

Appendix D

RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: NEXS1 Single channel Camera

Trade Mark: SCOSCHE

Test Model: NEXS1

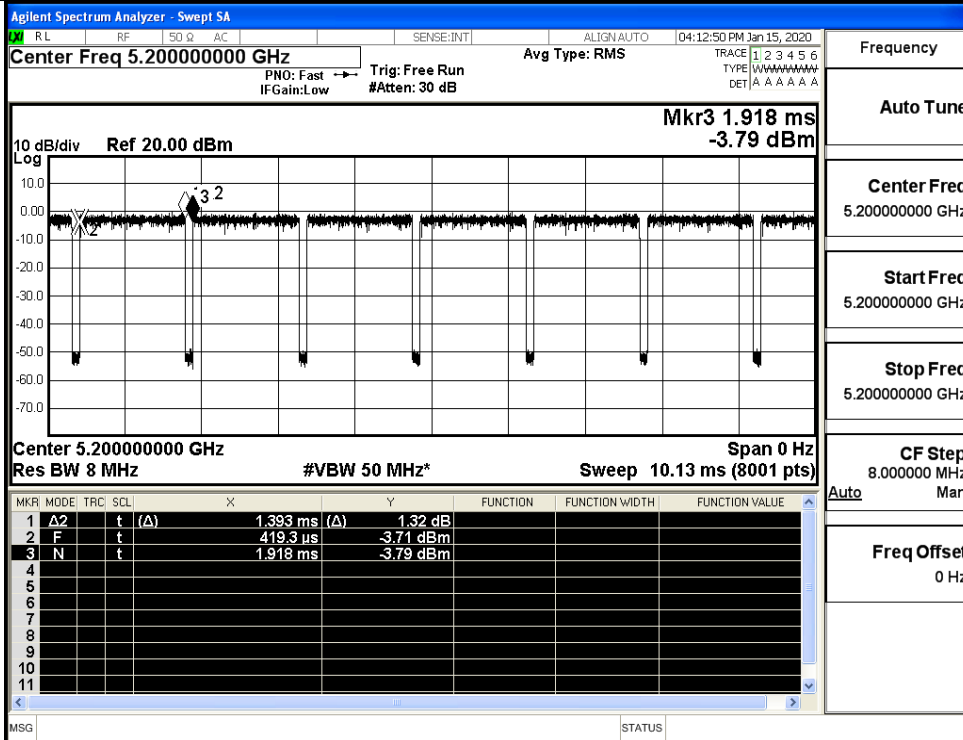
Environmental Conditions

Temperature:	24.3 ° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	David.Luo
Supervised by:	Tom.Liu

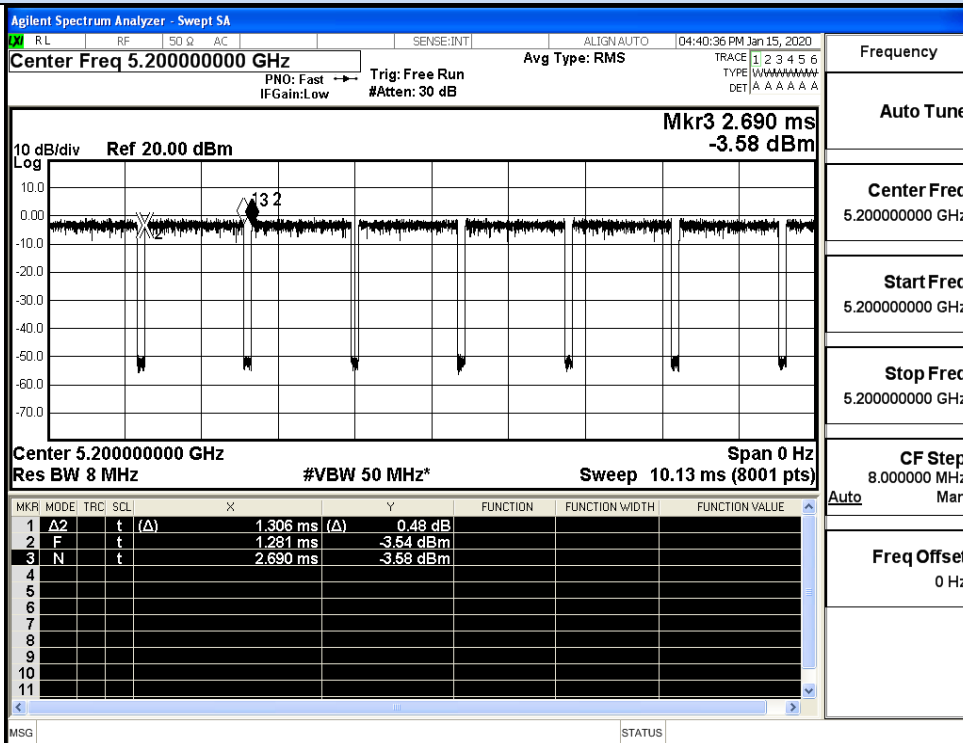
D.1 Duty Cycle

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5200	92.98	0.32	0.01
11N20 SISO	5200	92.63	0.33	0.01
11AC20 SISO	5200	92.59	0.33	0.01

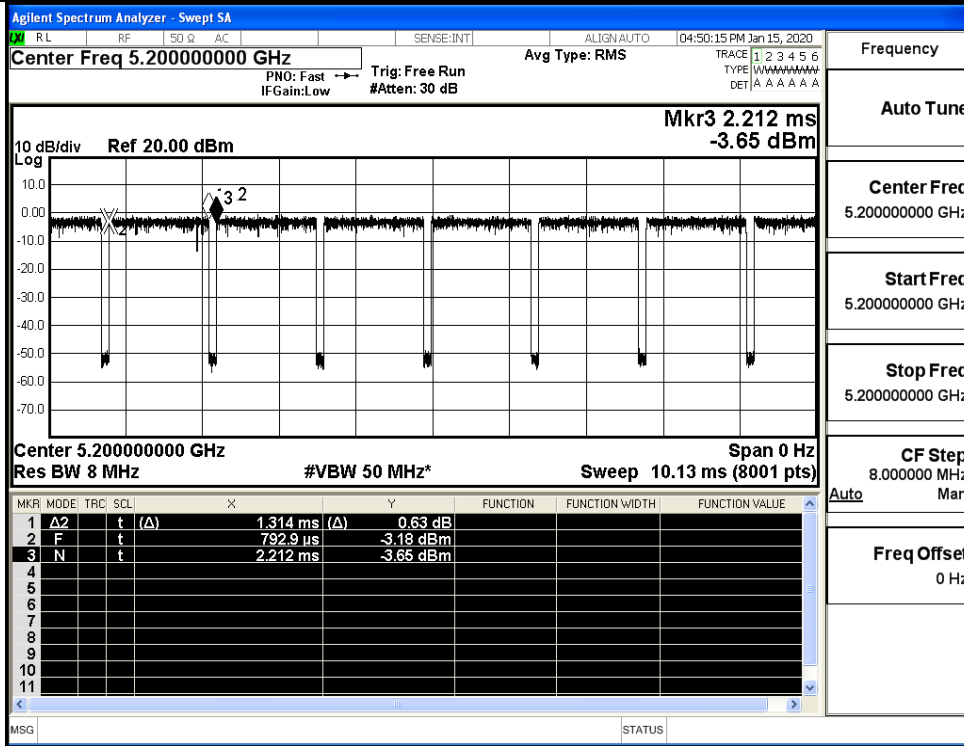
On Time and Duty Cycle



IEEE 802.11a



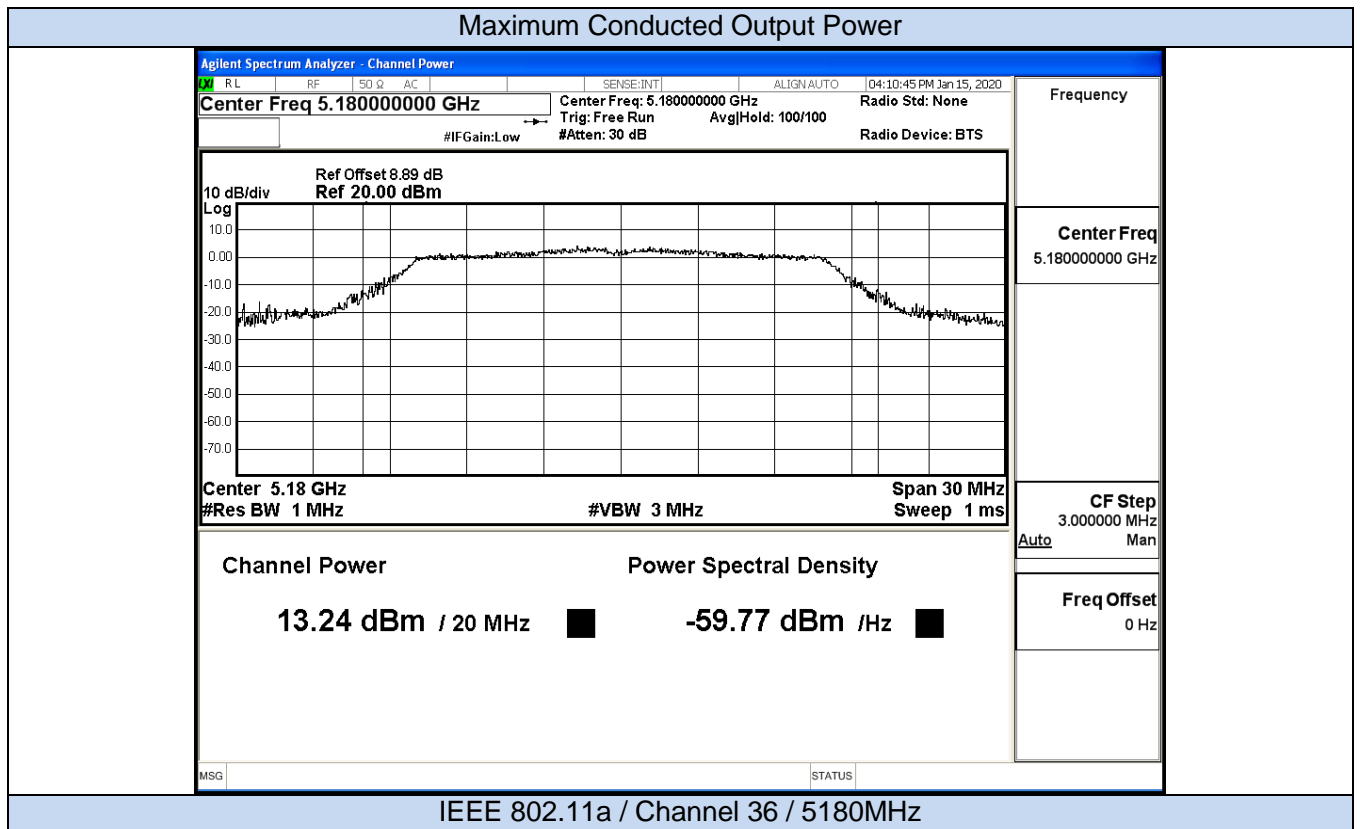
IEEE 802.11n HT20

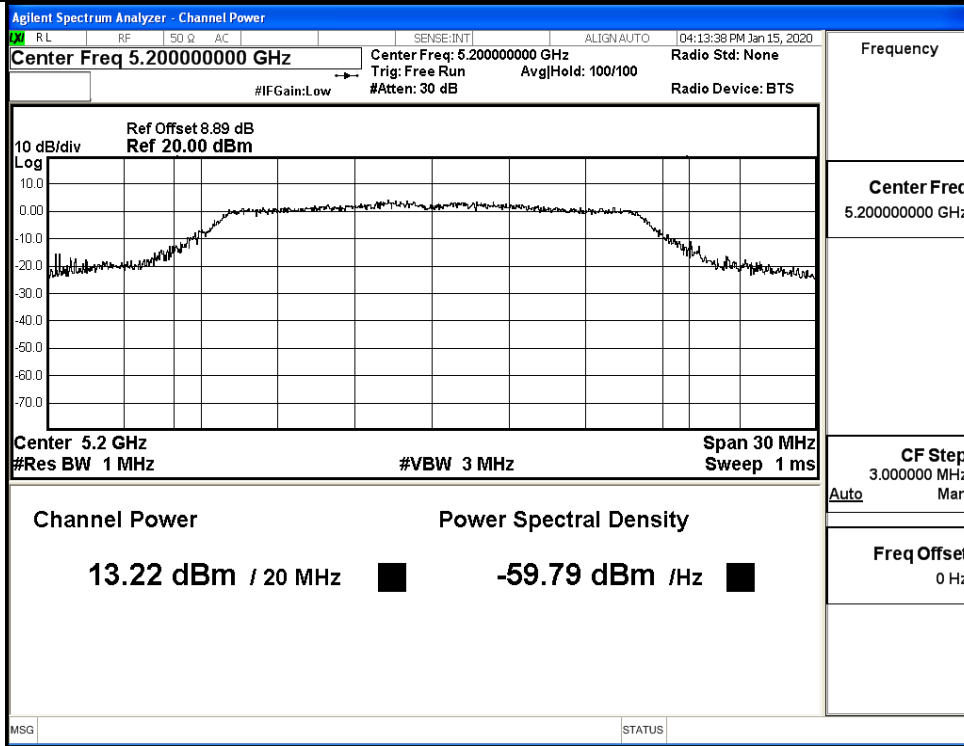


IEEE 802.11AC20

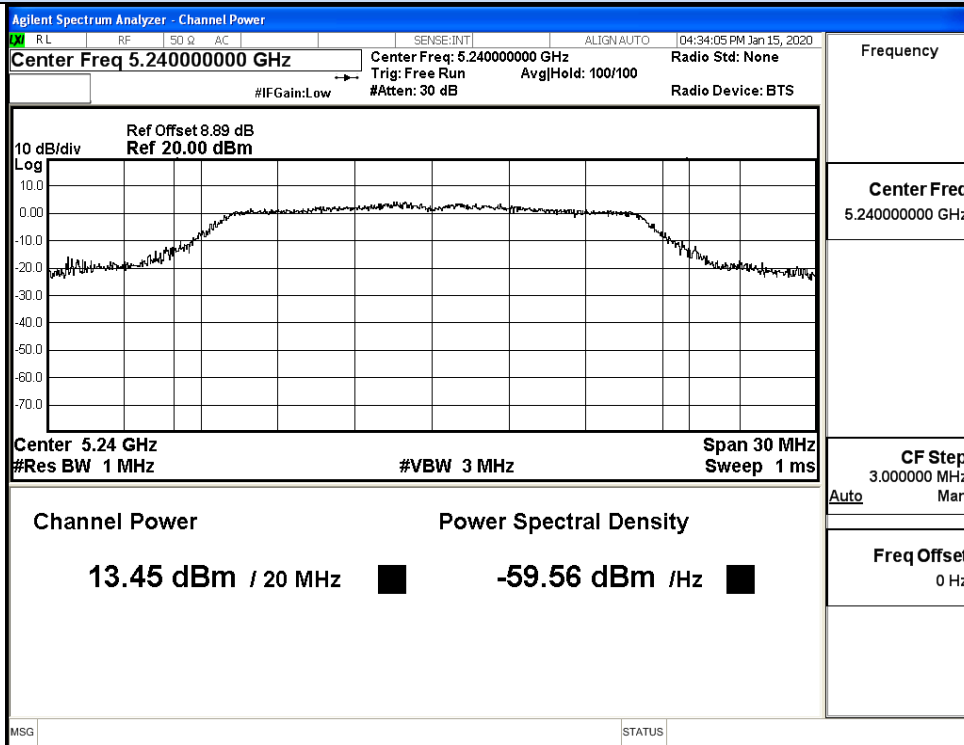
D.2 Maximum Conduct Output Power

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	13.24	0.32	13.55	24	Pass
	40	5200	13.22	0.32	13.54		Pass
	48	5240	13.44	0.32	13.76		Pass
11N20 SISO	36	5180	13.17	0.33	13.5	24	Pass
	40	5200	13	0.33	13.33		Pass
	48	5240	13.18	0.33	13.51		Pass
11AC20 SISO	36	5180	13.05	0.33	13.38	24	Pass
	40	5200	13.15	0.33	13.48		Pass
	48	5240	13.26	0.33	13.59		Pass



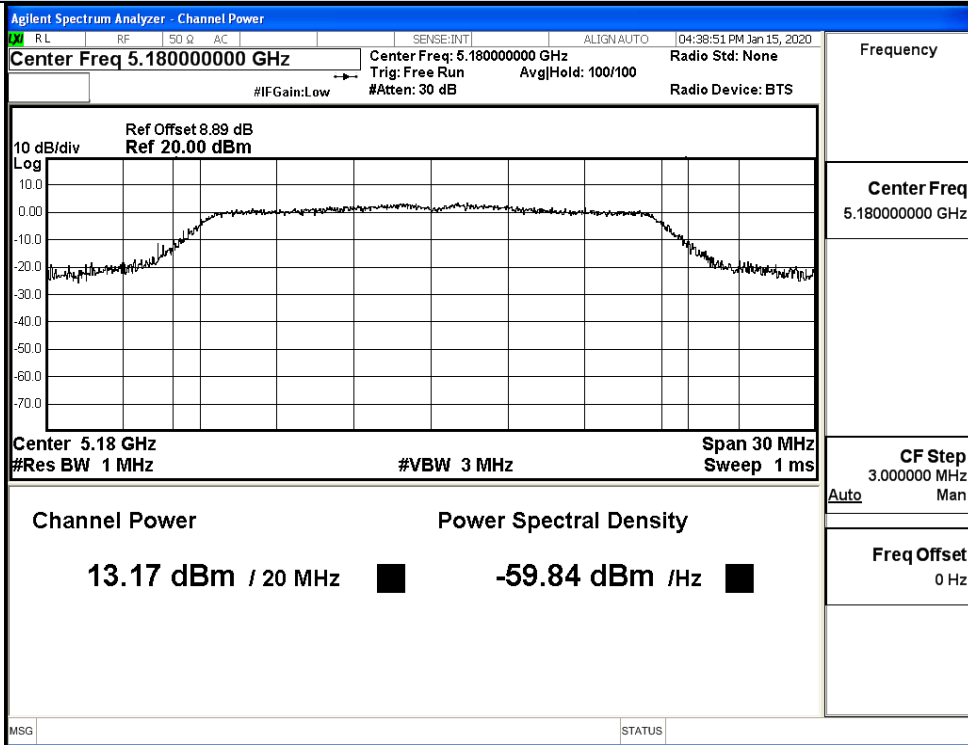


IEEE 802.11a / Channel 40 / 5200MHz

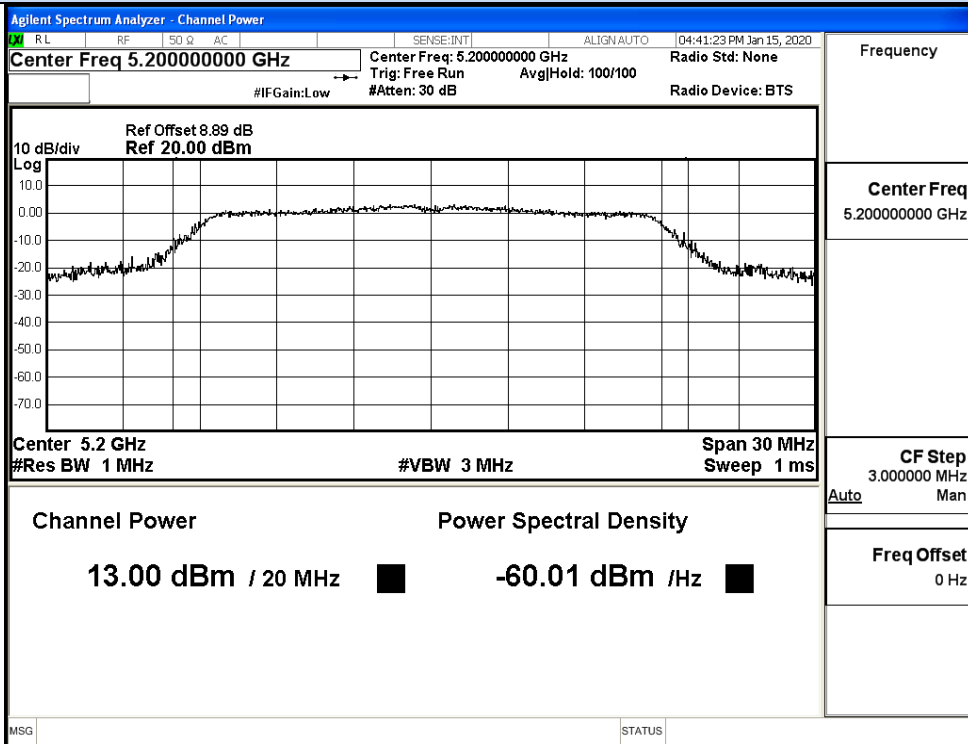


IEEE 802.11a / Channel 48 / 5240MHz

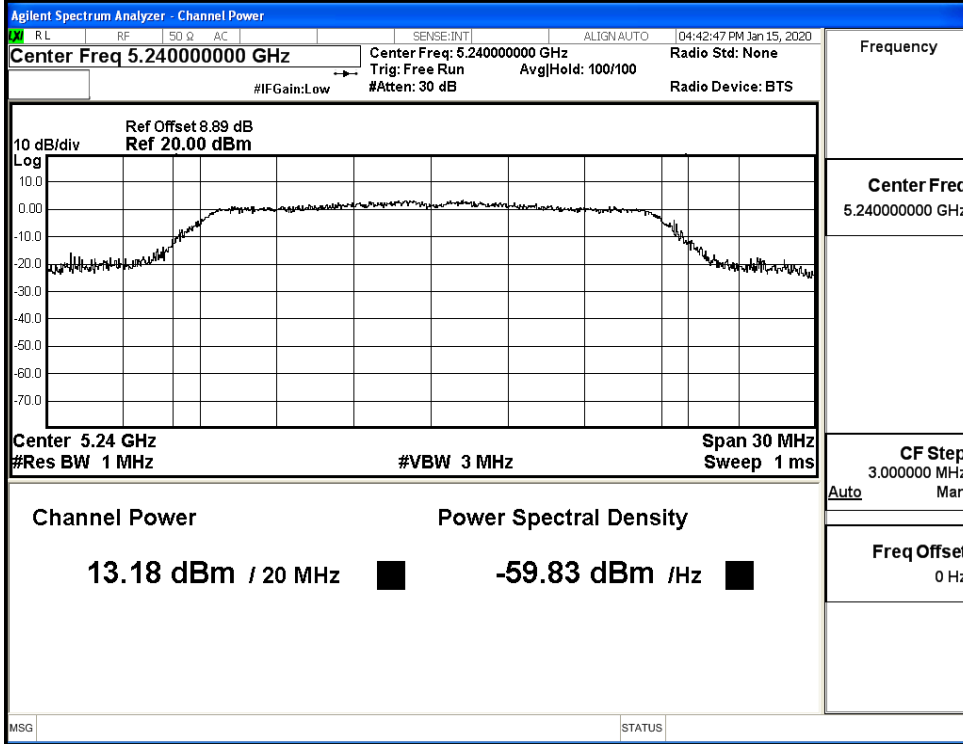
Maximum Conducted Output Power



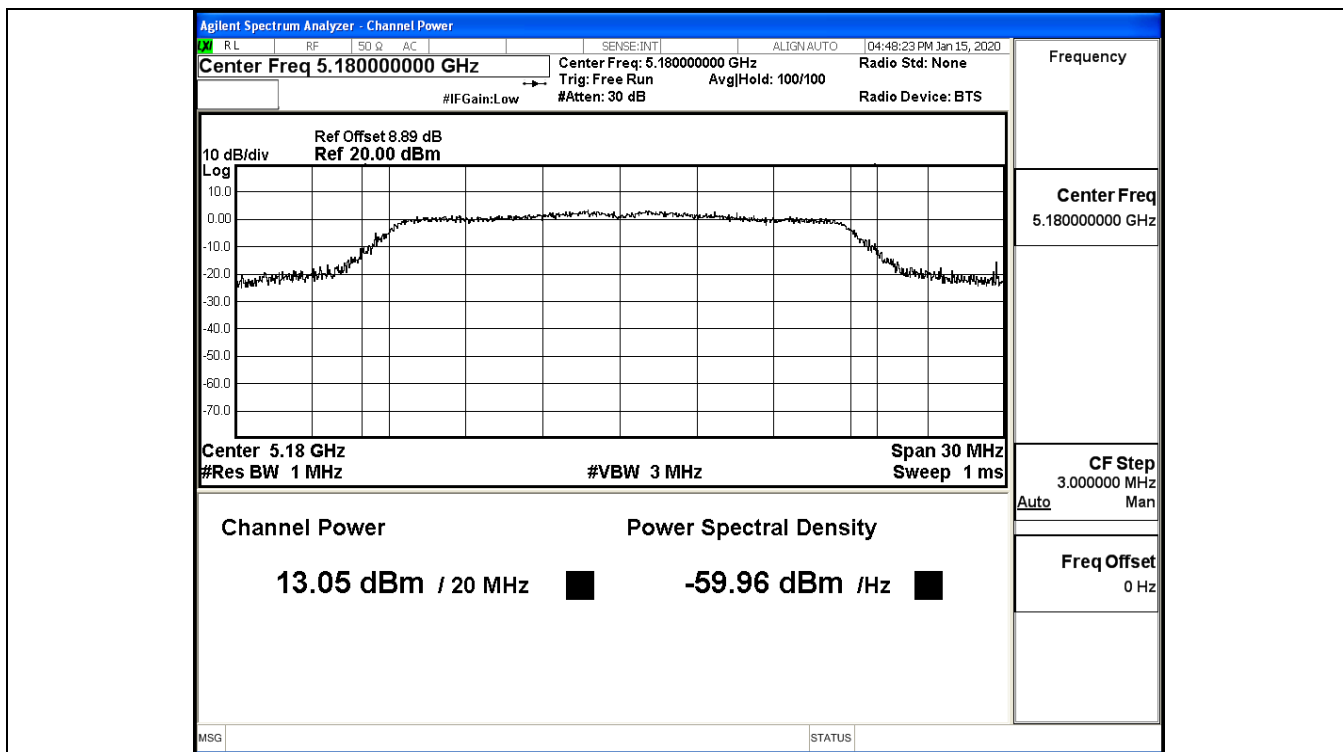
IEEE 802.11n20 / Channel 36 / 5180MHz



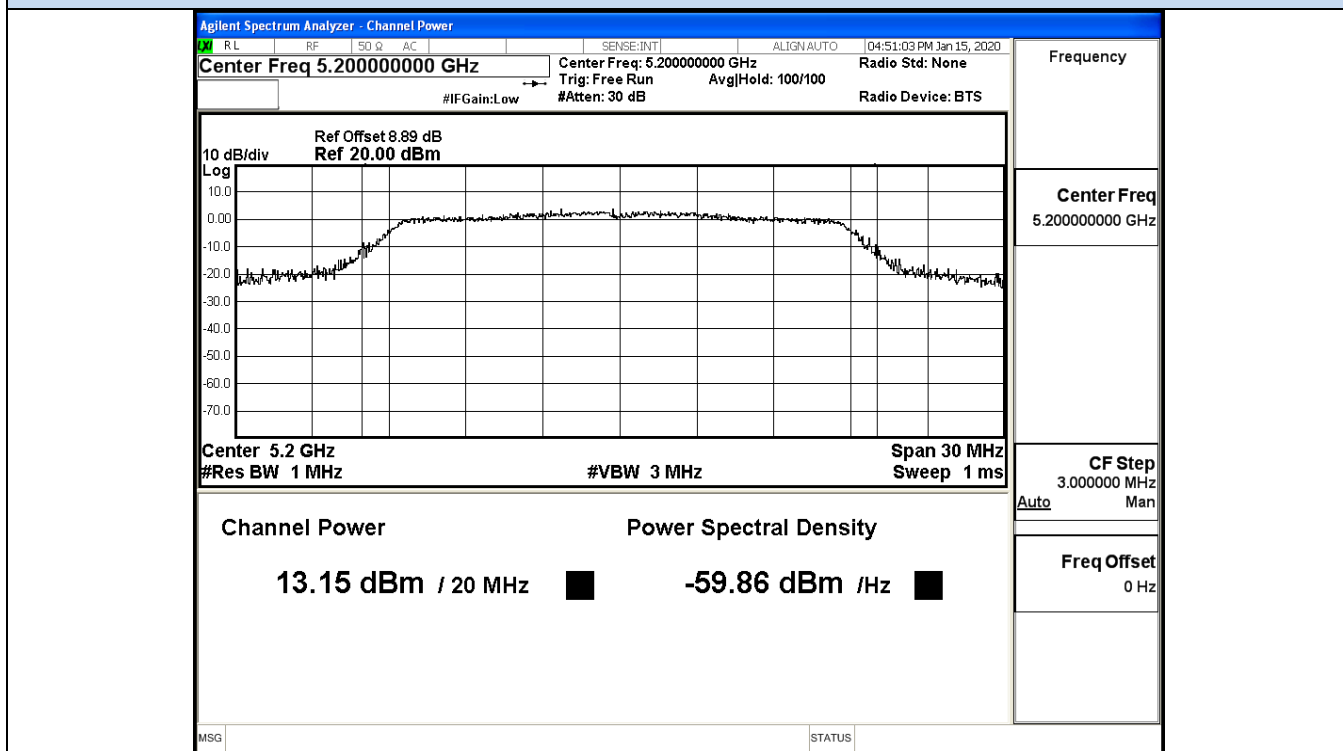
IEEE 802.11n20 / Channel 40 / 5200MHz



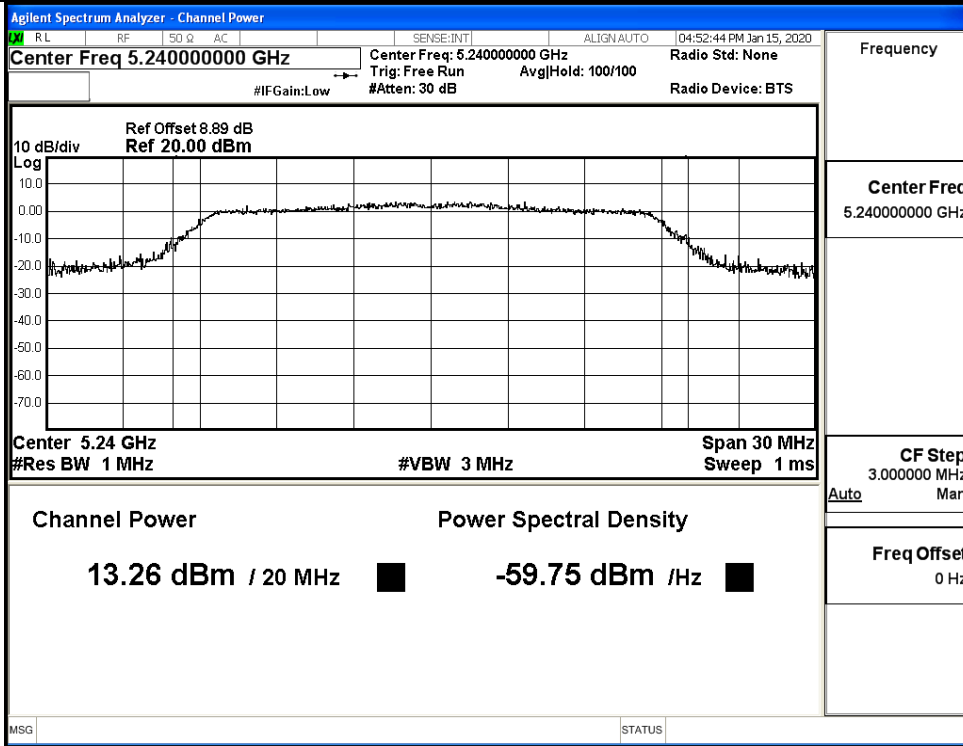
IEEE 802.11n20 / Channel 48 / 5240MHz



IEEE 802.11ac20 / Channel 36 / 5180MHz



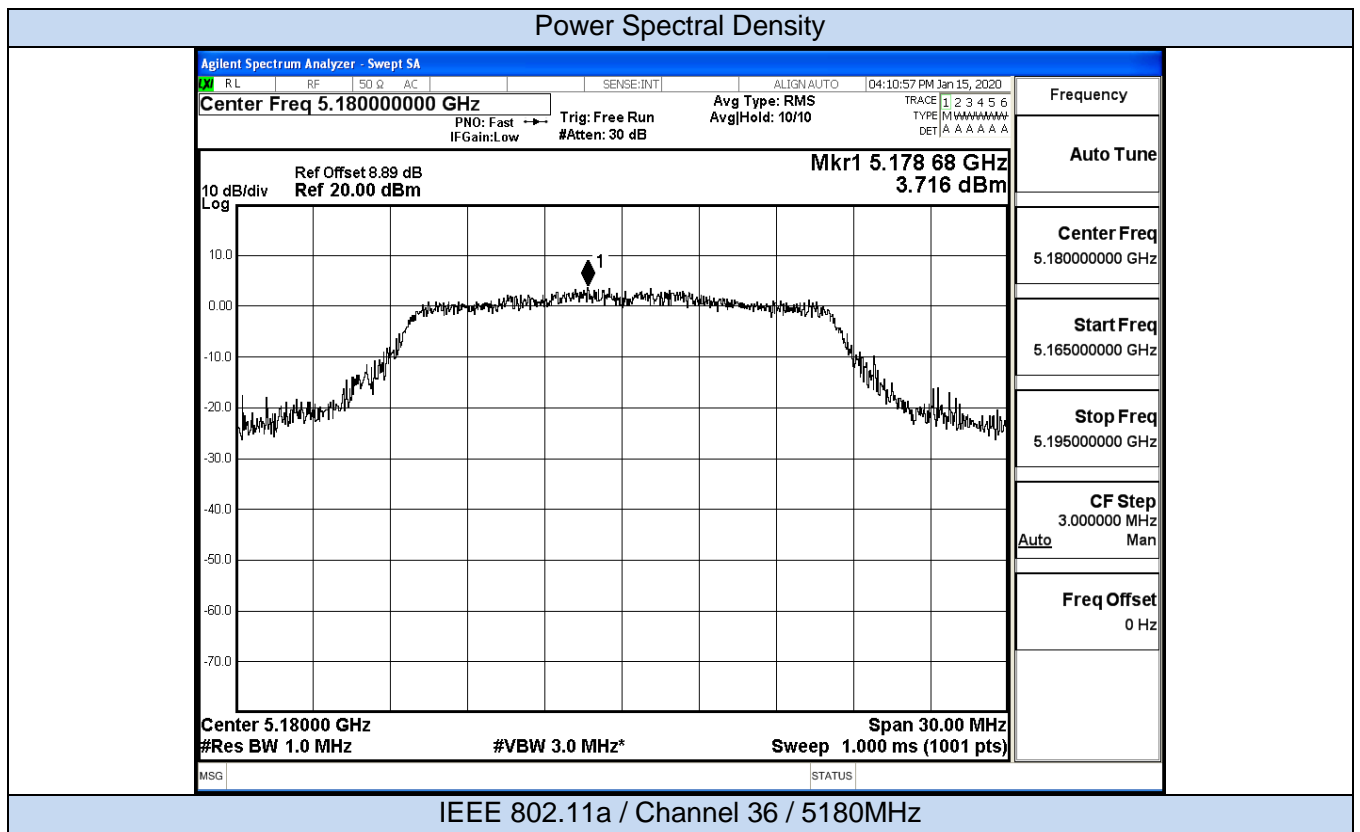
IEEE 802.11ac20 / Channel 40 / 5200MHz

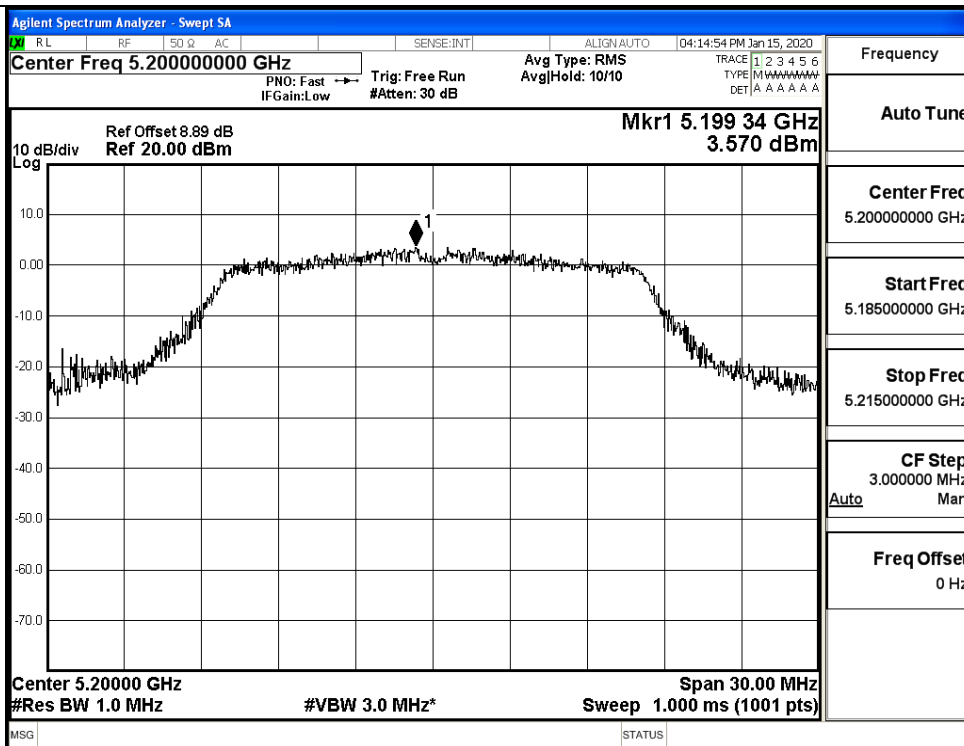


IEEE 802.11ac20 / Channel 48 / 5240MHz

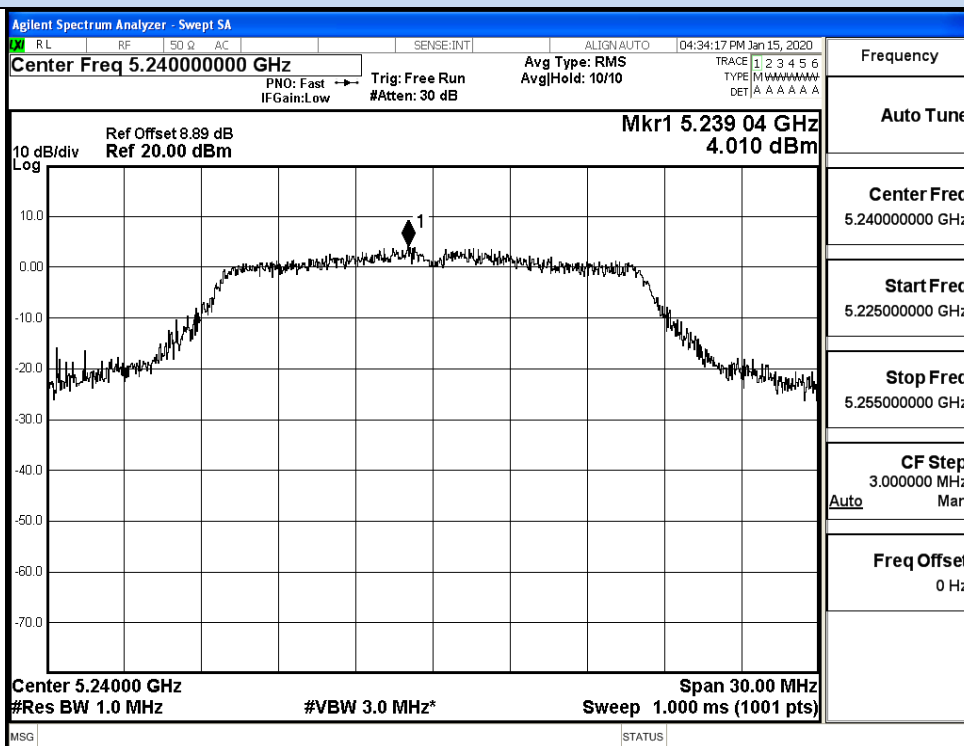
D.3 Power Spectral Density

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	3.71	0.32	4.03	11	Pass
	40	5200	3.57	0.32	3.89		Pass
	48	5240	4.00	0.32	4.32		Pass
11N20 SISO	36	5180	3.01	0.33	3.34	11	Pass
	40	5200	3.52	0.33	3.85		Pass
	48	5240	3.64	0.33	3.97		Pass
11AC20 SISO	36	5180	3.13	0.33	3.46	11	Pass
	40	5200	3.19	0.33	3.52		Pass
	48	5240	3.41	0.33	3.74		Pass



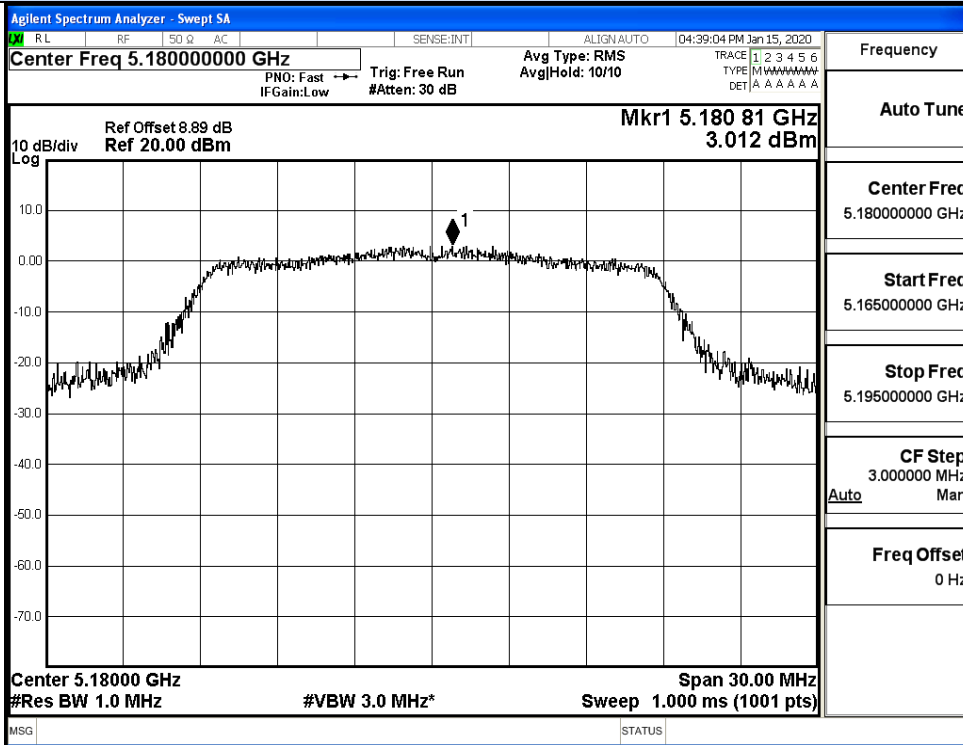


IEEE 802.11na / Channel 40 / 5200MHz

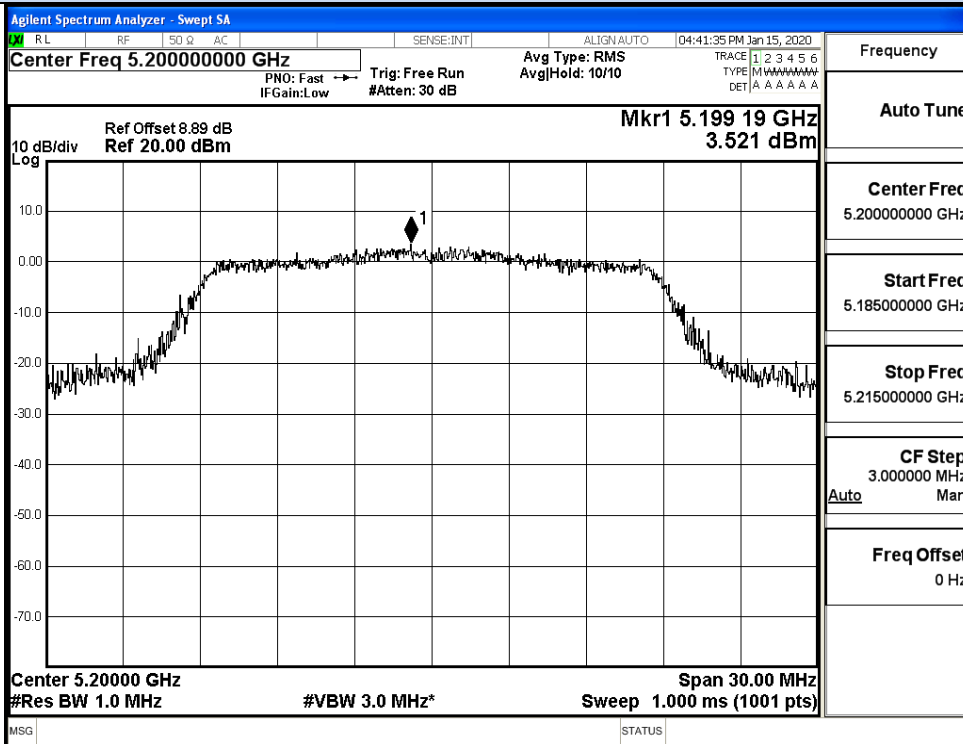


IEEE 802.11na / Channel 48 / 5240MHz

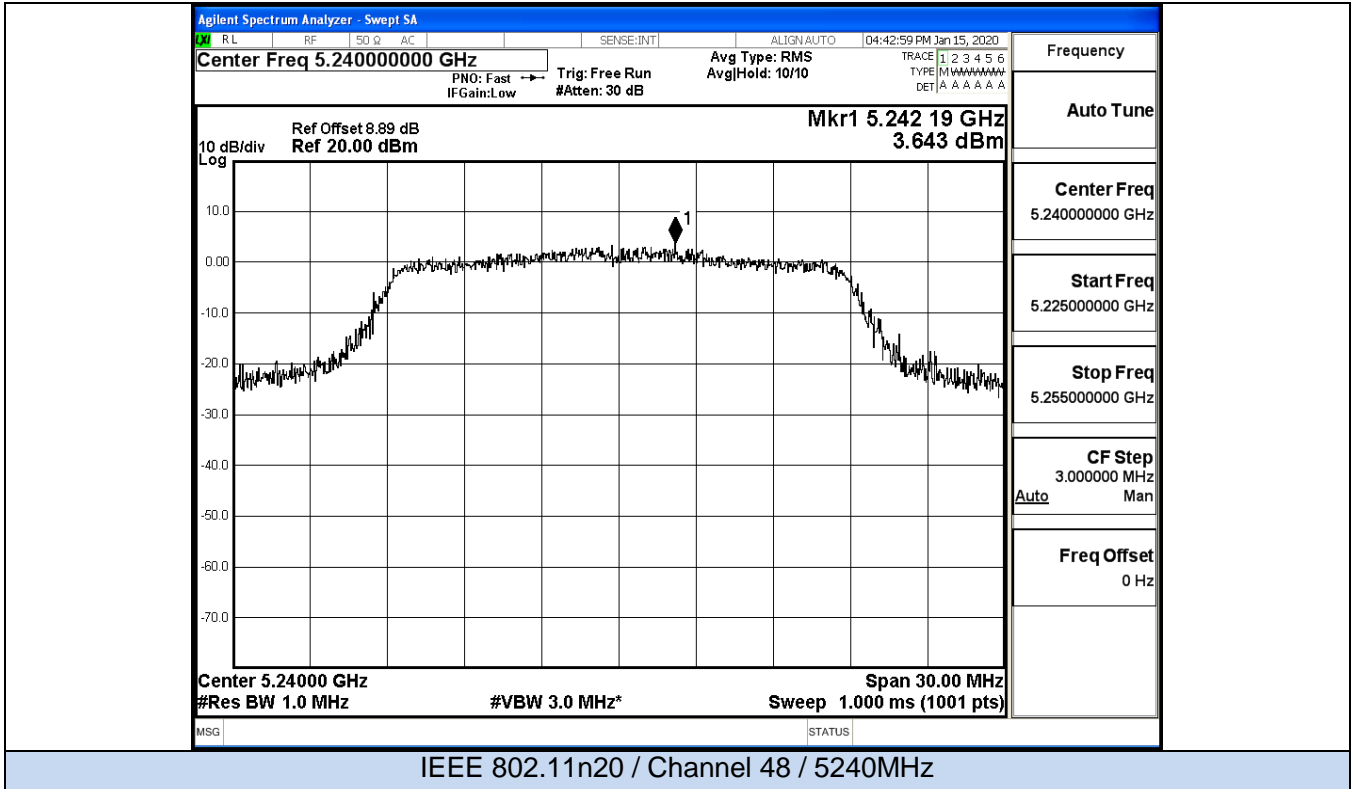
Power Spectral Density

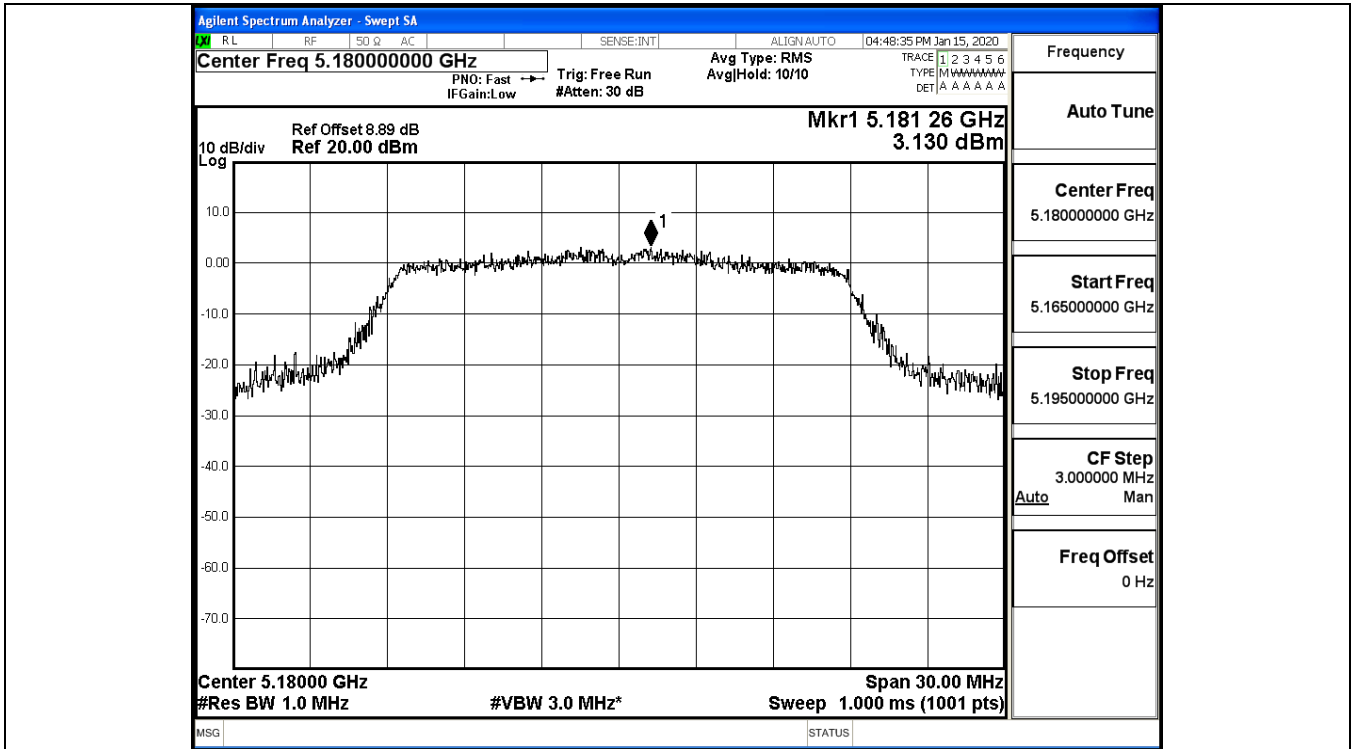


IEEE 802.11n20 / Channel 36 / 5180MHz

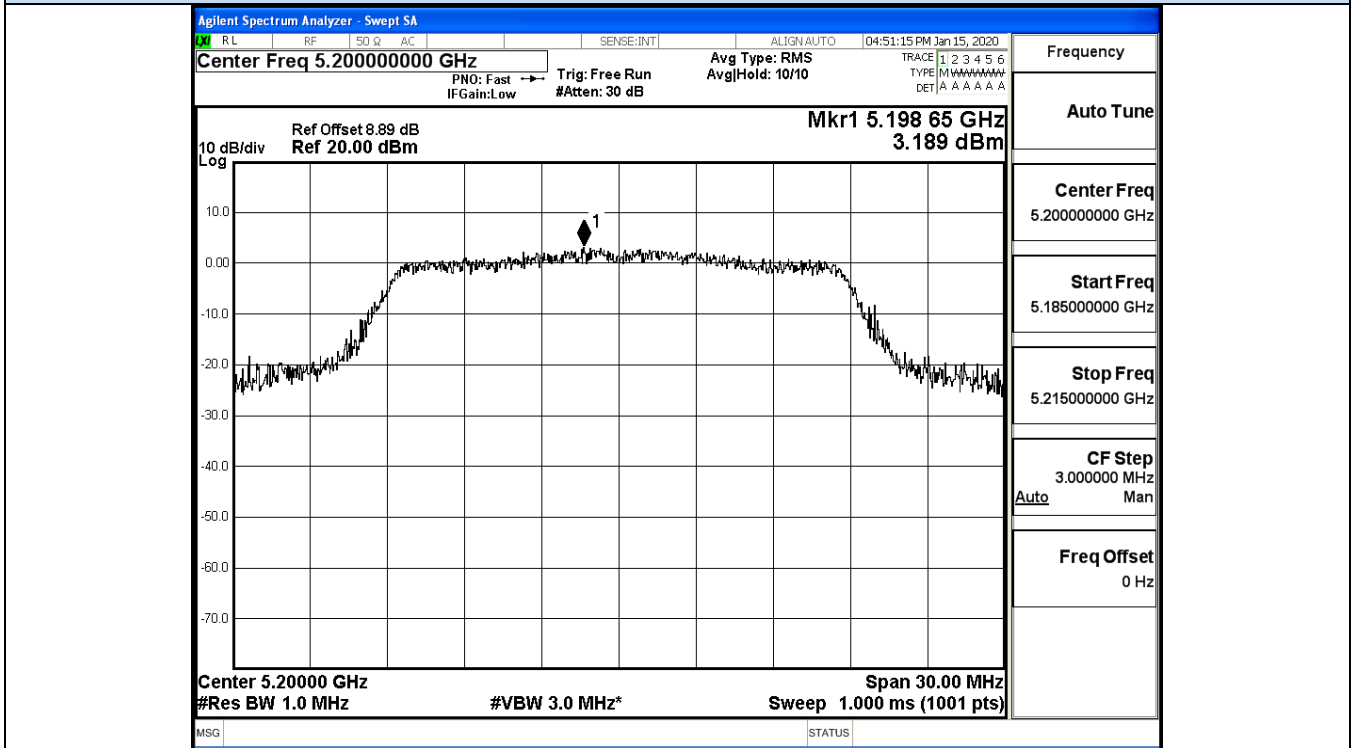


IEEE 802.11n20 / Channel 40 / 5200MHz

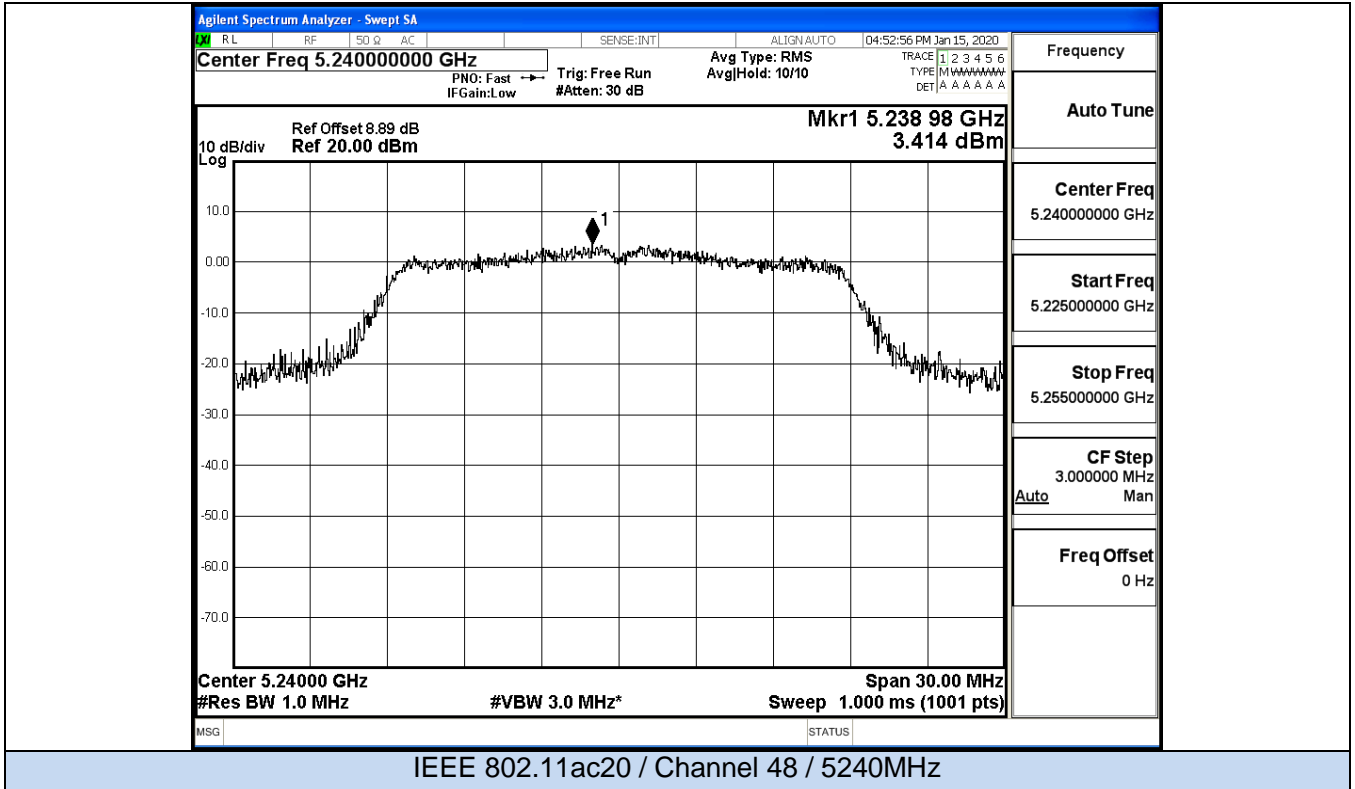




IEEE 802.11ac20 / Channel 36 / 5180MHz

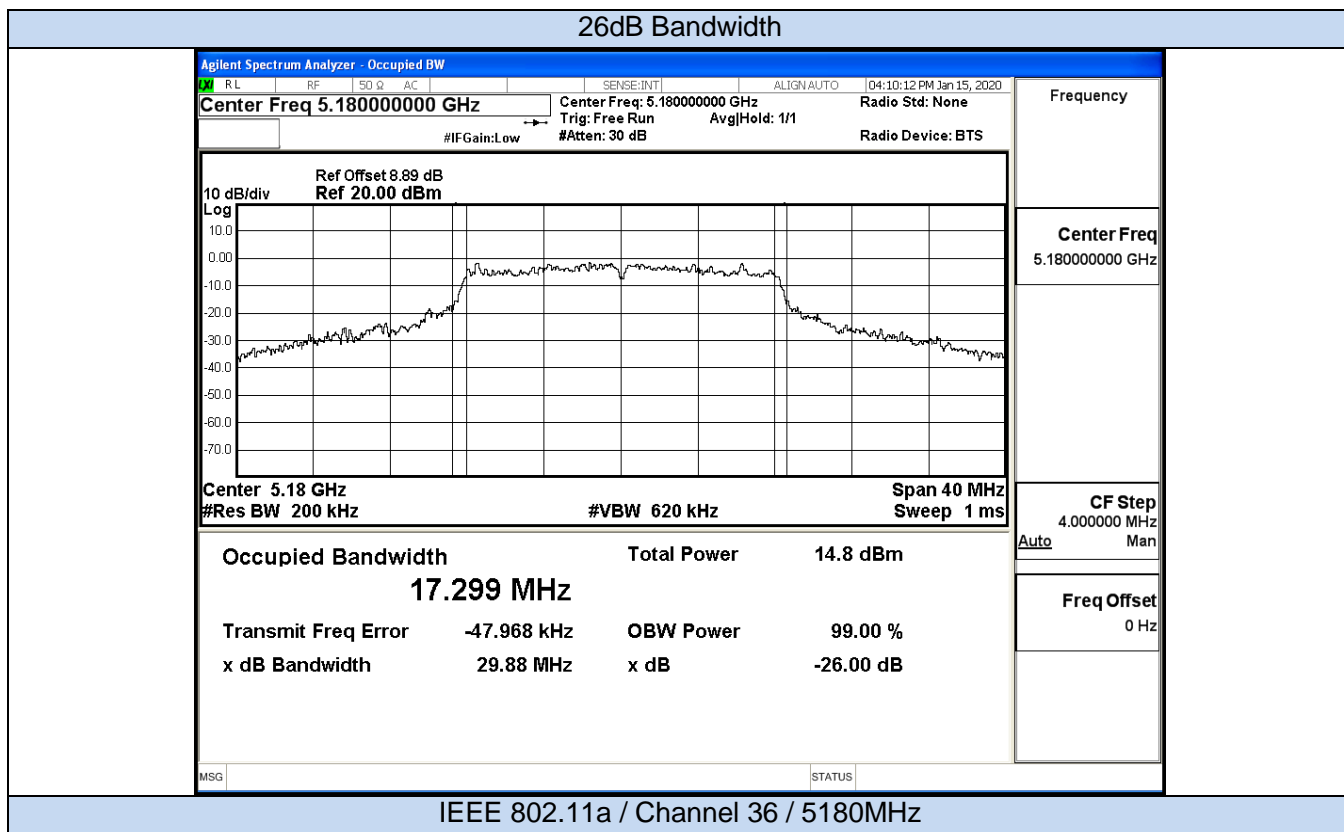


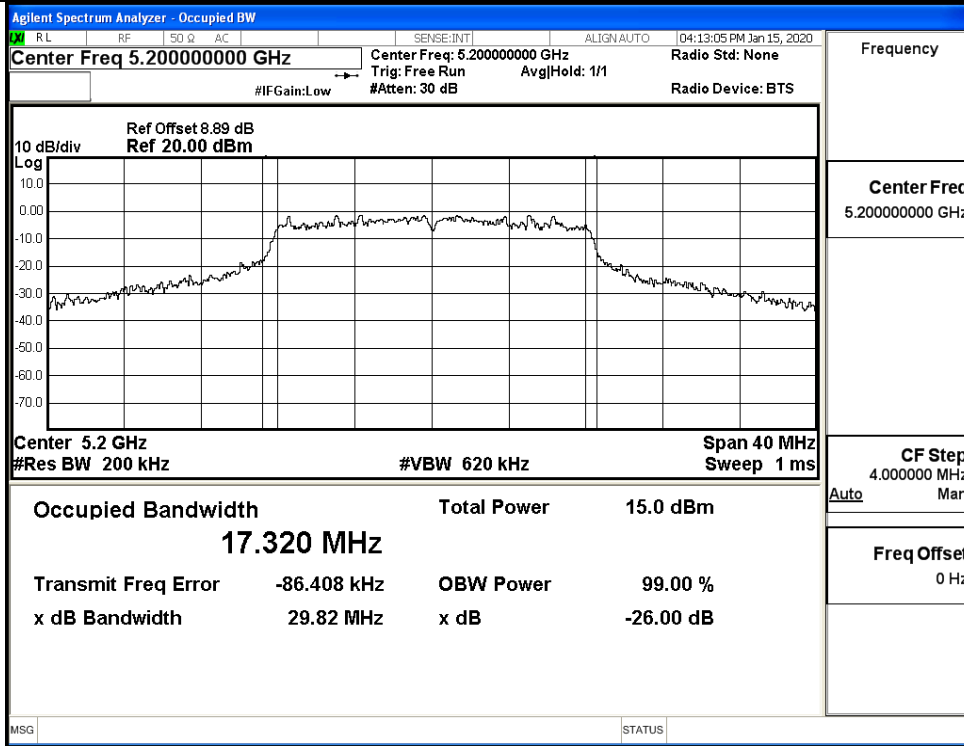
IEEE 802.11ac20 / Channel 40 / 5200MHz



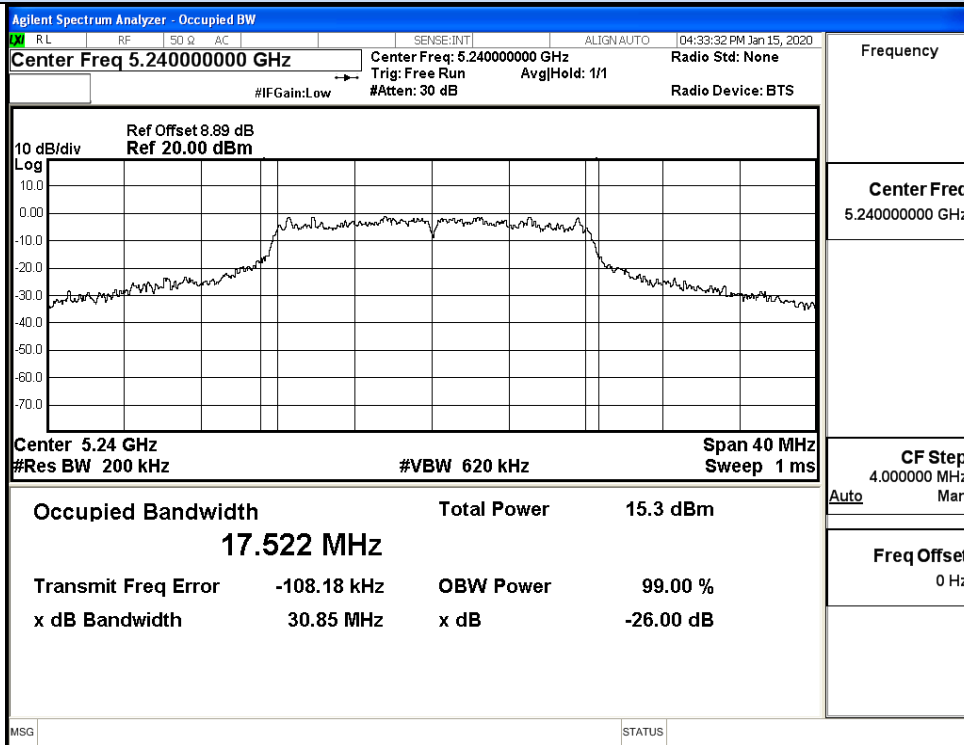
D.4 Emission Bandwidth

Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	29.88	17.886	No Limit	Pass
	40	5200	29.82	17.660		Pass
	48	5240	30.85	17.901		Pass
11N20 SISO	36	5180	28.78	18.131	No Limit	Pass
	40	5200	30.28	18.221		Pass
	48	5240	29.63	18.256		Pass
11AC20 SISO	36	5180	29.79	18.184	No Limi	Pass
	40	5200	29.66	18.134		Pass
	48	5240	29.43	18.253		Pass





IEEE 802.11a / Channel 40 / 5200MHz



IEEE 802.11a / Channel 48 / 5240MHz

26dB Bandwidth

Agilent Spectrum Analyzer - Occupied BW

RL	RF	SO Q	AC	SENSE:INT	ALIGN:AUTO	04:38:18 PM Jan 15, 2020
Center Freq 5.18000000 GHz				Center Freq: 5.18000000 GHz	Trig: Free Run	AvgHold: 1/1
#IFGain:Low				#Atten: 30 dB	Radio Std: None	Radio Device: BTS

Ref Offset 8.89 dB
Ref 20.00 dBm

Center 5.18 GHz Span 40 MHz
#Res BW 200 kHz #VBW 620 kHz Sweep 1 ms

Occupied Bandwidth	Total Power	14.8 dBm
17.967 MHz		
Transmit Freq Error	47.168 kHz	OBW Power 99.00 %
x dB Bandwidth	28.78 MHz	x dB -26.00 dB

MSG STATUS

IEEE 802.11n20 / Channel 36 / 5180MHz

Agilent Spectrum Analyzer - Occupied BW

RL	RF	SO Q	AC	SENSE:INT	ALIGN:AUTO	04:40:50 PM Jan 15, 2020
Center Freq 5.20000000 GHz				Center Freq: 5.20000000 GHz	Trig: Free Run	AvgHold: 1/1
#IFGain:Low				#Atten: 30 dB	Radio Std: None	Radio Device: BTS

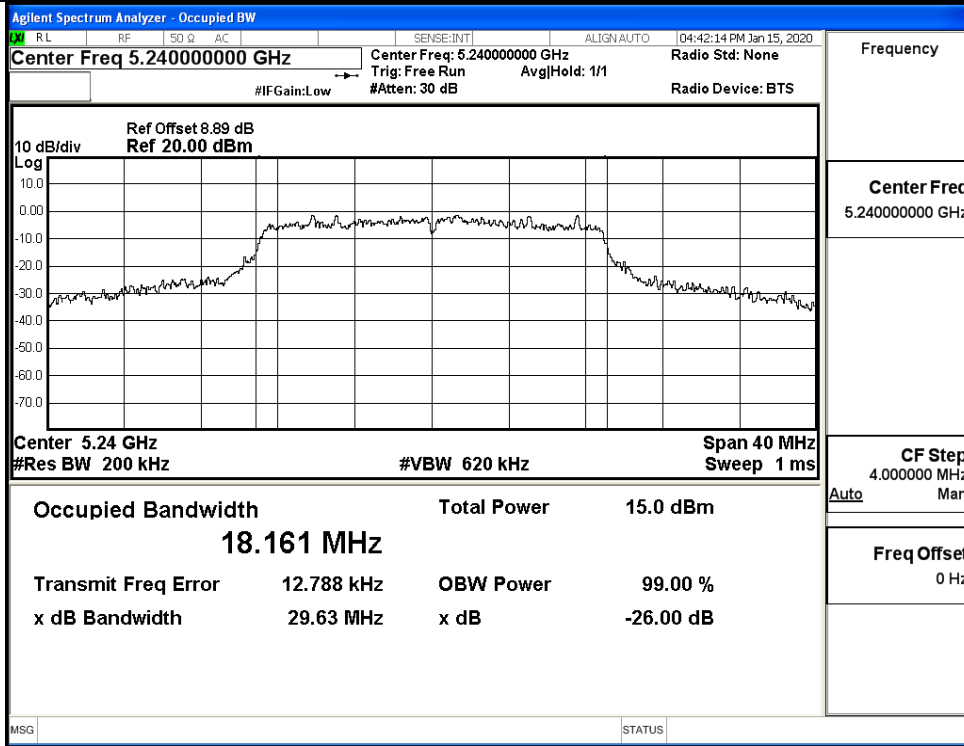
Ref Offset 8.89 dB
Ref 20.00 dBm

Center 5.2 GHz Span 40 MHz
#Res BW 200 kHz #VBW 620 kHz Sweep 1 ms

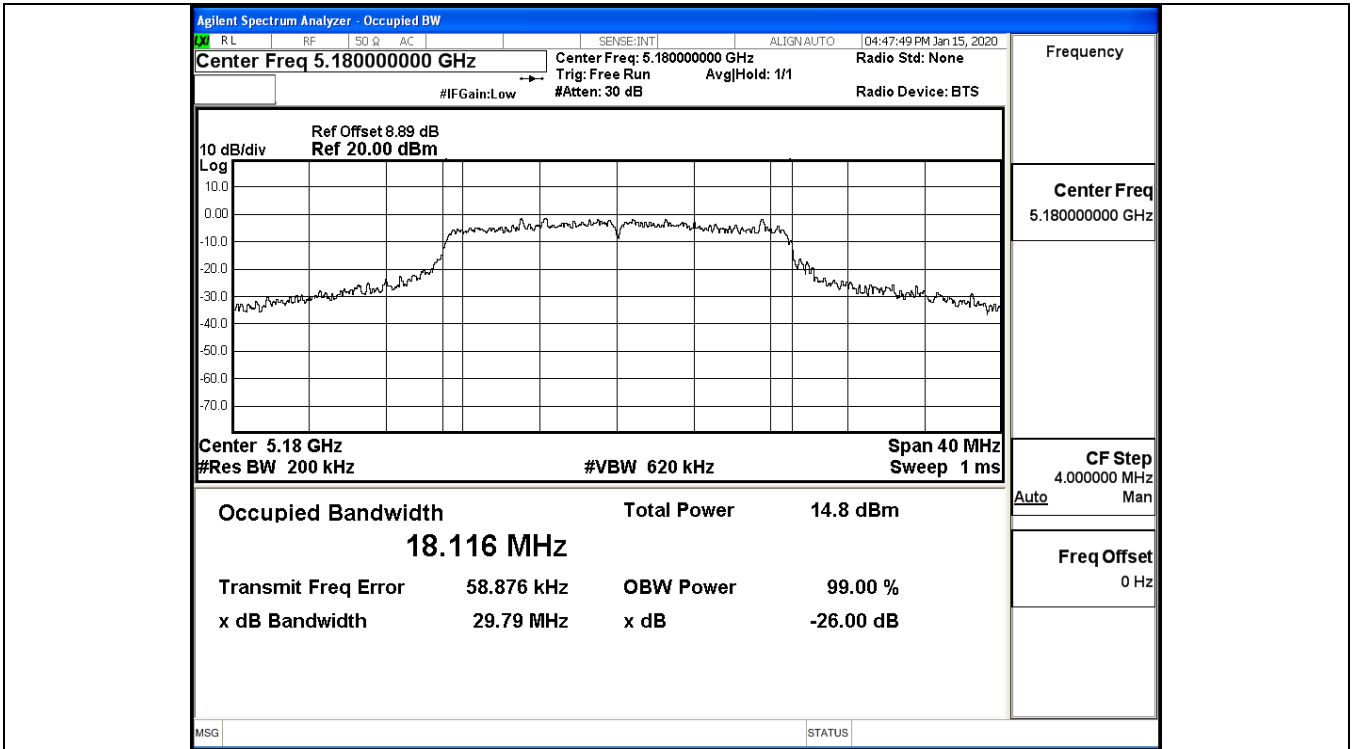
Occupied Bandwidth	Total Power	14.8 dBm
18.204 MHz		
Transmit Freq Error	7.508 kHz	OBW Power 99.00 %
x dB Bandwidth	30.28 MHz	x dB -26.00 dB

MSG STATUS

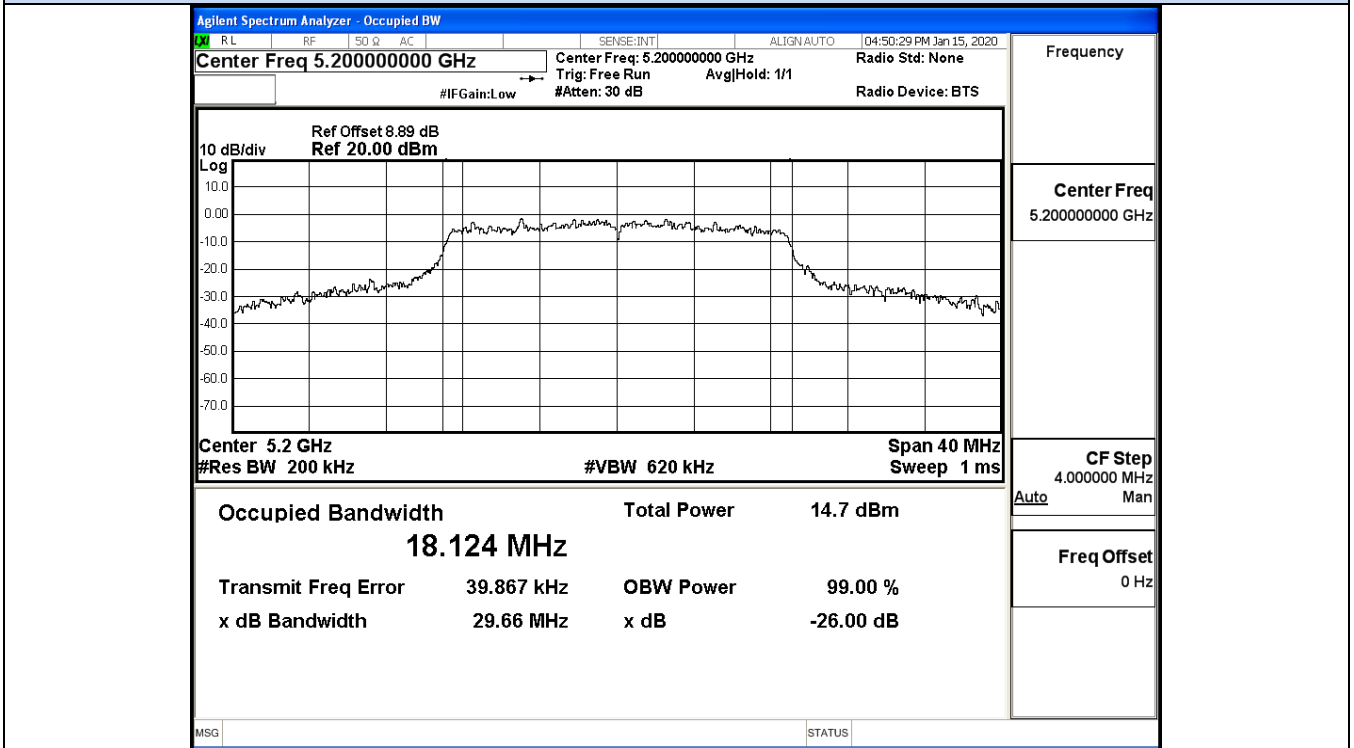
IEEE 802.11n20 / Channel 40 / 5200MHz



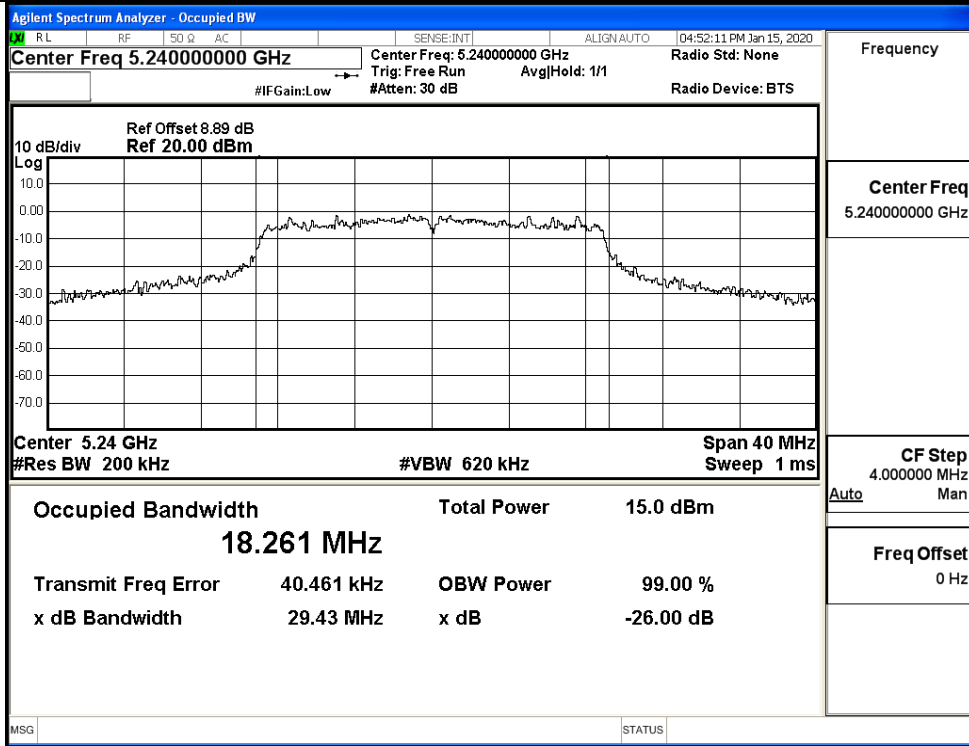
IEEE 802.11n20 / Channel 48 / 5240MHz



IEEE 802.11ac20 / Channel 36 / 5180MHz

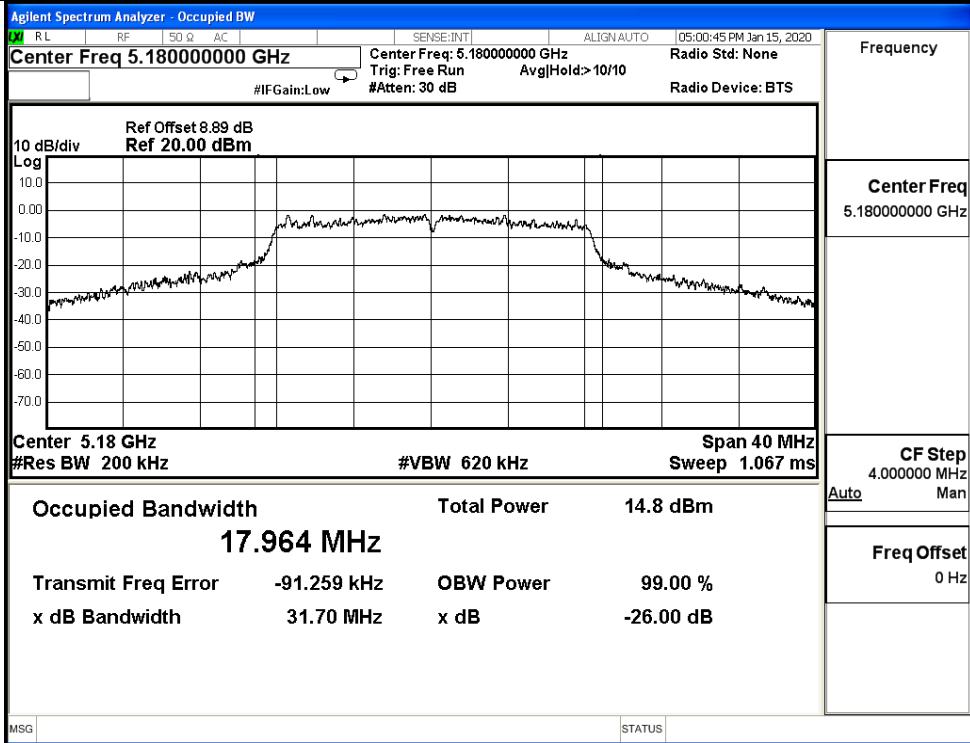


IEEE 802.11ac20 / Channel 40 / 5200MHz

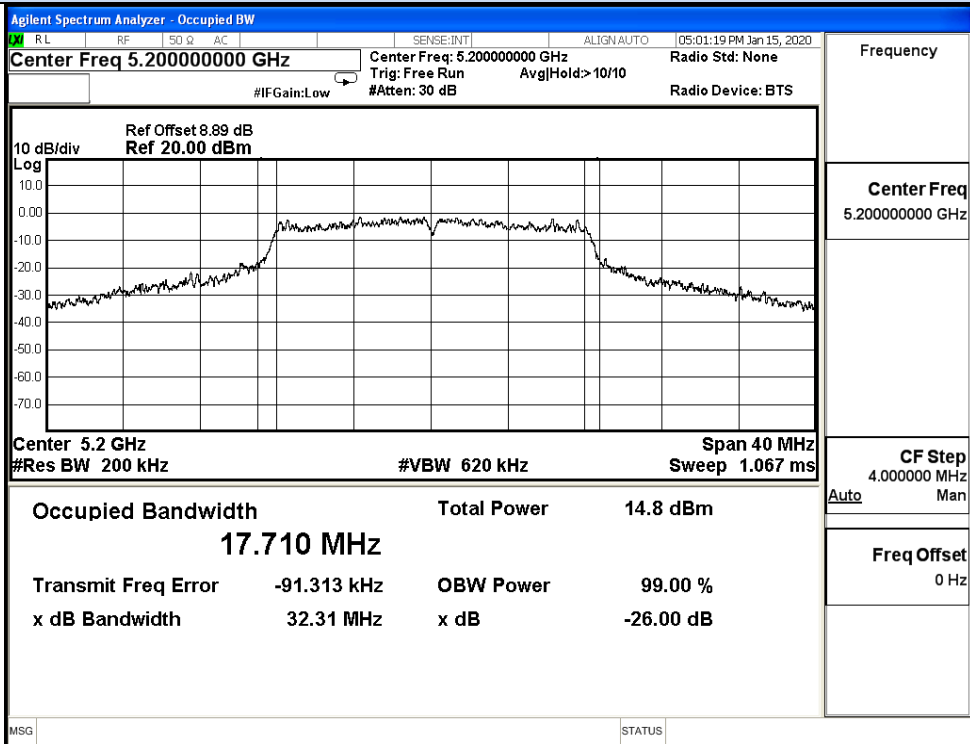


IEEE 802.11ac20 / Channel 48 / 5240MHz

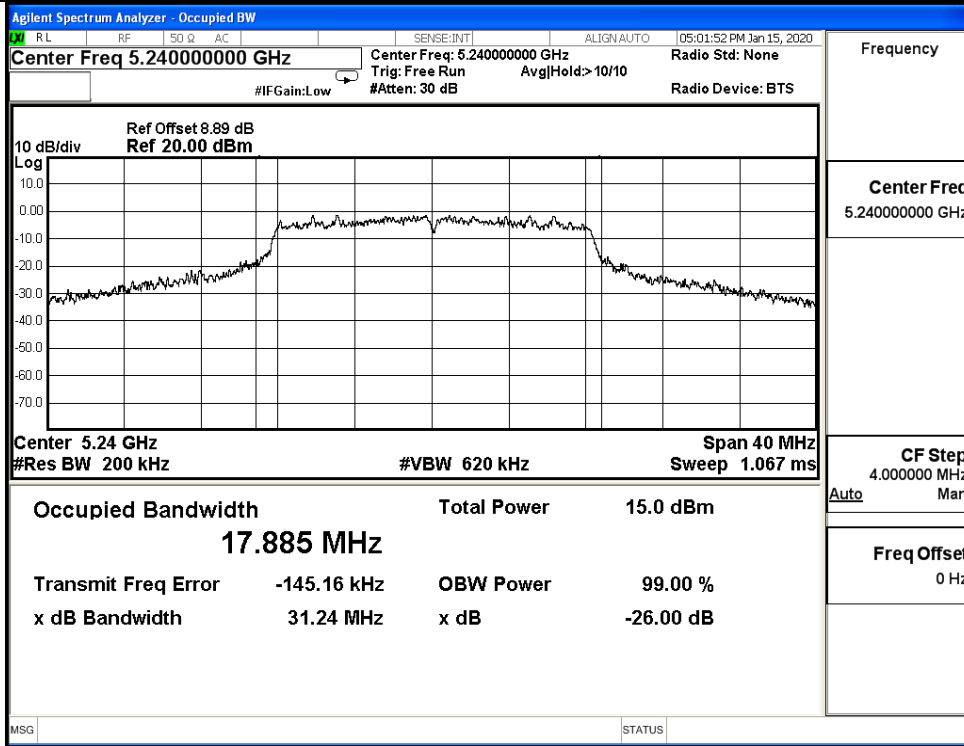
99% Occupied Bandwidth



IEEE 802.11a / Channel 36 / 5180MHz



IEEE 802.11a / Channel 40 / 5200MHz



IEEE 802.11a / Channel 48 / 5240MHz

99% Occupied Bandwidth

Agilent Spectrum Analyzer - Occupied BW

RL	RF	SO	Q	AC	SENSE:INT	ALIGN:AUTO	04:59:19 PM Jan 15, 2020
Center Freq 5.18000000 GHz					Center Freq: 5.18000000 GHz	Trig: Free Run	Avg/Hold: > 10/10
#IF Gain: Low					#Atten: 30 dB	Radio Device: BTS	

Ref Offset 8.89 dB
Ref 20.00 dBm

Center 5.18 GHz Span 40 MHz
#Res BW 200 kHz #VBW 620 kHz Sweep 1.067 ms

Occupied Bandwidth	Total Power	14.9 dBm
18.155 MHz		
Transmit Freq Error	41.509 kHz	OBW Power
x dB Bandwidth	31.74 MHz	x dB
		99.00 %
		-26.00 dB

Frequency: 5.18000000 GHz
CF Step: 4.000000 MHz
Freq Offset: 0 Hz

IEEE 802.11n20 / Channel 36 / 5180MHz

Agilent Spectrum Analyzer - Occupied BW

RL	RF	SO	Q	AC	SENSE:INT	ALIGN:AUTO	04:59:45 PM Jan 15, 2020
Center Freq 5.20000000 GHz					Center Freq: 5.20000000 GHz	Trig: Free Run	Avg/Hold: > 10/10
#IF Gain: Low					#Atten: 30 dB	Radio Device: BTS	

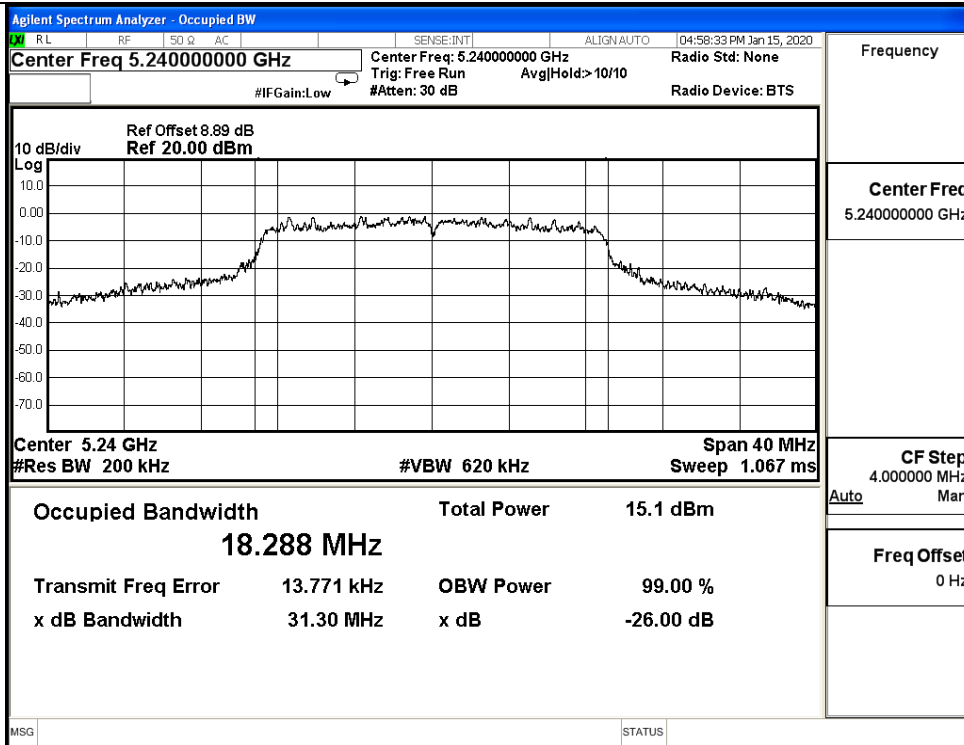
Ref Offset 8.89 dB
Ref 20.00 dBm

Center 5.2 GHz Span 40 MHz
#Res BW 200 kHz #VBW 620 kHz Sweep 1.067 ms

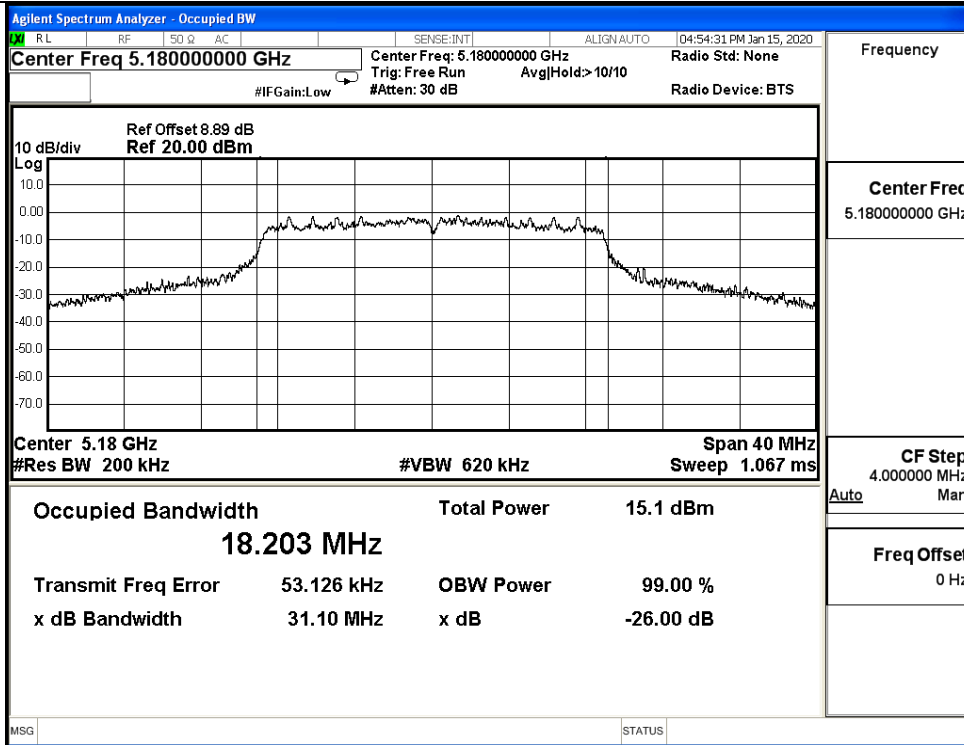
Occupied Bandwidth	Total Power	14.8 dBm
18.247 MHz		
Transmit Freq Error	6.188 kHz	OBW Power
x dB Bandwidth	30.61 MHz	x dB
		99.00 %
		-26.00 dB

Frequency: 5.20000000 GHz
CF Step: 4.000000 MHz
Freq Offset: 0 Hz

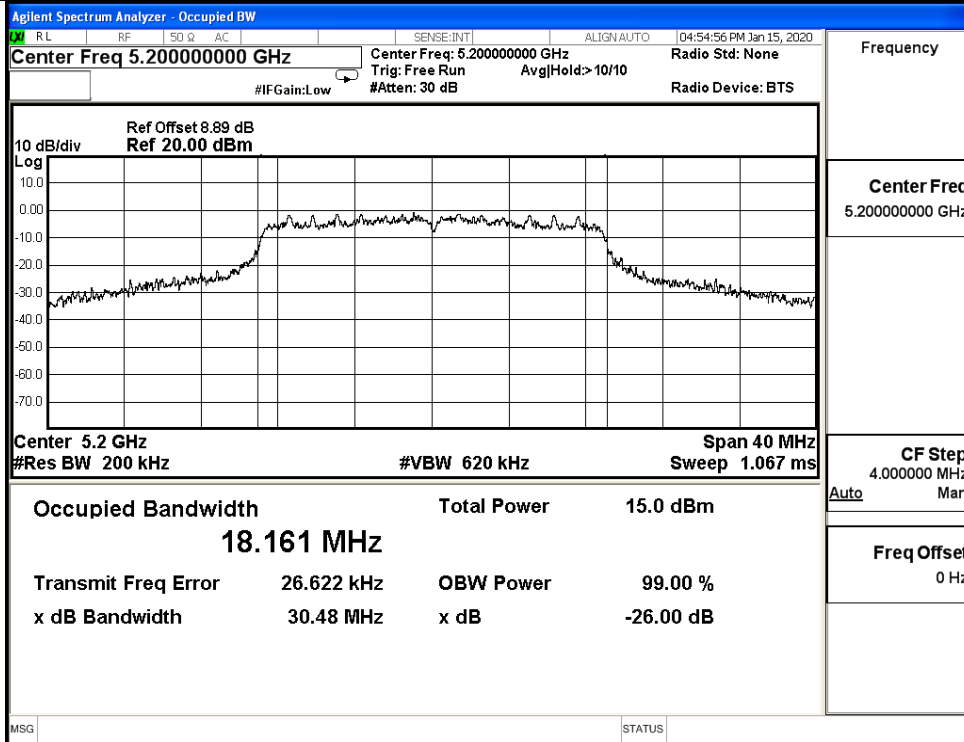
IEEE 802.11n20 / Channel 40 / 5200MHz



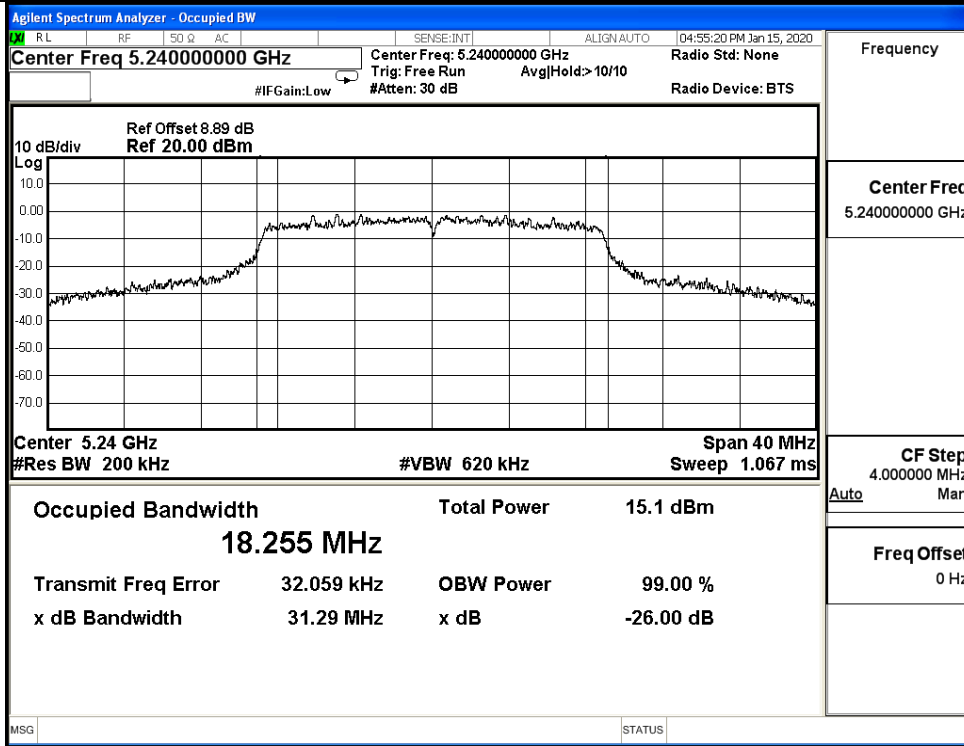
IEEE 802.11n20 / Channel 48 / 5240MHz



IEEE 802.11ac20 / Channel 36 / 5180MHz



IEEE 802.11ac20 / Channel 40 / 5200MHz

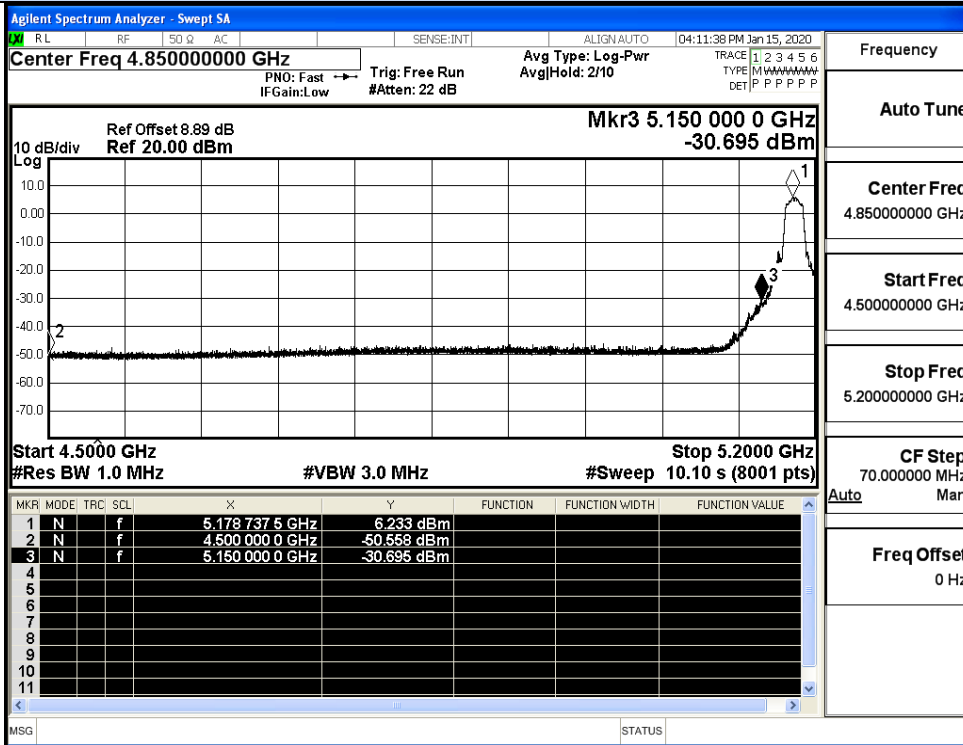


IEEE 802.11ac20 / Channel 48 / 5240MHz

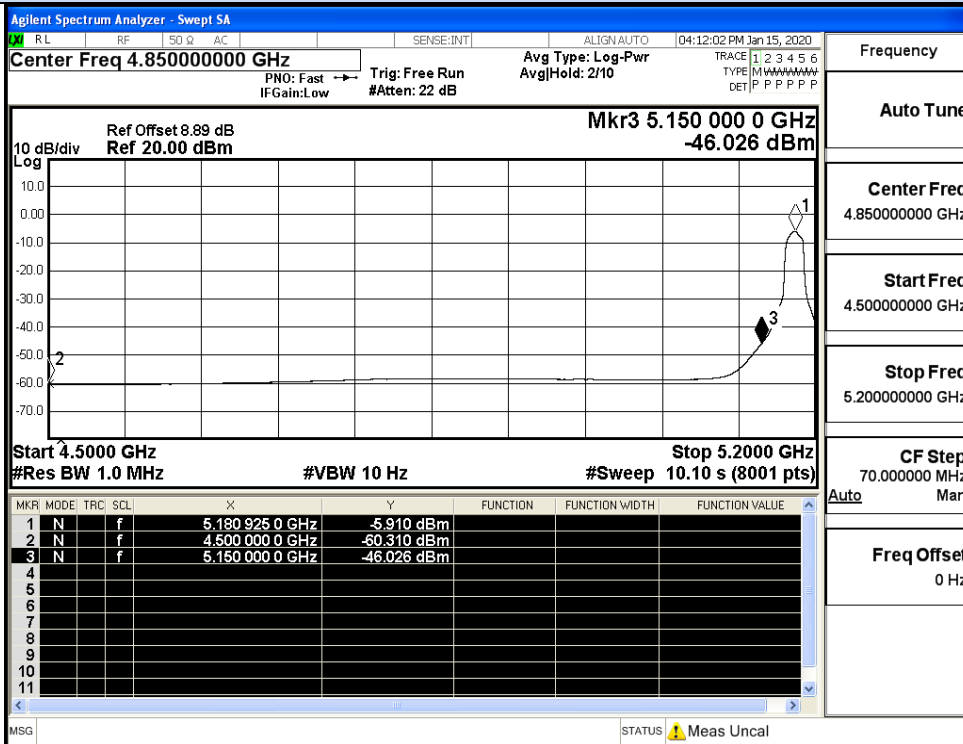
D.5 Undesirable Emissions Measurement

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	-50.56	2.00	0	46.67	Peak	74.00	Pass
		4500.0	-60.31	2.00	0	36.92	Average	54.00	Pass
		5150.0	-30.70	2.00	0	66.53	Peak	74.00	Pass
		5150.0	-46.03	2.00	0	51.20	Average	54.00	Pass
	48	5350.0	-49.64	2.00	0	47.59	Peak	74.00	Pass
		5350.0	-59.37	2.00	0	37.85	Average	54.00	Pass
		5460.0	-49.00	2.00	0	48.23	Peak	74.00	Pass
		5460.0	-59.39	2.00	0	37.83	Average	54.00	Pass
11N2 0 SISO	36	4500.0	-50.60	2.00	0	46.62	Peak	74.00	Pass
		4500.0	-59.60	2.00	0	37.62	Average	54.00	Pass
		5150.0	-32.15	2.00	0	65.08	Peak	74.00	Pass
		5150.0	-48.86	2.00	0	48.37	Average	54.00	Pass
	48	5350.0	-48.77	2.00	0	48.45	Peak	74.00	Pass
		5350.0	-59.35	2.00	0	37.87	Average	54.00	Pass
		5460.0	-49.31	2.00	0	47.92	Peak	74.00	Pass
		5460.0	-59.41	2.00	0	37.82	Average	54.00	Pass
11A C20 SISO	36	4500.0	-50.26	2.00	0	46.96	Peak	74.00	Pass
		4500.0	-60.33	2.00	0	36.90	Average	54.00	Pass
		5150.0	-34.89	2.00	0	62.34	Peak	74.00	Pass
		5150.0	-48.09	2.00	0	49.14	Average	54.00	Pass
	48	4500.0	-50.26	2.00	0	46.96	Peak	74.00	Pass
		4500.0	-60.33	2.00	0	36.90	Average	54.00	Pass
		5150.0	-34.89	2.00	0	62.34	Peak	74.00	Pass
		5150.0	-48.09	2.00	0	49.14	Average	54.00	Pass

Undesirable Emissions Measurement

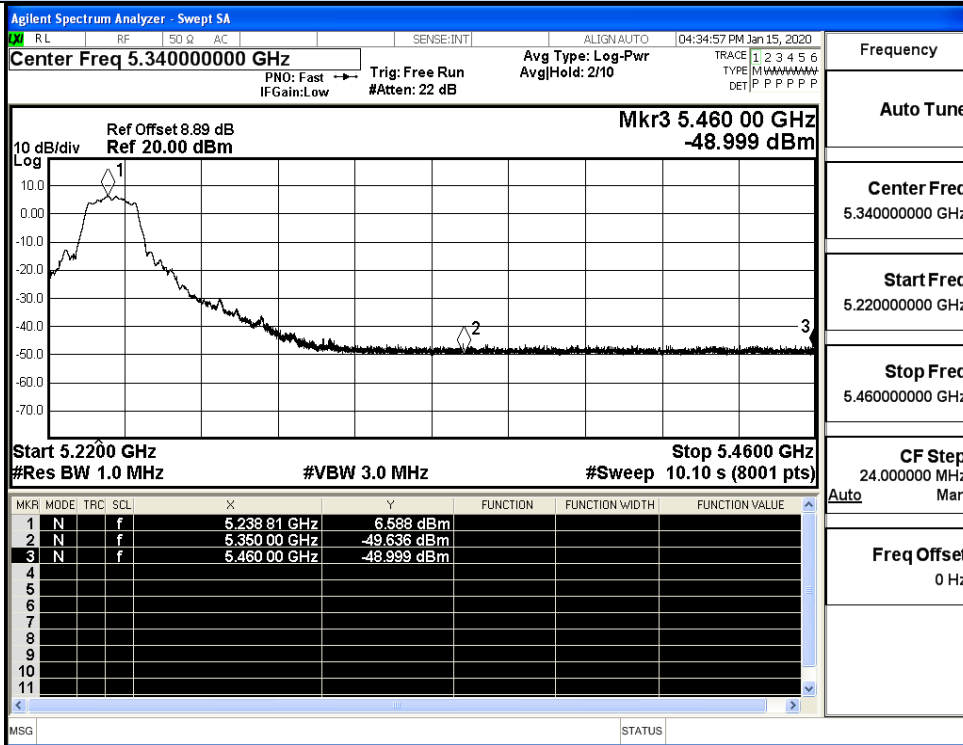


IEEE 802.11a / Channel 36 / 5180MHz / Peak

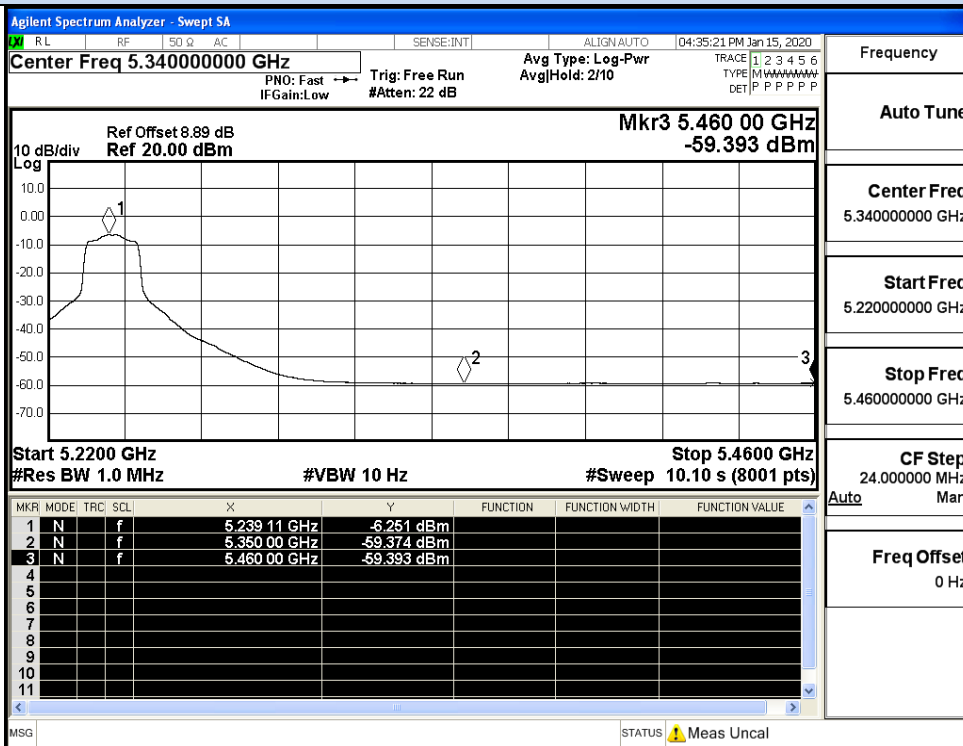


IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

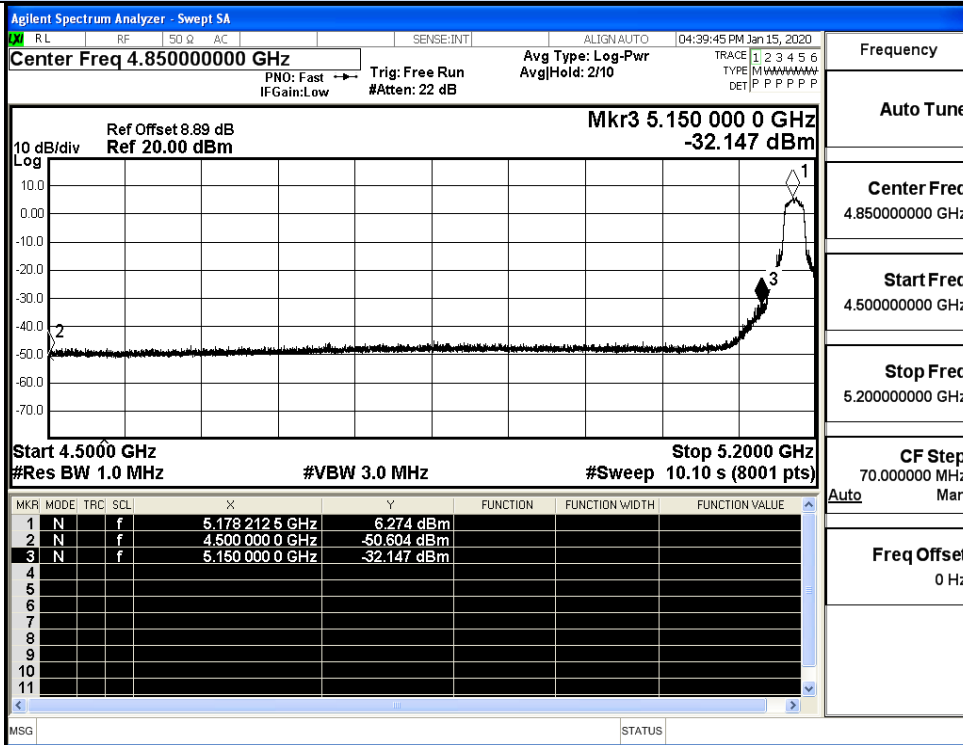


IEEE 802.11a / Channel 48 / 5240MHz / Peak

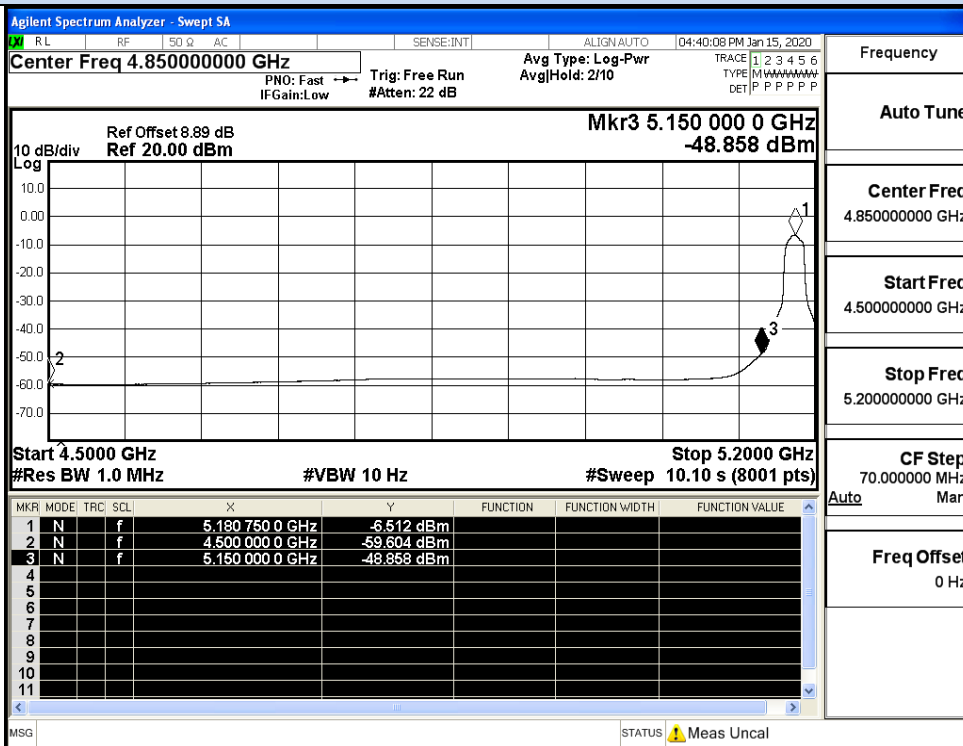


IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

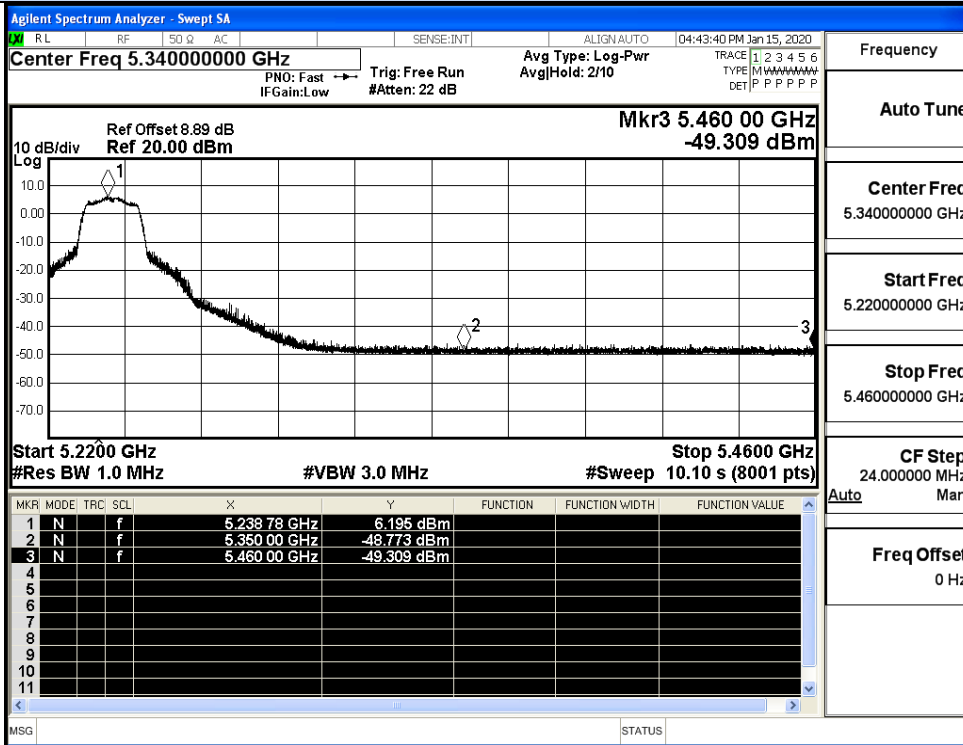


IEEE 802.11n20 / Channel 36 / 5180MHz / Peak

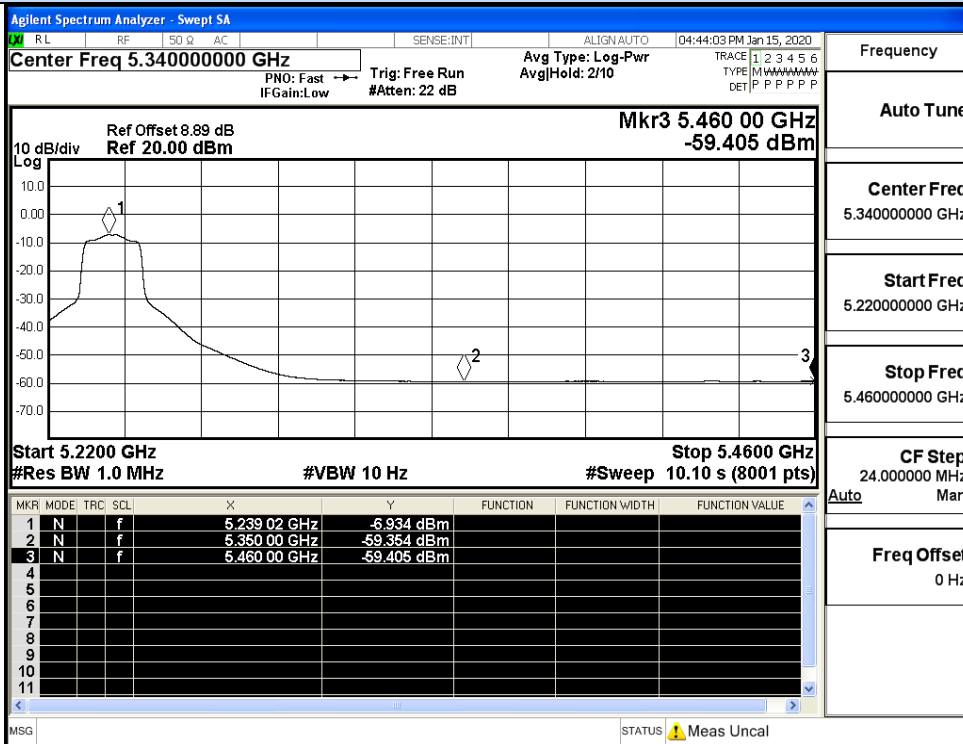


IEEE 802.11n20 / Channel 36 / 5180MHz / Average

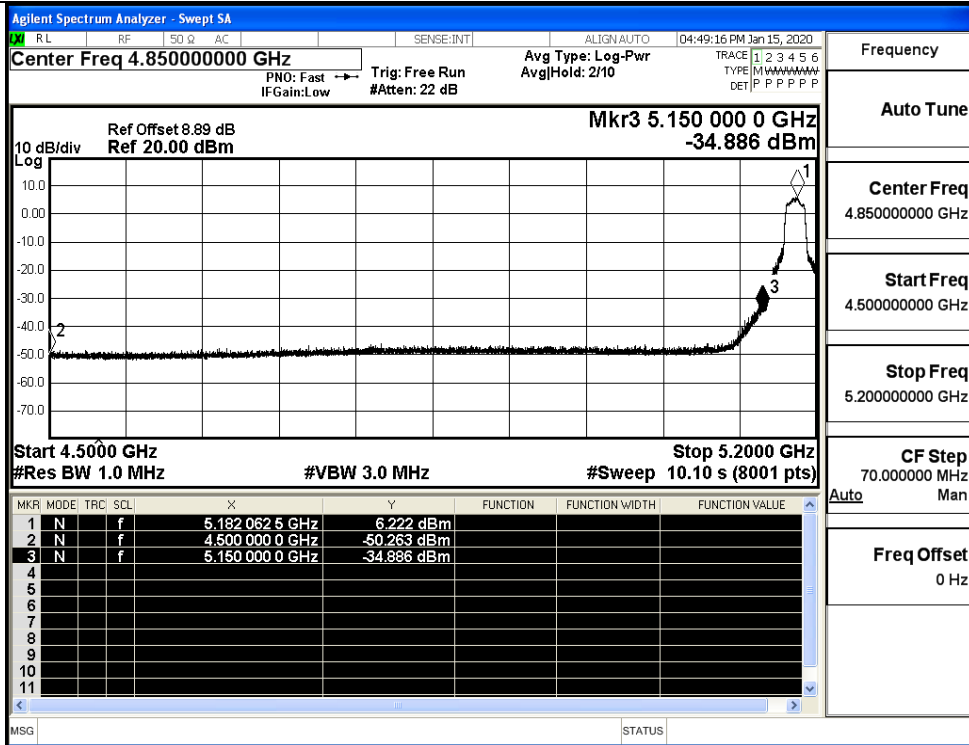
Undesirable Emissions Measurement



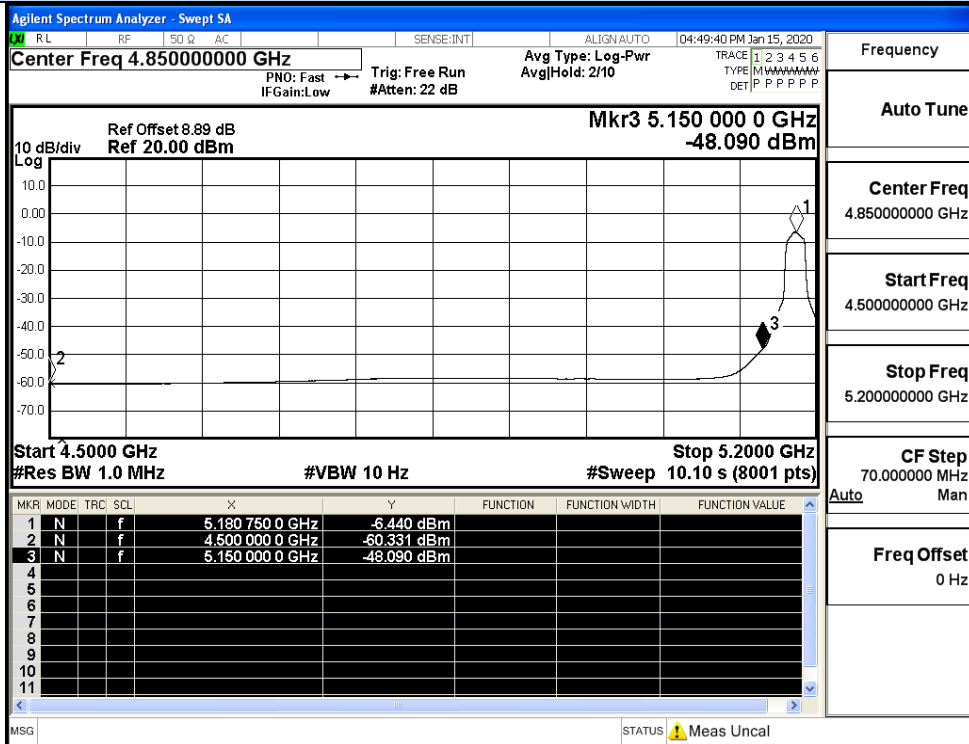
IEEE 802.11n20 / Channel 48 / 5240MHz / Peak



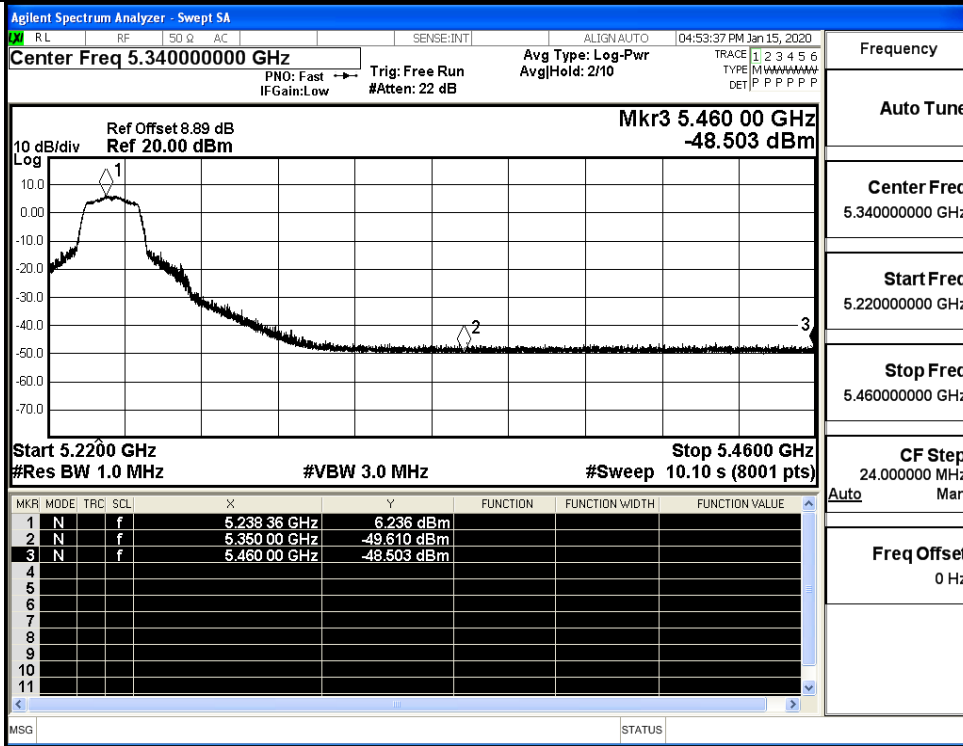
IEEE 802.11n20 / Channel 48 / 5240MHz / Average



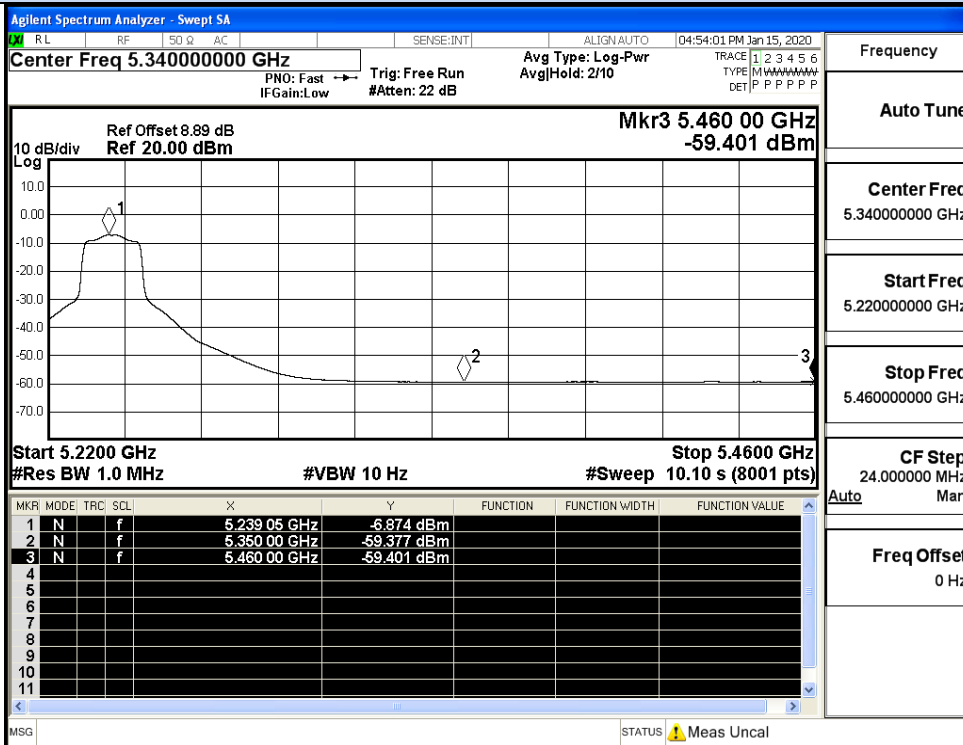
IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak



IEEE 802.11ac20 / Channel 36 / 5180MHz / Average



IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



IEEE 802.11ac20 / Channel 48 / 5240MHz / Average