Appendix E

RF Test Data for 5.8G WLAN (Conducted Measurement)

Product Name: IPTV Set-Top Box
Trade Mark: N/A
Test Model: SML-5041W

Environmental Conditions

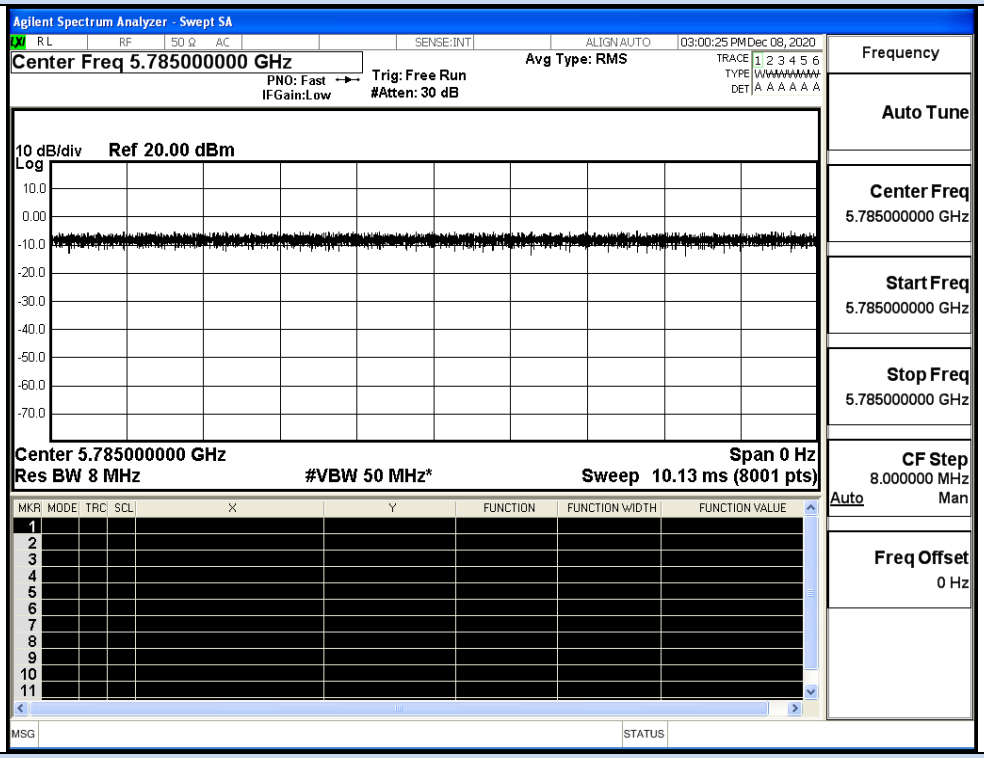
Temperature:	22.3° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

D.1 Duty Cycle

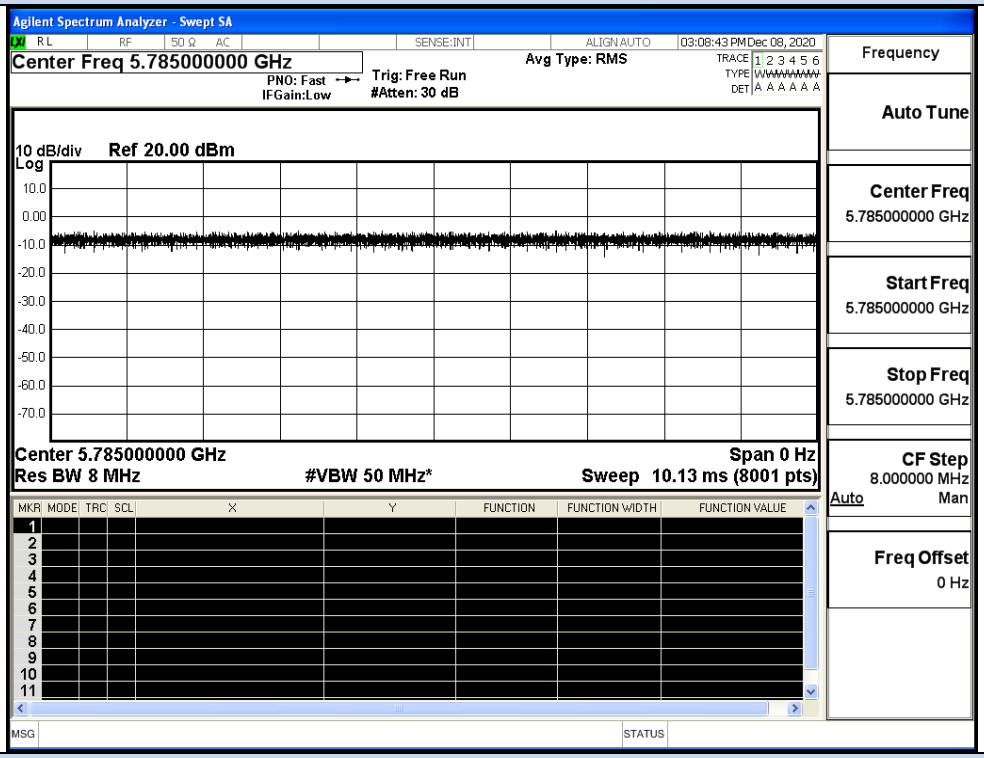
ANT0

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

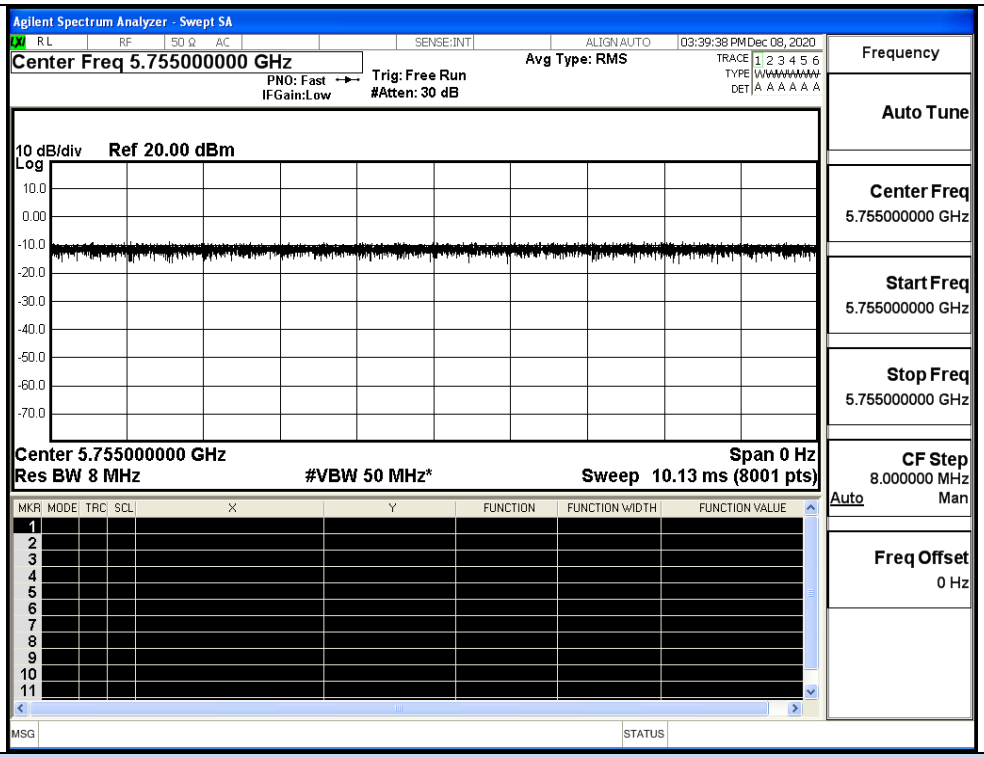
On Time and Duty Cycle



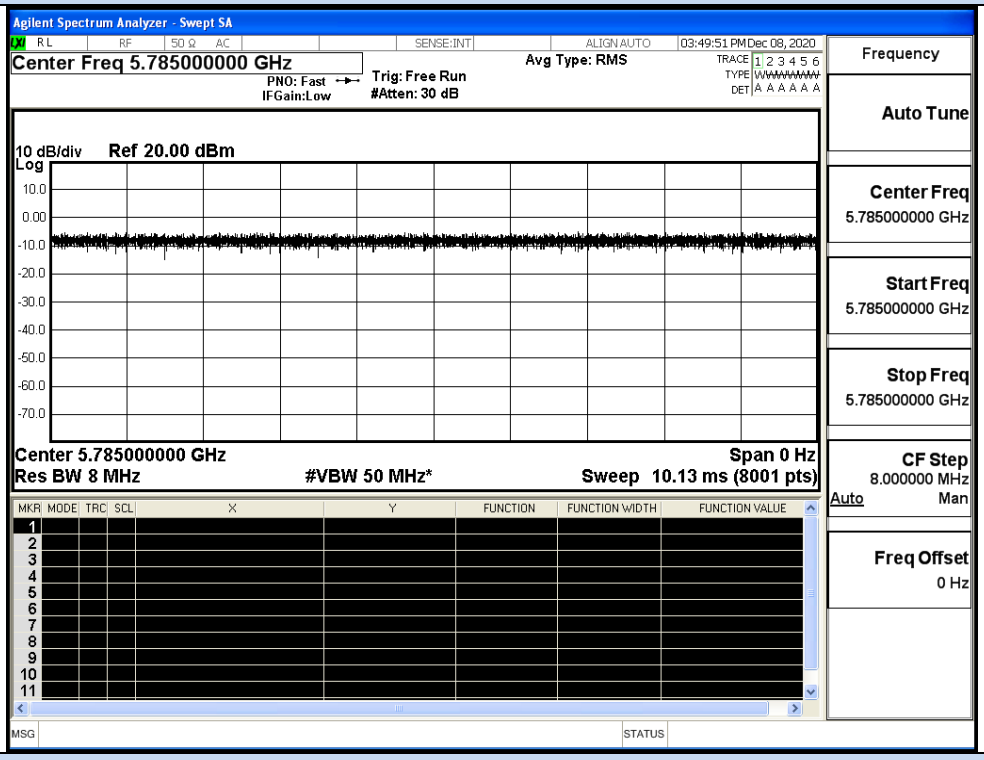
IEEE 802.11a



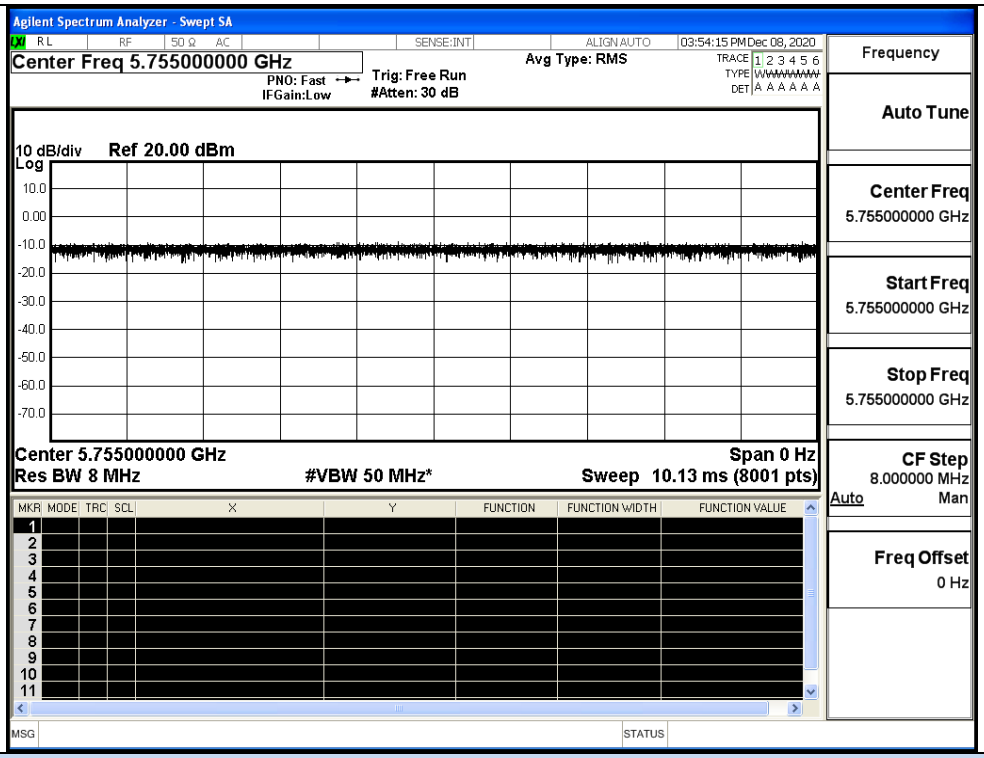
IEEE 802.11n HT20



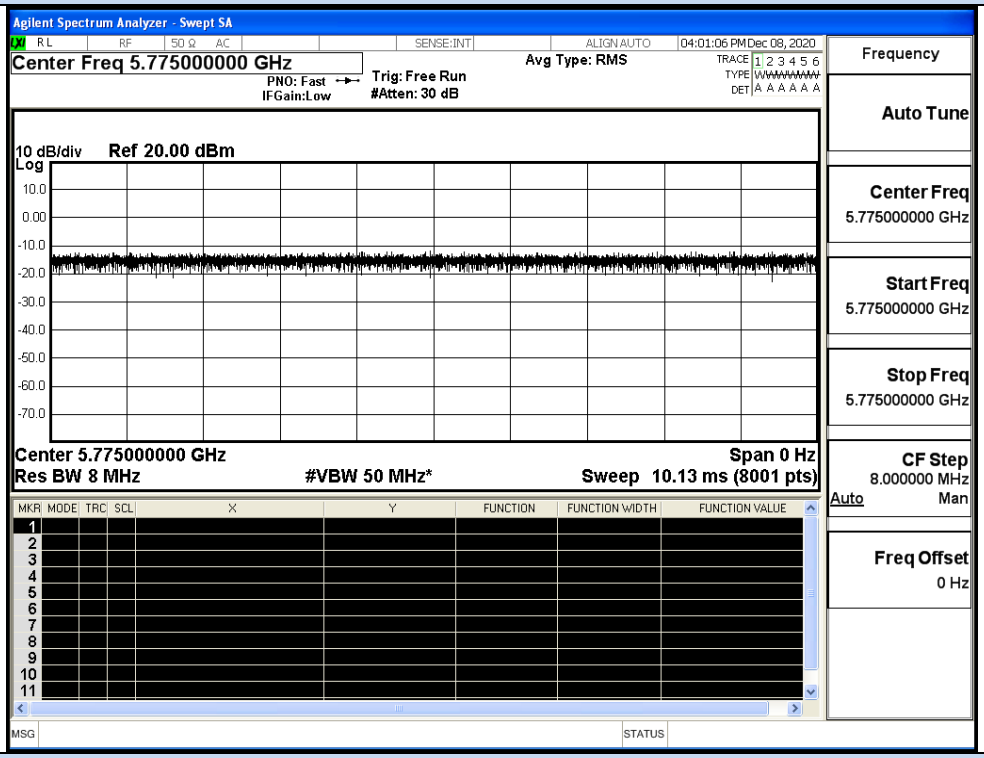
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11AC40

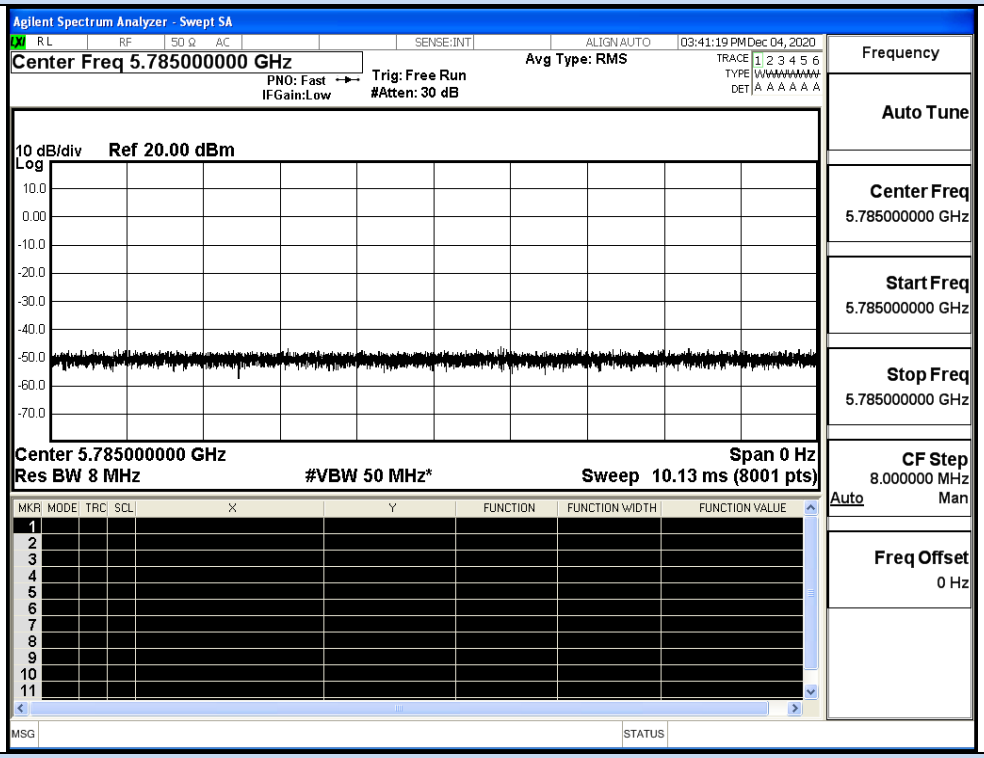


IEEE 802.11AC80

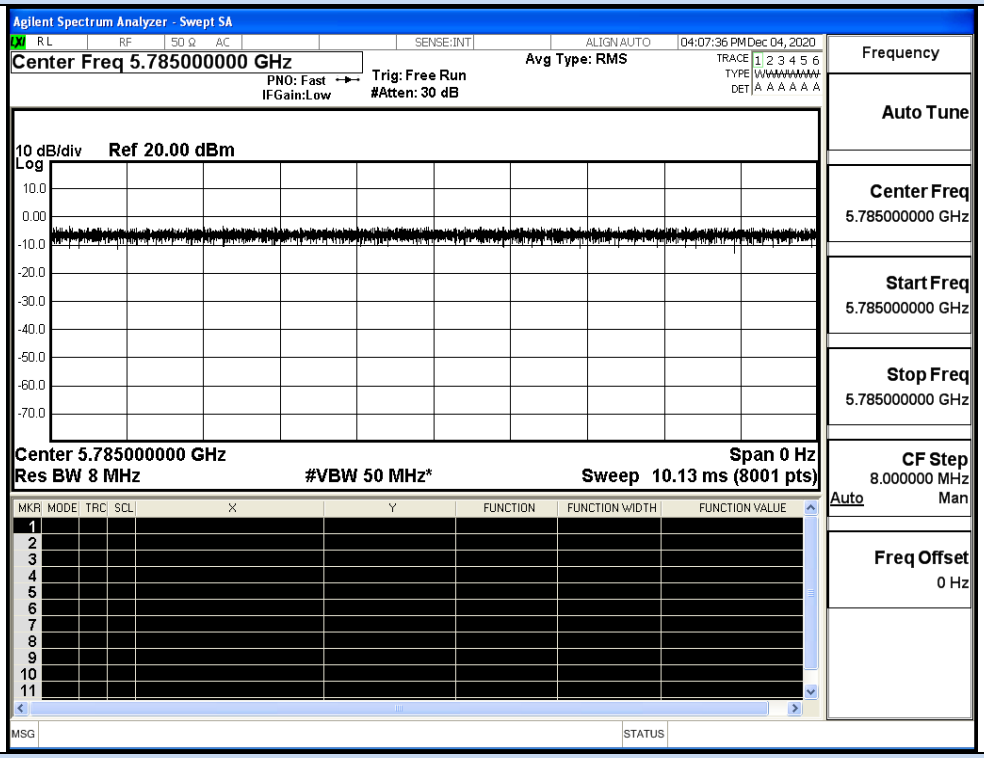
ANT1

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

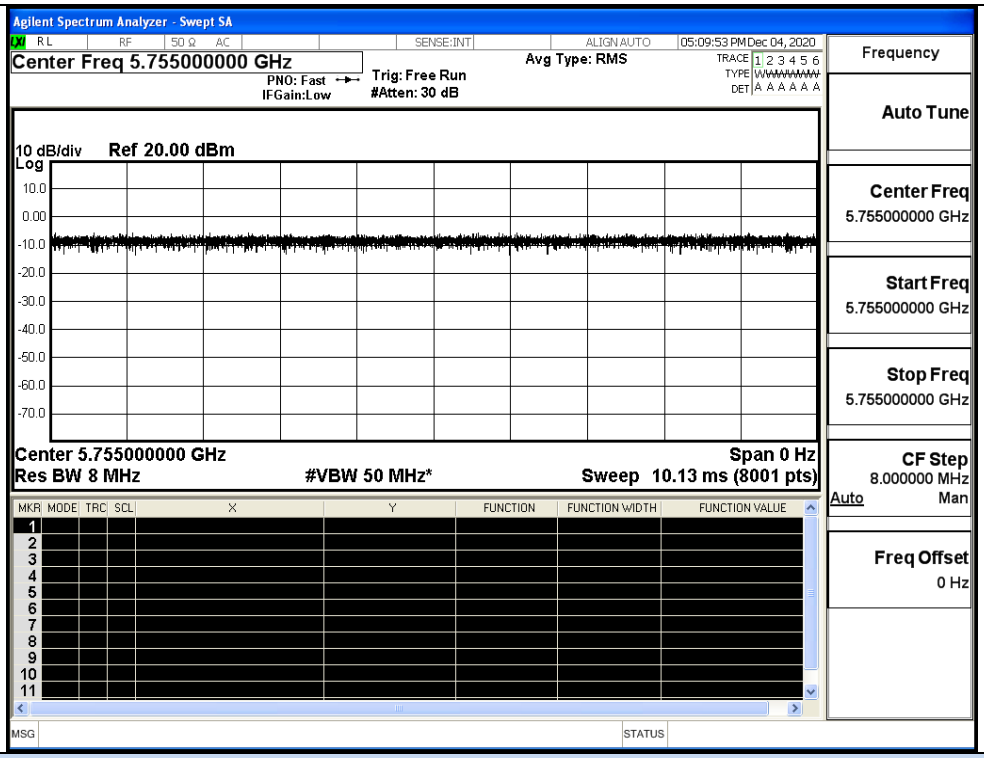
On Time and Duty Cycle



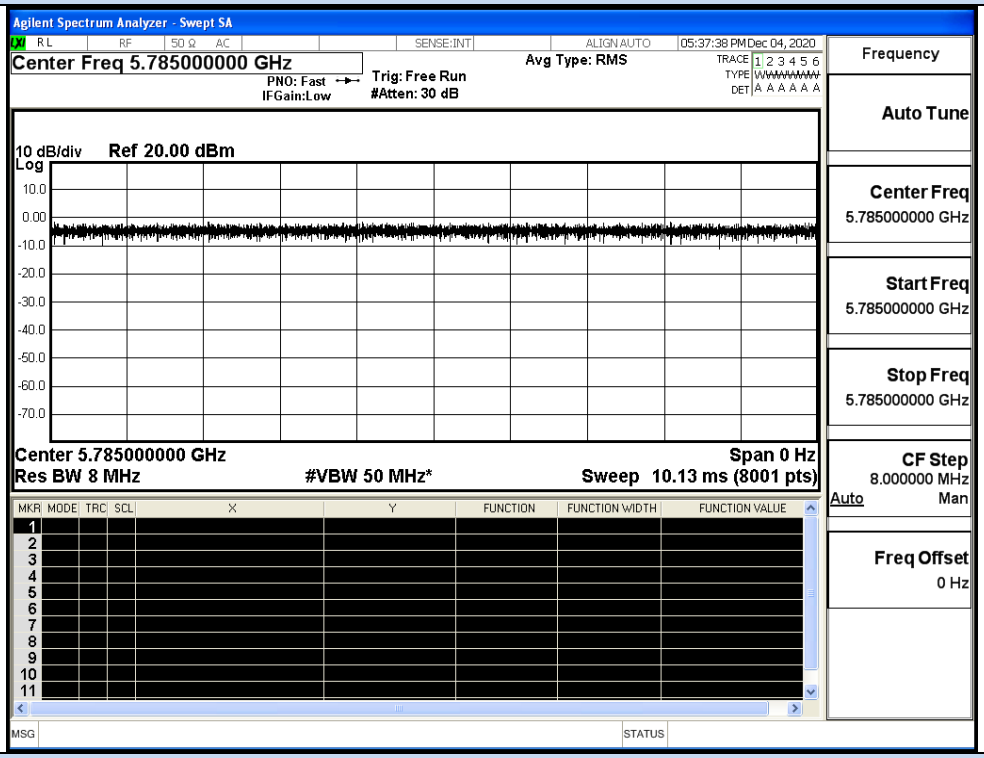
IEEE 802.11a



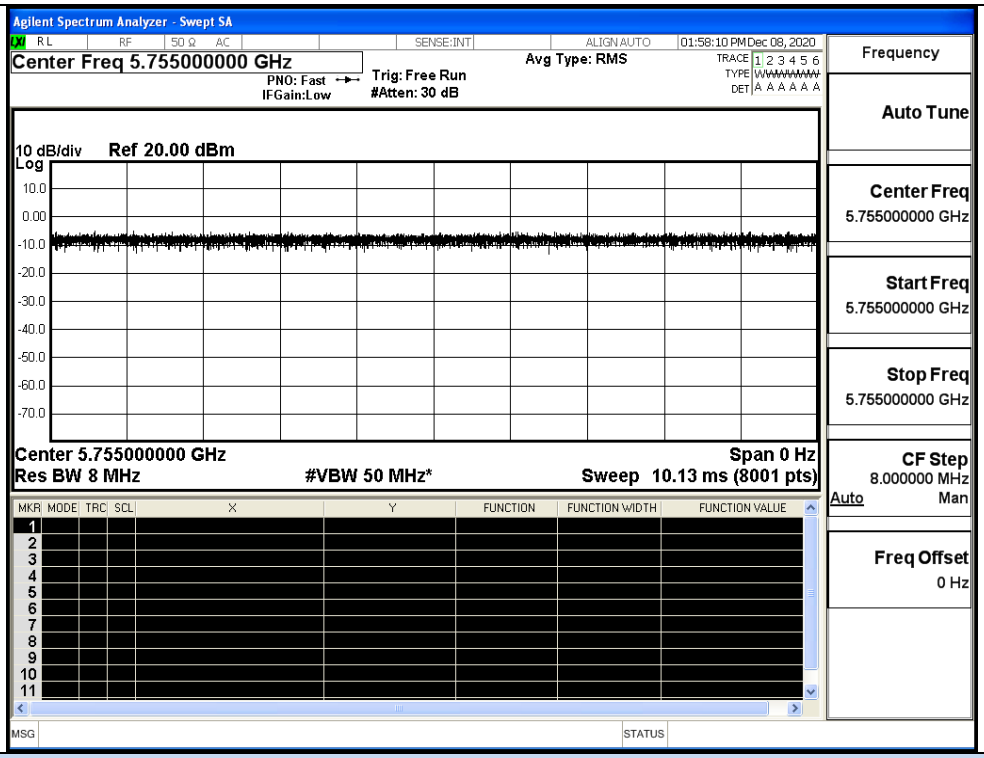
IEEE 802.11n HT20



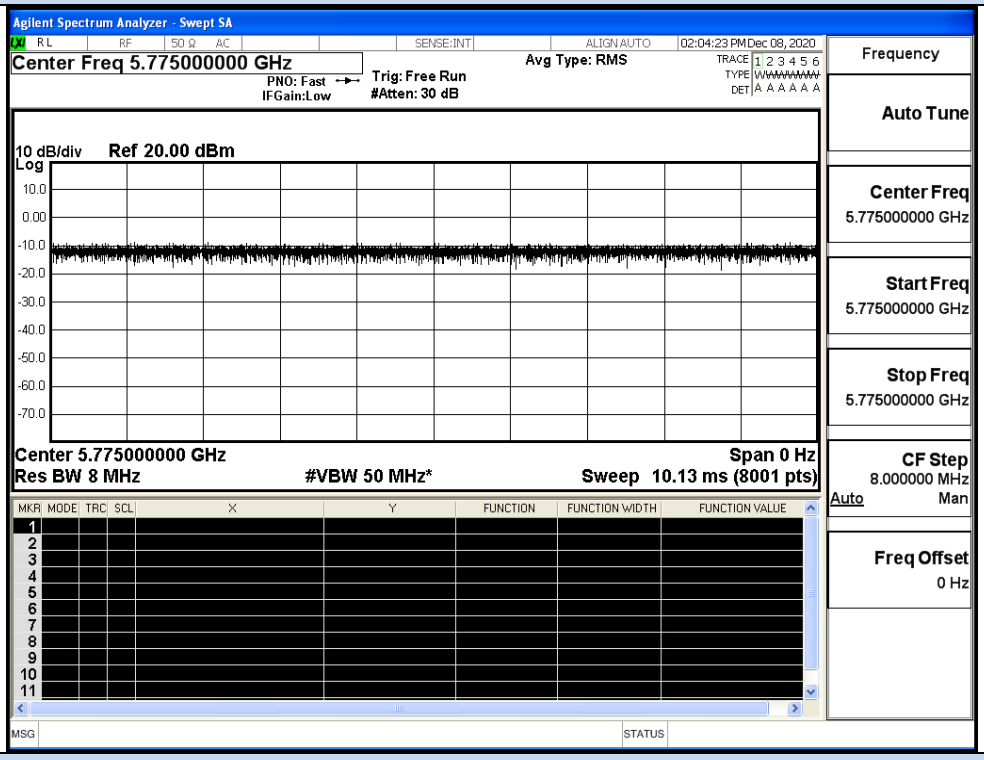
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11AC40



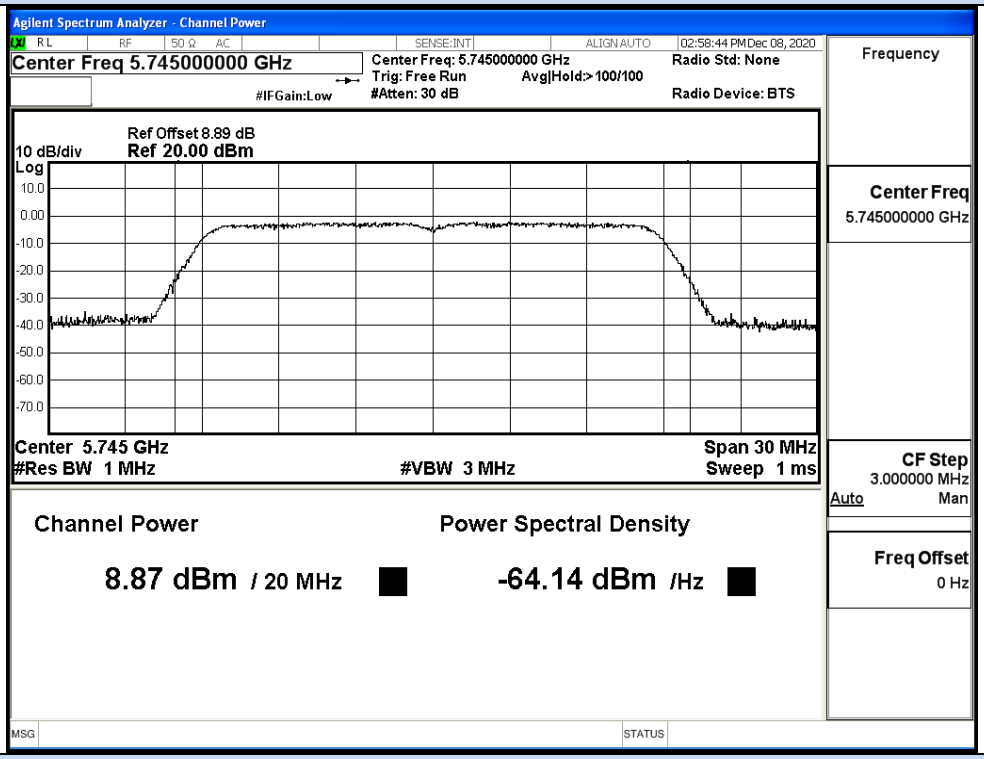
IEEE 802.11AC80

D.2 Maximum Conduct Output Power

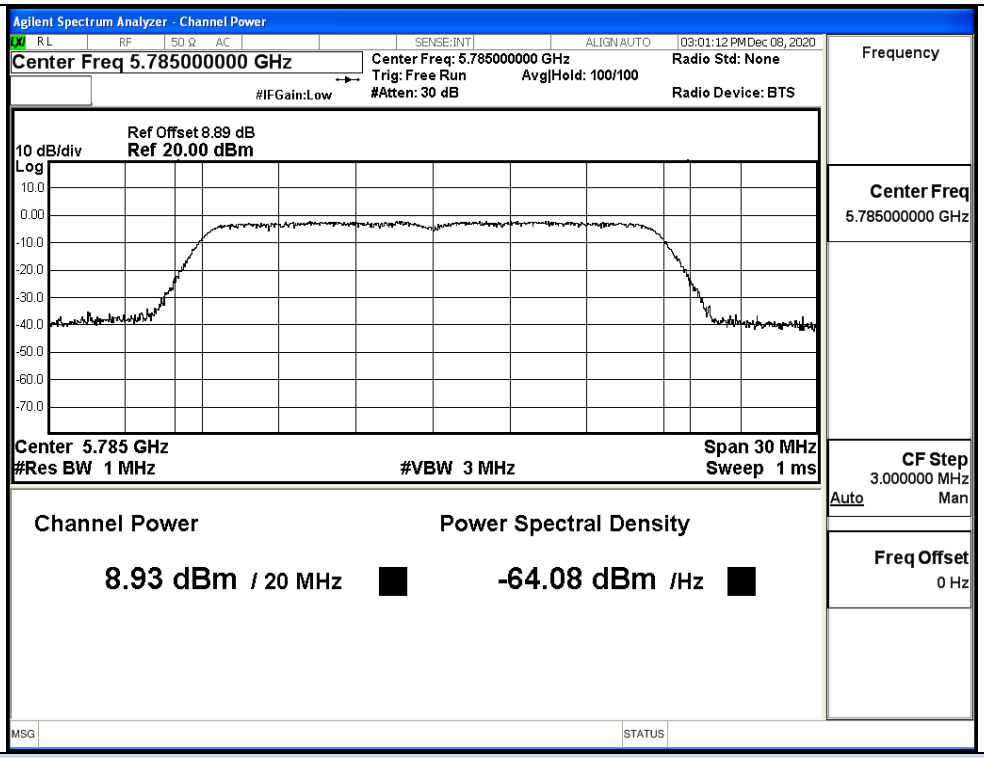
ANT0

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	149	5745	8.87	0	8.87	30	Pass
	157	5785	8.93	0	8.93		Pass
	165	5825	8.76	0	8.76		Pass
11N20 SISO	149	5745	8.63	0	8.63	30	Pass
	157	5785	8.98	0	8.98		Pass
	165	5825	9.25	0	9.25		Pass
11N40 SISO	151	5755	8.38	0	8.38	30	Pass
	159	5795	8.43	0	8.43		Pass
11AC20 SISO	149	5745	9.36	0	9.36	30	Pass
	157	5785	9.81	0	9.81		Pass
	165	5825	10.67	0	10.67		Pass
11AC40 SISO	151	5755	9.12	0	9.12	30	Pass
	159	5795	9.92	0	9.92		Pass
11AC80 SISO	155	5775	8.33	0	8.33	30	Pass

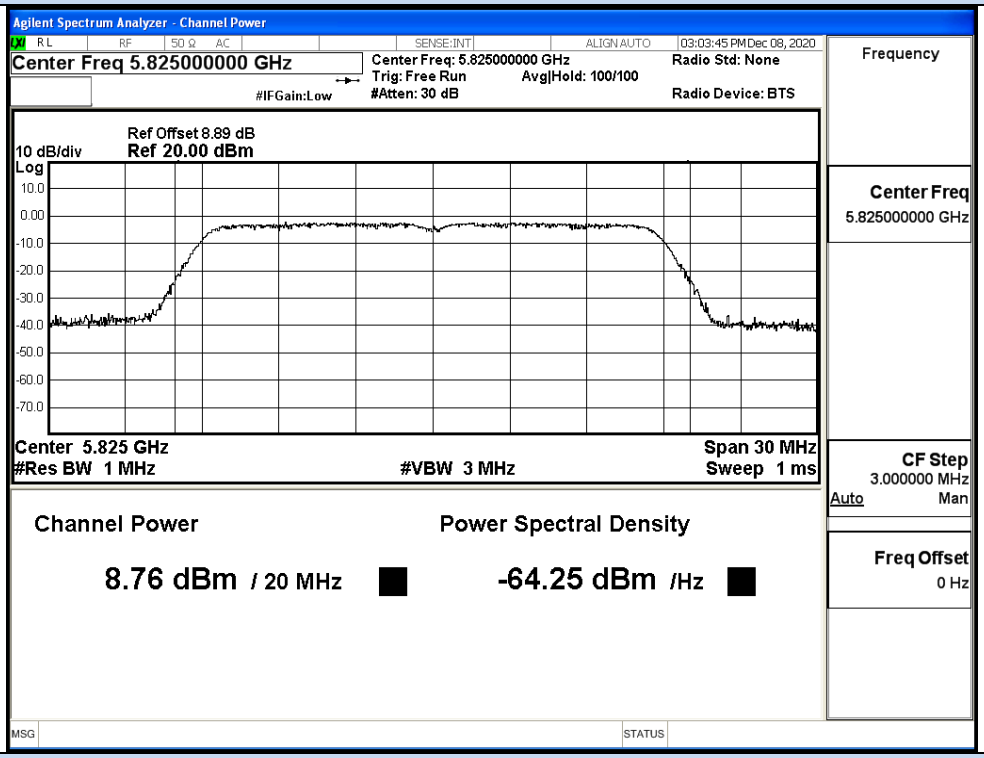
Maximum Conducted Output Power



IEEE 802.11a / Channel 149 / 5745MHz

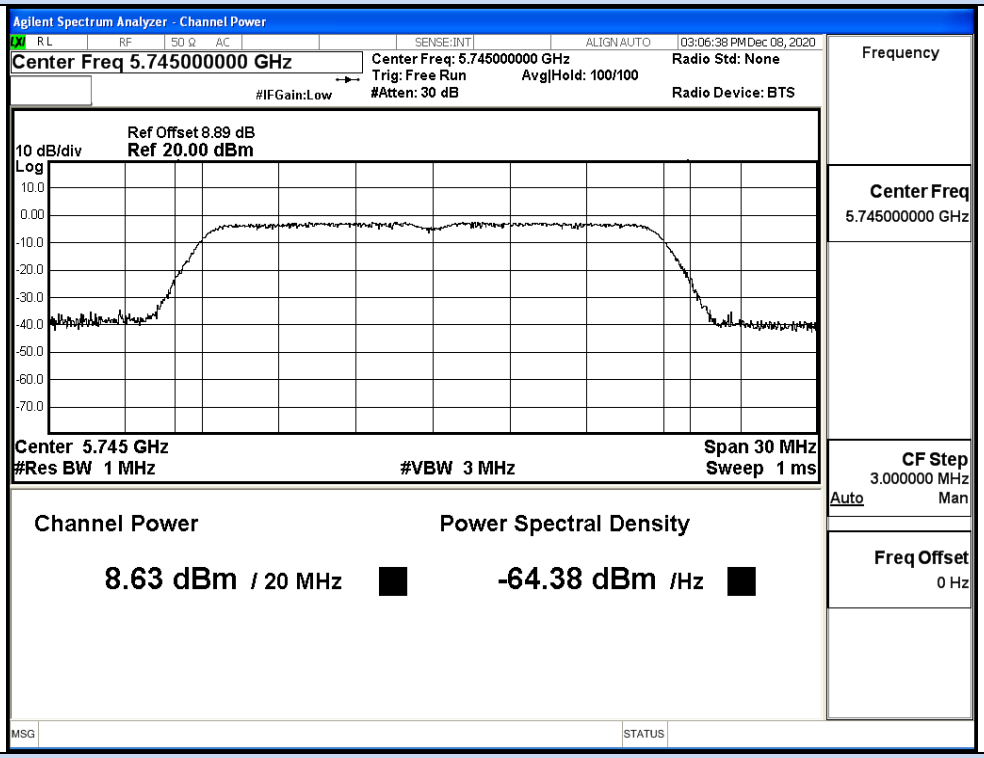


IEEE 802.11a / Channel 157 / 5785MHz

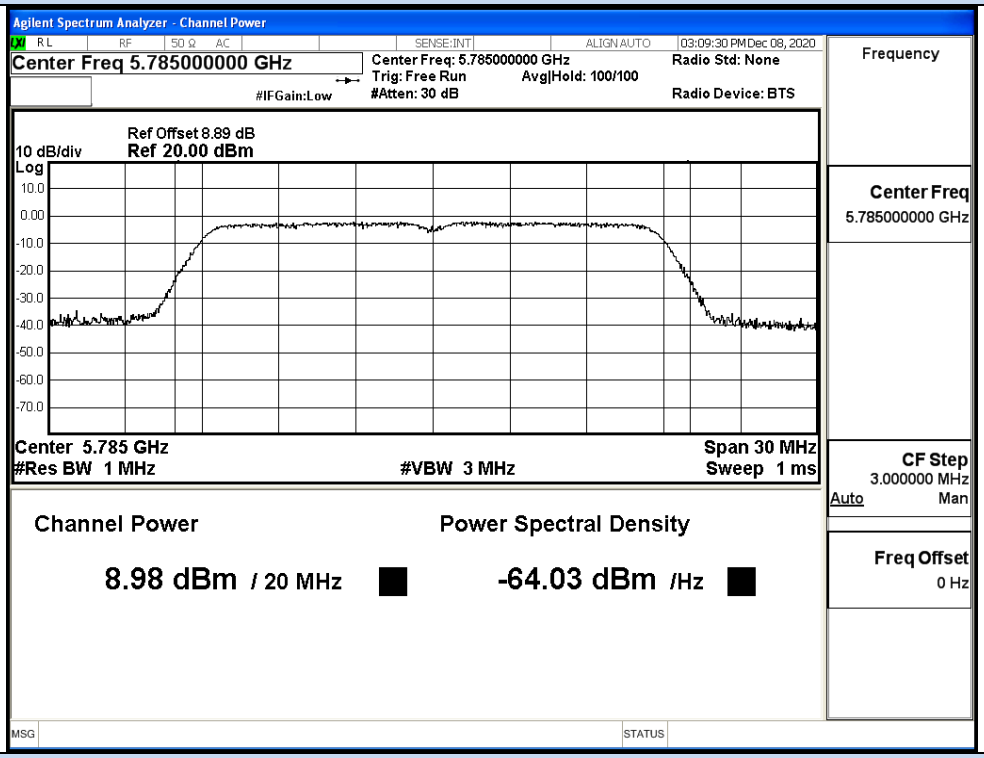


IEEE 802.11a / Channel 165 / 5825MHz

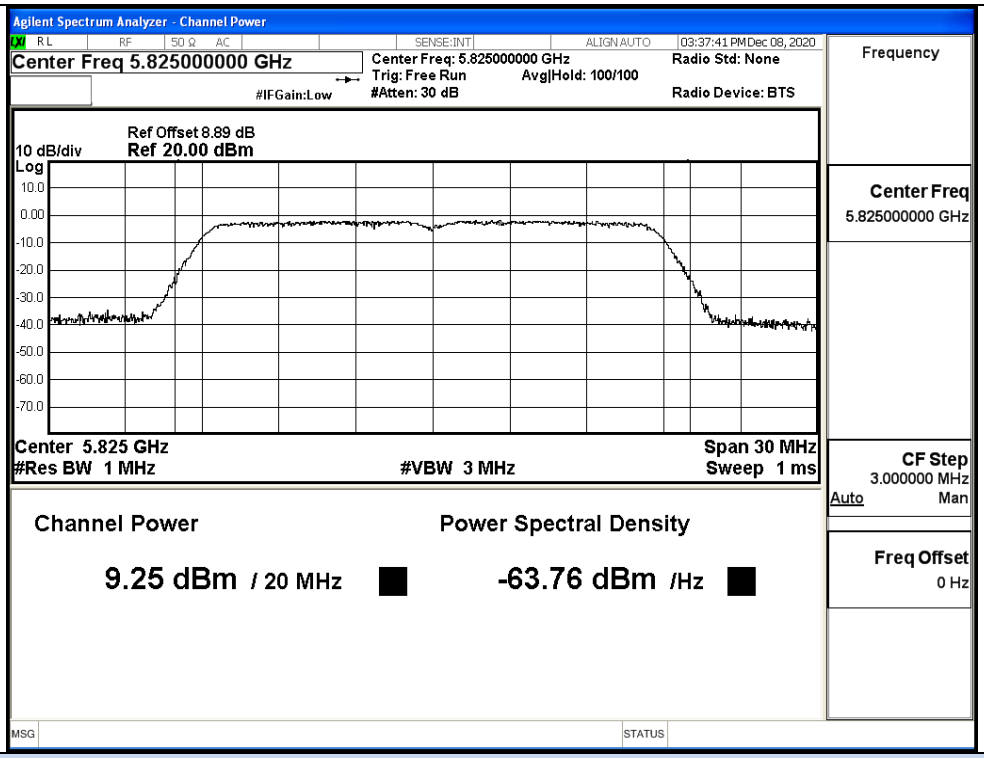
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 149 / 5745MHz

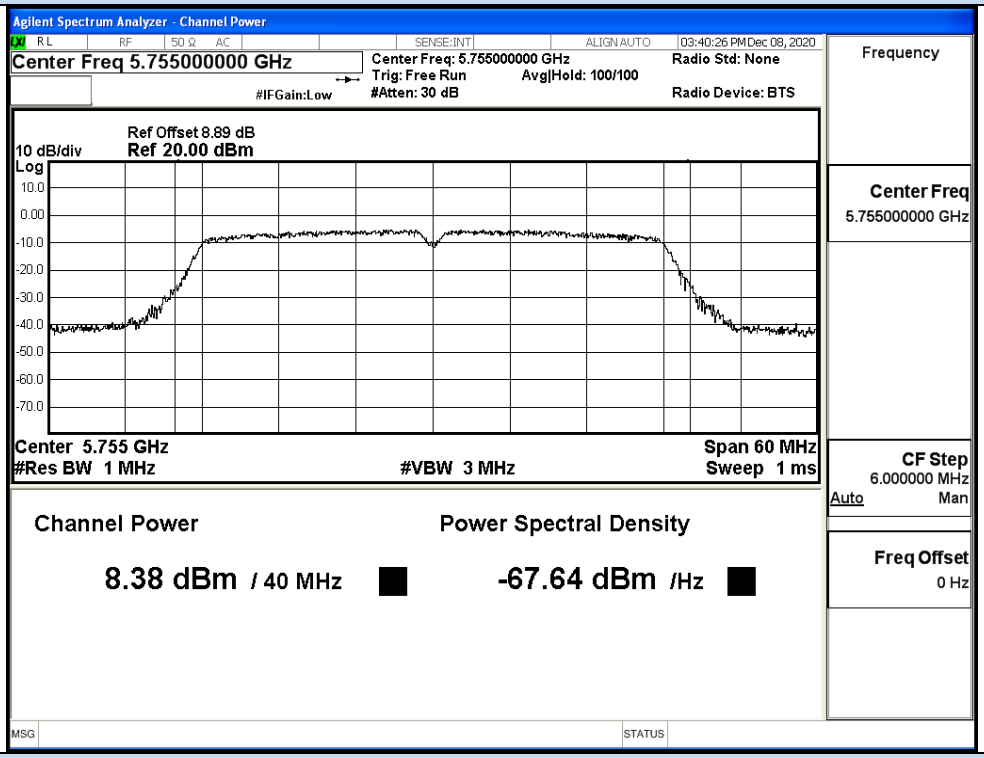


IEEE 802.11n20 / Channel 157 / 5785MHz

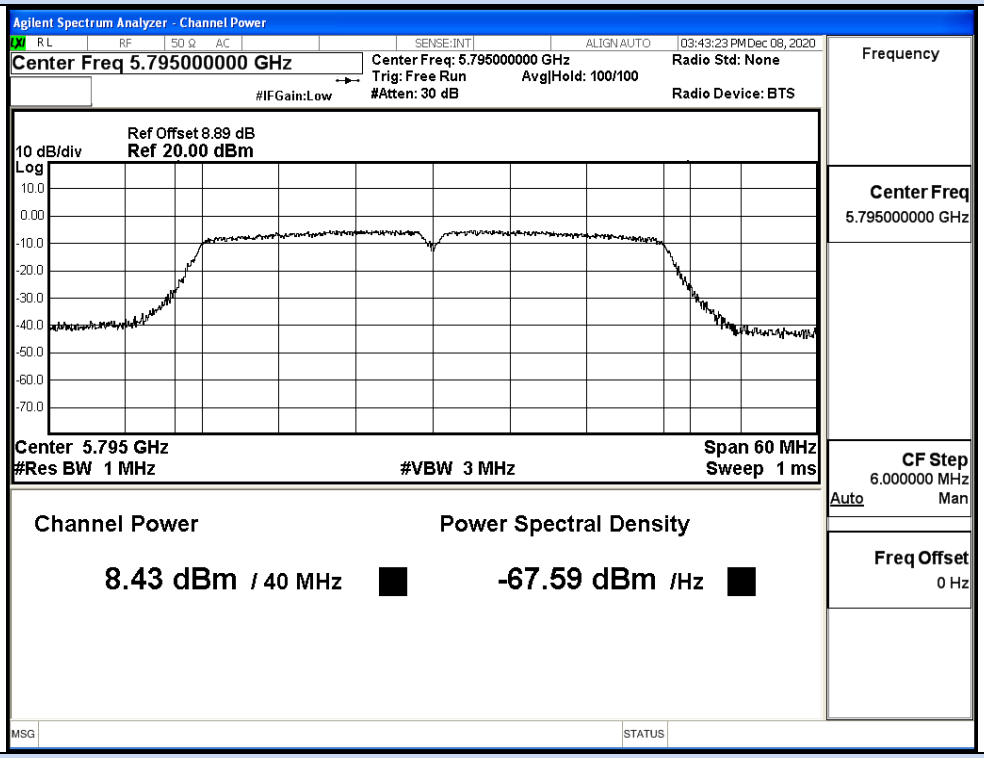


IEEE 802.11n20 / Channel 165 / 5825MHz

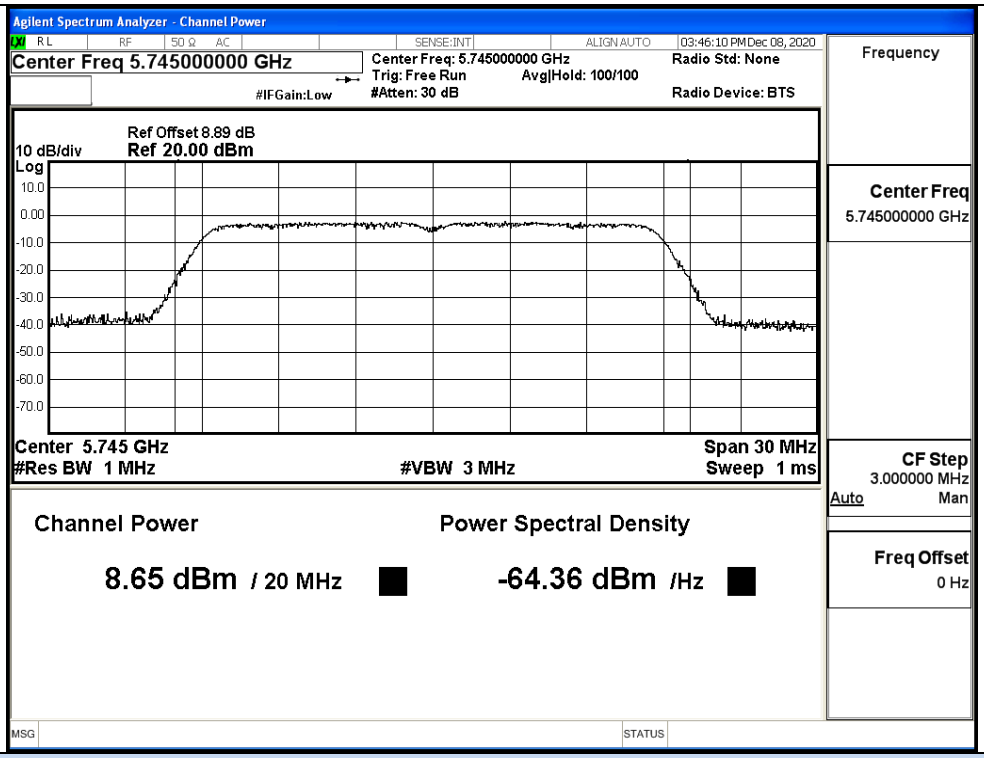
Maximum Conducted Output Power



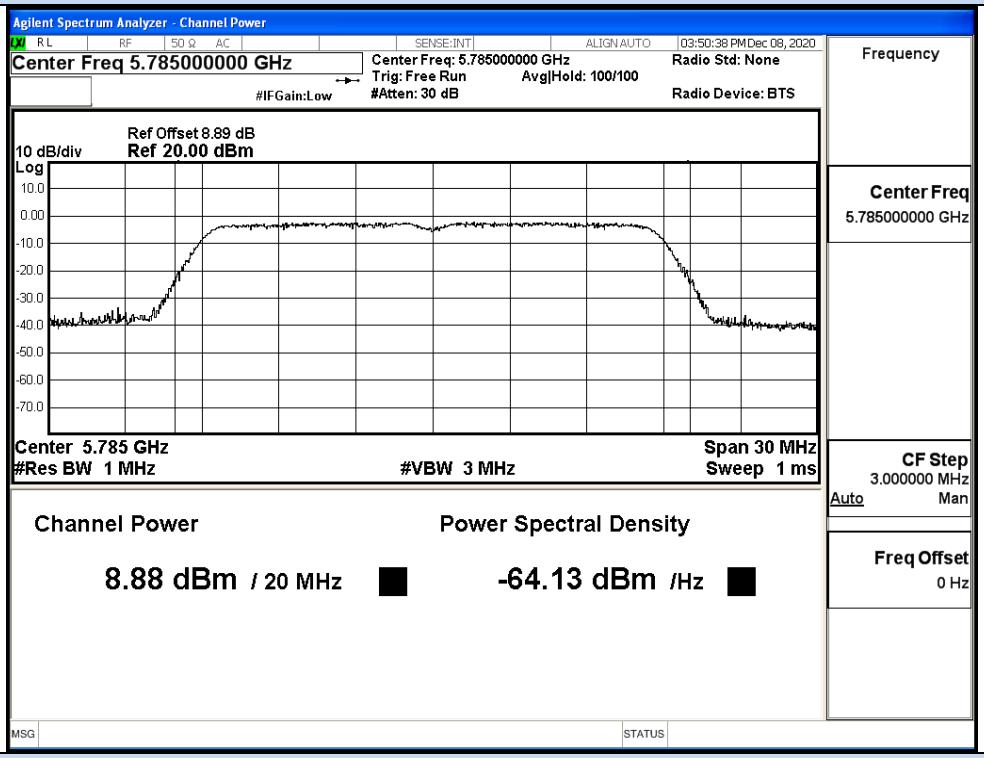
IEEE 802.11n40 / Channel 151 / 5755MHz



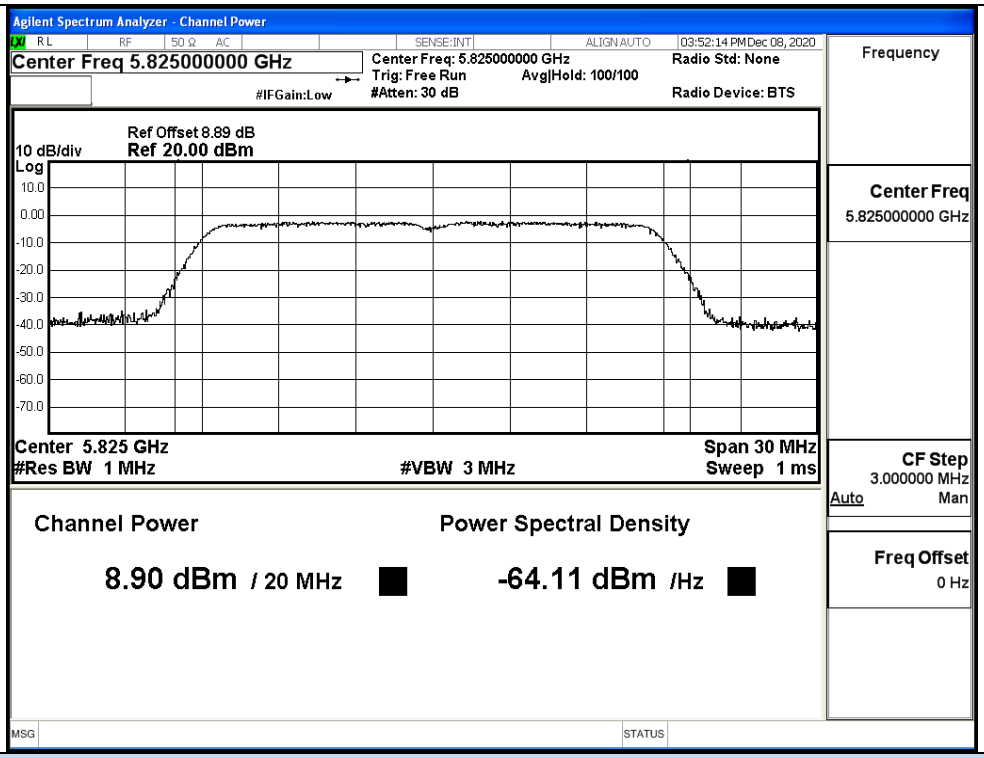
IEEE 802.11n40 / Channel 159 / 5795MHz



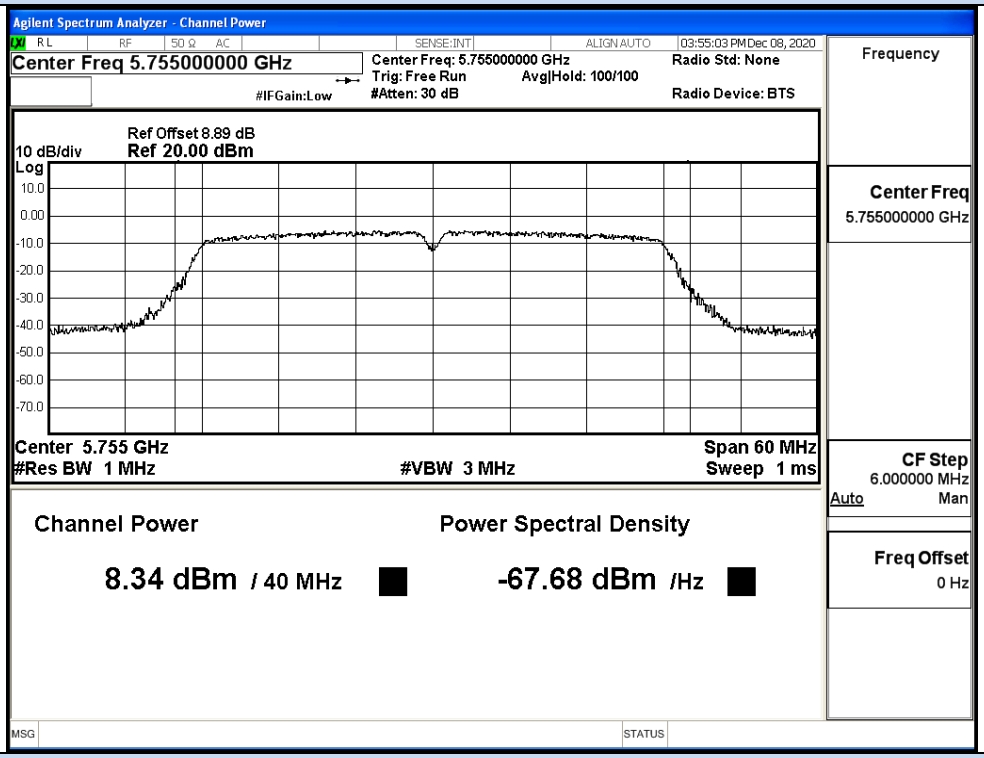
IEEE 802.11ac20 / Channel 149 / 5745MHz



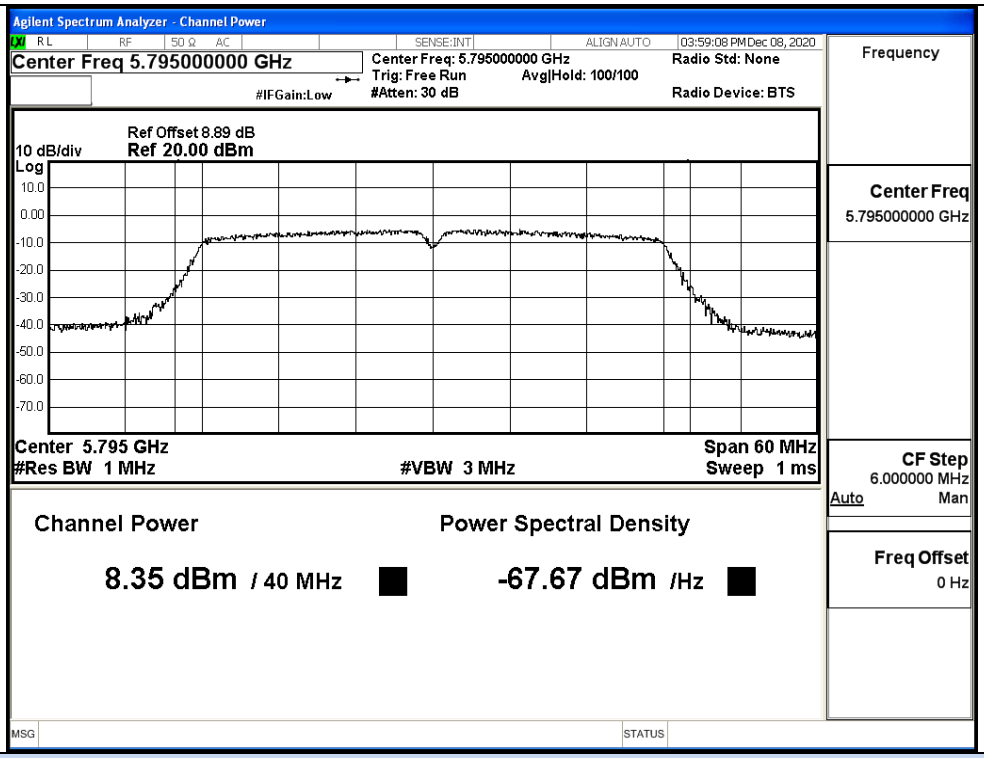
IEEE 802.11ac20 / Channel 157 / 5785MHz



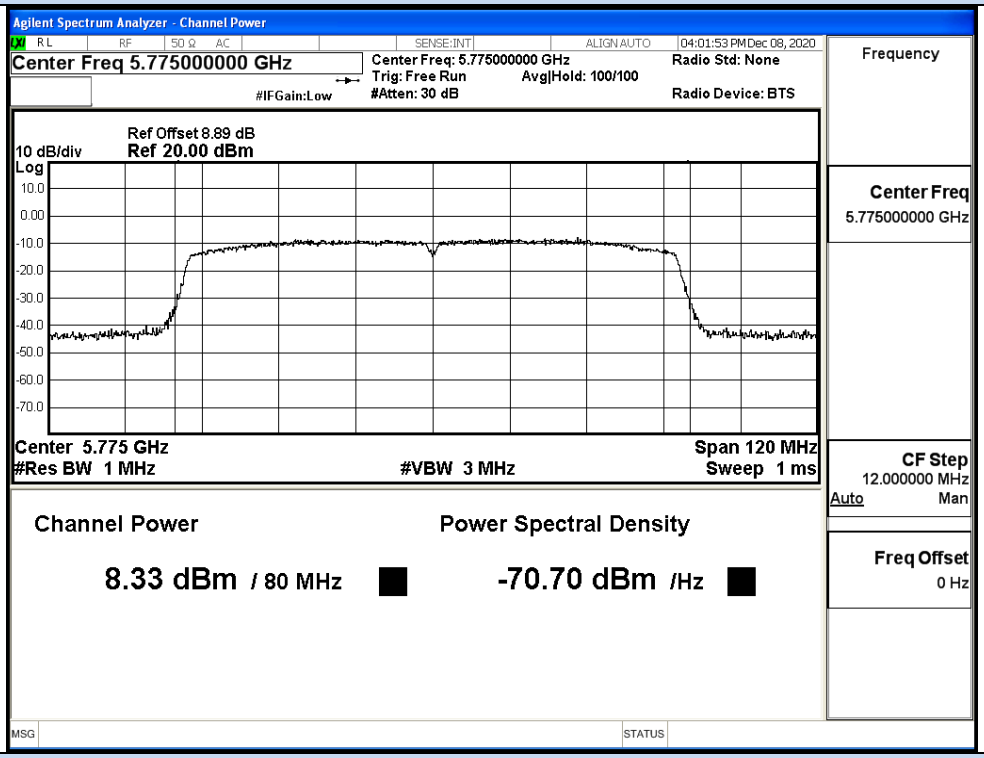
IEEE 802.11ac20 / Channel 165/ 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz

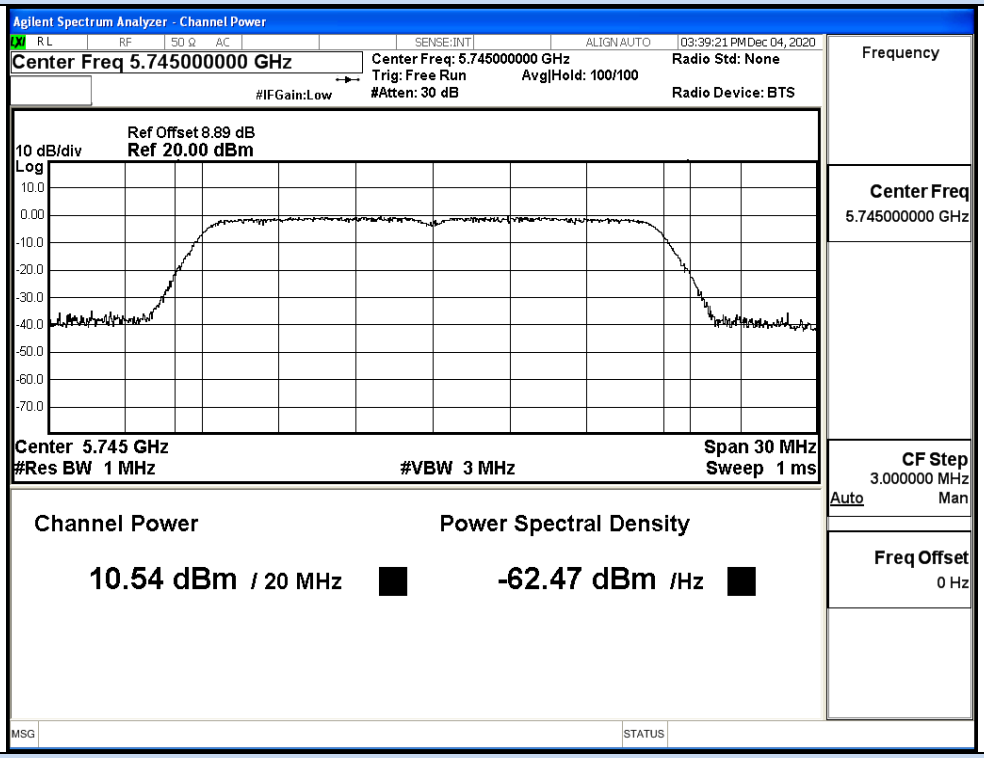


IEEE 802.11ac80 / Channel 155 / 5775MHz

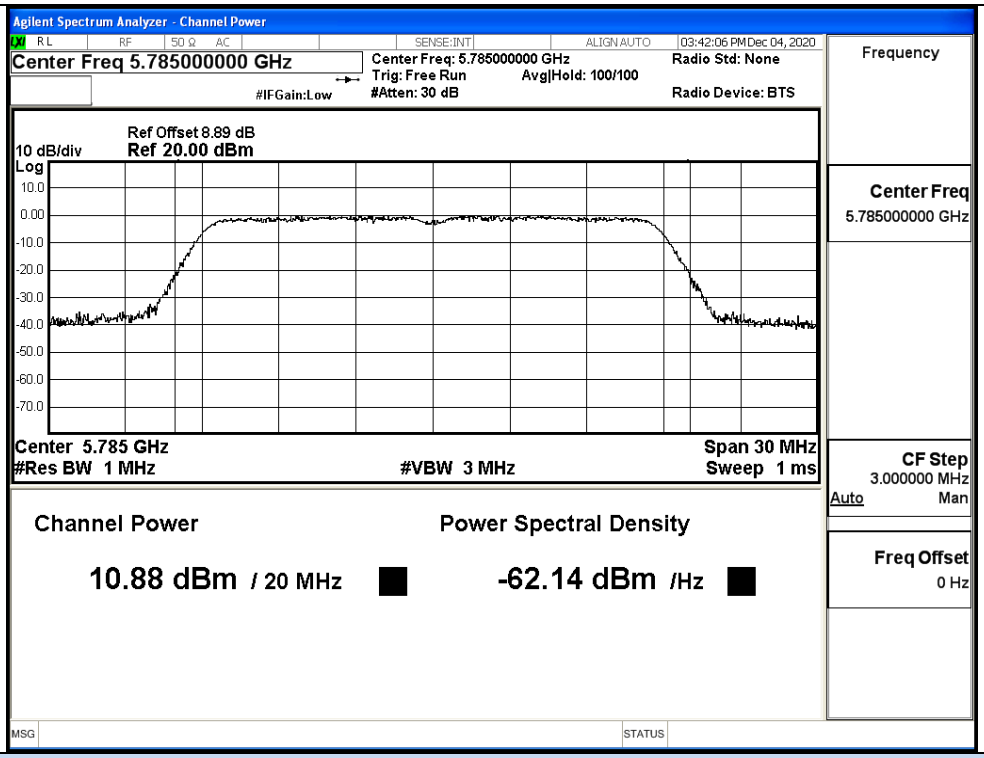
ANT1

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	149	5745	10.54	0	10.54	30	Pass
	157	5785	10.88	0	10.88		Pass
	165	5825	10.75	0	10.75		Pass
11N20 SISO	149	5745	10.15	0	10.15	30	Pass
	157	5785	10.61	0	10.61		Pass
	165	5825	10.76	0	10.76		Pass
11N40 SISO	151	5755	11.69	0	11.69	30	Pass
	159	5795	11.78	0	11.78		Pass
11AC20 SISO	149	5745	12.36	0	12.36	30	Pass
	157	5785	12.77	0	12.77		Pass
	165	5825	13.78	0	13.78		Pass
11AC40 SISO	151	5755	11.95	0	11.95	30	Pass
	159	5795	12.81	0	12.81		Pass
11AC80 SISO	155	5775	11.51	0	11.51	30	Pass

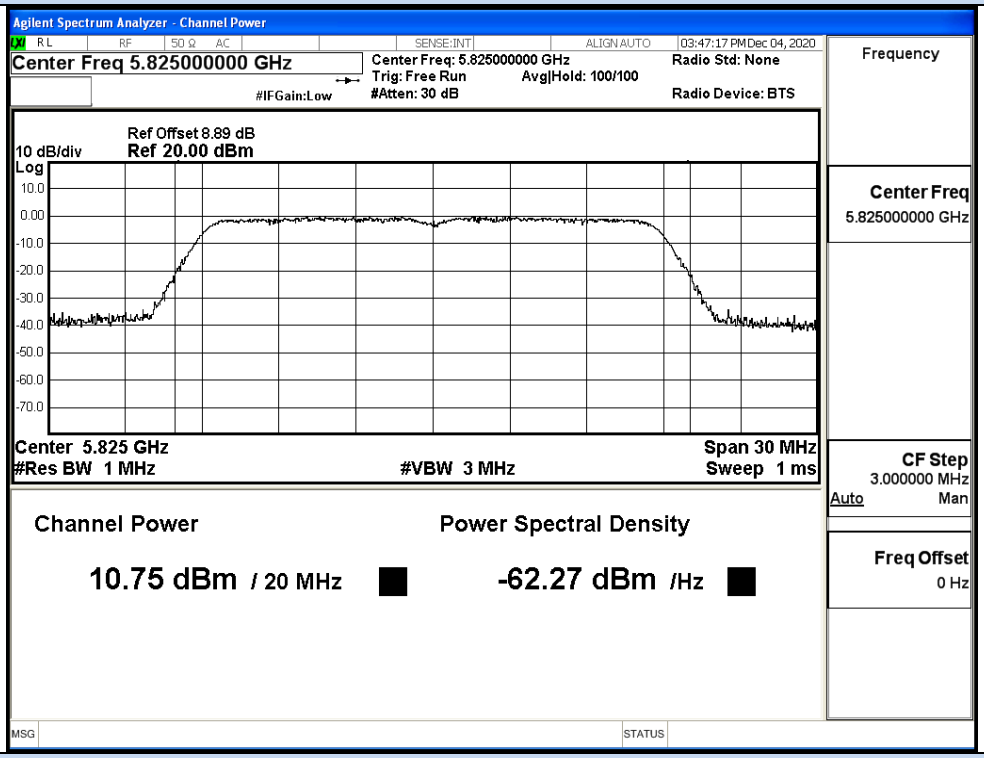
Maximum Conducted Output Power



IEEE 802.11a / Channel 149 / 5745MHz

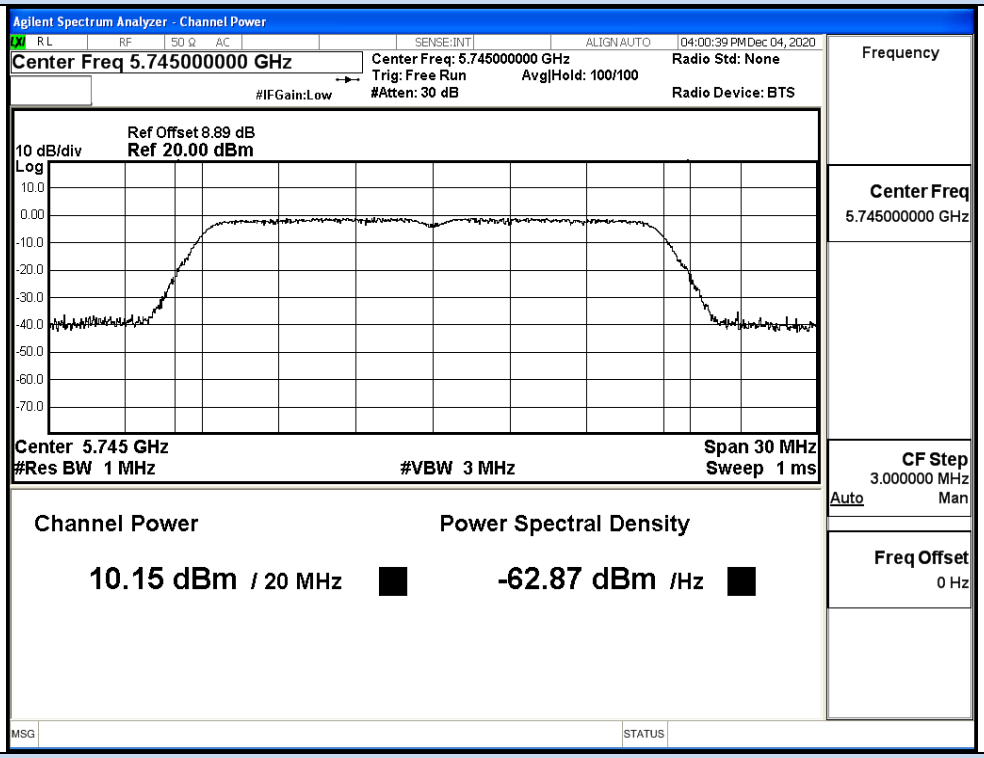


IEEE 802.11a / Channel 157 / 5785MHz

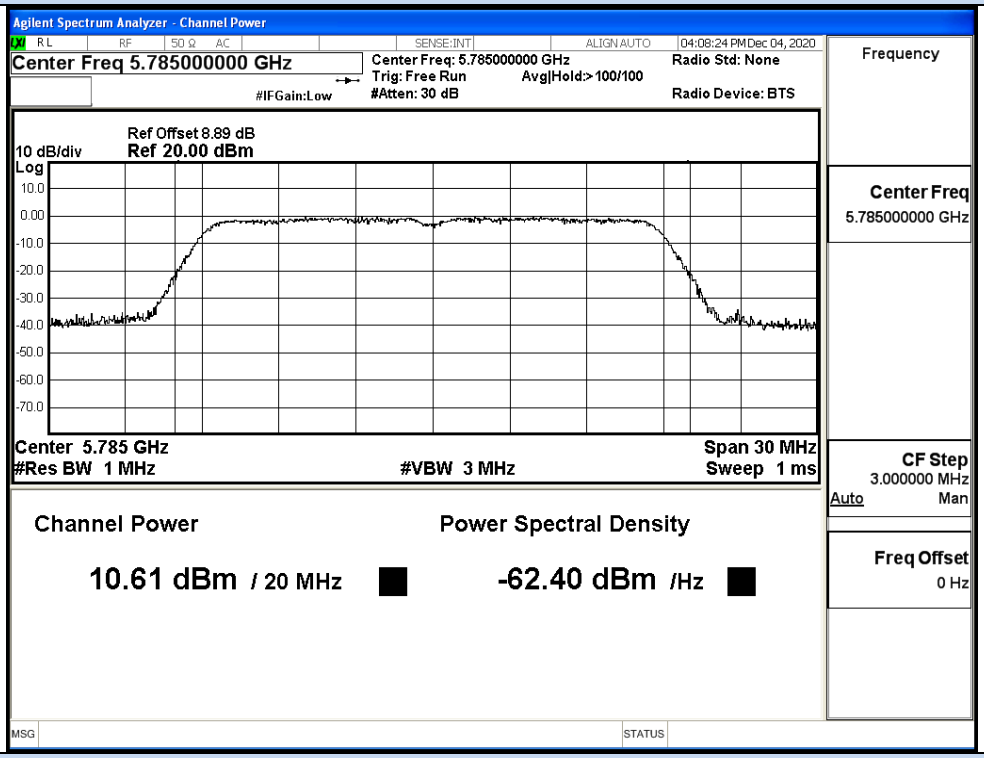


IEEE 802.11a / Channel 165 / 5825MHz

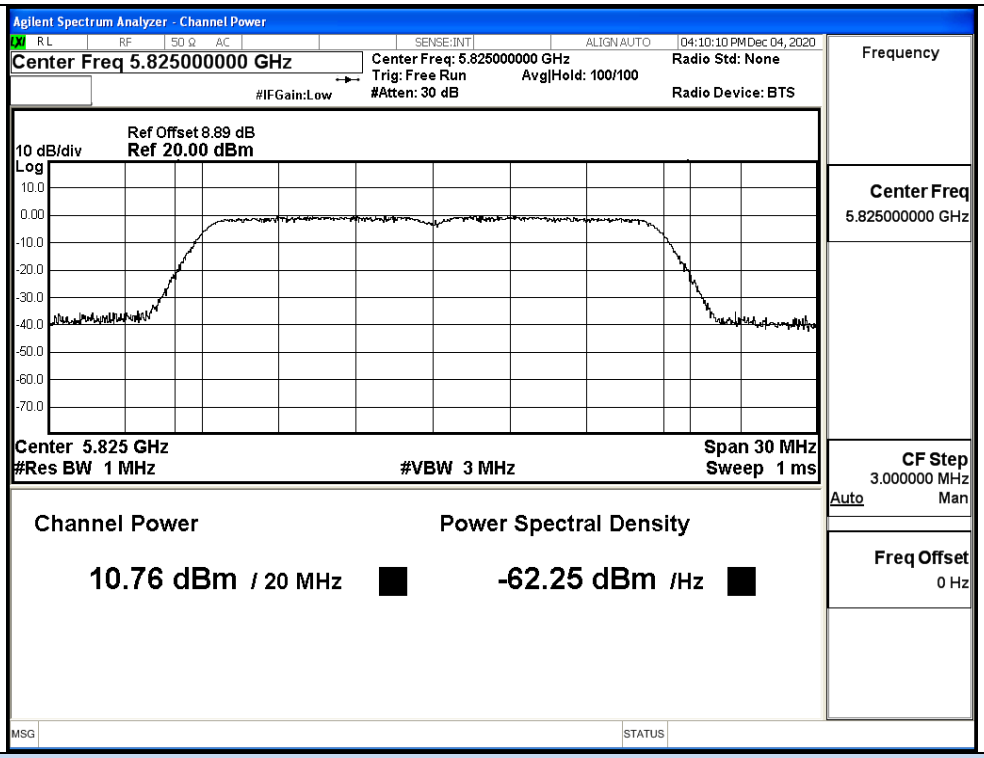
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 149 / 5745MHz

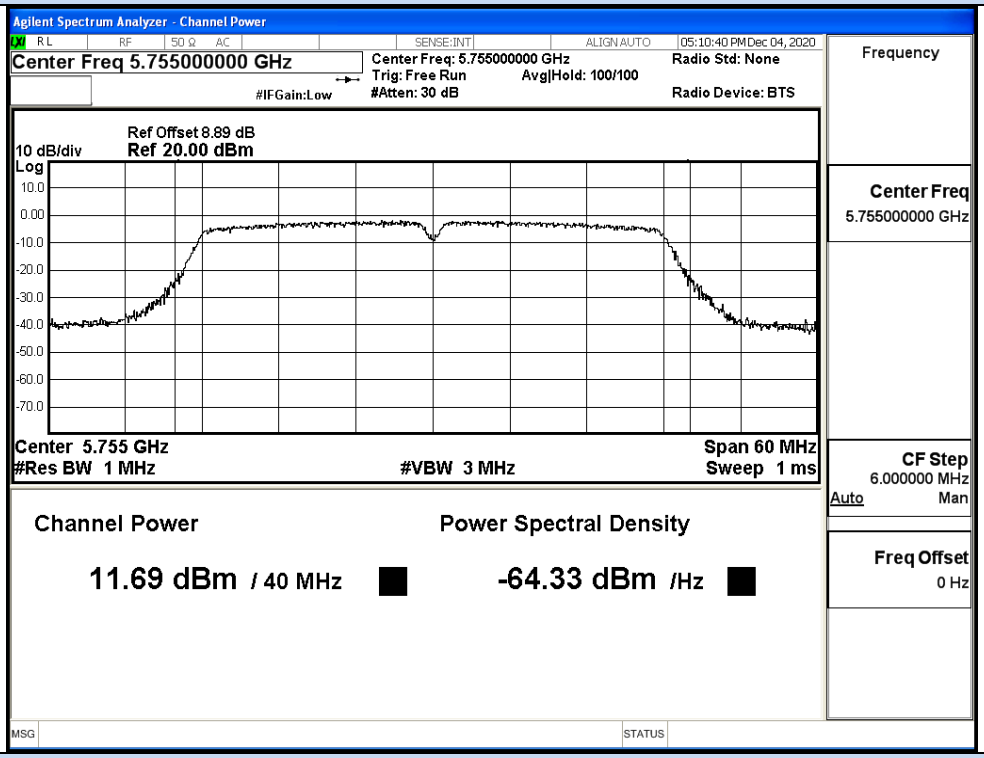


IEEE 802.11n20 / Channel 157 / 5785MHz

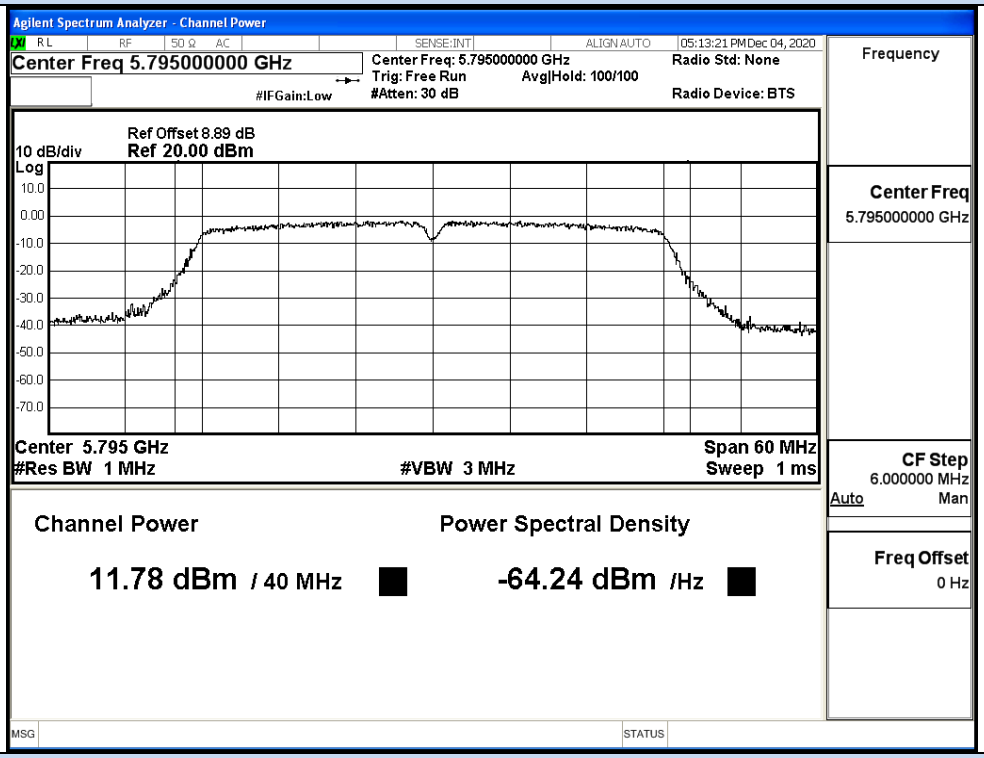


IEEE 802.11n20 / Channel 165 / 5825MHz

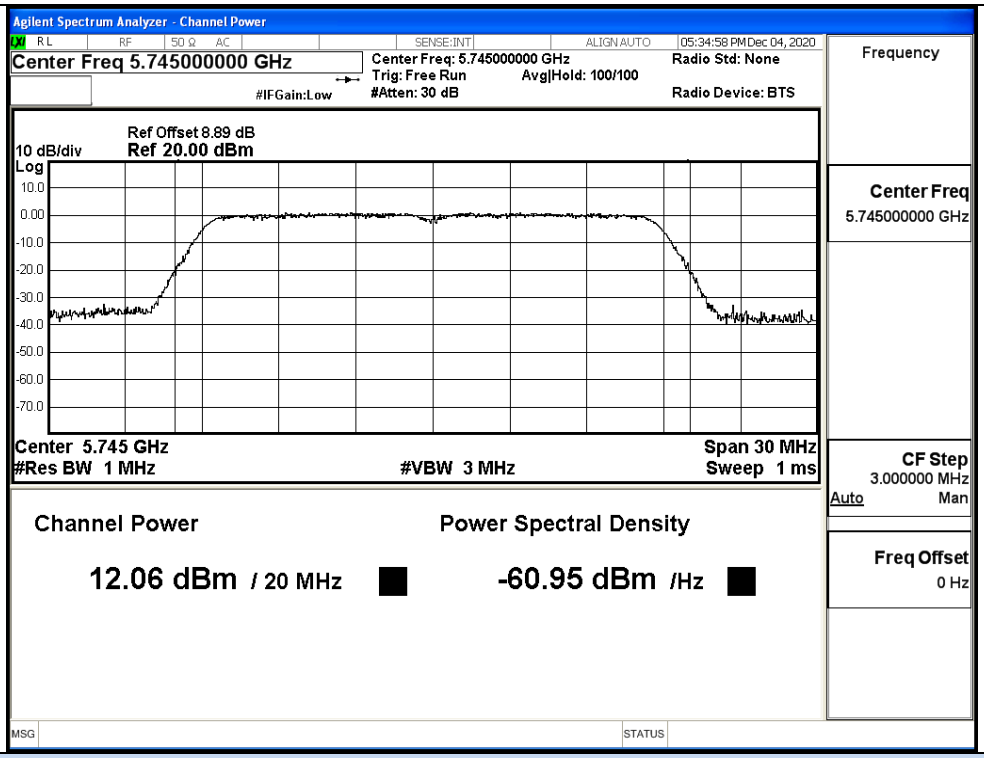
Maximum Conducted Output Power



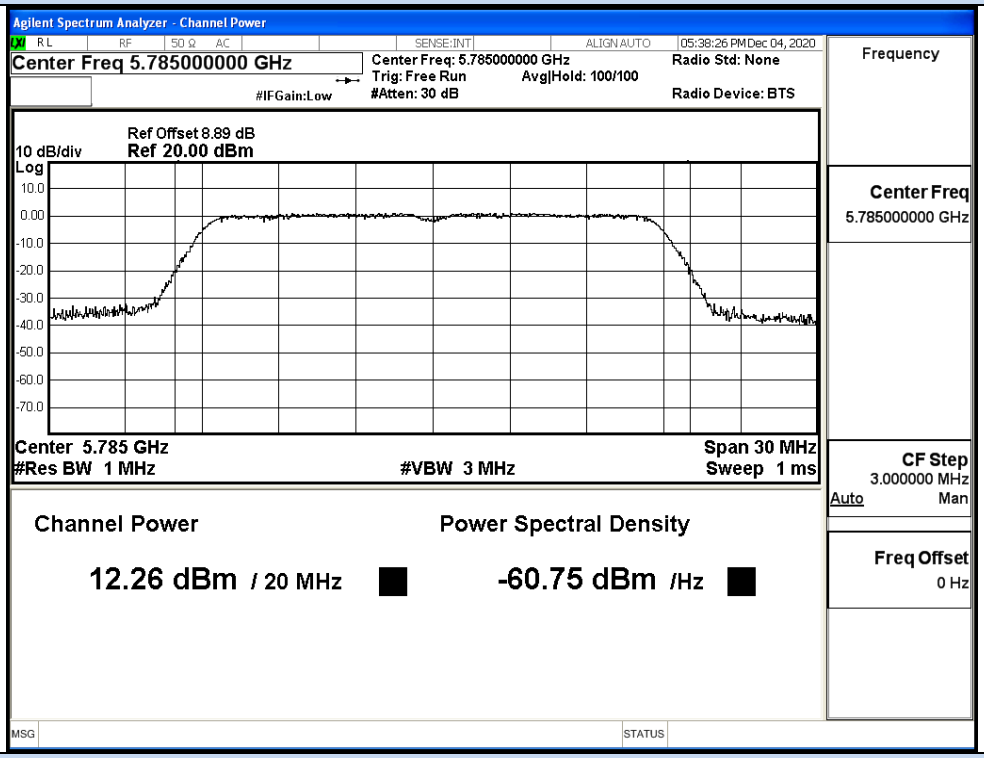
IEEE 802.11n40 / Channel 151 / 5755MHz



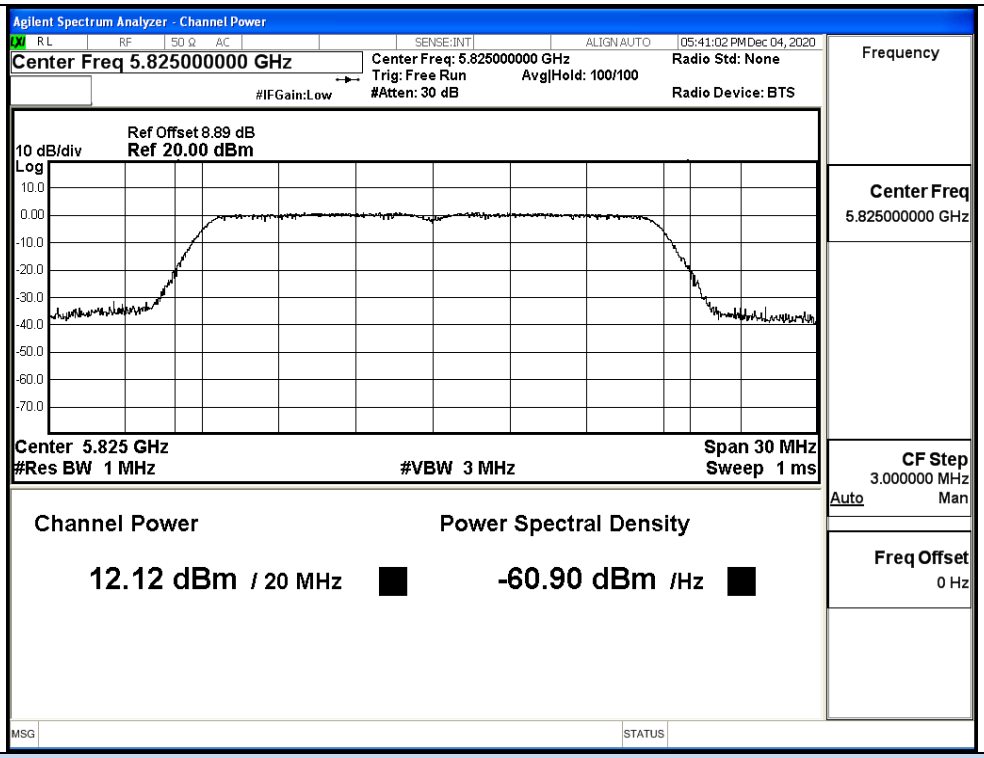
IEEE 802.11n40 / Channel 159 / 5795MHz



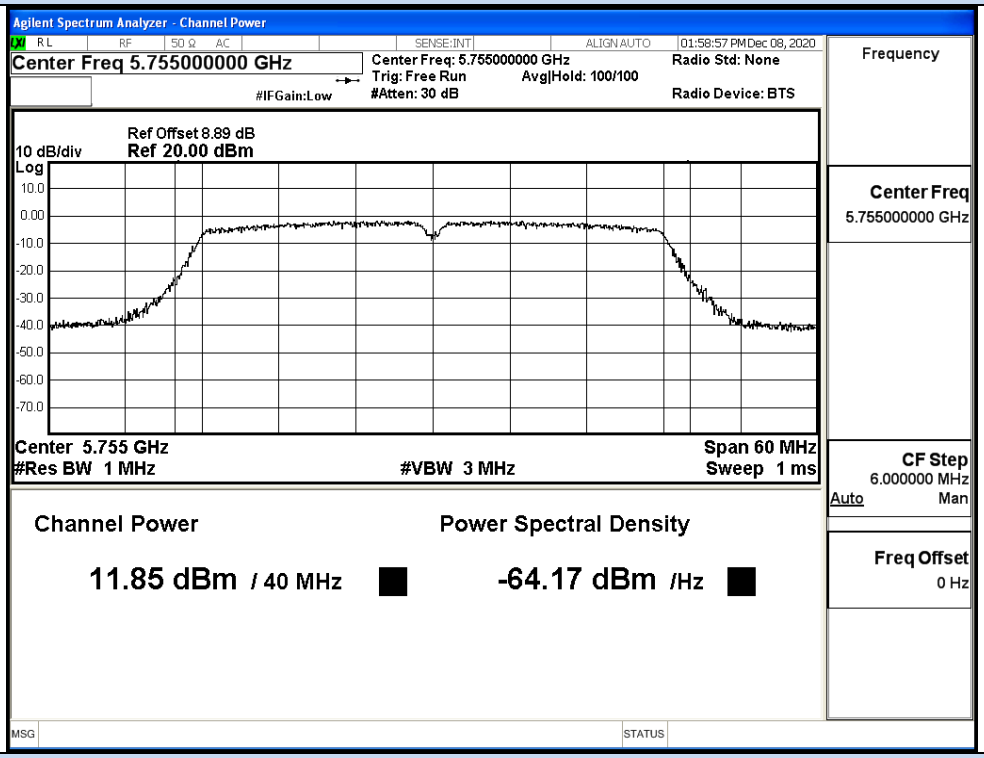
IEEE 802.11ac20 / Channel 149 / 5745MHz



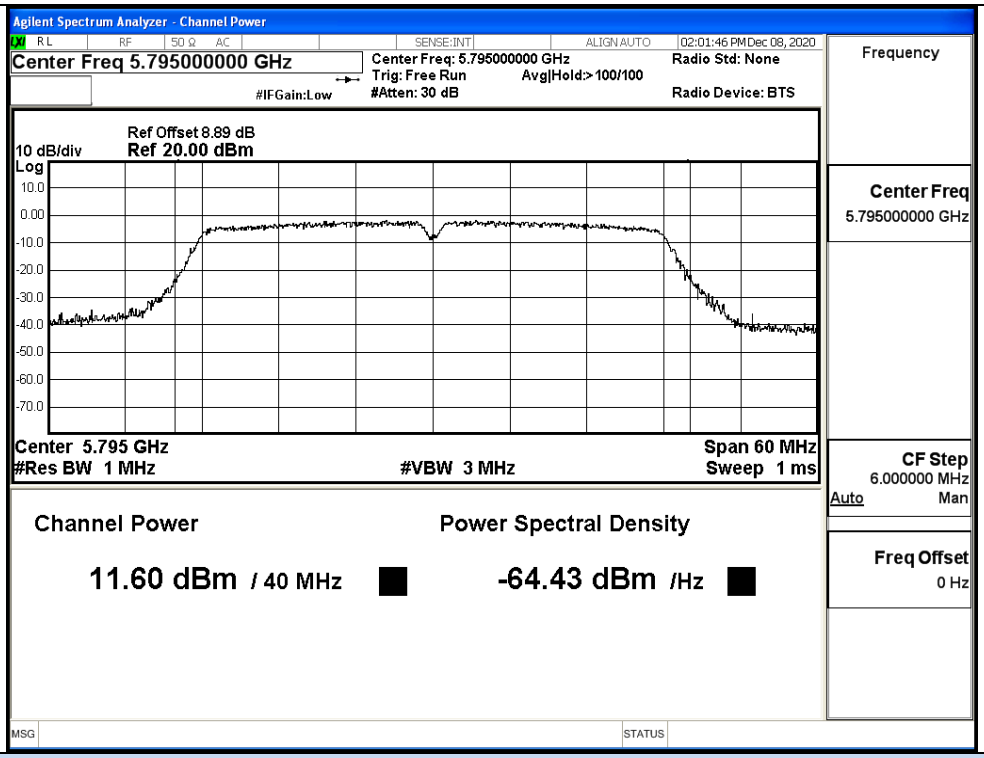
IEEE 802.11ac20 / Channel 157 / 5785MHz



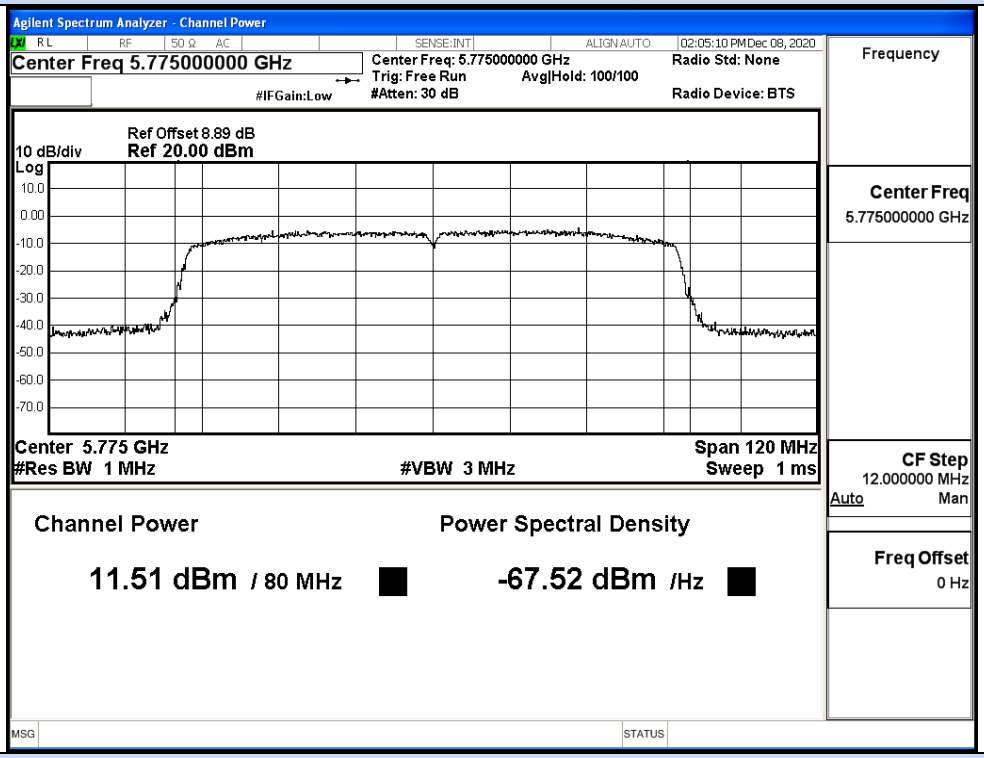
IEEE 802.11ac20 / Channel 165/ 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



IEEE 802.11ac80 / Channel 155 / 5775MHz

MIMO

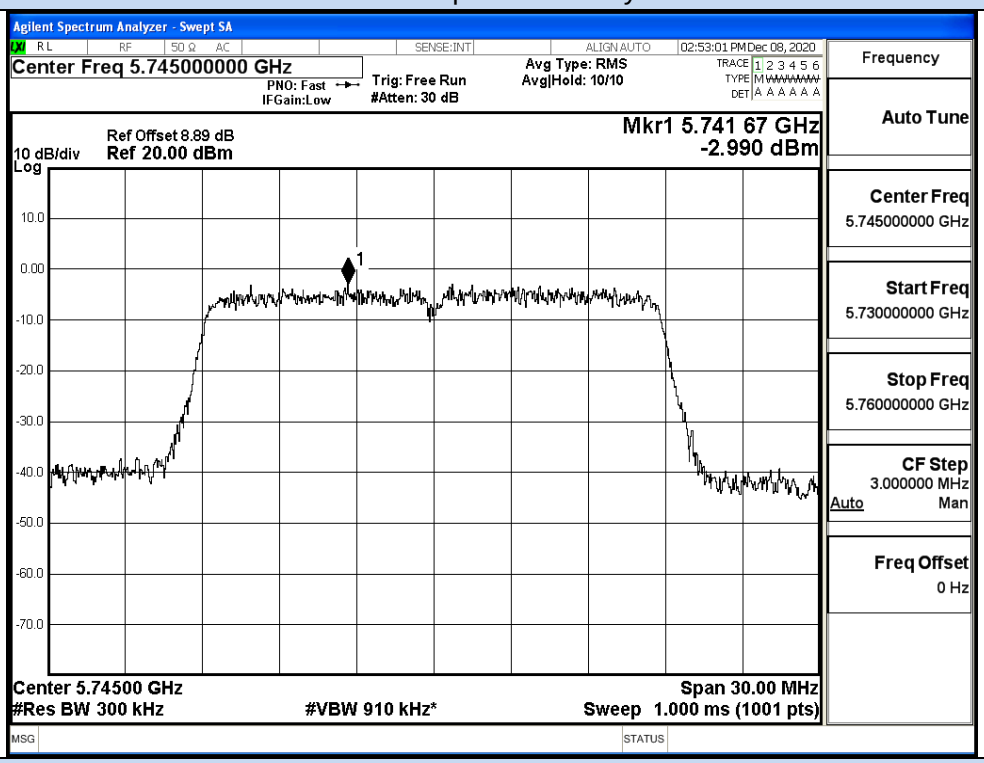
Test Mode	Channel	Frequency (MHz)	ANT 0 AVG Conducted Power (dBm)	ANT 1 AVG Conducted Power (dBm)	MIMO AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11N20	149	5745	8.63	10.15	12.47	0	12.47	30	Pass
	157	5785	8.98	10.61	12.88	0	12.88		Pass
	165	5825	9.25	10.76	13.08	0	13.08		Pass
11N40	151	5755	8.38	11.69	13.35	0	13.35	30	Pass
	159	5795	8.43	11.78	13.43	0	13.43		Pass
11AC20	149	5745	9.36	12.36	14.12	0	14.12	30	Pass
	157	5785	9.81	12.77	14.55	0	14.55		Pass
	165	5825	10.67	13.78	15.51	0	15.51		Pass
11AC40	151	5755	9.12	11.95	13.77	0	13.77	30	Pass
	159	5795	9.92	12.81	14.61	0	14.61		Pass
11AC80	155	5775	8.33	11.51	13.22	0	13.22	30	Pass

D.3 Power Spectral Density

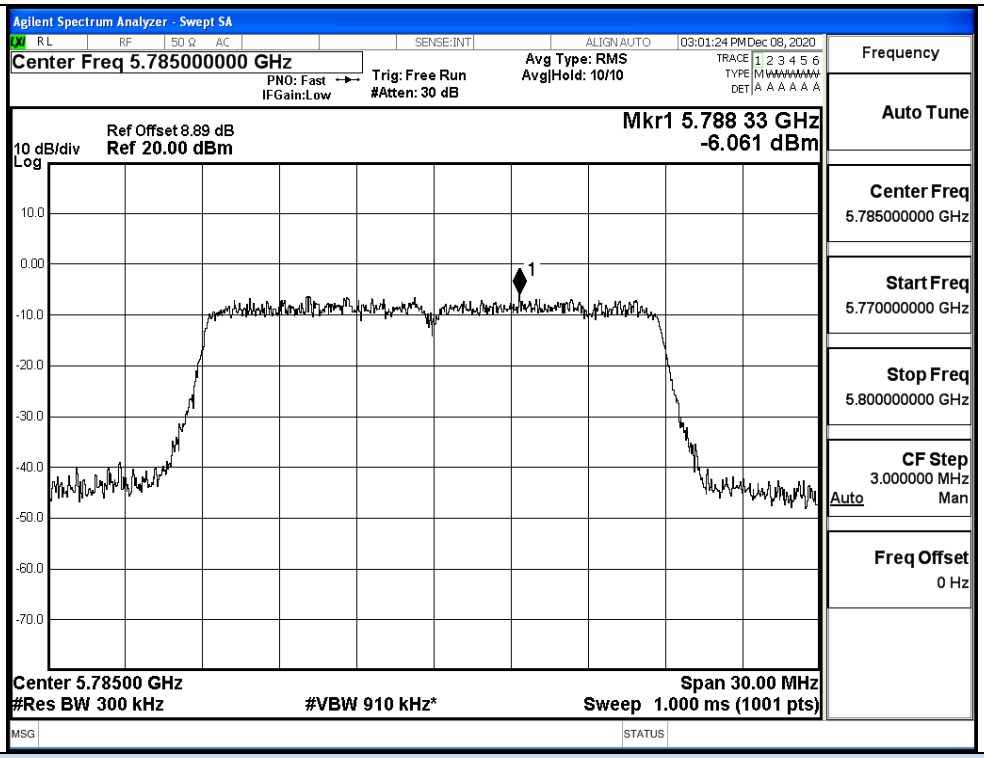
ANT0

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	-2.99	0	2.218	-0.77	30	Pass
	157	5785	-6.06	0	2.218	-3.84		Pass
	165	5825	-6.46	0	2.218	-4.25		Pass
11N20 SISO	149	5745	-6.44	0	2.218	-4.22	30	Pass
	157	5785	-6.19	0	2.218	-3.97		Pass
	165	5825	-5.97	0	2.218	-3.76		Pass
11N40 SISO	151	5755	-8.83	0	2.218	-6.61	30	Pass
	159	5795	-9.10	0	2.218	-6.89		Pass
11AC20 SISO	149	5745	-6.52	0	2.218	-4.31	30	Pass
	157	5785	-6.30	0	2.218	-4.08		Pass
	165	5825	-6.24	0	2.218	-4.02		Pass
11AC40 SISO	151	5755	-8.88	0	2.218	-6.66	30	Pass
	159	5795	-9.25	0	2.218	-7.03		Pass
11AC80 SISO	155	5775	-12.38	0	2.218	-10.16	30	Pass

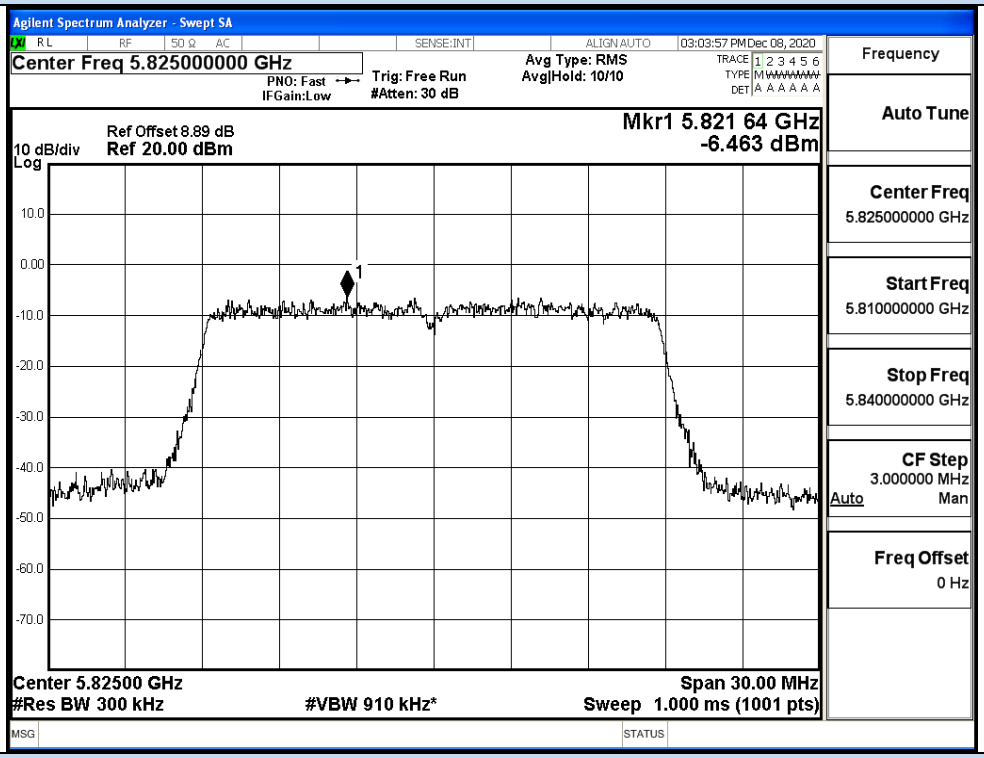
Power Spectral Density



IEEE 802.11a / Channel 149 / 5745MHz

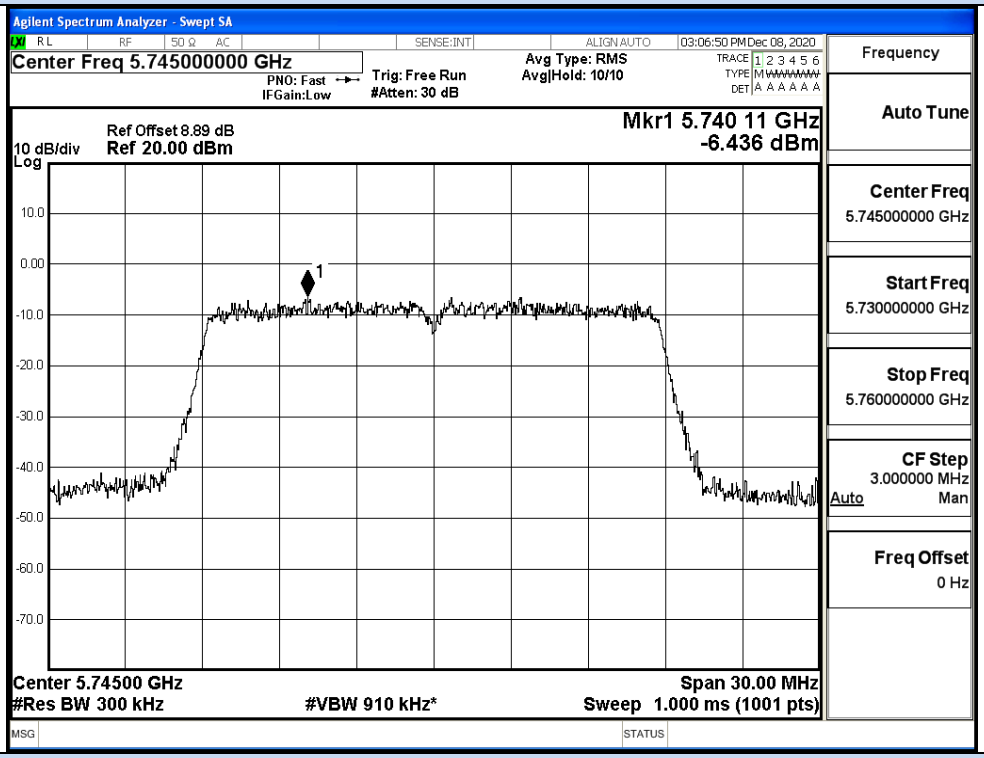


IEEE 802.11na / Channel 157 / 5785MHz

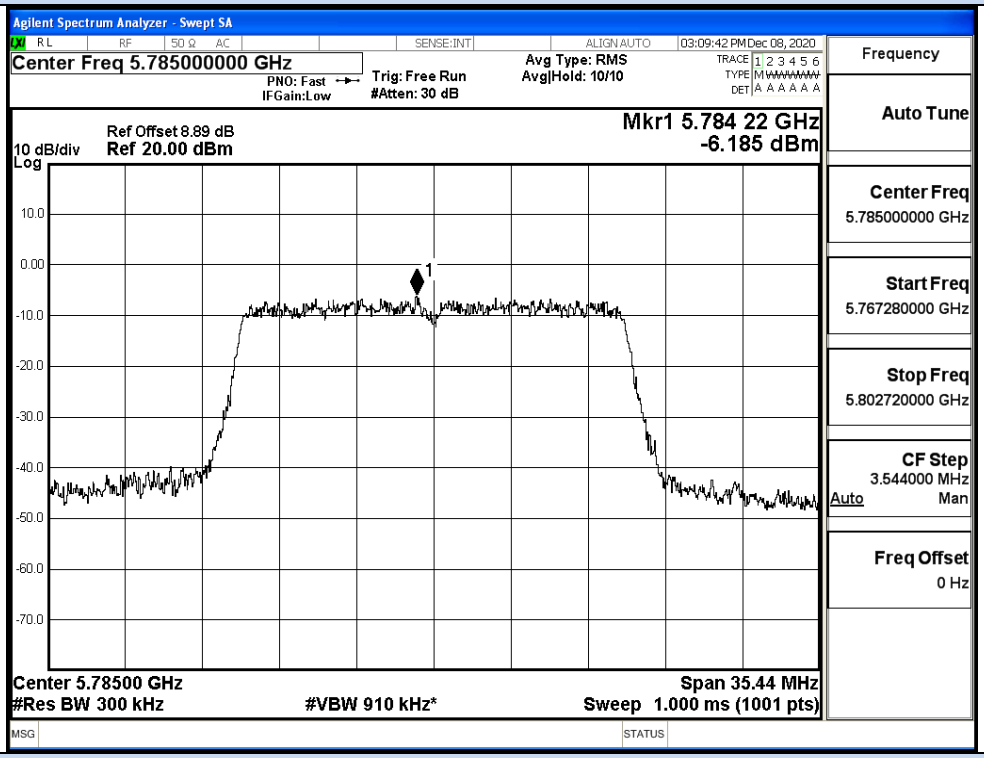


IEEE 802.11na / Channel 165 / 5825MHz

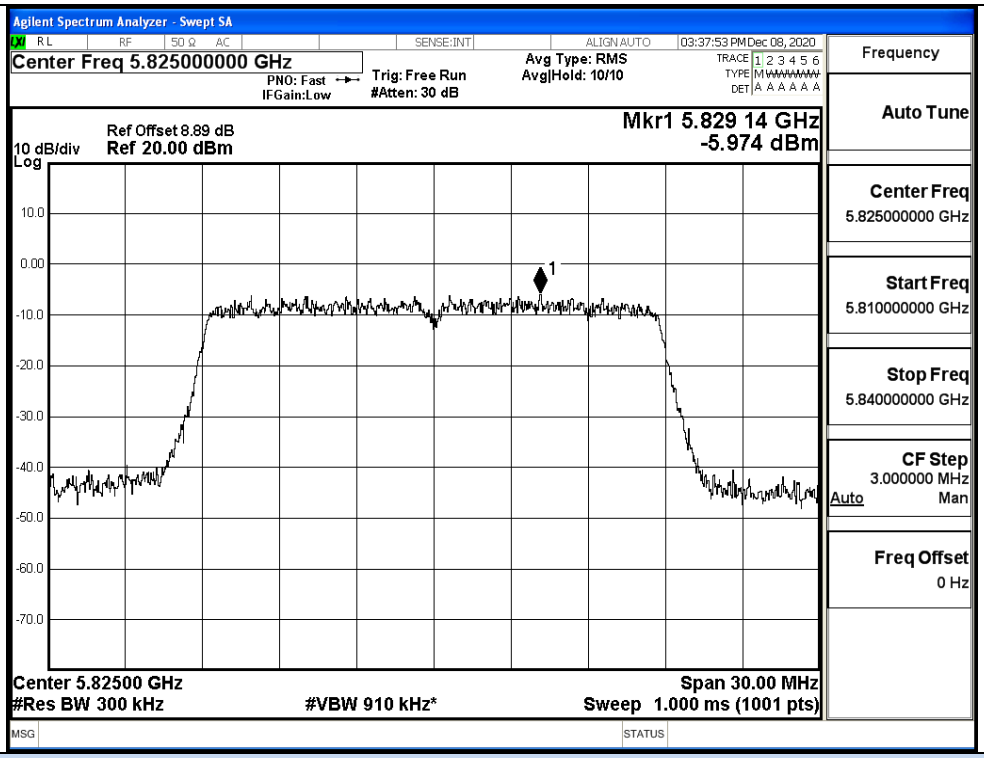
Power Spectral Density



IEEE 802.11n20 / Channel 149 / 5745MHz

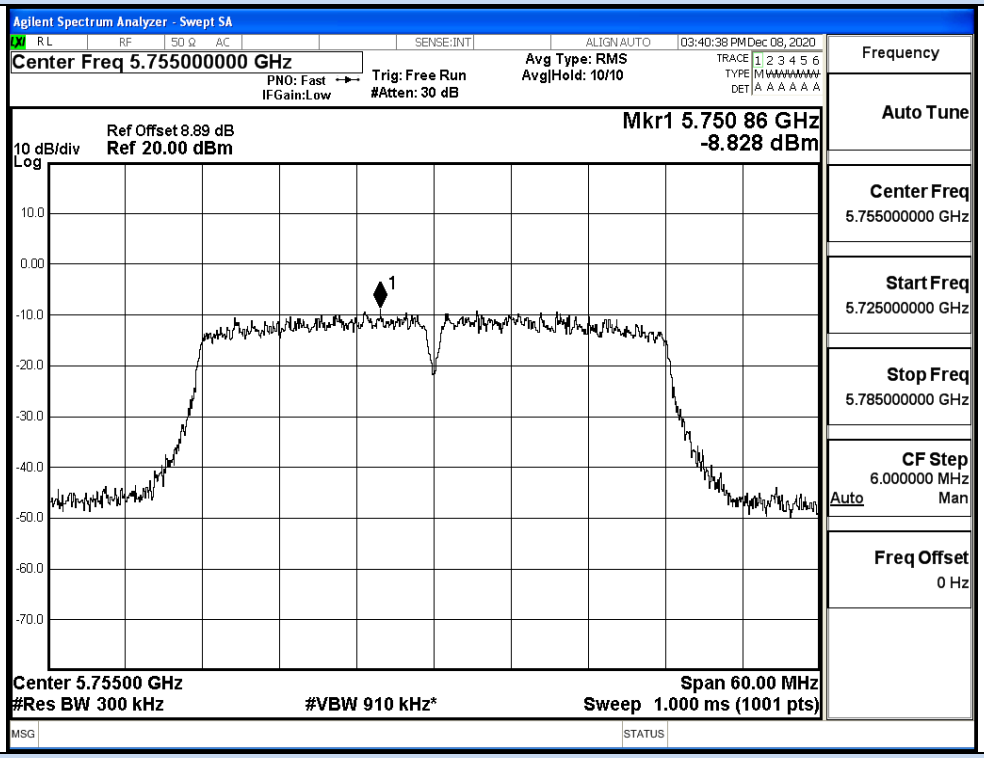


IEEE 802.11n20 / Channel 157 / 5785MHz

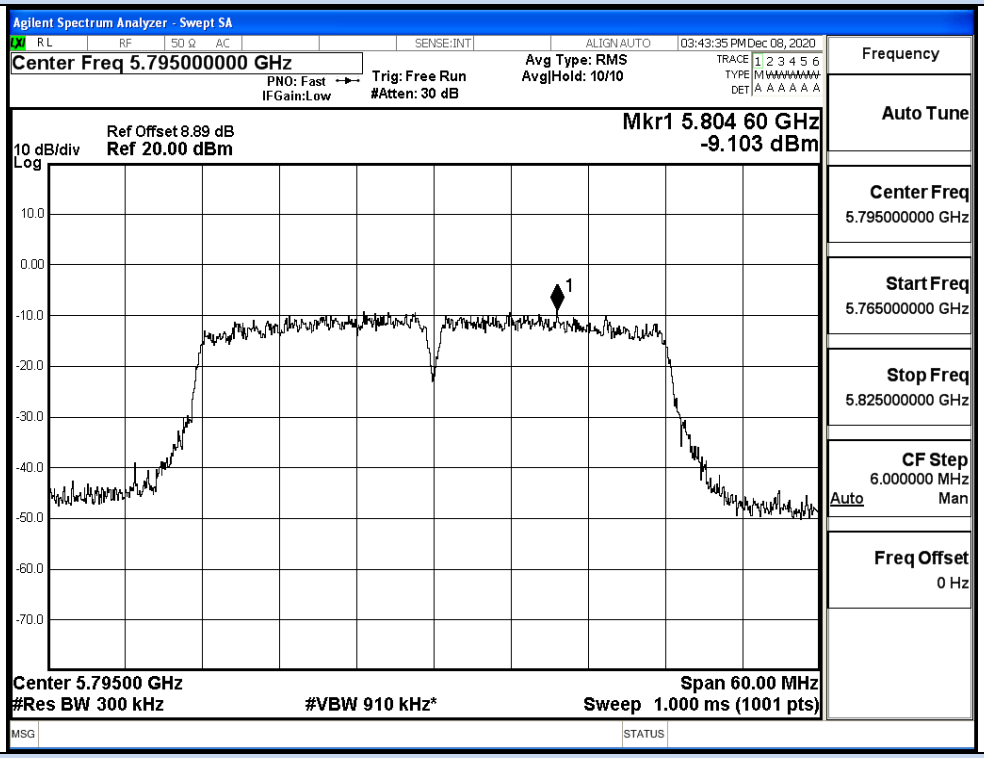


IEEE 802.11n20 / Channel 165 / 5825MHz

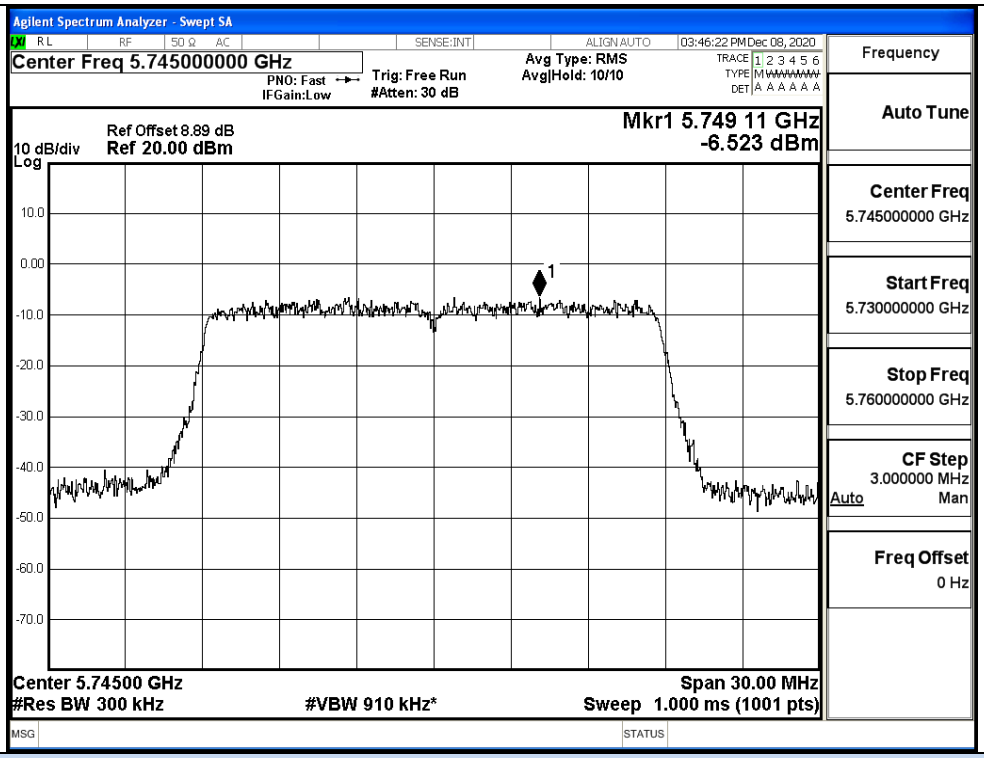
Power Spectral Density



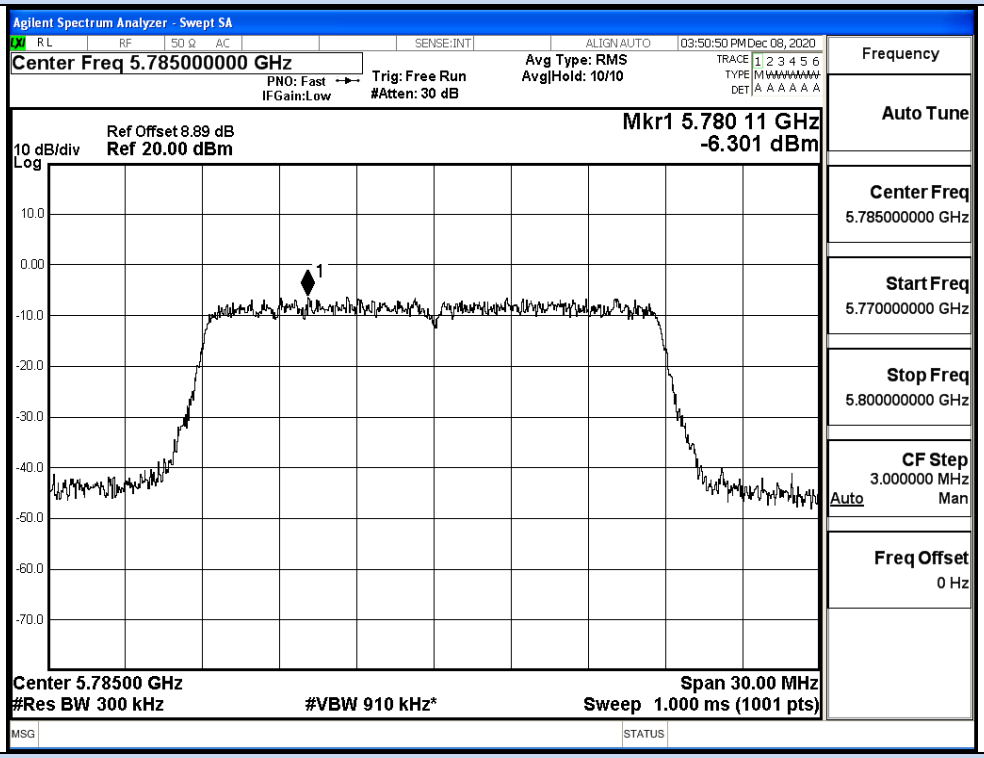
IEEE 802.11n40 / Channel 151 / 5755MHz



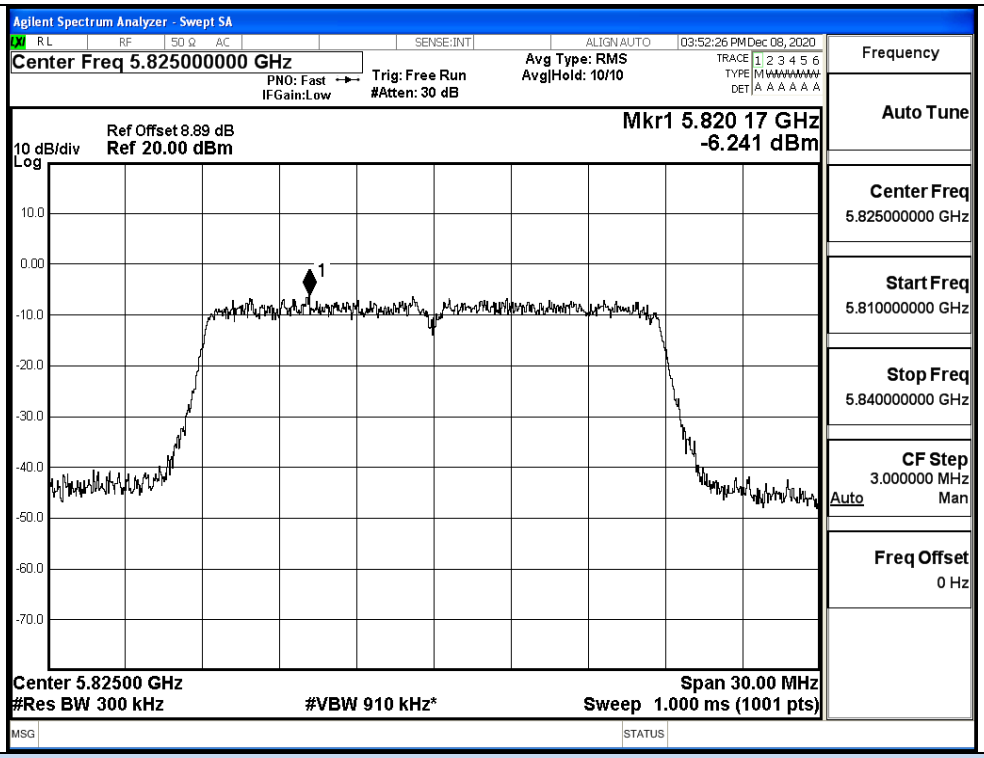
IEEE 802.11n40 / Channel 159 / 5795MHz



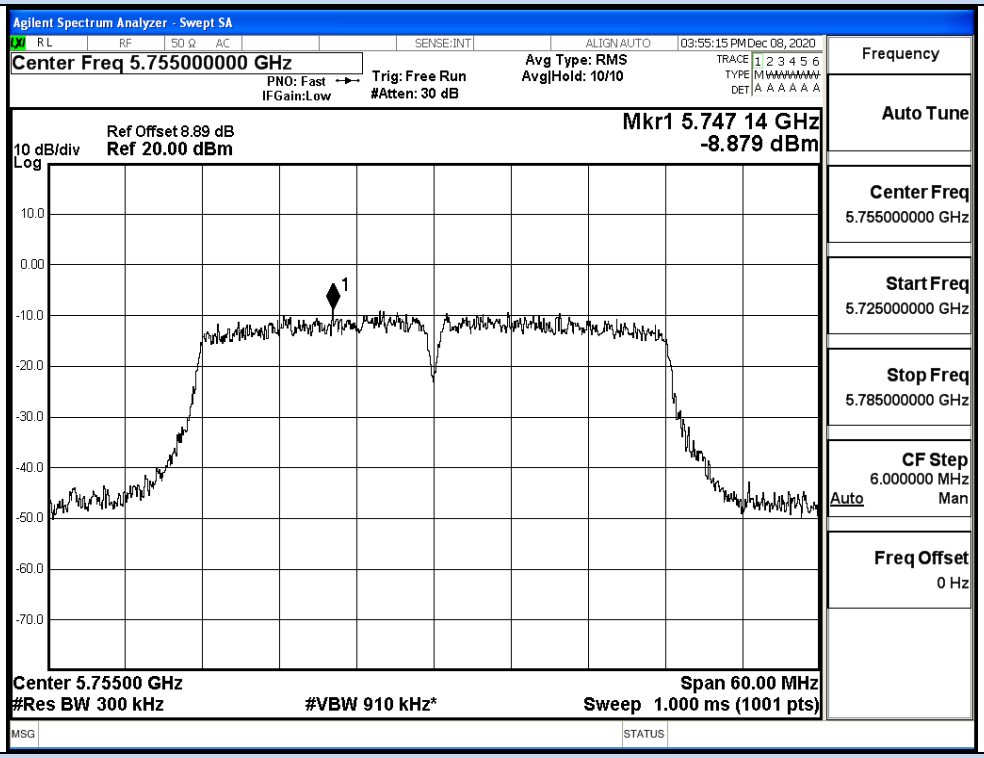
IEEE 802.11ac20 / Channel 149 / 5745MHz



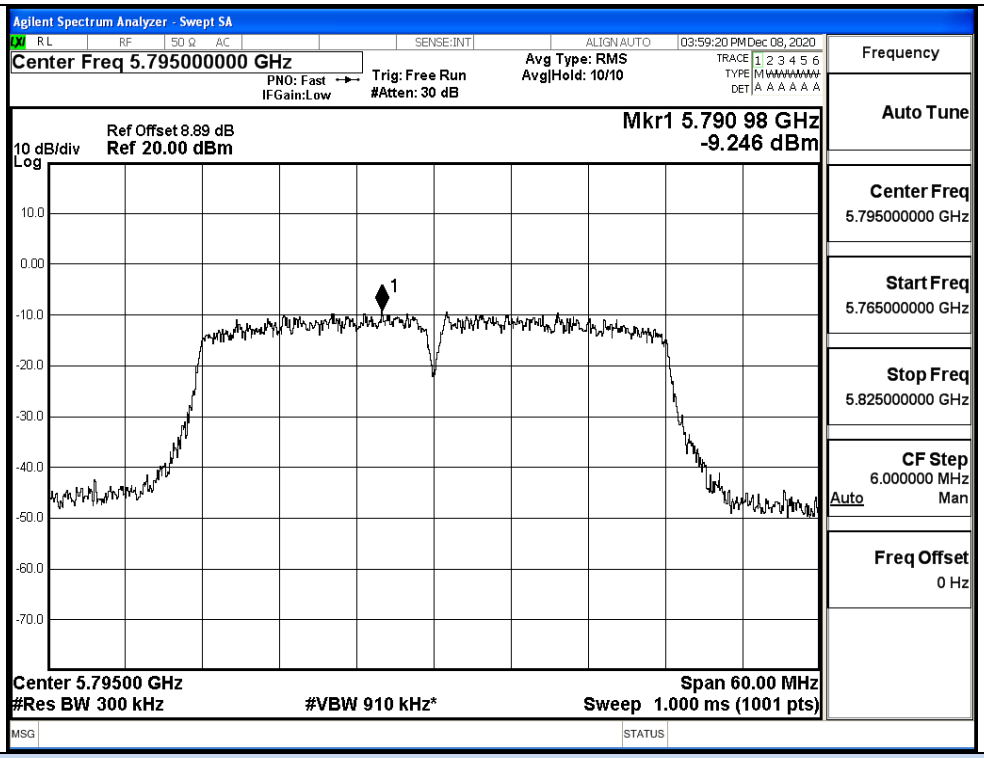
IEEE 802.11ac20 / Channel 157 / 5785MHz



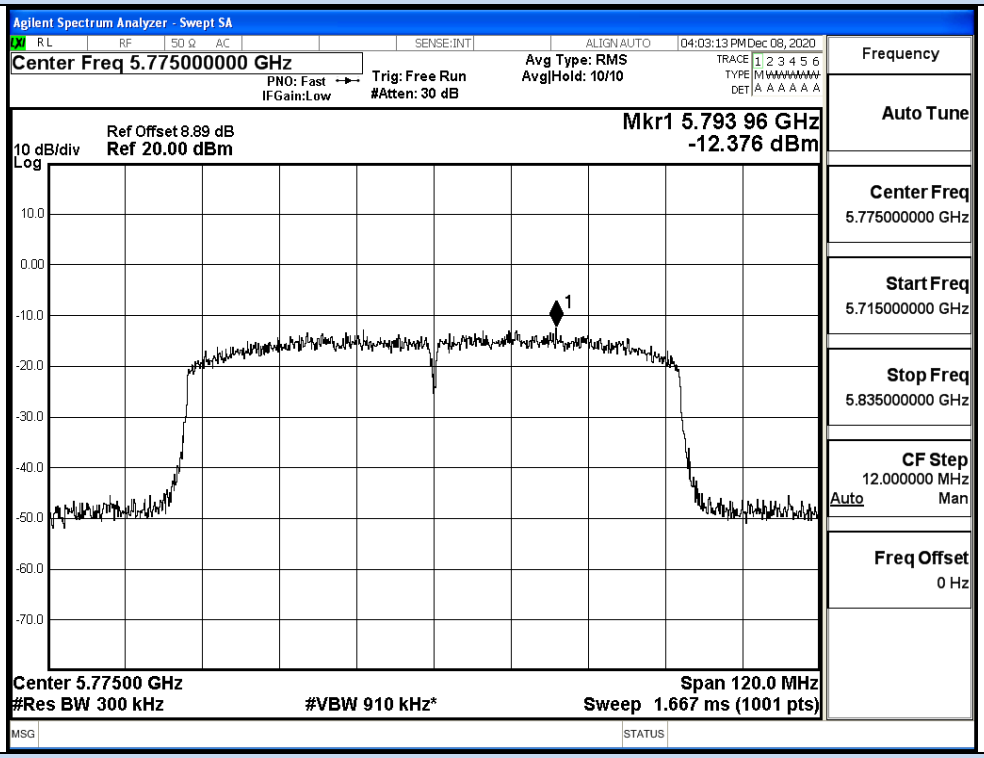
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz

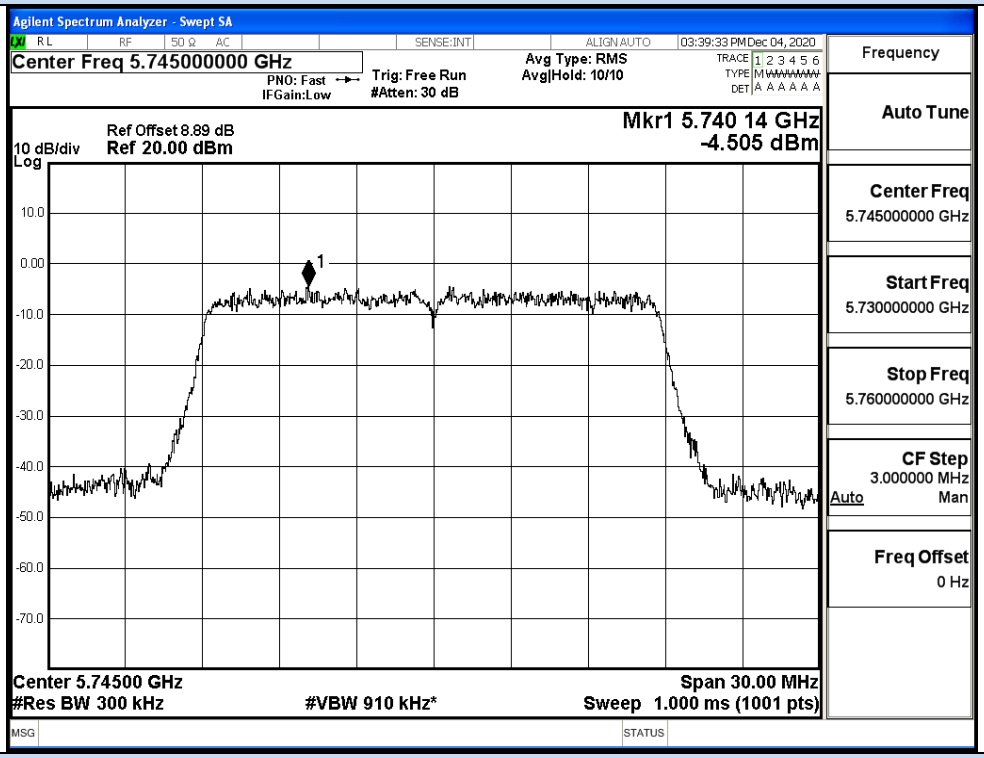


IEEE 802.11ac80 / Channel 155/ 5775MHz

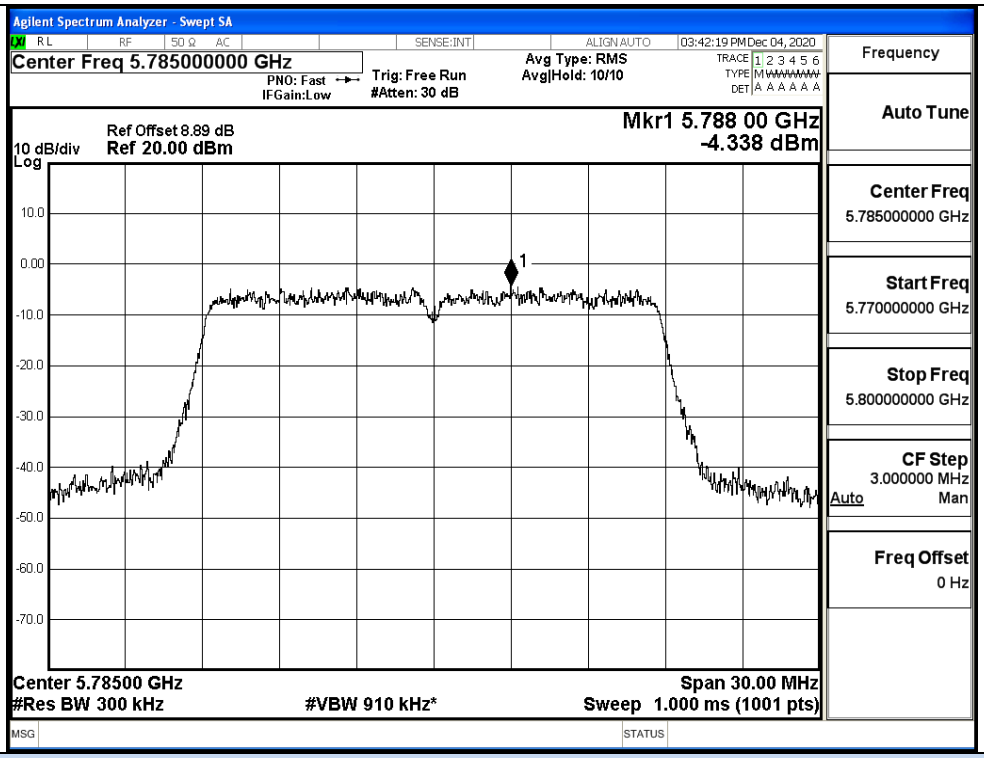
ANT1

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	-4.51	0	2.218	-2.29	30	Pass
	157	5785	-4.34	0	2.218	-2.12		Pass
	165	5825	-4.51	0	2.218	-2.29		Pass
11N20 SISO	149	5745	-4.65	0	2.218	-2.43	30	Pass
	157	5785	-4.03	0	2.218	-1.81		Pass
	165	5825	-4.35	0	2.218	-2.13		Pass
11N40 SISO	151	5755	-5.53	0	2.218	-3.31	30	Pass
	159	5795	-5.73	0	2.218	-3.51		Pass
11AC20 SISO	149	5745	-2.75	0	2.218	-0.53	30	Pass
	157	5785	-2.75	0	2.218	-0.53		Pass
	165	5825	-3.10	0	2.218	-0.88		Pass
11AC40 SISO	151	5755	-5.55	0	2.218	-3.33	30	Pass
	159	5795	-5.86	0	2.218	-3.64		Pass
11AC80 SISO	155	5775	-9.81	0	2.218	-7.60	30	Pass

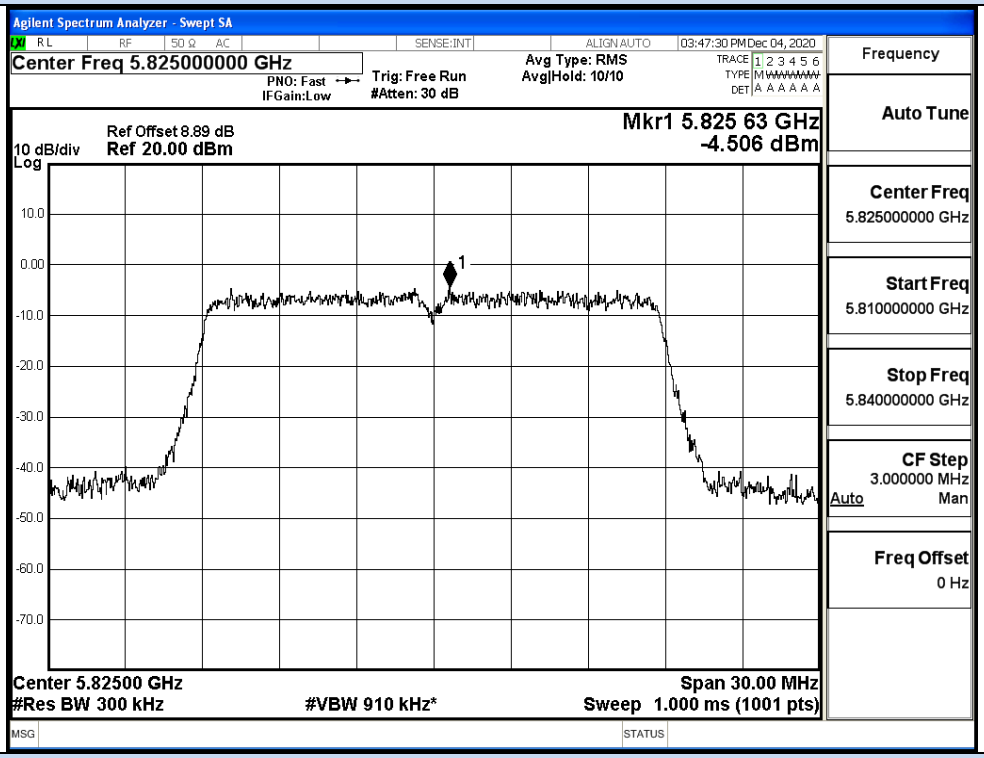
Power Spectral Density



IEEE 802.11a / Channel 149 / 5745MHz

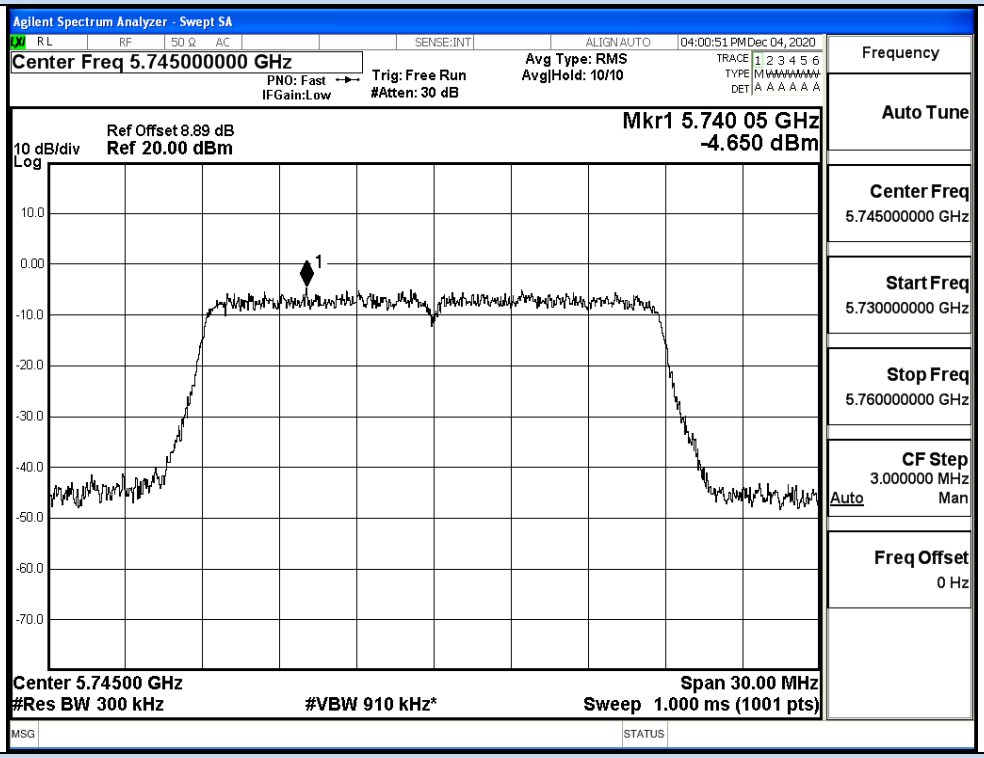


IEEE 802.11na / Channel 157 / 5785MHz

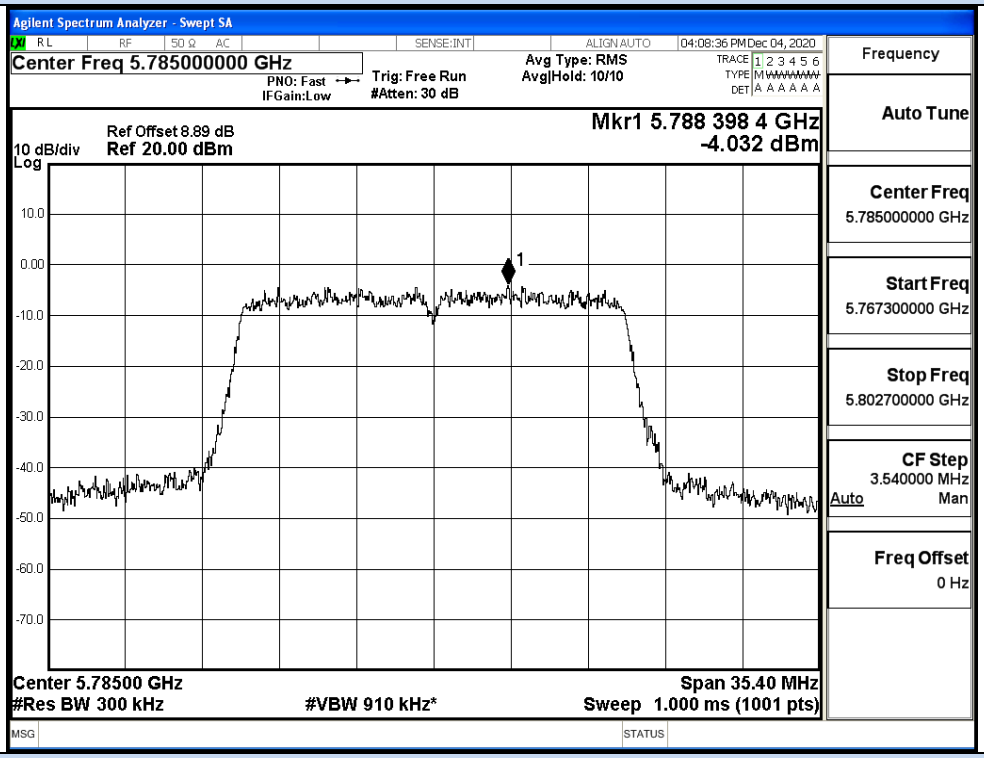


IEEE 802.11na / Channel 165 / 5825MHz

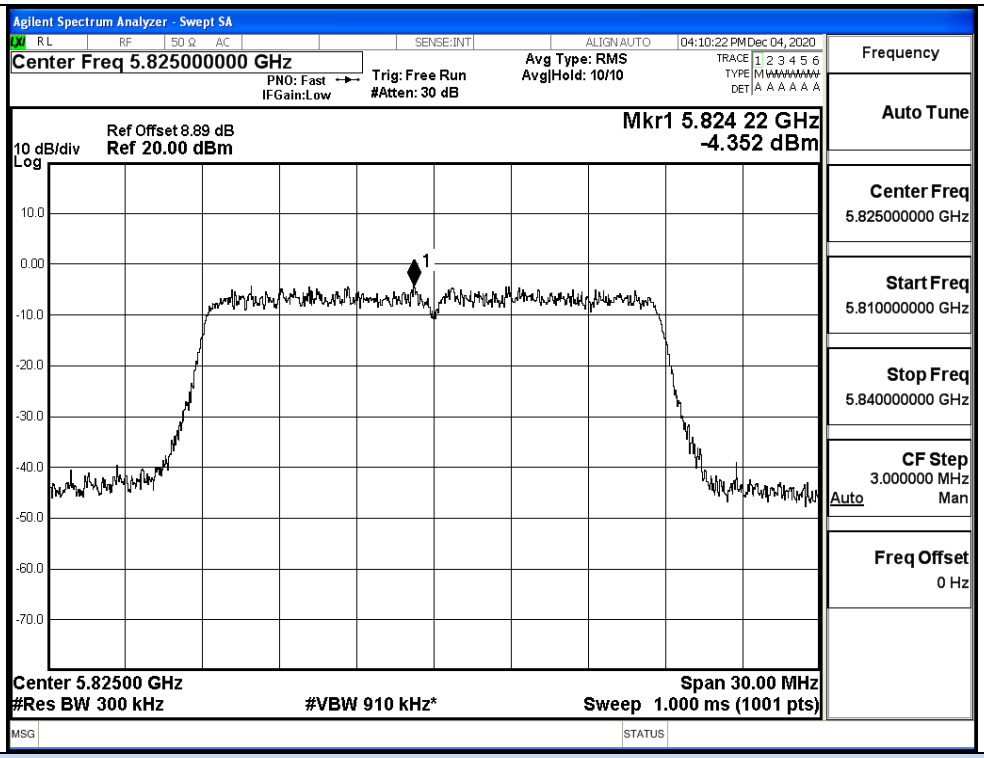
Power Spectral Density



IEEE 802.11n20 / Channel 149 / 5745MHz

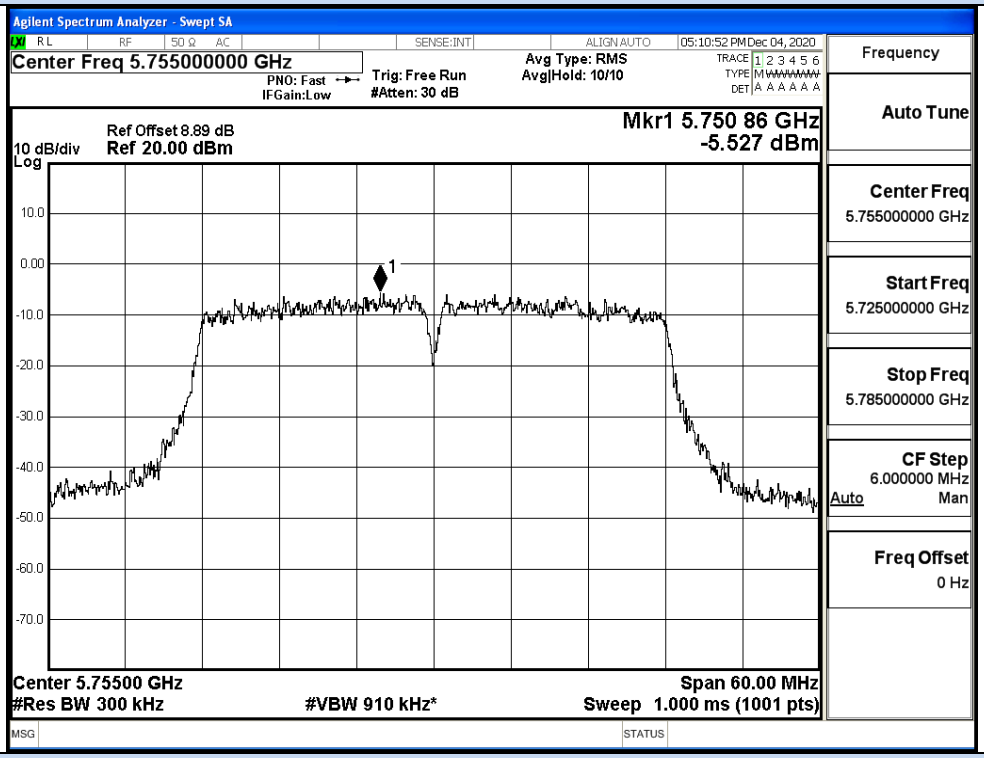


IEEE 802.11n20 / Channel 157 / 5785MHz

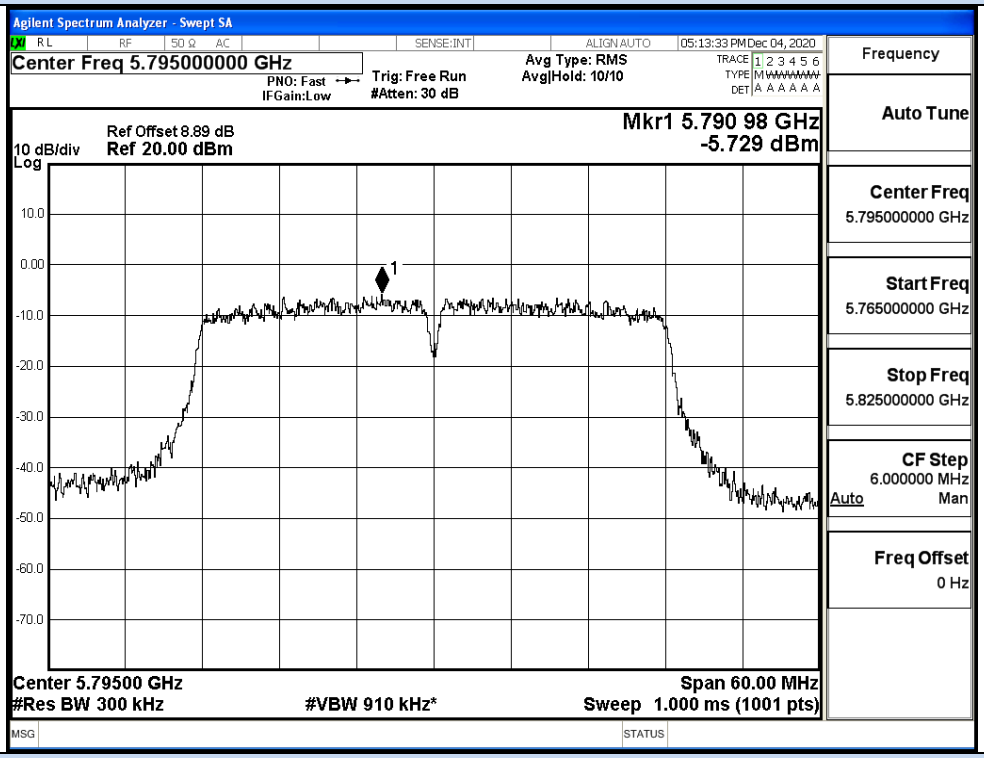


IEEE 802.11n20 / Channel 165 / 5825MHz

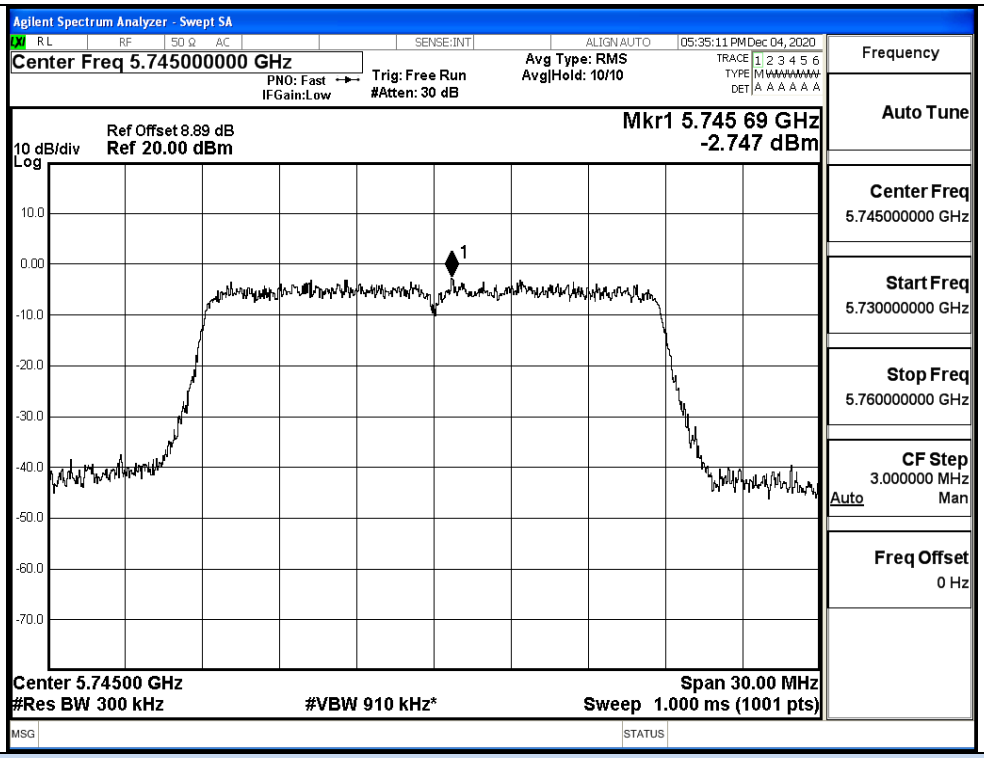
Power Spectral Density



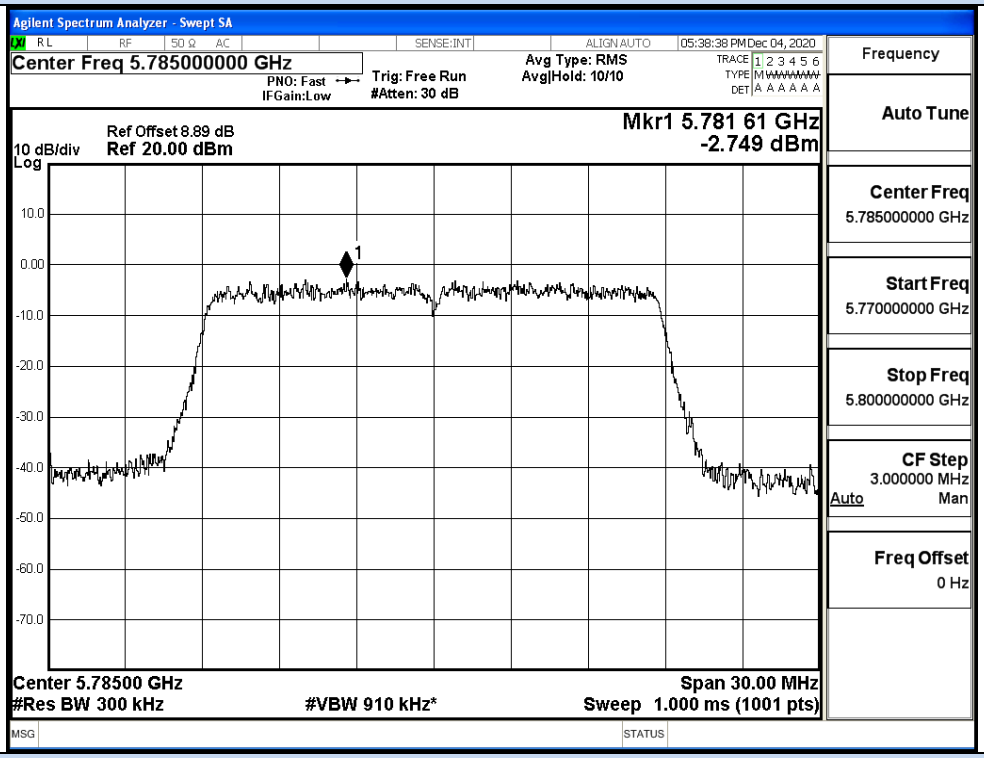
IEEE 802.11n40 / Channel 151 / 5755MHz



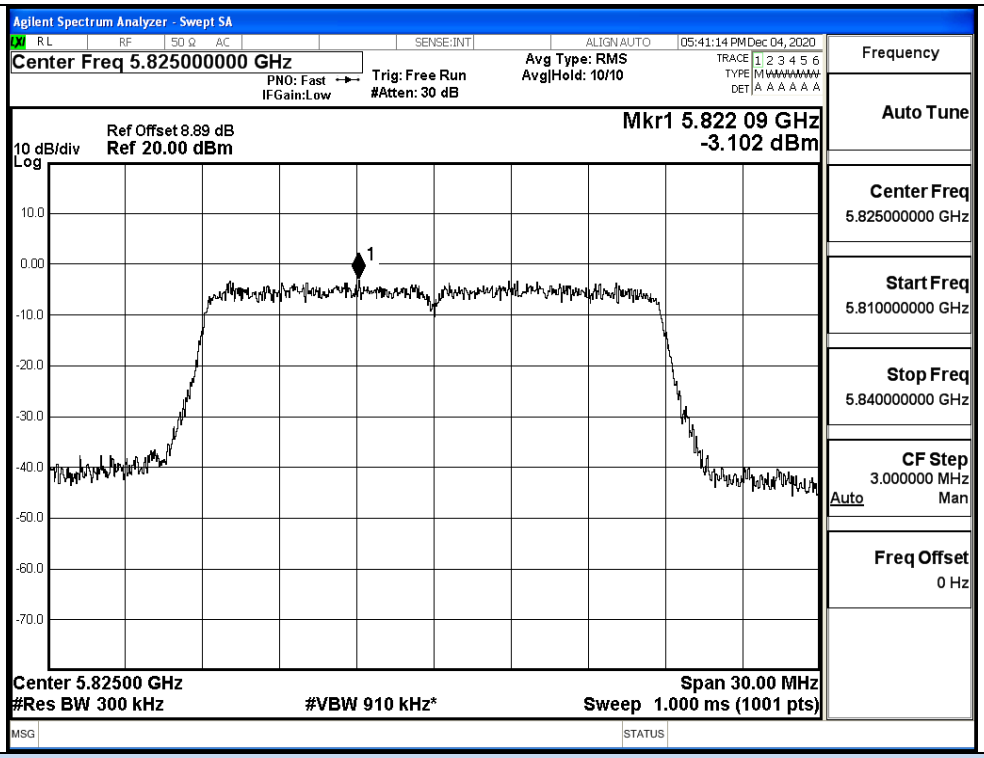
IEEE 802.11n40 / Channel 159 / 5795MHz



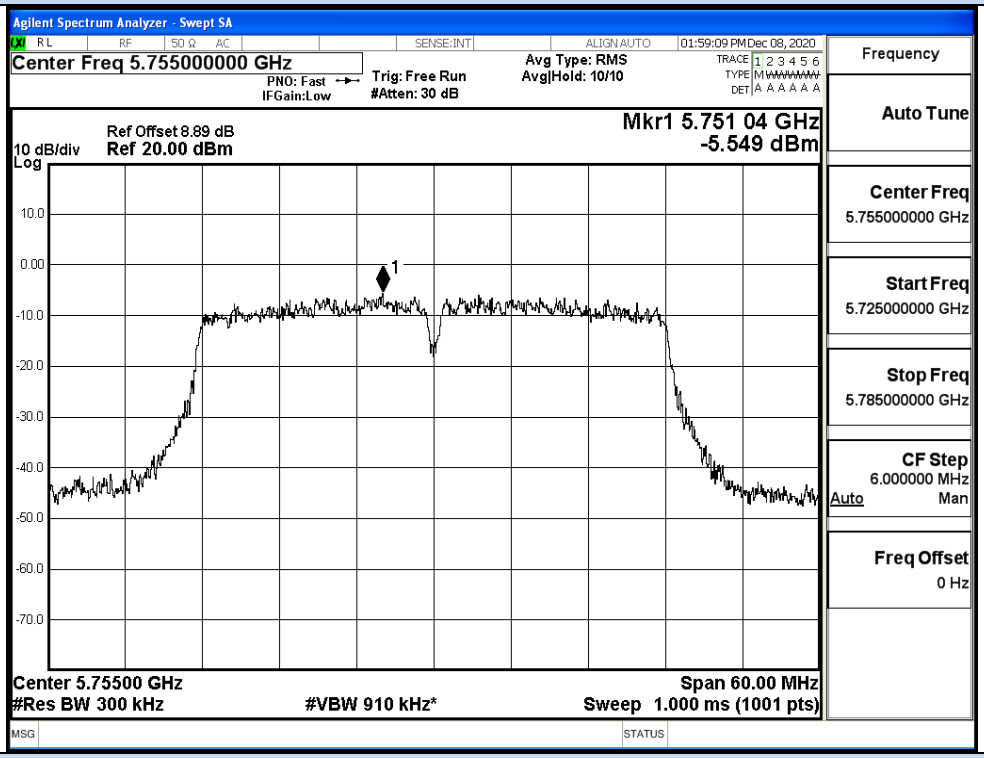
IEEE 802.11ac20 / Channel 149 / 5745MHz



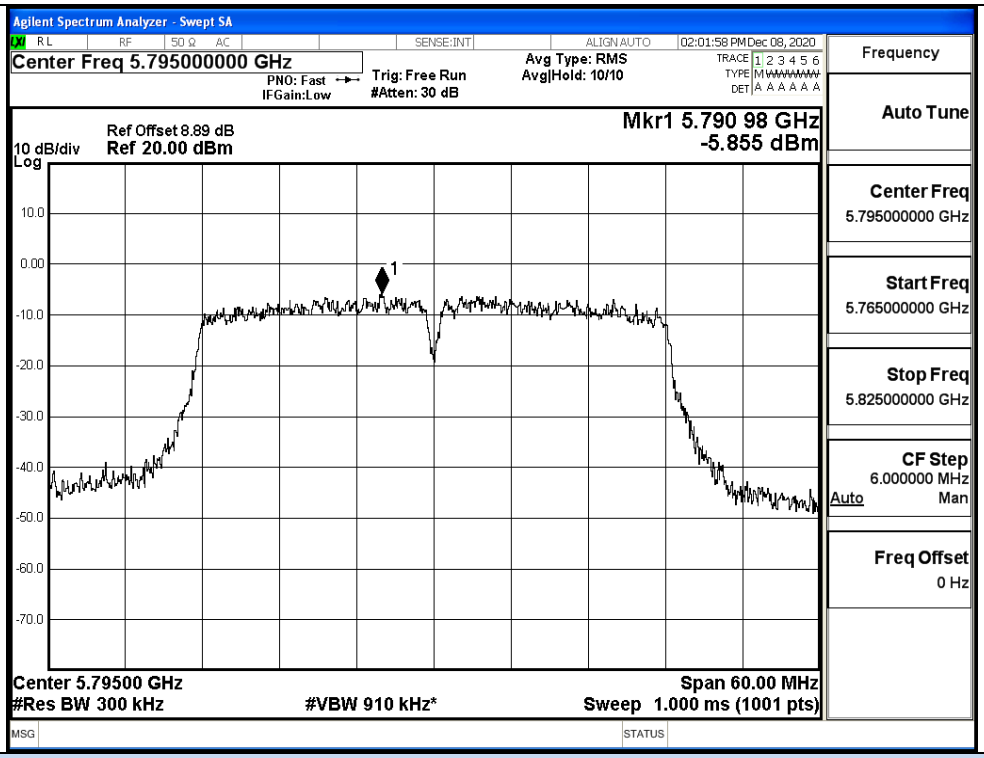
IEEE 802.11ac20 / Channel 157 / 5785MHz



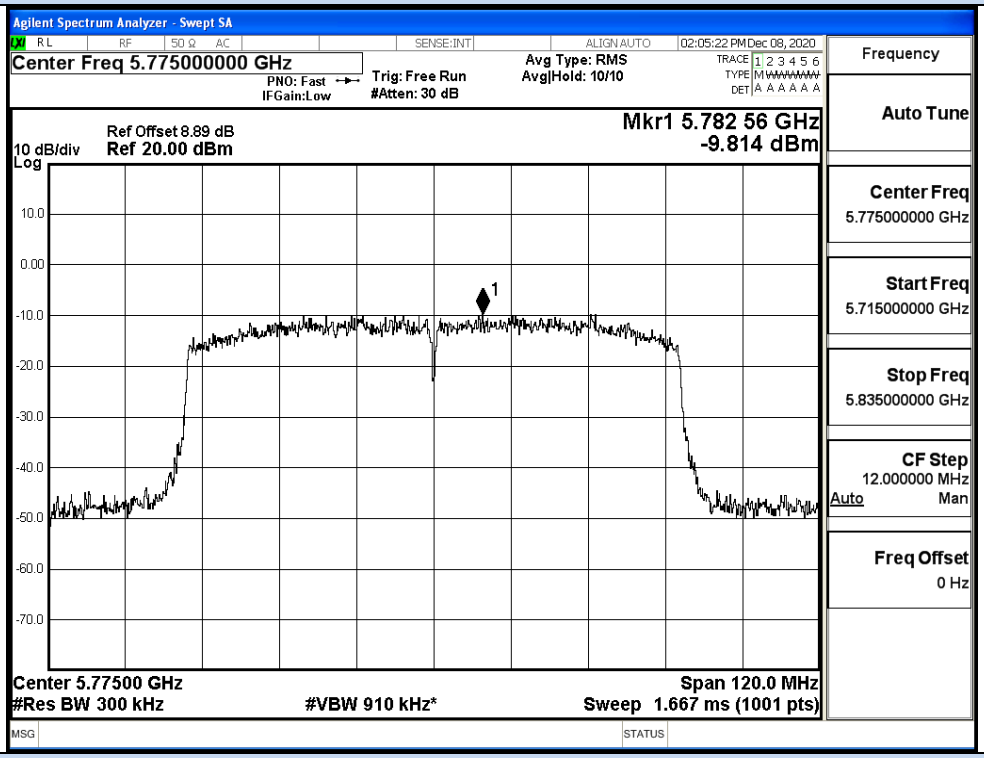
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz



IEEE 802.11ac80 / Channel 155/ 5775MHz

MIMO

Test Mode	Channel	Frequency (MHz)	ANT 0 Power Density (dBm/300KHz)	ANT 1 Power Density (dBm/300KHz)	MIMO Power Density (dBm/300KHz)	Duty Cycle Factor (dB)	RBW Factor (dB)	Report Power Density (dBm/500KHz)	10log(N-3)dB	Report Power Density (dBm/500KHz)	Report Power Density (dBm/500KHz)	Verdict
11N20	149	5745	-6.44	-4.51	-2.36	0	2.218	-0.14	3.01	2.87	29.99	Pass
	157	5785	-6.19	-4.34	-2.16	0	2.218	0.06	3.01	3.07		Pass
	165	5825	-5.97	-4.51	-2.17	0	2.218	0.05	3.01	3.06		Pass
11N40	151	5755	-8.83	-4.65	-3.25	0	2.218	-1.03	3.01	1.98	29.99	Pass
	159	5795	-9.10	-4.03	-2.85	0	2.218	-0.64	3.01	2.37		Pass
11AC20	149	5745	-6.52	-4.35	-2.29	0	2.218	-0.07	3.01	2.94	29.99	Pass
	157	5785	-6.30	-5.53	-2.89	0	2.218	-0.67	3.01	2.34		Pass
	165	5825	-6.24	-5.73	-2.97	0	2.218	-0.75	3.01	2.26		Pass
11AC40	151	5755	-8.88	-2.75	-1.80	0	2.218	0.42	3.01	3.43	29.99	Pass
	159	5795	-9.25	-2.75	-1.87	0	2.218	0.35	3.01	3.36		Pass
11AC80	155	5775	-12.38	-3.10	-2.62	0	2.218	-0.40	3.01	2.61	29.99	Pass

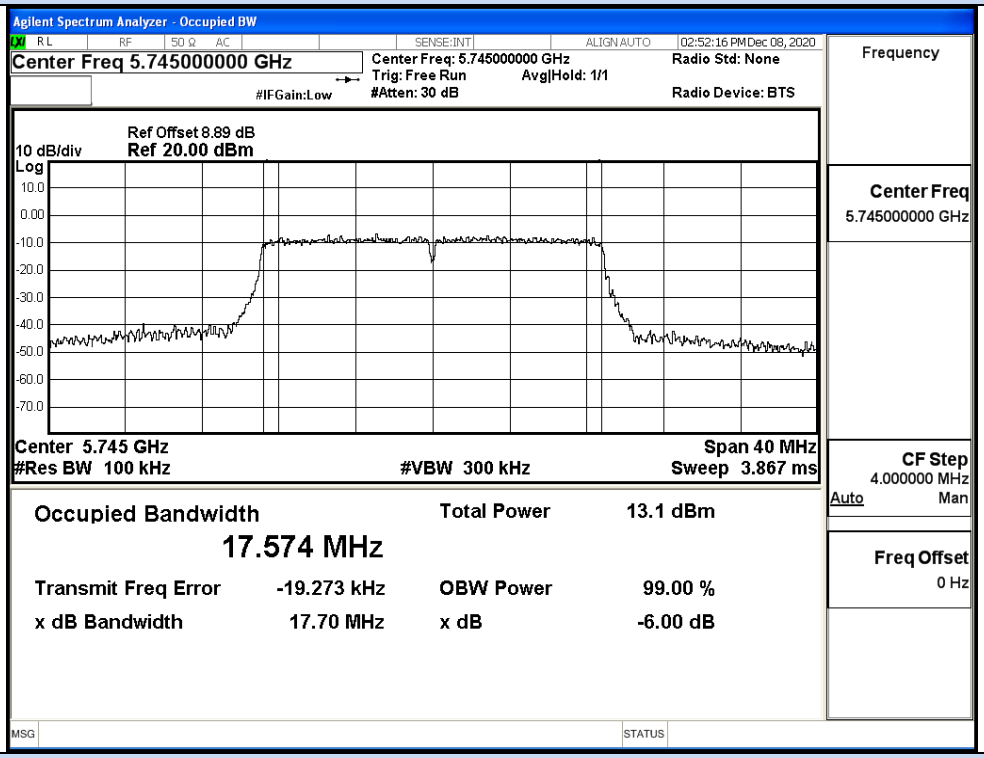
Directional gain=3dBi+10 log (2) = 6.01dBi > 6dBi, So the power density limit shall be reduced to 30-(6.01-6) = 29.99

D.4 Emission Bandwidth

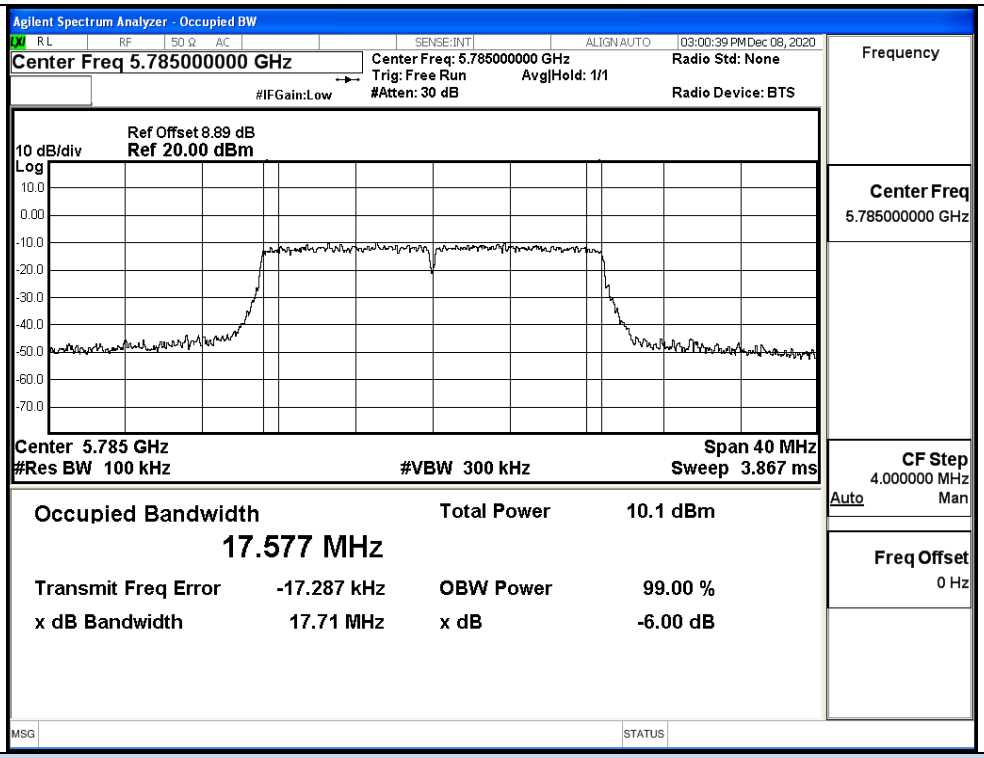
ANT0

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Verdict
11A	149	5745	17.70	17.551	>=0.5	Pass
	157	5785	17.71	17.552		Pass
	165	5825	17.70	17.551		Pass
11N20 SISO	149	5745	17.71	17.546	>=0.5	Pass
	157	5785	17.72	17.549		Pass
	165	5825	17.70	17.551		Pass
11N40 SISO	151	5755	36.44	36.021	>=0.5	Pass
	159	5795	36.41	36.011		Pass
11AC20S ISO	149	5745	17.72	17.555	>=0.5	Pass
	157	5785	17.70	17.547		Pass
	165	5825	17.75	17.543		Pass
11AC40S ISO	151	5755	36.44	36.032	>=0.5	Pass
	159	5795	36.42	36.015		Pass
11AC80S ISO	155	5775	75.84	74.727	>=0.5	Pass

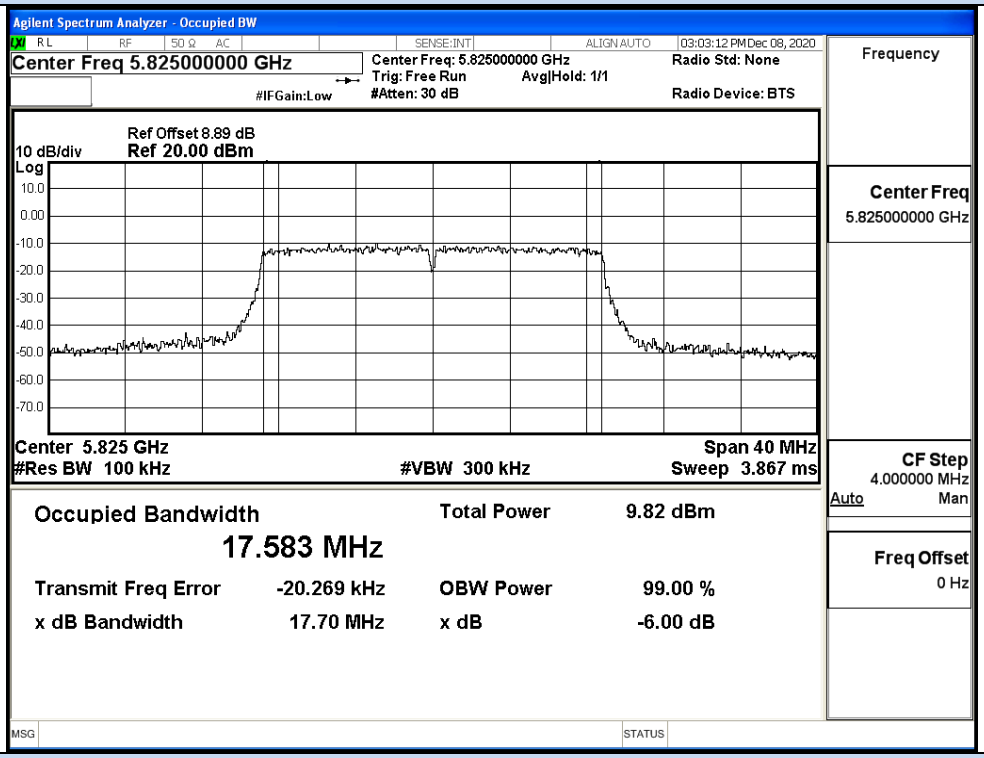
6dB Bandwidth



IEEE 802.11a / Channel 149 / 5745MHz

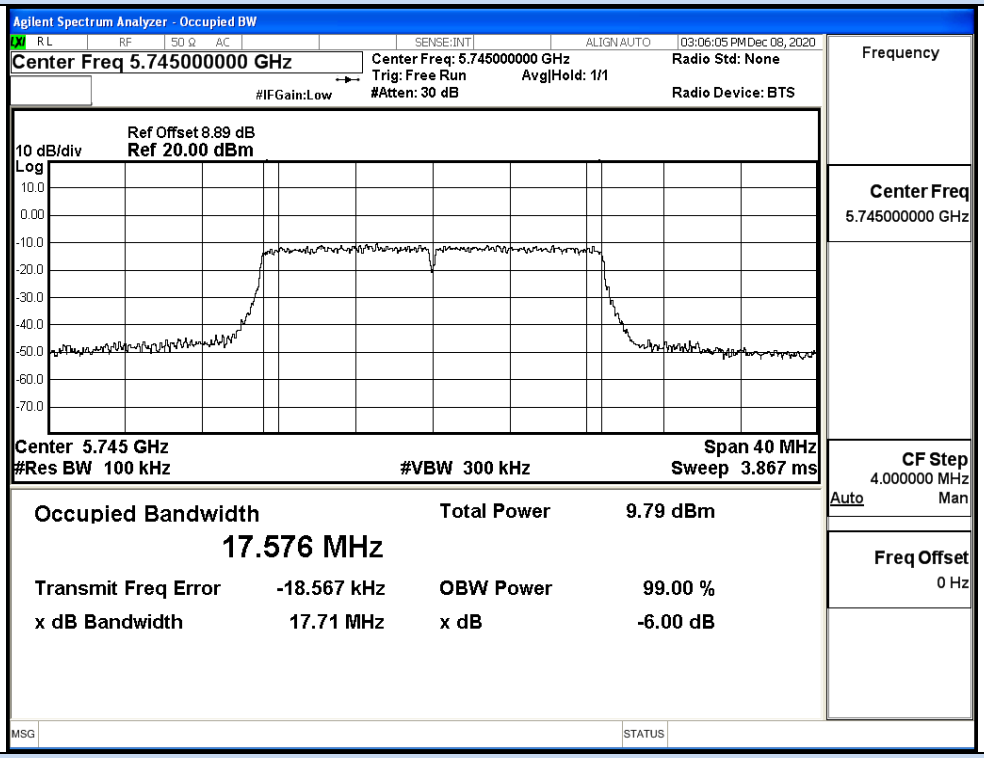


IEEE 802.11a / Channel 157 / 5785MHz

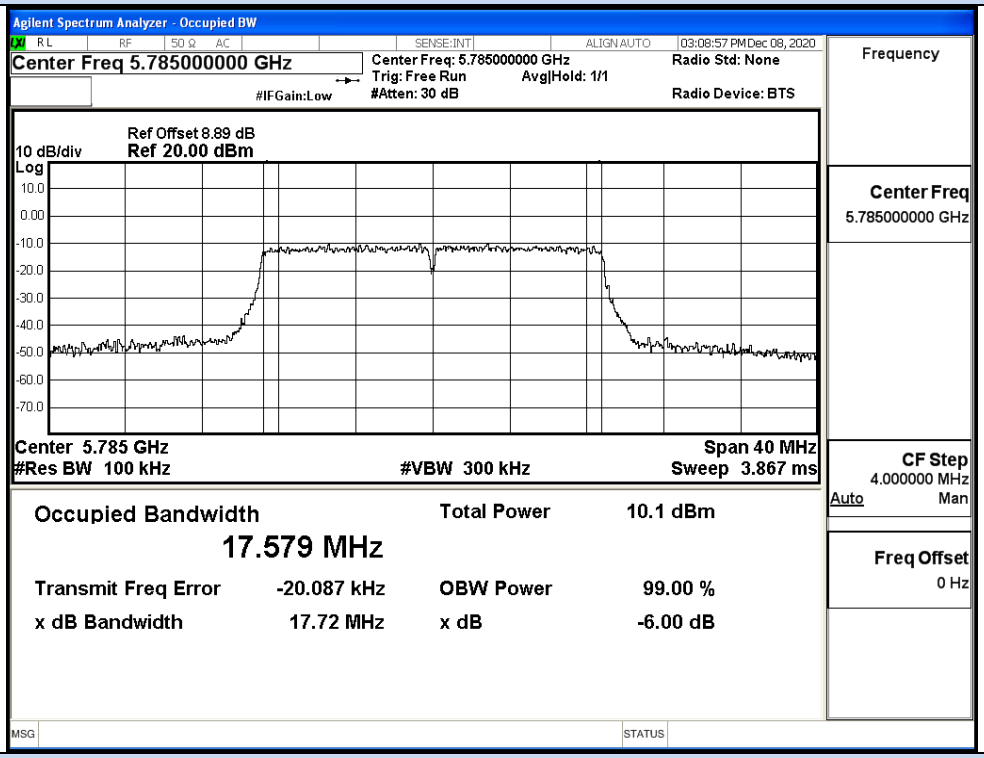


IEEE 802.11a / Channel 165 / 5825MHz

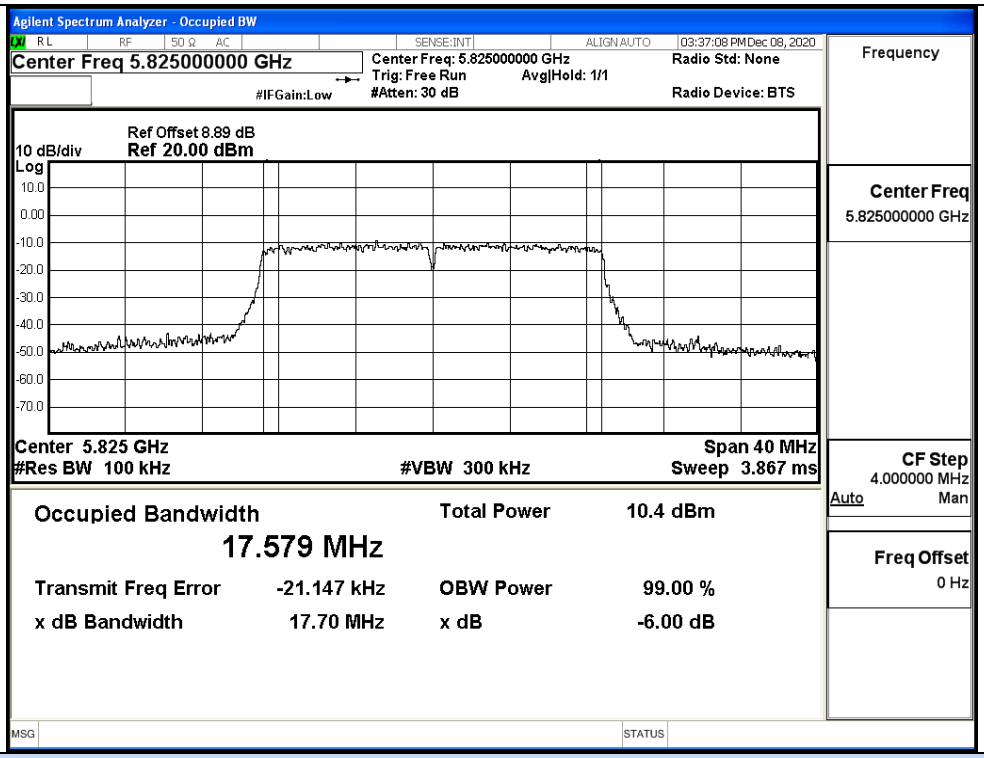
6dB Bandwidth



IEEE 802.11n20 / Channel 149 / 5745MHz

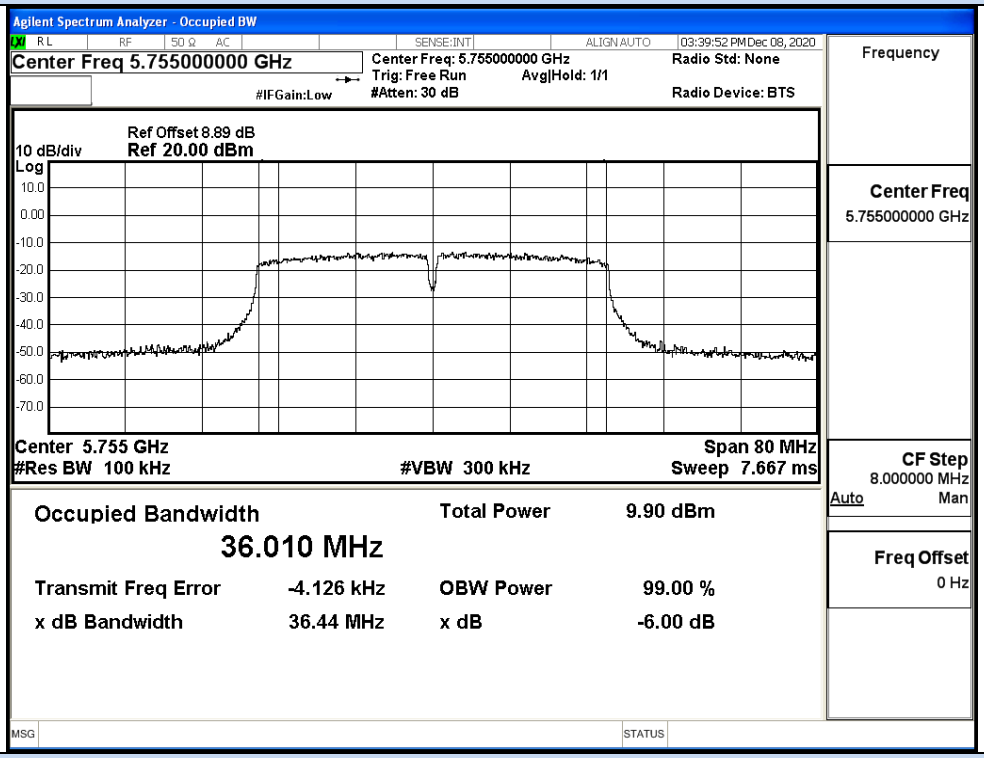


IEEE 802.11n20 / Channel 157 / 5785MHz

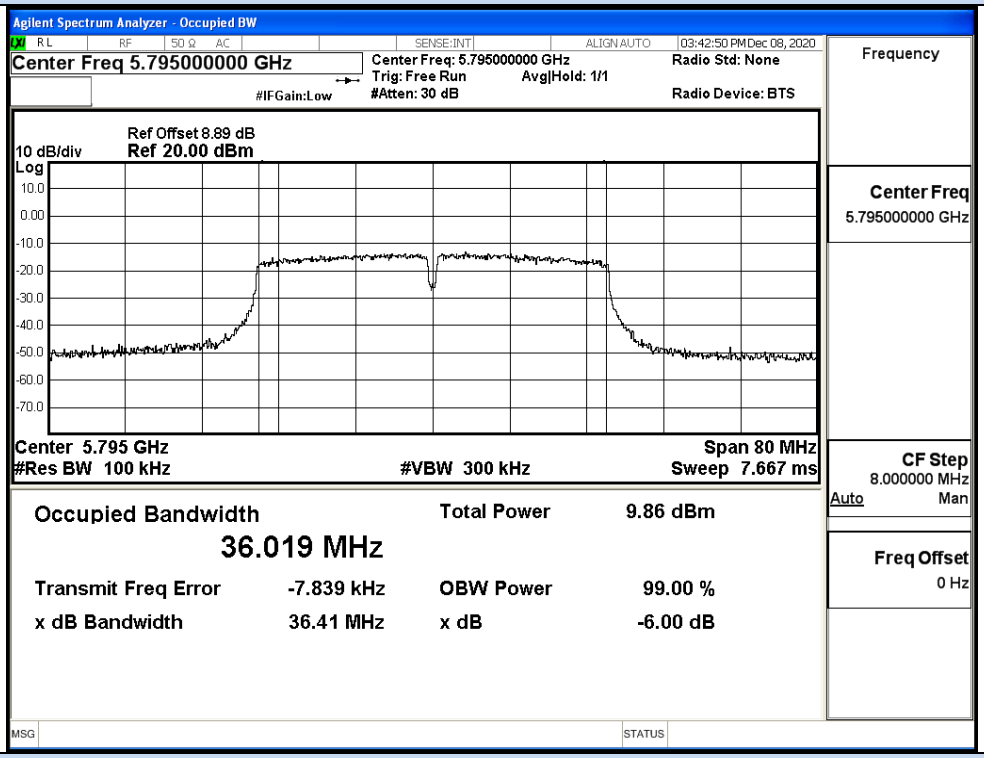


IEEE 802.11n20 / Channel 165 / 5825MHz

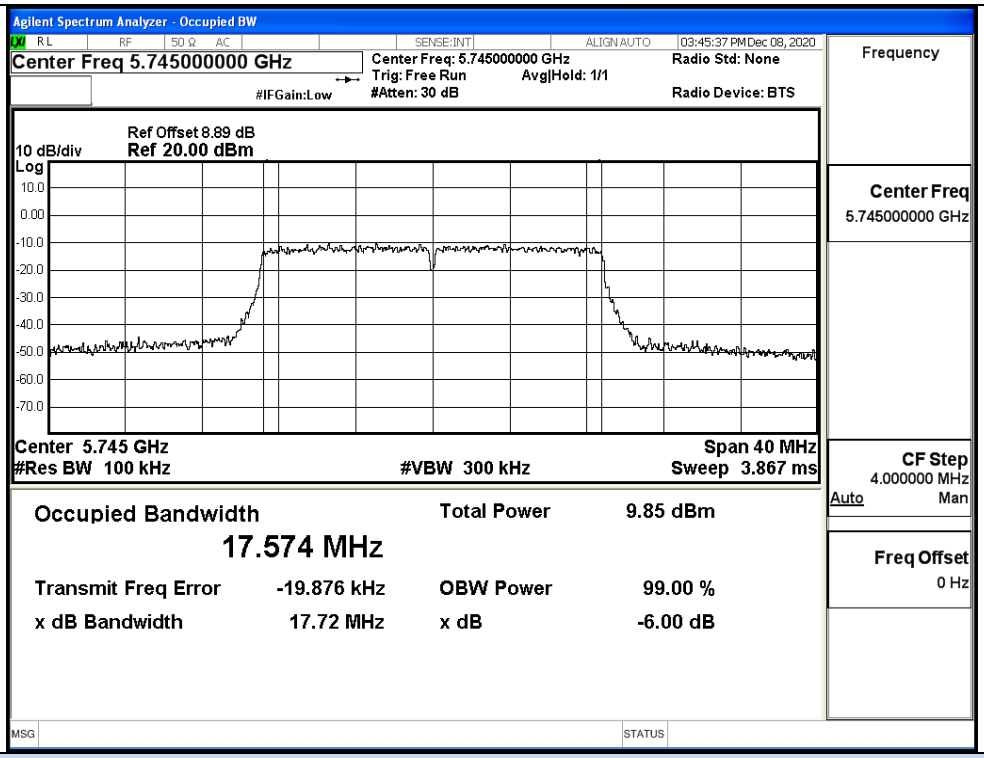
6dB Bandwidth



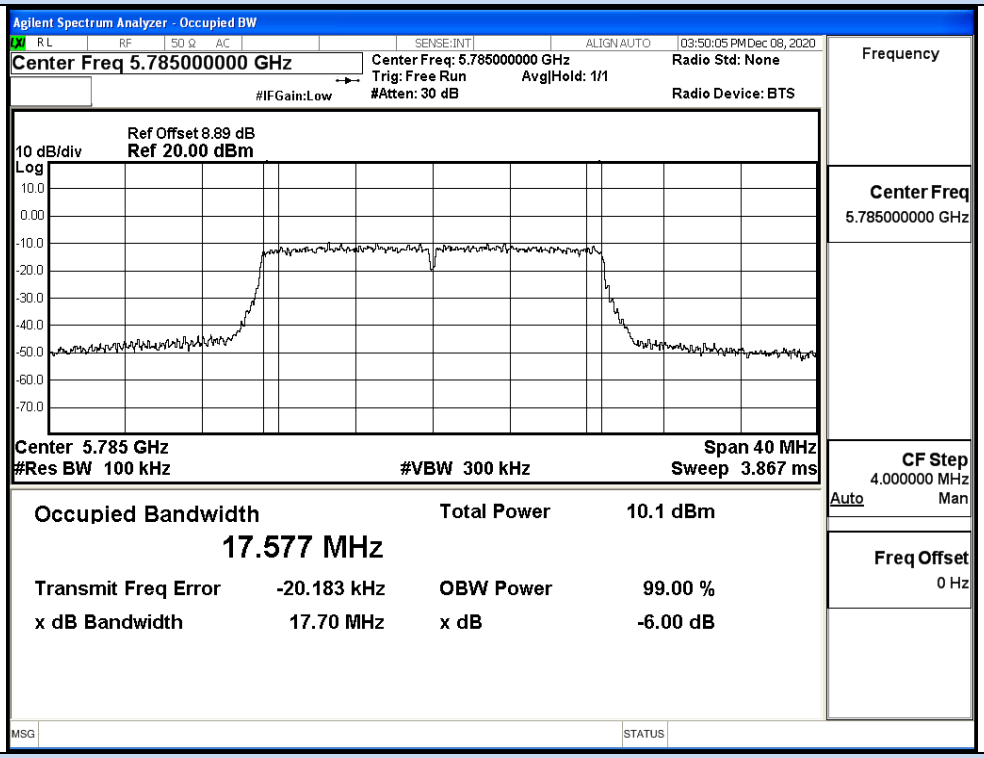
IEEE 802.11n40 / Channel 151 / 5755MHz



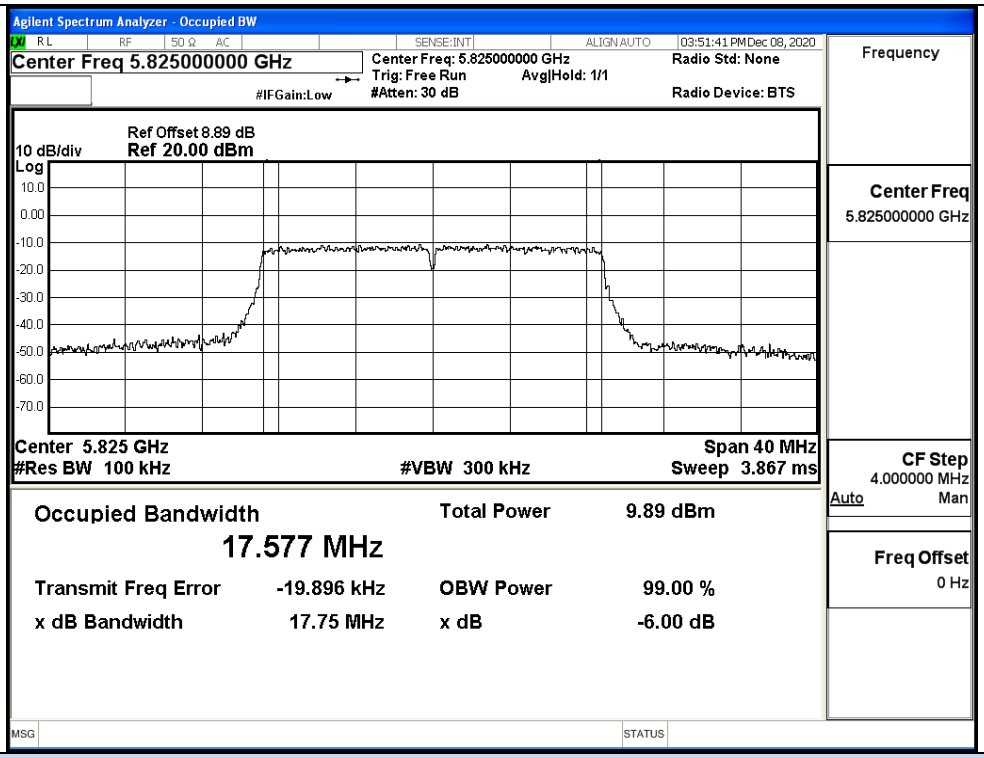
IEEE 802.11n40 / Channel 159 / 5795MHz



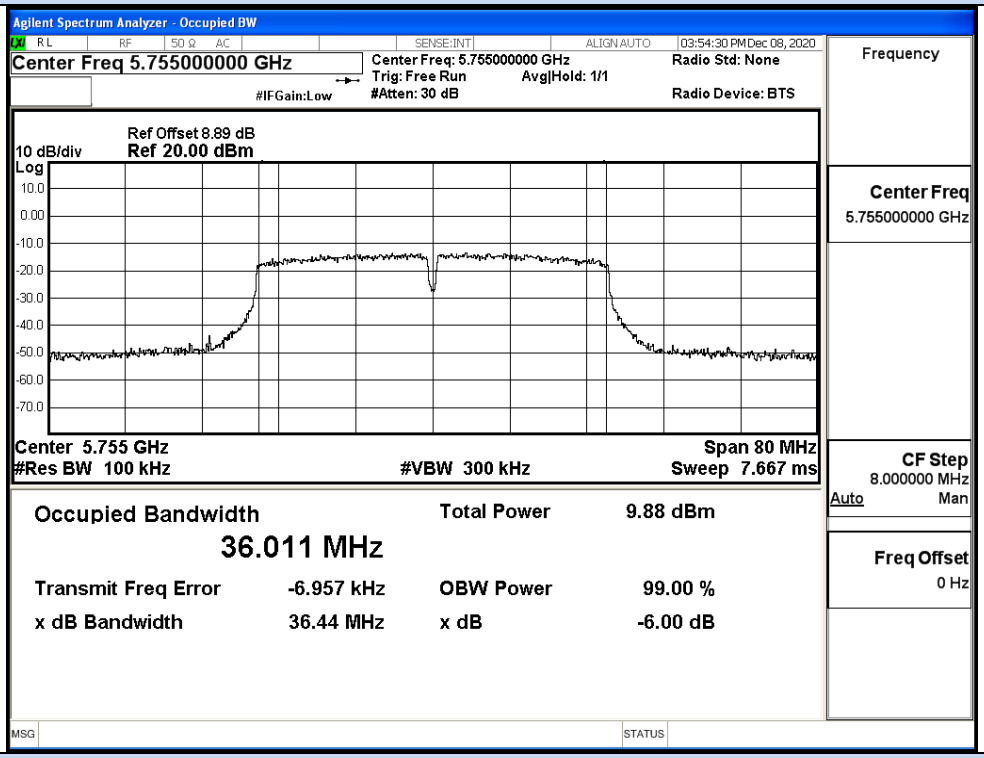
IEEE 802.11ac20 / Channel 149 / 5745MHz



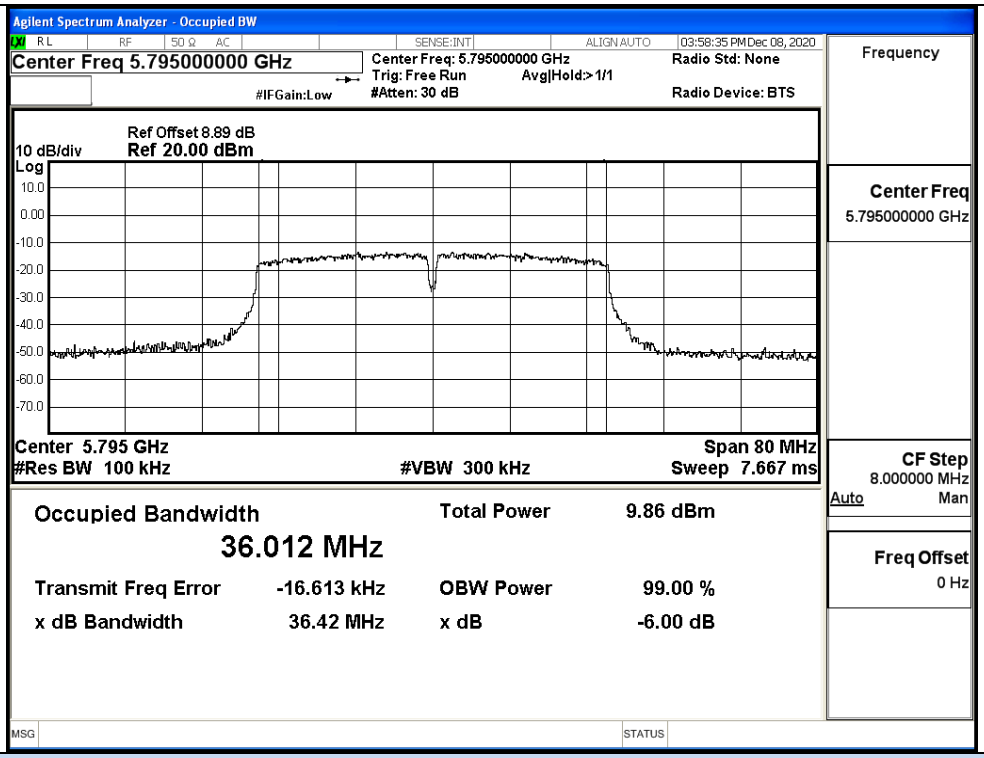
IEEE 802.11ac20 / Channel 157/ 5785MHz



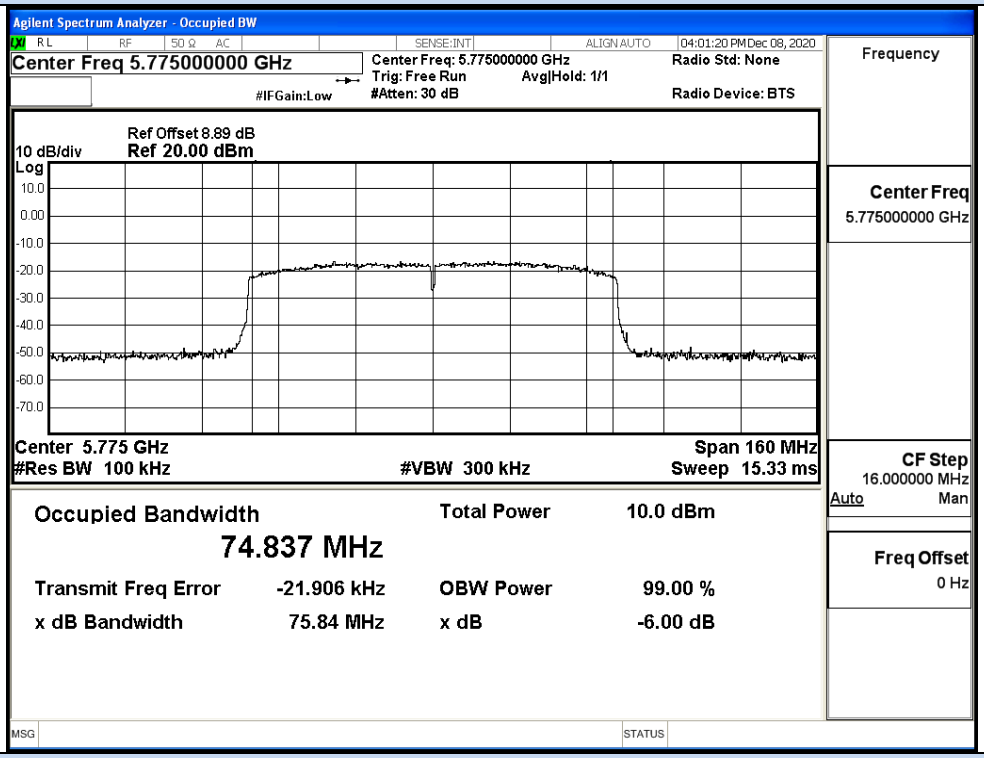
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz

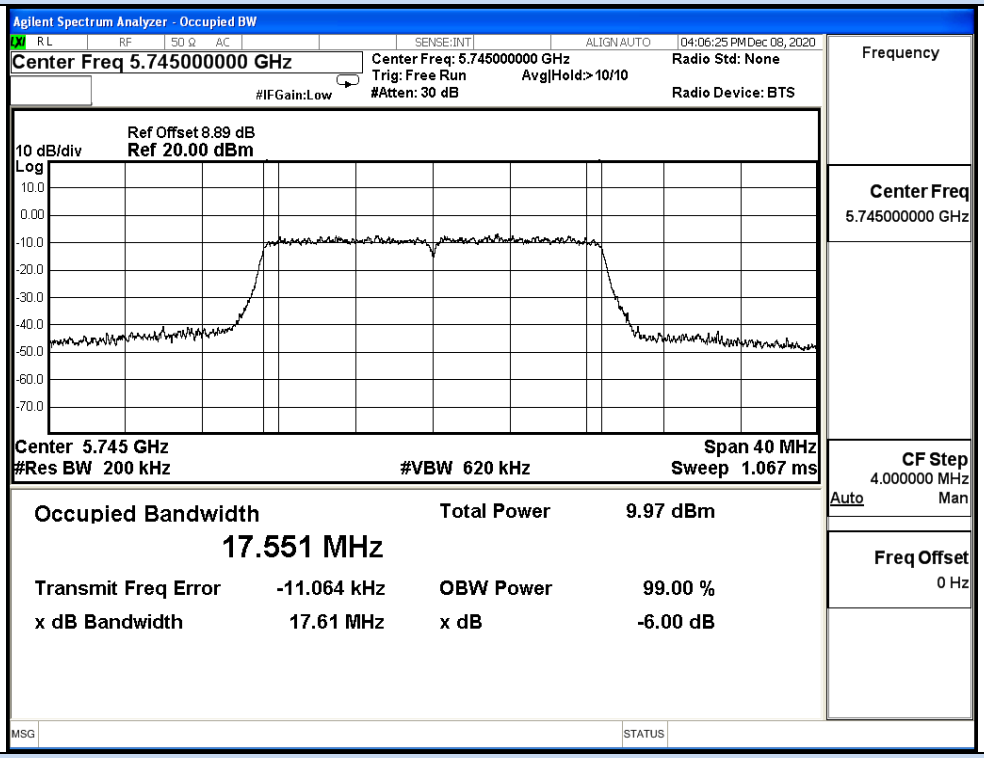


IEEE 802.11ac40 / Channel 159 / 5795MHz

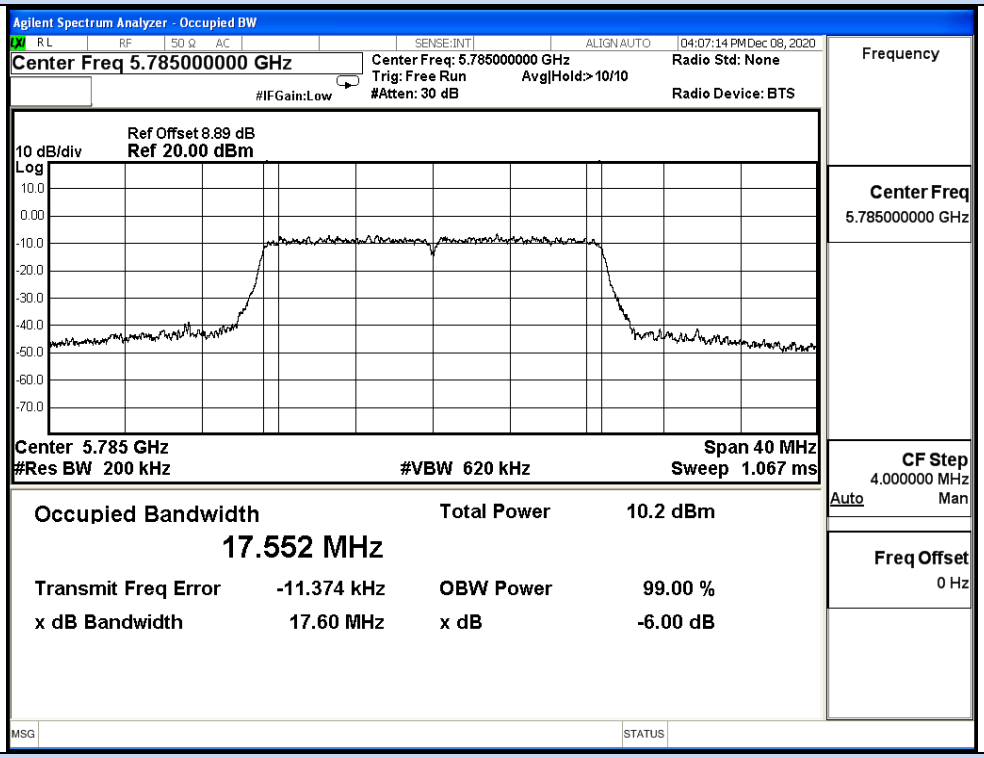


IEEE 802.11ac80 / Channel 155 / 5775MHz

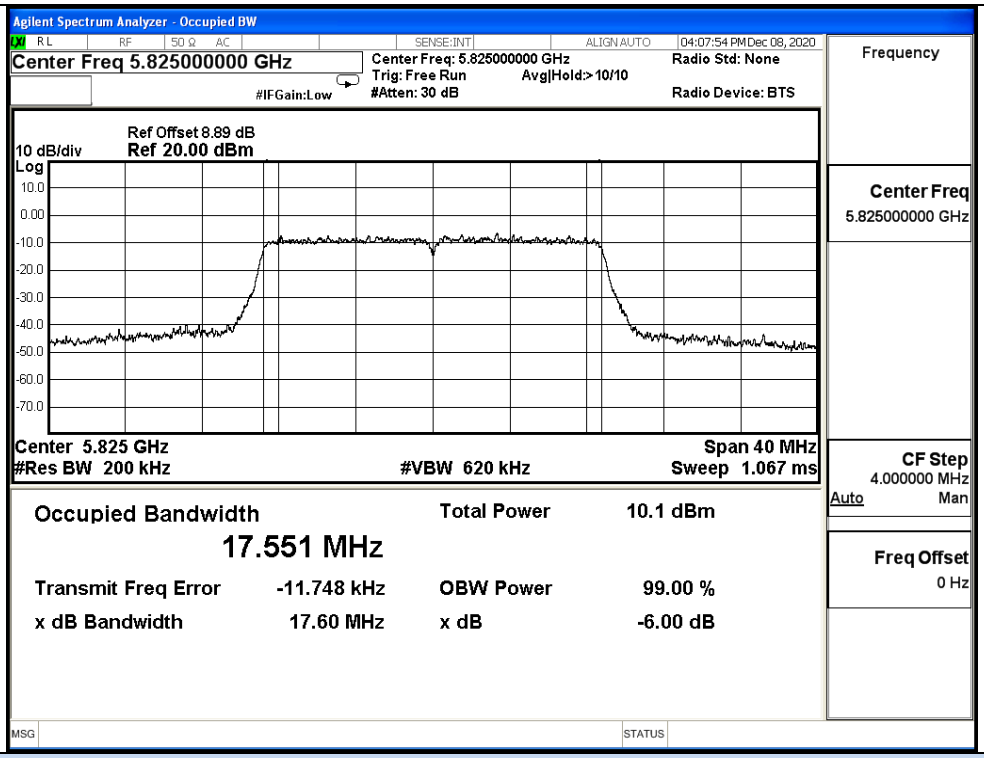
99% Occupied Bandwidth



IEEE 802.11a / Channel 149 / 5745MHz

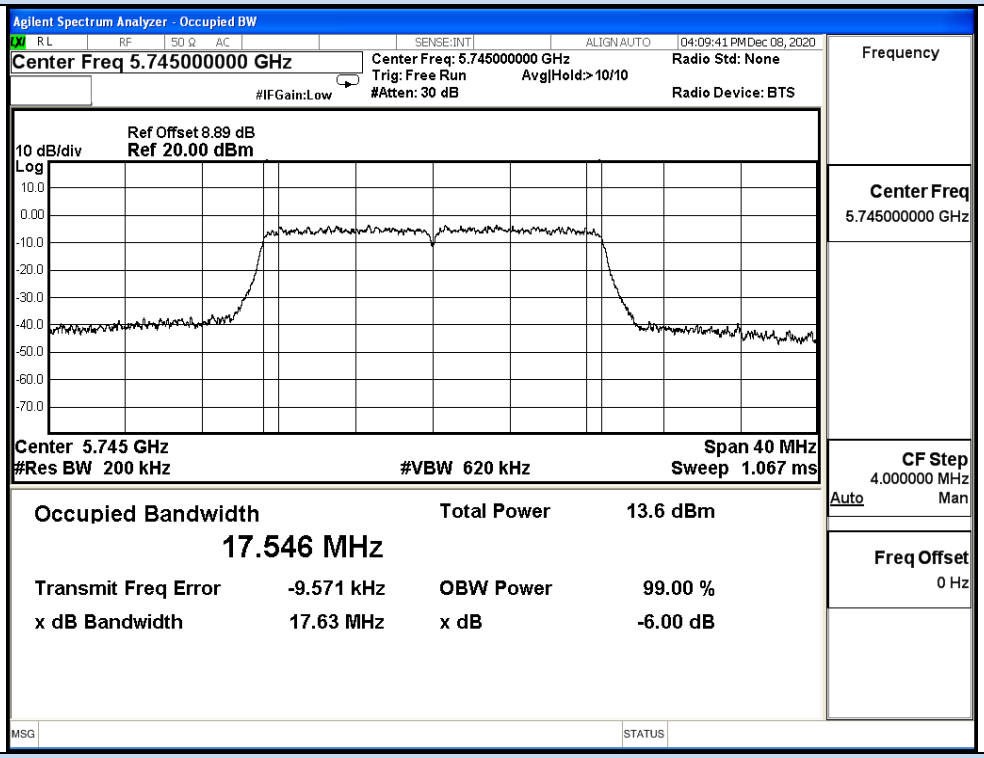


IEEE 802.11a / Channel 157 / 5785MHz

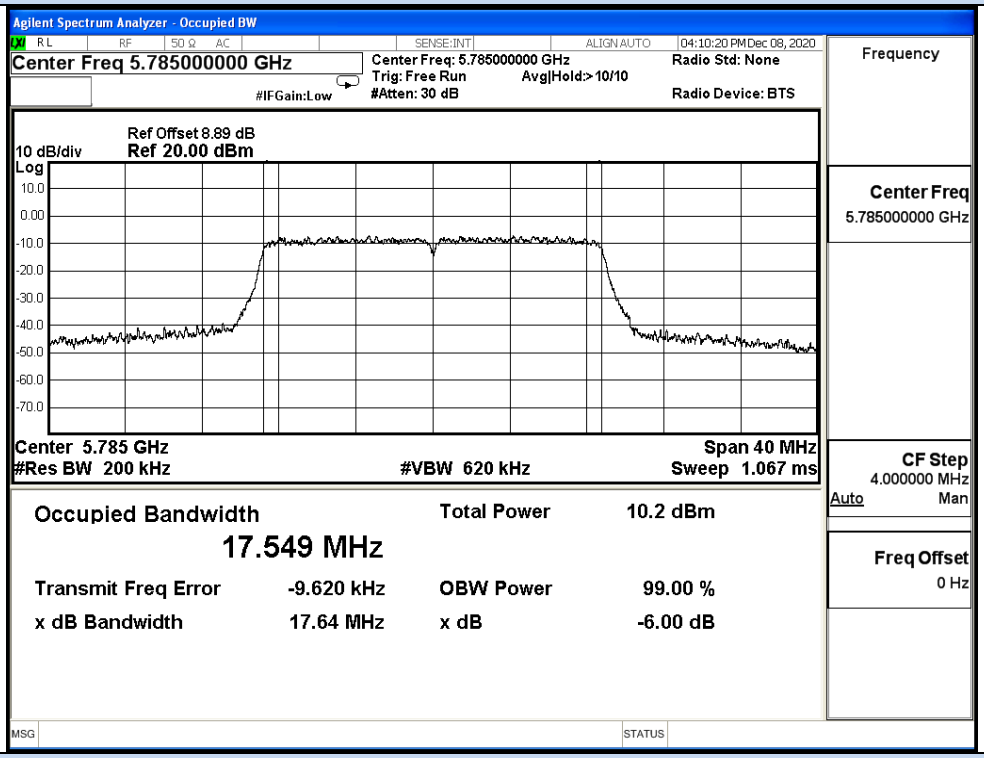


IEEE 802.11a / Channel 165 / 5825MHz

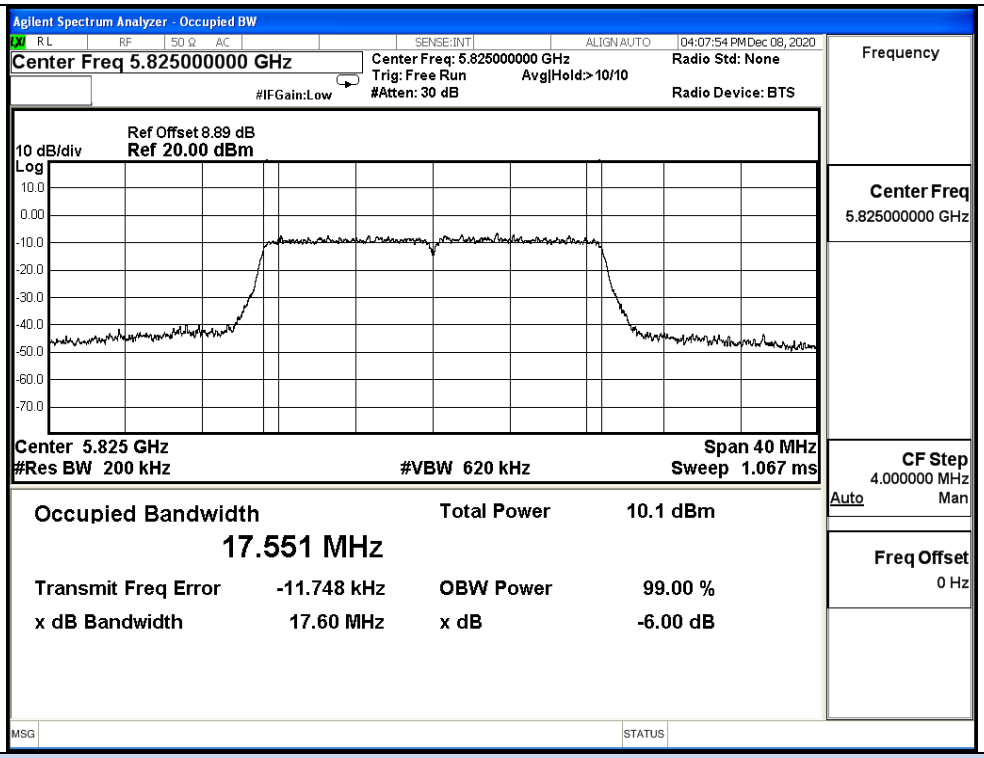
99% Occupied Bandwidth



IEEE 802.11n20 / Channel 149 / 5745MHz

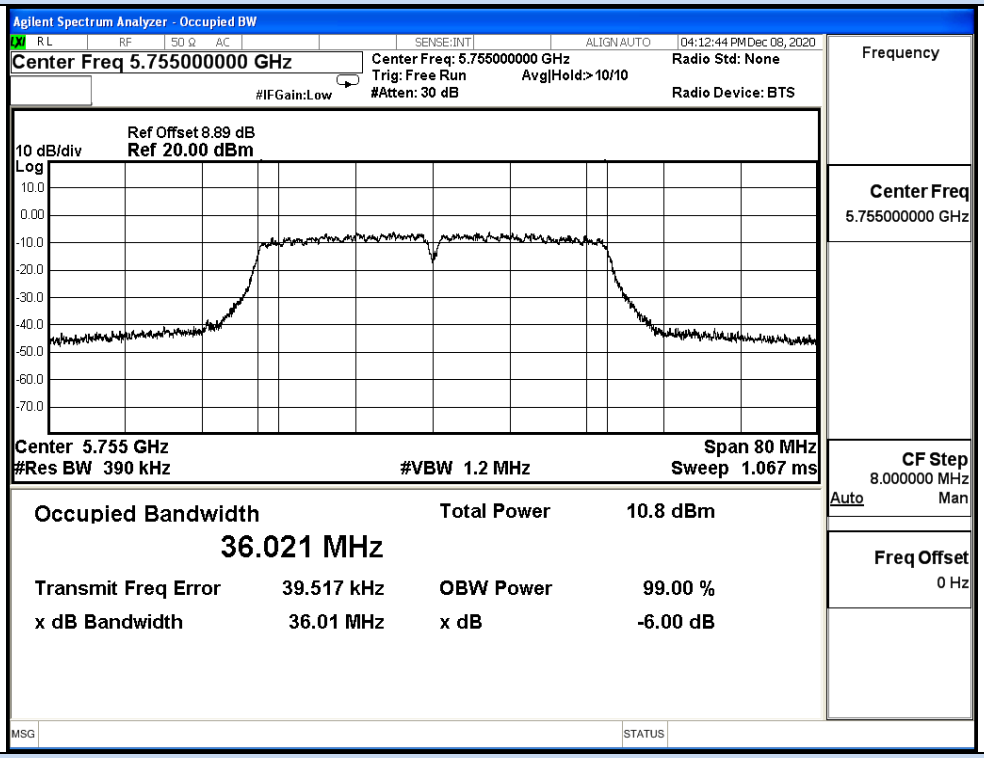


IEEE 802.11n20 / Channel 157 / 5785MHz

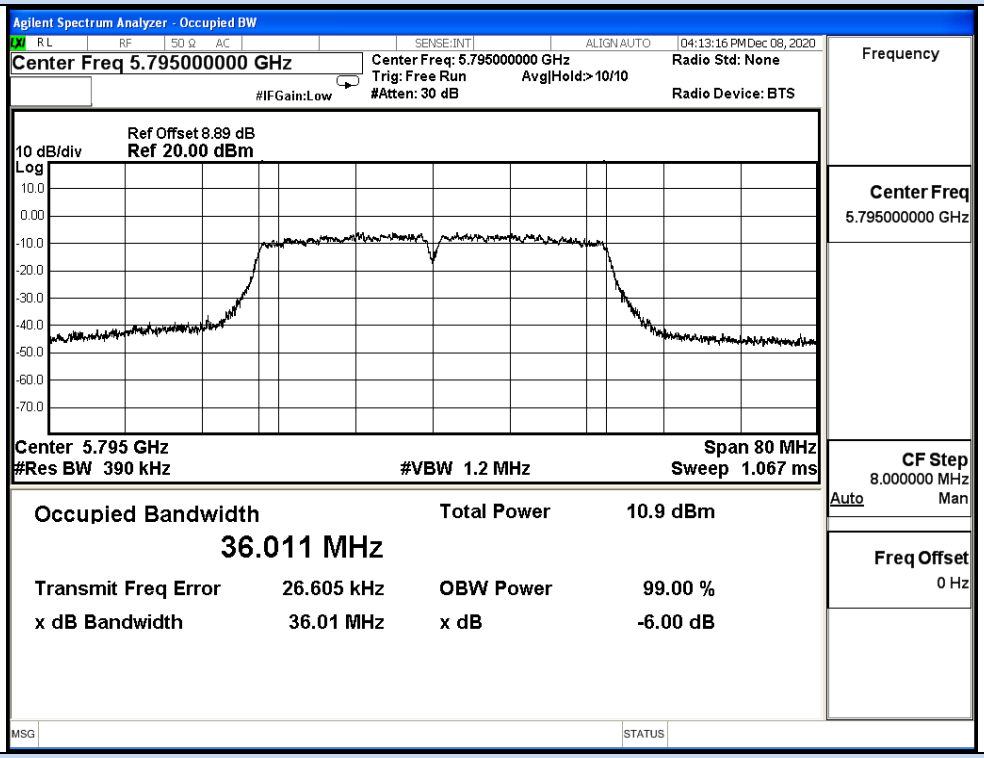


IEEE 802.11n20 / Channel 165 / 5825MHz

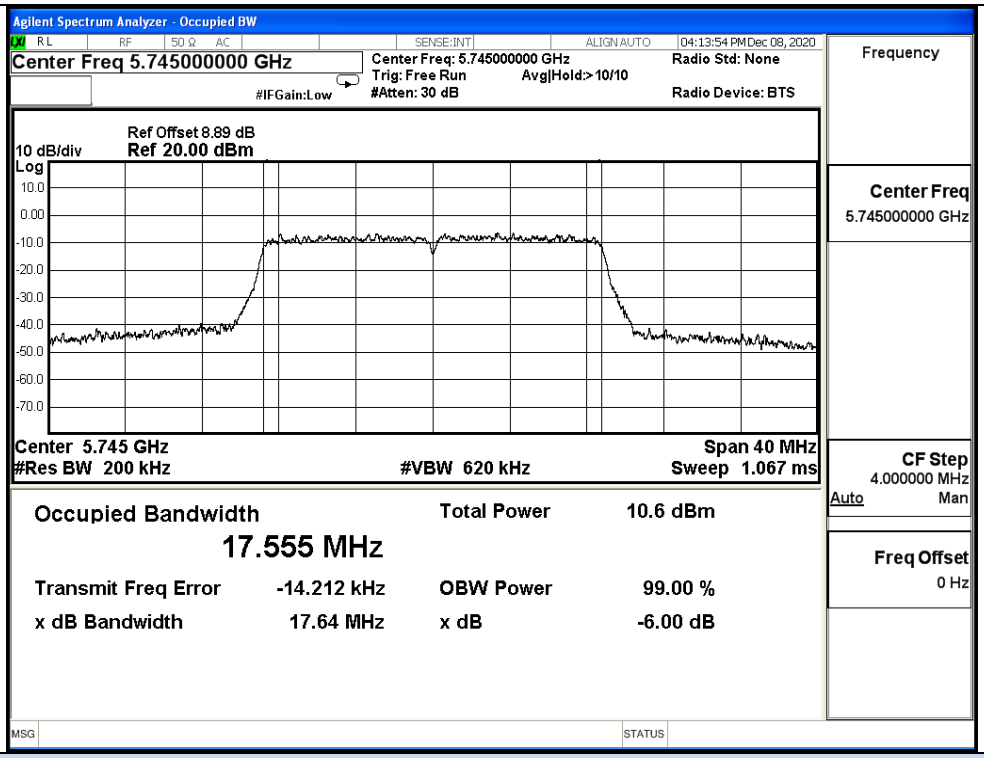
99% Occupied Bandwidth



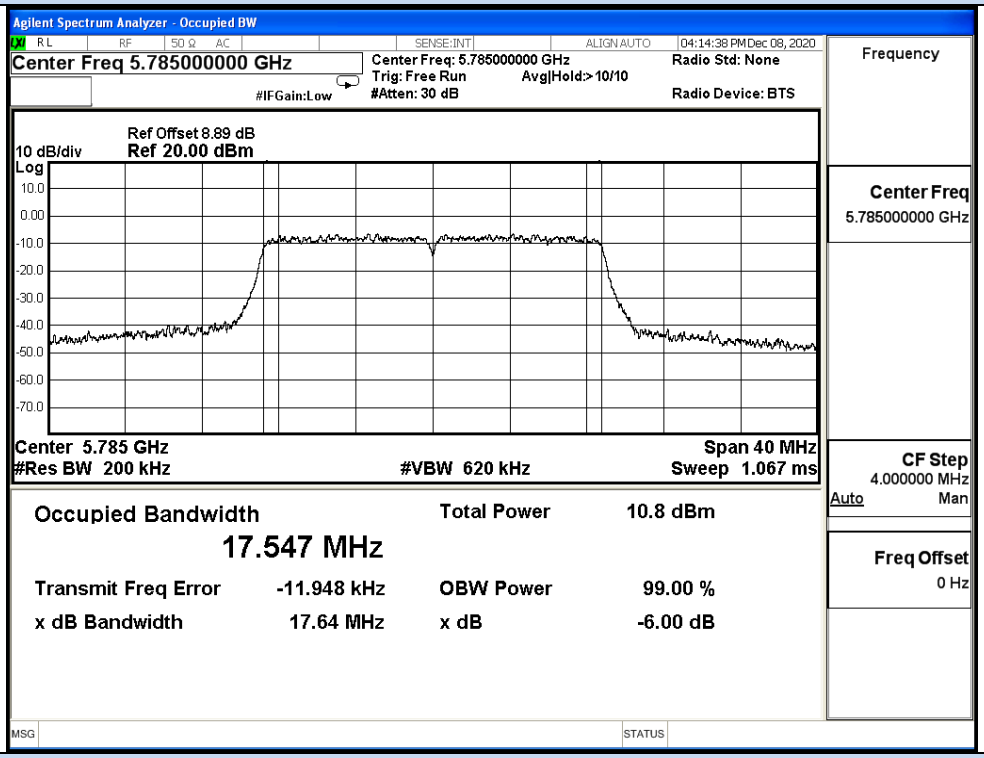
IEEE 802.11n40 / Channel 151 / 5755MHz



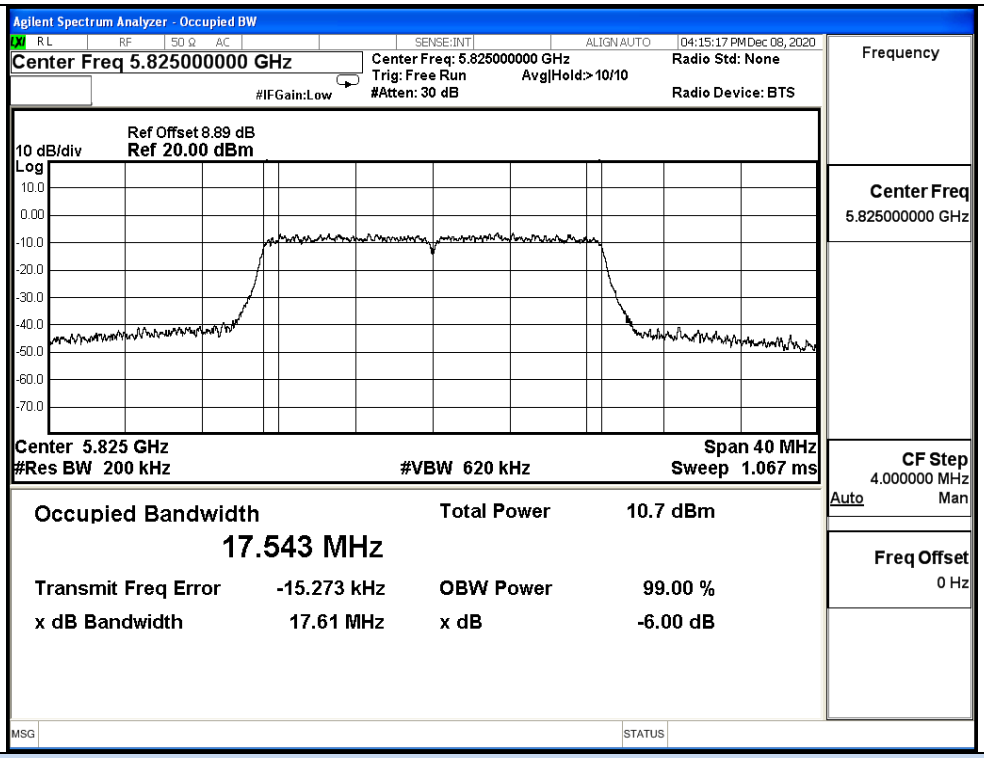
IEEE 802.11n40 / Channel 159 / 5795MHz



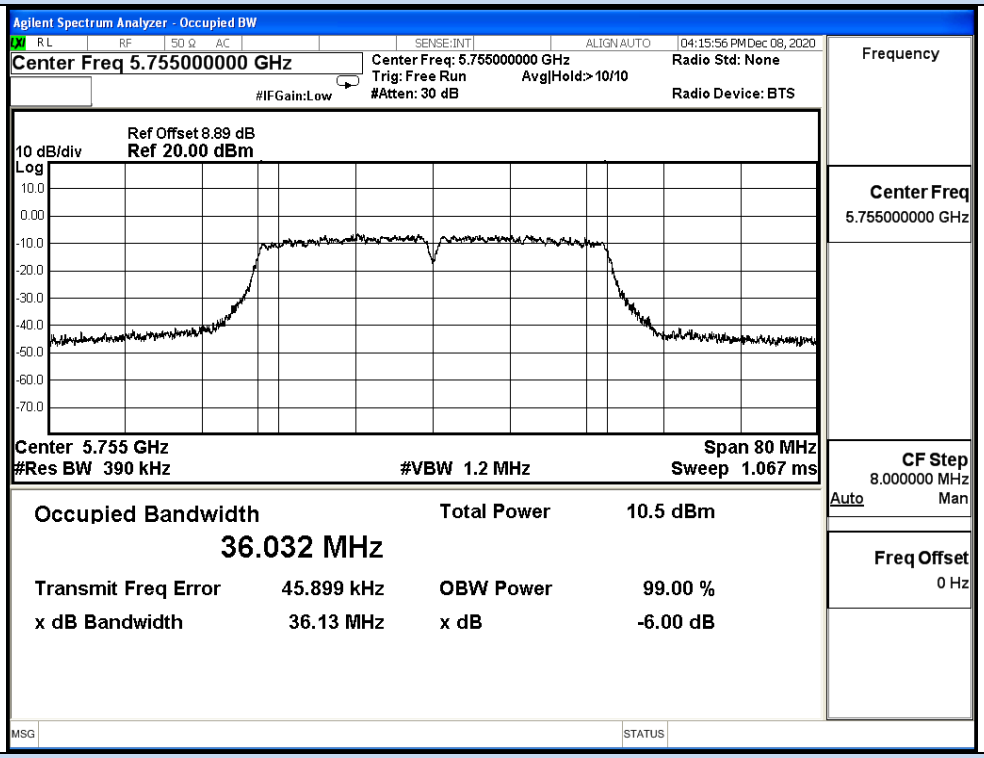
IEEE 802.11ac20 / Channel 149 / 5745MHz



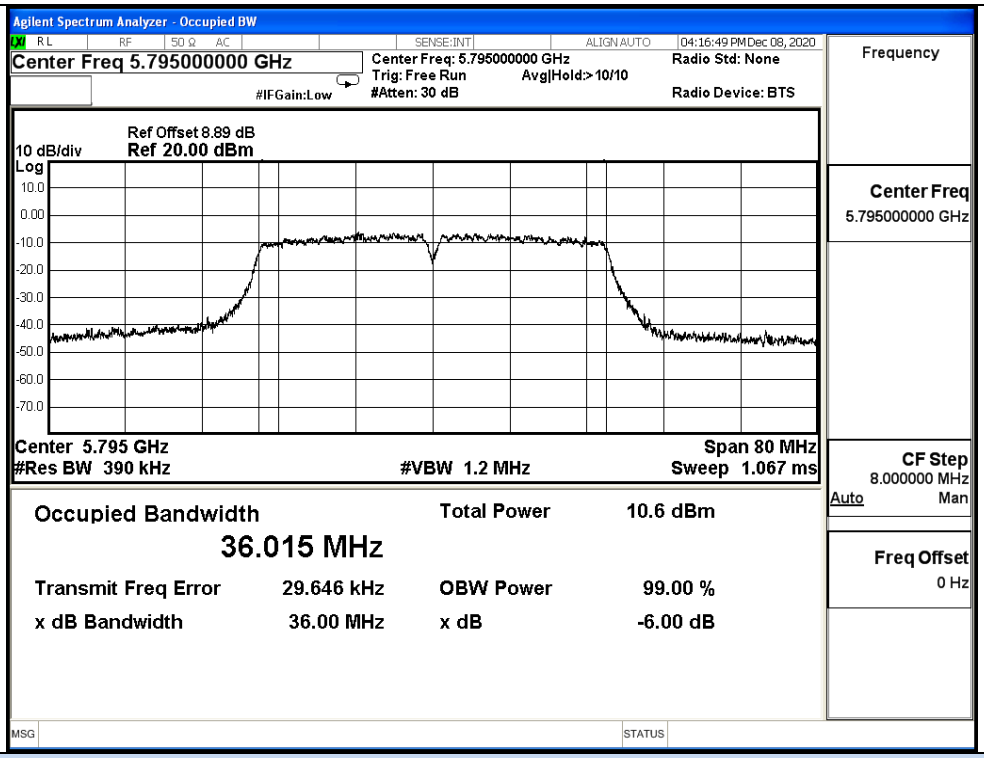
IEEE 802.11ac20 / Channel 157/ 5785MHz



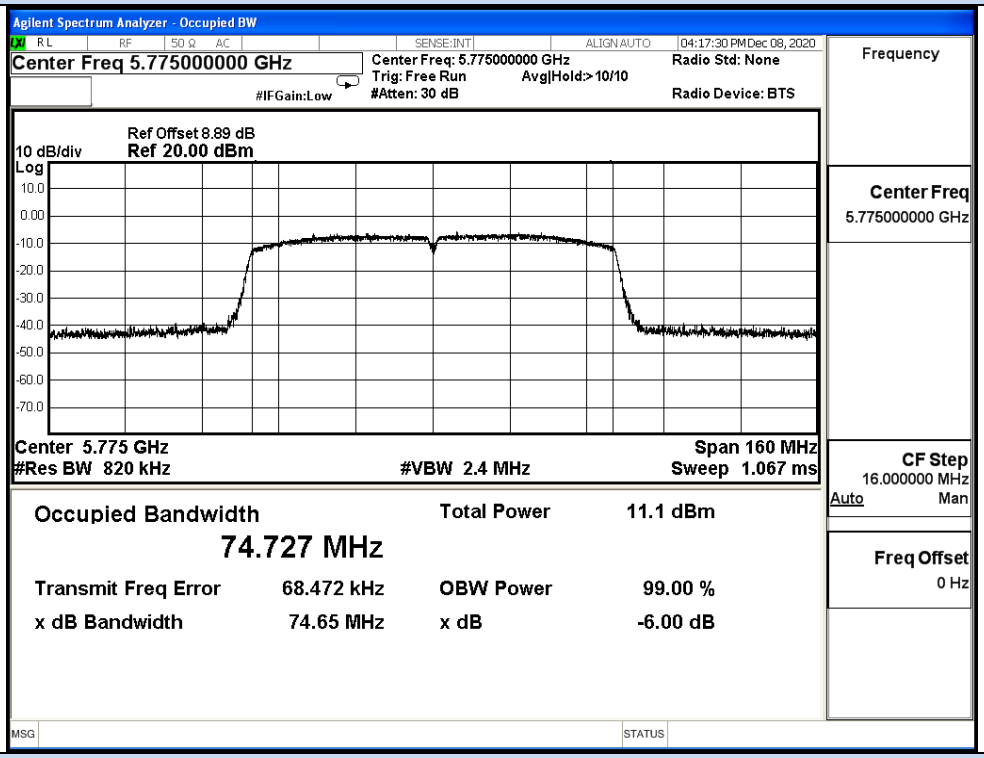
IEEE 802.11ac20 / Channel 165 / 5825MHz



IEEE 802.11ac40 / Channel 151 / 5755MHz



IEEE 802.11ac40 / Channel 159 / 5795MHz

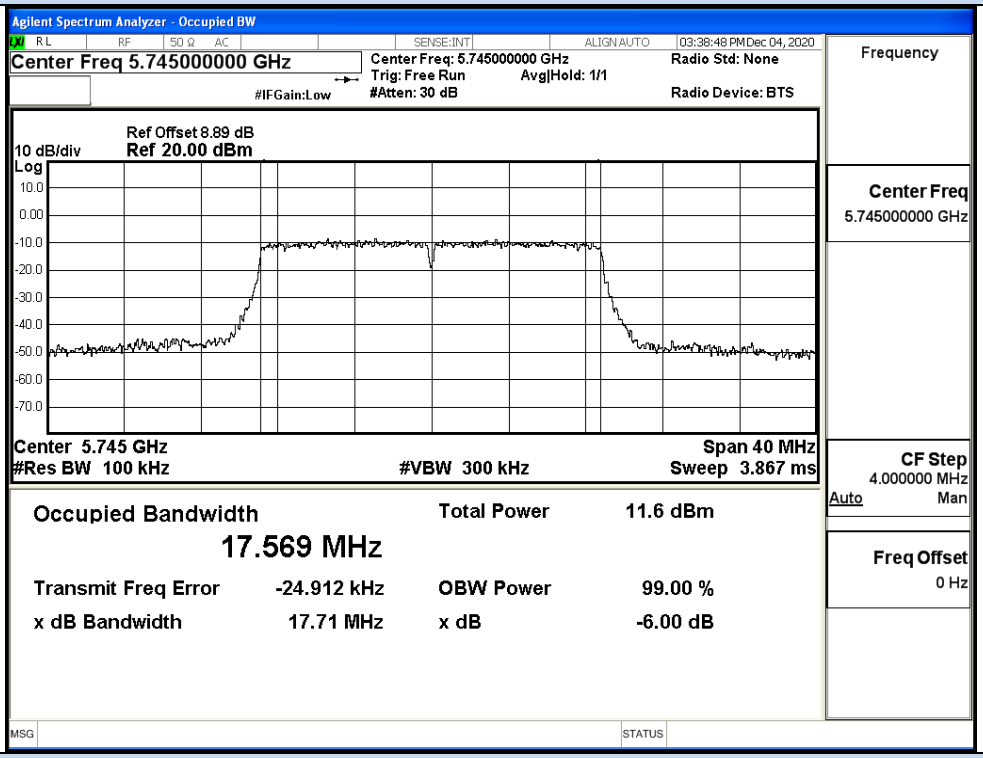


IEEE 802.11ac80 / Channel 155 / 5775MHz

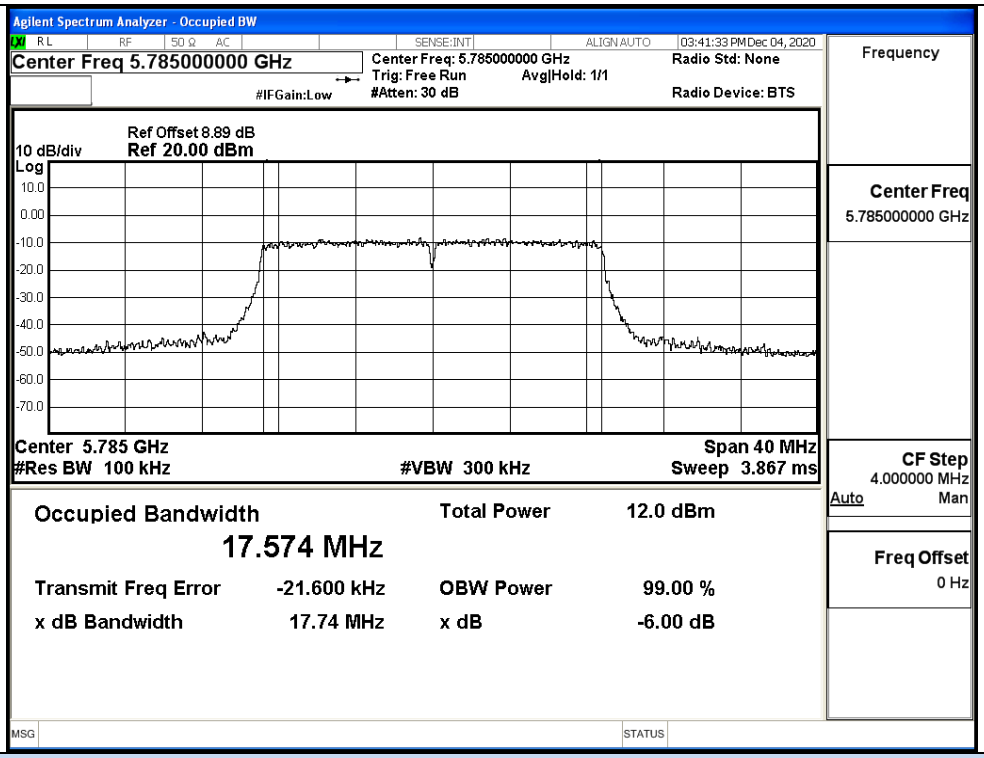
ANT1

Test Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Verdict
11A	149	5745	17.71	17.543	>=0.5	Pass
	157	5785	17.74	17.56		Pass
	165	5825	17.72	17.545		Pass
11N20 SISO	149	5745	17.71	17.547	>=0.5	Pass
	157	5785	17.70	17.543		Pass
	165	5825	17.70	17.545		Pass
11N40 SISO	151	5755	36.45	36.01	>=0.5	Pass
	159	5795	36.40	36.006		Pass
11AC20S ISO	149	5745	17.69	17.547	>=0.5	Pass
	157	5785	17.73	17.547		Pass
	165	5825	17.73	17.546		Pass
11AC40S ISO	151	5755	36.43	36.016	>=0.5	Pass
	159	5795	36.45	35.993		Pass
11AC80S ISO	155	5775	75.63	74.640	>=0.5	Pass

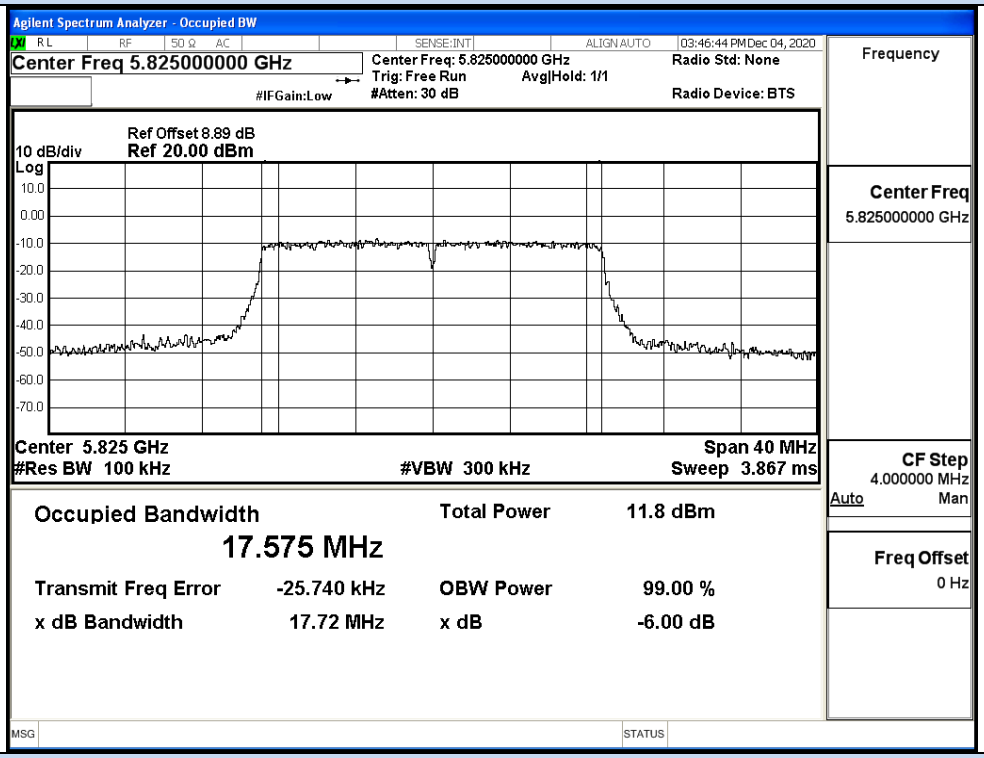
6dB Bandwidth



IEEE 802.11a / Channel 149 / 5745MHz



IEEE 802.11a / Channel 157 / 5785MHz



IEEE 802.11a / Channel 165 / 5825MHz