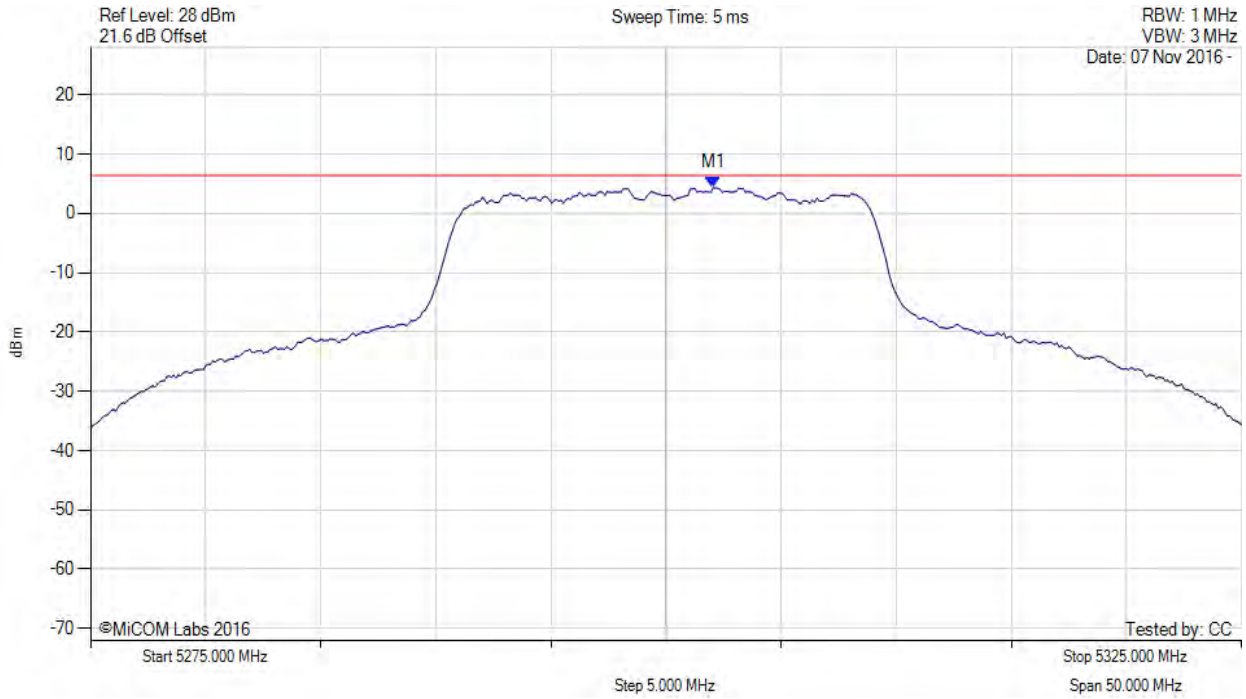
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5300.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5302.054 MHz : 4.328 dBm | Channel Frequency: 5300.00 MHz |

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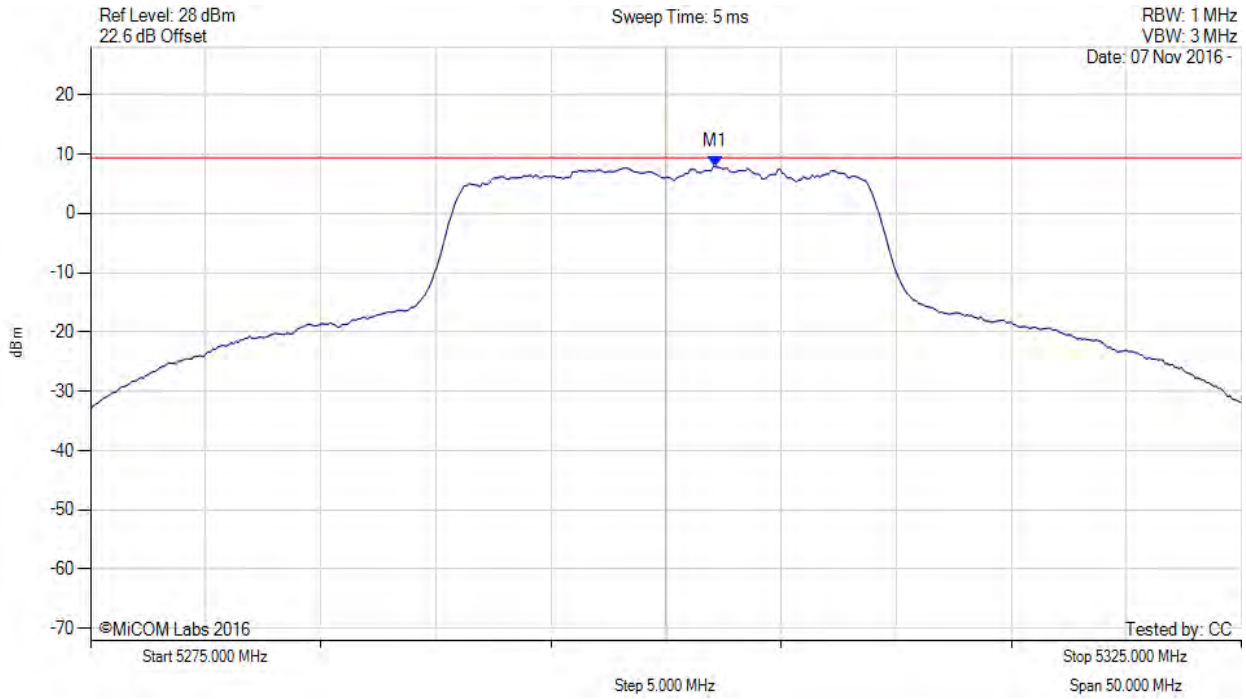
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5300.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5302.200 MHz : 7.878 dBm<br>M1 + DCCF : 5302.200 MHz : 7.922 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -1.5 dB |

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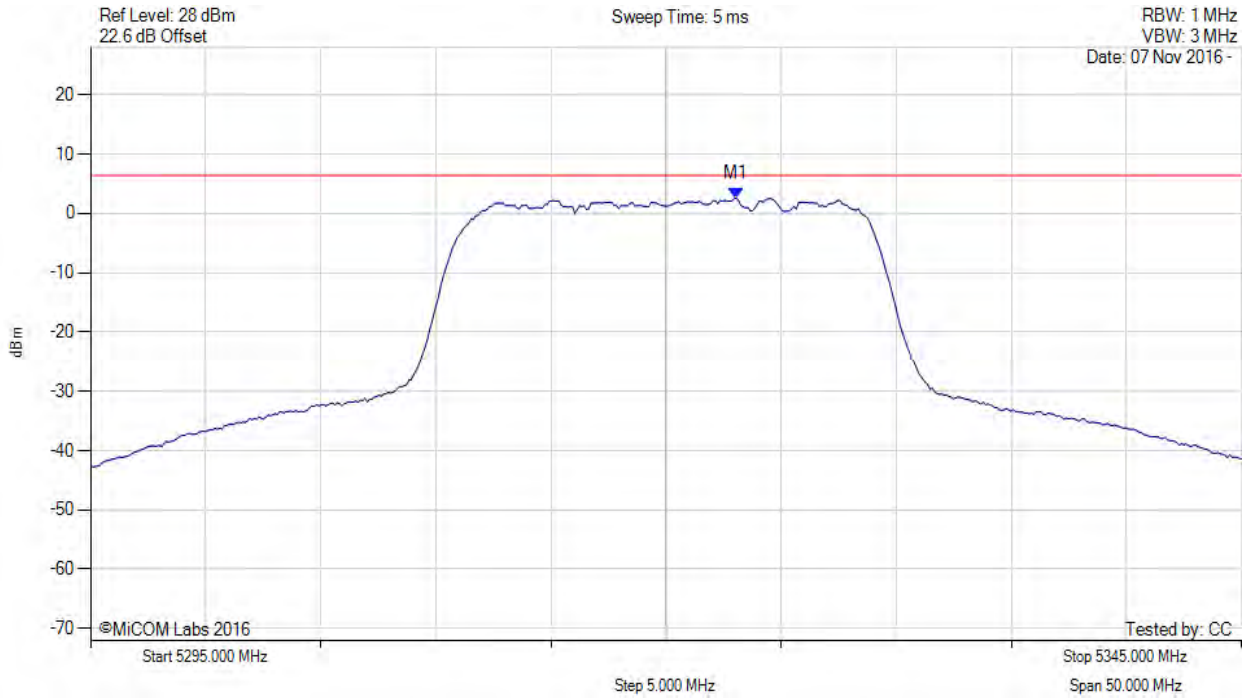
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5323.056 MHz : 2.580 dBm | Limit: ≤ 6.390 dBm |

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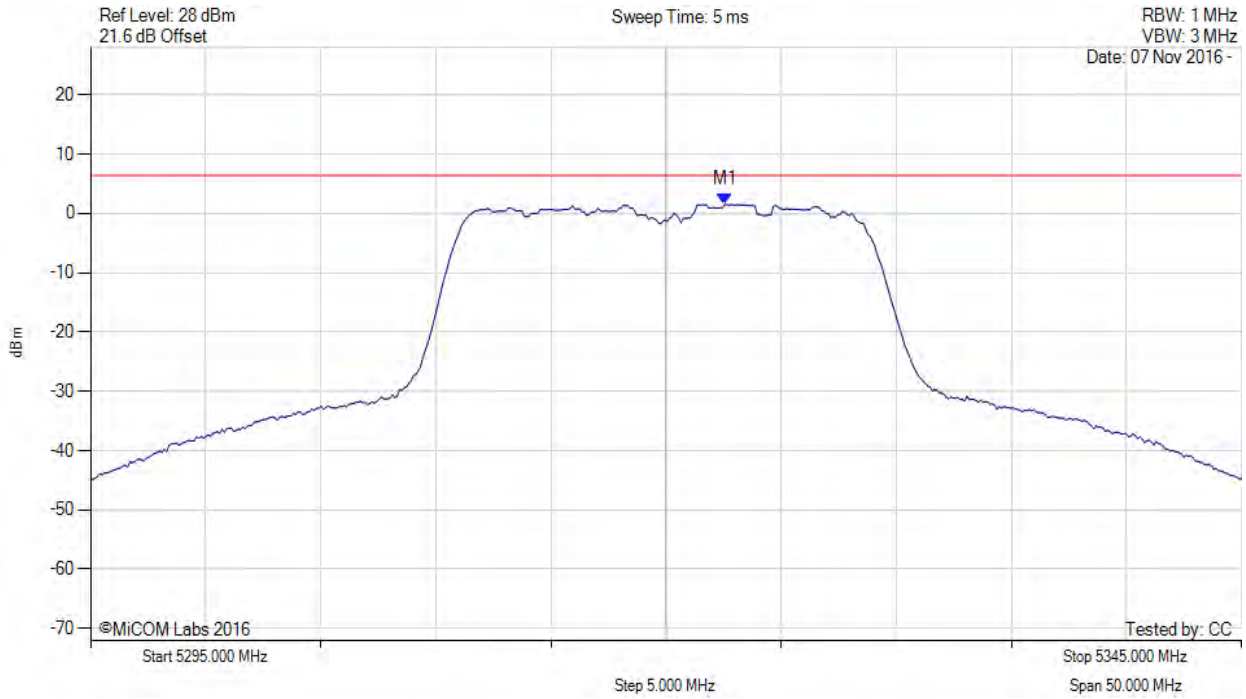
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5320.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5322.555 MHz : 1.506 dBm | Limit: ≤ 6.390 dBm |

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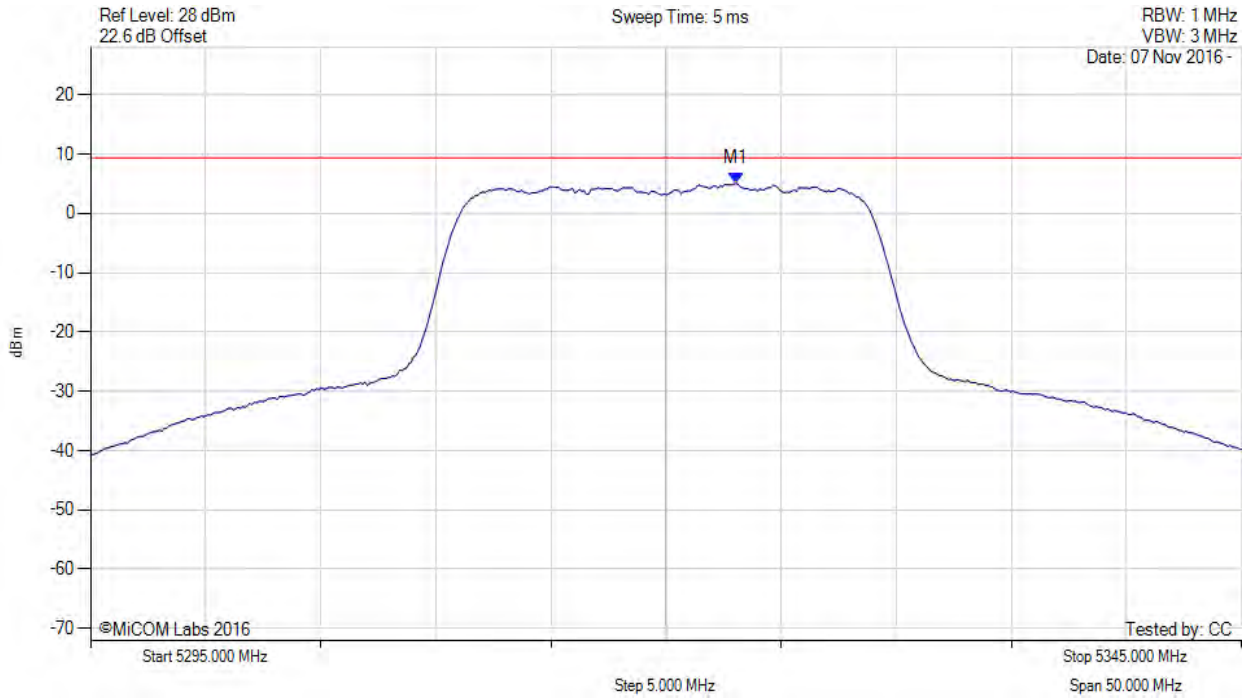
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5320.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5323.100 MHz : 5.058 dBm<br>M1 + DCCF : 5323.100 MHz : 5.102 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -4.3 dB |

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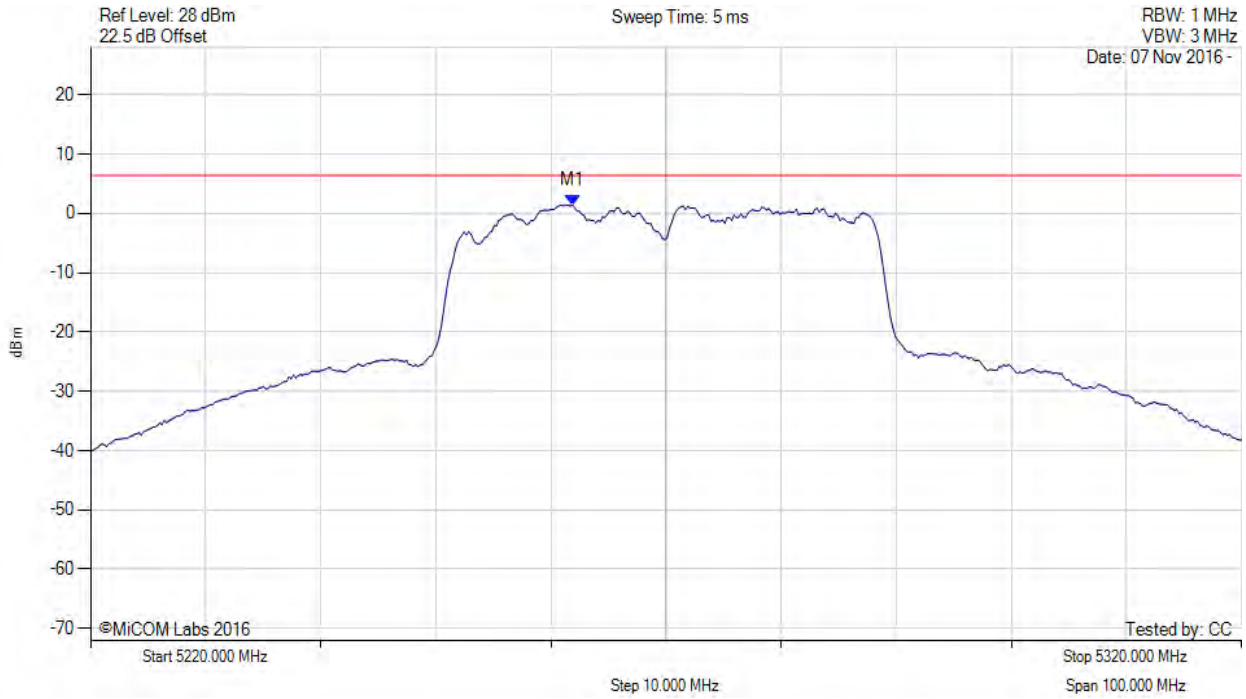
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5261.884 MHz : 1.417 dBm | Limit: ≤ 6.390 dBm |

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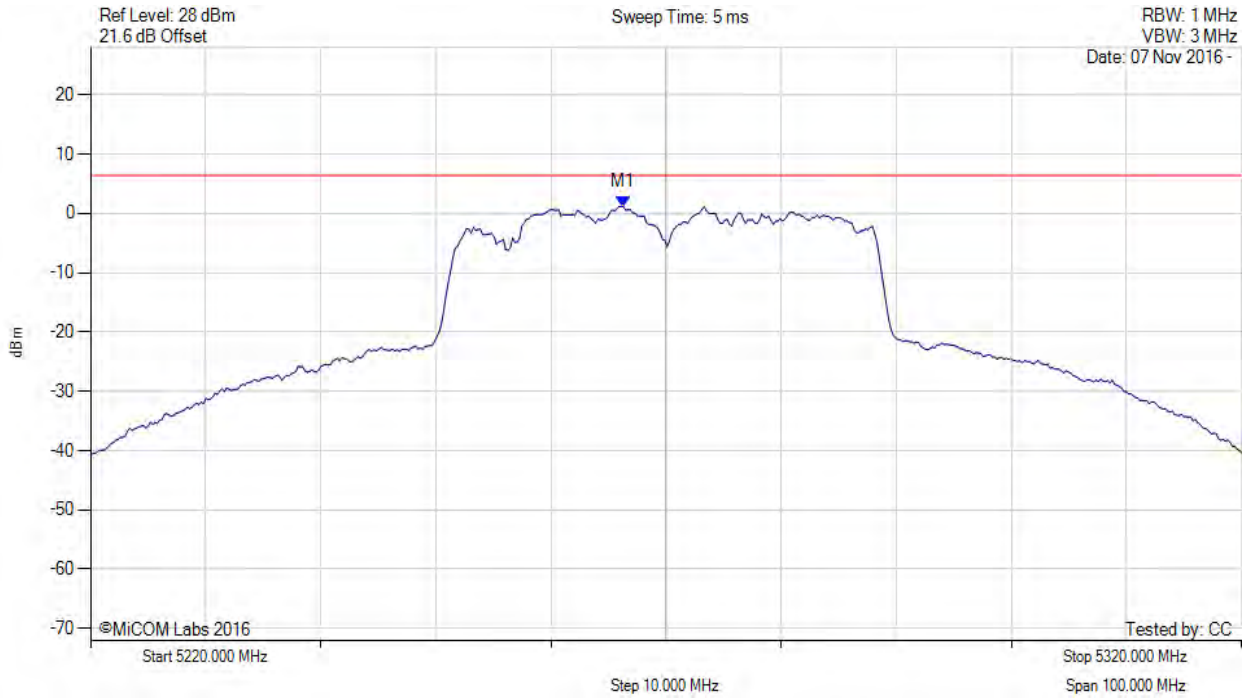
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5270.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5266.293 MHz : 1.174 dBm | Limit: ≤ 6.390 dBm |

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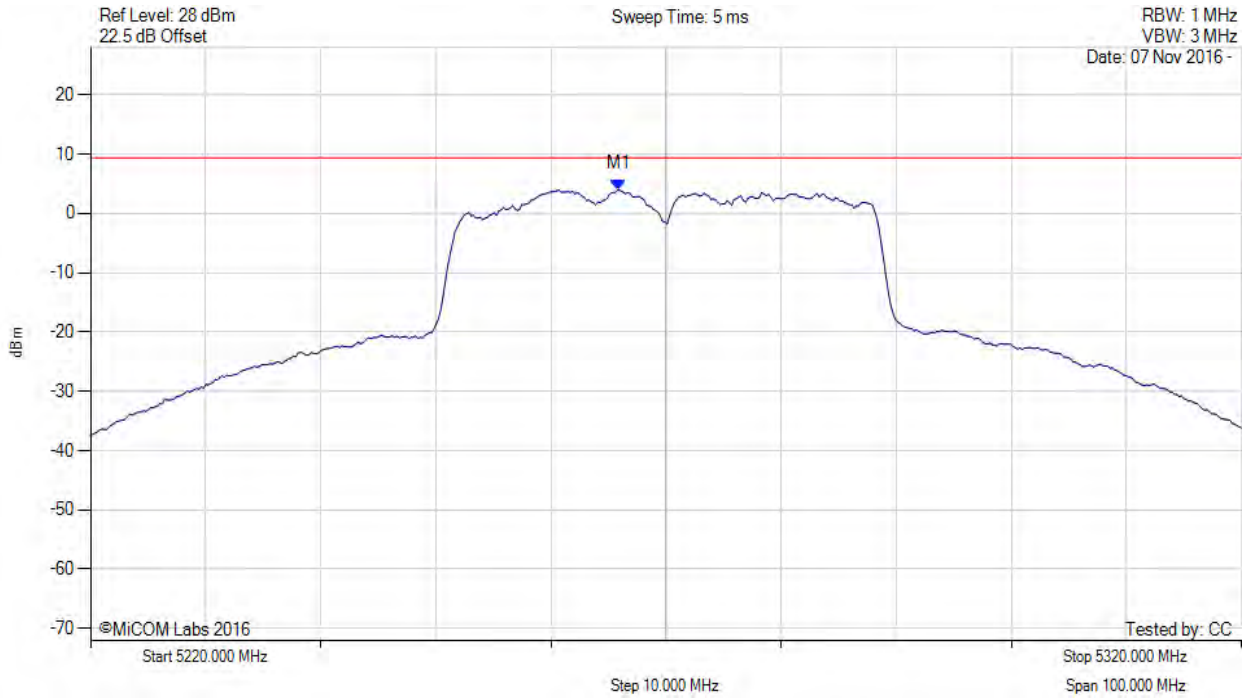
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5270.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5265.900 MHz : 4.021 dBm<br>M1 + DCCF : 5265.900 MHz : 4.065 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -5.3 dB |

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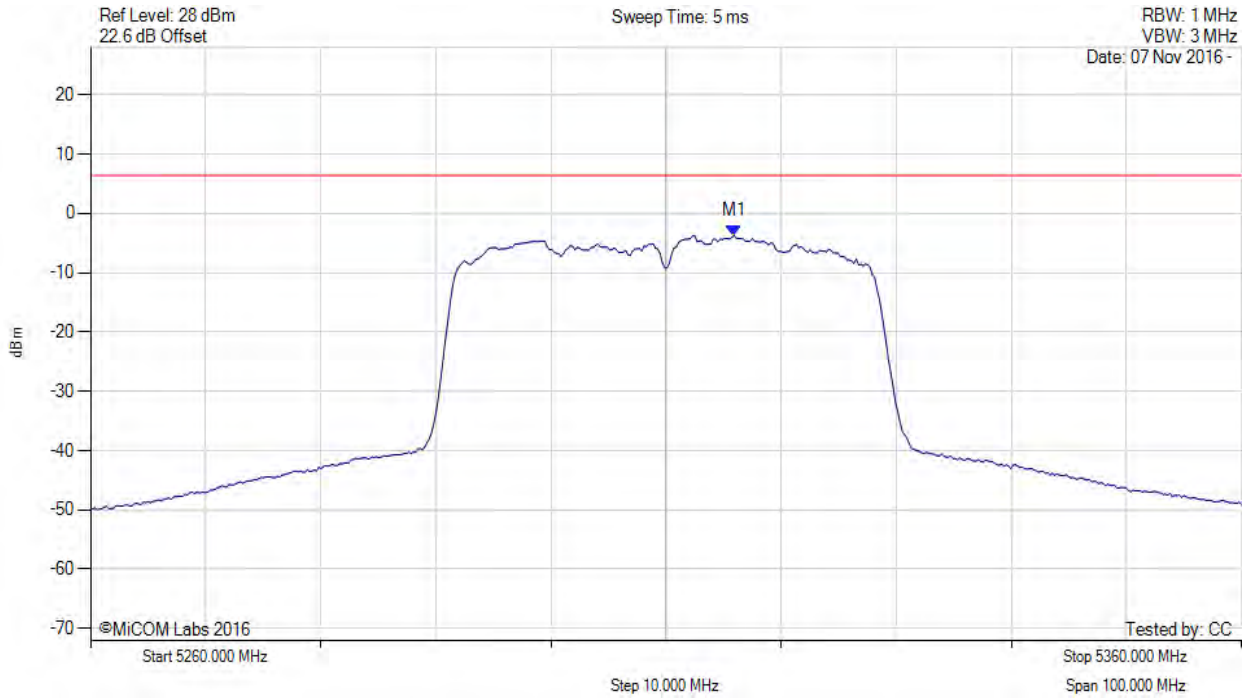
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5315.912 MHz : -3.760 dBm | Limit: ≤ 6.390 dBm |

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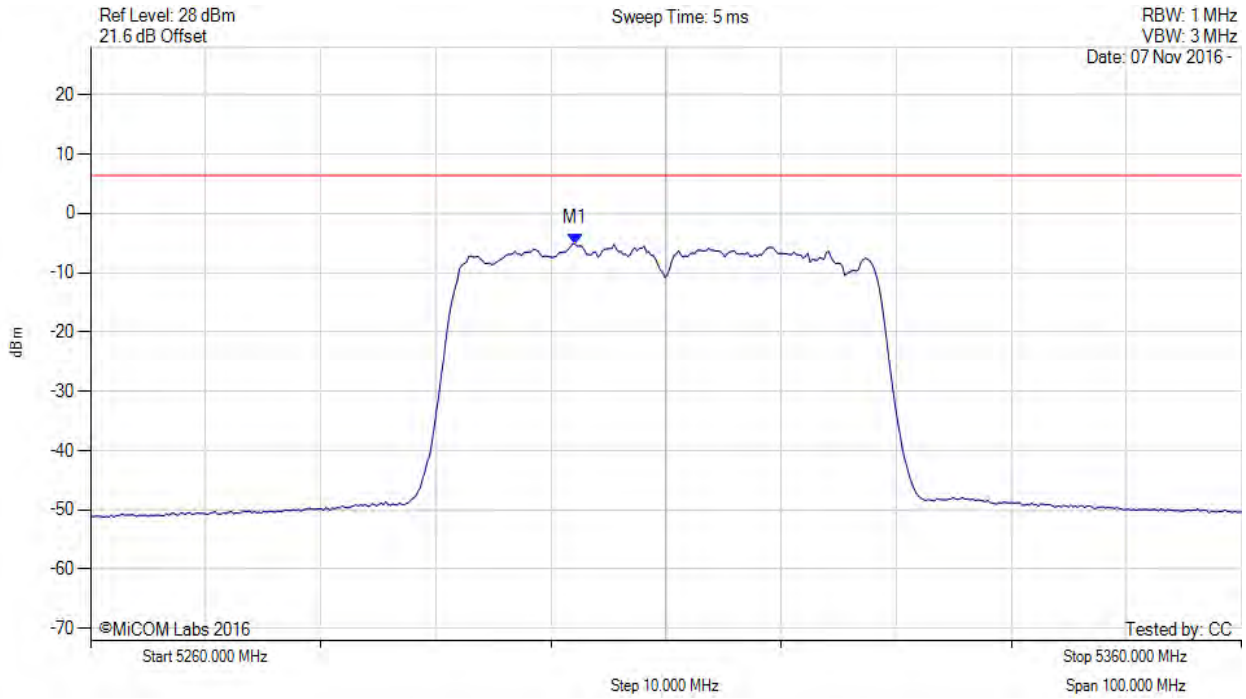
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5310.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5302.084 MHz : -5.091 dBm | Limit: ≤ 6.390 dBm |

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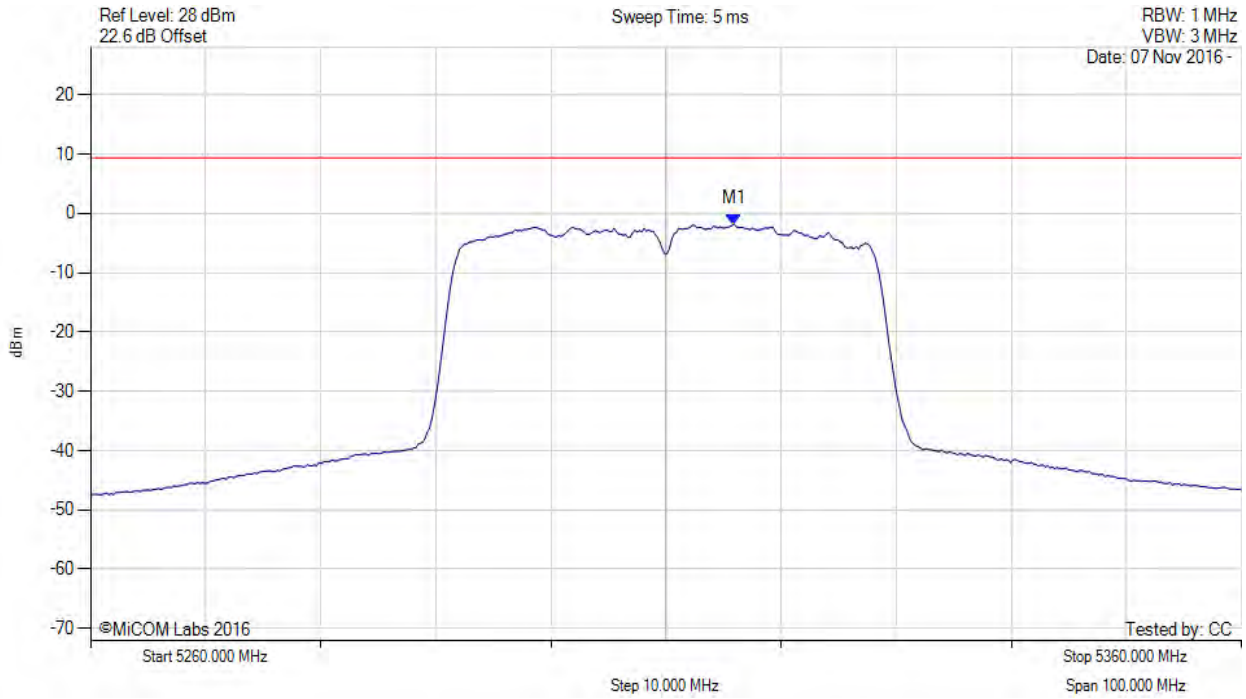
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5310.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5315.900 MHz : -1.820 dBm<br>M1 + DCCF : 5315.900 MHz : -1.776 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -11.2 dB |

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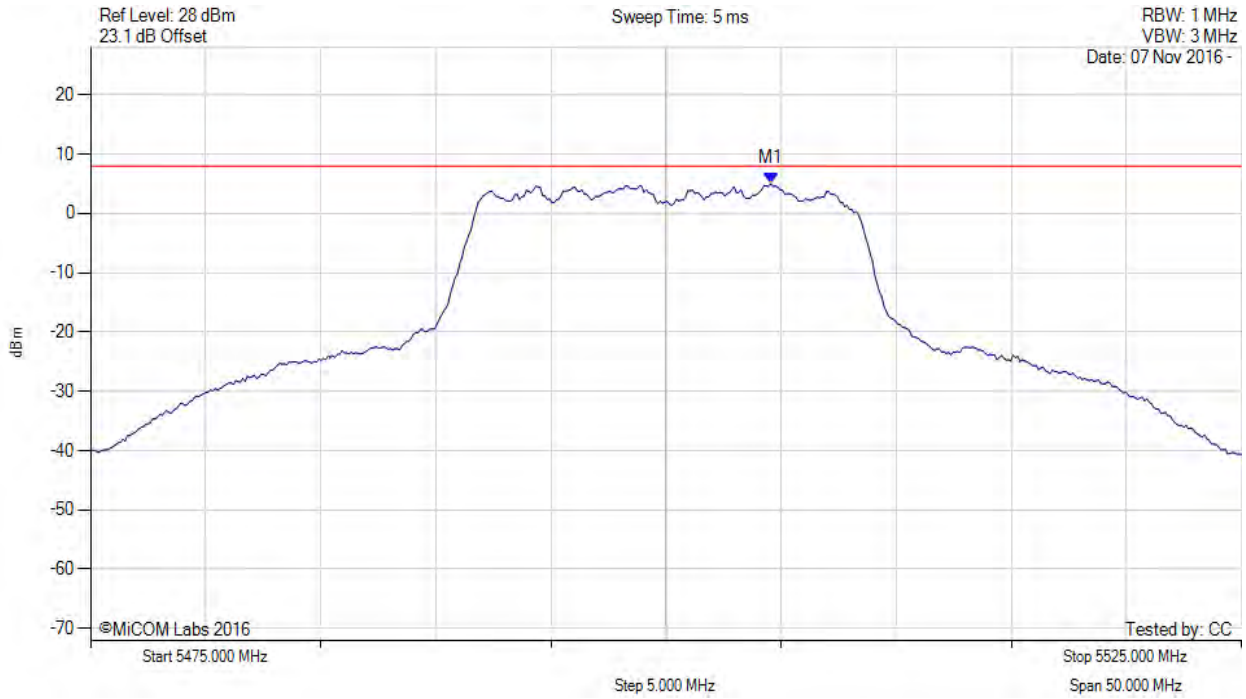
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5504.559 MHz : 5.011 dBm | Limit: ≤ 7.990 dBm |

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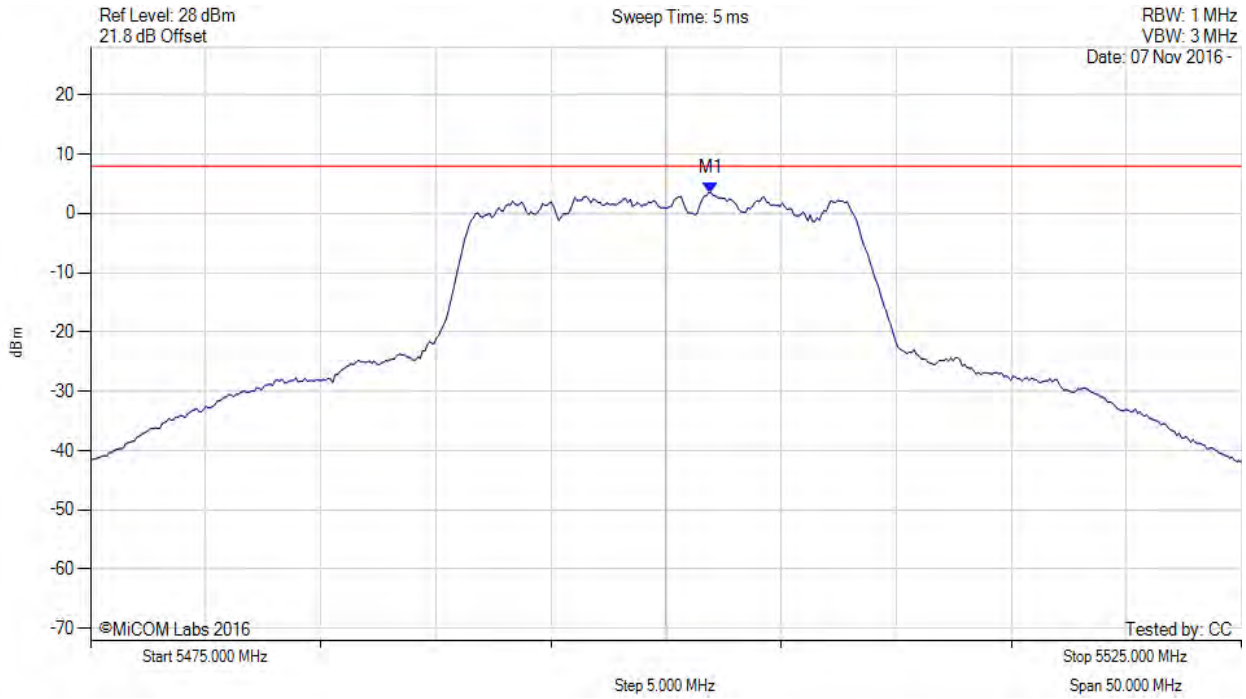
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5501.954 MHz : 3.520 dBm | Limit: ≤ 7.990 dBm |

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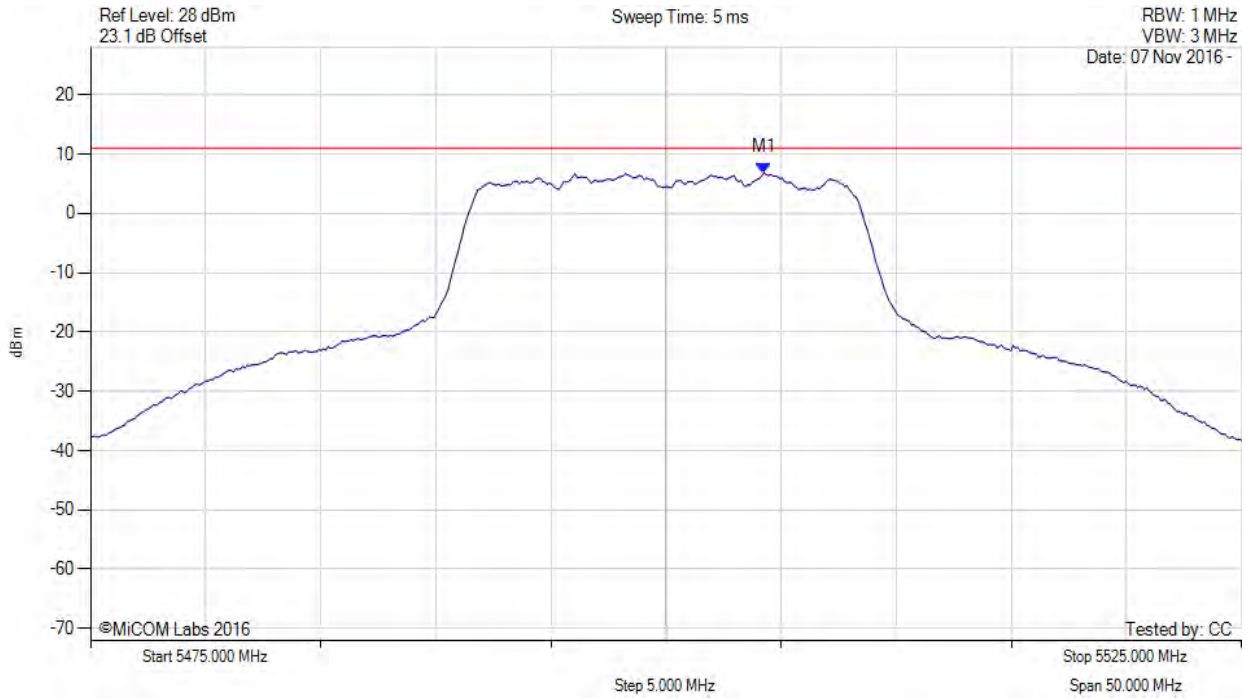
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5500.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5504.300 MHz : 6.825 dBm<br>M1 + DCCF : 5504.300 MHz : 6.869 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -4.1 dB |

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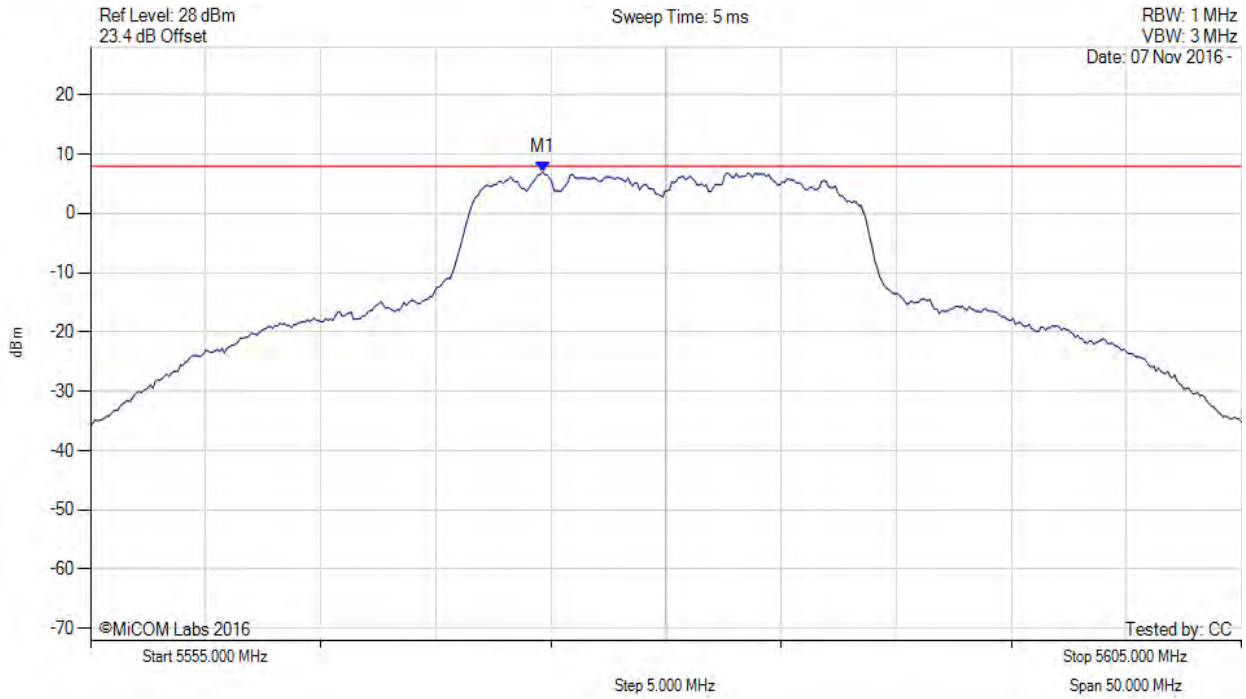
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5574.639 MHz : 7.004 dBm | Limit: ≤ 7.990 dBm |

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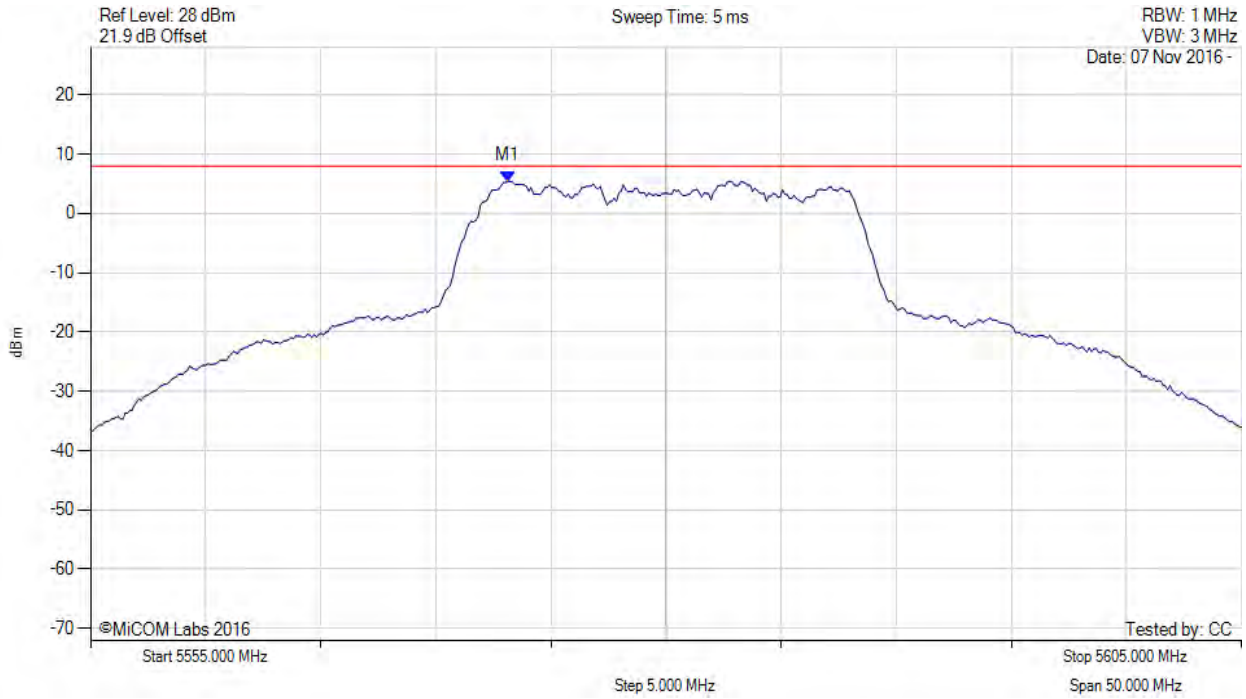
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5573.136 MHz : 5.429 dBm | Channel Frequency: 5580.00 MHz |

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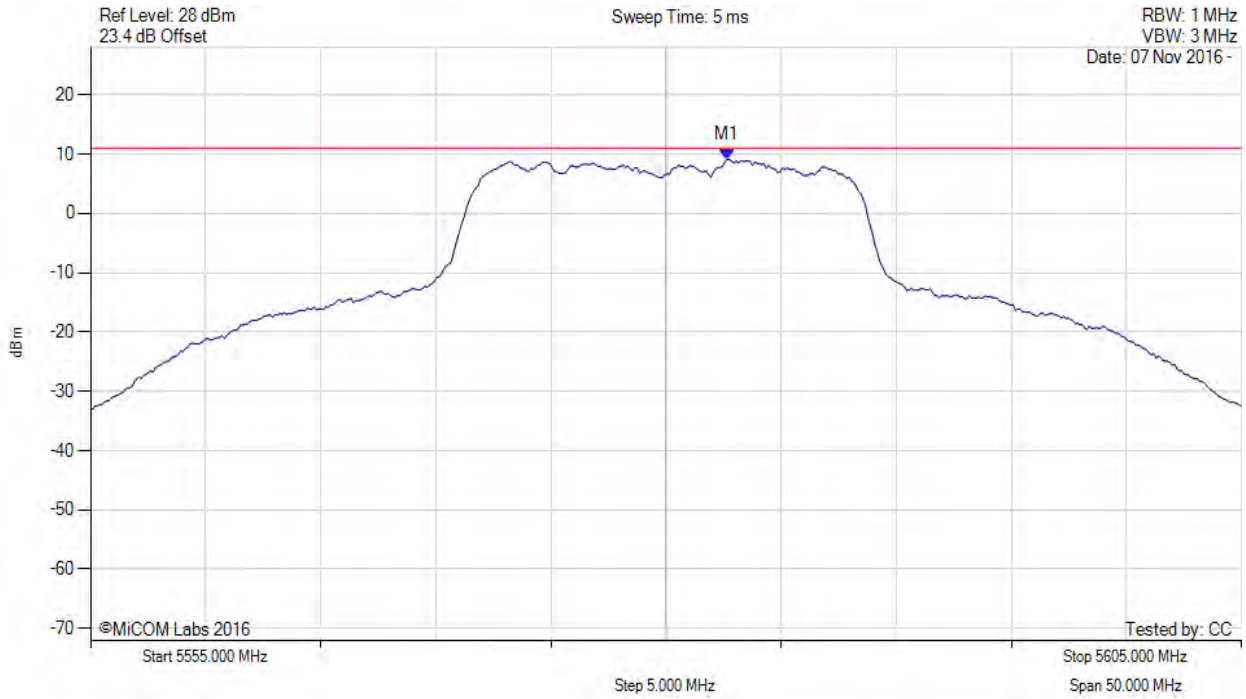
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5580.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5582.700 MHz : 9.126 dBm<br>M1 + DCCF : 5582.700 MHz : 9.170 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -1.8 dB |

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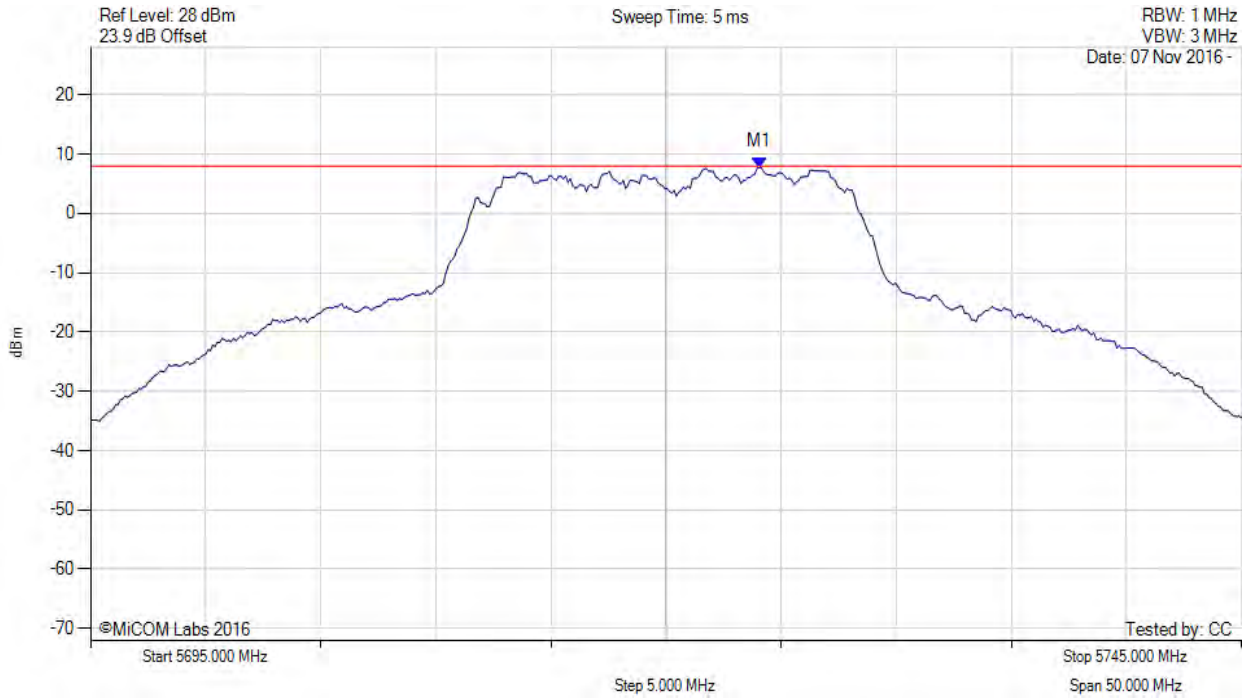
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5724.058 MHz : 7.745 dBm | Limit: ≤ 7.990 dBm |

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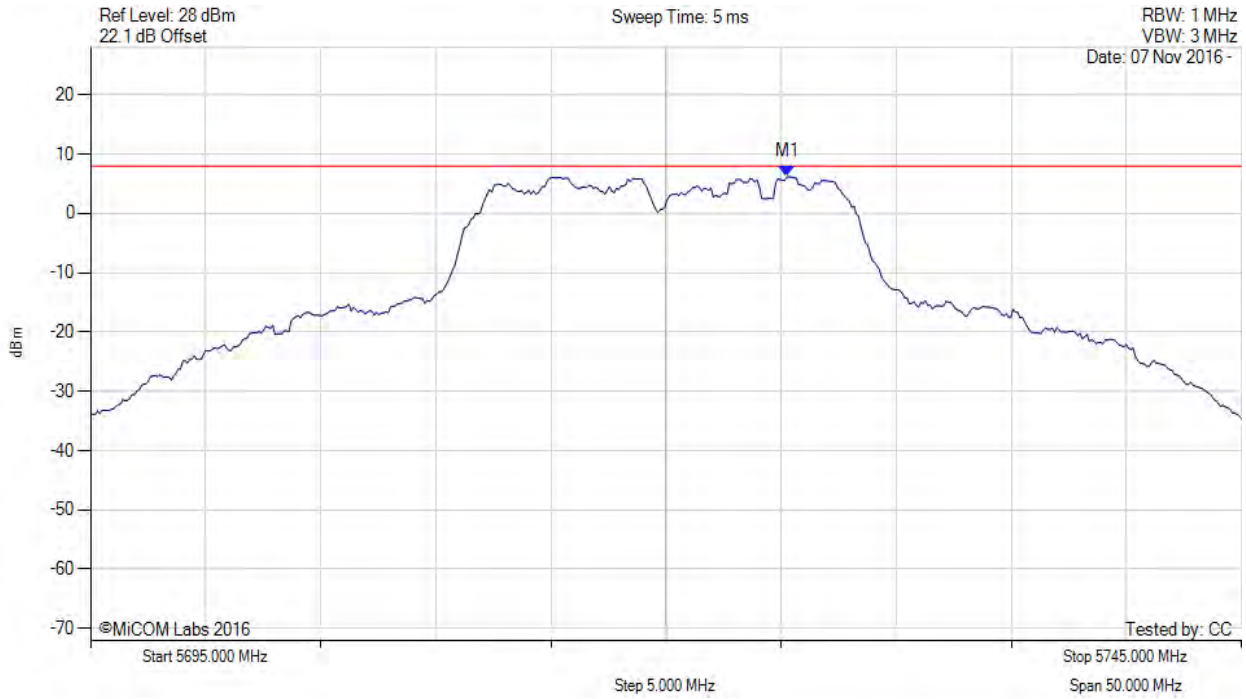
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5725.261 MHz : 6.157 dBm | Limit: ≤ 7.990 dBm |

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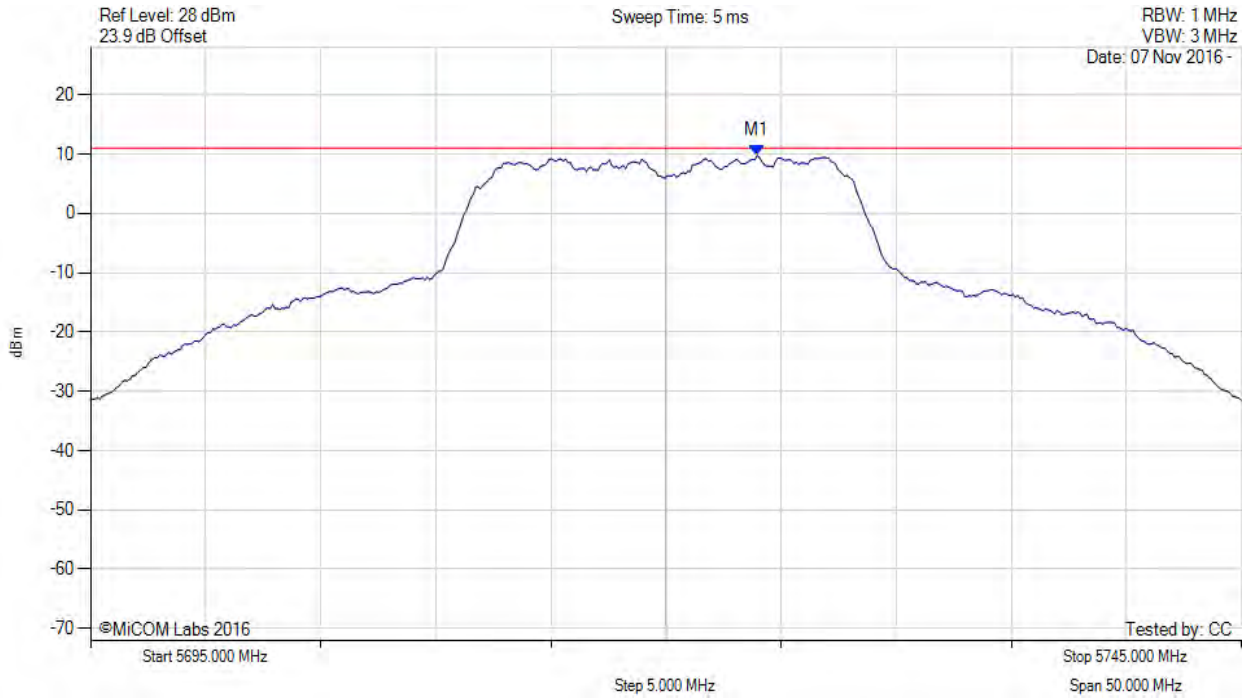
POWER SPECTRAL DENSITY

Variant: 802.11a, Channel: 5720.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5724.000 MHz : 9.771 dBm<br>M1 + DCCF : 5724.000 MHz : 9.815 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 11.0 dBm<br>Margin: -1.2 dB |

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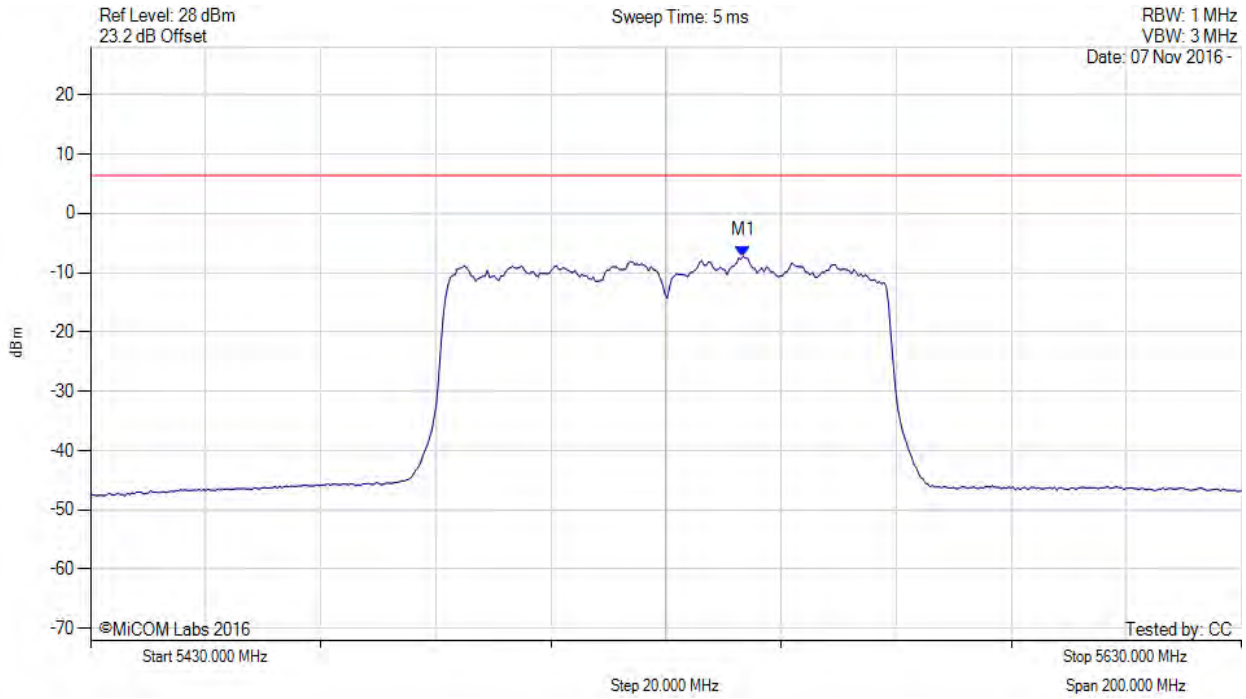
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5543.427 MHz : -7.215 dBm | Limit: ≤ 6.390 dBm |

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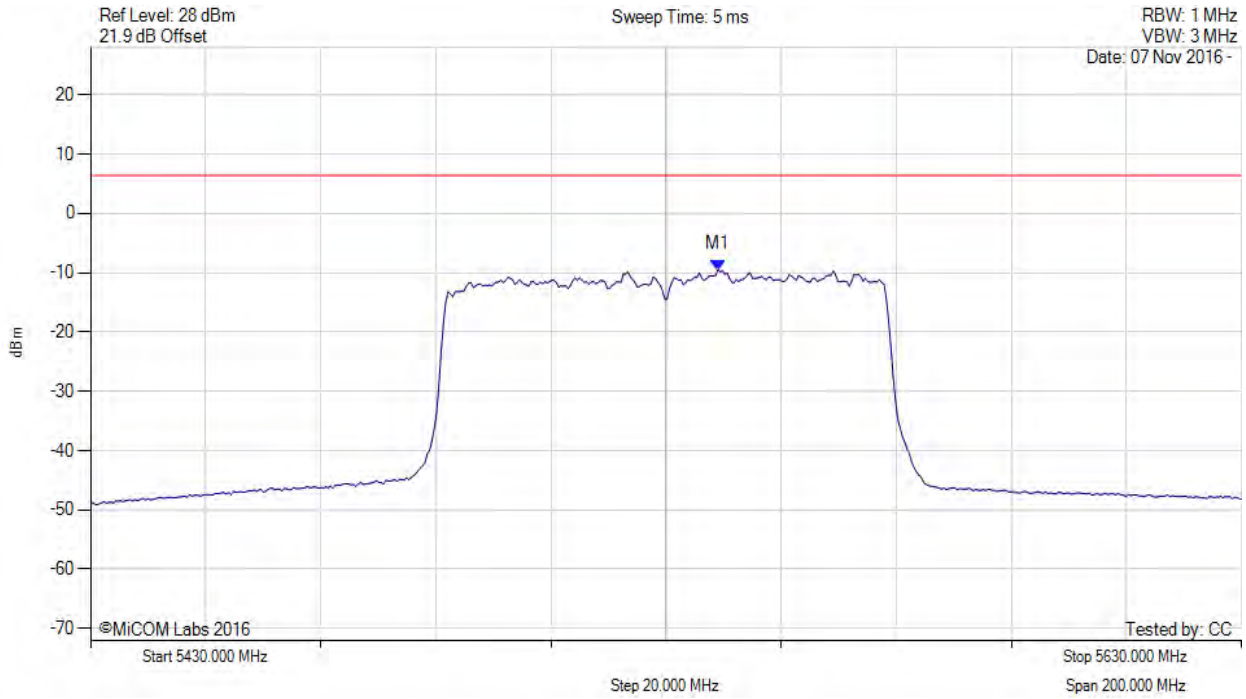
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5539.018 MHz : -9.526 dBm | Limit: ≤ 6.390 dBm |

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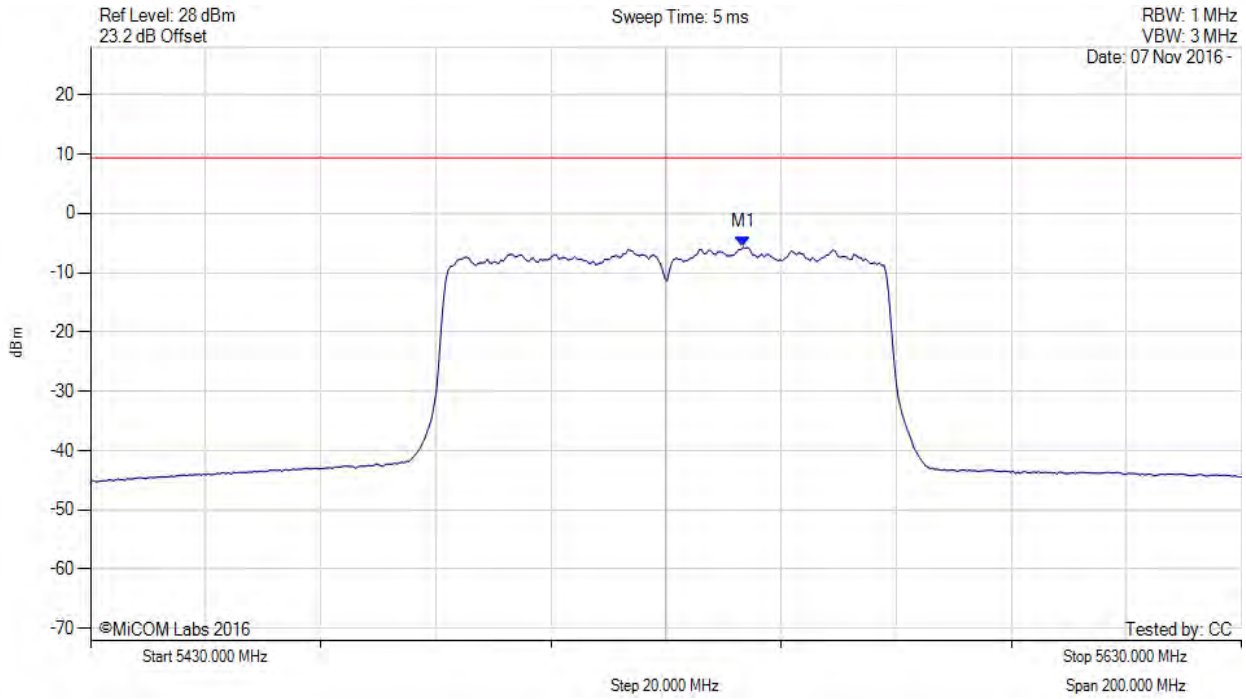
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5530.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5543.400 MHz : -5.728 dBm<br>M1 + DCCF : 5543.400 MHz : -5.684 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -15.1 dB |

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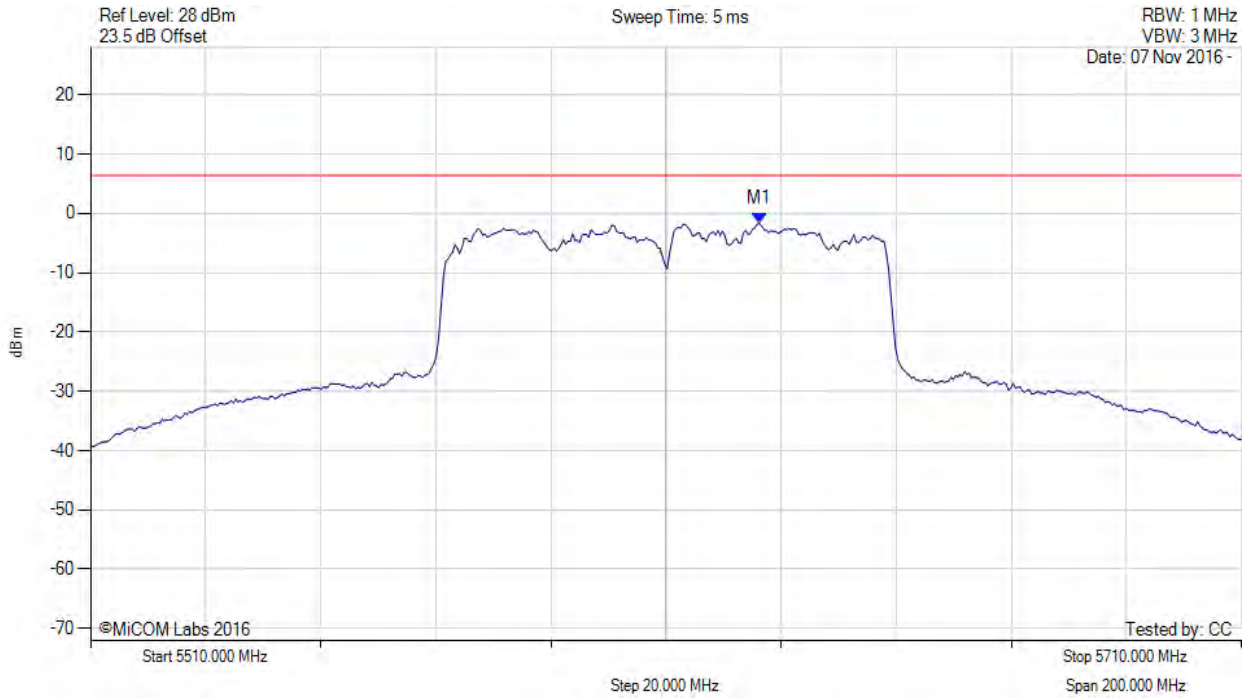
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5626.232 MHz : -1.699 dBm | Limit: ≤ 6.390 dBm |

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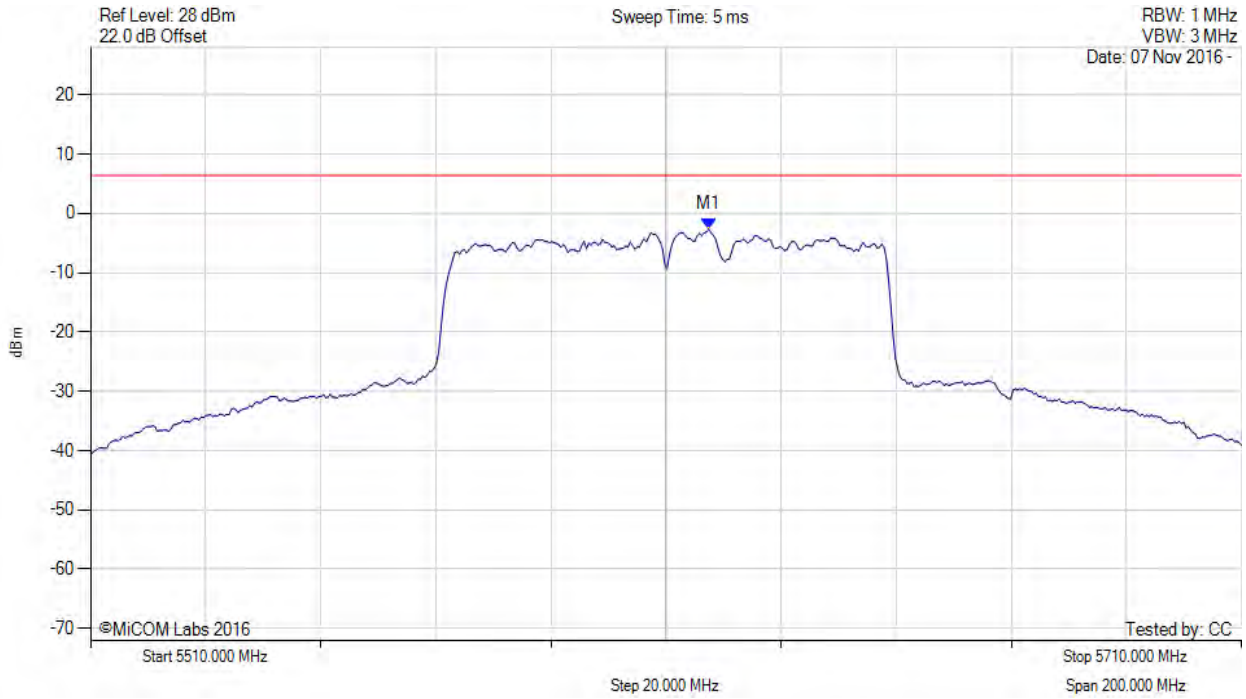
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5617.415 MHz : -2.663 dBm | Channel Frequency: 5610.00 MHz |

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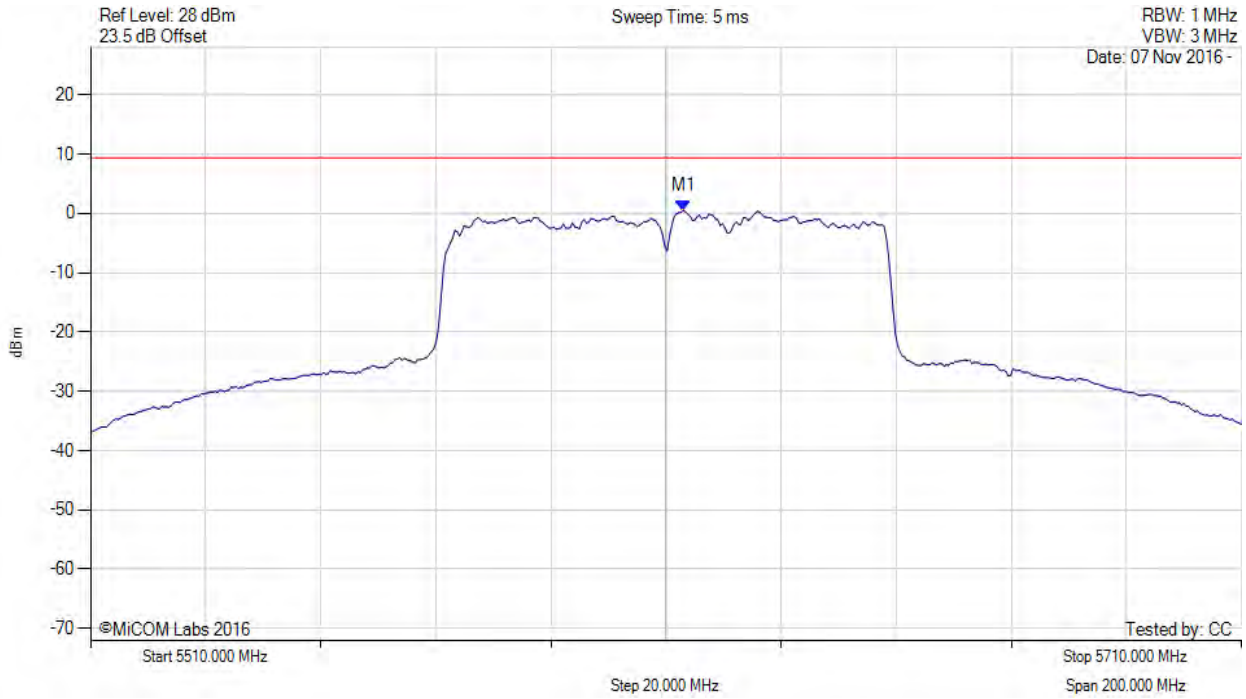
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5610.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5613.000 MHz : 0.492 dBm<br>M1 + DCCF : 5613.000 MHz : 0.536 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -8.9 dB |

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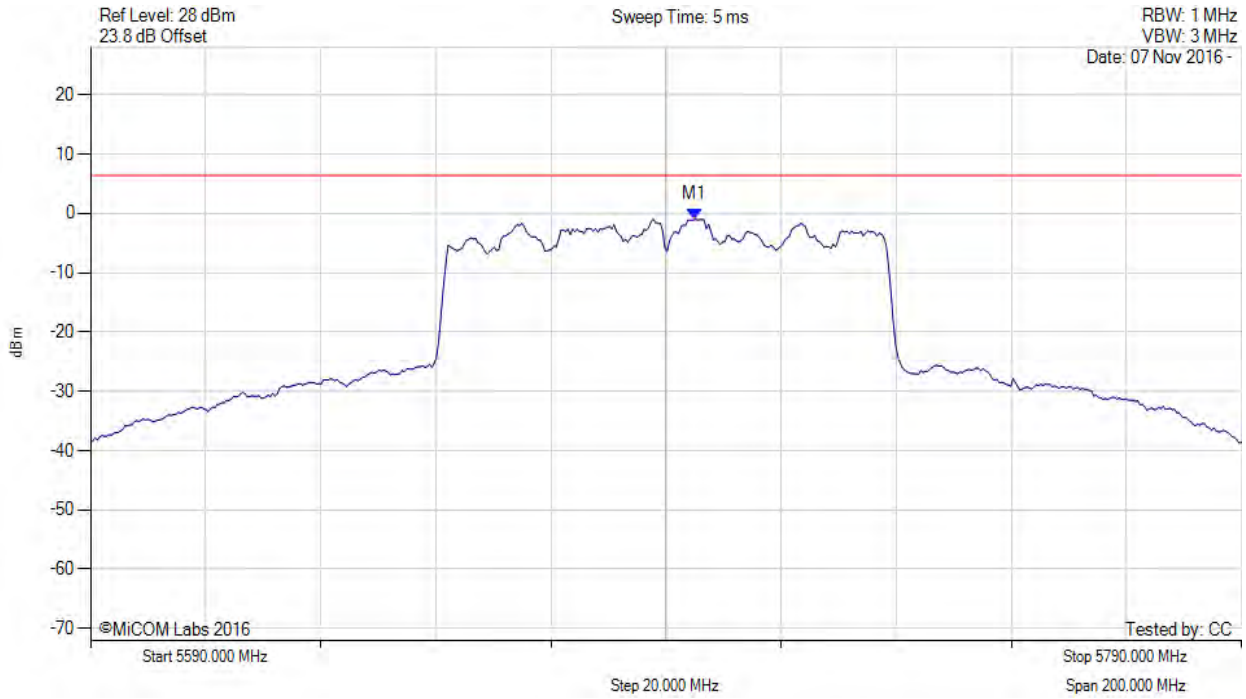
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5695.010 MHz : -0.981 dBm | Limit: ≤ 6.390 dBm |

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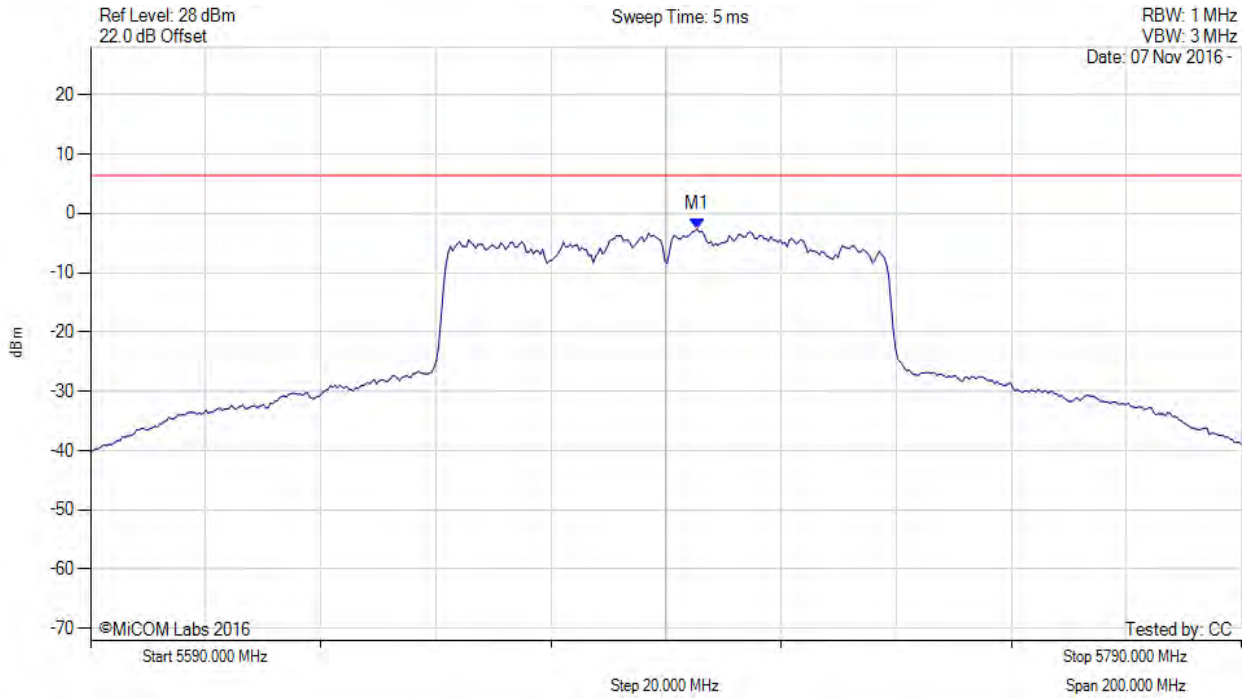
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5695.411 MHz : -2.633 dBm | Limit: ≤ 6.390 dBm |

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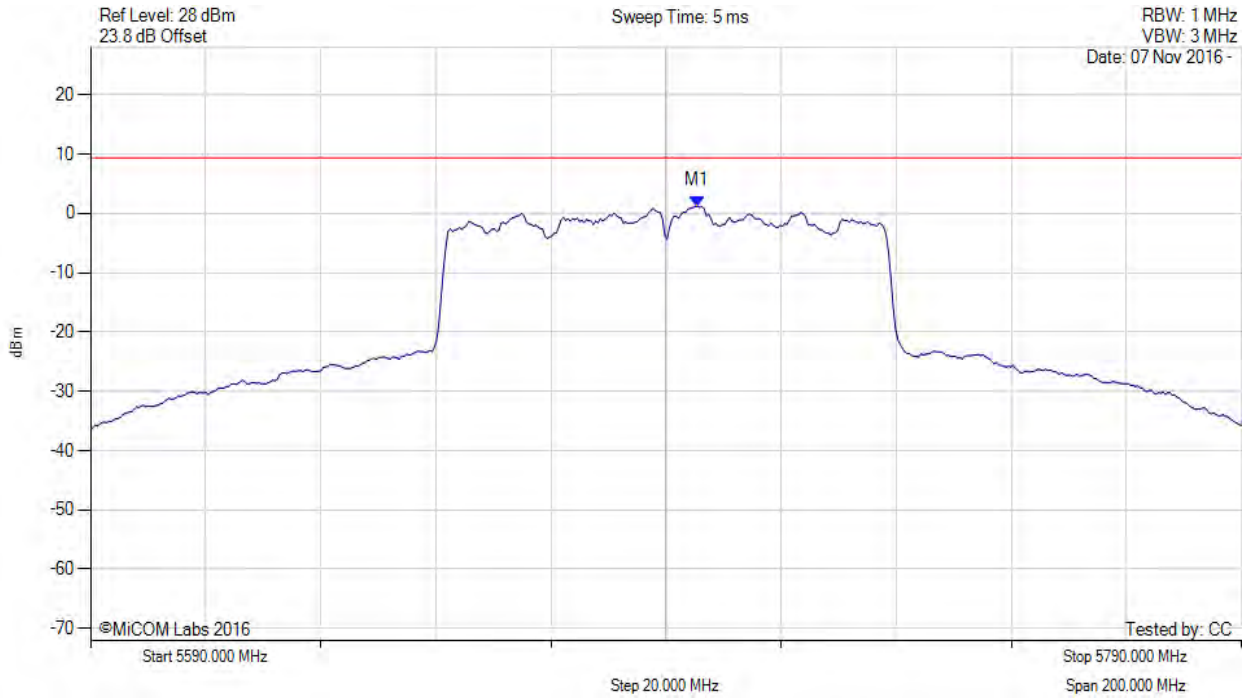
POWER SPECTRAL DENSITY

Variant: 802.11ac-80, Channel: 5690.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5695.400 MHz : 1.214 dBm<br>M1 + DCCF : 5695.400 MHz : 1.258 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -8.2 dB |

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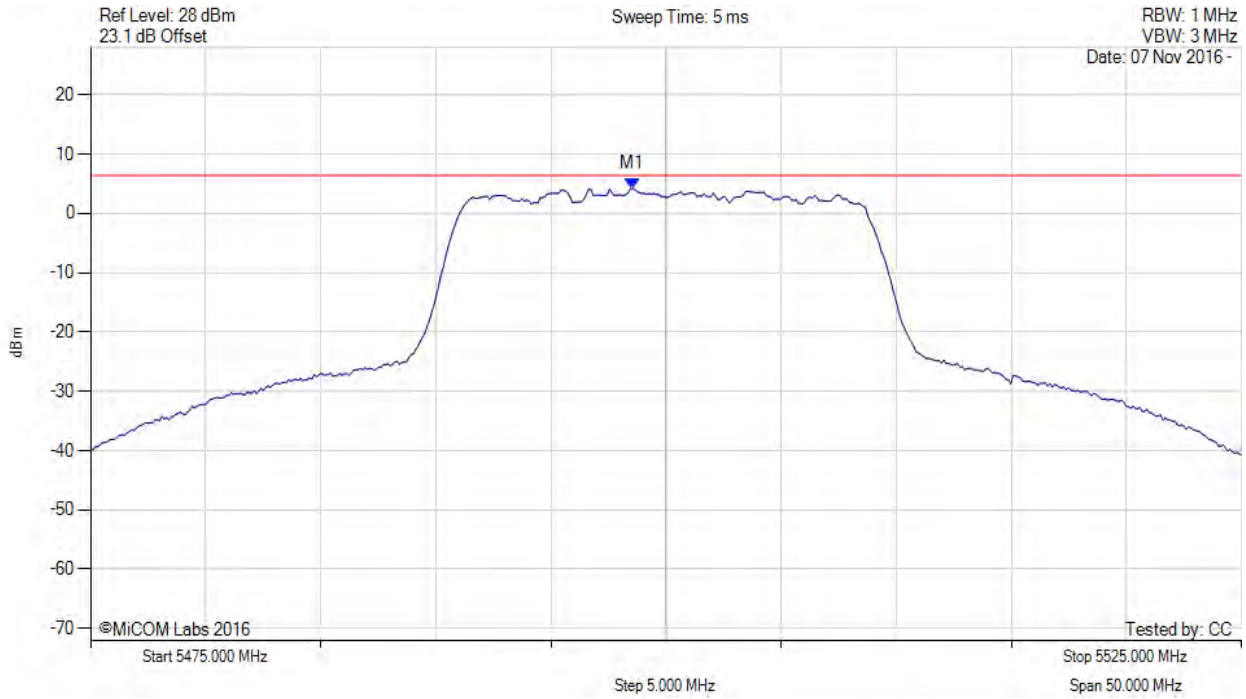
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5498.547 MHz : 4.126 dBm | Limit: ≤ 6.390 dBm |

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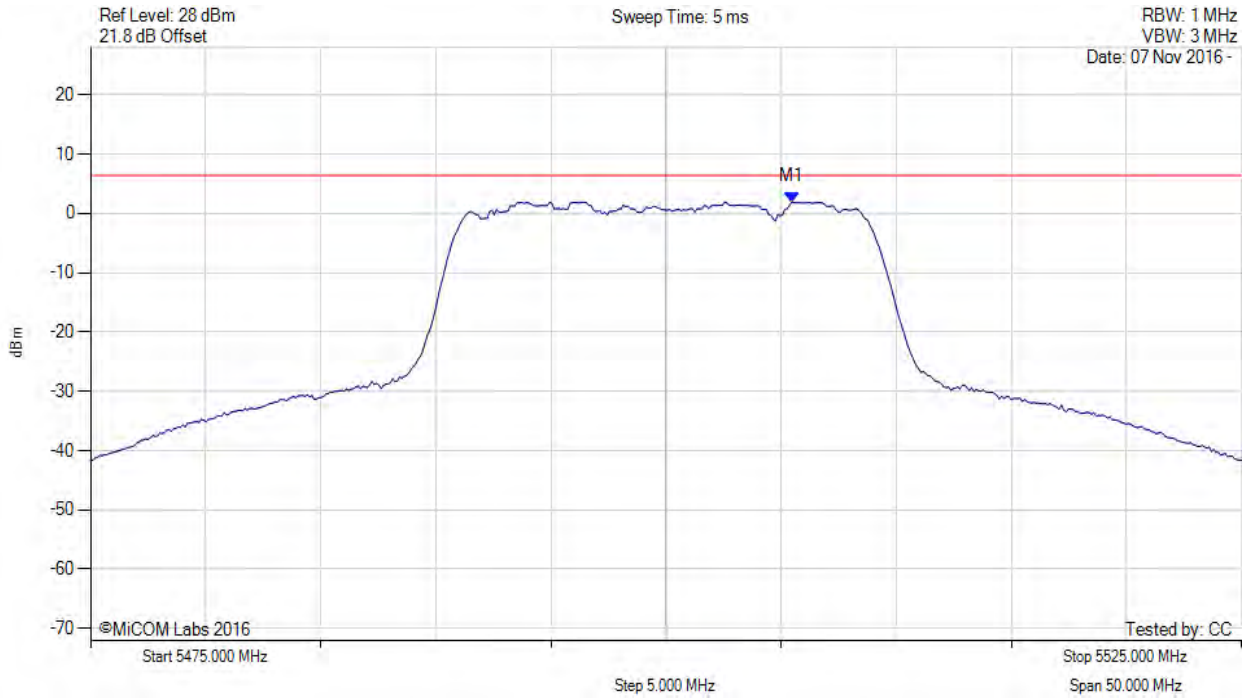
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5500.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5505.461 MHz : 1.923 dBm | Limit: ≤ 6.390 dBm |

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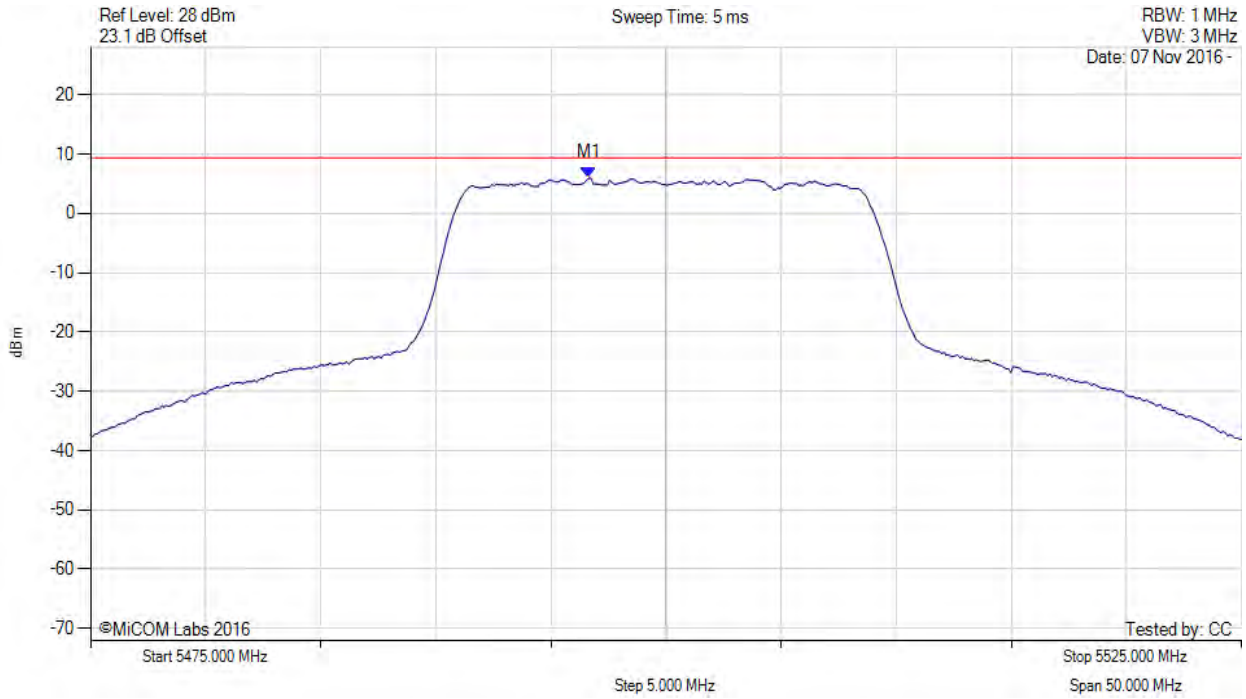
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5500.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5496.600 MHz : 5.919 dBm<br>M1 + DCCF : 5496.600 MHz : 5.963 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -3.4 dB |

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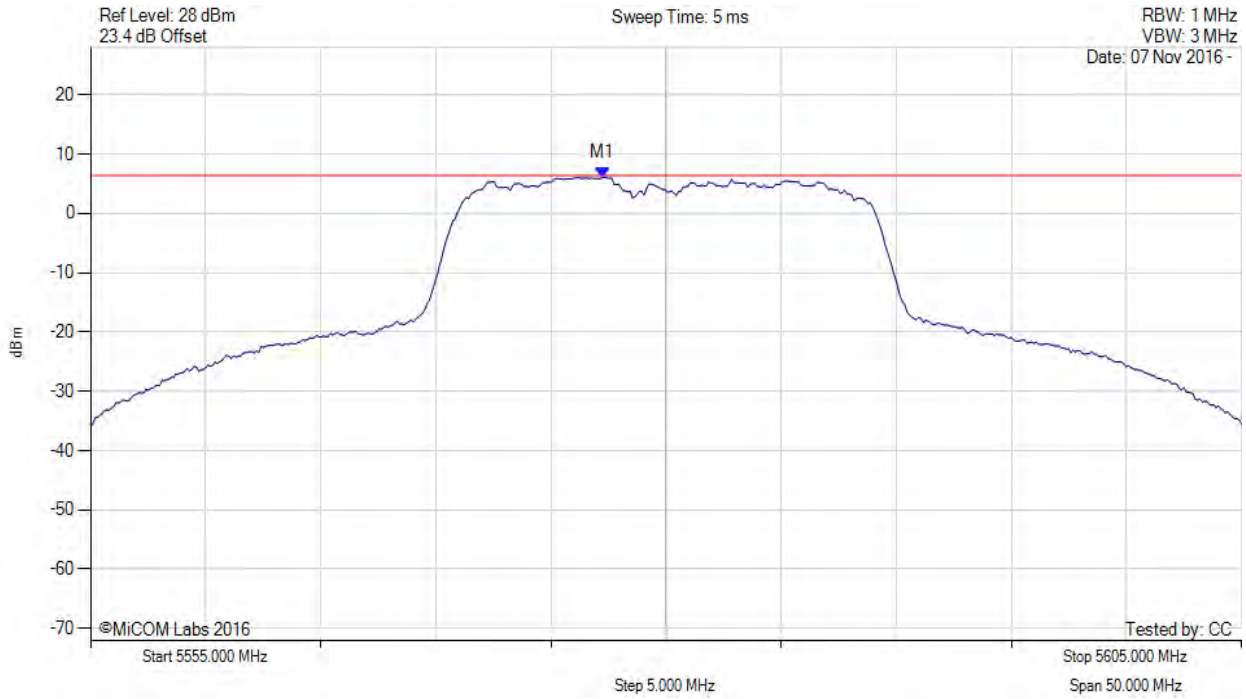
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5577.244 MHz : 6.074 dBm | Limit: ≤ 6.390 dBm |

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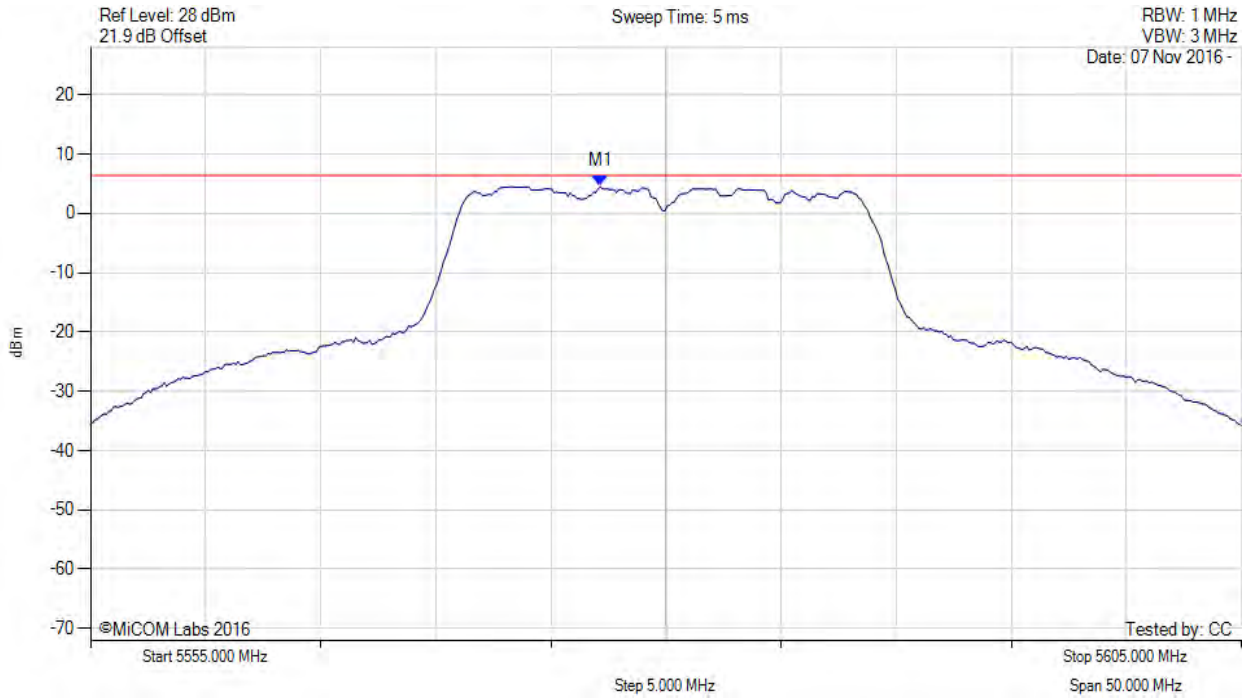
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5580.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5577.144 MHz : 4.501 dBm | Channel Frequency: 5580.00 MHz |

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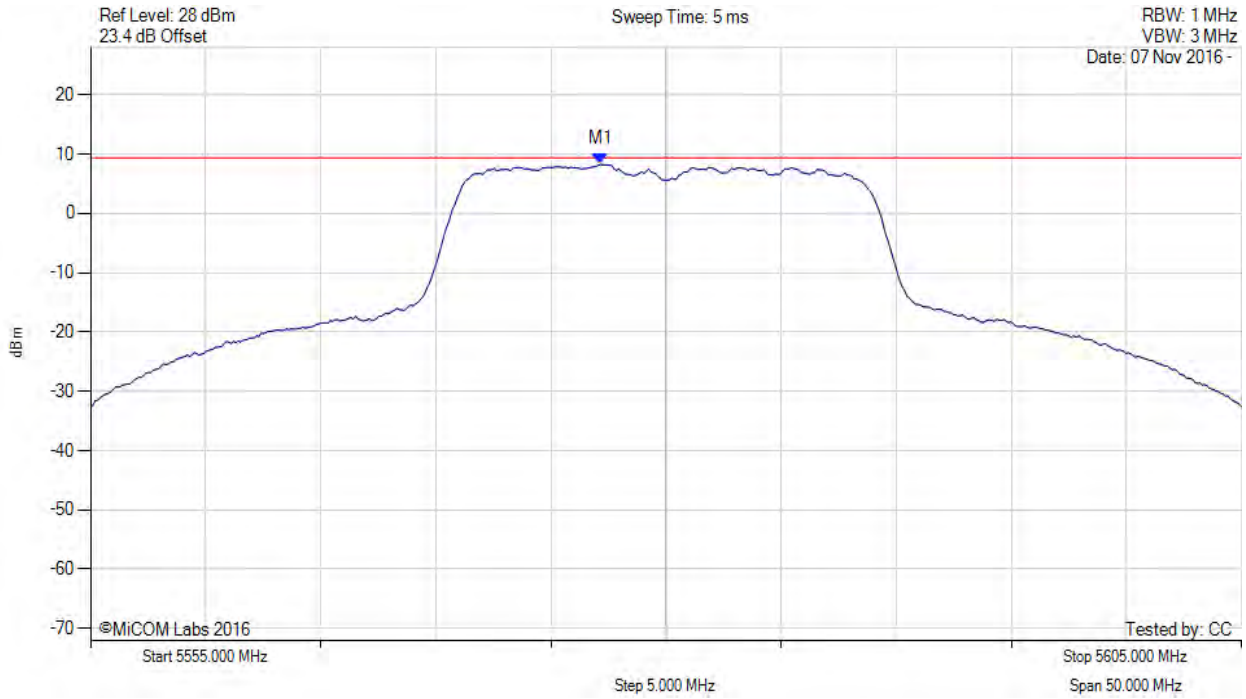
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5580.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5577.100 MHz : 8.258 dBm<br>M1 + DCCF : 5577.100 MHz : 8.302 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -1.1 dB |

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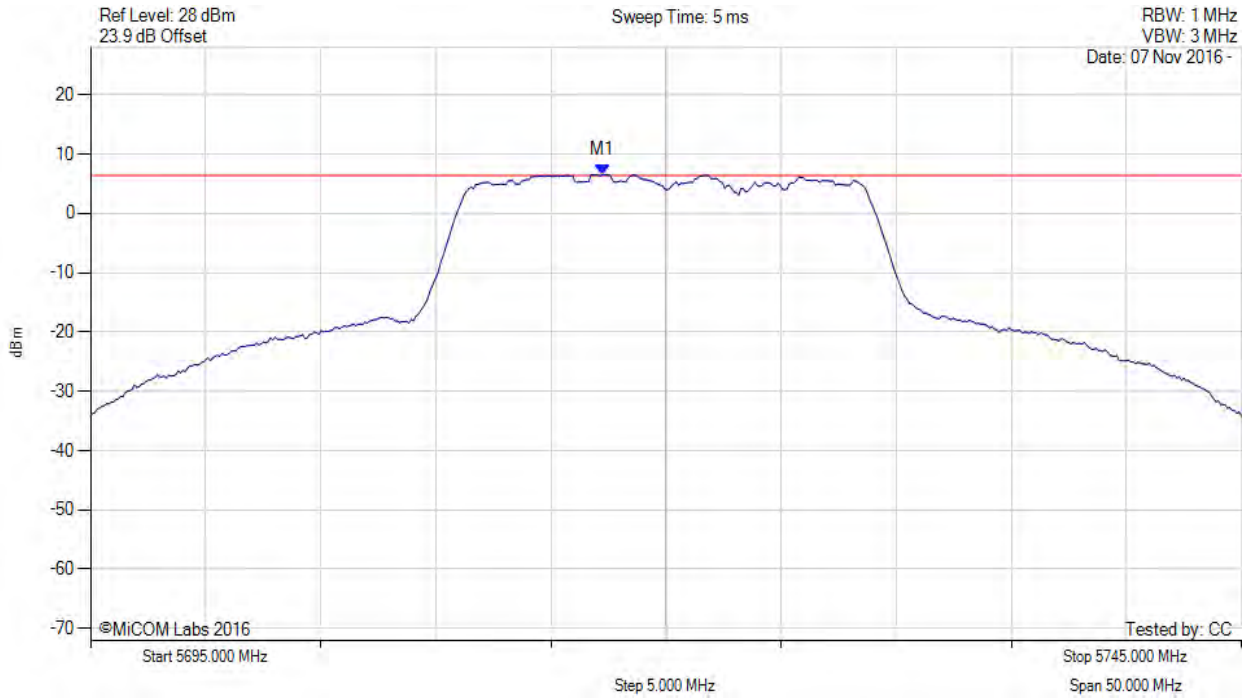
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5717.244 MHz : 6.512 dBm | Limit: ≤ 6.390 dBm |

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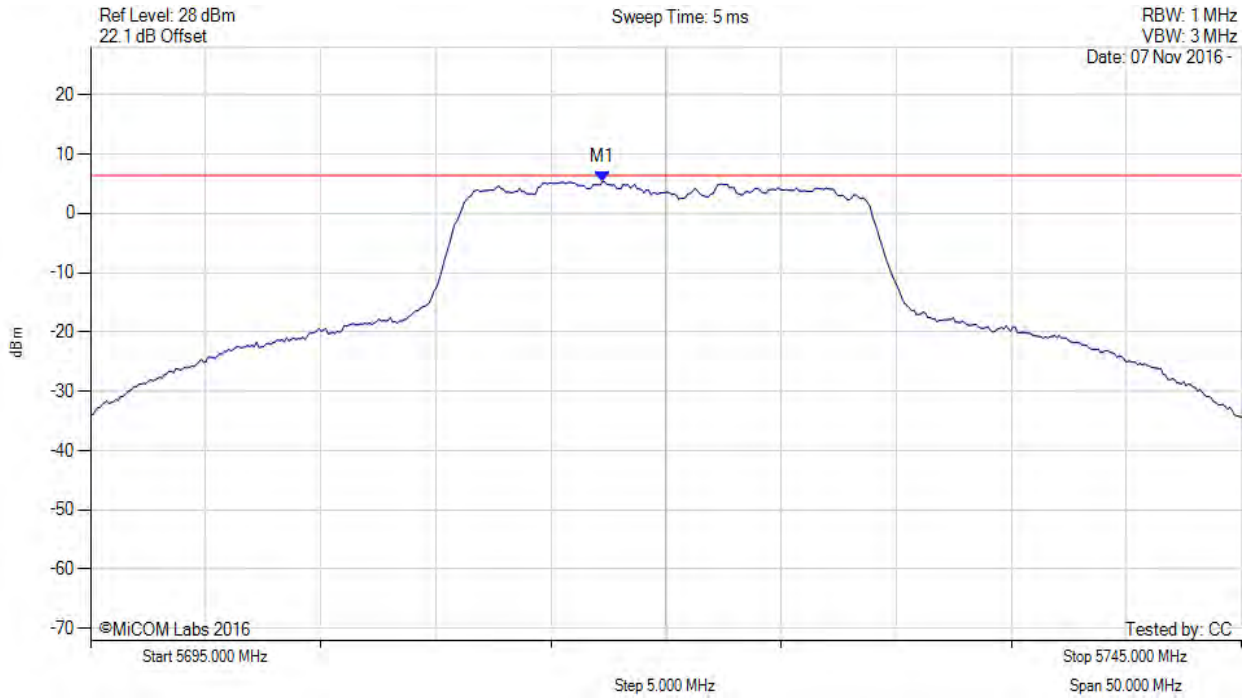
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5720.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5717.244 MHz : 5.365 dBm | Limit: ≤ 6.390 dBm |

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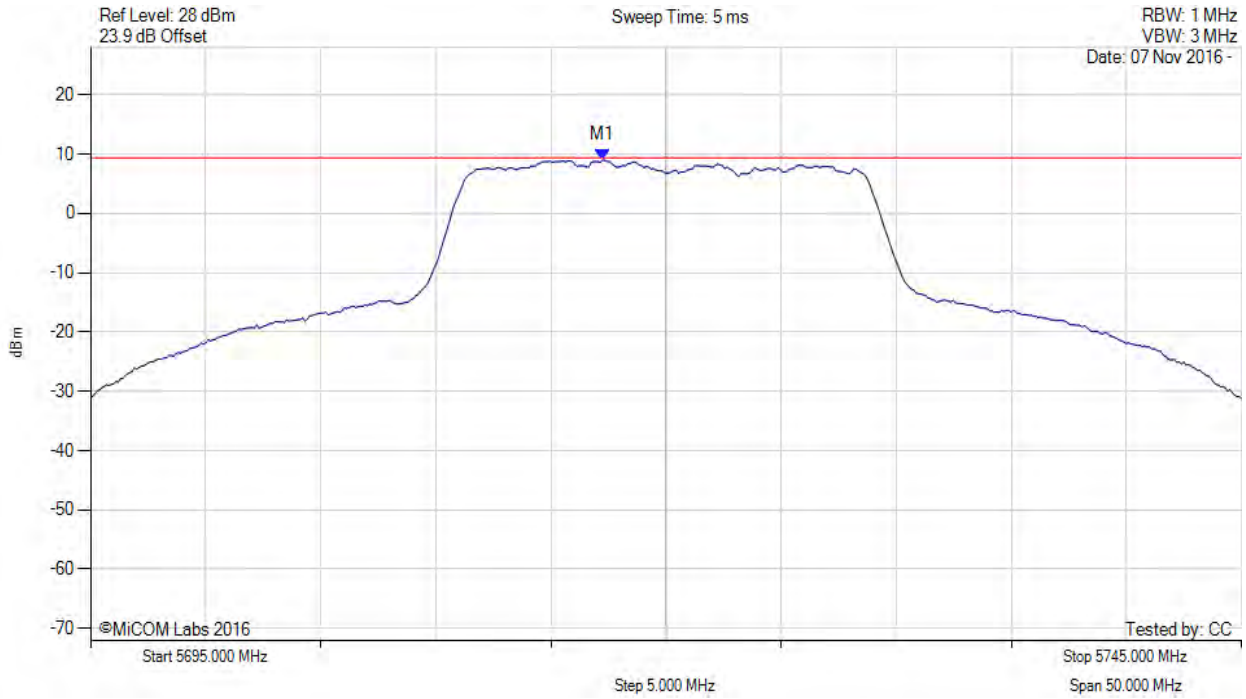
POWER SPECTRAL DENSITY

Variant: 802.11n HT-20, Channel: 5720.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5717.200 MHz : 8.987 dBm<br>M1 + DCCF : 5717.200 MHz : 9.031 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -0.4 dB |

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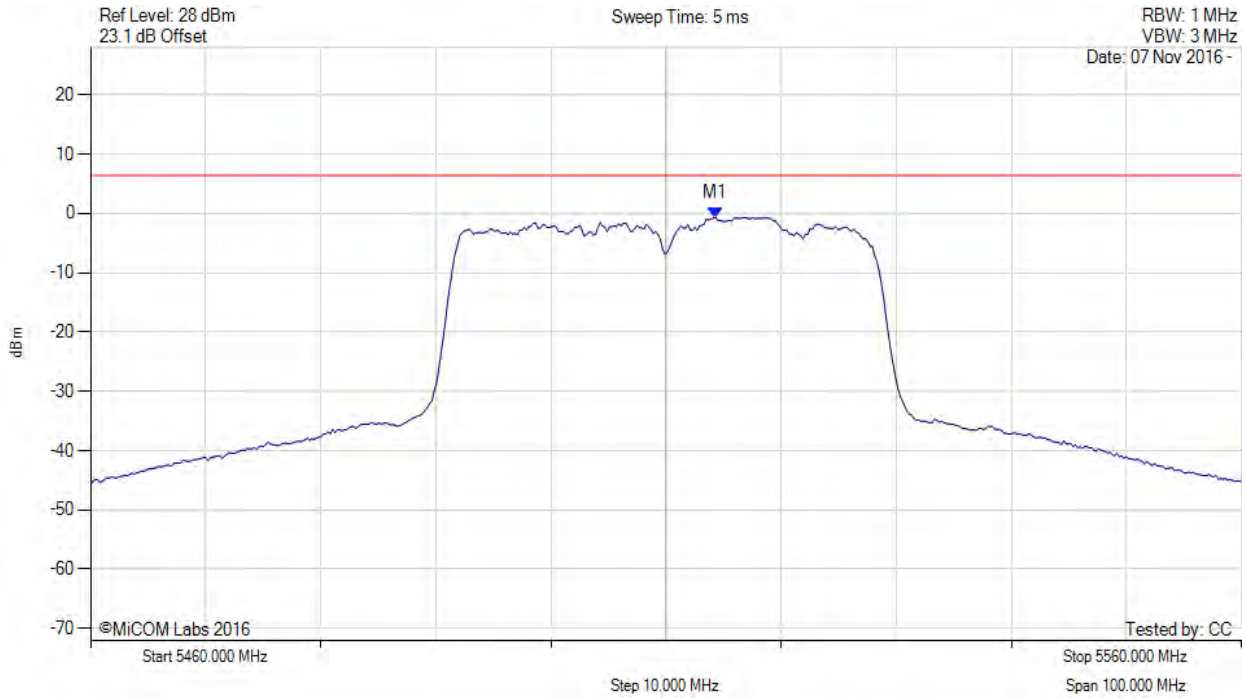
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5514.309 MHz : -0.711 dBm | Limit: ≤ 6.390 dBm |

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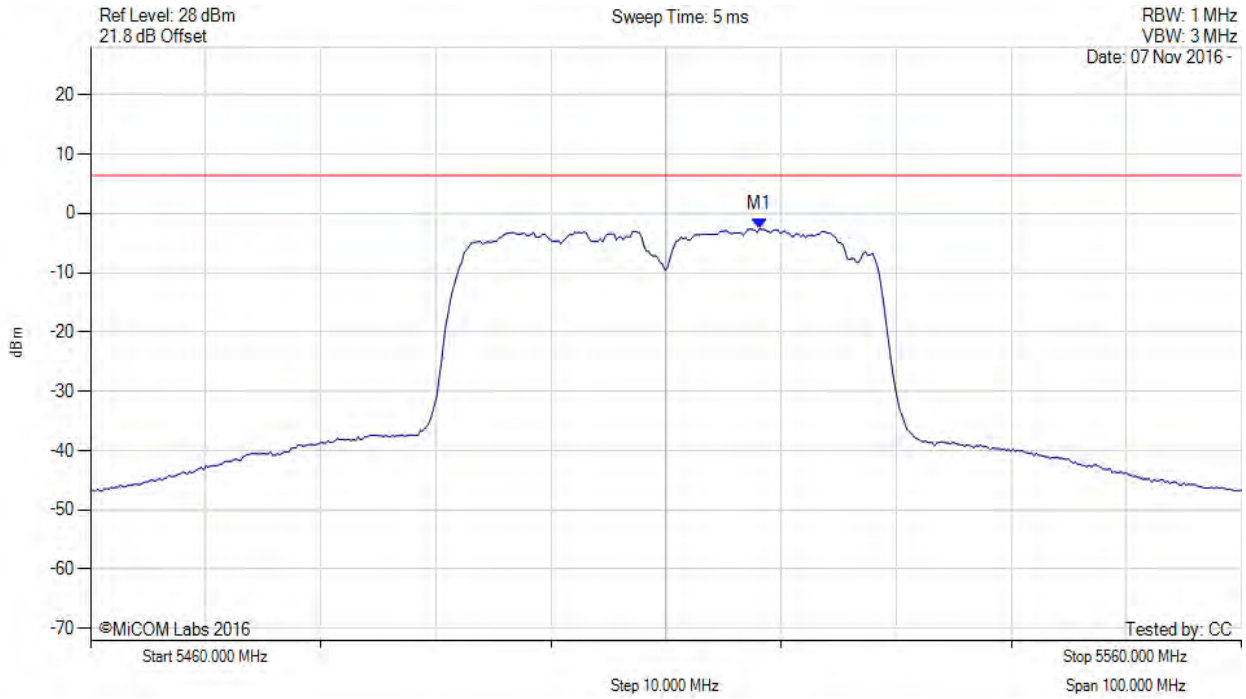
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5510.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5518.116 MHz : -2.635 dBm | Limit: ≤ 6.390 dBm |

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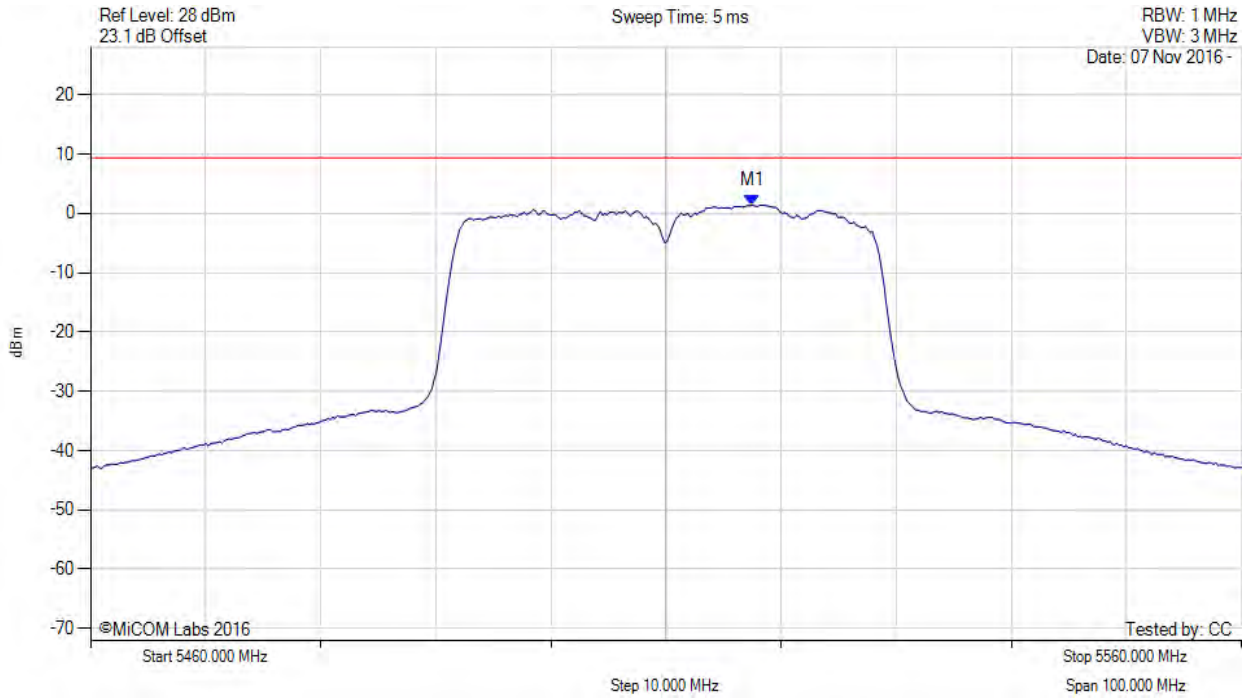
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5510.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5517.500 MHz : 1.386 dBm<br>M1 + DCCF : 5517.500 MHz : 1.430 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -8.0 dB |

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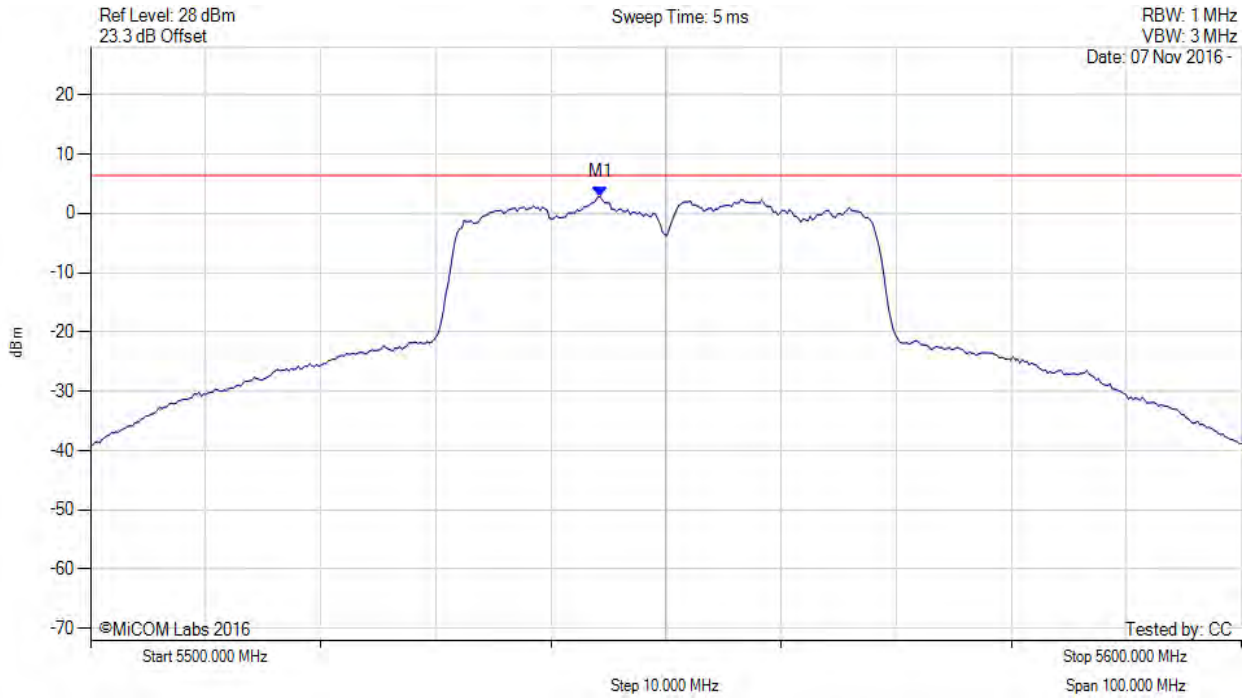
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5544.289 MHz : 2.751 dBm | Limit: ≤ 6.390 dBm |

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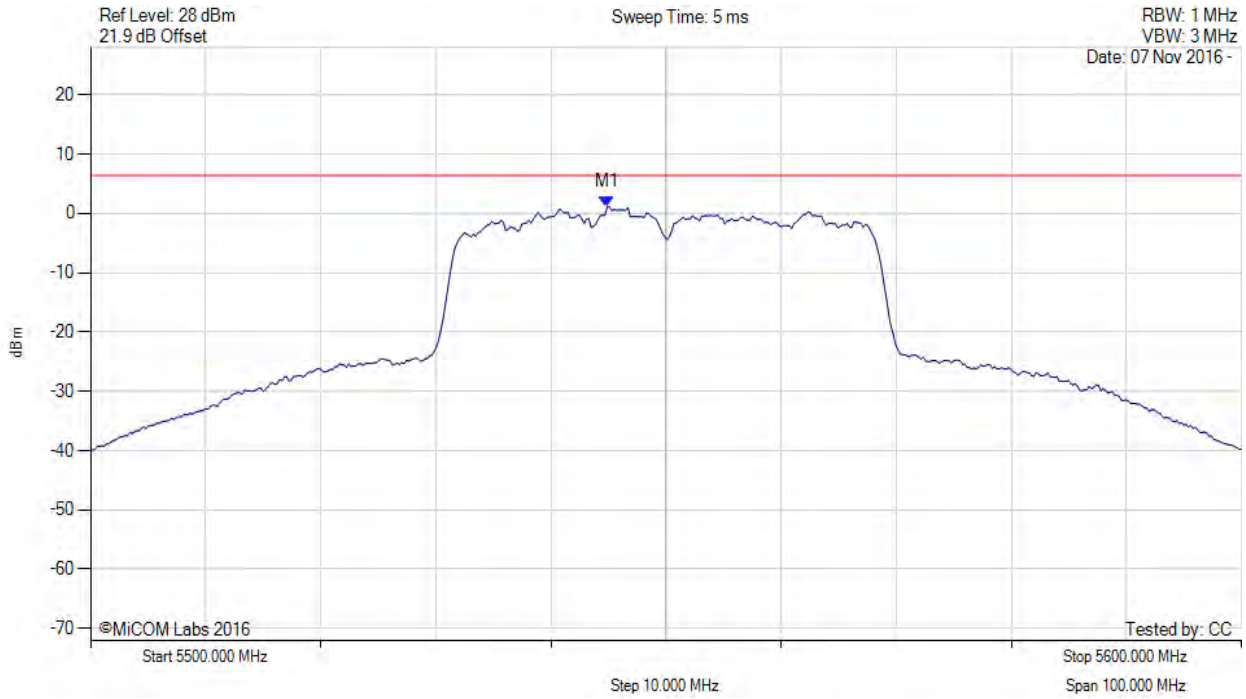
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5550.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5544.890 MHz : 1.123 dBm | Channel Frequency: 5550.00 MHz |

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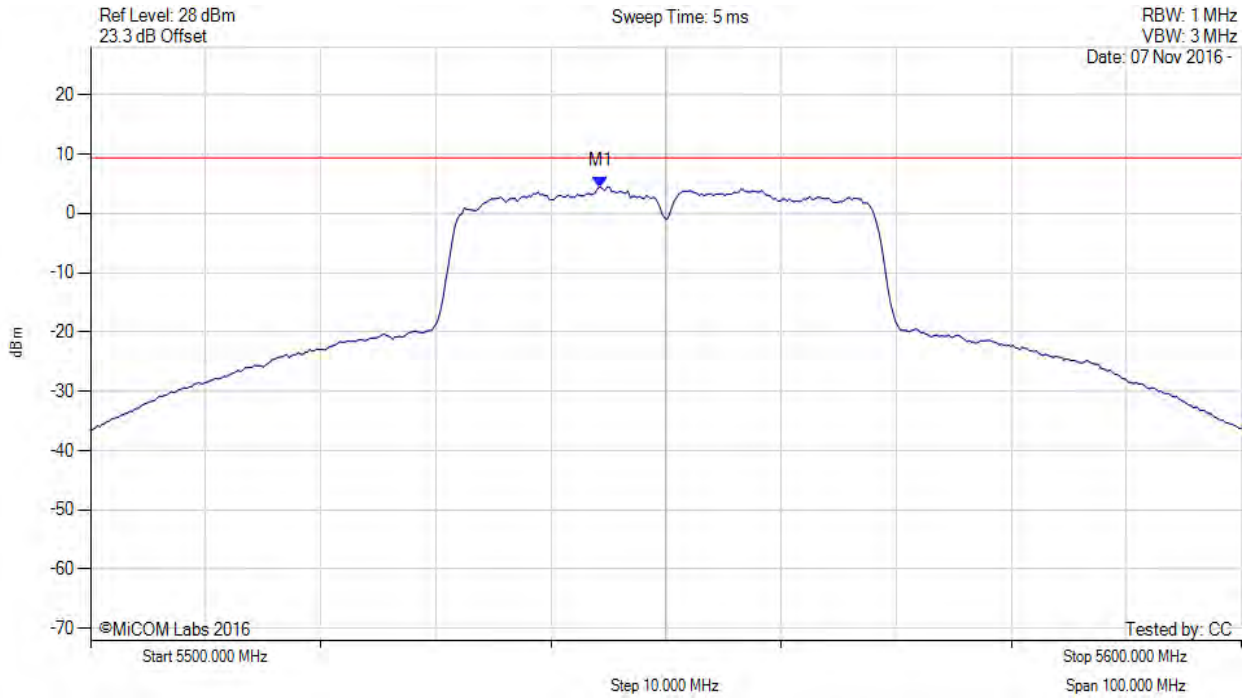
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5550.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5544.300 MHz : 4.474 dBm<br>M1 + DCCF : 5544.300 MHz : 4.518 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -4.9 dB |

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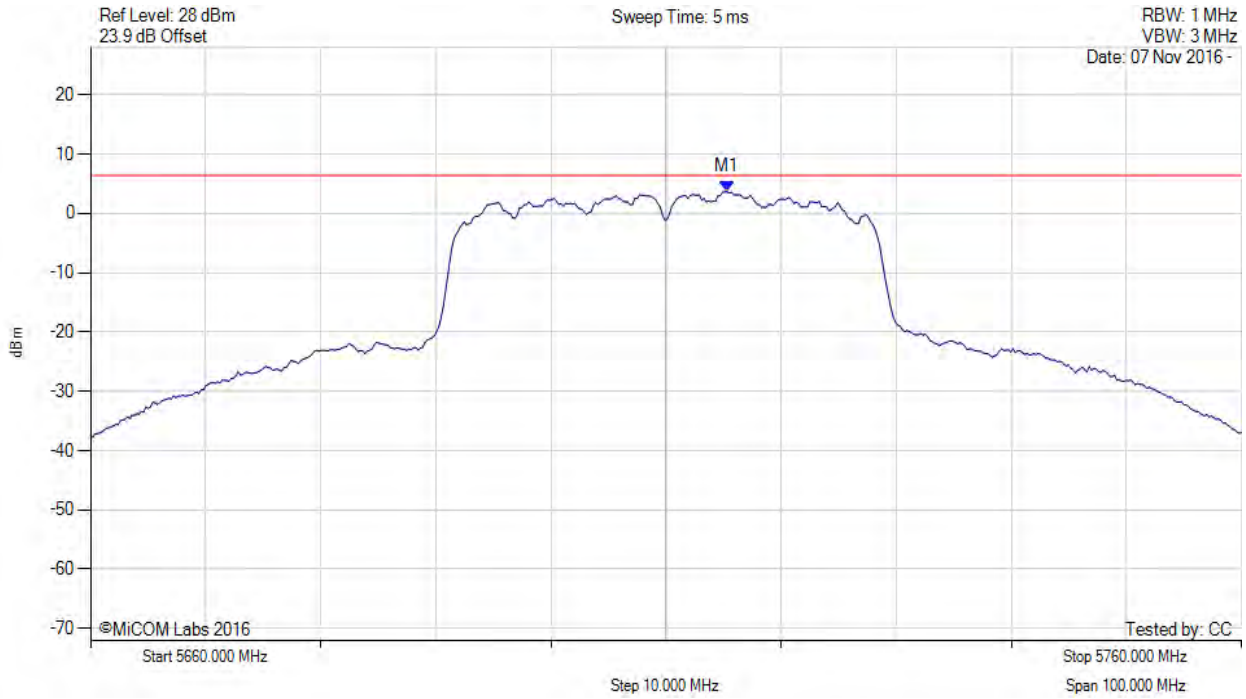
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain a, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5715.311 MHz : 3.646 dBm | Limit: ≤ 6.390 dBm |

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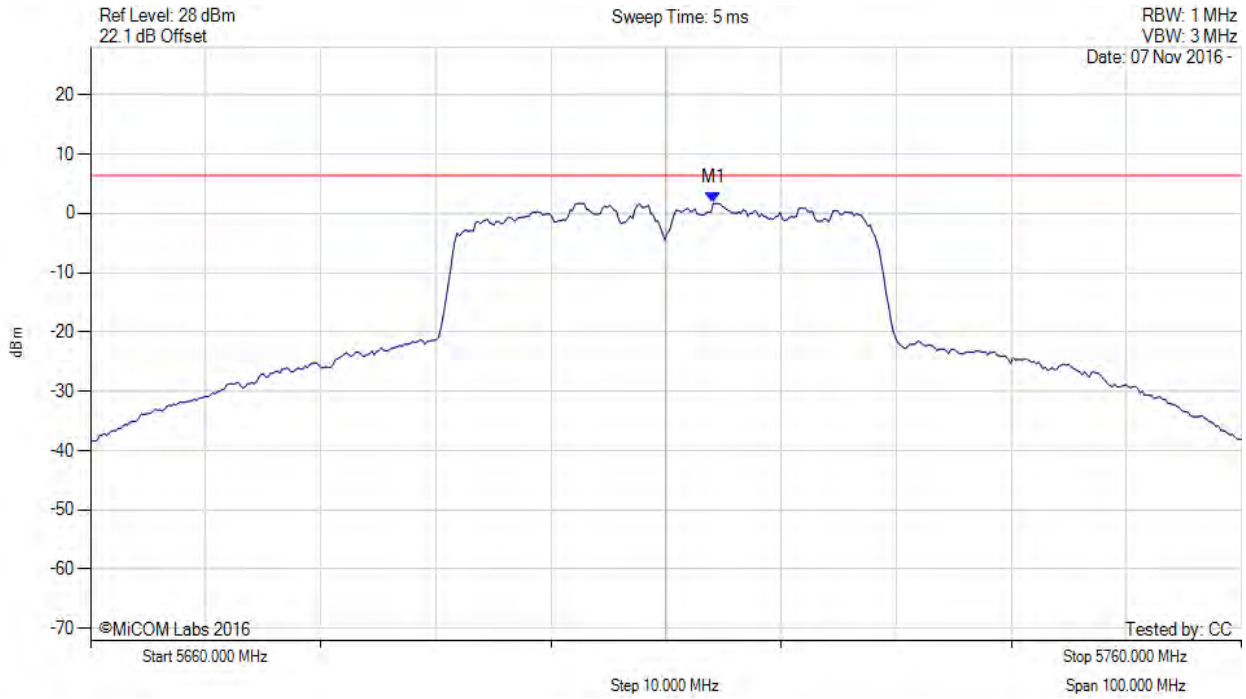
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5710.00 MHz, Chain b, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5714.108 MHz : 1.699 dBm | Limit: ≤ 6.390 dBm |

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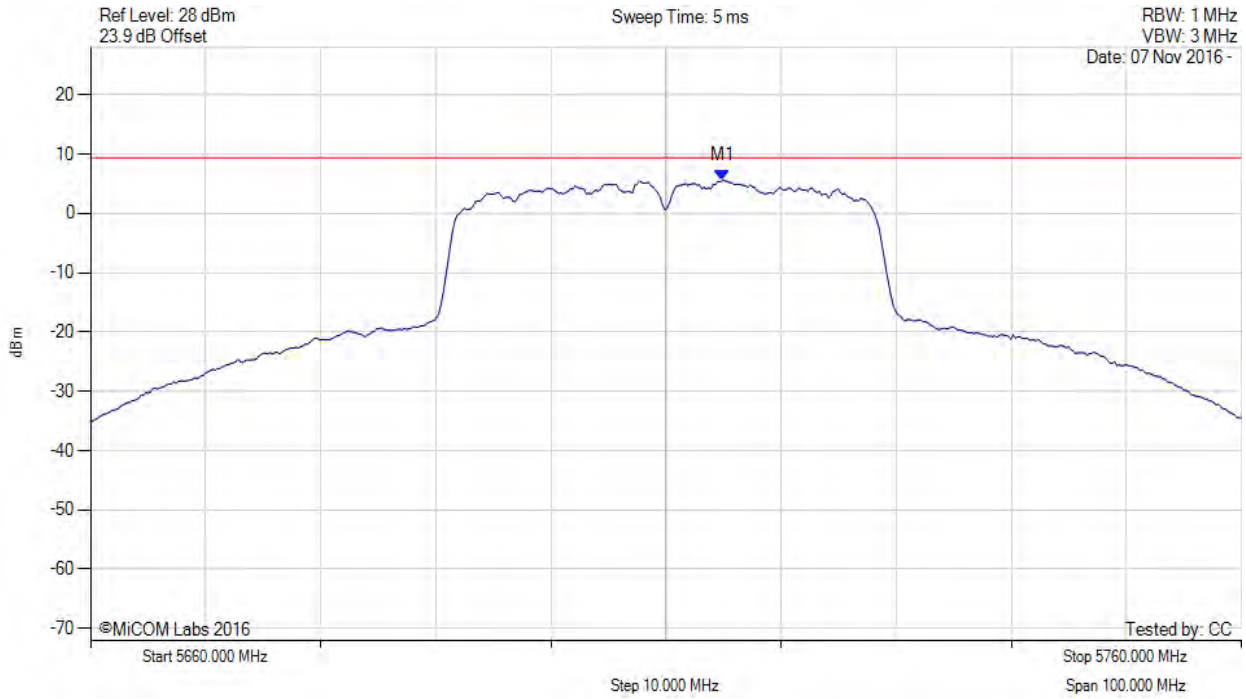
POWER SPECTRAL DENSITY

Variant: 802.11n HT-40, Channel: 5710.00 MHz, SUM, Temp: 20, Voltage: 48 Vdc




| Analyzer Setup | Marker:Frequency:Amplitude | Test Results |
|---|---|---|
| Detector = RMS<br>Sweep Count = 100<br>RF Atten (dB) = 20<br>Trace Mode = VIEW | M1 : 5714.900 MHz : 5.542 dBm<br>M1 + DCCF : 5714.900 MHz : 5.586 dBm<br>Duty Cycle Correction Factor : +0.04 dB | Limit: ≤ 9.4 dBm<br>Margin: -3.8 dB |

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