

Appendix E

RF Test Data for 5.8G WLAN (Conducted Measurement)

Product Name: IPTV Receiver

Trade Mark: FORMULER

Test Model: Z ALPHA

Environmental Conditions

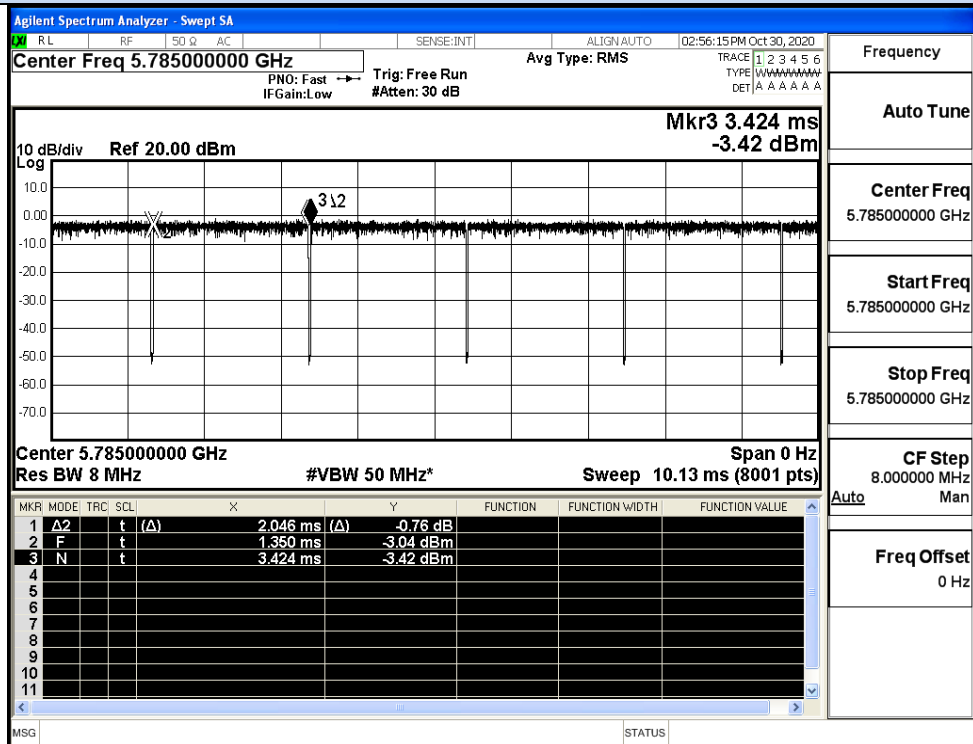
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

E.1 Duty Cycle

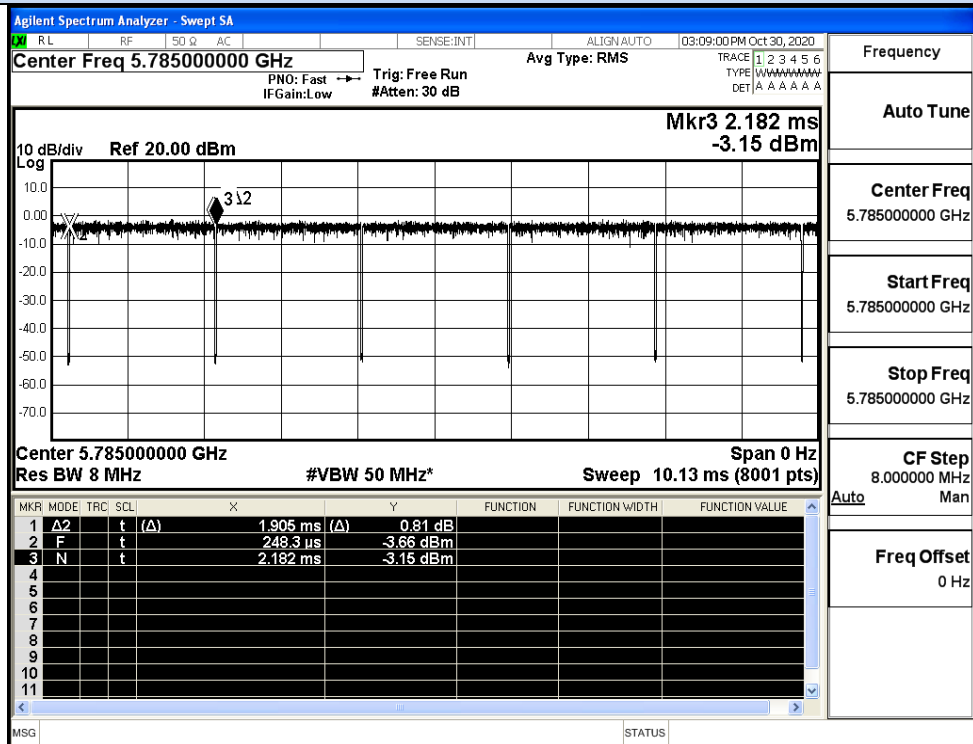
ANT 0

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5785	98.66	0	0.01
11N20 SISO	5785	98.49	0	0.01
11N40 SISO	5755	98.14	0	0.01
11AC20 SISO	5785	98.5	0	0.01
11AC40 SISO	5755	98.27	0	0.01
11AC80 SISO	5775	93.7	0.28	0.01

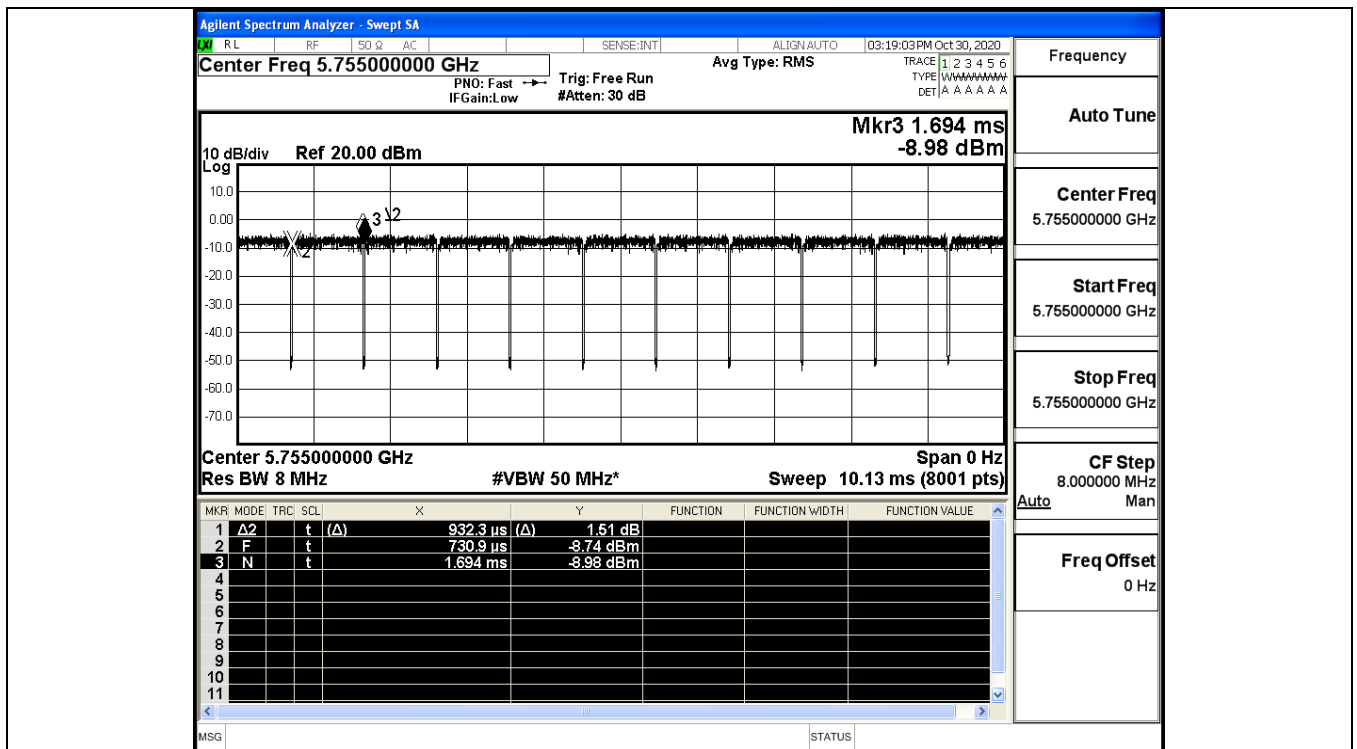
On Time and Duty Cycle



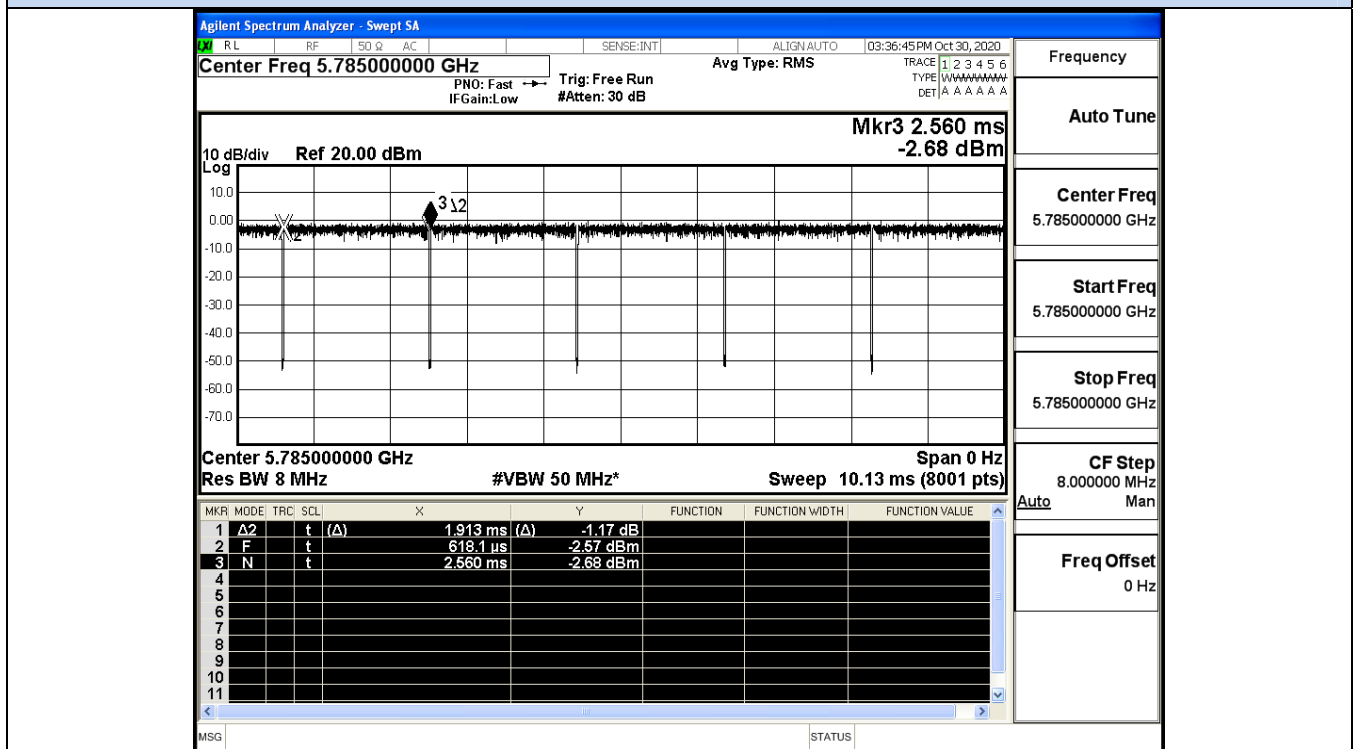
IEEE 802.11a



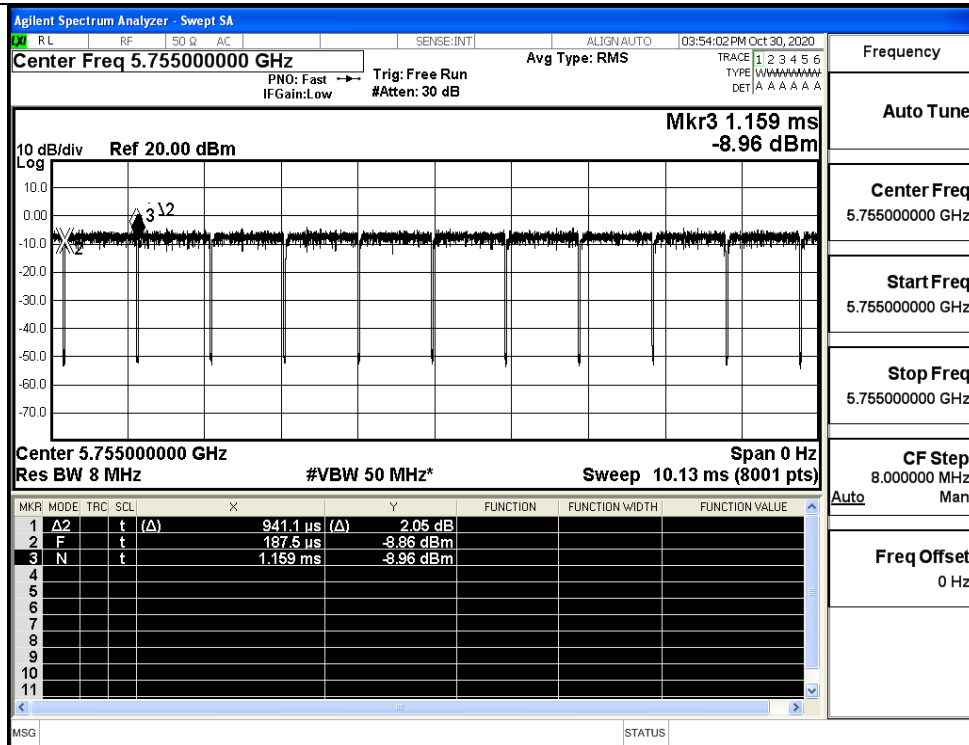
IEEE 802.11n HT20



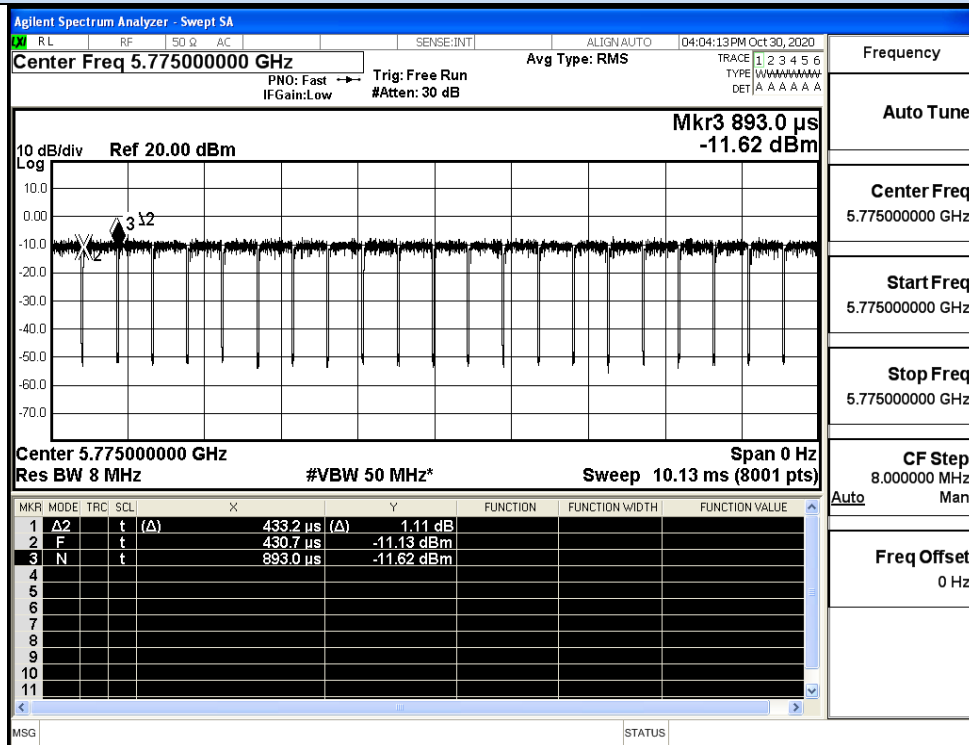
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11AC40

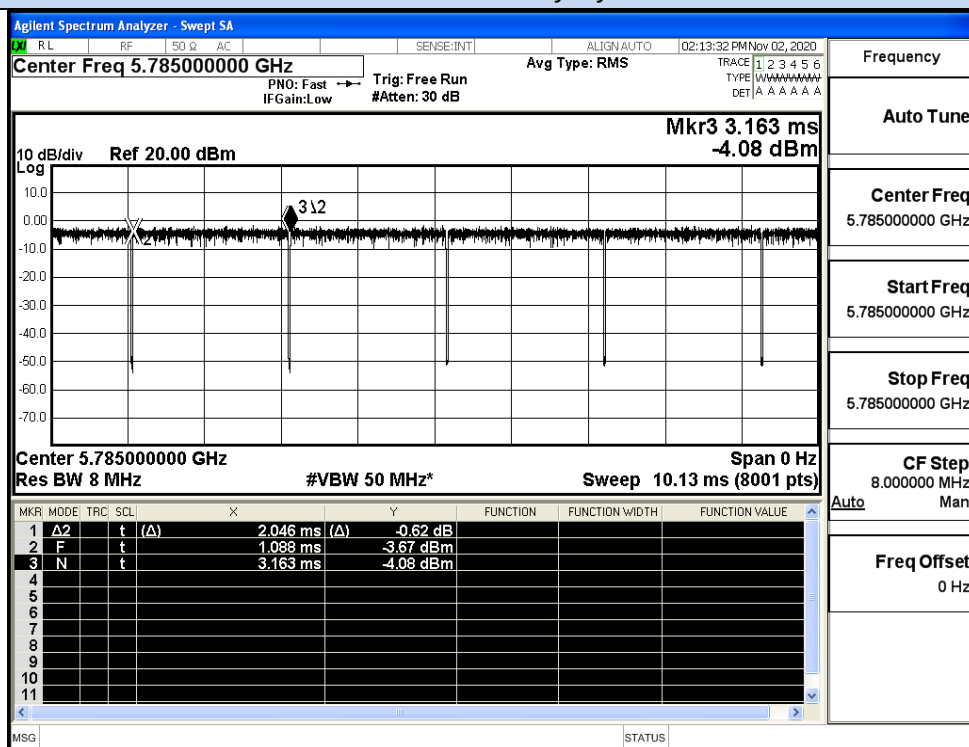


IEEE 802.11AC80

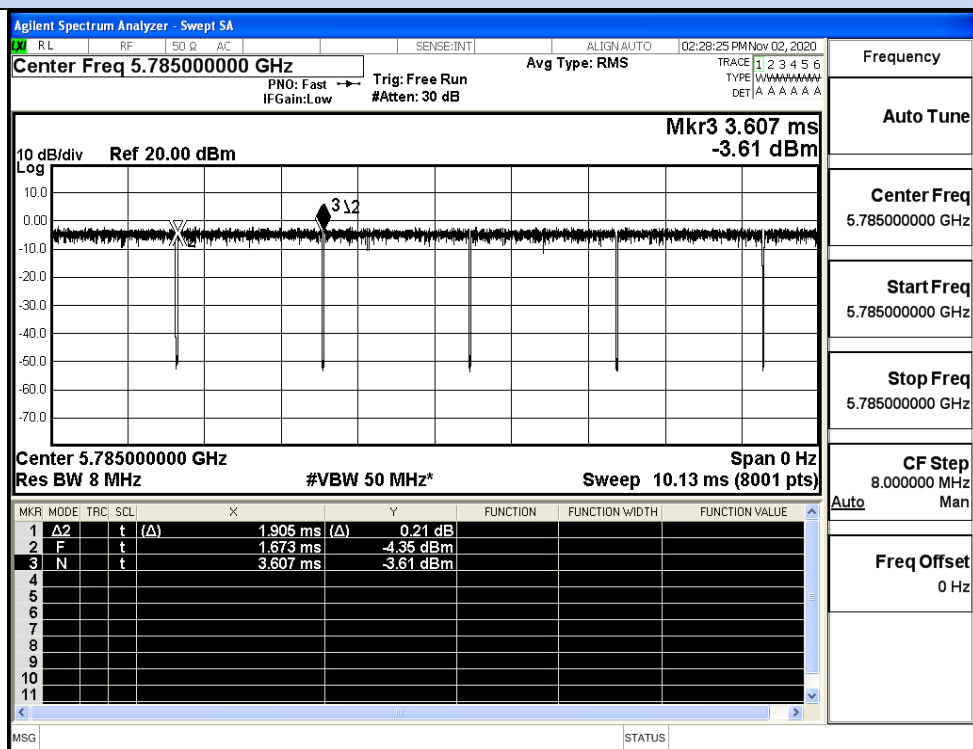
ANT 1

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5785	98.6	0	0.01
11N20 SISO	5785	98.49	0	0.01
11N40 SISO	5755	98.04	0	0.01
11AC20 SISO	5785	98.5	0	0.01
11AC40 SISO	5755	98.17	0	0.01
11AC80 SISO	5775	93.7	0.28	0.01

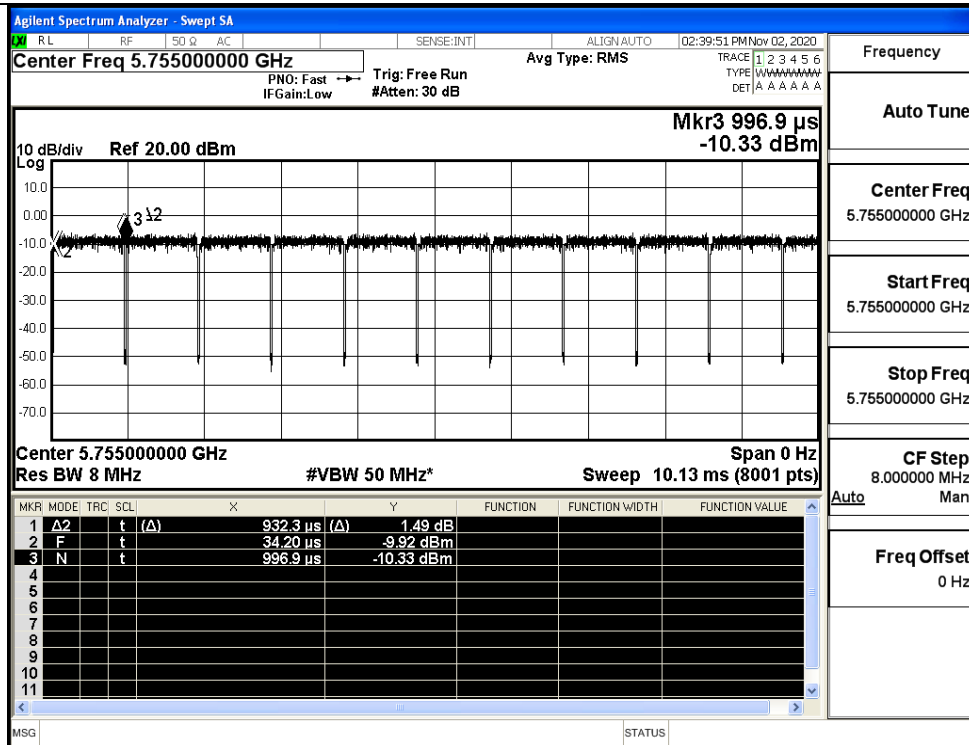
On Time and Duty Cycle



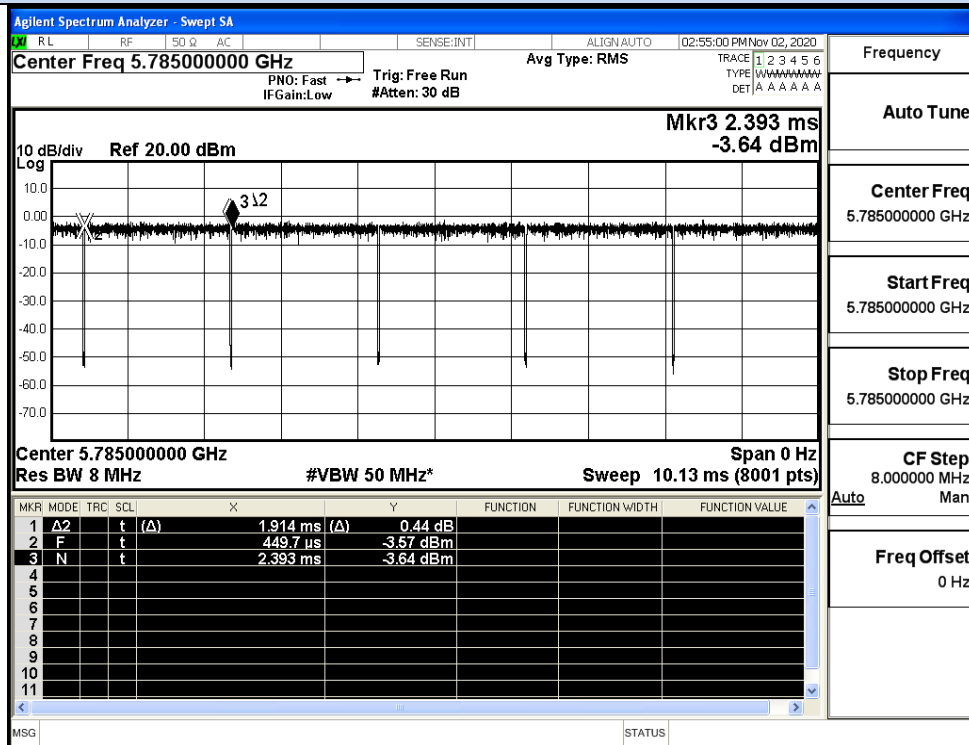
IEEE 802.11a



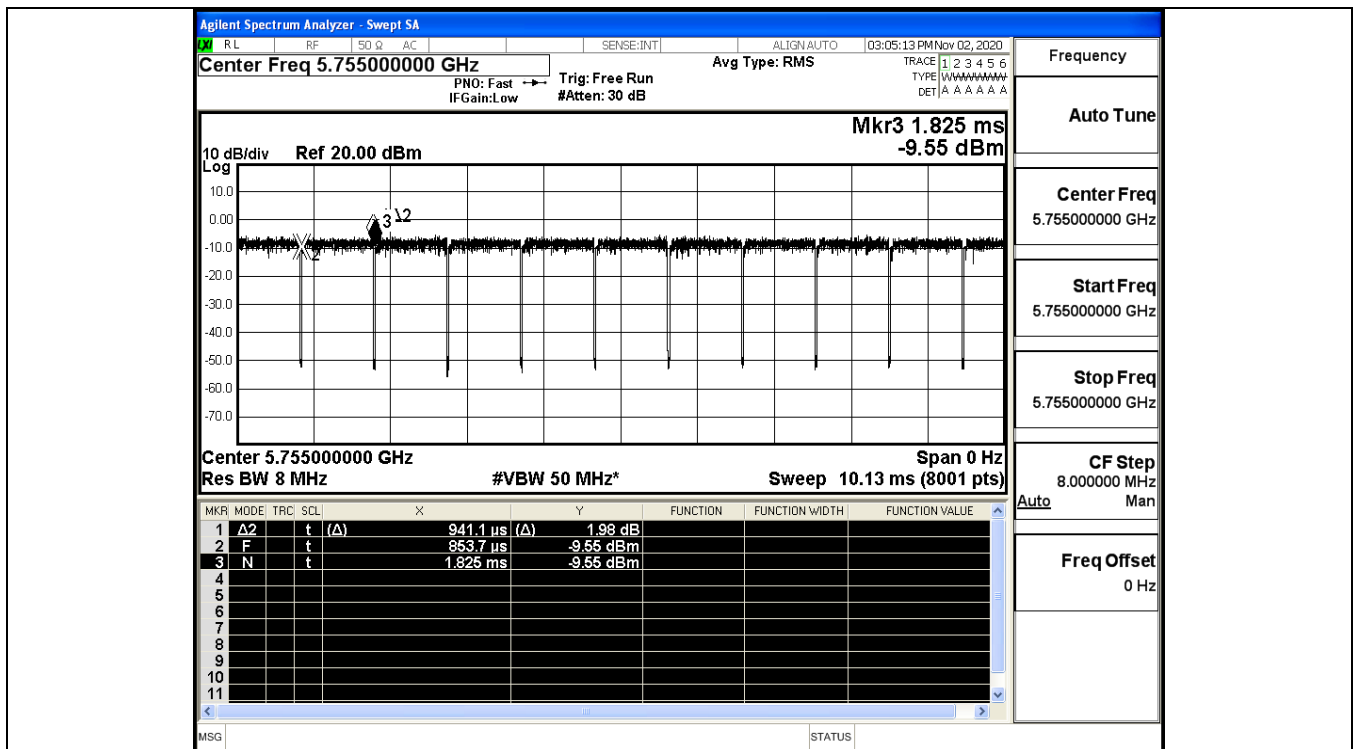
IEEE 802.11n HT20



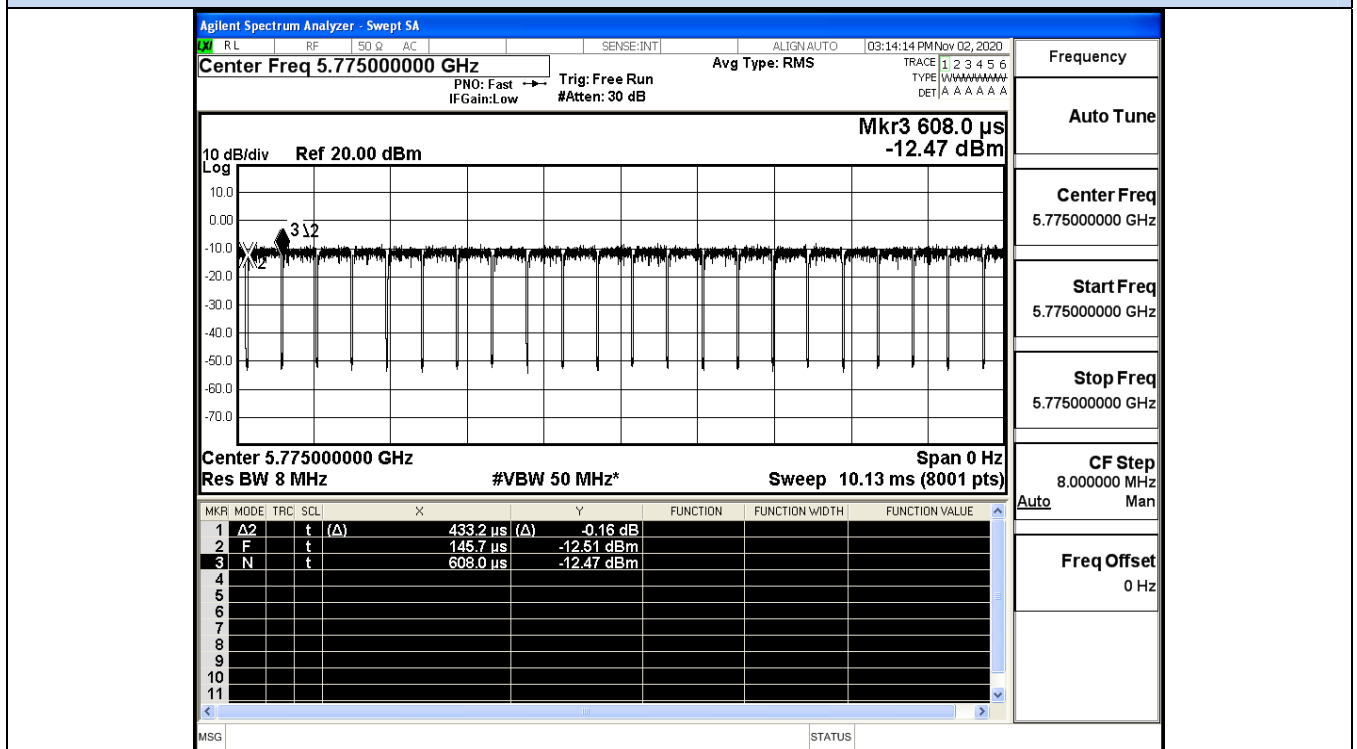
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11AC40



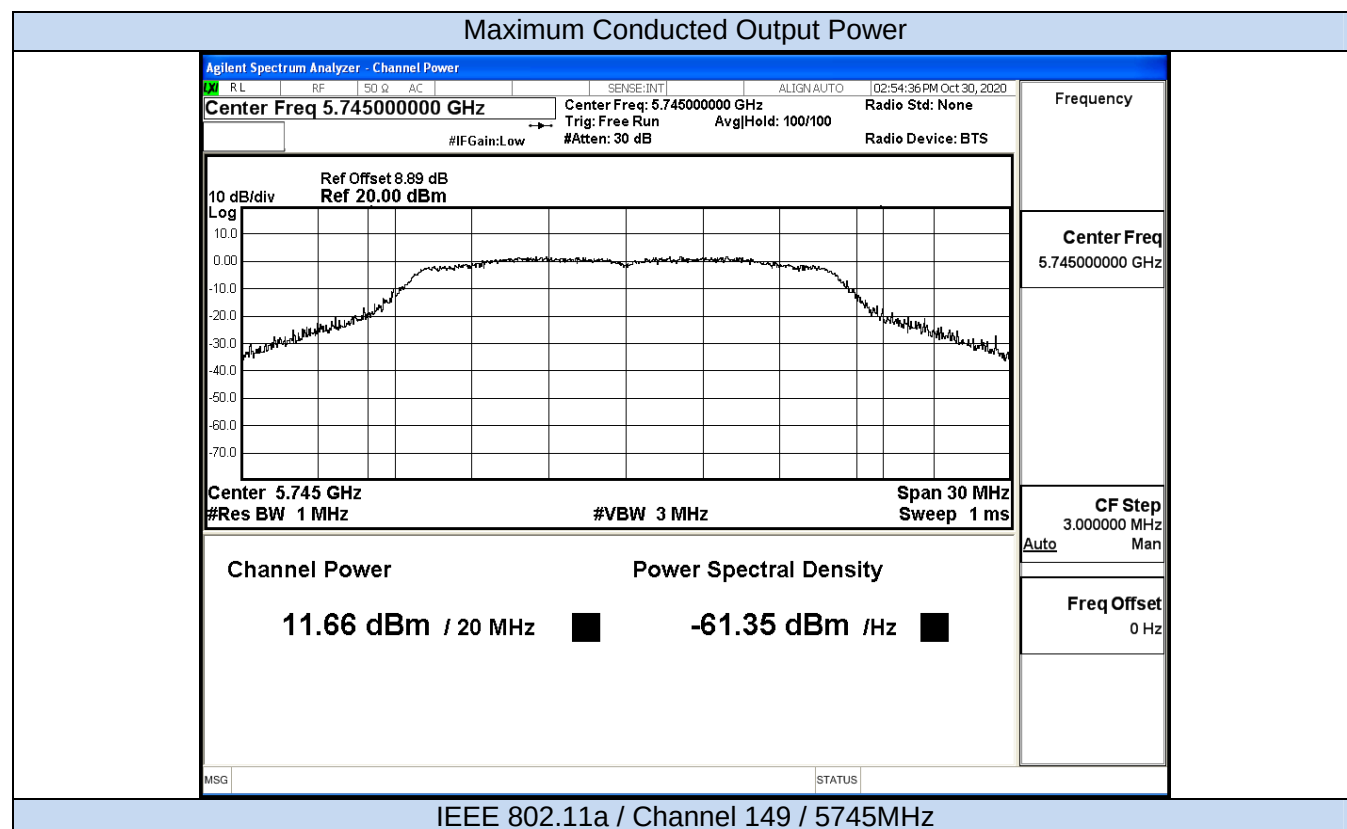
IEEE 802.11AC80

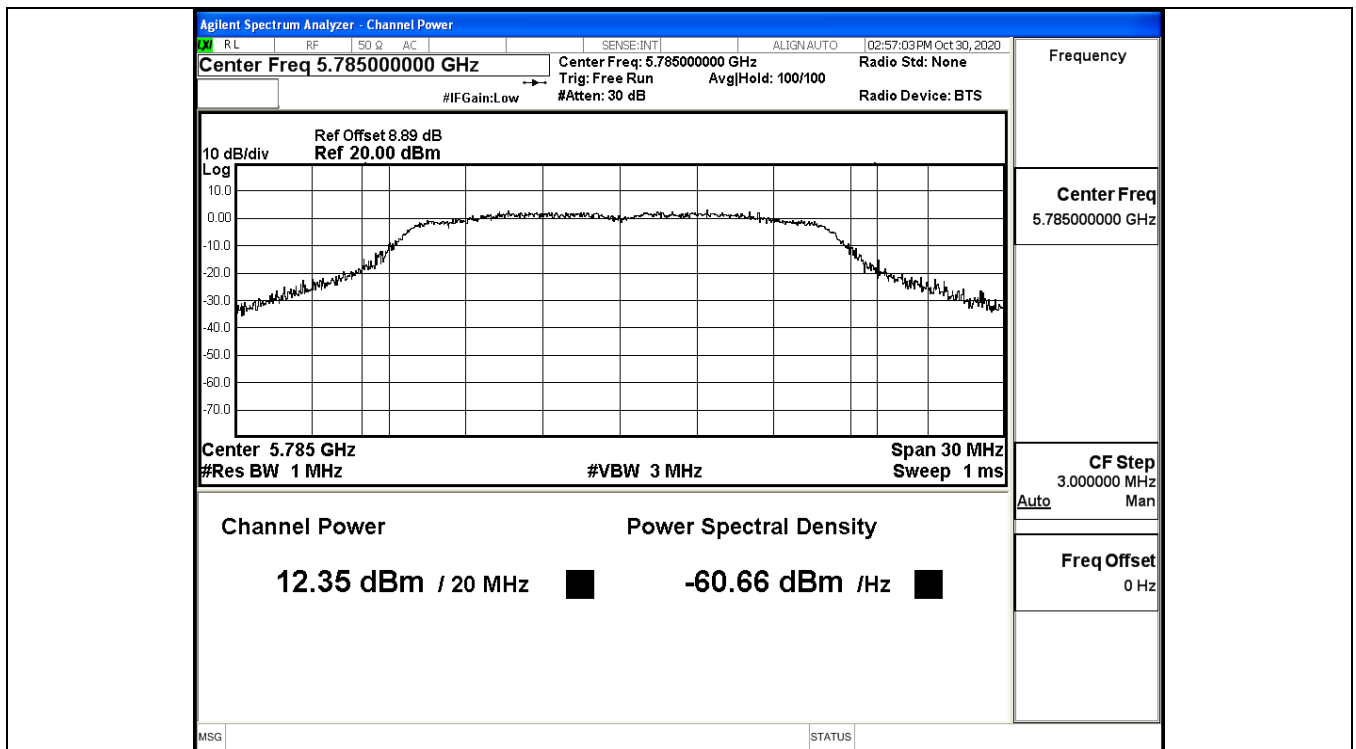
E.2 Maximum Conduct Output Power

ANT 0

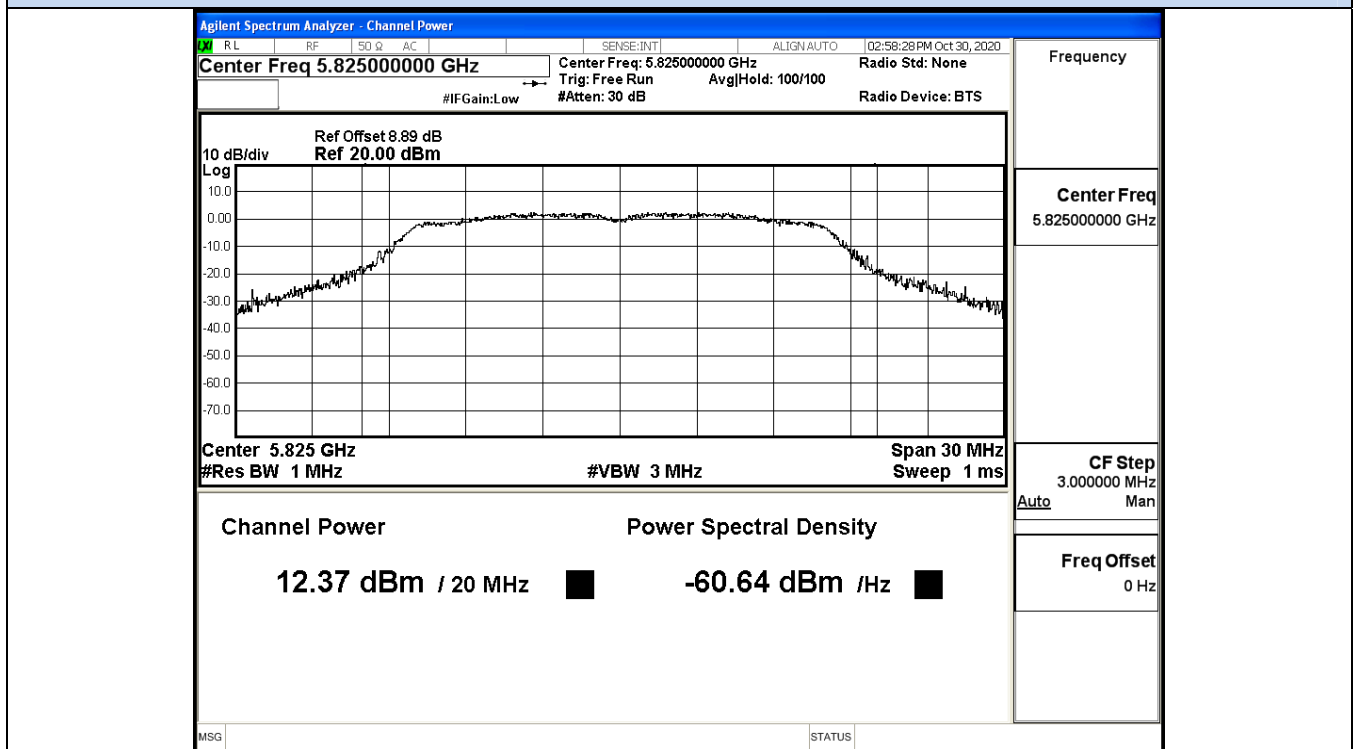
Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	149	5745	11.66	0	11.66	30	Pass
	157	5785	12.35	0	12.35		Pass
	165	5825	12.37	0	12.37		Pass
11N20 SISO	149	5745	11.52	0	11.52	30	Pass
	157	5785	12.27	0	12.27		Pass
	165	5825	12.30	0	12.30		Pass
11N40 SISO	151	5755	12.57	0	12.57	30	Pass
	159	5795	13.39	0	13.39		Pass
11AC20 SISO	149	5745	12.72	0	12.72	30	Pass
	157	5785	13.55	0	13.55		Pass
	165	5825	12.55	0	12.55		Pass
11AC40 SISO	151	5755	13.45	0	13.45	30	Pass
	159	5795	12.83	0	12.83		Pass
11AC80 SISO	155	5775	13.00	0.28	13.28	30	Pass

Maximum Conducted Output Power



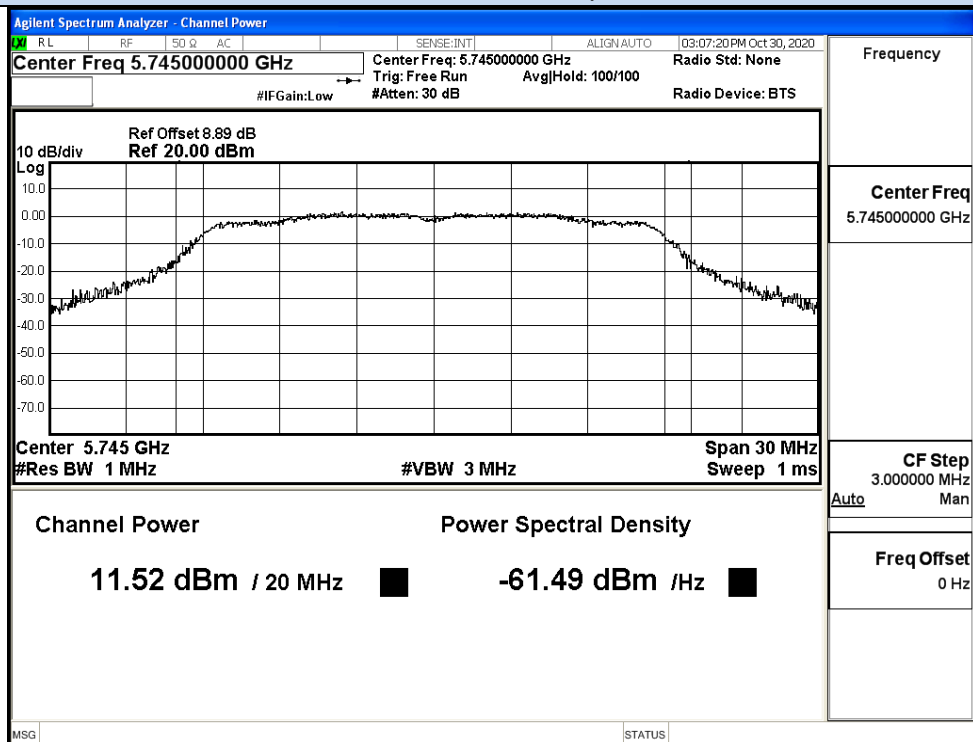


IEEE 802.11a / Channel 157 / 5785MHz

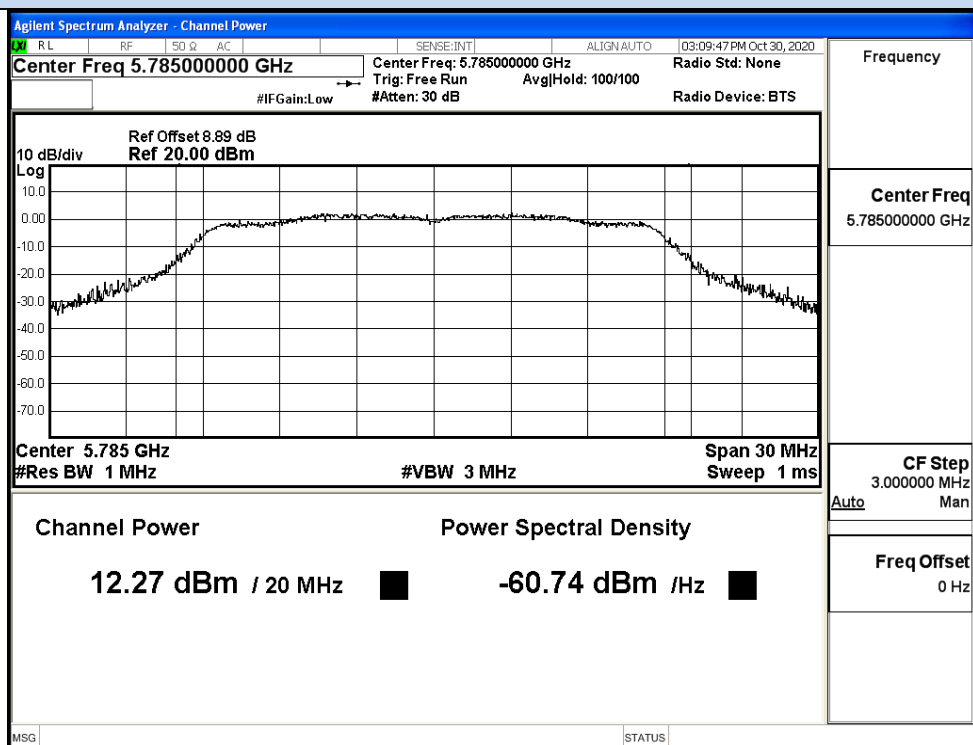


IEEE 802.11a / Channel 165 / 5825MHz

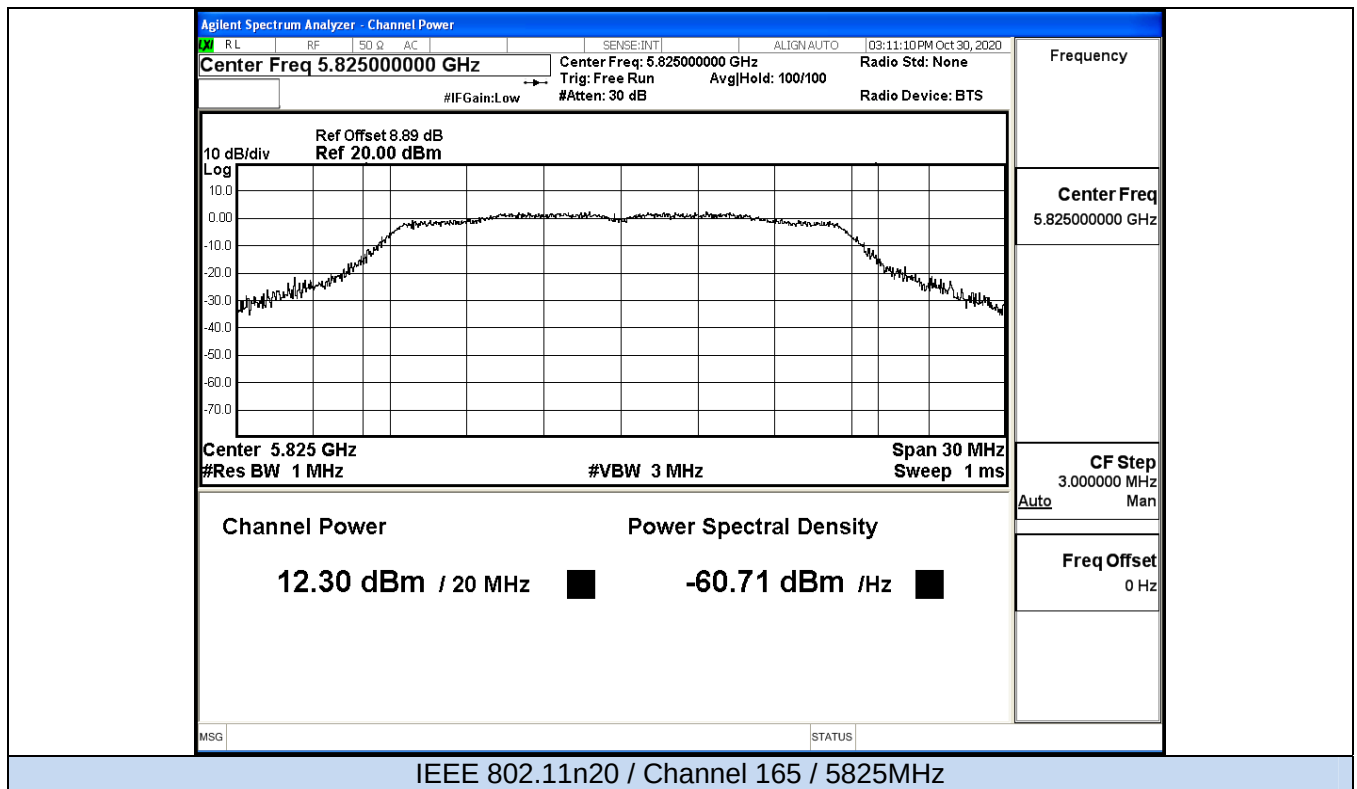
Maximum Conducted Output Power



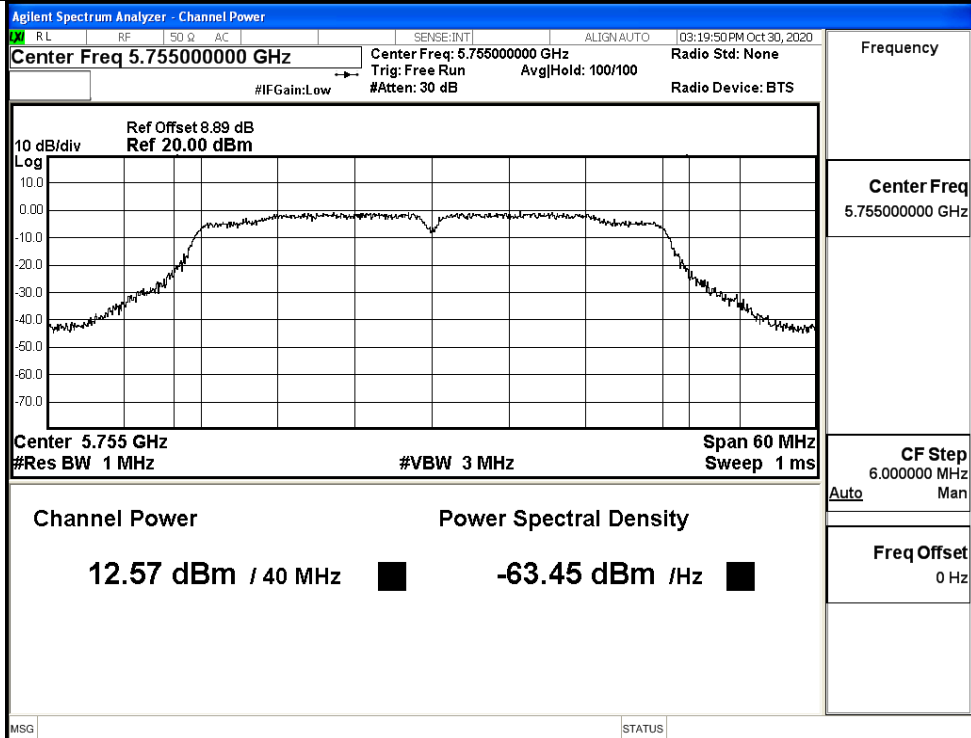
IEEE 802.11n20 / Channel 149 / 5745MHz



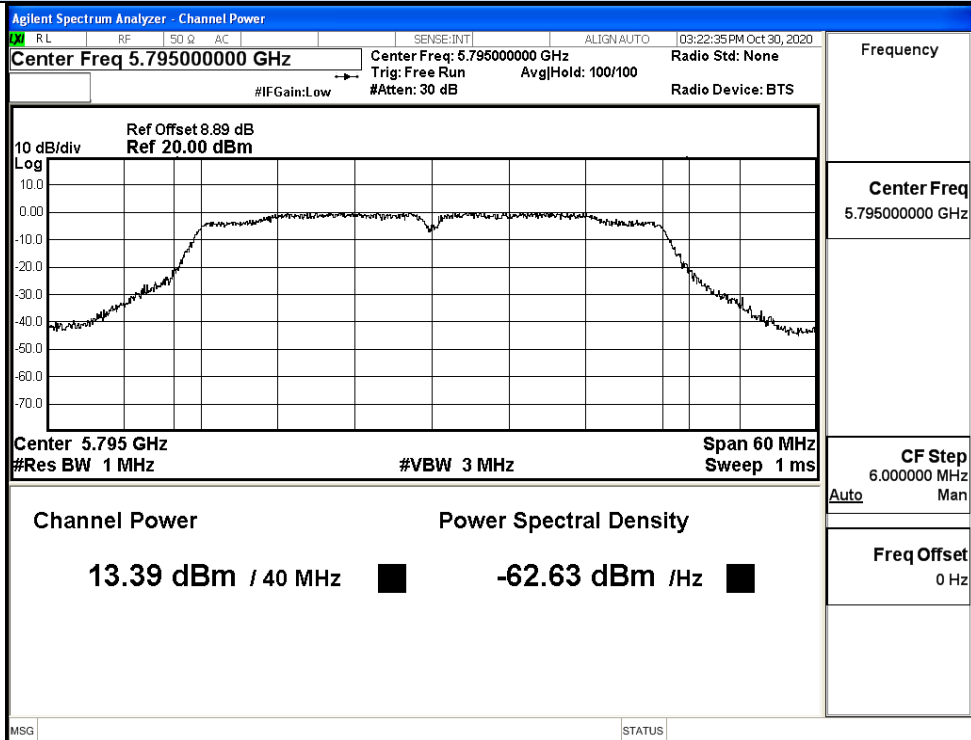
IEEE 802.11n20 / Channel 157 / 5785MHz



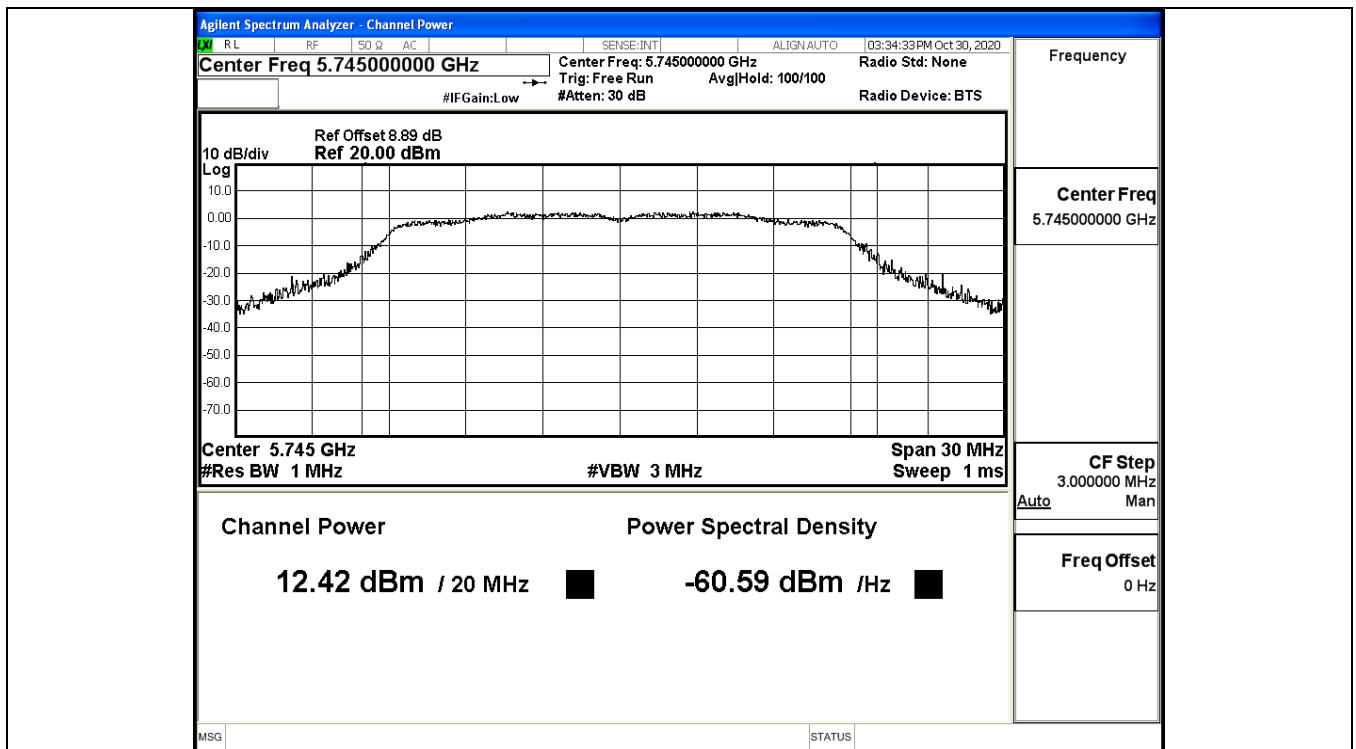
Maximum Conducted Output Power



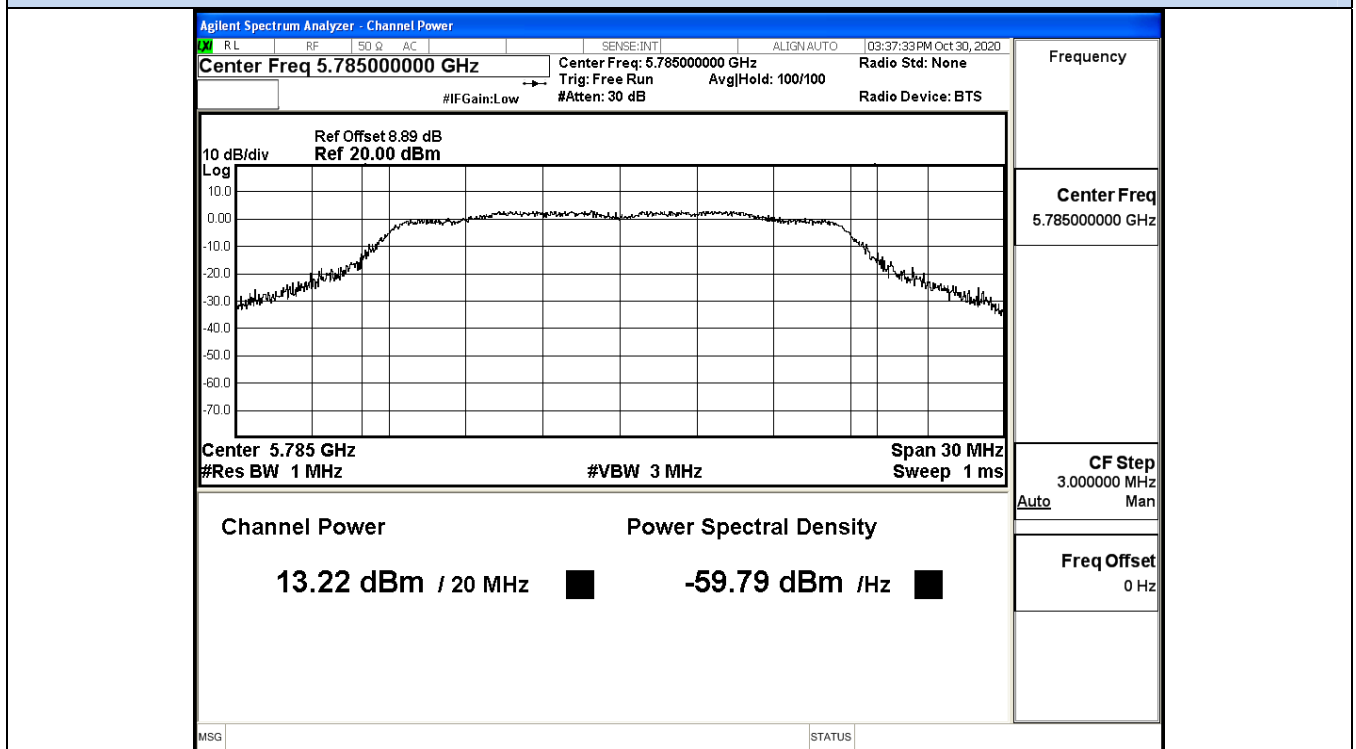
IEEE 802.11n40 / Channel 151 / 5755MHz



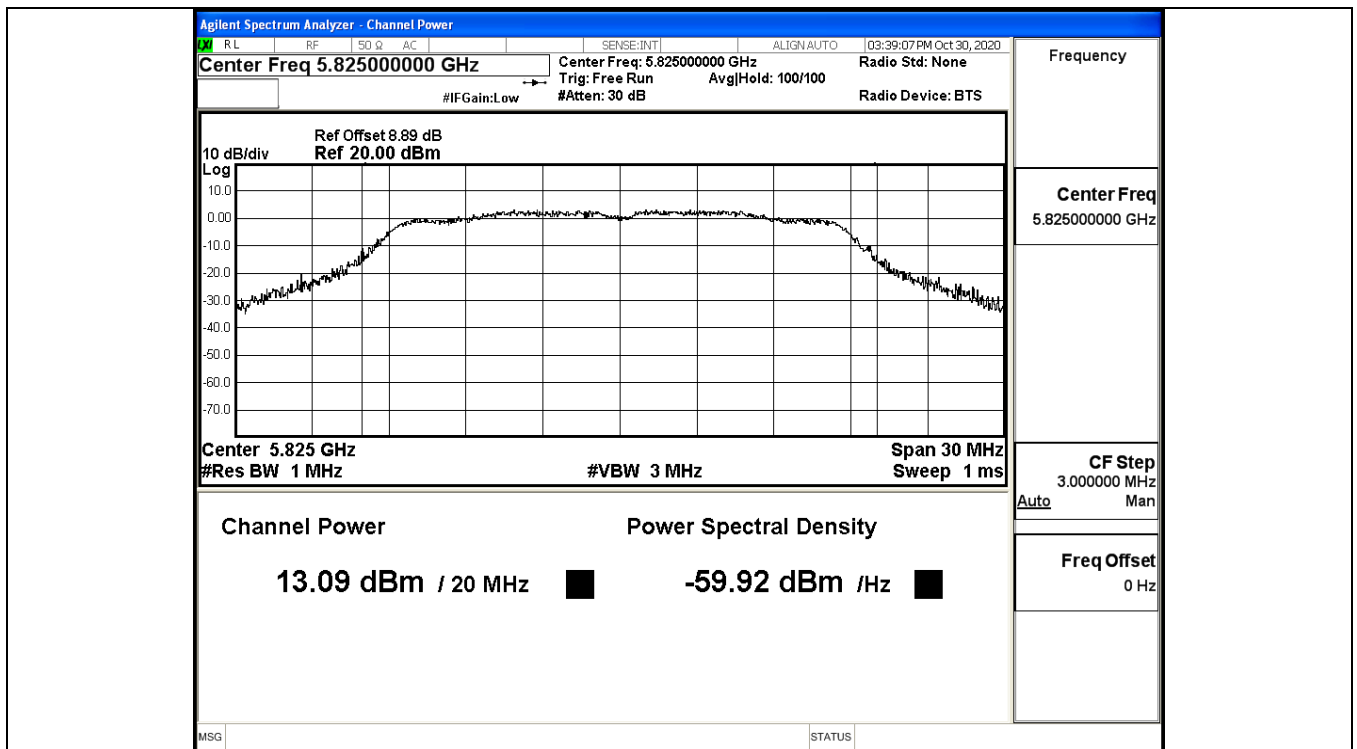
IEEE 802.11n40 / Channel 159 / 5795MHz



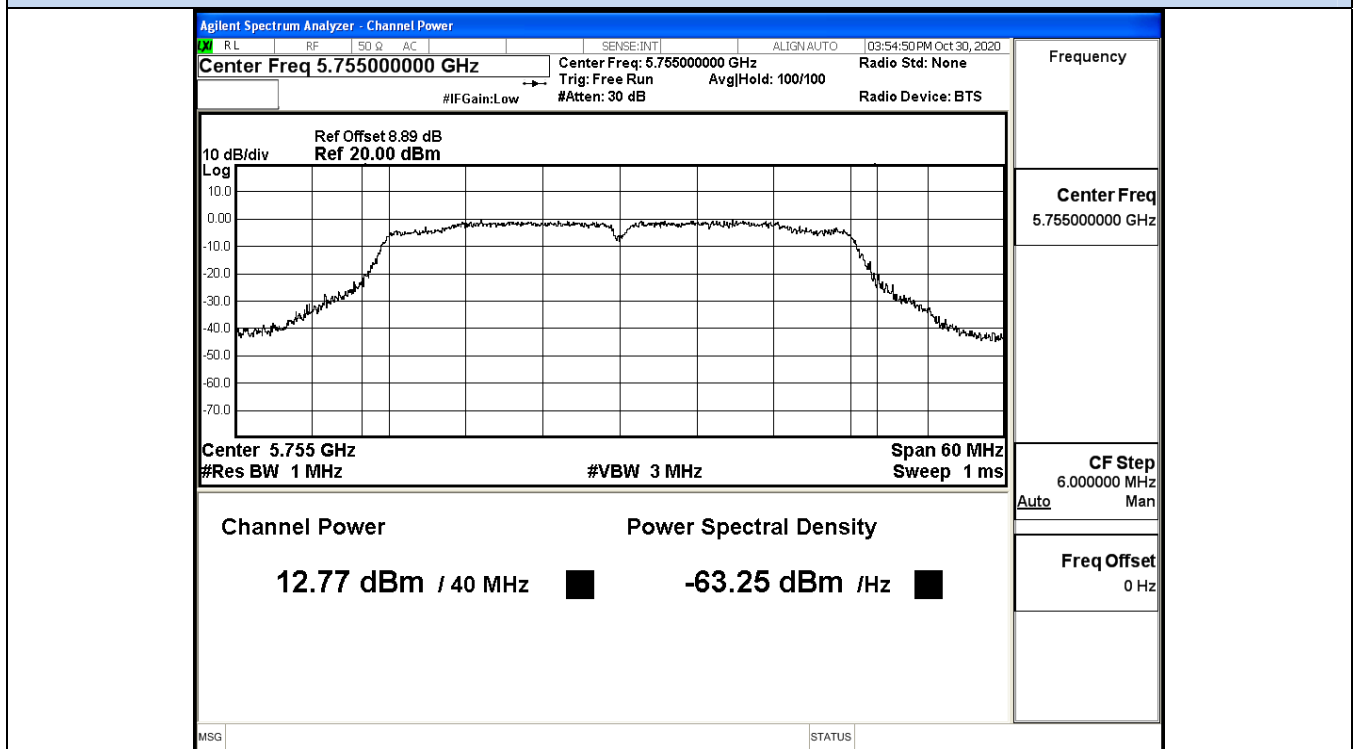
IEEE 802.11ac20 / Channel 149 / 5745MHz



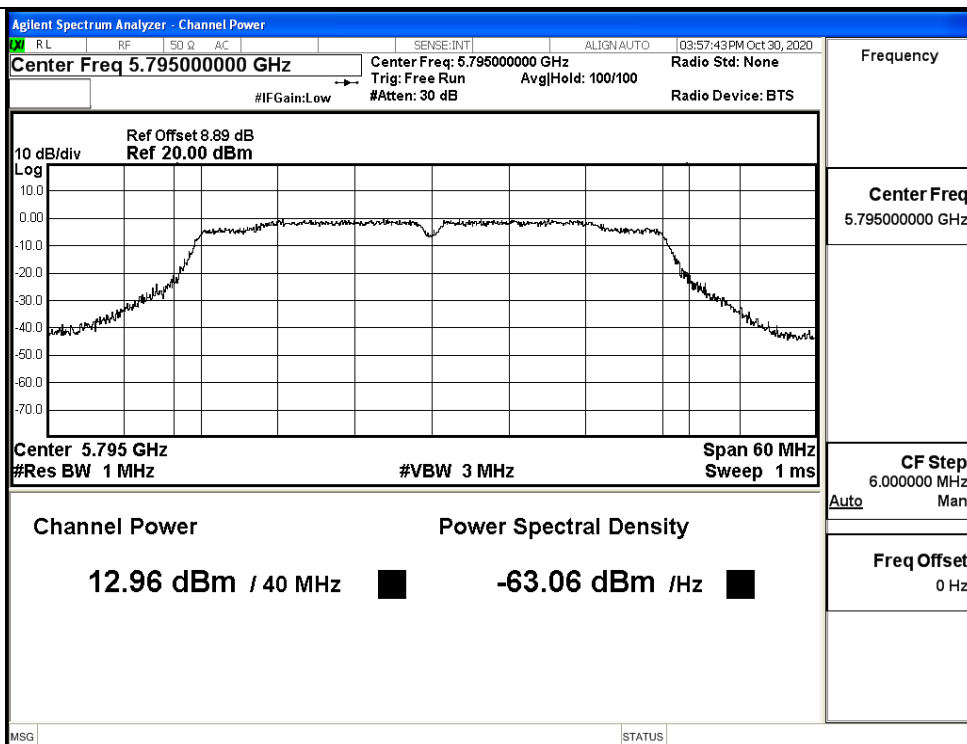
IEEE 802.11ac20 / Channel 157 / 5785MHz



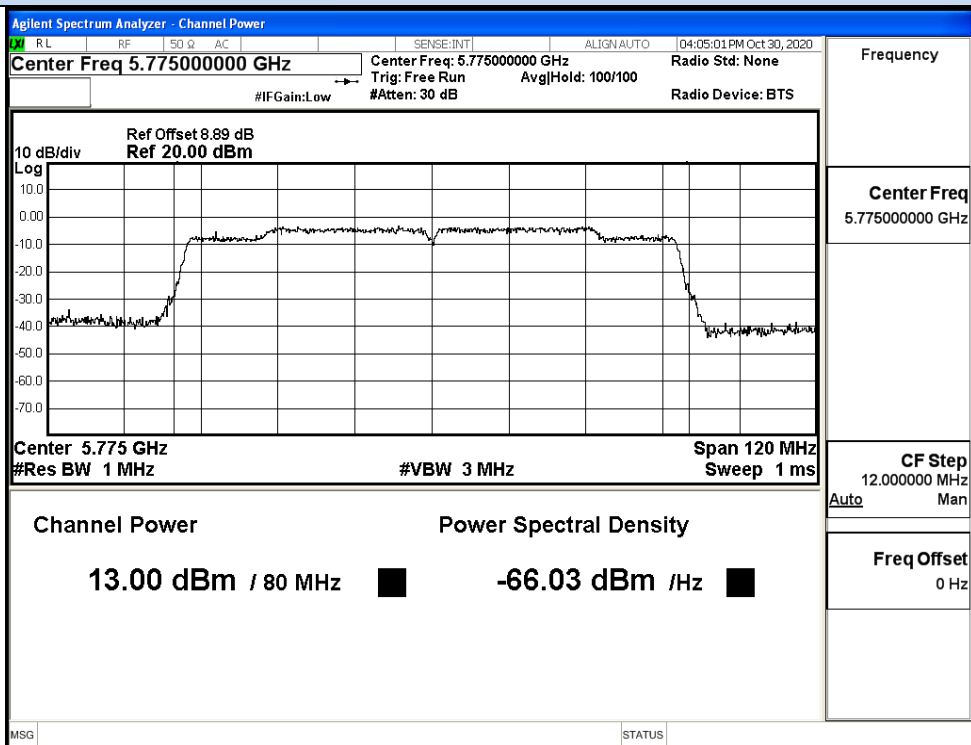
IEEE 802.11ac20 / Channel 165/ 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



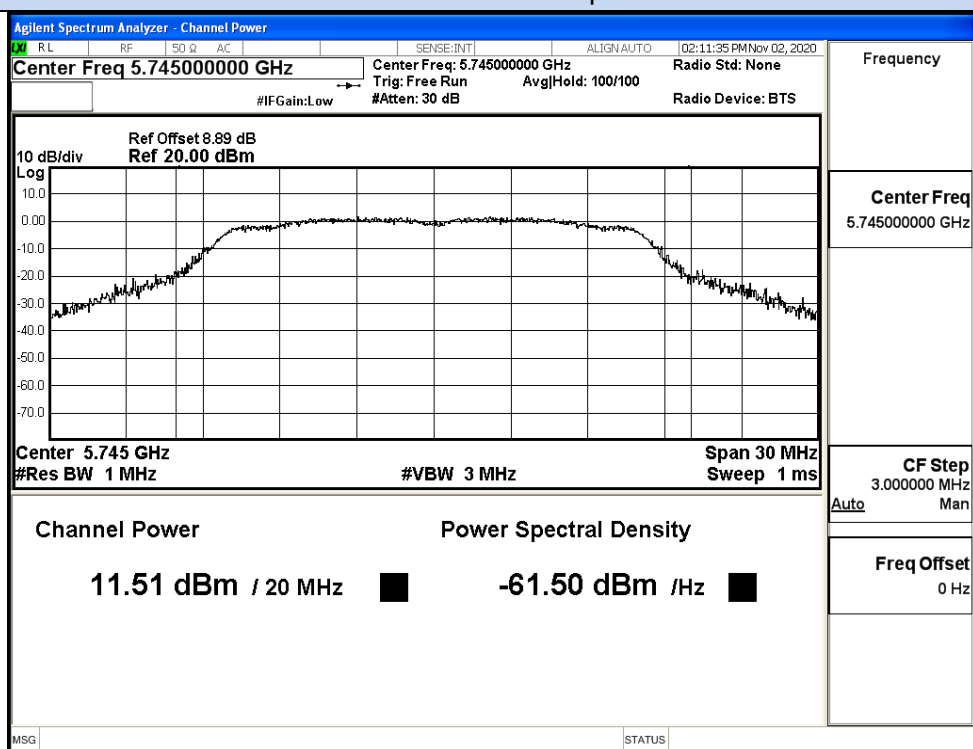
IEEE 802.11ac40 / Channel 159 / 5795MHz



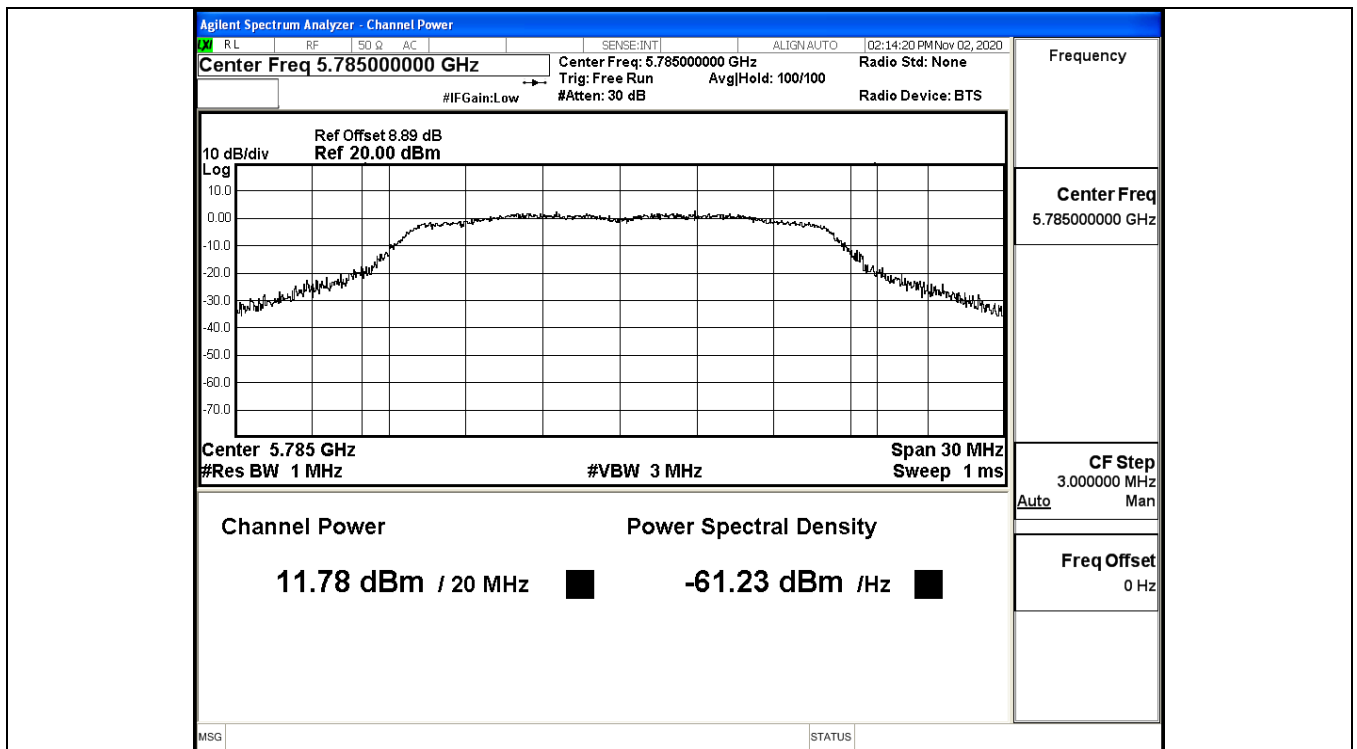
IEEE 802.11ac80 / Channel 155 / 5775MHz

ANT 1

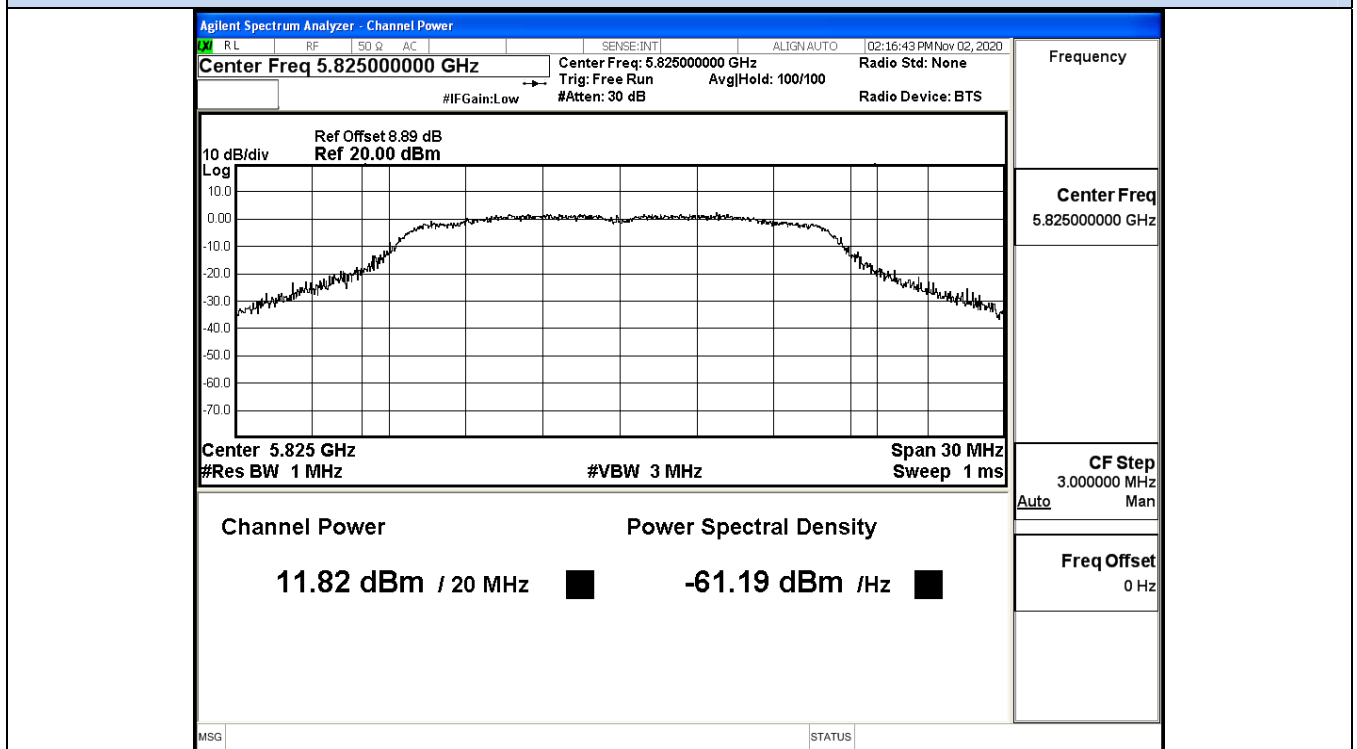
Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	149	5745	11.51	0	11.51	30	Pass
	157	5785	11.78	0	11.78		Pass
	165	5825	11.82	0	11.82		Pass
11N20 SISO	149	5745	11.45	0	11.45	30	Pass
	157	5785	11.66	0	11.66		Pass
	165	5825	11.64	0	11.64		Pass
11N40 SISO	151	5755	11.38	0	11.38	30	Pass
	159	5795	12.08	0	12.08		Pass
11AC20 SISO	149	5745	11.61	0	11.61	30	Pass
	157	5785	11.62	0	11.62		Pass
	165	5825	11.98	0	11.98		Pass
11AC40 SISO	151	5755	11.74	0	11.74	30	Pass
	159	5795	11.57	0	11.57		Pass
11AC80 SISO	155	5775	12.12	0.28	12.40	30	Pass

Maximum Conducted Output Power

IEEE 802.11a / Channel 149 / 5745MHz

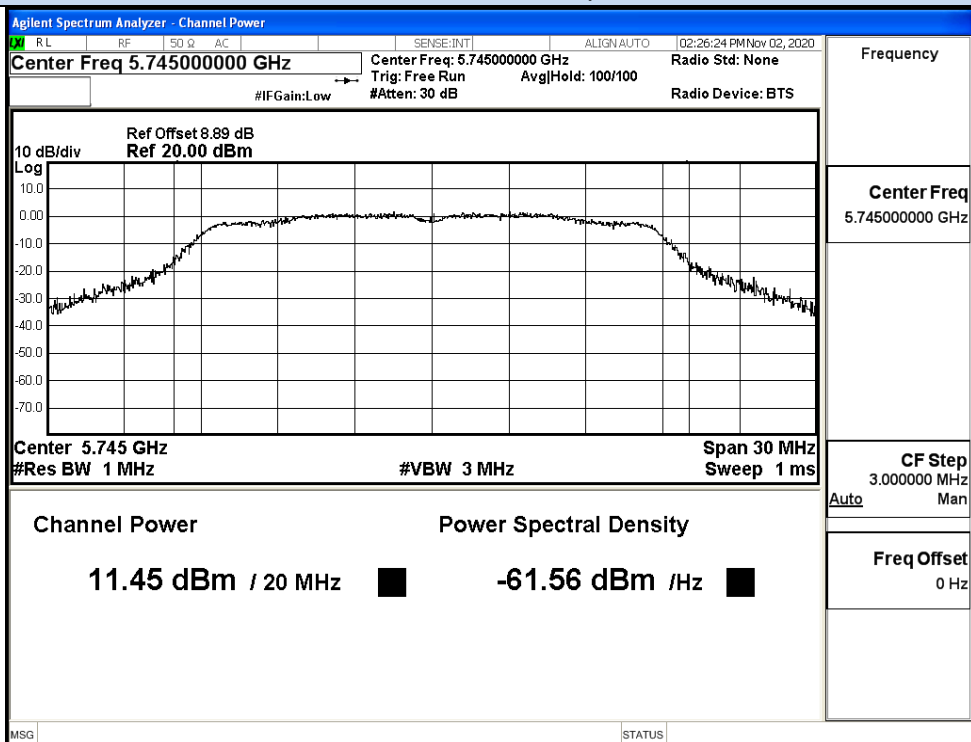


IEEE 802.11a / Channel 157 / 5785MHz

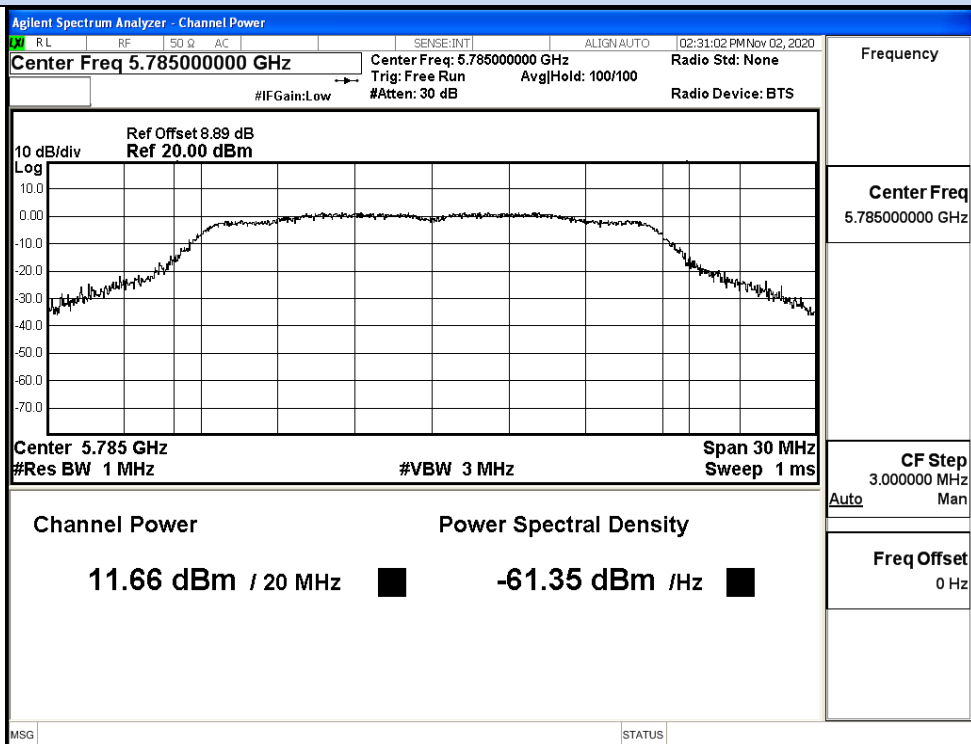


IEEE 802.11a / Channel 165 / 5825MHz

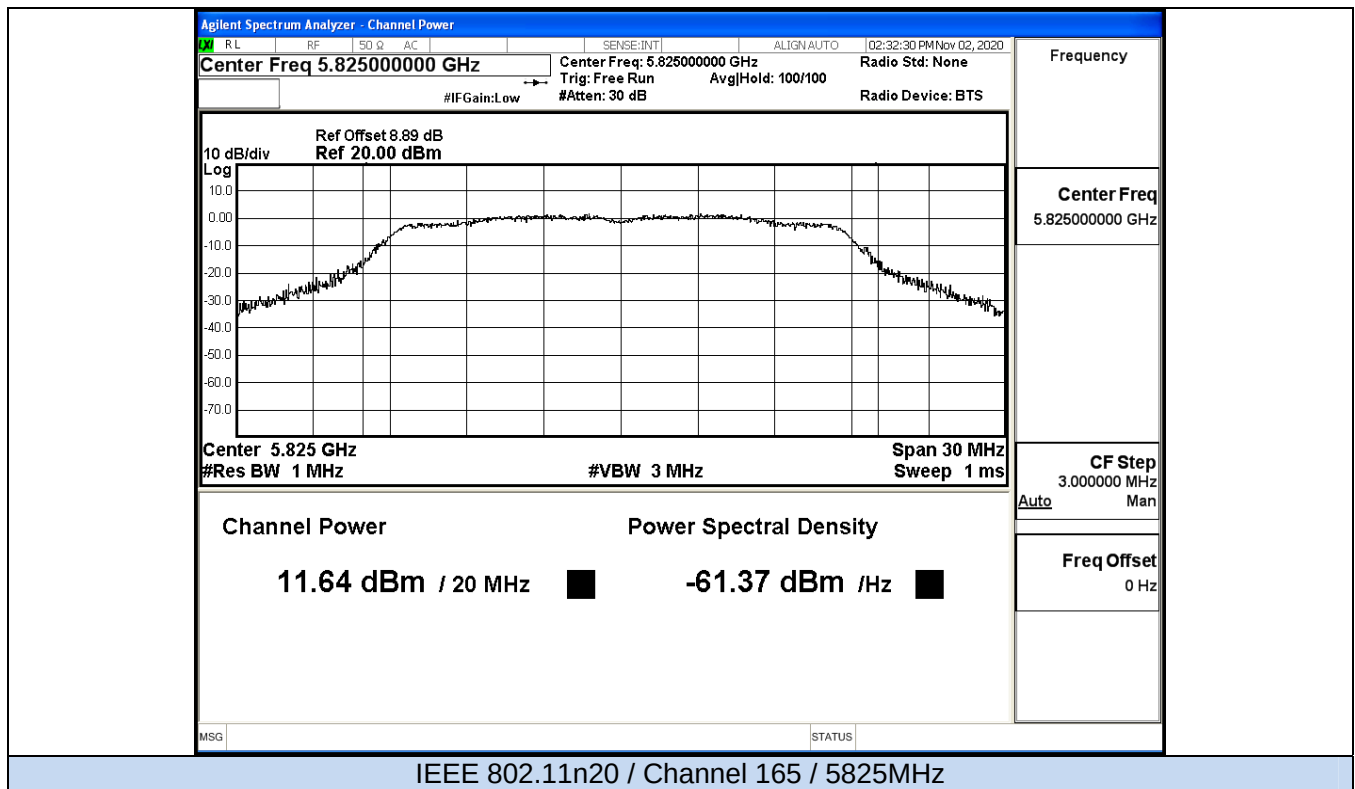
Maximum Conducted Output Power



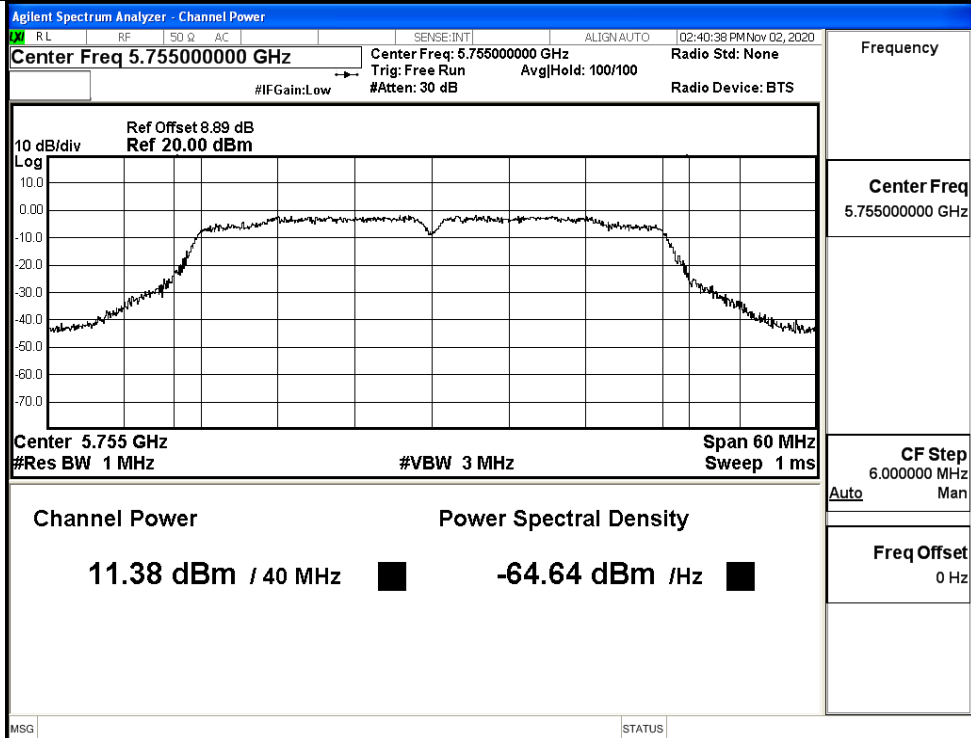
IEEE 802.11n20 / Channel 149 / 5745MHz



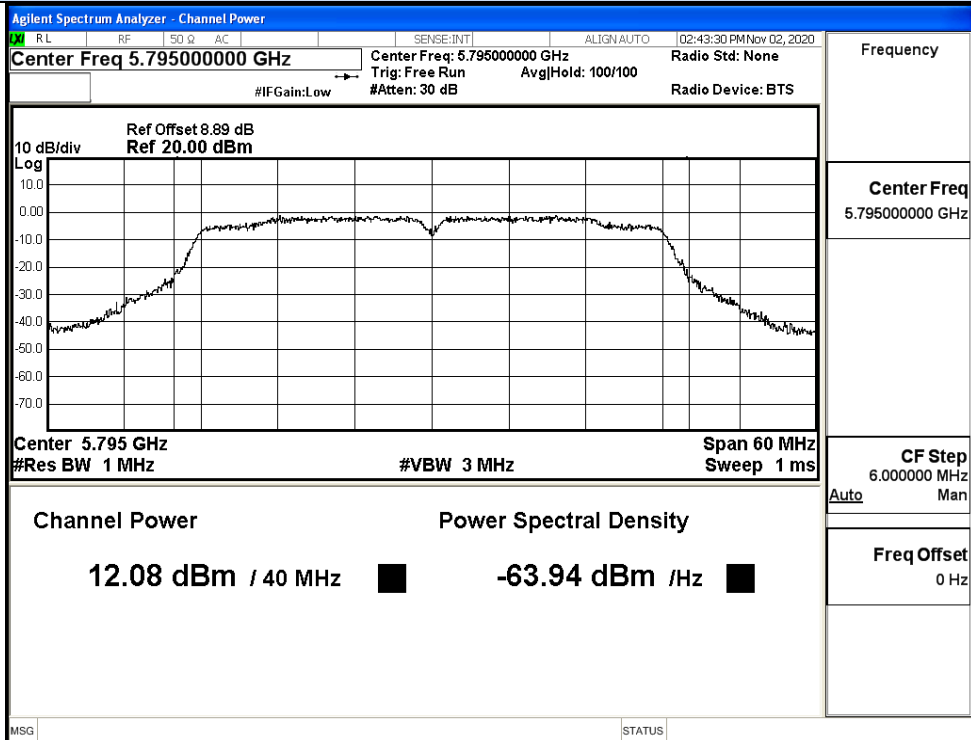
IEEE 802.11n20 / Channel 157 / 5785MHz



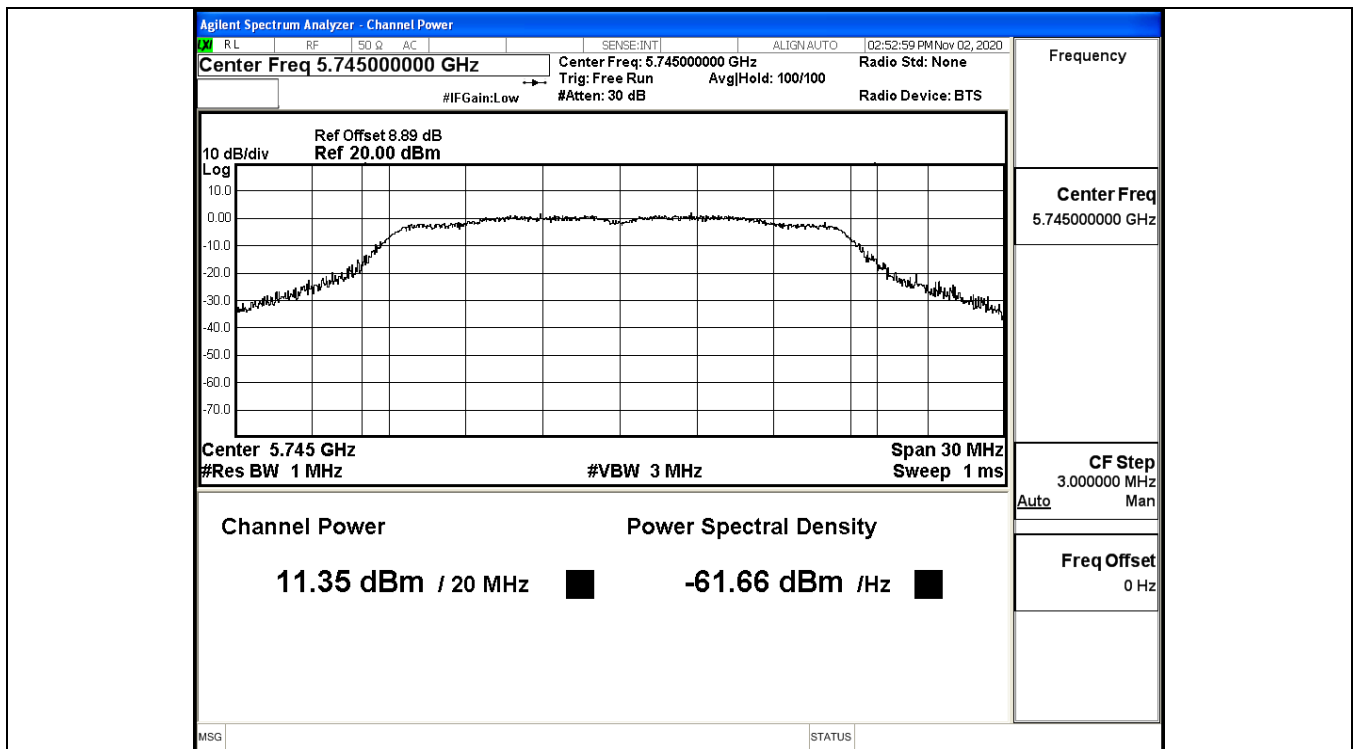
Maximum Conducted Output Power



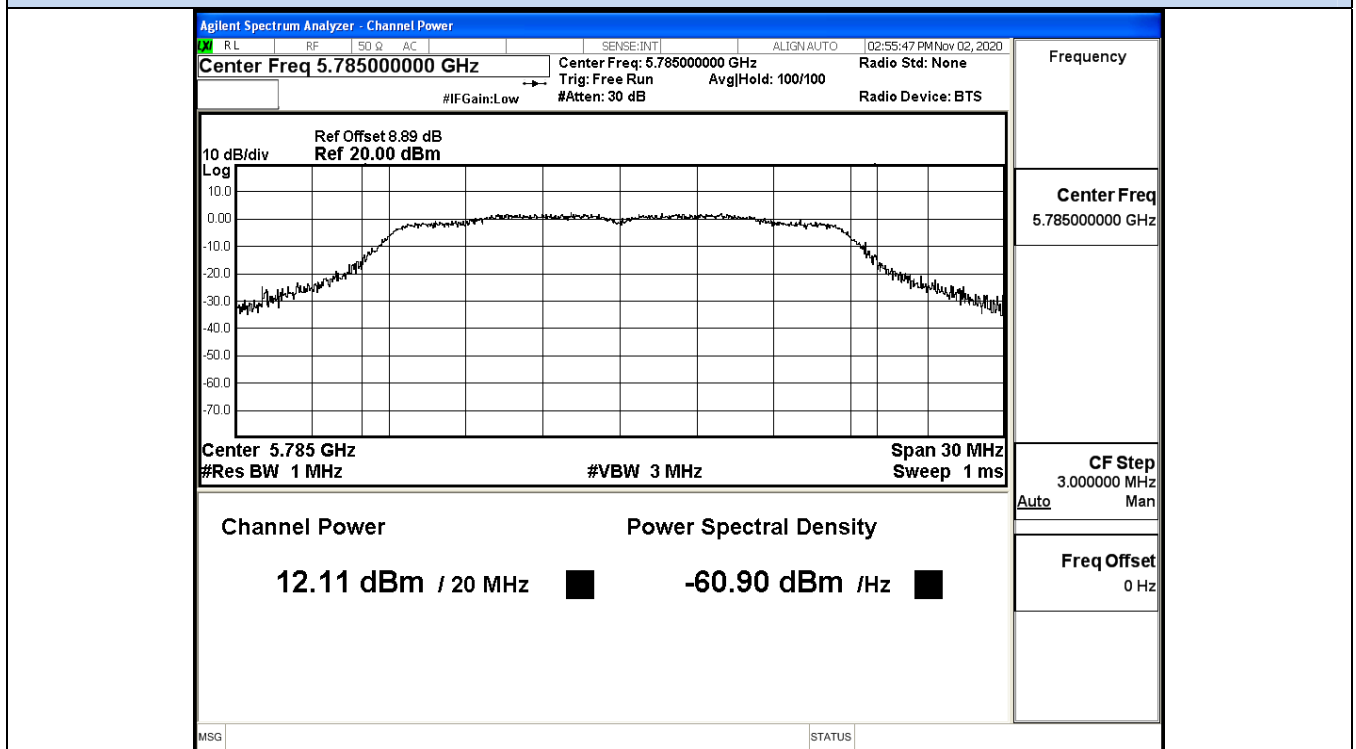
IEEE 802.11n40 / Channel 151 / 5755MHz



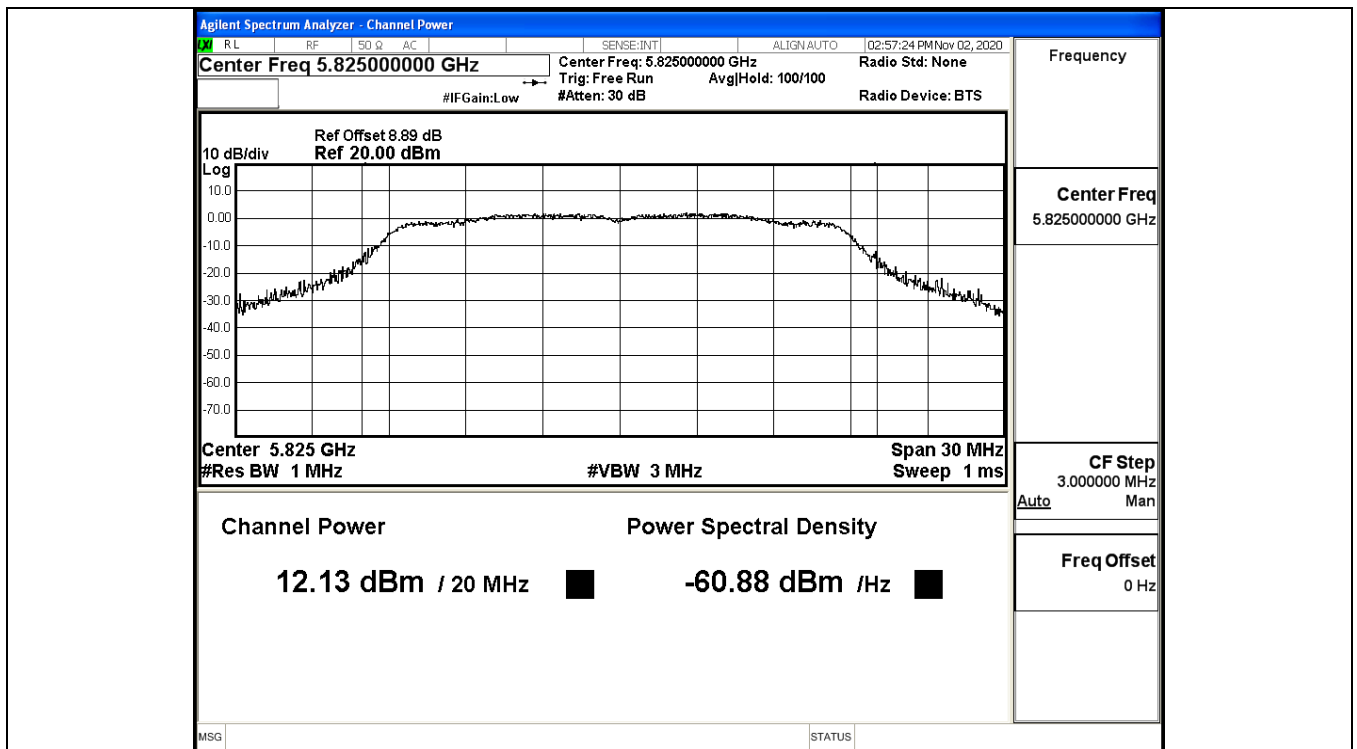
IEEE 802.11n40 / Channel 159 / 5795MHz



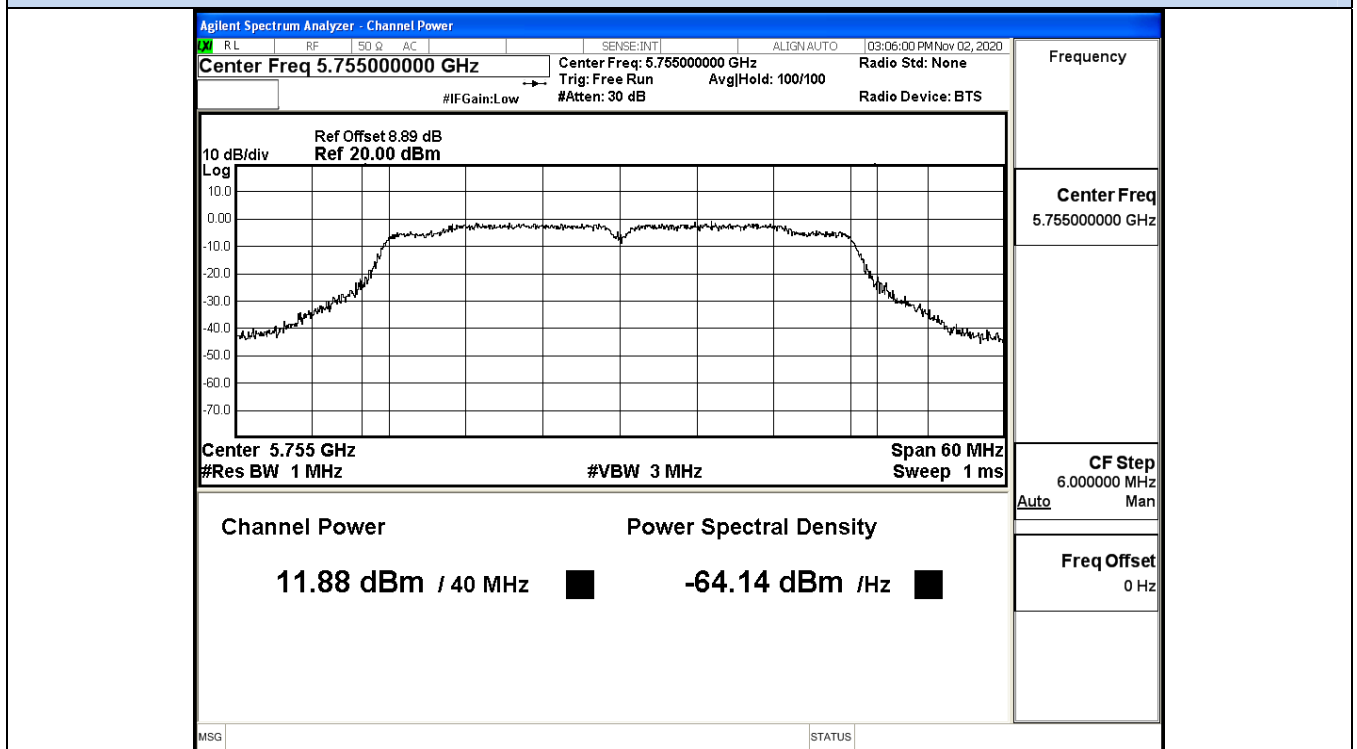
IEEE 802.11ac20 / Channel 149 / 5745MHz



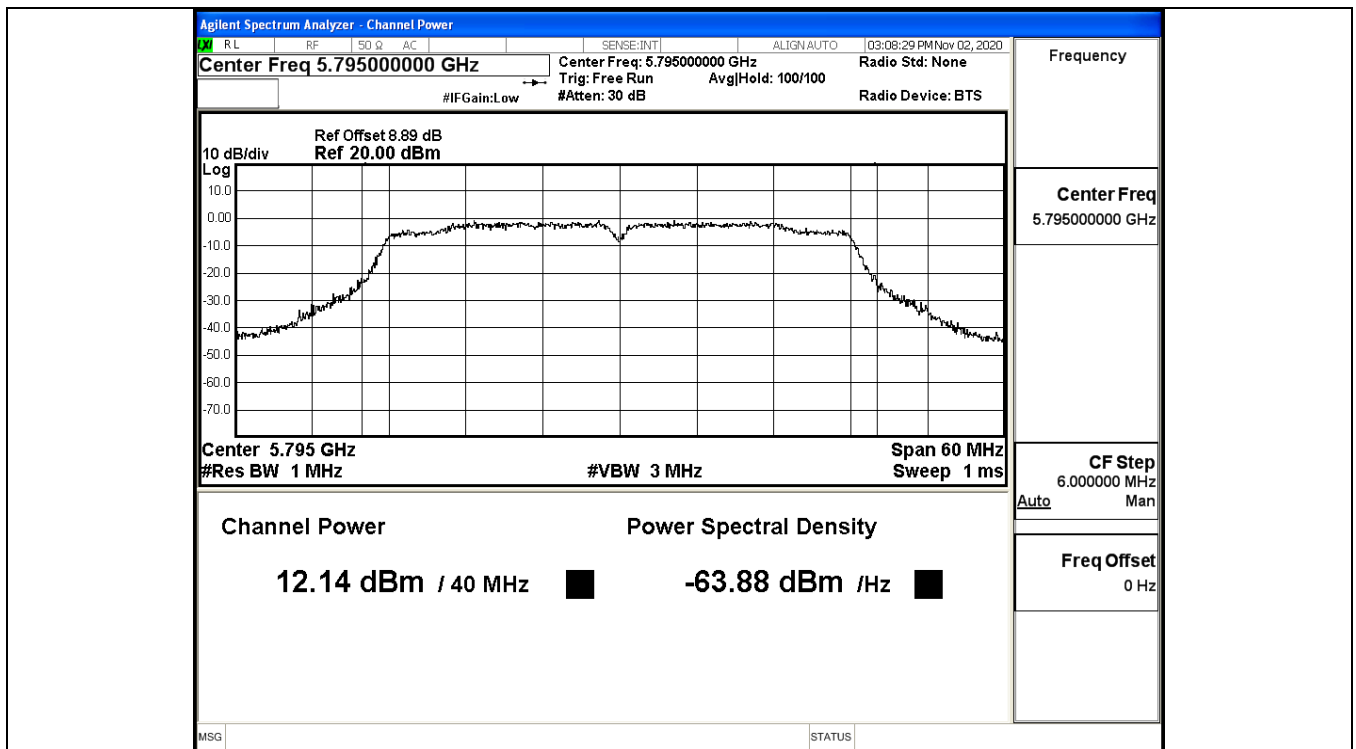
IEEE 802.11ac20 / Channel 157 / 5785MHz



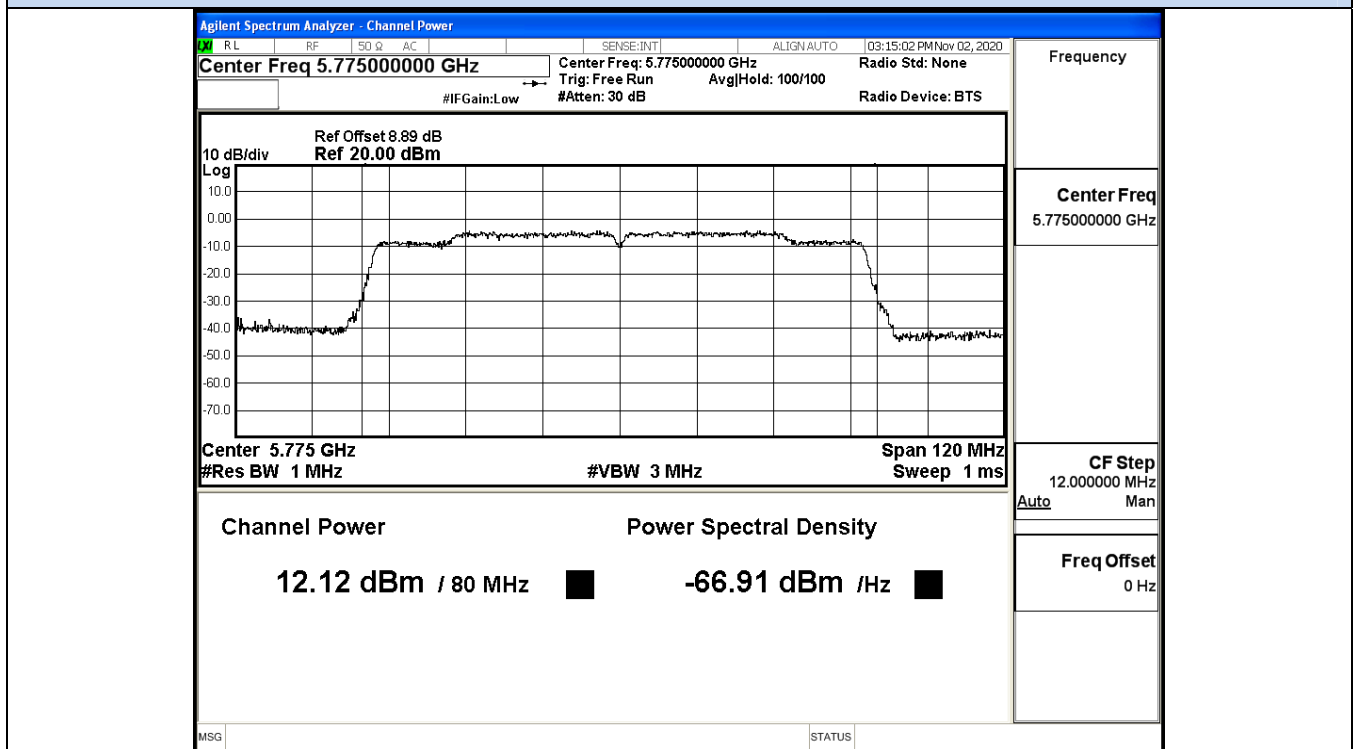
IEEE 802.11ac20 / Channel 165/ 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



IEEE 802.11ac80 / Channel 155 / 5775MHz

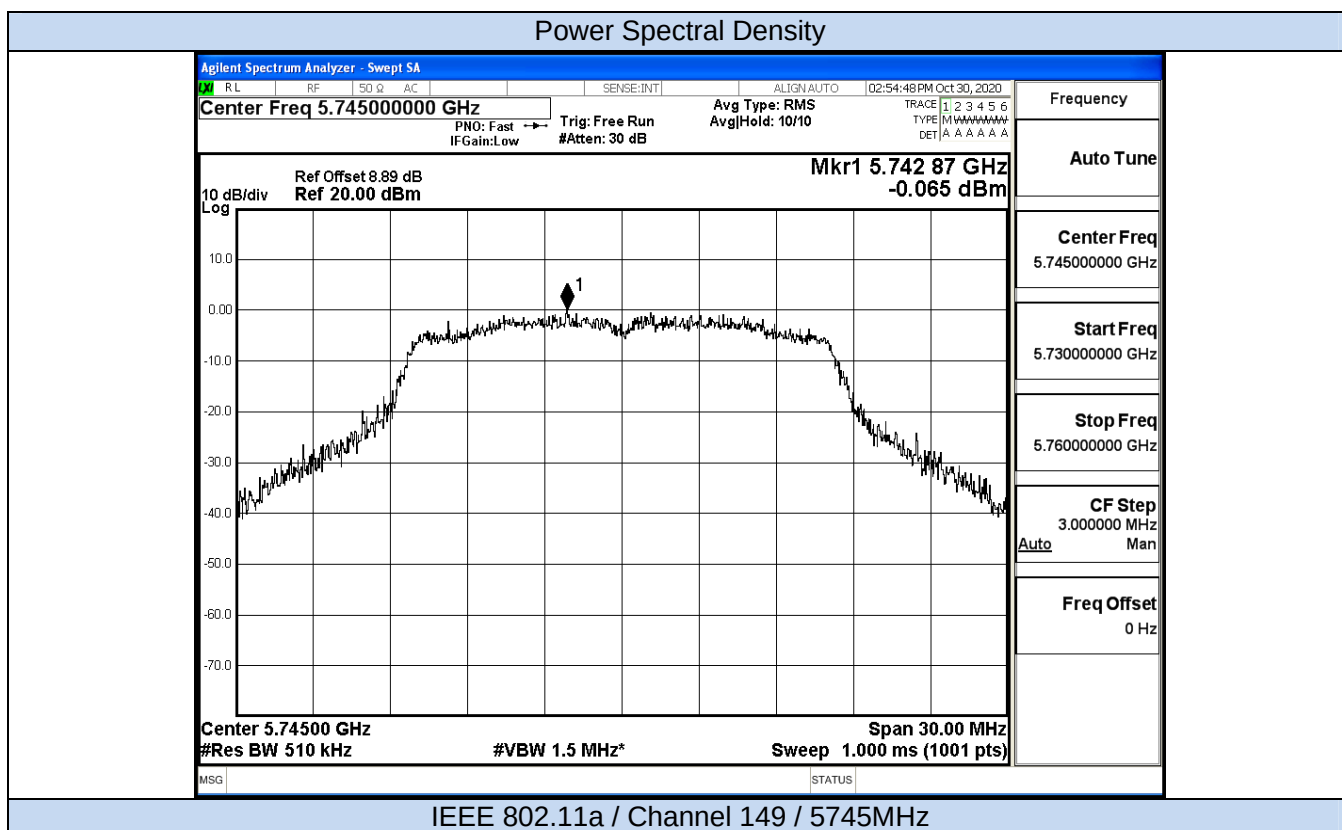
MIMO

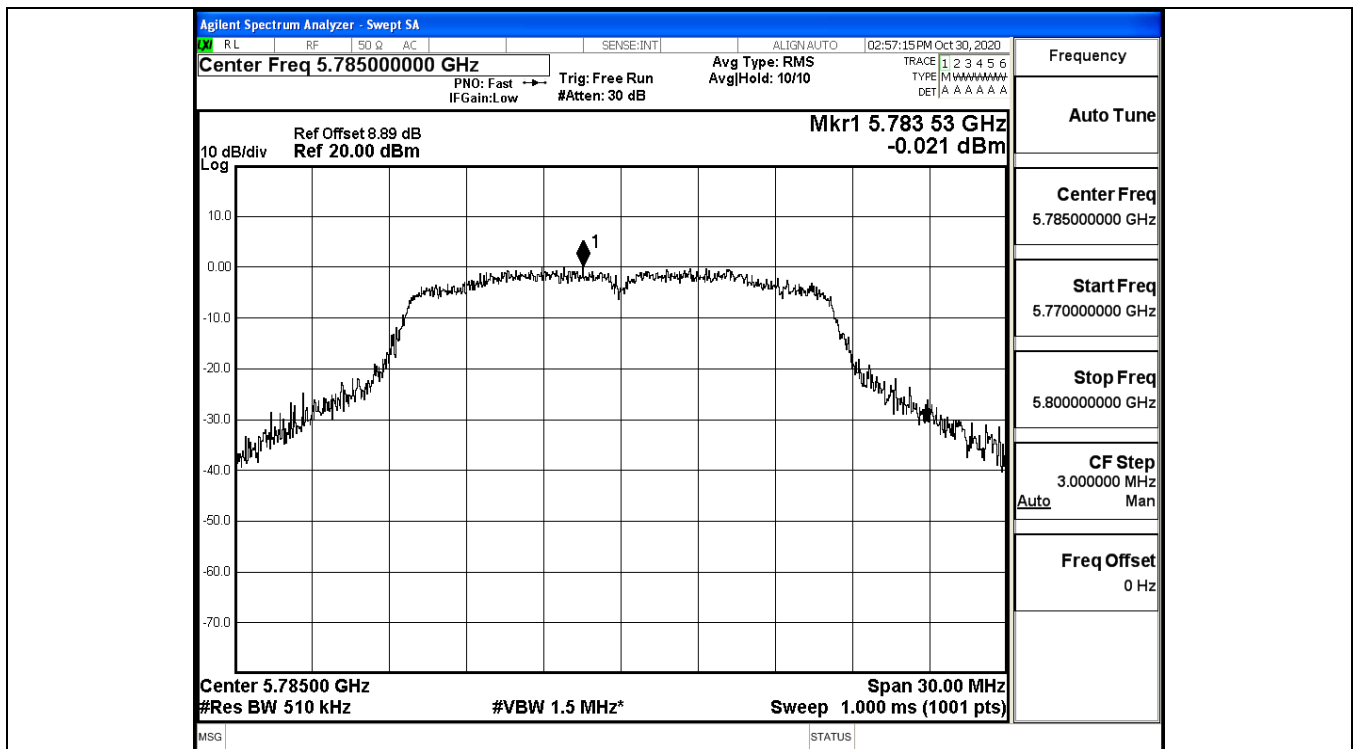
Test Mode	Channel	Frequency (MHz)	ANT 0 AVG Conducted Power (dBm)	ANT 1 AVG Conducted Power (dBm)	MIMO AVG Conducted Power (dBm)	Duty Cycle Factor (dB)	Report Conducted Power (dBm)	Limit (dBm)	Verdict
11N20	149	5745	11.52	11.45	14.50	0	14.50	30	Pass
	157	5785	12.27	11.66	14.99	0	14.99		Pass
	165	5825	12.30	11.64	14.99	0	14.99		Pass
11N40	151	5755	12.57	11.38	15.03	0	15.03	30	Pass
	159	5795	13.39	12.08	15.79	0	15.79		Pass
11AC20	149	5745	12.72	11.61	15.21	0	15.21	30	Pass
	157	5785	13.55	11.62	15.70	0	15.70		Pass
	165	5825	12.55	11.98	15.28	0	15.28		Pass
11AC40	151	5755	13.45	11.74	15.69	0	15.69	30	Pass
	159	5795	12.83	11.57	15.26	0	15.26		Pass
11AC80	155	5775	13.00	12.12	15.59	0.28	15.87	30	Pass

E.3 Power Spectral Density

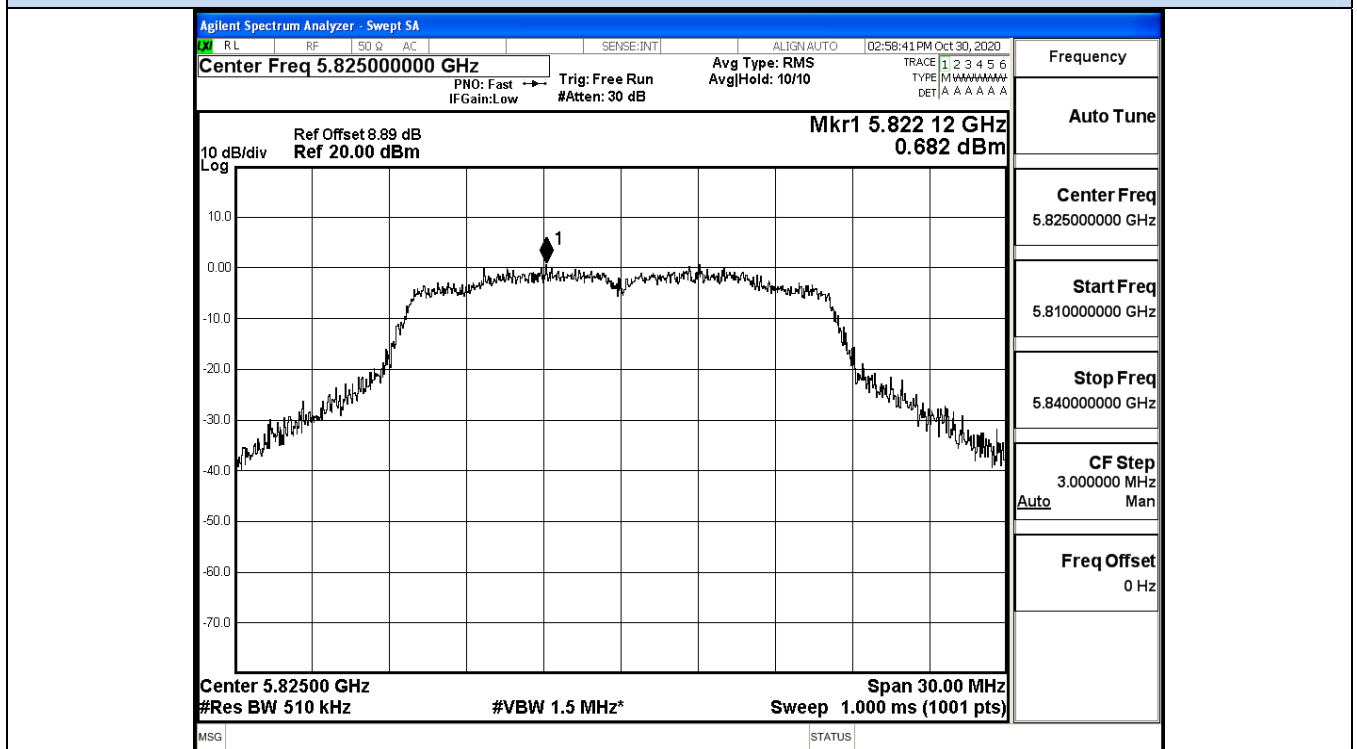
ANT 0

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/510KHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/510KHz)	Limit (dBm/500KHz)	Verdict
11A	149	5745	-0.07	0	-0.07	30	Pass
	157	5785	-0.02	0	-0.02		Pass
	165	5825	0.68	0	0.68		Pass
11N20 SISO	149	5745	-0.69	0	-0.69	30	Pass
	157	5785	0.02	0	0.02		Pass
	165	5825	0.65	0	0.65		Pass
11N40 SISO	151	5755	-3.06	0	-3.06	30	Pass
	159	5795	-1.87	0	-1.87		Pass
11AC20 SISO	149	5745	0.24	0	0.24	30	Pass
	157	5785	0.81	0	0.81		Pass
	165	5825	0.95	0	0.95		Pass
11AC40 SISO	151	5755	-2.68	0	-2.68	30	Pass
	159	5795	-2.07	0	-2.07		Pass
11AC80 SISO	155	5775	-5.06	0.28	-4.78	30	Pass



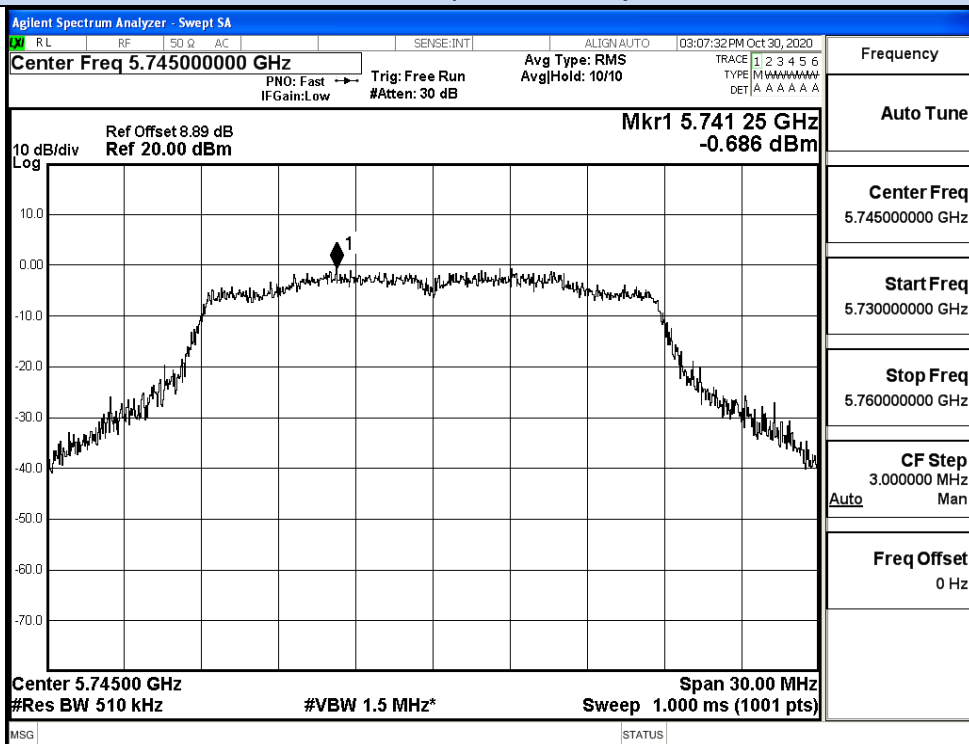


IEEE 802.11na / Channel 157 / 5785MHz

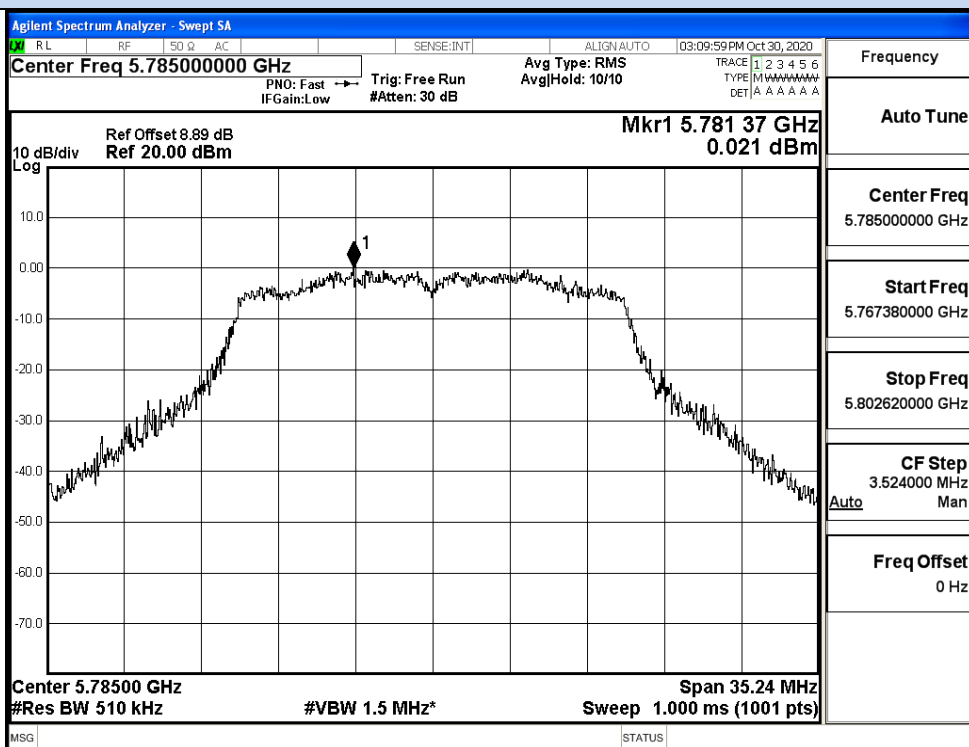


IEEE 802.11na / Channel 165 / 5825MHz

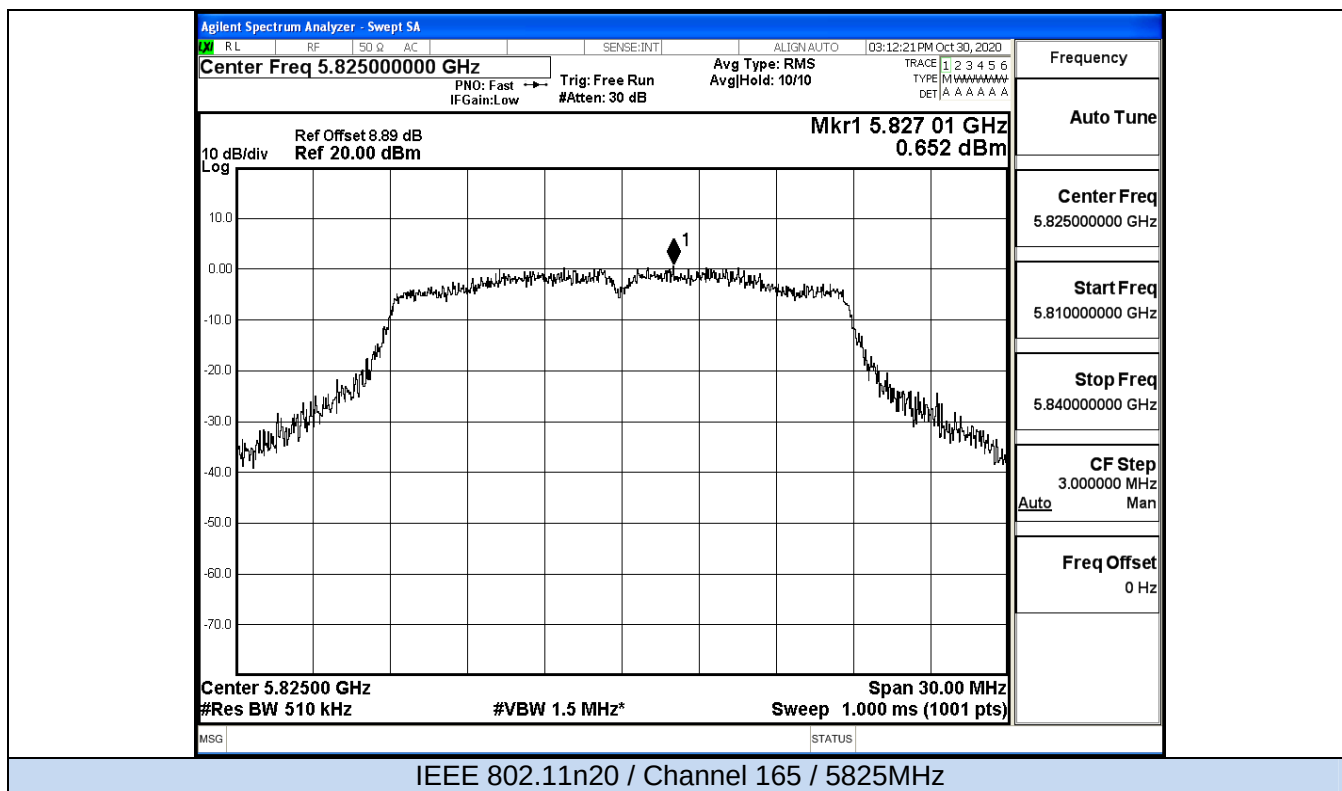
Power Spectral Density



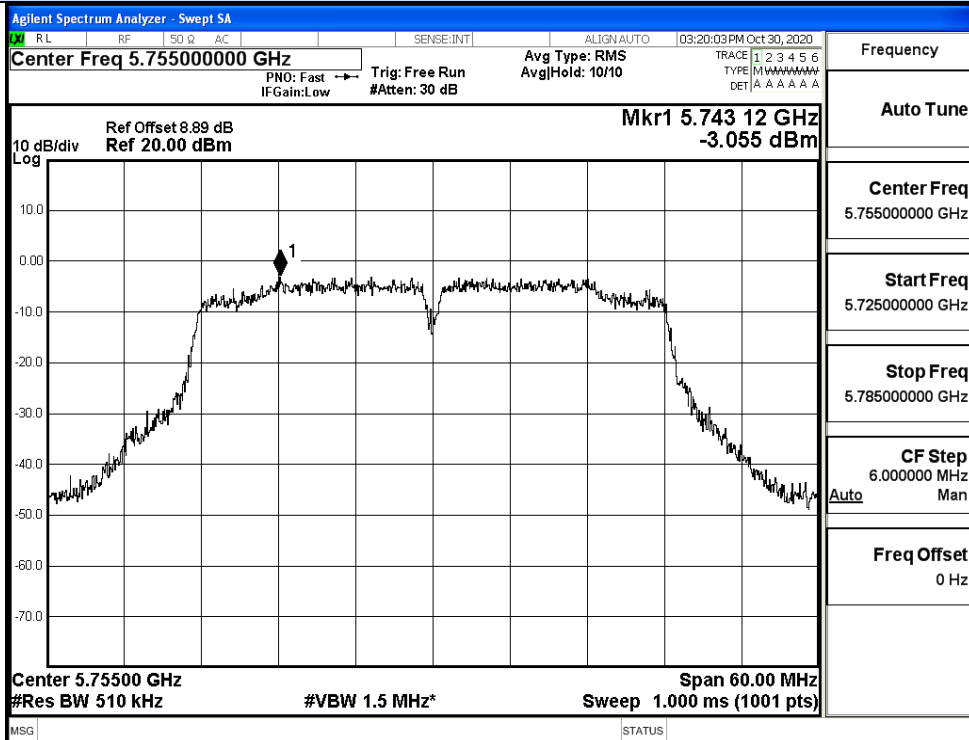
IEEE 802.11n20 / Channel 149 / 5745MHz



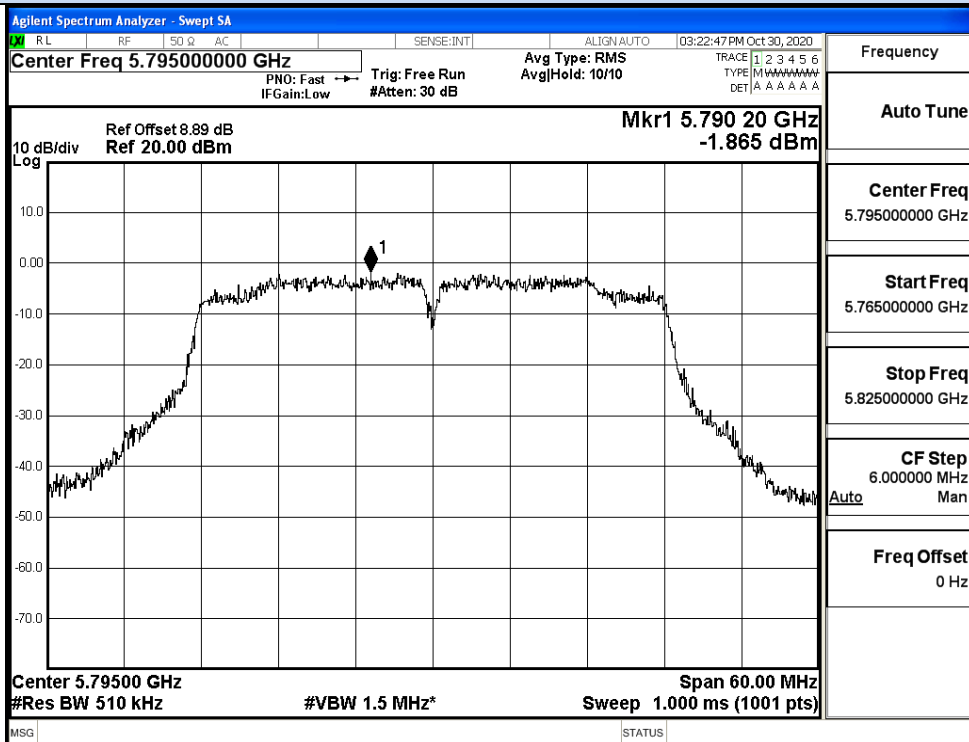
IEEE 802.11n20 / Channel 157 / 5785MHz



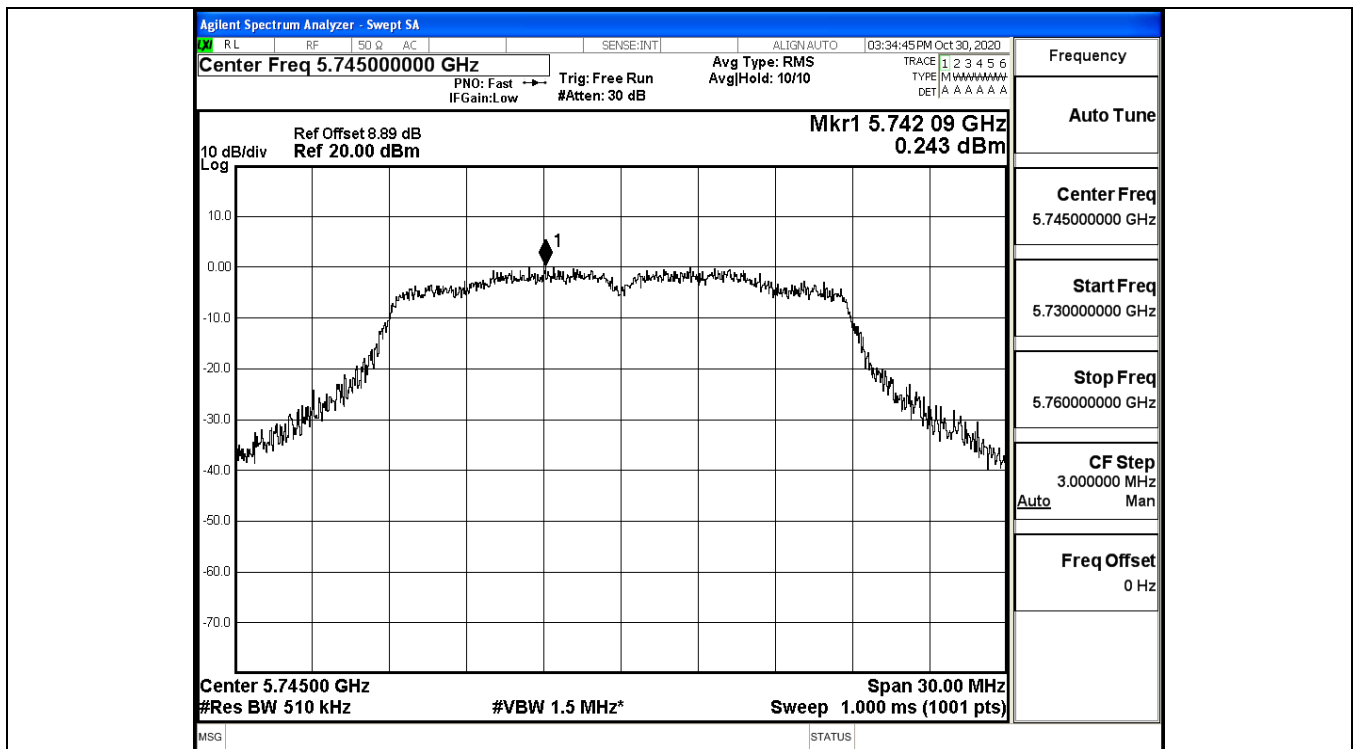
Power Spectral Density



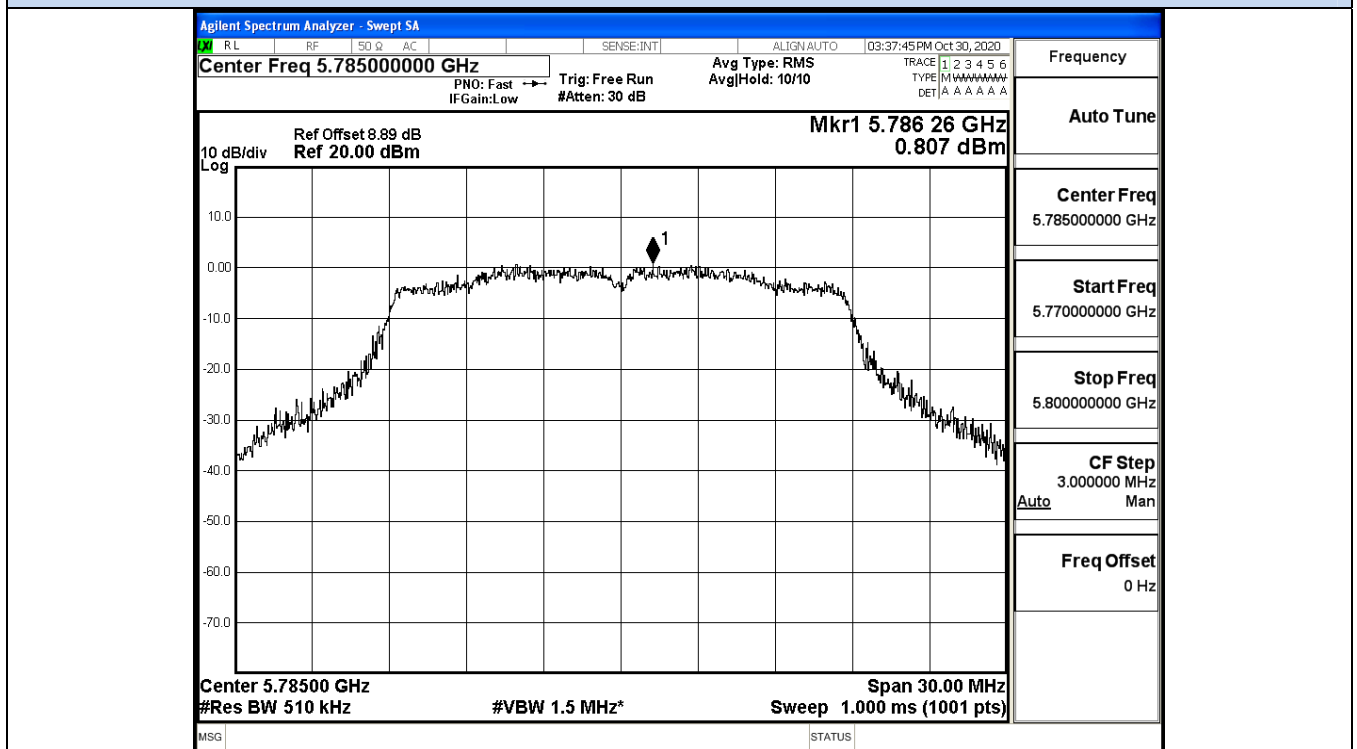
IEEE 802.11n40 / Channel 151 / 5755MHz



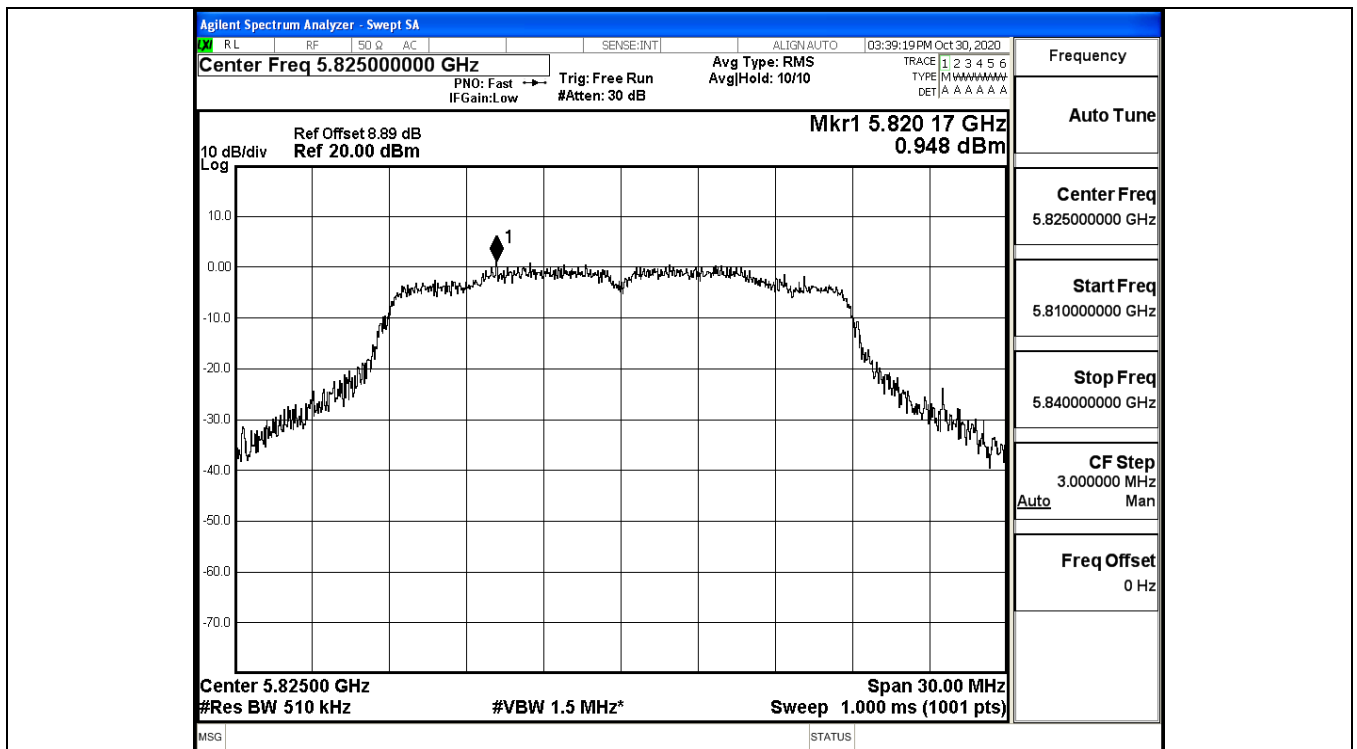
IEEE 802.11n40 / Channel 159 / 5795MHz



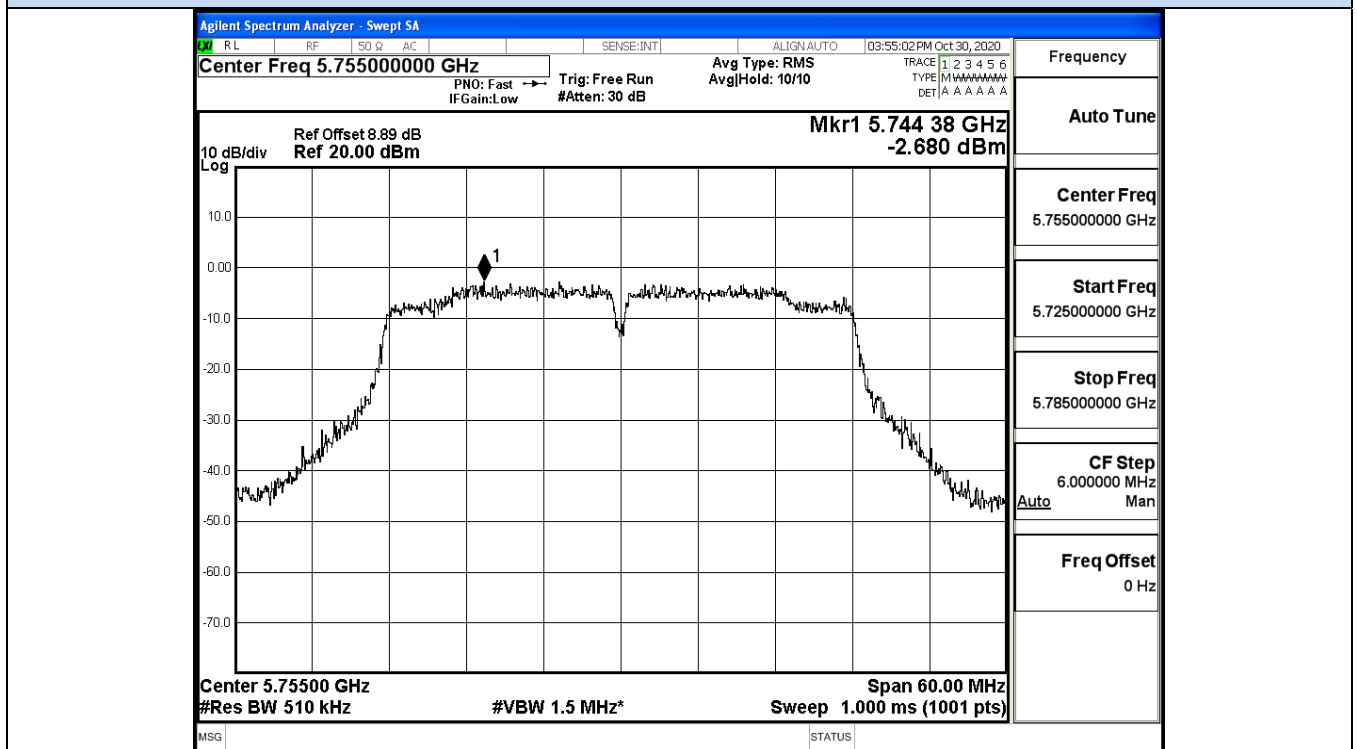
IEEE 802.11ac20 / Channel 149 / 5745MHz



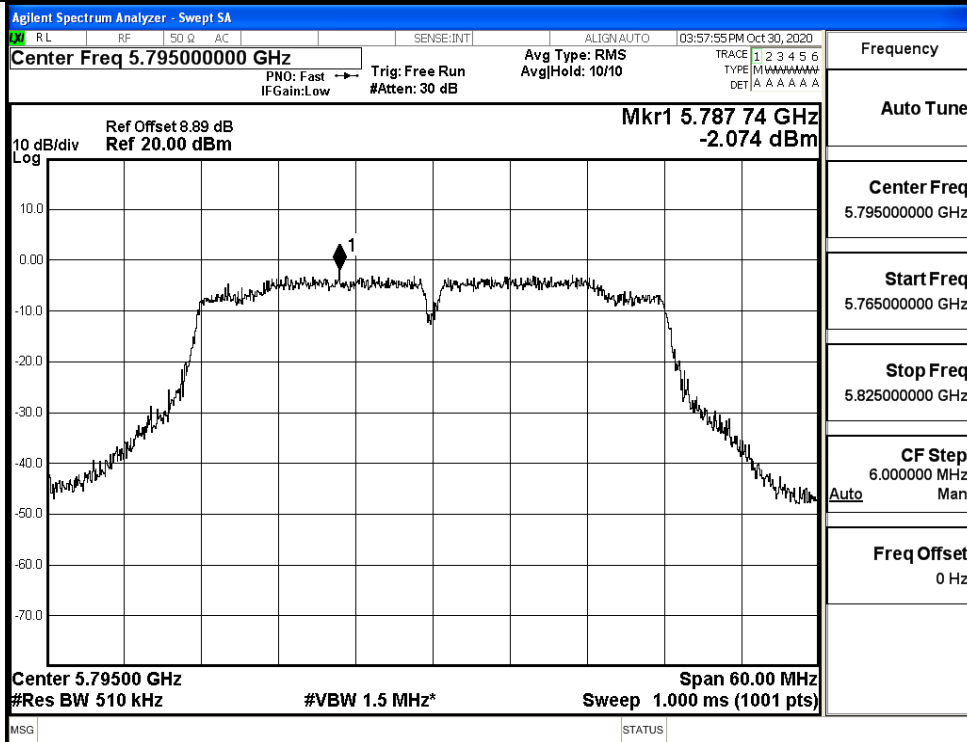
IEEE 802.11ac20 / Channel 157 / 5785MHz



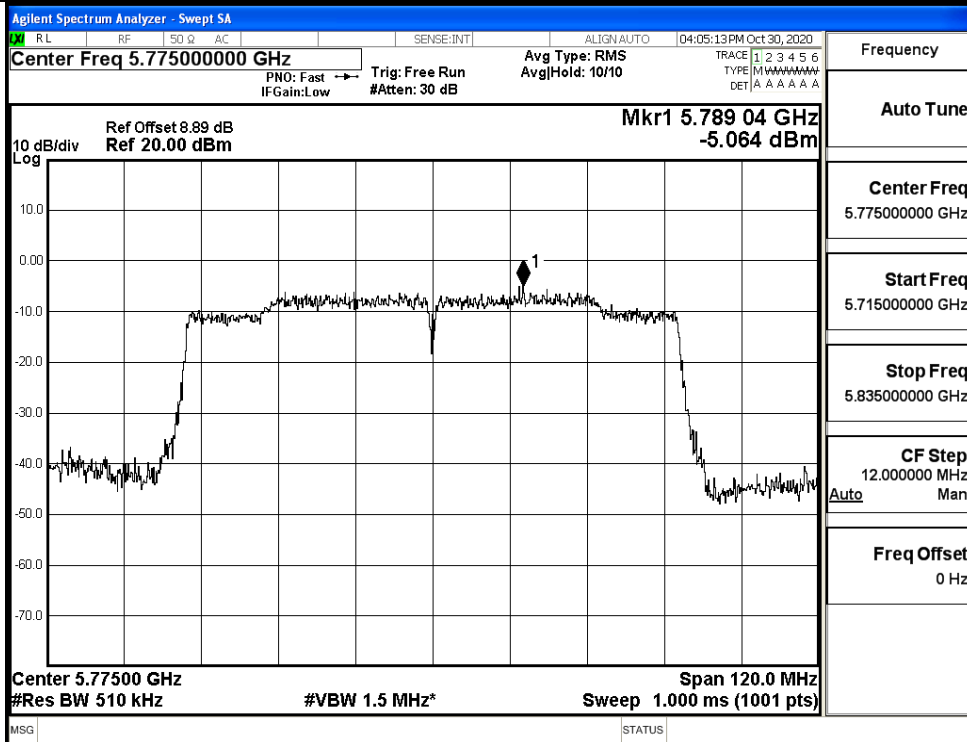
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



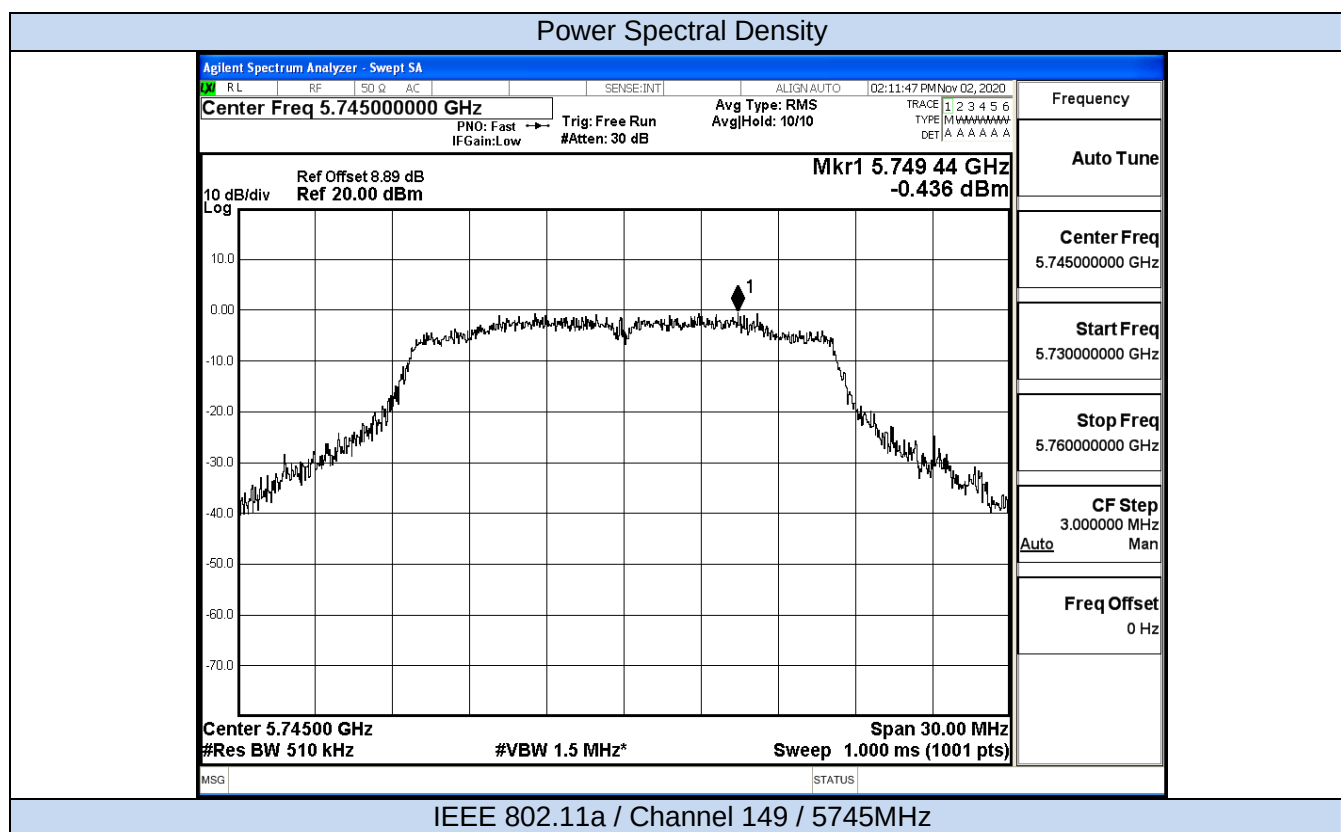
IEEE 802.11ac40 / Channel 159 / 5795MHz

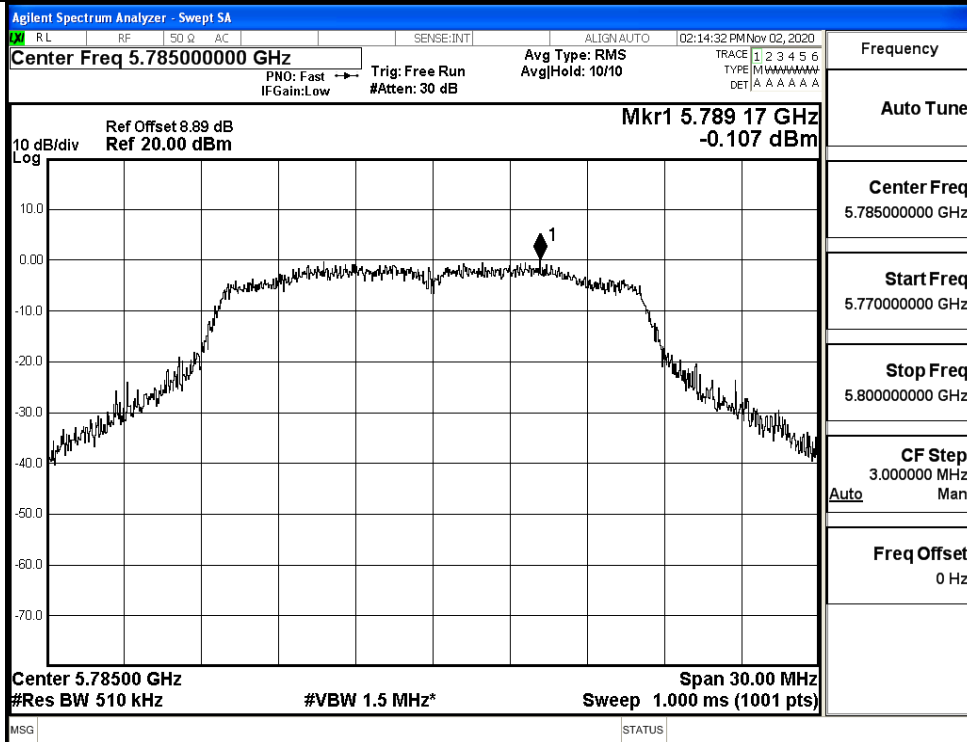


IEEE 802.11ac80 / Channel 155/ 5775MHz

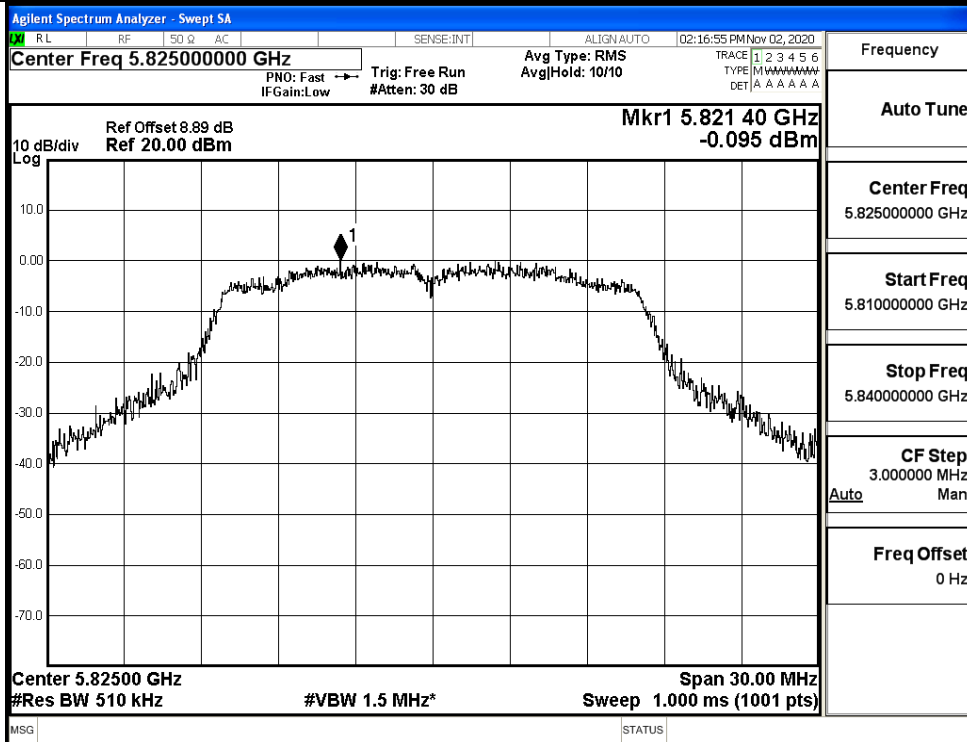
ANT 1

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/510KHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/510KHz)	Limit (dBm/500KHz)	Verdict
11A	149	5745	-0.44	0	-0.44	30	Pass
	157	5785	-0.11	0	-0.11		Pass
	165	5825	-0.10	0	-0.10		Pass
11N20 SISO	149	5745	-0.87	0	-0.87	30	Pass
	157	5785	-0.40	0	-0.40		Pass
	165	5825	-0.09	0	-0.09		Pass
11N40 SISO	151	5755	-4.21	0	-4.21	30	Pass
	159	5795	-3.54	0	-3.54		Pass
11AC20 SISO	149	5745	-0.47	0	-0.47	30	Pass
	157	5785	-0.20	0	-0.20		Pass
	165	5825	-0.43	0	-0.43		Pass
11AC40 SISO	151	5755	-3.53	0	-3.53	30	Pass
	159	5795	-2.91	0	-2.91		Pass
11AC80 SISO	155	5775	-6.35	0.28	-6.07	30	Pass



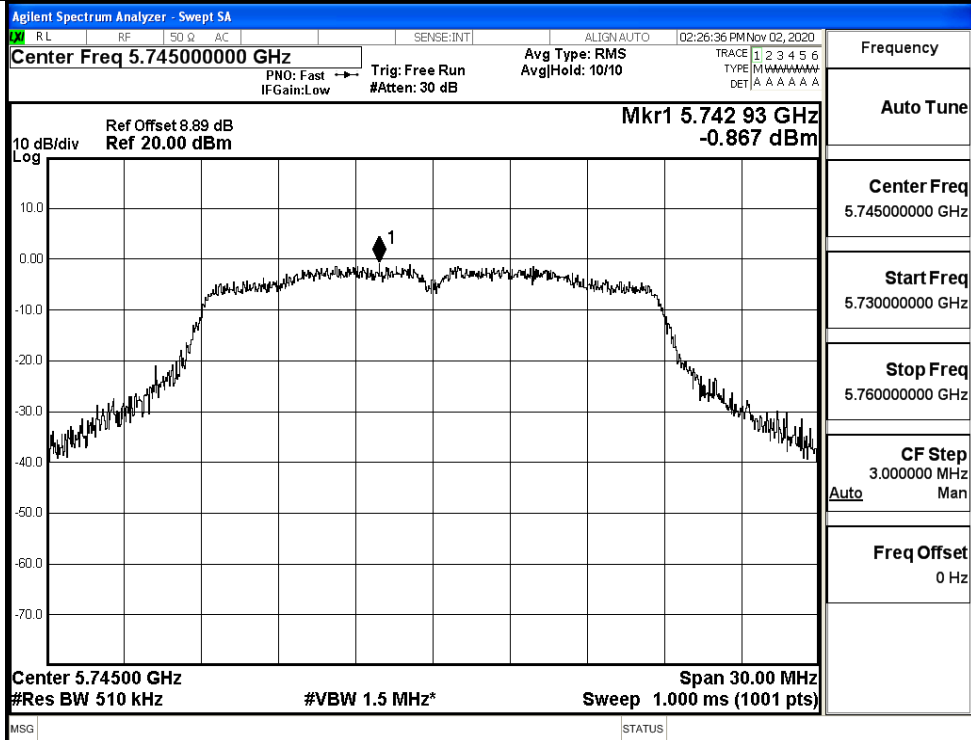


IEEE 802.11na / Channel 157 / 5785MHz

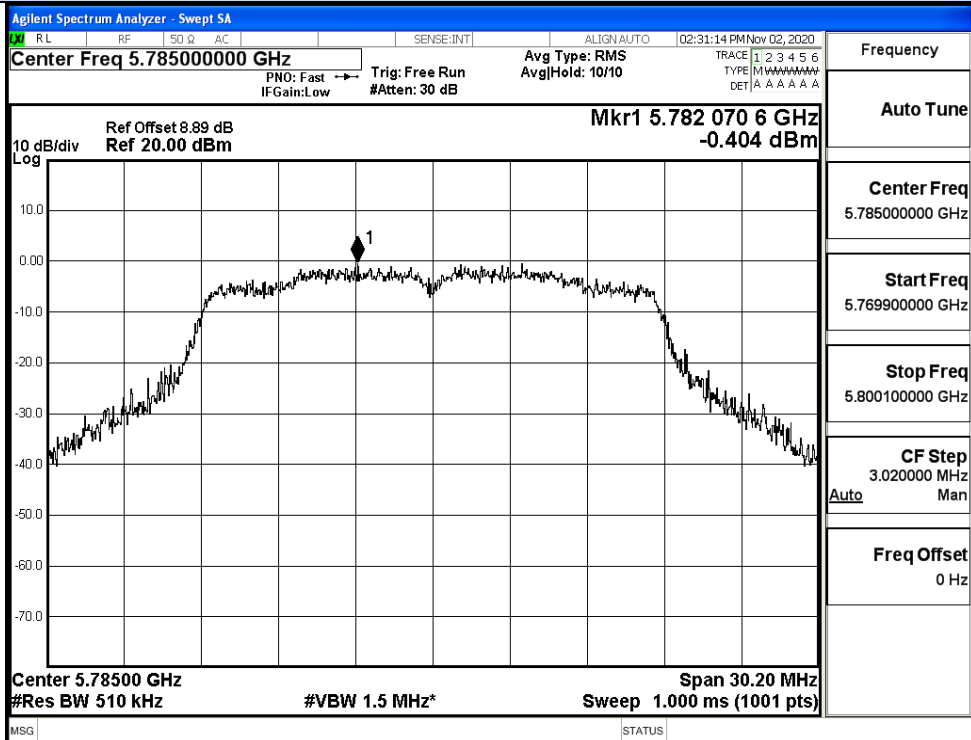


IEEE 802.11na / Channel 165 / 5825MHz

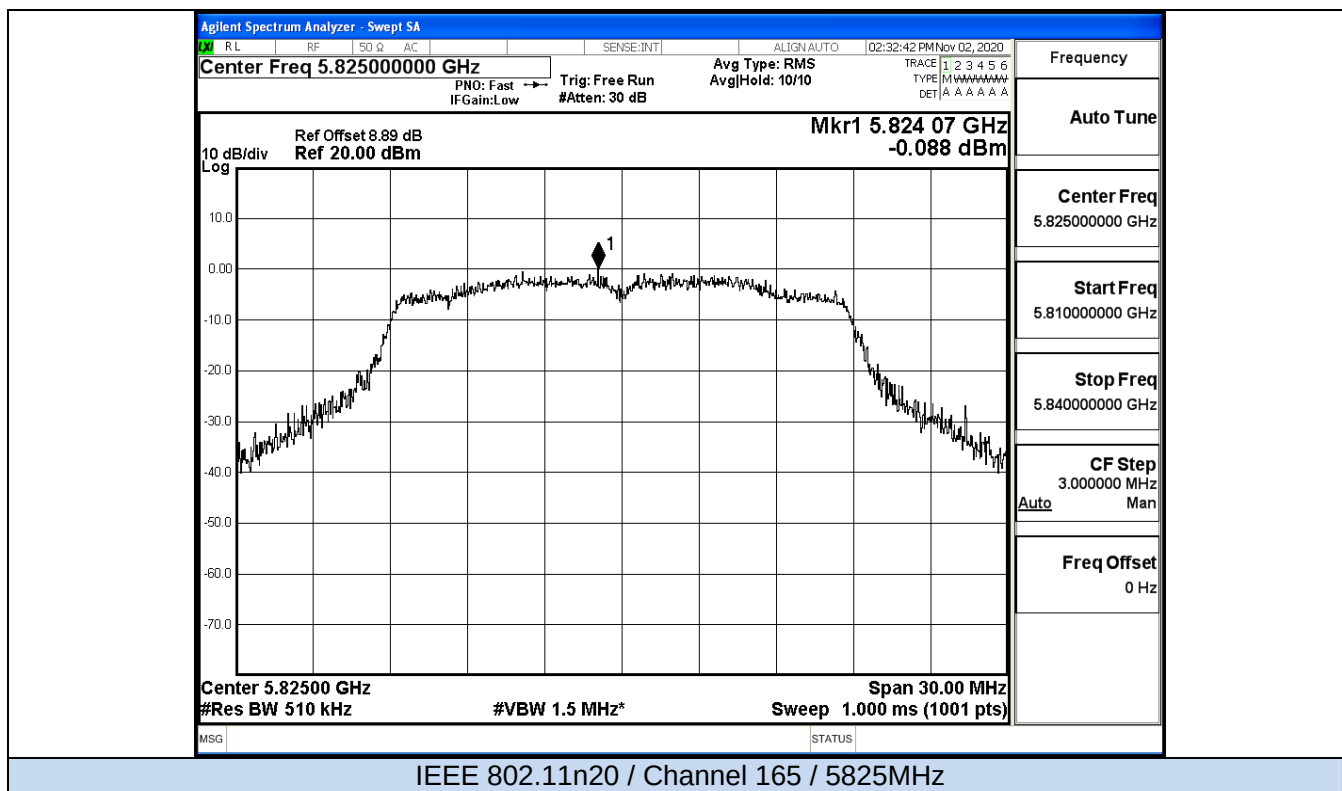
Power Spectral Density



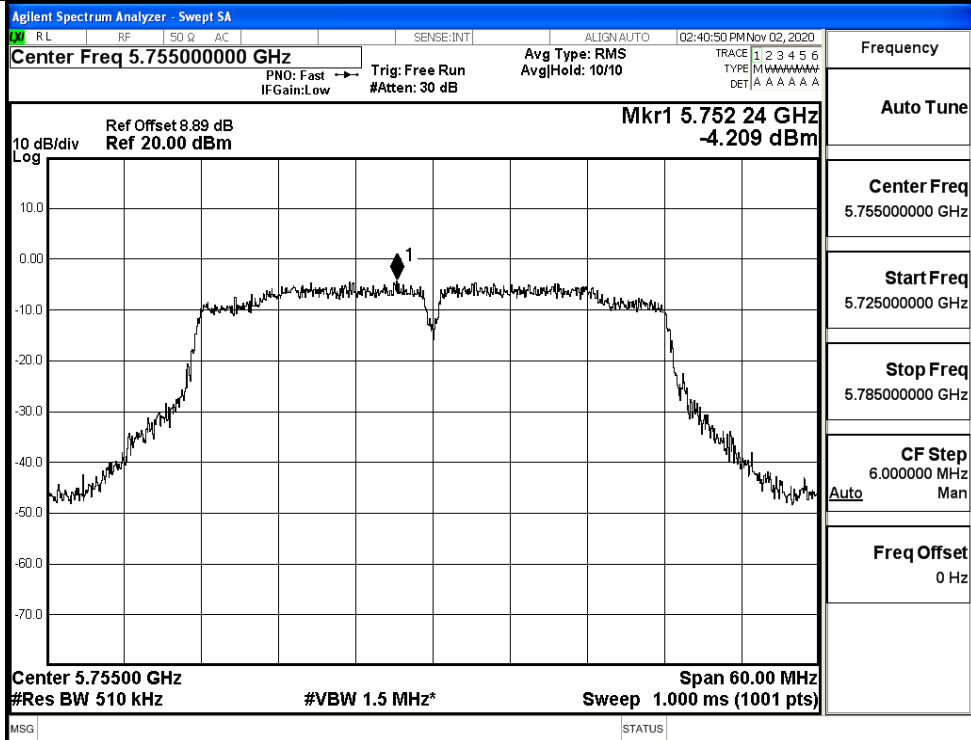
IEEE 802.11n20 / Channel 149 / 5745MHz



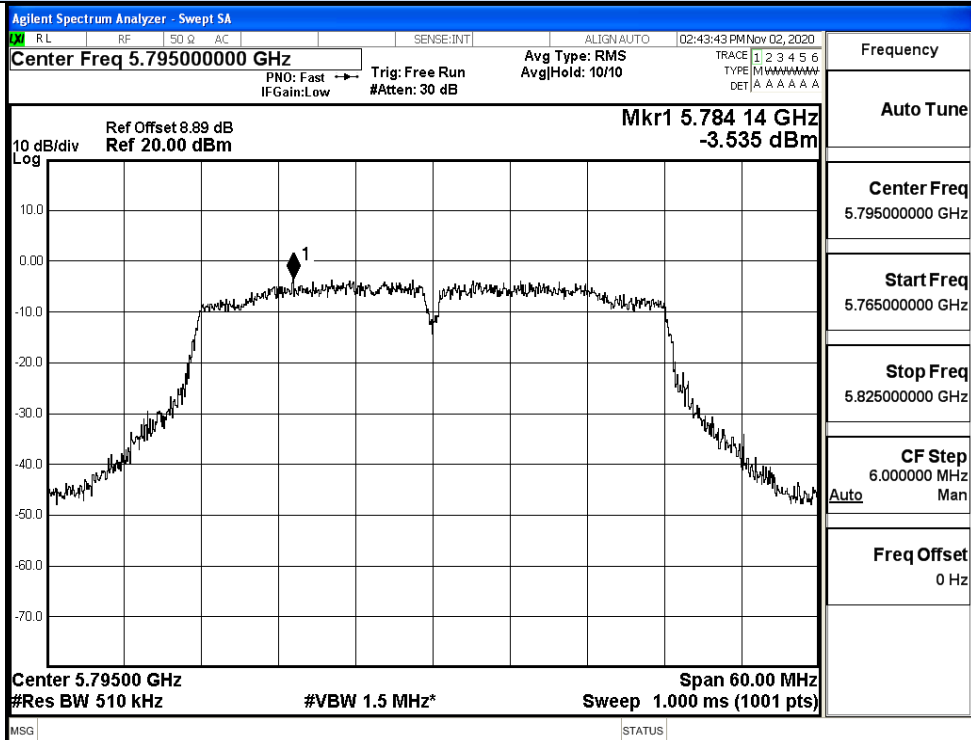
IEEE 802.11n20 / Channel 157 / 5785MHz



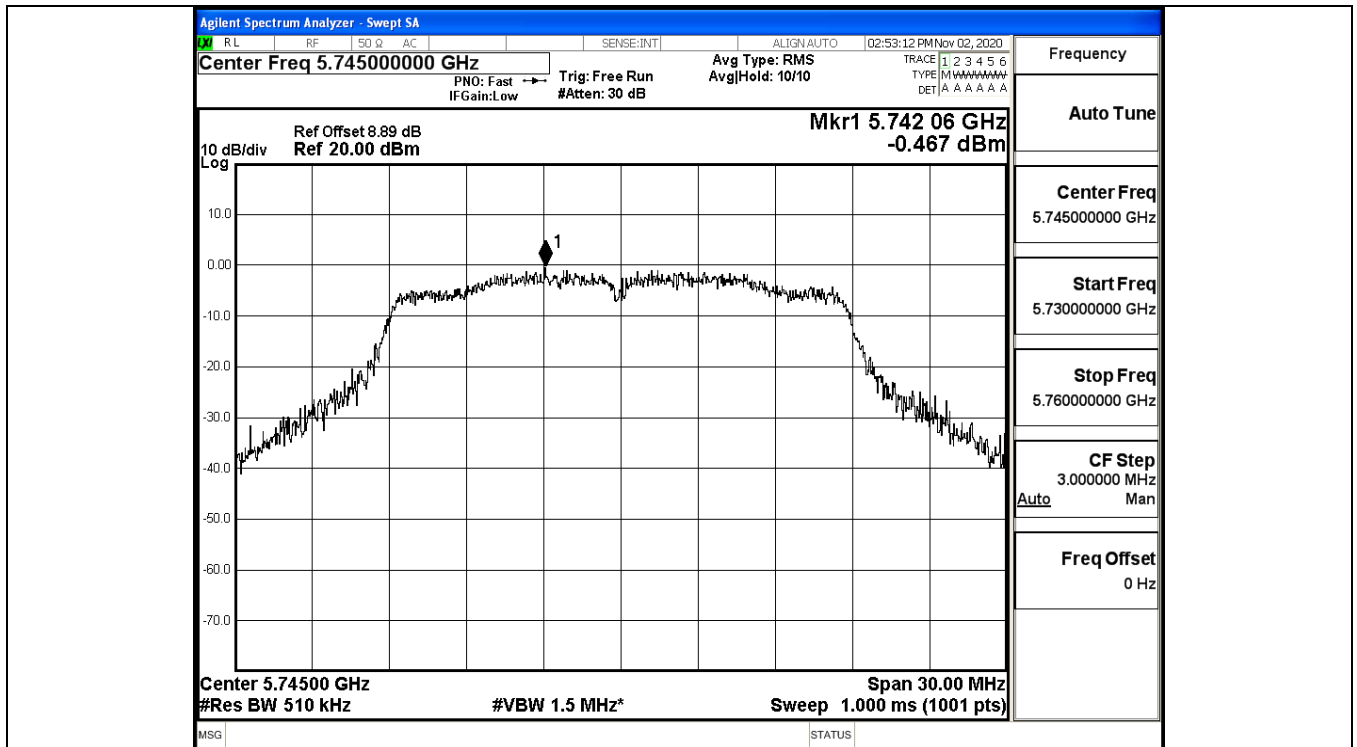
Power Spectral Density



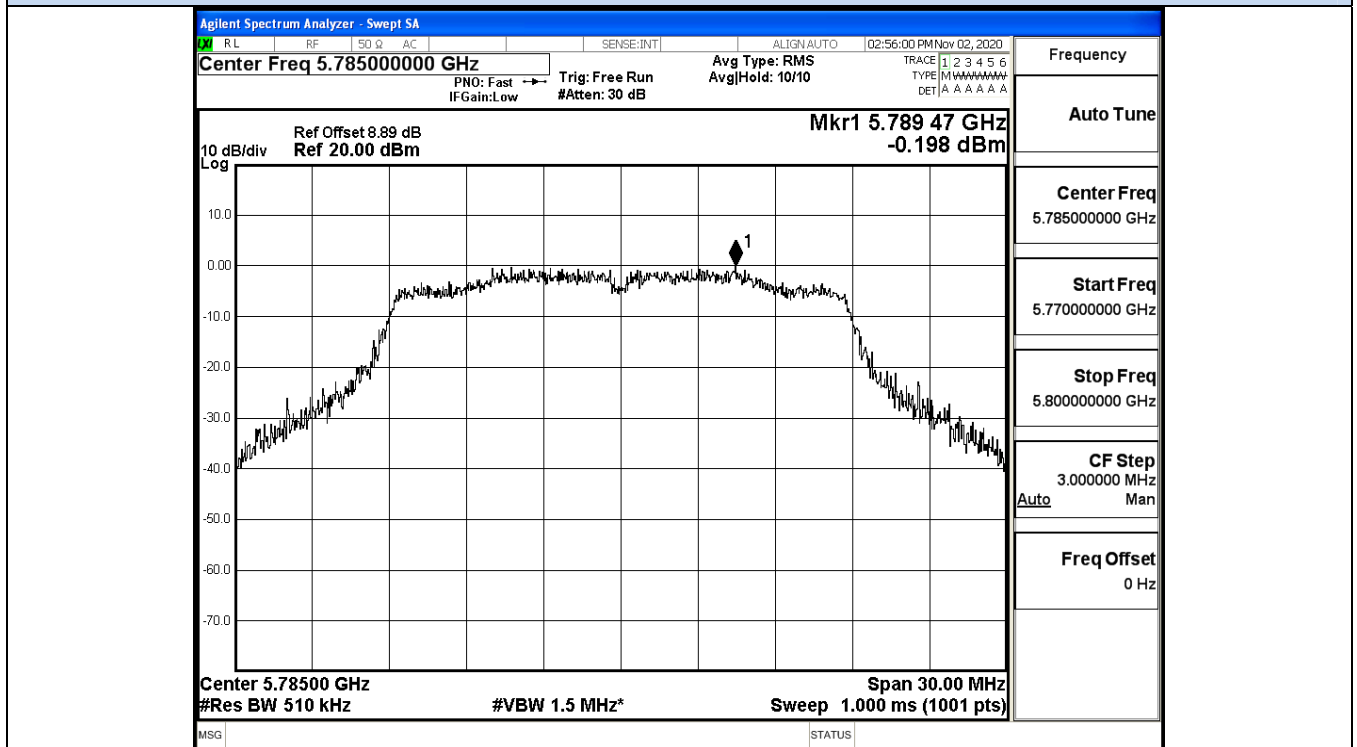
IEEE 802.11n40 / Channel 151 / 5755MHz



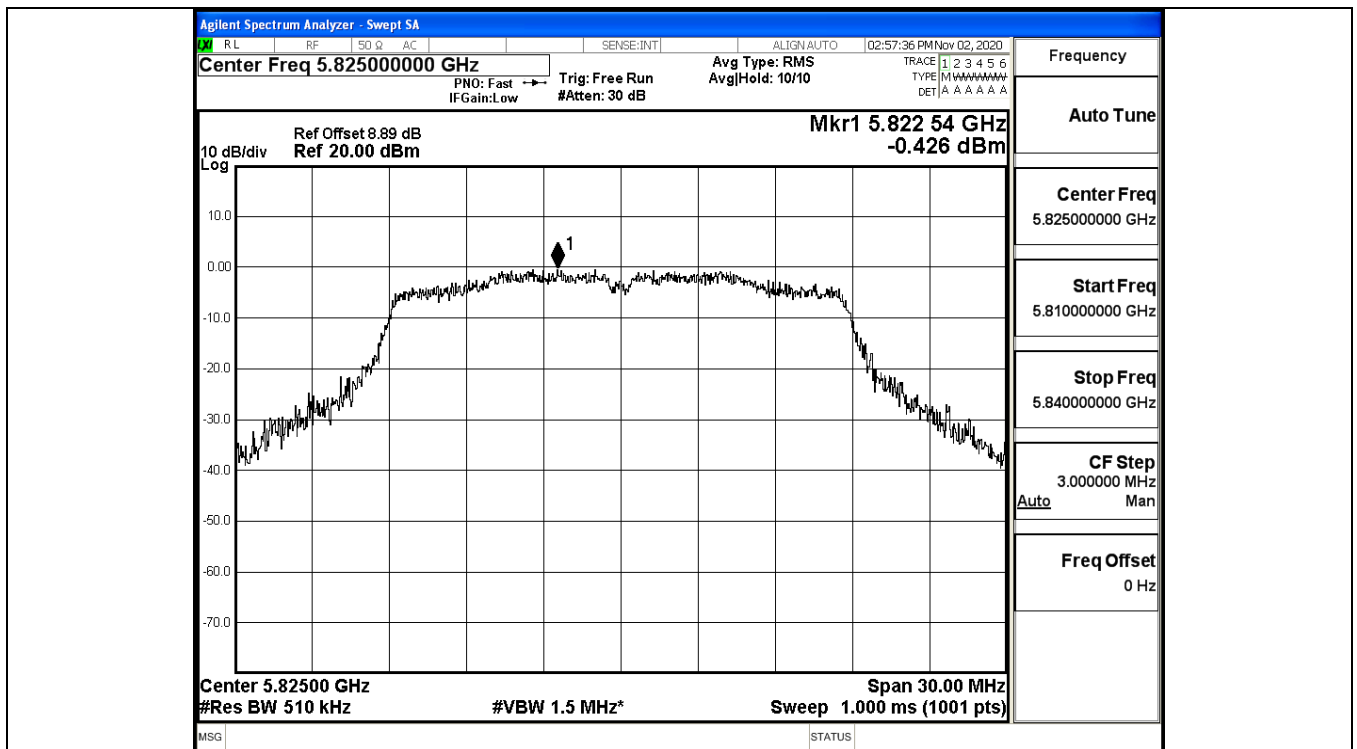
IEEE 802.11n40 / Channel 159 / 5795MHz



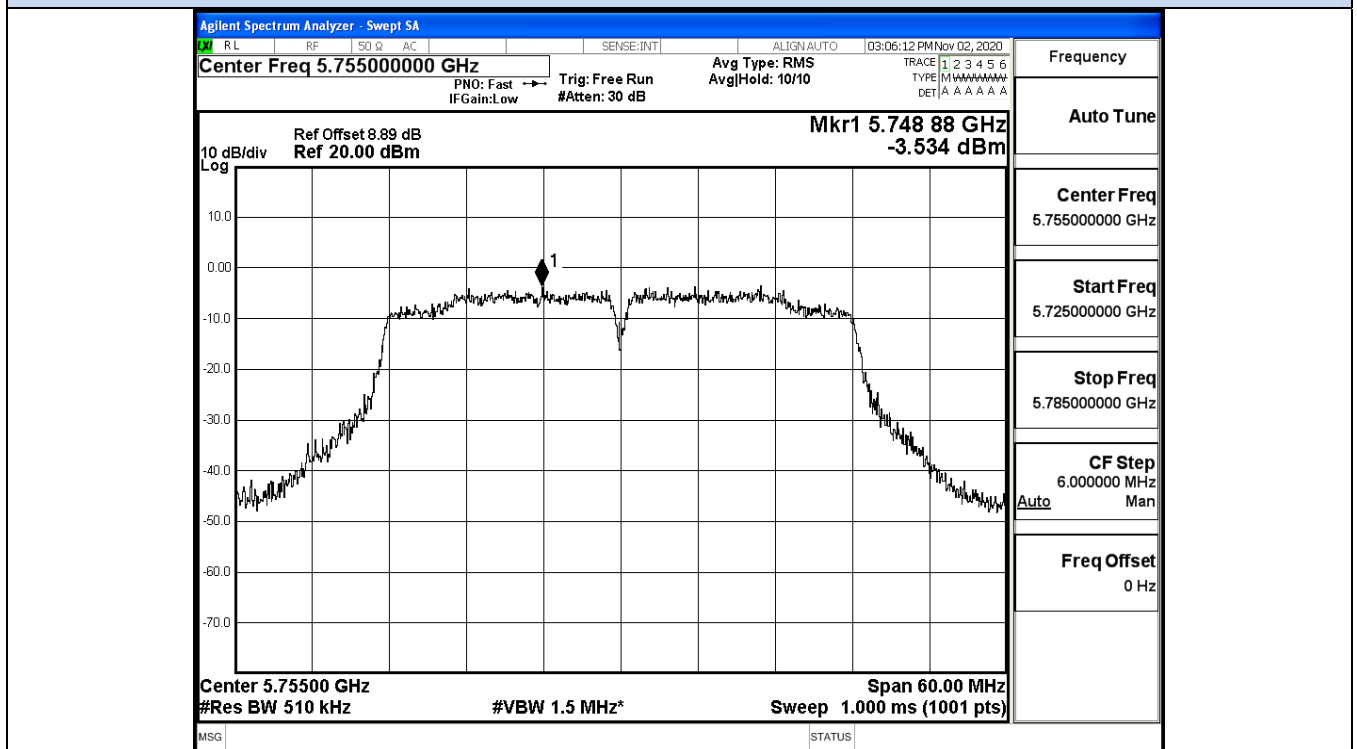
IEEE 802.11ac20 / Channel 149 / 5745MHz



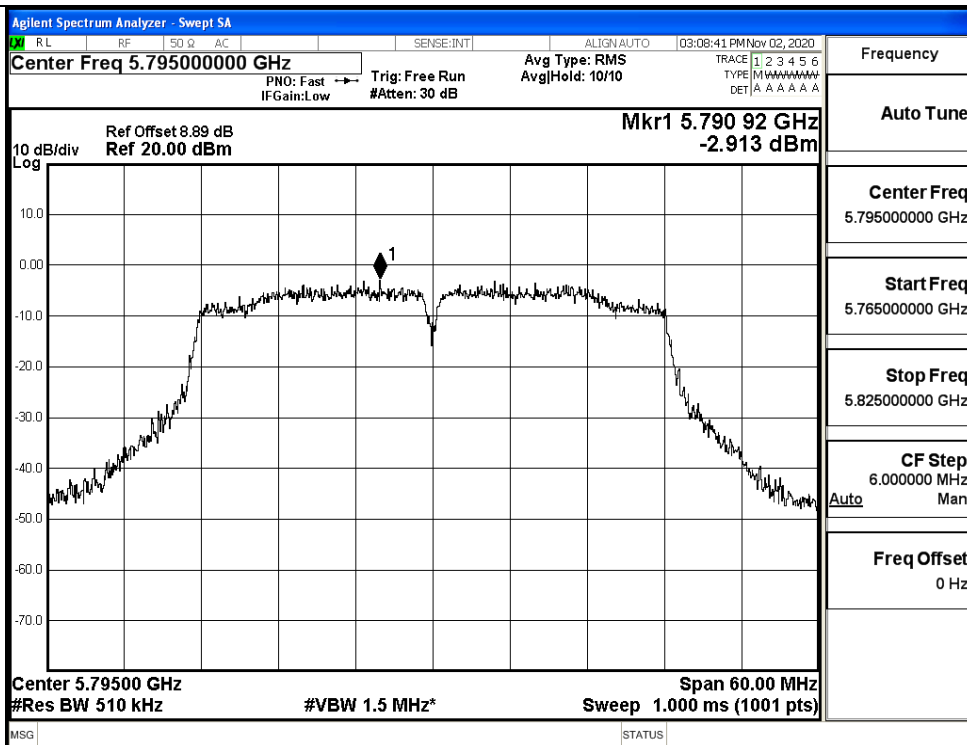
IEEE 802.11ac20 / Channel 157 / 5785MHz



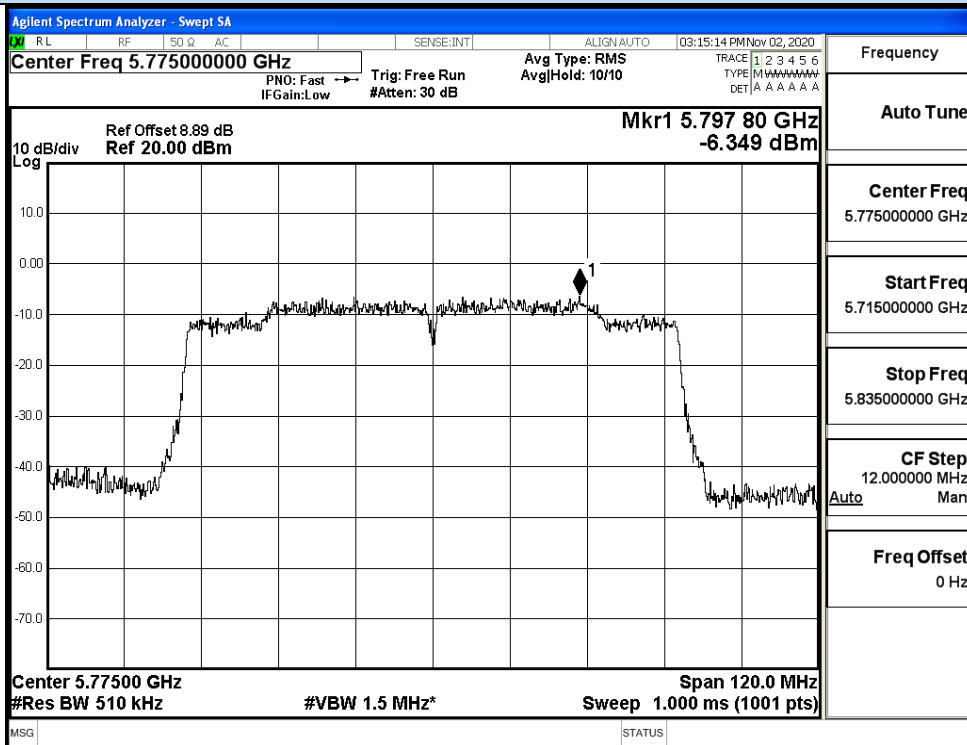
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



IEEE 802.11ac80 / Channel 155/ 5775MHz

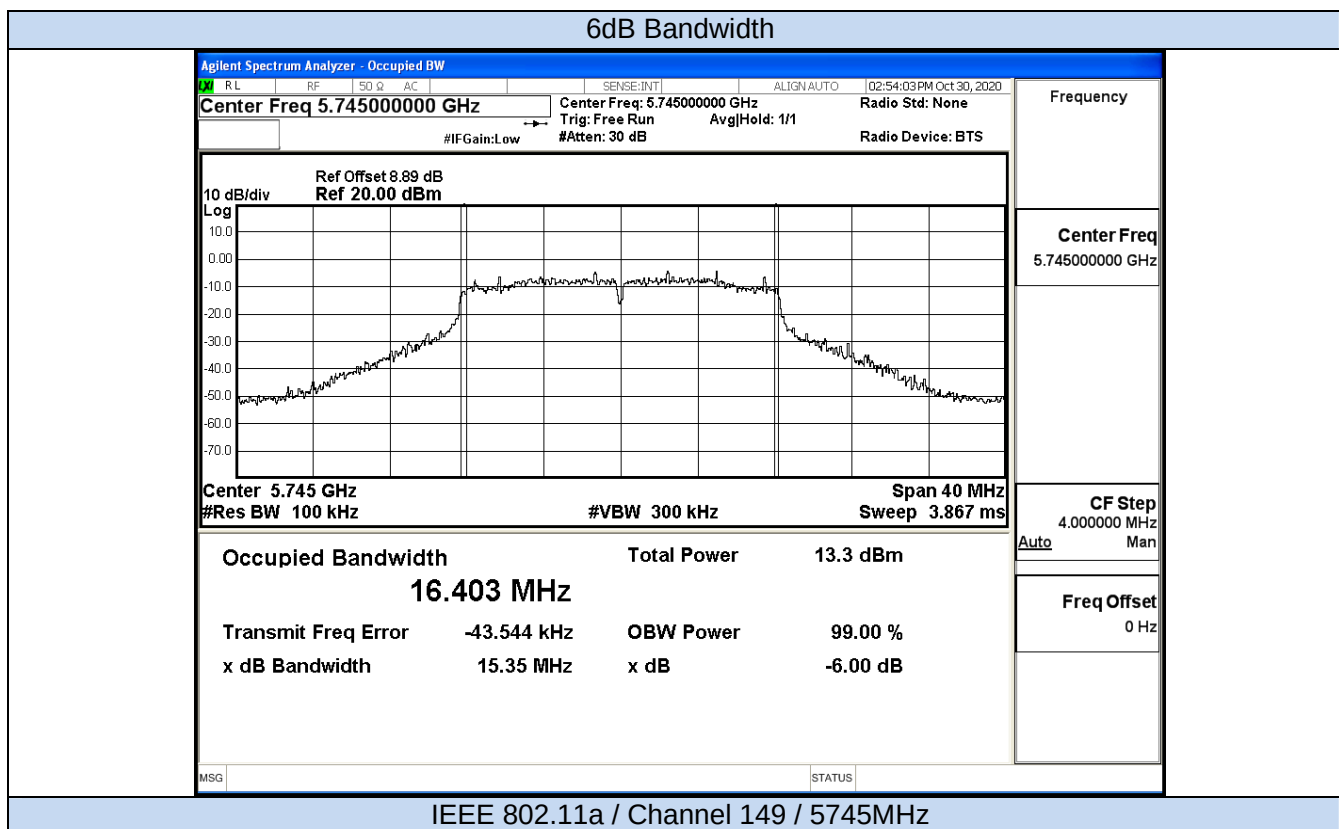
MIMO

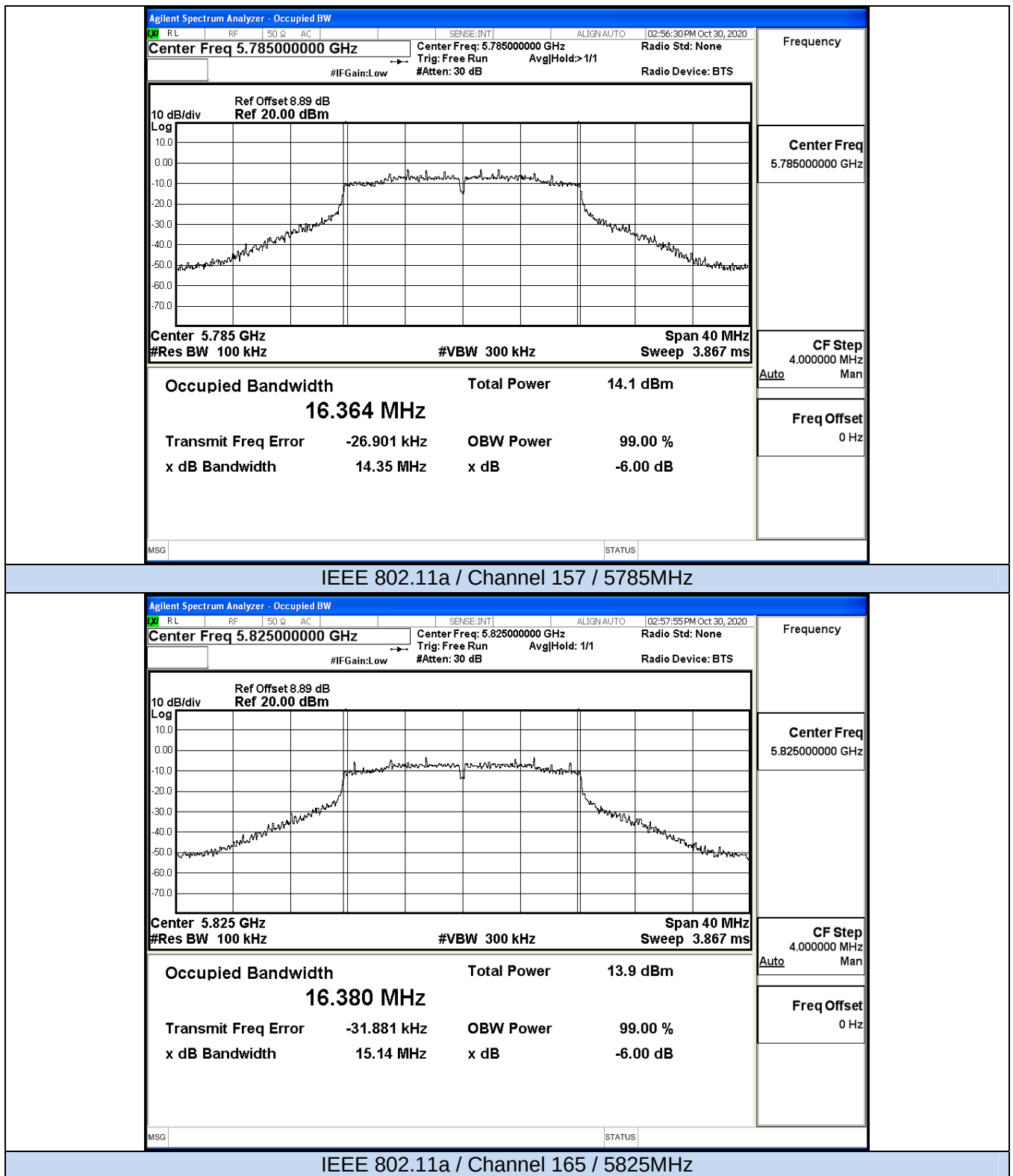
Test Mode	Channel	Frequency (MHz)	ANT 0 Power Density (dBm/510KHz)	ANT 1 Power Density (dBm/510KHz)	MIMO Power Density (dBm/510KHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/510KHz)	Report Power Density (dBm/500KHz)	Verdict
11N20	149	5745	-0.69	-0.87	2.23	0	2.23	30	Pass
	157	5785	0.02	-0.40	2.83	0	2.83		Pass
	165	5825	0.65	-0.09	3.31	0	3.31		Pass
11N40	151	5755	-3.06	-4.21	-0.59	0	-0.59	30	Pass
	159	5795	-1.87	-3.54	0.39	0	0.39		Pass
11AC20	149	5745	0.24	-0.47	2.91	0	2.91	30	Pass
	157	5785	0.81	-0.20	3.34	0	3.34		Pass
	165	5825	0.95	-0.43	3.32	0	3.32		Pass
11AC40	151	5755	-2.68	-3.53	-0.07	0	-0.07	30	Pass
	159	5795	-2.07	-2.91	0.54	0	0.54		Pass
11AC80	155	5775	-5.06	-6.35	-2.65	0.28	-2.37	30	Pass

E.4 Emission Bandwidth

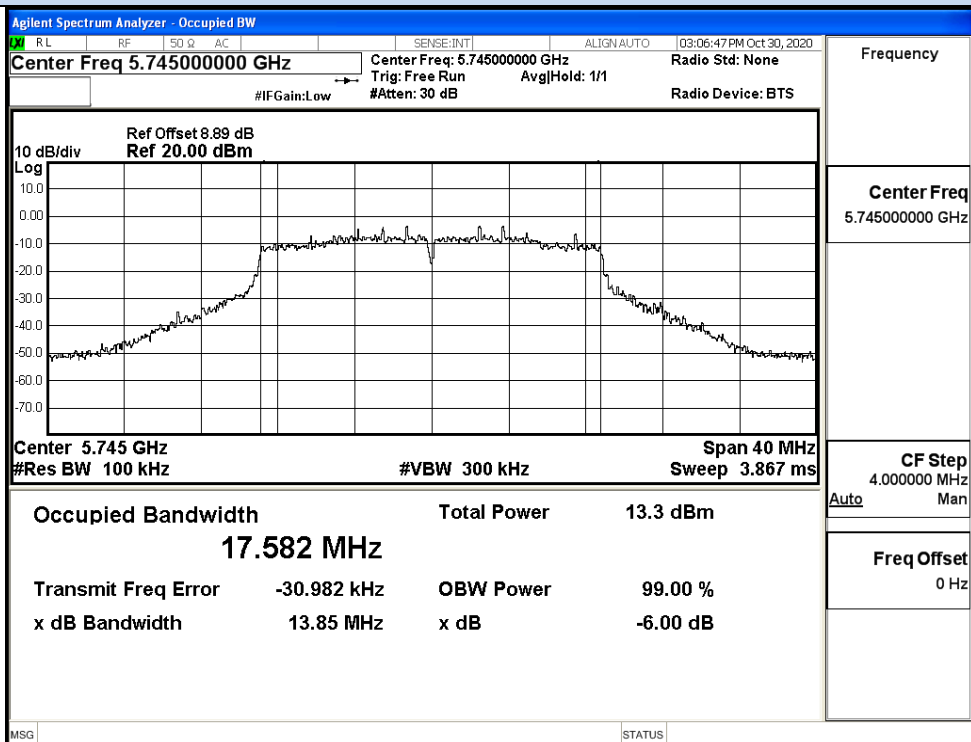
ANT 0

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
11A	149	5745	15.35	>=0.5	Pass
	157	5785	14.35		Pass
	165	5825	15.14		Pass
11N20 SISO	149	5745	13.85	>=0.5	Pass
	157	5785	17.62		Pass
	165	5825	16.81		Pass
11N40 SISO	151	5755	35.20	>=0.5	Pass
	159	5795	35.14		Pass
11AC20S ISO	149	5745	15.01	>=0.5	Pass
	157	5785	13.93		Pass
	165	5825	15.14		Pass
11AC40S ISO	151	5755	35.19	>=0.5	Pass
	159	5795	33.83		Pass
11AC80S ISO	155	5775	75.34	>=0.5	Pass

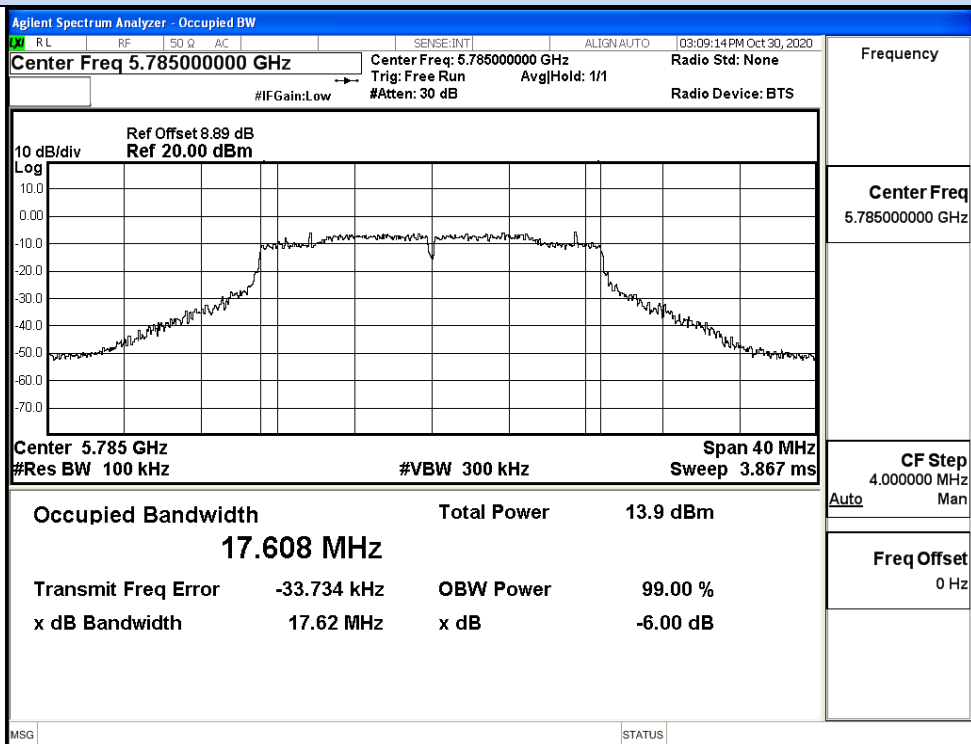




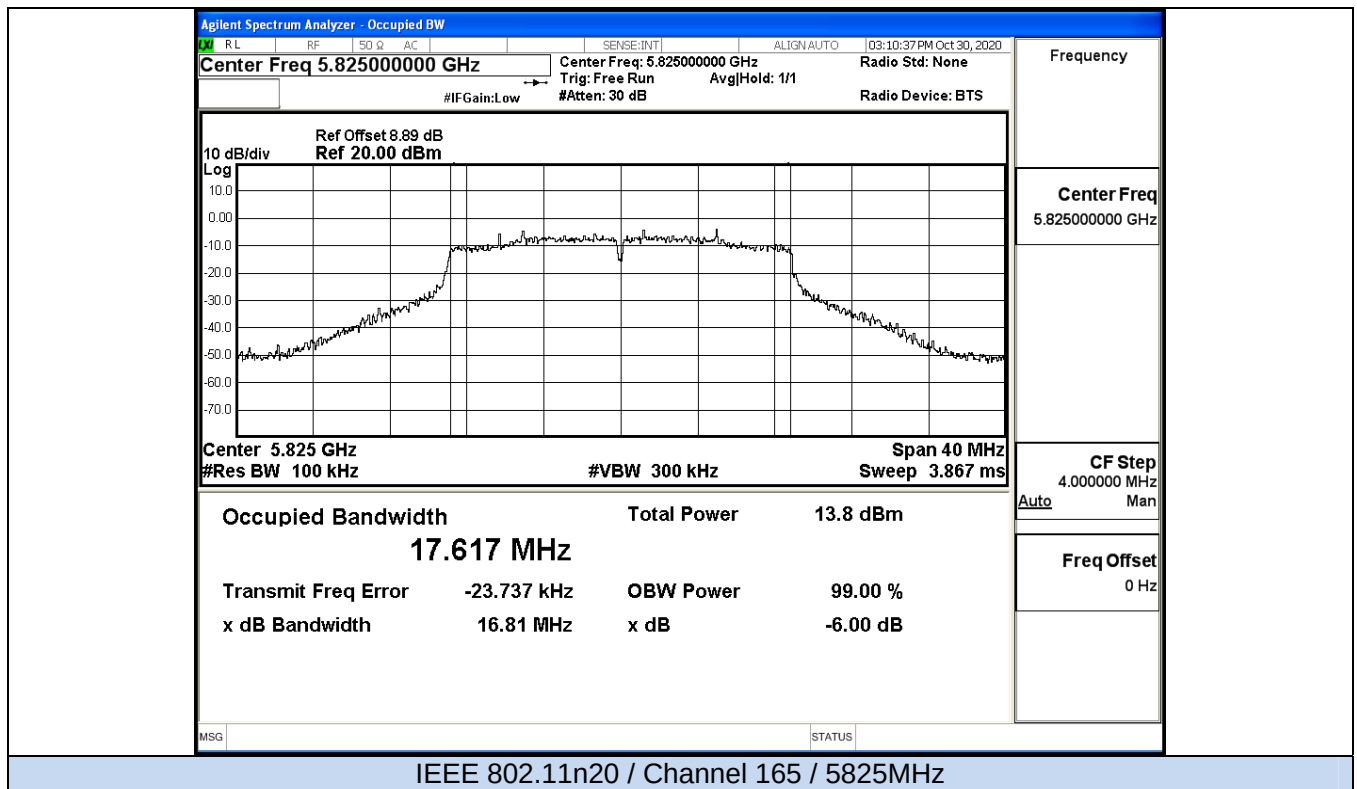
6dB Bandwidth



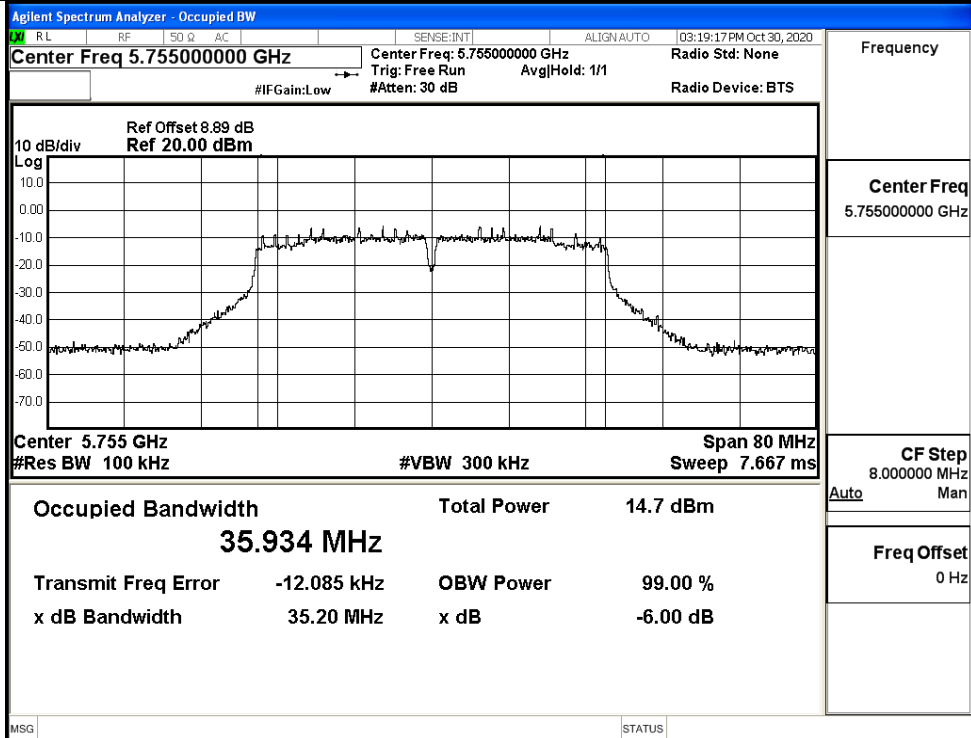
IEEE 802.11n20 / Channel 149 / 5745MHz



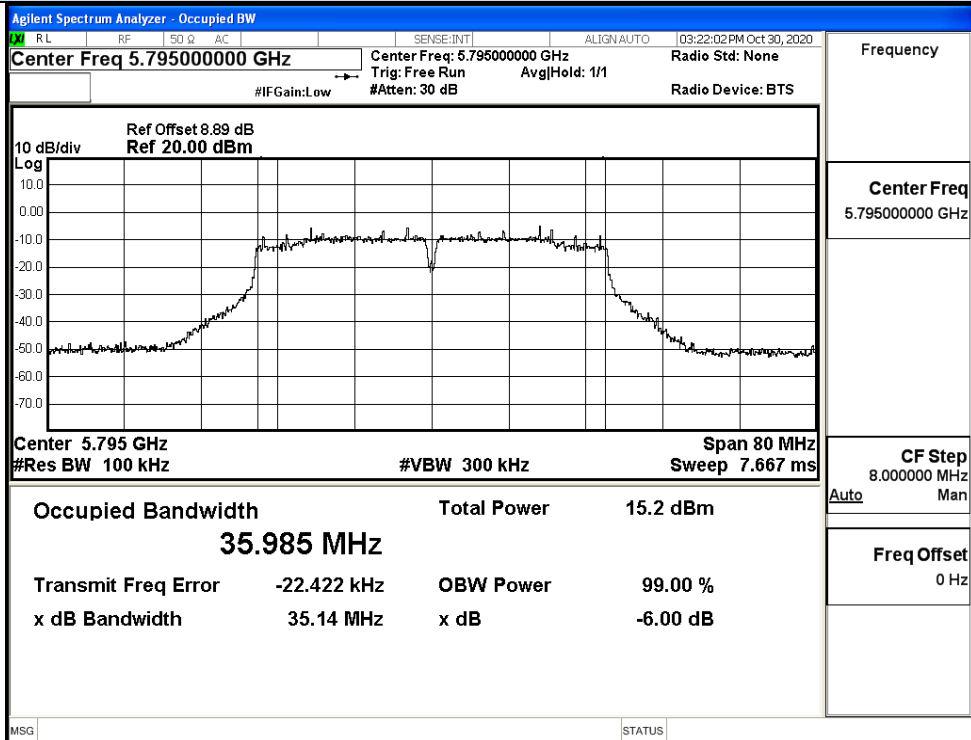
IEEE 802.11n20 / Channel 157 / 5785MHz



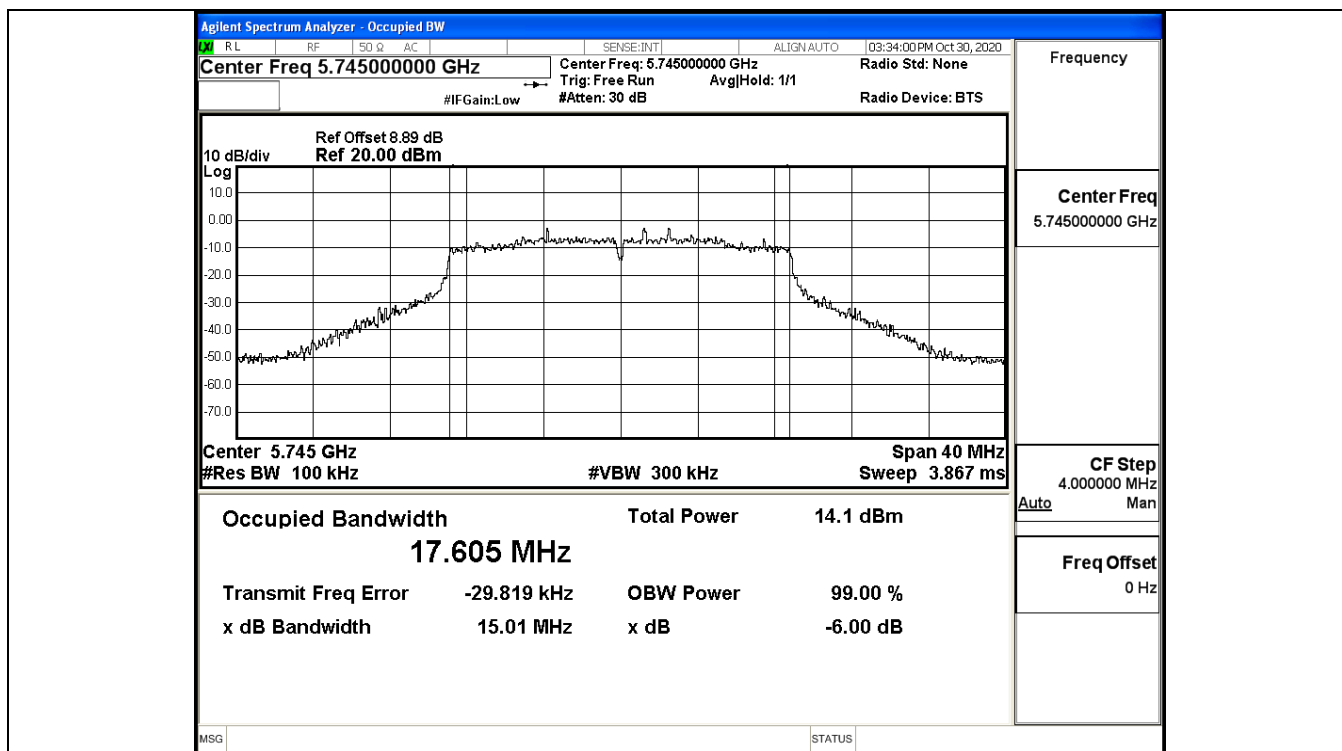
6dB Bandwidth



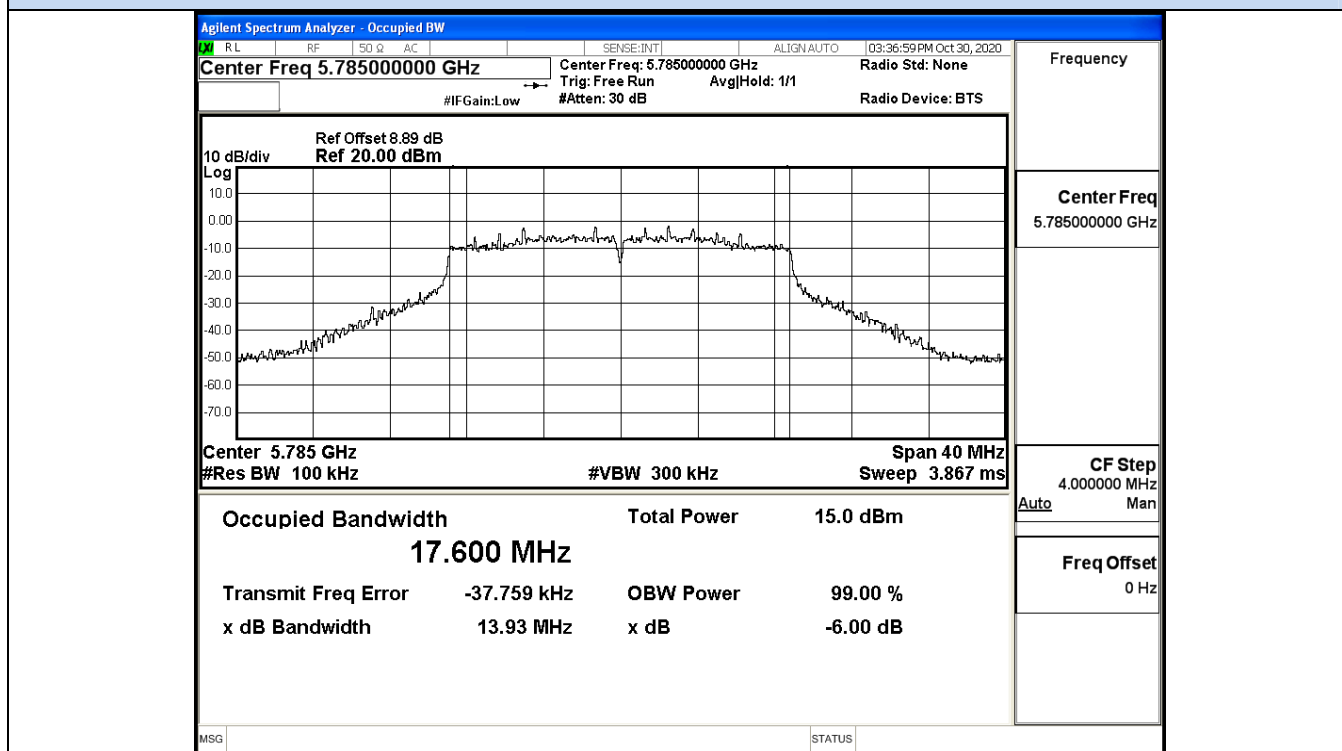
IEEE 802.11n40 / Channel 151 / 5755MHz



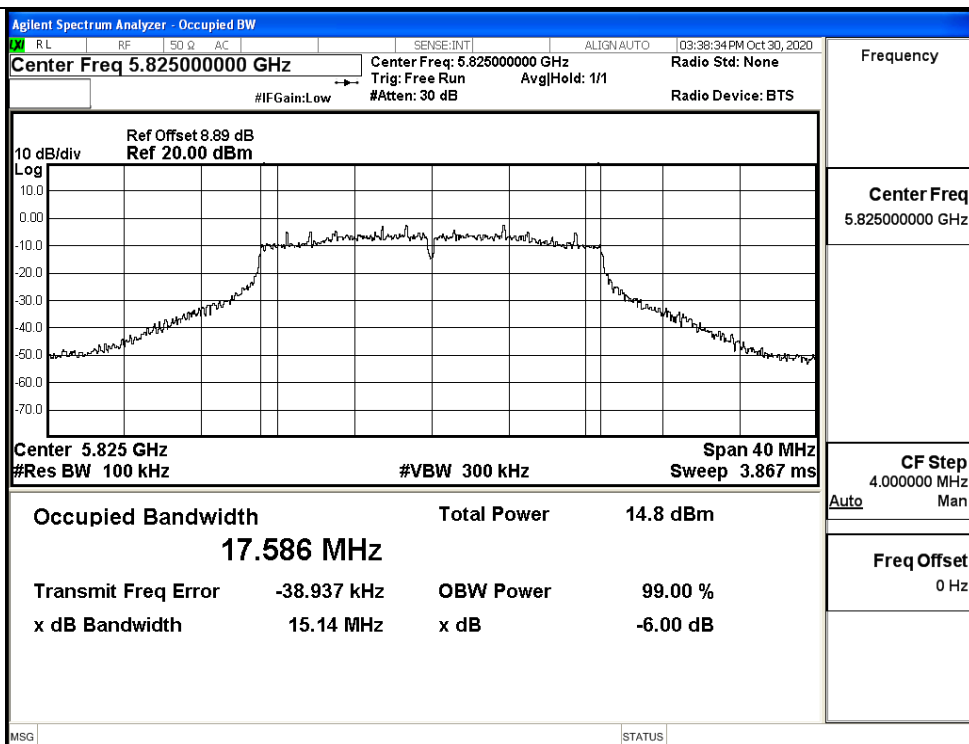
IEEE 802.11n40 / Channel 159 / 5795MHz



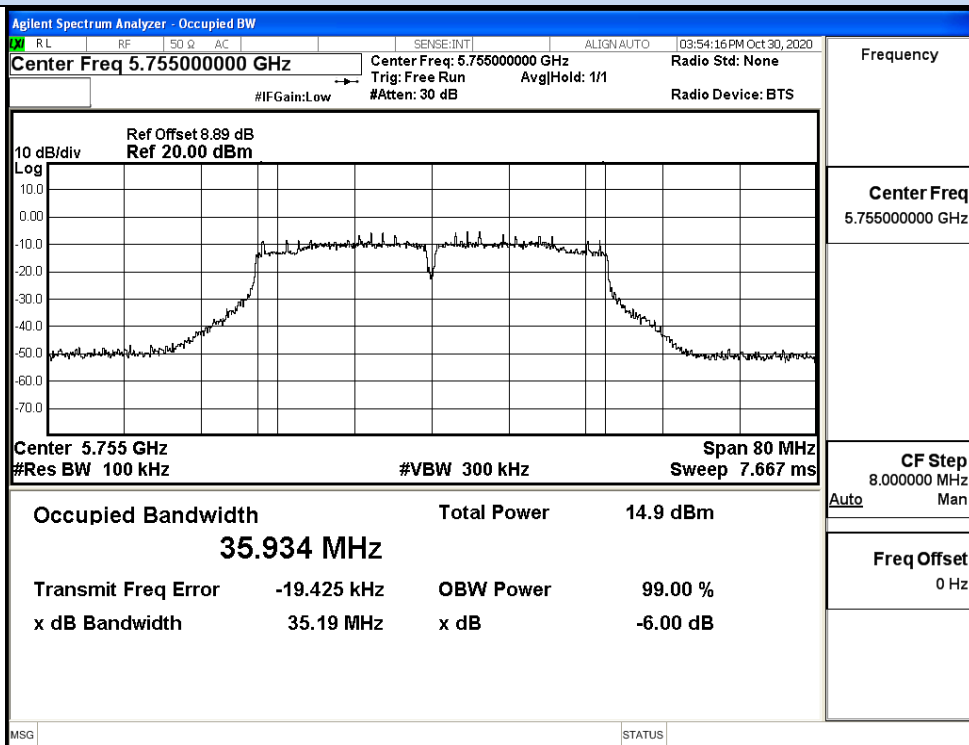
IEEE 802.11ac20 / Channel 149 / 5745MHz



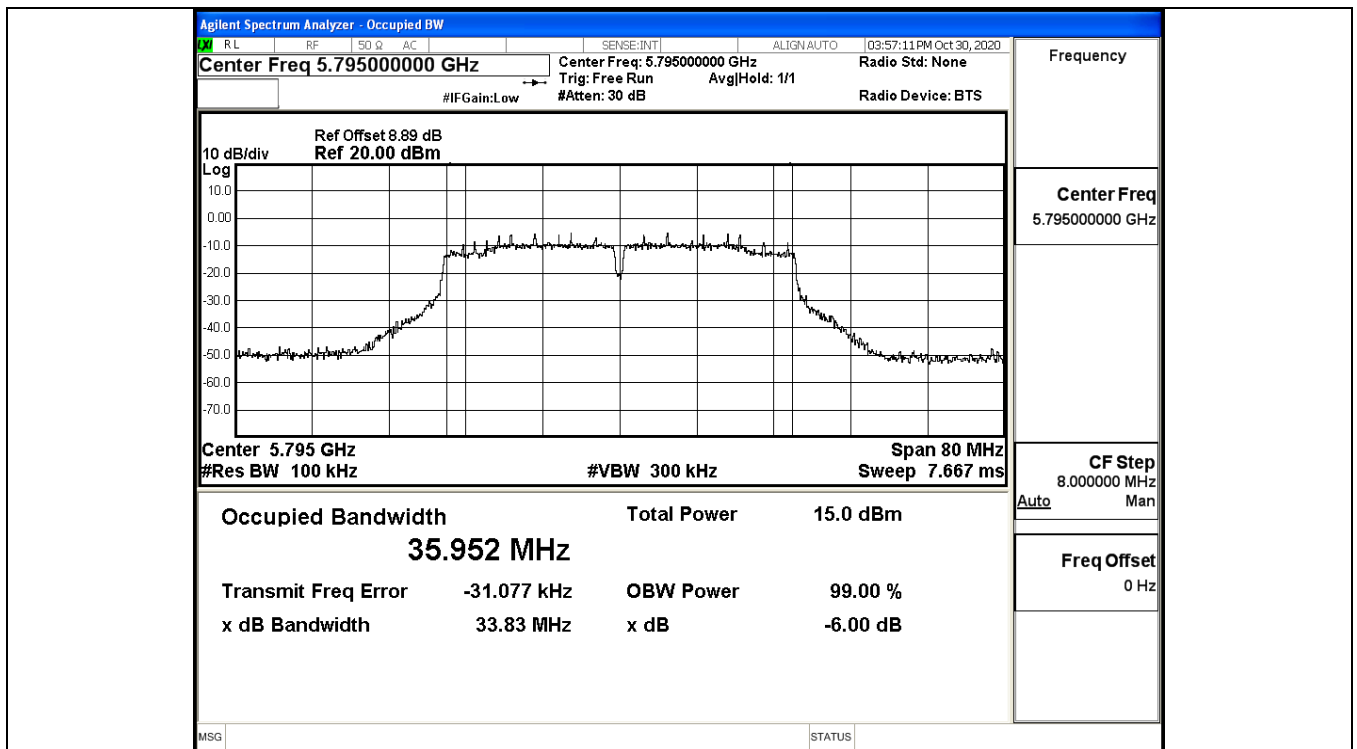
IEEE 802.11ac20 / Channel 157/ 5785MHz



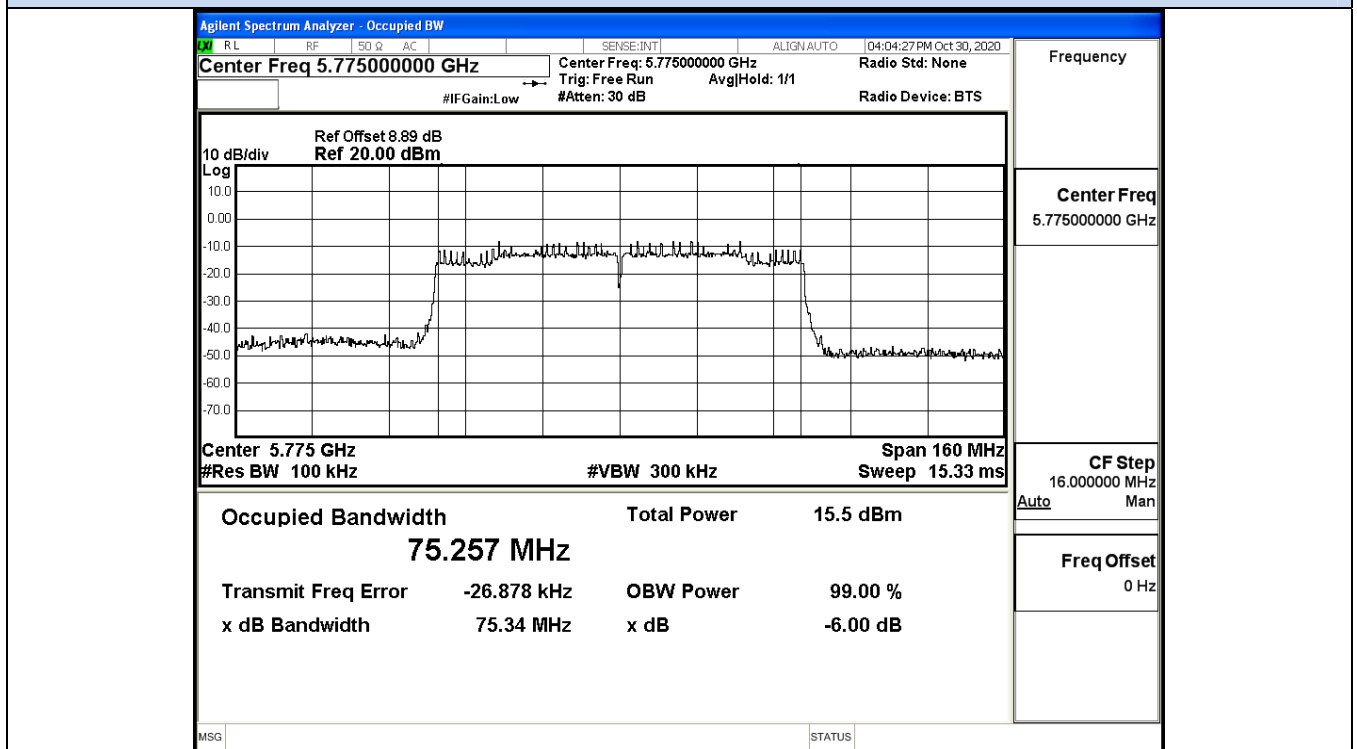
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



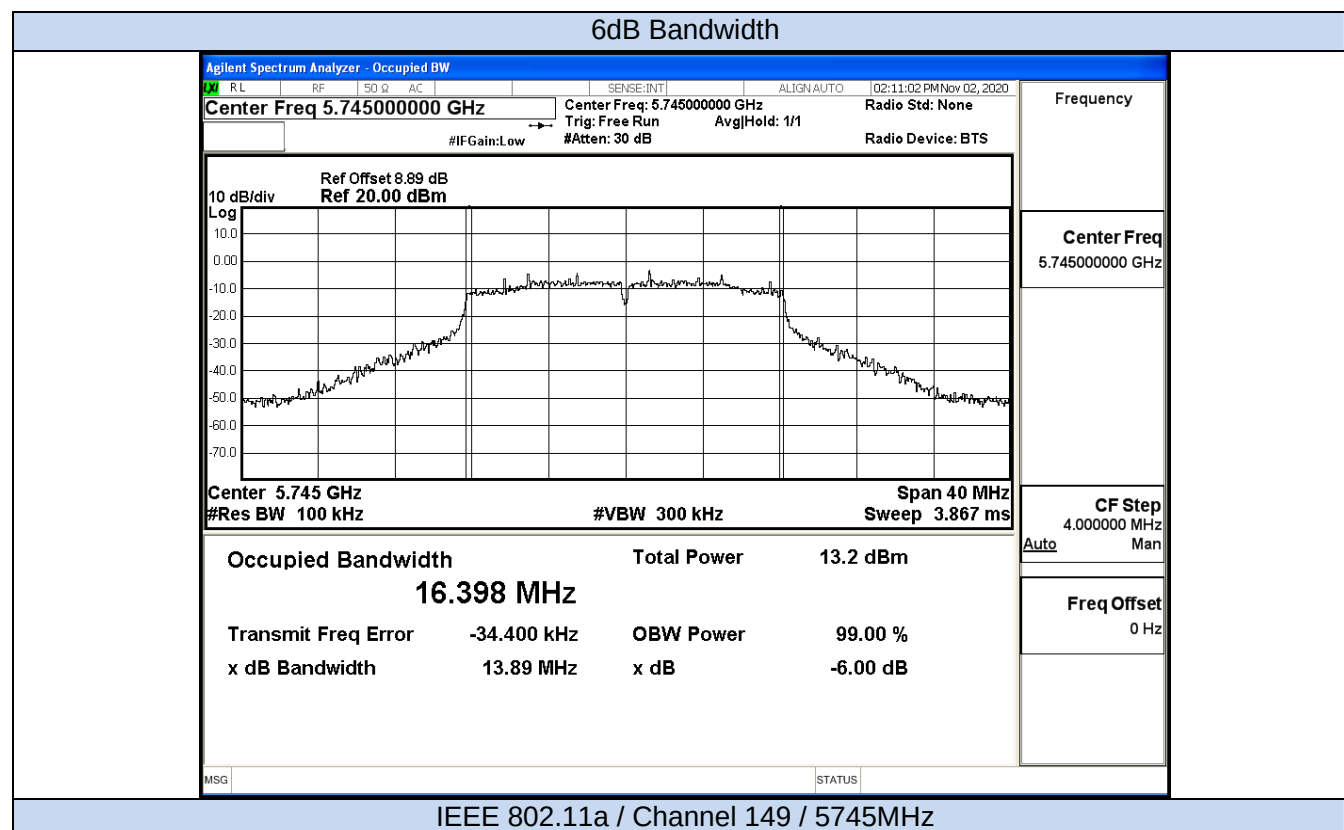
IEEE 802.11ac40 / Channel 159 / 5795MHz

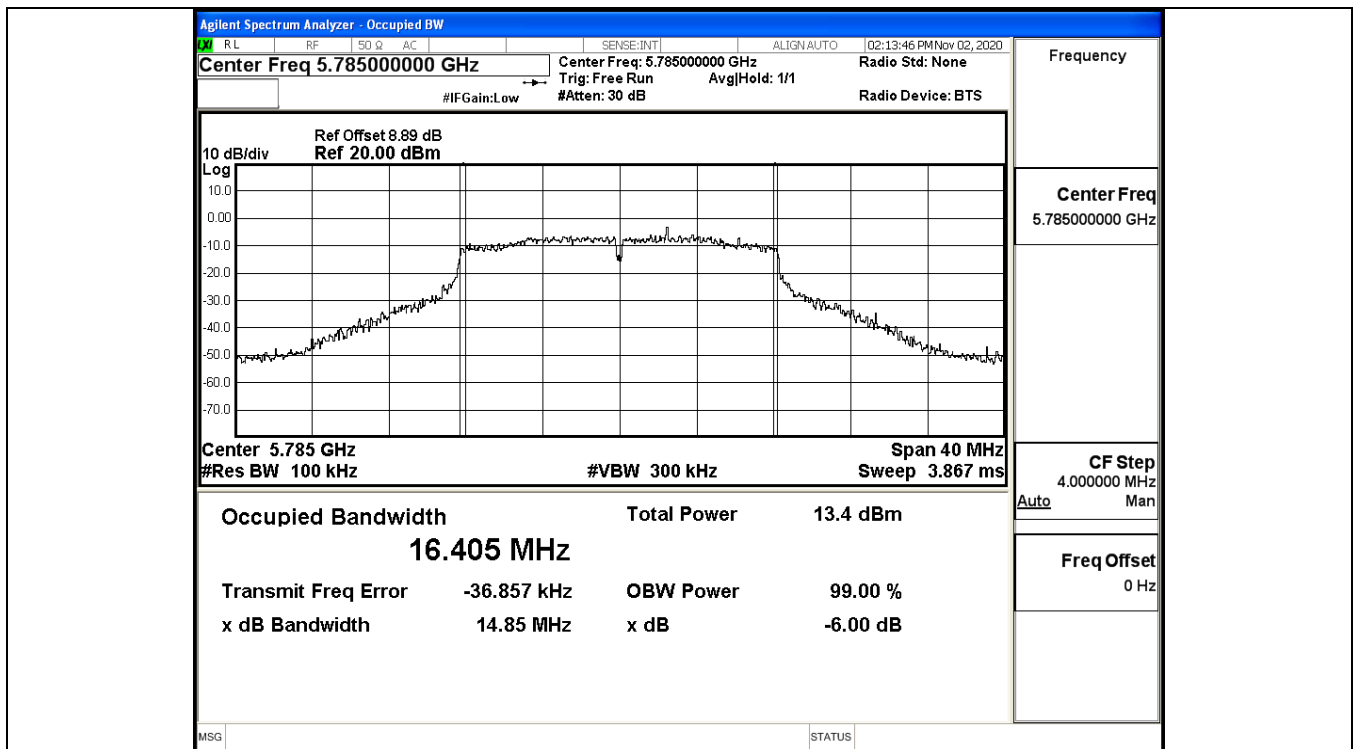


IEEE 802.11ac80 / Channel 155 / 5775MHz

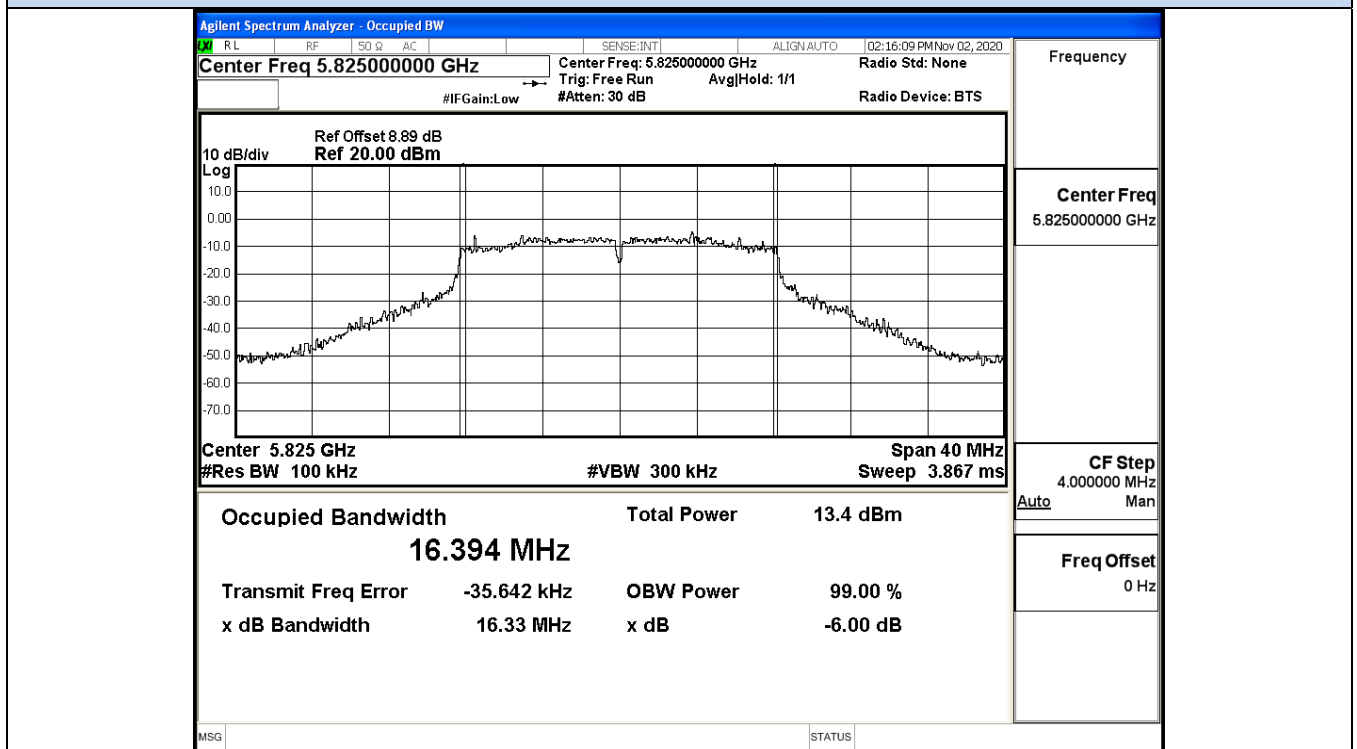
ANT 1

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
11A	149	5745	13.89	>=0.5	Pass
	157	5785	14.85		Pass
	165	5825	16.33		Pass
11N20 SISO	149	5745	15.07	>=0.5	Pass
	157	5785	15.10		Pass
	165	5825	14.18		Pass
11N40 SISO	151	5755	35.09	>=0.5	Pass
	159	5795	35.17		Pass
11AC20S ISO	149	5745	13.74	>=0.5	Pass
	157	5785	15.17		Pass
	165	5825	13.00		Pass
11AC40S ISO	151	5755	31.40	>=0.5	Pass
	159	5795	34.00		Pass
11AC80S ISO	155	5775	75.15	>=0.5	Pass



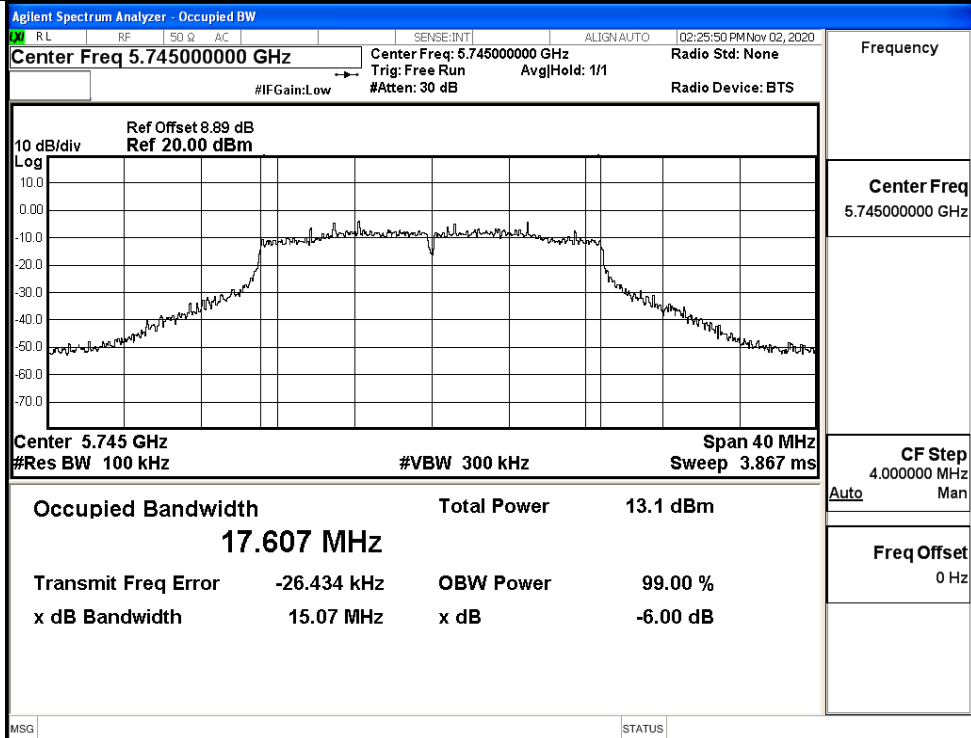


IEEE 802.11a / Channel 157 / 5785MHz

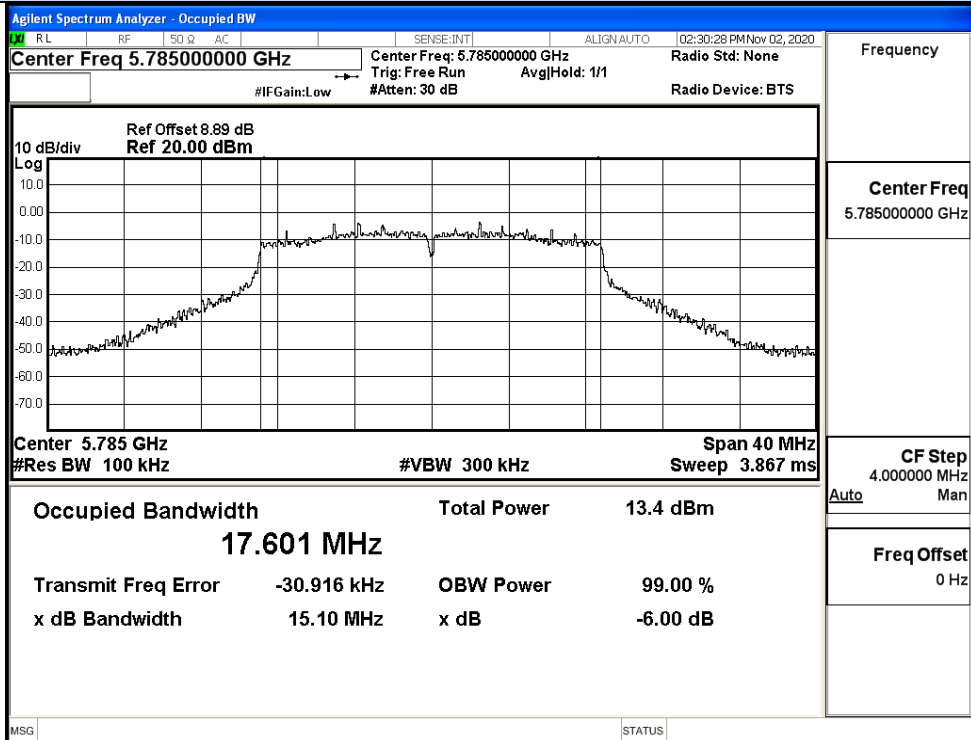


IEEE 802.11a / Channel 165 / 5825MHz

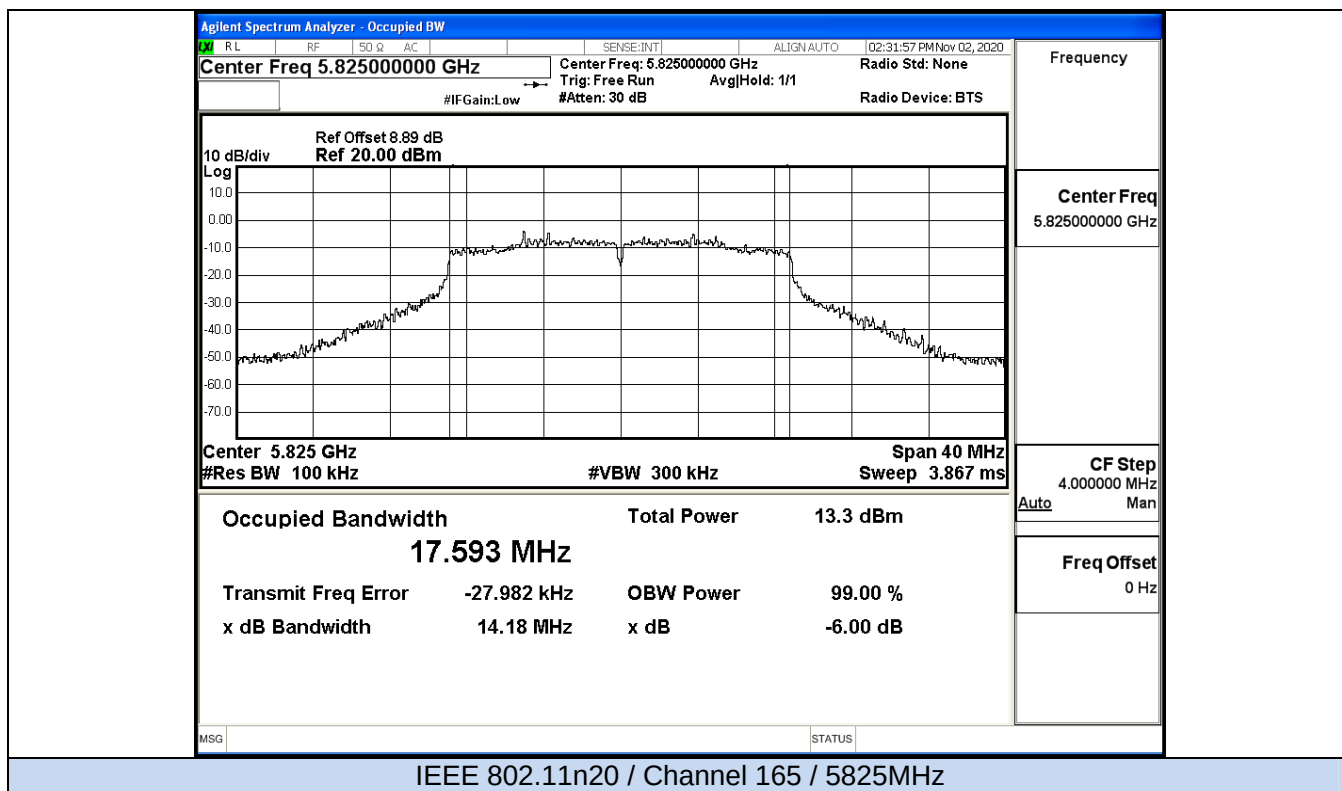
6dB Bandwidth



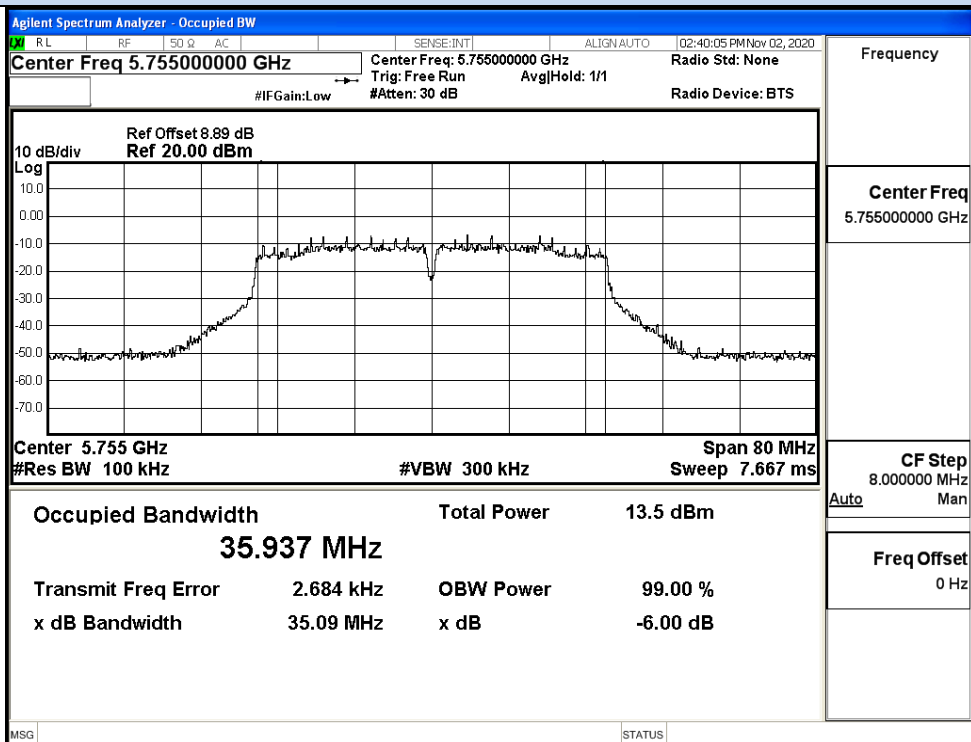
IEEE 802.11n20 / Channel 149 / 5745MHz



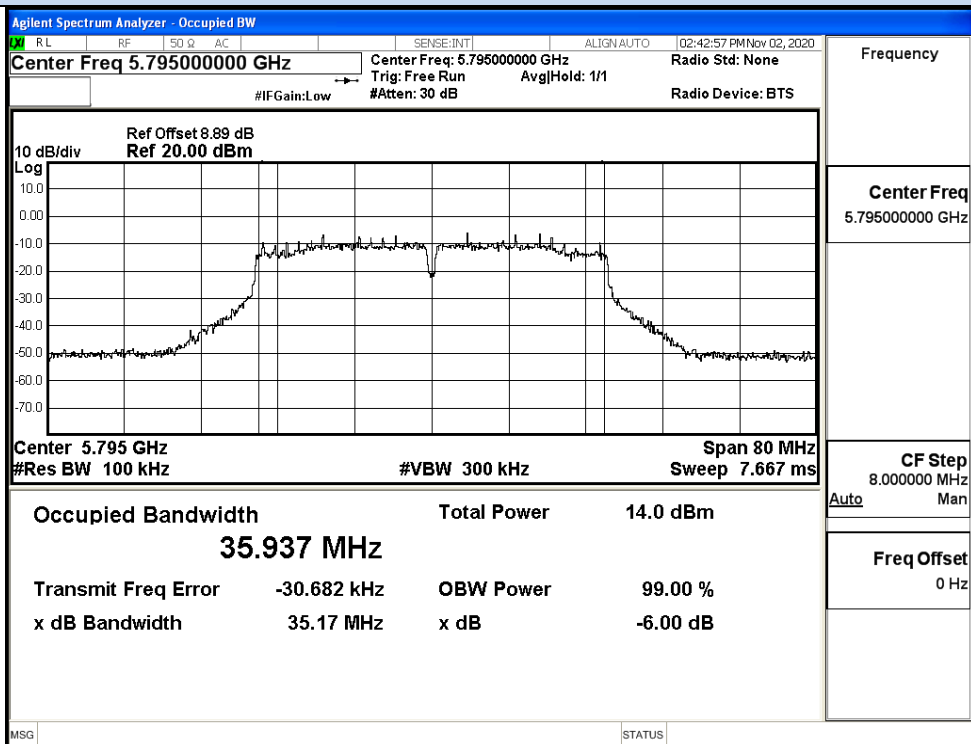
IEEE 802.11n20 / Channel 157 / 5785MHz



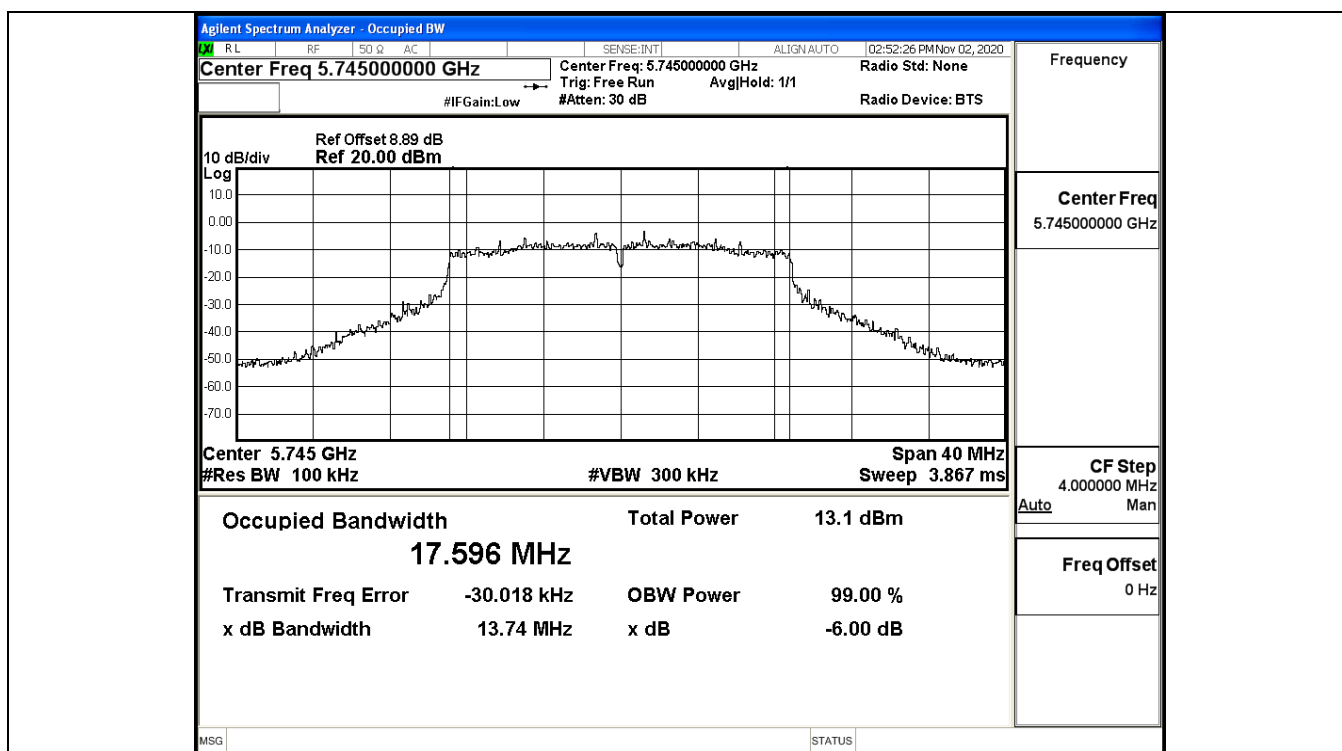
6dB Bandwidth



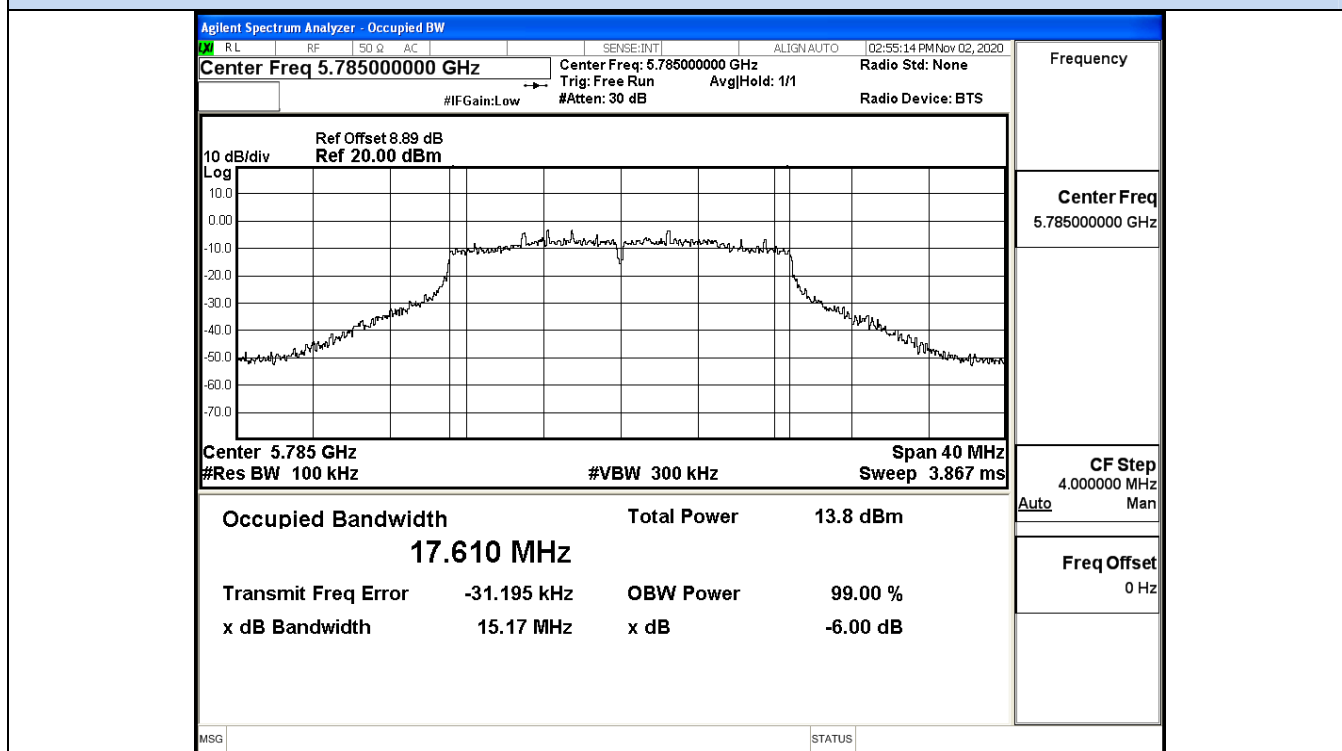
IEEE 802.11n40 / Channel 151 / 5755MHz



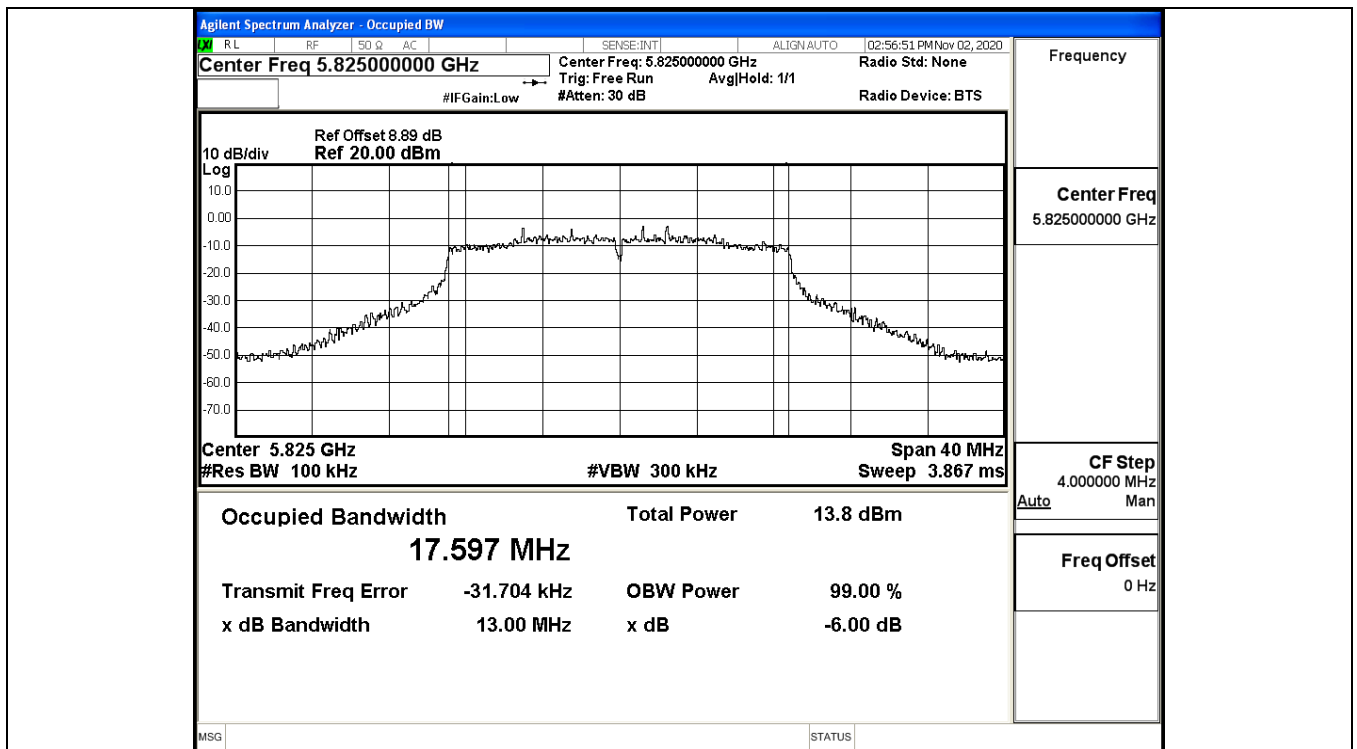
IEEE 802.11n40 / Channel 159 / 5795MHz



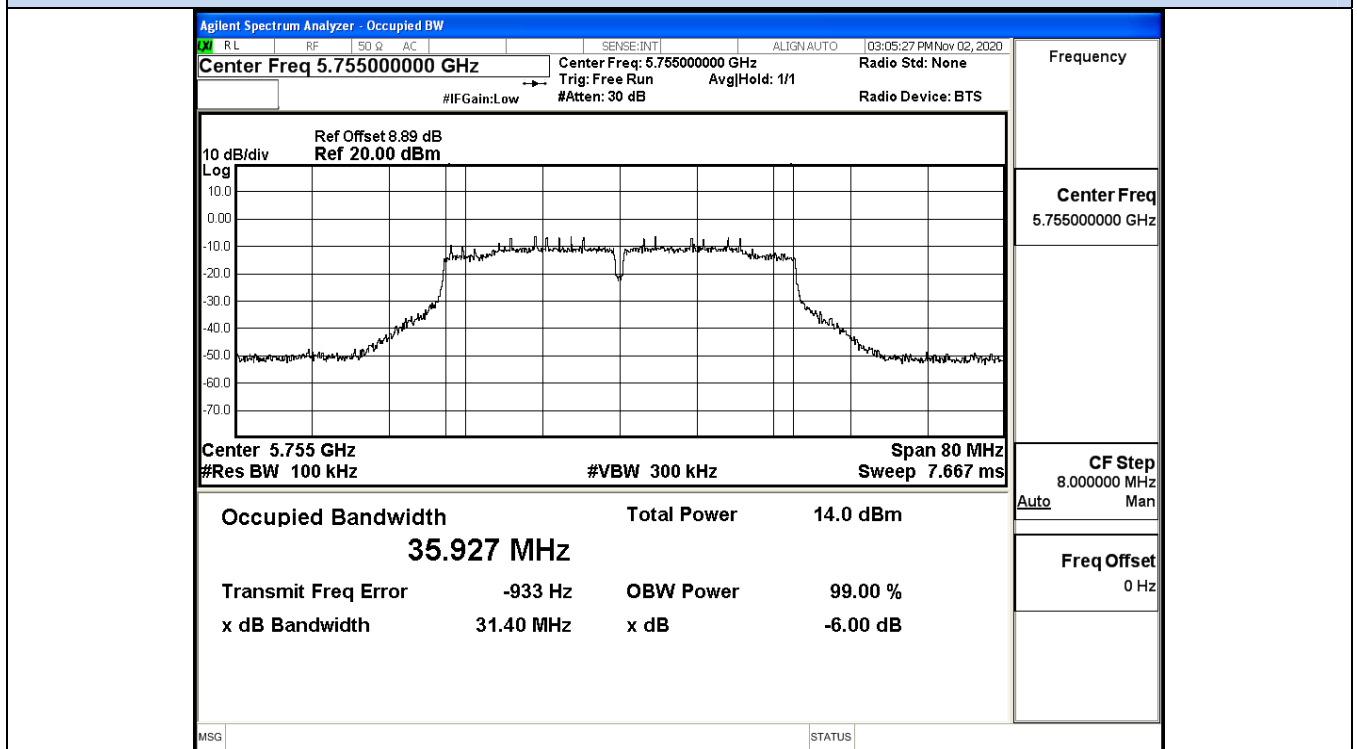
IEEE 802.11ac20 / Channel 149 / 5745MHz



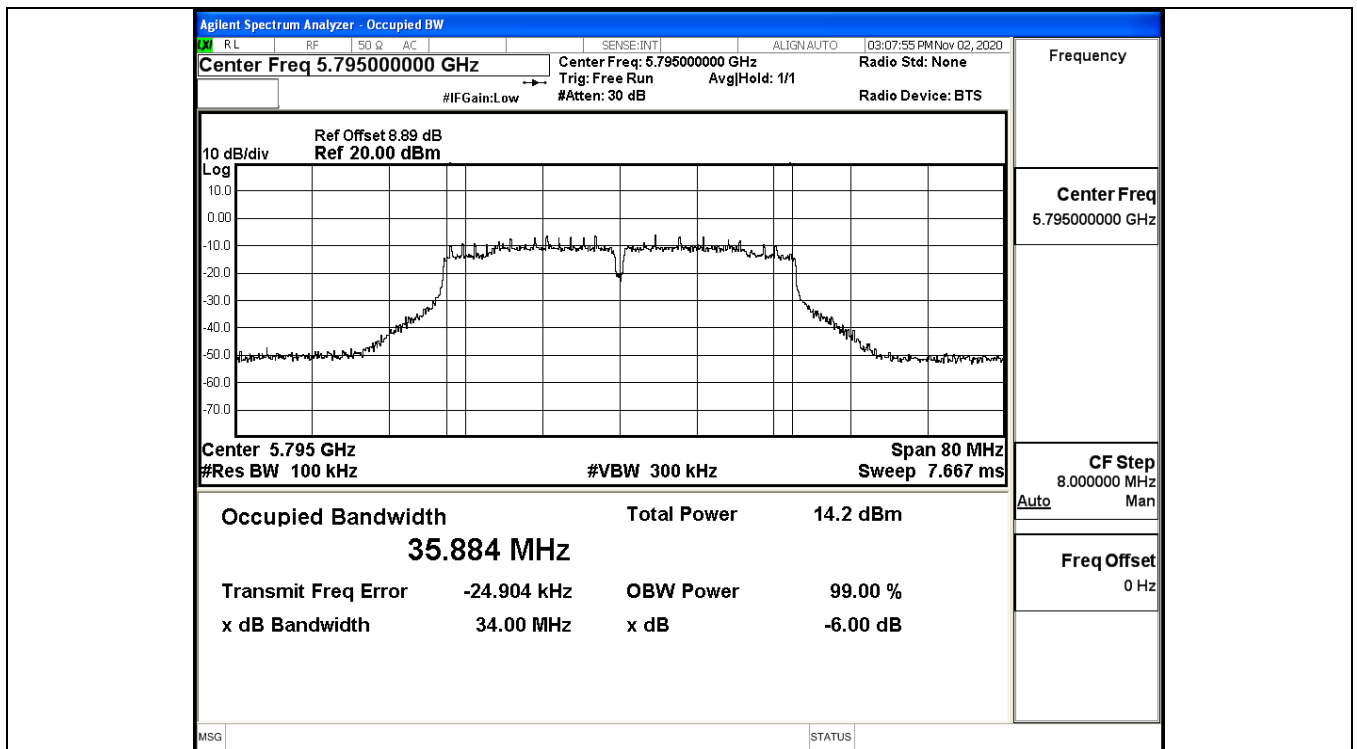
IEEE 802.11ac20 / Channel 157/ 5785MHz



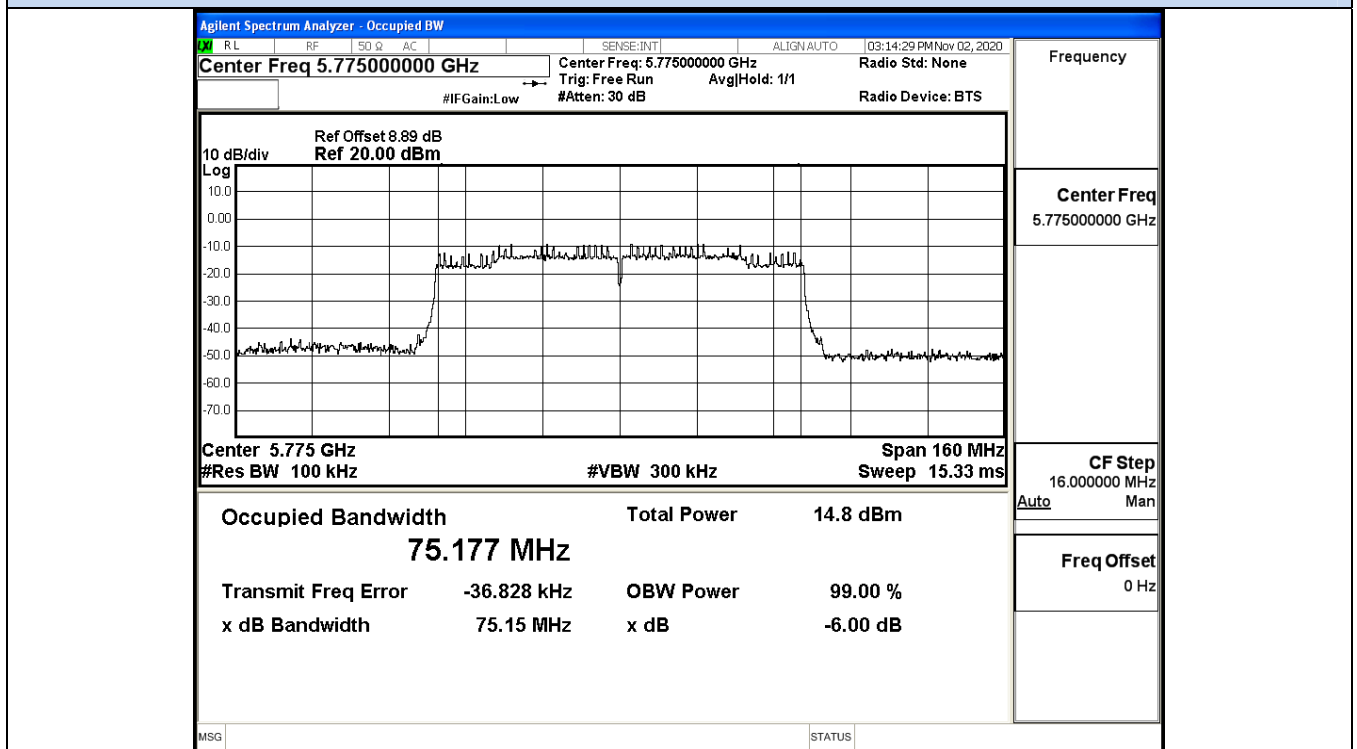
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



IEEE 802.11ac80 / Channel 155 / 5775MHz

E.5 Undesirable Emissions Measurement

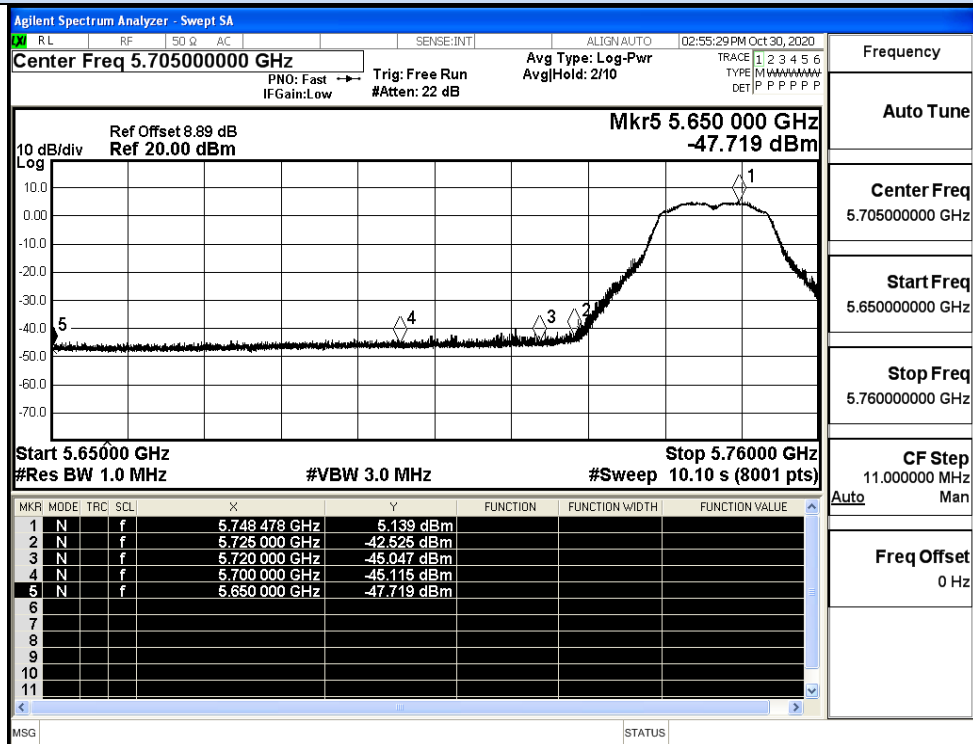
ANT 0

Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11A	149	5650.0	-47.72	2.00	-47.72	Peak	-27.0	Pass
		5650.0	-59.06	2.00	-59.06	Average	-27.0	Pass
		5700.0	-45.12	2.00	-45.12	Peak	10	Pass
		5700.0	-57.95	2.00	-57.95	Average	10	Pass
		5720.0	-45.05	2.00	-45.05	Peak	15.6	Pass
		5720.0	-57.37	2.00	-57.37	Average	15.6	Pass
		5725.0	-42.53	2.00	-42.53	Peak	27.0	Pass
		5725.0	-56.32	2.00	-56.32	Average	27.0	Pass
	165	5850.0	-44.08	2.00	-44.08	Peak	27.0	Pass
		5850.0	-56.88	2.00	-56.88	Average	27.0	Pass
		5855.0	-43.37	2.00	-43.37	Peak	15.6	Pass
		5855.0	-57.29	2.00	-57.29	Average	15.6	Pass
		5875.0	-46.72	2.00	-46.72	Peak	10	Pass
		5875.0	-58.01	2.00	-58.01	Average	10	Pass
		5925.0	-45.83	2.00	-45.83	Peak	-27.0	Pass
		5925.0	-58.13	2.00	-58.13	Average	-27.0	Pass
11N20 SISO	149	5650.0	-46.14	2.00	-46.14	Peak	-27.0	Pass
		5650.0	-59.08	2.00	-59.08	Average	-27.0	Pass
		5700.0	-46.56	2.00	-46.56	Peak	10	Pass
		5700.0	-57.29	2.00	-57.29	Average	10	Pass
		5720.0	-44.07	2.00	-44.07	Peak	15.6	Pass
		5720.0	-57.95	2.00	-57.95	Average	15.6	Pass
		5725.0	-41.24	2.00	-41.24	Peak	27.0	Pass
		5725.0	-56.12	2.00	-56.12	Average	27.0	Pass
	165	5850.0	-44.19	2.00	-44.19	Peak	27.0	Pass
		5850.0	-56.77	2.00	-56.77	Average	27.0	Pass
		5855.0	-44.99	2.00	-44.99	Peak	15.6	Pass
		5855.0	-57.24	2.00	-57.24	Average	15.6	Pass
		5875.0	-45.23	2.00	-45.23	Peak	10	Pass
		5875.0	-57.98	2.00	-57.98	Average	10	Pass
		5925.0	-46.07	2.00	-46.07	Peak	-27.0	Pass
		5925.0	-58.08	2.00	-58.08	Average	-27.0	Pass

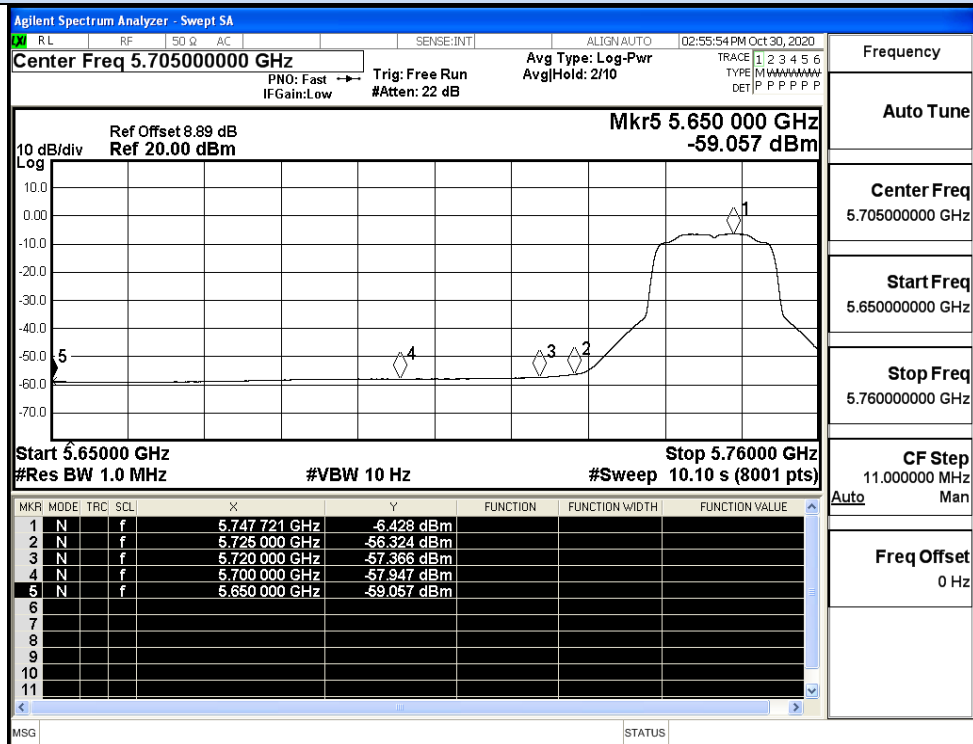
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11N40 SISO	151	5650.0	-46.49	2.00	-46.49	Peak	-27.0	Pass
		5650.0	-58.49	2.00	-58.49	Average	-27.0	Pass
		5700.0	-44.86	2.00	-44.86	Peak	10	Pass
		5700.0	-56.78	2.00	-56.78	Average	10	Pass
		5720.0	-40.52	2.00	-40.52	Peak	15.6	Pass
		5720.0	-53.12	2.00	-53.12	Average	15.6	Pass
		5725.0	-39.53	2.00	-39.53	Peak	27.0	Pass
		5725.0	-52.25	2.00	-52.25	Average	27.0	Pass
	159	5850.0	-45.38	2.00	-45.38	Peak	27.0	Pass
		5850.0	-56.49	2.00	-56.49	Average	27.0	Pass
		5855.0	-43.30	2.00	-43.30	Peak	15.6	Pass
		5855.0	-56.63	2.00	-56.63	Average	15.6	Pass
		5875.0	-46.43	2.00	-46.43	Peak	10	Pass
		5875.0	-57.32	2.00	-57.32	Average	10	Pass
		5925.0	-46.06	2.00	-46.06	Peak	-27.0	Pass
		5925.0	-57.55	2.00	-57.55	Average	-27.0	Pass
11AC2 0 SISO	149	5650.0	-47.47	2.00	-47.47	Peak	-27.0	Pass
		5650.0	-58.87	2.00	-58.87	Average	-27.0	Pass
		5700.0	-45.06	2.00	-45.06	Peak	10	Pass
		5700.0	-56.89	2.00	-56.89	Average	10	Pass
		5720.0	-42.50	2.00	-42.50	Peak	15.6	Pass
		5720.0	-57.51	2.00	-57.51	Average	15.6	Pass
		5725.0	-37.62	2.00	-37.62	Peak	27.0	Pass
		5725.0	-55.07	2.00	-55.07	Average	27.0	Pass
	165	5850.0	-42.56	2.00	-42.56	Peak	27.0	Pass
		5850.0	-56.60	2.00	-56.60	Average	27.0	Pass
		5855.0	-44.83	2.00	-44.83	Peak	15.6	Pass
		5855.0	-57.02	2.00	-57.02	Average	15.6	Pass
		5875.0	-45.98	2.00	-45.98	Peak	10	Pass
		5875.0	-57.72	2.00	-57.72	Average	10	Pass
		5925.0	-46.55	2.00	-46.55	Peak	-27.0	Pass
		5925.0	-57.86	2.00	-57.86	Average	-27.0	Pass
11AC4 0 SISO	151	5650.0	-47.34	2.00	-47.34	Peak	-27.0	Pass
		5650.0	-58.64	2.00	-58.64	Average	-27.0	Pass
		5700.0	-44.80	2.00	-44.80	Peak	10	Pass
		5700.0	-57.11	2.00	-57.11	Average	10	Pass
		5720.0	-40.82	2.00	-40.82	Peak	15.6	Pass
		5720.0	-52.76	2.00	-52.76	Average	15.6	Pass
		5725.0	-39.20	2.00	-39.20	Peak	27.0	Pass
		5725.0	-51.78	2.00	-51.78	Average	27.0	Pass
	159	5850.0	-45.67	2.00	-45.67	Peak	27.0	Pass
		5850.0	-56.79	2.00	-56.79	Average	27.0	Pass
		5855.0	-44.94	2.00	-44.94	Peak	15.6	Pass
		5855.0	-56.91	2.00	-56.91	Average	15.6	Pass
		5875.0	-44.86	2.00	-44.86	Peak	10	Pass
		5875.0	-57.59	2.00	-57.59	Average	10	Pass
		5925.0	-45.90	2.00	-45.90	Peak	-27.0	Pass
		5925.0	-57.78	2.00	-57.78	Average	-27.0	Pass
11AC8 0 SISO	155	5725.0	-40.22	2.00	-40.22	Peak	27.0	Pass
		5720.0	-41.59	2.00	-41.59	Peak	15.6	Pass
		5700.0	-46.15	2.00	-46.15	Peak	10	Pass
		5650.0	-45.50	2.00	-45.50	Peak	-27.0	Pass
		5725.0	-53.05	2.00	-53.05	Average	27.0	Pass
		5720.0	-54.18	2.00	-54.18	Average	15.6	Pass
		5700.0	-56.71	2.00	-56.71	Average	10	Pass
		5650.0	-57.77	2.00	-57.77	Average	-27.0	Pass
		5850.0	-40.22	2.00	-40.22	Peak	27.0	Pass

		5855.0	-41.59	2.00	-41.59	Peak	15.6	Pass
		5875.0	-46.15	2.00	-46.15	Peak	10	Pass
		5925.0	-45.50	2.00	-45.50	Peak	-27.0	Pass
		5850.0	-53.05	2.00	-53.05	Average	27.0	Pass
		5855.0	-54.18	2.00	-54.18	Average	15.6	Pass
		5875.0	-56.71	2.00	-56.71	Average	10	Pass
		5925.0	-57.77	2.00	-57.77	Average	-27.0	Pass

Undesirable Emissions Measurement

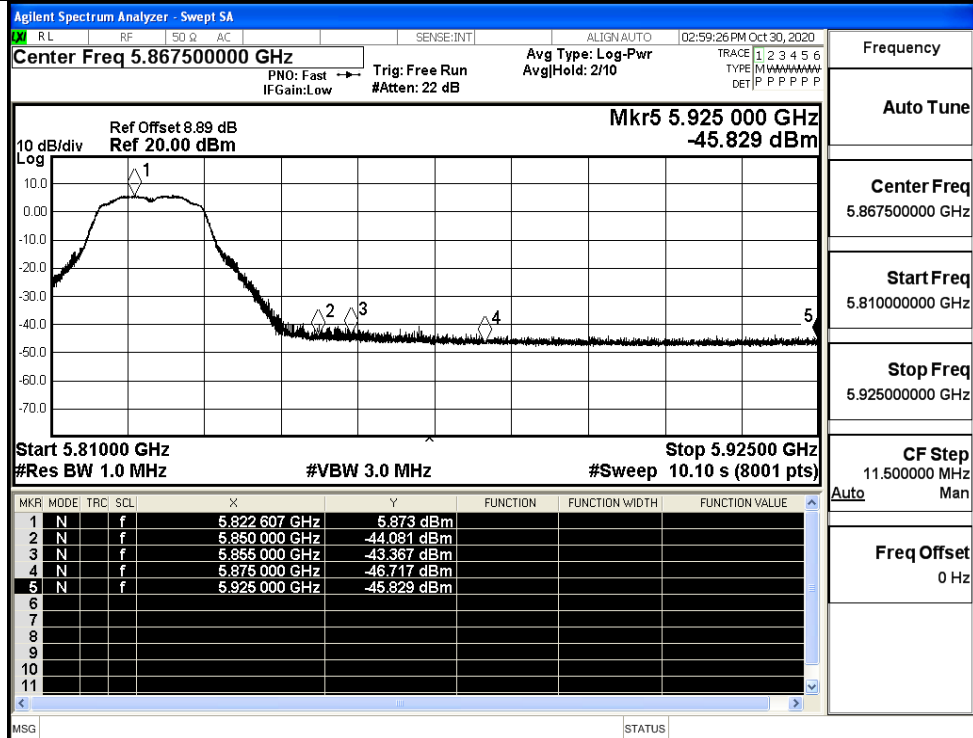


IEEE 802.11a / Channel 149 / 5745MHz / Peak

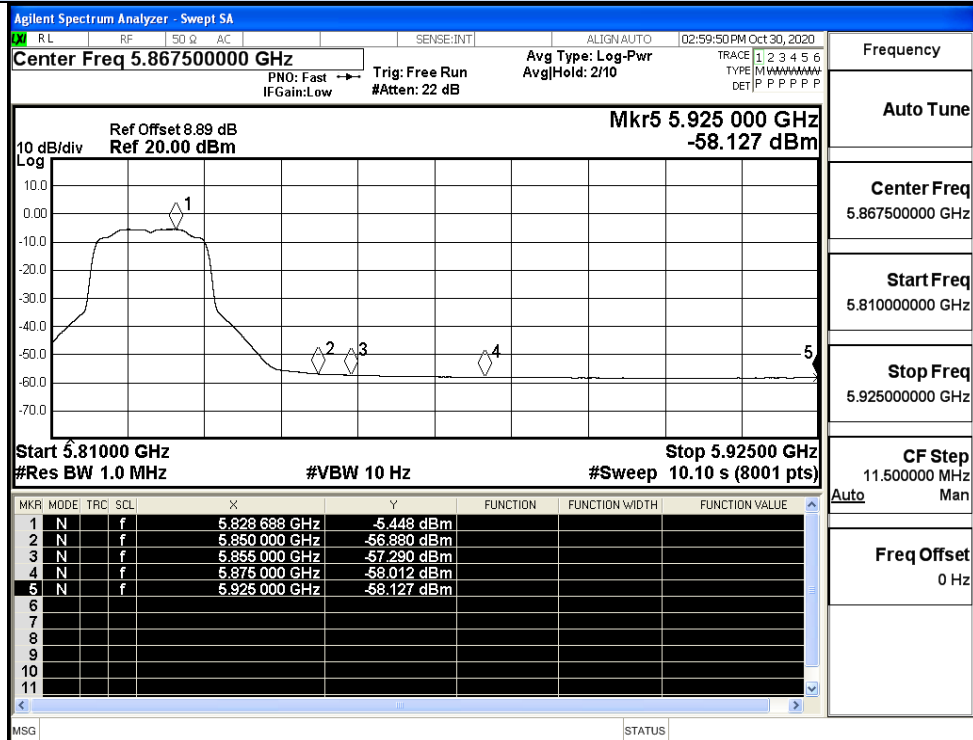


IEEE 802.11a / Channel 148 / 5745MHz / Average

Undesirable Emissions Measurement

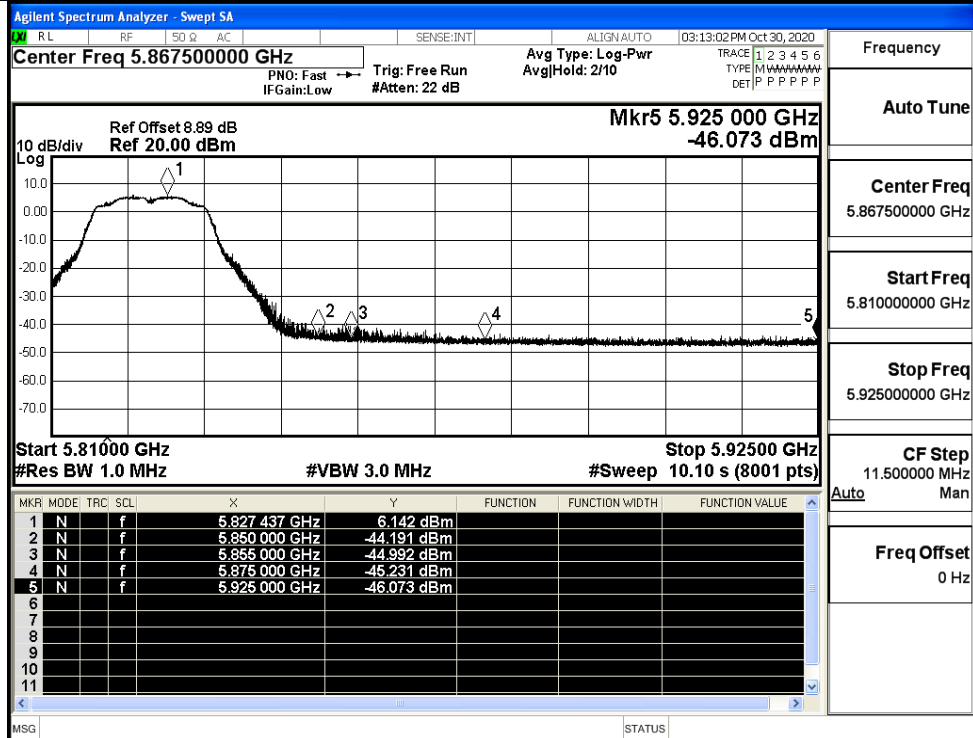


IEEE 802.11a / Channel 165 / 5825MHz / Peak

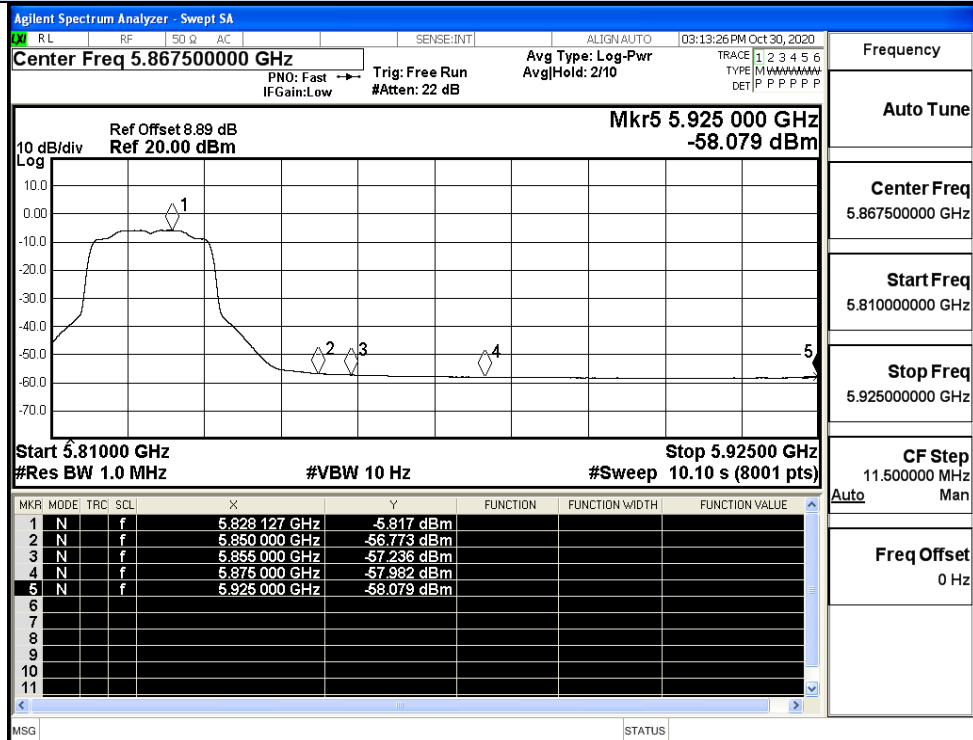


IEEE 802.11a / Channel 165 / 5825MHz / Average

Undesirable Emissions Measurement

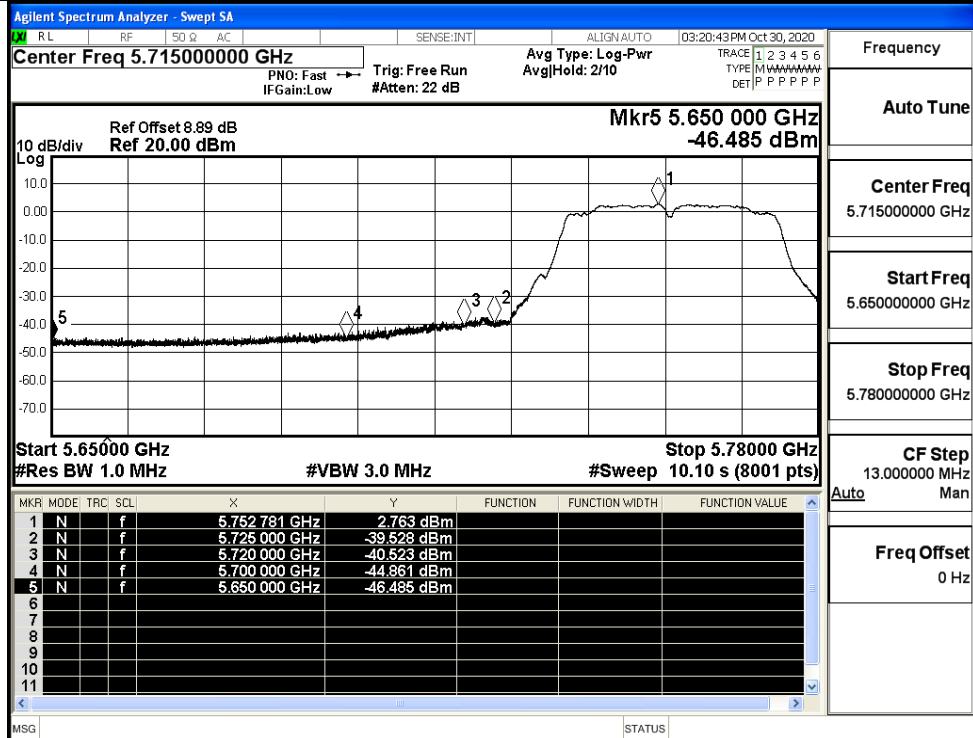


IEEE 802.11n20 / Channel 165 / 5825MHz / Peak

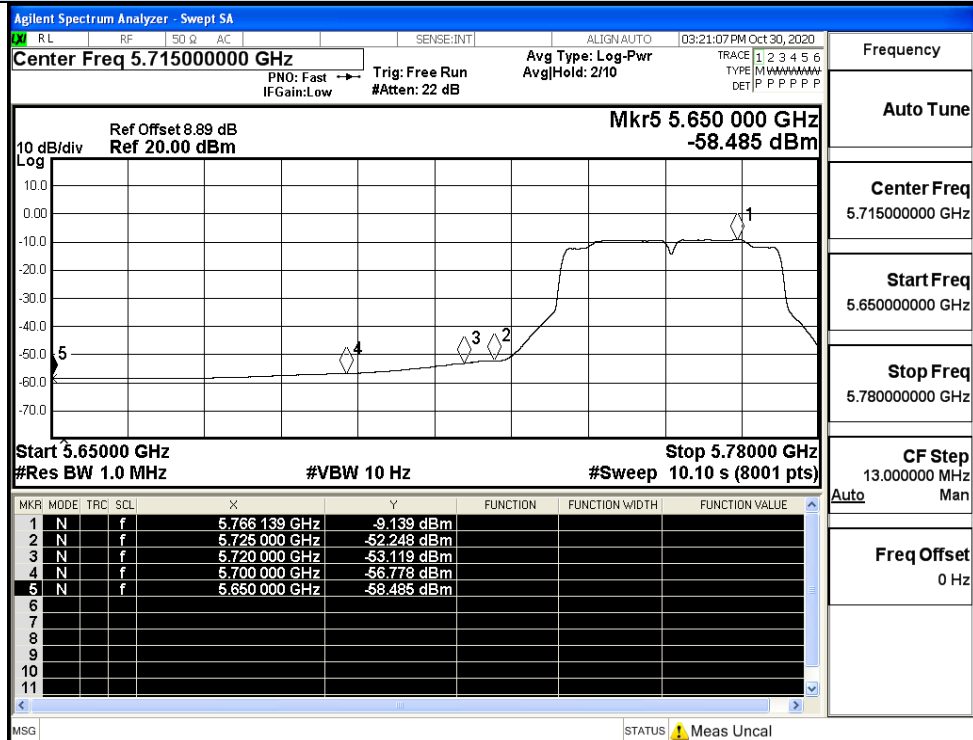


IEEE 802.11n20 / Channel 165 / 5825MHz / Average

Undesirable Emissions Measurement

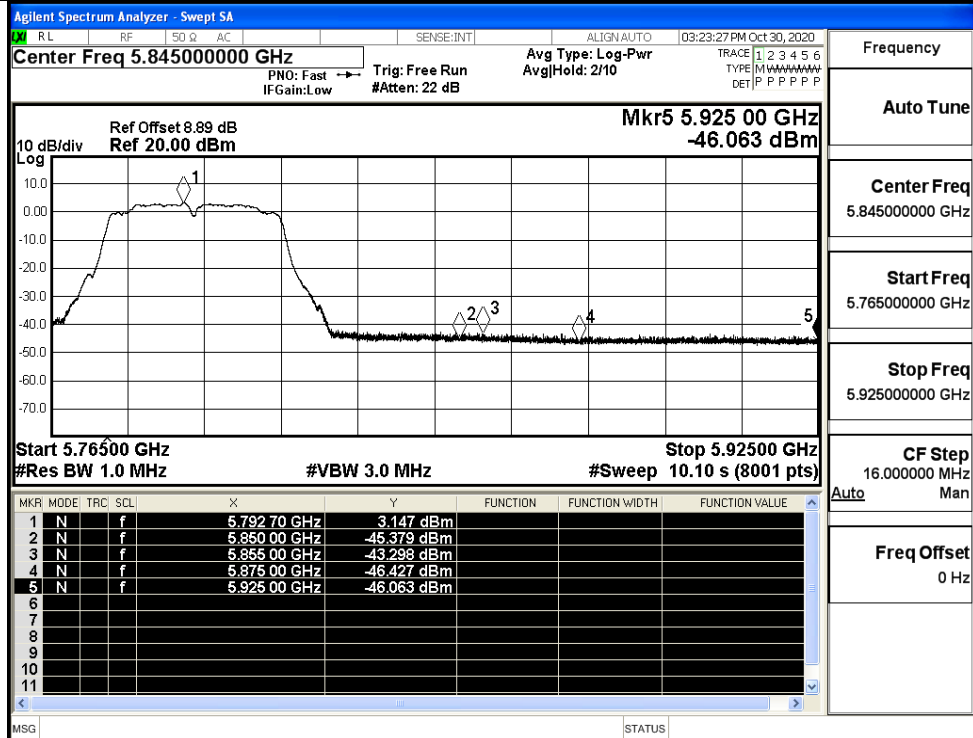


IEEE 802.11n40 / Channel 151 / 5755MHz / Peak

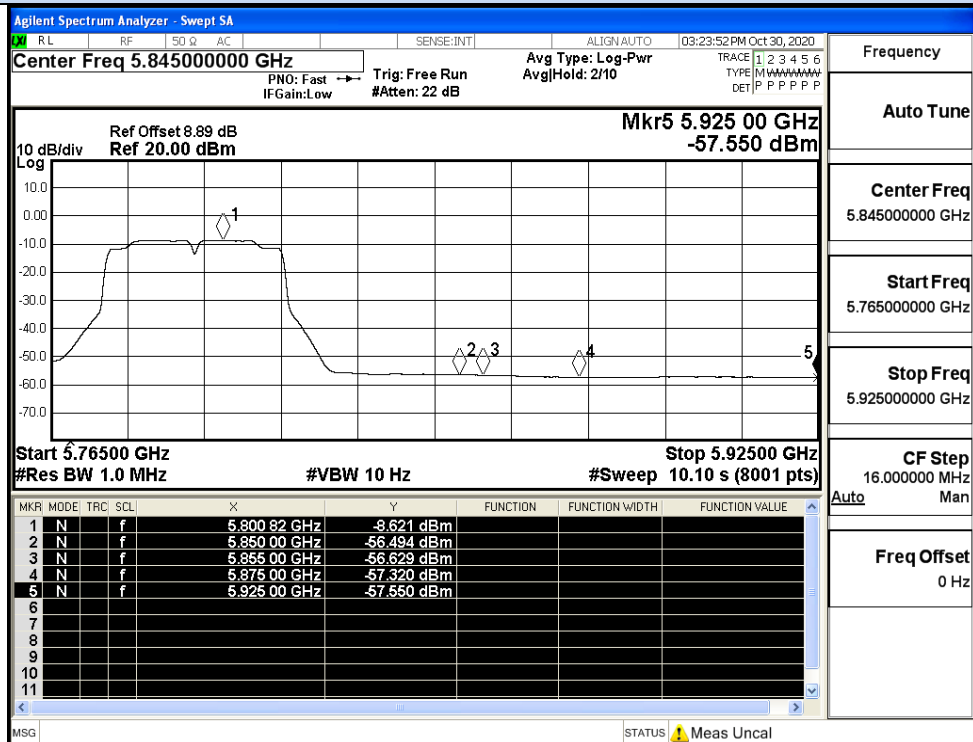


IEEE 802.11n40 / Channel 151 / 5755MHz / Average

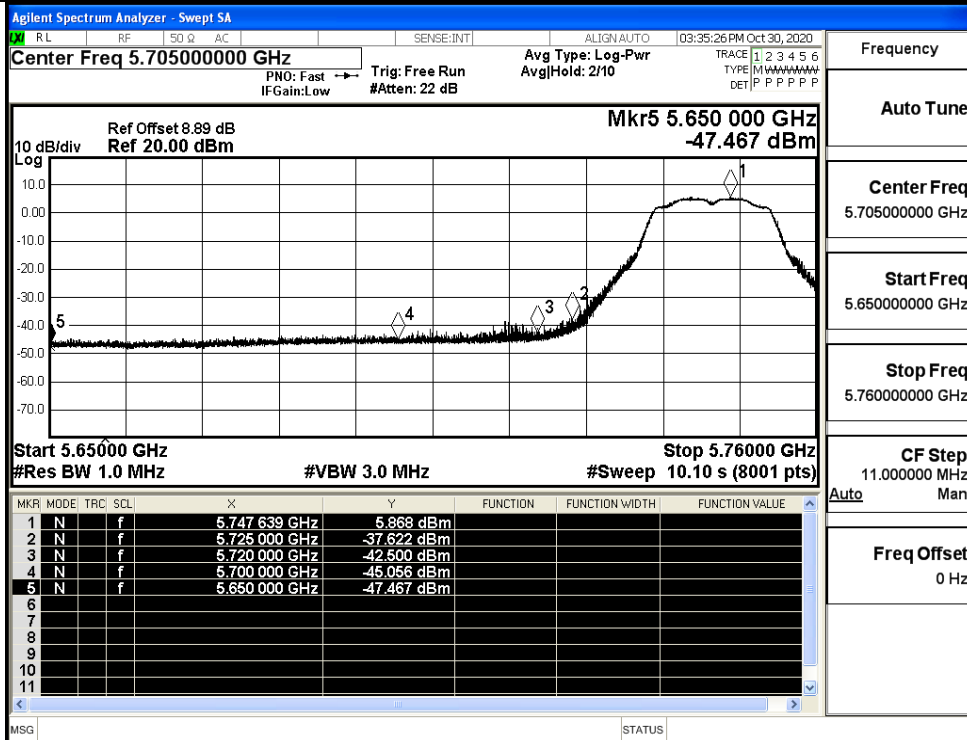
Undesirable Emissions Measurement



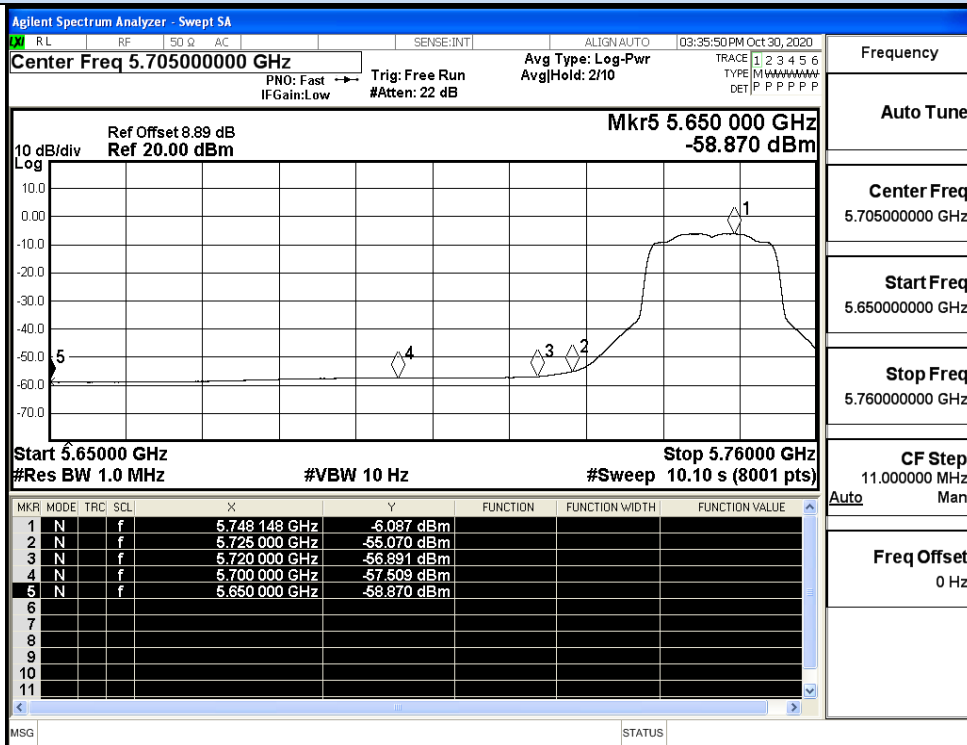
IEEE 802.11n40 / Channel 159 / 5795MHz / Peak



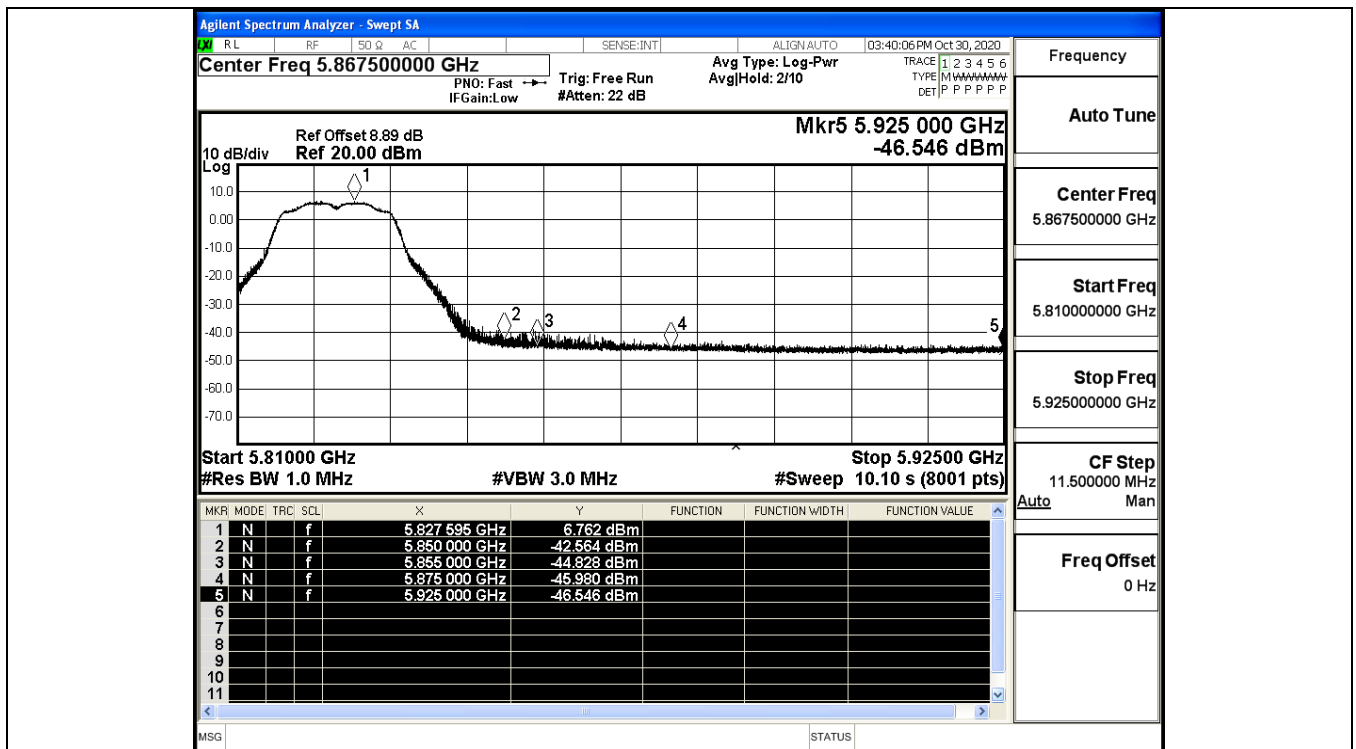
IEEE 802.11n40 / Channel 159 / 5795MHz / Average



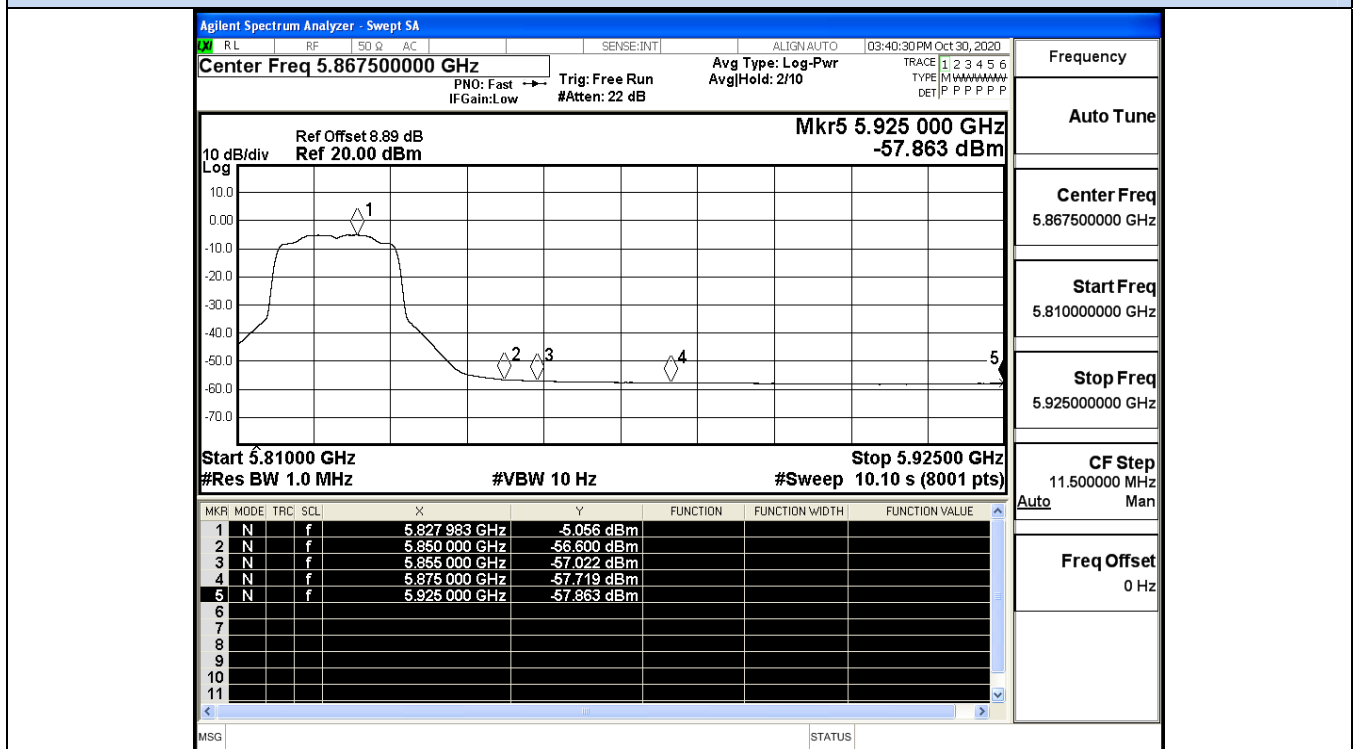
IEEE 802.11ac20 / Channel 149 / 5745MHz / Peak



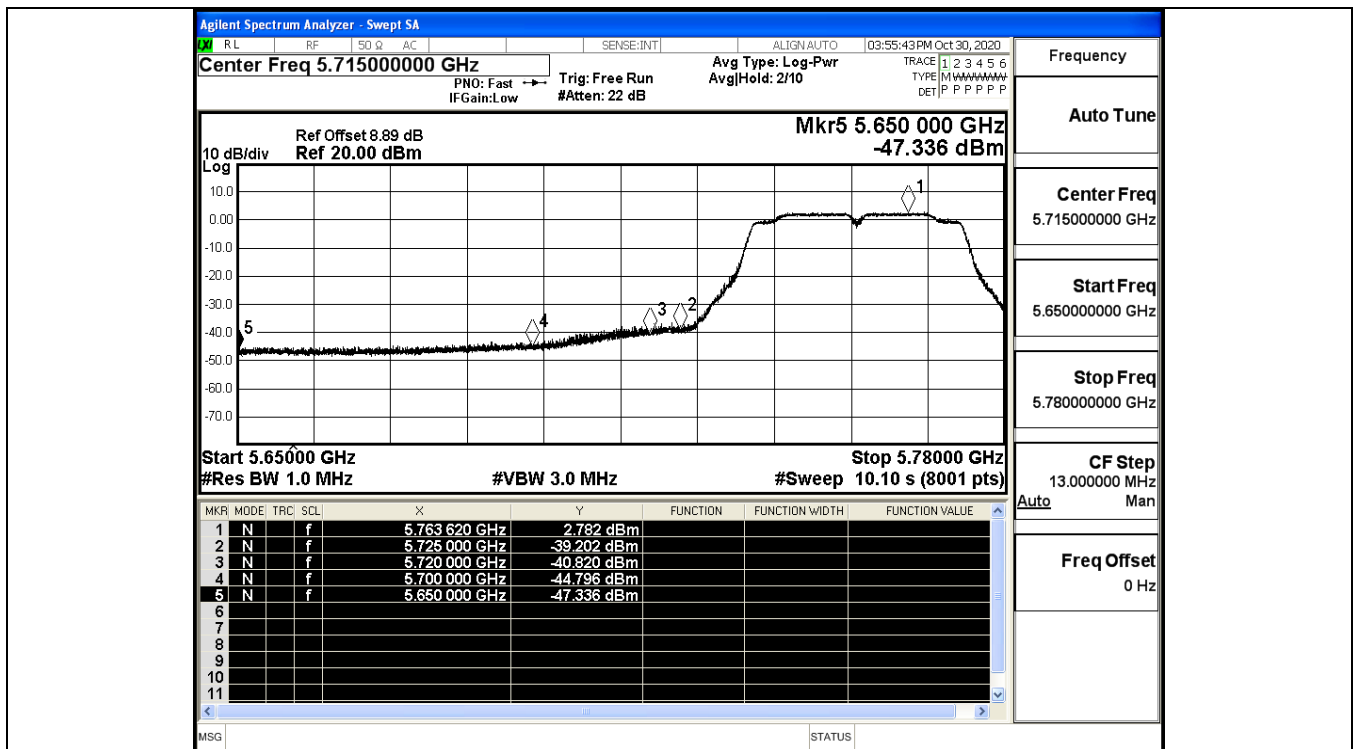
IEEE 802.11ac20 / Channel 149 / 5745MHz / Average



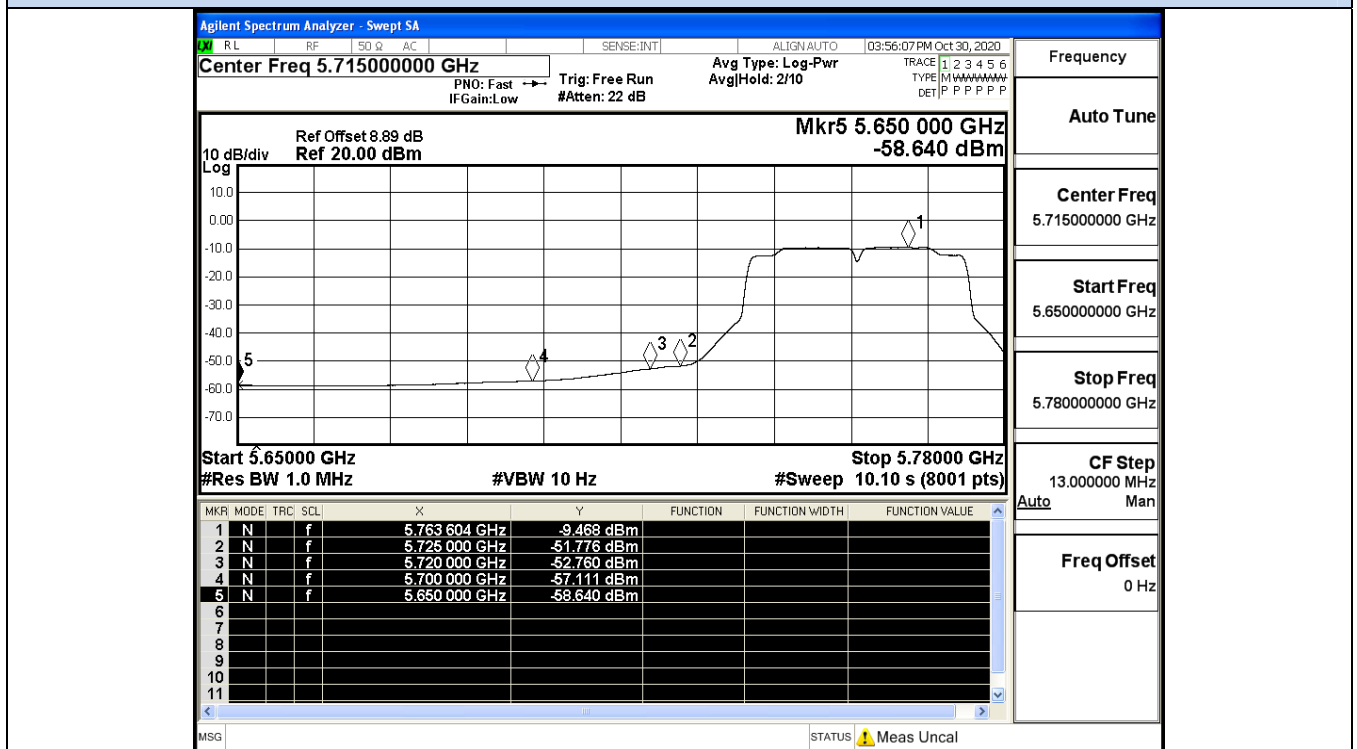
IEEE 802.11ac20 / Channel 165 / 5825MHz / Peak



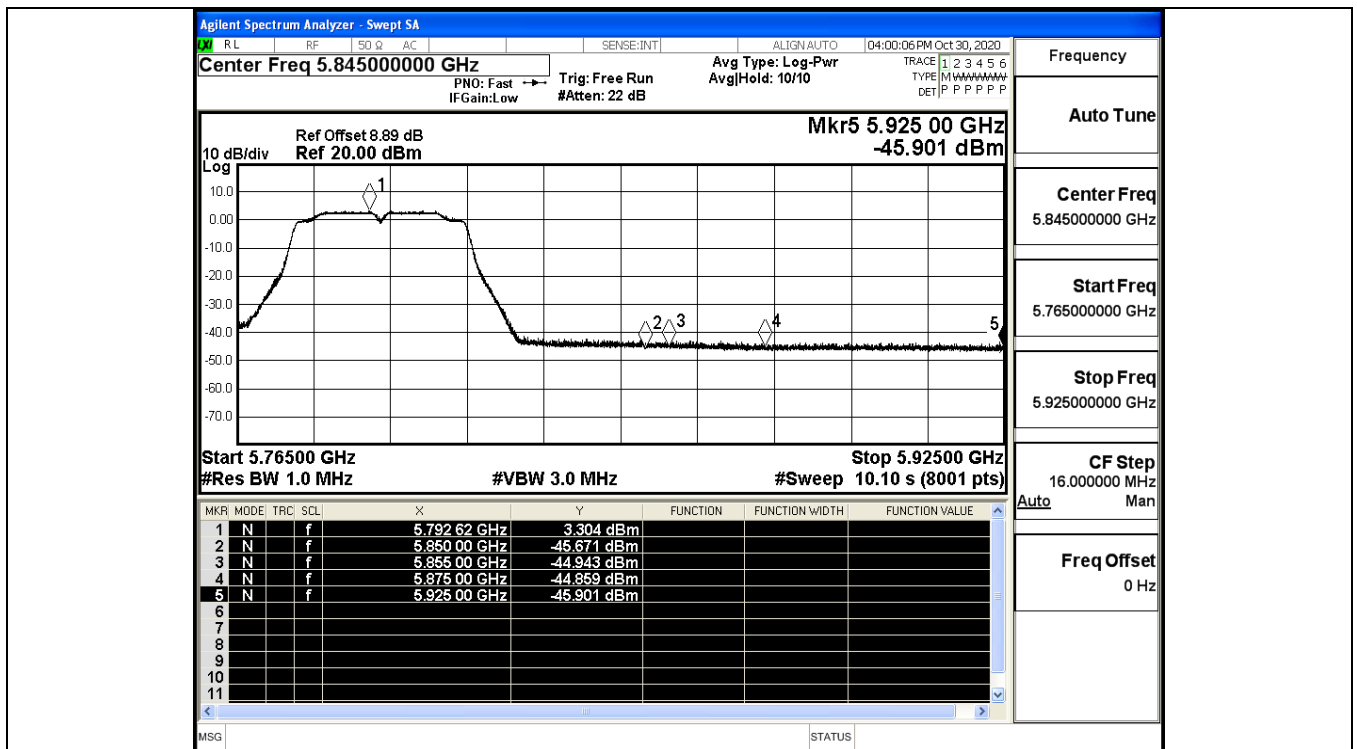
IEEE 802.11ac20 / Channel 165 / 5825MHz / Average



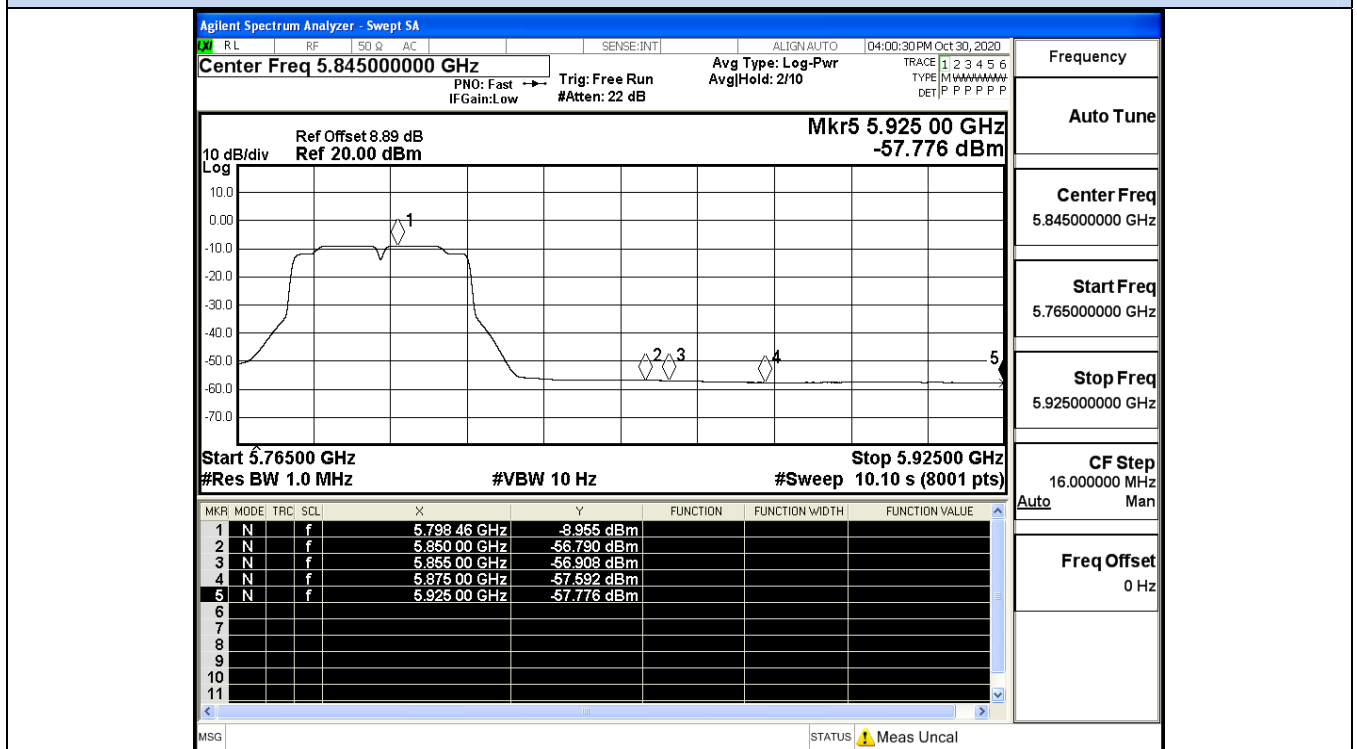
IEEE 802.11ac40 / Channel 151 / 5755MHz / Peak



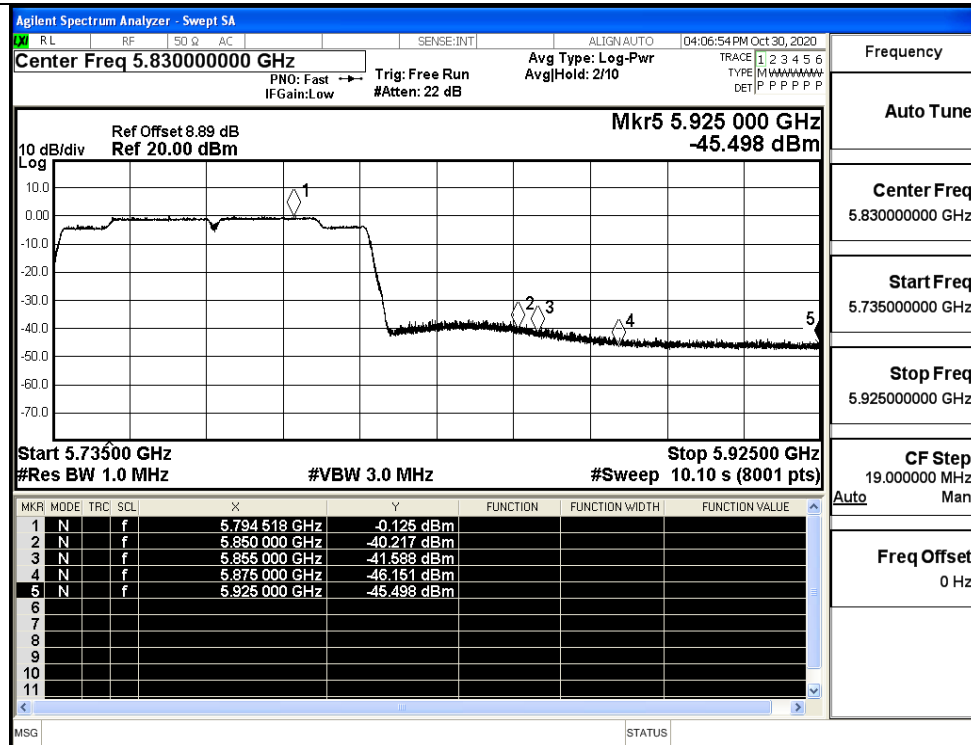
IEEE 802.11ac40 / Channel 151 / 5755MHz / Average



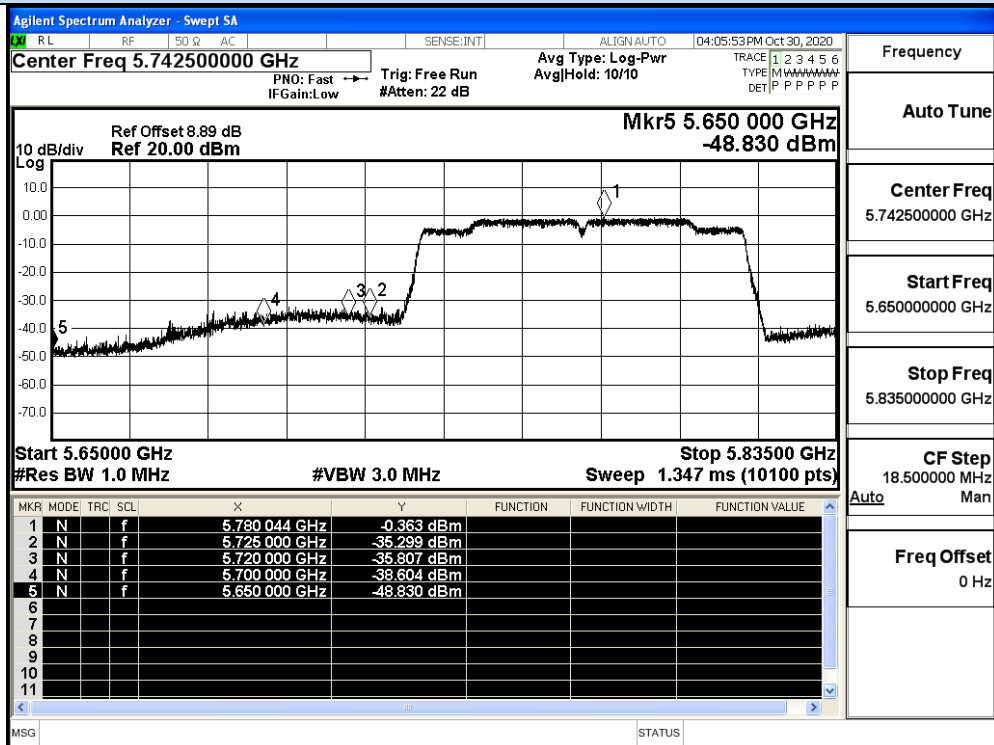
IEEE 802.11ac40 / Channel 159 / 5795MHz / Peak



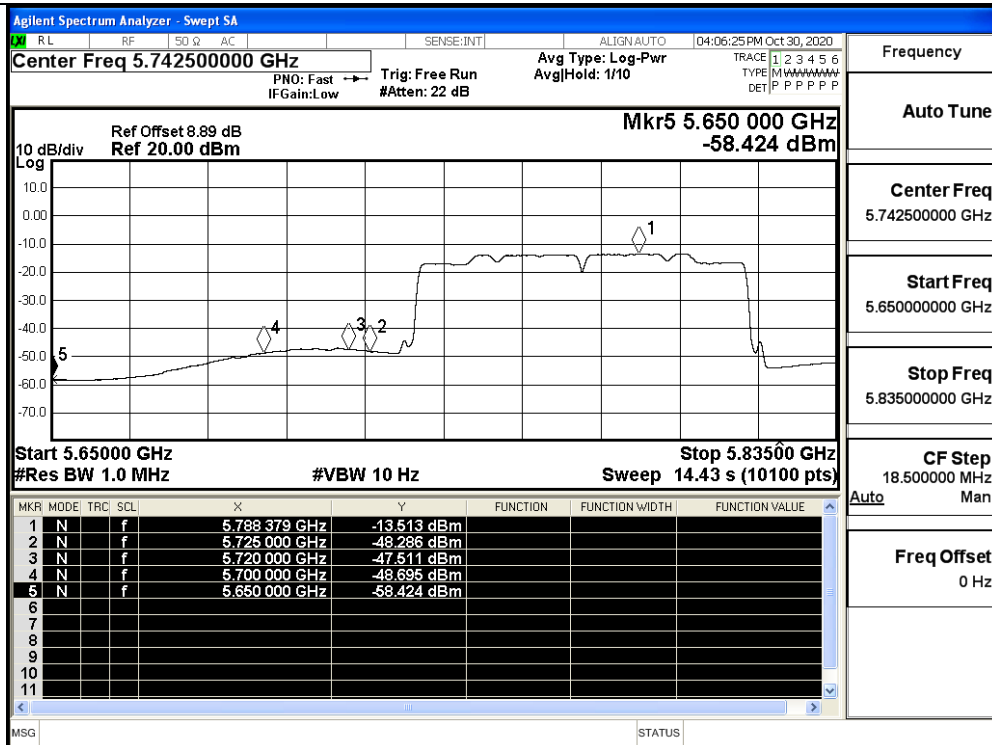
IEEE 802.11ac40 / Channel 159 / 5795MHz / Average



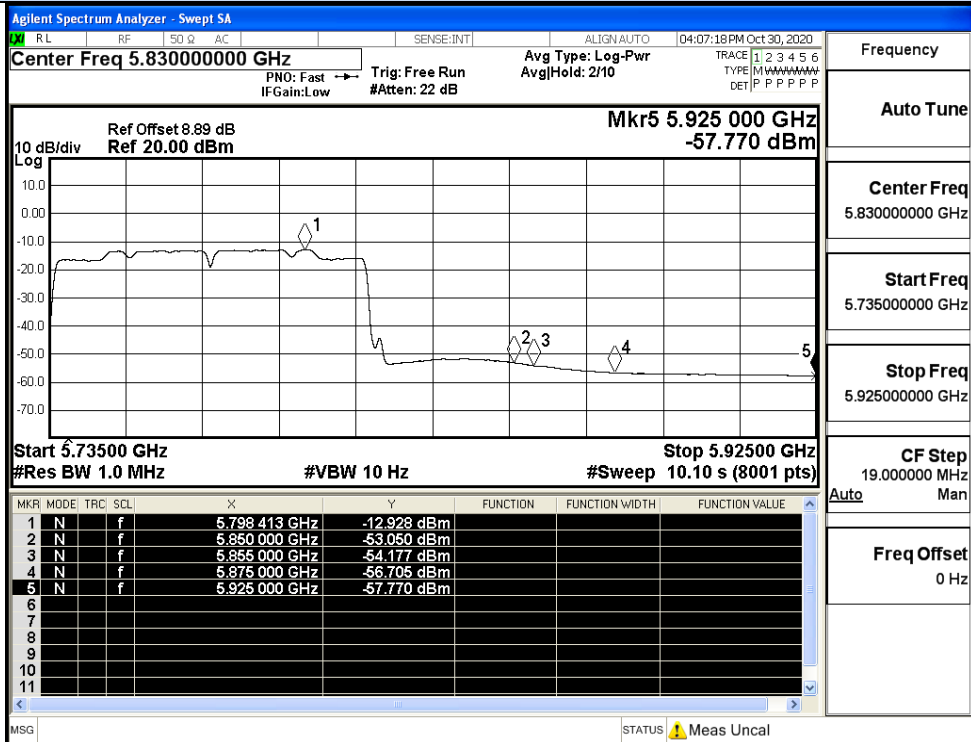
IEEE 802.11ac80 / Channel 155 / 5775MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Average



IEEE 802.11ac80 / Channel 155 / 5775MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Average

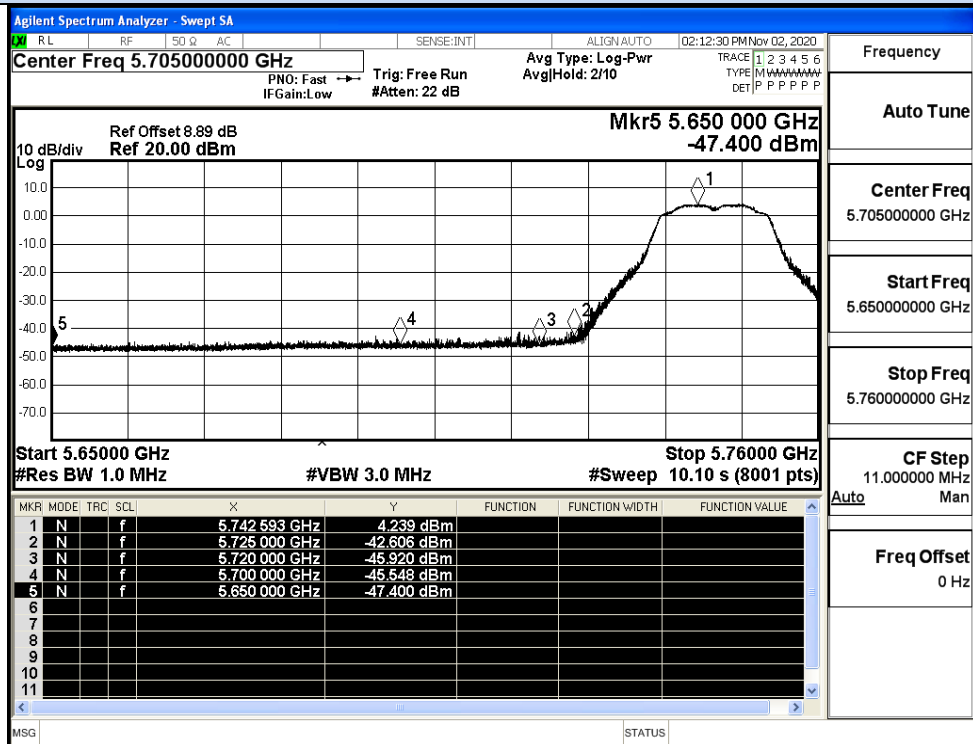
ANT 1

Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11A	149	5650.0	-47.40	2.00	-47.40	Peak	-27.0	Pass
		5650.0	-59.19	2.00	-59.19	Average	-27.0	Pass
		5700.0	-45.55	2.00	-45.55	Peak	10	Pass
		5700.0	-58.09	2.00	-58.09	Average	10	Pass
		5720.0	-45.92	2.00	-45.92	Peak	15.6	Pass
		5720.0	-57.55	2.00	-57.55	Average	15.6	Pass
		5725.0	-42.61	2.00	-42.61	Peak	27.0	Pass
		5725.0	-56.62	2.00	-56.62	Average	27.0	Pass
	165	5850.0	-45.01	2.00	-45.01	Peak	27.0	Pass
		5850.0	-57.03	2.00	-57.03	Average	27.0	Pass
		5855.0	-45.17	2.00	-45.17	Peak	15.6	Pass
		5855.0	-57.41	2.00	-57.41	Average	15.6	Pass
		5875.0	-45.29	2.00	-45.29	Peak	10	Pass
		5875.0	-58.10	2.00	-58.10	Average	10	Pass
		5925.0	-46.47	2.00	-46.47	Peak	-27.0	Pass
		5925.0	-58.29	2.00	-58.29	Average	-27.0	Pass
11N20 SISO	149	5650.0	-46.86	2.00	-46.86	Peak	-27.0	Pass
		5650.0	-59.16	2.00	-59.16	Average	-27.0	Pass
		5700.0	-45.02	2.00	-45.02	Peak	10	Pass
		5700.0	-57.36	2.00	-57.36	Average	10	Pass
		5720.0	-45.15	2.00	-45.15	Peak	15.6	Pass
		5720.0	-58.03	2.00	-58.03	Average	15.6	Pass
		5725.0	-43.59	2.00	-43.59	Peak	27.0	Pass
		5725.0	-55.89	2.00	-55.89	Average	27.0	Pass
	165	5850.0	-43.87	2.00	-43.87	Peak	27.0	Pass
		5850.0	-57.01	2.00	-57.01	Average	27.0	Pass
		5855.0	-44.71	2.00	-44.71	Peak	15.6	Pass
		5855.0	-57.49	2.00	-57.49	Average	15.6	Pass
		5875.0	-45.41	2.00	-45.41	Peak	10	Pass
		5875.0	-58.19	2.00	-58.19	Average	10	Pass
		5925.0	-46.48	2.00	-46.48	Peak	-27.0	Pass
		5925.0	-58.27	2.00	-58.27	Average	-27.0	Pass

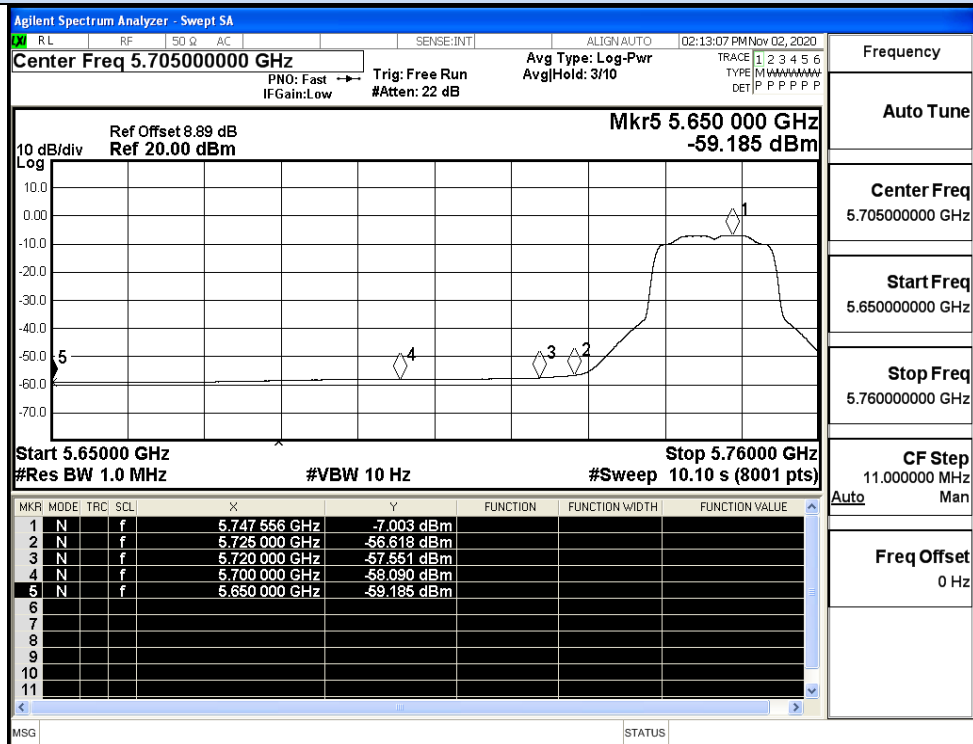
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11N40 SISO	151	5650.0	-46.86	2.00	-46.86	Peak	-27.0	Pass
		5650.0	-59.02	2.00	-59.02	Average	-27.0	Pass
		5700.0	-44.54	2.00	-44.54	Peak	10	Pass
		5700.0	-57.65	2.00	-57.65	Average	10	Pass
		5720.0	-43.79	2.00	-43.79	Peak	15.6	Pass
		5720.0	-55.62	2.00	-55.62	Average	15.6	Pass
		5725.0	-43.48	2.00	-43.48	Peak	27.0	Pass
		5725.0	-55.00	2.00	-55.00	Average	27.0	Pass
	159	5850.0	-44.47	2.00	-44.47	Peak	27.0	Pass
		5850.0	-57.26	2.00	-57.26	Average	27.0	Pass
		5855.0	-45.54	2.00	-45.54	Peak	15.6	Pass
		5855.0	-57.44	2.00	-57.44	Average	15.6	Pass
		5875.0	-46.54	2.00	-46.54	Peak	10	Pass
		5875.0	-58.00	2.00	-58.00	Average	10	Pass
		5925.0	-46.94	2.00	-46.94	Peak	-27.0	Pass
		5925.0	-58.19	2.00	-58.19	Average	-27.0	Pass
11AC2 0 SISO	149	5650.0	-47.79	2.00	-47.79	Peak	-27.0	Pass
		5650.0	-59.24	2.00	-59.24	Average	-27.0	Pass
		5700.0	-45.98	2.00	-45.98	Peak	10	Pass
		5700.0	-57.53	2.00	-57.53	Average	10	Pass
		5720.0	-45.18	2.00	-45.18	Peak	15.6	Pass
		5720.0	-58.15	2.00	-58.15	Average	15.6	Pass
		5725.0	-44.30	2.00	-44.30	Peak	27.0	Pass
		5725.0	-56.48	2.00	-56.48	Average	27.0	Pass
	165	5850.0	-44.60	2.00	-44.60	Peak	27.0	Pass
		5850.0	-57.04	2.00	-57.04	Average	27.0	Pass
		5855.0	-44.69	2.00	-44.69	Peak	15.6	Pass
		5855.0	-57.48	2.00	-57.48	Average	15.6	Pass
		5875.0	-45.48	2.00	-45.48	Peak	10	Pass
		5875.0	-58.18	2.00	-58.18	Average	10	Pass
		5925.0	-46.53	2.00	-46.53	Peak	-27.0	Pass
		5925.0	-58.30	2.00	-58.30	Average	-27.0	Pass
11AC4 0 SISO	151	5650.0	-47.52	2.00	-47.52	Peak	-27.0	Pass
		5650.0	-59.05	2.00	-59.05	Average	-27.0	Pass
		5700.0	-44.47	2.00	-44.47	Peak	10	Pass
		5700.0	-57.68	2.00	-57.68	Average	10	Pass
		5720.0	-43.66	2.00	-43.66	Peak	15.6	Pass
		5720.0	-55.55	2.00	-55.55	Average	15.6	Pass
		5725.0	-42.16	2.00	-42.16	Peak	27.0	Pass
		5725.0	-54.88	2.00	-54.88	Average	27.0	Pass
	159	5850.0	-46.11	2.00	-46.11	Peak	27.0	Pass
		5850.0	-57.31	2.00	-57.31	Average	27.0	Pass
		5855.0	-45.94	2.00	-45.94	Peak	15.6	Pass
		5855.0	-57.45	2.00	-57.45	Average	15.6	Pass
		5875.0	-47.86	2.00	-47.86	Peak	10	Pass
		5875.0	-58.00	2.00	-58.00	Average	10	Pass
		5925.0	-46.94	2.00	-46.94	Peak	-27.0	Pass
		5925.0	-58.20	2.00	-58.20	Average	-27.0	Pass
11AC8 0 SISO	155	5725.0	-42.65	2.00	-42.65	Peak	27.0	Pass
		5720.0	-43.94	2.00	-43.94	Peak	15.6	Pass
		5700.0	-46.57	2.00	-46.57	Peak	10	Pass
		5650.0	-46.48	2.00	-46.48	Peak	-27.0	Pass
		5725.0	-54.96	2.00	-54.96	Average	27.0	Pass
		5720.0	-55.60	2.00	-55.60	Average	15.6	Pass
		5700.0	-57.30	2.00	-57.30	Average	10	Pass
		5650.0	-58.07	2.00	-58.07	Average	-27.0	Pass
		5850.0	-42.65	2.00	-42.65	Peak	27.0	Pass

		5855.0	-43.94	2.00	-43.94	Peak	15.6	Pass
		5875.0	-46.57	2.00	-46.57	Peak	10	Pass
		5925.0	-46.48	2.00	-46.48	Peak	-27.0	Pass
		5850.0	-54.96	2.00	-54.96	Average	27.0	Pass
		5855.0	-55.60	2.00	-55.60	Average	15.6	Pass
		5875.0	-57.30	2.00	-57.30	Average	10	Pass
		5925.0	-58.07	2.00	-58.07	Average	-27.0	Pass

Undesirable Emissions Measurement

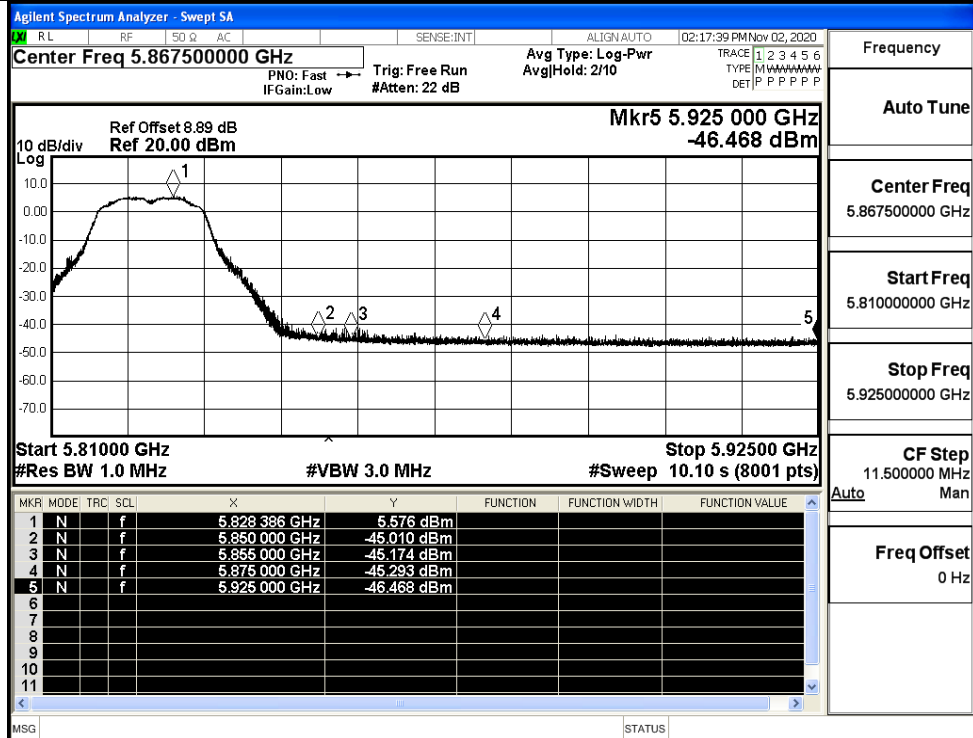


IEEE 802.11a / Channel 149 / 5745MHz / Peak

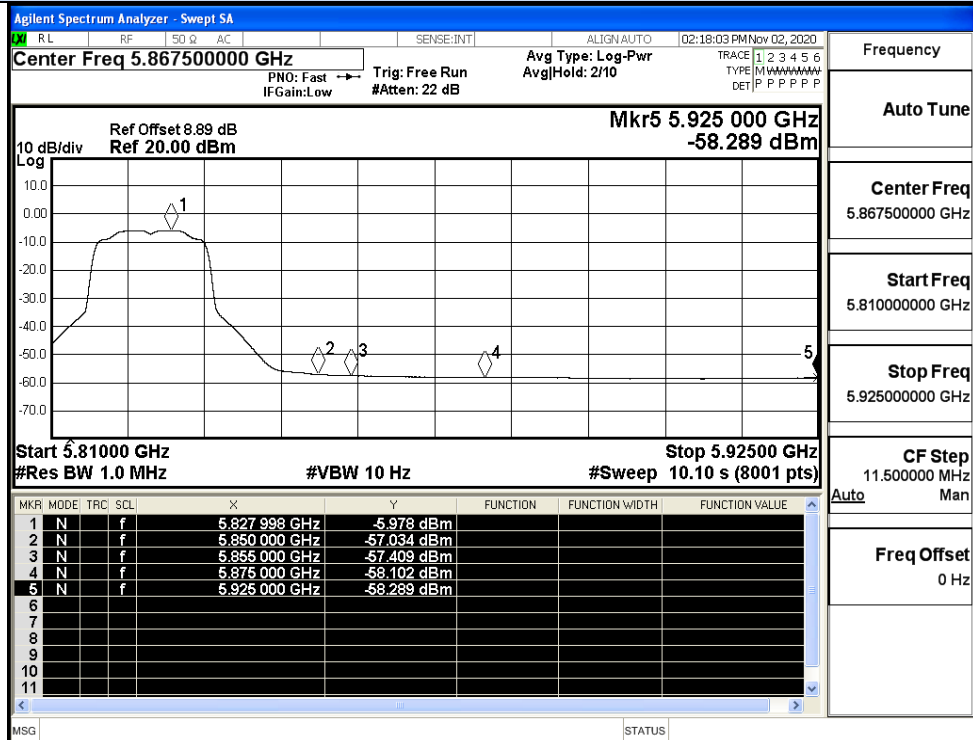


IEEE 802.11a / Channel 148 / 5745MHz / Average

Undesirable Emissions Measurement

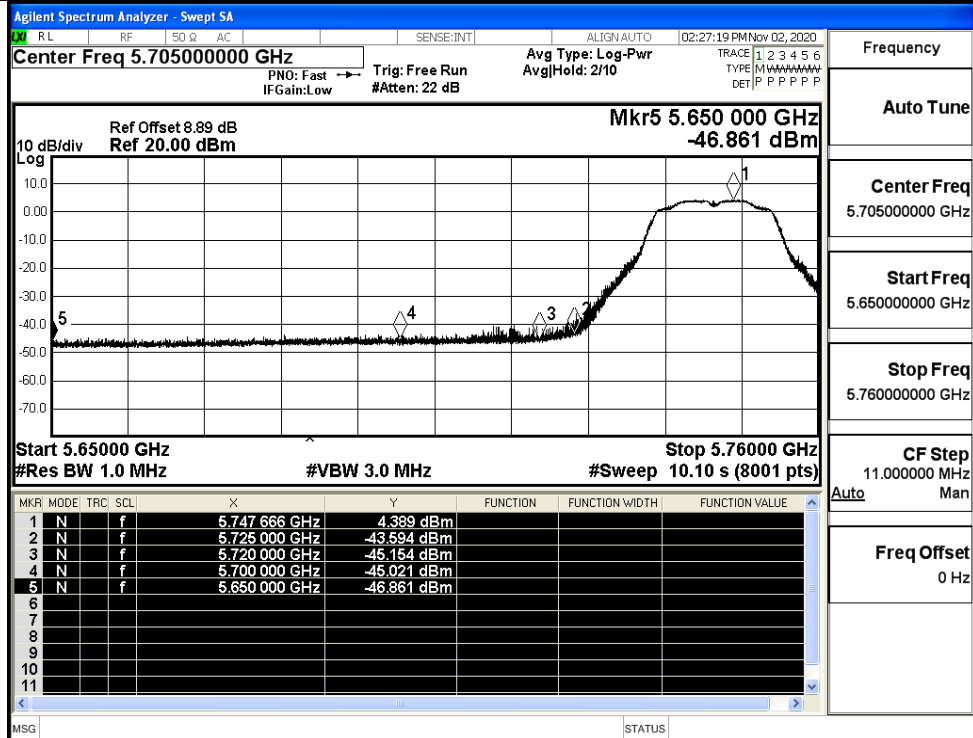


IEEE 802.11a / Channel 165 / 5825MHz / Peak

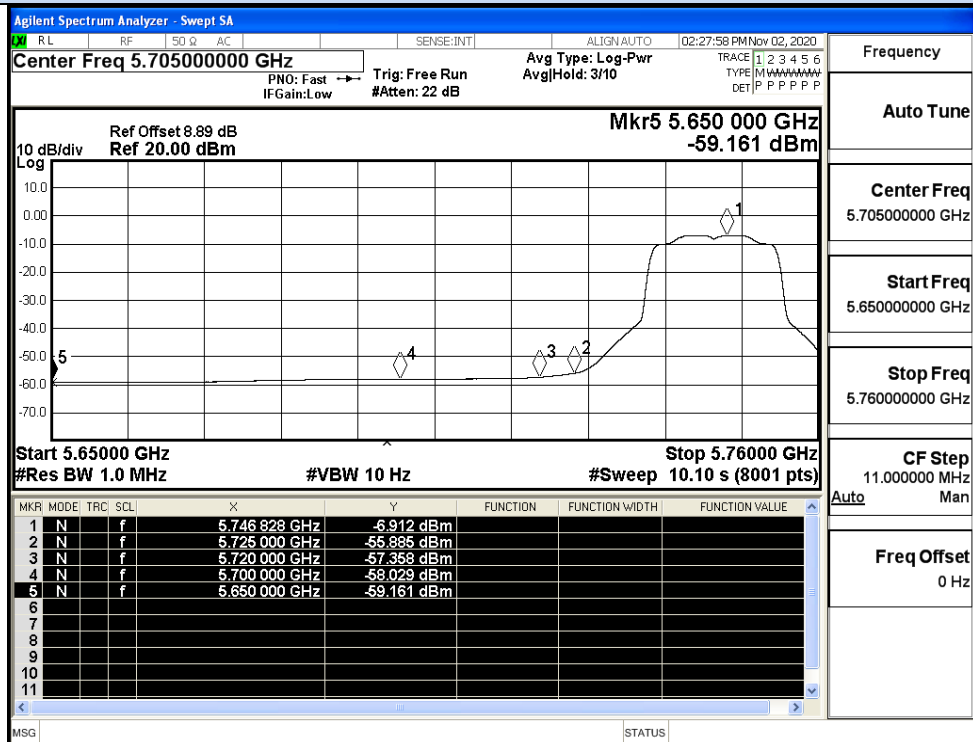


IEEE 802.11a / Channel 165 / 5825MHz / Average

Undesirable Emissions Measurement

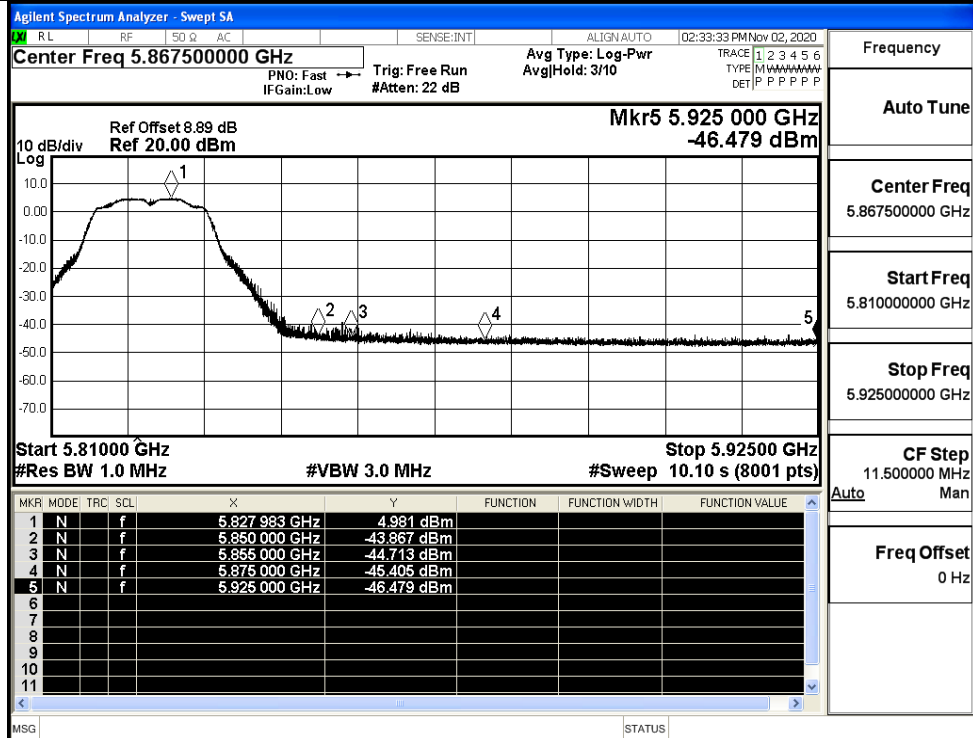


IEEE 802.11n20 / Channel 149 / 5745MHz / Peak

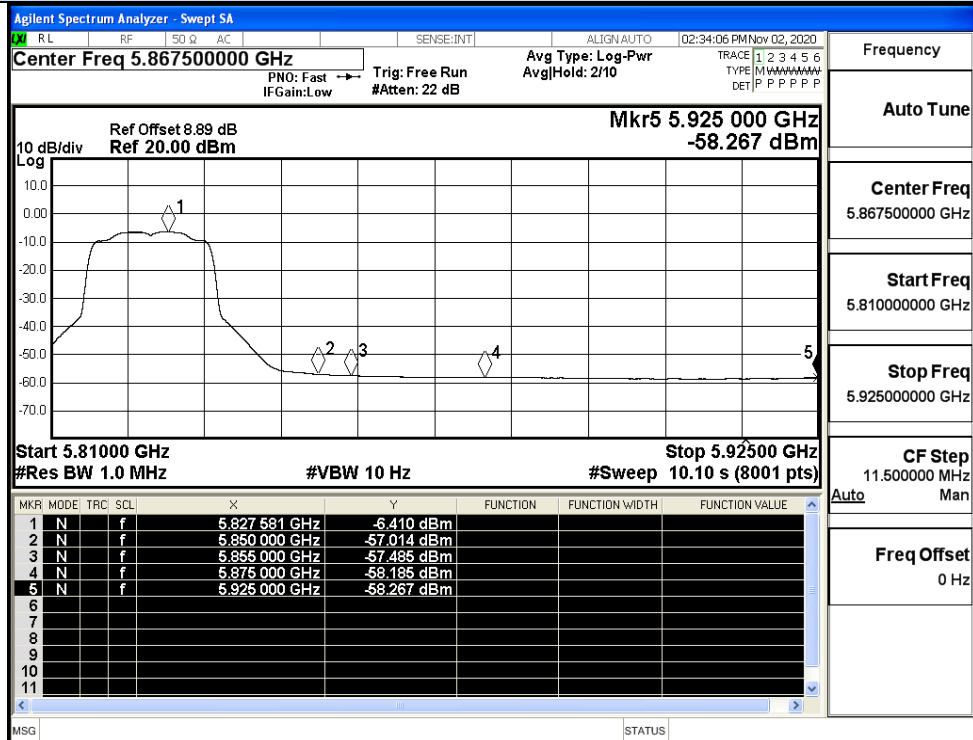


IEEE 802.11n20 / Channel 149 / 5745MHz / Average

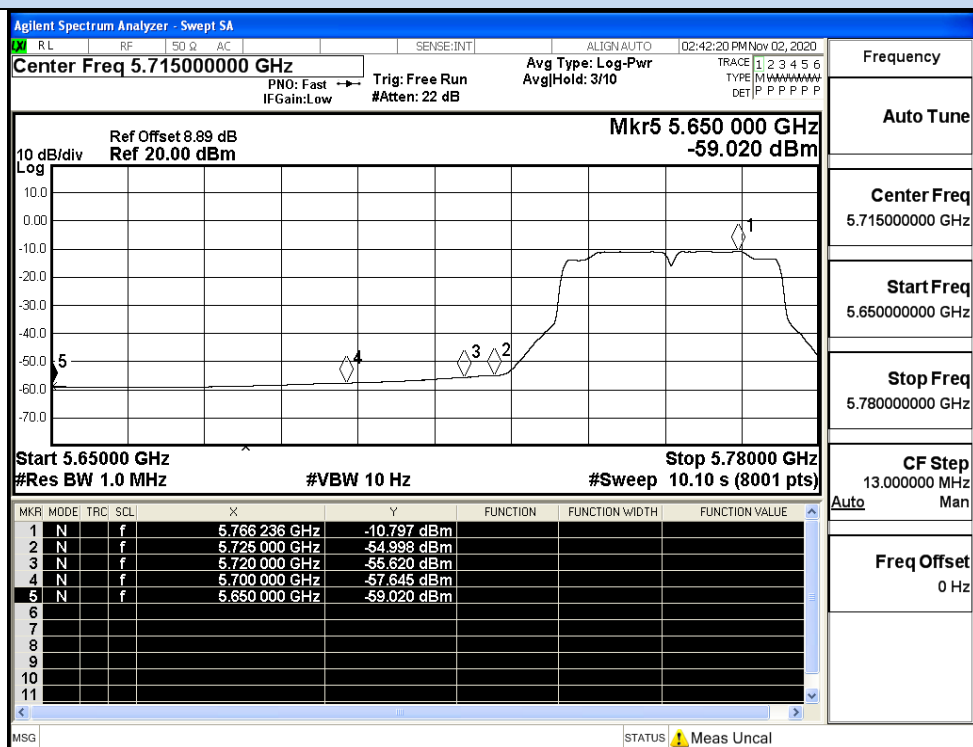
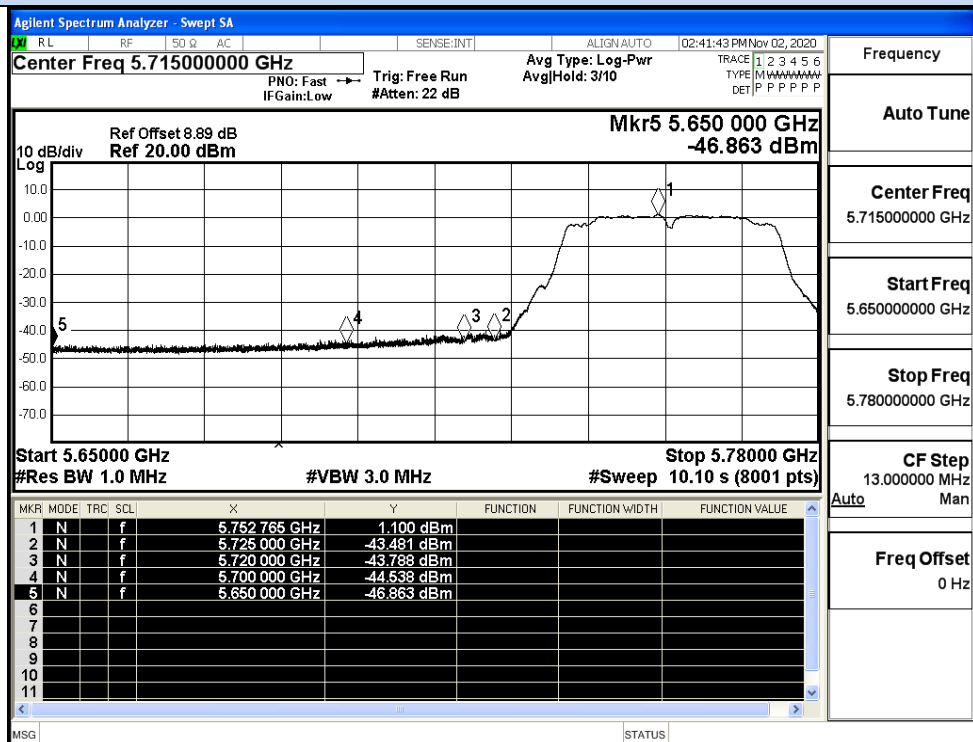
Undesirable Emissions Measurement



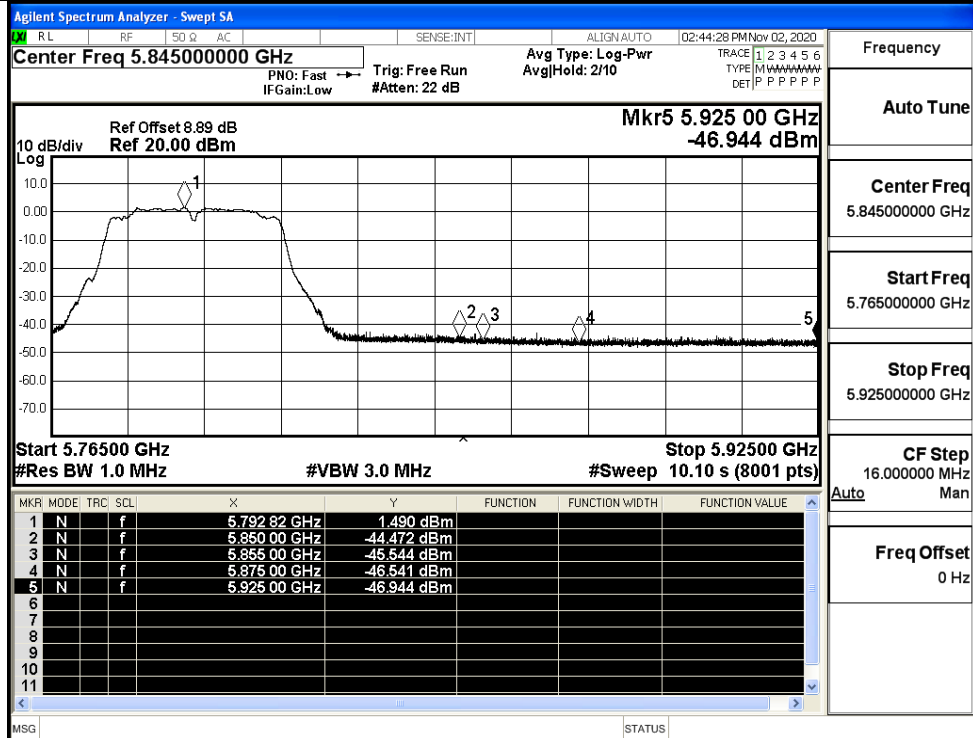
IEEE 802.11n20 / Channel 165 / 5825MHz / Peak



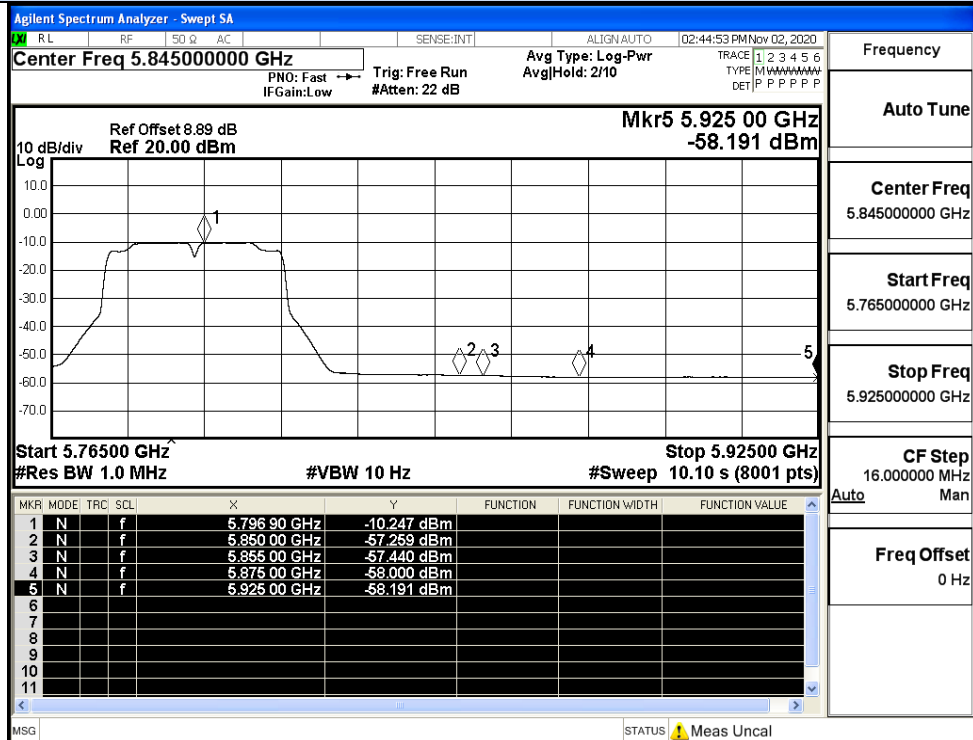
IEEE 802.11n20 / Channel 165 / 5825MHz / Average



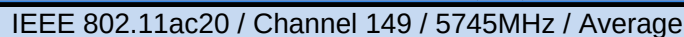
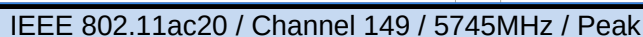
Undesirable Emissions Measurement

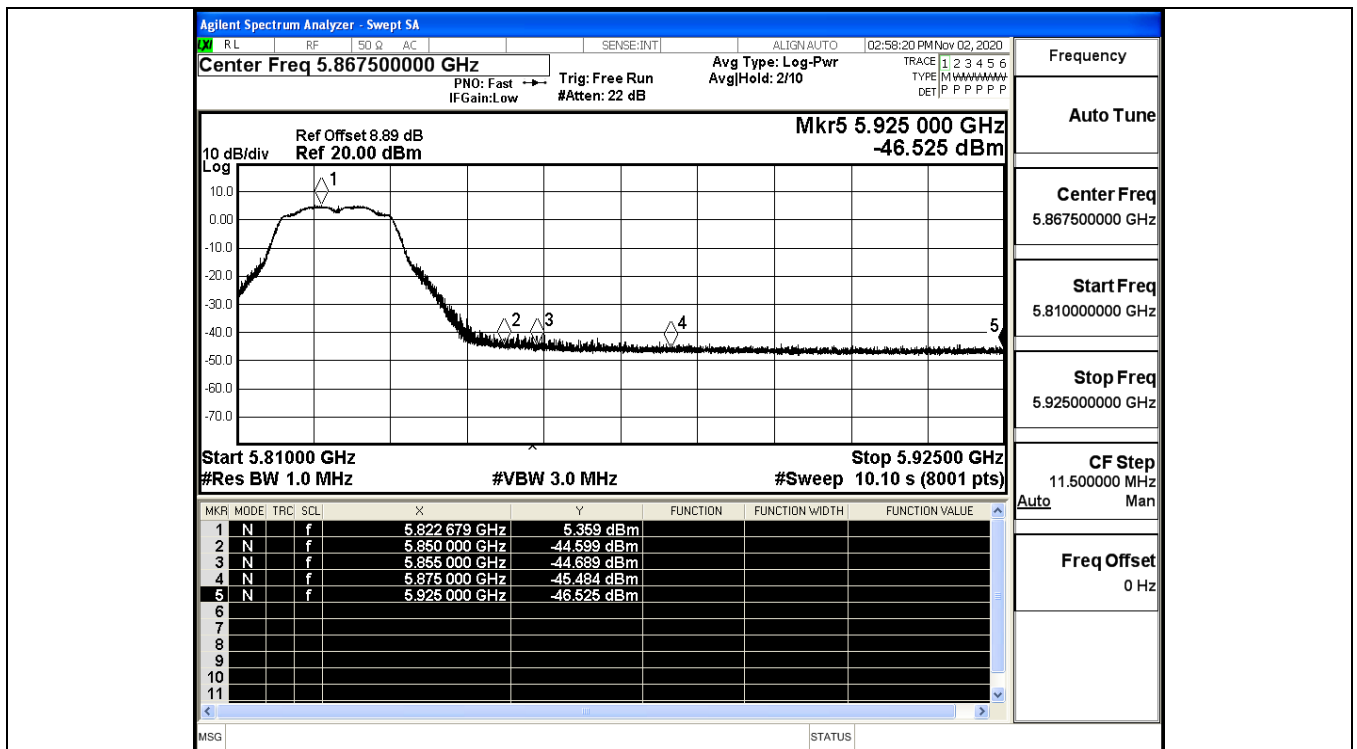


IEEE 802.11n40 / Channel 159 / 5795MHz / Peak

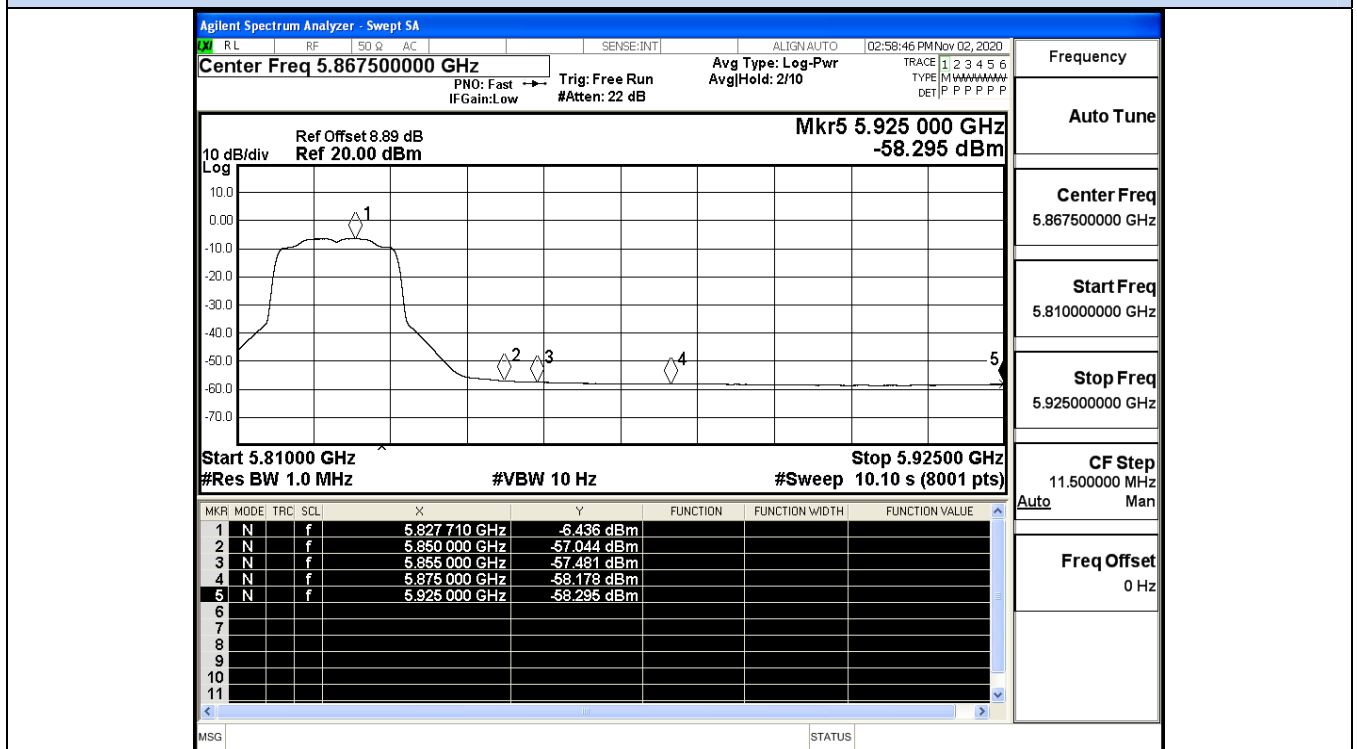


IEEE 802.11n40 / Channel 159 / 5795MHz / Average

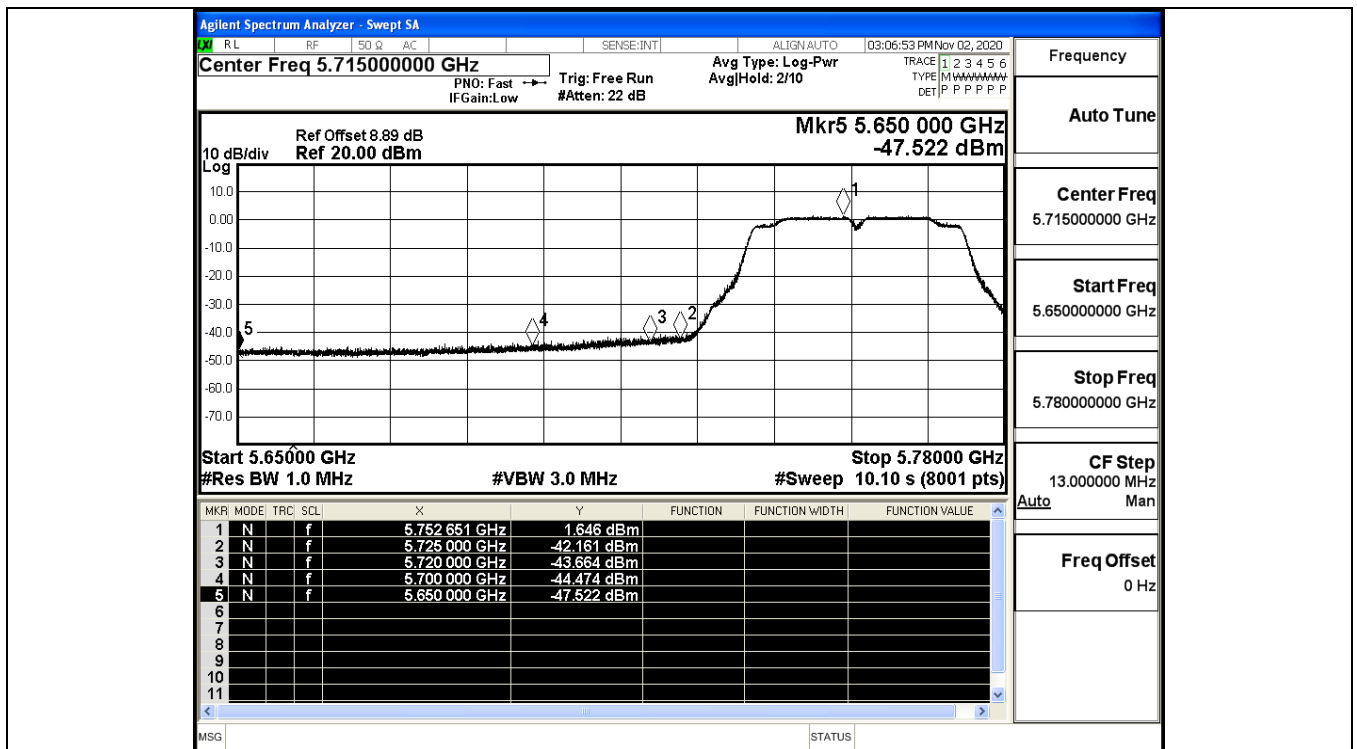




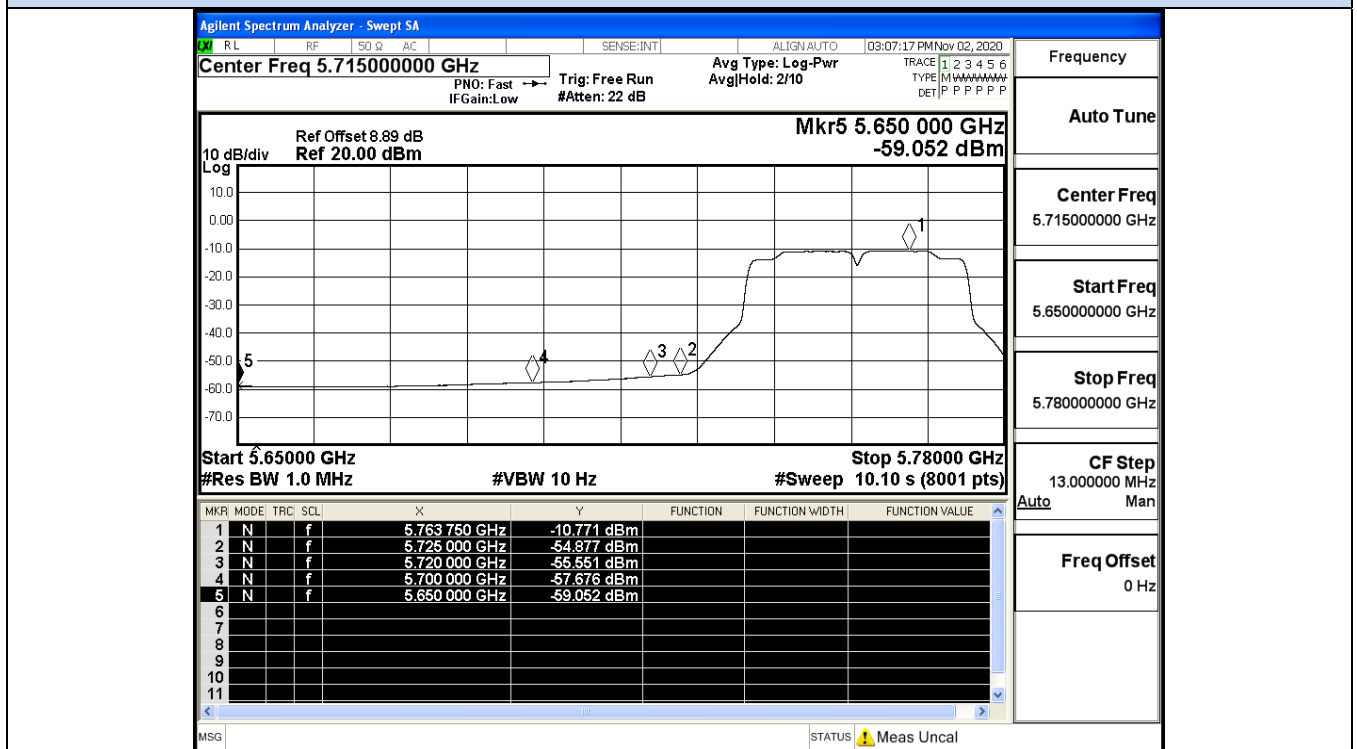
IEEE 802.11ac20 / Channel 165 / 5825MHz / Peak



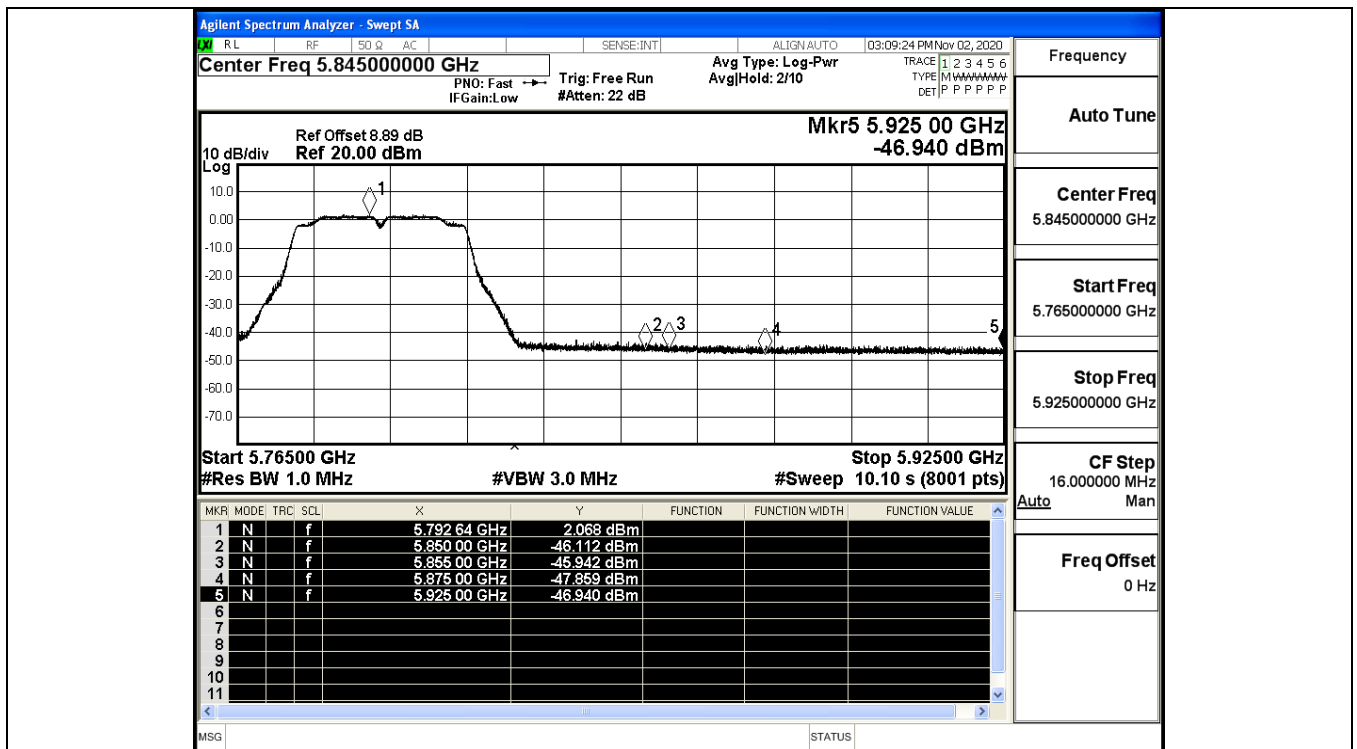
IEEE 802.11ac20 / Channel 165 / 5825MHz / Average



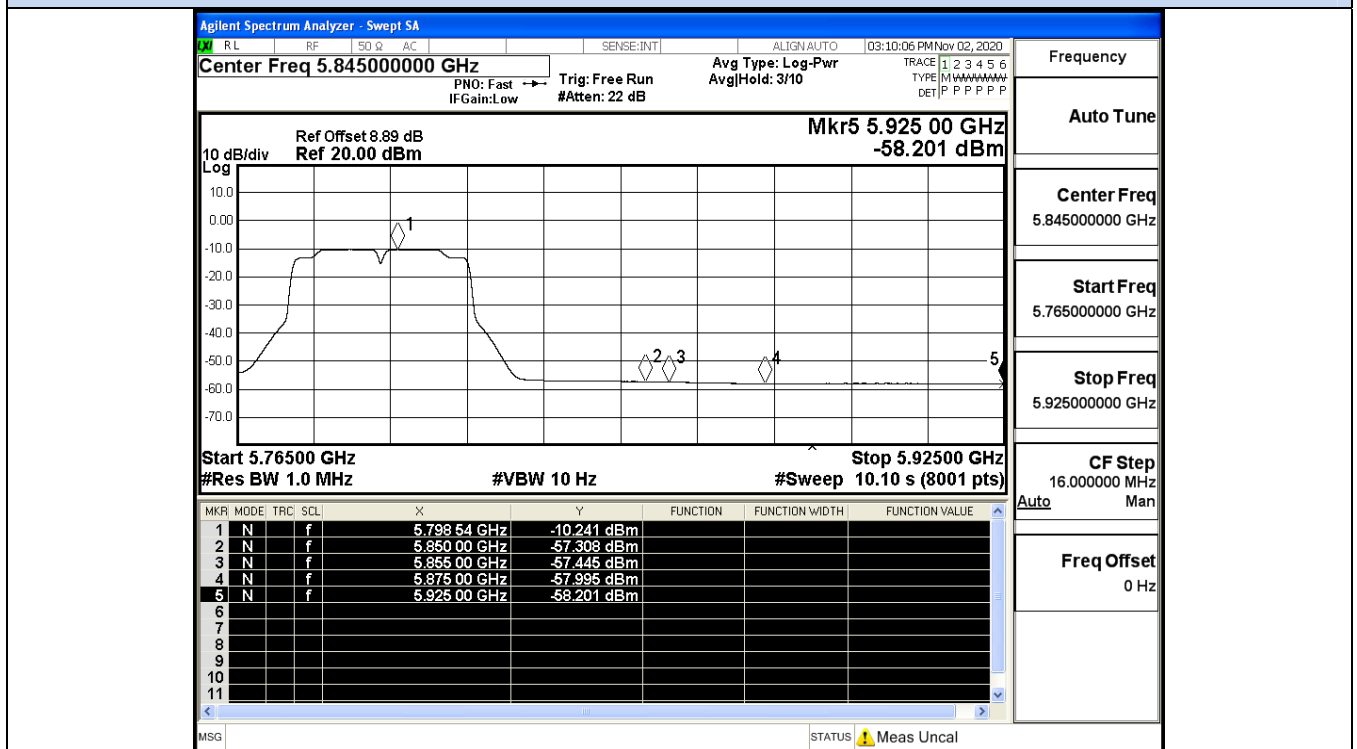
IEEE 802.11ac40 / Channel 151 / 5755MHz / Peak



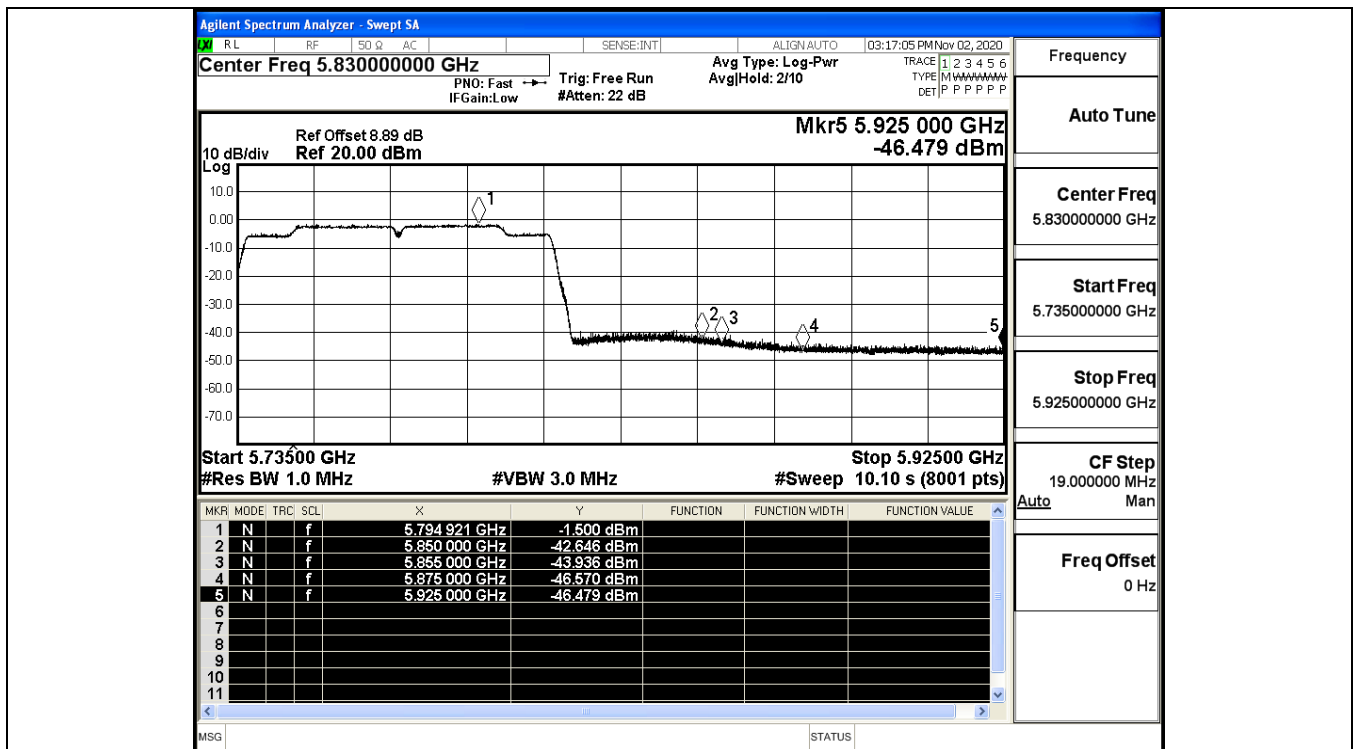
IEEE 802.11ac40 / Channel 151 / 5755MHz / Average



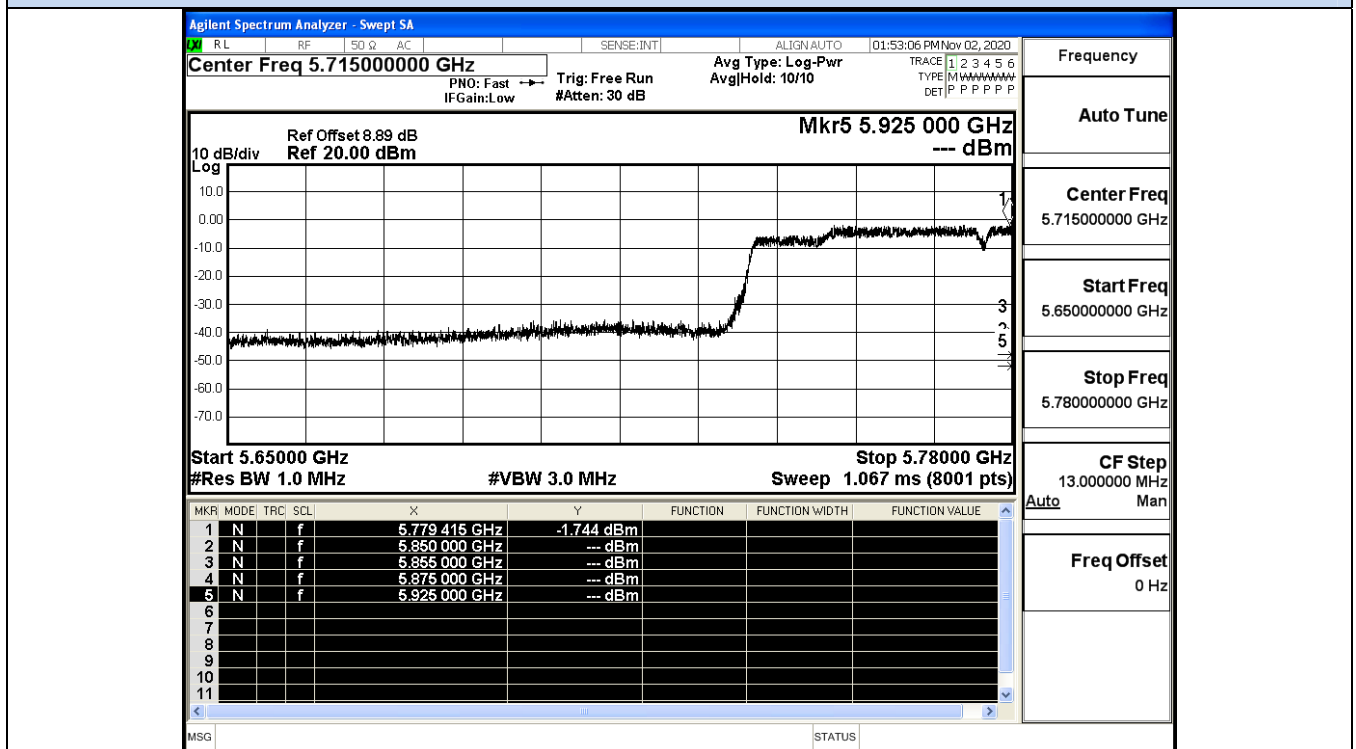
IEEE 802.11ac40 / Channel 159 / 5795MHz / Peak



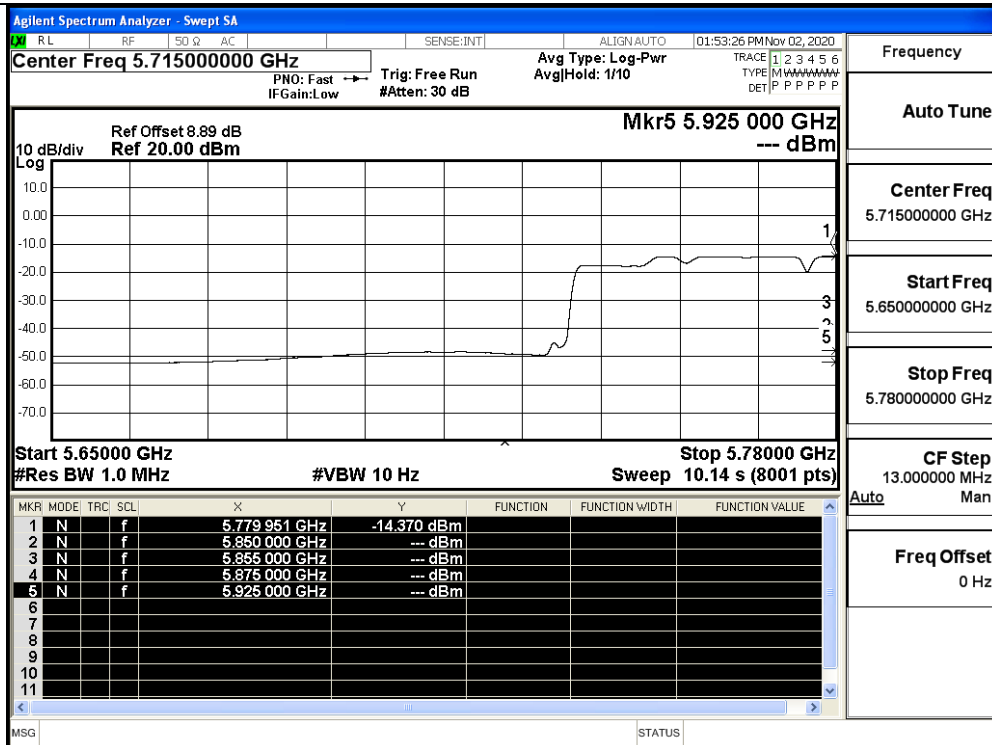
IEEE 802.11ac40 / Channel 159 / 5795MHz / Average



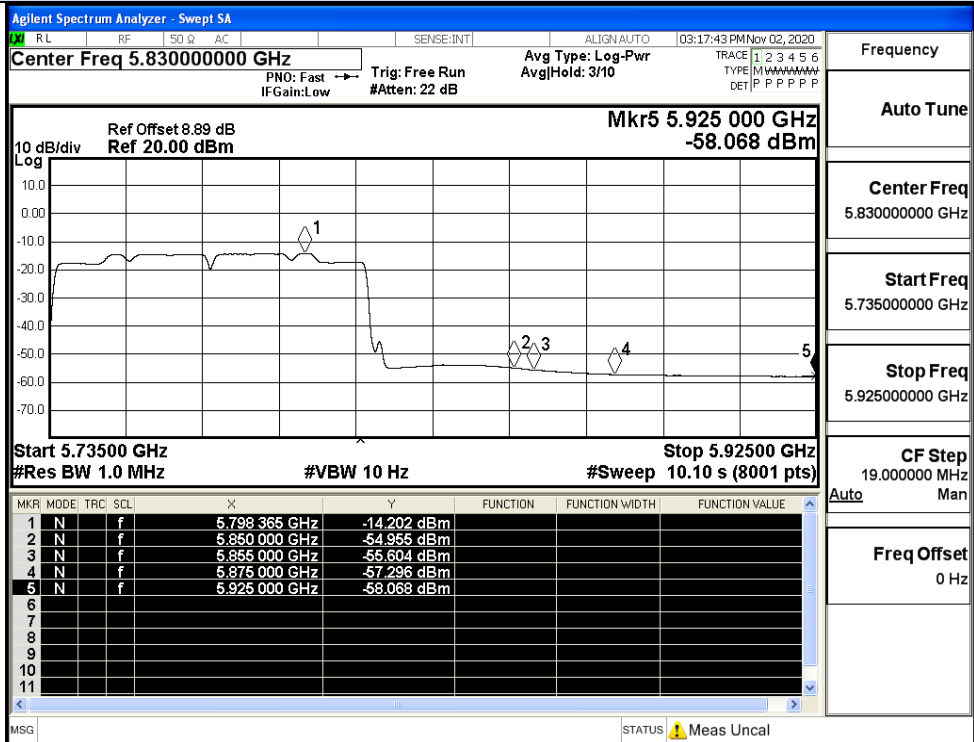
IEEE 802.11ac80 / Channel 155 / 5775MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Average



IEEE 802.11ac80 / Channel 155 / 5775MHz / Peak



IEEE 802.11ac80 / Channel 155 / 5775MHz / Average

MIMO

Test Mode	Channel	Frequency (MHz)	ANT 0 Conducted Power (dBm)	ANT 1 Conducted Power (dBm)	MIMO Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11N20	149	5650.0	-46.14	-46.86	-43.47	5.01	-38.46	Peak	-27.0	Pass
		5650.0	-59.08	-59.16	-56.11	5.01	-51.10	Average	-27.0	Pass
		5700.0	-46.56	-45.02	-42.71	5.01	-37.70	Peak	10	Pass
		5700.0	-57.29	-57.36	-54.31	5.01	-49.30	Average	10	Pass
		5720.0	-44.07	-45.15	-41.57	5.01	-36.56	Peak	15.6	Pass
		5720.0	-57.95	-58.03	-54.98	5.01	-49.97	Average	15.6	Pass
		5725.0	-41.24	-43.59	-39.25	5.01	-34.24	Peak	27.0	Pass
		5725.0	-56.12	-55.89	-52.99	5.01	-47.98	Average	27.0	Pass
	165	5850.0	-44.19	-43.87	-41.02	5.01	-36.01	Peak	27.0	Pass
		5850.0	-56.77	-57.01	-53.88	5.01	-48.87	Average	27.0	Pass
		5855.0	-44.99	-44.71	-41.84	5.01	-36.83	Peak	15.6	Pass
		5855.0	-57.24	-57.49	-54.35	5.01	-49.34	Average	15.6	Pass
		5875.0	-45.23	-45.41	-42.31	5.01	-37.30	Peak	10	Pass
		5875.0	-57.98	-58.19	-55.07	5.01	-50.06	Average	10	Pass
		5925.0	-46.07	-46.48	-43.26	5.01	-38.25	Peak	-27.0	Pass
		5925.0	-58.08	-58.27	-55.16	5.01	-50.15	Average	-27.0	Pass

Test Mode	Channel	Frequency (MHz)	ANT 0 Conducted Power (dBm)	ANT 1 Conducted Power (dBm)	MIMO Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Detector	Limit (dBm/MHz)	Verdict
11N40	151	5650.0	-46.49	-46.86	-43.66	5.01	-38.65	Peak	-27.0	Pass
		5650.0	-58.49	-59.02	-55.74	5.01	-50.73	Average	-27.0	Pass
		5700.0	-44.86	-44.54	-41.69	5.01	-36.68	Peak	10	Pass
		5700.0	-56.78	-57.65	-54.18	5.01	-49.17	Average	10	Pass
		5720.0	-40.52	-43.79	-38.84	5.01	-33.83	Peak	15.6	Pass
		5720.0	-53.12	-55.62	-51.18	5.01	-46.17	Average	15.6	Pass
		5725.0	-39.53	-43.48	-38.06	5.01	-33.05	Peak	27.0	Pass
	159	5725.0	-52.25	-55.00	-50.40	5.01	-45.39	Average	27.0	Pass
		5850.0	-45.38	-44.47	-41.89	5.01	-36.88	Peak	27.0	Pass
		5850.0	-56.49	-57.26	-53.85	5.01	-48.84	Average	27.0	Pass
		5855.0	-43.30	-45.54	-41.27	5.01	-36.26	Peak	15.6	Pass
		5855.0	-56.63	-57.44	-54.01	5.01	-49.00	Average	15.6	Pass
		5875.0	-46.43	-46.54	-43.47	5.01	-38.46	Peak	10	Pass
		5875.0	-57.32	-58.00	-54.64	5.01	-49.63	Average	10	Pass
11AC20	149	5925.0	-46.06	-46.94	-43.47	5.01	-38.46	Peak	-27.0	Pass
		5925.0	-57.55	-58.19	-54.85	5.01	-49.84	Average	-27.0	Pass
		5650.0	-47.47	-47.79	-44.62	5.01	-39.61	Peak	-27.0	Pass
		5650.0	-58.87	-59.24	-56.04	5.01	-51.03	Average	-27.0	Pass
		5700.0	-45.06	-45.98	-42.49	5.01	-37.48	Peak	10	Pass
		5700.0	-56.89	-57.53	-54.19	5.01	-49.18	Average	10	Pass
		5720.0	-42.50	-45.18	-40.63	5.01	-35.62	Peak	15.6	Pass
	165	5720.0	-57.51	-58.15	-54.81	5.01	-49.80	Average	15.6	Pass
		5725.0	-37.62	-44.30	-36.78	5.01	-31.77	Peak	27.0	Pass
		5725.0	-55.07	-56.48	-52.71	5.01	-47.70	Average	27.0	Pass
		5850.0	-42.56	-44.60	-40.45	5.01	-35.44	Peak	27.0	Pass
		5850.0	-56.60	-57.04	-53.80	5.01	-48.79	Average	27.0	Pass
		5855.0	-44.83	-44.69	-41.75	5.01	-36.74	Peak	15.6	Pass
		5855.0	-57.02	-57.48	-54.23	5.01	-49.22	Average	15.6	Pass
11AC40	151	5875.0	-45.98	-45.48	-42.71	5.01	-37.70	Peak	10	Pass
		5875.0	-57.72	-58.18	-54.93	5.01	-49.92	Average	10	Pass
		5925.0	-46.55	-46.53	-43.53	5.01	-38.52	Peak	-27.0	Pass
		5925.0	-57.86	-58.30	-55.06	5.01	-50.05	Average	-27.0	Pass
	159	5650.0	-47.34	-47.52	-44.42	5.01	-39.41	Peak	-27.0	Pass
		5650.0	-58.64	-59.05	-55.83	5.01	-50.82	Average	-27.0	Pass
		5700.0	-44.80	-44.47	-41.62	5.01	-36.61	Peak	10	Pass
		5700.0	-57.11	-57.68	-54.38	5.01	-49.37	Average	10	Pass
		5720.0	-40.82	-43.66	-39.00	5.01	-33.99	Peak	15.6	Pass
		5720.0	-52.76	-55.55	-50.92	5.01	-45.91	Average	15.6	Pass
		5725.0	-39.20	-42.16	-37.42	5.01	-32.41	Peak	27.0	Pass
11AC40	151	5725.0	-51.78	-54.88	-50.05	5.01	-45.04	Average	27.0	Pass
		5850.0	-45.67	-46.11	-42.87	5.01	-37.86	Peak	27.0	Pass
		5850.0	-56.79	-57.31	-54.03	5.01	-49.02	Average	27.0	Pass
		5855.0	-44.94	-45.94	-42.40	5.01	-37.39	Peak	15.6	Pass

11AC80	155	5855.0	-56.91	-57.45	-54.16	5.01	-49.15	Average	15.6	Pass
		5875.0	-44.86	-47.86	-43.10	5.01	-38.09	Peak	10	Pass
		5875.0	-57.59	-58.00	-54.78	5.01	-49.77	Average	10	Pass
		5925.0	-45.90	-46.94	-43.38	5.01	-38.37	Peak	-27.0	Pass
	155	5925.0	-57.78	-58.20	-54.97	5.01	-49.96	Average	-27.0	Pass
		5725.0	-40.22	-42.65	-38.26	5.01	-33.25	Peak	27.0	Pass
		5720.0	-41.59	-43.94	-39.60	5.01	-34.59	Peak	15.6	Pass
		5700.0	-46.15	-46.57	-43.34	5.01	-38.33	Peak	10	Pass
		5650.0	-45.50	-46.48	-42.95	5.01	-37.94	Peak	-27.0	Pass
		5725.0	-53.05	-54.96	-50.89	5.01	-45.88	Average	27.0	Pass
		5720.0	-54.18	-55.60	-51.82	5.01	-46.81	Average	15.6	Pass
		5700.0	-56.71	-57.30	-53.98	5.01	-48.97	Average	10	Pass
		5650.0	-57.77	-58.07	-54.91	5.01	-49.90	Average	-27.0	Pass
		5850.0	-40.22	-42.65	-38.26	5.01	-33.25	Peak	27.0	Pass
		5855.0	-41.59	-43.94	-39.60	5.01	-34.59	Peak	15.6	Pass
		5875.0	-46.15	-46.57	-43.34	5.01	-38.33	Peak	10	Pass
		5925.0	-45.50	-46.48	-42.95	5.01	-37.94	Peak	-27.0	Pass
		5850.0	-53.05	-54.96	-50.89	5.01	-45.88	Average	27.0	Pass
		5855.0	-54.18	-55.60	-51.82	5.01	-46.81	Average	15.6	Pass
		5875.0	-56.71	-57.30	-53.98	5.01	-48.97	Average	10	Pass
		5925.0	-57.77	-58.07	-54.91	5.01	-49.90	Average	-27.0	Pass

$EIRP(dBm/MHz) = \text{Conducted Power (dBm)} + \text{Antenna Gain (dBi)}$

The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater

Directional gain = $2dBi + 10 \log(2) = 5.01dBi$