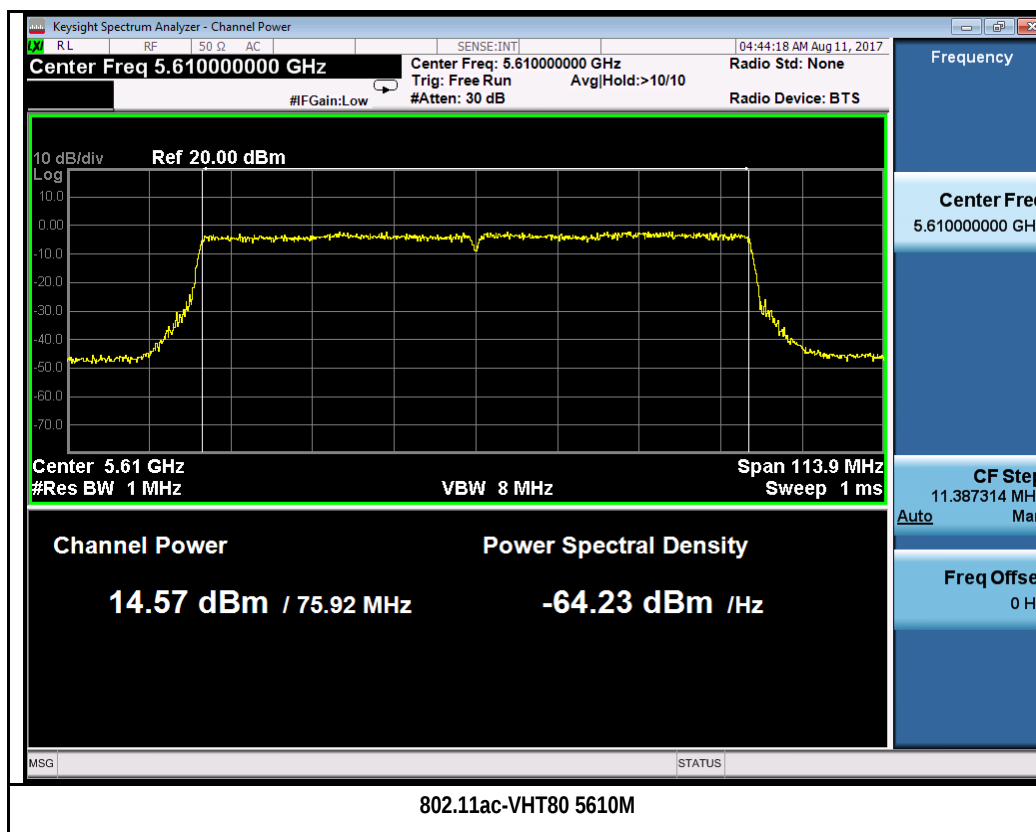
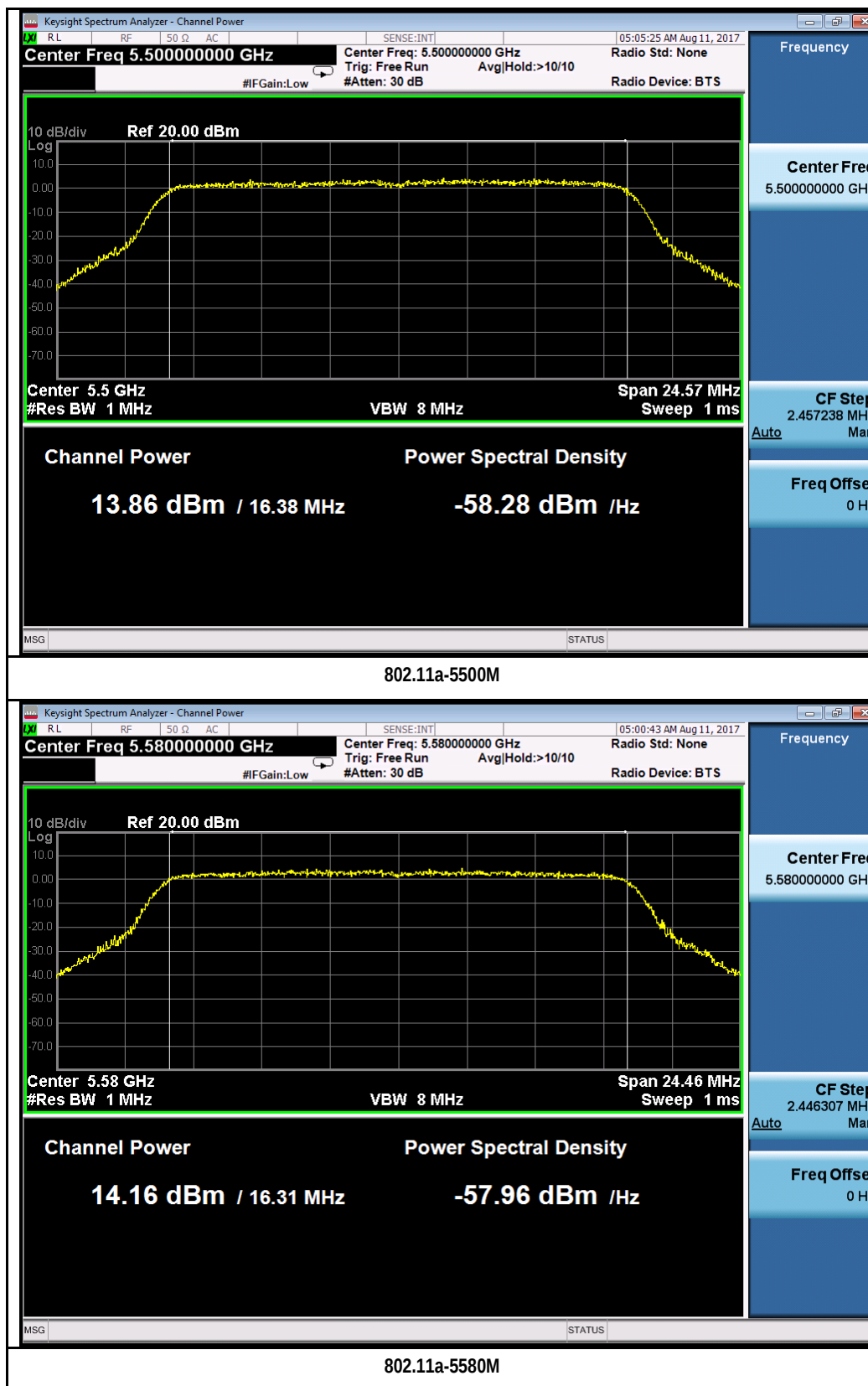
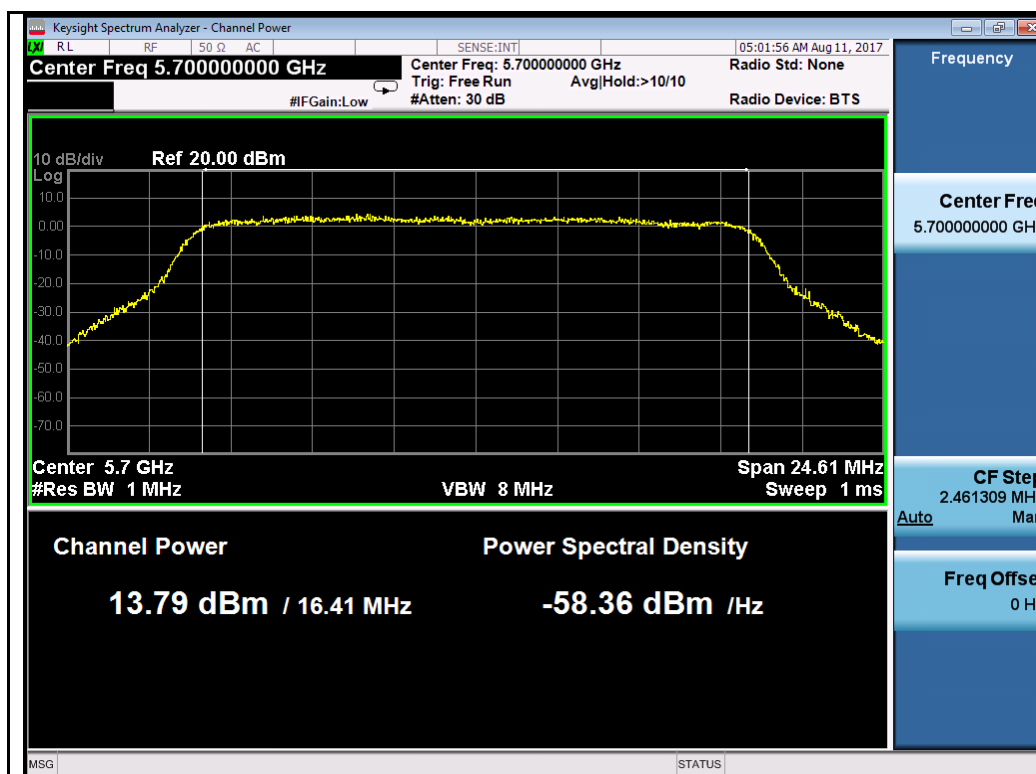


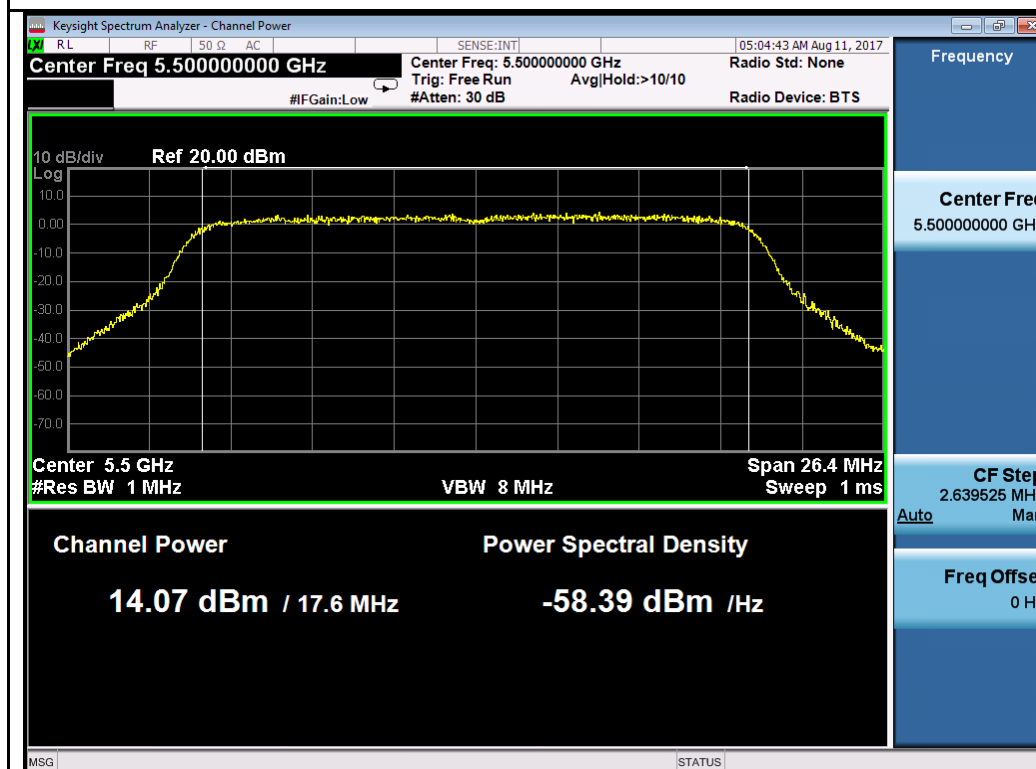


Chain 3:

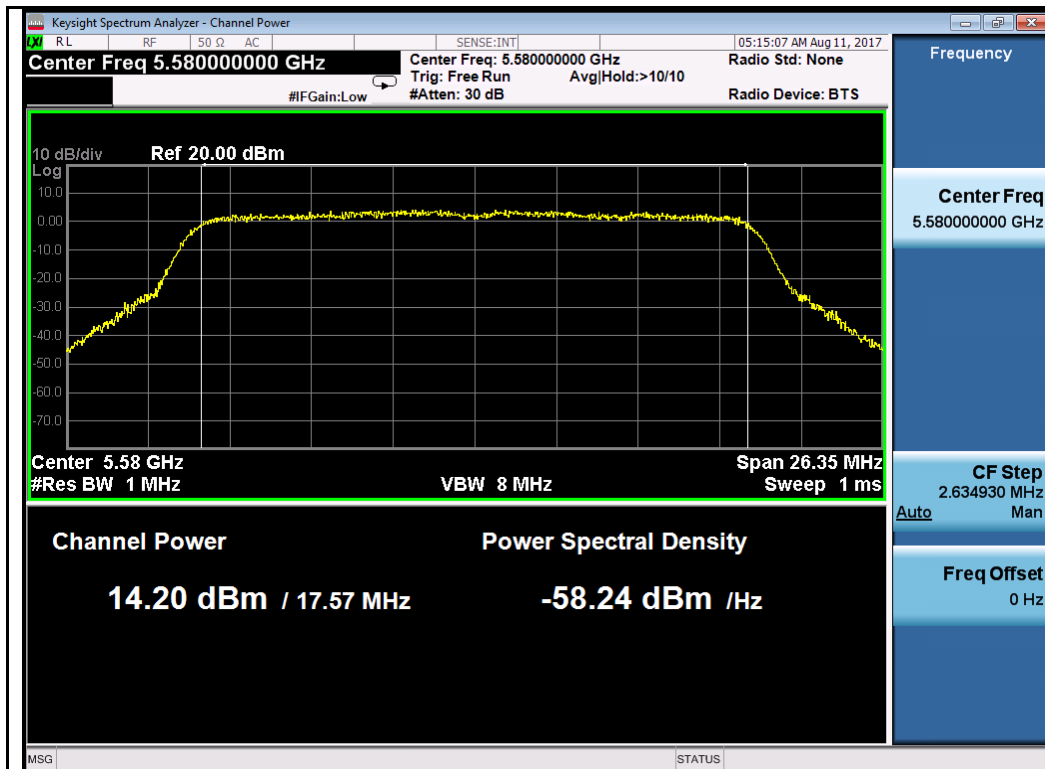




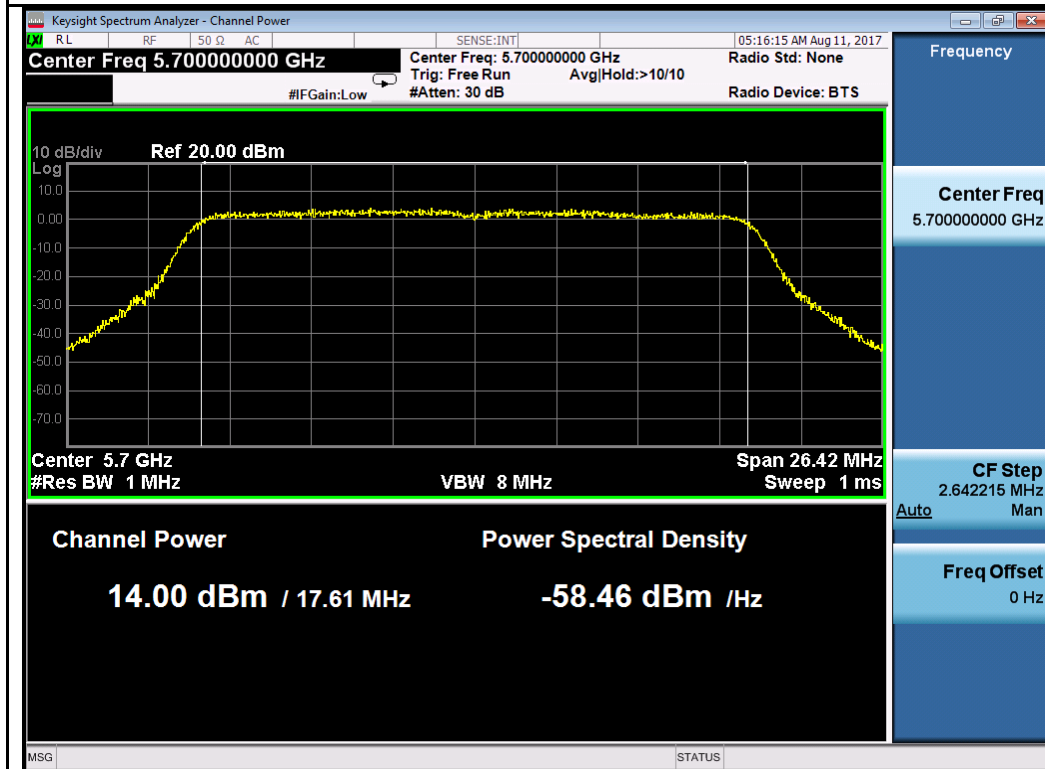
802.11a-5700M



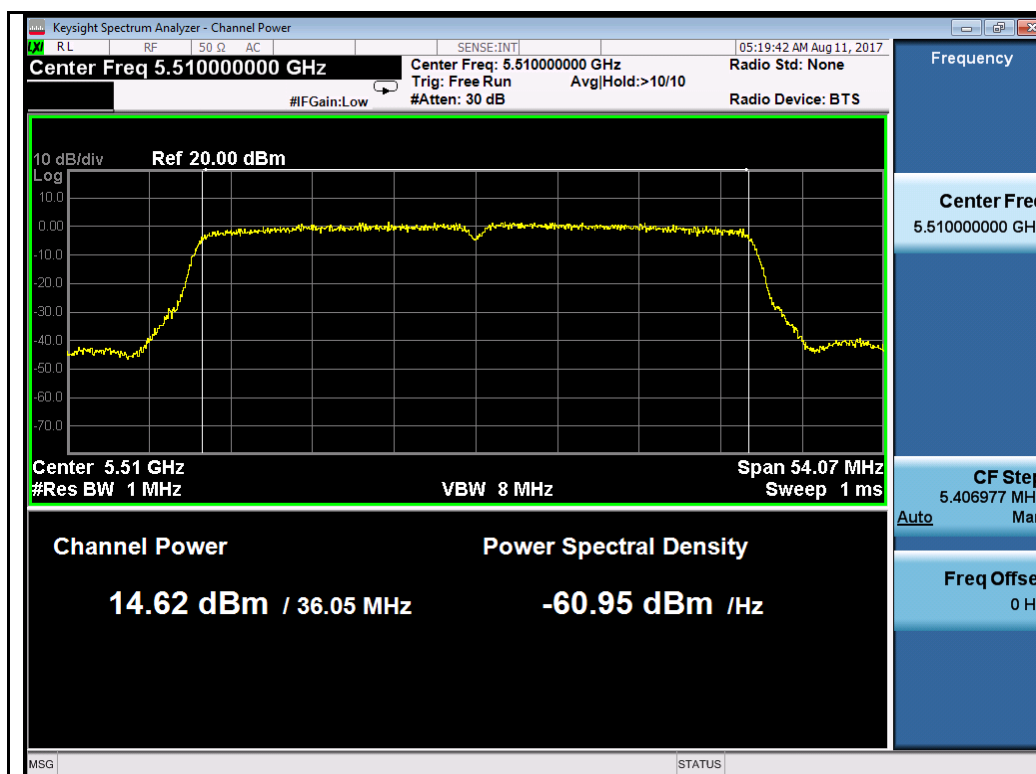
802.11n-HT20 5500M



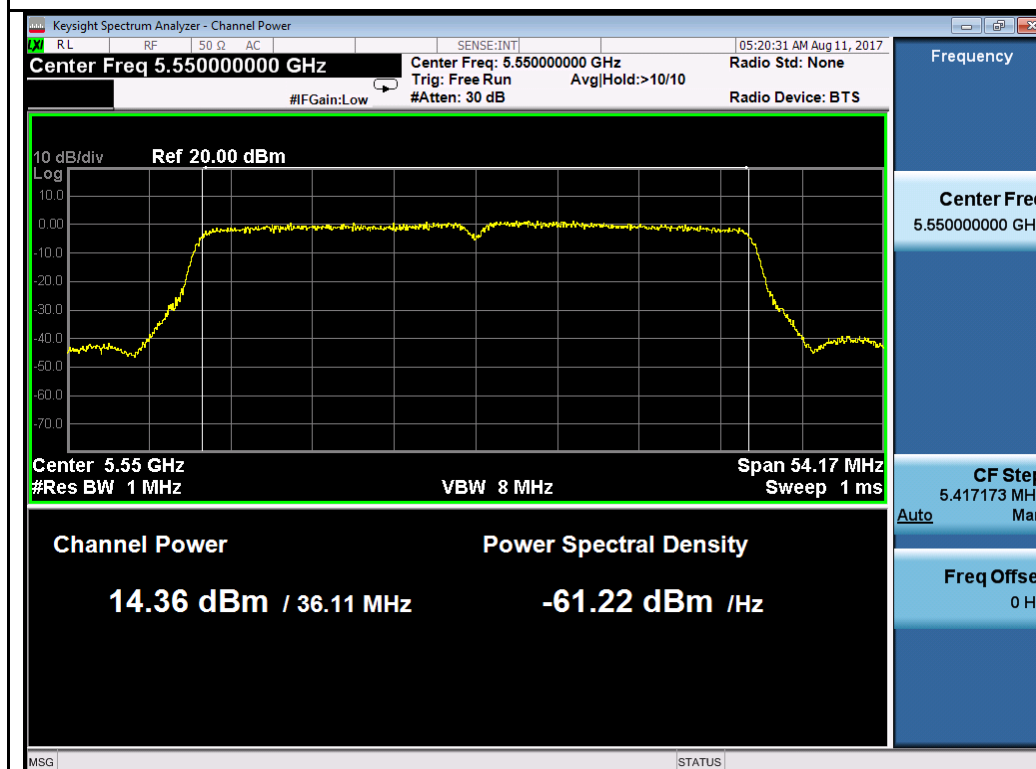
802.11n-HT20 5580M



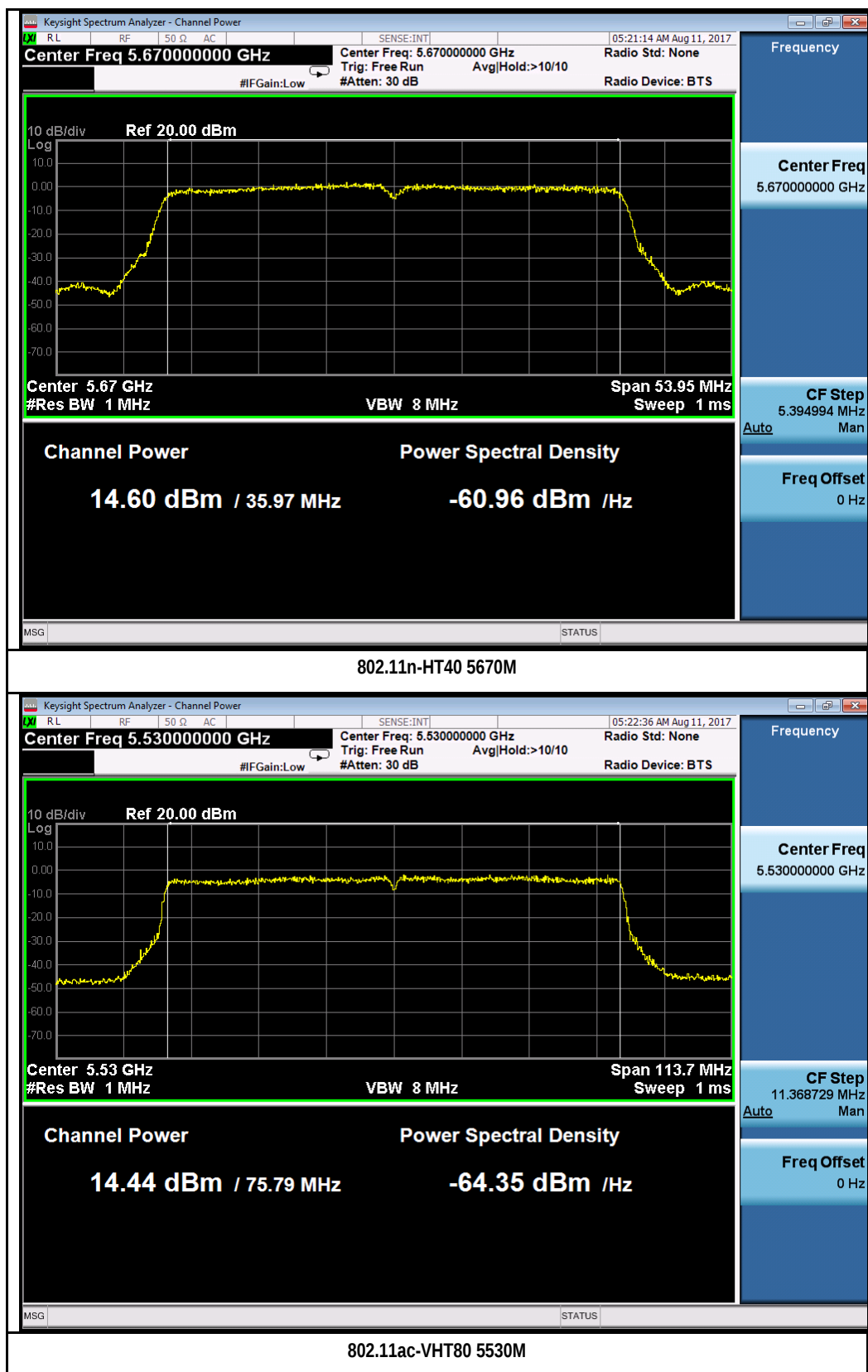
802.11n-HT20 5700M

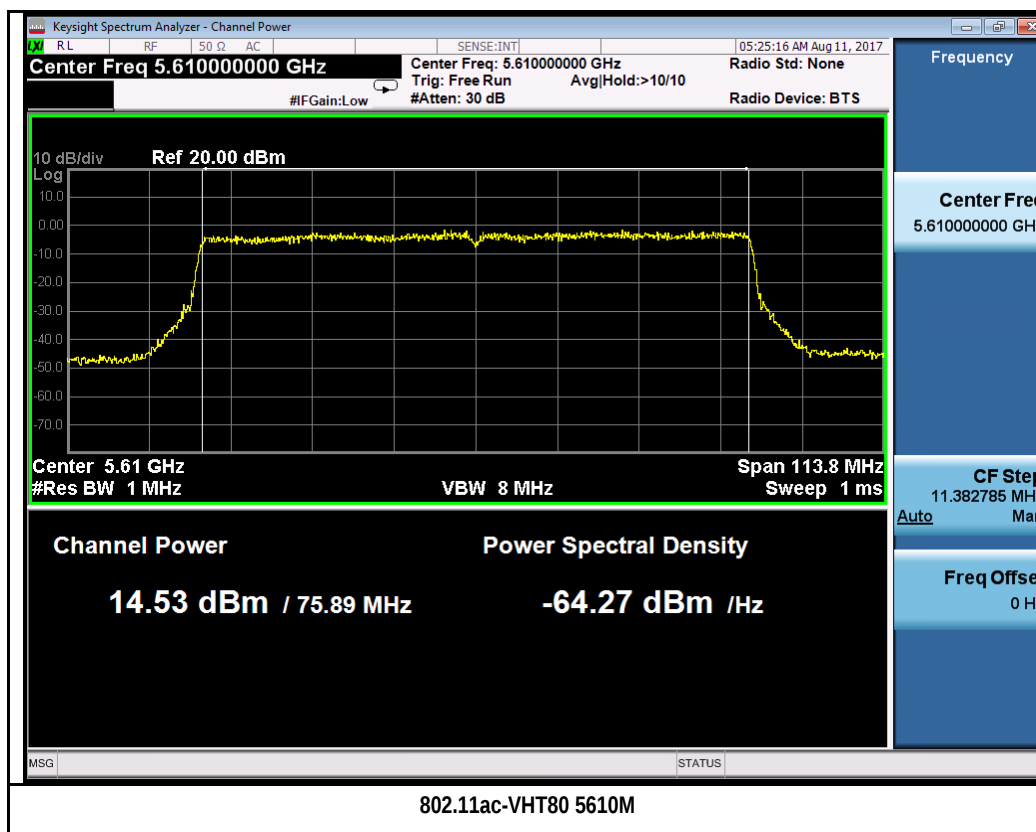


802.11n-HT40 5510M



802.11n-HT40 5550M

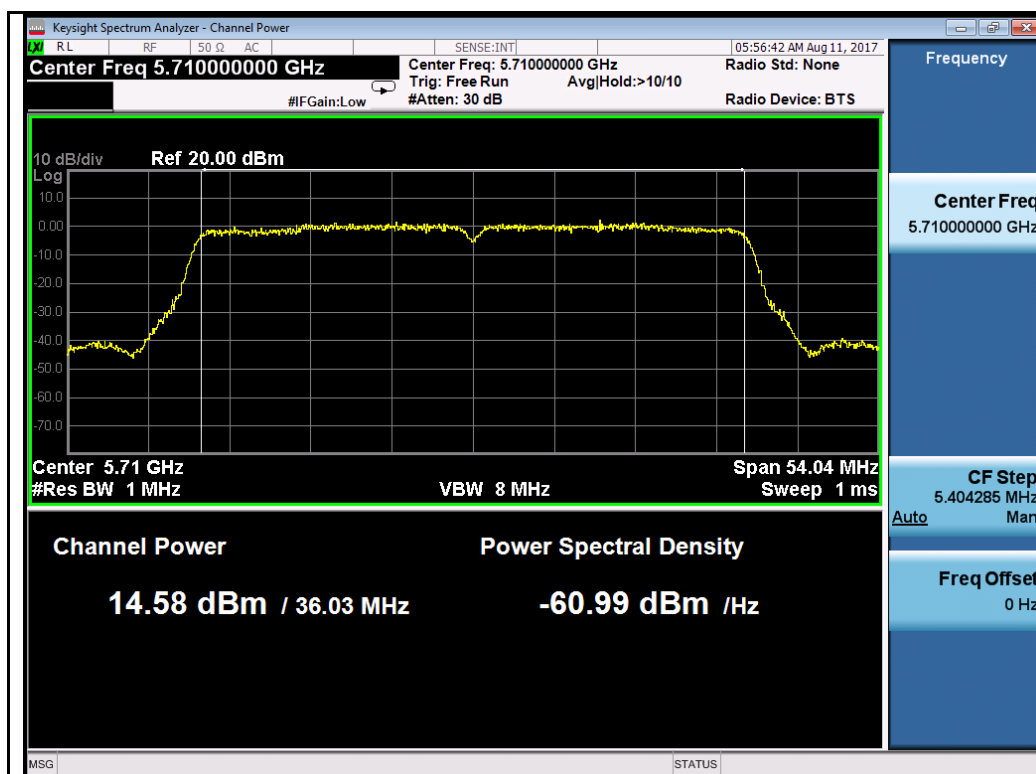




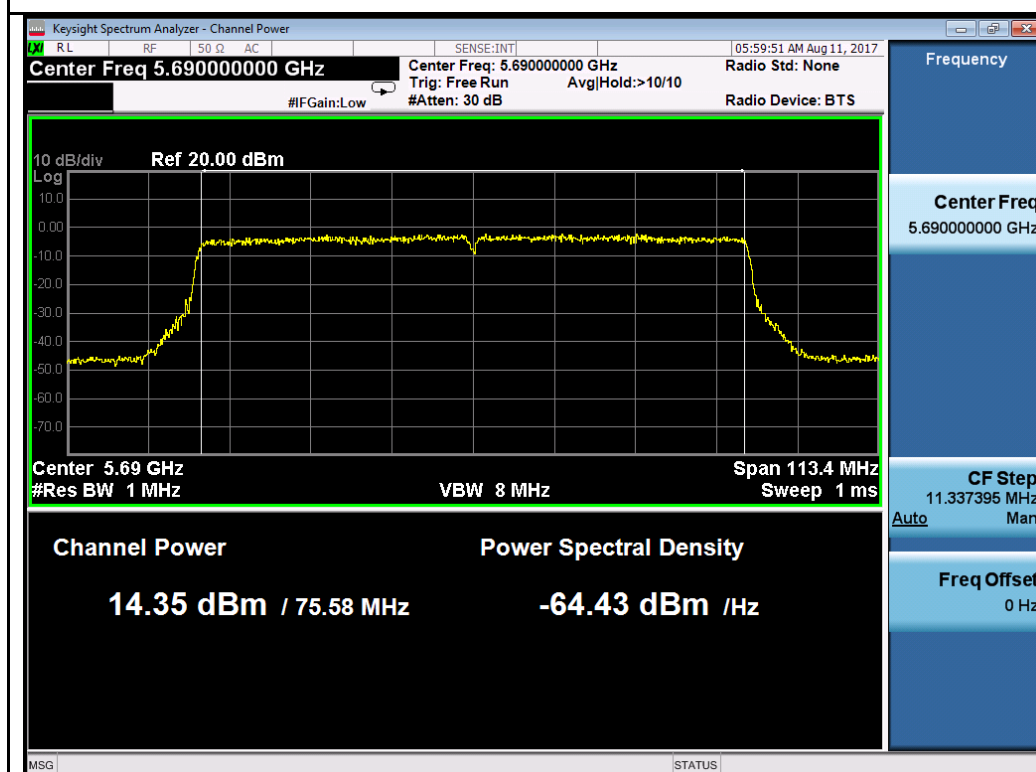
Test Plot for Crossband (W56 procedure):

Chain 0:





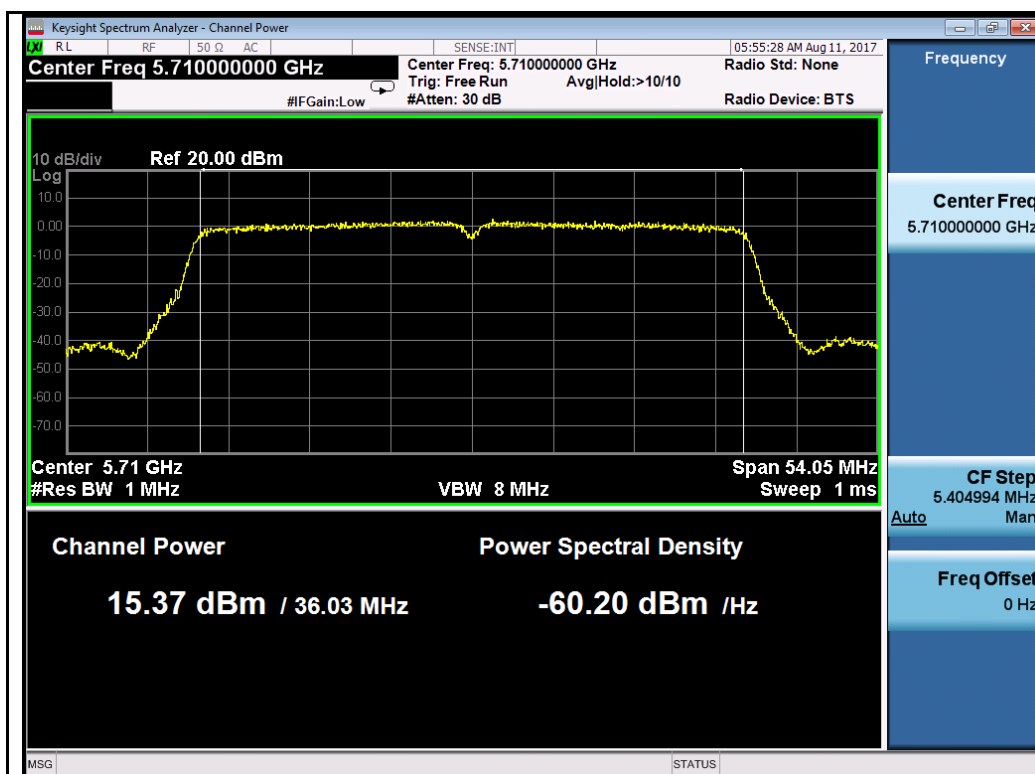
802.11n-HT40 5710M



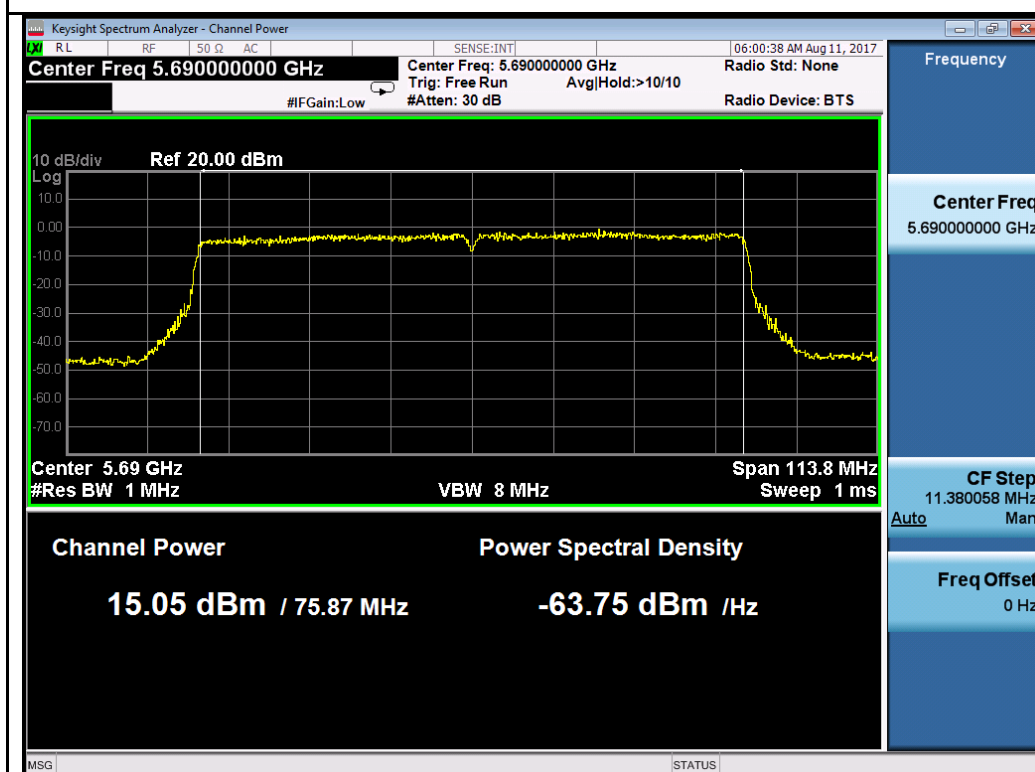
802.11ac-VHT80 5690M

Chain 1:



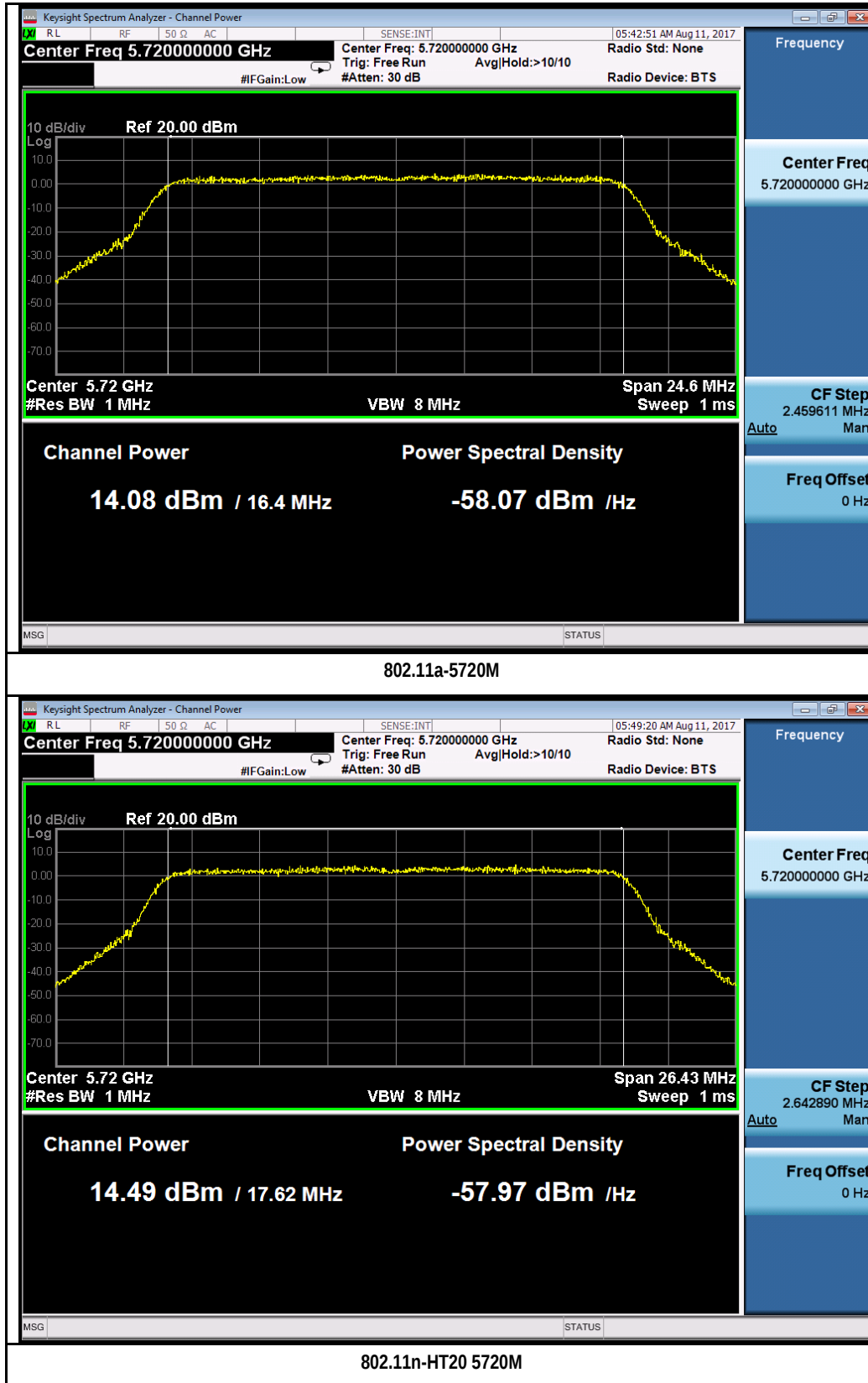


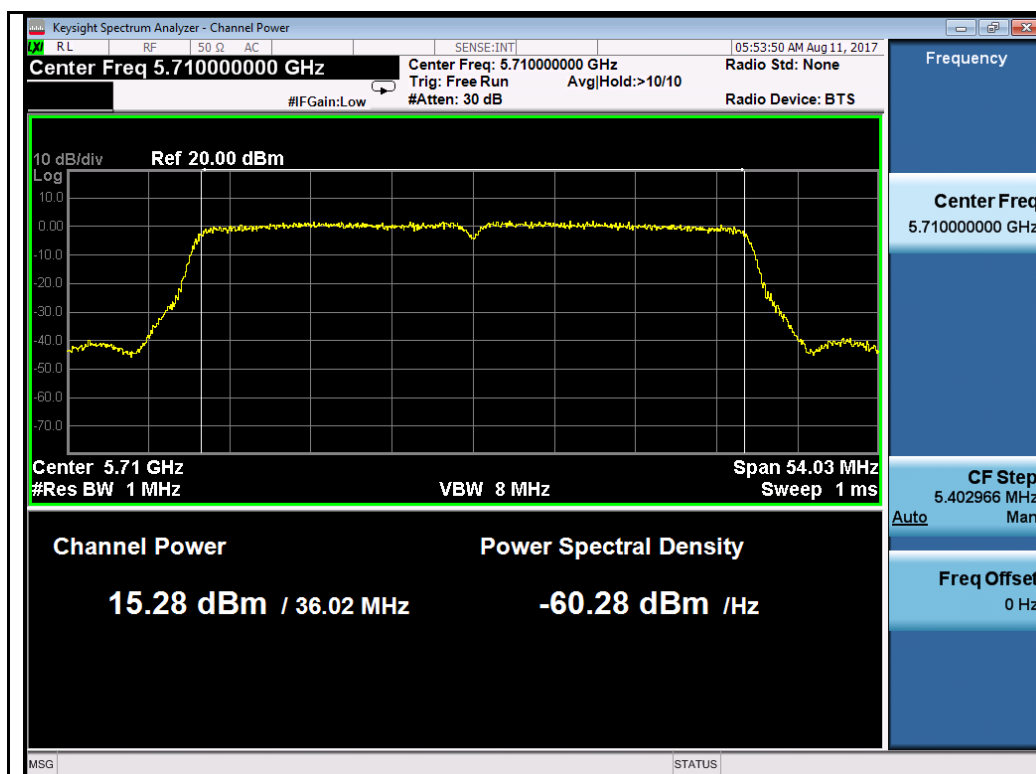
802.11n-HT40 5710M



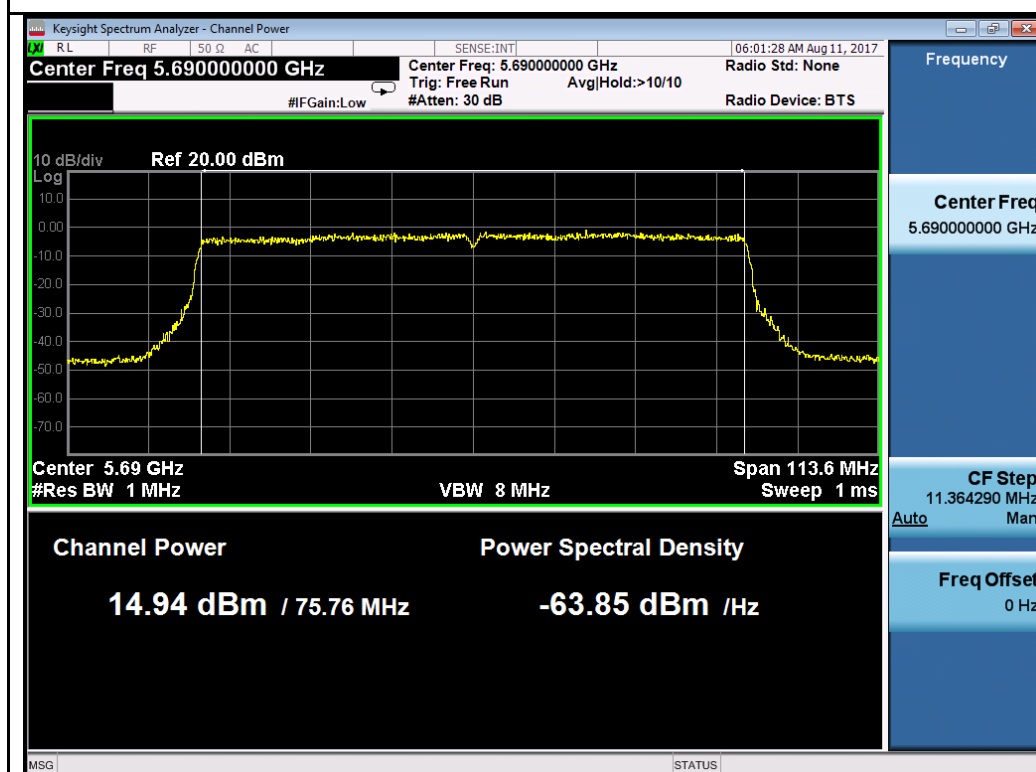
802.11ac-VHT80 5690M

Chain 2:





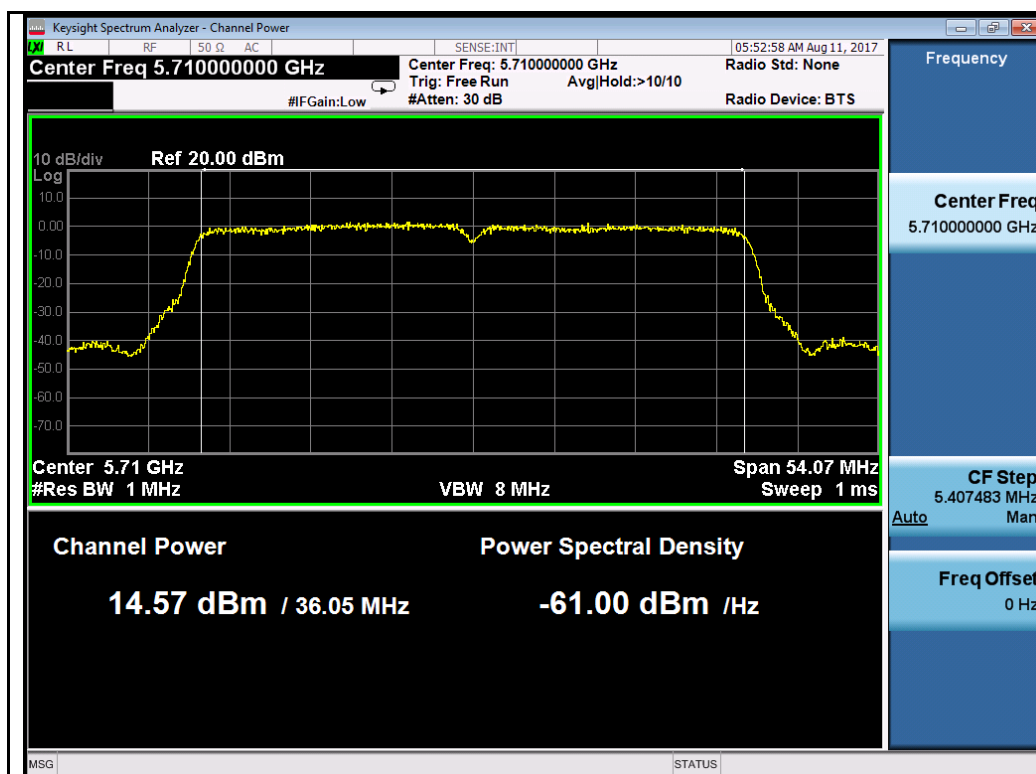
802.11n-HT40 5710M



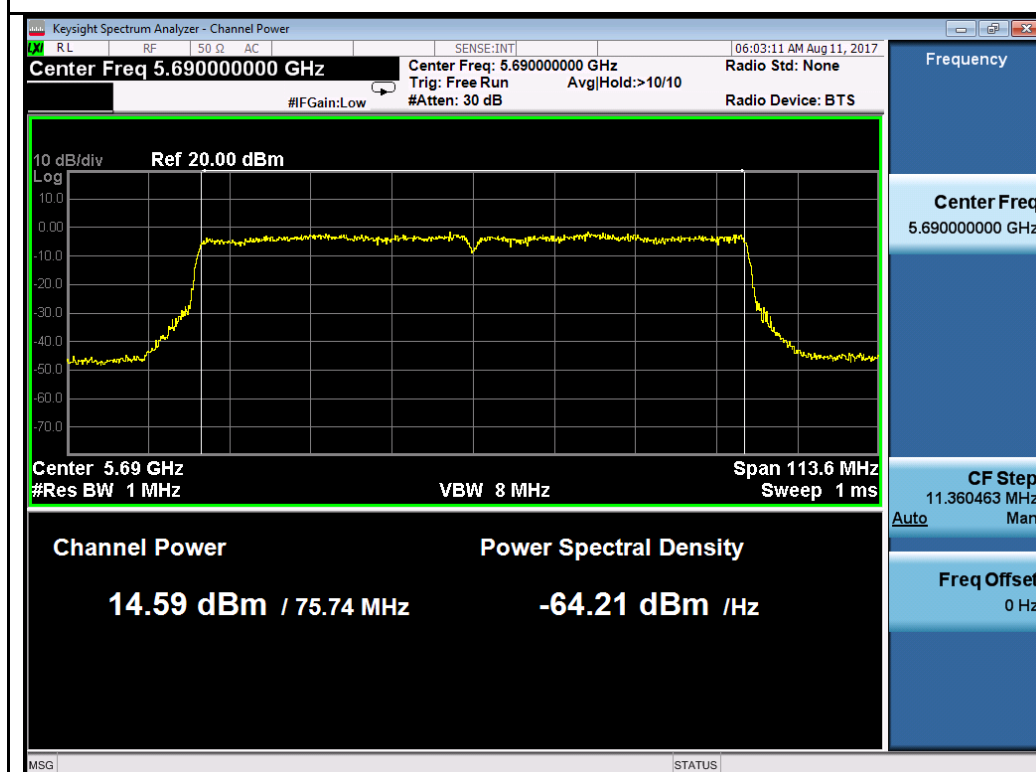
802.11ac-VHT80 5690M

Chain 3:





802.11n-HT40 5710M

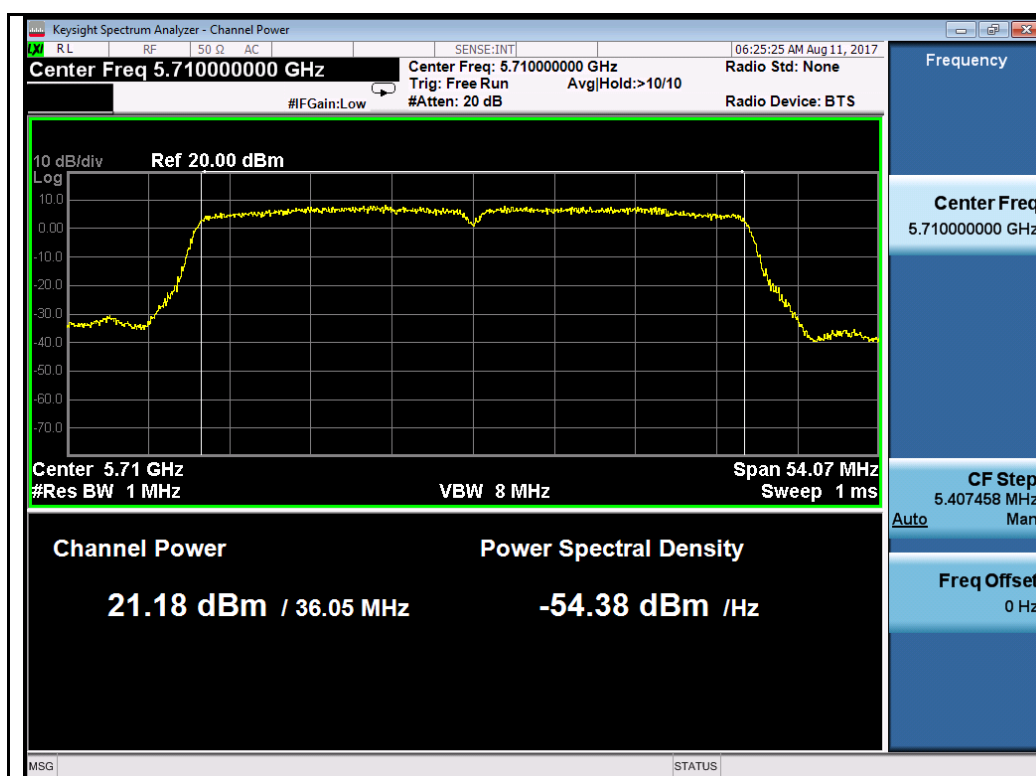


802.11ac-VHT80 5690M

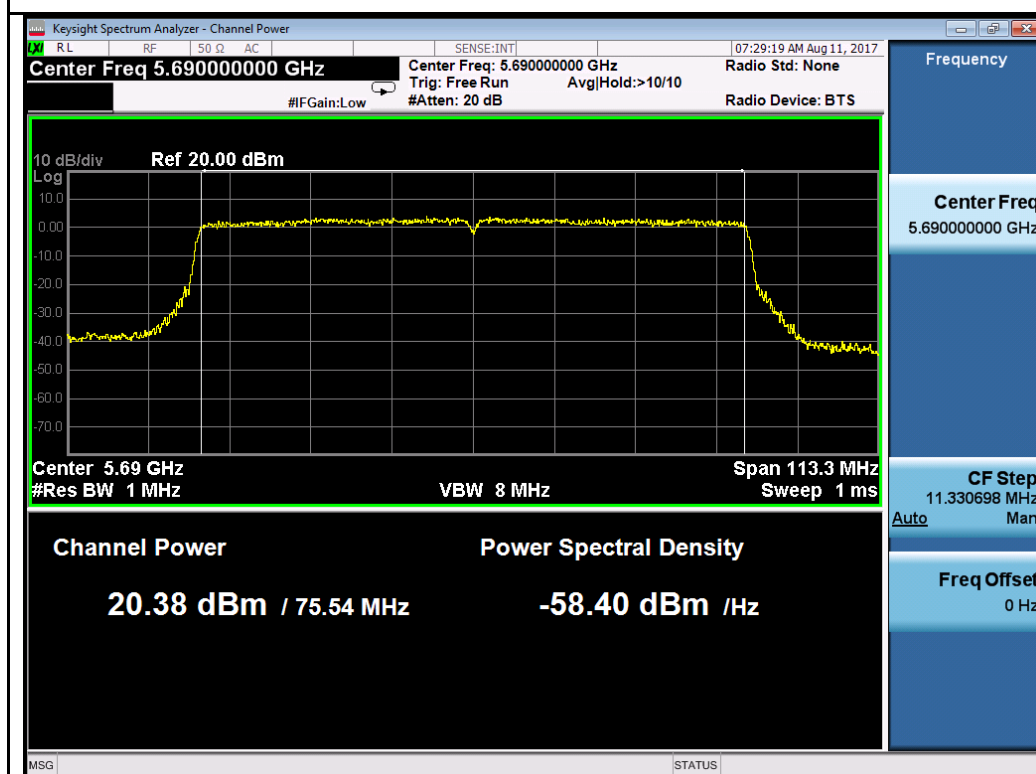
Test Plot for Crossband (W58 procedure):

Chain 0:





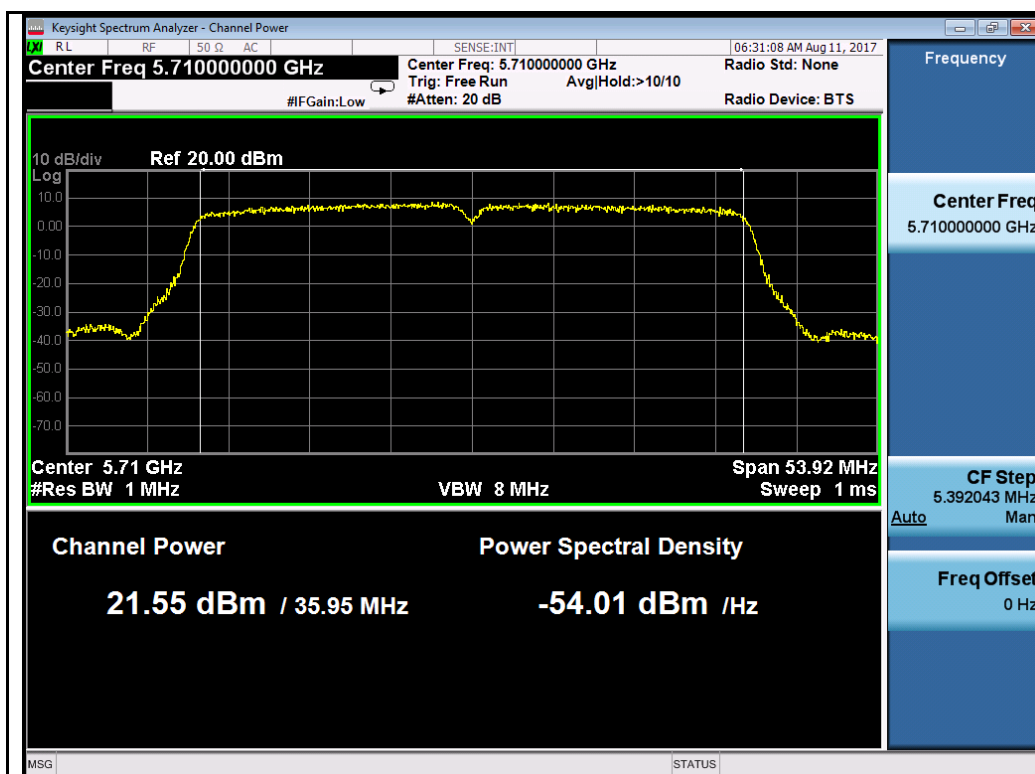
802.11n-HT40 5710M



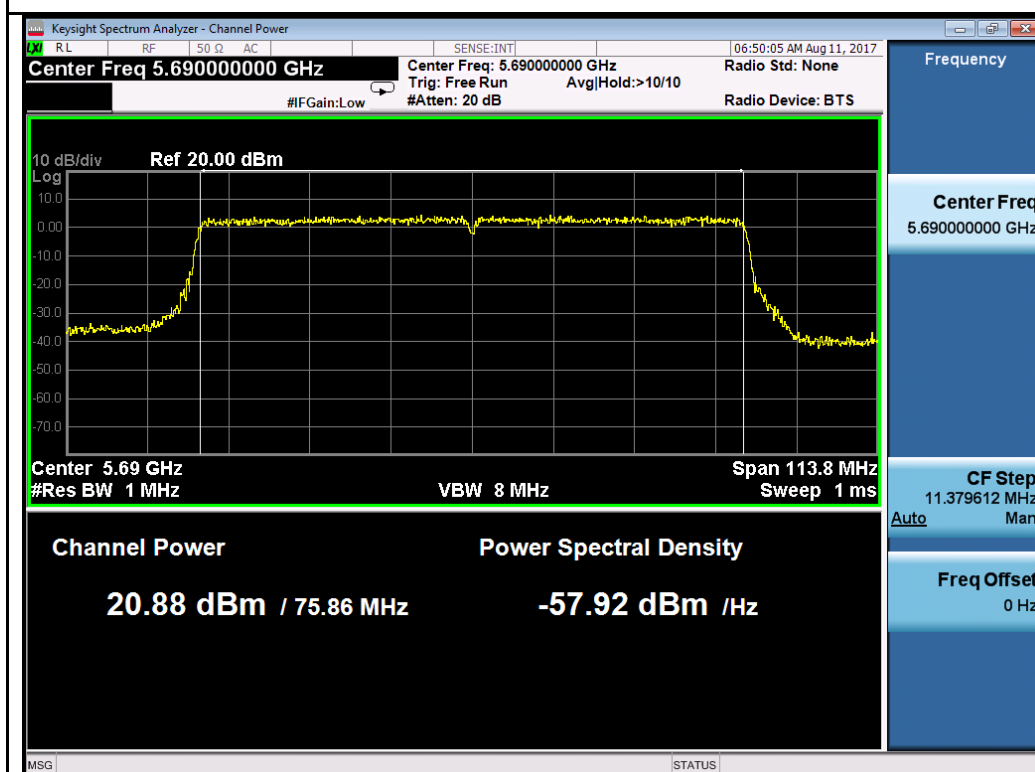
802.11ac-VHT80 5690M

Chain 1:





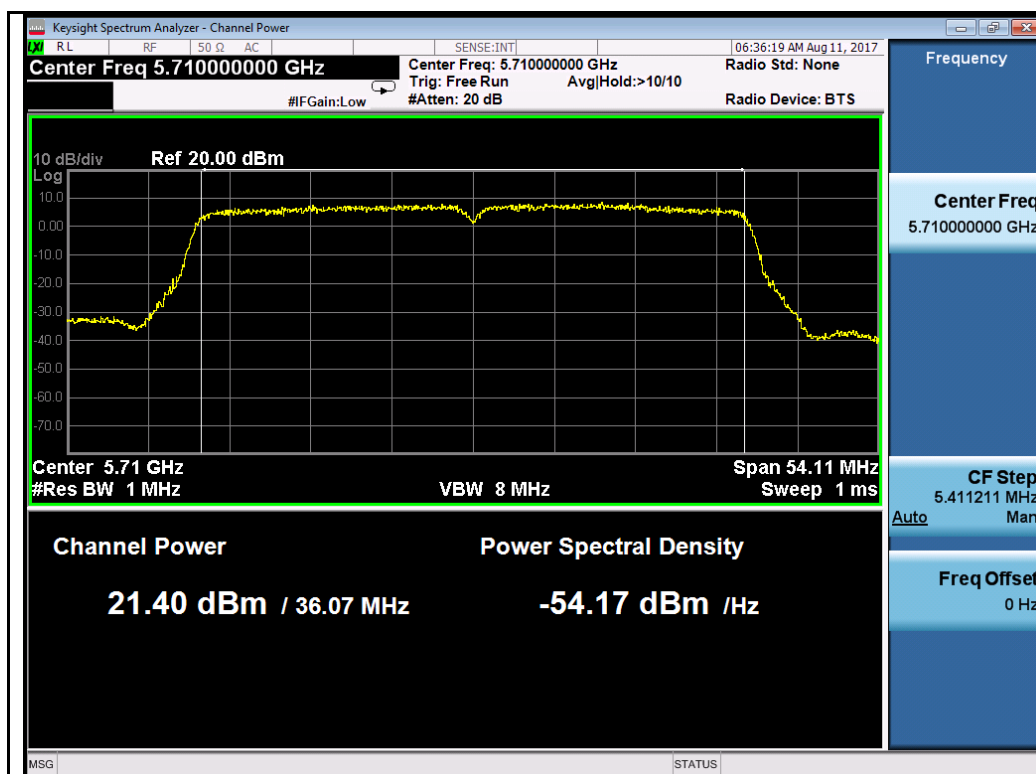
802.11n-HT40 5710M



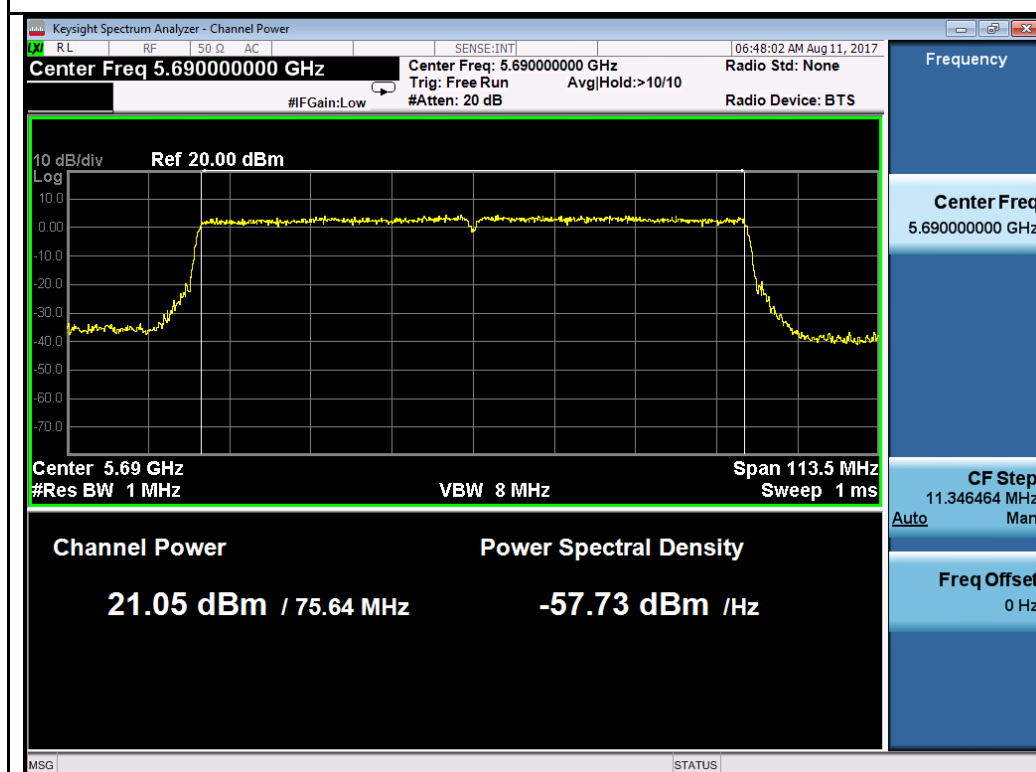
802.11ac-VHT80 5690M

Chain 2:





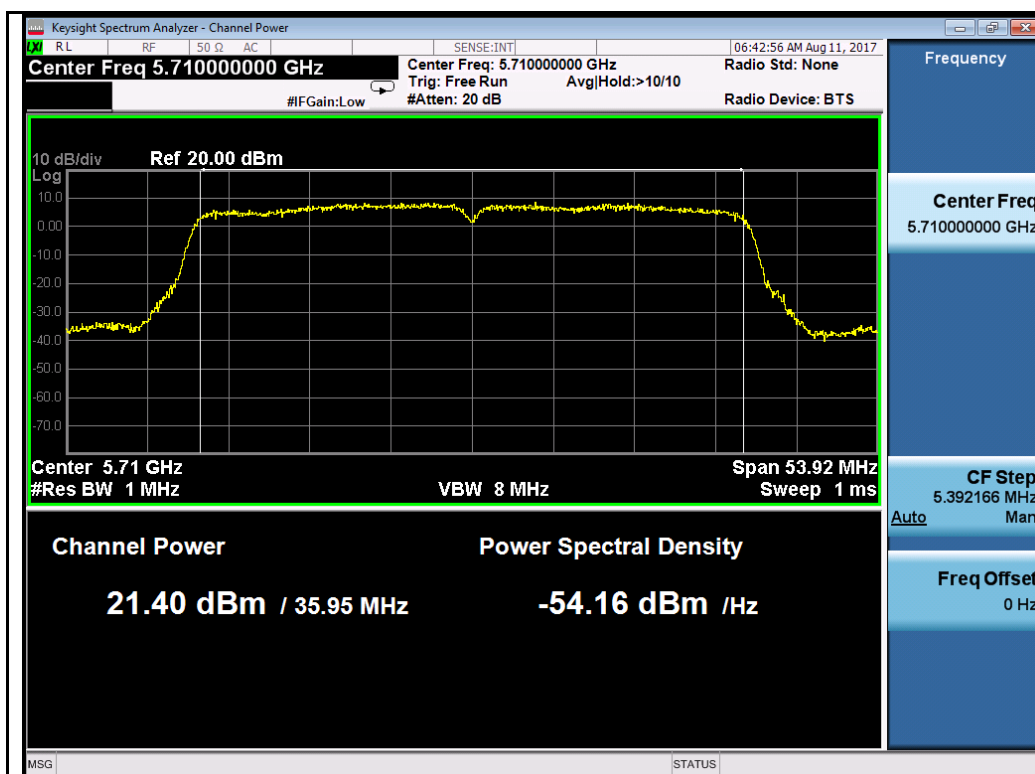
802.11n-HT40 5710M



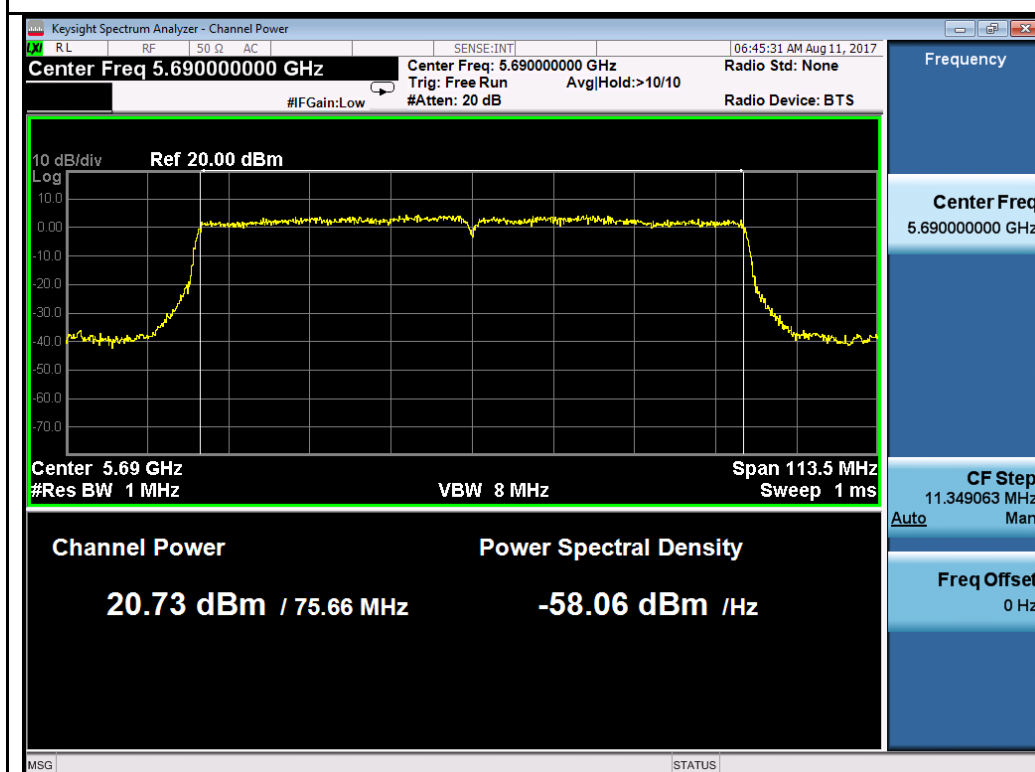
802.11ac-VHT80 5690M

Chain 3:





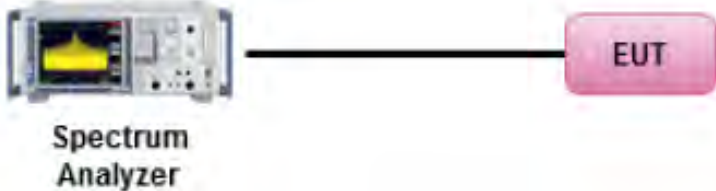
802.11n-HT40 5710M



802.11ac-VHT80 5690M

10.4 Peak Power 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)(1)(ii)	For an indoor 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)(2)	For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 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 v01, 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	08/11/2017 – 08/12/2017	Environmental condition	Temperature 22°C Relative Humidity 46% 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 = 4.5 dBi, directional gain = 3 dB, total gain = 7.5 dBi Highest of total gain is 7.5 dBi. The power limit and PSD limit will be reduced by amount of 1.5 dB. For the Cross band channels, the PSD of full bandwidth is compared to the PSD limit in 5.5G and 5.8G as the worst case. For 5.8GHz band, the PSD measurement on Cross band channel is using 1MHz BW as the worst case.		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at RF test site.

PSD measurement result for 5.3GHz

Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/MHz)					Limit (dBm/MHz)	Result
				Chain0	Chain1	Chain2	Chain3	Combined Power		
PSD	802.11a	5260	Low	2.94	2.91	2.98	2.44	8.84	9.5	Pass
	802.11a	5280	Mid	2.80	3.11	3.12	2.57	8.93	9.5	Pass
	802.11a	5320	High	2.82	2.64	2.49	2.83	8.72	9.5	Pass
	802.11n-20M	5260	Low	2.59	2.73	2.76	2.39	8.64	9.5	Pass
	802.11n-20M	5280	Mid	2.76	2.87	2.97	2.79	8.87	9.5	Pass
	802.11n-20M	5320	High	2.58	2.79	2.42	2.87	8.69	9.5	Pass
	802.11n-40M	5270	Low	1.10	1.14	1.62	1.13	7.27	9.5	Pass
	802.11n-40M	5310	Mid	1.04	1.47	1.16	0.65	7.11	9.5	Pass
	802.11ac-80M	5290	High	-2.40	-2.00	-2.36	-2.78	3.64	9.5	Pass

PSD measurement result for 5.5GHz

Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/MHz)					Limit (dBm/MHz)	Result
				Chain0	Chain1	Chain2	Chain3	Combined Power		
PSD	802.11a	5500	Low	2.66	3.08	3.28	2.80	8.98	9.5	Pass
	802.11a	5580	Mid	3.02	3.33	3.42	3.27	9.28	9.5	Pass
	802.11a	5700	High	2.90	3.57	3.45	2.87	9.23	9.5	Pass
	802.11n-20M	5500	Low	2.38	3.23	3.38	3.03	9.04	9.5	Pass
	802.11n-20M	5580	Mid	2.47	3.31	3.49	3.05	9.12	9.5	Pass
	802.11n-20M	5700	High	3.23	3.59	3.56	3.05	9.38	9.5	Pass
	802.11n-40M	5510	Low	1.00	1.10	1.24	0.35	6.96	9.5	Pass
	802.11n-40M	5550	Mid	0.63	0.76	1.04	0.39	6.73	9.5	Pass
	802.11n-40M	5670	High	0.23	0.74	0.45	0.62	6.53	9.5	Pass
	802.11ac-80M	5530	Low	-2.81	-2.56	-2.25	-2.78	3.43	9.5	Pass
	802.11ac-80M	5610	High	-3.61	-2.81	-2.86	-3.22	2.91	9.5	Pass

PSD measurement result for cross channels (in band 5470-5725MHz)

Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/MHz)					Limit (dBm/MHz)	Result
				Chain0	Chain1	Chain2	Chain3	Combined Power		
PSD	802.11a	5720	CROSS	2.85	3.01	2.89	2.50	8.84	9.5	Pass
	802.11n-20M	5720	CROSS	2.43	3.26	3.46	2.54	8.97	9.5	Pass
	802.11n-40M	5710	CROSS	0.54	1.44	1.10	0.65	6.97	9.5	Pass
	802.11ac-80M	5690	CROSS	-3.15	-2.19	-2.86	-2.36	3.40	9.5	Pass

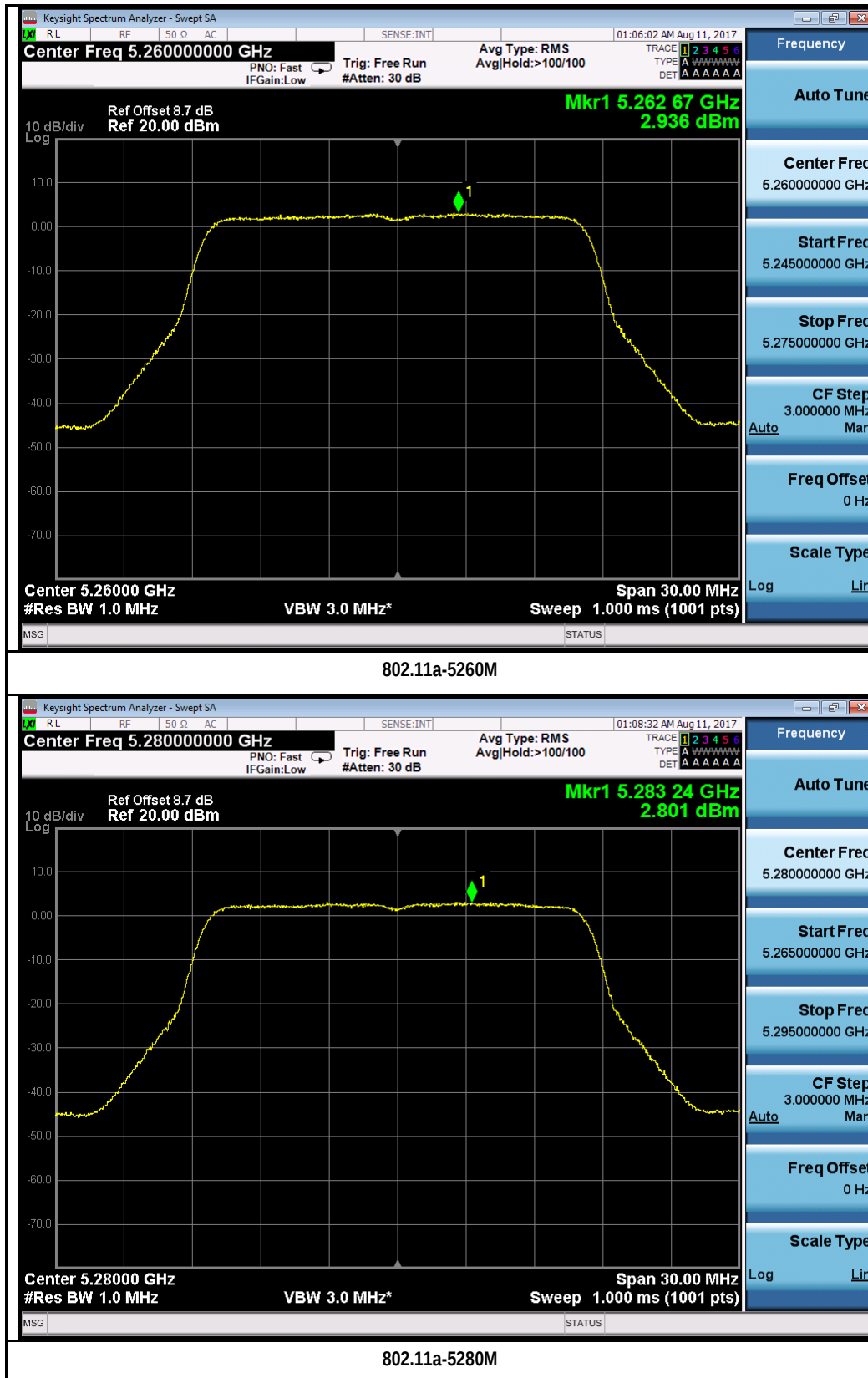
PSD measurement result for cross channels (in band 5725-5850MHz)

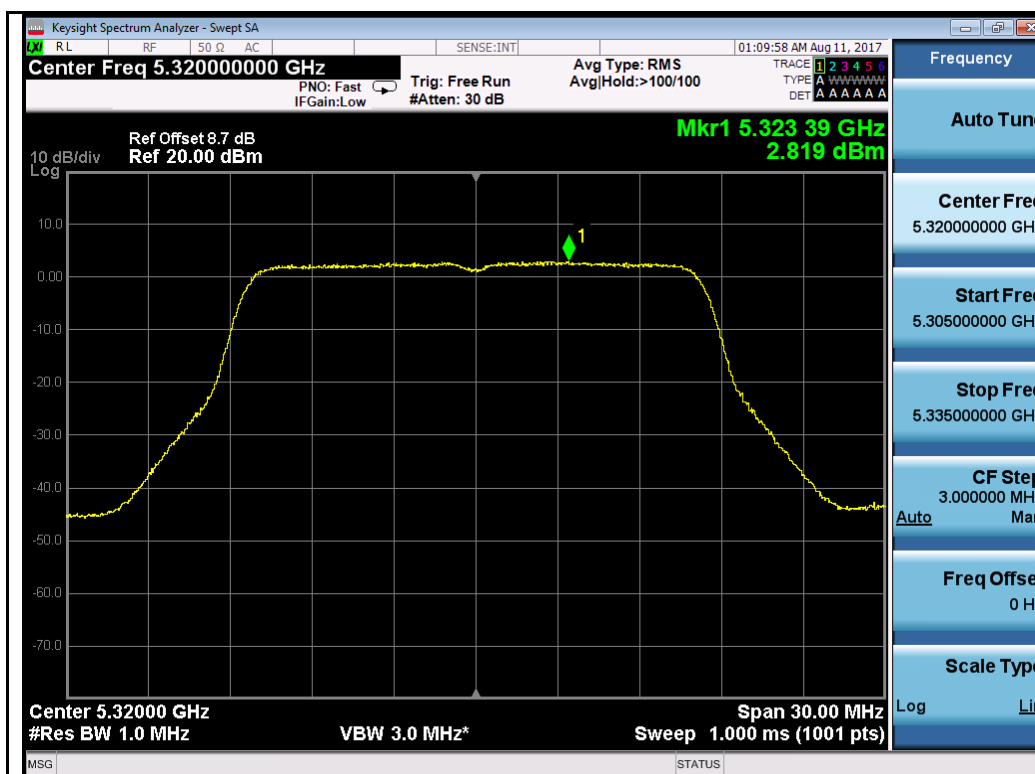
Test mode	Freq (MHz)	CH	Conducted PSD (dBm/MHz)					Corrected Level (dBm/500kHz)	Limit (dBm/500kHz)	Result
			Chain0	Chain1	Chain2	Chain3	Combined PSD			
802.11a	5720	CROSS	1.97	2.50	2.17	1.39	8.05	15.04	28.5	Pass
802.11n-20M	5720	CROSS	2.05	2.11	2.31	2.01	8.14	15.13	28.5	Pass
802.11n-40M	5710	CROSS	-1.15	-0.81	-1.43	-1.45	4.82	11.81	28.5	Pass
802.11ac-80M	5690	CROSS	-6.22	-5.67	-5.39	-5.38	0.37	7.36	28.5	Pass

Correction factor=10*log(500/100)=6.99

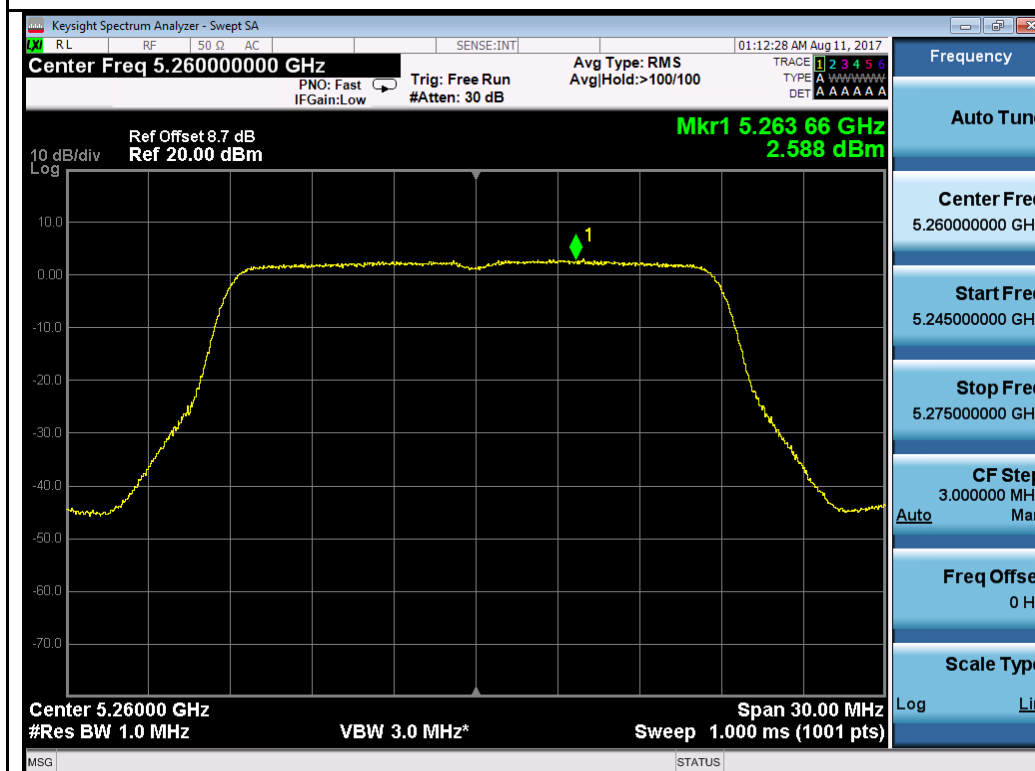
Test Plot for W53:

Chain 0:

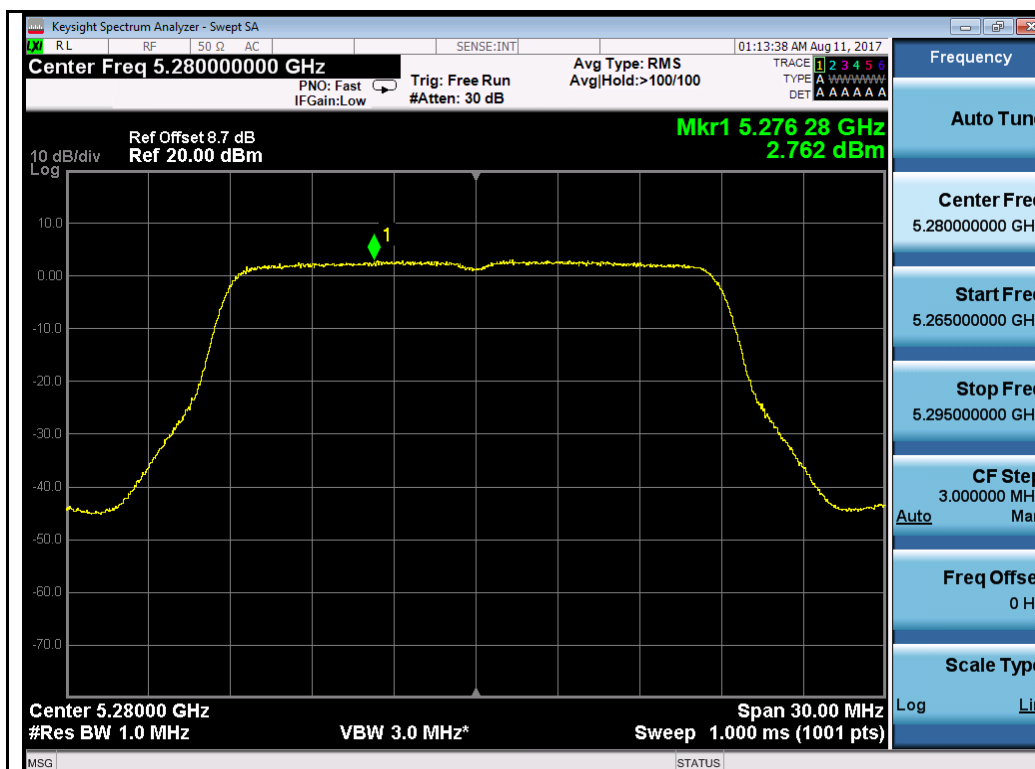




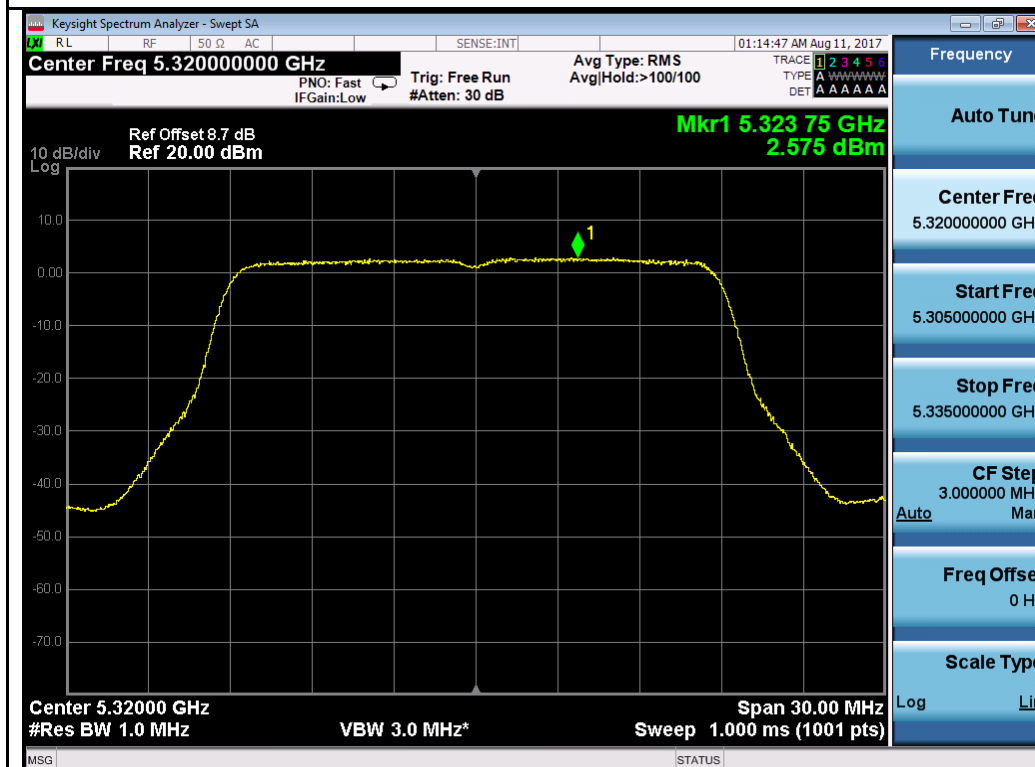
802.11a-5320M



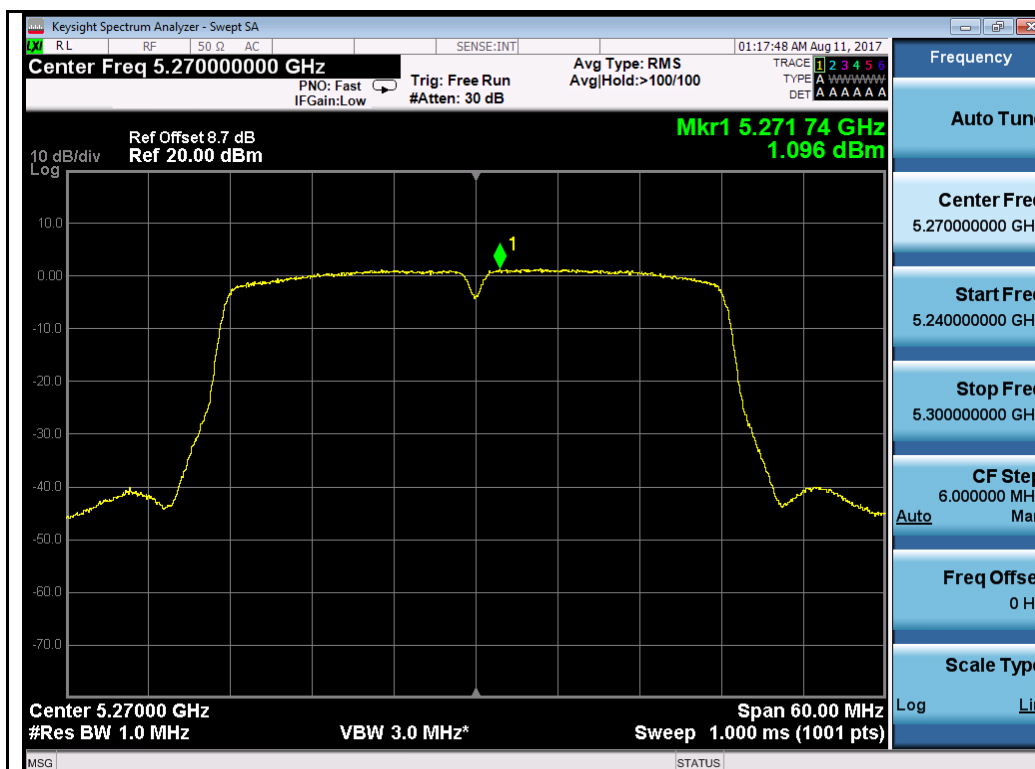
802.11n-HT20 5260M



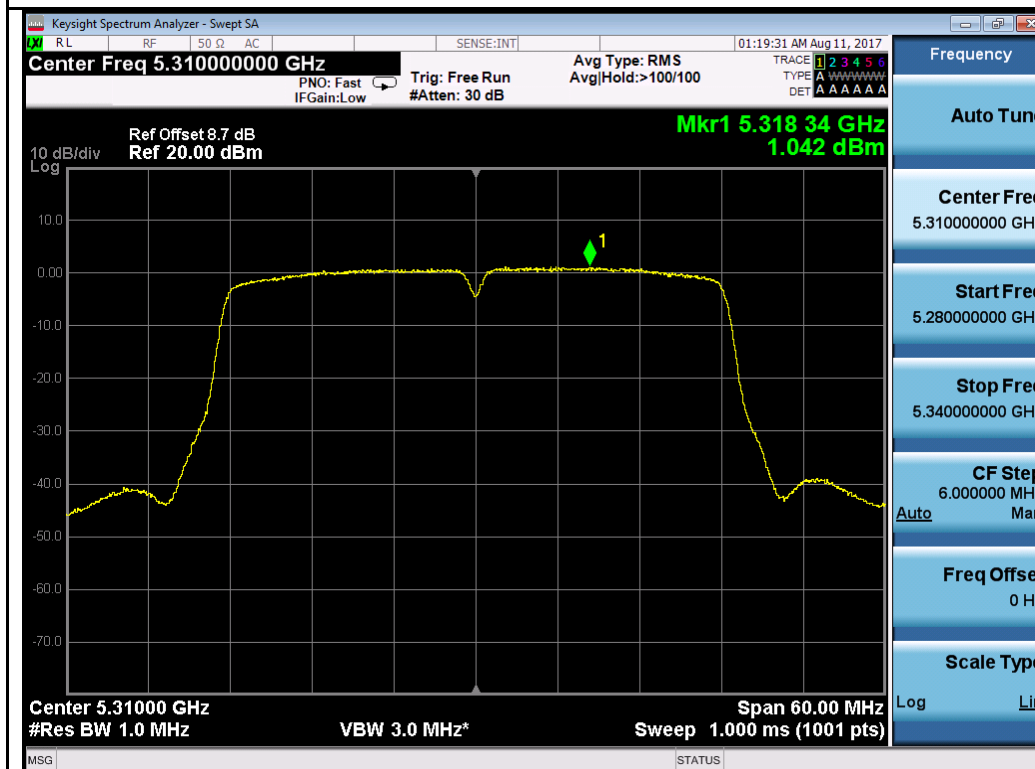
802.11n-HT20 5280M



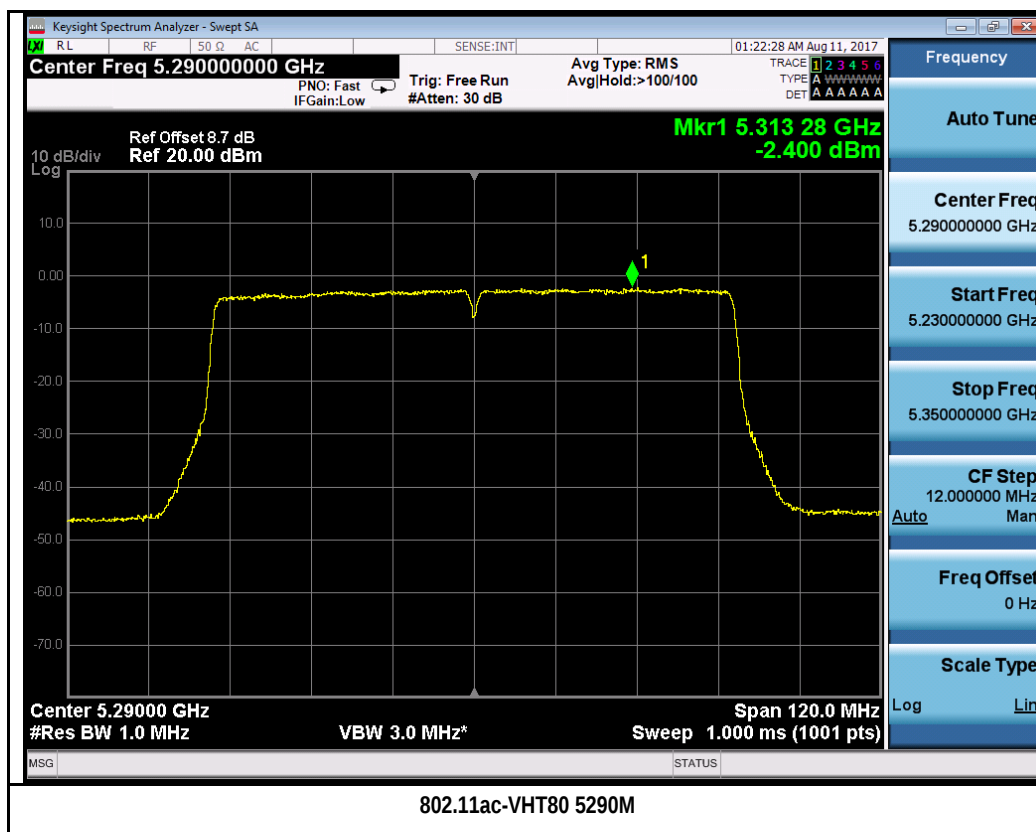
802.11n-HT20 5320M



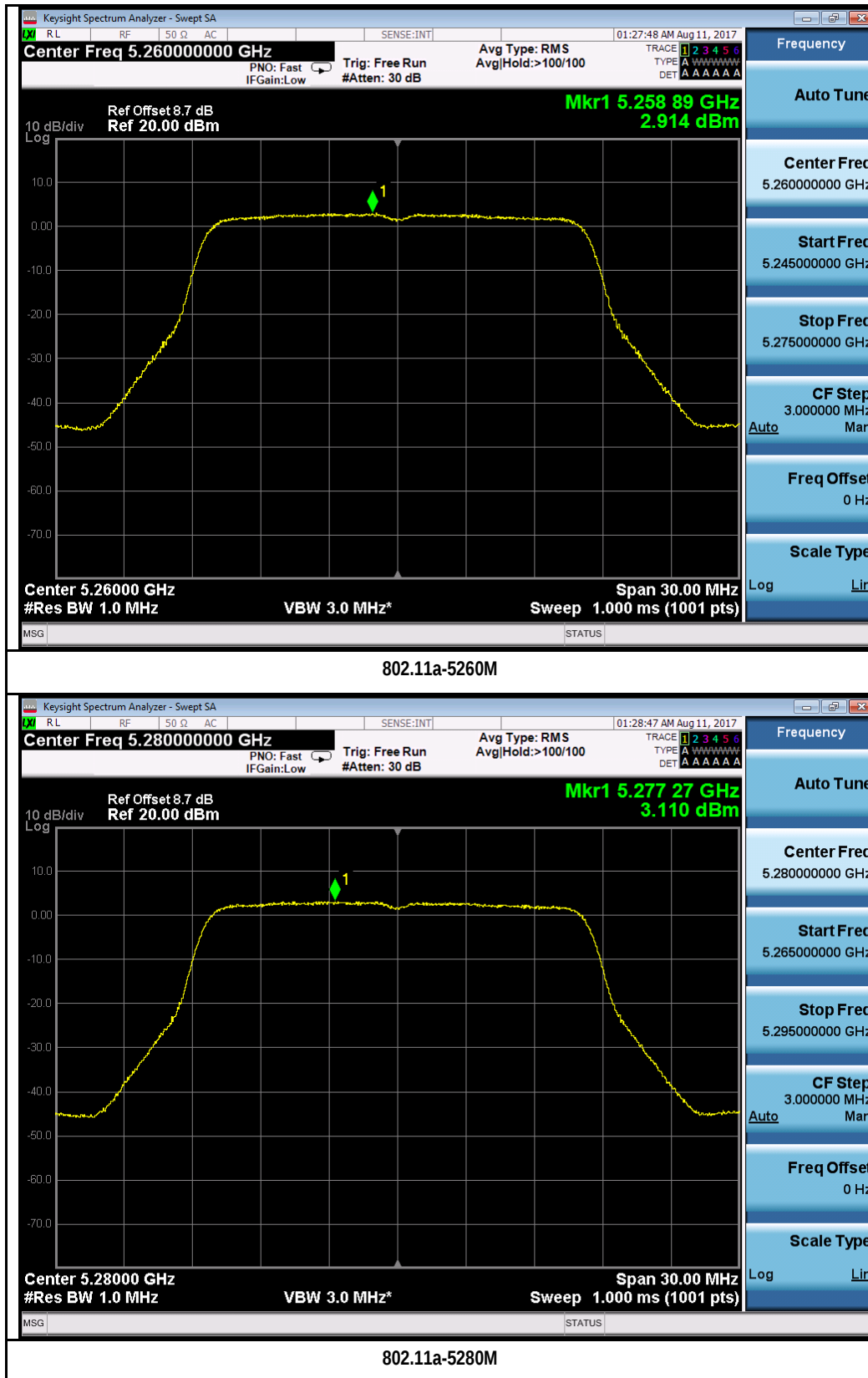
802.11n-HT40 5270M

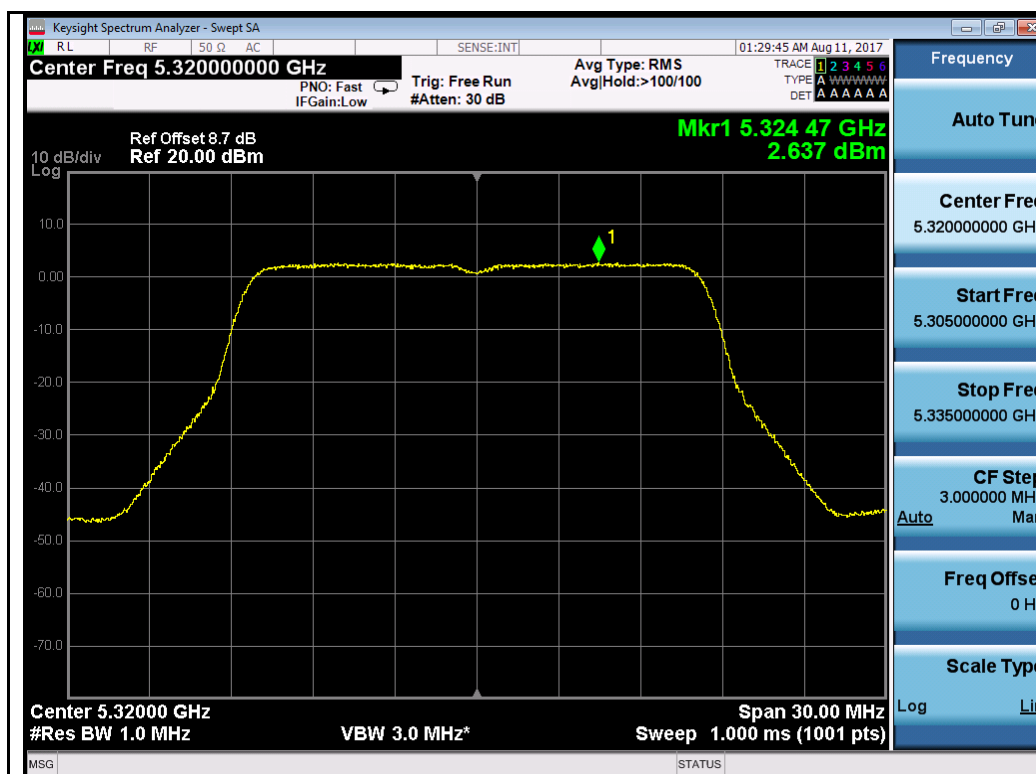


802.11n-HT40 5310M

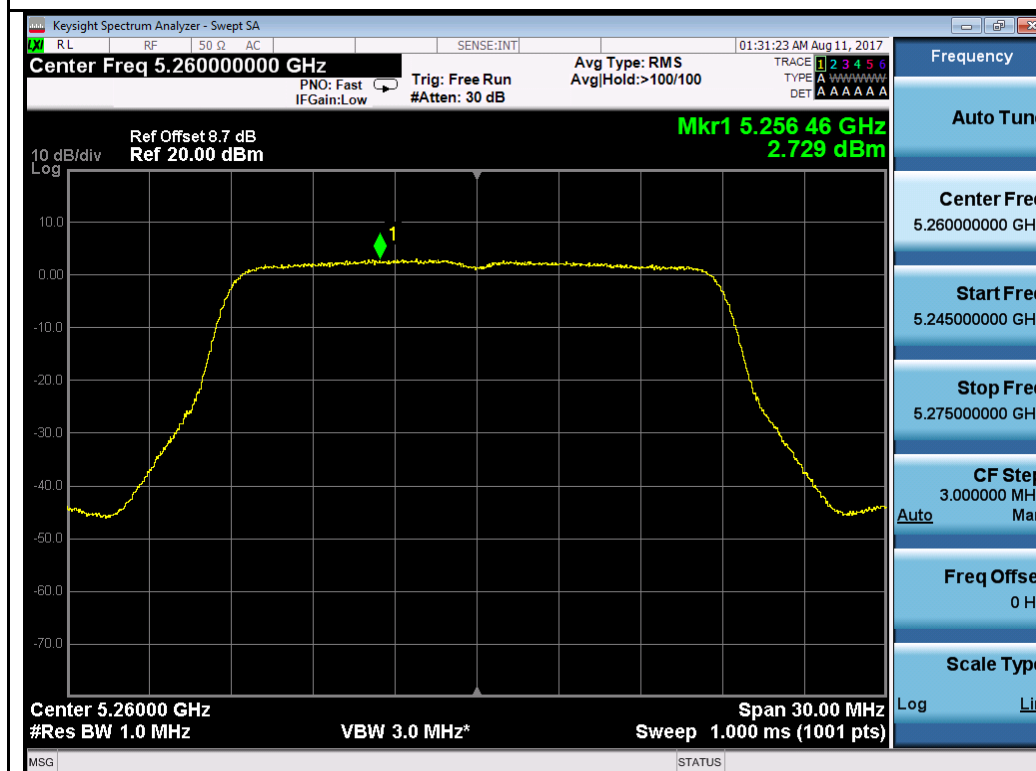


Chain 1:

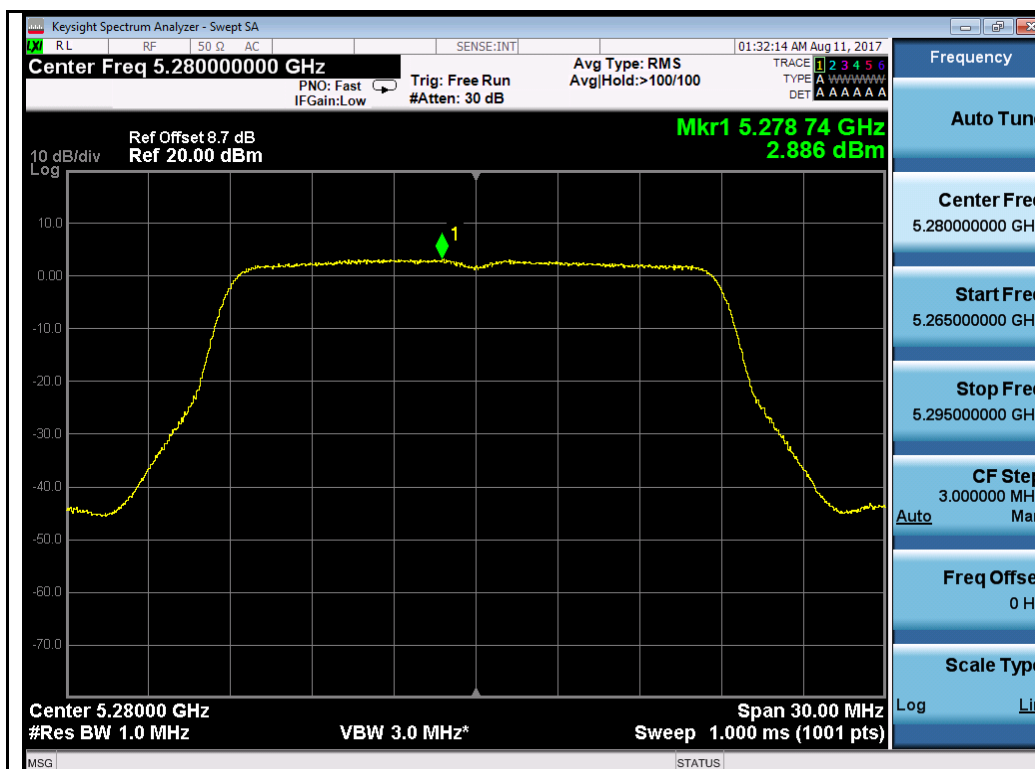




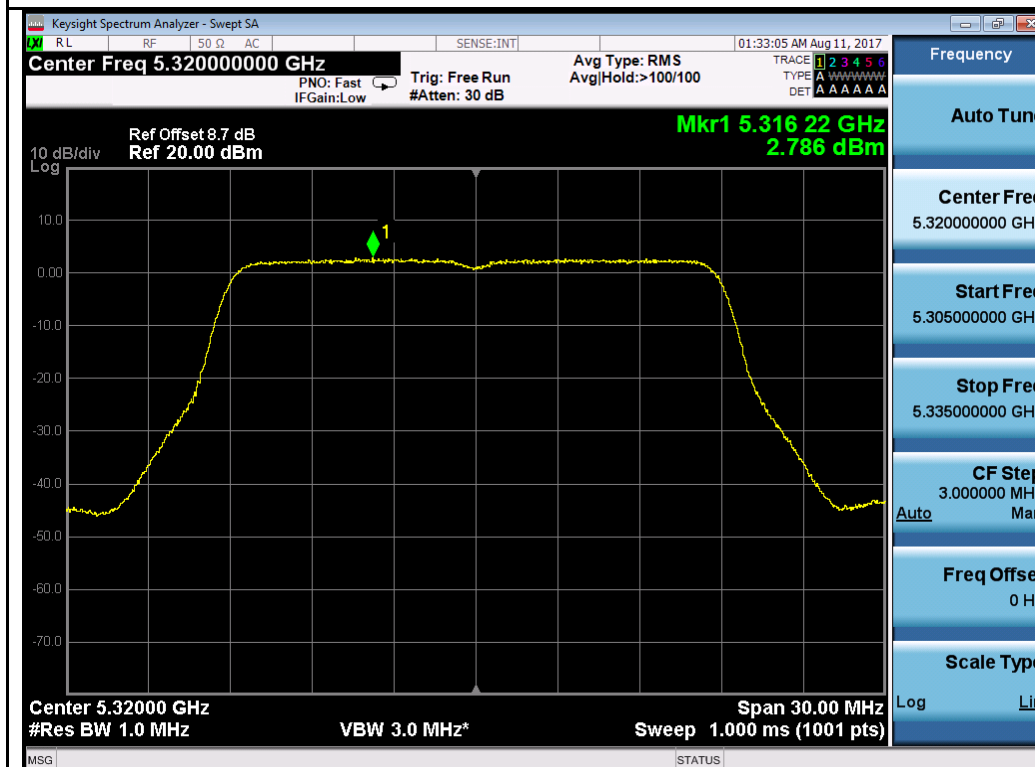
802.11a-5320M



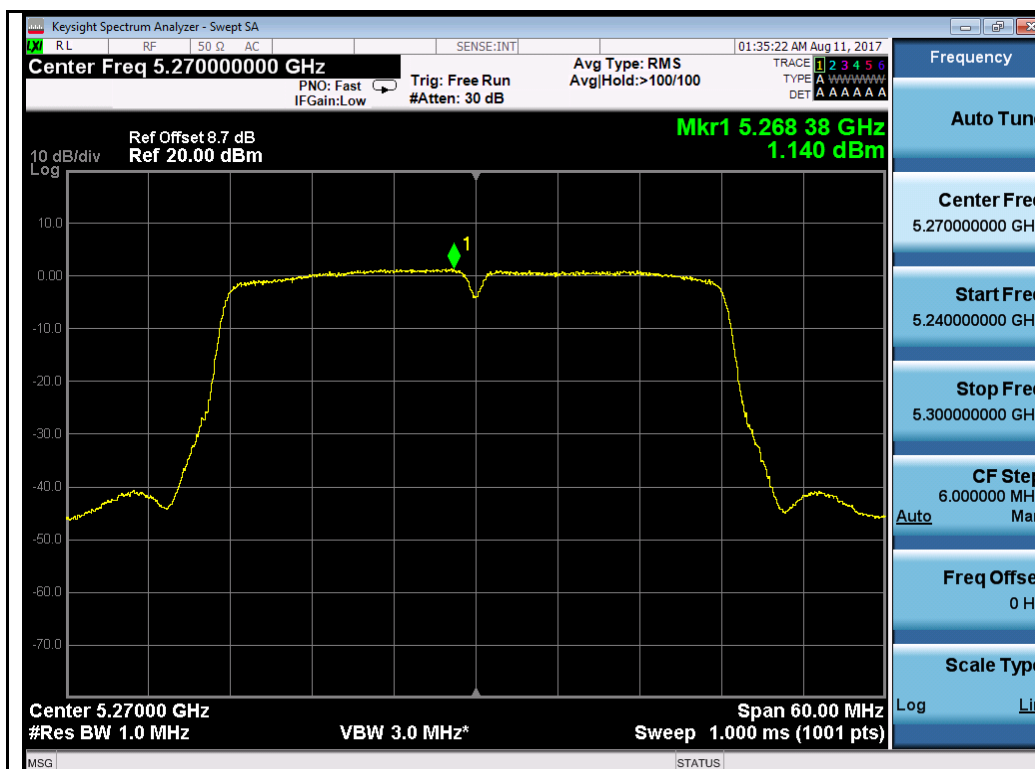
802.11n-HT20 5260M



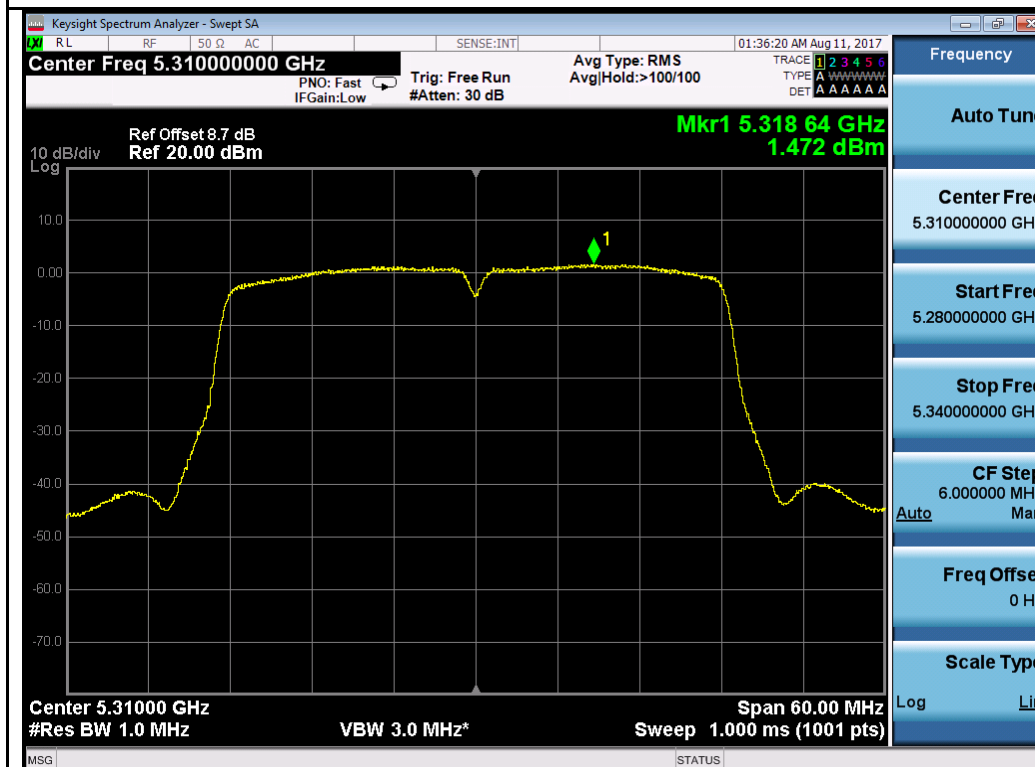
802.11n-HT20 5280M



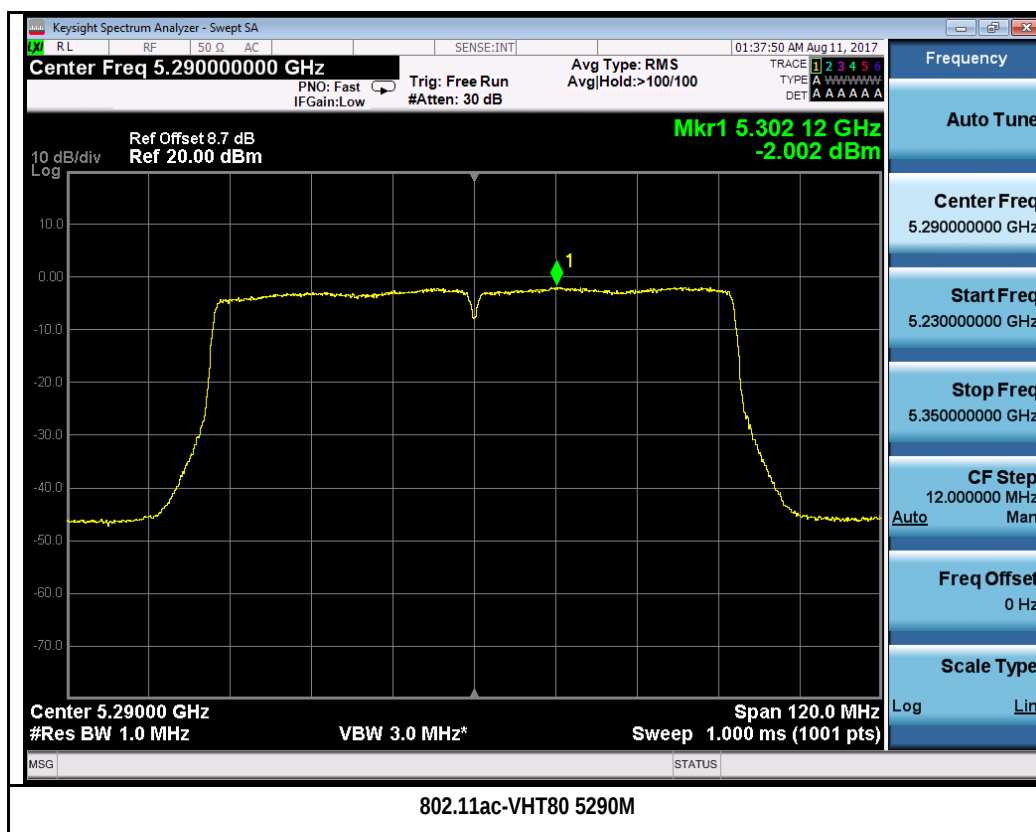
802.11n-HT20 5320M



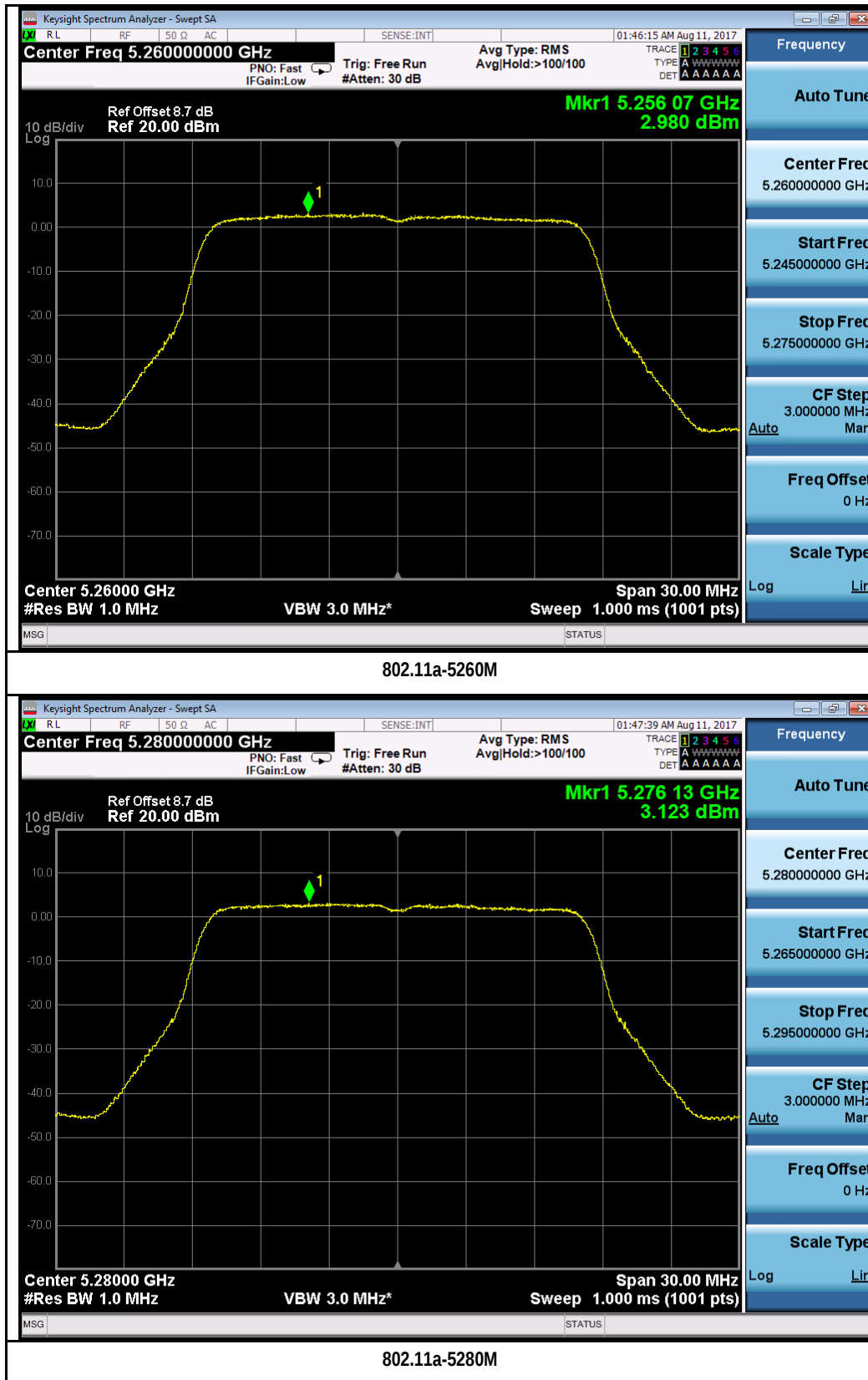
802.11n-HT40 5270M

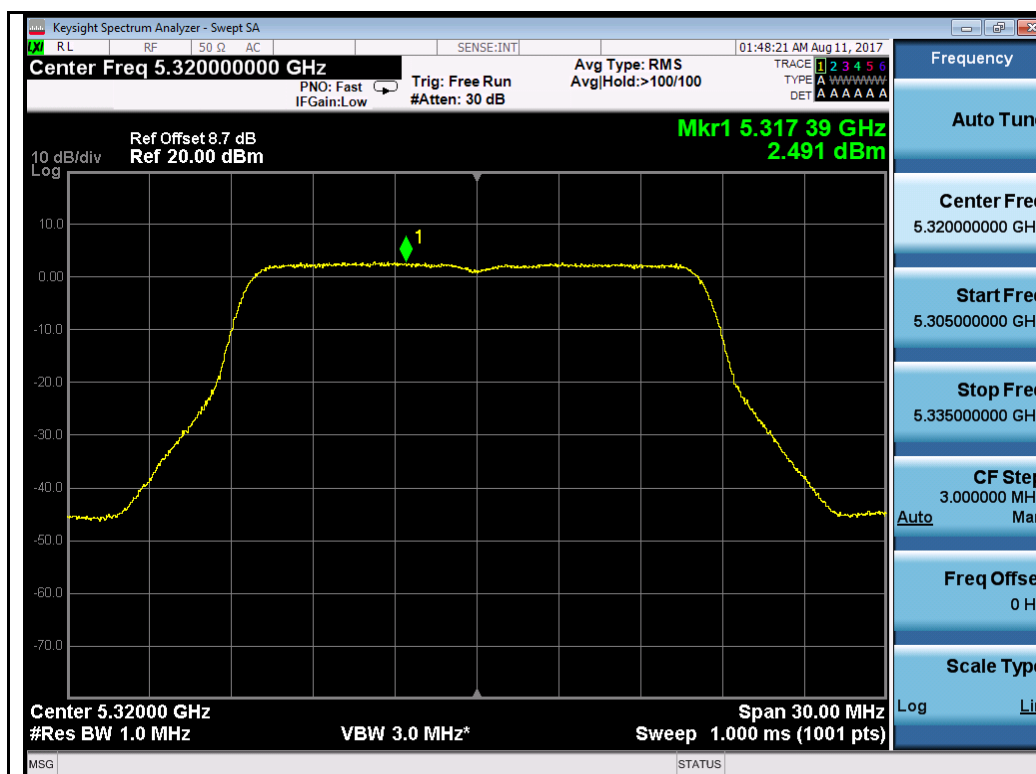


802.11n-HT40 5310M

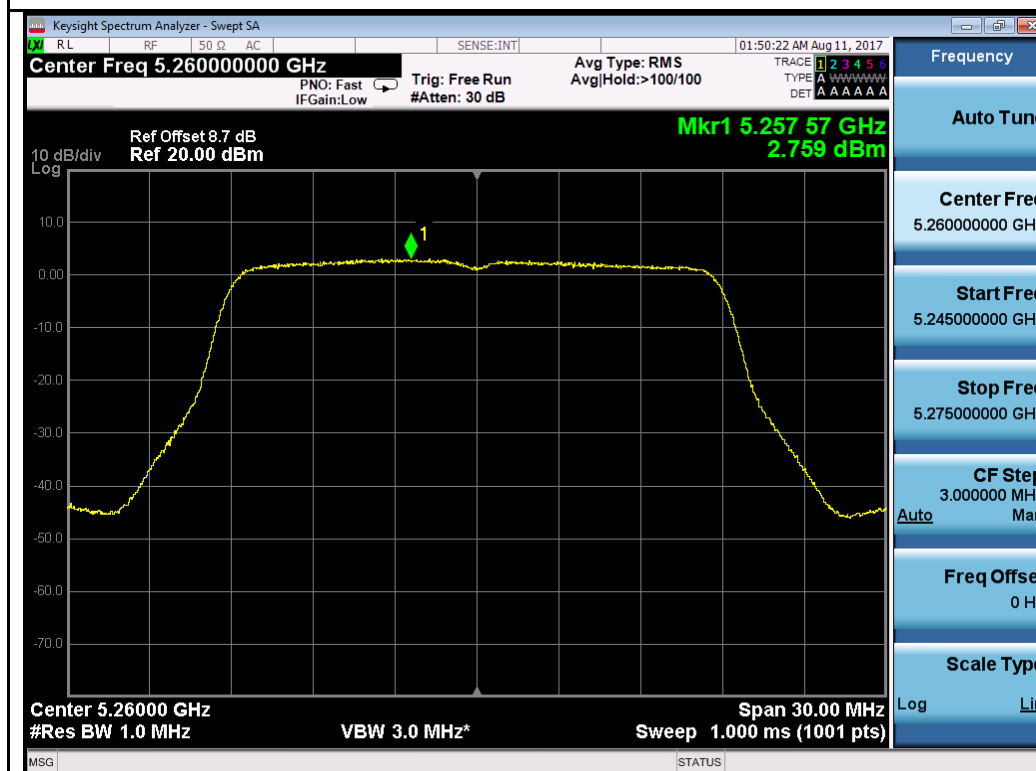


Chain 2:

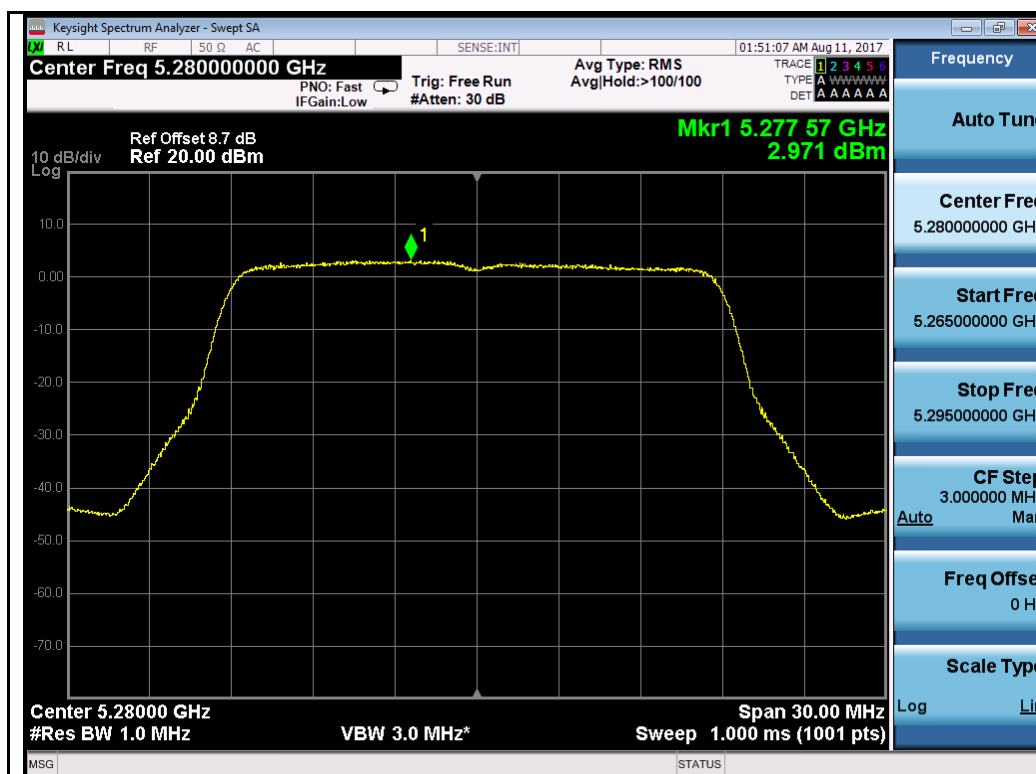




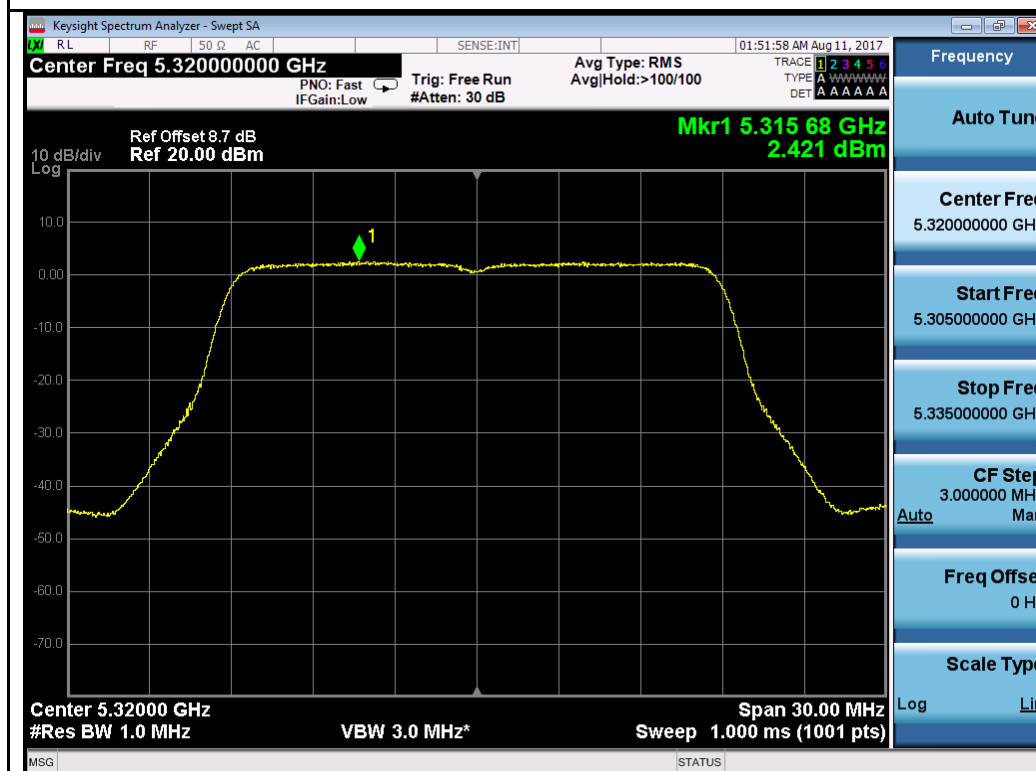
802.11a-5320M



802.11n-HT20 5260M

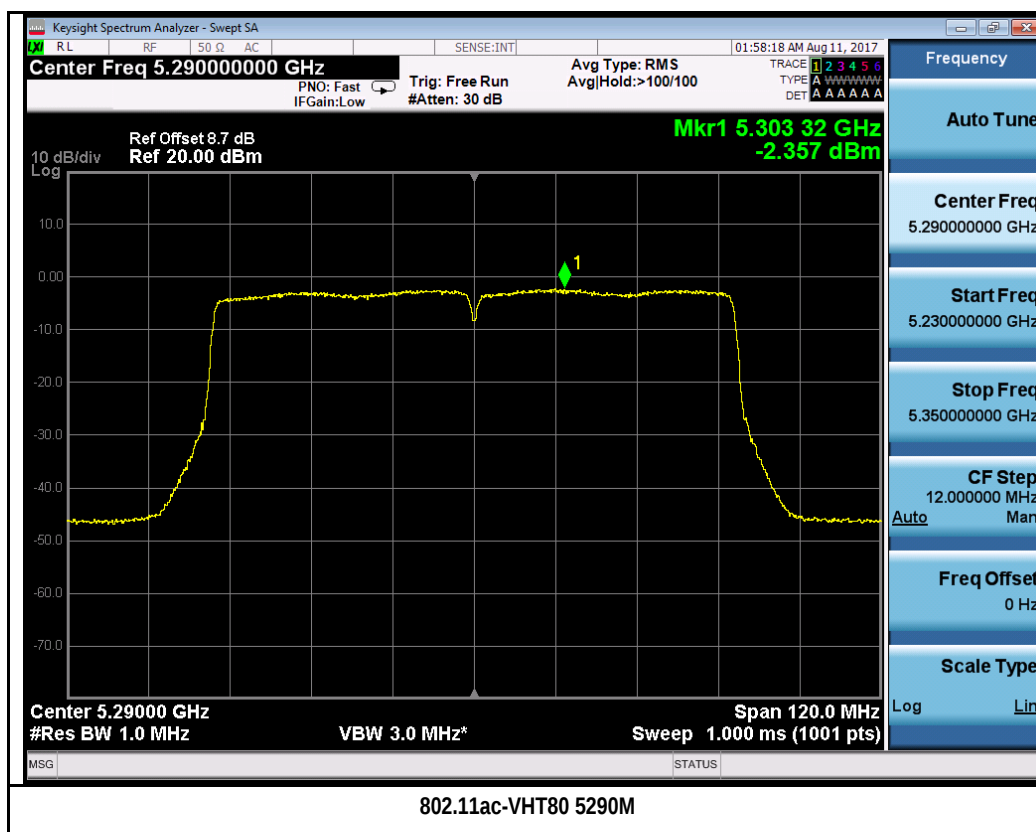


802.11n-HT20 5280M

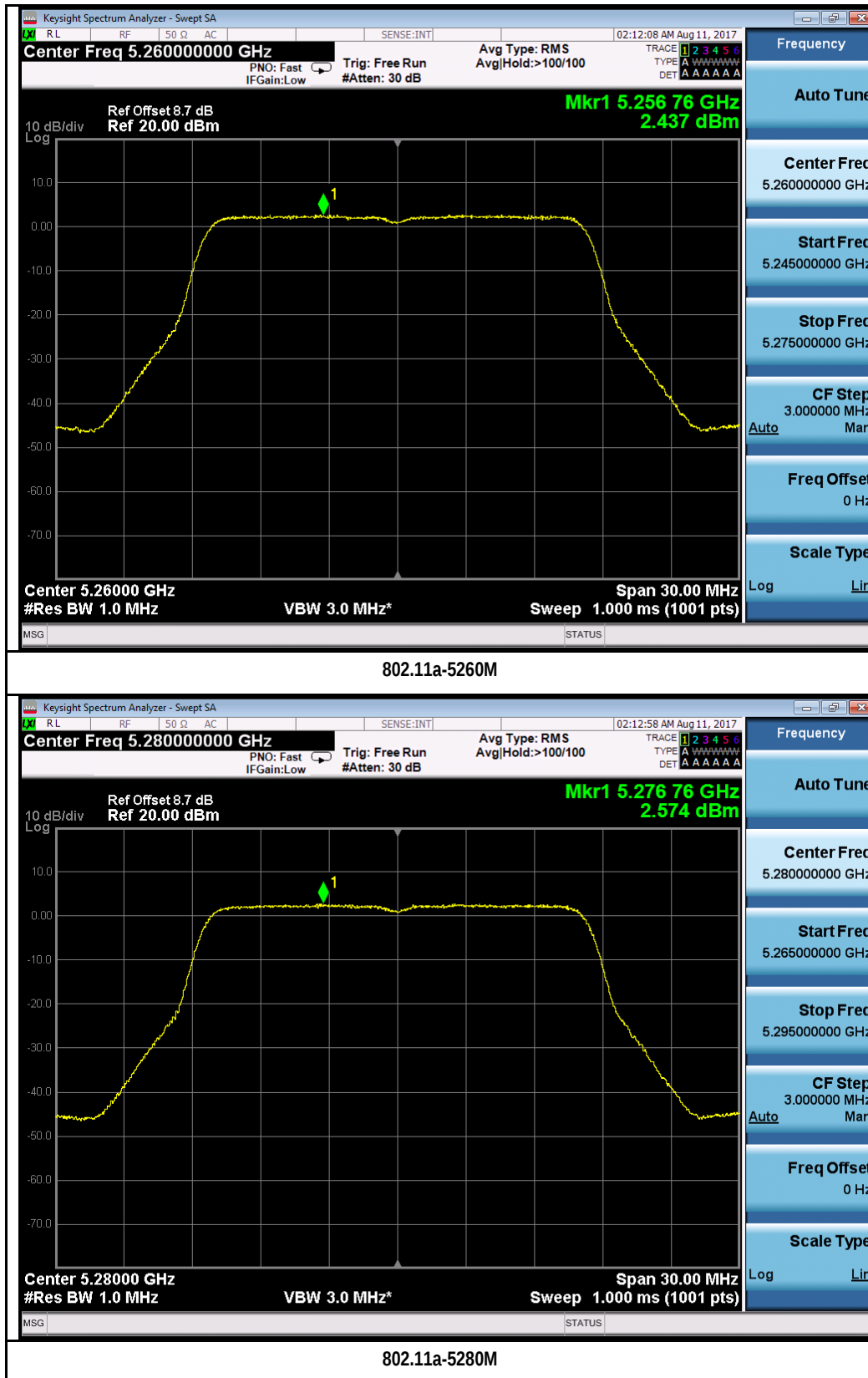


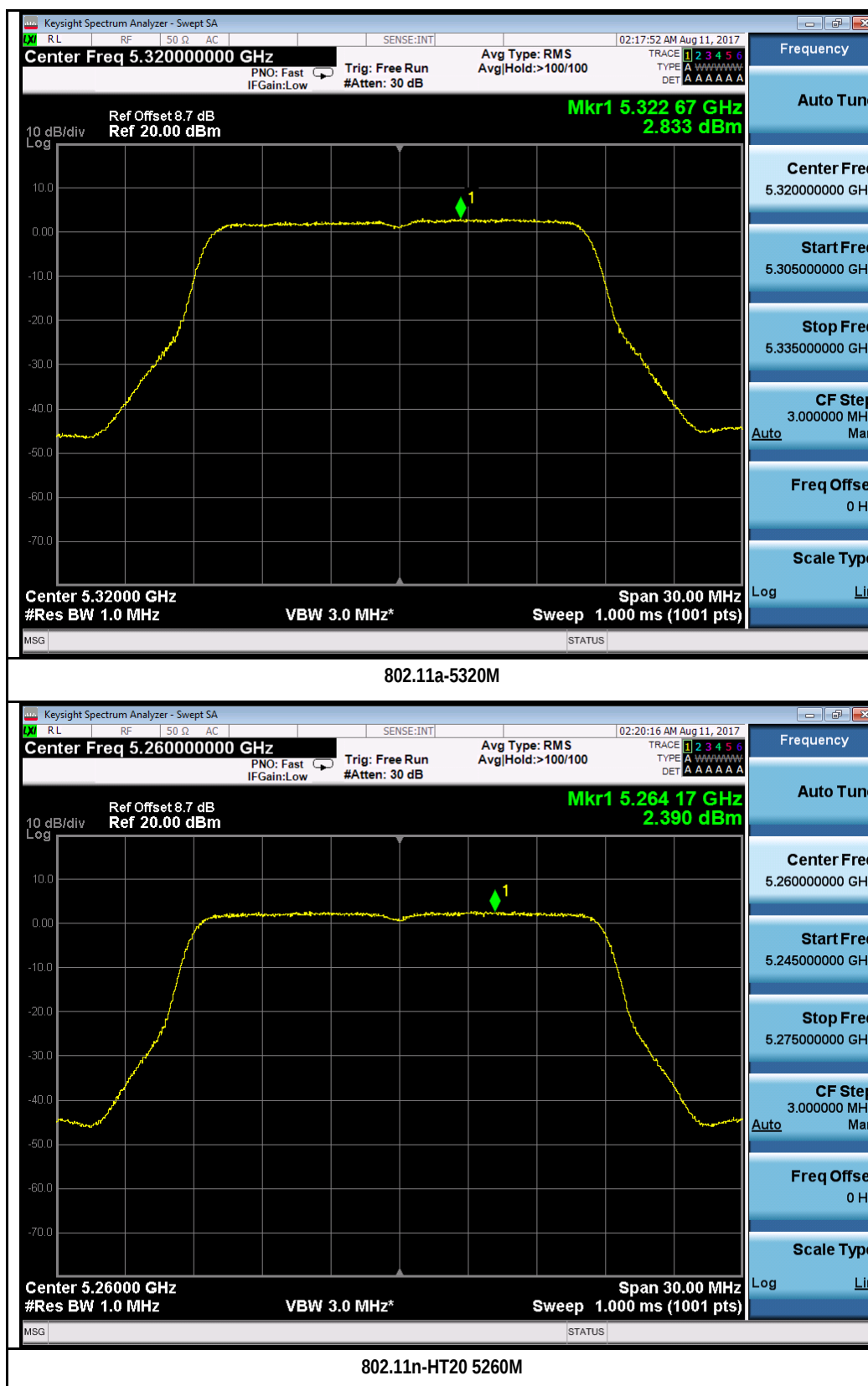
802.11n-HT20 5320M

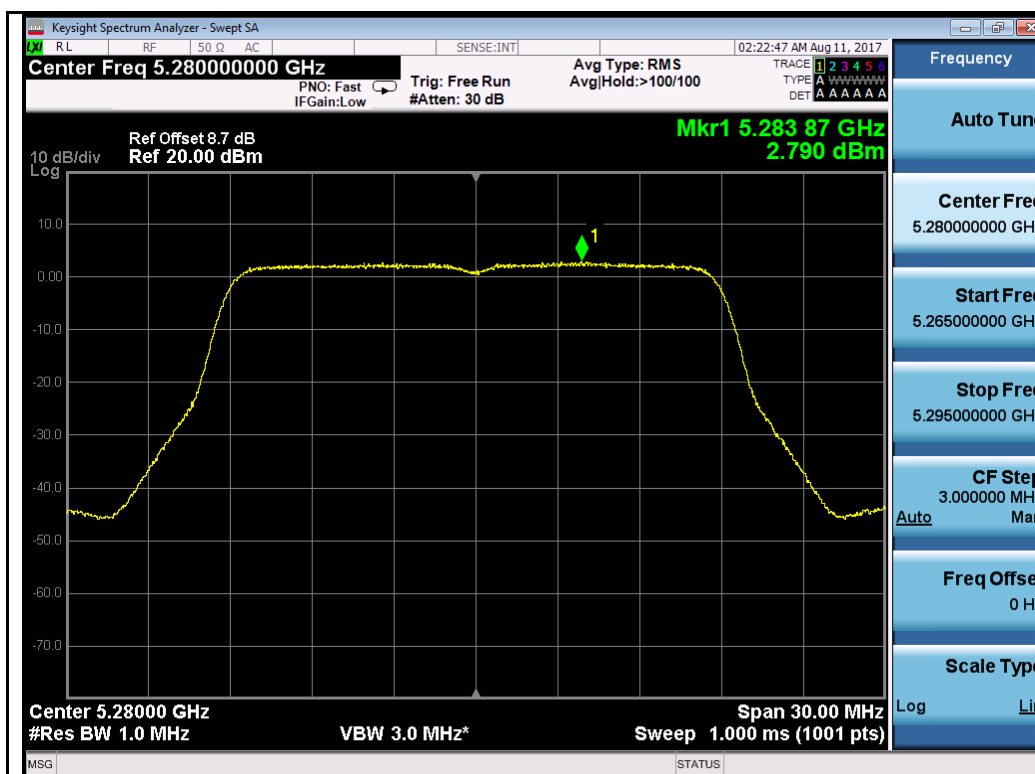




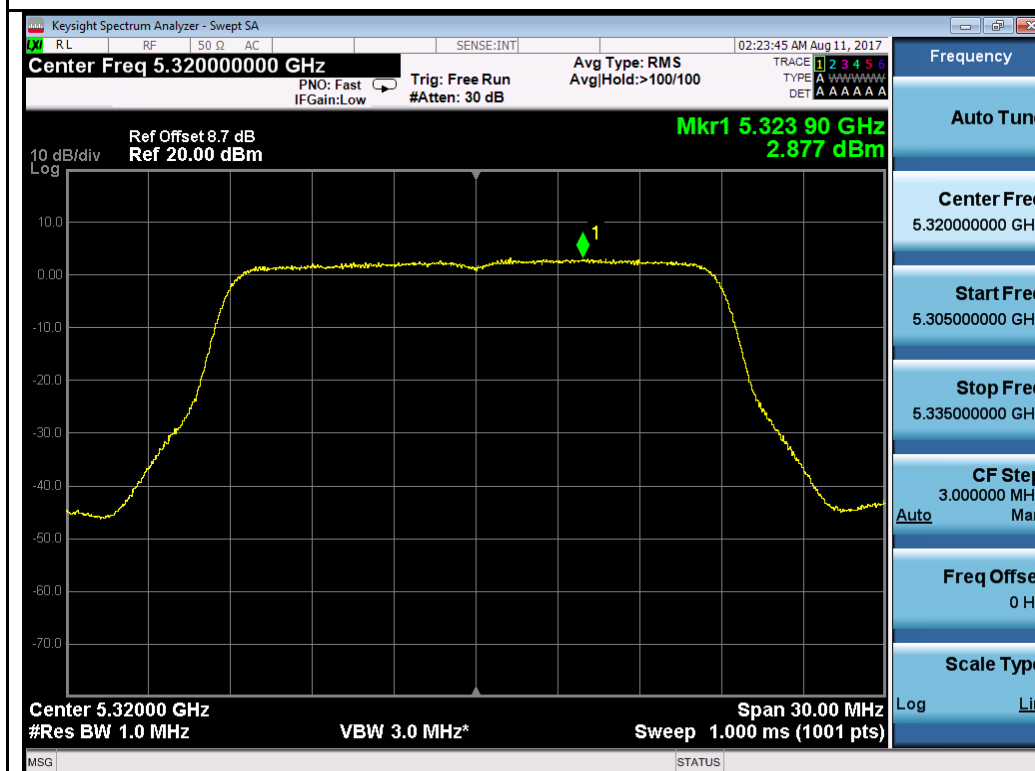
Chain 3:





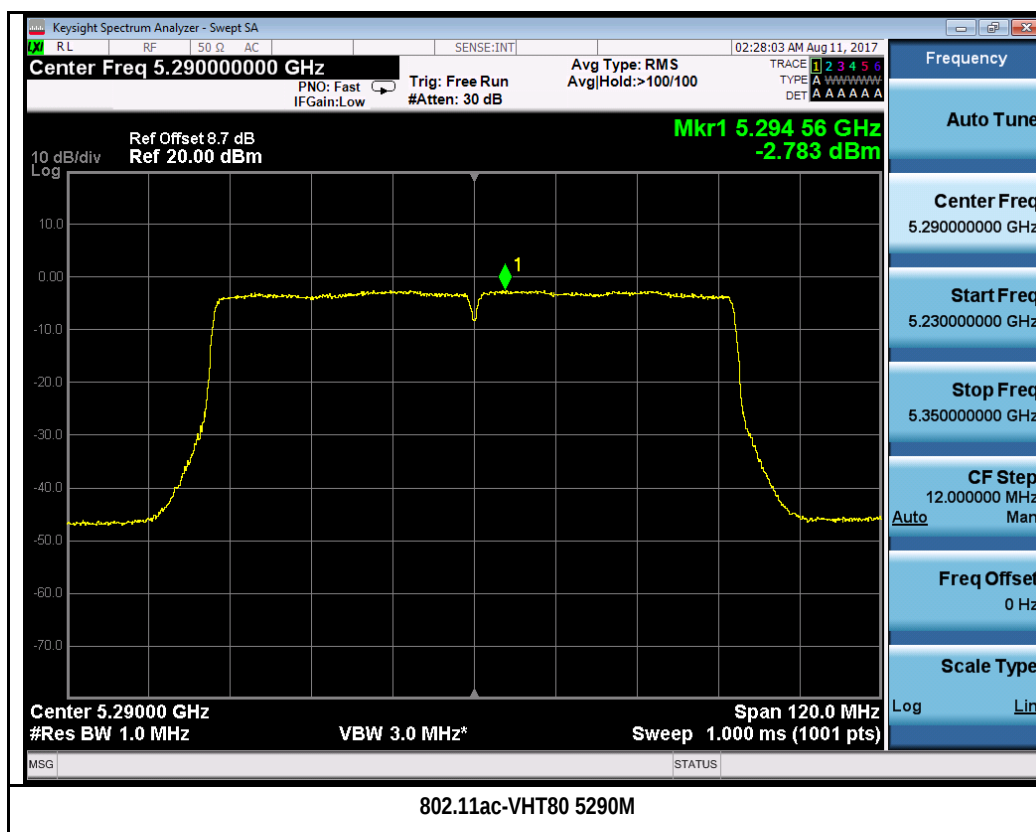


802.11n-HT20 5280M



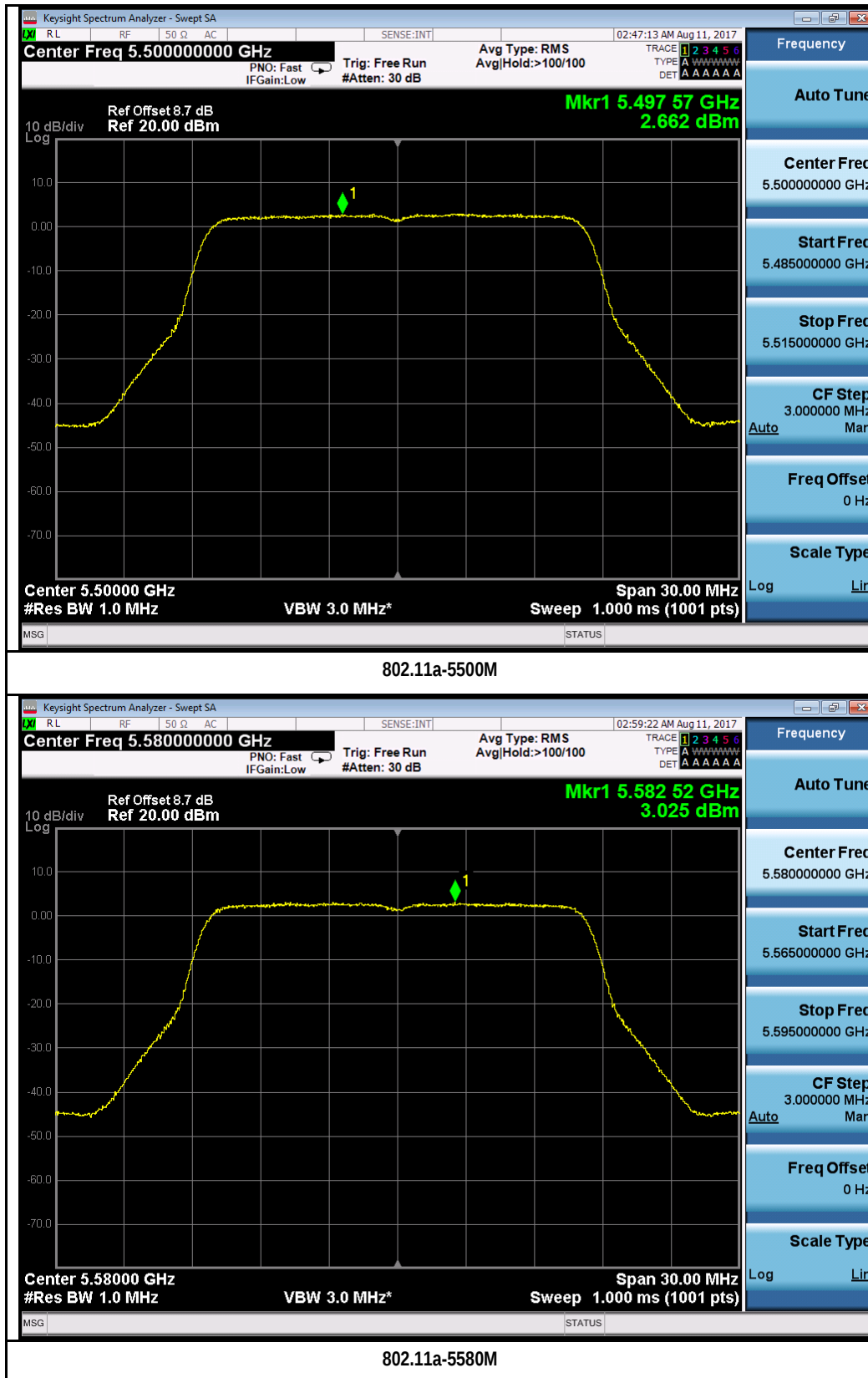
802.11n-HT20 5320M

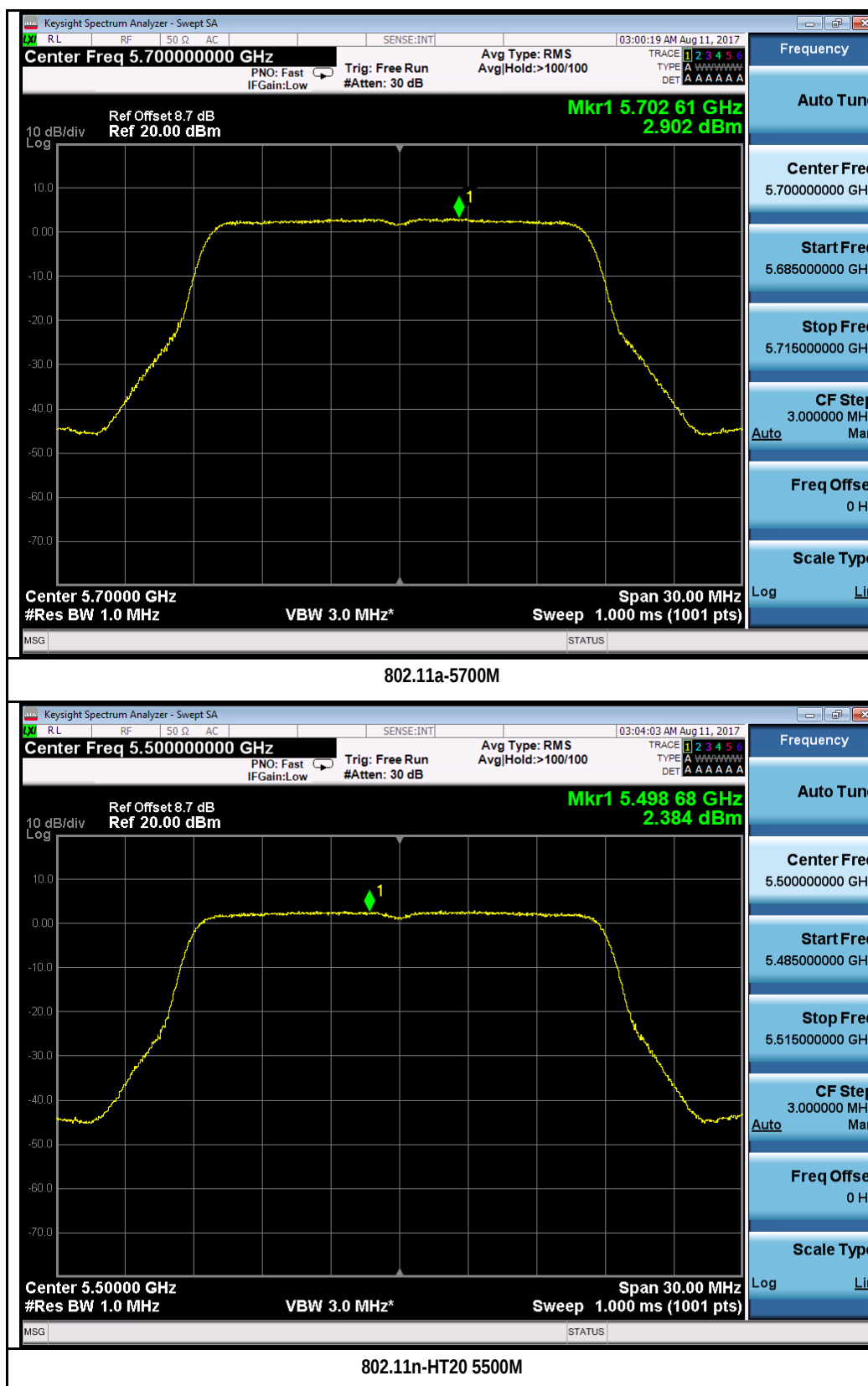


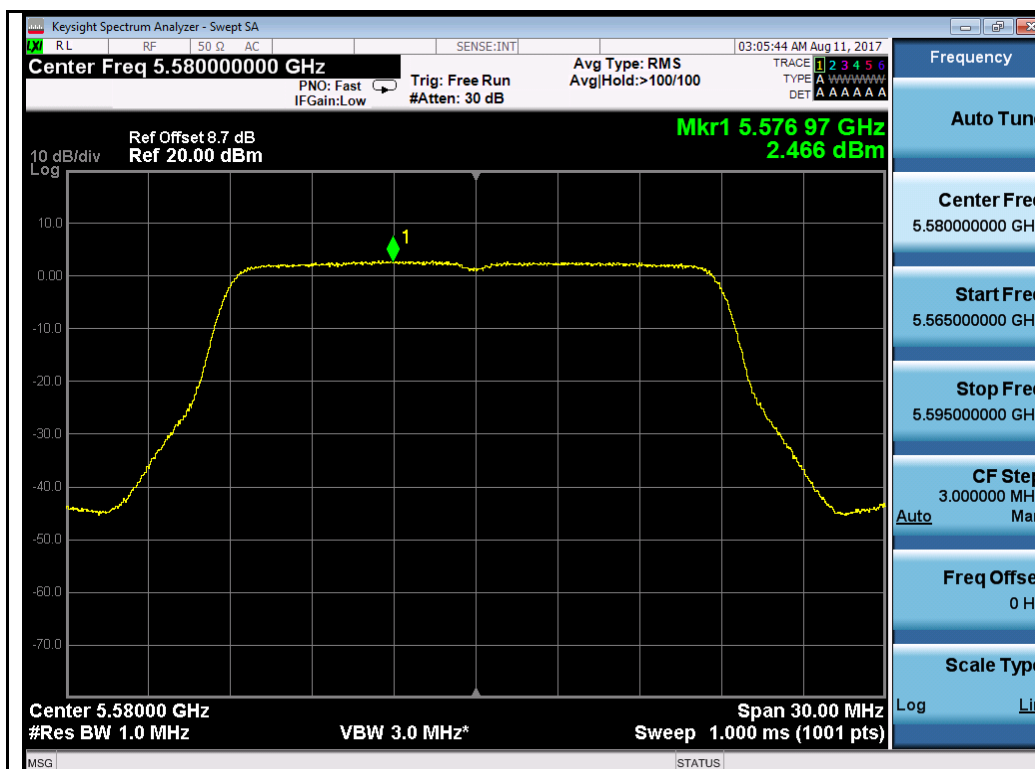


Test Plot for W56:

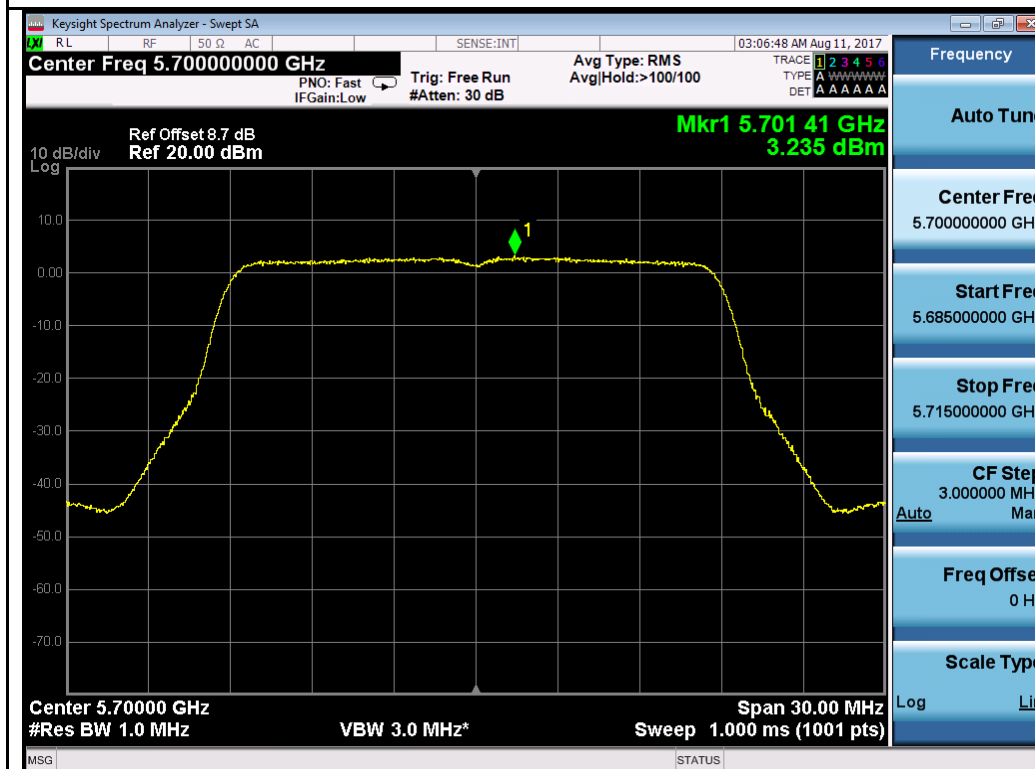
Chain 0:



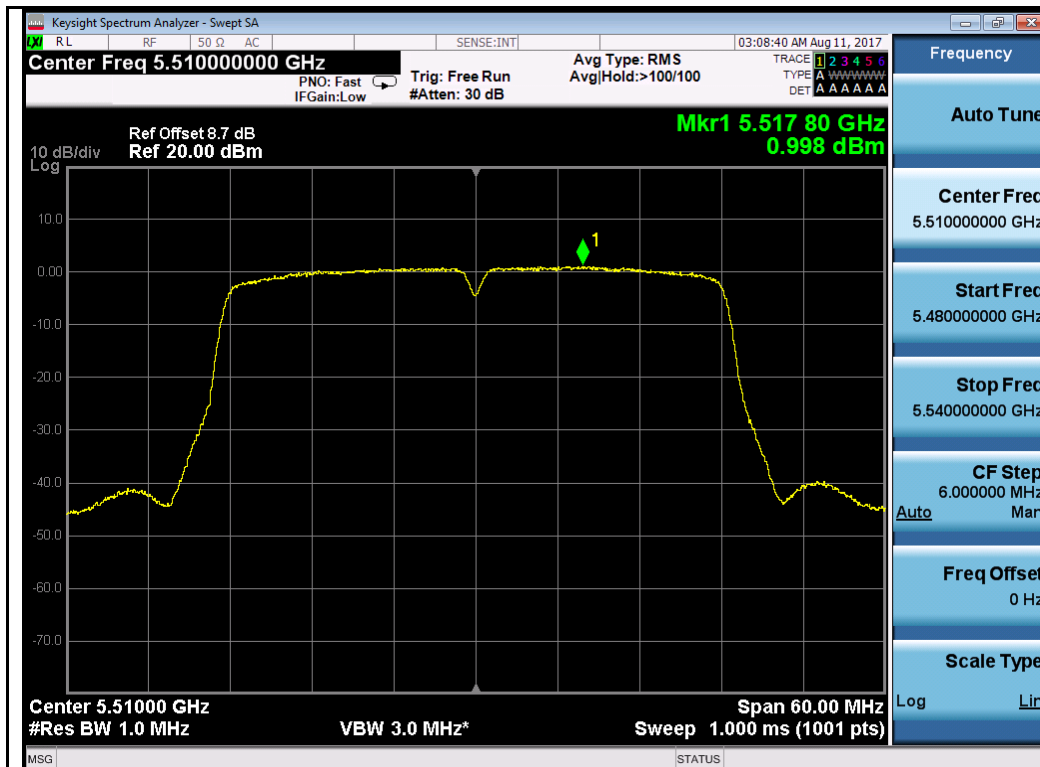




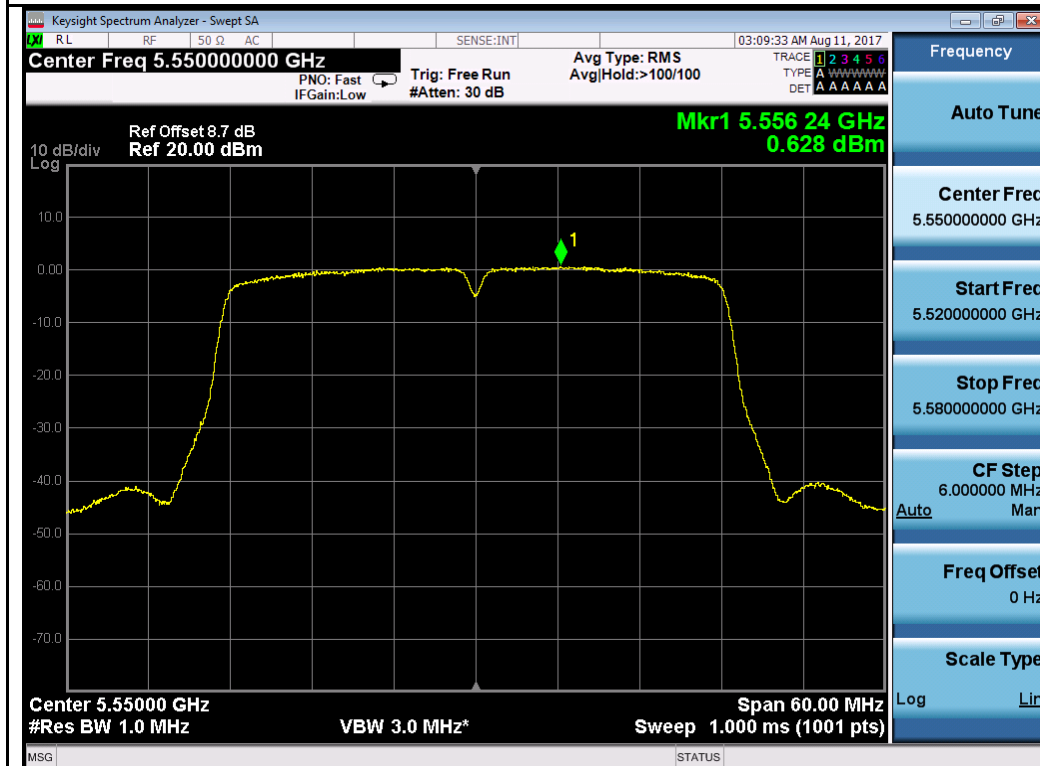
802.11n-HT20 5580M



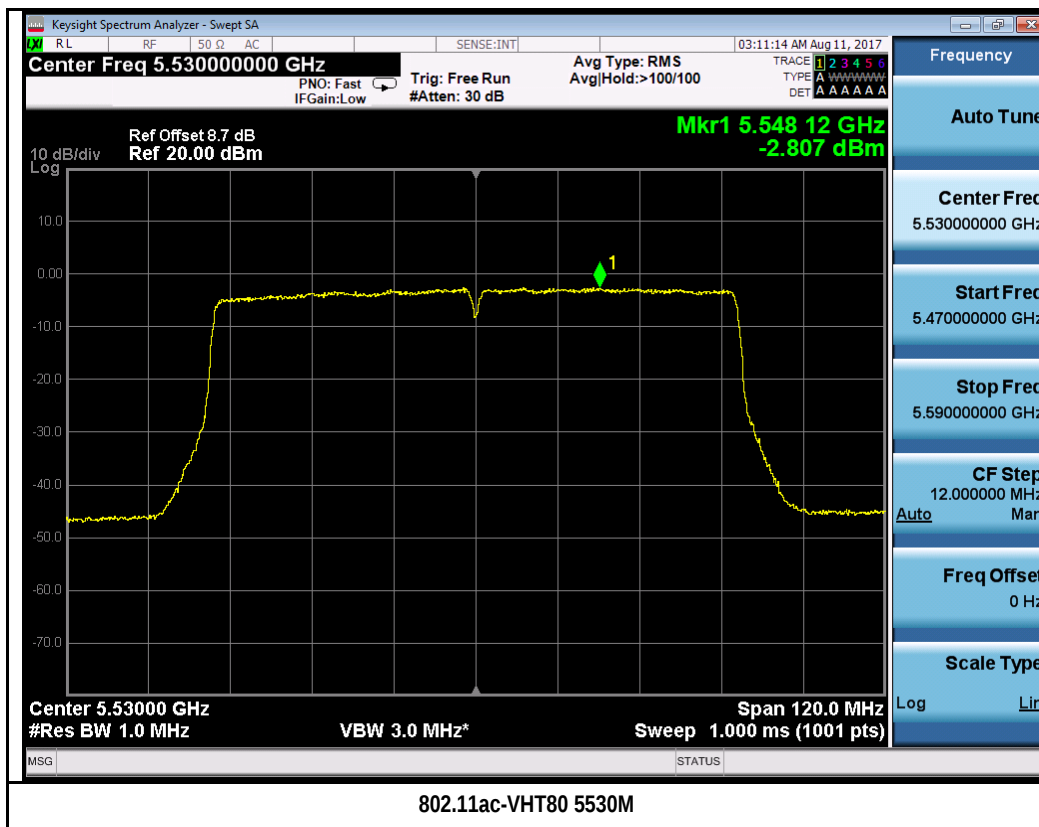
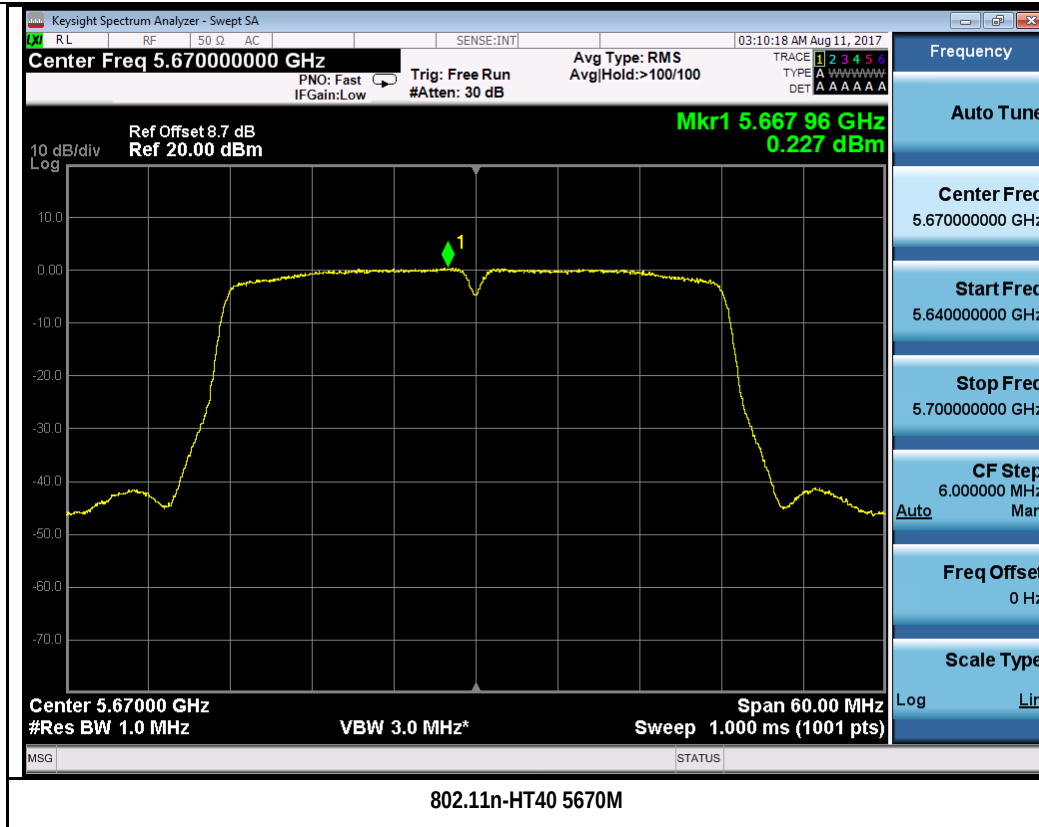
802.11n-HT20 5700M

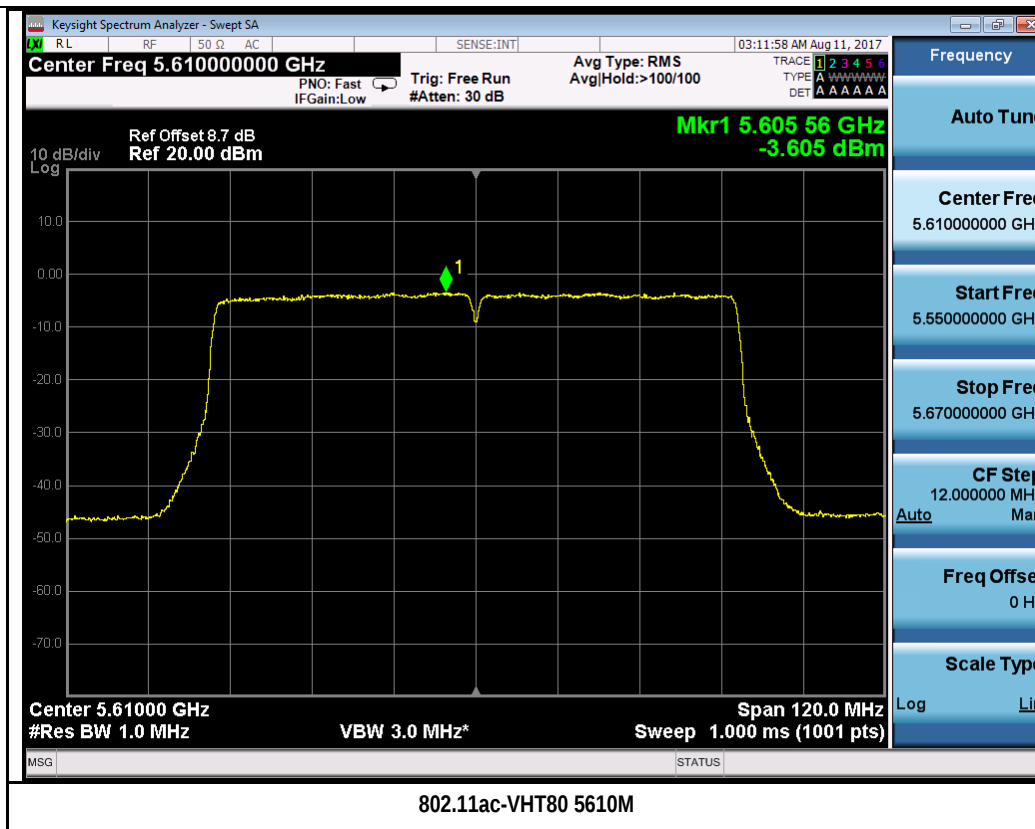


802.11n-HT40 5510M

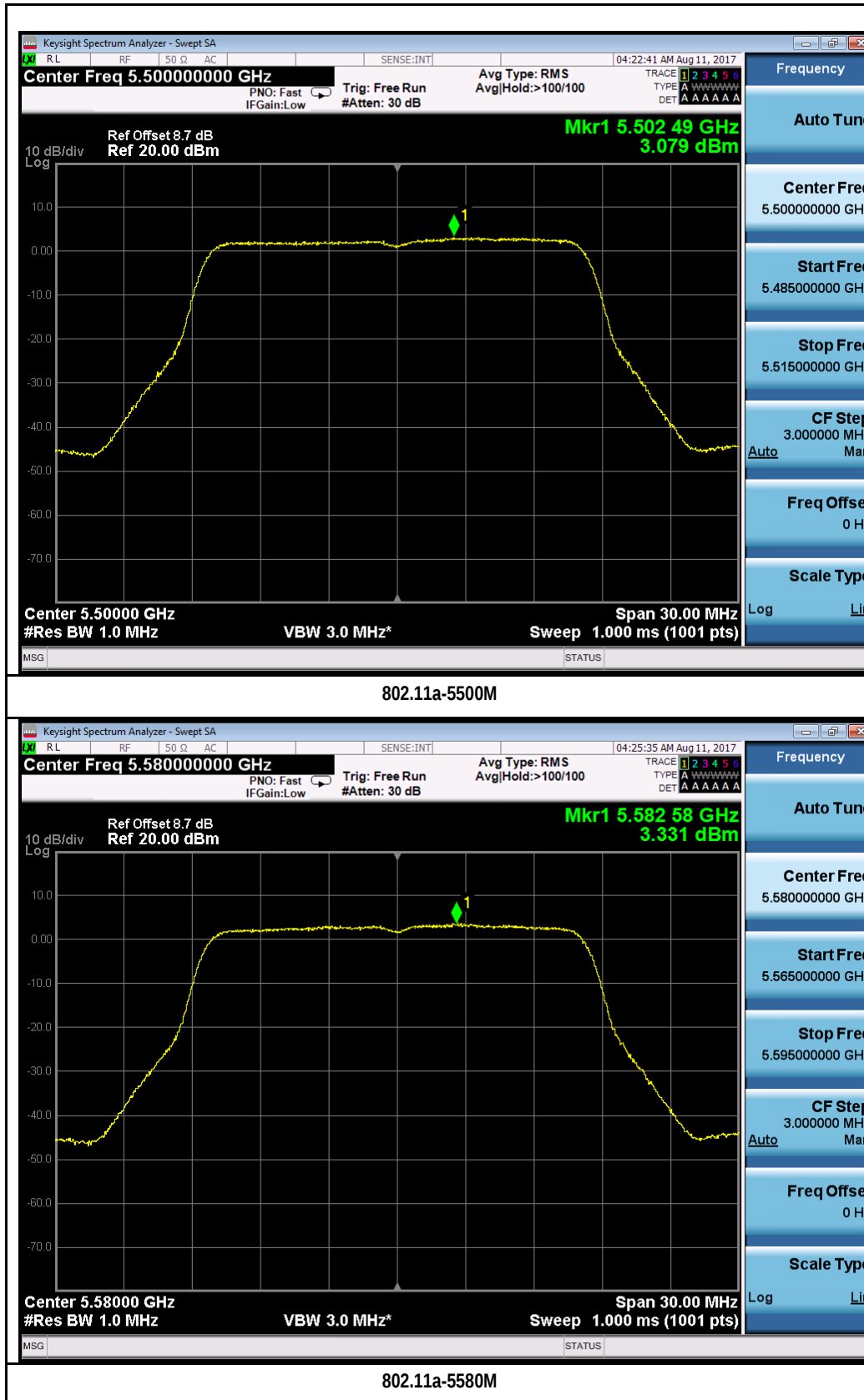


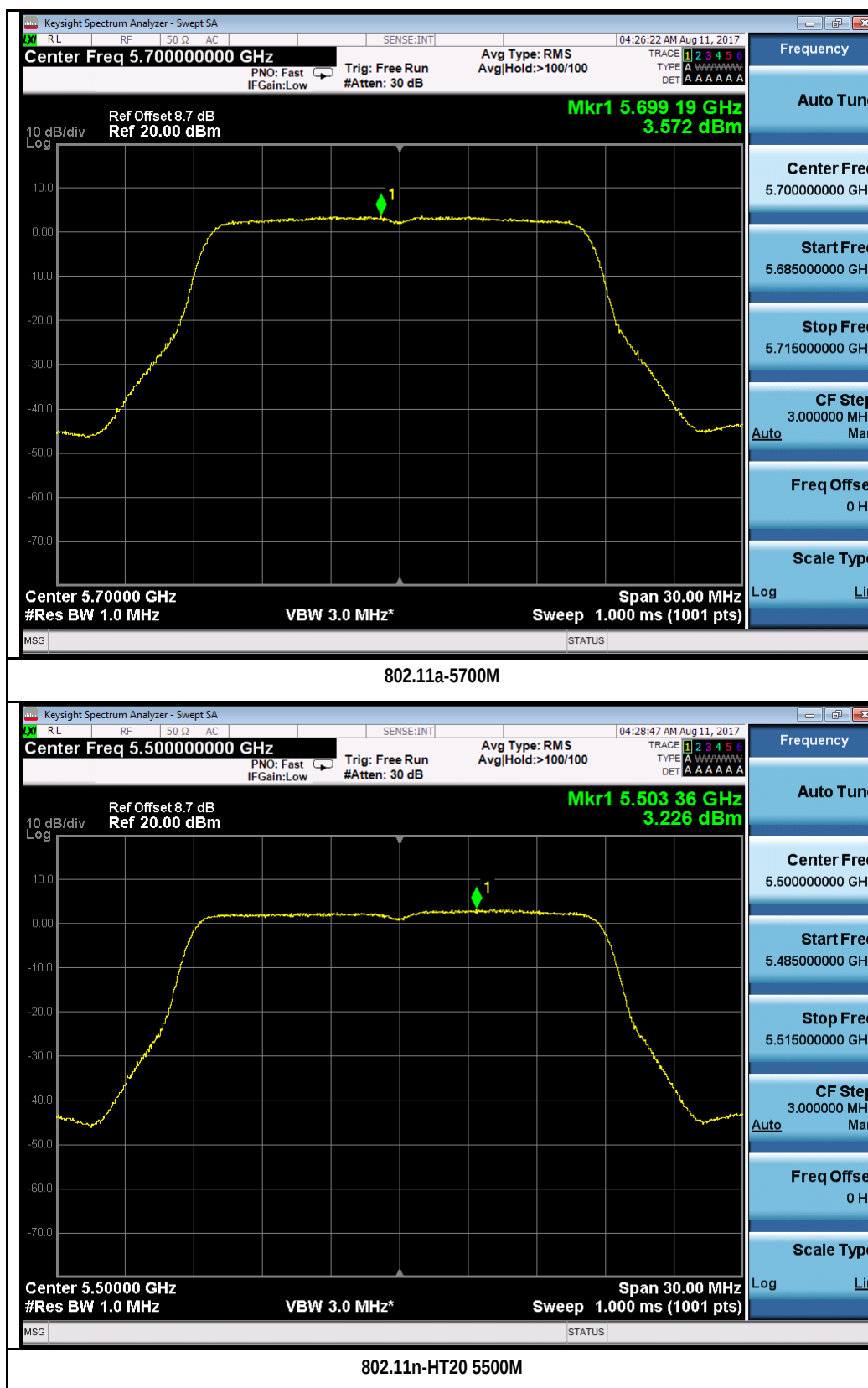
802.11n-HT40 5550M

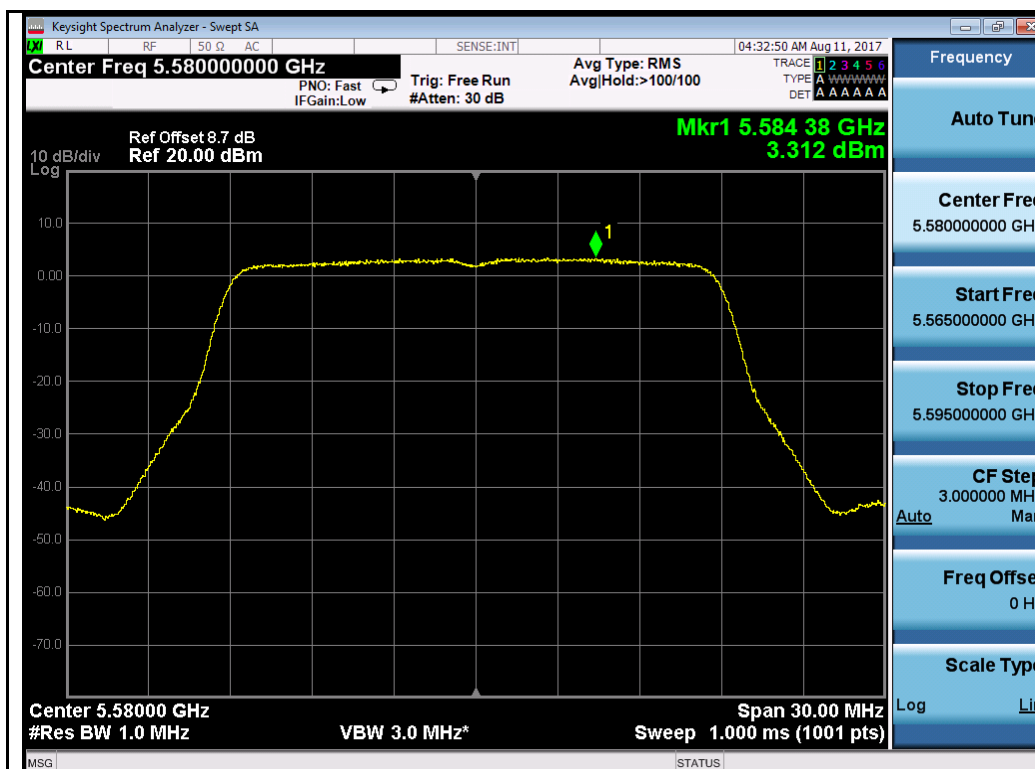




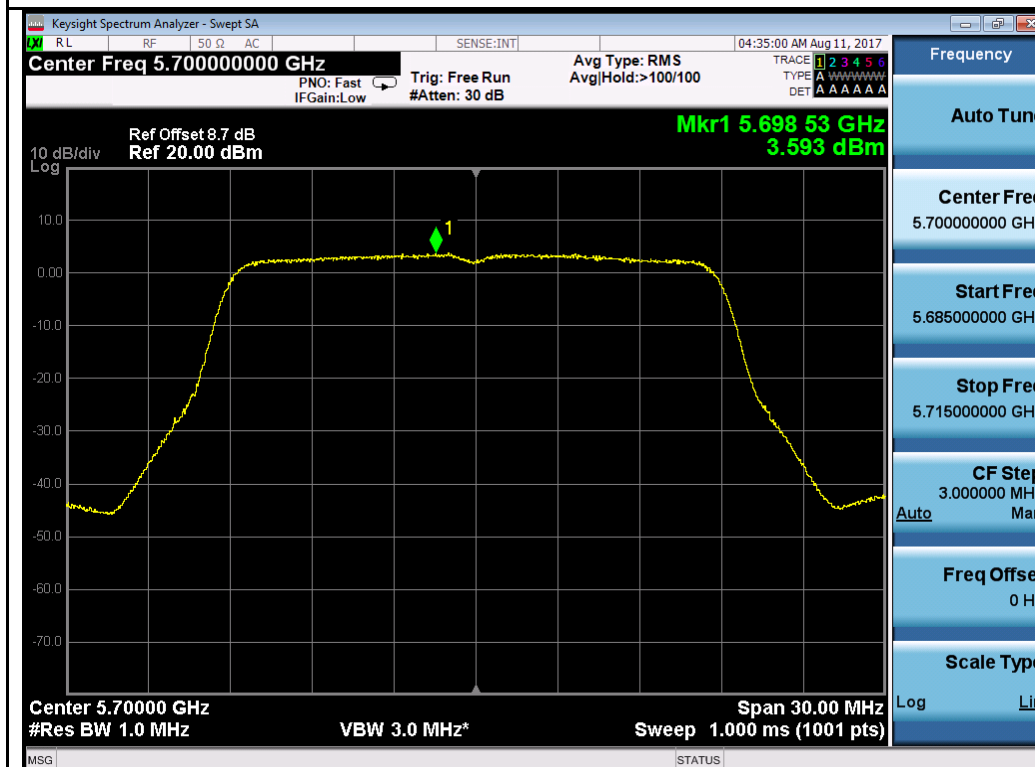
Chain 1:



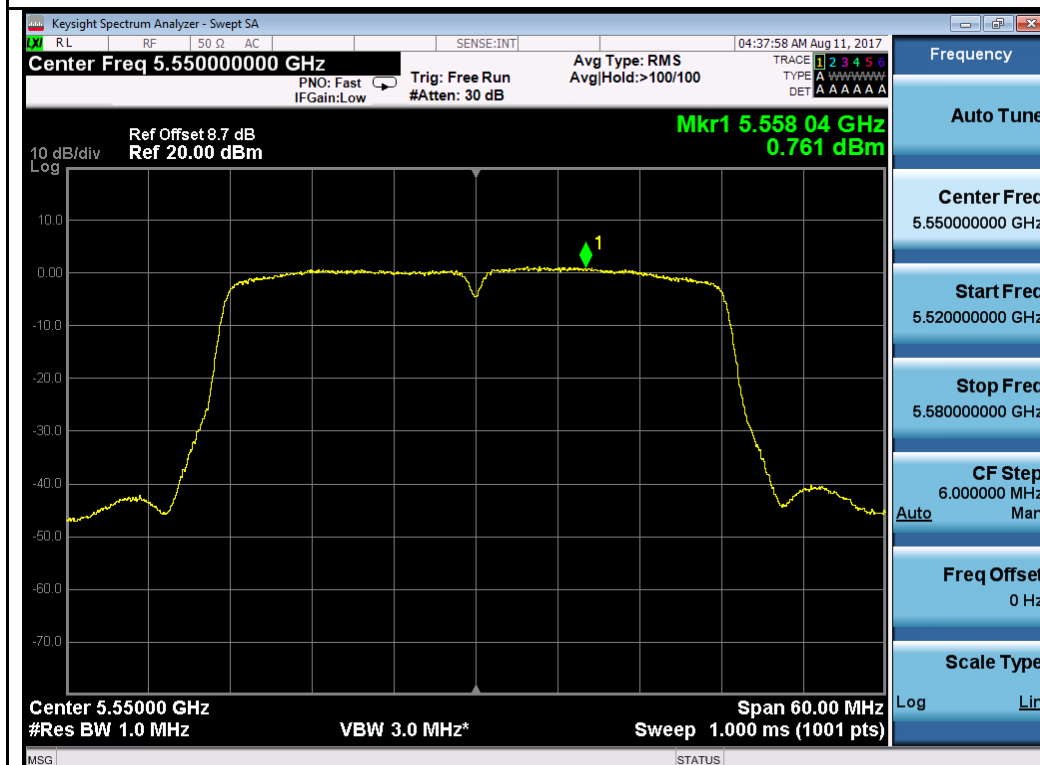
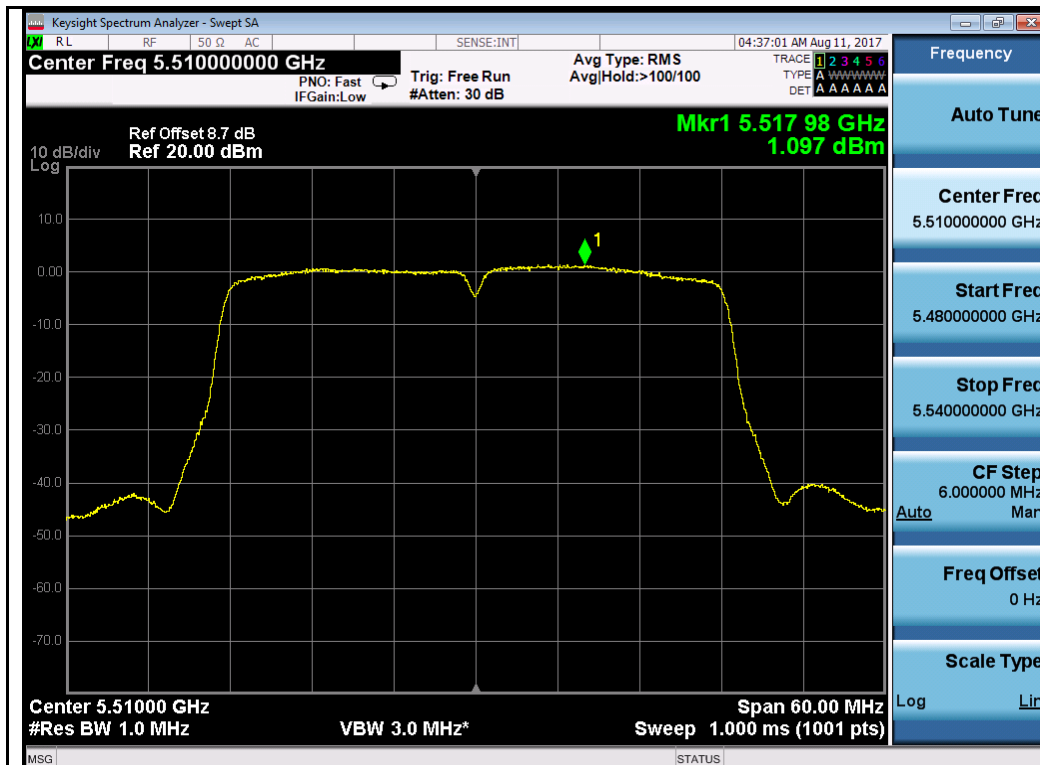


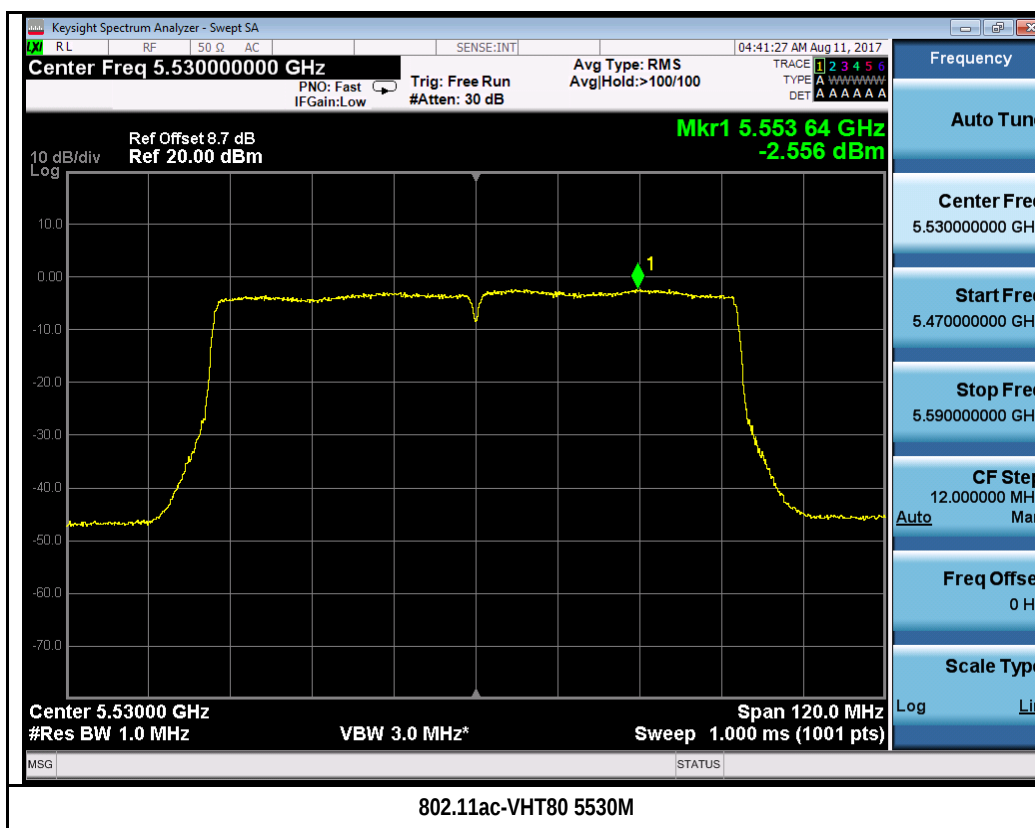
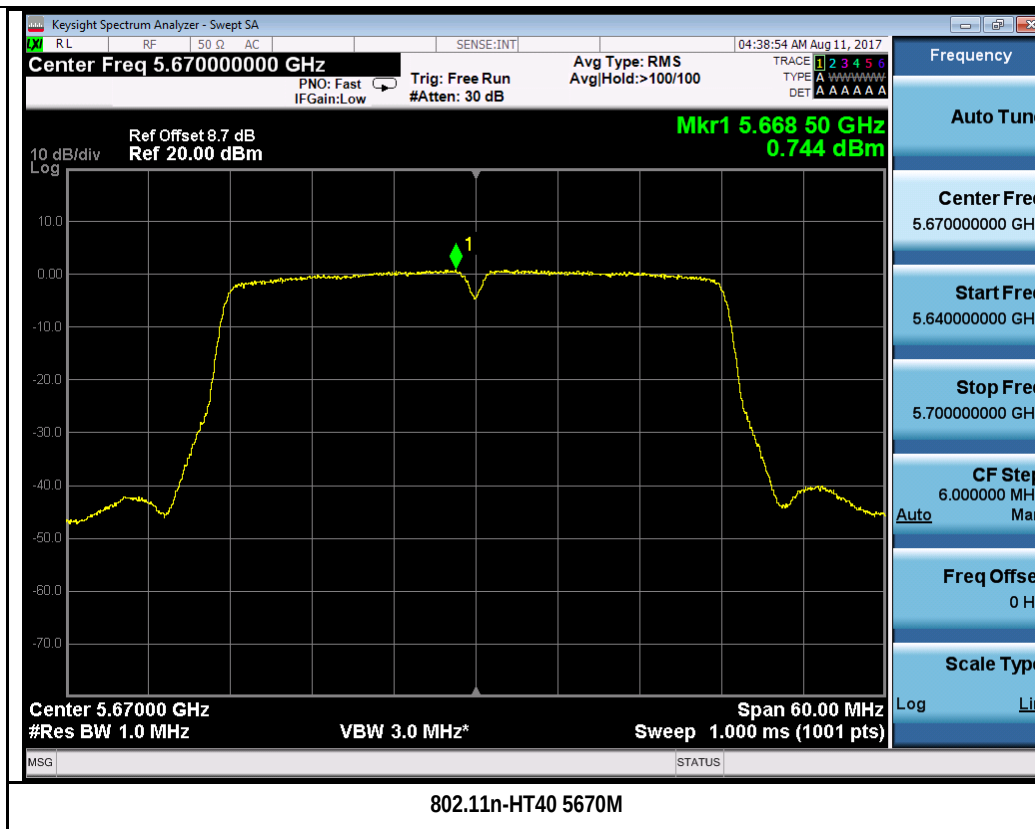


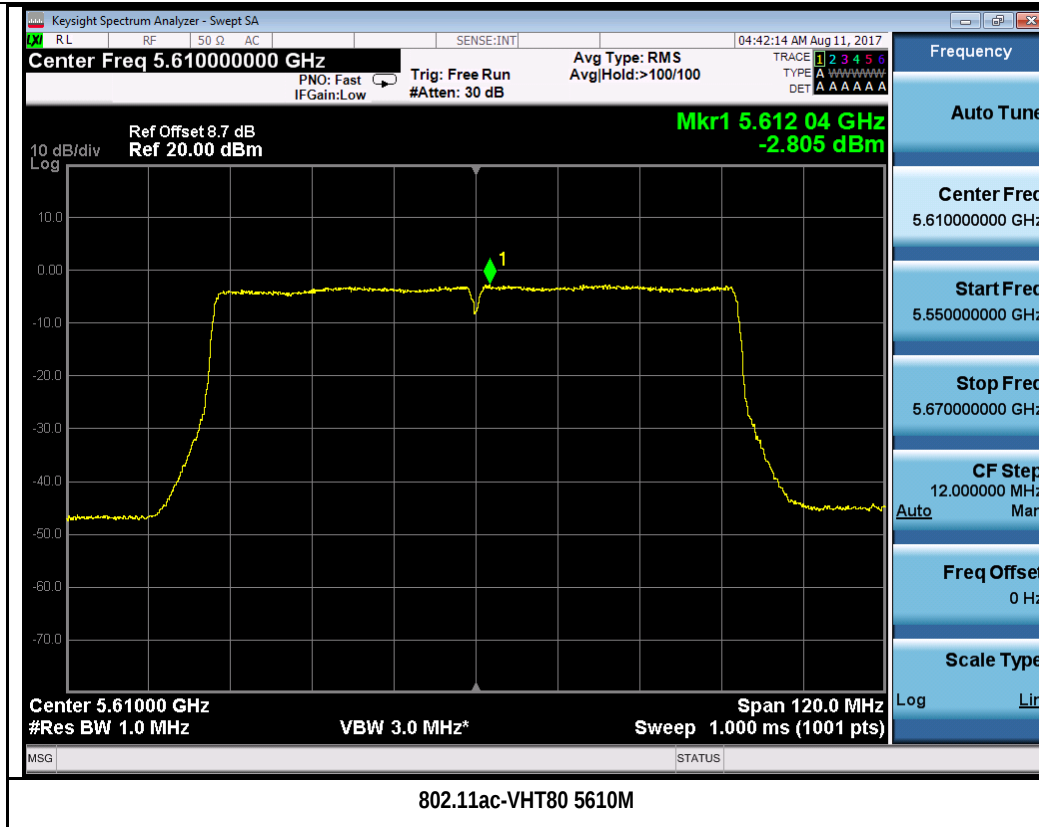
802.11n-HT20 5580M



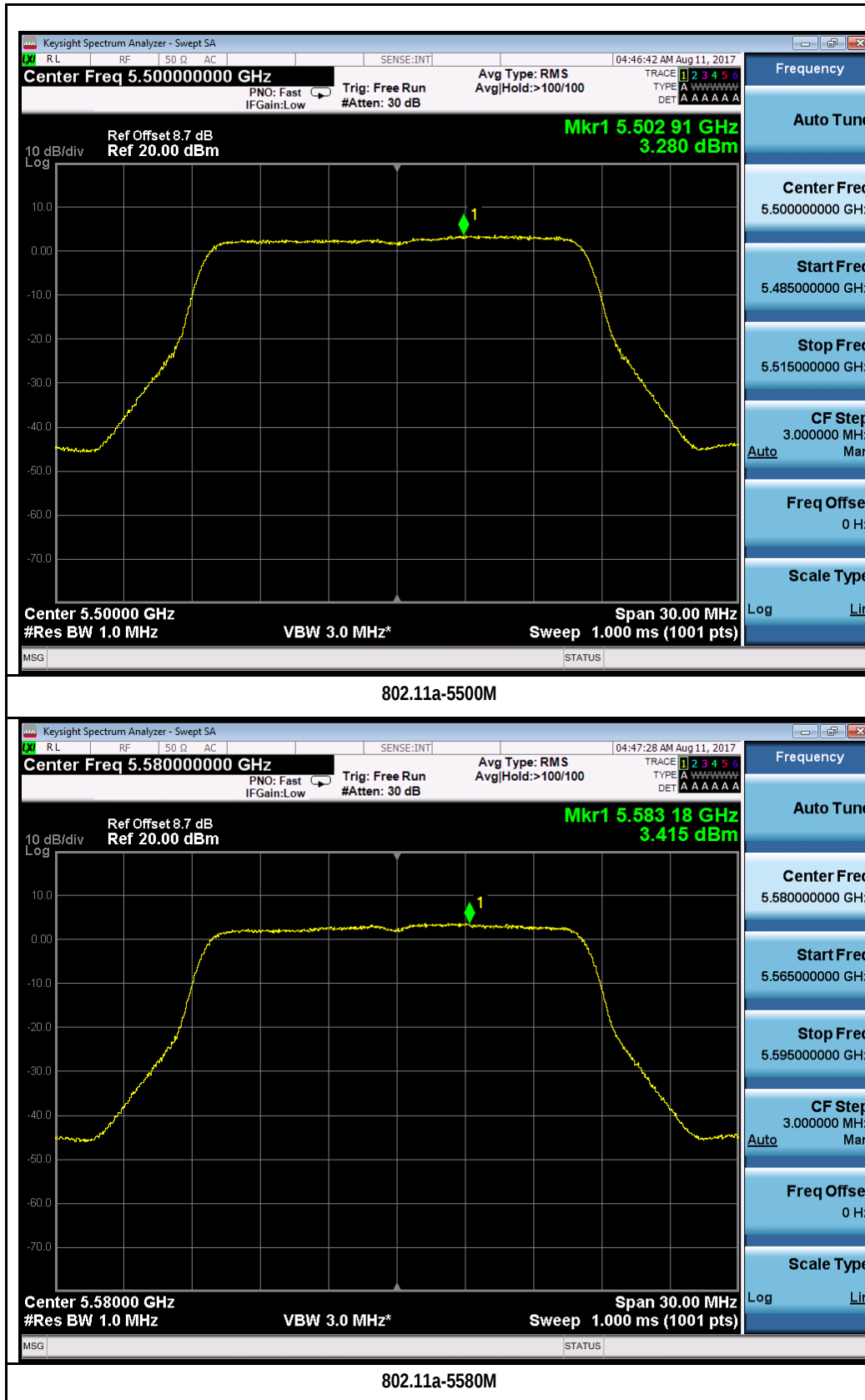
802.11n-HT20 5700M

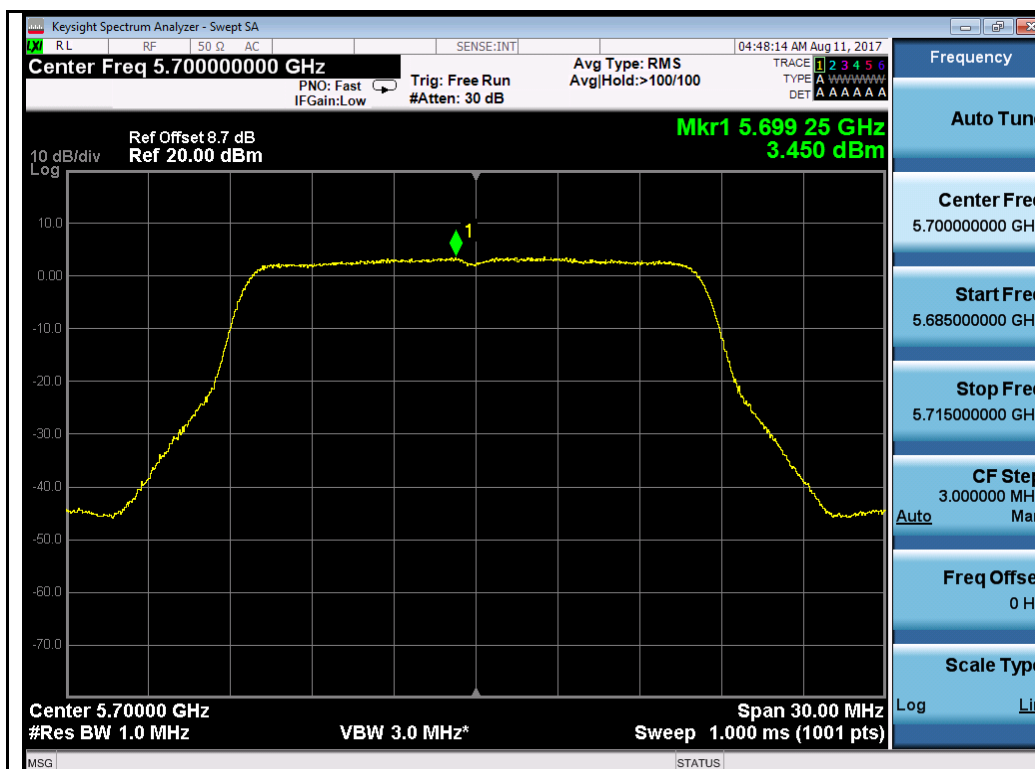




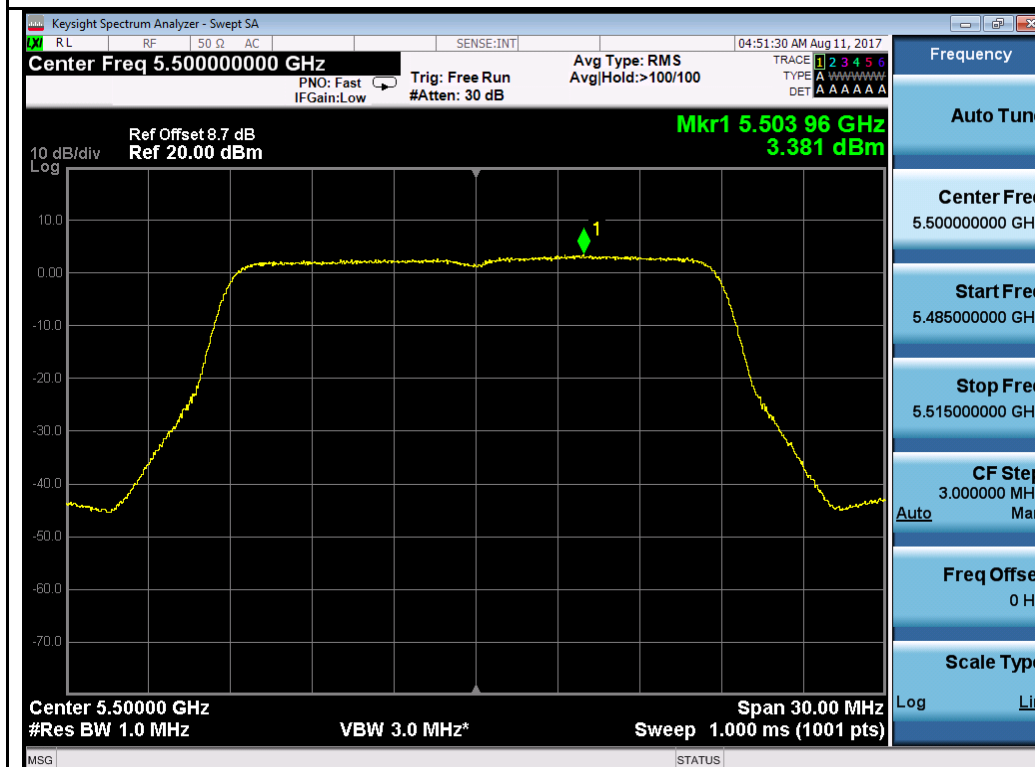


Chain 2:





802.11a-5700M



802.11n-HT20 5500M