

## Appendix E

### RF Test Data for 5.8G WLAN (Conducted Measurement)

Product Name: W97L

Trade Mark: ZAPO

Test Model: W97L-5DB

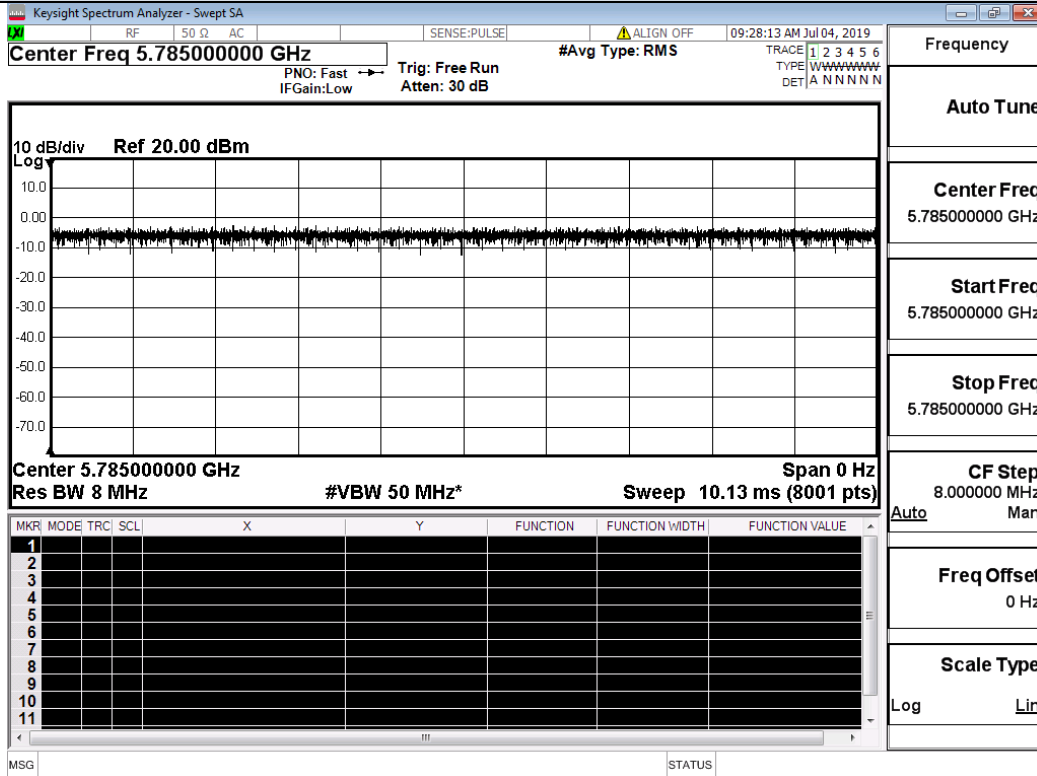
#### Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	CHUANG WANG
Supervised by:	JAYDEN ZHUO

#### E.1 Duty Cycle

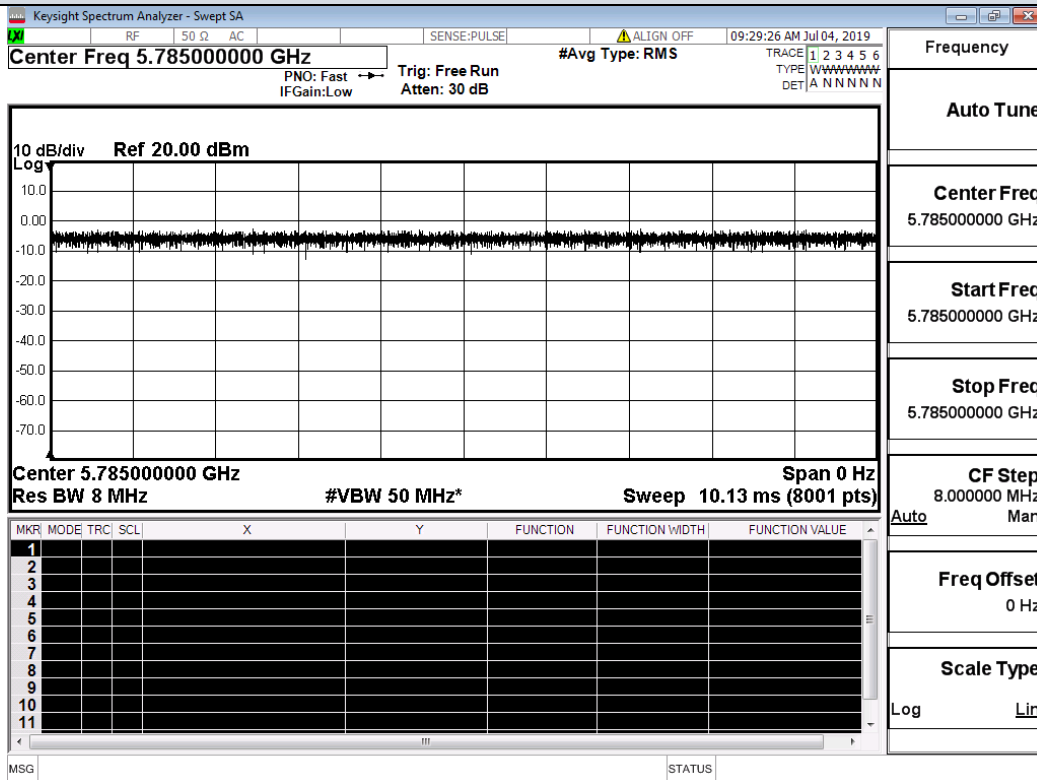
Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5785	100	0.00	0.01
11N20 SISO	5785	100	0.00	0.01
11N40 SISO	5755	100	0.00	0.01
11AC20 SISO	5785	100	0.00	0.01
11AC40 SISO	5755	100	0.00	0.01
11AC80 SISO	5775	100	0.00	0.01

On Time and Duty Cycle



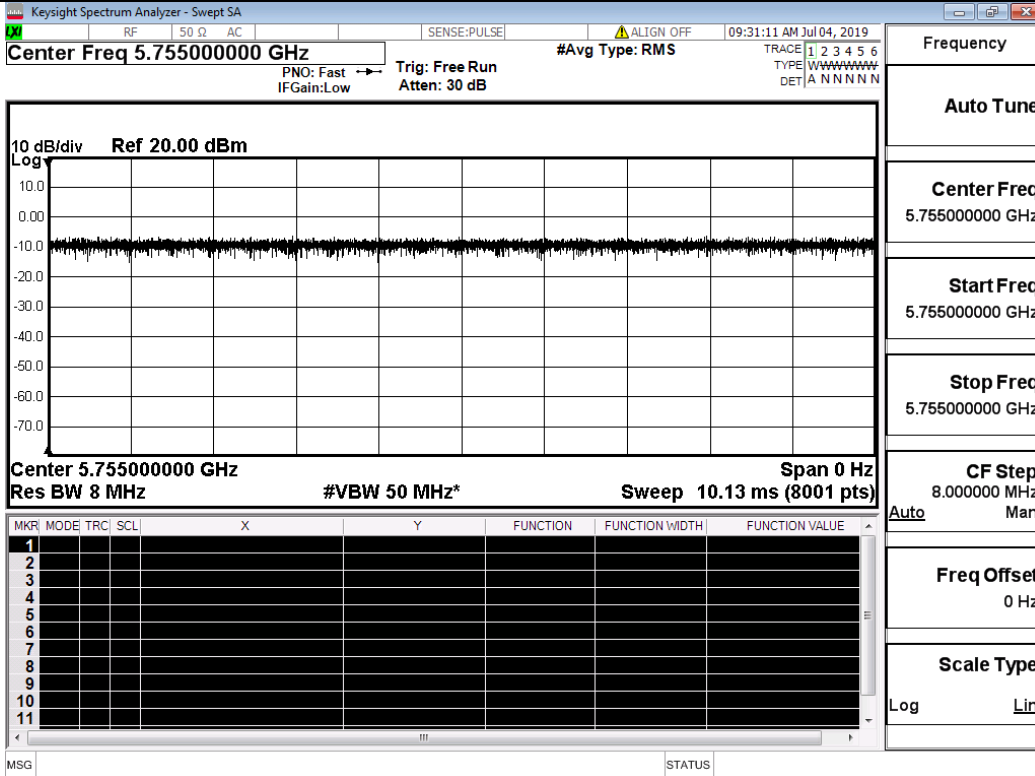
Frequency
Auto Tune
Center Freq 5.78500000 GHz
Start Freq 5.78500000 GHz
Stop Freq 5.78500000 GHz
CF Step 8.000000 MHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

IEEE 802.11a

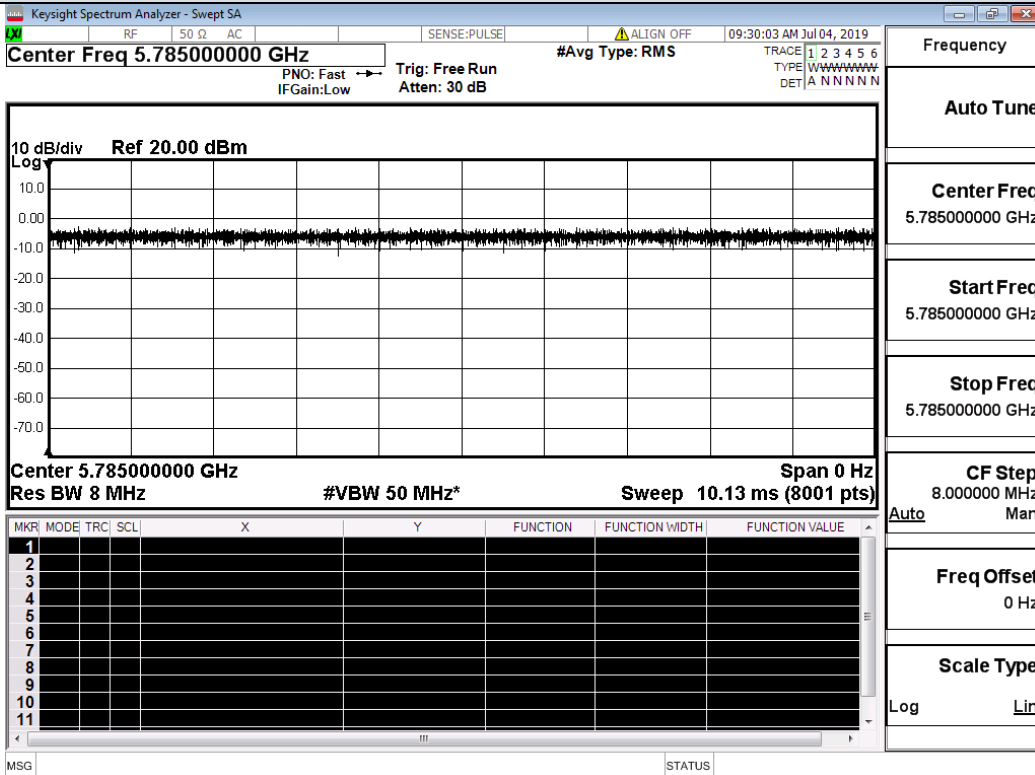


Frequency
Auto Tune
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Start Freq 5.78500000 GHz
Stop Freq 5.78500000 GHz
CF Step 8.000000 MHz Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

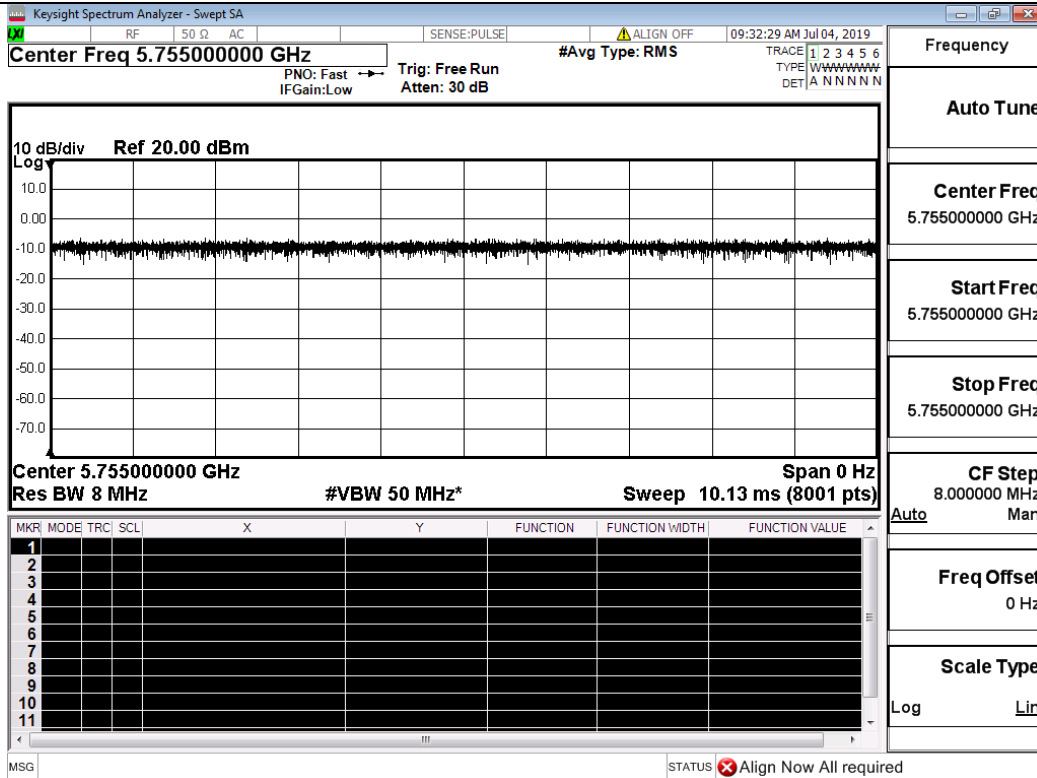
IEEE 802.11n HT20



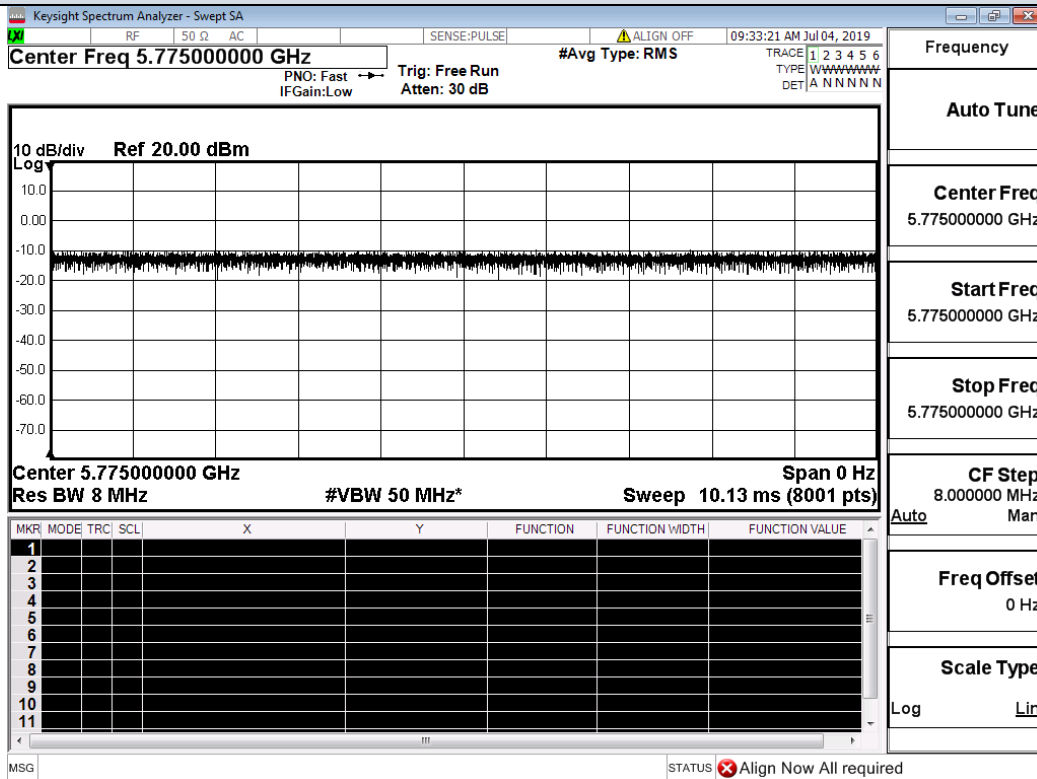
IEEE 802.11n HT40



IEEE 802.11ac HT20



IEEE 802.11ac HT40



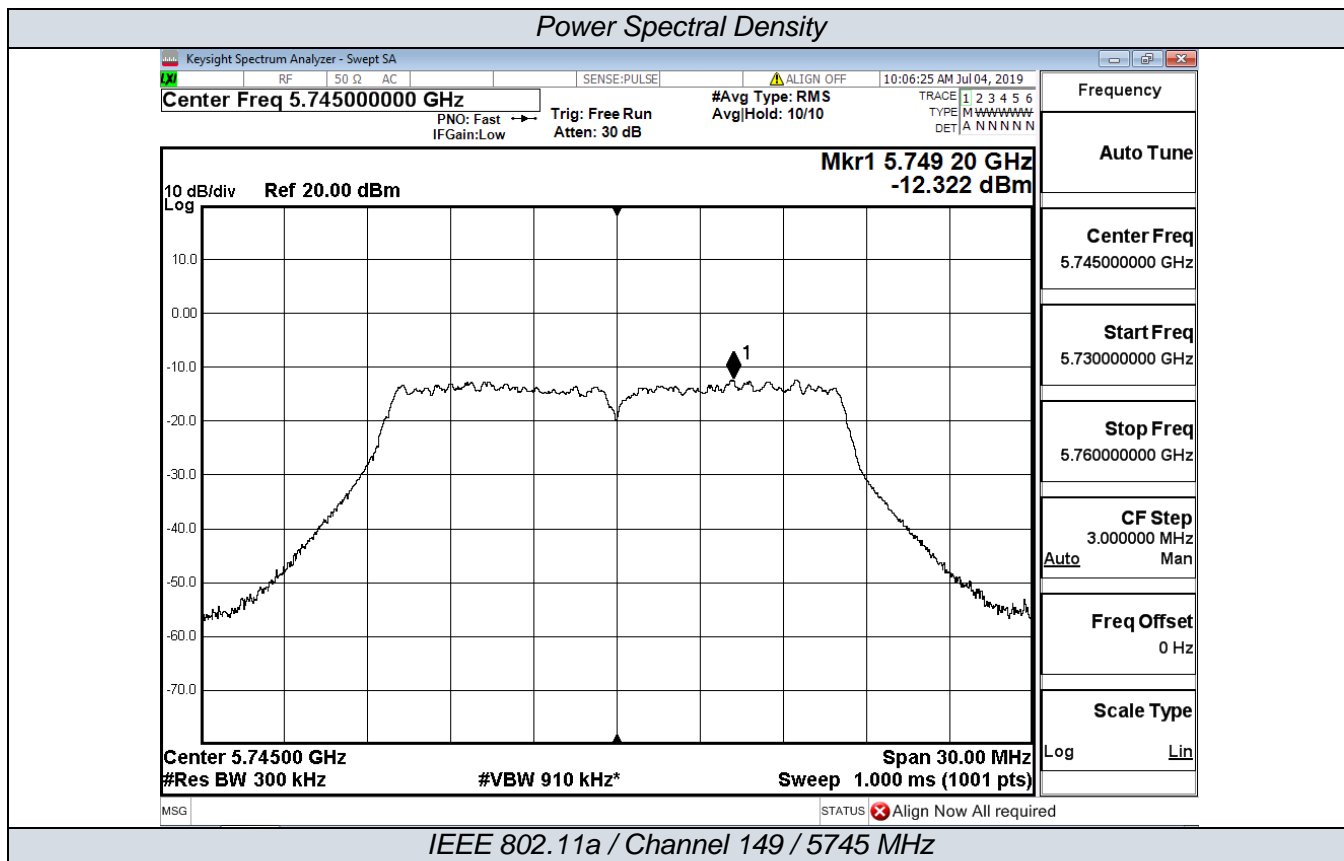
IEEE 802.11ac HT80

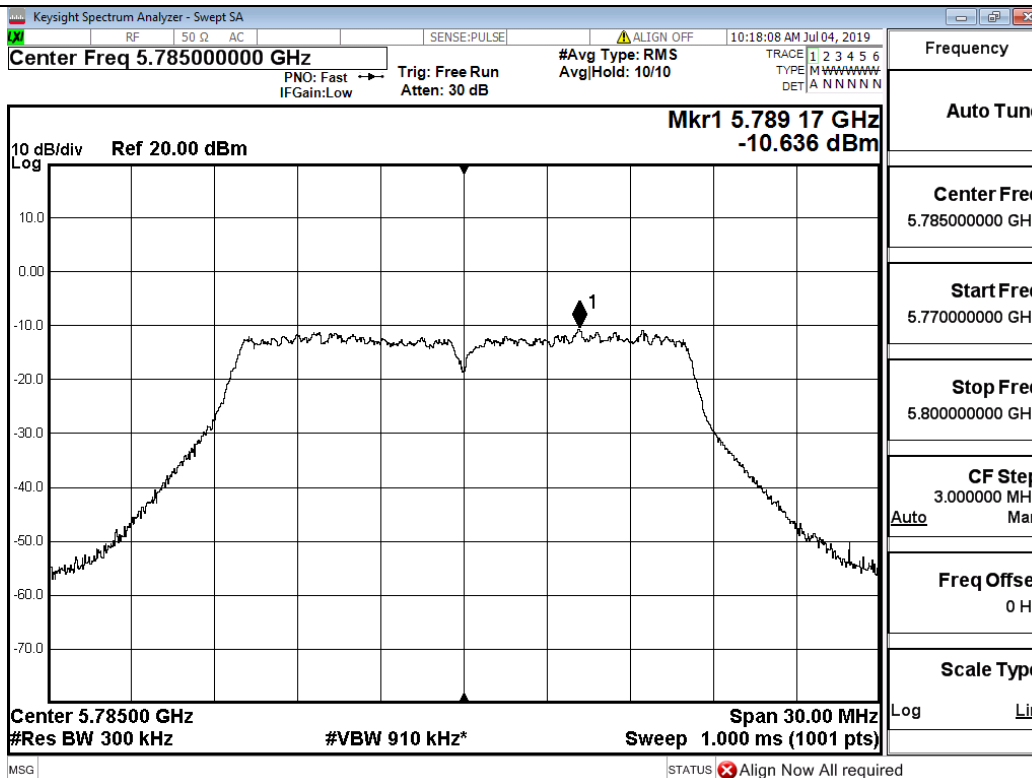
**E.2 Maximum Conduct Output Power**

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor (dB)	Report Conducted Power (dBm)	Limit (dBm)
11A	149	5745	5.653	0	5.653	30
	157	5785	6.261	0	6.261	
	165	5825	6.579	0	6.579	
11N20 SISO	149	5745	4.461	0	4.461	30
	157	5785	5.447	0	5.447	
	165	5825	5.716	0	5.716	
11N40 SISO	151	5755	2.800	0	2.800	30
	159	5795	3.609	0	3.609	
11AC20 SISO	149	5745	5.461	0	5.461	30
	157	5785	5.765	0	5.765	
	165	5825	5.825	0	5.825	
11AC40 SISO	151	5755	3.771	0	3.771	30
	159	5795	3.568	0	3.568	
11AC80 SISO	155	5775	-0.052	0	-0.052	30

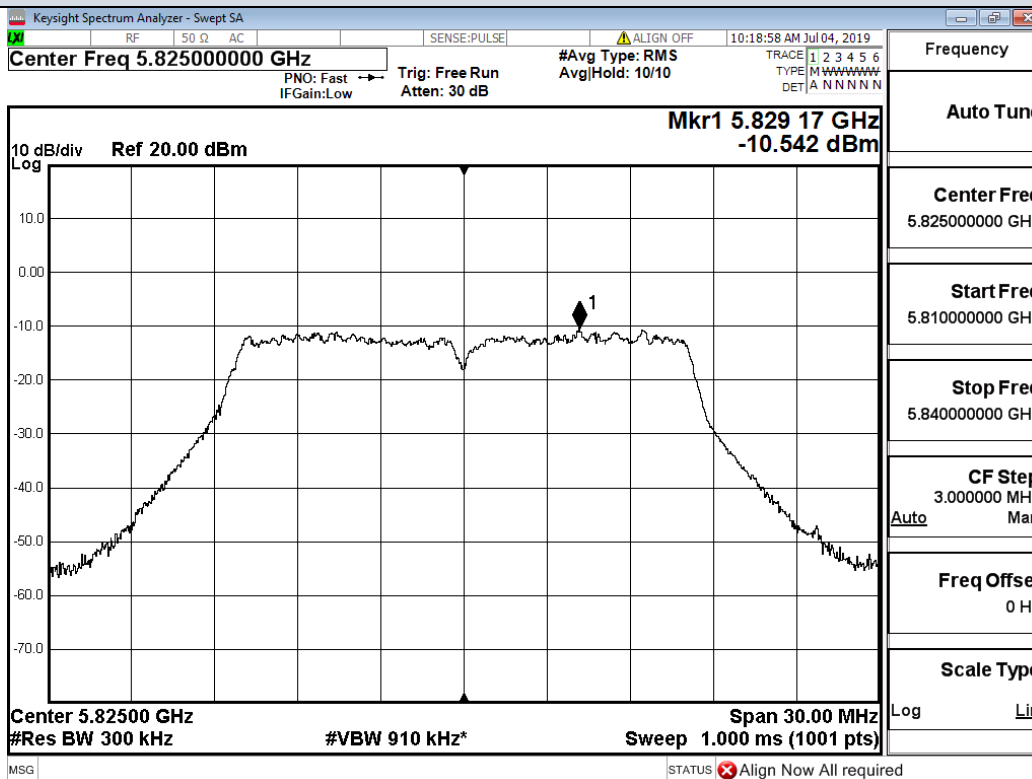
### E.3 Power Spectral Density

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/300KHz)	Duty Cycle Factor (dB)	RBW Factor (dB)	Report Power Density (dBm/500KHz)	Limit (dBm/500KHz)
11A	149	5745	-12.322	0	2.218	-10.104	30
	157	5785	-10.636	0	2.218	-8.418	
	165	5825	-10.542	0	2.218	-8.324	
11N20 SISO	149	5745	-12.244	0	2.218	-10.026	30
	157	5785	-11.505	0	2.218	-9.287	
	165	5825	-11.088	0	2.218	-8.870	
11N40 SISO	151	5755	-14.801	0	2.218	-12.583	30
	159	5795	-14.204	0	2.218	-11.986	
11AC20 SISO	149	5745	-12.102	0	2.218	-9.884	30
	157	5785	-11.753	0	2.218	-9.535	
	165	5825	-11.115	0	2.218	-8.897	
11AC40 SISO	151	5755	-14.853	0	2.218	-12.635	30
	159	5795	-13.967	0	2.218	-11.749	
11AC80 SISO	155	5775	-17.061	0	2.218	-14.843	30



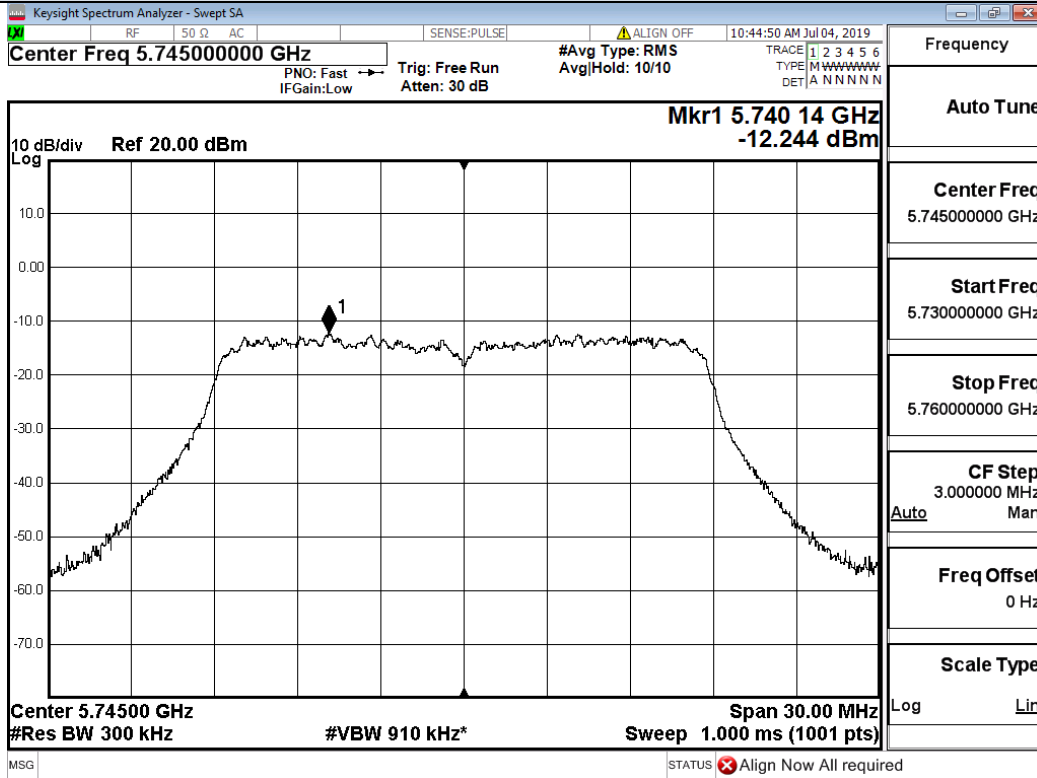


IEEE 802.11a / Channel 157 / 5785 MHz

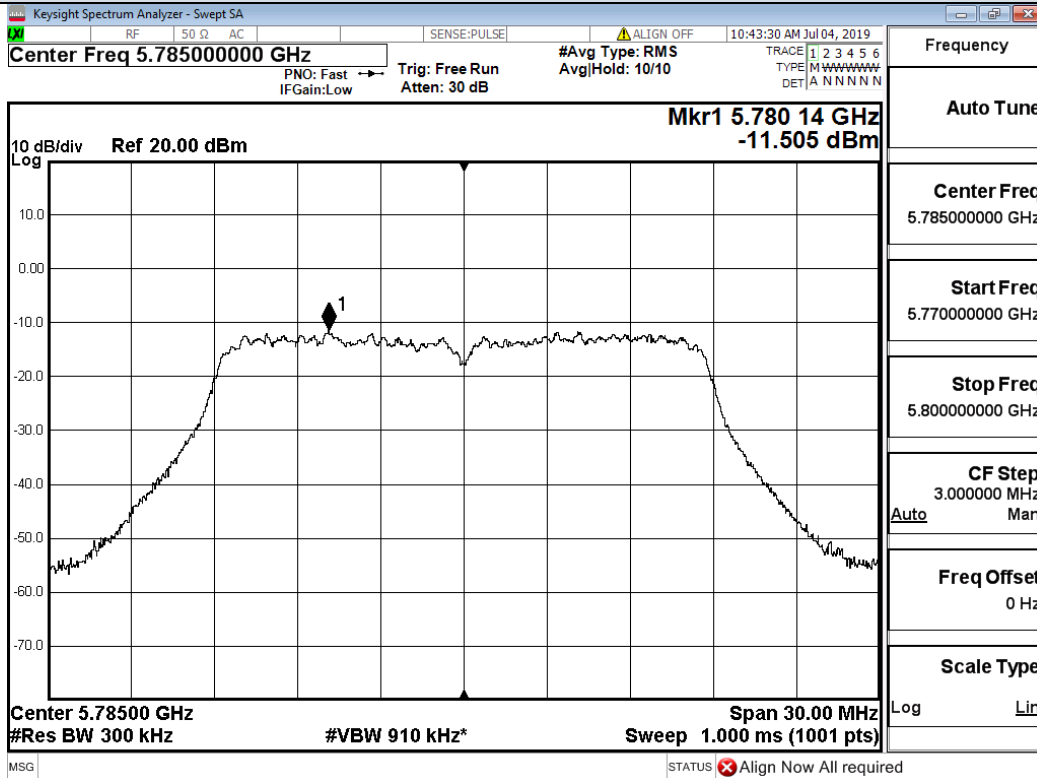


IEEE 802.11a / Channel 165 / 5825 MHz

Power Spectral Density

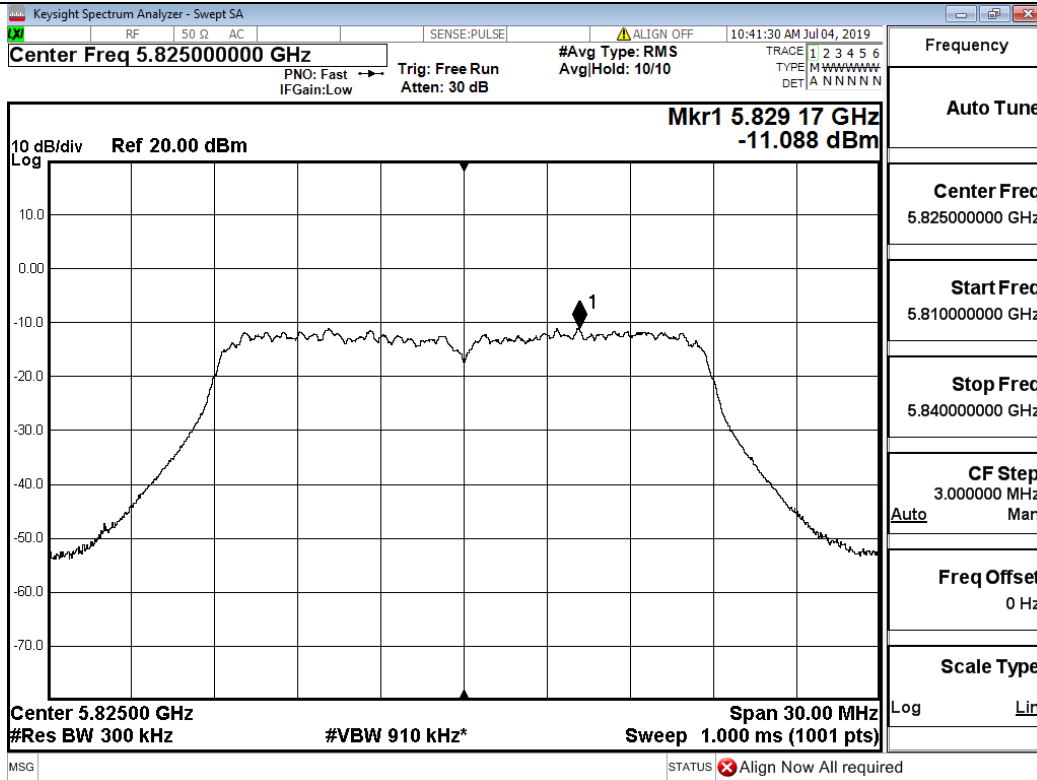


IEEE 802.11n HT20 / Channel 149 / 5745 MHz



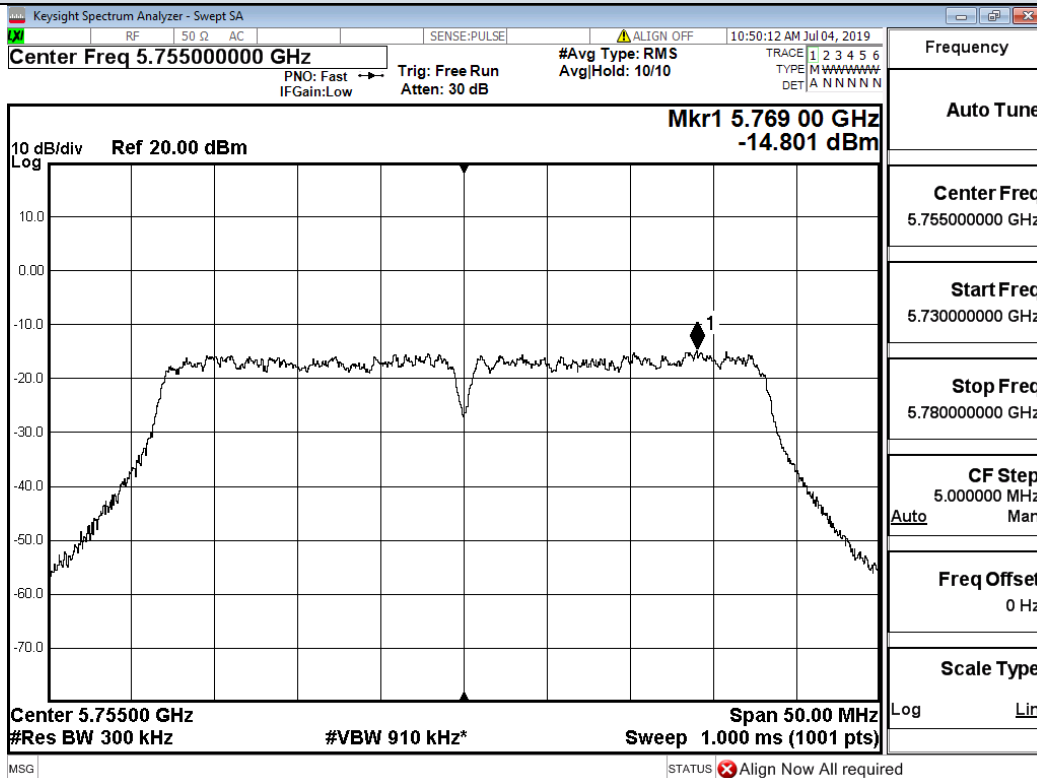
IEEE 802.11n HT20 / Channel 157 / 5785 MHz



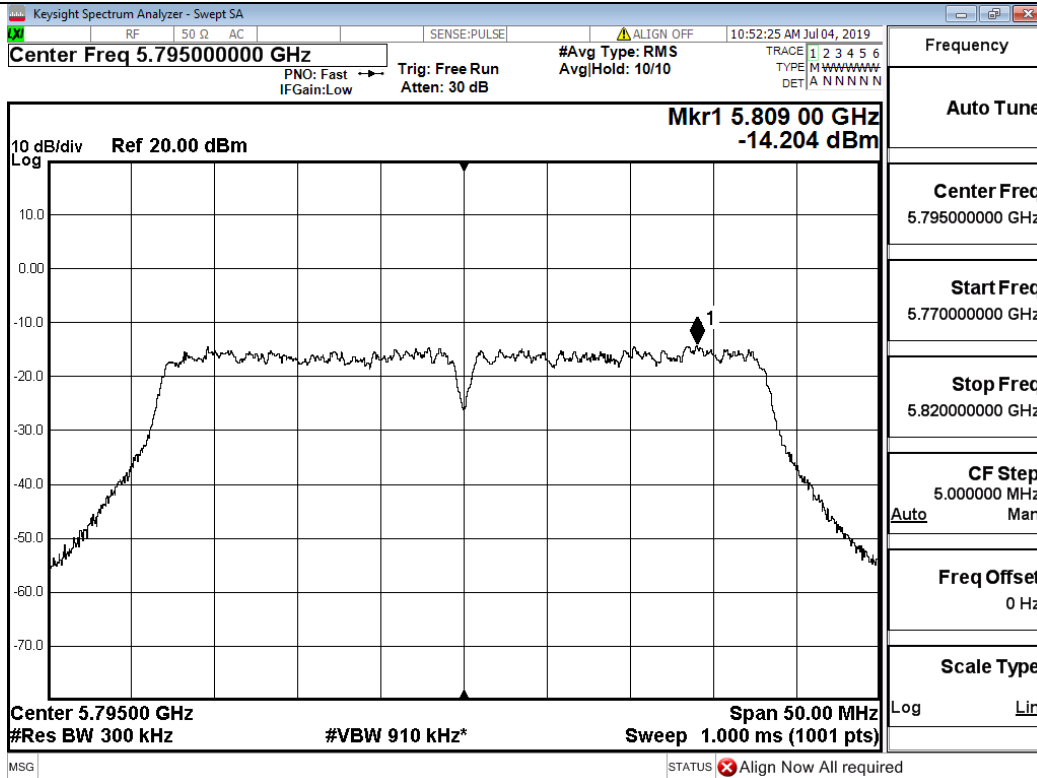


IEEE 802.11n HT20 / Channel 165 / 5825 MHz

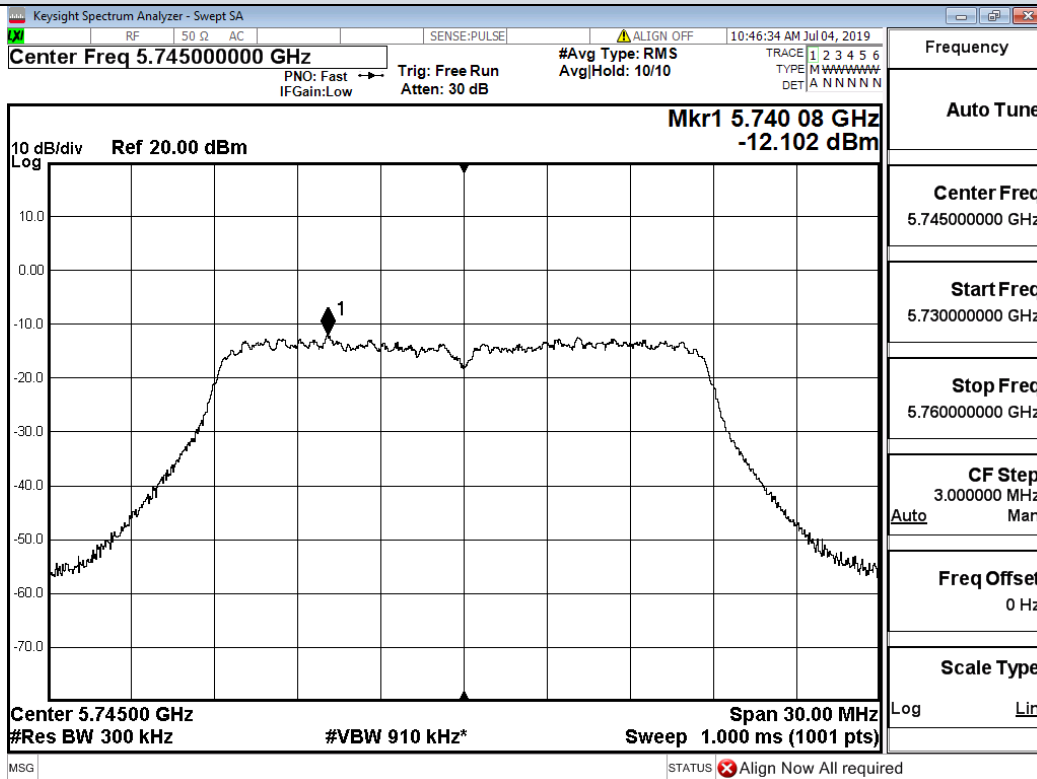
Power Spectral Density



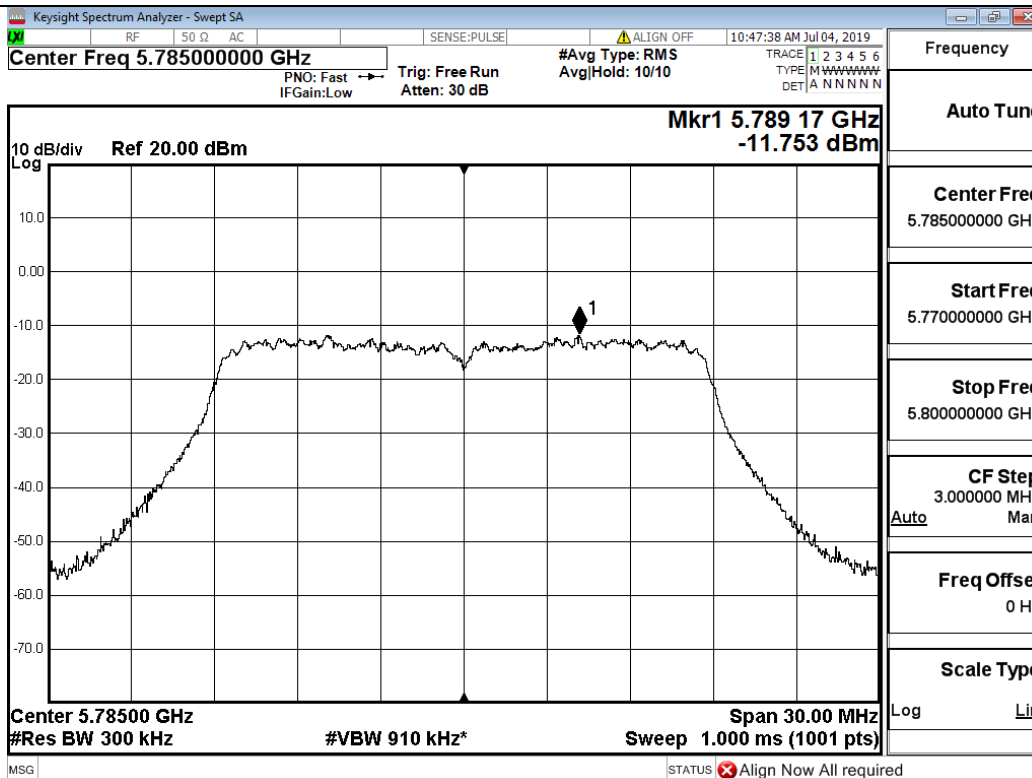
IEEE 802.11n HT40 / Channel 151 / 5755 MHz



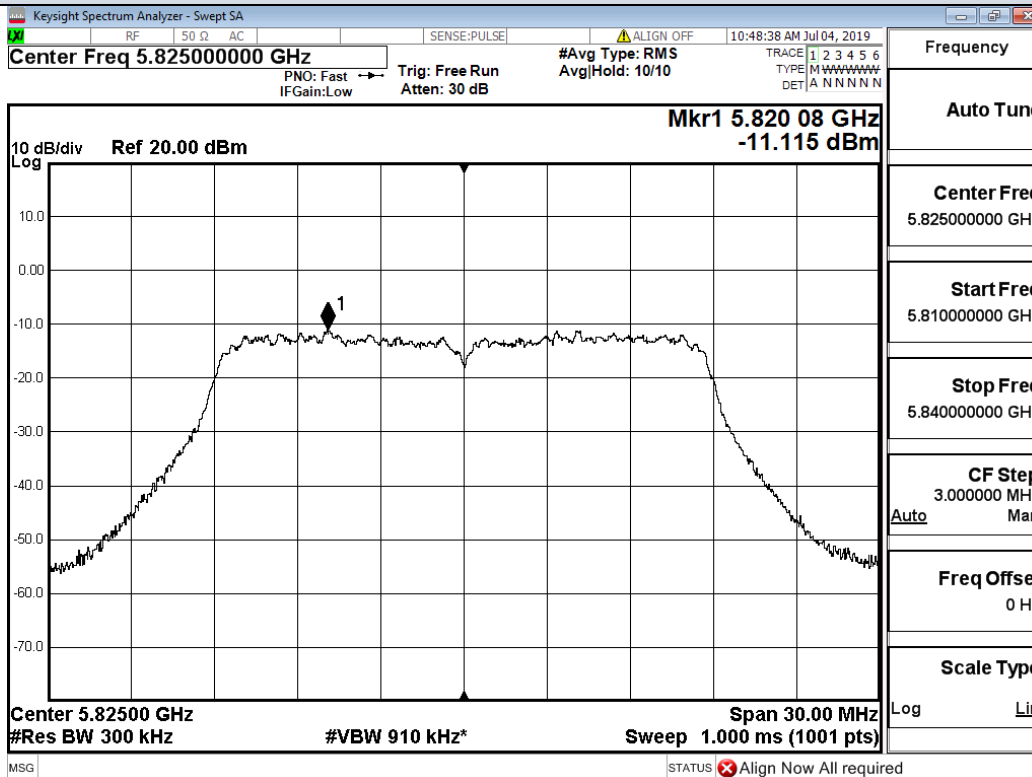
IEEE 802.11n HT40 / Channel 159 / 5795 MHz



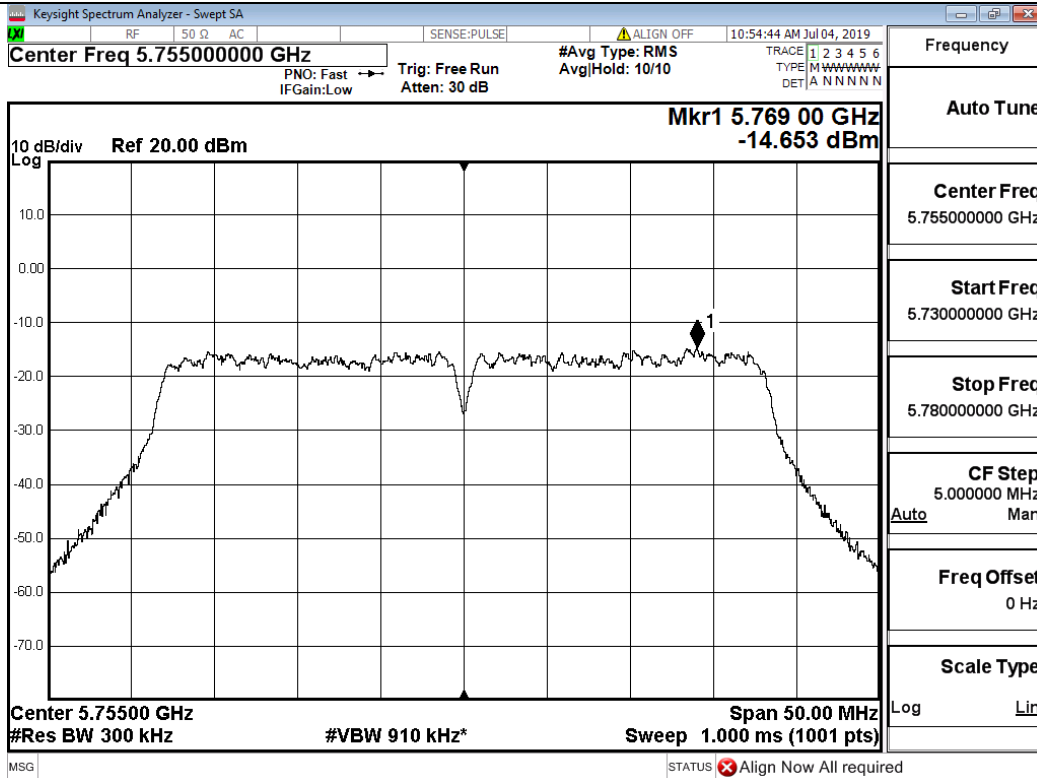
IEEE 802.11ac HT20 / Channel 149 / 5745 MHz



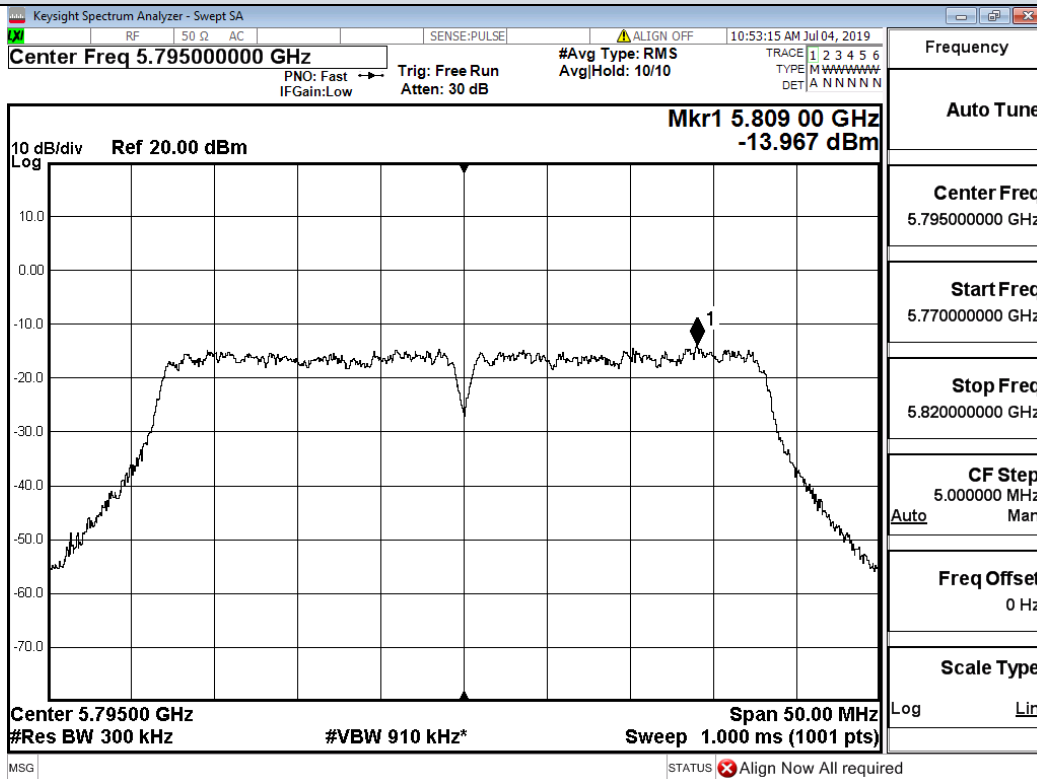
IEEE 802.11ac HT20 / Channel 157 / 5785 MHz



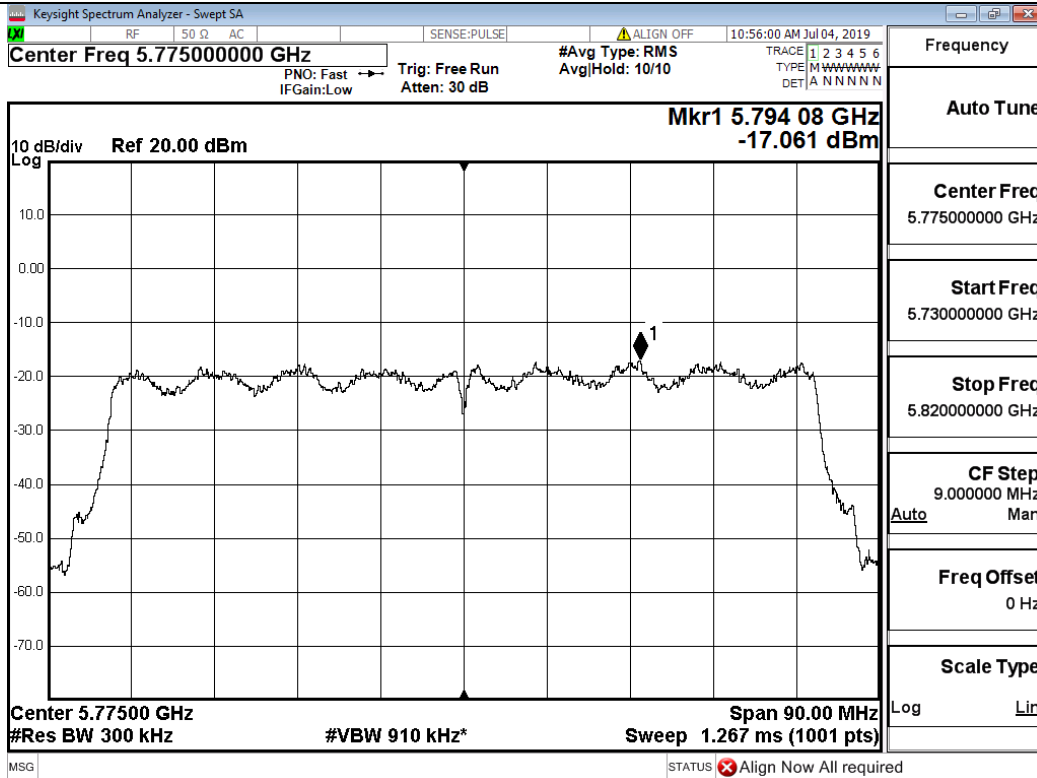
IEEE 802.11ac HT20 / Channel 165 / 5825 MHz



IEEE 802.11ac HT40 / Channel 151 / 5755 MHz



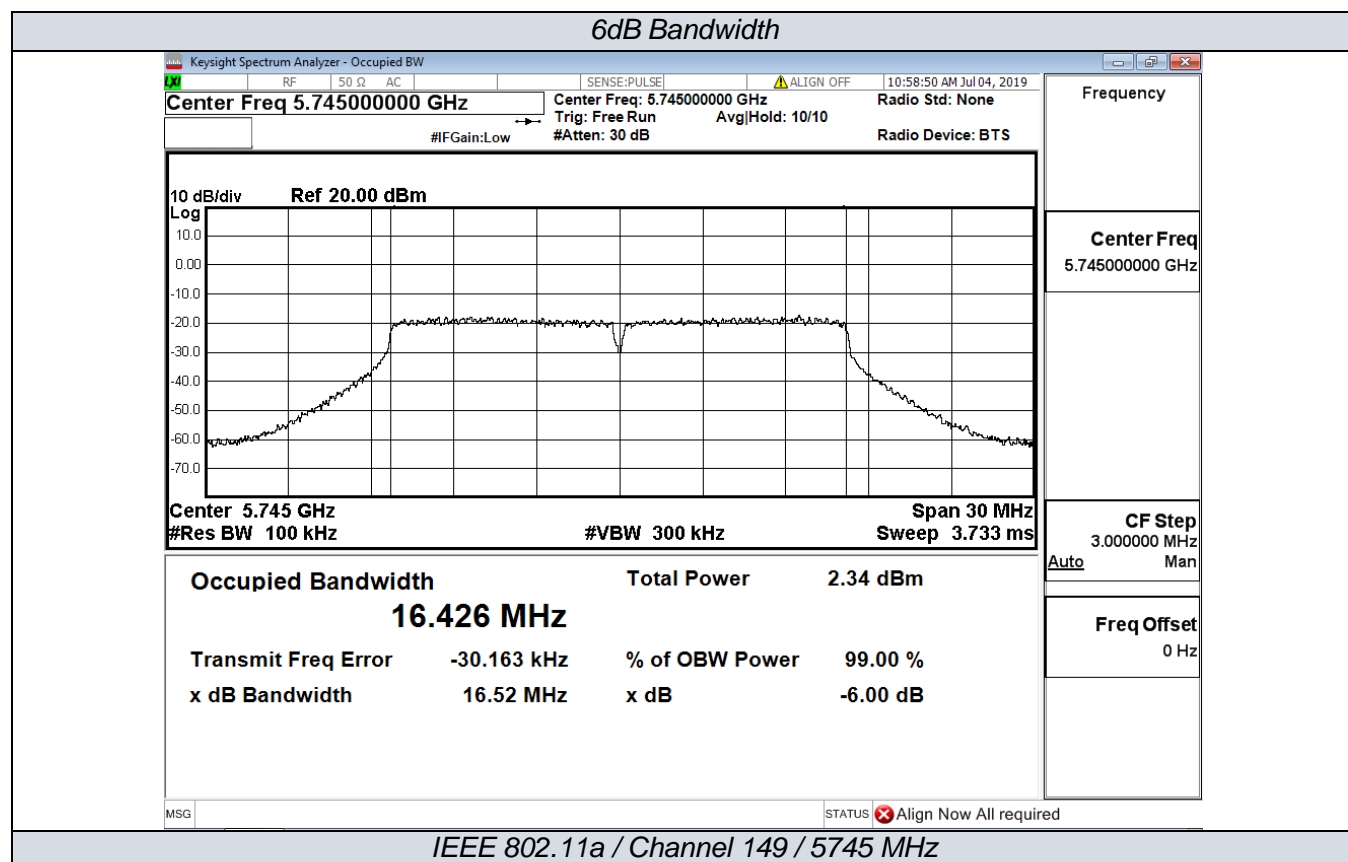
IEEE 802.11ac HT40 / Channel 159 / 5795 MHz

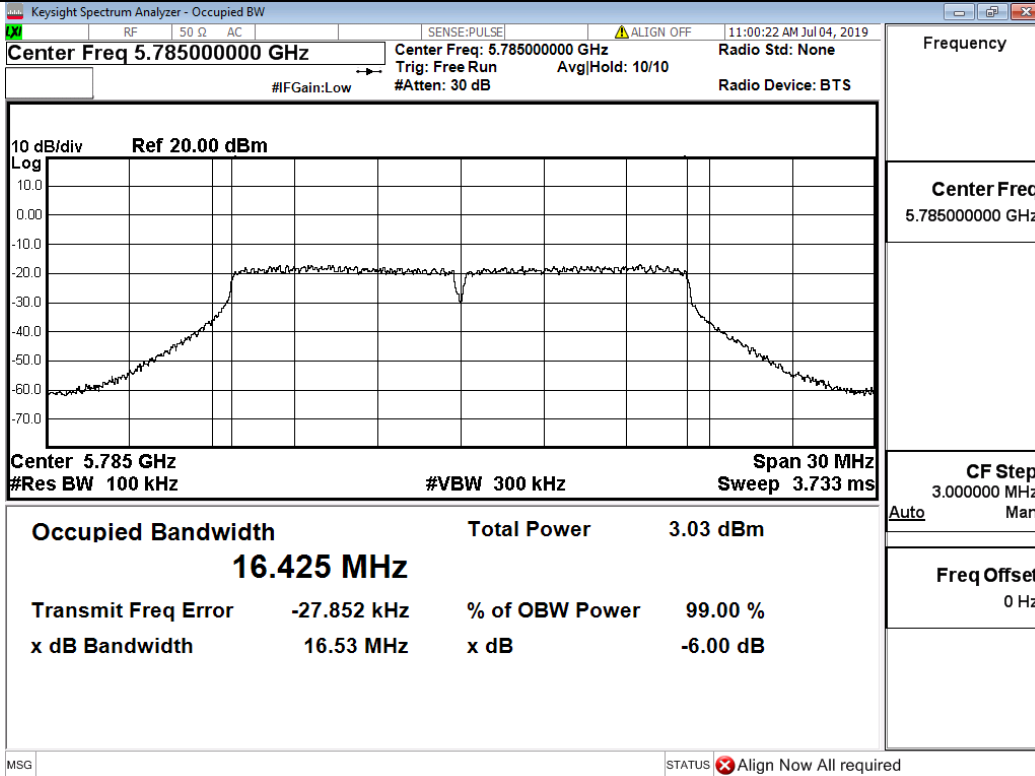


IEEE 802.11ac HT80 / Channel 155 / 5775 MHz

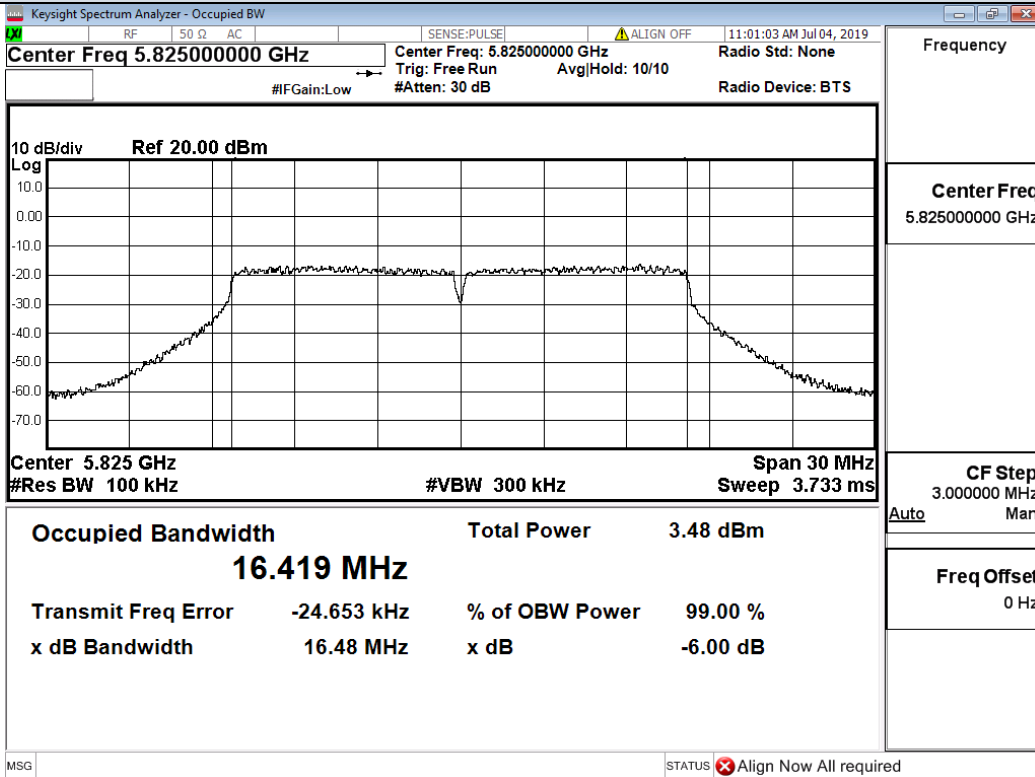
**E.4 Emission Bandwidth**

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
11A	149	5745	16.52	≥0.5
	157	5785	16.53	
	165	5825	16.45	
11N20 SISO	149	5745	17.65	≥0.5
	157	5785	17.64	
	165	5825	17.65	
11N40 SISO	151	5755	36.48	≥0.5
	159	5795	36.47	
11AC20SISO	149	5745	17.64	≥0.5
	157	5785	17.65	
	165	5825	17.66	
11AC40SISO	151	5755	36.48	≥0.5
	159	5795	36.44	
11AC80SISO	155	5775	76.39	≥0.5



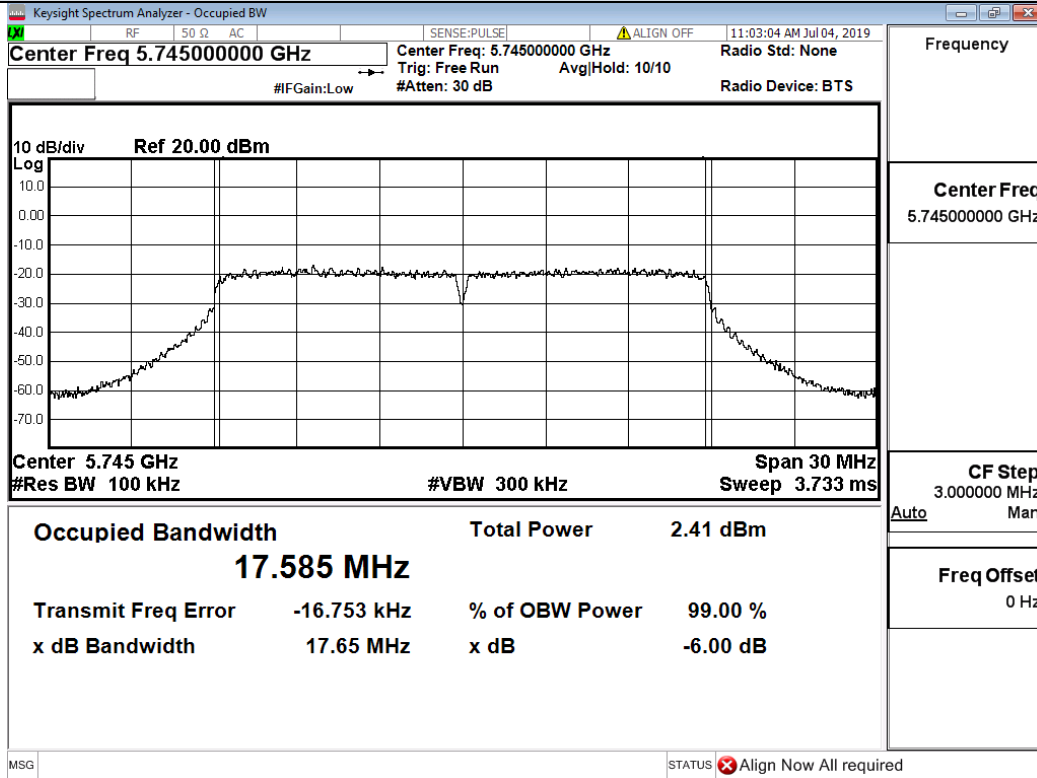


IEEE 802.11a / Channel 157 / 5785 MHz

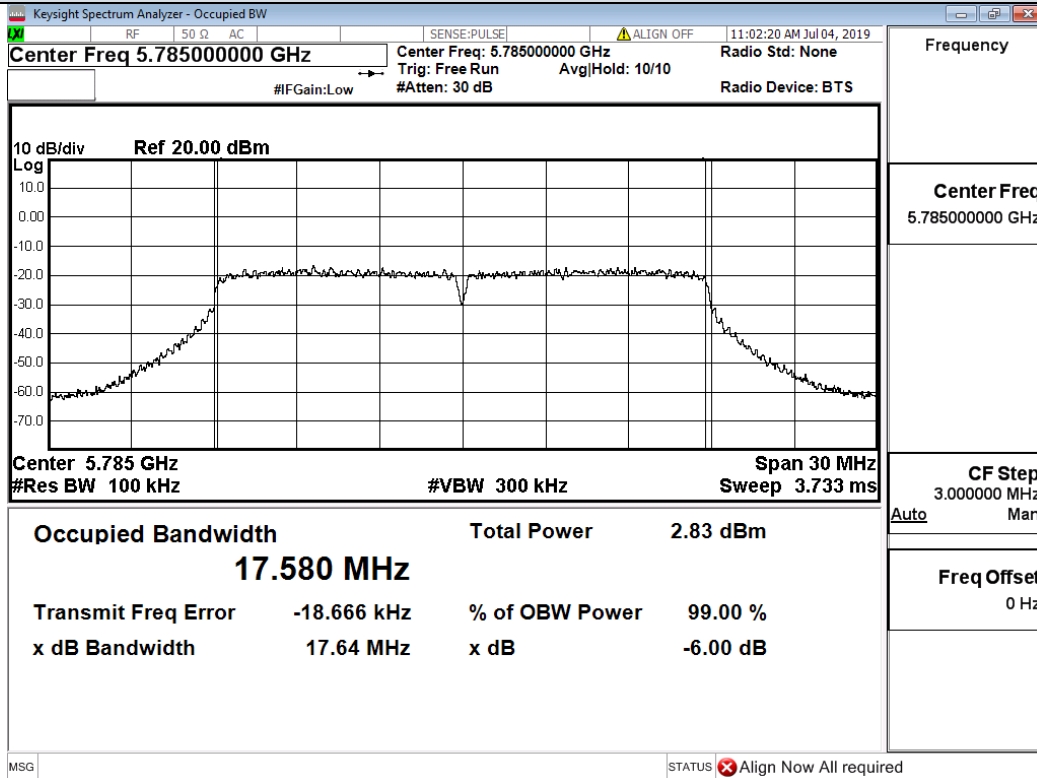


IEEE 802.11a / Channel 165 / 5825 MHz

6dB Bandwidth

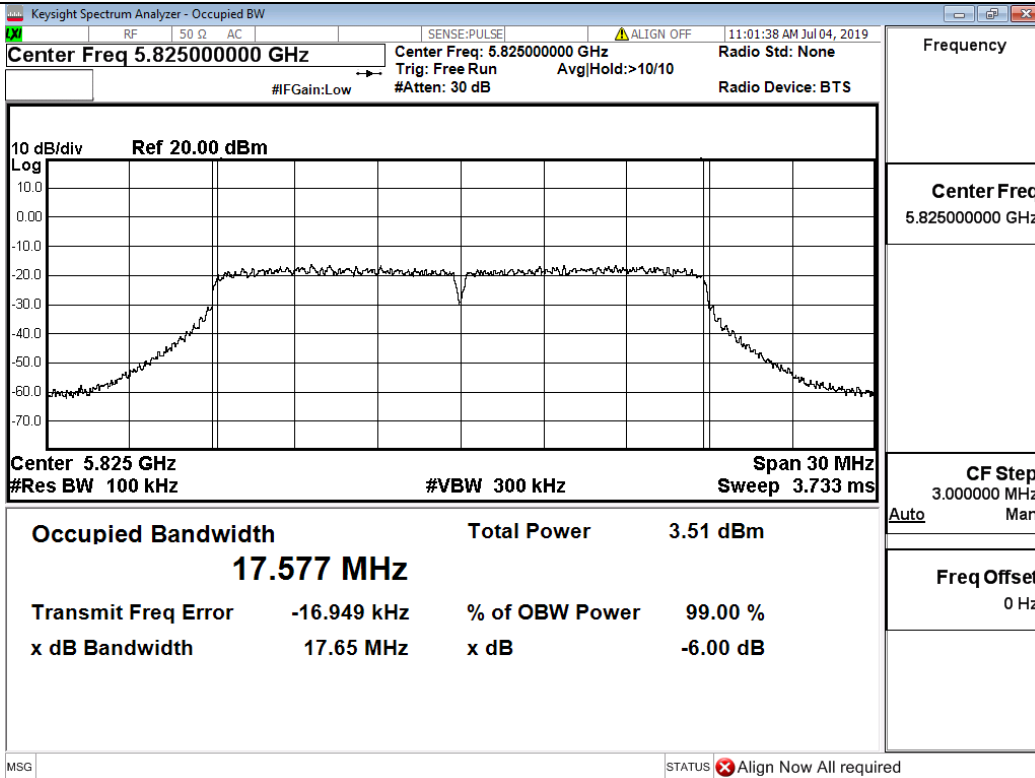


IEEE 802.11n HT20 / Channel 149 / 5745 MHz



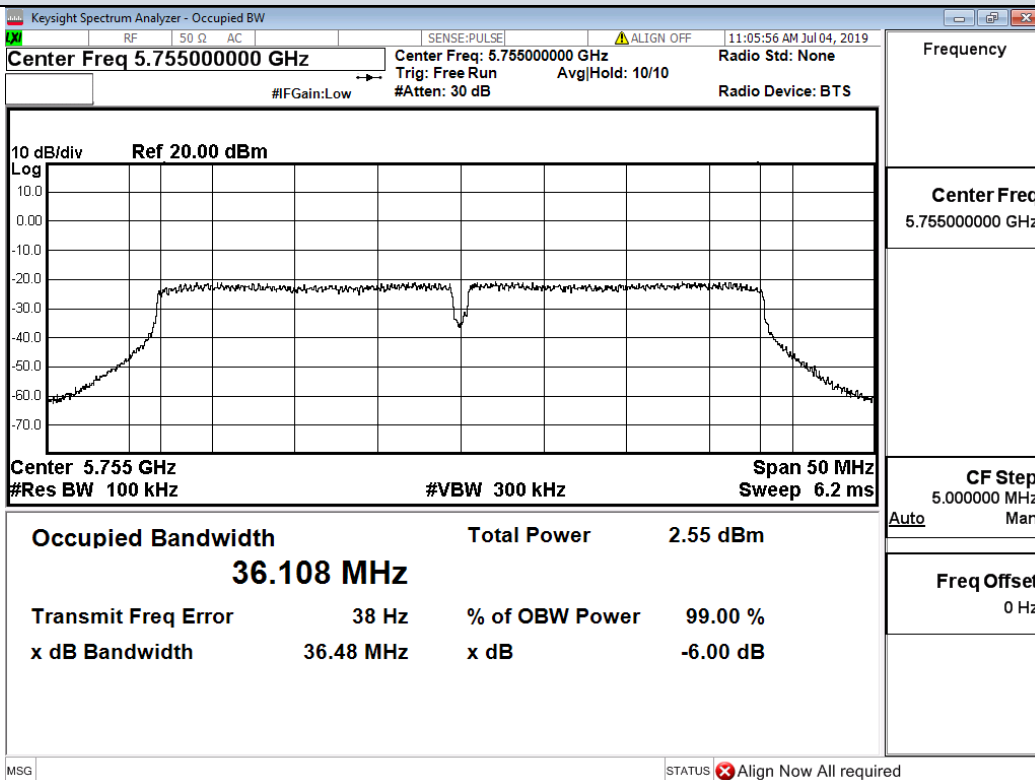
IEEE 802.11n HT20 / Channel 157 / 5785 MHz



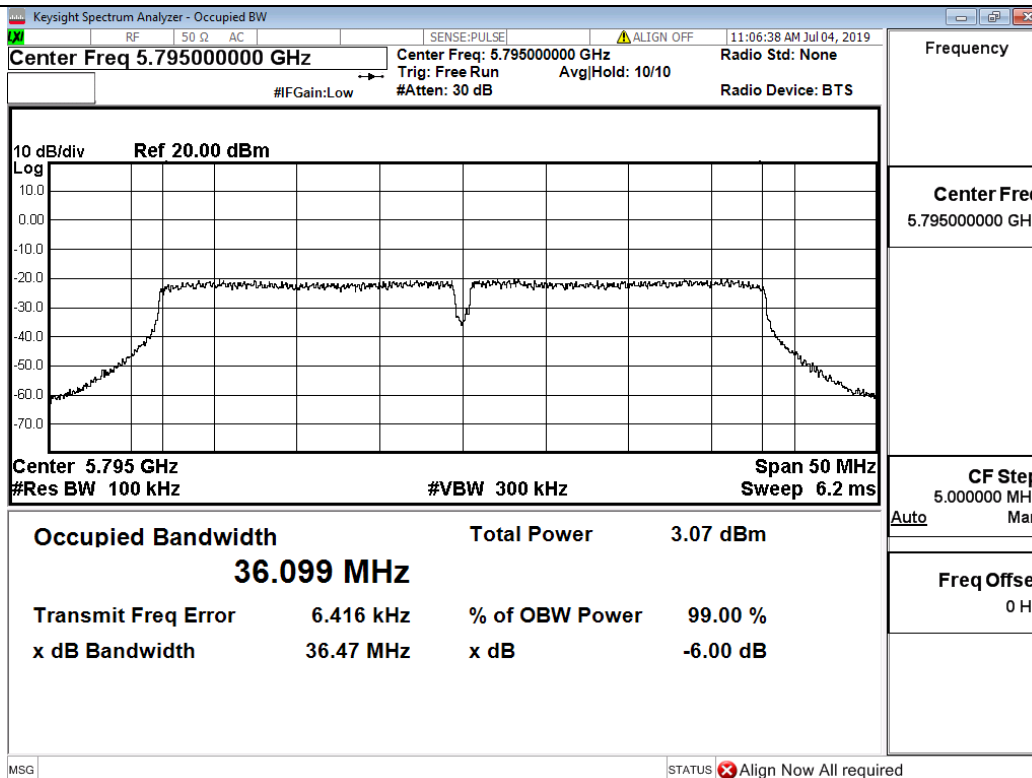


IEEE 802.11n HT20 / Channel 165 / 5825 MHz

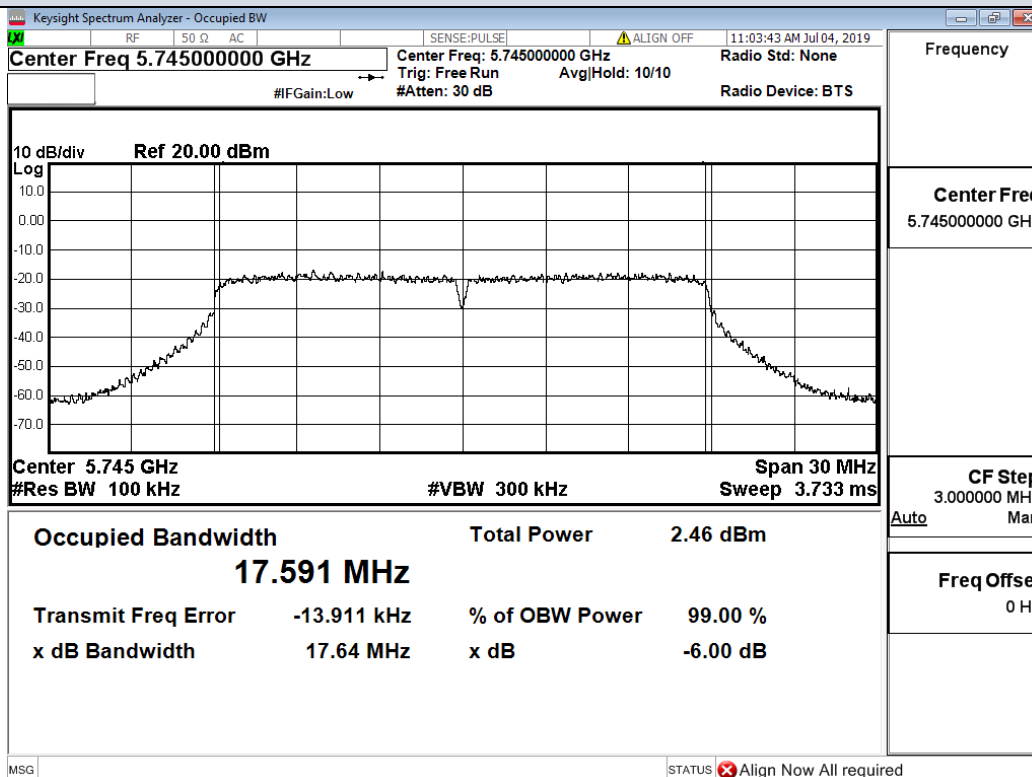
6dB Bandwidth



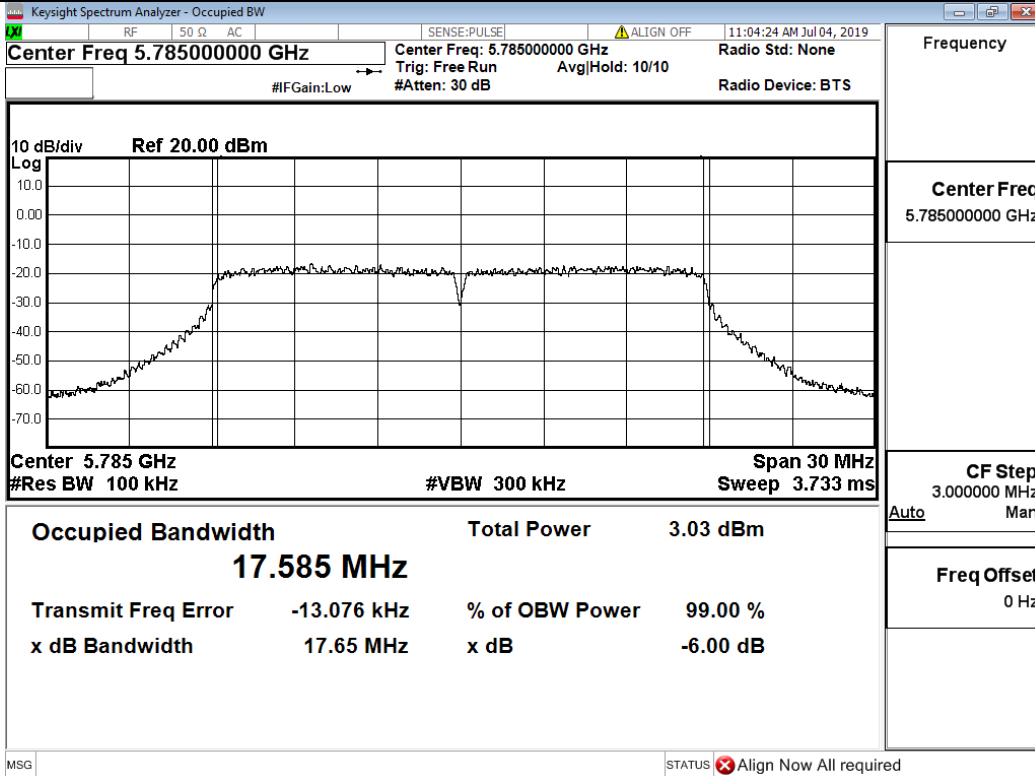
IEEE 802.11n HT40 / Channel 151 / 5755 MHz



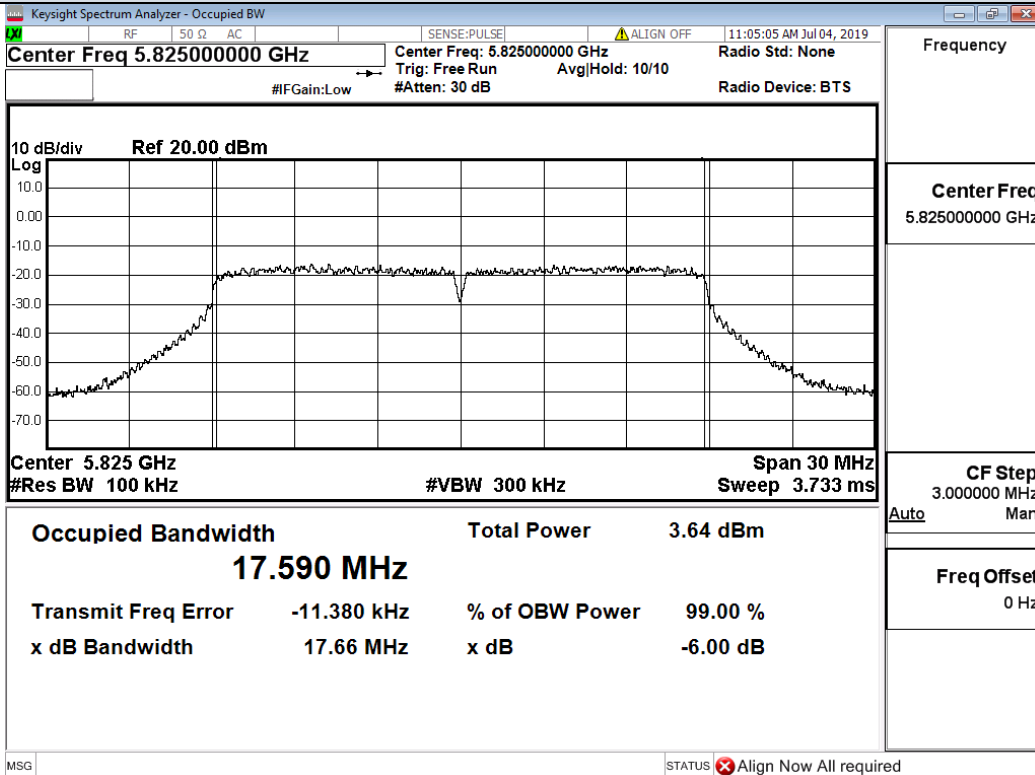
IEEE 802.11n HT40 / Channel 159 / 5795 MHz



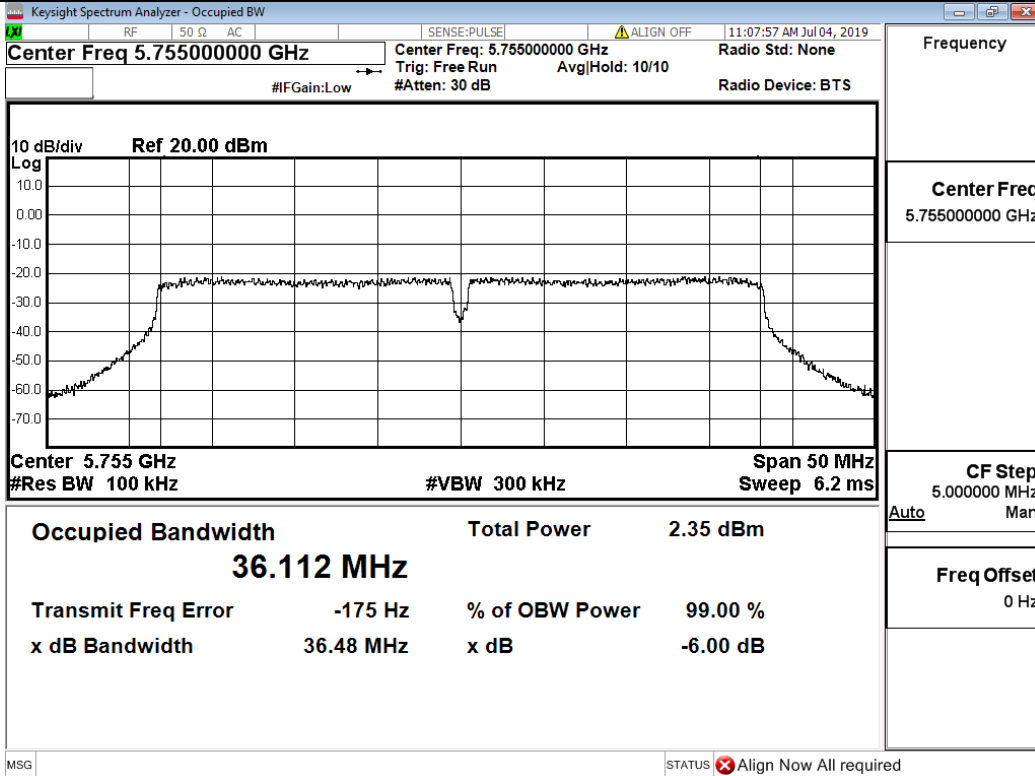
IEEE 802.11ac HT20 / Channel 149 / 5745 MHz



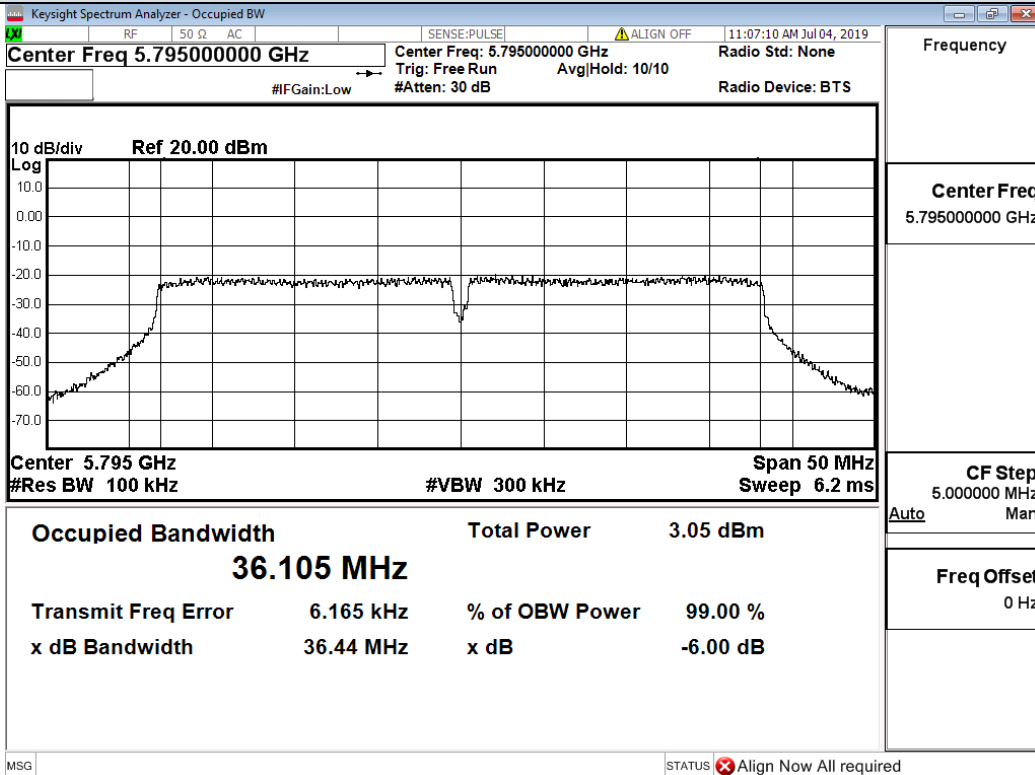
IEEE 802.11ac HT20 / Channel 157 / 5785 MHz



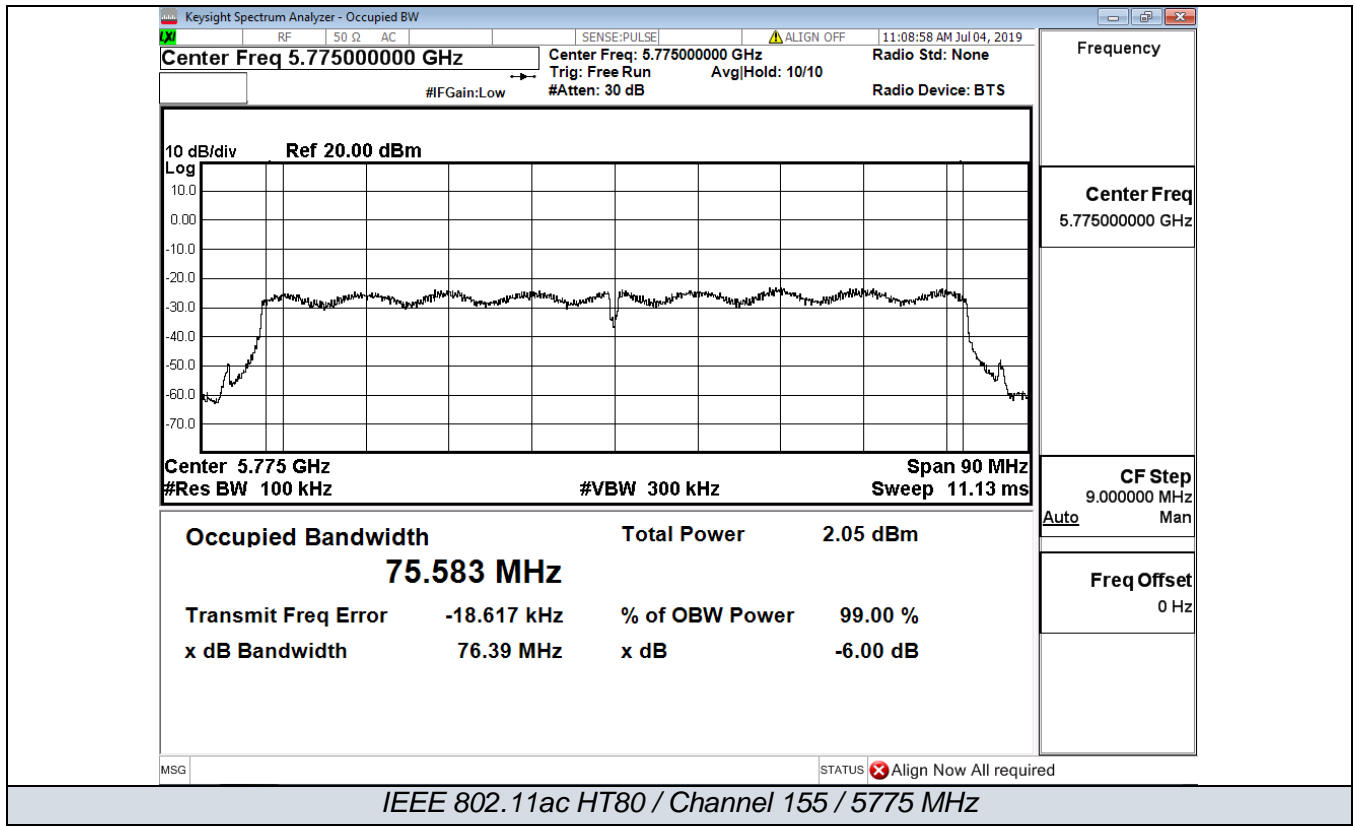
IEEE 802.11ac HT20 / Channel 165 / 5825 MHz



IEEE 802.11ac HT40 / Channel 151 / 5755 MHz



IEEE 802.11ac HT40 / Channel 159 / 5795 MHz



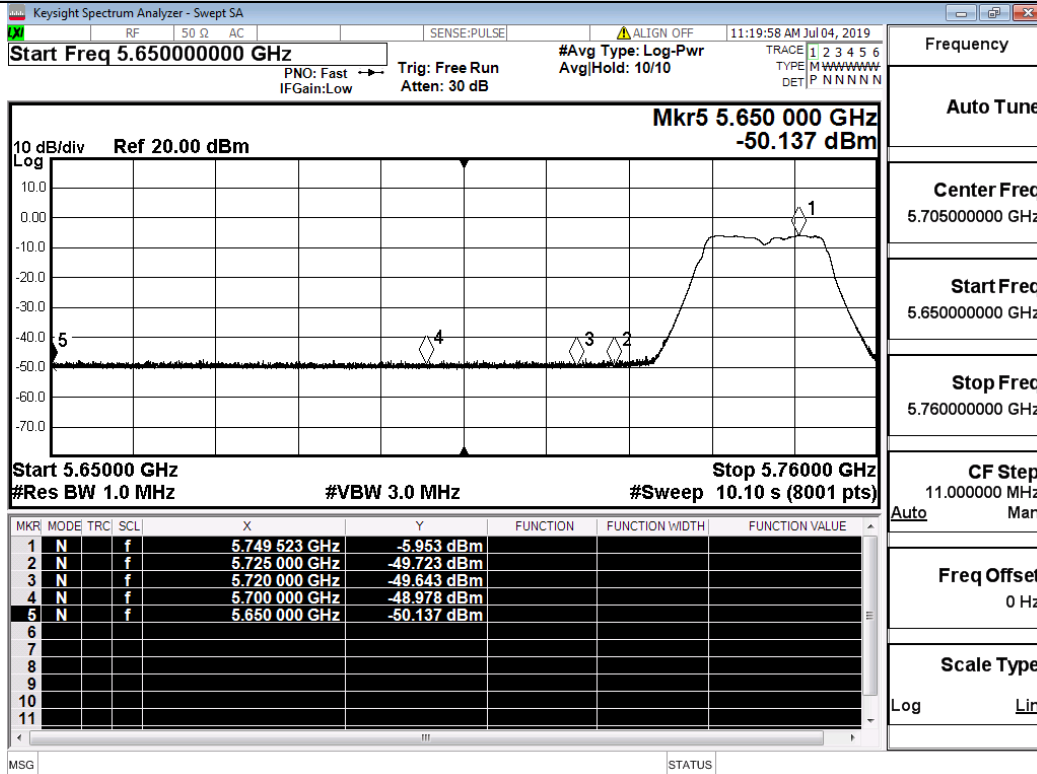
IEEE 802.11ac HT80 / Channel 155 / 5775 MHz

## E.5 Undesirable Emissions Measurement

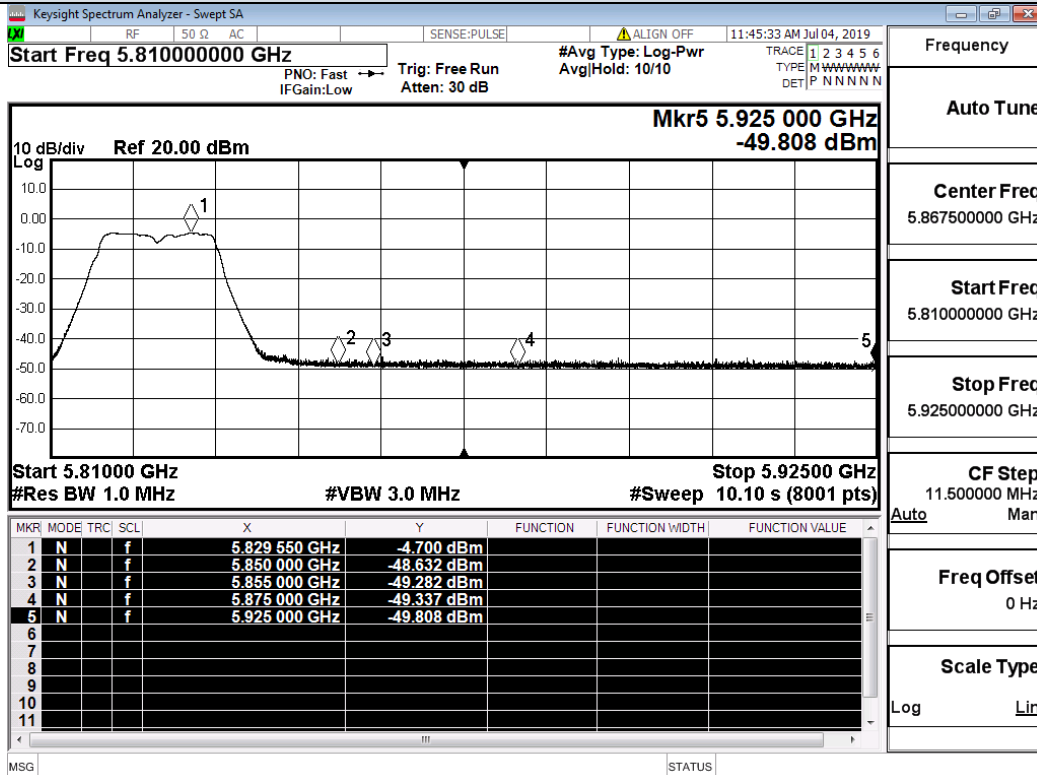
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)
11A	149	5650.0	-50.137	5.00	-45.14	Peak	-27.0
		5700.0	-48.978	5.00	-43.98	Peak	10.0
		5720.0	-49.643	5.00	-44.64	Peak	15.6
		5725.0	-49.723	5.00	-44.72	Peak	27.0
	165	5850.0	-48.632	5.00	-43.63	Peak	27.0
		5855.0	-49.282	5.00	-44.28	Peak	15.6
		5875.0	-49.337	5.00	-44.34	Peak	10.0
11N20 SISO	149	5650.0	-49.511	5.00	-44.51	Peak	-27.0
		5700.0	-50.263	5.00	-45.26	Peak	10.0
		5720.0	-49.022	5.00	-44.02	Peak	15.6
		5725.0	-49.513	5.00	-44.51	Peak	27.0
	165	5850.0	-48.946	5.00	-43.95	Peak	27.0
		5855.0	-49.100	5.00	-44.10	Peak	15.6
		5875.0	-48.310	5.00	-43.31	Peak	10.0
11N40 SISO	151	5650.0	-50.148	5.00	-45.15	Peak	-27.0
		5700.0	-50.254	5.00	-45.25	Peak	10.0
		5720.0	-49.398	5.00	-44.40	Peak	15.6
		5725.0	-49.225	5.00	-44.23	Peak	27.0
	159	5850.0	-48.581	5.00	-43.58	Peak	27.0
		5855.0	-46.728	5.00	-41.73	Peak	15.6
		5875.0	-49.416	5.00	-44.42	Peak	10.0
11AC20 SISO	149	5650.0	-49.467	5.00	-44.47	Peak	-27.0
		5700.0	-50.547	5.00	-45.55	Peak	10.0
		5720.0	-49.200	5.00	-44.20	Peak	15.6
		5725.0	-48.962	5.00	-43.96	Peak	27.0
	165	5850.0	-47.802	5.00	-42.80	Peak	27.0
		5855.0	-48.922	5.00	-43.92	Peak	15.6
		5875.0	-48.907	5.00	-43.91	Peak	10.0
11AC40 SISO	151	5650.0	-48.947	5.00	-43.95	Peak	-27.0
		5700.0	-50.269	5.00	-45.27	Peak	10.0
		5720.0	-49.942	5.00	-44.94	Peak	15.6
		5725.0	-49.682	5.00	-44.68	Peak	27.0
	159	5850.0	-49.132	5.00	-44.13	Peak	27.0
		5855.0	-49.064	5.00	-44.06	Peak	15.6
		5875.0	-49.307	5.00	-44.31	Peak	10.0
11AC80 SISO	155	5650.0	-49.161	5.00	-44.16	Peak	-27.0
		5700.0	-49.915	5.00	-44.92	Peak	10.0
		5720.0	-49.002	5.00	-44.00	Peak	15.6
		5725.0	-48.996	5.00	-44.00	Peak	27.0
		5850.0	-48.488	5.00	-43.49	Peak	27.0

		5855.0	-49.168	5.00	-44.17	Peak	15.6
		5875.0	-49.018	5.00	-44.02	Peak	10.0
		5925.0	-48.208	5.00	-43.21	Peak	-27.0

Undesirable Emissions Measurement



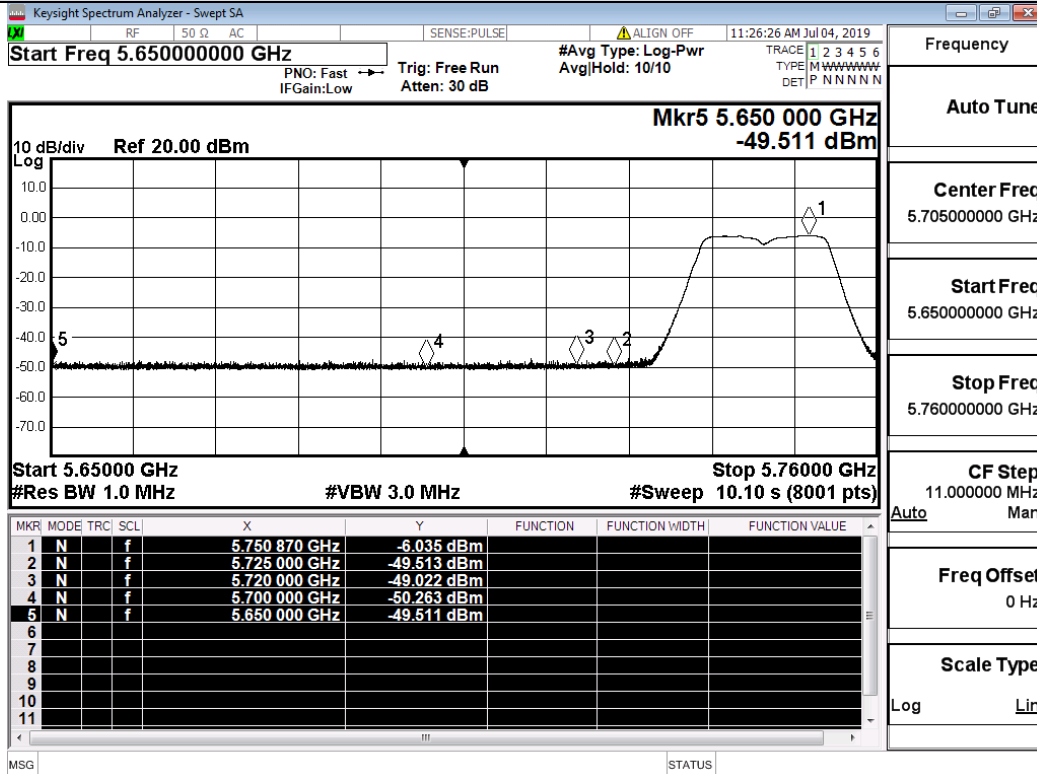
IEEE 802.11a / Channel 149 / 5745 MHz / Peak



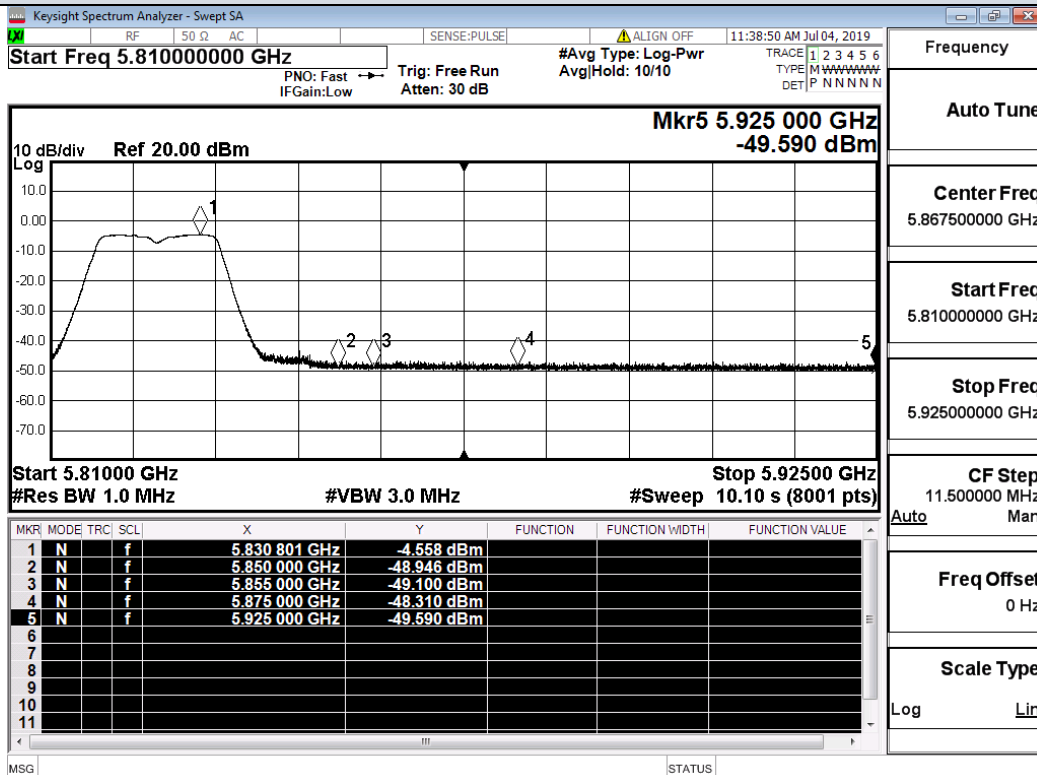
IEEE 802.11a / Channel 165 / 5825 MHz / Peak



Undesirable Emissions Measurement

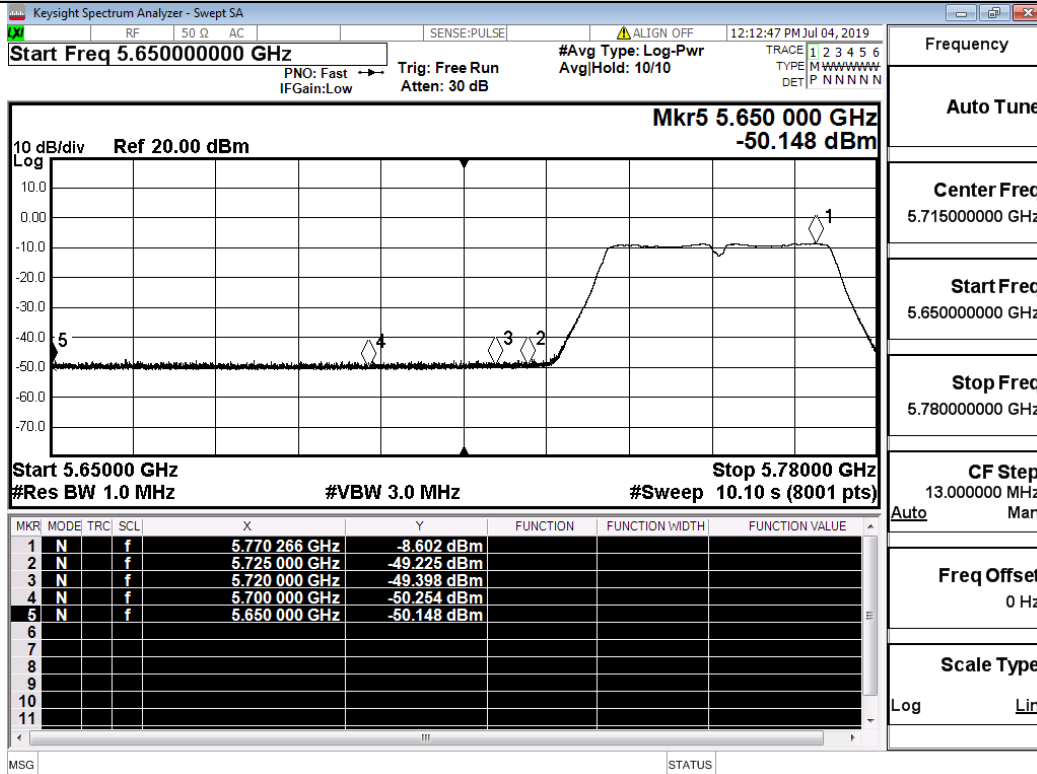


IEEE 802.11n HT20 / Channel 149 / 5745 MHz / Peak

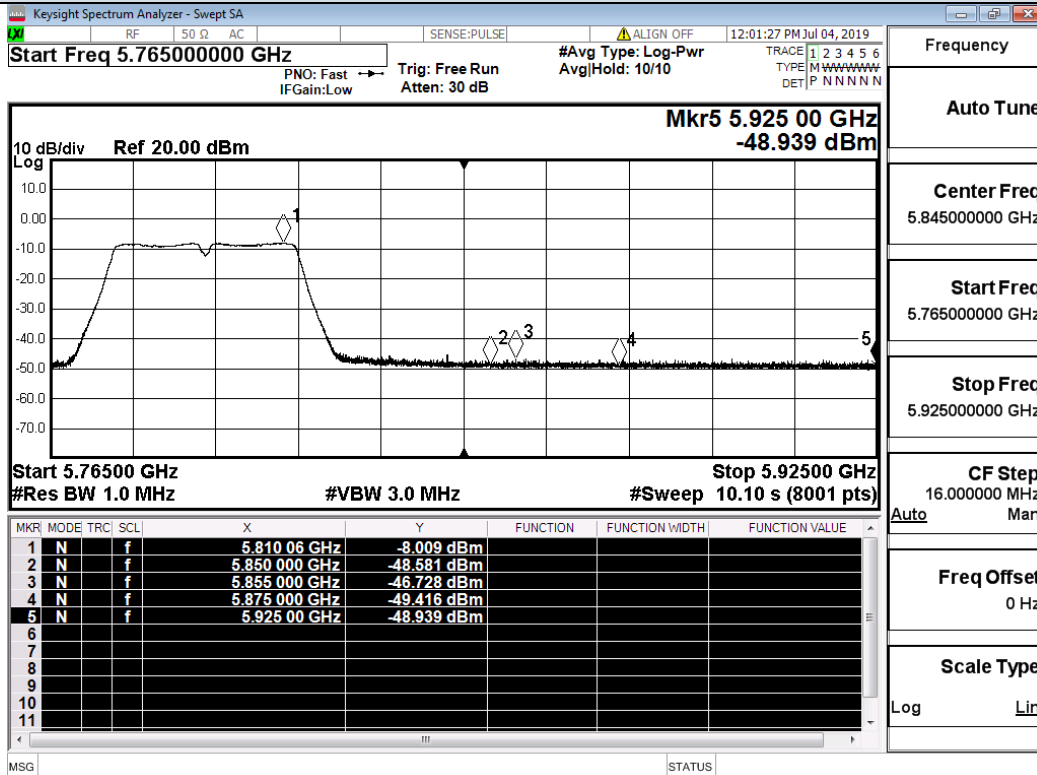


IEEE 802.11n HT20 / Channel 165 / 5825 MHz / Peak

Undesirable Emissions Measurement

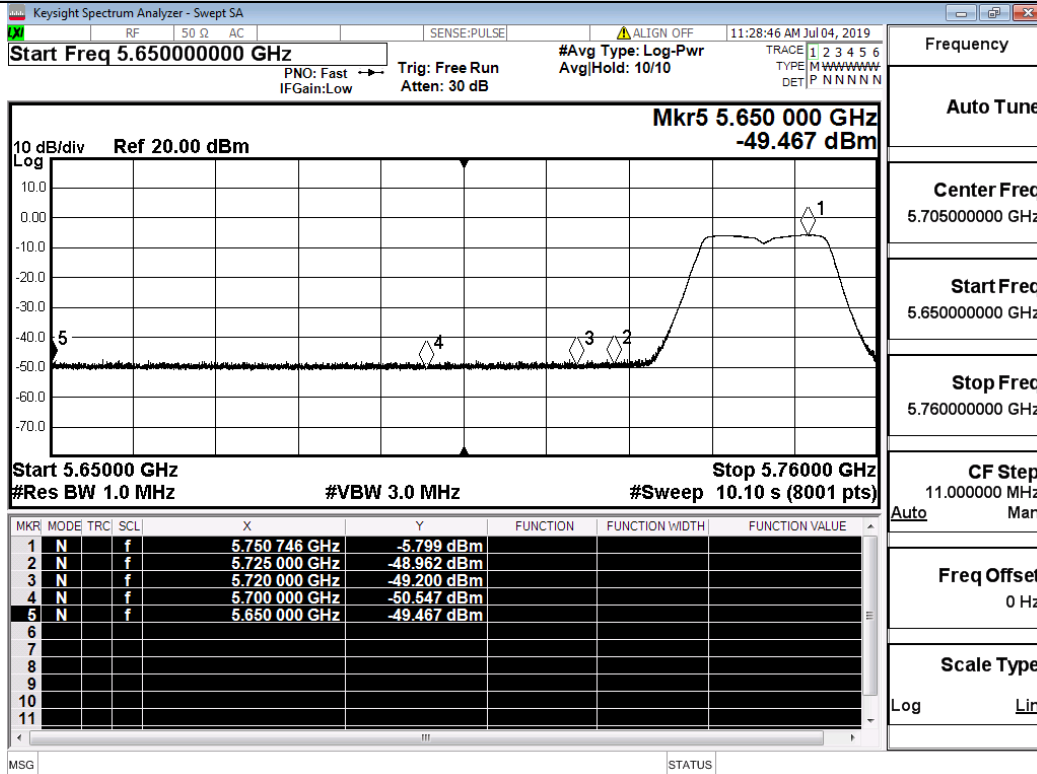


IEEE 802.11n HT40 / Channel 151 / 5755 MHz / Peak

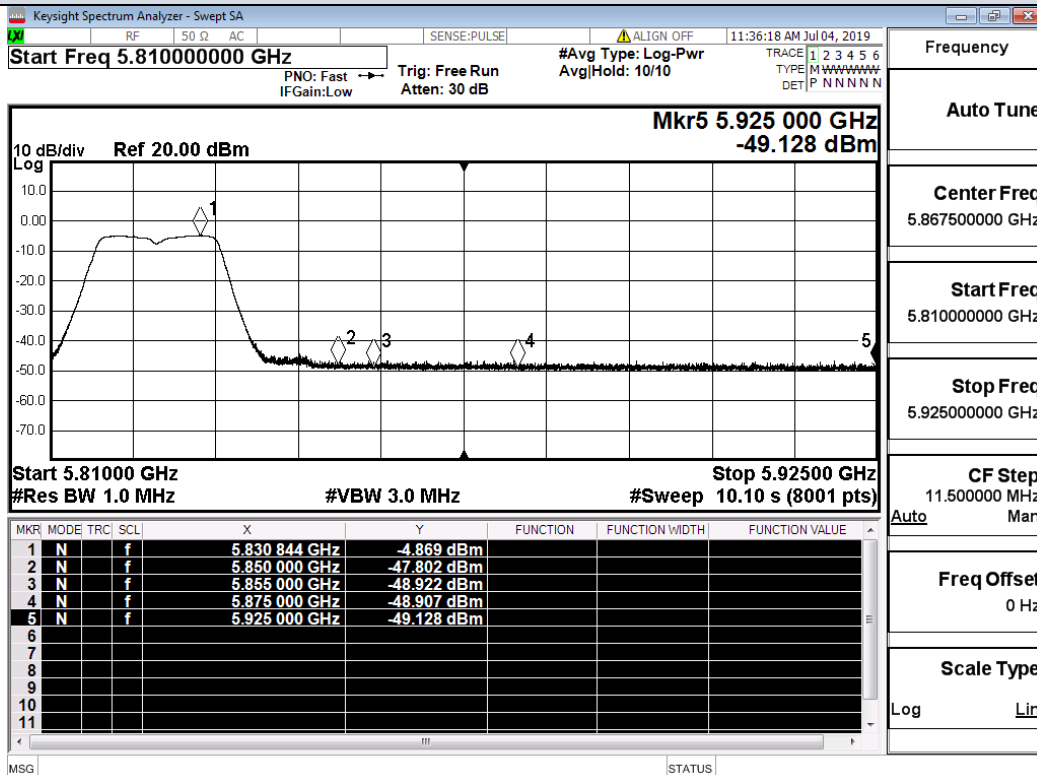


IEEE 802.11n HT40 / Channel 159 / 5795 MHz / Peak

Undesirable Emissions Measurement

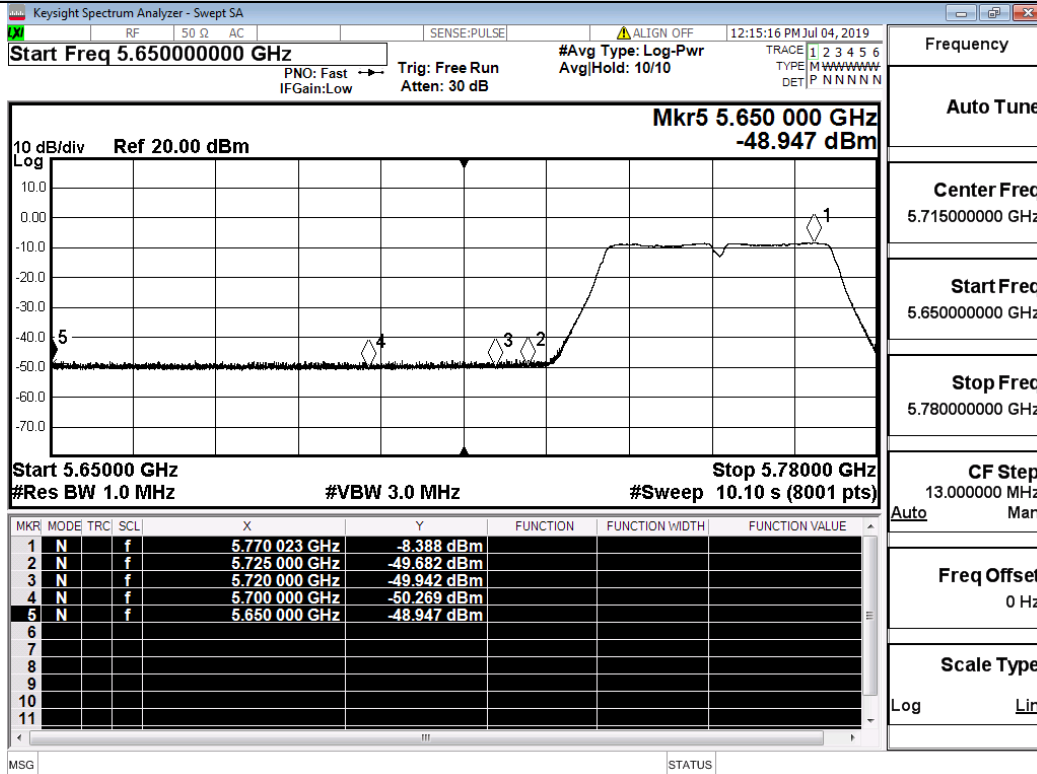


IEEE 802.11ac HT20 / Channel 149 / 5745 MHz / Peak

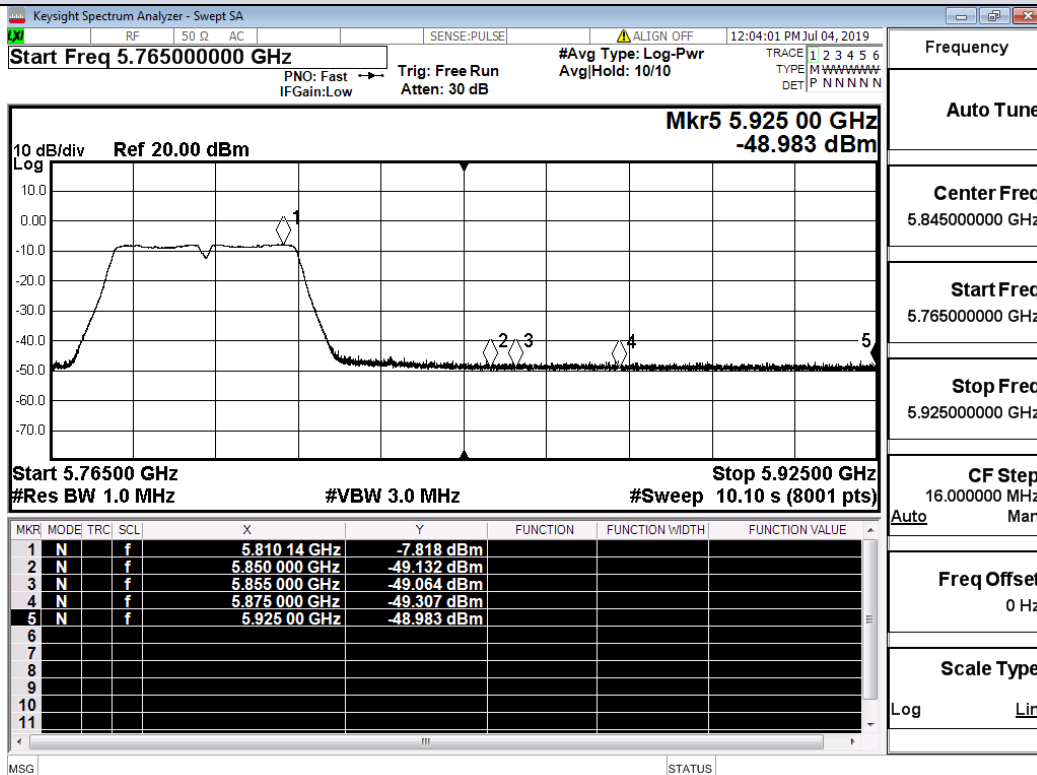


IEEE 802.11ac HT20 / Channel 165 / 5825 MHz / Peak

Undesirable Emissions Measurement

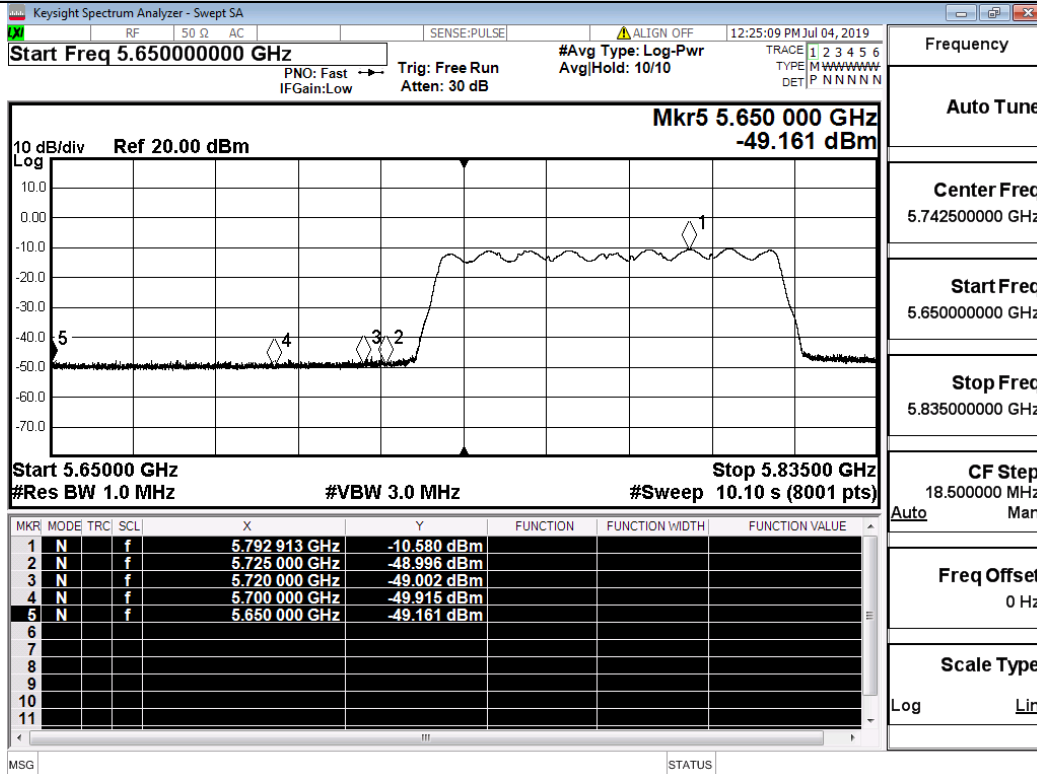


IEEE 802.11ac HT40 / Channel 151 / 5755 MHz / Peak

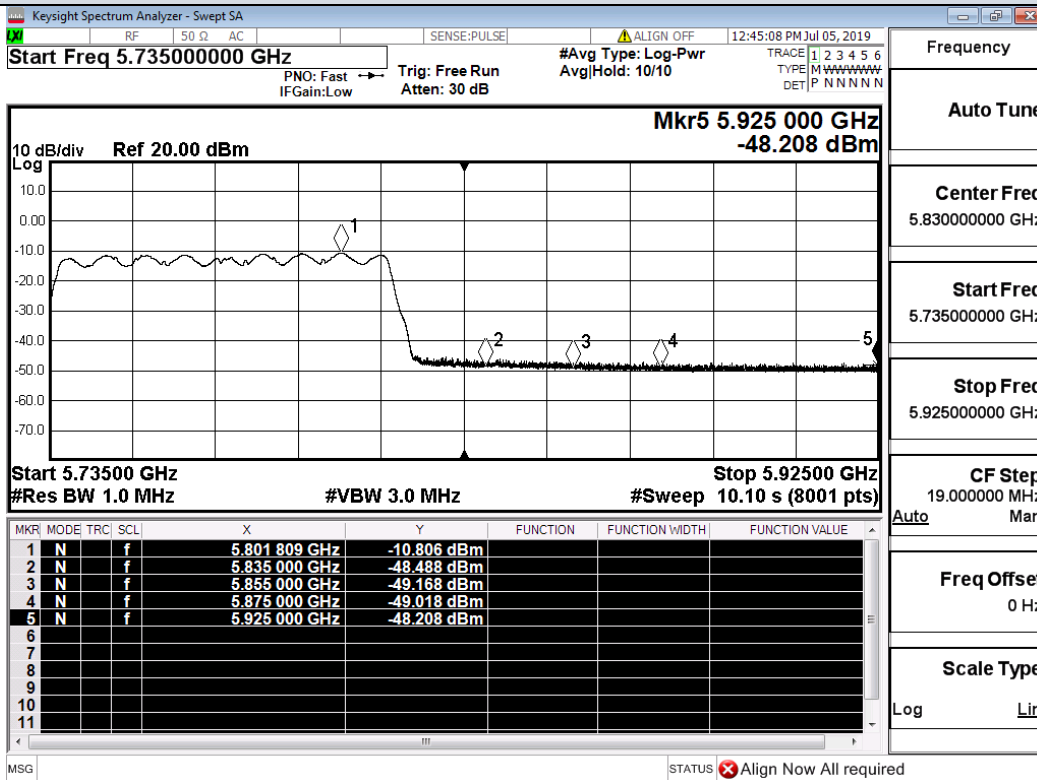


IEEE 802.11ac HT40 / Channel 159 / 5795 MHz / Peak

Undesirable Emissions Measurement



IEEE 802.11ac HT80 / Channel 155 / 5775 MHz / Peak



IEEE 802.11ac HT80 / Channel 155 / 5775 MHz / Peak