

Appendix E

RF Test Data for 5.8G WLAN (Conducted Measurement)

Product Name: Diagnosis System

Trade Mark: H6 Elite

Test Model: NITRO LT

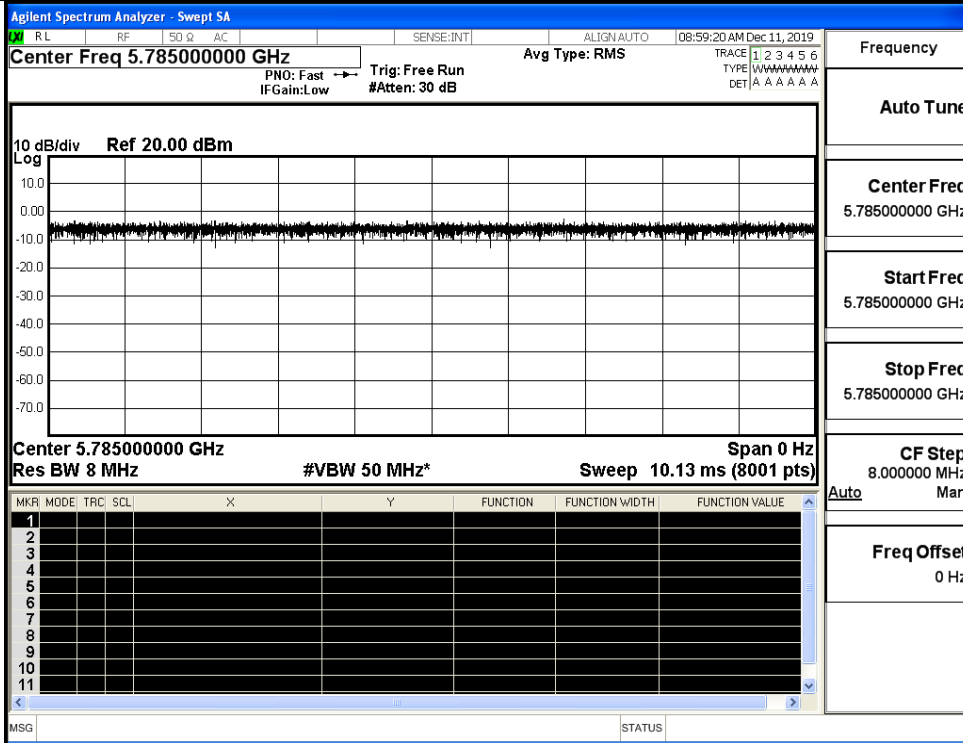
Environmental Conditions

Temperature:	22.5 ° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Scout Wu
Supervised by:	TOM LIU

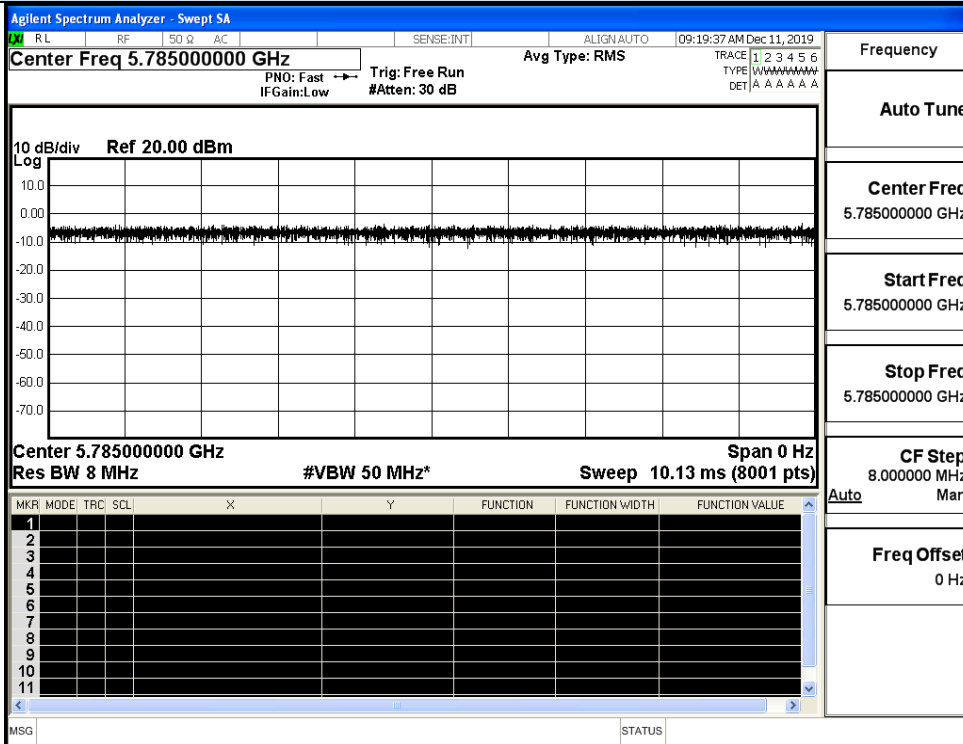
E.1 Duty Cycle

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

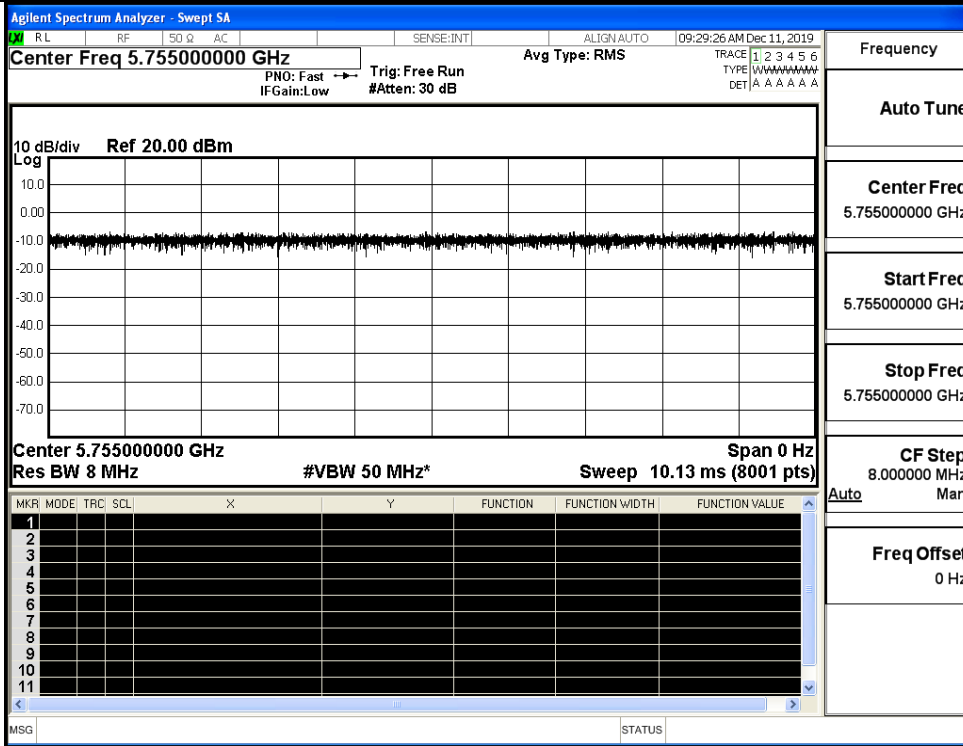
On Time and Duty Cycle



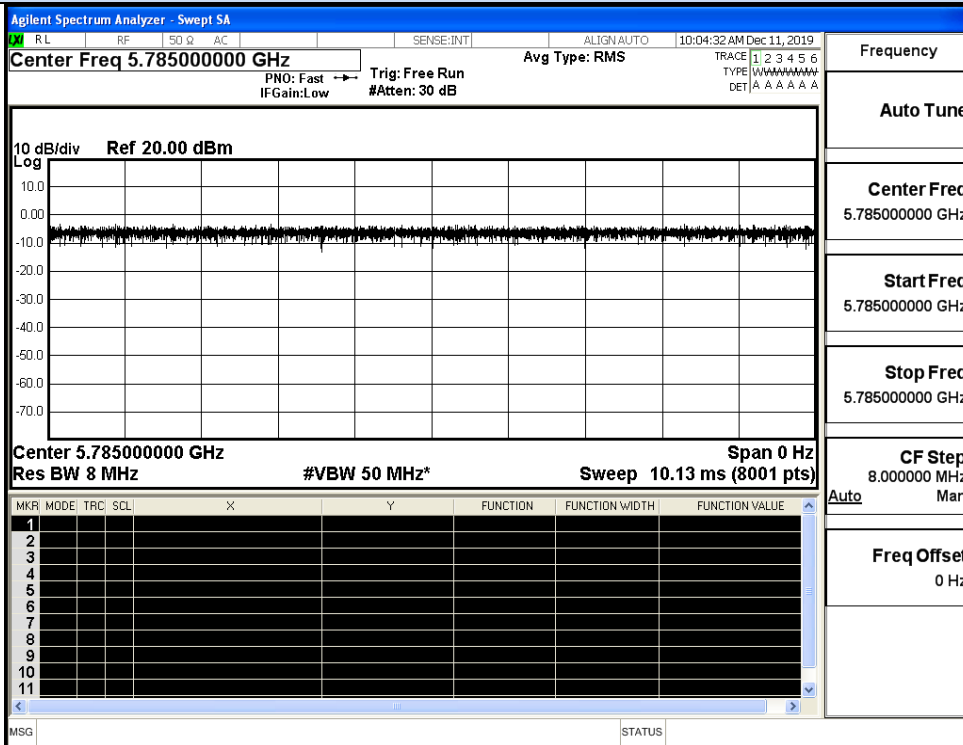
IEEE 802.11a



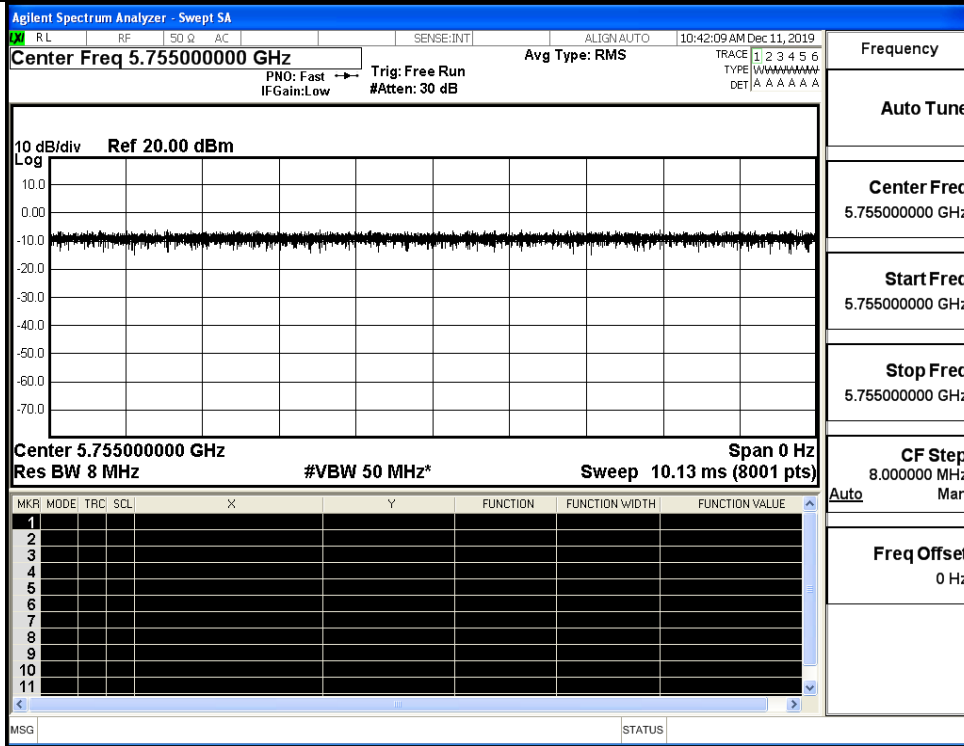
IEEE 802.11n HT20



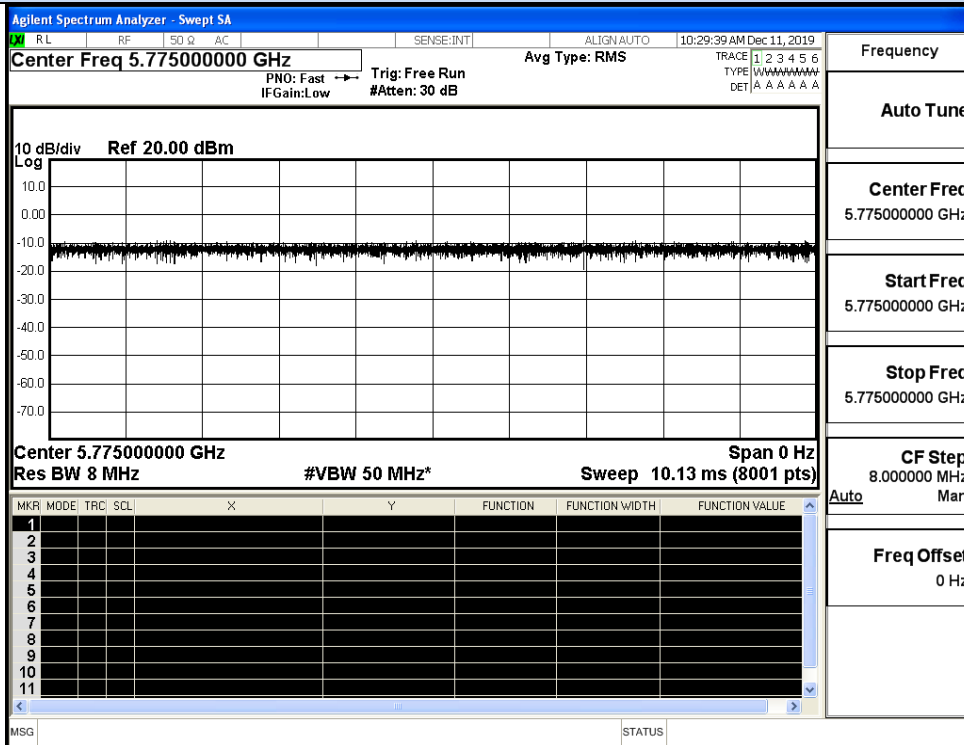
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11AC40

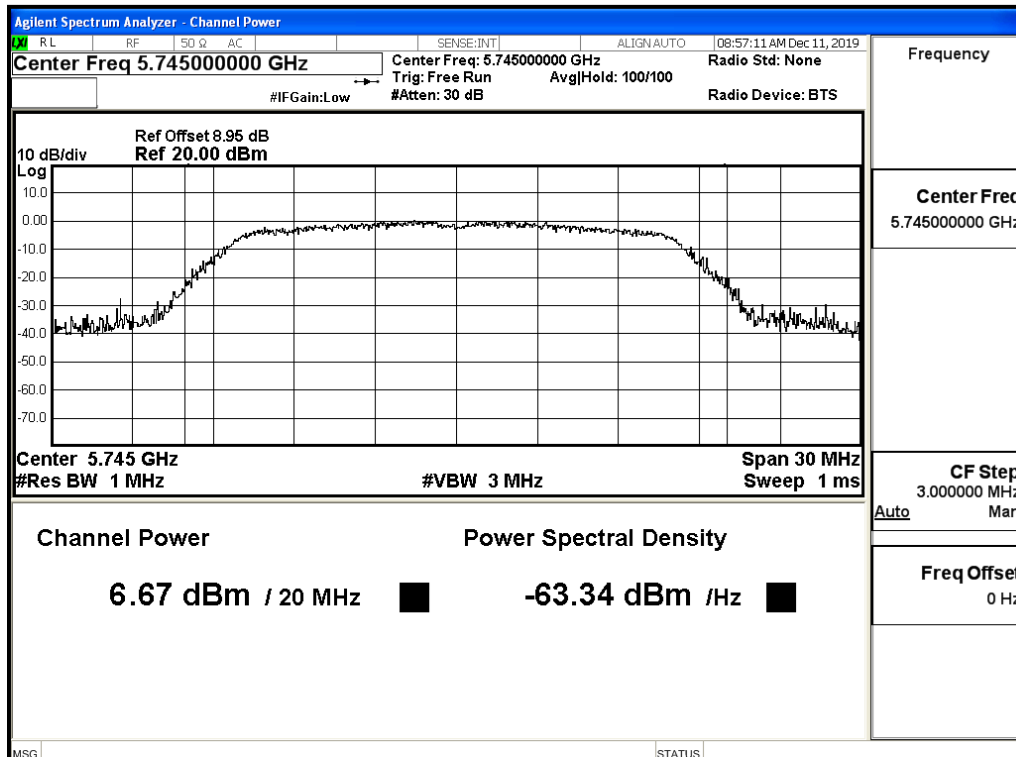


IEEE 802.11AC80

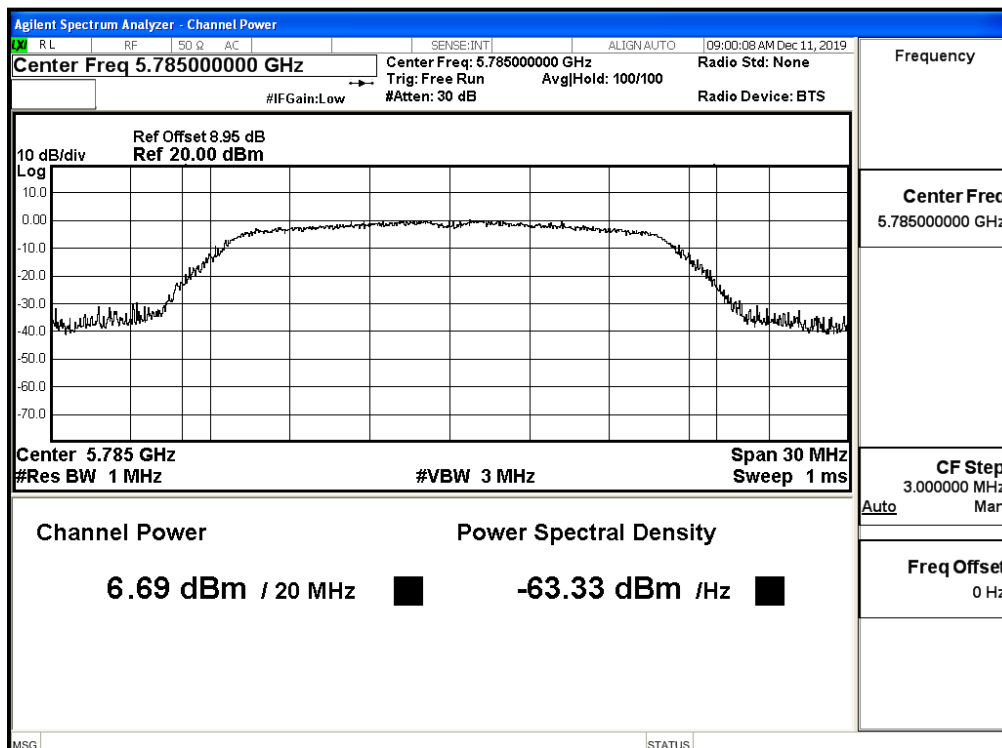
E.2 Maximum Conduct Output Power

Test Mode	Channe I	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	149	5745	6.67	0	6.67	30	Pass
	157	5785	6.69	0	6.69		Pass
	165	5825	6.06	0	6.06		Pass
11N20 SISO	149	5745	6.71	0	6.71	30	Pass
	157	5785	6.36	0	6.36		Pass
	165	5825	6.64	0	6.64		Pass
11N40 SISO	151	5755	6.53	0	6.53	30	Pass
	159	5795	6.75	0	6.75		Pass
11AC20 SISO	149	5745	6.88	0	6.88	30	Pass
	157	5785	6.65	0	6.65		Pass
	165	5825	6.26	0	6.26		Pass
11AC40 SISO	151	5755	6.81	0	6.81	30	Pass
	159	5795	6.36	0	6.36		Pass
11AC80 SISO	155	5775	6.73	0	6.73	30	Pass

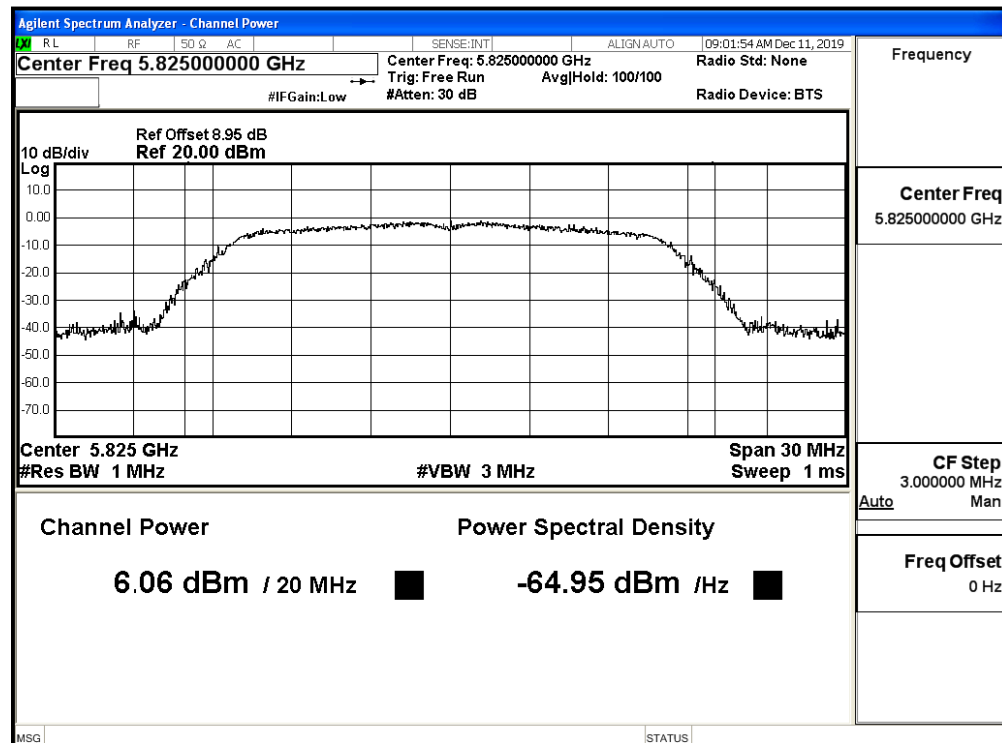
Maximum Conducted Output Power



IEEE 802.11a / Channel 149 / 5745MHz

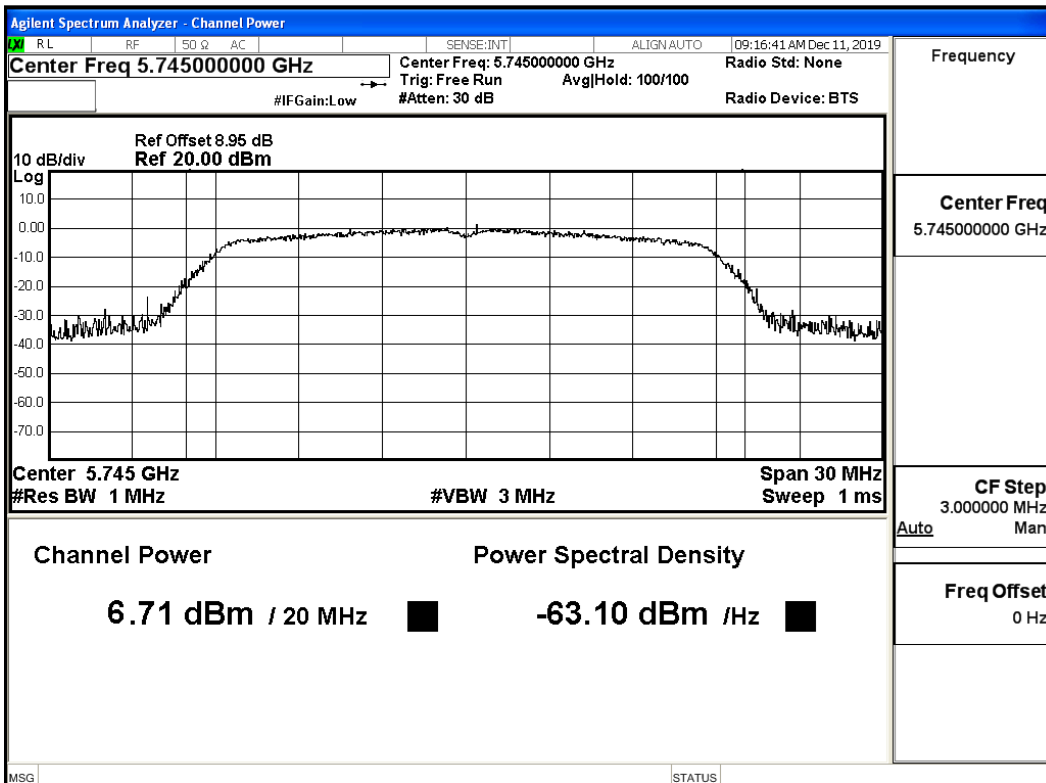


IEEE 802.11a / Channel 157 / 5785MHz

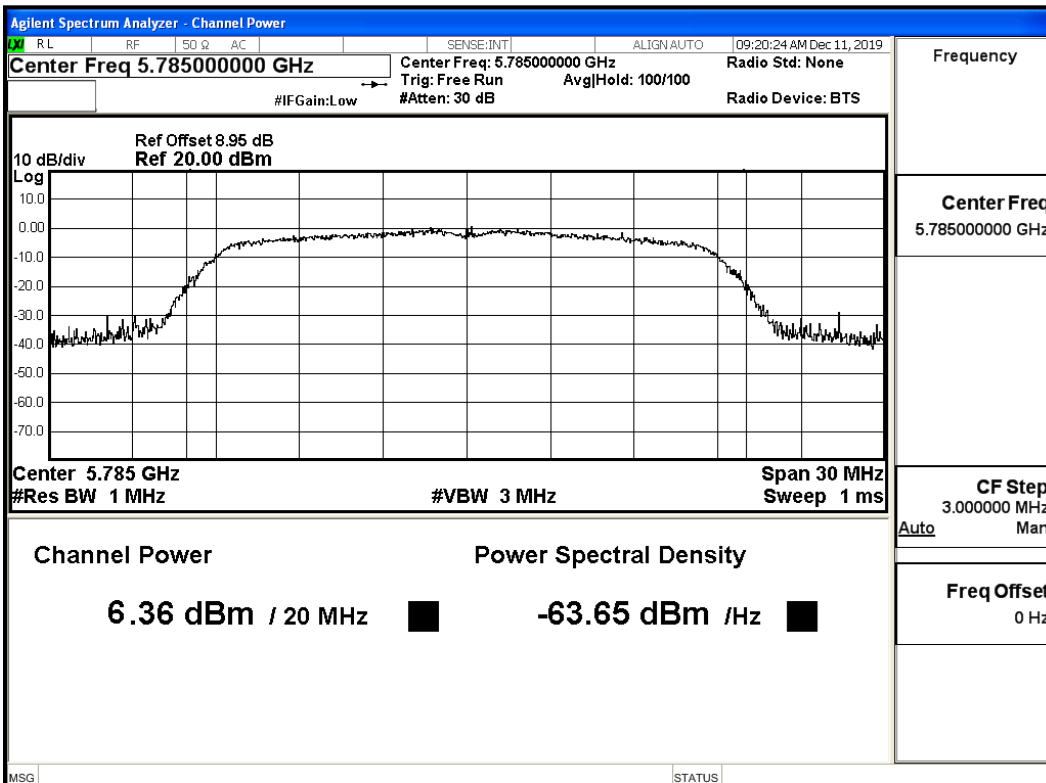


IEEE 802.11a / Channel 165 / 5825MHz

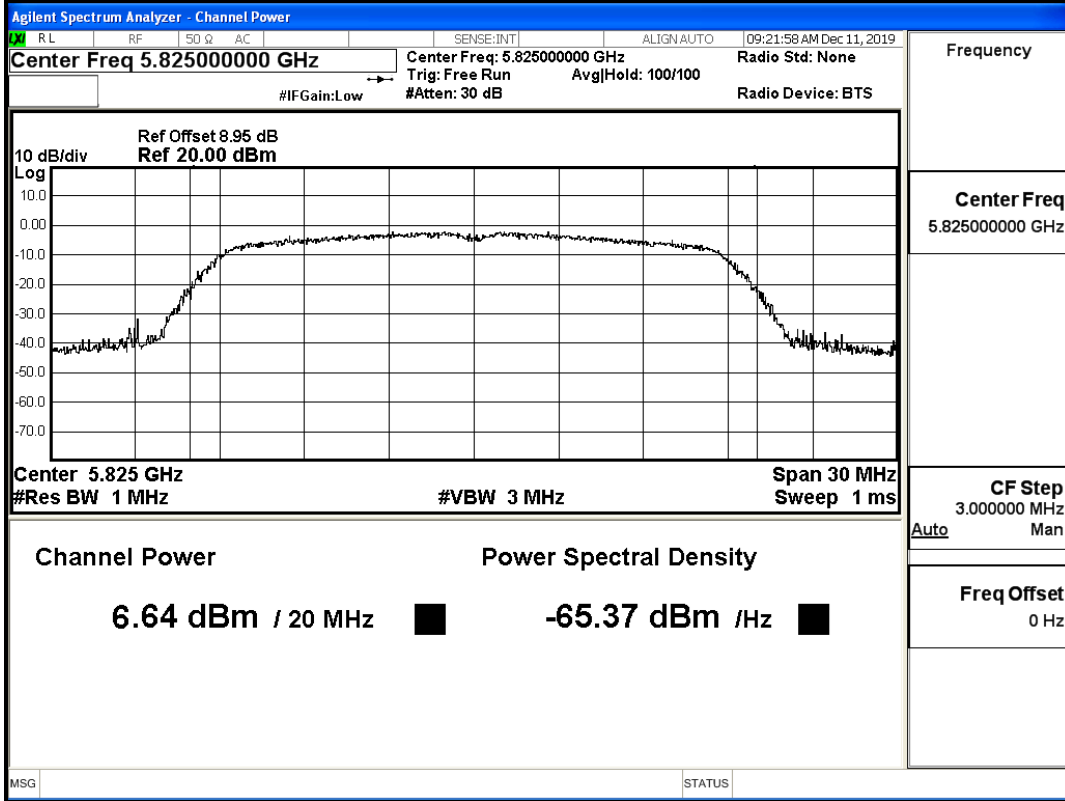
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 149 / 5745MHz

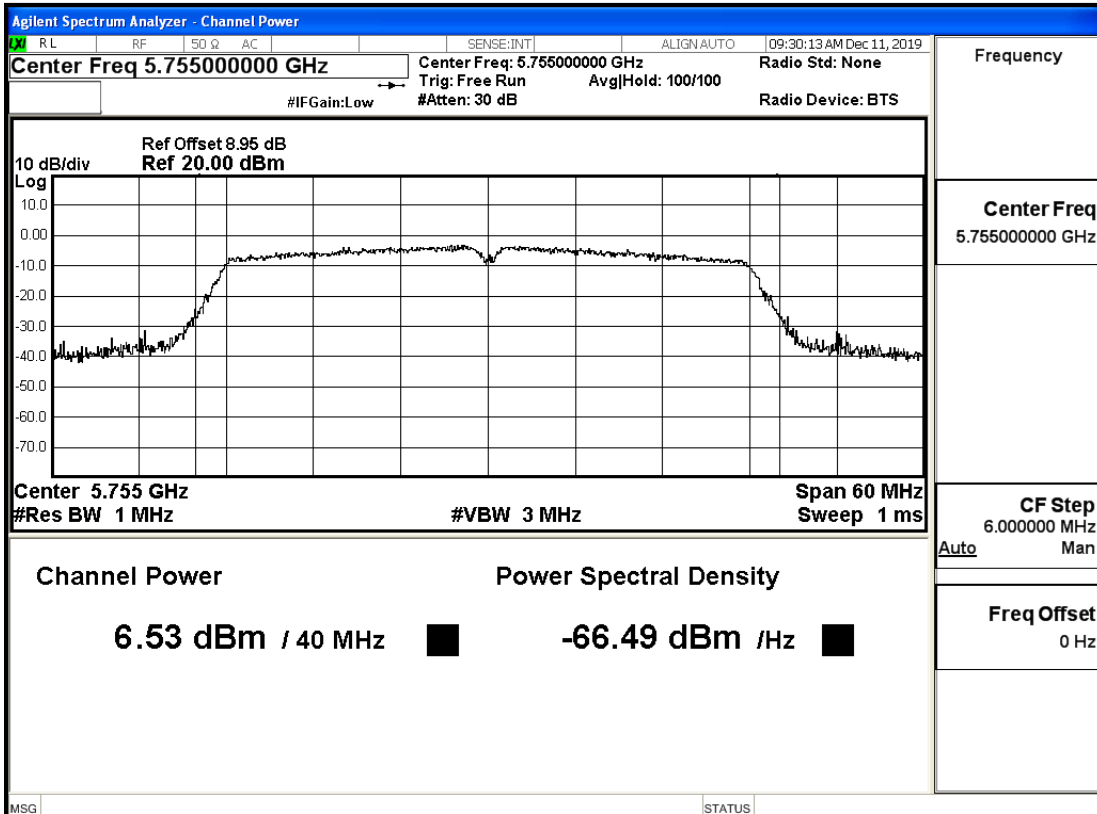


IEEE 802.11n20 / Channel 157 / 5785MHz

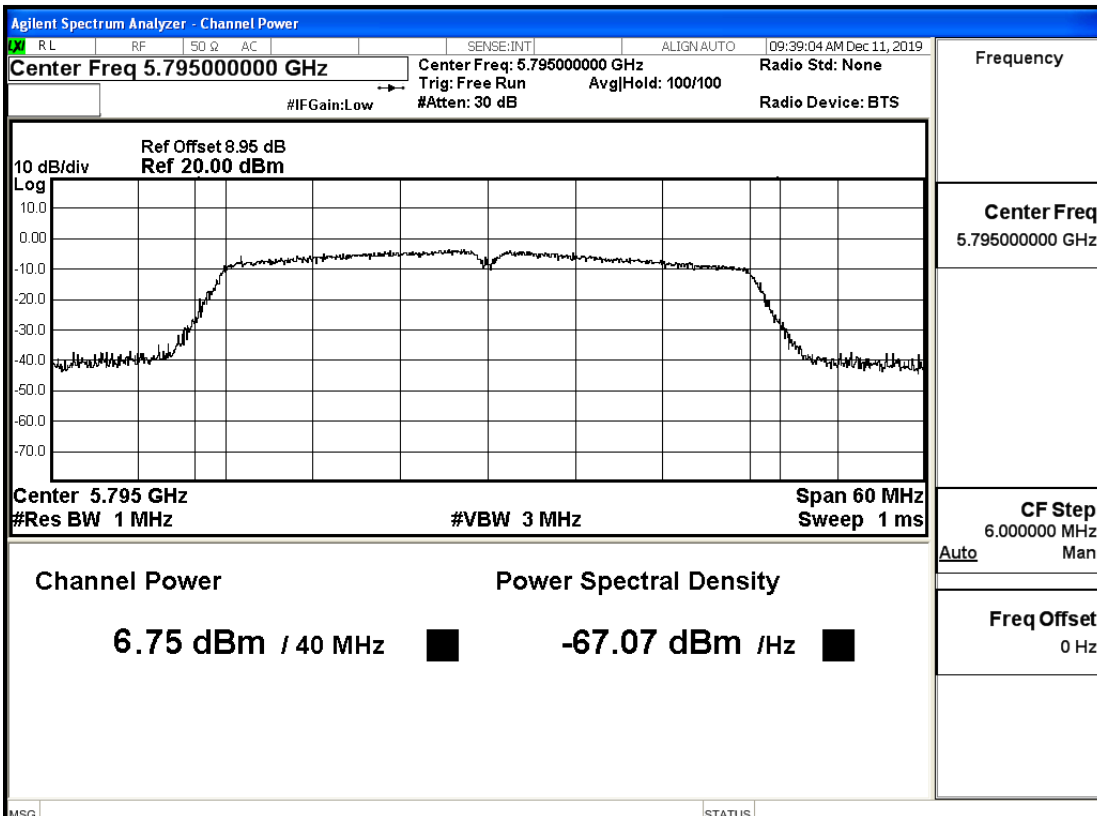


IEEE 802.11n20 / Channel 165 / 5825MHz

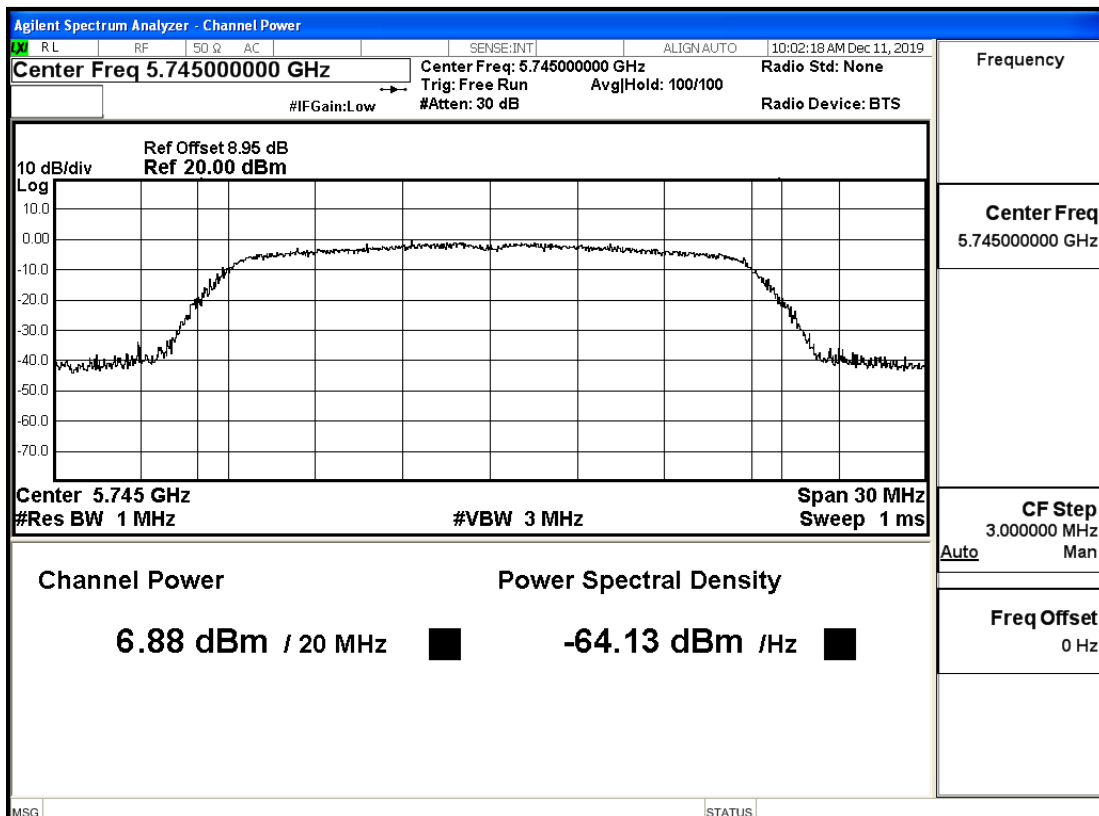
Maximum Conducted Output Power



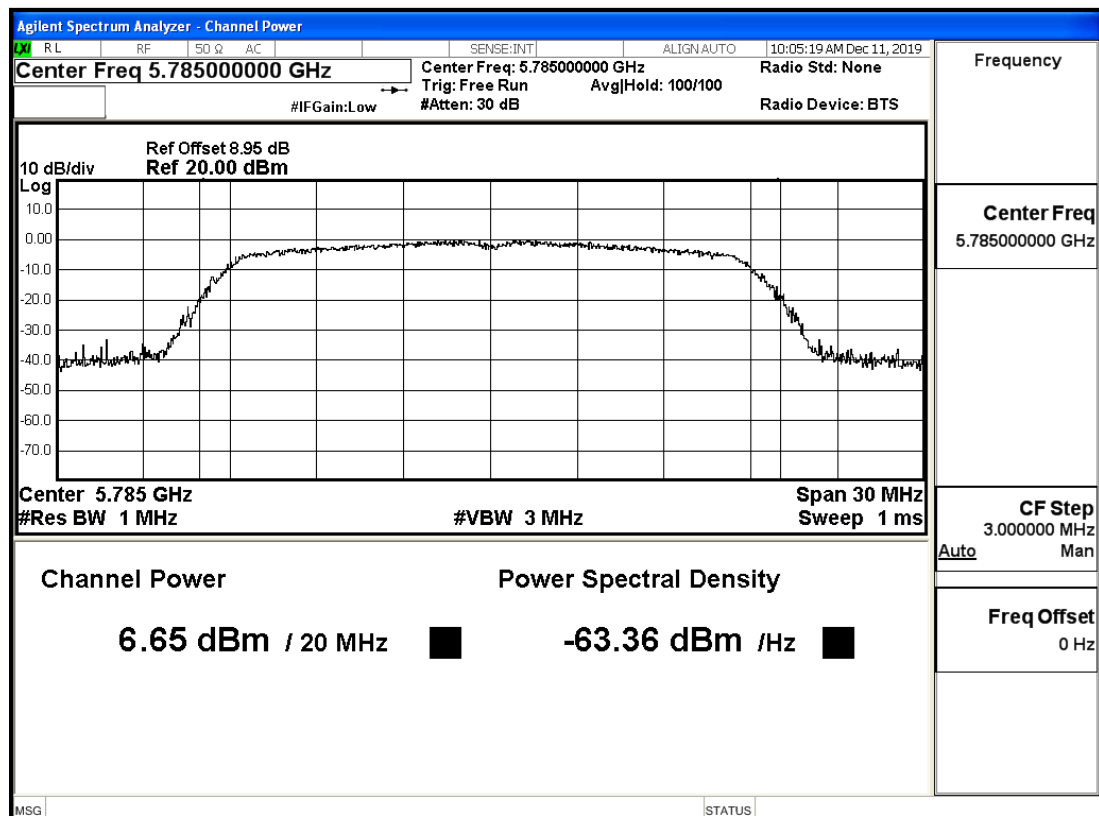
IEEE 802.11n40 / Channel 151 / 5755MHz



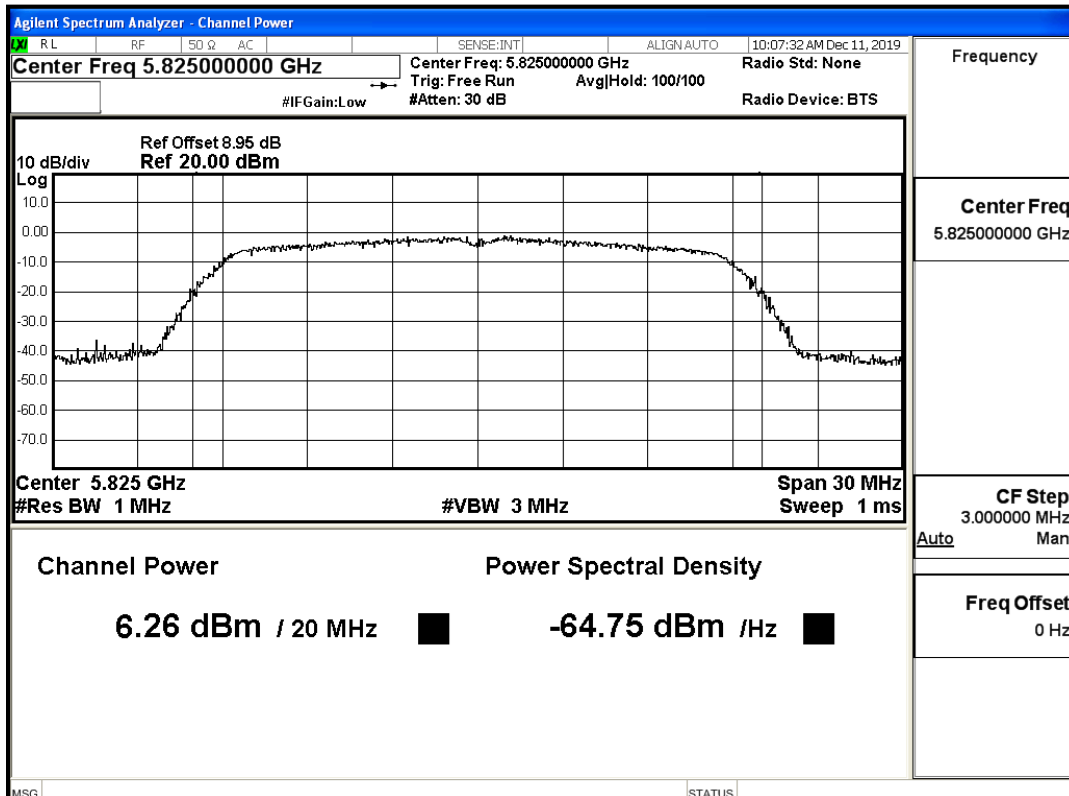
IEEE 802.11n40 / Channel 159 / 5795MHz



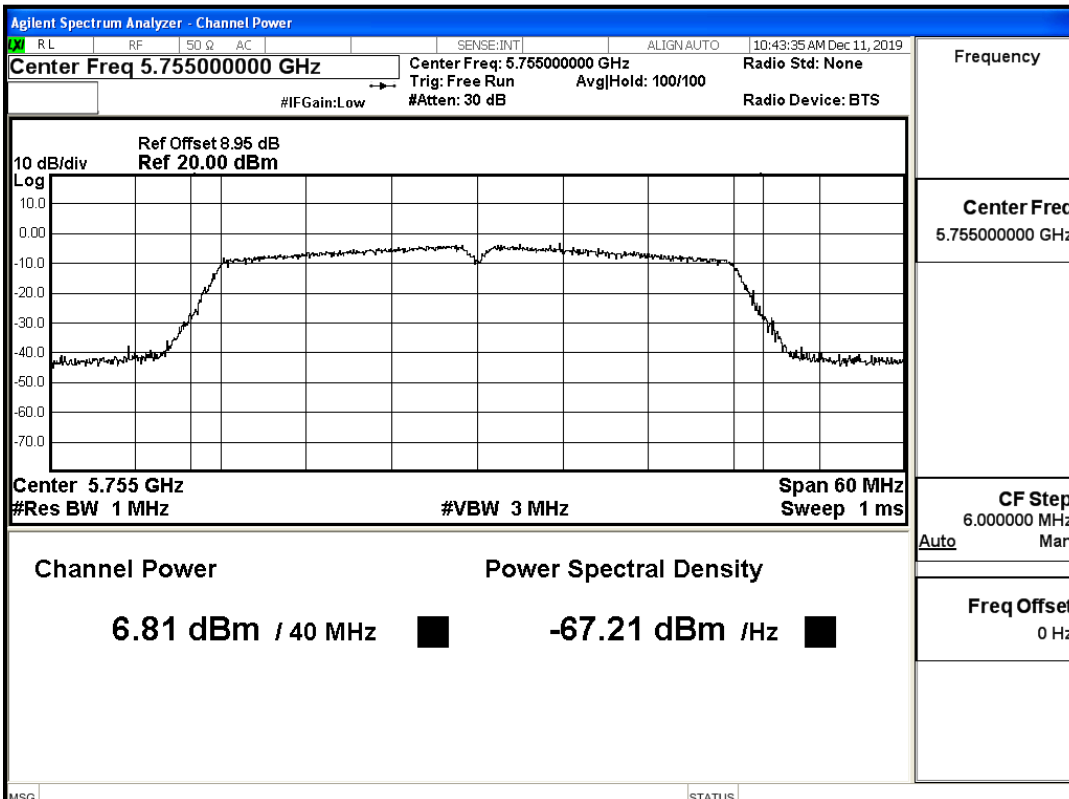
IEEE 802.11ac20 / Channel 149 / 5745MHz



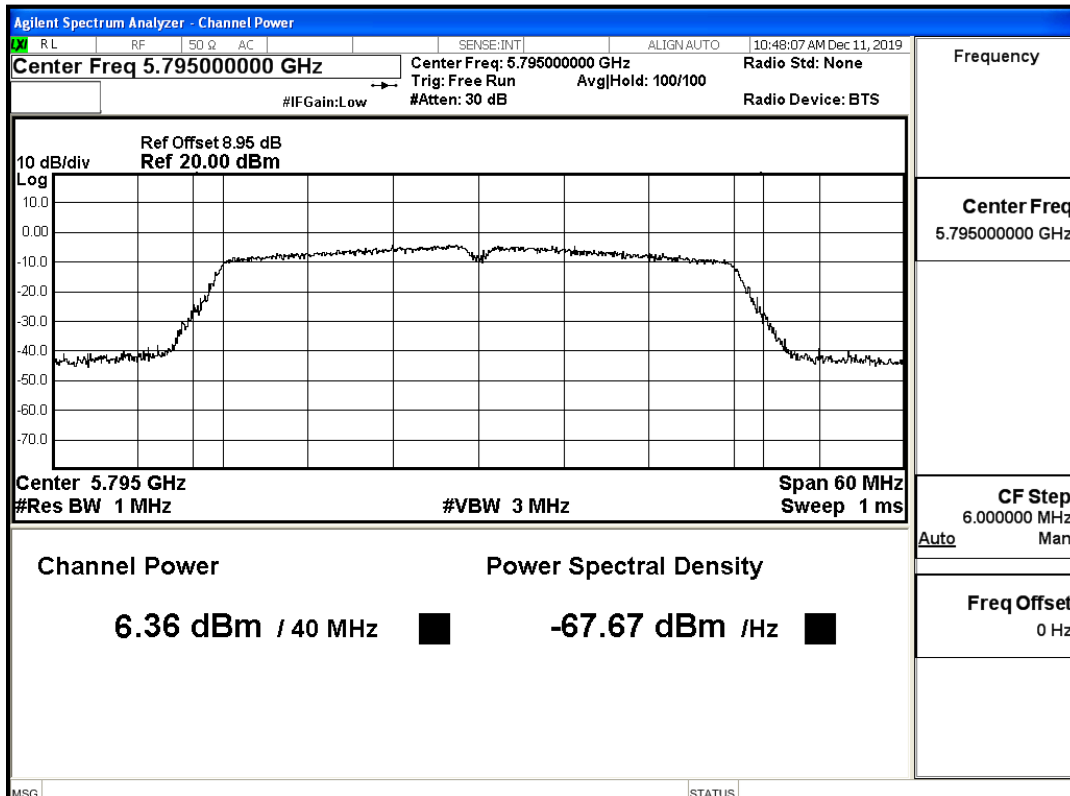
IEEE 802.11ac20 / Channel 157 / 5785MHz



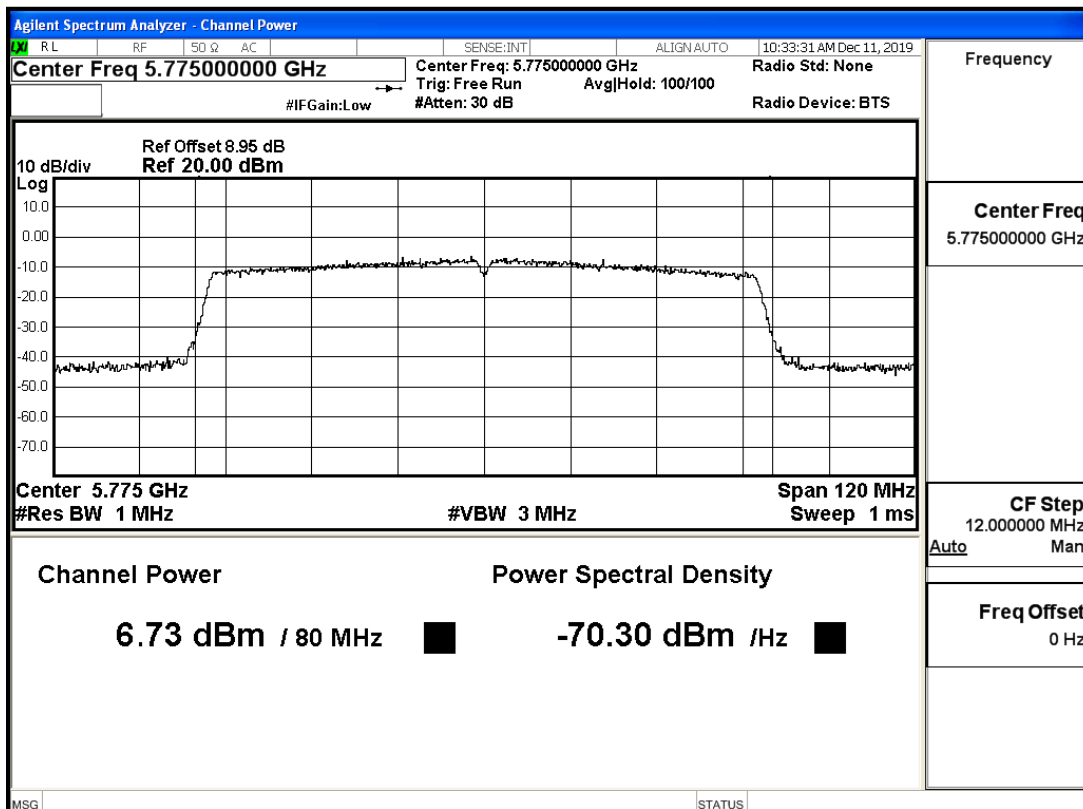
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



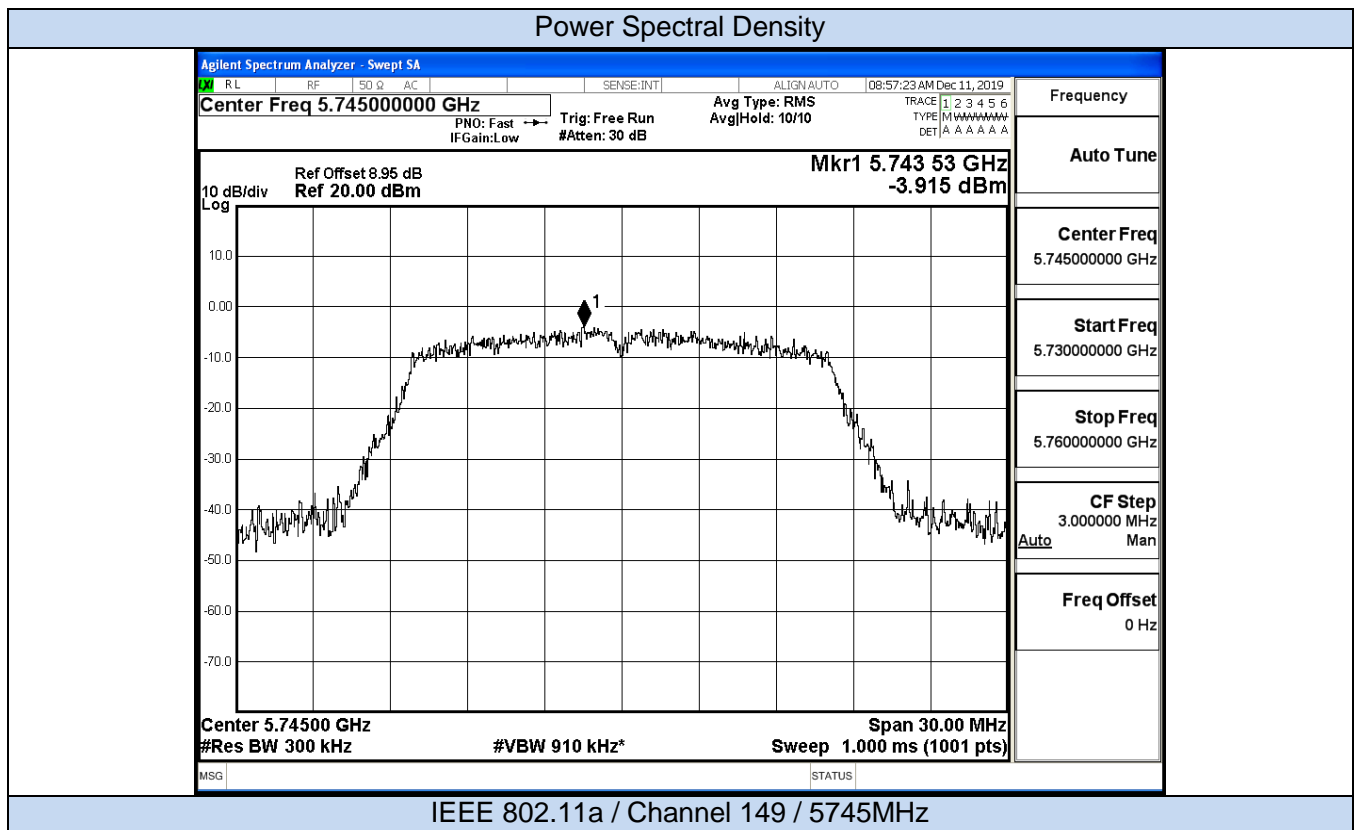
IEEE 802.11ac40 / Channel 159 / 5795MHz

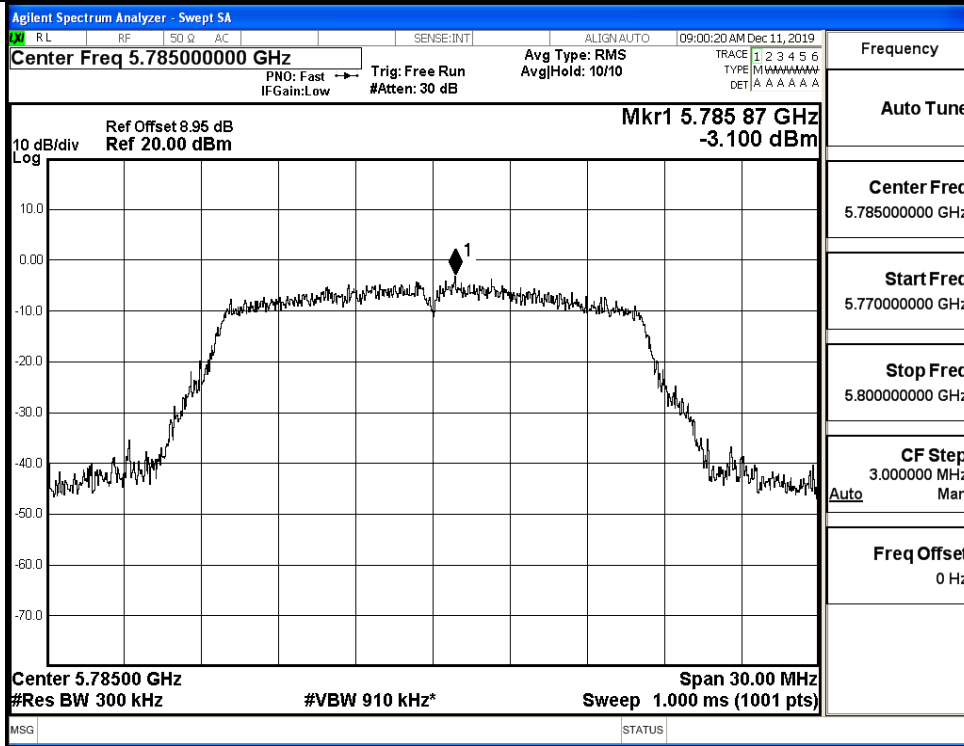


IEEE 802.11ac80 / Channel 155 / 5775MHz

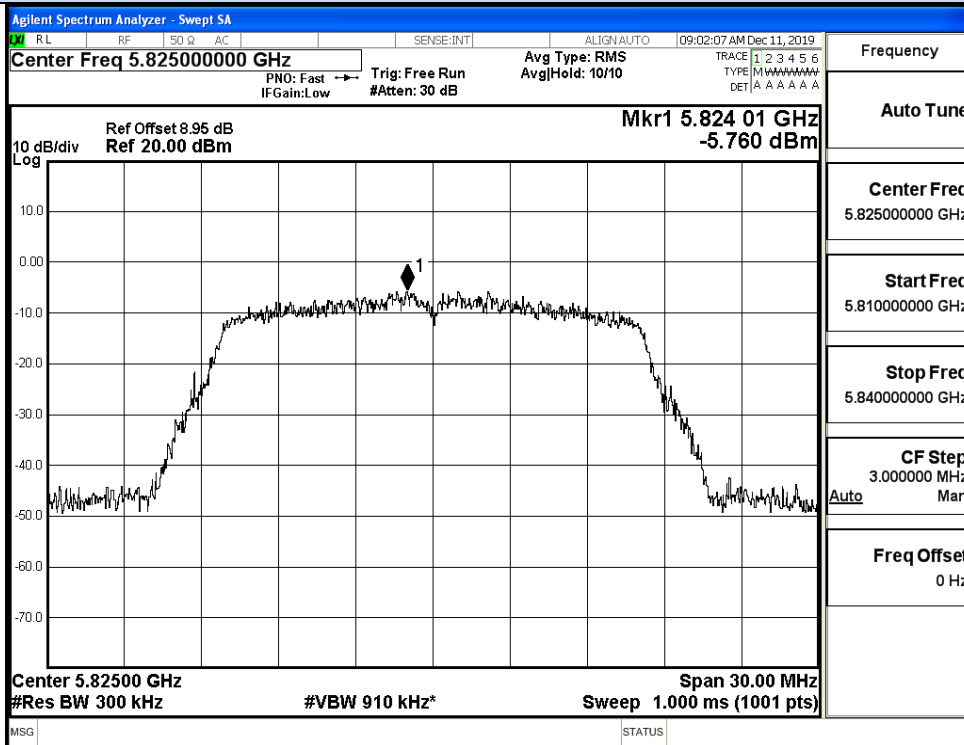
E.3 Power Spectral Density

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/300KHz)	Duty Cycle Factor (dB)	RBW Factor (dB)	Report Power Density (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
11A	149	5745	-3.92	0	2.218	-1.70	30	Pass
	157	5785	-3.10	0	2.218	-0.88		Pass
	165	5825	-5.76	0	2.218	-3.54		Pass
11N20 SISO	149	5745	-3.58	0	2.218	-1.36	30	Pass
	157	5785	-4.53	0	2.218	-2.31		Pass
	165	5825	-6.51	0	2.218	-4.29		Pass
11N40 SISO	151	5755	-6.19	0	2.218	-3.97	30	Pass
	159	5795	-7.48	0	2.218	-5.26		Pass
11AC20 SISO	149	5745	-4.76	0	2.218	-2.54	30	Pass
	157	5785	-4.22	0	2.218	-2.00		Pass
	165	5825	-5.39	0	2.218	-3.17		Pass
11AC40 SISO	151	5755	-7.70	0	2.218	-5.49	30	Pass
	159	5795	-8.21	0	2.218	-5.99		Pass
11AC80 SISO	155	5775	-10.48	0	2.218	-8.26	30	Pass



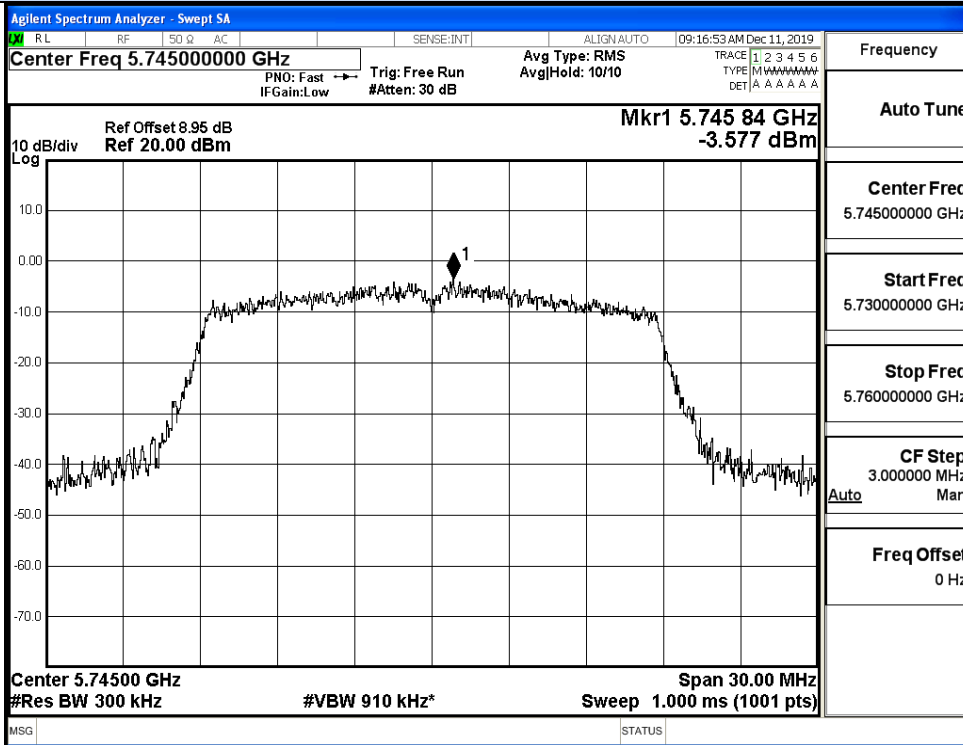


IEEE 802.11na / Channel 157 / 5785MHz

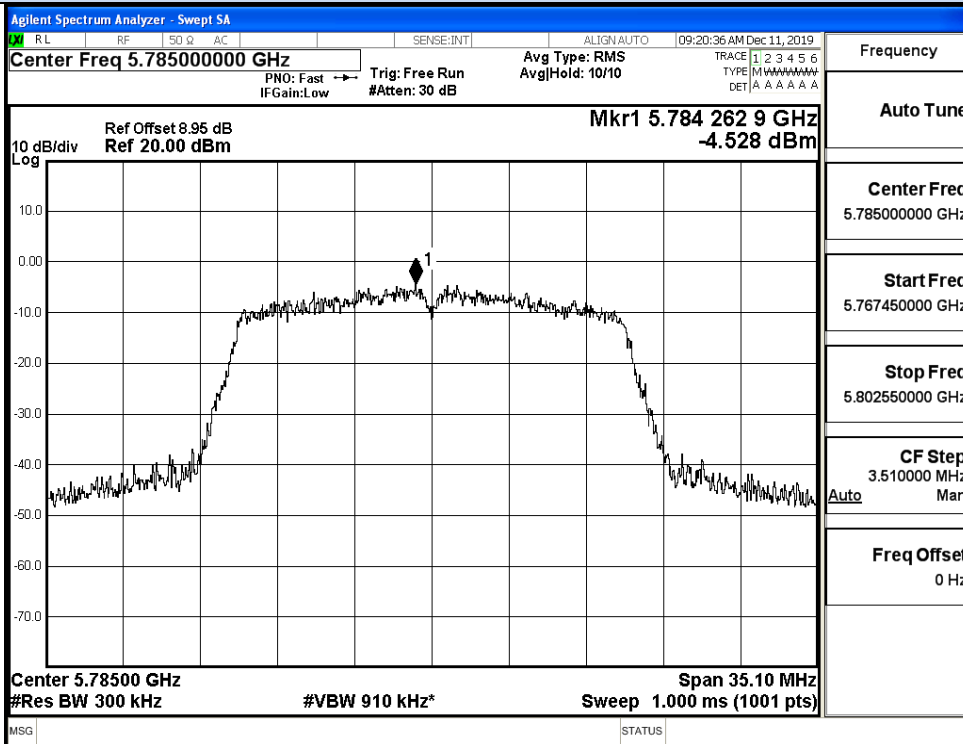


IEEE 802.11na / Channel 165 / 5825MHz

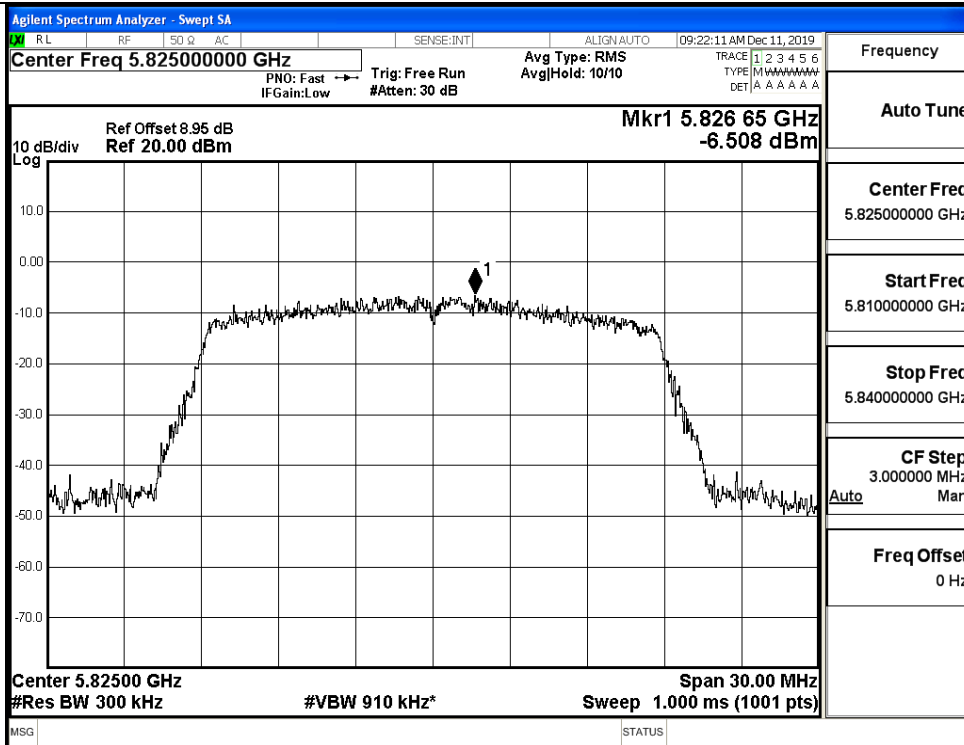
Power Spectral Density



IEEE 802.11n20 / Channel 149 / 5745MHz

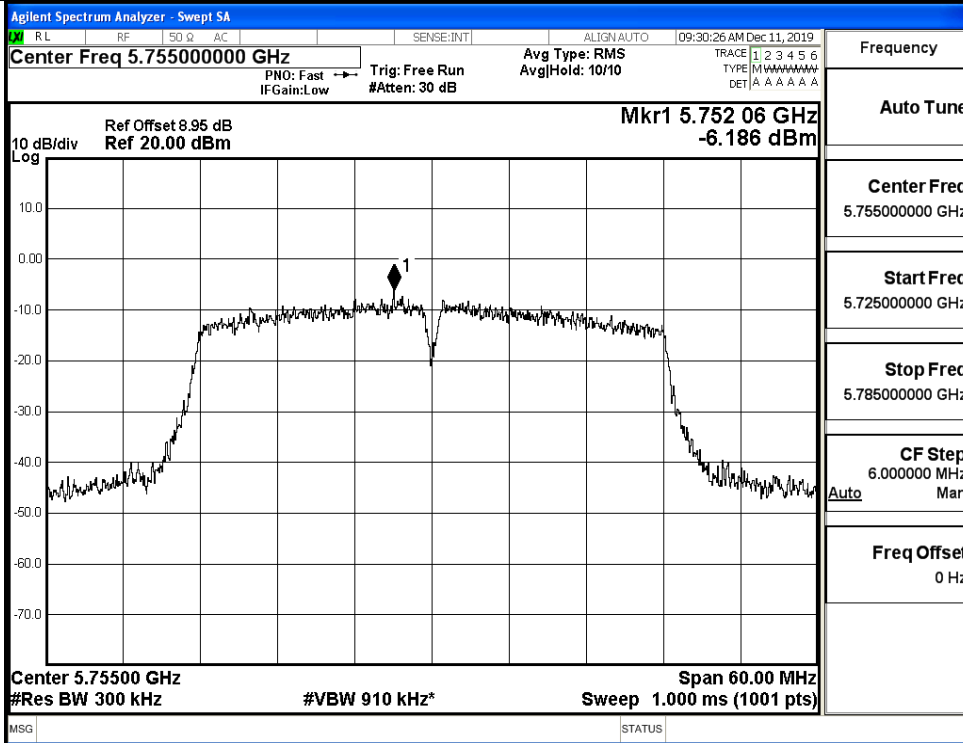


IEEE 802.11n20 / Channel 157 / 5785MHz

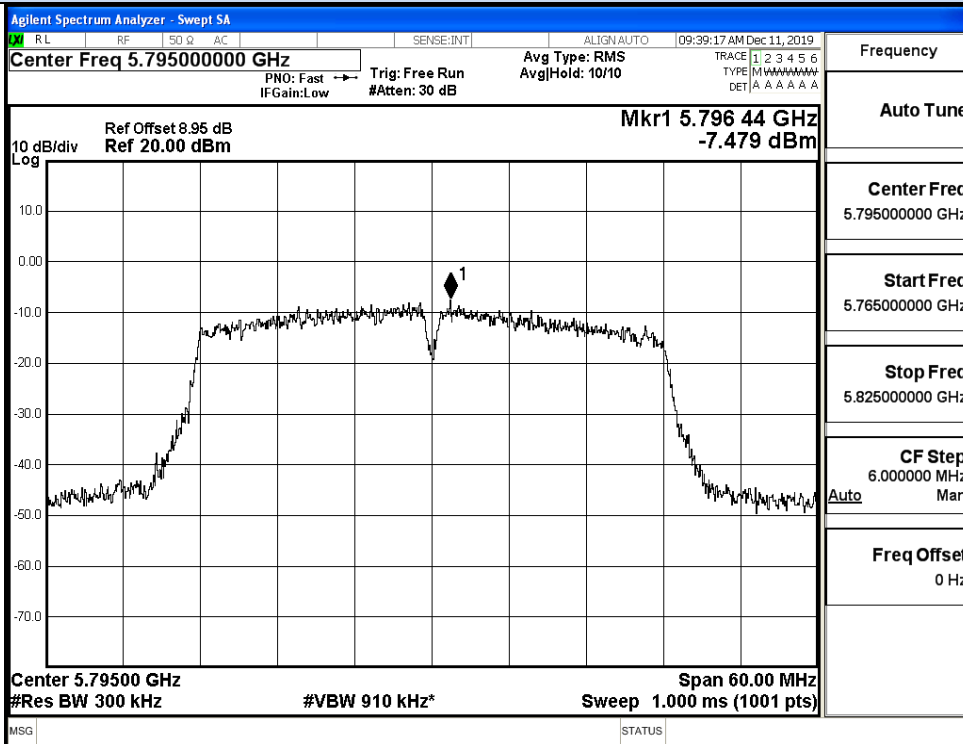


IEEE 802.11n20 / Channel 165 / 5825MHz

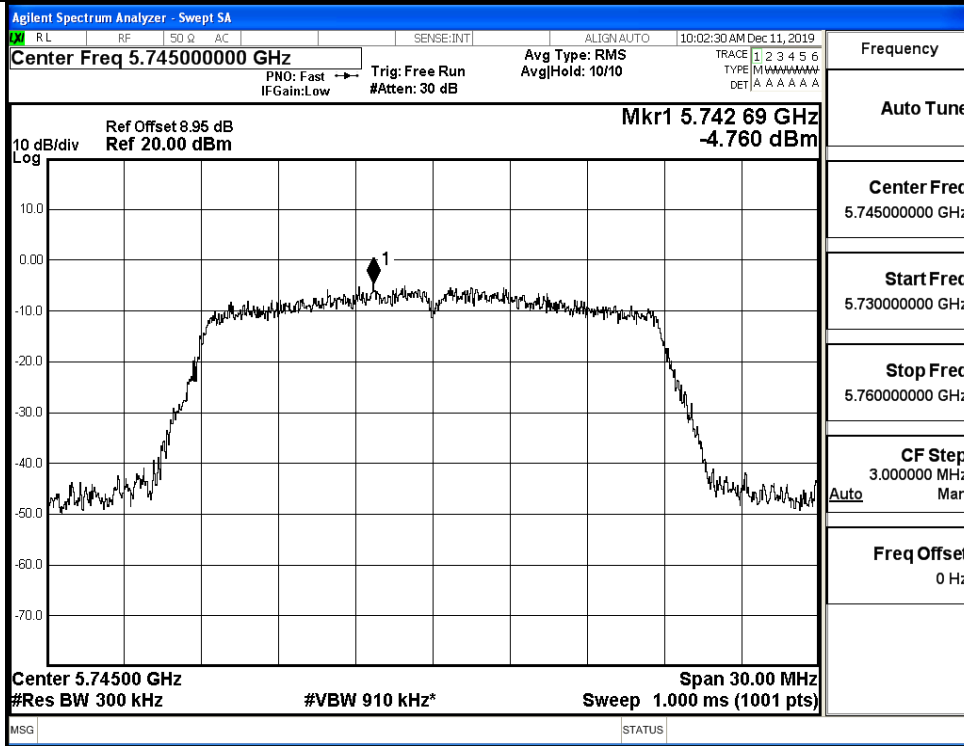
Power Spectral Density



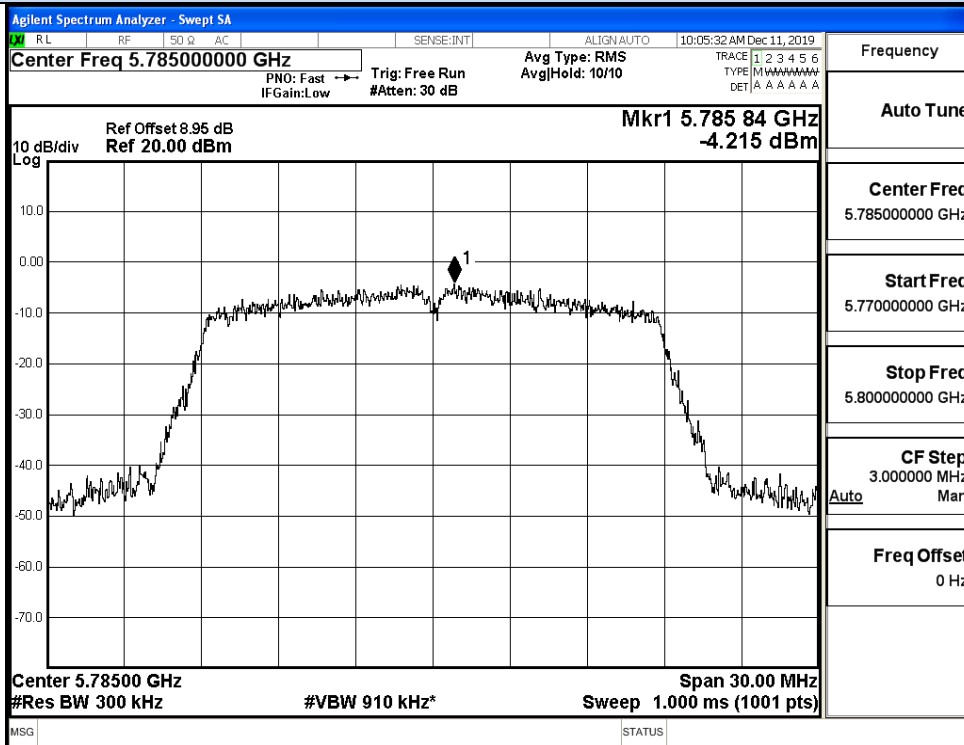
IEEE 802.11n40 / Channel 151 / 5755MHz



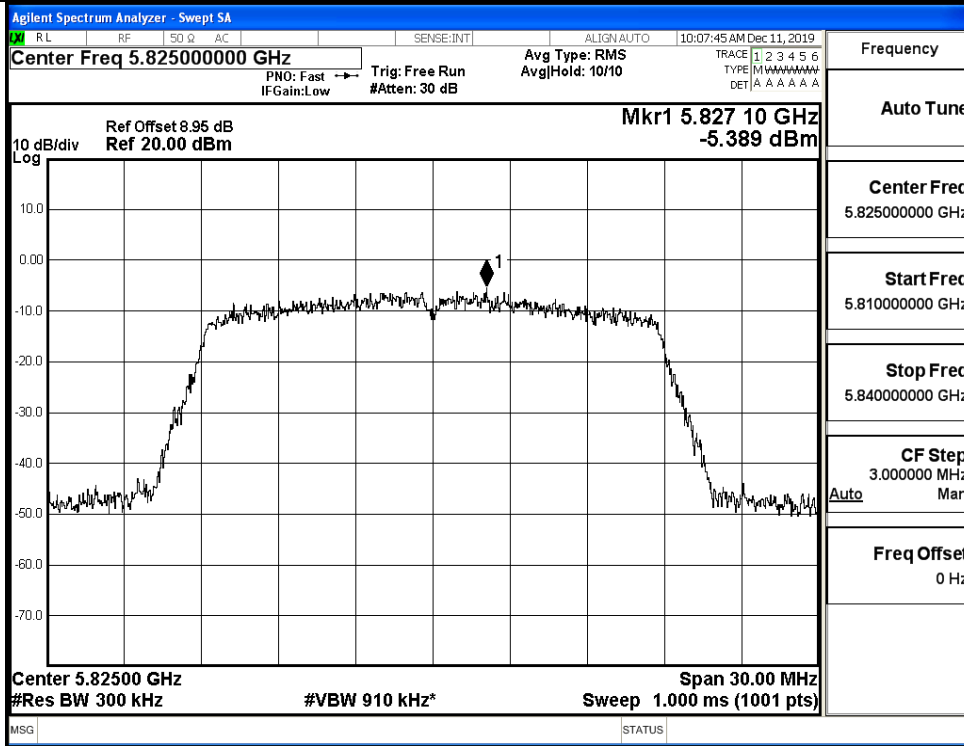
IEEE 802.11n40 / Channel 159 / 5795MHz



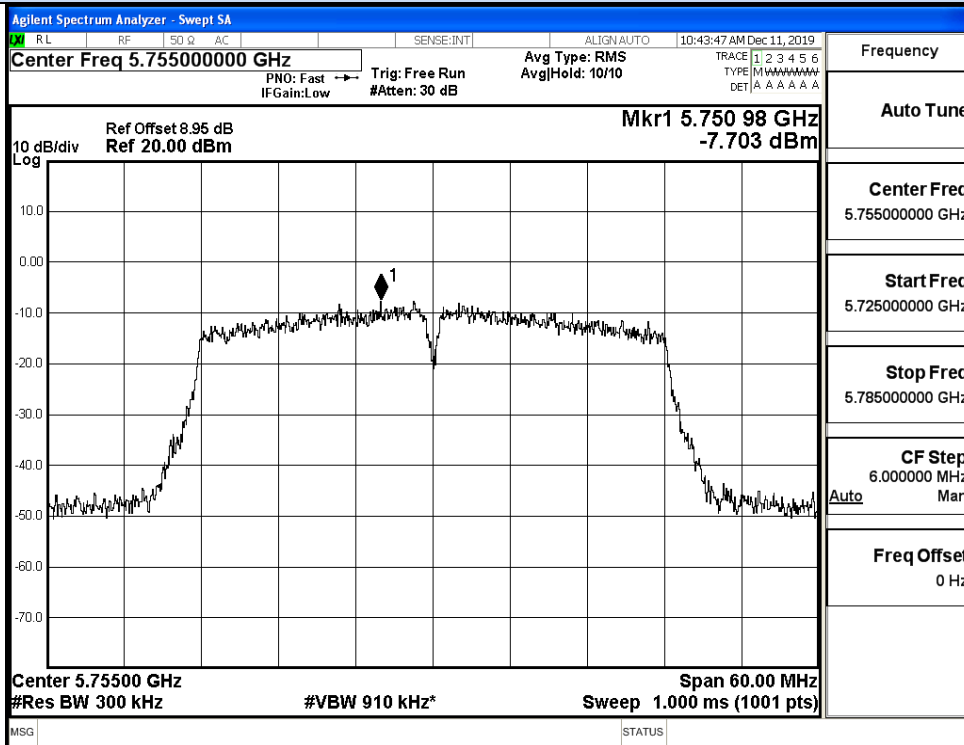
IEEE 802.11ac20 / Channel 149 / 5745MHz



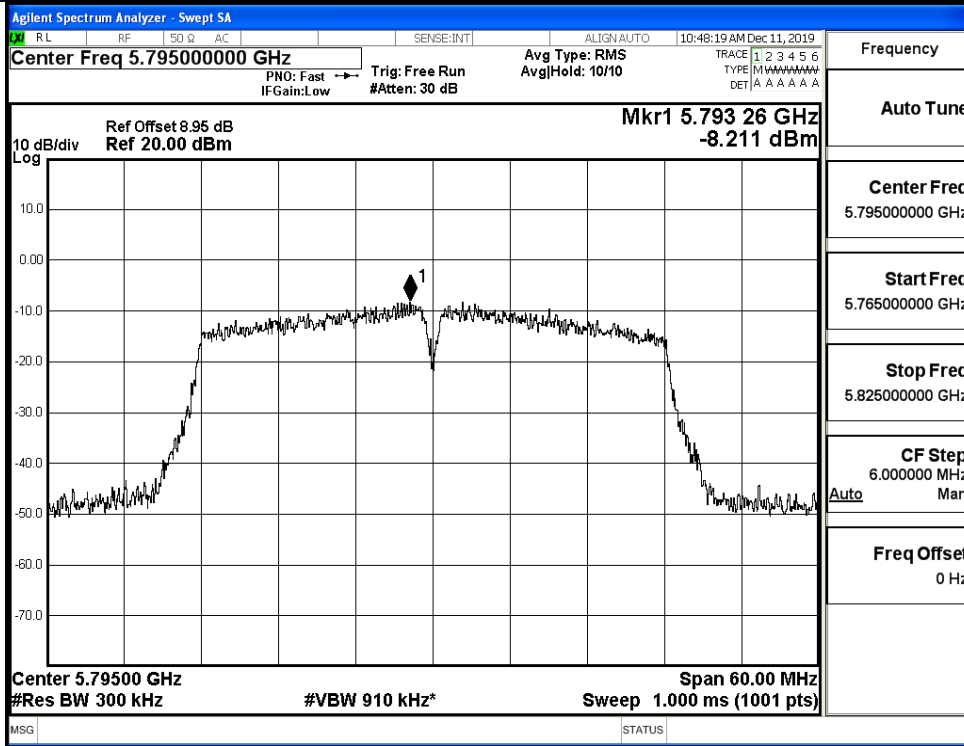
IEEE 802.11ac20 / Channel 157 / 5785MHz



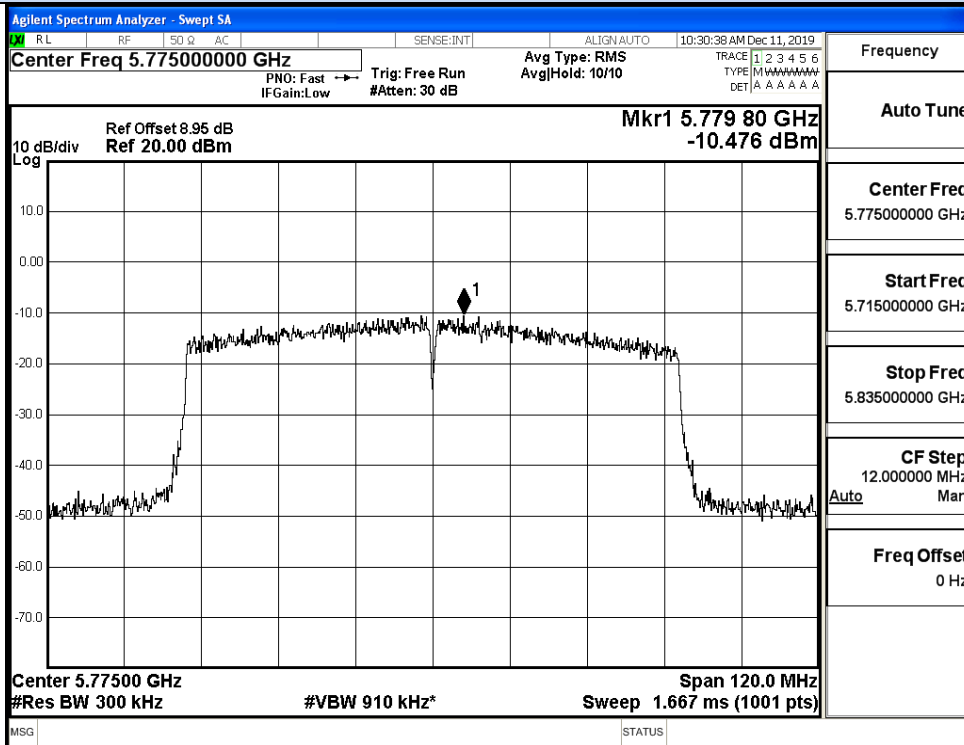
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



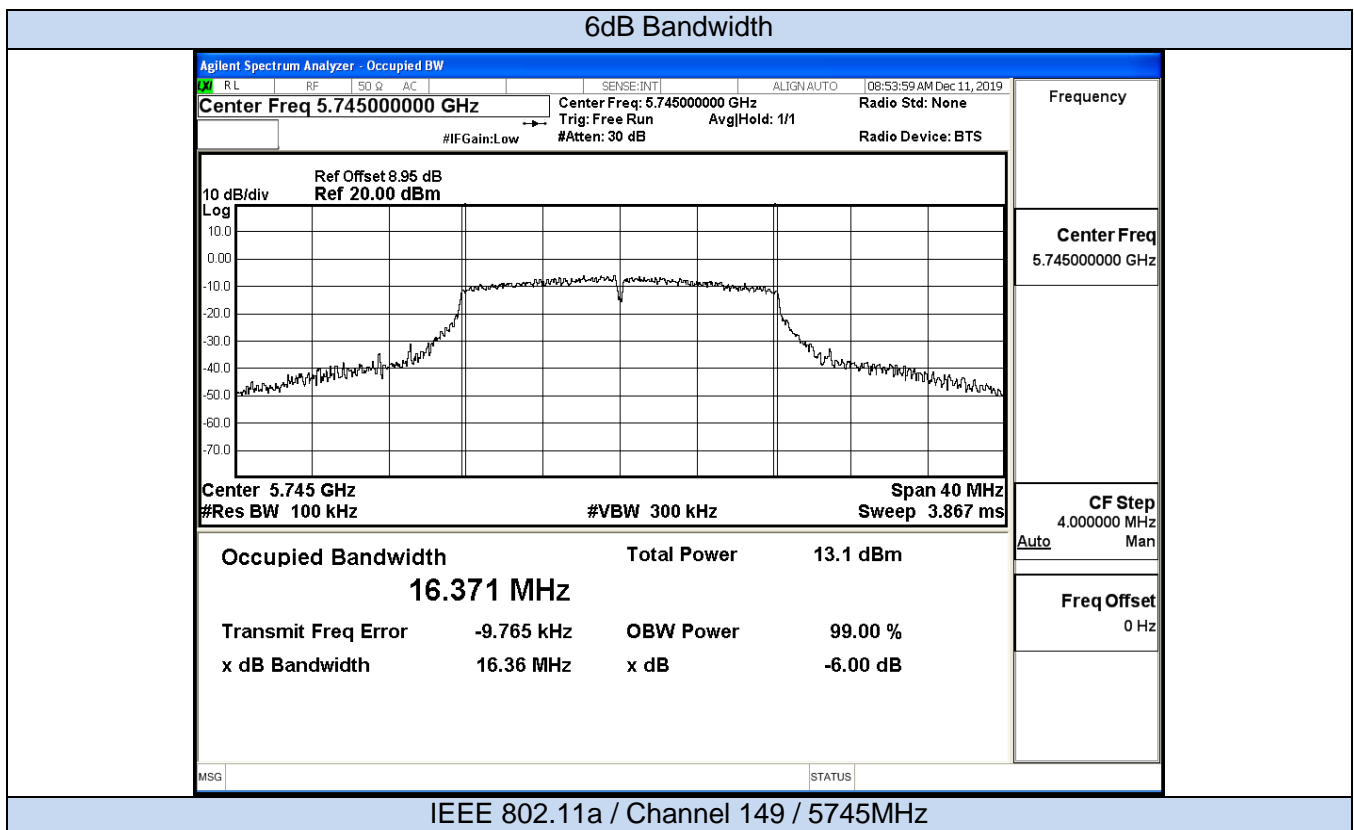
IEEE 802.11ac40 / Channel 159 / 5795MHz

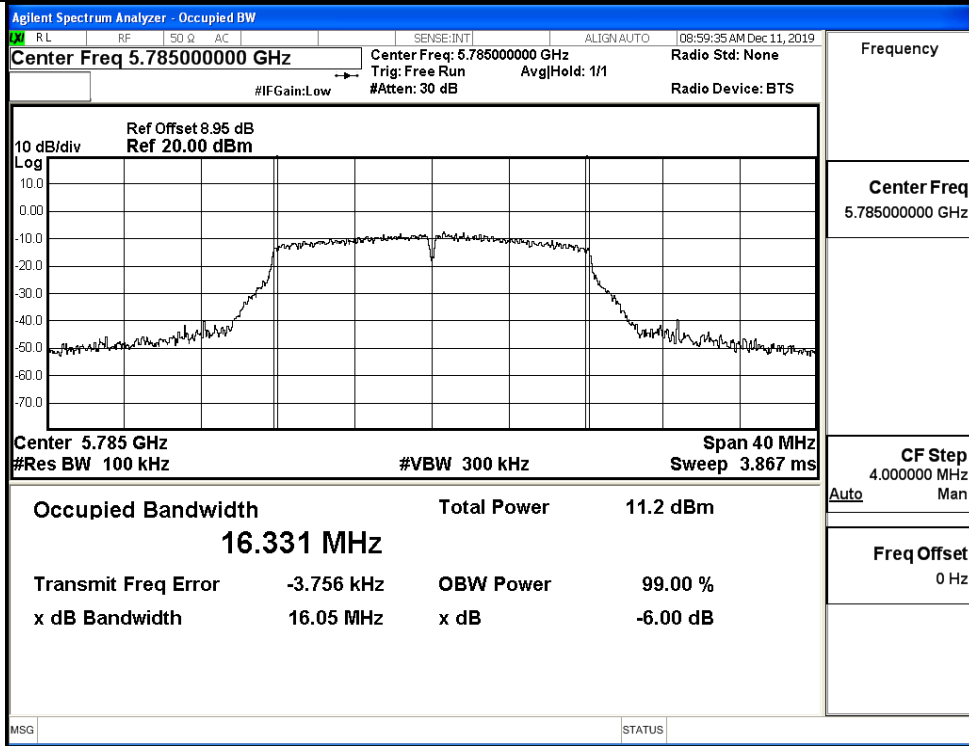


IEEE 802.11ac80 / Channel 155/ 5775MHz

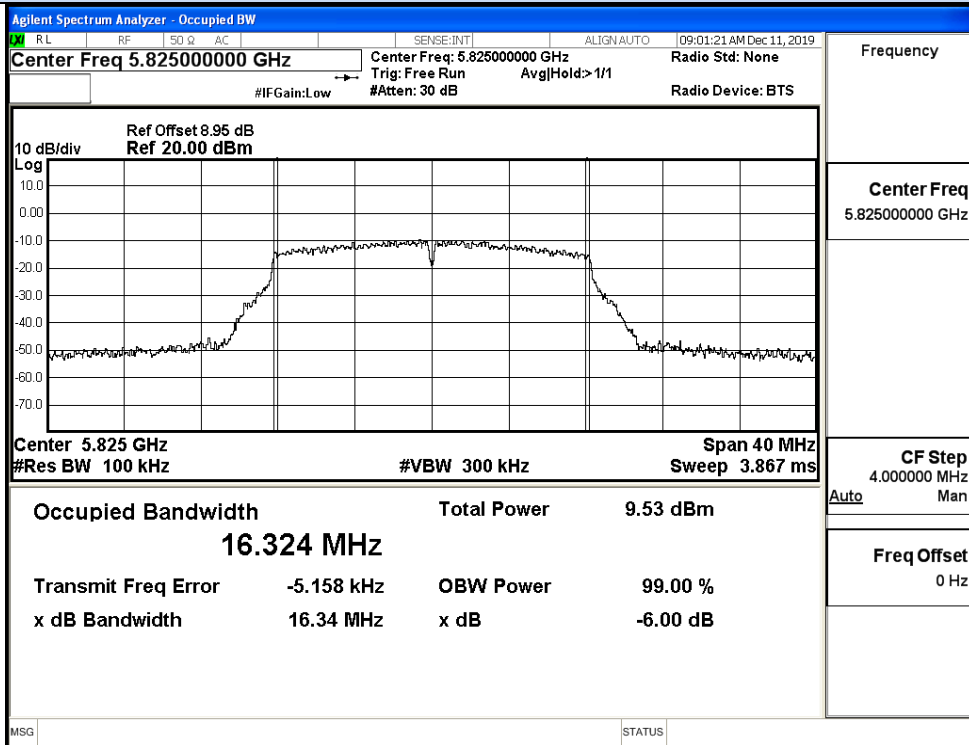
E.4 Emission Bandwidth

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	99% Bandwidth (MHz)	Verdict
11A	149	5745	16.36	>=0.5	16.371	Pass
	157	5785	16.05		16.331	Pass
	165	5825	16.34		16.324	Pass
11N20 SISO	149	5745	17.57	>=0.5	17.552	Pass
	157	5785	17.55		17.520	Pass
	165	5825	17.59		17.546	Pass
11N40 SISO	151	5755	36.36	>=0.5	35.957	Pass
	159	5795	35.08		35.856	Pass
11AC20S ISO	149	5745	17.54	>=0.5	17.539	Pass
	157	5785	17.33		17.537	Pass
	165	5825	17.58		17.531	Pass
11AC40S ISO	151	5755	35.66	>=0.5	35.849	Pass
	159	5795	35.96		35.874	Pass
11AC80S ISO	155	5775	76.05	>=0.5	75.268	Pass





IEEE 802.11a / Channel 157 / 5785MHz



IEEE 802.11a / Channel 165 / 5825MHz

6dB Bandwidth

Agilent Spectrum Analyzer - Occupied BW

RL	RF	SO Q	AC	SENSE:INT	ALIGN:AUTO	09:16:08 AM Dec 11, 2019
Center Freq 5.745000000 GHz				Center Freq: 5.745000000 GHz	Trig: Free Run	Radio Std: None
#IFGain:Low				#Atten: 30 dB	Radio Device: BTS	

10 dB/div
Ref Offset 8.95 dB
Ref 20.00 dBm

Center 5.745 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40 MHz
Sweep 3.867 ms

Occupied Bandwidth	Total Power	11.4 dBm
17.552 MHz		
Transmit Freq Error	-7.540 kHz	OBW Power
x dB Bandwidth	17.57 MHz	x dB
		99.00 %
		-6.00 dB

Frequency: 5.745000000 GHz
CF Step: 4.000000 MHz (Auto)
Freq Offset: 0 Hz

IEEE 802.11n20 / Channel 149 / 5745MHz

Agilent Spectrum Analyzer - Occupied BW

RL	RF	SO Q	AC	SENSE:INT	ALIGN:AUTO	09:19:51 AM Dec 11, 2019
Center Freq 5.785000000 GHz				Center Freq: 5.785000000 GHz	Trig: Free Run	Radio Std: None
#IFGain:Low				#Atten: 30 dB	Radio Device: BTS	

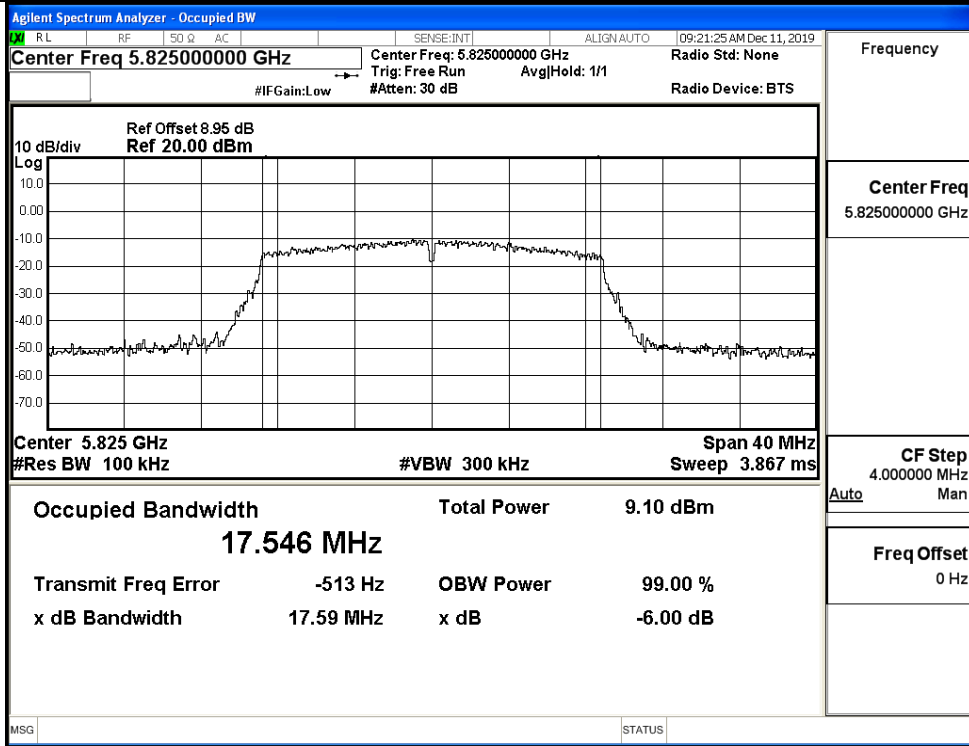
10 dB/div
Ref Offset 8.95 dB
Ref 20.00 dBm

Center 5.785 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40 MHz
Sweep 3.867 ms

Occupied Bandwidth	Total Power	10.8 dBm
17.520 MHz		
Transmit Freq Error	-7.333 kHz	OBW Power
x dB Bandwidth	17.55 MHz	x dB
		99.00 %
		-6.00 dB

Frequency: 5.785000000 GHz
CF Step: 4.000000 MHz (Auto)
Freq Offset: 0 Hz

IEEE 802.11n20 / Channel 157 / 5785MHz



IEEE 802.11n20 / Channel 165 / 5825MHz

26dB Bandwidth

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:INT	ALIGN:AUTO	09:29:40 AM Dec 11, 2019
Center Freq 5.755000000 GHz				Center Freq: 5.755000000 GHz	Trig: Free Run	Avg/Hold: 1/1
#IFGain:Low				#Atten: 30 dB	Radio Device: BTS	

Ref Offset 8.95 dB
Ref 20.00 dBm

Center 5.755 GHz Span 80 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 7.667 ms

Occupied Bandwidth	Total Power	11.0 dBm
35.957 MHz		
Transmit Freq Error	-40.669 kHz	OBW Power 99.00 %
x dB Bandwidth	36.36 MHz	x dB -6.00 dB

Frequency: 5.755000000 GHz
CF Step: 8.000000 MHz
Auto Man
Freq Offset: 0 Hz

IEEE 802.11n40 / Channel 151 / 5755MHz

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:INT	ALIGN:AUTO	09:38:31 AM Dec 11, 2019
Center Freq 5.795000000 GHz				Center Freq: 5.795000000 GHz	Trig: Free Run	Avg/Hold: 1/1
#IFGain:Low				#Atten: 30 dB	Radio Device: BTS	

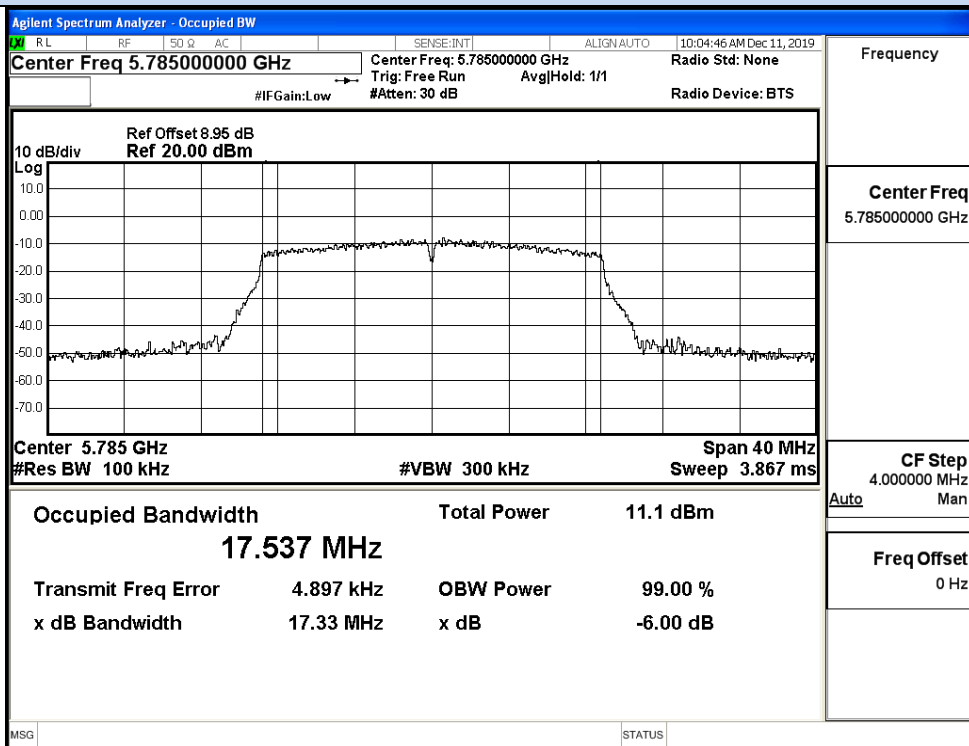
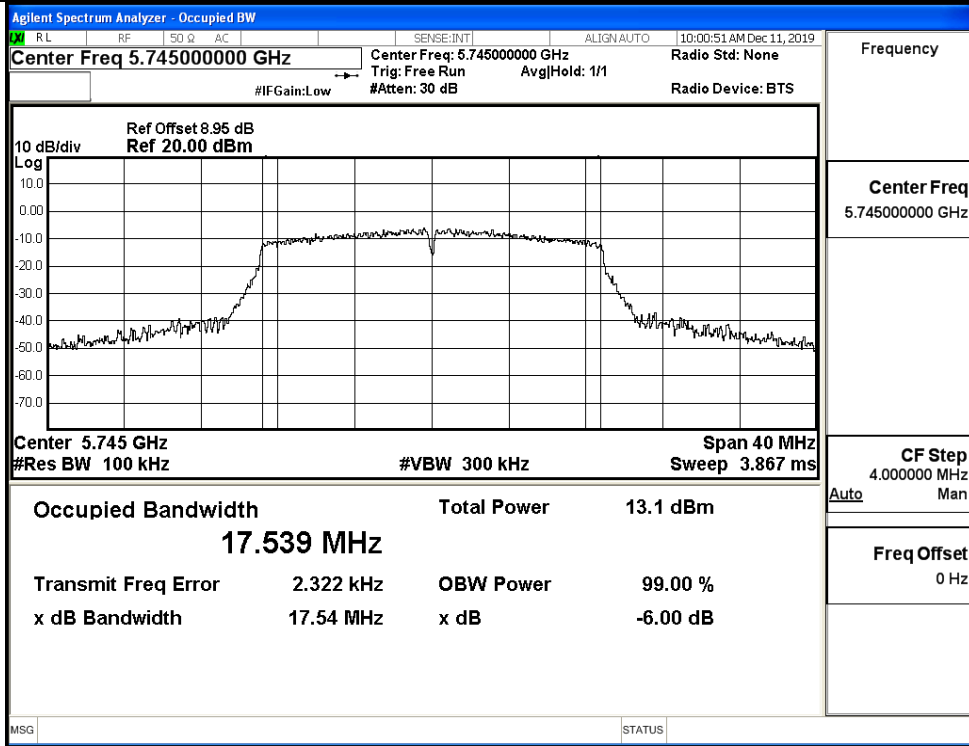
Ref Offset 8.95 dB
Ref 20.00 dBm

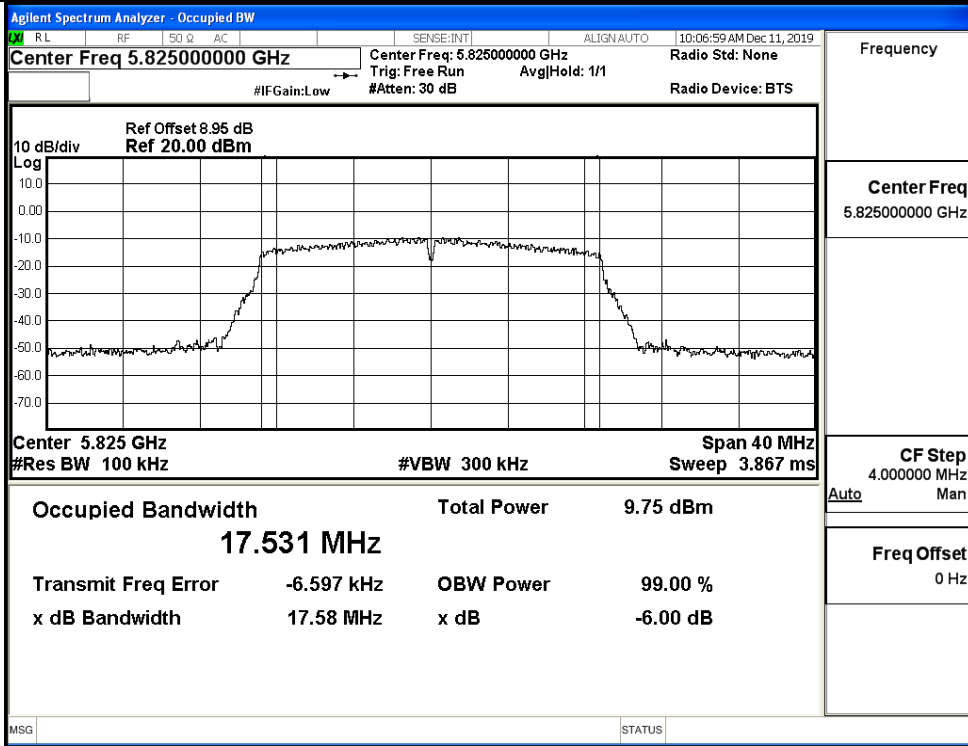
Center 5.795 GHz Span 80 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 7.667 ms

Occupied Bandwidth	Total Power	10.6 dBm
35.856 MHz		
Transmit Freq Error	-52.419 kHz	OBW Power 99.00 %
x dB Bandwidth	35.08 MHz	x dB -6.00 dB

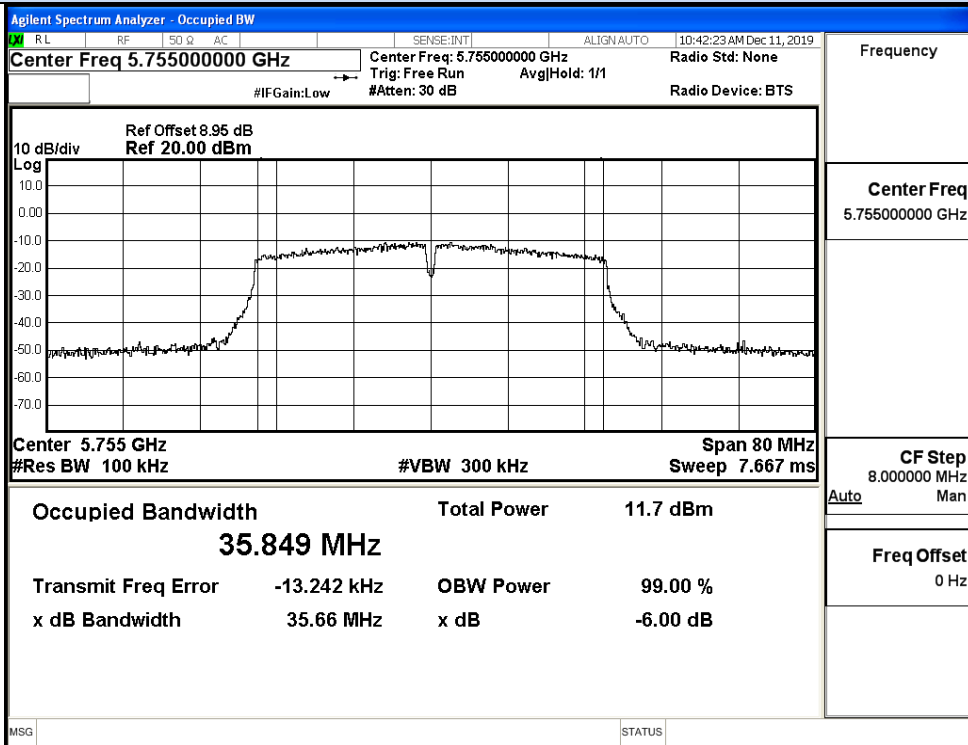
Frequency: 5.795000000 GHz
CF Step: 8.000000 MHz
Auto Man
Freq Offset: 0 Hz

IEEE 802.11n40 / Channel 159 / 5795MHz

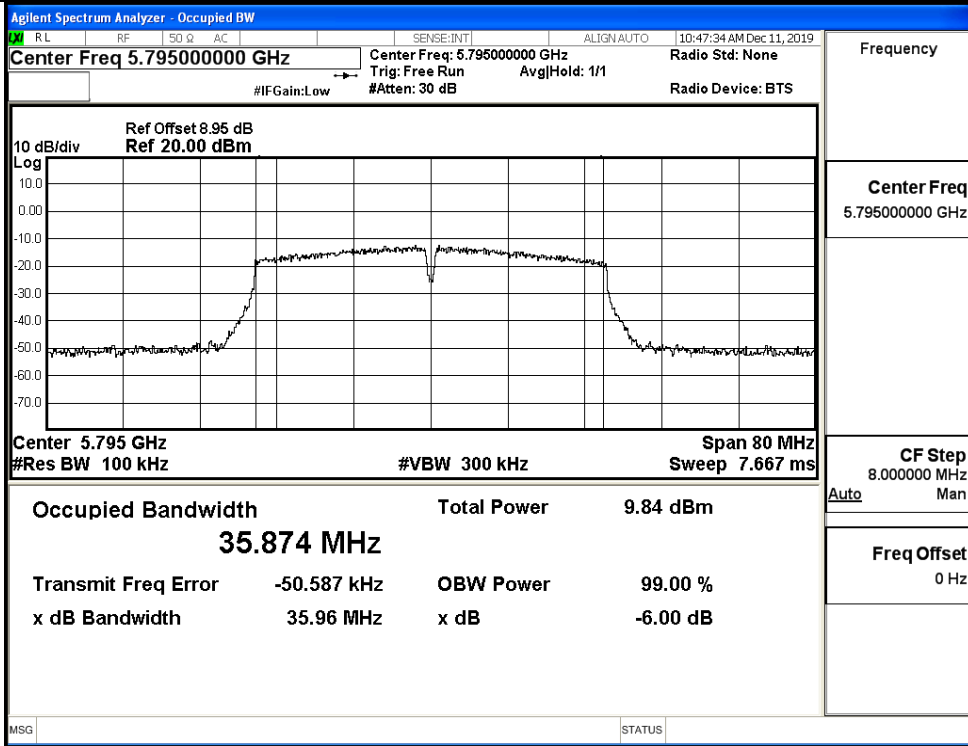




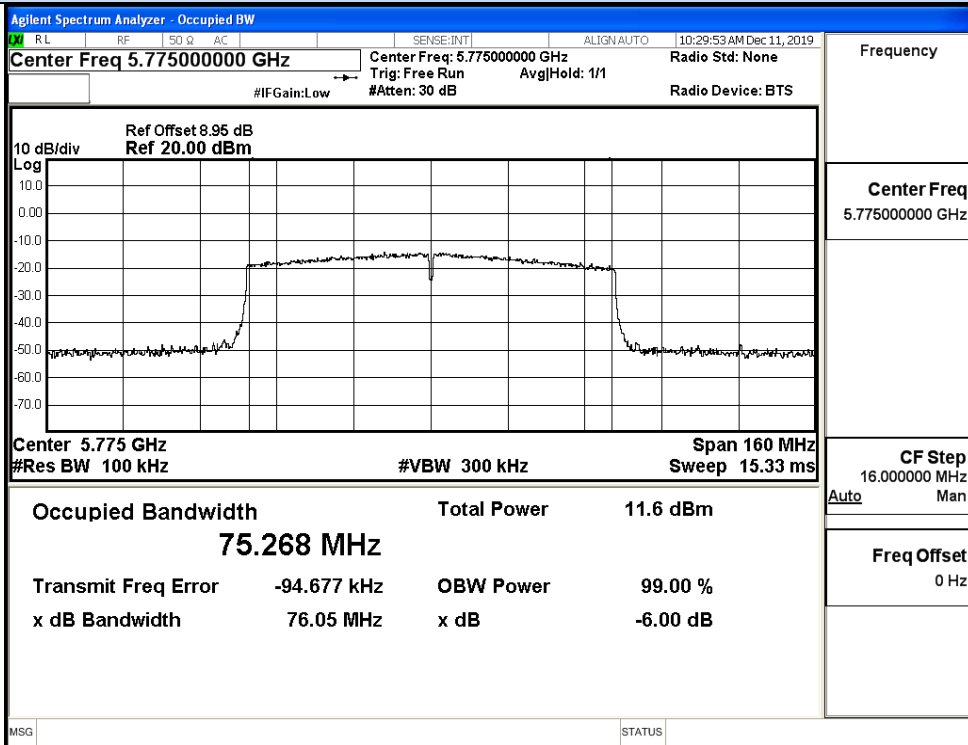
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



IEEE 802.11ac80 / Channel 155 / 5775MHz

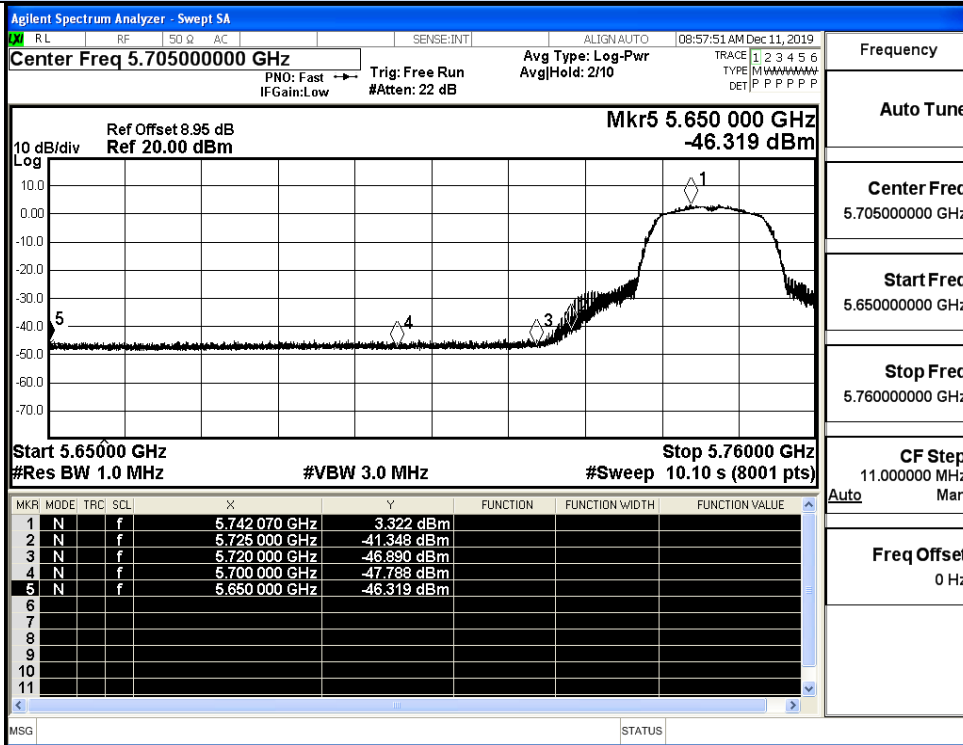
E.5 Undesirable Emissions Measurement

Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11A	149	5650.0	-46.32	2.00	-44.32	Peak	-27.0	Pass
		5650.0	-59.40	2.00	-57.40	Average	-27.0	Pass
		5700.0	-47.79	2.00	-45.79	Peak	10	Pass
		5700.0	-58.88	2.00	-56.88	Average	10	Pass
		5720.0	-46.89	2.00	-44.89	Peak	15.6	Pass
		5720.0	-58.40	2.00	-56.40	Average	15.6	Pass
		5725.0	-41.35	2.00	-39.35	Peak	27.0	Pass
	5725.0	-56.23	2.00	-54.23	Average	27.0	Pass	
	165	5850.0	-48.31	2.00	-46.31	Peak	27.0	Pass
		5850.0	-59.34	2.00	-57.34	Average	27.0	Pass
		5855.0	-47.27	2.00	-45.27	Peak	15.6	Pass
		5855.0	-59.49	2.00	-57.49	Average	15.6	Pass
		5875.0	-47.94	2.00	-45.94	Peak	10	Pass
		5875.0	-59.84	2.00	-57.84	Average	10	Pass
5925.0		-49.12	2.00	-47.12	Peak	-27.0	Pass	
5925.0	-60.28	2.00	-58.28	Average	-27.0	Pass		
11N20 SISO	149	5650.0	-47.27	2.00	-45.27	Peak	-27.0	Pass
		5650.0	-60.05	2.00	-58.05	Average	-27.0	Pass
		5700.0	-47.21	2.00	-45.21	Peak	10	Pass
		5700.0	-58.57	2.00	-56.57	Average	10	Pass
		5720.0	-46.17	2.00	-44.17	Peak	15.6	Pass
		5720.0	-59.40	2.00	-57.40	Average	15.6	Pass
		5725.0	-39.01	2.00	-37.01	Peak	27.0	Pass
	5725.0	-55.30	2.00	-53.30	Average	27.0	Pass	
	165	5850.0	-47.63	2.00	-45.63	Peak	27.0	Pass
		5850.0	-59.27	2.00	-57.27	Average	27.0	Pass
		5855.0	-47.35	2.00	-45.35	Peak	15.6	Pass
		5855.0	-59.53	2.00	-57.53	Average	15.6	Pass
		5875.0	-48.59	2.00	-46.59	Peak	10	Pass
		5875.0	-59.77	2.00	-57.77	Average	10	Pass
5925.0		-48.57	2.00	-46.57	Peak	-27.0	Pass	
5925.0	-60.24	2.00	-58.24	Average	-27.0	Pass		

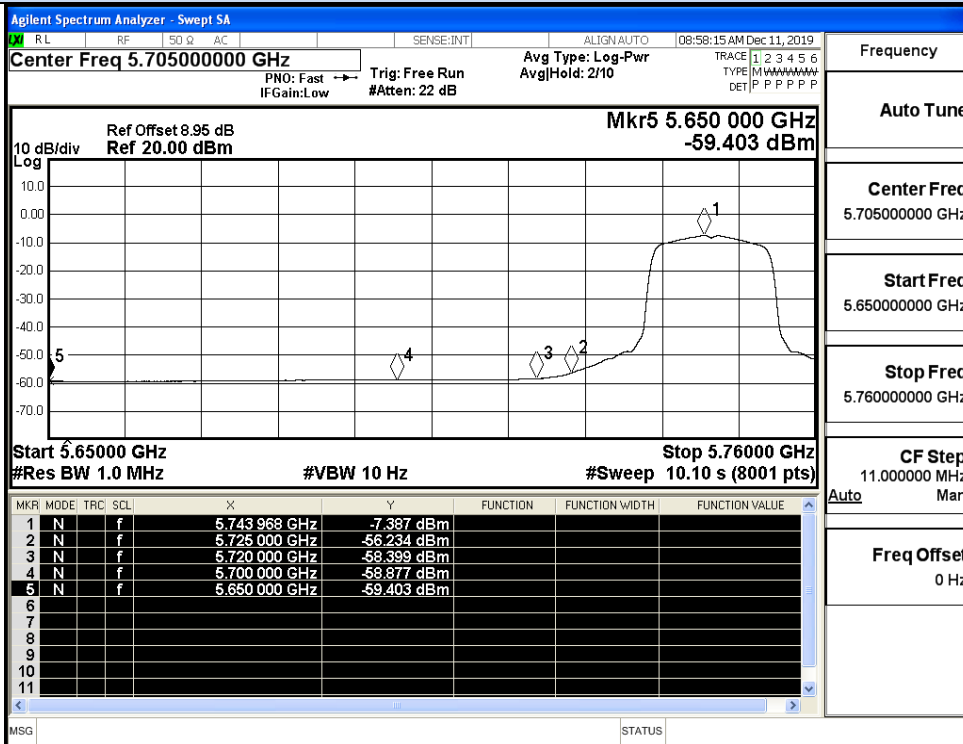
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11N40 SISO	151	5650.0	-47.73	2.00	-45.73	Peak	-27.0	Pass
		5650.0	-60.01	2.00	-58.01	Average	-27.0	Pass
		5700.0	-48.04	2.00	-46.04	Peak	10	Pass
		5700.0	-59.17	2.00	-57.17	Average	10	Pass
		5720.0	-39.03	2.00	-37.03	Peak	15.6	Pass
		5720.0	-54.90	2.00	-52.90	Average	15.6	Pass
		5725.0	-34.34	2.00	-32.34	Peak	27.0	Pass
	5725.0	-52.26	2.00	-50.26	Average	27.0	Pass	
	159	5850.0	-46.62	2.00	-44.62	Peak	27.0	Pass
		5850.0	-59.24	2.00	-57.24	Average	27.0	Pass
		5855.0	-46.89	2.00	-44.89	Peak	15.6	Pass
		5855.0	-59.26	2.00	-57.26	Average	15.6	Pass
		5875.0	-47.32	2.00	-45.32	Peak	10	Pass
		5875.0	-59.55	2.00	-57.55	Average	10	Pass
		5925.0	-48.81	2.00	-46.81	Peak	-27.0	Pass
	5925.0	-60.06	2.00	-58.06	Average	-27.0	Pass	
	11AC20	149	5650.0	-47.66	2.00	-45.66	Peak	-27.0
5650.0			-60.48	2.00	-58.48	Average	-27.0	Pass

SISO		5700.0	-47.66	2.00	-45.66	Peak	10	Pass	
		5700.0	-59.63	2.00	-57.63	Average	10	Pass	
		5720.0	-46.87	2.00	-44.87	Peak	15.6	Pass	
		5720.0	-60.07	2.00	-58.07	Average	15.6	Pass	
		5725.0	-43.39	2.00	-41.39	Peak	27.0	Pass	
		5725.0	-58.28	2.00	-56.28	Average	27.0	Pass	
	165		5850.0	-47.26	2.00	-45.26	Peak	27.0	Pass
			5850.0	-59.29	2.00	-57.29	Average	27.0	Pass
			5855.0	-47.14	2.00	-45.14	Peak	15.6	Pass
			5855.0	-59.55	2.00	-57.55	Average	15.6	Pass
			5875.0	-47.30	2.00	-45.30	Peak	10	Pass
			5875.0	-59.79	2.00	-57.79	Average	10	Pass
			5925.0	-49.31	2.00	-47.31	Peak	-27.0	Pass
			5925.0	-60.26	2.00	-58.26	Average	-27.0	Pass
11AC4 0 SISO	151	5650.0	-47.69	2.00	-45.69	Peak	-27.0	Pass	
		5650.0	-60.31	2.00	-58.31	Average	-27.0	Pass	
		5700.0	-47.66	2.00	-45.66	Peak	10	Pass	
		5700.0	-59.87	2.00	-57.87	Average	10	Pass	
		5720.0	-45.21	2.00	-43.21	Peak	15.6	Pass	
		5720.0	-58.22	2.00	-56.22	Average	15.6	Pass	
		5725.0	-42.45	2.00	-40.45	Peak	27.0	Pass	
		5725.0	-56.35	2.00	-54.35	Average	27.0	Pass	
	159		5850.0	-46.81	2.00	-44.81	Peak	27.0	Pass
			5850.0	-59.52	2.00	-57.52	Average	27.0	Pass
			5855.0	-47.92	2.00	-45.92	Peak	15.6	Pass
			5855.0	-59.54	2.00	-57.54	Average	15.6	Pass
			5875.0	-48.71	2.00	-46.71	Peak	10	Pass
			5875.0	-59.75	2.00	-57.75	Average	10	Pass
11AC8 0 SISO	155	5925.0	-48.72	2.00	-46.72	Peak	-27.0	Pass	
		5925.0	-60.06	2.00	-58.06	Average	-27.0	Pass	
		5725.0	-46.25	2.00	-44.25	Peak	27.0	Pass	
		5720.0	-47.20	2.00	-45.20	Peak	15.6	Pass	
		5700.0	-47.60	2.00	-45.60	Peak	10	Pass	
		5650.0	-48.66	2.00	-46.66	Peak	-27.0	Pass	
		5725.0	-57.97	2.00	-55.97	Average	27.0	Pass	
		5720.0	-58.26	2.00	-56.26	Average	15.6	Pass	
		5700.0	-59.02	2.00	-57.02	Average	10	Pass	
		5650.0	-59.62	2.00	-57.62	Average	-27.0	Pass	
		5850.0	-46.25	2.00	-44.25	Peak	27.0	Pass	
		5855.0	-47.20	2.00	-45.20	Peak	15.6	Pass	
		5875.0	-47.60	2.00	-45.60	Peak	10	Pass	
		5925.0	-48.66	2.00	-46.66	Peak	-27.0	Pass	
5850.0	-57.97	2.00	-55.97	Average	27.0	Pass			
5855.0	-58.26	2.00	-56.26	Average	15.6	Pass			
5875.0	-59.02	2.00	-57.02	Average	10	Pass			
5925.0	-59.62	2.00	-57.62	Average	-27.0	Pass			

Undesirable Emissions Measurement

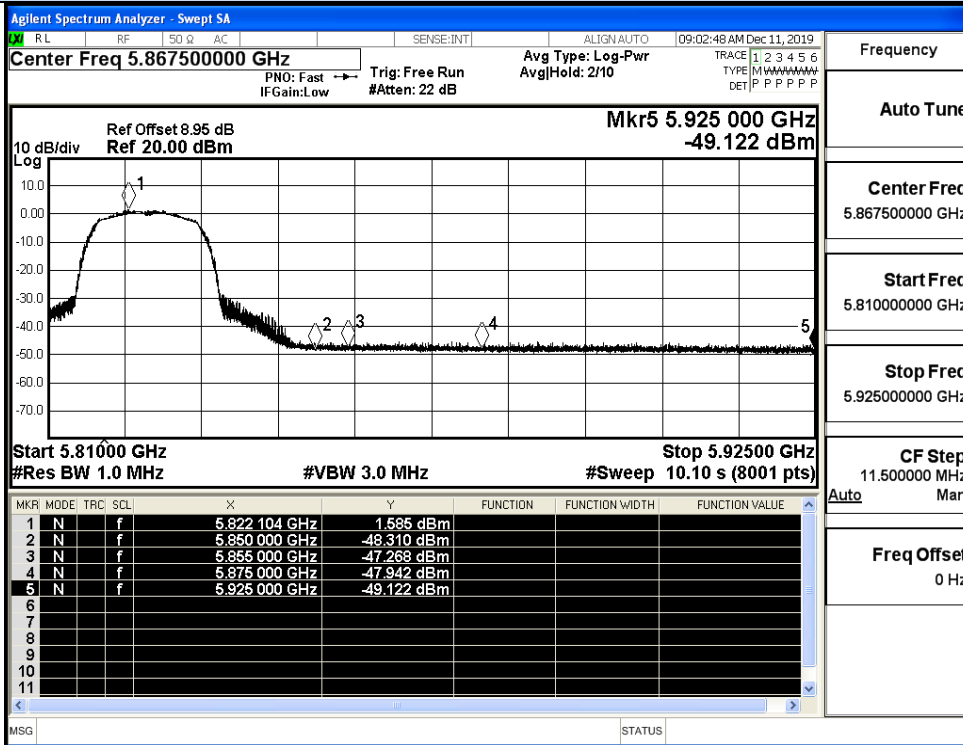


IEEE 802.11a / Channel 149 / 5745MHz / Peak

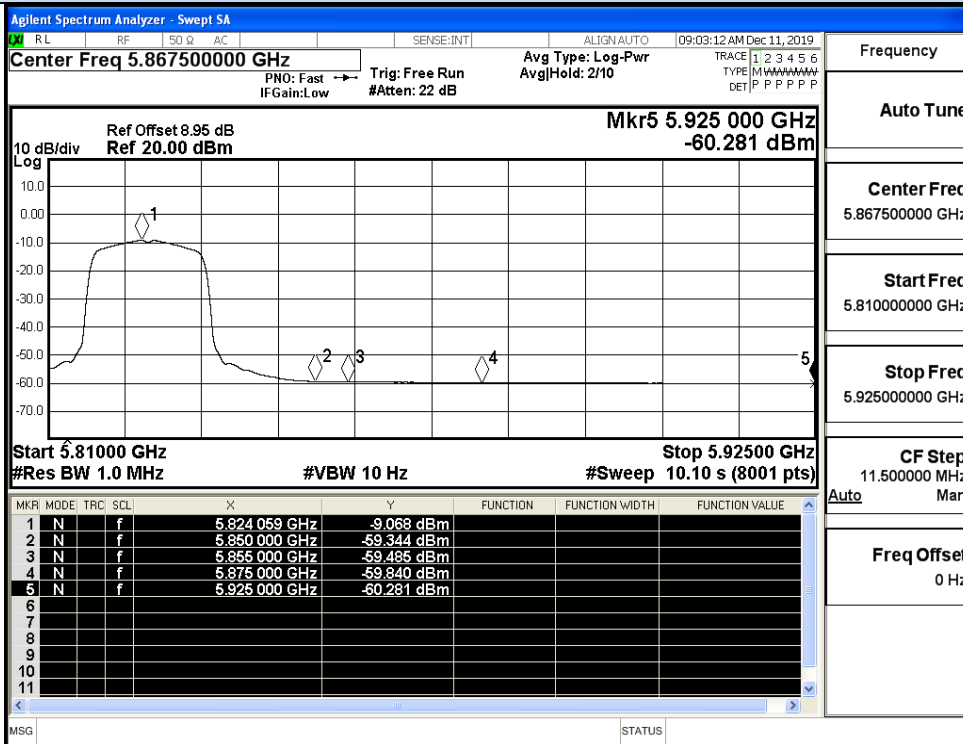


IEEE 802.11a / Channel 148 / 5745MHz / Average

Undesirable Emissions Measurement

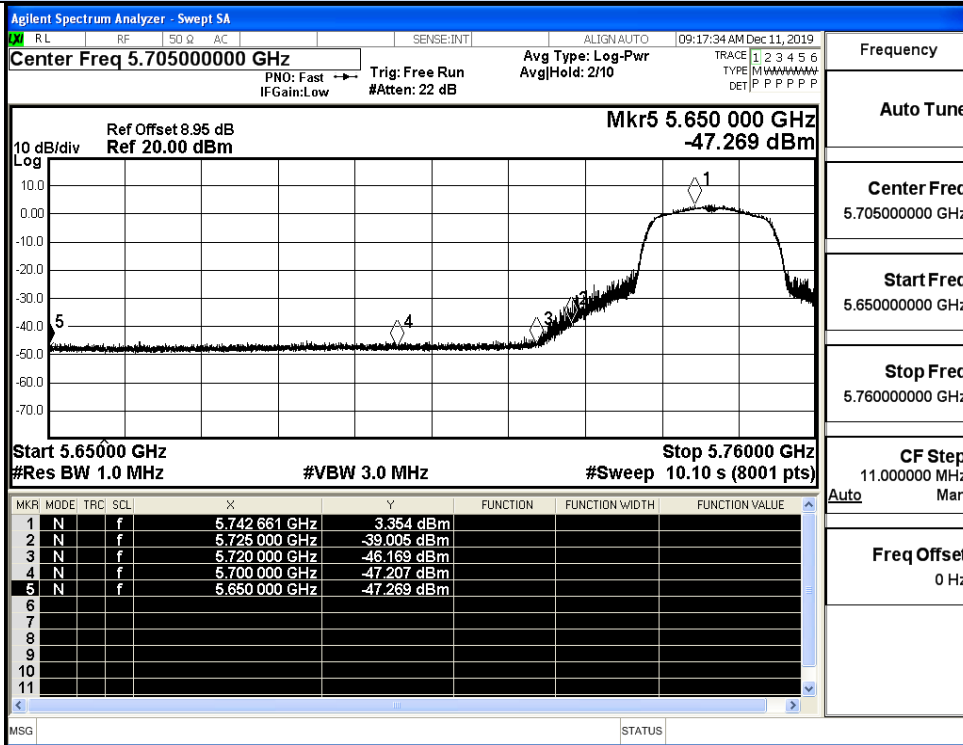


IEEE 802.11a / Channel 165 / 5825MHz / Peak

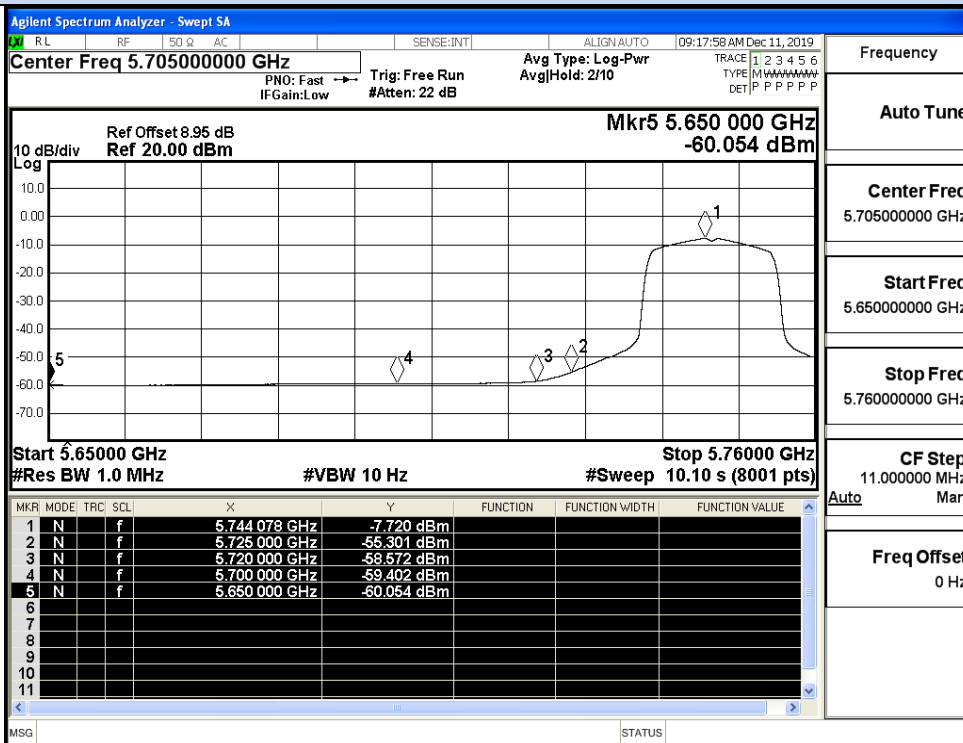


IEEE 802.11a / Channel 165 / 5825MHz / Average

Undesirable Emissions Measurement

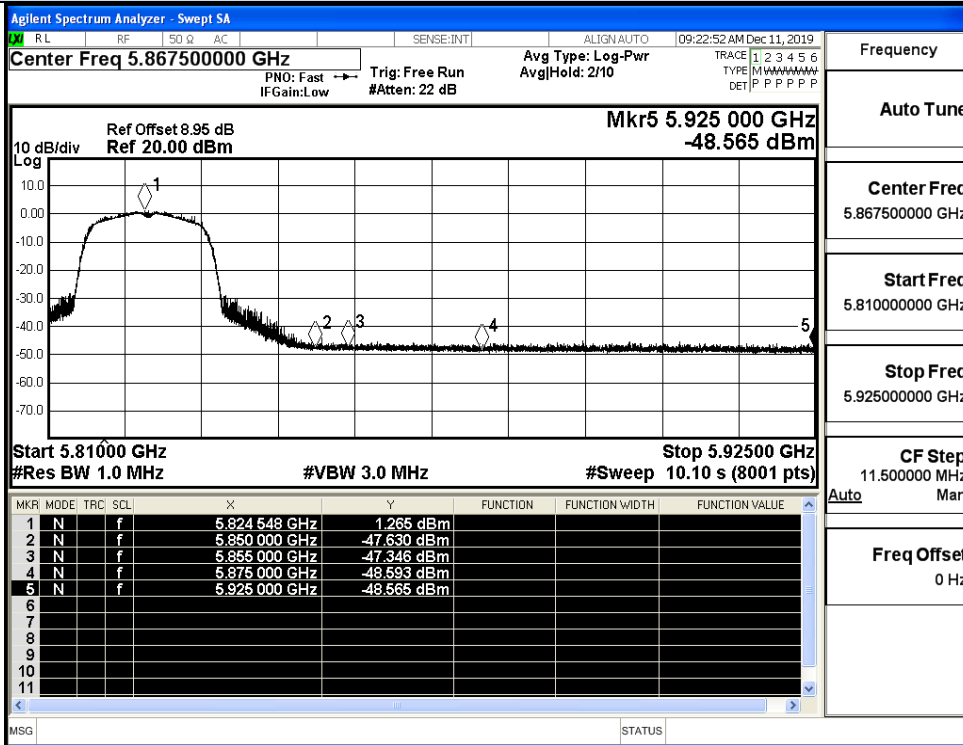


IEEE 802.11n20 / Channel 149 / 5745MHz / Peak

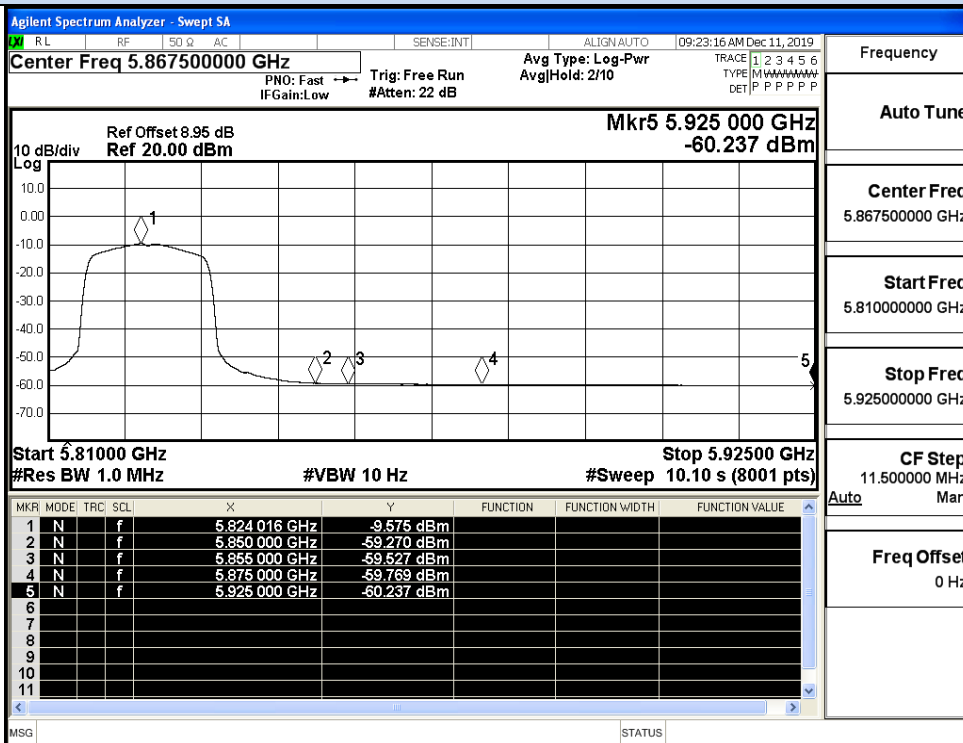


IEEE 802.11n20 / Channel 149 / 5745MHz / Average

Undesirable Emissions Measurement

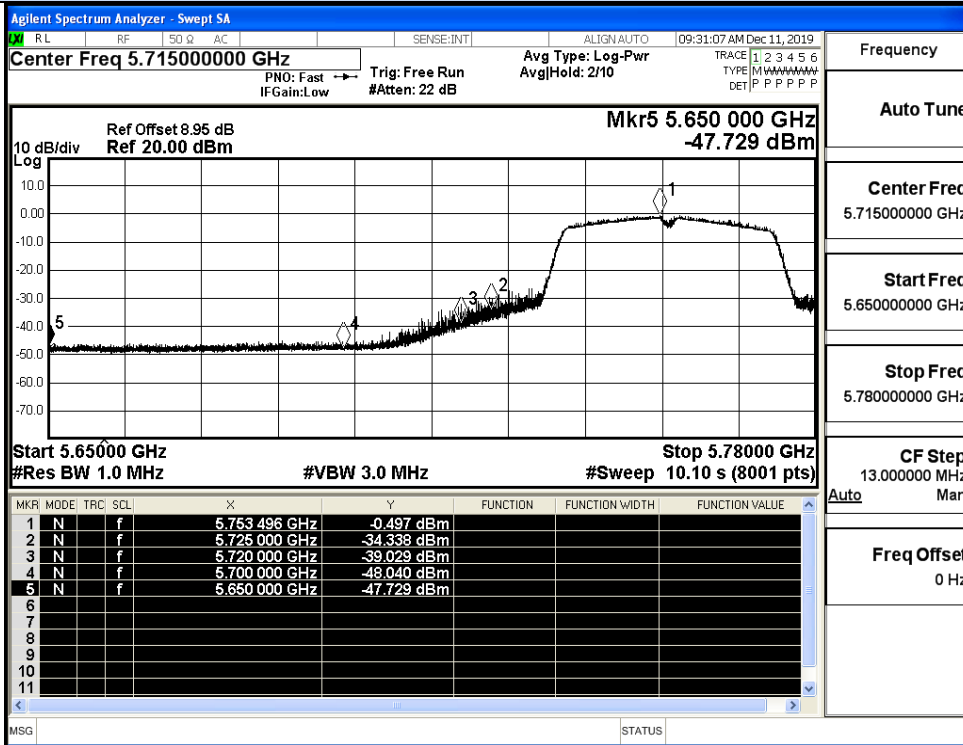


IEEE 802.11n20 / Channel 165 / 5825MHz / Peak

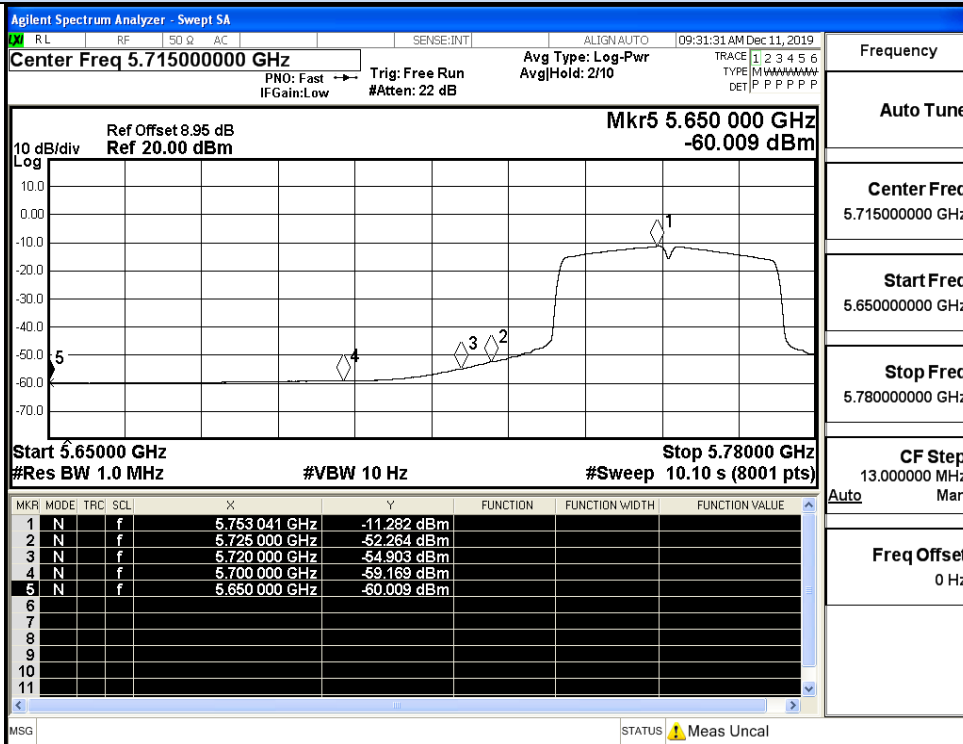


IEEE 802.11n20 / Channel 165 / 5825MHz / Average

Undesirable Emissions Measurement

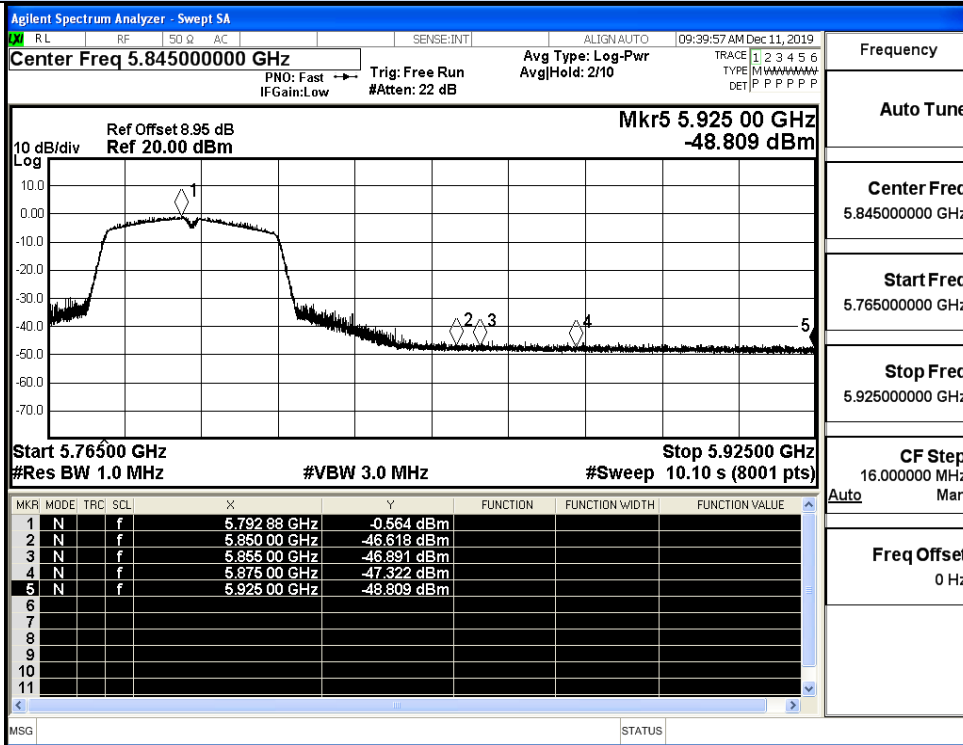


IEEE 802.11n40 / Channel 151 / 5755MHz / Peak

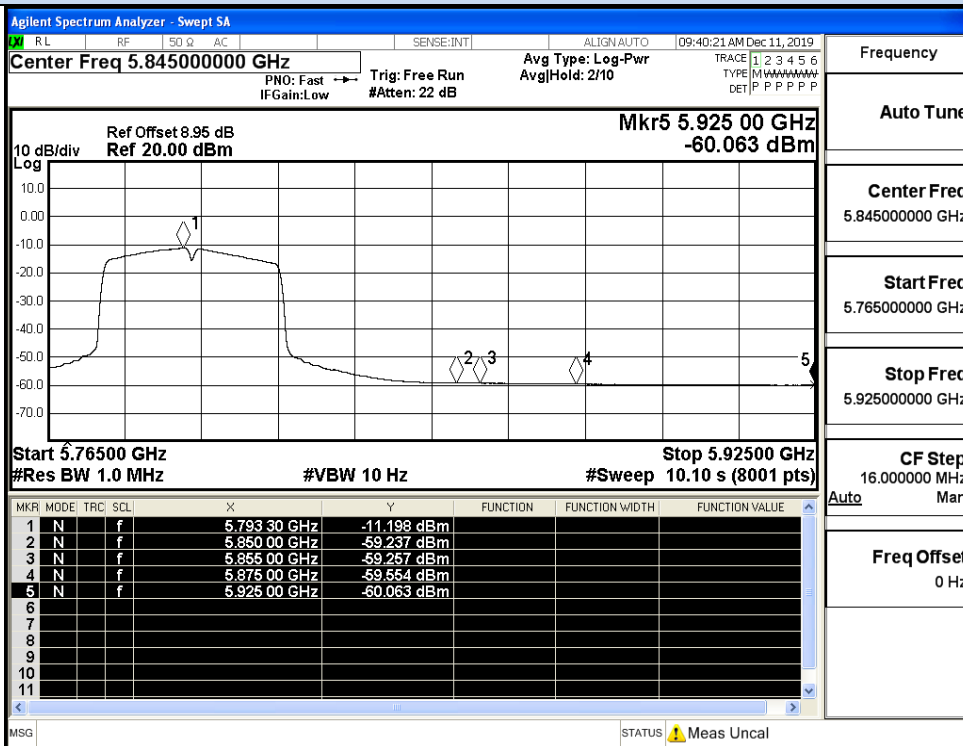


IEEE 802.11n40 / Channel 151 / 5755MHz / Average

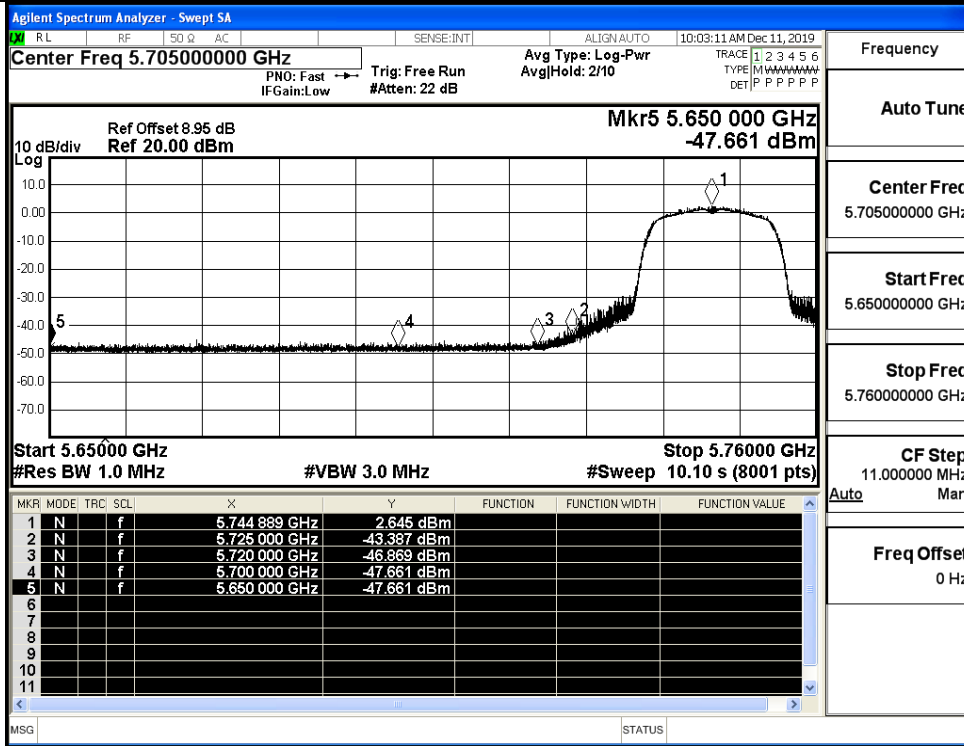
Undesirable Emissions Measurement



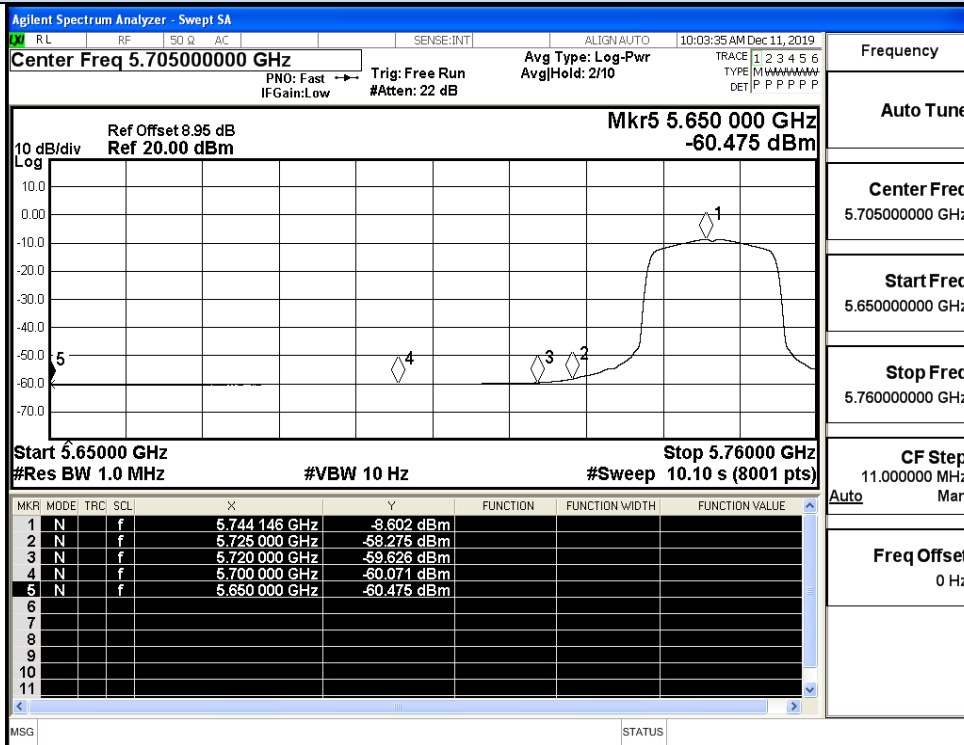
IEEE 802.11n40 / Channel 159 / 5795MHz / Peak



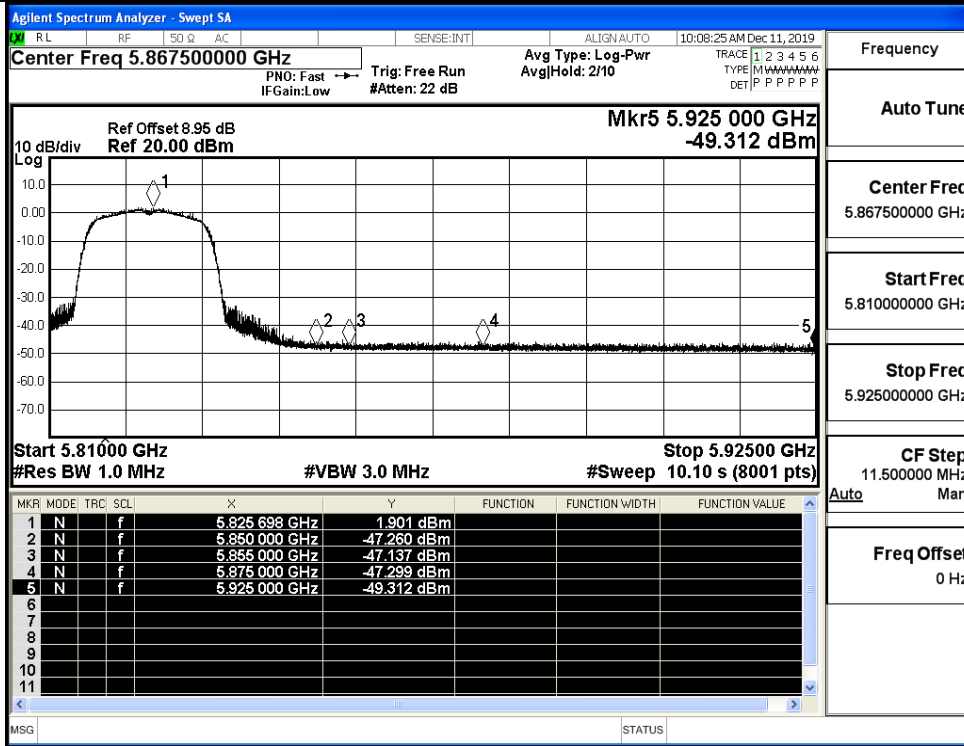
IEEE 802.11n40 / Channel 159 / 5795MHz / Average



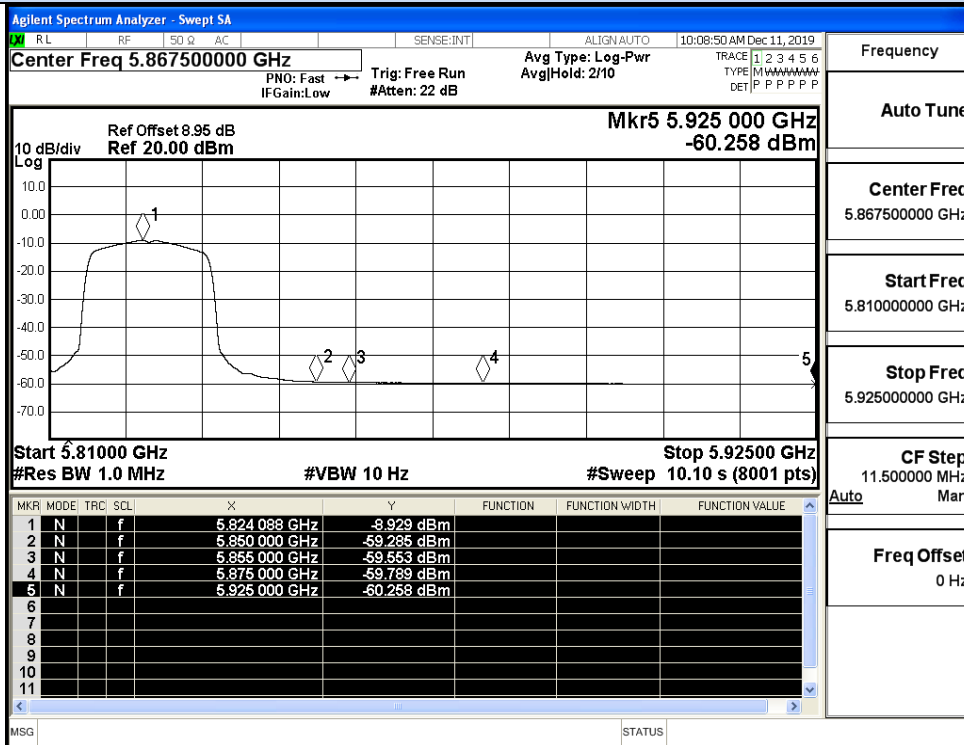
IEEE 802.11ac20 / Channel 149 / 5745MHz / Peak



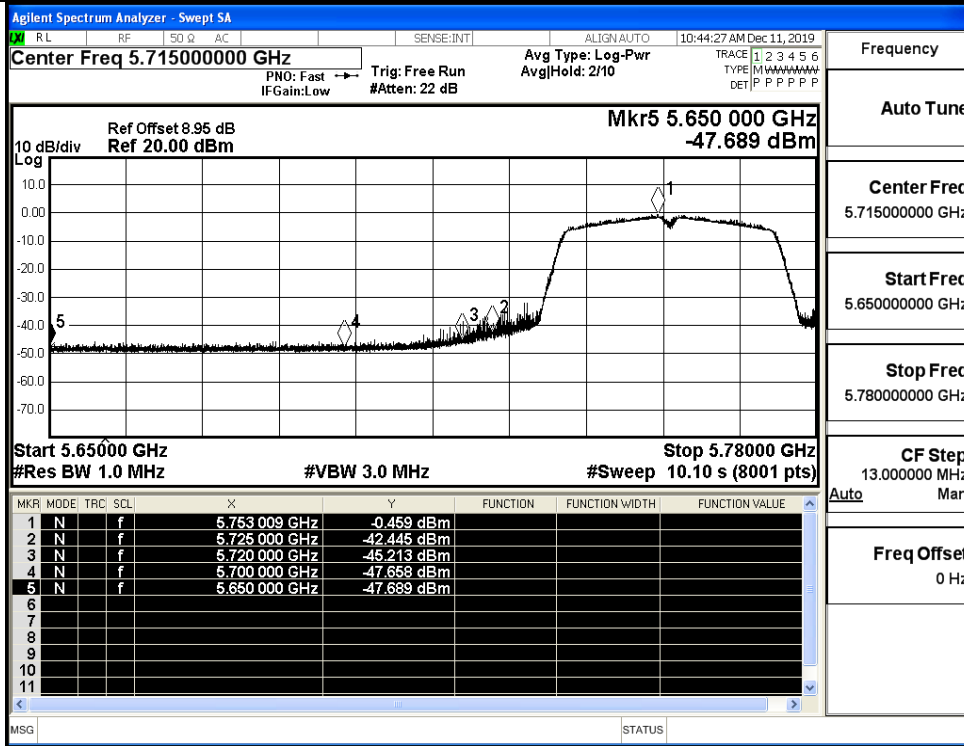
IEEE 802.11ac20 / Channel 149 / 5745MHz / Average



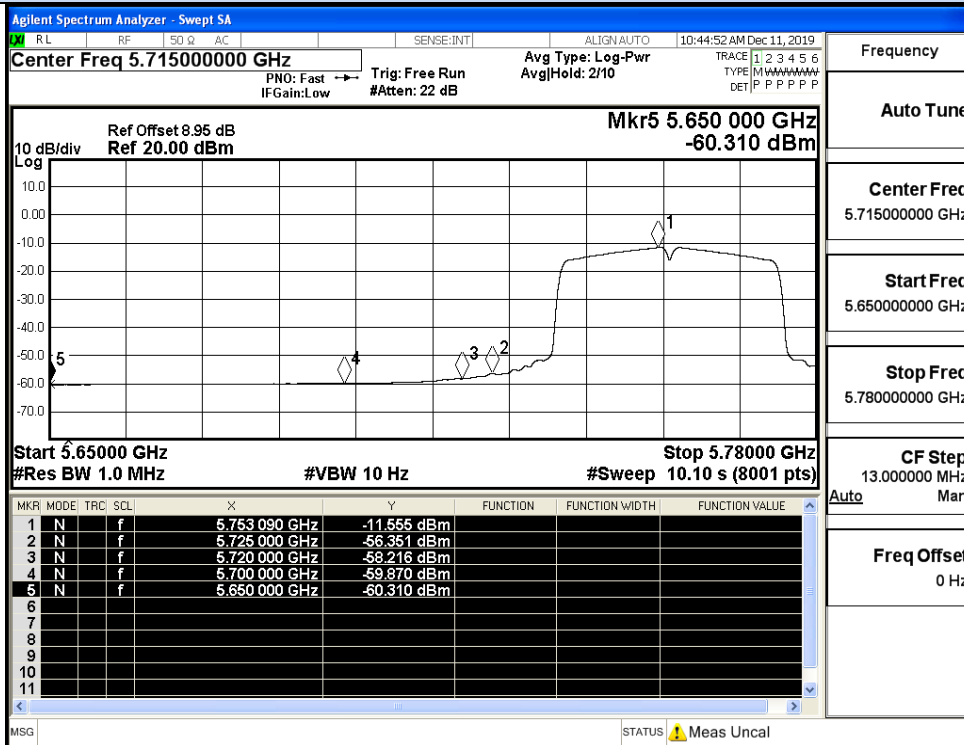
IEEE 802.11ac20 / Channel 165 / 5825MHz / Peak



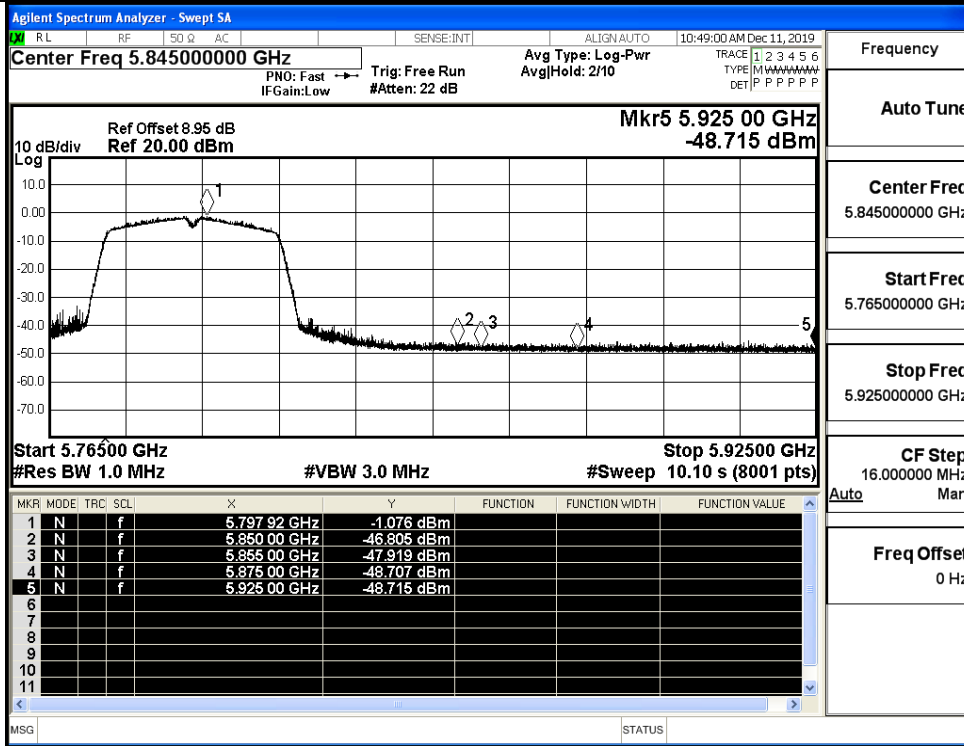
IEEE 802.11ac20 / Channel 165 / 5825MHz / Average



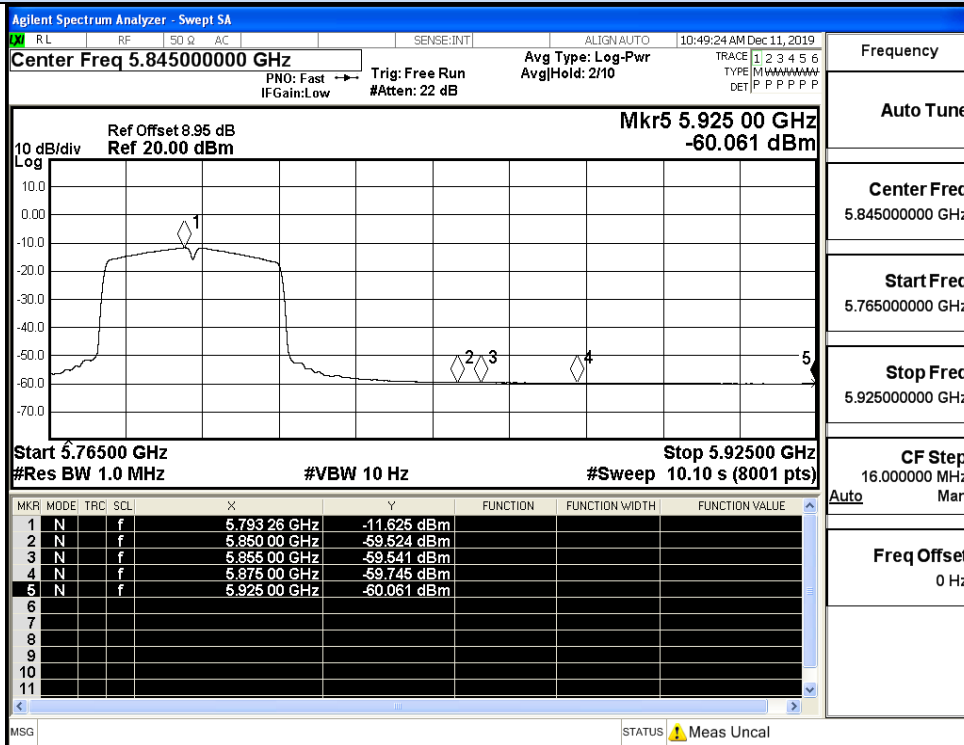
IEEE 802.11ac40 / Channel 151 / 5755MHz / Peak



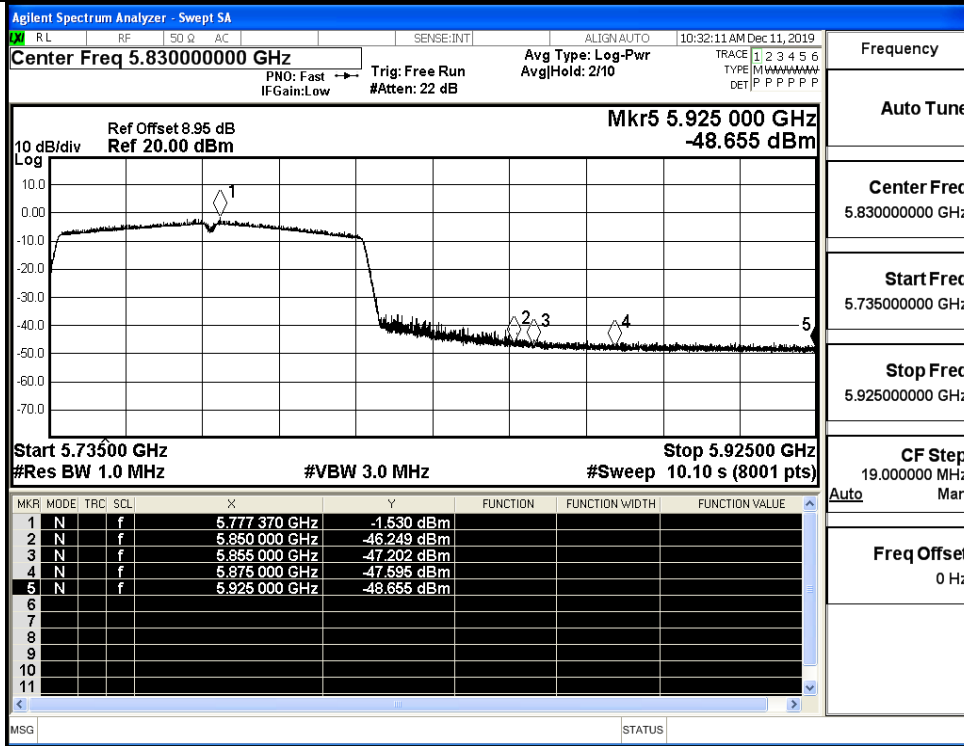
IEEE 802.11ac40 / Channel 151 / 5755MHz / Average



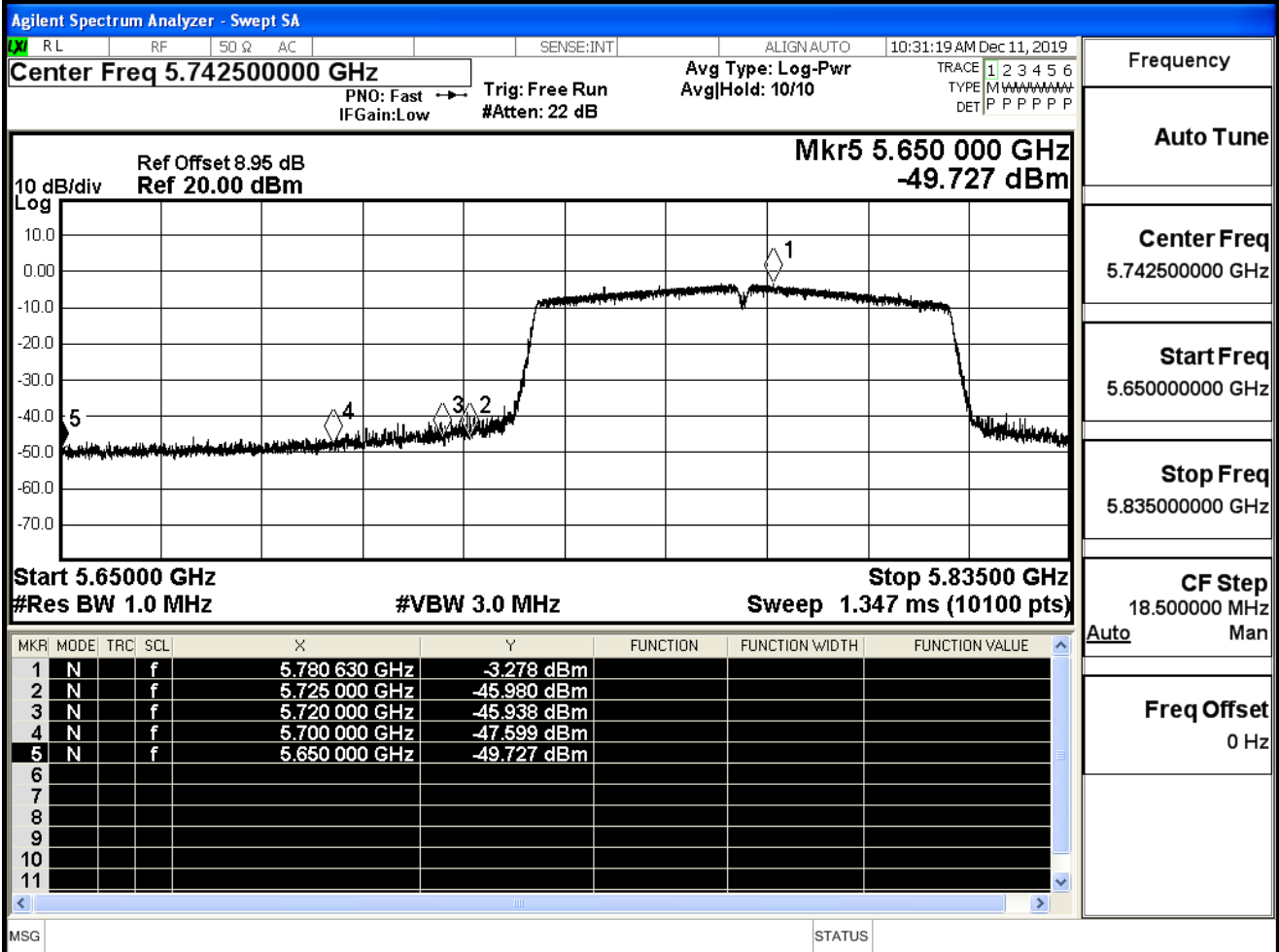
IEEE 802.11ac40 / Channel 159 / 5795MHz / Peak



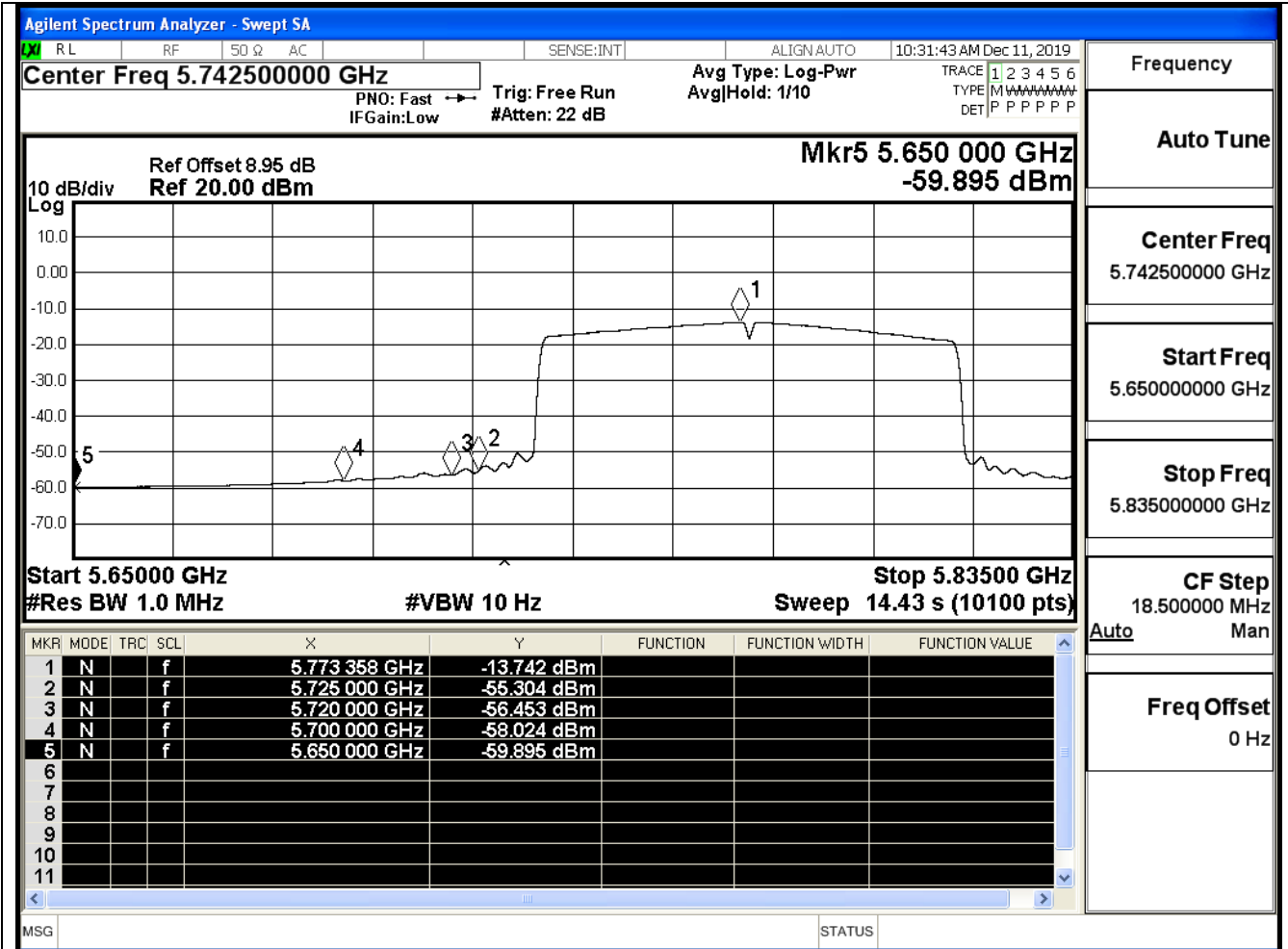
IEEE 802.11ac40 / Channel 159 / 5795MHz / Average



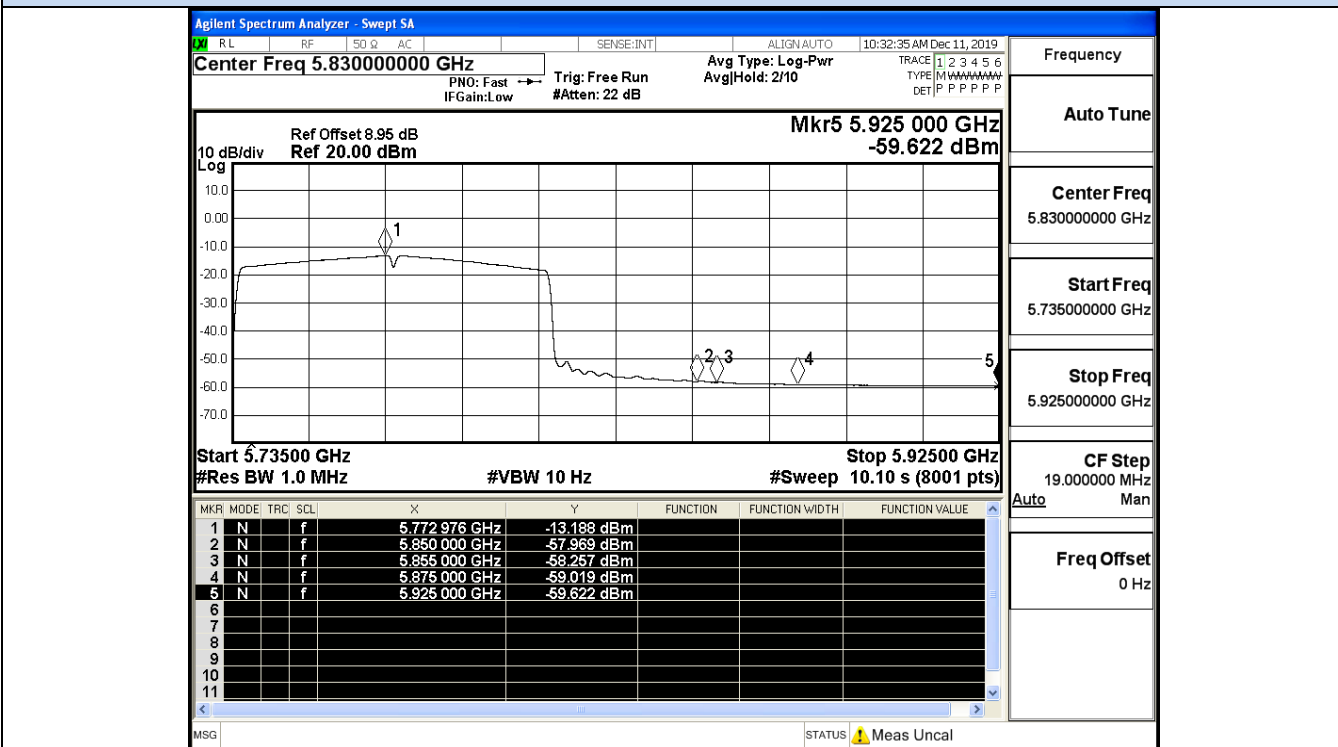
IEEE 802.11ac80 / Channel 155 / 5775MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Average



IEEE 802.11ac80 / Channel 155/ 5775MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Average