Appendix B

RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: Vilo Mesh Wi-Fi System
Trade Mark: N/A
Test Model: VLWF01

Environmental Conditions

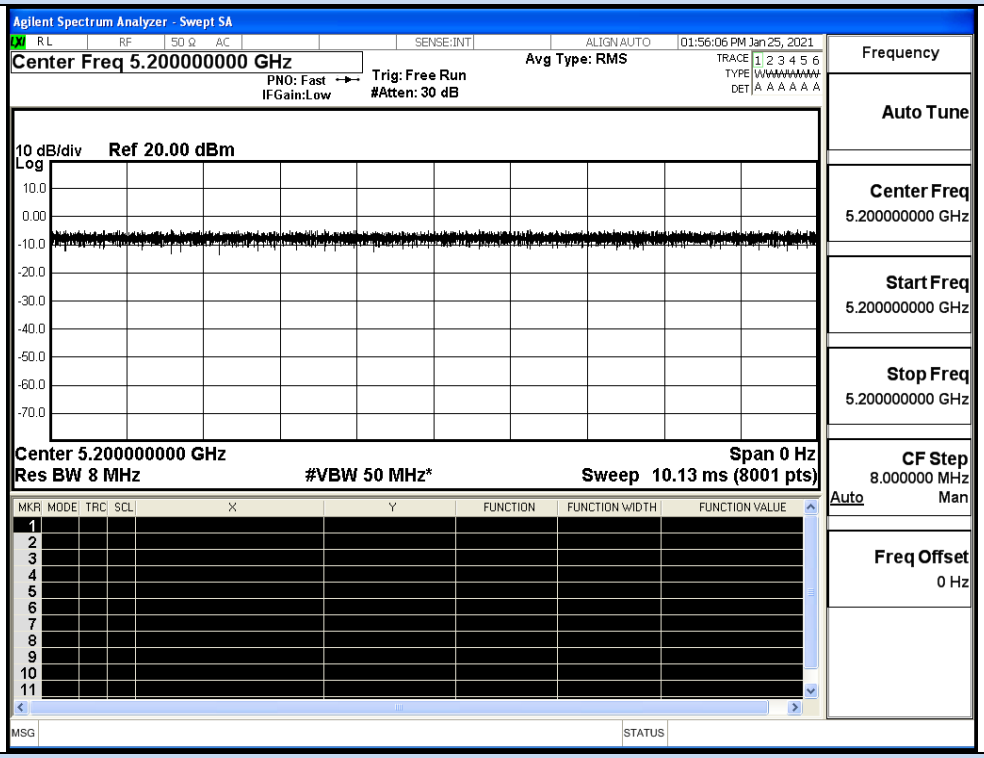
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ben Jin
Supervised by:	Li Huan

B.1 Duty Cycle

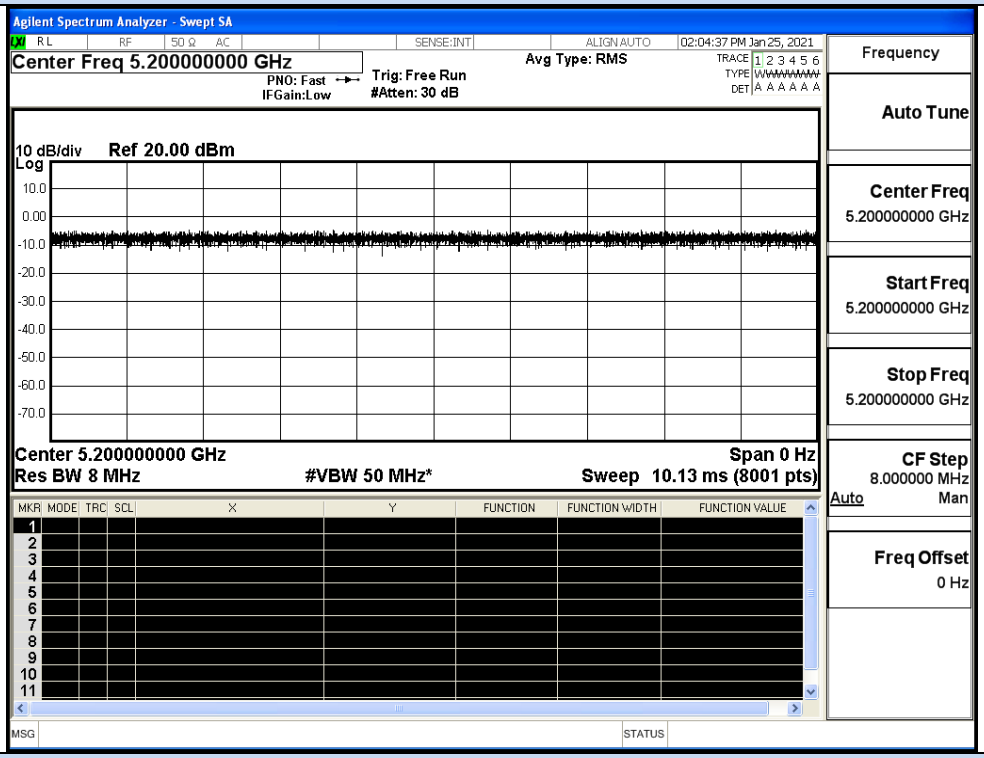
ANT0

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5200	100	0.00	0.01
11N20 SISO	5200	100	0.00	0.01
11N40 SISO	5190	100	0.00	0.01
11AC20 SISO	5200	100	0.00	0.01
11AC40 SISO	5190	100	0.00	0.01
11AC80 SISO	5210	100	0.00	0.01

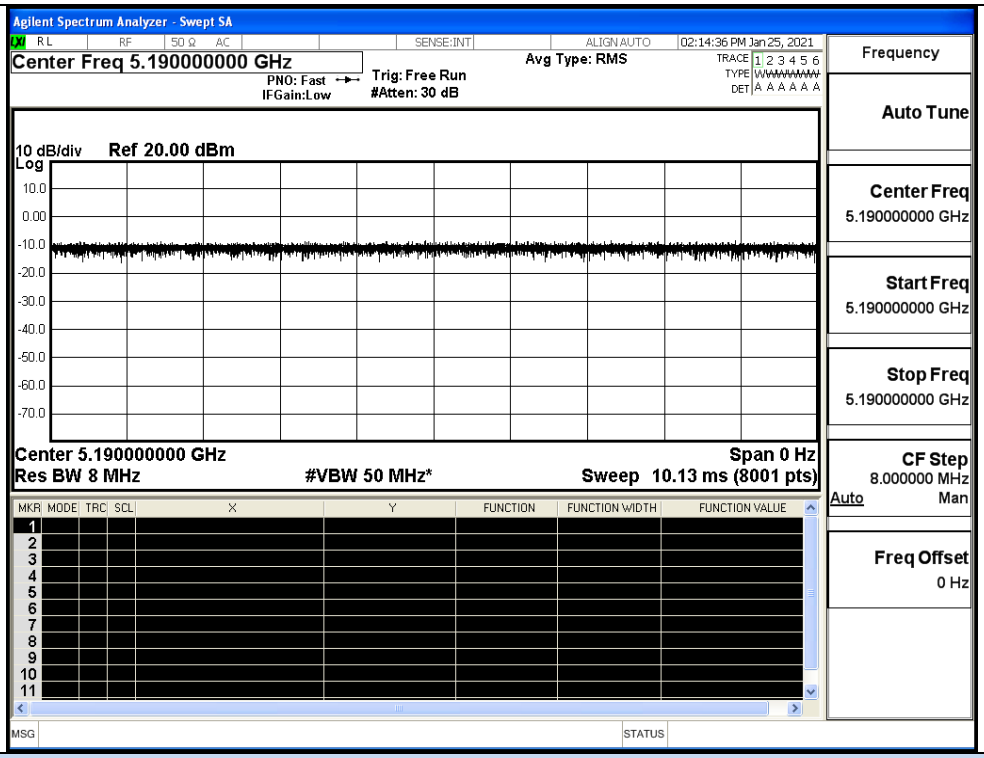
On Time and Duty Cycle



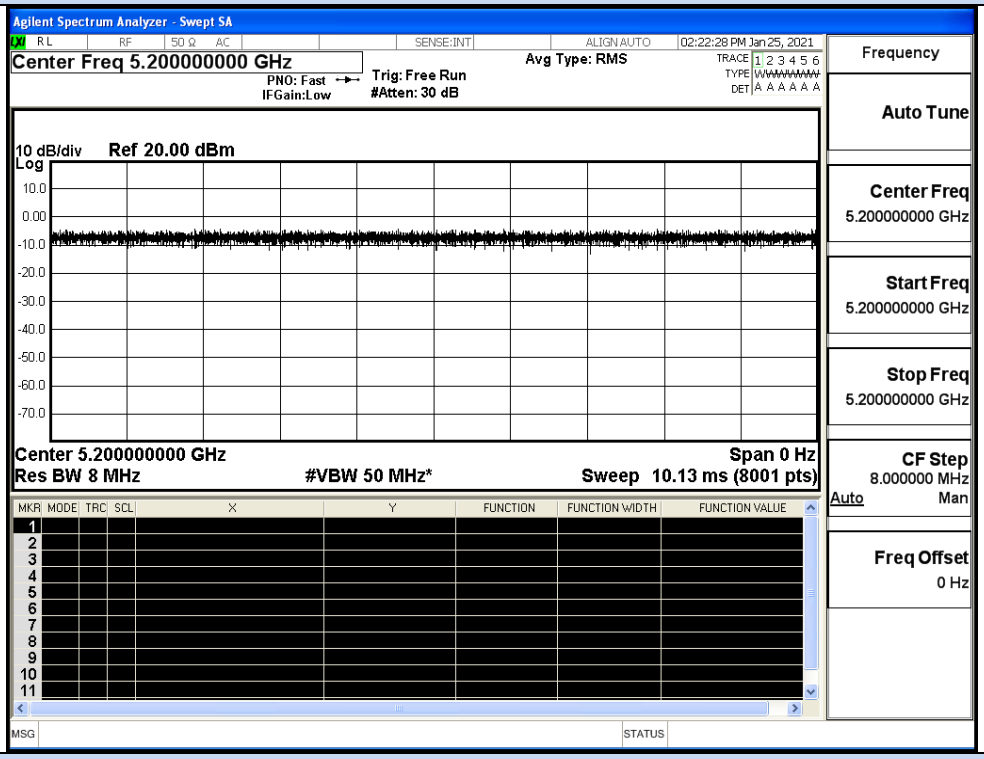
IEEE 802.11a



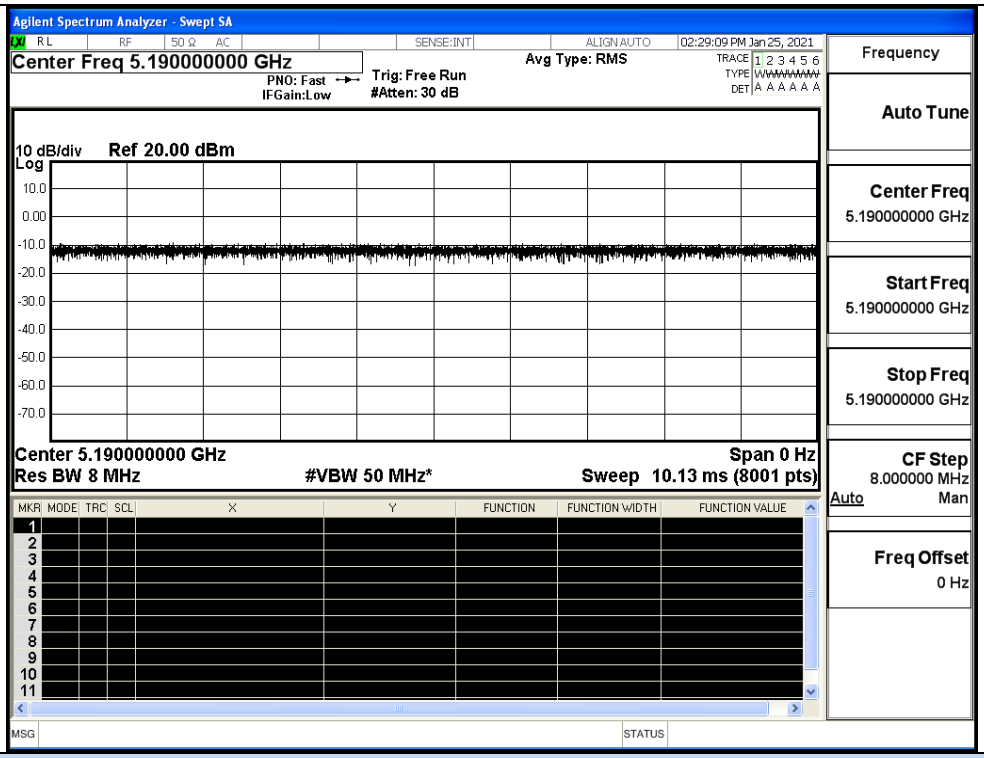
IEEE 802.11n HT20



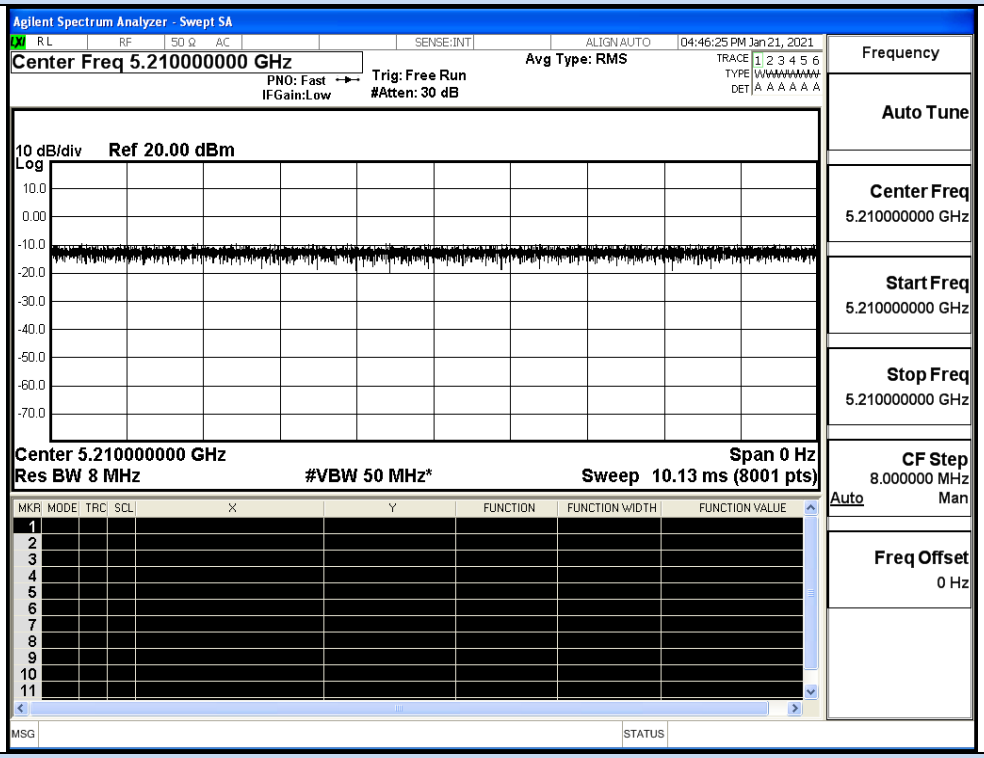
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40

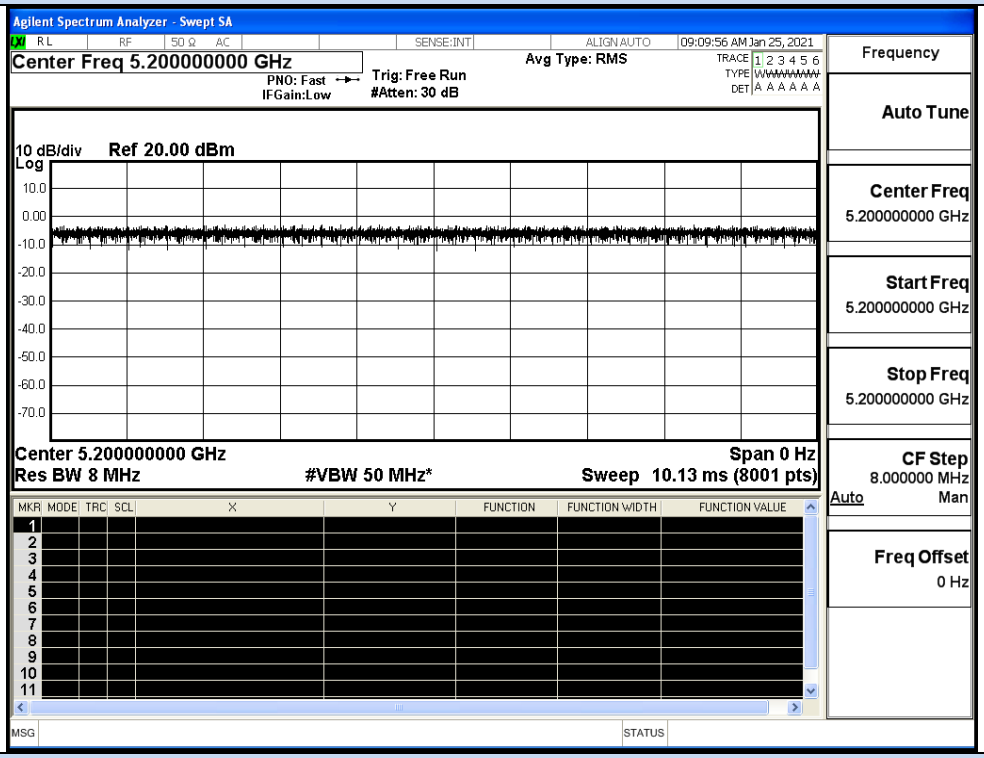


IEEE 802.11AC80

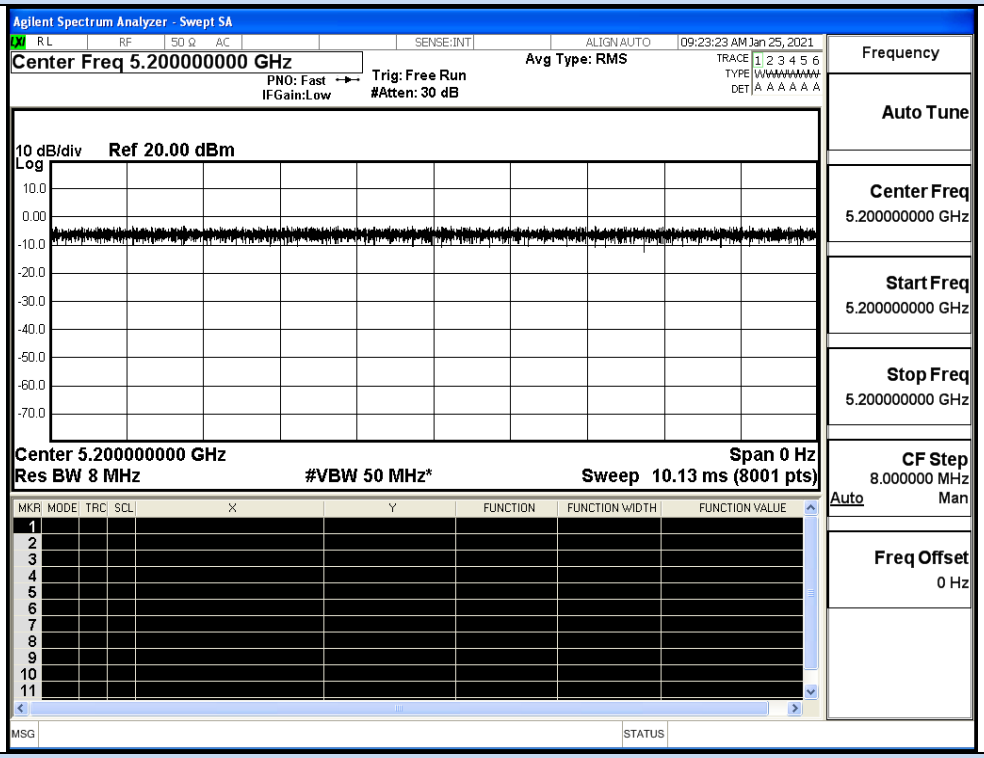
ANT1

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5200	100	0.00	0.01
11N20 SISO	5200	100	0.00	0.01
11N40 SISO	5190	100	0.00	0.01
11AC20 SISO	5200	100	0.00	0.01
11AC40 SISO	5190	100	0.00	0.01
11AC80 SISO	5210	100	0.00	0.01

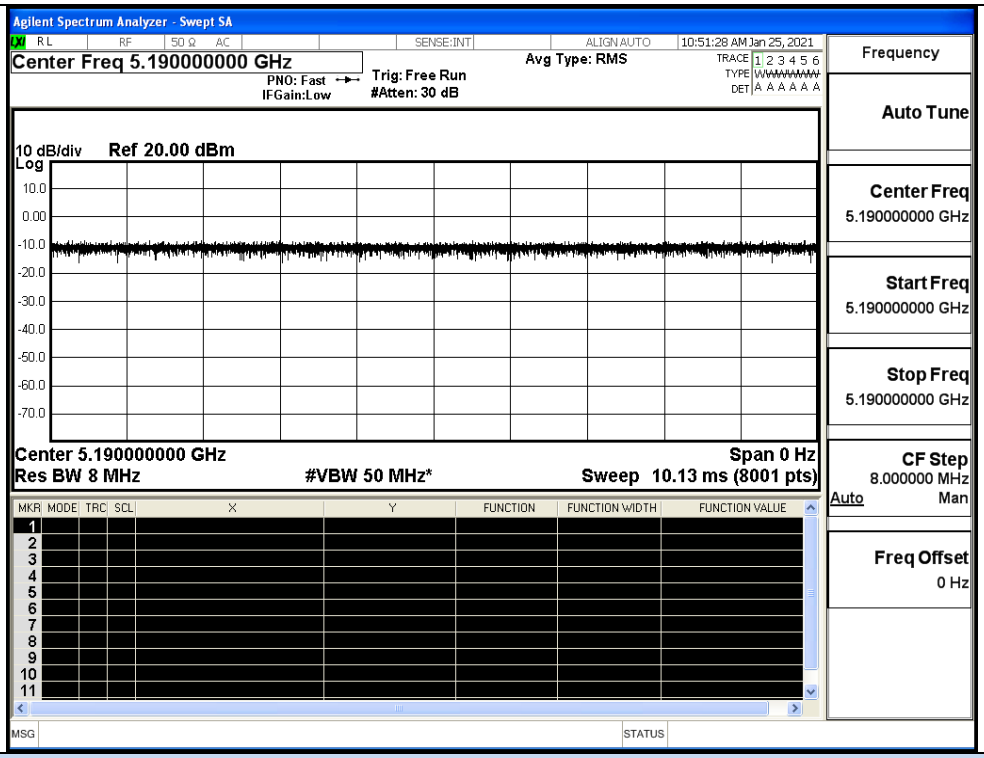
On Time and Duty Cycle



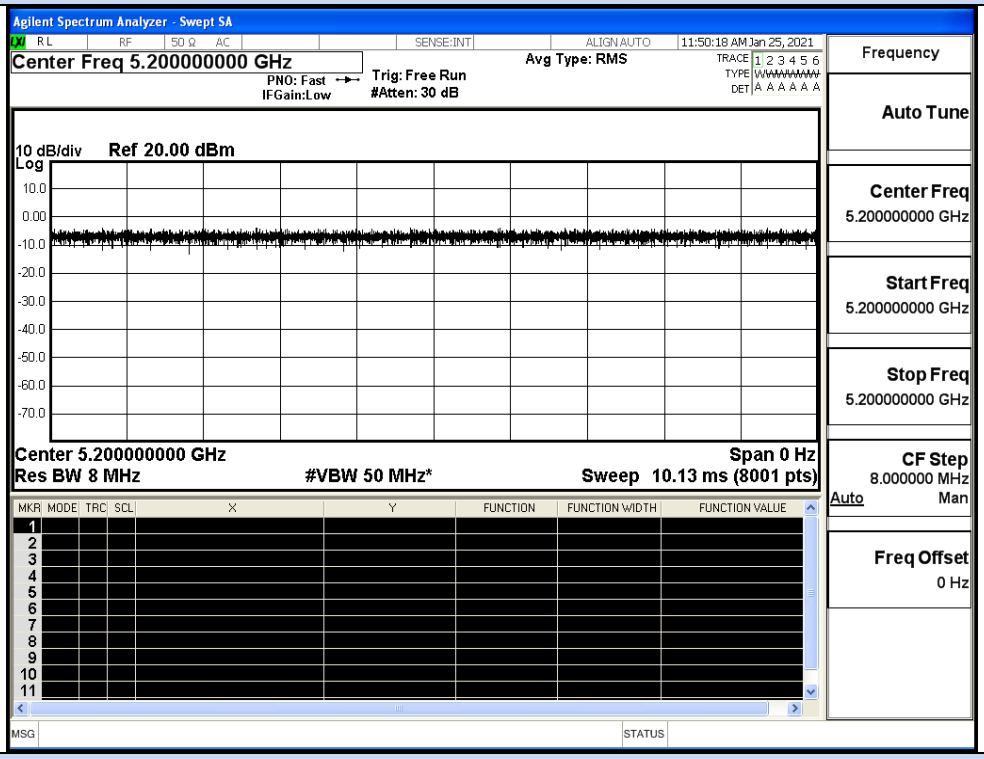
IEEE 802.11a



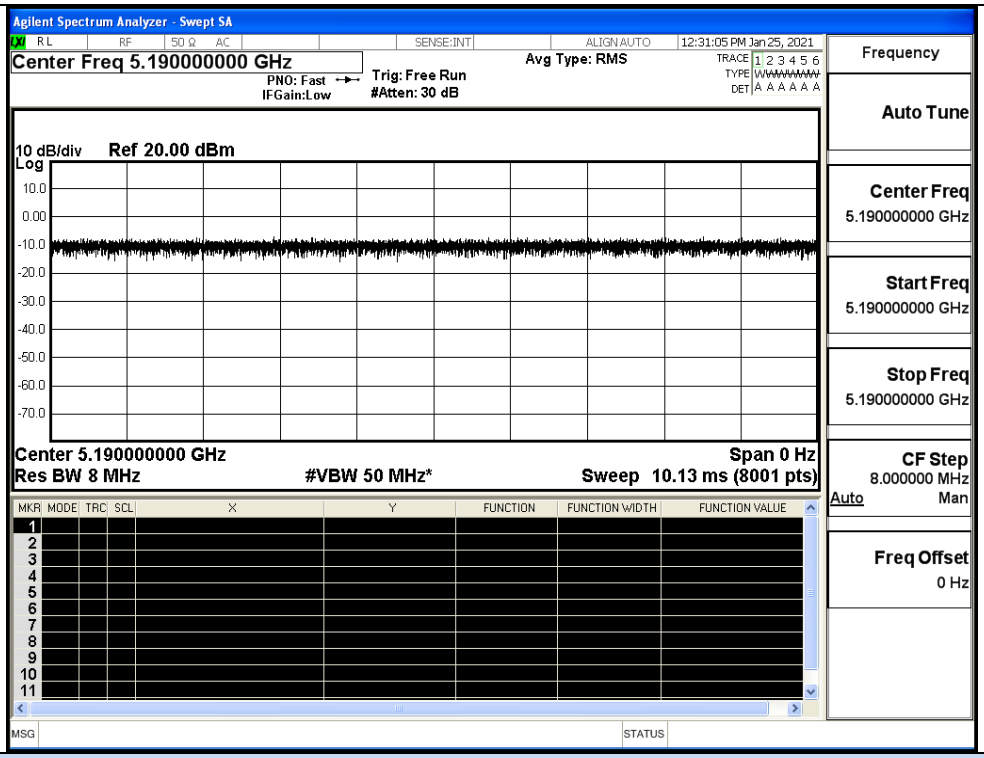
IEEE 802.11n HT20



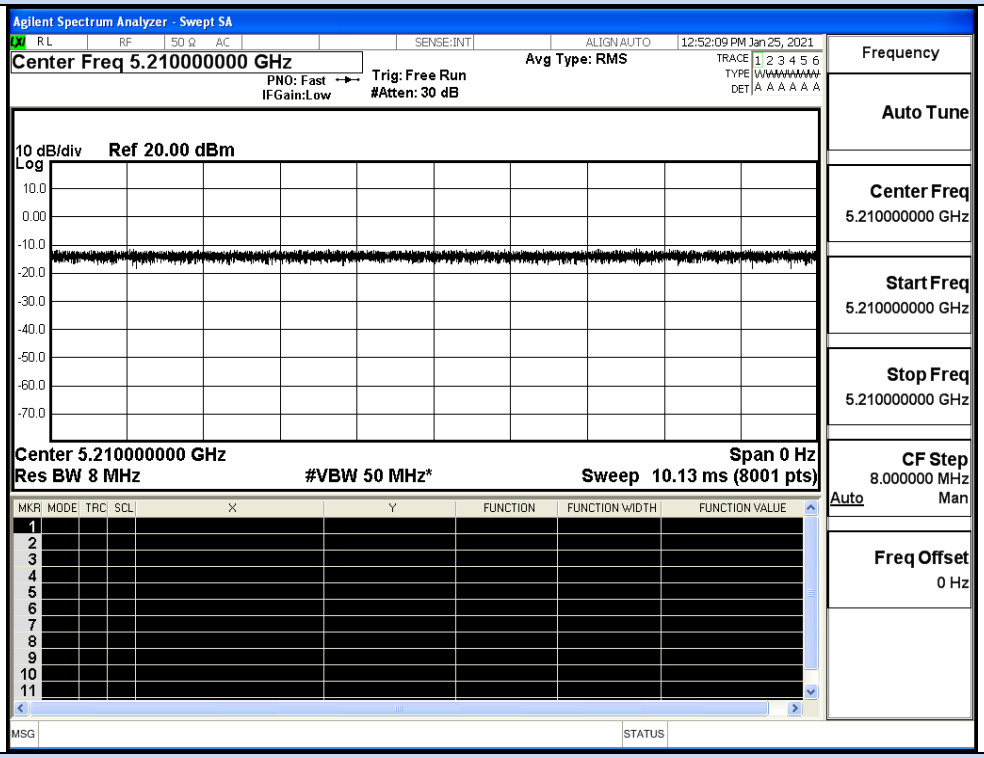
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40



IEEE 802.11AC80

B.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	36	5180	8.5	0	8.5	30	Pass
	40	5200	9.49	0	9.49		Pass
	48	5240	10.63	0	10.63		Pass
11N20 SISO	36	5180	8.52	0	8.52	30	Pass
	40	5200	9.48	0	9.48		Pass
	48	5240	10.16	0	10.16		Pass
11N40 SISO	38	5190	8.97	0	8.97	30	Pass
	46	5230	10.46	0	10.46		Pass
11AC20 SISO	36	5180	8.88	0	8.88	30	Pass
	40	5200	9.78	0	9.78		Pass
	48	5240	10.32	0	10.32		Pass
11AC40 SISO	38	5190	8.15	0	8.15	30	Pass
	46	5230	9.63	0	9.63		Pass
11AC80 SISO	42	5210	11.93	0	11.93	30	Pass

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Ant Gain (dBi)	Report EIRP Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	8.5	0	5.0	13.5	24	Pass
	40	5200	9.49	0	5.0	14.49		Pass
	48	5240	10.63	0	5.0	15.63		Pass
11N20 SISO	36	5180	8.52	0	5.0	13.52	24	Pass
	40	5200	9.48	0	5.0	14.48		Pass
	48	5240	10.16	0	5.0	15.16		Pass
11N40 SISO	38	5190	8.97	0	5.0	13.97	24	Pass
	46	5230	10.46	0	5.0	15.46		Pass
11AC20 SISO	36	5180	8.88	0	5.0	13.88	24	Pass
	40	5200	9.78	0	5.0	14.78		Pass
	48	5240	10.32	0	5.0	15.32		Pass
11AC40 SISO	38	5190	8.15	0	5.0	13.15	24	Pass
	46	5230	9.63	0	5.0	14.63		Pass
11AC80 SISO	42	5210	11.93	0	5.0	16.93	24	Pass

ANT1

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report conducted Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	9.94	0	9.94	30	Pass
	40	5200	10.81	0	10.81		Pass
	48	5240	11.93	0	11.93		Pass
11N20 SISO	36	5180	10.2	0	10.2	30	Pass
	40	5200	11.01	0	11.01		Pass
	48	5240	11.24	0	11.24		Pass
11N40 SISO	38	5190	9.47	0	9.47	30	Pass
	46	5230	10.77	0	10.77		Pass
11AC20 SISO	36	5180	9.77	0	9.77	30	Pass
	40	5200	10.64	0	10.64		Pass
	48	5240	10.78	0	10.78		Pass
11AC40 SISO	38	5190	10.27	0	10.27	30	Pass
	46	5230	11.61	0	11.61		Pass
11AC80 SISO	42	5210	10.8	0	10.8	30	Pass

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Ant Gain (dBi)	Report EIRP Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	9.94	0	5.0	14.94	24	Pass
	40	5200	10.81	0	5.0	15.81		Pass
	48	5240	11.93	0	5.0	16.93		Pass
11N20 SISO	36	5180	10.2	0	5.0	15.2	24	Pass
	40	5200	11.01	0	5.0	16.01		Pass
	48	5240	11.24	0	5.0	16.24		Pass
11N40 SISO	38	5190	9.47	0	5.0	14.47	24	Pass
	46	5230	10.77	0	5.0	15.77		Pass
11AC20 SISO	36	5180	9.77	0	5.0	14.77	24	Pass
	40	5200	10.64	0	5.0	15.64		Pass
	48	5240	10.78	0	5.0	15.78		Pass
11AC40 SISO	38	5190	10.27	0	5.0	15.27	24	Pass
	46	5230	11.61	0	5.0	16.61		Pass
11AC80 SISO	42	5210	10.8	0	5.0	15.8	24	Pass

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	36	5180	8.52	10.2	12.45	0	12.45	27.99	Pass
	40	5200	9.48	11.01	13.32	0	13.32		Pass
	48	5240	10.16	11.24	13.74	0	13.74		Pass
11N40	38	5190	8.97	9.47	12.24	0	12.24	27.99	Pass
	46	5230	10.46	10.77	13.63	0	13.63		Pass
11AC20	36	5180	8.88	9.77	12.36	0	12.36	27.99	Pass
	40	5200	9.78	10.64	13.24	0	13.24		Pass
	48	5240	10.32	10.78	13.57	0	13.57		Pass
11AC40	38	5190	8.15	10.27	12.35	0	12.35	27.99	Pass
	46	5230	9.63	11.61	13.74	0	13.74		Pass
11AC80	42	5210	11.93	10.8	14.41	0	14.41	27.99	Pass

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)	Ant Gain (dBi)	Report EIRP Power(dBm)	Limit (dBm)	Verdict
11N20	36	5180	8.52	10.2	12.45	0	5.0	17.45	21.99	Pass
	40	5200	9.48	11.01	13.32	0	5.0	18.32		Pass
	48	5240	10.16	11.24	13.74	0	5.0	18.74		Pass
11N40	38	5190	8.97	9.47	12.24	0	5.0	17.24	21.99	Pass
	46	5230	10.46	10.77	13.63	0	5.0	18.63		Pass
11AC20	36	5180	8.88	9.77	12.36	0	5.0	17.36	21.99	Pass
	40	5200	9.78	10.64	13.24	0	5.0	18.24		Pass
	48	5240	10.32	10.78	13.57	0	5.0	18.57		Pass
11AC40	38	5190	8.15	10.27	12.35	0	5.0	17.35	21.99	Pass
	46	5230	9.63	11.61	13.74	0	5.0	18.74		Pass
11AC80	42	5210	11.93	10.8	14.41	0	5.0	19.41	21.99	Pass

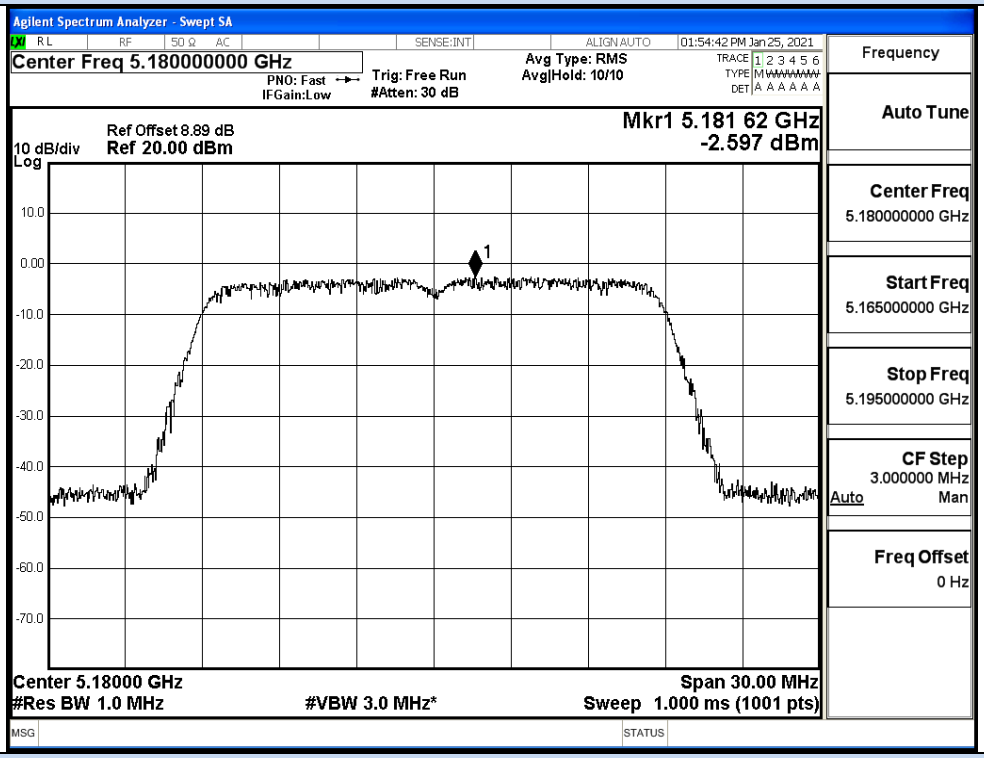
B.3 Power Spectral Density

ANT0

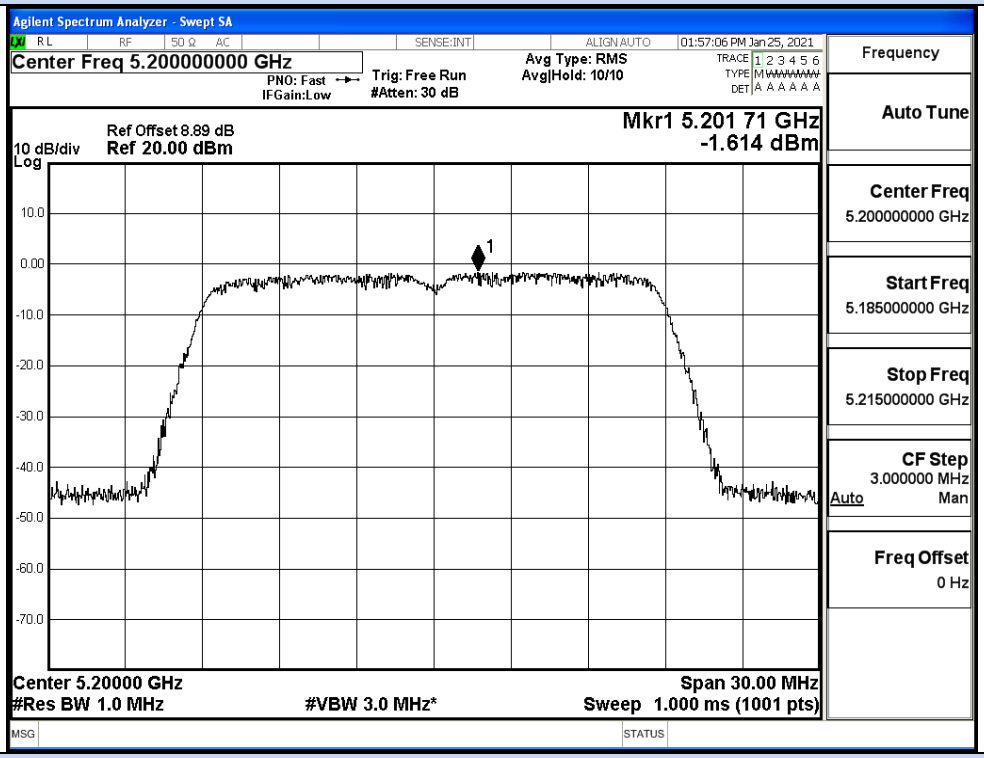
Test Mode	Channel	Frequency (MHz)	Power Density (dBm/MHz)	Duty Cycle Factor(dB)	Report Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	36	5180	-2.60	0	-2.60	17	Pass
	40	5200	-1.61	0	-1.61		Pass
	48	5240	-0.53	0	-0.53		Pass
11N20 SISO	36	5180	-2.44	0	-2.44	17	Pass
	40	5200	-1.44	0	-1.44		Pass
	48	5240	-1.16	0	-1.16		Pass
11N40 SISO	38	5190	-4.69	0	-4.69	17	Pass
	46	5230	-3.38	0	-3.38		Pass
11AC20 SISO	36	5180	-2.26	0	-2.26	17	Pass
	40	5200	-1.39	0	-1.39		Pass
	48	5240	-0.69	0	-0.69		Pass
11AC40 SISO	38	5190	-5.65	0	-5.65	17	Pass
	46	5230	-4.16	0	-4.16		Pass
11AC80 SISO	42	5210	-4.71	0	-4.71	17	Pass

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/MHz)	Duty Cycle Factor(dB)	Ant Gain (dBi)	Report EIRP Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	36	5180	-2.60	0	5.0	2.4	10	Pass
	40	5200	-1.61	0	5.0	3.39		Pass
	48	5240	-0.53	0	5.0	4.47		Pass
11N20 SISO	36	5180	-2.44	0	5.0	2.56	10	Pass
	40	5200	-1.44	0	5.0	3.56		Pass
	48	5240	-1.16	0	5.0	3.84		Pass
11N40 SISO	38	5190	-4.69	0	5.0	0.31	10	Pass
	46	5230	-3.38	0	5.0	1.62		Pass
11AC20 SISO	36	5180	-2.26	0	5.0	2.74	10	Pass
	40	5200	-1.39	0	5.0	3.61		Pass
	48	5240	-0.69	0	5.0	4.31		Pass
11AC40 SISO	38	5190	-5.65	0	5.0	-0.65	10	Pass
	46	5230	-4.16	0	5.0	0.84		Pass
11AC80 SISO	42	5210	-4.71	0	5.0	0.29	10	Pass

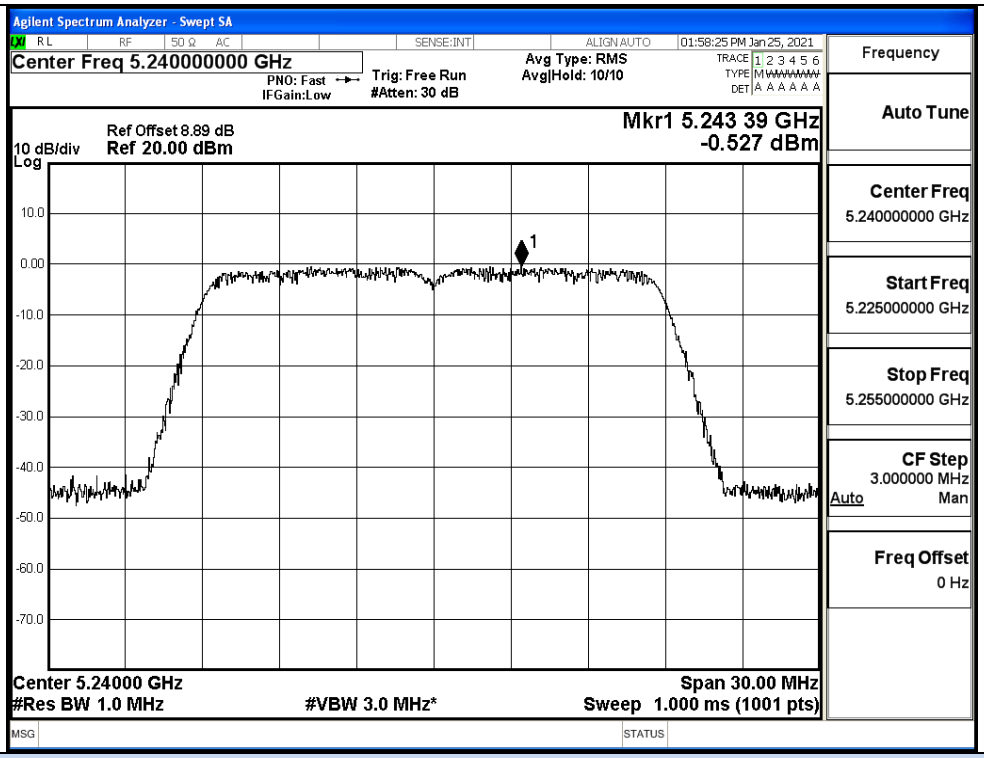
Power Spectral Density



IEEE 802.11a / Channel 36 / 5180MHz

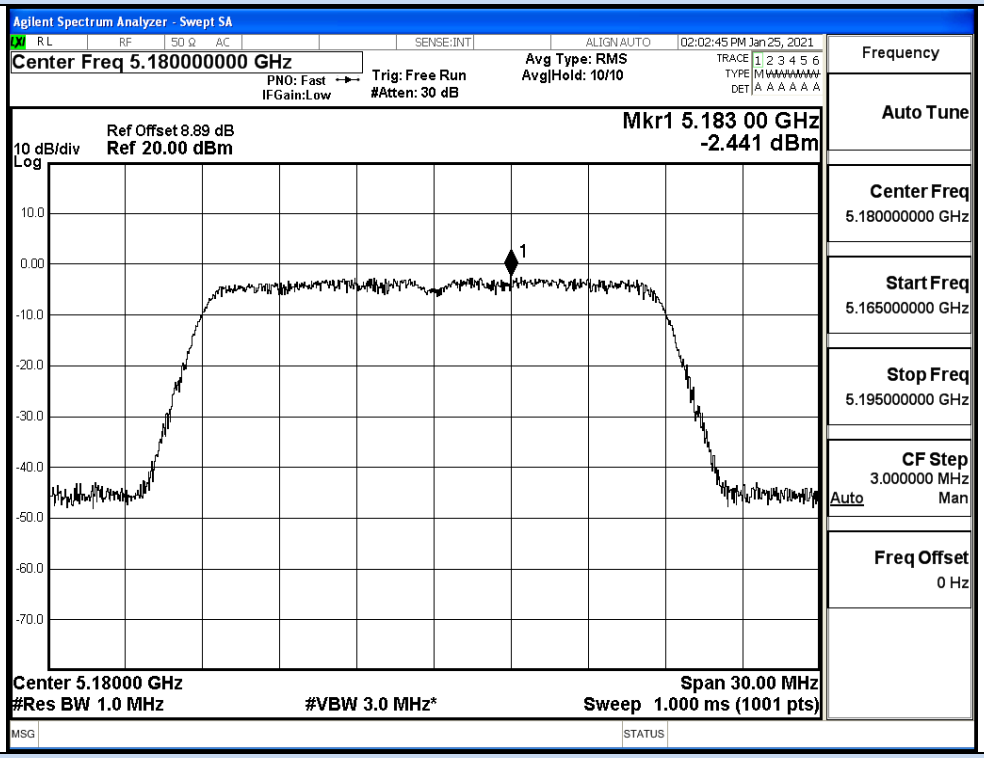


IEEE 802.11na / Channel 40 / 5200MHz

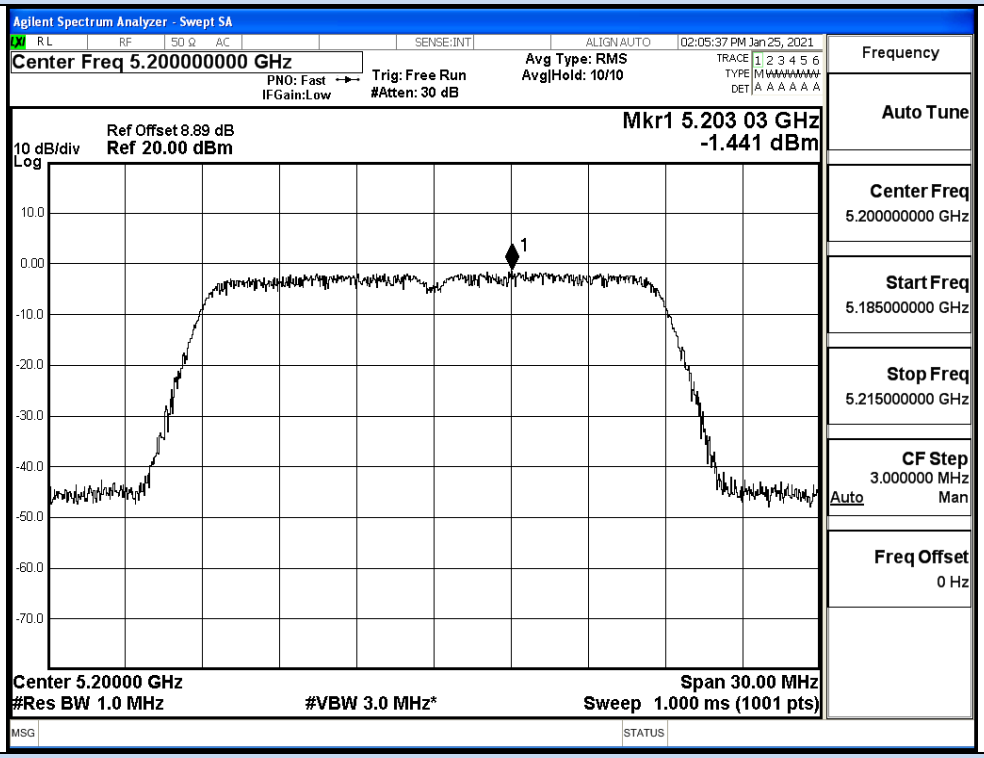


IEEE 802.11na / Channel 48 / 5240MHz

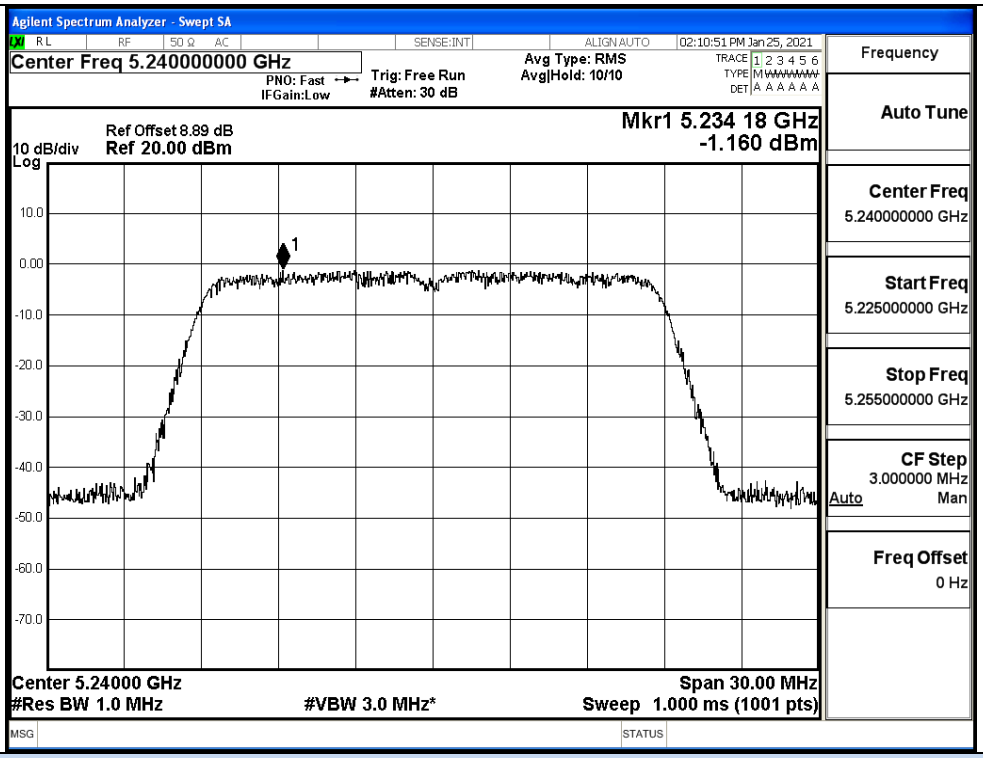
Power Spectral Density



IEEE 802.11n20 / Channel 36 / 5180MHz

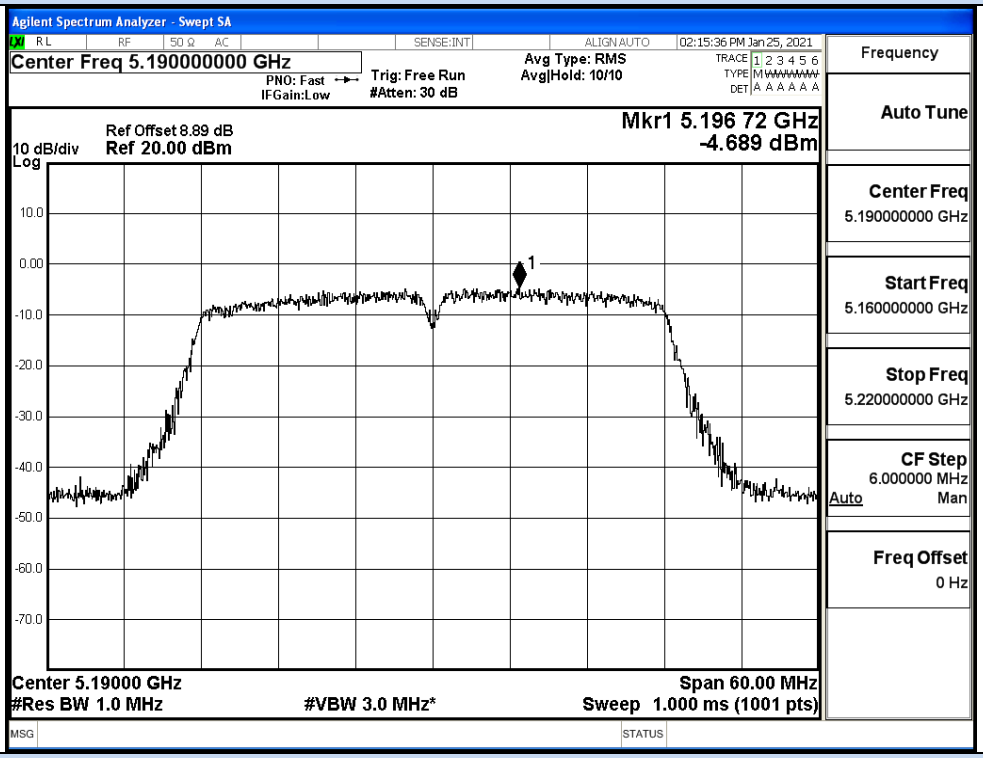


IEEE 802.11n20 / Channel 40 / 5200MHz

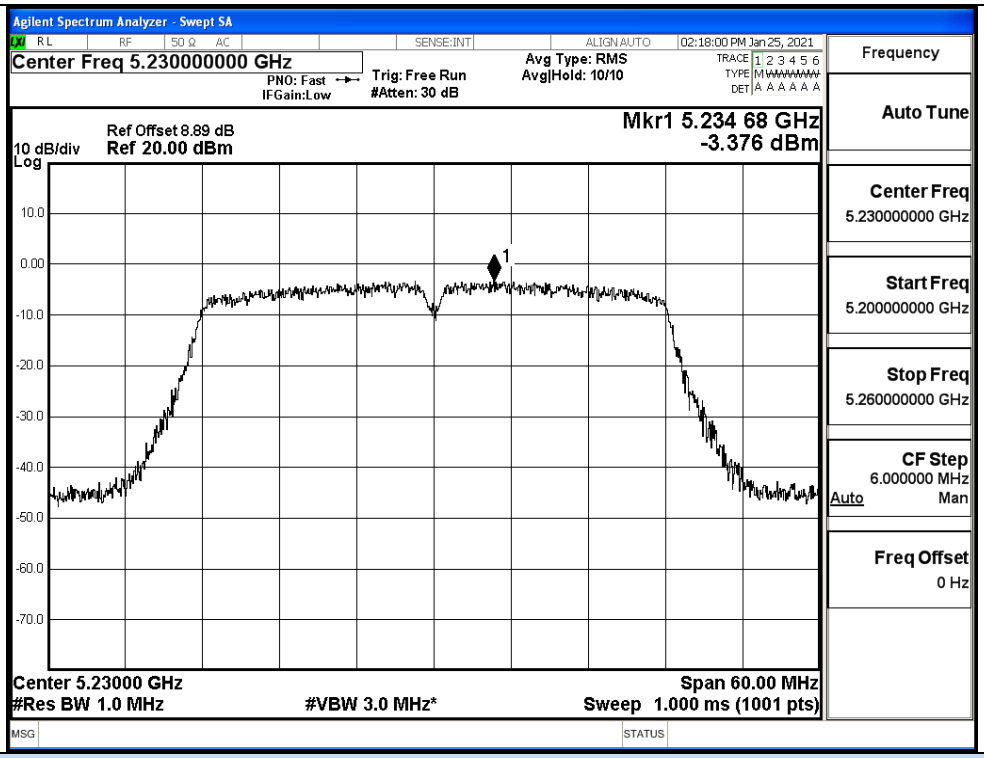


IEEE 802.11n20 / Channel 48 / 5240MHz

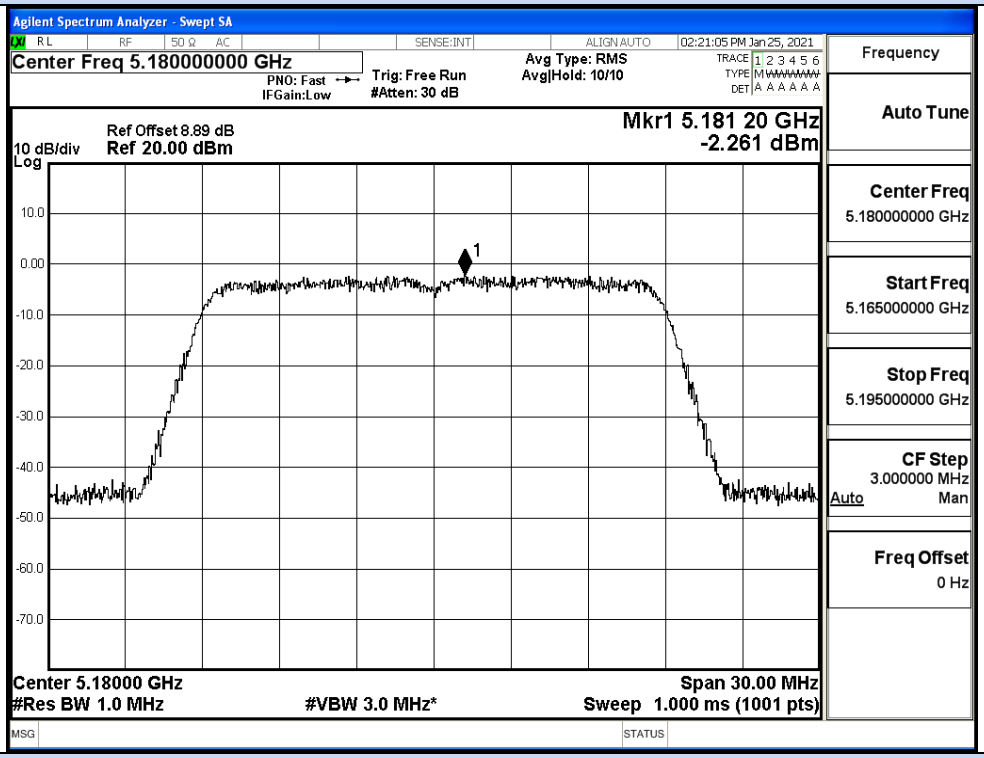
Power Spectral Density



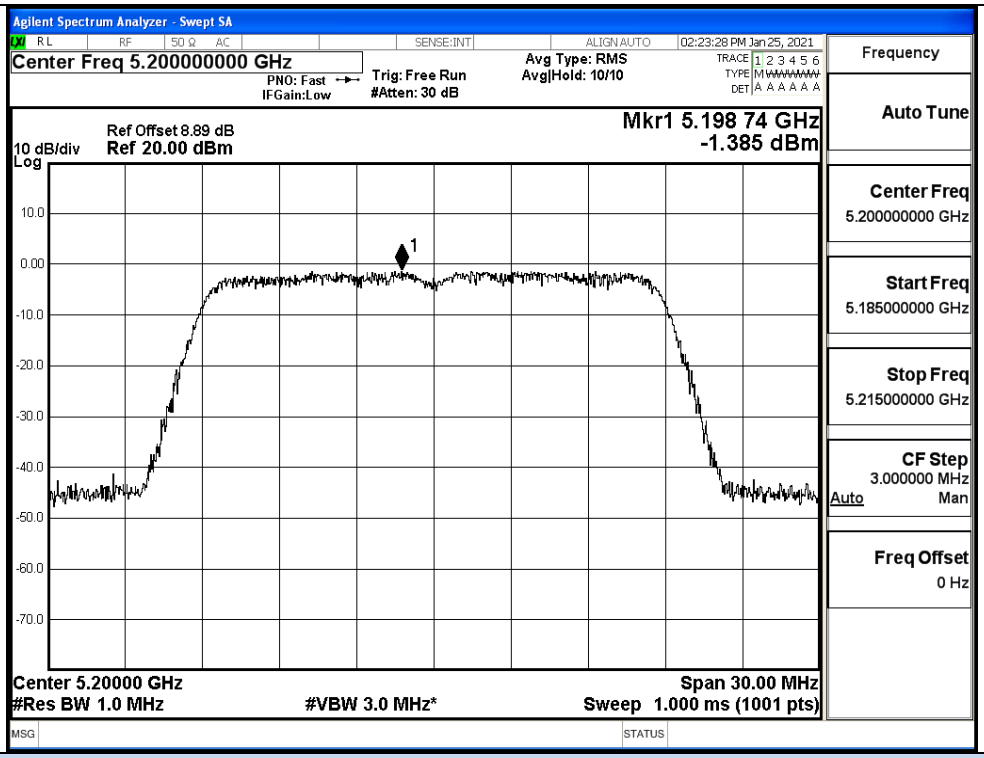
IEEE 802.11n40 / Channel 38 / 5190MHz



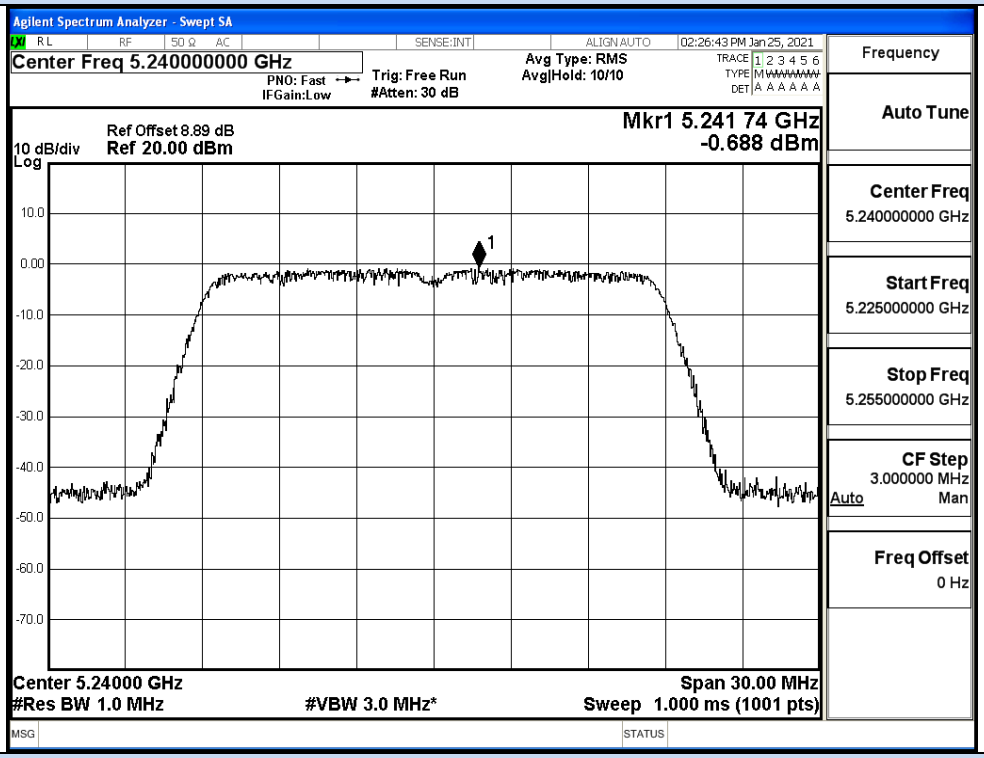
IEEE 802.11n40 / Channel 46 / 5230MHz



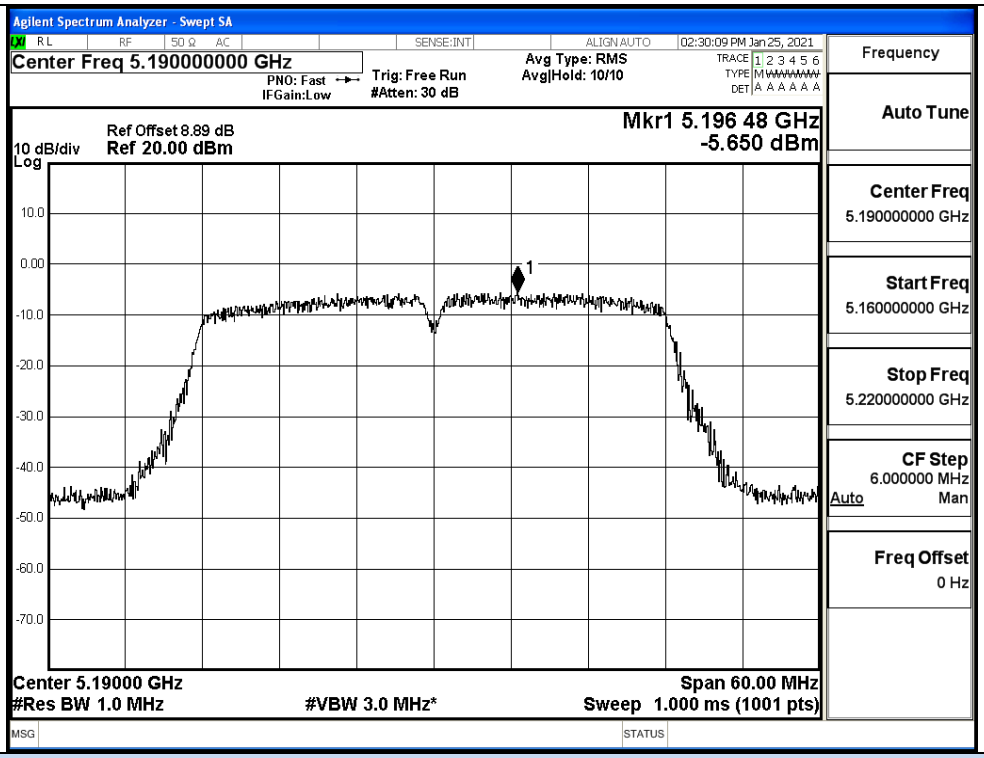
IEEE 802.11ac20 / Channel 36 / 5180MHz



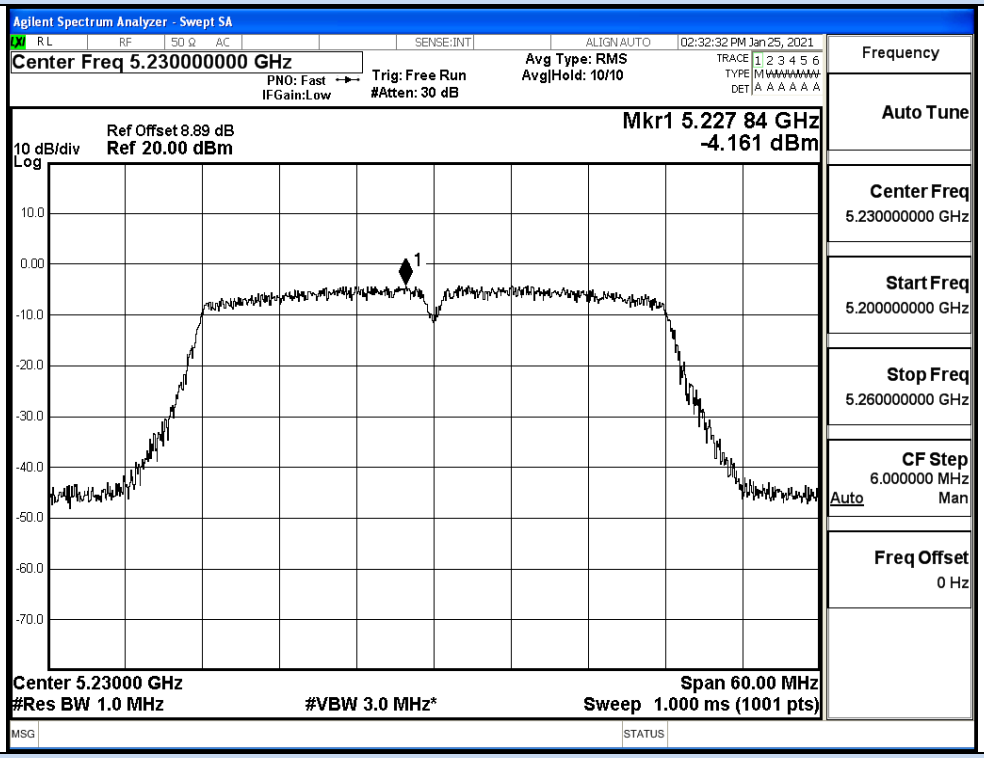
IEEE 802.11ac20 / Channel 40 / 5200MHz



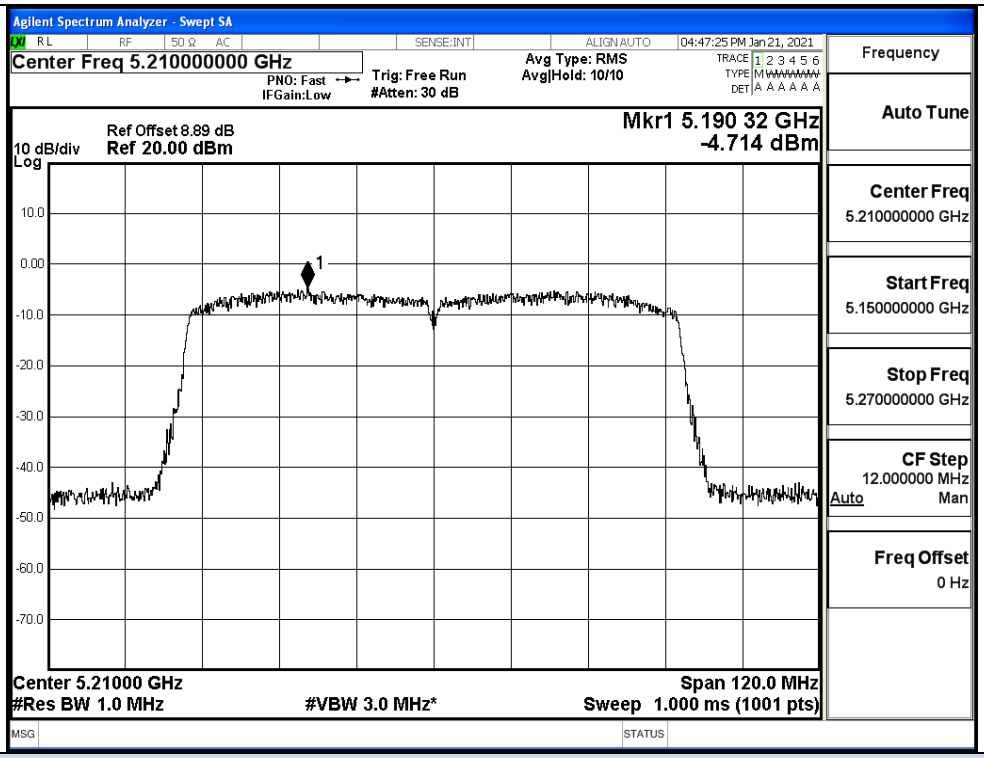
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



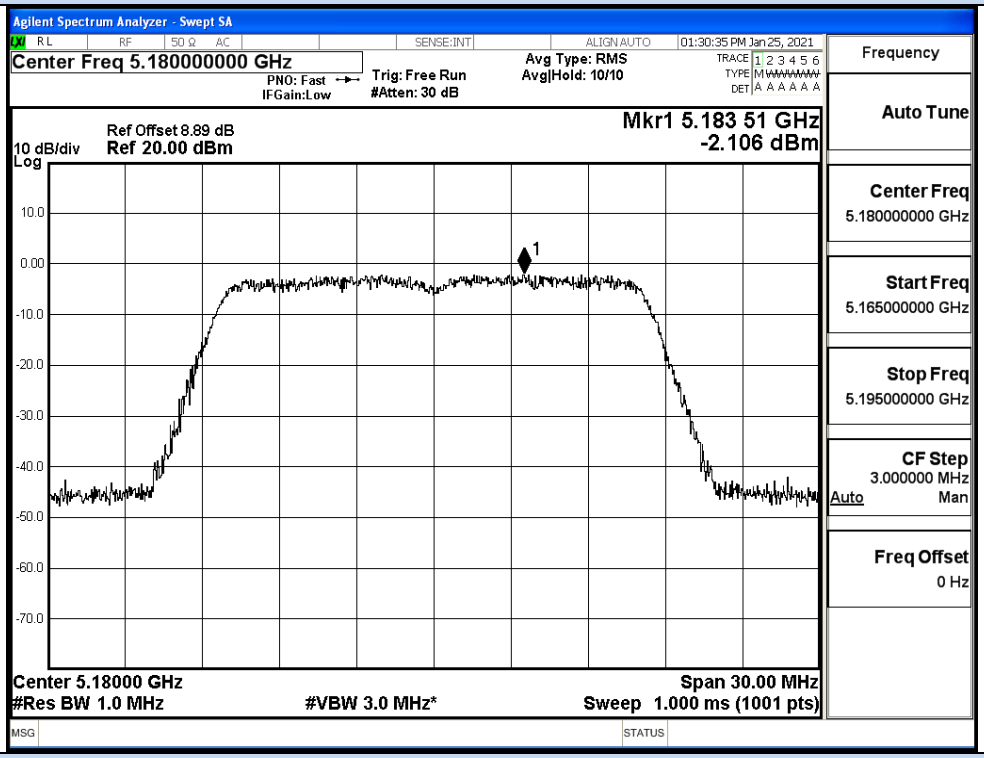
IEEE 802.11ac80 / Channel 42 / 5210MHz

ANT1

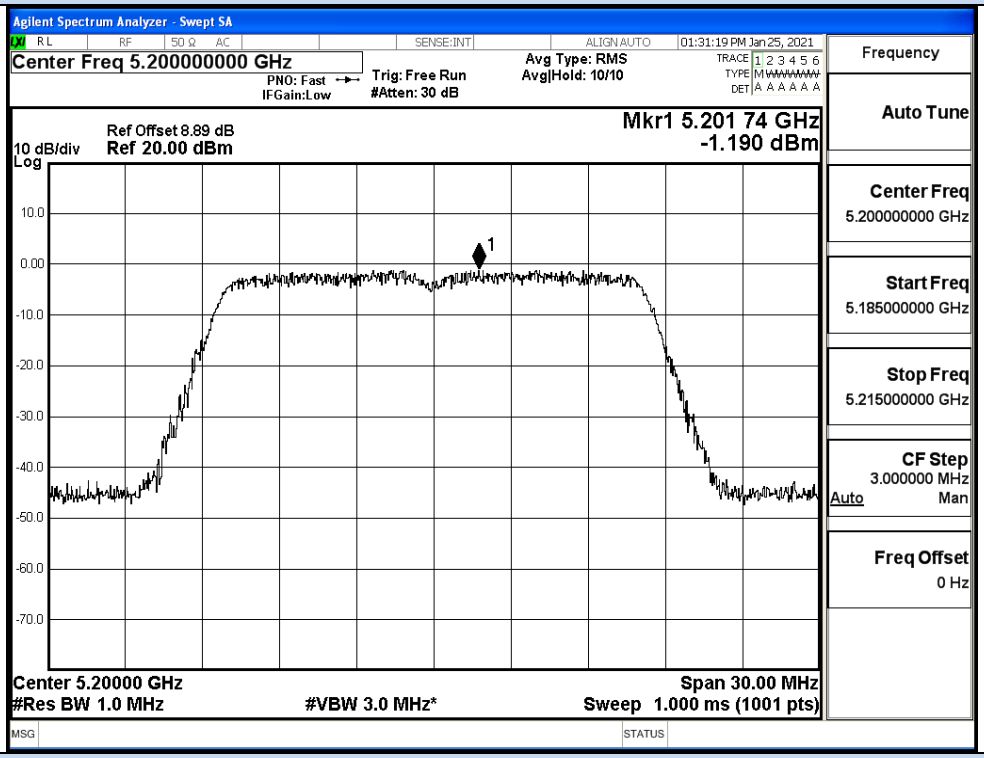
Test Mode	Channel	Frequency (MHz)	Power Density (dBm/MHz)	Duty Cycle Factor(dB)	Report Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	36	5180	-2.11	0	-2.11	17	Pass
	40	5200	-1.19	0	-1.19		Pass
	48	5240	-0.92	0	-0.92		Pass
11N20 SISO	36	5180	-2.83	0	-2.83	17	Pass
	40	5200	-1.91	0	-1.91		Pass
	48	5240	-1.21	0	-1.21		Pass
11N40 SISO	38	5190	-5.10	0	-5.10	17	Pass
	46	5230	-3.45	0	-3.45		Pass
11AC20 SISO	36	5180	-3.11	0	-3.11	17	Pass
	40	5200	-2.21	0	-2.21		Pass
	48	5240	-0.93	0	-0.93		Pass
11AC40 SISO	38	5190	-5.64	0	-5.64	17	Pass
	46	5230	-4.04	0	-4.04		Pass
11AC80 SISO	42	5210	-5.84	0	-5.84	17	Pass

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/MHz)	Duty Cycle Factor(dB)	Ant Gain (dBi)	Report EIRP Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	36	5180	-2.11	0	5.0	2.89	10	Pass
	40	5200	-1.19	0	5.0	3.81		Pass
	48	5240	-0.92	0	5.0	4.08		Pass
11N20 SISO	36	5180	-2.83	0	5.0	2.17	10	Pass
	40	5200	-1.91	0	5.0	3.09		Pass
	48	5240	-1.21	0	5.0	3.79		Pass
11N40 SISO	38	5190	-5.10	0	5.0	-0.1	10	Pass
	46	5230	-3.45	0	5.0	1.55		Pass
11AC20 SISO	36	5180	-3.11	0	5.0	1.89	10	Pass
	40	5200	-2.21	0	5.0	2.79		Pass
	48	5240	-0.93	0	5.0	4.07		Pass
11AC40 SISO	38	5190	-5.64	0	5.0	-0.64	10	Pass
	46	5230	-4.04	0	5.0	0.96		Pass
11AC80 SISO	42	5210	-5.84	0	5.0	-0.84	10	Pass

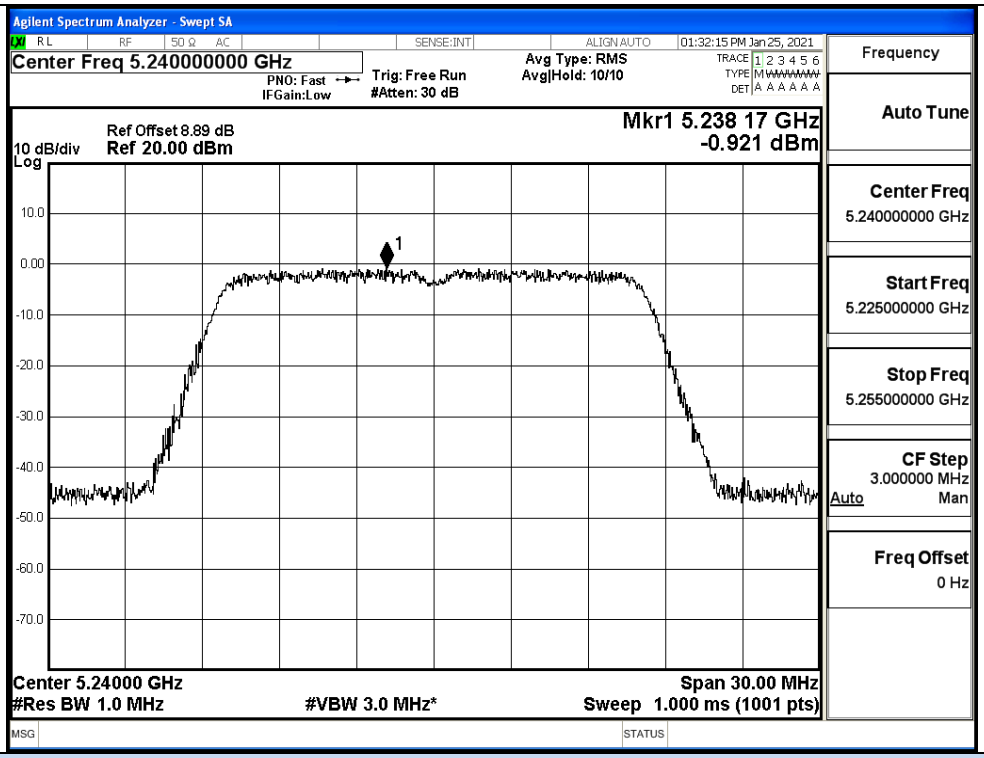
Power Spectral Density



IEEE 802.11a / Channel 36 / 5180MHz

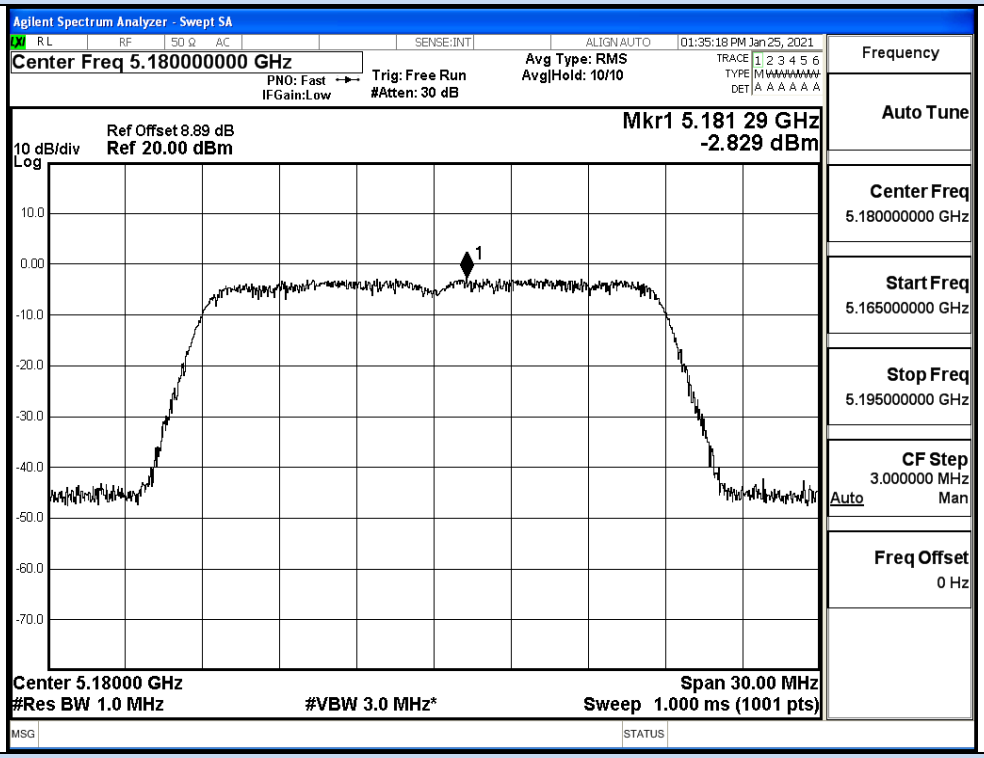


IEEE 802.11na / Channel 40 / 5200MHz

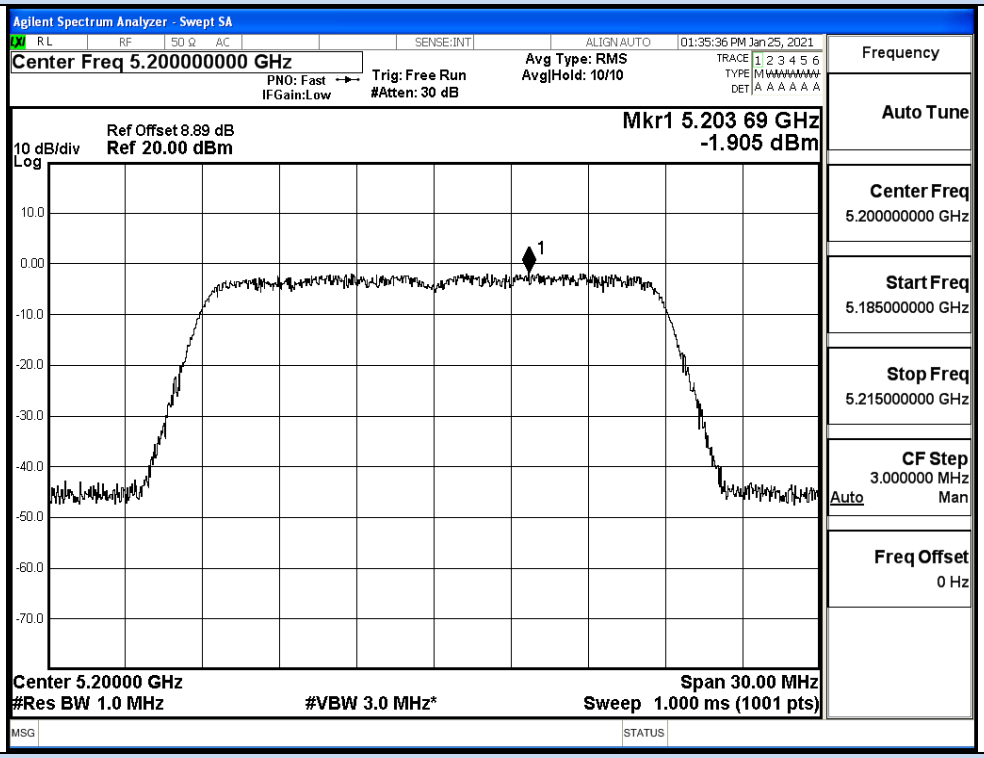


IEEE 802.11na / Channel 48 / 5240MHz

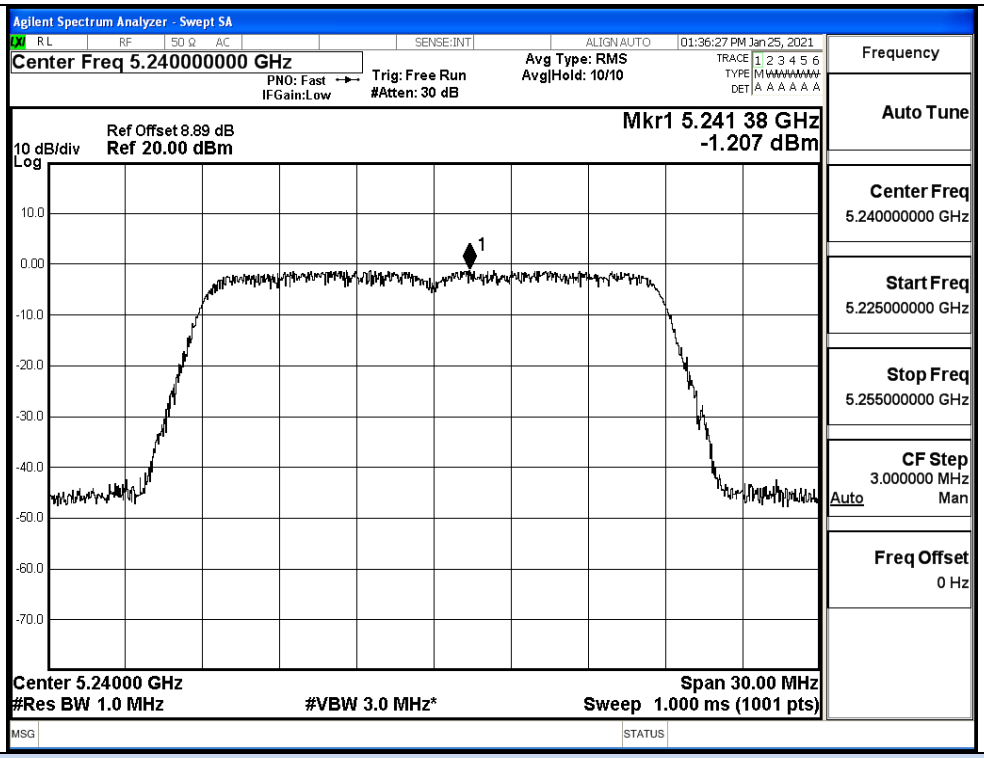
Power Spectral Density



IEEE 802.11n20 / Channel 36 / 5180MHz

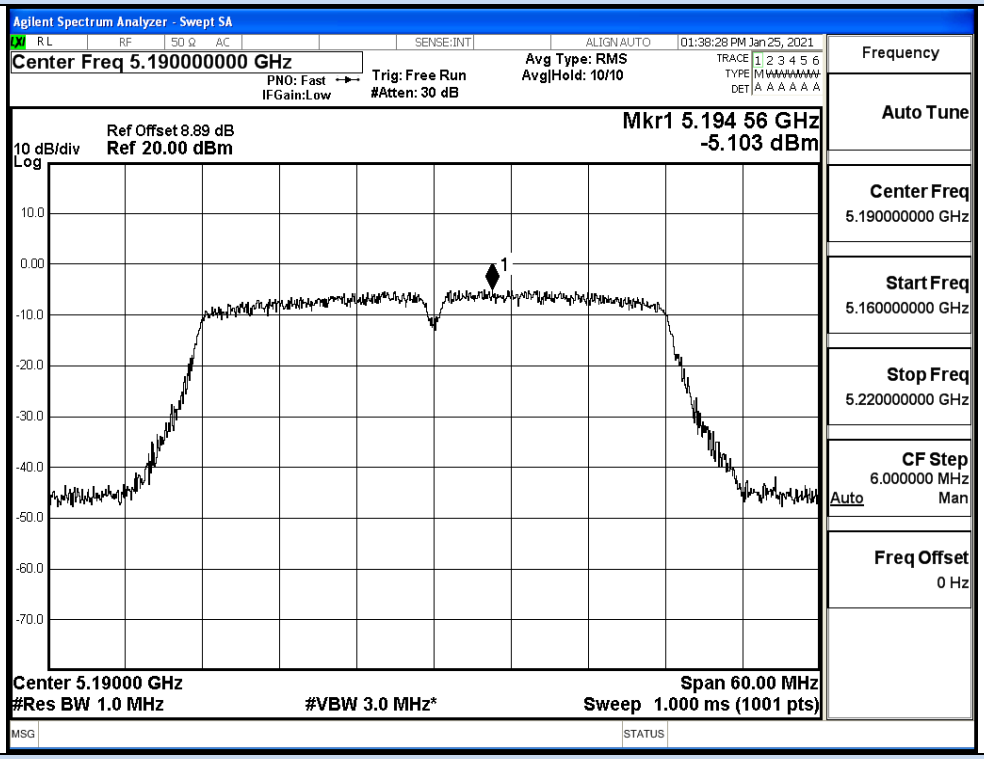


IEEE 802.11n20 / Channel 40 / 5200MHz

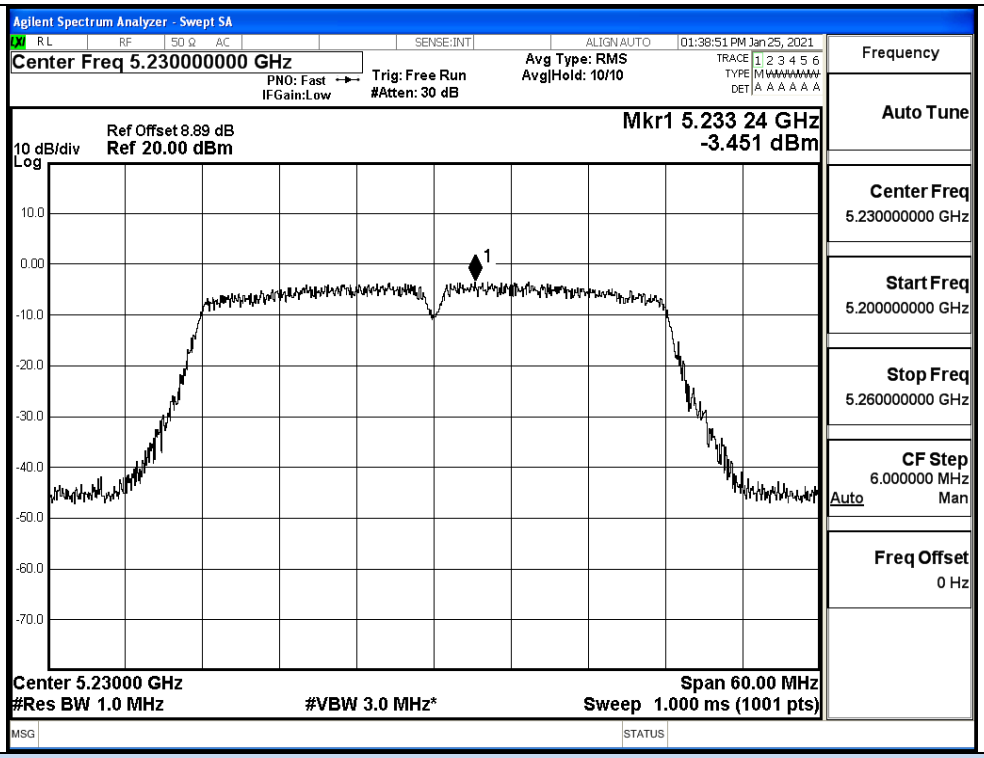


IEEE 802.11n20 / Channel 48 / 5240MHz

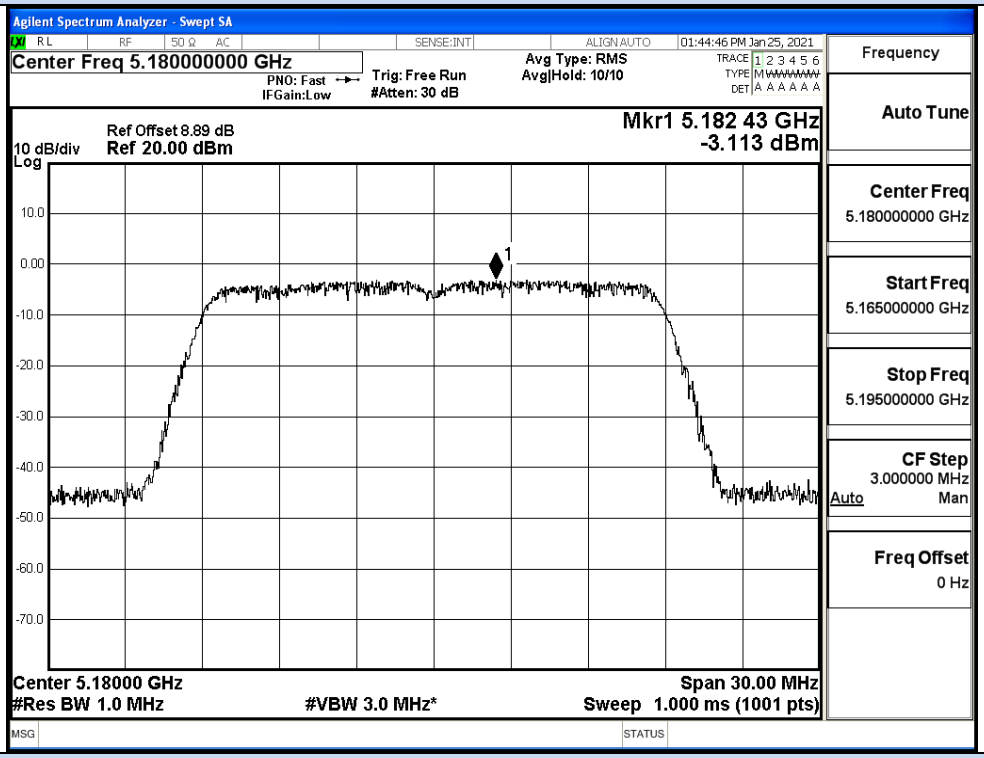
Power Spectral Density



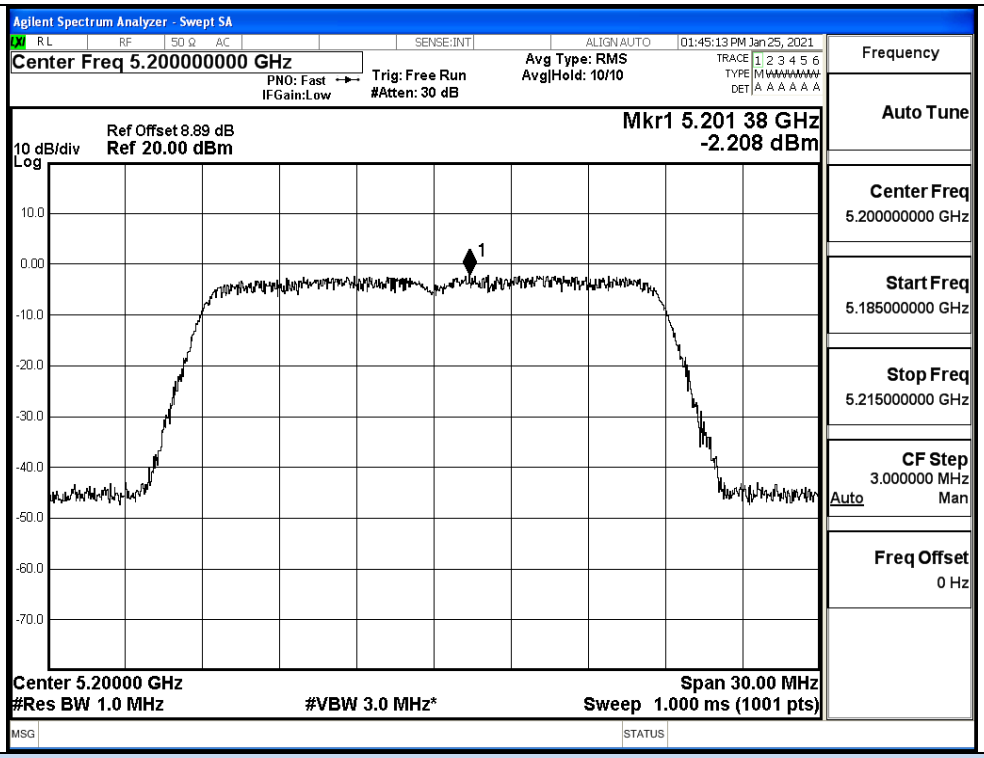
IEEE 802.11n40 / Channel 38 / 5190MHz



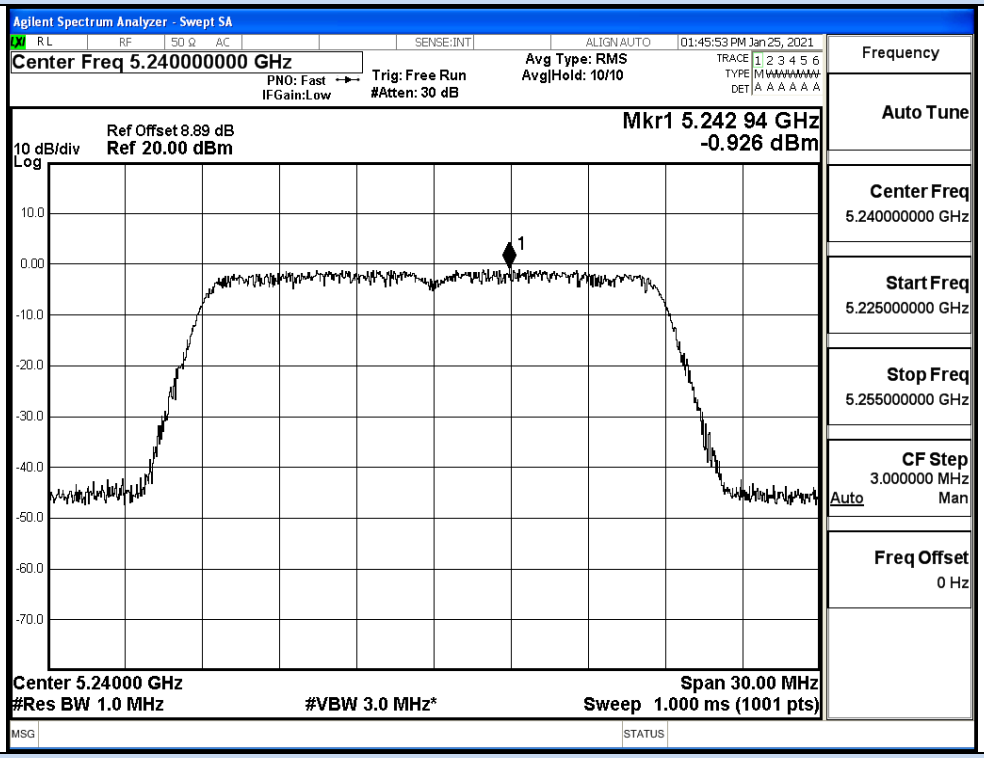
IEEE 802.11n40 / Channel 46 / 5230MHz



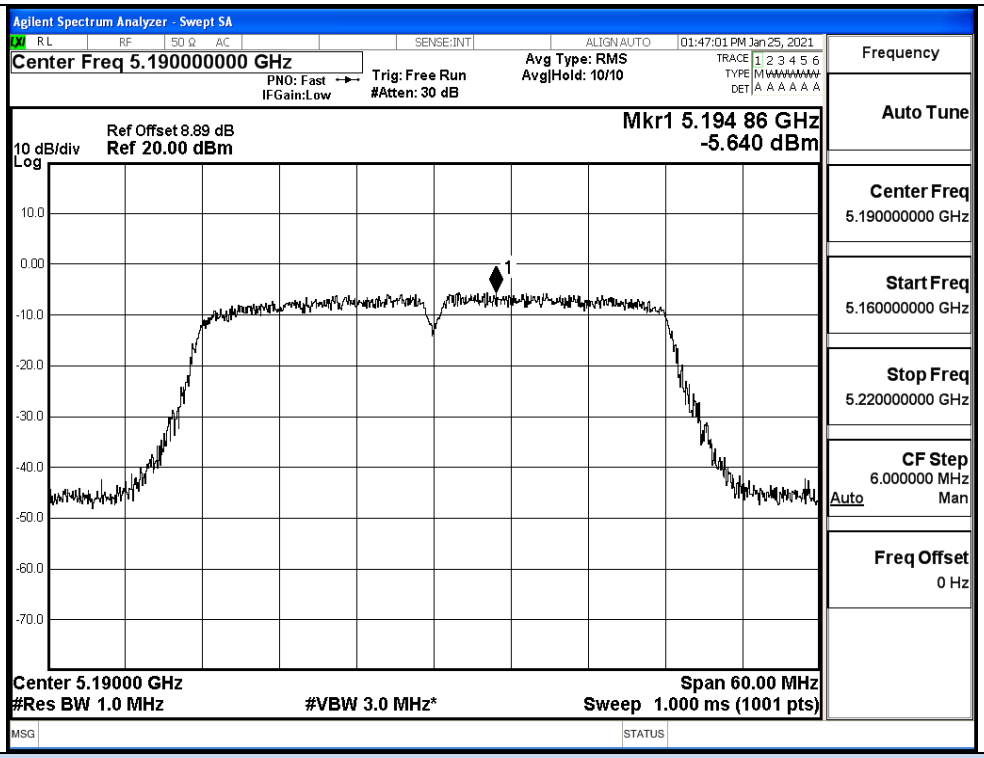
IEEE 802.11ac20 / Channel 36 / 5180MHz



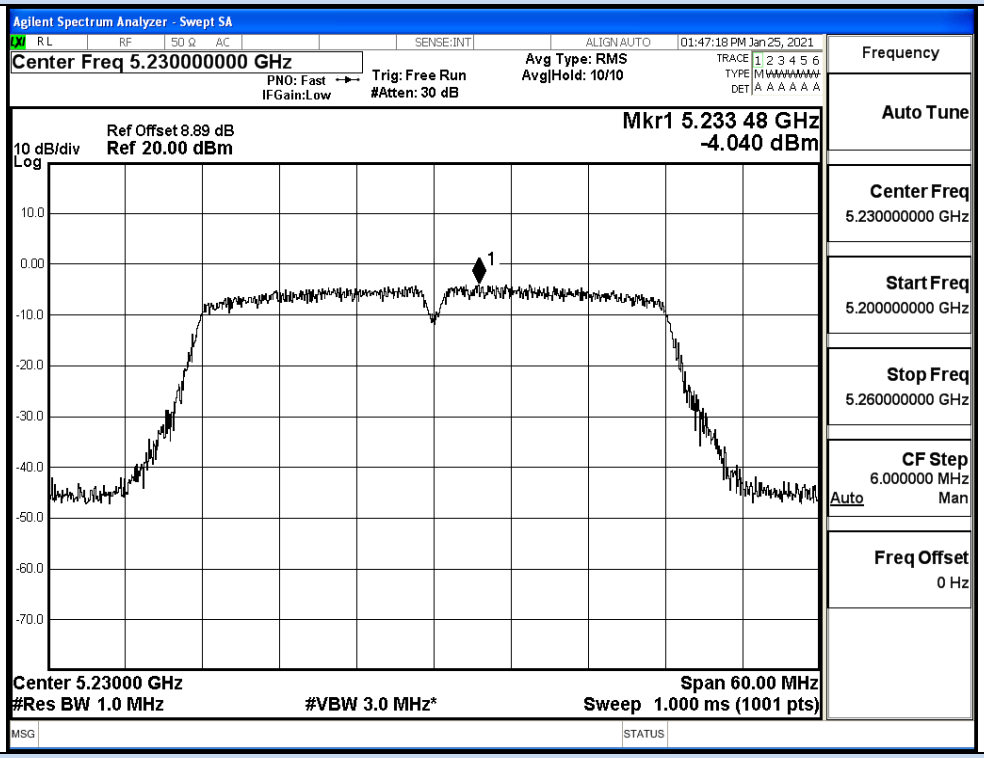
IEEE 802.11ac20 / Channel 40 / 5200MHz



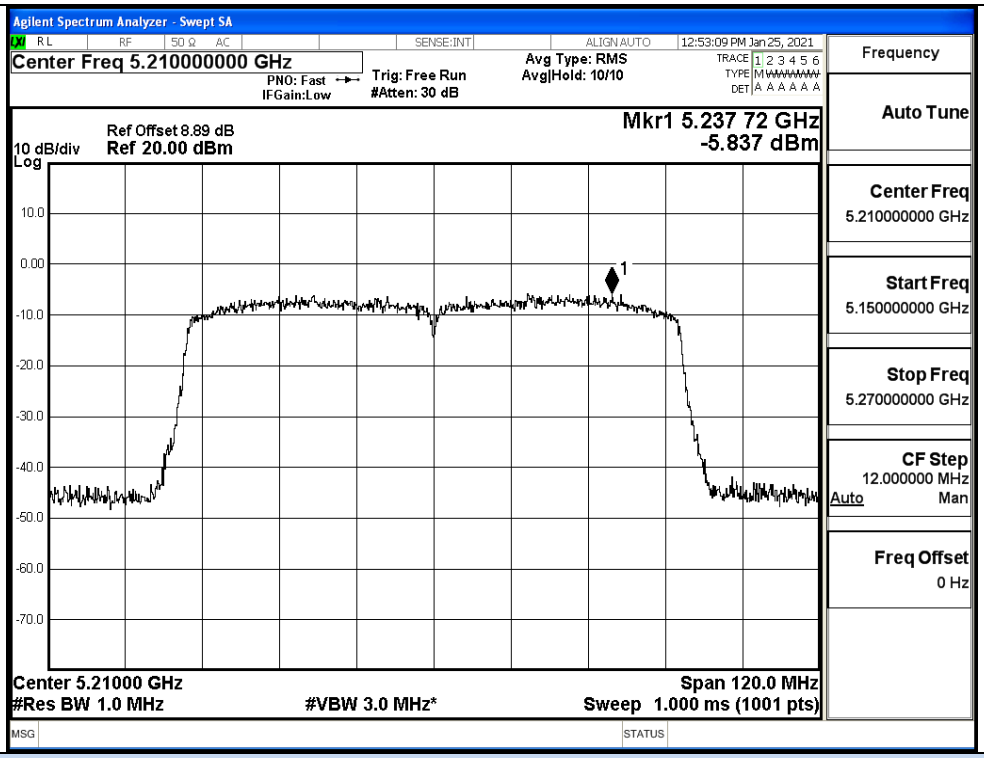
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



IEEE 802.11ac80 / Channel 42 / 5210MHz

MIMO

Test Mode	Channel	Frequency (MHz)	ANT 0 Power Density (dBm/MHz)	ANT 1 Power Density (dBm/MHz)	MIMO Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11N20	36	5180	-2.44	-2.83	0.38	14.99	Pass
	40	5200	-1.44	-1.91	1.34		Pass
	48	5240	-1.16	-1.21	1.83		Pass
11N40	38	5190	-4.69	-5.10	-1.88	14.99	Pass
	46	5230	-3.38	-3.45	-0.40		Pass
11AC20	36	5180	-2.26	-3.11	0.35	14.99	Pass
	40	5200	-1.39	-2.21	1.23		Pass
	48	5240	-0.69	-0.93	2.20		Pass
11AC40	38	5190	-5.65	-5.64	-2.63	14.99	Pass
	46	5230	-4.16	-4.04	-1.09		Pass
11AC80	42	5210	-4.71	-5.84	-2.23	14.99	Pass

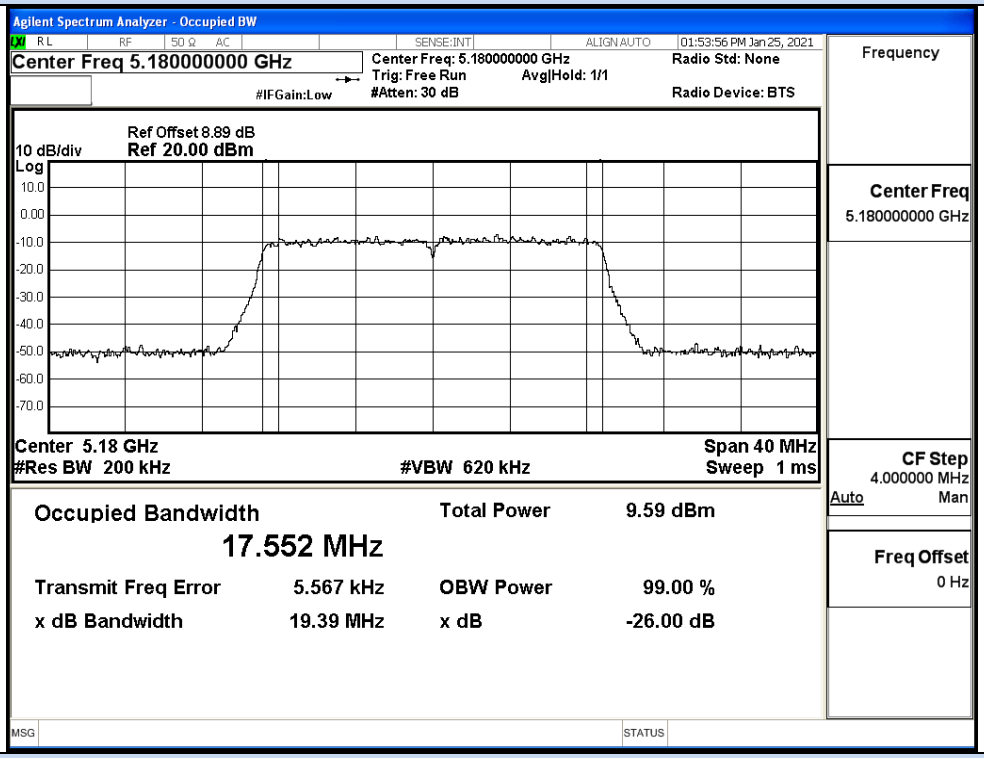
Test Mode	Channel	Frequency (MHz)	ANT 0 EIRP Power Density (dBm/MHz)	ANT 1 EIRP Power Density (dBm/MHz)	MIMO EIRP Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11N20	36	5180	2.56	2.17	5.38	7.99	Pass
	40	5200	3.56	3.09	6.34		Pass
	48	5240	3.84	3.79	6.83		Pass
11N40	38	5190	0.31	-0.1	3.12	7.99	Pass
	46	5230	1.62	1.55	4.60		Pass
11AC20	36	5180	2.74	1.89	5.35	7.99	Pass
	40	5200	3.61	2.79	6.23		Pass
	48	5240	4.31	4.07	7.20		Pass
11AC40	38	5190	-0.65	-0.64	2.37	7.99	Pass
	46	5230	0.84	0.96	3.91		Pass
11AC80	42	5210	0.29	-0.84	2.77	7.99	Pass

B.4 Emission Bandwidth

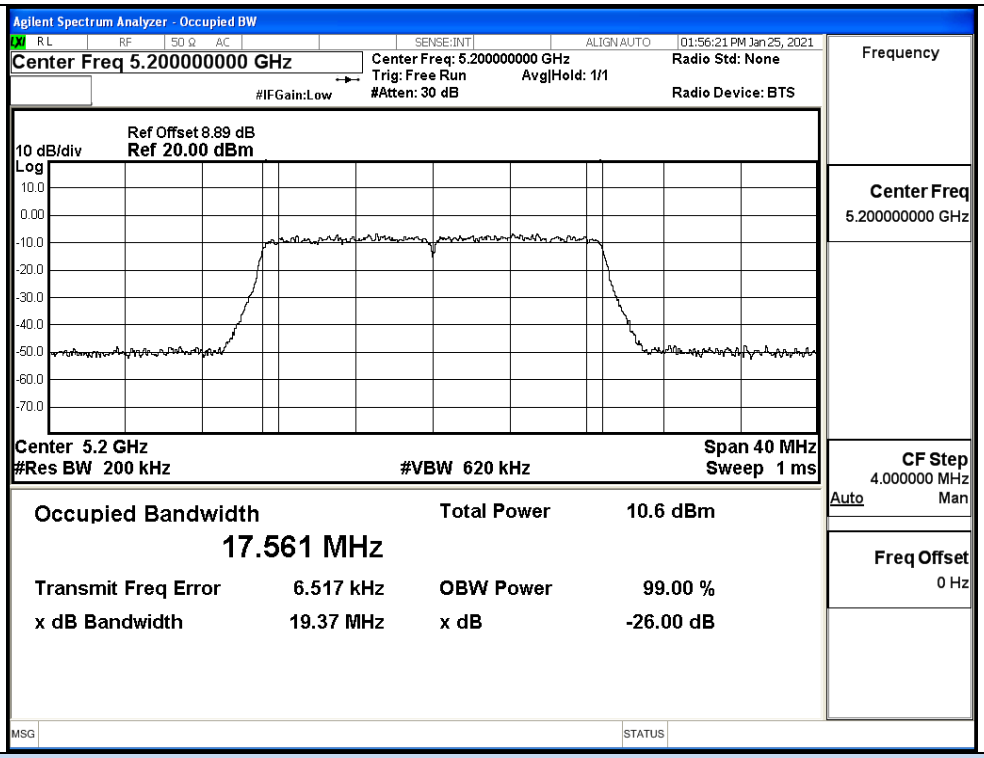
ANT0

Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	19.39	16.355	No Limit	Pass
	40	5200	19.37	16.358		Pass
	48	5240	19.42	16.349		Pass
11N20 SISO	36	5180	19.34	17.556	No Limit	Pass
	40	5200	19.36	17.565		Pass
	48	5240	19.28	17.565		Pass
11N40 SISO	38	5190	41.08	36.101	No Limit	Pass
	46	5230	40.80	36.094		Pass
11AC20 SISO	36	5180	19.42	17.563	No Limit	Pass
	40	5200	19.36	17.559		Pass
	48	5240	19.40	17.567		Pass
11AC40 SISO	38	5190	40.76	36.086	No Limit	Pass
	46	5230	40.97	36.021		Pass
11AC80 SISO	42	5210	80.83	75.300	No Limit	Pass

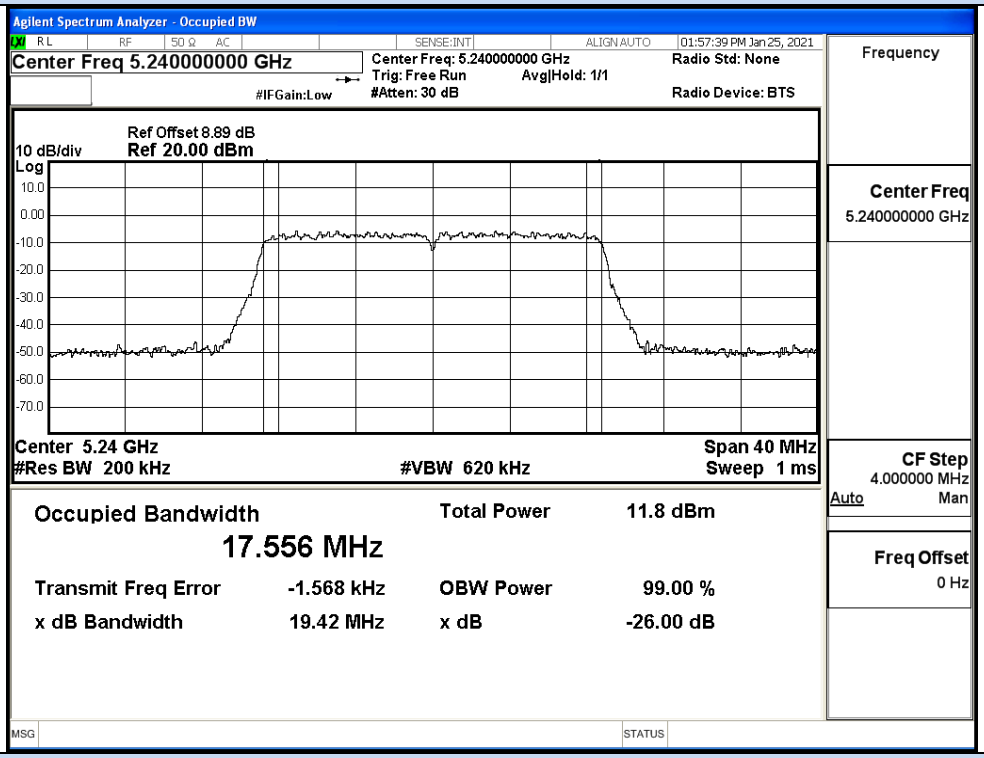
26dB Bandwidth



IEEE 802.11a / Channel 36 / 5180MHz

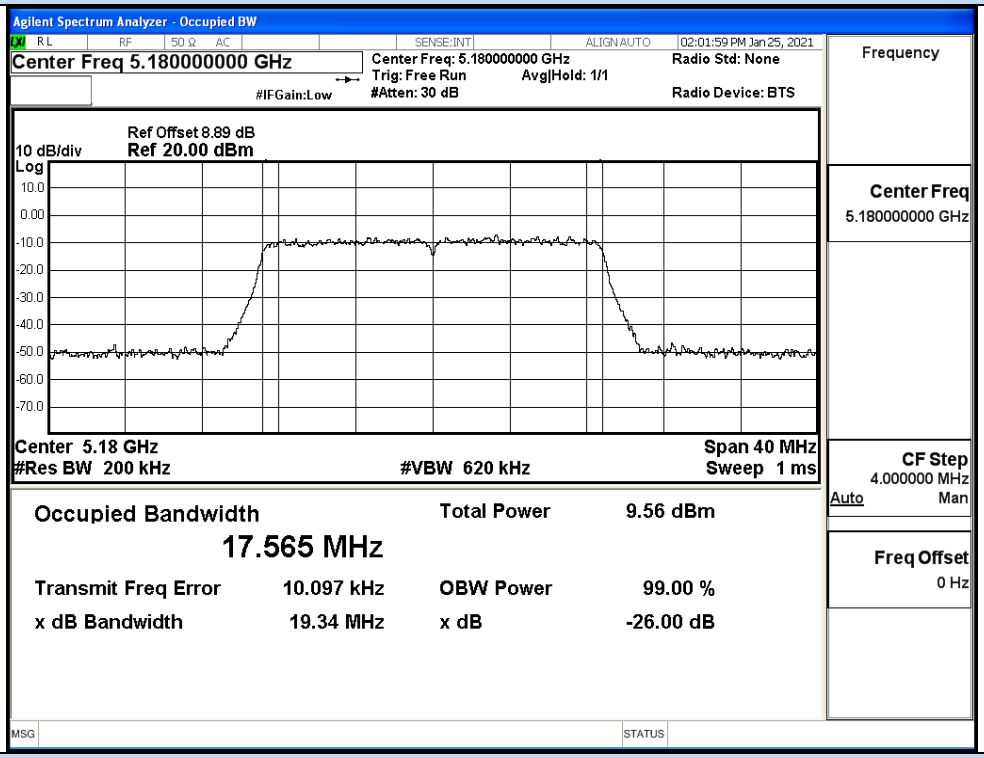


IEEE 802.11a / Channel 40 / 5200MHz

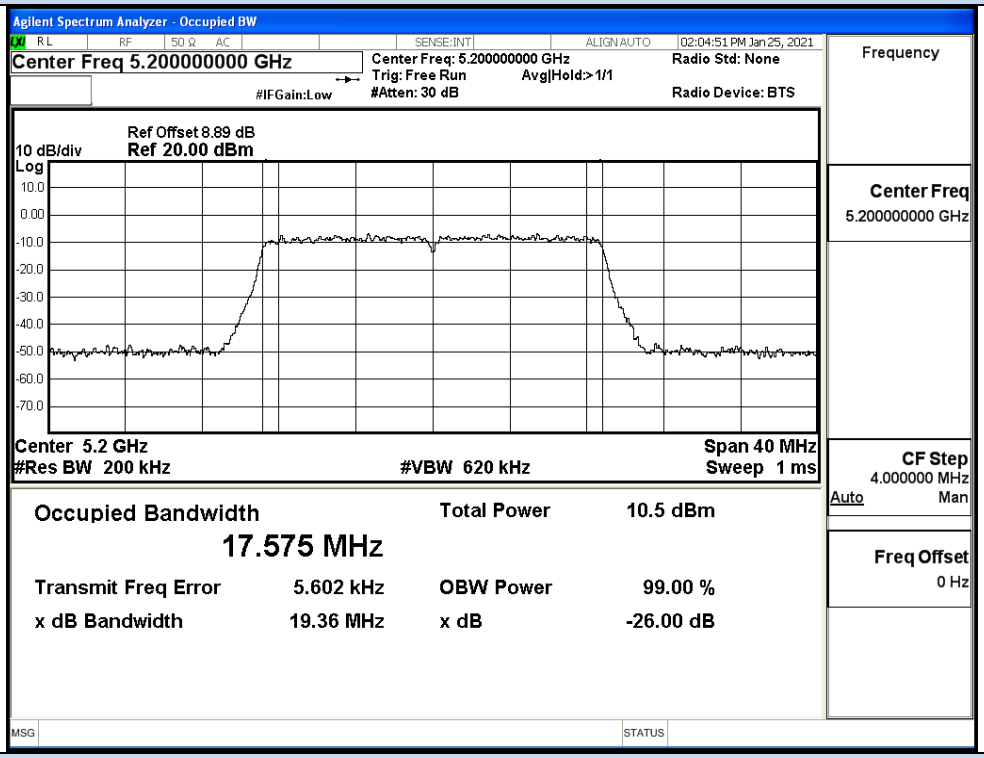


IEEE 802.11a / Channel 48 / 5240MHz

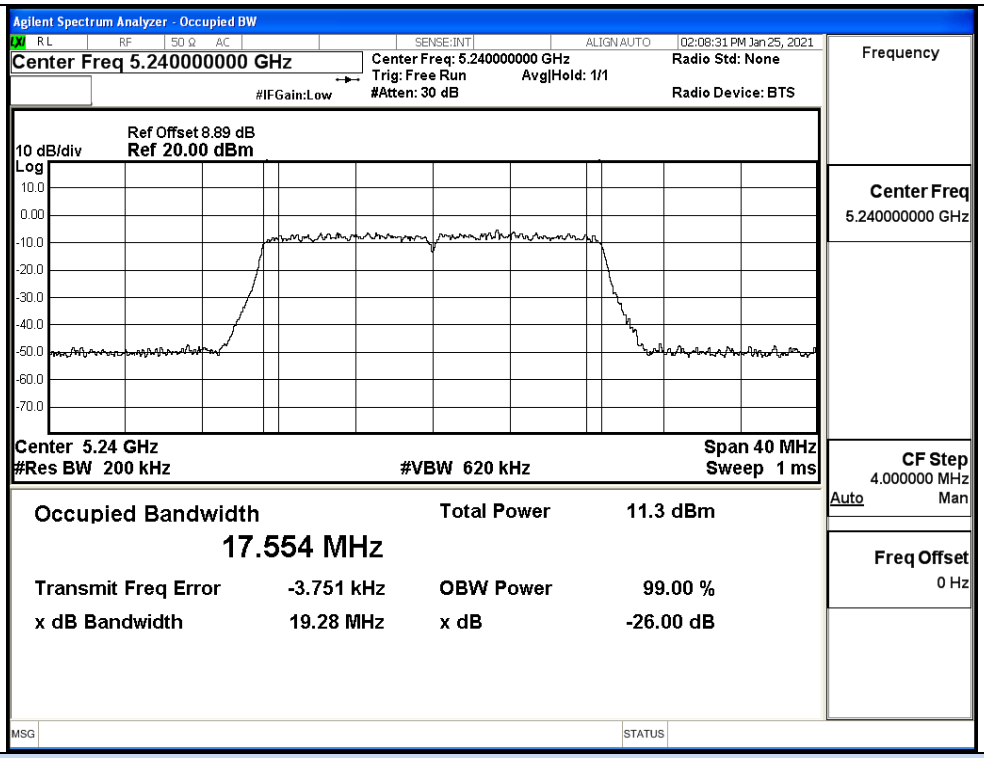
26dB Bandwidth



IEEE 802.11n20 / Channel 36 / 5180MHz

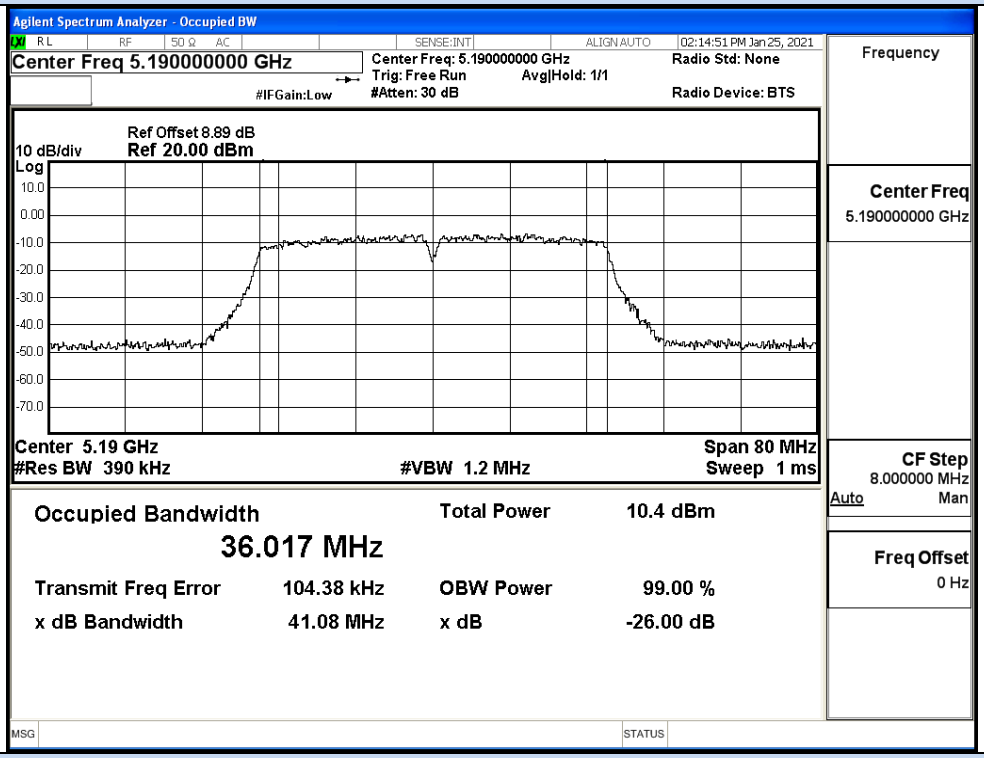


IEEE 802.11n20 / Channel 40 / 5200MHz

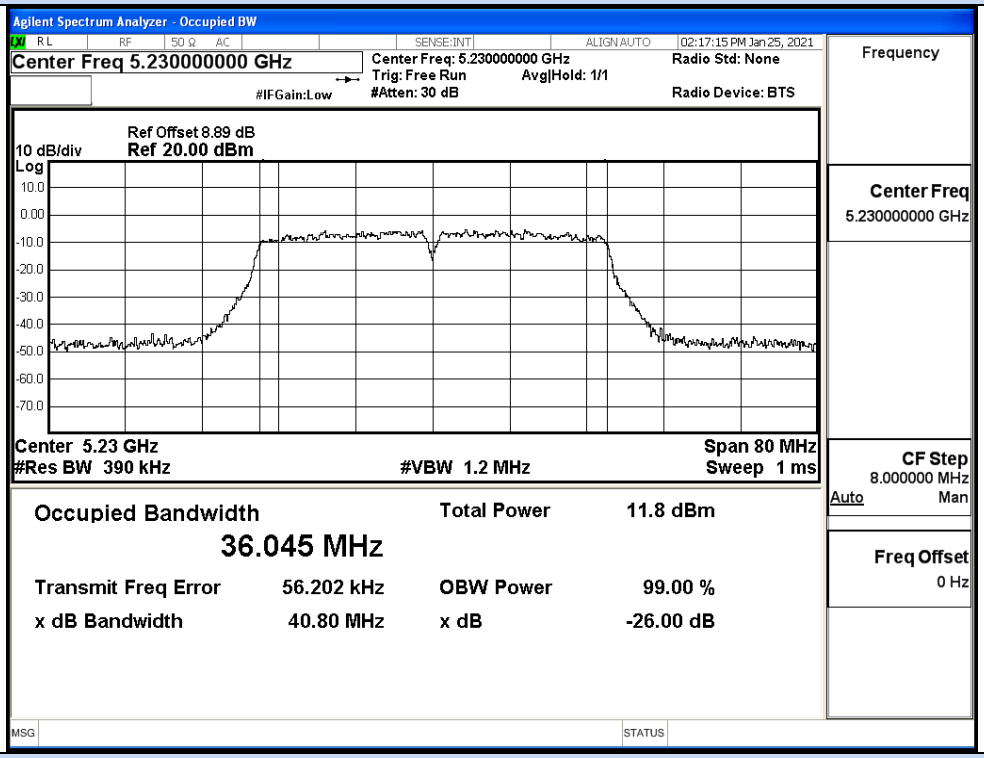


IEEE 802.11n20 / Channel 48 / 5240MHz

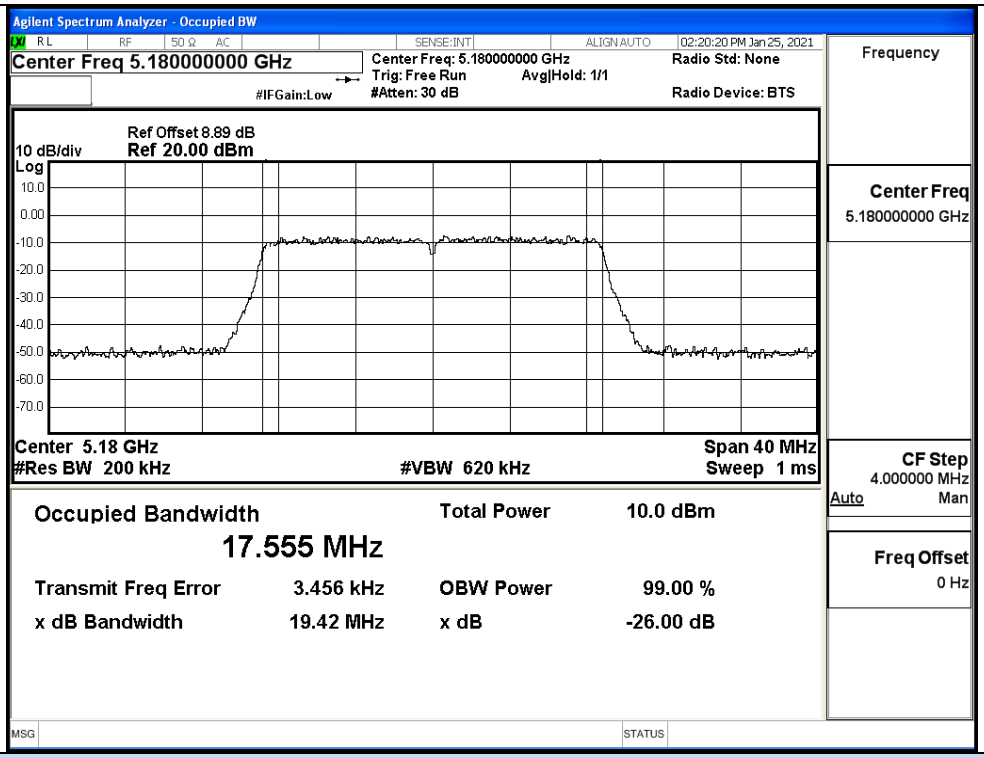
26dB Bandwidth



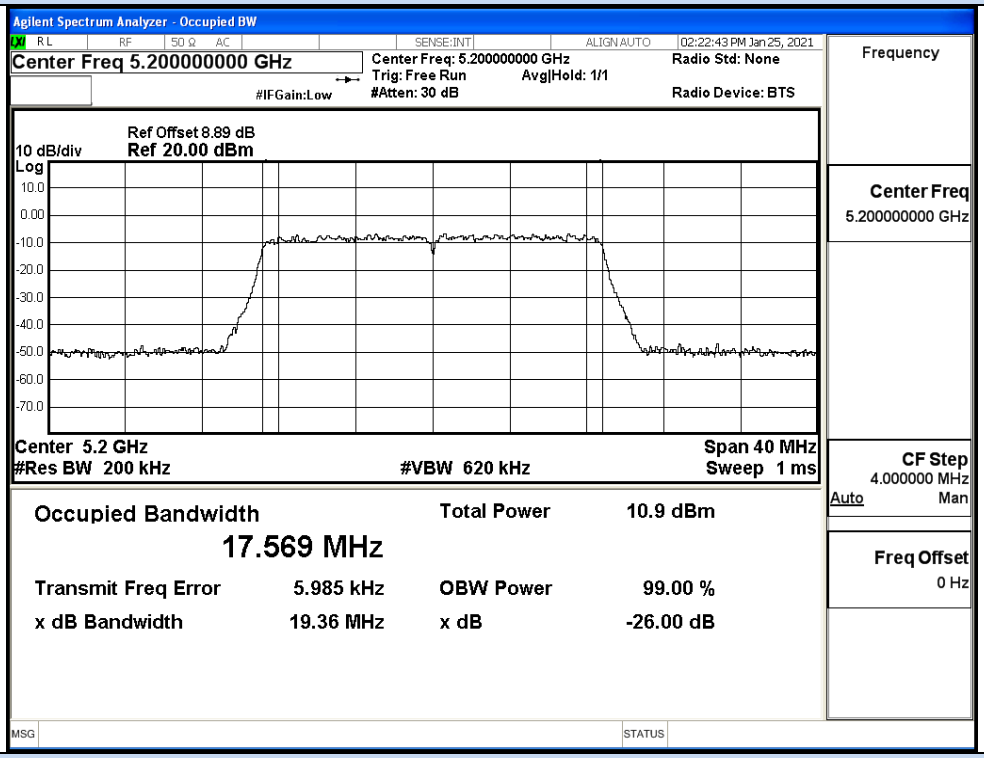
IEEE 802.11n40 / Channel 38 / 5190MHz



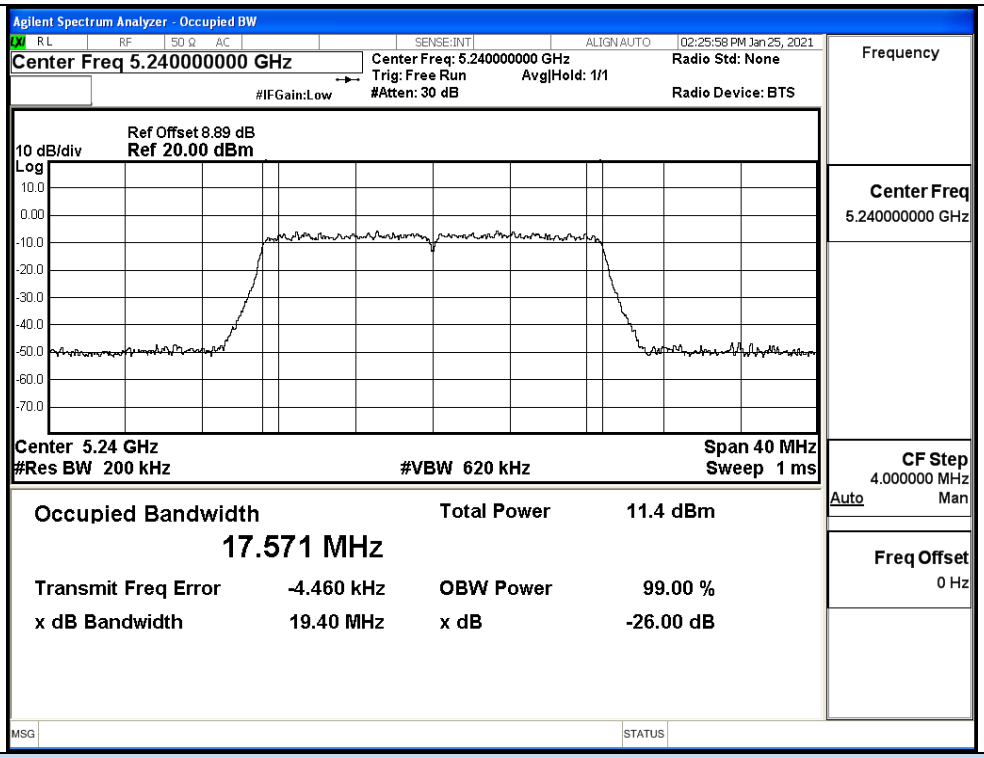
IEEE 802.11n40 / Channel 46 / 5230MHz



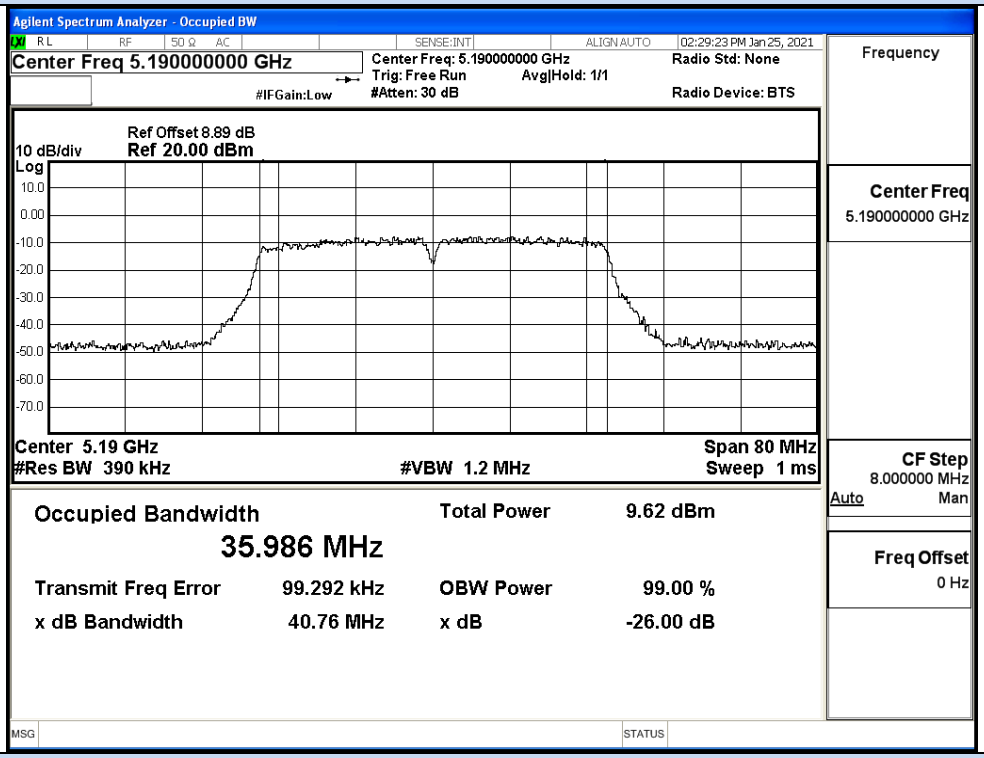
IEEE 802.11ac20 / Channel 36 / 5180MHz



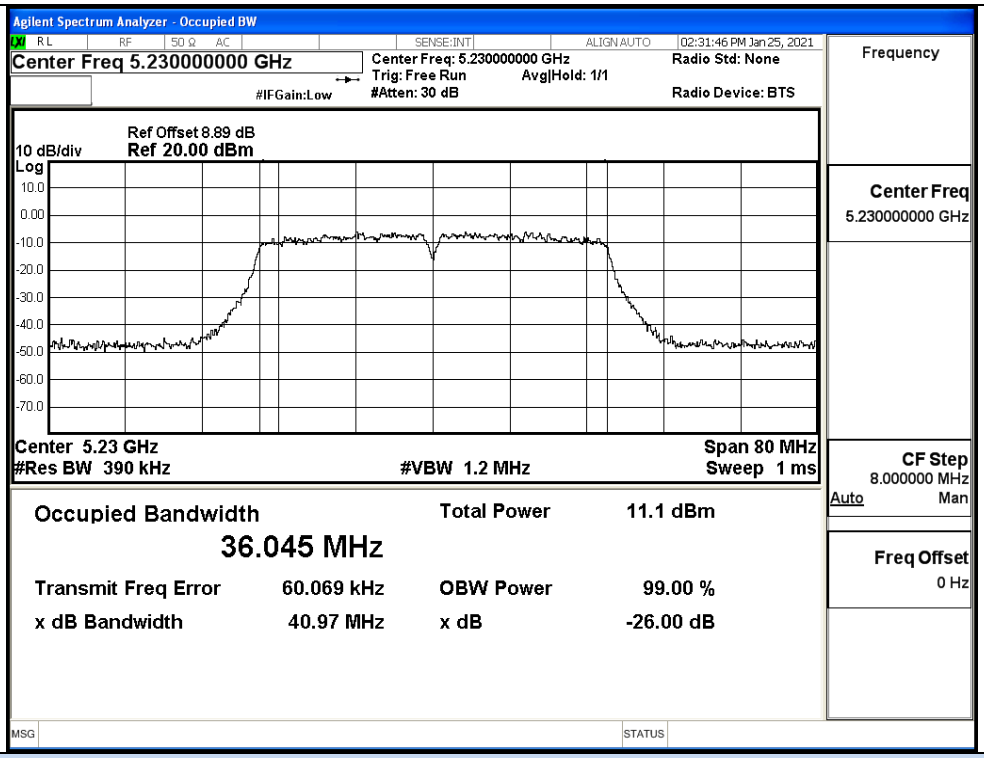
IEEE 802.11ac20 / Channel 40 / 5200MHz



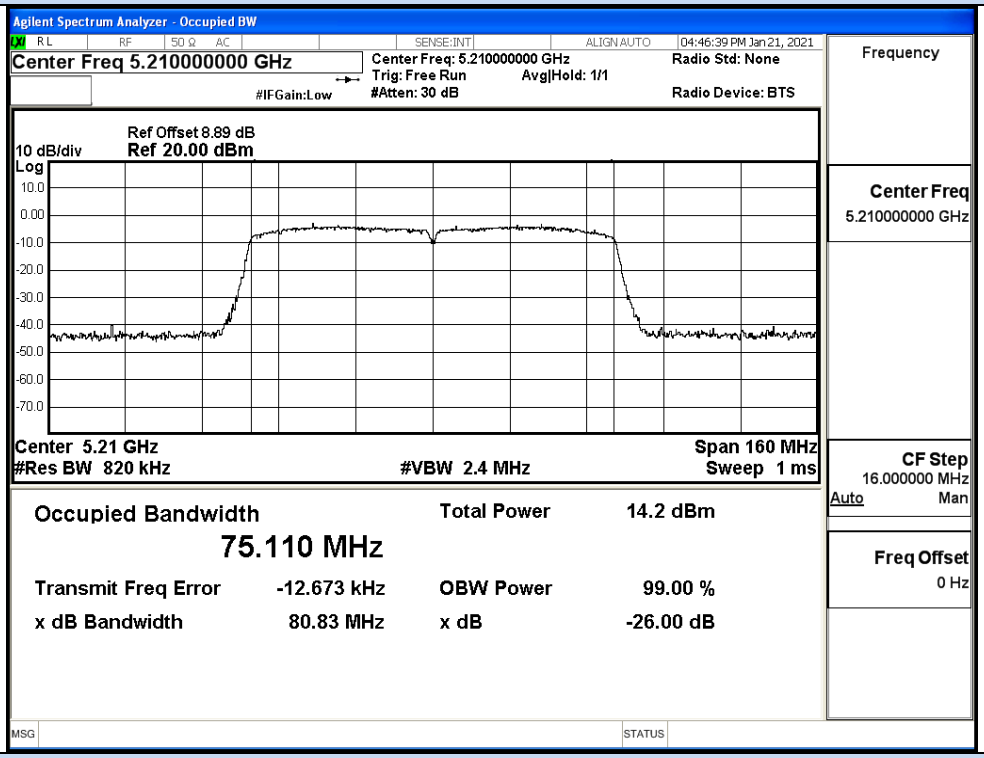
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz

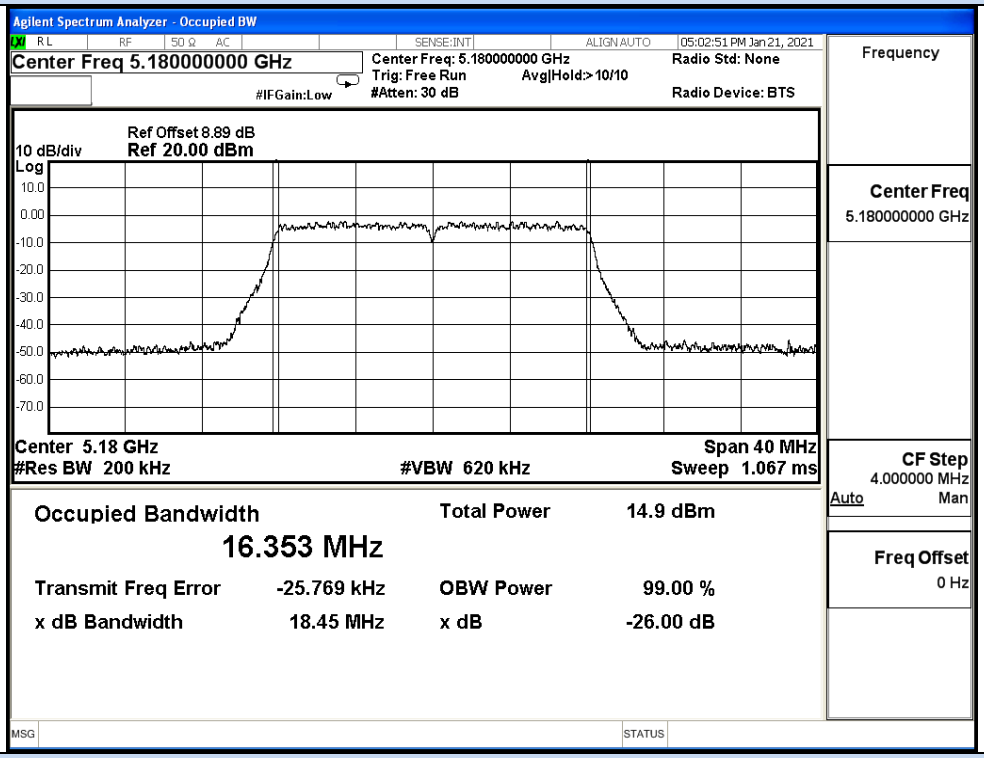


IEEE 802.11ac40 / Channel 46 / 5230MHz

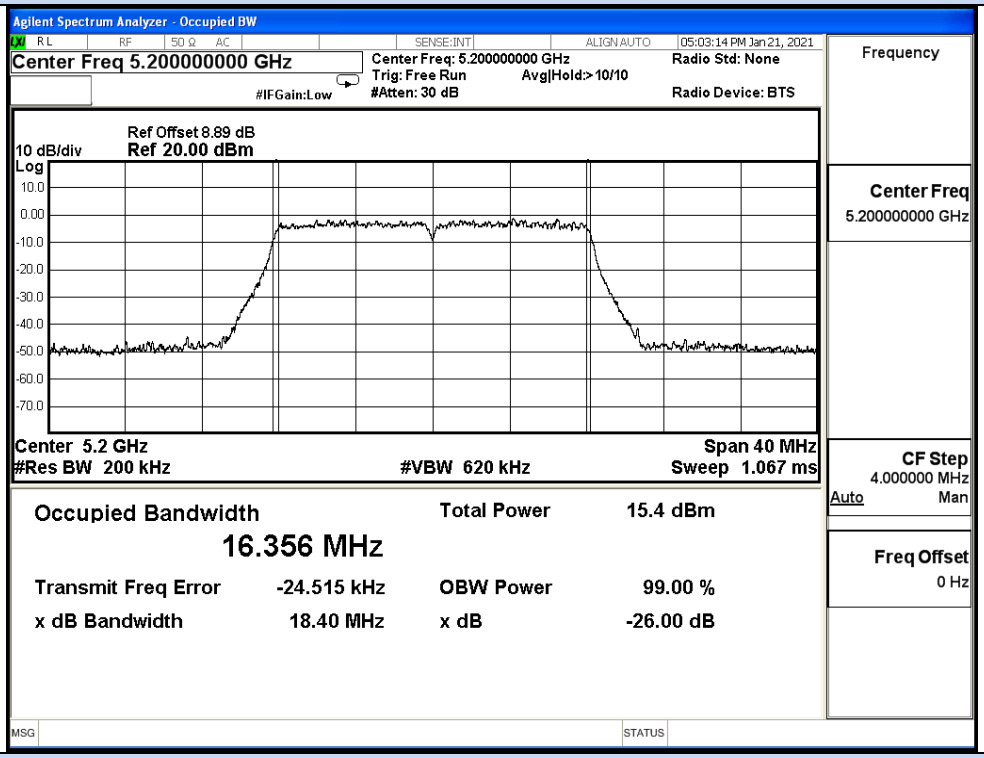


IEEE 802.11ac80 / Channel 42 / 5210MHz

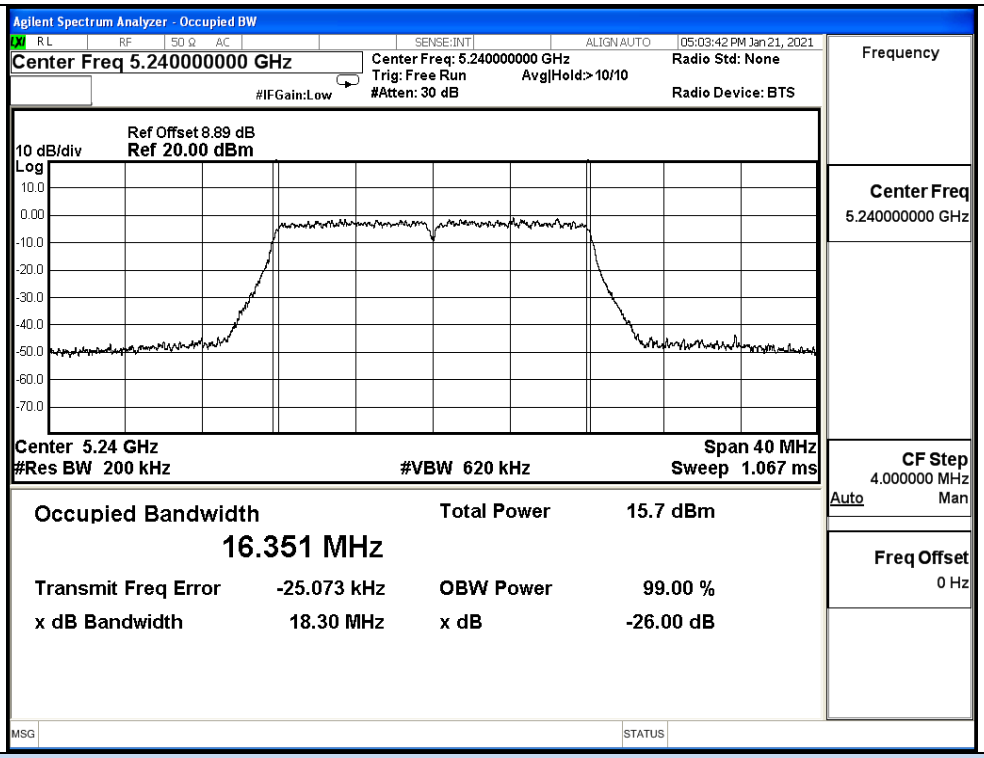
99% Occupied Bandwidth



IEEE 802.11a / Channel 36 / 5180MHz

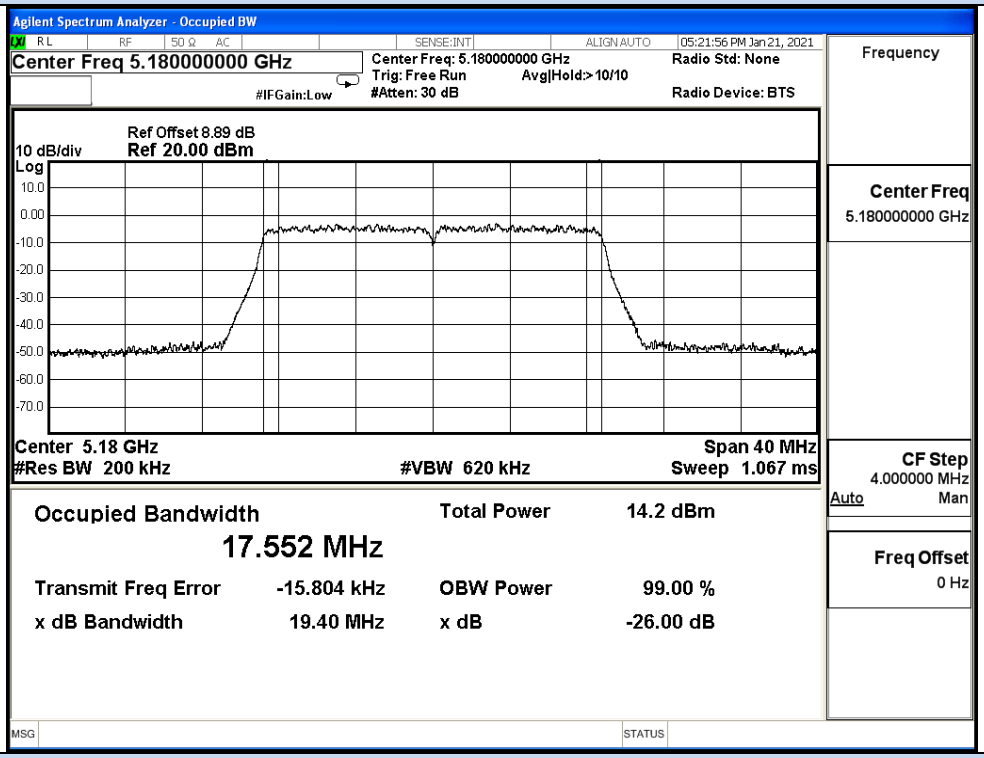


IEEE 802.11a / Channel 40 / 5200MHz

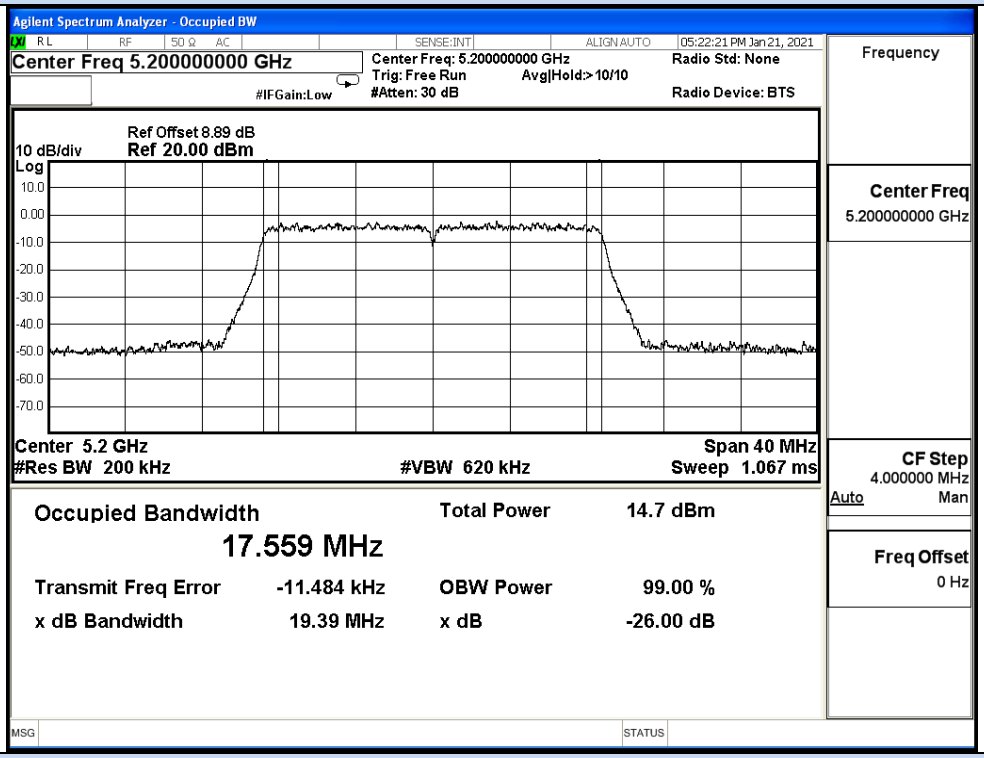


IEEE 802.11a / Channel 48 / 5240MHz

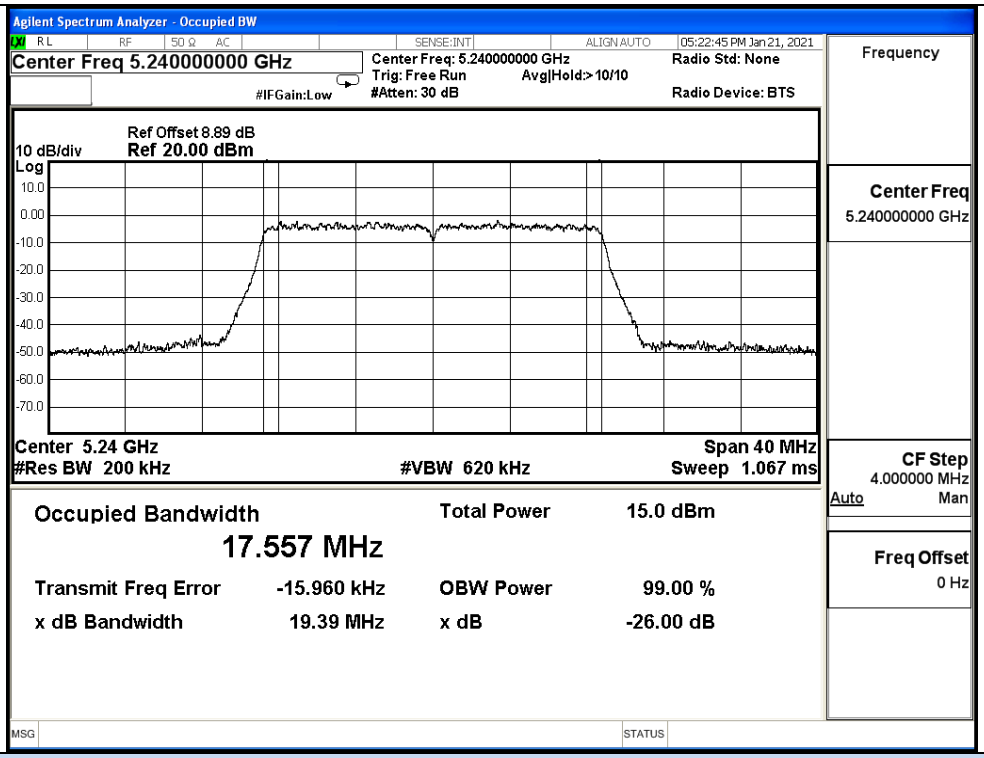
99% Occupied Bandwidth



IEEE 802.11n20 / Channel 36 / 5180MHz

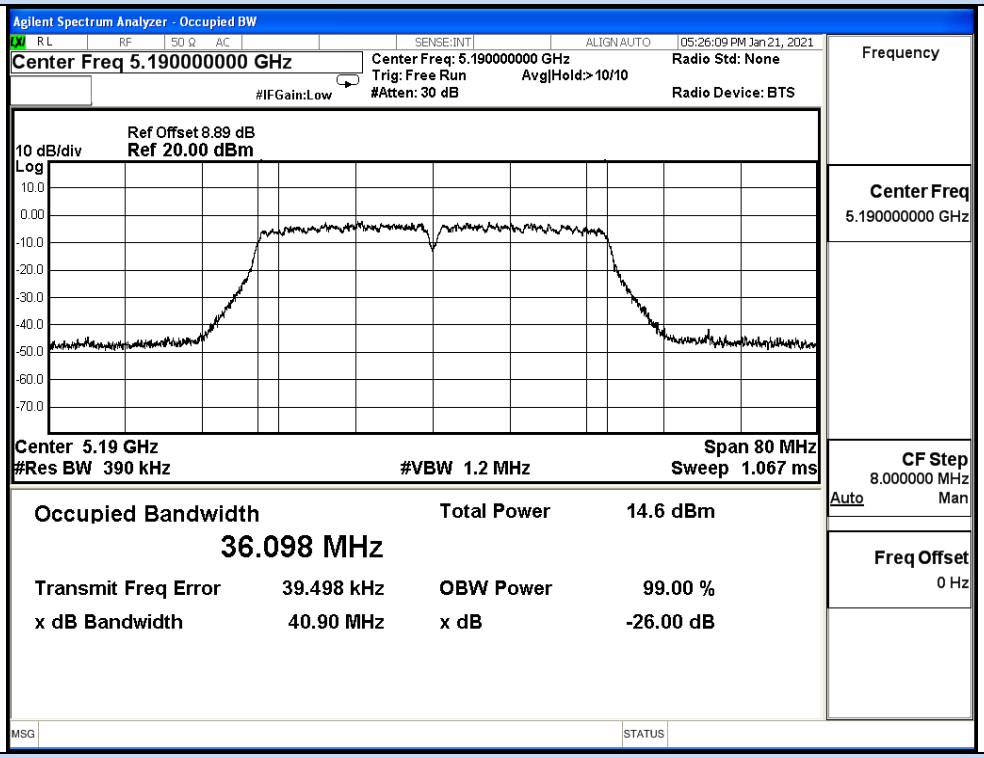


IEEE 802.11n20 / Channel 40 / 5200MHz

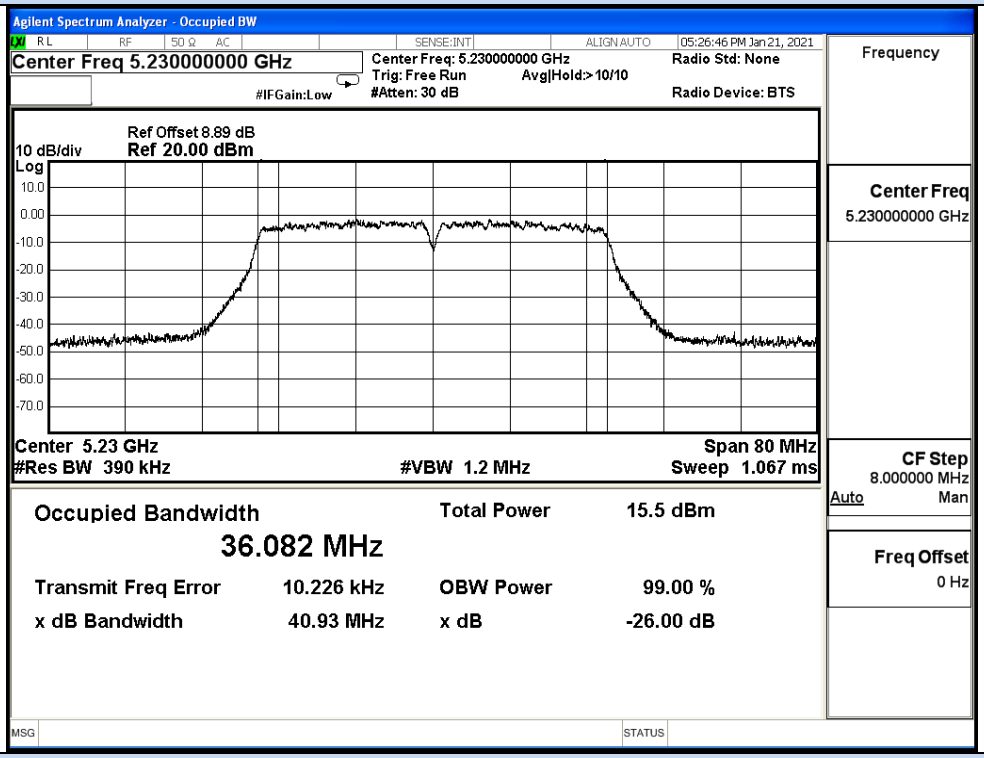


IEEE 802.11n20 / Channel 48 / 5240MHz

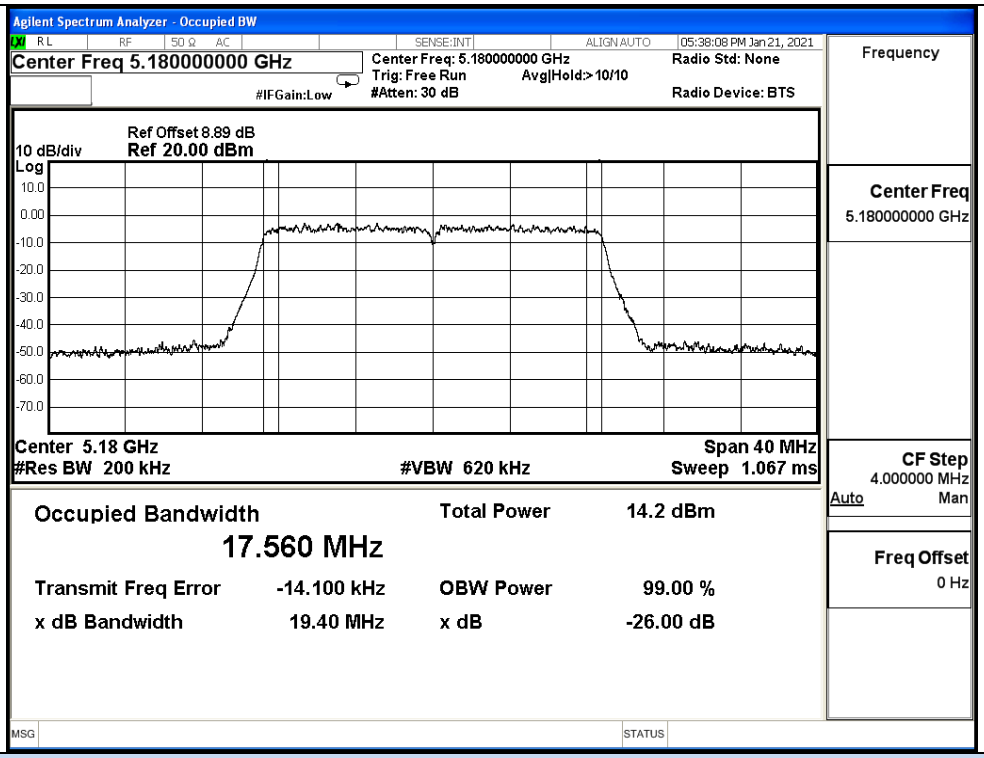
99% Occupied Bandwidth



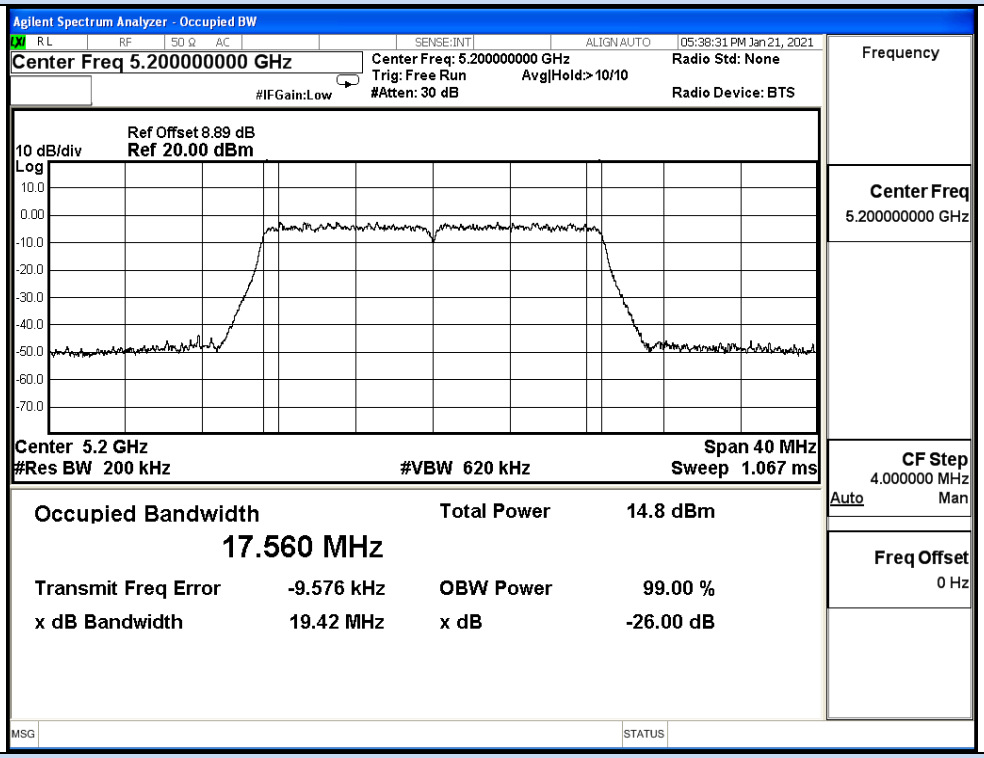
IEEE 802.11n40 / Channel 38 / 5190MHz



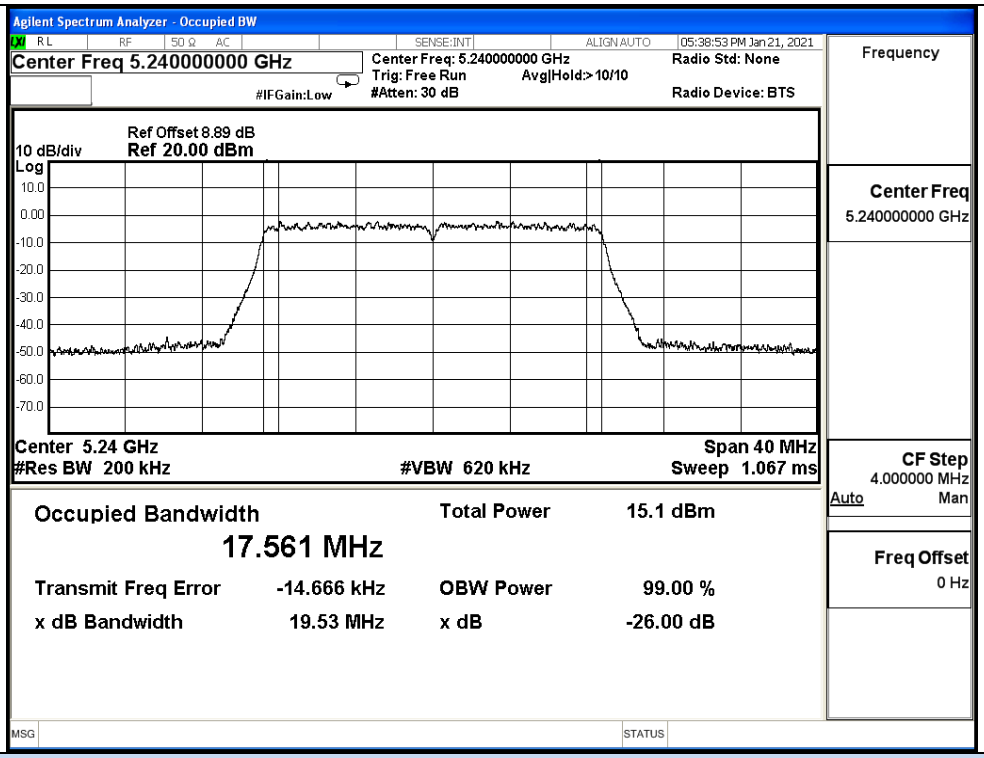
IEEE 802.11n40 / Channel 46 / 5230MHz



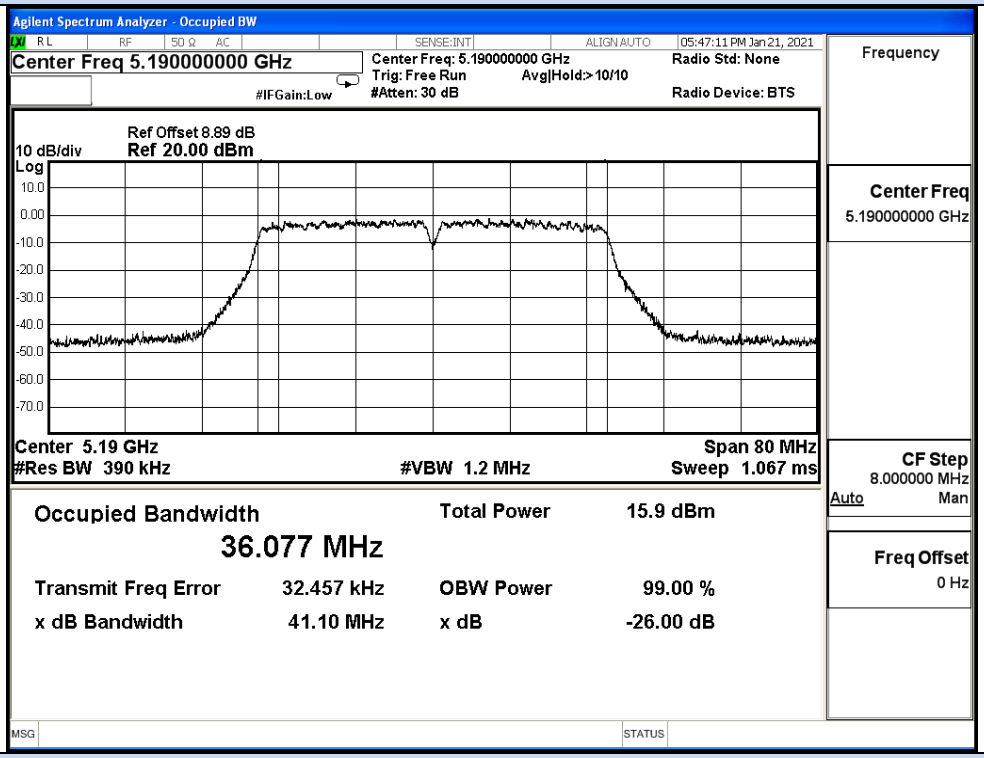
IEEE 802.11ac20 / Channel 36 / 5180MHz



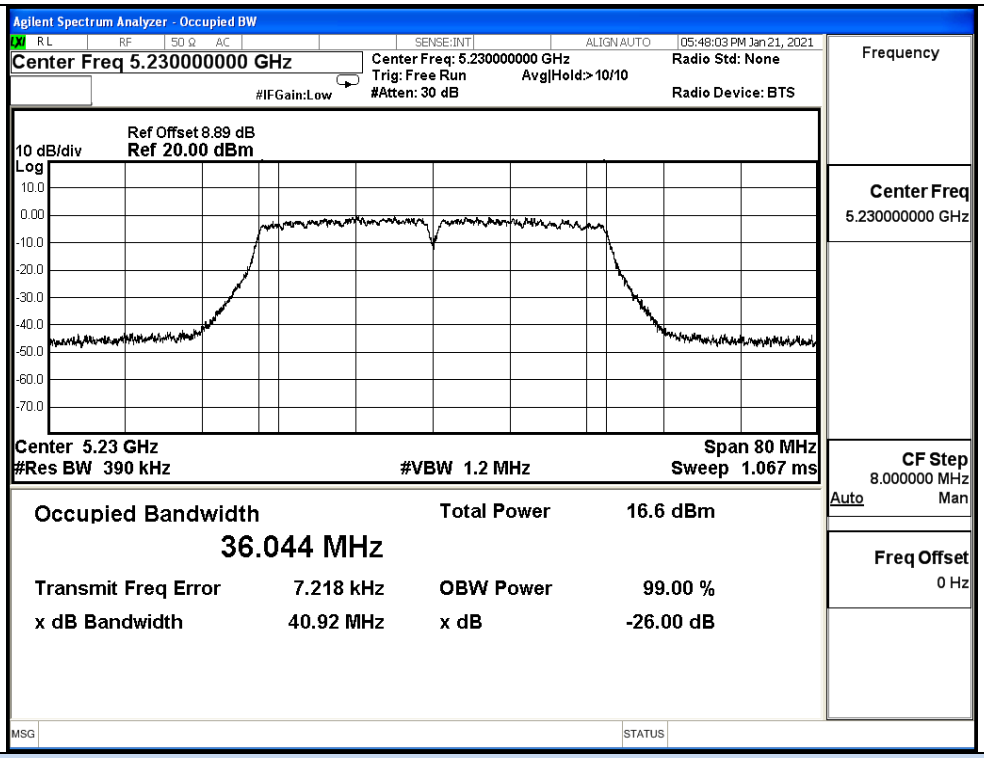
IEEE 802.11ac20 / Channel 40 / 5200MHz



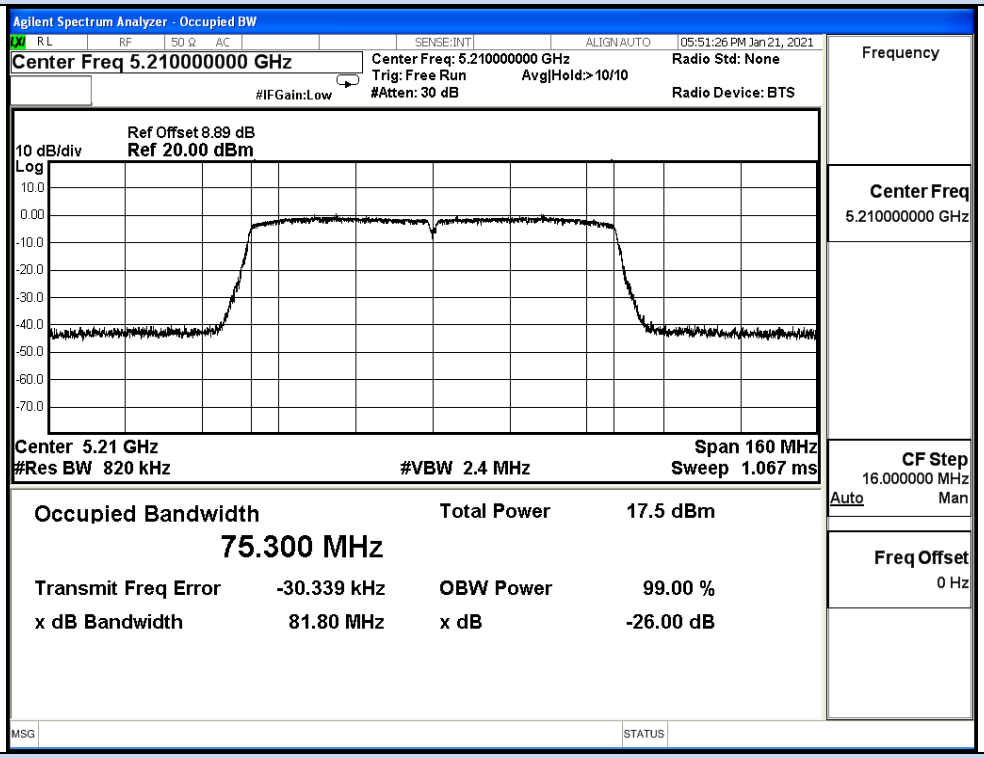
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz

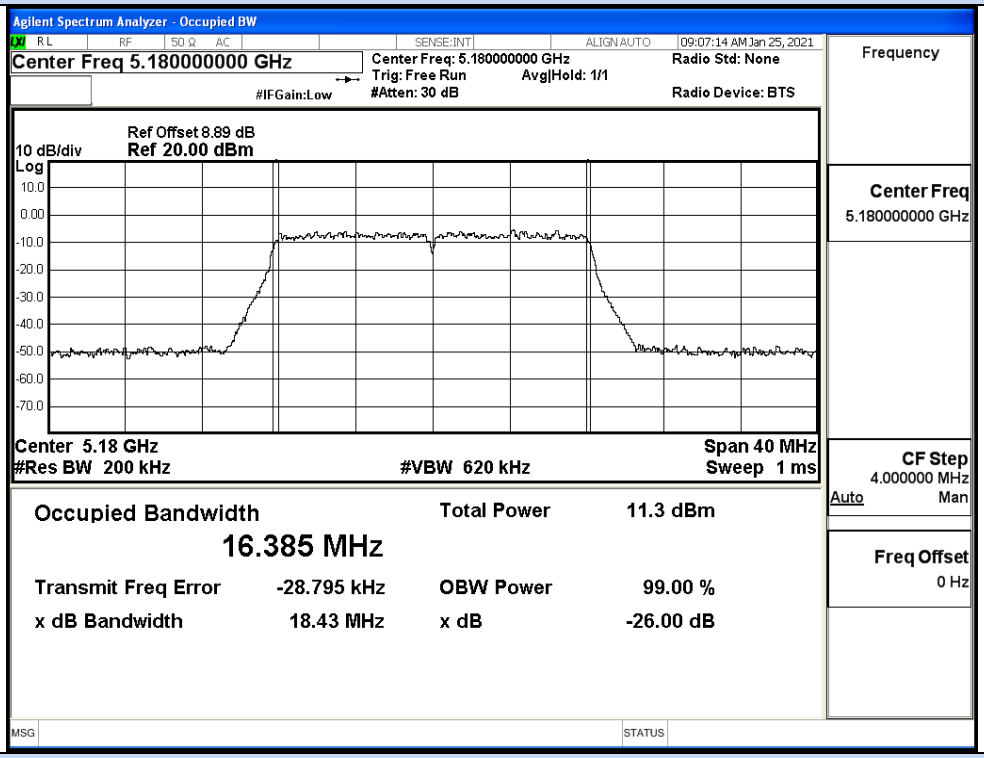


IEEE 802.11ac80 / Channel 42 / 5210MHz

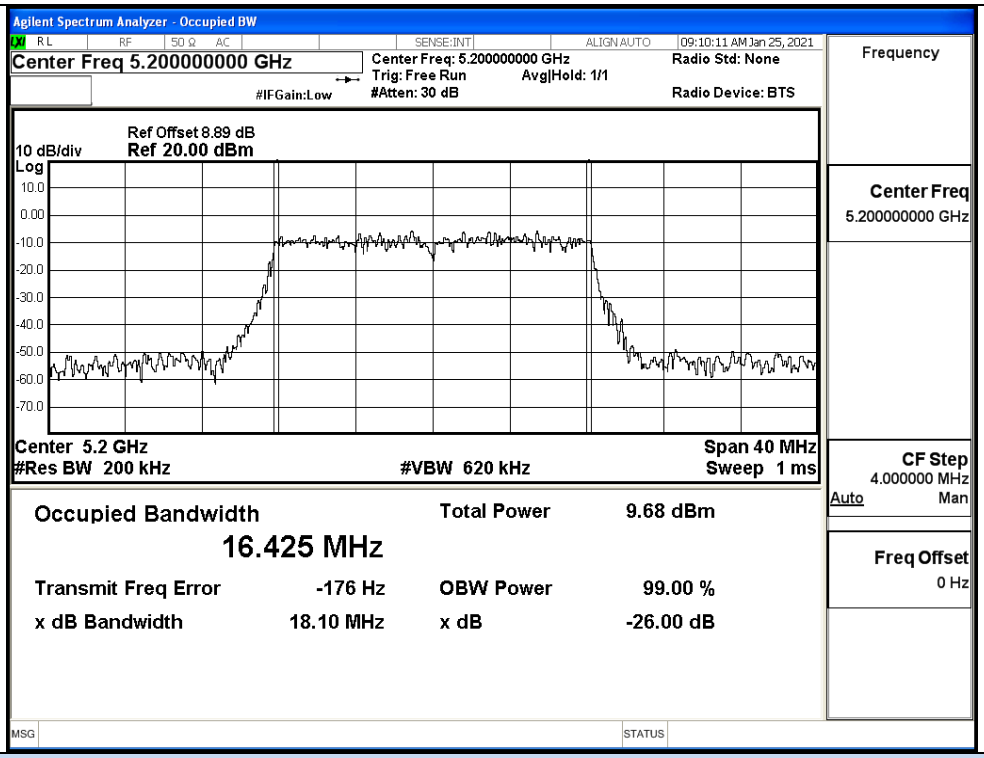
ANT1

Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	18.43	16.356	No Limit	Pass
	40	5200	18.10	16.361		Pass
	48	5240	18.46	16.356		Pass
11N20 SISO	36	5180	19.36	17.561	No Limit	Pass
	40	5200	19.43	17.561		Pass
	48	5240	19.44	17.559		Pass
11N40 SISO	38	5190	41.10	36.042	No Limit	Pass
	46	5230	41.17	36.063		Pass
11AC20 SISO	36	5180	19.38	17.563	No Limit	Pass
	40	5200	19.36	17.567		Pass
	48	5240	19.55	17.559		Pass
11AC40 SISO	38	5190	40.09	36.061	No Limit	Pass
	46	5230	39.87	36.060		Pass
11AC80 SISO	42	5210	80.64	75.110	No Limit	Pass

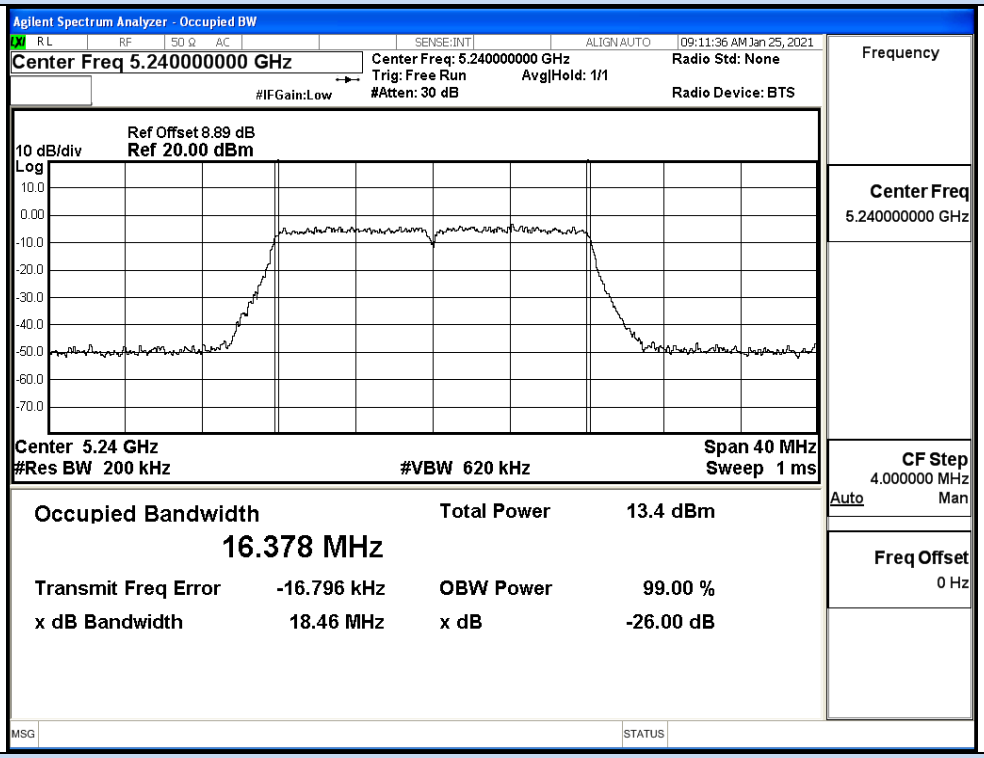
26dB Bandwidth



IEEE 802.11a / Channel 36 / 5180MHz

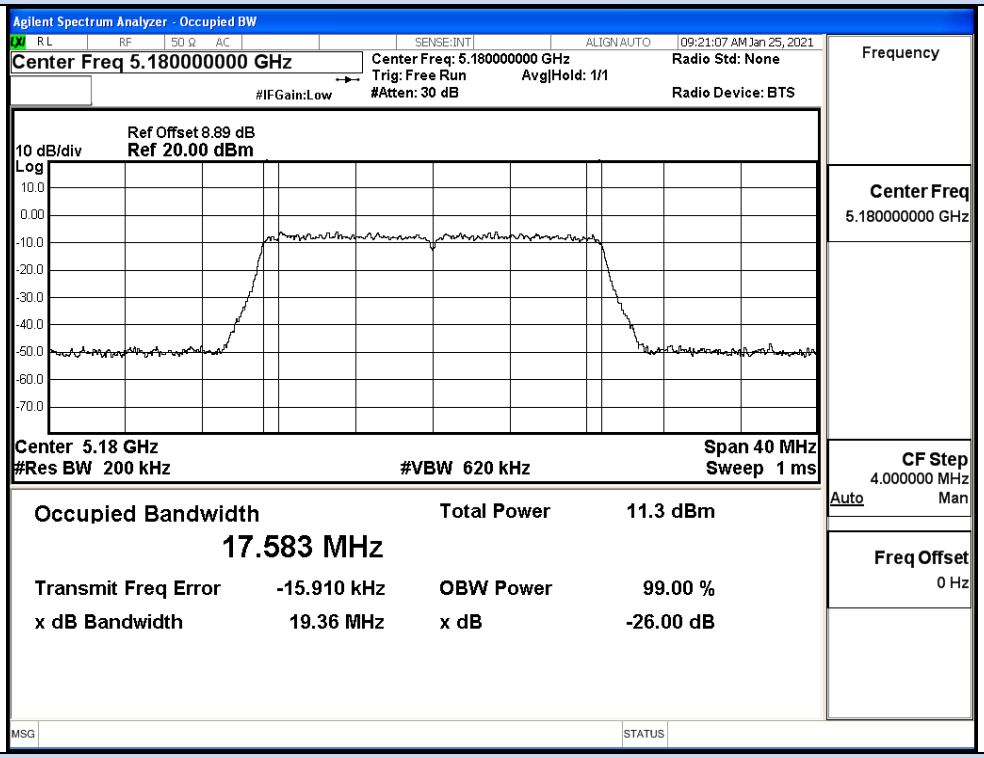


IEEE 802.11a / Channel 40 / 5200MHz

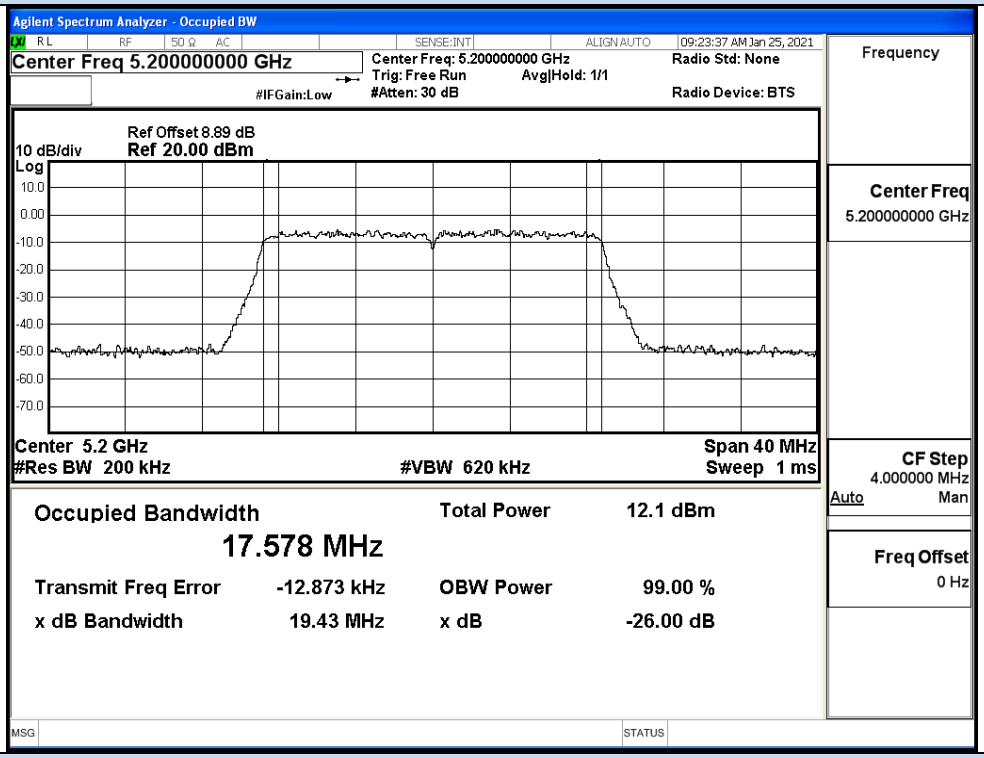


IEEE 802.11a / Channel 48 / 5240MHz

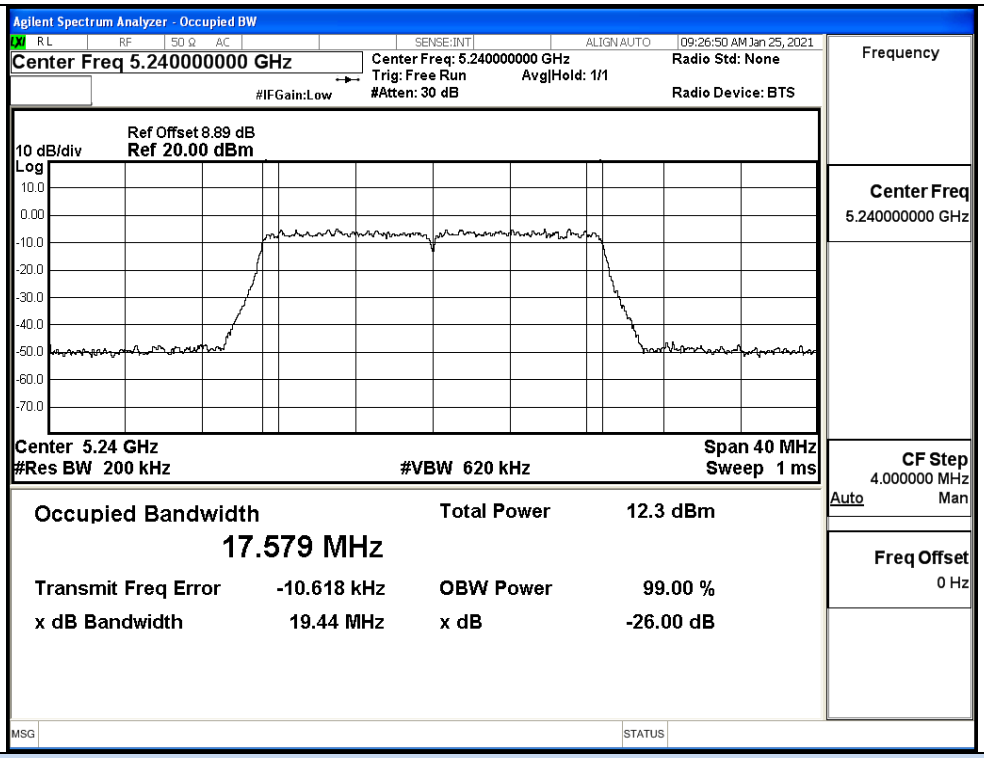
26dB Bandwidth



IEEE 802.11n20 / Channel 36 / 5180MHz

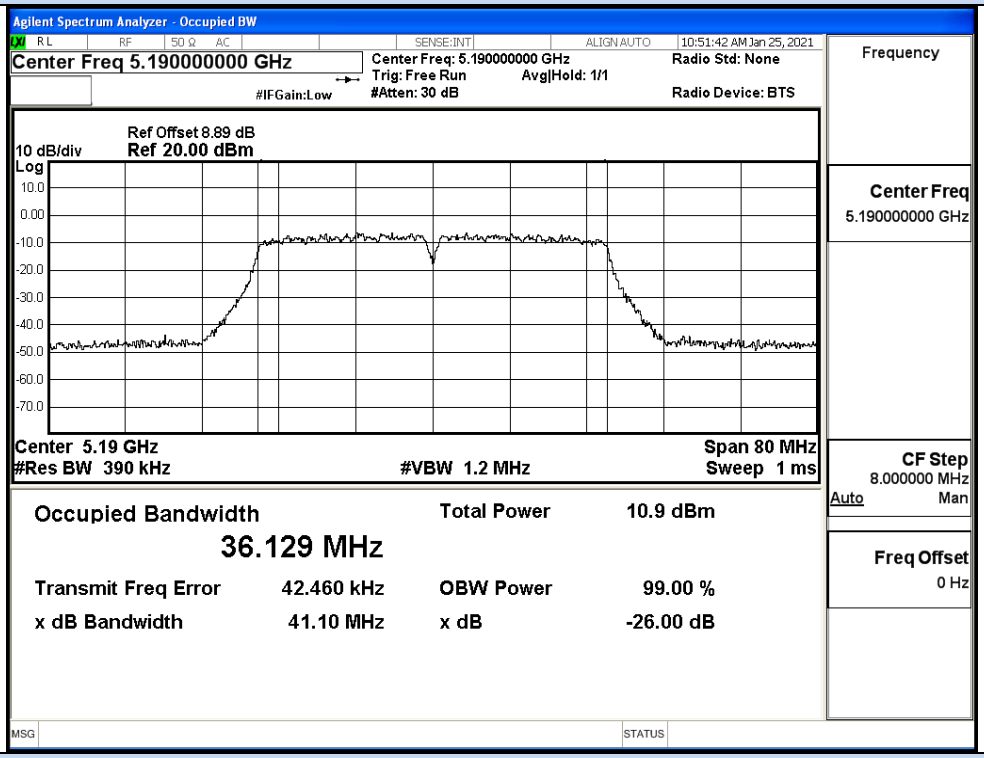


IEEE 802.11n20 / Channel 40 / 5200MHz

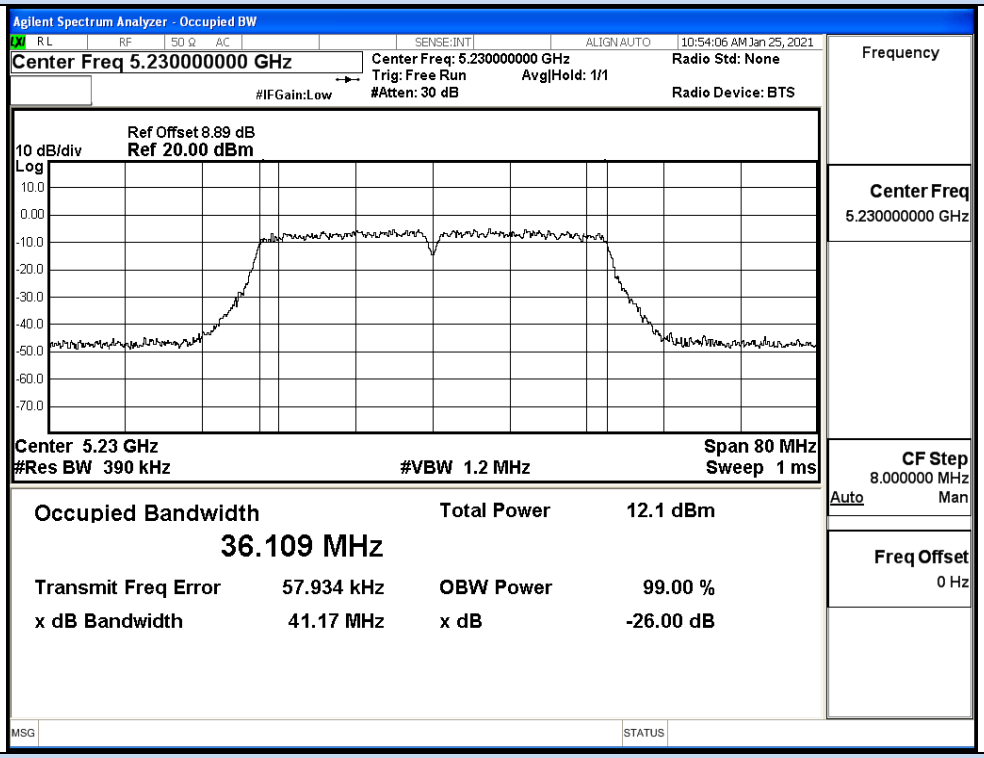


IEEE 802.11n20 / Channel 48 / 5240MHz

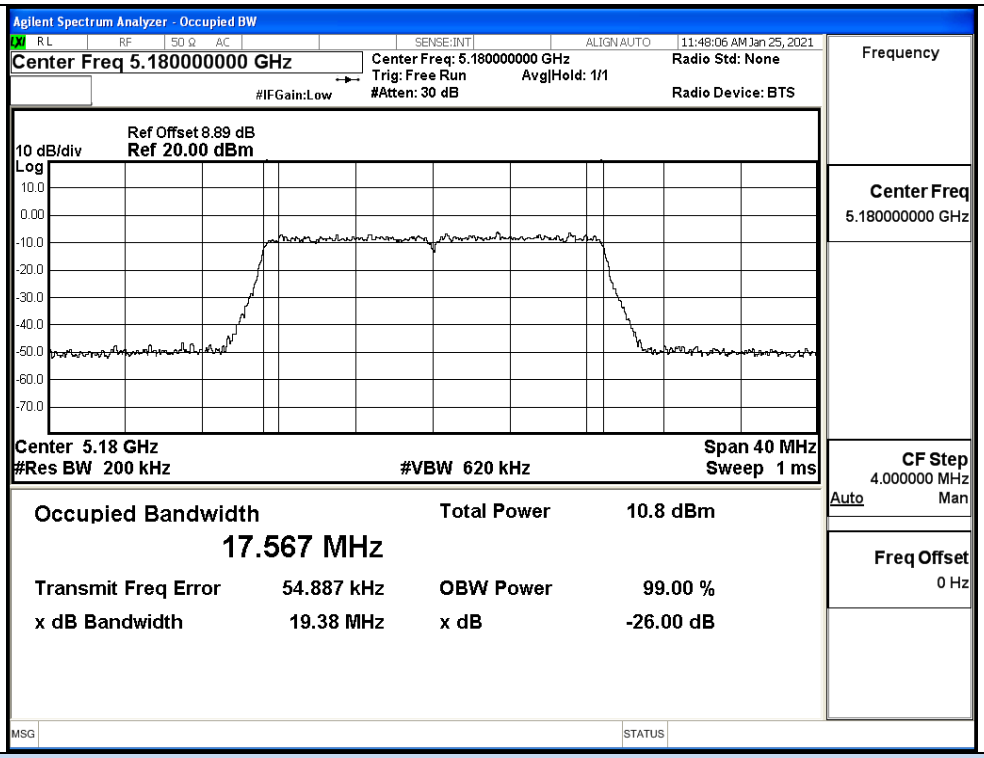
26dB Bandwidth



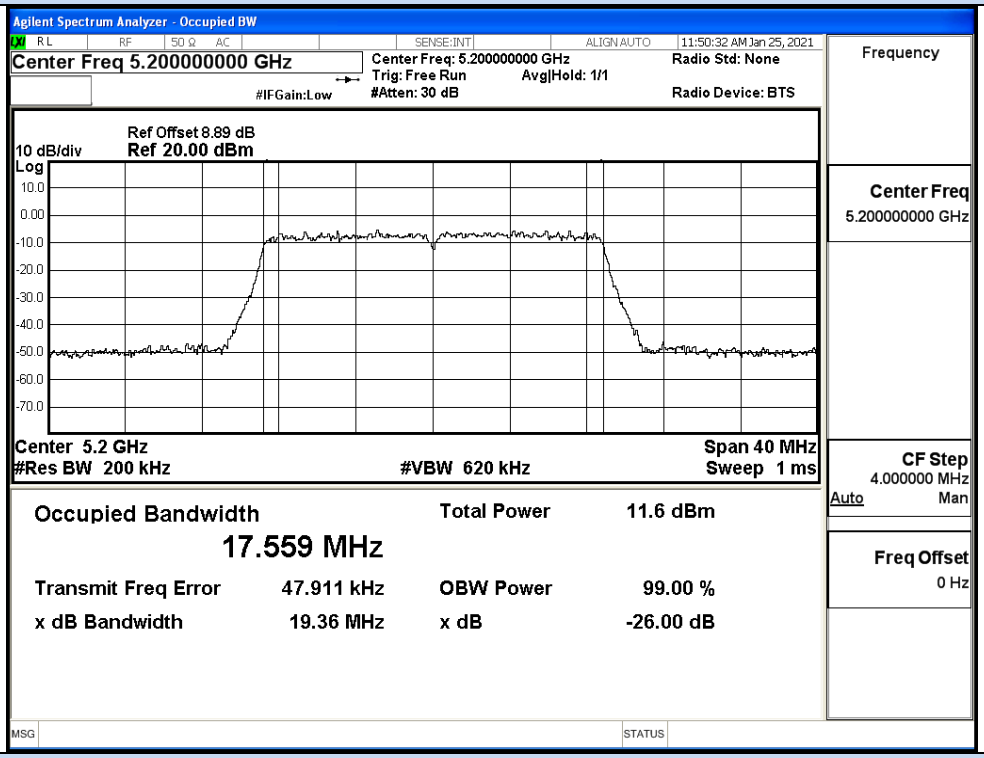
IEEE 802.11n40 / Channel 38 / 5190MHz



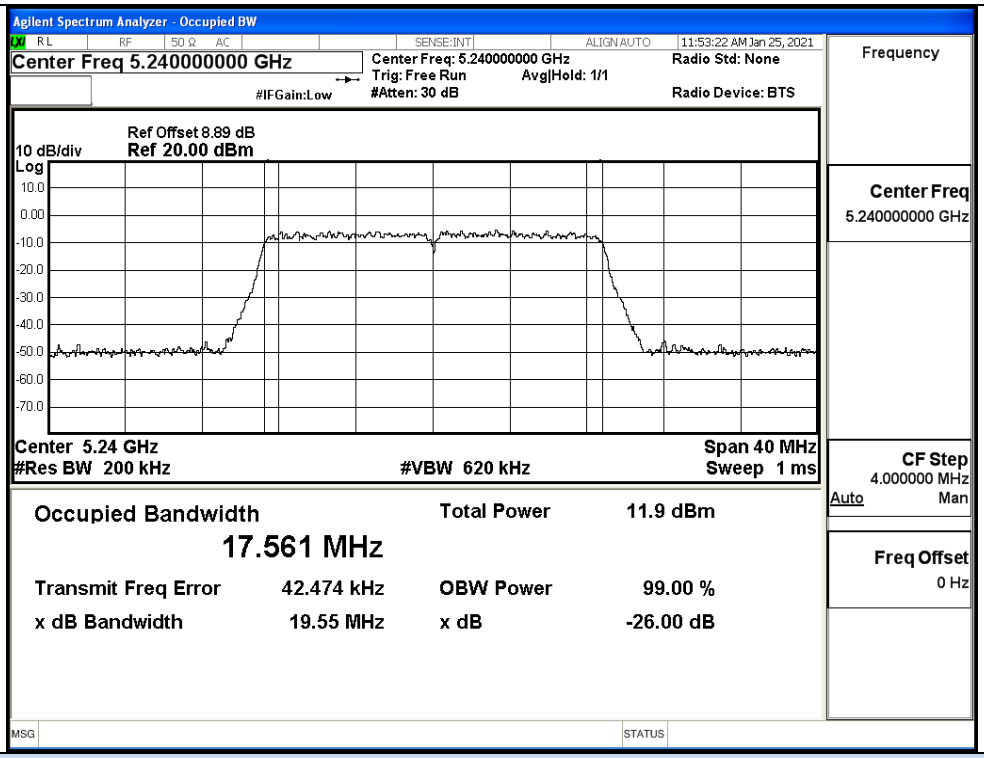
IEEE 802.11n40 / Channel 46 / 5230MHz



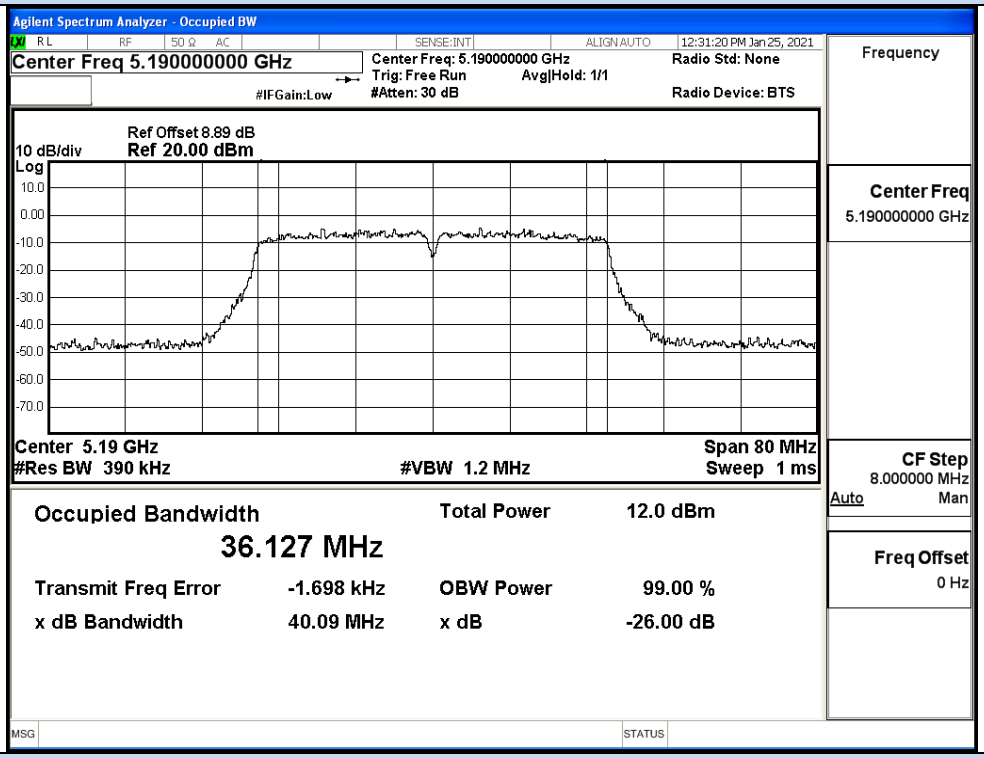
IEEE 802.11ac20 / Channel 36 / 5180MHz



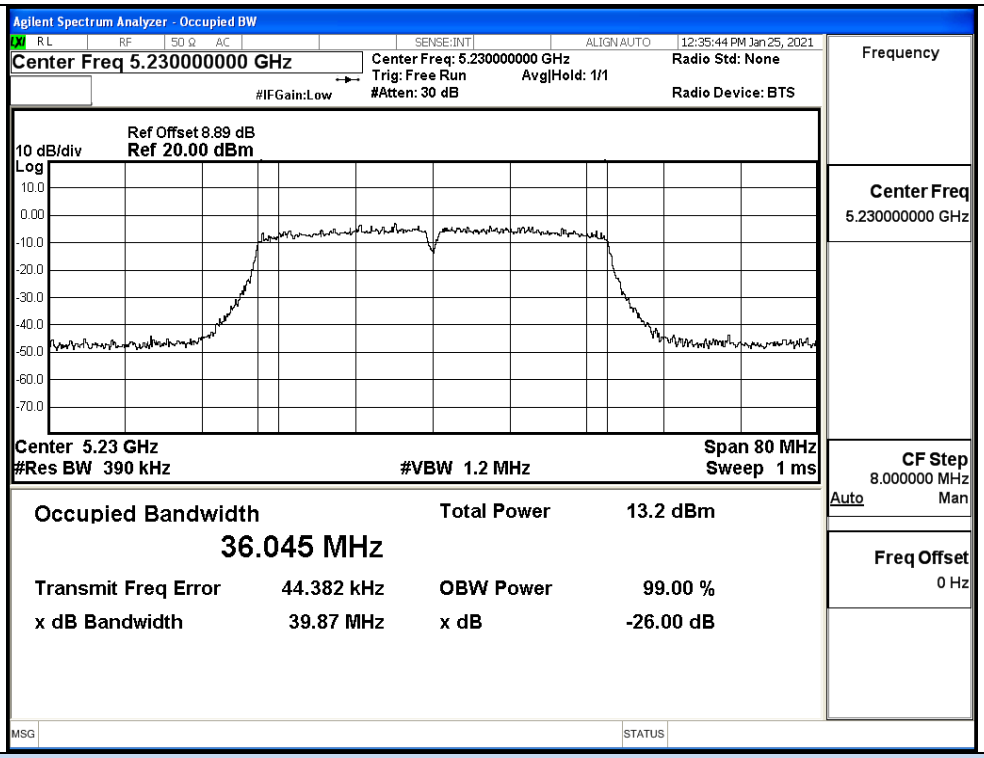
IEEE 802.11ac20 / Channel 40 / 5200MHz



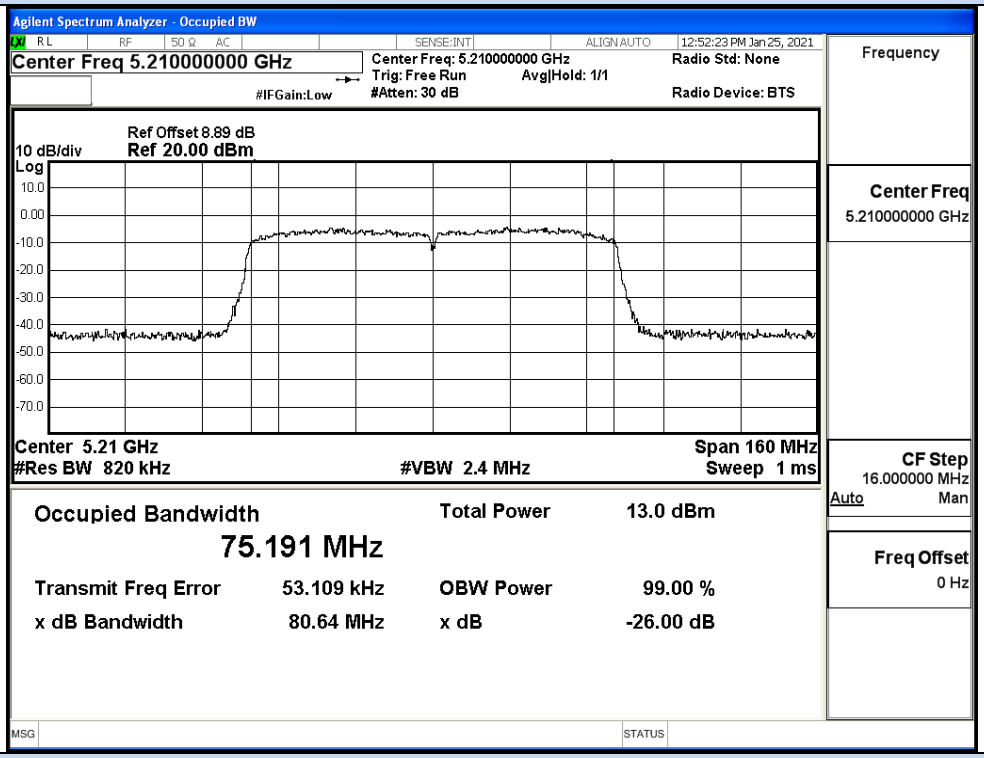
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz

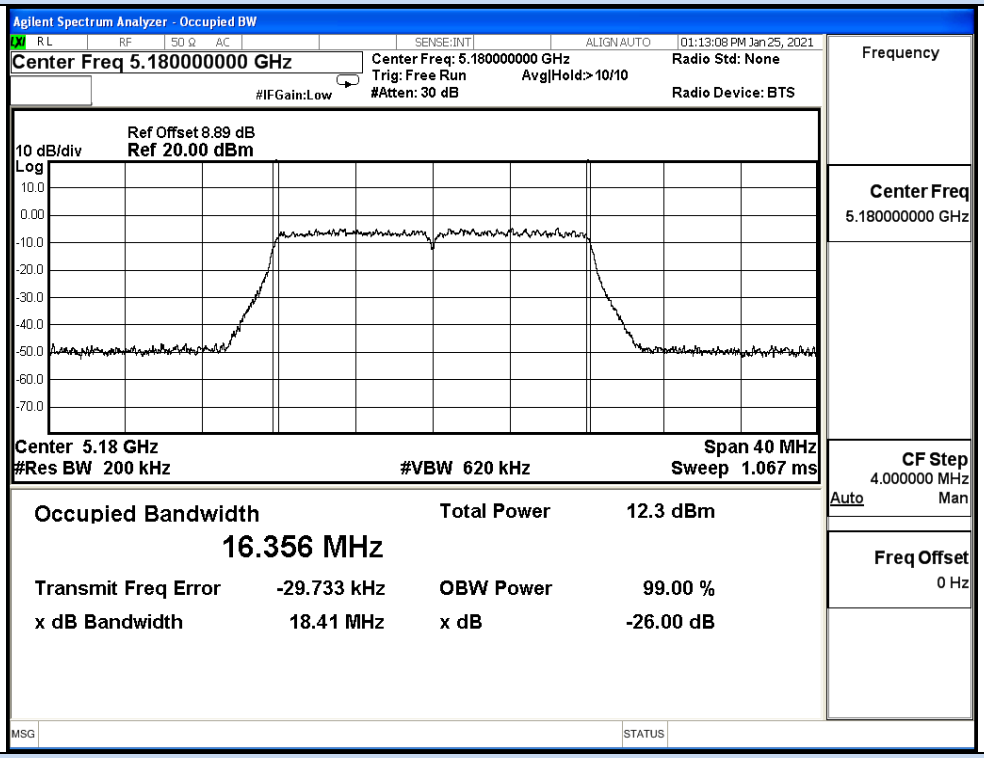


IEEE 802.11ac40 / Channel 46 / 5230MHz

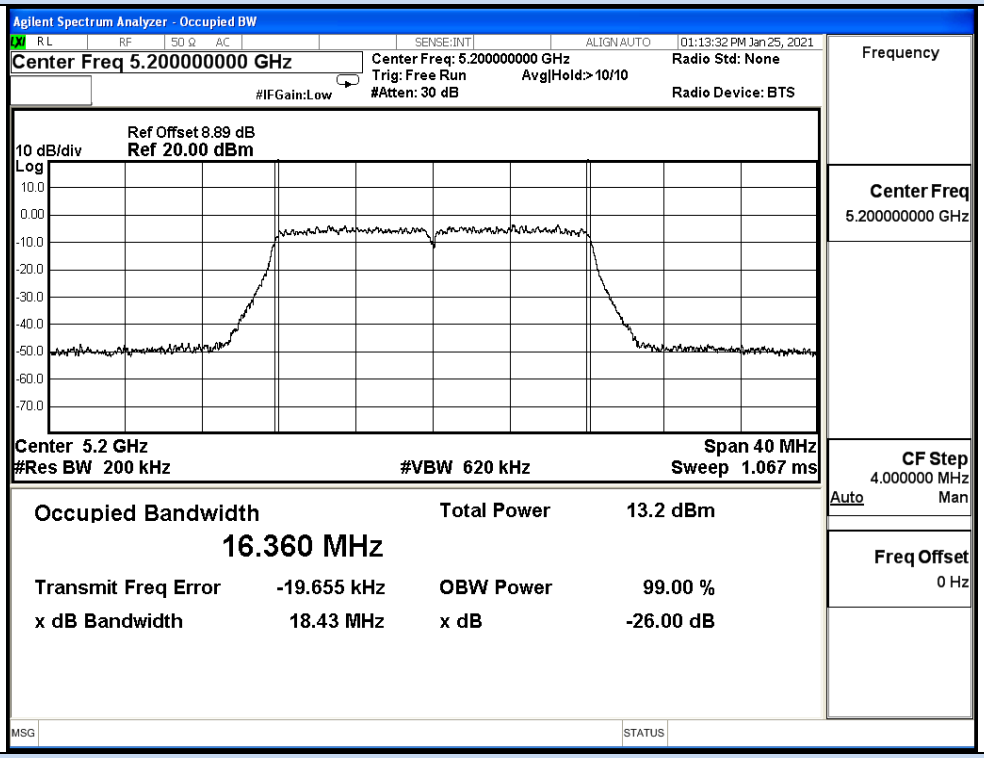


IEEE 802.11ac80 / Channel 42 / 5210MHz

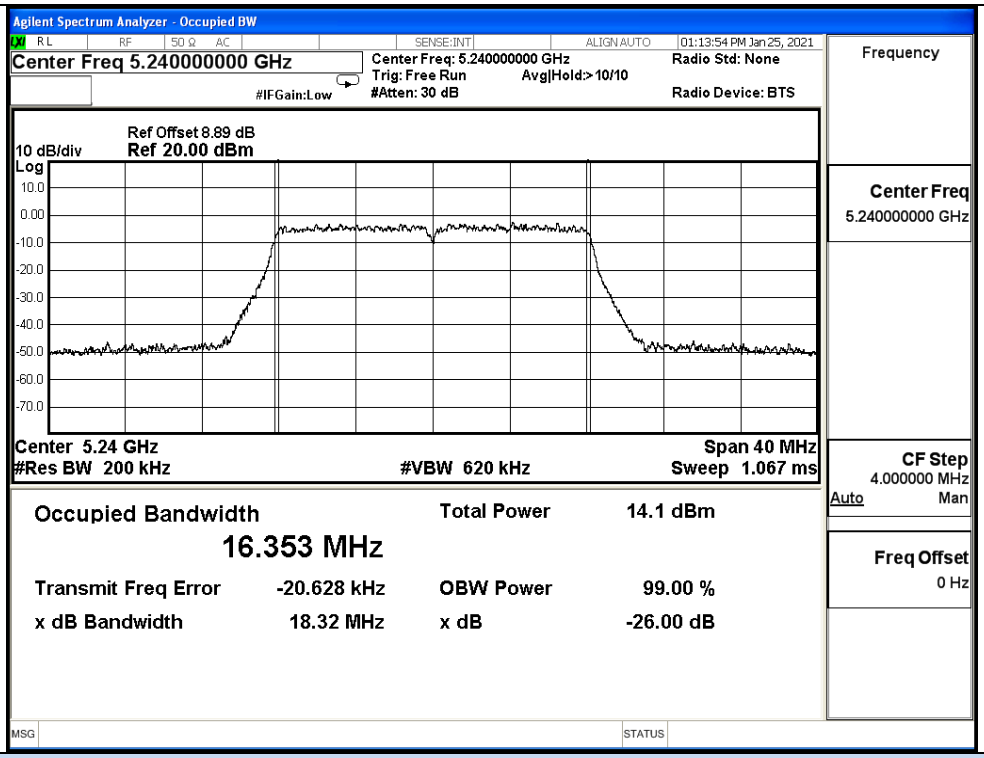
99% Occupied Bandwidth



IEEE 802.11a / Channel 36 / 5180MHz

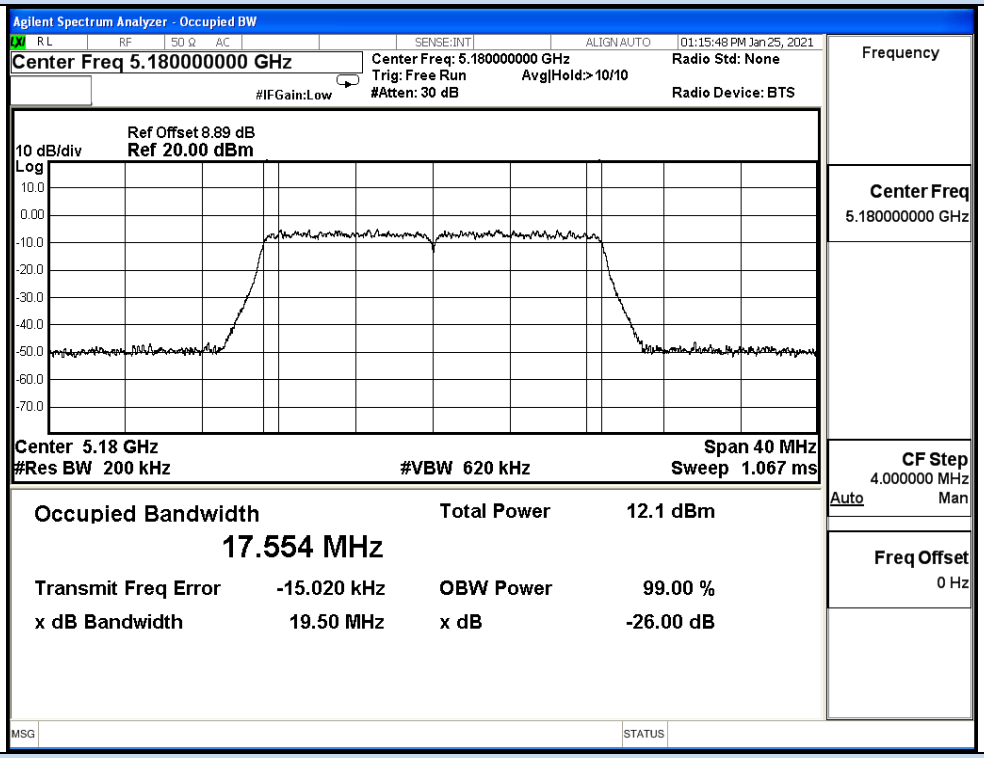


IEEE 802.11a / Channel 40 / 5200MHz

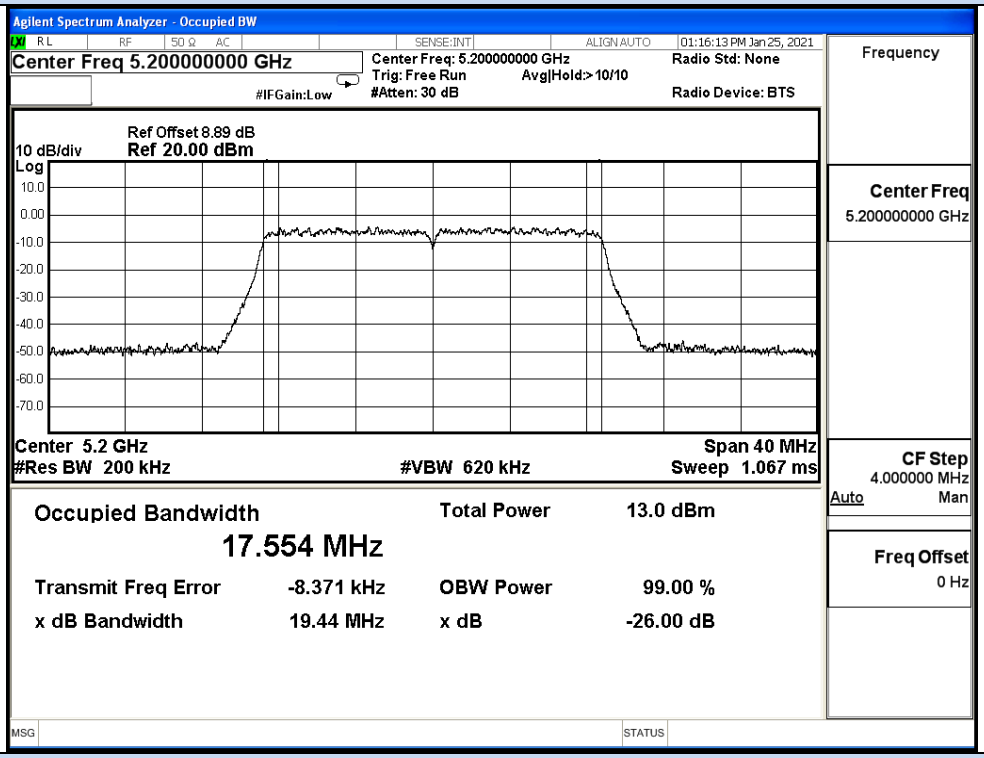


IEEE 802.11a / Channel 48 / 5240MHz

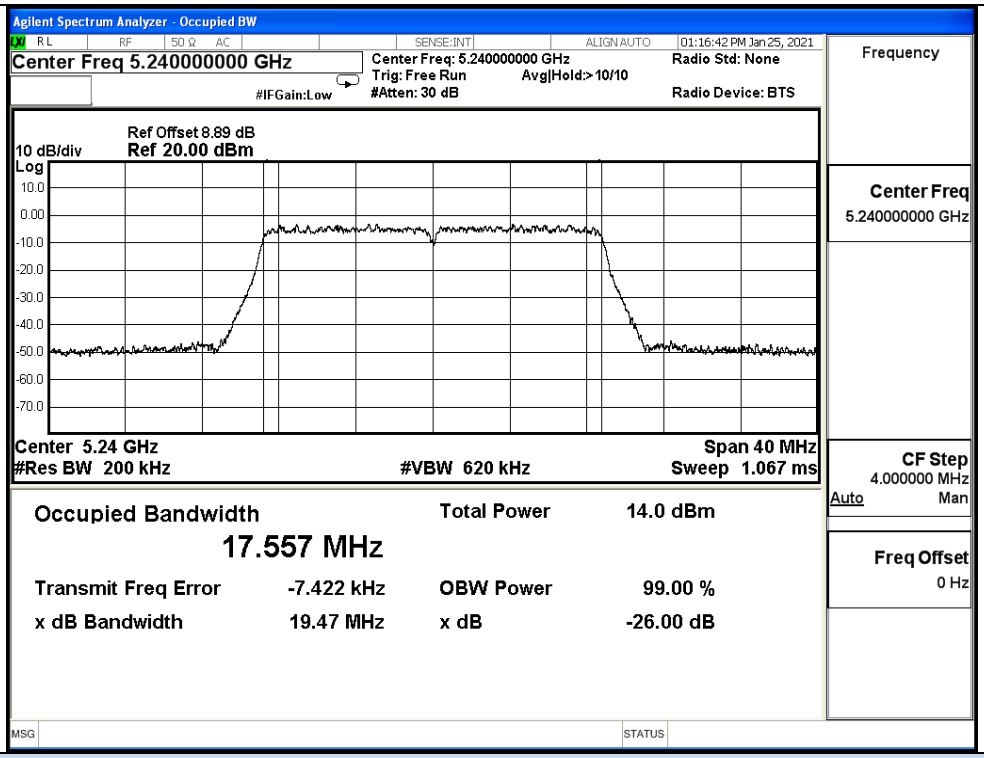
99% Occupied Bandwidth



IEEE 802.11n20 / Channel 36 / 5180MHz

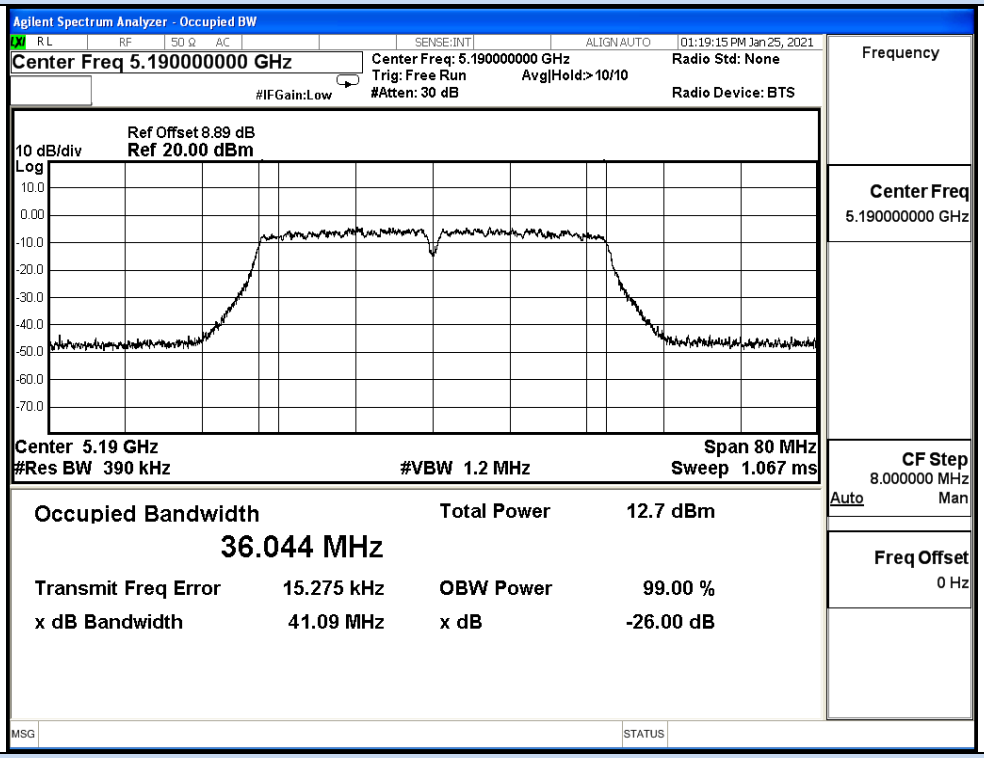


IEEE 802.11n20 / Channel 40 / 5200MHz

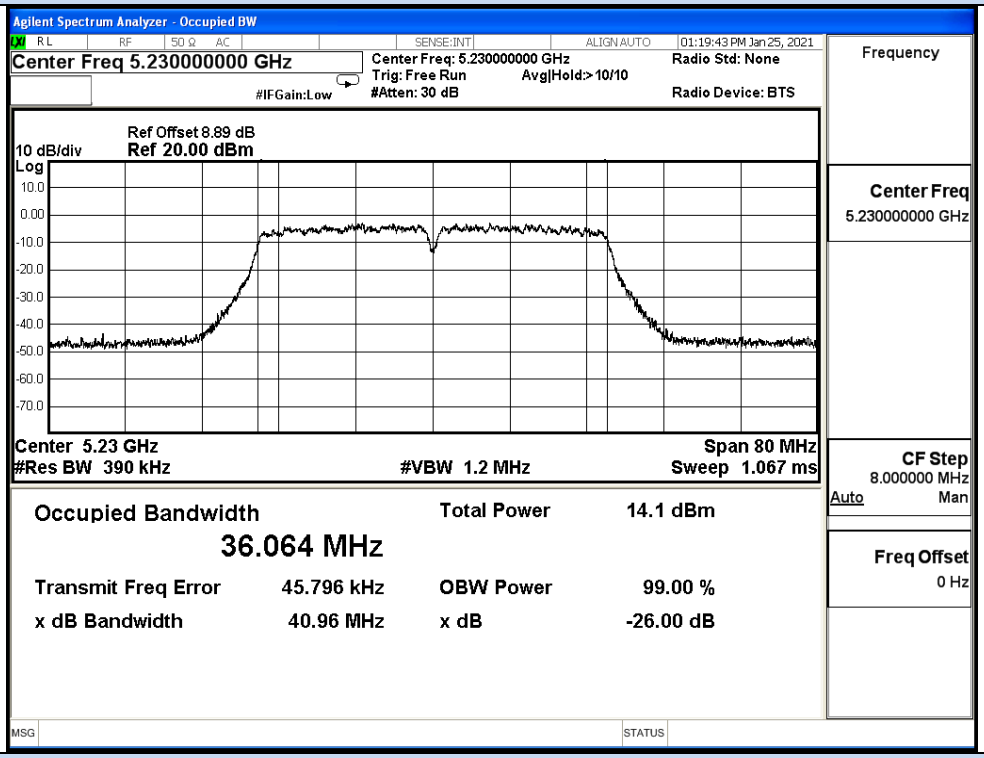


IEEE 802.11n20 / Channel 48 / 5240MHz

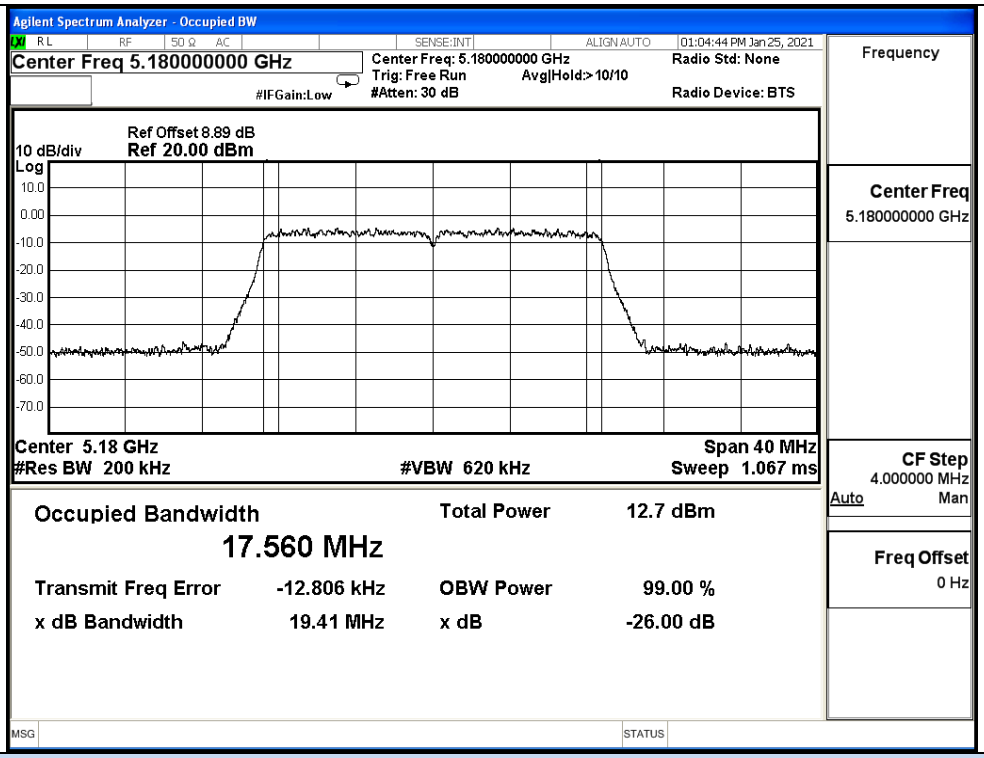
99% Occupied Bandwidth



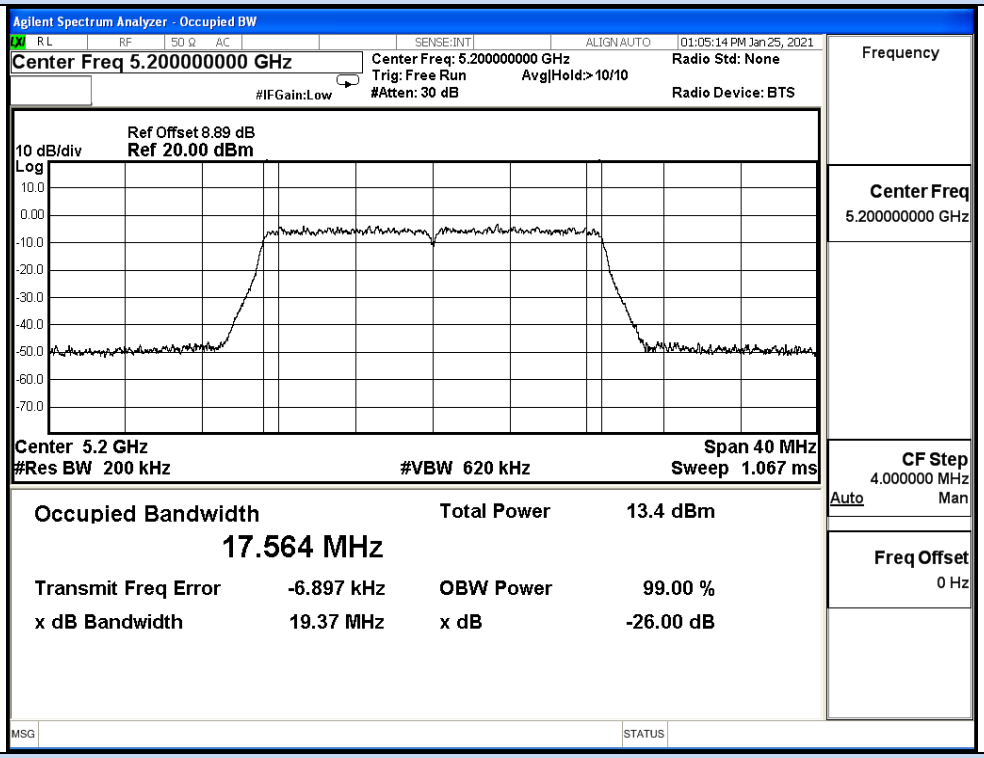
IEEE 802.11n40 / Channel 38 / 5190MHz



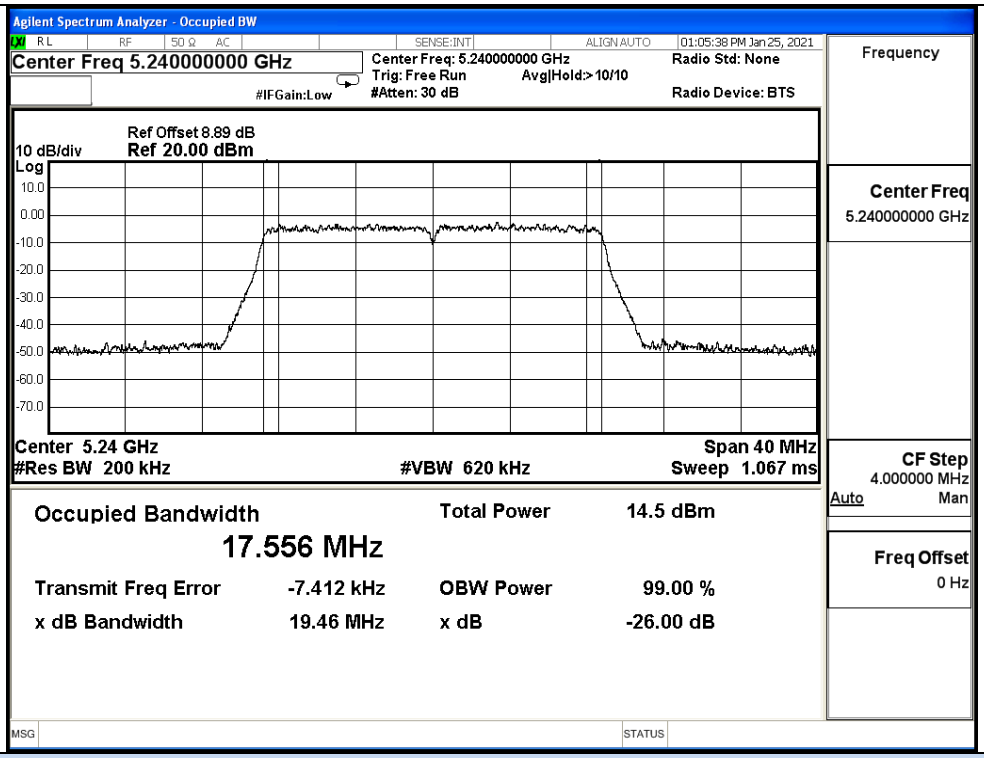
IEEE 802.11n40 / Channel 46 / 5230MHz



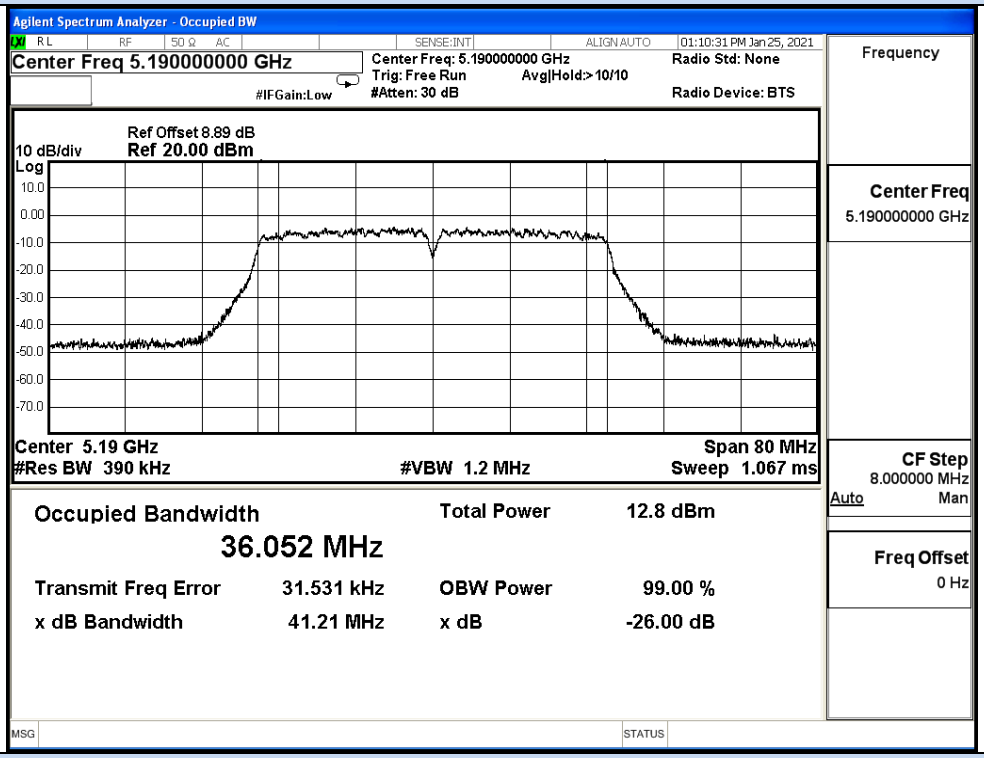
IEEE 802.11ac20 / Channel 36 / 5180MHz



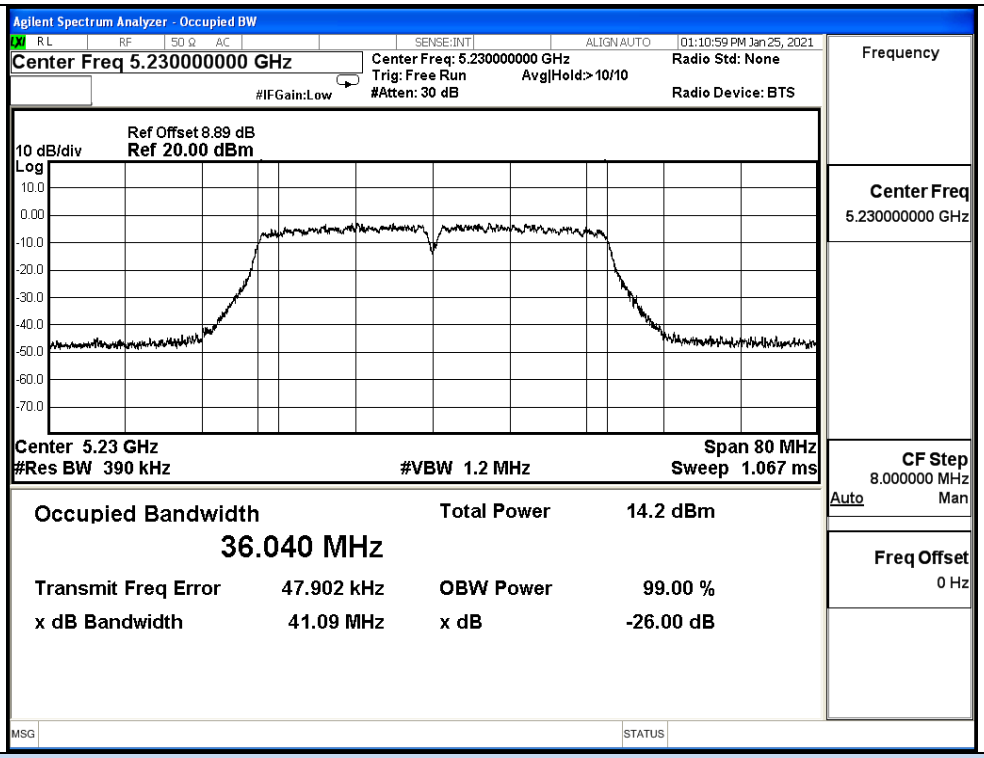
IEEE 802.11ac20 / Channel 40 / 5200MHz



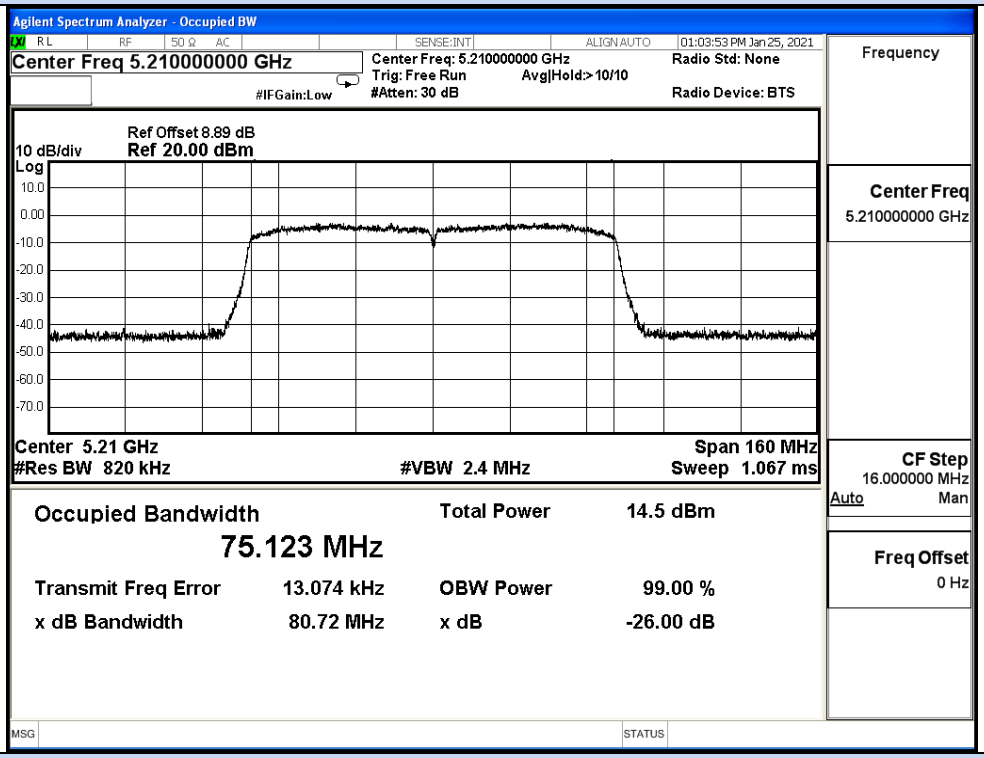
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



IEEE 802.11ac80 / Channel 42 / 5210MHz

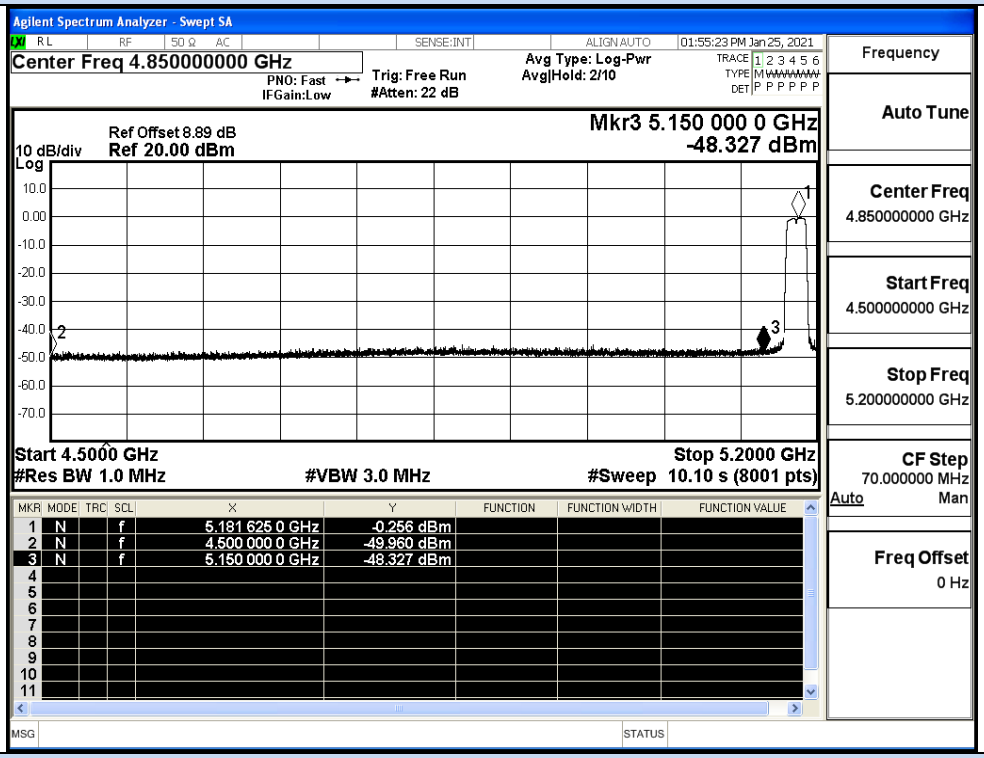
B.5 Undesirable Emissions Measurement

ANT0

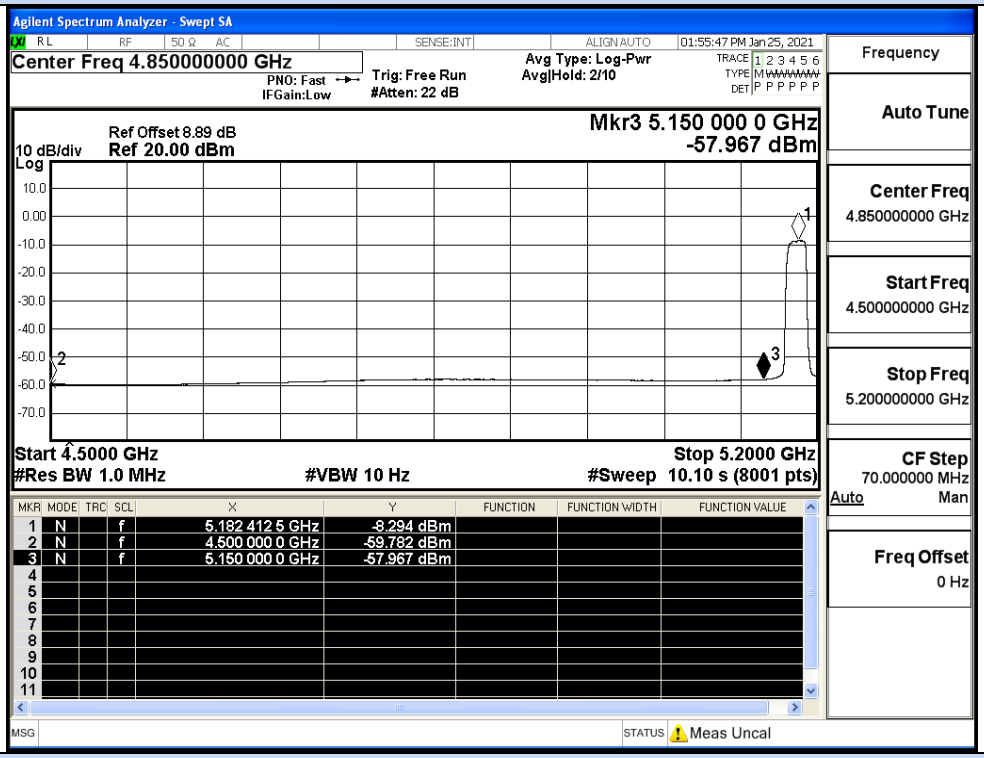
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
11A	36	4500.0	-49.96	5.0	0	50.27	Peak	74.00	Pass
		4500.0	-59.78	5.0	0	40.45	Average	54.00	Pass
		5150.0	-48.33	5.0	0	51.90	Peak	74.00	Pass
		5150.0	-57.97	5.0	0	42.26	Average	54.00	Pass
	48	5350.0	-48.67	5.0	0	51.56	Peak	74.00	Pass
		5350.0	-59.33	5.0	0	40.90	Average	54.00	Pass
		5460.0	-48.99	5.0	0	51.24	Peak	74.00	Pass
		5460.0	-59.42	5.0	0	40.81	Average	54.00	Pass
11N20 SISO	36	4500.0	-50.54	5.0	0	49.69	Peak	74.00	Pass
		4500.0	-59.77	5.0	0	40.46	Average	54.00	Pass
		5150.0	-47.57	5.0	0	52.66	Peak	74.00	Pass
		5150.0	-58.00	5.0	0	42.23	Average	54.00	Pass
	48	5350.0	-48.69	5.0	0	51.54	Peak	74.00	Pass
		5350.0	-59.35	5.0	0	40.88	Average	54.00	Pass
		5460.0	-48.75	5.0	0	51.48	Peak	74.00	Pass
		5460.0	-59.43	5.0	0	40.80	Average	54.00	Pass
11N40 SISO	38	4500.0	-49.72	5.0	0	50.51	Peak	74.00	Pass
		4500.0	-59.74	5.0	0	40.49	Average	54.00	Pass
		5150.0	-48.22	5.0	0	52.01	Peak	74.00	Pass
		5150.0	-57.62	5.0	0	42.61	Average	54.00	Pass
	46	5350.0	-48.28	5.0	0	51.95	Peak	74.00	Pass
		5350.0	-58.73	5.0	0	41.50	Average	54.00	Pass
		5460.0	-48.56	5.0	0	51.67	Peak	74.00	Pass
		5460.0	-58.93	5.0	0	41.30	Average	54.00	Pass
11AC20 SISO	36	4500.0	-50.71	5.0	0	49.52	Peak	74.00	Pass
		4500.0	-59.74	5.0	0	40.49	Average	54.00	Pass
		5150.0	-48.79	5.0	0	51.44	Peak	74.00	Pass
		5150.0	-57.90	5.0	0	42.33	Average	54.00	Pass
	48	4500.0	-50.71	5.0	0	49.52	Peak	74.00	Pass
		4500.0	-59.74	5.0	0	40.49	Average	54.00	Pass
		5150.0	-48.79	5.0	0	51.44	Peak	74.00	Pass
		5150.0	-57.90	5.0	0	42.33	Average	54.00	Pass
11AC40 SISO	38	4500.0	-50.19	5.0	0	50.04	Peak	74.00	Pass
		4500.0	-59.76	5.0	0	40.47	Average	54.00	Pass
		5150.0	-47.18	5.0	0	53.05	Peak	74.00	Pass
		5150.0	-57.71	5.0	0	42.52	Average	54.00	Pass

	46	5350.0	-49.45	5.0	0	50.78	Peak	74.00	Pass
		5350.0	-58.82	5.0	0	41.41	Average	54.00	Pass
		5460.0	-48.27	5.0	0	51.96	Peak	74.00	Pass
		5460.0	-58.97	5.0	0	41.26	Average	54.00	Pass
11AC80 SISO	42	4500.0	-47.73	5.0	0	52.50	Peak	74.00	Pass
		5150.0	-57.51	5.0	0	42.72	Average	54.00	Pass
		4500.0	-47.99	5.0	0	52.24	Peak	74.00	Pass
		5150.0	-57.86	5.0	0	42.37	Average	54.00	Pass
		5350.0	-47.73	5.0	0	52.50	Peak	74.00	Pass
		5460.0	-57.51	5.0	0	42.72	Average	54.00	Pass
		5350.0	-47.99	5.0	0	52.24	Peak	74.00	Pass
		5460.0	-57.86	5.0	0	42.37	Average	54.00	Pass

Undesirable Emissions Measurement

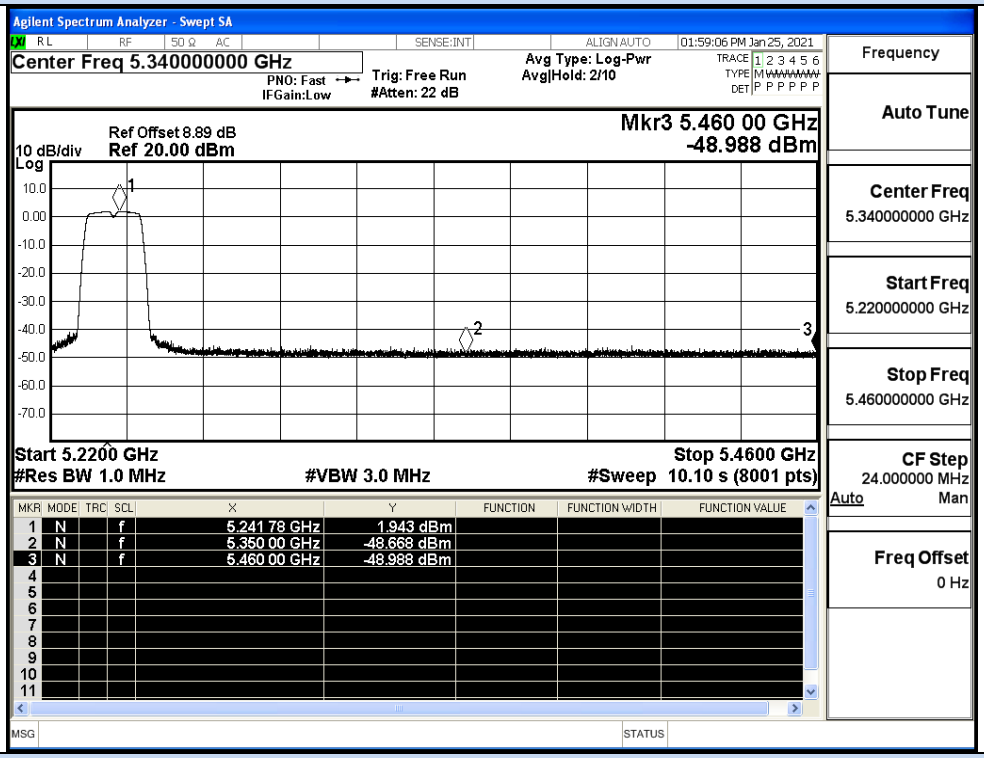


IEEE 802.11a / Channel 36 / 5180MHz / Peak

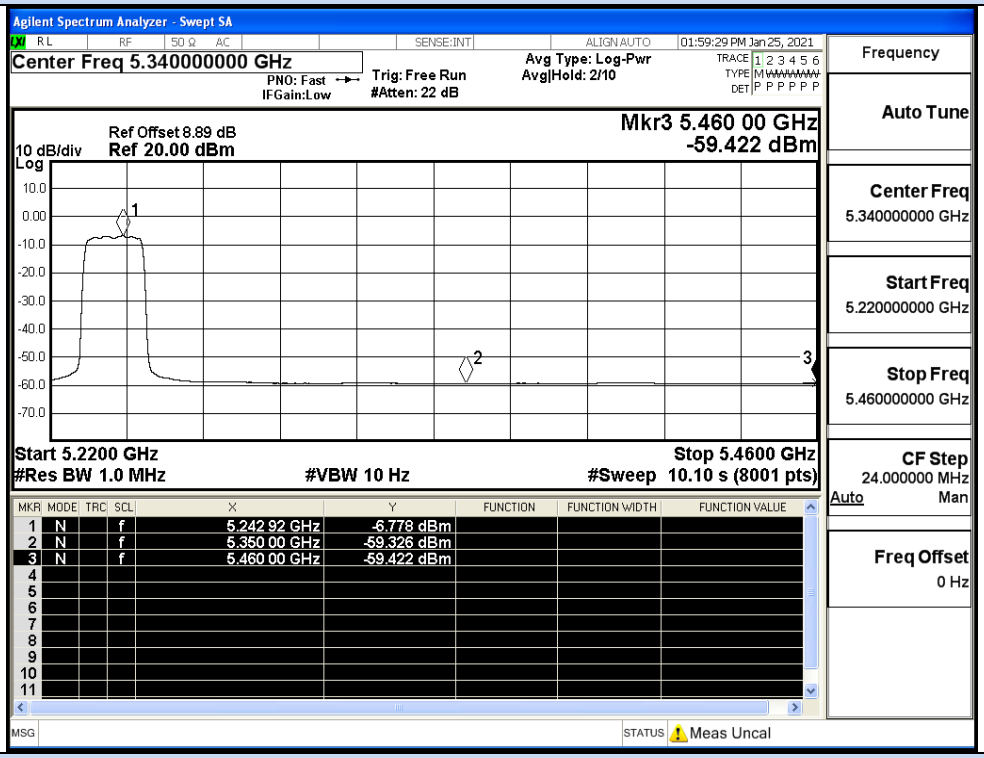


IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

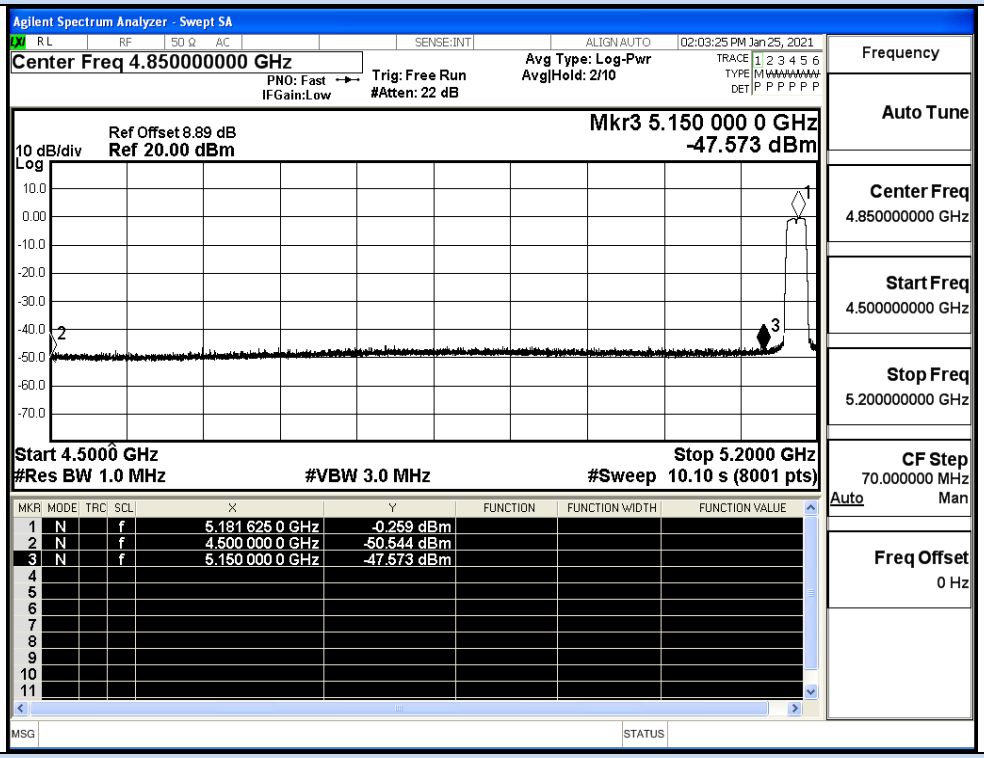


IEEE 802.11a / Channel 48 / 5240MHz / Peak

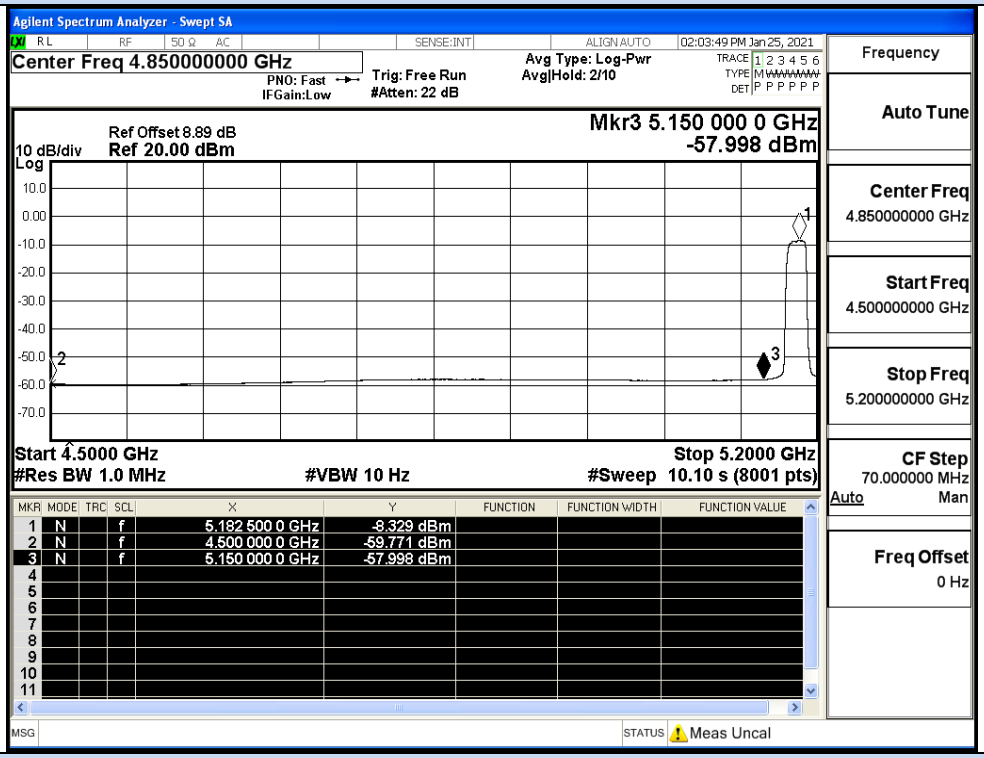


IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

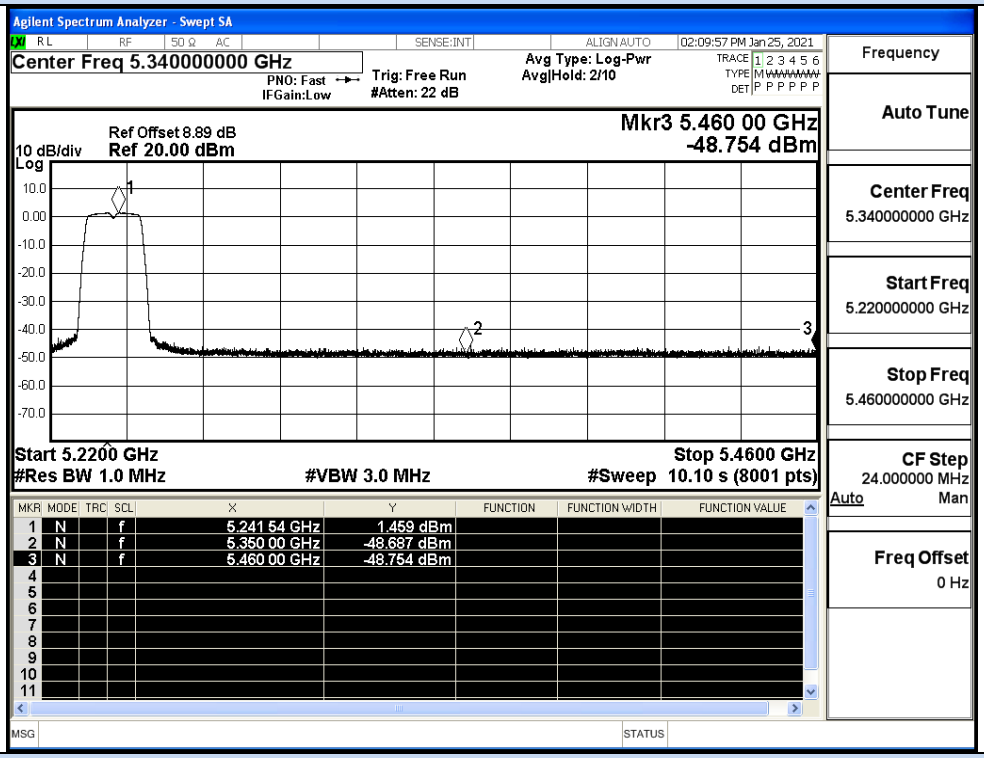


IEEE 802.11n20 / Channel 36 / 5180MHz / Peak

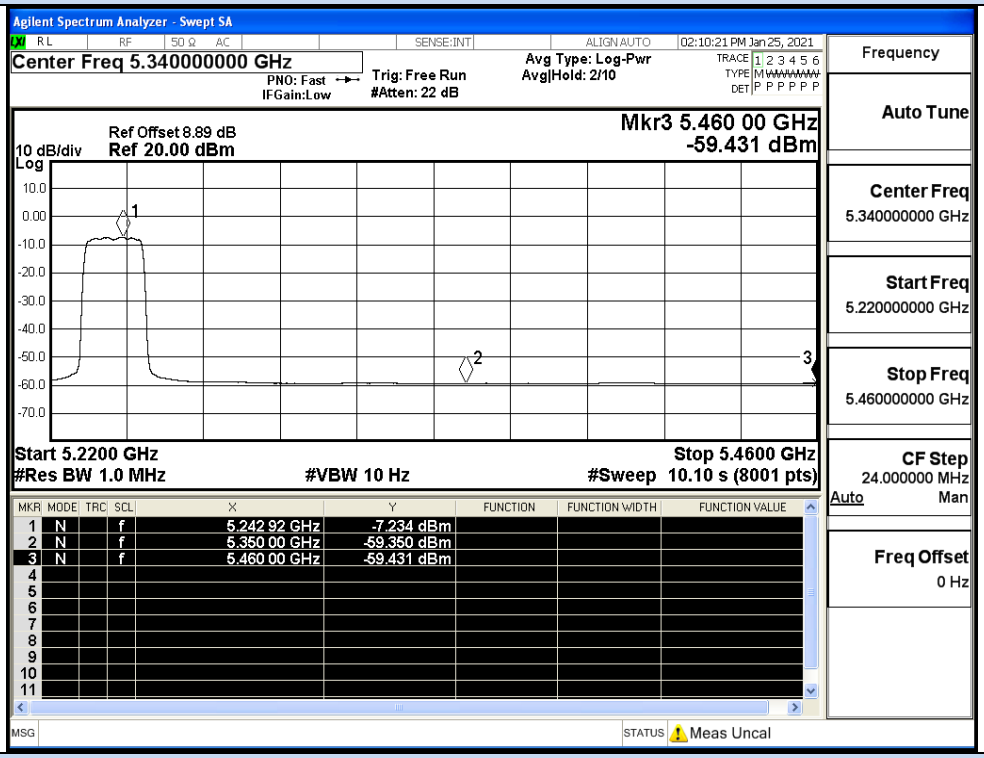


IEEE 802.11n20 / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

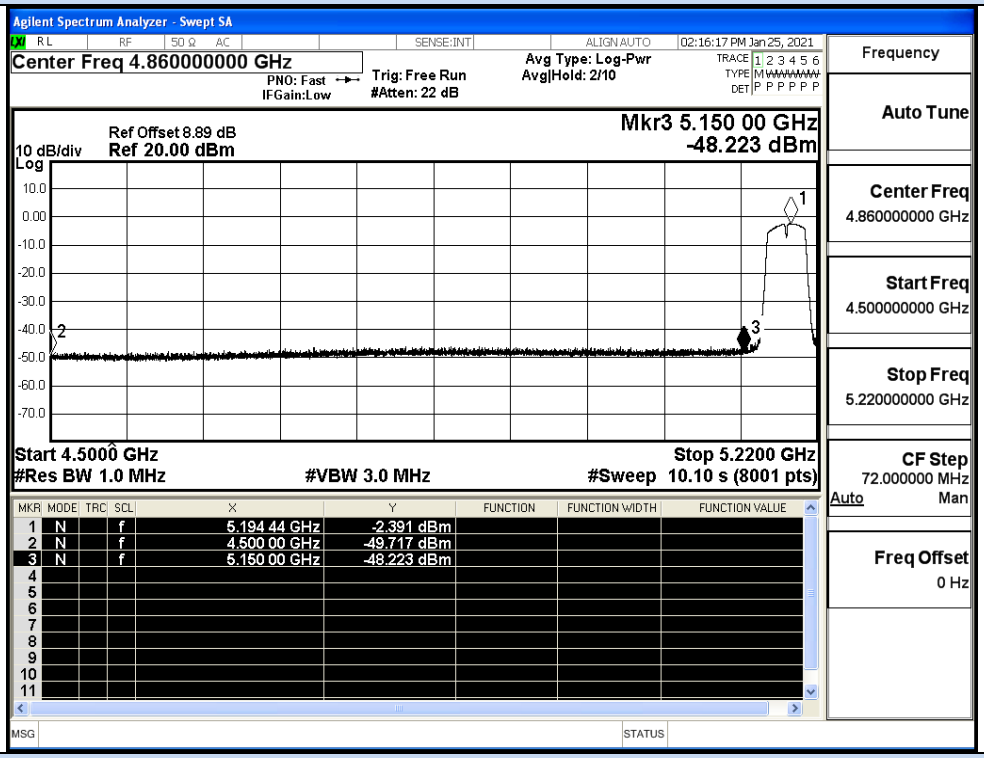


IEEE 802.11n20 / Channel 48 / 5240MHz / Peak

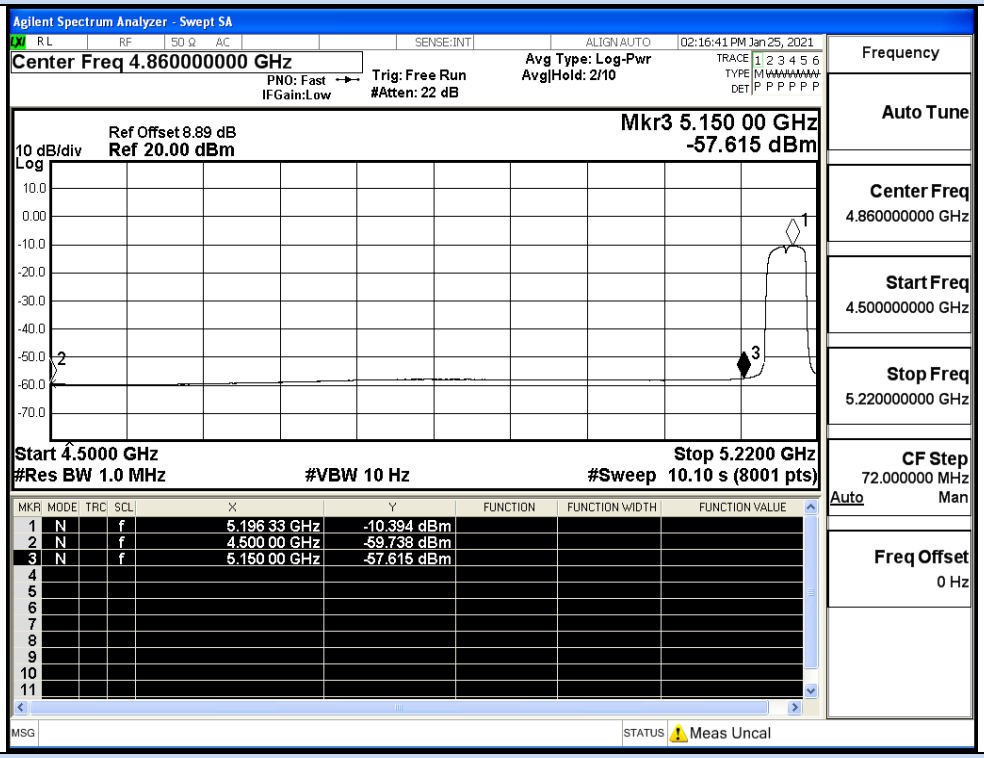


IEEE 802.11n20 / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

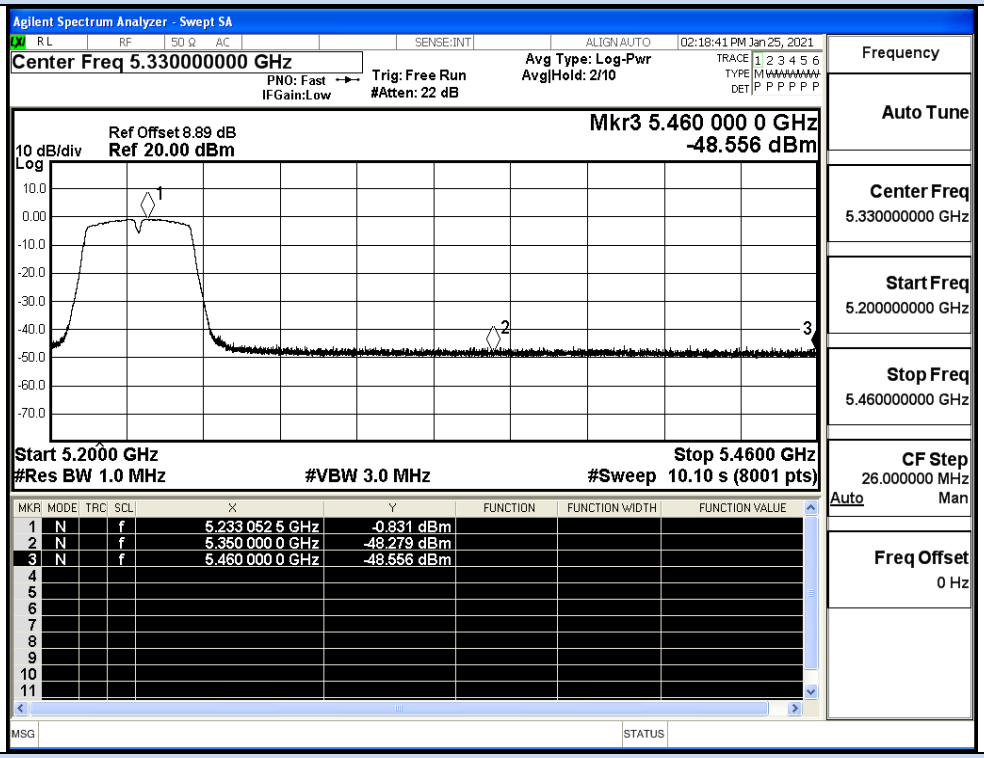


IEEE 802.11n40 / Channel 38 / 5190MHz / Peak

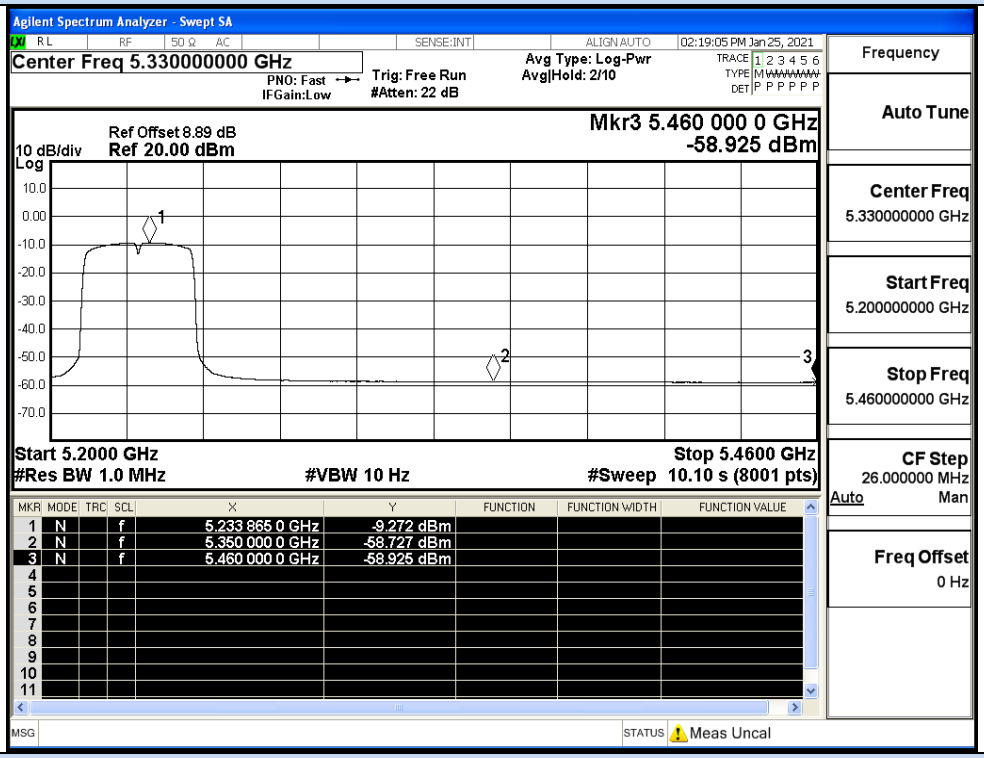


IEEE 802.11n40 / Channel 38 / 5190MHz / Average

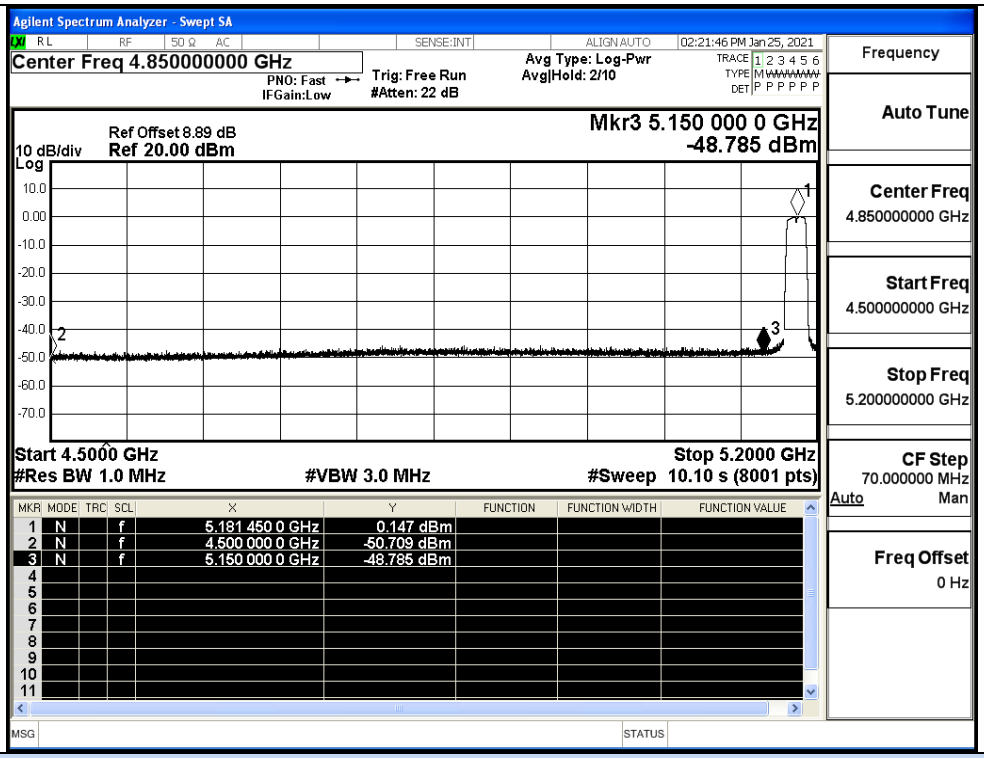
Undesirable Emissions Measurement



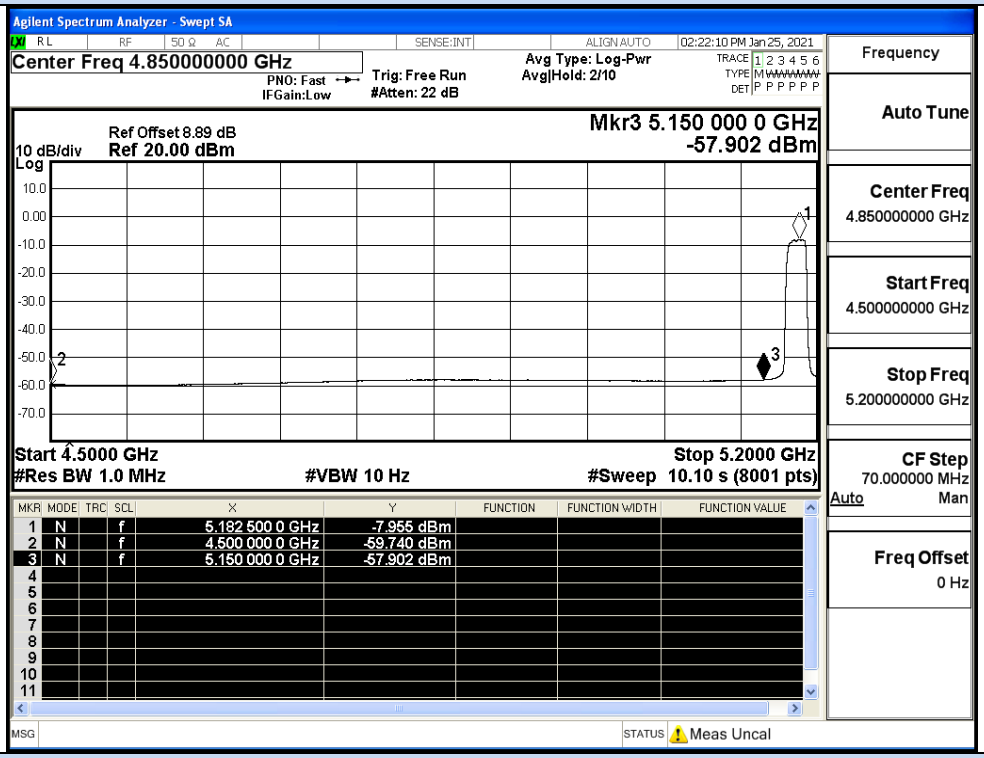
IEEE 802.11n40 / Channel 48 / 5230MHz / Peak



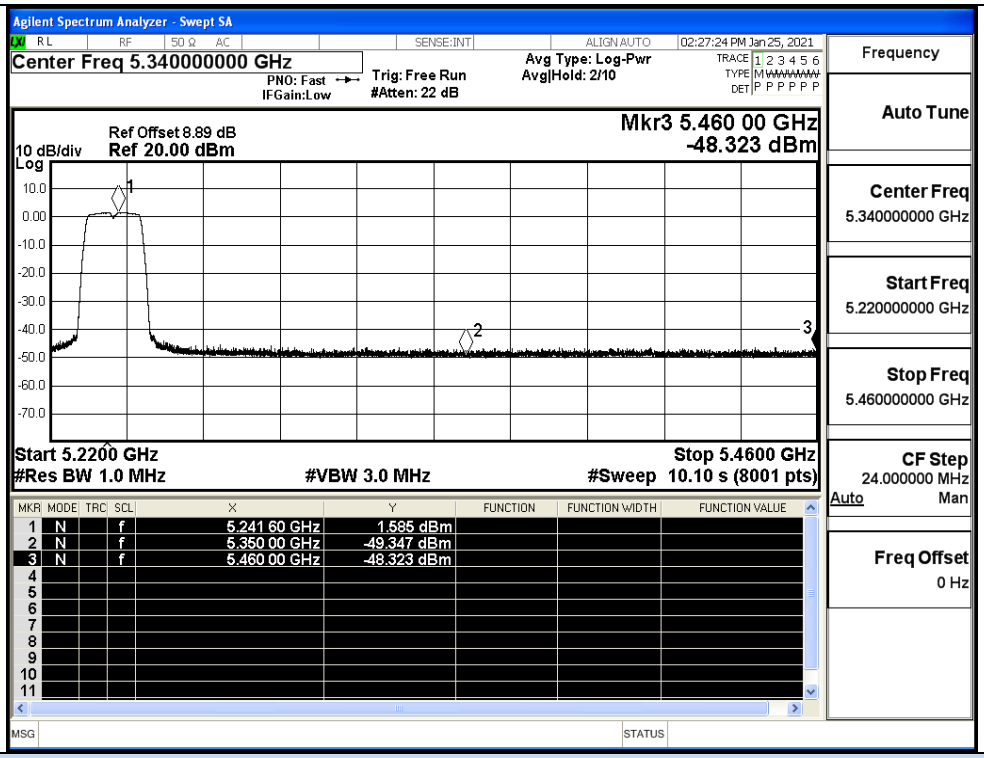
IEEE 802.11n40 / Channel 48 / 5230MHz / Average



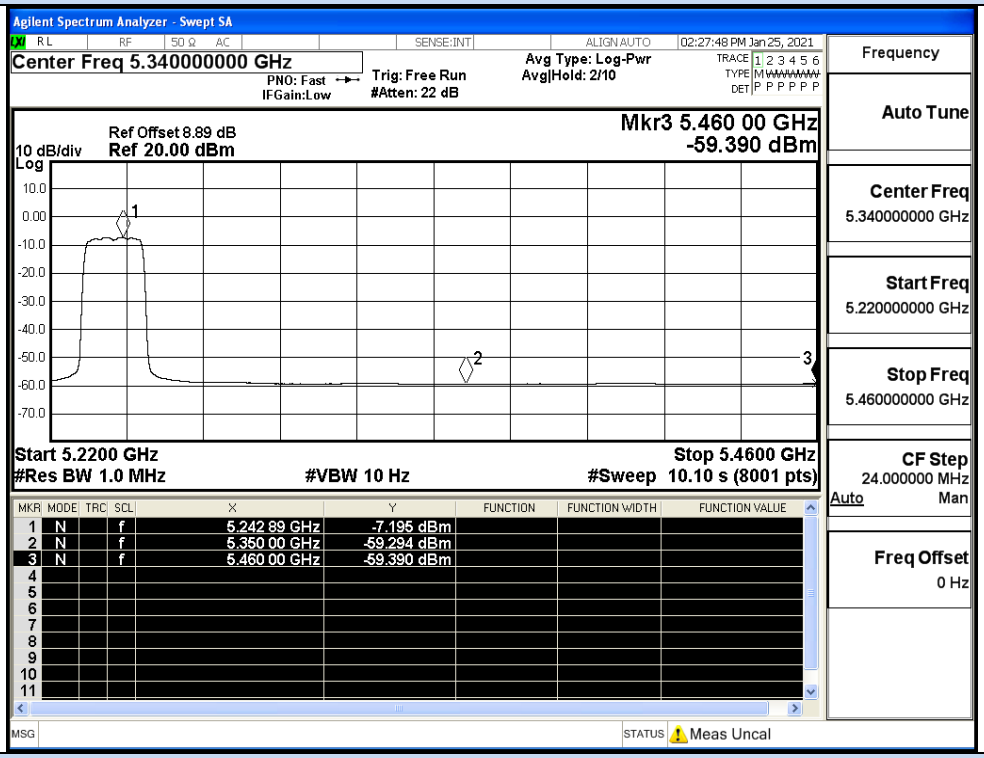
IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak



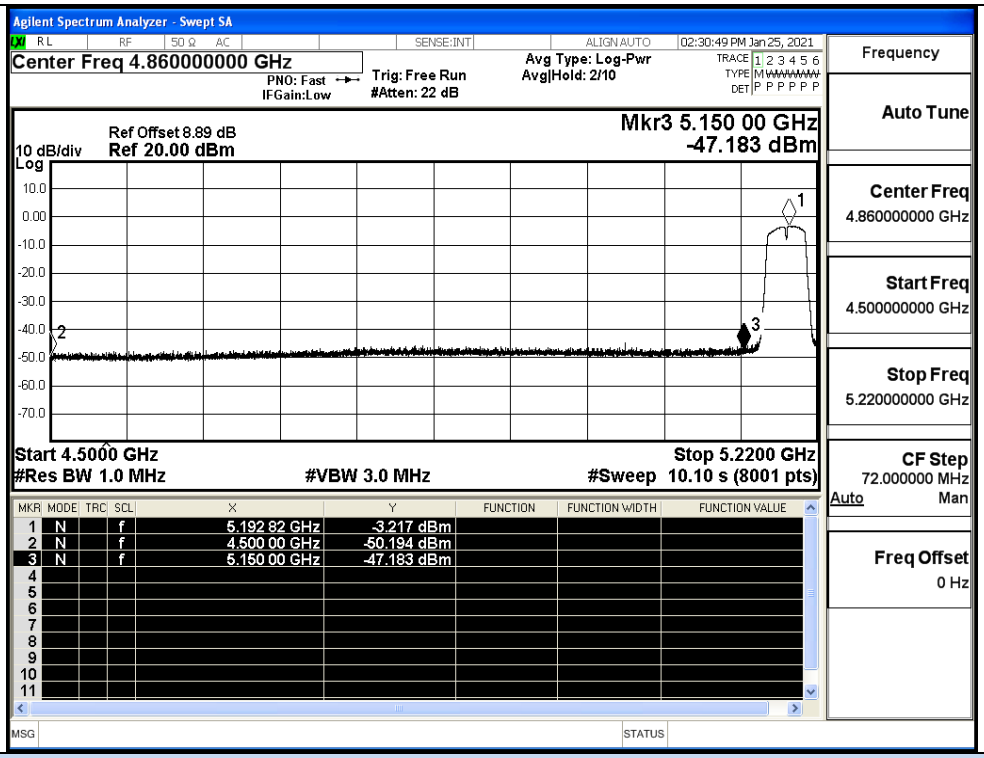
IEEE 802.11ac20 / Channel 36 / 5180MHz / Average



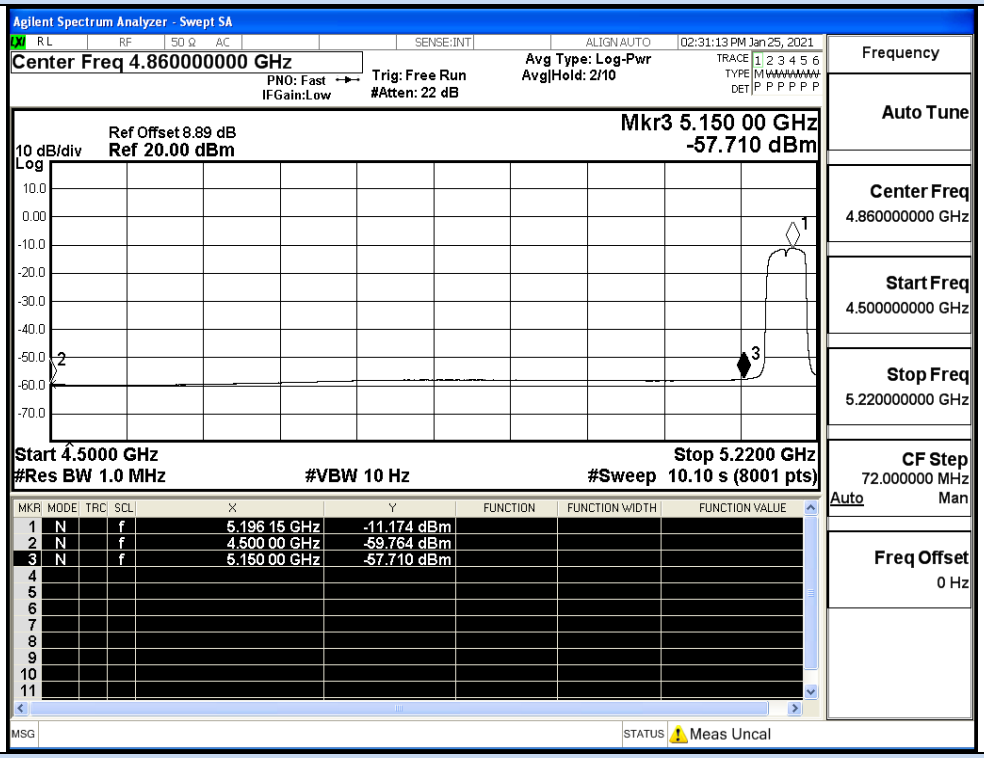
IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



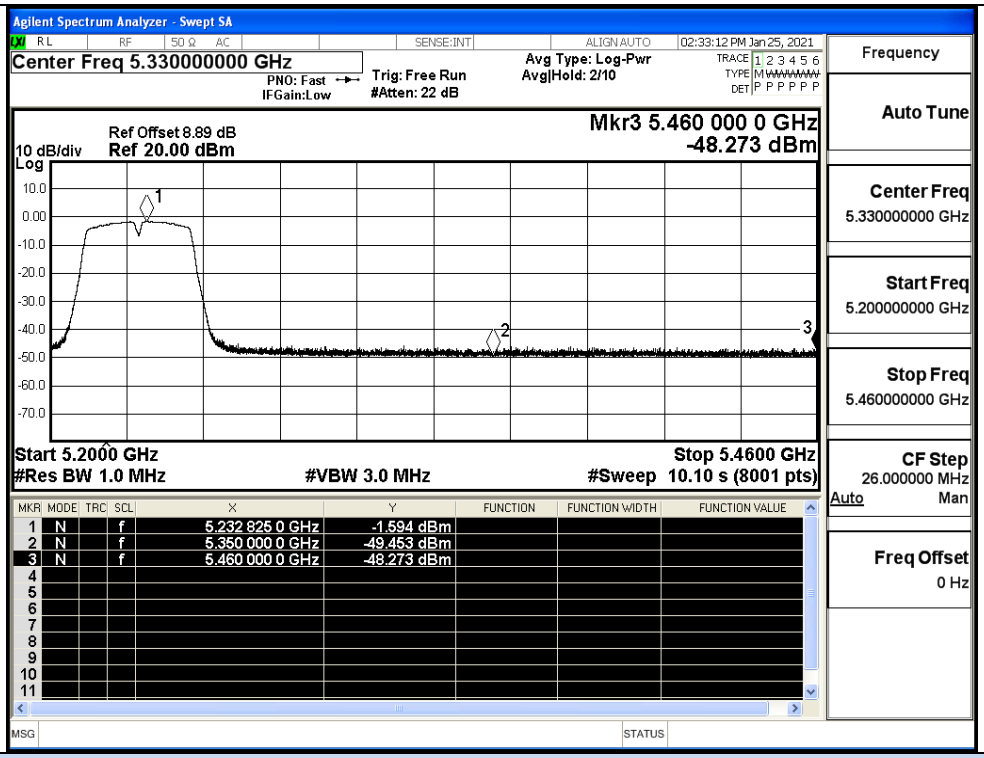
IEEE 802.11ac20 / Channel 48 / 5240MHz / Average



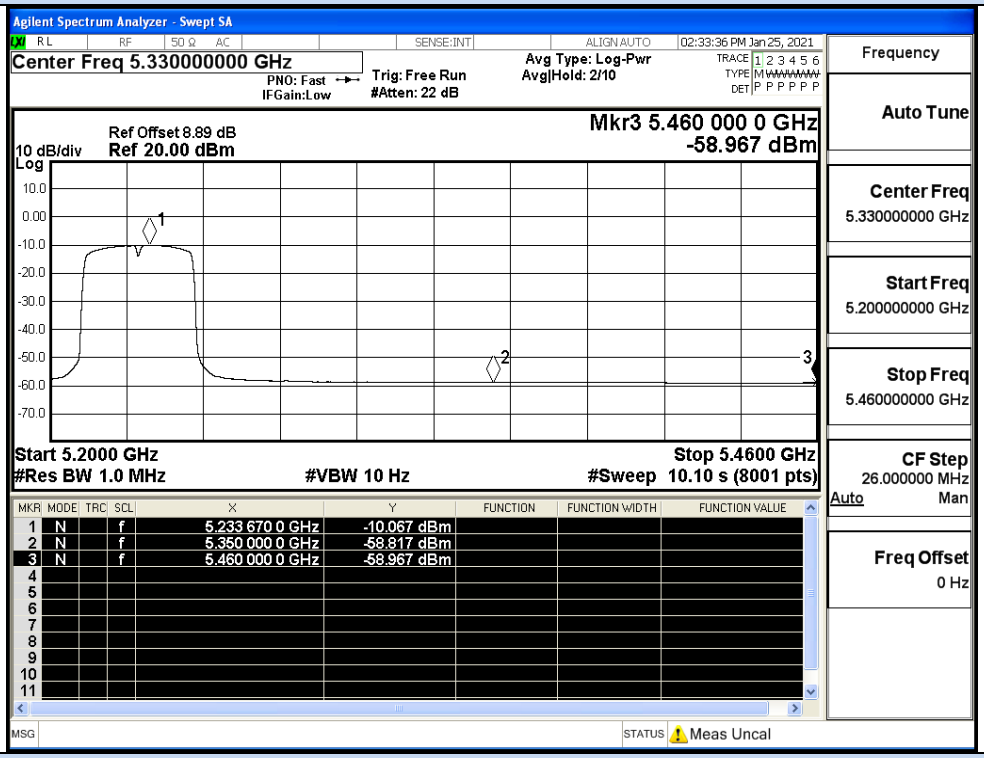
IEEE 802.11ac40 / Channel 38 / 5190MHz / Peak



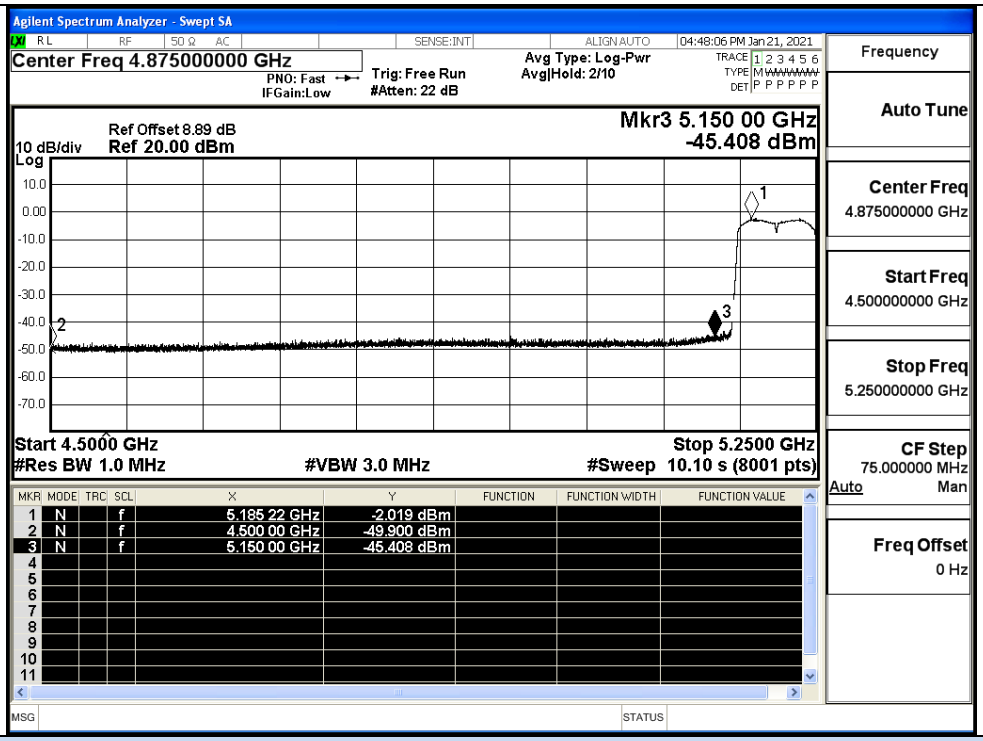
IEEE 802.11ac40 / Channel 38 / 5190MHz / Average



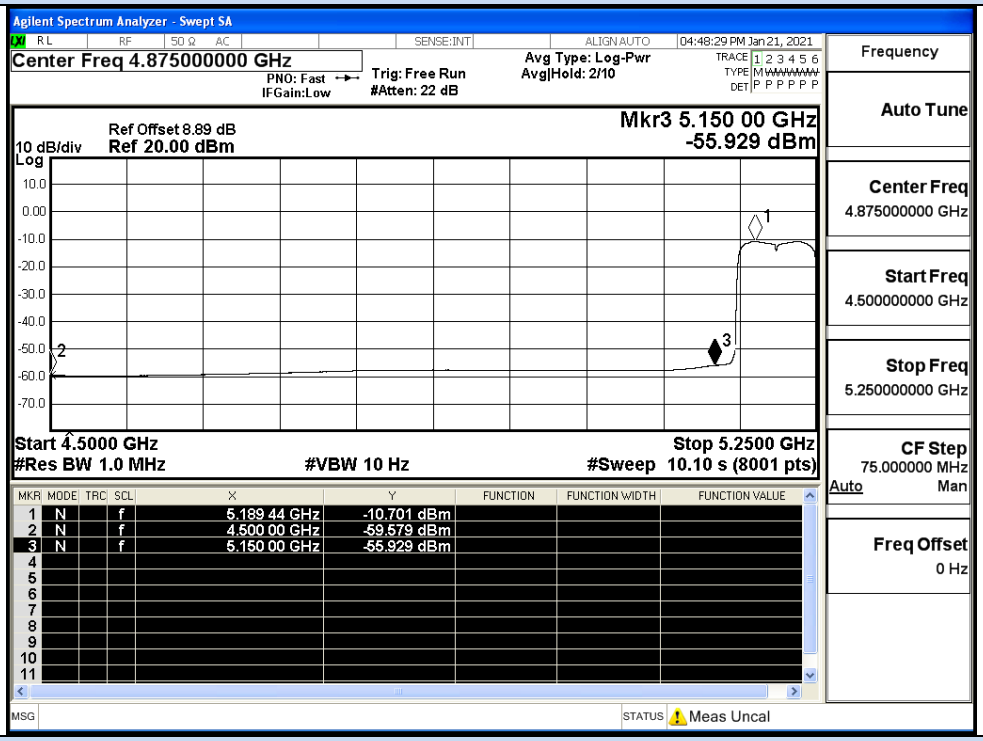
IEEE 802.11ac40 / Channel 48 / 5230MHz / Peak



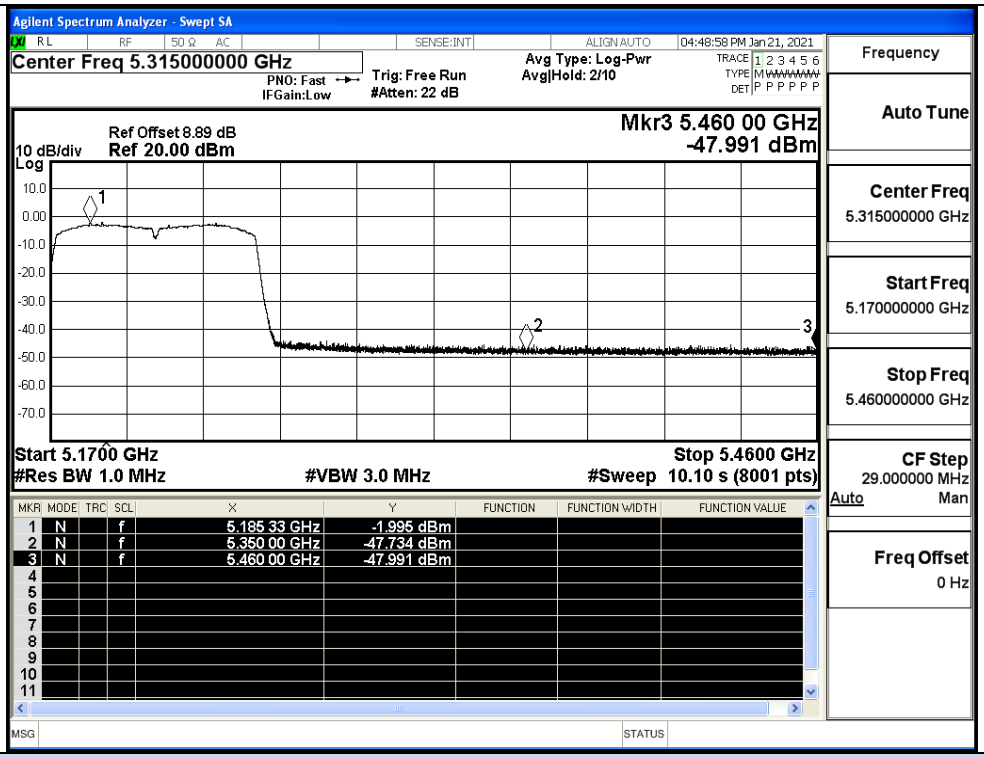
IEEE 802.11ac40 / Channel 48 / 5230MHz / Average



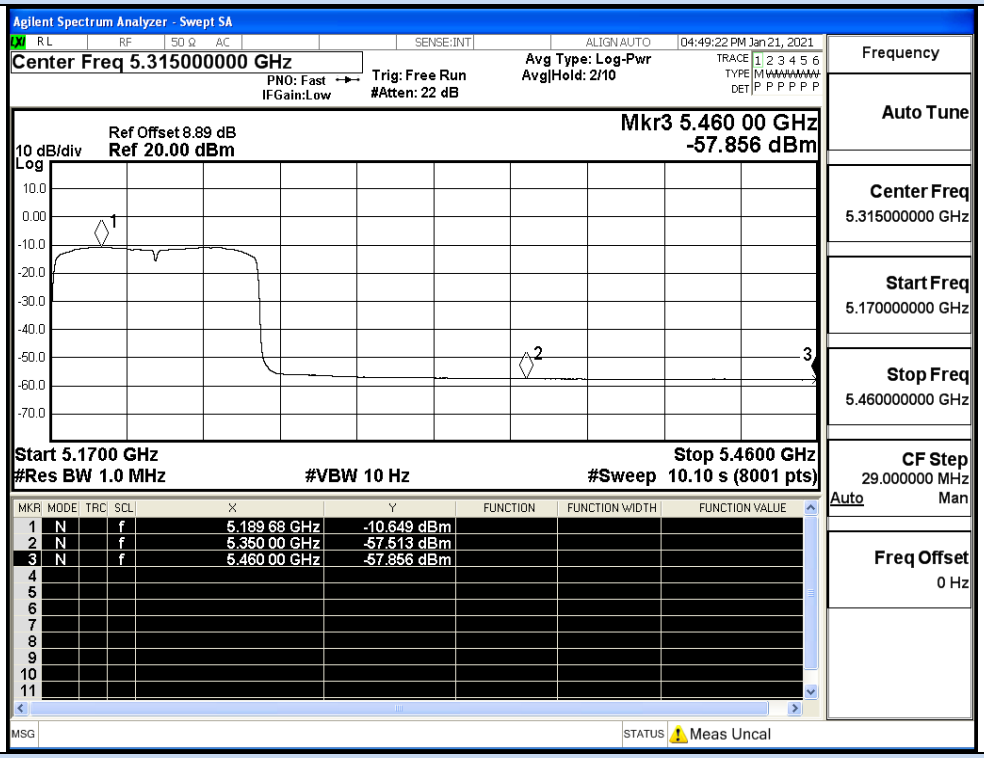
IEEE 802.11ac80 / Channel 42 / 5210MHz / Peak



IEEE 802.11ac80 / Channel 42 / 5210MHz / Average



IEEE 802.11ac80 / Channel 42/ 5210MHz / Peak



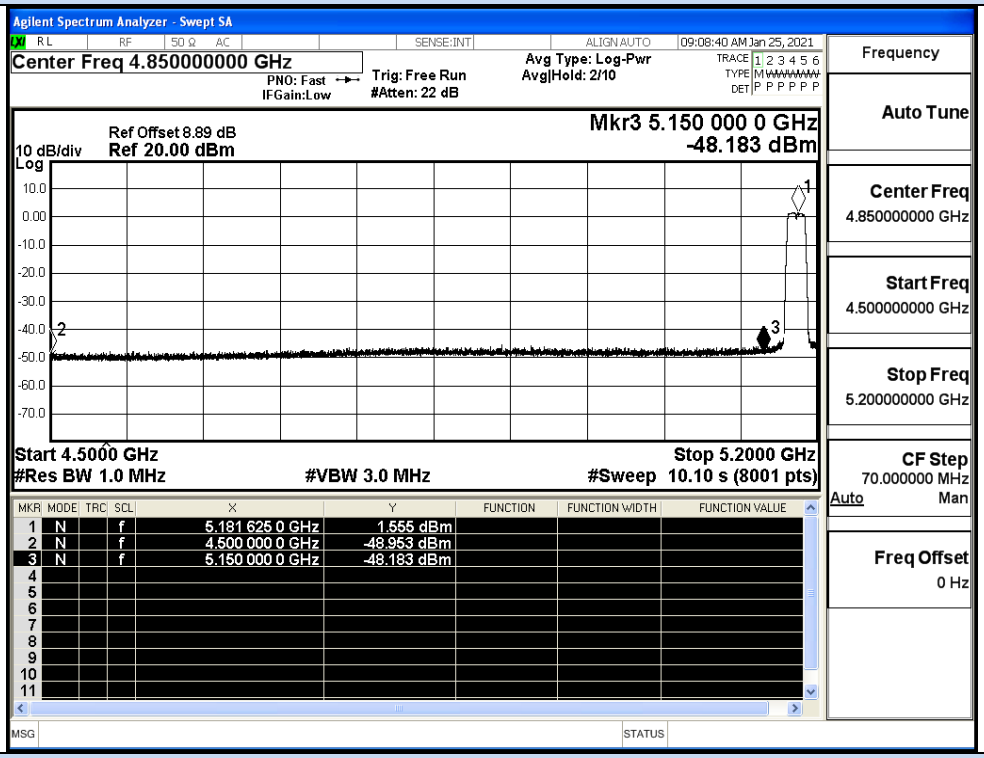
IEEE 802.11ac80 / Channel 42 / 5210MHz / Average

ANT1

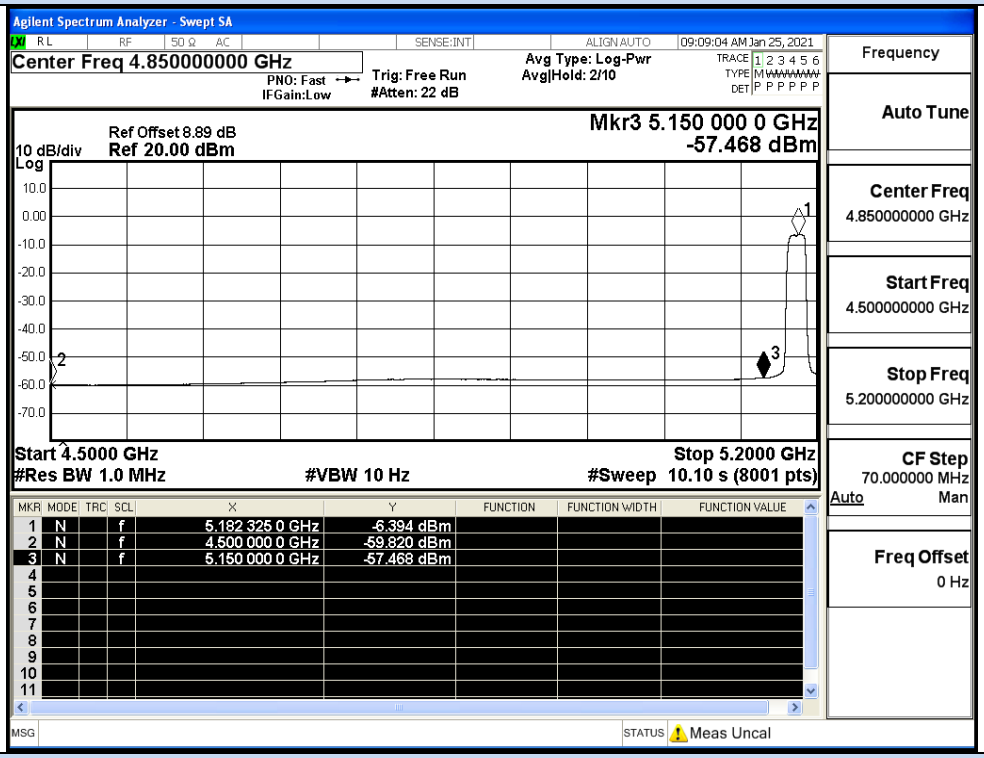
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
11A	36	4500.0	-48.95	5.0	0	51.28	Peak	74.00	Pass
		4500.0	-59.82	5.0	0	40.41	Average	54.00	Pass
		5150.0	-48.18	5.0	0	52.05	Peak	74.00	Pass
		5150.0	-57.47	5.0	0	42.76	Average	54.00	Pass
	48	5350.0	-49.07	5.0	0	51.16	Peak	74.00	Pass
		5350.0	-58.82	5.0	0	41.41	Average	54.00	Pass
		5460.0	-48.20	5.0	0	52.03	Peak	74.00	Pass
		5460.0	-59.10	5.0	0	41.13	Average	54.00	Pass
11N20 SISO	36	4500.0	-50.00	5.0	0	50.23	Peak	74.00	Pass
		4500.0	-59.74	5.0	0	40.49	Average	54.00	Pass
		5150.0	-47.55	5.0	0	52.68	Peak	74.00	Pass
		5150.0	-57.41	5.0	0	42.82	Average	54.00	Pass
	48	5350.0	-48.47	5.0	0	51.76	Peak	74.00	Pass
		5350.0	-58.87	5.0	0	41.36	Average	54.00	Pass
		5460.0	-47.91	5.0	0	52.32	Peak	74.00	Pass
		5460.0	-59.13	5.0	0	41.10	Average	54.00	Pass
11N40 SISO	38	4500.0	-50.64	5.0	0	49.59	Peak	74.00	Pass
		4500.0	-59.83	5.0	0	40.40	Average	54.00	Pass
		5150.0	-47.54	5.0	0	52.69	Peak	74.00	Pass
		5150.0	-57.12	5.0	0	43.11	Average	54.00	Pass
	46	5350.0	-48.17	5.0	0	52.06	Peak	74.00	Pass
		5350.0	-58.74	5.0	0	41.49	Average	54.00	Pass
		5460.0	-49.07	5.0	0	51.16	Peak	74.00	Pass
		5460.0	-58.94	5.0	0	41.29	Average	54.00	Pass
11AC20 SISO	36	4500.0	-49.53	5.0	0	50.70	Peak	74.00	Pass
		4500.0	-59.80	5.0	0	40.43	Average	54.00	Pass
		5150.0	-47.82	5.0	0	52.41	Peak	74.00	Pass
		5150.0	-57.94	5.0	0	42.29	Average	54.00	Pass
	48	4500.0	-49.53	5.0	0	50.70	Peak	74.00	Pass
		4500.0	-59.80	5.0	0	40.43	Average	54.00	Pass
		5150.0	-47.82	5.0	0	52.41	Peak	74.00	Pass
		5150.0	-57.94	5.0	0	42.29	Average	54.00	Pass
11AC40 SISO	38	4500.0	-49.68	5.0	0	50.55	Peak	74.00	Pass
		4500.0	-59.74	5.0	0	40.49	Average	54.00	Pass
		5150.0	-48.14	5.0	0	52.09	Peak	74.00	Pass
		5150.0	-57.09	5.0	0	43.14	Average	54.00	Pass
	46	5350.0	-47.67	5.0	0	52.56	Peak	74.00	Pass
		5350.0	-58.74	5.0	0	41.49	Average	54.00	Pass

		5460.0	-48.81	5.0	0	51.42	Peak	74.00	Pass
		5460.0	-58.90	5.0	0	41.33	Average	54.00	Pass
11AC80SISO	42	4500.0	-48.48	5.0	0	51.75	Peak	74.00	Pass
		5150.0	-57.49	5.0	0	42.74	Average	54.00	Pass
		4500.0	-49.09	5.0	0	51.14	Peak	74.00	Pass
		5150.0	-58.09	5.0	0	42.14	Average	54.00	Pass
		5350.0	-48.48	5.0	0	51.75	Peak	74.00	Pass
		5460.0	-57.49	5.0	0	42.74	Average	54.00	Pass
		5350.0	-49.09	5.0	0	51.14	Peak	74.00	Pass
		5460.0	-58.09	5.0	0	42.14	Average	54.00	Pass

Undesirable Emissions Measurement

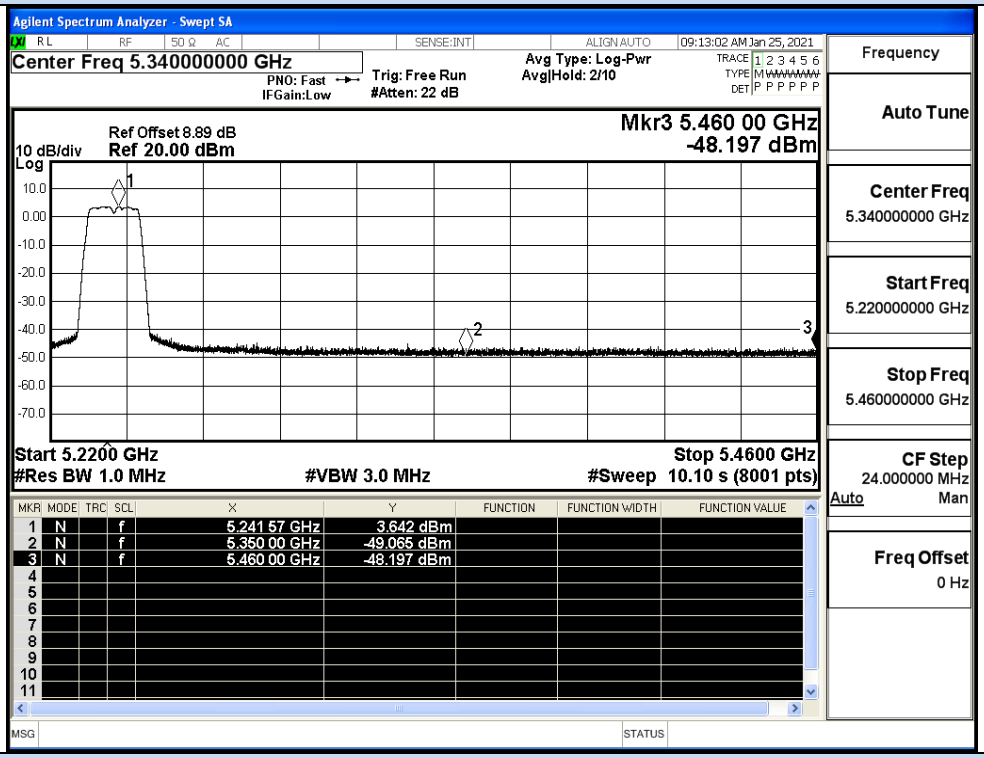


IEEE 802.11a / Channel 36 / 5180MHz / Peak

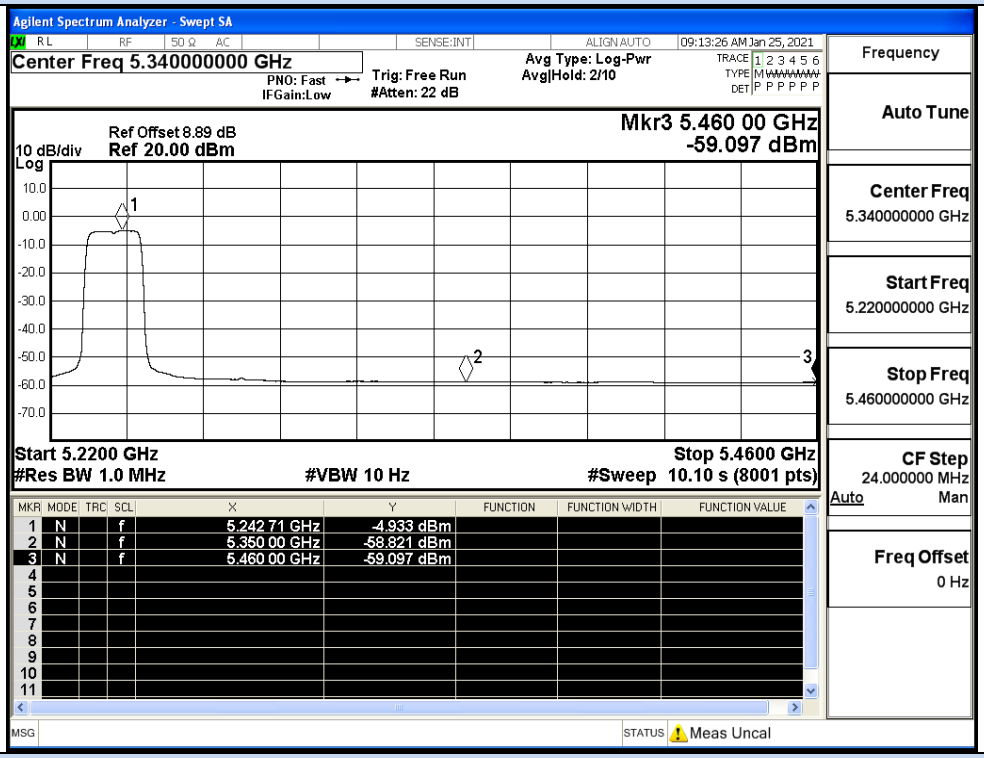


IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

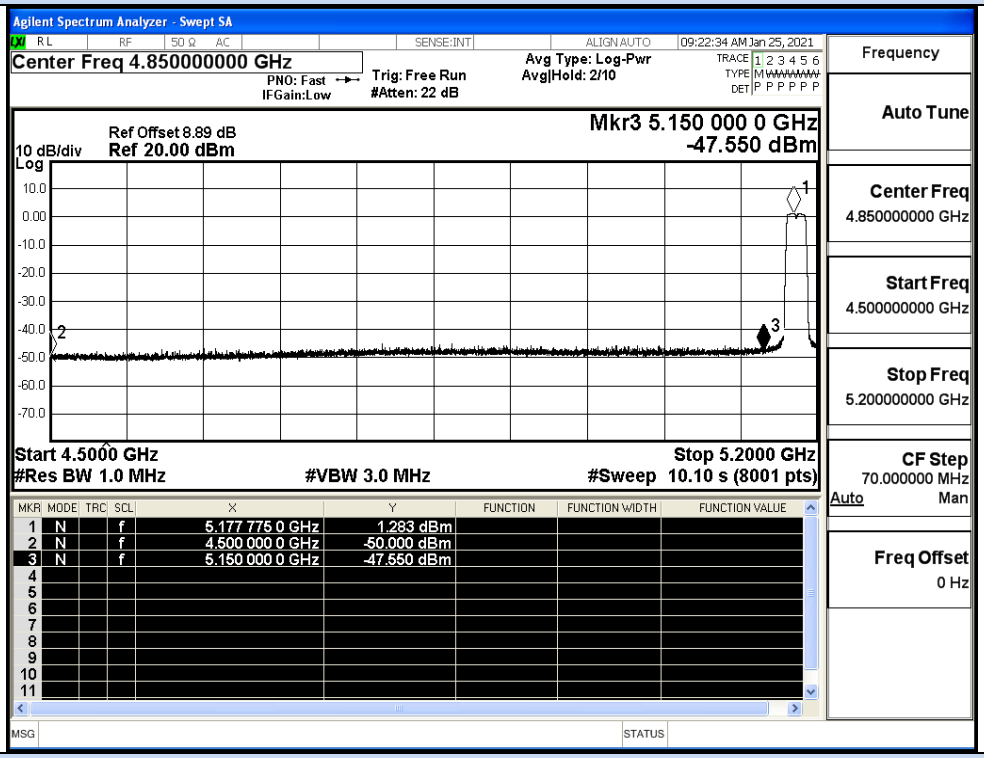


IEEE 802.11a / Channel 48 / 5240MHz / Peak

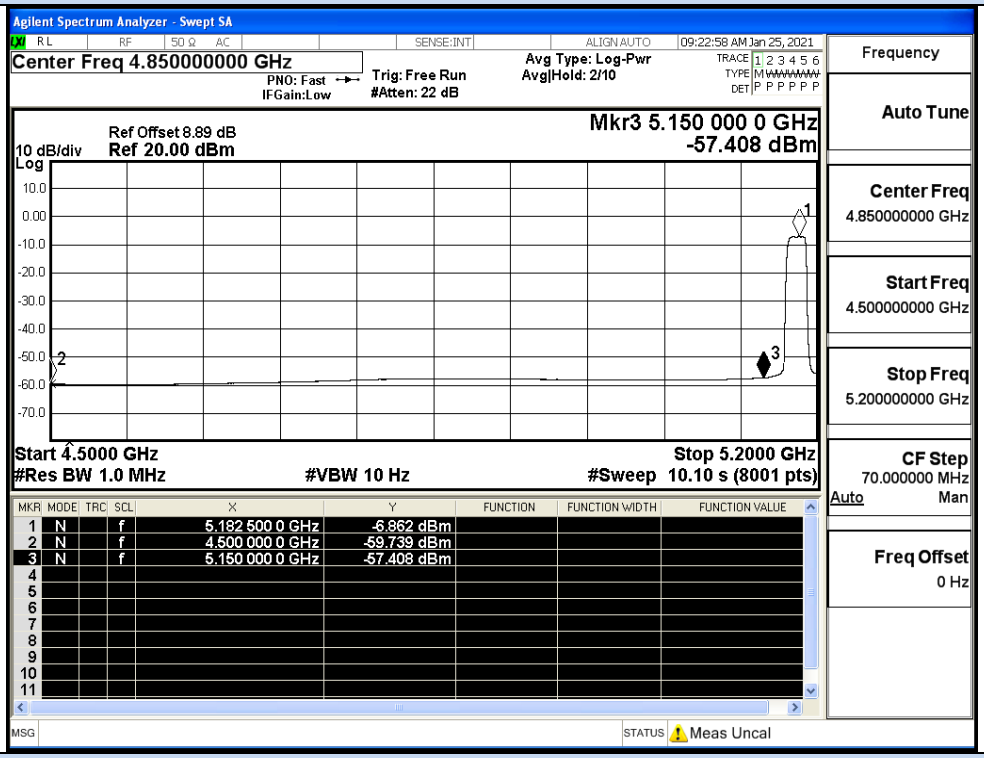


IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

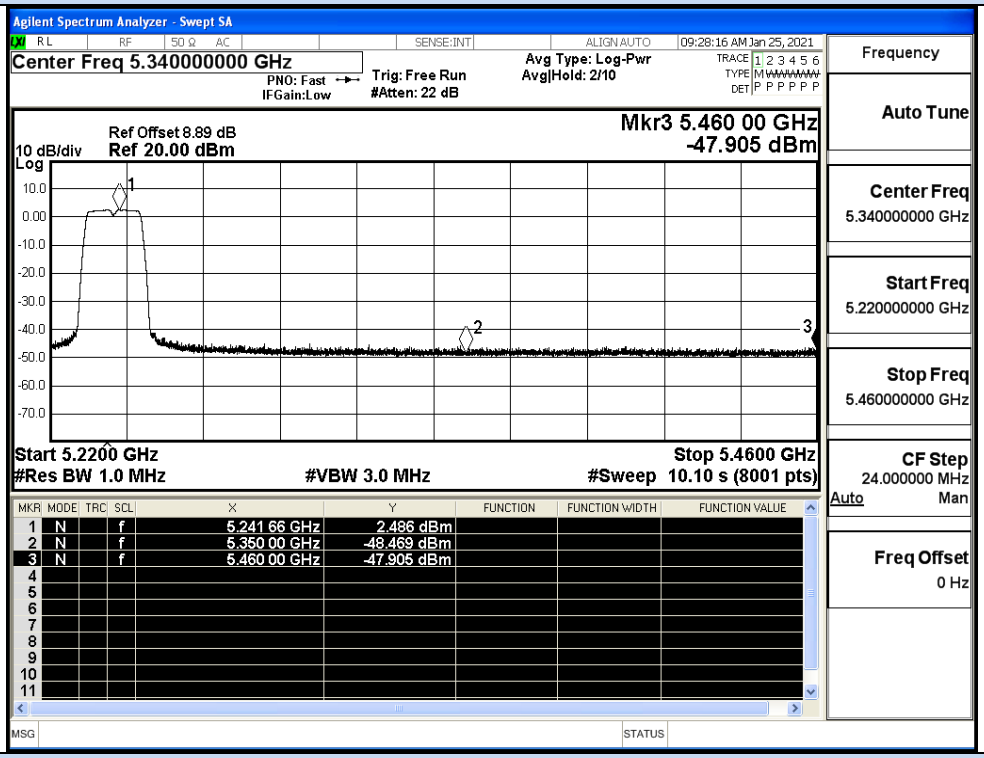


IEEE 802.11n20 / Channel 36 / 5180MHz / Peak

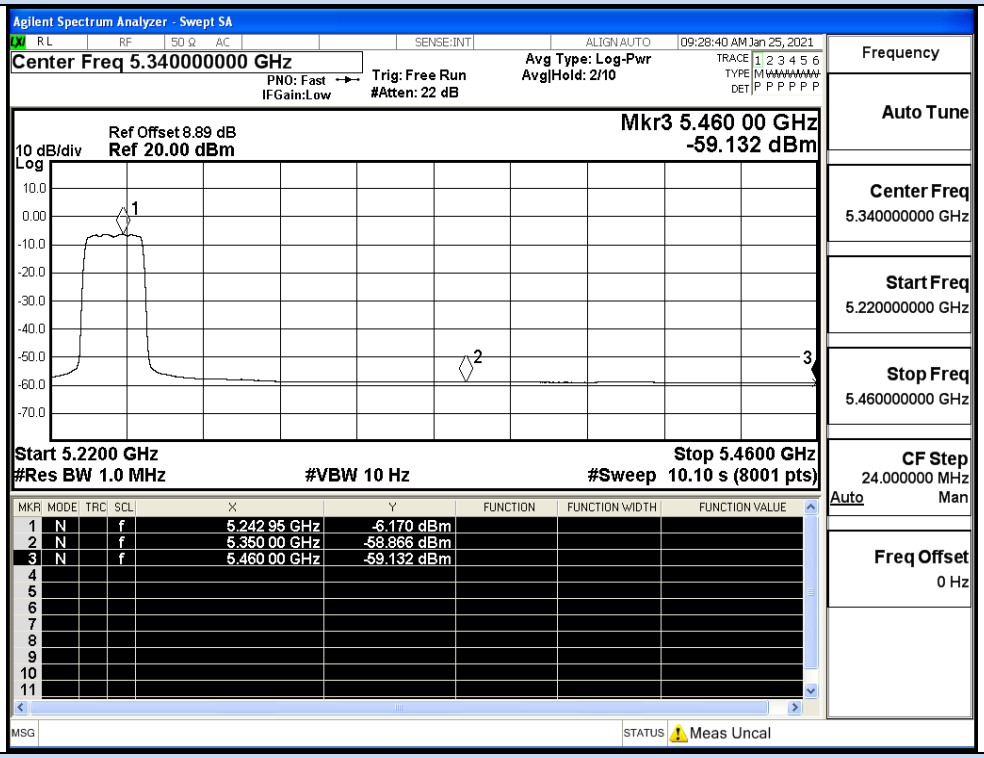


IEEE 802.11n20 / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

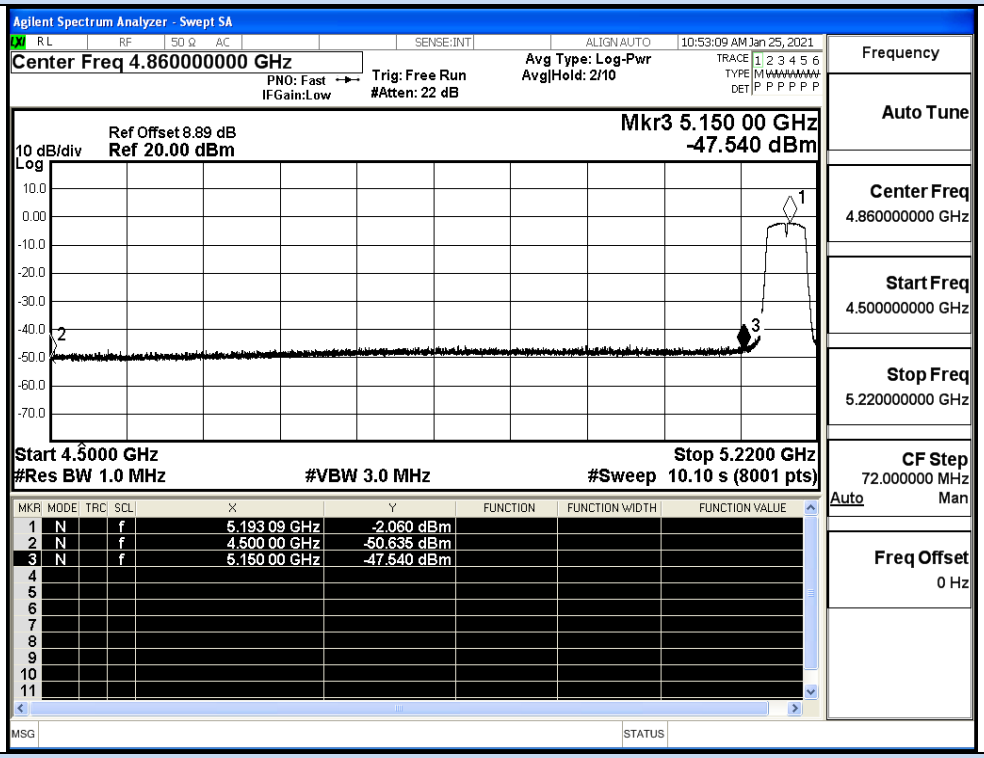


IEEE 802.11n20 / Channel 48 / 5240MHz / Peak

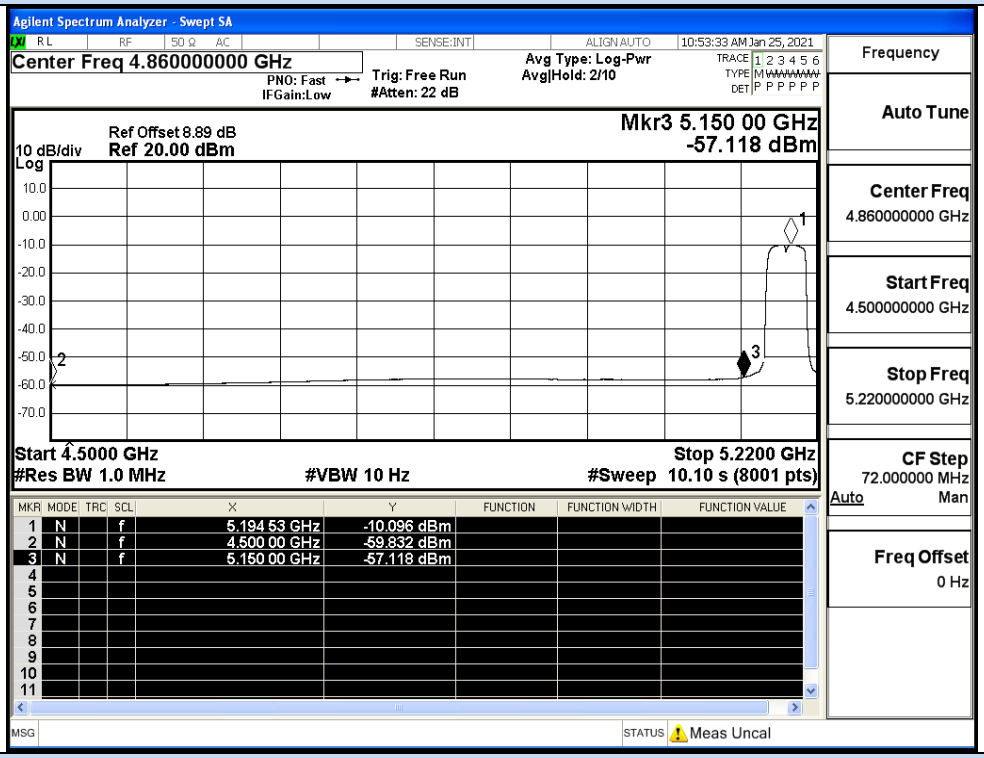


IEEE 802.11n20 / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

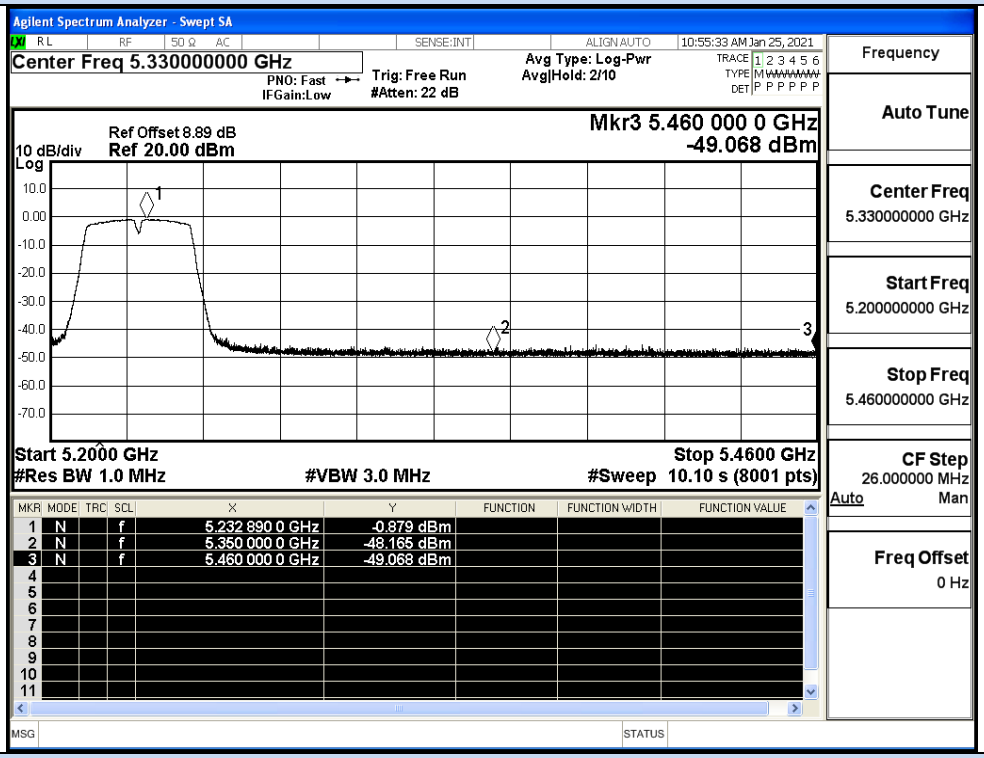


IEEE 802.11n40 / Channel 38 / 5190MHz / Peak

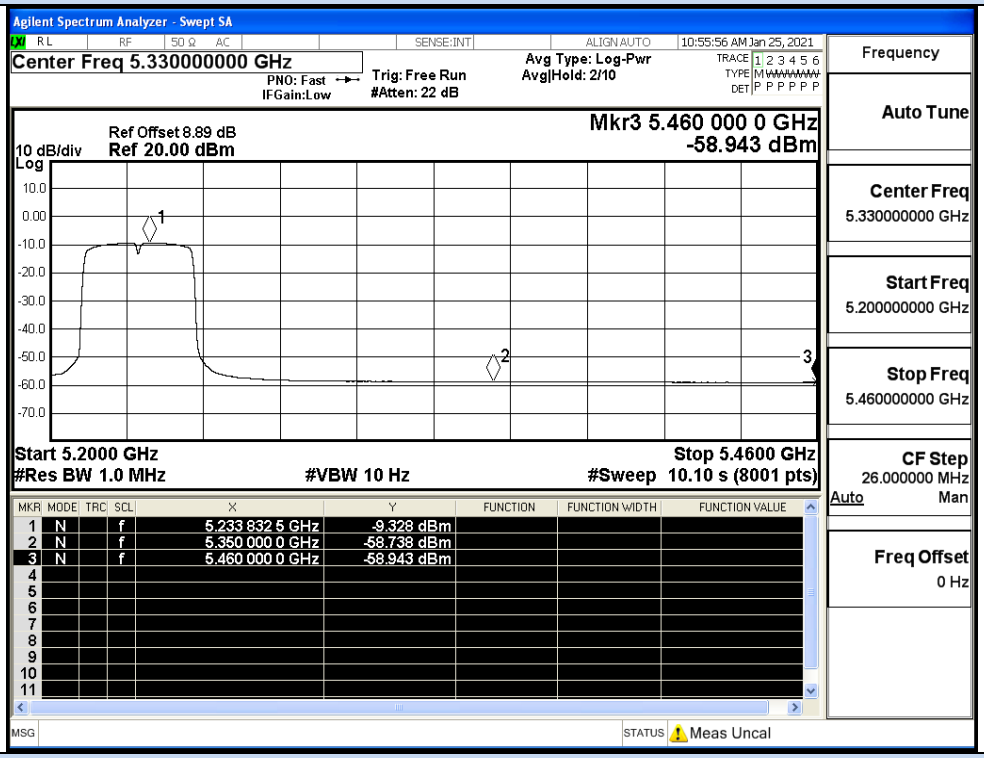


IEEE 802.11n40 / Channel 38 / 5190MHz / Average

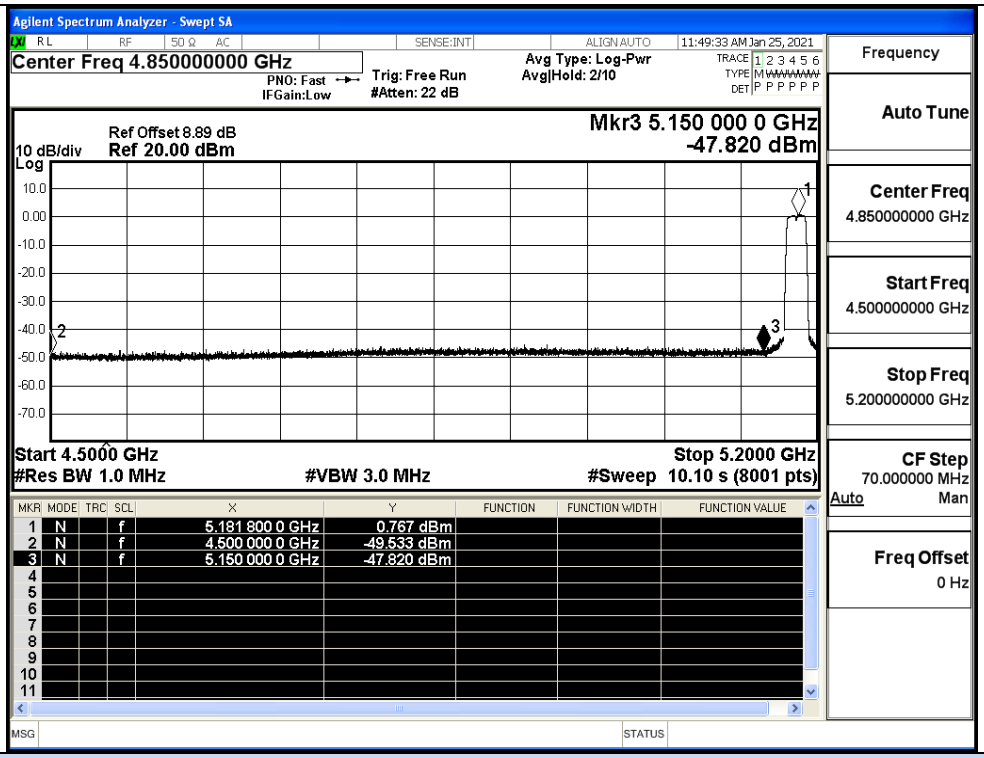
Undesirable Emissions Measurement



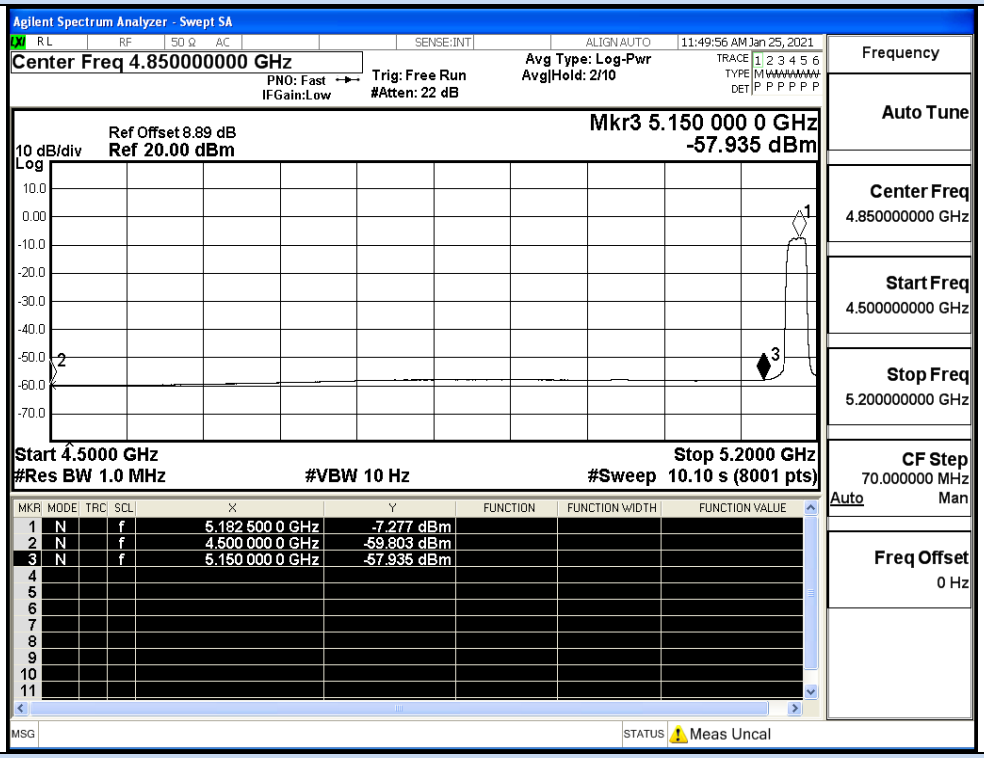
IEEE 802.11n40 / Channel 48 / 5230MHz / Peak



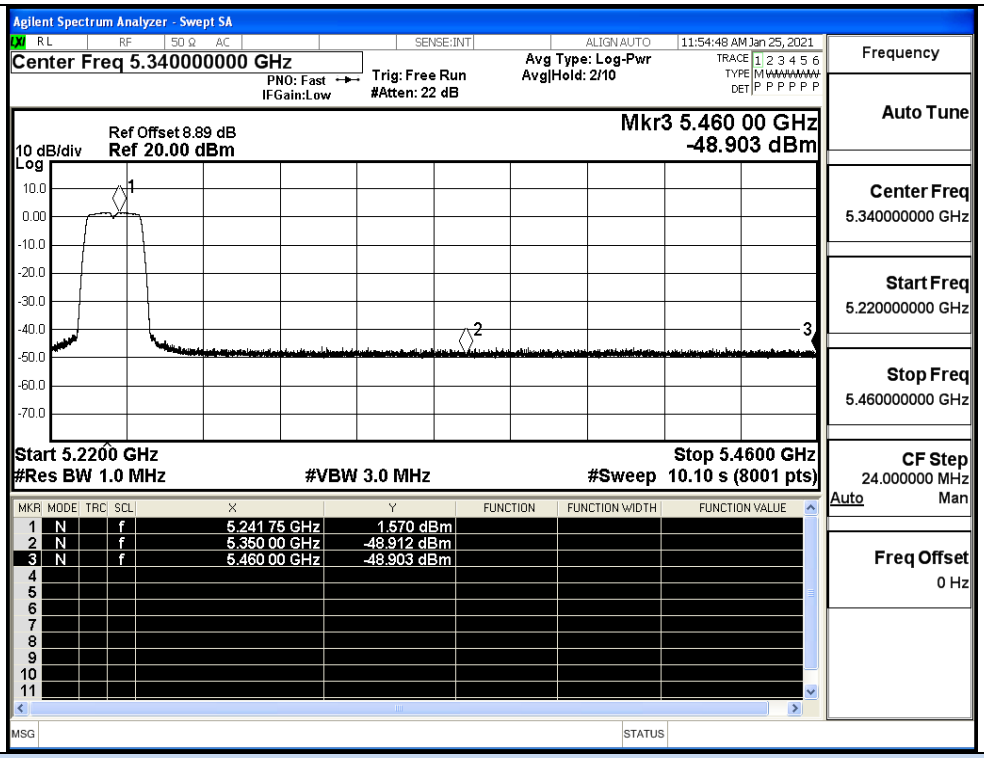
IEEE 802.11n40 / Channel 48 / 5230MHz / Average



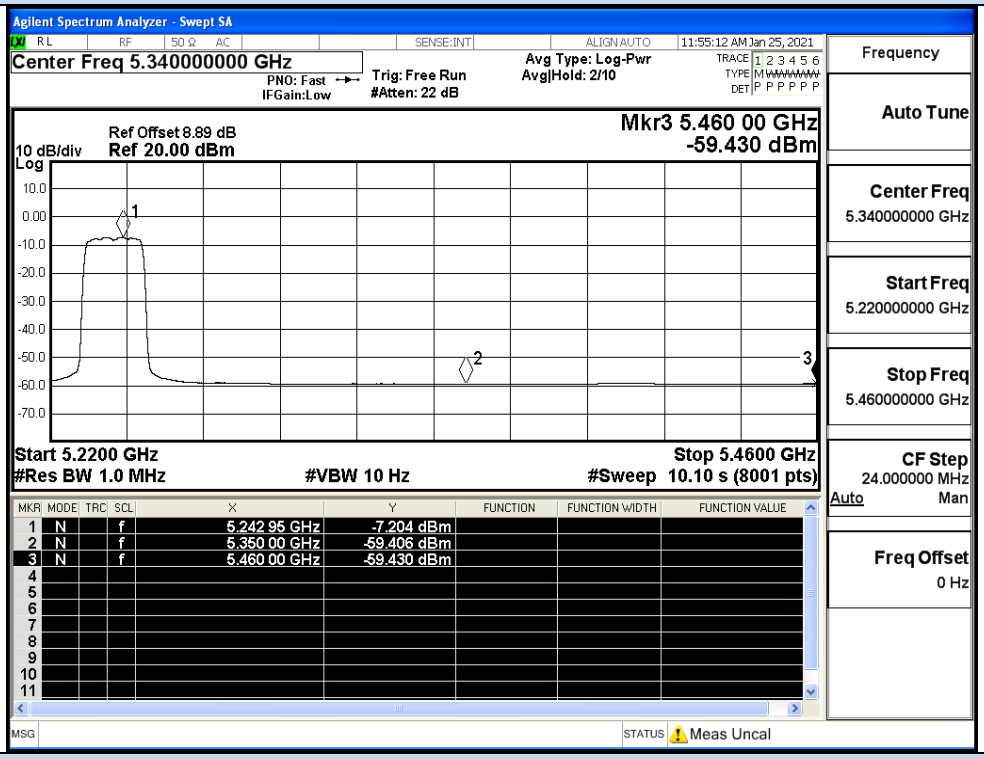
IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak



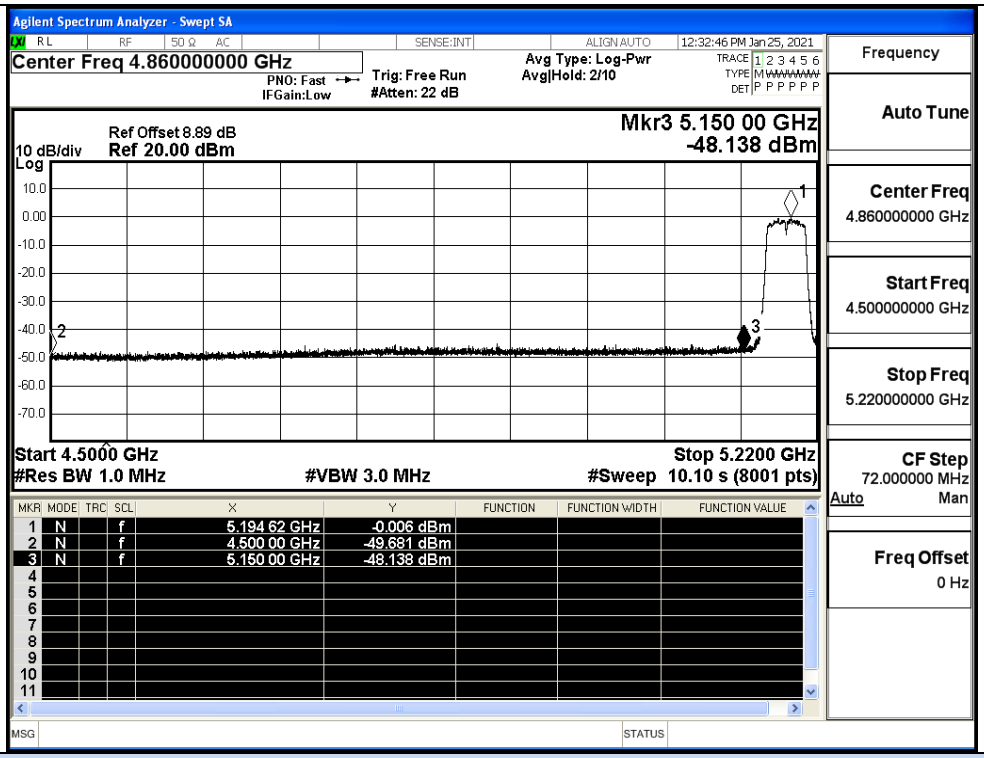
IEEE 802.11ac20 / Channel 36 / 5180MHz / Average



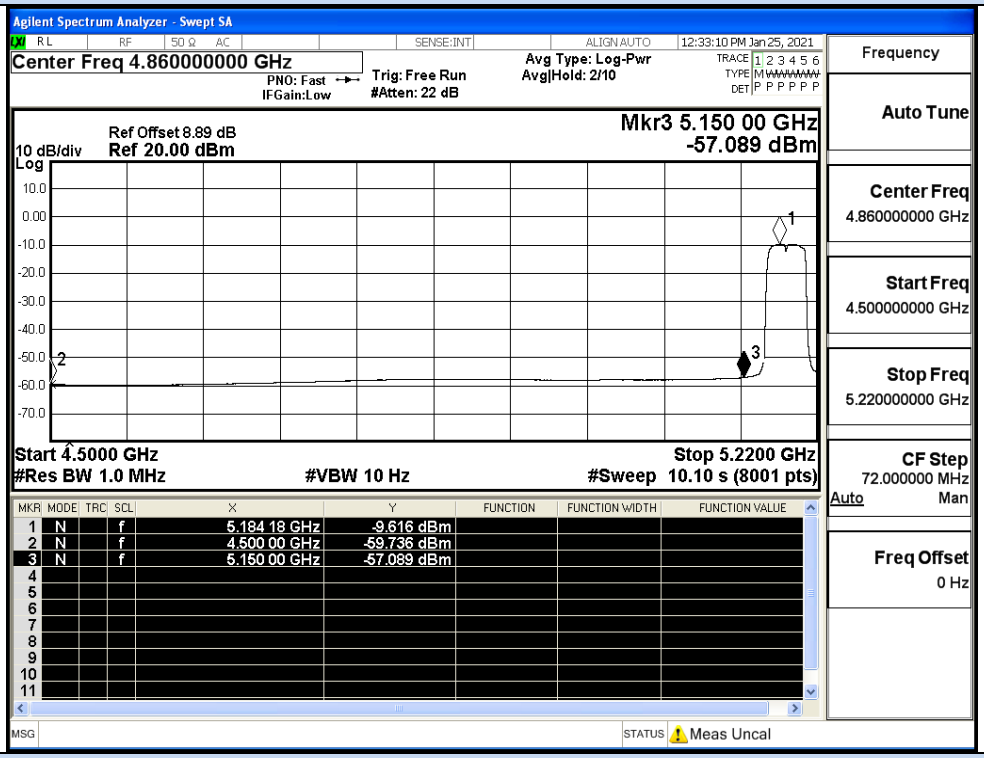
IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



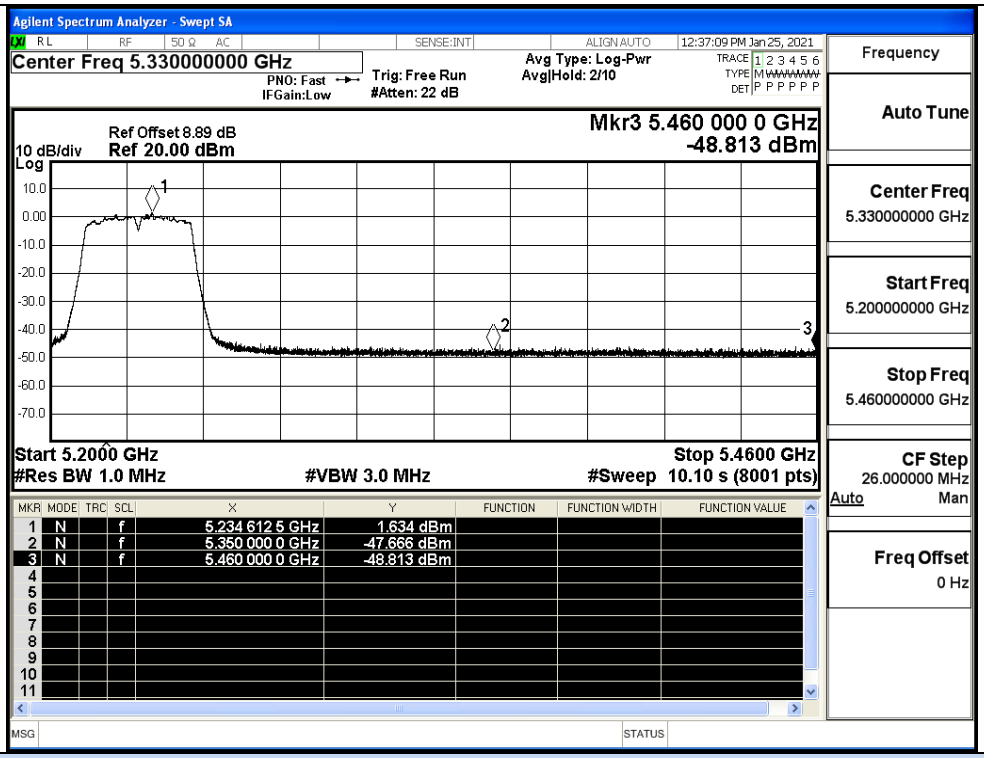
IEEE 802.11ac20 / Channel 48 / 5240MHz / Average



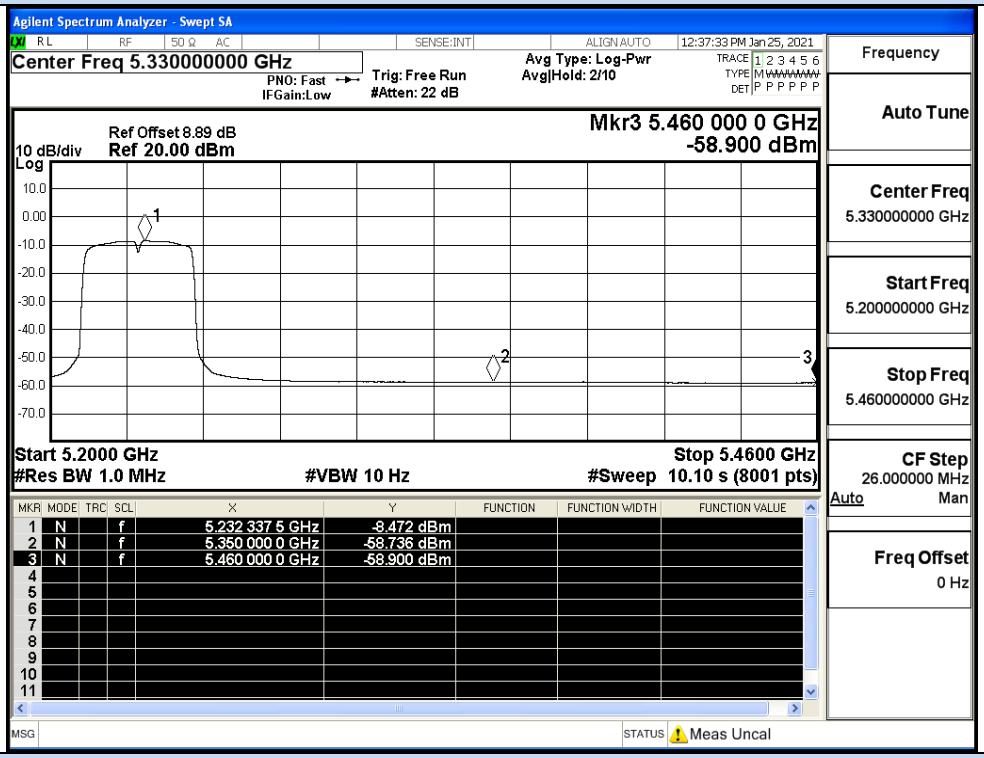
IEEE 802.11ac40 / Channel 38 / 5190MHz / Peak



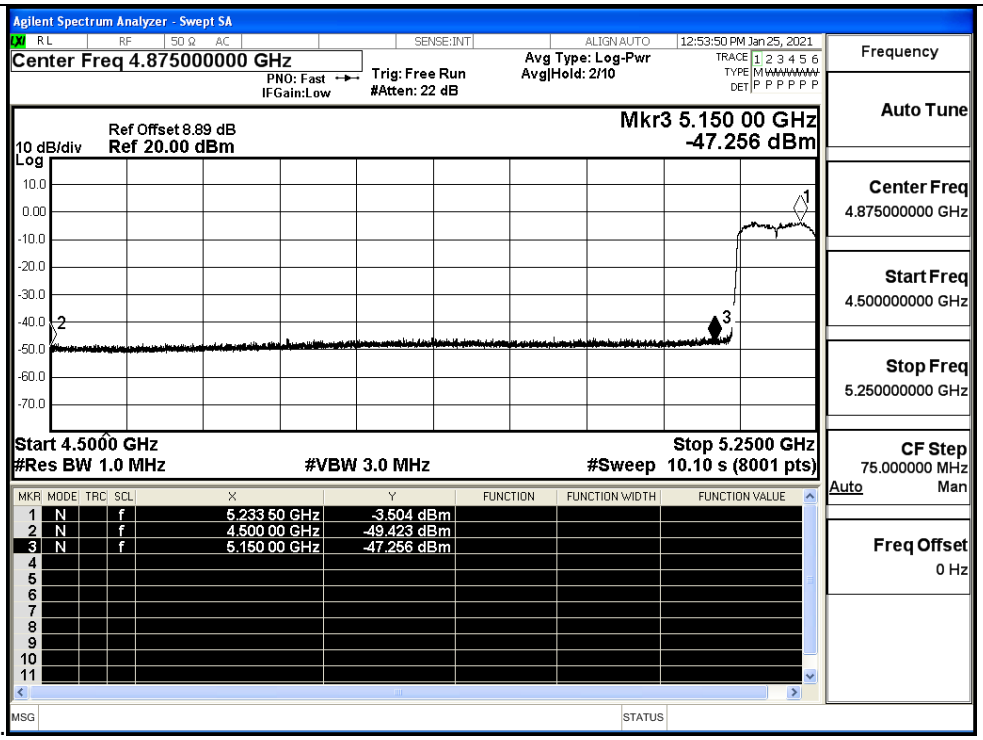
IEEE 802.11ac40 / Channel 38 / 5190MHz / Average



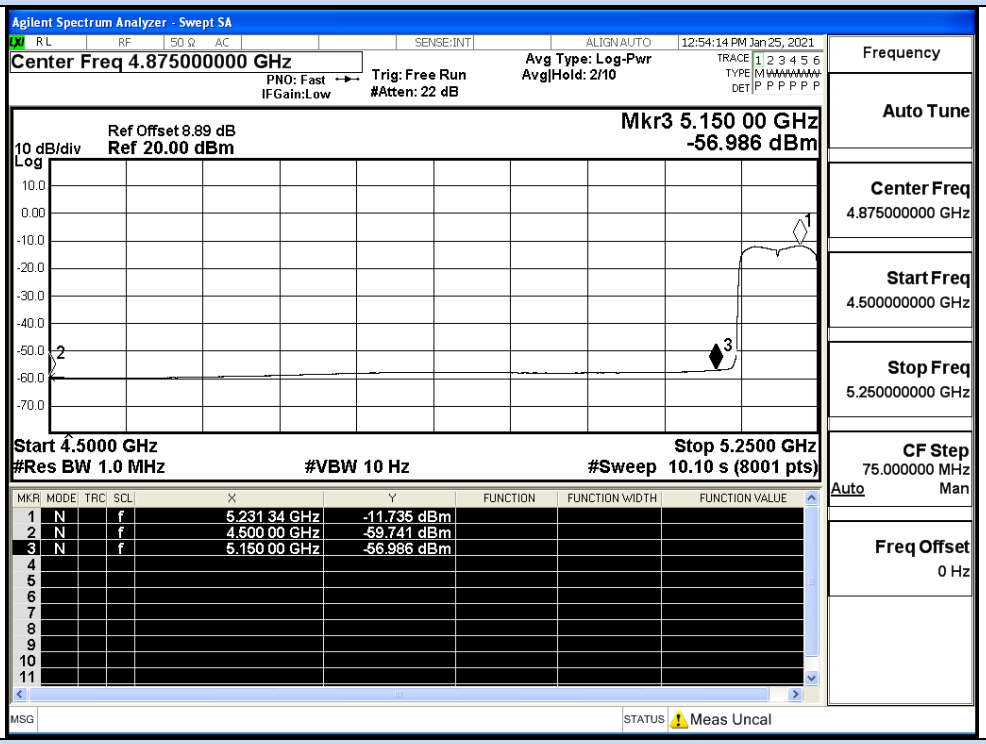
IEEE 802.11ac40 / Channel 48 / 5230MHz / Peak



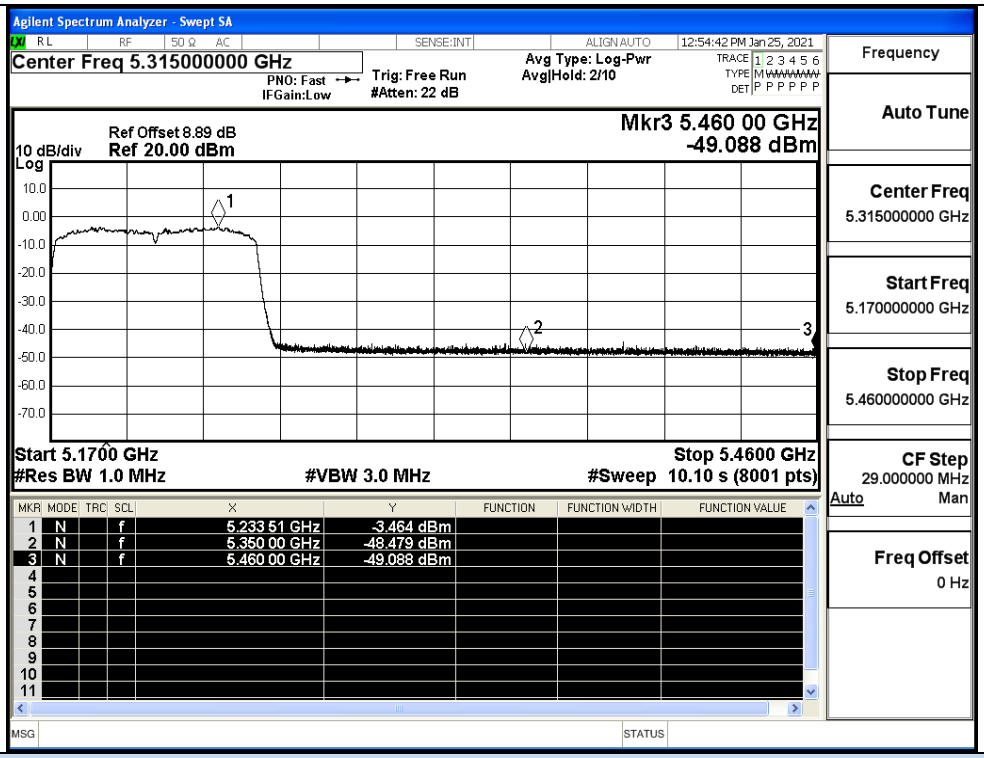
IEEE 802.11ac40 / Channel 48 / 5230MHz / Average



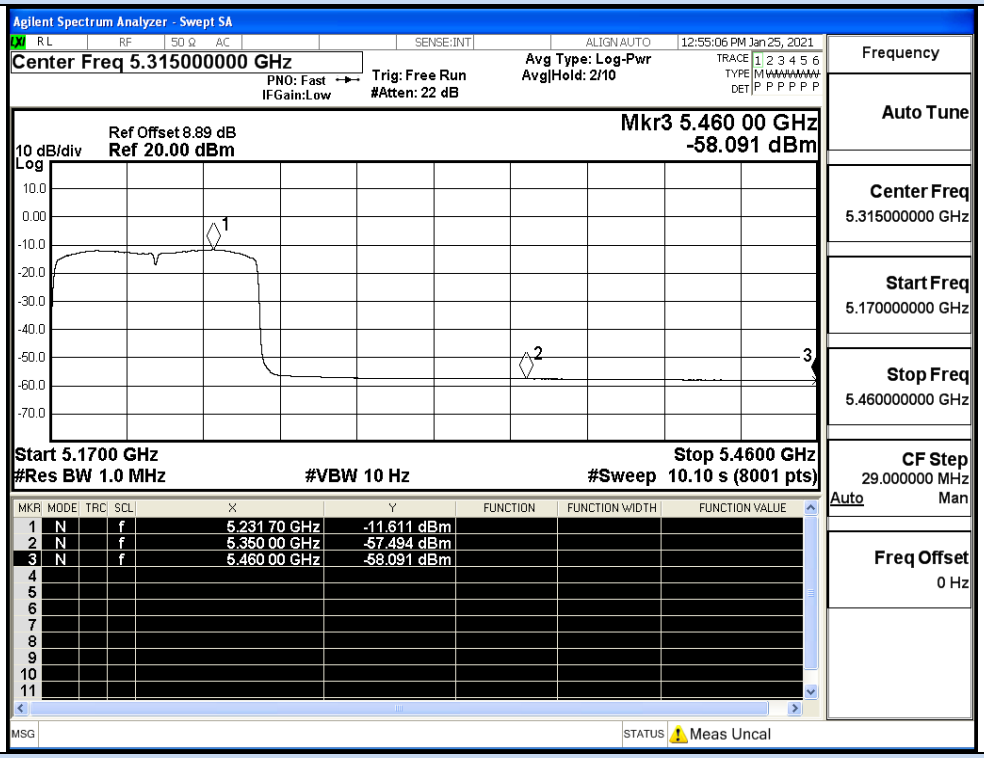
IEEE 802.11ac80 / Channel 42 / 5210MHz / Peak



IEEE 802.11ac80 / Channel 42 / 5210MHz / Average



IEEE 802.11ac80 / Channel 42/ 5210MHz / Peak



IEEE 802.11ac80 / Channel 42 / 5210MHz / Average

MIMO

Test Mode	Channel	Frequency (MHz)	ANT 0 Conducted Power (dBm)	ANT 1 Conducted Power (dBm)	MIMO Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
11N20	36	4500.0	-50.54	-50.00	-47.25	8.01	0	55.99	Peak	68.20	Pass
		4500.0	-59.77	-59.74	-56.74	8.01	0	46.50	Average	54.00	Pass
		5150.0	-47.57	-47.55	-44.55	8.01	0	58.69	Peak	68.20	Pass
		5150.0	-58.00	-57.41	-54.68	8.01	0	48.56	Average	54.00	Pass
	48	5350.0	-48.69	-48.47	-45.57	8.01	0	57.67	Peak	68.20	Pass
		5350.0	-59.35	-58.87	-56.09	8.01	0	47.15	Average	54.00	Pass
		5460.0	-48.75	-47.91	-45.30	8.01	0	57.94	Peak	68.20	Pass
		5460.0	-59.43	-59.13	-56.27	8.01	0	46.97	Average	54.00	Pass
11N40	38	4500.0	-49.72	-50.64	-47.15	8.01	0	56.09	Peak	68.20	Pass
		4500.0	-59.74	-59.83	-56.77	8.01	0	46.47	Average	54.00	Pass
		5150.0	-48.22	-47.54	-44.86	8.01	0	58.38	Peak	68.20	Pass
		5150.0	-57.62	-57.12	-54.35	8.01	0	48.89	Average	54.00	Pass
	46	5350.0	-48.28	-48.17	-45.21	8.01	0	58.03	Peak	68.20	Pass
		5350.0	-58.73	-58.74	-55.72	8.01	0	47.52	Average	54.00	Pass
		5460.0	-48.56	-49.07	-45.80	8.01	0	57.44	Peak	68.20	Pass
		5460.0	-58.93	-58.94	-55.92	8.01	0	47.32	Average	54.00	Pass
11AC20	36	4500.0	-50.71	-49.53	-47.07	8.01	0	56.17	Peak	68.20	Pass
		4500.0	-59.74	-59.80	-56.76	8.01	0	46.48	Average	54.00	Pass
		5150.0	-48.79	-47.82	-45.27	8.01	0	57.97	Peak	68.20	Pass
		5150.0	-57.90	-57.94	-54.91	8.01	0	48.33	Average	54.00	Pass
	48	4500.0	-50.71	-49.53	-47.07	8.01	0	56.17	Peak	68.20	Pass
		4500.0	-59.74	-59.80	-56.76	8.01	0	46.48	Average	54.00	Pass
		5150.0	-48.79	-47.82	-45.27	8.01	0	57.97	Peak	68.20	Pass
		5150.0	-57.90	-57.94	-54.91	8.01	0	48.33	Average	54.00	Pass
11AC40	38	4500.0	-50.19	-49.68	-46.92	8.01	0	56.32	Peak	68.20	Pass
		4500.0	-59.76	-59.74	-56.74	8.01	0	46.50	Average	54.00	Pass
		5150.0	-47.18	-48.14	-44.62	8.01	0	58.62	Peak	68.20	Pass
		5150.0	-57.71	-57.09	-54.38	8.01	0	48.86	Average	54.00	Pass
	46	5350.0	-49.45	-47.67	-45.46	8.01	0	57.78	Peak	68.20	Pass
		5350.0	-58.82	-58.74	-55.77	8.01	0	47.47	Average	54.00	Pass
		5460.0	-48.27	-48.81	-45.52	8.01	0	57.72	Peak	68.20	Pass
		5460.0	-58.97	-58.90	-55.92	8.01	0	47.32	Average	54.00	Pass
11AC80	42	4500.0	-47.73	-48.48	-45.08	8.01	0	58.16	Peak	68.20	Pass
		5150.0	-57.51	-57.49	-54.49	8.01	0	48.75	Average	54.00	Pass
		4500.0	-47.99	-49.09	-45.49	8.01	0	57.75	Peak	68.20	Pass
		5150.0	-57.86	-58.09	-54.96	8.01	0	48.28	Average	54.00	Pass
		5350.0	-47.73	-48.48	-45.08	8.01	0	58.16	Peak	68.20	Pass
		5460.0	-57.51	-57.49	-54.49	8.01	0	48.75	Average	54.00	Pass
		5350.0	-47.99	-49.09	-45.49	8.01	0	57.75	Peak	68.20	Pass
		5460.0	-57.86	-58.09	-54.96	8.01	0	48.28	Average	54.00	Pass

E[dBμV/m] = EIRP[dBm] - 20 log (d[meters]) + 104.77

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=5dBi+10 log (2) = 8.01dBi