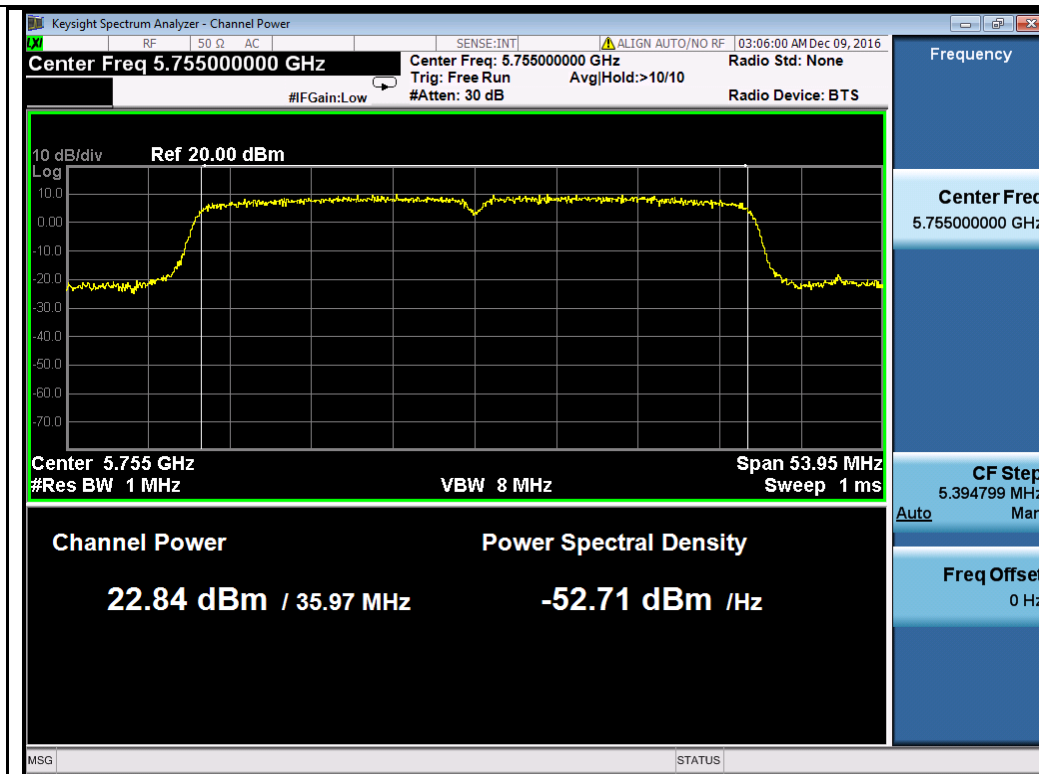
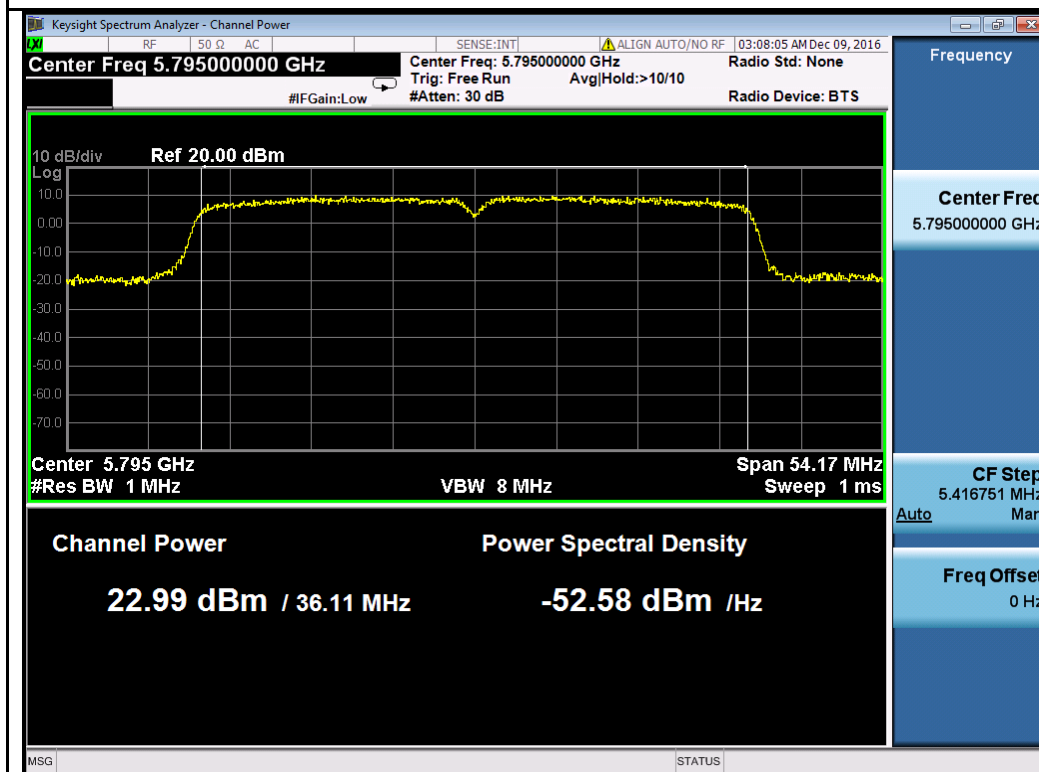
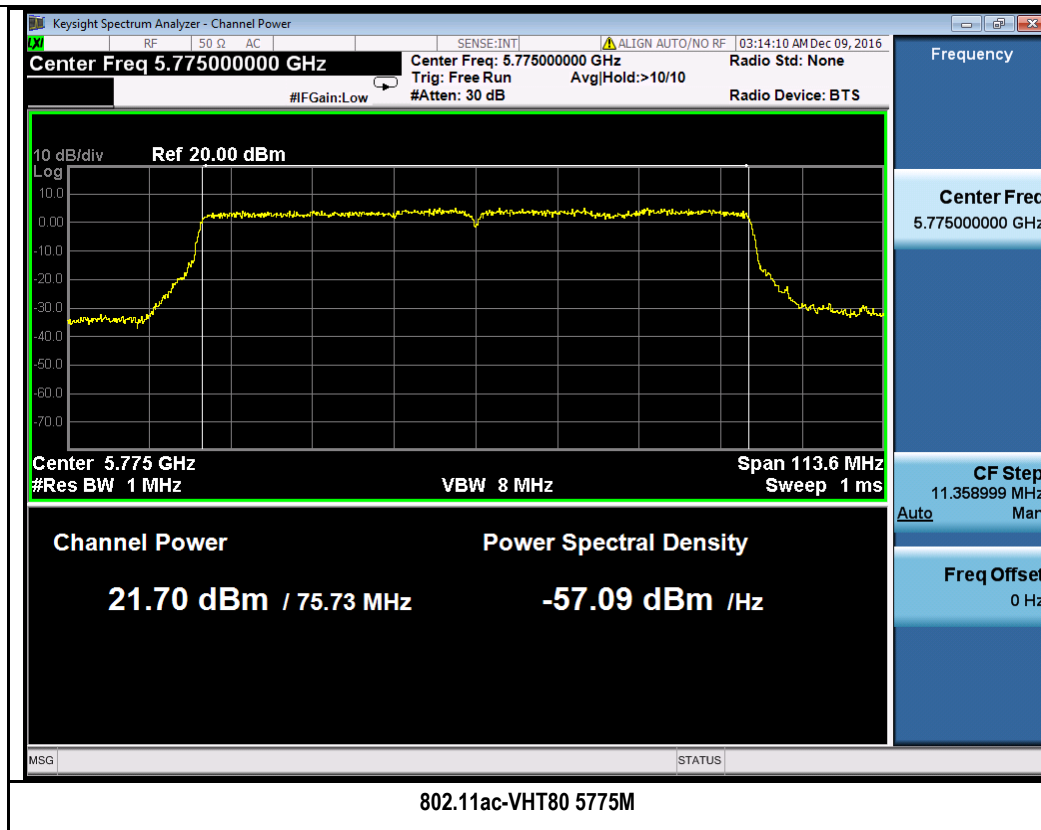




802.11n-HT40 5755M

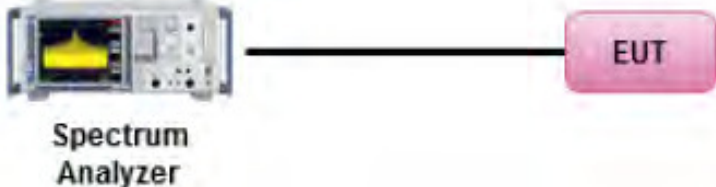


802.11n-HT40 5795M



10.4 Peak Spectral Density

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.407	a)(1)(i)	For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.	☒
	a)(3)	For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.	☒
Test Setup			
Test Procedure	789033 D02 General UNII Test Procedures New Rules v01r02, II.F. Method SA-1 <u>Maximum spectral density measurement procedure</u> - Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal. - Set RBW = 1 MHz - Set VBW ≥ 3 MHz - Detector = RMS. - Sweep time = auto couple. - Trace mode = max hold. - Trace average at least 100 traces in power averaging - Use the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.		
Test Date	12/05/2016 – 12/20/2016	Environmental condition	Temperature 22°C Relative Humidity 42% Atmospheric Pressure 1020mbar
Remark	Per KDB 662911 D01 Multiple Transmitter Output v02r01, the direction gain for horizontal polarization and vertical polarization is calculated separately. For 5GHz band, peak antenna gain = 3.5 dBi, directional gain = 3 dB, total gain = 6.5 dBi. Highest of total gain is 6.5 dBi. The power limit and PSD limit will be reduced by amount of 0.5 dB.		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Shuo Zhang at RF test site.

PSD measurement result for 5.2GHz

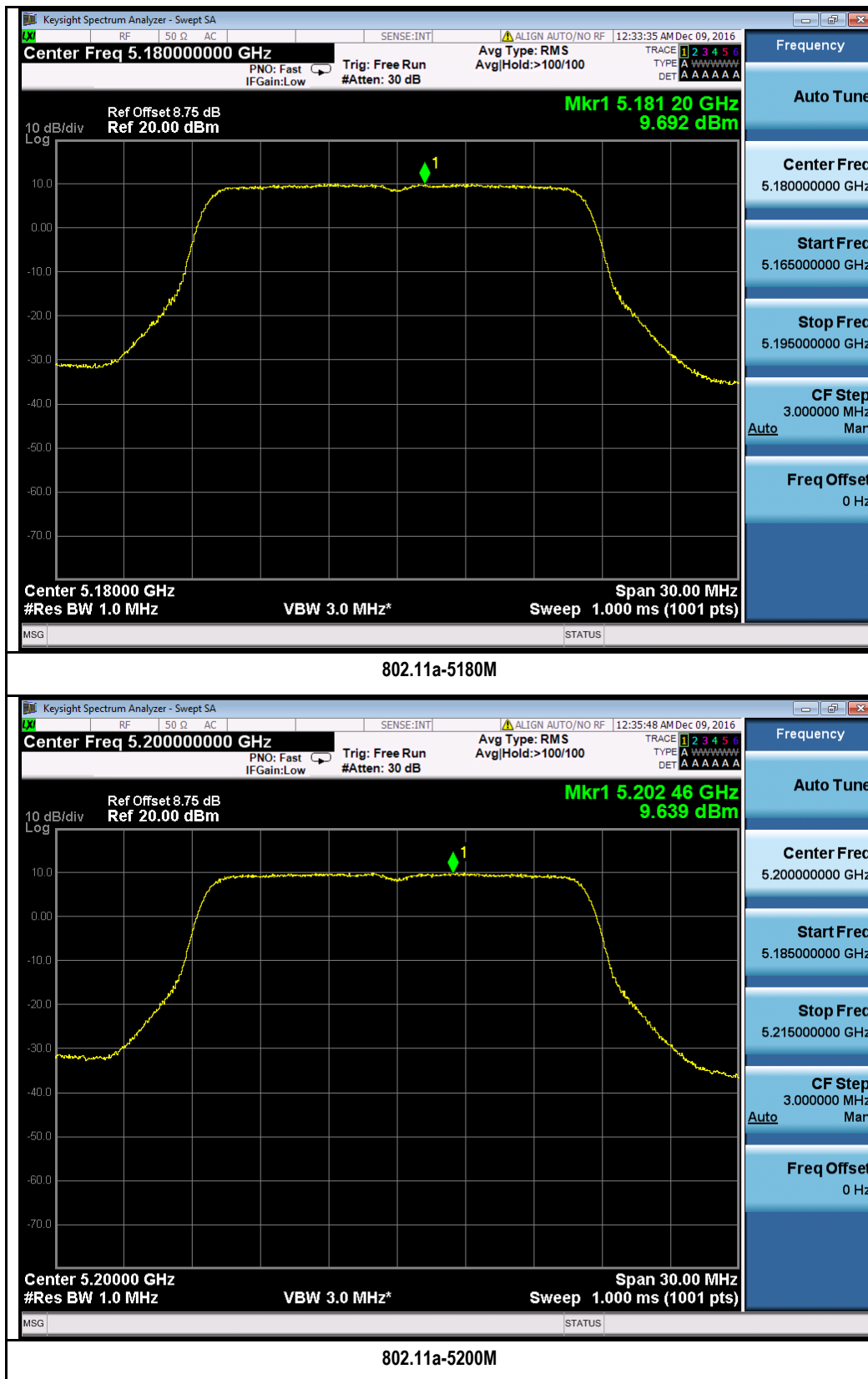
Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/MHz)					Limit (dBm/MHz)	Result
				Chain1	Chain2	Chain3	Chain4	Combined		
PSD	802.11a	5180	Low	9.69	10.25	9.61	9.94	15.90	16.5	Pass
		5200	Mid	9.64	10.06	9.75	9.58	15.78	16.5	Pass
		5240	High	10	10.41	9.64	9.74	15.98	16.5	Pass
	802.11n-20	5180	Low	9.28	9.78	9.17	9.53	15.47	16.5	Pass
		5200	Mid	9.18	9.75	9.29	9.5	15.46	16.5	Pass
		5240	High	9.46	9.5	9.38	9.47	15.47	16.5	Pass
	802.11n-40	5190	Low	6.65	6.68	6.69	6.78	12.72	16.5	Pass
		5230	High	8.42	8.89	9.19	8.7	14.83	16.5	Pass
	802.11ac-80	5210	Mid	3.22	3.31	3.25	3.13	9.25	16.5	Pass

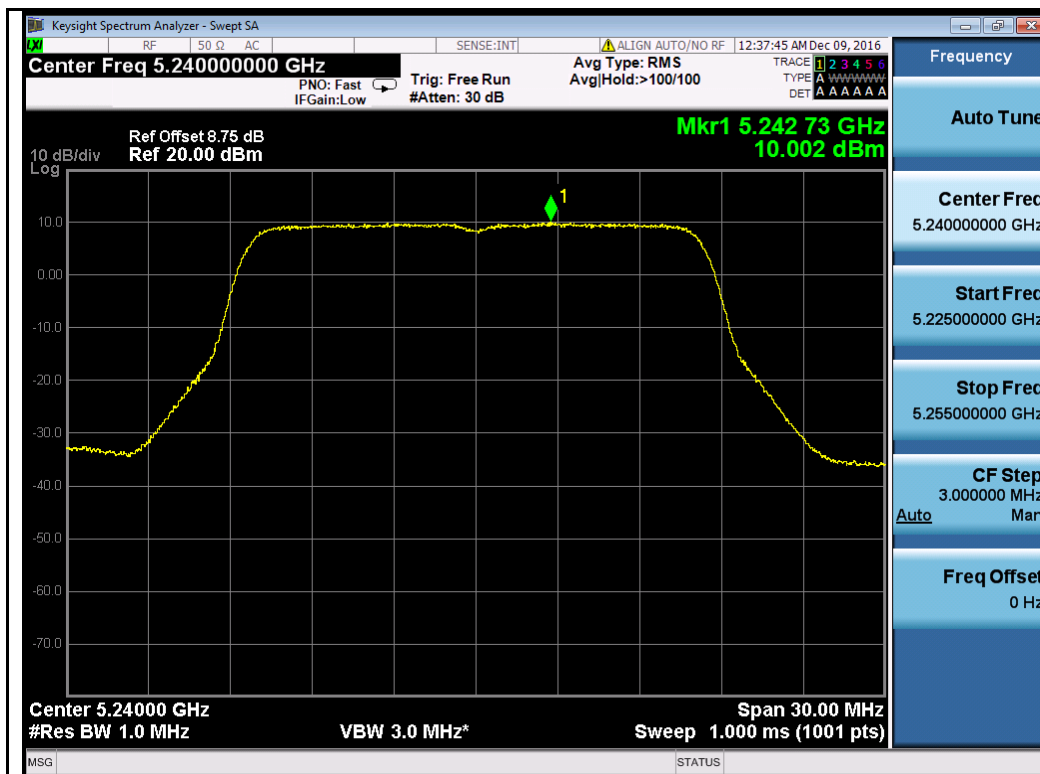
PSD measurement result for 5.8GHz

Test mode	Freq (MHz)	CH	Conducted PSD (dBm/100kHz)					Correction factor (dB)	PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Result
			Chain1	Chain2	Chain3	Chain4	Combined				
802.11a	5745	Low	2.31	2.84	2.71	2.45	8.60	6.99	15.59	29.5	Pass
	5785	Mid	2.32	2.93	2.58	2.34	8.57	6.99	15.56	29.5	Pass
	5825	High	2.73	3.08	2.94	2.76	8.90	6.99	15.89	29.5	Pass
802.11n-20	5745	Low	1.77	2.29	2.89	2.90	8.51	6.99	15.50	29.5	Pass
	5785	Mid	2.02	2.90	2.33	2.63	8.50	6.99	15.49	29.5	Pass
	5825	High	2.04	2.72	2.77	2.61	8.57	6.99	15.56	29.5	Pass
802.11n-40	5755	Low	-0.41	-0.30	-0.03	-0.53	5.71	6.99	12.70	29.5	Pass
	5795	High	-0.65	-0.03	0.2	-0.38	5.82	6.99	12.81	29.5	Pass
802.11ac-80	5775	Mid	-4.67	-4.81	-3.91	-5.30	1.38	6.99	8.37	29.5	Pass
Note	BW correction factor = $10\log(500\text{kHz}/\text{RBW})$, RBW was set to 100kHz during test.										

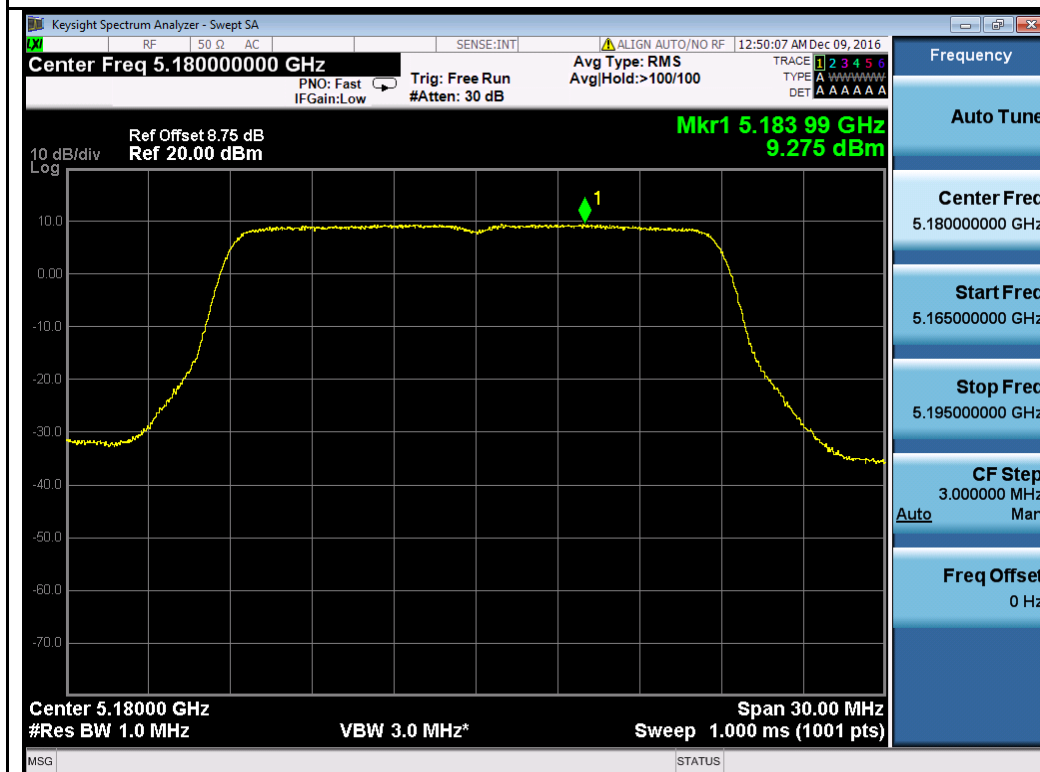
Test Plot for W52:

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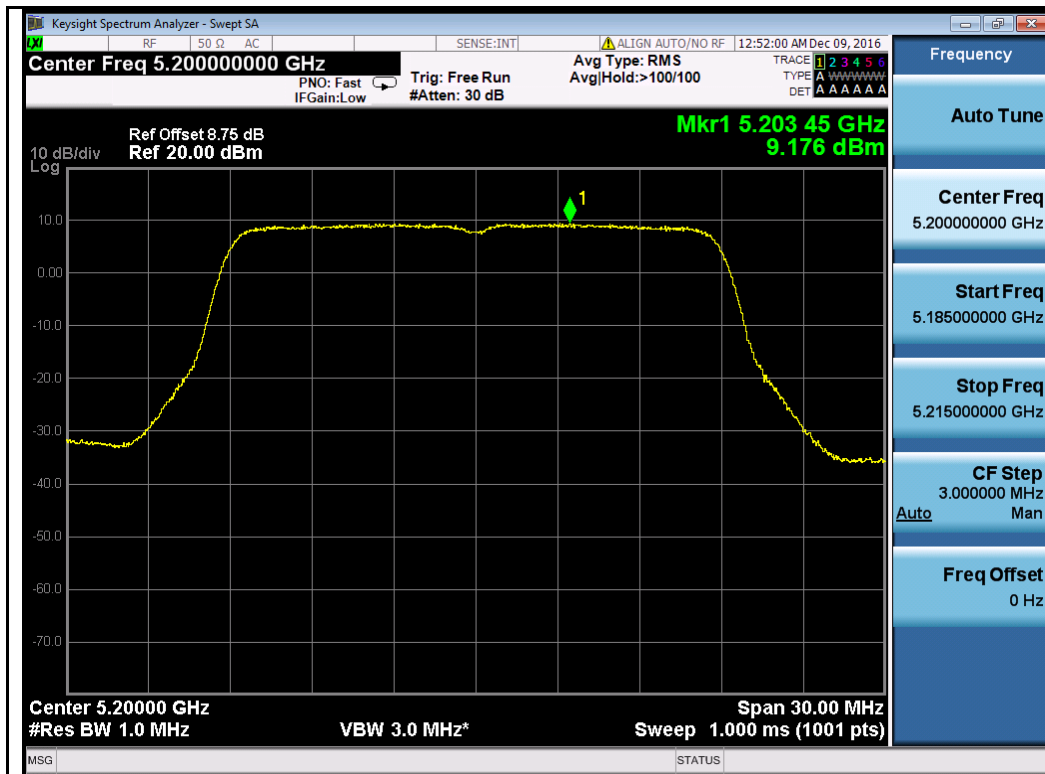




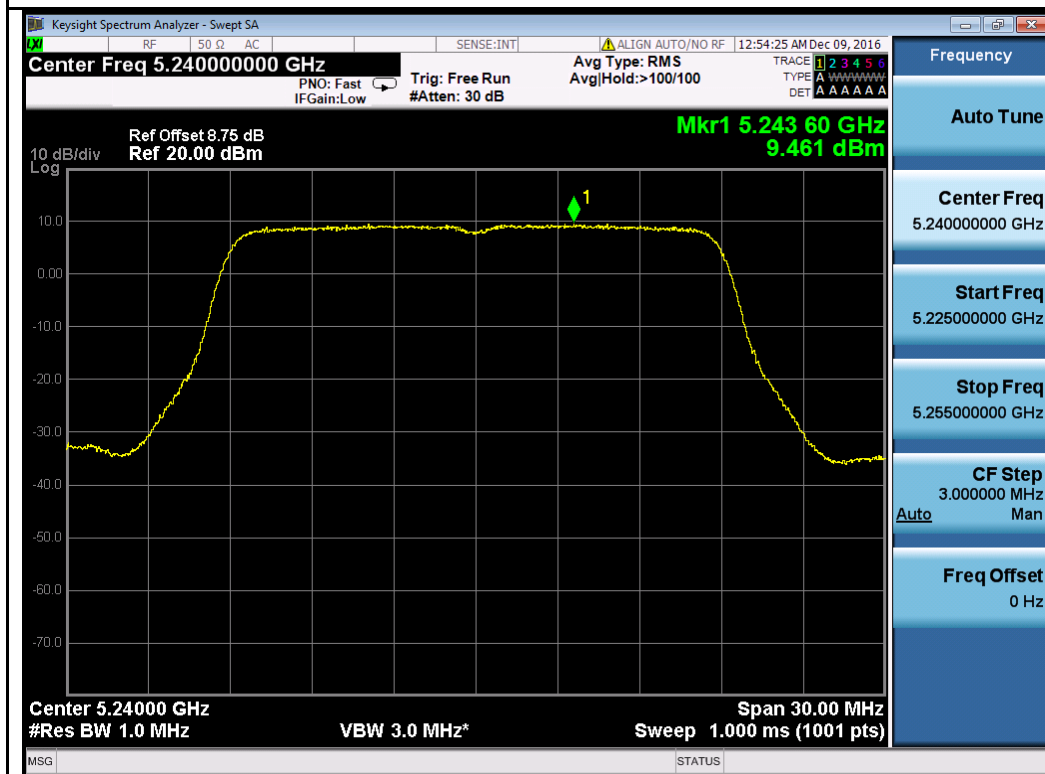
802.11a-5240M



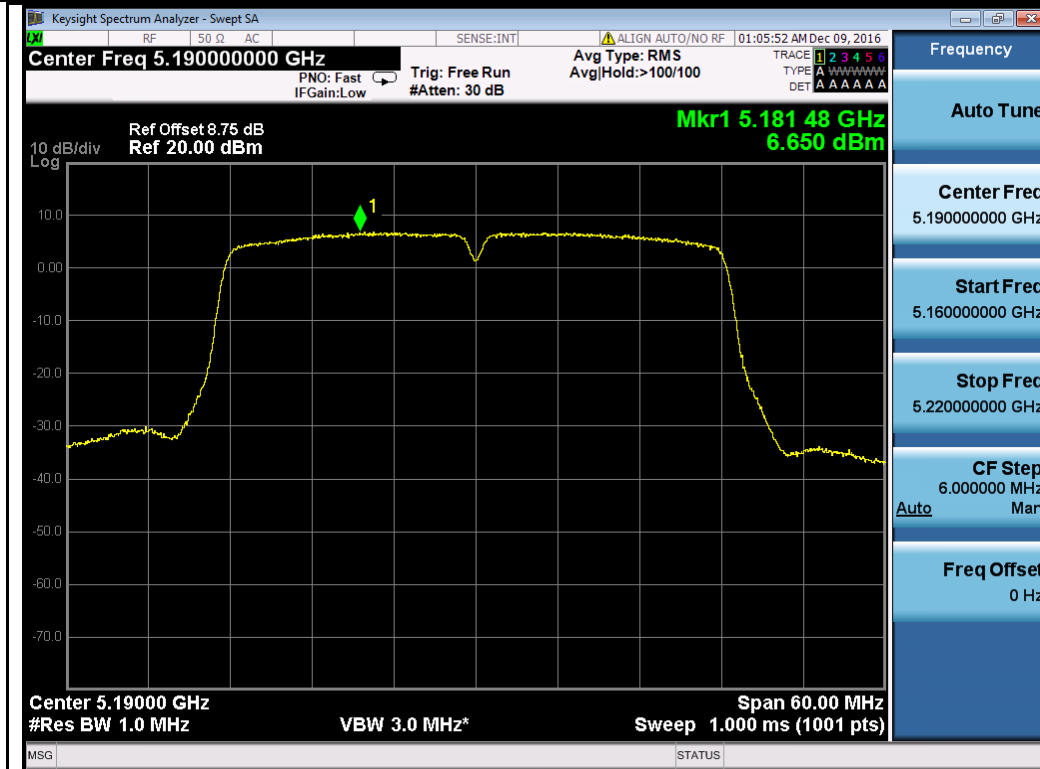
802.11n-HT20 5180M



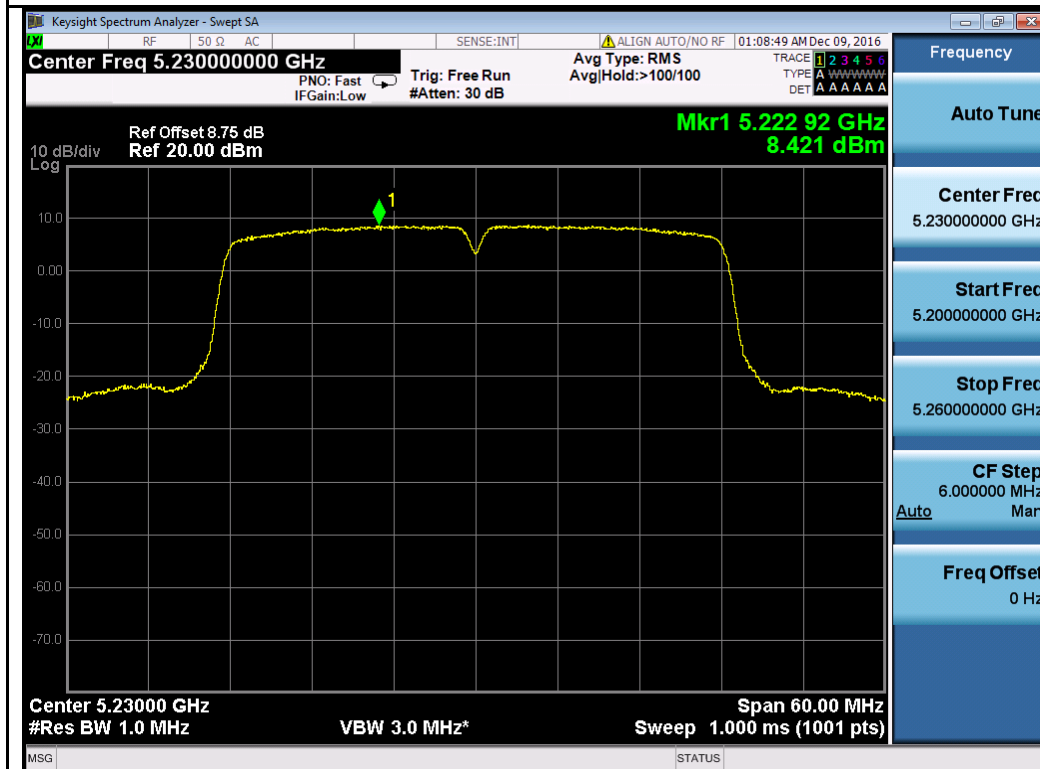
802.11n-HT20 5200M



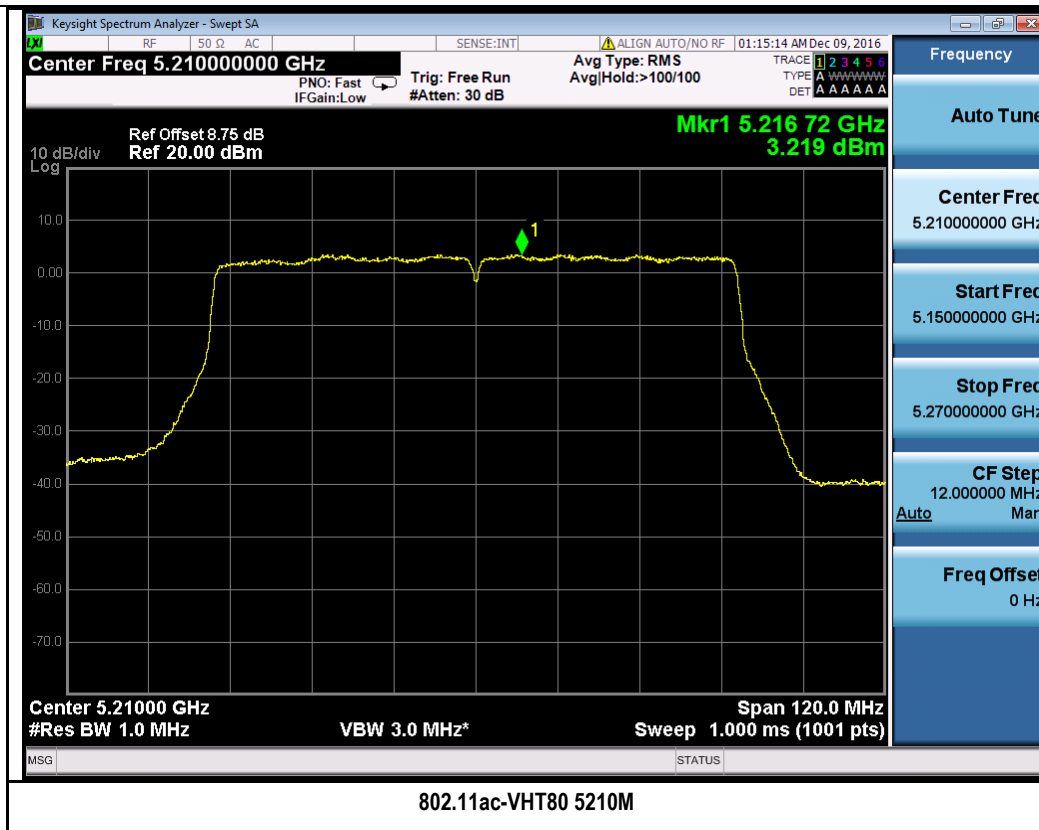
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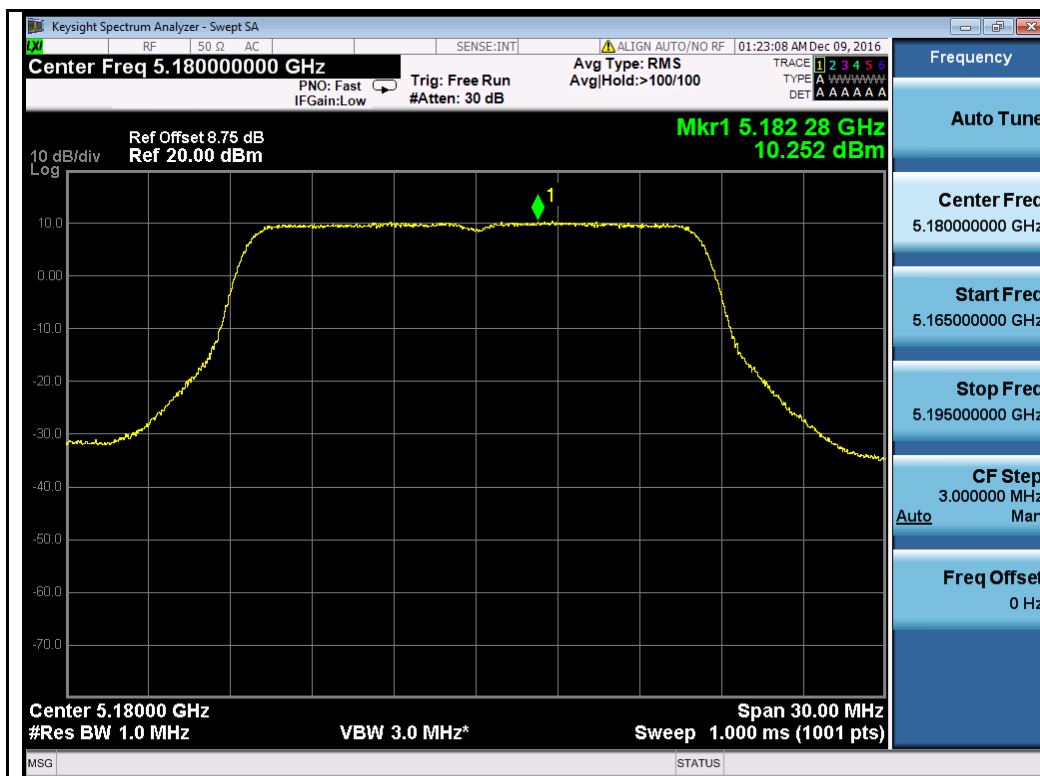
802.11n-HT40 5190M



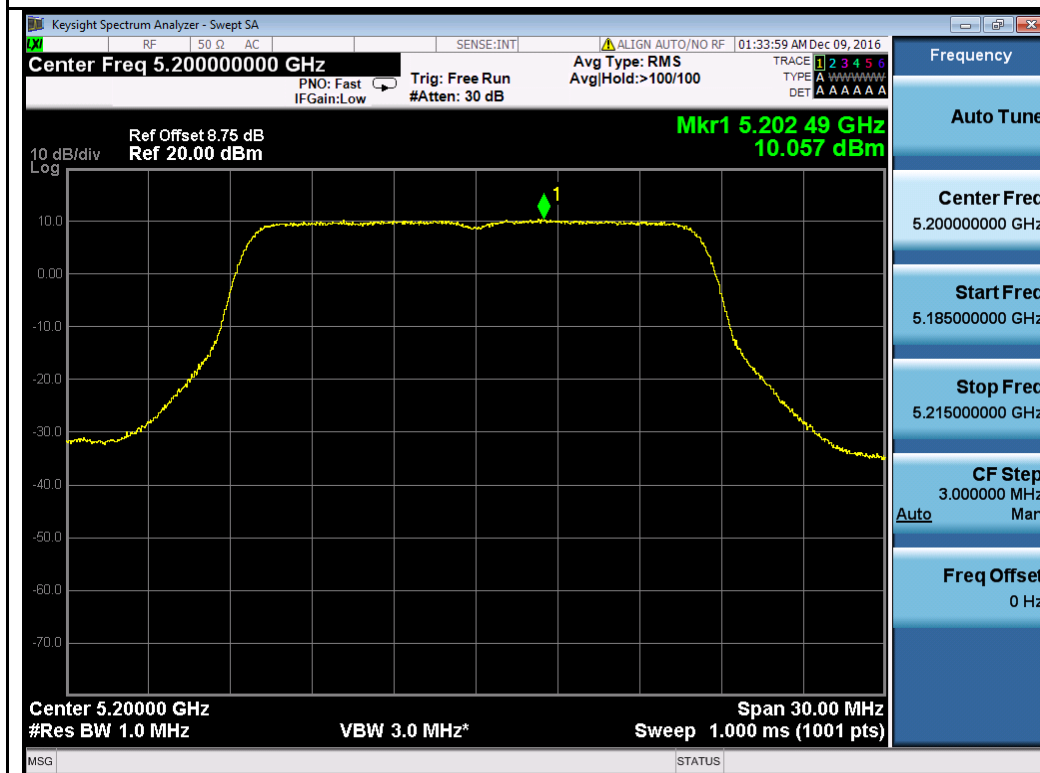
802.11n-HT40 5230M



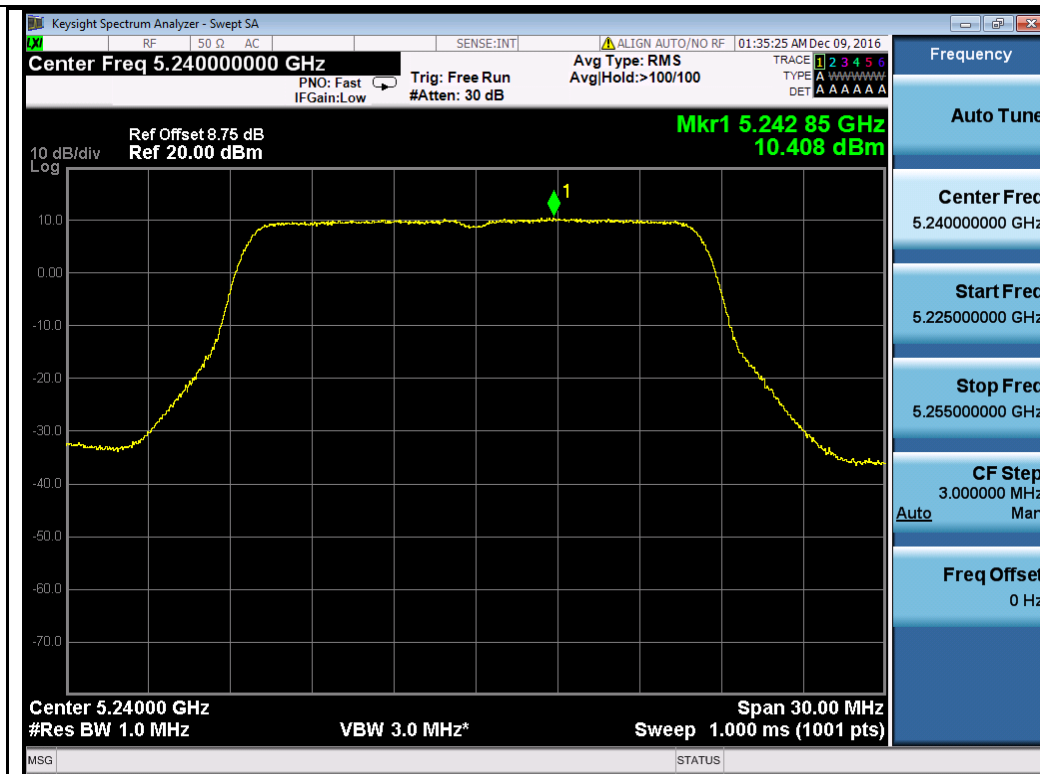
Chain 2:



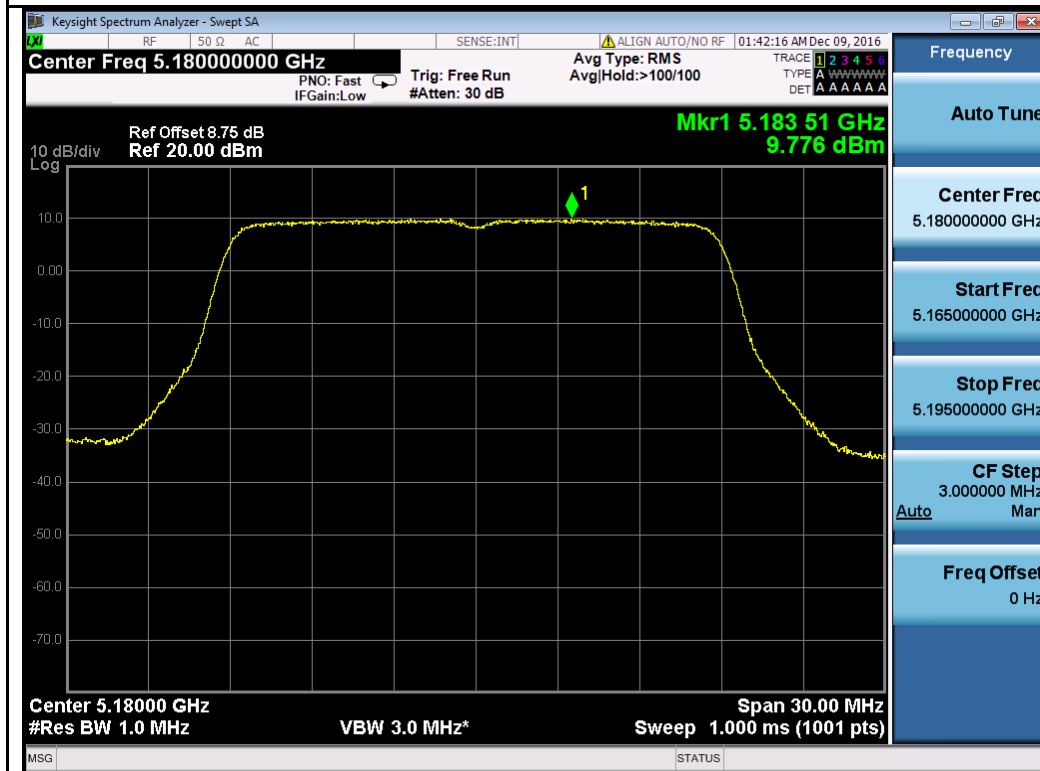
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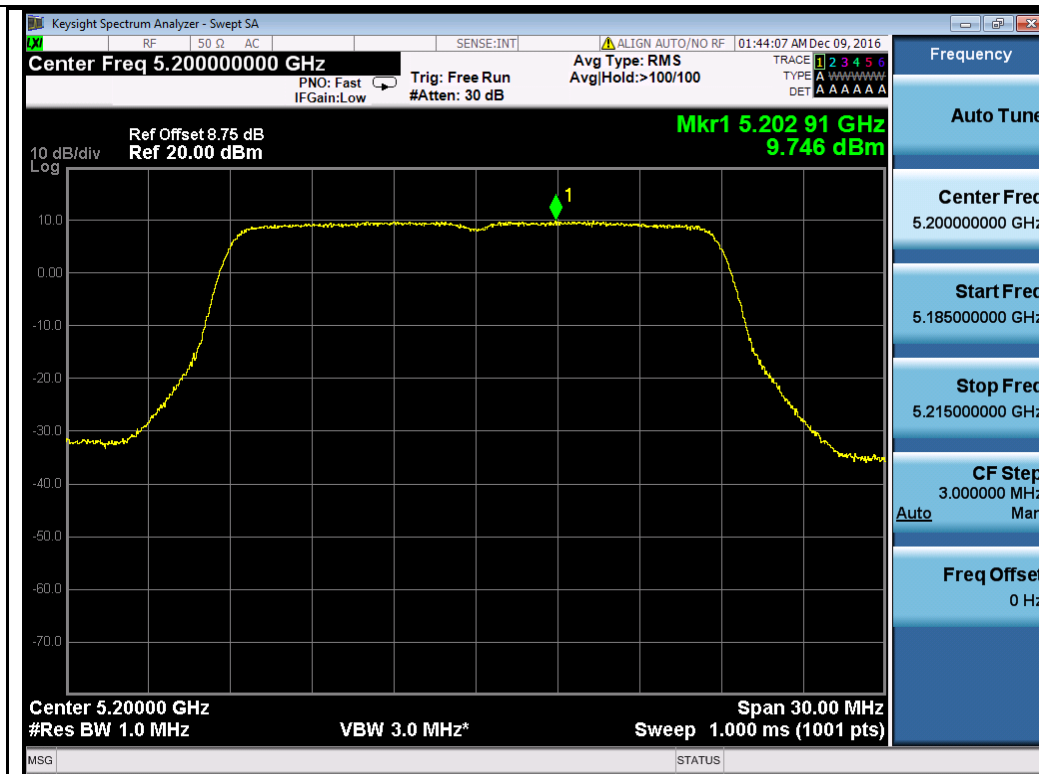
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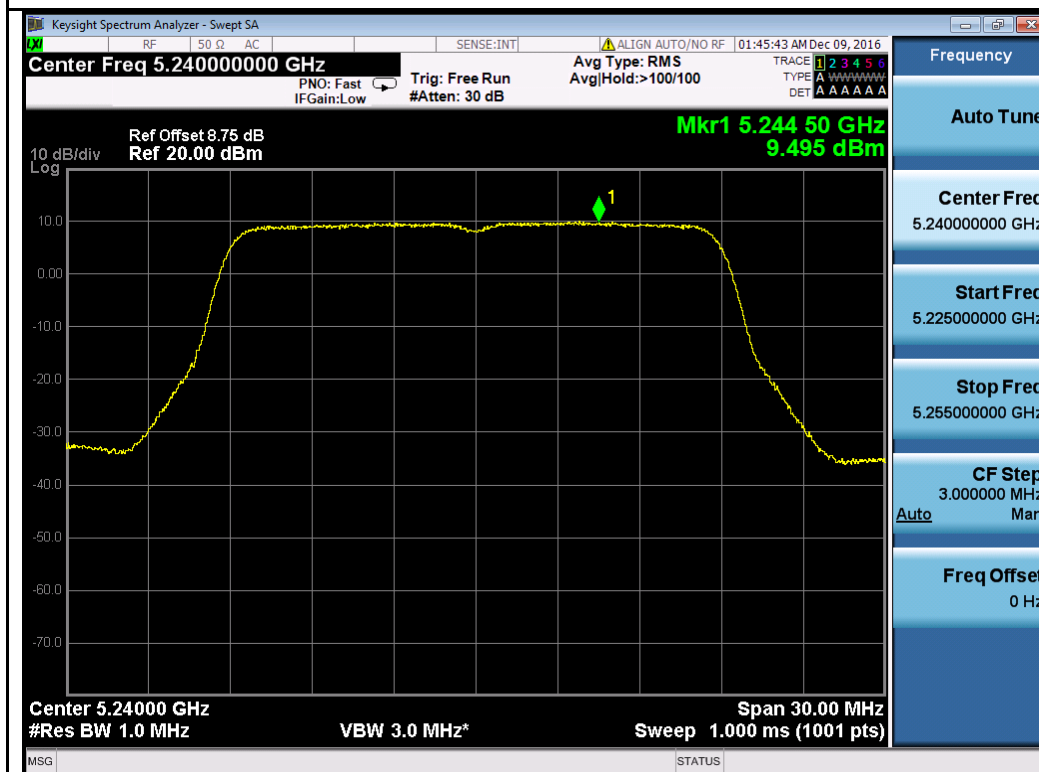
802.11a-5240M



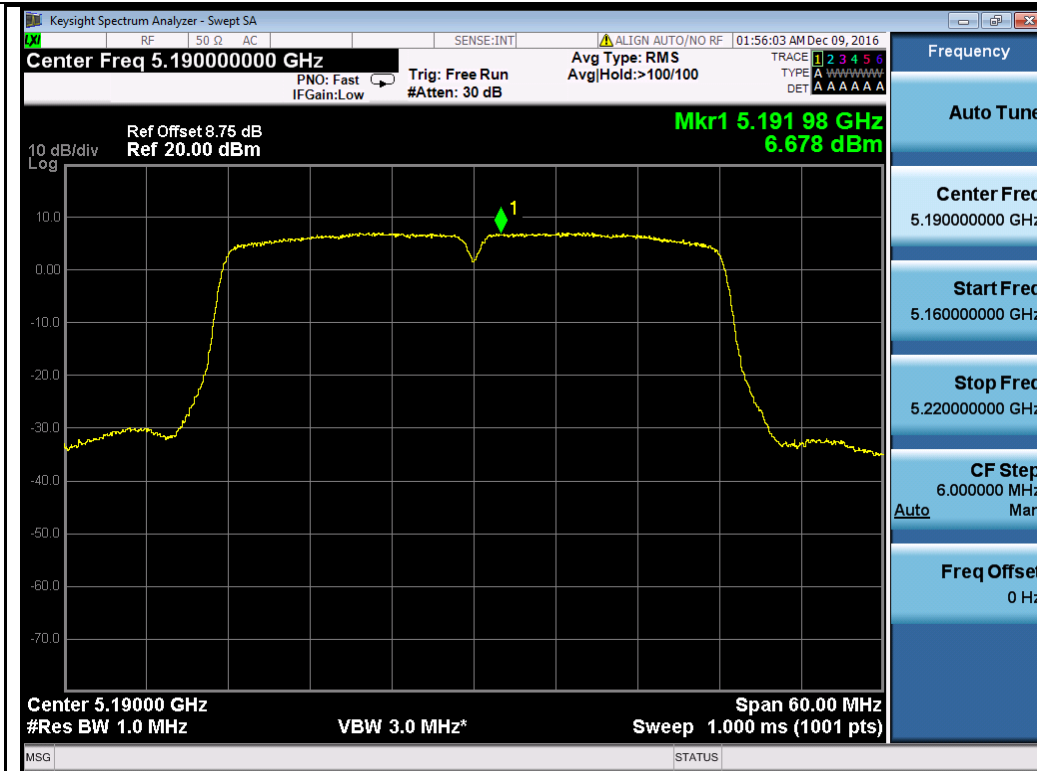
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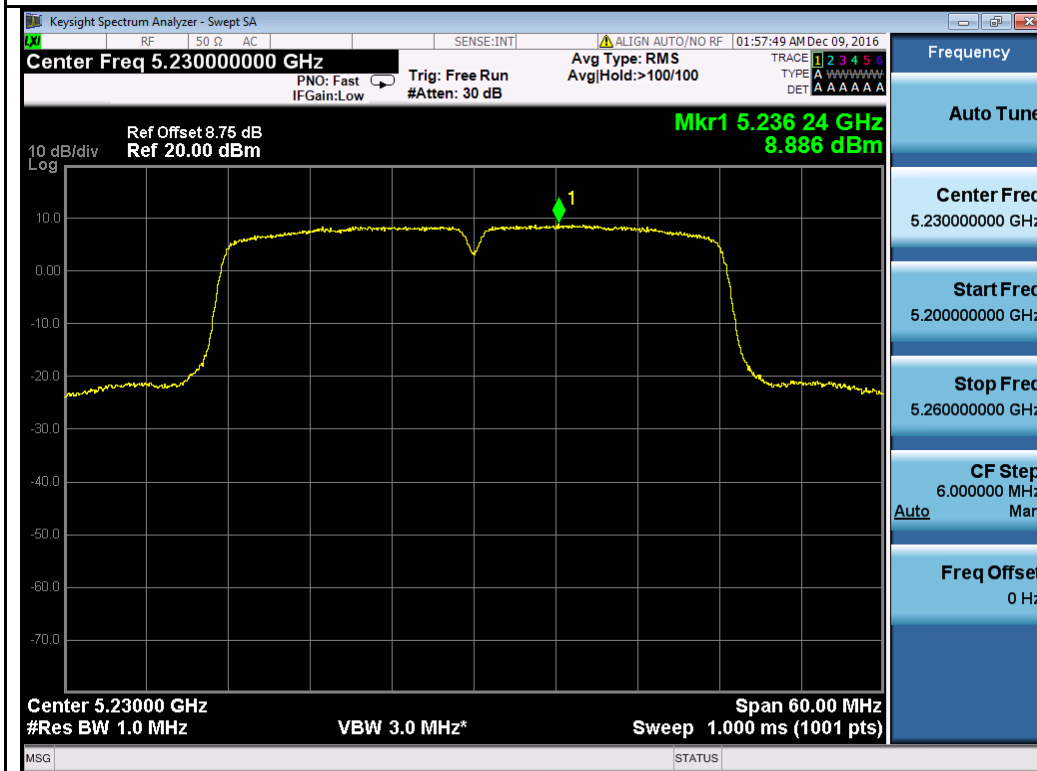
802.11n-HT20 5200M



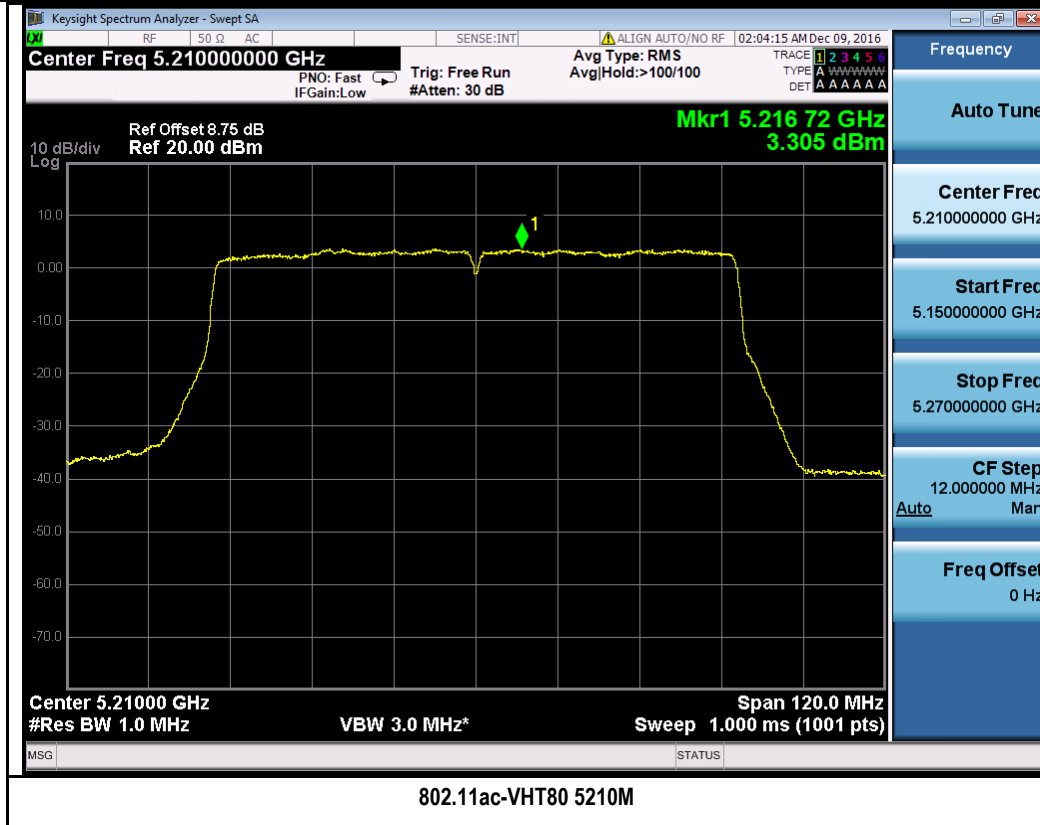
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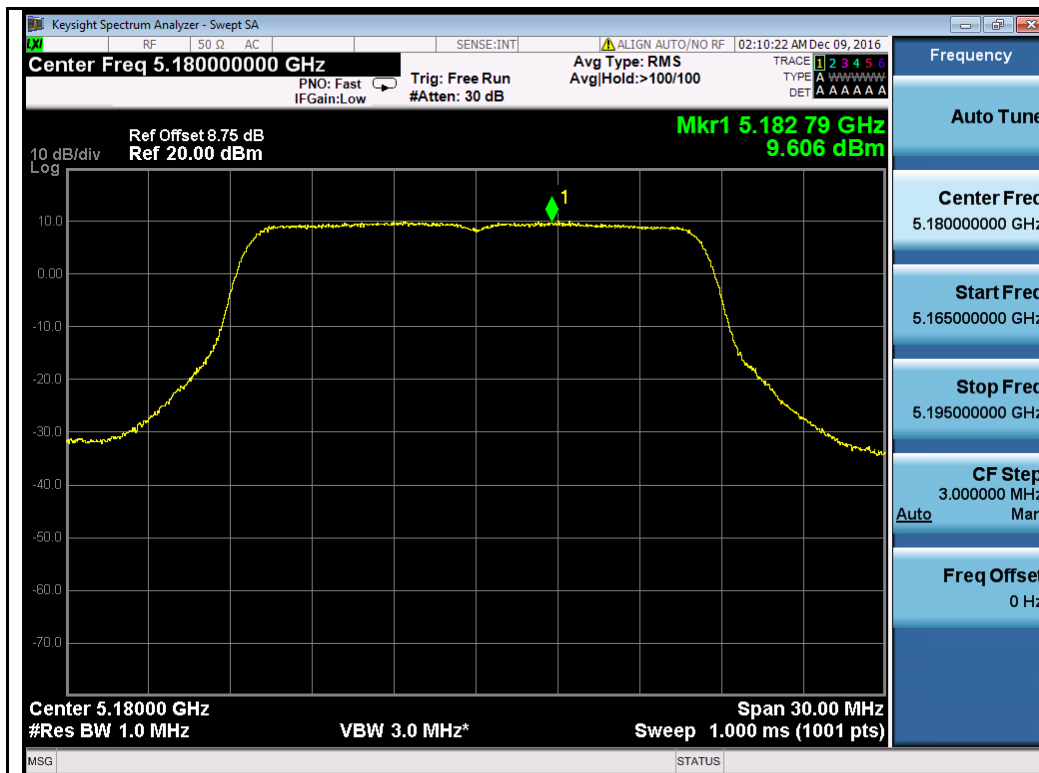
802.11n-HT40 5190M



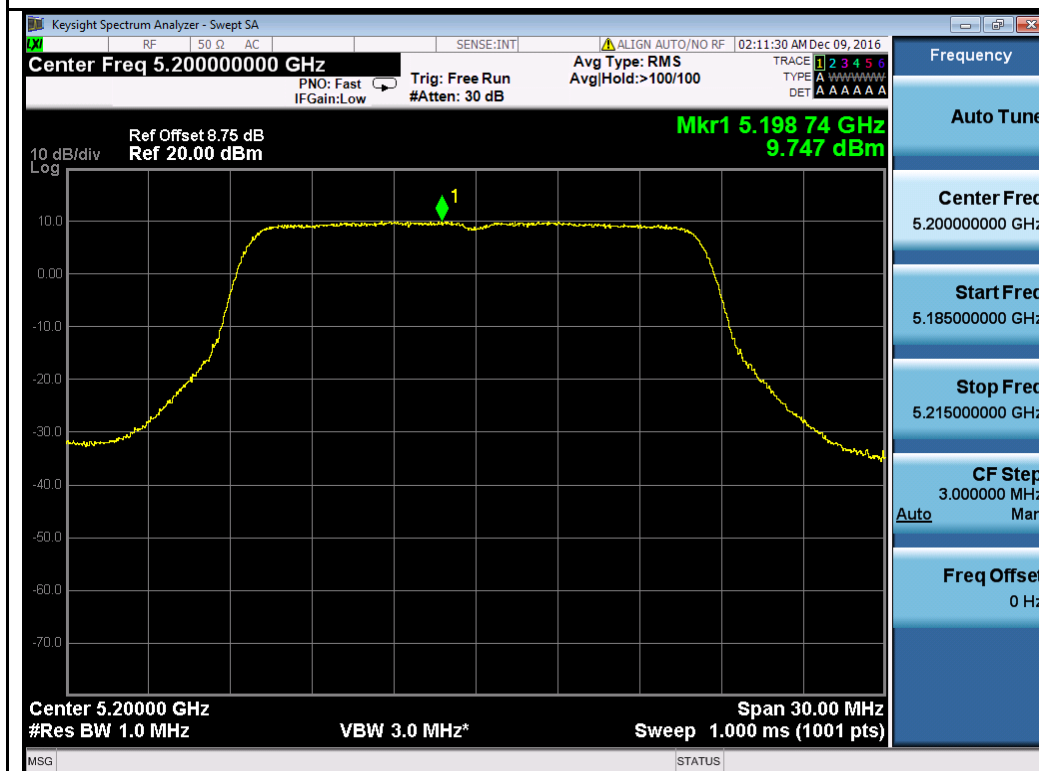
802.11n-HT40 5230M



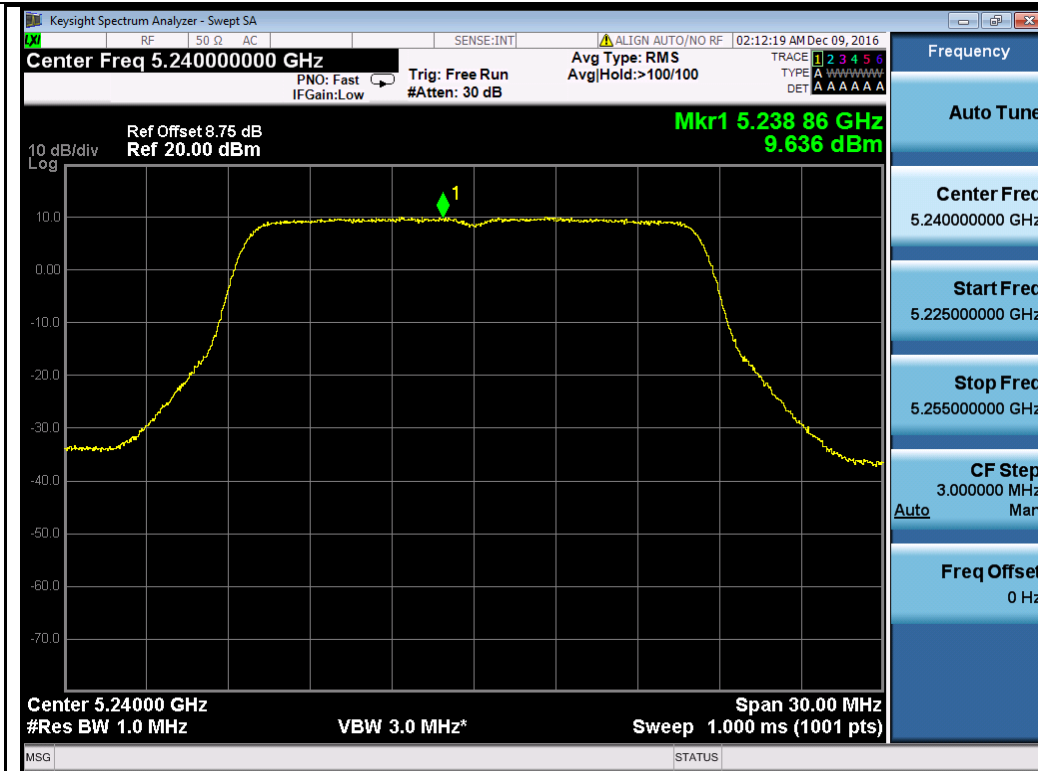
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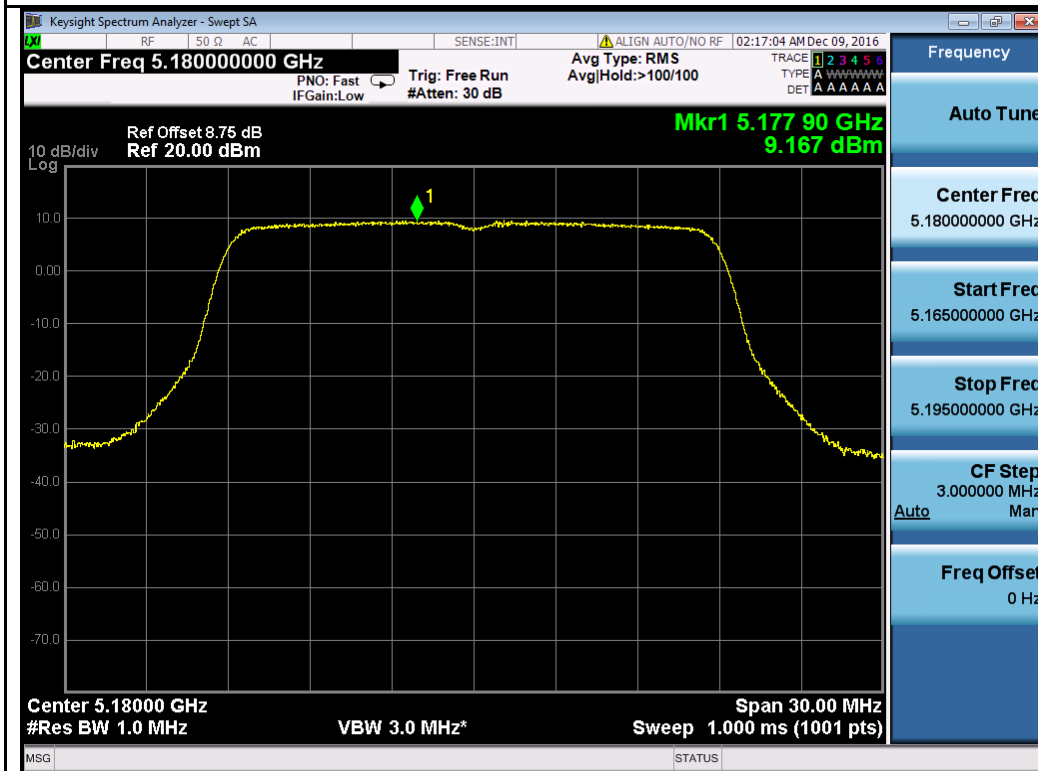
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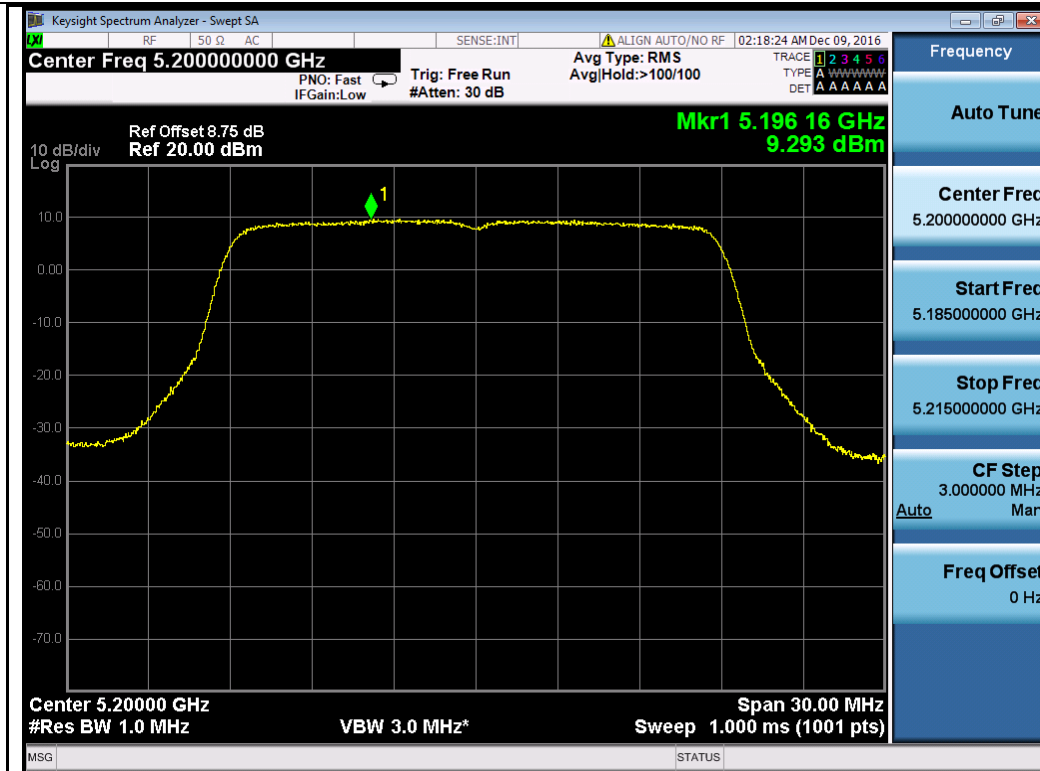
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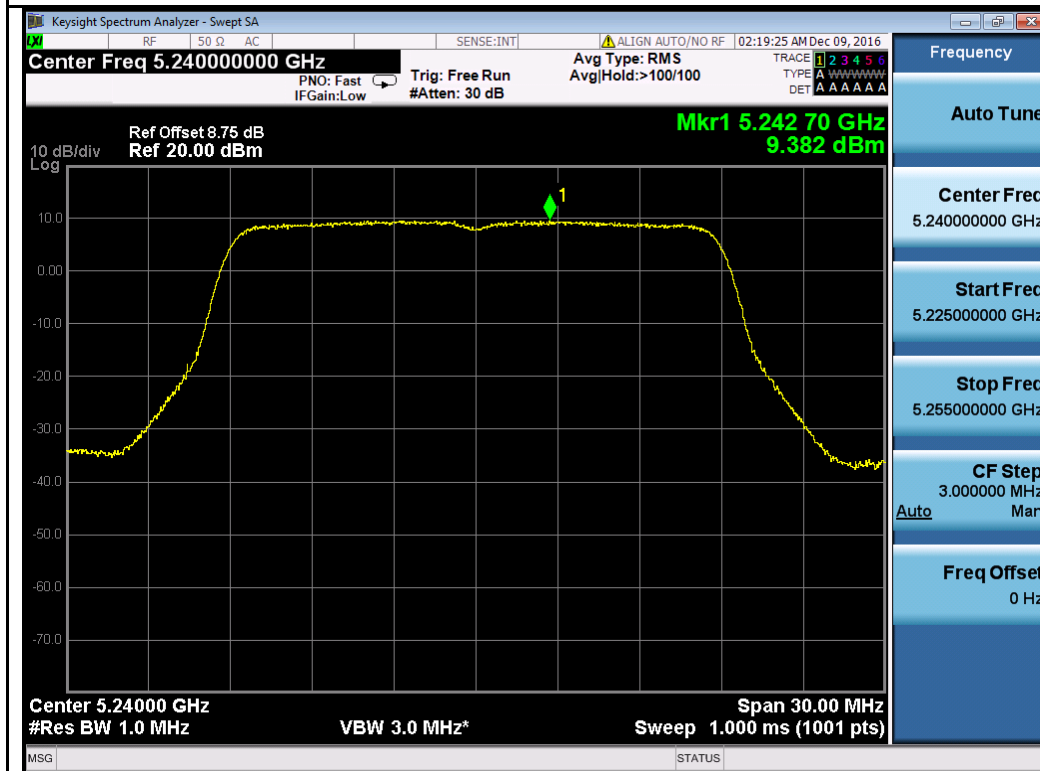
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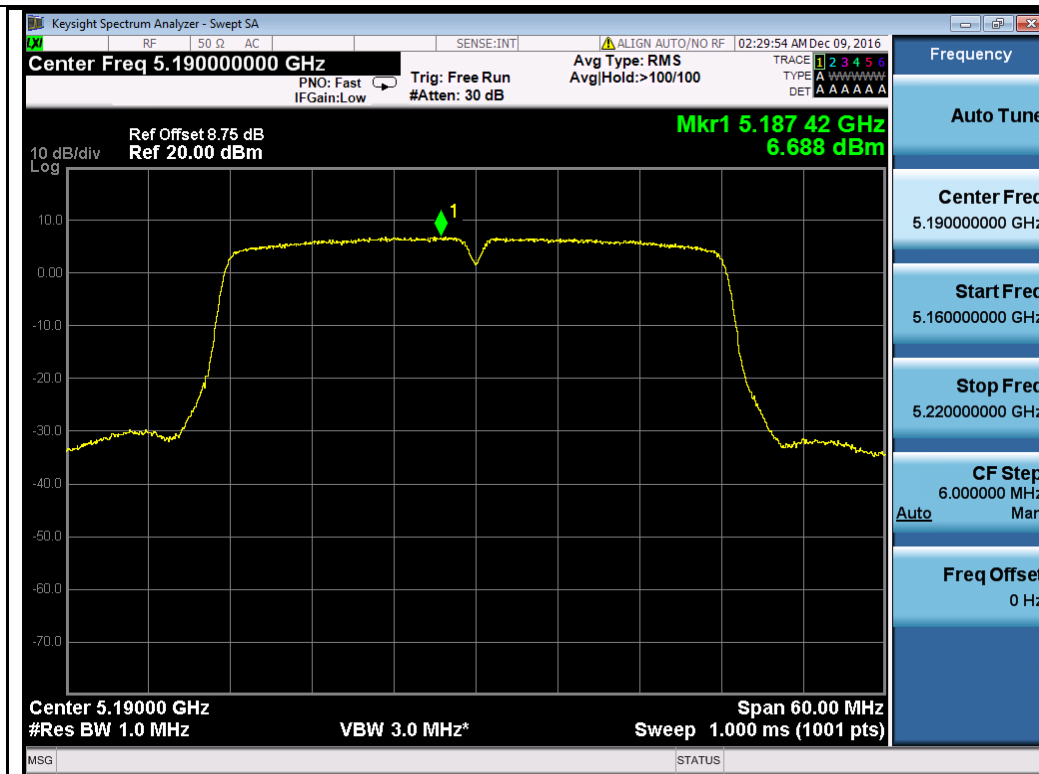
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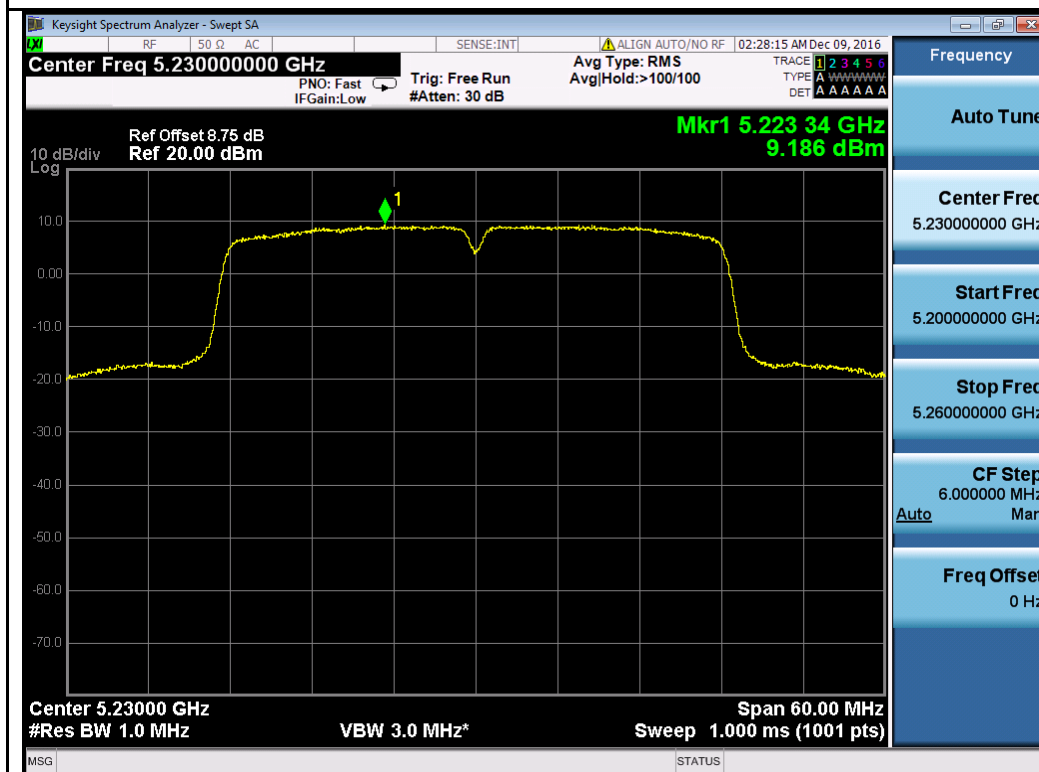
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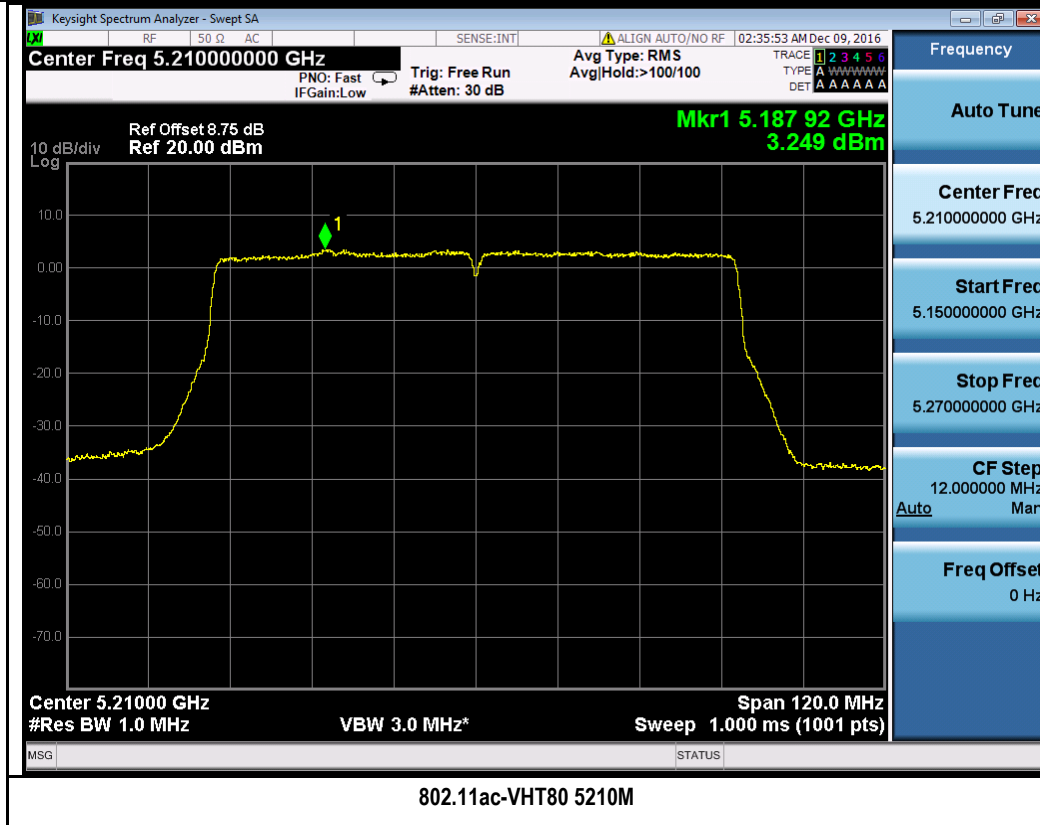
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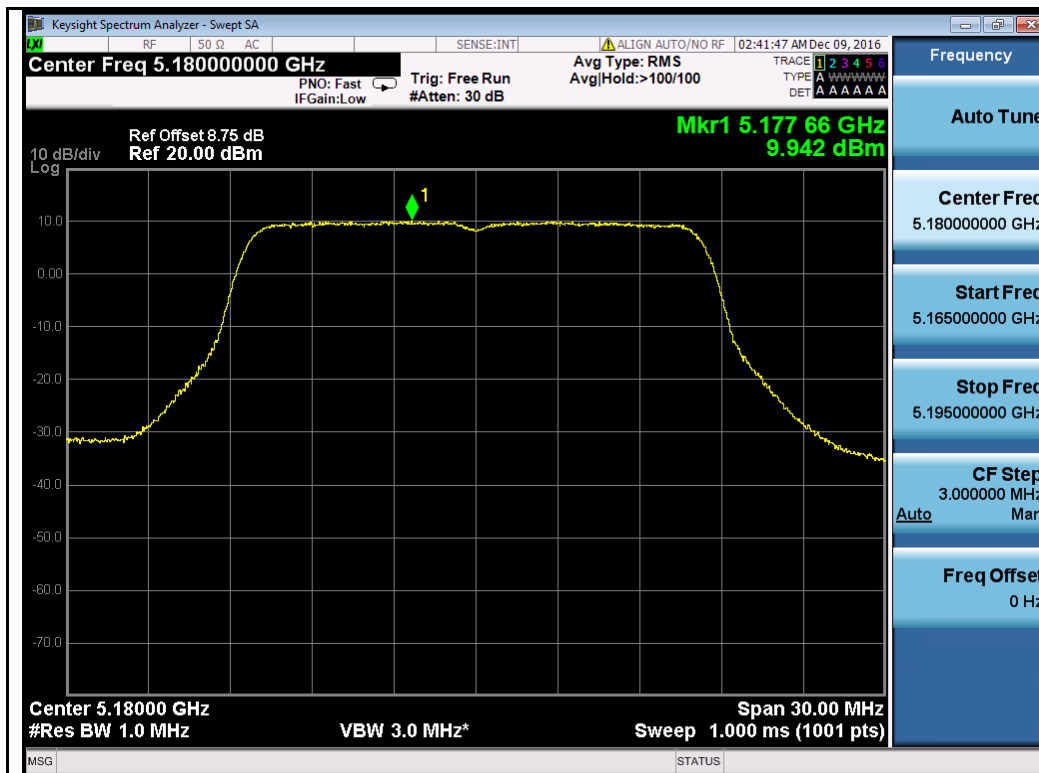
802.11n-HT40 5190M



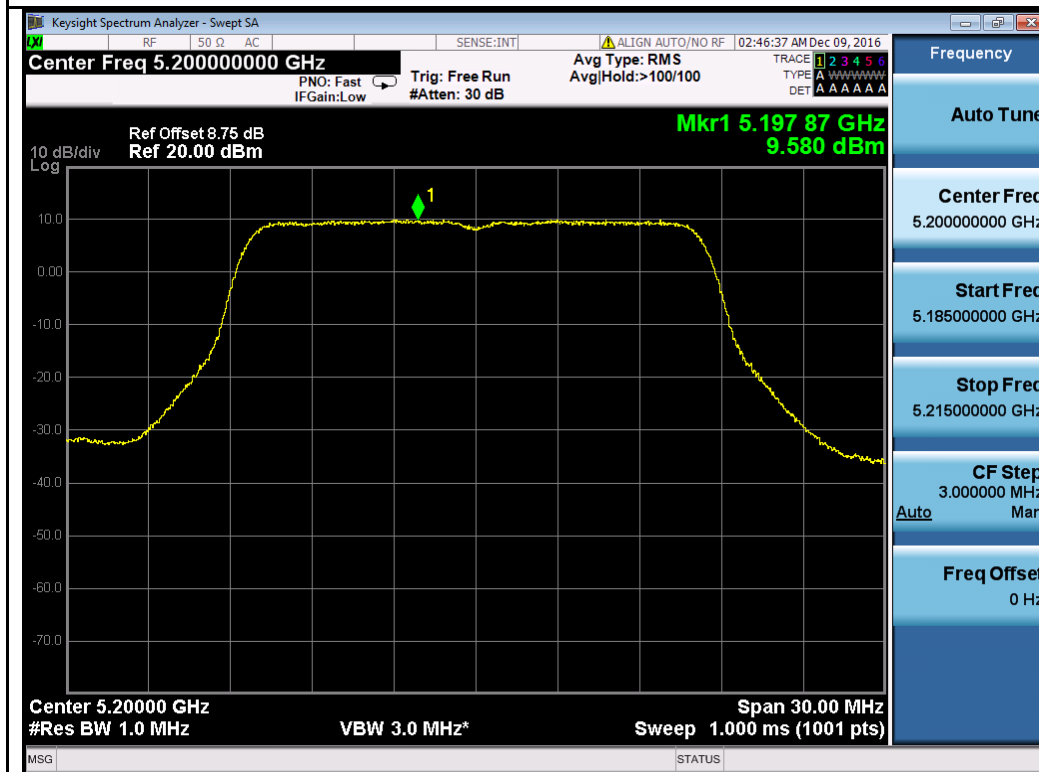
802.11n-HT40 5230M



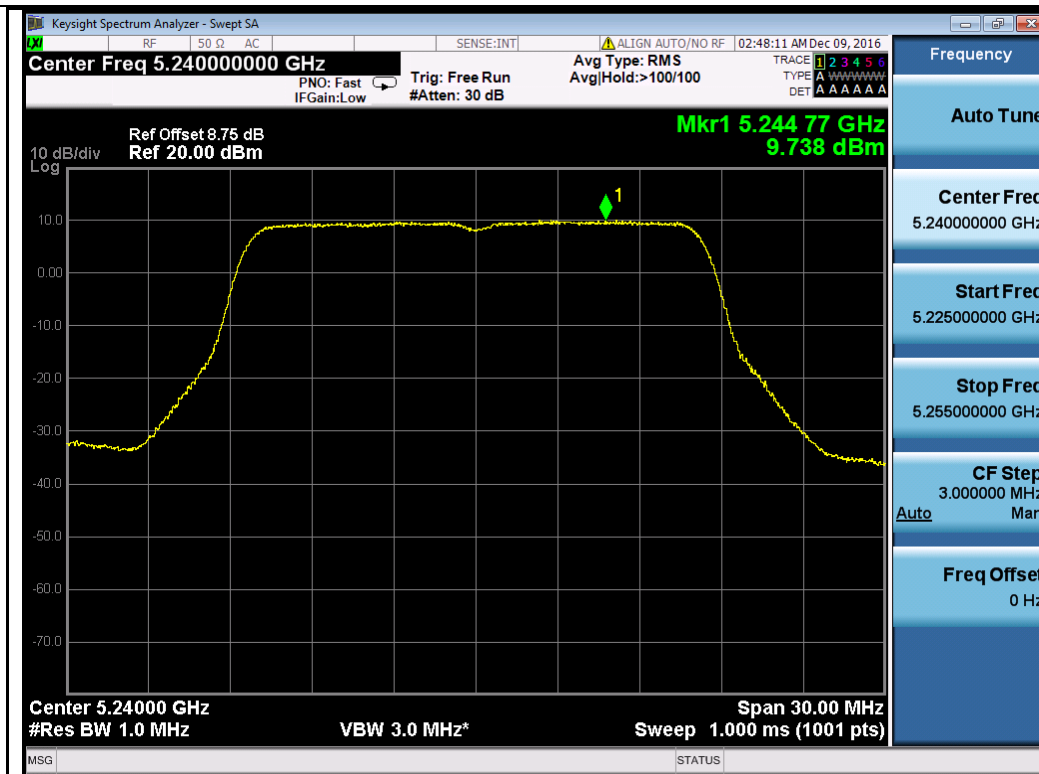
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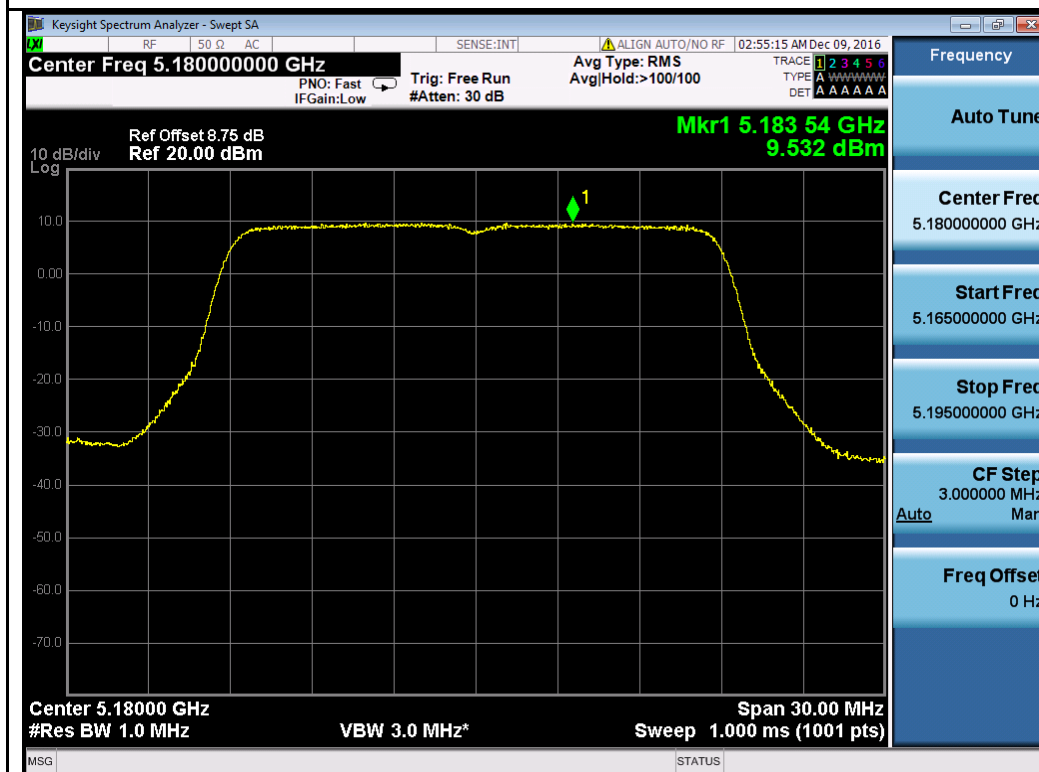
802.11a-5180M



802.11a-5200M

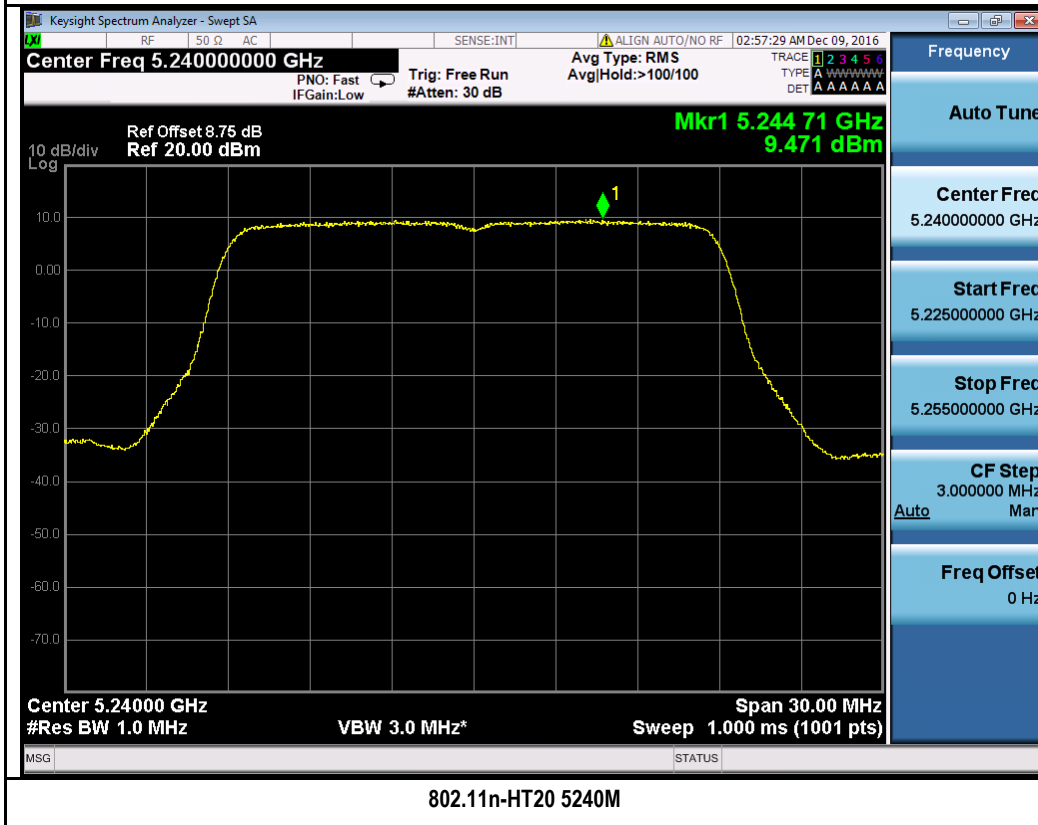


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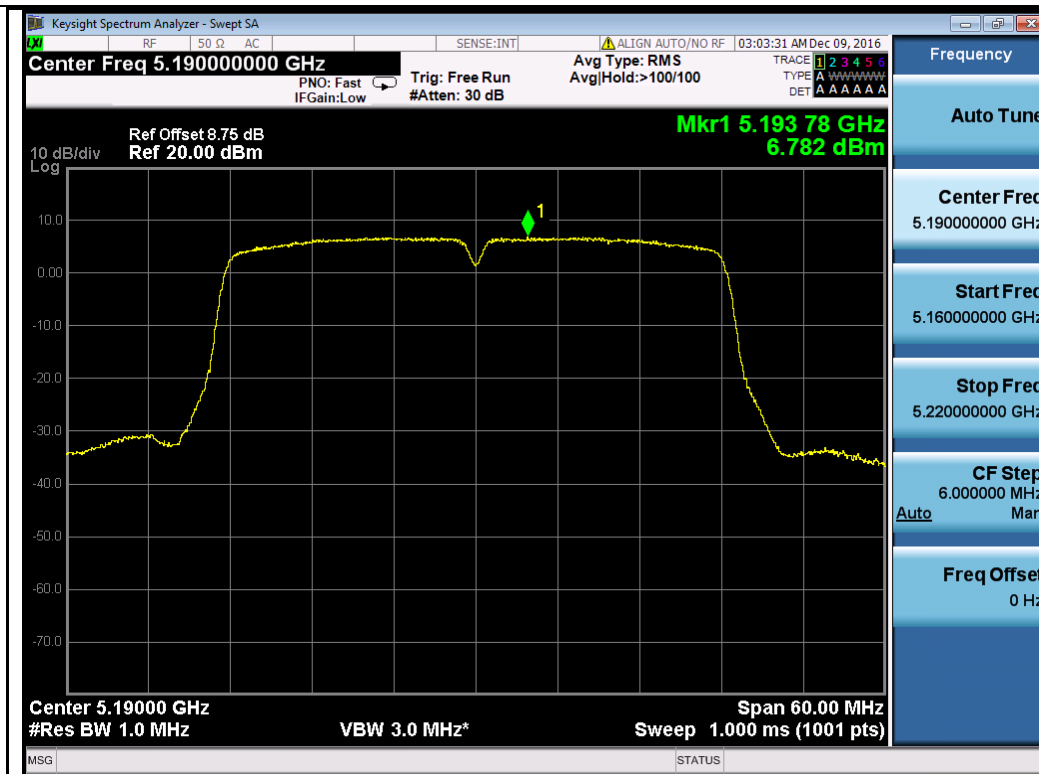


802.11n-HT20 5180M

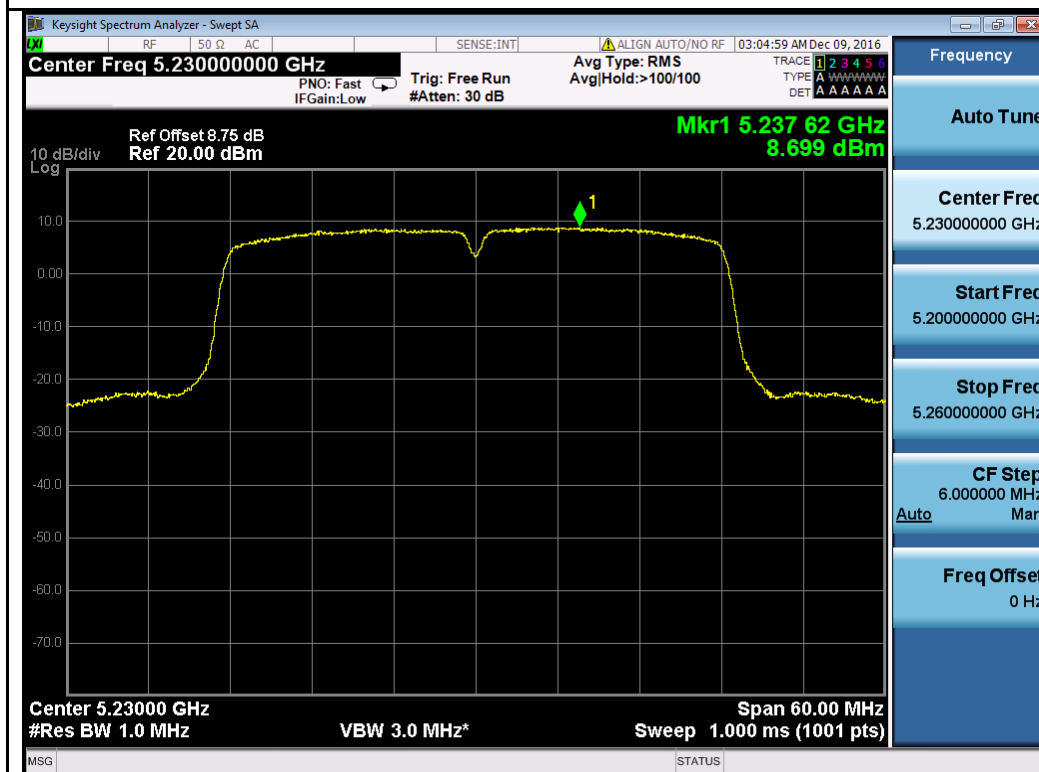
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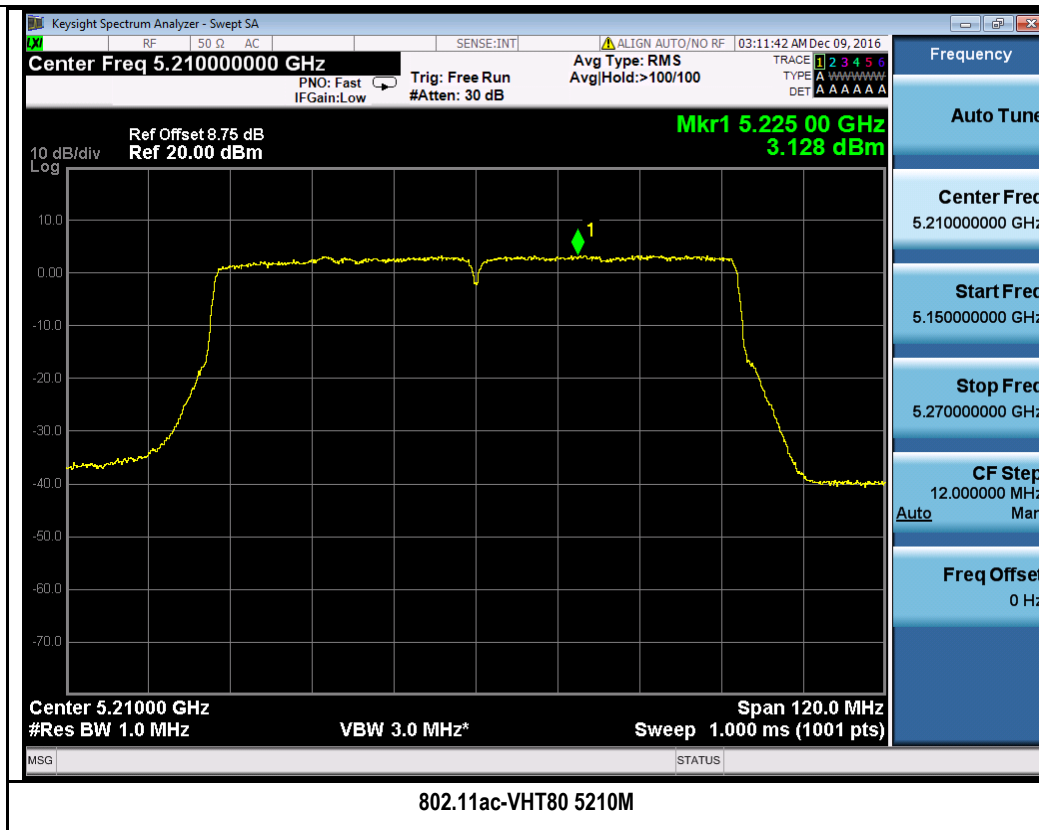
802.11n-HT20 5240M



802.11n-HT40 5190M

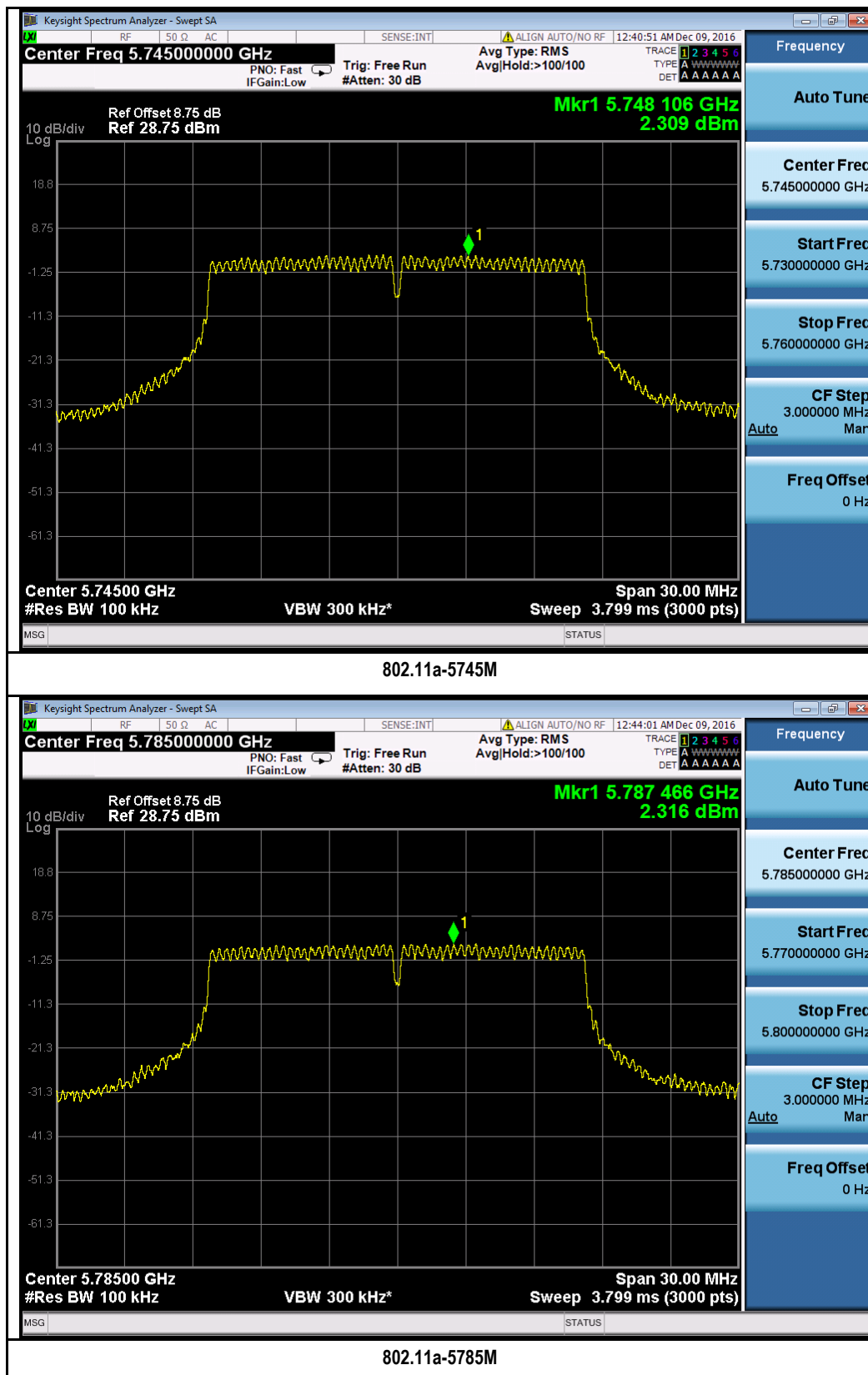


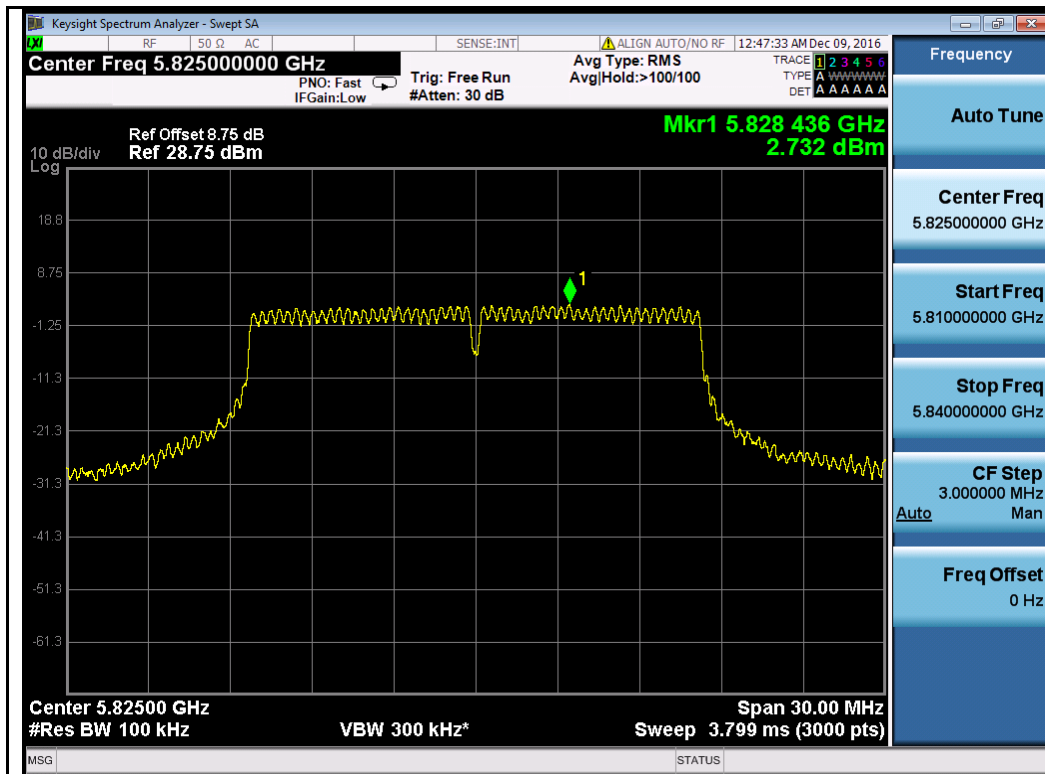
802.11n-HT40 5230M



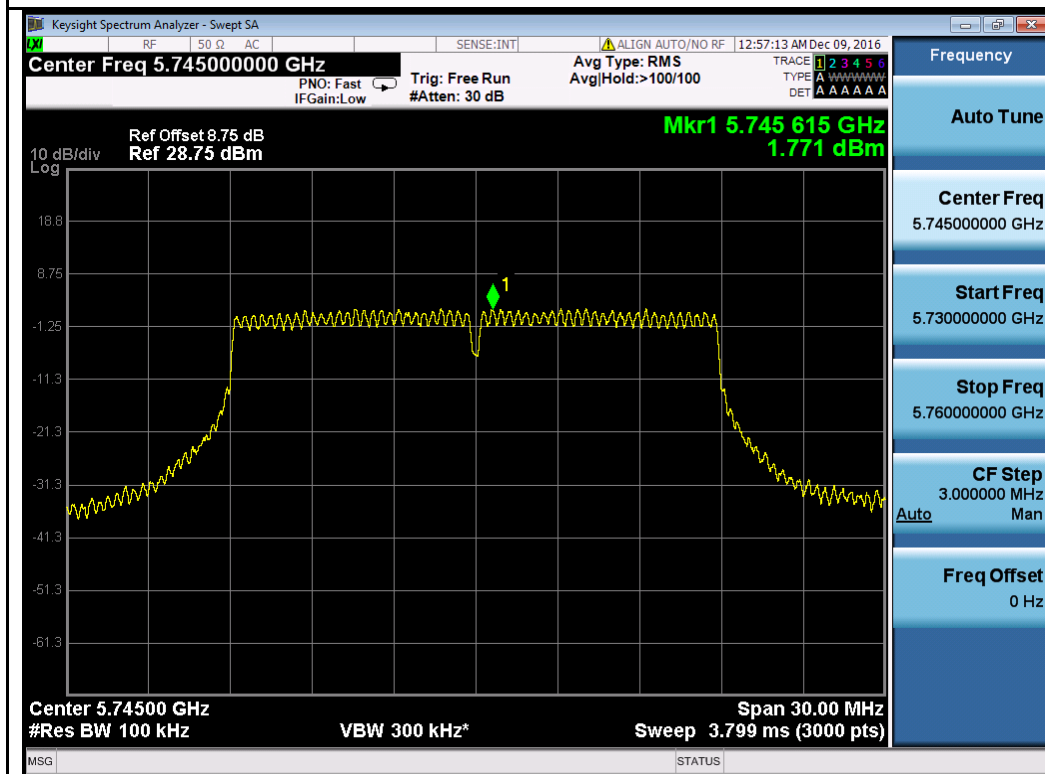
Test Plot for W58:

Chain 1:

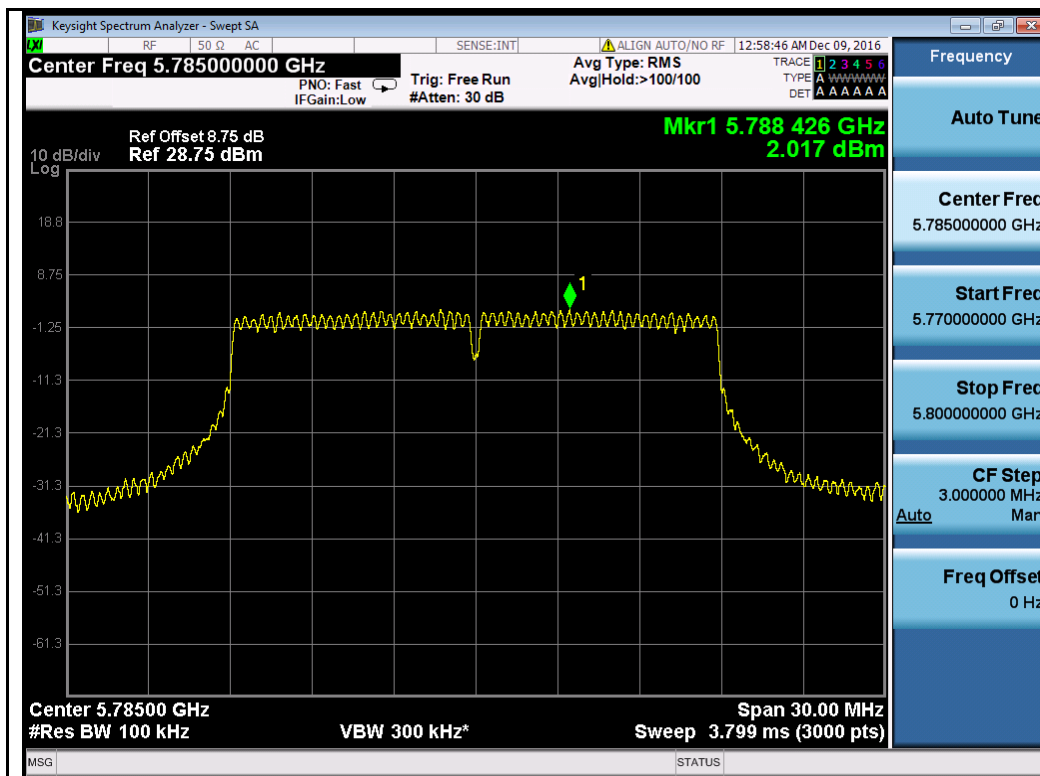




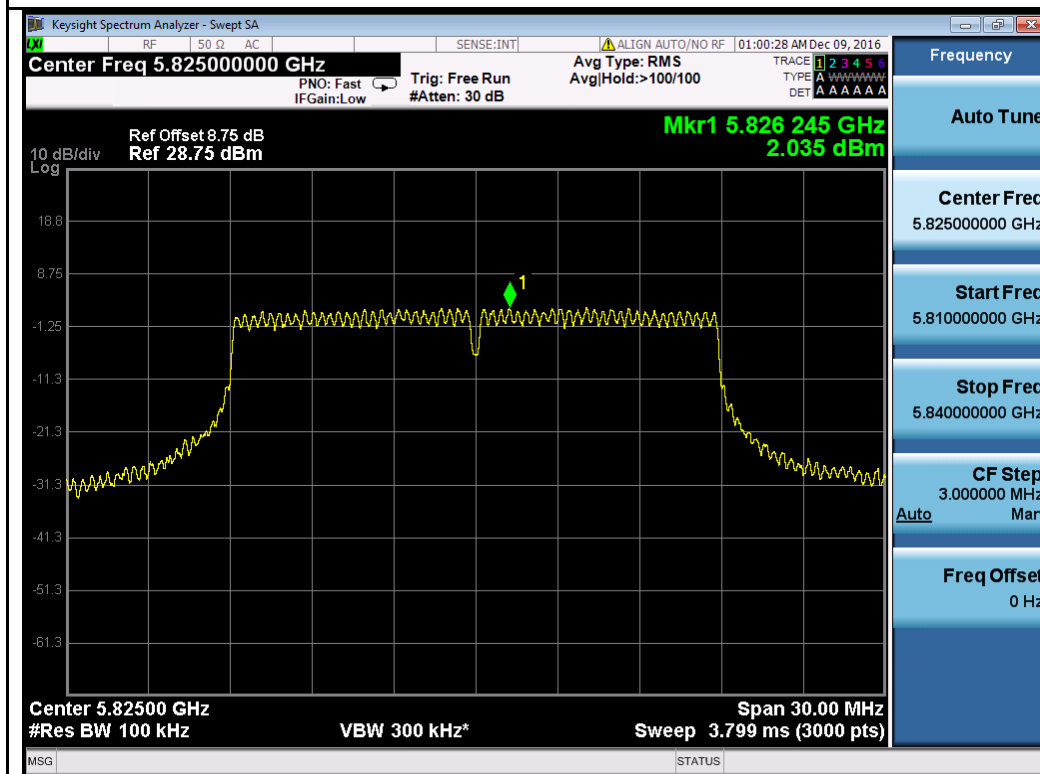
802.11a-5825M



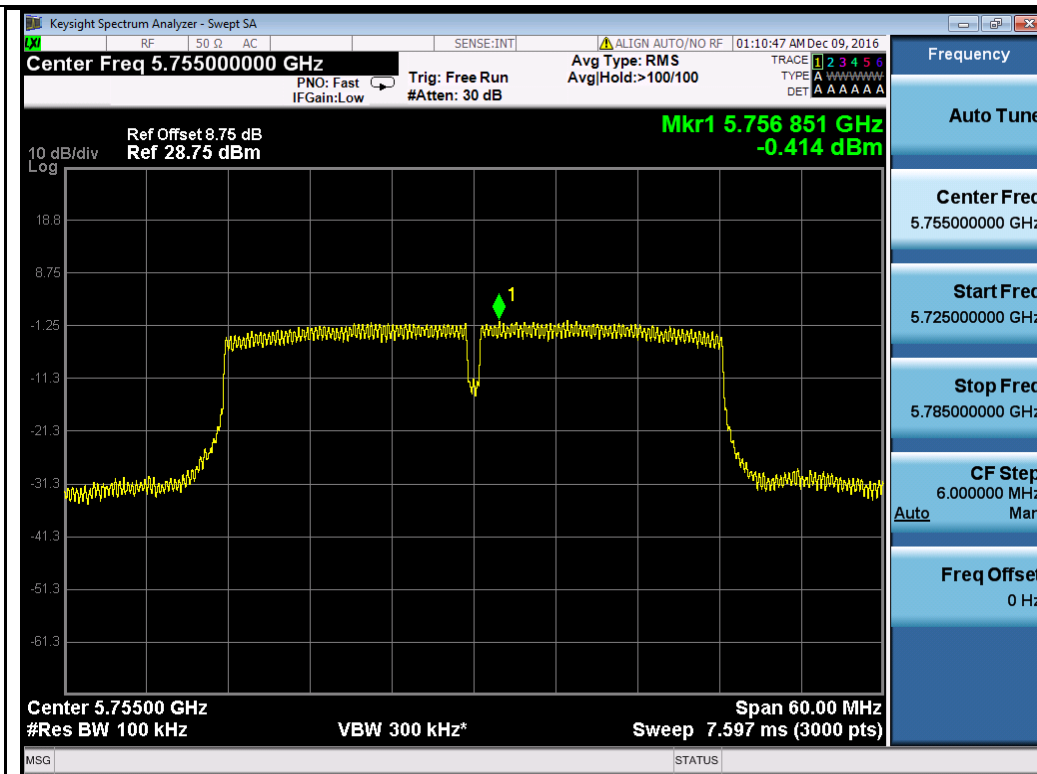
802.11n-HT20 5745M



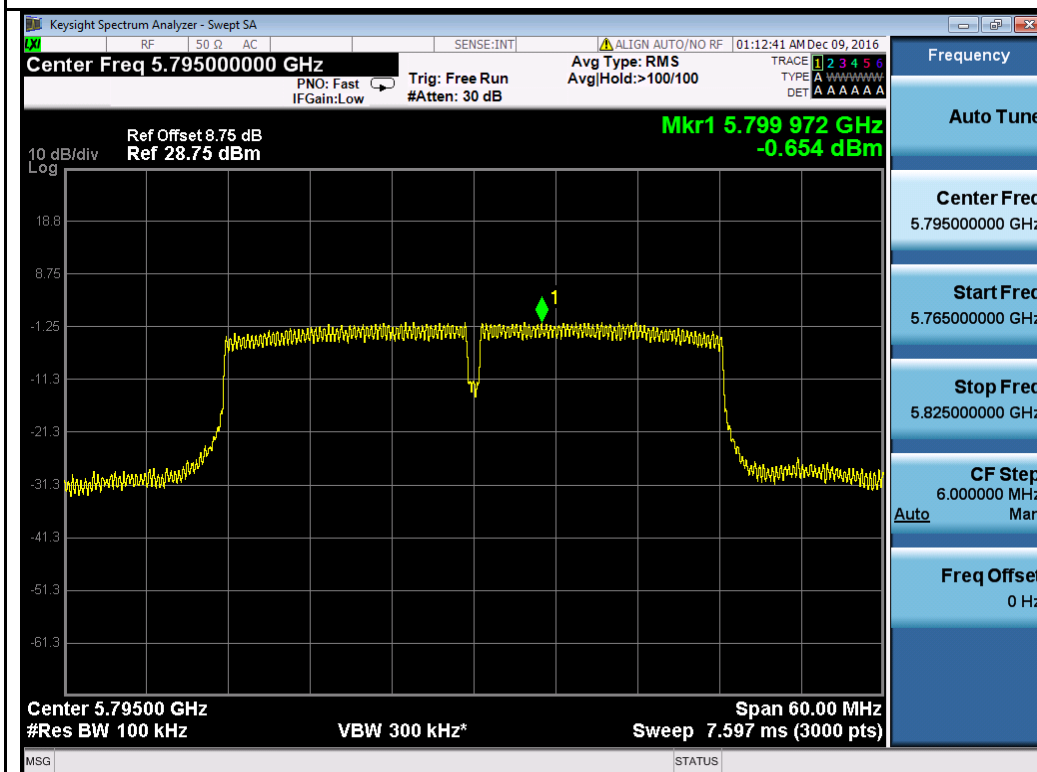
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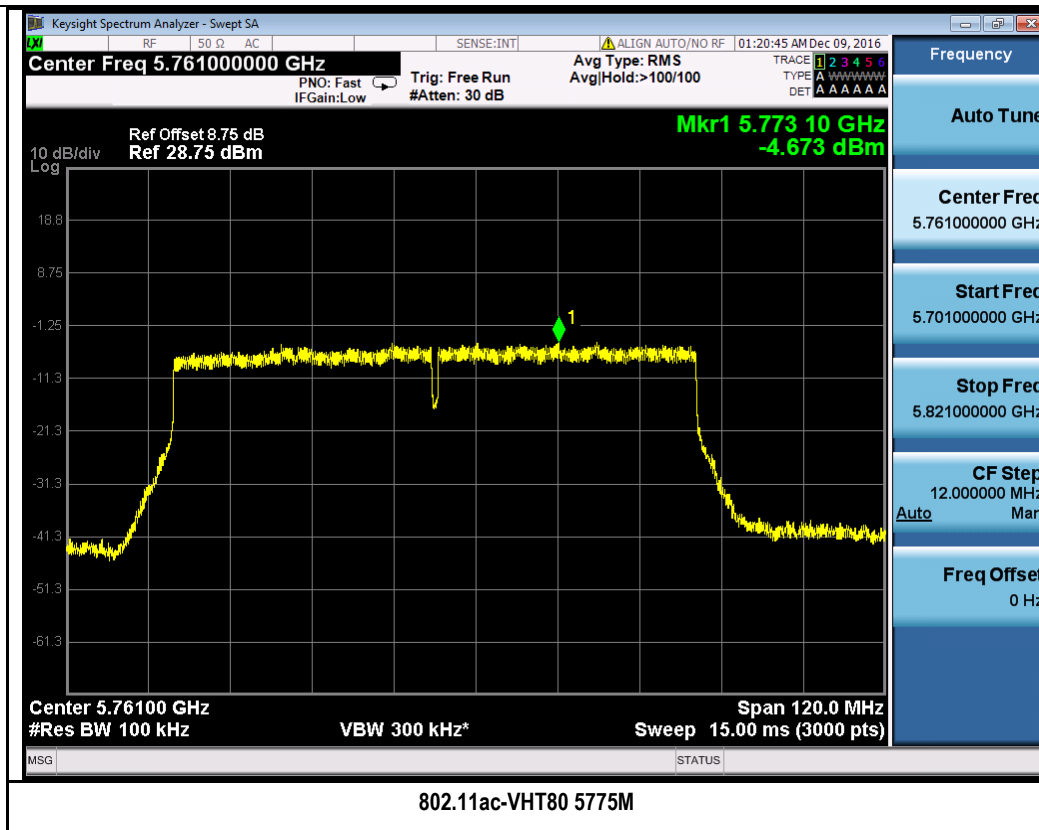
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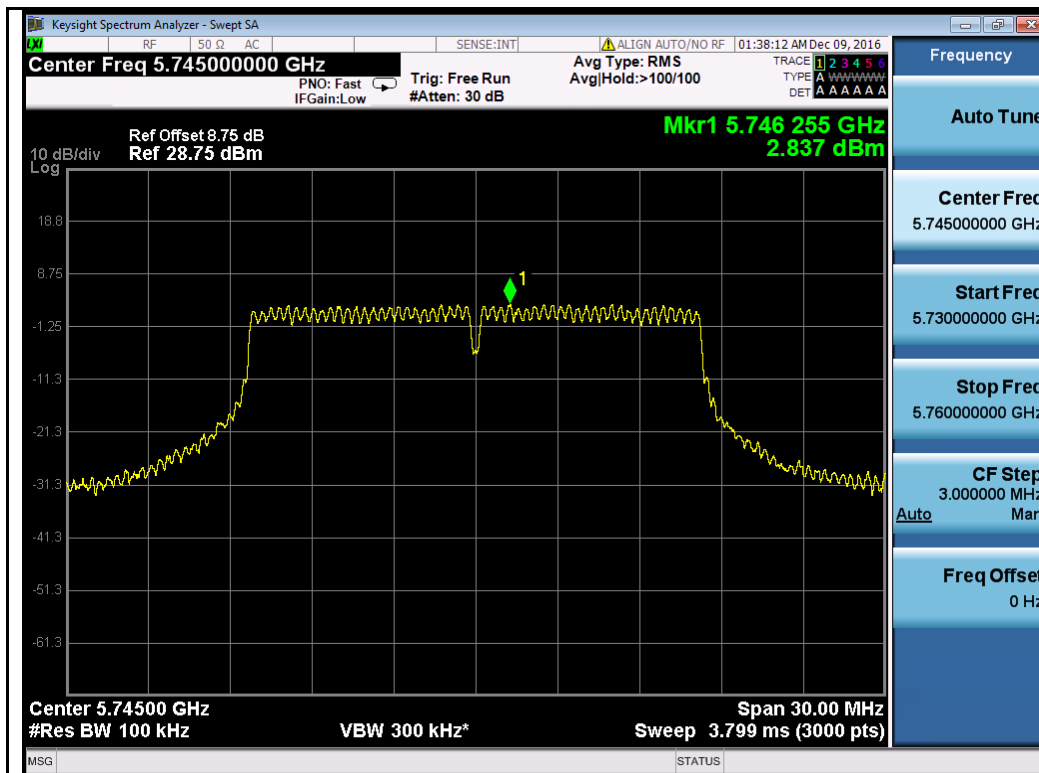
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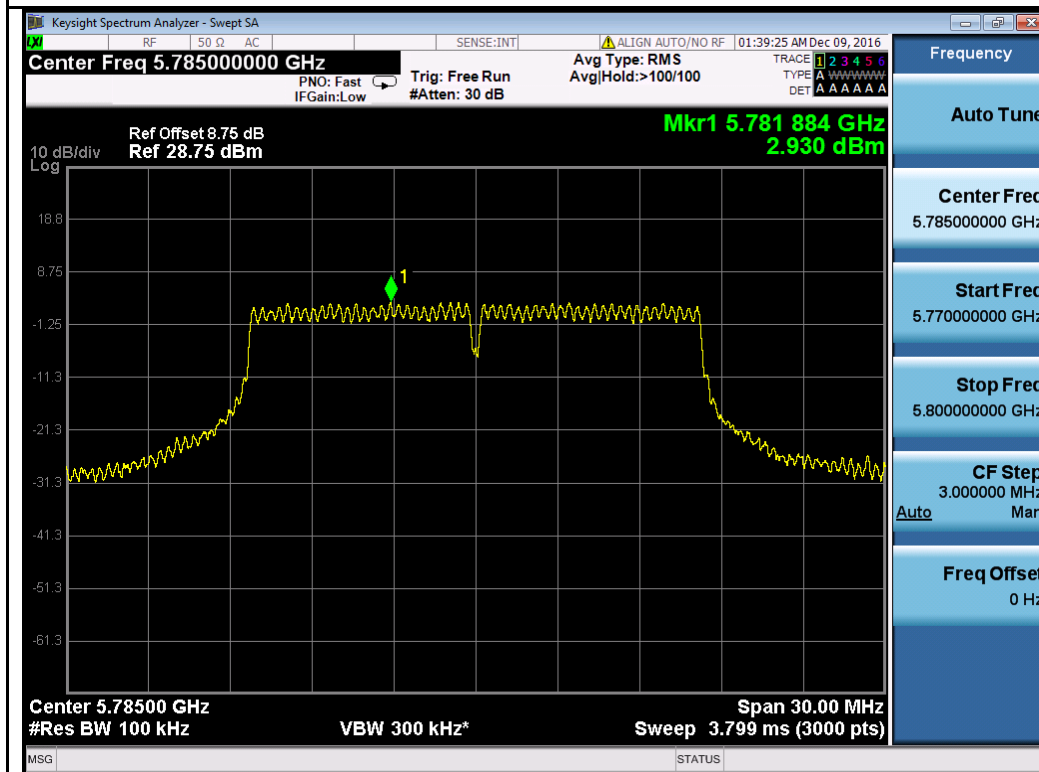
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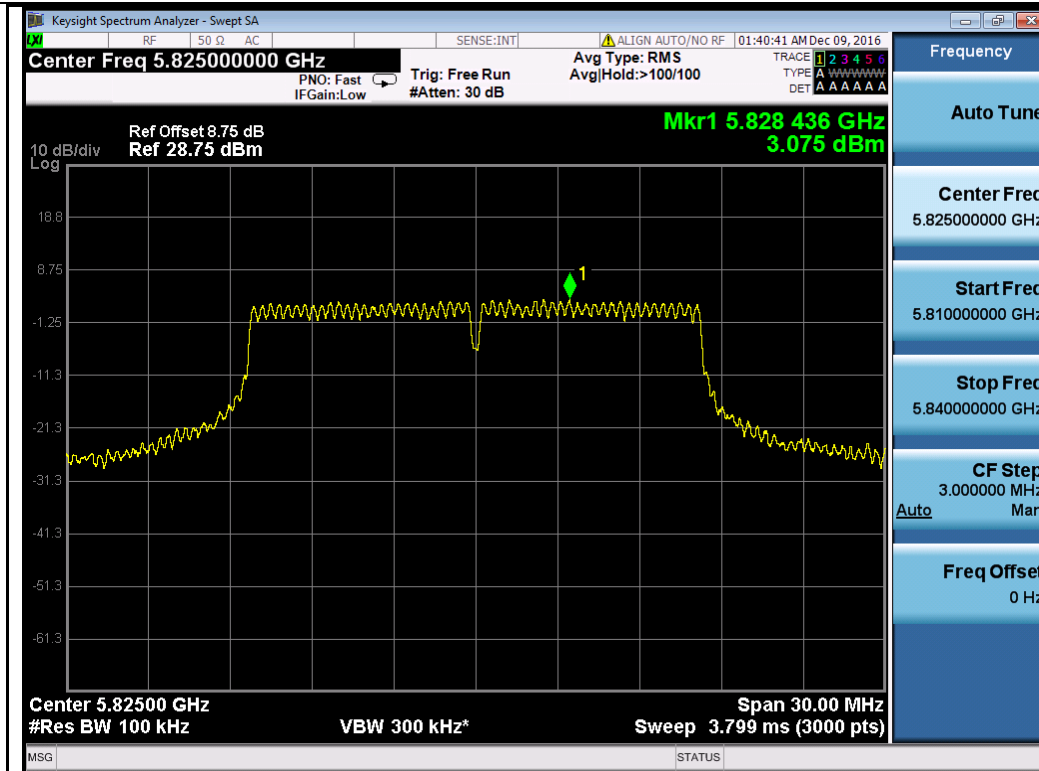
Chain 2:



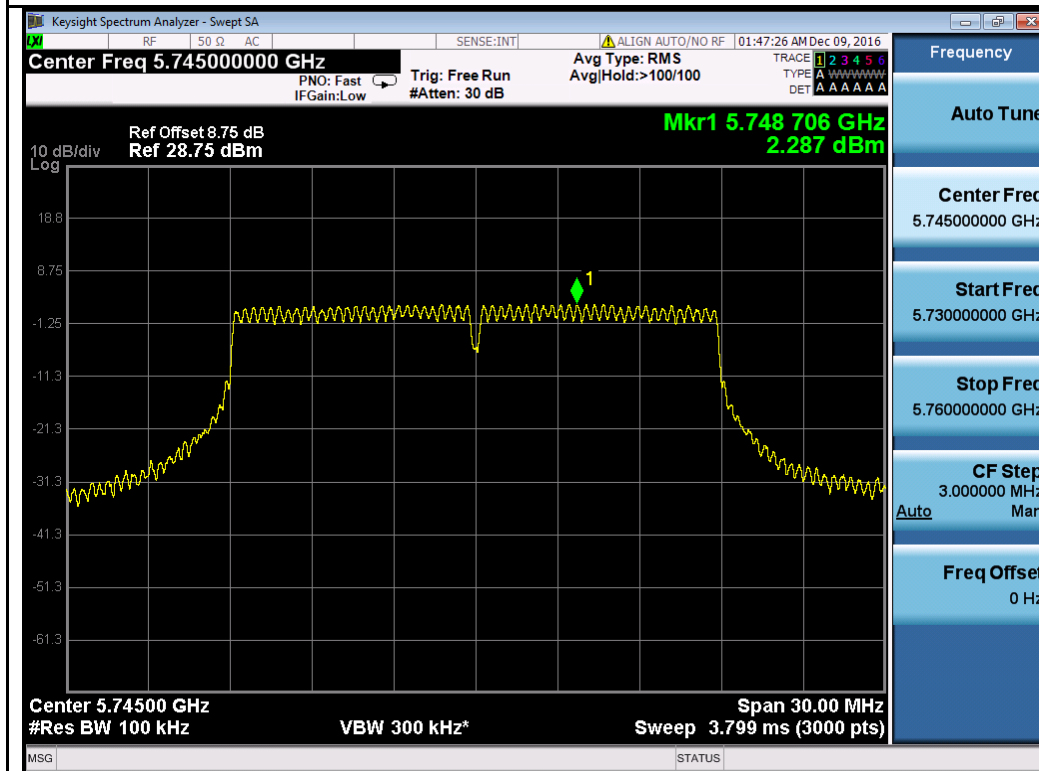
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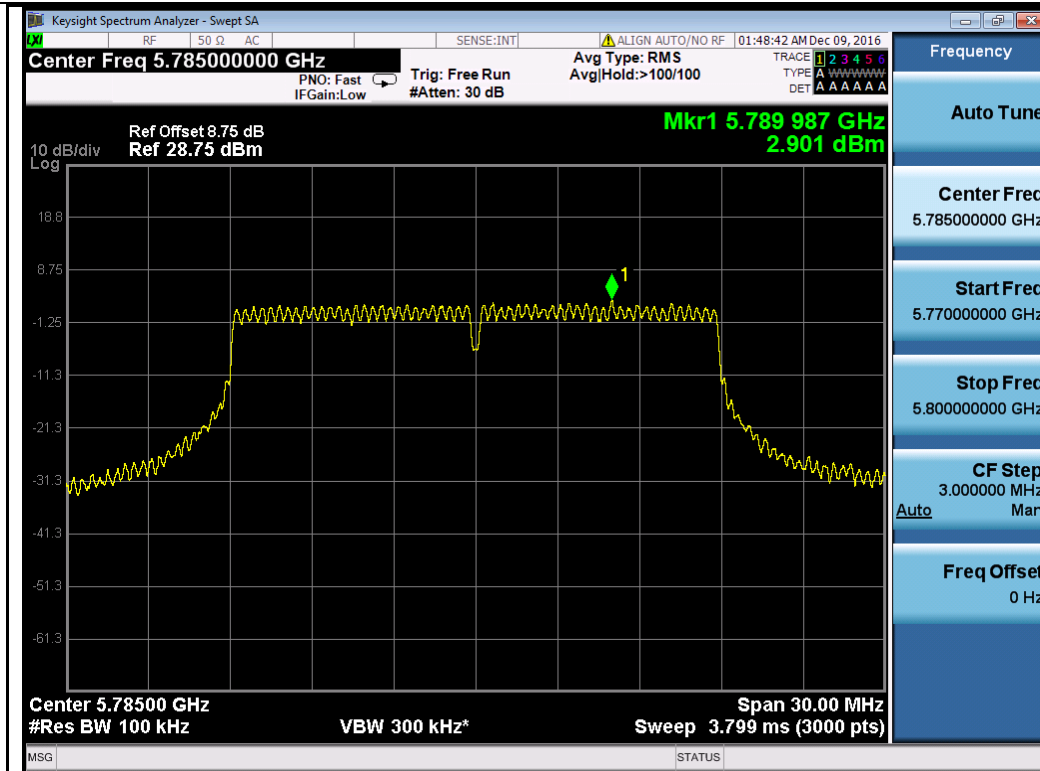
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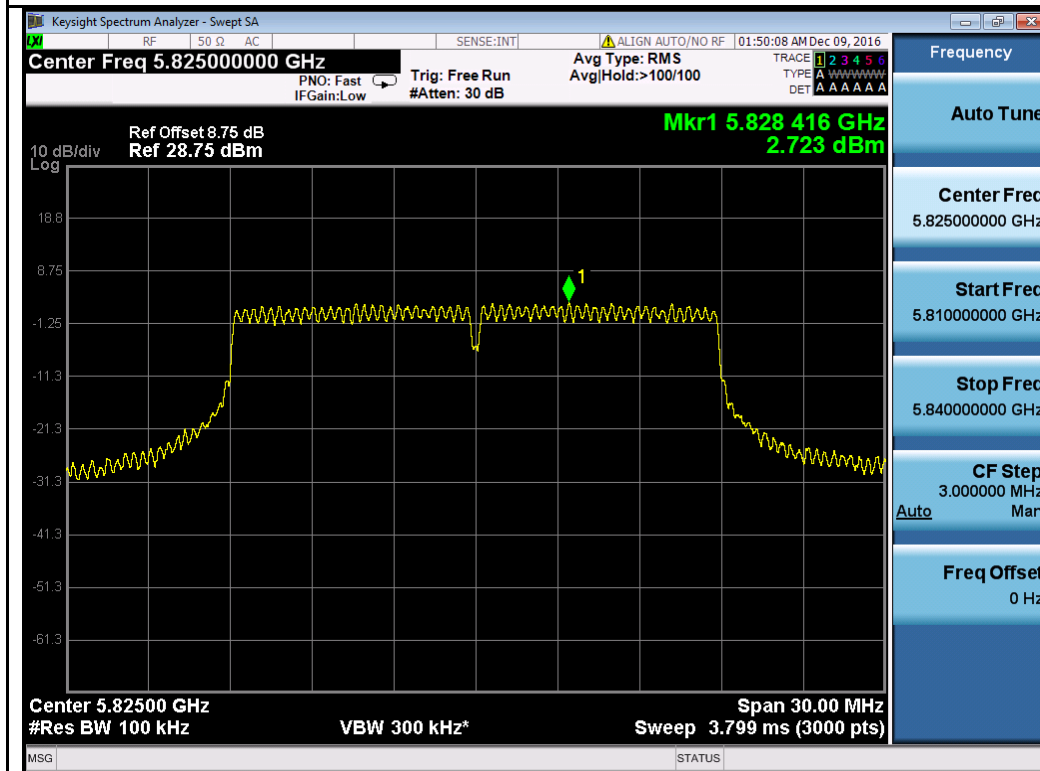
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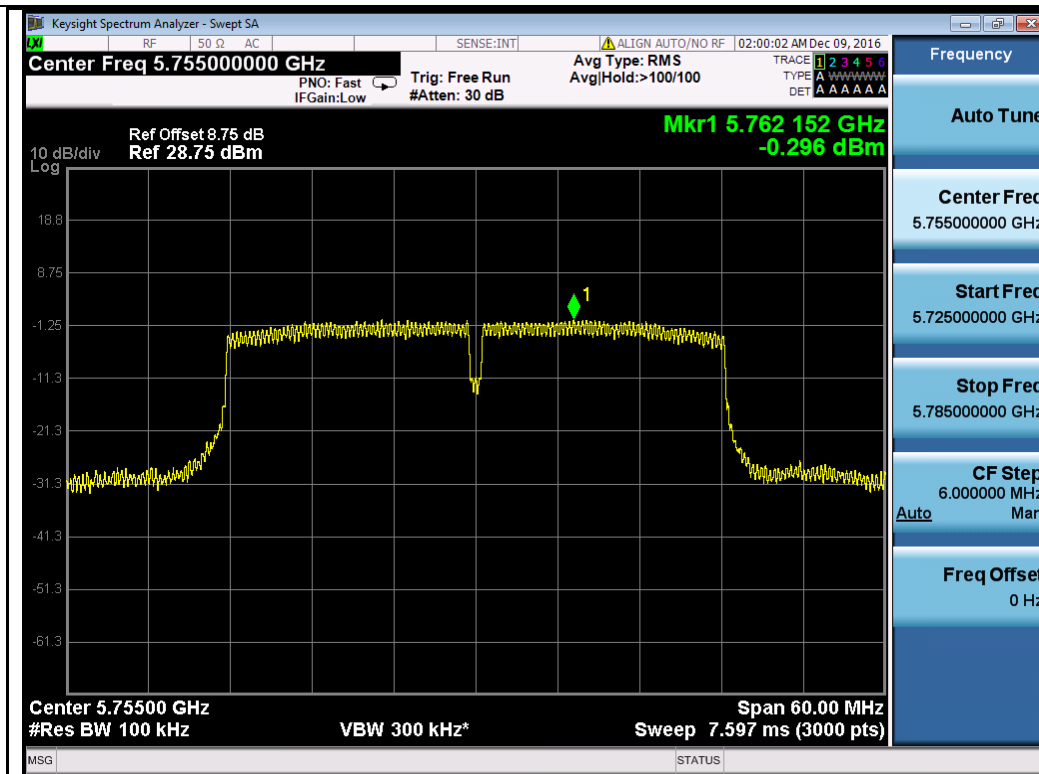
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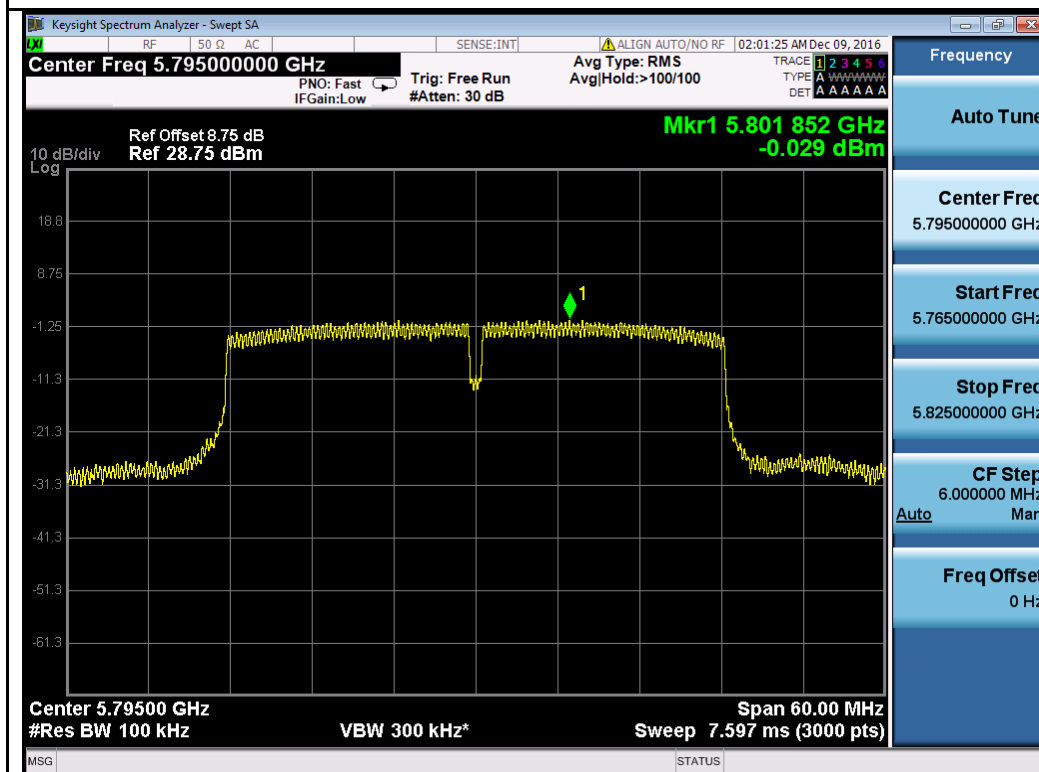
802.11n-HT20 5785M



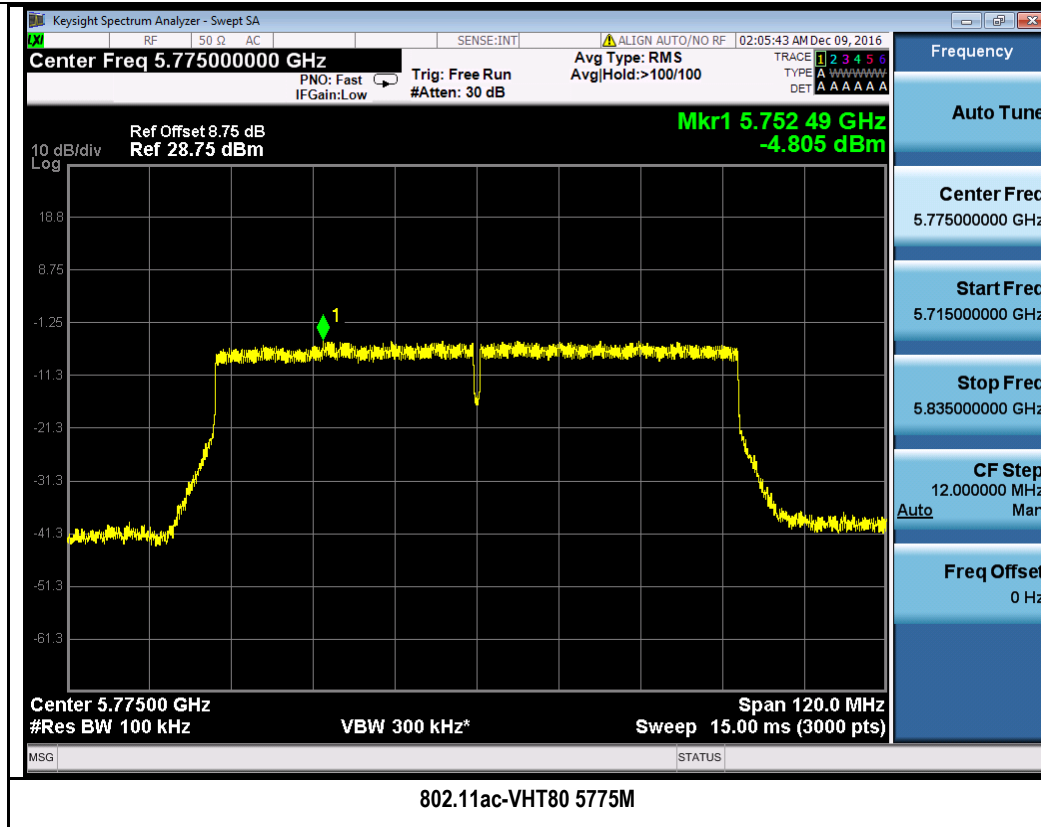
802.11n-HT20 5825M



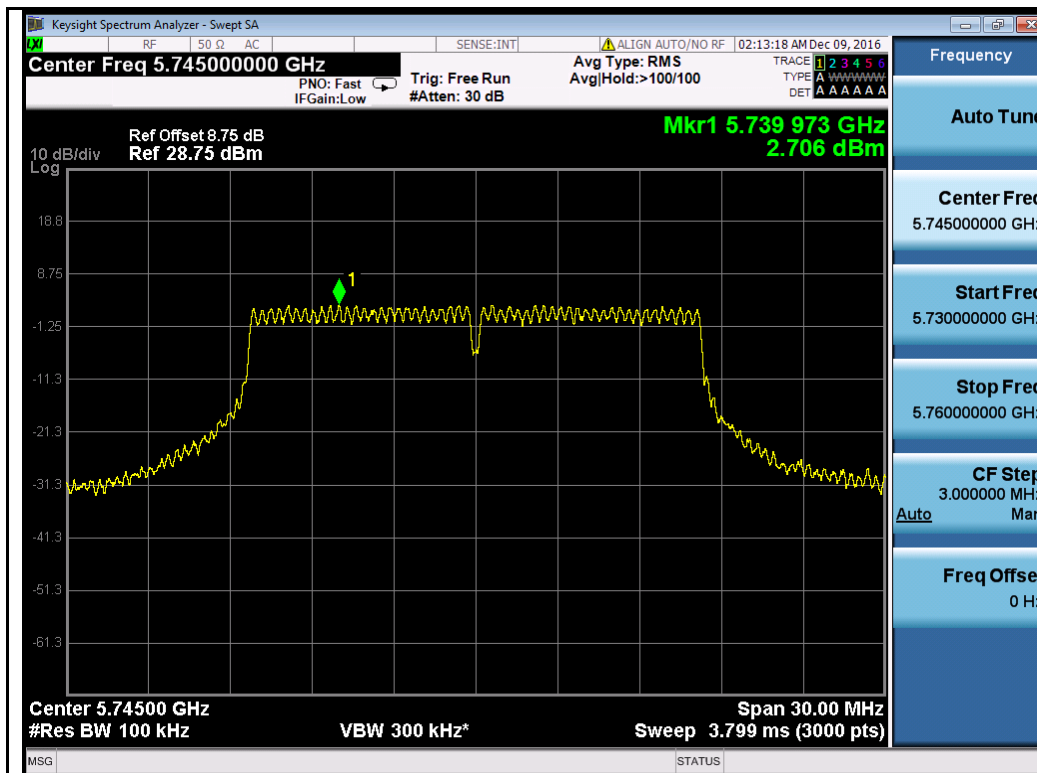
802.11n-HT40 5755M



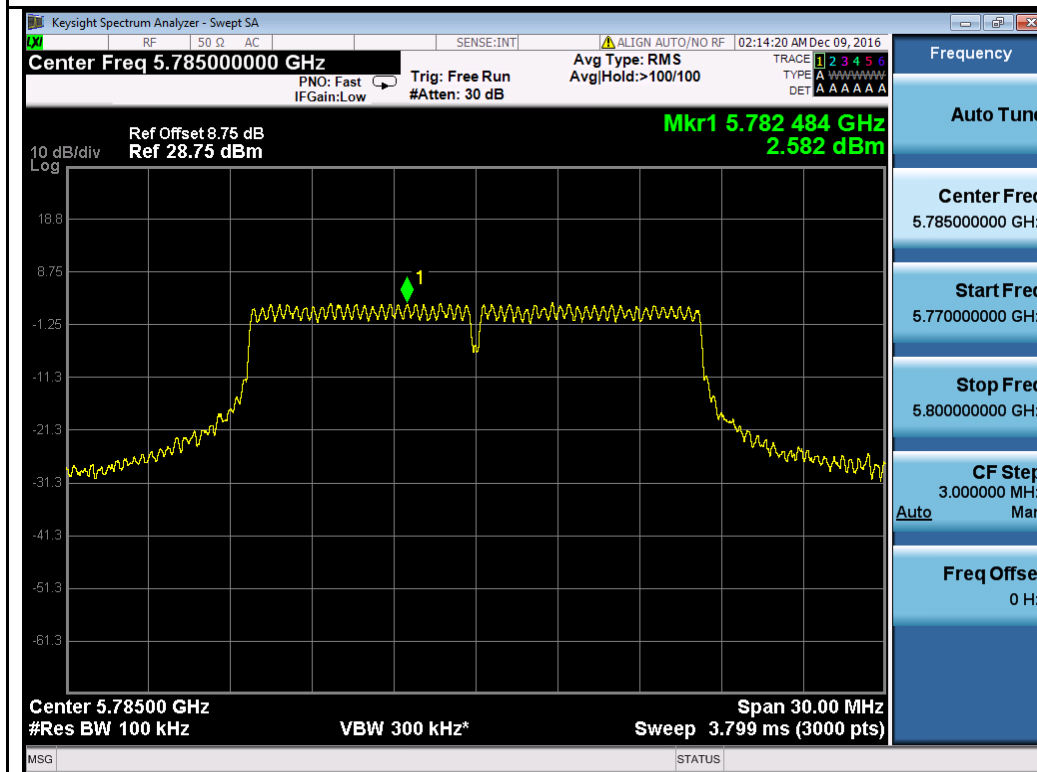
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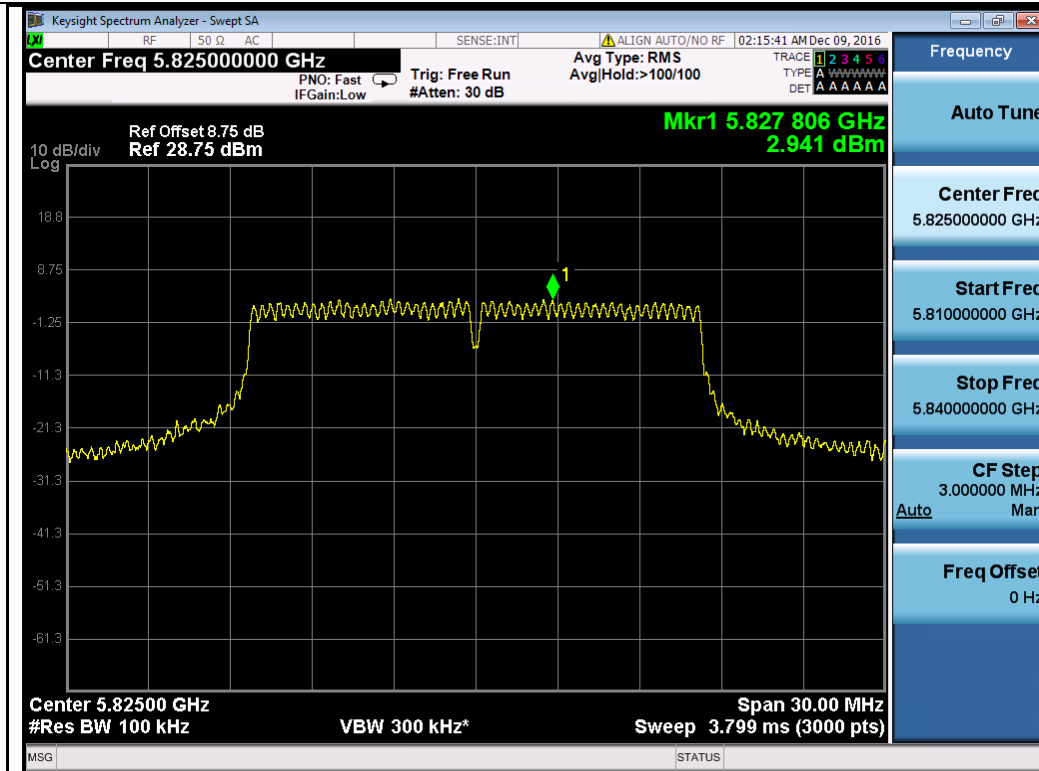
Chain 3:



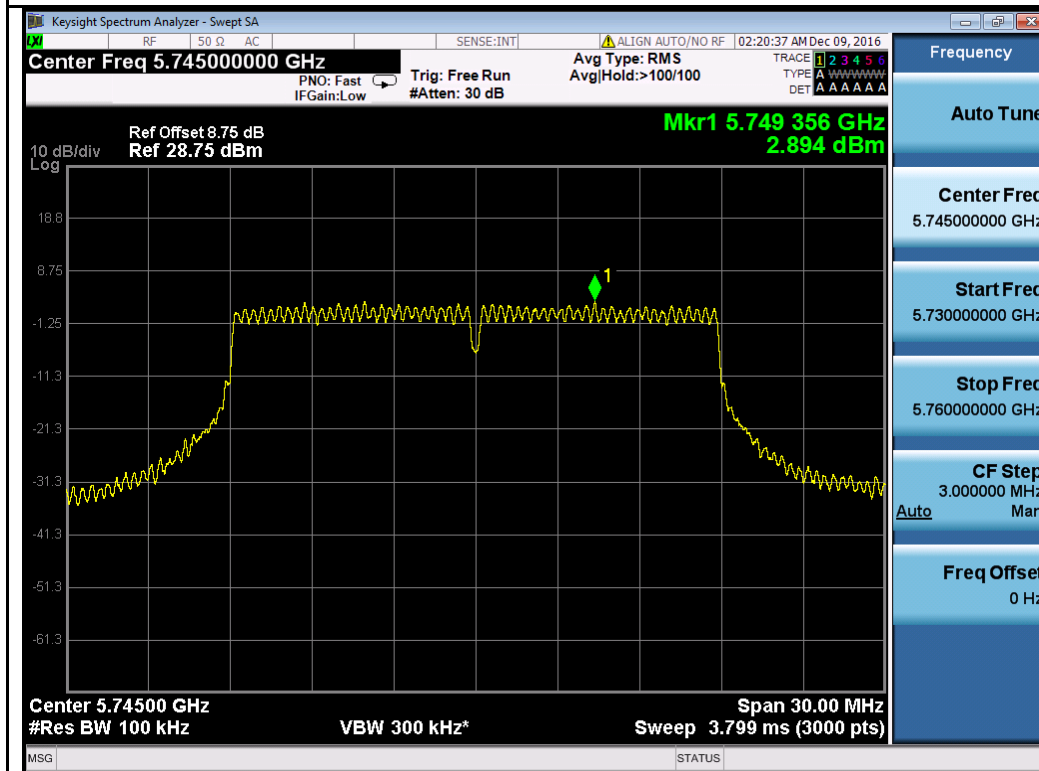
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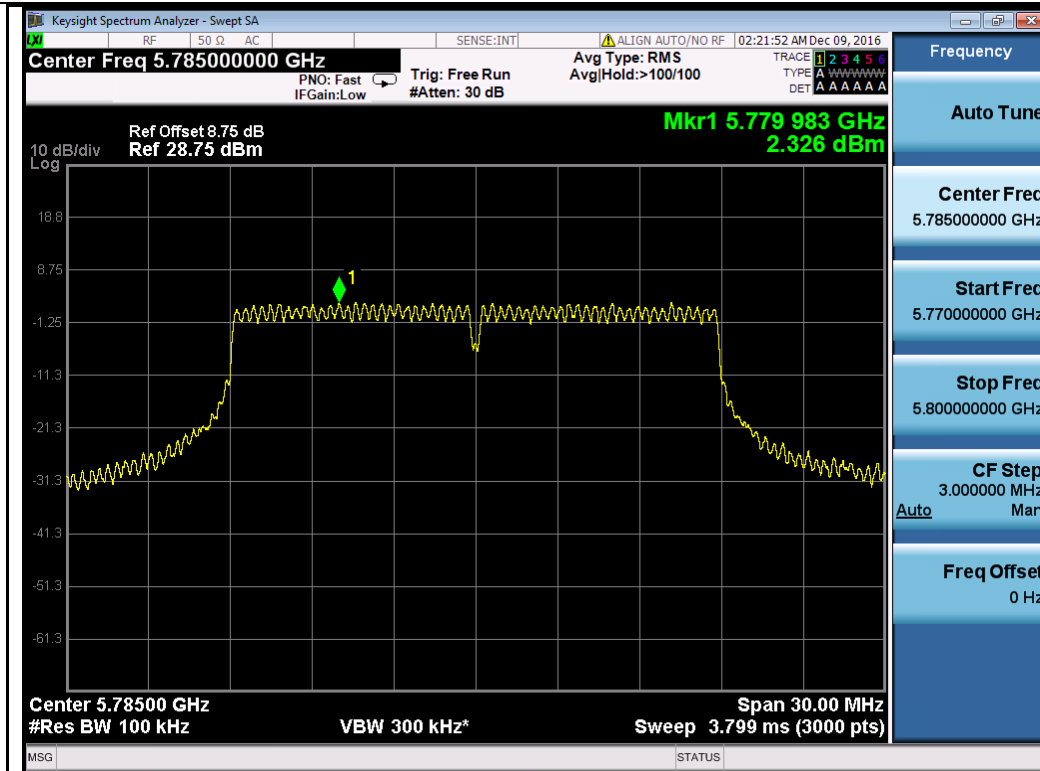
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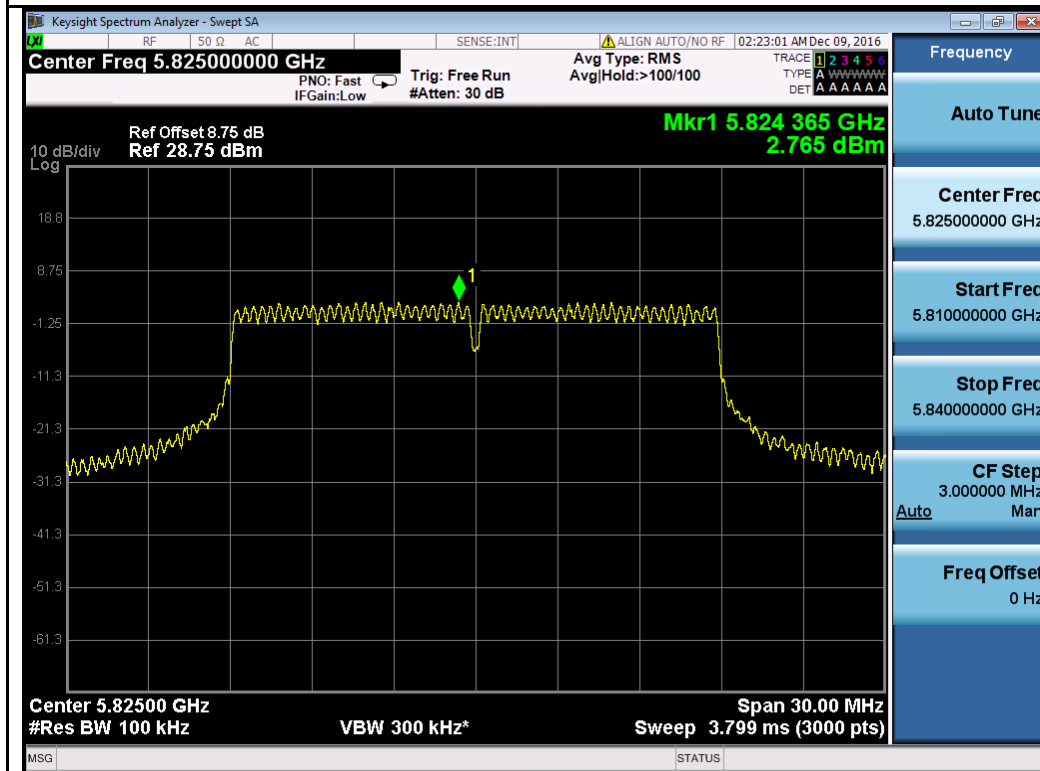
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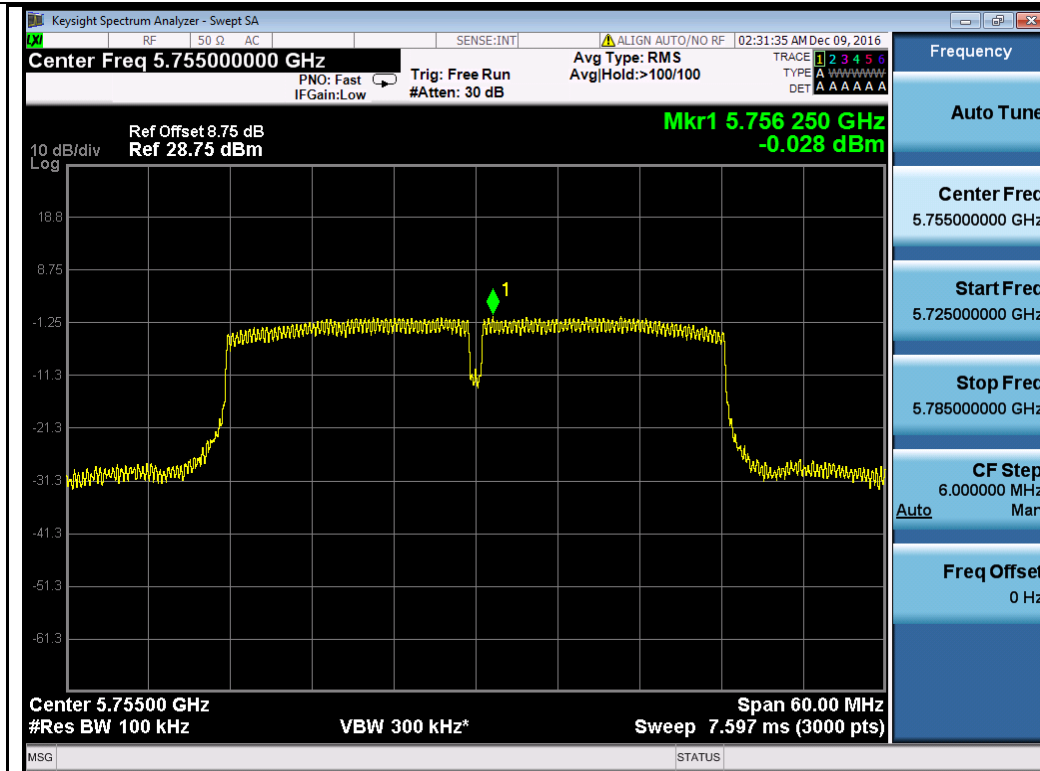
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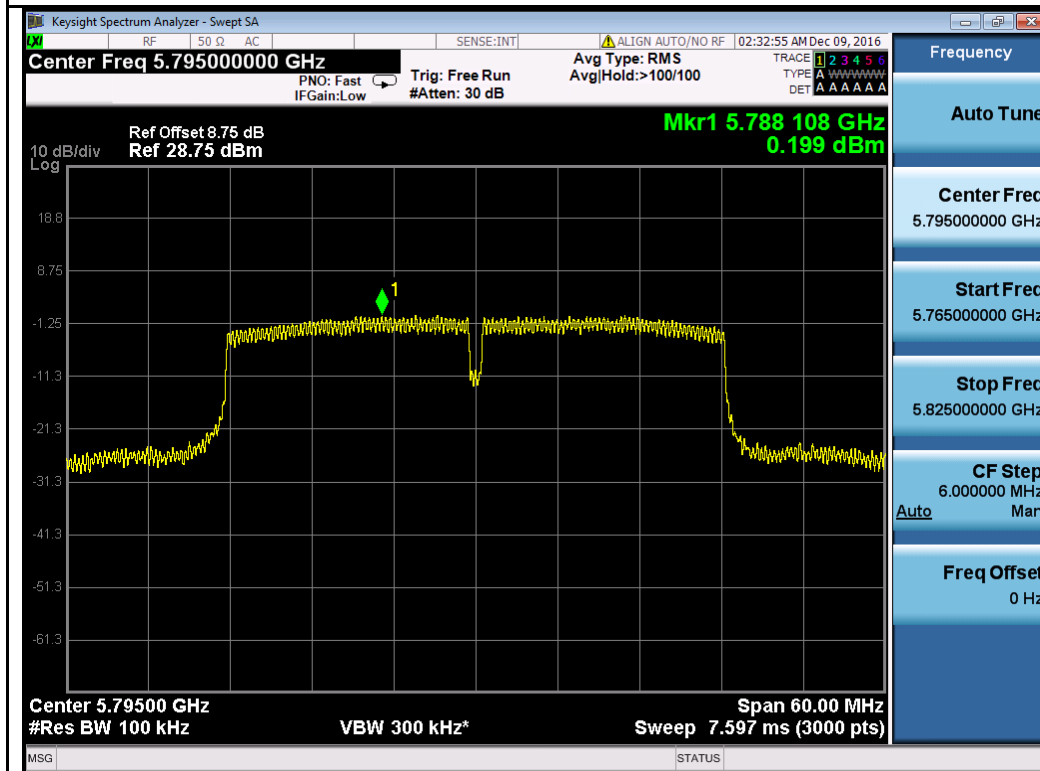
802.11n-HT20 5785M



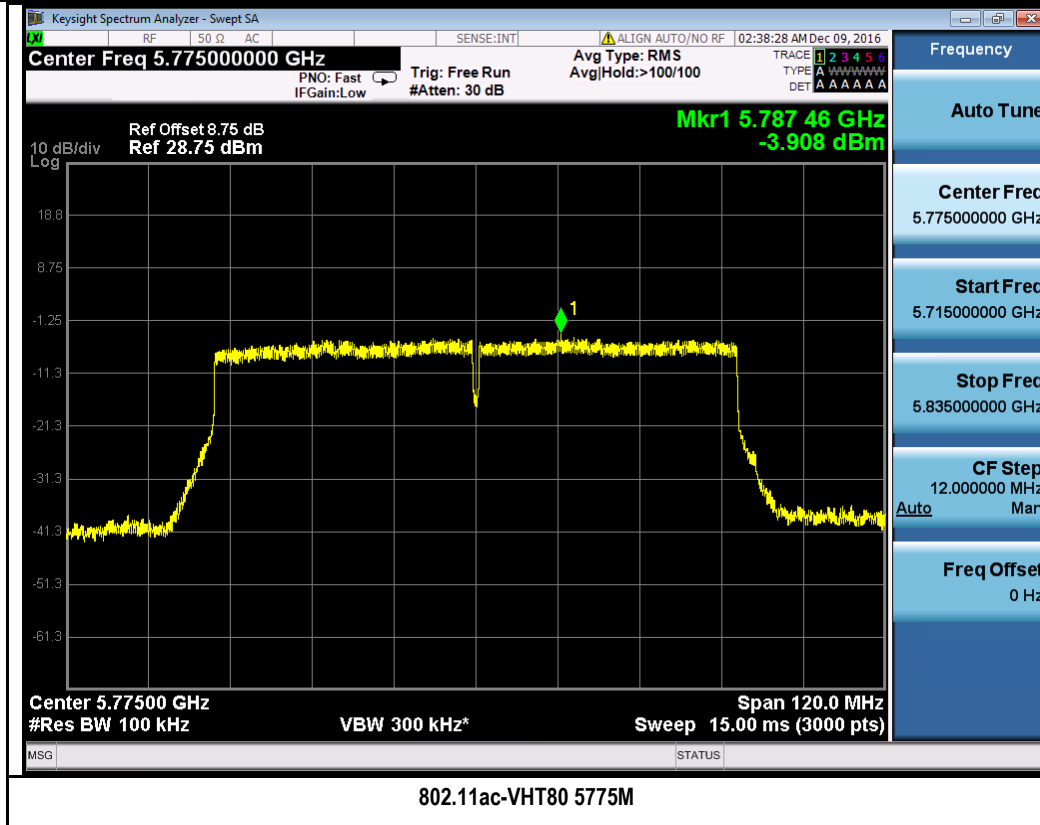
802.11n-HT20 5825M



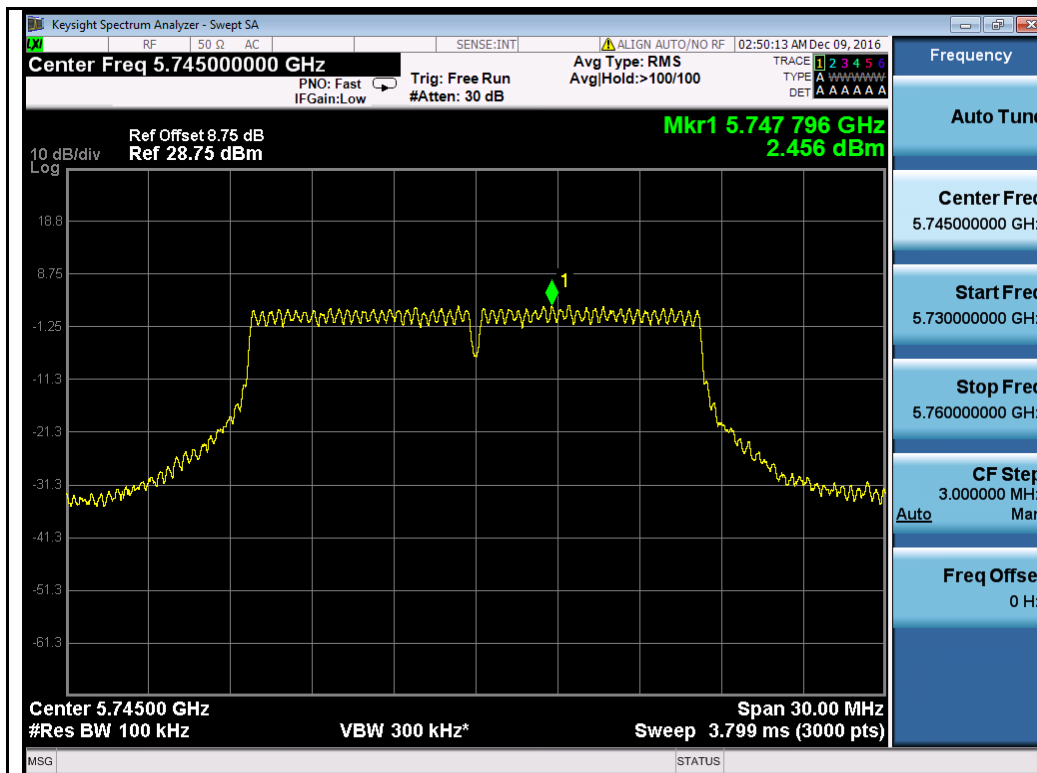
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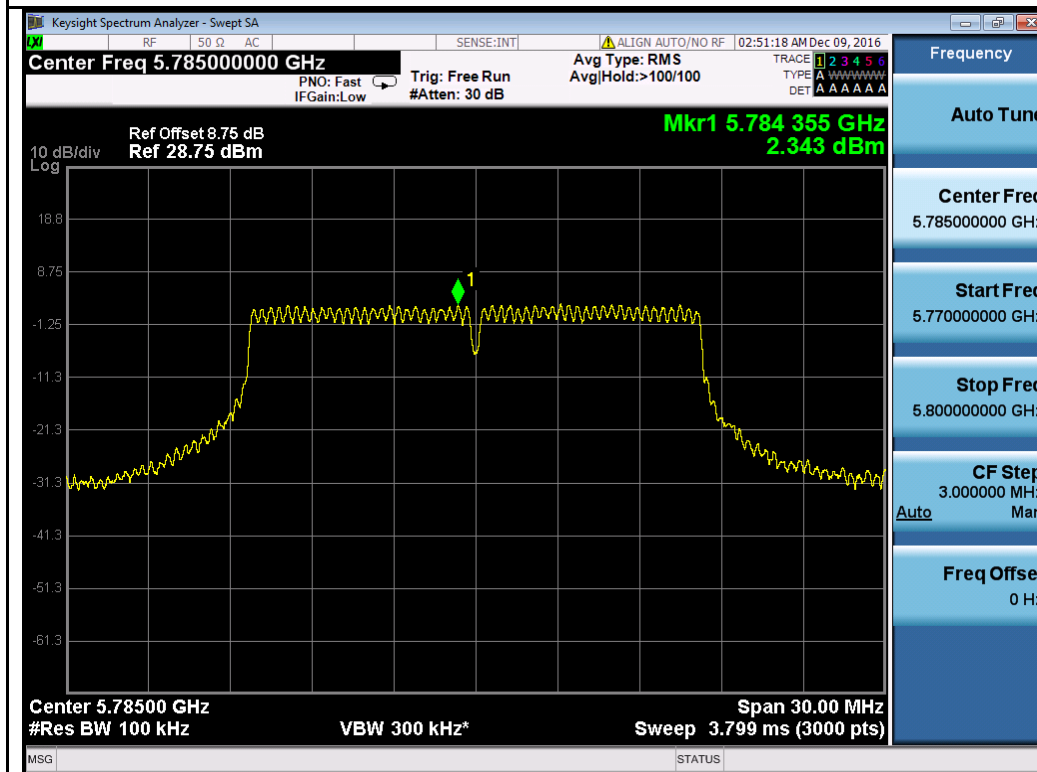
802.11n-HT40 5795M



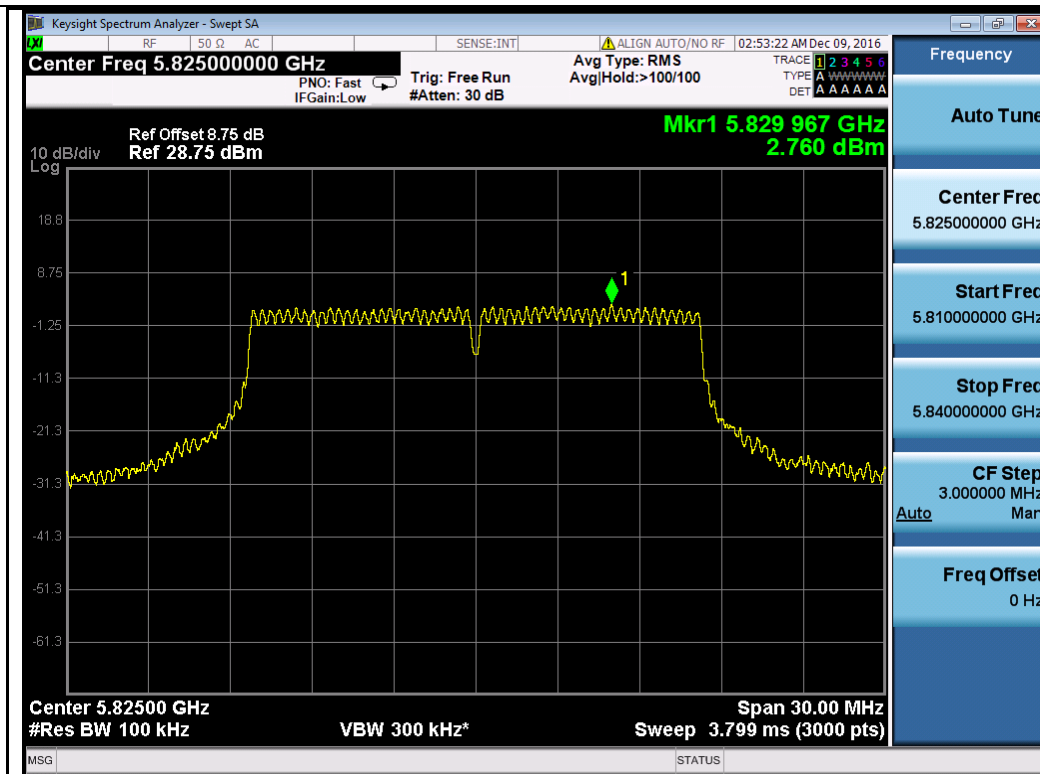
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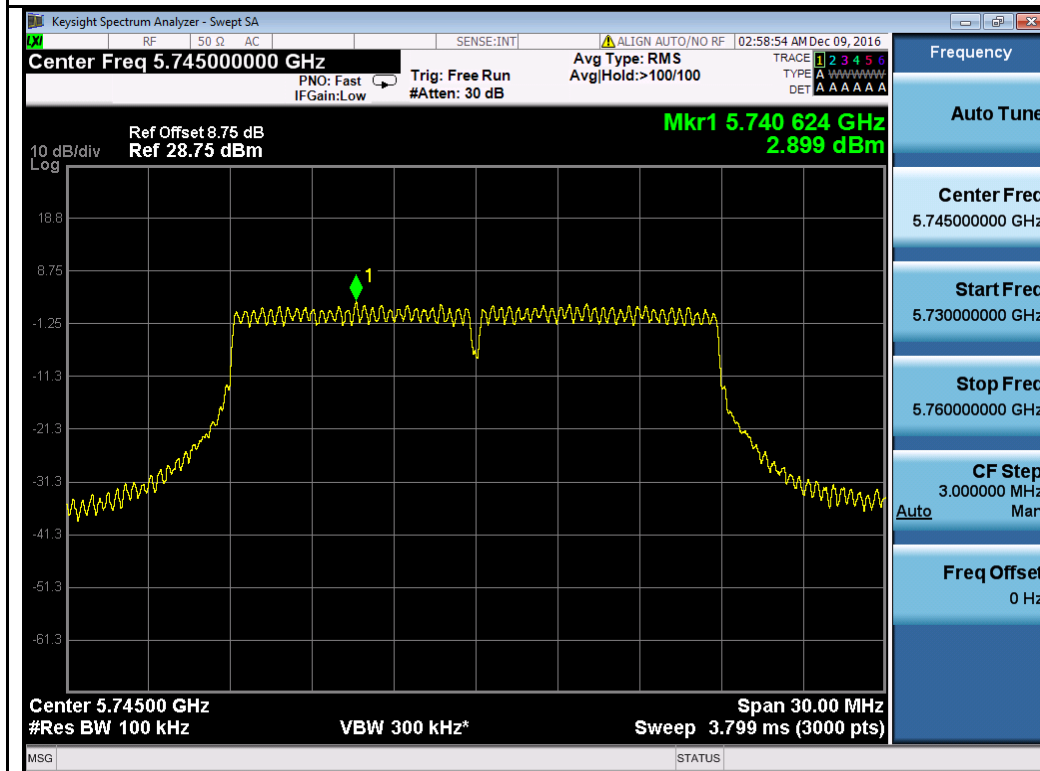
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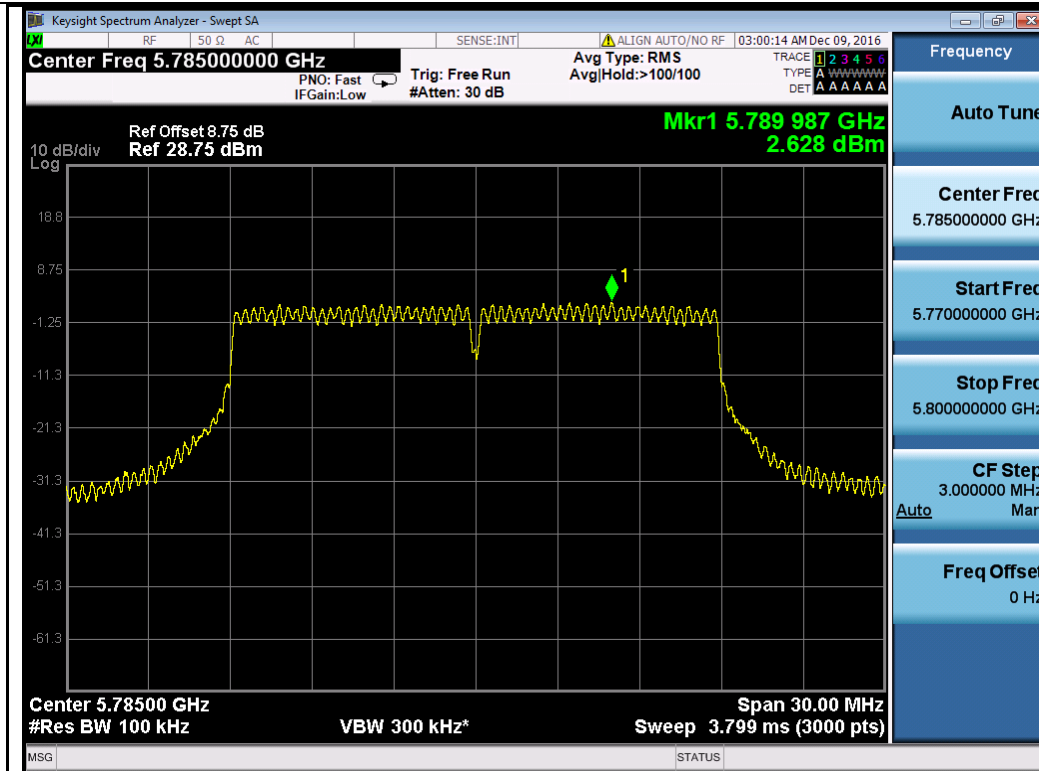
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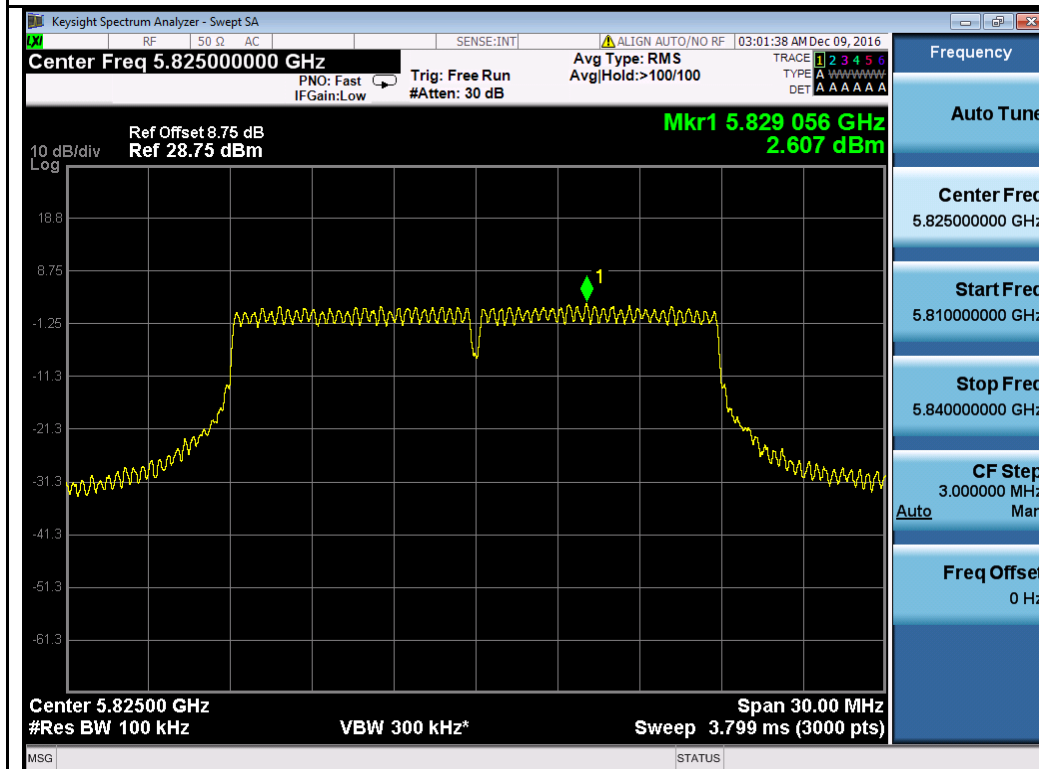
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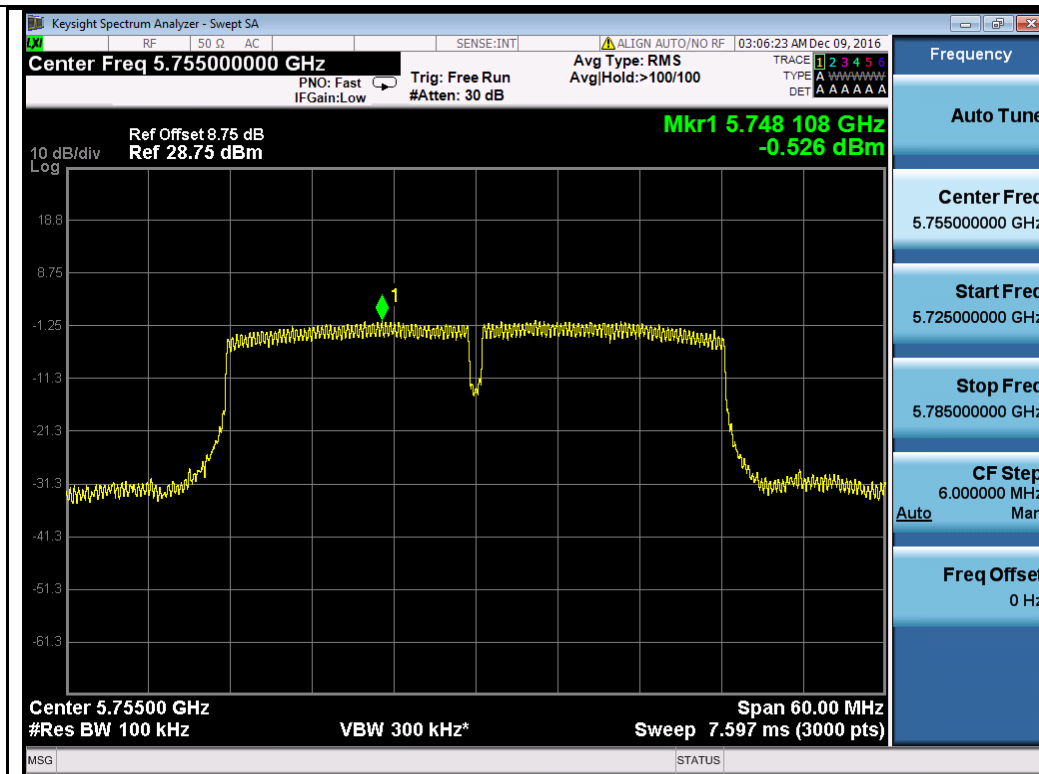
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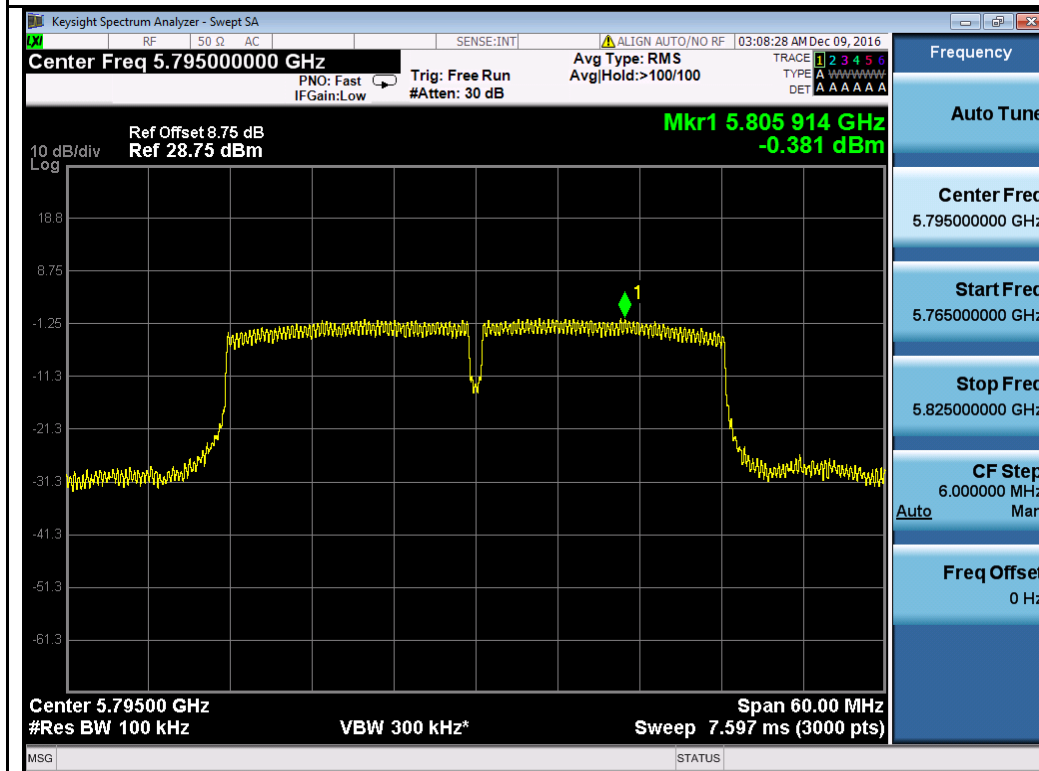
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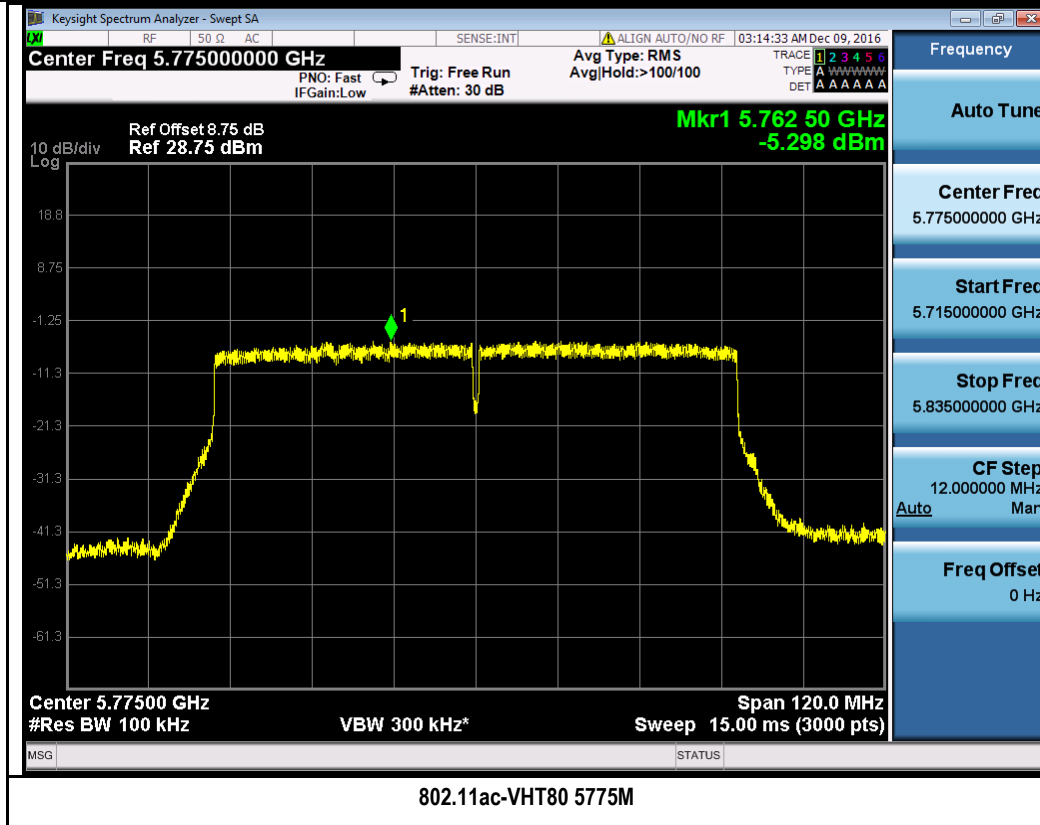
802.11n-HT20 5825M



802.11n-HT40 5755M

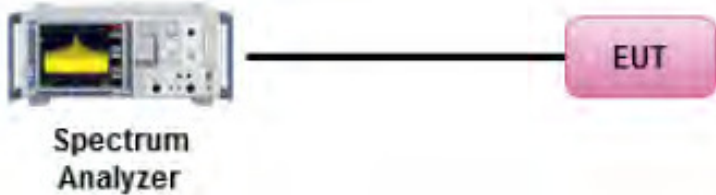


802.11n-HT40 5795M



10.5 Band Edge and Emission Mask Measurement

Requirement(s):

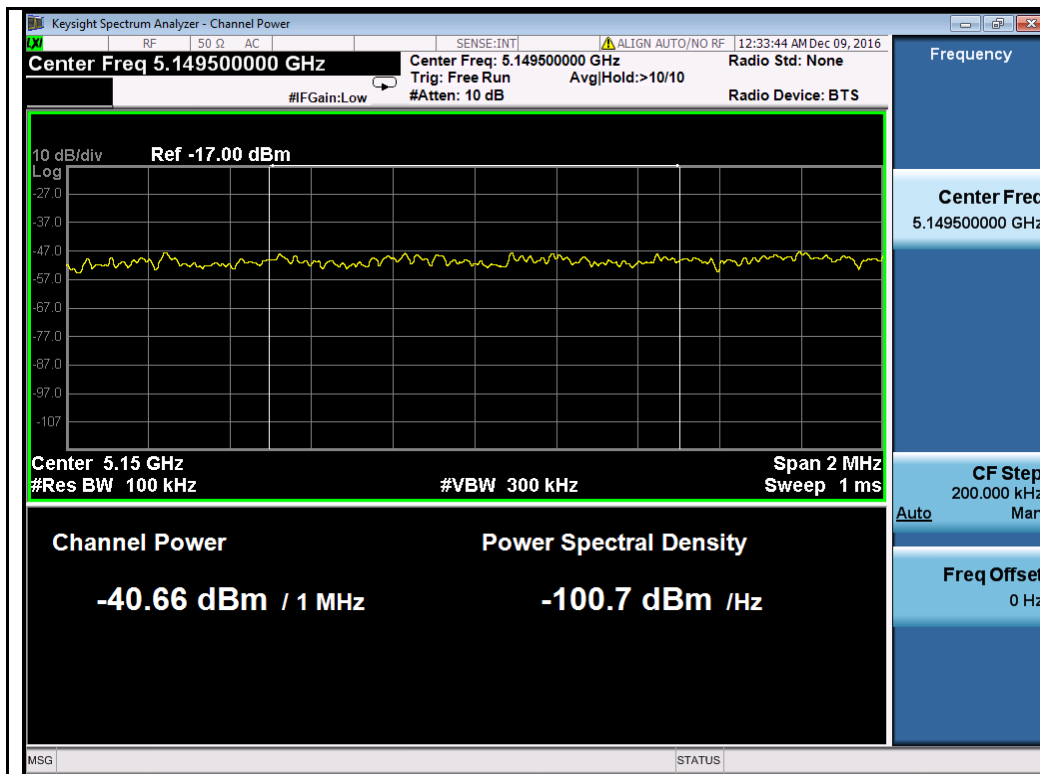
Spec	Item	Requirement	Applicable
47CFR§ 15.407(b)(2), 15.407(b)(6)	(1)	For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.	☒
	(4)	For transmitters operating in the 5.725-5.825 GHz band: all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	☒
Test Setup			
Procedure	789033 D02 General UNII Test Procedures New Rules v01r02, II.F. Method SA-1 <u>Band Edge measurement:</u> - For average emissions measurements, follow the procedures described in section II.G.6., "Procedures for Average Unwanted Emissions Measurements above 1000 MHz", except for the following changes: - Set RBW=100kHz - Set VBW=300kHz - Perform a band-power integration across the 1 MHz bandwidth in which the band-edge emission level is to be measured.		
Remark	Antenna gain was added to the offset.		
Result	☒ Pass ☐ Fail		

Test Data ☐ Yes (See below) ☒ N/A

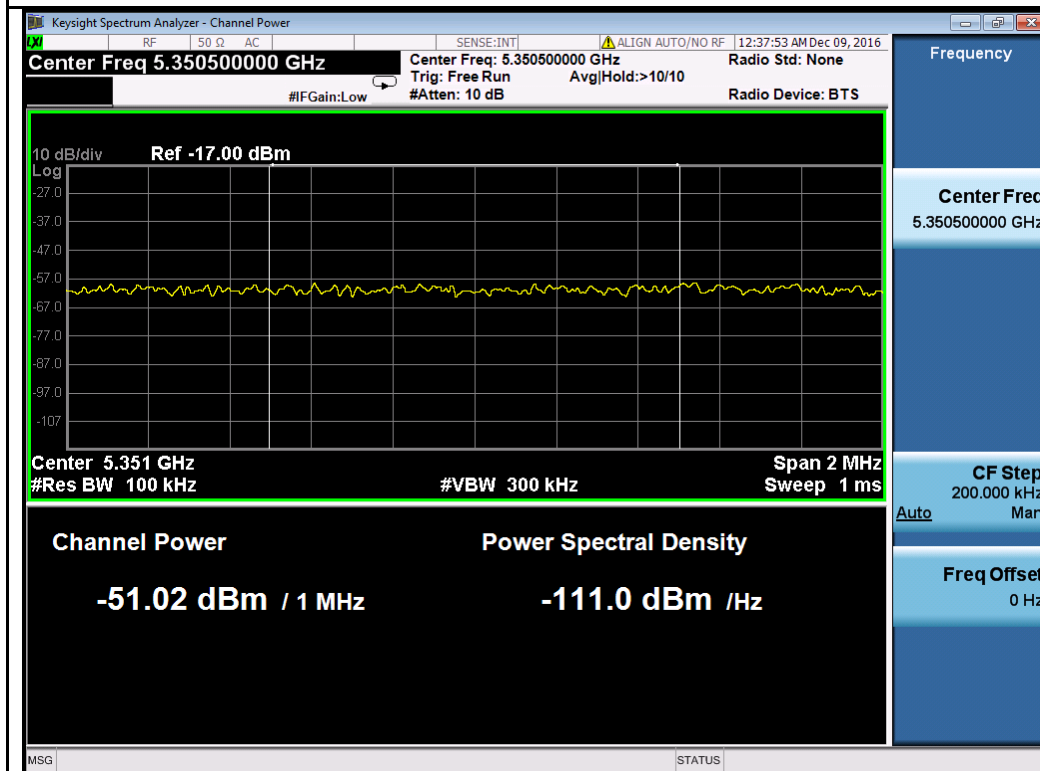
Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Shuo Zhang at RF test site.

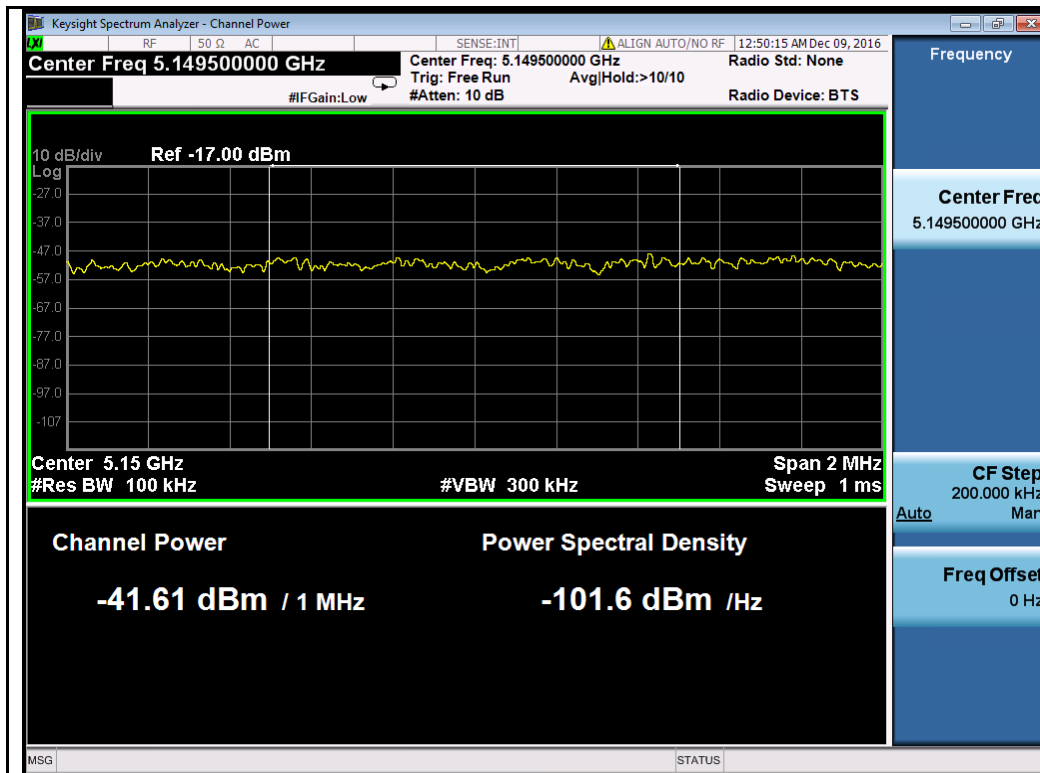
Test Plots for W52:
Chain 1:



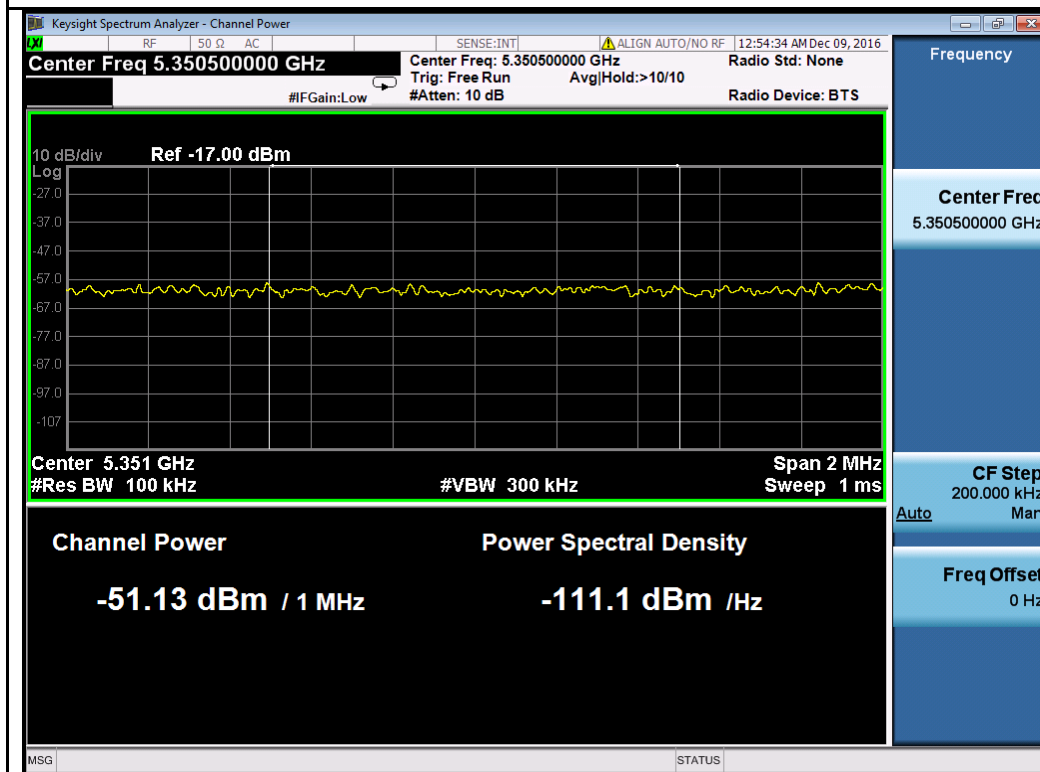
802.11a-5180MHz



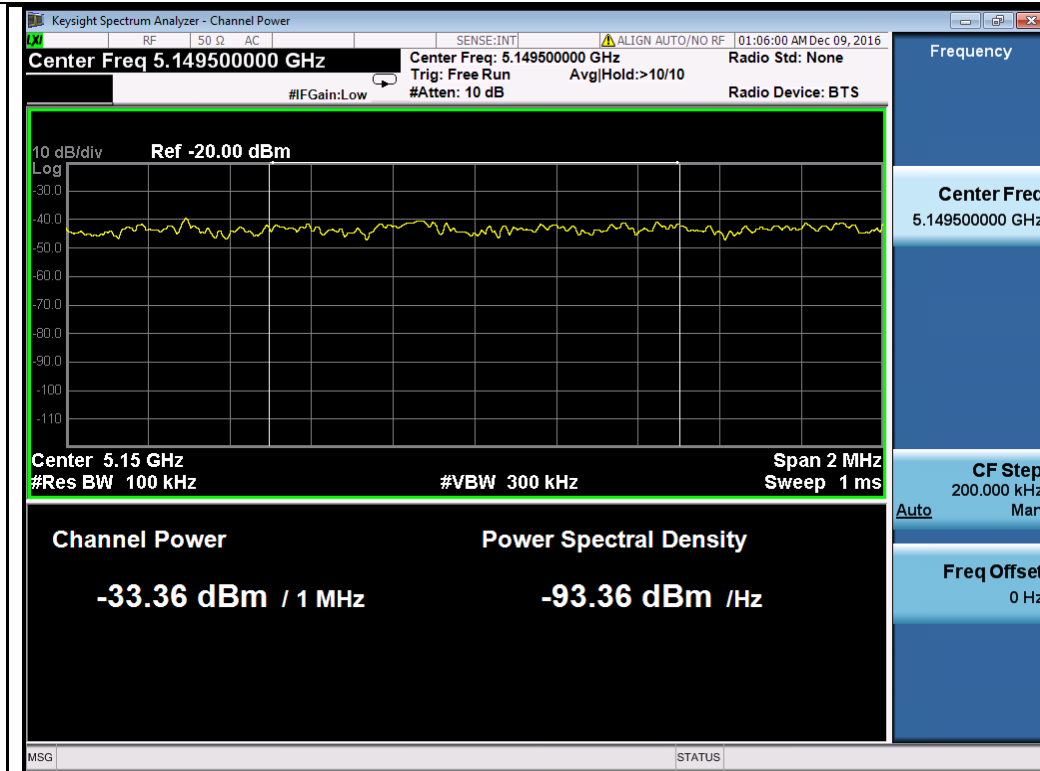
802.11a-5240MHz



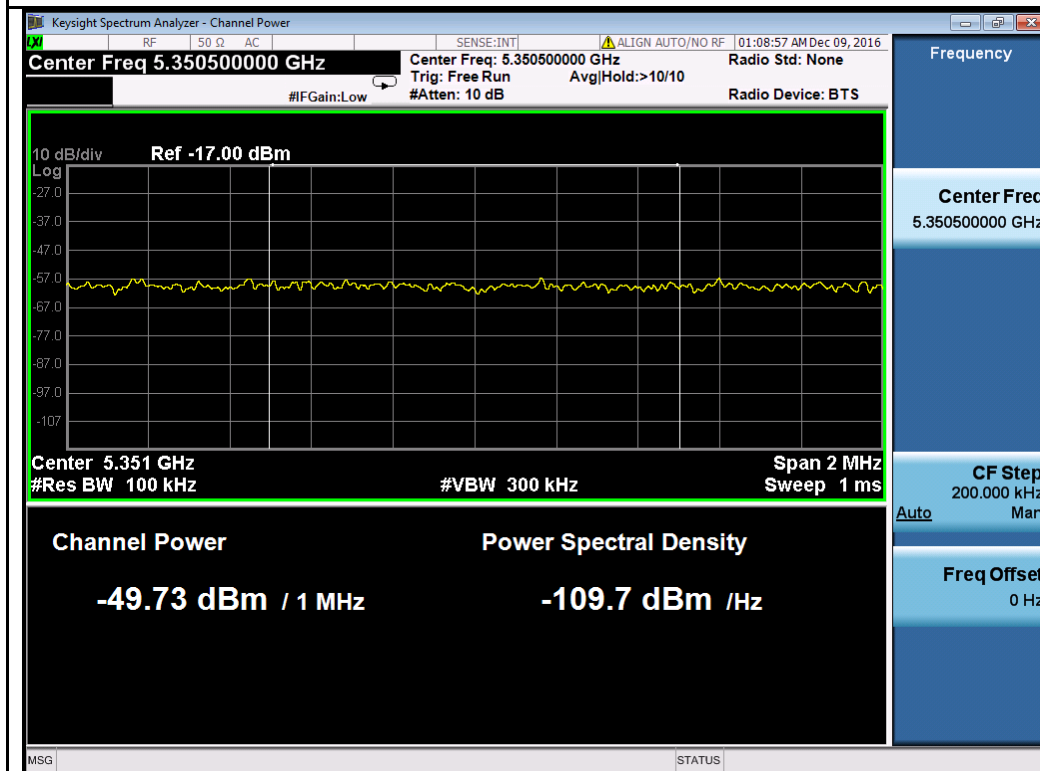
802.11n-HT20-5180MHz



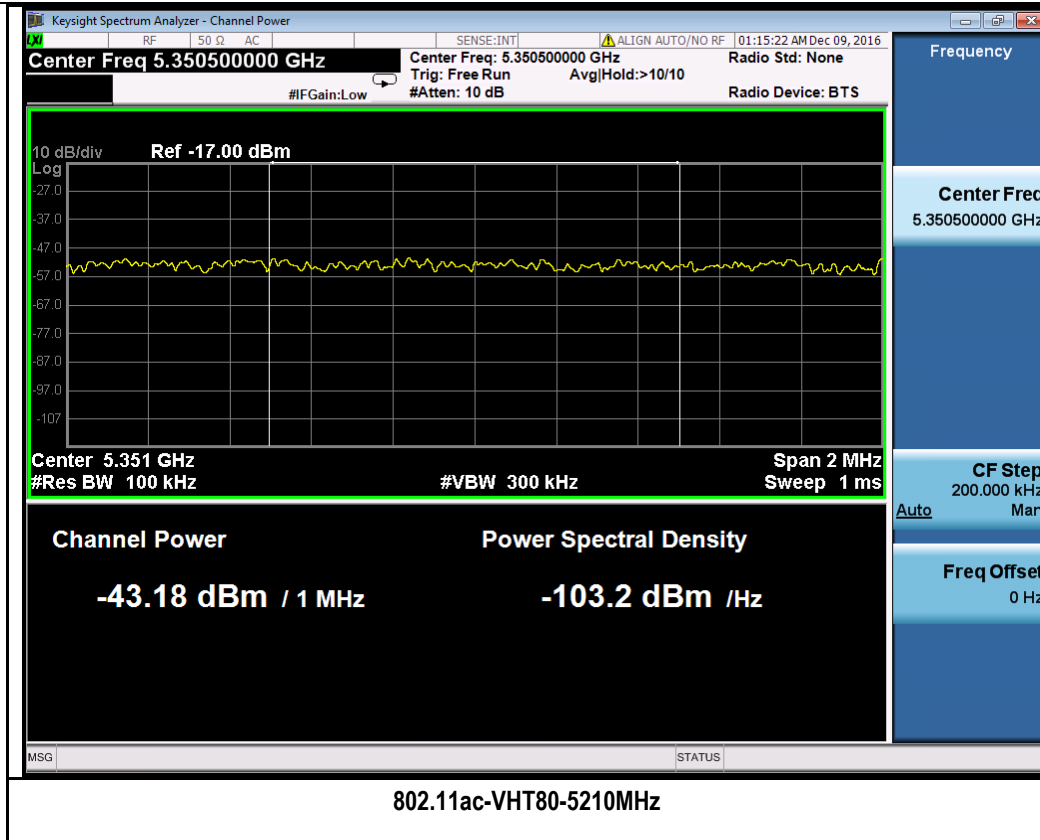
802.11n-HT20-5240MHz



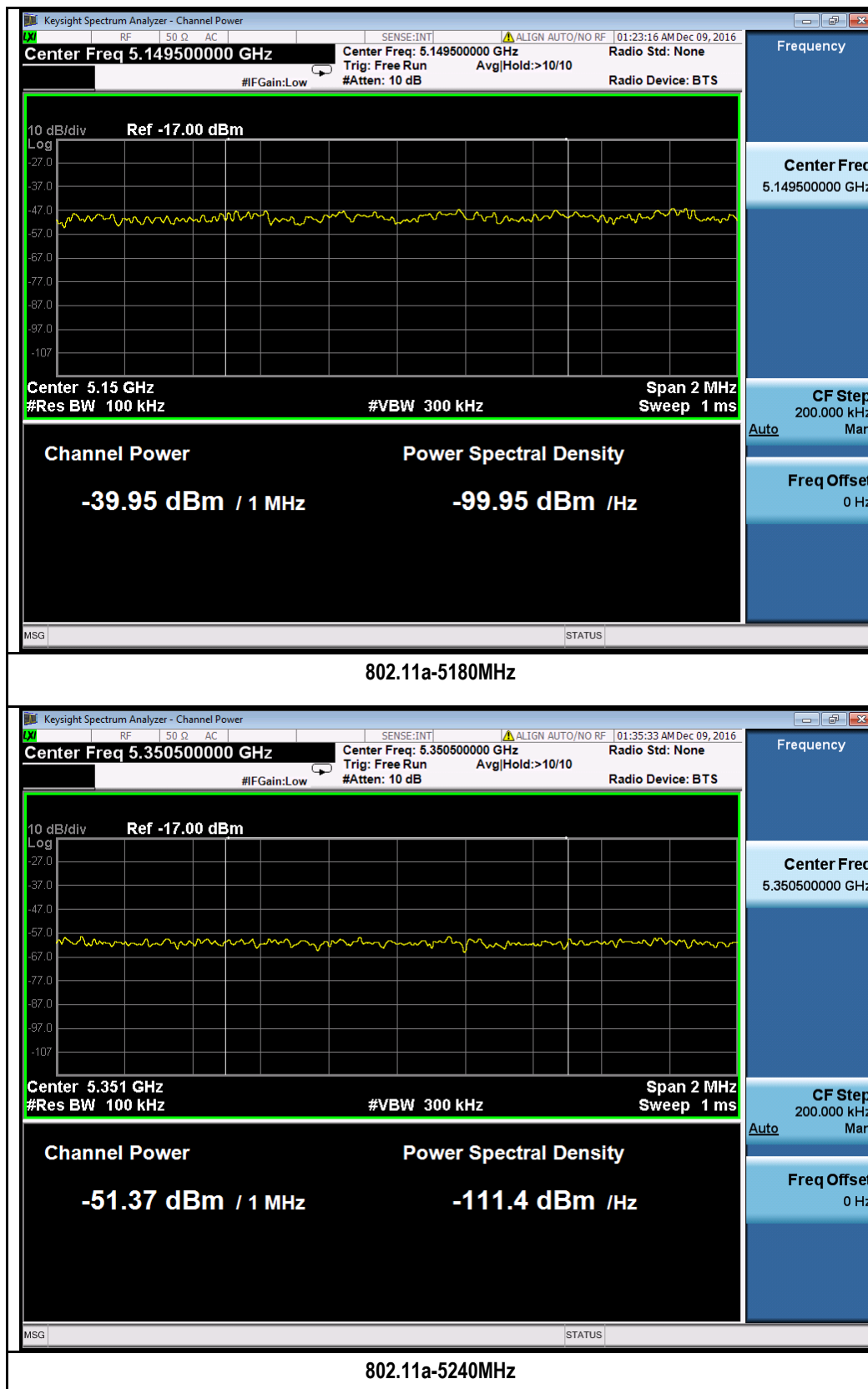
802.11n-HT40-5190MHz

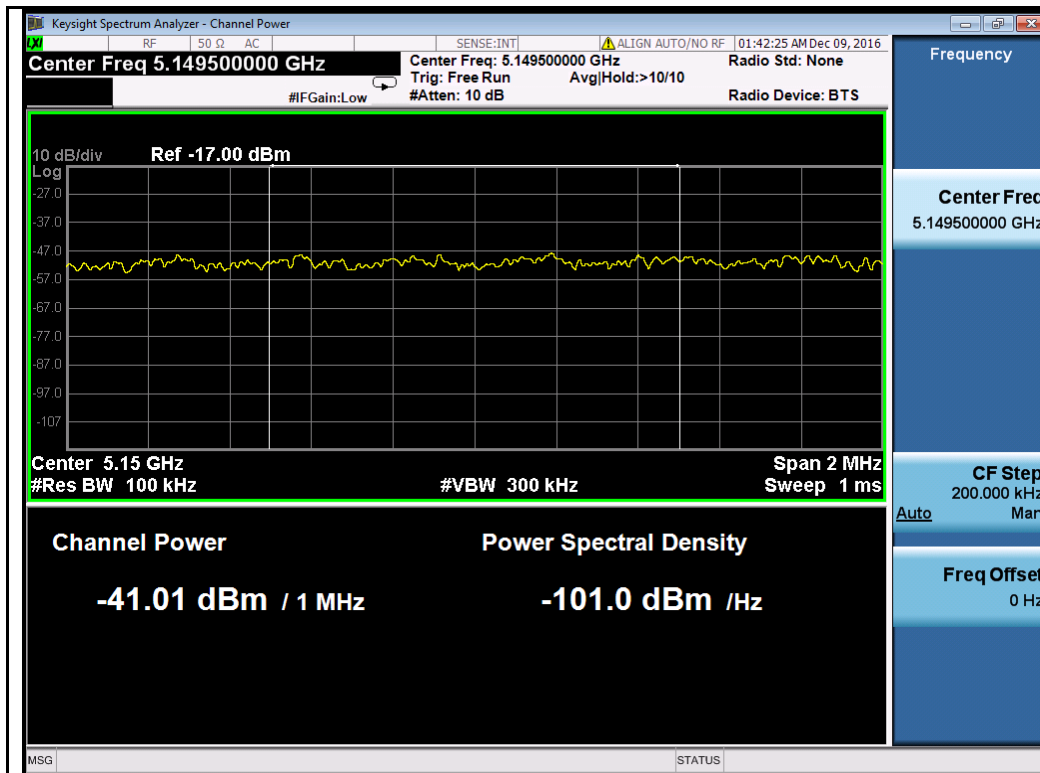


802.11n-HT40-5230MHz

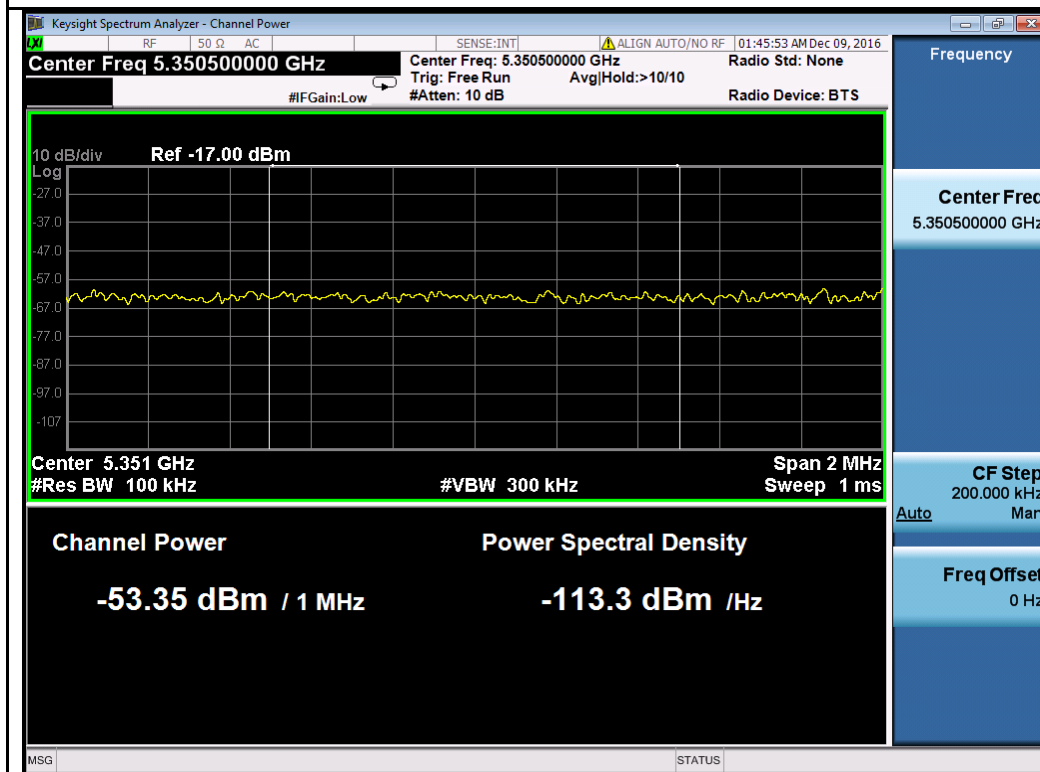


Chain 2:

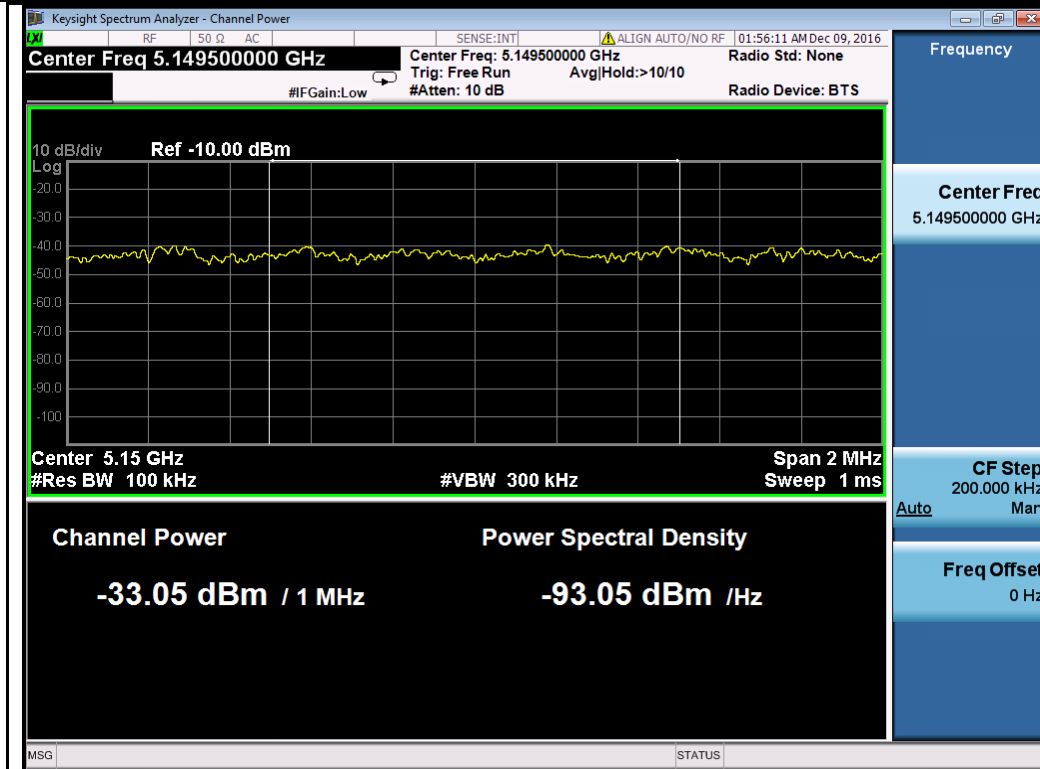




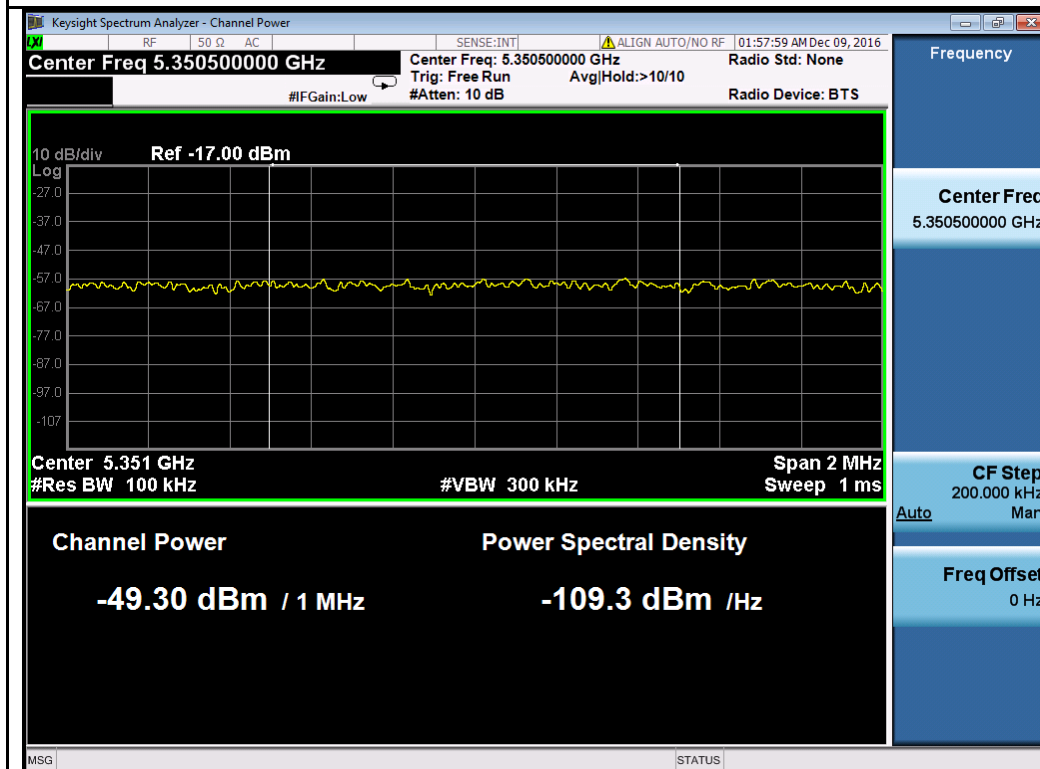
802.11n-HT20-5180MHz



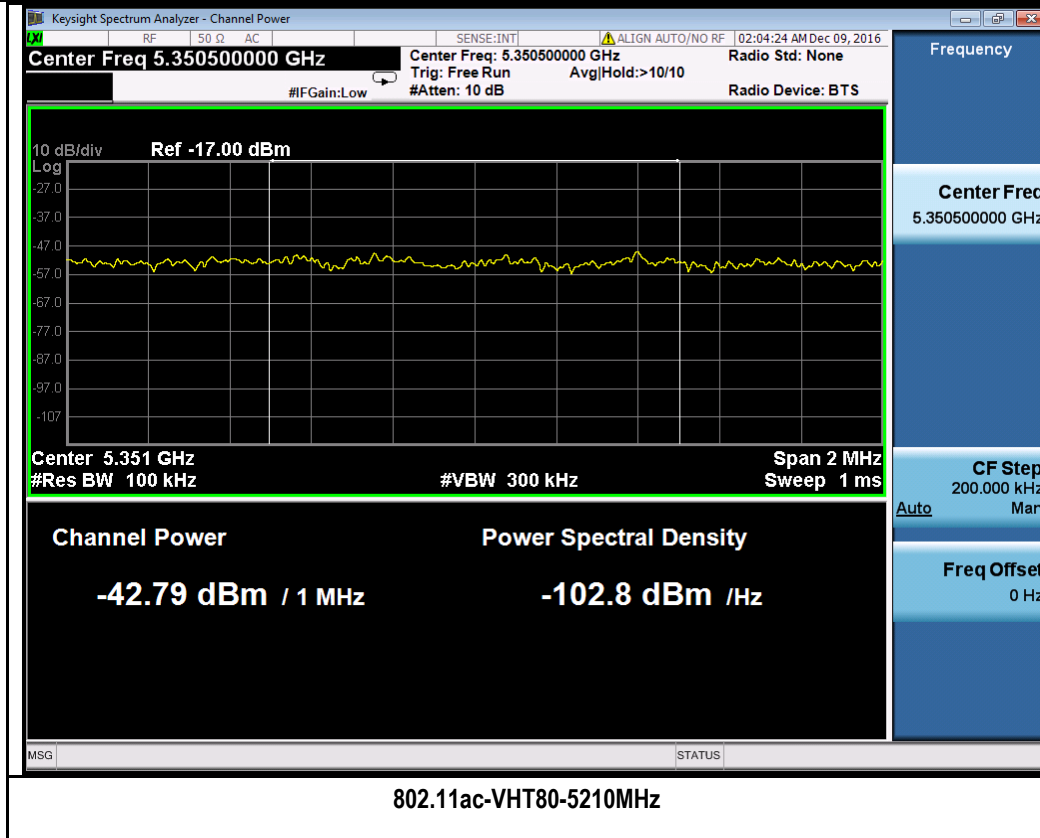
802.11n-HT20-5240MHz



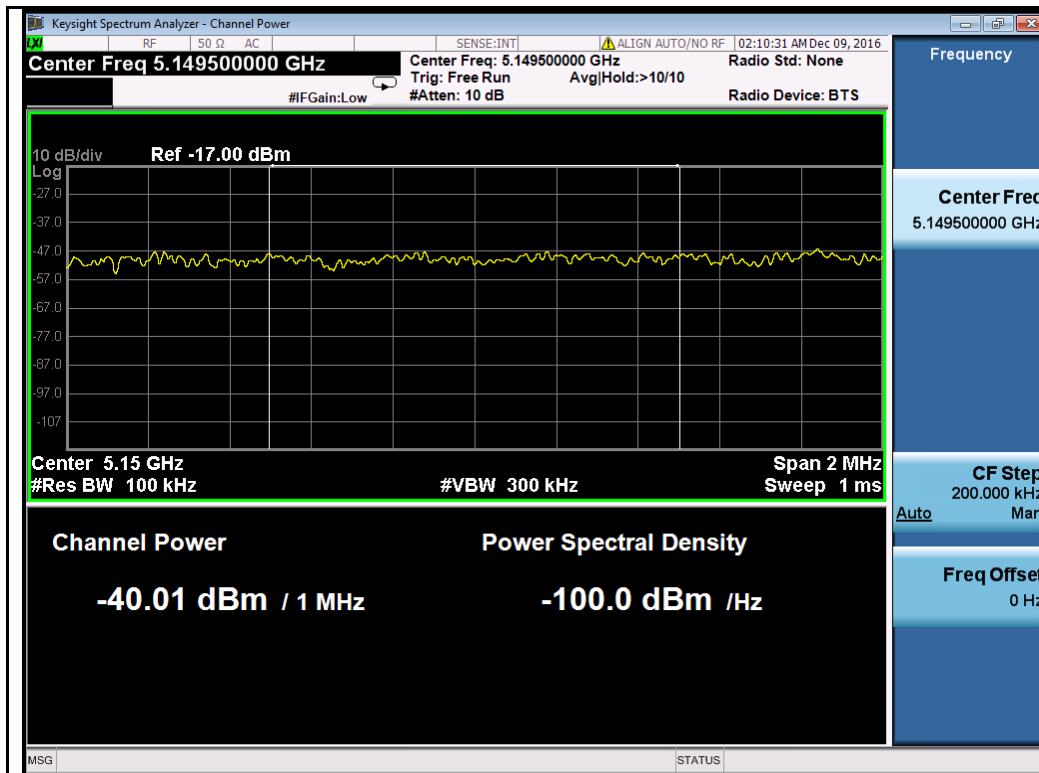
802.11n-HT40-5190MHz



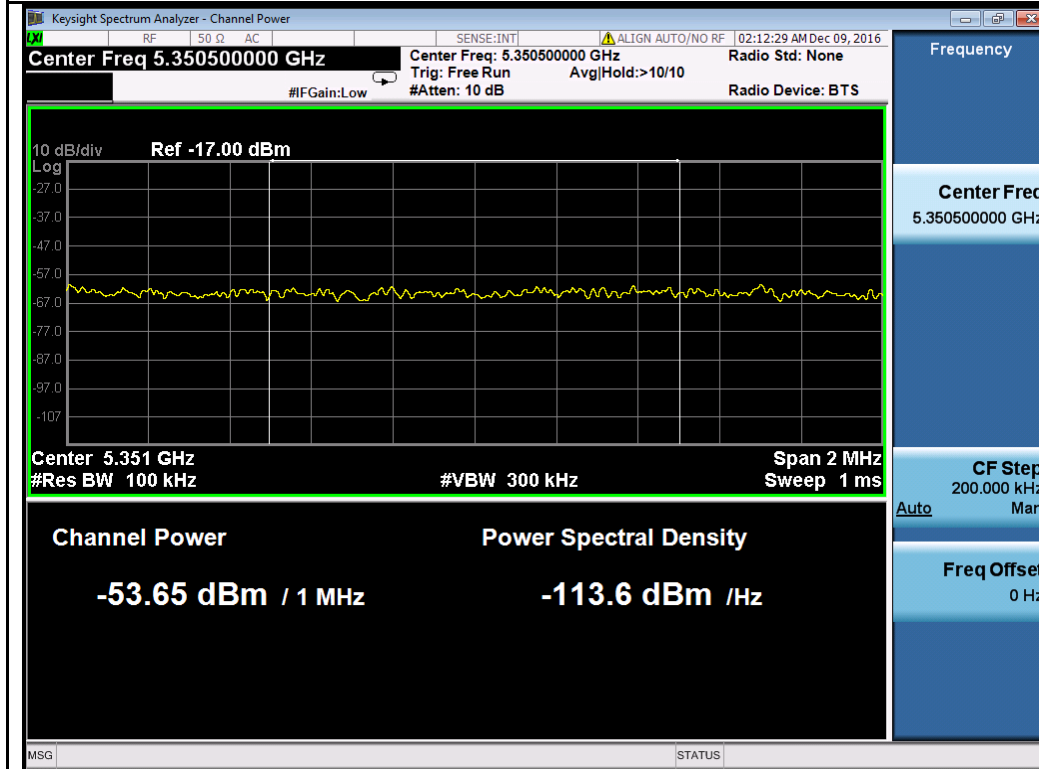
802.11n-HT40-5230MHz



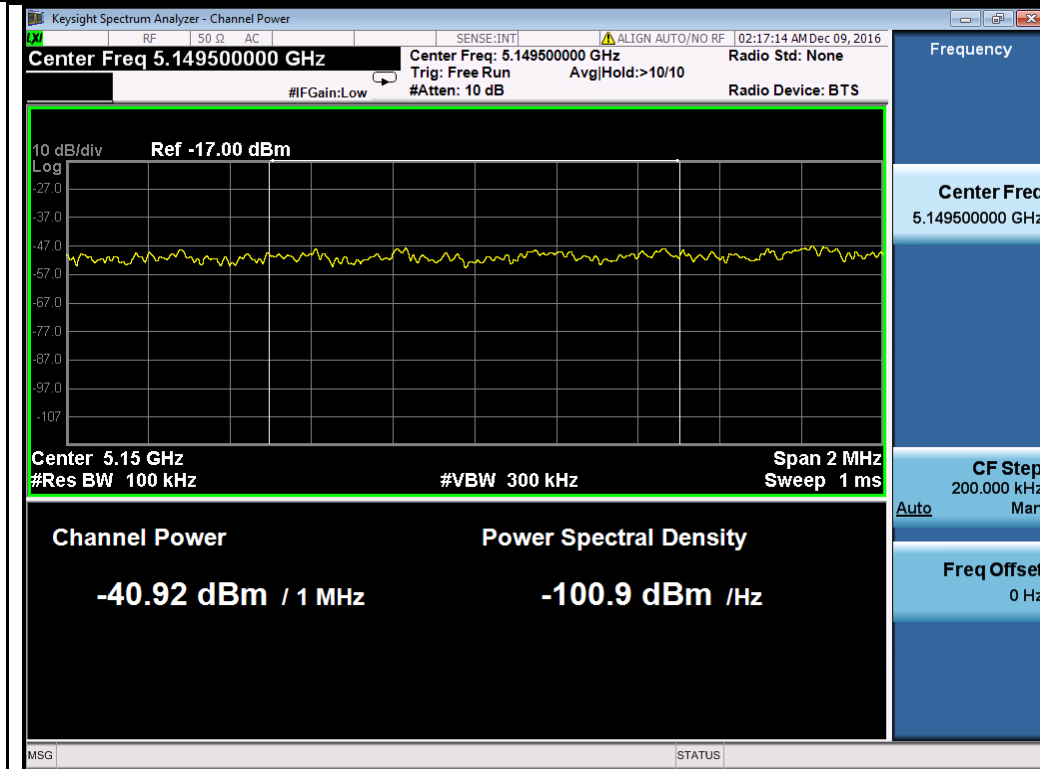
Chain 3:



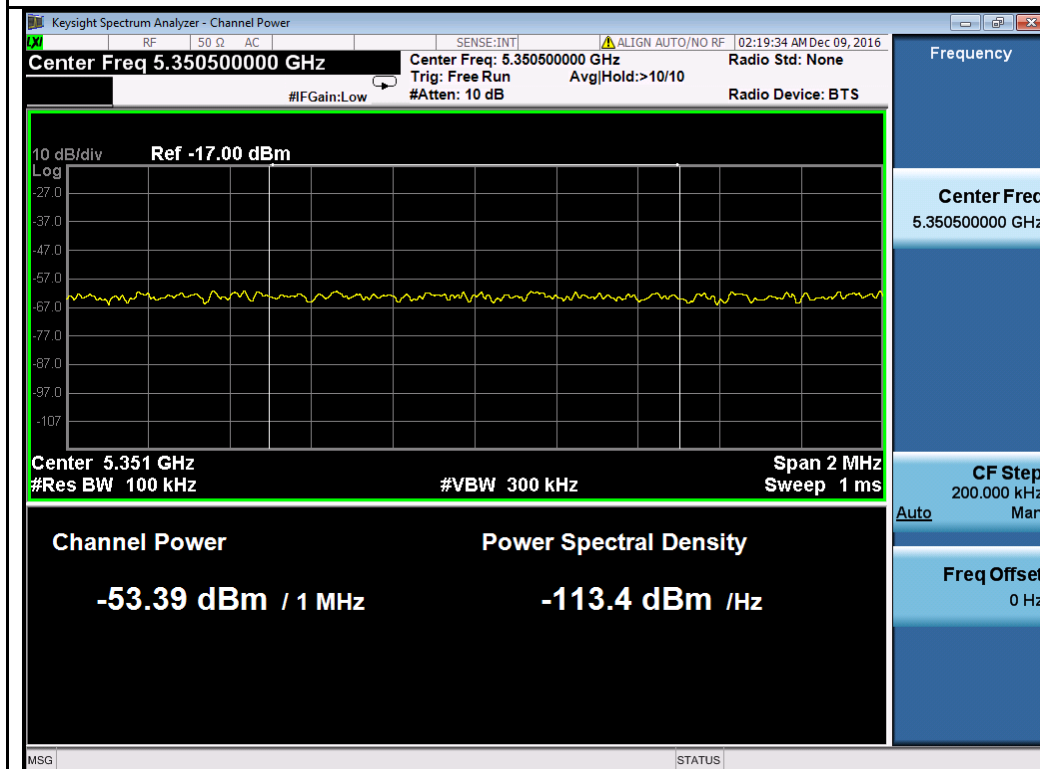
802.11a-5180MHz



802.11a-5240MHz



802.11n-HT20-5180MHz



802.11n-HT20-5240MHz