

Appendix C

RF Test Data for 5.8G WLAN (Conducted Measurement)

Product Name: KE2 Edge Manager Plus
 Trade Mark: KE2, KE2 Connect, KE2 Therm
 Test Model: KE2EM-Plus

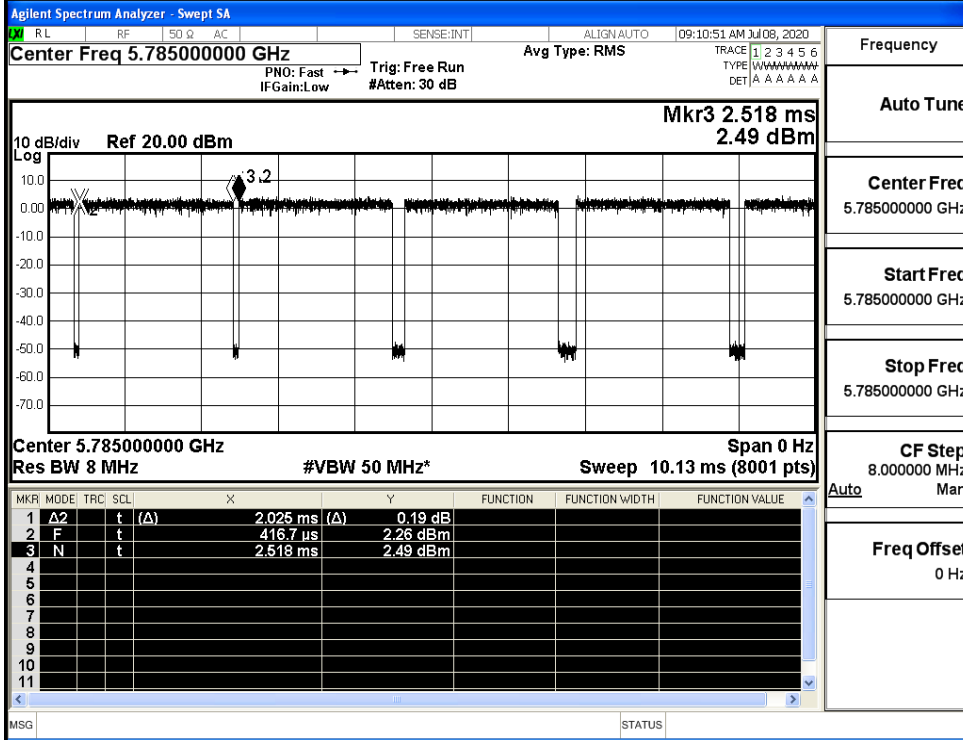
Environmental Conditions

Temperature:	23.1 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Qu Xin
Supervised by:	Li Huan

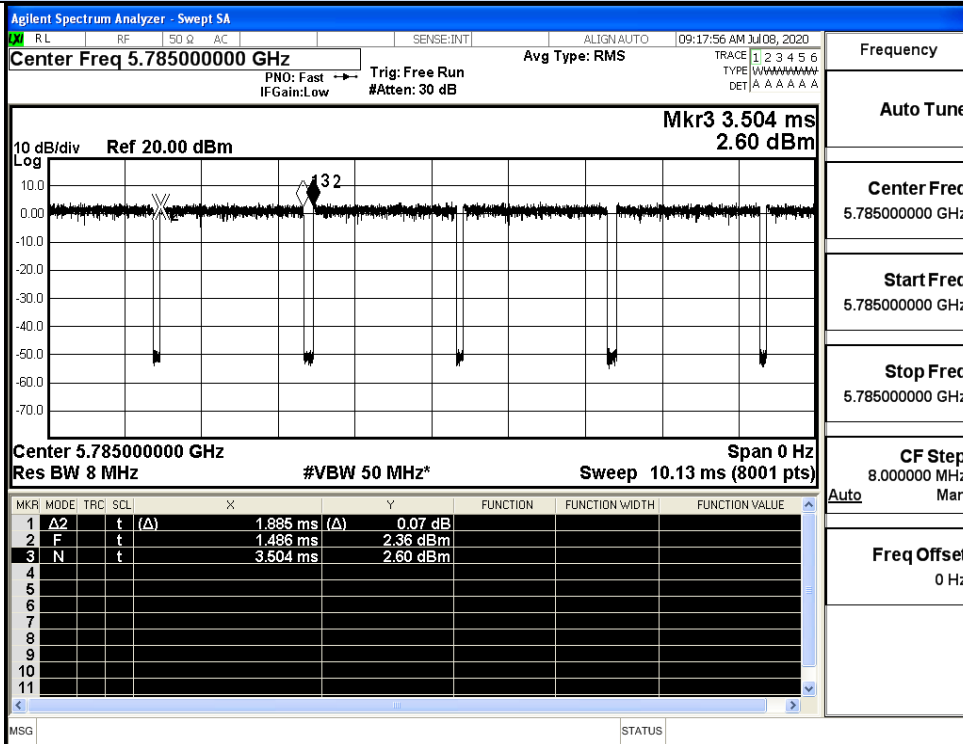
C.1 Duty Cycle

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/T Minimum VBW(KHz)
11A	5785	96.38	0.16	0.49
11N20 SISO	5785	93.41	0.30	0.53
11N40 SISO	5755	92.41	0.34	1.08
11AC20 SISO	5785	96.4	0.16	0.53
11AC40 SISO	5755	92.13	0.36	1.07
11AC80 SISO	5775	47.37	3.24	14.62

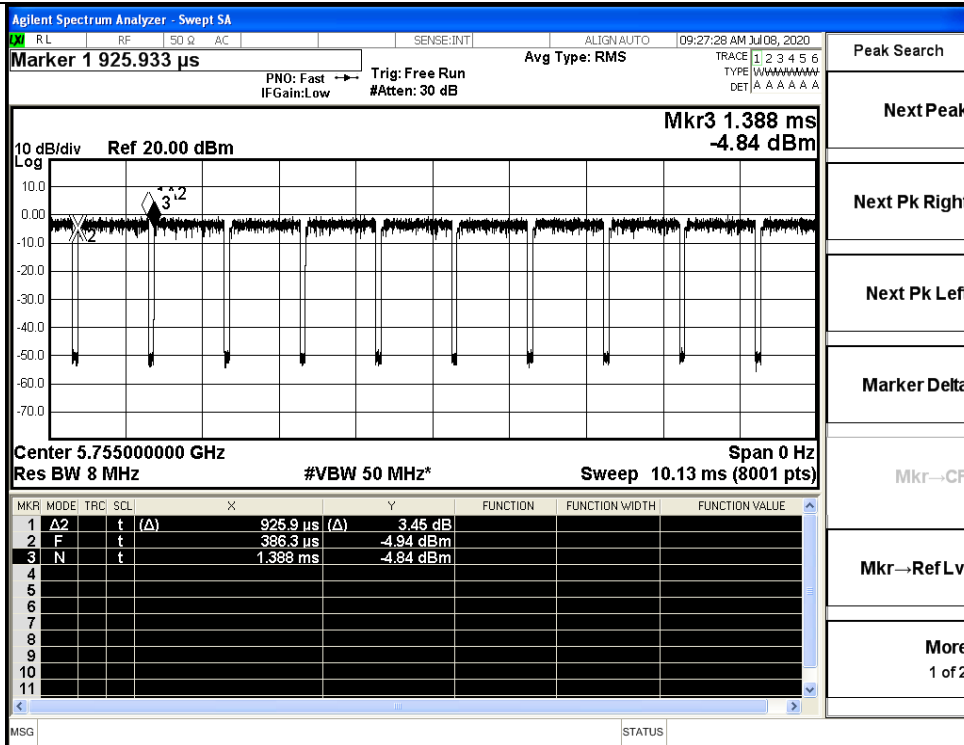
On Time and Duty Cycle



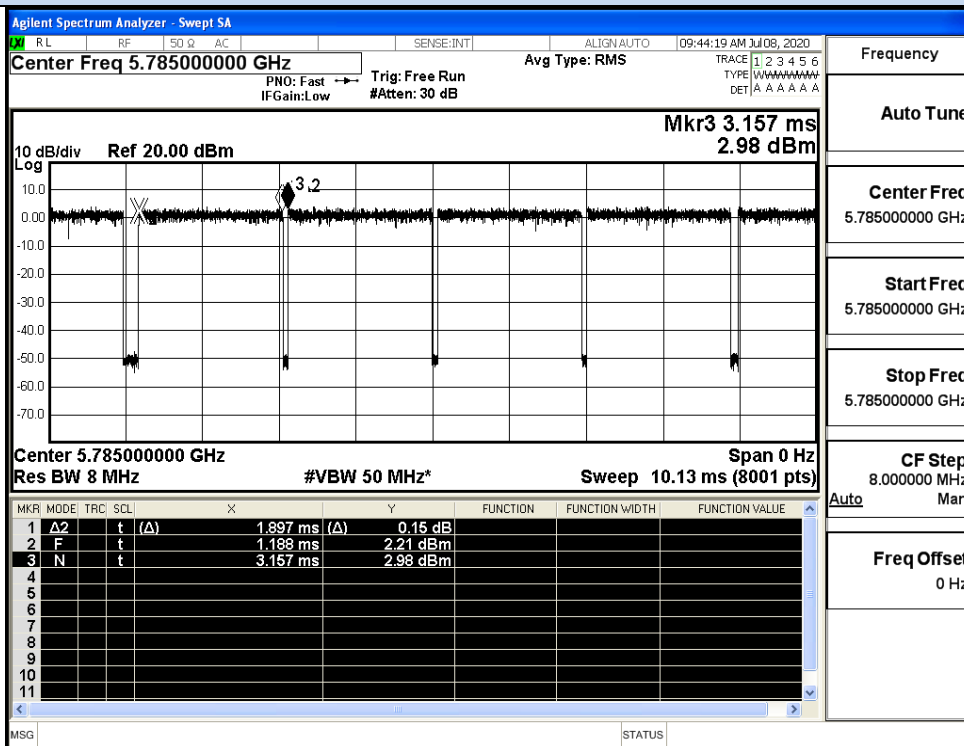
IEEE 802.11a



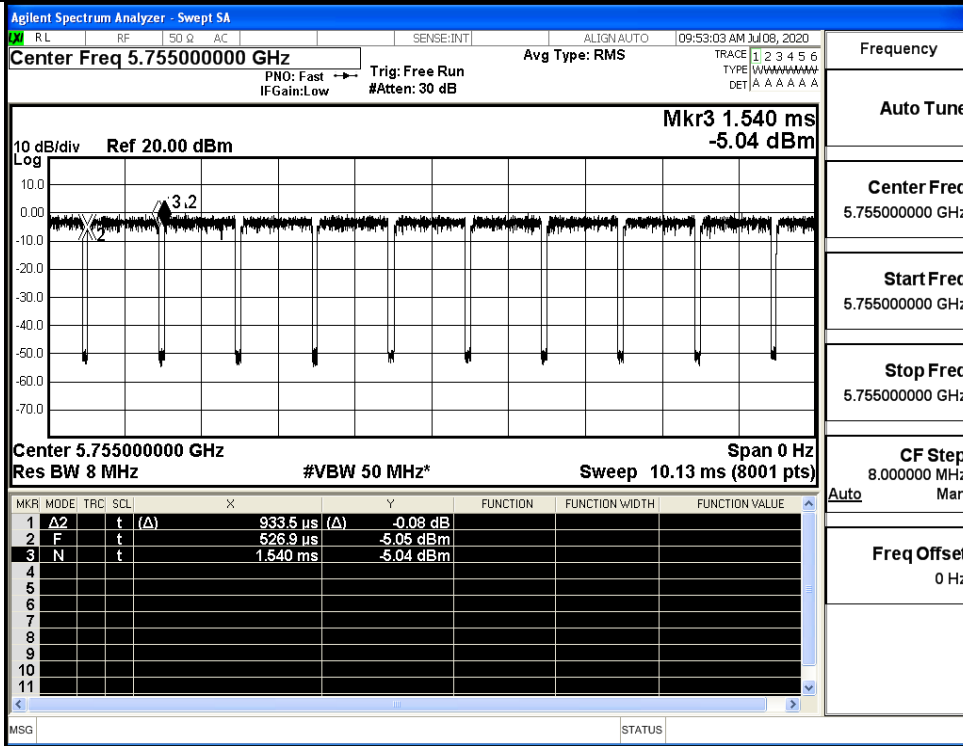
IEEE 802.11n HT20



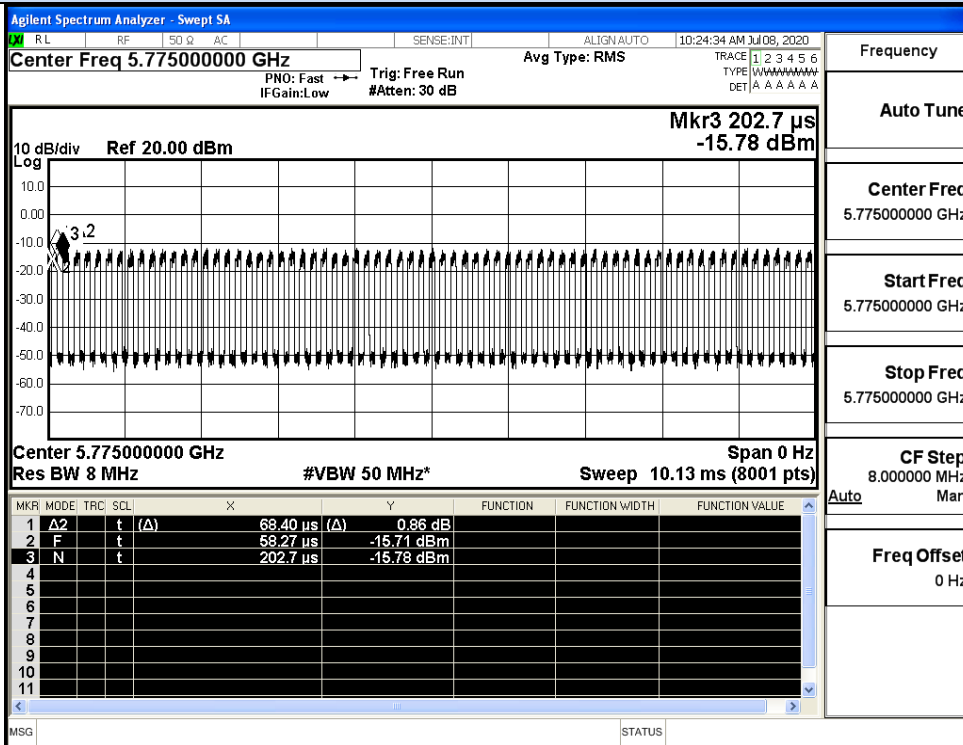
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11AC40



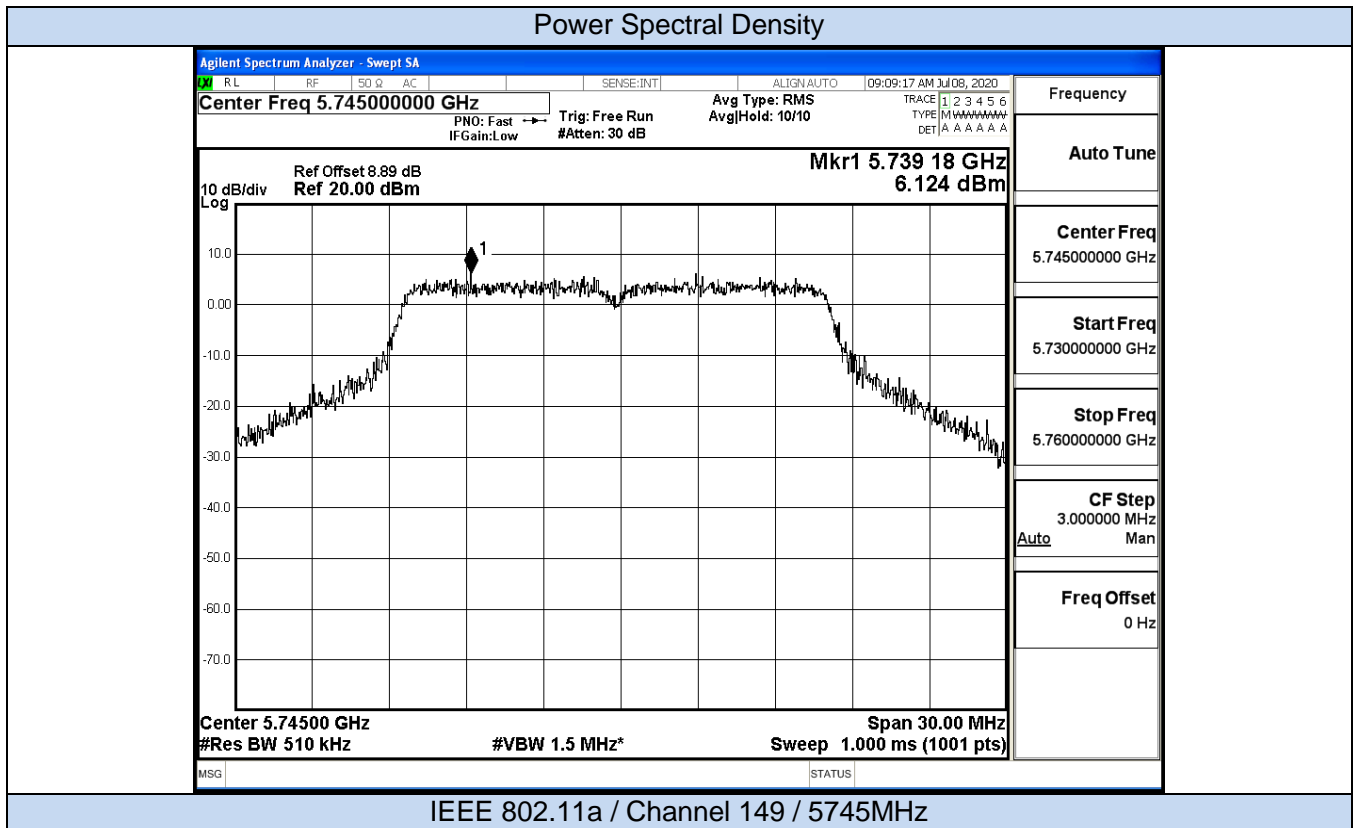
IEEE 802.11AC80

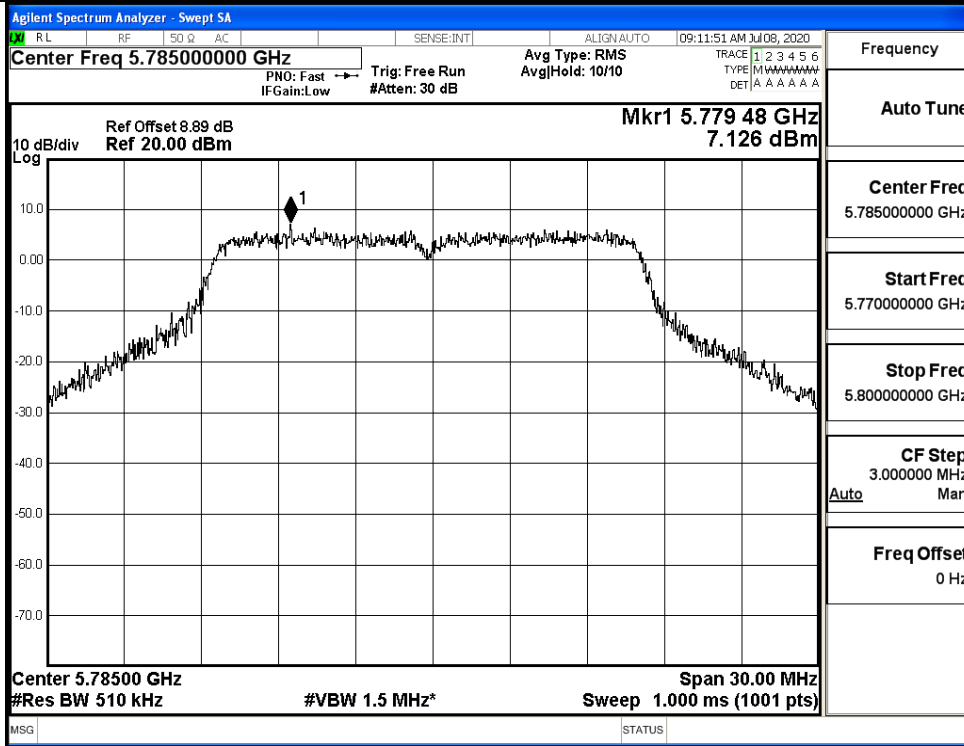
C.2 Maximum Conduct Output Power

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	149	5745	18.21	0.43	18.64	30	Pass
	157	5785	18.97	0.16	19.13		Pass
	165	5825	19.57	0.35	19.92		Pass
11N20 SISO	149	5745	18.15	0.34	18.49	30	Pass
	157	5785	18.97	0.30	19.27		Pass
	165	5825	19.59	0.27	19.86		Pass
11N40 SISO	151	5755	17.93	0.34	18.27	30	Pass
	159	5795	18.96	0.33	19.29		Pass
11AC20 SISO	149	5745	17.93	0.17	18.10	30	Pass
	157	5785	18.32	0.27	18.59		Pass
	165	5825	18.91	0.17	19.08		Pass
11AC40 SISO	151	5755	17.83	0.32	18.15	30	Pass
	159	5795	18.38	0.31	18.69		Pass
11AC80 SISO	155	5775	17.8	3.24	21.04	30	Pass

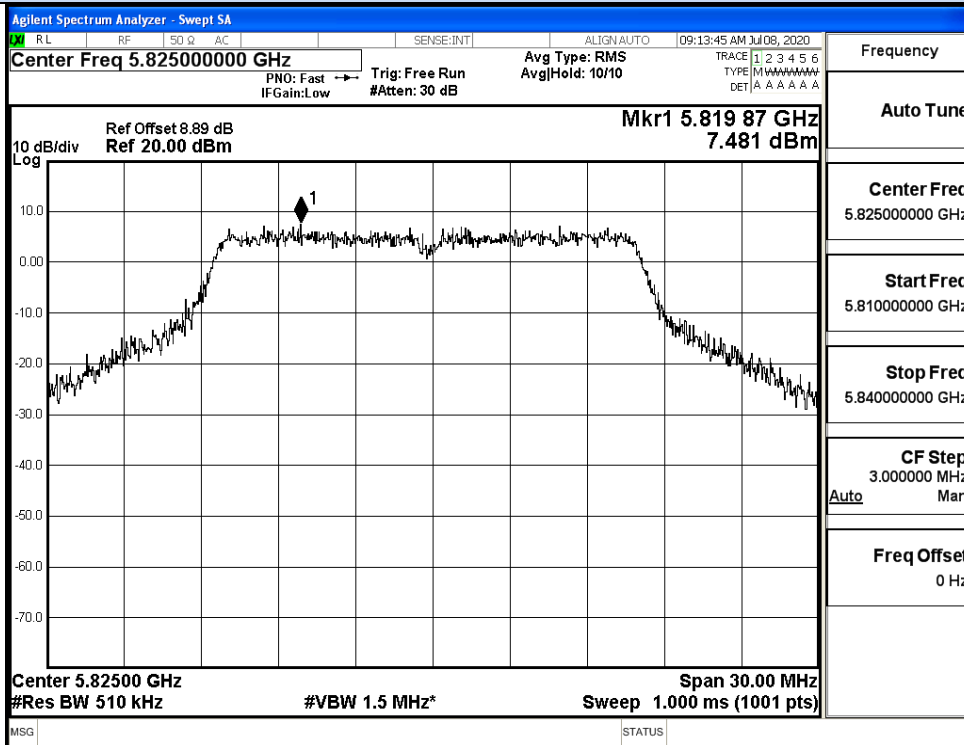
C.3 Power Spectral Density

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/510KHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
11A	149	5745	6.12	0.43	6.55	30	Pass
	157	5785	7.13	0.16	7.29		Pass
	165	5825	7.48	0.35	7.83		Pass
11N20 SISO	149	5745	5.35	0.34	5.69	30	Pass
	157	5785	6.96	0.30	7.26		Pass
	165	5825	7.15	0.27	7.42		Pass
11N40 SISO	151	5755	2.86	0.34	3.20	30	Pass
	159	5795	3.41	0.33	3.74		Pass
11AC20 SISO	149	5745	4.91	0.17	5.10	30	Pass
	157	5785	6.32	0.27	6.48		Pass
	165	5825	6.84	0.17	7.10		Pass
11AC40 SISO	151	5755	2.19	0.32	2.55	30	Pass
	159	5795	3.80	0.31	4.13		Pass
11AC80 SISO	155	5775	-2.43	3.24	0.81	30	Pass



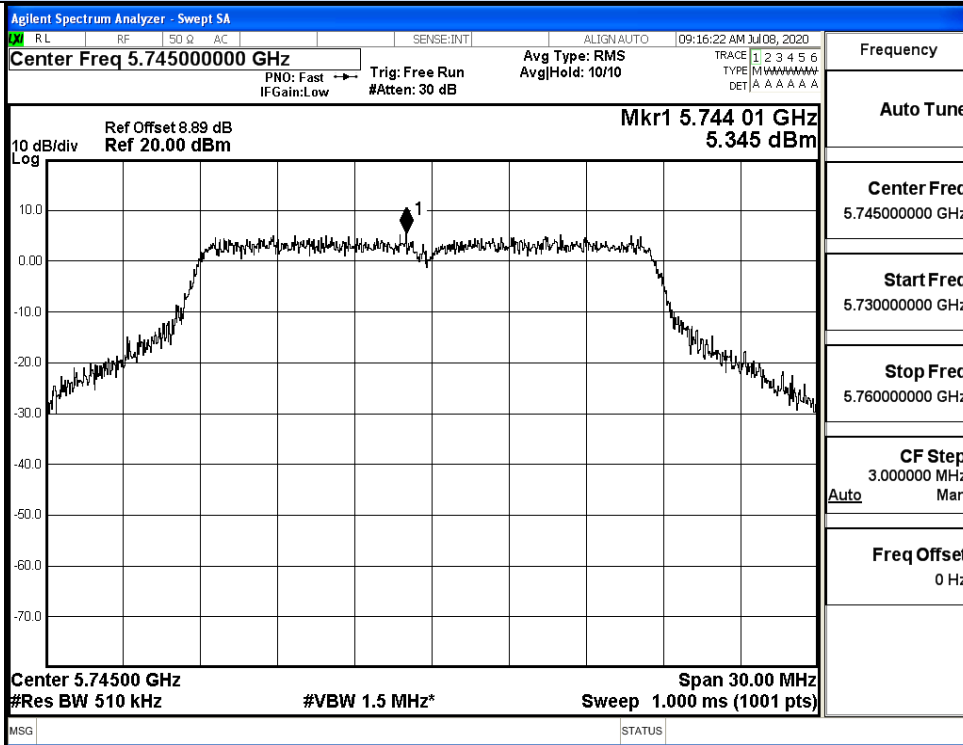


IEEE 802.11na / Channel 157 / 5785MHz

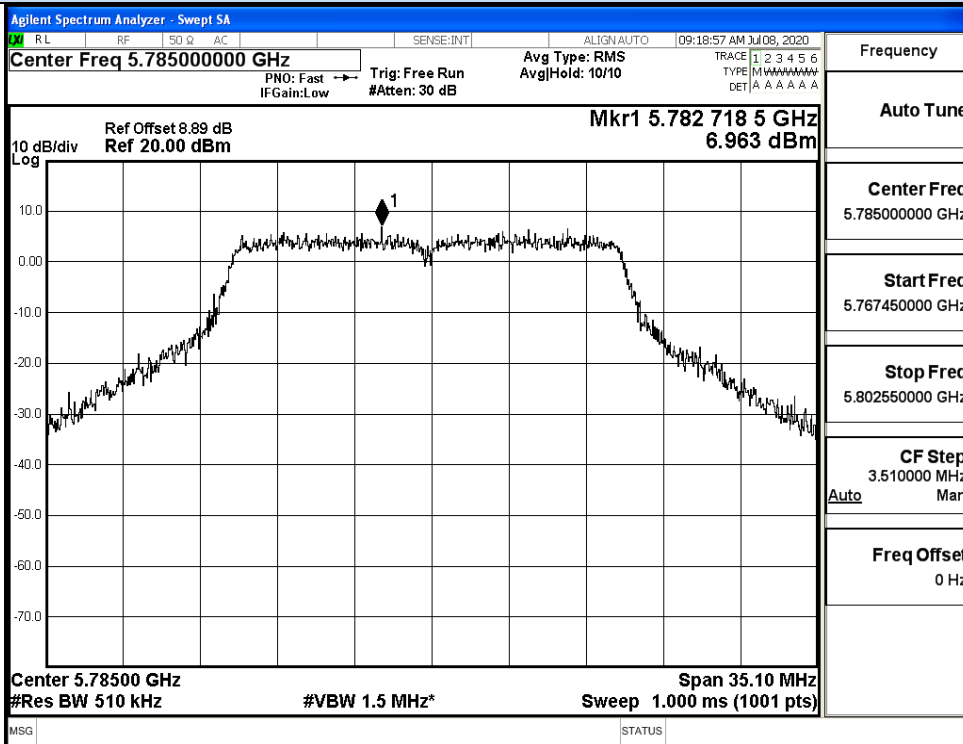


IEEE 802.11na / Channel 165 / 5825MHz

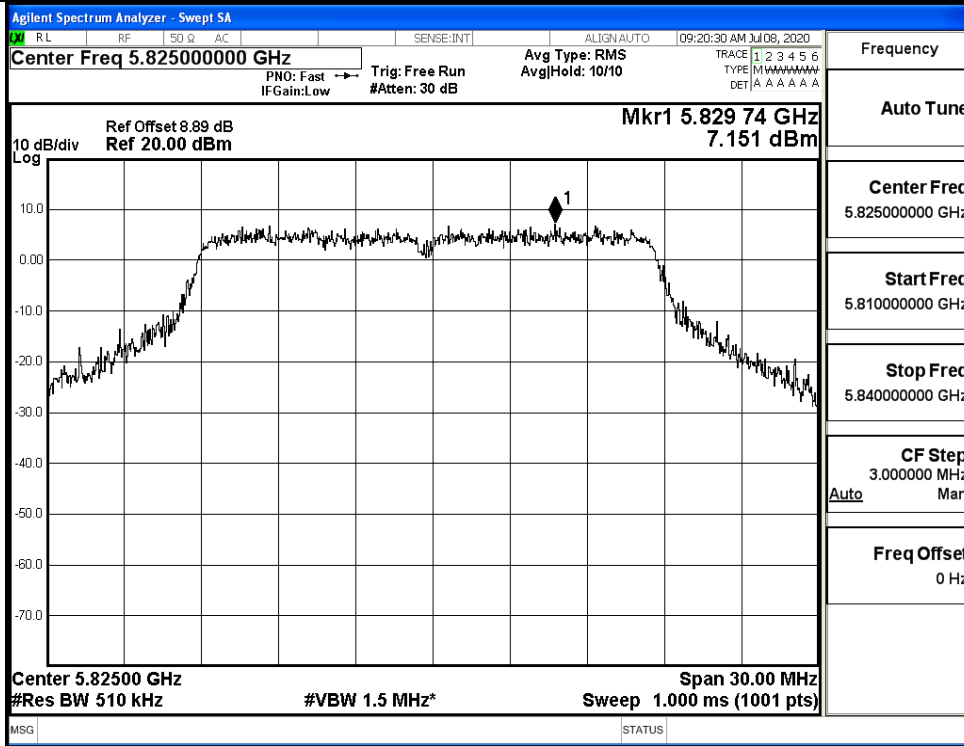
Power Spectral Density



IEEE 802.11n20 / Channel 149 / 5745MHz

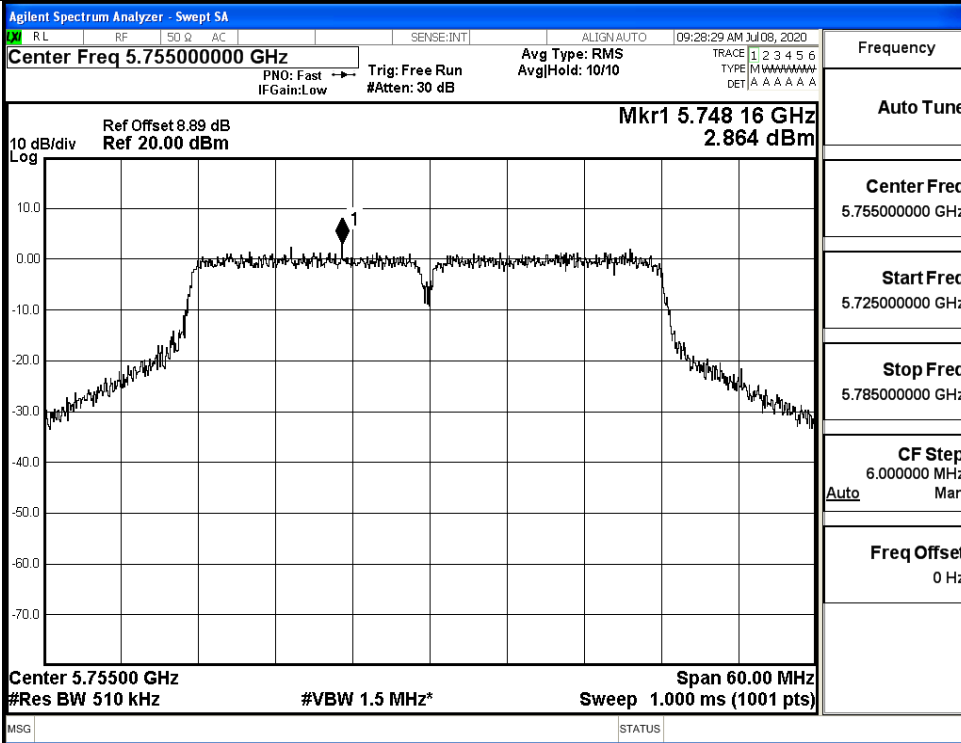


IEEE 802.11n20 / Channel 157 / 5785MHz

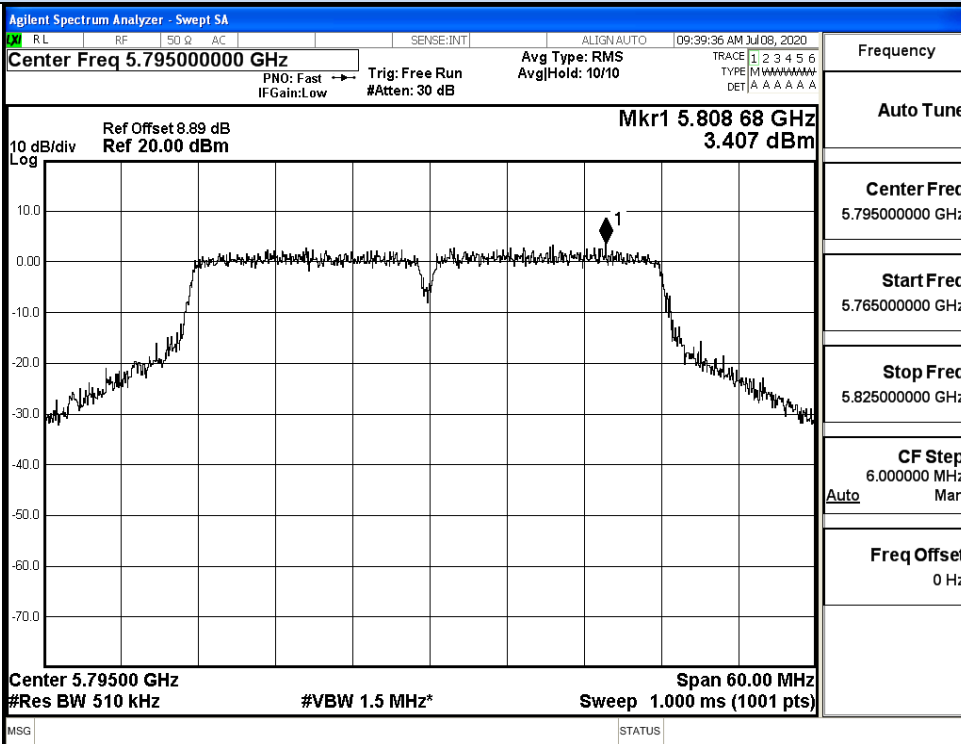


IEEE 802.11n20 / Channel 165 / 5825MHz

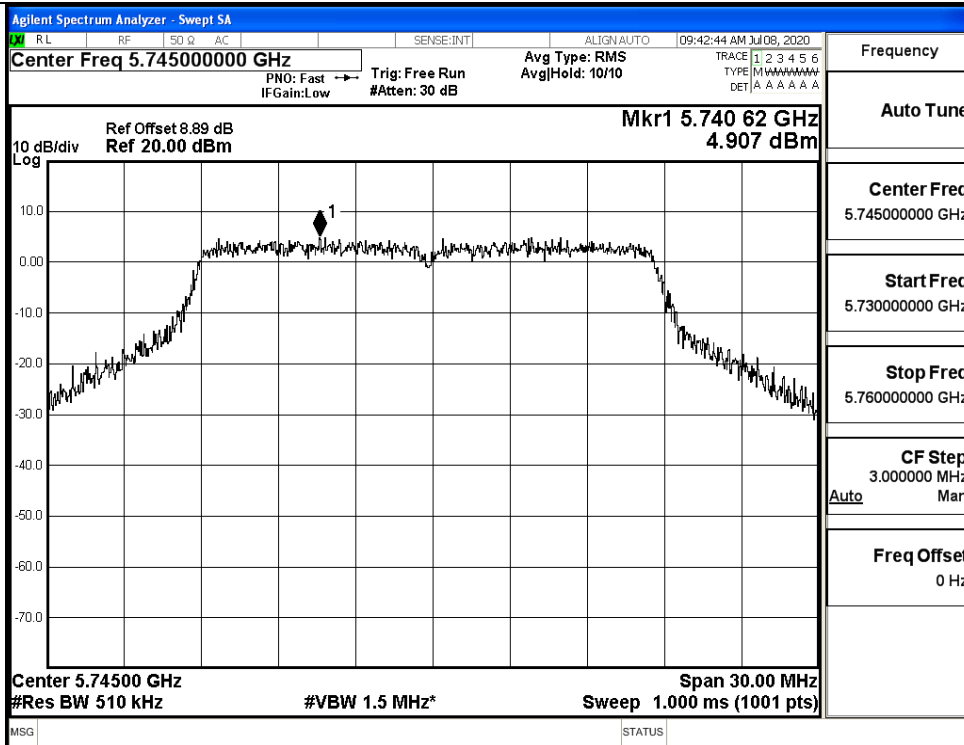
Power Spectral Density



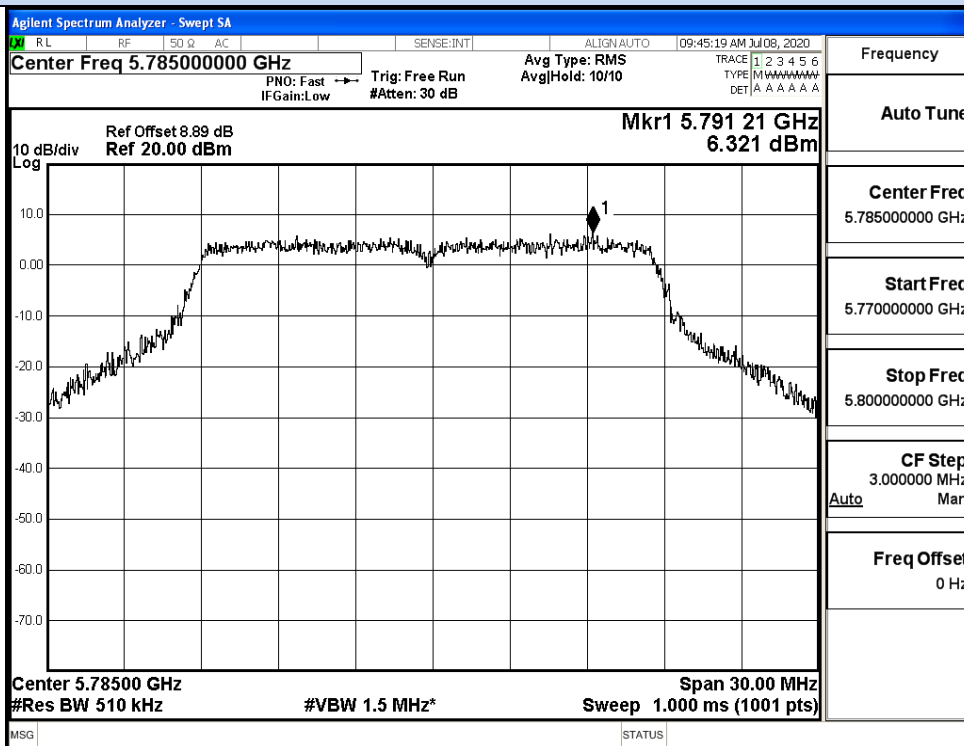
IEEE 802.11n40 / Channel 151 / 5755MHz



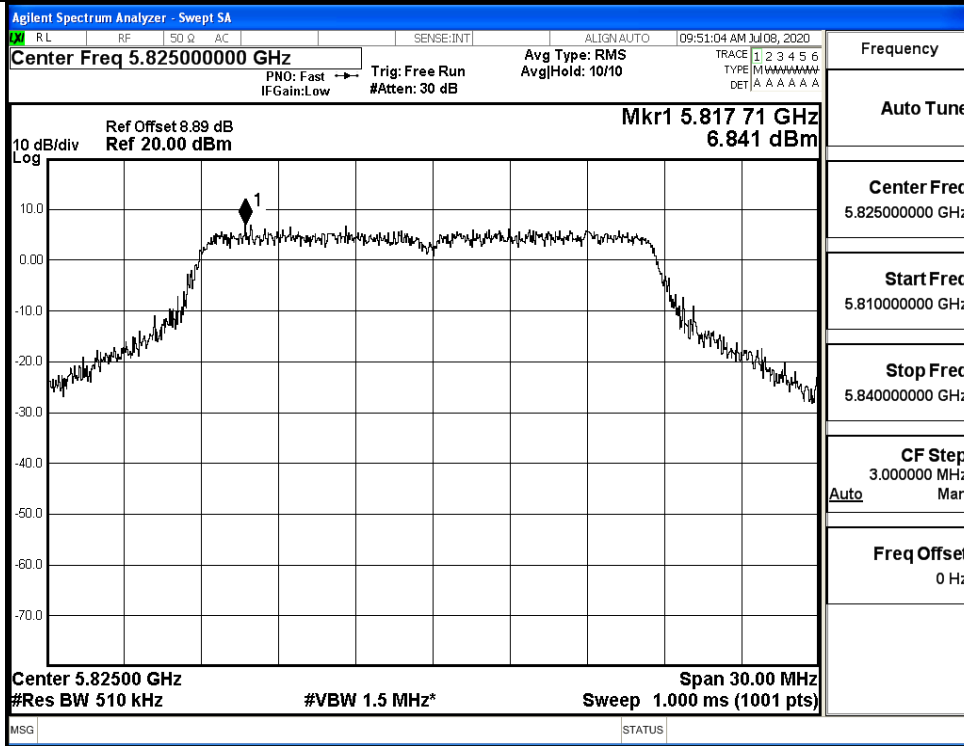
IEEE 802.11n40 / Channel 159 / 5795MHz



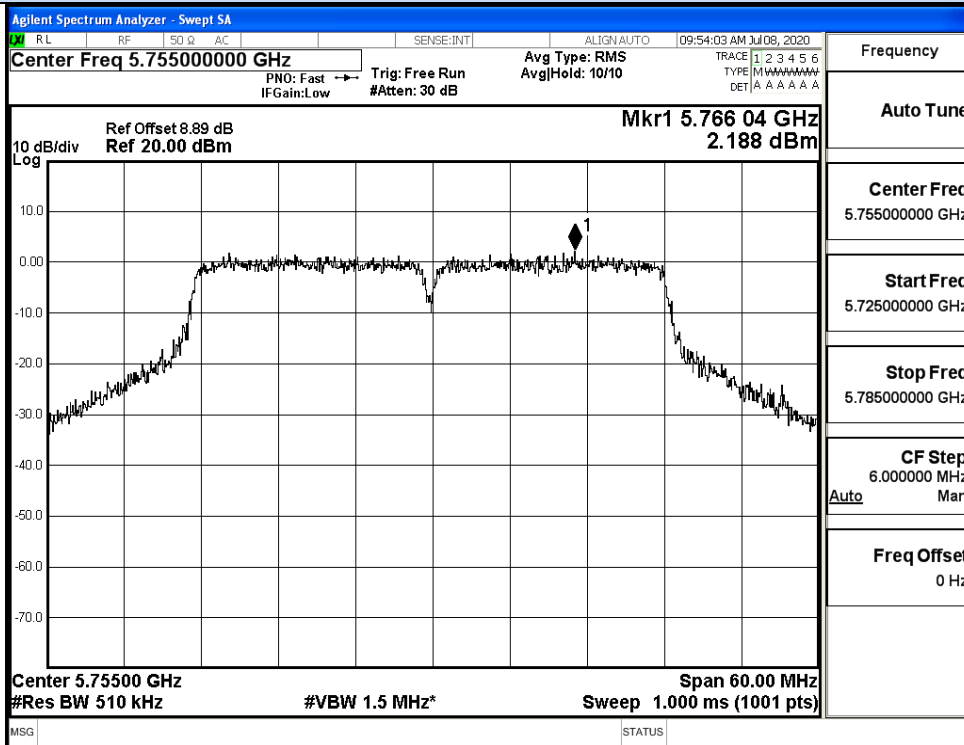
IEEE 802.11ac20 / Channel 149 / 5745MHz



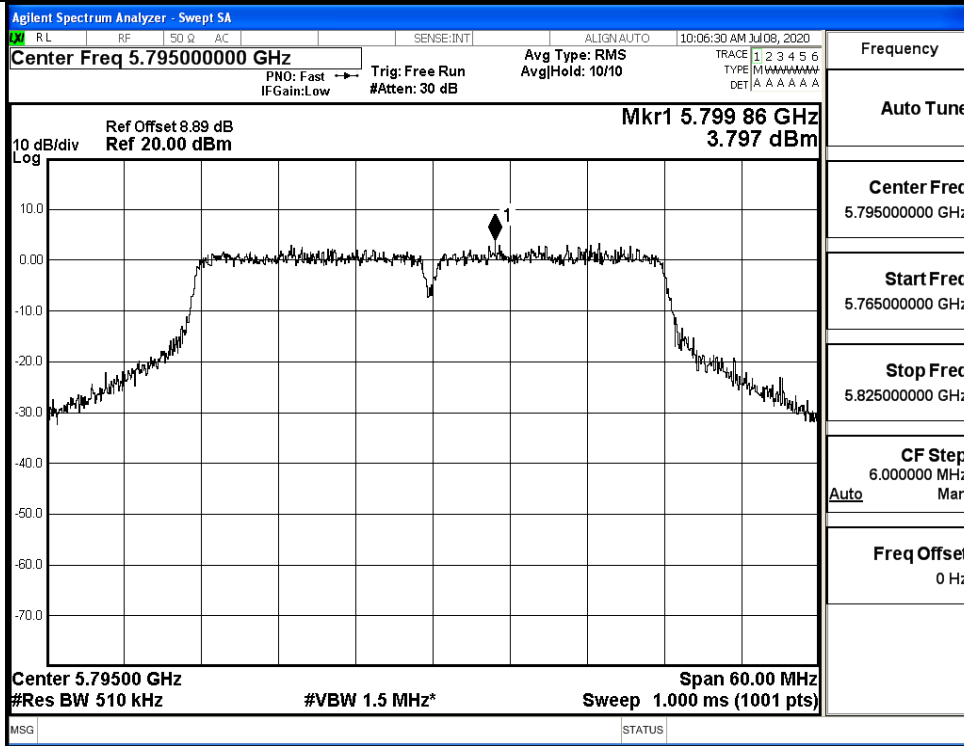
IEEE 802.11ac20 / Channel 157 / 5785MHz



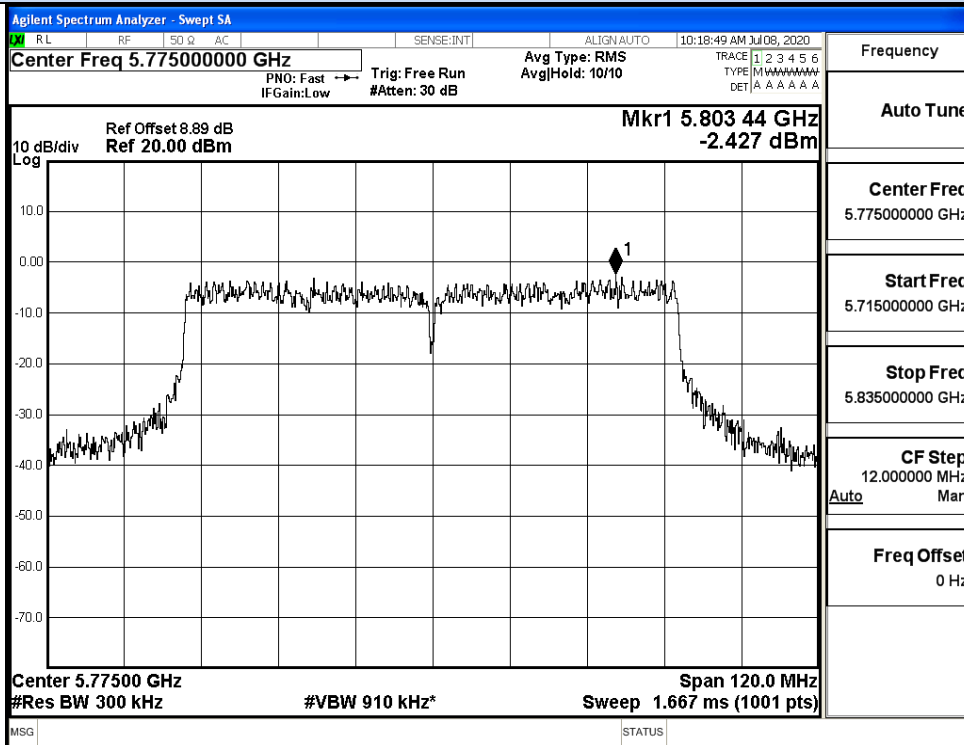
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



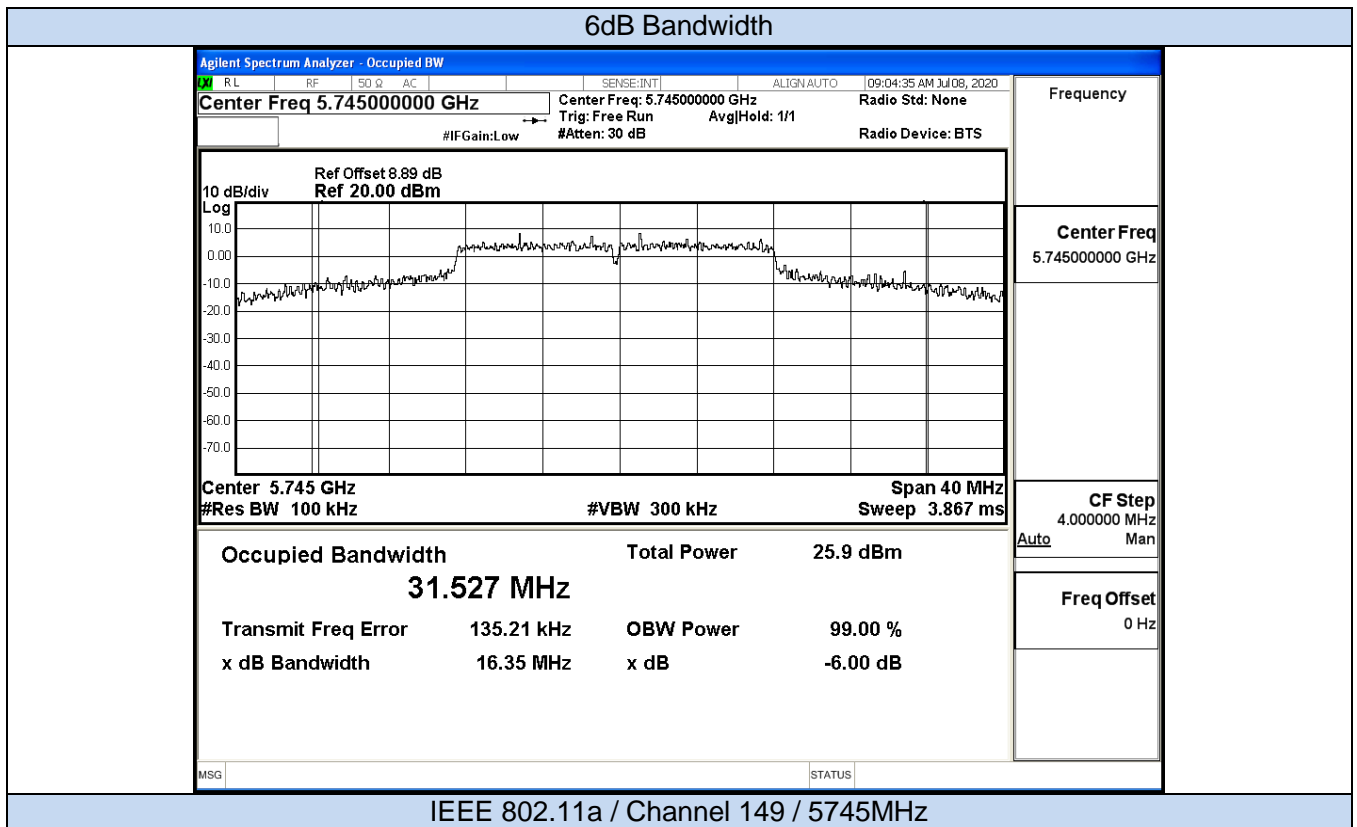
IEEE 802.11ac40 / Channel 159 / 5795MHz

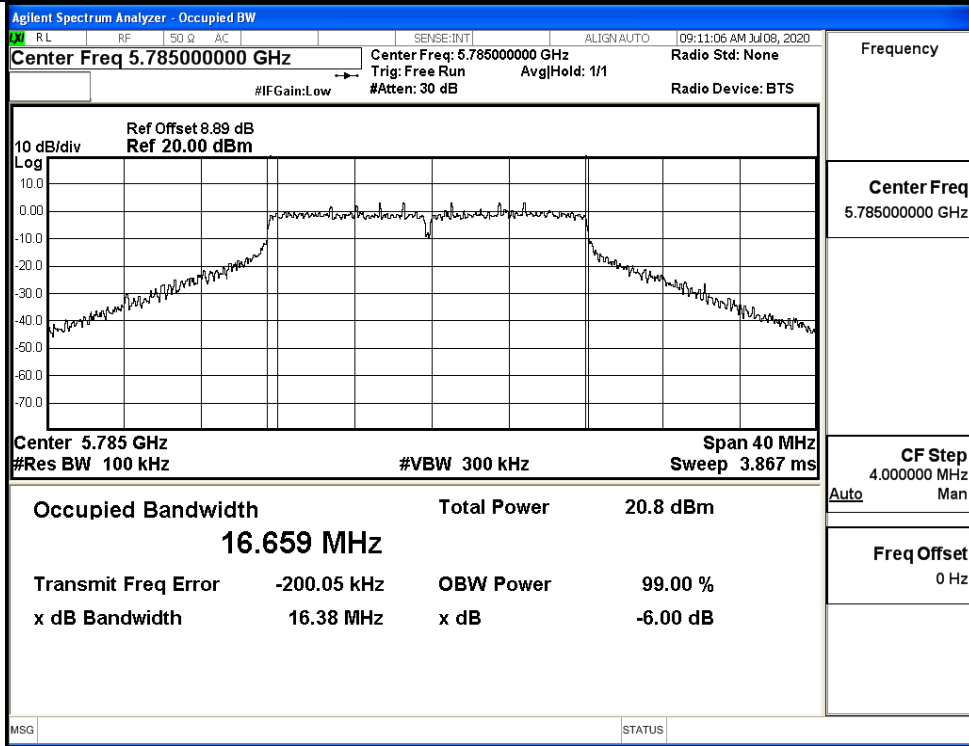


IEEE 802.11ac80 / Channel 155/ 5775MHz

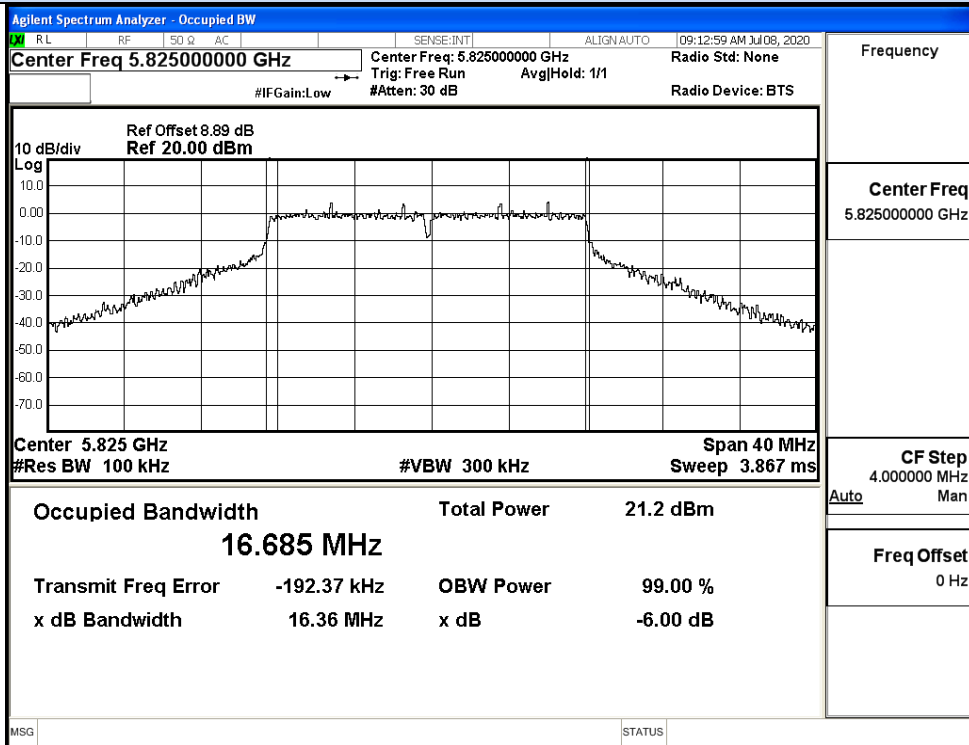
C.4 Emission Bandwidth

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
11A	149	5745	16.35	>=0.5	Pass
	157	5785	16.38		Pass
	165	5825	16.36		Pass
11N20 SISO	149	5745	17.56	>=0.5	Pass
	157	5785	17.55		Pass
	165	5825	17.59		Pass
11N40 SISO	151	5755	36.20	>=0.5	Pass
	159	5795	35.85		Pass
11AC20S ISO	149	5745	17.58	>=0.5	Pass
	157	5785	17.60		Pass
	165	5825	17.54		Pass
11AC40S ISO	151	5755	36.33	>=0.5	Pass
	159	5795	36.14		Pass
11AC80S ISO	155	5775	76.39	>=0.5	Pass



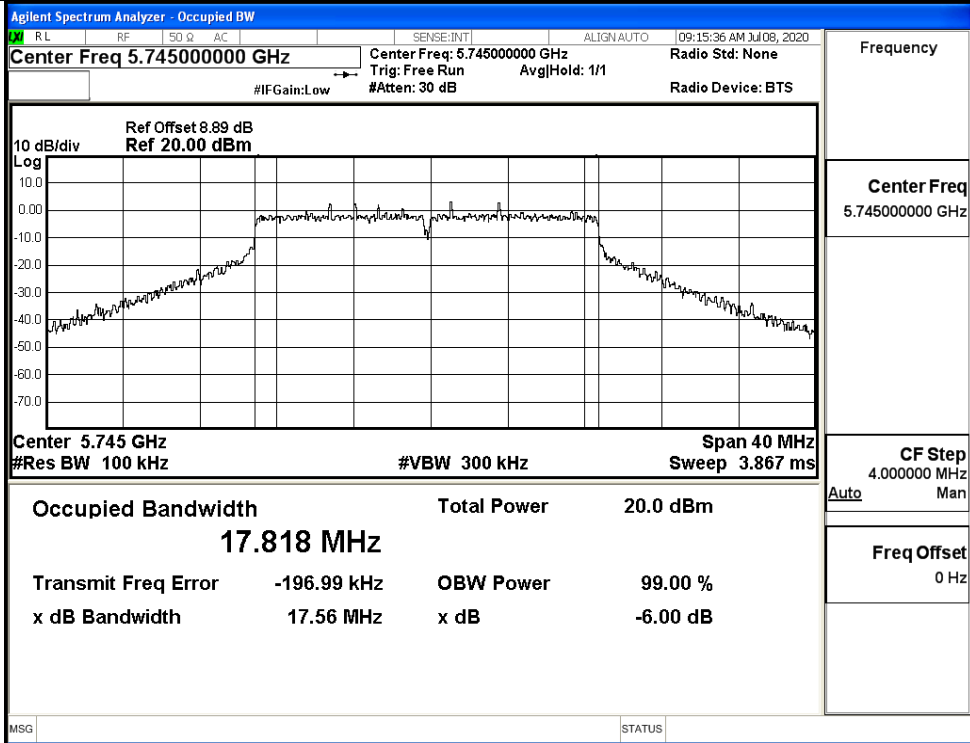


IEEE 802.11a / Channel 157 / 5785MHz

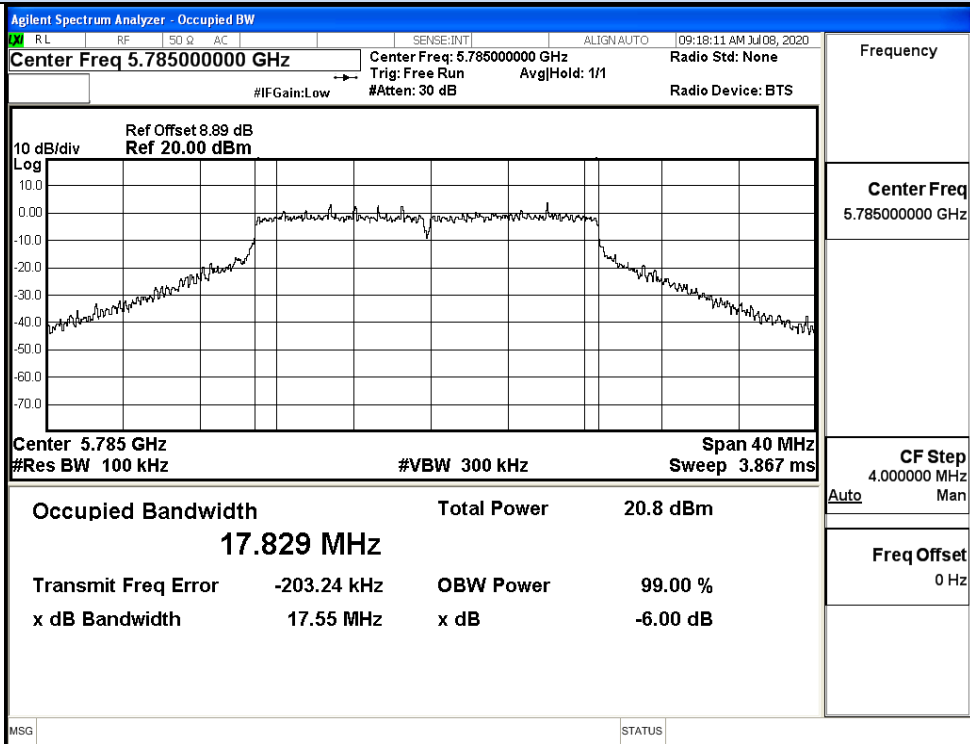


IEEE 802.11a / Channel 165 / 5825MHz

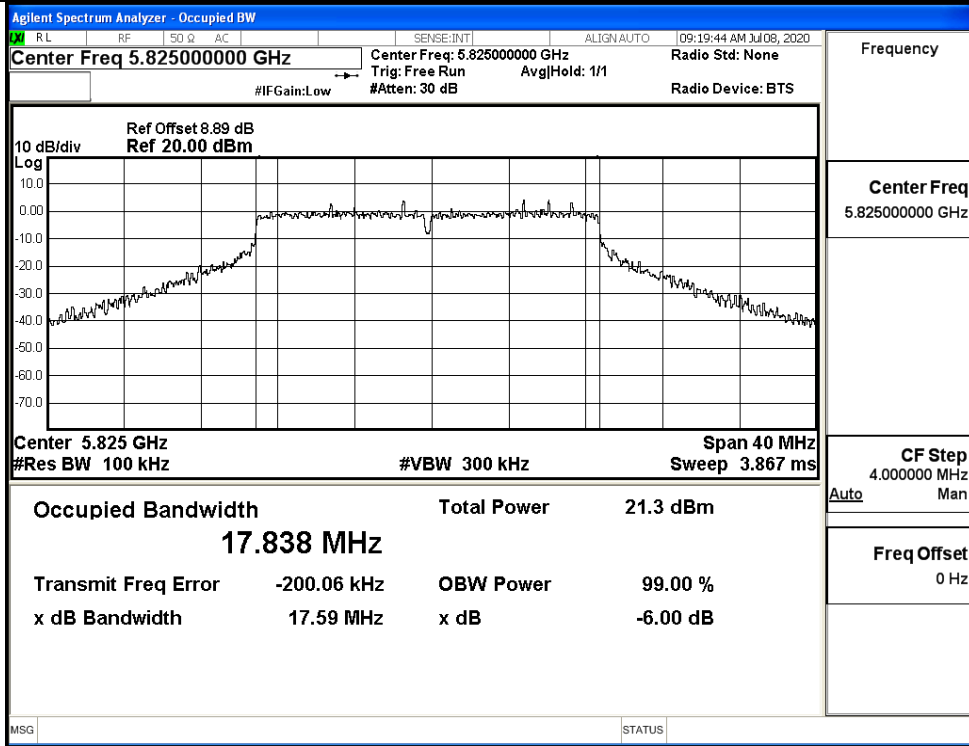
6dB Bandwidth



IEEE 802.11n20 / Channel 149 / 5745MHz



IEEE 802.11n20 / Channel 157 / 5785MHz



IEEE 802.11n20 / Channel 165 / 5825MHz

6dB Bandwidth

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:INT	ALIGN:AUTO	09:27:43 AM 11/08, 2020
Center Freq 5.755000000 GHz				Center Freq: 5.755000000 GHz	Trig: Free Run	Avg/Hold: 1/1
#IF Gain: Low				#Atten: 30 dB	Radio Device: BTS	

Ref Offset 8.89 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	20.0 dBm
36.373 MHz		
Transmit Freq Error	-202.60 kHz	OBW Power 99.00 %
x dB Bandwidth	36.20 MHz	x dB -6.00 dB

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

IEEE 802.11n40 / Channel 151 / 5755MHz

Agilent Spectrum Analyzer - Occupied BW

RL	RF	50 Ω	AC	SENSE:INT	ALIGN:AUTO	09:38:51 AM 11/08, 2020
Center Freq 5.795000000 GHz				Center Freq: 5.795000000 GHz	Trig: Free Run	Avg/Hold: 1/1
#IF Gain: Low				#Atten: 30 dB	Radio Device: BTS	

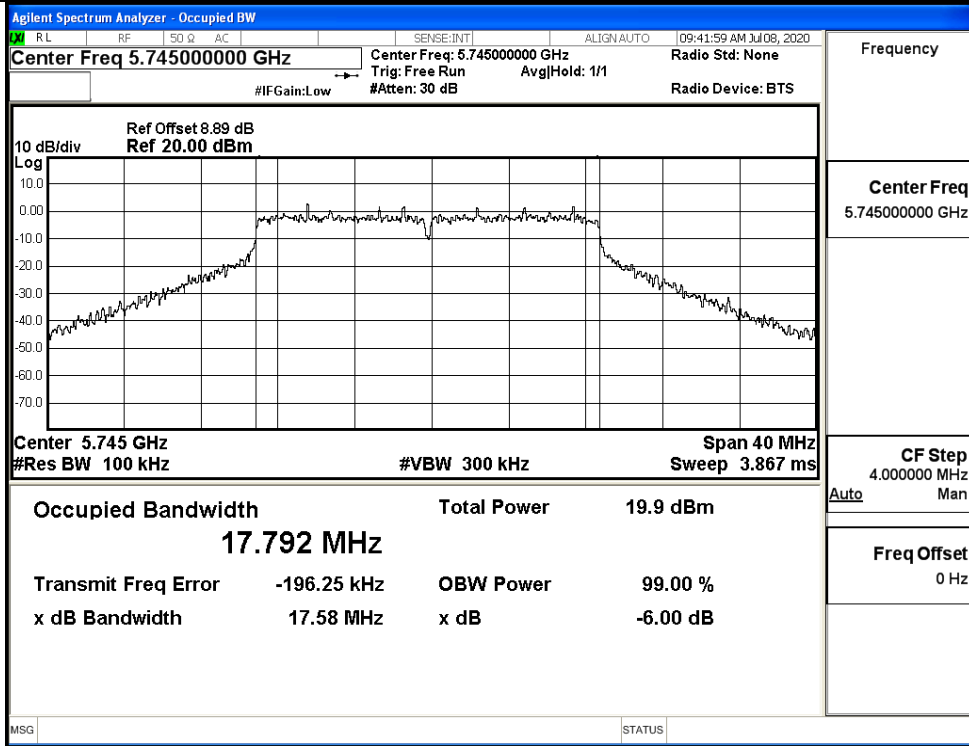
Ref Offset 8.89 dB
Ref 20.00 dBm

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

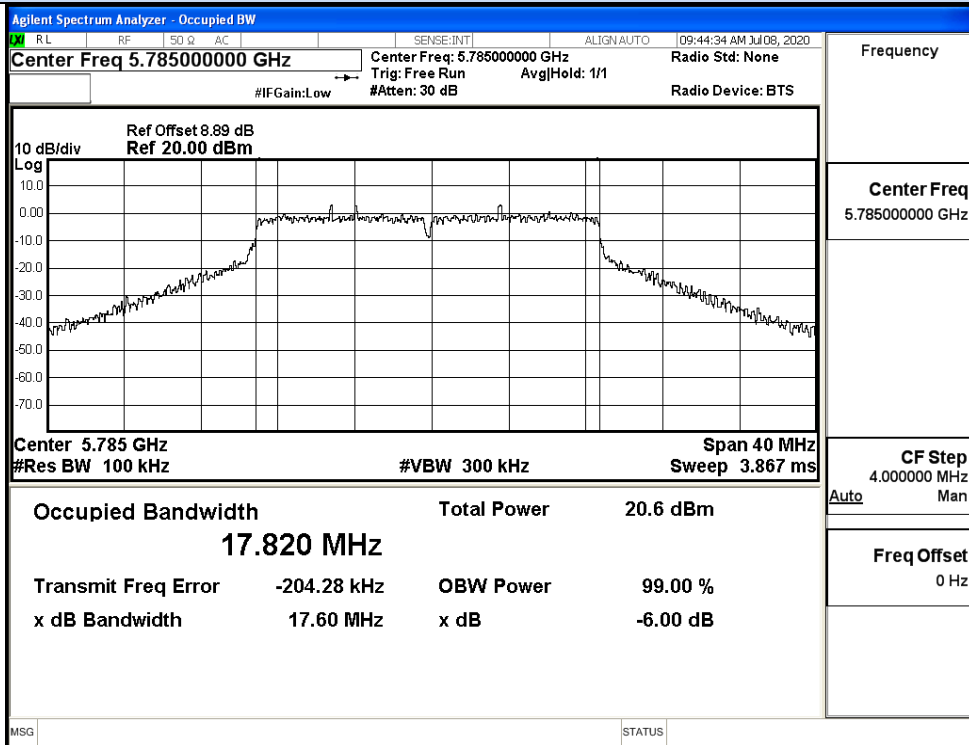
Occupied Bandwidth	Total Power	21.0 dBm
36.351 MHz		
Transmit Freq Error	-199.02 kHz	OBW Power 99.00 %
x dB Bandwidth	35.85 MHz	x dB -6.00 dB

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

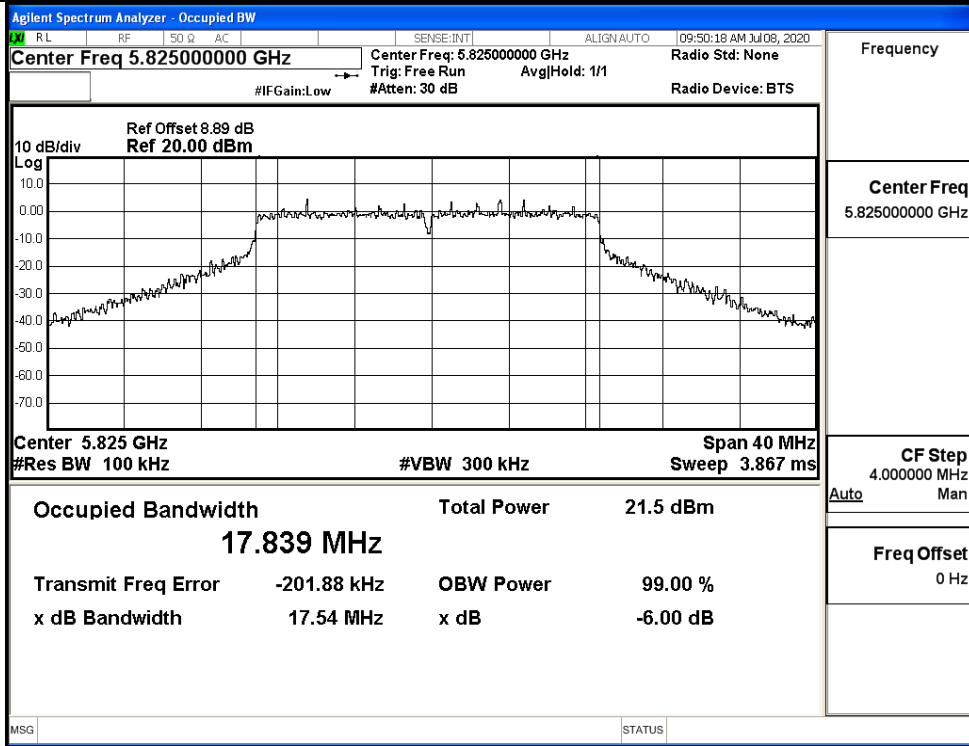
IEEE 802.11n40 / Channel 159 / 5795MHz



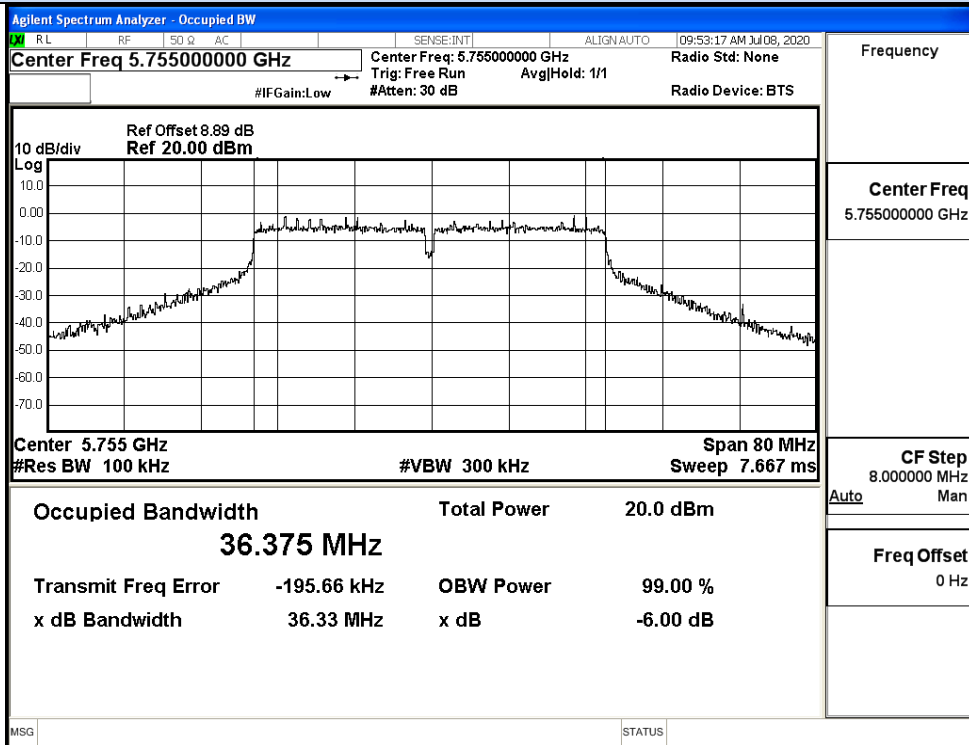
IEEE 802.11ac20 / Channel 149 / 5745MHz



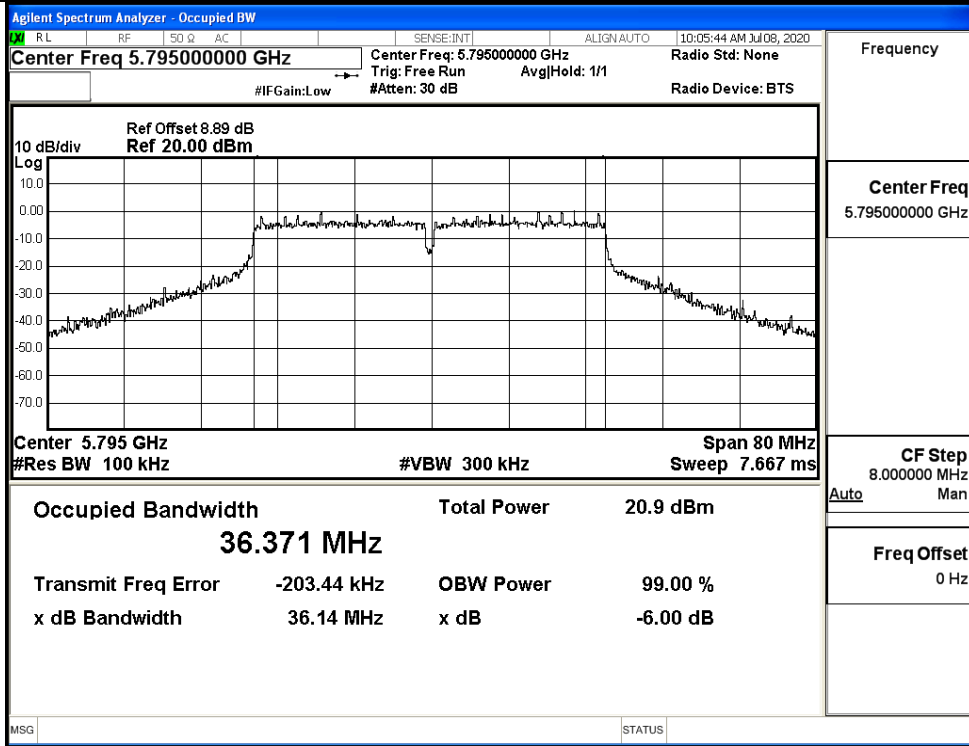
IEEE 802.11ac20 / Channel 157/ 5785MHz



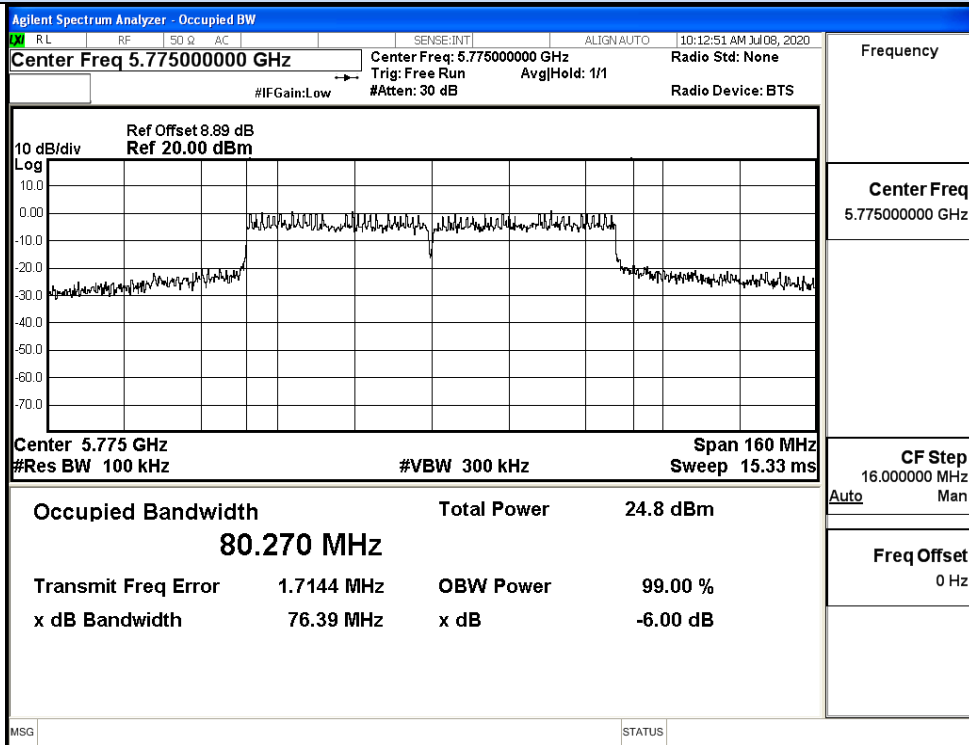
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



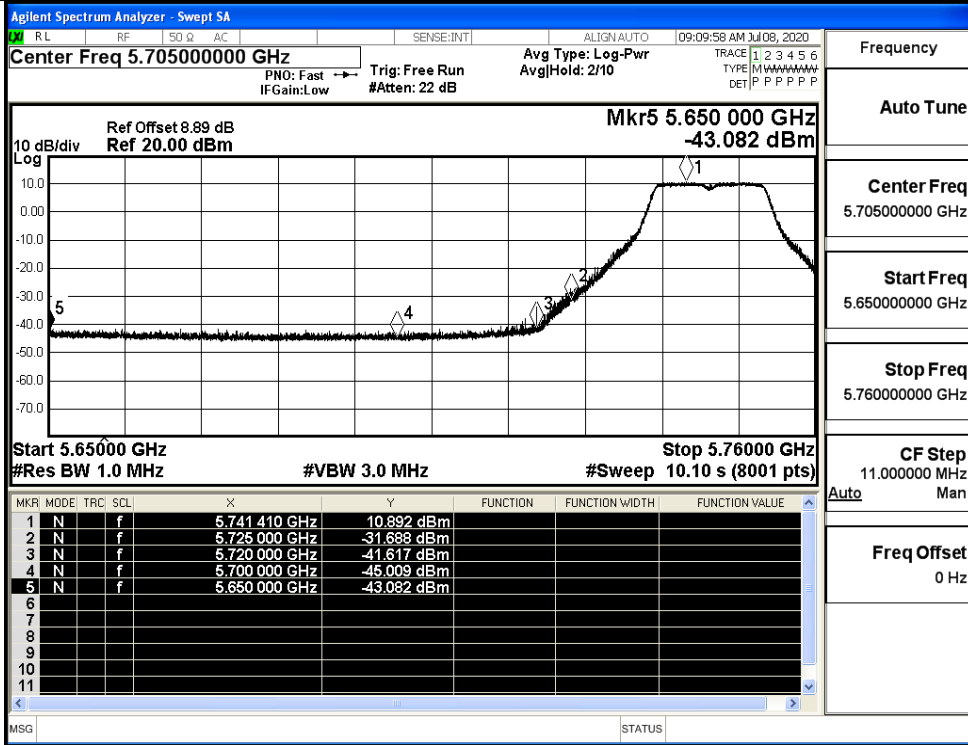
IEEE 802.11ac80 / Channel 155 / 5775MHz

C.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	-43.08	6.00	-37.08	Peak	-27.0	Pass
		5700.0	-45.01	6.00	-39.01	Peak	10	Pass
		5720.0	-41.62	6.00	-35.62	Peak	15.6	Pass
		5725.0	-31.69	6.00	-25.69	Peak	27.0	Pass
	165	5850.0	-39.64	6.00	-33.64	Peak	27.0	Pass
		5855.0	-39.95	6.00	-33.95	Peak	15.6	Pass
		5875.0	-44.12	6.00	-38.12	Peak	10	Pass
	5925.0	-44.07	6.00	-38.07	Peak	-27.0	Pass	
11N20 SISO	149	5650.0	-44.18	6.00	-38.18	Peak	-27.0	Pass
		5700.0	-44.04	6.00	-38.04	Peak	10	Pass
		5720.0	-40.34	6.00	-34.34	Peak	15.6	Pass
		5725.0	-30.08	6.00	-24.08	Peak	27.0	Pass
	165	5850.0	-37.31	6.00	-31.31	Peak	27.0	Pass
		5855.0	-39.40	6.00	-33.4	Peak	15.6	Pass
		5875.0	-44.48	6.00	-38.48	Peak	10	Pass
		5925.0	-45.05	6.00	-39.05	Peak	-27.0	Pass

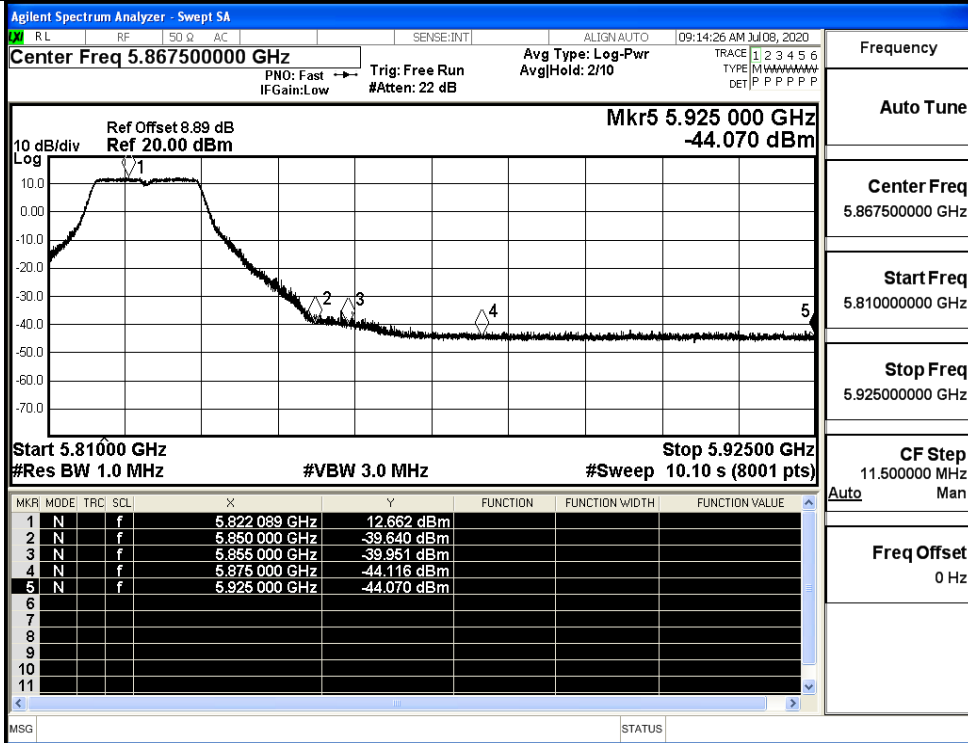
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11N40 SISO	151	5650.0	-43.11	6.00	-37.11	Peak	-27.0	Pass
		5700.0	-43.32	6.00	-37.32	Peak	10	Pass
		5720.0	-31.36	6.00	-25.36	Peak	15.6	Pass
		5725.0	-25.05	6.00	-19.05	Peak	27.0	Pass
	159	5850.0	-42.72	6.00	-36.72	Peak	27.0	Pass
		5855.0	-43.23	6.00	-37.23	Peak	15.6	Pass
		5875.0	-42.65	6.00	-36.65	Peak	10	Pass
	5925.0	-44.52	6.00	-38.52	Peak	-27.0	Pass	
11AC2 0 SISO	149	5650.0	-43.36	6.00	-37.36	Peak	-27.0	Pass
		5700.0	-44.57	6.00	-38.57	Peak	10	Pass
		5720.0	-40.63	6.00	-34.63	Peak	15.6	Pass
		5725.0	-29.84	6.00	-23.84	Peak	27.0	Pass
	165	5850.0	-37.57	6.00	-31.57	Peak	27.0	Pass
		5855.0	-38.72	6.00	-32.72	Peak	15.6	Pass
		5875.0	-44.25	6.00	-38.25	Peak	10	Pass
	5925.0	-44.13	6.00	-38.13	Peak	-27.0	Pass	
11AC4 0 SISO	151	5650.0	-43.79	6.00	-37.79	Peak	-27.0	Pass
		5700.0	-43.62	6.00	-37.62	Peak	10	Pass
		5720.0	-29.14	6.00	-23.14	Peak	15.6	Pass
		5725.0	-23.30	6.00	-17.3	Peak	27.0	Pass
	159	5850.0	-42.05	6.00	-36.05	Peak	27.0	Pass
		5855.0	-42.61	6.00	-36.61	Peak	15.6	Pass
		5875.0	-44.59	6.00	-38.59	Peak	10	Pass
	5925.0	-44.10	6.00	-38.1	Peak	-27.0	Pass	
11AC8 0 SISO	155	5725.0	-23.62	6.00	-17.62	Peak	27.0	Pass
		5720.0	-26.51	6.00	-20.51	Peak	15.6	Pass
		5700.0	-30.79	6.00	-24.79	Peak	10	Pass
		5650.0	-39.03	6.00	-33.03	Peak	-27.0	Pass
		5850.0	-23.62	6.00	-17.62	Peak	27.0	Pass
		5855.0	-26.51	6.00	-20.51	Peak	15.6	Pass
		5875.0	-30.79	6.00	-24.79	Peak	10	Pass
	5925.0	-39.03	6.00	-33.03	Peak	-27.0	Pass	

Undesirable Emissions Measurement



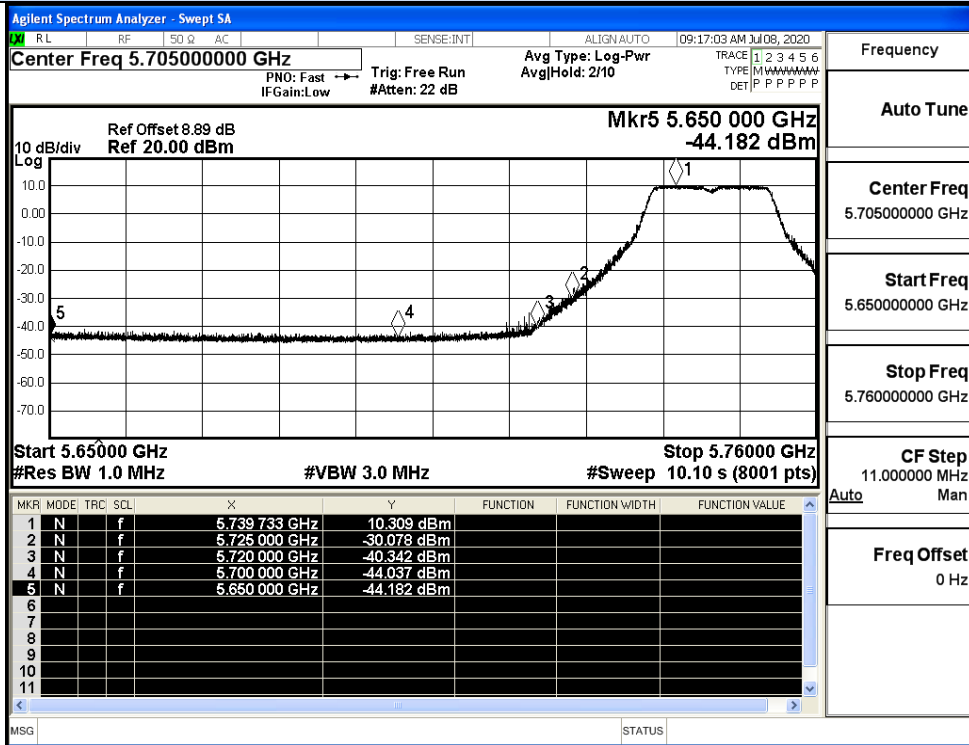
IEEE 802.11a / Channel 149 / 5745MHz / Peak

Undesirable Emissions Measurement



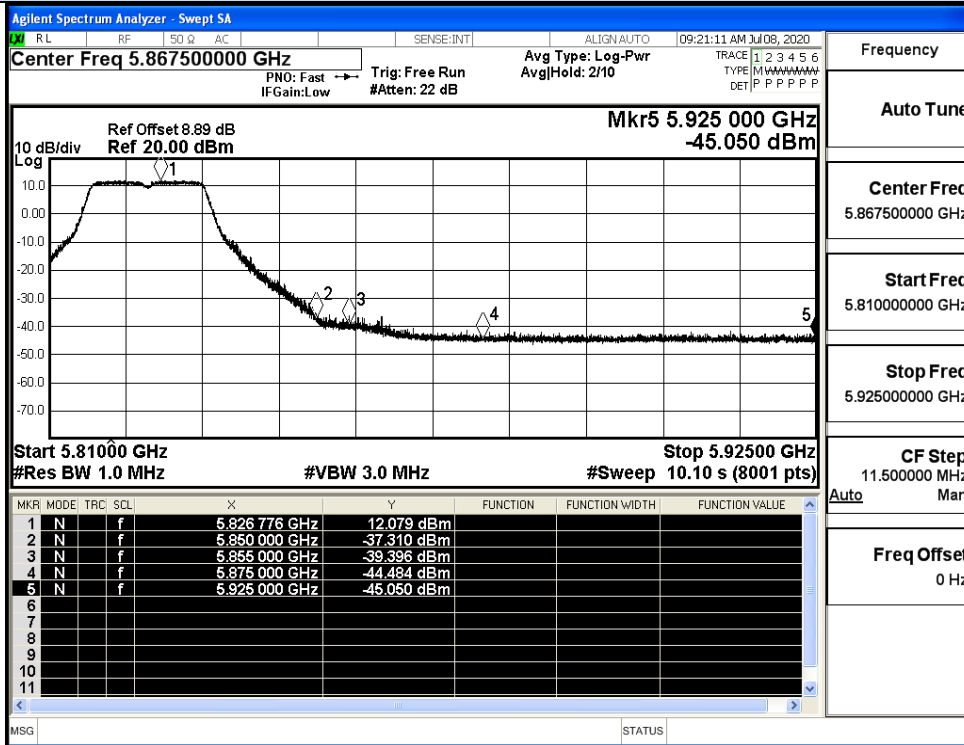
IEEE 802.11a / Channel 165 / 5825MHz / Peak

Undesirable Emissions Measurement



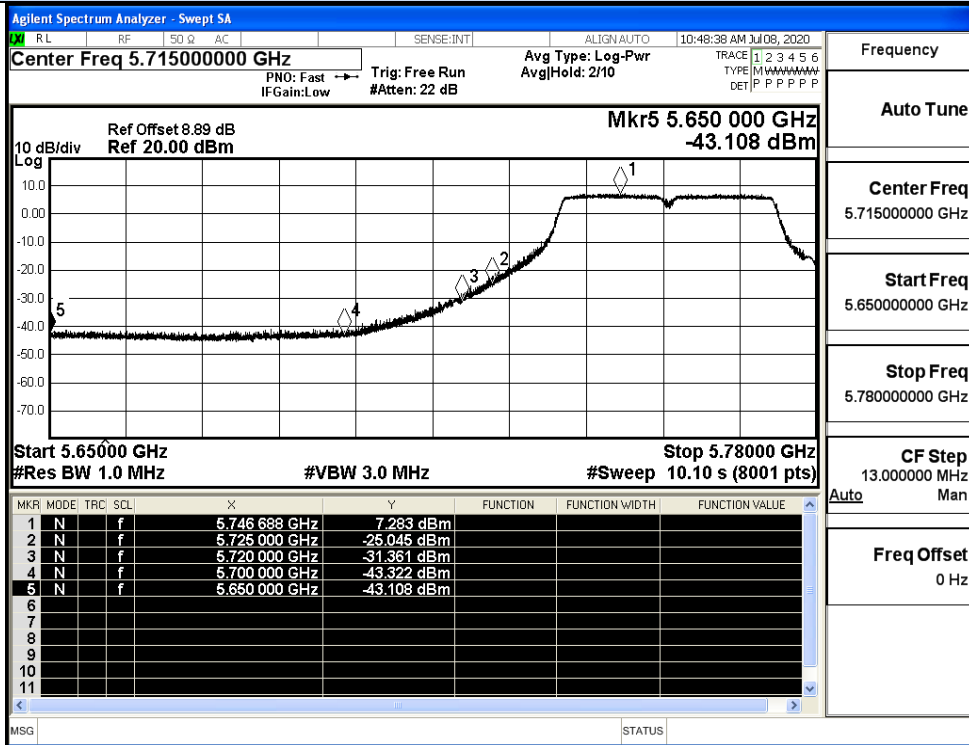
IEEE 802.11n20 / Channel 149 / 5745MHz / Peak

Undesirable Emissions Measurement



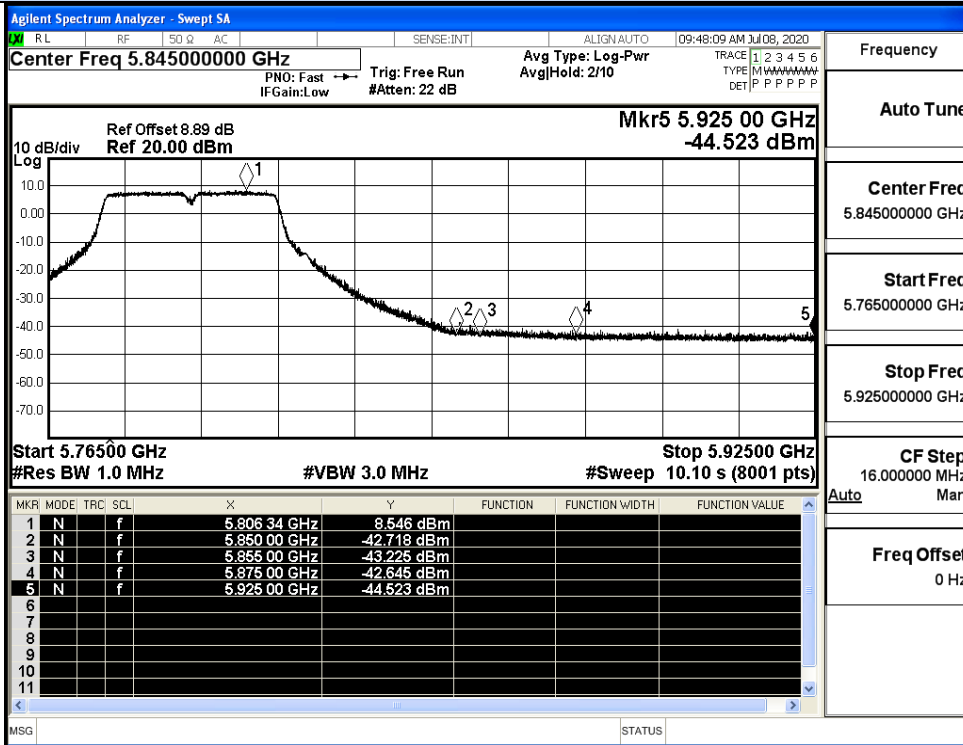
IEEE 802.11n20 / Channel 165 / 5825MHz / Peak

Undesirable Emissions Measurement

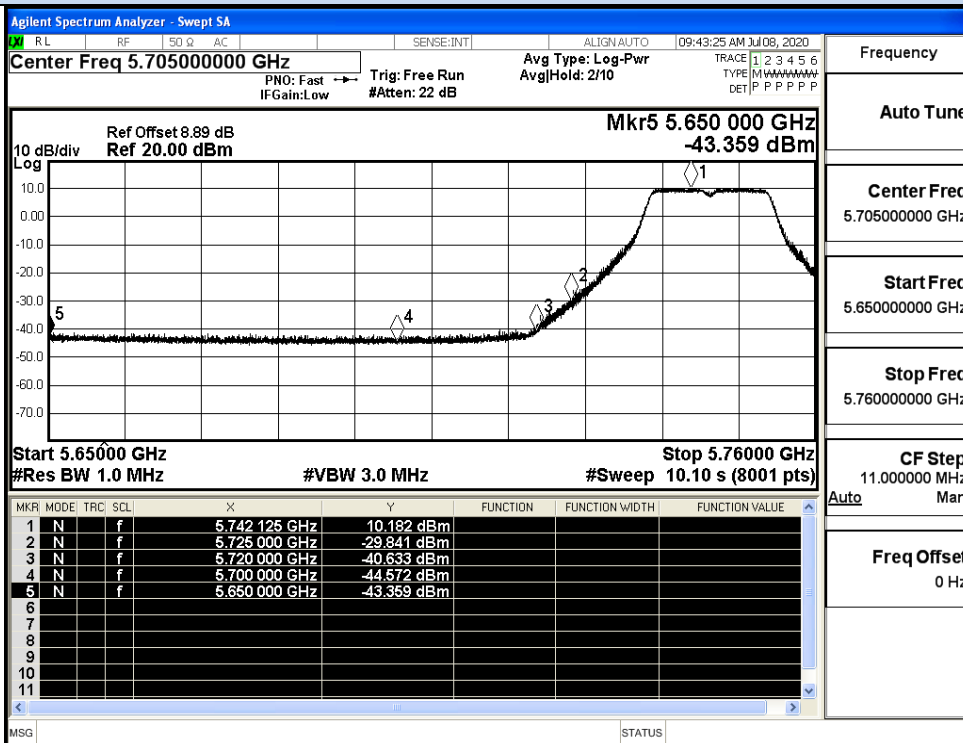


IEEE 802.11n40 / Channel 151 / 5755MHz / Peak

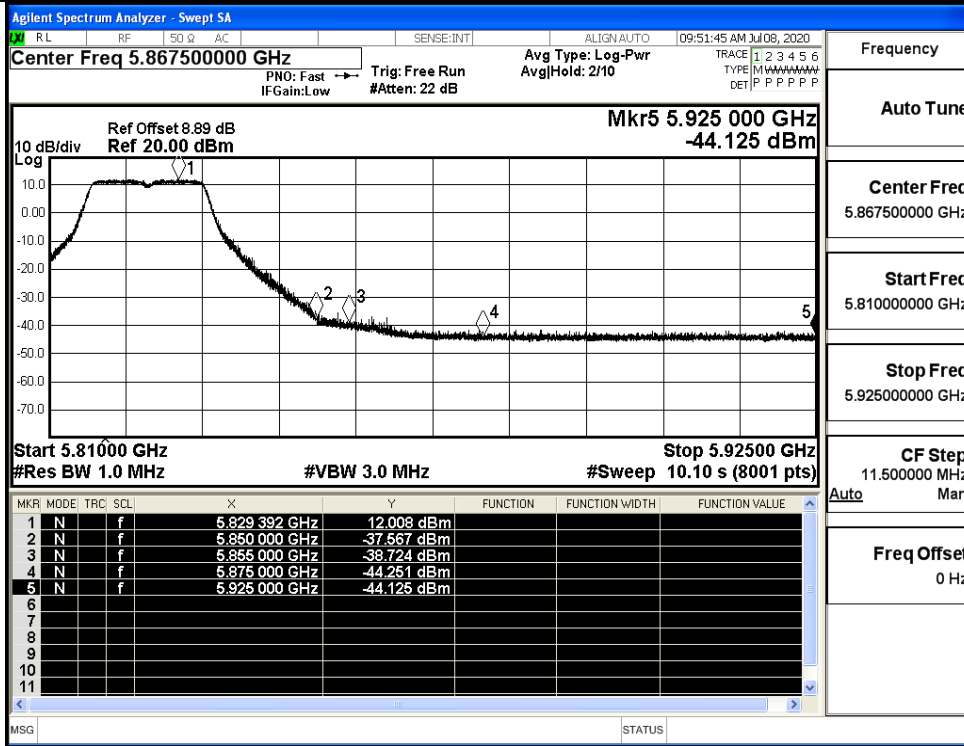
Undesirable Emissions Measurement



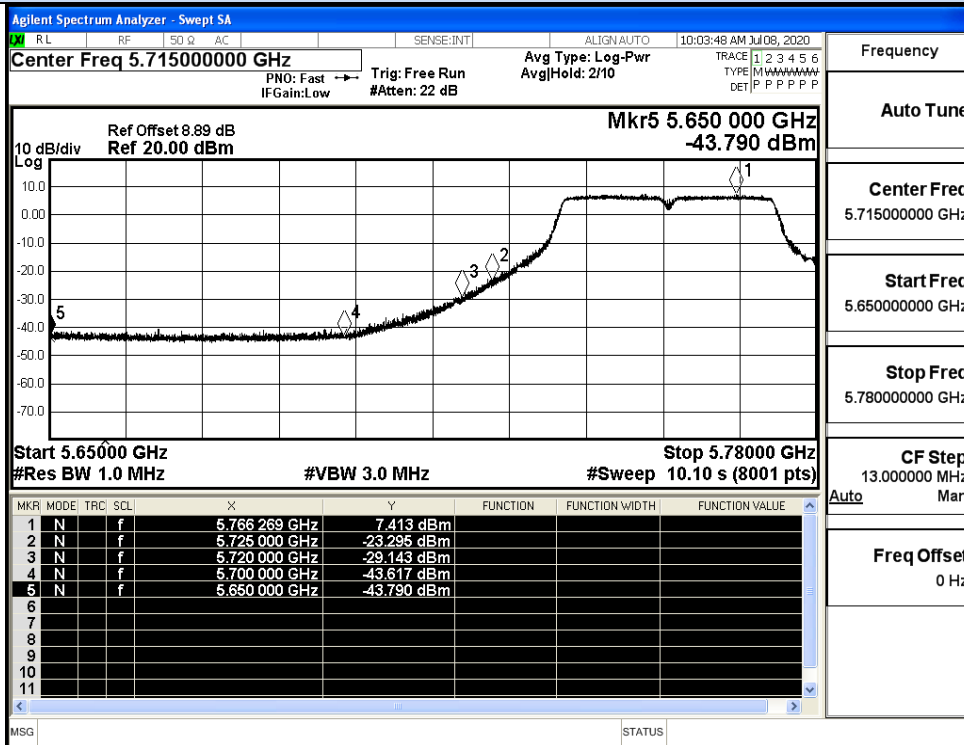
IEEE 802.11n40 / Channel 159 / 5795MHz / Peak



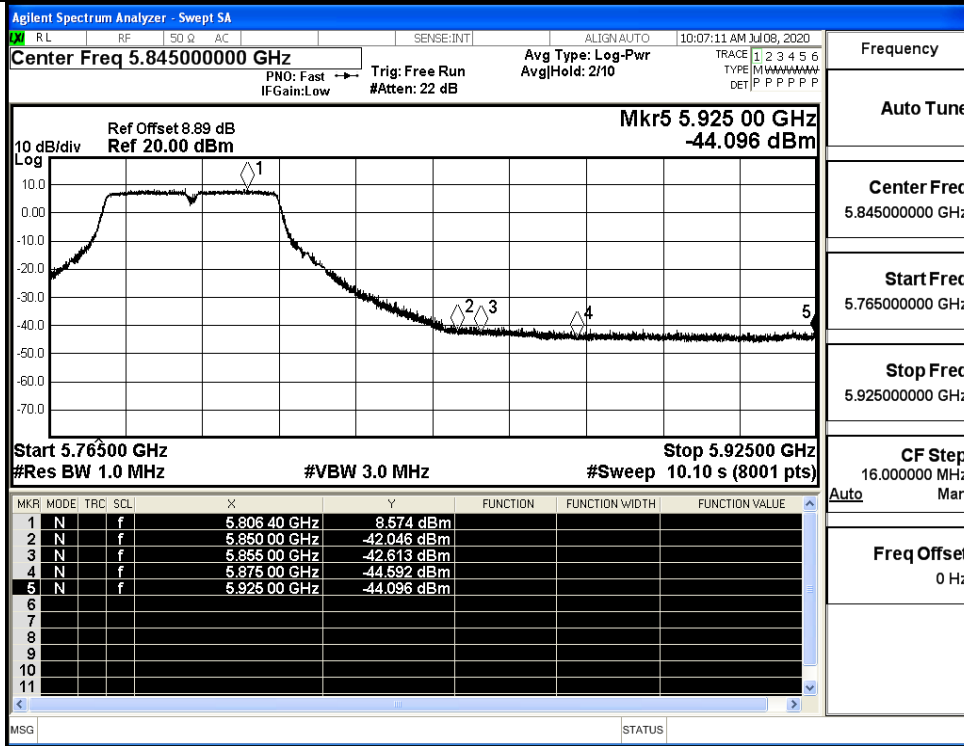
IEEE 802.11ac20 / Channel 149 / 5745MHz / Peak



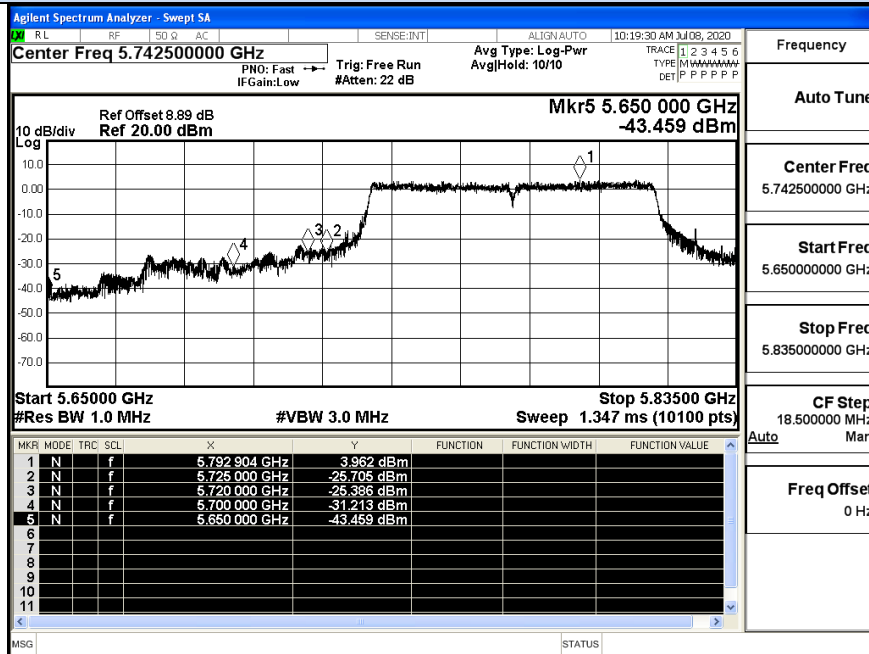
IEEE 802.11ac20 / Channel 165 / 5825MHz / Peak



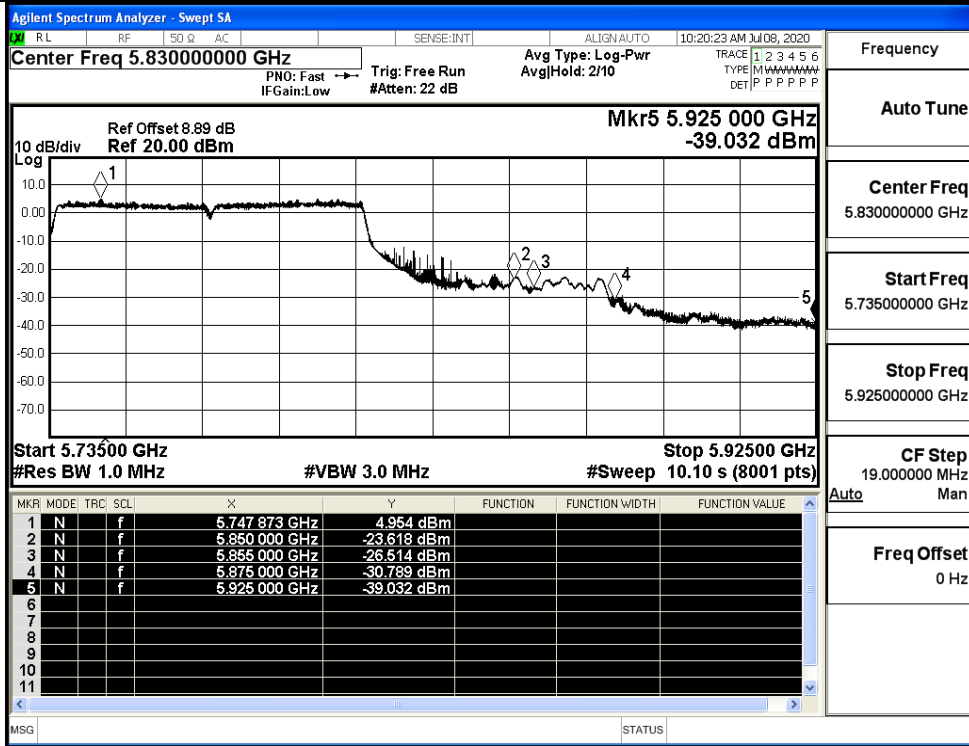
IEEE 802.11ac40 / Channel 151 / 5755MHz / Peak



IEEE 802.11ac40 / Channel 159 / 5795MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Peak



IEEE 802.11ac80 / Channel 155/ 5775MHz / Peak