

TEST REPORT ADDENDUM - CONDUCTED

FROM



Test of: Aruba Networks APIN0334, APIN0335

to

To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)

Test Report Serial No.: ARUB196-U10_Conducted Addendum Rev A

Issue Date: 17th June 2016

Master Document Number	Addendum Reports
ARUB196-U10M	ARUB196-U7_Conducted
	ARUB196-U7_Radiated
	ARUB196-U26 (FCC Part15B Emissions)



Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
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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'.

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



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

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2. TEST SUMMARY

List of Measurements

Test Header	Result	Comments
Conducted Testing		
(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)	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Maximum Conducted Output Power Measurement

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

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

Supporting Information

Calculated Power = $A + G + Y + 10 \log(1/x)$ dBm

A = Total Power [$10 \cdot \log_{10}(10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})$]

G = Antenna Gain

Y = Beamforming Gain

x = Duty Cycle (average power measurements only)

Limits Maximum Conducted Output Power

Operating Frequency Band 5150-5250 MHz

15.407 (a)(1)

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

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

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

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

Operating Frequency Band 5250-5350 and 5470 – 5725 MHz

15.407 (a)(2)

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

Operating Frequency Band 5725 – 5850 MHz

15.407 (a)(3)

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

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Equipment Configuration for Peak Transmit Power

Variant:	802.11a	Duty Cycle (%):	97.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.13 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5260.0	15.06	15.80	14.63	14.83	21.13	19.138	22.80	-1.67	15.00
5300.0	14.33	14.83	14.09	14.63	20.50	19.339	22.80	-2.30	15.00
5320.0	14.44	14.61	14.02	15.07	20.57	19.138	22.80	-2.23	15.00

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

DCCF - Duty Cycle Correction Factor

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Variant:	802.11ac-80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.22 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5290.0	16.58	17.10	16.16	16.68	22.67	80.160	22.80	-0.13	17.00

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

DCCF - Duty Cycle Correction Factor

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Variant:	802.11ac-80+80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.22 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	c	b	d	Σ Port(s) dBm	MHz	dBm	dB	
5250.0	15.69	16.18	--	--	18.95	80.160	22.80	-3.85	16.00

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power			
Variant:	802.11n HT-20	Duty Cycle (%):	97.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.13 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5260.0	14.86	15.62	14.45	14.69	20.95	20.140	22.80	-1.85	15.00
5300.0	14.61	15.17	14.45	14.94	20.82	20.240	22.80	-1.98	15.50
5320.0	14.26	14.43	13.85	14.89	20.40	20.341	22.80	-2.40	15.00

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11n HT-40	Duty Cycle (%):	97.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.13 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5270.0	16.23	16.81	15.86	16.20	22.31	39.880	22.80	-0.49	16.50
5310.0	15.87	16.45	15.62	16.27	22.08	39.880	22.80	-0.72	16.50

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11a	Duty Cycle (%):	97.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.13 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5500.0	14.31	13.78	13.51	14.27	20.00	19.339	22.80	-2.80	14.00
5580.0	14.53	13.59	13.63	13.95	19.96	18.938	22.80	-2.84	14.00
5720.0	14.00	13.23	12.38	14.12	19.51	19.138	22.80	-3.29	14.00

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11ac-80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.22 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5530.0	16.98	16.61	16.09	16.50	22.58	80.160	22.80	-0.22	16.50
5610.0	17.02	16.21	16.74	16.71	22.70	80.561	22.80	-0.10	17.00
5690.0	16.67	16.01	15.39	16.74	22.26	80.561	22.80	-0.54	16.50

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11ac-80+80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.22 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	c	b	d	Σ Port(s) dBm	MHz	dBm	dB	
5530.0	16.54	15.57	--	--	19.10	80.561	22.80	-3.70	16.00
5610.0	16.07	15.25	--	--	18.69	80.561	22.80	-4.11	16.00
5690.0	16.33	15.63	--	--	19.01	80.561	22.80	-3.79	16.00

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power			
Variant:	802.11n HT-20	Duty Cycle (%):	97.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.13 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5500.0	14.88	13.81	13.56	14.24	20.17	20.341	22.80	-2.63	14.00
5580.0	14.30	13.42	13.54	13.81	19.80	20.140	22.80	-3.00	14.00
5720.0	13.77	13.01	12.20	13.97	19.32	19.940	22.80	-3.48	14.00

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results									
Test Frequency	Measured Conducted Output Power + DCCF (+0.18 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
	Port(s)								
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
5510.0	16.74	15.69	15.24	15.85	21.93	39.679	22.80	-0.87	16.00
5550.0	16.62	15.88	15.59	15.55	21.95	39.679	22.80	-0.85	16.50
5710.0	16.61	15.77	15.01	16.69	22.09	39.679	22.80	-0.71	16.50

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Peak Transmit Power

Variant:	802.11ac-160	Duty Cycle (%):	91.0
Data Rate:	58.5 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Conducted Output Power + DCCF (+0.22 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting	
	Port(s)									
MHz	a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB		
5250.0	5210.0	15.72	--	16.20	--	19.29	--	28.80	-9.51	16.00
5250.0	5290.0	--	15.00	--	15.93	18.85	155.19	22.80	-3.95	16.00

Traceability to Industry Recognized Test Methodologies

Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB18

DCCF - Duty Cycle Correction Factor

* APIN0334 to perform on operational mode ac-160 the EUT has two transmit on two different antenna ports on different channels. For example, antenna port 0 is set on frequency 5210.0MHz and antenna port on frequency 5290.0MHz center channel 5250 MHz

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Equipment Configuration for Peak Transmit Power

Variant:	802.11ac-160	Duty Cycle (%):	91.0
Data Rate:	58.5 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results								
Measured Conducted Output Power + DCCF (+0.41 dB) (dBm)				Calculated Total Power	Minimum 26 dB Bandwidth	Limit	Margin	EUT Power Setting
Test Frequency (MHz)								
5570.0								
5530.0	5530	5610	5610					
Port(s)								
a	b	c	d	Σ Port(s) dBm	MHz	dBm	dB	
15.69	14.83	14.41	14.37	21.02	155.19	22.80	-1.78	16.00

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

DCCF - Duty Cycle Correction Factor

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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)	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for 26 dB and 99% Bandwidth Measurement

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

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

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

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11a	Duty Cycle (%):	97.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5260.0	19.439	19.238	19.138	19.739	19.739	19.138		
5300.0	19.639	19.739	19.339	19.439	19.739	19.339		
5320.0	19.639	19.539	19.339	19.138	19.639	19.138		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5260.0	16.433	16.433	16.433	16.433	16.433	16.433		
5300.0	16.433	16.433	16.433	16.433	16.433	16.433		
5320.0	16.433	16.433	16.433	16.433	16.433	16.433		

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

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

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11ac-80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5290.0	80.160	80.561	80.561	80.160	80.561	80.160		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5290.0	76.152	76.152	76.152	76.152	76.152	76.152		

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+80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	c	b	d				
5290.0	80.561	80.160			80.561	80.160		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	c	b	d				
5290.0	76.152	75.752			76.152	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:	802.11n HT-20	Duty Cycle (%):	97.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5260.0	20.441	20.240	20.140	20.441	20.441	20.140		
5300.0	20.441	20.441	20.441	20.240	20.441	20.240		
5320.0	20.341	20.441	20.441	20.441	20.441	20.341		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5260.0	17.635	17.635	17.635	17.635	17.635	17.635		
5300.0	17.635	17.635	17.635	17.635	17.635	17.635		
5320.0	17.635	17.635	17.635	17.635	17.635	17.635		

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

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11n HT-40	Duty Cycle (%):	97.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5270.0	40.281	40.080	40.281	39.880	40.281	39.880		
5310.0	40.080	40.080	39.880	39.880	40.080	39.880		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5270.0	36.273	36.273	36.273	36.273	36.273	36.273		
5310.0	36.273	36.273	36.273	36.273	36.273	36.273		

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:	802.11a	Duty Cycle (%):	97.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5500.0	19.339	19.539	19.739	19.439	19.739	19.339		
5580.0	19.539	19.339	19.238	18.938	19.539	18.938		
5720.0	19.439	19.138	19.339	19.439	19.439	19.138		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5500.0	16.433	16.533	16.433	16.433	16.533	16.433		
5580.0	16.433	16.433	16.533	16.433	16.533	16.433		
5720.0	16.433	16.433	16.533	16.433	16.533	16.433		

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 (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5530.0	80.962	80.561	80.160	80.561	80.962	80.160		
5610.0	80.561	80.561	80.561	80.561	80.561	80.561		
5690.0	80.561	80.561	80.561	80.561	80.561	80.561		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5530.0	76.152	75.752	75.351	76.152	76.152	75.351		
5610.0	76.152	76.152	75.752	75.752	76.152	75.752		
5690.0	76.152	76.152	75.752	75.752	76.152	75.752		

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

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

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11ac-80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	c	b	d				
5530.0	80.561	80.561			80.561	80.561		
5610.0	80.561	80.561			80.561	80.561		
5690.0	80.962	80.561			80.962	80.561		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	c	b	d				
5530.0	76.152	75.752			76.152	75.752		
5610.0	76.152	76.152			76.152	76.152		
5690.0	76.152	76.152			76.152	76.152		

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:	802.11n HT-20	Duty Cycle (%):	97.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5500.0	20.441	20.441	20.641	20.341	20.641	20.341		
5580.0	20.341	20.541	20.240	20.140	20.541	20.140		
5720.0	20.341	20.240	19.940	20.541	20.541	19.940		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5500.0	17.635	17.735	17.735	17.735	17.735	17.635		
5580.0	17.635	17.635	17.735	17.635	17.735	17.635		
5720.0	17.635	17.535	17.735	17.635	17.735	17.535		

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

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

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth

Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)				26 dB Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5510.0	39.880	39.880	39.679	39.679	39.880	39.679		
5550.0	40.481	40.281	39.679	40.080	40.481	39.679		
5710.0	40.481	40.281	39.679	39.880	40.481	39.679		

Test Frequency	Measured 99% Bandwidth (MHz)				99% Bandwidth (MHz)			
	Port(s)				Highest	Lowest		
MHz	a	b	c	d				
5510.0	36.273	36.273	36.072	36.273	36.273	36.072		
5550.0	36.273	36.273	36.072	36.273	36.273	36.072		
5710.0	36.273	36.273	36.273	36.273	36.273	36.273		

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-160	Duty Cycle (%):	91.0
Data Rate:	58.5 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
	Port(s)		Highest	Lowest		
MHz	a + b	c + d				
5250.0	160.96	161.60	160.96	161.60		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
	Port(s)		Highest	Lowest		
MHz	a + b	c + d				
5250.0	155.190	155.190	155.190	155.190		

Traceability to Industry Recognized Test Methodologies

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

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

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Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	802.11ac-160	Duty Cycle (%):	91.0
Data Rate:	58.5 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)		
	Port(s)		Highest	Lowest	
MHz	a + b	c + d			
5570.0	160.96	161.60	160.96	161.60	

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)		
	Port(s)		Highest	Lowest	
MHz	a + b	c + d			
5570.0	155.190	155.190	155.190	155.190	

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

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

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3.3. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
Standard:	FCC CFR 47:15.407	Ambient Temp. (°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 [$10^a \cdot \text{Log}_{10}(10^{a/10} + 10^{b/10} + 10^{c/10} + 10^{d/10})$]

x = Duty Cycle

Limits Power Spectral Density

Operating Frequency Band 5150-5250 MHz

15.407 (a)(1)

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

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

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

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

Operating Frequency Band 5250-5350 and 5470 – 5725 MHz

15. 407 (a)(2)

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

Operating Frequency Band 5725 – 5850 MHz

15. 407 (a)(3)

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

Power Spectral Density - Amplitude Summation

The following Power Spectral Density measurement data consists of measuring data from each antenna port. The data is then linearly summed pixel by pixel for each of the spectrum data i.e Port a, Pixel 1+ Port b, Pixel 1 + Port c, Pixel 1+ Port d, Pixel 1 = Pixel 1 SUMMATION. This process is repeated for all pixels and the summation is compared to the limit. Its possible that the individual port measurement may break the limit line however it's the summation plot that determines compliance and not the individual antenna port measurements.

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Equipment Configuration for Power Spectral Density

Variant:	802.11a	Duty Cycle (%):	97.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.13 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5260.0	3.663	4.727	4.779	2.854	9.667	9.8	-0.2
5300.0	2.850	3.516	3.836	2.603	8.777	9.8	-1.0
5320.0	3.150	3.514	4.634	3.374	9.452	9.8	-0.4

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

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density

Variant:	802.11ac-80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.22 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5290.0	-1.357	-0.564	0.295	-1.596	4.179	9.8	-5.6

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density

Variant:	802.11ac-80+80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.22 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	c	b	d	dBm/MHz	dBm/MHz	dB
5250 / 5290.0	-2.029	-1.303			1.066	9.8	-8.7

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density

Variant:	802.11n HT-20	Duty Cycle (%):	97.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.13 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5260.0	3.143	4.143	4.347	2.752	9.674	9.8	-0.1
5300.0	3.045	3.582	4.529	3.171	9.538	9.8	-0.3
5320.0	2.746	2.880	4.191	2.842	9.030	9.8	-0.8

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

DCCF - Duty Cycle Correction Factor

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

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Equipment Configuration for Power Spectral Density

Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5270.0	1.621	2.601	2.289	1.642	7.579	9.8	-2.2
5310.0	1.558	2.197	2.962	1.855	7.984	9.8	-1.8

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Power Spectral Density

Variant:	802.11ac-160	Duty Cycle (%):	91.0
Data Rate:	58.5 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.41 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
	MHz	a	b	c			
5250.0 5210.0	-2.04	--	-0.46	--	1.87	15.3	-9.1
5250.0 5290.0	--	-1.91	--	-0.75	1.75	9.8	-5.7

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:	802.11a	Duty Cycle (%):	97.0
Data Rate:	6.00 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.13 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5500.0	3.471	2.404	4.496	2.818	8.810	9.8	-1.0
5580.0	2.999	2.656	5.813	2.646	9.323	9.8	-0.5
5720.0	3.236	2.190	4.977	2.650	8.905	9.8	-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-80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.22 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5530.0	-0.862	-1.707	1.277	-1.511	4.905	9.8	-4.9
5610.0	-1.379	-1.740	2.513	-2.024	5.427	9.8	-4.4
5690.0	-1.167	-1.904	0.516	-1.628	4.128	9.8	-5.7

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+80	Duty Cycle (%):	95.0
Data Rate:	29.30 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.22 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	c	b	d	dBm/MHz	dBm/MHz	dB
5530.0	-1.507	-1.900			1.183	9.8	-8.6
5610.0	-1.942	-2.481			0.706	9.8	-9.1
5690.0	-1.763	-2.040			1.182	9.8	-8.6

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Power Spectral Density

Variant:	802.11n HT-20	Duty Cycle (%):	97.0
Data Rate:	6.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.13 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5500.0	3.829	2.613	5.446	3.168	9.559	9.8	-0.3
5580.0	3.100	2.488	5.932	2.453	9.438	9.8	-0.4
5720.0	2.380	1.974	4.366	2.472	8.699	9.8	-1.1

Traceability to Industry Recognized Test Methodologies

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Power Spectral Density

Variant:	802.11n HT-40	Duty Cycle (%):	96.0
Data Rate:	13.50 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results							
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.18 dB)	Limit	Margin
	Port(s) (dBm/MHz)						
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB
5510.0	2.107	1.071	3.723	1.320	7.773	9.8	-2.0
5550.0	2.135	1.494	4.621	0.976	8.138	9.8	-1.7
5710.0	1.788	1.306	3.713	1.753	7.865	9.8	-2.0

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

DCCF - Duty Cycle Correction Factor

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Equipment Configuration for Power Spectral Density			
Variant:	802.11ac-160	Duty Cycle (%):	91.0
Data Rate:	58.5 MBit/s	Antenna Gain (dBi):	2.10
Modulation:	OFDM	Beam Forming Gain (Y)(dB):	5.10
TPC:	Not Applicable	Tested By:	SB
Engineering Test Notes:			

Test Measurement Results								
Test Frequency	Measured Power Spectral Density				Amplitude Summation + DCCF (+0.41 dB)	Limit	Margin	
	Port(s) (dBm/MHz)							
MHz	a	b	c	d	dBm/MHz	dBm/MHz	dB	
5570.0	5530.0	<u>-1.37</u>	--	<u>-1.50</u>	--	1.61	9.8	-8.19
5570.0	5610.0	--	<u>-2.53</u>	--	<u>-2.00</u>	0.79	9.8	-9.01

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. Peak Transmit Power

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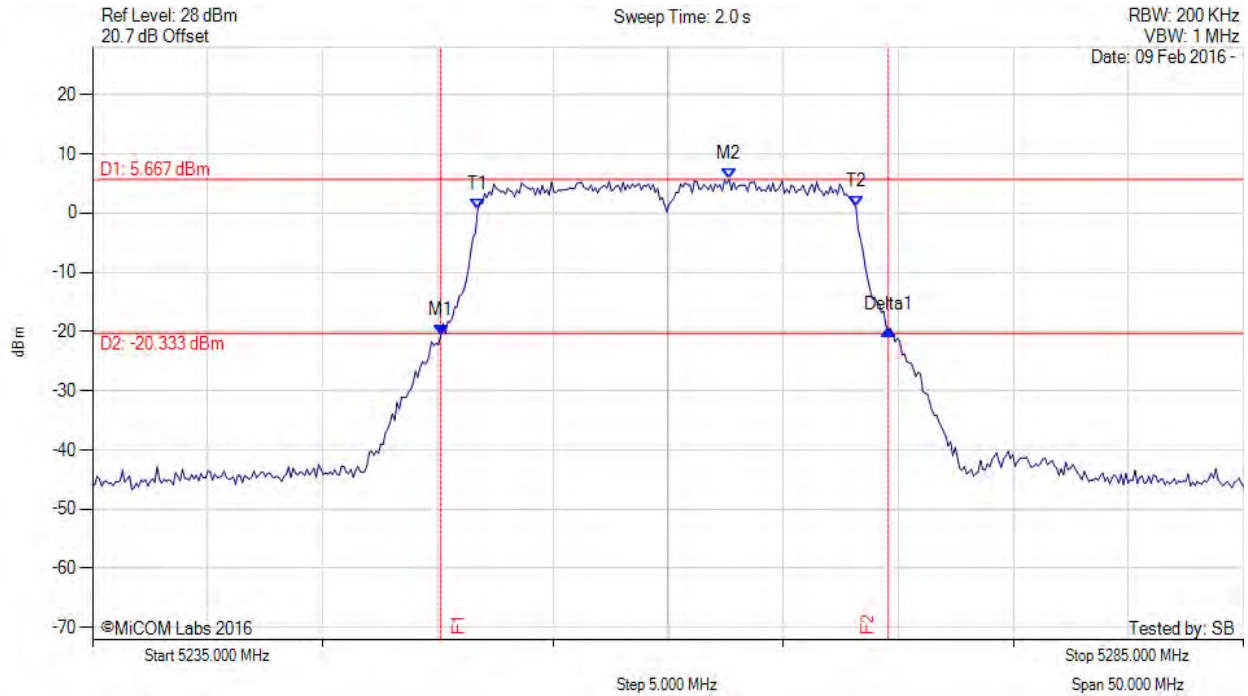


A.2. 26 dB & 99% Bandwidth



26 dB & 99% BANDWIDTH

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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5250.130 MHz : -20.629 dBm M2 : 5262.655 MHz : 5.667 dBm Delta1 : 19.439 MHz : 0.942 dB T1 : 5251.733 MHz : 0.607 dBm T2 : 5268.166 MHz : 1.065 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.439 MHz Measured 99% Bandwidth: 16.433 MHz

[back to matrix](#)

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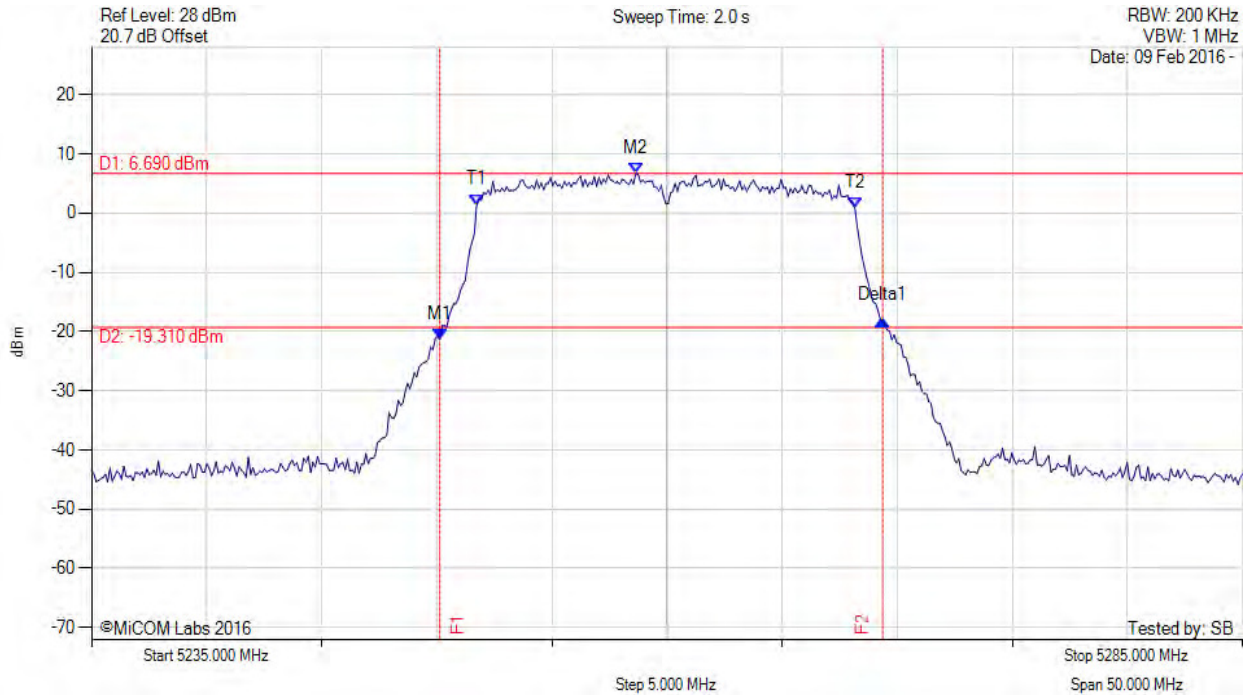


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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5250.130 MHz : -21.345 dBm M2 : 5258.647 MHz : 6.690 dBm Delta1 : 19.238 MHz : 3.179 dB T1 : 5251.733 MHz : 1.433 dBm T2 : 5268.166 MHz : 0.827 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.238 MHz Measured 99% Bandwidth: 16.433 MHz

[back to matrix](#)

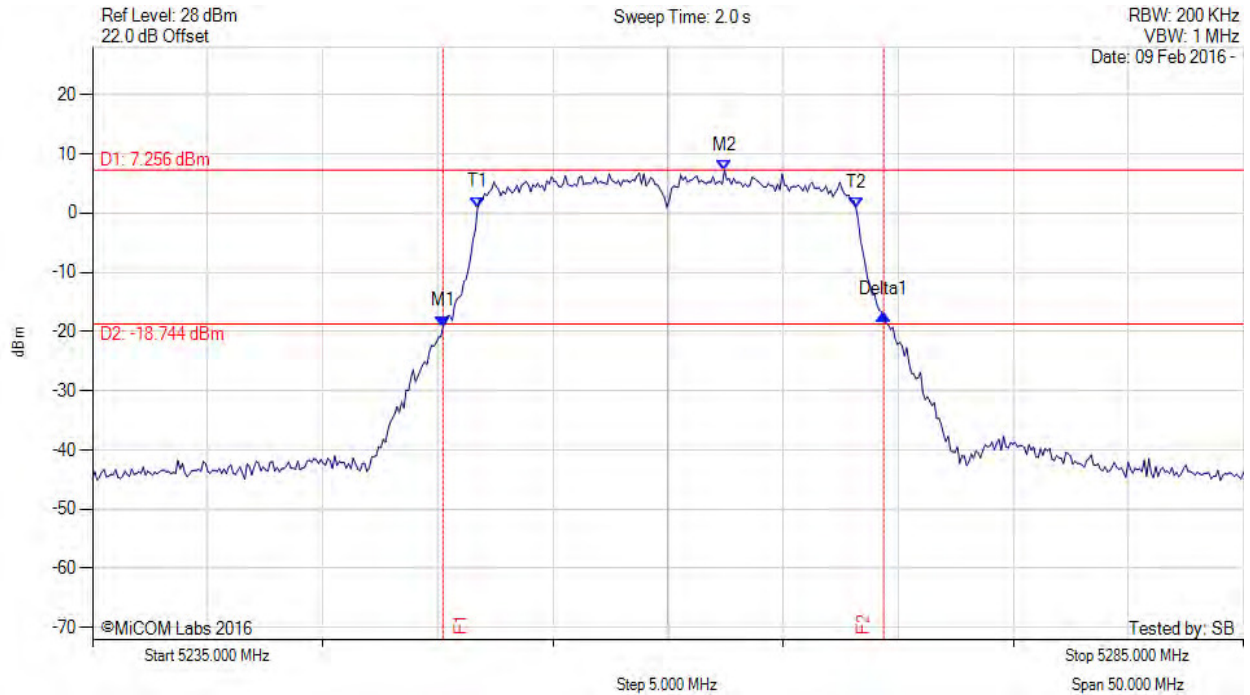
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5250.230 MHz : -19.122 dBm M2 : 5262.455 MHz : 7.256 dBm Delta1 : 19.138 MHz : 1.952 dB T1 : 5251.733 MHz : 0.980 dBm T2 : 5268.166 MHz : 0.874 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.138 MHz Measured 99% Bandwidth: 16.433 MHz

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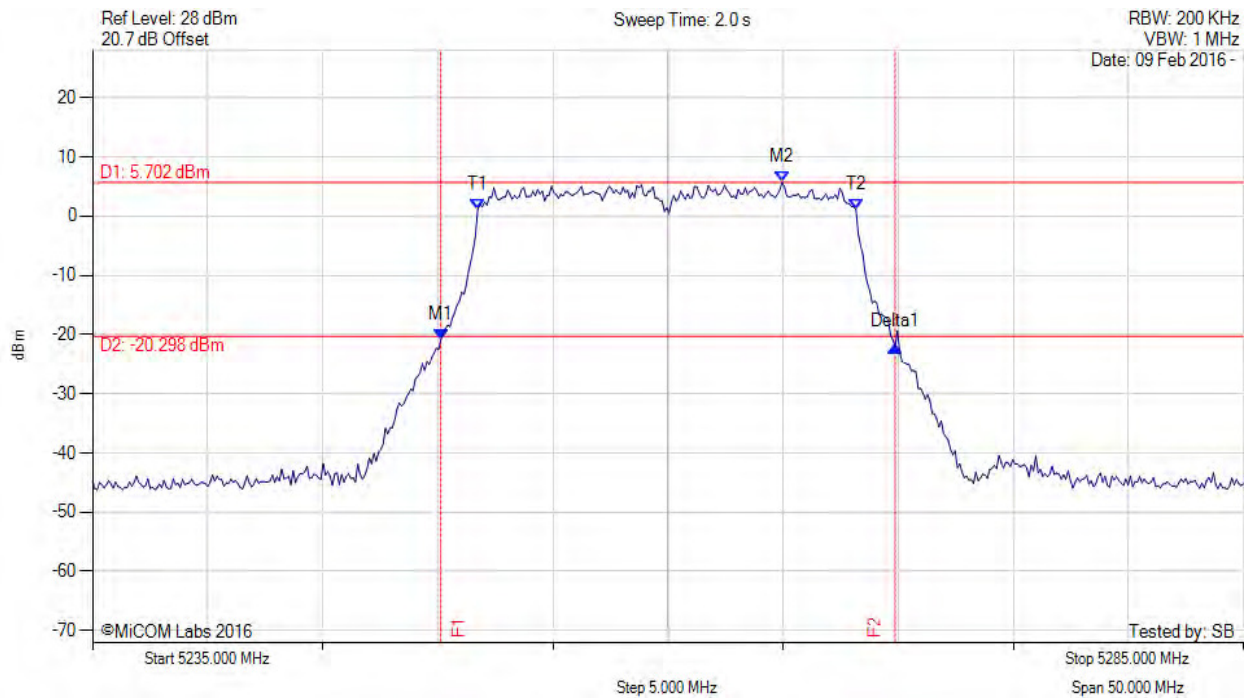
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5250.130 MHz : -20.771 dBm M2 : 5264.960 MHz : 5.702 dBm Delta1 : 19.739 MHz : -1.279 dB T1 : 5251.733 MHz : 1.067 dBm T2 : 5268.166 MHz : 1.136 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.739 MHz Measured 99% Bandwidth: 16.433 MHz

[back to matrix](#)

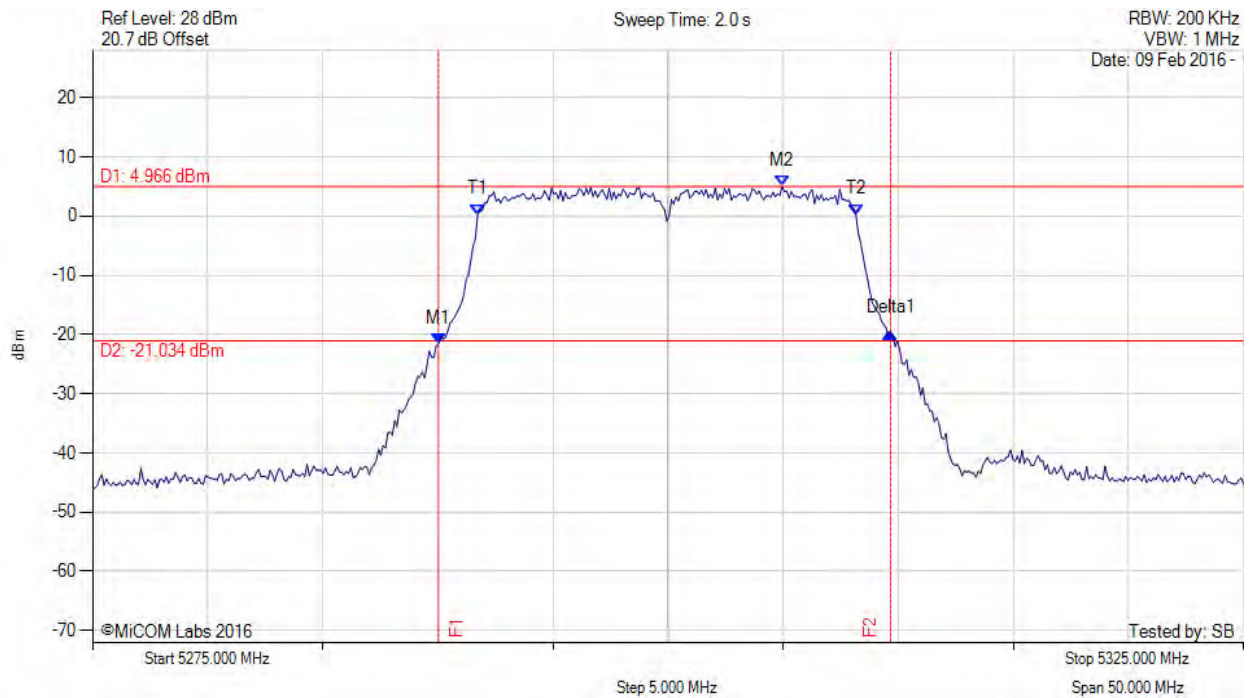
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5290.030 MHz : -21.475 dBm M2 : 5304.960 MHz : 4.966 dBm Delta1 : 19.639 MHz : 1.672 dB T1 : 5291.733 MHz : 0.290 dBm T2 : 5308.166 MHz : 0.276 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.639 MHz Measured 99% Bandwidth: 16.433 MHz

[back to matrix](#)

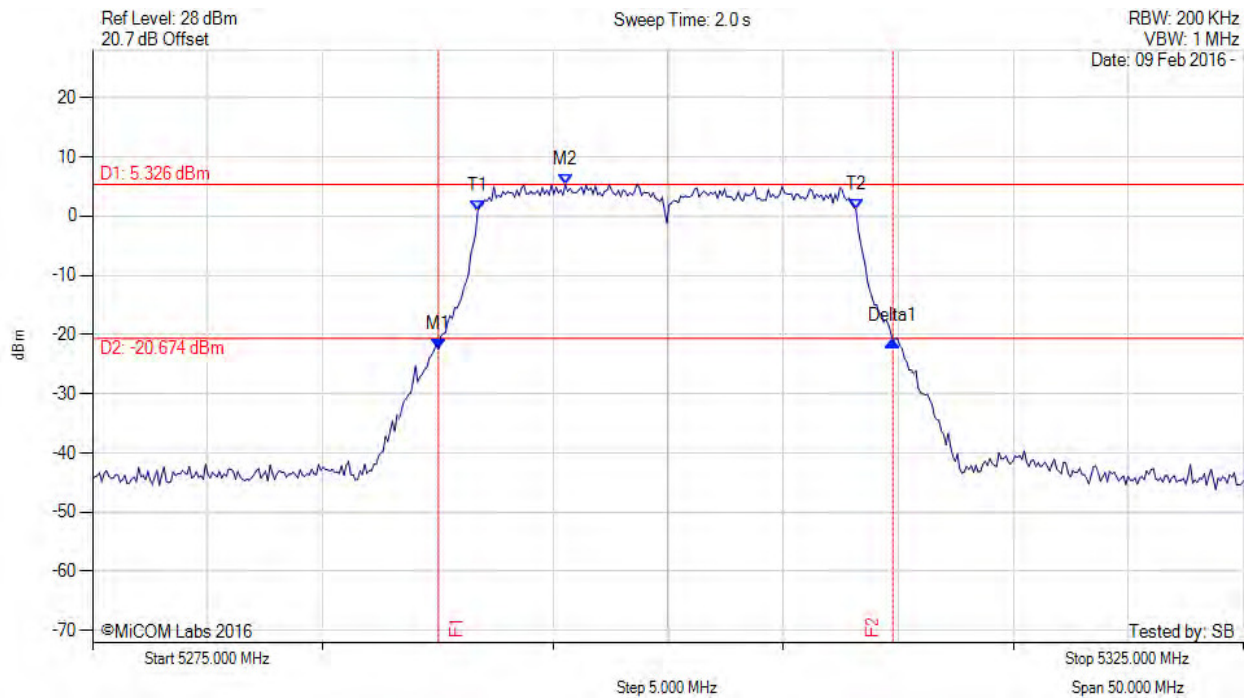
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5290.030 MHz : -22.484 dBm M2 : 5295.541 MHz : 5.326 dBm Delta1 : 19.739 MHz : 1.308 dB T1 : 5291.733 MHz : 0.843 dBm T2 : 5308.166 MHz : 1.104 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.739 MHz Measured 99% Bandwidth: 16.433 MHz

[back to matrix](#)

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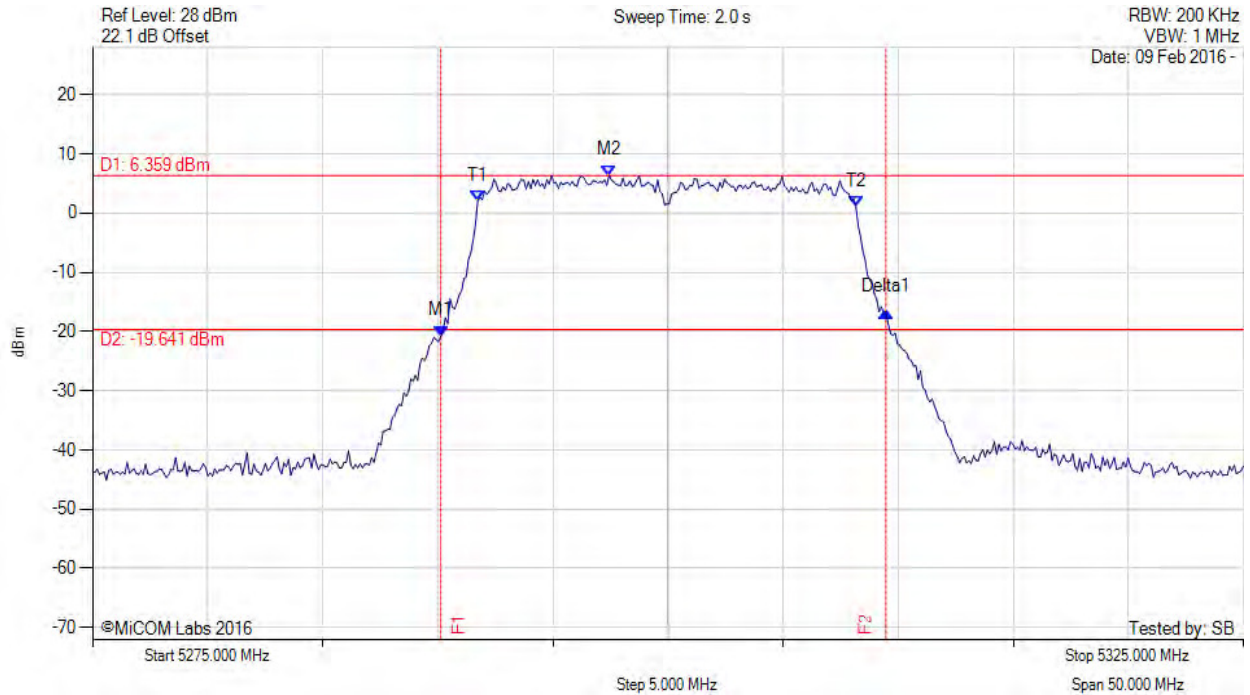


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5290.130 MHz : -20.769 dBm M2 : 5297.445 MHz : 6.359 dBm Delta1 : 19.339 MHz : 4.061 dB T1 : 5291.733 MHz : 2.125 dBm T2 : 5308.166 MHz : 0.998 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.339 MHz Measured 99% Bandwidth: 16.433 MHz

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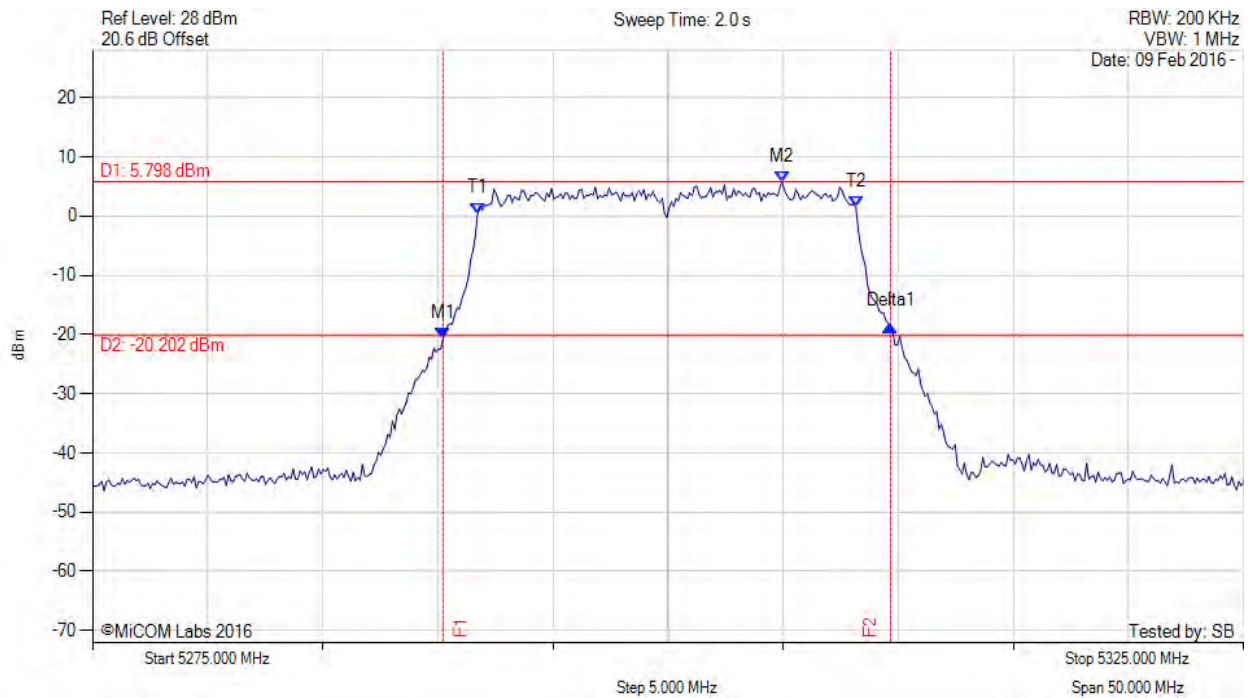
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5290.230 MHz : -20.560 dBm M2 : 5304.960 MHz : 5.798 dBm Delta1 : 19.439 MHz : 1.963 dB T1 : 5291.733 MHz : 0.508 dBm T2 : 5308.166 MHz : 1.484 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.439 MHz Measured 99% Bandwidth: 16.433 MHz

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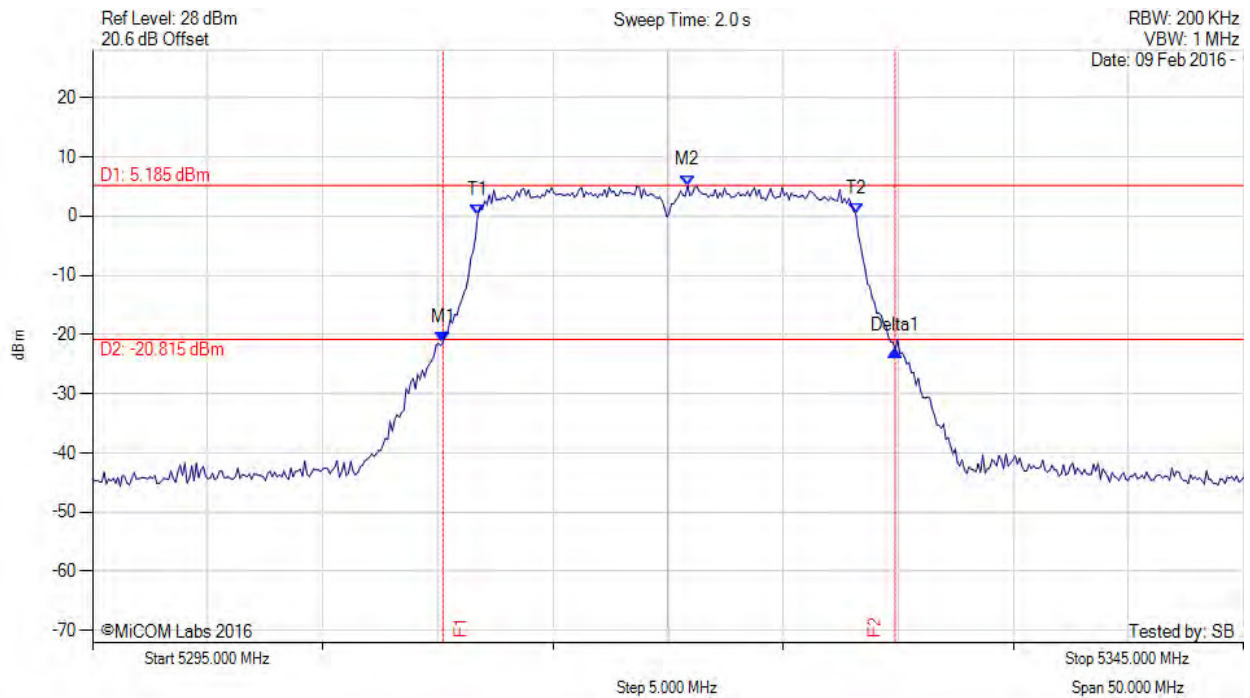
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5310.230 MHz : -21.349 dBm M2 : 5320.852 MHz : 5.185 dBm Delta1 : 19.639 MHz : -1.452 dB T1 : 5311.733 MHz : 0.060 dBm T2 : 5328.166 MHz : 0.294 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.639 MHz Measured 99% Bandwidth: 16.433 MHz

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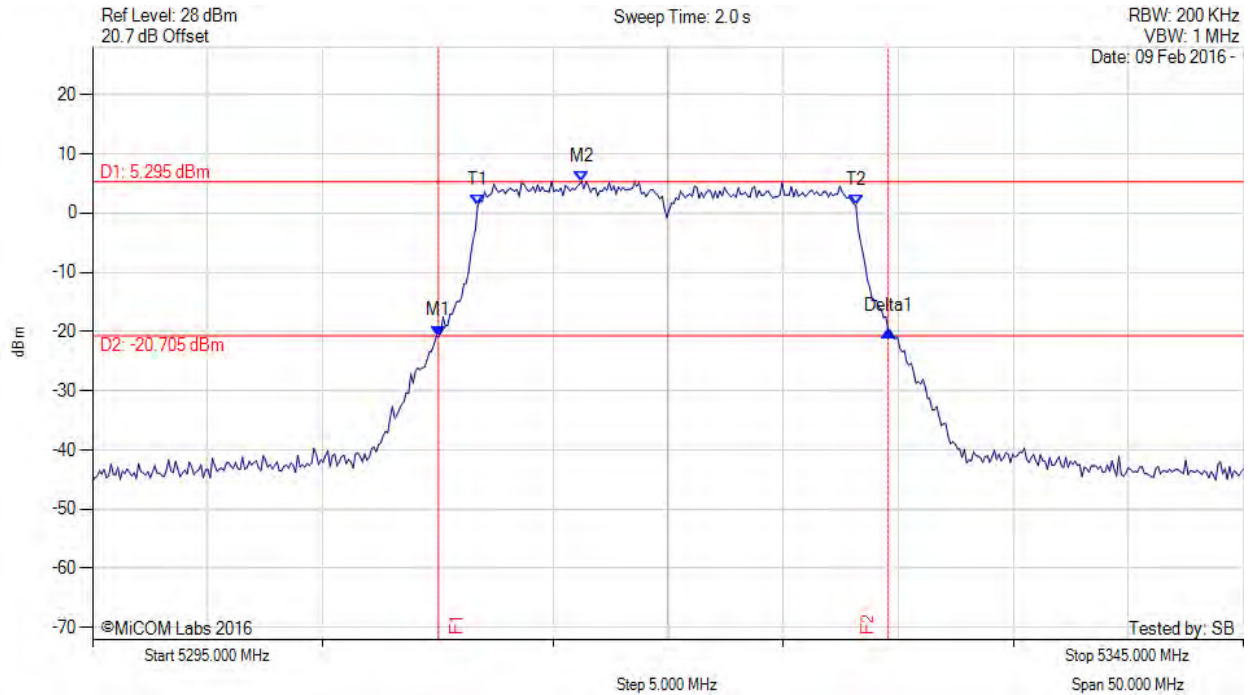
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5310.030 MHz : -20.767 dBm M2 : 5316.242 MHz : 5.295 dBm Delta1 : 19.539 MHz : 0.877 dB T1 : 5311.733 MHz : 1.248 dBm T2 : 5328.166 MHz : 1.281 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.539 MHz Measured 99% Bandwidth: 16.433 MHz

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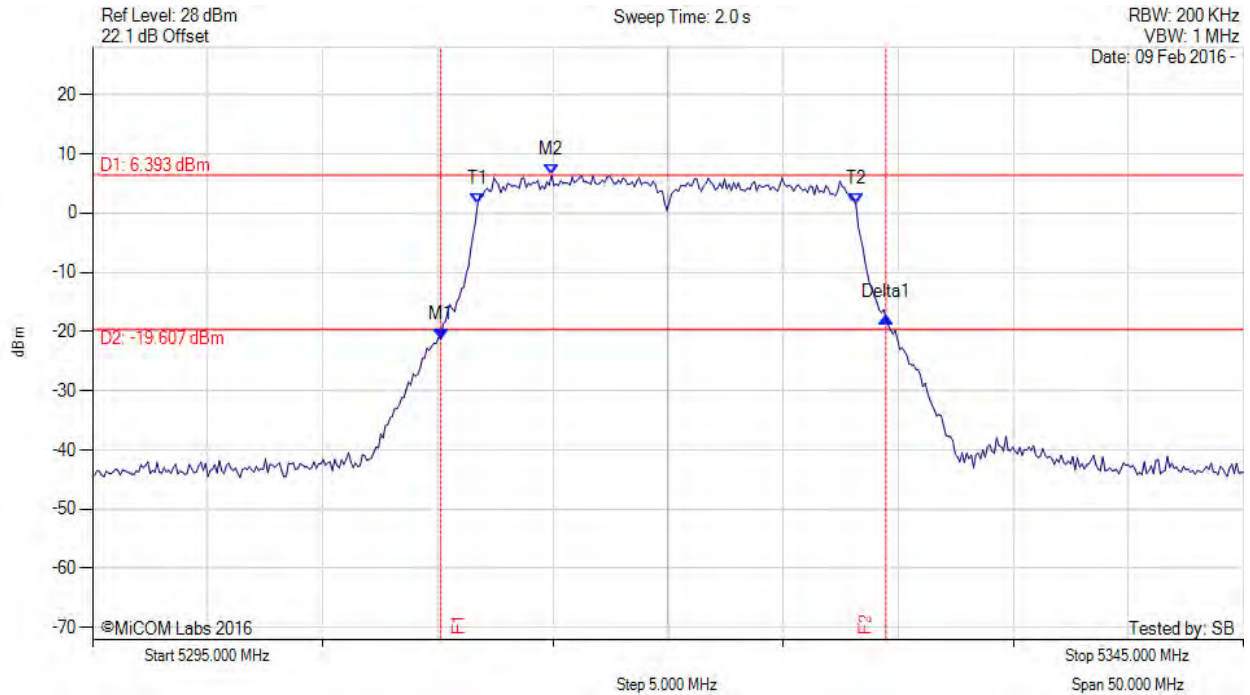
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5310.130 MHz : -21.318 dBm M2 : 5314.940 MHz : 6.393 dBm Delta1 : 19.339 MHz : 3.624 dB T1 : 5311.733 MHz : 1.618 dBm T2 : 5328.166 MHz : 1.512 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.339 MHz Measured 99% Bandwidth: 16.433 MHz

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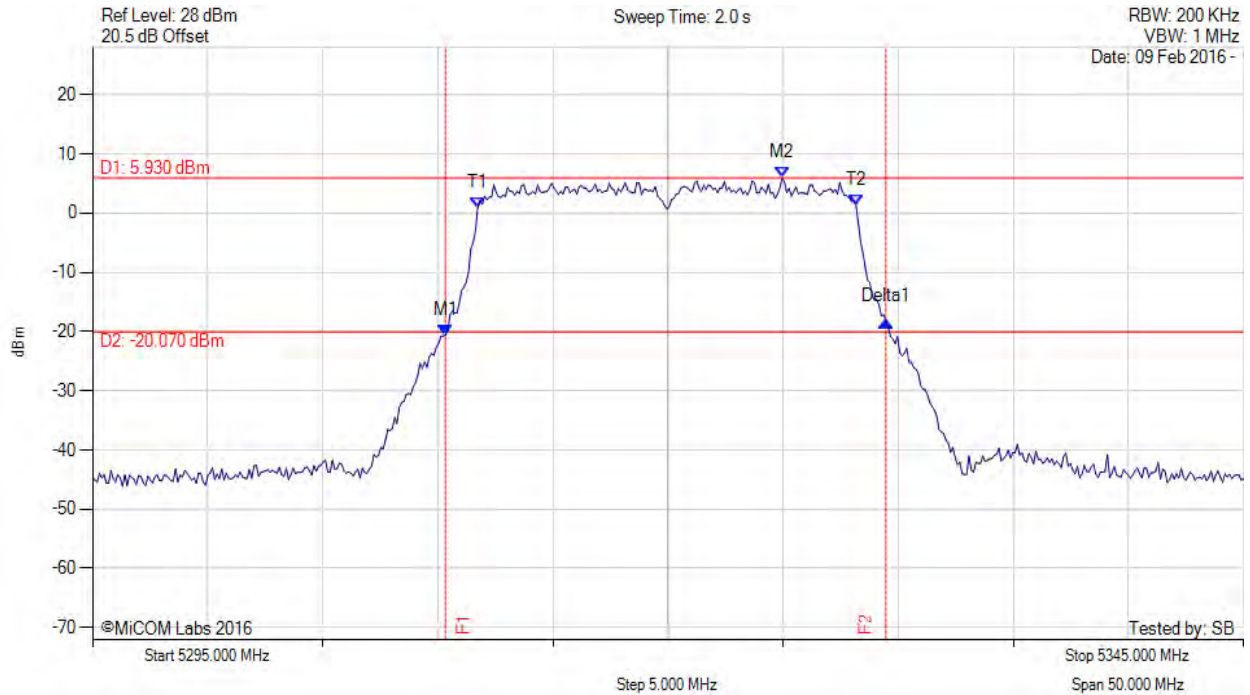
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5310.331 MHz : -20.602 dBm M2 : 5324.960 MHz : 5.930 dBm Delta1 : 19.138 MHz : 2.284 dB T1 : 5311.733 MHz : 0.913 dBm T2 : 5328.166 MHz : 1.425 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.138 MHz Measured 99% Bandwidth: 16.433 MHz

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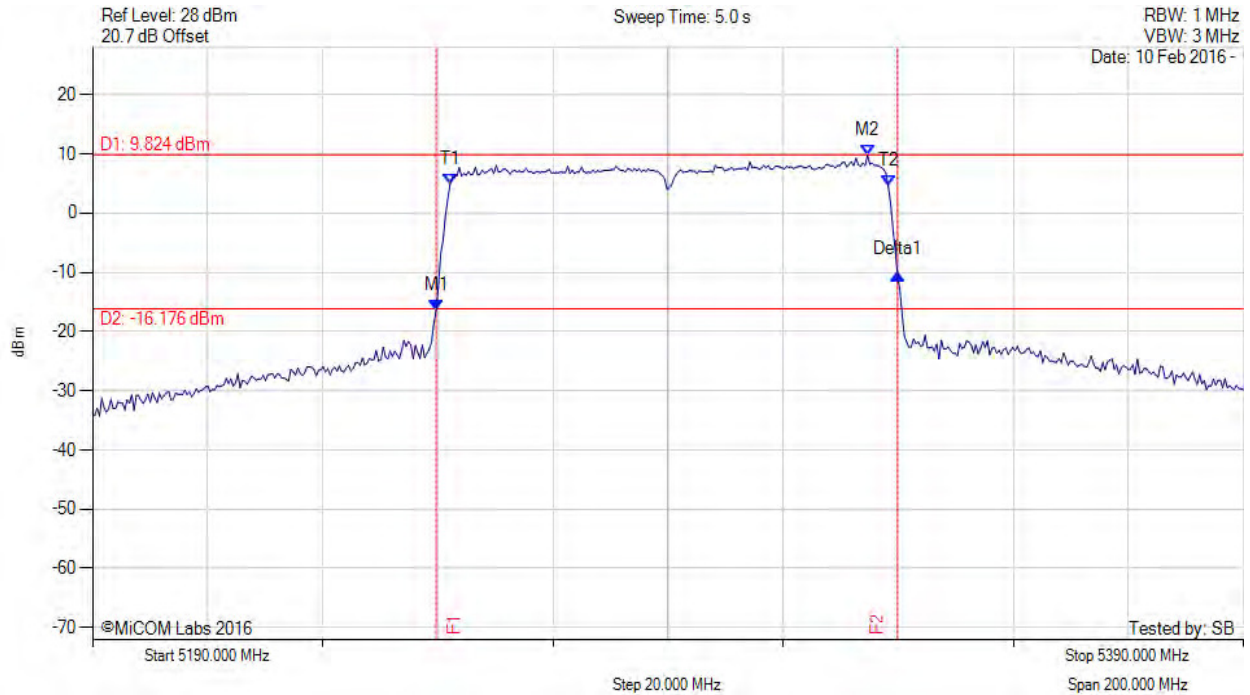
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.719 MHz : -16.372 dBm M2 : 5324.669 MHz : 9.824 dBm Delta1 : 80.160 MHz : 6.026 dB T1 : 5252.124 MHz : 4.795 dBm T2 : 5328.277 MHz : 4.549 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 76.152 MHz

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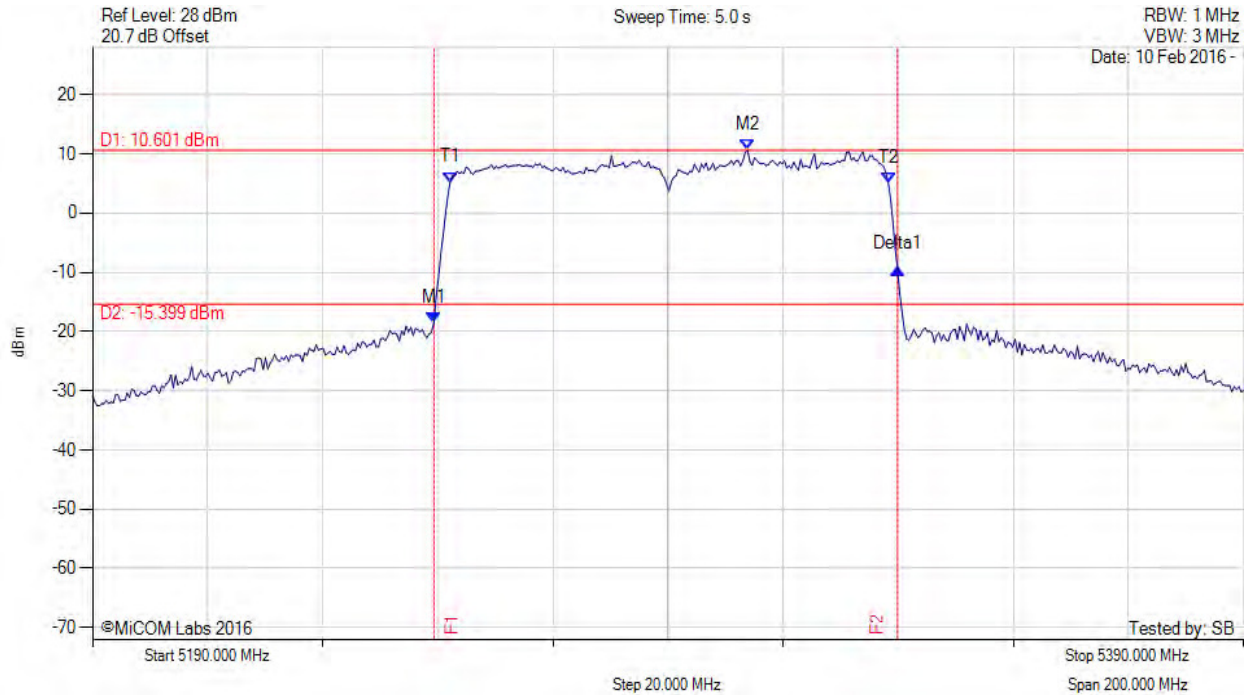
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5290.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.319 MHz : -18.502 dBm M2 : 5303.828 MHz : 10.601 dBm Delta1 : 80.561 MHz : 9.071 dB T1 : 5252.124 MHz : 5.196 dBm T2 : 5328.277 MHz : 5.135 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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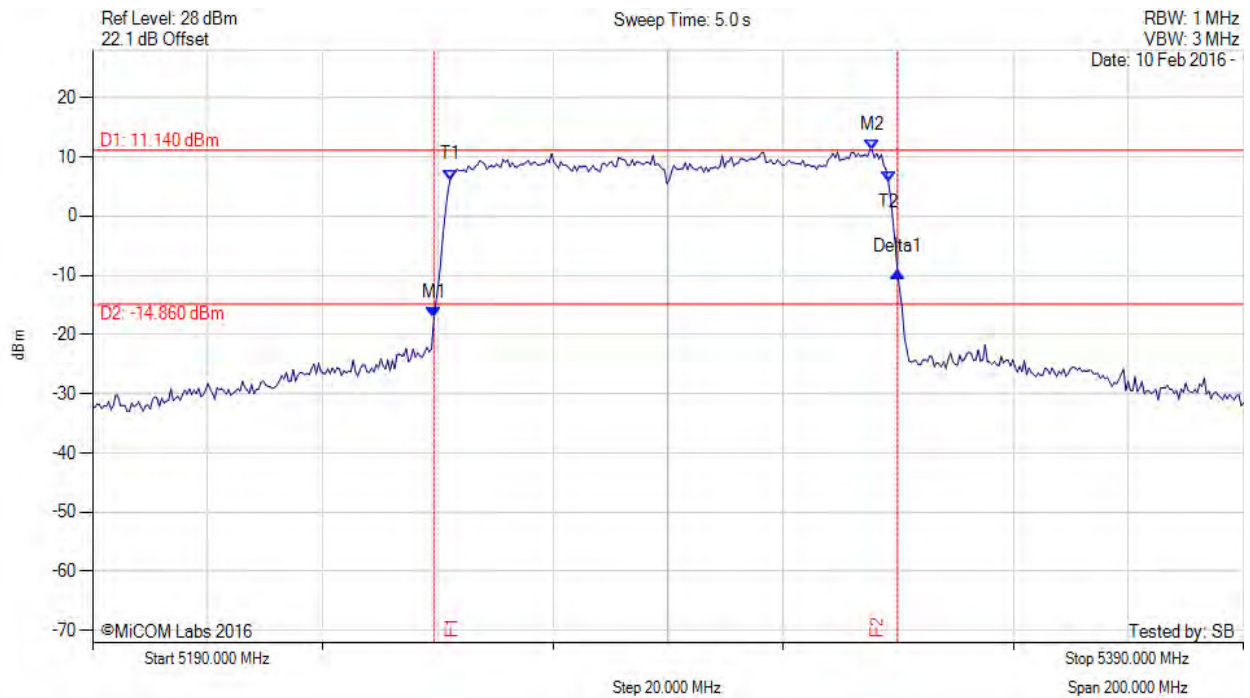
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5290.00 MHz, Chain c, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.319 MHz : -17.153 dBm M2 : 5325.471 MHz : 11.140 dBm Delta1 : 80.561 MHz : 7.734 dB T1 : 5252.124 MHz : 6.119 dBm T2 : 5328.277 MHz : 5.899 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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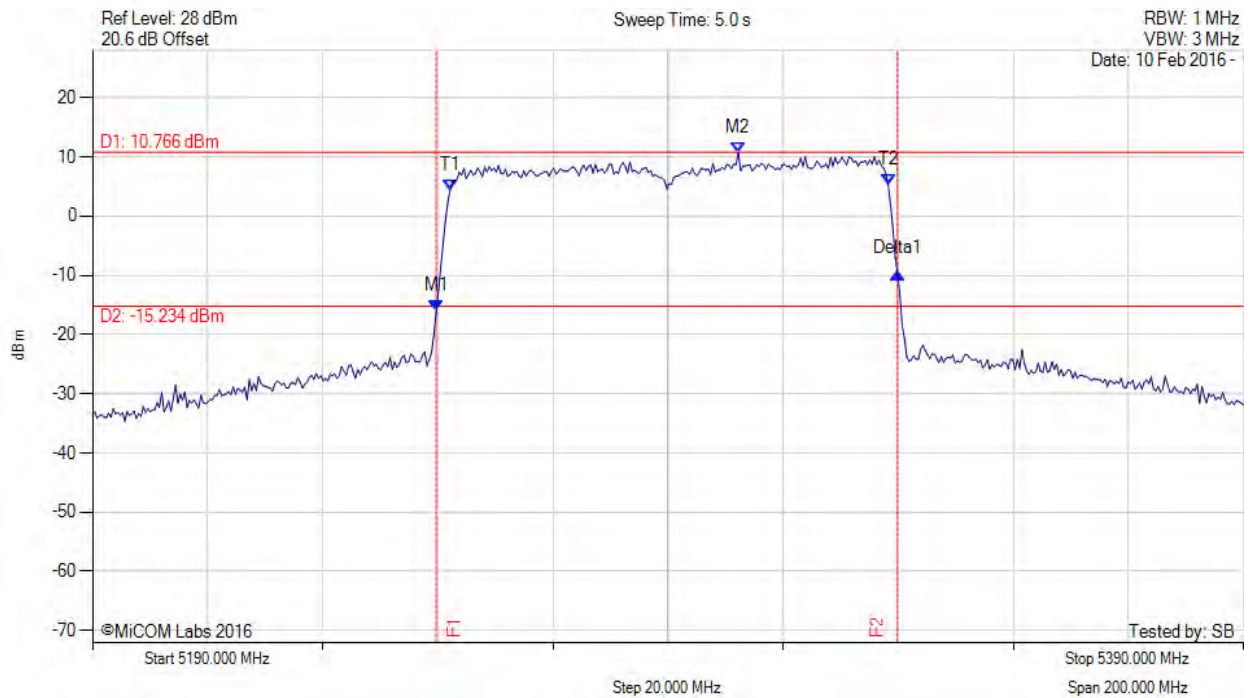


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5290.00 MHz, Chain d, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.719 MHz : -16.059 dBm M2 : 5302.224 MHz : 10.766 dBm Delta1 : 80.160 MHz : 6.357 dB T1 : 5252.124 MHz : 4.398 dBm T2 : 5328.277 MHz : 5.265 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 76.152 MHz

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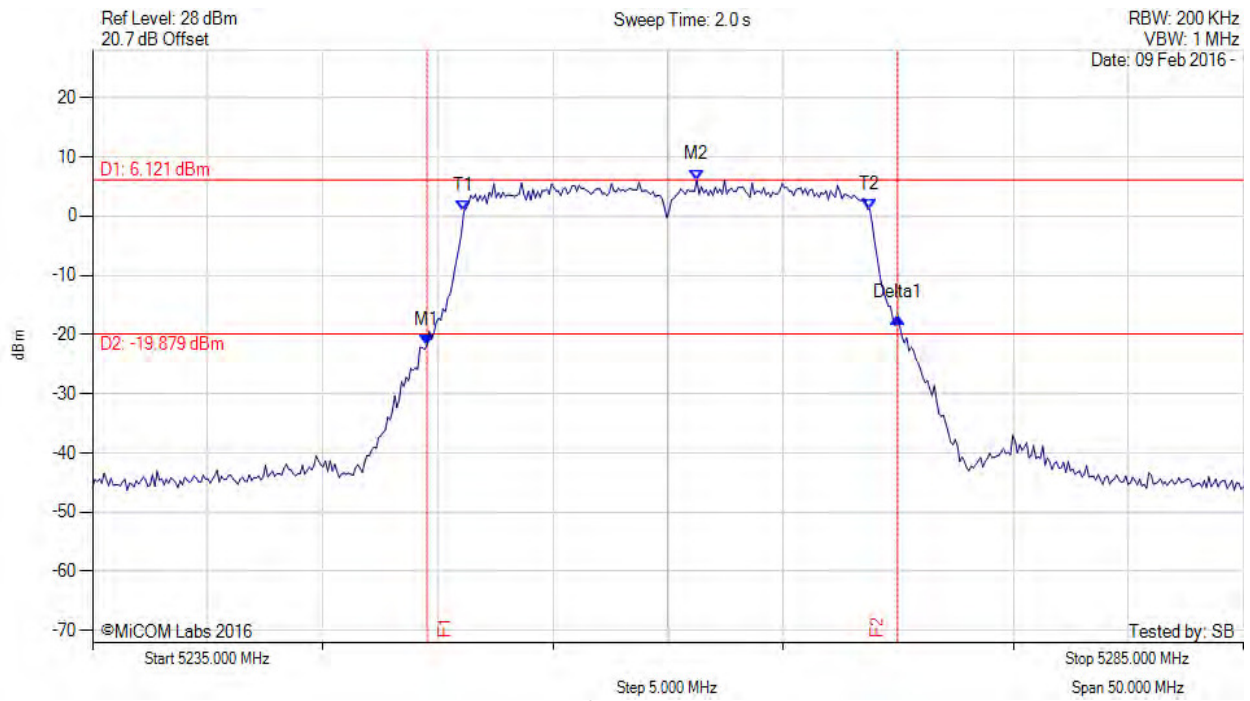


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.529 MHz : -21.808 dBm M2 : 5261.253 MHz : 6.121 dBm Delta1 : 20.441 MHz : 4.706 dB T1 : 5251.132 MHz : 0.807 dBm T2 : 5268.768 MHz : 1.124 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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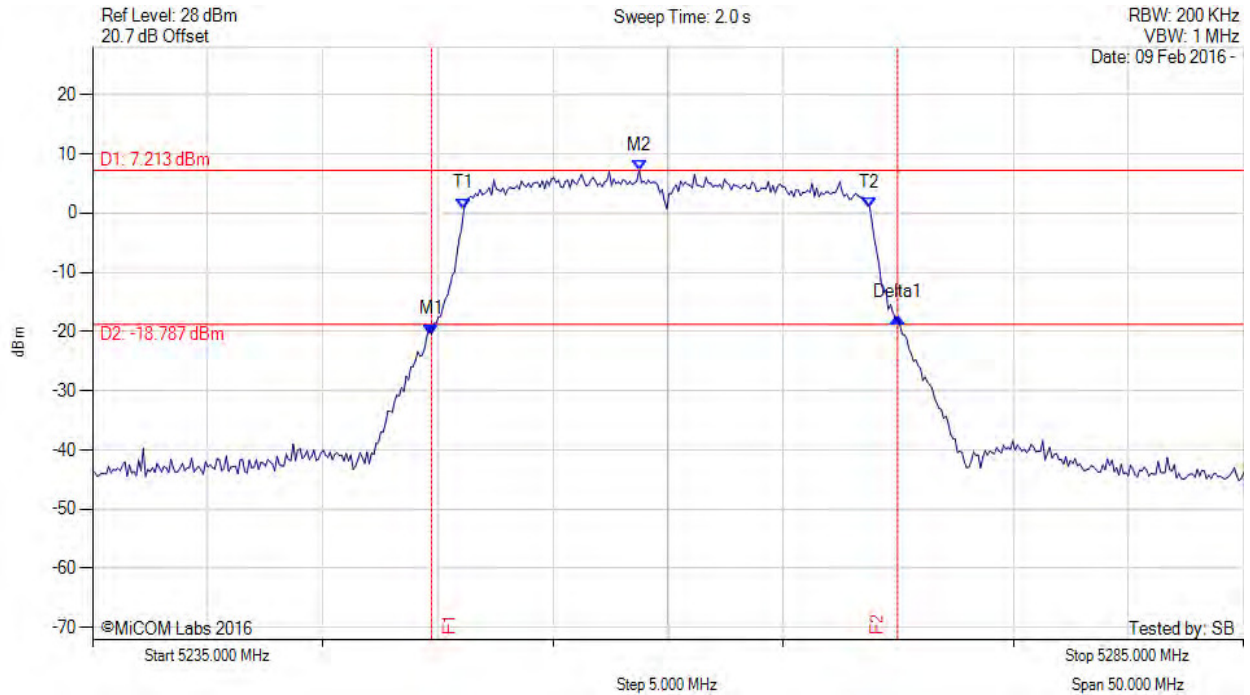
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.729 MHz : -20.533 dBm M2 : 5258.747 MHz : 7.213 dBm Delta1 : 20.240 MHz : 2.833 dB T1 : 5251.132 MHz : 0.752 dBm T2 : 5268.768 MHz : 0.884 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.240 MHz Measured 99% Bandwidth: 17.635 MHz

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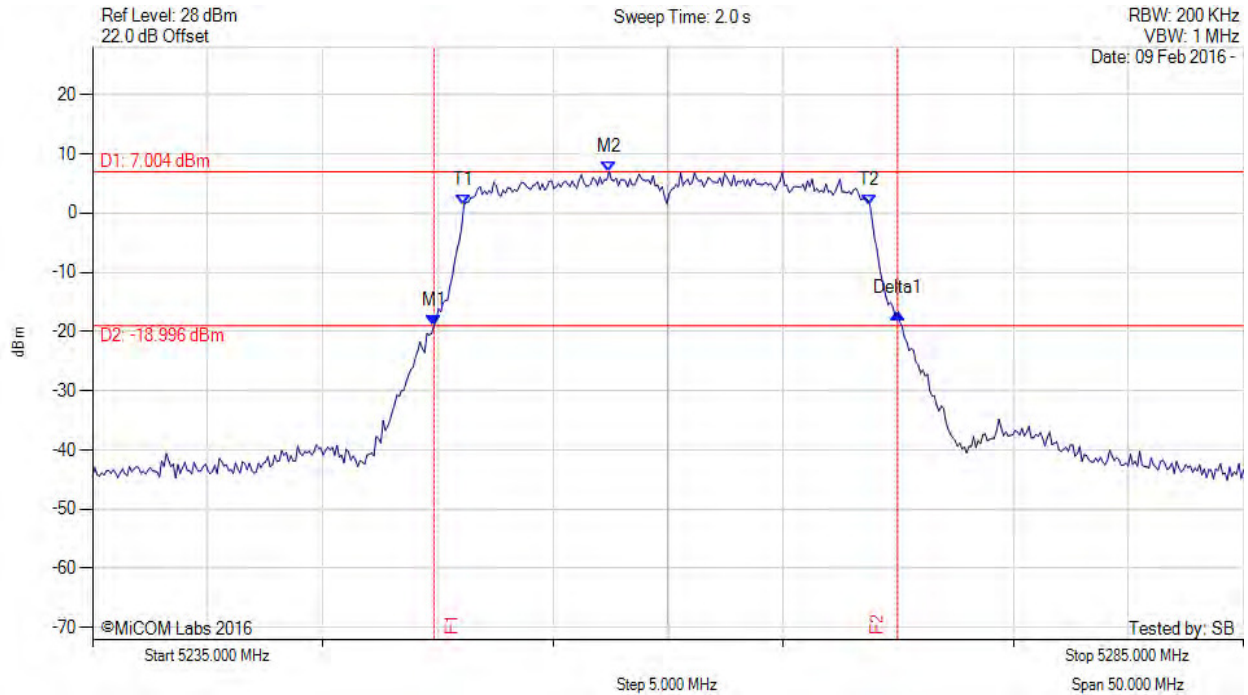
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.830 MHz : -19.061 dBm M2 : 5257.445 MHz : 7.004 dBm Delta1 : 20.140 MHz : 2.217 dB T1 : 5251.132 MHz : 1.317 dBm T2 : 5268.768 MHz : 1.407 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.140 MHz Measured 99% Bandwidth: 17.635 MHz

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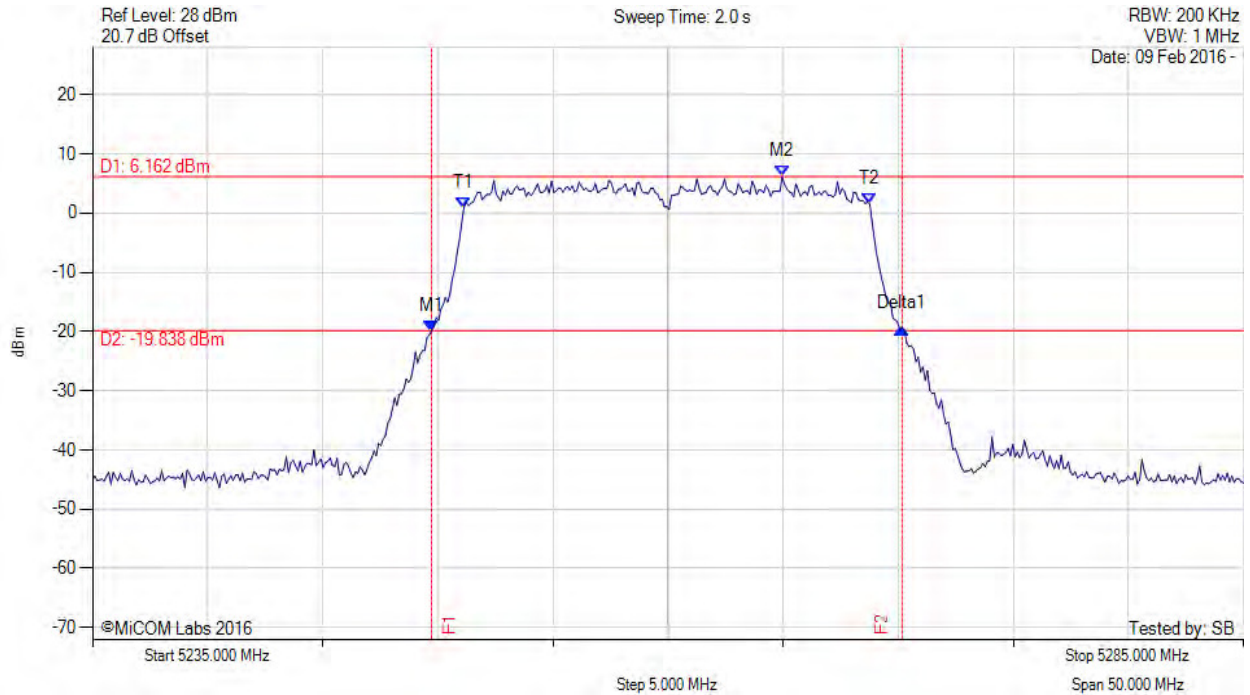
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.729 MHz : -19.866 dBm M2 : 5264.960 MHz : 6.162 dBm Delta1 : 20.441 MHz : 0.397 dB T1 : 5251.132 MHz : 0.917 dBm T2 : 5268.768 MHz : 1.490 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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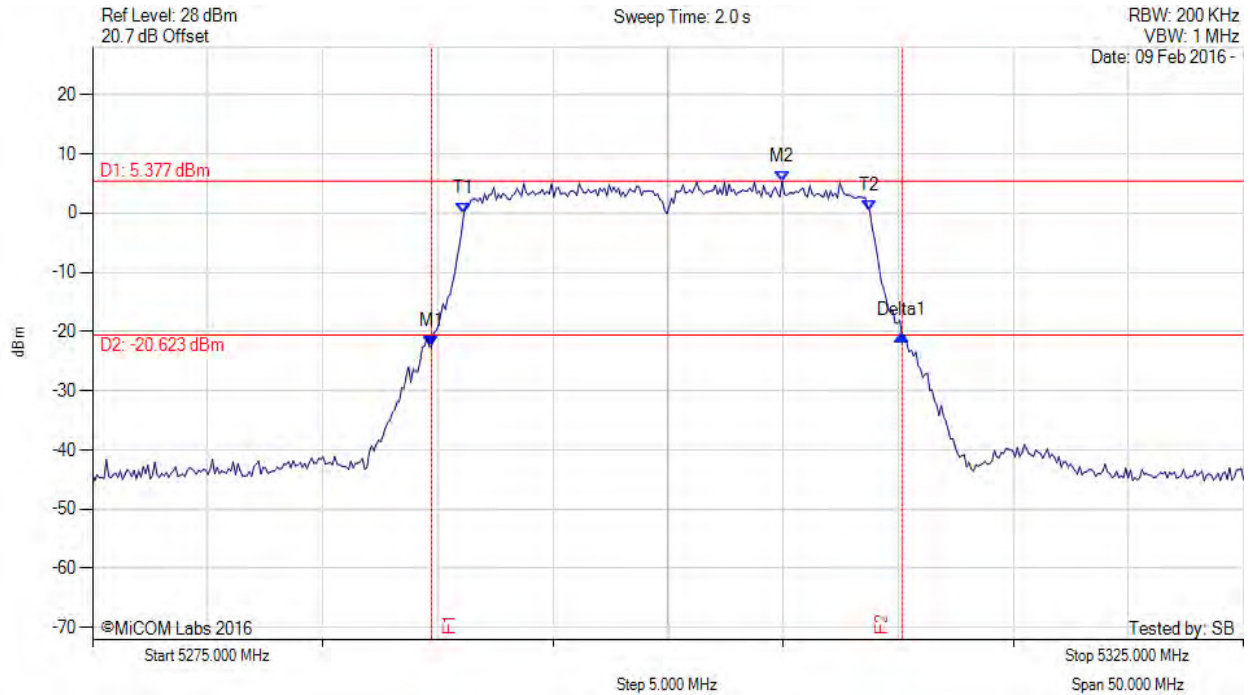
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.729 MHz : -22.563 dBm M2 : 5304.960 MHz : 5.377 dBm Delta1 : 20.441 MHz : 1.893 dB T1 : 5291.132 MHz : -0.037 dBm T2 : 5308.768 MHz : 0.367 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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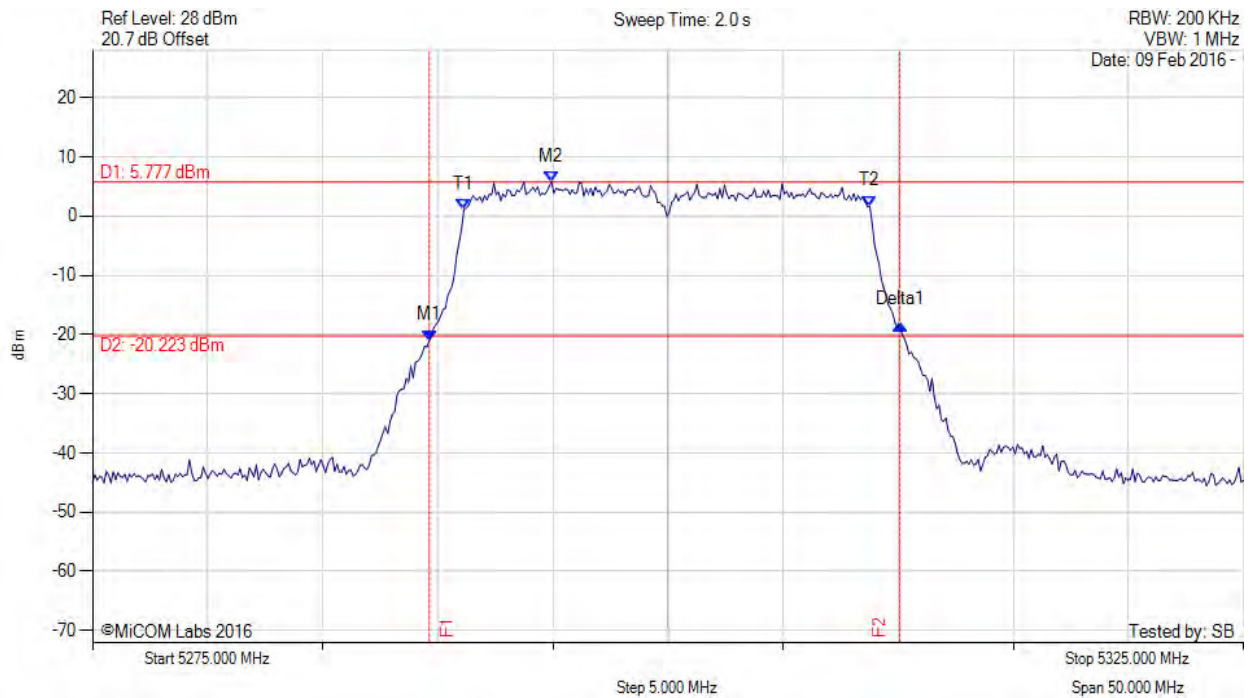
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.629 MHz : -20.995 dBm M2 : 5294.940 MHz : 5.777 dBm Delta1 : 20.441 MHz : 2.703 dB T1 : 5291.132 MHz : 1.089 dBm T2 : 5308.768 MHz : 1.679 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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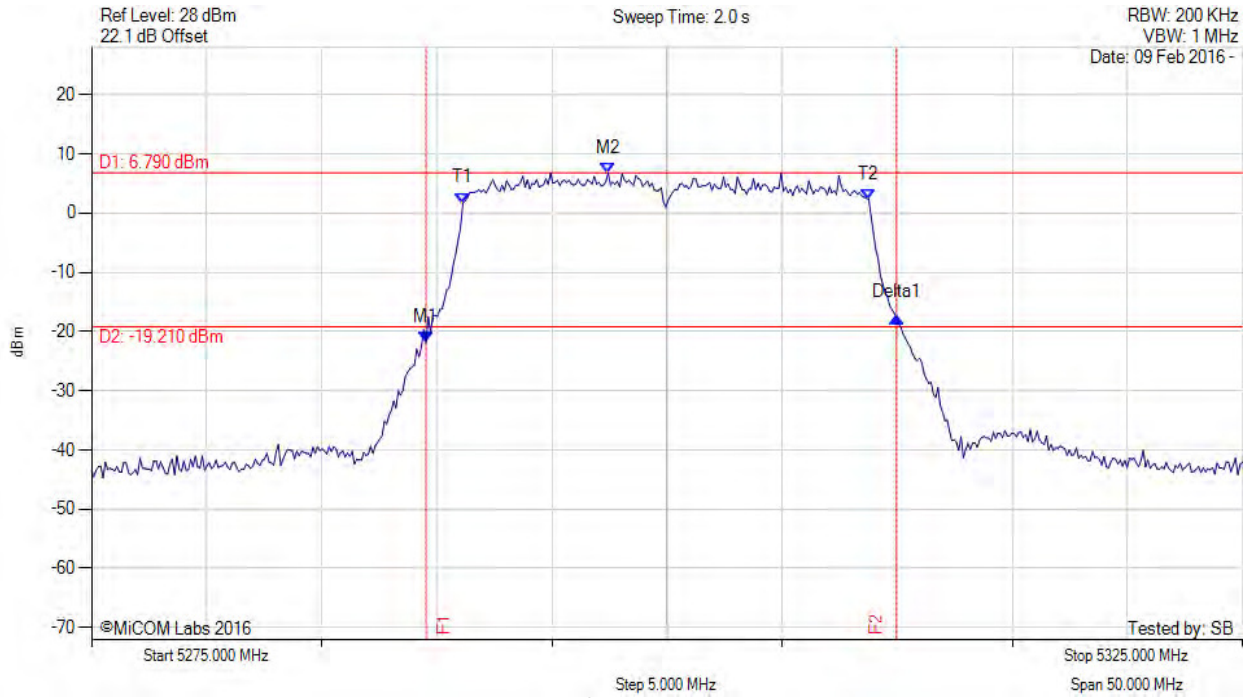
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.529 MHz : -21.85 dBm M2 : 5297.445 MHz : 6.790 dBm Delta1 : 20.441 MHz : 4.267 dB T1 : 5291.132 MHz : 1.671 dBm T2 : 5308.768 MHz : 2.350 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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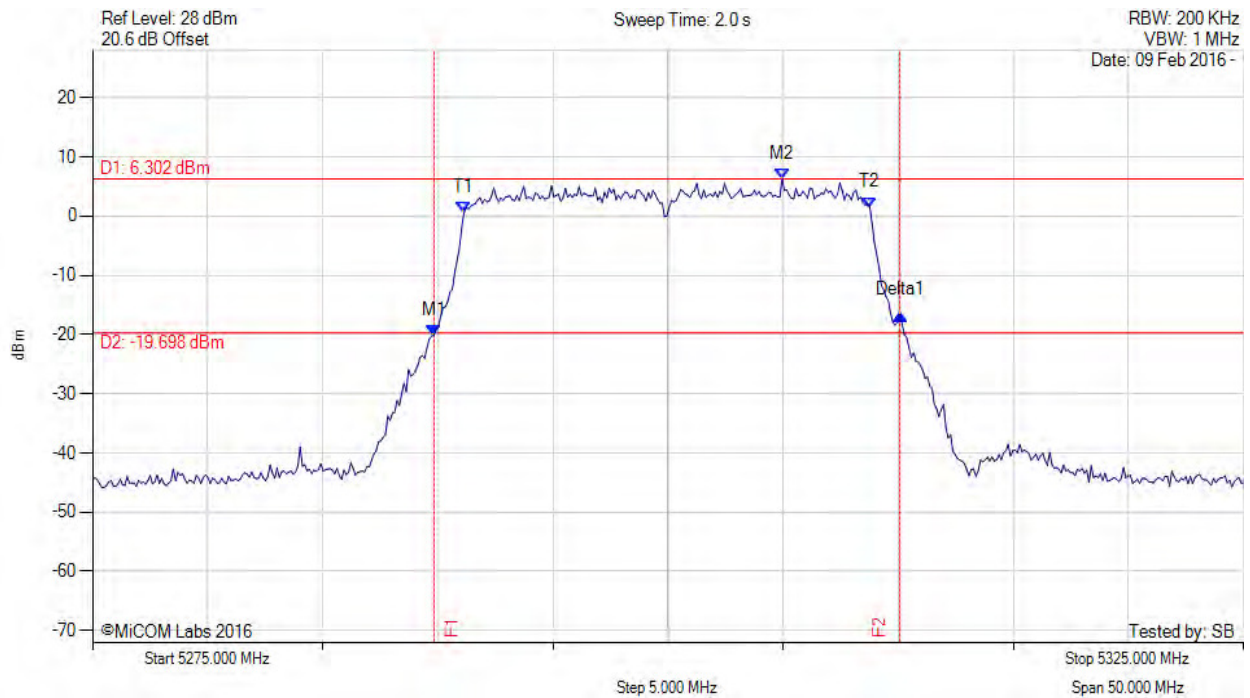
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.830 MHz : -20.133 dBm M2 : 5304.960 MHz : 6.302 dBm Delta1 : 20.240 MHz : 3.482 dB T1 : 5291.132 MHz : 0.561 dBm T2 : 5308.768 MHz : 1.447 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.240 MHz Measured 99% Bandwidth: 17.635 MHz

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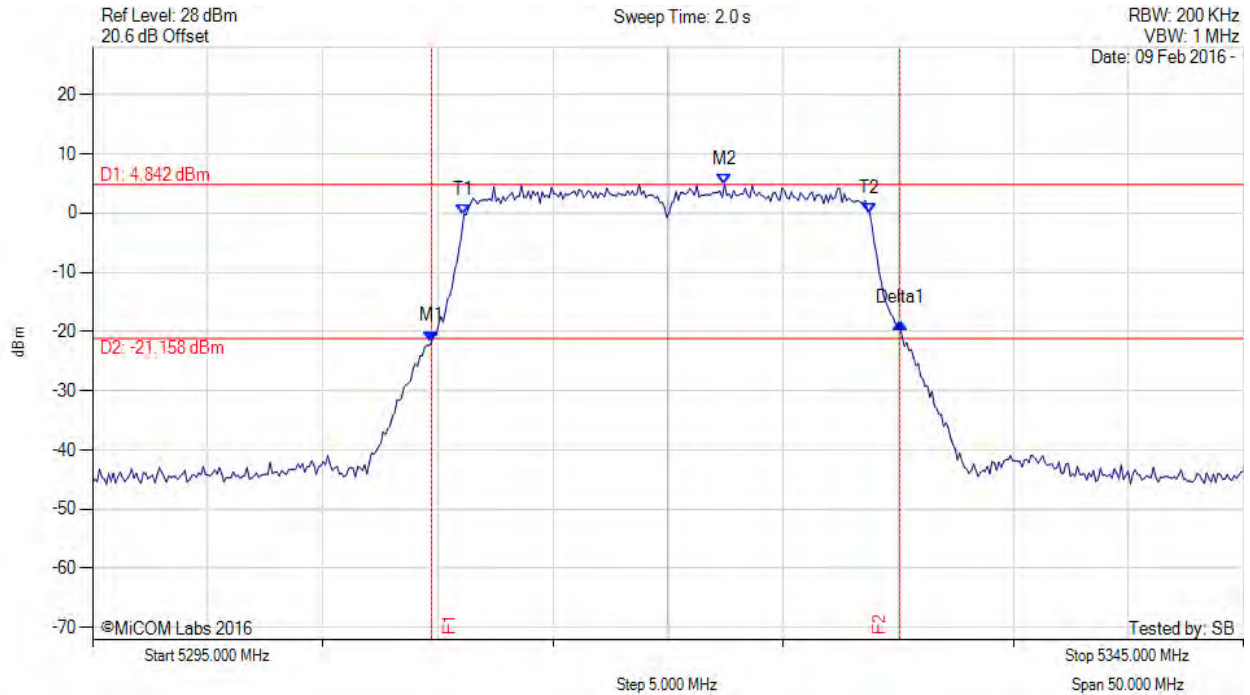
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5309.729 MHz : -21.701 dBm M2 : 5322.455 MHz : 4.842 dBm Delta1 : 20.341 MHz : 3.209 dB T1 : 5311.132 MHz : -0.251 dBm T2 : 5328.768 MHz : -0.064 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.341 MHz Measured 99% Bandwidth: 17.635 MHz

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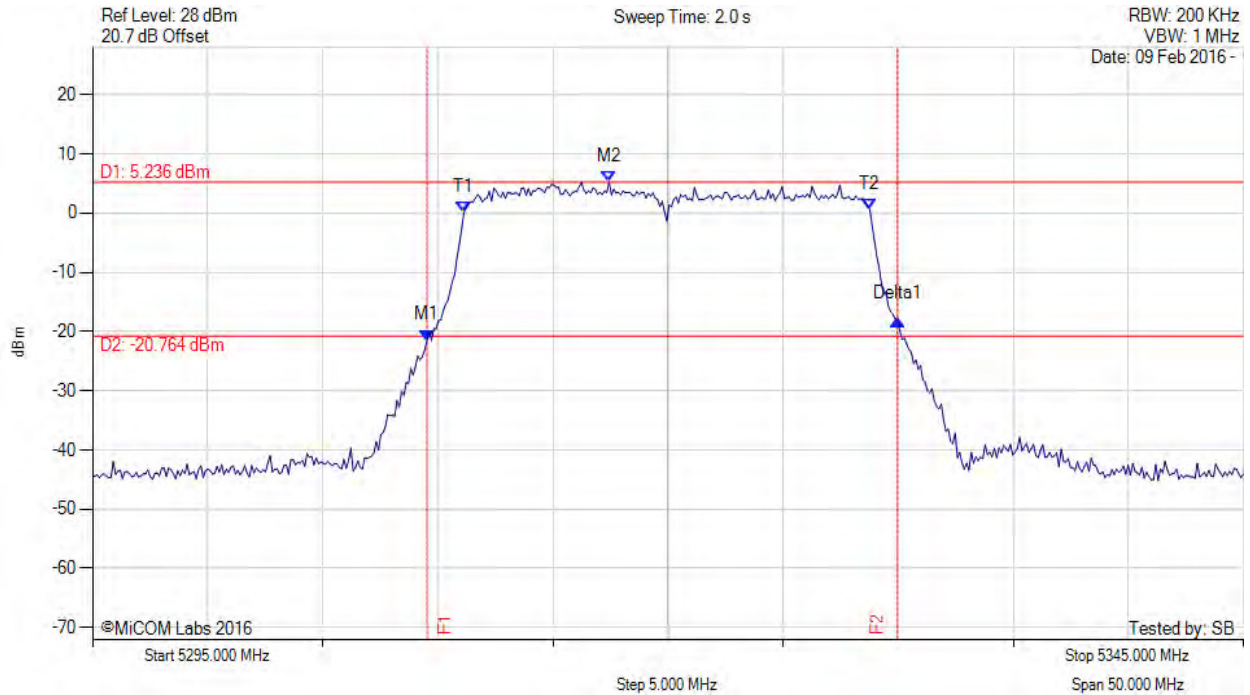
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5309.529 MHz : -21.457 dBm M2 : 5317.445 MHz : 5.236 dBm Delta1 : 20.441 MHz : 3.496 dB T1 : 5311.132 MHz : 0.081 dBm T2 : 5328.768 MHz : 0.622 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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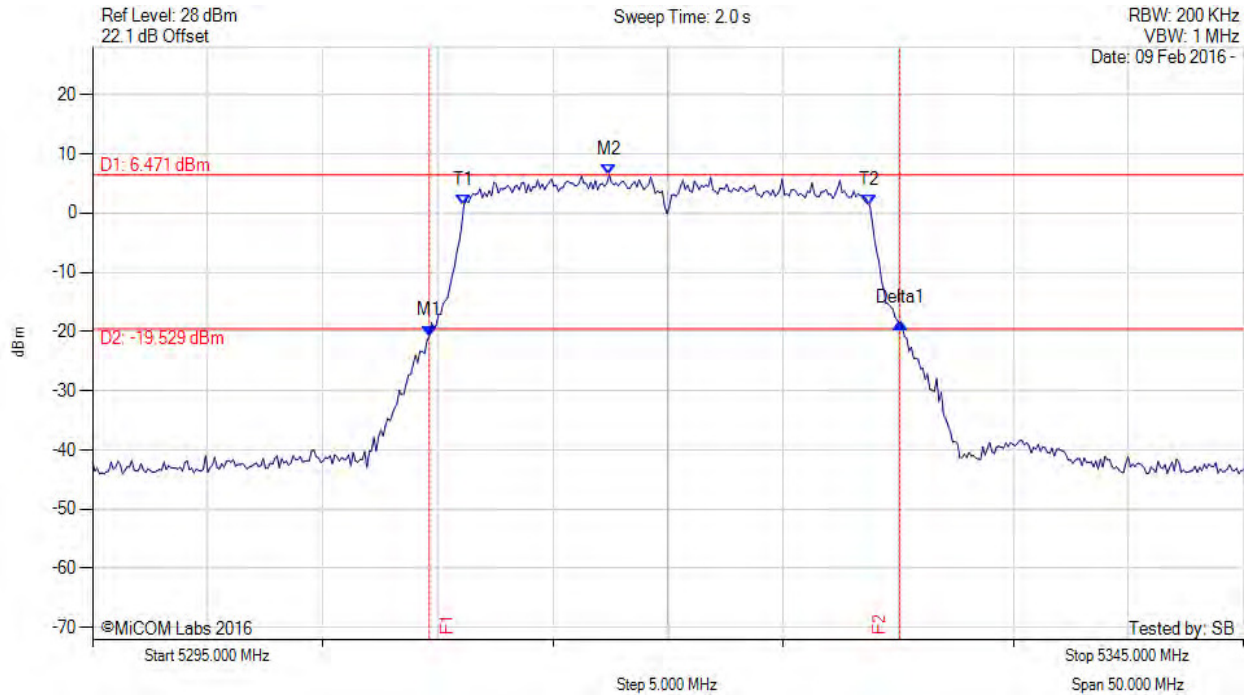
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5309.629 MHz : -20.751 dBm M2 : 5317.445 MHz : 6.471 dBm Delta1 : 20.441 MHz : 2.266 dB T1 : 5311.132 MHz : 1.338 dBm T2 : 5328.768 MHz : 1.295 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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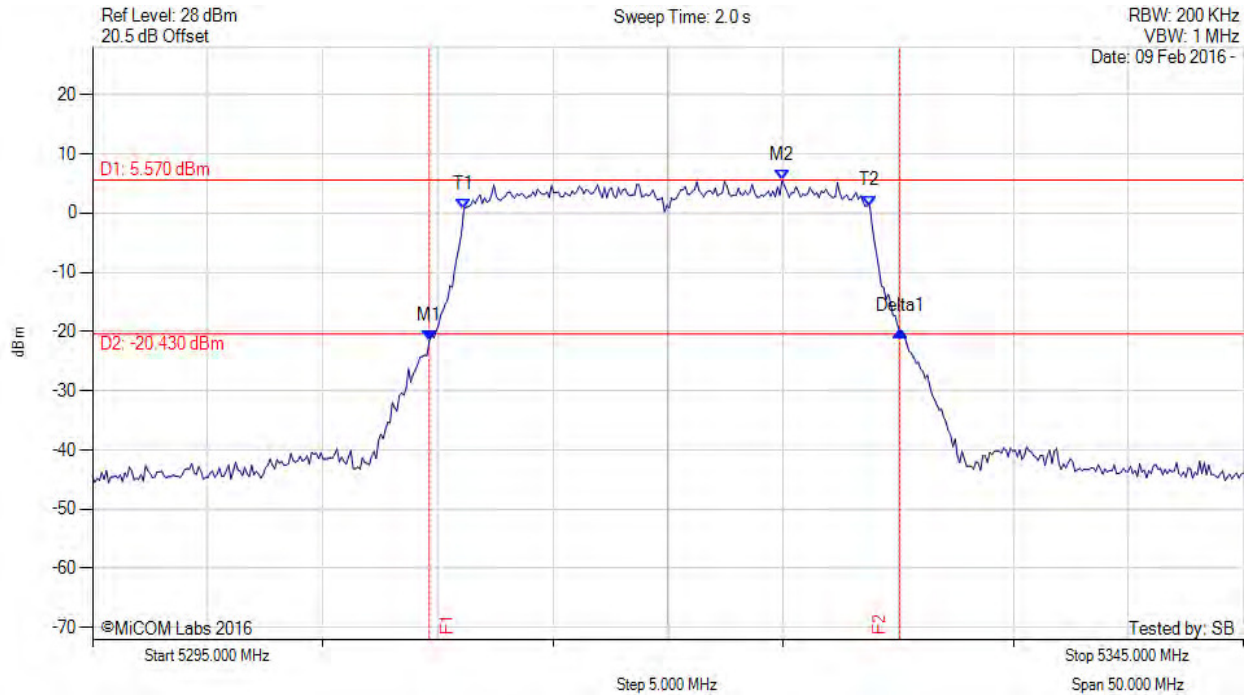
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5309.629 MHz : -21.524 dBm M2 : 5324.960 MHz : 5.570 dBm Delta1 : 20.441 MHz : 1.546 dB T1 : 5311.132 MHz : 0.703 dBm T2 : 5328.768 MHz : 1.222 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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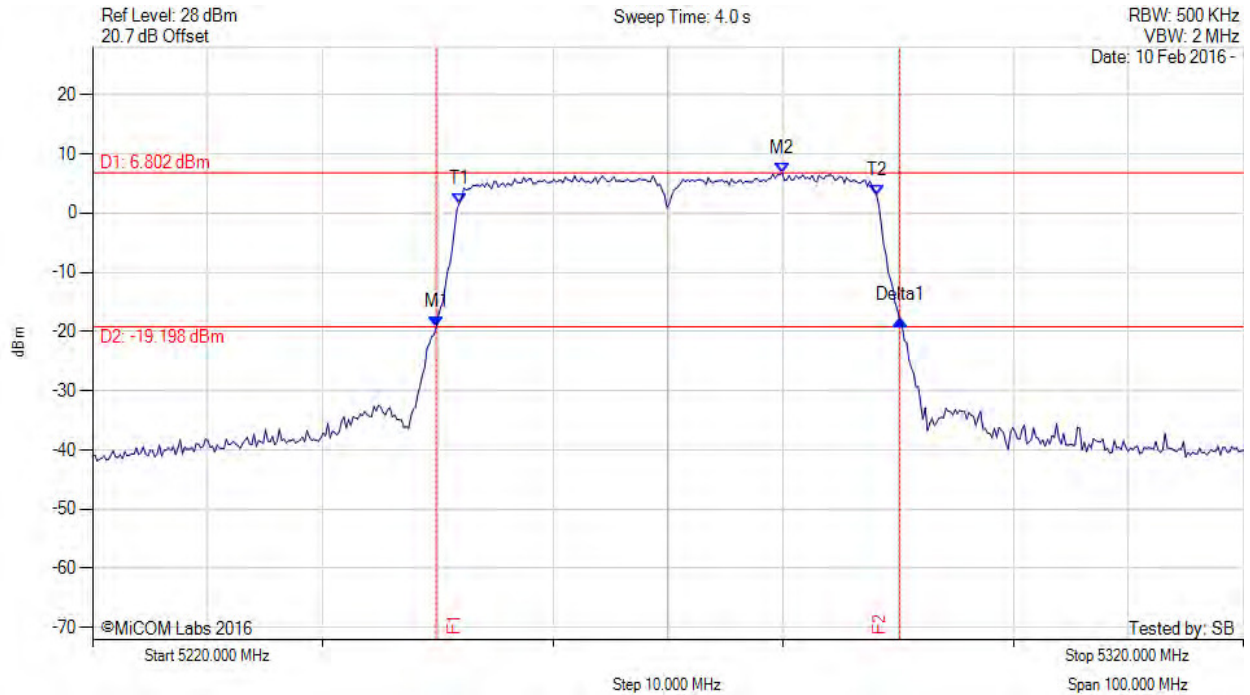
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.860 MHz : -19.337 dBm M2 : 5279.920 MHz : 6.802 dBm Delta1 : 40.281 MHz : 1.283 dB T1 : 5251.864 MHz : 1.618 dBm T2 : 5288.136 MHz : 3.011 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.281 MHz Measured 99% Bandwidth: 36.273 MHz

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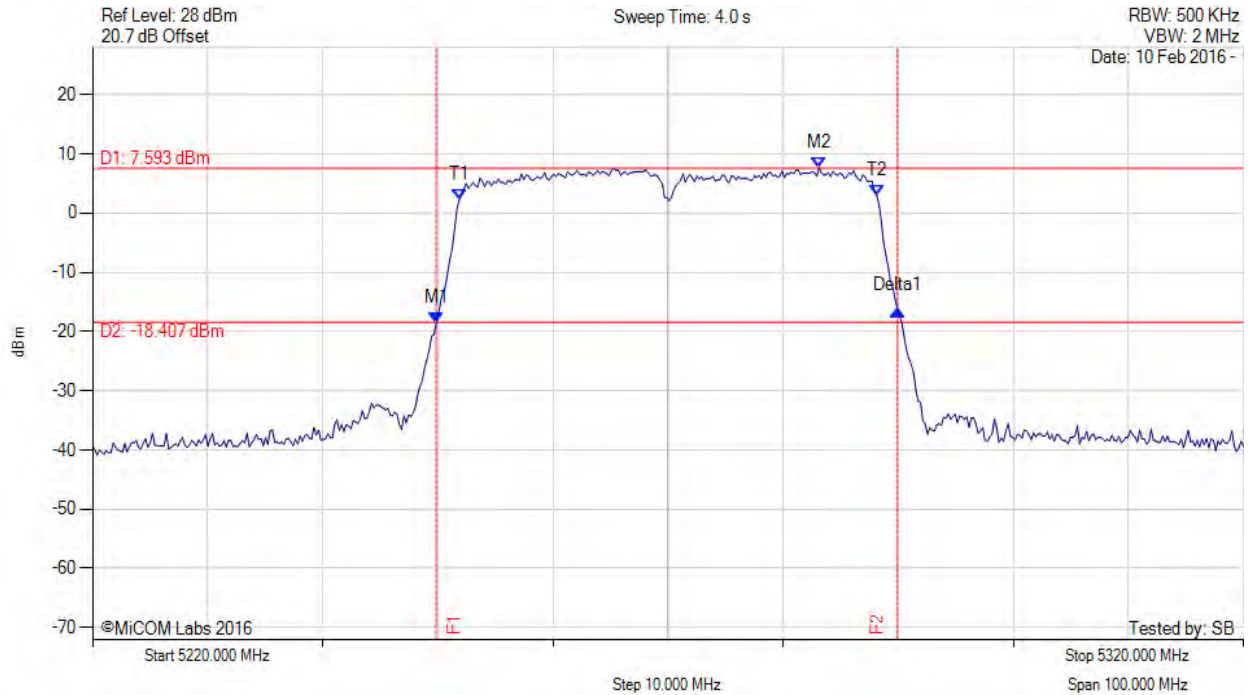


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.860 MHz : -18.601 dBm M2 : 5283.126 MHz : 7.593 dBm Delta1 : 40.080 MHz : 2.270 dB T1 : 5251.864 MHz : 2.277 dBm T2 : 5288.136 MHz : 3.030 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.080 MHz Measured 99% Bandwidth: 36.273 MHz

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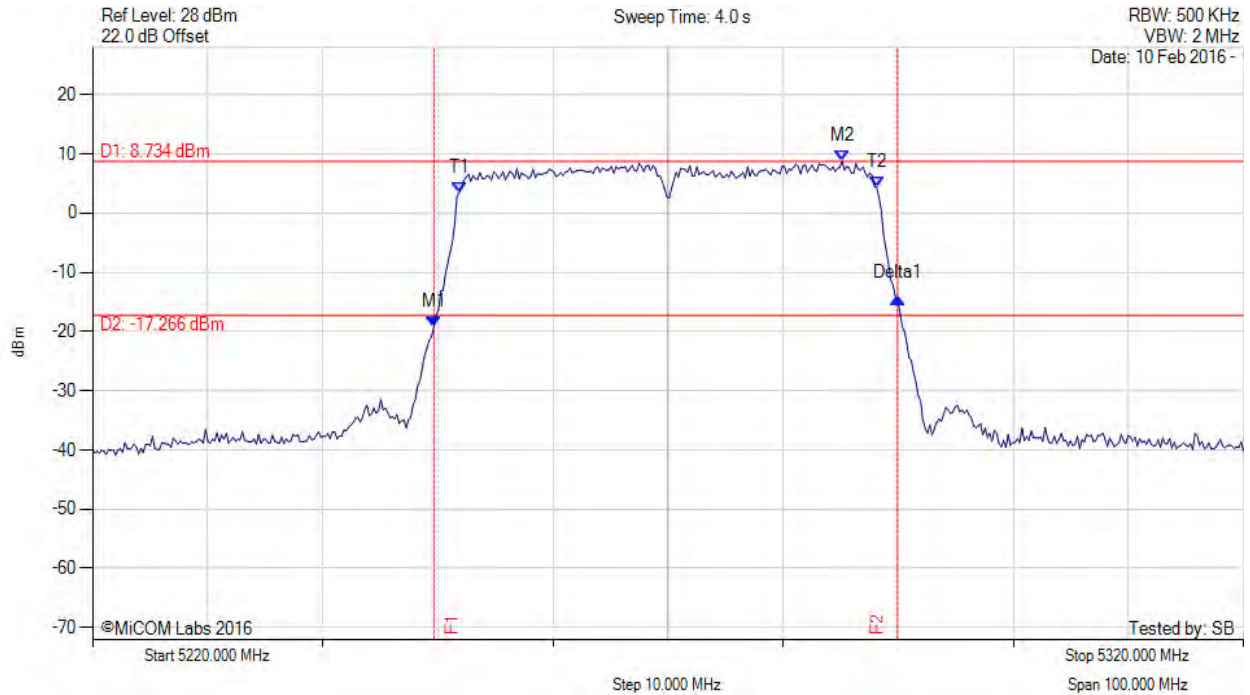
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.659 MHz : -19.144 dBm M2 : 5285.130 MHz : 8.734 dBm Delta1 : 40.281 MHz : 4.749 dB T1 : 5251.864 MHz : 3.432 dBm T2 : 5288.136 MHz : 4.392 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.281 MHz Measured 99% Bandwidth: 36.273 MHz

[back to matrix](#)

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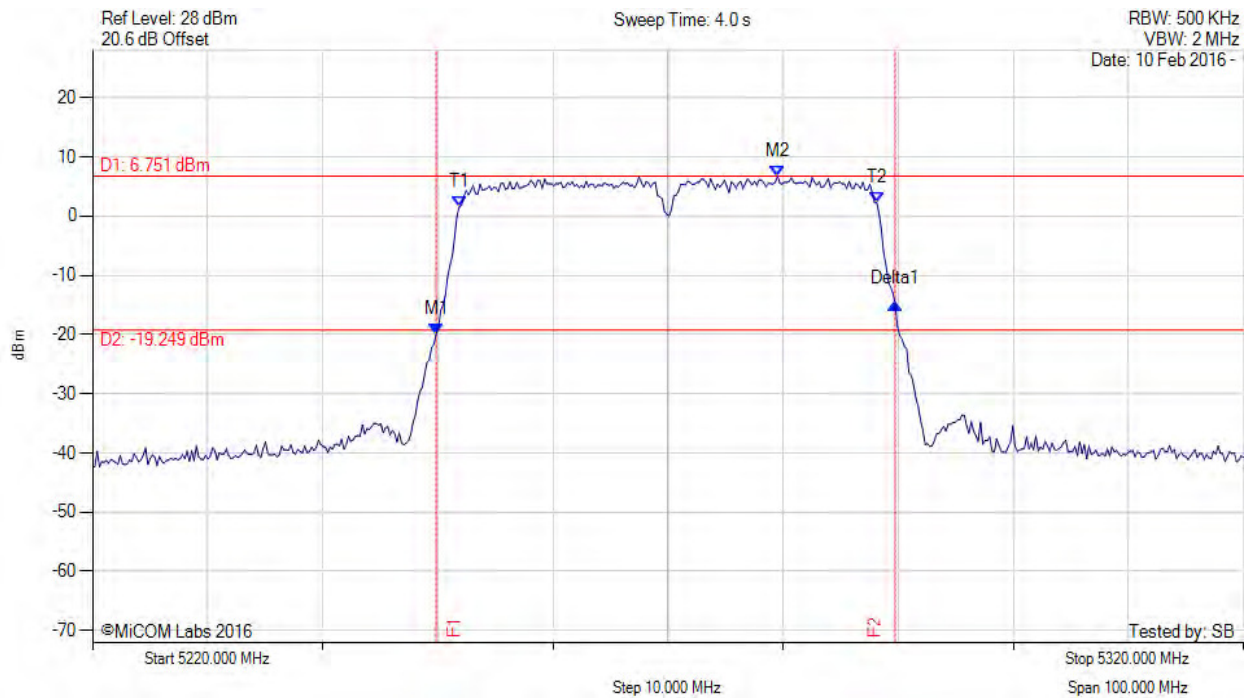


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.860 MHz : -19.907 dBm M2 : 5279.519 MHz : 6.751 dBm Delta1 : 39.880 MHz : 5.076 dB T1 : 5251.864 MHz : 1.576 dBm T2 : 5288.136 MHz : 2.265 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.880 MHz Measured 99% Bandwidth: 36.273 MHz

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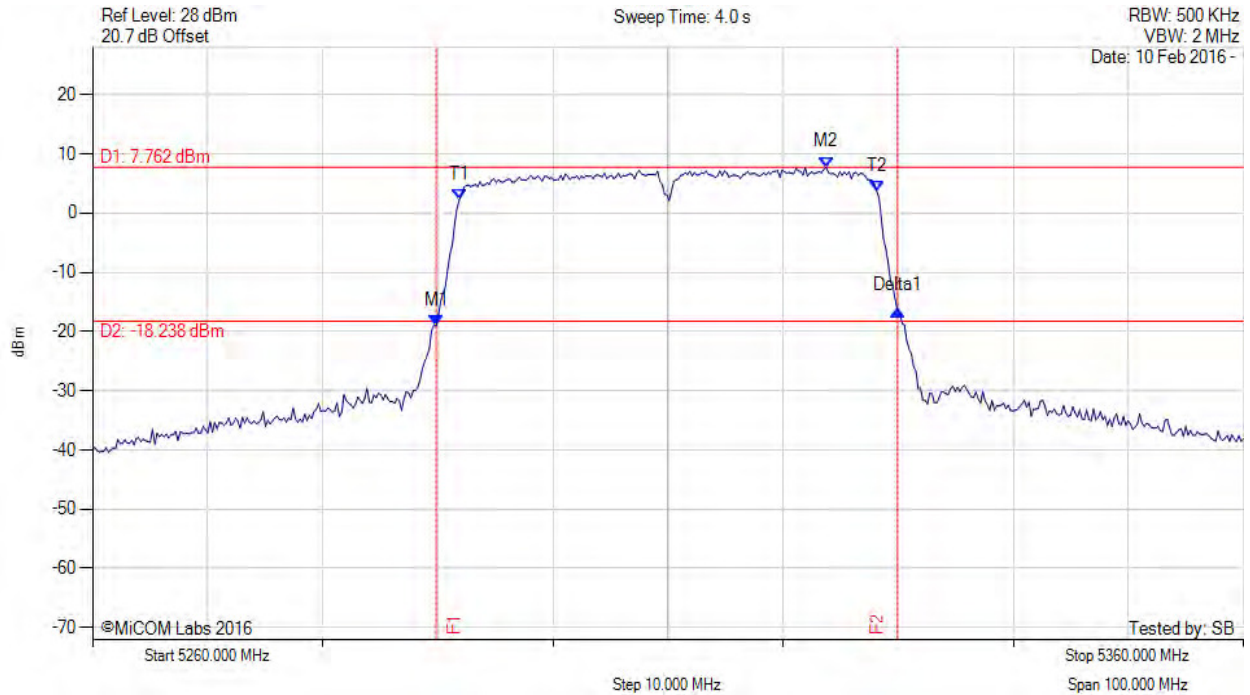
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.860 MHz : -19.022 dBm M2 : 5323.727 MHz : 7.762 dBm Delta1 : 40.080 MHz : 2.615 dB T1 : 5291.864 MHz : 2.220 dBm T2 : 5328.136 MHz : 3.733 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.080 MHz Measured 99% Bandwidth: 36.273 MHz

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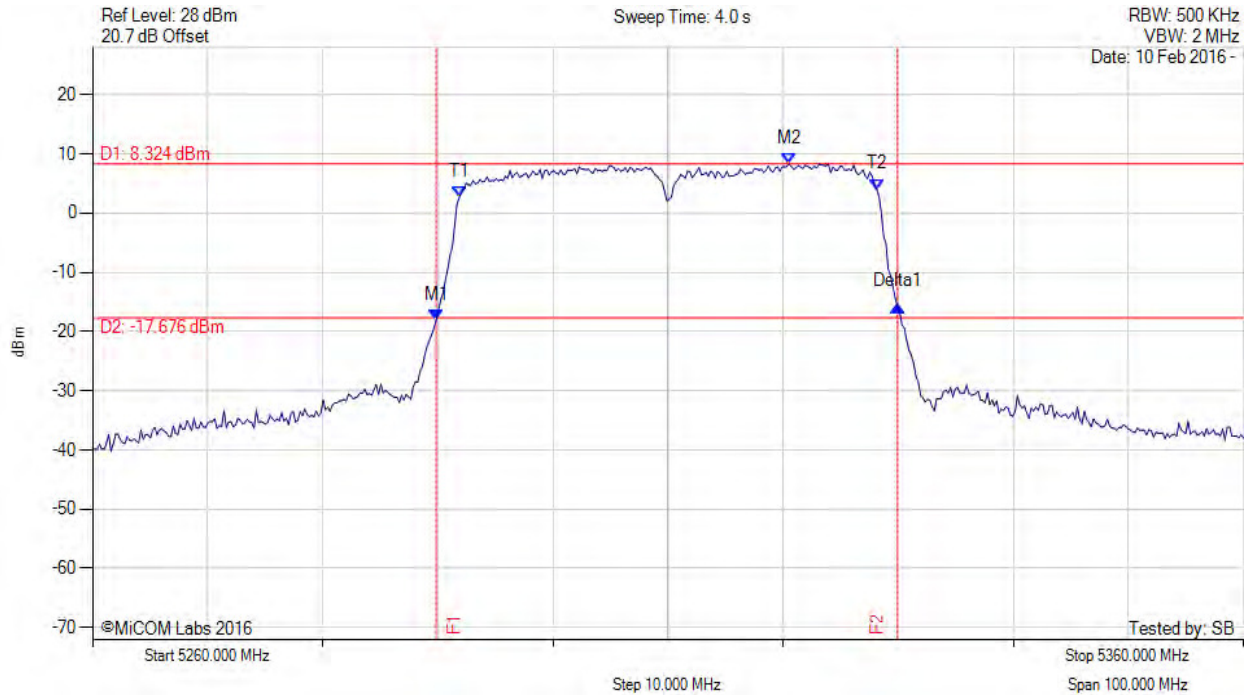
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.860 MHz : -18.097 dBm M2 : 5320.521 MHz : 8.324 dBm Delta1 : 40.080 MHz : 2.294 dB T1 : 5291.864 MHz : 2.657 dBm T2 : 5328.136 MHz : 4.016 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.080 MHz Measured 99% Bandwidth: 36.273 MHz

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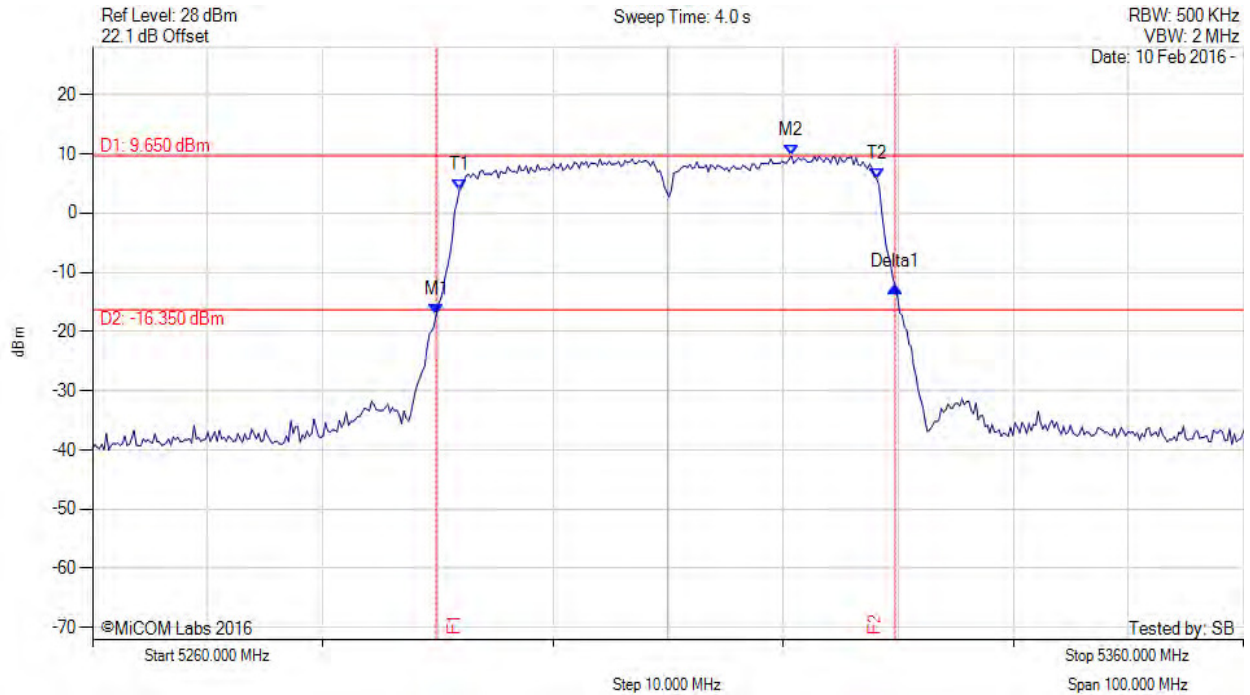
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5289.860 MHz : -17.200 dBm M2 : 5320.721 MHz : 9.650 dBm Delta1 : 39.880 MHz : 4.773 dB T1 : 5291.864 MHz : 3.831 dBm T2 : 5328.136 MHz : 5.771 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.880 MHz Measured 99% Bandwidth: 36.273 MHz

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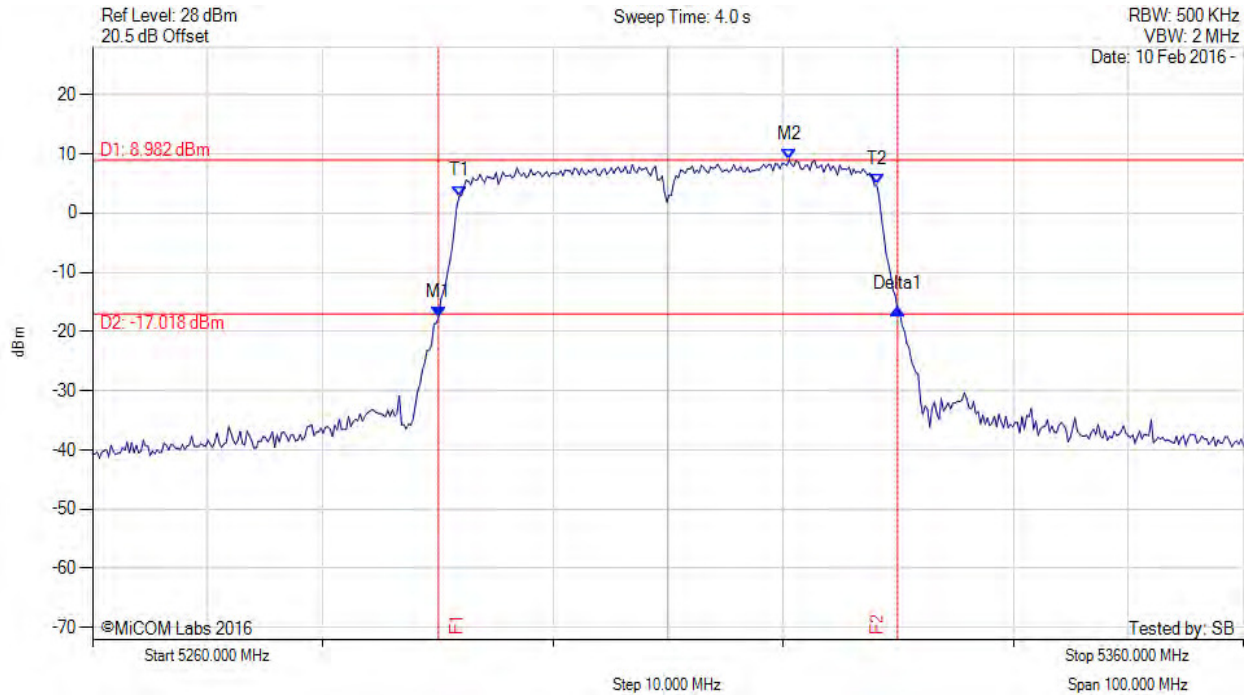
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5290.060 MHz : -17.566 dBm M2 : 5320.521 MHz : 8.982 dBm Delta1 : 39.880 MHz : 1.334 dB T1 : 5291.864 MHz : 2.853 dBm T2 : 5328.136 MHz : 4.771 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.880 MHz Measured 99% Bandwidth: 36.273 MHz

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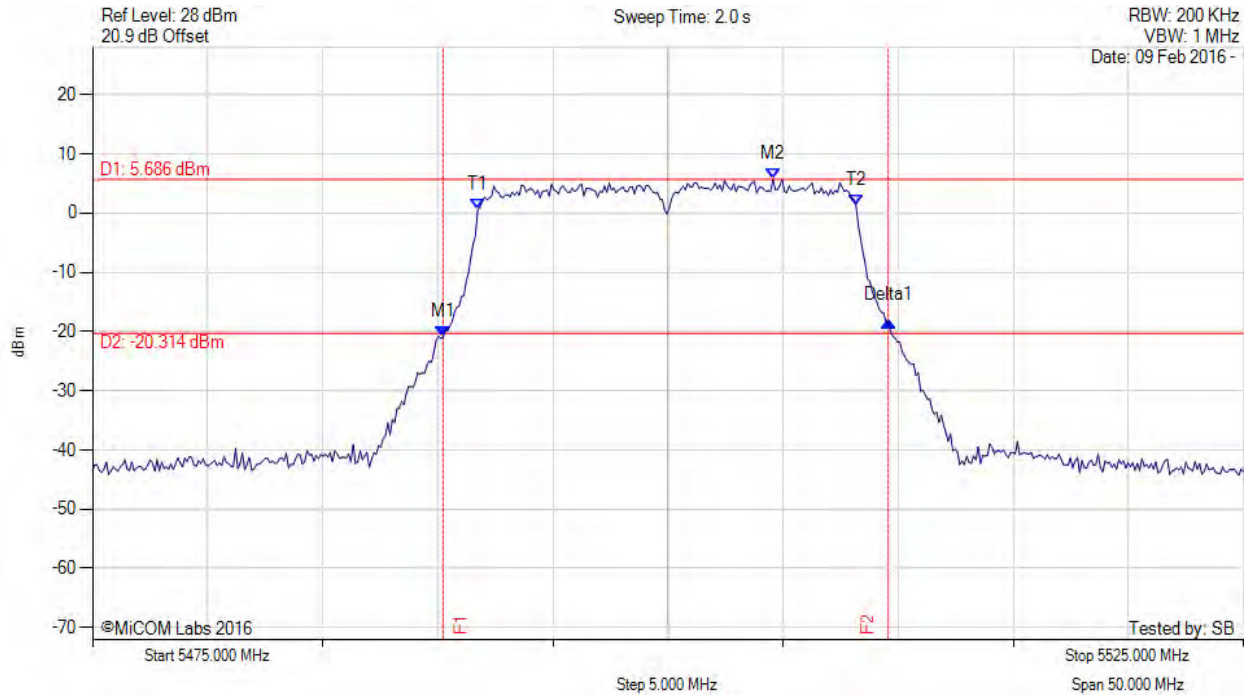
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5490.230 MHz : -20.971 dBm M2 : 5504.559 MHz : 5.686 dBm Delta1 : 19.339 MHz : 2.794 dB T1 : 5491.733 MHz : 0.563 dBm T2 : 5508.166 MHz : 1.364 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.339 MHz Measured 99% Bandwidth: 16.433 MHz

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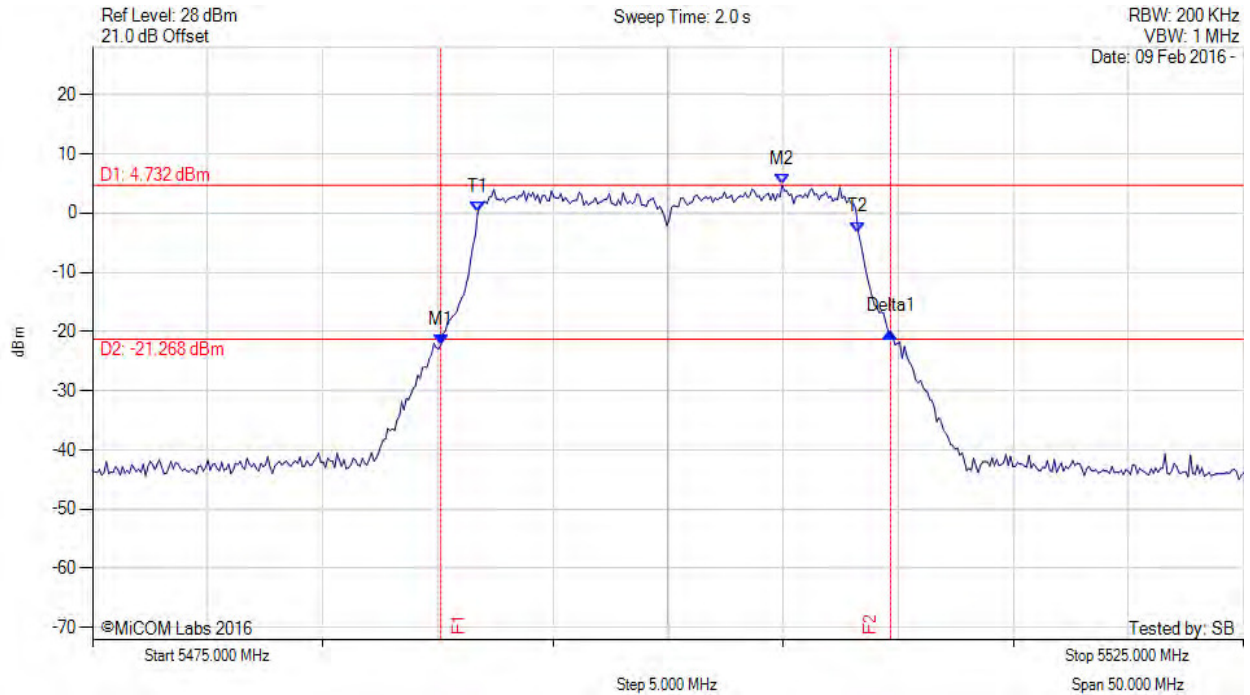
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5490.130 MHz : -22.266 dBm M2 : 5504.960 MHz : 4.732 dBm Delta1 : 19.539 MHz : 2.217 dB T1 : 5491.733 MHz : 0.079 dBm T2 : 5508.267 MHz : -3.238 dBm OBW : 16.533 MHz	Measured 26 dB Bandwidth: 19.539 MHz Measured 99% Bandwidth: 16.533 MHz

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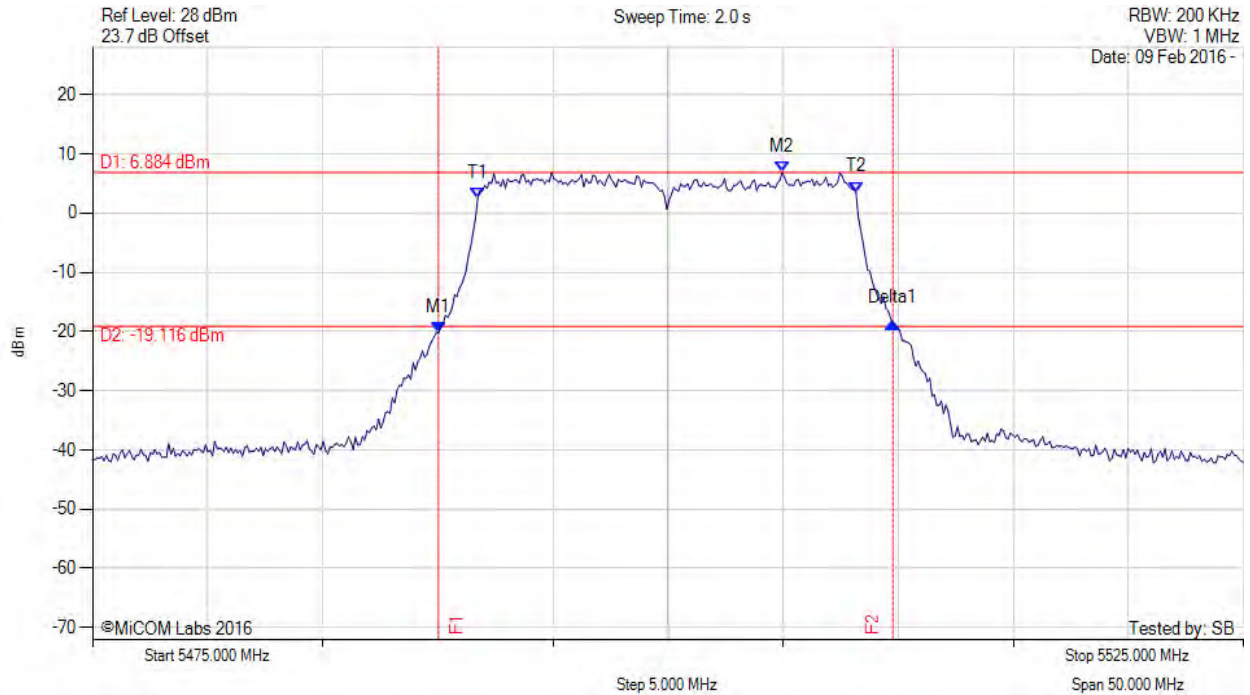
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5490.030 MHz : -20.210 dBm M2 : 5504.960 MHz : 6.884 dBm Delta1 : 19.739 MHz : 1.696 dB T1 : 5491.733 MHz : 2.476 dBm T2 : 5508.166 MHz : 3.556 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.739 MHz Measured 99% Bandwidth: 16.433 MHz

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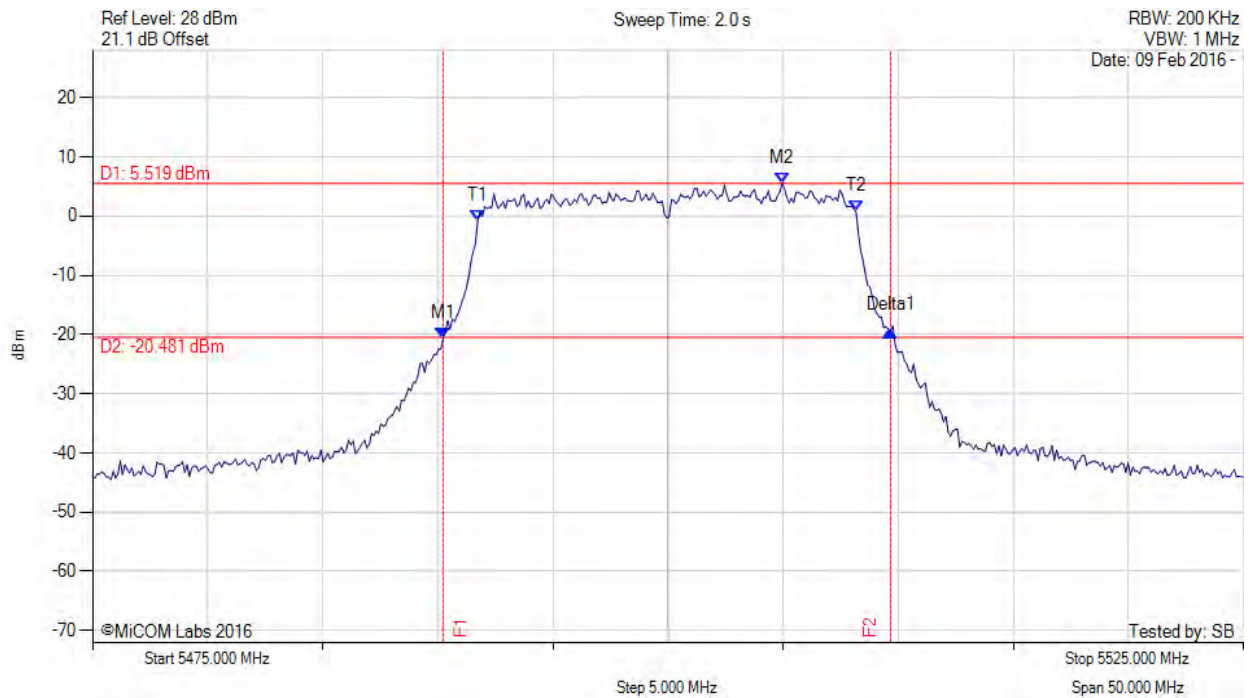
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5490.230 MHz : -20.574 dBm M2 : 5504.960 MHz : 5.519 dBm Delta1 : 19.439 MHz : 1.226 dB T1 : 5491.733 MHz : -0.735 dBm T2 : 5508.166 MHz : 0.807 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.439 MHz Measured 99% Bandwidth: 16.433 MHz

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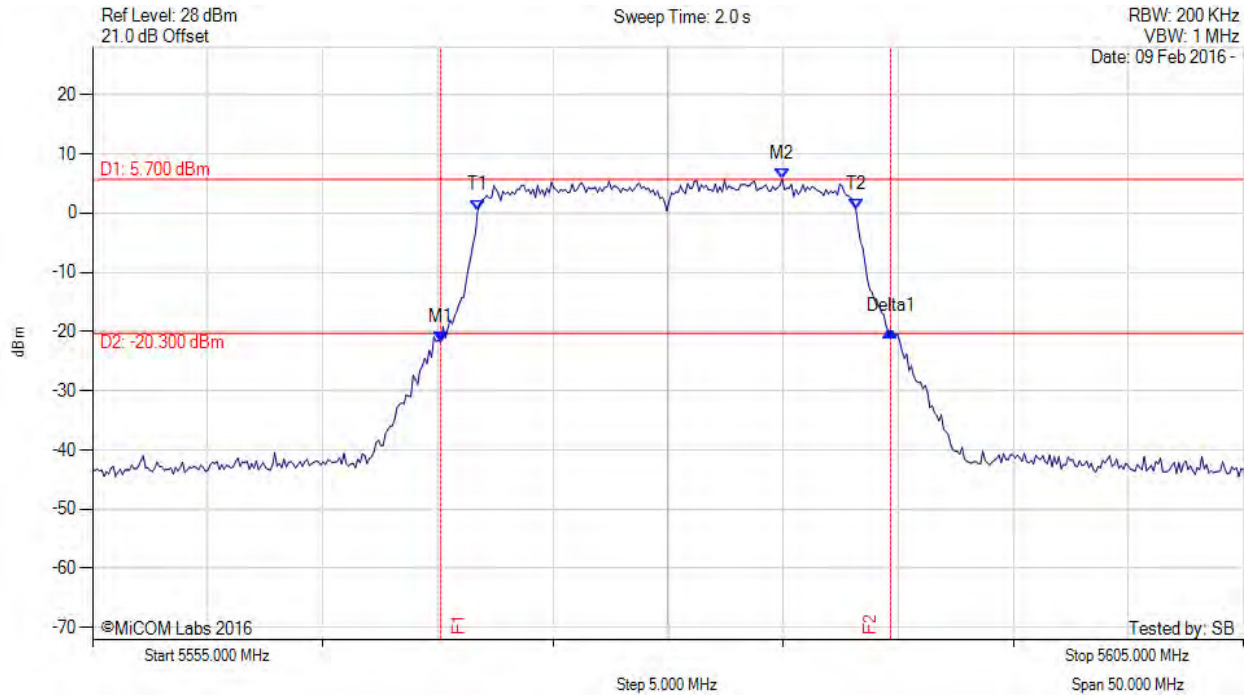
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5570.130 MHz : -21.786 dBm M2 : 5584.960 MHz : 5.700 dBm Delta1 : 19.539 MHz : 1.946 dB T1 : 5571.733 MHz : 0.506 dBm T2 : 5588.166 MHz : 0.626 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.539 MHz Measured 99% Bandwidth: 16.433 MHz

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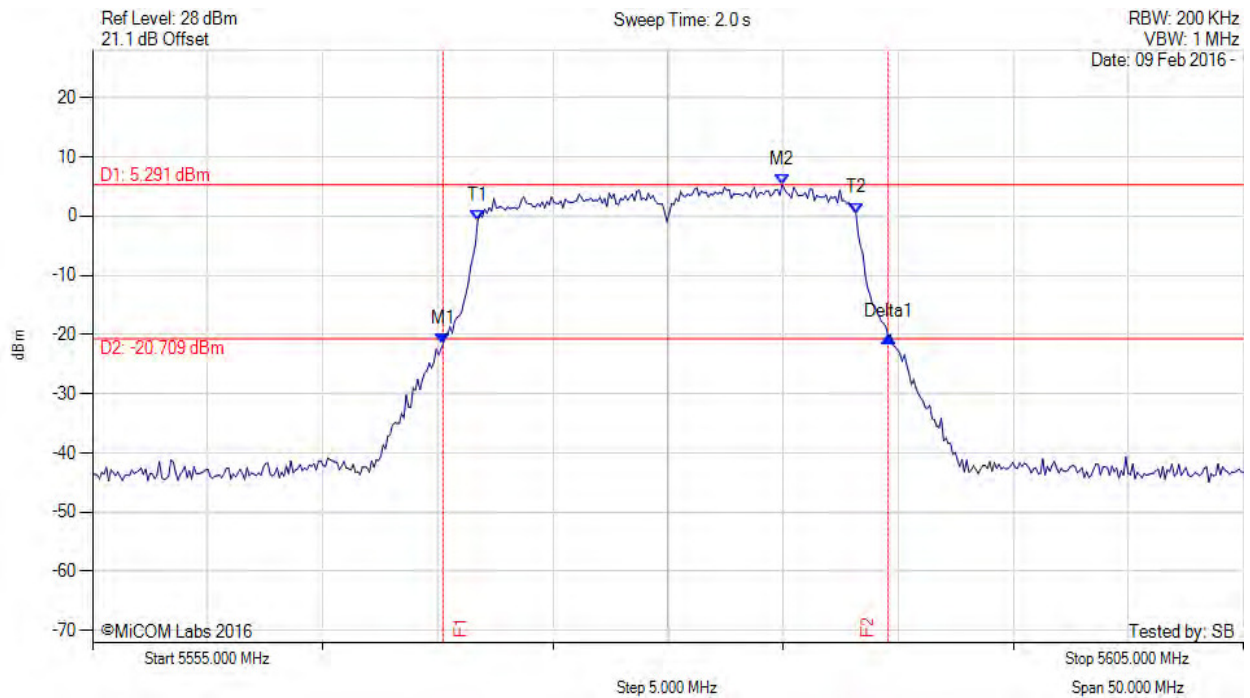
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5570.230 MHz : -21.617 dBm M2 : 5584.960 MHz : 5.291 dBm Delta1 : 19.339 MHz : 1.230 dB T1 : 5571.733 MHz : -0.716 dBm T2 : 5588.166 MHz : 0.510 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.339 MHz Measured 99% Bandwidth: 16.433 MHz

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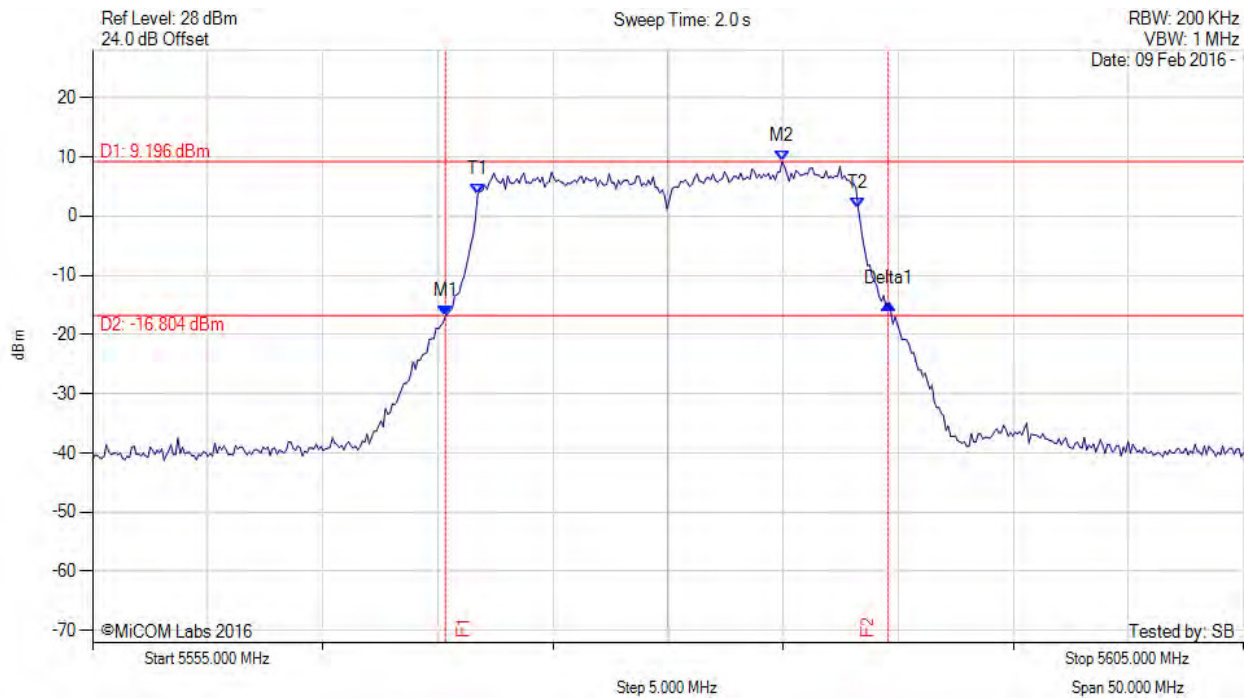
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5570.331 MHz : -16.846 dBm M2 : 5584.960 MHz : 9.196 dBm Delta1 : 19.238 MHz : 2.081 dB T1 : 5571.733 MHz : 3.642 dBm T2 : 5588.267 MHz : 1.268 dBm OBW : 16.533 MHz	Measured 26 dB Bandwidth: 19.238 MHz Measured 99% Bandwidth: 16.533 MHz

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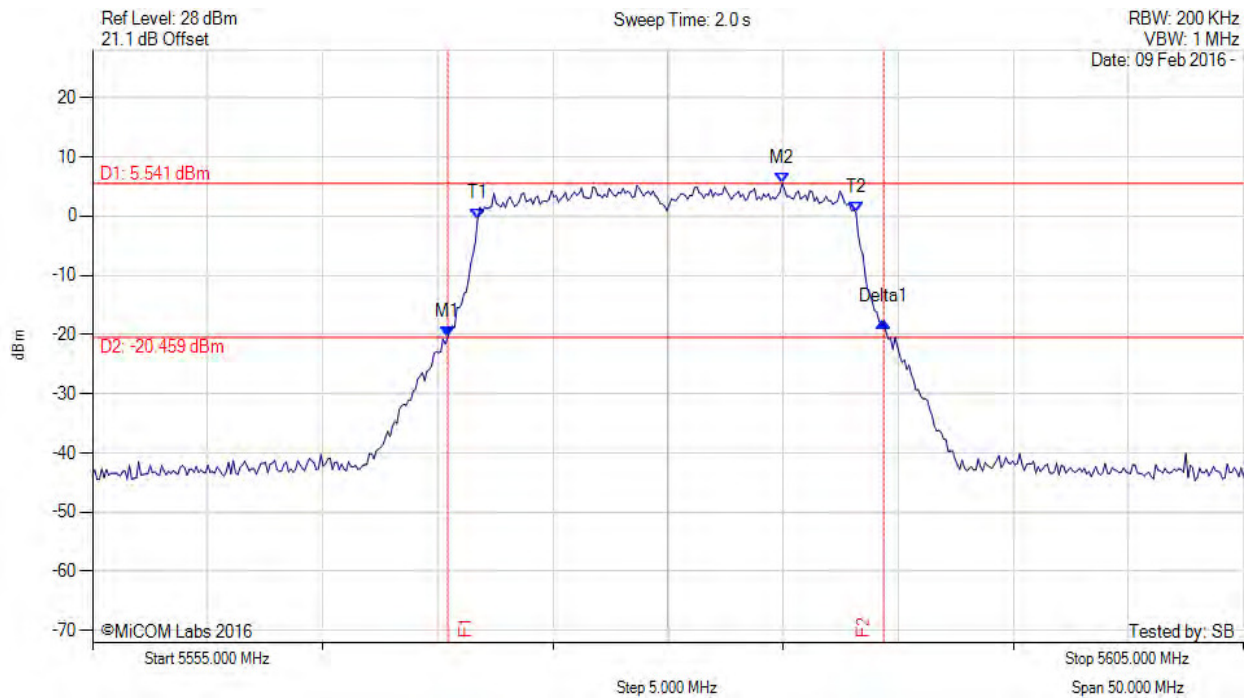
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5570.431 MHz : -20.480 dBm M2 : 5584.960 MHz : 5.541 dBm Delta1 : 18.938 MHz : 2.579 dB T1 : 5571.733 MHz : -0.411 dBm T2 : 5588.166 MHz : 0.636 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 18.938 MHz Measured 99% Bandwidth: 16.433 MHz

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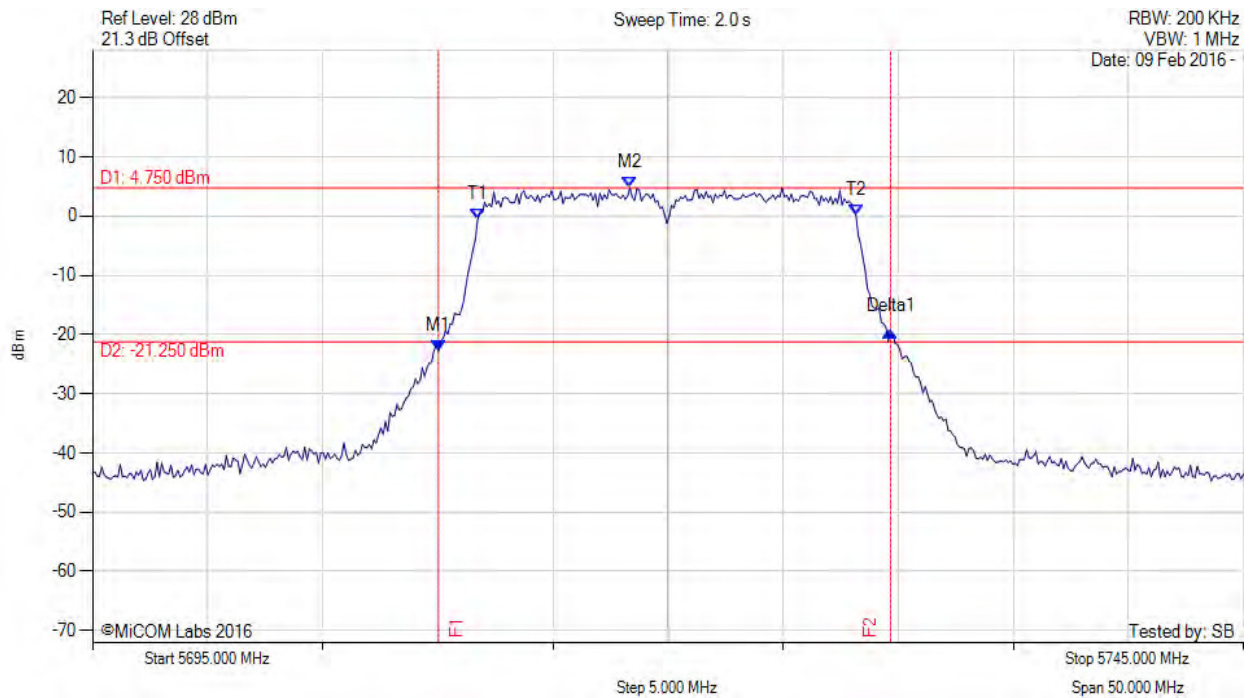
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5710.030 MHz : -22.807 dBm M2 : 5718.347 MHz : 4.750 dBm Delta1 : 19.639 MHz : 3.234 dB T1 : 5711.733 MHz : -0.511 dBm T2 : 5728.166 MHz : 0.144 dBm OBW : 16.433 MHz	Channel Frequency: 5720.00 MHz

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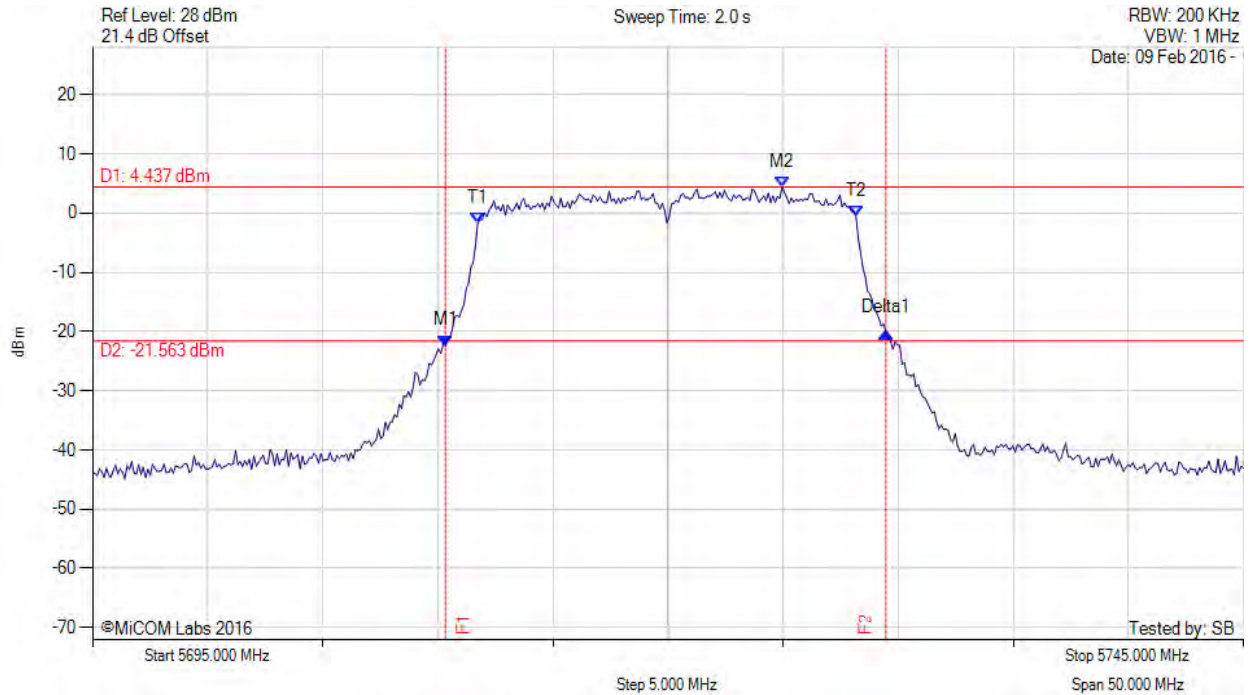
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5710.331 MHz : -22.400 dBm M2 : 5724.960 MHz : 4.437 dBm Delta1 : 19.138 MHz : 2.312 dB T1 : 5711.733 MHz : -1.707 dBm T2 : 5728.166 MHz : -0.499 dBm OBW : 16.433 MHz	Measured 26 dB Bandwidth: 19.138 MHz Measured 99% Bandwidth: 16.433 MHz

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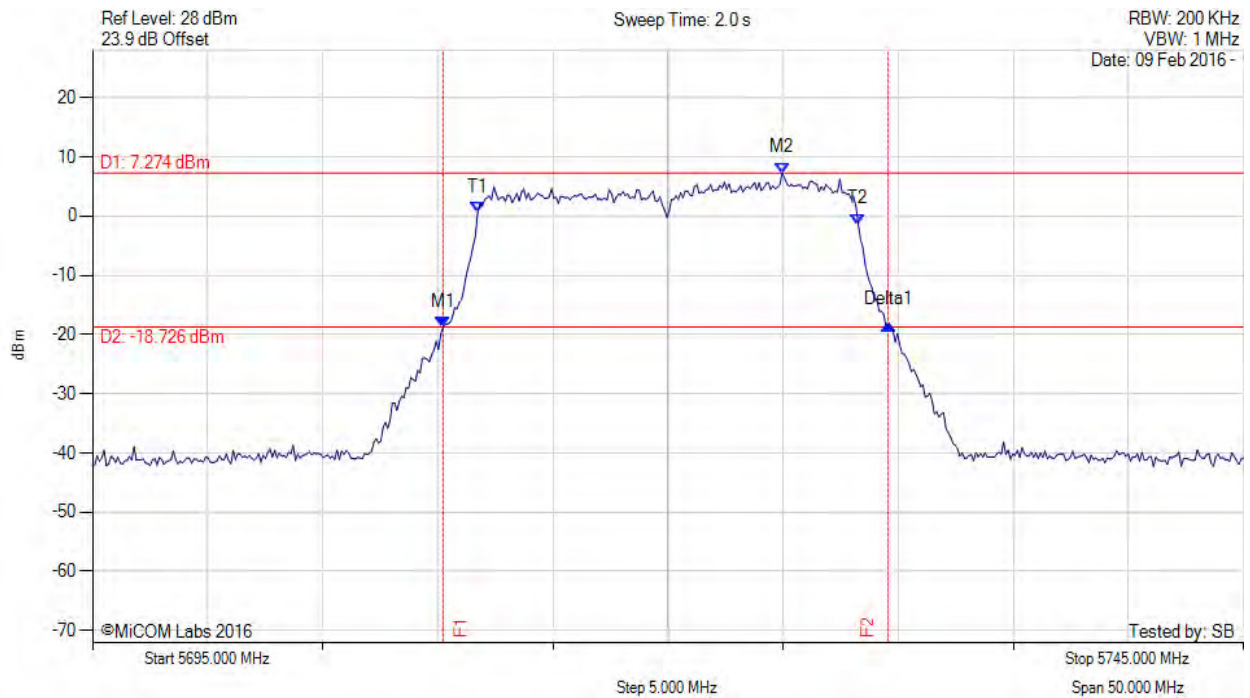
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5710.230 MHz : -18.827 dBm M2 : 5724.960 MHz : 7.274 dBm Delta1 : 19.339 MHz : 0.533 dB T1 : 5711.733 MHz : 0.575 dBm T2 : 5728.267 MHz : -1.353 dBm OBW : 16.533 MHz	Measured 26 dB Bandwidth: 19.339 MHz Measured 99% Bandwidth: 16.533 MHz

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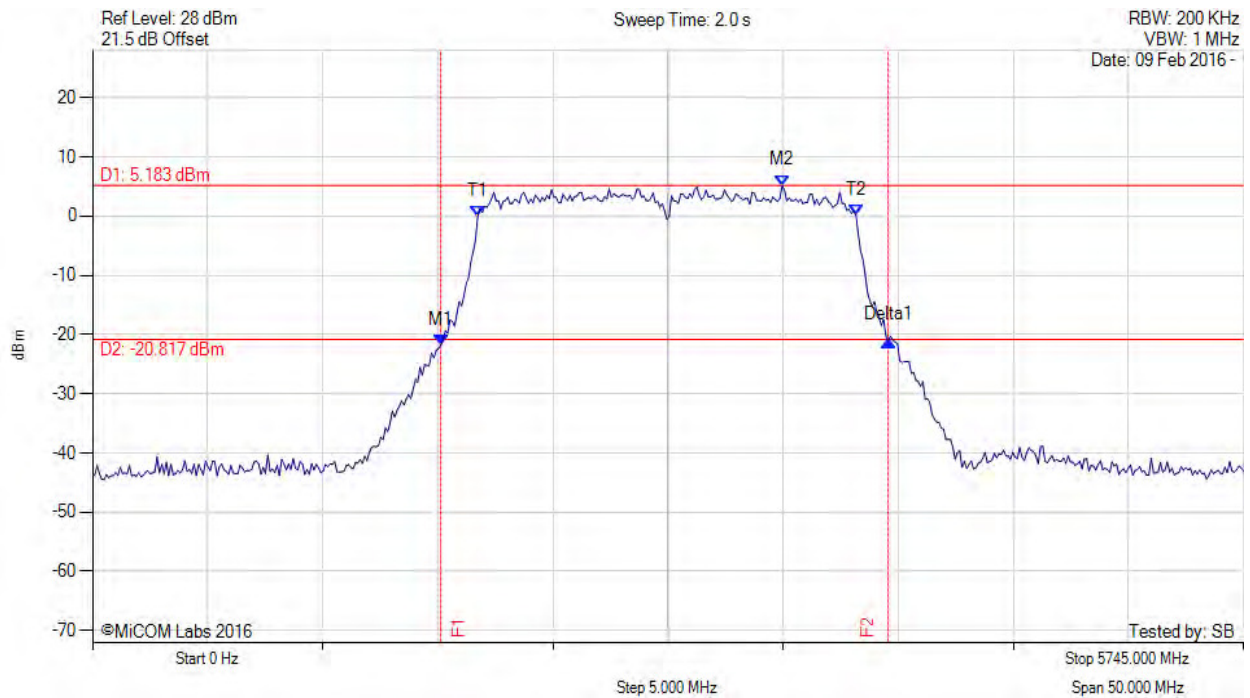
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	ERROR!!! MULTIPLE TEST RESULTS MATCHES...	Measured 26 dB Bandwidth: 19.439 MHz Measured 99% Bandwidth: 16.433 MHz ERROR!!! MULTIPLE TEST RESULTS MATCHES...

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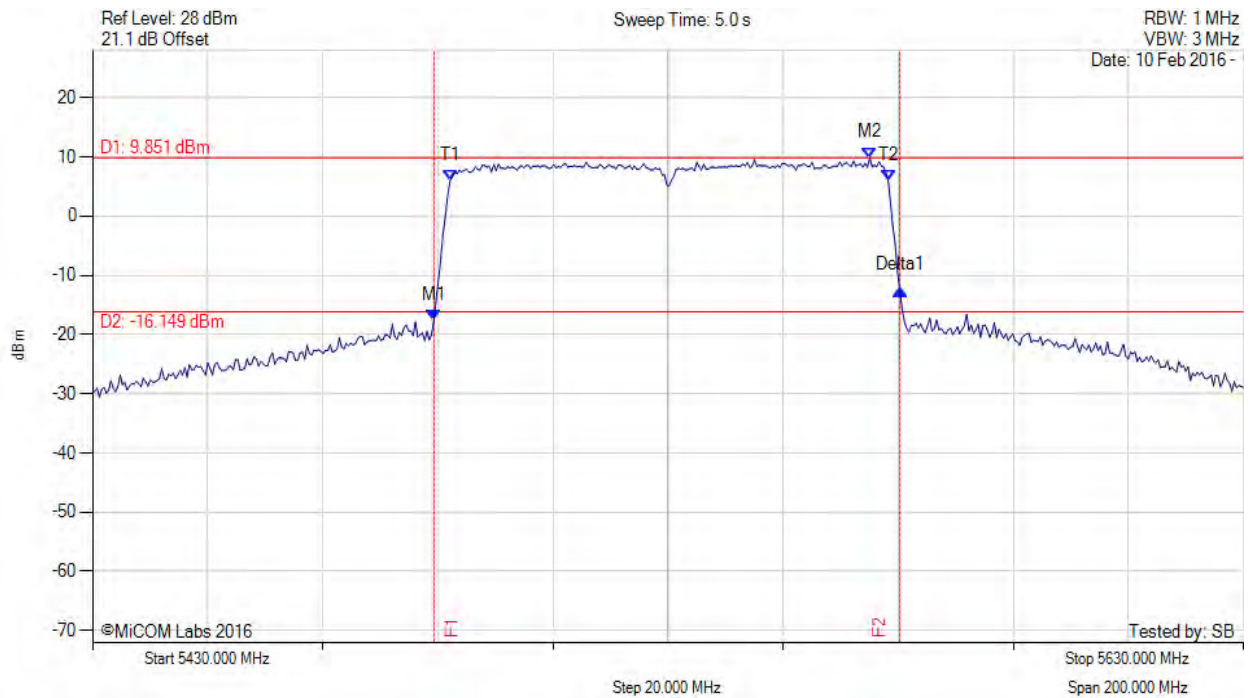
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -17.660 dBm M2 : 5565.070 MHz : 9.851 dBm Delta1 : 80.962 MHz : 5.294 dB T1 : 5492.124 MHz : 5.950 dBm T2 : 5568.277 MHz : 5.924 dBm OBW : 76.152 MHz	Channel Frequency: 5530.00 MHz

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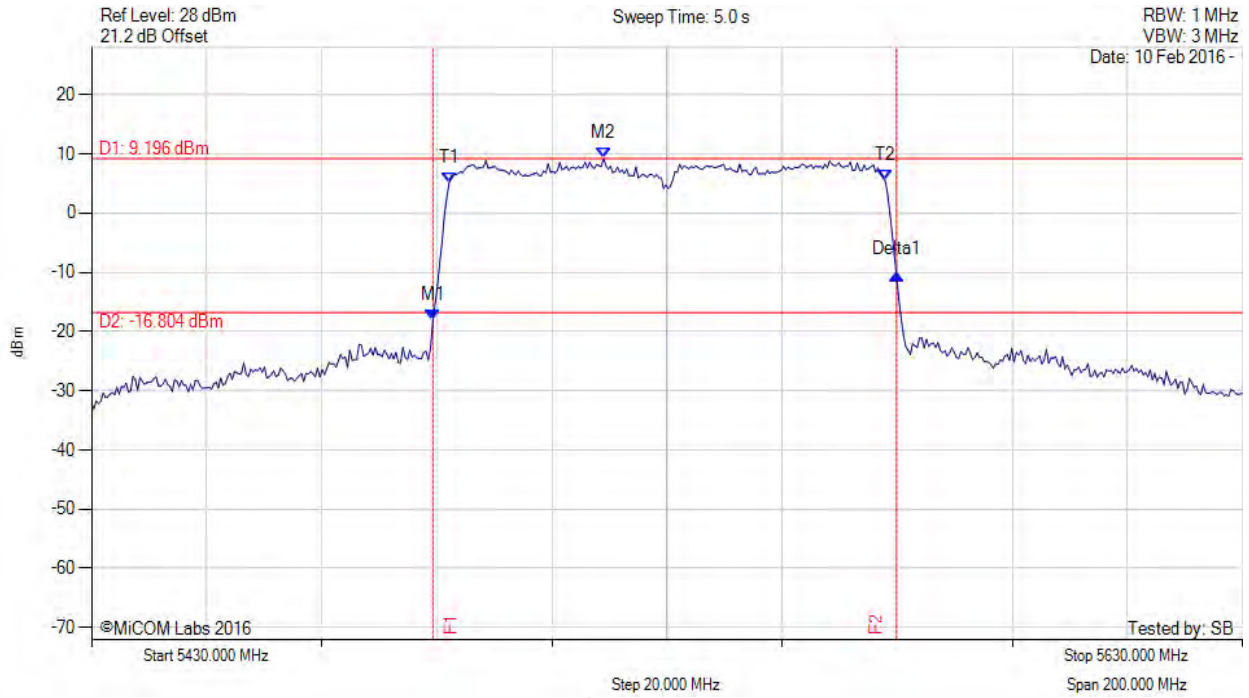
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -18.087 dBm M2 : 5518.978 MHz : 9.196 dBm Delta1 : 80.561 MHz : 7.653 dB T1 : 5492.124 MHz : 5.021 dBm T2 : 5567.876 MHz : 5.531 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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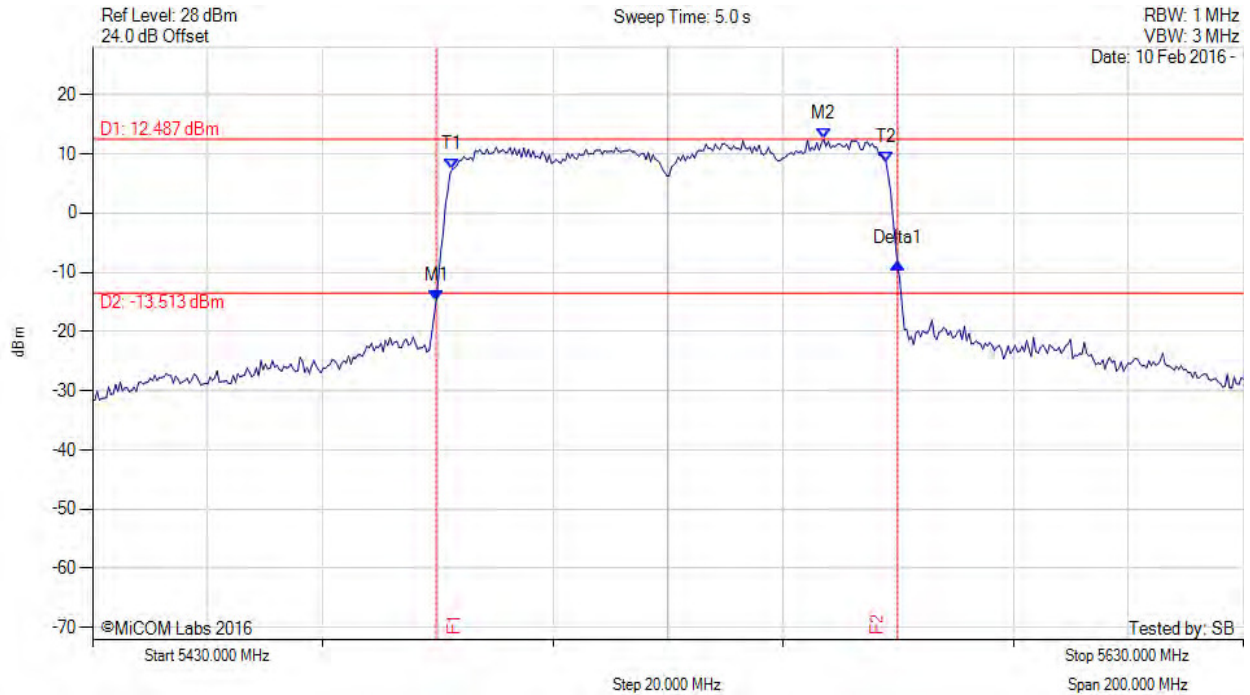
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26 dB & 99% BANDWIDTH



Variant: 802.11ac-80, Channel: 5530.00 MHz, Chain c, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.719 MHz : -14.755 dBm M2 : 5557.054 MHz : 12.487 dBm Delta1 : 80.160 MHz : 6.299 dB T1 : 5492.525 MHz : 7.492 dBm T2 : 5567.876 MHz : 8.663 dBm OBW : 75.351 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 75.351 MHz

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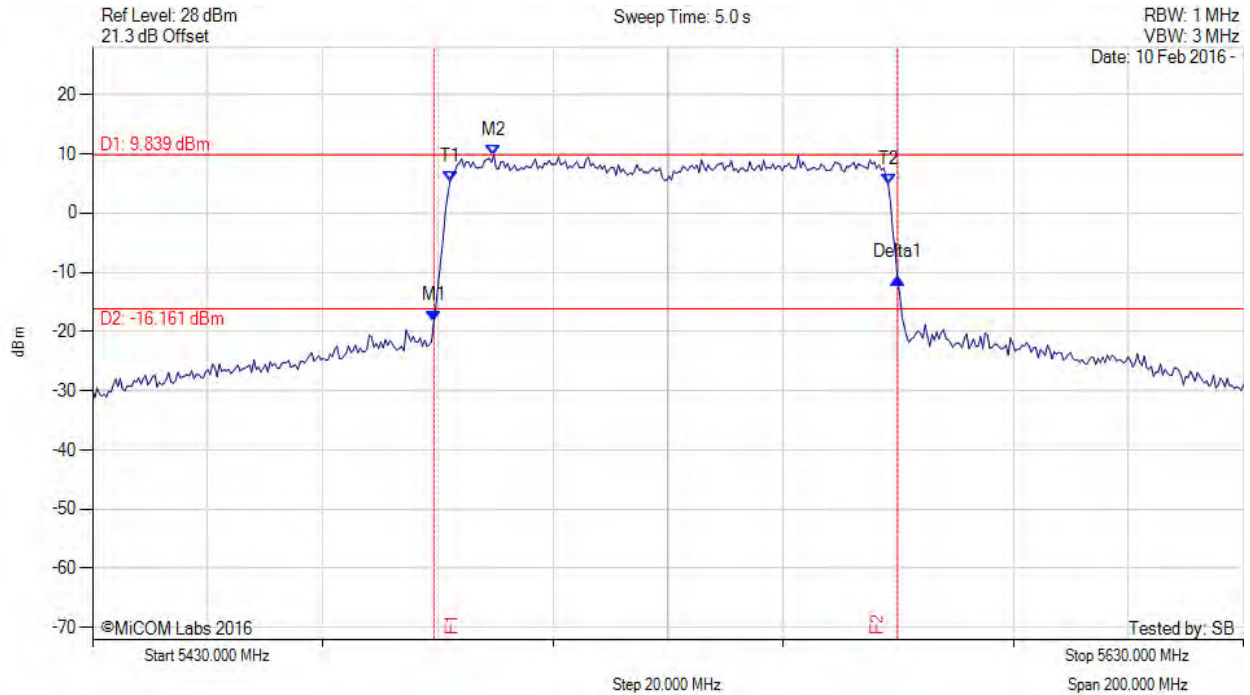
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5530.00 MHz, Chain d, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -18.188 dBm M2 : 5499.739 MHz : 9.839 dBm Delta1 : 80.561 MHz : 7.244 dB T1 : 5492.124 MHz : 5.324 dBm T2 : 5568.277 MHz : 4.827 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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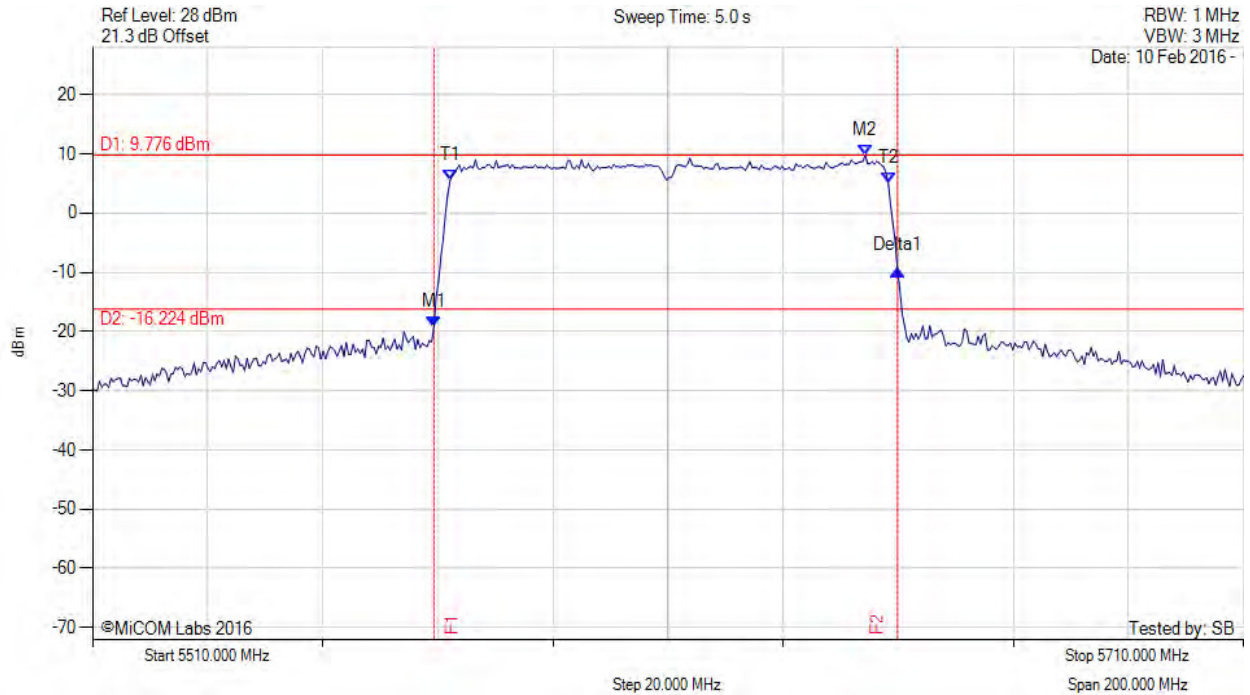
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5610.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -19.136 dBm M2 : 5644.269 MHz : 9.776 dBm Delta1 : 80.561 MHz : 9.457 dB T1 : 5572.124 MHz : 5.480 dBm T2 : 5648.277 MHz : 5.076 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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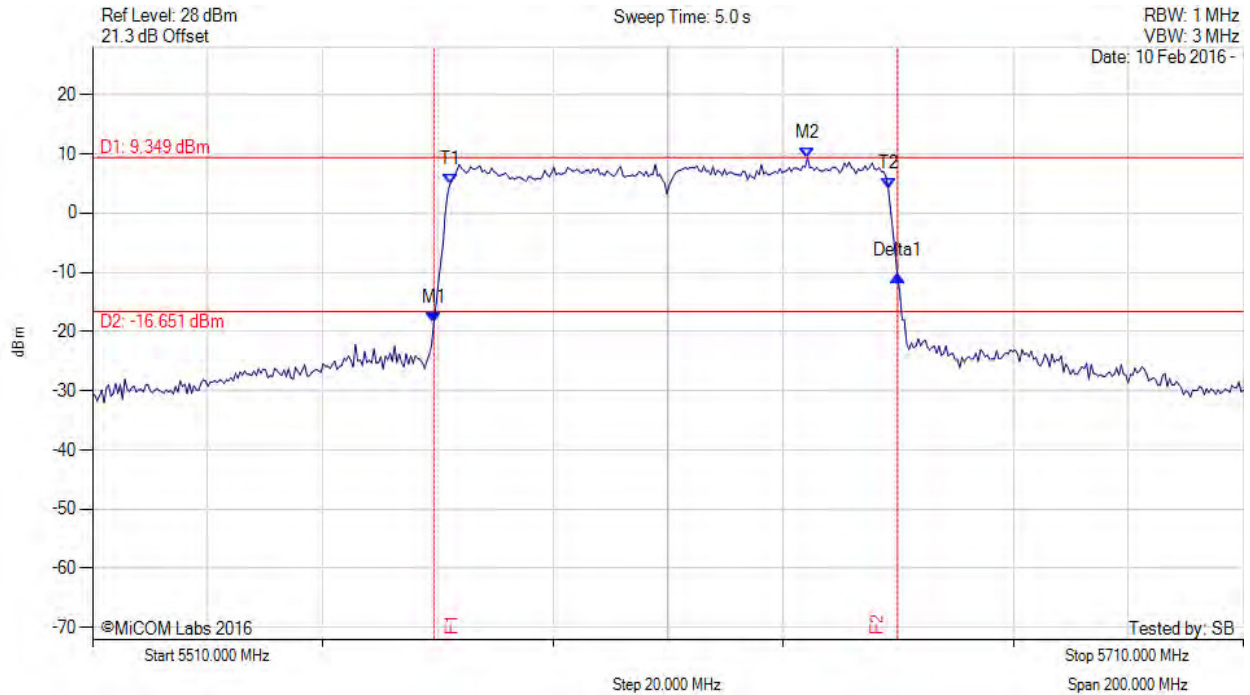
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5610.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -18.489 dBm M2 : 5634.248 MHz : 9.349 dBm Delta1 : 80.561 MHz : 7.958 dB T1 : 5572.124 MHz : 4.815 dBm T2 : 5648.277 MHz : 4.183 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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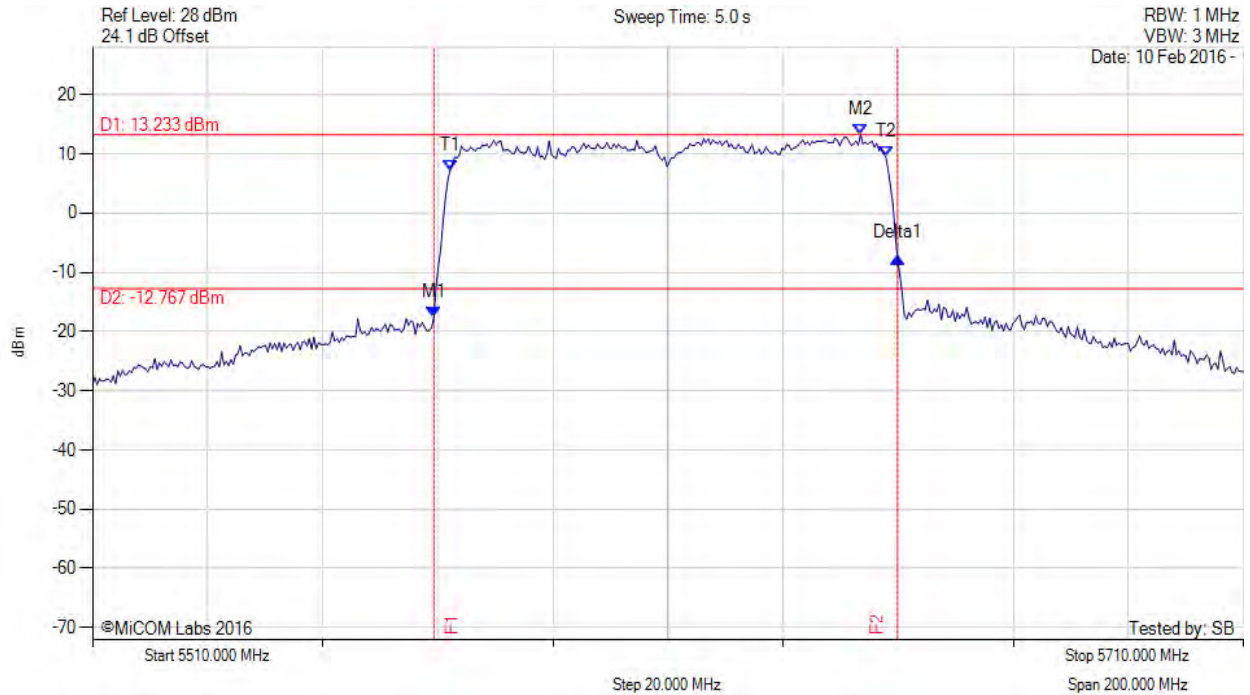
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5610.00 MHz, Chain c, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -17.505 dBm M2 : 5643.467 MHz : 13.233 dBm Delta1 : 80.561 MHz : 9.898 dB T1 : 5572.124 MHz : 7.209 dBm T2 : 5647.876 MHz : 9.440 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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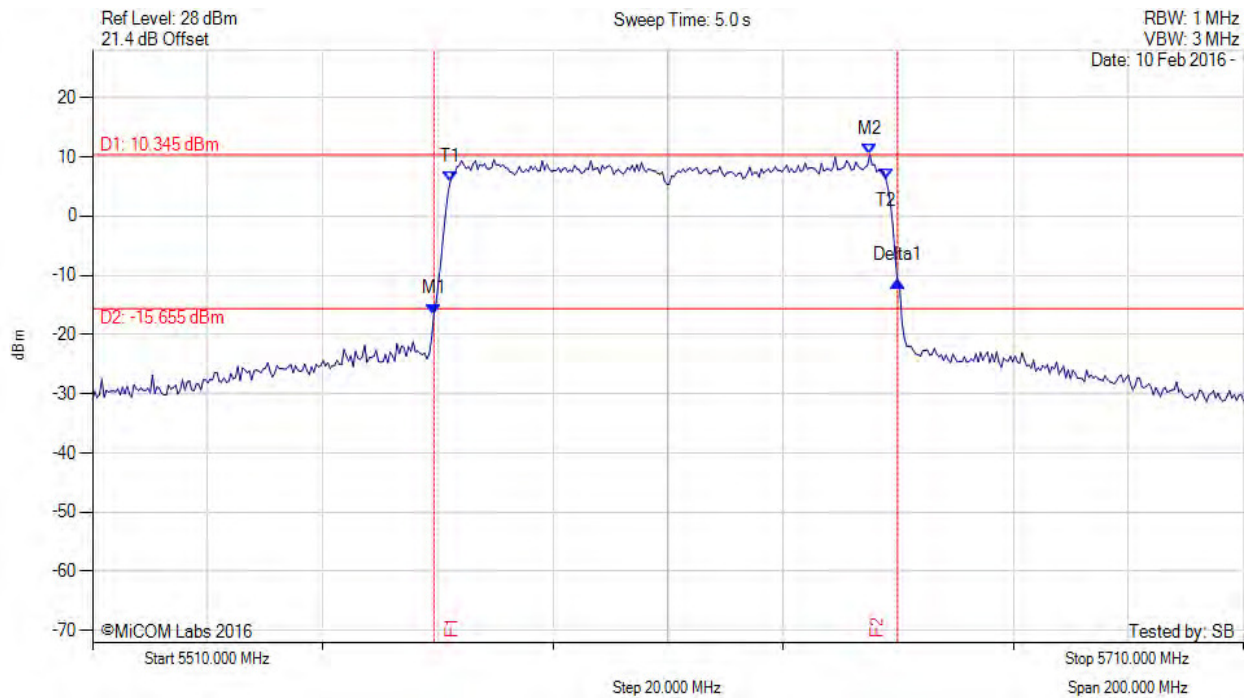
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5610.00 MHz, Chain d, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -16.563 dBm M2 : 5645.070 MHz : 10.345 dBm Delta1 : 80.561 MHz : 5.617 dB T1 : 5572.124 MHz : 5.676 dBm T2 : 5647.876 MHz : 6.221 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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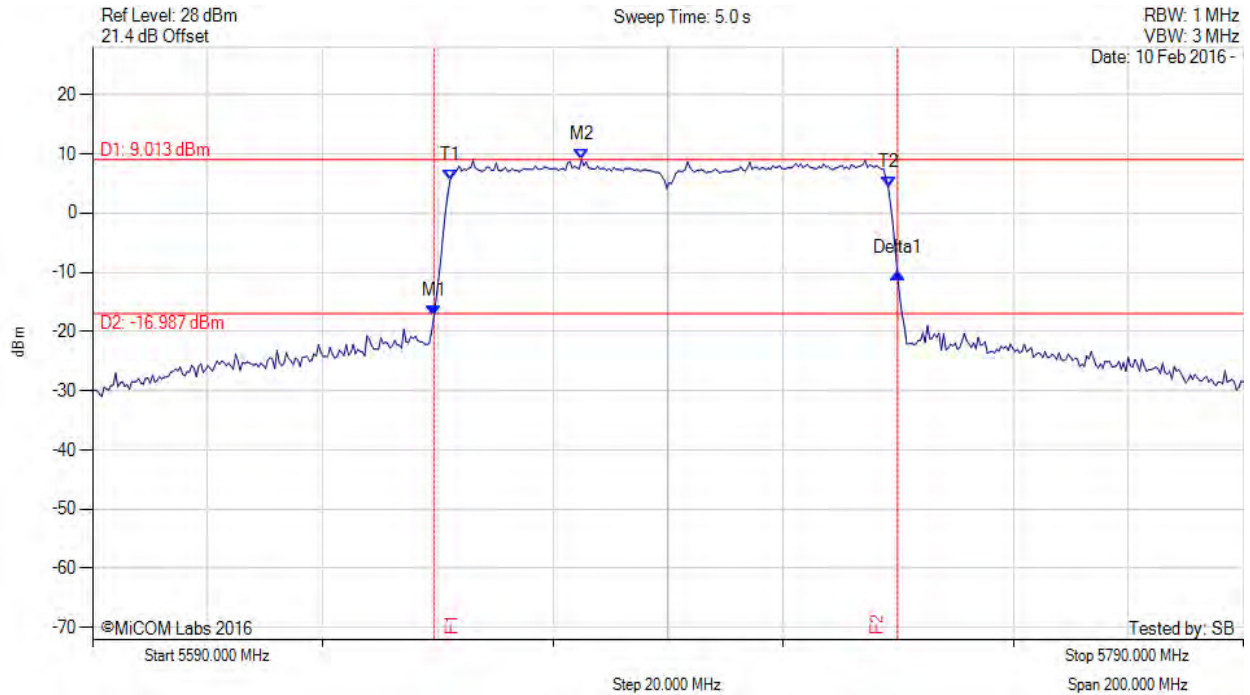
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -17.460 dBm M2 : 5674.970 MHz : 9.013 dBm Delta1 : 80.561 MHz : 7.242 dB T1 : 5652.124 MHz : 5.493 dBm T2 : 5728.277 MHz : 4.465 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

[back to matrix](#)

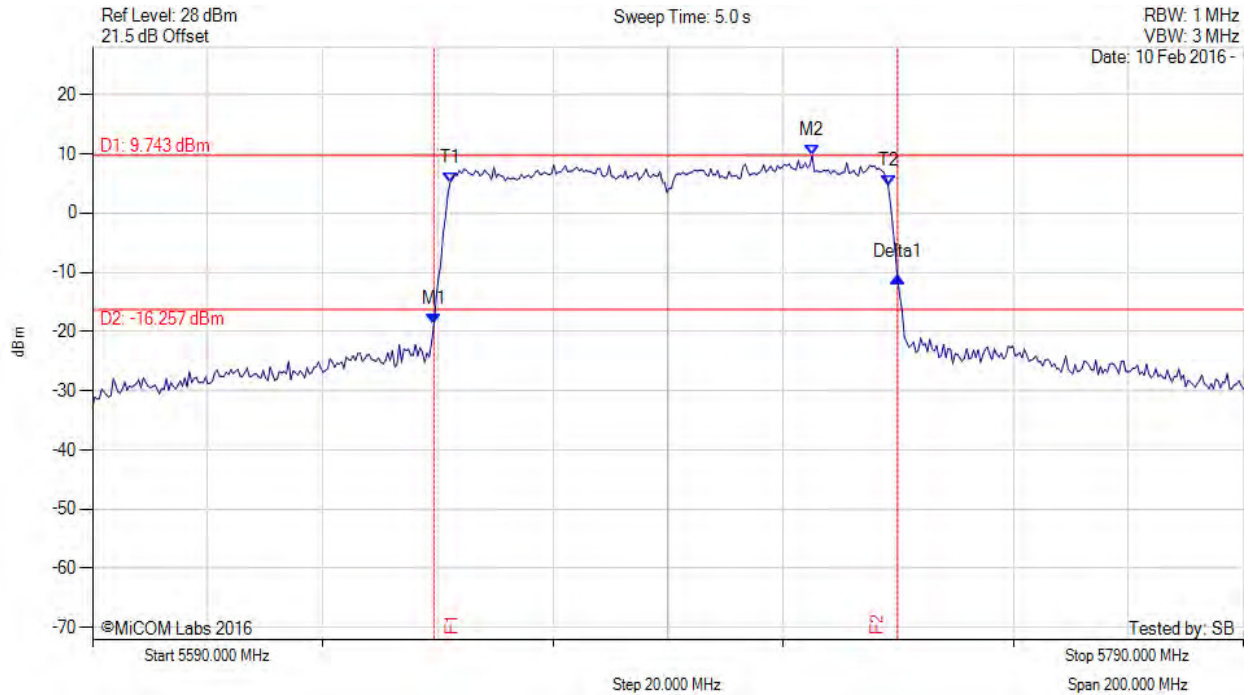
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -18.796 dBm M2 : 5715.050 MHz : 9.743 dBm Delta1 : 80.561 MHz : 7.915 dB T1 : 5652.124 MHz : 5.126 dBm T2 : 5728.277 MHz : 4.533 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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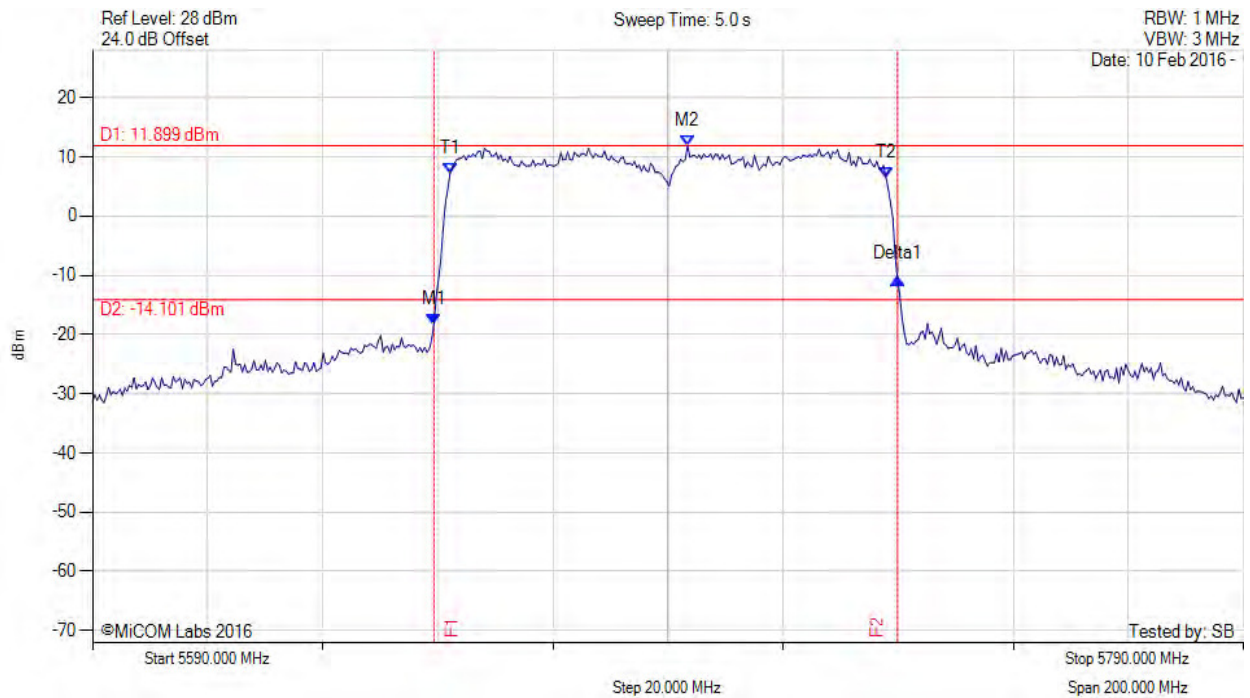
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5690.00 MHz, Chain c, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -18.302 dBm M2 : 5693.407 MHz : 11.899 dBm Delta1 : 80.561 MHz : 7.810 dB T1 : 5652.124 MHz : 7.174 dBm T2 : 5727.876 MHz : 6.497 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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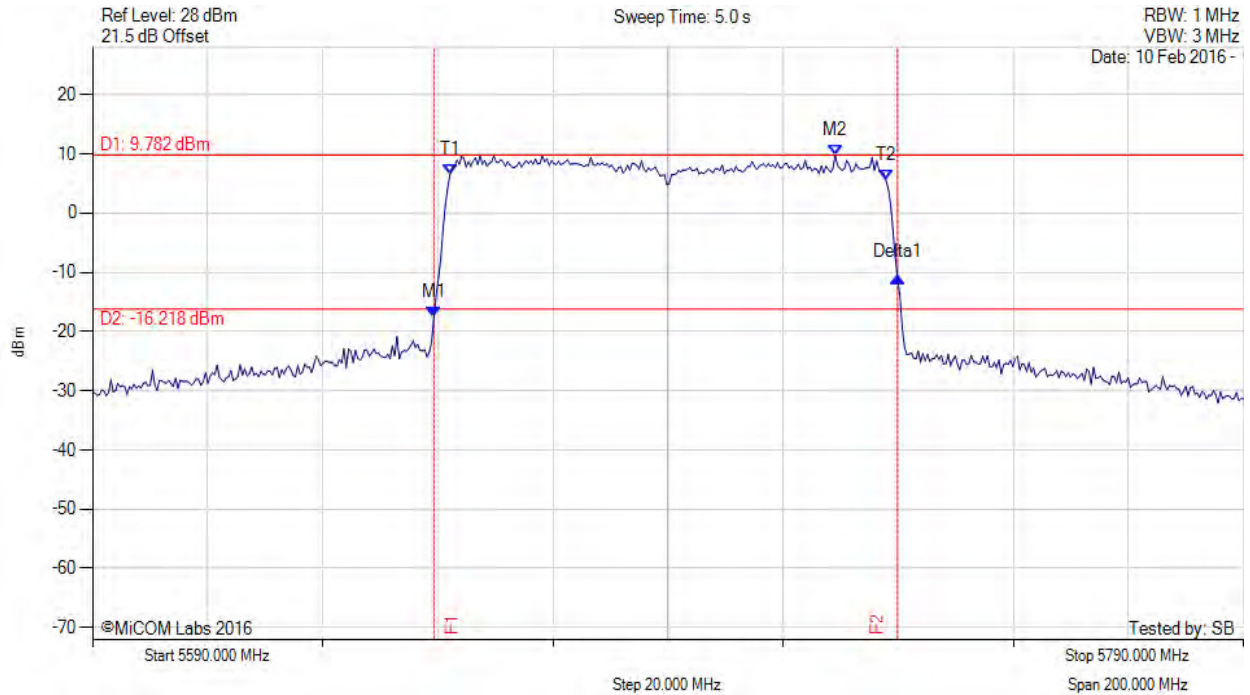
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5690.00 MHz, Chain d, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -17.529 dBm M2 : 5719.058 MHz : 9.782 dBm Delta1 : 80.561 MHz : 6.610 dB T1 : 5652.124 MHz : 6.548 dBm T2 : 5727.876 MHz : 5.525 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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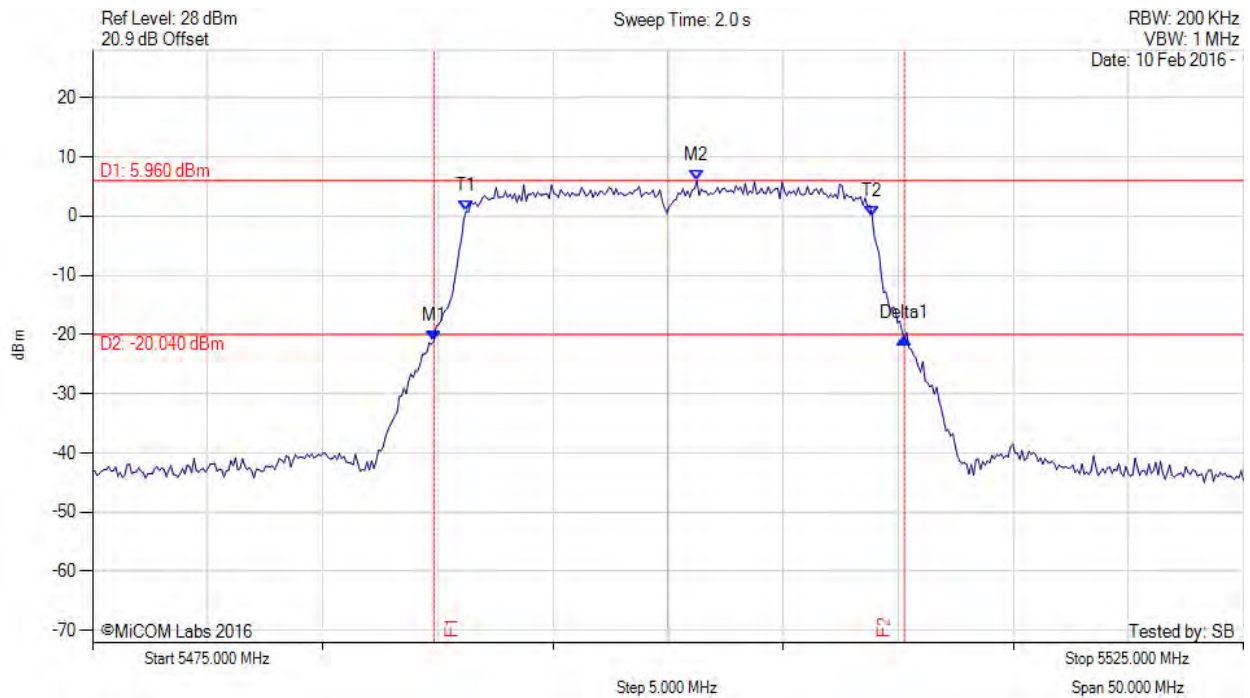
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.830 MHz : -21.107 dBm M2 : 5501.253 MHz : 5.960 dBm Delta1 : 20.441 MHz : 0.380 dB T1 : 5491.232 MHz : 0.795 dBm T2 : 5508.868 MHz : 0.012 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.635 MHz

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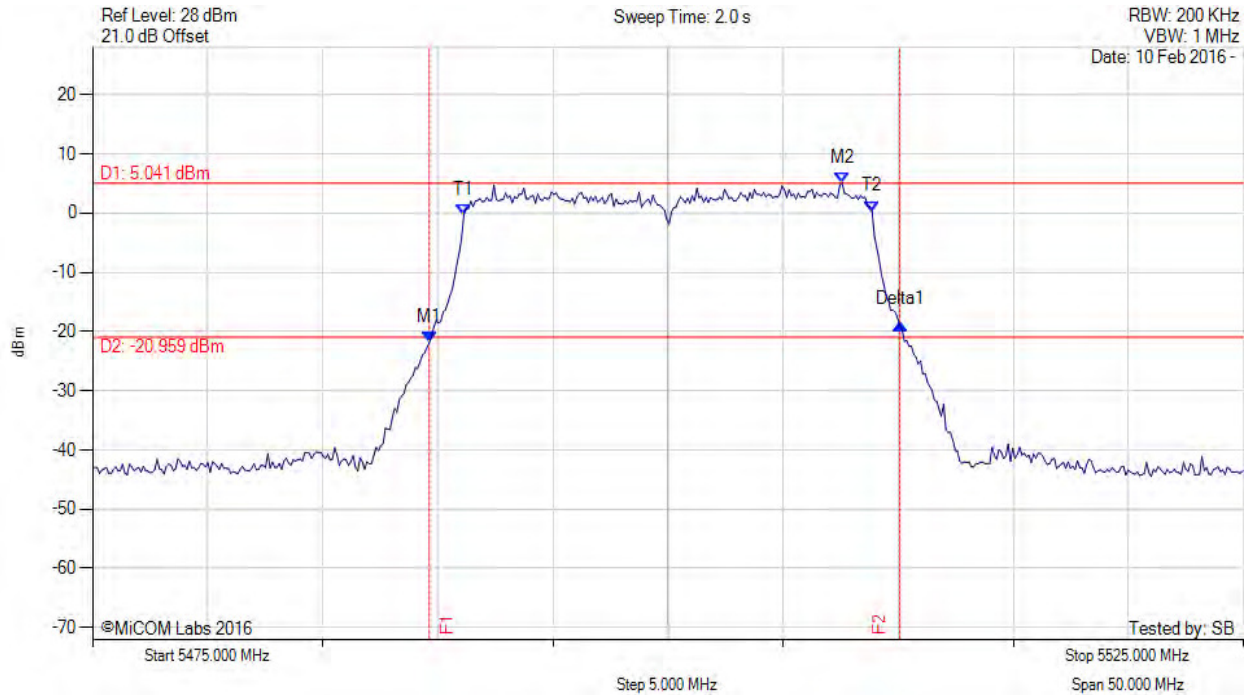
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.629 MHz : -21.847 dBm M2 : 5507.565 MHz : 5.041 dBm Delta1 : 20.441 MHz : 2.986 dB T1 : 5491.132 MHz : -0.228 dBm T2 : 5508.868 MHz : 0.286 dBm OBW : 17.735 MHz	Measured 26 dB Bandwidth: 20.441 MHz Measured 99% Bandwidth: 17.735 MHz

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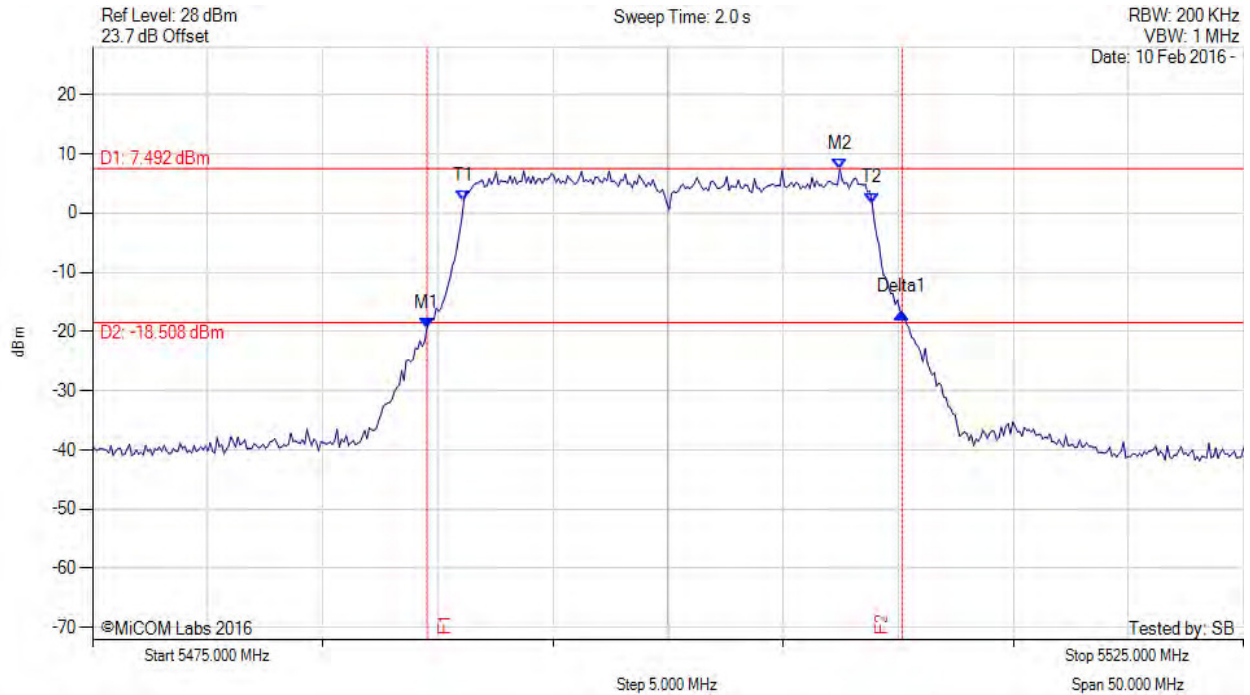


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.529 MHz : -19.380 dBm M2 : 5507.465 MHz : 7.492 dBm Delta1 : 20.641 MHz : 2.609 dB T1 : 5491.132 MHz : 2.098 dBm T2 : 5508.868 MHz : 1.675 dBm OBW : 17.735 MHz	Measured 26 dB Bandwidth: 20.641 MHz Measured 99% Bandwidth: 17.735 MHz

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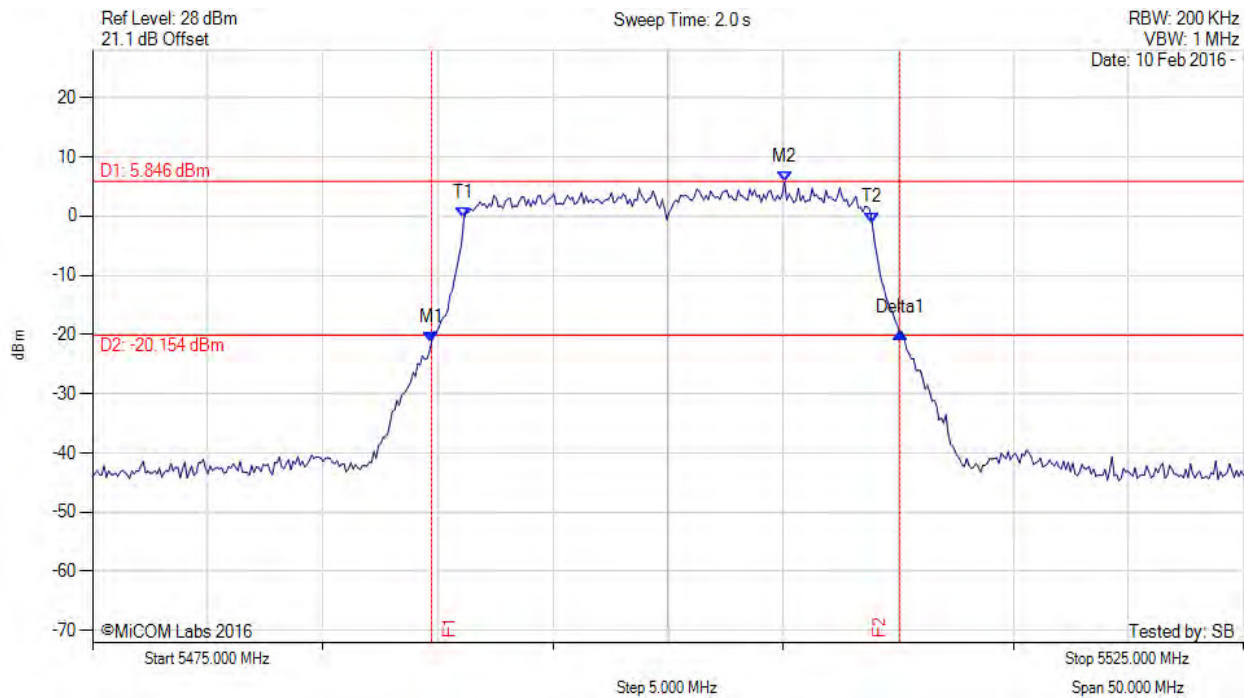
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.729 MHz : -21.270 dBm M2 : 5505.060 MHz : 5.846 dBm Delta1 : 20.341 MHz : 1.560 dB T1 : 5491.132 MHz : -0.395 dBm T2 : 5508.868 MHz : -1.127 dBm OBW : 17.735 MHz	Measured 26 dB Bandwidth: 20.341 MHz Measured 99% Bandwidth: 17.735 MHz

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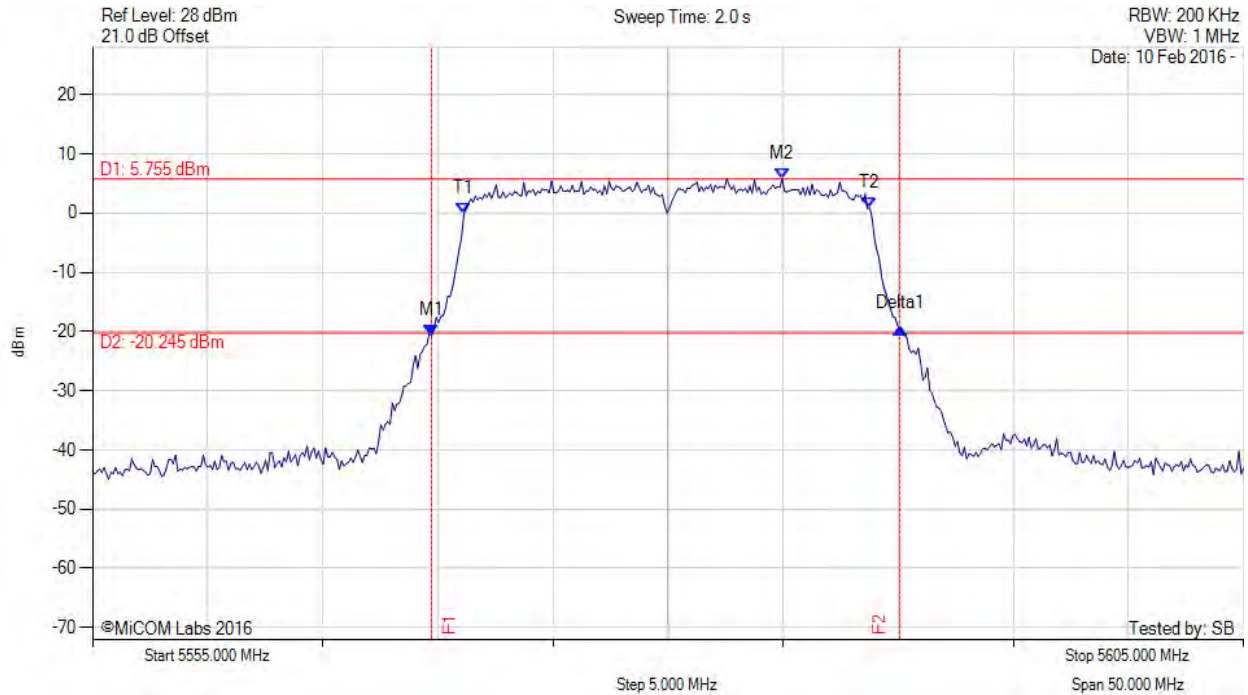
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.729 MHz : -20.714 dBm M2 : 5584.960 MHz : 5.755 dBm Delta1 : 20.341 MHz : 1.344 dB T1 : 5571.132 MHz : -0.096 dBm T2 : 5588.768 MHz : 0.854 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.341 MHz Measured 99% Bandwidth: 17.635 MHz

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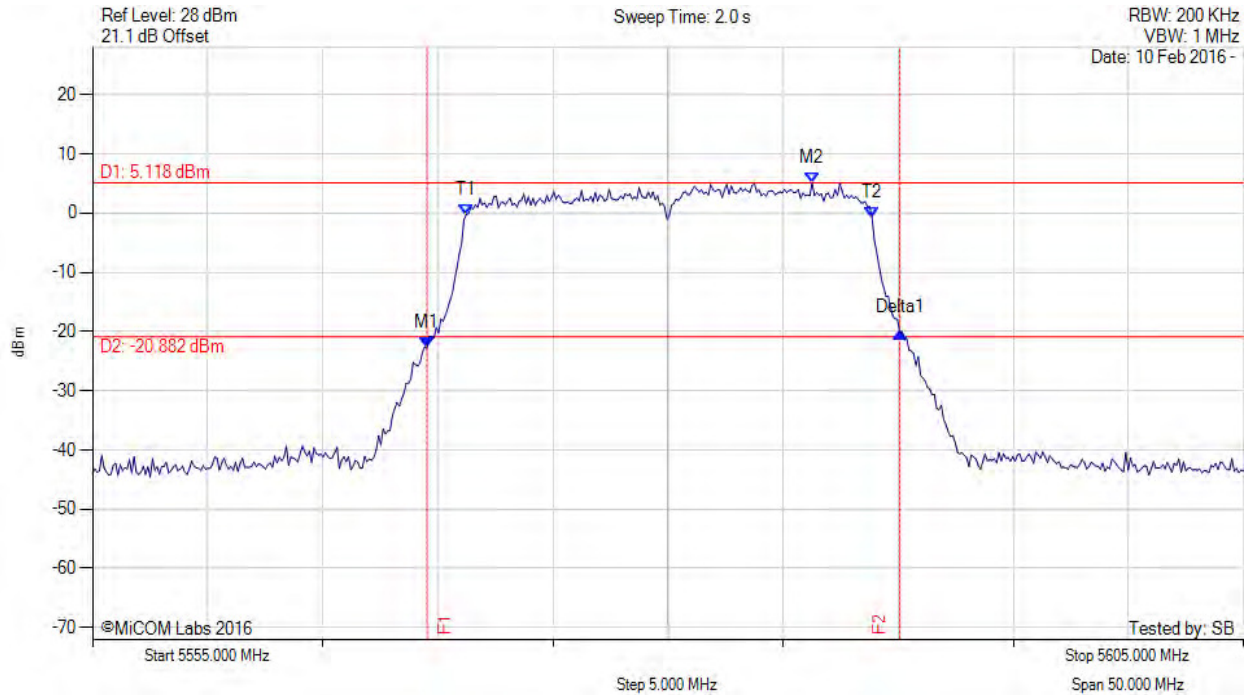
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.529 MHz : -22.777 dBm M2 : 5586.263 MHz : 5.118 dBm Delta1 : 20.541 MHz : 2.581 dB T1 : 5571.232 MHz : -0.239 dBm T2 : 5588.868 MHz : -0.822 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.541 MHz Measured 99% Bandwidth: 17.635 MHz

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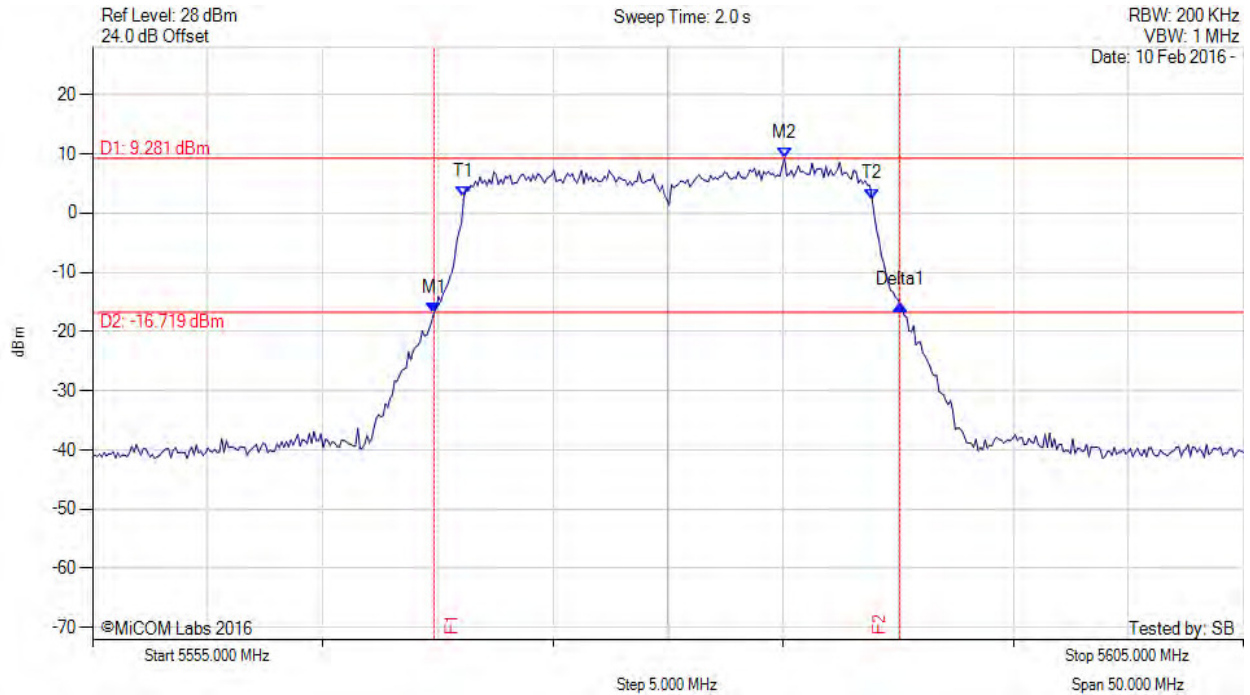
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.830 MHz : -16.805 dBm M2 : 5585.060 MHz : 9.281 dBm Delta1 : 20.240 MHz : 1.407 dB T1 : 5571.132 MHz : 2.769 dBm T2 : 5588.868 MHz : 2.373 dBm OBW : 17.735 MHz	Measured 26 dB Bandwidth: 20.240 MHz Measured 99% Bandwidth: 17.735 MHz

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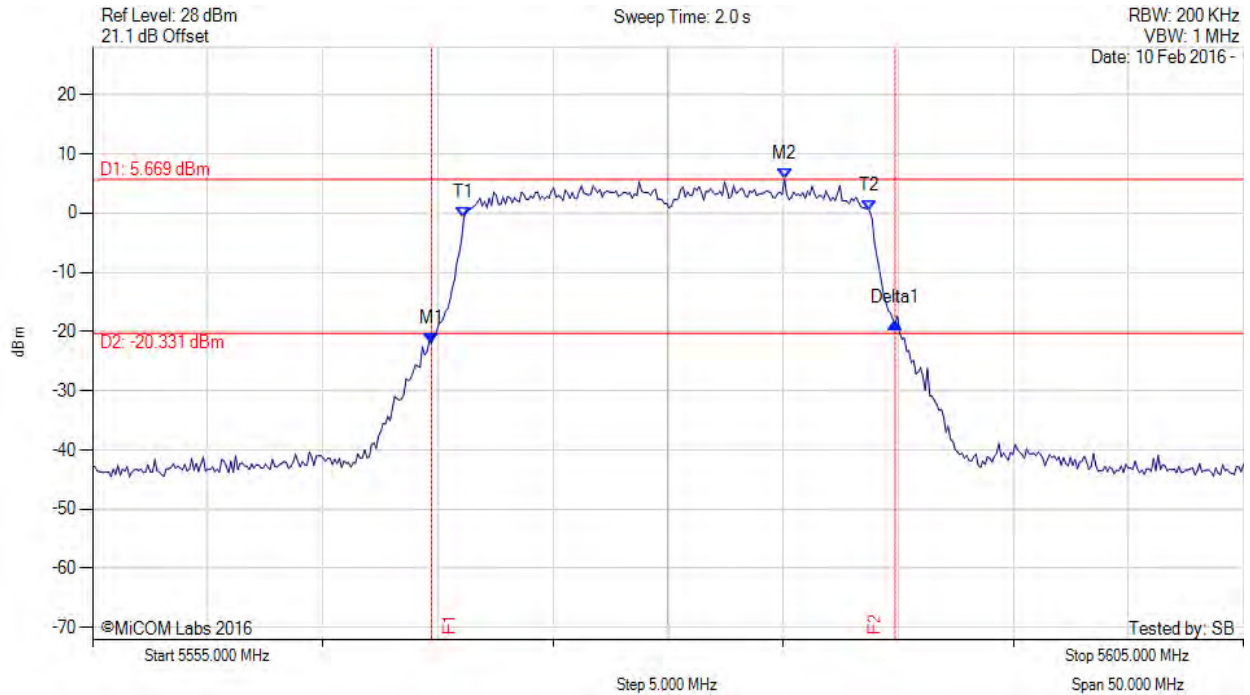
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.729 MHz : -21.973 dBm M2 : 5585.060 MHz : 5.669 dBm Delta1 : 20.140 MHz : 3.364 dB T1 : 5571.132 MHz : -0.741 dBm T2 : 5588.768 MHz : 0.327 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.140 MHz Measured 99% Bandwidth: 17.635 MHz

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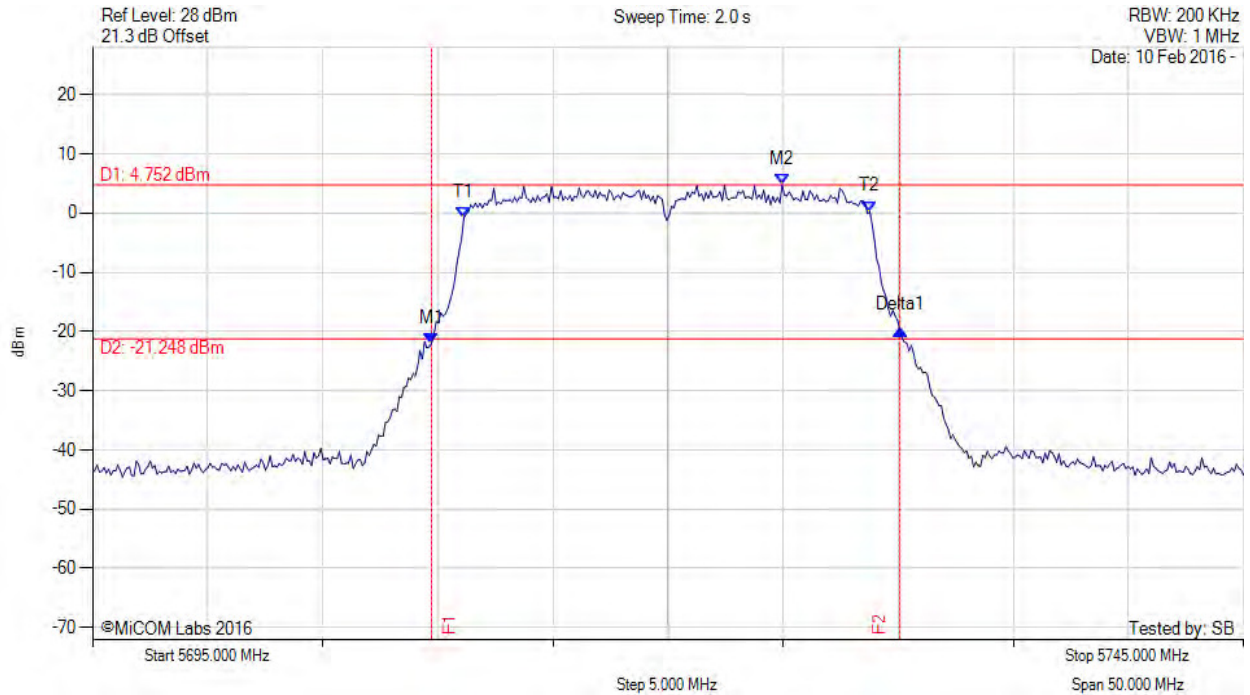
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5709.729 MHz : -21.951 dBm M2 : 5724.960 MHz : 4.752 dBm Delta1 : 20.341 MHz : 2.272 dB T1 : 5711.132 MHz : -0.778 dBm T2 : 5728.768 MHz : 0.280 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.341 MHz Measured 99% Bandwidth: 17.635 MHz

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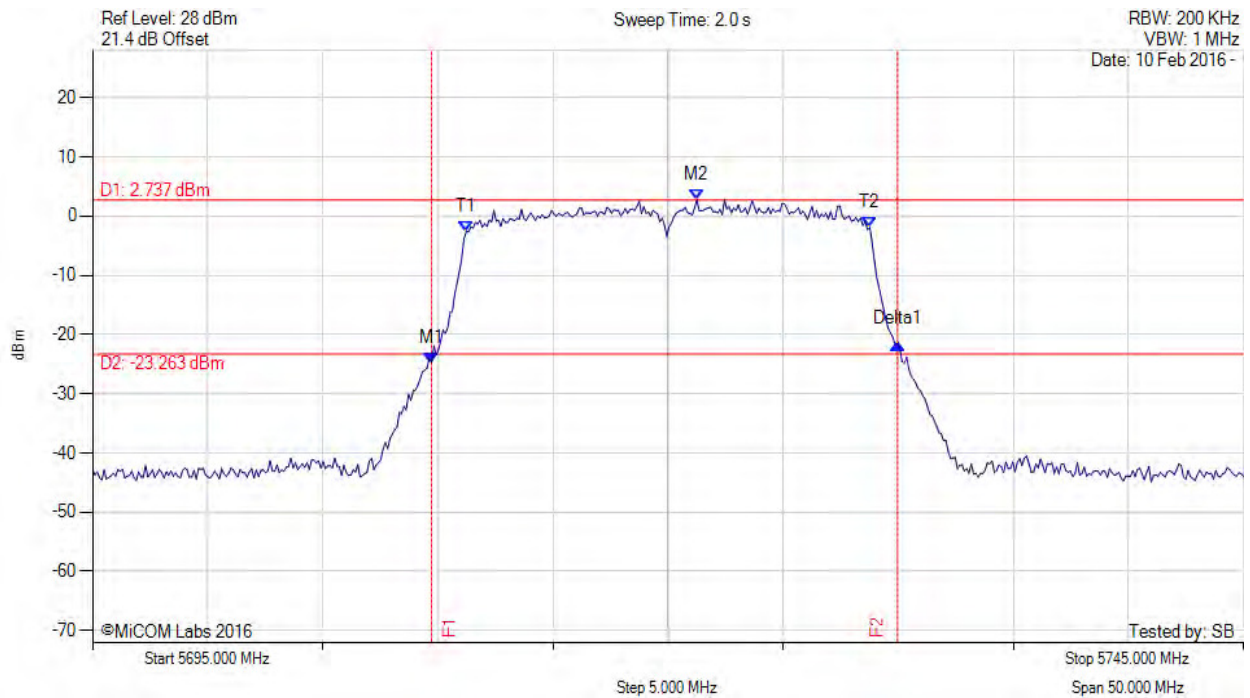
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5709.729 MHz : -24.800 dBm M2 : 5721.253 MHz : 2.737 dBm Delta1 : 20.240 MHz : 3.209 dB T1 : 5711.232 MHz : -2.640 dBm T2 : 5728.768 MHz : -1.906 dBm OBW : 17.535 MHz	Measured 26 dB Bandwidth: 20.240 MHz Measured 99% Bandwidth: 17.535 MHz

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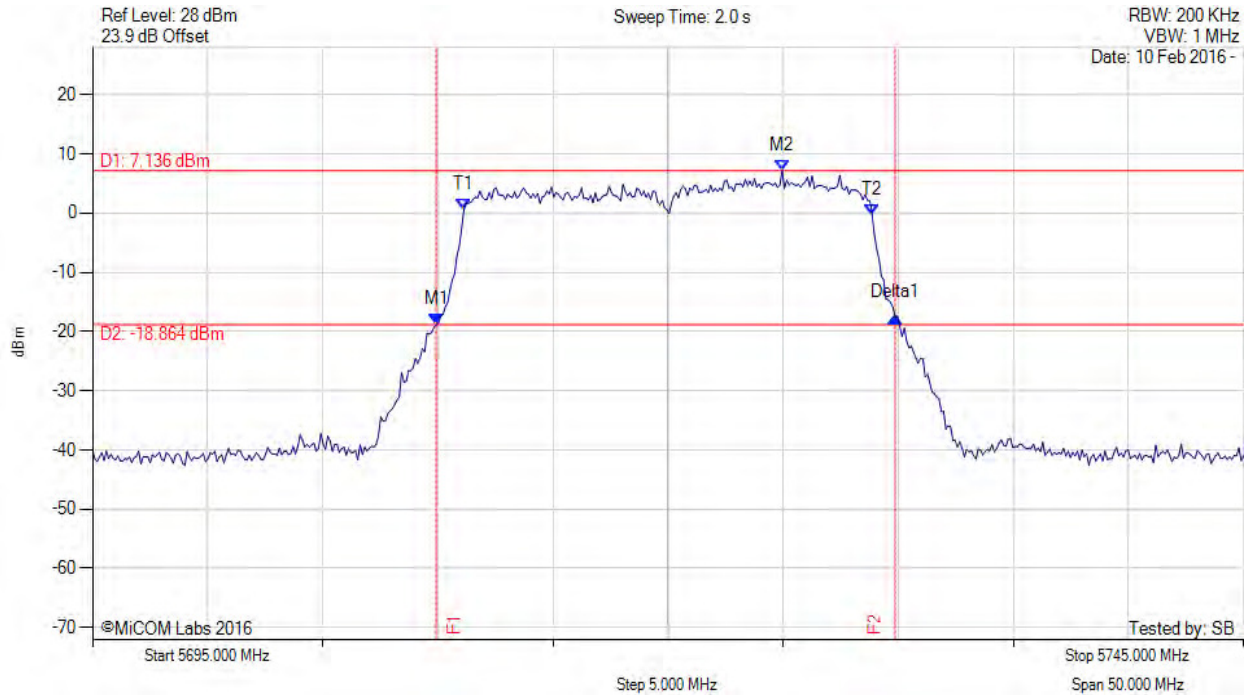
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5709.930 MHz : -18.870 dBm M2 : 5724.960 MHz : 7.136 dBm Delta1 : 19.940 MHz : 1.239 dB T1 : 5711.132 MHz : 0.561 dBm T2 : 5728.868 MHz : -0.226 dBm OBW : 17.735 MHz	Measured 26 dB Bandwidth: 19.940 MHz Measured 99% Bandwidth: 17.735 MHz

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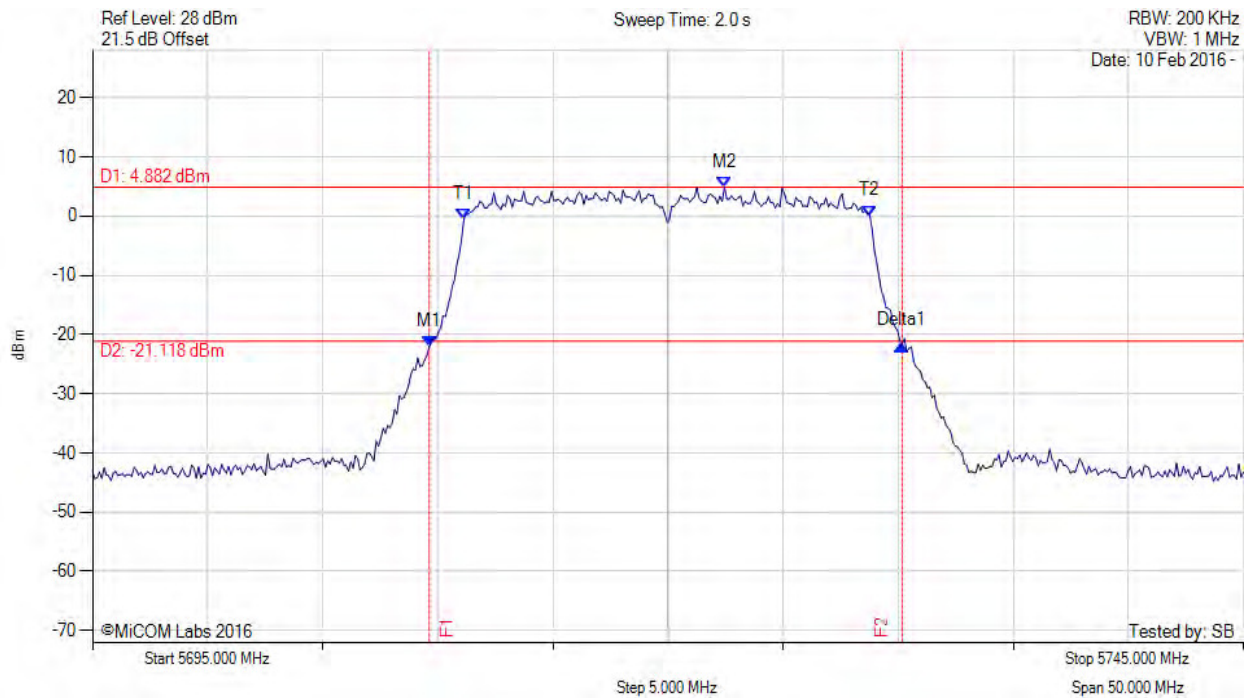


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5709.629 MHz : -22.050 dBm M2 : 5722.455 MHz : 4.882 dBm Delta1 : 20.541 MHz : 0.295 dB T1 : 5711.132 MHz : -0.505 dBm T2 : 5728.768 MHz : 0.046 dBm OBW : 17.635 MHz	Measured 26 dB Bandwidth: 20.541 MHz Measured 99% Bandwidth: 17.635 MHz

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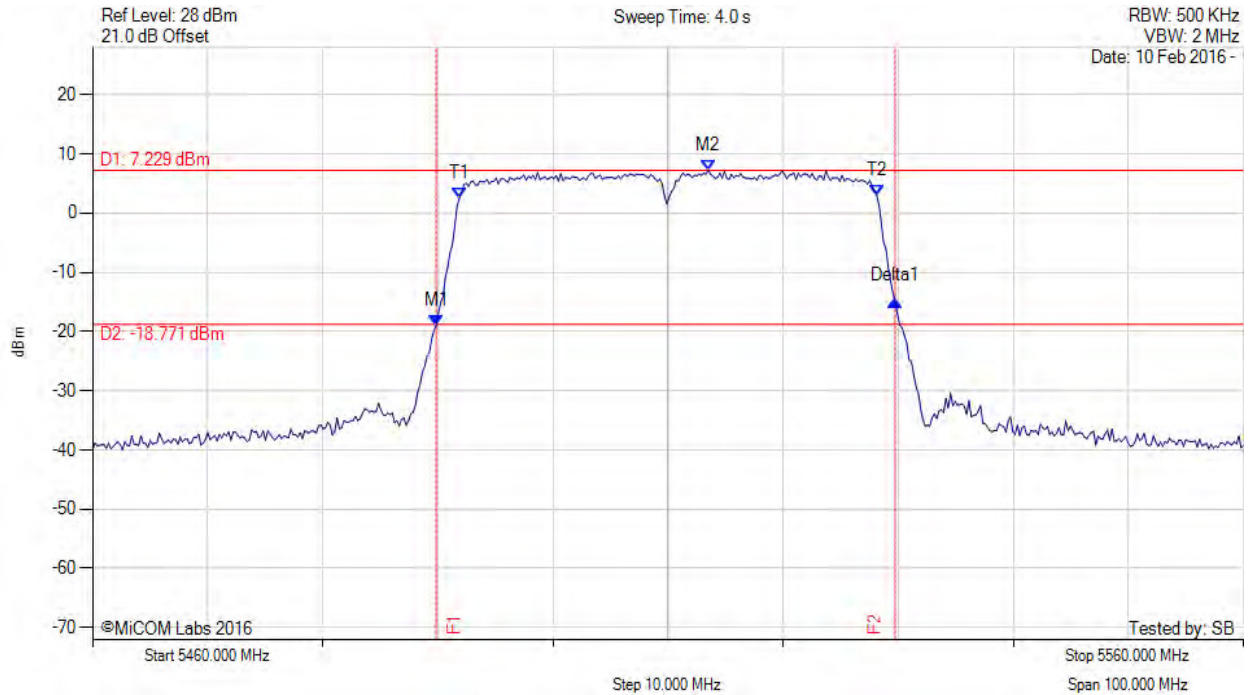
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.860 MHz : -18.982 dBm M2 : 5513.507 MHz : 7.229 dBm Delta1 : 39.880 MHz : 4.108 dB T1 : 5491.864 MHz : 2.479 dBm T2 : 5528.136 MHz : 3.066 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.880 MHz Measured 99% Bandwidth: 36.273 MHz

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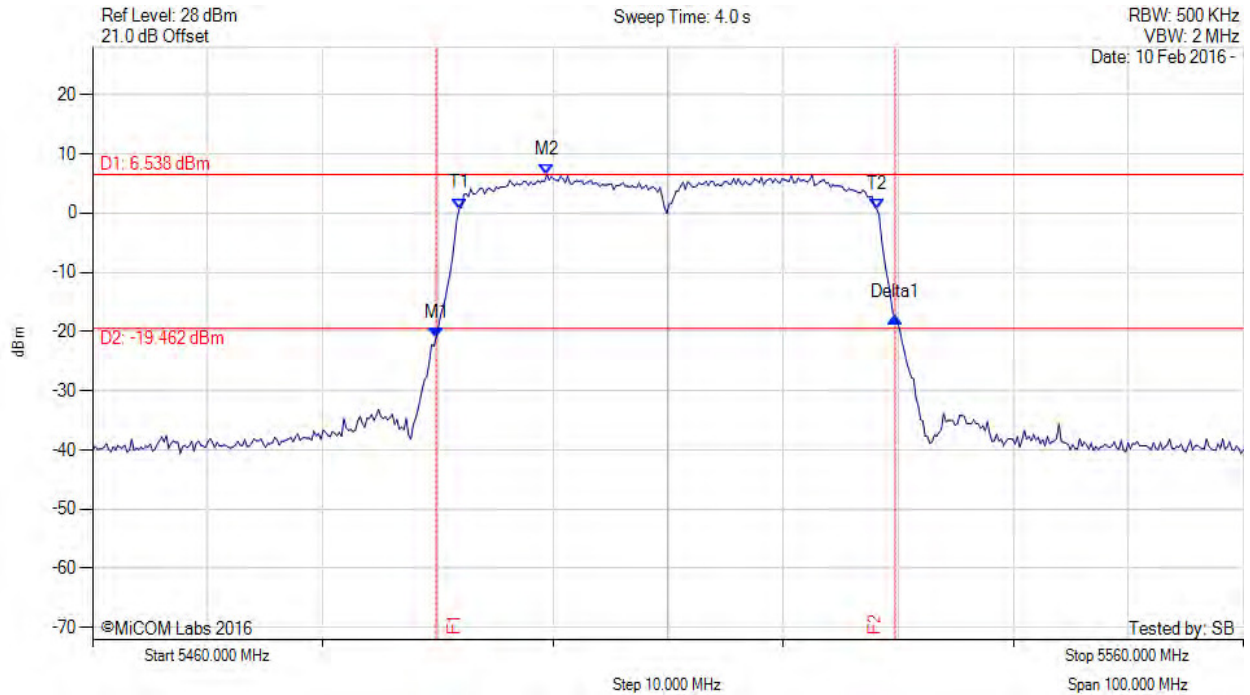
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.860 MHz : -21.007 dBm M2 : 5499.479 MHz : 6.538 dBm Delta1 : 39.880 MHz : 3.498 dB T1 : 5491.864 MHz : 0.752 dBm T2 : 5528.136 MHz : 0.697 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.880 MHz Measured 99% Bandwidth: 36.273 MHz

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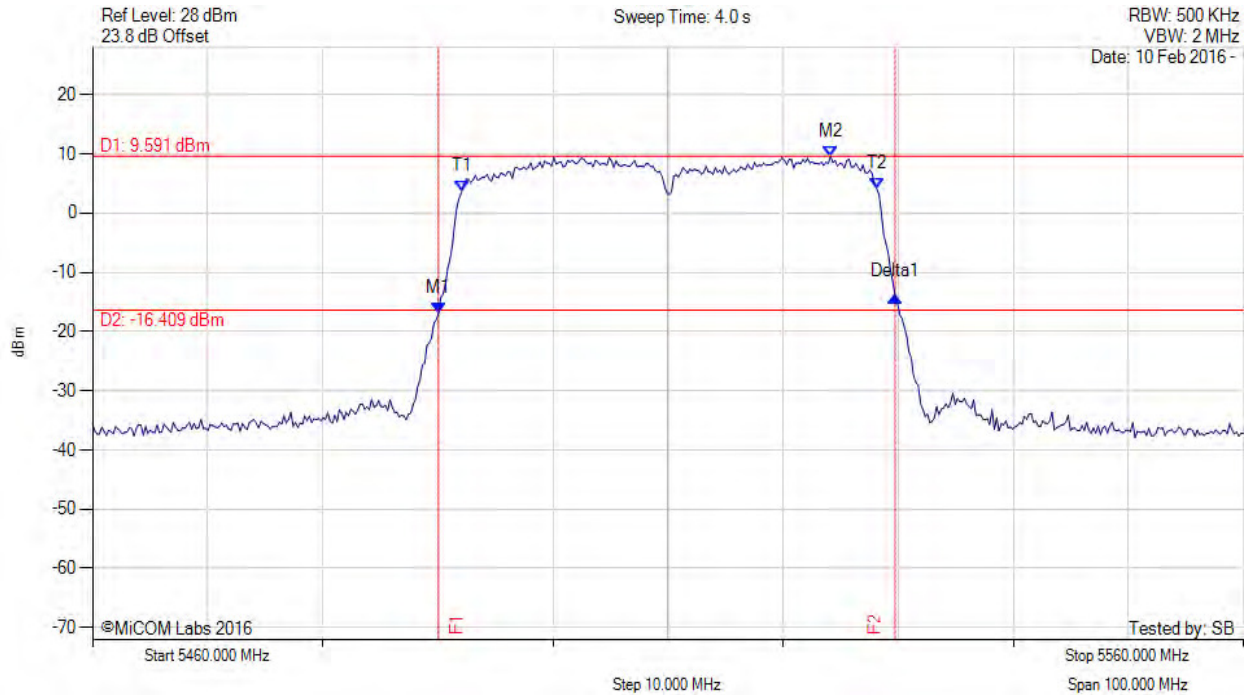
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5490.060 MHz : -16.895 dBm M2 : 5524.128 MHz : 9.591 dBm Delta1 : 39.679 MHz : 2.746 dB T1 : 5492.064 MHz : 3.565 dBm T2 : 5528.136 MHz : 4.211 dBm OBW : 36.072 MHz	Measured 26 dB Bandwidth: 39.679 MHz Measured 99% Bandwidth: 36.072 MHz

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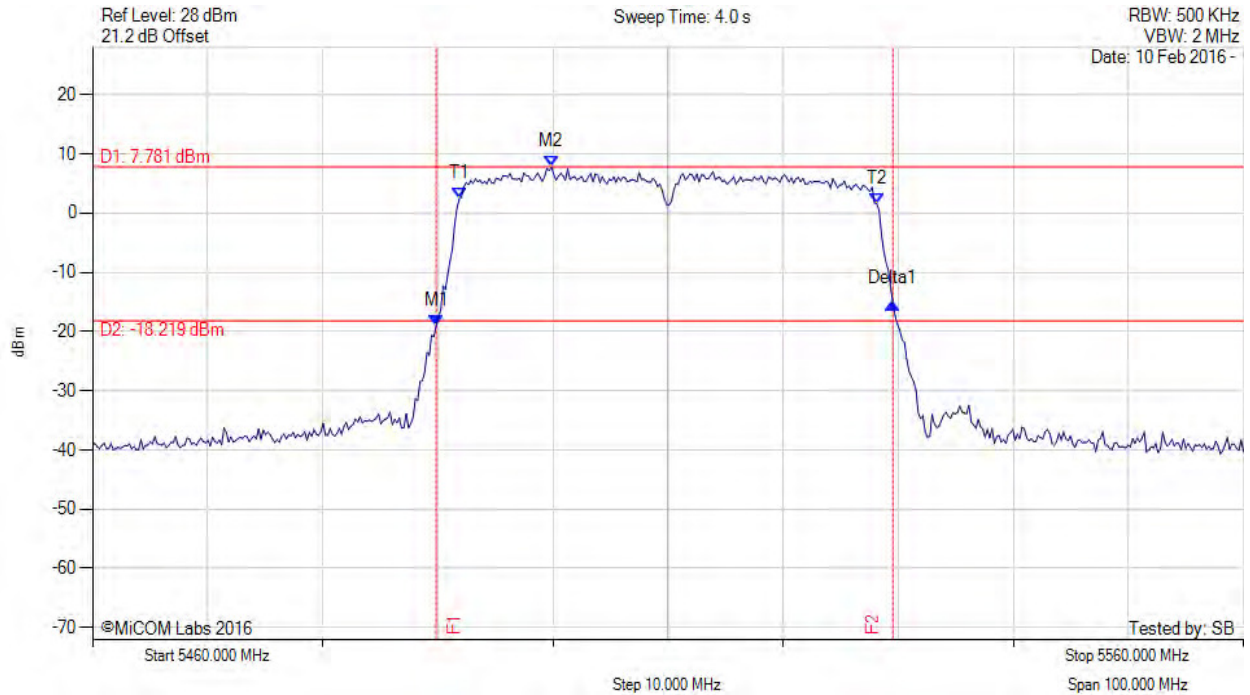
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.860 MHz : -18.984 dBm M2 : 5499.880 MHz : 7.781 dBm Delta1 : 39.679 MHz : 3.769 dB T1 : 5491.864 MHz : 2.399 dBm T2 : 5528.136 MHz : 1.598 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.679 MHz Measured 99% Bandwidth: 36.273 MHz

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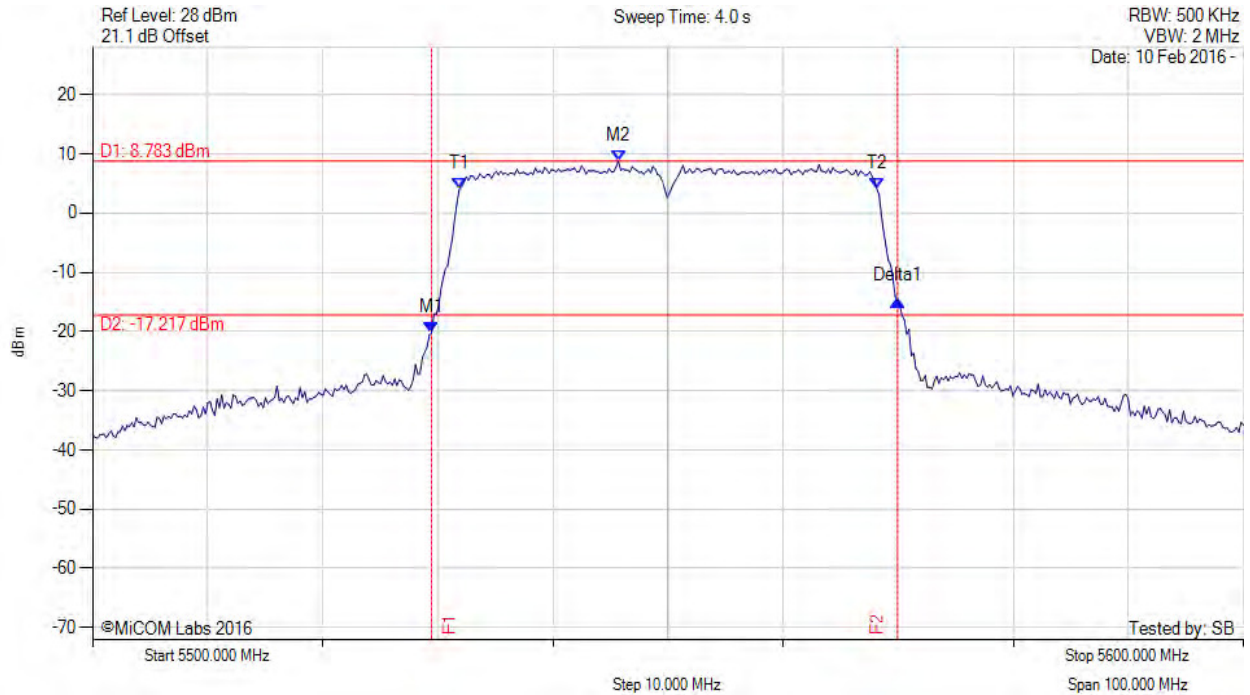


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5529.459 MHz : -20.259 dBm M2 : 5545.691 MHz : 8.783 dBm Delta1 : 40.481 MHz : 5.428 dB T1 : 5531.864 MHz : 4.073 dBm T2 : 5568.136 MHz : 4.203 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.481 MHz Measured 99% Bandwidth: 36.273 MHz

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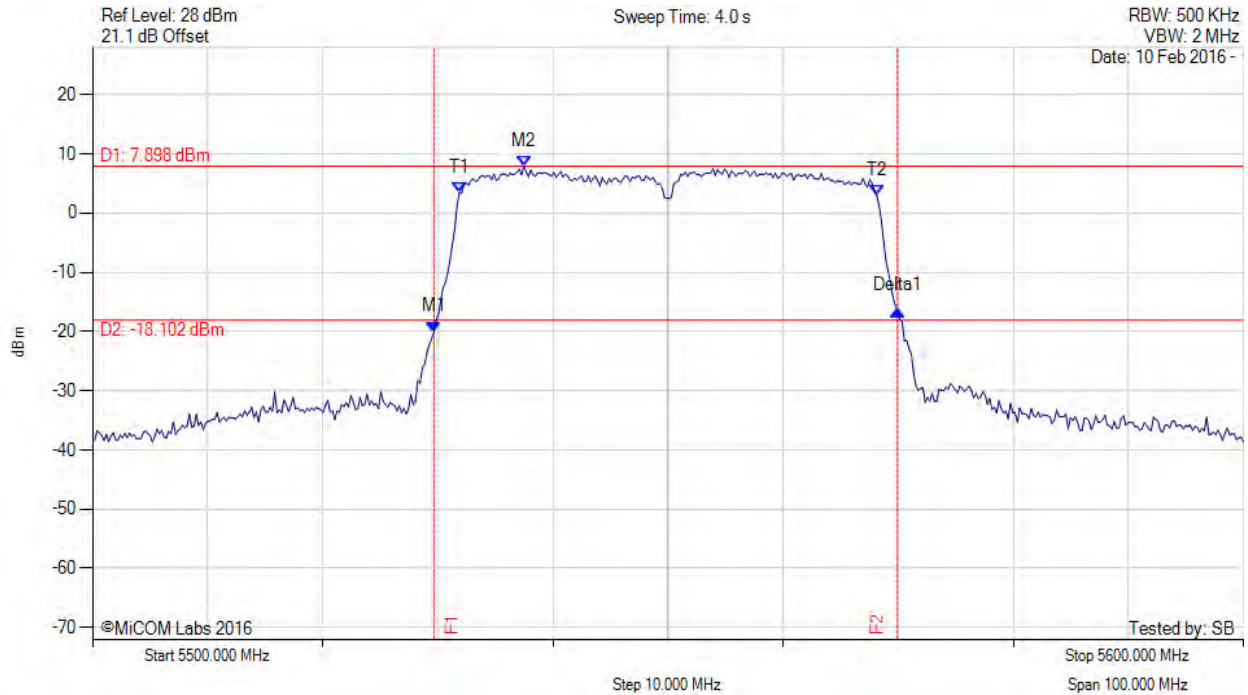
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5529.659 MHz : -20.070 dBm M2 : 5537.475 MHz : 7.898 dBm Delta1 : 40.281 MHz : 3.606 dB T1 : 5531.864 MHz : 3.402 dBm T2 : 5568.136 MHz : 3.011 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.281 MHz Measured 99% Bandwidth: 36.273 MHz

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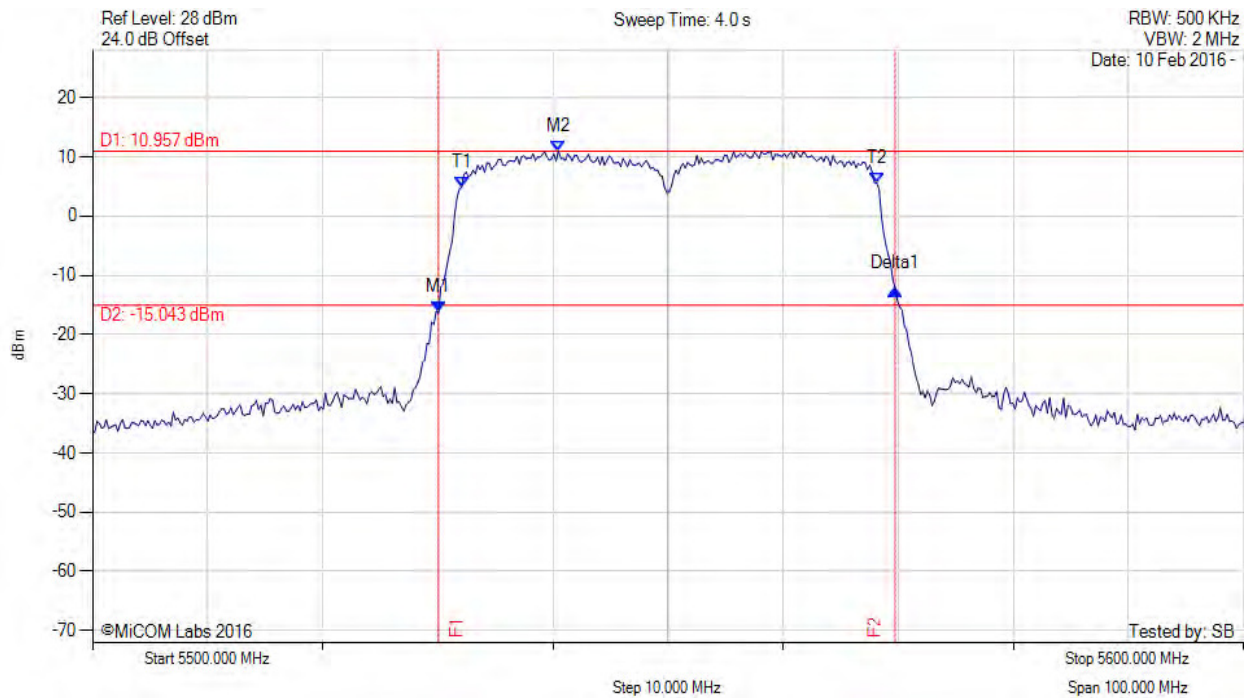
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5530.060 MHz : -16.293 dBm M2 : 5540.481 MHz : 10.957 dBm Delta1 : 39.679 MHz : 3.962 dB T1 : 5532.064 MHz : 4.860 dBm T2 : 5568.136 MHz : 5.610 dBm OBW : 36.072 MHz	Measured 26 dB Bandwidth: 39.679 MHz Measured 99% Bandwidth: 36.072 MHz

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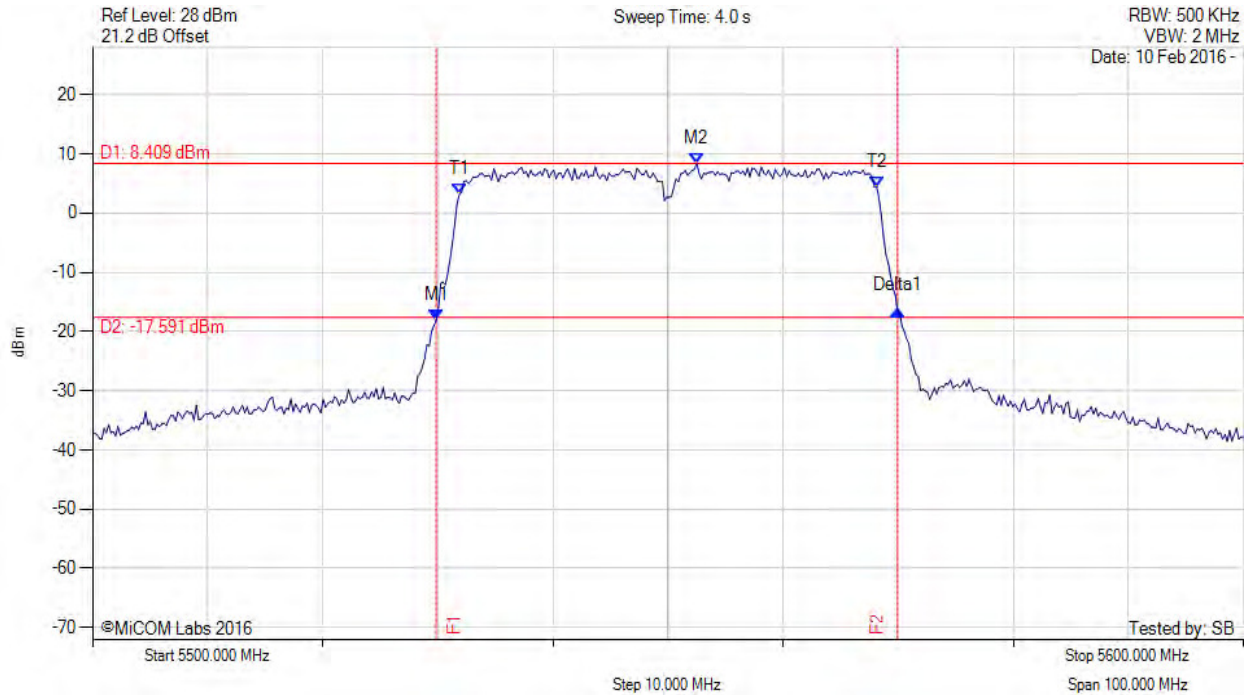


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5529.860 MHz : -18.093 dBm M2 : 5552.505 MHz : 8.409 dBm Delta1 : 40.080 MHz : 1.605 dB T1 : 5531.864 MHz : 3.146 dBm T2 : 5568.136 MHz : 4.407 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.080 MHz Measured 99% Bandwidth: 36.273 MHz

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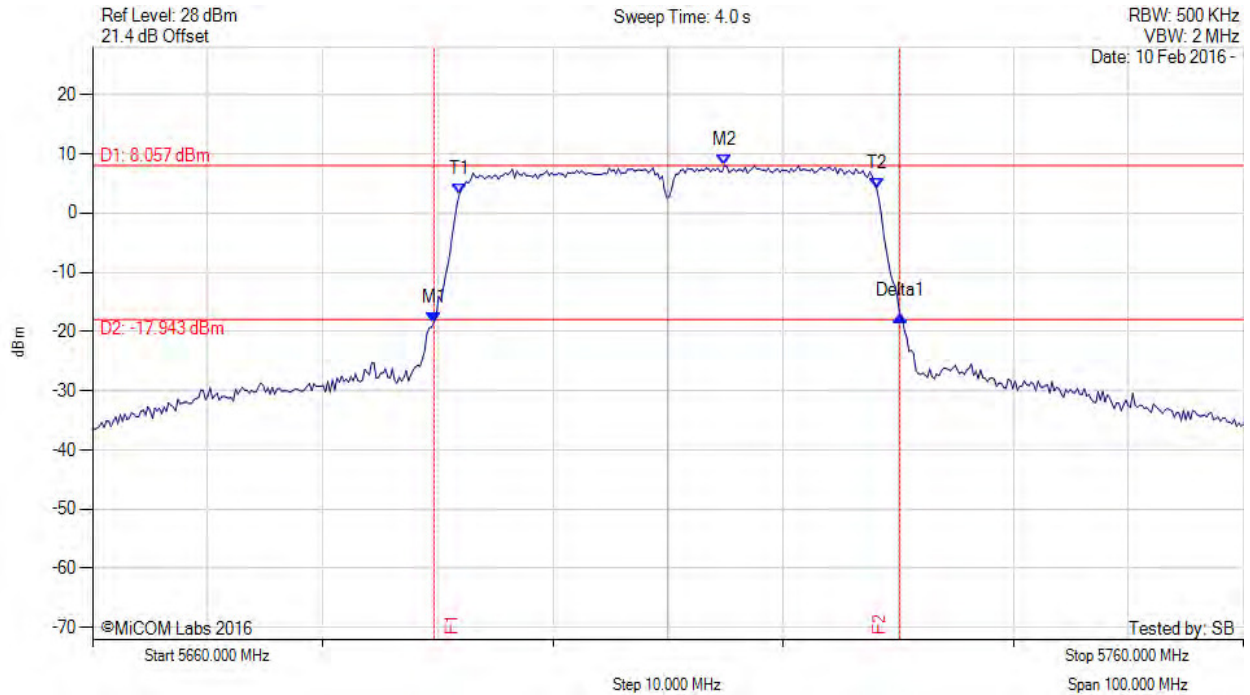


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5689.659 MHz : -18.455 dBm M2 : 5714.910 MHz : 8.057 dBm Delta1 : 40.481 MHz : 1.123 dB T1 : 5691.864 MHz : 3.190 dBm T2 : 5728.136 MHz : 4.106 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.481 MHz Measured 99% Bandwidth: 36.273 MHz

[back to matrix](#)

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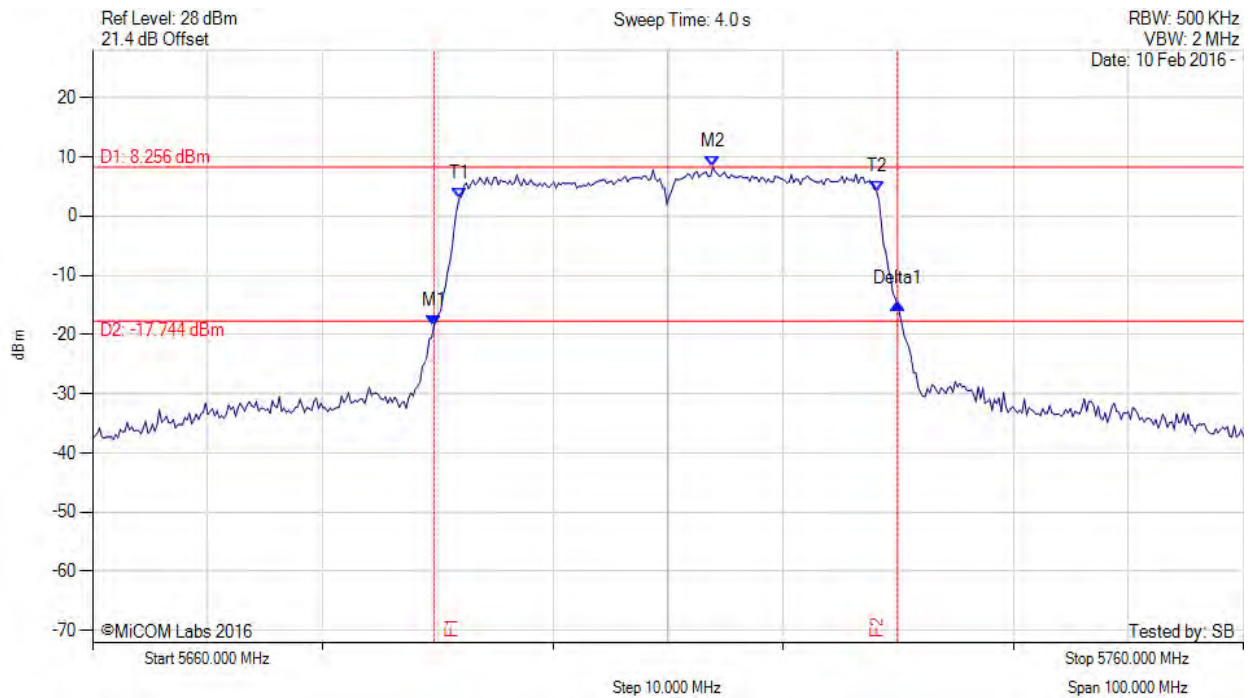


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5689.659 MHz : -18.626 dBm M2 : 5713.908 MHz : 8.256 dBm Delta1 : 40.281 MHz : 3.825 dB T1 : 5691.864 MHz : 2.963 dBm T2 : 5728.136 MHz : 4.203 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 40.281 MHz Measured 99% Bandwidth: 36.273 MHz

[back to matrix](#)

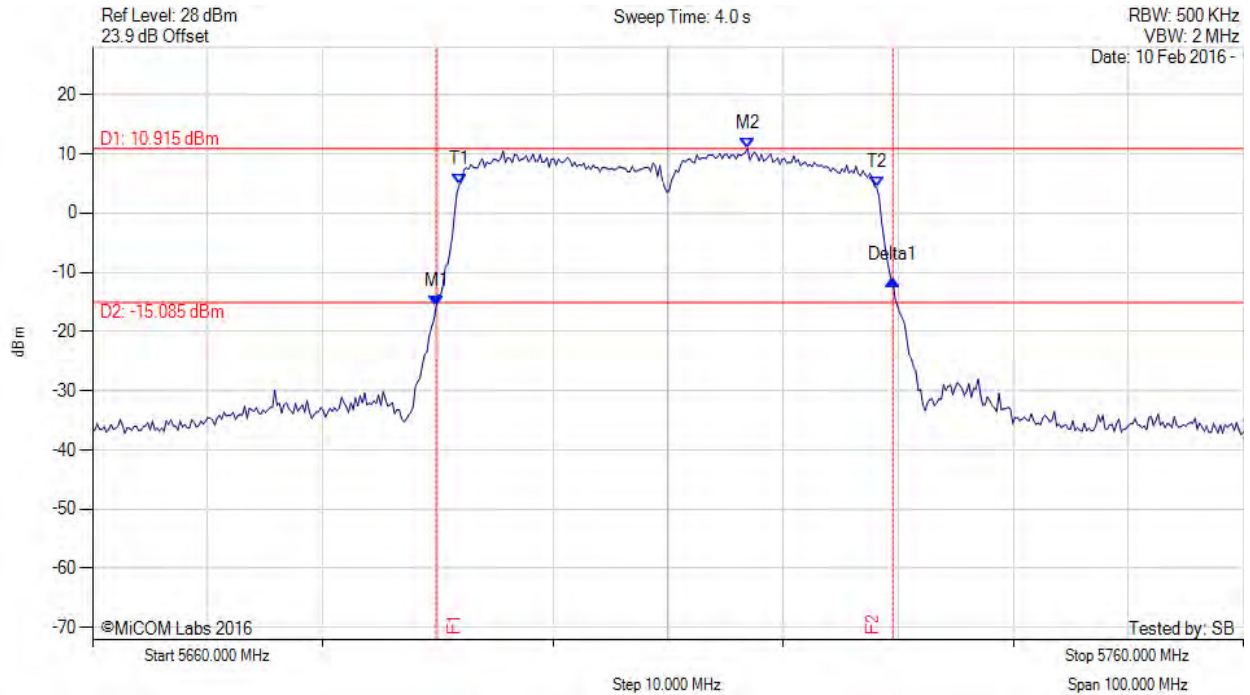
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5689.860 MHz : -15.752 dBm M2 : 5716.914 MHz : 10.915 dBm Delta1 : 39.679 MHz : 4.403 dB T1 : 5691.864 MHz : 4.787 dBm T2 : 5728.136 MHz : 4.299 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.679 MHz Measured 99% Bandwidth: 36.273 MHz

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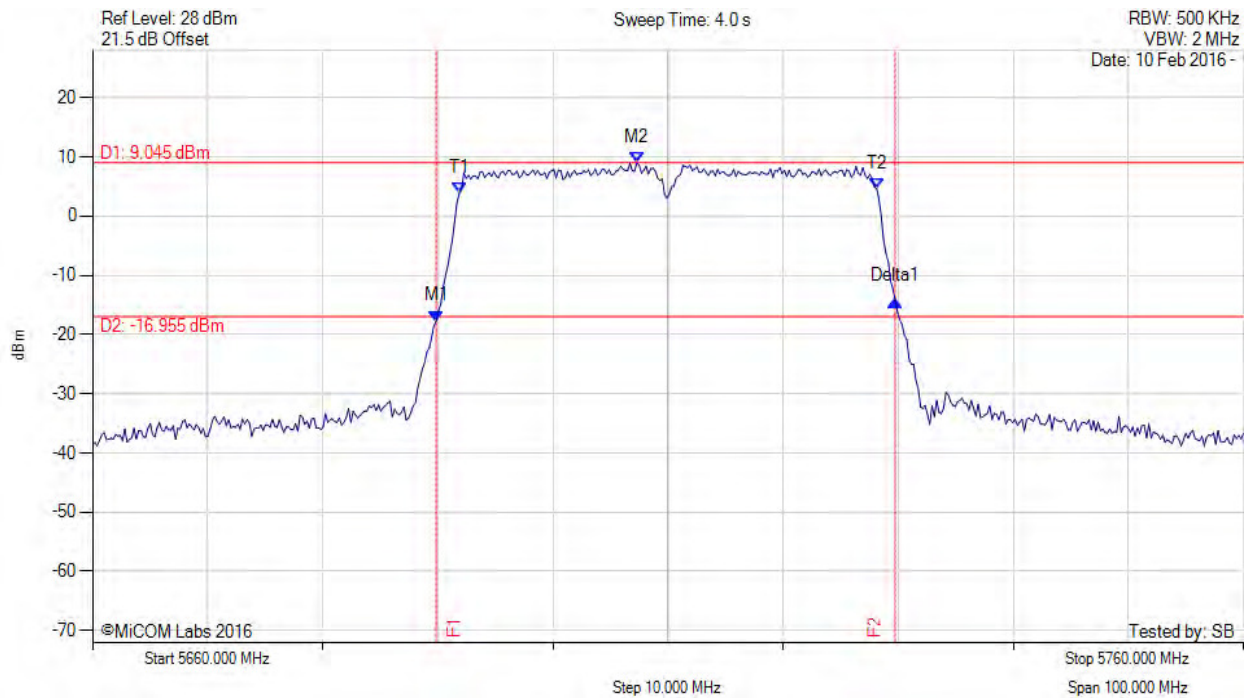


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5689.860 MHz : -17.731 dBm M2 : 5707.295 MHz : 9.045 dBm Delta1 : 39.880 MHz : 3.455 dB T1 : 5691.864 MHz : 3.894 dBm T2 : 5728.136 MHz : 4.655 dBm OBW : 36.273 MHz	Measured 26 dB Bandwidth: 39.880 MHz Measured 99% Bandwidth: 36.273 MHz

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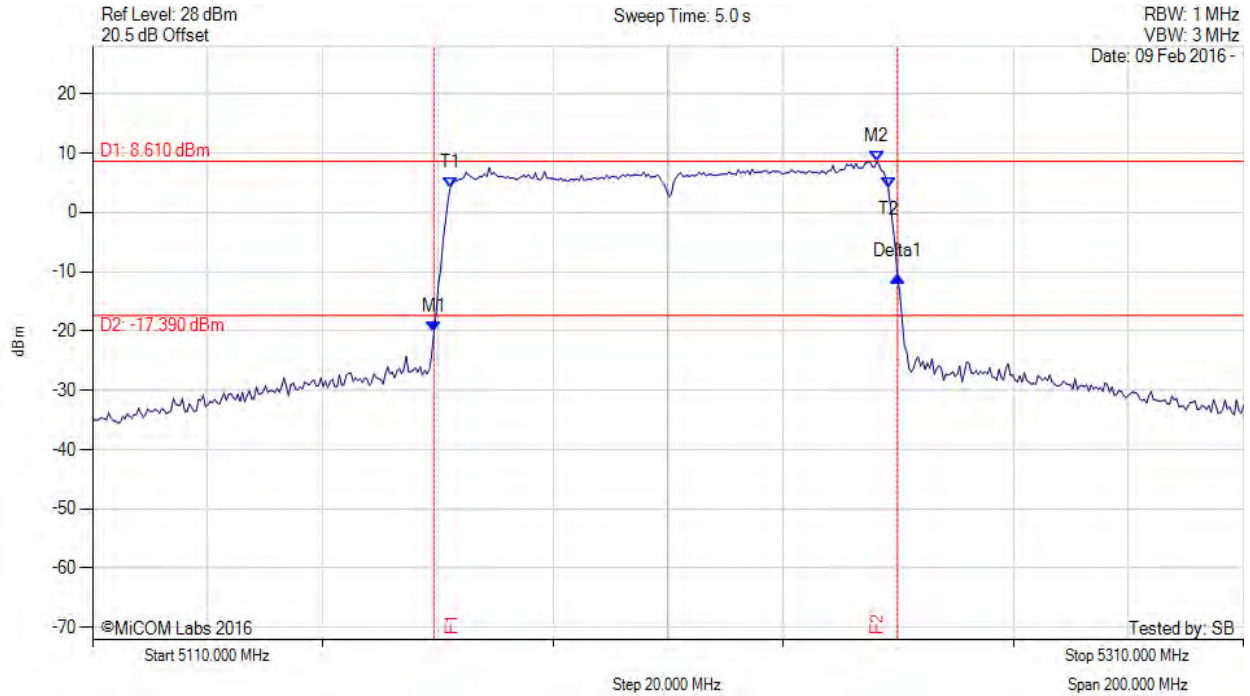


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
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26 dB & 99% BANDWIDTH



Variant: 802.11ac-80, Channel: 5210.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5169.319 MHz : -20.167 dBm M2 : 5246.273 MHz : 8.610 dBm Delta1 : 80.561 MHz : 9.329 dB T1 : 5172.124 MHz : 4.049 dBm T2 : 5248.277 MHz : 4.116 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

[back to matrix](#)

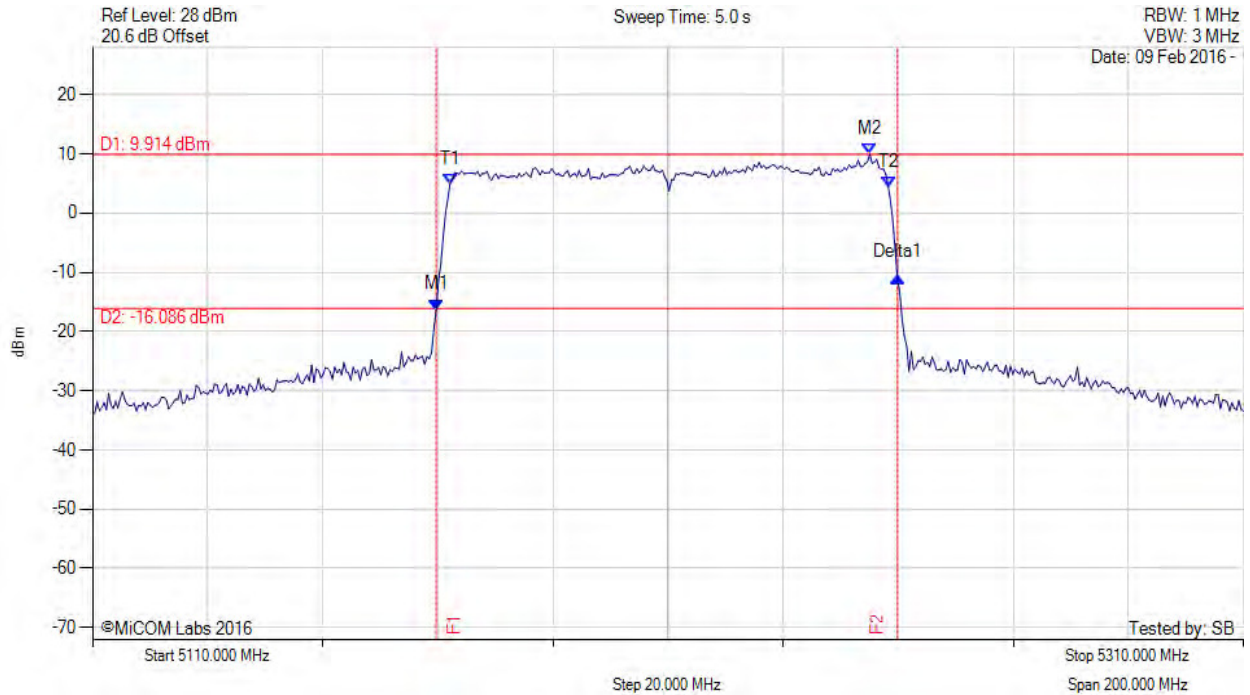
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5210.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5169.719 MHz : -16.328 dBm M2 : 5245.070 MHz : 9.914 dBm Delta1 : 80.160 MHz : 5.418 dB T1 : 5172.124 MHz : 4.921 dBm T2 : 5248.277 MHz : 4.468 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 76.152 MHz

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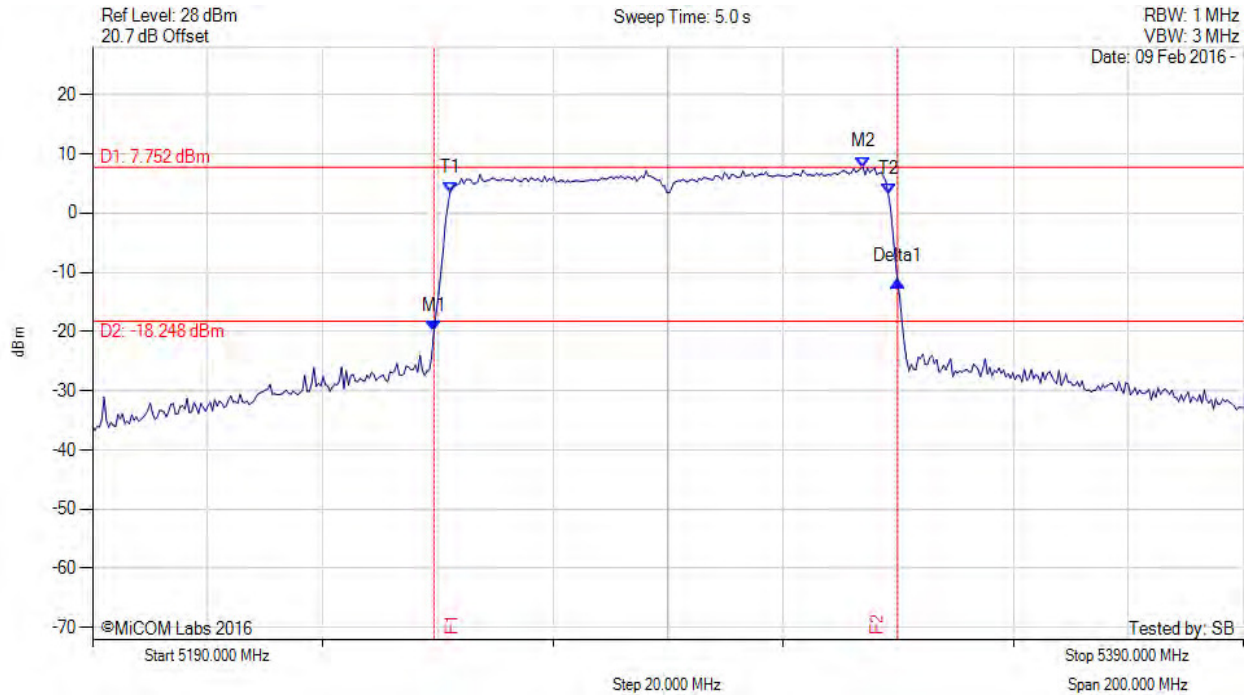
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.319 MHz : -19.970 dBm M2 : 5328.277 MHz : 7.752 dBm Delta1 : 80.561 MHz : 8.509 dB T1 : 5252.124 MHz : 3.509 dBm T2 : 5328.277 MHz : 3.298 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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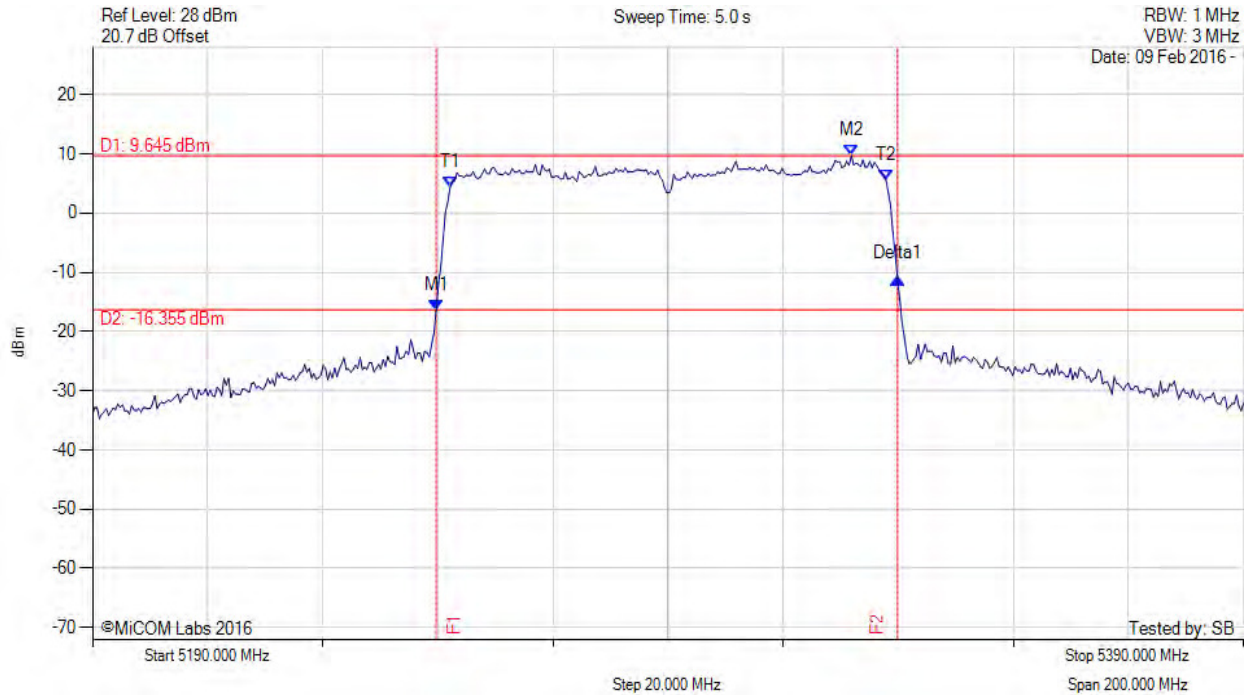
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.719 MHz : -16.397 dBm M2 : 5321.864 MHz : 9.645 dBm Delta1 : 80.160 MHz : 5.424 dB T1 : 5252.124 MHz : 4.266 dBm T2 : 5327.876 MHz : 5.621 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 75.752 MHz

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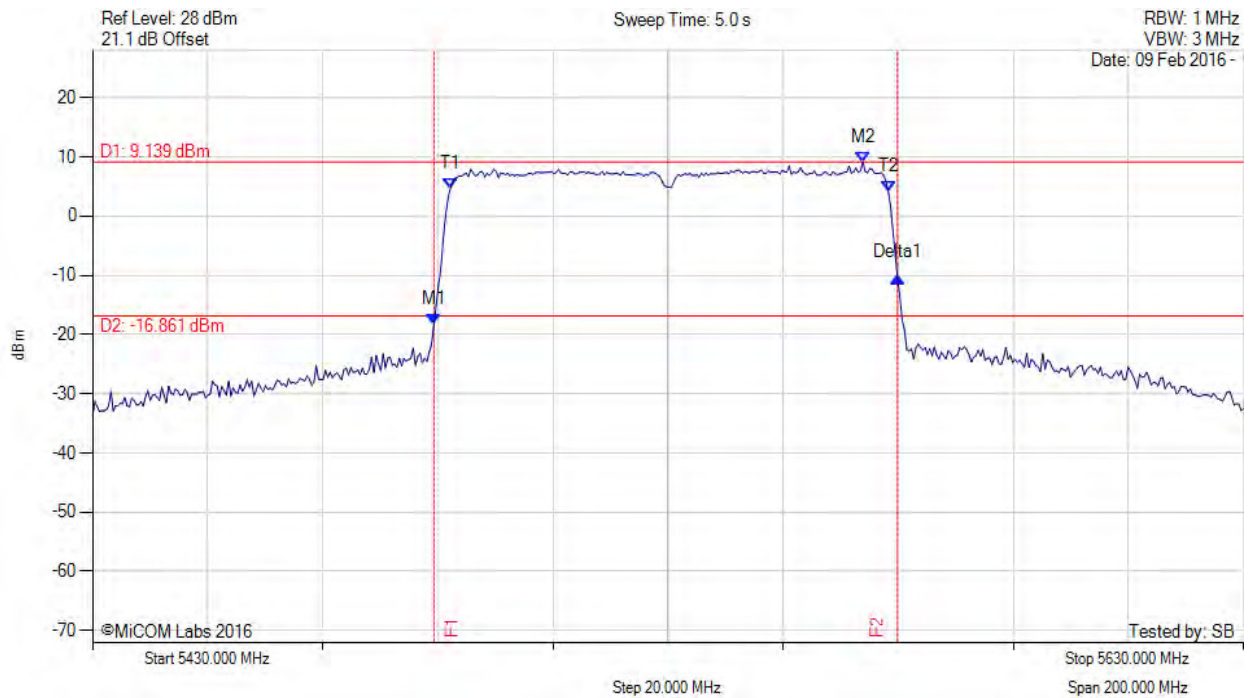
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -18.239 dBm M2 : 5563.868 MHz : 9.139 dBm Delta1 : 80.561 MHz : 7.787 dB T1 : 5492.124 MHz : 4.510 dBm T2 : 5568.277 MHz : 4.177 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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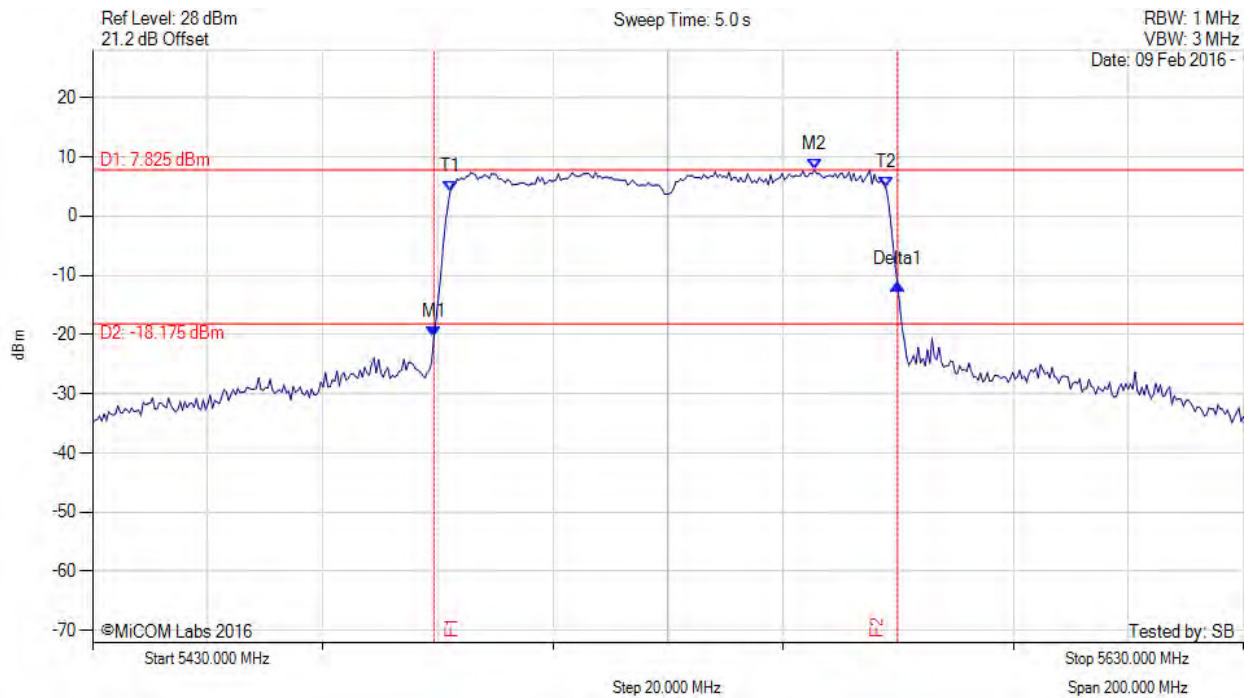
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -20.409 dBm M2 : 5555.451 MHz : 7.825 dBm Delta1 : 80.561 MHz : 8.983 dB T1 : 5492.124 MHz : 4.108 dBm T2 : 5567.876 MHz : 4.760 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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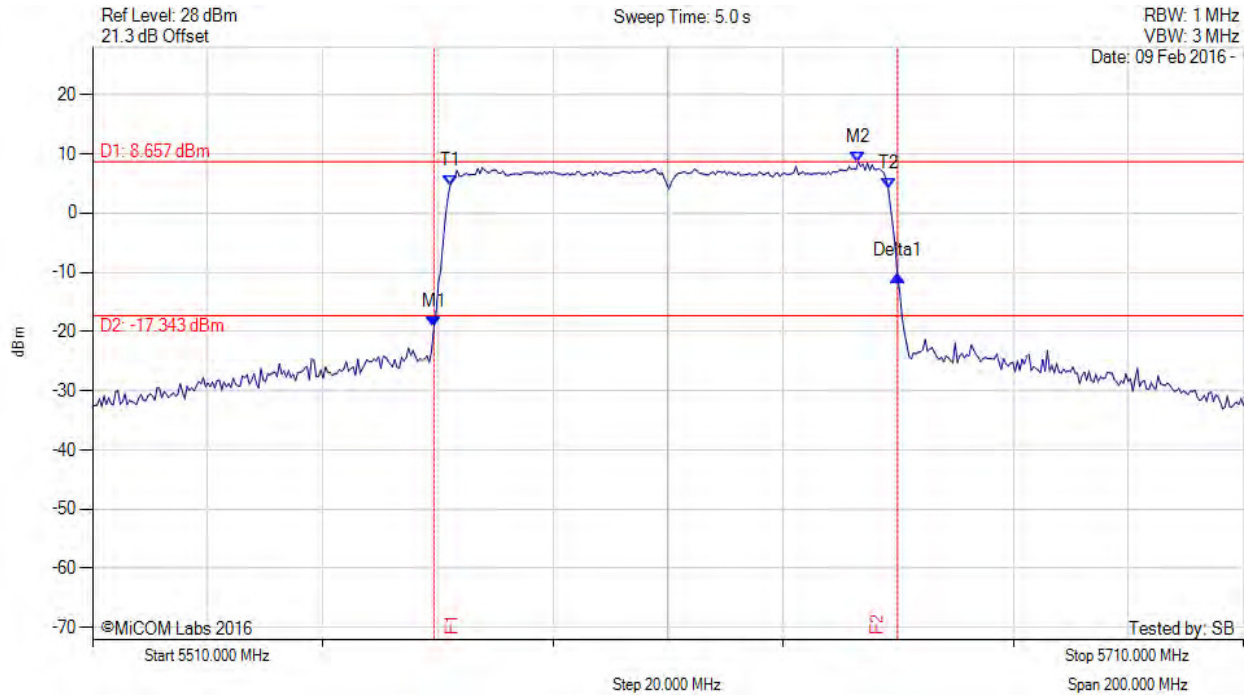
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -19.209 dBm M2 : 5643.066 MHz : 8.657 dBm Delta1 : 80.561 MHz : 8.654 dB T1 : 5572.124 MHz : 4.671 dBm T2 : 5648.277 MHz : 4.148 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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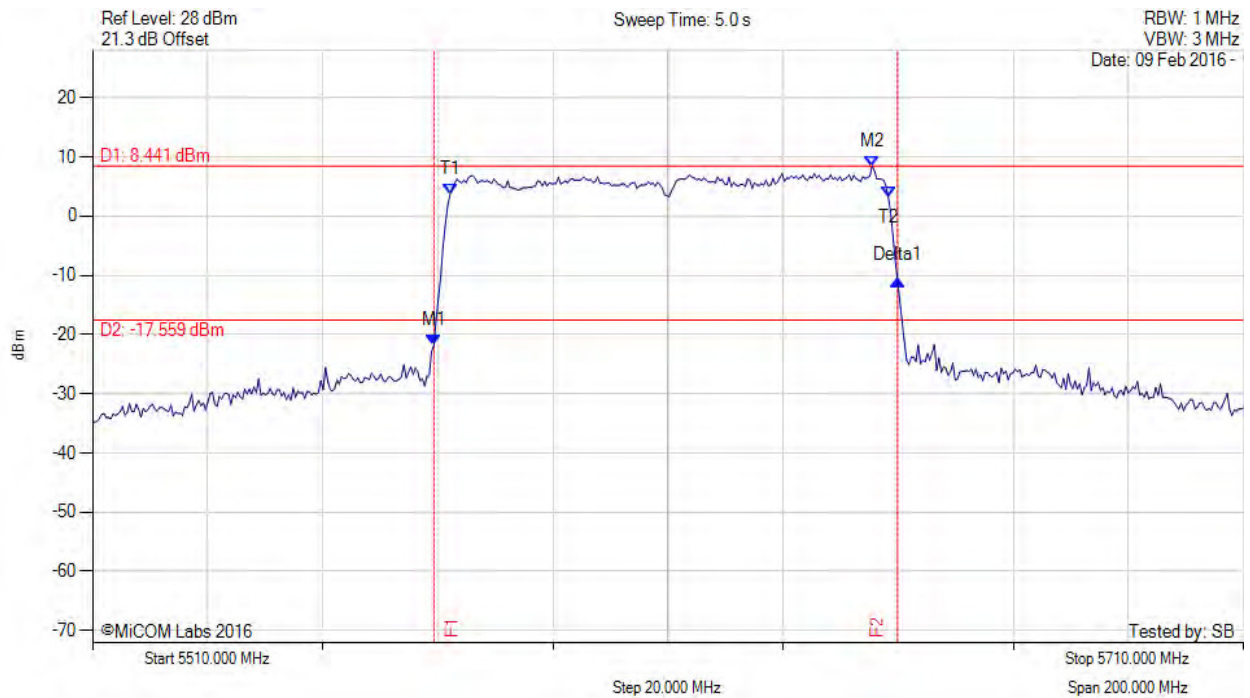
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -21.819 dBm M2 : 5645.471 MHz : 8.441 dBm Delta1 : 80.561 MHz : 11.066 dB T1 : 5572.124 MHz : 3.634 dBm T2 : 5648.277 MHz : 3.253 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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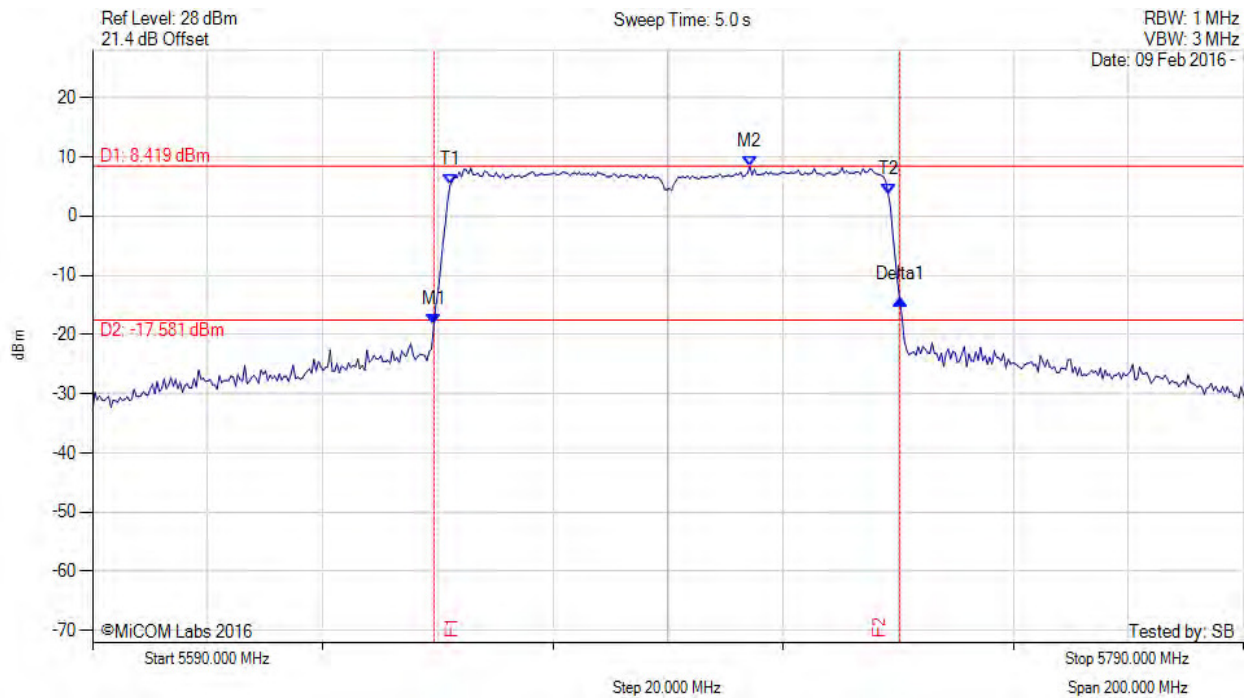
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -18.227 dBm M2 : 5704.228 MHz : 8.419 dBm Delta1 : 80.962 MHz : 4.230 dB T1 : 5652.124 MHz : 5.216 dBm T2 : 5728.277 MHz : 3.739 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.962 MHz Measured 99% Bandwidth: 76.152 MHz

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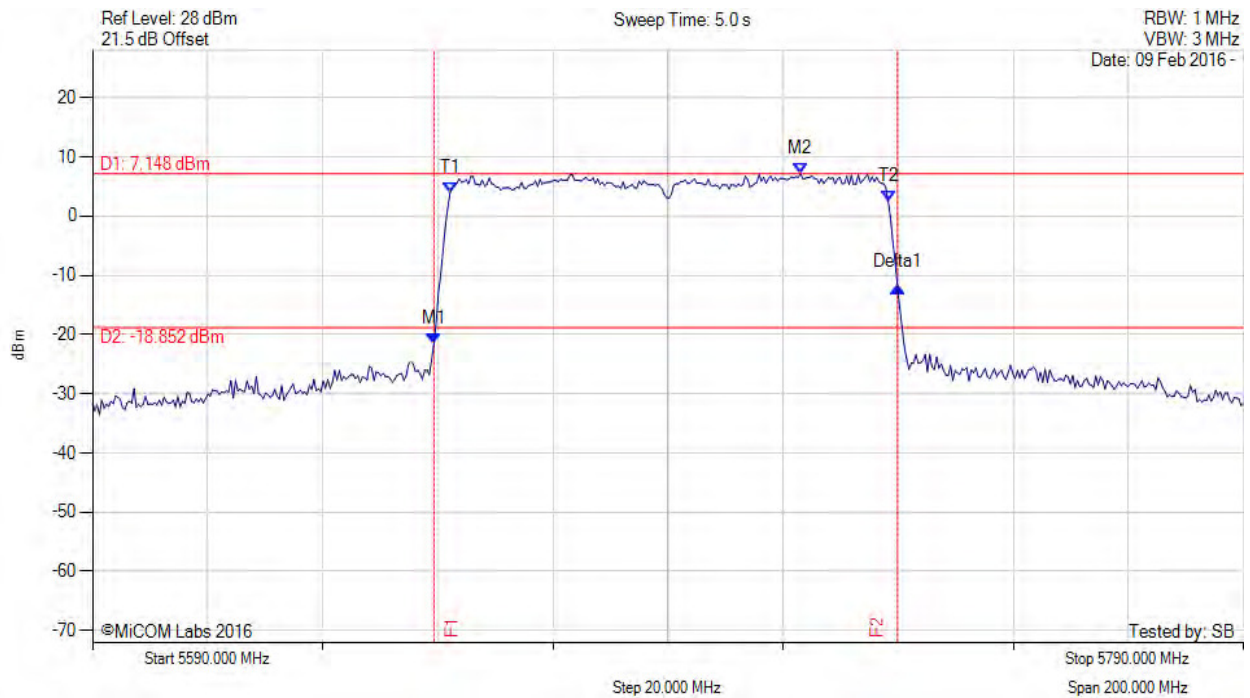
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5690.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -21.623 dBm M2 : 5713.046 MHz : 7.148 dBm Delta1 : 80.561 MHz : 9.711 dB T1 : 5652.124 MHz : 3.912 dBm T2 : 5728.277 MHz : 2.462 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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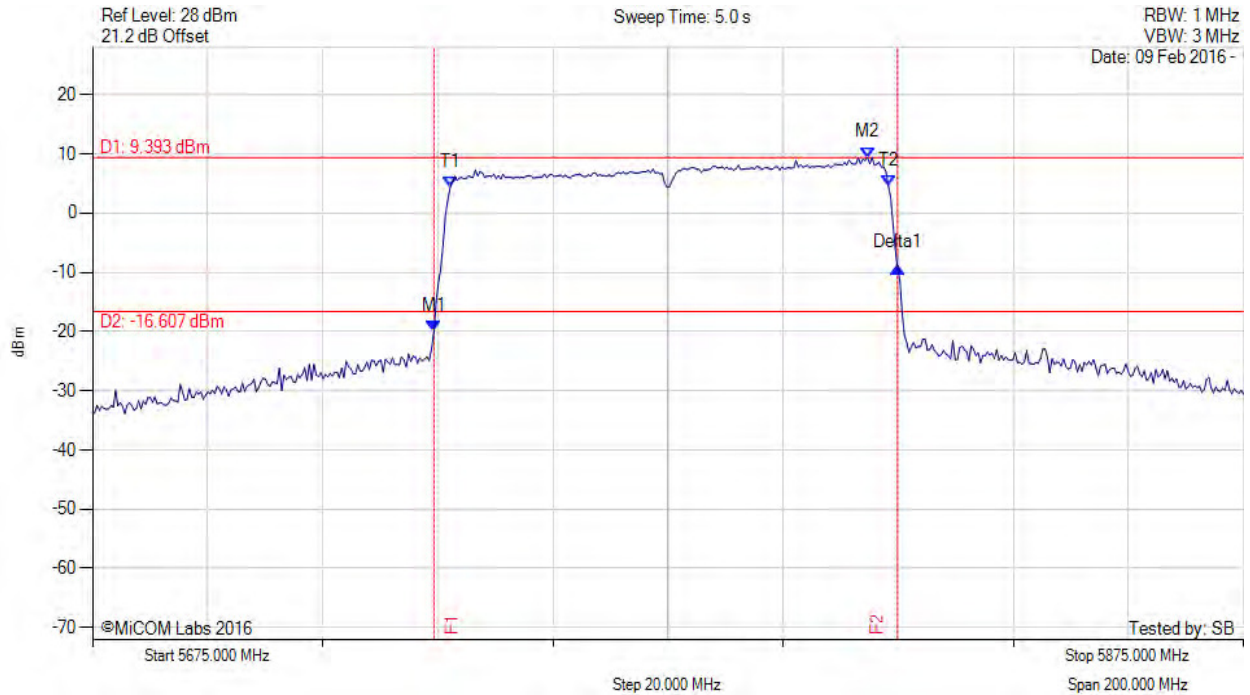
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26 dB & 99% BANDWIDTH



Variant: 802.11ac-80, Channel: 5775.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5734.319 MHz : -20.015 dBm M2 : 5809.669 MHz : 9.393 dBm Delta1 : 80.561 MHz : 10.811 dB T1 : 5737.124 MHz : 4.270 dBm T2 : 5813.277 MHz : 4.636 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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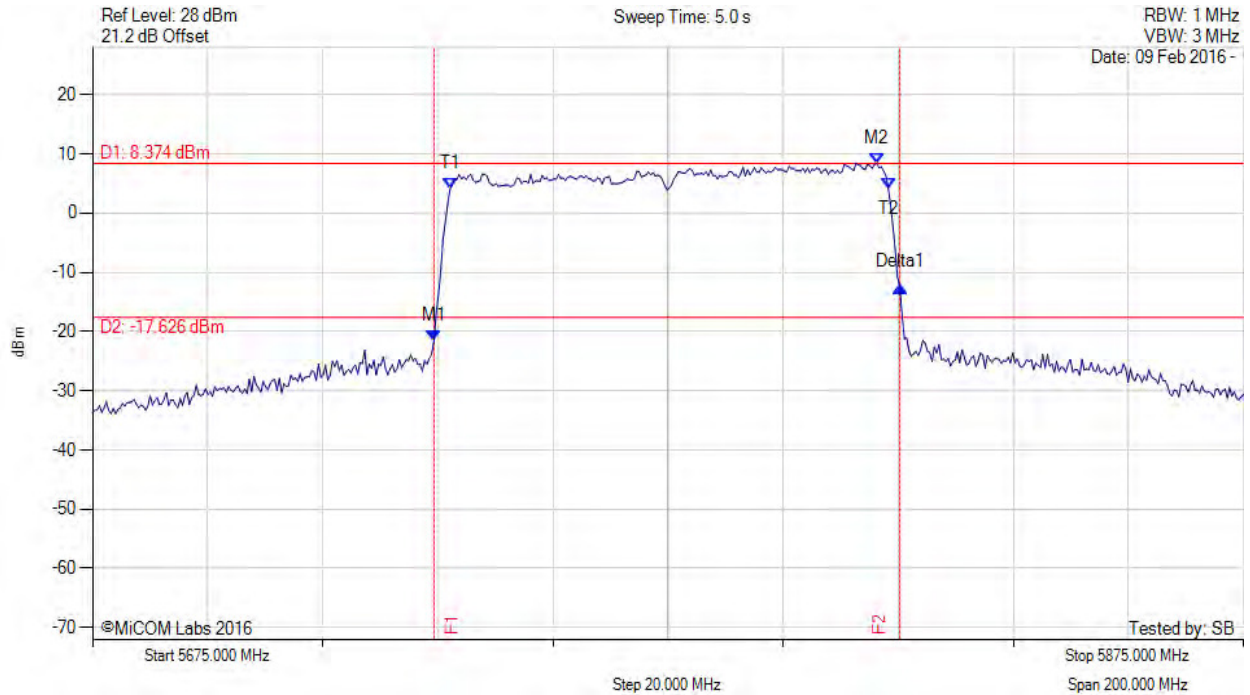
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26 dB & 99% BANDWIDTH



Variant: 802.11ac-80, Channel: 5775.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5734.319 MHz : -21.676 dBm M2 : 5811.273 MHz : 8.374 dBm Delta1 : 80.962 MHz : 9.266 dB T1 : 5737.124 MHz : 4.067 dBm T2 : 5813.277 MHz : 4.260 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.962 MHz Measured 99% Bandwidth: 76.152 MHz

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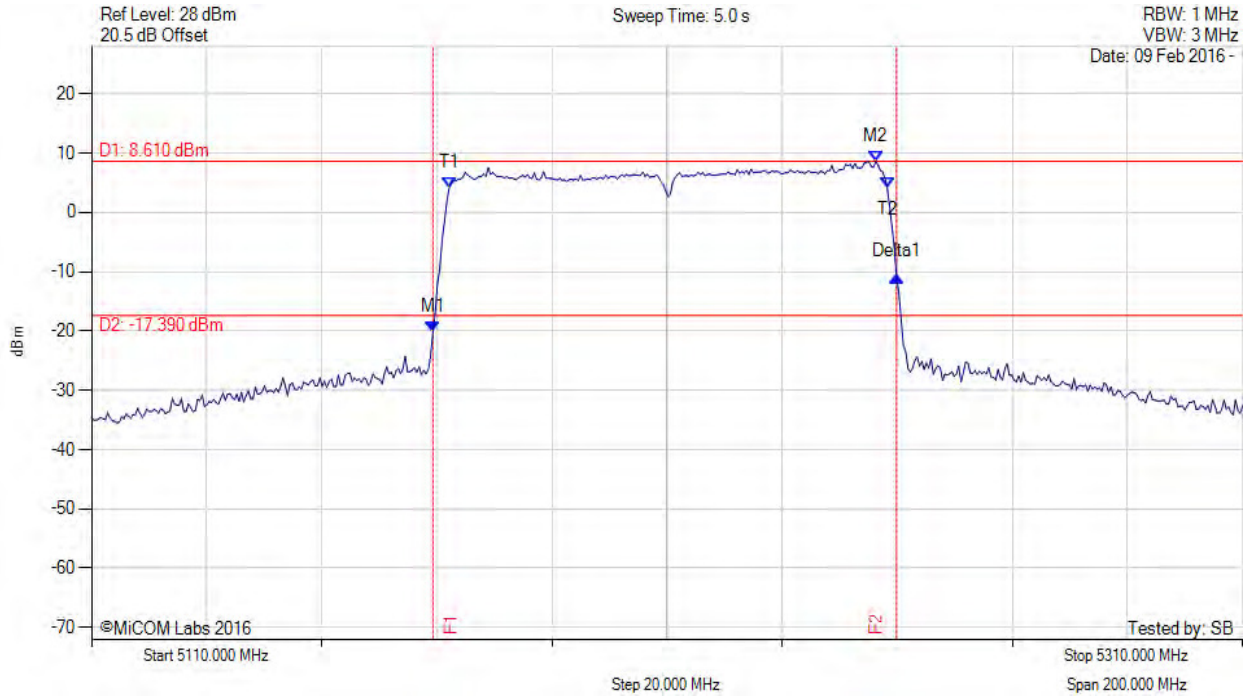


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
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26 dB & 99% BANDWIDTH



Variante: 802.11ac-80, Channel: 5210.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5169.319 MHz : -20.167 dBm M2 : 5246.273 MHz : 8.610 dBm Delta1 : 80.561 MHz : 9.329 dB T1 : 5172.124 MHz : 4.049 dBm T2 : 5248.277 MHz : 4.116 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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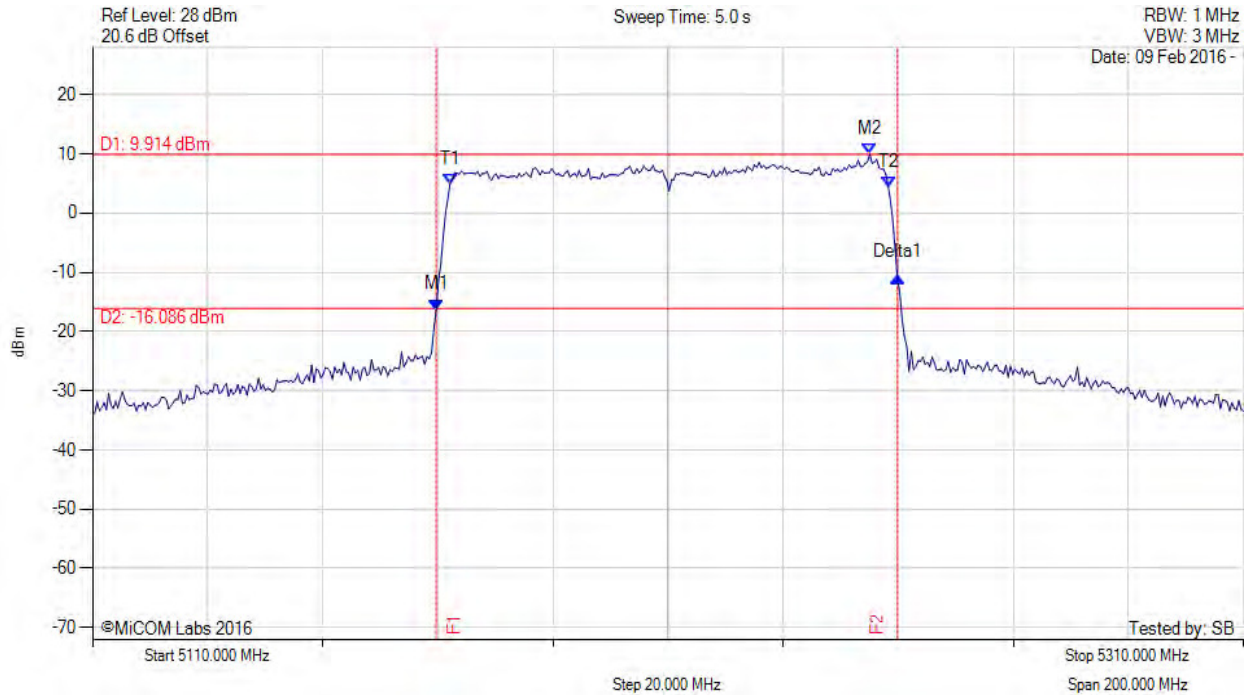
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5210.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5169.719 MHz : -16.328 dBm M2 : 5245.070 MHz : 9.914 dBm Delta1 : 80.160 MHz : 5.418 dB T1 : 5172.124 MHz : 4.921 dBm T2 : 5248.277 MHz : 4.468 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 76.152 MHz

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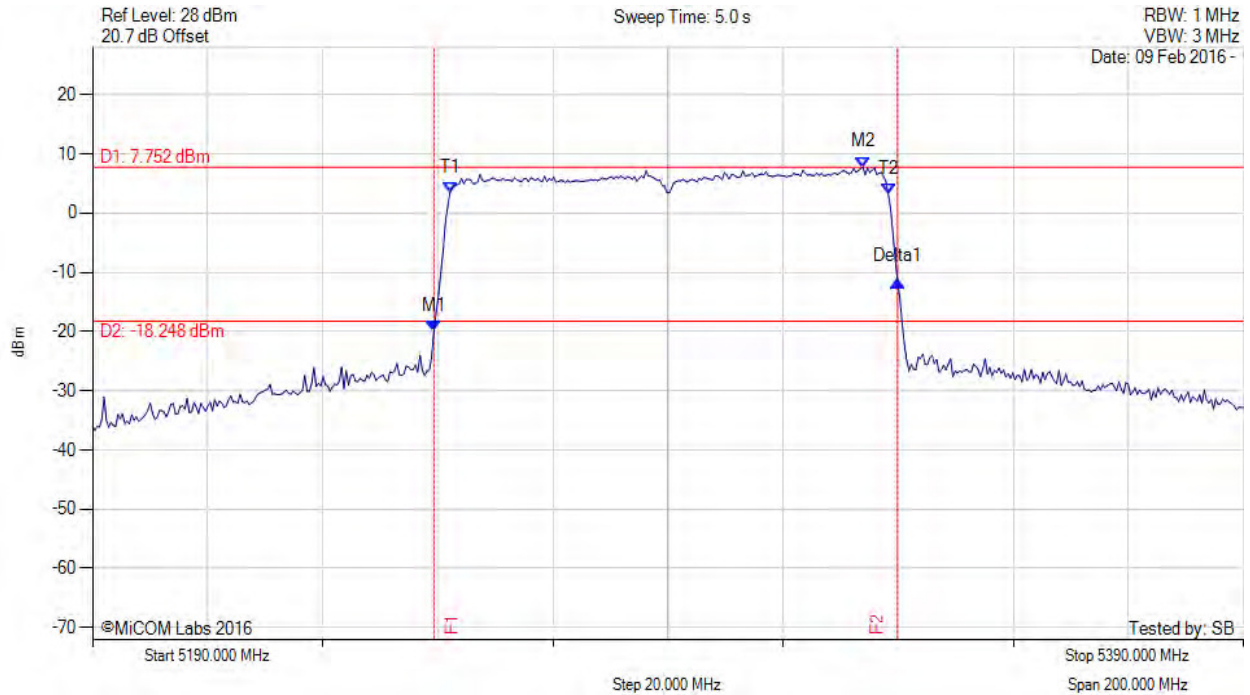


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5290.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.319 MHz : -19.970 dBm M2 : 5323.868 MHz : 7.752 dBm Delta1 : 80.561 MHz : 8.509 dB T1 : 5252.124 MHz : 3.506 dBm T2 : 5328.277 MHz : 3.298 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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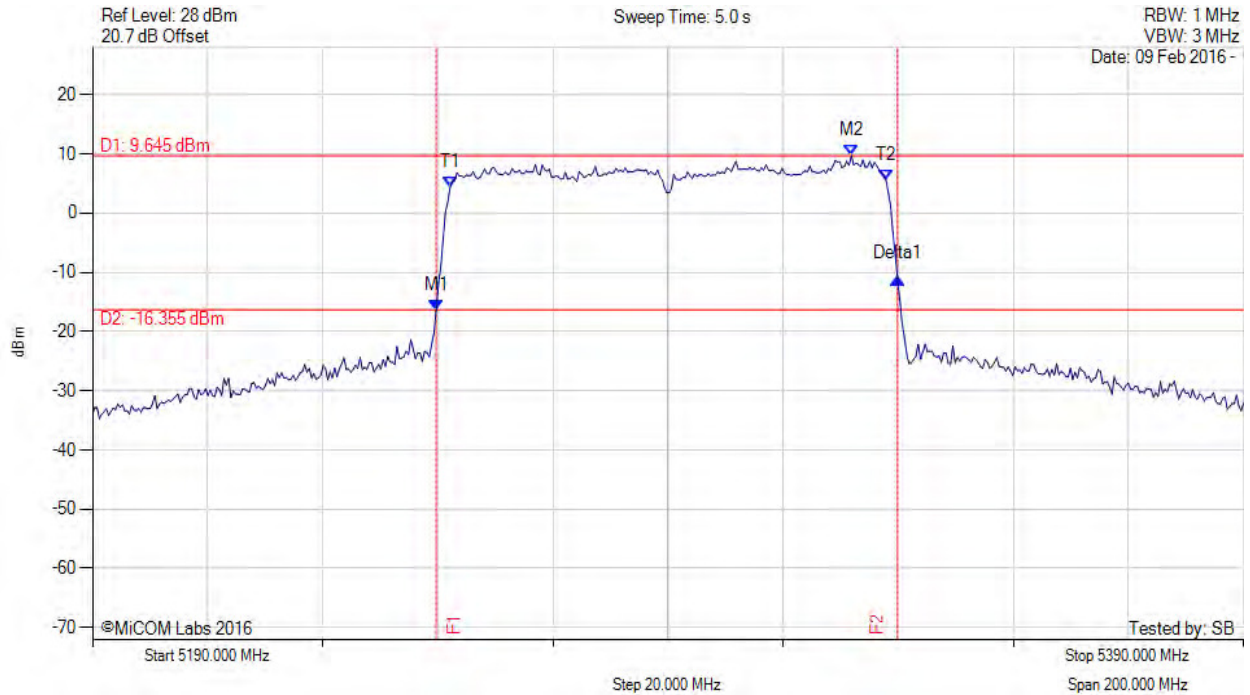
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5249.719 MHz : -16.397 dBm M2 : 5327.876 MHz : 9.645 dBm Delta1 : 80.160 MHz : 5.424 dB T1 : 5252.124 MHz : 4.266 dBm T2 : 5327.876 MHz : 5.621 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.160 MHz Measured 99% Bandwidth: 75.752 MHz

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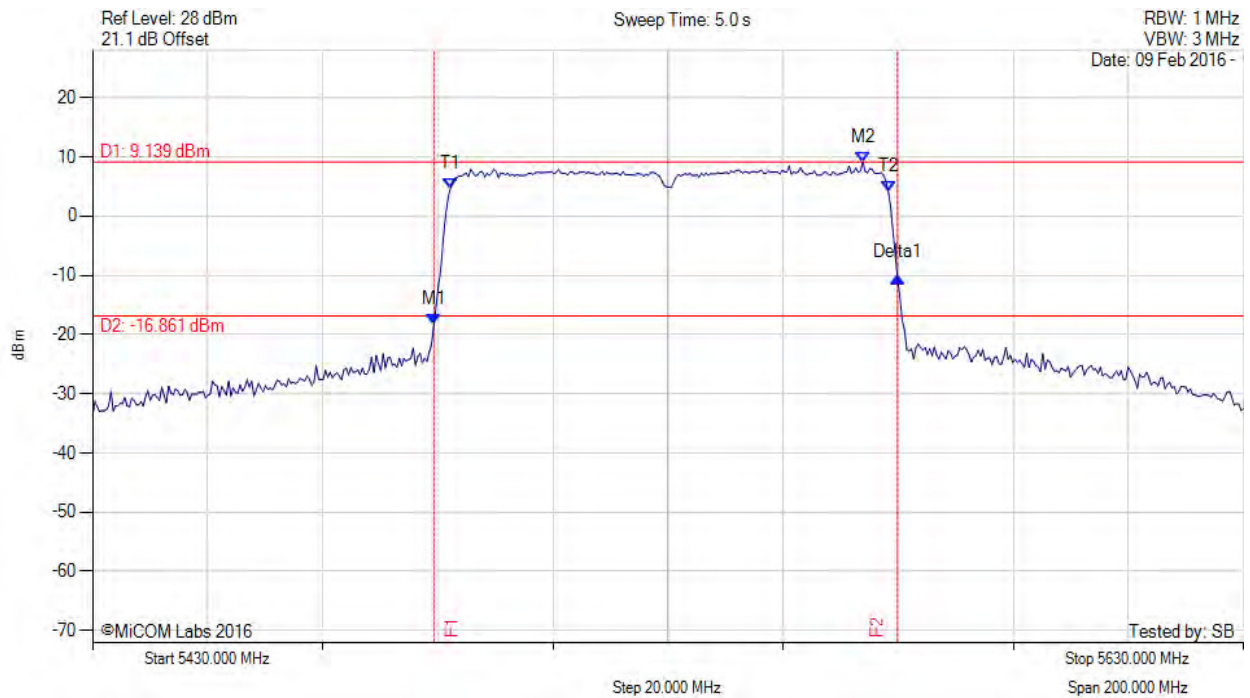
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -18.239 dBm M2 : 5563.868 MHz : 9.139 dBm Delta1 : 80.561 MHz : 7.787 dB T1 : 5492.124 MHz : 4.510 dBm T2 : 5568.277 MHz : 4.177 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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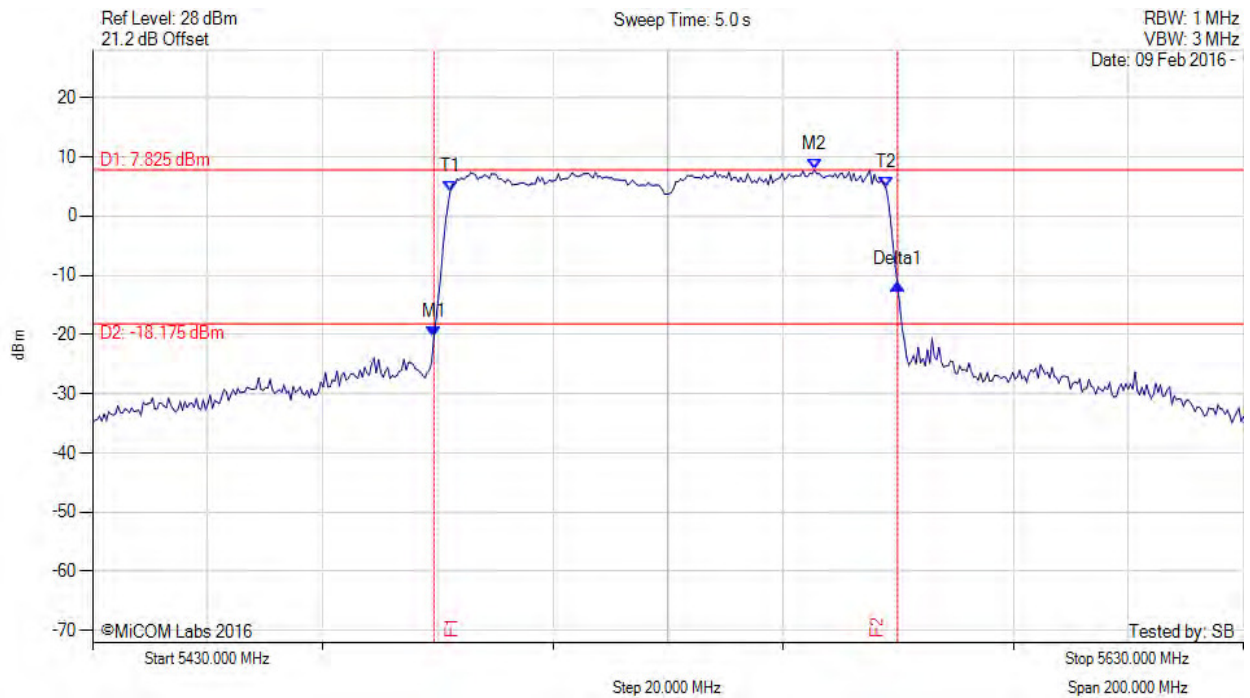
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5530.00 MHz, Chain b, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5489.319 MHz : -20.409 dBm M2 : 5555.451 MHz : 7.825 dBm Delta1 : 80.561 MHz : 8.983 dB T1 : 5492.124 MHz : 4.108 dBm T2 : 5567.876 MHz : 4.760 dBm OBW : 75.752 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 75.752 MHz

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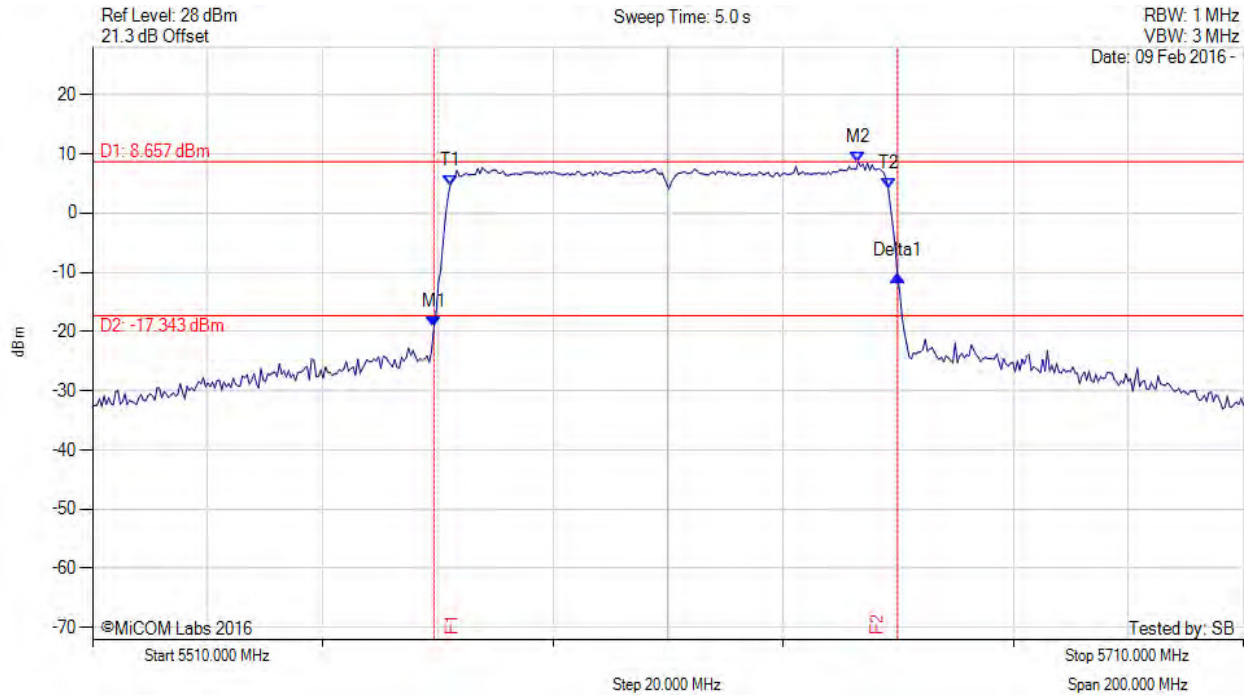
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -19.209 dBm M2 : 5643.066 MHz : 8.657 dBm Delta1 : 80.561 MHz : 8.654 dB T1 : 5572.124 MHz : 4.671 dBm T2 : 5648.277 MHz : 4.148 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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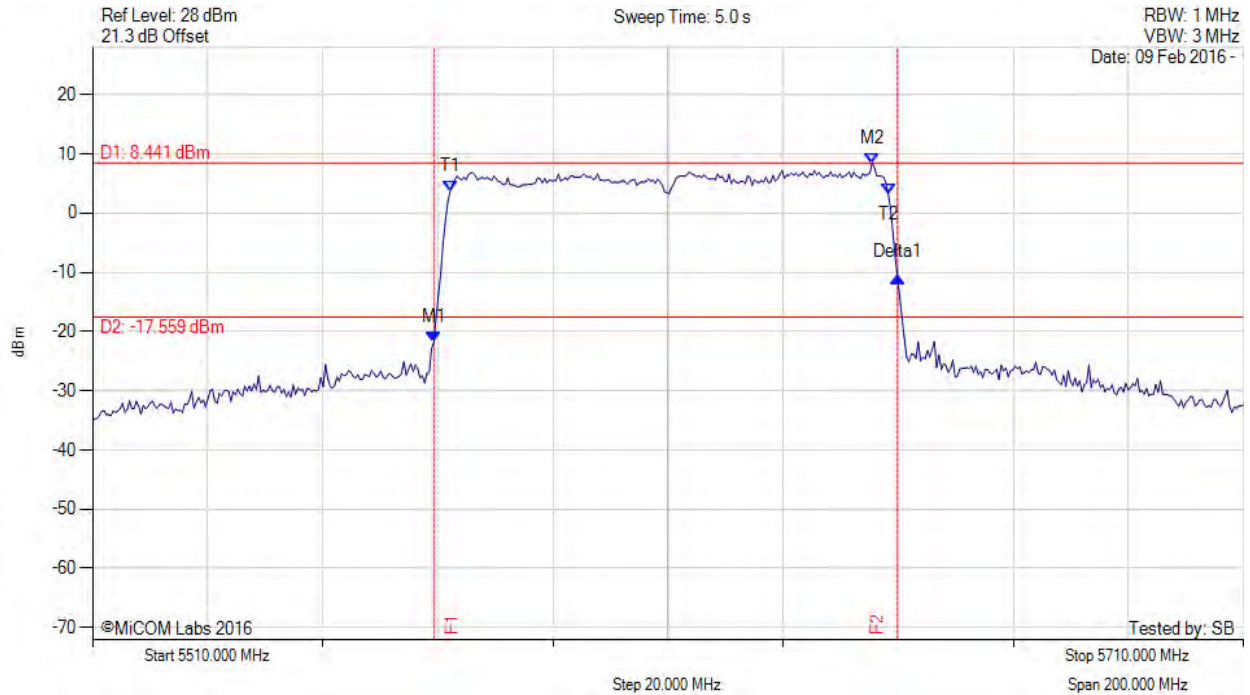
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5569.319 MHz : -21.819 dBm M2 : 5645.471 MHz : 8.441 dBm Delta1 : 80.561 MHz : 11.066 dB T1 : 5572.124 MHz : 3.634 dBm T2 : 5648.277 MHz : 3.253 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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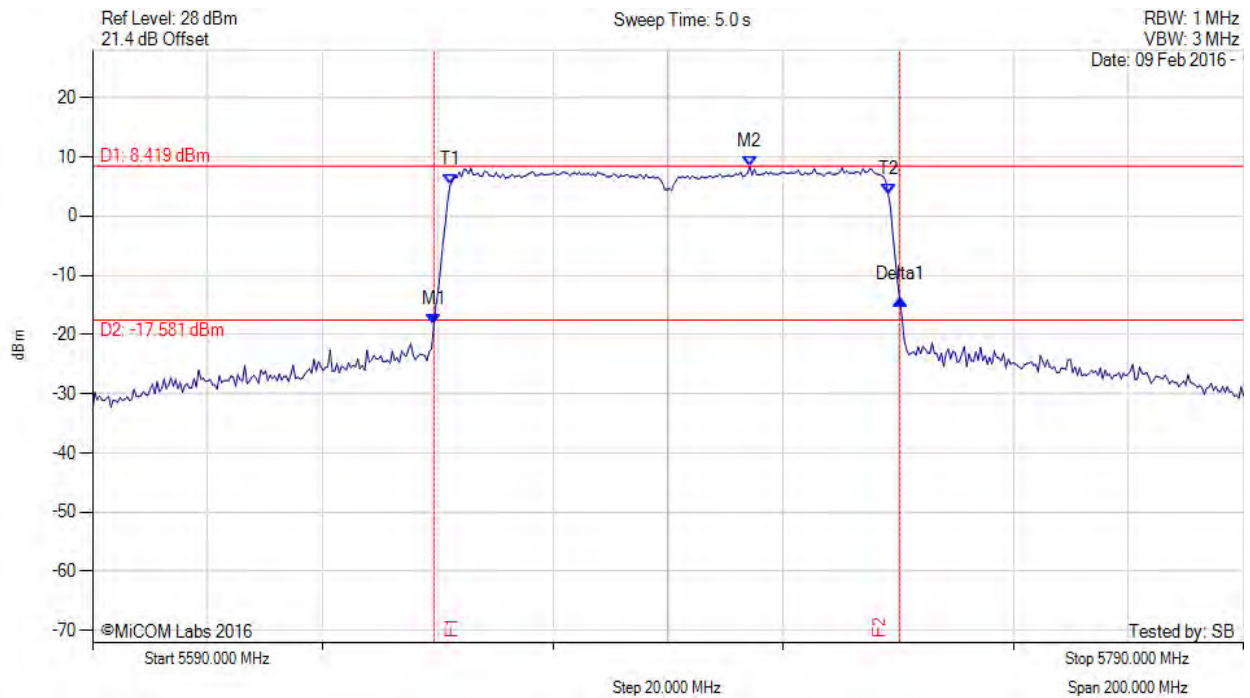
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26 dB & 99% BANDWIDTH



Variat: 802.11ac-80, Channel: 5690.00 MHz, Chain a, Temp: Ambient, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -18.227 dBm M2 : 5704.228 MHz : 8.419 dBm Delta1 : 80.962 MHz : 4.230 dB T1 : 5652.124 MHz : 5.216 dBm T2 : 5728.277 MHz : 3.739 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.962 MHz Measured 99% Bandwidth: 76.152 MHz

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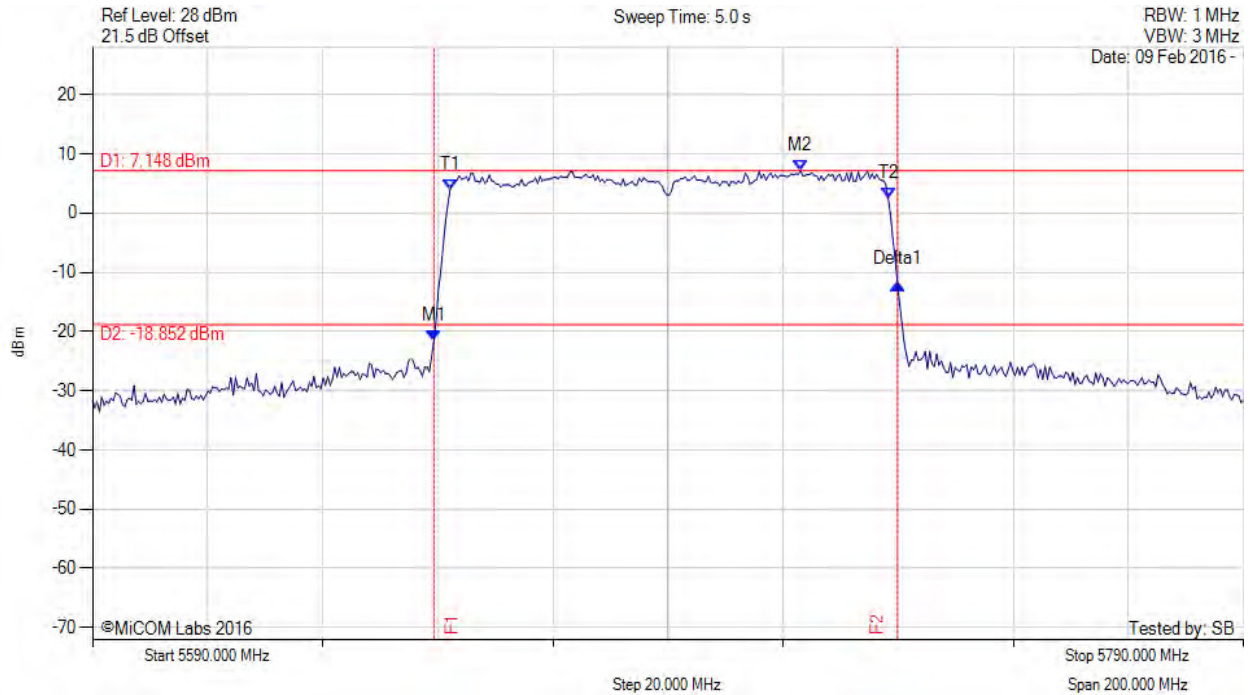
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26 dB & 99% BANDWIDTH



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



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 5649.319 MHz : -21.623 dBm M2 : 5713.046 MHz : 7.148 dBm Delta1 : 80.561 MHz : 9.711 dB T1 : 5652.124 MHz : 3.912 dBm T2 : 5728.277 MHz : 2.462 dBm OBW : 76.152 MHz	Measured 26 dB Bandwidth: 80.561 MHz Measured 99% Bandwidth: 76.152 MHz

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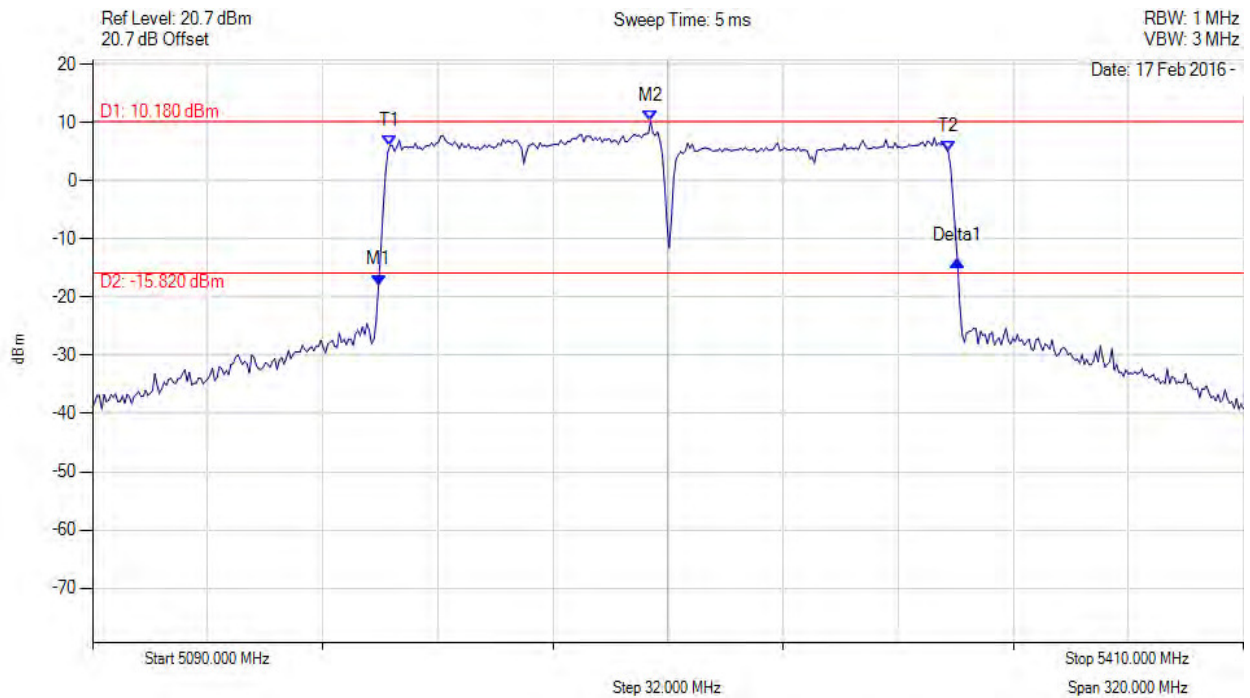
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26 dB & 99% BANDWIDTH



Variant: AC160, Channel: 5250.00 MHz, A+B, Temp: 20C, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 5169.519 MHz : -17.900 dBm M2 : 5245.190 MHz : 10.182 dBm Delta1 : 160.962 MHz : 4.131 dB T1 : 5172.725 MHz : 6.039 dBm T2 : 5327.916 MHz : 4.971 dBm OBW : 155.190 MHz	Channel Frequency: 5250.00 MHz

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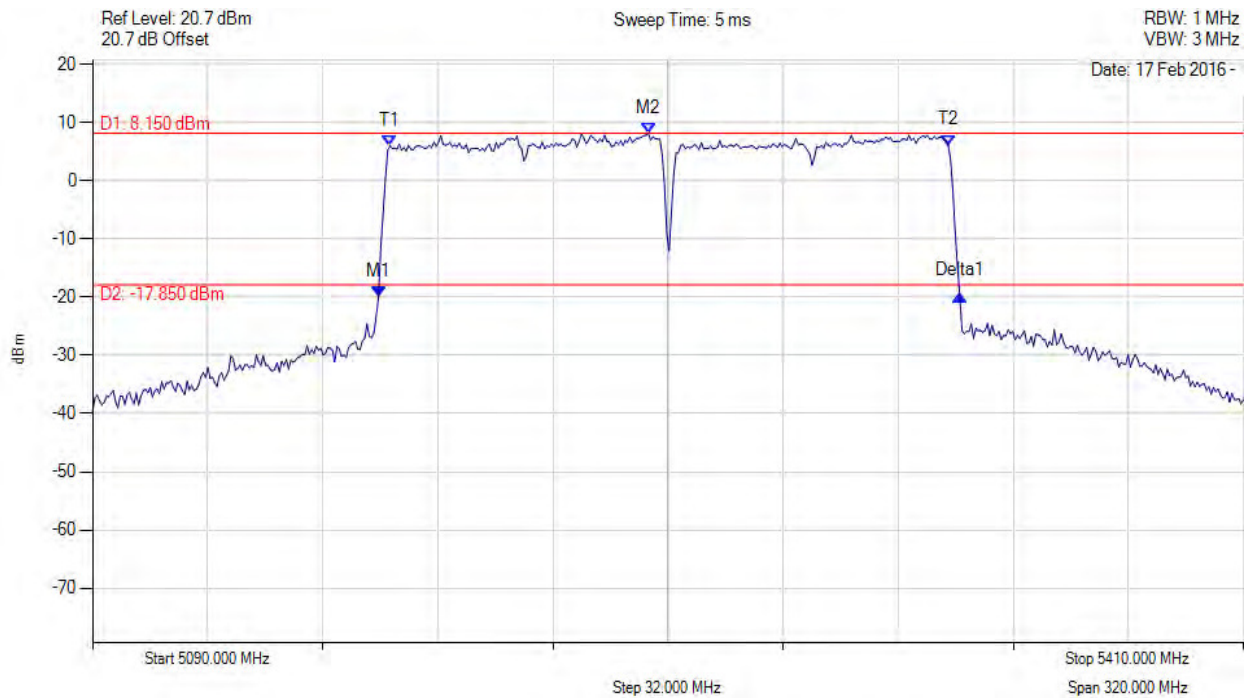
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26 dB & 99% BANDWIDTH



Variant: AC160, Channel: 5250.00 MHz, C+D, Temp: 20C, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 5169.519 MHz : -19.873 dBm M2 : 5244.549 MHz : 8.148 dBm Delta1 : 161.603 MHz : 0.081 dB T1 : 5172.725 MHz : 5.937 dBm T2 : 5327.916 MHz : 6.102 dBm OBW : 155.190 MHz	Channel Frequency: 5250.00 MHz

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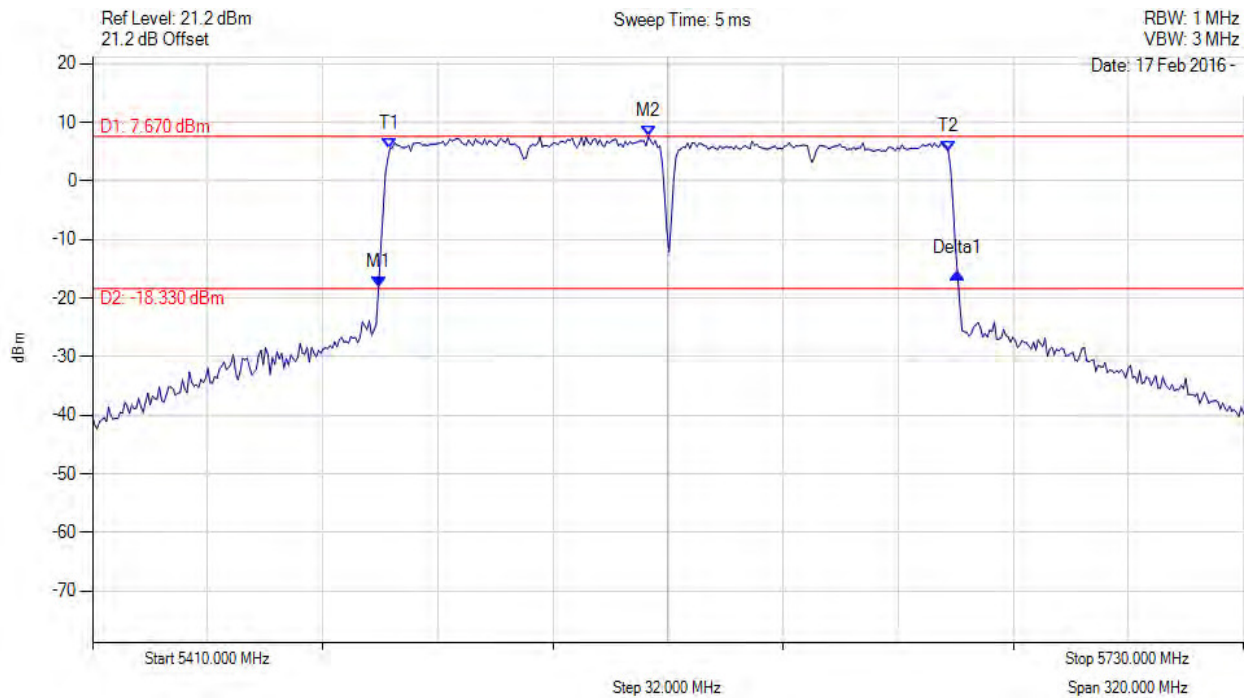
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26 dB & 99% BANDWIDTH



Variant: AC160, Channel: 5570.00 MHz, A+B, Temp: 20C, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = VIEW	M1 : 5489.499 MHz : -18.145 dBm M2 : 5564.549 MHz : 7.672 dBm Delta1 : 160.962 MHz : 2.445 dB T1 : 5492.725 MHz : 5.587 dBm T2 : 5647.916 MHz : 5.091 dBm OBW : 155.190 MHz	Channel Frequency: 5570.00 MHz

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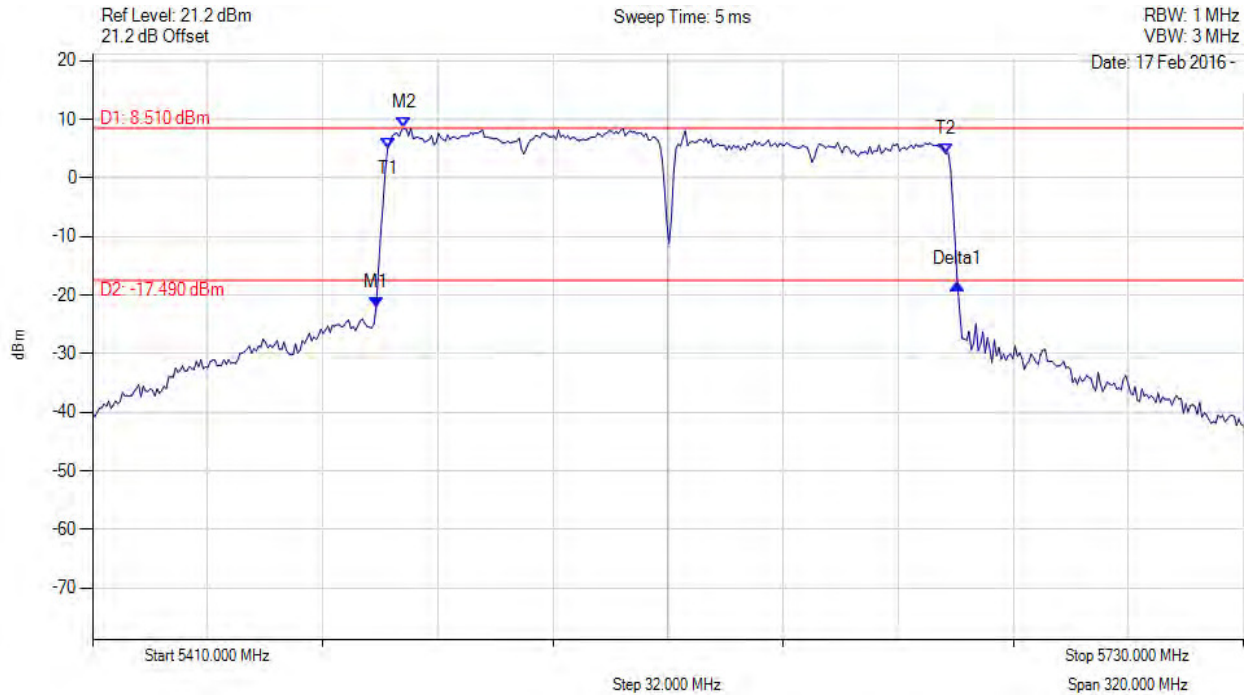


Title: Aruba Networks APIN0334, APIN0335
To: FCC CFR 47 Part 15 Subpart E 15.407 (DFS Bands)
Serial #: ARUB196-U10_Conducted Addendum Rev A
Issue Date: 17th June 2016
Page: 157 of 283

26 dB & 99% BANDWIDTH



Variant: AC160, Channel: 5570.00 MHz, C+D, Temp: 20C, Voltage: 48 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 10 Trace Mode = MAX HOLD	M1 : 5488.858 MHz : -22.029 dBm M2 : 5496.573 MHz : 8.508 dBm Delta1 : 161.603 MHz : 3.854 dB T1 : 5492.084 MHz : 5.146 dBm T2 : 5647.275 MHz : 4.107 dBm OBW : 155.190 MHz	Channel Frequency: 5570.00 MHz

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