## **TEST REPORT ADDENDUM - CONDUCTED**

**FROM** 



Test of: Test of: Mimosa Networks A5c, A5-14, A5-18

To: FCC CFR 47 Part 15 Subpart E 15.407 & IC RSS-247 (DFS Bands)

Test Report Serial No.: MIMO09-U8\_Conducted Addendum Rev A

Issue Date: 2<sup>nd</sup> August 2016

Master Document Number	Addendum Reports
MIMO09-U8_Master	MIMO09-U8_Conducted
	MIMO09-U8_Radiated
	MIMO09-U8_DFS
	MIMO09 – U2 (FCC Part15B Emissions) A5C
	MIMO09 – U3 (FCC Part15B Emissions) A5-14, A5-18



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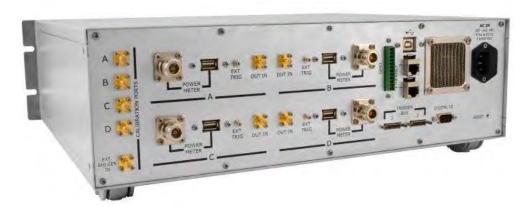
# 1. MEASUREMENT AND PRESENTATION OF TEST DATA

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

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

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





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



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# 2. TEST SUMMARY

List of Measurements

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



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## 3. TEST RESULTS

## 3.1. Peak Transmit Power

Conducted Test Conditions for Maximum Conducted Output Power								
Standard:         FCC CFR 47:15.407         Ambient Temp. (°C):         24.0 - 27.5								
Test Heading:	Maximum Conducted Output Power	Rel. Humidity (%):	32 - 45					
Standard Section(s):	15.407 (a)	5.407 (a) <b>Pressure (mBars):</b> 999 - 1001						
Reference Document(s):	See Normative References							

#### **Test Procedure for Maximum Conducted Output Power Measurement**

Method PM (Measurement using an RF average power meter). KDB 789033 defines a methodology using an average wideband power meter. Measurements were made while the EUT was operating in a continuous transmission mode (100% duty cycle) at the appropriate center frequency. All operational modes and frequency bands were measured independently and the resultant calculated. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported separately. A summation ( $\Sigma$ ) 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 =  $A + G + Y + 10 \log (1/x) dBm$ 

A = Total Power [ $10*Log10 (10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})$ ]

G = Antenna Gain

Y = Beamforming Gain

x = Duty Cycle (average power measurements only)

#### **Limits Maximum Conducted Output Power**

### Operating Frequency Band 5150-5250 MHz

15. 407 (a)(1)

- (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
- (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



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

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

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

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

#### Operating Frequency Band 5725 - 5850 MHz

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

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



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#### **Equipment Configuration for Peak Transmit Power**

Variant:	802.11ac 20	Duty Cycle (%):	99.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measur	Test Measurement Results									
Test Frequency	Measured	d Conducted (+0.04 dl	Output Powe B) (dBm)	er + DCCF	Calculated Total	Minimum 26 dB	Limit Ma	Margin	EUT Power	
Trequency		Por	t(s)		Power	Bandwidth			Setting	
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dB		
5260.0	16.55	16.82	16.94	16.79	22.80	23.647	24.00	-1.20	0x13	
5300.0	16.56	17.09	17.25	17.27	23.08	23.547	24.00	-0.92	0x13	
5335.0	15.93	16.63	16.81	16.73	22.56	24.248	24.00	-1.44	0x13	

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



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## **Equipment Configuration for Peak Transmit Power**

Variant:	802.11ac 40	Duty Cycle (%):	99.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measur	Test Measurement Results								
Test	Measured	l Conducted (+0.04 dl	•	er + DCCF		Minimum 26 dB	Limit	Margin	FUT D
Frequency		Por	t(s)		Power	Bandwidth		Ū	EUT Power Setting
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dB	Johnnig
5270.0	17.50	17.52	17.64	17.98	23.69	42.285	24.00	-0.31	0x11
5330.0	16.62	16.79	16.92	17.16	22.90	42.285	24.00	-1.10	0x11

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



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Variant:	802.11ac 80	Duty Cycle (%):	99.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured	easured Conducted Output Power + DCCF (+0.04 dB) (dBm) Port(s)			Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dB	Cetting
5290.0	16.48	16.49	16.58	16.66	22.58	82.565	24.00	-1.42	0x12

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



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#### **Equipment Configuration for Peak Transmit Power**

Variant:	802.11ac 20	Duty Cycle (%):	99.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured	,	B) (dBm)	er + DCCF	Calculated Total	Minimum 26 dB	Limit	Margin	EUT Power
,		Por	t(s)		Power	Bandwidth			Setting
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dB	
5485.0	16.29	16.74	15.96	17.05	22.55	23.647	24.00	-1.45	0x11
5580.0	16.27	16.22	15.80	16.36	22.19	23.547	24.00	-1.81	0x11
5720.0	16.65	17.29	16.65	16.00	22.70	23.647	24.00	-1.30	0x11

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



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#### **Equipment Configuration for Peak Transmit Power**

Variant:	802.11ac 40	Duty Cycle (%):	99.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured	•	Output Powe B) (dBm) rt(s)	er + DCCF	Calculated Minimum Total 26 dB Limit Margin Power Bandwidth				EUT Power
		PUI	ι(5)	ı		Danuwiutii			Setting
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dB	
5510.0	16.55	16.78	16.13	17.17	22.70	42.084	24.00	-1.30	0x15
5550.0	16.22	16.43	15.58	16.10	22.12	42.285	24.00	-1.88	0x15
5710.0	16.98	17.35	16.68	16.01	22.81	42.285	24.00	-1.19	0x15

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



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#### **Equipment Configuration for Peak Transmit Power**

Variant:	802.11ac 80	Duty Cycle (%):	99.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured	,	B) (dBm)	er + DCCF	Calculated Total	Minimum 26 dB	Limit	Margin	EUT Power
		Por	t(s)		Power	Bandwidth			Setting
MHz	а	b	С	d	Σ Port(s) dBm	MHz	dBm	dB	
5530.0	16.49	16.43	16.03	16.85	22.48	81.764	24.00	-1.52	0x11
5610.0	16.24	16.28	15.97	16.47	22.27	81.764	24.00	-1.73	0x11
5690.0	16.28	16.55	16.36	16.54	22.46	83.367	24.00	-1.54	0x12

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



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## 3.2. 26 dB & 99% Bandwidth

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

#### Test Procedure for 26 dB and 99% Bandwidth Measurement

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

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

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



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

Variant:	802.11ac 20	Duty Cycle (%):	99.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measure	Test Measurement Results									
Test	Me	Measured 26 dB Bandwidth (MHz)			26 dB Bond	width (MILL=)				
Frequency		Por	t(s)		26 dB Bandwidth (MHz)					
MHz	а	b	С	d	Highest	Lowest				
5260.0	<u>24.148</u>	24.048	<u>24.148</u>	23.647	24.148	23.647				
5300.0	<u>24.148</u>	23.547	<u>24.148</u>	23.547	24.148	23.547				
5335.0	24.549	24.248	24.248	24.248	24.549	24.248				

Test	M	Measured 99% Bandwidth (MHz)			99% Bandy	vidth (MHz)	
Frequency		Port(s)		99% Bandwidth (MHz)			
MHz	а	b	С	d	Highest	Lowest	
5260.0	<u>17.936</u>	<u>18.036</u>	<u>17.936</u>	<u>17.936</u>	18.036	17.936	
5300.0	<u>17.936</u>	<u>18.036</u>	<u>17.936</u>	<u>17.936</u>	18.036	17.936	
5335.0	<u>18.036</u>	<u>18.036</u>	<u>18.036</u>	<u>17.936</u>	18.036	17.936	

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



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

Variant:	802.11ac 40	Duty Cycle (%):	99.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measure	Test Measurement Results									
Test	Test Me		Measured 26 dB Bandwidth (MHz)			width (MU=)				
Frequency		Port(s)			26 dB Bandwidth (MHz)					
MHz	а	b	С	d	Highest	Lowest				
5270.0	43.487	42.886	<u>43.086</u>	<u>42.285</u>	43.487	42.285				
5330.0	43.487	43.086	42.886	42.285	43.487	42.285				

Test Frequency	Measured 99% Bandwidth (MHz)  Port(s)			99% Bandv	vidth (MHz)		
MHz	а	b	С	d	Highest	Lowest	
5270.0	<u>36.874</u>	<u>36.874</u>	<u>36.673</u>	<u>36.473</u>	36.874	36.473	
5330.0	<u>36.874</u>	<u>36.673</u>	<u>36.673</u>	<u>36.673</u>	36.874	36.673	

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



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

Variant:	802.11ac 80	Duty Cycle (%):	99.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measure	est Measurement Results									
Test	Me	Measured 26 dB Bandwidth (MHz)				harielth (MILL=)				
Frequency		Por	t(s)		- 26 dB Bandwidth (MHz)					
MHz	а	b	С	d	Highest	Lowest				
5290.0	<u>84.168</u>	<u>82.565</u>	<u>83.367</u>	<u>82.565</u>	84.168	82.565				
Test	M	easured 99% E	Bandwidth (MF	lz)	200/ 5 1 1 1/1/ (2011 )					
Frequency		Port(s)			99% Bandwidth (MHz)					
MHz	а	b	С	d	Highest	Lowest				
5290.0	<u>75.752</u>	<u>75.752</u>	<u>75.752</u>	<u>75.752</u>	75.752	75.752				

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



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

Variant:	802.11ac 20	Duty Cycle (%):	99.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measure	Test Measurement Results									
Test	Measured 26 dB Bandwidth (MHz)		OC dD Dandwidth (MILE)							
Frequency		Por	t(s)		- 26 dB Bandwidth (MHz)					
MHz	а	b	С	d	Highest	Lowest				
5485.0	23.948	23.647	23.647	23.848	23.948	23.647				
5580.0	<u>23.948</u>	23.848	23.848	23.547	23.948	23.547				
5720.0	23.747	24.248	23.647	24.048	24.248	23.647				

Test	M	easured 99% E	Bandwidth (MH	lz)	90% Randy	vidth (MHz)	
Frequency		Por	t(s)		99 / Balluk	width (WiFiZ)	
MHz	а	b	С	d	Highest	Lowest	
5485.0	<u>18.036</u>	<u>17.936</u>	<u>17.936</u>	<u>17.936</u>	18.036	17.936	
5580.0	<u>17.936</u>	<u>18.036</u>	<u>18.036</u>	<u>17.936</u>	18.036	17.936	
5720.0	<u>18.036</u>	<u>18.036</u>	<u>18.036</u>	<u>17.936</u>	18.036	17.936	

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



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

Variant:	802.11ac 40	Duty Cycle (%):	99.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results								
Test	Measured 26 dB Bandwidth (MHz)			26 dB Band	width (MILL=)			
Frequency		Port(s)		26 UB Banu	width (MHZ)			
MHz	а	b	С	d	Highest	Lowest		
5510.0	43.086	<u>43.086</u>	<u>42.886</u>	42.084	43.086	42.084		
5550.0	43.687	<u>42.886</u>	43.287	<u>42.285</u>	43.687	42.285		
5710.0	43.487	43.086	43.487	<u>42.285</u>	43.487	42.285		

Test	Me	easured 99% E	Bandwidth (MF	lz)	00% Bands	vidth (MHz)	
Frequency		Por	t(s)		99 % Balluv	vidiri (ivinz)	
MHz	а	b	С	d	Highest	Lowest	
5510.0	36.874	<u>36.673</u>	<u>36.673</u>	<u>36.473</u>	36.874	36.473	
5550.0	36.874	<u>36.874</u>	<u>36.874</u>	<u>36.473</u>	36.874	36.473	
5710.0	<u>36.874</u>	<u>36.874</u>	<u>36.874</u>	<u>36.473</u>	36.874	36.473	

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



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

Variant:	802.11ac 80	Duty Cycle (%):	99.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results								
Test	Measured 26 dB Bandwidth (MHz)			Hz)	26 dB Band	width (MU=)		
Frequency		Por	t(s)		26 dB Bandwidth (MHz)			
MHz	а	b	С	d	Highest	Lowest		
5530.0	83.768	<u>81.764</u>	<u>82.565</u>	<u>81.764</u>	83.768	81.764		
5610.0	83.768	<u>81.764</u>	<u>82.966</u>	<u>81.764</u>	83.768	81.764		
5690.0	83.367	<u>83.768</u>	<u>83.768</u>	<u>84.168</u>	84.168	83.367		

Test	M	easured 99% E		lz)	99% Bandy	vidth (MHz)	
Frequency		Por	t(s)			,	
MHz	а	b	С	d	Highest	Lowest	
5530.0	<u>75.752</u>	<u>75.752</u>	<u>75.752</u>	<u>75.752</u>	75.752	75.752	
5610.0	<u>75.752</u>	<u>75.351</u>	<u>75.752</u>	<u>76.152</u>	76.152	75.351	
5690.0	<u>75.752</u>	<u>75.351</u>	<u>75.752</u>	<u>75.752</u>	75.752	75.351	

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



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## 3.3. Power Spectral Density

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

#### **Test Procedure for Power Spectral Density**

The in-band power spectral density was measured using the test technique specified in KDB 789033. A 1 MHz measurement bandwidth was implemented for the analyzer sweep. Once the sweep is complete the analyzer trace data is downloaded and used for post processing purposes.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. The Peak Power Spectral Density is the highest level found across the emission bandwidth. With multiple antenna port measurements the numerical analyzer data from each port is summed (å) and a link to this additional graphic is provided.

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

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

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

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

#### **Limits Power Spectral Density**

## Operating Frequency Band 5150-5250 MHz

15. 407 (a)(1)

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



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

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

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

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

For the  $\hat{5}.\hat{25}.\hat{5}.35$  GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Operating Frequency Band 5725 - 5850 MHz

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

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



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

Variant:	802.11ac 20	Duty Cycle (%):	99.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density Port(s) (dBm/MHz)			Summation Peak Marker + DCCF (+0.04 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5260.0	3.978	4.298	4.529	4.745	<u>10.386</u>	11.0	-0.6
5300.0	3.950	4.520	4.720	4.642	<u>10.449</u>	11.0	-0.6
5335.0	3.346	4.326	4.417	4.224	<u>10.080</u>	11.0	-0.9

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

DCCF - Duty Cycle Correction Factor



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

Variant:	802.11ac 40	Duty Cycle (%):	99.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Measured Power Spectral Density					Summation		
Test Frequency	Port(s) (dBm/MHz)			Peak Marker + DCCF (+0.04 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5270.0	2.043	2.012	<u>1.960</u>	2.498	<u>8.142</u>	11.0	-2.9
5330.0	<u>1.035</u>	<u>1.392</u>	<u>1.456</u>	<u>1.788</u>	<u>7.369</u>	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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#### **Equipment Configuration for Power Spectral Density**

Variant:	802.11ac 80	Duty Cycle (%):	99.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
_ ,	N	leasured Power	Summation				
Test Frequency	Port(s) (dBm/MHz)			Peak Marker + DCCF (+0.04 dB)	Limit	Margin	
MHz	a b c d			dBm/MHz	dBm/MHz	dB	
5290.0	<u>-1.964</u>	<u>-1.769</u>	<u>-1.142</u>	<u>-1.619</u>	4.305	11.0	-6.7

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

Variant:	802.11ac 20	Duty Cycle (%):	99.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurem	ent Results						
Test Frequency	Measured Power Spectral Density  Port(s) (dBm/MHz)			Summation Peak Marker + DCCF (+0.04 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5485.0	<u>3.965</u>	4.353	3.427	<u>4.691</u>	<u>10.129</u>	11.0	-0.9
5580.0	3.642	<u>3.774</u>	<u>3.268</u>	<u>3.914</u>	9.660	11.0	-1.4
5720.0	<u>4.516</u>	<u>5.160</u>	4.502	<u>3.889</u>	<u>10.529</u>	11.0	-0.5

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**

Variant:	802.11ac 40	Duty Cycle (%):	99.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurem	Test Measurement Results						
Test Frequency	Measured Power Spectral Density Port(s) (dBm/MHz)			Summation Peak Marker + DCCF (+0.04 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5510.0	<u>1.223</u>	<u>1.464</u>	<u>0.629</u>	<u>1.865</u>	7.347	11.0	-3.7
5550.0	<u>0.813</u>	<u>1.174</u>	0.098	<u>0.759</u>	<u>6.667</u>	11.0	-4.4
5710.0	<u>2.209</u>	<u>2.140</u>	<u>1.451</u>	<u>0.854</u>	<u>7.711</u>	11.0	-3.3

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

DCCF - Duty Cycle Correction Factor



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

Variant:	802.11ac 80	Duty Cycle (%):	99.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	5.00
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	Not Applicable
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurem	Test Measurement Results						
Test Frequency	Measured Power Spectral Density Port(s) (dBm/MHz)			Summation Peak Marker + DCCF (+0.04 dB)	Limit	Margin	
MHz	а	b	С	d	dBm/MHz	dBm/MHz	dB
5530.0	<u>-1.961</u>	<u>-1.657</u>	<u>-2.337</u>	<u>-0.893</u>	4.122	11.0	-6.9
5610.0	<u>-1.376</u>	<u>-1.038</u>	<u>-2.435</u>	<u>-1.336</u>	4.336	11.0	-6.7
5690.0	<u>-0.735</u>	<u>-0.482</u>	<u>-1.002</u>	<u>-0.428</u>	<u>5.120</u>	11.0	-5.9

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

DCCF - Duty Cycle Correction Factor



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# A. APPENDIX - GRAPHICAL IMAGES

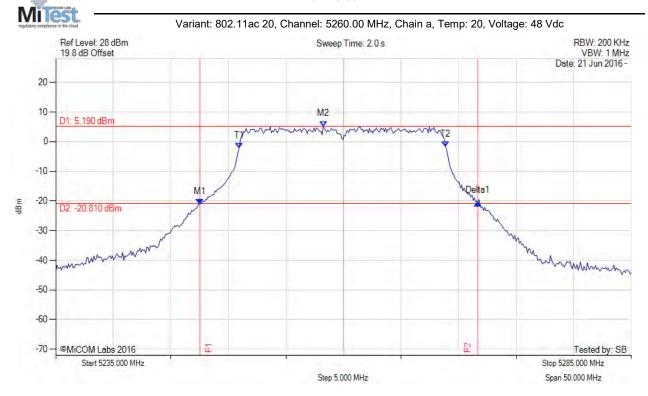


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# A.1. 26 dB & 99% Bandwidth

#### 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		Measured 26 dB Bandwidth: 24.148 MHz Measured 99% Bandwidth: 17.936 MHz

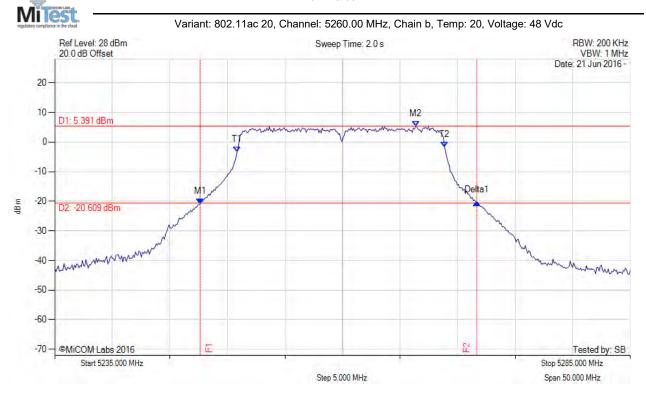


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#### 26 dB & 99% BANDWIDTH



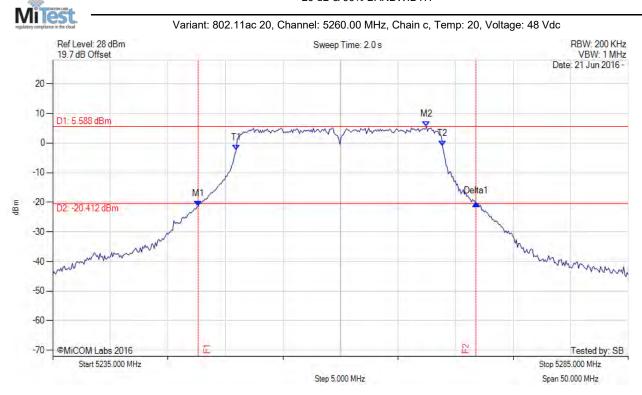
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.048 MHz Measured 99% Bandwidth: 18.036 MHz



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#### 26 dB & 99% BANDWIDTH



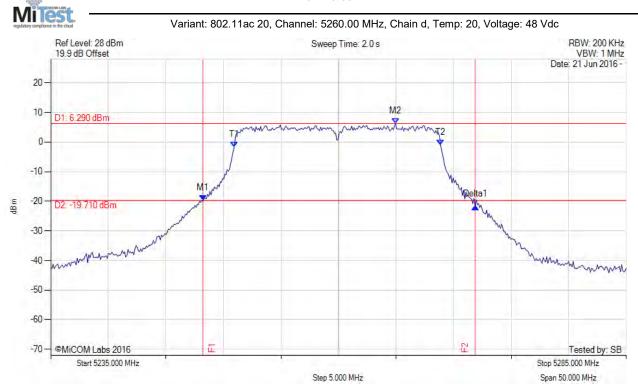
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.148 MHz Measured 99% Bandwidth: 17.936 MHz



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#### 26 dB & 99% BANDWIDTH



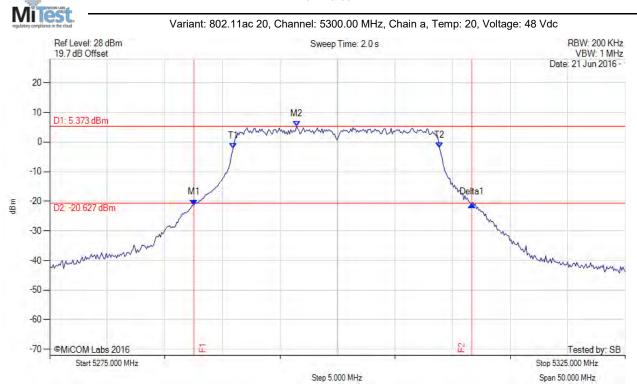
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 17.936 MHz



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#### 26 dB & 99% BANDWIDTH



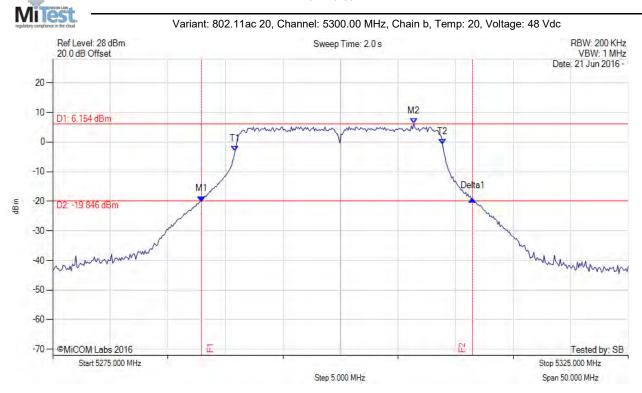
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.148 MHz Measured 99% Bandwidth: 17.936 MHz



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#### 26 dB & 99% BANDWIDTH



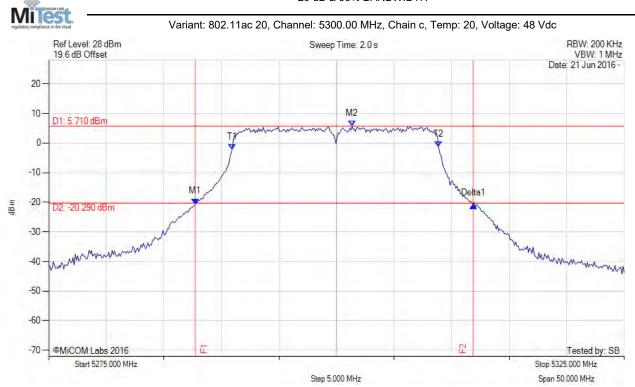
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 18.036 MHz



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#### 26 dB & 99% BANDWIDTH



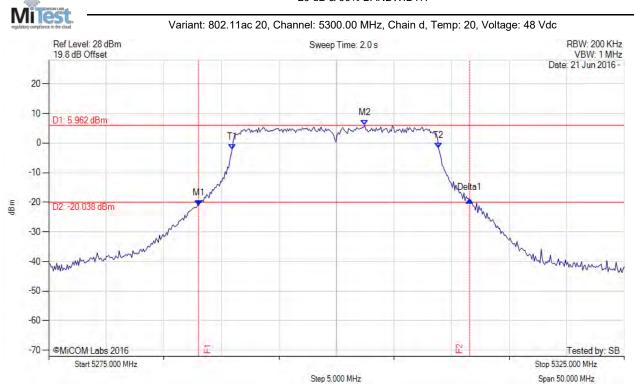
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.148 MHz Measured 99% Bandwidth: 17.936 MHz



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#### 26 dB & 99% BANDWIDTH



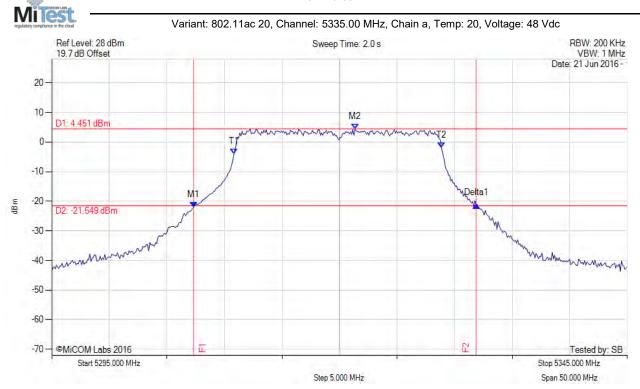
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



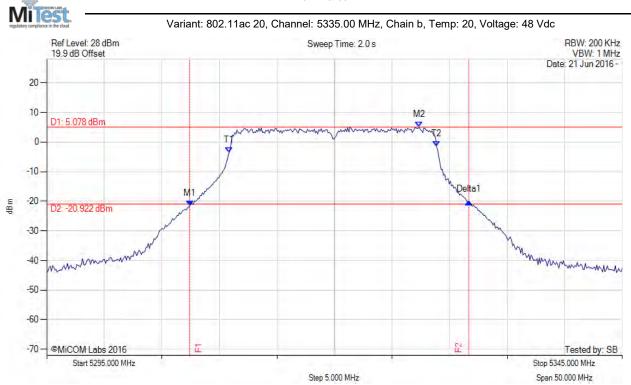
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.549 MHz Measured 99% Bandwidth: 18.036 MHz



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## 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		Measured 26 dB Bandwidth: 24.248 MHz Measured 99% Bandwidth: 18.036 MHz

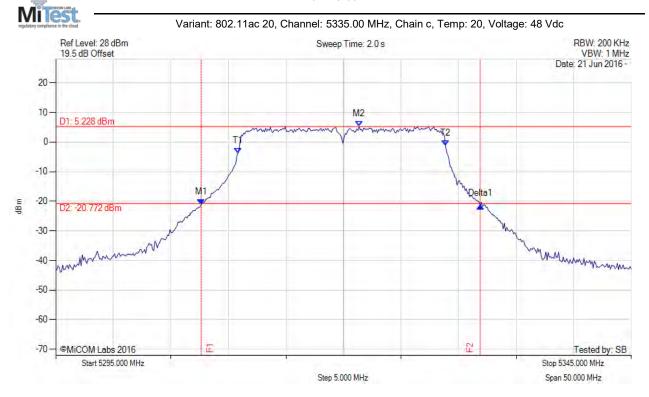


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## 26 dB & 99% BANDWIDTH



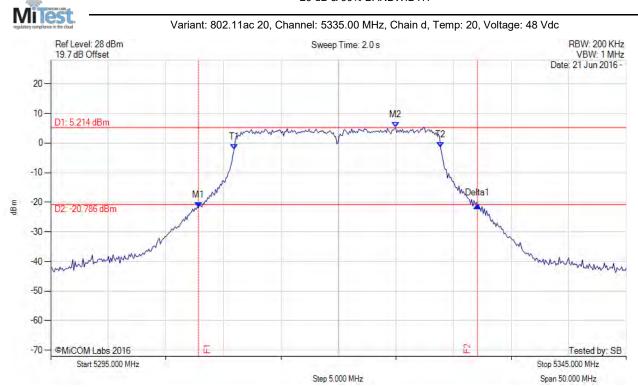
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.248 MHz Measured 99% Bandwidth: 18.036 MHz



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## 26 dB & 99% BANDWIDTH



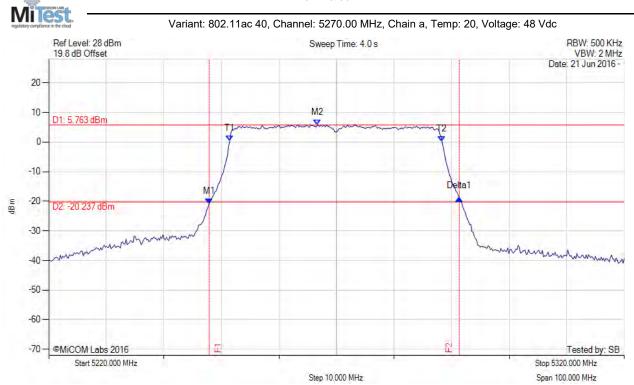
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.248 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



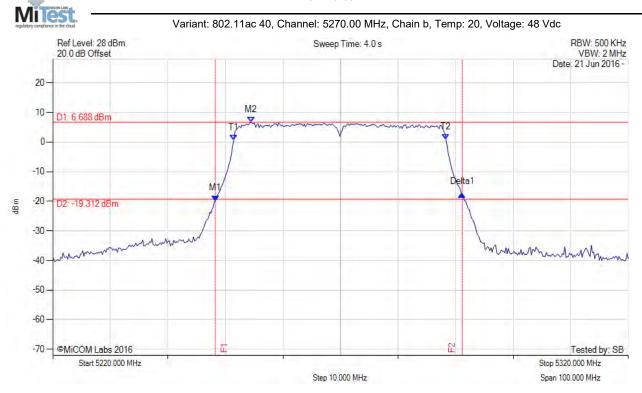
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.487 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



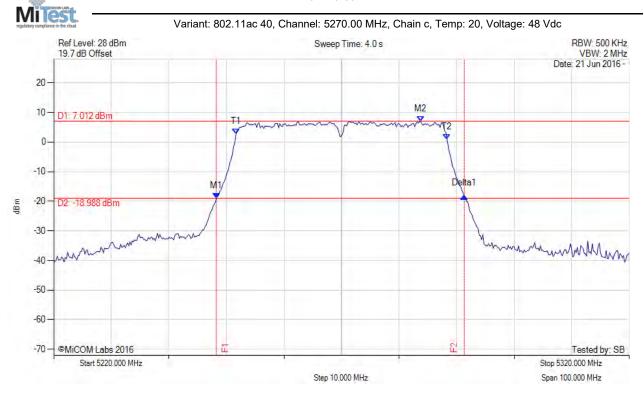
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



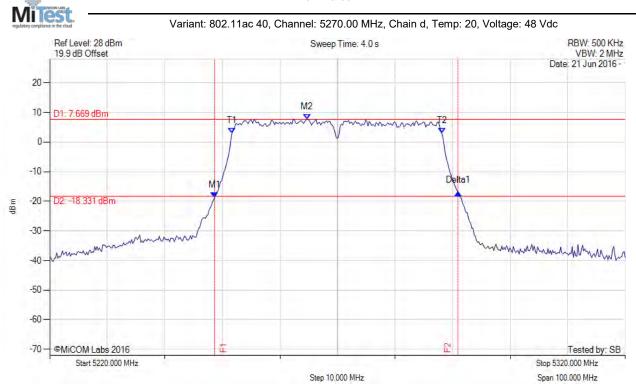
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.673 MHz



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## 26 dB & 99% BANDWIDTH



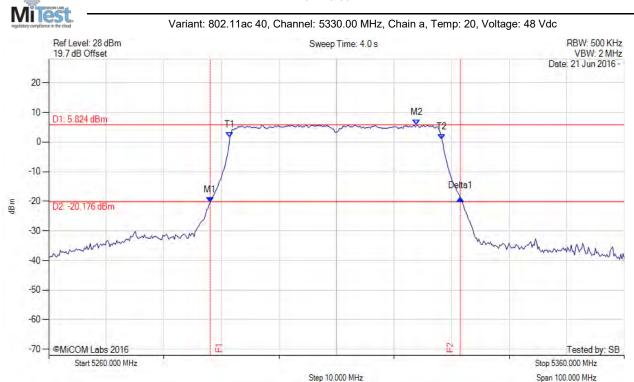
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.285 MHz Measured 99% Bandwidth: 36.473 MHz



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## 26 dB & 99% BANDWIDTH



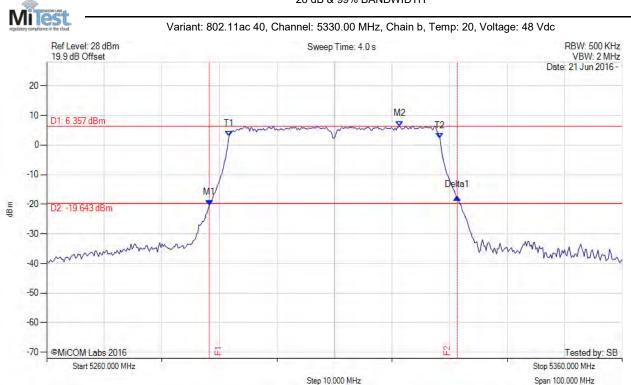
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.487 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



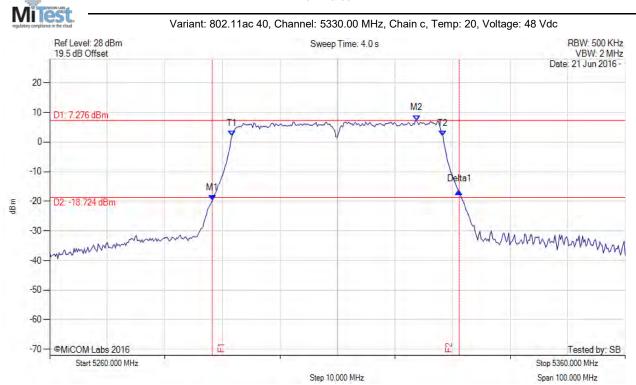
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.673 MHz



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## 26 dB & 99% BANDWIDTH



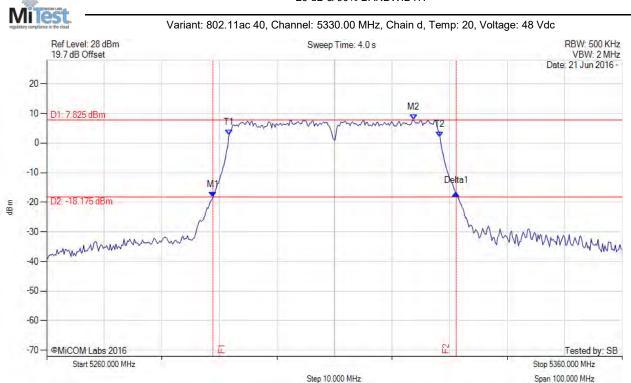
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz



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## 26 dB & 99% BANDWIDTH



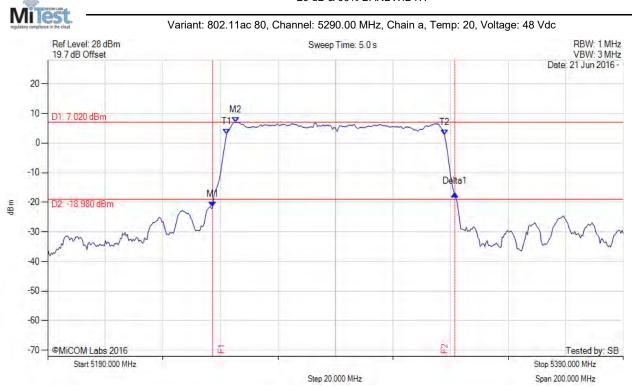
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.285 MHz Measured 99% Bandwidth: 36.673 MHz



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## 26 dB & 99% BANDWIDTH



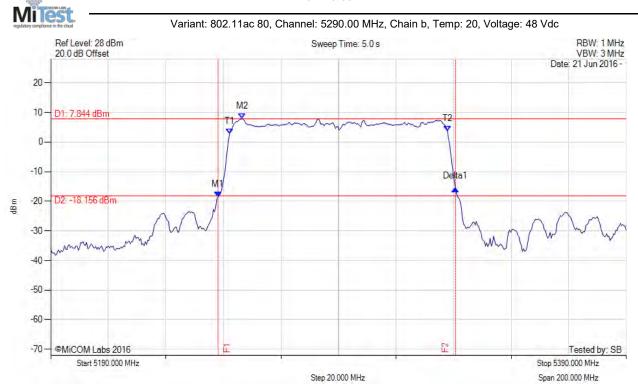
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 84.168 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



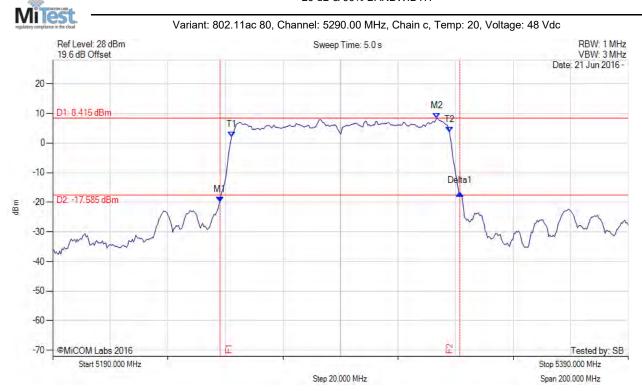
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 82.565 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



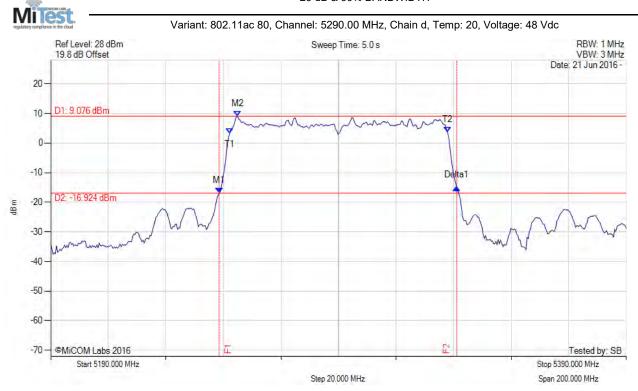
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 83.367 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



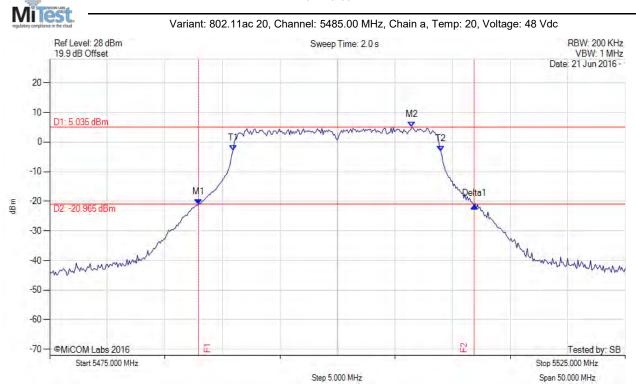
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 82.565 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



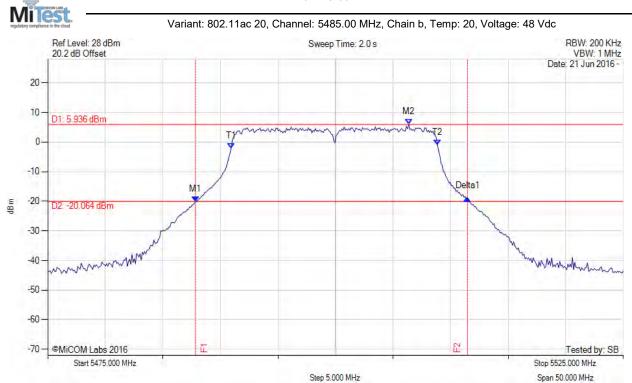
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.948 MHz Measured 99% Bandwidth: 18.036 MHz



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## 26 dB & 99% BANDWIDTH



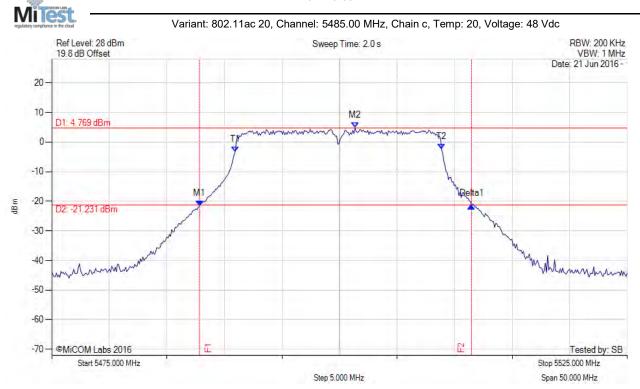
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



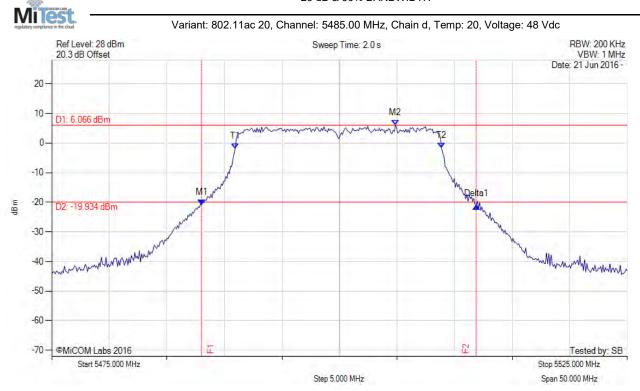
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



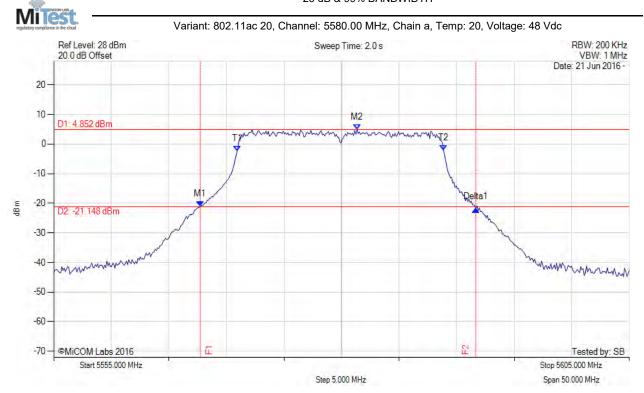
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.848 MHz Measured 99% Bandwidth: 17.936 MHz



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# 26 dB & 99% BANDWIDTH



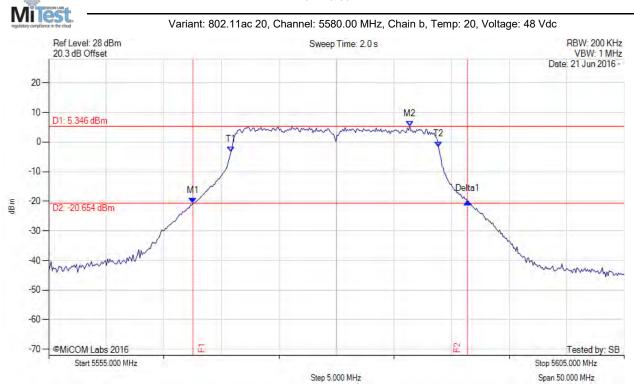
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.948 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



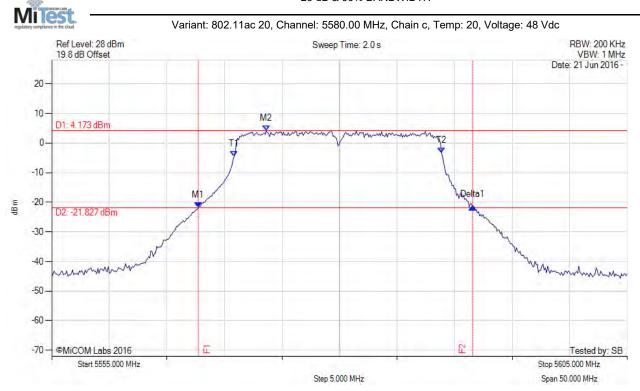
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.848 MHz Measured 99% Bandwidth: 18.036 MHz



Serial #: MIMO09-U8\_Conducted Addendum Rev A

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## 26 dB & 99% BANDWIDTH



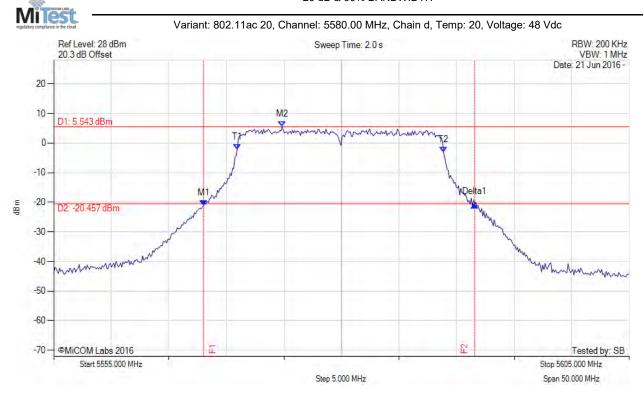
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.848 MHz Measured 99% Bandwidth: 18.036 MHz



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## 26 dB & 99% BANDWIDTH



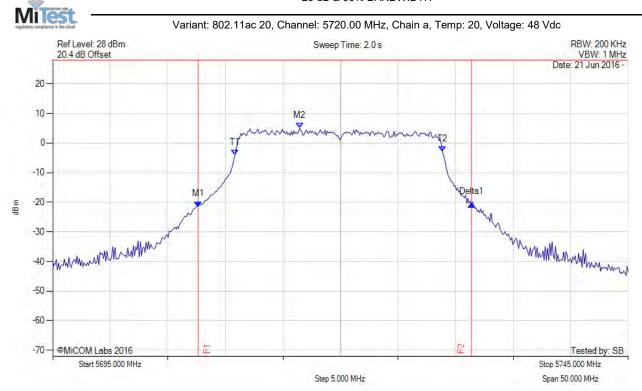
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.547 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



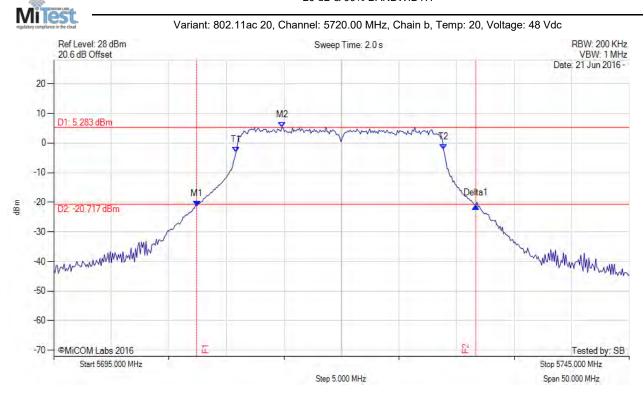
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.747 MHz Measured 99% Bandwidth: 18.036 MHz



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## 26 dB & 99% BANDWIDTH



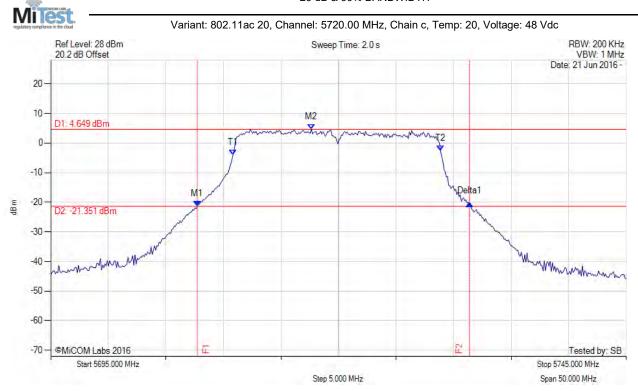
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.248 MHz Measured 99% Bandwidth: 18.036 MHz



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## 26 dB & 99% BANDWIDTH



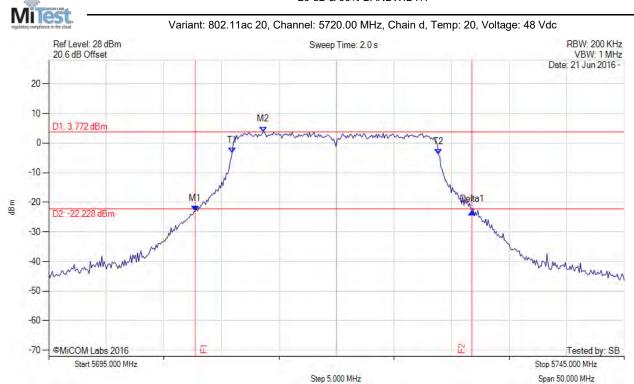
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 23.647 MHz Measured 99% Bandwidth: 18.036 MHz



Serial #: MIMO09-U8\_Conducted Addendum Rev A

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## 26 dB & 99% BANDWIDTH



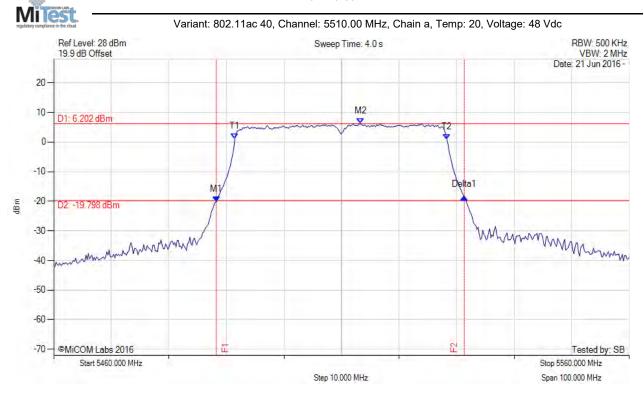
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 24.048 MHz Measured 99% Bandwidth: 17.936 MHz



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## 26 dB & 99% BANDWIDTH



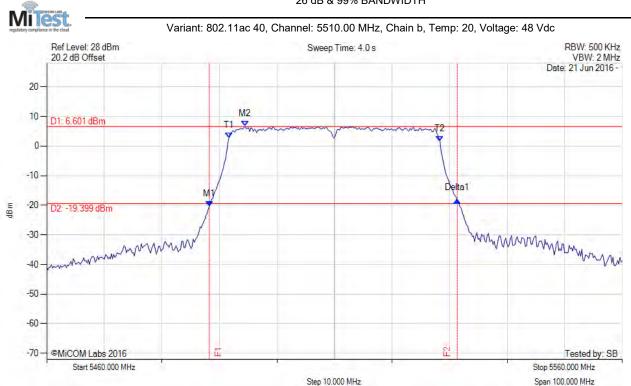
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



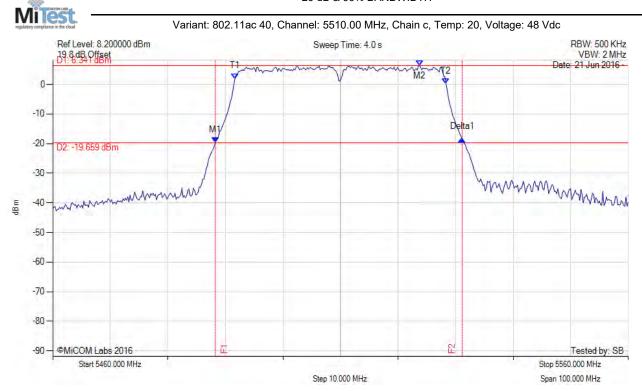
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.673 MHz



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## 26 dB & 99% BANDWIDTH



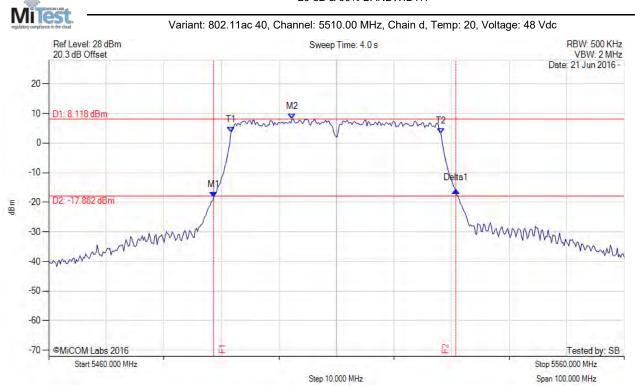
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
	M1: 5488.257 MHz: -19.665 dBm M2: 5523.727 MHz: 6.341 dBm Delta1: 42.886 MHz: 1.261 dB T1: 5491.663 MHz: 1.964 dBm T2: 5528.337 MHz: 0.227 dBm OBW: 36.673 MHz	Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.673 MHz



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## 26 dB & 99% BANDWIDTH



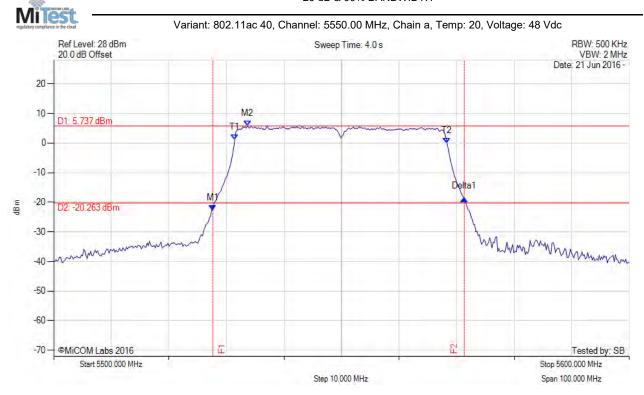
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.084 MHz Measured 99% Bandwidth: 36.473 MHz



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## 26 dB & 99% BANDWIDTH



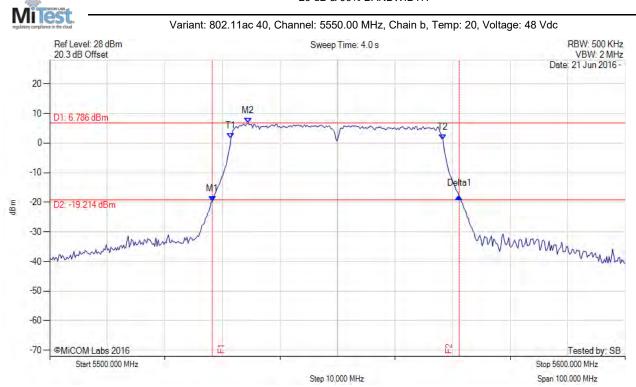
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.687 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



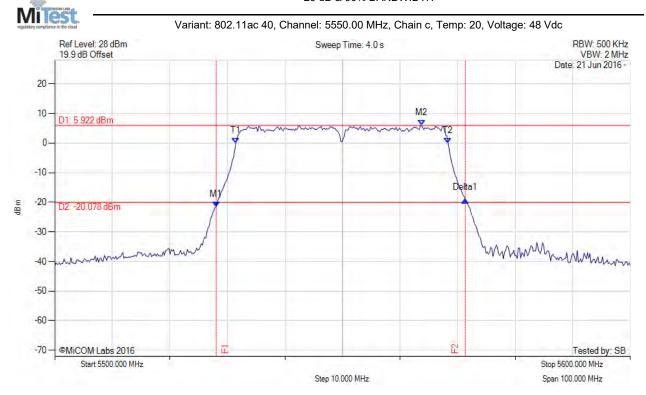
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.886 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



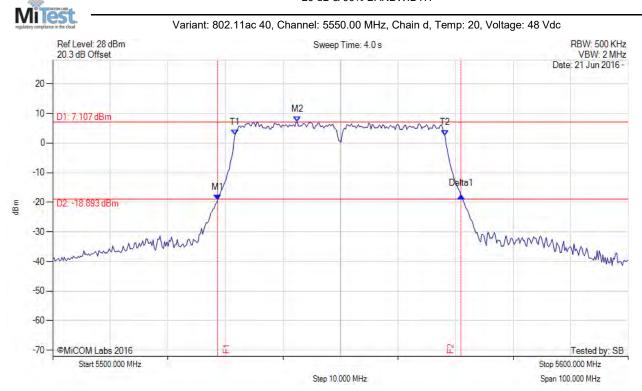
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.287 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



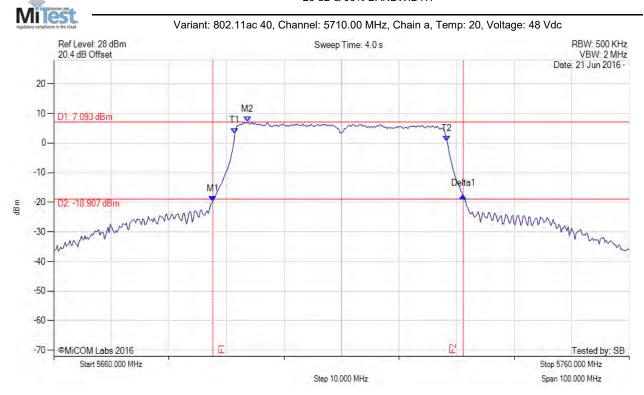
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.285 MHz Measured 99% Bandwidth: 36.473 MHz



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## 26 dB & 99% BANDWIDTH



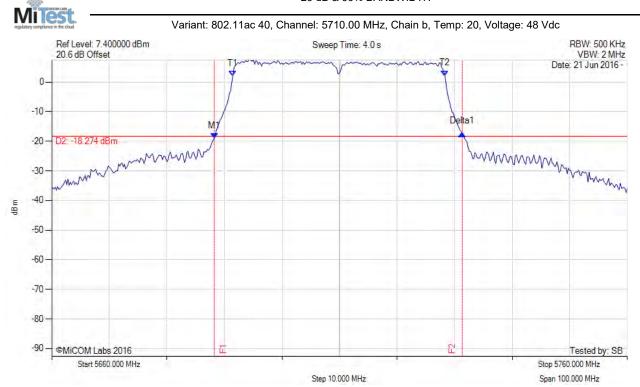
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.487 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



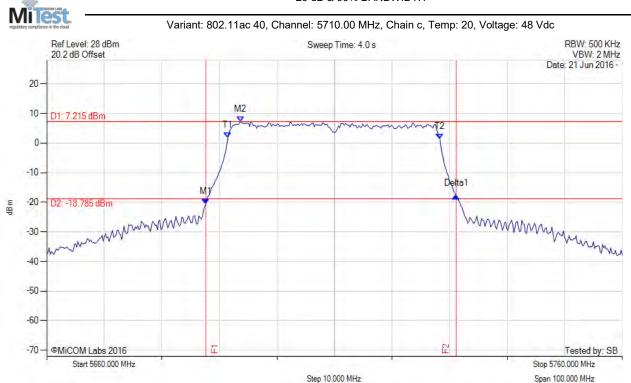
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.086 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



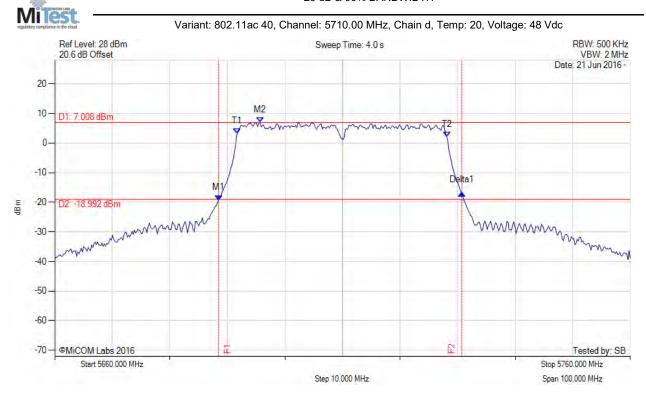
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 43.487 MHz Measured 99% Bandwidth: 36.874 MHz



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## 26 dB & 99% BANDWIDTH



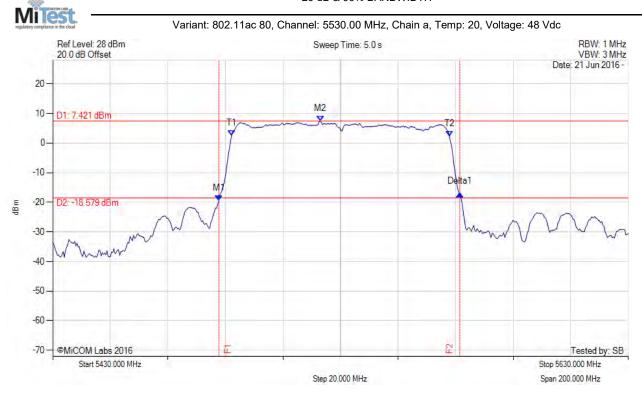
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 42.285 MHz Measured 99% Bandwidth: 36.473 MHz



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## 26 dB & 99% BANDWIDTH



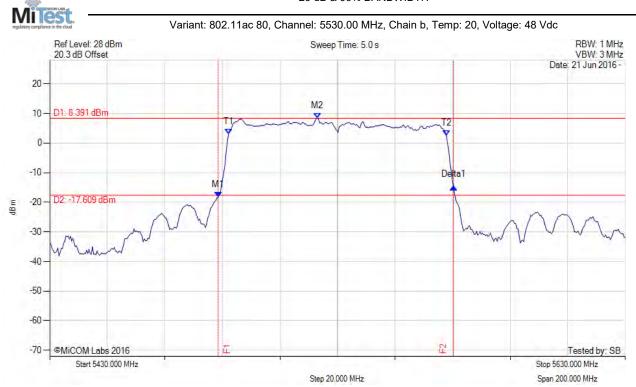
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1: 5487.715 MHz: -19.557 dBm M2: 5522.986 MHz: 7.421 dBm Delta1: 83.768 MHz: 2.410 dB T1: 5492.124 MHz: 2.507 dBm T2: 5567.876 MHz: 2.318 dBm OBW: 75.752 MHz	Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



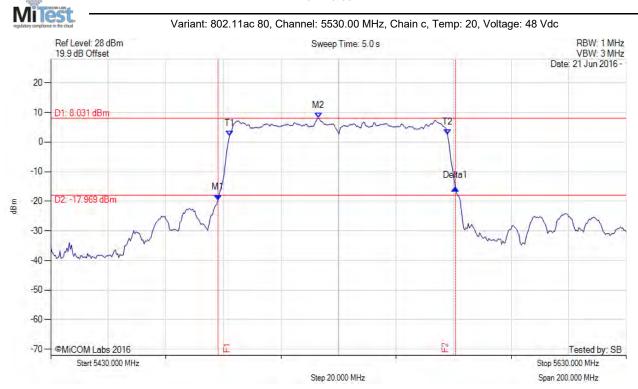
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 81.764 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



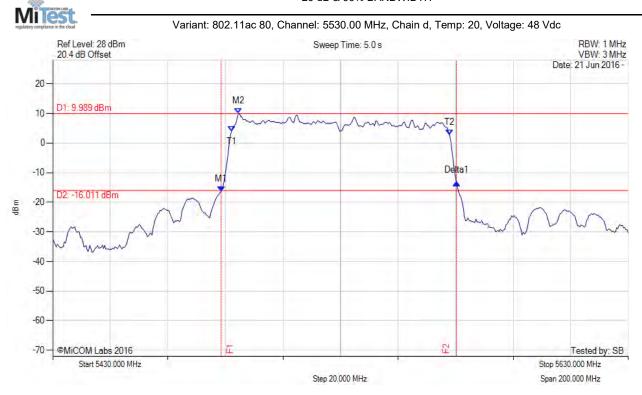
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 82.565 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



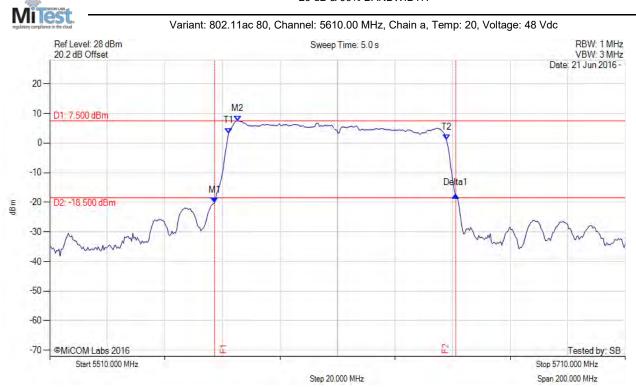
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 81.764 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



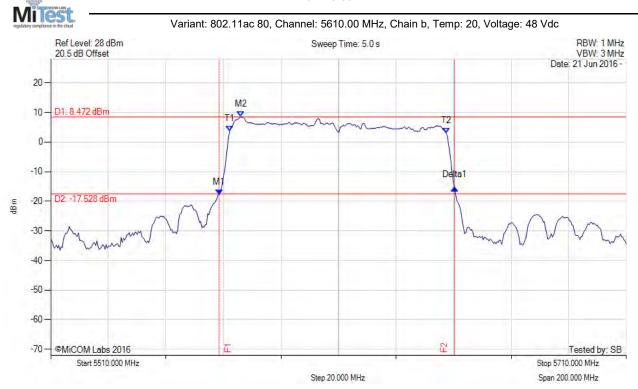
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



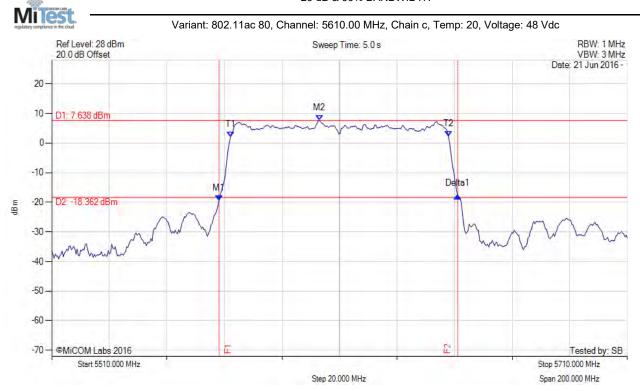
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 81.764 MHz Measured 99% Bandwidth: 75.351 MHz



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## 26 dB & 99% BANDWIDTH



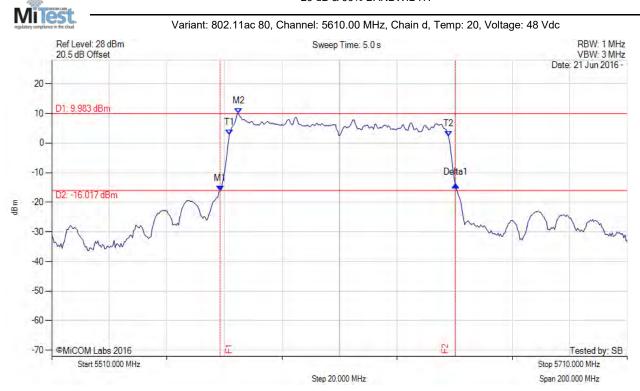
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 82.966 MHz Measured 99% Bandwidth: 75.752 MHz



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## 26 dB & 99% BANDWIDTH



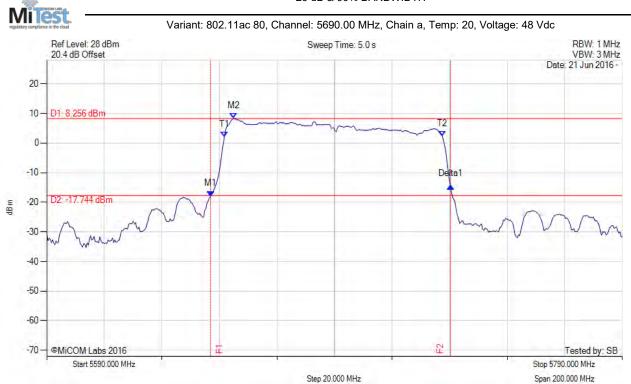
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 81.764 MHz Measured 99% Bandwidth: 76.152 MHz



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## 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		Measured 26 dB Bandwidth: 83.367 MHz Measured 99% Bandwidth: 75.752 MHz

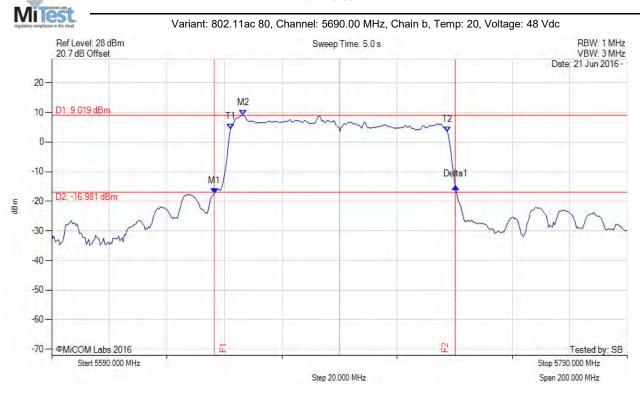


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## 26 dB & 99% BANDWIDTH



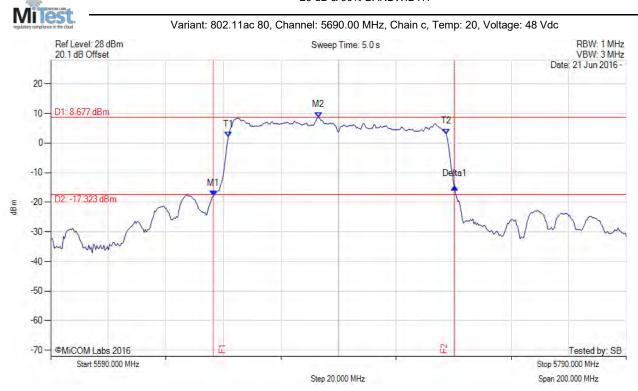
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.351 MHz



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## 26 dB & 99% BANDWIDTH



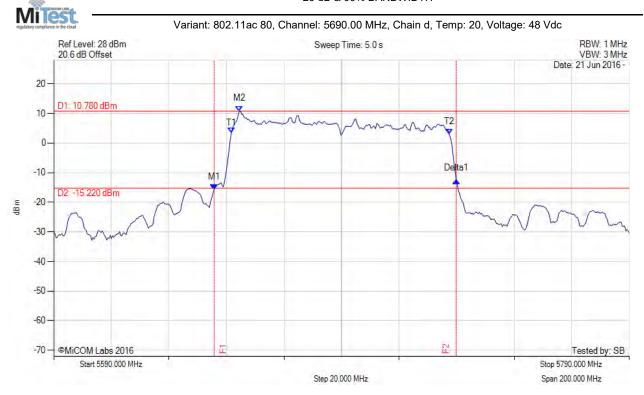
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD		Measured 26 dB Bandwidth: 83.768 MHz Measured 99% Bandwidth: 75.752 MHz



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## 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		Measured 26 dB Bandwidth: 84.168 MHz Measured 99% Bandwidth: 75.752 MHz

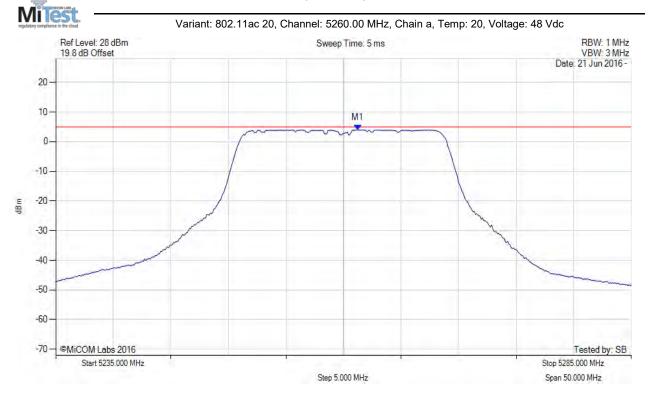


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# A.2. Power Spectral Density

### POWER SPECTRAL DENSITY



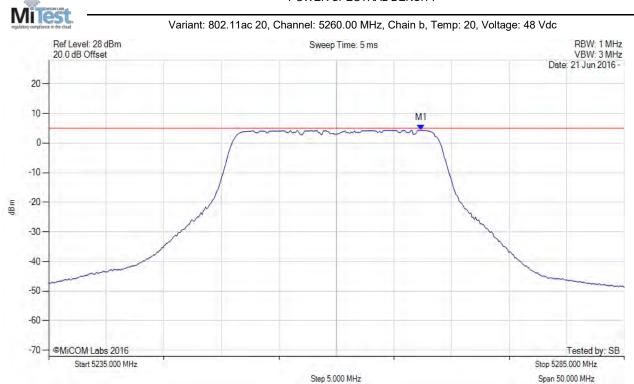
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5261.253 MHz : 3.978 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



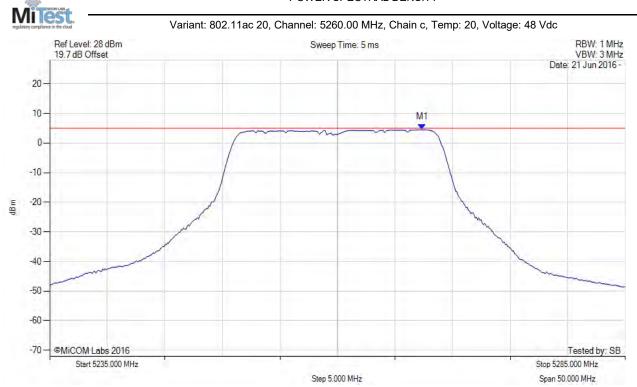
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5267.365 MHz: 4.298 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5267.365 MHz : 4.529 dBm	Limit: ≤ 4.980 dBm

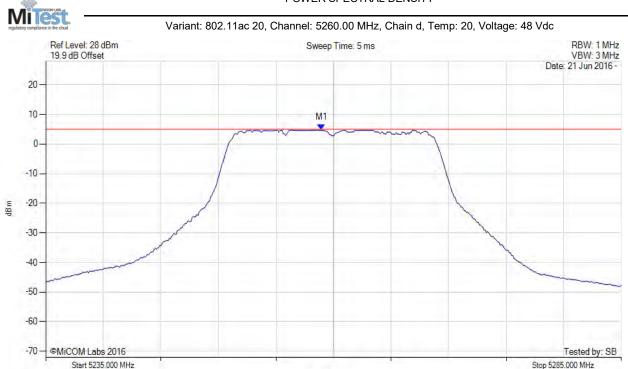


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Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5258.948 MHz: 4.745 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

Step 5.000 MHz

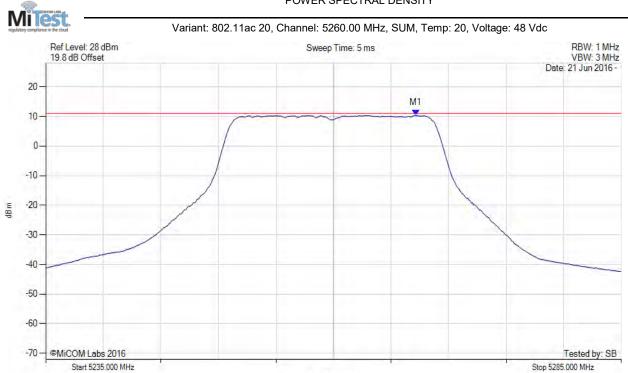


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Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5267.200 MHz: 10.342 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5267.200 MHz : 10.386 dBm	Margin: -0.6 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	-
Trace Mode = VIEW		

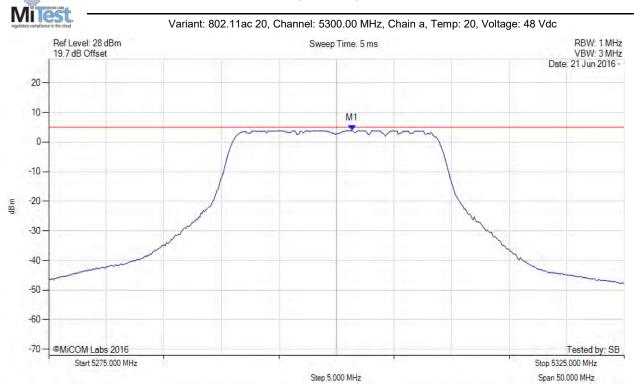
Step 5.000 MHz



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## POWER SPECTRAL DENSITY



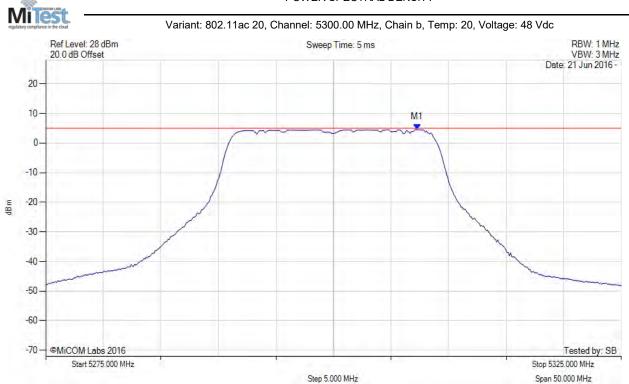
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5301.353 MHz: 3.950 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



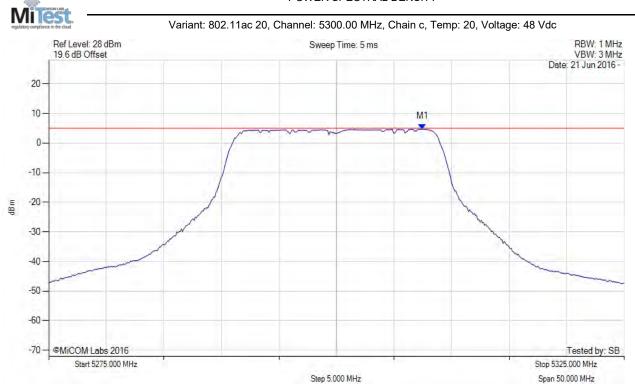
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5307.265 MHz: 4.520 dBm	Channel Frequency: 5300.00 MHz
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5307.465 MHz: 4.720 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

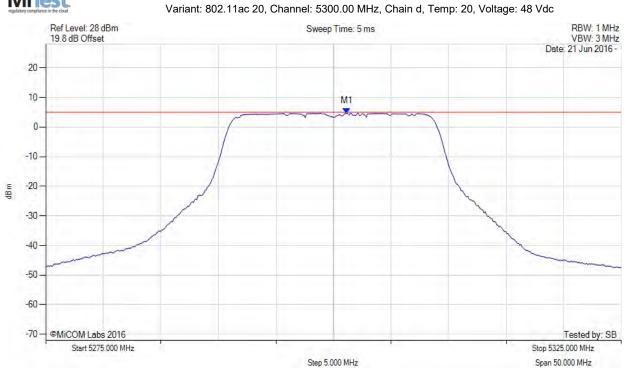


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## POWER SPECTRAL DENSITY





Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5301.152 MHz : 4.642 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



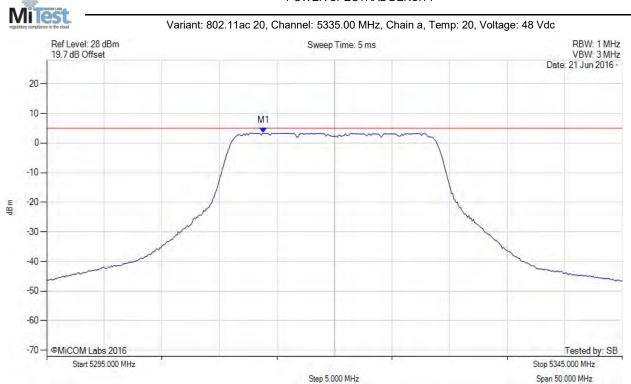
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5301.200 MHz: 10.405 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5301.200 MHz : 10.449 dBm	Margin: -0.6 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	_
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



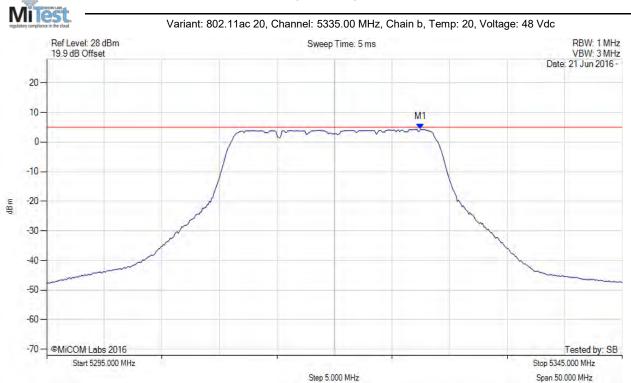
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5313.838 MHz : 3.346 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5327.465 MHz: 4.326 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

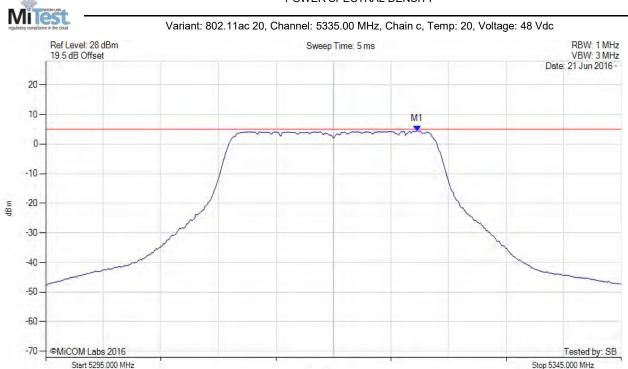


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Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5327.265 MHz: 4.417 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

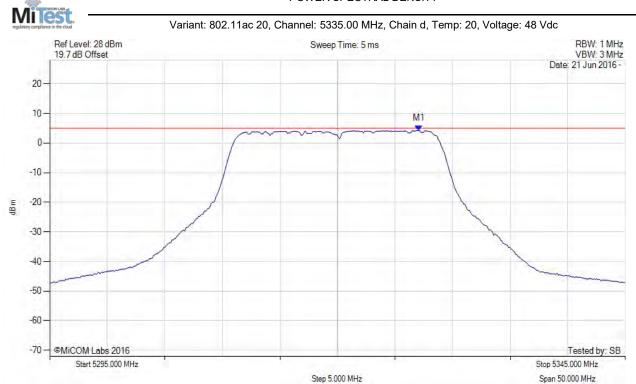
Step 5.000 MHz



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## POWER SPECTRAL DENSITY



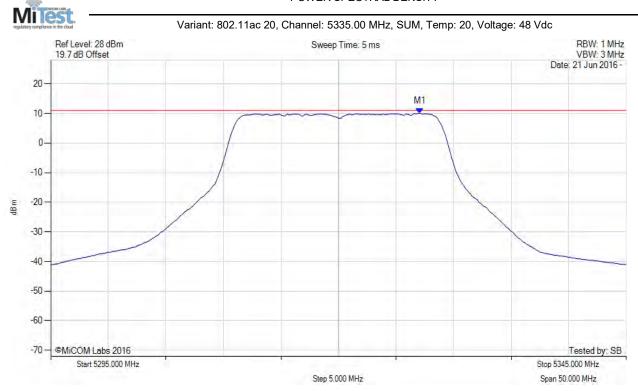
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5327.064 MHz: 4.224 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



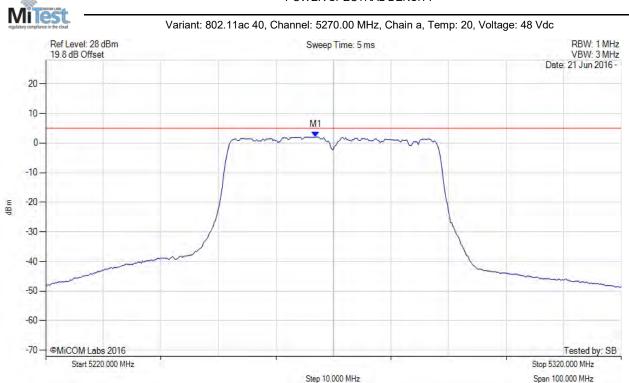
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5327.100 MHz: 10.036 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5327.100 MHz : 10.080 dBm	Margin: -0.9 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	-
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5266.894 MHz: 2.043 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5267.695 MHz: 2.012 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



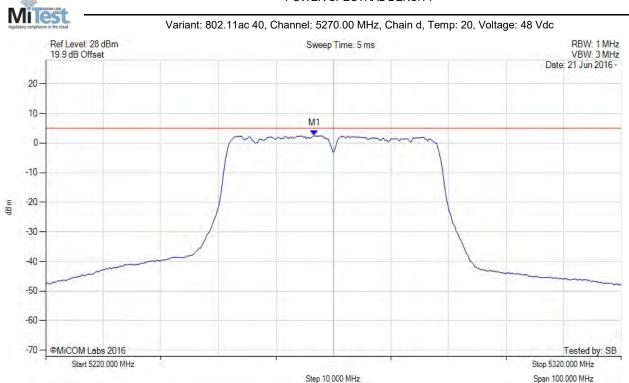
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5272.505 MHz: 1.960 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



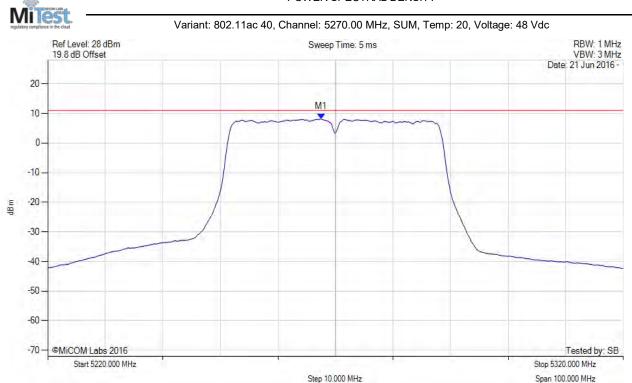
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5266.693 MHz: 2.498 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5267.500 MHz: 8.098 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5267.500 MHz : 8.142 dBm	Margin: -2.9 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	_
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



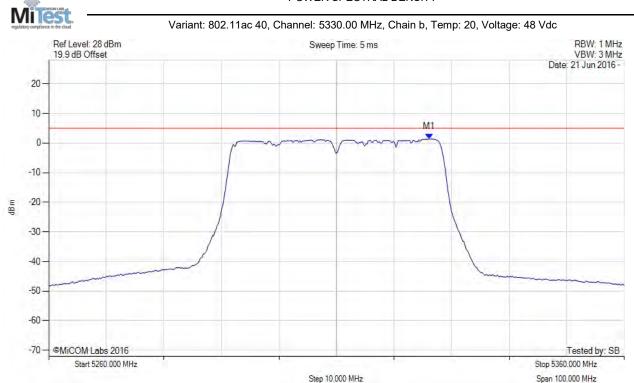
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5307.695 MHz : 1.035 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5326.132 MHz: 1.392 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



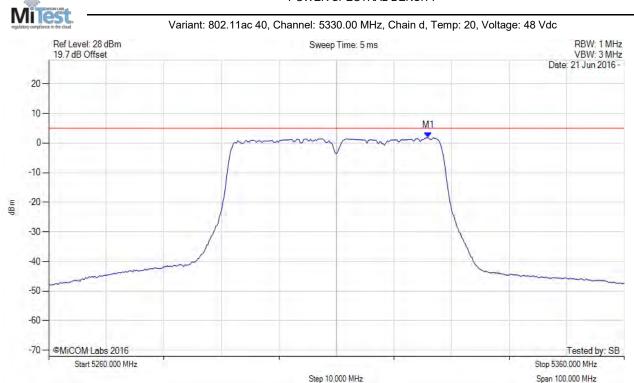
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5326.733 MHz: 1.456 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



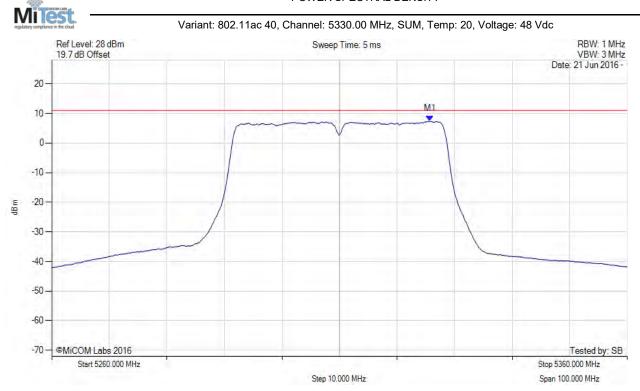
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5325.932 MHz: 1.788 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



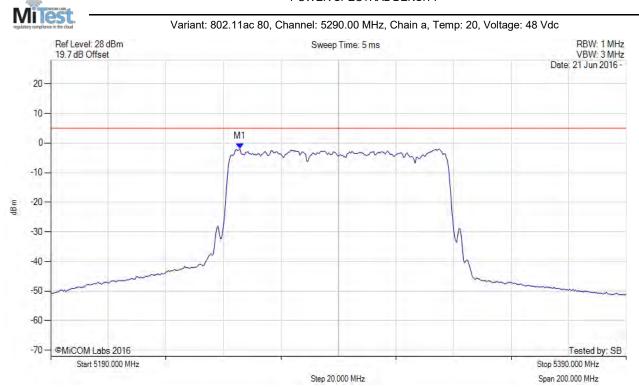
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5325.700 MHz: 7.325 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5325.700 MHz : 7.369 dBm	Margin: -3.7 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	-
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



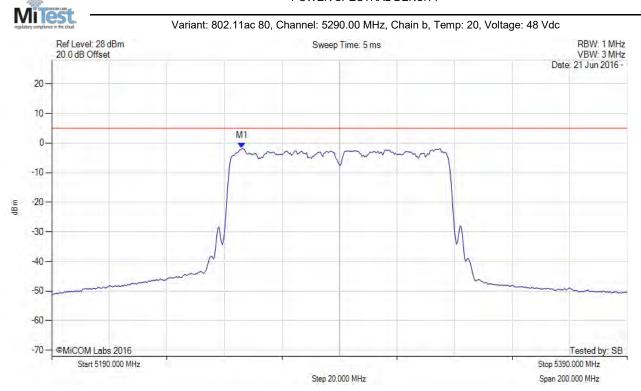
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5255.731 MHz: -1.964 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



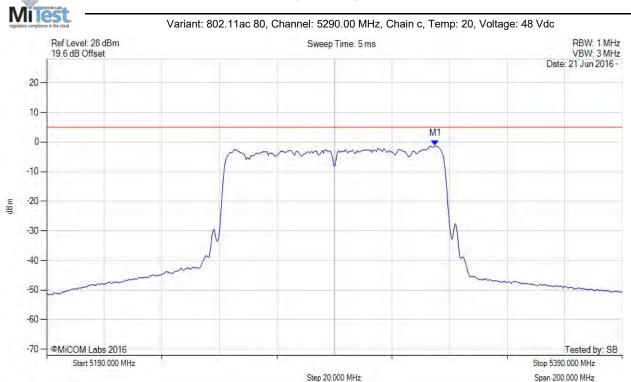
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5256.132 MHz : -1.769 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



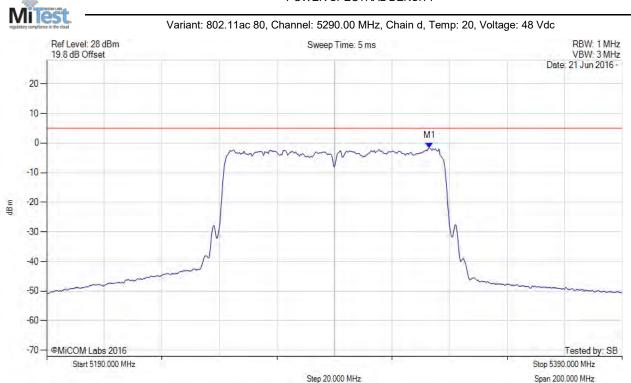
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5325.070 MHz: -1.142 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



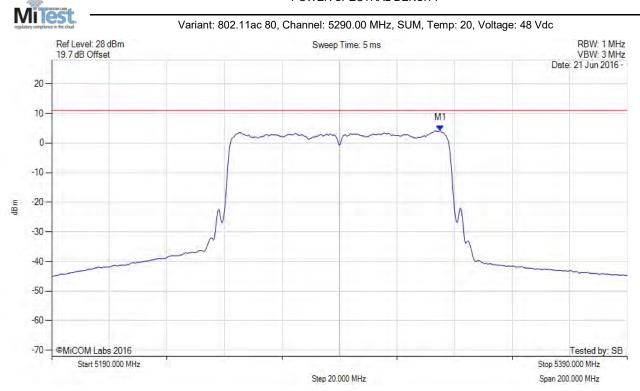
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5323.066 MHz : -1.619 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5325.100 MHz: 4.261 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5325.100 MHz : 4.305 dBm	Margin: -6.7 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	-
Trace Mode = VIEW		

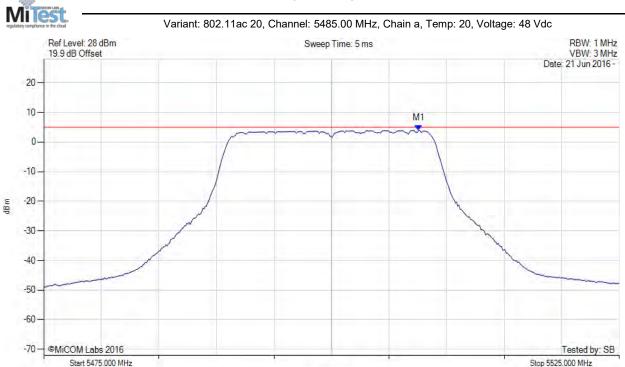


Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5507.565 MHz: 3.965 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

Step 5.000 MHz



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## POWER SPECTRAL DENSITY



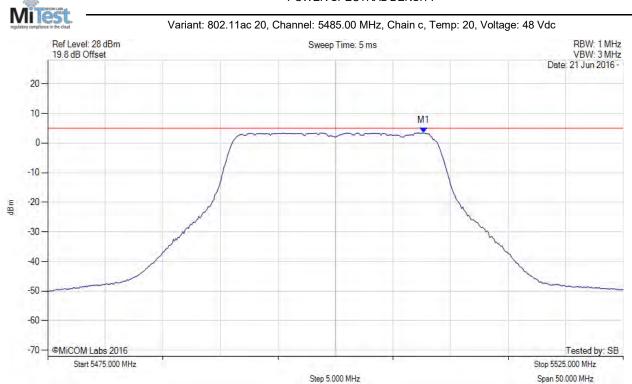
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5507.465 MHz: 4.353 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



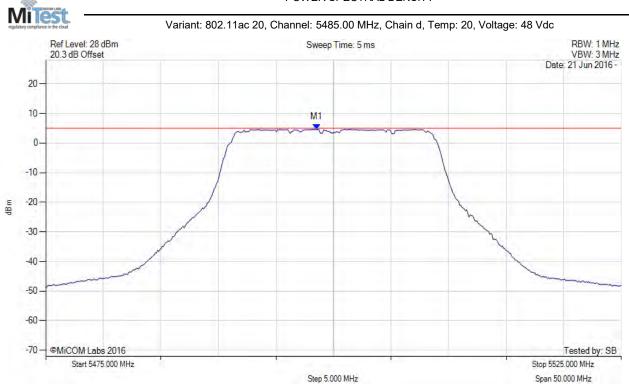
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5507.665 MHz : 3.427 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



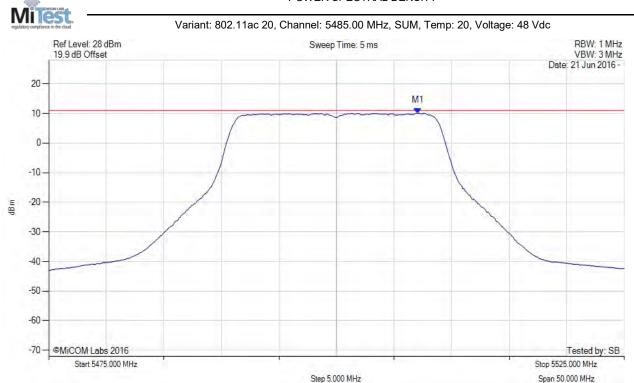
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5498.547 MHz: 4.691 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5507.100 MHz: 10.085 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5507.100 MHz : 10.129 dBm	Margin: -0.9 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor: +0.04 dB	_
Trace Mode = VIEW		

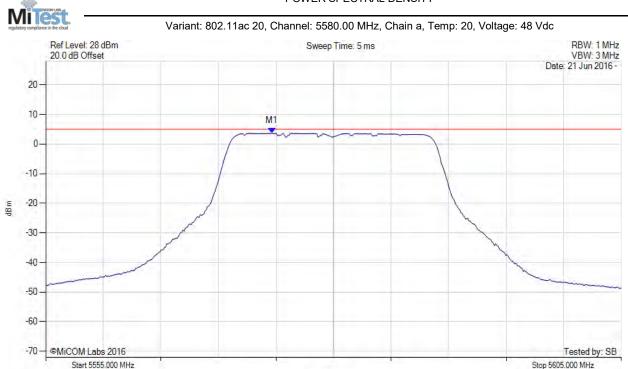


Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5574.639 MHz: 3.642 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

Step 5.000 MHz

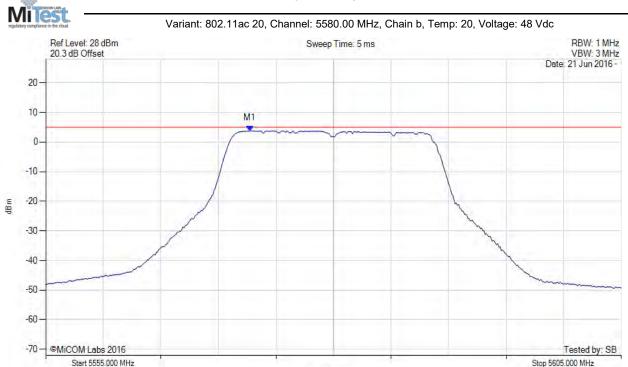


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Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5572.735 MHz : 3.774 dBm	Channel Frequency: 5580.00 MHz

Step 5.000 MHz

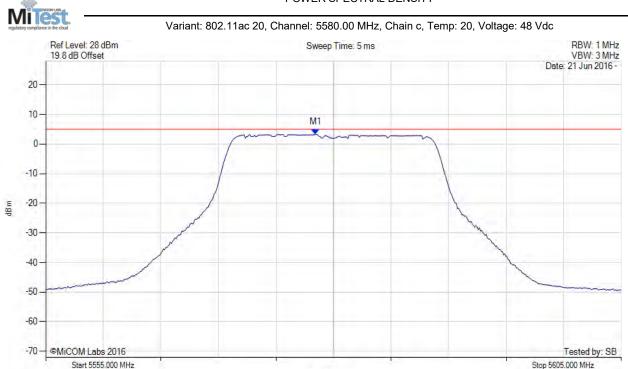


Span 50.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5578.447 MHz: 3.268 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

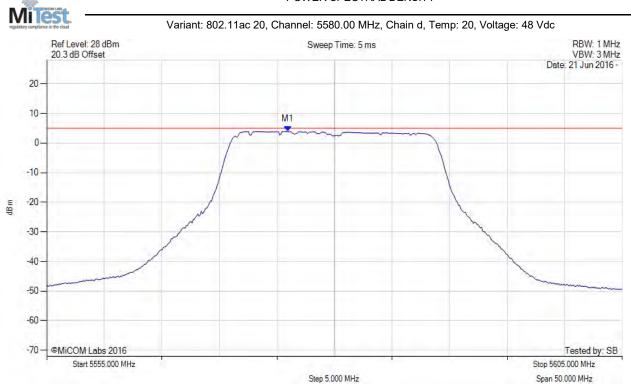
Step 5.000 MHz



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## POWER SPECTRAL DENSITY



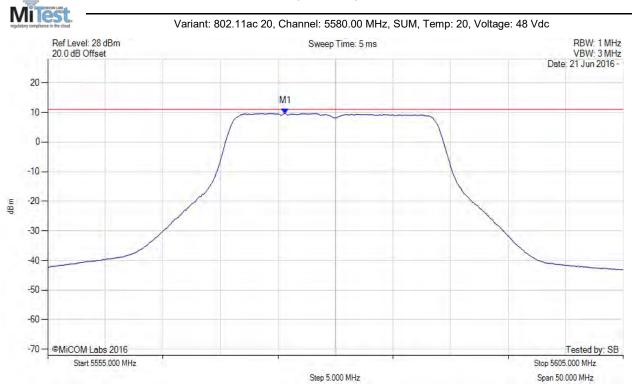
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5575.942 MHz : 3.914 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



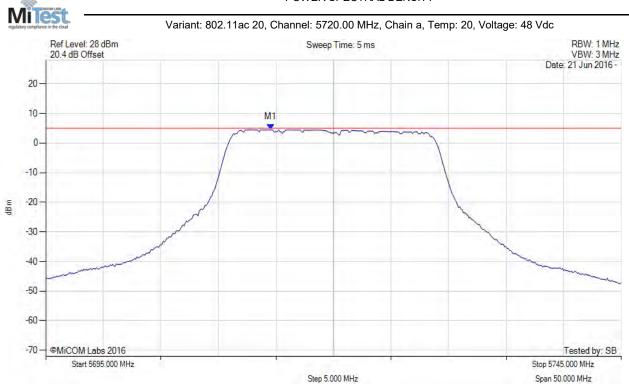
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5575.600 MHz: 9.616 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5575.600 MHz : 9.660 dBm	Margin: -1.4 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1 : 5714.539 MHz : 4.516 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



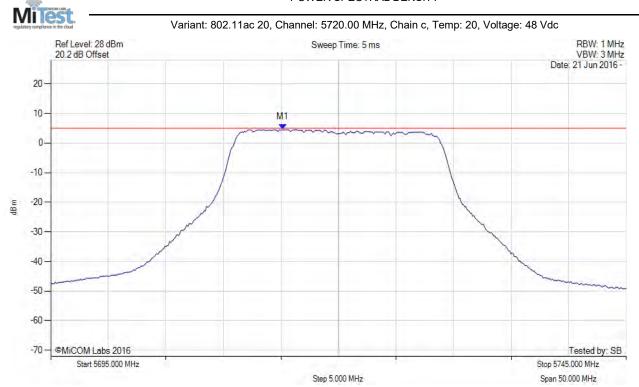
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1 : 5715.441 MHz : 5.160 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



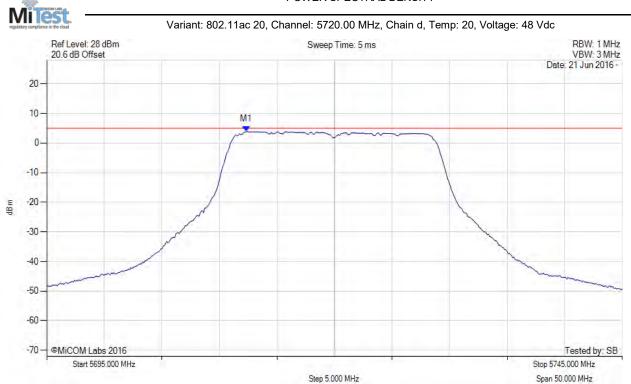
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5715.140 MHz: 4.502 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



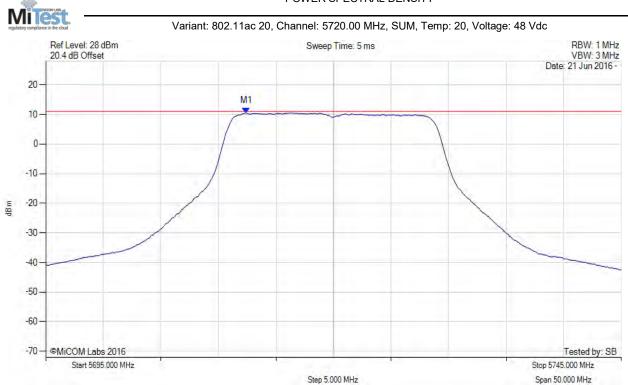
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5712.335 MHz: 3.889 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5712.400 MHz: 10.485 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5712.400 MHz : 10.529 dBm	Margin: -0.5 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	
Trace Mode = VIEW		

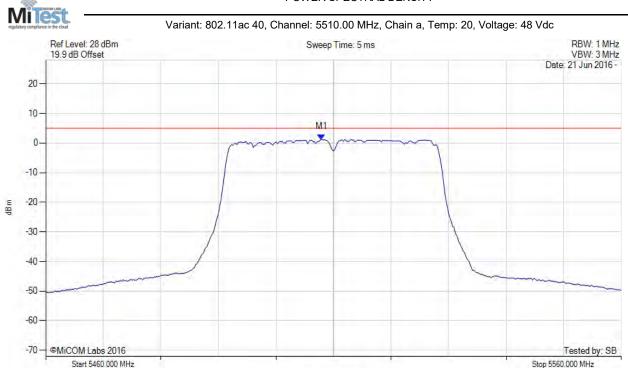


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Span 100.000 MHz

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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5507.896 MHz : 1.223 dBm	Limit: ≤ 4.980 dBm

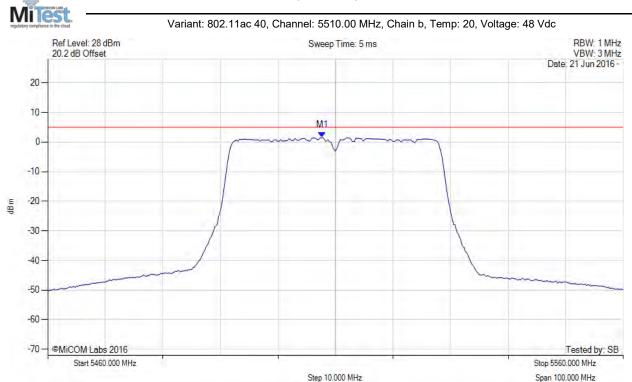
Step 10.000 MHz



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5507.695 MHz: 1.464 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5507.695 MHz: 0.629 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



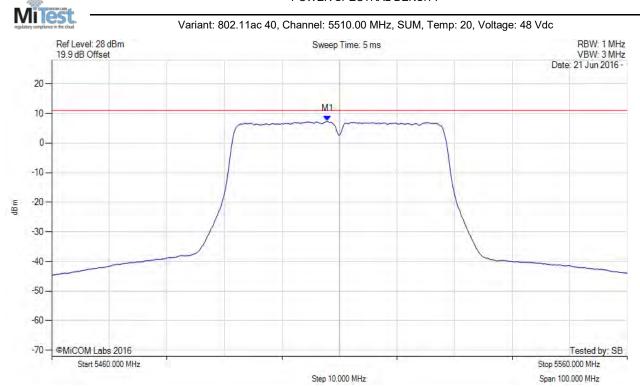
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5507.896 MHz : 1.865 dBm	Limit: ≤ 4.980 dBm



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## POWER SPECTRAL DENSITY



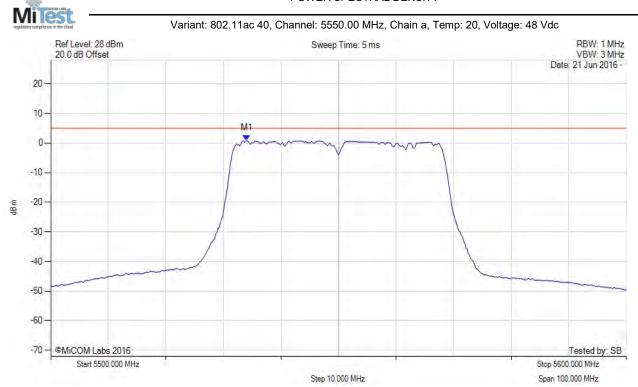
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5507.900 MHz: 7.303 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5507.900 MHz : 7.347 dBm	Margin: -3.7 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



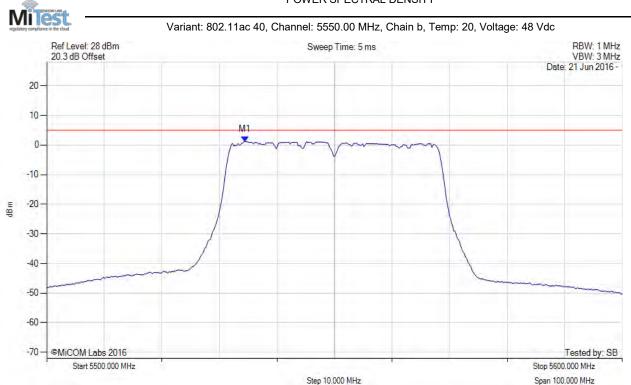
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5534.068 MHz: 0.813 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



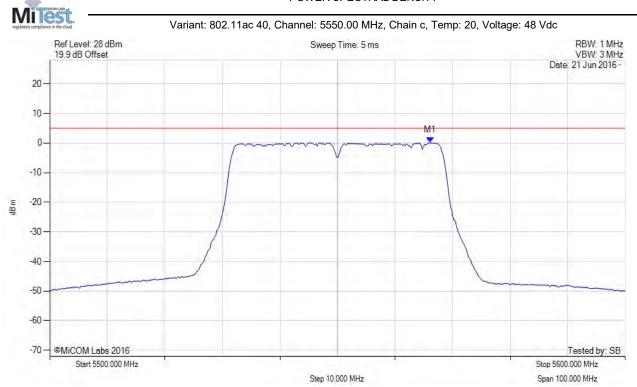
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5534.469 MHz : 1.174 dBm	Channel Frequency: 5550.00 MHz



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## POWER SPECTRAL DENSITY



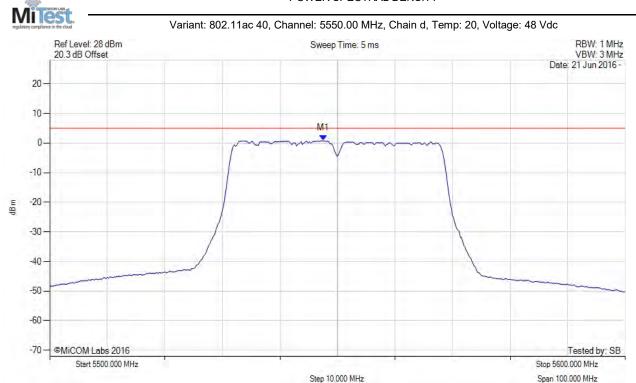
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5566.132 MHz: 0.098 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



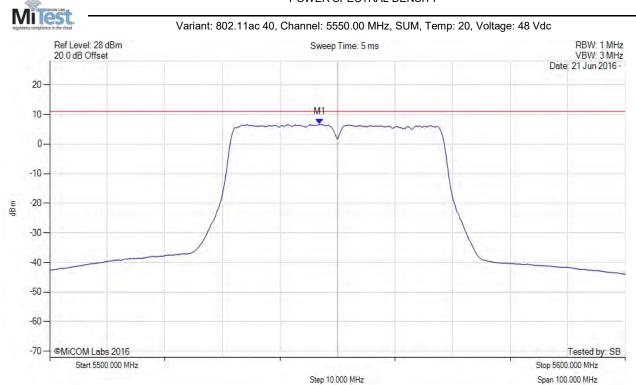
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5547.495 MHz : 0.759 dBm	Limit: ≤ 4.980 dBm



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# POWER SPECTRAL DENSITY



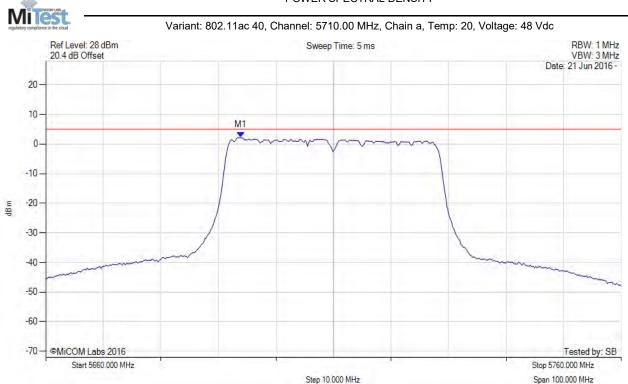
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5546.900 MHz: 6.623 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5546.900 MHz : 6.667 dBm	Margin: -4.4 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	_
Trace Mode = VIEW		



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## POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5693.868 MHz: 2.209 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

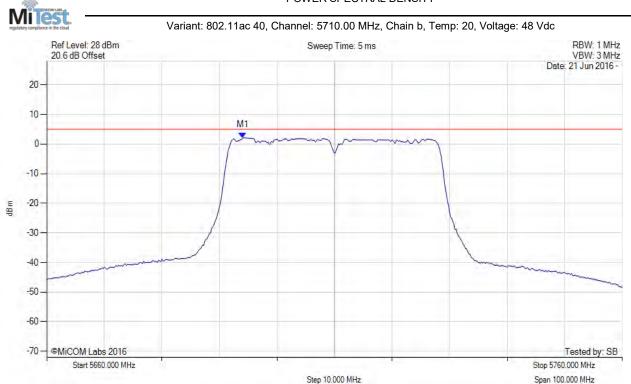
Step 10.000 MHz



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# POWER SPECTRAL DENSITY



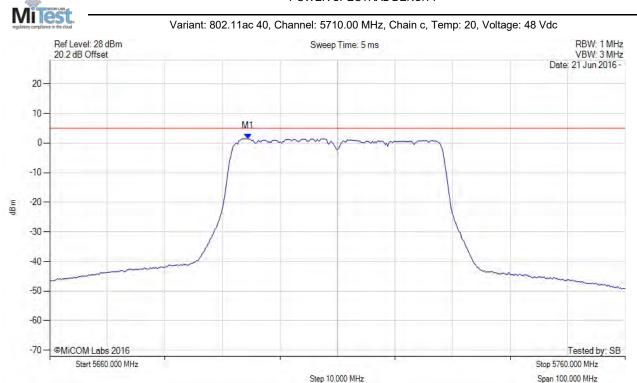
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5694.068 MHz : 2.140 dBm	Limit: ≤ 4.980 dBm



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# POWER SPECTRAL DENSITY



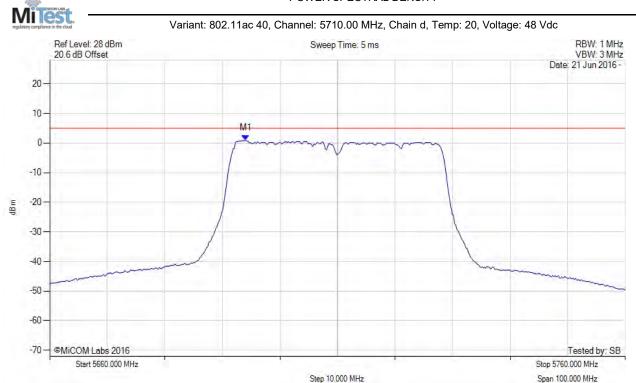
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5694.469 MHz: 1.451 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



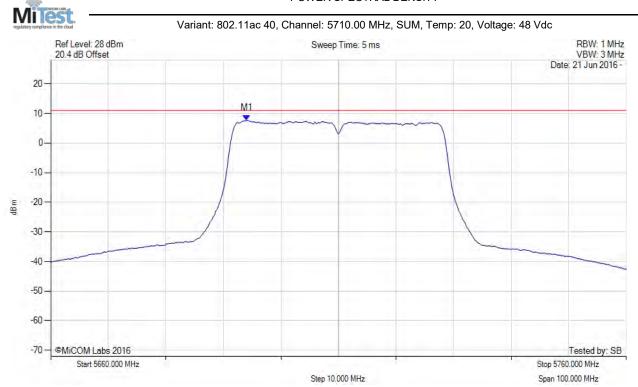
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5694.068 MHz : 0.854 dBm	Limit: ≤ 4.980 dBm



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# POWER SPECTRAL DENSITY



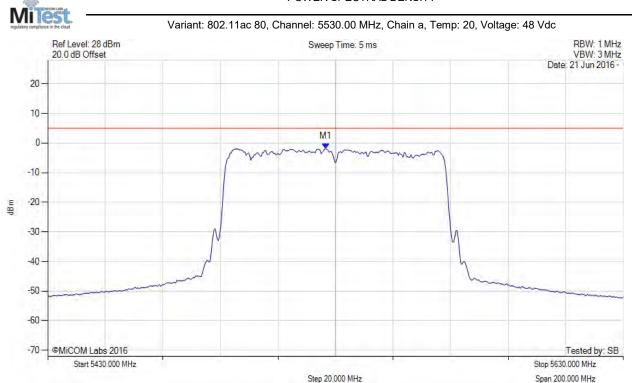
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5694.100 MHz: 7.667 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5694.100 MHz : 7.711 dBm	Margin: -3.3 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	_
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1 : 5526.593 MHz : -1.961 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

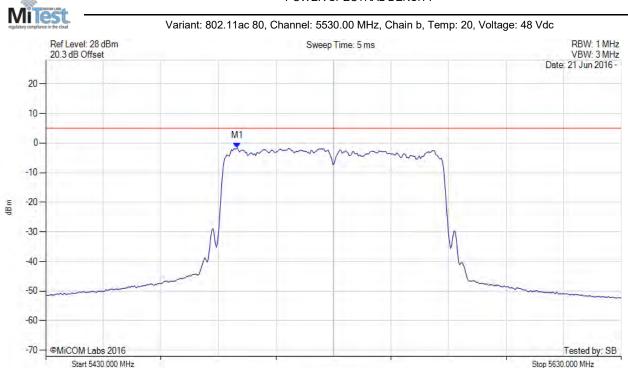


Span 200.000 MHz

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# POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5496.533 MHz: -1.657 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		

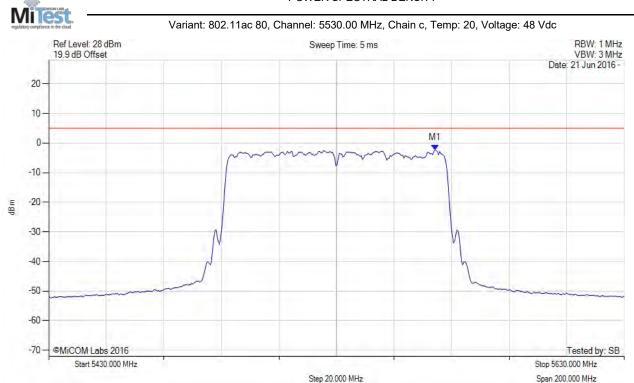
Step 20.000 MHz



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# POWER SPECTRAL DENSITY



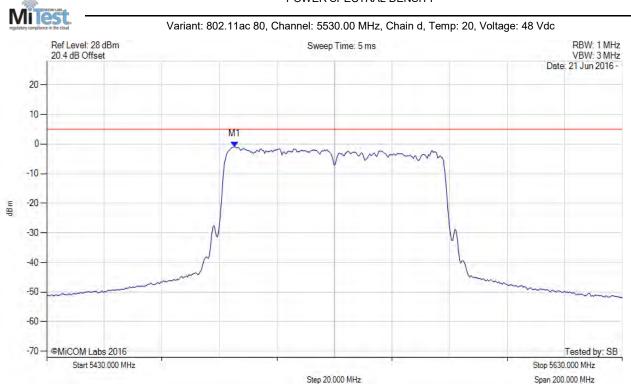
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5564.269 MHz: -2.337 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



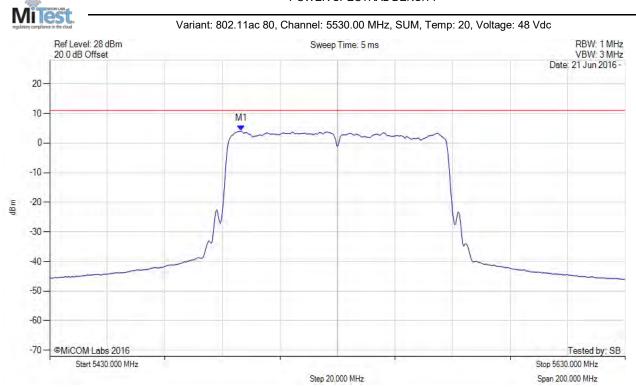
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5495.331 MHz: -0.893 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



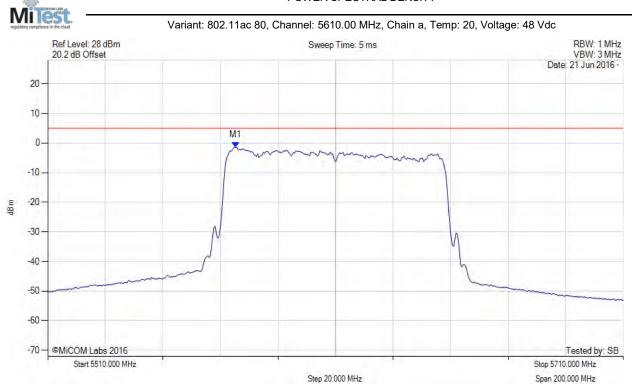
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5496.500 MHz: 4.078 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5496.500 MHz : 4.122 dBm	Margin: -6.9 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



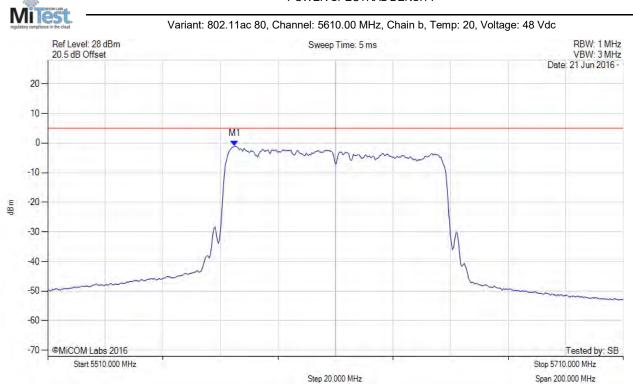
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5575.331 MHz : -1.376 dBm	Limit: ≤ 4.980 dBm



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# POWER SPECTRAL DENSITY



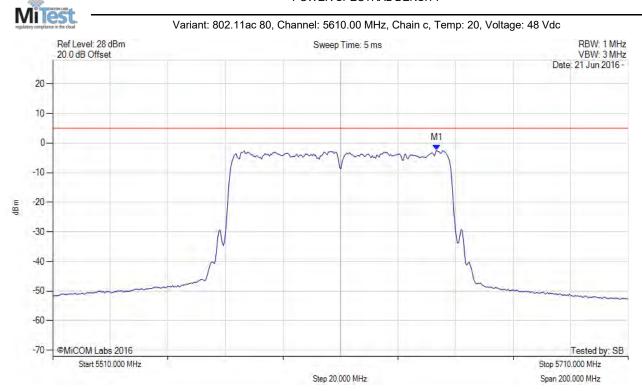
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5574.930 MHz : -1.038 dBm	Channel Frequency: 5610.00 MHz



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# POWER SPECTRAL DENSITY



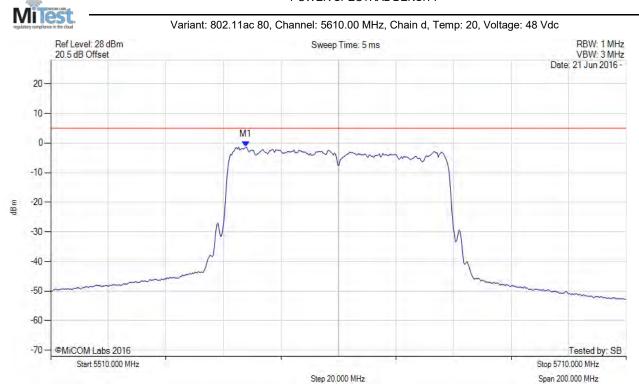
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5643.467 MHz: -2.435 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



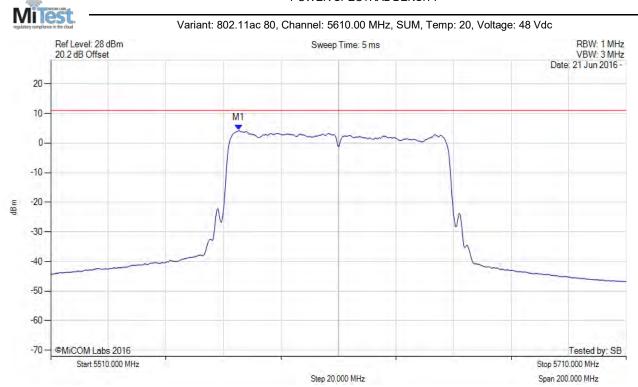
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5577.735 MHz : -1.336 dBm	Limit: ≤ 4.980 dBm



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# POWER SPECTRAL DENSITY



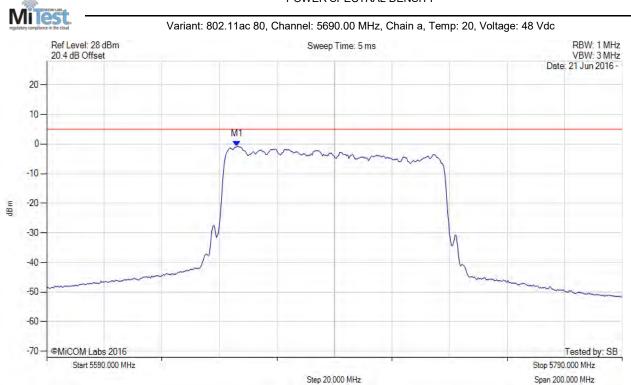
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5575.300 MHz: 4.292 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5575.300 MHz : 4.336 dBm	Margin: -6.7 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



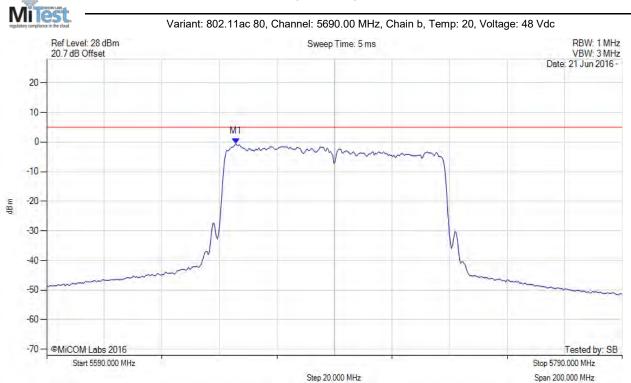
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5656.132 MHz: -0.735 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



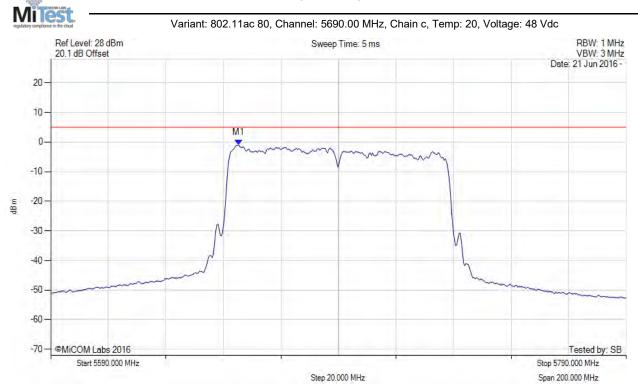
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5655.731 MHz: -0.482 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



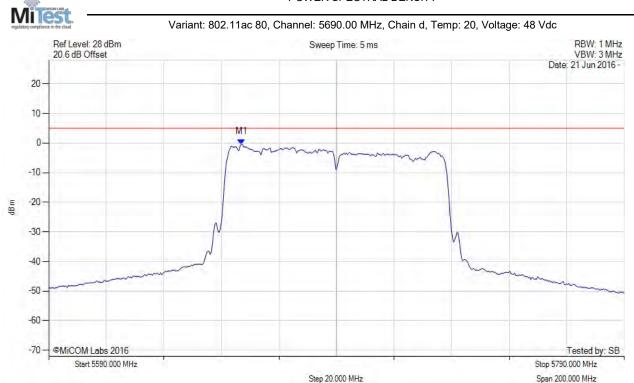
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS Sweep Count = 100 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 5655.331 MHz : -1.002 dBm	Limit: ≤ 4.980 dBm



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# POWER SPECTRAL DENSITY



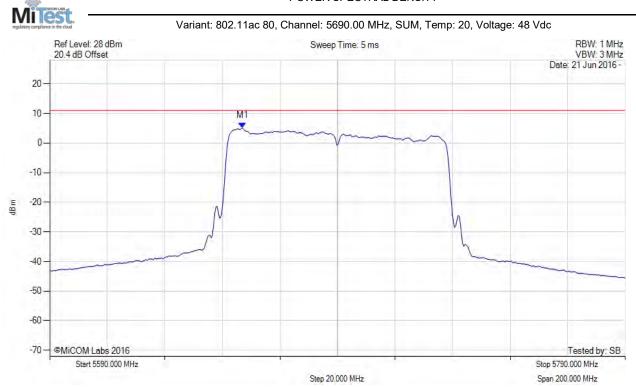
Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5656.934 MHz: -0.428 dBm	Limit: ≤ 4.980 dBm
Sweep Count = 100		
RF Atten (dB) = 20		
Trace Mode = VIEW		



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# POWER SPECTRAL DENSITY



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = RMS	M1: 5656.900 MHz: 5.076 dBm	Limit: ≤ 11.0 dBm
Sweep Count = 100	M1 + DCCF : 5656.900 MHz : 5.120 dBm	Margin: -5.9 dB
RF Atten (dB) = 20	Duty Cycle Correction Factor : +0.04 dB	
Trace Mode = VIEW		



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