Appendix D

RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: VIM3

Trade Mark: Khadas

Test Model: VIM3 Pro

Environmental Conditions

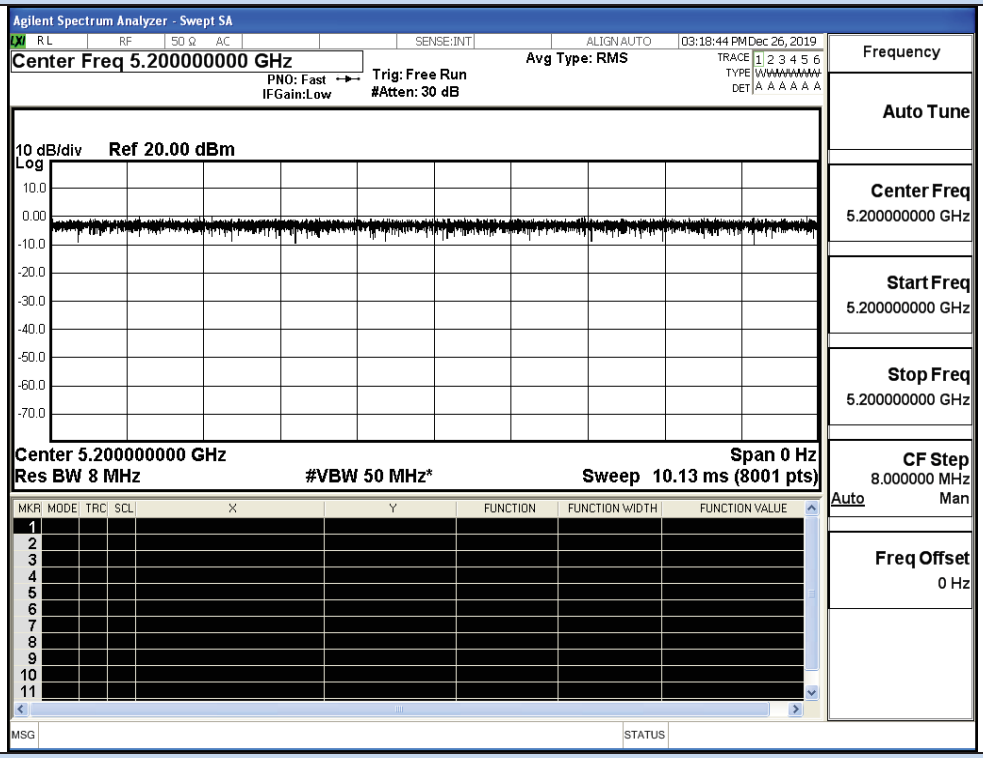
Temperature:	23.9 ° C
Relative Humidity:	54.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Qu Xin
Supervised by:	Wang Chuang

D.1 Duty Cycle

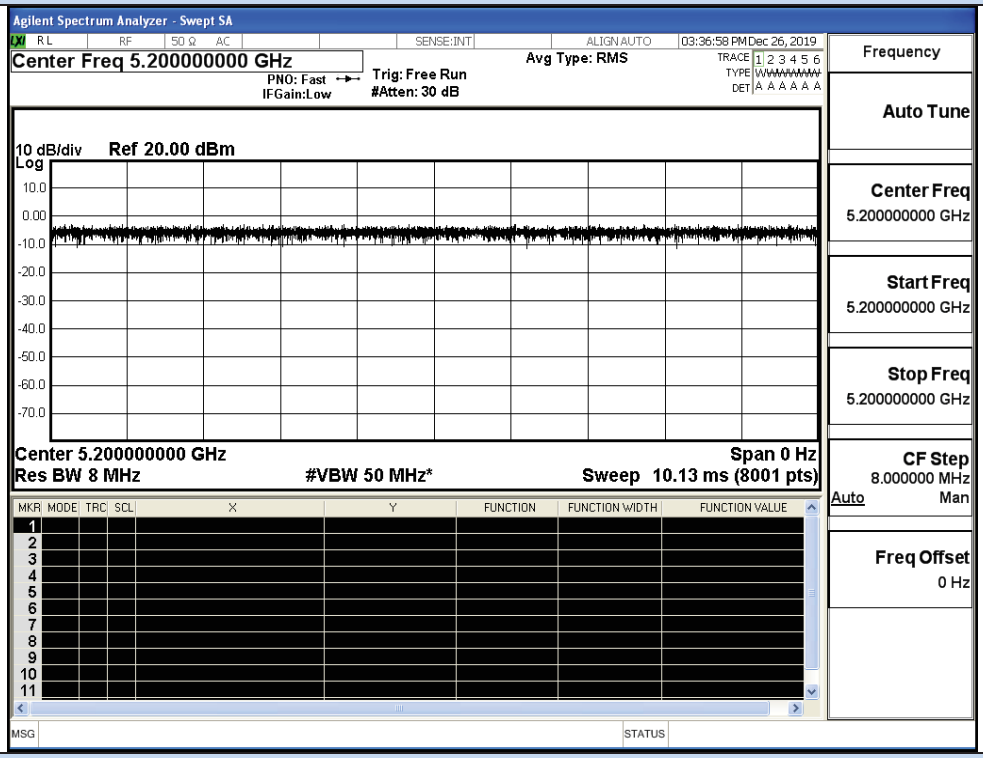
Ant0

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

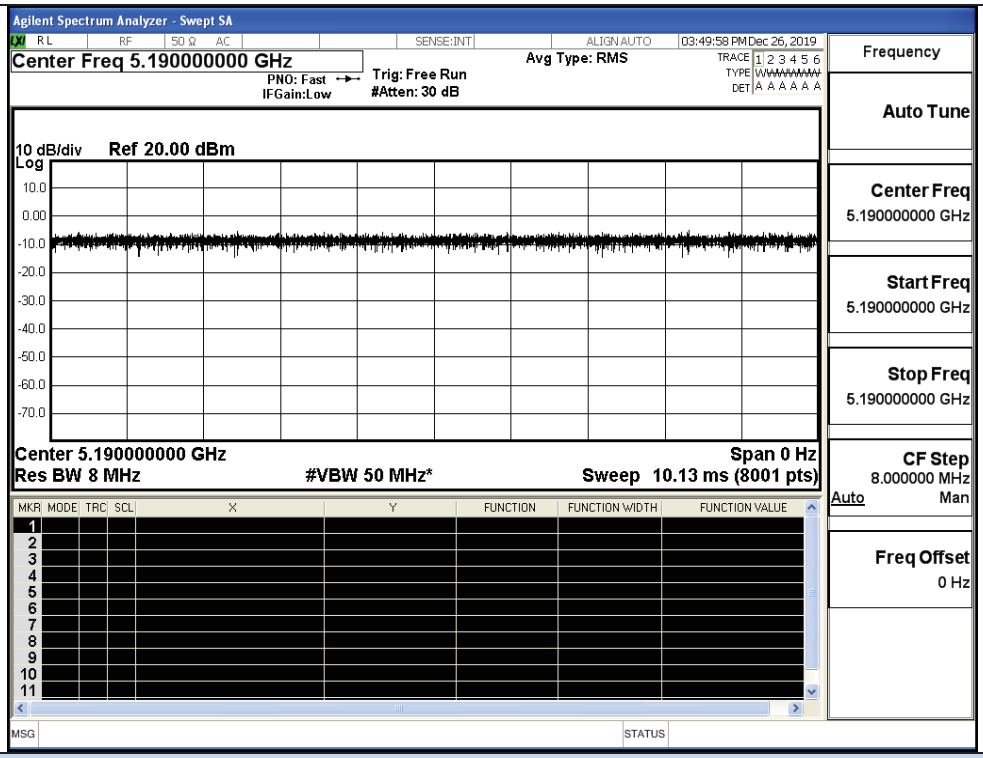
On Time and Duty Cycle



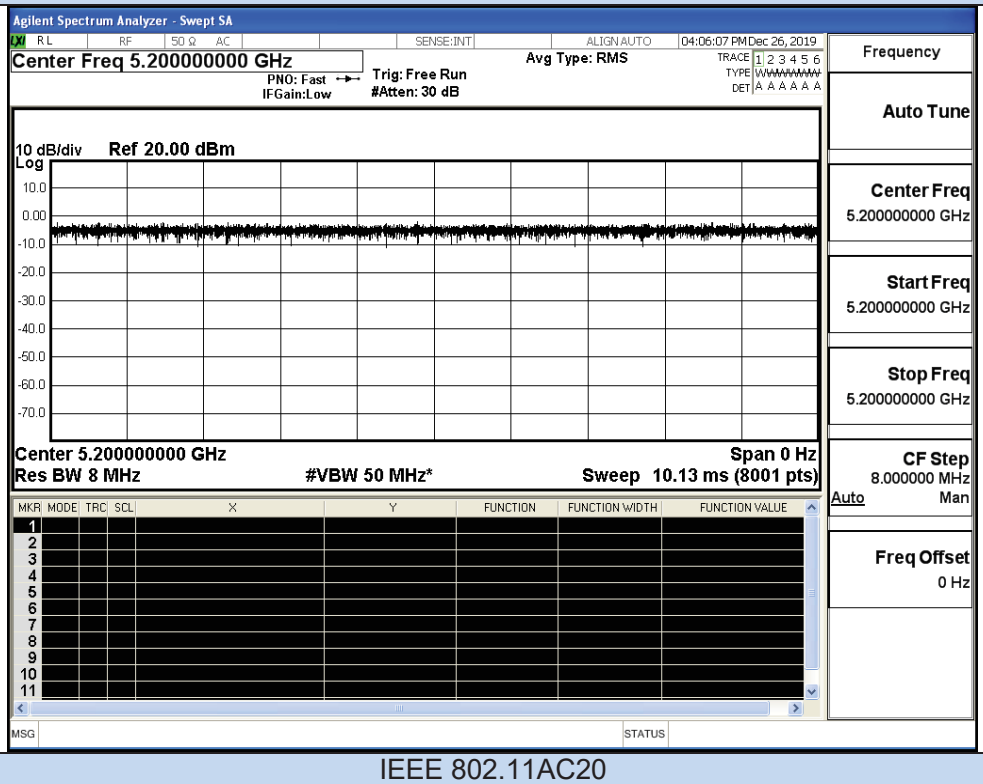
IEEE 802.11a



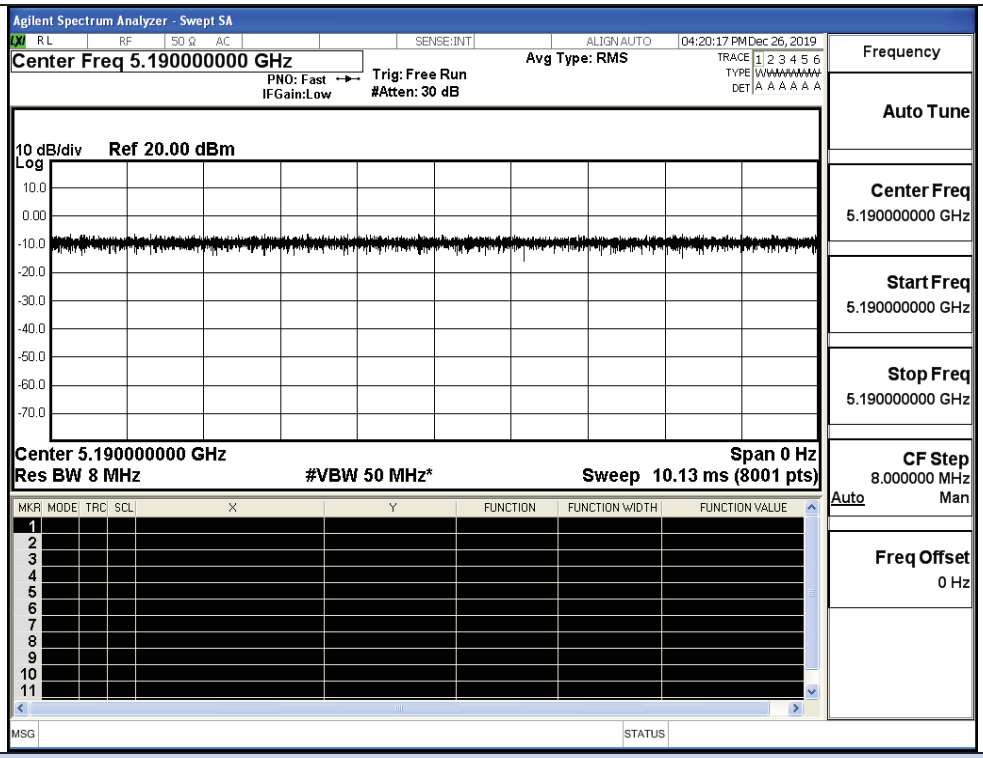
IEEE 802.11n HT20



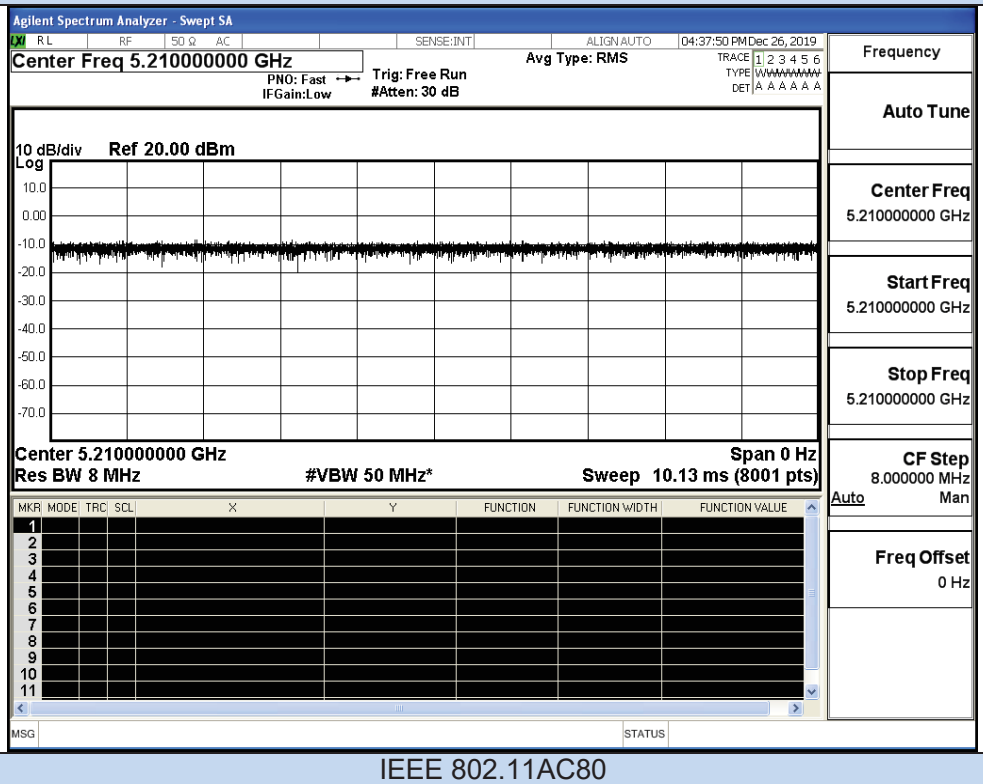
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40

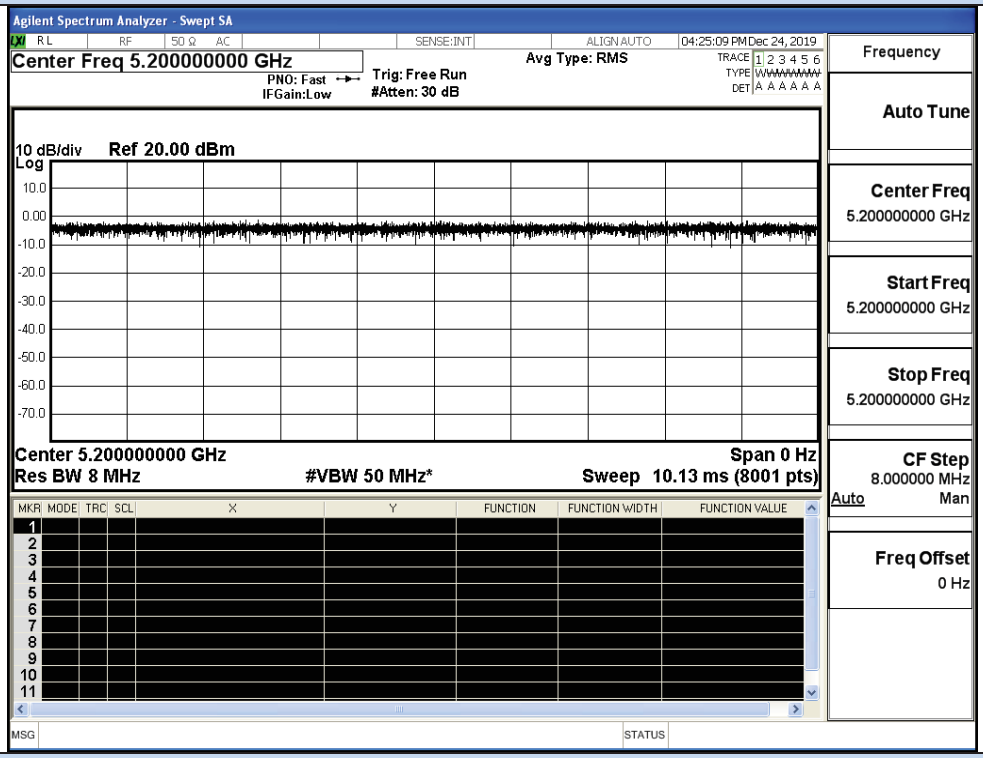


IEEE 802.11AC80

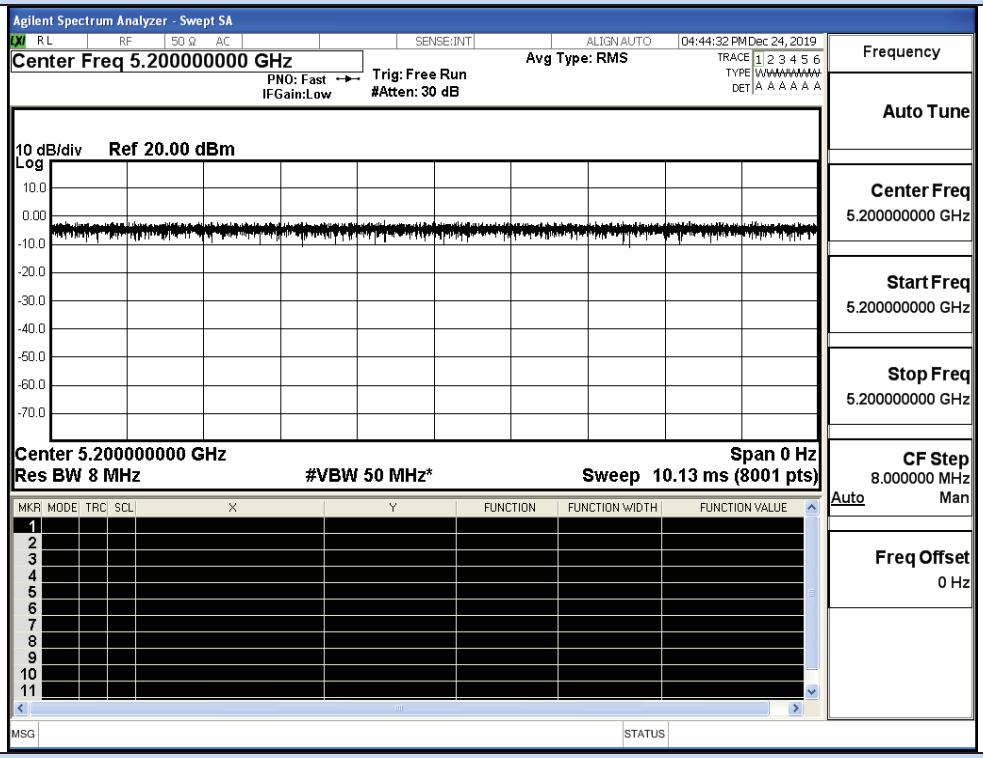
Ant1

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

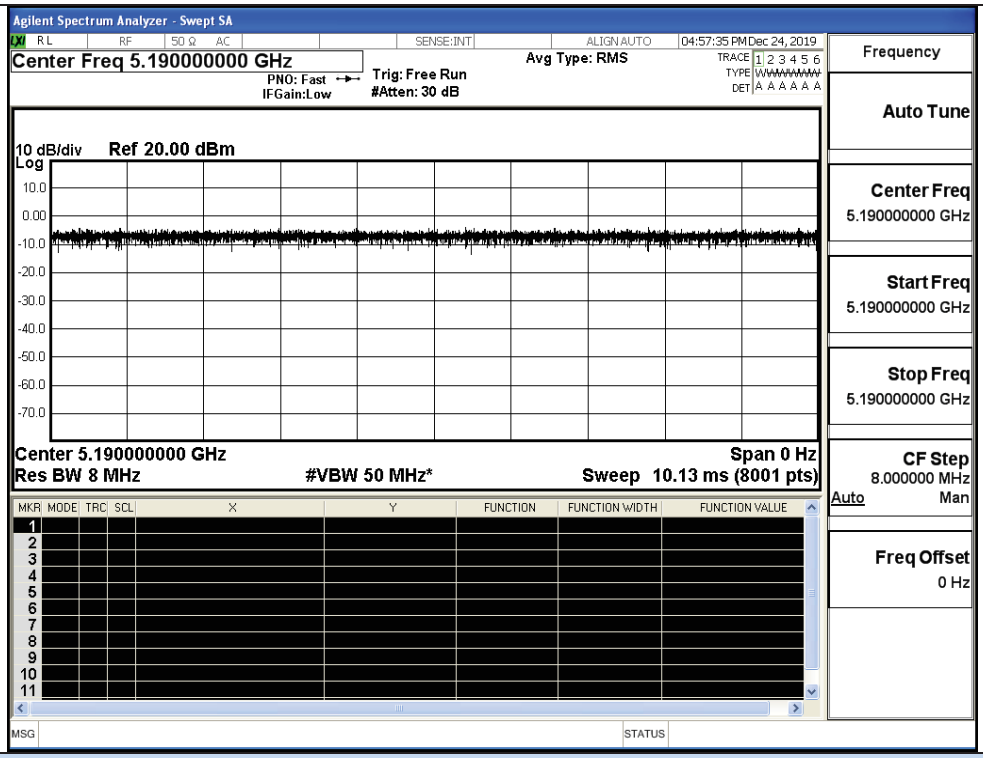
On Time and Duty Cycle



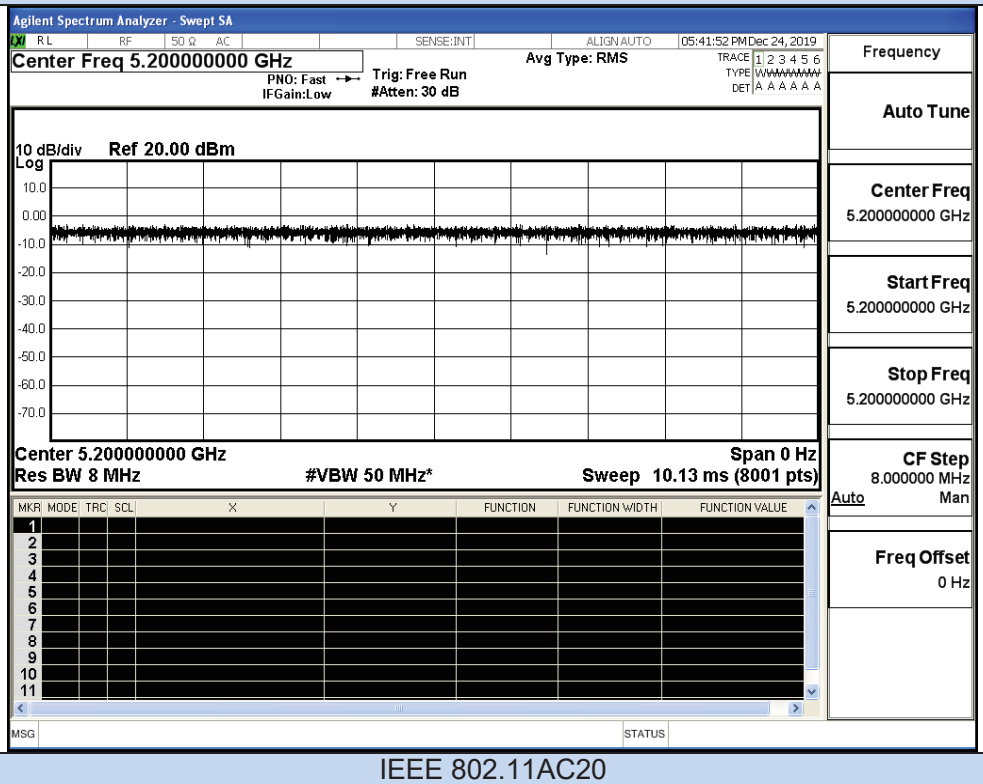
IEEE 802.11a



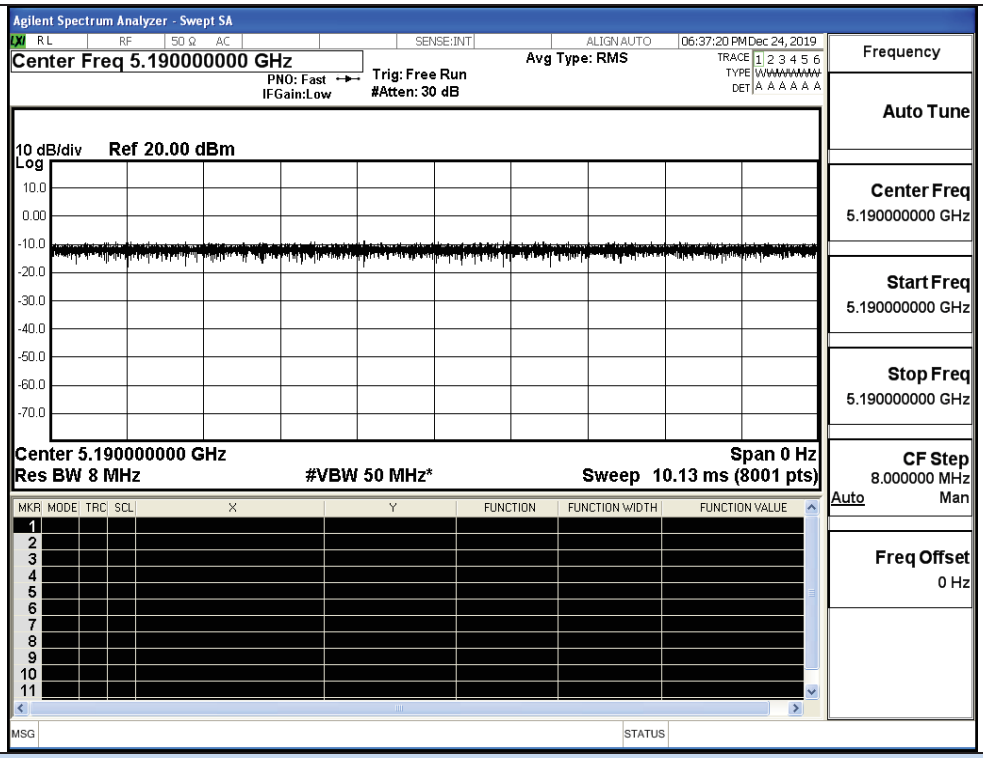
IEEE 802.11n HT20



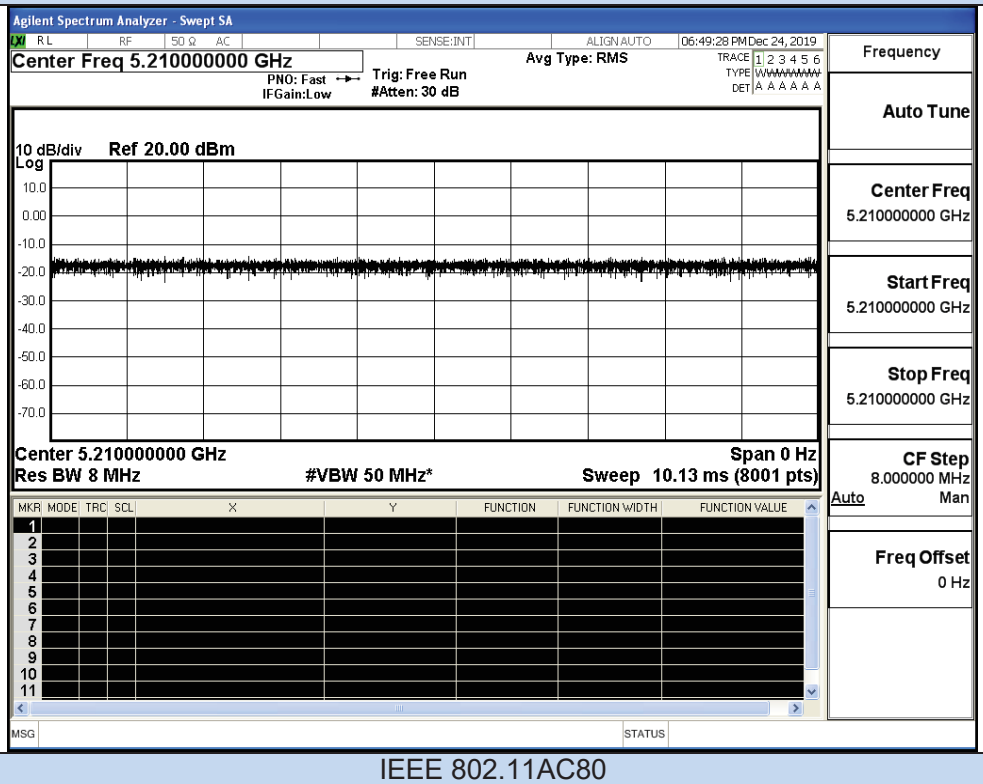
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40

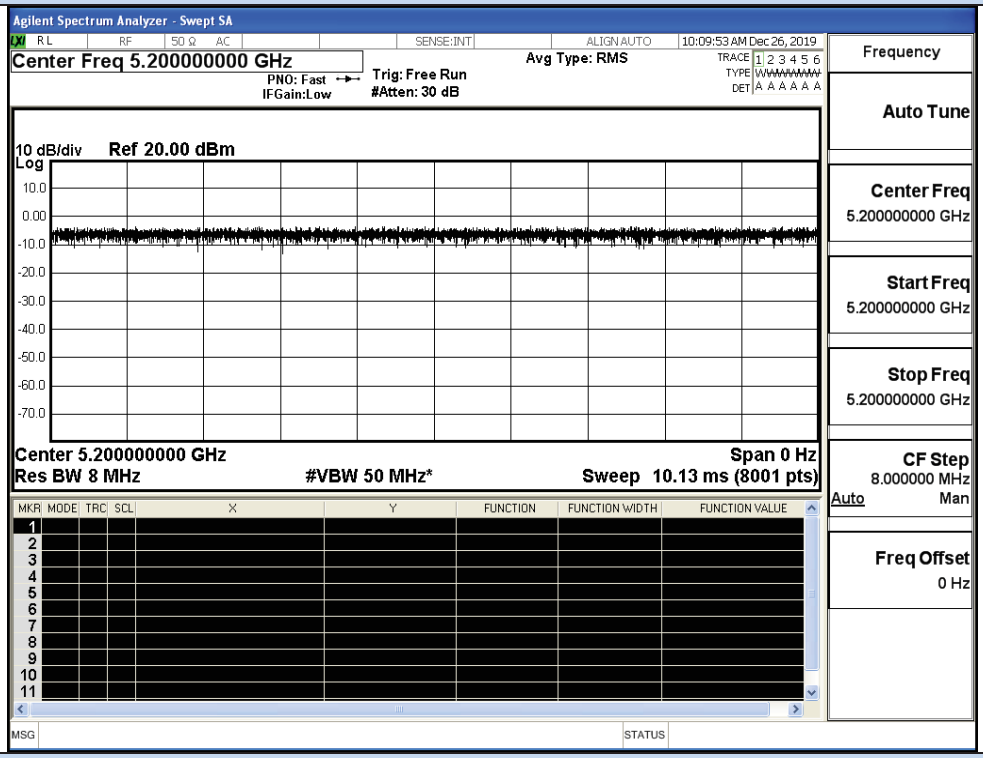


IEEE 802.11AC80

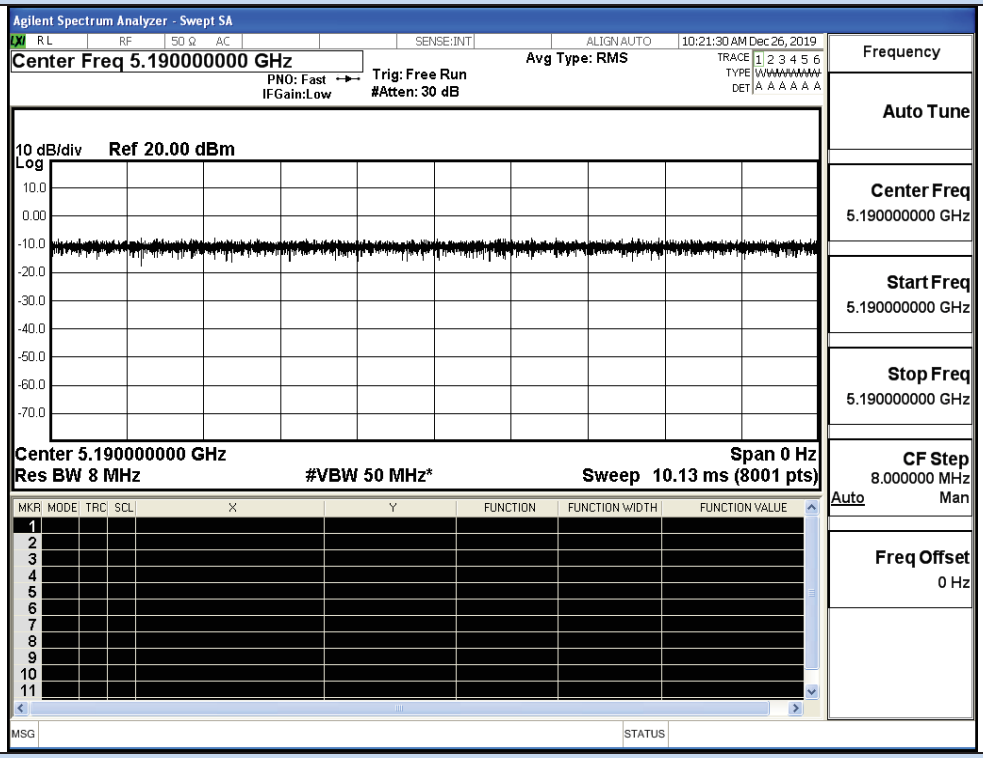
Ant0+1

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
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

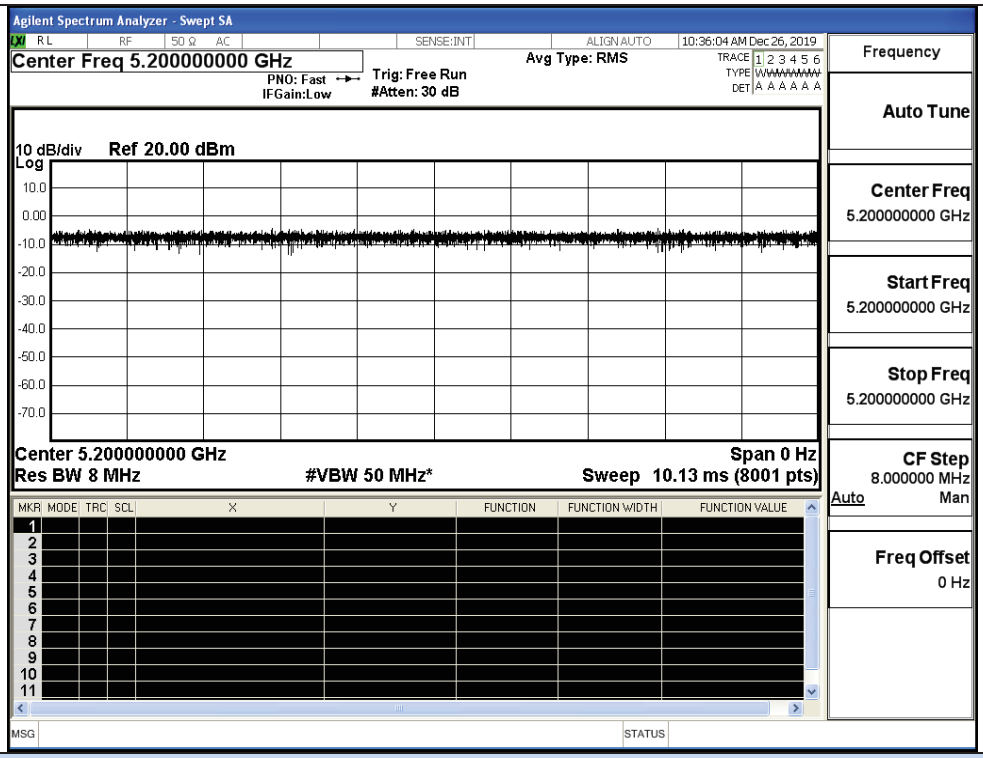
On Time and Duty Cycle



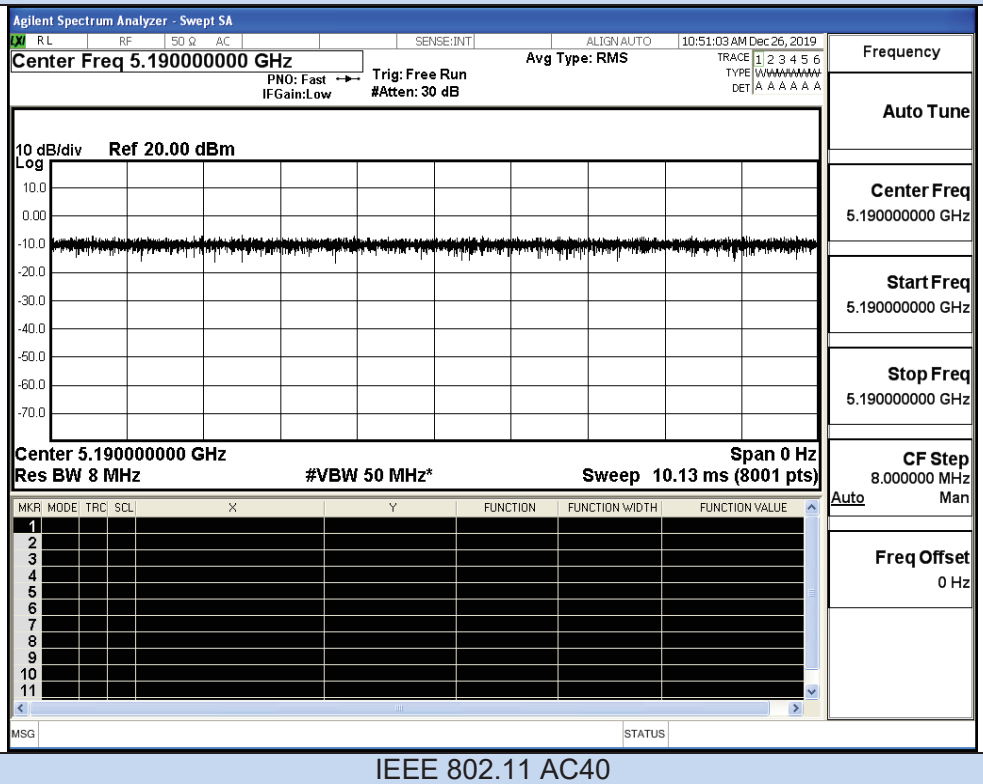
IEEE 802.11n HT20



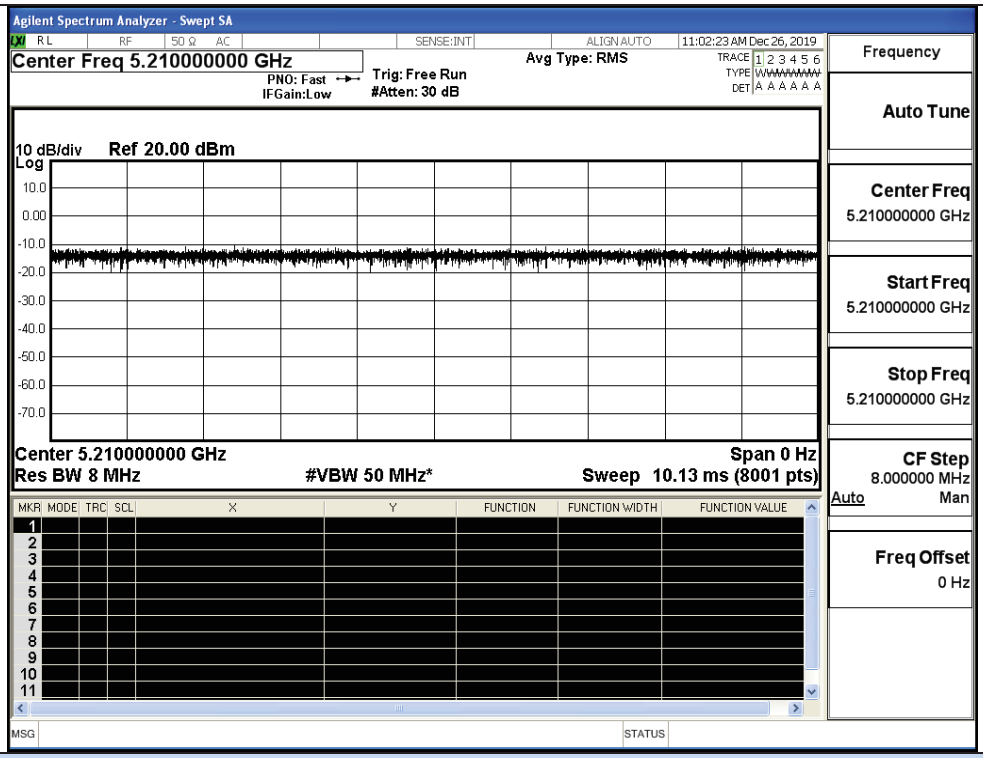
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40



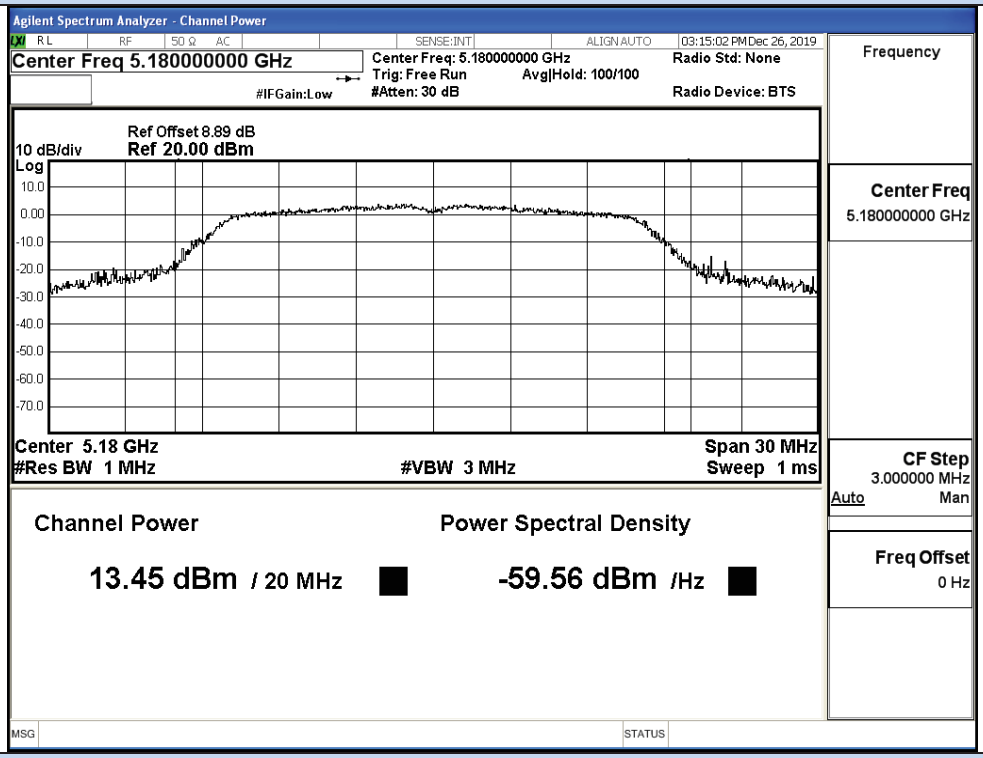
IEEE 802.11AC80

D.2 Maximum Conduct Output Power

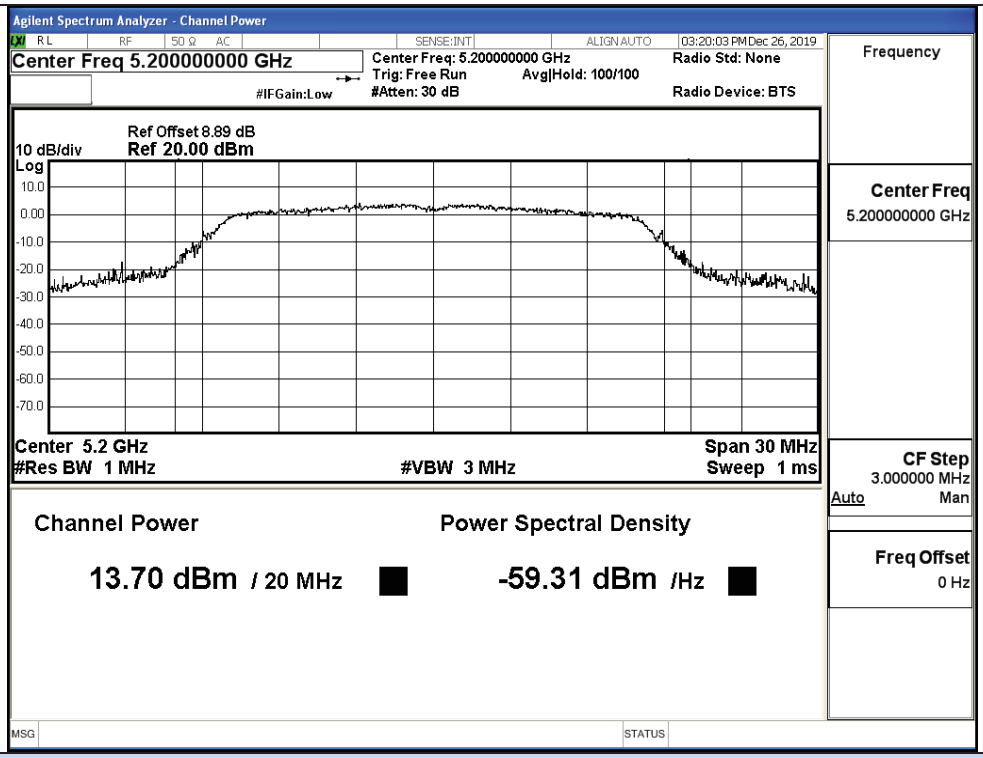
Ant0

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	13.45	0	13.45	24	Pass
	40	5200	13.7	0	13.7		Pass
	48	5240	13.12	0	13.12		Pass
11N20 SISO	36	5180	11.11	0	11.11	24	Pass
	40	5200	11	0	11		Pass
	48	5240	11.39	0	11.39		Pass
11N40 SISO	38	5190	11.03	0	11.03	24	Pass
	46	5230	11.06	0	11.06		Pass
11AC20 SISO	36	5180	11.6	0	11.6	24	Pass
	40	5200	11.47	0	11.47		Pass
	48	5240	11.27	0	11.27		Pass
11AC40 SISO	38	5190	9.41	0	9.41	24	Pass
	46	5230	9.01	0	9.01		Pass
11AC80 SISO	42	5210	9.47	0	9.47	24	Pass

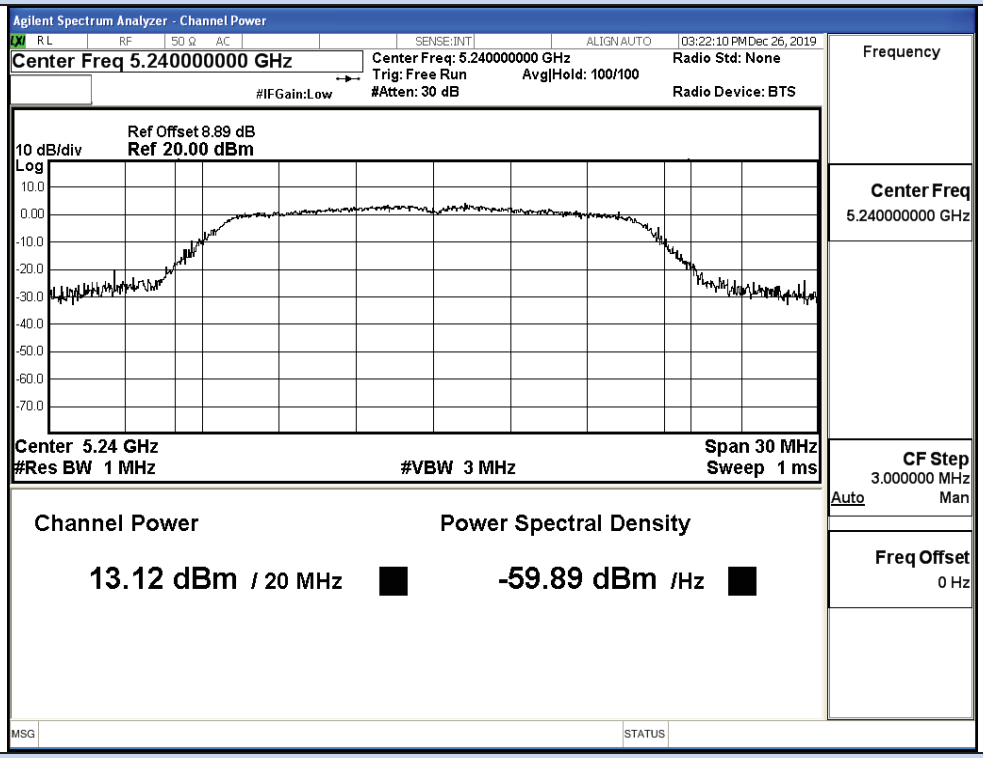
Maximum Conducted Output Power



IEEE 802.11a / Channel 36 / 5180MHz

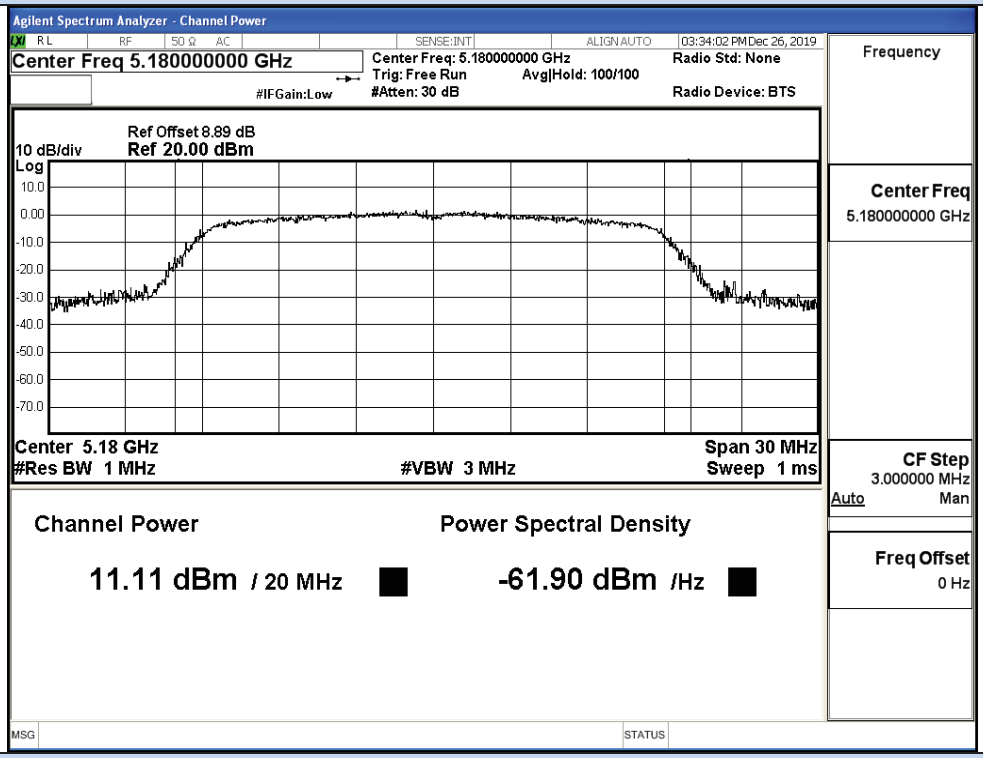


IEEE 802.11a / Channel 40 / 5200MHz

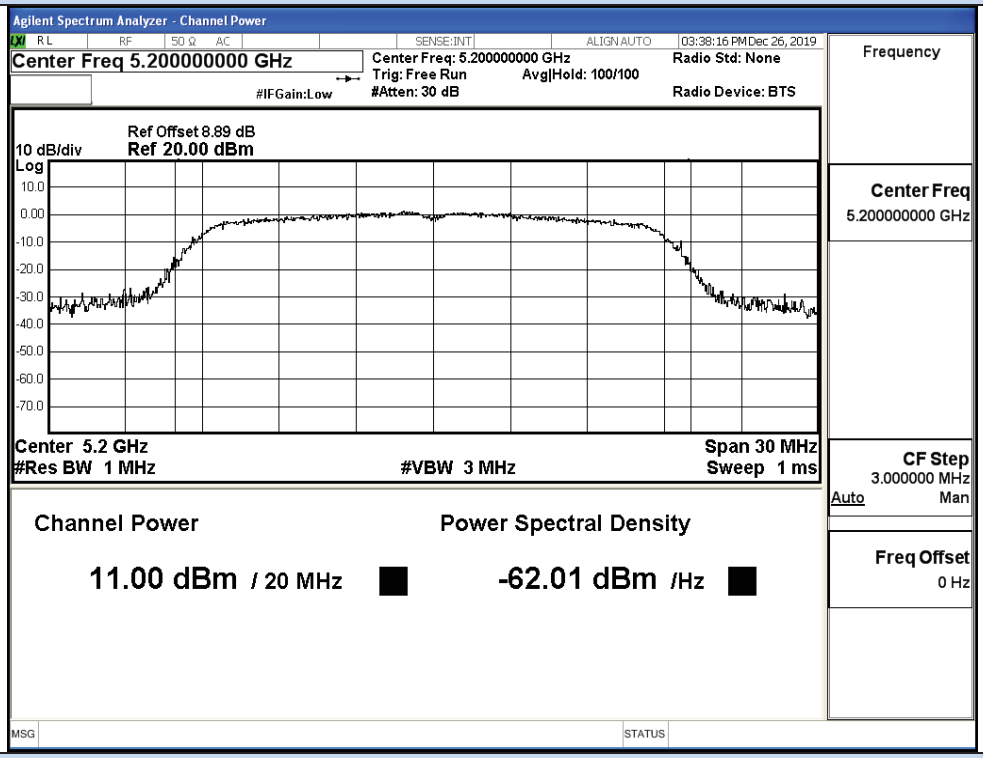


IEEE 802.11a / Channel 48 / 5240MHz

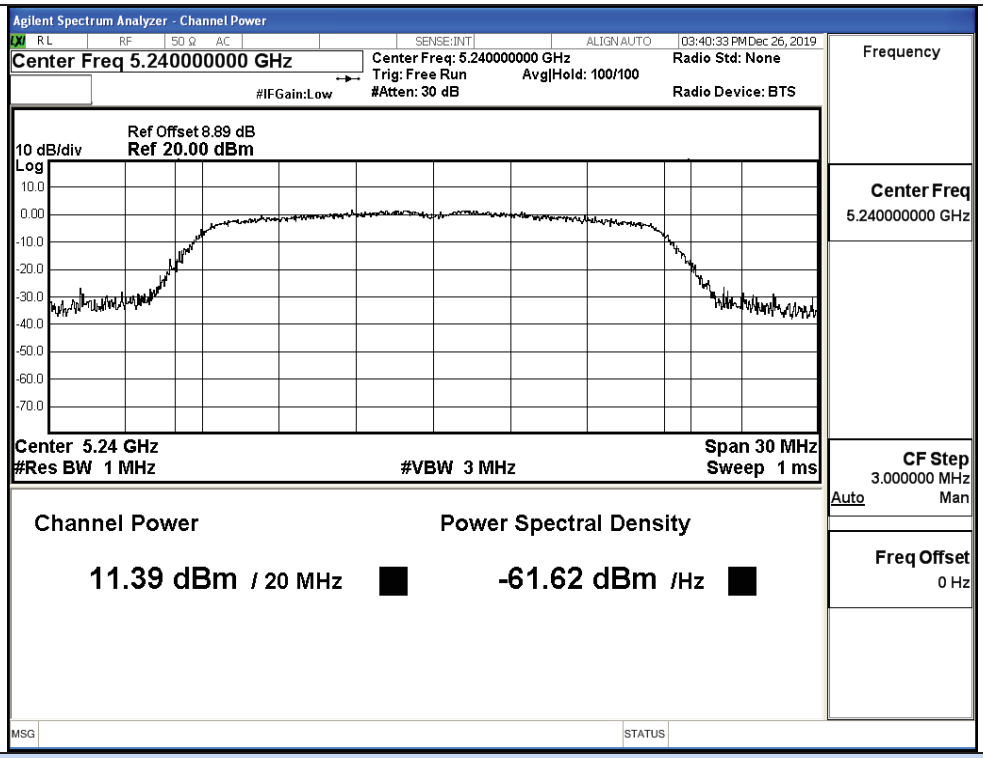
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 36 / 5180MHz

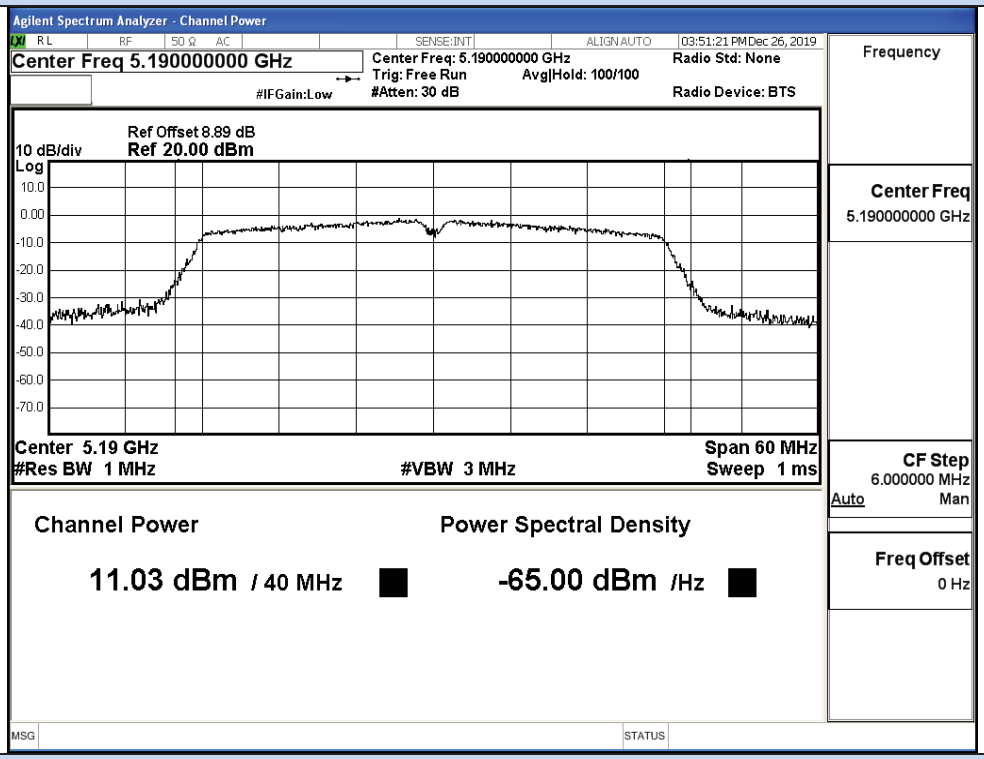


IEEE 802.11n20 / Channel 40 / 5200MHz

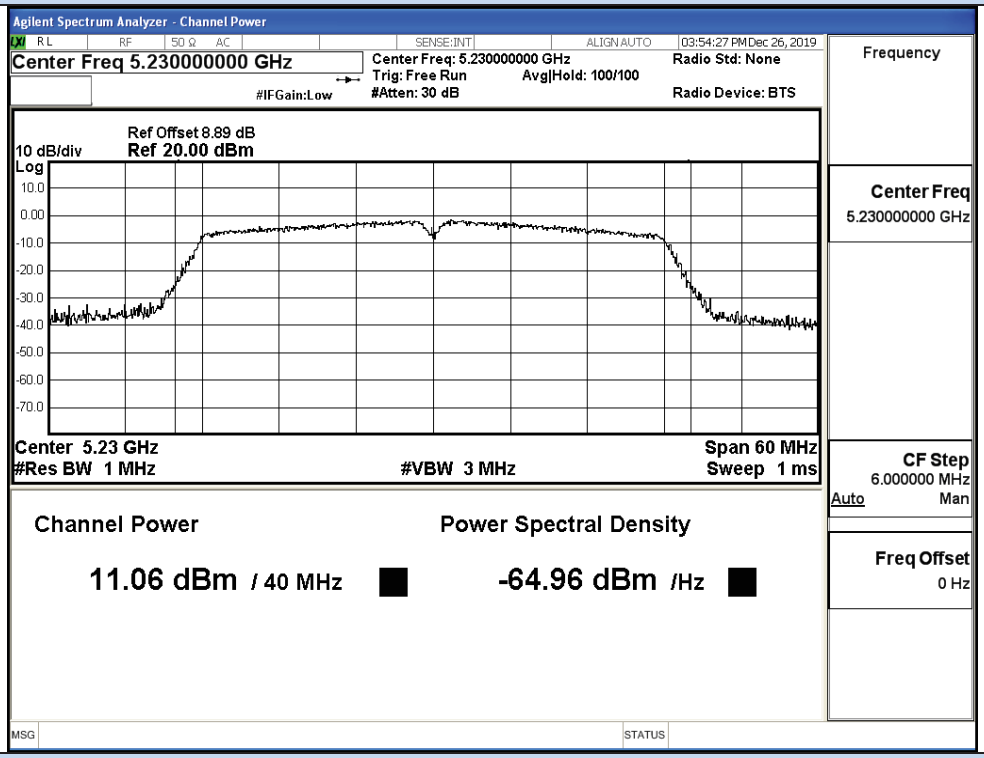


IEEE 802.11n20 / Channel 48 / 5240MHz

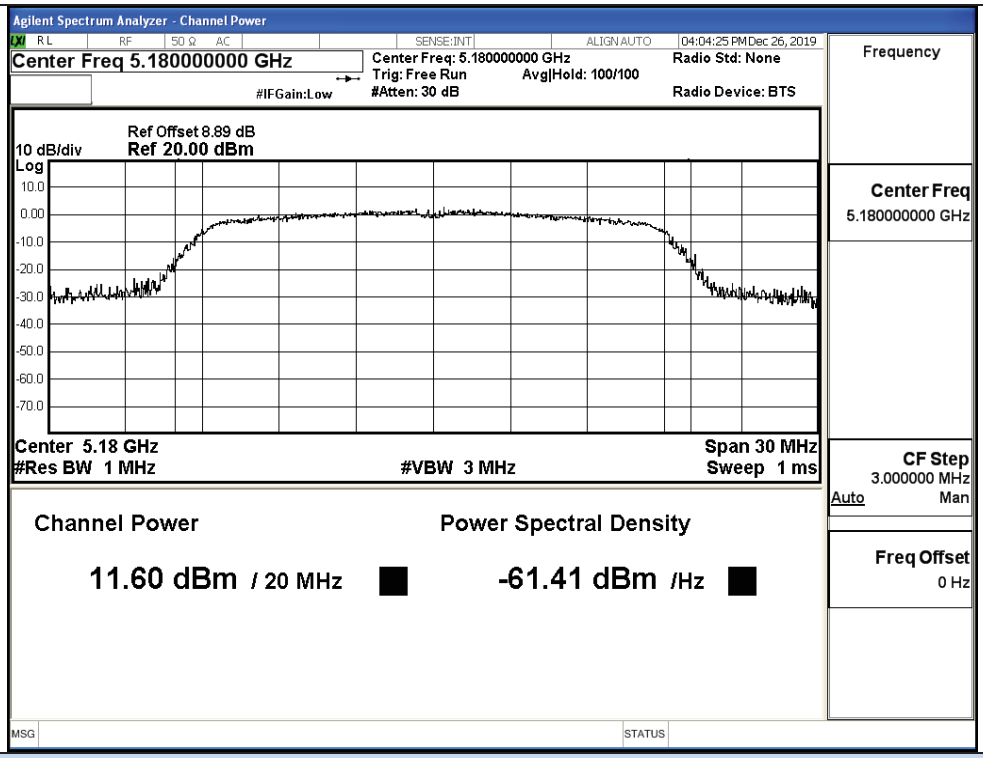
Maximum Conducted Output Power



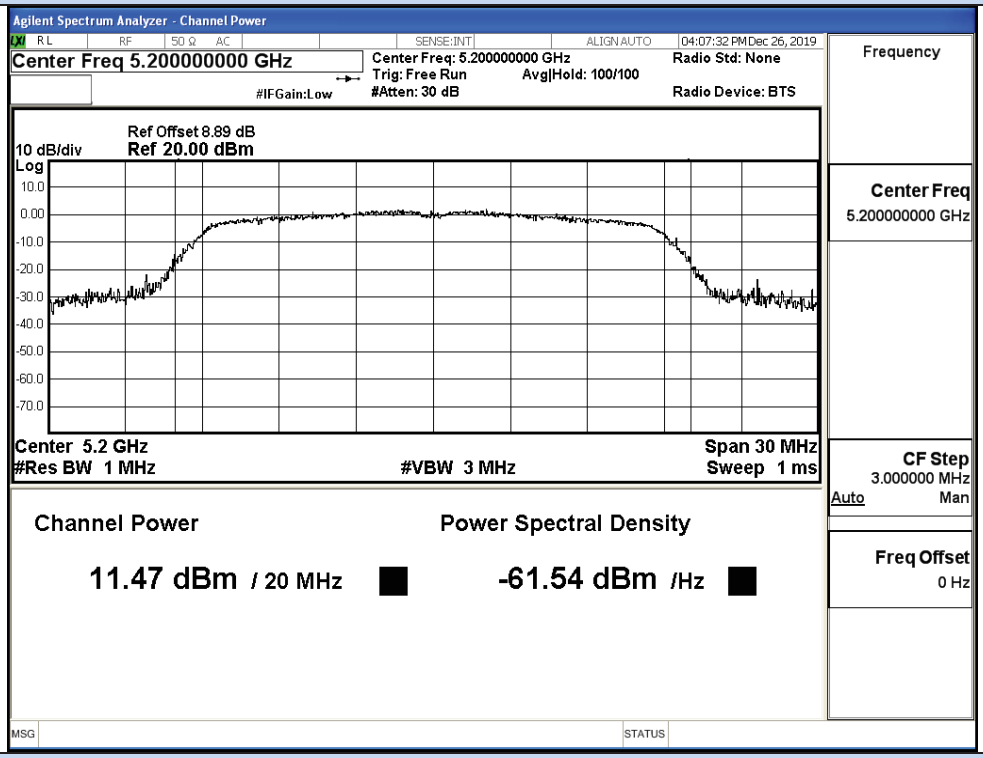
IEEE 802.11n40 / Channel 38 / 5190MHz



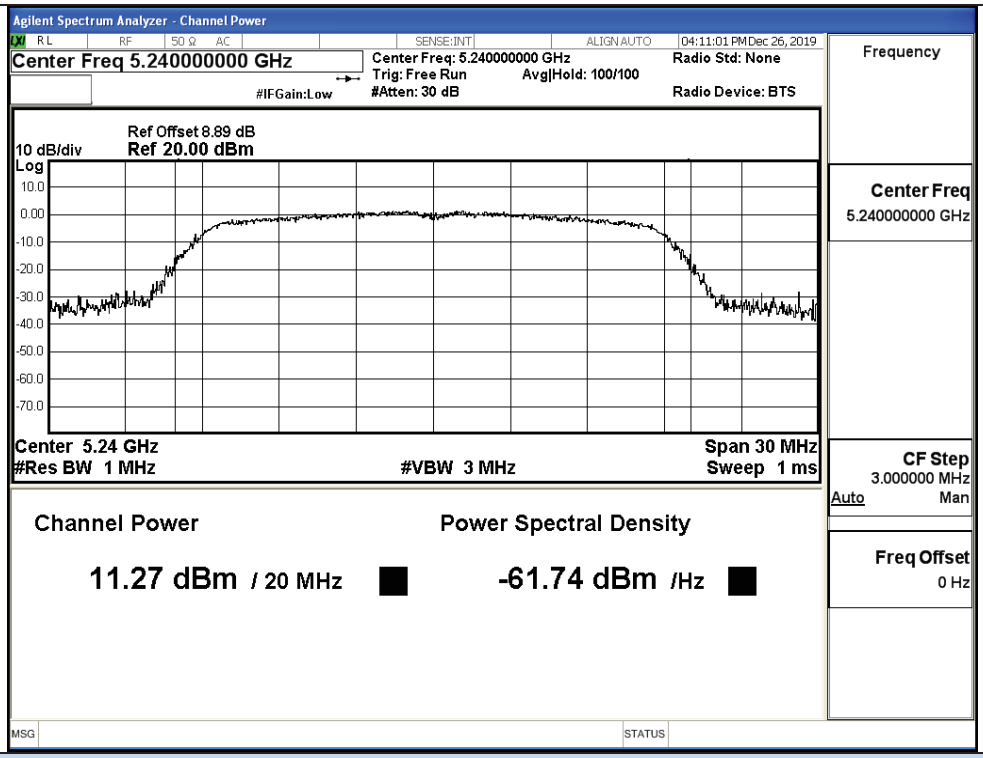
IEEE 802.11n40 / Channel 46 / 5230MHz



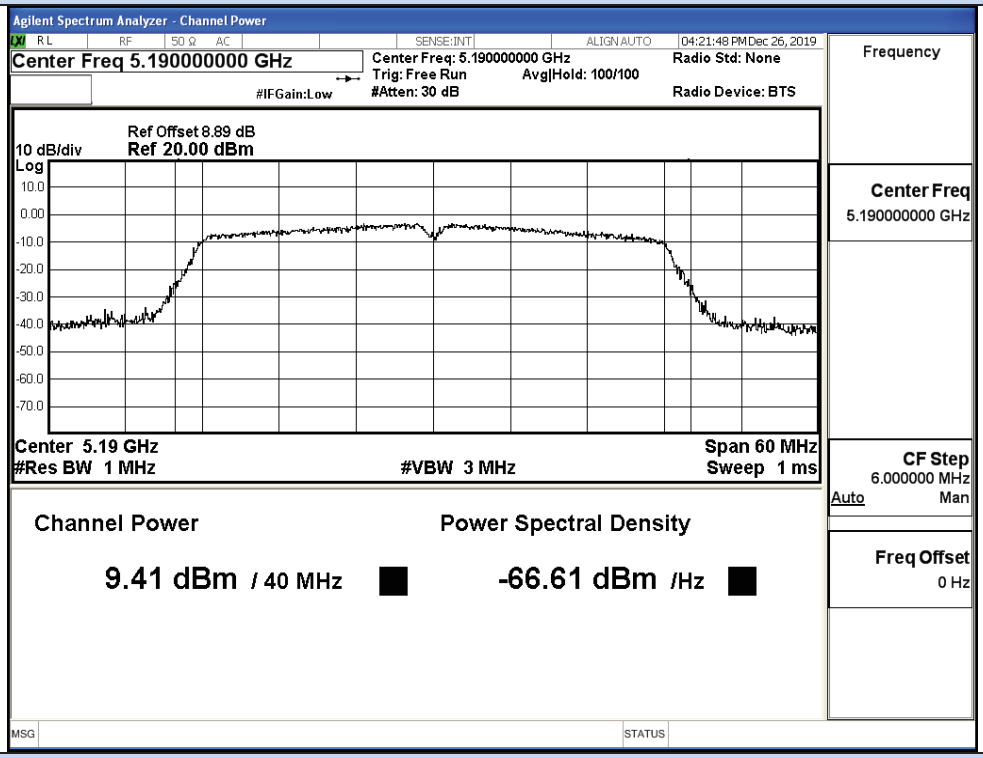
IEEE 802.11ac20 / Channel 36 / 5180MHz



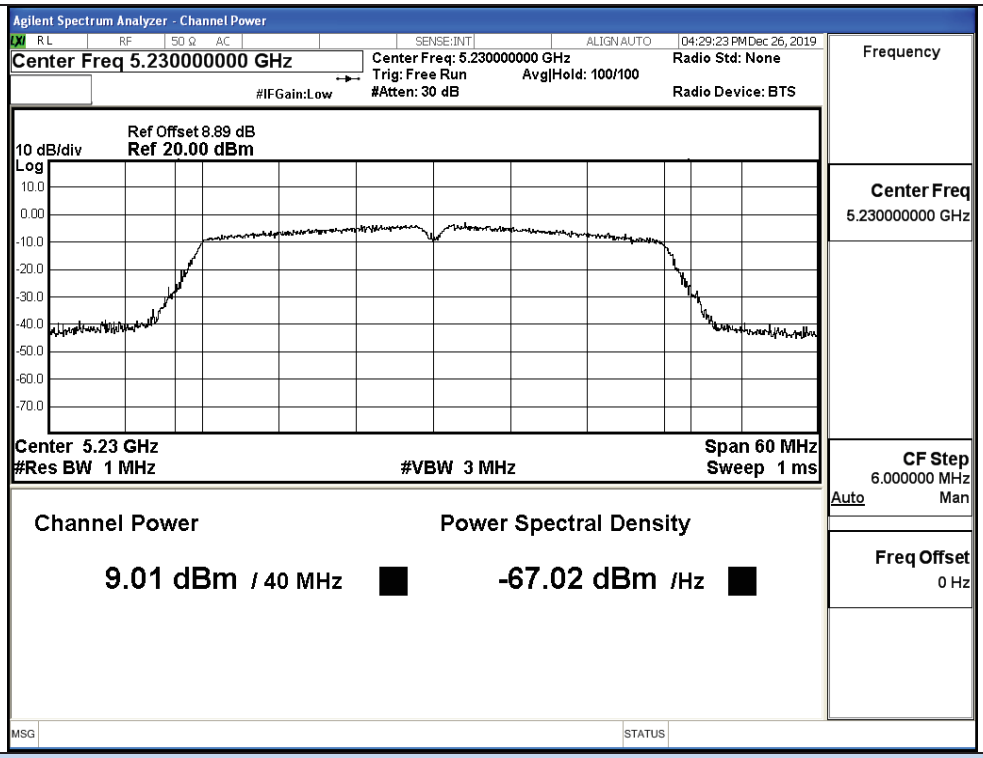
IEEE 802.11ac20 / Channel 40 / 5200MHz



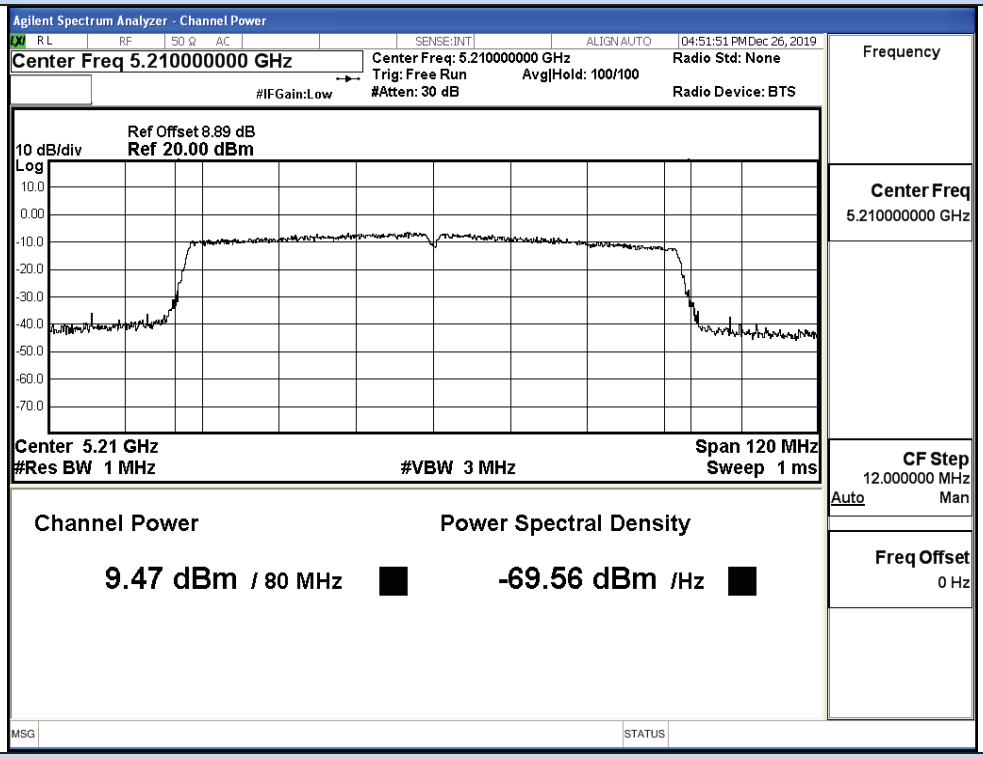
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz

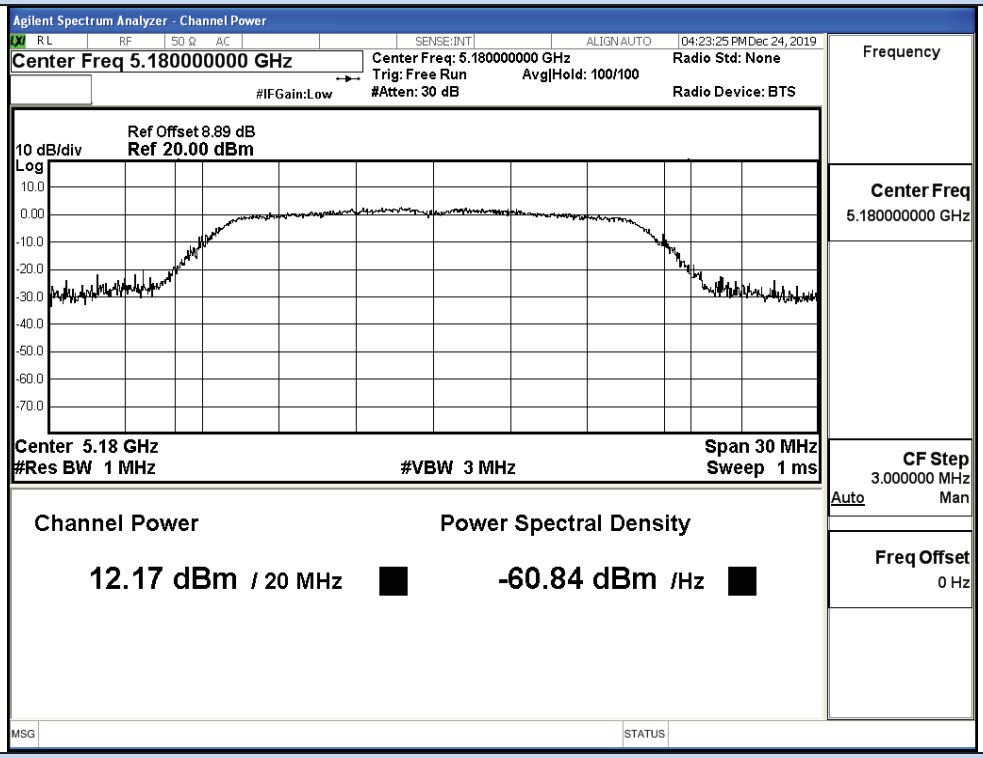


IEEE 802.11ac80 / Channel 42 / 5210MHz

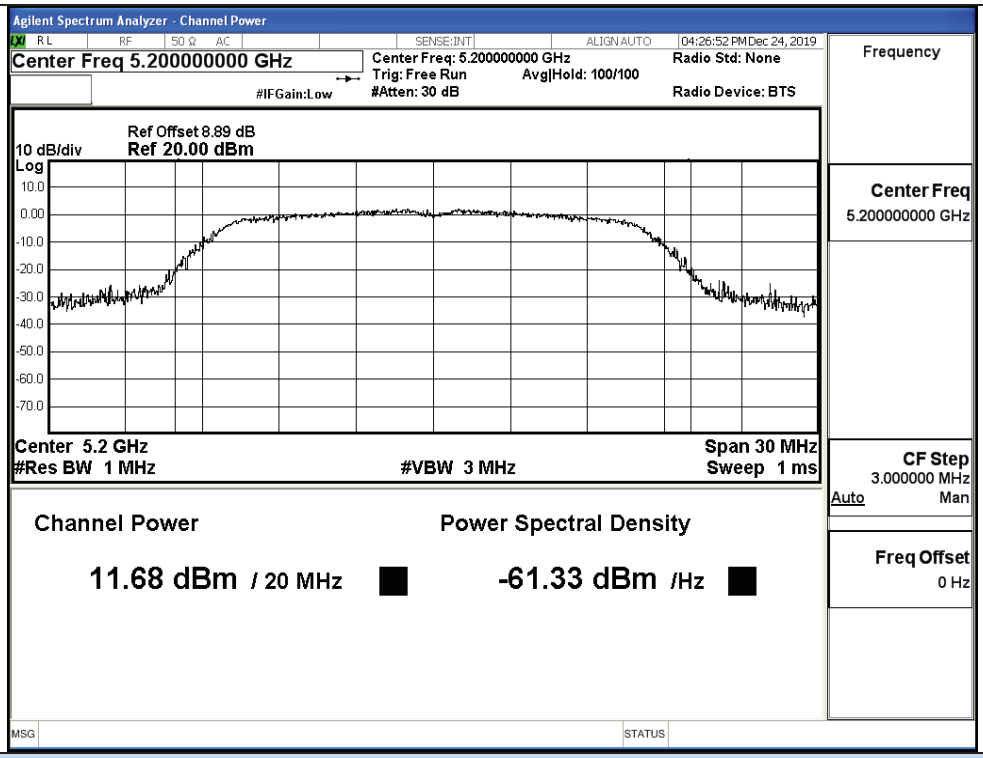
Ant1

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	12.17	0	12.17	24	Pass
	40	5200	11.68	0	11.68		Pass
	48	5240	11.8	0	11.8		Pass
11N20 SISO	36	5180	11.18	0	11.18	24	Pass
	40	5200	11.33	0	11.33		Pass
	48	5240	10.82	0	10.82		Pass
11N40 SISO	38	5190	11.02	0	11.02	24	Pass
	46	5230	10.61	0	10.61		Pass
11AC20 SISO	36	5180	10.97	0	10.97	24	Pass
	40	5200	10.37	0	10.37		Pass
	48	5240	10.54	0	10.54		Pass
11AC40 SISO	38	5190	8.21	0	8.21	24	Pass
	46	5230	6.74	0	6.74		Pass
11AC80 SISO	42	5210	8.76	0	8.76	24	Pass

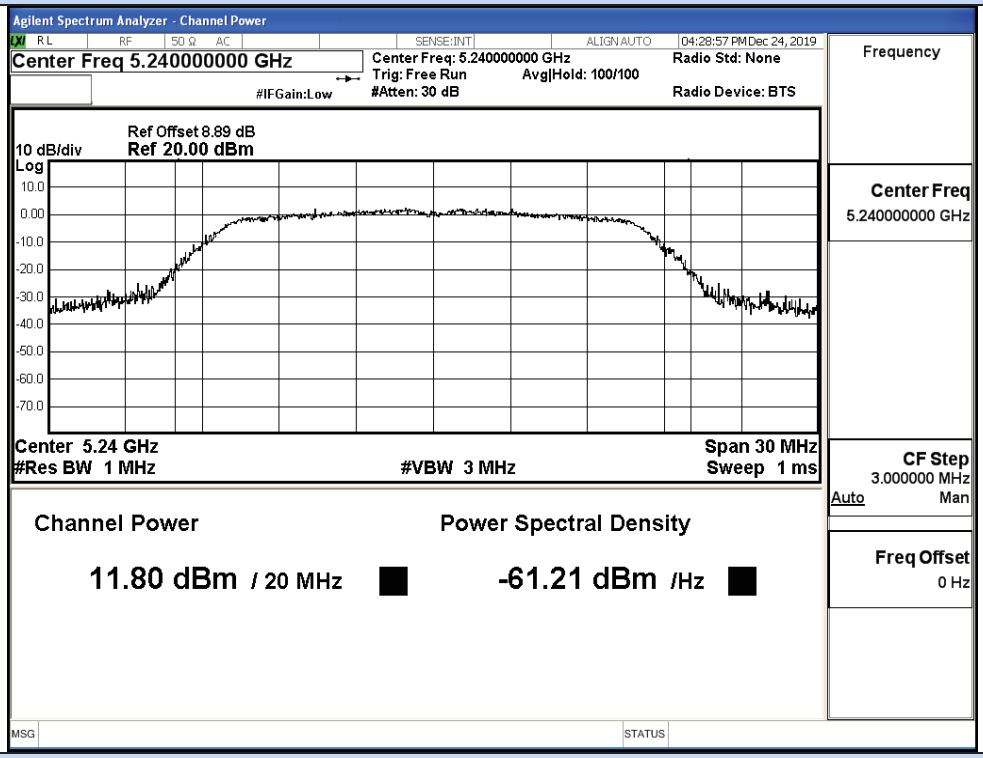
Maximum Conducted Output Power



IEEE 802.11a / Channel 36 / 5180MHz

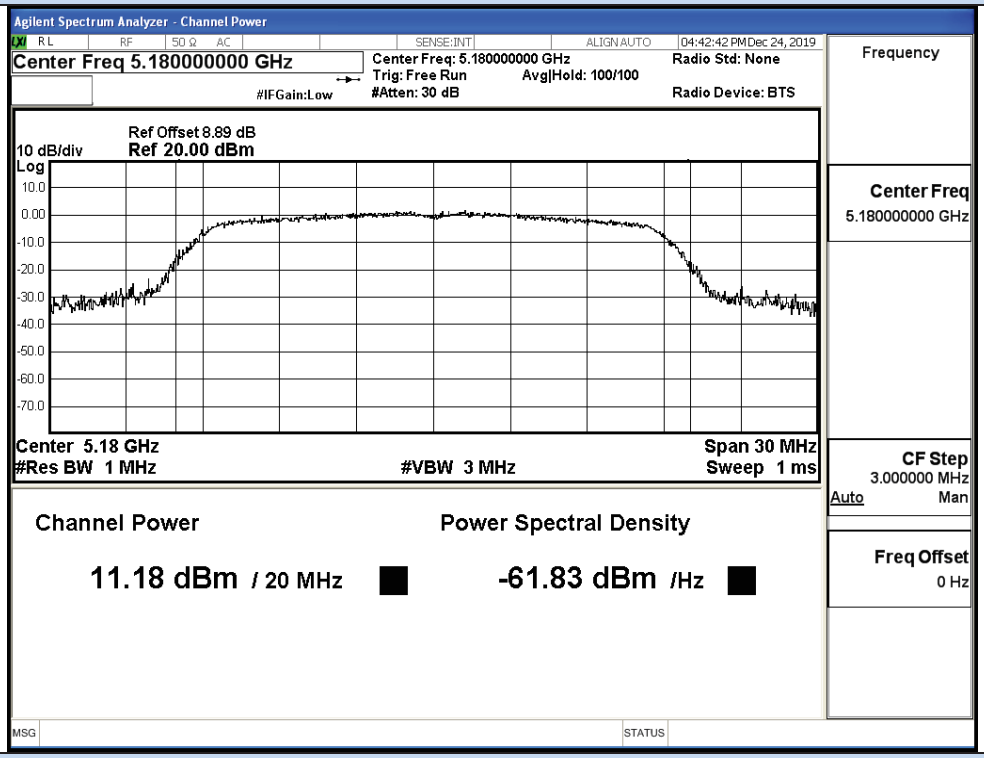


IEEE 802.11a / Channel 40 / 5200MHz

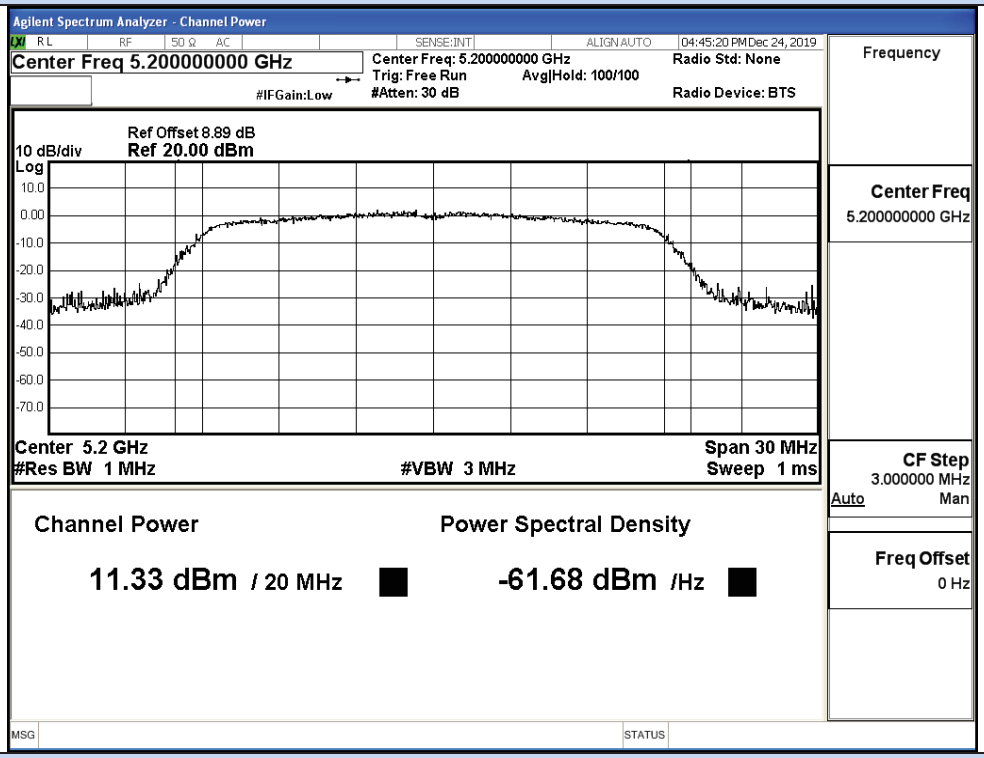


IEEE 802.11a / Channel 48 / 5240MHz

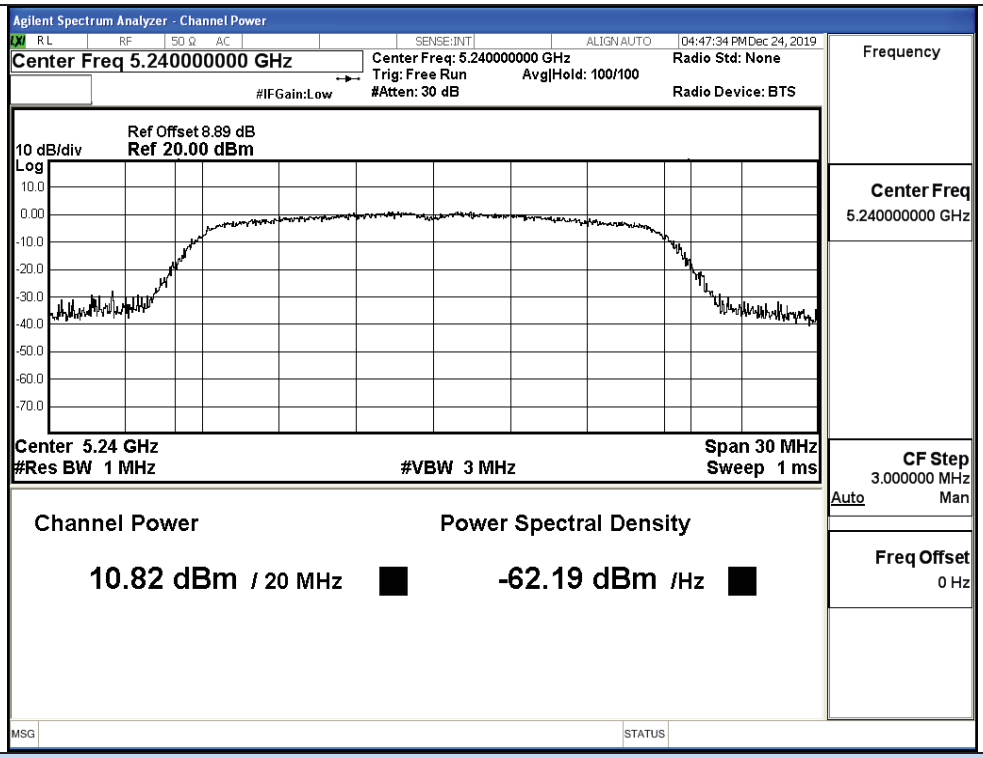
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 36 / 5180MHz

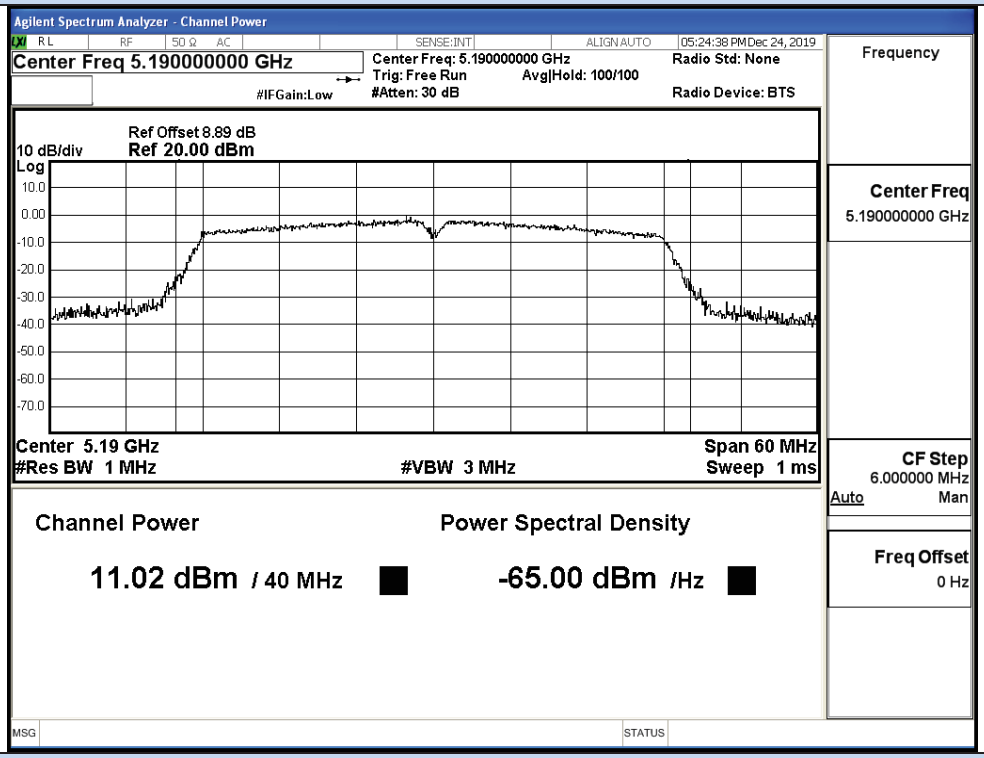


IEEE 802.11n20 / Channel 40 / 5200MHz

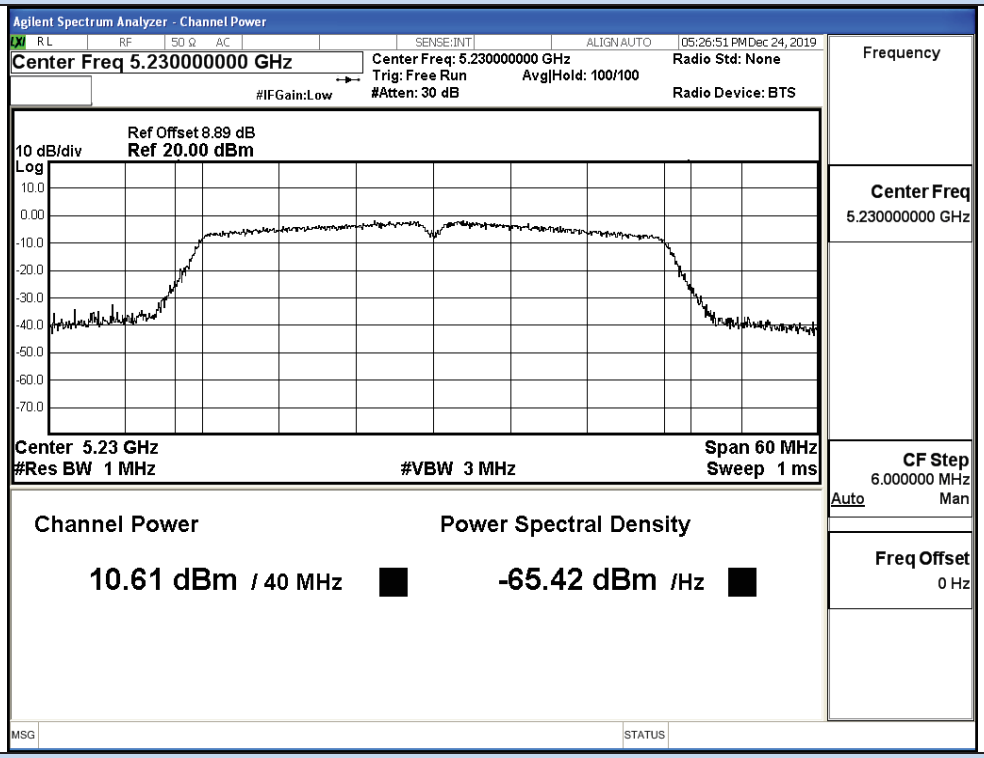


IEEE 802.11n20 / Channel 48 / 5240MHz

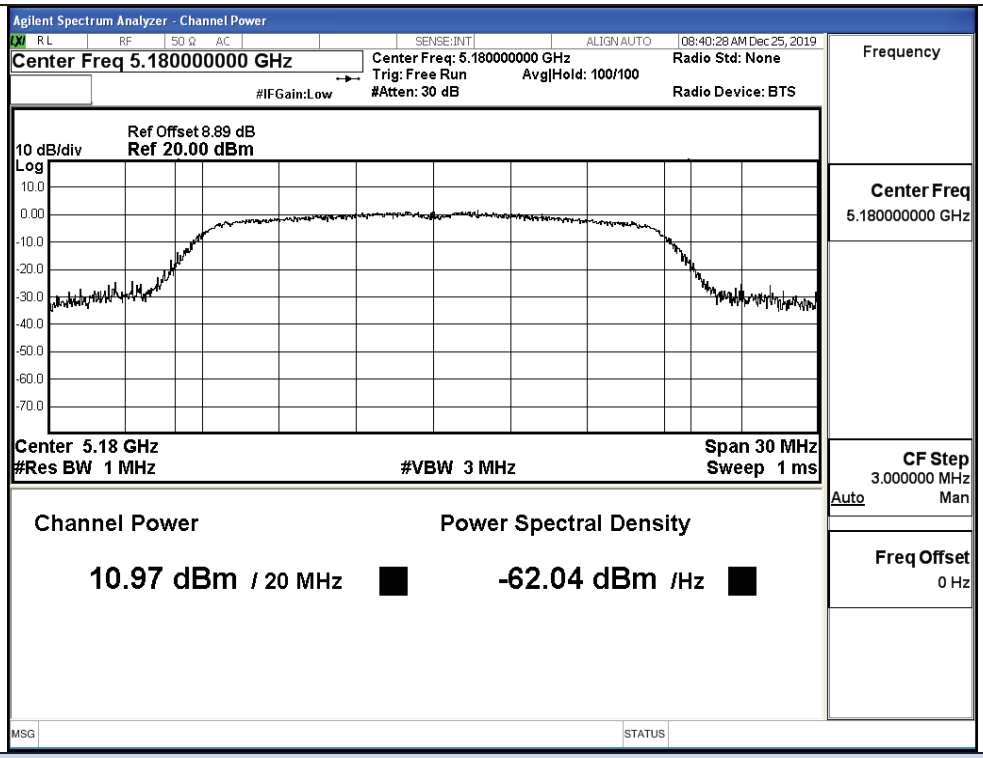
Maximum Conducted Output Power



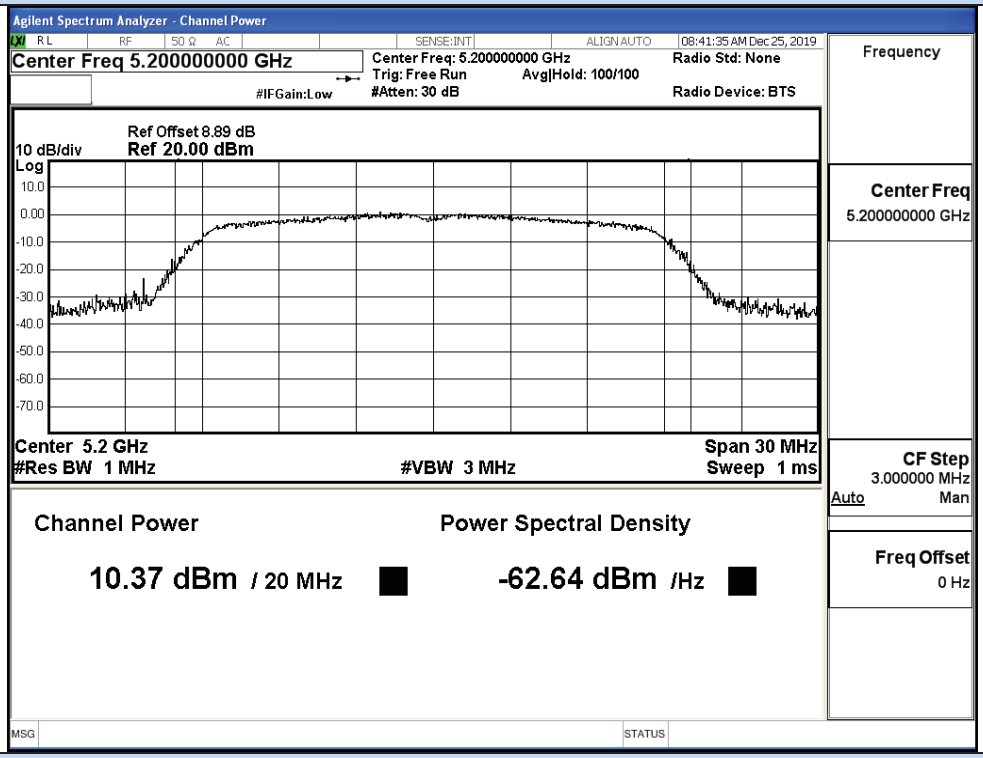
IEEE 802.11n40 / Channel 38 / 5190MHz



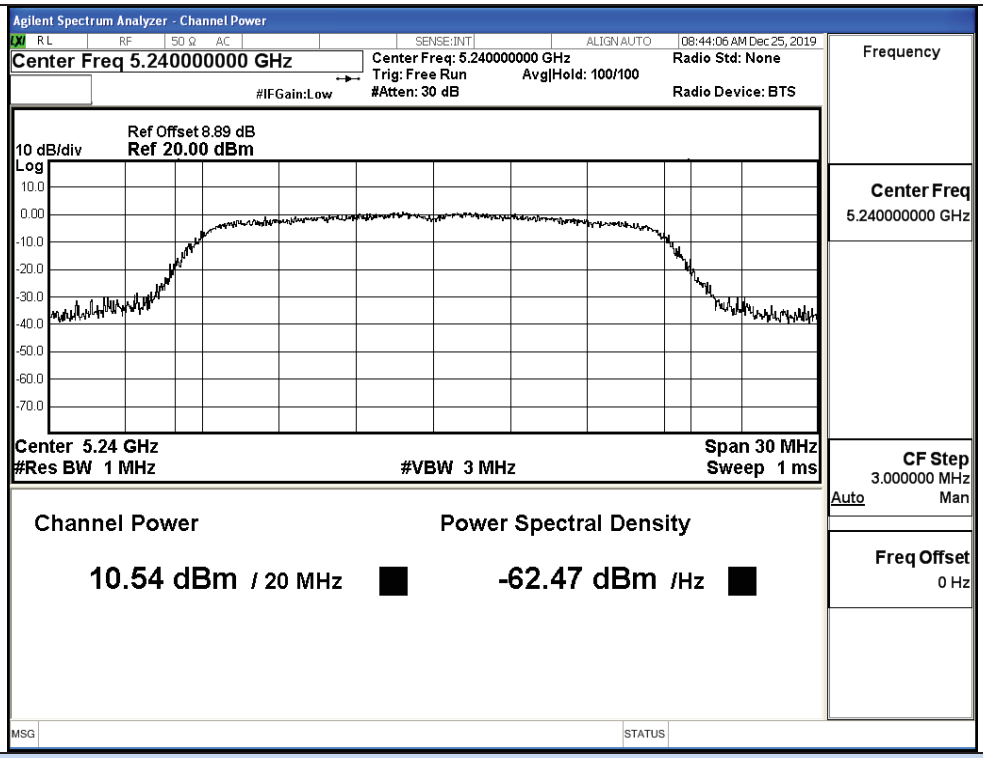
IEEE 802.11n40 / Channel 46 / 5230MHz



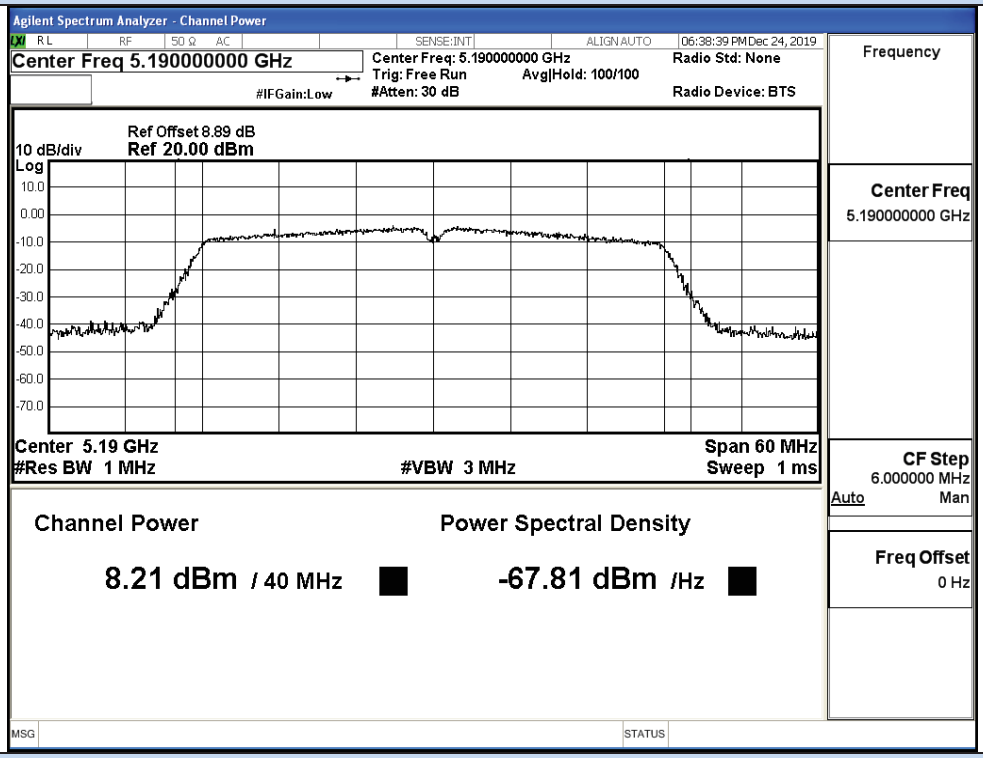
IEEE 802.11ac20 / Channel 36 / 5180MHz



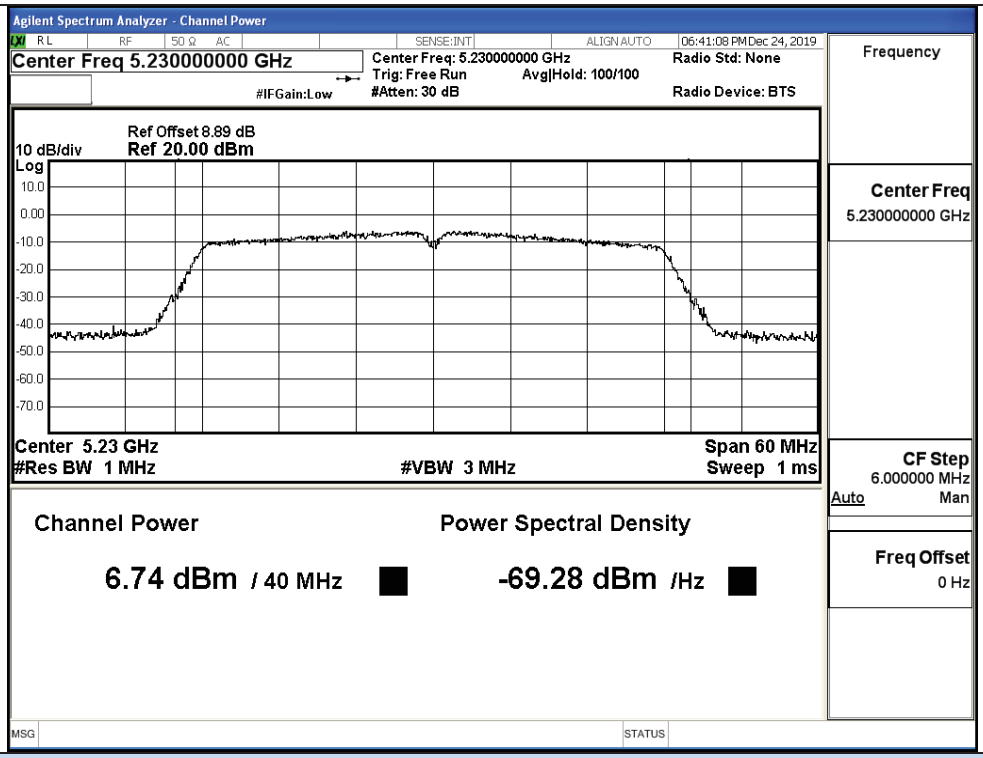
IEEE 802.11ac20 / Channel 40 / 5200MHz



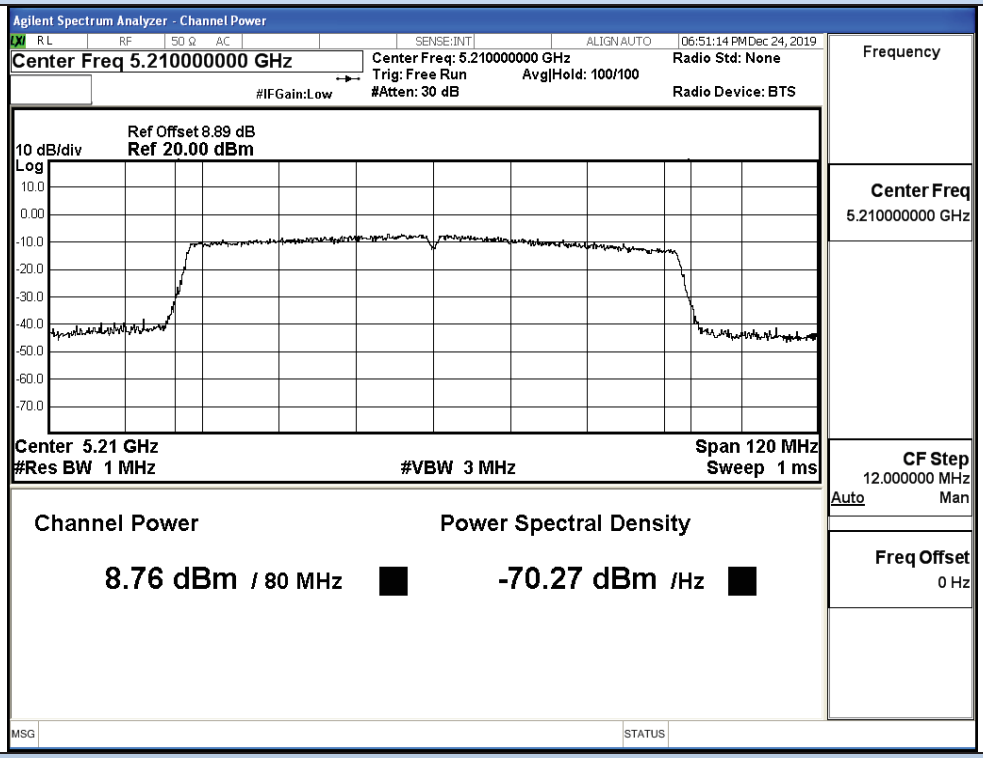
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



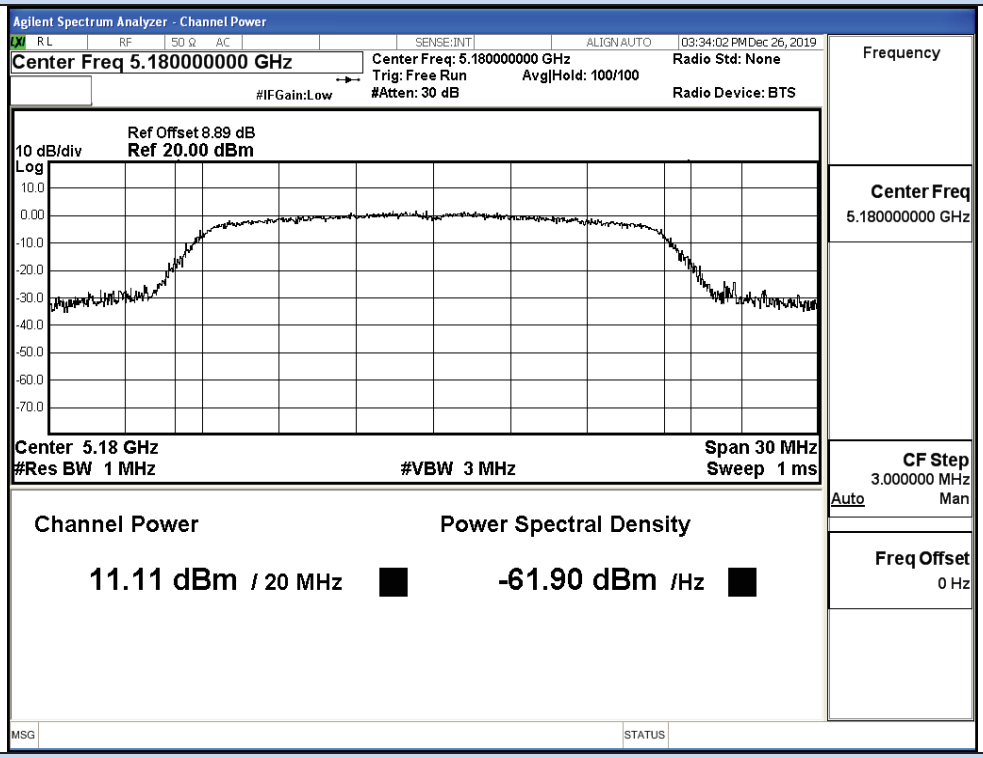
IEEE 802.11ac80 / Channel 42 / 5210MHz

Ant0+1

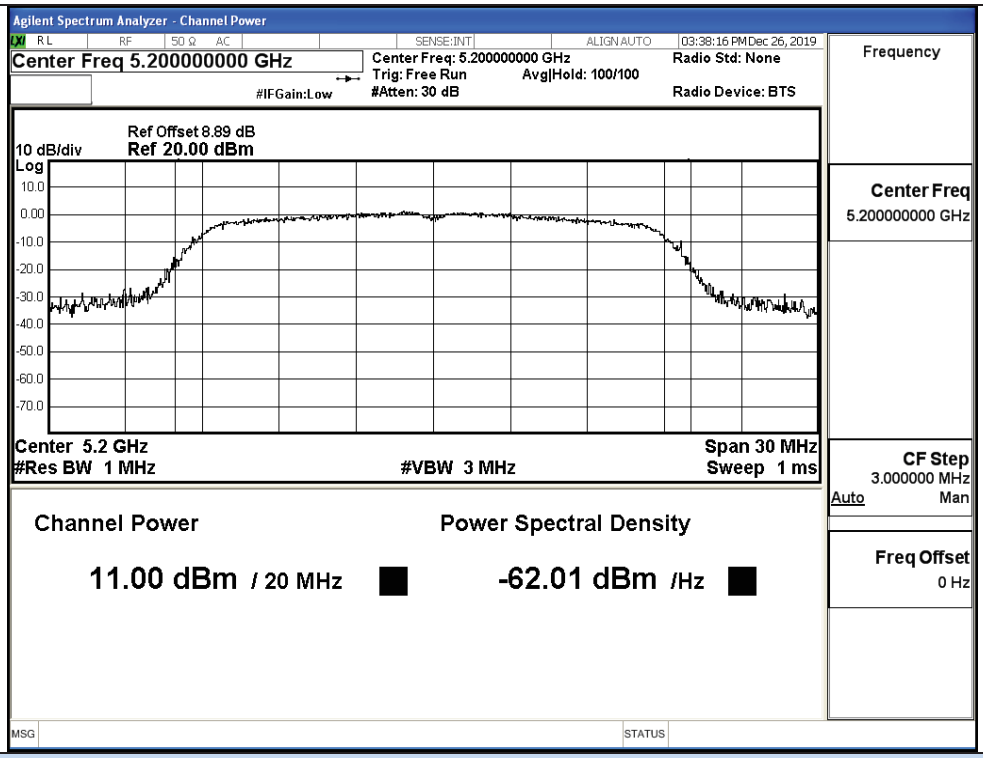
Test Mode	Channel	Frequency (MHz)	ANT 0 AVG Conducted Power (dBm)	ANT 1 AVG Conducted Power (dBm)	ANT 0+1 AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11N20 SISO	36	5180	11.11	11.18	14.16	0	14.16	24	Pass
	40	5200	11	11.33	14.18	0	14.18		Pass
	48	5240	11.39	10.82	14.12	0	14.12		Pass
11N40 SISO	38	5190	11.03	11.02	14.04	0	14.04	24	Pass
	46	5230	11.06	10.61	13.85	0	13.85		Pass
11AC20 SISO	36	5180	11.6	10.97	14.31	0	14.31	24	Pass
	40	5200	11.47	10.37	13.97	0	13.97		Pass
	48	5240	11.27	10.54	13.93	0	13.93		Pass
11AC40 SISO	38	5190	9.41	8.21	11.86	0	11.86	24	Pass
	46	5230	9.01	6.74	11.03	0	11.03		Pass
11AC80 SISO	42	5210	9.47	8.76	12.14	0	12.14	24	Pass

ANT 0

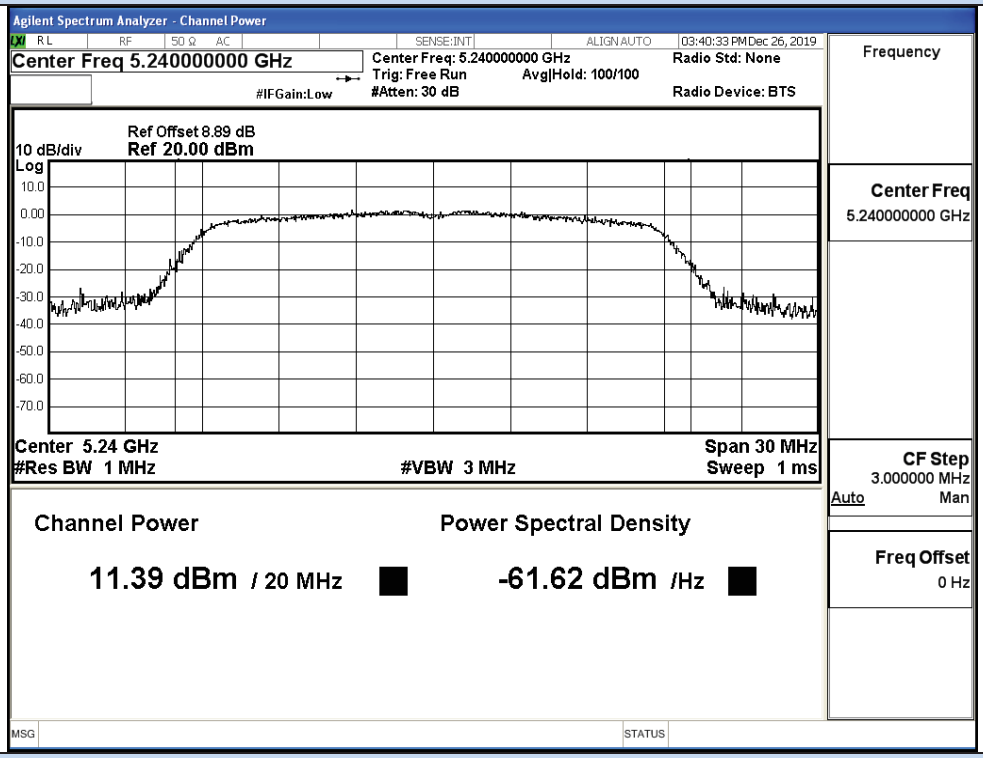
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 36 / 5180MHz

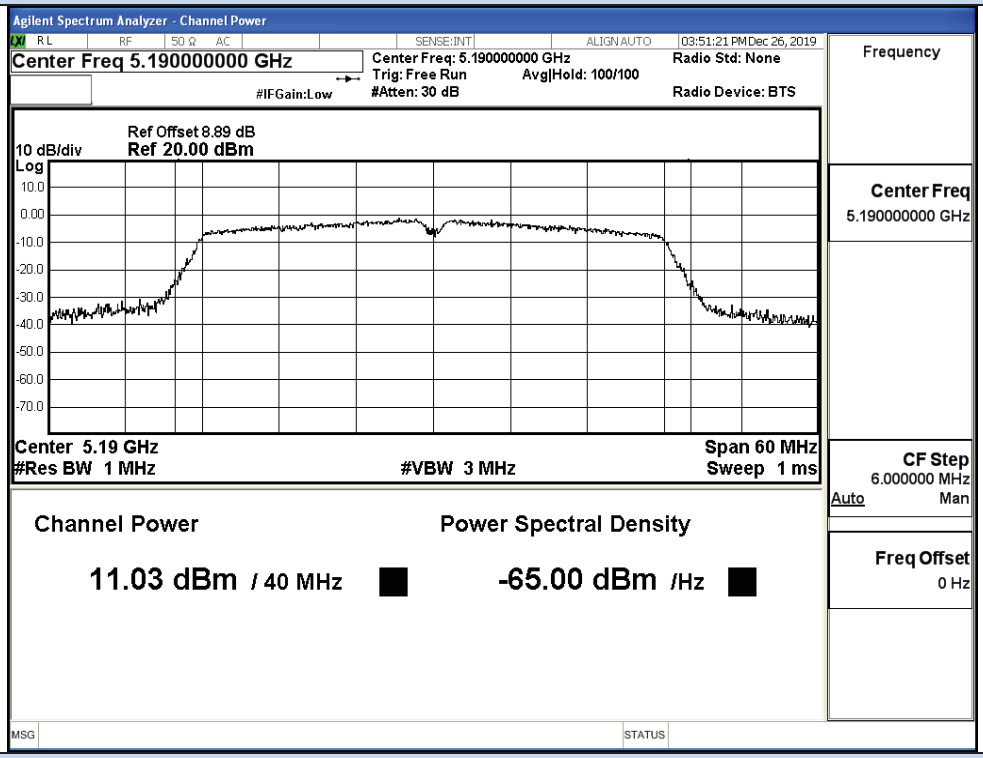


IEEE 802.11n20 / Channel 40 / 5200MHz

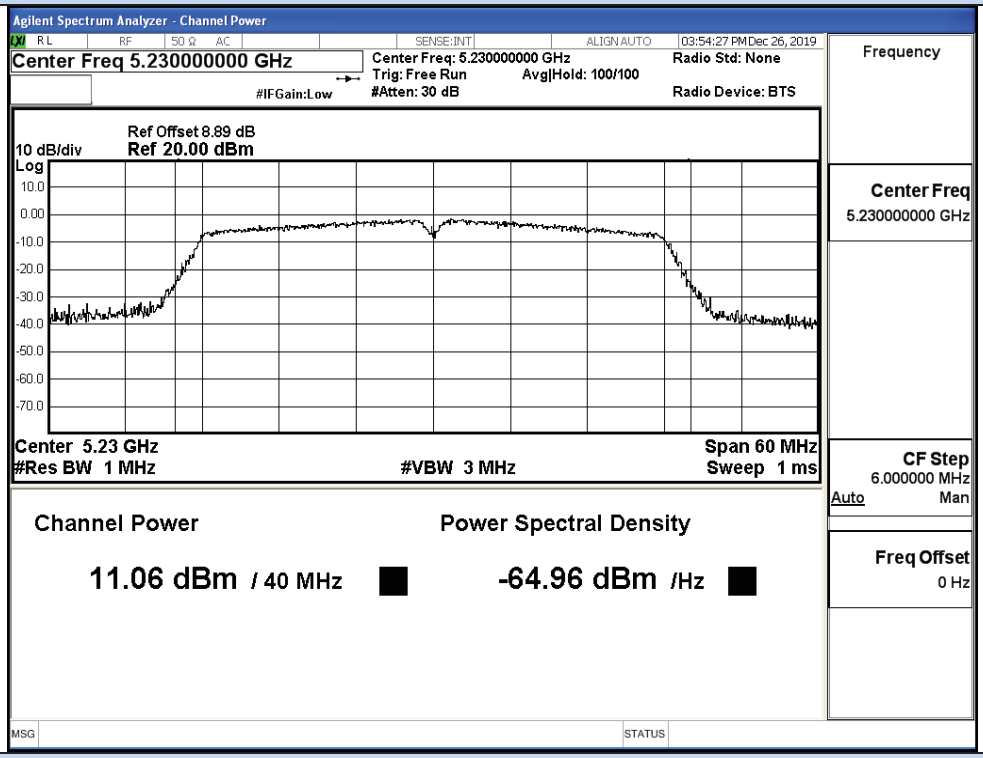


IEEE 802.11n20 / Channel 48 / 5240MHz

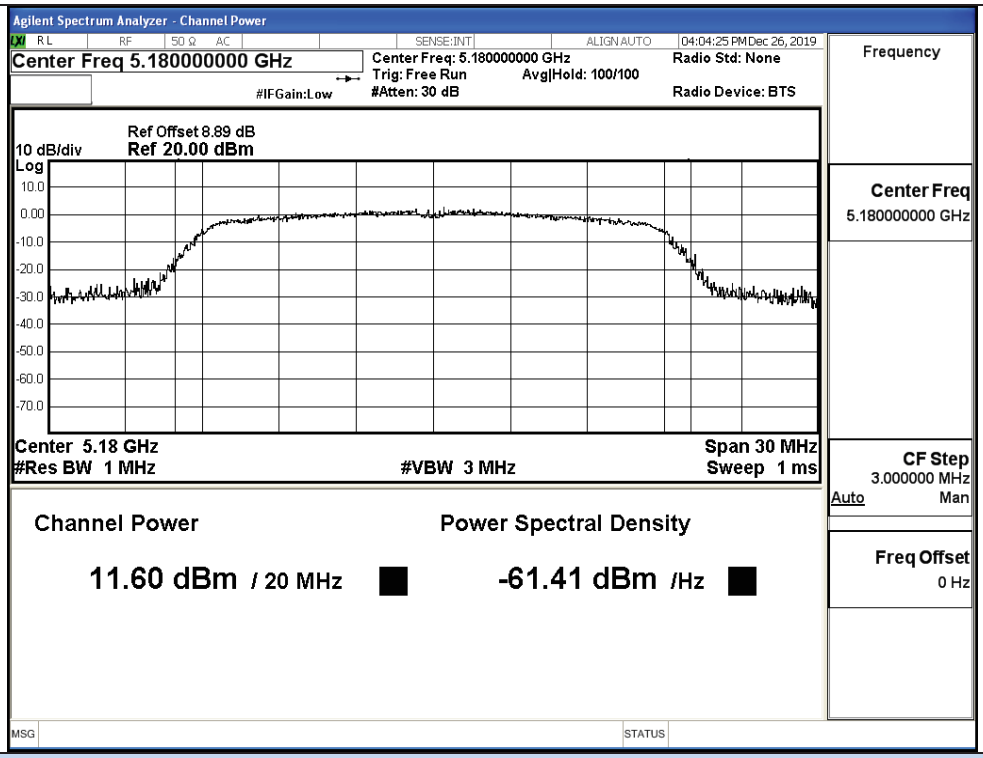
Maximum Conducted Output Power



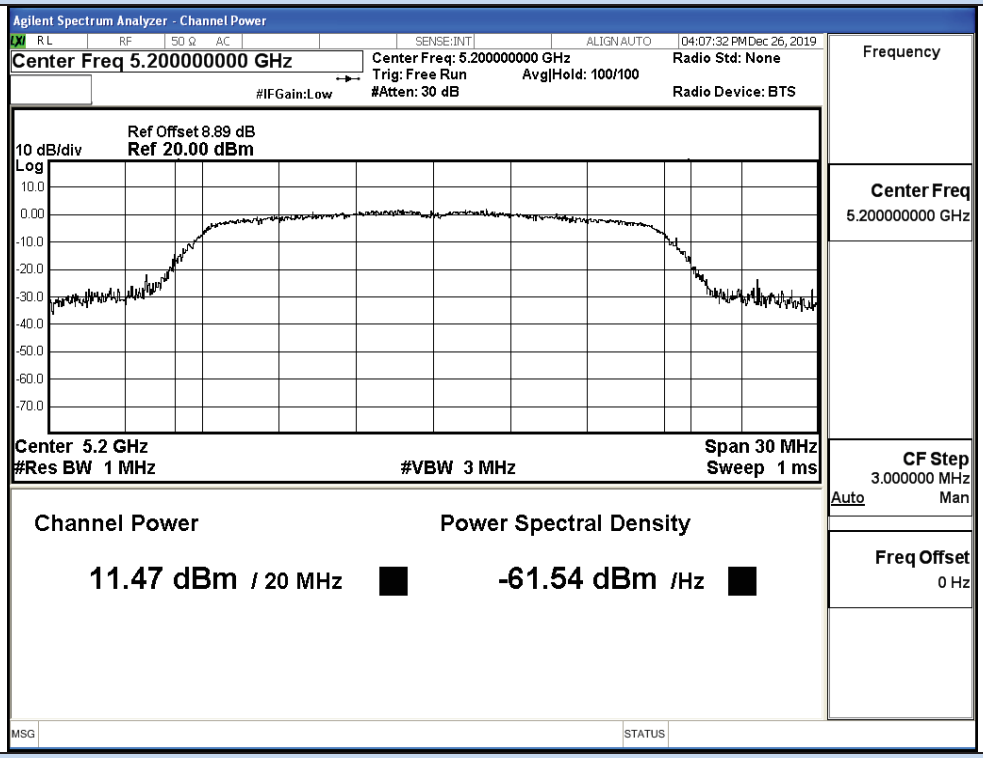
IEEE 802.11n40 / Channel 38 / 5190MHz



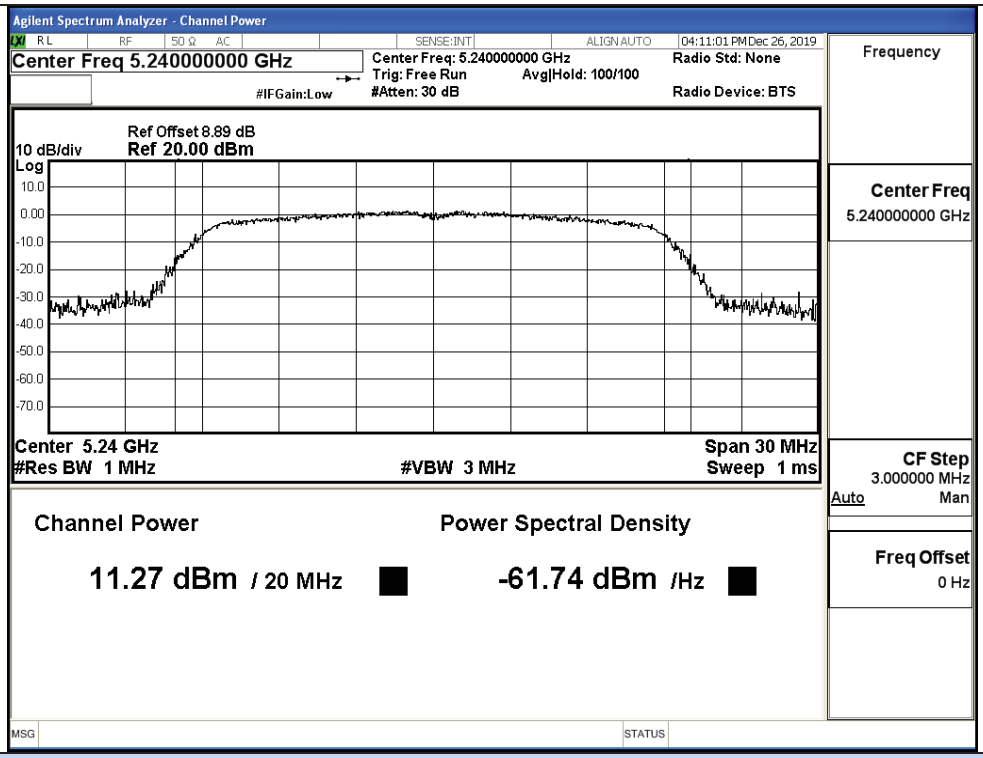
IEEE 802.11n40 / Channel 46 / 5230MHz



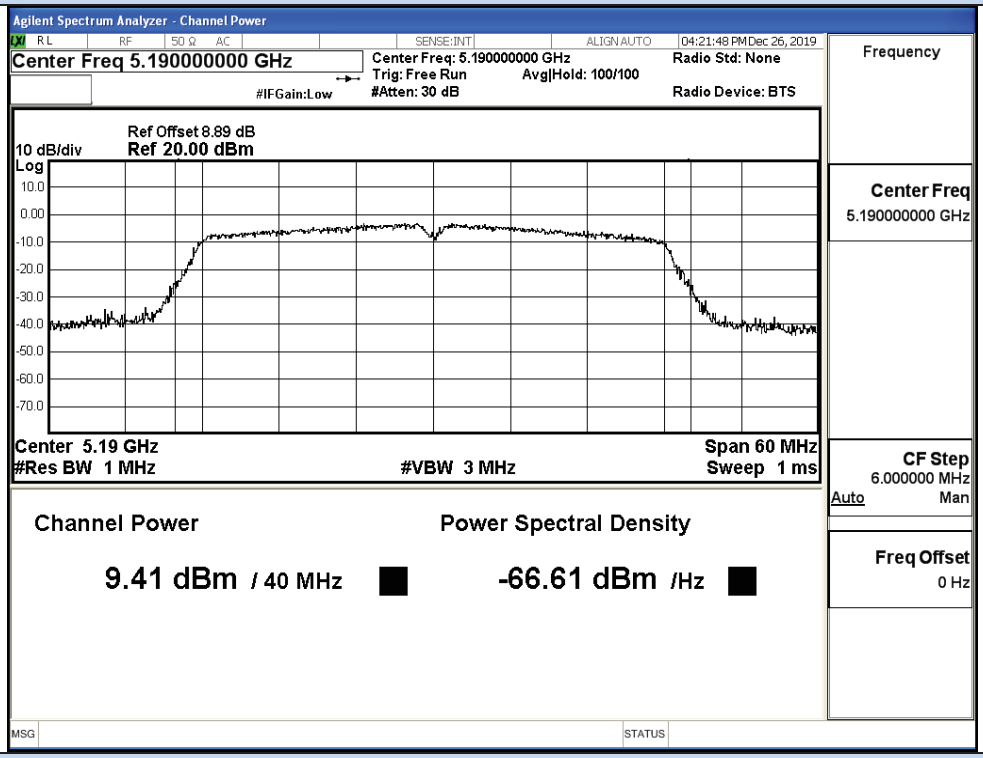
IEEE 802.11ac20 / Channel 36 / 5180MHz



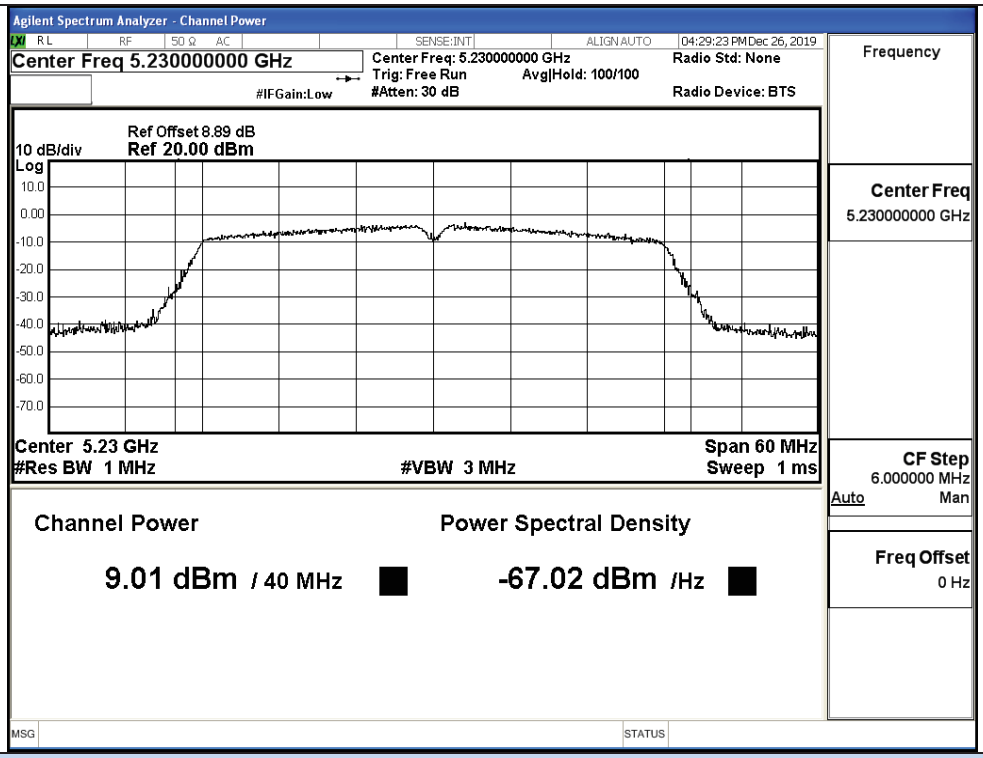
IEEE 802.11ac20 / Channel 40 / 5200MHz



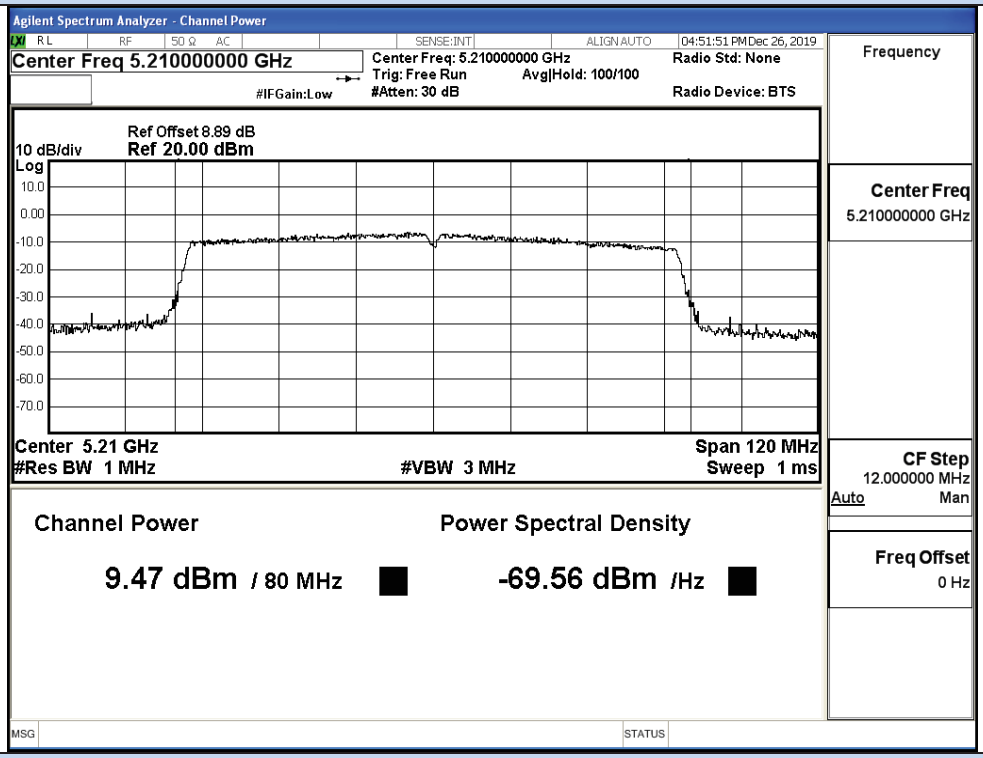
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



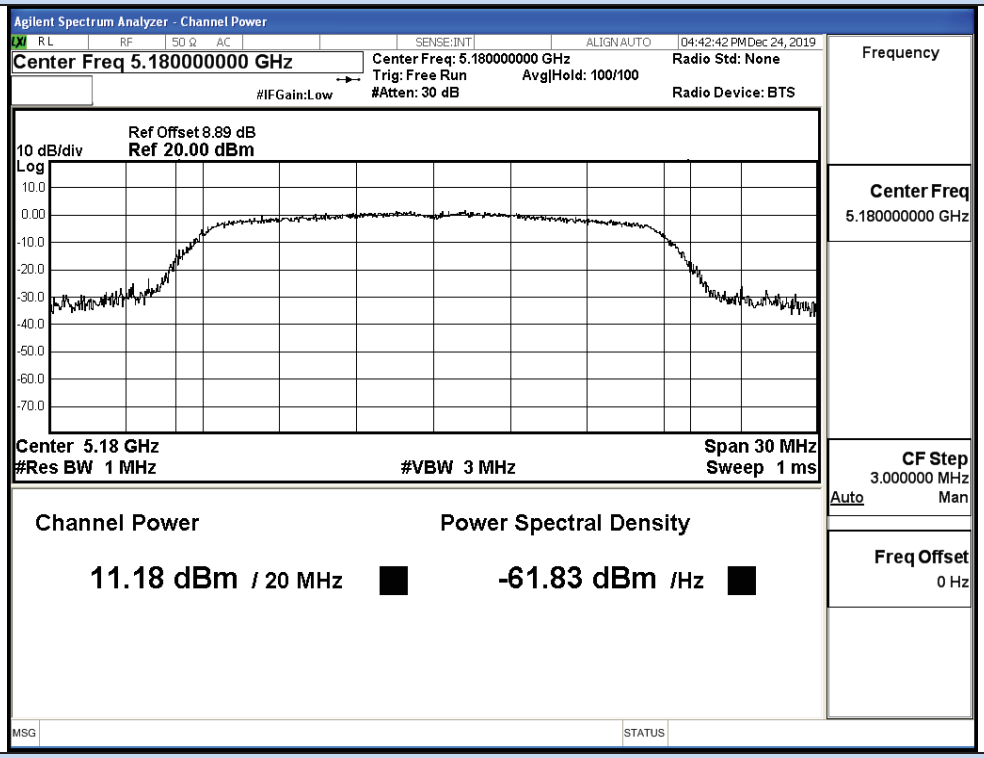
IEEE 802.11ac40 / Channel 46 / 5230MHz



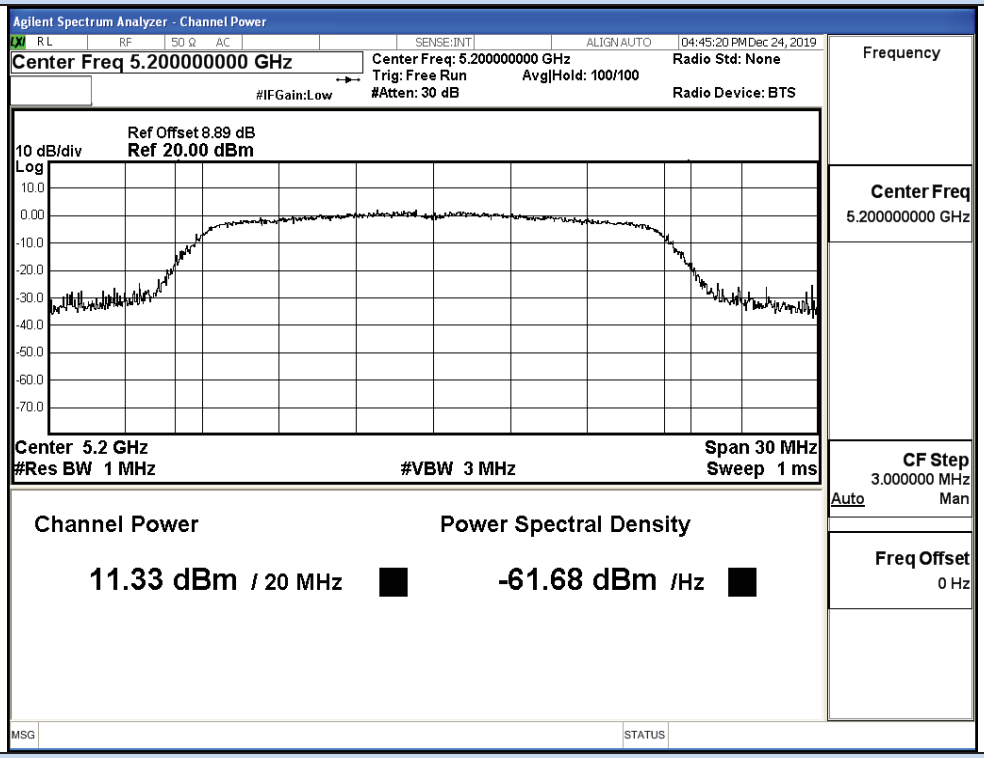
IEEE 802.11ac80 / Channel 42 / 5210MHz

ANT 1

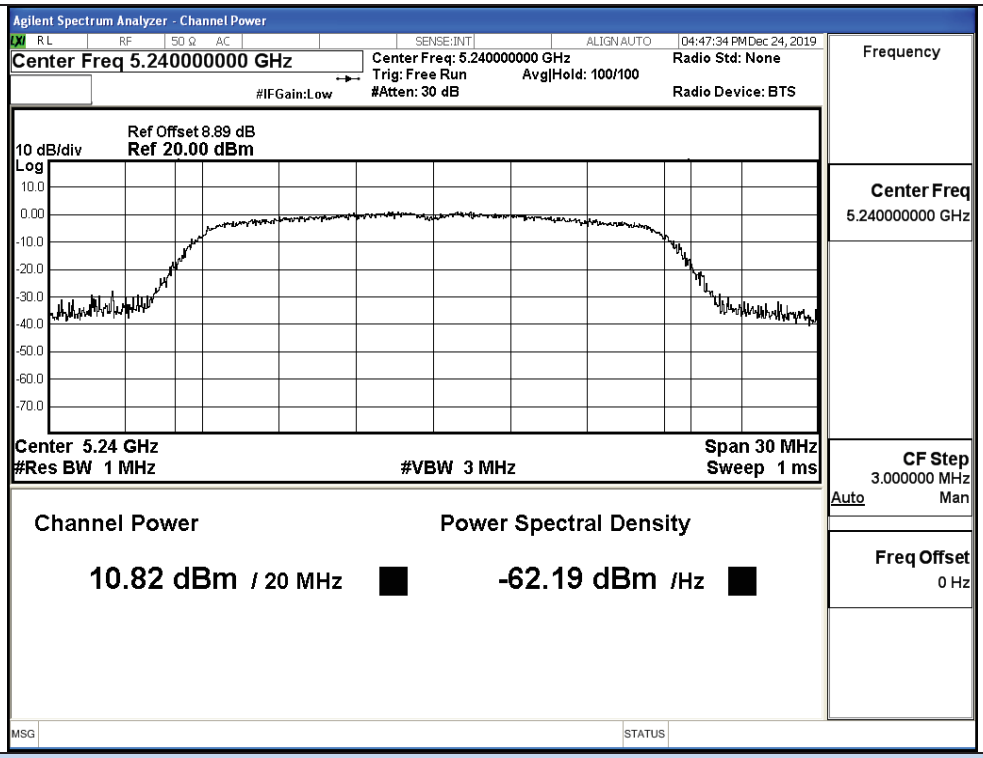
Maximum Conducted Output Power



IEEE 802.11n20 / Channel 36 / 5180MHz

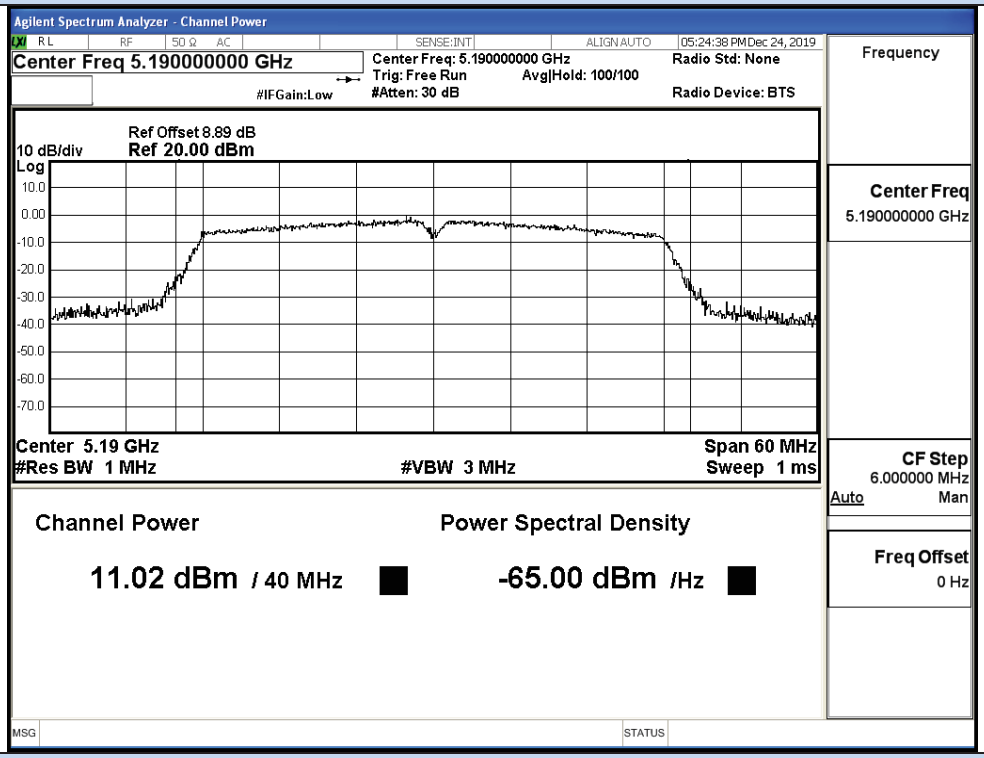


IEEE 802.11n20 / Channel 40 / 5200MHz

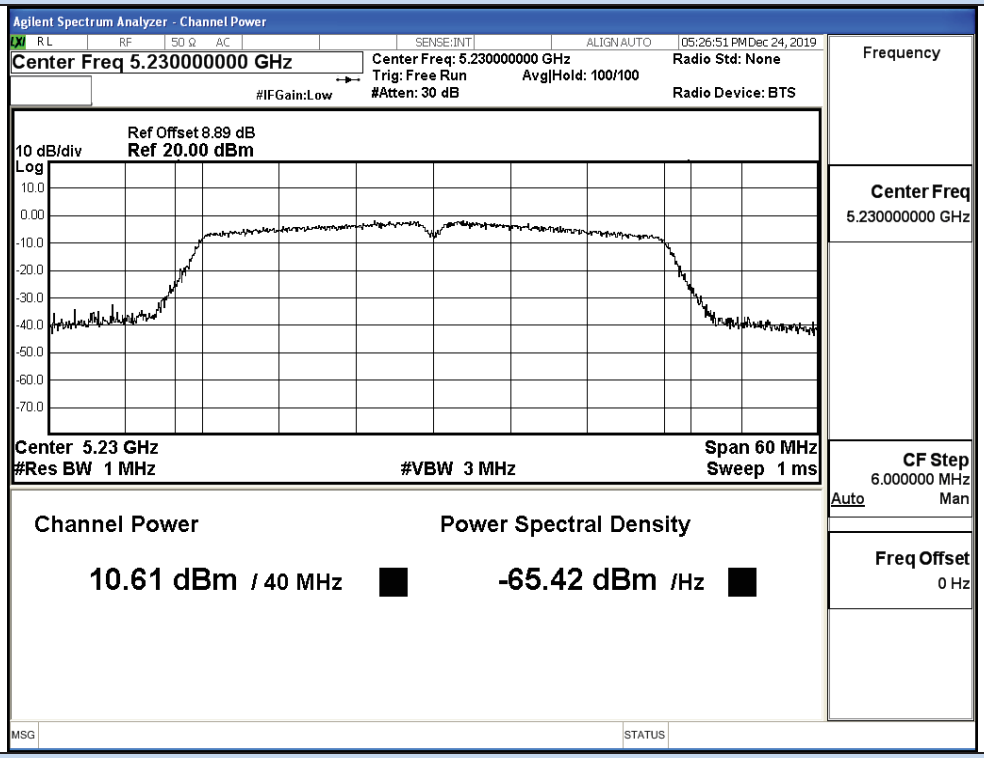


IEEE 802.11n20 / Channel 48 / 5240MHz

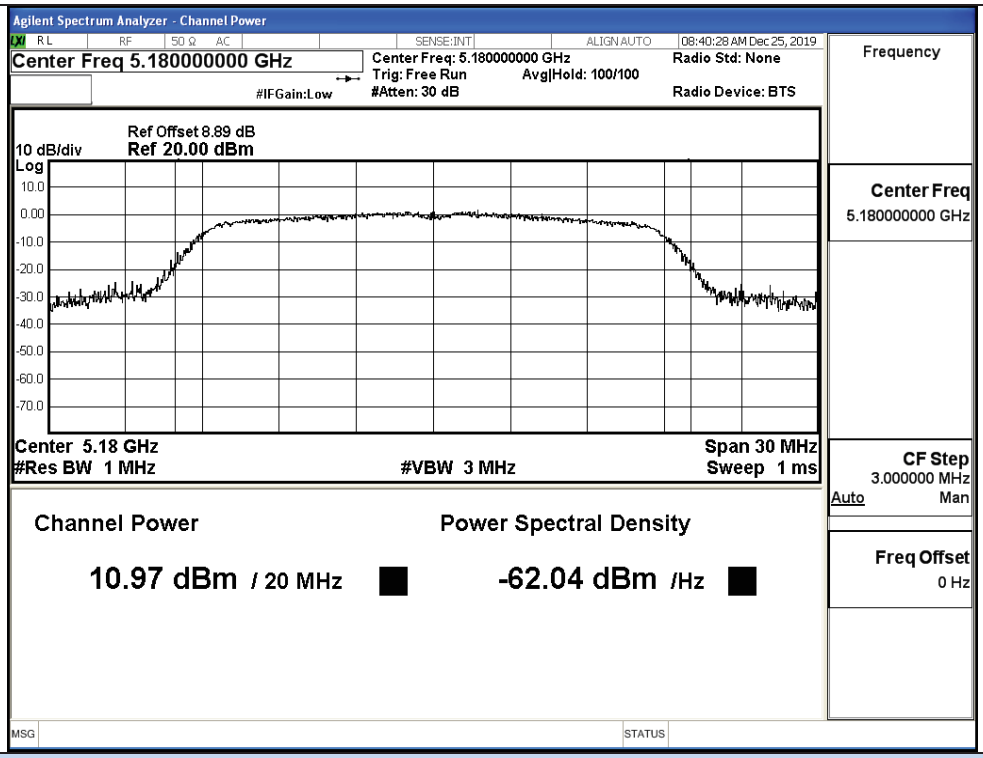
Maximum Conducted Output Power



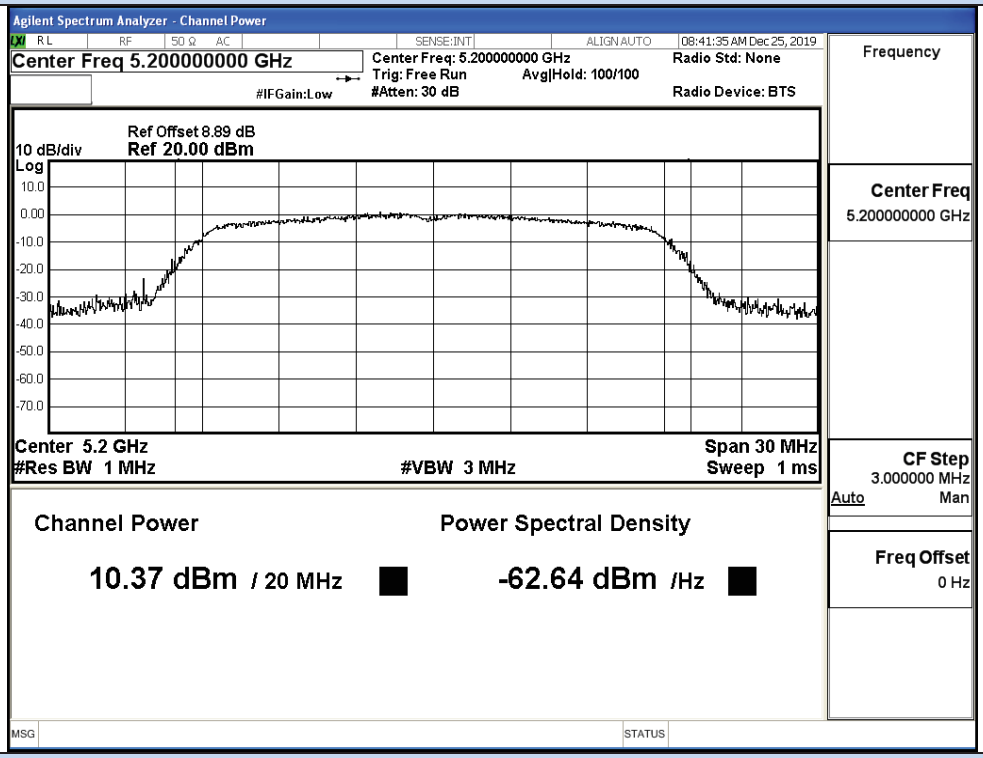
IEEE 802.11n40 / Channel 38 / 5190MHz



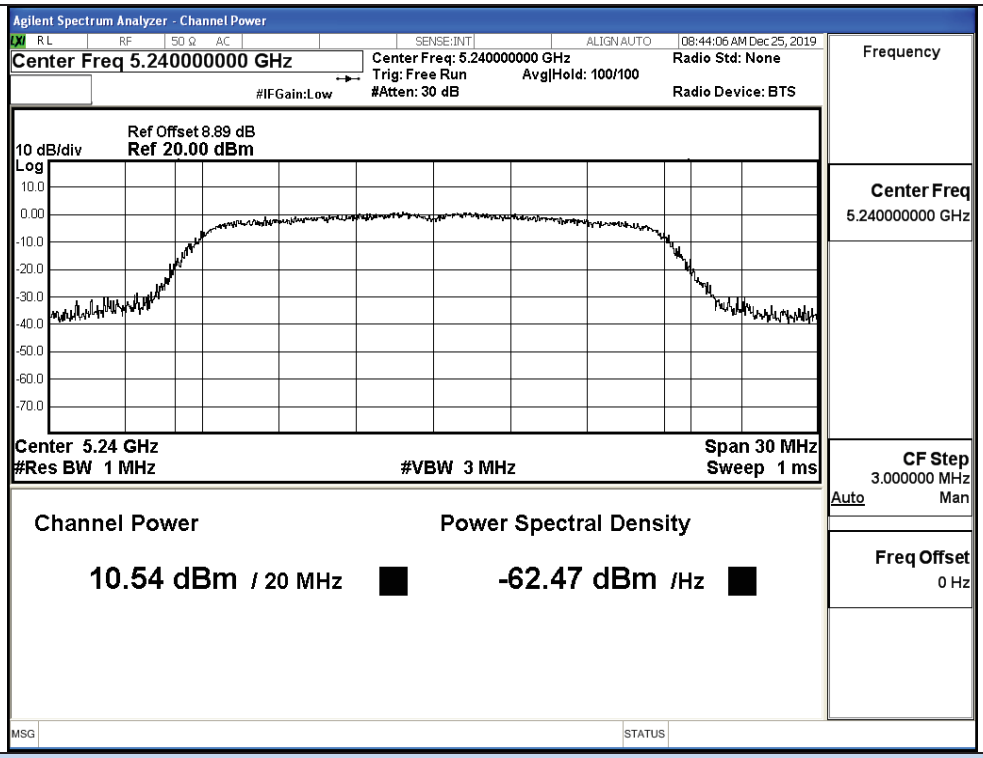
IEEE 802.11n40 / Channel 46 / 5230MHz



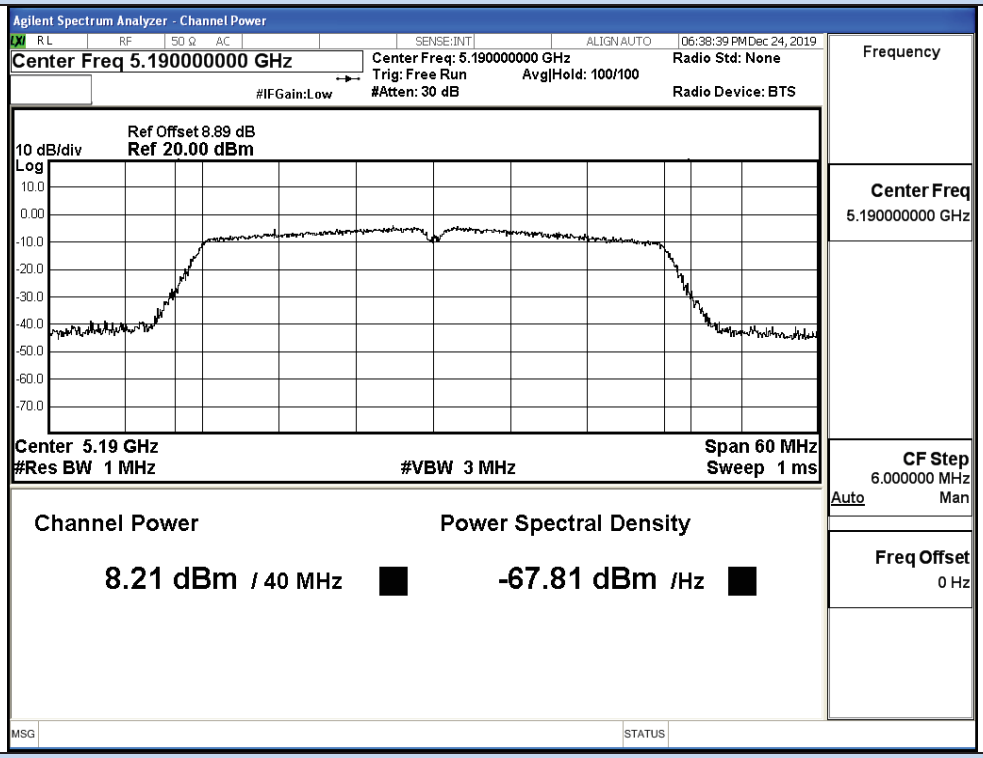
IEEE 802.11ac20 / Channel 36 / 5180MHz



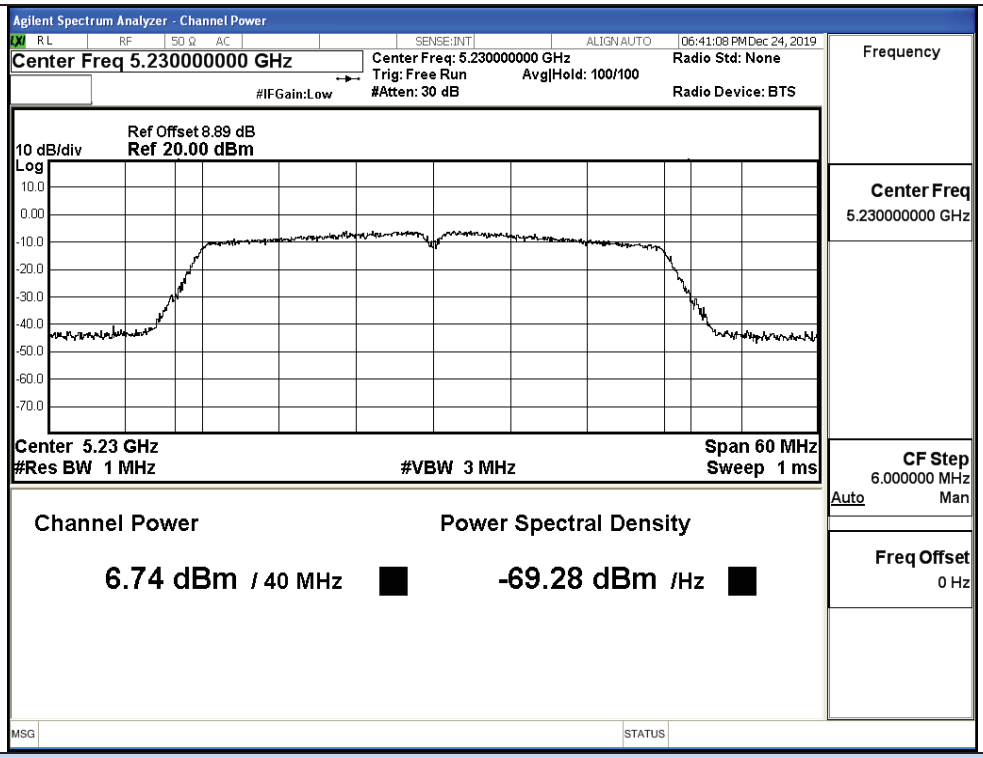
IEEE 802.11ac20 / Channel 40 / 5200MHz



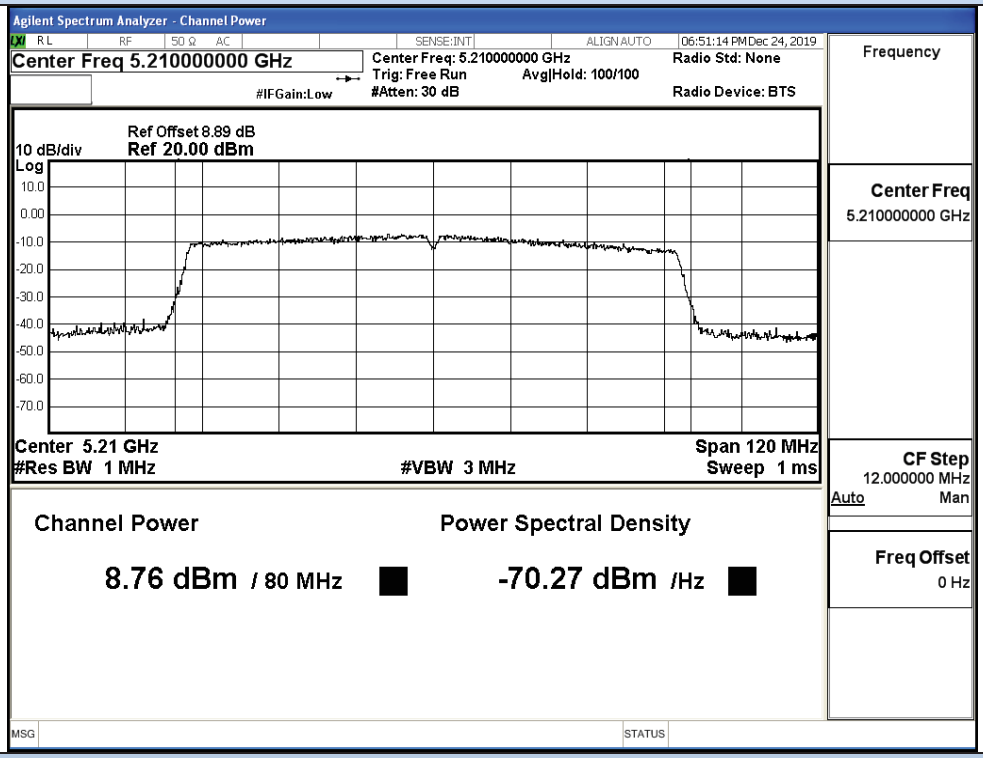
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



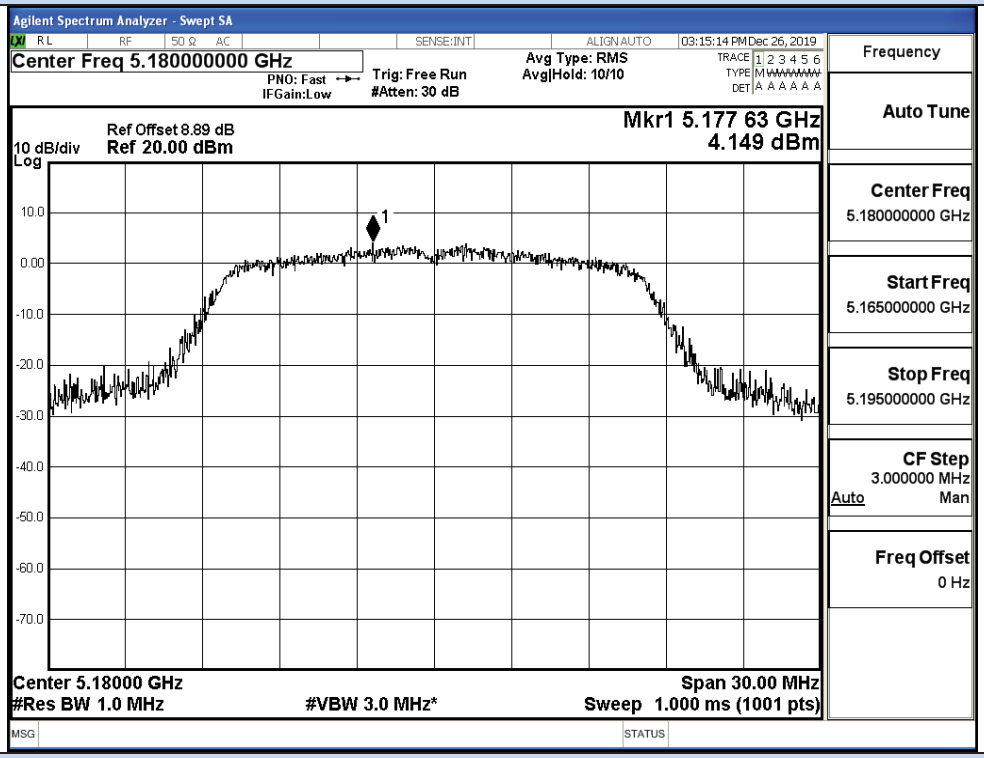
IEEE 802.11ac80 / Channel 42 / 5210MHz

D.3 Power Spectral Density

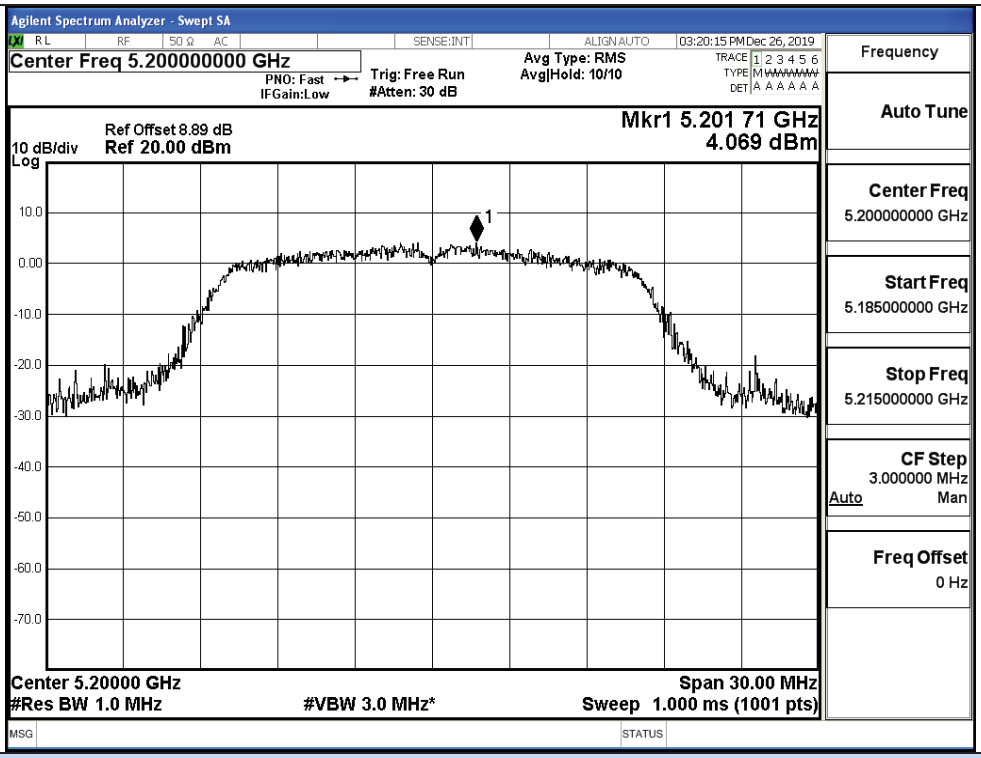
Ant0

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	4.15	0	4.15	11	Pass
	40	5200	4.07	0	4.07		Pass
	48	5240	3.26	0	3.26		Pass
11N20 SISO	36	5180	1.38	0	1.38	11	Pass
	40	5200	1.12	0	1.12		Pass
	48	5240	1.46	0	1.46		Pass
11N40 SISO	38	5190	-1.79	0	-1.79	11	Pass
	46	5230	-1.78	0	-1.78		Pass
11AC20 SISO	36	5180	1.63	0	1.63	11	Pass
	40	5200	1.31	0	1.31		Pass
	48	5240	1.21	0	1.21		Pass
11AC40 SISO	38	5190	-2.94	0	-2.94	11	Pass
	46	5230	-3.77	0	-3.77		Pass
11AC80 SISO	42	5210	-4.74	0	-4.74	11	Pass

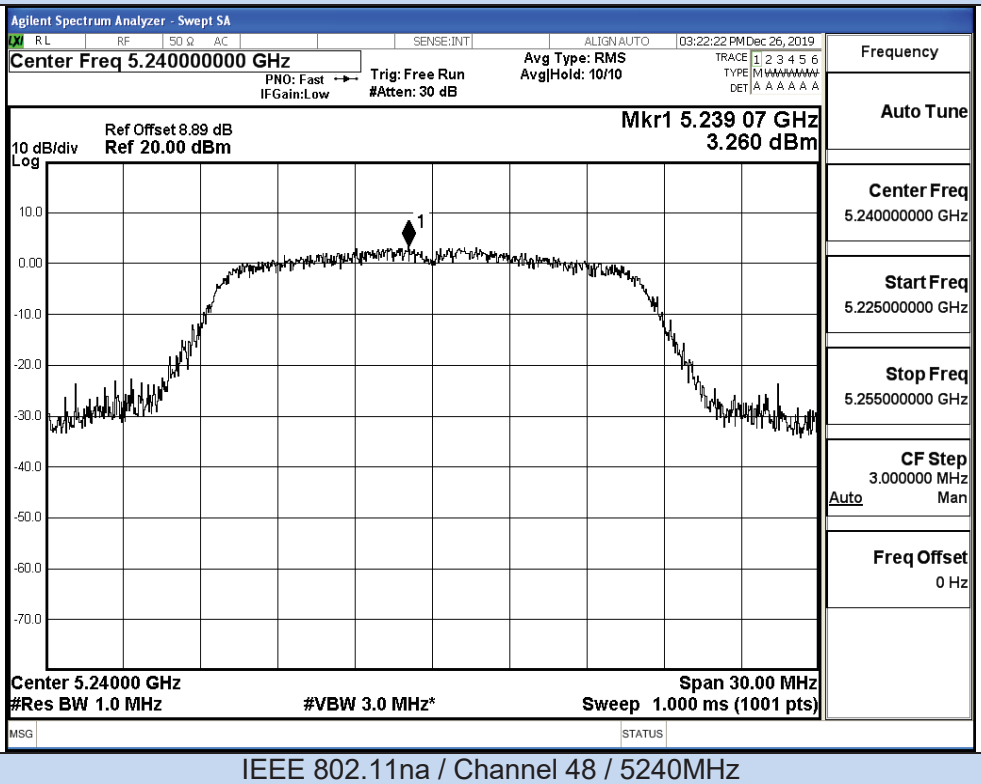
Power Spectral Density



IEEE 802.11a / Channel 36 / 5180MHz

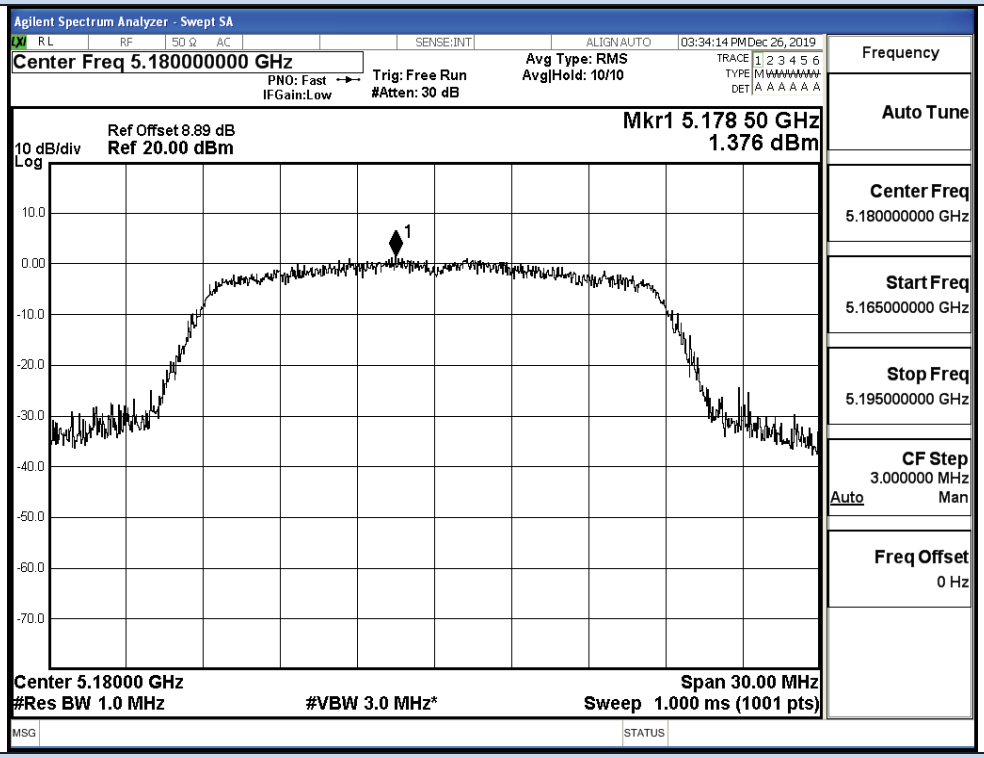


IEEE 802.11na / Channel 40 / 5200MHz

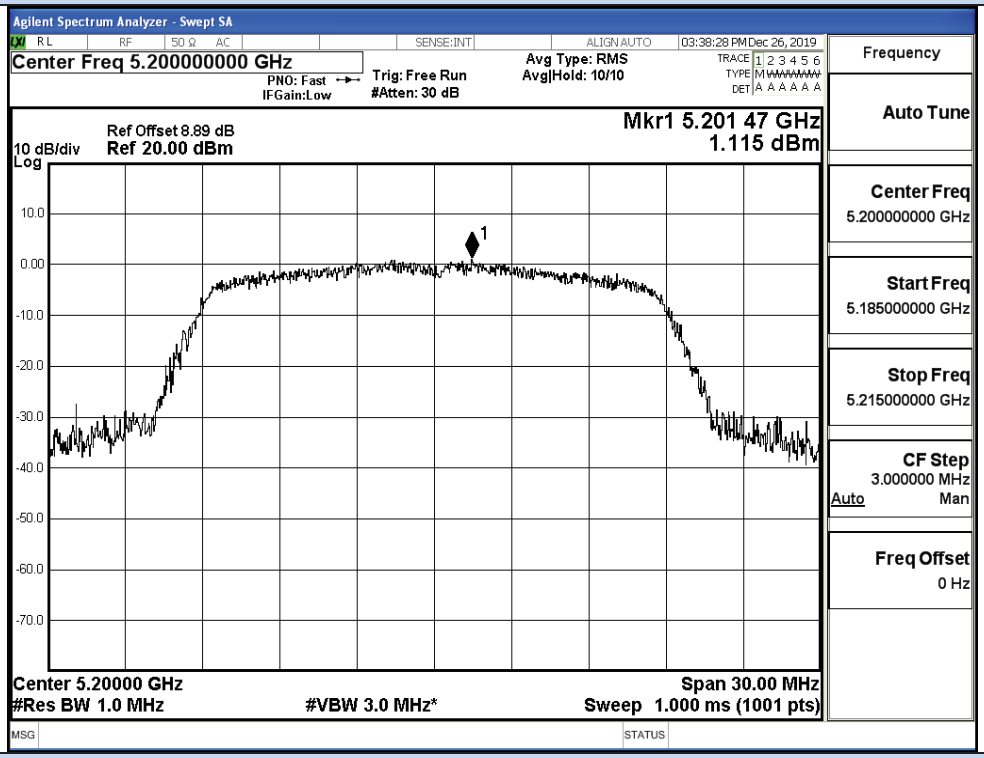


IEEE 802.11na / Channel 48 / 5240MHz

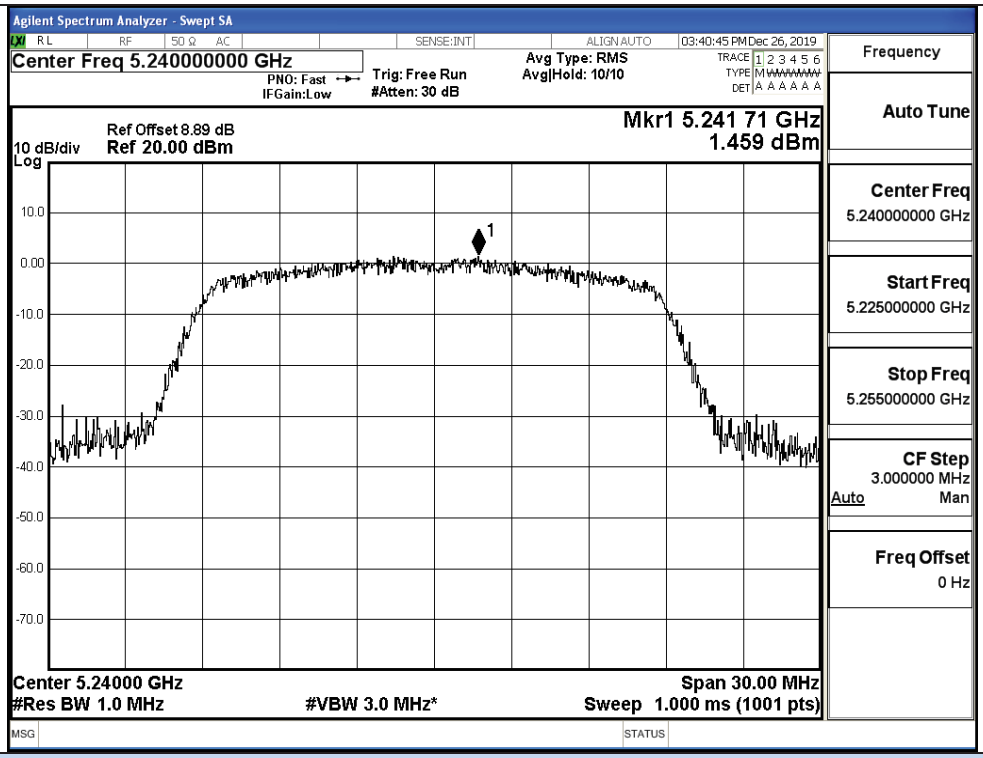
Power Spectral Density



IEEE 802.11n20 / Channel 36 / 5180MHz

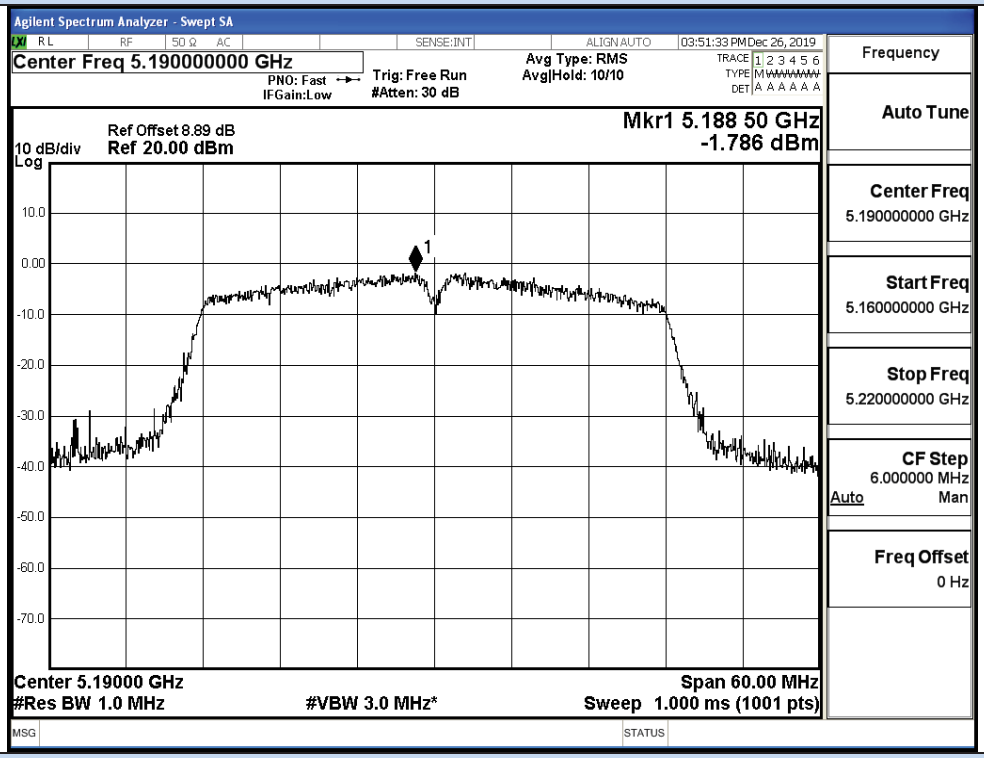


IEEE 802.11n20 / Channel 40 / 5200MHz

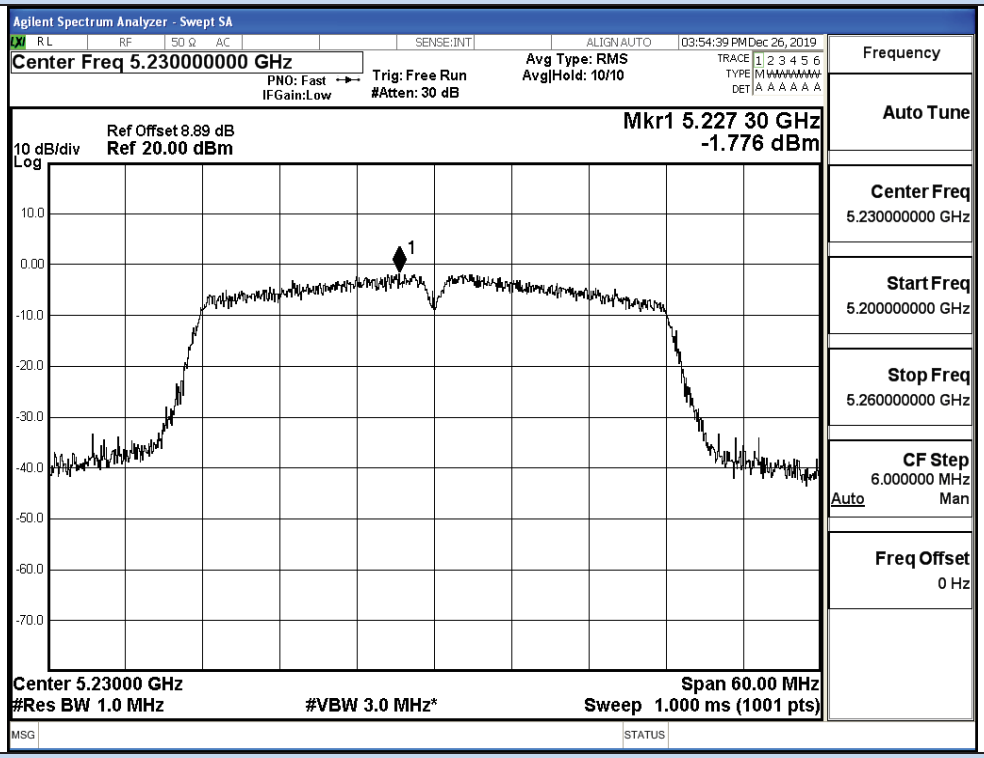


IEEE 802.11n20 / Channel 48 / 5240MHz

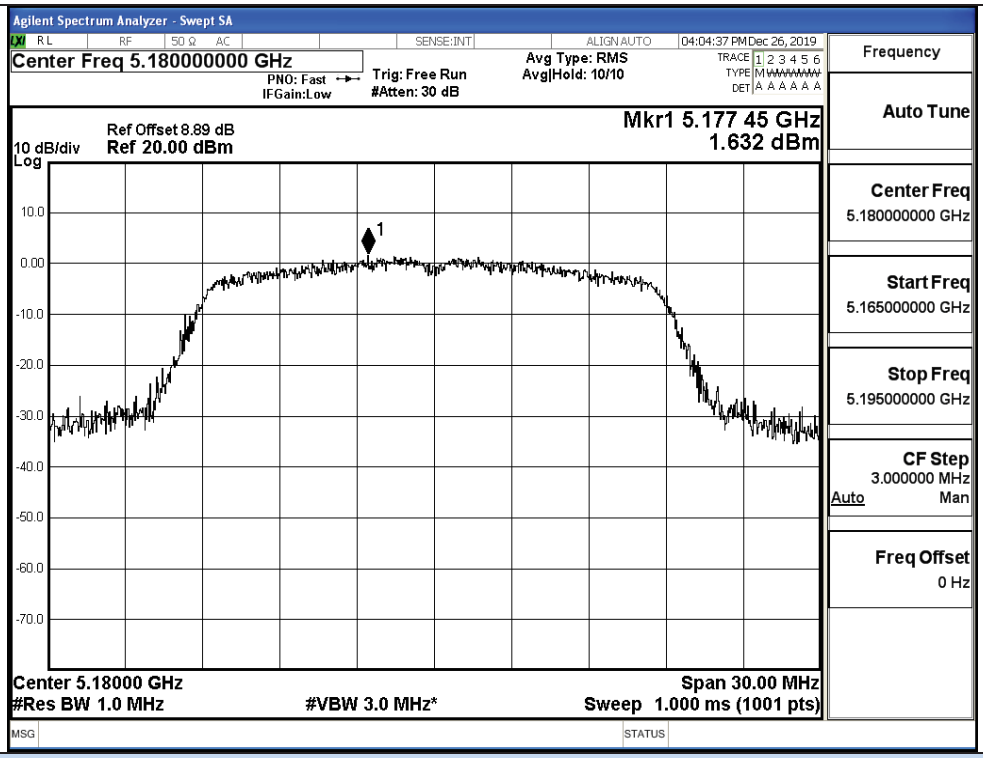
Power Spectral Density



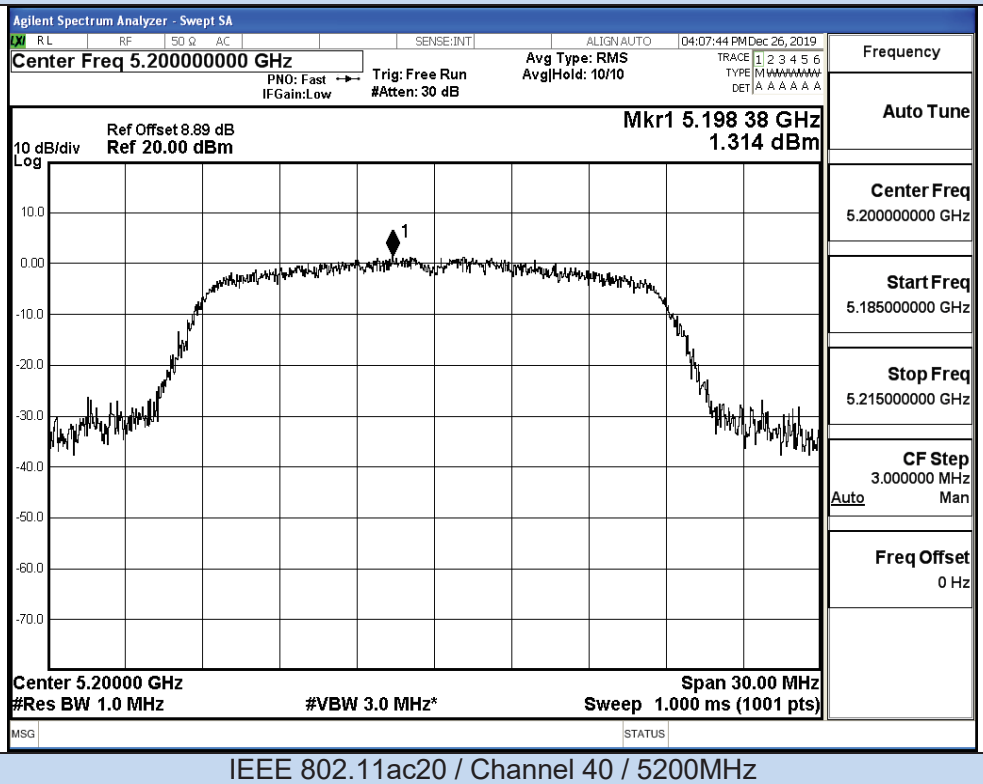
IEEE 802.11n40 / Channel 38 / 5190MHz



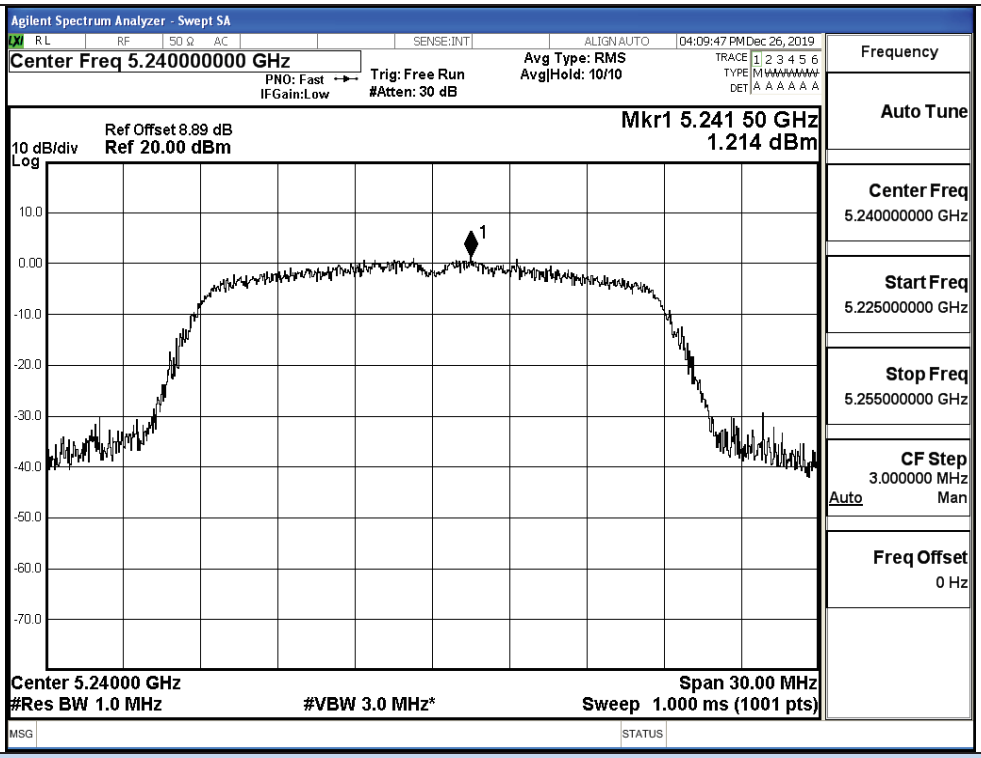
IEEE 802.11n40 / Channel 46 / 5230MHz



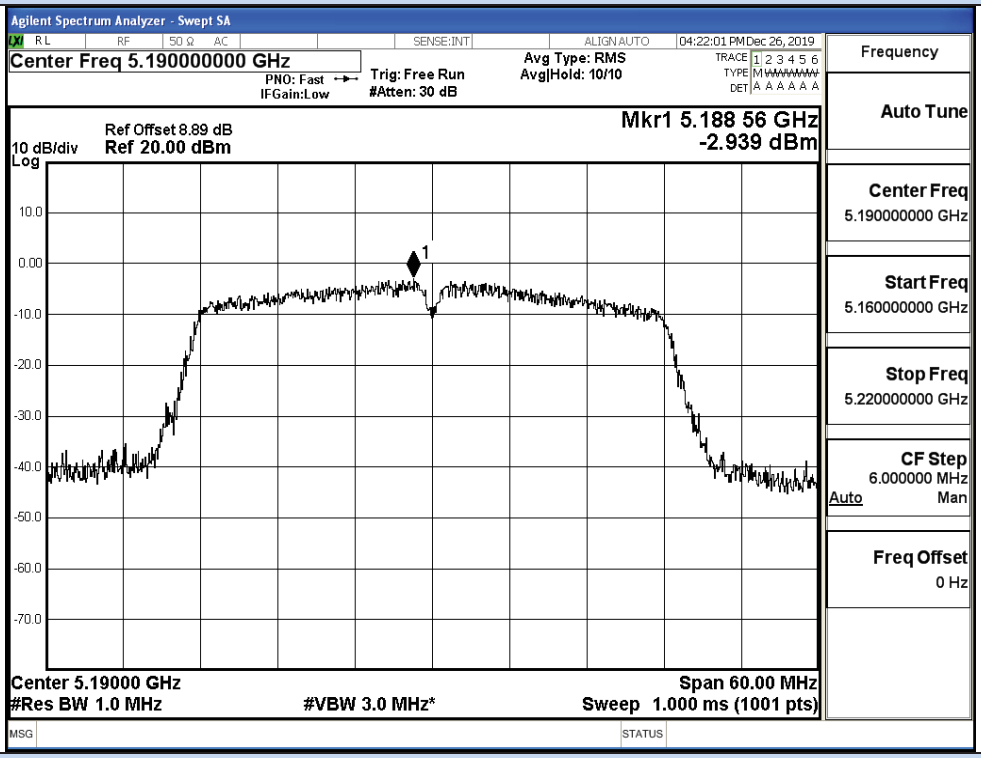
IEEE 802.11ac20 / Channel 36 / 5180MHz



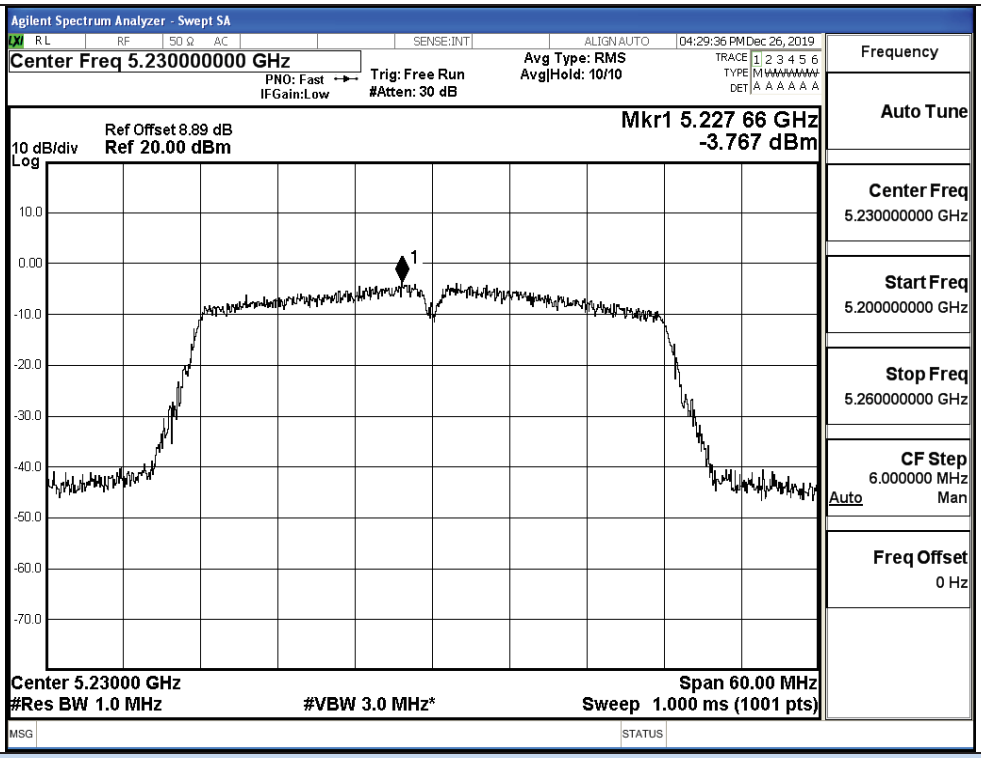
IEEE 802.11ac20 / Channel 40 / 5200MHz



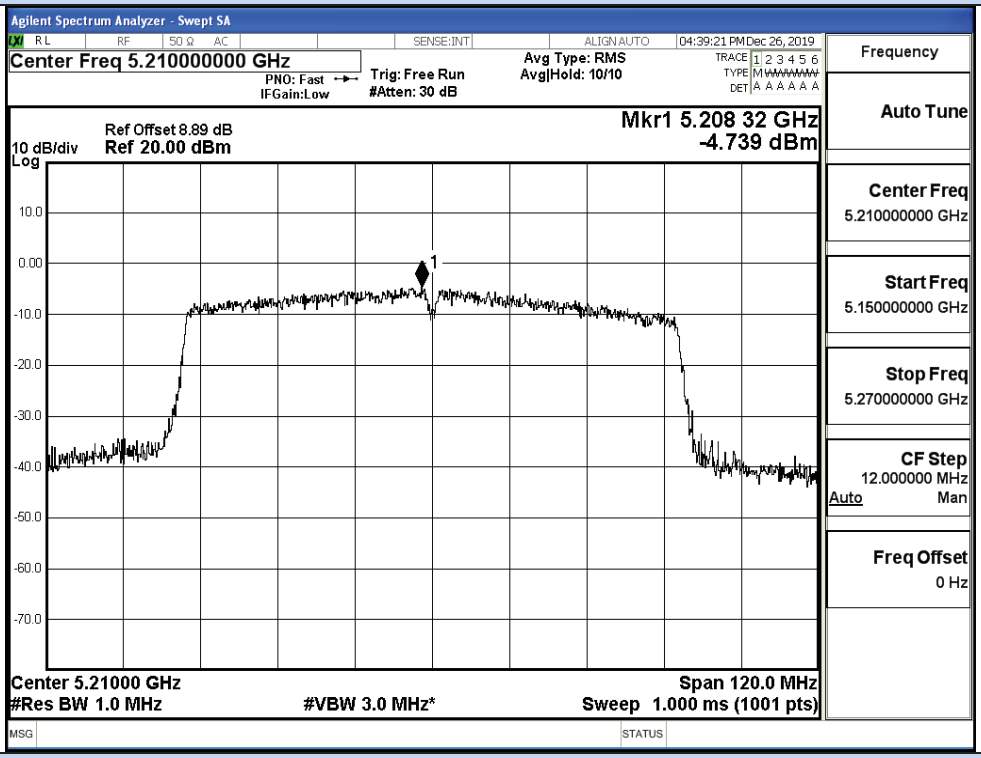
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz

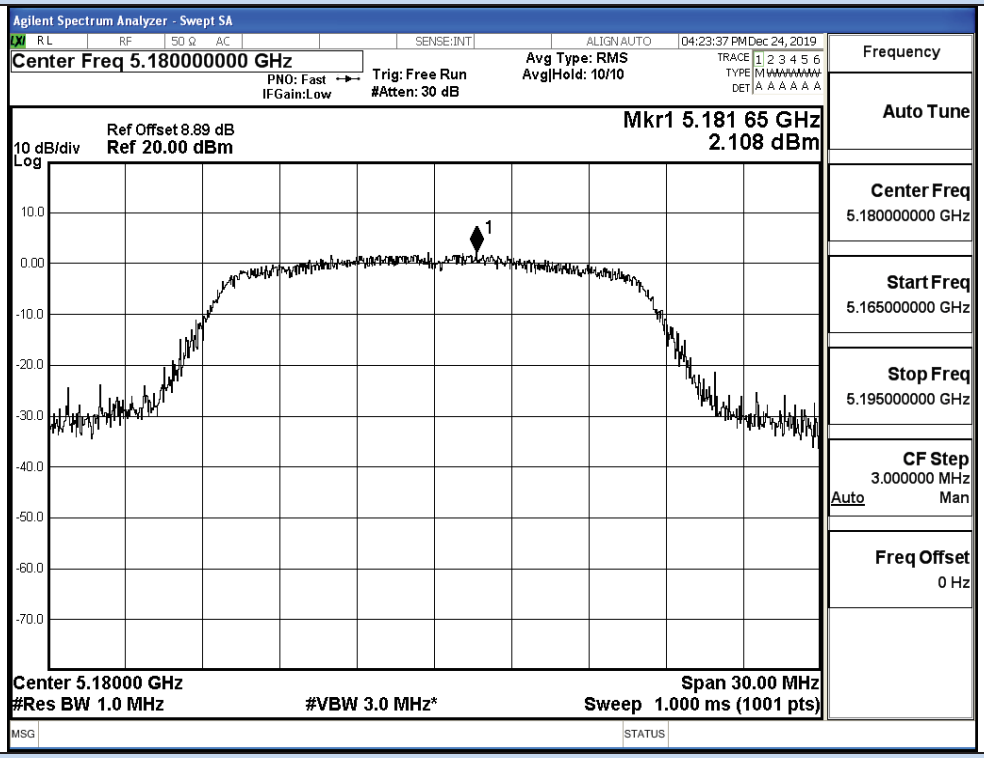


IEEE 802.11ac80 / Channel 42 / 5210MHz

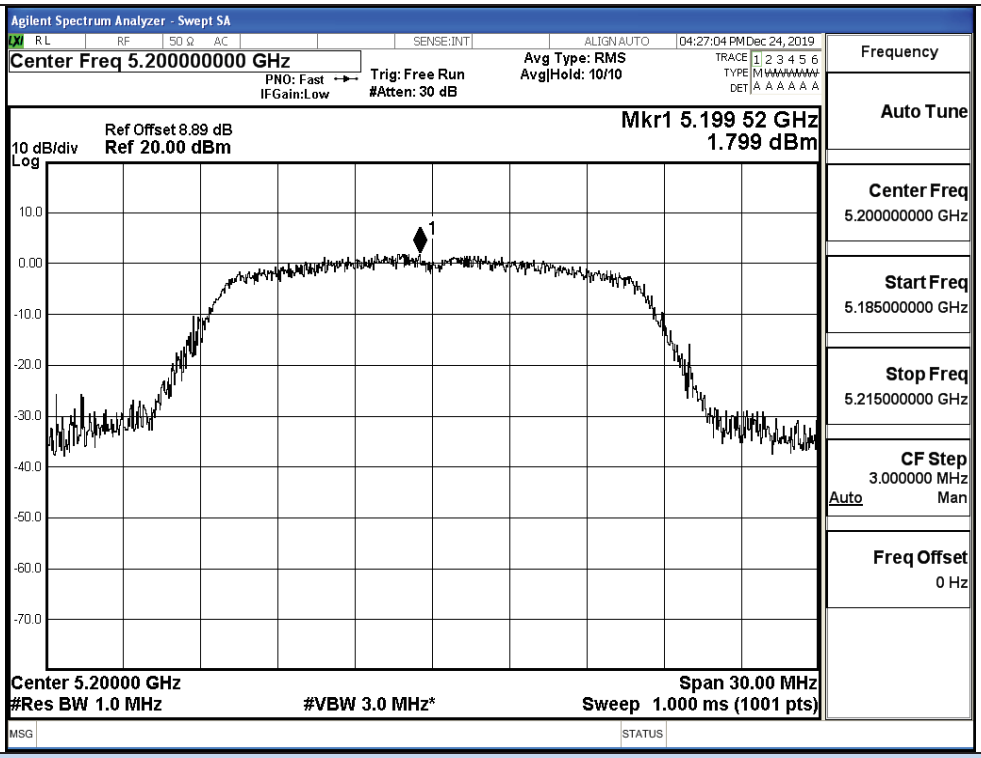
Ant1

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	11	Pass
	40	5200	1.80	0	1.80		Pass
	48	5240	1.90	0	1.90		Pass
11N20 SISO	36	5180	1.19	0	1.19	11	Pass
	40	5200	1.69	0	1.69		Pass
	48	5240	0.99	0	0.99		Pass
11N40 SISO	38	5190	-0.44	0	-0.44	11	Pass
	46	5230	-2.14	0	-2.14		Pass
11AC20 SISO	36	5180	2.93	0	2.93	11	Pass
	40	5200	0.60	0	0.60		Pass
	48	5240	0.53	0	0.53		Pass
11AC40 SISO	38	5190	-3.95	0	-3.95	11	Pass
	46	5230	-6.02	0	-6.02		Pass
11AC80 SISO	42	5210	-7.47	0	-7.47	11	Pass

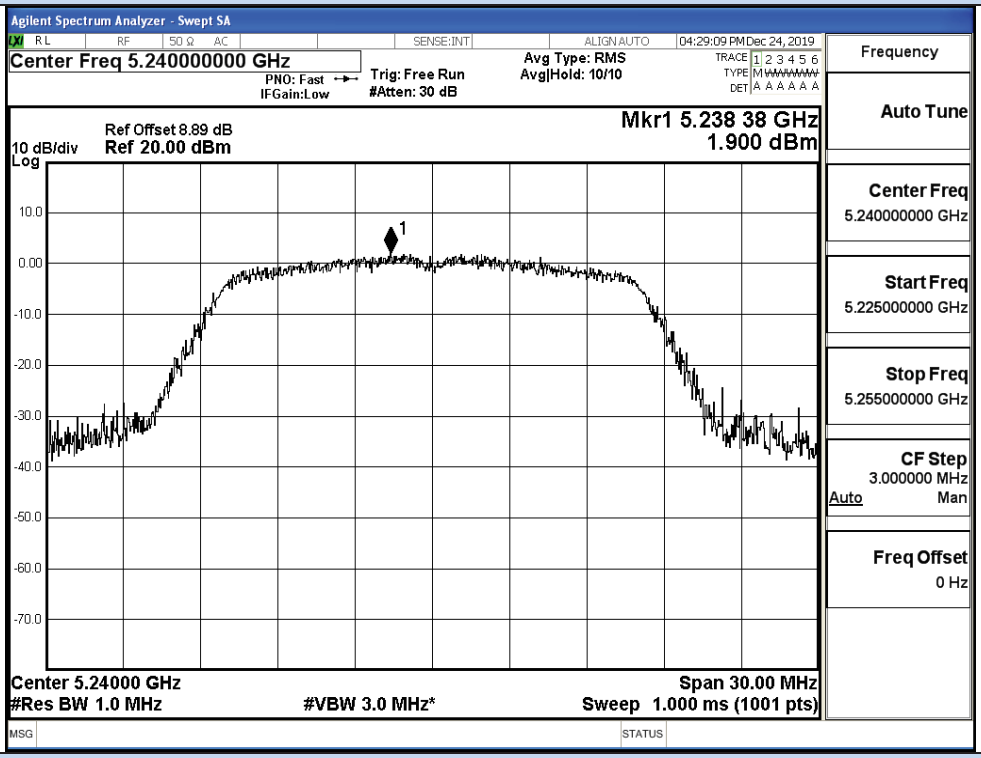
Power Spectral Density



IEEE 802.11a / Channel 36 / 5180MHz

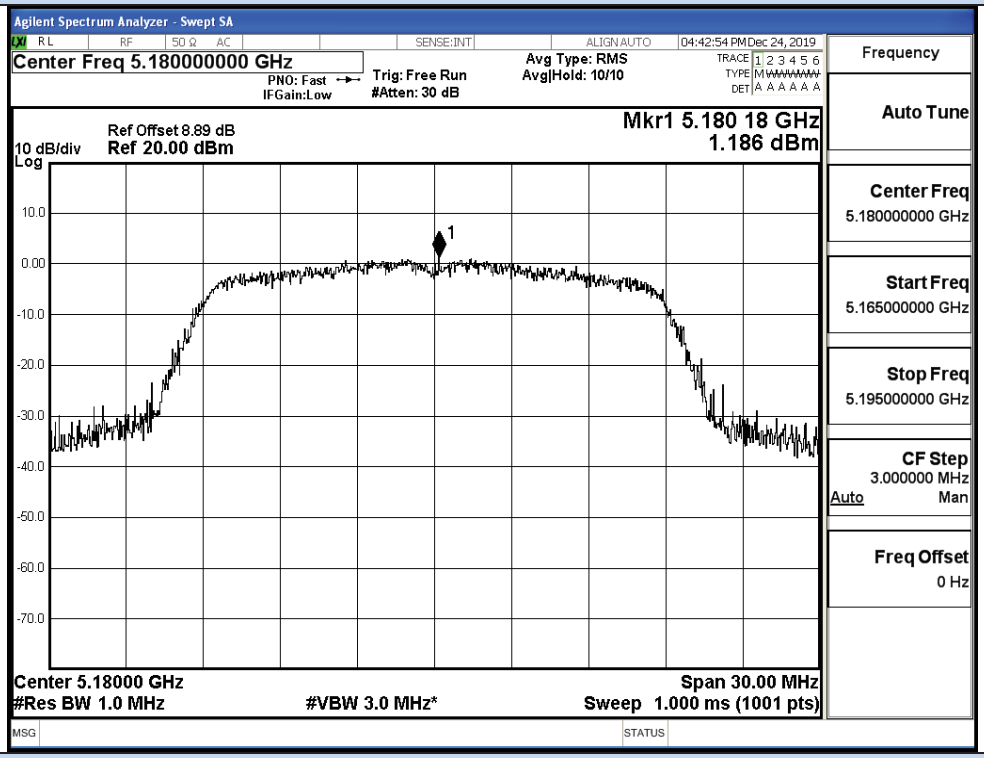


IEEE 802.11na / Channel 40 / 5200MHz

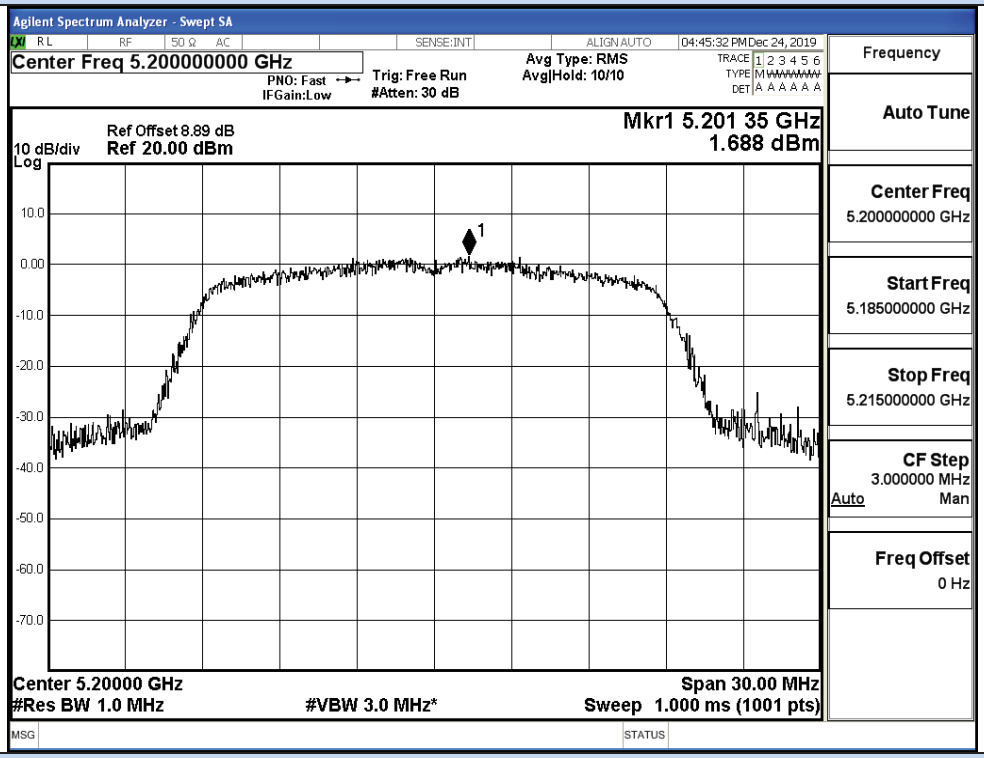


IEEE 802.11na / Channel 48 / 5240MHz

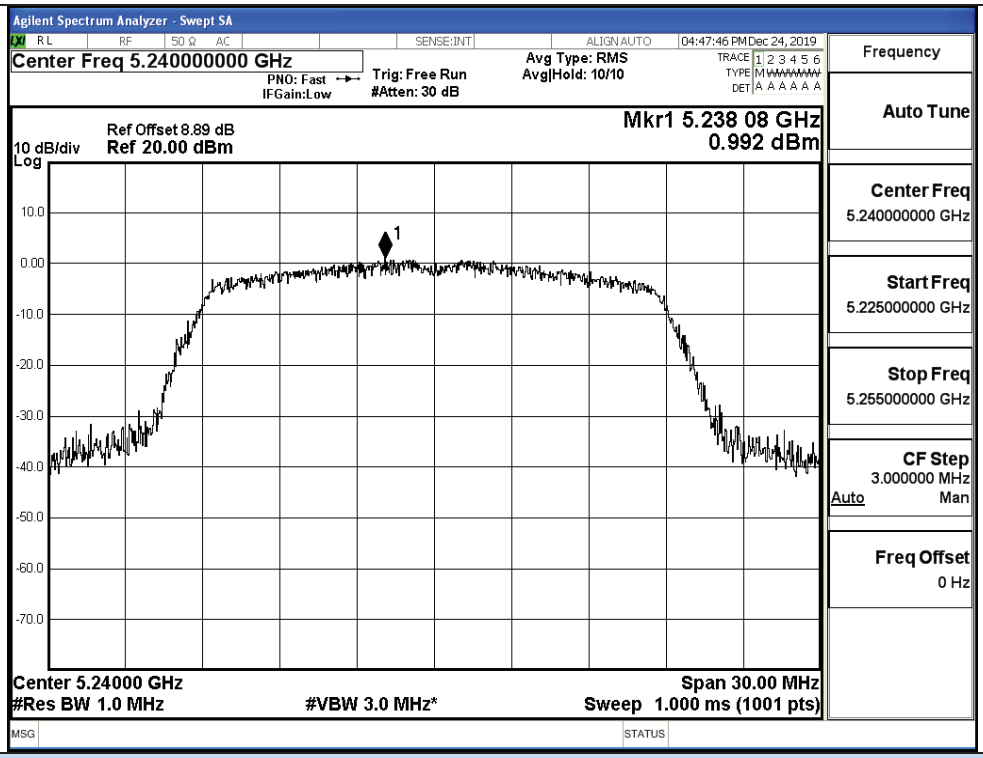
Power Spectral Density



IEEE 802.11n20 / Channel 36 / 5180MHz

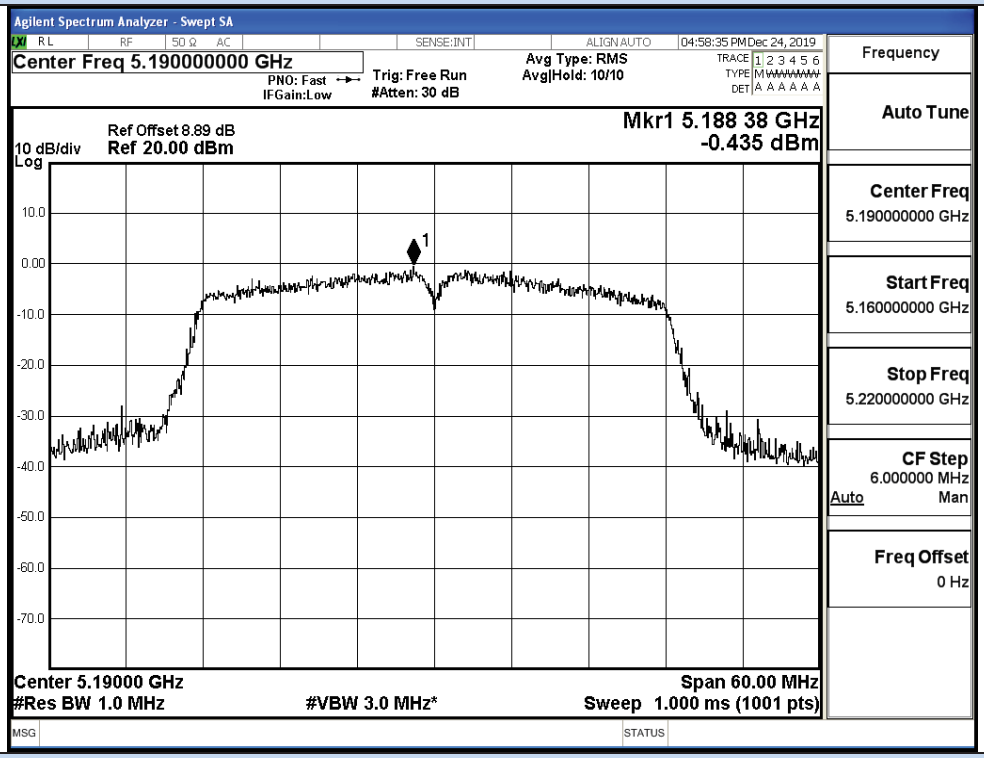


IEEE 802.11n20 / Channel 40 / 5200MHz

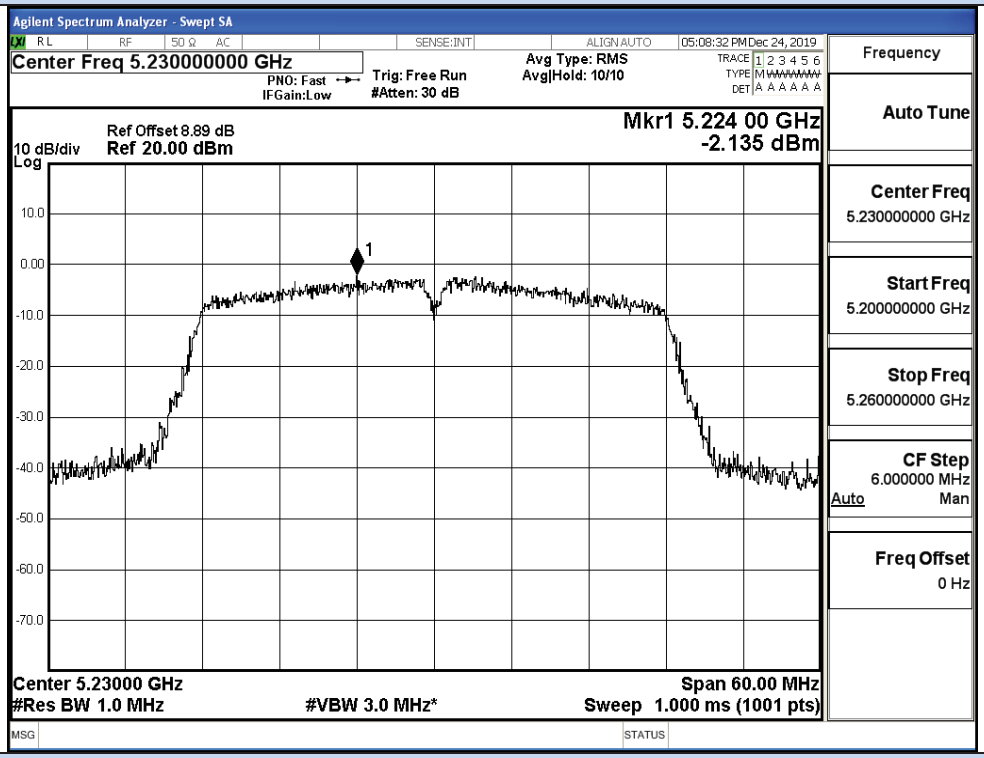


IEEE 802.11n20 / Channel 48 / 5240MHz

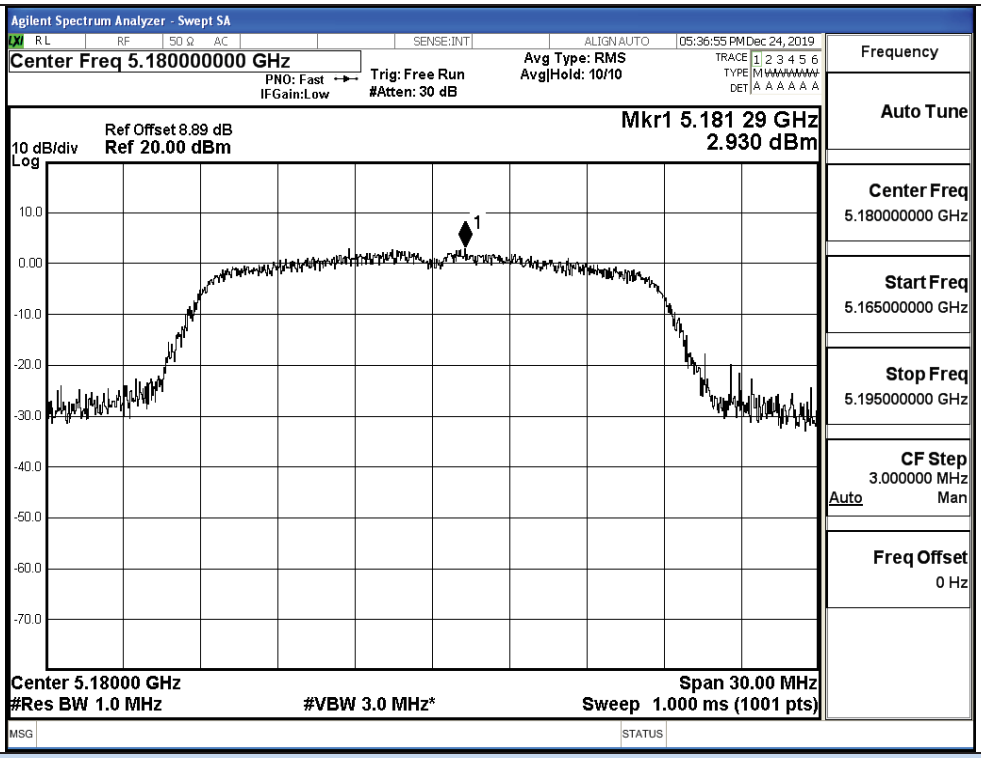
Power Spectral Density



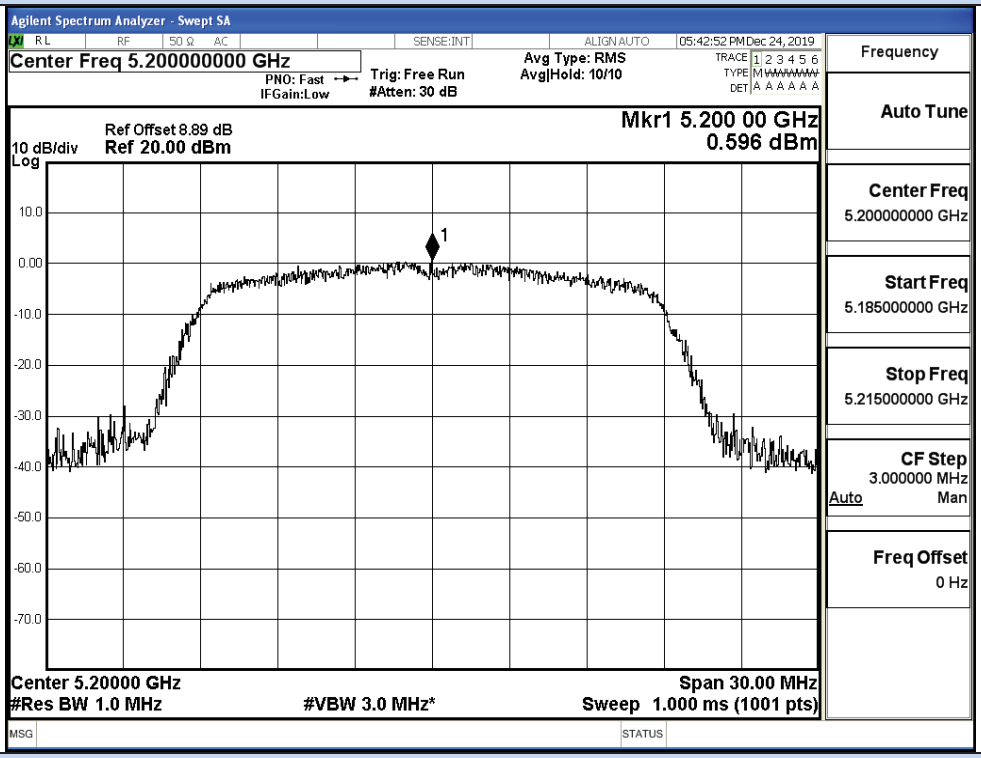
IEEE 802.11n40 / Channel 38 / 5190MHz



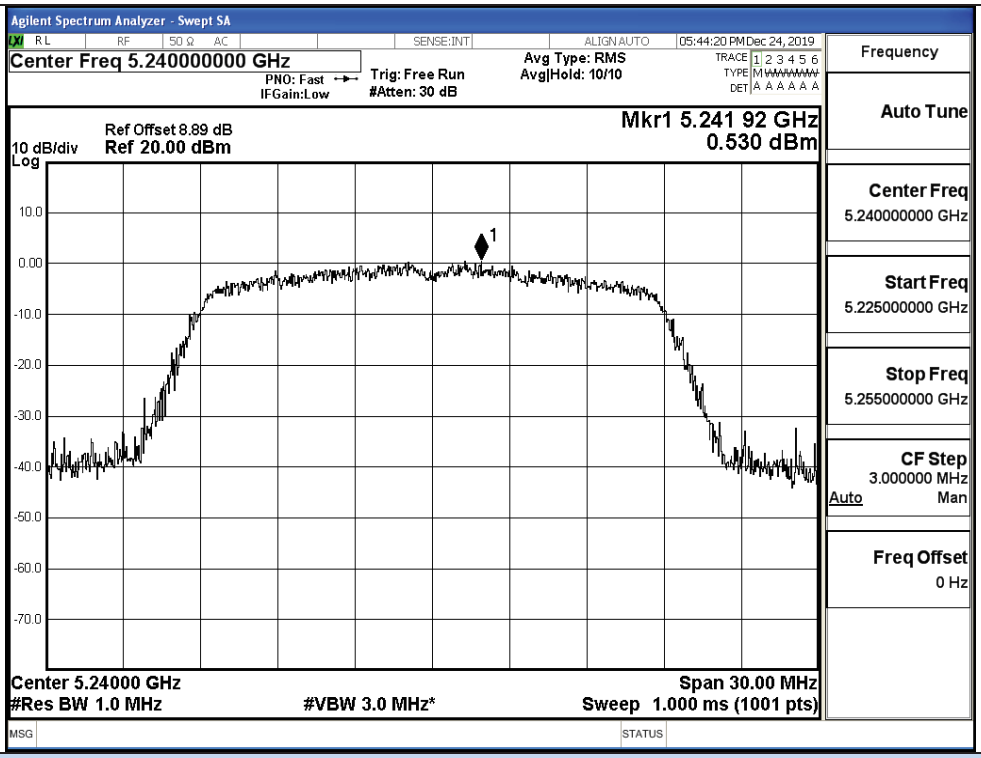
IEEE 802.11n40 / Channel 46 / 5230MHz



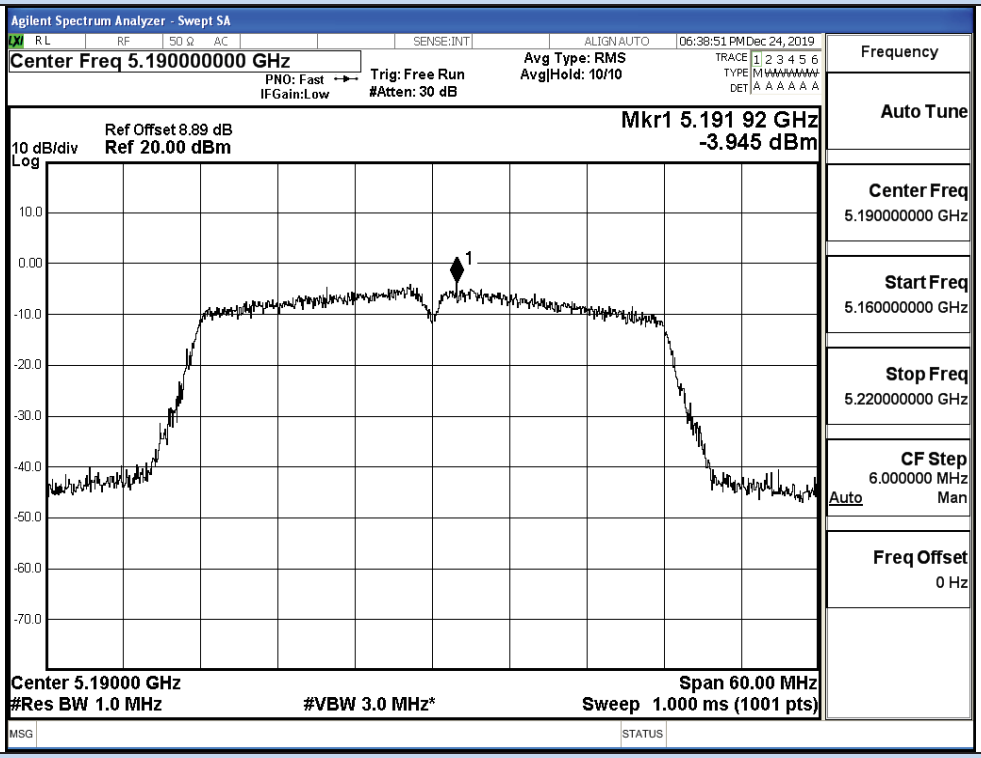
IEEE 802.11ac20 / Channel 36 / 5180MHz



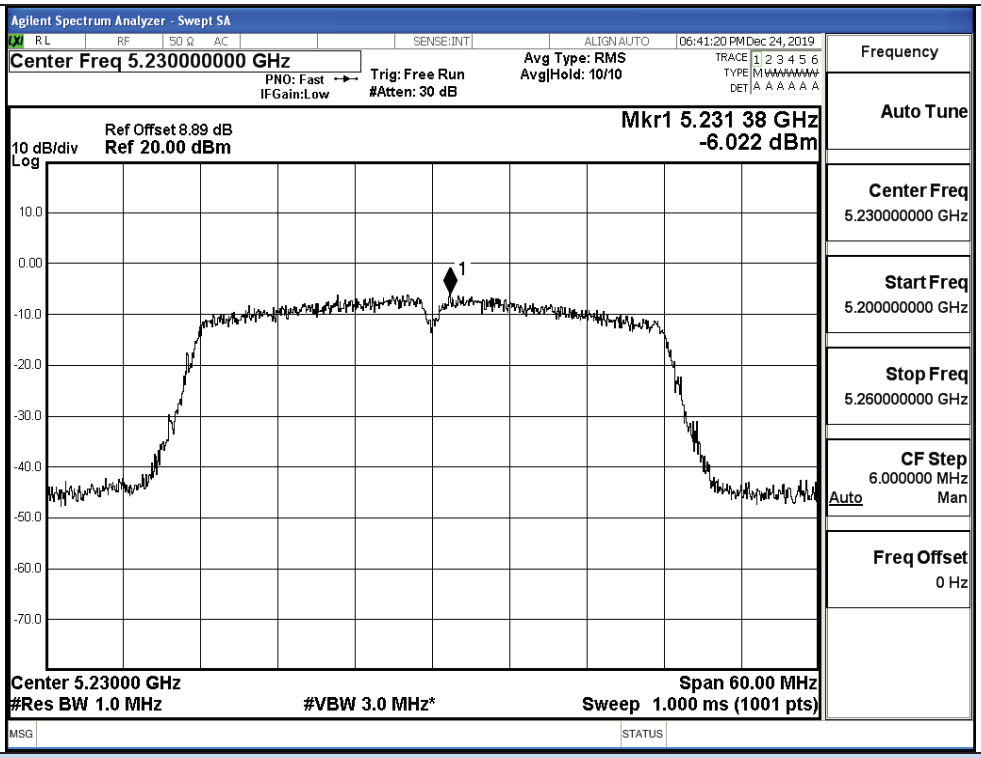
IEEE 802.11ac20 / Channel 40 / 5200MHz



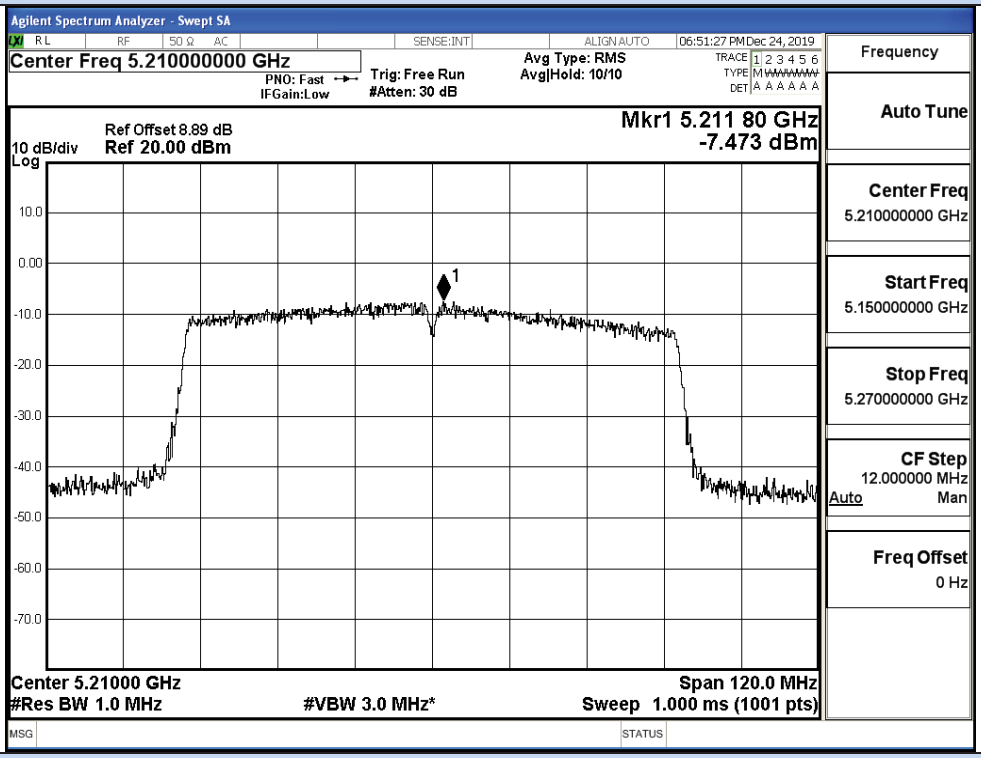
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



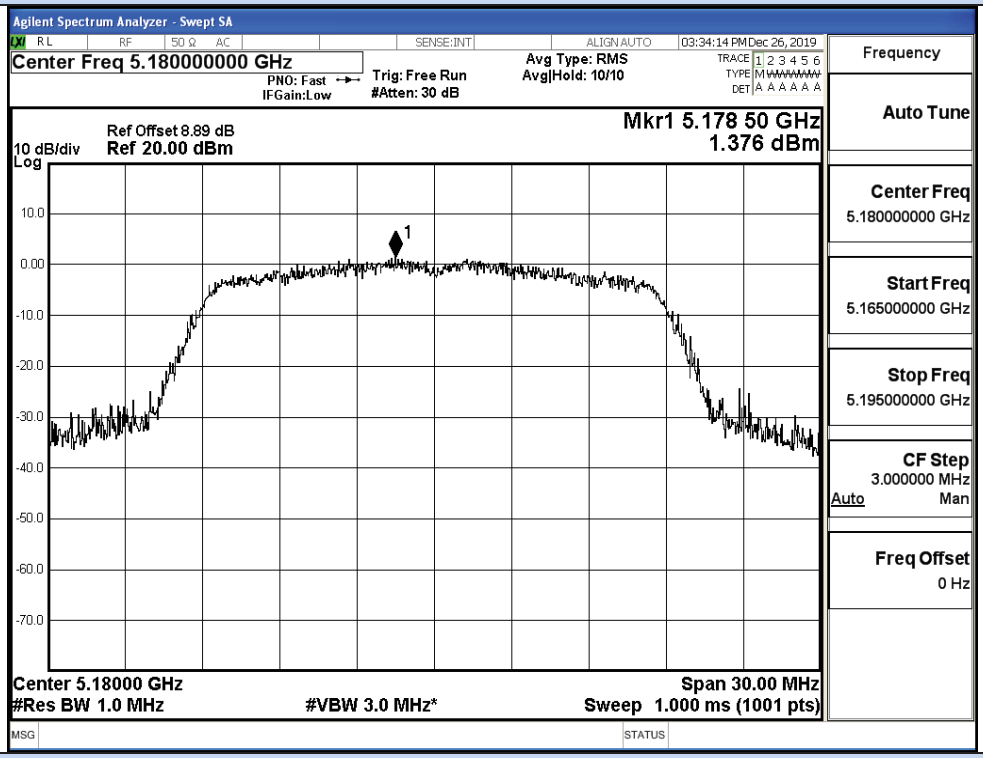
IEEE 802.11ac80 / Channel 42 / 5210MHz

Ant0+1

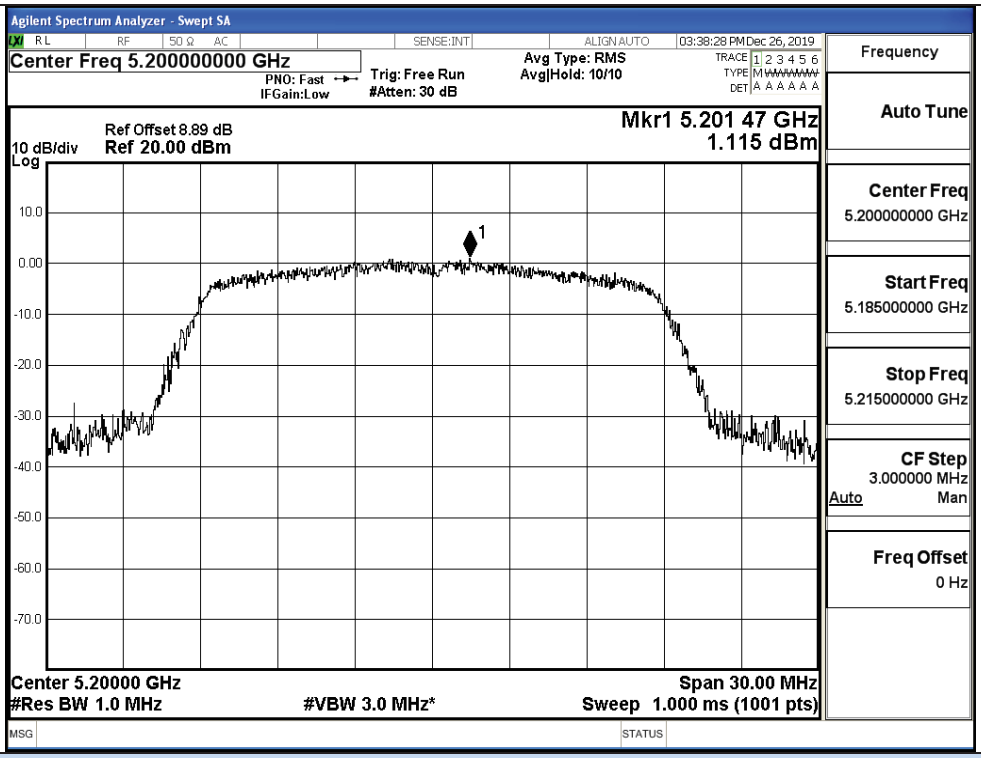
Test Mode	Channel	Frequency (MHz)	ANT 0 Power Density (dBm/MHz)	ANT 1 Power Density (dBm/MHz)	ANT 0+1 Power Density (dBm/MHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11N20 SISO	36	5180	1.38	1.19	4.30	0	4.30	11	Pass
	40	5200	1.12	1.69	4.42	0	4.42		Pass
	48	5240	1.46	0.99	4.24	0	4.24		Pass
11N40 SISO	38	5190	-1.79	-0.44	1.95	0	1.95	11	Pass
	46	5230	-1.78	-2.14	1.05	0	1.05		Pass
11AC20 SISO	36	5180	1.63	2.93	5.34	0	5.34	11	Pass
	40	5200	1.31	0.60	3.98	0	3.98		Pass
	48	5240	1.21	0.53	3.89	0	3.89		Pass
11AC40 SISO	38	5190	-2.94	-3.95	-0.41	0	-0.41	11	Pass
	46	5230	-3.77	-6.02	-1.74	0	-1.74		Pass
11AC80 SISO	42	5210	-4.74	-7.47	-2.88	0	-2.88	11	Pass

ANT 0

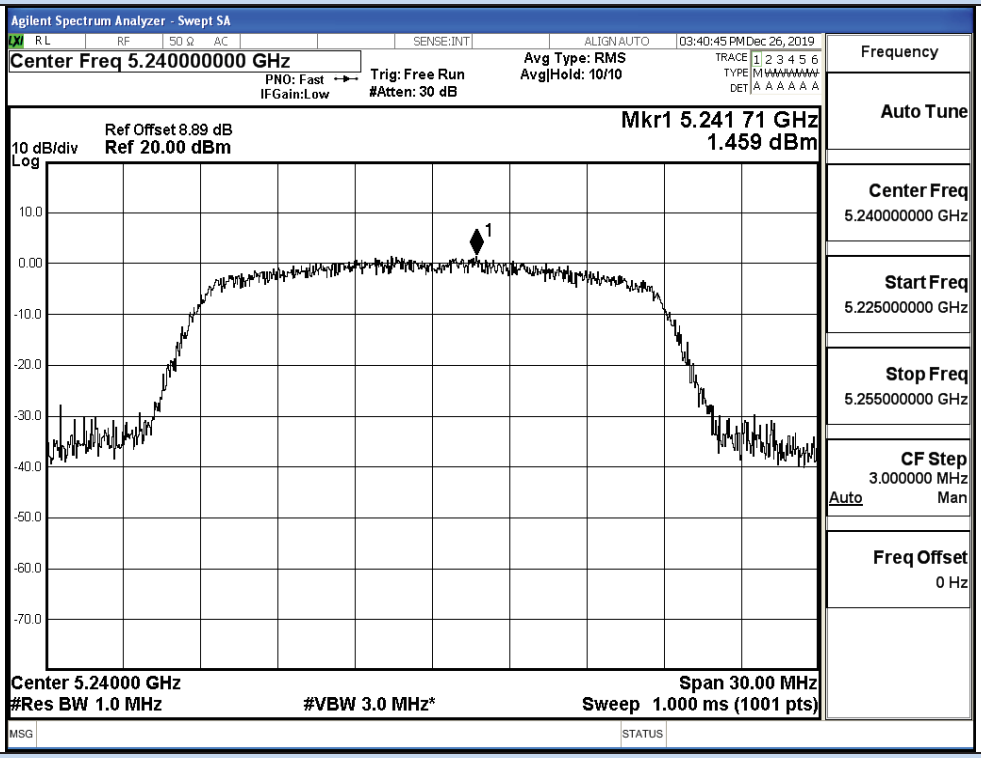
Power Spectral Density



IEEE 802.11n20 / Channel 36 / 5180MHz

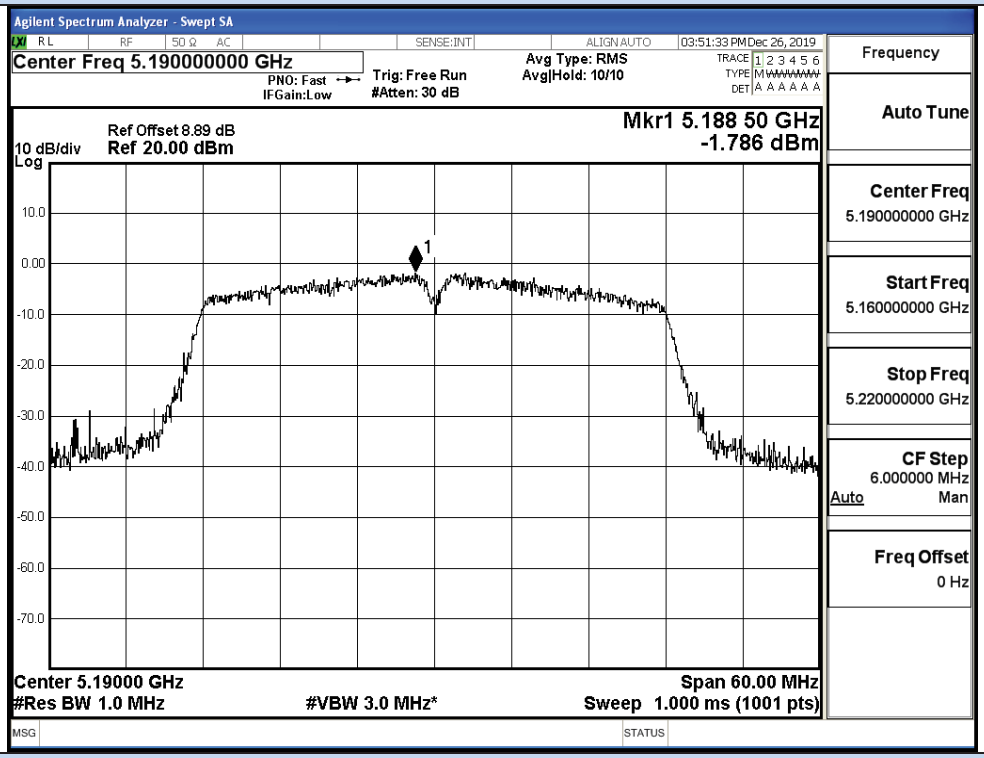


IEEE 802.11n20 / Channel 40 / 5200MHz

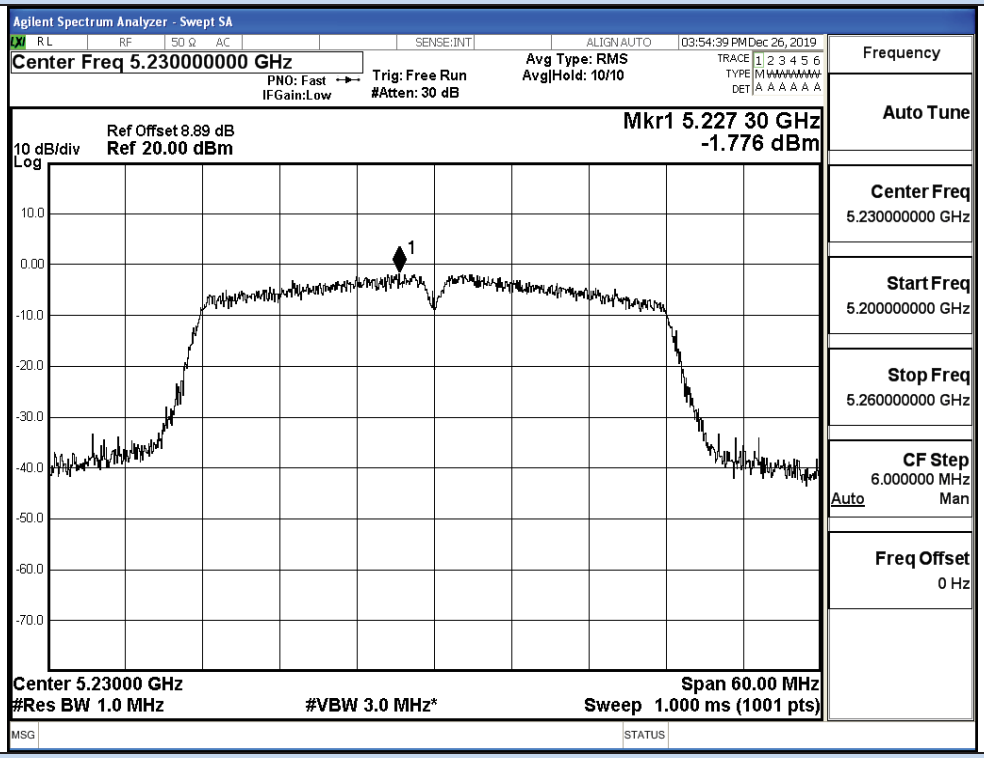


IEEE 802.11n20 / Channel 48 / 5240MHz

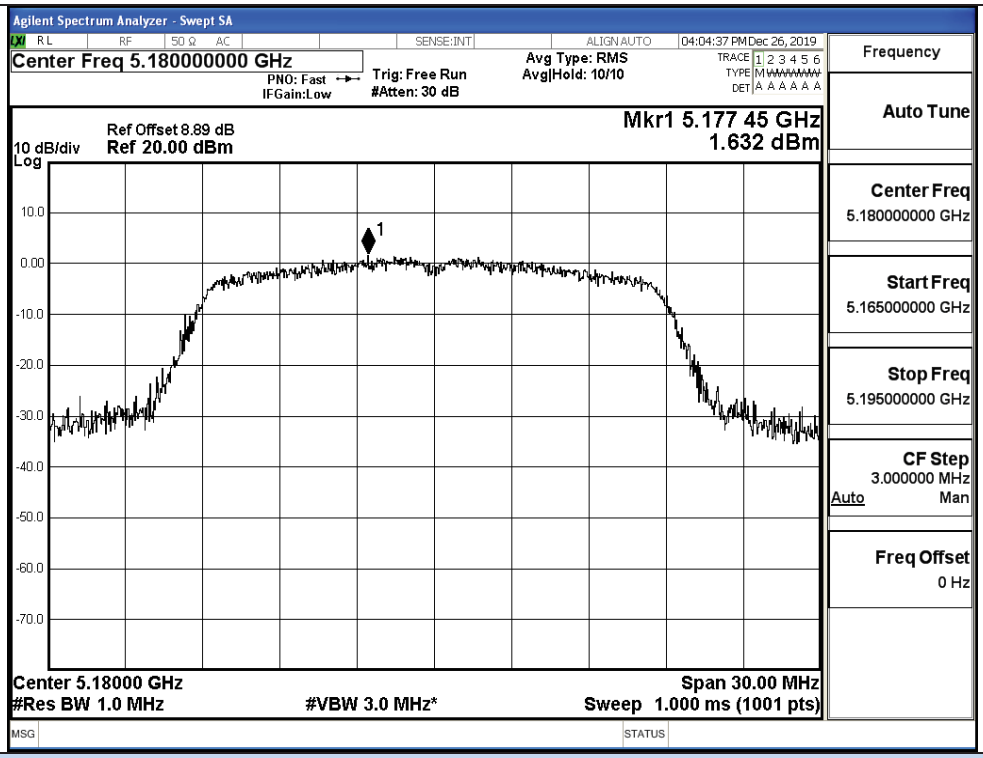
Power Spectral Density



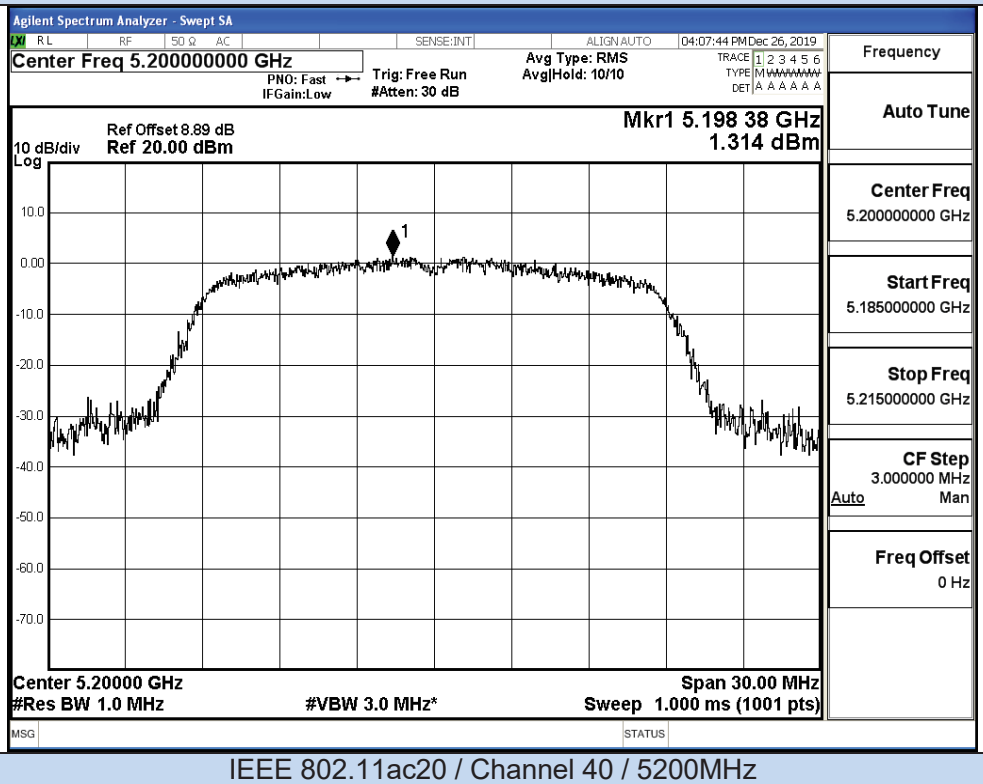
IEEE 802.11n40 / Channel 38 / 5190MHz



IEEE 802.11n40 / Channel 46 / 5230MHz



IEEE 802.11ac20 / Channel 36 / 5180MHz



IEEE 802.11ac20 / Channel 40 / 5200MHz