

# TEST REPORT ADDENDUM - CONDUCTED

FROM



Test of: Actiontec Electronics Inc T3200M

to

To: FCC CFR 47 Part 15.407 & IC RSS-247 (DFS Bands)

Test Report Serial No.: ATEC14-U13\_Conducted Rev A

Note: this report is one of a set of five reports that together address the requirements of the above noted standards for certification purposes.

Master Document Number	Addendum Reports
ATEC14-U13_Master	ATEC14-U13_Conducted
	ATEC14-U13_Radiated
	ATEC14-U13_DFS
	ATEC14-U2 (FCC Part 15B & ICES_003)

This report supersedes: NONE

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

Product Function: Wireless 802.11ac Bonded VDSL2  
Modem Gateway with MoCA 2.0

Issue Date: 1st April 2016

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

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## **1. DOCUMENT HISTORY**

Document History		
Revision	Date	Comments
Draft		
Rev A	1 <sup>st</sup> April 2016	Initial release.
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In the above table the latest report revision will replace all earlier versions.

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## 2. 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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### 3. TEST SUMMARY

#### List of Measurements

Test Header	Result	Data Link
Conducted		
(a) Peak Transmit Power	Complies	<a href="#">View Data</a>
(a) 26 dB & 99% Bandwidth	Complies	<a href="#">View Data</a>
(a)(5) Power Spectral Density	Complies	<a href="#">View Data</a>

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## 4. TEST RESULTS

### 4.1. Peak Transmit Power

Conducted Test Conditions for Maximum Conducted Output Power			
<b>Standard:</b>	FCC CFR 47:15.407	<b>Ambient Temp. (°C):</b>	24.0 - 27.5
<b>Test Heading:</b>	Maximum Conducted Output Power	<b>Rel. Humidity (%):</b>	32 - 45
<b>Standard Section(s):</b>	15.407 (a)	<b>Pressure (mBars):</b>	999 - 1001
<b>Reference Document(s):</b>	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 ( $\Sigma$ ) 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 =  $A + G + Y + 10 \log (1/x) \text{ dBm}$

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

$G$  = Antenna Gain

$Y$  = Beamforming Gain

$x$  = Duty Cycle (average power measurements only)

#### Limits Maximum Conducted Output Power

##### Operating Frequency Band 5150-5250 MHz

###### 15. 407 (a)(1)

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

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

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

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

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

##### **15. 407 (a)(2)**

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

#### **Operating Frequency Band 5725 – 5850 MHz**

##### **15. 407 (a)(3)**

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

### Maximum Conducted Power Limit(s)

#### Operating in Frequency Band 5250 - 5350 and 5470 – 5725 MHz

15. 407 (a)(2)

Mode	Frequency Range (MHz)	Maximum 26 dB Bandwidth (MHz)	11 + 10 Log (B) (dBm)	Maximum Power Limit (dBm)
a	5250 – 5350	23.450	24.701	+24.0
HT-20		23.447	24.700	+24.0
HT-40		42.685	27.303	+24.0
ac-80		83.768	30.231	+24.0
a	5470 – 5725	22.846	24.588	+24.0
HT-20		23.547	24.719	+24.0
HT-40		42.685	27.303	+24.0
ac-80		83.768	30.231	+24.0

Maximum Conducted Power Limit 5250 – 5350 and 5470 – 5725 MHz: +24 dBm (+30 dBm/EIRP, 6 dBi antenna).

#### 5250- 5350 MHz

Antenna Gain 4.46 dBi

Beamforming Gain (5250 – 5350 MHz): 1.14 dB

Total Gain (5250 – 5350 MHz): Antenna Gain + Beamforming Gain = 4.46 + 1.14 = 6.00 dBi

Maximum conducted power (5250 – 5350 MHz) = +24.0 – (6.0 – 6.0) = +24.0 dBm

#### 5470- 5725 MHz

Antenna Gain 4.40 dBi

Beamforming Gain (5470 – 5725 MHz): 1.40 dB

Total Gain (5470 – 5725 MHz): Antenna Gain + Beamforming Gain = 4.40 + 1.40 = 5.80 dBi

Maximum conducted power (5250 – 5350 MHz) = +24.0 – (5.8 – 6.0) = +24.0 dBm

5250.00-5350.00MHz

**Equipment Configuration for Peak Transmit Power**

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

<b>Test Frequency</b>	<b>Measured Conducted Output Power + DCCF (+0.04 dB) (dBm)</b>					<b>Calculated Total Power</b>	<b>Minimum 26 dB Bandwidth</b>	<b>Limit</b>	<b>Margin</b>	<b>EUT Power Setting</b>
	<b>Port(s)</b>									
<b>MHz</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b><math>\Sigma</math> Port(s) dBm</b>	<b>MHz</b>	<b>dBm</b>	<b>dB</b>		
<b>5260.0</b>	17.18	17.61	17.75	17.14	23.45	21.743	24.00	-0.55	17.00	
<b>5300.0</b>	17.11	17.62	17.64	17.32	23.45	21.643	24.00	-0.55	17.00	
<b>5320.0</b>	16.98	17.35	17.75	17.46	23.42	21.844	24.00	-0.58	17.00	

**Traceability to Industry Recognized Test Methodologies**

<b>Work Instruction:</b>	WI-03 MEASURING RF SPECTRUM MASK
<b>Measurement Uncertainty:</b>	±2.81 dB

DCCF - Duty Cycle Correction Factor

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**Title:** Actiontec Electronics Inc. T3200M  
**To:** FCC CFR 47 Part 15.407 & RSS-247  
**Serial #:** ATEC14-U13\_Conducted Rev A (DFS bands)  
**Issue Date:** 1st April 2016  
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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.32 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5290.0	17.55	18.01	18.01	17.89	23.88	83.768	24.00	-0.12	17.00

#### Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.09 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5260.0	16.81	17.10	17.17	17.04	23.05	23.447	24.00	-0.95	17.00
5300.0	17.07	17.17	17.49	17.20	23.25	23.146	24.00	-0.75	17.00
5320.0	16.96	17.17	17.50	17.33	23.26	23.246	24.00	-0.74	17.00

#### 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 Peak Transmit Power

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.18 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5270.0	17.15	17.69	17.64	17.64	23.55	42.685	24.00	-0.45	17.00
5310.0	17.15	17.52	17.72	17.35	23.46	42.685	24.00	-0.54	17.00

#### 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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5470.00-5725.00MHz

**Equipment Configuration for Peak Transmit Power**

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

<b>Test Frequency</b>	<b>Measured Conducted Output Power + DCCF (+0.04 dB) (dBm)</b>					<b>Calculated Total Power</b>	<b>Minimum 26 dB Bandwidth</b>	<b>Limit</b>	<b>Margin</b>	<b>EUT Power Setting</b>
	<b>Port(s)</b>									
<b>MHz</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b><math>\Sigma</math> Port(s) dBm</b>	<b>MHz</b>	<b>dBm</b>	<b>dB</b>		
<b>5500.0</b>	16.77	17.18	17.06	16.71	22.96	22.044	24.00	-1.04	16.00	
<b>5580.0</b>	16.62	17.08	16.71	16.64	22.79	21.743	24.00	-1.21	16.00	
<b>5720.0</b>	16.44	16.81	17.32	16.57	22.82	21.944	24.00	-1.18	16.00	

**Traceability to Industry Recognized Test Methodologies**

<b>Work Instruction:</b>	WI-03 MEASURING RF SPECTRUM MASK
<b>Measurement Uncertainty:</b>	±2.81 dB

DCCF - Duty Cycle Correction Factor

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#### Equipment Configuration for Peak Transmit Power

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.32 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5530.0	17.02	17.37	17.07	16.70	23.06	83.367	24.00	-0.94	16.00
5610.0	17.06	17.12	17.08	16.65	23.00	83.768	24.00	-1.00	16.00
5690.0	16.98	17.32	16.78	16.55	22.93	83.768	24.00	-1.07	16.00

#### 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 Peak Transmit Power

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.09 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5500.0	17.69	17.85	17.85	17.34	23.71	23.447	24.00	-0.29	17.00
5580.0	17.47	18.03	17.35	17.28	23.56	23.547	24.00	-0.44	17.00
5720.0	17.31	17.86	17.98	17.51	23.69	23.547	24.00	-0.31	17.00

#### 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 Peak Transmit Power

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.18 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	$\Sigma$ Port(s) dBm	MHz	dBm	dB	
5510.0	17.03	17.29	17.14	16.57	23.03	42.685	24.00	-0.97	16.00
5550.0	16.88	17.23	17.03	16.68	22.98	42.685	24.00	-1.02	16.00
5710.0	17.04	17.53	17.47	17.08	23.30	42.685	24.00	-0.70	16.00

#### 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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## 4.2. 26 dB & 99% Bandwidth

Conducted Test Conditions for 26 dB and 99% Bandwidth			
<b>Standard:</b>	FCC CFR 47:15.407	<b>Ambient Temp. (°C):</b>	24.0 - 27.5
<b>Test Heading:</b>	26 dB and 99 % Bandwidth	<b>Rel. Humidity (%):</b>	32 - 45
<b>Standard Section(s):</b>	15.407 (a)	<b>Pressure (mBars):</b>	999 - 1001
<b>Reference Document(s):</b>	See Normative References		
<b>Test Procedure for 26 dB and 99% Bandwidth Measurement</b> 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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5250.00-5350.00MHz

Equipment Configuration for 26 dB & 99% Occupied Bandwidth	
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<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results							
Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)		
	Port(s)						

MHz	a	b	c	d	Highest	Lowest	
5260.0	<a href="#">22.745</a>	<a href="#">22.044</a>	<a href="#">21.743</a>	<a href="#">22.745</a>	22.745	21.743	
5300.0	<a href="#">22.645</a>	<a href="#">22.144</a>	<a href="#">21.643</a>	<a href="#">22.745</a>	22.745	21.643	
5320.0	<a href="#">22.445</a>	<a href="#">22.044</a>	<a href="#">21.844</a>	<a href="#">22.745</a>	22.745	21.844	

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)		
	Port(s)						
MHz	a	b	c	d	Highest	Lowest	
5260.0	<a href="#">16.834</a>	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.834</a>	16.834	16.733	
5300.0	<a href="#">16.834</a>	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.834</a>	16.834	16.733	
5320.0	<a href="#">16.834</a>	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.834</a>	16.834	16.733	

Traceability to Industry Recognized Test Methodologies	
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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**

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5290.0	84.168	83.768	83.768	84.168	84.168	83.768
Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5290.0	75.752	75.752	75.752	75.752	75.752	75.752

**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**

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5260.0	<a href="#">23.447</a>	<a href="#">23.647</a>	<a href="#">23.647</a>	<a href="#">23.747</a>	23.747	23.447		
5300.0	<a href="#">23.547</a>	<a href="#">23.146</a>	<a href="#">23.647</a>	<a href="#">23.647</a>	23.647	23.146		
5320.0	<a href="#">23.848</a>	<a href="#">23.246</a>	<a href="#">24.048</a>	<a href="#">23.647</a>	24.048	23.246		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5260.0	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	18.036	18.036		
5300.0	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.136</a>	18.136	18.036		
5320.0	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	18.036	18.036		

**Traceability to Industry Recognized Test Methodologies**

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

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

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

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5270.0	<a href="#">42.685</a>	<a href="#">42.685</a>	<a href="#">42.685</a>	<a href="#">42.685</a>	42.685	42.685		
5310.0	<a href="#">42.886</a>	<a href="#">42.685</a>	<a href="#">42.685</a>	<a href="#">42.886</a>	42.886	42.685		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5270.0	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	36.673	36.673		
5310.0	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	36.673	36.673		

**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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5470.00-5725.00MHz

Equipment Configuration for 26 dB & 99% Occupied Bandwidth	
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<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results						
Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)	
	Port(s)					

MHz	a	b	c	d	Highest	Lowest
5500.0	<a href="#">22.445</a>	<a href="#">22.144</a>	<a href="#">22.044</a>	<a href="#">22.846</a>	22.846	22.044
5580.0	<a href="#">22.745</a>	<a href="#">22.144</a>	<a href="#">21.743</a>	<a href="#">22.745</a>	22.745	21.743
5720.0	<a href="#">22.345</a>	<a href="#">22.345</a>	<a href="#">21.944</a>	<a href="#">22.745</a>	22.745	21.944

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)	
	Port(s)					
MHz	a	b	c	d	Highest	Lowest
5500.0	<a href="#">16.834</a>	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.834</a>	16.834	16.733
5580.0	<a href="#">16.834</a>	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.834</a>	16.834	16.733
5720.0	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.733</a>	<a href="#">16.834</a>	16.834	16.733

Traceability to Industry Recognized Test Methodologies	
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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**

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5530.0	<a href="#">83.367</a>	<a href="#">83.768</a>	<a href="#">83.768</a>	<a href="#">83.768</a>	83.768	83.367		
5610.0	<a href="#">83.768</a>	<a href="#">83.768</a>	<a href="#">83.768</a>	<a href="#">84.168</a>	84.168	83.768		
5690.0	<a href="#">83.768</a>	<a href="#">83.768</a>	<a href="#">83.768</a>	<a href="#">83.768</a>	83.768	83.768		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5530.0	<a href="#">75.752</a>	<a href="#">75.752</a>	<a href="#">75.752</a>	<a href="#">75.752</a>	75.752	75.752		
5610.0	<a href="#">75.752</a>	<a href="#">75.752</a>	<a href="#">75.752</a>	<a href="#">75.752</a>	75.752	75.752		
5690.0	<a href="#">75.752</a>	<a href="#">75.752</a>	<a href="#">75.752</a>	<a href="#">75.752</a>	75.752	75.752		

**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**

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5500.0	<a href="#">23.747</a>	<a href="#">23.447</a>	<a href="#">23.848</a>	<a href="#">23.647</a>	23.848	23.447		
5580.0	<a href="#">23.547</a>	<a href="#">23.647</a>	<a href="#">23.647</a>	<a href="#">23.647</a>	23.647	23.547		
5720.0	<a href="#">23.647</a>	<a href="#">23.848</a>	<a href="#">23.547</a>	<a href="#">23.647</a>	23.848	23.547		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5500.0	<a href="#">18.136</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.136</a>	18.136	18.036		
5580.0	<a href="#">18.136</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.136</a>	18.136	18.036		
5720.0	<a href="#">18.136</a>	<a href="#">18.036</a>	<a href="#">18.036</a>	<a href="#">18.136</a>	18.136	18.036		

**Traceability to Industry Recognized Test Methodologies**

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

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

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

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5510.0	<a href="#">42.886</a>	<a href="#">42.886</a>	<a href="#">42.685</a>	<a href="#">42.886</a>	42.886	42.685		
5550.0	<a href="#">43.086</a>	<a href="#">42.685</a>	<a href="#">42.685</a>	<a href="#">42.685</a>	43.086	42.685		
5710.0	<a href="#">43.086</a>	<a href="#">42.886</a>	<a href="#">42.685</a>	<a href="#">43.287</a>	43.287	42.685		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)							
MHz	a	b	c	d	Highest	Lowest		
5510.0	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	36.673	36.673		
5550.0	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	36.673	36.673		
5710.0	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	<a href="#">36.673</a>	36.673	36.673		

**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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### 4.3. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
<b>Standard:</b>	FCC CFR 47:15.407	<b>Ambient Temp. (°C):</b>	24.0 - 27.5
<b>Test Heading:</b>	Power Spectral Density	<b>Rel. Humidity (%):</b>	32 - 45
<b>Standard Section(s):</b>	15.407 (a)	<b>Pressure (mBars):</b>	999 - 1001
<b>Reference Document(s):</b>	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 (à) 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

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

$x = \text{Duty Cycle}$

#### Limits Power Spectral Density

##### Operating Frequency Band 5150-5250 MHz

###### 15. 407 (a)(1)

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

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

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

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

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

##### 15. 407 (a)(2)

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

#### **Operating Frequency Band 5725 – 5850 MHz**

##### 15. 407 (a)(3)

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

#### **Horizontal and Vertical Antenna Polarization**

The T3200M antennas are dual polarized i.e. 3 antennas operate horizontal the other 1 vertical polarization. For this reason the Power Spectral Density test does not compare all 4 antenna's to the limit but it measures the 3 horizontal and 1 vertical antennas separately.

As a result two separate sets of tests were performed;

1).. Horizontal 3 antenna chains

2).. Vertical single antenna chain

**NOTE:** Antenna chain power cannot be set on an individual basis

5250.00-5350.00MHz

**Equipment Configuration for Power Spectral Density**

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

<b>Test Frequency</b>	<b>Measured Power Spectral Density</b>				<b>Amplitude Summation + DCCF (+0.04 dB)</b>	<b>Limit</b>	<b>Margin</b>
	<b>Port(s) (dBm/MHz)</b>						
<b>MHz</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b>dBm/MHz</b>	<b>dBm/MHz</b>	<b>dB</b>
<b>5260.0</b>	<a href="#">5.873</a>	<a href="#">6.330</a>	<a href="#">6.542</a>	--	<a href="#">10.885</a>	11.0	-0.1
<b>5300.0</b>	<a href="#">5.678</a>	<a href="#">6.553</a>	<a href="#">6.346</a>	--	<a href="#">10.921</a>	11.0	-0.1
<b>5320.0</b>	<a href="#">5.609</a>	<a href="#">6.095</a>	<a href="#">6.365</a>	--	<a href="#">10.798</a>	11.0	-0.2

**Traceability to Industry Recognized Test Methodologies**

<b>Work Instruction:</b>	WI-03 MEASURING RF SPECTRUM MASK
<b>Measurement Uncertainty:</b>	±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**

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.04 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5260.0	--	--	--	<u>5.806</u>	<u>5.850</u>	11.0	-5.2
5300.0	--	--	--	<u>5.968</u>	<u>6.012</u>	11.0	-5.0
5320.0	--	--	--	<u>6.135</u>	<u>6.179</u>	11.0	-4.8

**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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**Equipment Configuration for Power Spectral Density**

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.32 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5290.0	<a href="#">-0.594</a>	<a href="#">0.270</a>	<a href="#">0.388</a>	--	<a href="#">4.512</a>	11.0	-6.5

**Traceability to Industry Recognized Test Methodologies**

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

DCCF - Duty Cycle Correction Factor

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**Equipment Configuration for Power Spectral Density**

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.32 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5290.0	--	--	--	<a href="#">0.733</a>	<a href="#">1.048</a>	11.0	-10.0

**Traceability to Industry Recognized Test Methodologies**

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

DCCF - Duty Cycle Correction Factor

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**Equipment Configuration for Power Spectral Density**

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5260.0	<a href="#">5.044</a>	<a href="#">5.410</a>	<a href="#">5.535</a>	--	<a href="#">10.077</a>	11.0	-0.9
5300.0	<a href="#">5.091</a>	<a href="#">5.418</a>	<a href="#">5.715</a>	--	<a href="#">10.233</a>	11.0	-0.7
5320.0	<a href="#">5.006</a>	<a href="#">5.453</a>	<a href="#">5.821</a>	--	<a href="#">10.127</a>	11.0	-0.8

**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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**Equipment Configuration for Power Spectral Density**

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5260.0	--	--	--	<a href="#">5.436</a>	<a href="#">5.524</a>	11.0	-5.5
5300.0	--	--	--	<a href="#">5.552</a>	<a href="#">5.640</a>	11.0	-5.4
5320.0	--	--	--	<a href="#">5.575</a>	<a href="#">5.663</a>	11.0	-5.3

**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**

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5270.0	<a href="#">2.224</a>	<a href="#">2.813</a>	<a href="#">2.818</a>	--	<a href="#">7.346</a>	11.0	-3.6
5310.0	<a href="#">1.997</a>	<a href="#">2.601</a>	<a href="#">2.679</a>	--	<a href="#">7.140</a>	11.0	-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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**Title:** Actiontec Electronics Inc. T3200M  
**To:** FCC CFR 47 Part 15.407 & RSS-247  
**Serial #:** ATEC14-U13\_Conducted Rev A (DFS bands)  
**Issue Date:** 1st April 2016  
**Page:** 35 of 255

#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.46
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.14
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5270.0	--	--	--	<u>3.005</u>	<u>3.182</u>	11.0	-7.8
5310.0	--	--	--	<u>2.529</u>	<u>2.706</u>	11.0	-8.3

#### 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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5470.00-5725.00MHz

**Equipment Configuration for Power Spectral Density**

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.04 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5500.0	<a href="#">5.409</a>	<a href="#">6.025</a>	<a href="#">5.713</a>	--	<a href="#">10.344</a>	11.0	-0.6
5580.0	<a href="#">5.222</a>	<a href="#">6.081</a>	<a href="#">5.455</a>	--	<a href="#">10.193</a>	11.0	-0.8
5720.0	<a href="#">4.973</a>	<a href="#">5.329</a>	<a href="#">5.946</a>	--	<a href="#">10.131</a>	11.0	-0.8

**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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**Title:** Actiontec Electronics Inc. T3200M  
**To:** FCC CFR 47 Part 15.407 & RSS-247  
**Serial #:** ATEC14-U13\_Conducted Rev A (DFS bands)  
**Issue Date:** 1st April 2016  
**Page:** 37 of 255

#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11a	<b>Duty Cycle (%):</b>	99.0
<b>Data Rate:</b>	6.00 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.04 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5500.0	--	--	--	<a href="#">5.380</a>	<a href="#">5.424</a>	11.0	-5.6
5580.0	--	--	--	<a href="#">5.381</a>	<a href="#">5.425</a>	11.0	-5.6
5720.0	--	--	--	<a href="#">5.178</a>	<a href="#">5.222</a>	11.0	-5.8

#### 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			
<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.32 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5530.0	<a href="#">-1.181</a>	<a href="#">-0.571</a>	<a href="#">-0.676</a>	--	<a href="#">3.749</a>	11.0	-7.2
5610.0	<a href="#">-1.305</a>	<a href="#">-0.621</a>	<a href="#">-1.327</a>	--	<a href="#">3.607</a>	11.0	-7.4
5690.0	<a href="#">-1.118</a>	<a href="#">-1.187</a>	<a href="#">-1.109</a>	--	<a href="#">3.760</a>	11.0	-7.2

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**

<b>Variant:</b>	802.11ac-80	<b>Duty Cycle (%):</b>	93.0
<b>Data Rate:</b>	29.30 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.32 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5530.0	--	--	--	<u>-1.051</u>	<u>-0.736</u>	11.0	-11.7
5610.0	--	--	--	<u>-1.120</u>	<u>-0.805</u>	11.0	-11.8
5690.0	--	--	--	<u>-1.422</u>	<u>-1.107</u>	11.0	-12.1

**Traceability to Industry Recognized Test Methodologies**

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Power Spectral Density			
<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5500.0	<a href="#">5.852</a>	<a href="#">6.066</a>	<a href="#">6.179</a>	--	<a href="#">10.753</a>	11.0	-0.2
5580.0	<a href="#">5.654</a>	<a href="#">6.336</a>	<a href="#">6.032</a>	--	<a href="#">10.679</a>	11.0	-0.3
5720.0	<a href="#">5.427</a>	<a href="#">6.263</a>	<a href="#">6.133</a>	--	<a href="#">10.731</a>	11.0	-0.2

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**

<b>Variant:</b>	802.11n HT-20	<b>Duty Cycle (%):</b>	98.0
<b>Data Rate:</b>	6.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

**Test Measurement Results**

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.09 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5500.0	--	--	--	<a href="#">5.648</a>	<a href="#">5.736</a>	11.0	-5.3
5580.0	--	--	--	<a href="#">5.583</a>	<a href="#">5.671</a>	11.0	-5.3
5720.0	--	--	--	<a href="#">5.655</a>	<a href="#">5.743</a>	11.0	-5.3

**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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**Title:** Actiontec Electronics Inc. T3200M  
**To:** FCC CFR 47 Part 15.407 & RSS-247  
**Serial #:** ATEC14-U13\_Conducted Rev A (DFS bands)  
**Issue Date:** 1st April 2016  
**Page:** 42 of 255

#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5510.0	<a href="#">2.099</a>	<a href="#">2.316</a>	<a href="#">2.322</a>	--	<a href="#">6.886</a>	11.0	-4.1
5550.0	<a href="#">1.826</a>	<a href="#">2.201</a>	<a href="#">2.160</a>	--	<a href="#">6.759</a>	11.0	-4.2
5710.0	<a href="#">2.342</a>	<a href="#">2.827</a>	<a href="#">2.853</a>	--	<a href="#">7.238</a>	11.0	-3.7

#### Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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**Title:** Actiontec Electronics Inc. T3200M  
**To:** FCC CFR 47 Part 15.407 & RSS-247  
**Serial #:** ATEC14-U13\_Conducted Rev A (DFS bands)  
**Issue Date:** 1st April 2016  
**Page:** 43 of 255

#### Equipment Configuration for Power Spectral Density

<b>Variant:</b>	802.11n HT-40	<b>Duty Cycle (%):</b>	96.0
<b>Data Rate:</b>	13.50 MBit/s	<b>Antenna Gain (dBi):</b>	4.40
<b>Modulation:</b>	OFDM	<b>Beam Forming Gain (Y)(dB):</b>	1.40
<b>TPC:</b>	Not Applicable	<b>Tested By:</b>	CC
<b>Engineering Test Notes:</b>			

#### Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5510.0	--	--	--	<u>1.700</u>	<u>1.877</u>	11.0	-9.1
5550.0	--	--	--	<u>1.733</u>	<u>1.910</u>	11.0	-9.1
5710.0	--	--	--	<u>2.688</u>	<u>2.865</u>	11.0	-8.1

#### Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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

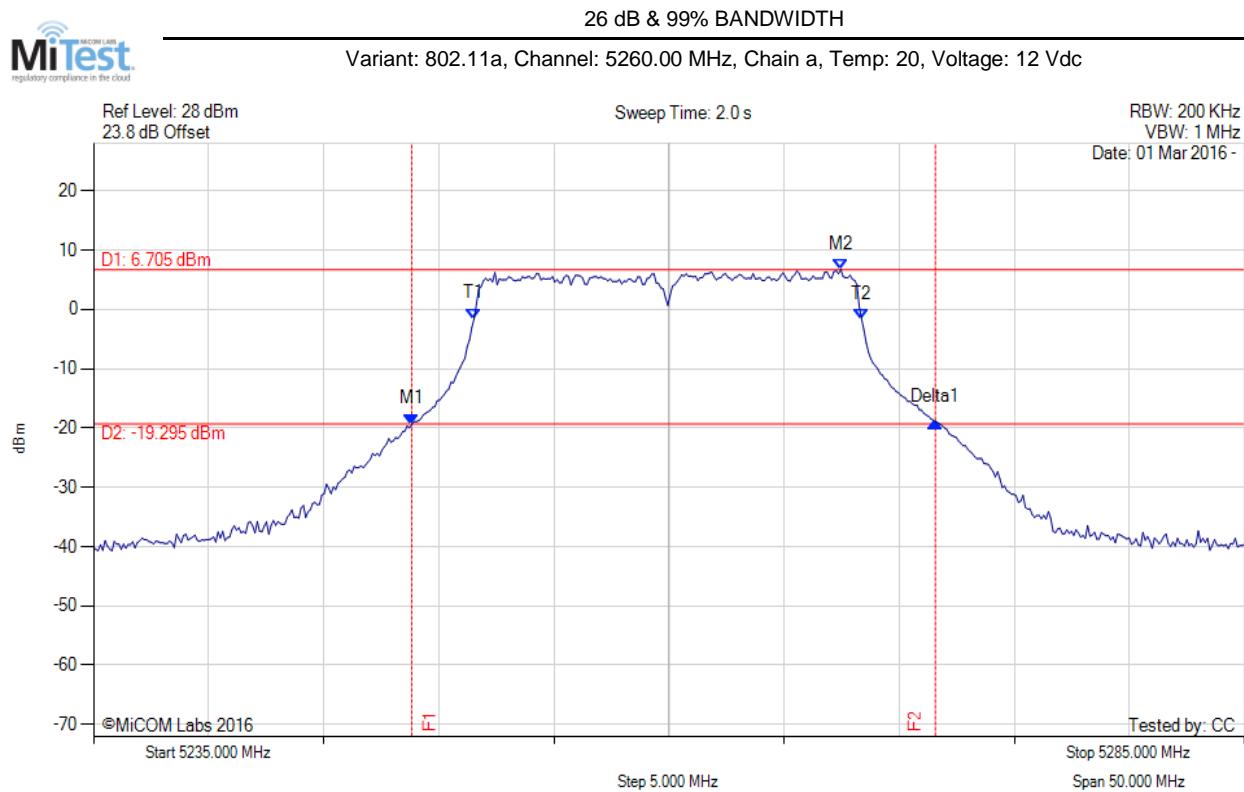
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## **A. APPENDIX - GRAPHICAL IMAGES**

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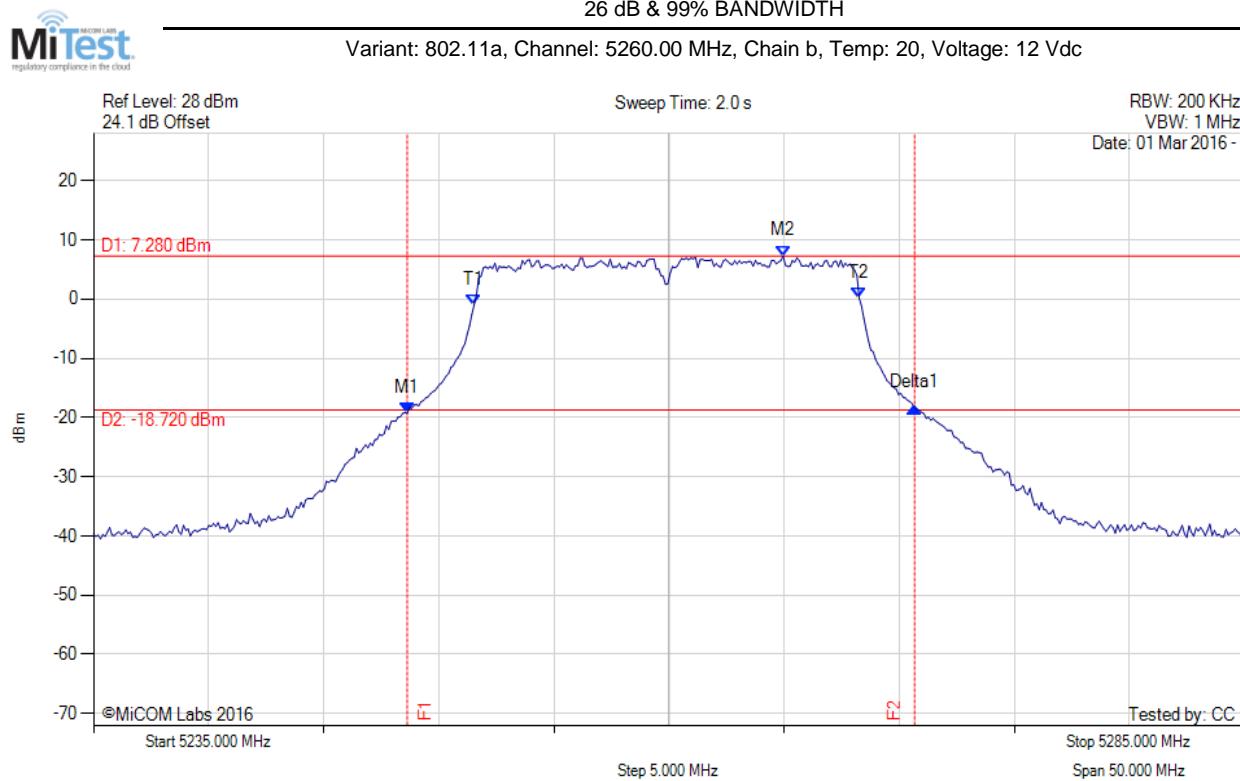
### A.1. 26 dB & 99% Bandwidth



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.828 MHz : -19.356 dBm M2 : 5267.465 MHz : 6.705 dBm Delta1 : 22.745 MHz : 0.393 dB T1 : 5251.533 MHz : -1.589 dBm T2 : 5268.367 MHz : -1.626 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

[back to matrix](#)

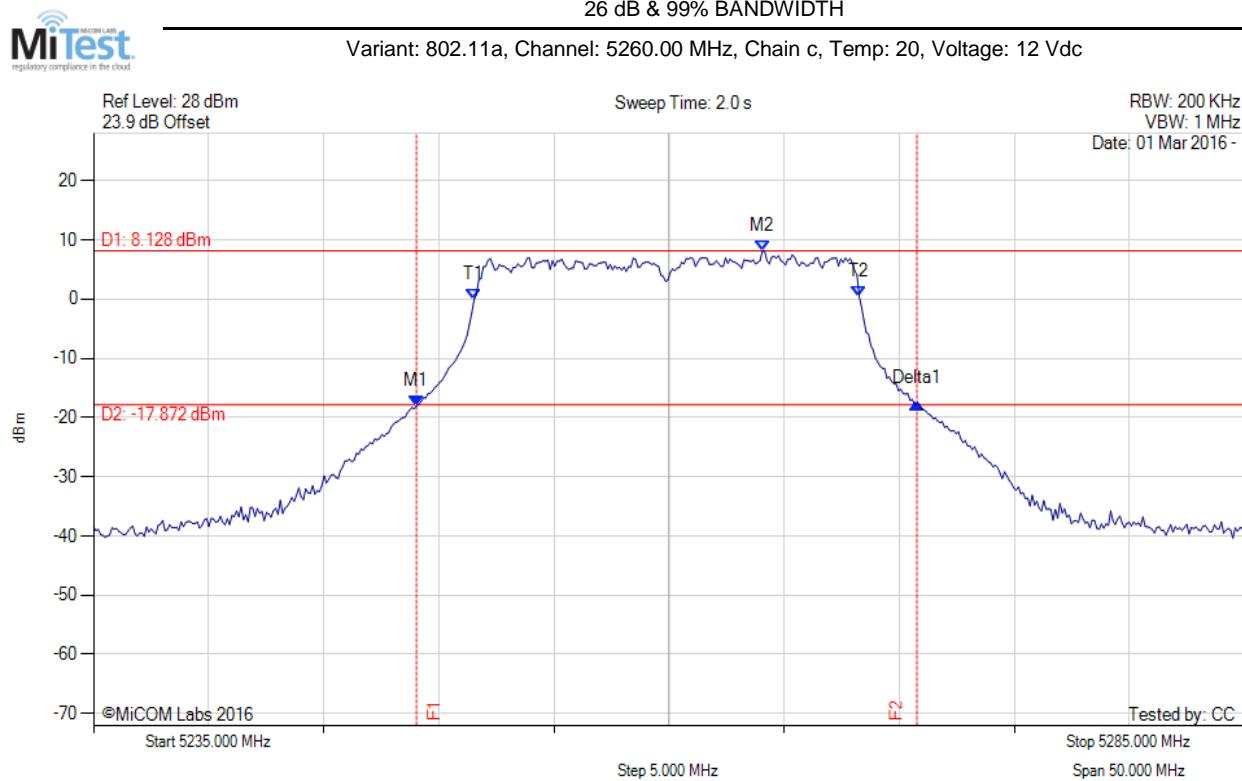
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.627 MHz : -19.264 dBm M2 : 5264.960 MHz : 7.280 dBm Delta1 : 22.044 MHz : 0.986 dB T1 : 5251.533 MHz : -1.015 dBm T2 : 5268.267 MHz : 0.121 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 22.044 MHz Measured 99% Bandwidth: 16.733 MHz

[back to matrix](#)

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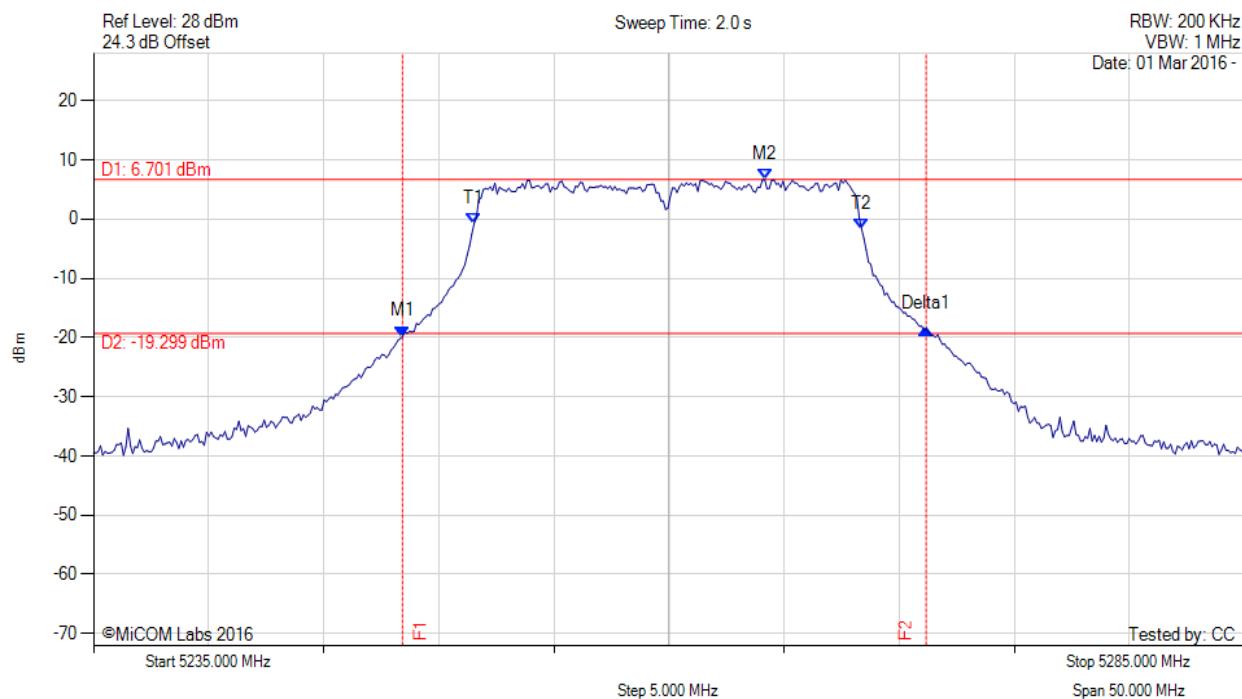
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.028 MHz : -18.009 dBm M2 : 5264.058 MHz : 8.128 dBm Delta1 : 21.743 MHz : 0.470 dB T1 : 5251.533 MHz : -0.121 dBm T2 : 5268.267 MHz : 0.416 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 21.743 MHz Measured 99% Bandwidth: 16.733 MHz

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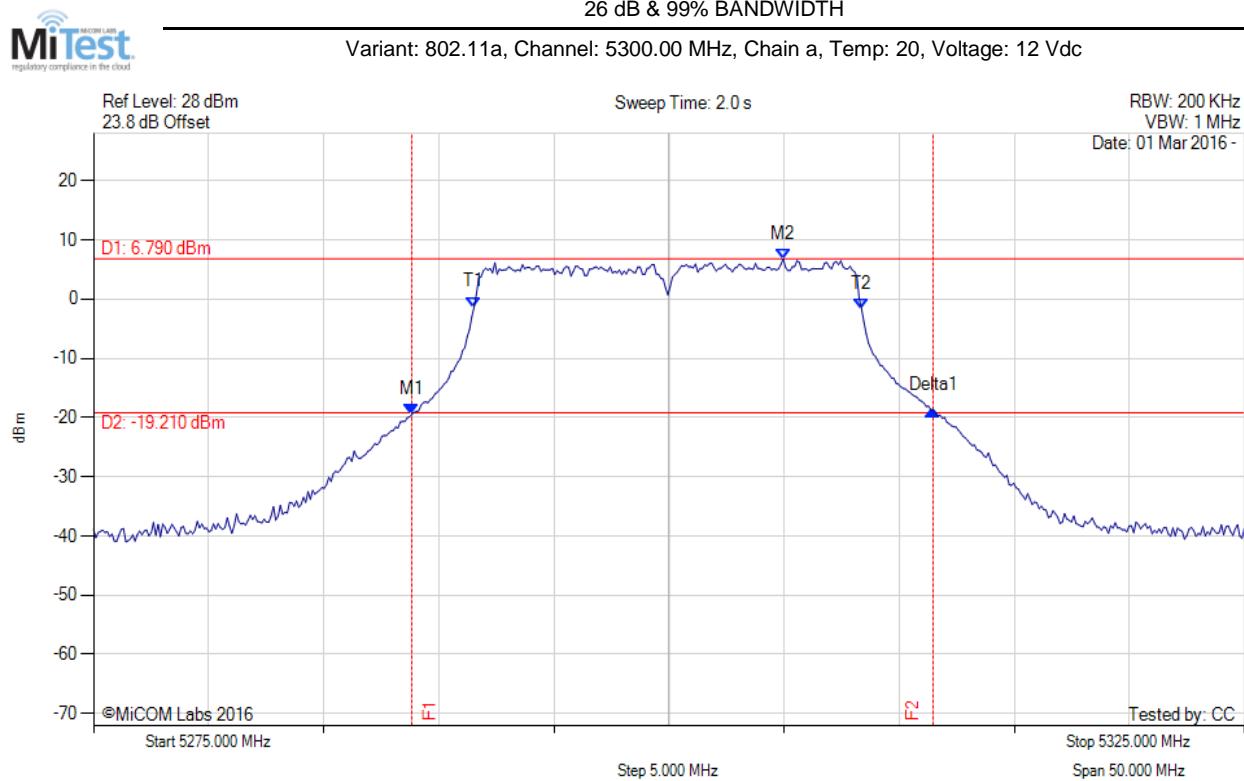
26 dB & 99% BANDWIDTH  
 Variant: 802.11a, Channel: 5260.00 MHz, Chain d, Temp: 20, Voltage: 12 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.427 MHz : -19.822 dBm M2 : 5264.158 MHz : 6.701 dBm Delta1 : 22.745 MHz : 1.261 dB T1 : 5251.533 MHz : -0.814 dBm T2 : 5268.367 MHz : -1.656 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

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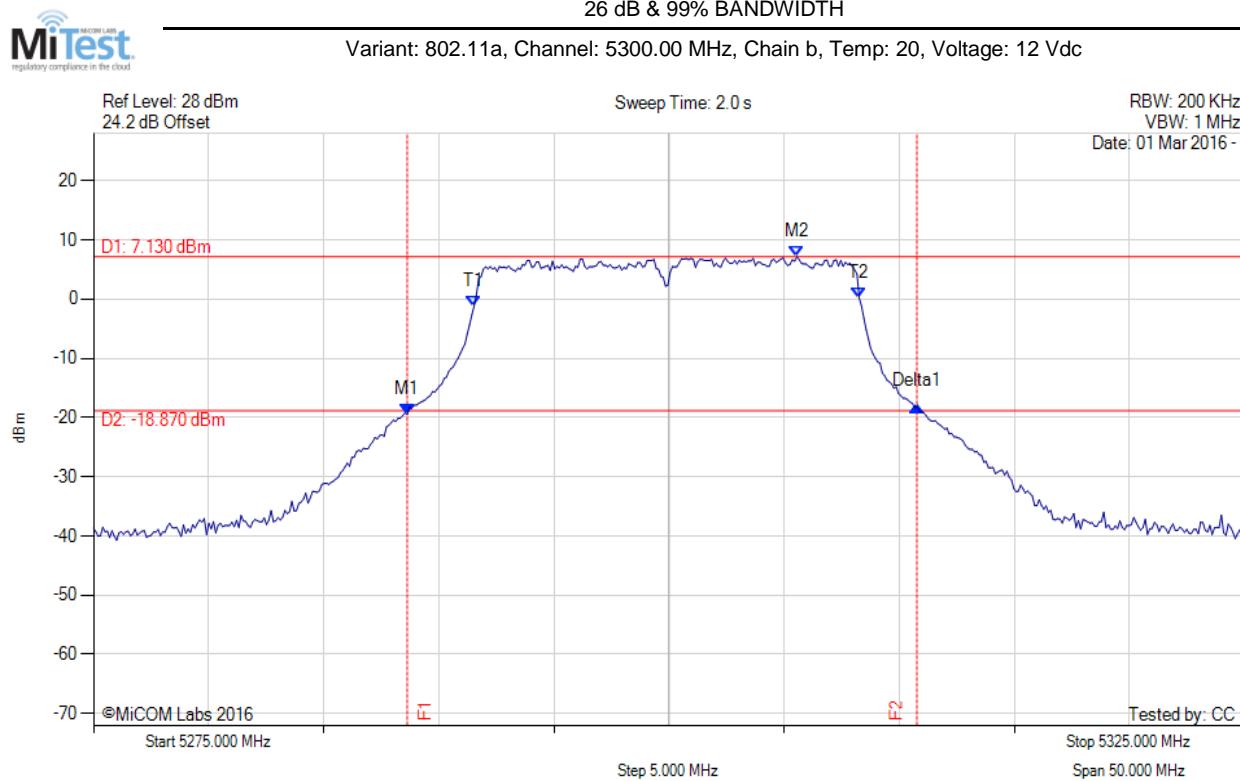
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.828 MHz : -19.478 dBm M2 : 5304.960 MHz : 6.790 dBm Delta1 : 22.645 MHz : 0.759 dB T1 : 5291.533 MHz : -1.361 dBm T2 : 5308.367 MHz : -1.676 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.645 MHz Measured 99% Bandwidth: 16.834 MHz

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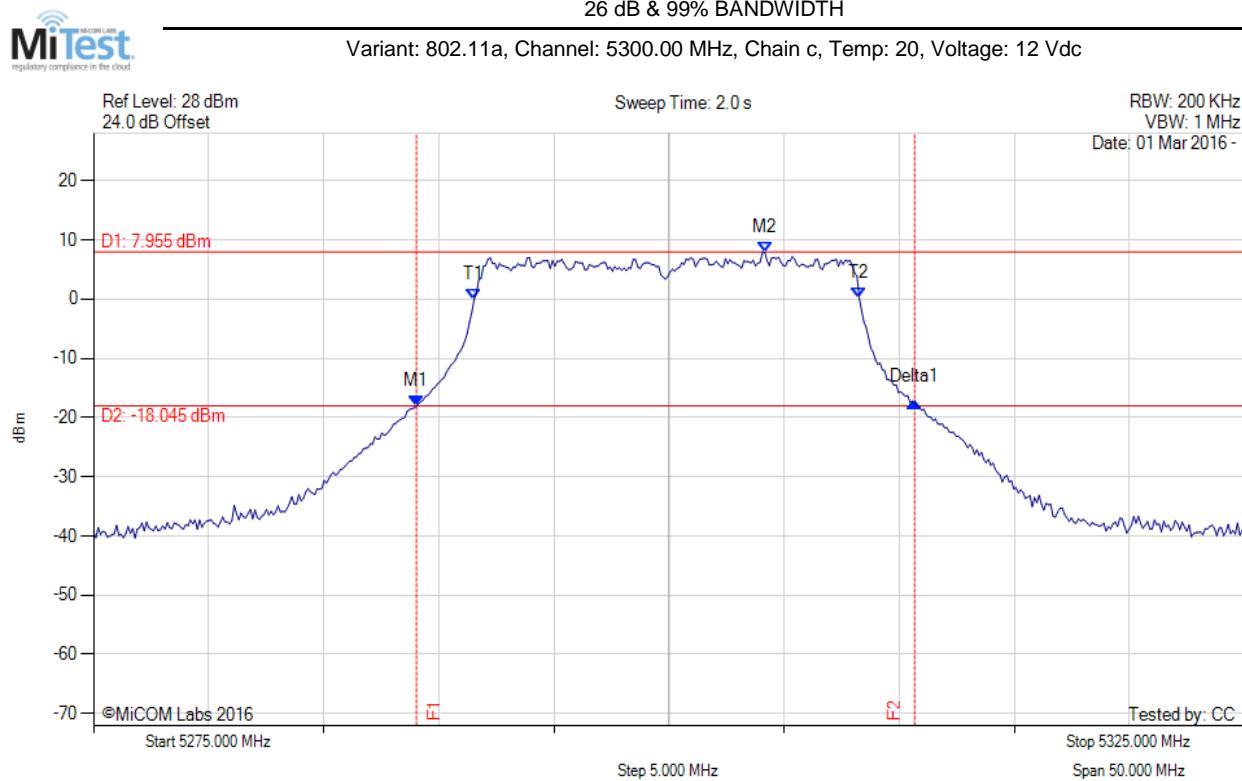
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.627 MHz : -19.417 dBm M2 : 5305.561 MHz : 7.130 dBm Delta1 : 22.144 MHz : 1.289 dB T1 : 5291.533 MHz : -1.196 dBm T2 : 5308.267 MHz : 0.174 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 22.144 MHz Measured 99% Bandwidth: 16.733 MHz

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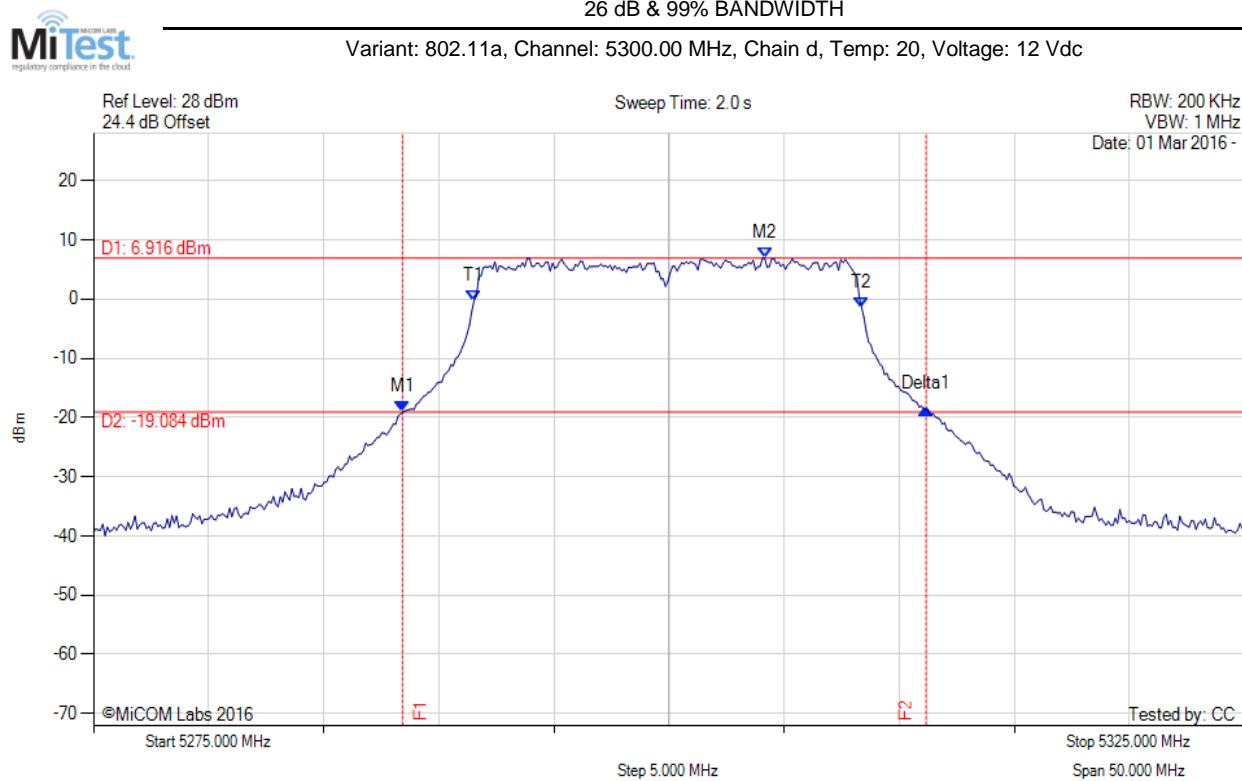
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.028 MHz : -18.046 dBm M2 : 5304.158 MHz : 7.955 dBm Delta1 : 21.643 MHz : 0.602 dB T1 : 5291.533 MHz : -0.090 dBm T2 : 5308.267 MHz : 0.166 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 21.643 MHz Measured 99% Bandwidth: 16.733 MHz

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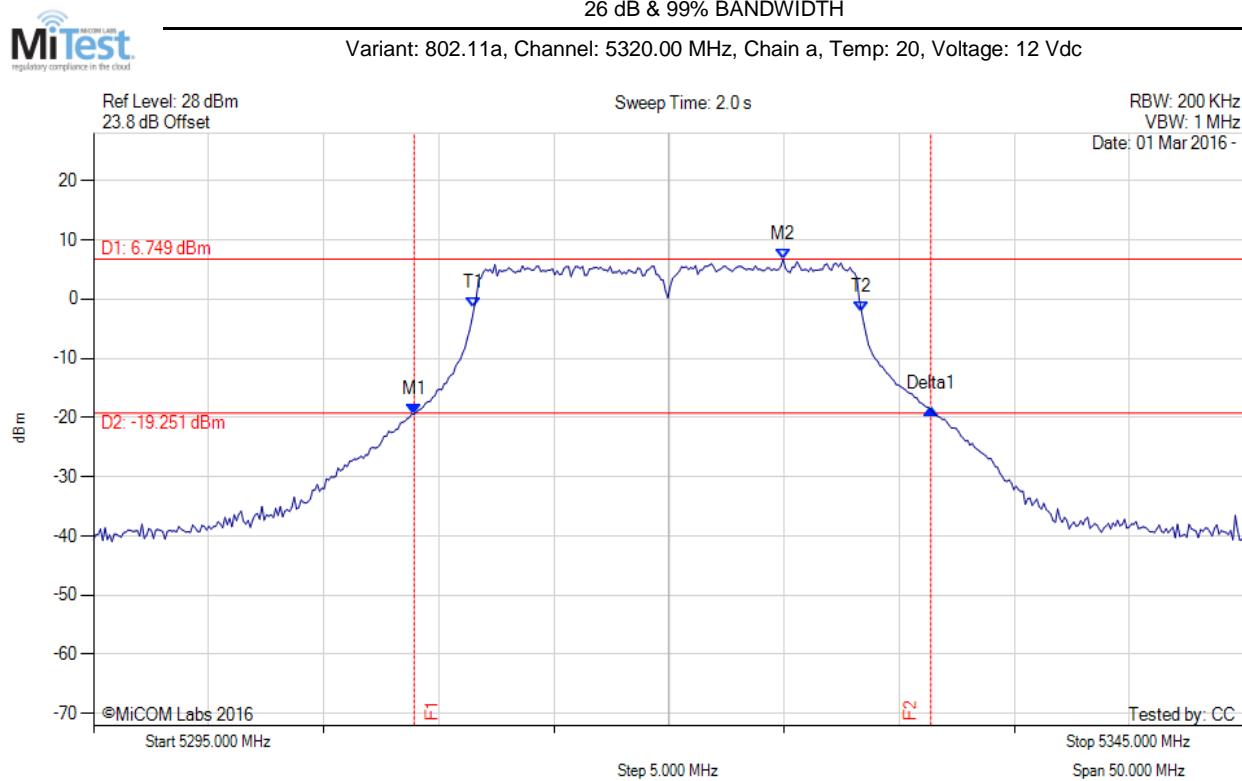
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.427 MHz : -19.085 dBm M2 : 5304.158 MHz : 6.916 dBm Delta1 : 22.745 MHz : 0.454 dB T1 : 5291.533 MHz : -0.265 dBm T2 : 5308.367 MHz : -1.396 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

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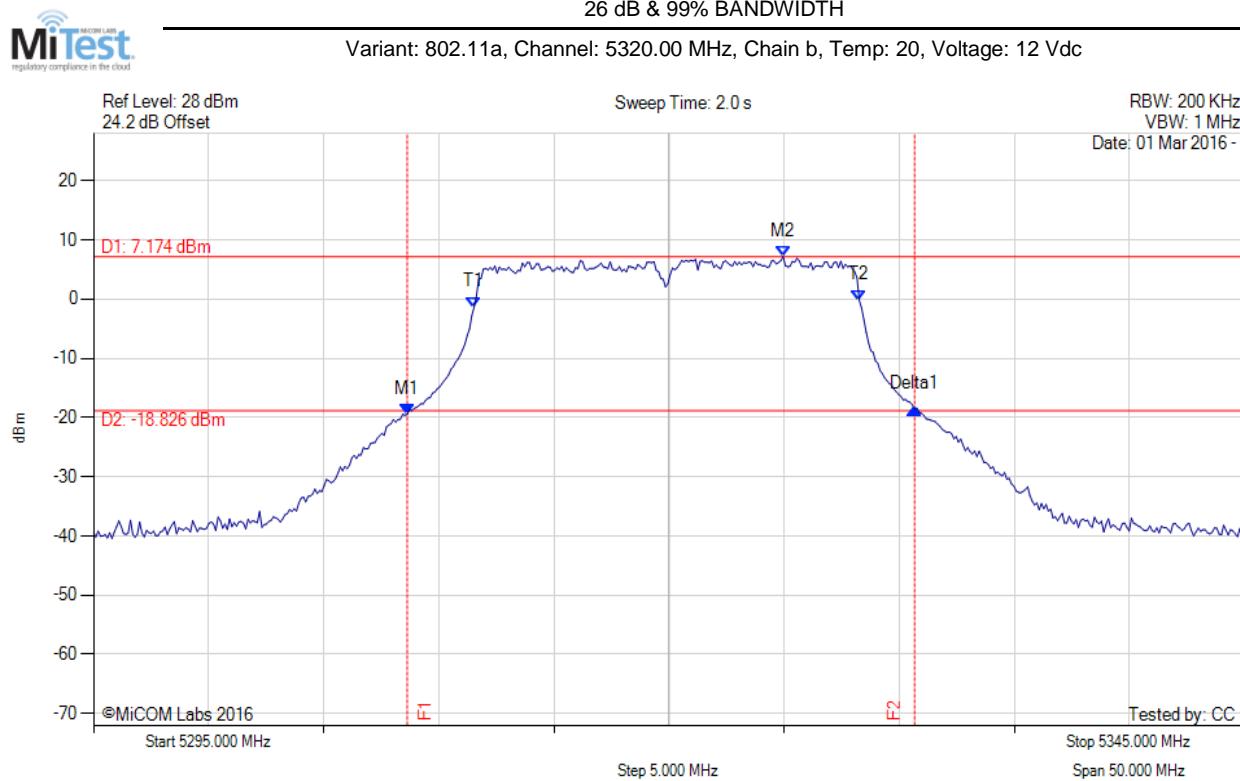
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.928 MHz : -19.457 dBm M2 : 5324.960 MHz : 6.749 dBm Delta1 : 22.445 MHz : 0.846 dB T1 : 5311.533 MHz : -1.510 dBm T2 : 5328.367 MHz : -2.183 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.445 MHz Measured 99% Bandwidth: 16.834 MHz

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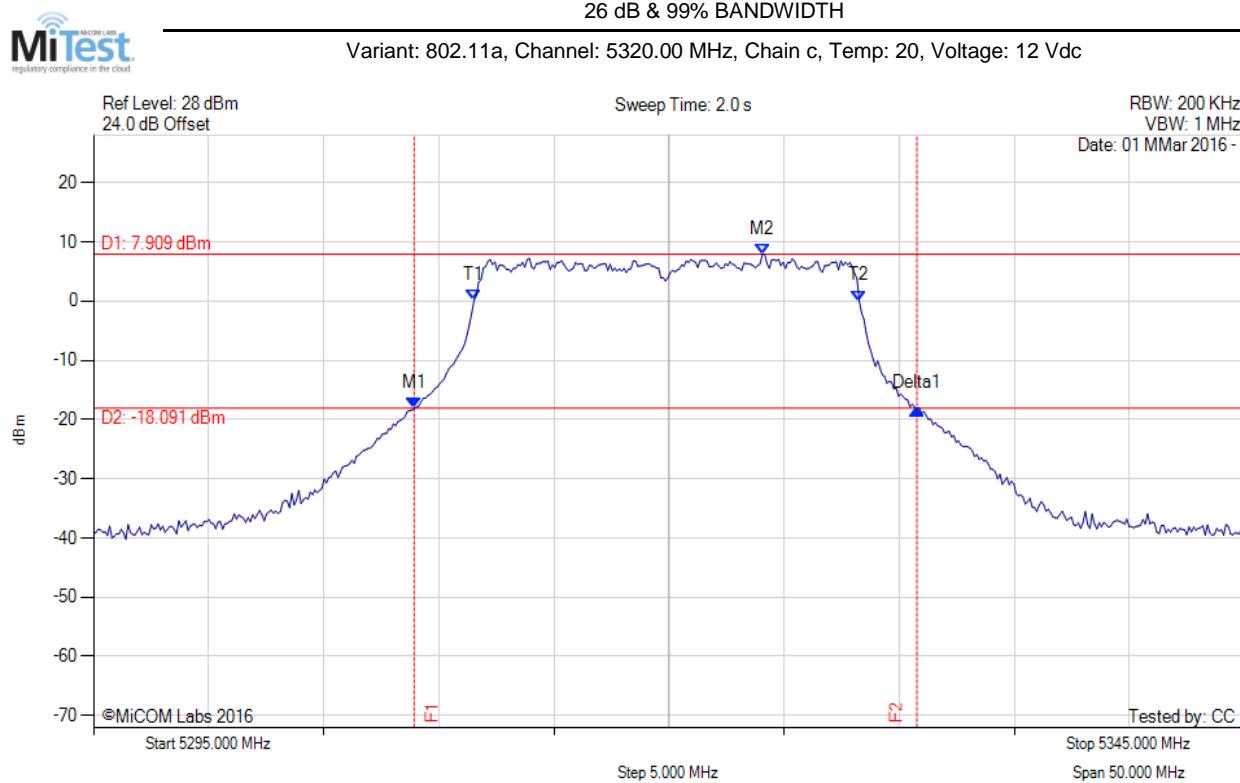
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.627 MHz : -19.451 dBm M2 : 5324.960 MHz : 7.174 dBm Delta1 : 22.044 MHz : 0.897 dB T1 : 5311.533 MHz : -1.361 dBm T2 : 5328.267 MHz : -0.194 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 22.044 MHz Measured 99% Bandwidth: 16.733 MHz

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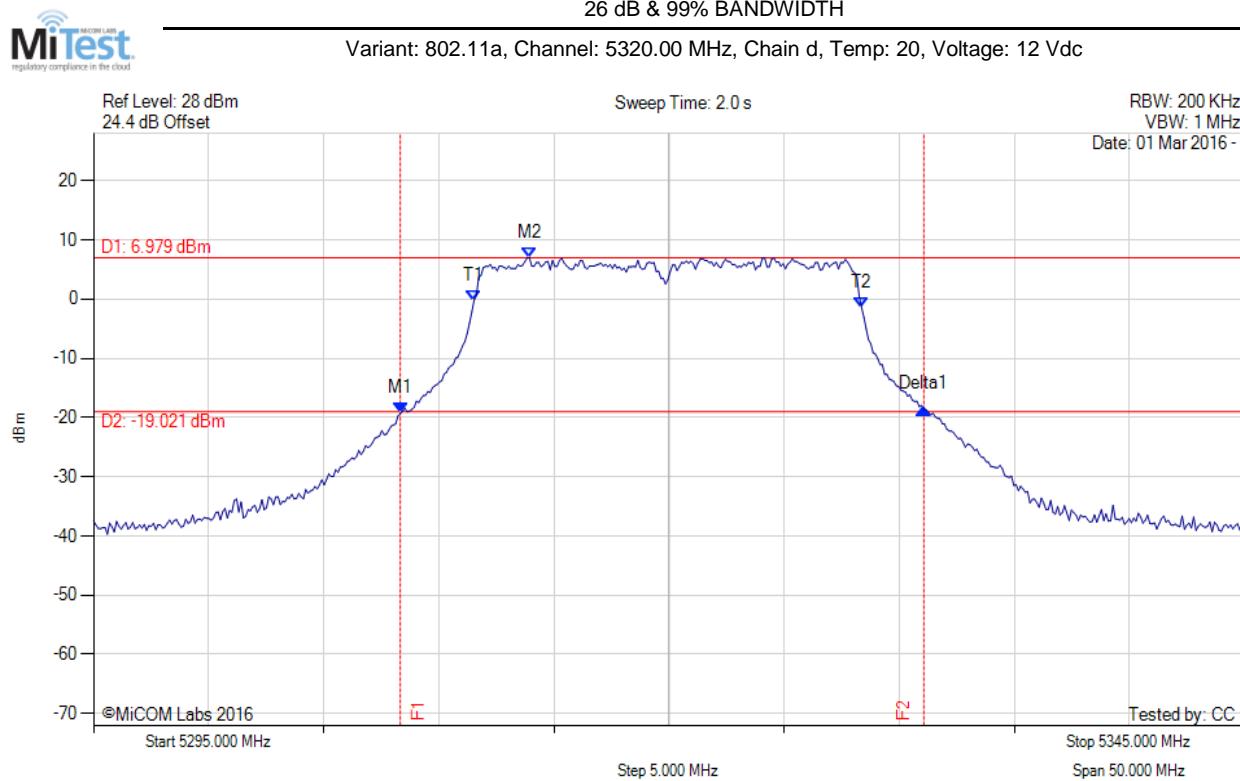
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.928 MHz : -18.121 dBm M2 : 5324.058 MHz : 7.909 dBm Delta1 : 21.844 MHz : -0.057 dB T1 : 5311.533 MHz : 0.142 dBm T2 : 5328.267 MHz : 0.052 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 21.844 MHz Measured 99% Bandwidth: 16.733 MHz

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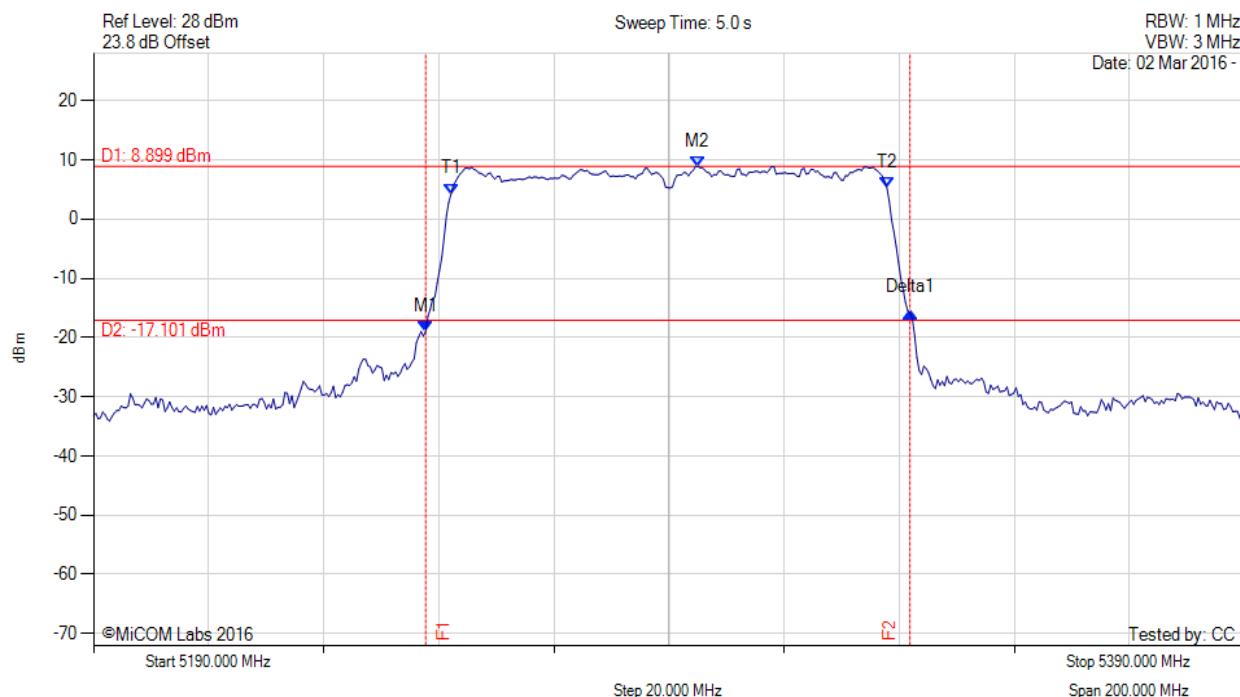
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.327 MHz : -19.315 dBm M2 : 5313.938 MHz : 6.979 dBm Delta1 : 22.745 MHz : 0.712 dB T1 : 5311.533 MHz : -0.210 dBm T2 : 5328.367 MHz : -1.430 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

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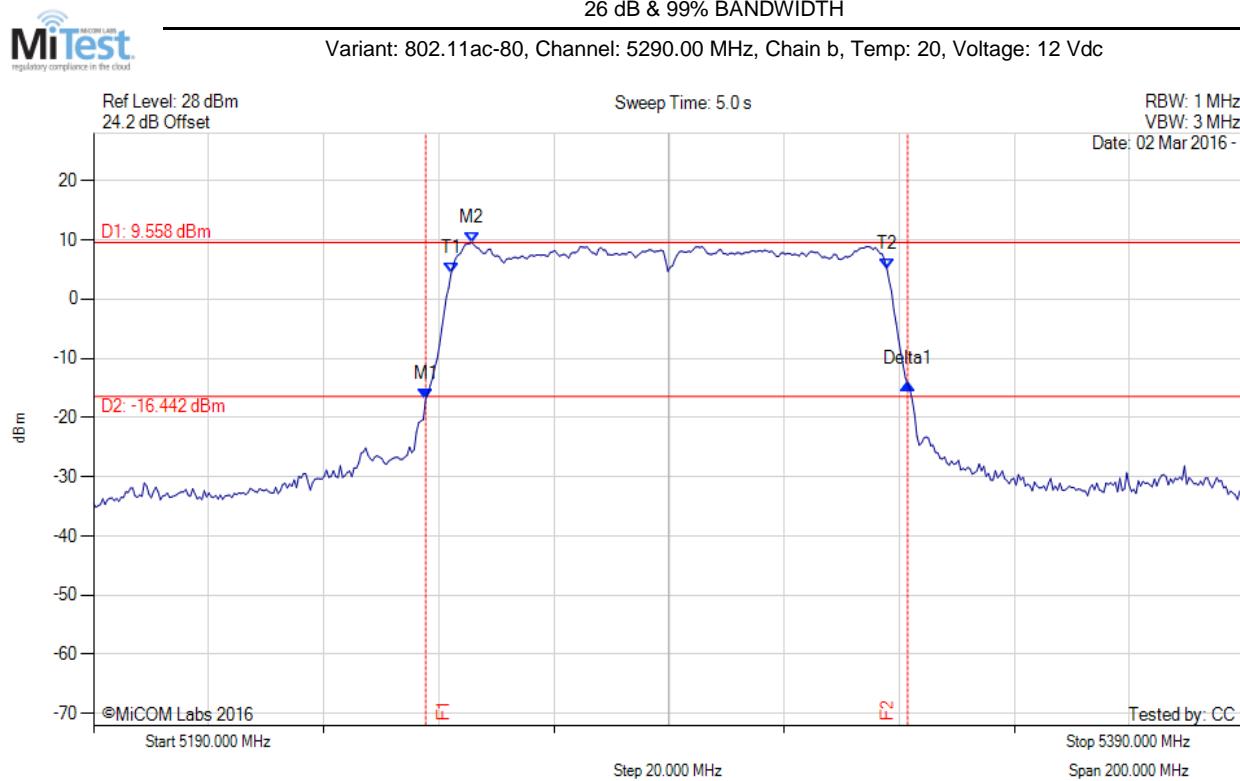
26 dB & 99% BANDWIDTH  
 Variant: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: 20, Voltage: 12 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5247.715 MHz : -18.916 dBm M2 : 5295.010 MHz : 8.899 dBm Delta1 : 84.168 MHz : 3.134 dB T1 : 5252.124 MHz : 4.244 dBm T2 : 5327.876 MHz : 5.244 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 84.168 MHz Measured 99% Bandwidth: 75.752 MHz

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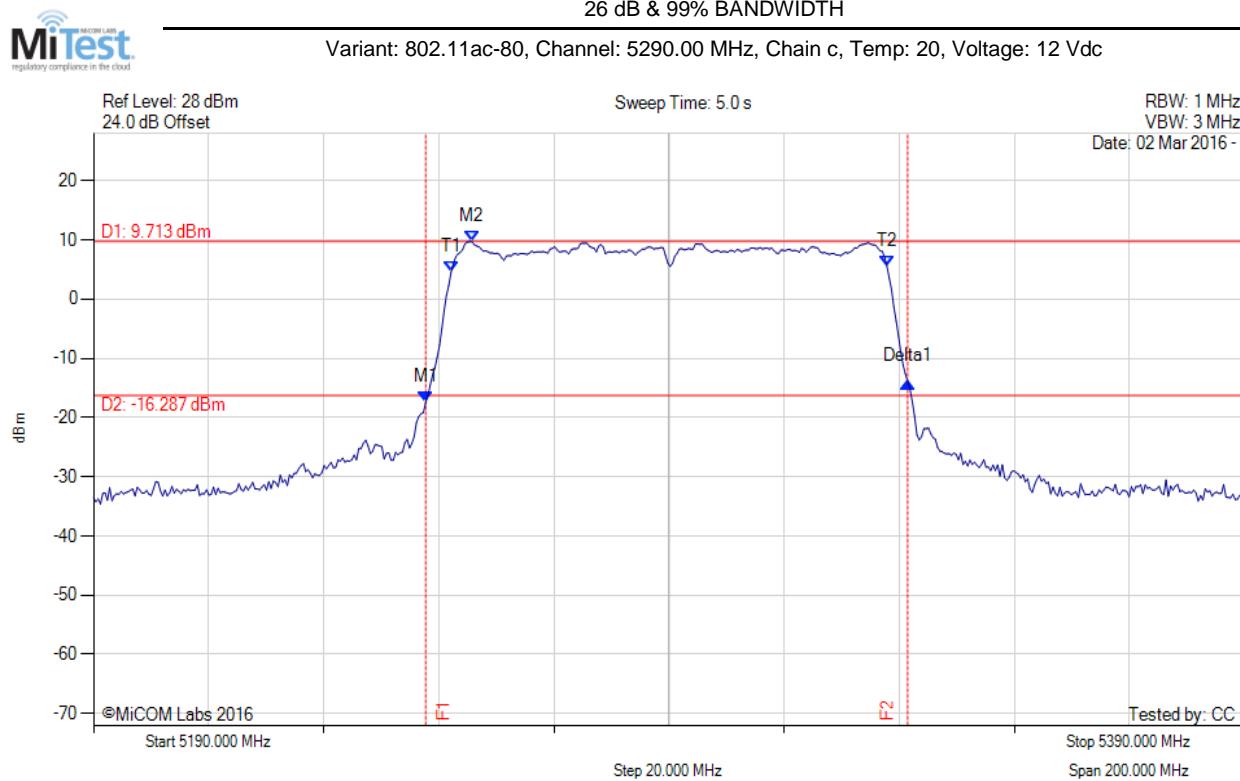
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5247.715 MHz : -16.903 dBm M2 : 5255.731 MHz : 9.558 dBm Delta1 : 83.768 MHz : 2.520 dB T1 : 5252.124 MHz : 4.268 dBm T2 : 5327.876 MHz : 5.067 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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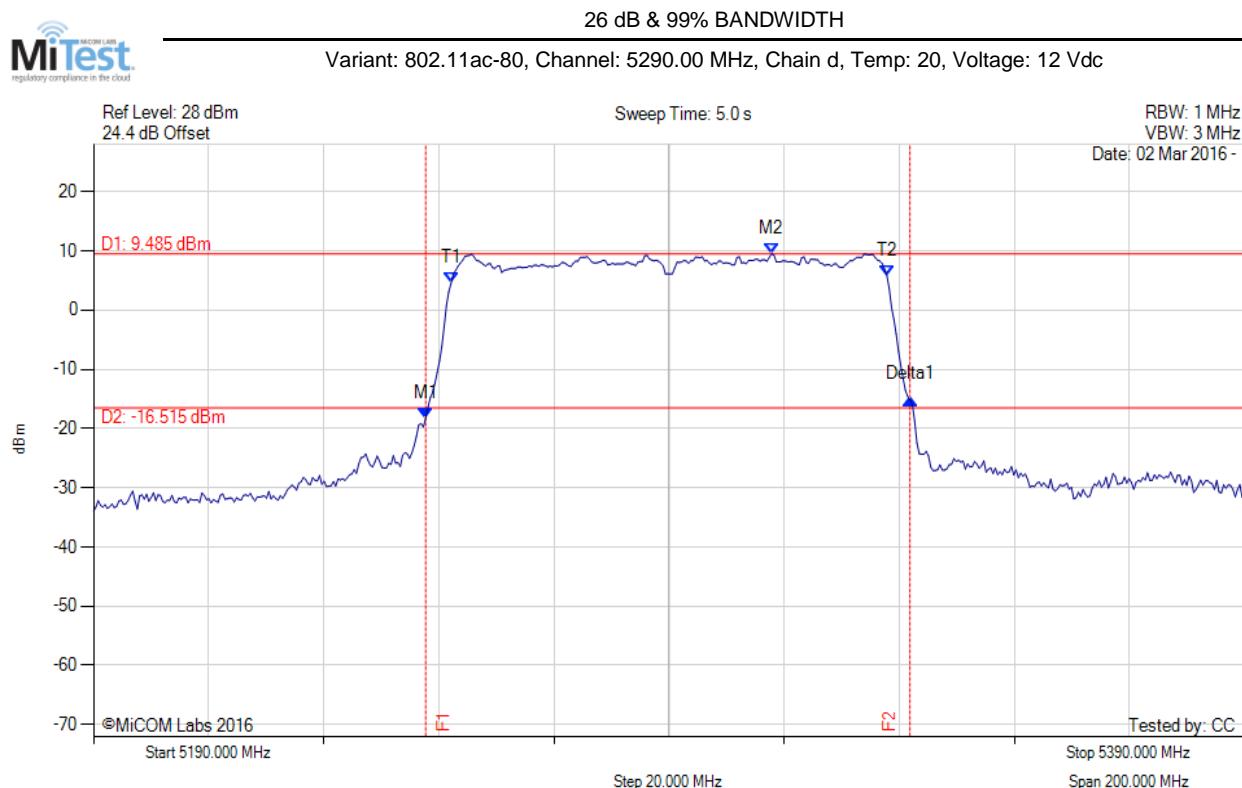
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5247.715 MHz : -17.460 dBm M2 : 5255.731 MHz : 9.713 dBm Delta1 : 83.768 MHz : 3.470 dB T1 : 5252.124 MHz : 4.516 dBm T2 : 5327.876 MHz : 5.529 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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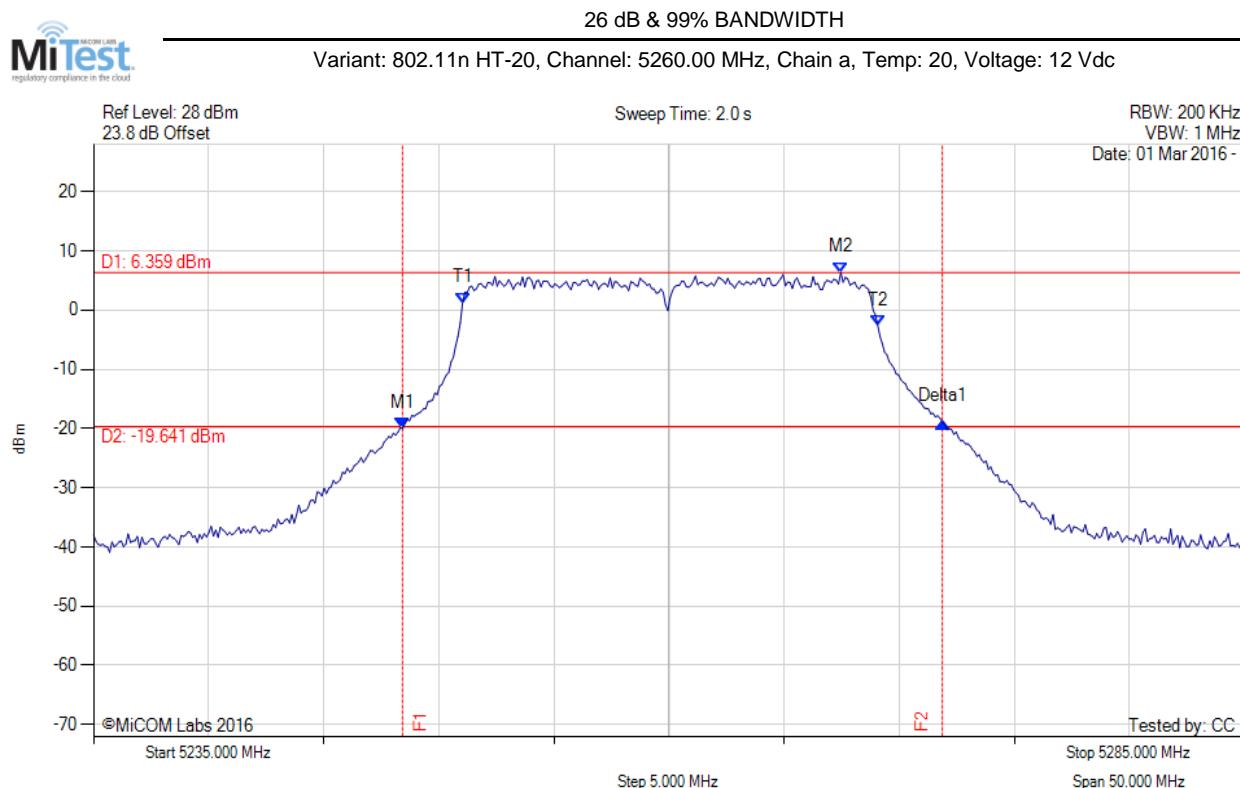
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5247.715 MHz : -18.268 dBm M2 : 5307.836 MHz : 9.485 dBm Delta1 : 84.168 MHz : 3.156 dB T1 : 5252.124 MHz : 4.524 dBm T2 : 5327.876 MHz : 5.779 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 84.168 MHz Measured 99% Bandwidth: 75.752 MHz

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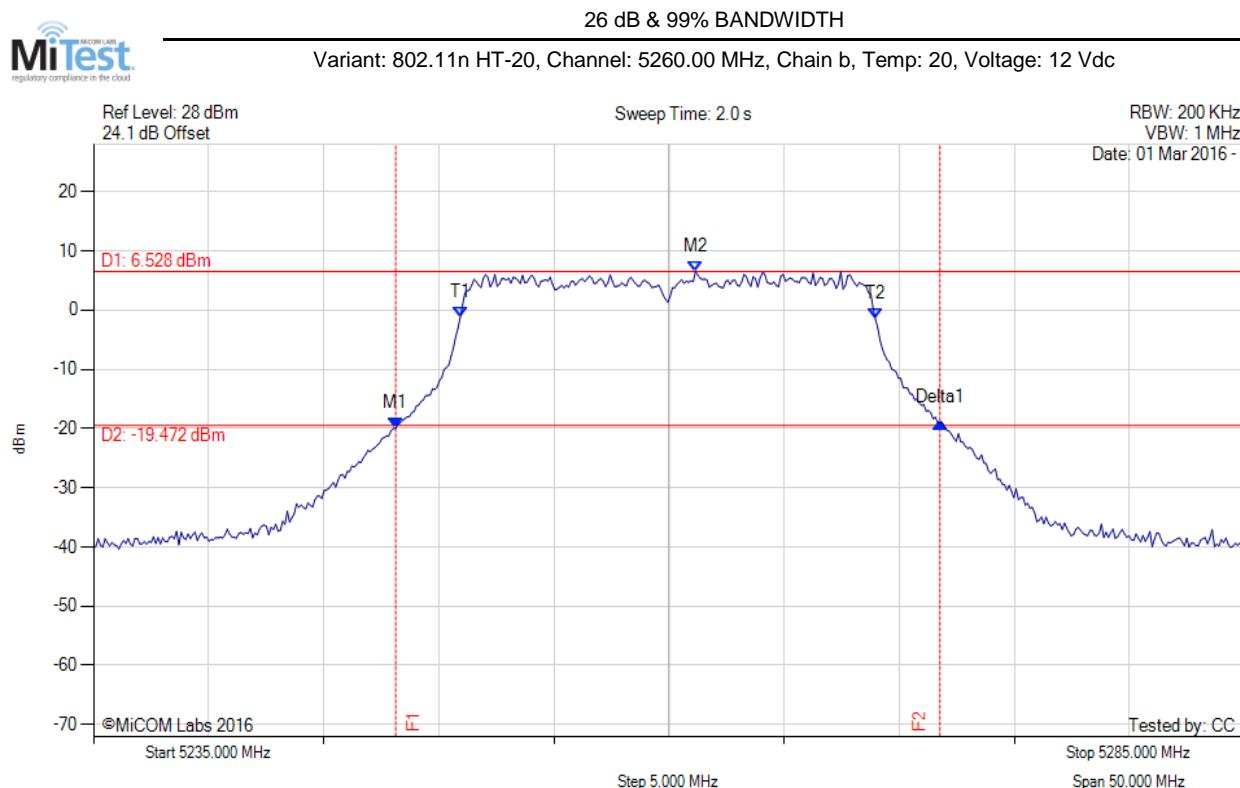
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.427 MHz : -19.984 dBm M2 : 5267.465 MHz : 6.359 dBm Delta1 : 23.447 MHz : 1.106 dB T1 : 5251.032 MHz : 1.211 dBm T2 : 5269.068 MHz : -2.547 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.447 MHz Measured 99% Bandwidth: 18.036 MHz

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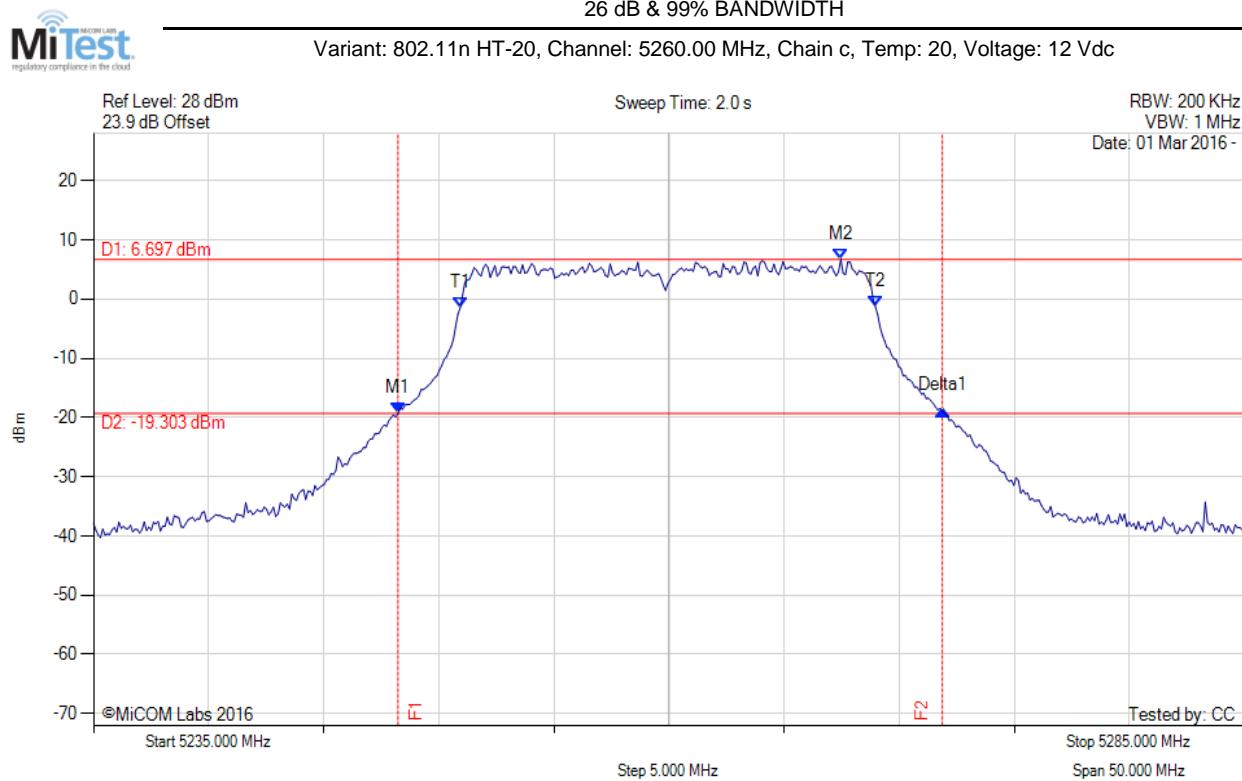
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.126 MHz : -19.931 dBm M2 : 5261.152 MHz : 6.528 dBm Delta1 : 23.647 MHz : 1.023 dB T1 : 5250.932 MHz : -1.152 dBm T2 : 5268.968 MHz : -1.558 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz

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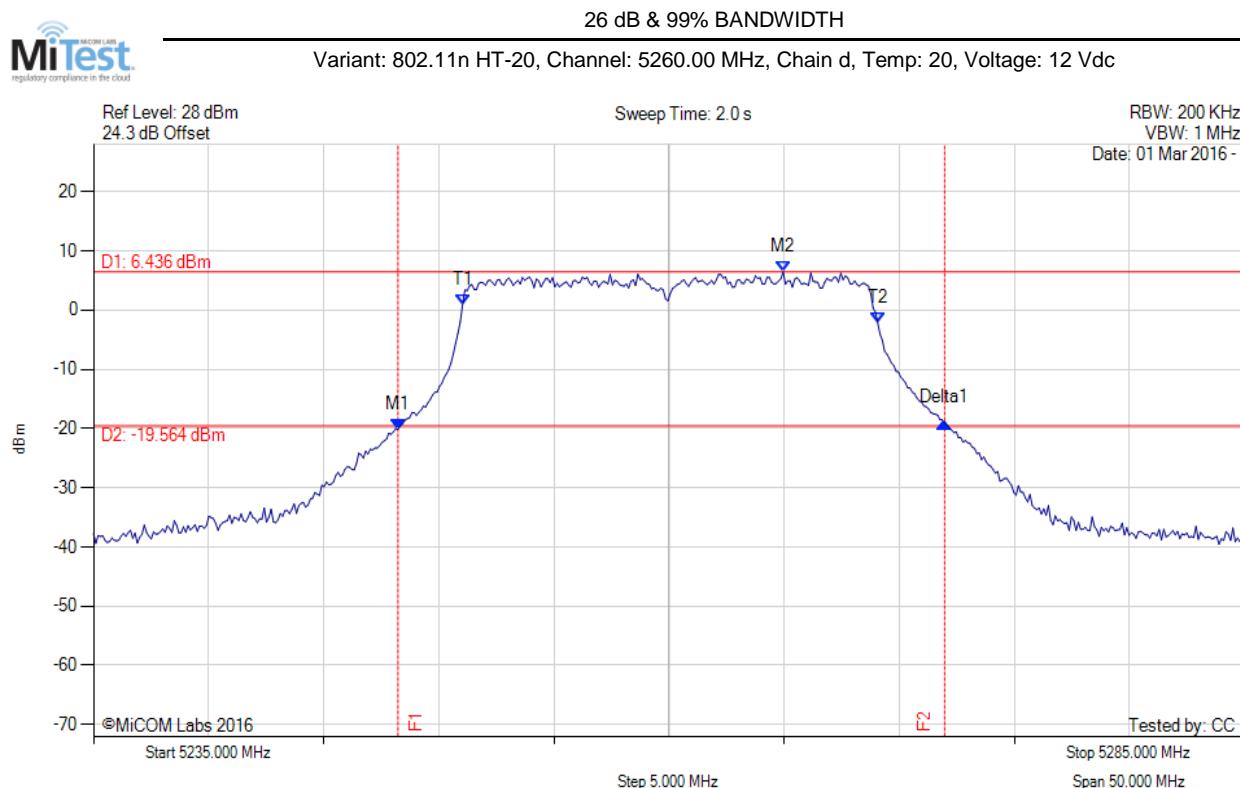
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.226 MHz : -19.313 dBm M2 : 5267.465 MHz : 6.697 dBm Delta1 : 23.647 MHz : 0.470 dB T1 : 5250.932 MHz : -1.404 dBm T2 : 5268.968 MHz : -1.312 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz

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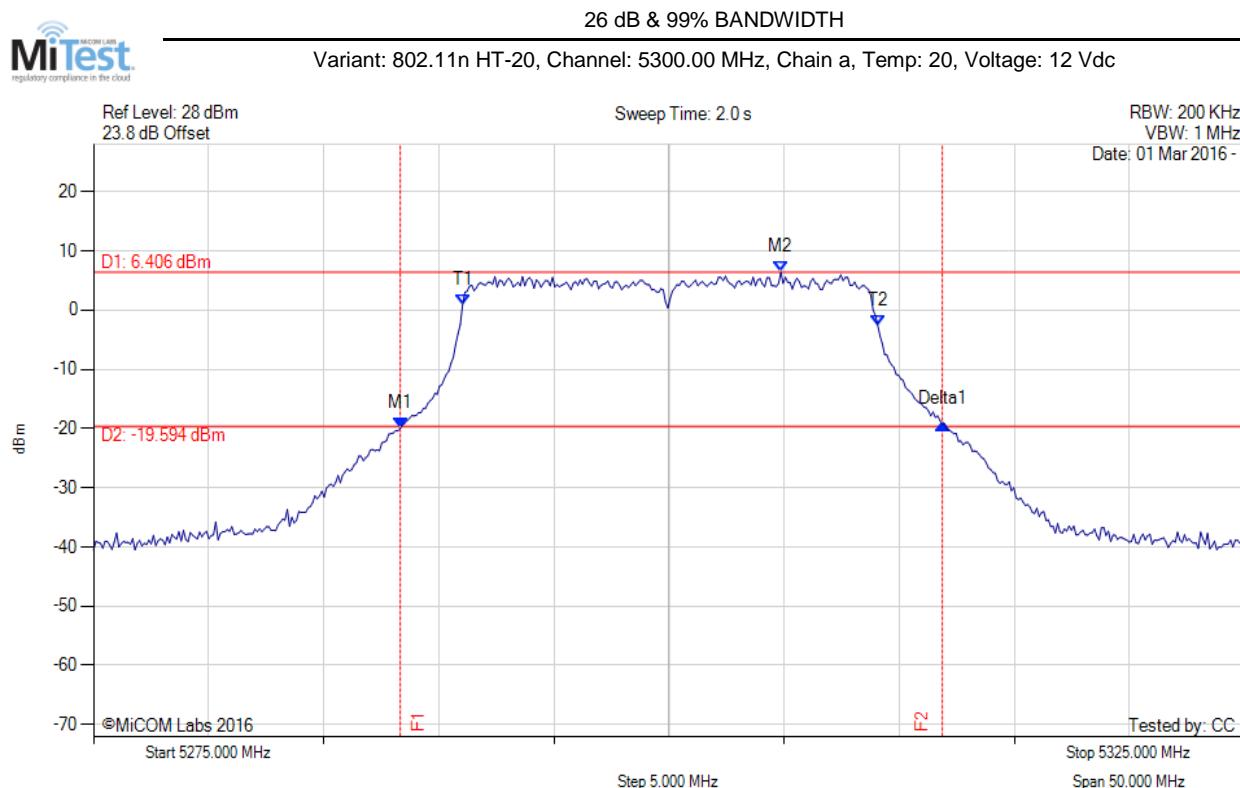
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.226 MHz : -20.143 dBm M2 : 5264.960 MHz : 6.436 dBm Delta1 : 23.747 MHz : 1.096 dB T1 : 5251.032 MHz : 0.933 dBm T2 : 5269.068 MHz : -2.171 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.747 MHz Measured 99% Bandwidth: 18.036 MHz

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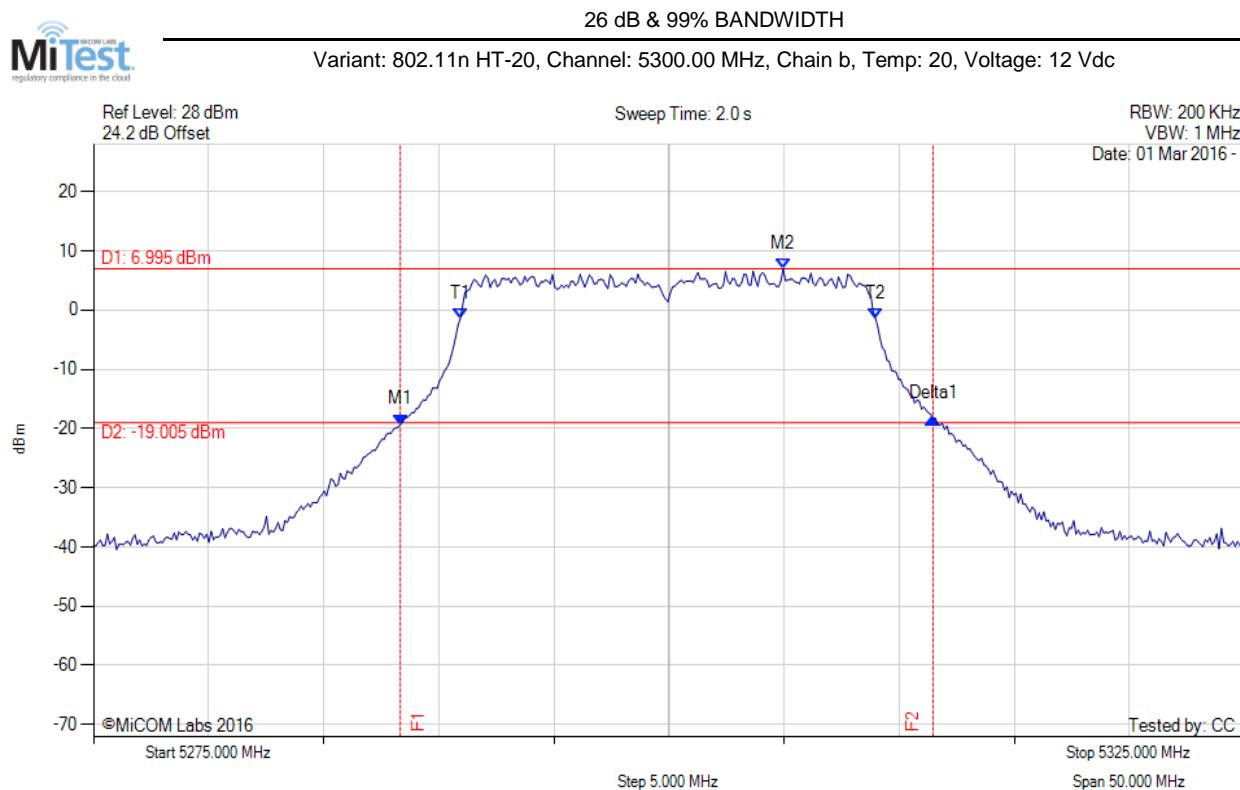
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.327 MHz : -19.931 dBm M2 : 5304.860 MHz : 6.406 dBm Delta1 : 23.547 MHz : 0.657 dB T1 : 5291.032 MHz : 0.868 dBm T2 : 5309.068 MHz : -2.561 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 18.036 MHz

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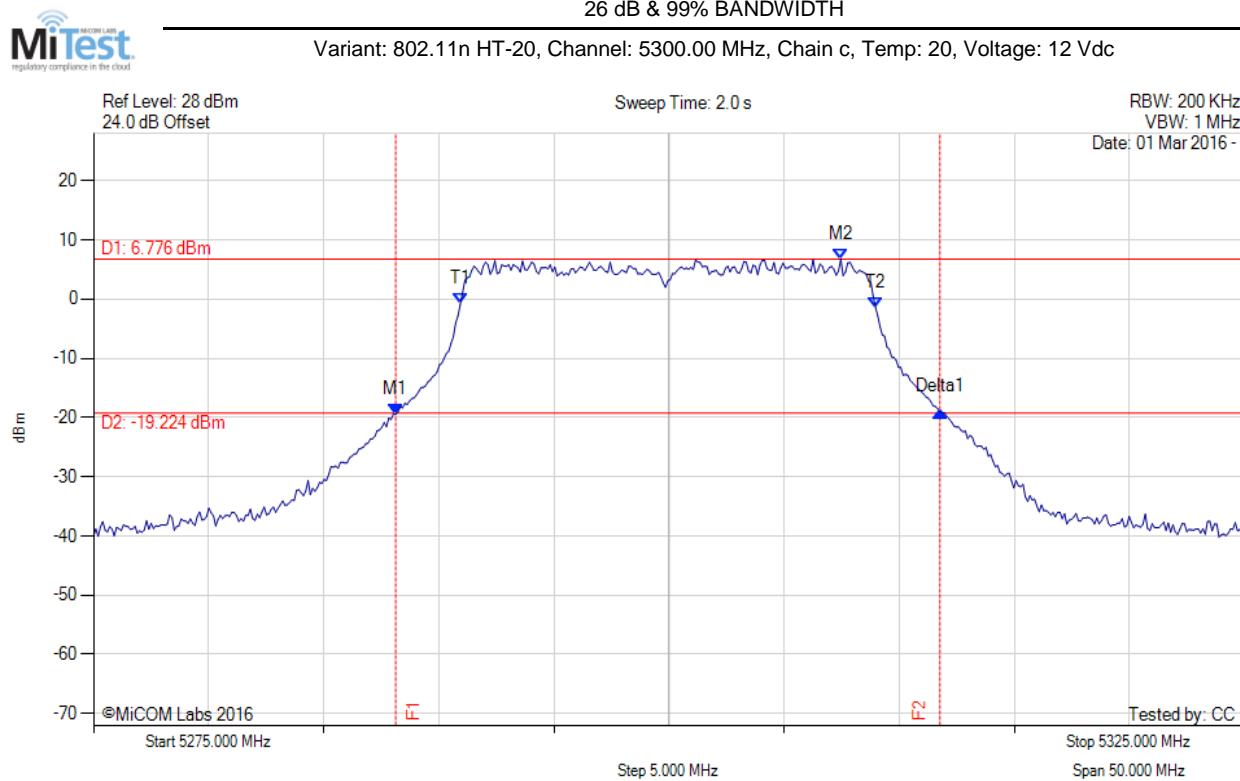
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.327 MHz : -19.360 dBm M2 : 5304.960 MHz : 6.995 dBm Delta1 : 23.146 MHz : 1.029 dB T1 : 5290.932 MHz : -1.420 dBm T2 : 5308.968 MHz : -1.420 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.146 MHz Measured 99% Bandwidth: 18.036 MHz

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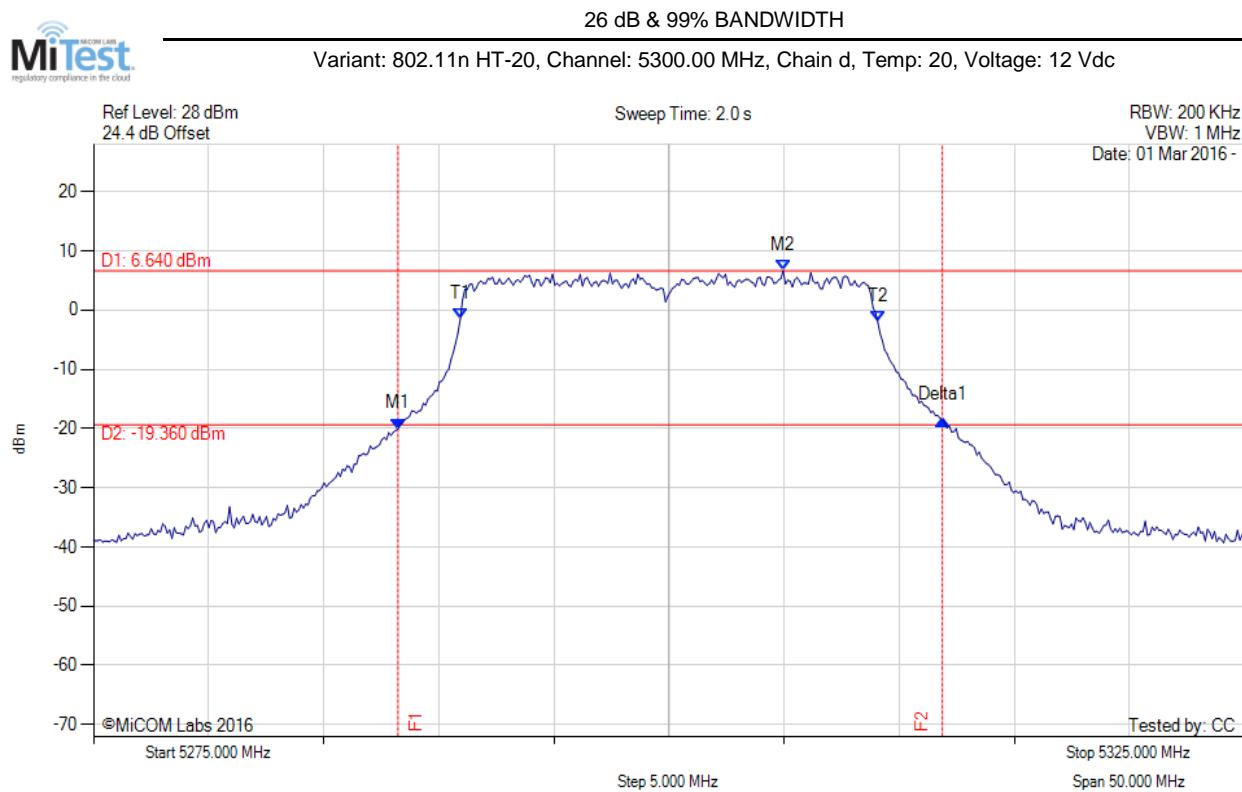
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.126 MHz : -19.370 dBm M2 : 5307.465 MHz : 6.776 dBm Delta1 : 23.647 MHz : 0.423 dB T1 : 5290.932 MHz : -0.875 dBm T2 : 5308.968 MHz : -1.375 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz

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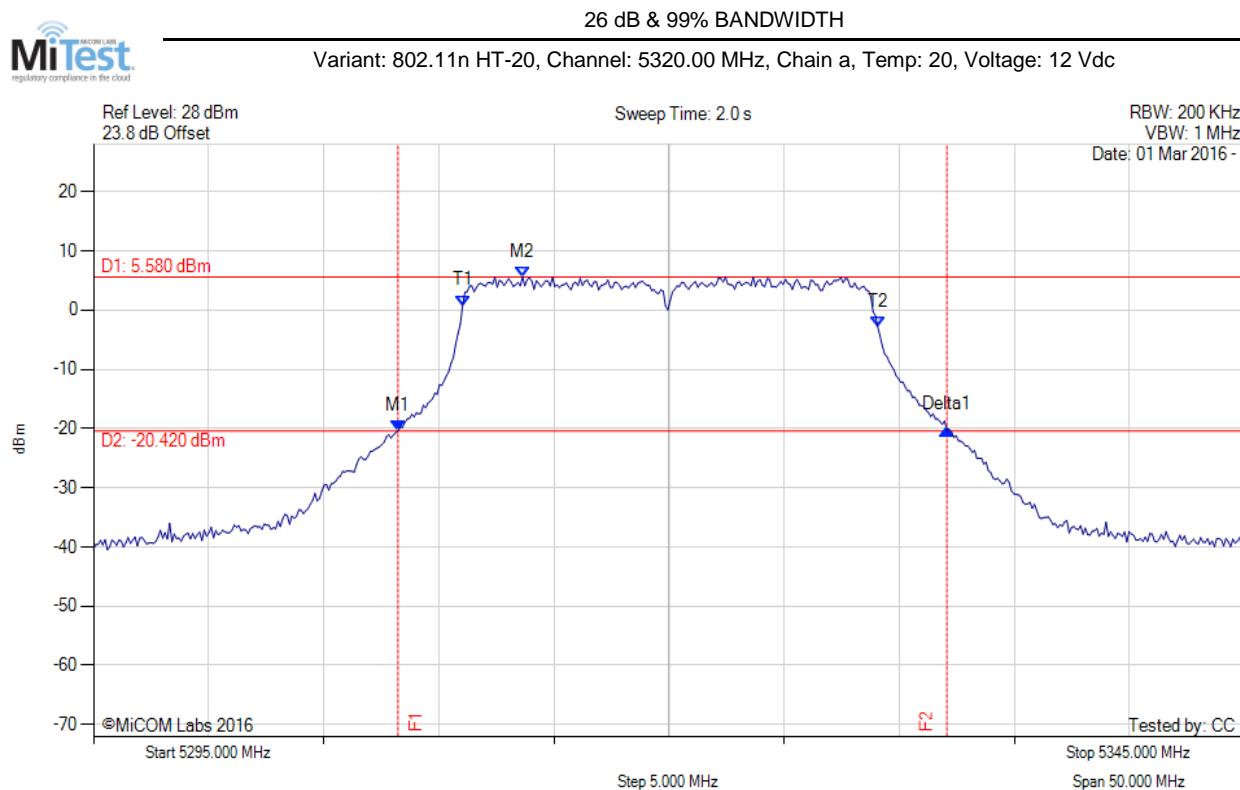
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.226 MHz : -20.064 dBm M2 : 5304.960 MHz : 6.640 dBm Delta1 : 23.647 MHz : 1.596 dB T1 : 5290.932 MHz : -1.479 dBm T2 : 5309.068 MHz : -1.963 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.136 MHz

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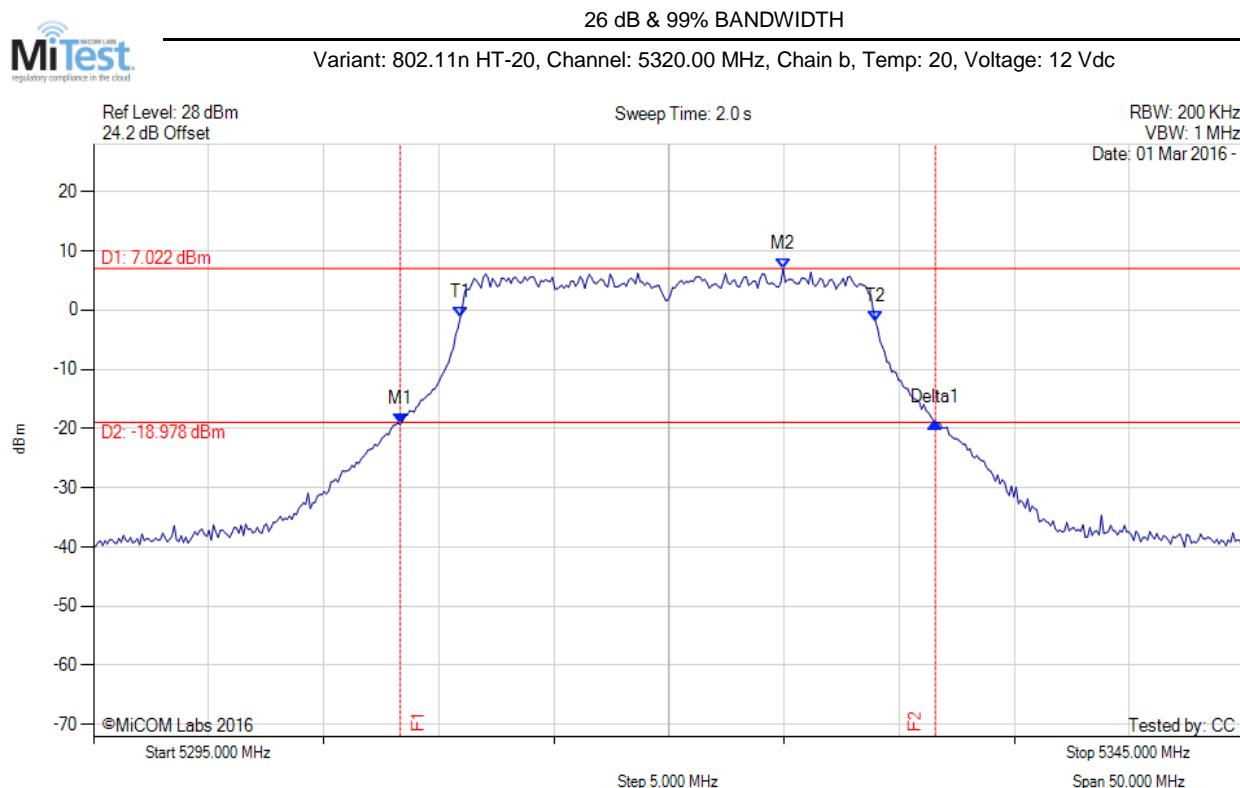
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.226 MHz : -20.426 dBm M2 : 5313.637 MHz : 5.580 dBm Delta1 : 23.848 MHz : 0.199 dB T1 : 5311.032 MHz : 0.734 dBm T2 : 5329.068 MHz : -2.830 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.848 MHz Measured 99% Bandwidth: 18.036 MHz

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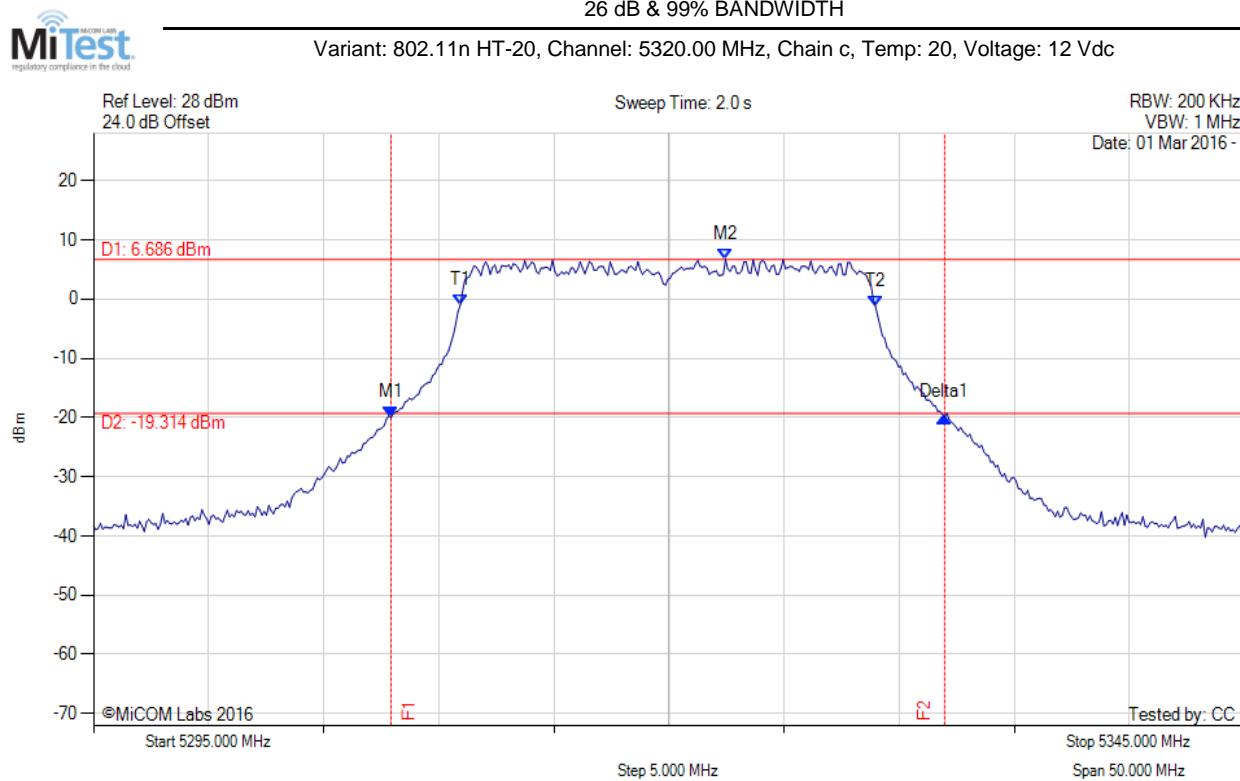
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.327 MHz : -19.254 dBm M2 : 5324.960 MHz : 7.022 dBm Delta1 : 23.246 MHz : 0.344 dB T1 : 5310.932 MHz : -1.172 dBm T2 : 5328.968 MHz : -1.906 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.246 MHz Measured 99% Bandwidth: 18.036 MHz

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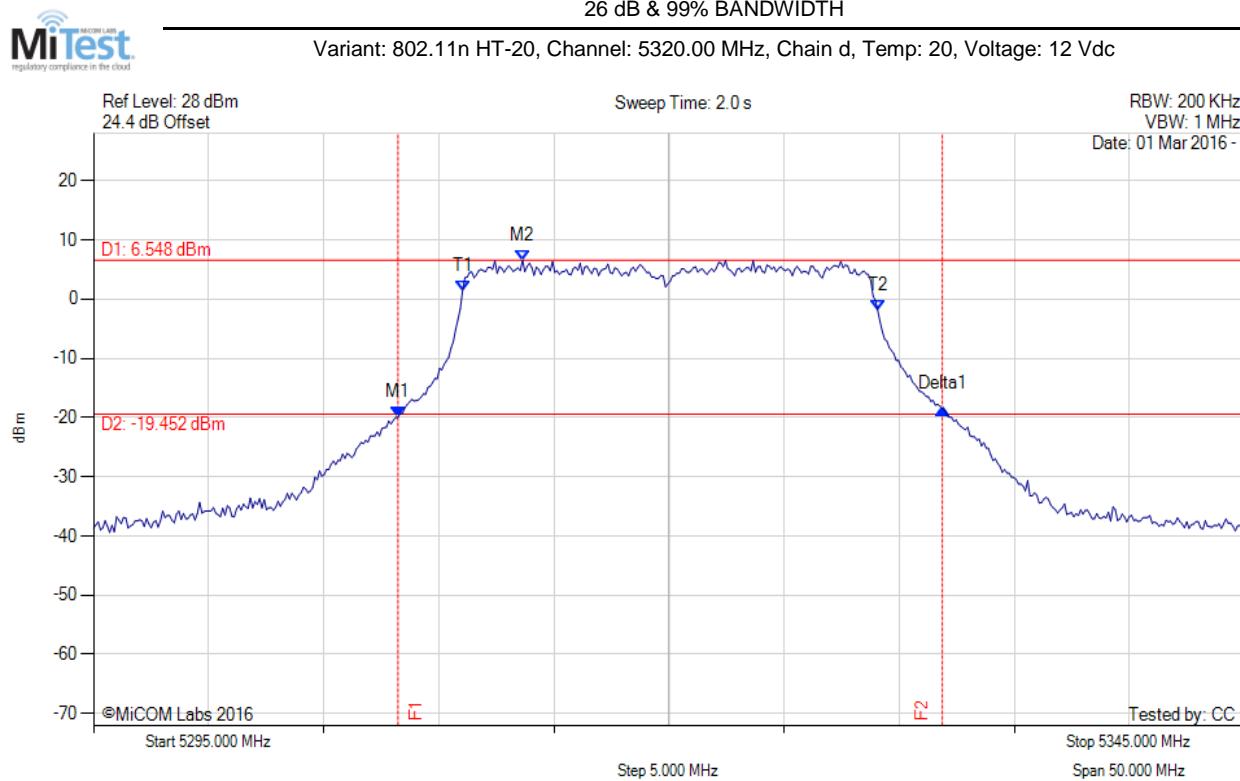
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5307.926 MHz : -20.009 dBm M2 : 5322.455 MHz : 6.686 dBm Delta1 : 24.048 MHz : 0.033 dB T1 : 5310.932 MHz : -1.032 dBm T2 : 5328.968 MHz : -1.231 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 24.048 MHz Measured 99% Bandwidth: 18.036 MHz

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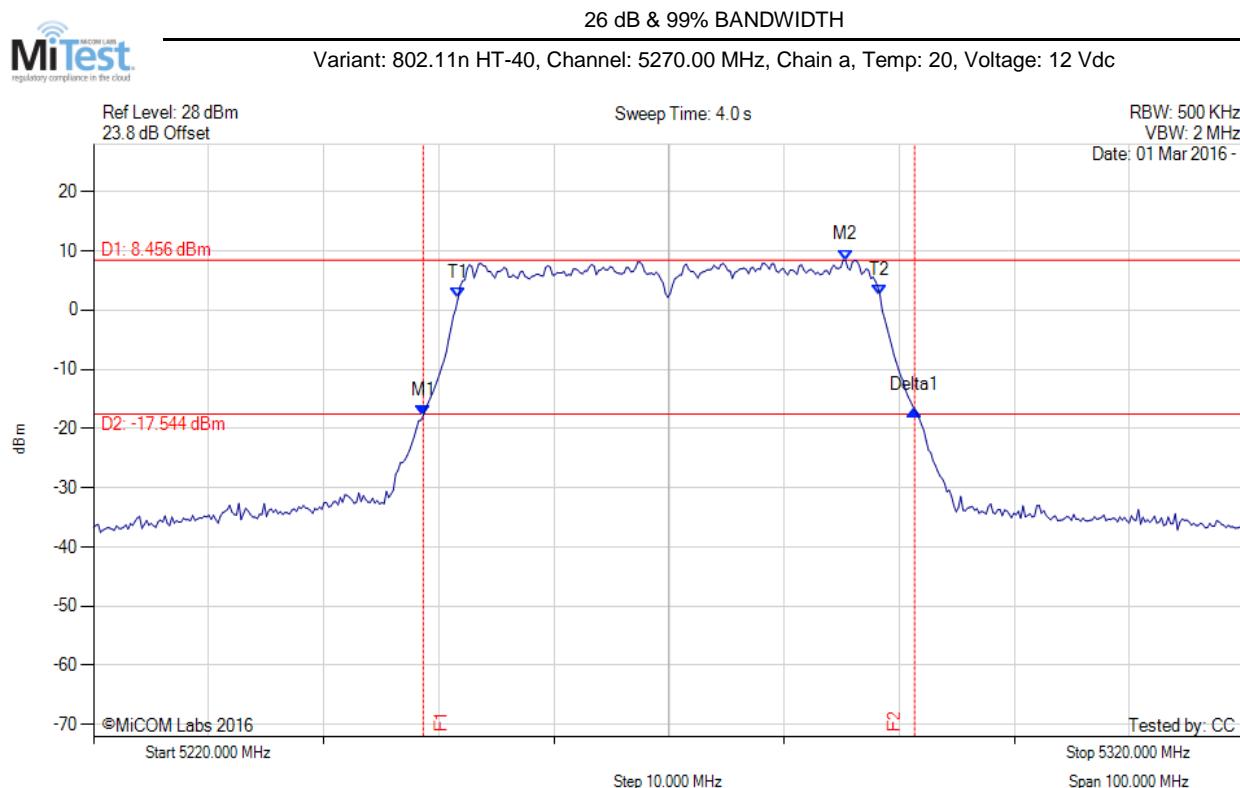
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5308.226 MHz : -19.956 dBm M2 : 5313.637 MHz : 6.548 dBm Delta1 : 23.647 MHz : 1.495 dB T1 : 5311.032 MHz : 1.431 dBm T2 : 5329.068 MHz : -1.918 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz

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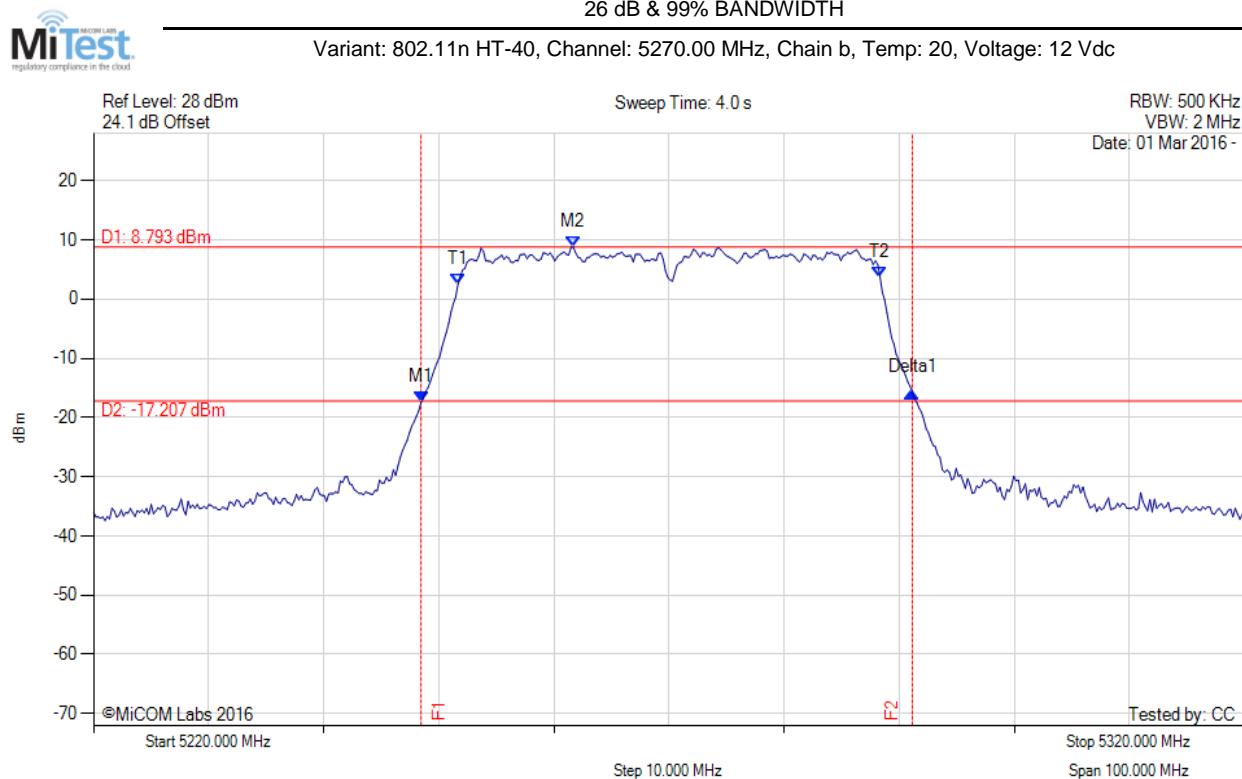
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.657 MHz : -17.786 dBm M2 : 5285.331 MHz : 8.456 dBm Delta1 : 42.685 MHz : 0.970 dB T1 : 5251.663 MHz : 1.940 dBm T2 : 5288.337 MHz : 2.466 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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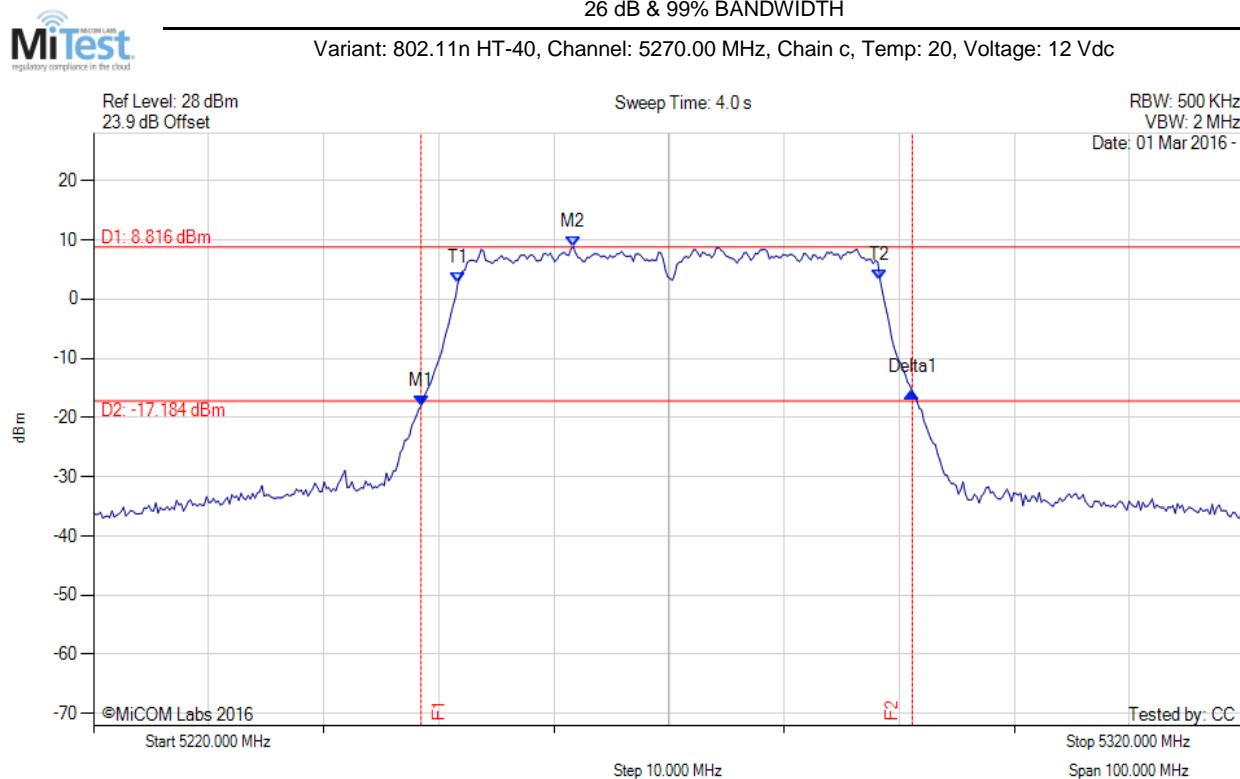
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.457 MHz : -17.401 dBm M2 : 5261.683 MHz : 8.793 dBm Delta1 : 42.685 MHz : 1.688 dB T1 : 5251.663 MHz : 2.474 dBm T2 : 5288.337 MHz : 3.707 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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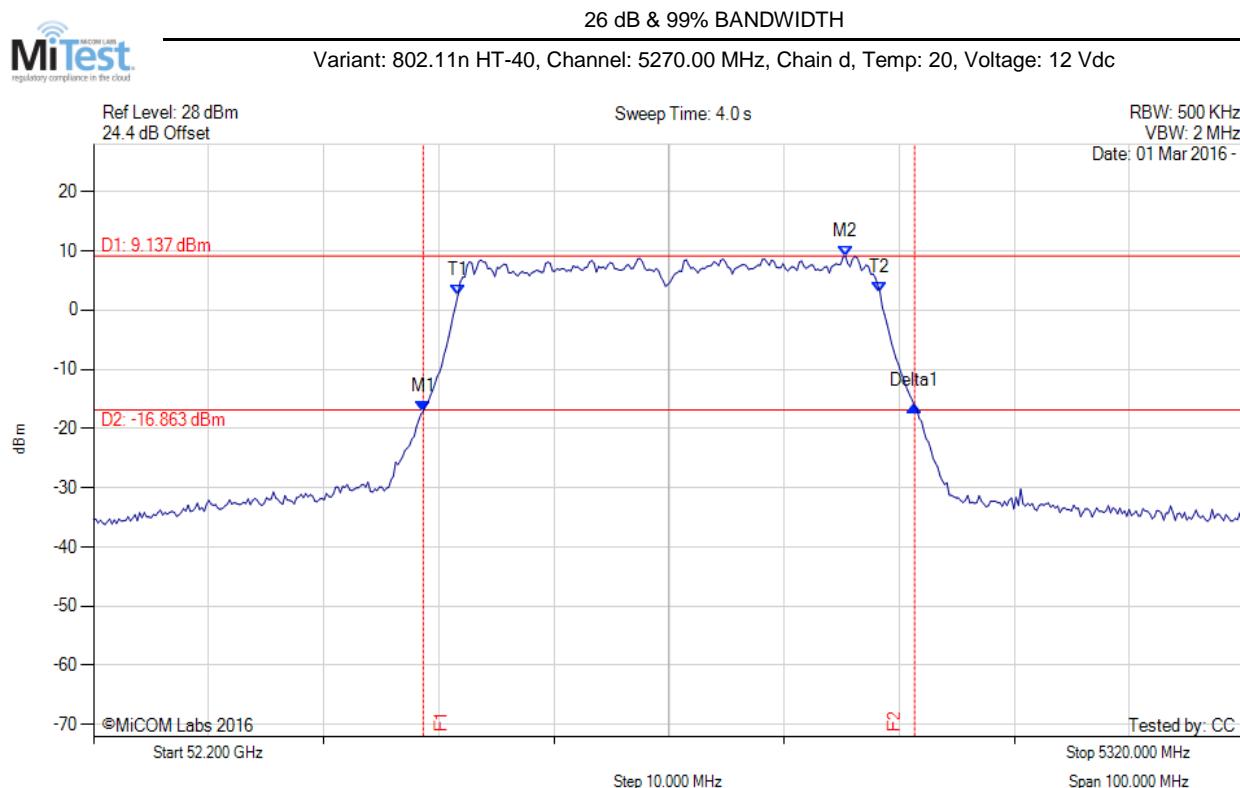
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.457 MHz : -18.052 dBm M2 : 5261.683 MHz : 8.816 dBm Delta1 : 42.685 MHz : 2.268 dB T1 : 5251.663 MHz : 2.286 dBm T2 : 5288.337 MHz : 3.296 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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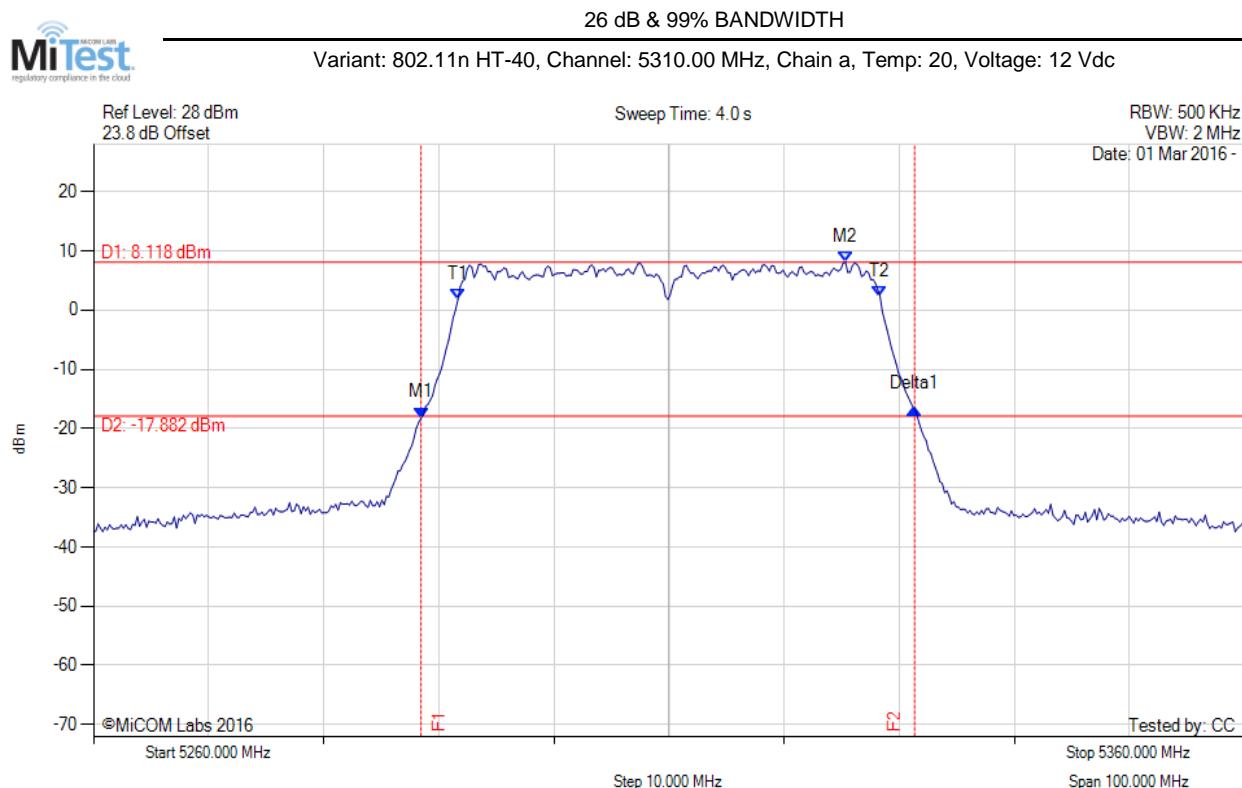
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5248.657 MHz : -17.047 dBm M2 : 5285.331 MHz : 9.137 dBm Delta1 : 42.685 MHz : 0.830 dB T1 : 5251.663 MHz : 2.542 dBm T2 : 5288.337 MHz : 3.009 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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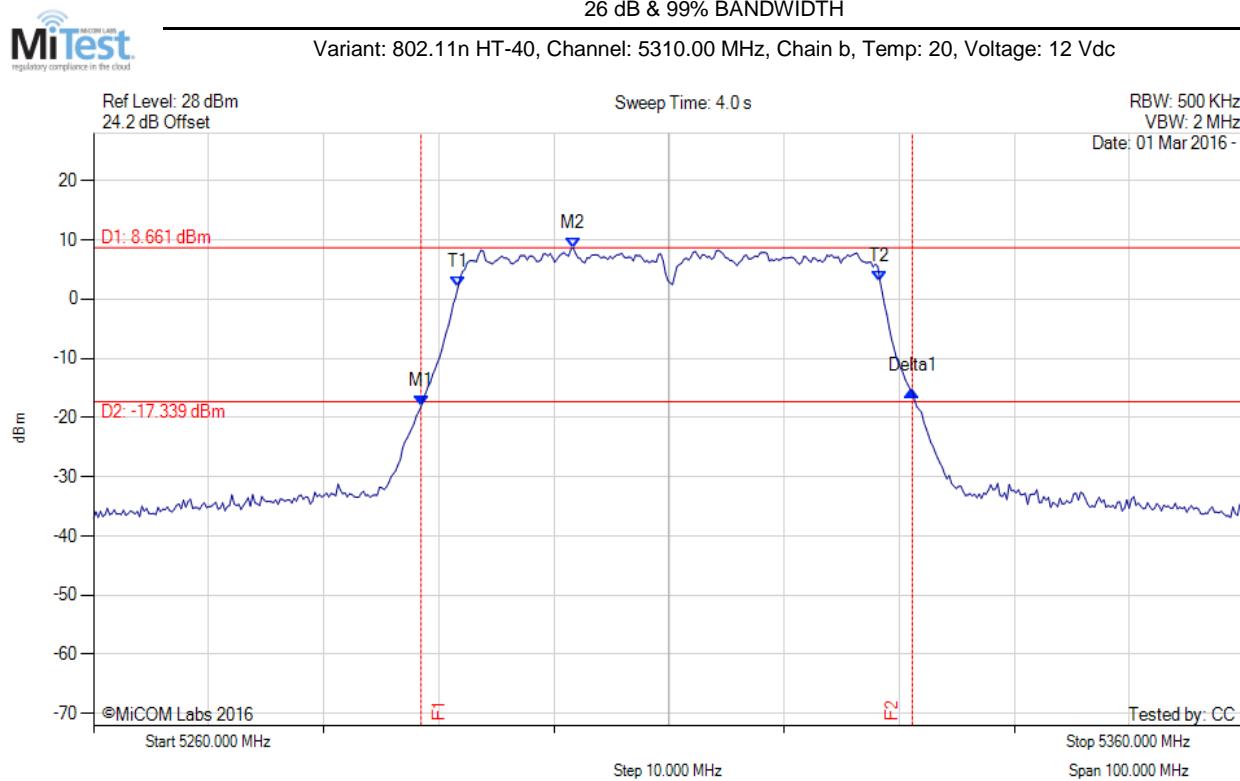
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.457 MHz : -18.188 dBm M2 : 5325.331 MHz : 8.118 dBm Delta1 : 42.886 MHz : 1.550 dB T1 : 5291.663 MHz : 1.799 dBm T2 : 5328.337 MHz : 2.310 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz

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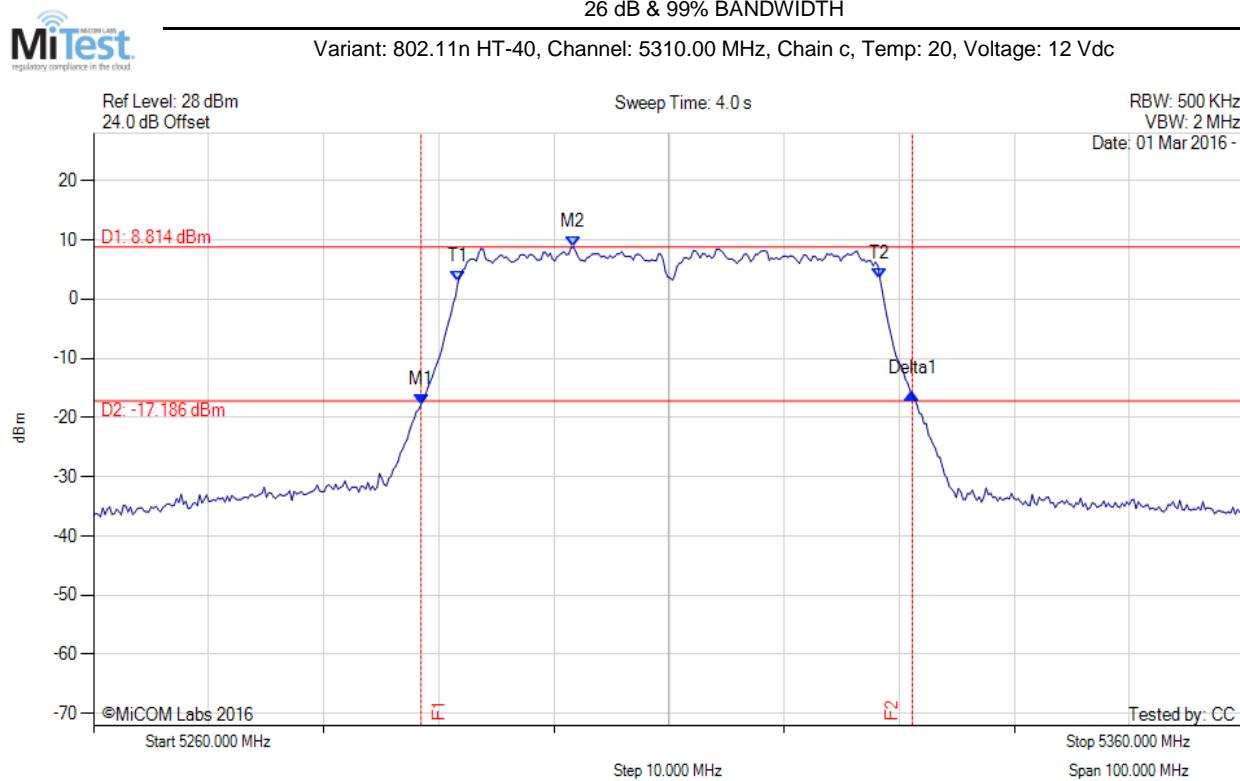
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.457 MHz : -18.127 dBm M2 : 5301.683 MHz : 8.661 dBm Delta1 : 42.685 MHz : 2.597 dB T1 : 5291.663 MHz : 1.944 dBm T2 : 5328.337 MHz : 2.999 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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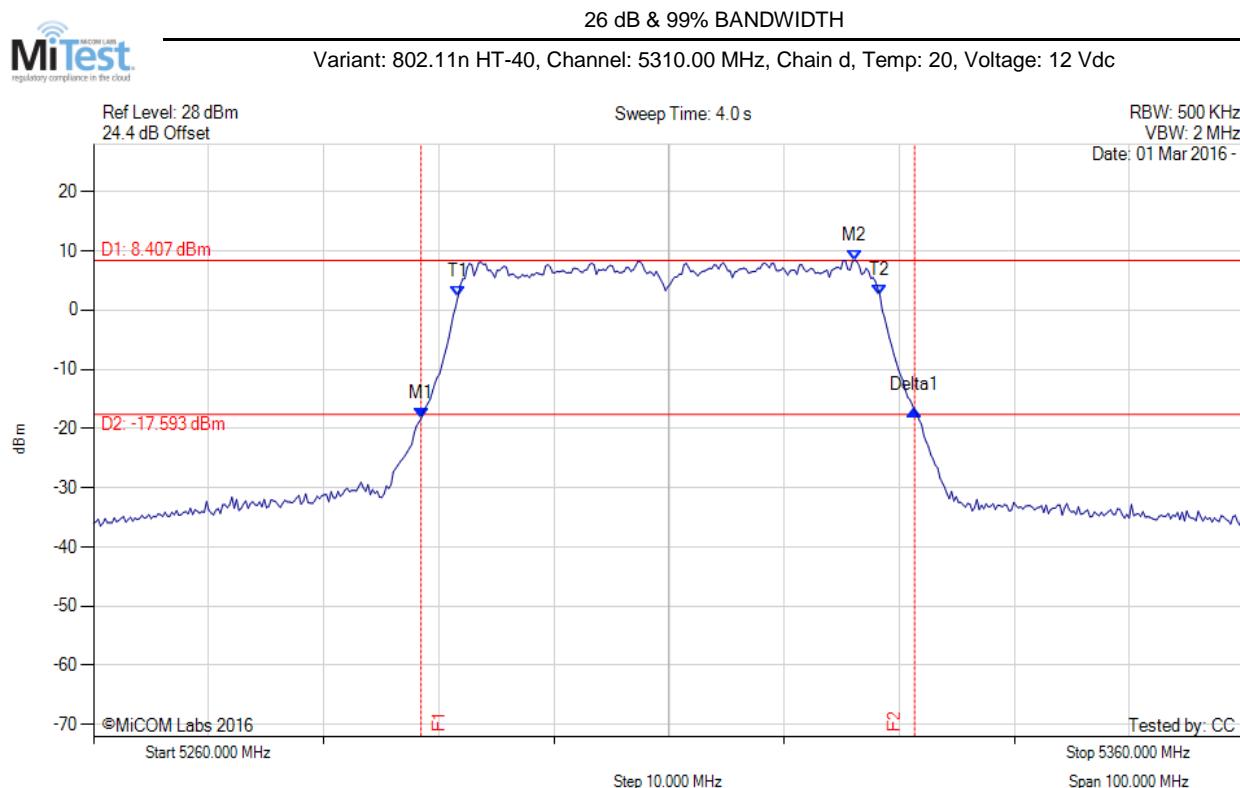
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.457 MHz : -17.816 dBm M2 : 5301.683 MHz : 8.814 dBm Delta1 : 42.685 MHz : 1.790 dB T1 : 5291.663 MHz : 2.867 dBm T2 : 5328.337 MHz : 3.412 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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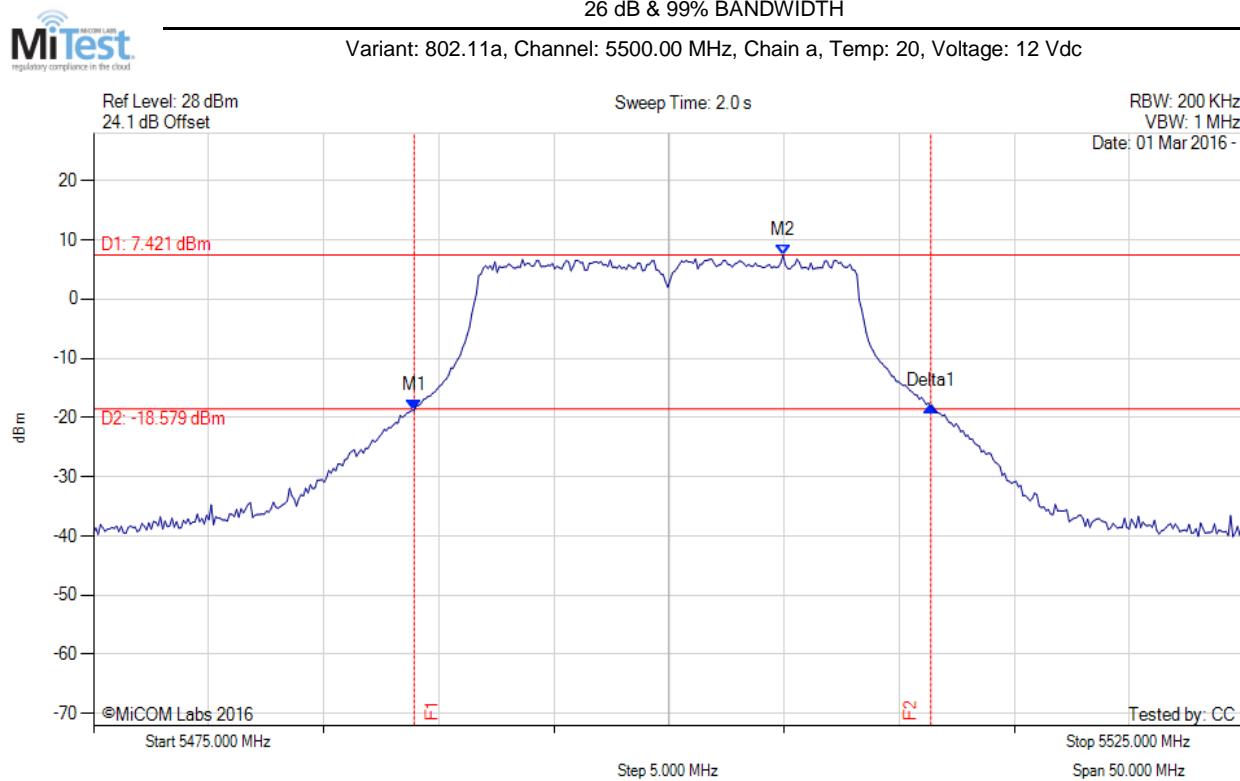
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5288.457 MHz : -18.319 dBm M2 : 5326.132 MHz : 8.407 dBm Delta1 : 42.886 MHz : 1.365 dB T1 : 5291.663 MHz : 2.259 dBm T2 : 5328.337 MHz : 2.409 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz

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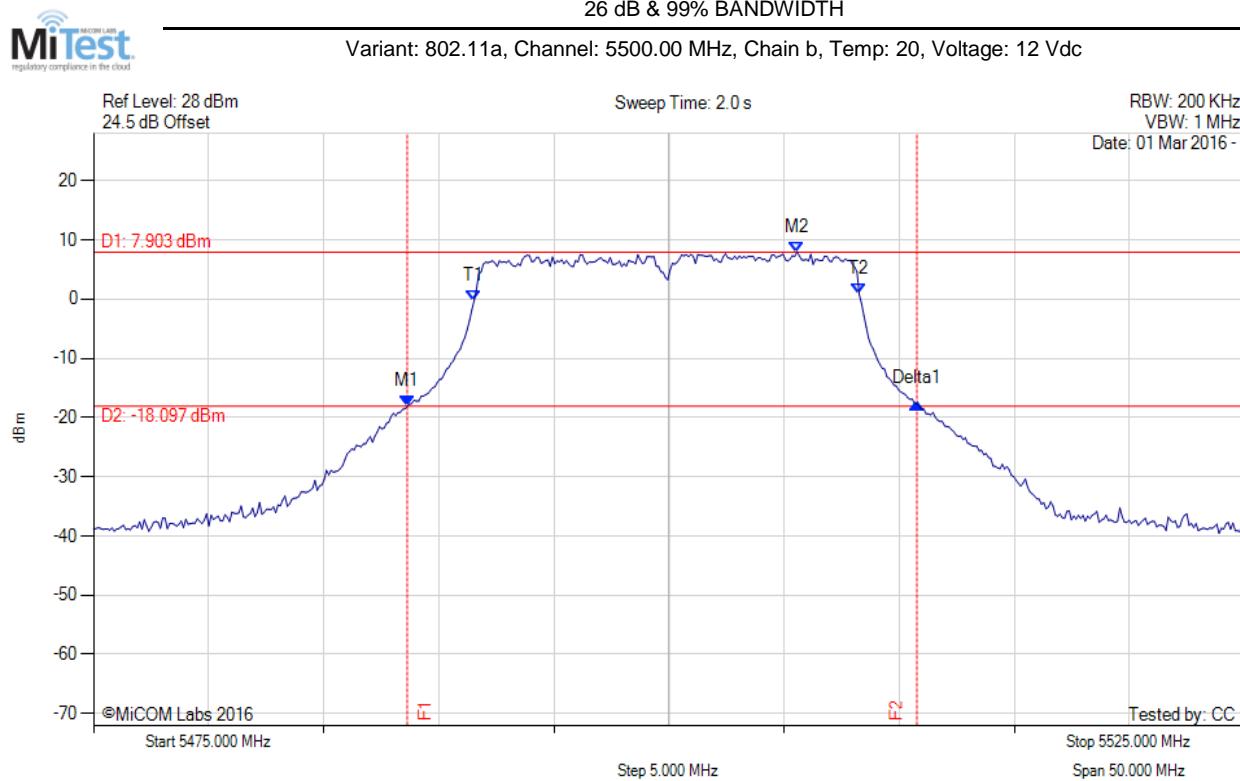
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.928 MHz : -18.839 dBm M2 : 5504.960 MHz : 7.421 dBm Delta1 : 22.445 MHz : 0.748 dB T1 : 0 Hz : 500.000 dBm T2 : 0 Hz : 500.000 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.445 MHz Measured 99% Bandwidth: 16.834 MHz

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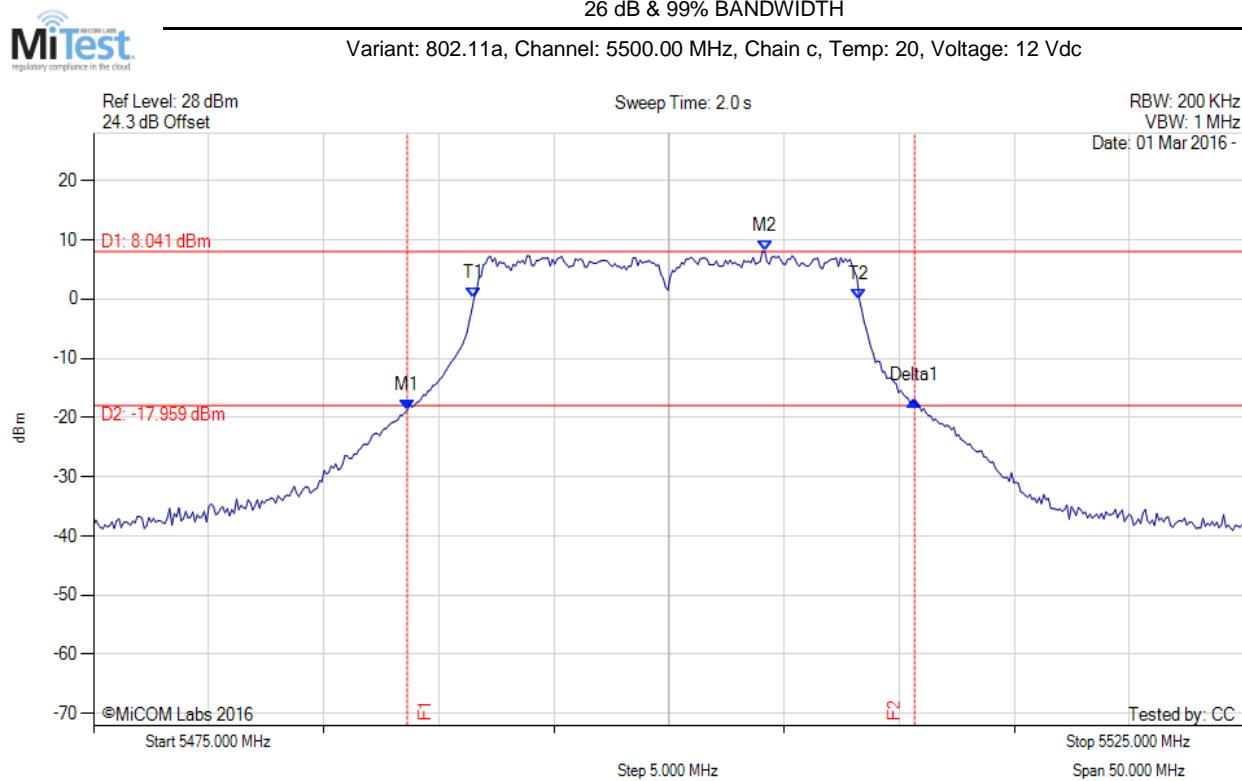
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.627 MHz : -18.123 dBm M2 : 5505.561 MHz : 7.903 dBm Delta1 : 22.144 MHz : 0.569 dB T1 : 5491.533 MHz : -0.293 dBm T2 : 5508.267 MHz : 0.766 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 22.144 MHz Measured 99% Bandwidth: 16.733 MHz

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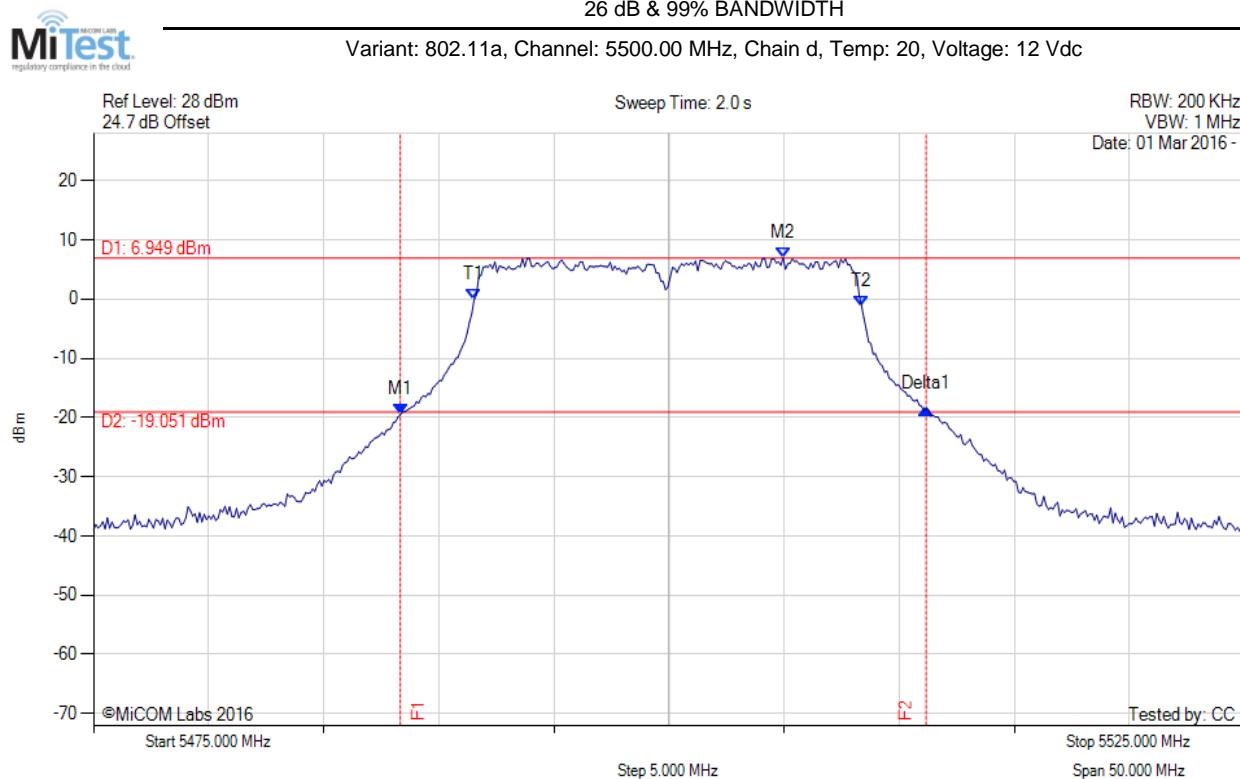
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.627 MHz : -18.772 dBm M2 : 5504.158 MHz : 8.041 dBm Delta1 : 22.044 MHz : 1.560 dB T1 : 5491.533 MHz : 0.211 dBm T2 : 5508.267 MHz : -0.025 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 22.044 MHz Measured 99% Bandwidth: 16.733 MHz

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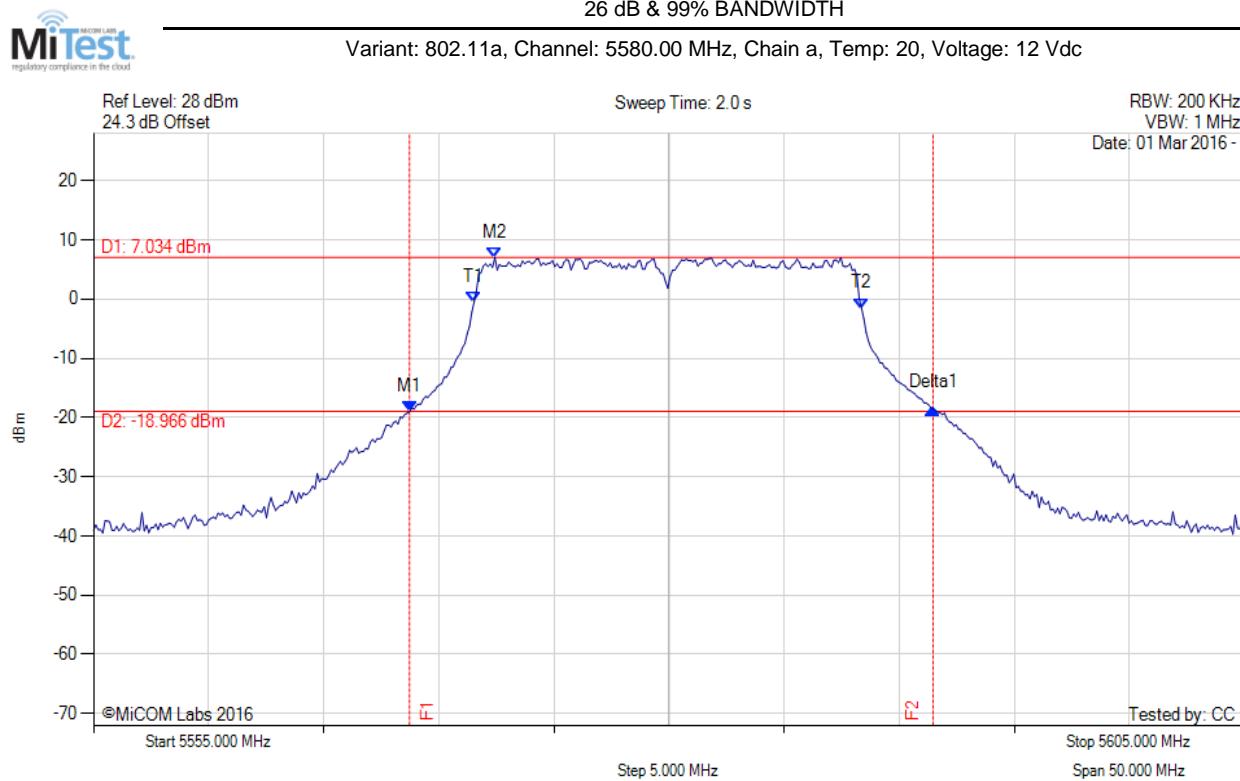
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.327 MHz : -19.557 dBm M2 : 5504.960 MHz : 6.949 dBm Delta1 : 22.846 MHz : 1.033 dB T1 : 5491.533 MHz : -0.129 dBm T2 : 5508.367 MHz : -1.174 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.846 MHz Measured 99% Bandwidth: 16.834 MHz

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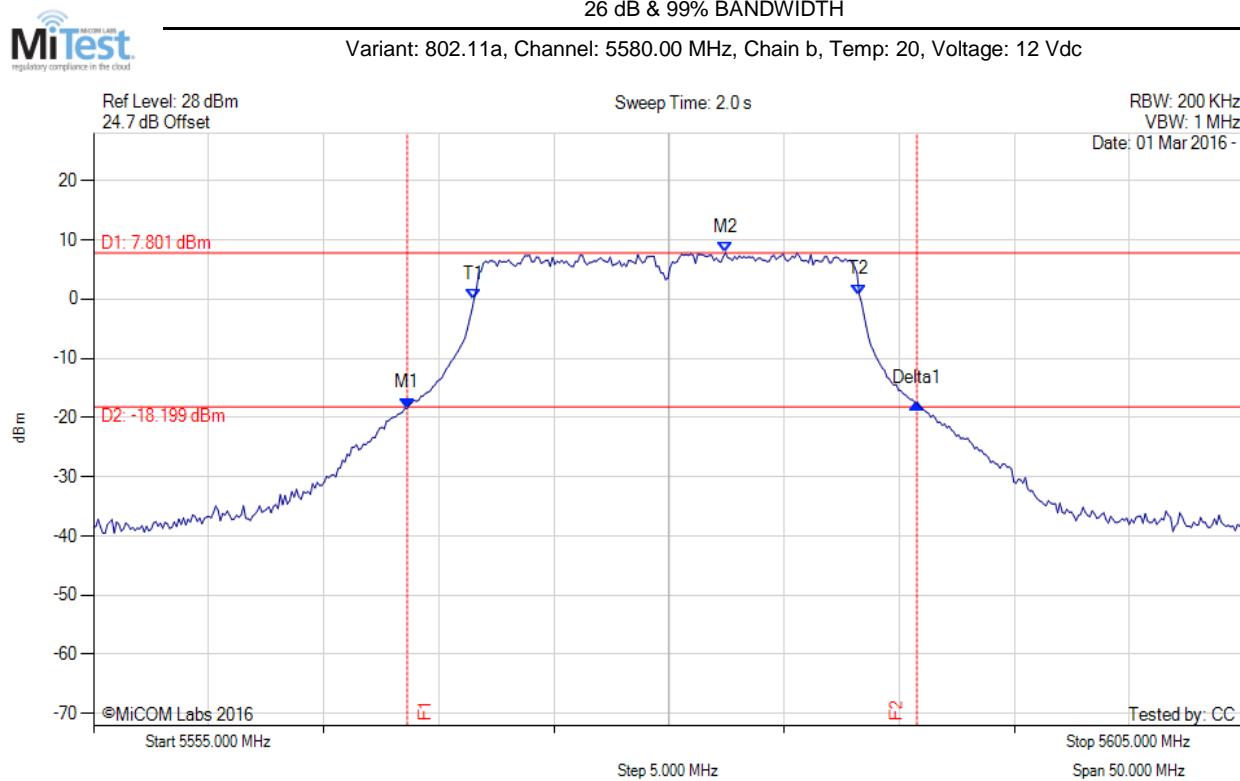
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.727 MHz : -19.010 dBm M2 : 5572.435 MHz : 7.034 dBm Delta1 : 22.745 MHz : 0.592 dB T1 : 5571.533 MHz : -0.552 dBm T2 : 5588.367 MHz : -1.583 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

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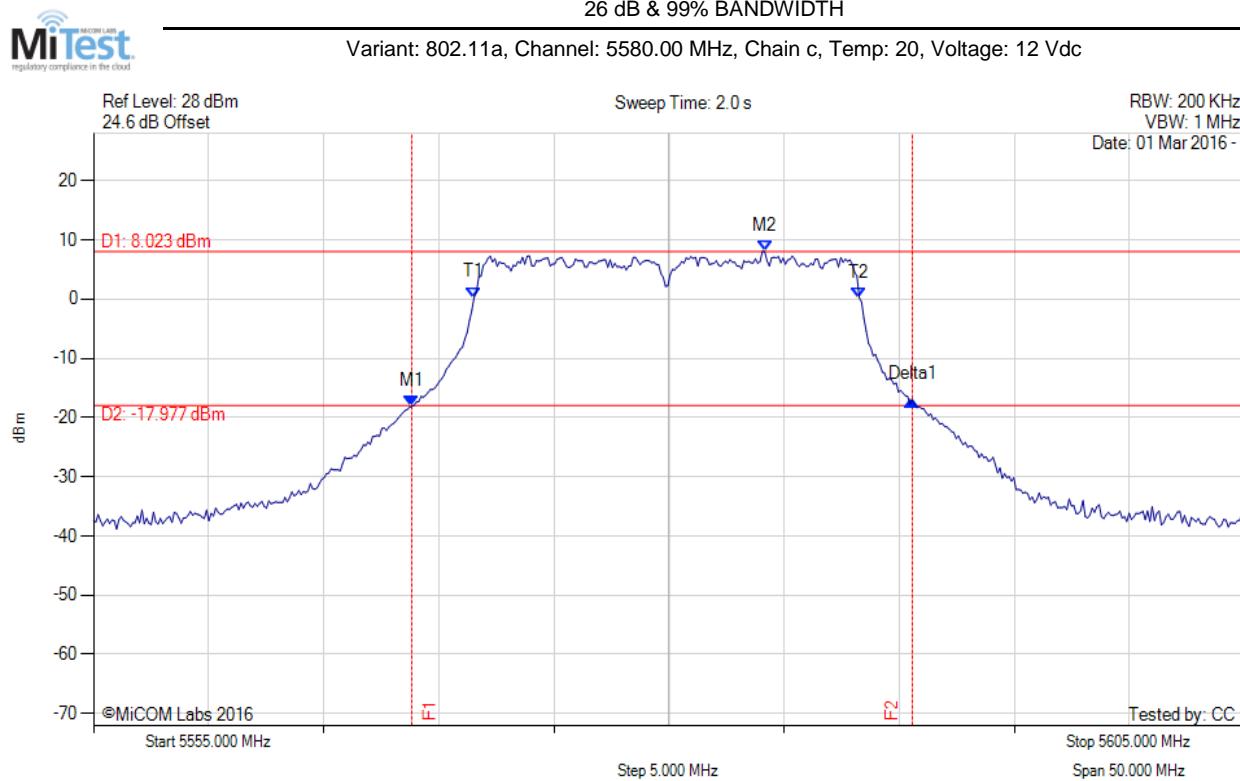
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.627 MHz : -18.414 dBm M2 : 5582.455 MHz : 7.801 dBm Delta1 : 22.144 MHz : 0.858 dB T1 : 5571.533 MHz : 0.022 dBm T2 : 5588.267 MHz : 0.756 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 22.144 MHz Measured 99% Bandwidth: 16.733 MHz

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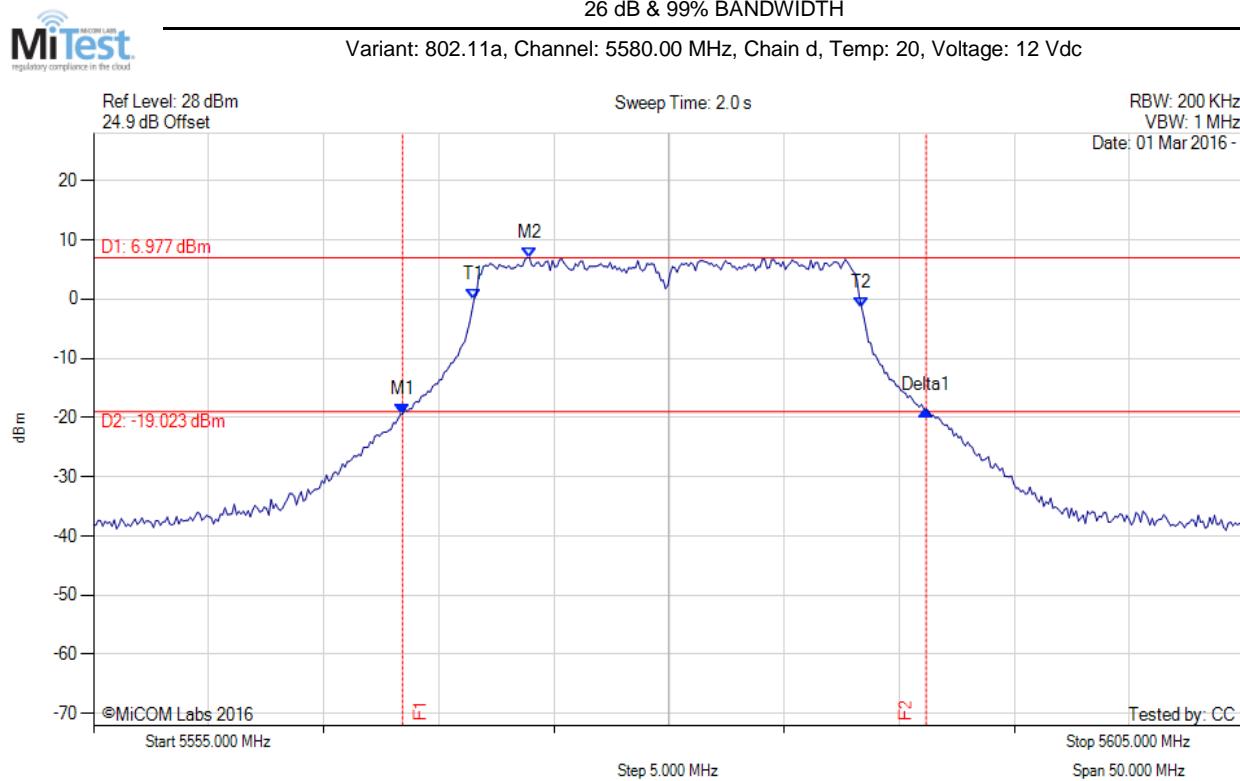
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.828 MHz : -18.091 dBm M2 : 5584.158 MHz : 8.023 dBm Delta1 : 21.743 MHz : 1.070 dB T1 : 5571.533 MHz : 0.274 dBm T2 : 5588.267 MHz : 0.245 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 21.743 MHz Measured 99% Bandwidth: 16.733 MHz

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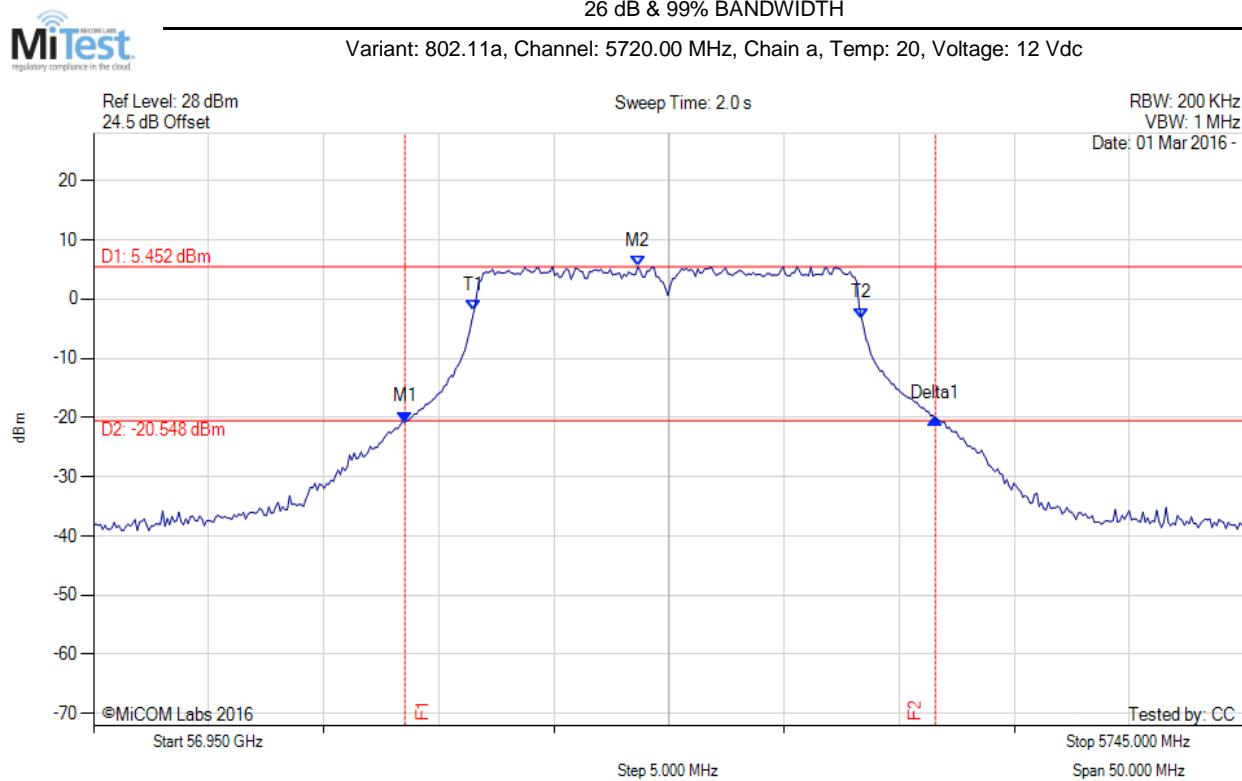
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.427 MHz : -19.443 dBm M2 : 5573.938 MHz : 6.977 dBm Delta1 : 22.745 MHz : 0.748 dB T1 : 5571.533 MHz : -0.056 dBm T2 : 5588.367 MHz : -1.392 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

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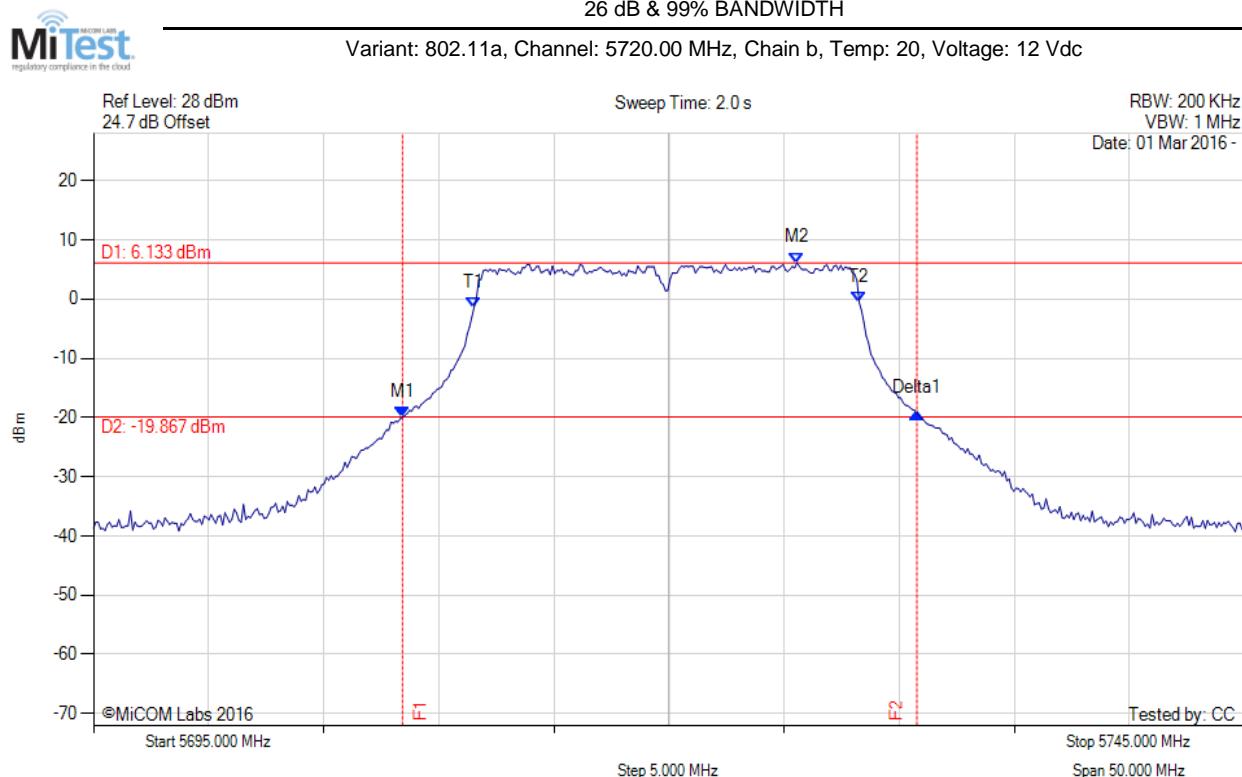
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5708.527 MHz : -20.757 dBm M2 : 5718.647 MHz : 5.452 dBm Delta1 : 23.046 MHz : 0.641 dB T1 : 5711.533 MHz : -1.920 dBm T2 : 5728.367 MHz : -3.226 dBm OBW : 16.834 MHz	Channel Frequency: 5720.00 MHz

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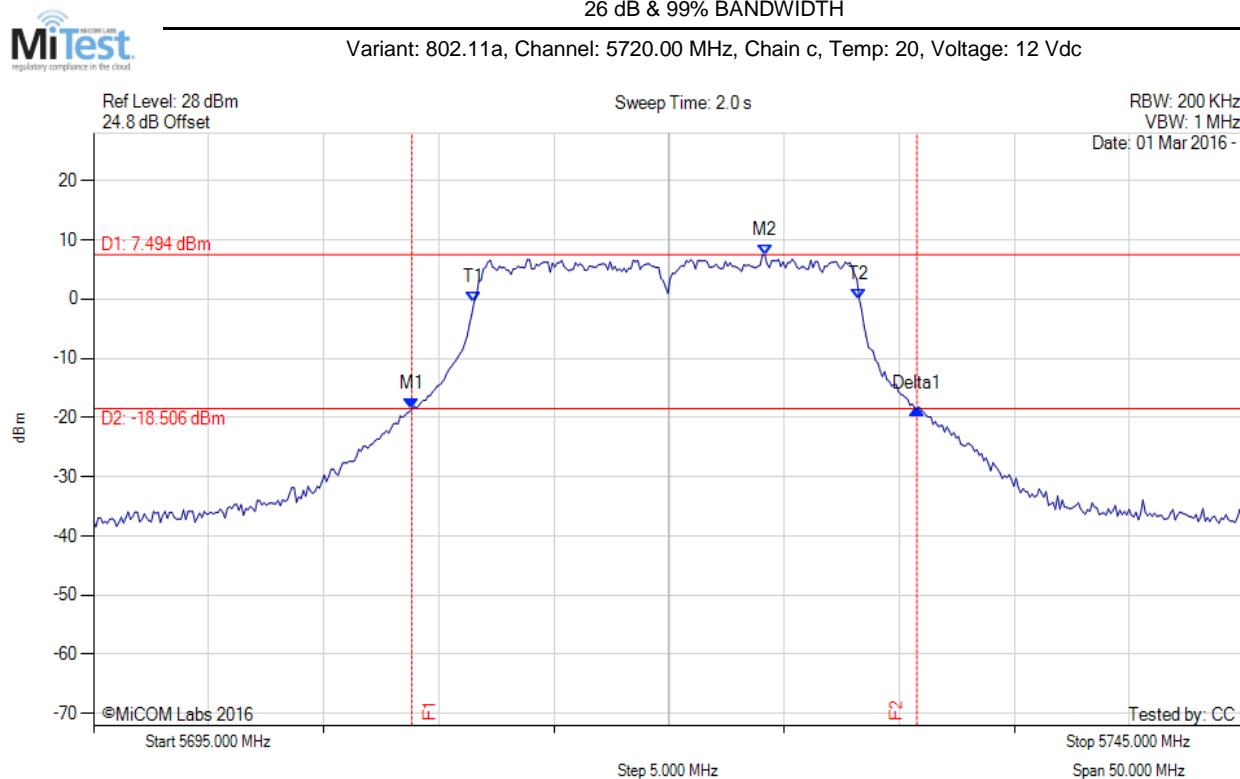
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	ERROR!!! MULTIPLE TEST RESULTS MATCHES...	Measured 26 dB Bandwidth: 22.345 MHz Measured 99% Bandwidth: 16.733 MHz ERROR!!! MULTIPLE TEST RESULTS MATCHES...

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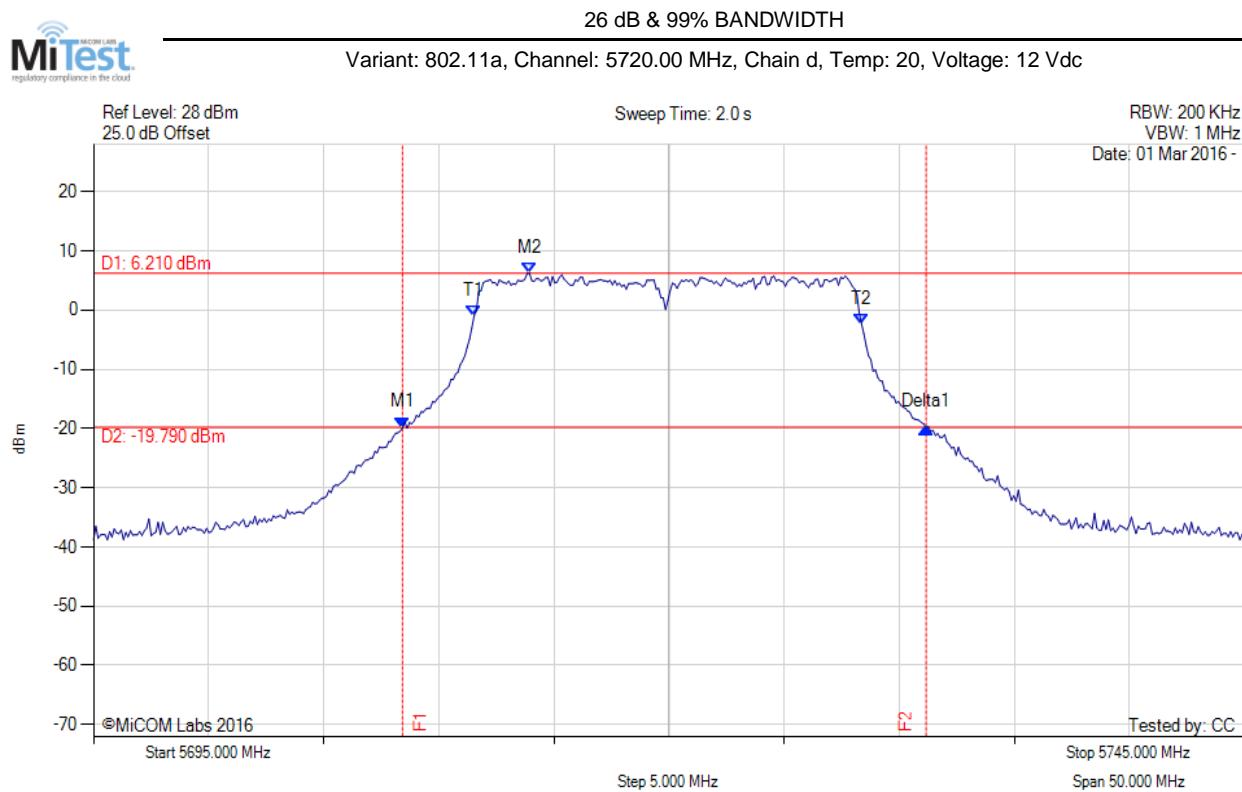
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5708.828 MHz : -18.615 dBm M2 : 5724.158 MHz : 7.494 dBm Delta1 : 21.944 MHz : 0.010 dB T1 : 5711.533 MHz : -0.468 dBm T2 : 5728.267 MHz : -0.009 dBm OBW : 16.733 MHz	Measured 26 dB Bandwidth: 21.944 MHz Measured 99% Bandwidth: 16.733 MHz

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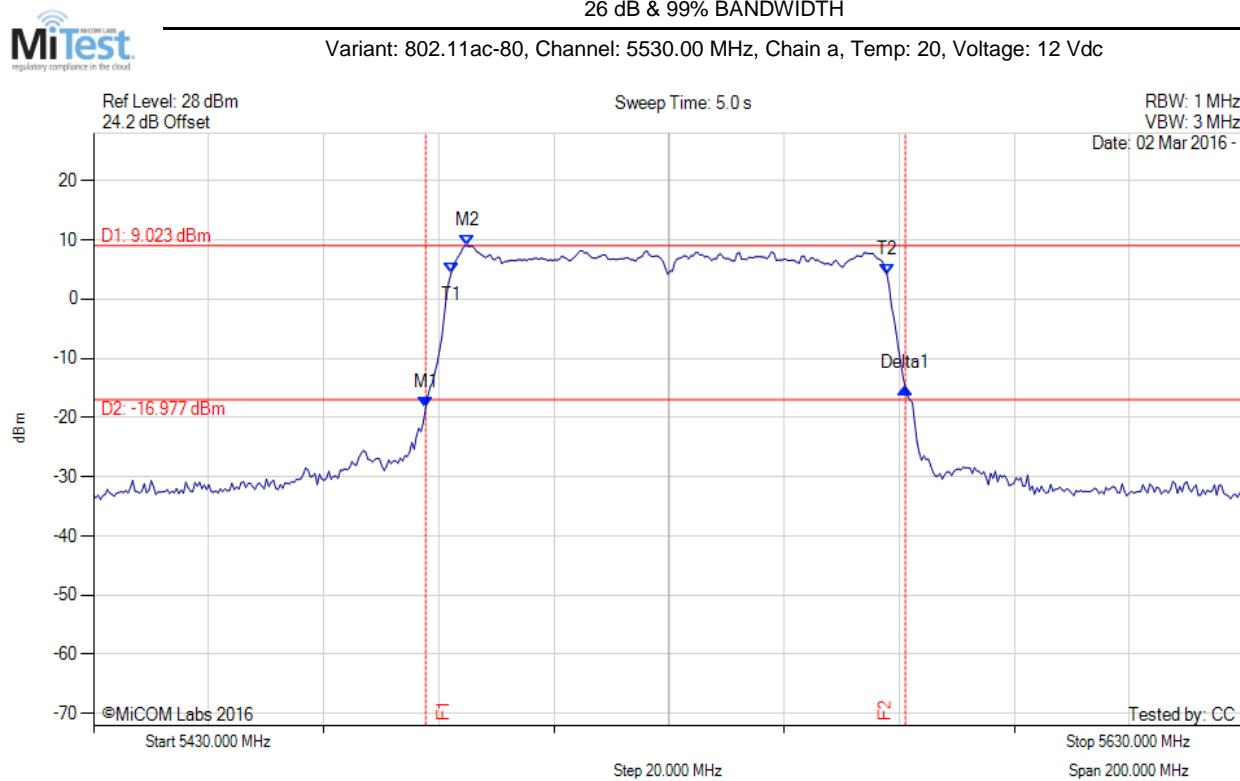
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5708.427 MHz : -19.832 dBm M2 : 5713.938 MHz : 6.210 dBm Delta1 : 22.745 MHz : 0.004 dB T1 : 5711.533 MHz : -1.005 dBm T2 : 5728.367 MHz : -2.333 dBm OBW : 16.834 MHz	Measured 26 dB Bandwidth: 22.745 MHz Measured 99% Bandwidth: 16.834 MHz

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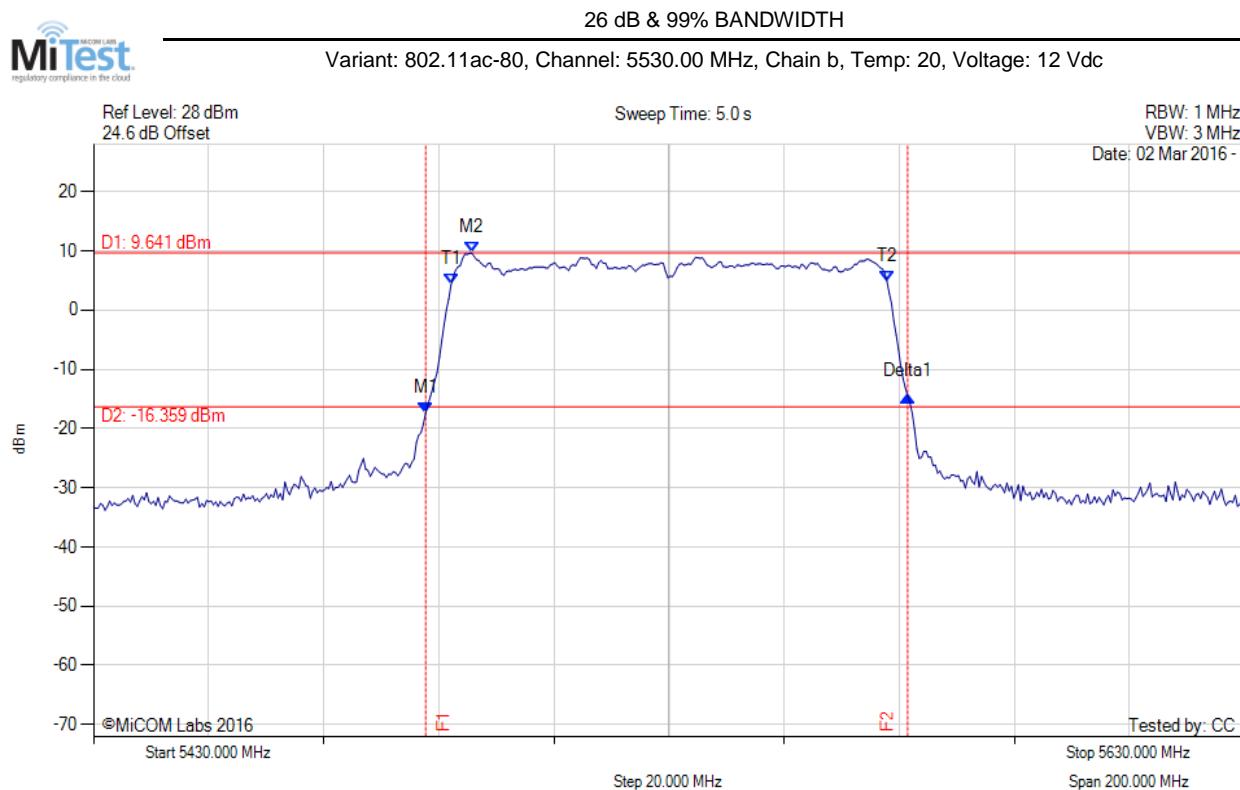
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5487.715 MHz : -18.384 dBm M2 : 5494.930 MHz : 9.023 dBm Delta1 : 83.367 MHz : 3.339 dB T1 : 5492.124 MHz : 4.297 dBm T2 : 5567.876 MHz : 4.187 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.367 MHz Measured 99% Bandwidth: 75.752 MHz

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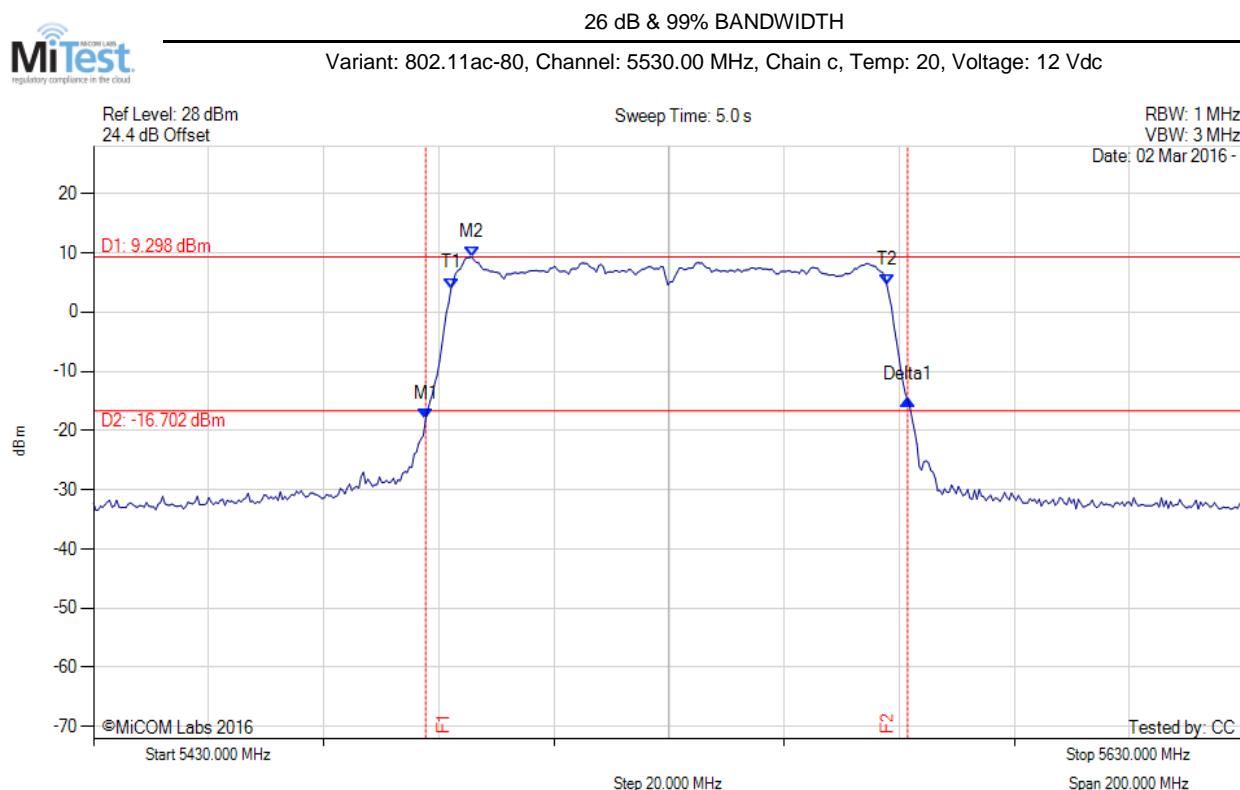
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5487.715 MHz : -17.373 dBm M2 : 5495.731 MHz : 9.641 dBm Delta1 : 83.768 MHz : 2.835 dB T1 : 5492.124 MHz : 4.272 dBm T2 : 5567.876 MHz : 4.872 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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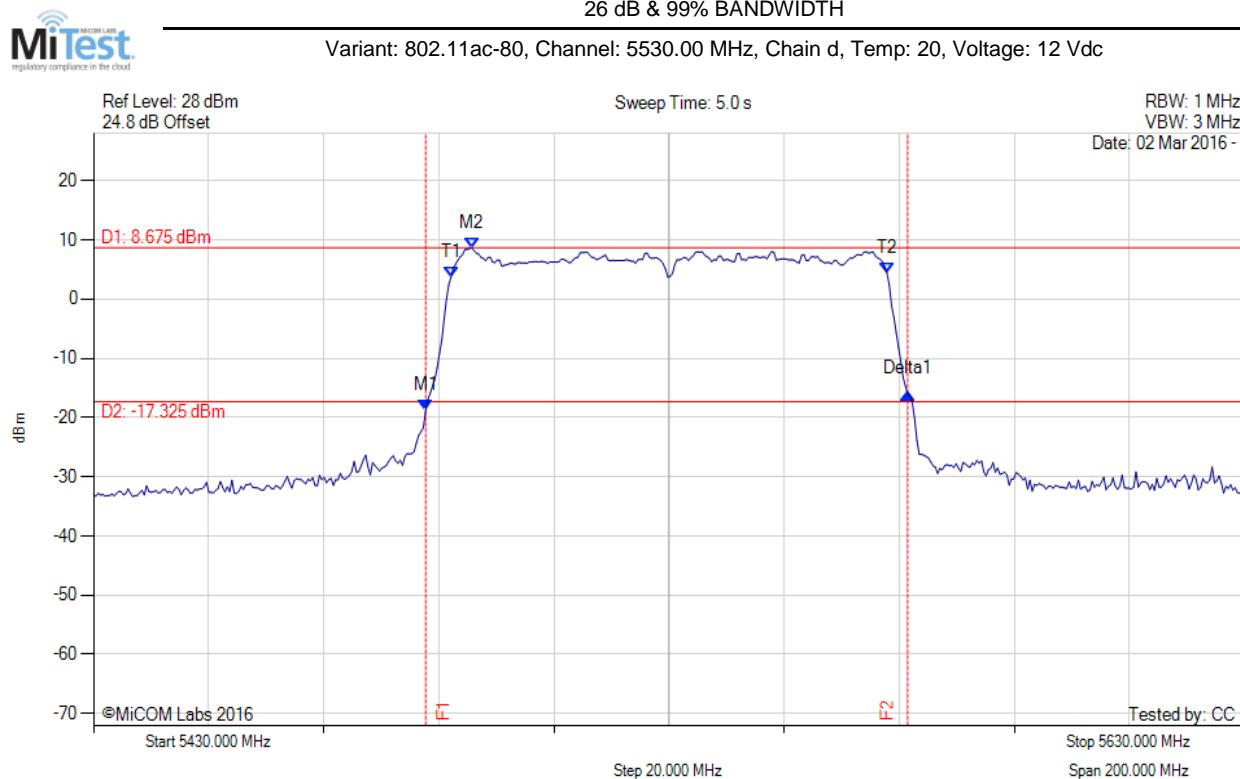
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5487.715 MHz : -18.091 dBm M2 : 5495.731 MHz : 9.298 dBm Delta1 : 83.768 MHz : 3.272 dB T1 : 5492.124 MHz : 4.022 dBm T2 : 5567.876 MHz : 4.518 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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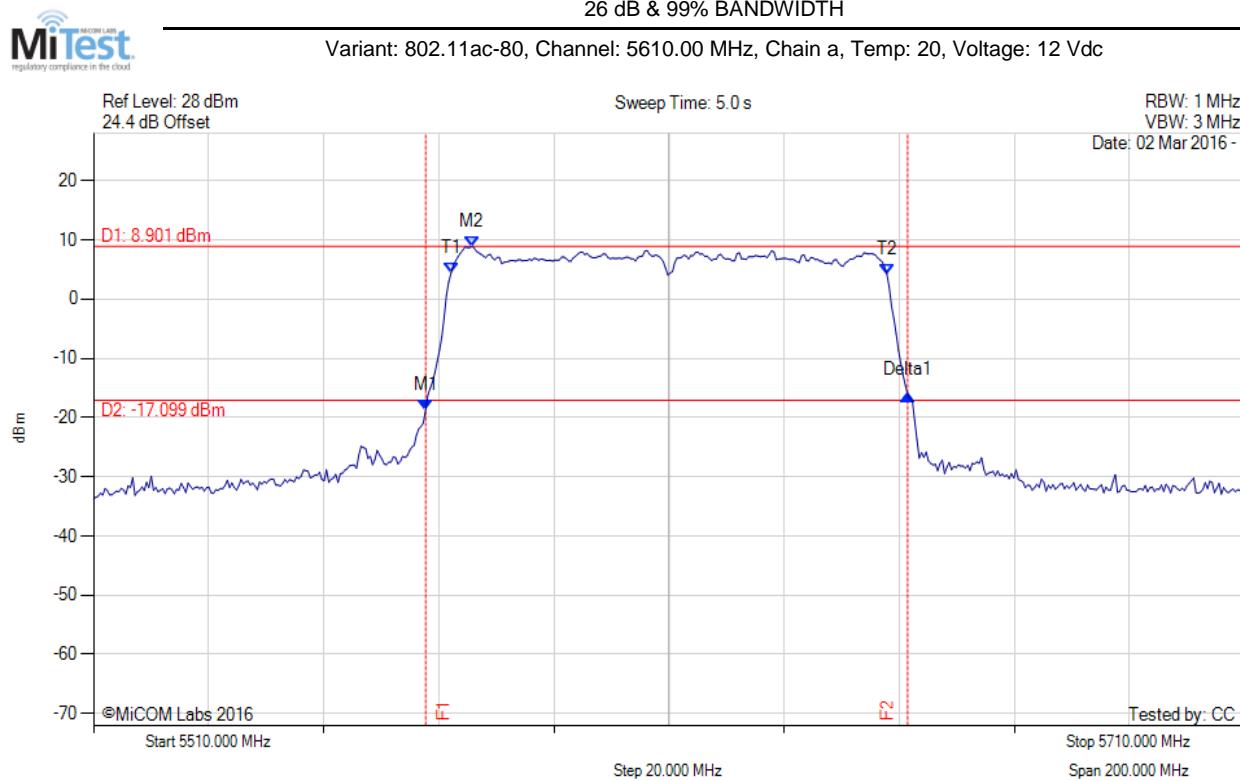
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5487.715 MHz : -18.843 dBm M2 : 5495.731 MHz : 8.675 dBm Delta1 : 83.768 MHz : 2.825 dB T1 : 5492.124 MHz : 3.729 dBm T2 : 5567.876 MHz : 4.413 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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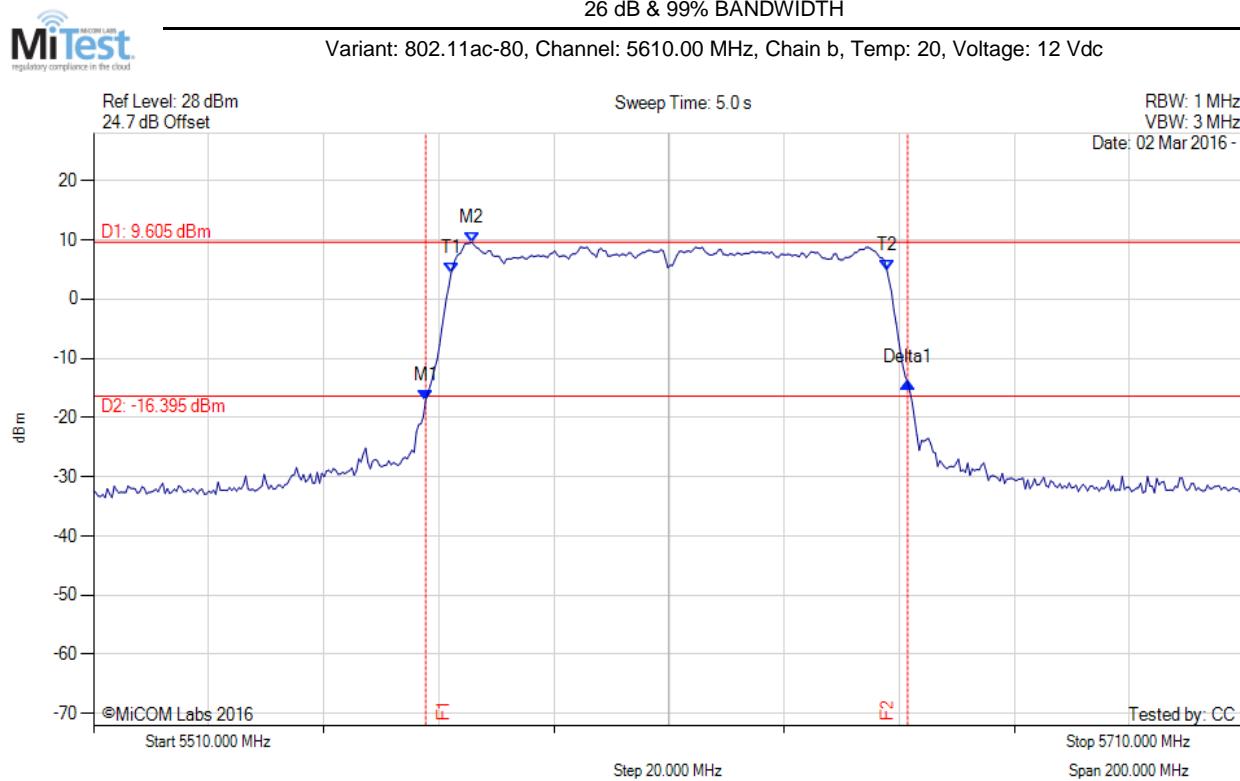
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5567.715 MHz : -18.693 dBm M2 : 5575.731 MHz : 8.901 dBm Delta1 : 83.768 MHz : 2.556 dB T1 : 5572.124 MHz : 4.354 dBm T2 : 5647.876 MHz : 4.171 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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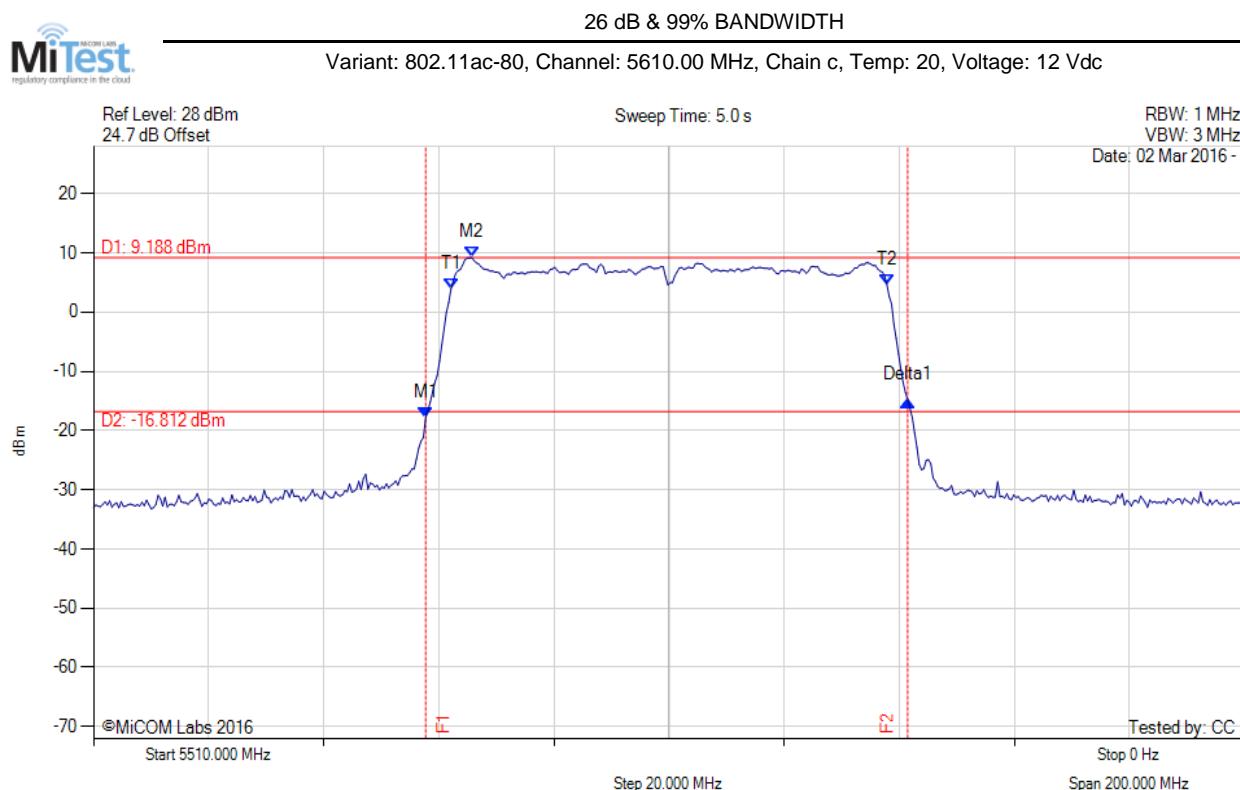
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5567.715 MHz : -17.104 dBm M2 : 5575.731 MHz : 9.605 dBm Delta1 : 83.768 MHz : 3.061 dB T1 : 5572.124 MHz : 4.358 dBm T2 : 5647.876 MHz : 4.830 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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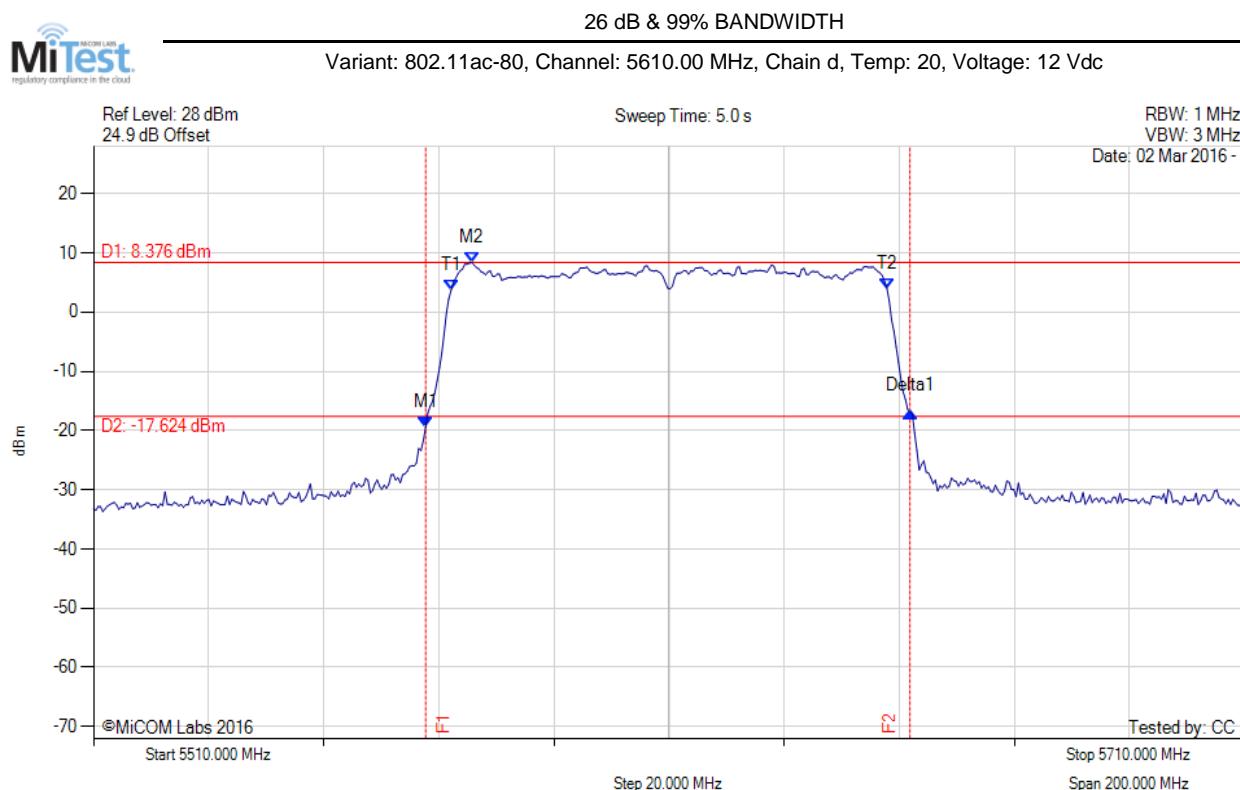
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5567.715 MHz : -17.843 dBm M2 : 5575.731 MHz : 9.188 dBm Delta1 : 83.768 MHz : 2.941 dB T1 : 5572.124 MHz : 3.959 dBm T2 : 5647.876 MHz : 4.604 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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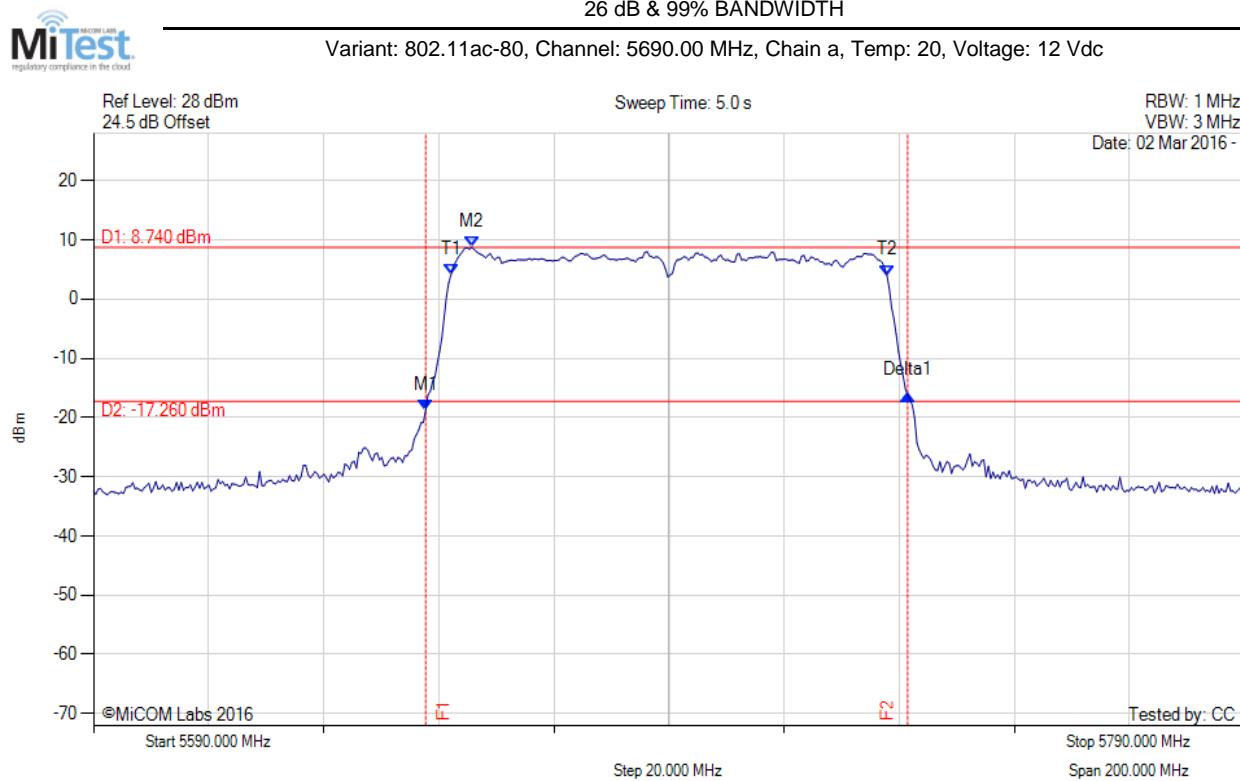
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5567.715 MHz : -19.390 dBm M2 : 5575.731 MHz : 8.376 dBm Delta1 : 84.168 MHz : 2.619 dB T1 : 5572.124 MHz : 3.644 dBm T2 : 5647.876 MHz : 3.996 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 84.168 MHz Measured 99% Bandwidth: 75.752 MHz

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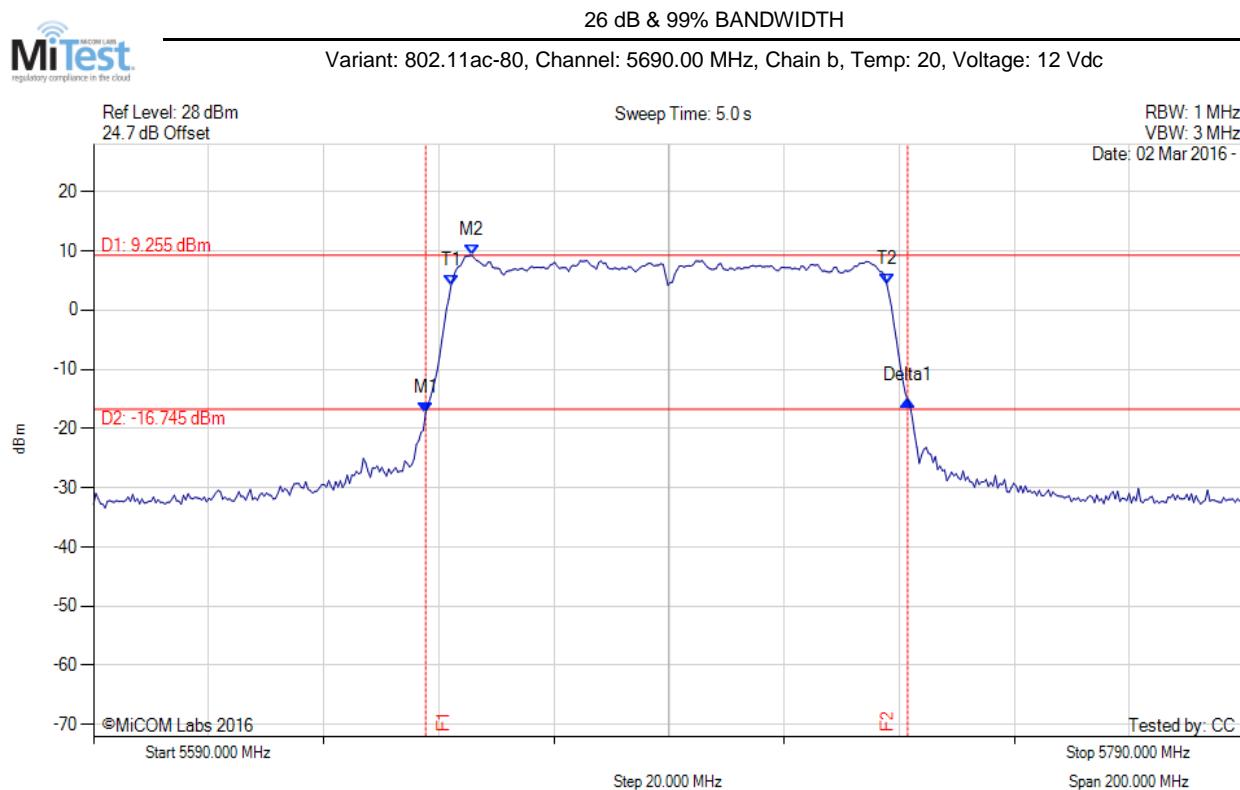
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5647.715 MHz : -18.825 dBm M2 : 5655.731 MHz : 8.740 dBm Delta1 : 83.768 MHz : 2.617 dB T1 : 5652.124 MHz : 4.122 dBm T2 : 5727.876 MHz : 4.028 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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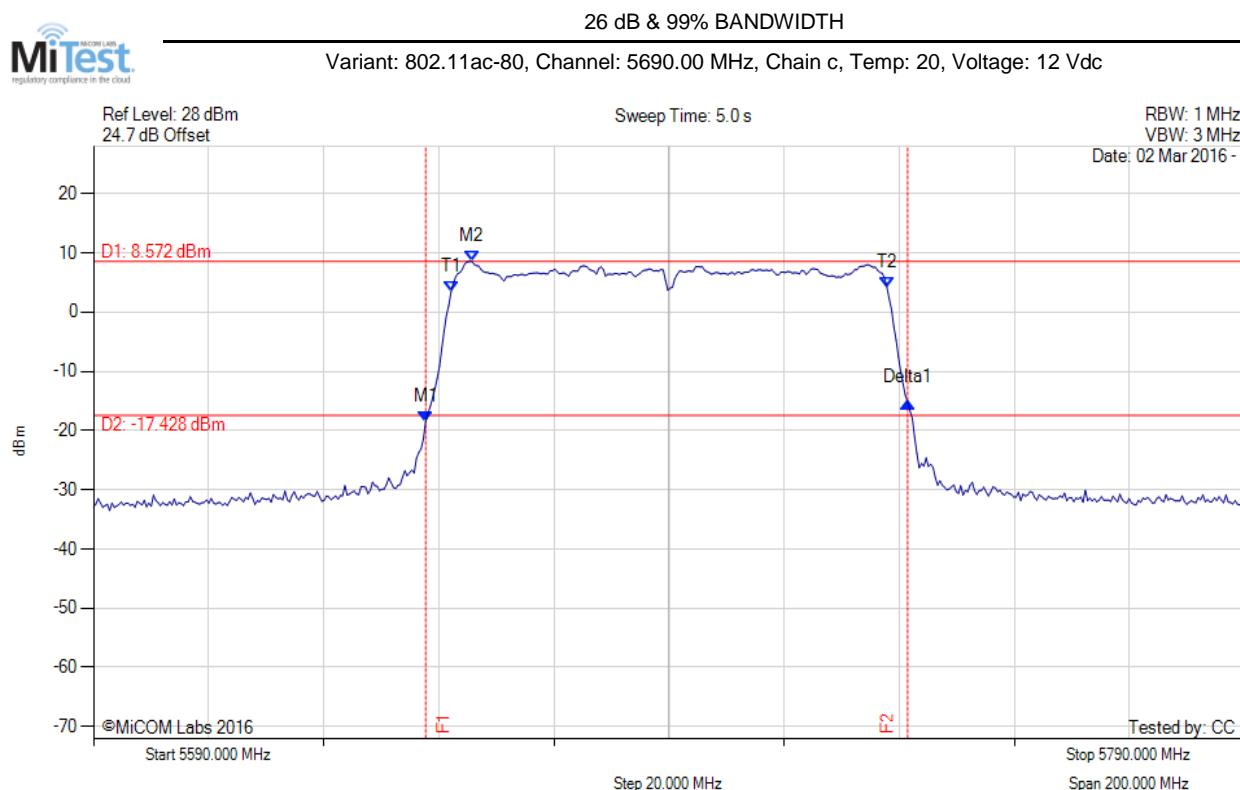
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5647.715 MHz : -17.334 dBm M2 : 5655.731 MHz : 9.255 dBm Delta1 : 83.768 MHz : 2.109 dB T1 : 5652.124 MHz : 4.154 dBm T2 : 5727.876 MHz : 4.287 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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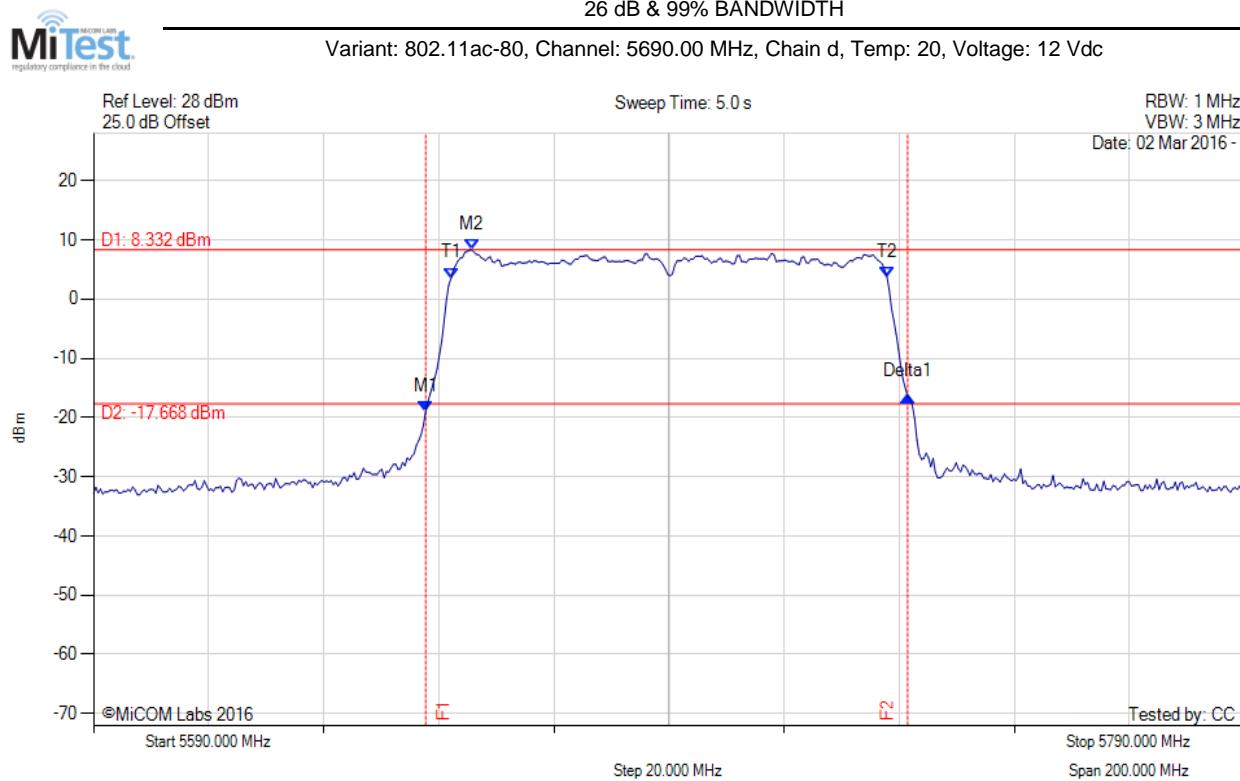
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5647.715 MHz : -18.489 dBm M2 : 5655.731 MHz : 8.572 dBm Delta1 : 83.768 MHz : 3.274 dB T1 : 5652.124 MHz : 3.406 dBm T2 : 5727.876 MHz : 4.171 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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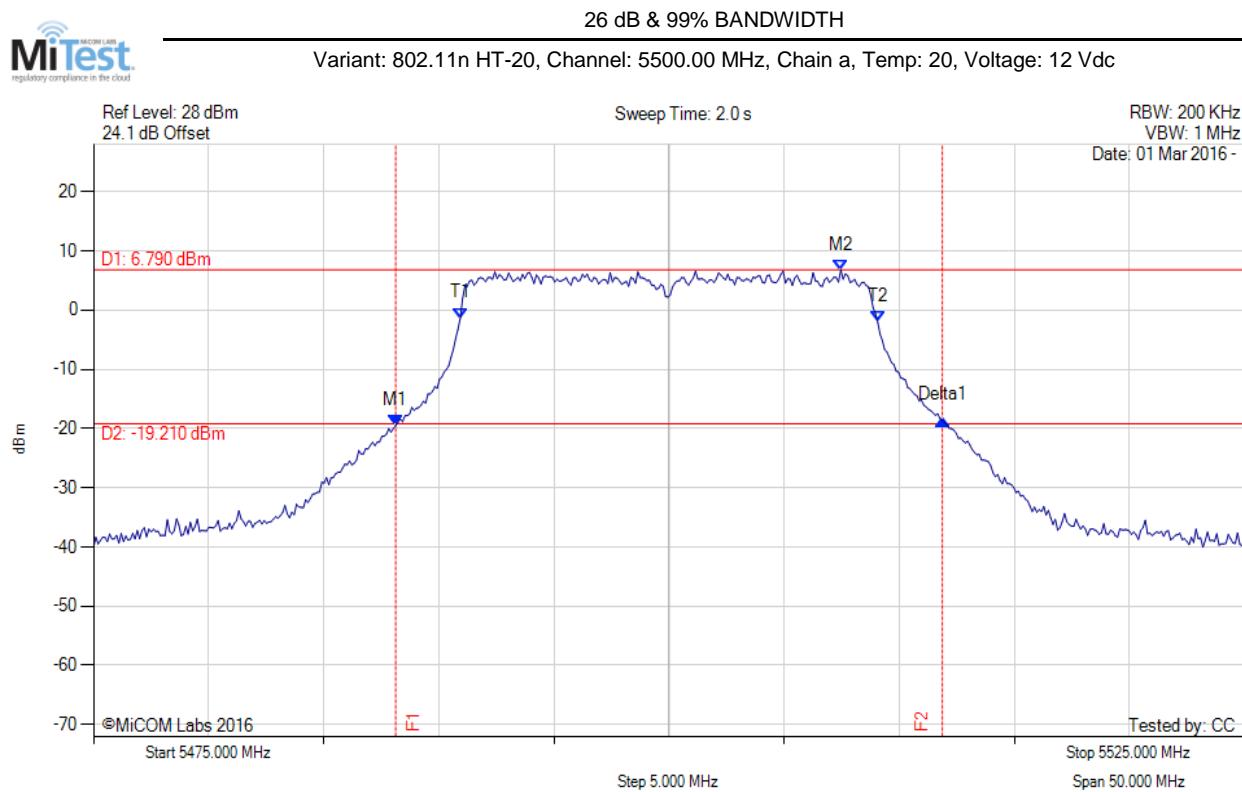
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5647.715 MHz : -18.921 dBm M2 : 5655.731 MHz : 8.332 dBm Delta1 : 83.768 MHz : 2.390 dB T1 : 5652.124 MHz : 3.556 dBm T2 : 5727.876 MHz : 3.762 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz

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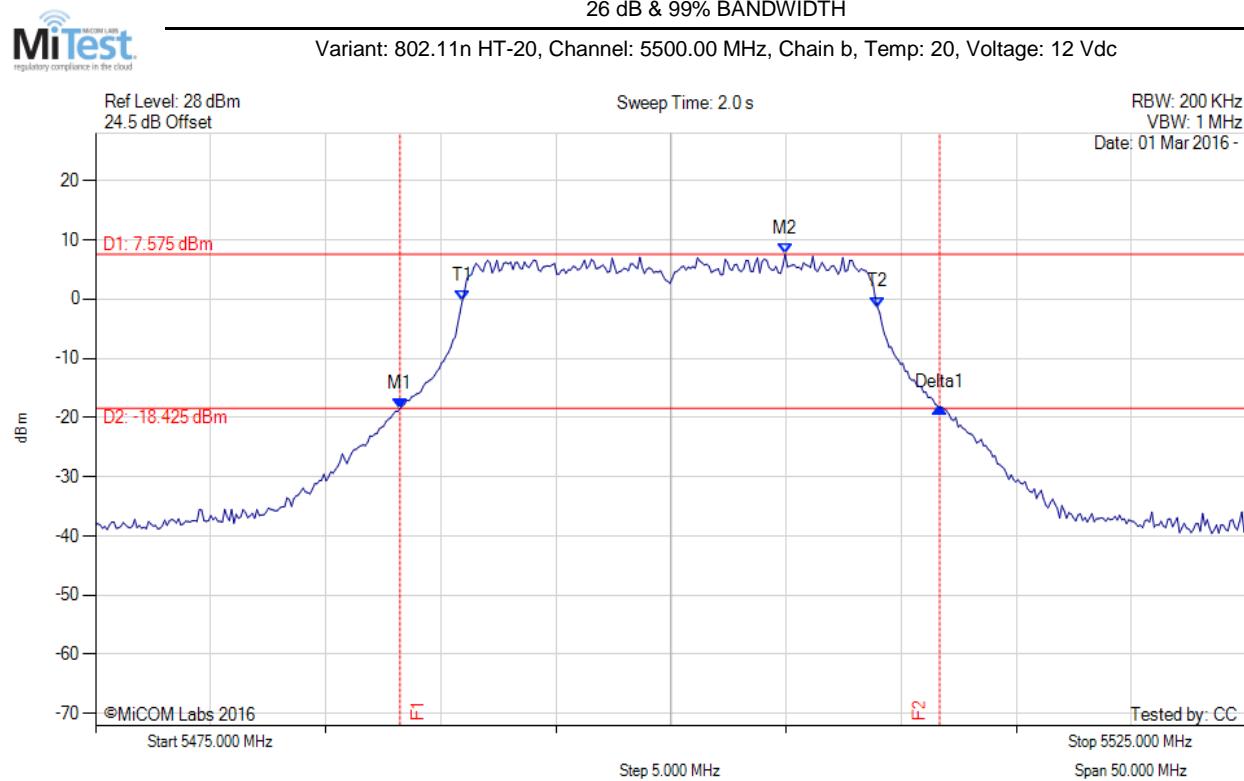
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.126 MHz : -19.529 dBm M2 : 5507.465 MHz : 6.790 dBm Delta1 : 23.747 MHz : 0.895 dB T1 : 5490.932 MHz : -1.357 dBm T2 : 5509.068 MHz : -2.042 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.747 MHz Measured 99% Bandwidth: 18.136 MHz

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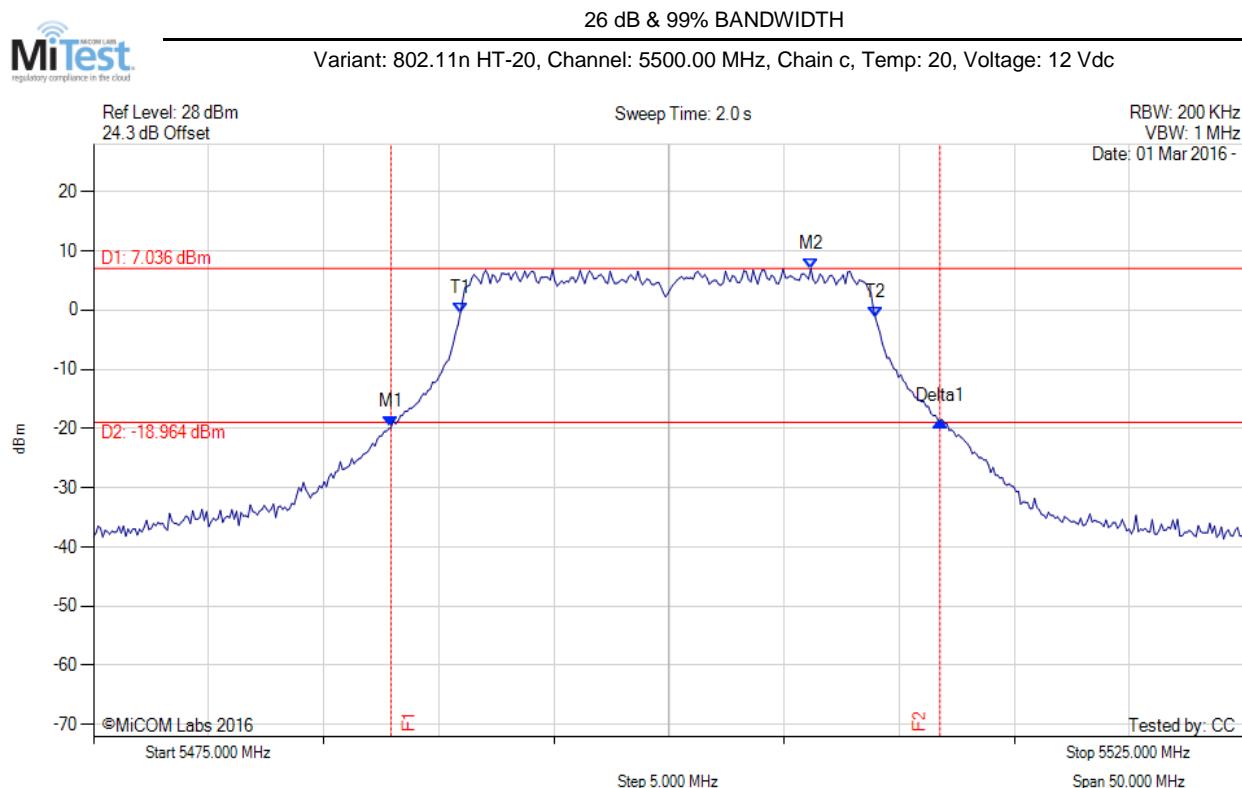
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.226 MHz : -18.498 dBm M2 : 5504.960 MHz : 7.575 dBm Delta1 : 23.447 MHz : 0.116 dB T1 : 5490.932 MHz : -0.277 dBm T2 : 5508.968 MHz : -1.365 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.447 MHz Measured 99% Bandwidth: 18.036 MHz

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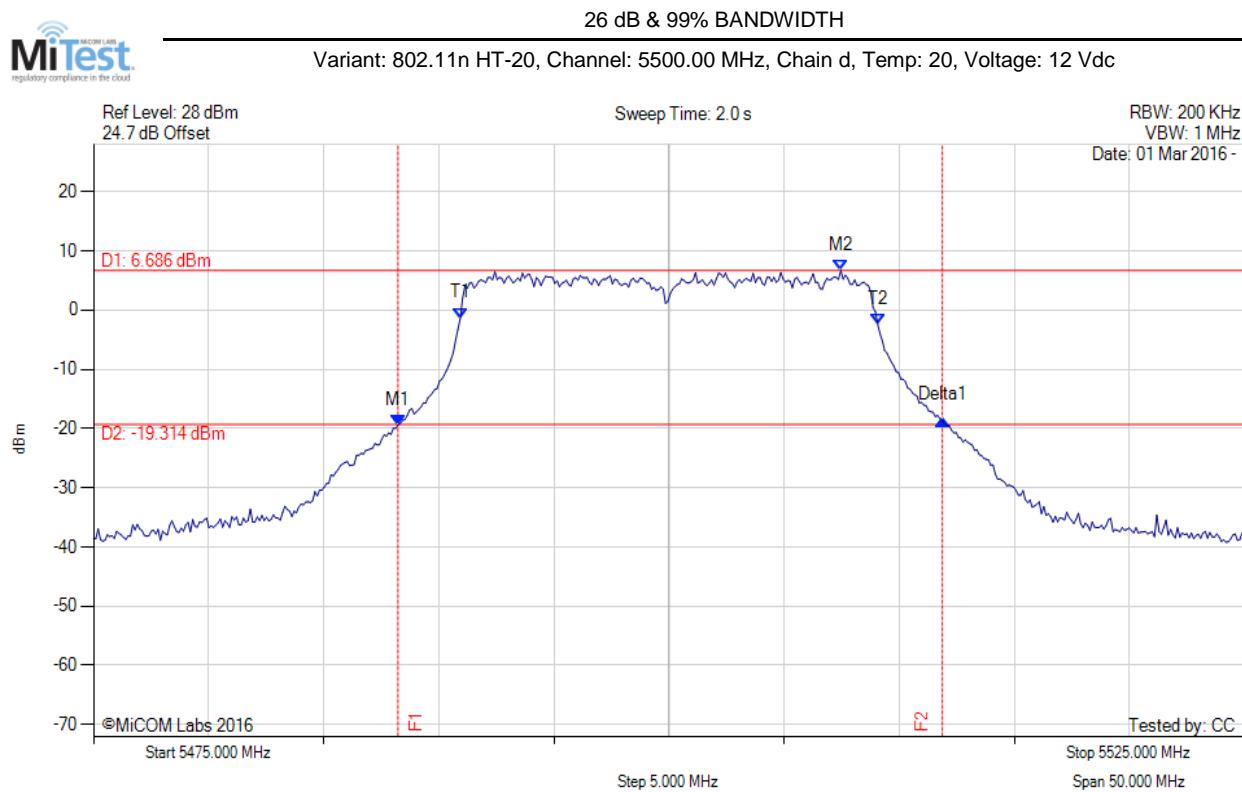
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5487.926 MHz : -19.779 dBm M2 : 5506.162 MHz : 7.036 dBm Delta1 : 23.848 MHz : 1.060 dB T1 : 5490.932 MHz : -0.531 dBm T2 : 5508.968 MHz : -1.323 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.848 MHz Measured 99% Bandwidth: 18.036 MHz

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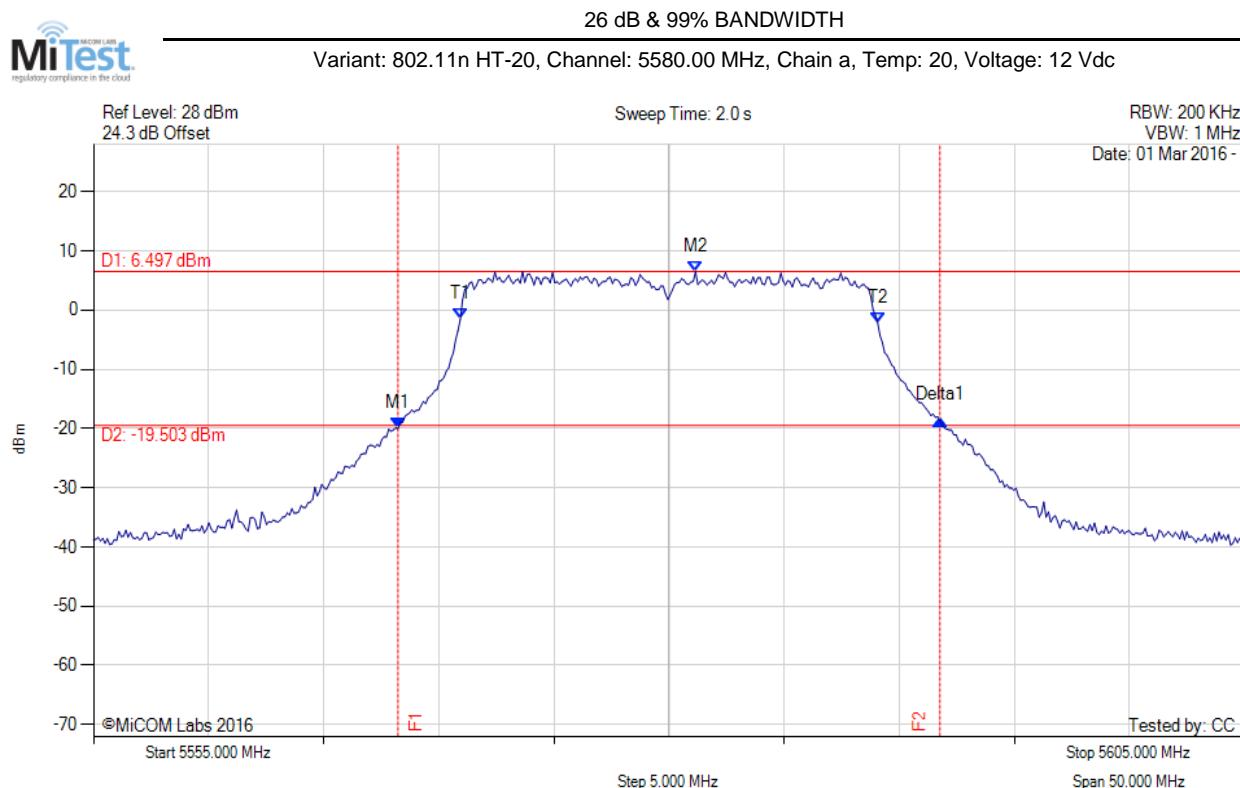
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.226 MHz : -19.374 dBm M2 : 5507.465 MHz : 6.686 dBm Delta1 : 23.647 MHz : 0.740 dB T1 : 5490.932 MHz : -1.355 dBm T2 : 5509.068 MHz : -2.415 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.136 MHz

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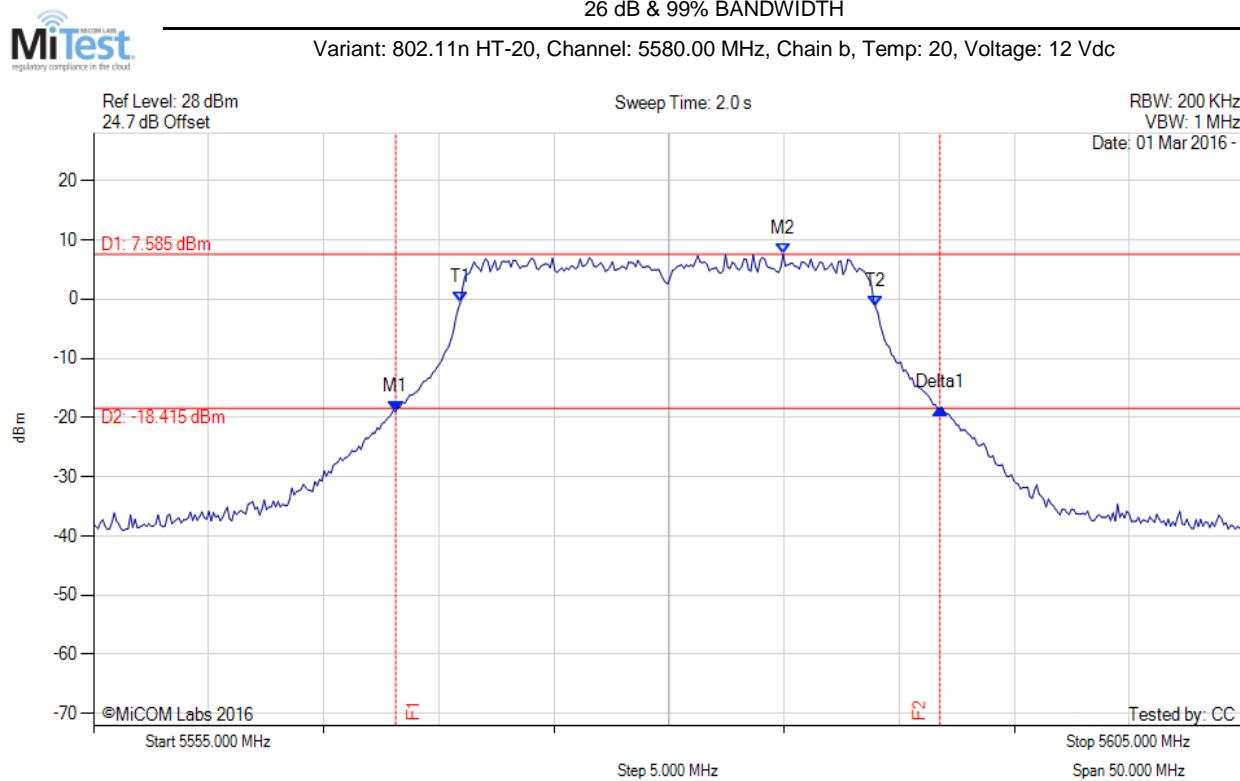
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.226 MHz : -20.007 dBm M2 : 5581.152 MHz : 6.497 dBm Delta1 : 23.547 MHz : 1.397 dB T1 : 5570.932 MHz : -1.575 dBm T2 : 5589.068 MHz : -2.205 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 18.136 MHz

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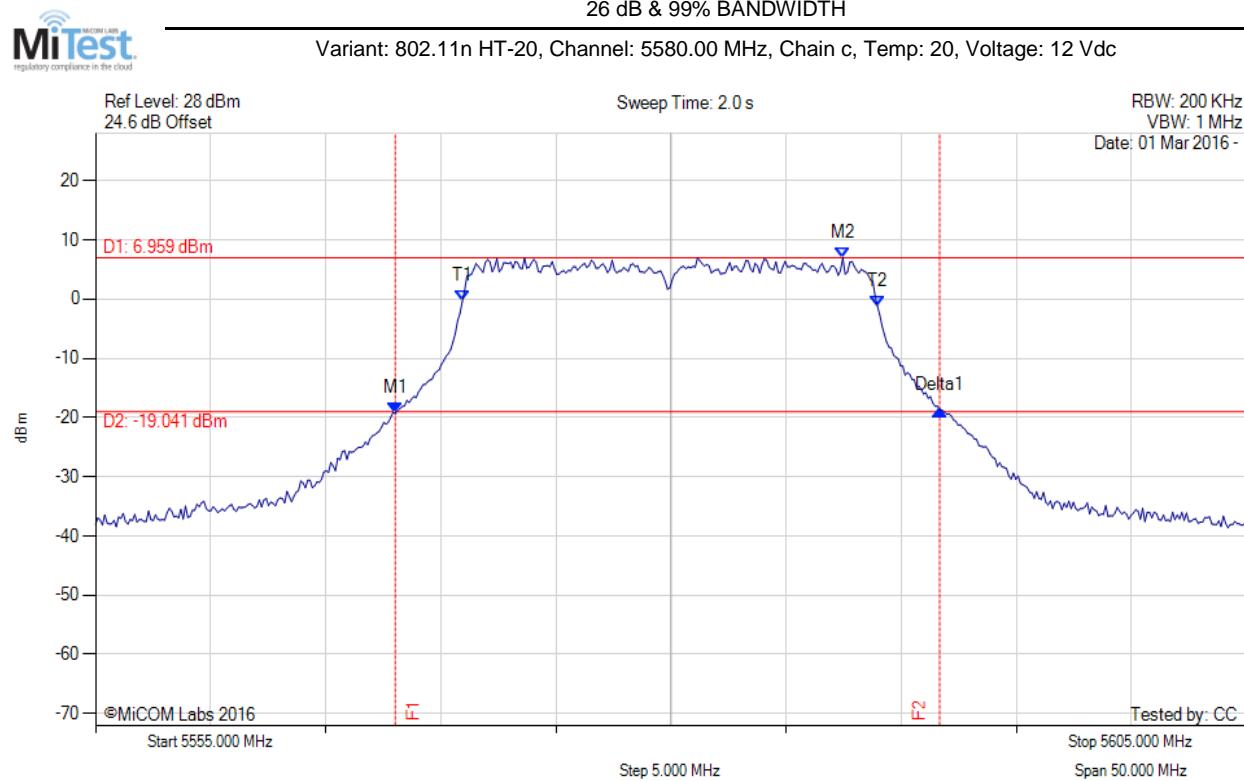
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.126 MHz : -18.965 dBm M2 : 5584.960 MHz : 7.585 dBm Delta1 : 23.647 MHz : 0.533 dB T1 : 5570.932 MHz : -0.623 dBm T2 : 5588.968 MHz : -1.333 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz

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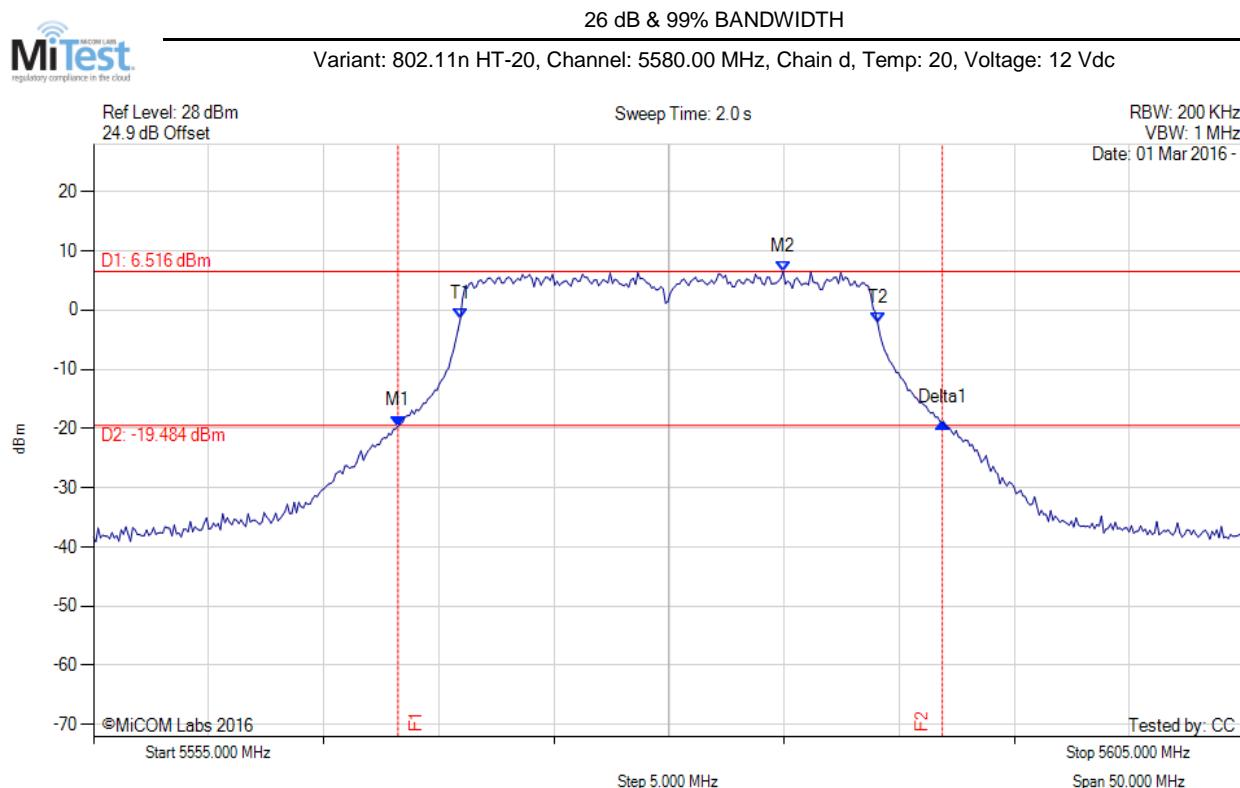
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.026 MHz : -19.283 dBm M2 : 5587.465 MHz : 6.959 dBm Delta1 : 23.647 MHz : 0.596 dB T1 : 5570.932 MHz : -0.393 dBm T2 : 5588.968 MHz : -1.194 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz

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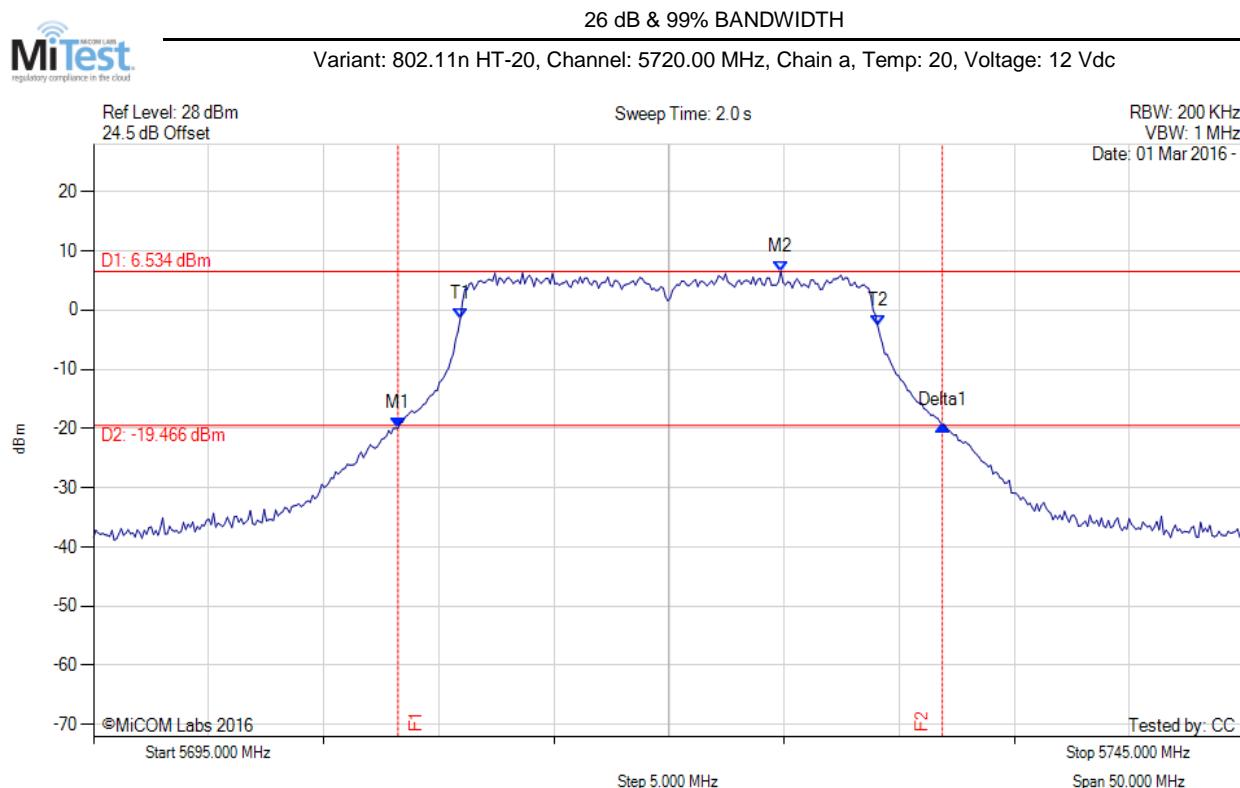
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5568.226 MHz : -19.600 dBm M2 : 5584.960 MHz : 6.516 dBm Delta1 : 23.647 MHz : 0.610 dB T1 : 5570.932 MHz : -1.516 dBm T2 : 5589.068 MHz : -2.221 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.136 MHz

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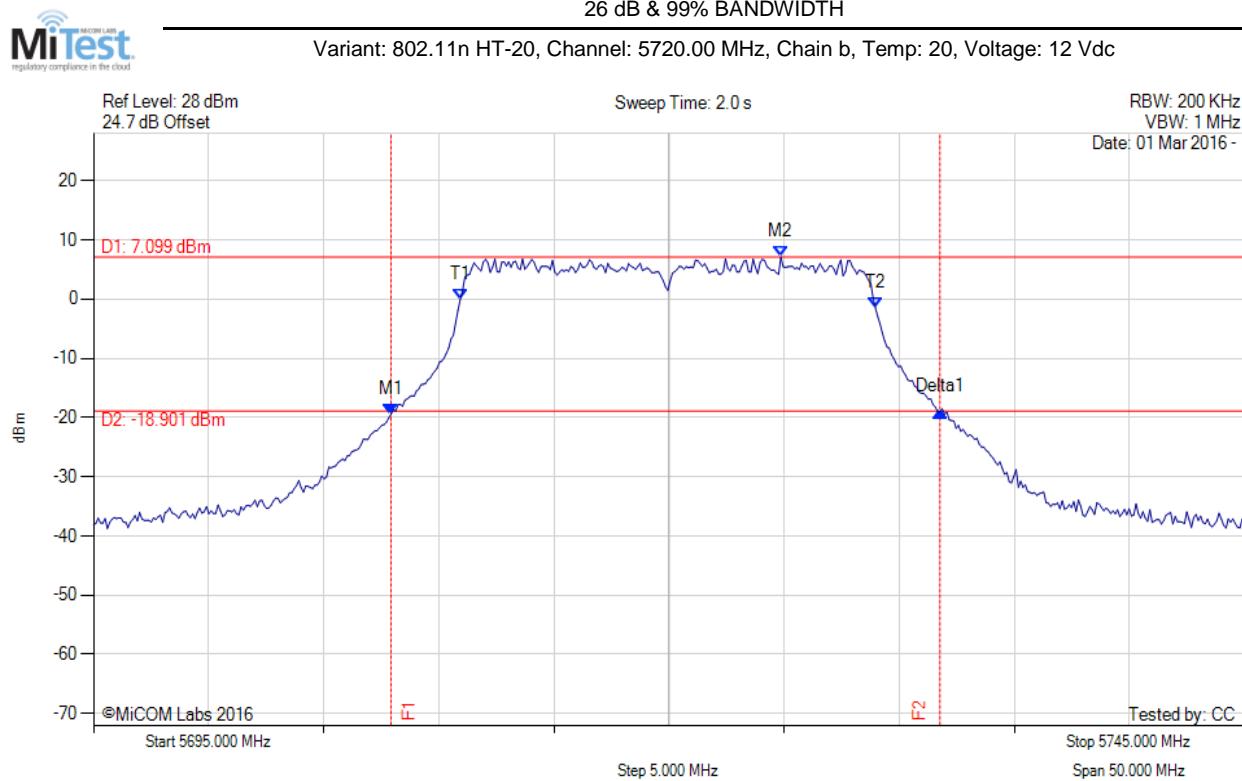
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5708.226 MHz : -19.907 dBm M2 : 5724.860 MHz : 6.534 dBm Delta1 : 23.647 MHz : 0.492 dB T1 : 5710.932 MHz : -1.457 dBm T2 : 5729.068 MHz : -2.638 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.136 MHz

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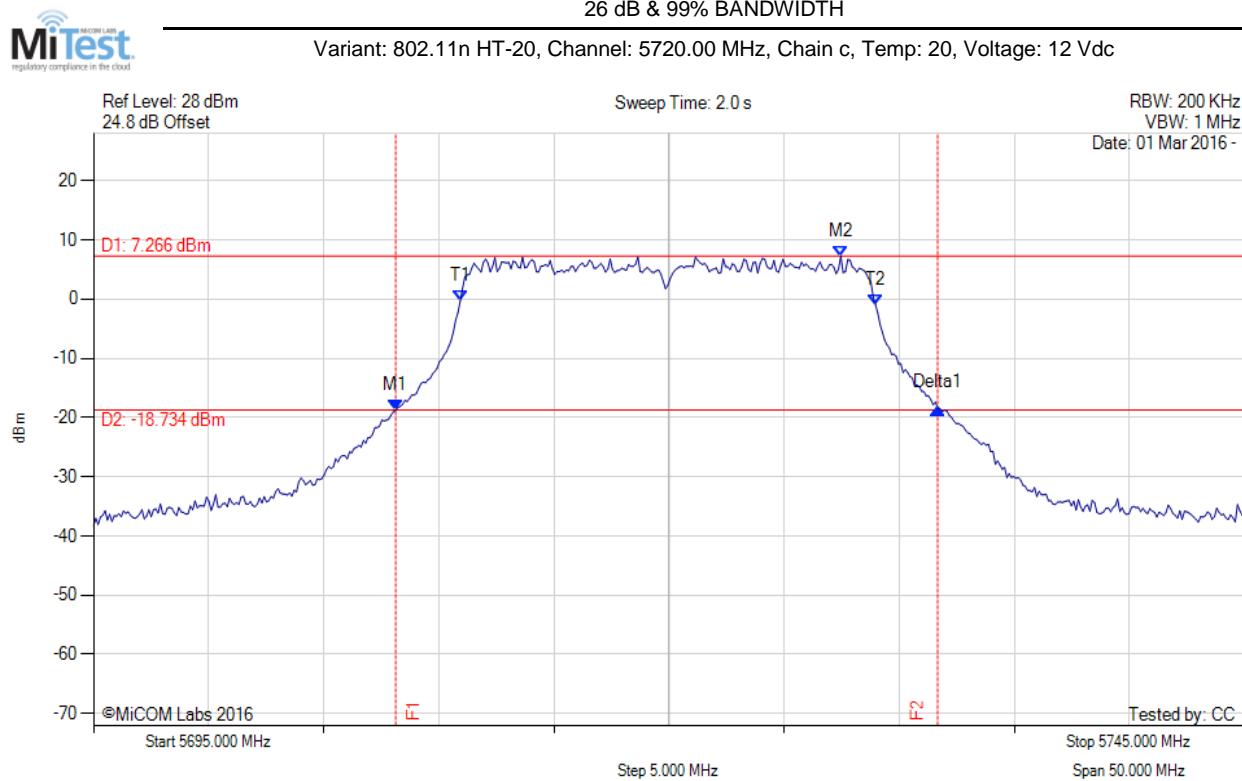
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5707.926 MHz : -19.415 dBm M2 : 5724.860 MHz : 7.099 dBm Delta1 : 23.848 MHz : 0.390 dB T1 : 5710.932 MHz : -0.005 dBm T2 : 5728.968 MHz : -1.491 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.848 MHz Measured 99% Bandwidth: 18.036 MHz

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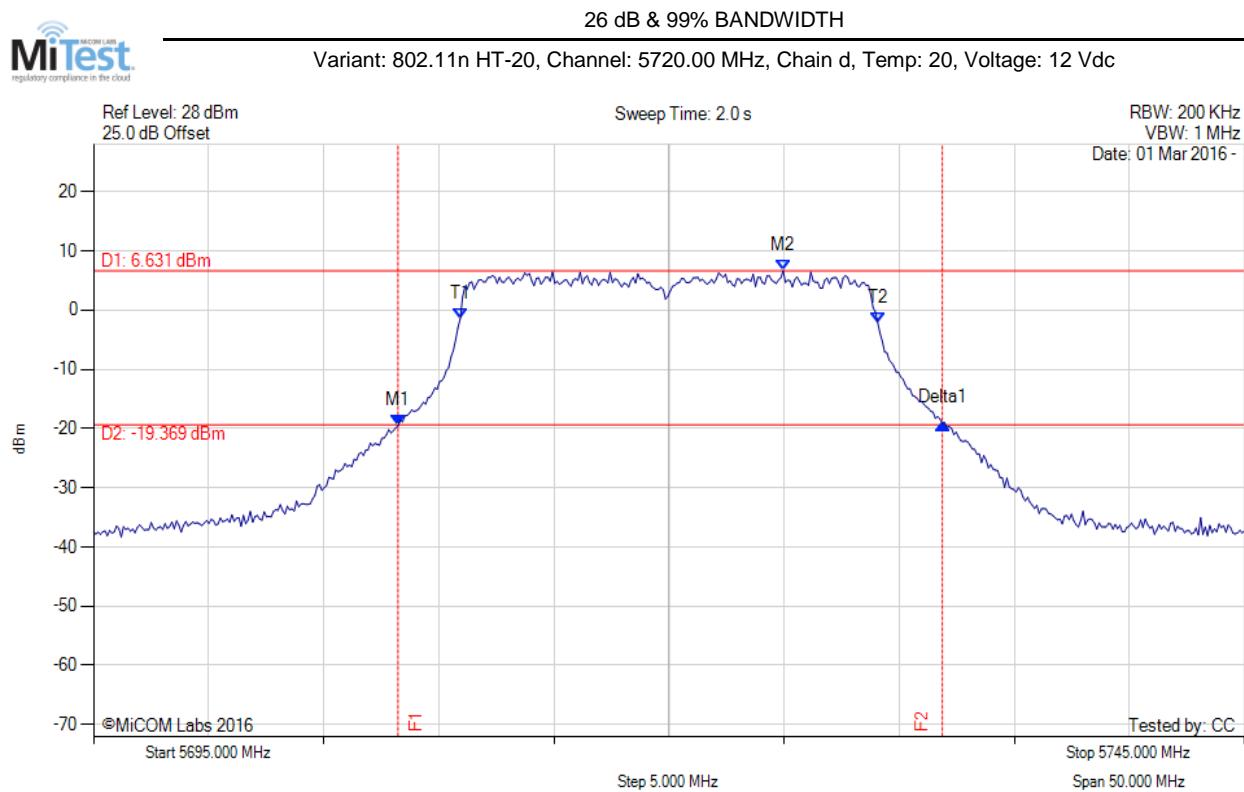
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5708.126 MHz : -18.823 dBm M2 : 5727.465 MHz : 7.266 dBm Delta1 : 23.547 MHz : 0.417 dB T1 : 5710.932 MHz : -0.302 dBm T2 : 5728.968 MHz : -0.918 dBm OBW : 18.036 MHz	Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 18.036 MHz

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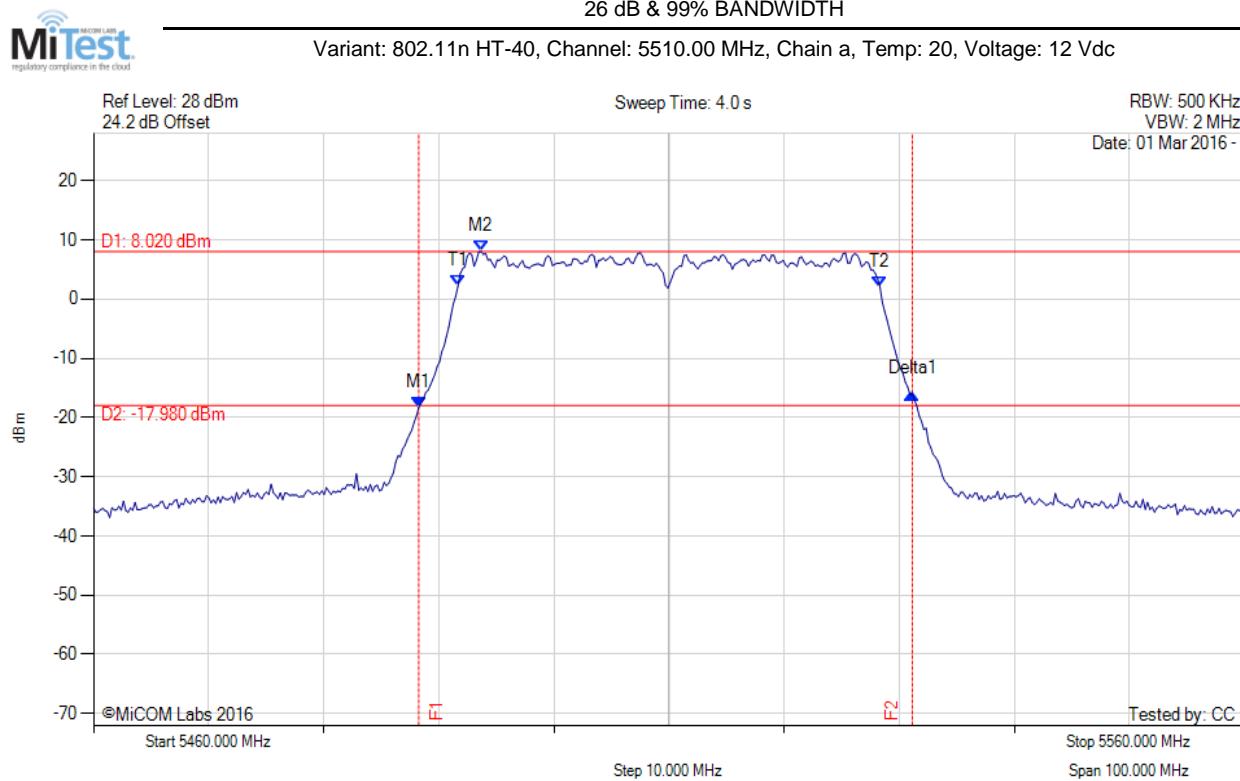
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5708.226 MHz : -19.565 dBm M2 : 5724.960 MHz : 6.631 dBm Delta1 : 23.647 MHz : 0.458 dB T1 : 5710.932 MHz : -1.408 dBm T2 : 5729.068 MHz : -2.120 dBm OBW : 18.136 MHz	Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.136 MHz

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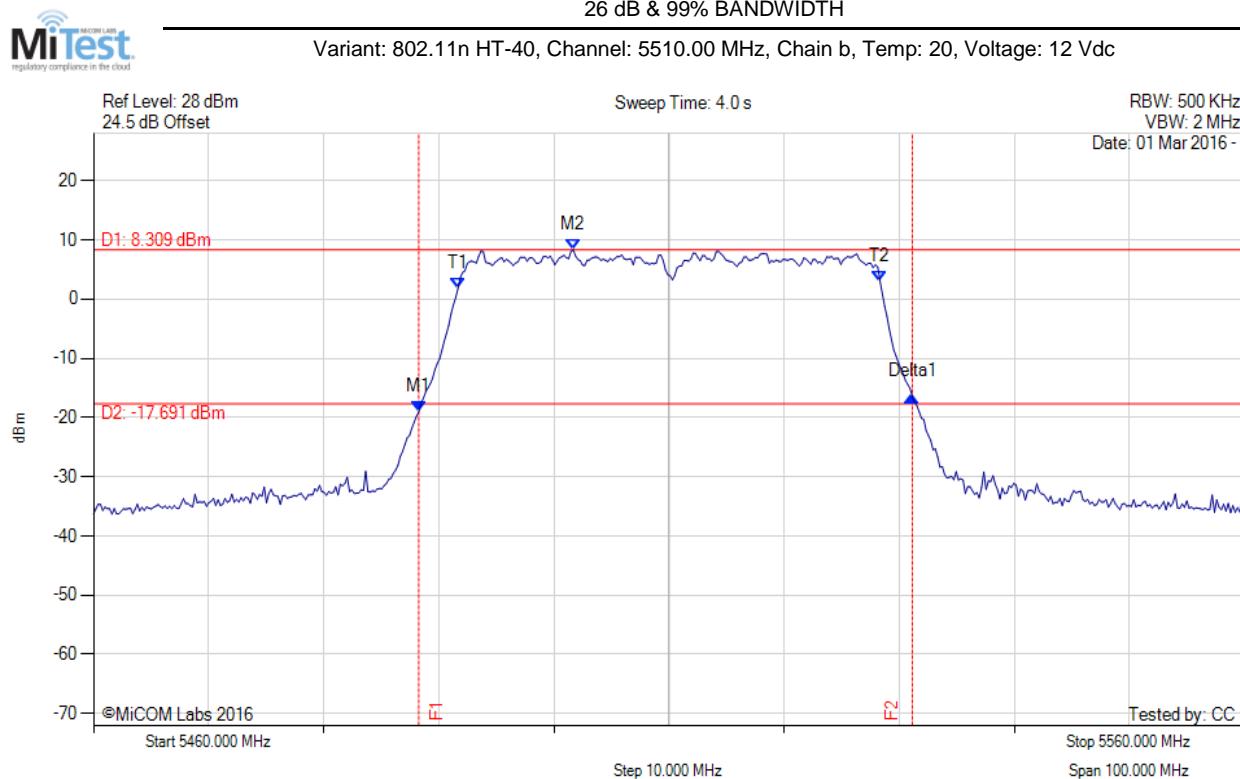
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.257 MHz : -18.288 dBm M2 : 5493.667 MHz : 8.020 dBm Delta1 : 42.886 MHz : 2.304 dB T1 : 5491.663 MHz : 2.190 dBm T2 : 5528.337 MHz : 1.966 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz

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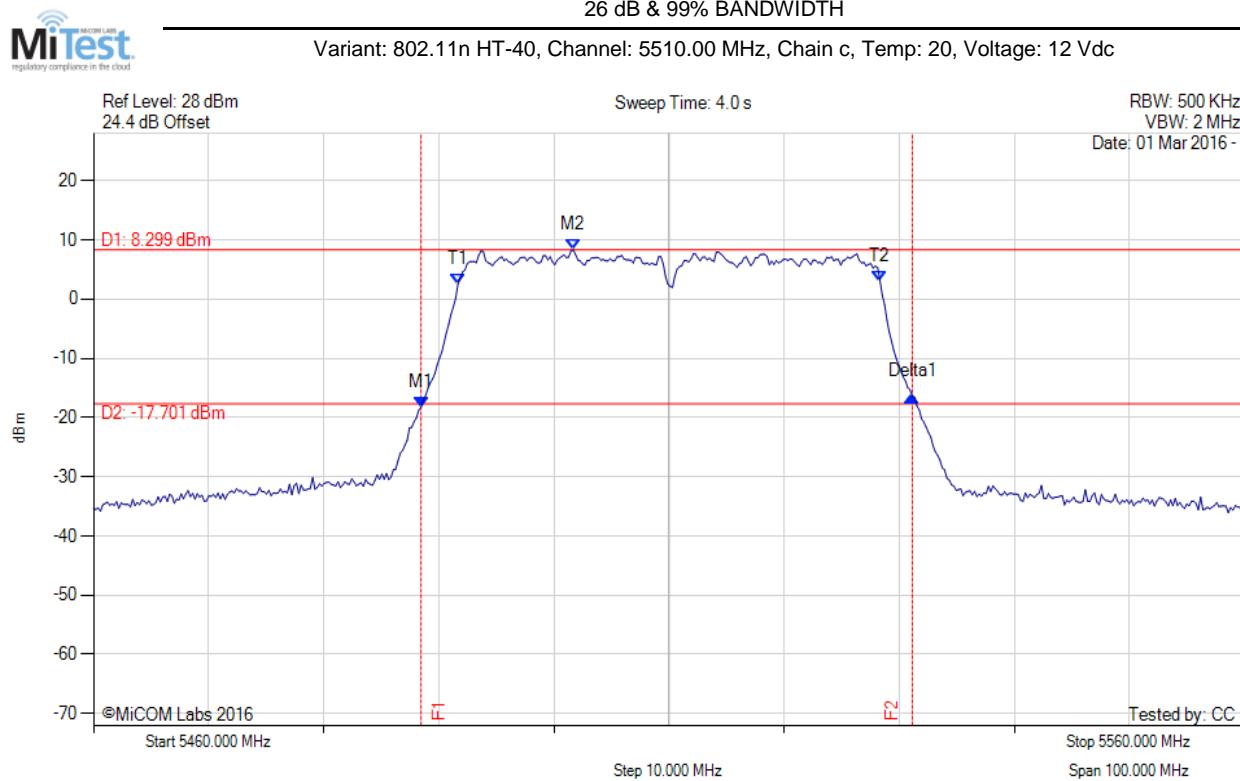
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.257 MHz : -19.071 dBm M2 : 5501.683 MHz : 8.309 dBm Delta1 : 42.886 MHz : 2.587 dB T1 : 5491.663 MHz : 1.771 dBm T2 : 5528.337 MHz : 3.005 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz

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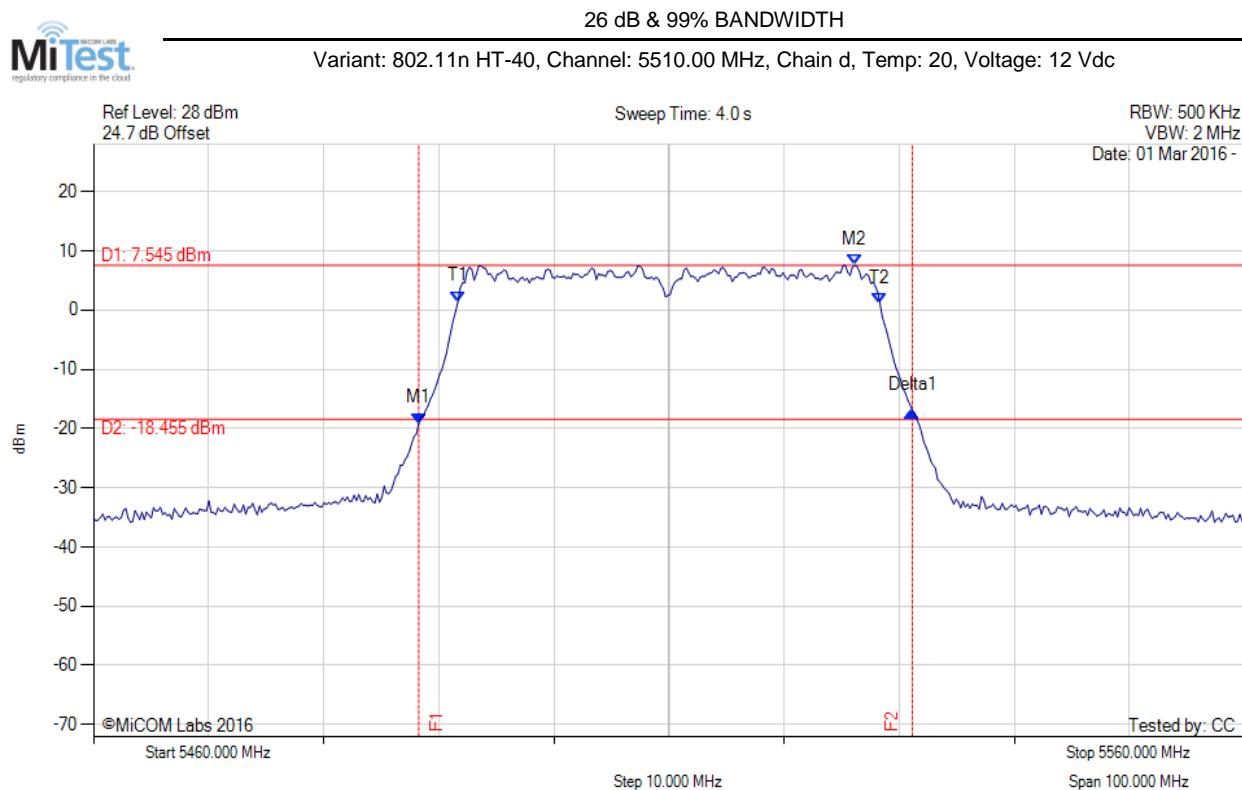
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.457 MHz : -18.233 dBm M2 : 5501.683 MHz : 8.299 dBm Delta1 : 42.685 MHz : 1.788 dB T1 : 5491.663 MHz : 2.535 dBm T2 : 5528.337 MHz : 2.997 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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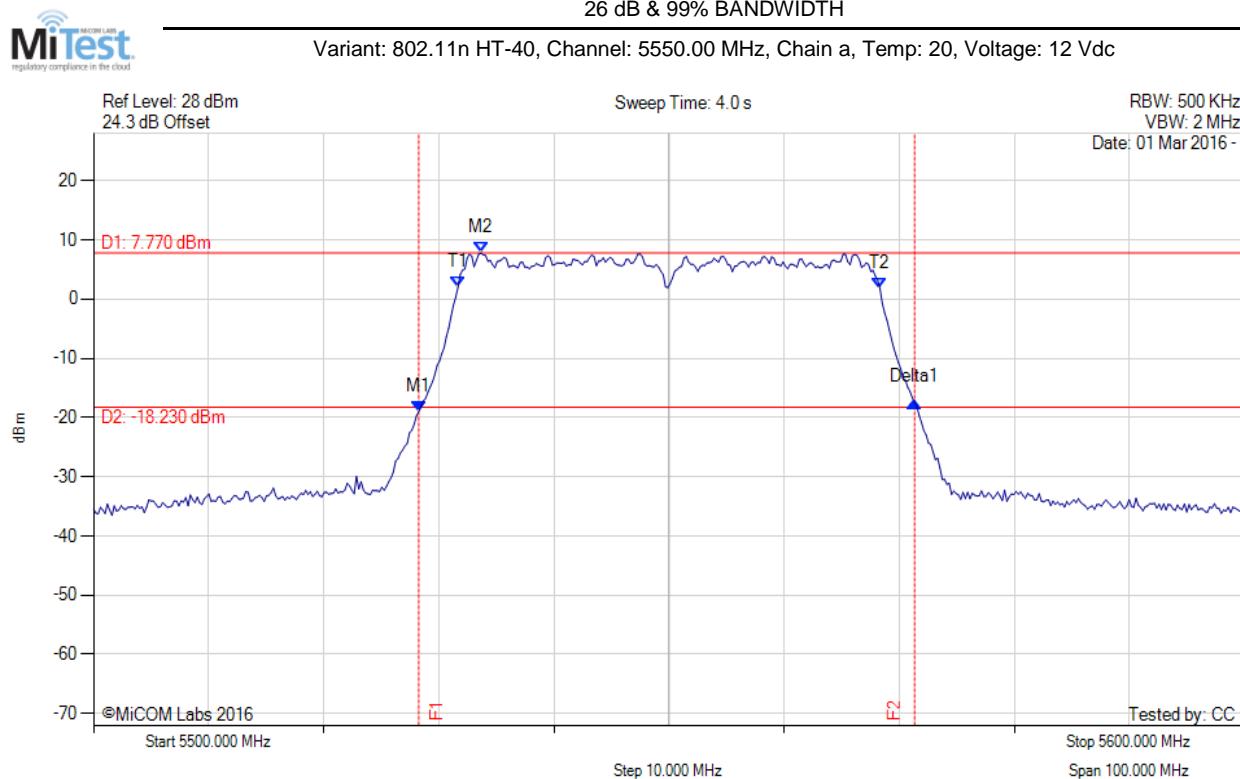
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5488.257 MHz : -19.116 dBm M2 : 5526.132 MHz : 7.545 dBm Delta1 : 42.886 MHz : 2.091 dB T1 : 5491.663 MHz : 1.437 dBm T2 : 5528.337 MHz : 1.039 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz

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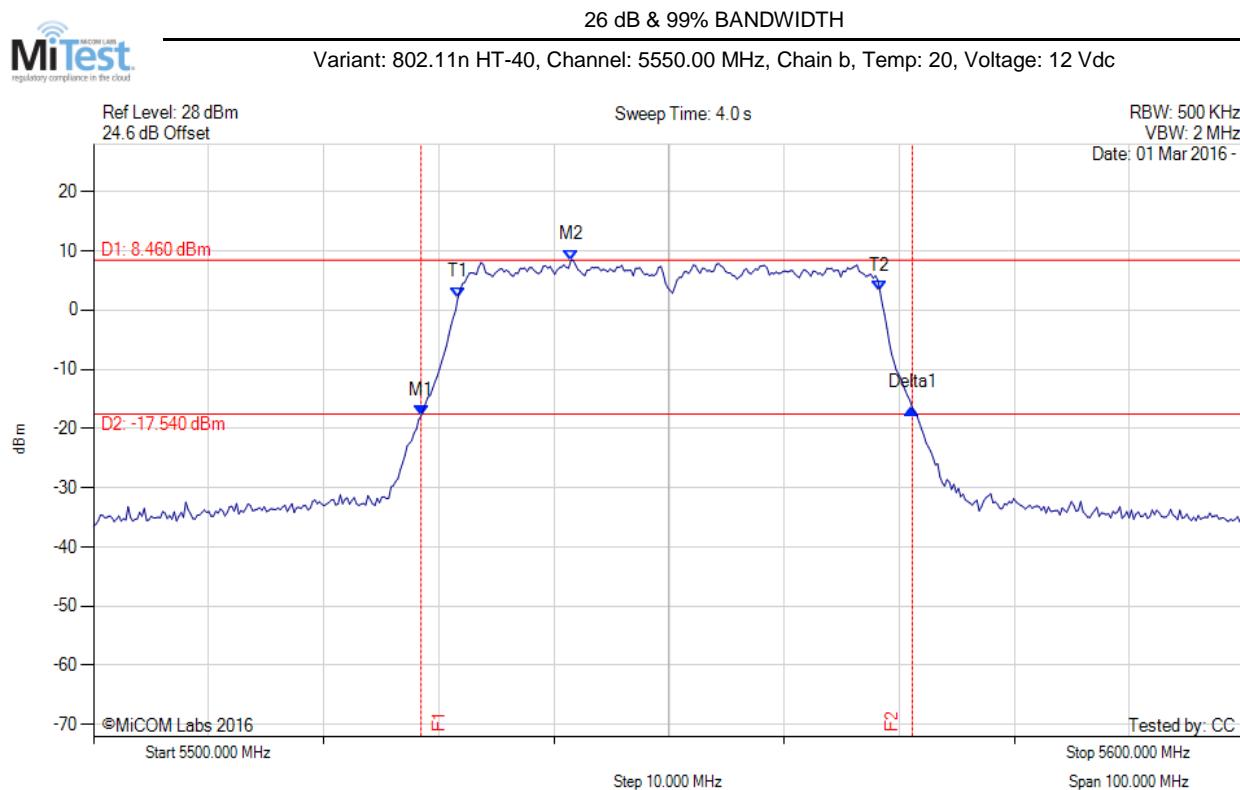
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5528.257 MHz : -18.990 dBm M2 : 5533.667 MHz : 7.770 dBm Delta1 : 43.086 MHz : 1.666 dB T1 : 5531.663 MHz : 1.997 dBm T2 : 5568.337 MHz : 1.716 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.673 MHz

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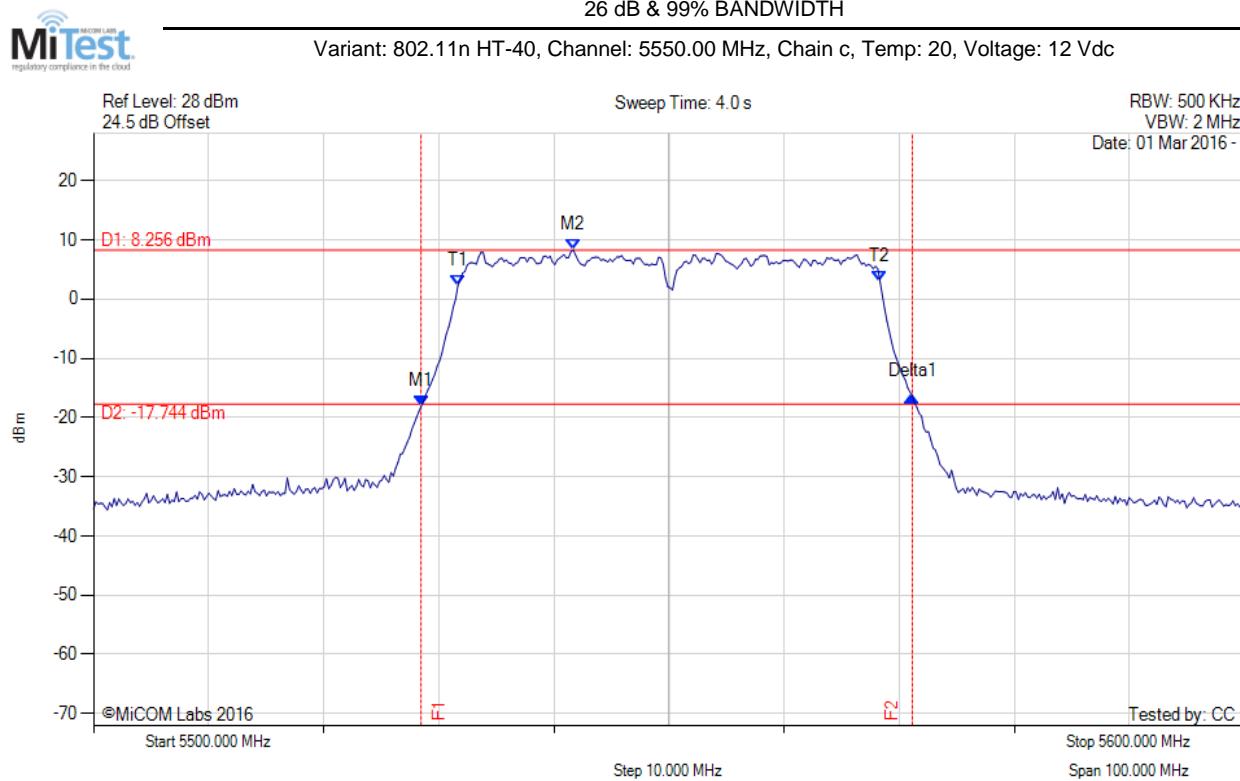
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5528.457 MHz : -17.865 dBm M2 : 5541.483 MHz : 8.460 dBm Delta1 : 42.685 MHz : 1.314 dB T1 : 5531.663 MHz : 2.145 dBm T2 : 5568.337 MHz : 3.135 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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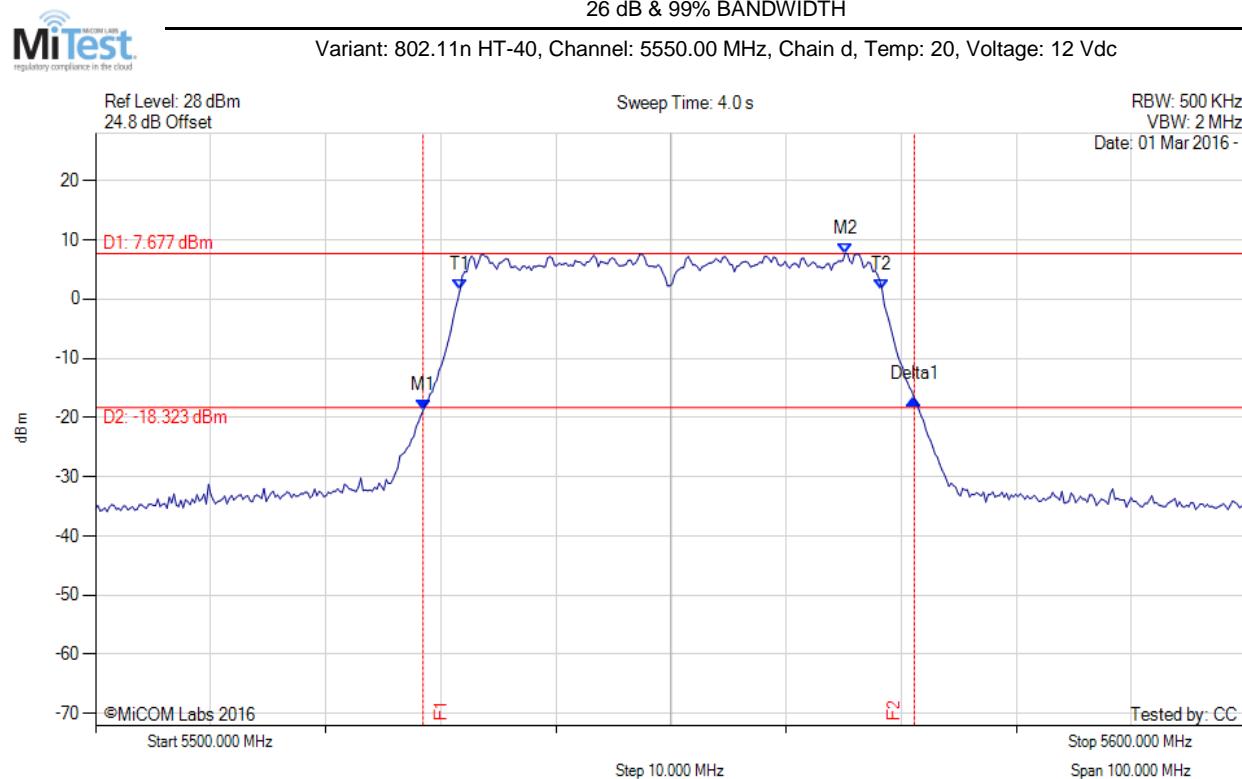
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5528.457 MHz : -18.133 dBm M2 : 5541.683 MHz : 8.256 dBm Delta1 : 42.685 MHz : 1.773 dB T1 : 5531.663 MHz : 2.340 dBm T2 : 5568.337 MHz : 2.940 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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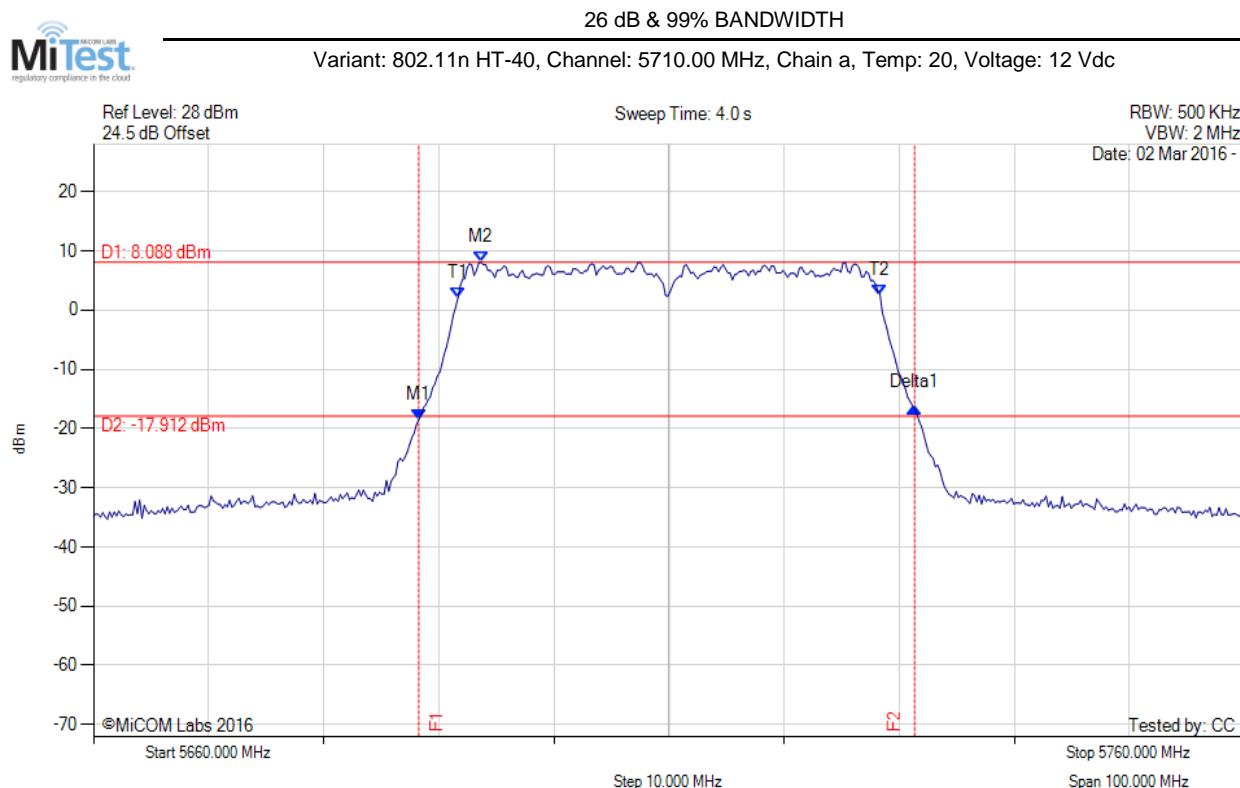
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5528.457 MHz : -18.788 dBm M2 : 5565.130 MHz : 7.677 dBm Delta1 : 42.685 MHz : 1.928 dB T1 : 5531.663 MHz : 1.468 dBm T2 : 5568.337 MHz : 1.614 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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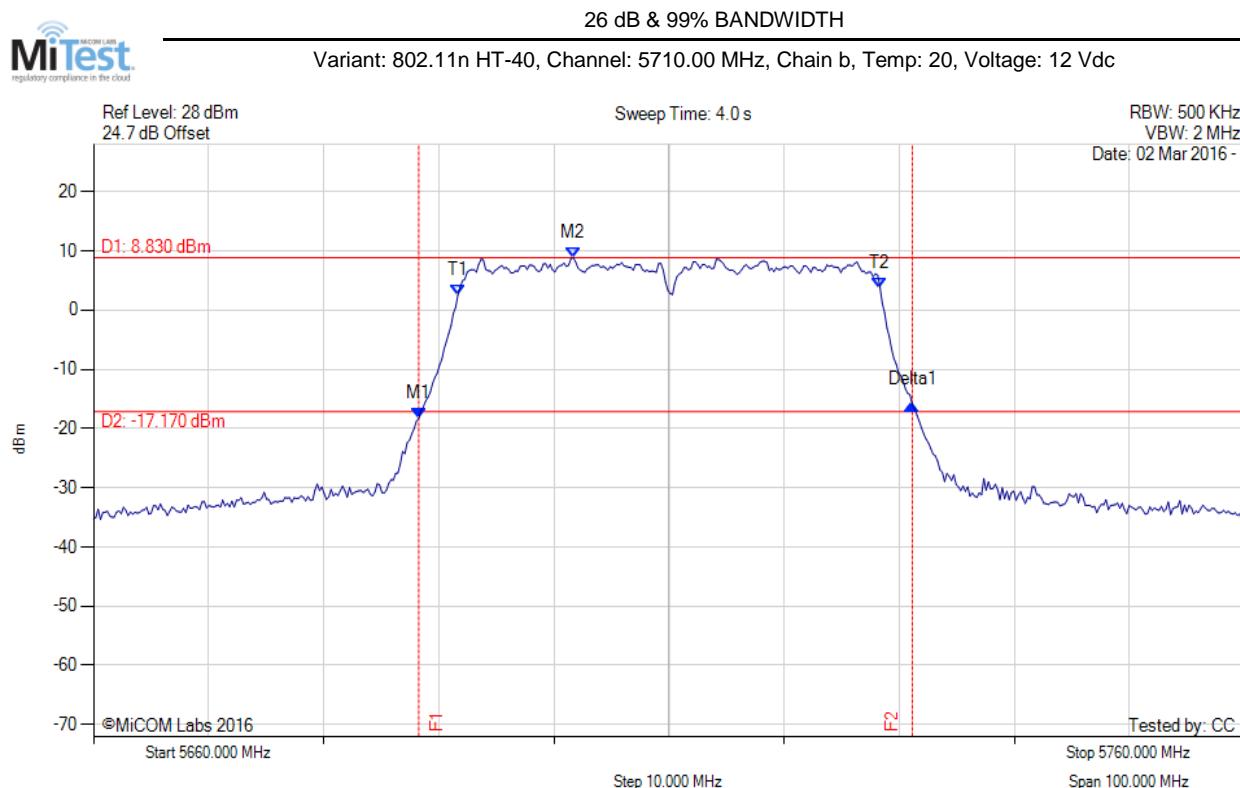
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5688.257 MHz : -18.526 dBm M2 : 5693.667 MHz : 8.088 dBm Delta1 : 43.086 MHz : 2.011 dB T1 : 5691.663 MHz : 2.094 dBm T2 : 5728.337 MHz : 2.560 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.673 MHz

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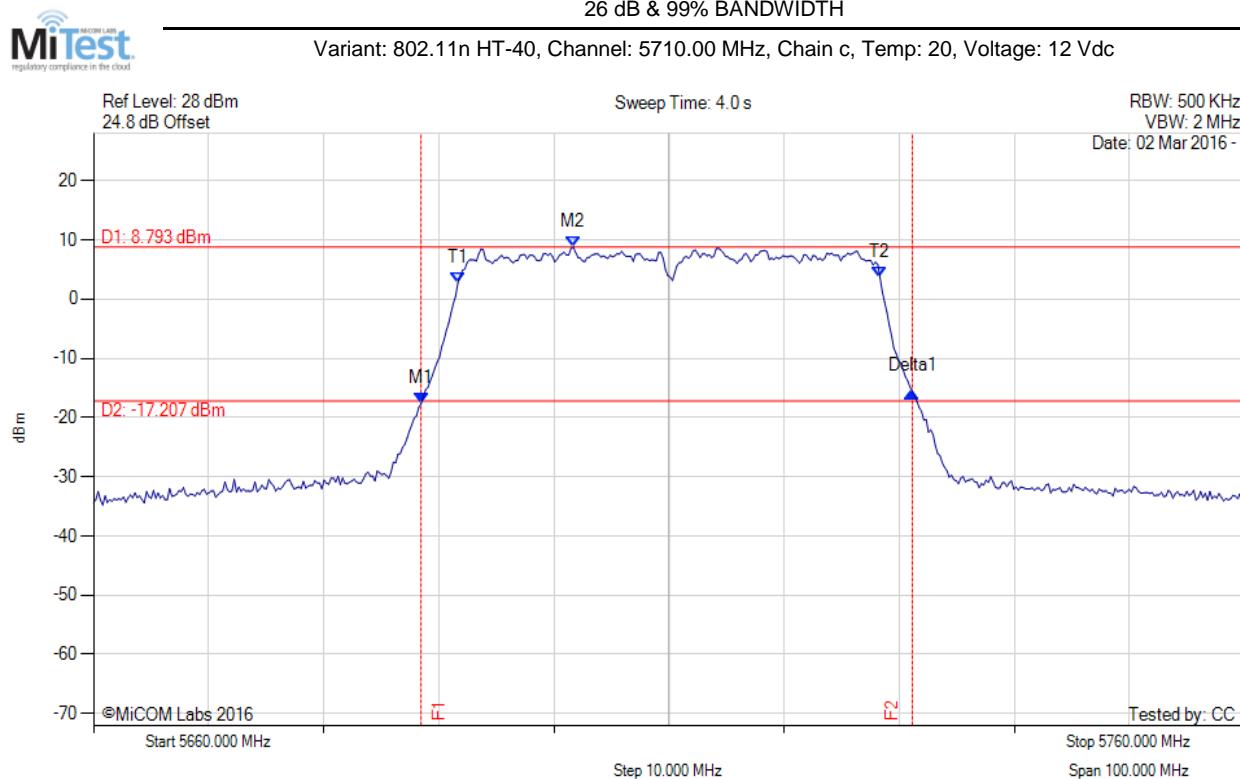
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5688.257 MHz : -18.298 dBm M2 : 5701.683 MHz : 8.830 dBm Delta1 : 42.886 MHz : 2.237 dB T1 : 5691.663 MHz : 2.592 dBm T2 : 5728.337 MHz : 3.752 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz

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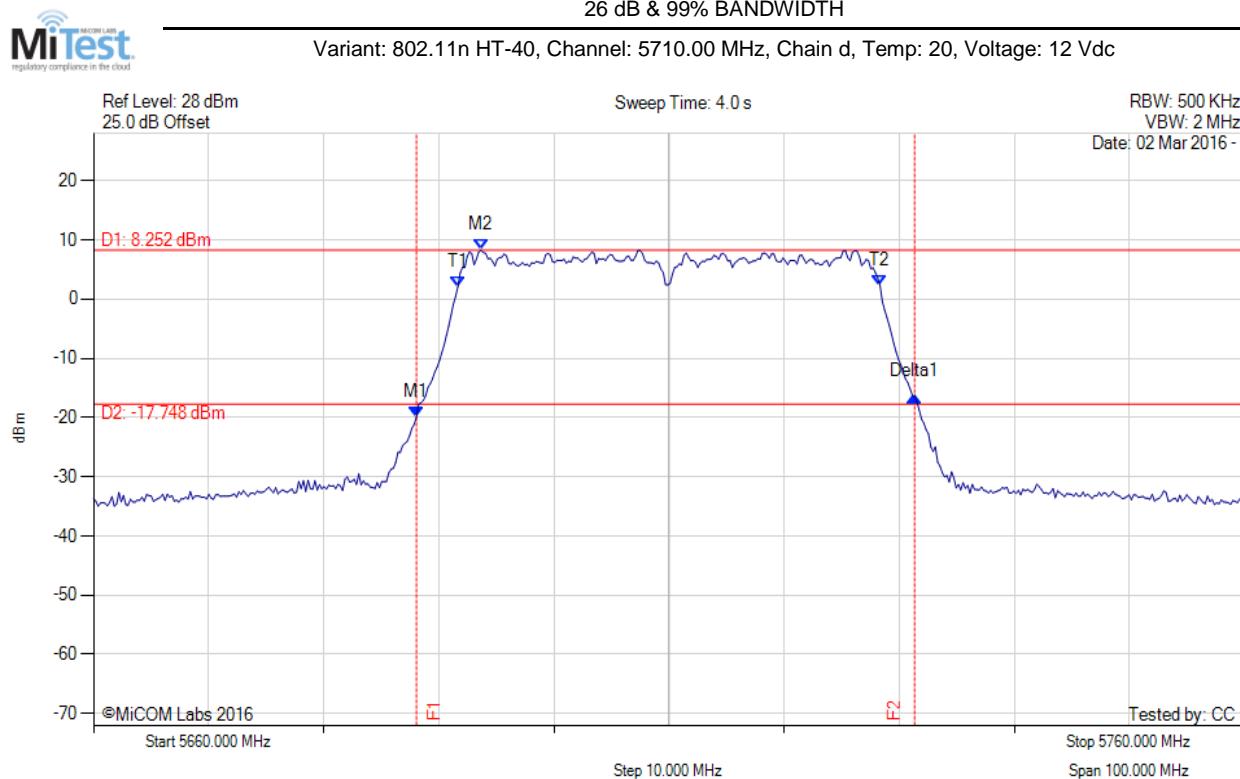
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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5688.457 MHz : -17.645 dBm M2 : 5701.683 MHz : 8.793 dBm Delta1 : 42.685 MHz : 2.024 dB T1 : 5691.663 MHz : 2.773 dBm T2 : 5728.337 MHz : 3.605 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 42.685 MHz Measured 99% Bandwidth: 36.673 MHz

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Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5688.056 MHz : -19.921 dBm M2 : 5693.667 MHz : 8.252 dBm Delta1 : 43.287 MHz : 3.427 dB T1 : 5691.663 MHz : 2.129 dBm T2 : 5728.337 MHz : 2.275 dBm OBW : 36.673 MHz	Measured 26 dB Bandwidth: 43.287 MHz Measured 99% Bandwidth: 36.673 MHz

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