

## Appendix D

### RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: Vivi Wireless Presentation

Trade Mark: Vivi

Test Model: VWP-205-16

#### Environmental Conditions

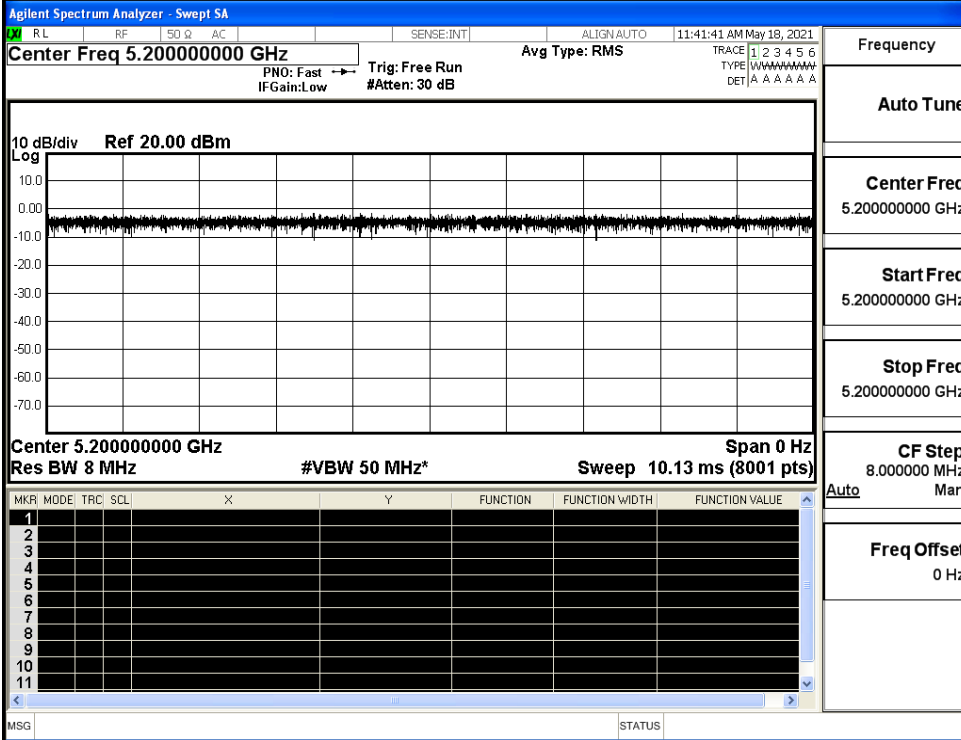
Temperature:	20.1°C
Relative Humidity:	51.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Carl Fu
Supervised by:	Li Huan

#### D.1 Duty Cycle

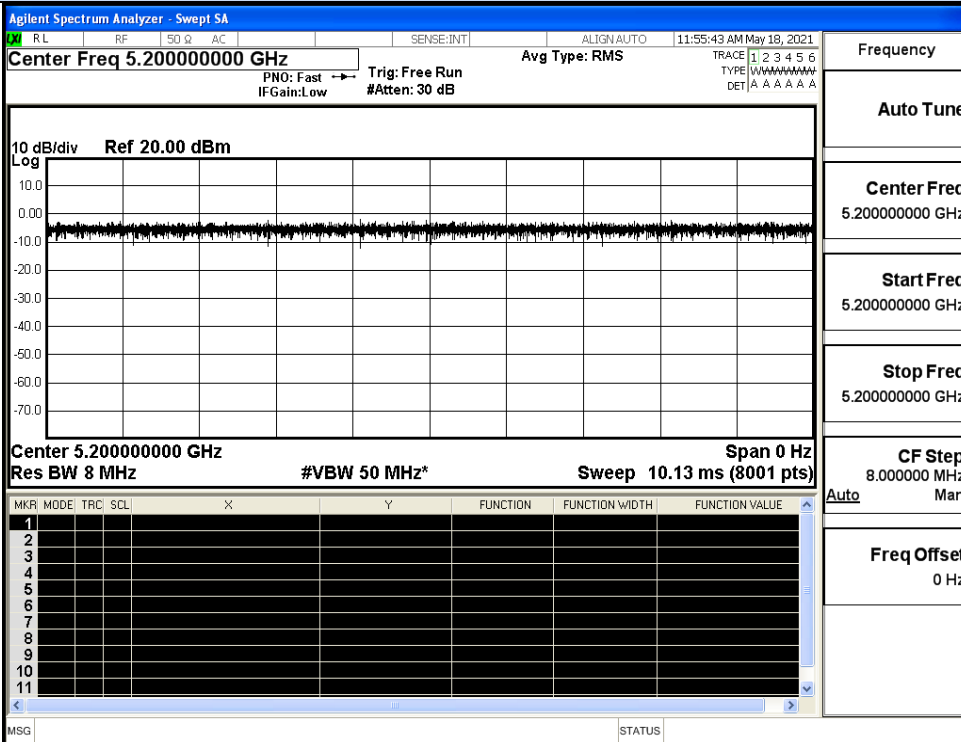
ANT0

Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	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

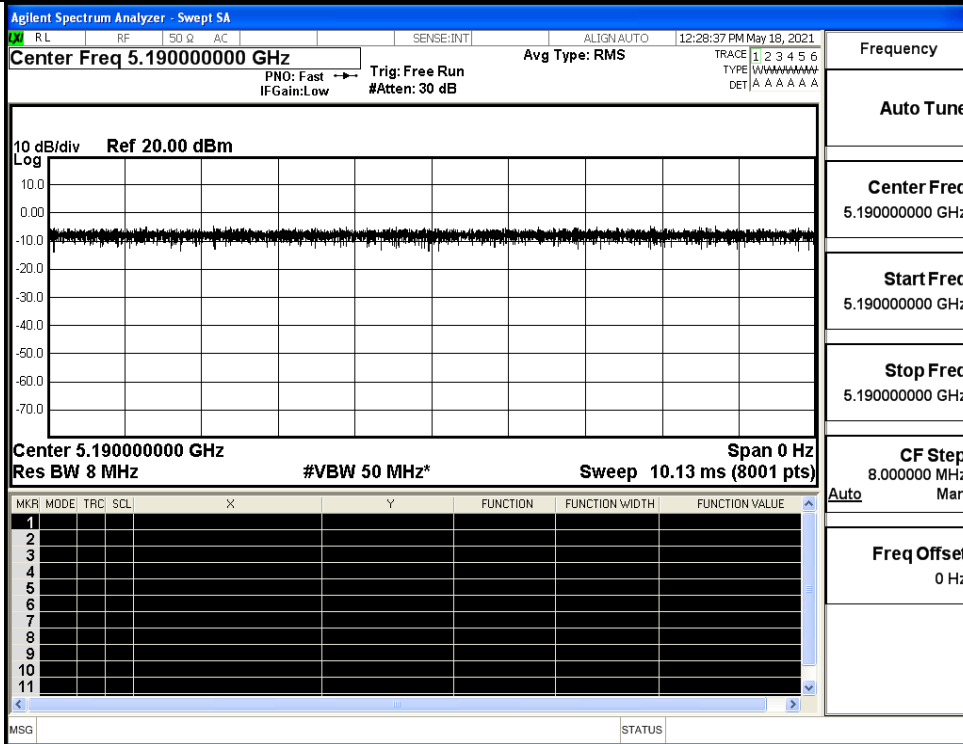
On Time and Duty Cycle



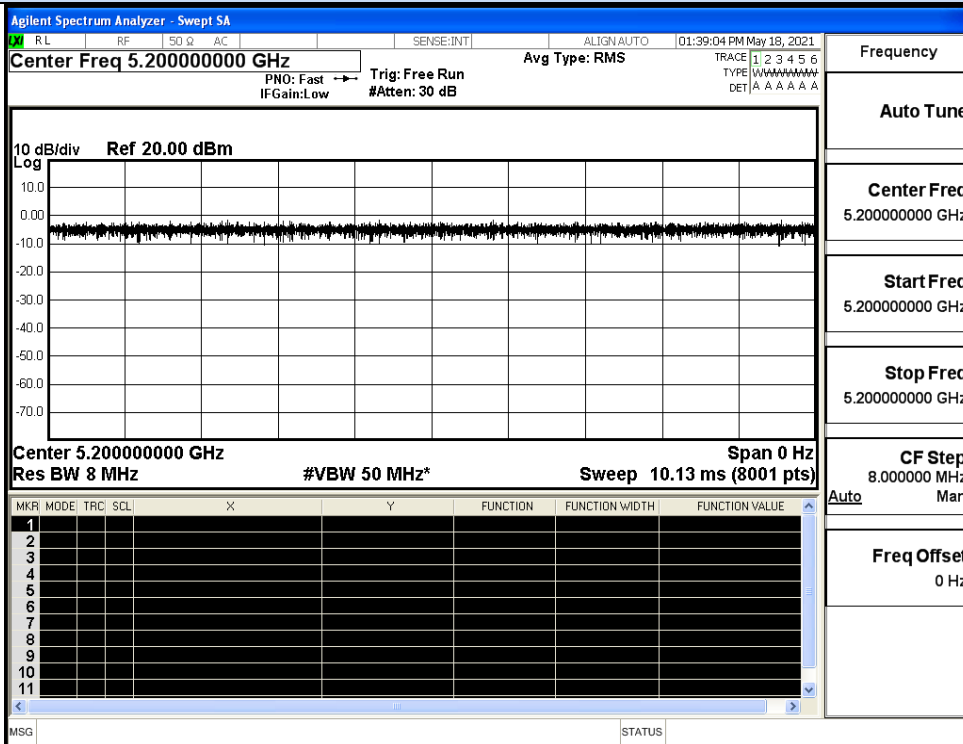
IEEE 802.11a



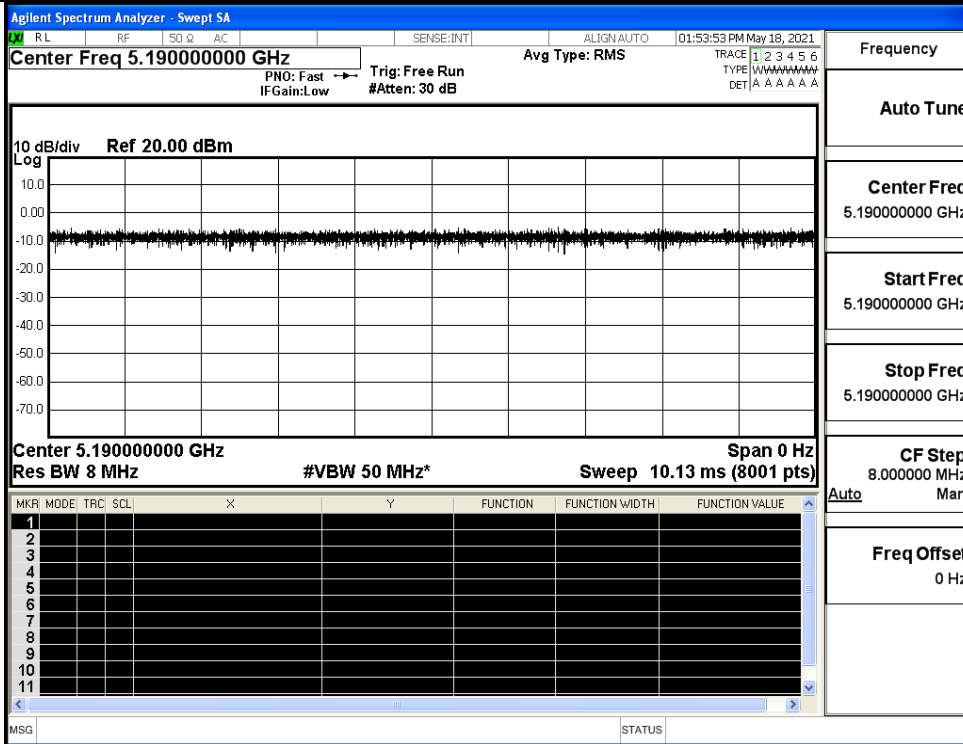
IEEE 802.11n HT20



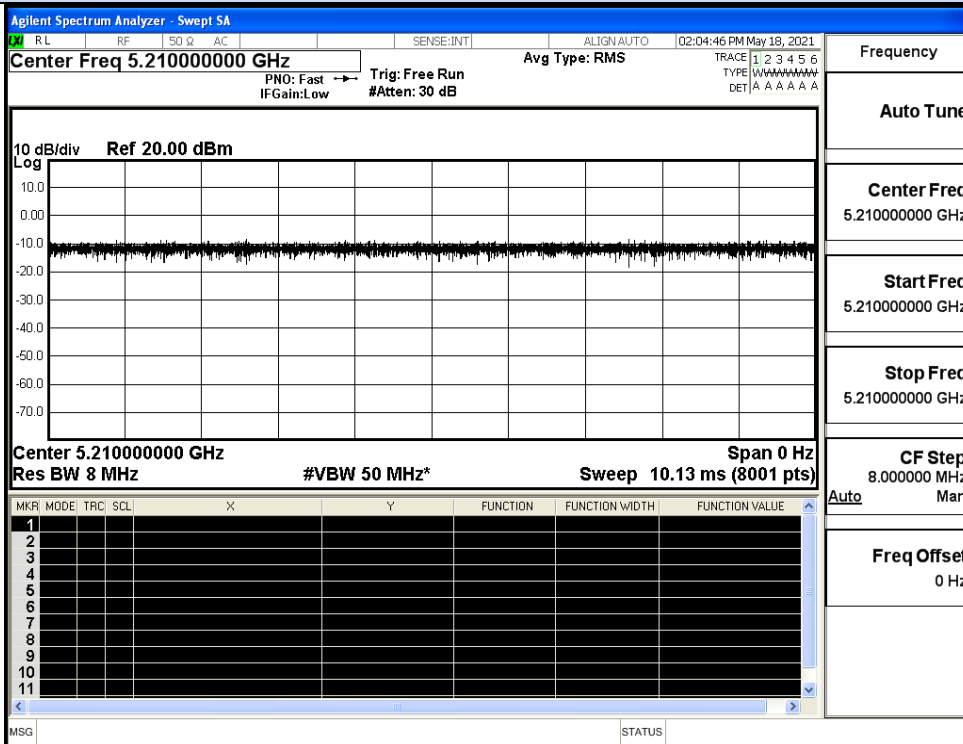
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40

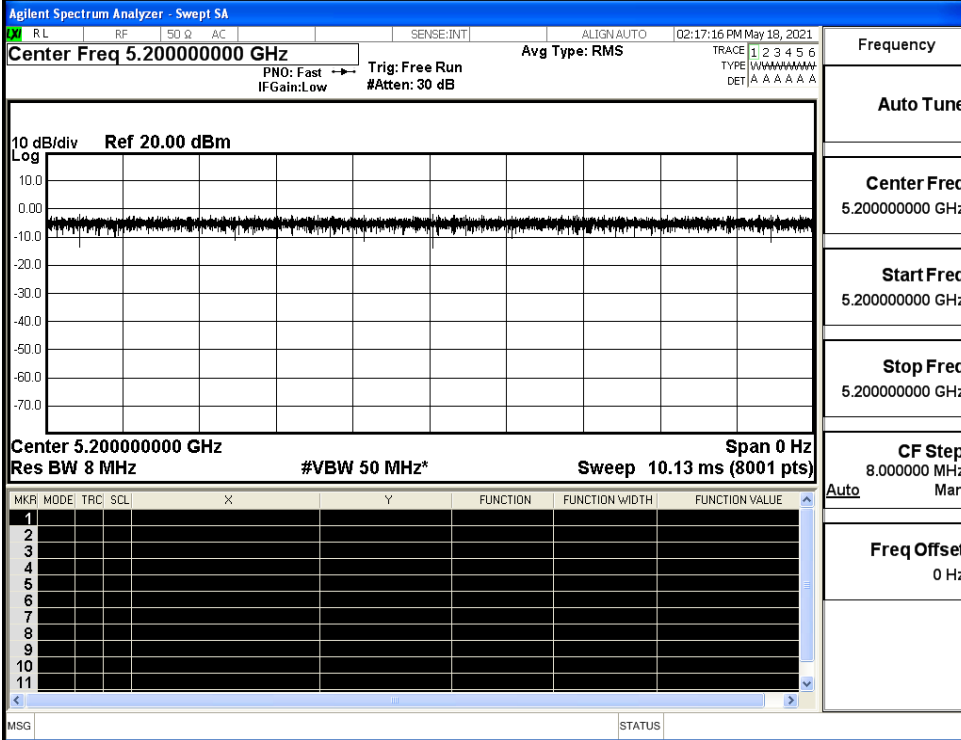


IEEE 802.11AC80

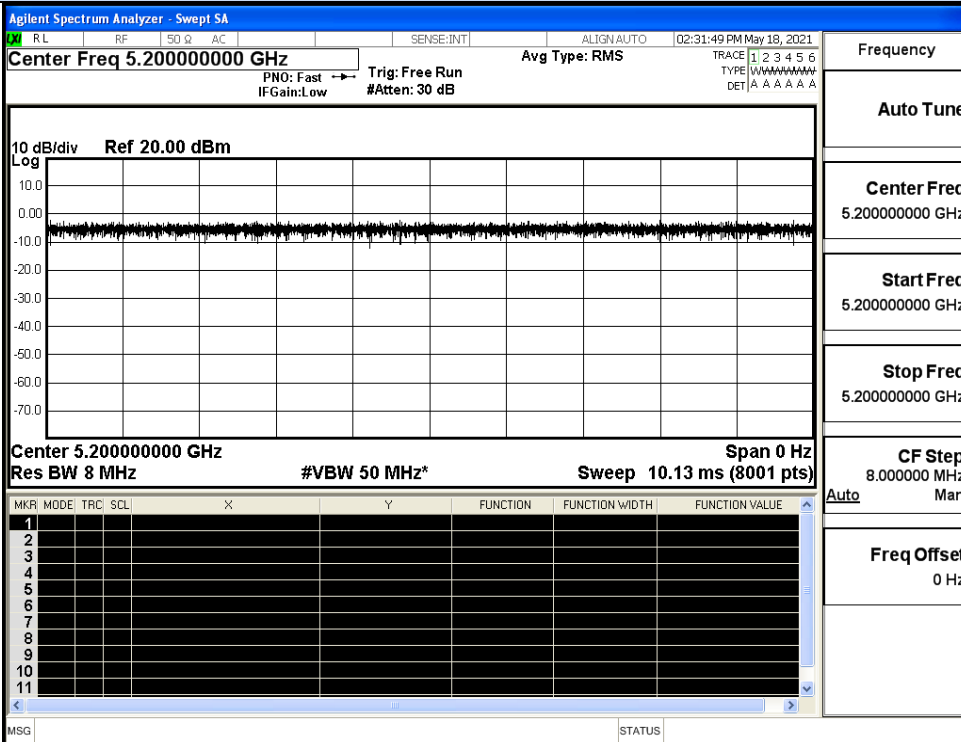
## ANT1

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

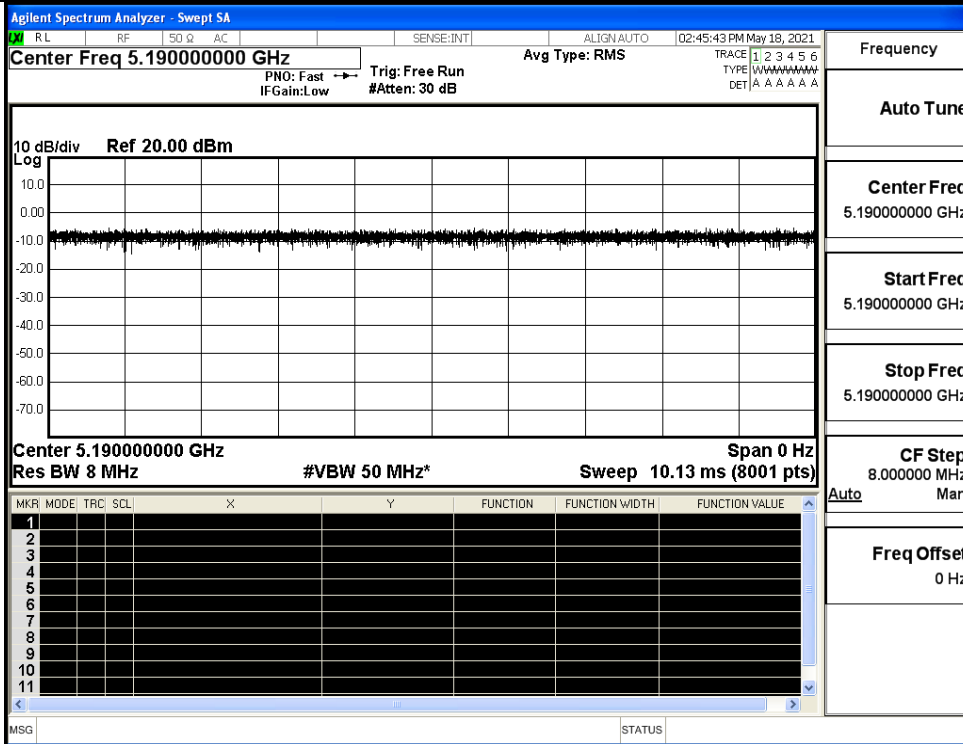
On Time and Duty Cycle



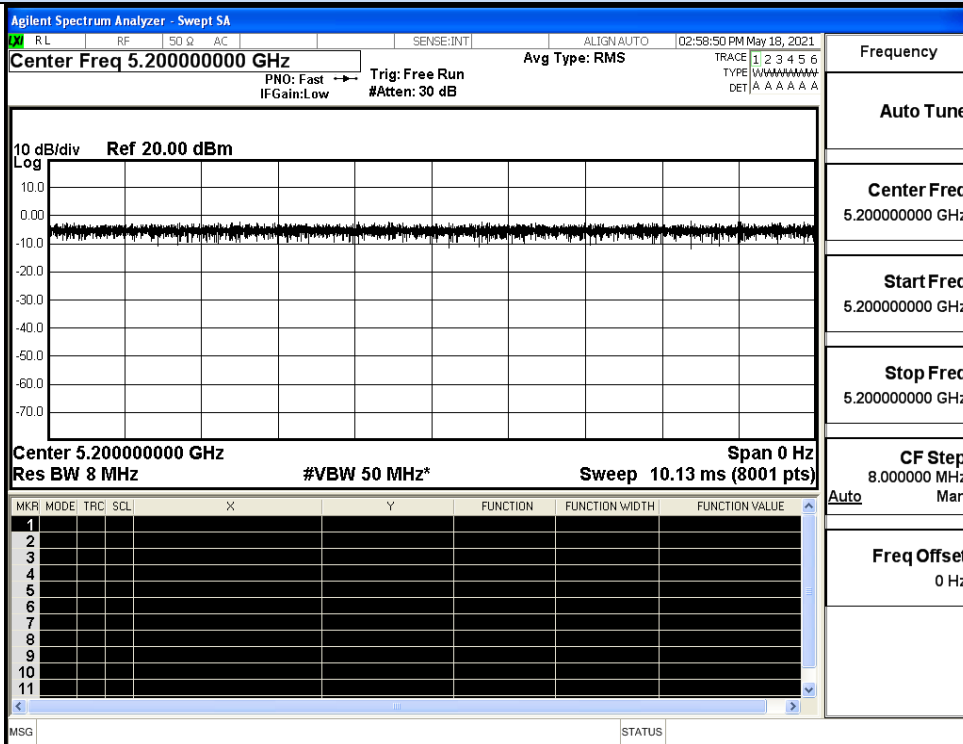
IEEE 802.11a



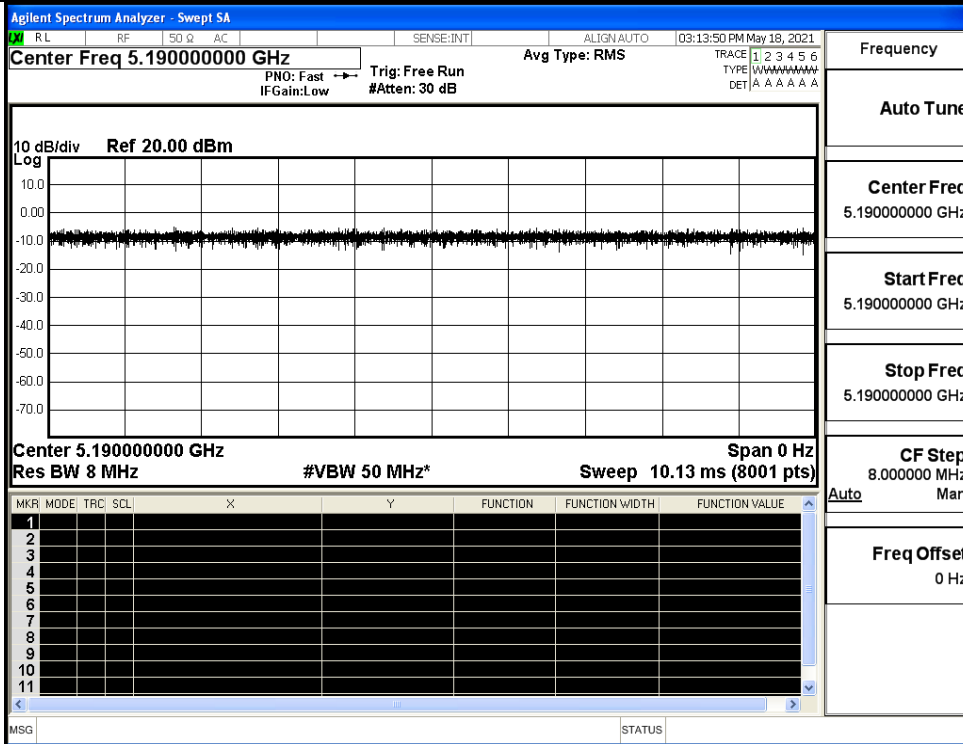
IEEE 802.11n HT20



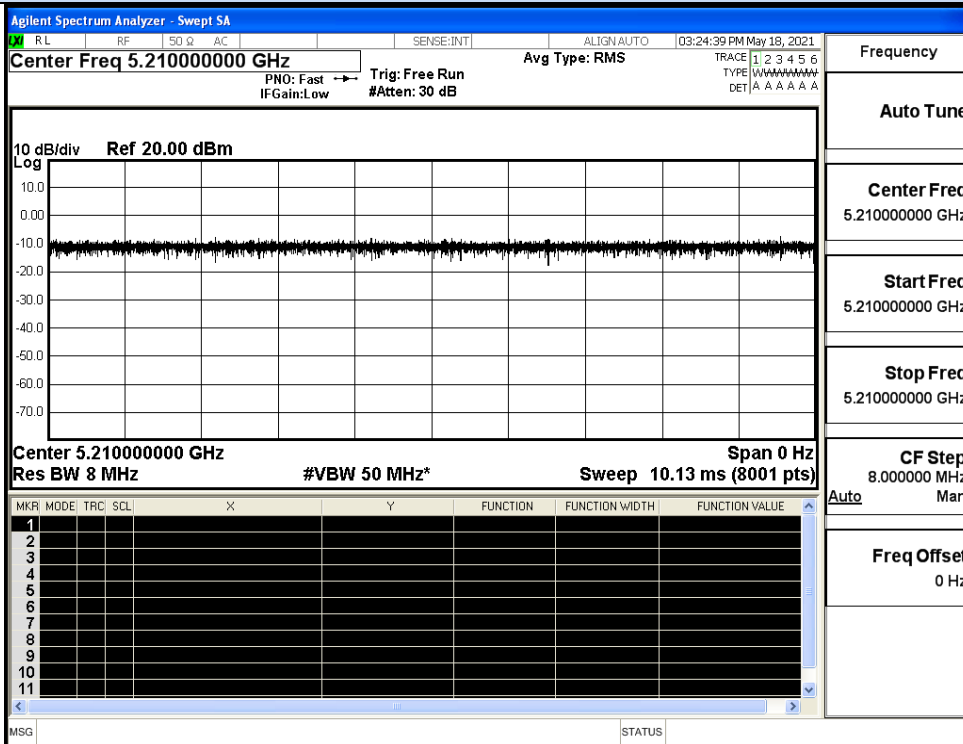
IEEE 802.11n HT40



IEEE 802.11AC20



IEEE 802.11 AC40



IEEE 802.11AC80



**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	12.53	0	12.53	30	Pass
	40	5200	11.26	0	11.26		Pass
	48	5240	11.05	0	11.05		Pass
11N20 SISO	36	5180	10.68	0	10.68	30	Pass
	40	5200	10.64	0	10.64		Pass
	48	5240	10.38	0	10.38		Pass
11N40 SISO	38	5190	11.39	0	11.39	30	Pass
	46	5230	11.14	0	11.14		Pass
11AC20 SISO	36	5180	11.23	0	11.23	30	Pass
	40	5200	11.24	0	11.24		Pass
	48	5240	10.43	0	10.43		Pass
11AC40 SISO	38	5190	10.81	0	10.81	30	Pass
	46	5230	10.75	0	10.75		Pass
11AC80 SISO	42	5210	10.73	0	10.73	30	Pass

**ANT1**

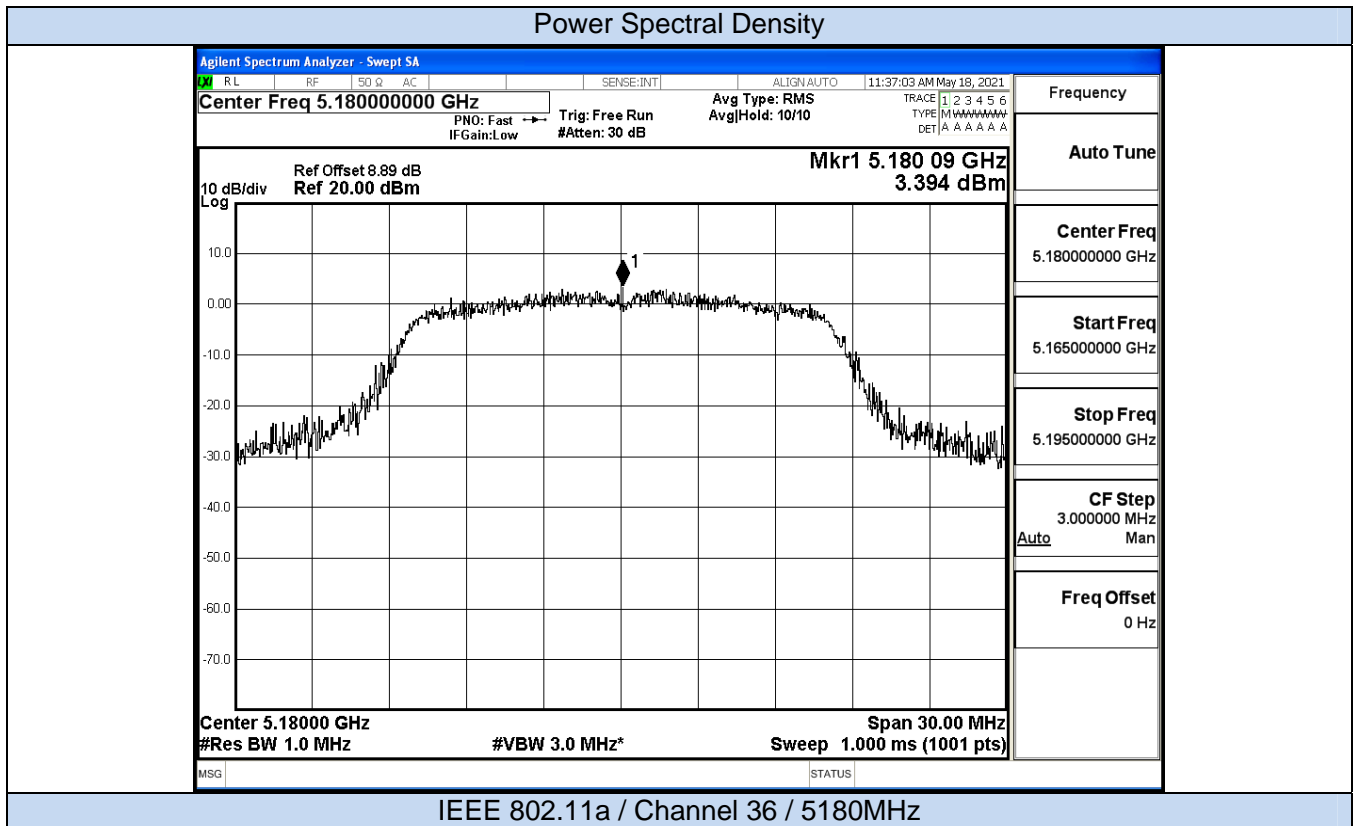
Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor (dB)	Report Conducted Power (dBm)	Limit (dBm)	Verdict
11A	36	5180	10.89	0	10.89	30	Pass
	40	5200	10.89	0	10.89		Pass
	48	5240	10.61	0	10.61		Pass
11N20 SISO	36	5180	10.78	0	10.78	30	Pass
	40	5200	10.75	0	10.75		Pass
	48	5240	10.56	0	10.56		Pass
11N40 SISO	38	5190	10.96	0	10.96	30	Pass
	46	5230	10.86	0	10.86		Pass
11AC20 SISO	36	5180	10.88	0	10.88	30	Pass
	40	5200	10.91	0	10.91		Pass
	48	5240	10.61	0	10.61		Pass
11AC40 SISO	38	5190	11.02	0	11.02	30	Pass
	46	5230	10.81	0	10.81		Pass
11AC80 SISO	42	5210	11.35	0	11.35	30	Pass

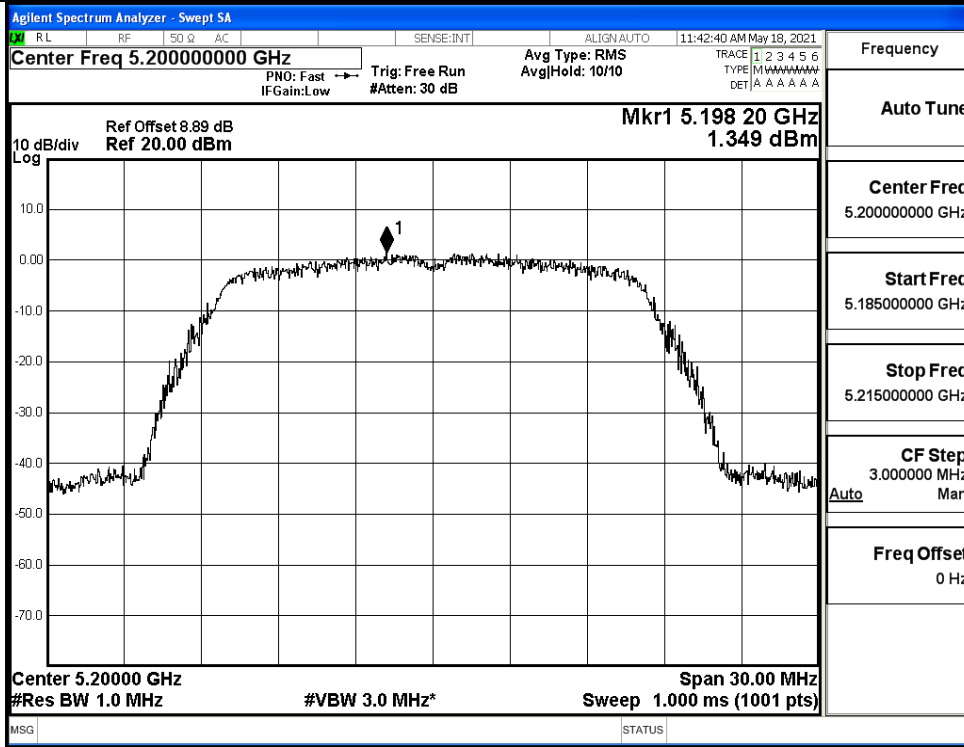
## MIMO

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	10.68	10.78	13.74	0	13.74	29.99	Pass
	40	5200	10.64	10.75	13.71	0	13.71		Pass
	48	5240	10.38	10.56	13.48	0	13.48		Pass
11N40	38	5190	11.39	10.96	14.19	0	14.19	29.99	Pass
	46	5230	11.14	10.86	14.01	0	14.01		Pass
11AC20	36	5180	11.23	10.88	14.07	0	14.07	29.99	Pass
	40	5200	11.24	10.91	14.09	0	14.09		Pass
	48	5240	10.43	10.61	13.53	0	13.53		Pass
11AC40	38	5190	10.81	11.02	13.93	0	13.93	29.99	Pass
	46	5230	10.75	10.81	13.79	0	13.79		Pass
11AC80	42	5210	10.73	11.35	14.06	0	14.06	29.99	Pass

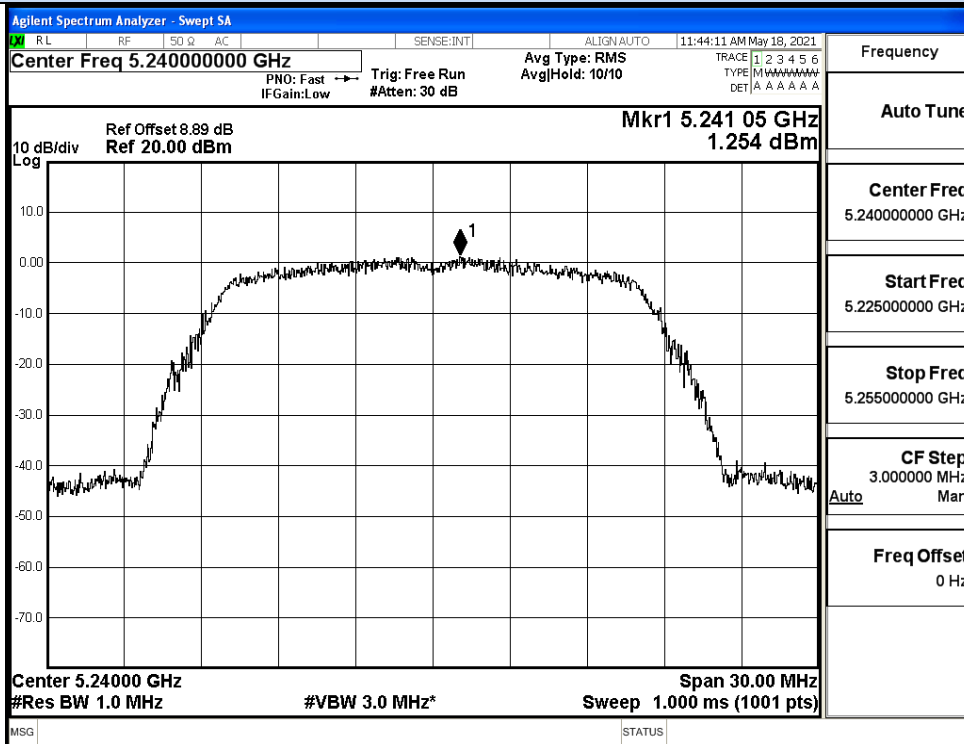
**D.3 Power Spectral Density**  
ANT0

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	3.39	0	3.39	17	Pass
	40	5200	1.35	0	1.35		Pass
	48	5240	1.25	0	1.25		Pass
11N20 SISO	36	5180	0.75	0	0.75	17	Pass
	40	5200	0.60	0	0.60		Pass
	48	5240	0.52	0	0.52		Pass
11N40 SISO	38	5190	-1.81	0	-1.81	17	Pass
	46	5230	-1.19	0	-1.19		Pass
11AC20 SISO	36	5180	1.79	0	1.79	17	Pass
	40	5200	1.13	0	1.13		Pass
	48	5240	0.33	0	0.33		Pass
11AC40 SISO	38	5190	-1.99	0	-1.99	17	Pass
	46	5230	-1.84	0	-1.84		Pass
11AC80 SISO	42	5210	-4.80	0	-4.80	17	Pass



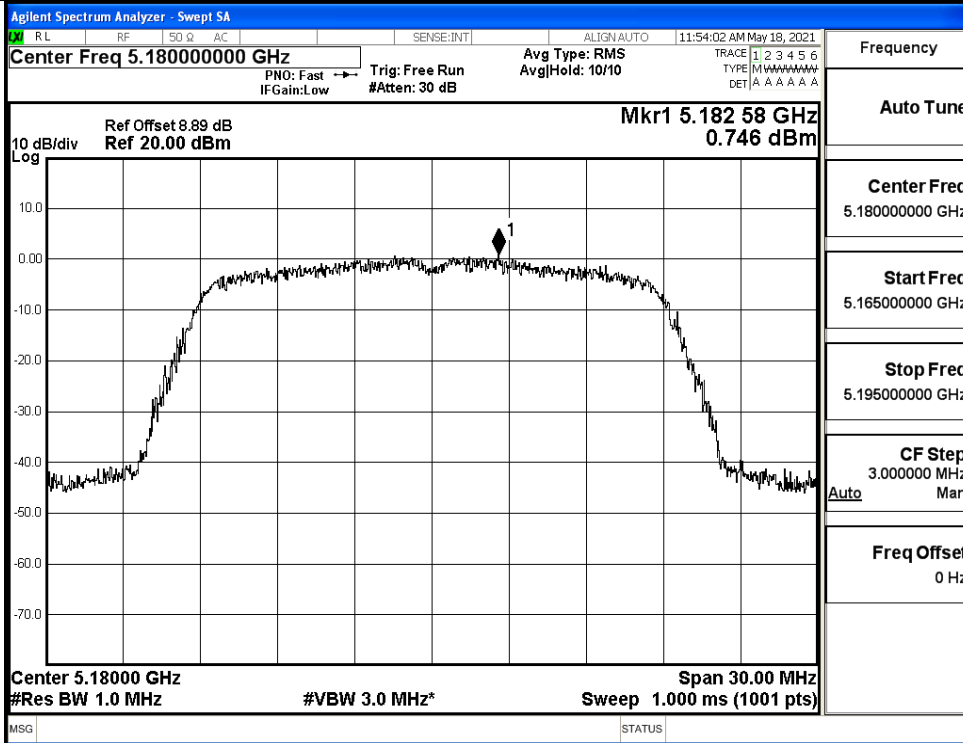


IEEE 802.11na / Channel 40 / 5200MHz

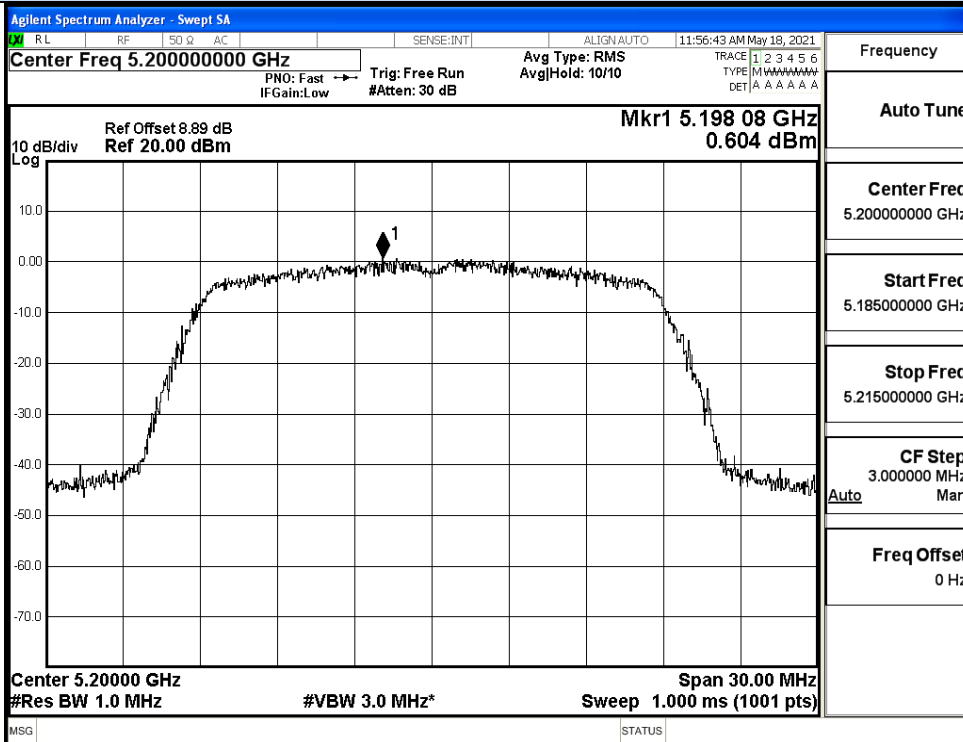


IEEE 802.11na / Channel 48 / 5240MHz

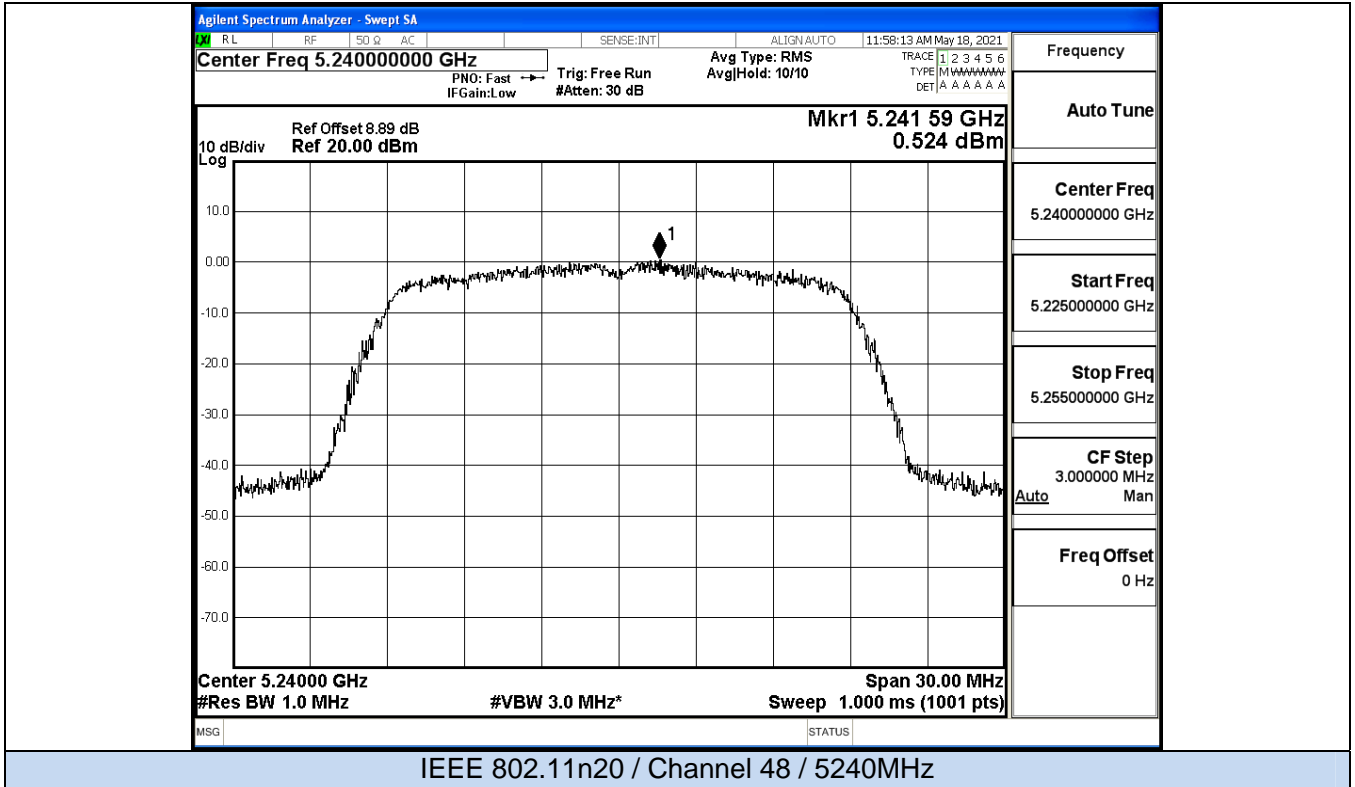
Power Spectral Density



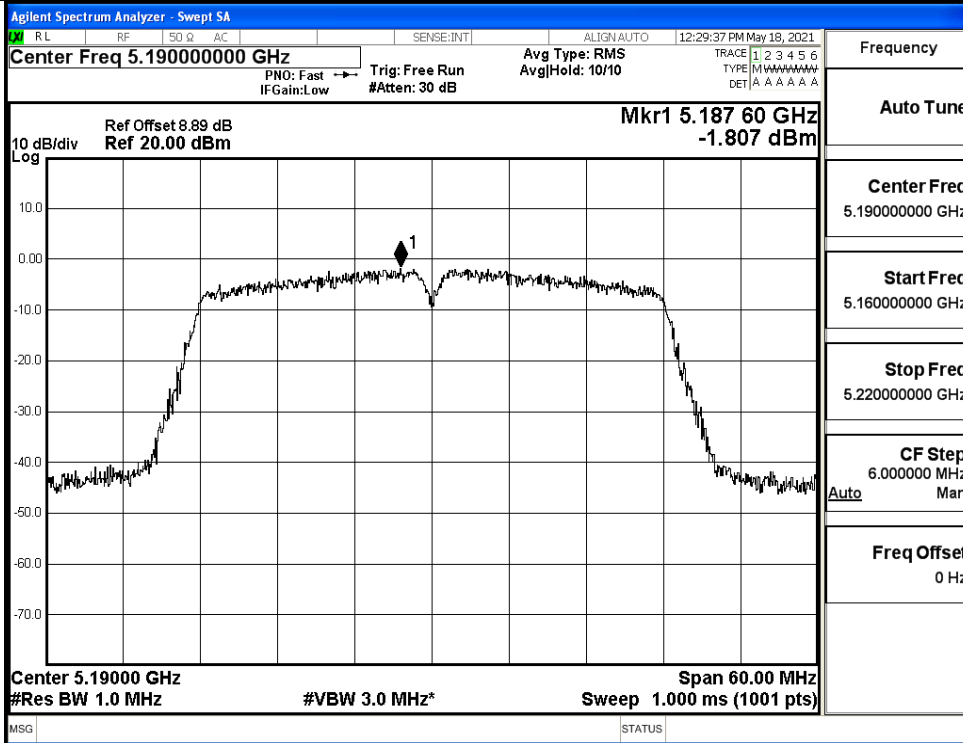
IEEE 802.11n20 / Channel 36 / 5180MHz



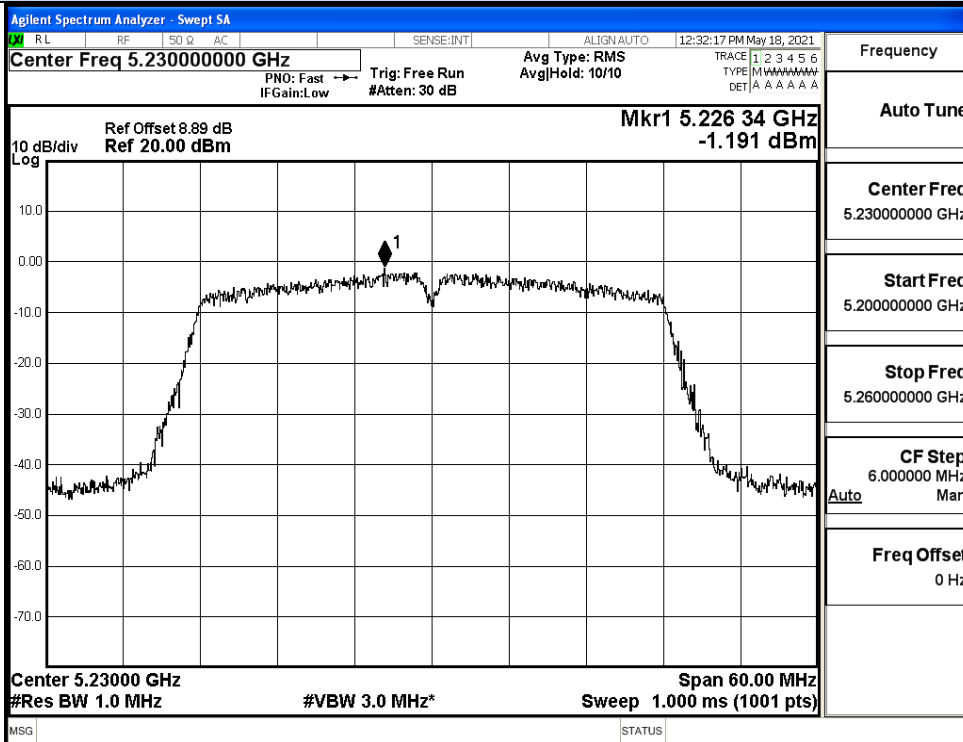
IEEE 802.11n20 / Channel 40 / 5200MHz



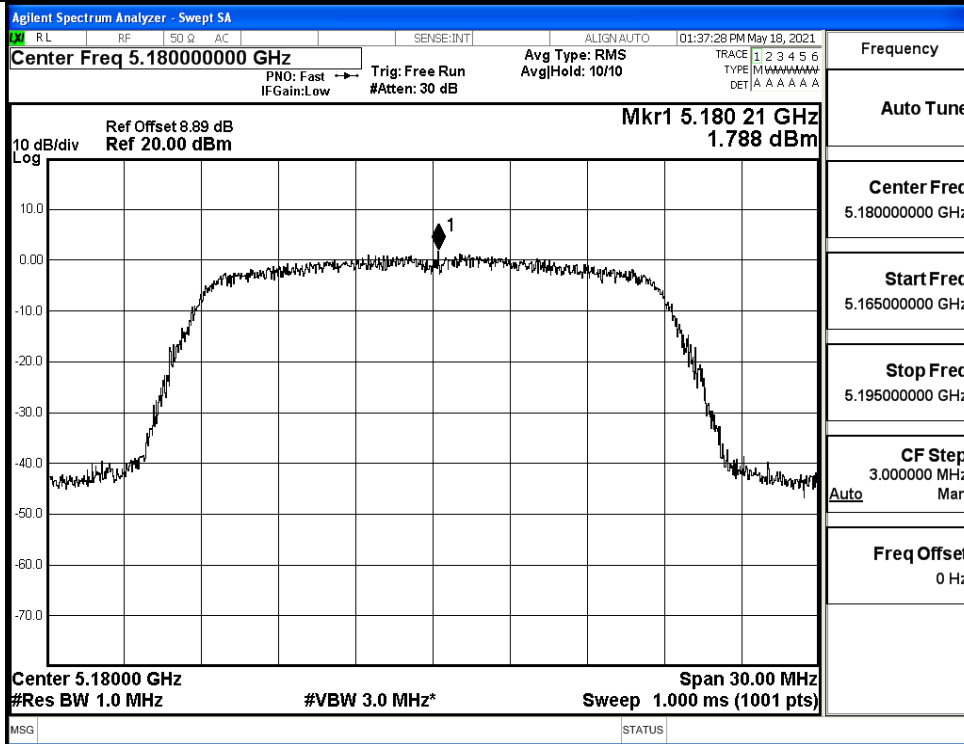
Power Spectral Density



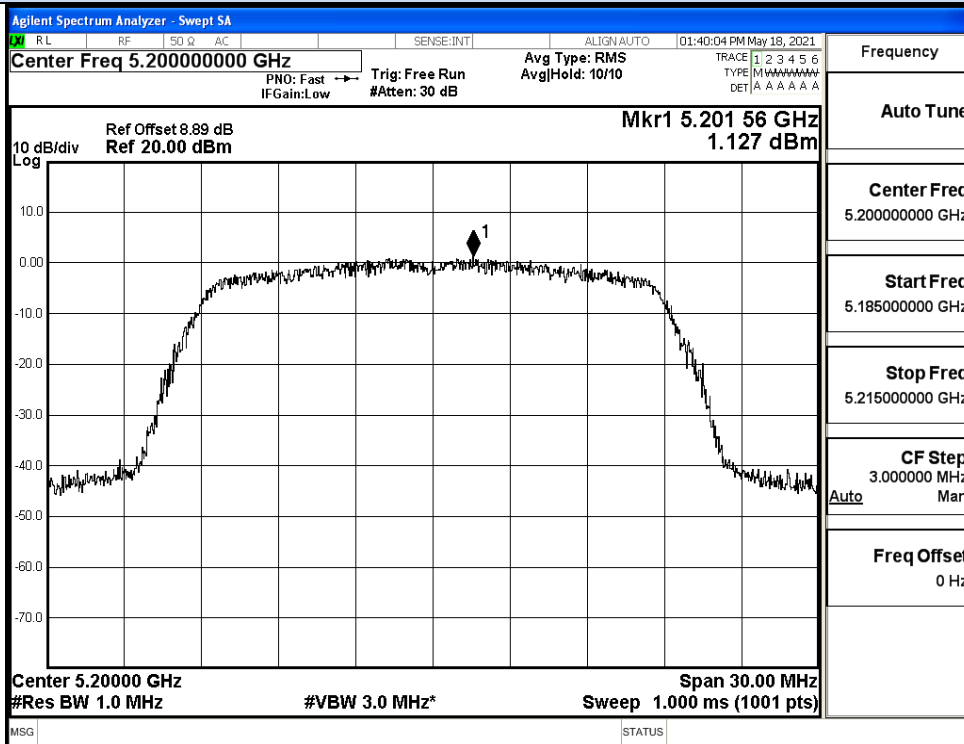
IEEE 802.11n40 / Channel 38 / 5190MHz



IEEE 802.11n40 / Channel 46 / 5230MHz

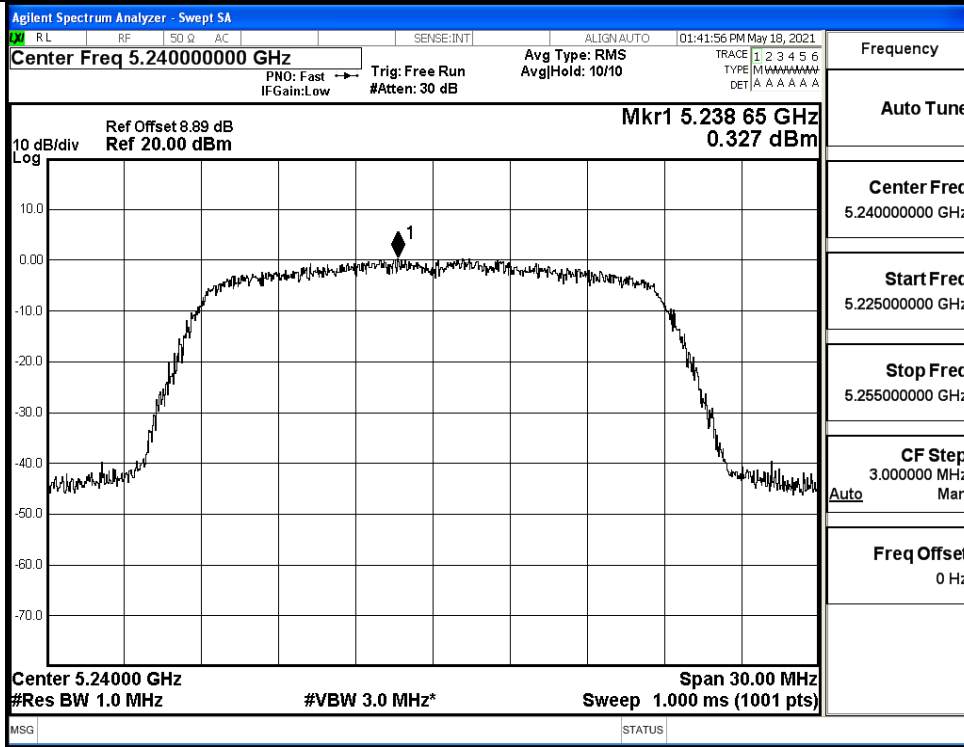


IEEE 802.11ac20 / Channel 36 / 5180MHz

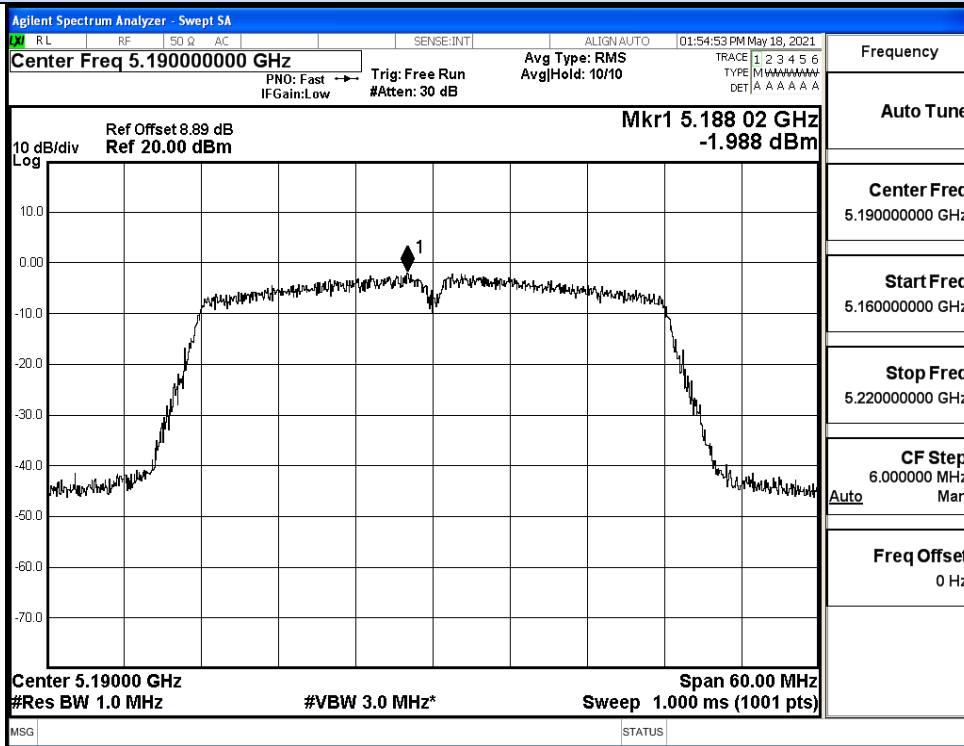


IEEE 802.11ac20 / Channel 40 / 5200MHz

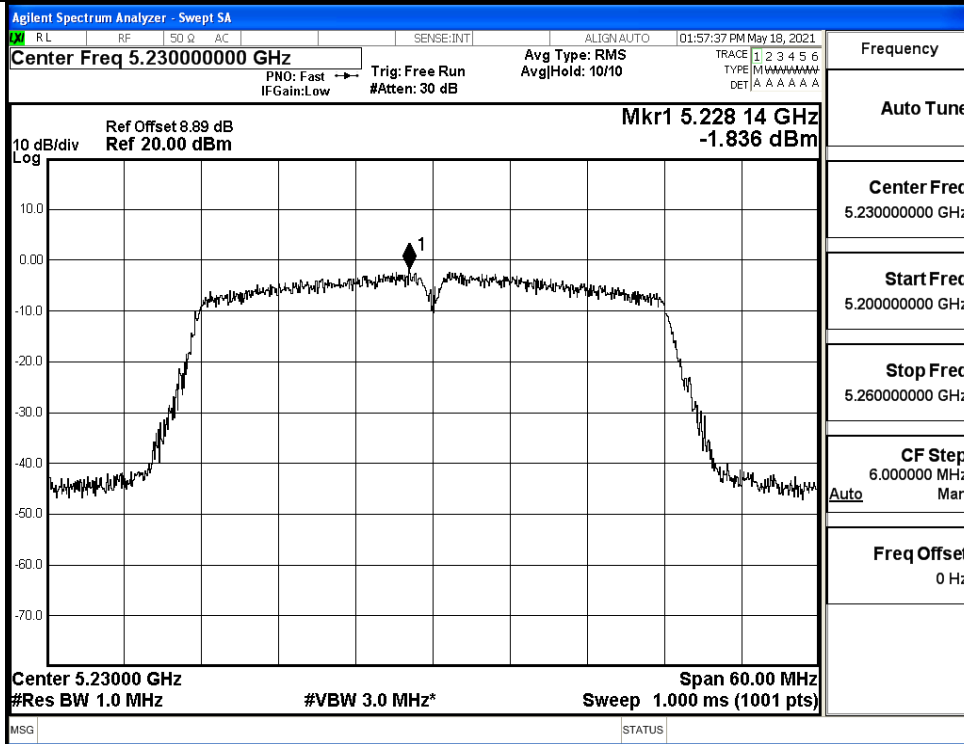




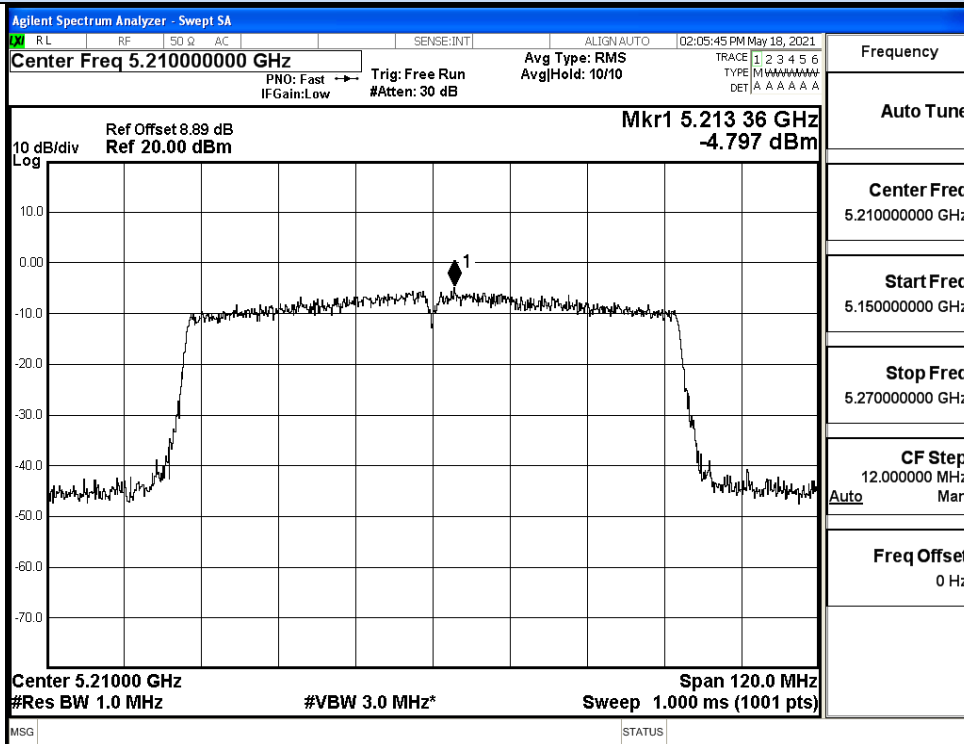
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



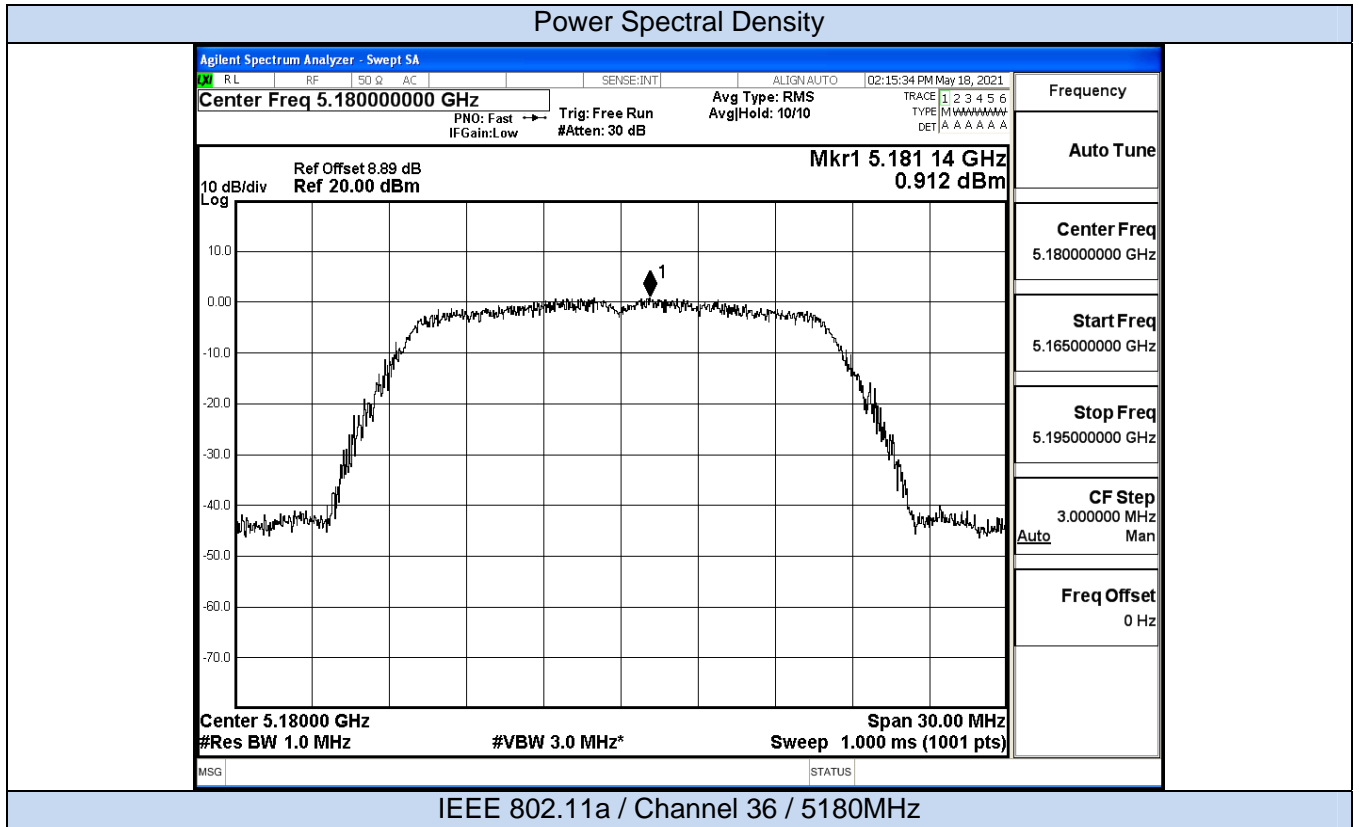
IEEE 802.11ac40 / Channel 46 / 5230MHz

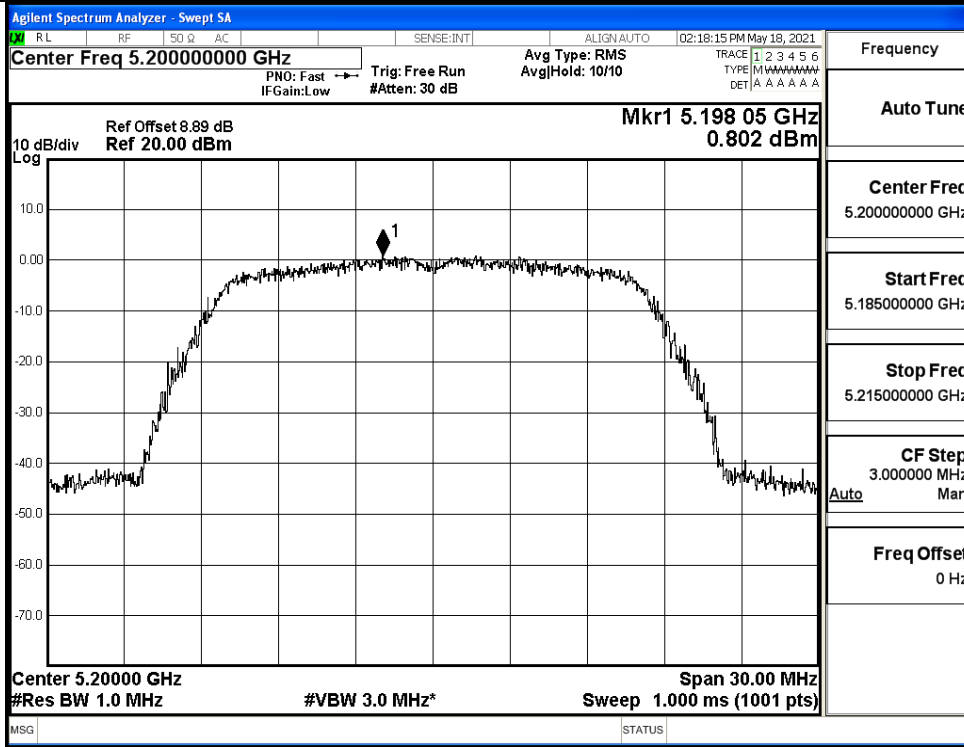


IEEE 802.11ac80 / Channel 42 / 5210MHz

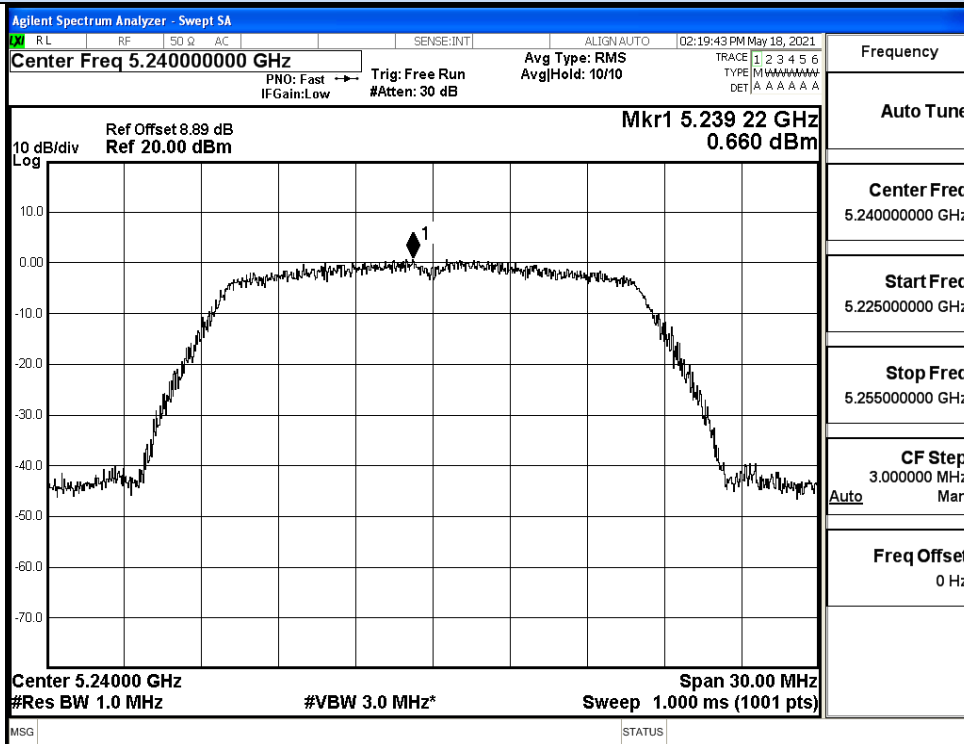
ANT1

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	0.91	0	0.91	17	Pass
	40	5200	0.80	0	0.80		Pass
	48	5240	0.66	0	0.66		Pass
11N20 SISO	36	5180	0.51	0	0.51	17	Pass
	40	5200	0.80	0	0.80		Pass
	48	5240	0.66	0	0.66		Pass
11N40 SISO	38	5190	-1.67	0	-1.67	17	Pass
	46	5230	-1.48	0	-1.48		Pass
11AC20 SISO	36	5180	0.53	0	0.53	17	Pass
	40	5200	0.57	0	0.57		Pass
	48	5240	0.78	0	0.78		Pass
11AC40 SISO	38	5190	-2.27	0	-2.27	17	Pass
	46	5230	-1.34	0	-1.34		Pass
11AC80 SISO	42	5210	-4.80	0	-4.80	17	Pass



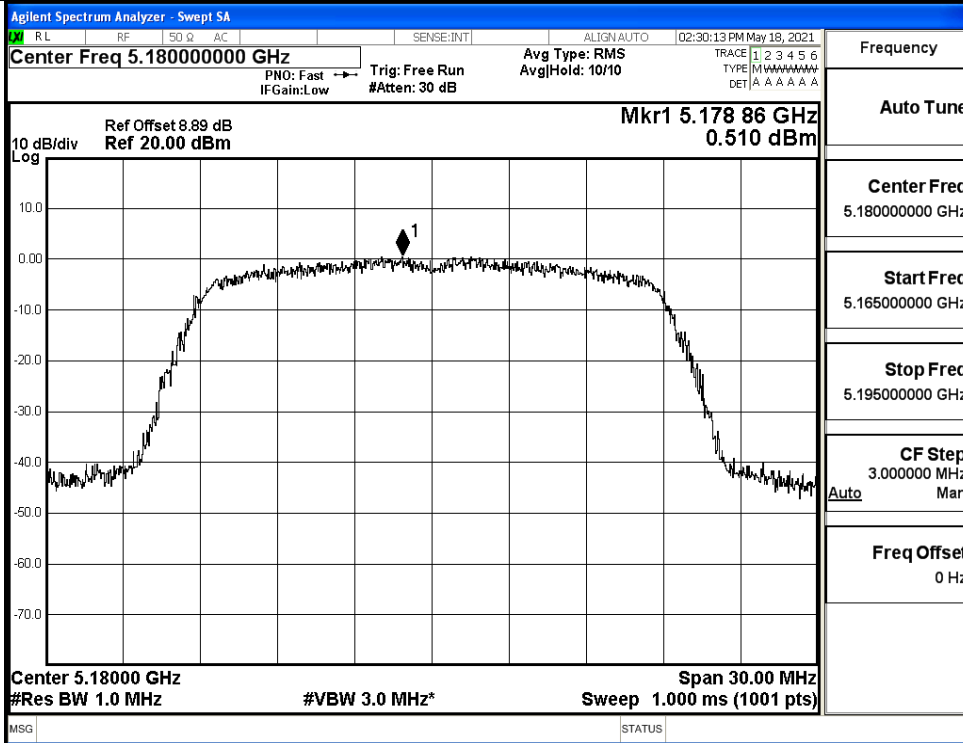


IEEE 802.11na / Channel 40 / 5200MHz

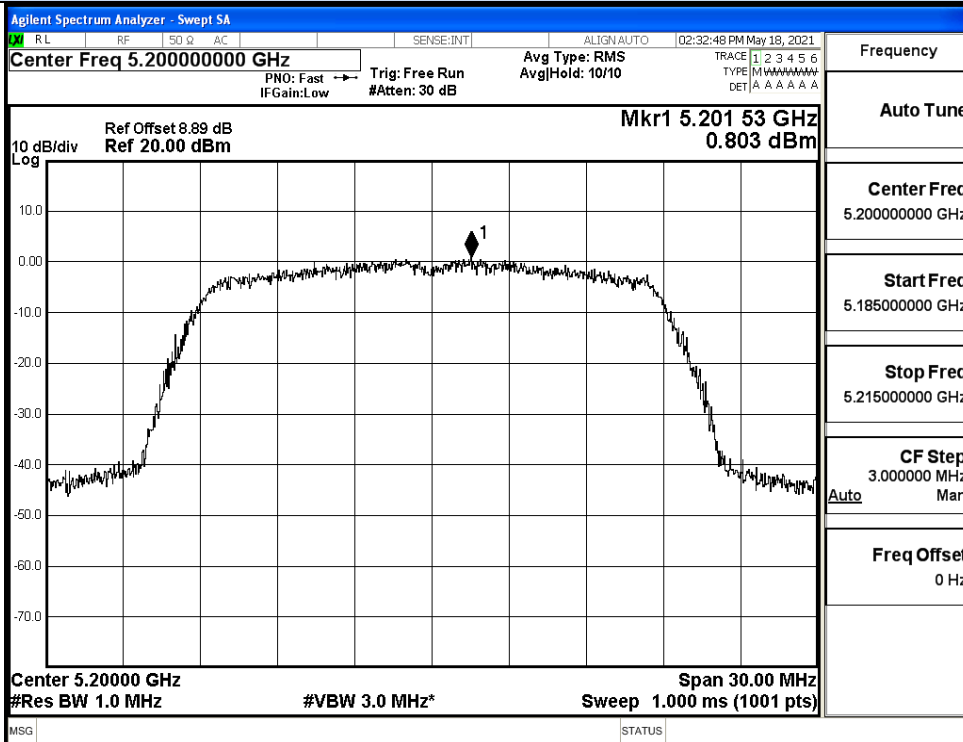


IEEE 802.11na / Channel 48 / 5240MHz

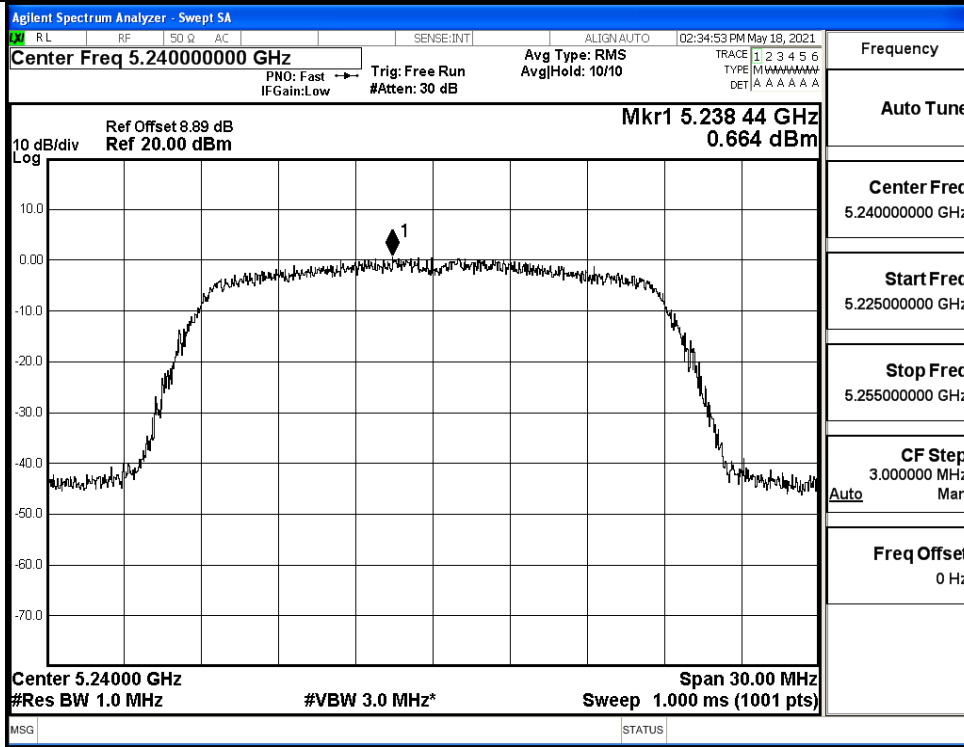
Power Spectral Density



IEEE 802.11n20 / Channel 36 / 5180MHz

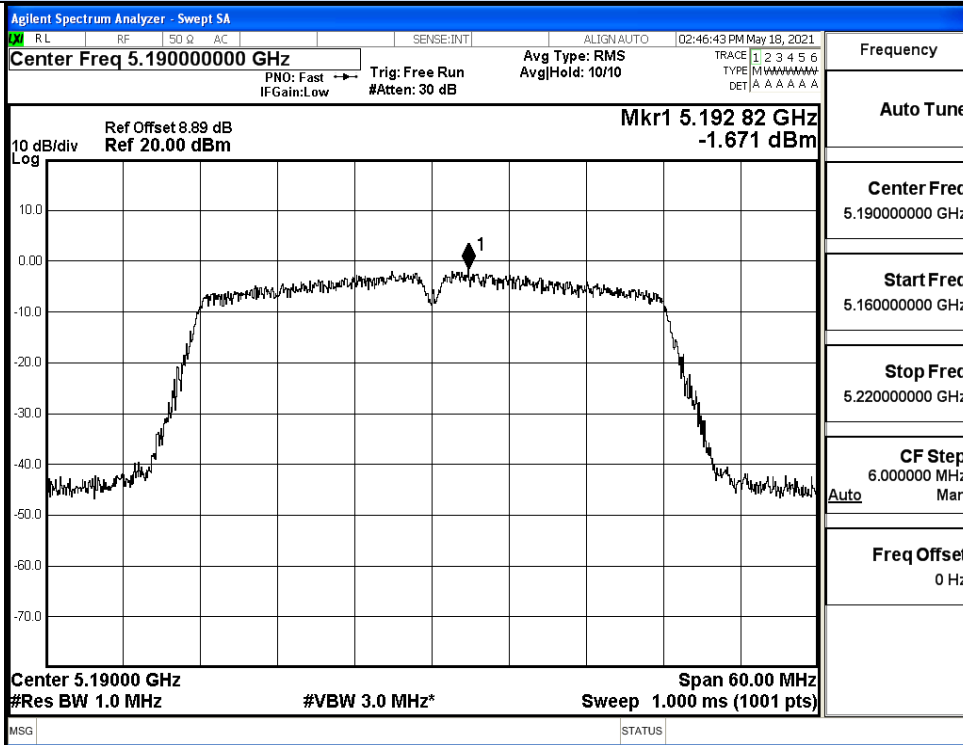


IEEE 802.11n20 / Channel 40 / 5200MHz

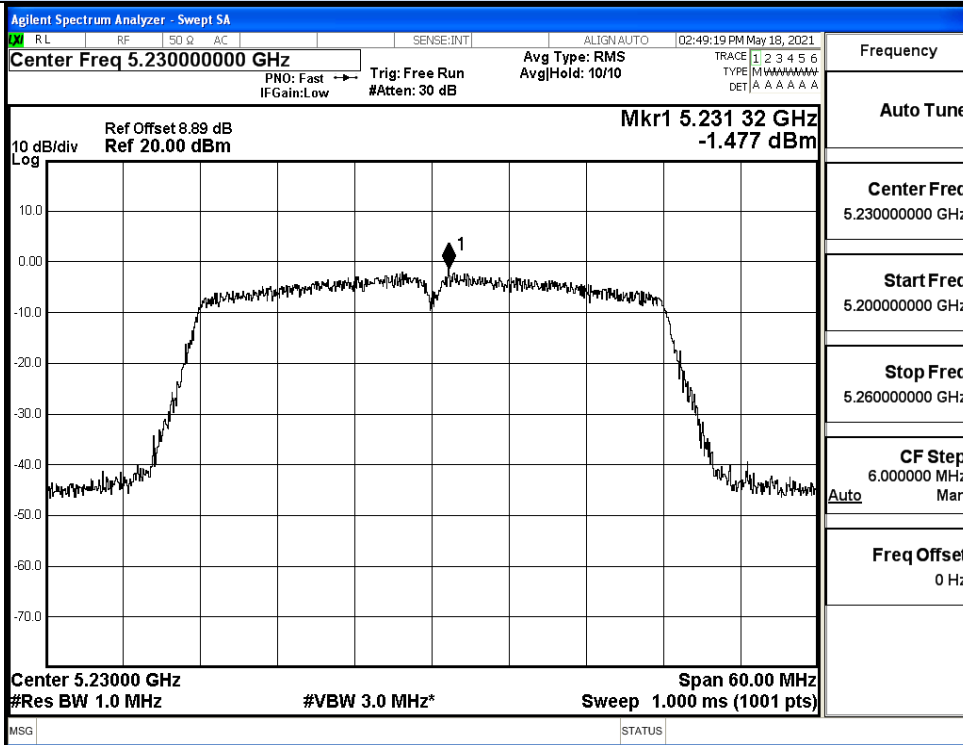


IEEE 802.11n20 / Channel 48 / 5240MHz

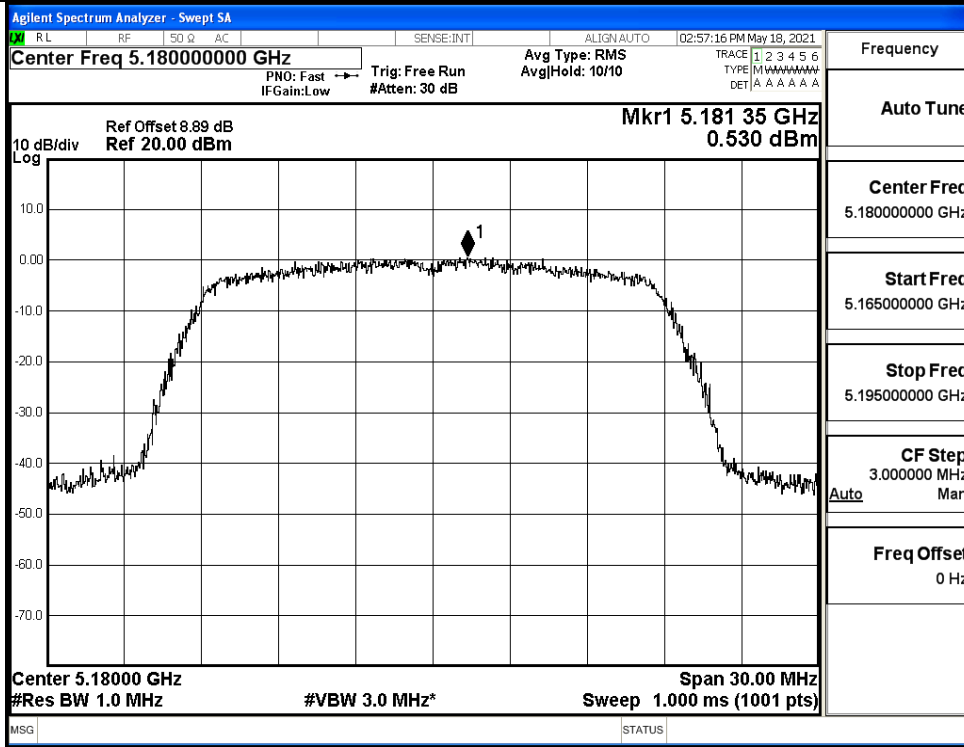
Power Spectral Density



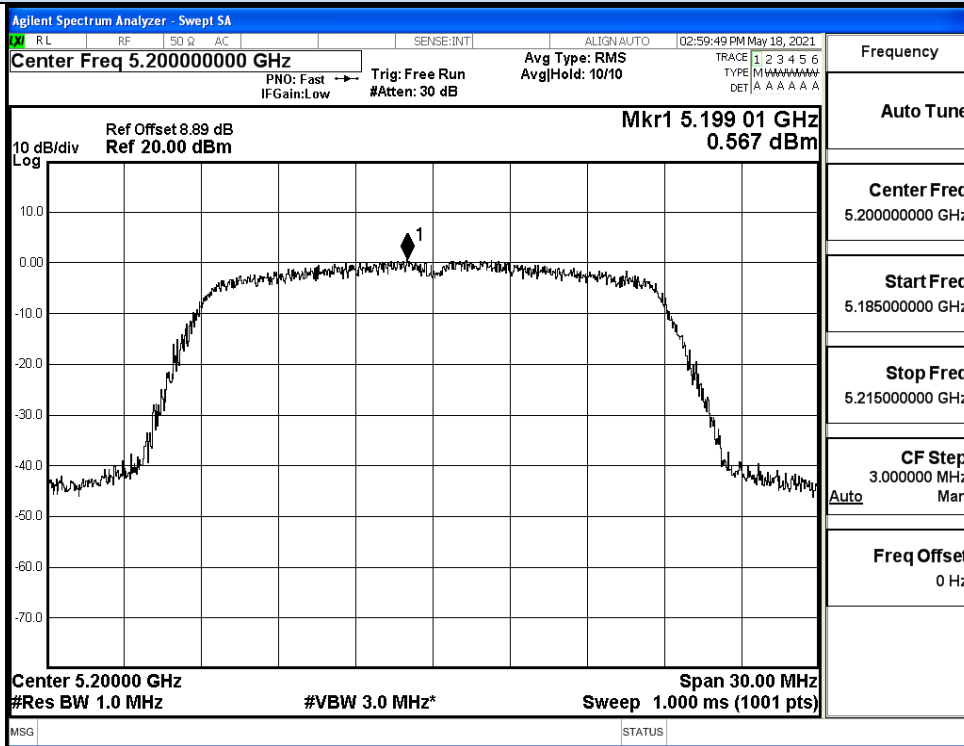
IEEE 802.11n40 / Channel 38 / 5190MHz



IEEE 802.11n40 / Channel 46 / 5230MHz

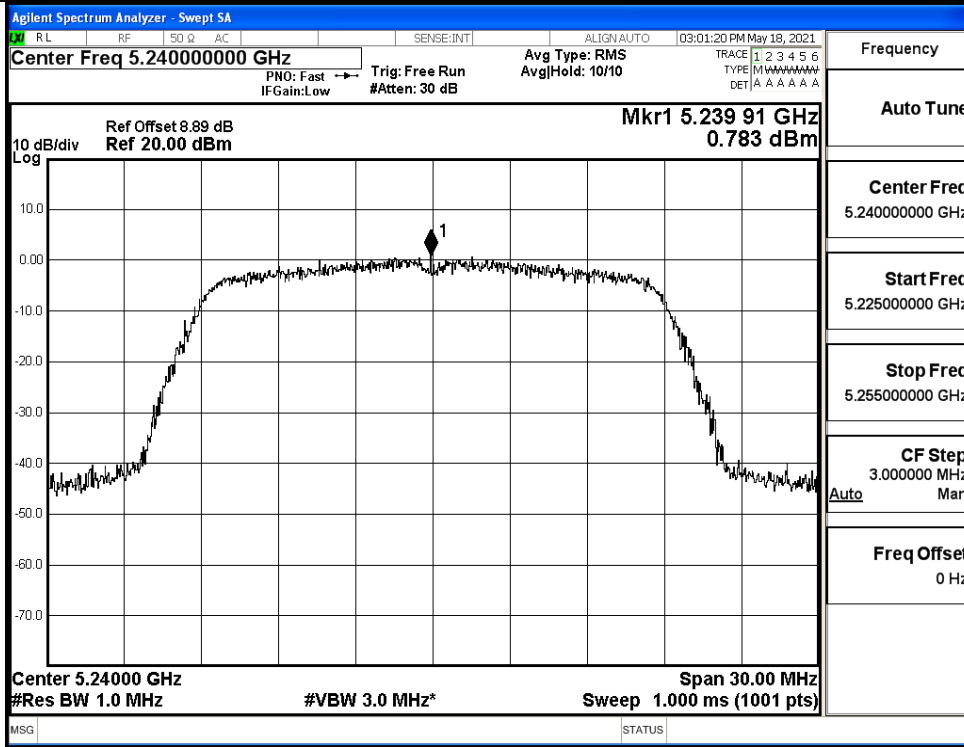


IEEE 802.11ac20 / Channel 36 / 5180MHz

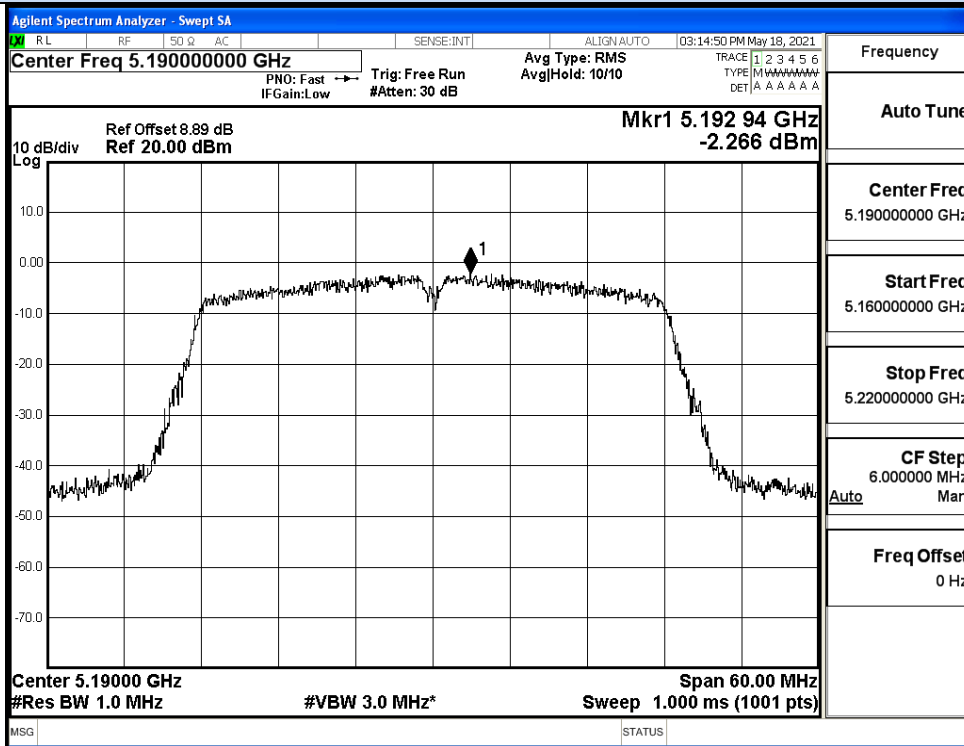


IEEE 802.11ac20 / Channel 40 / 5200MHz

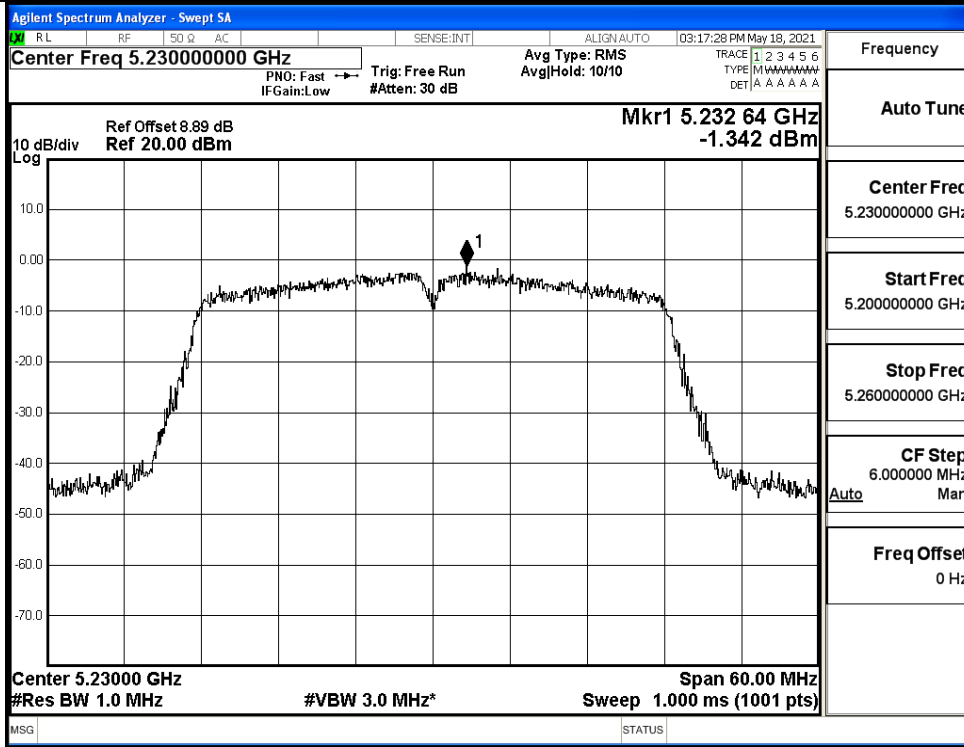




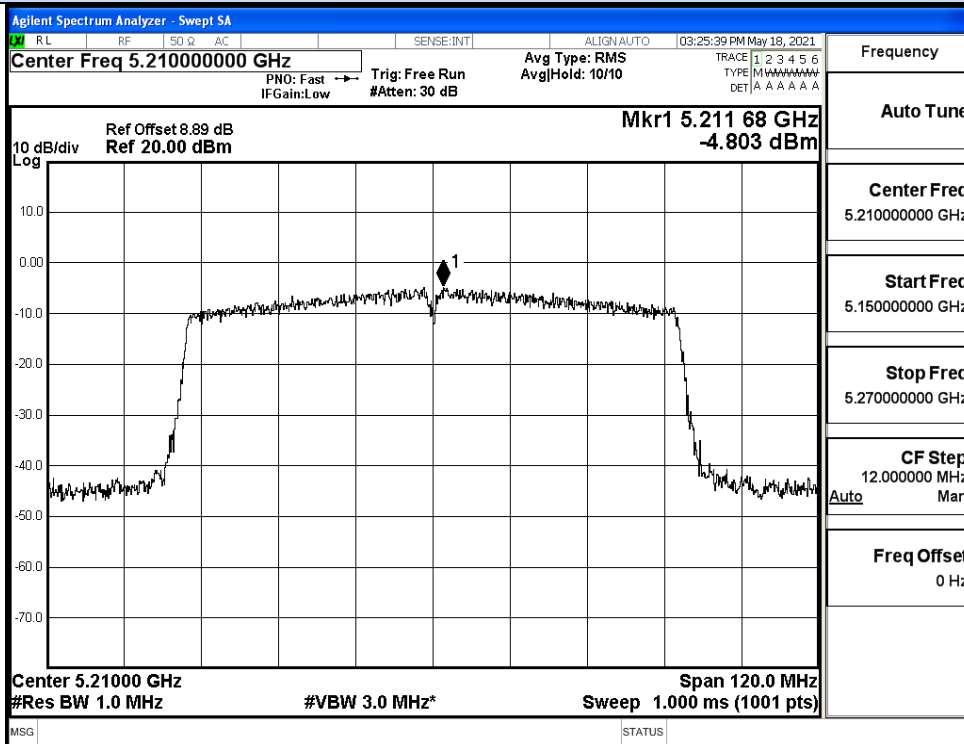
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



IEEE 802.11ac80 / Channel 42 / 5210MHz

## MIMO

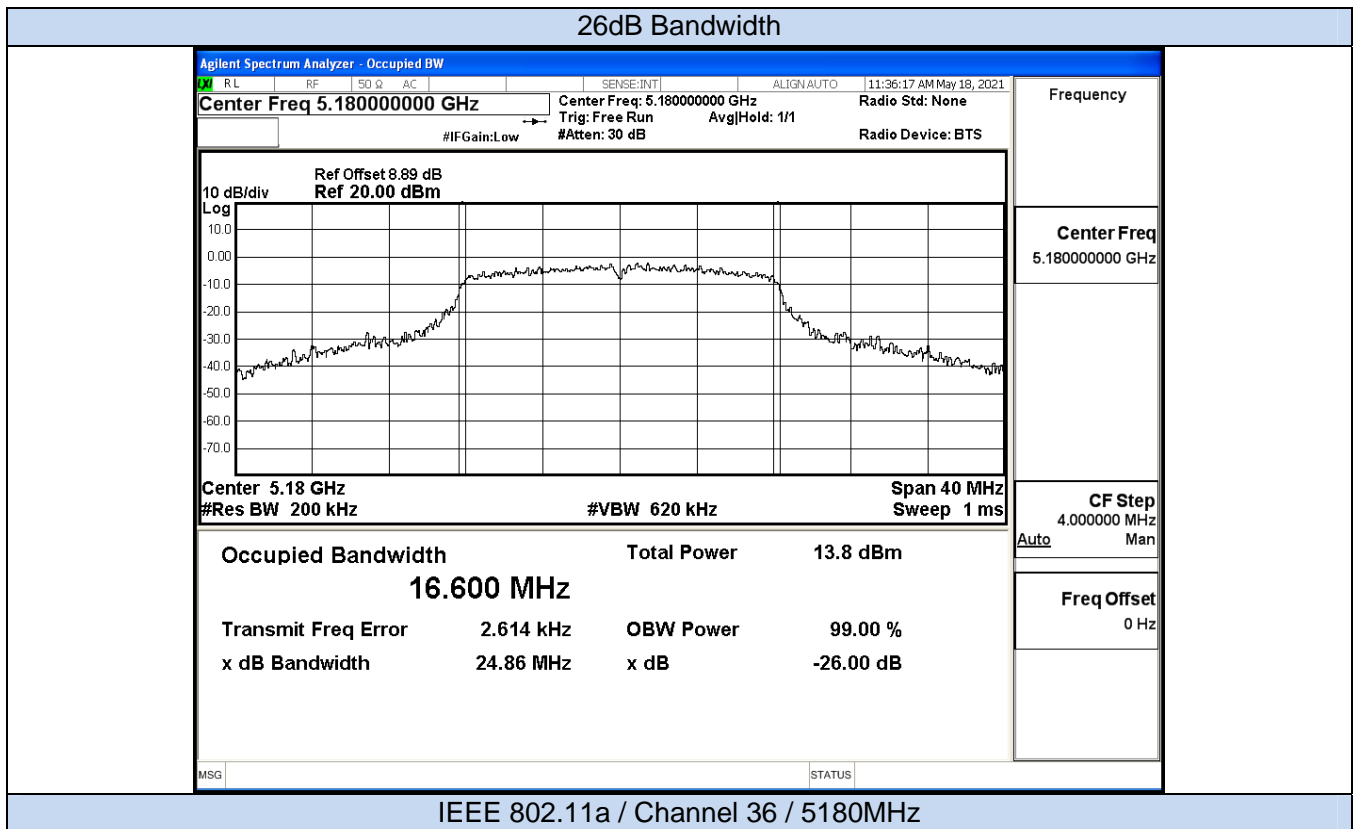
Test Mode	Channel	Frequency (MHz)	ANT 0 Power Density (dBm/MHz)	ANT 1 Power Density (dBm/MHz)	MIMO Power Density (dBm/MHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11N20	36	5180	0.75	0.51	3.64	0	3.64	16.99	Pass
	40	5200	0.60	0.80	3.71	0	3.71		Pass
	48	5240	0.52	0.66	3.60	0	3.60		Pass
11N40	38	5190	-1.81	-1.67	1.27	0	1.27	16.99	Pass
	46	5230	-1.19	-1.48	1.68	0	1.68		Pass
11AC20	36	5180	1.79	0.53	4.22	0	4.22	16.99	Pass
	40	5200	1.13	0.57	3.87	0	3.87		Pass
	48	5240	0.33	0.78	3.57	0	3.57		Pass
11AC40	38	5190	-1.99	-2.27	0.88	0	0.88	16.99	Pass
	46	5230	-1.84	-1.34	1.43	0	1.43		Pass
11AC80	42	5210	-4.80	-4.80	-1.79	0	-1.79	16.99	Pass

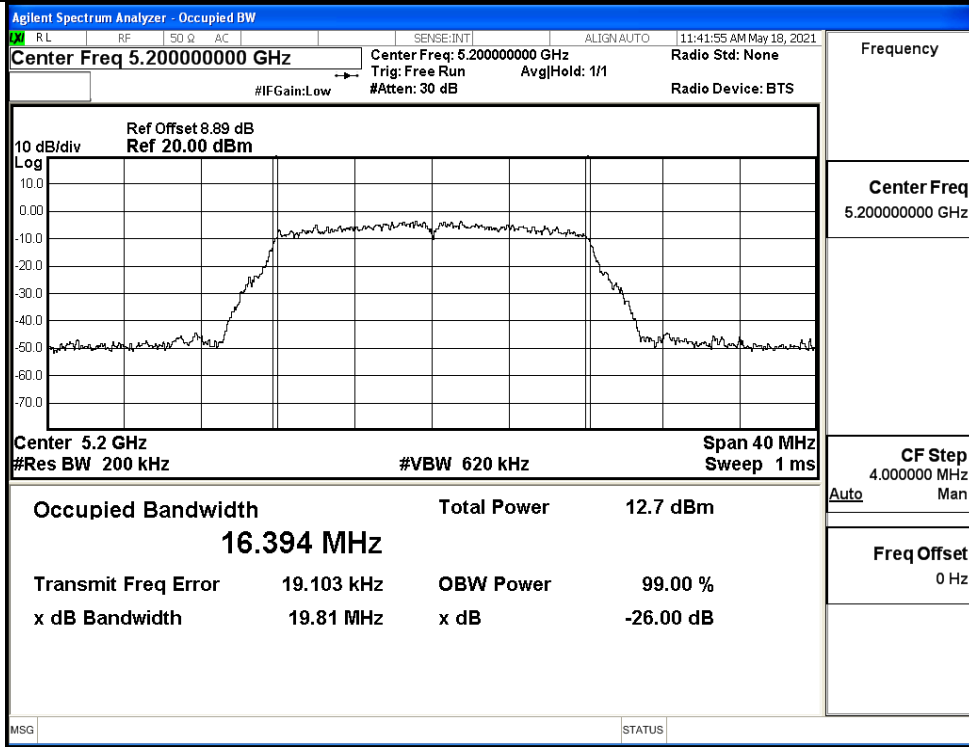
Directional gain=3dBi+10 log (2) = 6.01dBi > 6dBi, So the power density limit shall be reduced to 17-(6.01-6) = 16.99

**D.4 Emission Bandwidth**

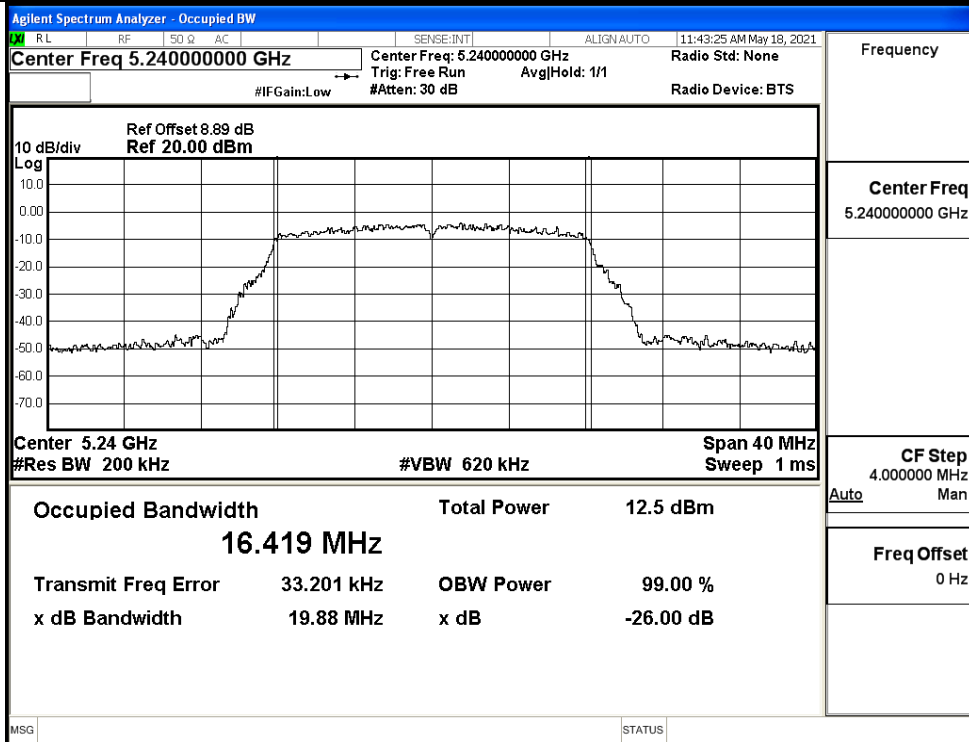
ANT0

Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	24.86	No Limit	Pass
	40	5200	19.81		Pass
	48	5240	19.88		Pass
11N20 SISO	36	5180	20.07	No Limit	Pass
	40	5200	20.22		Pass
	48	5240	20.02		Pass
11N40 SISO	38	5190	40.10	No Limit	Pass
	46	5230	40.27		Pass
11AC20 SISO	36	5180	20.04	No Limi	Pass
	40	5200	20.16		Pass
	48	5240	20.00		Pass
11AC40 SISO	38	5190	39.69	No Limi	Pass
	46	5230	40.10		Pass
11AC80 SISO	42	5210	80.55	No Limi	Pass





IEEE 802.11a / Channel 40 / 5200MHz



IEEE 802.11a / Channel 48 / 5240MHz

26dB Bandwidth

Agilent Spectrum Analyzer - Occupied BW

Center Freq 5.18000000 GHz

Center Freq: 5.18000000 GHz  
Trig: Free Run Avg/Hold: 1/1

Radio Std: None  
Radio Device: BTS

Ref Offset 8.89 dB  
Ref 20.00 dBm

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

Occupied Bandwidth	Total Power	12.1 dBm
<b>17.579 MHz</b>		
Transmit Freq Error	27.053 kHz	OBW Power 99.00 %
x dB Bandwidth	20.07 MHz	x dB -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

Center Freq 5.20000000 GHz

Center Freq: 5.20000000 GHz  
Trig: Free Run Avg/Hold: 1/1

Radio Std: None  
Radio Device: BTS

Ref Offset 8.89 dB  
Ref 20.00 dBm

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

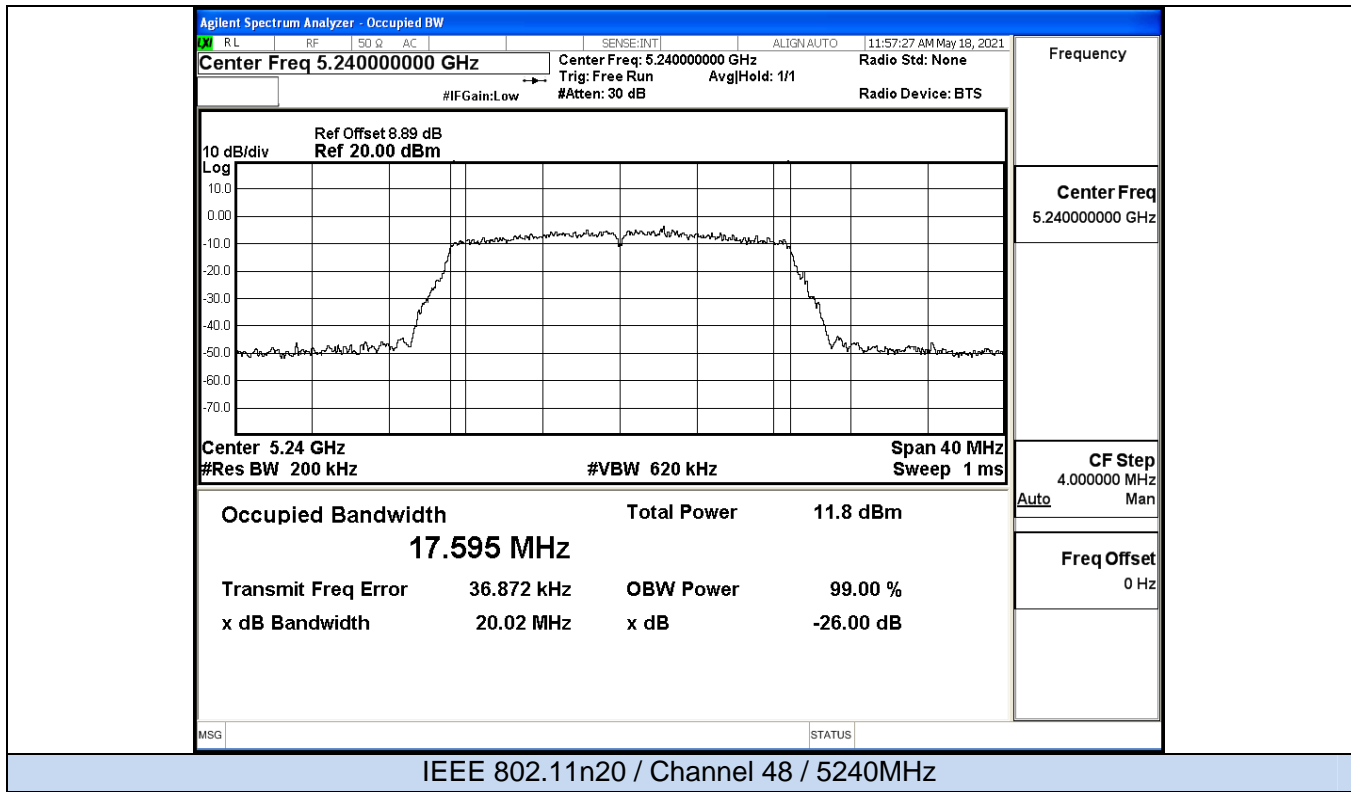
Occupied Bandwidth	Total Power	12.1 dBm
<b>17.555 MHz</b>		
Transmit Freq Error	15.630 kHz	OBW Power 99.00 %
x dB Bandwidth	20.22 MHz	x dB -26.00 dB

Frequency: 5.20000000 GHz

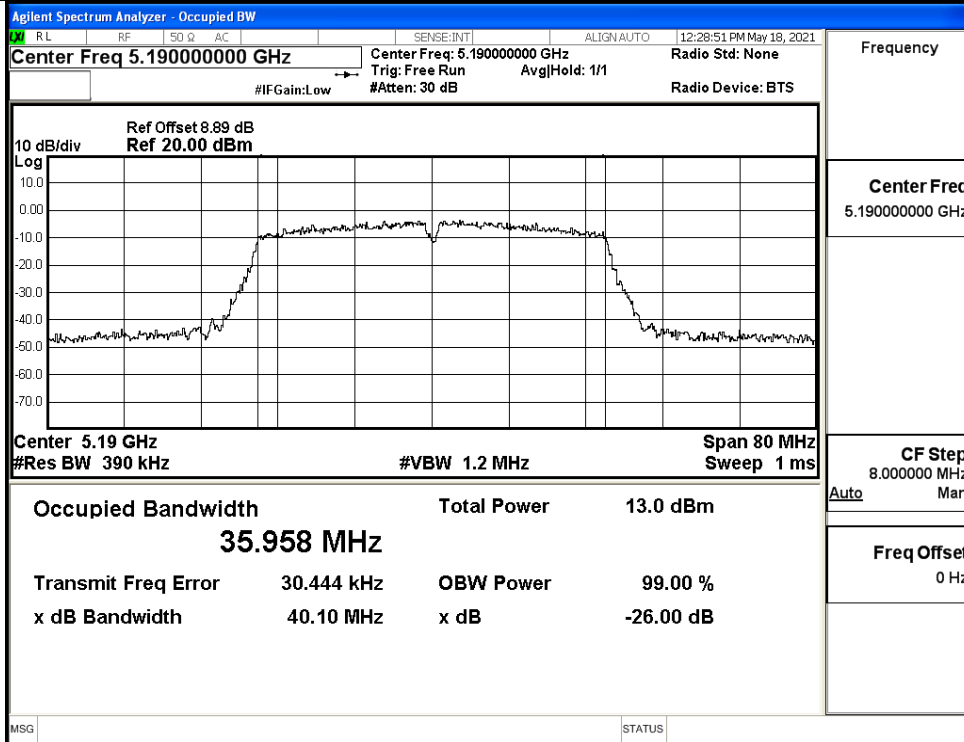
CF Step: 4.000000 MHz

Freq Offset: 0 Hz

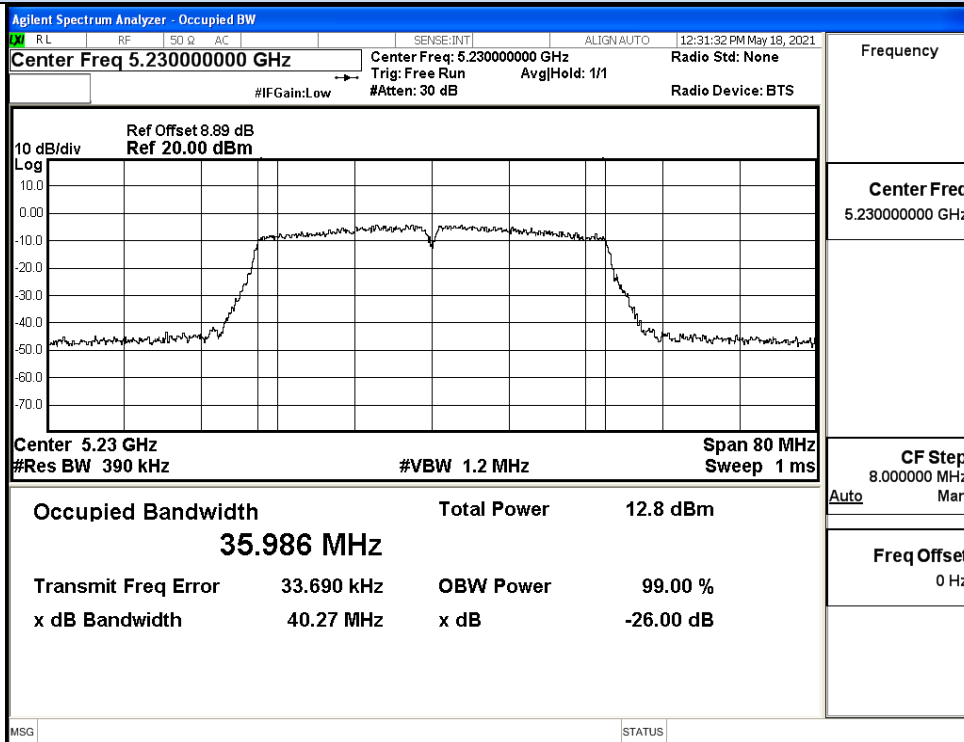
IEEE 802.11n20 / Channel 40 / 5200MHz



26dB Bandwidth

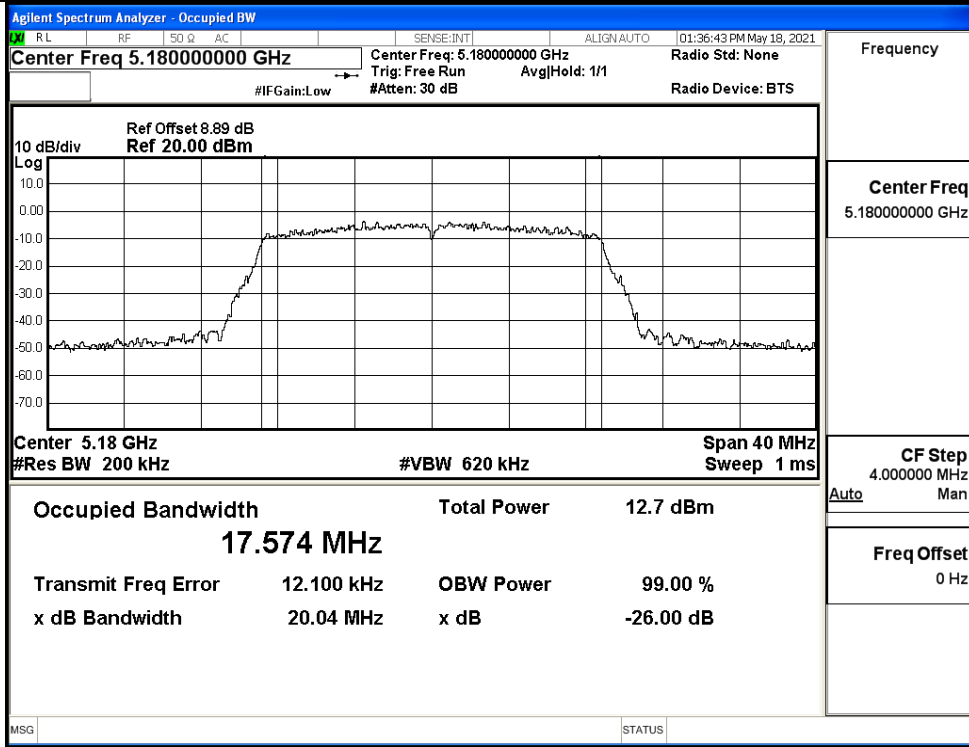


IEEE 802.11n40 / Channel 38 / 5190MHz

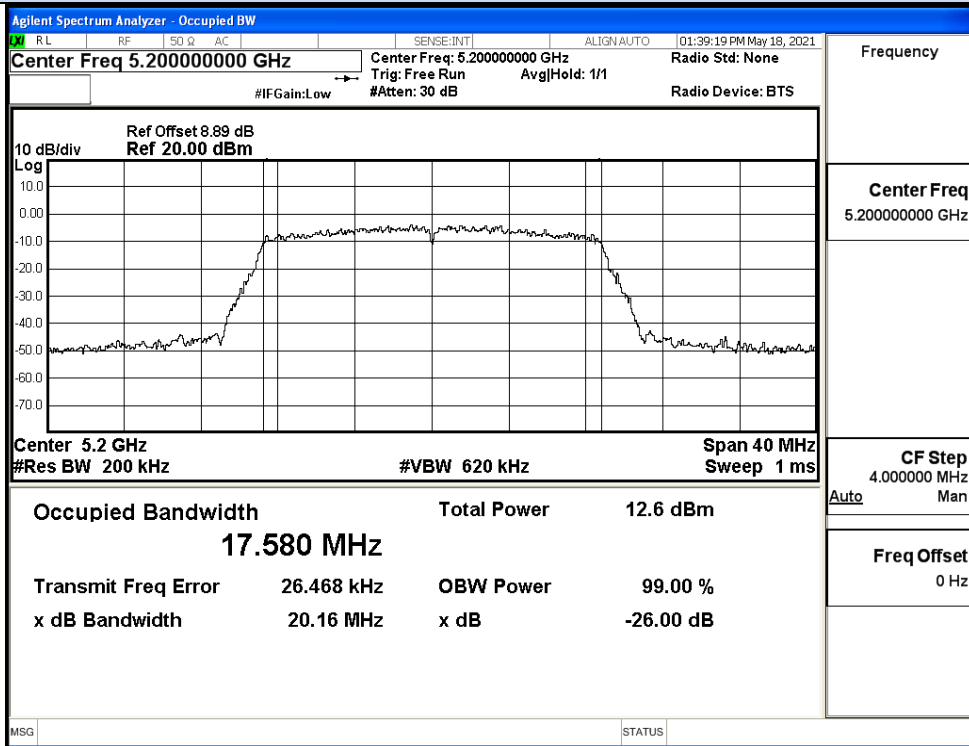


IEEE 802.11n40 / Channel 46 / 5230MHz

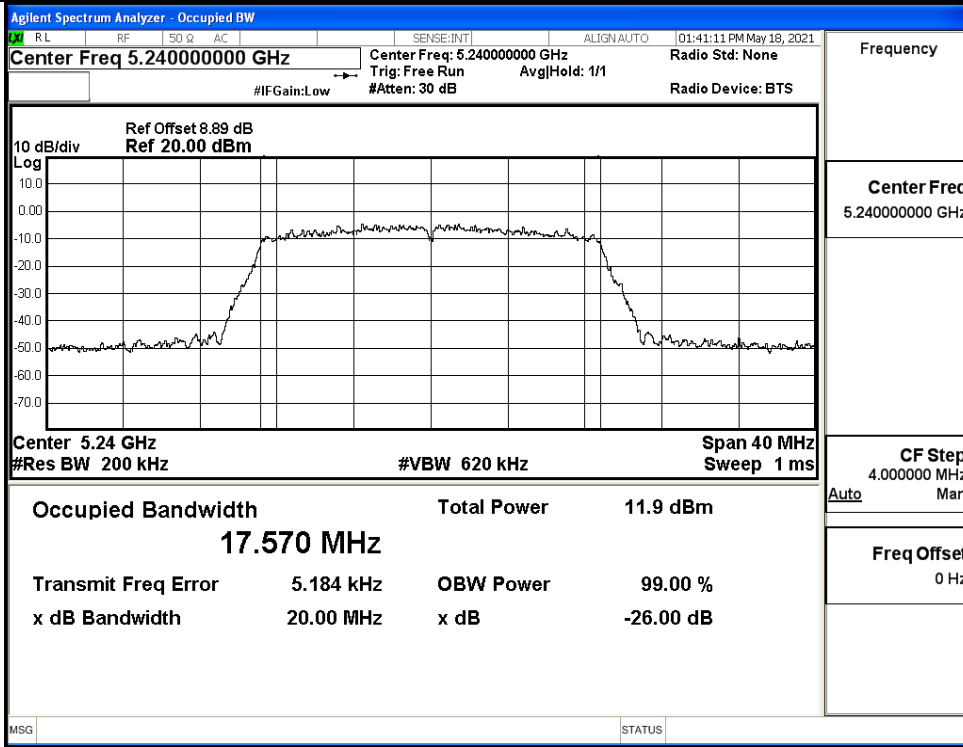




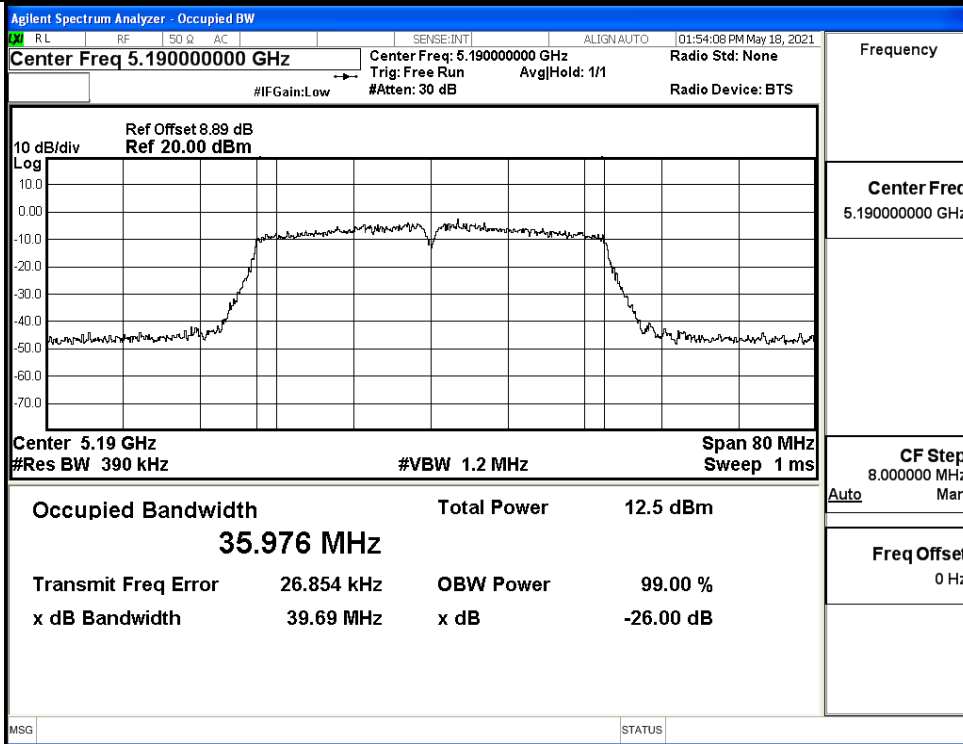
IEEE 802.11ac20 / Channel 36 / 5180MHz



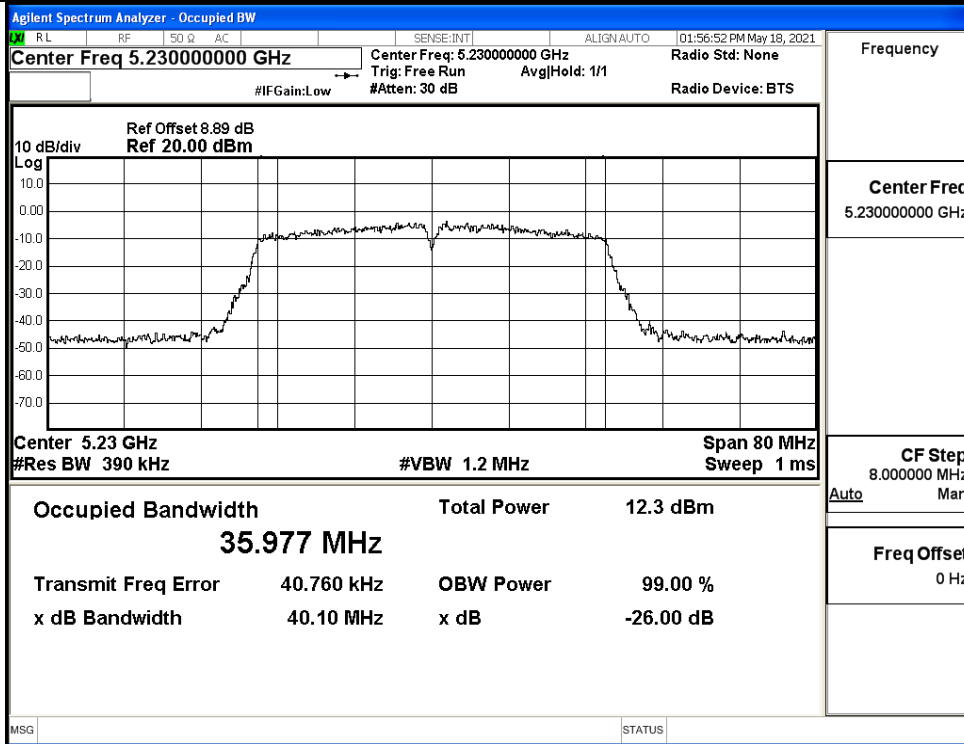
IEEE 802.11ac20 / Channel 40 / 5200MHz



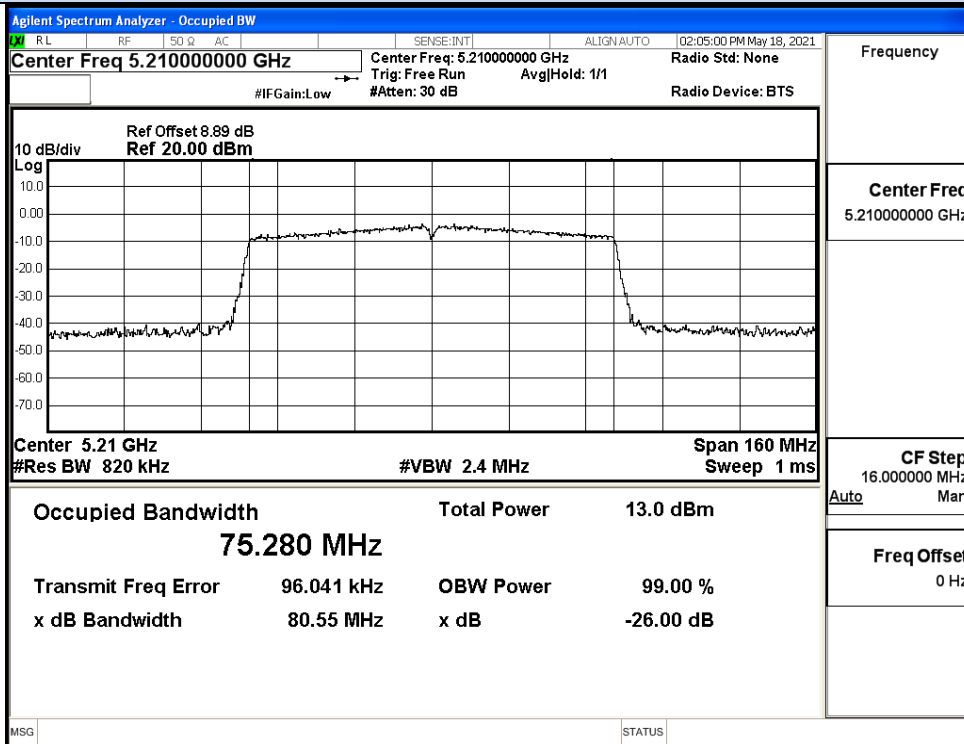
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



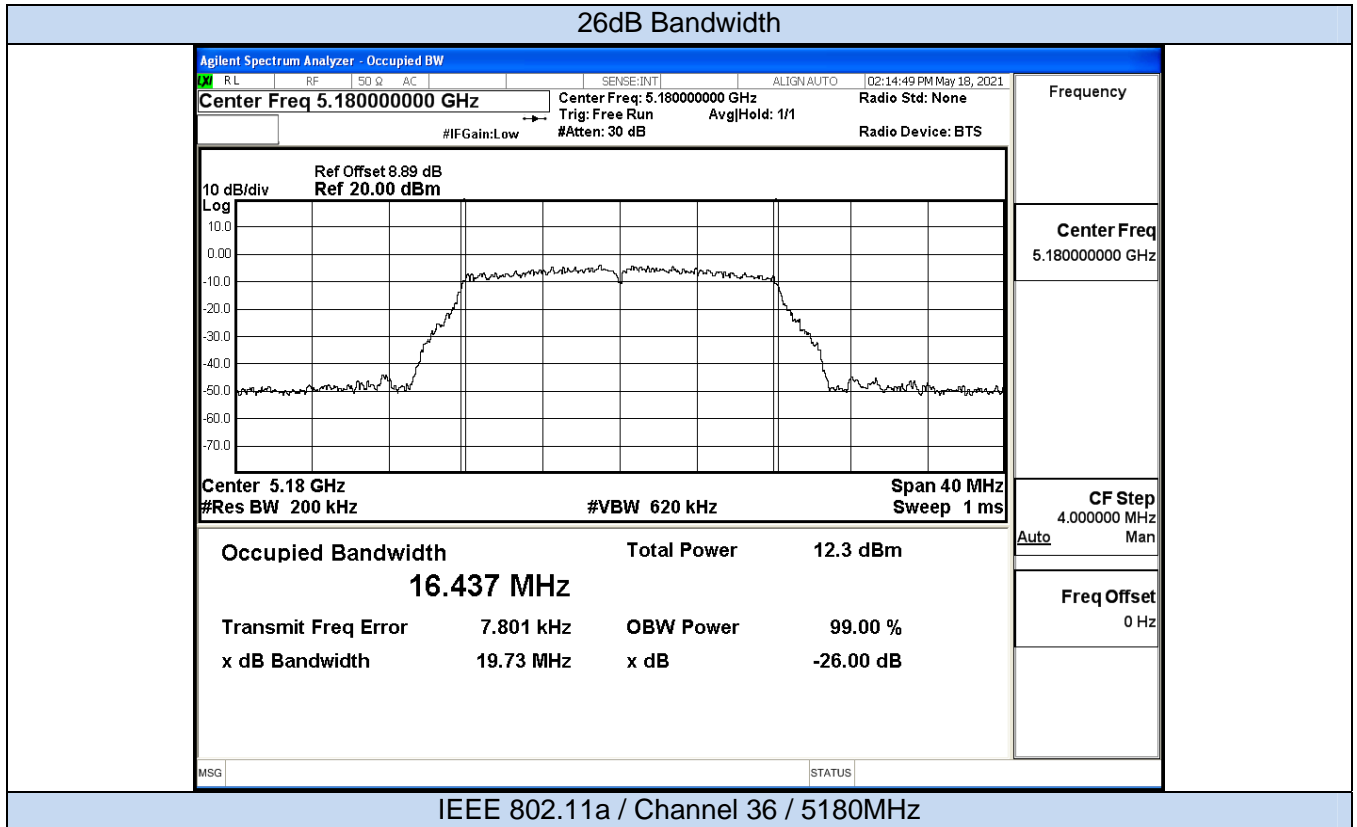
IEEE 802.11ac40 / Channel 46 / 5230MHz

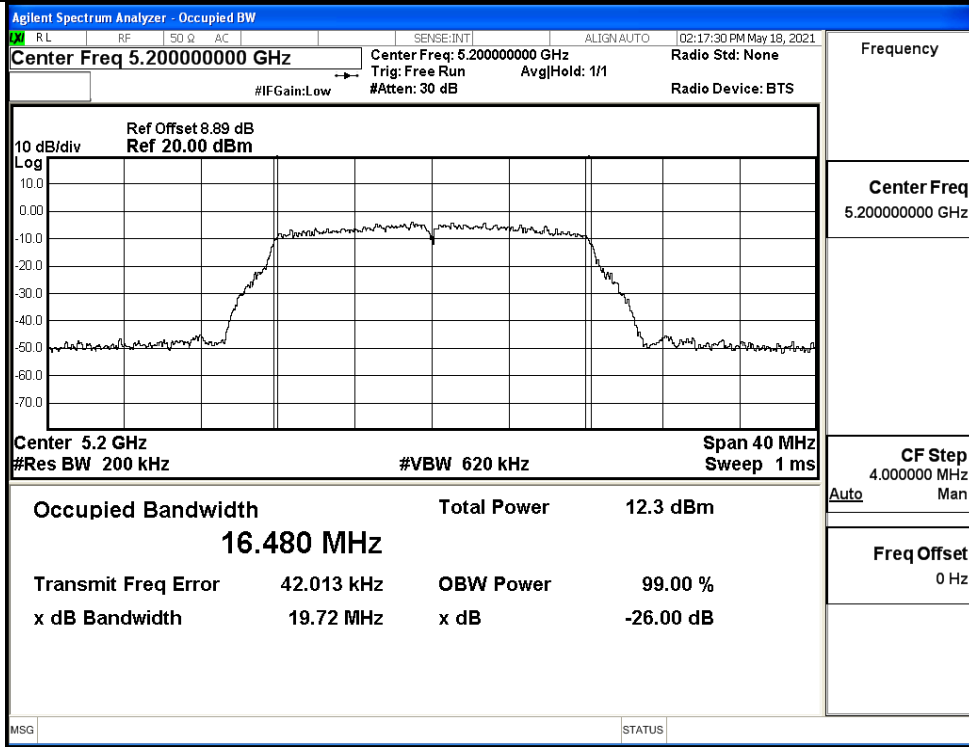


IEEE 802.11ac80 / Channel 42 / 5210MHz

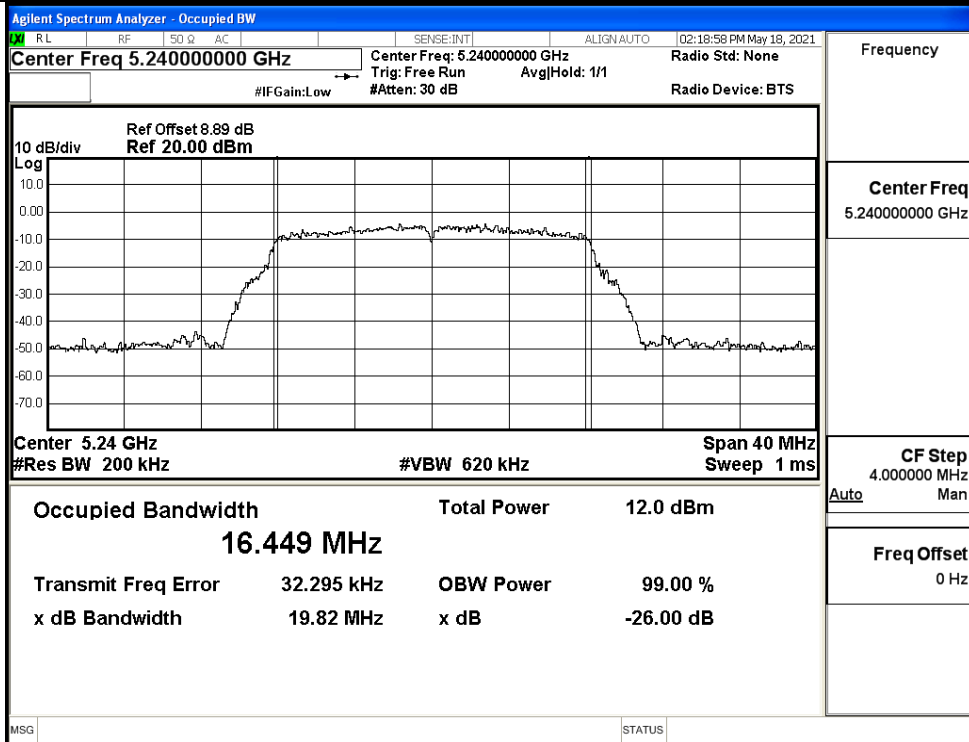
ANT1

Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	19.73	No Limit	Pass
	40	5200	19.72		Pass
	48	5240	19.82		Pass
11N20 SISO	36	5180	20.08	No Limit	Pass
	40	5200	20.45		Pass
	48	5240	19.94		Pass
11N40 SISO	38	5190	40.58	No Limit	Pass
	46	5230	40.18		Pass
11AC20 SISO	36	5180	20.13	No Limi	Pass
	40	5200	20.07		Pass
	48	5240	20.02		Pass
11AC40 SISO	38	5190	39.82	No Limi	Pass
	46	5230	40.12		Pass
11AC80 SISO	42	5210	80.80	No Limi	Pass



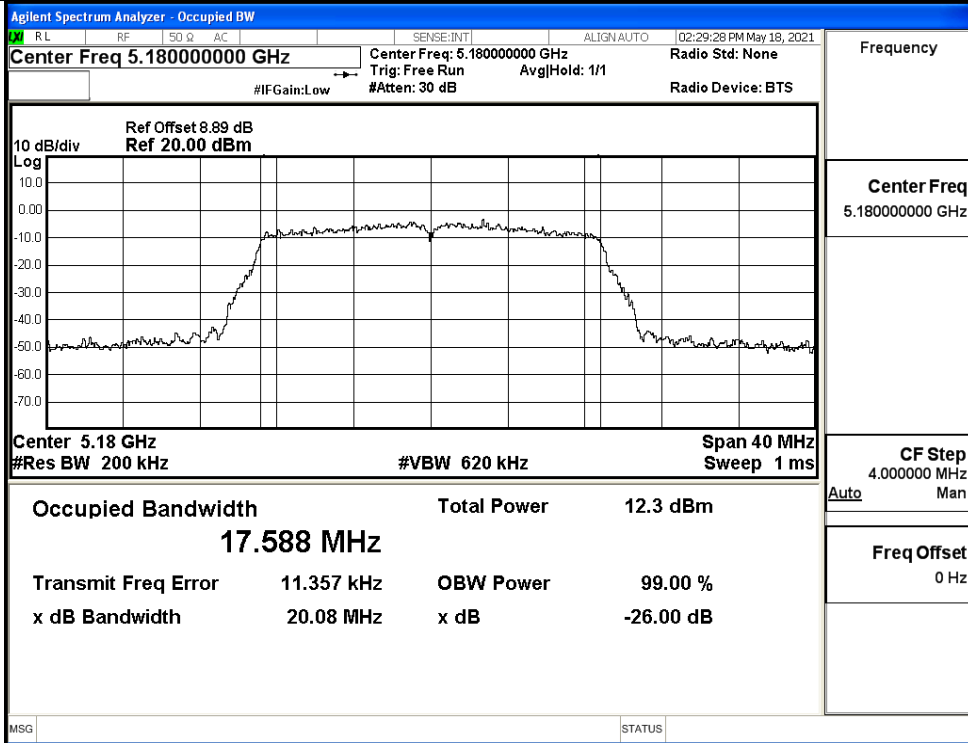


IEEE 802.11a / Channel 40 / 5200MHz

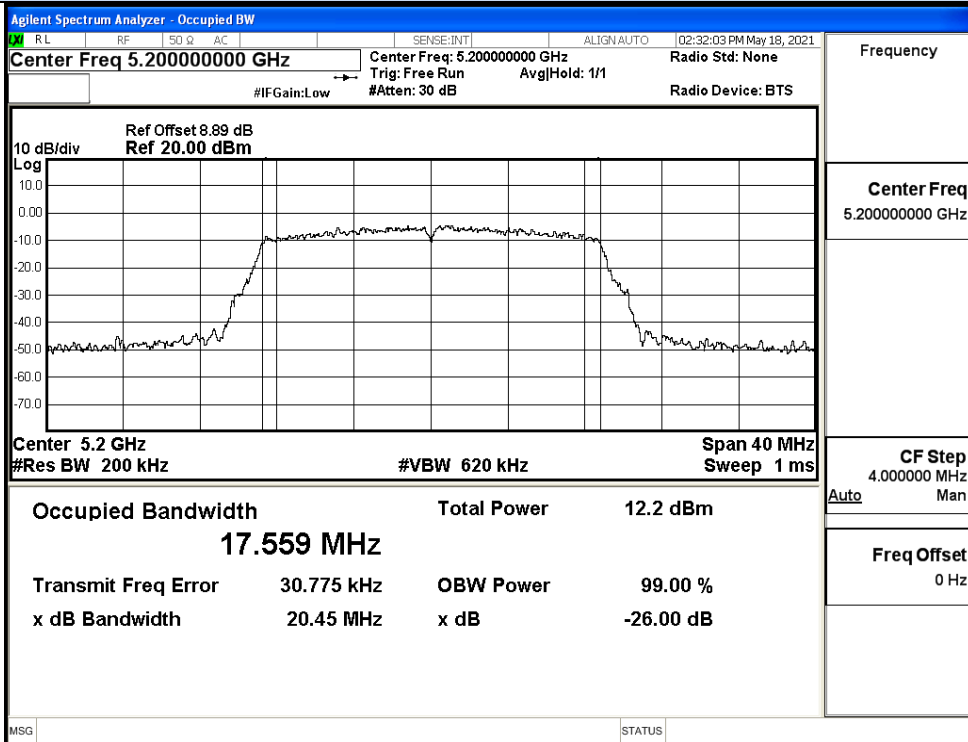


IEEE 802.11a / Channel 48 / 5240MHz

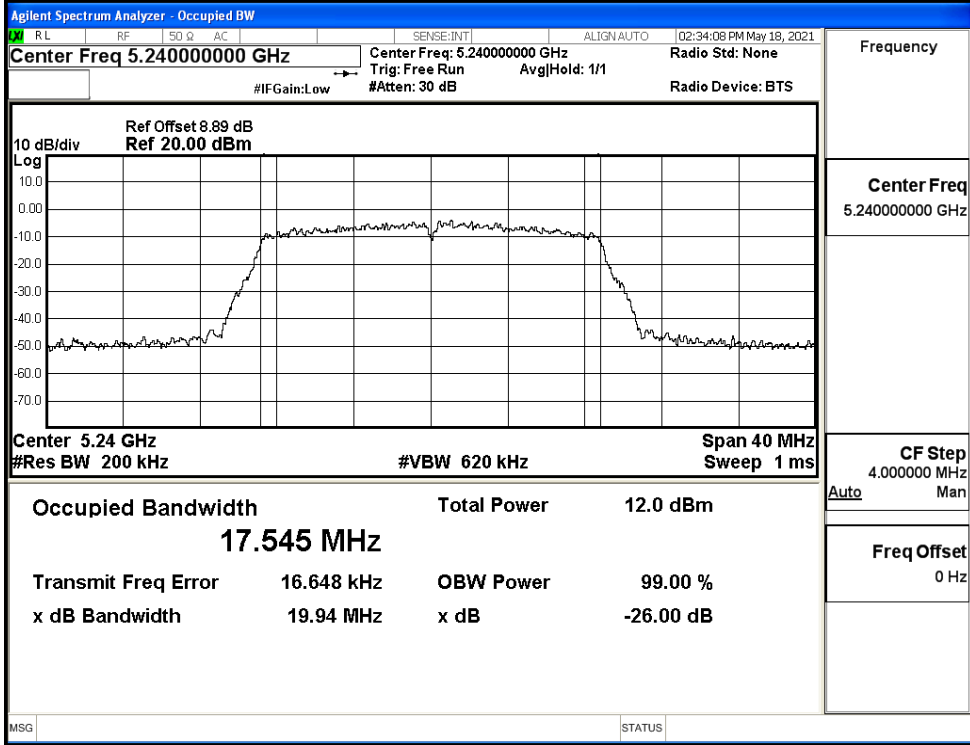
26dB Bandwidth



IEEE 802.11n20 / Channel 36 / 5180MHz

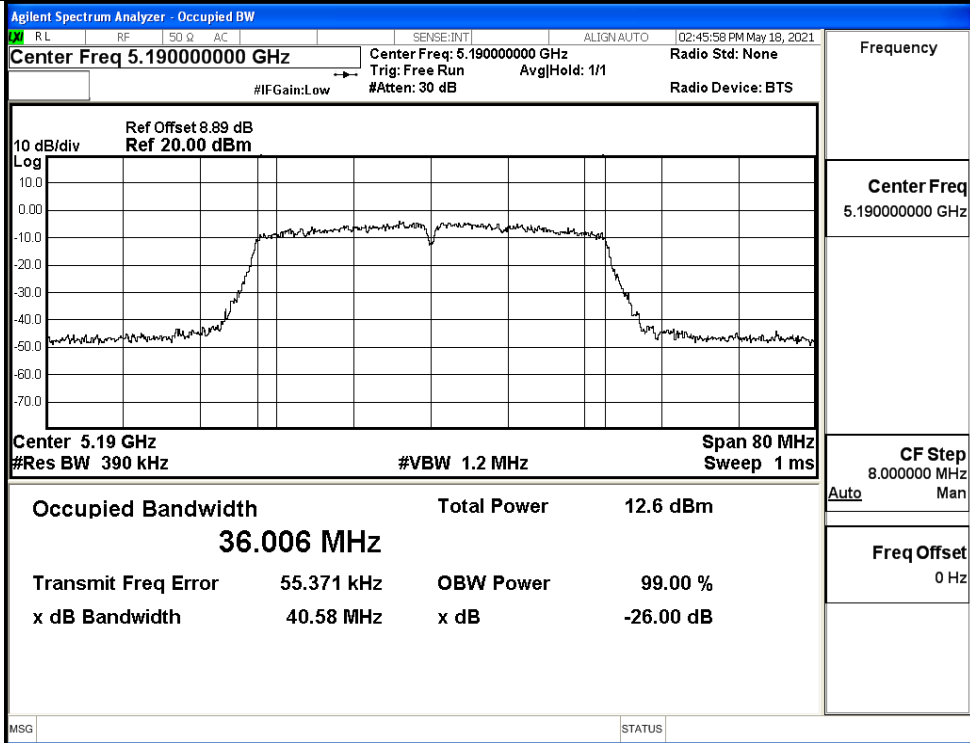


IEEE 802.11n20 / Channel 40 / 5200MHz

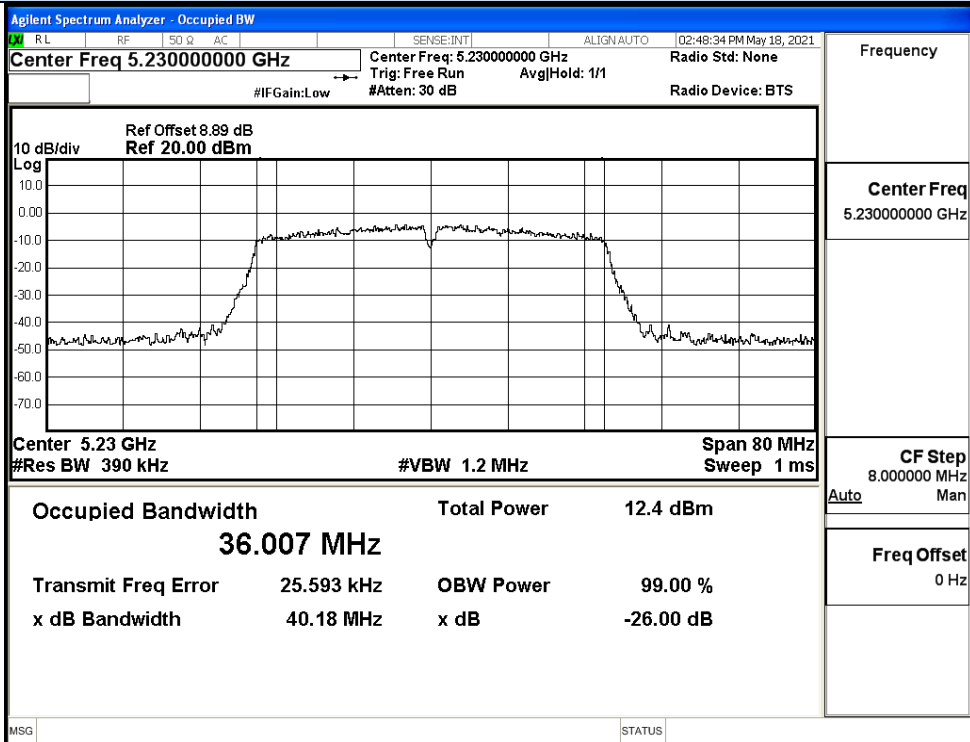


IEEE 802.11n20 / Channel 48 / 5240MHz

26dB Bandwidth

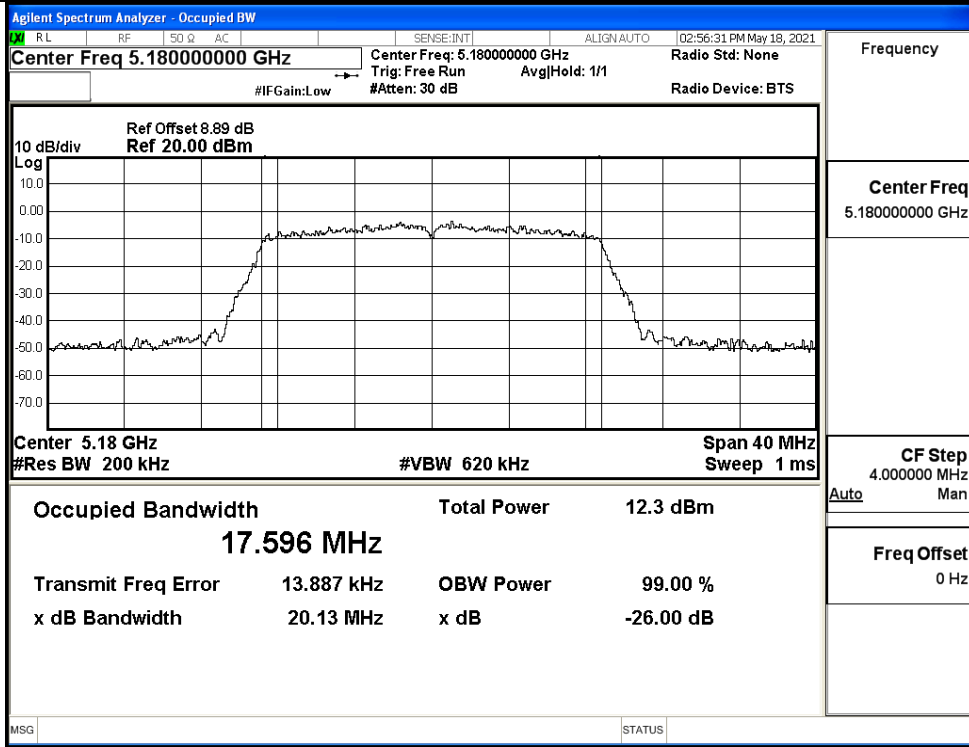


IEEE 802.11n40 / Channel 38 / 5190MHz

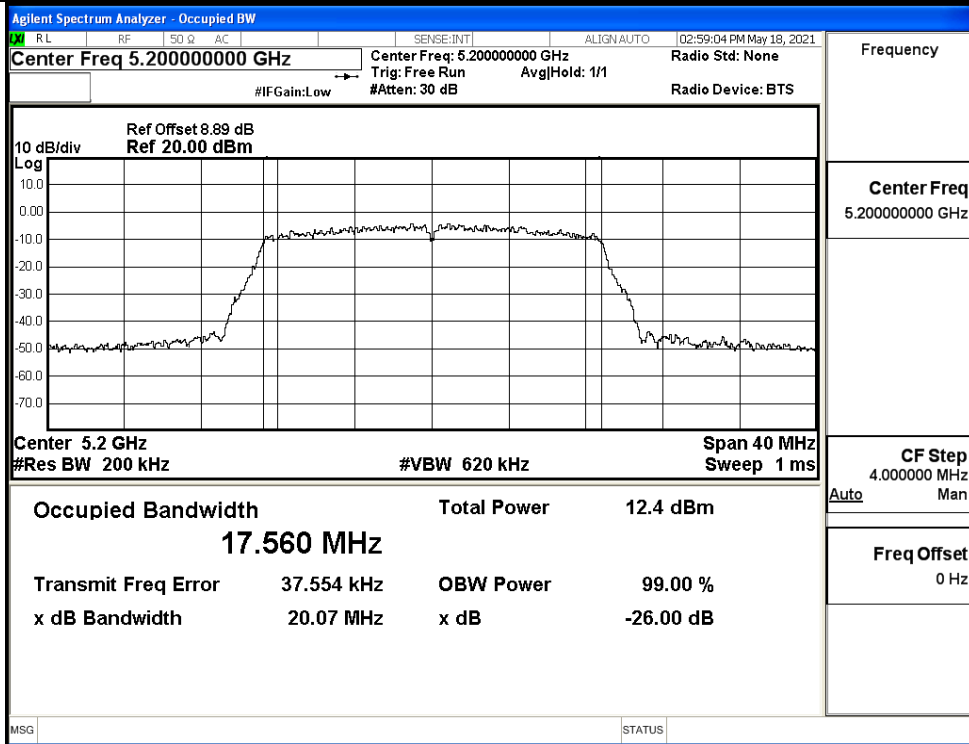


IEEE 802.11n40 / Channel 46 / 5230MHz

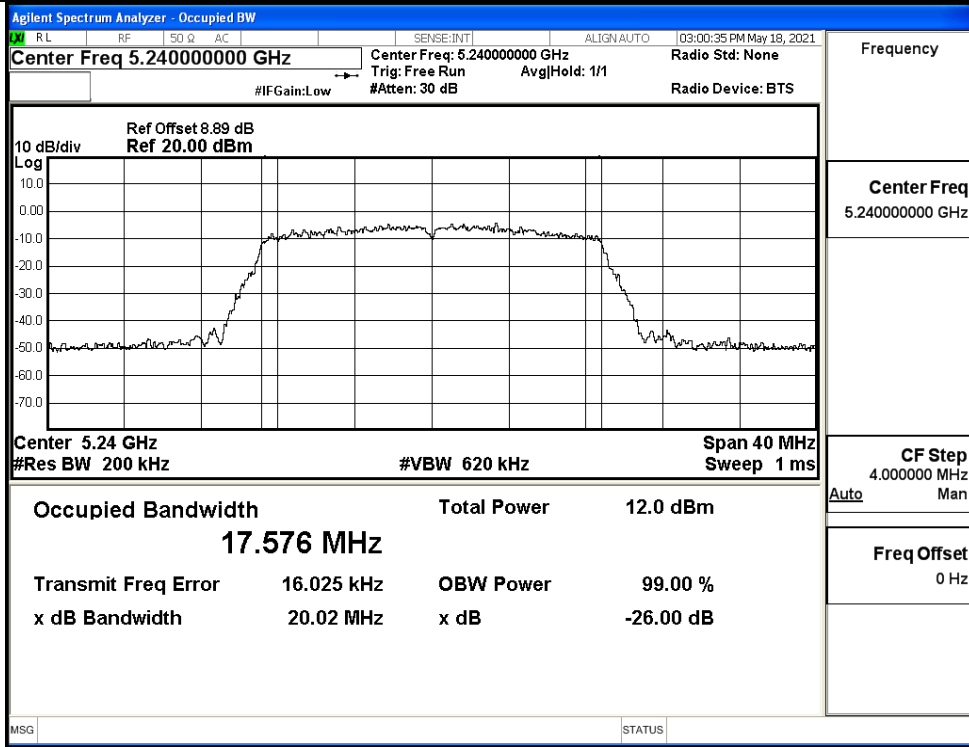




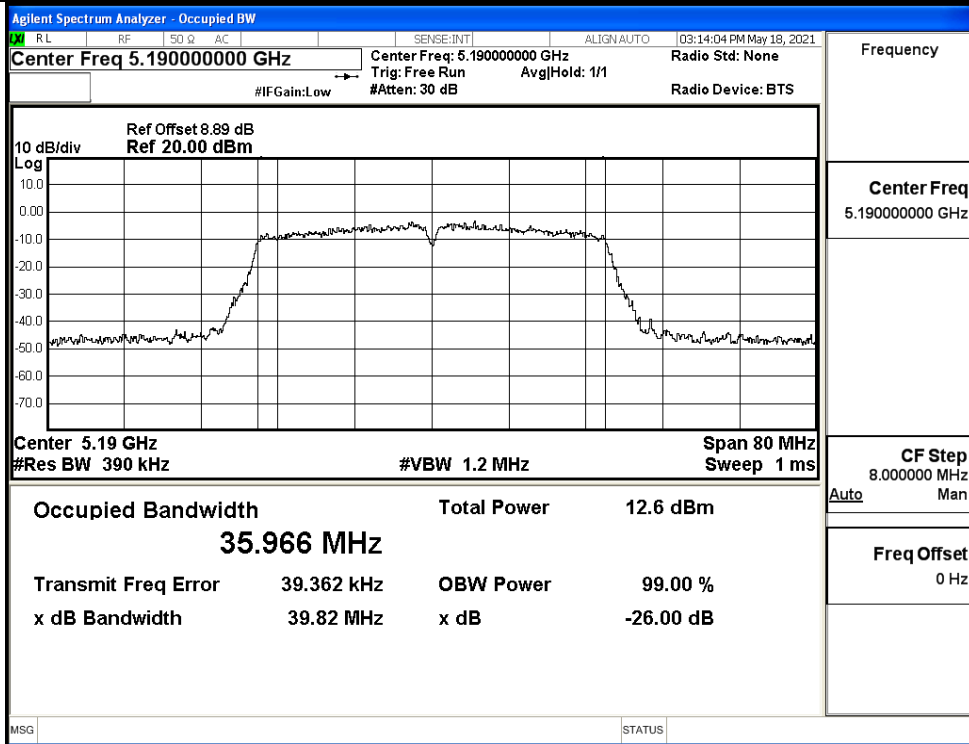
IEEE 802.11ac20 / Channel 36 / 5180MHz



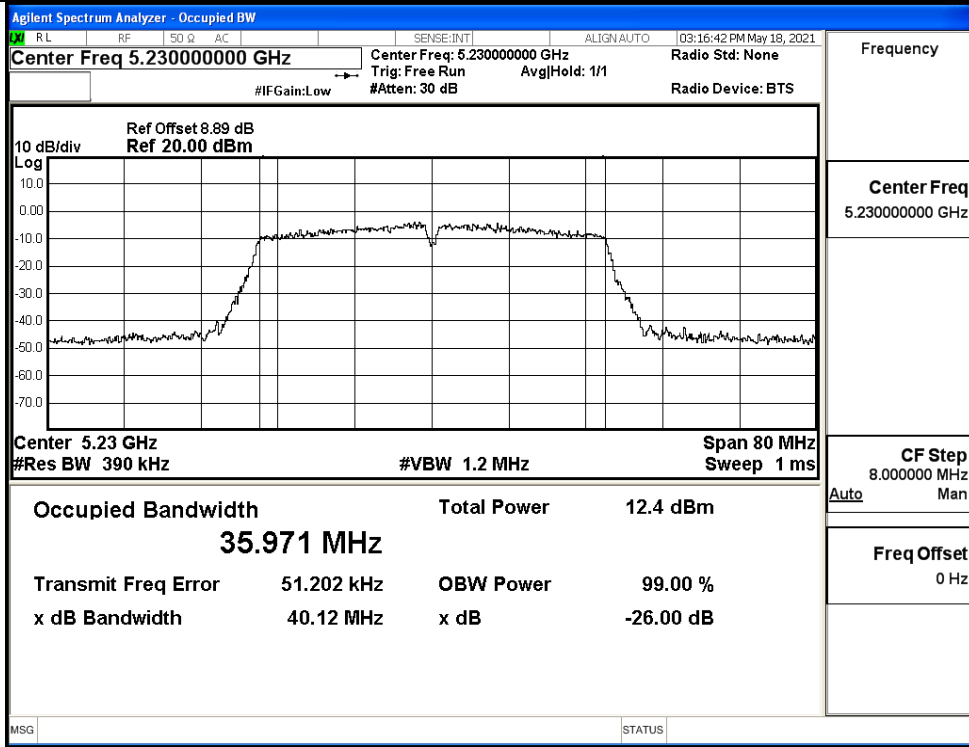
IEEE 802.11ac20 / Channel 40 / 5200MHz



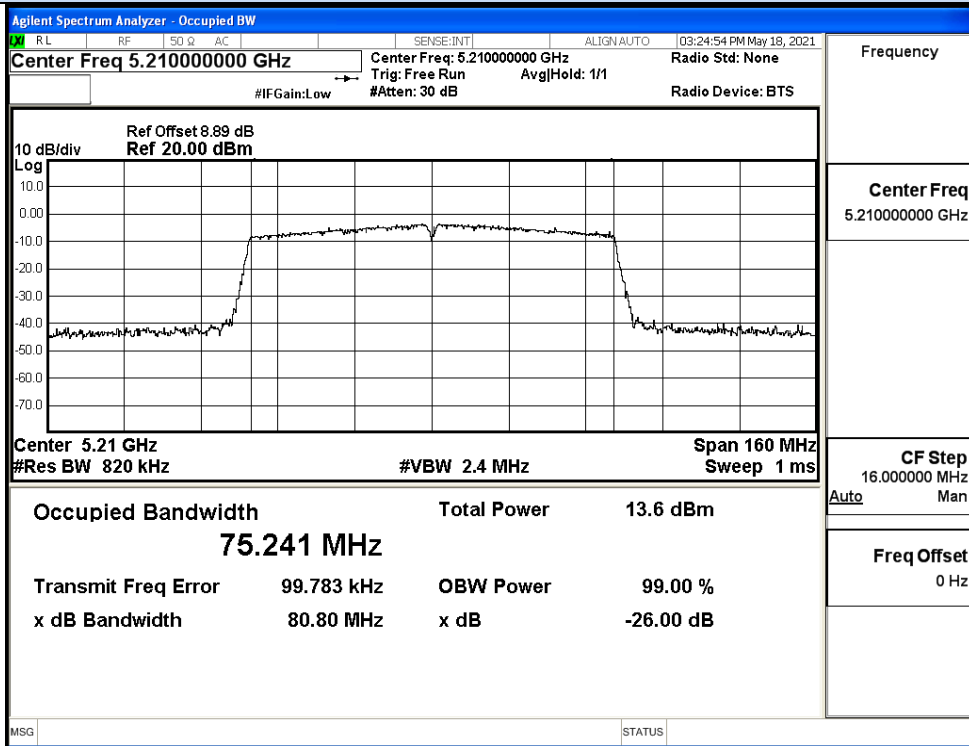
IEEE 802.11ac20 / Channel 48 / 5240MHz



IEEE 802.11ac40 / Channel 38 / 5190MHz



IEEE 802.11ac40 / Channel 46 / 5230MHz



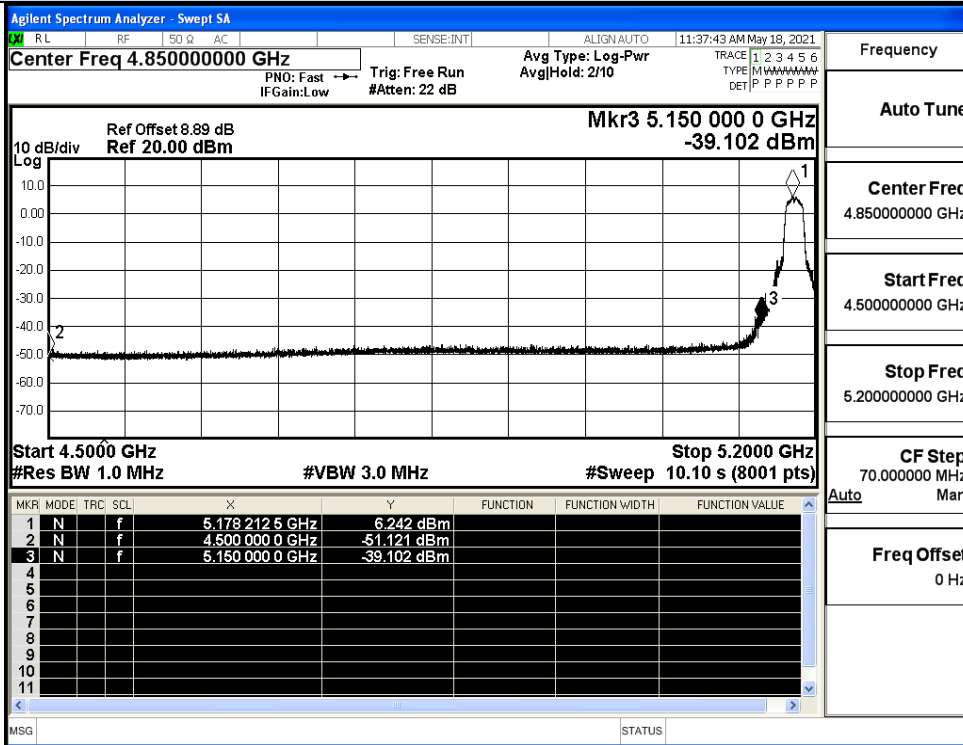
IEEE 802.11ac80 / Channel 42 / 5210MHz

### D.5 Undesirable Emissions Measurement

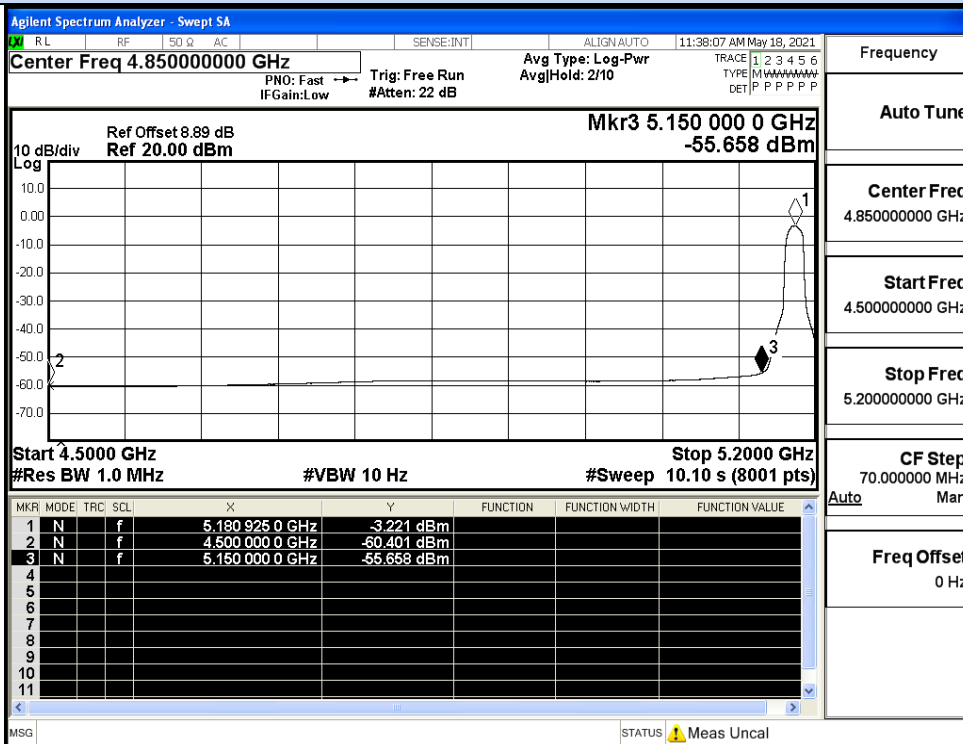
ANTO

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	-51.12	3.0	0	47.11	Peak	68.20	Pass
		4500.0	-60.40	3.0	0	37.83	Average	54.00	Pass
		5150.0	-39.10	3.0	0	59.13	Peak	68.20	Pass
		5150.0	-55.66	3.0	0	42.57	Average	54.00	Pass
	48	5350.0	-47.50	3.0	0	50.73	Peak	68.20	Pass
		5350.0	-58.90	3.0	0	39.33	Average	54.00	Pass
		5460.0	-48.97	3.0	0	49.26	Peak	68.20	Pass
11N2 0 SISO	36	4500.0	-49.40	3.0	0	48.83	Peak	68.20	Pass
		4500.0	-59.62	3.0	0	38.61	Average	54.00	Pass
		5150.0	-46.41	3.0	0	51.82	Peak	68.20	Pass
		5150.0	-56.61	3.0	0	41.62	Average	54.00	Pass
	48	5350.0	-47.10	3.0	0	51.13	Peak	68.20	Pass
		5350.0	-58.89	3.0	0	39.34	Average	54.00	Pass
		5460.0	-48.56	3.0	0	49.67	Peak	68.20	Pass
11N4 0 SISO	38	4500.0	-49.73	3.0	0	48.50	Peak	68.20	Pass
		4500.0	-60.39	3.0	0	37.84	Average	54.00	Pass
		5150.0	-43.73	3.0	0	54.50	Peak	68.20	Pass
		5150.0	-55.40	3.0	0	42.83	Average	54.00	Pass
	46	5350.0	-48.33	3.0	0	49.90	Peak	68.20	Pass
		5350.0	-58.63	3.0	0	39.60	Average	54.00	Pass
		5460.0	-48.72	3.0	0	49.51	Peak	68.20	Pass
11A C20 SIS O	36	4500.0	-50.69	3.0	0	47.54	Peak	68.20	Pass
		4500.0	-60.32	3.0	0	37.91	Average	54.00	Pass
		5150.0	-47.34	3.0	0	50.89	Peak	68.20	Pass
		5150.0	-56.55	3.0	0	41.68	Average	54.00	Pass
	48	4500.0	-50.69	3.0	0	47.54	Peak	68.20	Pass
		4500.0	-60.32	3.0	0	37.91	Average	54.00	Pass
		5150.0	-47.34	3.0	0	50.89	Peak	68.20	Pass
11A C40 SIS O	38	4500.0	-49.73	3.0	0	48.50	Peak	68.20	Pass
		4500.0	-60.30	3.0	0	37.93	Average	54.00	Pass
		5150.0	-47.09	3.0	0	51.14	Peak	68.20	Pass
		5150.0	-56.13	3.0	0	42.10	Average	54.00	Pass
	46	5350.0	-49.18	3.0	0	49.05	Peak	68.20	Pass
		5350.0	-58.61	3.0	0	39.62	Average	54.00	Pass
		5460.0	-48.28	3.0	0	49.95	Peak	68.20	Pass
11A C80 SIS O	42	4500.0	-48.11	3.0	0	50.12	Peak	68.20	Pass
		4500.0	-58.16	3.0	0	40.07	Average	54.00	Pass
		5150.0	-49.28	3.0	0	48.95	Peak	68.20	Pass
		5150.0	-58.64	3.0	0	39.59	Average	54.00	Pass
		5350.0	-48.11	3.0	0	50.12	Peak	68.20	Pass
		5350.0	-58.16	3.0	0	40.07	Average	54.00	Pass
		5460.0	-49.28	3.0	0	48.95	Peak	68.20	Pass
		5460.0	-58.64	3.0	0	39.59	Average	54.00	Pass

Undesirable Emissions Measurement

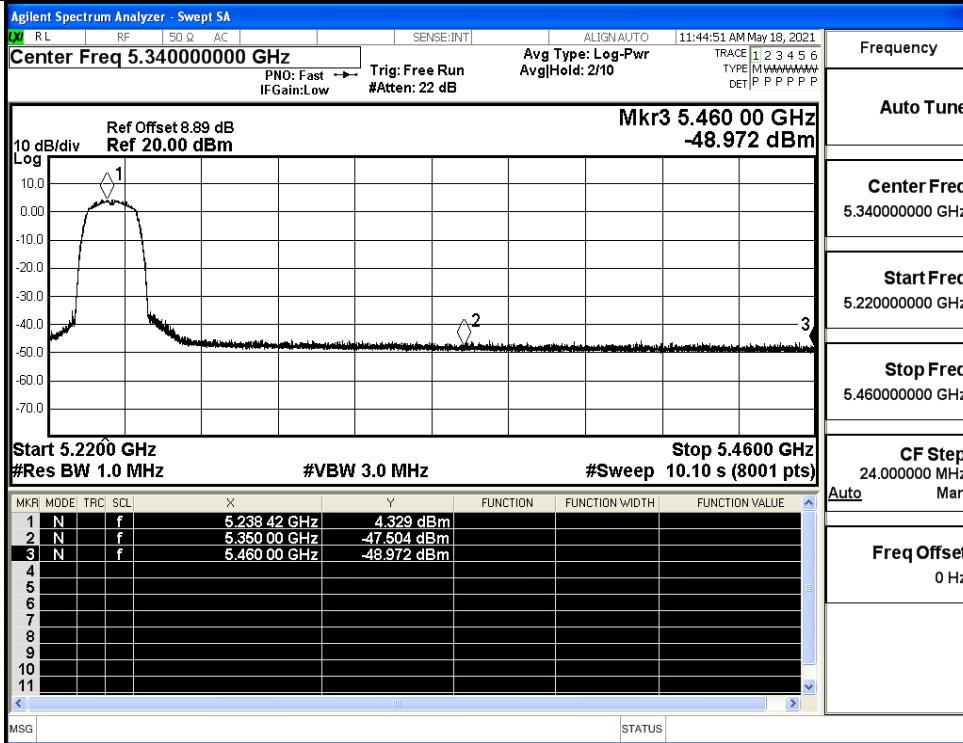


IEEE 802.11a / Channel 36 / 5180MHz / Peak

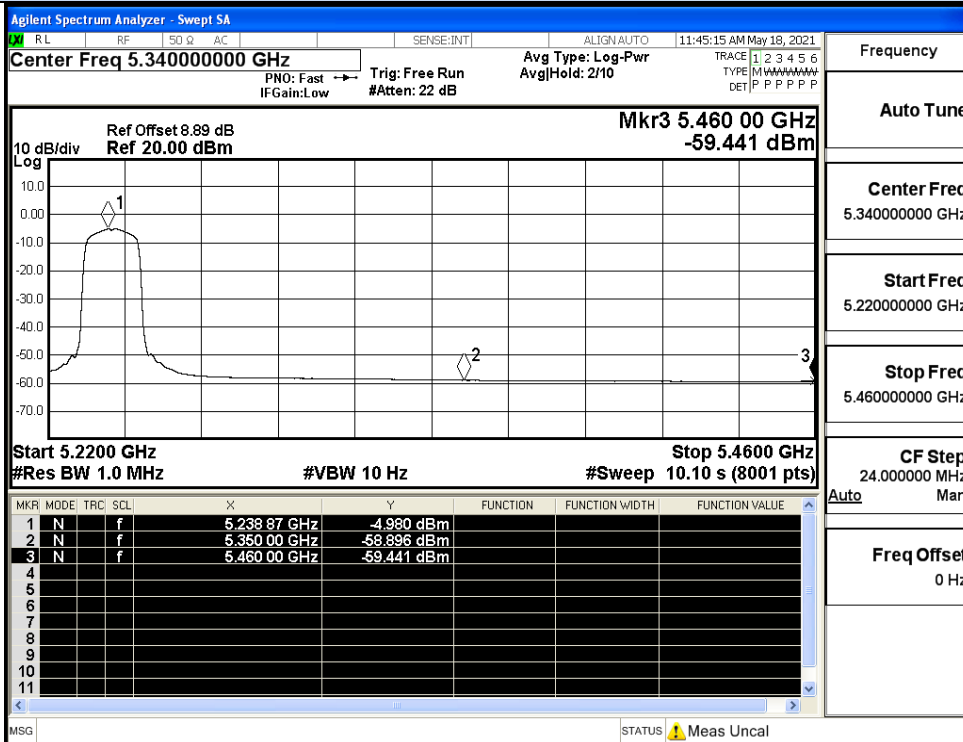


IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

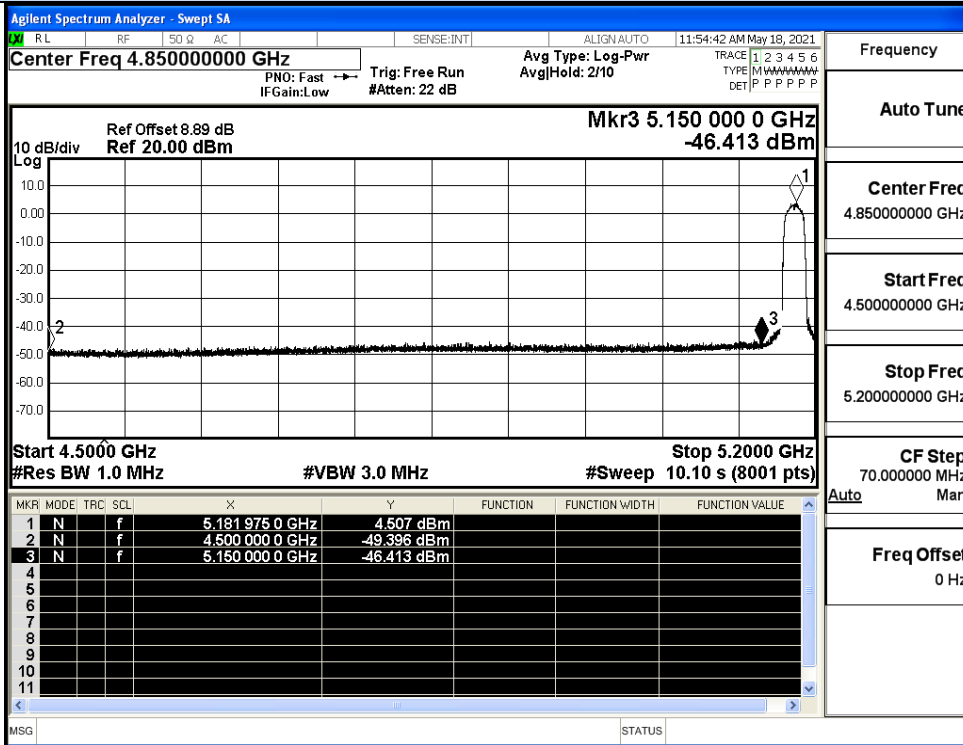


IEEE 802.11a / Channel 48 / 5240MHz / Peak

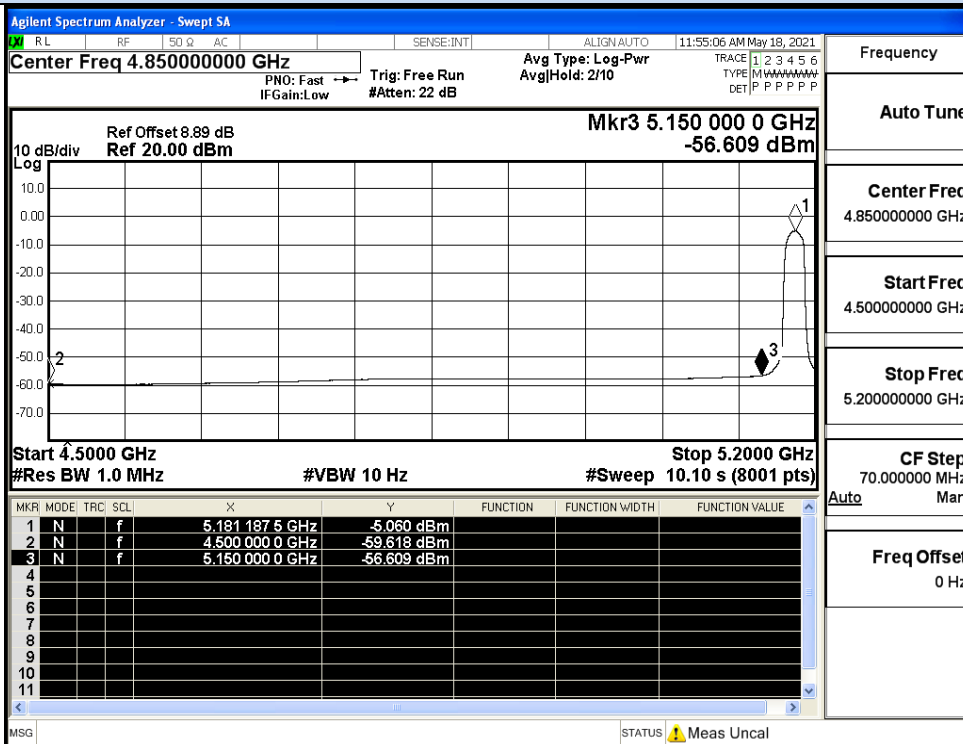


IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

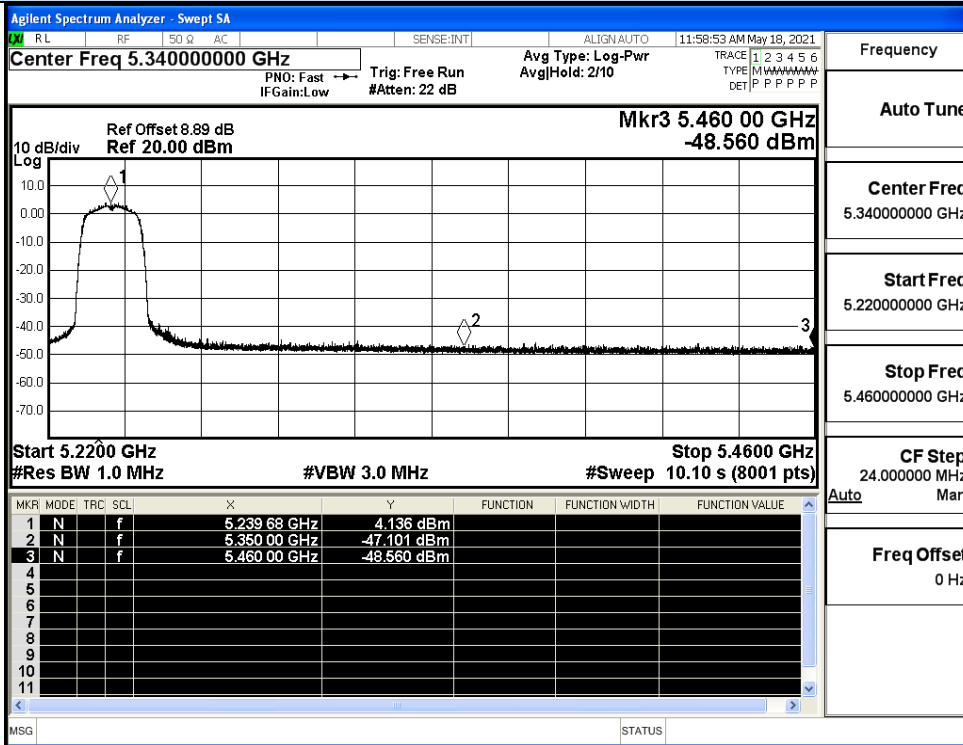


IEEE 802.11n20 / Channel 36 / 5180MHz / Peak

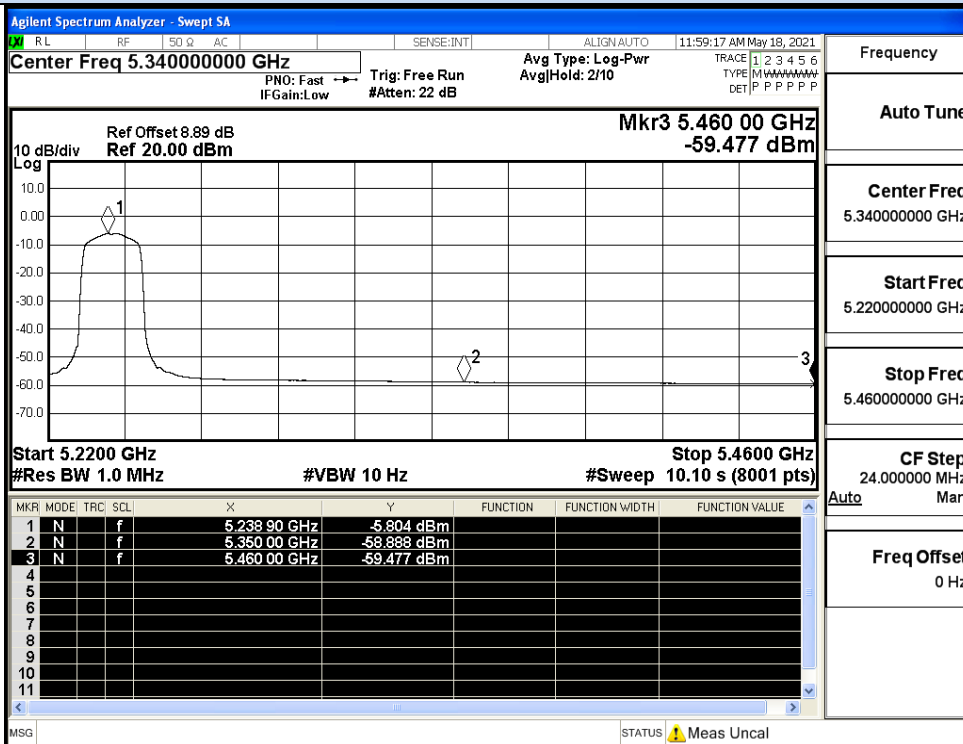


IEEE 802.11n20 / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement



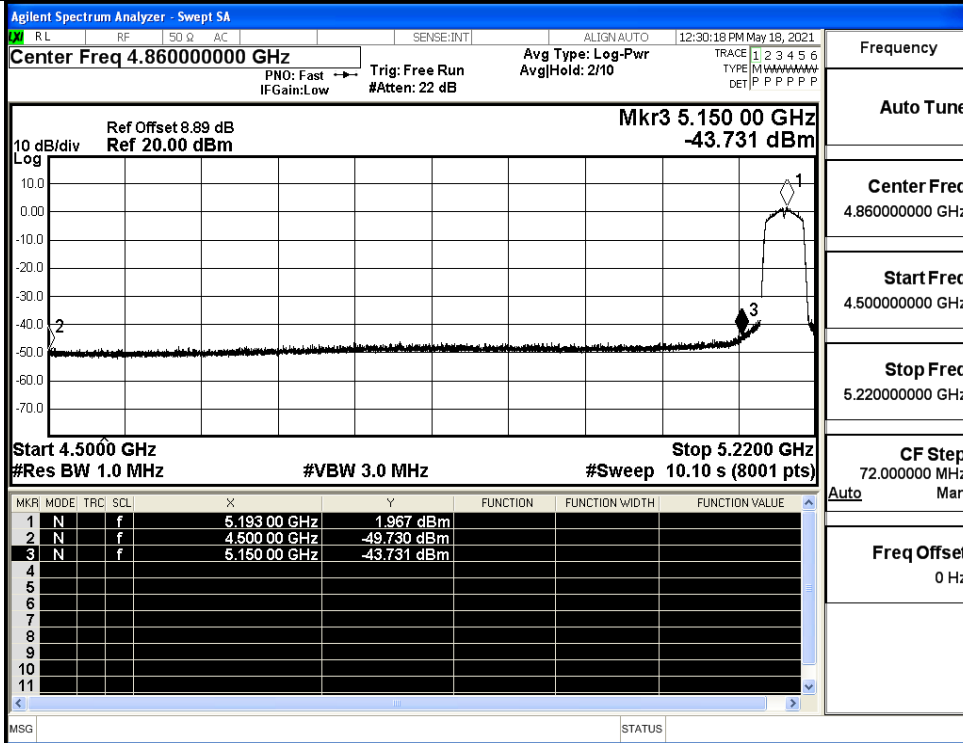
IEEE 802.11n20 / Channel 48 / 5240MHz / Peak



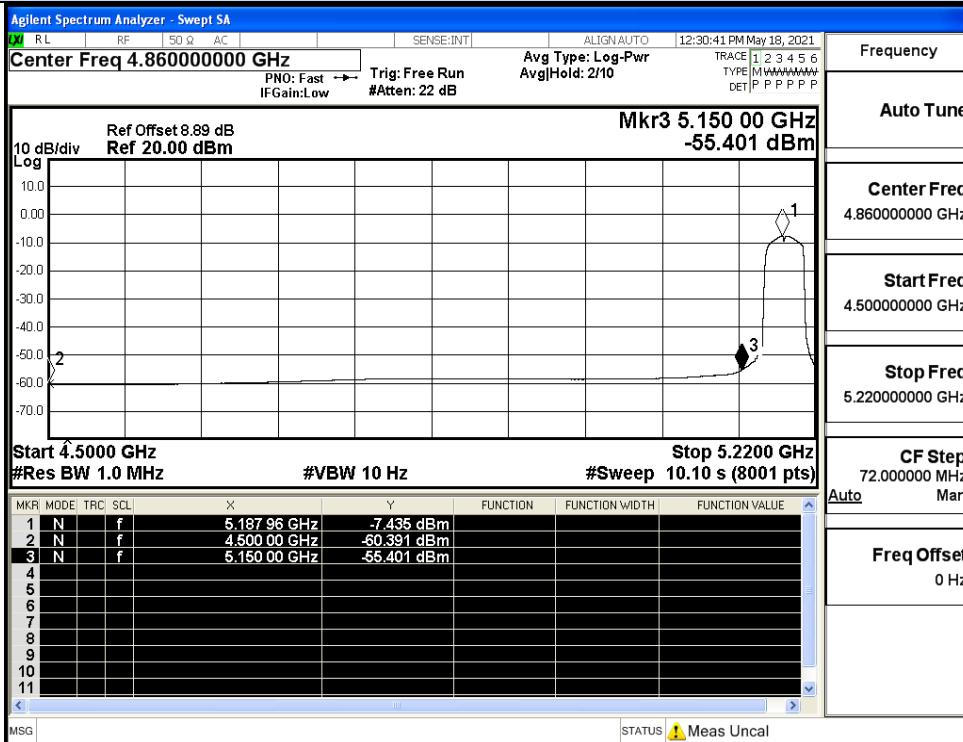
IEEE 802.11n20 / Channel 48 / 5240MHz / Average



Undesirable Emissions Measurement

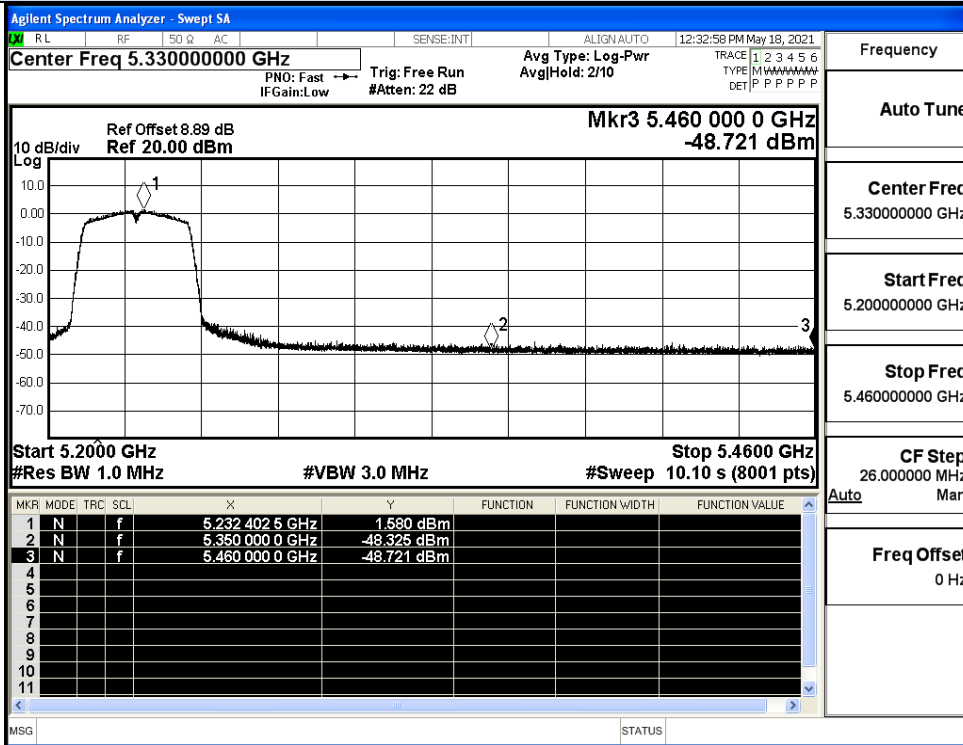


IEEE 802.11n40 / Channel 38 / 5190MHz / Peak

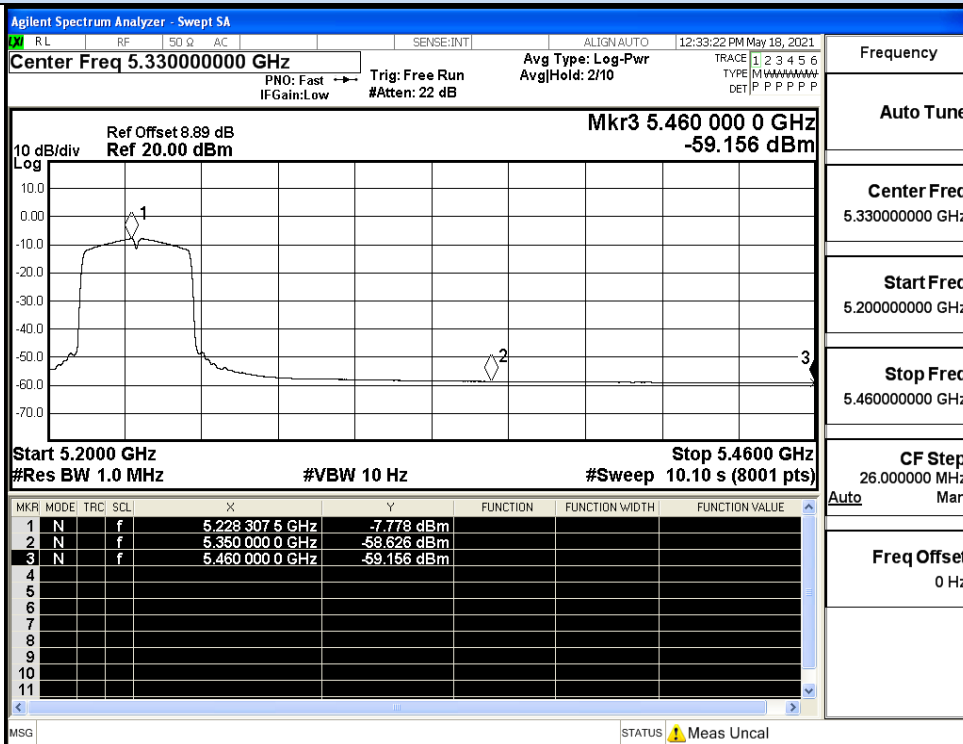


IEEE 802.11n40 / Channel 38 / 5190MHz / Average

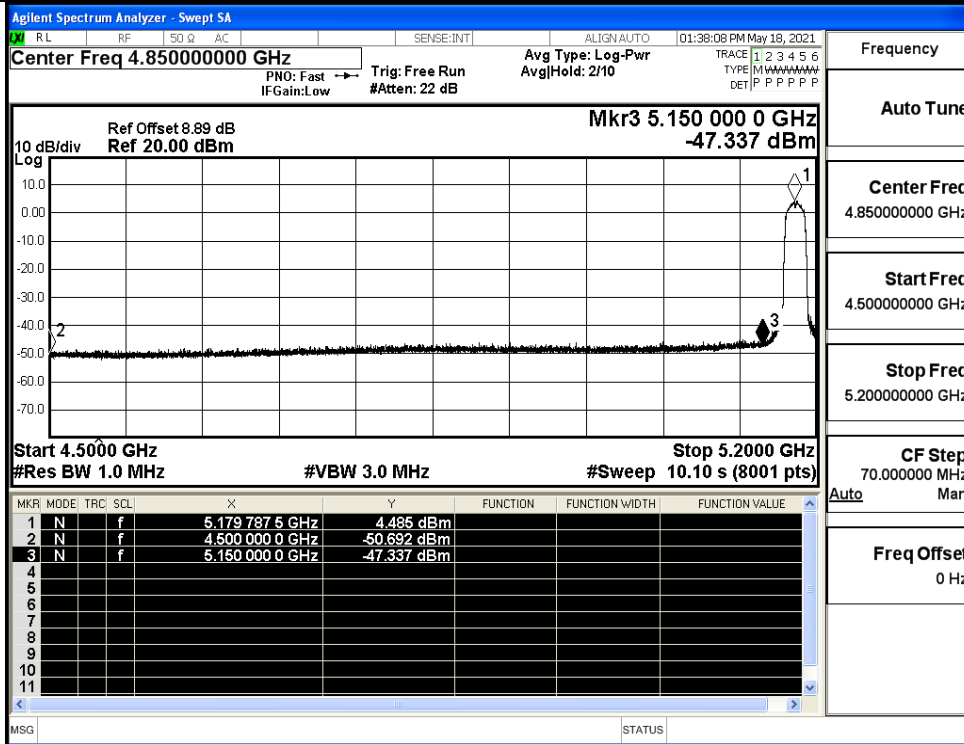
Undesirable Emissions Measurement



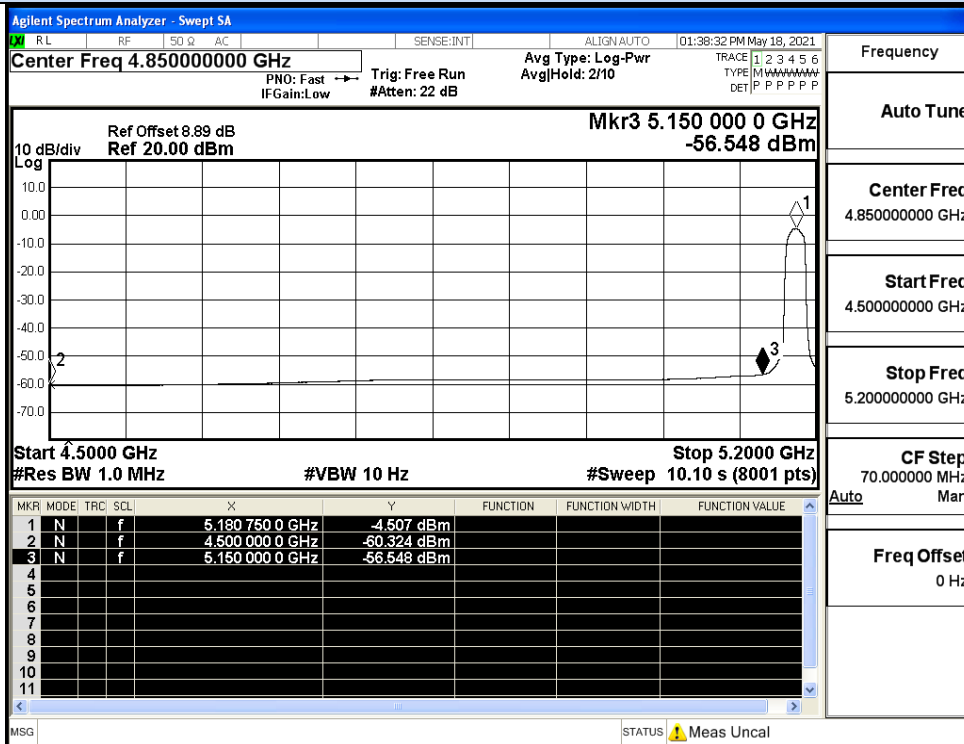
IEEE 802.11n40 / Channel 48 / 5230MHz / Peak



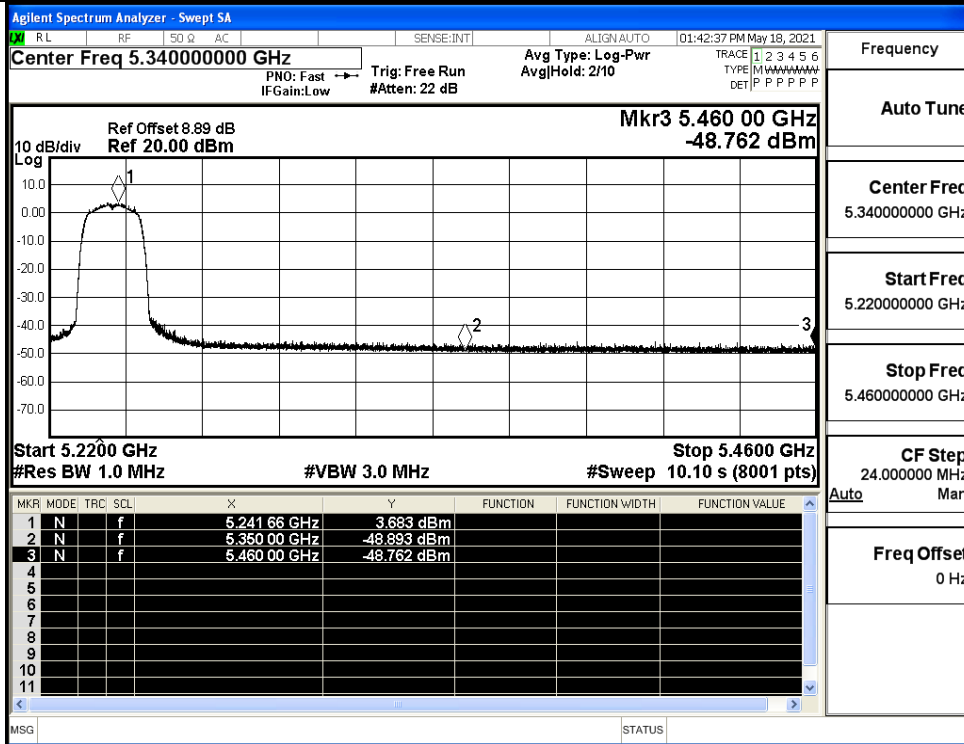
IEEE 802.11n40 / Channel 48 / 5230MHz / Average



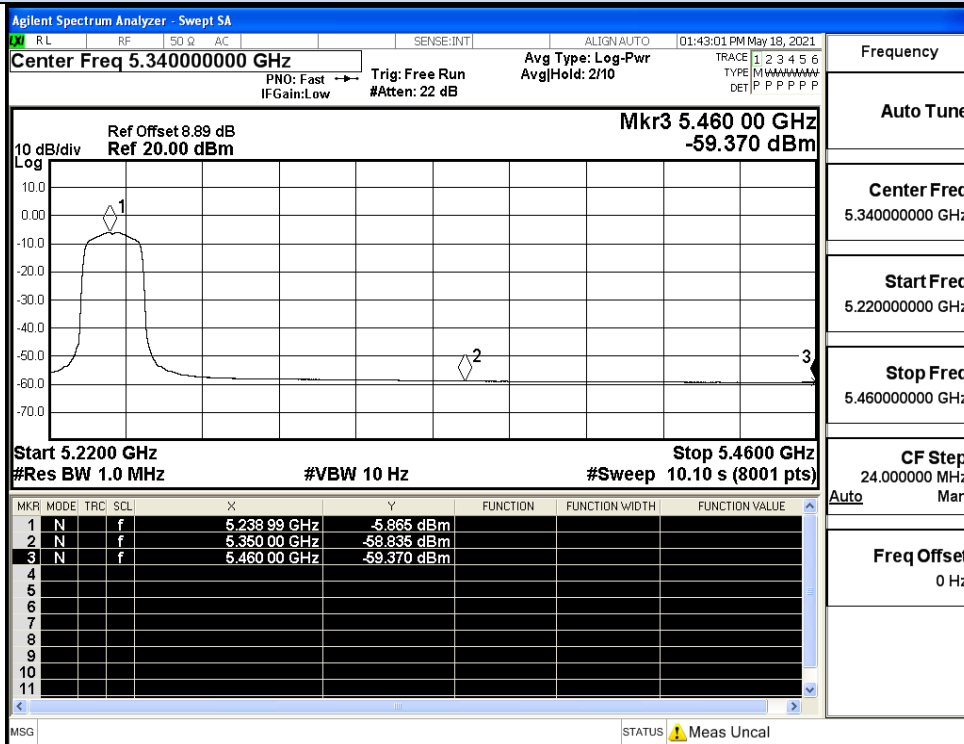
IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak



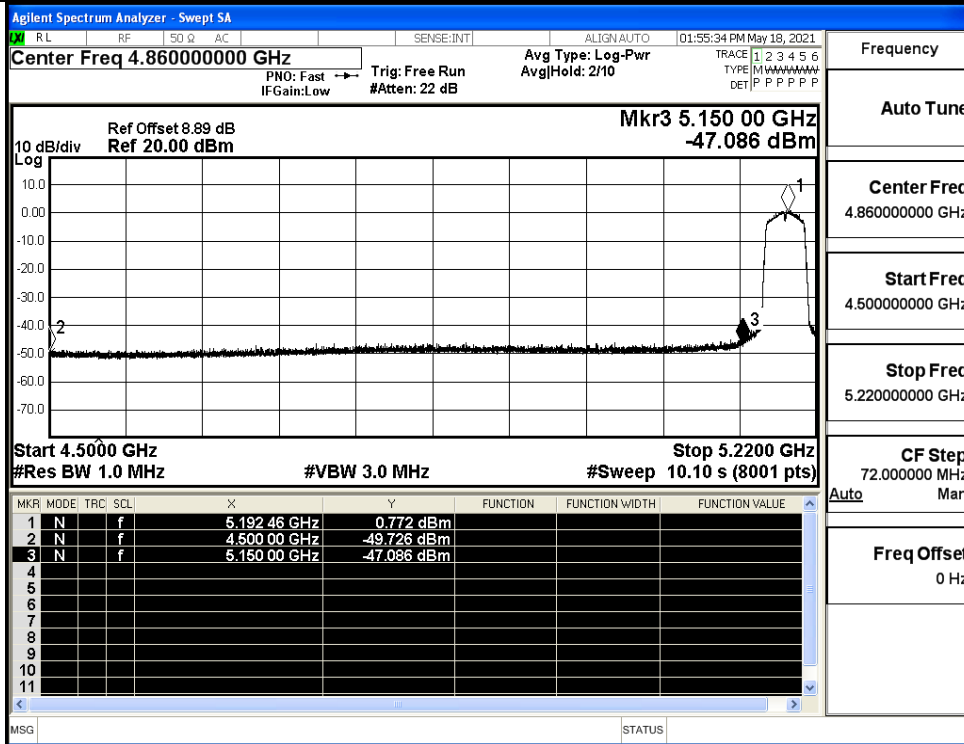
IEEE 802.11ac20 / Channel 36 / 5180MHz / Average



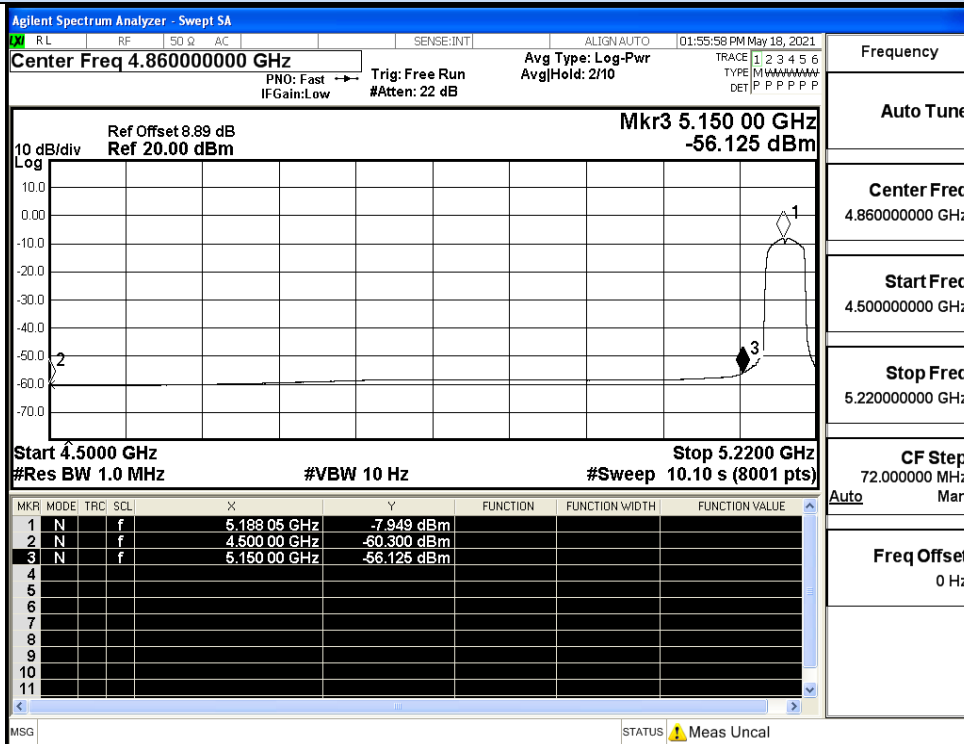
IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



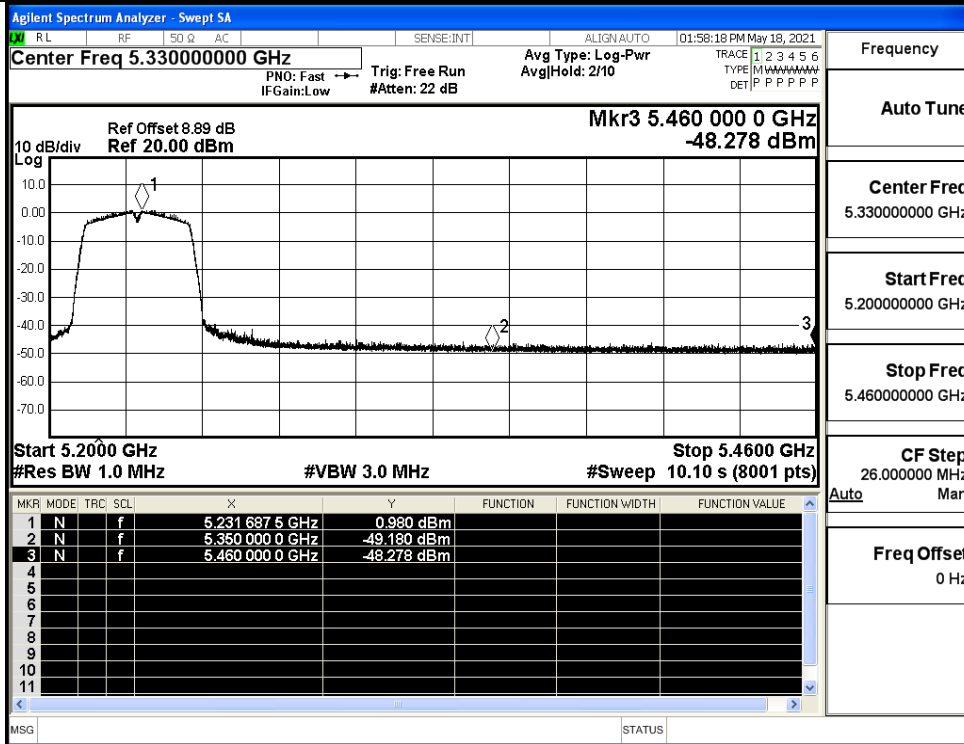
IEEE 802.11ac20 / Channel 48 / 5240MHz / Average



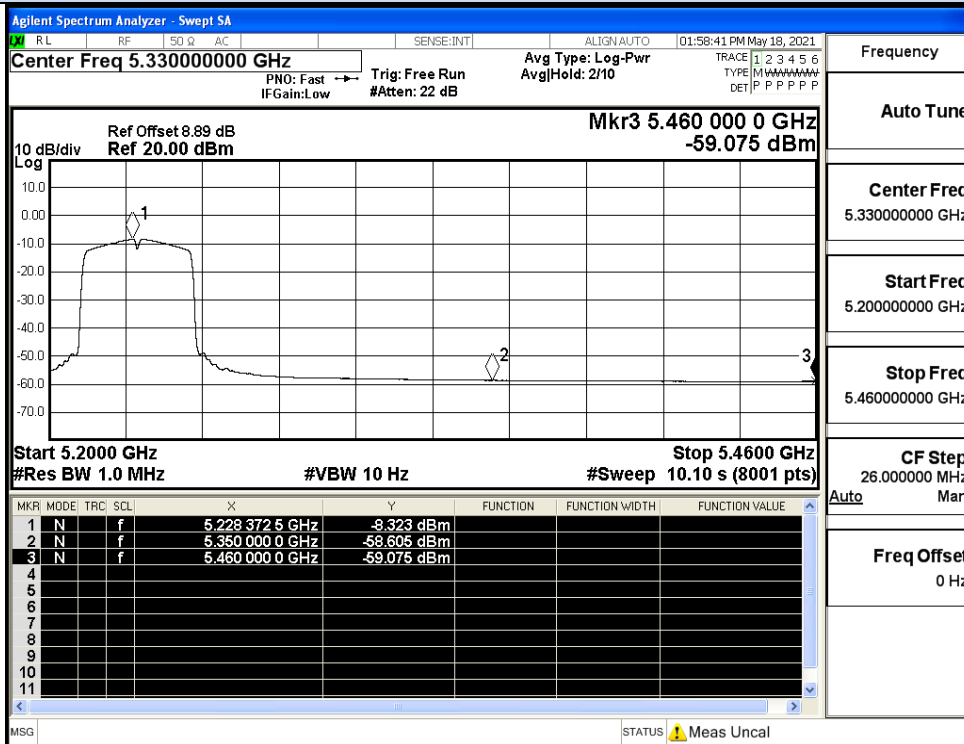
IEEE 802.11ac40 / Channel 38 / 5190MHz / Peak



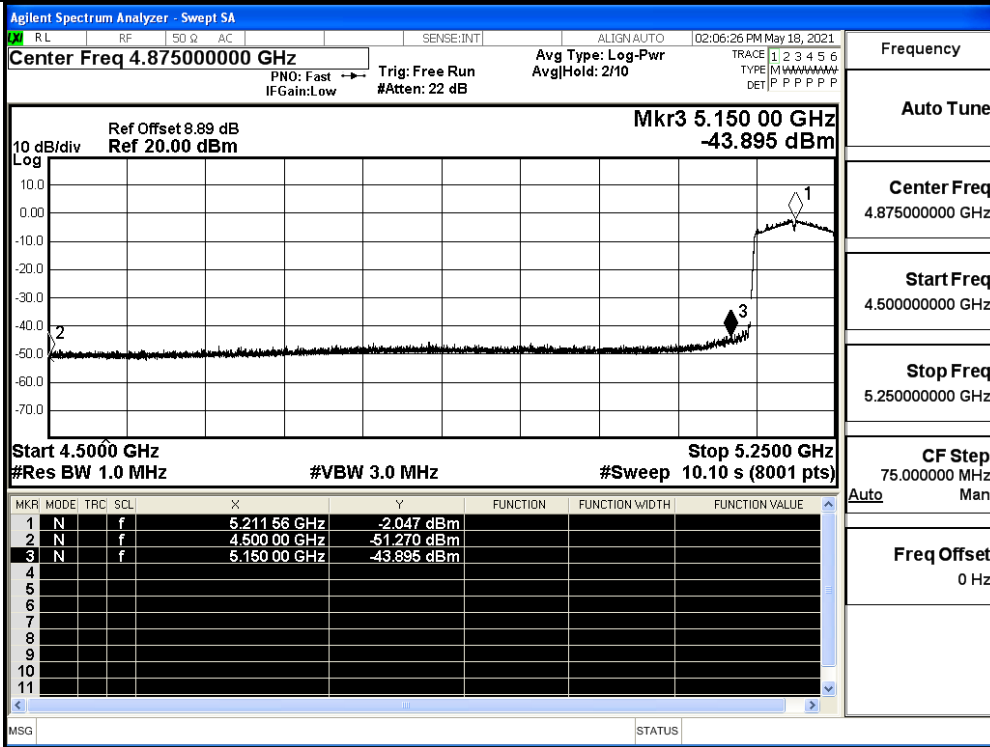
IEEE 802.11ac40 / Channel 38 / 5190MHz / Average



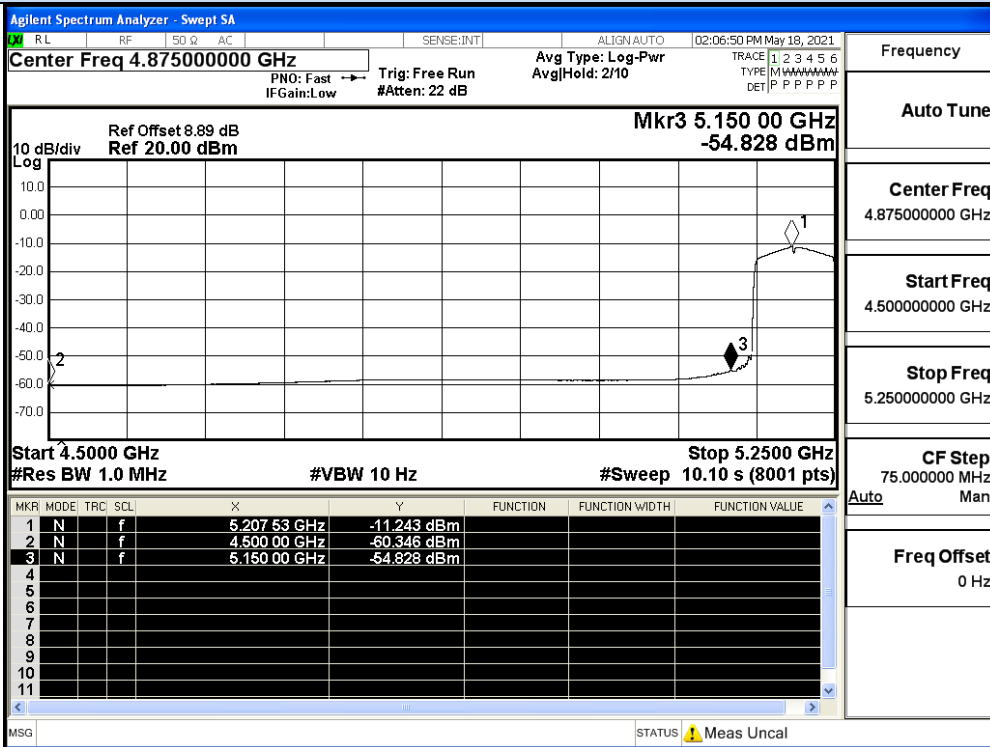
IEEE 802.11ac40 / Channel 48 / 5230MHz / Peak



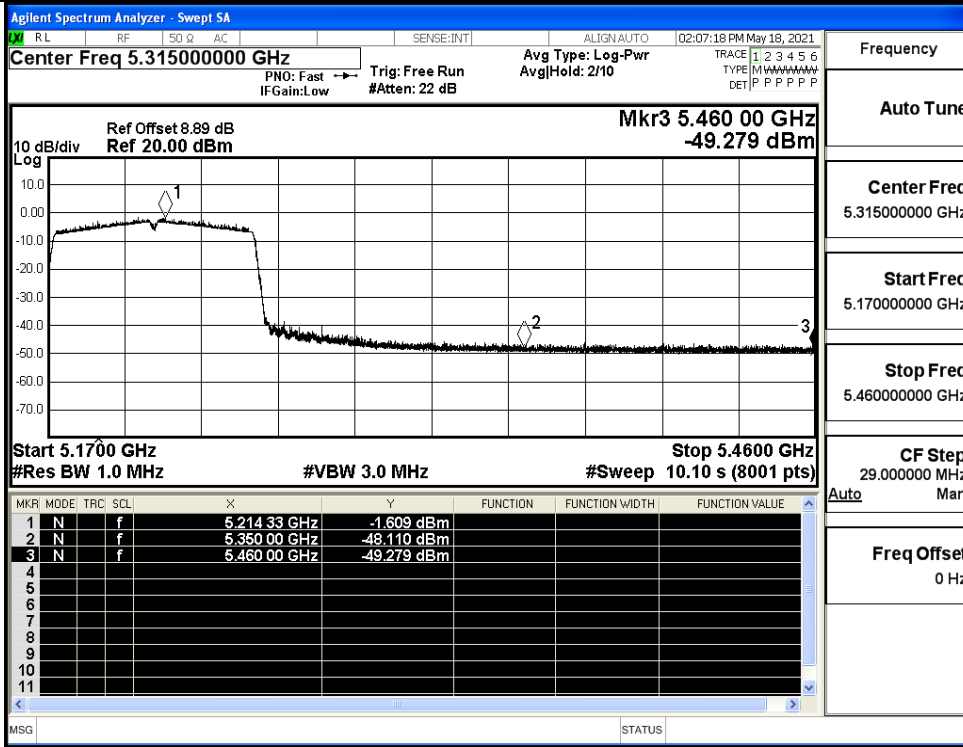
IEEE 802.11ac40 / Channel 48 / 5230MHz / Average



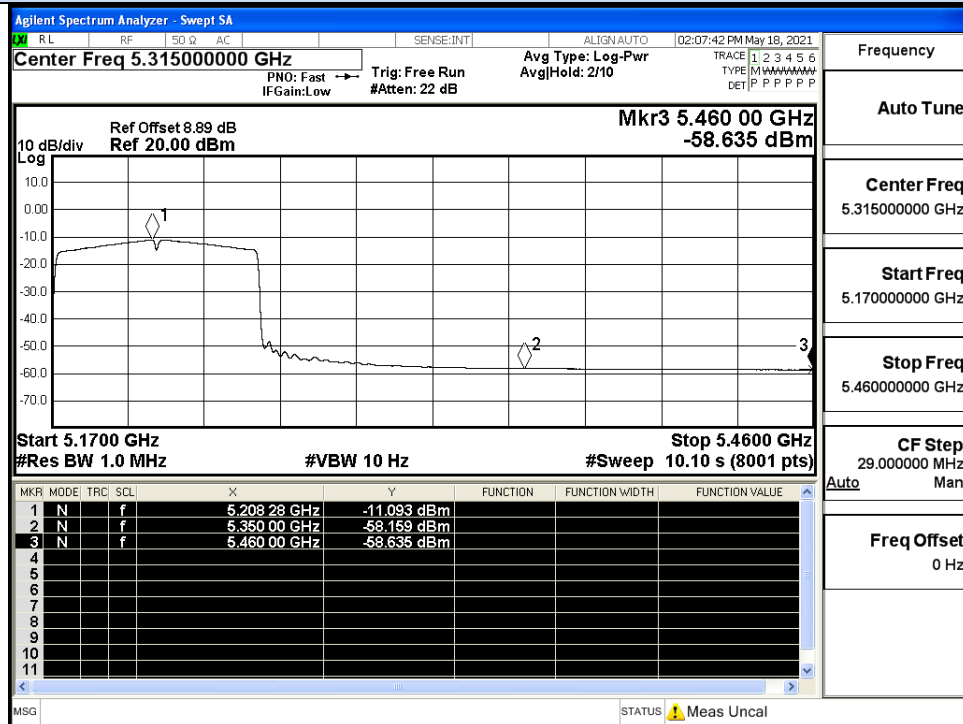
IEEE 802.11ac80 / Channel 42 / 5210MHz / Peak



IEEE 802.11ac80 / Channel 42 / 5210MHz / Average



IEEE 802.11ac80 / Channel 42/ 5210MHz / Peak



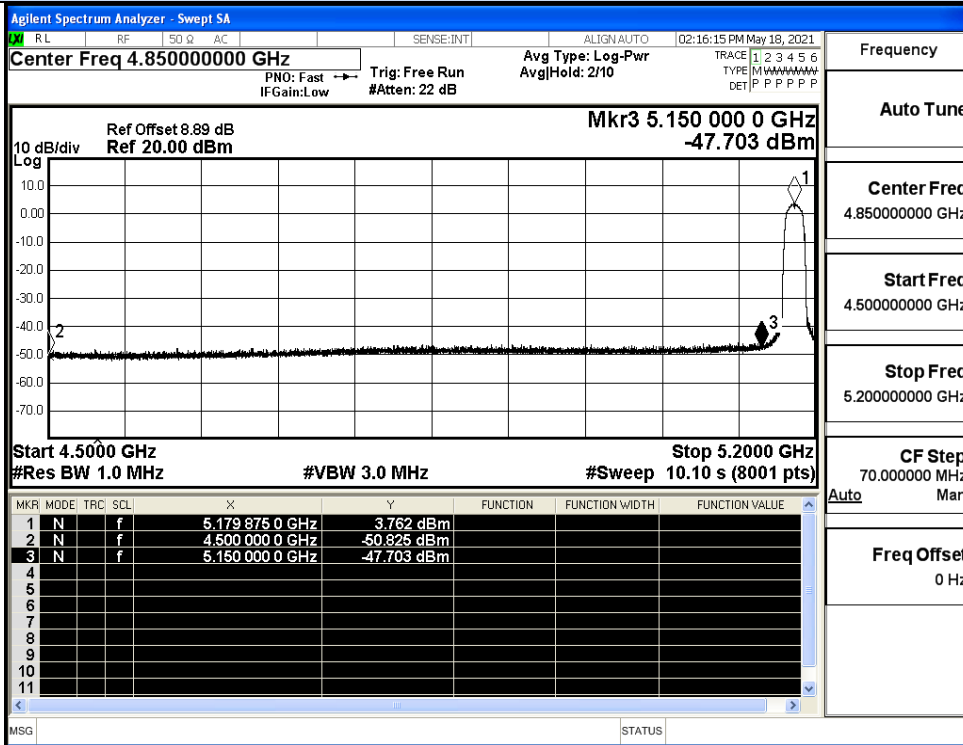
IEEE 802.11ac80 / Channel 42 / 5210MHz / Average



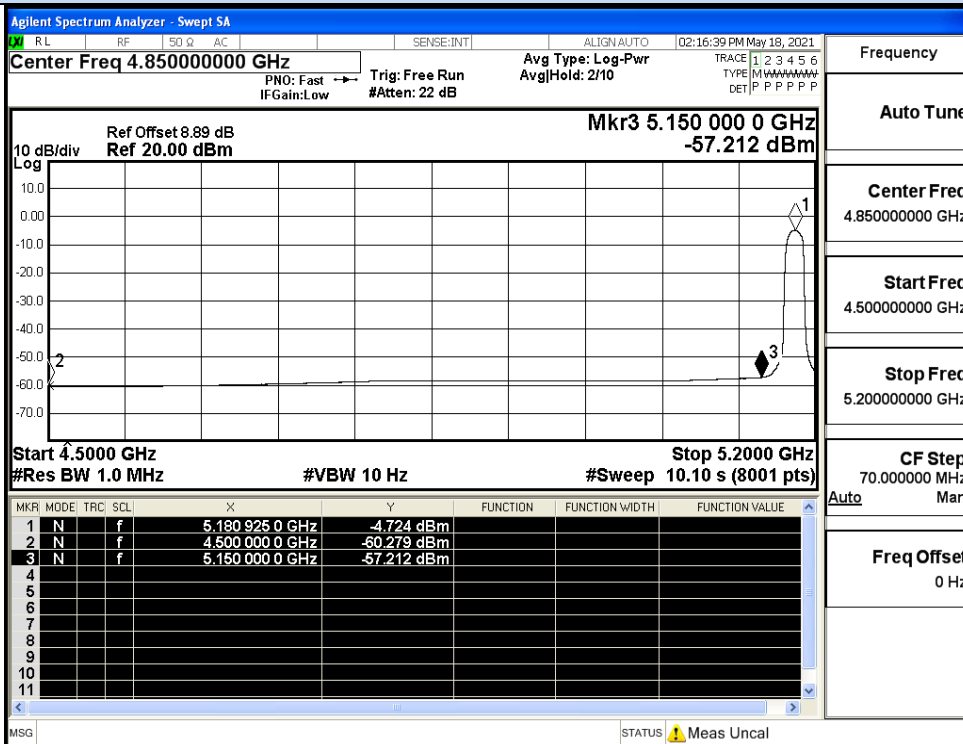
ANT1

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	-50.83	3.0	0	47.40	Peak	68.20	Pass
		4500.0	-60.28	3.0	0	37.95	Average	54.00	Pass
		5150.0	-47.70	3.0	0	50.53	Peak	68.20	Pass
		5150.0	-57.21	3.0	0	41.02	Average	54.00	Pass
	48	5350.0	-47.92	3.0	0	50.31	Peak	68.20	Pass
		5350.0	-58.82	3.0	0	39.41	Average	54.00	Pass
		5460.0	-48.74	3.0	0	49.49	Peak	68.20	Pass
		5460.0	-59.39	3.0	0	38.84	Average	54.00	Pass
11N2 0 SISO	36	4500.0	-50.97	3.0	0	47.26	Peak	68.20	Pass
		4500.0	-60.30	3.0	0	37.93	Average	54.00	Pass
		5150.0	-48.13	3.0	0	50.10	Peak	68.20	Pass
		5150.0	-57.17	3.0	0	41.06	Average	54.00	Pass
	48	5350.0	-47.48	3.0	0	50.75	Peak	68.20	Pass
		5350.0	-58.80	3.0	0	39.43	Average	54.00	Pass
		5460.0	-48.64	3.0	0	49.59	Peak	68.20	Pass
		5460.0	-59.36	3.0	0	38.87	Average	54.00	Pass
11N4 0 SISO	38	4500.0	-50.33	3.0	0	47.90	Peak	68.20	Pass
		4500.0	-60.32	3.0	0	37.91	Average	54.00	Pass
		5150.0	-45.30	3.0	0	52.93	Peak	68.20	Pass
		5150.0	-56.18	3.0	0	42.05	Average	54.00	Pass
	46	5350.0	-47.58	3.0	0	50.65	Peak	68.20	Pass
		5350.0	-58.55	3.0	0	39.68	Average	54.00	Pass
		5460.0	-47.72	3.0	0	50.51	Peak	68.20	Pass
		5460.0	-59.05	3.0	0	39.18	Average	54.00	Pass
11A C20 SIS O	36	4500.0	-50.37	3.0	0	47.86	Peak	68.20	Pass
		4500.0	-60.31	3.0	0	37.92	Average	54.00	Pass
		5150.0	-47.81	3.0	0	50.42	Peak	68.20	Pass
		5150.0	-57.05	3.0	0	41.18	Average	54.00	Pass
	48	4500.0	-50.37	3.0	0	47.86	Peak	68.20	Pass
		4500.0	-60.31	3.0	0	37.92	Average	54.00	Pass
		5150.0	-47.81	3.0	0	50.42	Peak	68.20	Pass
		5150.0	-57.05	3.0	0	41.18	Average	54.00	Pass
11A C40 SIS O	38	4500.0	-48.86	3.0	0	49.37	Peak	68.20	Pass
		4500.0	-59.59	3.0	0	38.64	Average	54.00	Pass
		5150.0	-44.91	3.0	0	53.32	Peak	68.20	Pass
		5150.0	-55.73	3.0	0	42.50	Average	54.00	Pass
	46	5350.0	-49.25	3.0	0	48.98	Peak	68.20	Pass
		5350.0	-58.60	3.0	0	39.63	Average	54.00	Pass
		5460.0	-47.31	3.0	0	50.92	Peak	68.20	Pass
		5460.0	-59.12	3.0	0	39.11	Average	54.00	Pass
11A C80 SIS O	42	4500.0	-49.16	3.0	0	49.07	Peak	68.20	Pass
		4500.0	-58.14	3.0	0	40.09	Average	54.00	Pass
		5150.0	-48.72	3.0	0	49.51	Peak	68.20	Pass
		5150.0	-58.65	3.0	0	39.58	Average	54.00	Pass
		5350.0	-49.16	3.0	0	49.07	Peak	68.20	Pass
		5350.0	-58.14	3.0	0	40.09	Average	54.00	Pass
		5460.0	-48.72	3.0	0	49.51	Peak	68.20	Pass
		5460.0	-58.65	3.0	0	39.58	Average	54.00	Pass

Undesirable Emissions Measurement

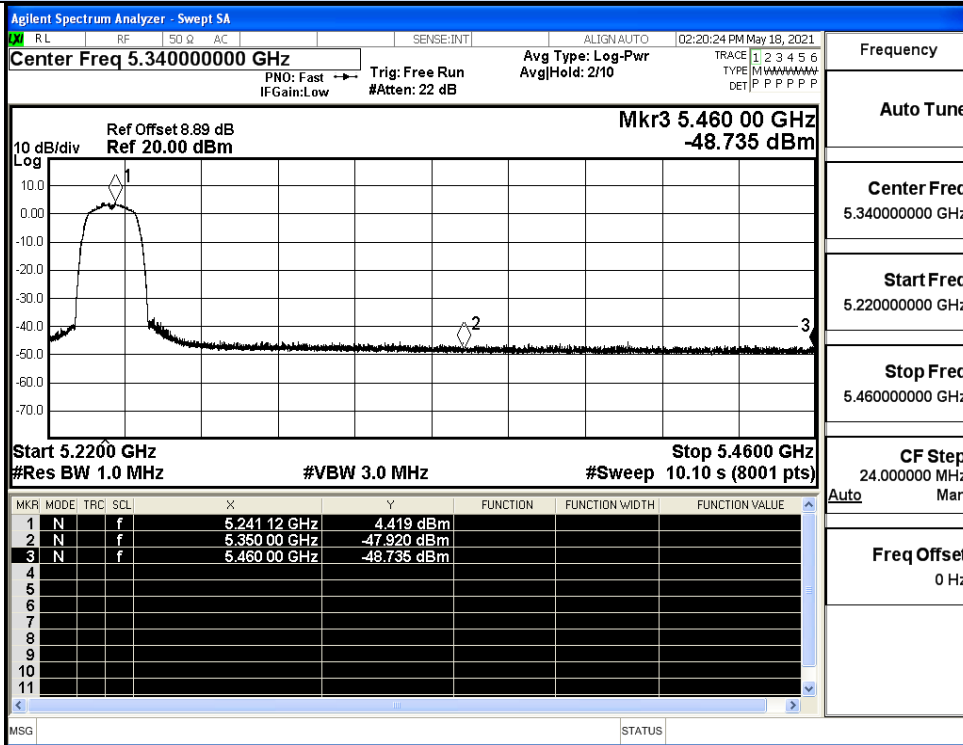


IEEE 802.11a / Channel 36 / 5180MHz / Peak

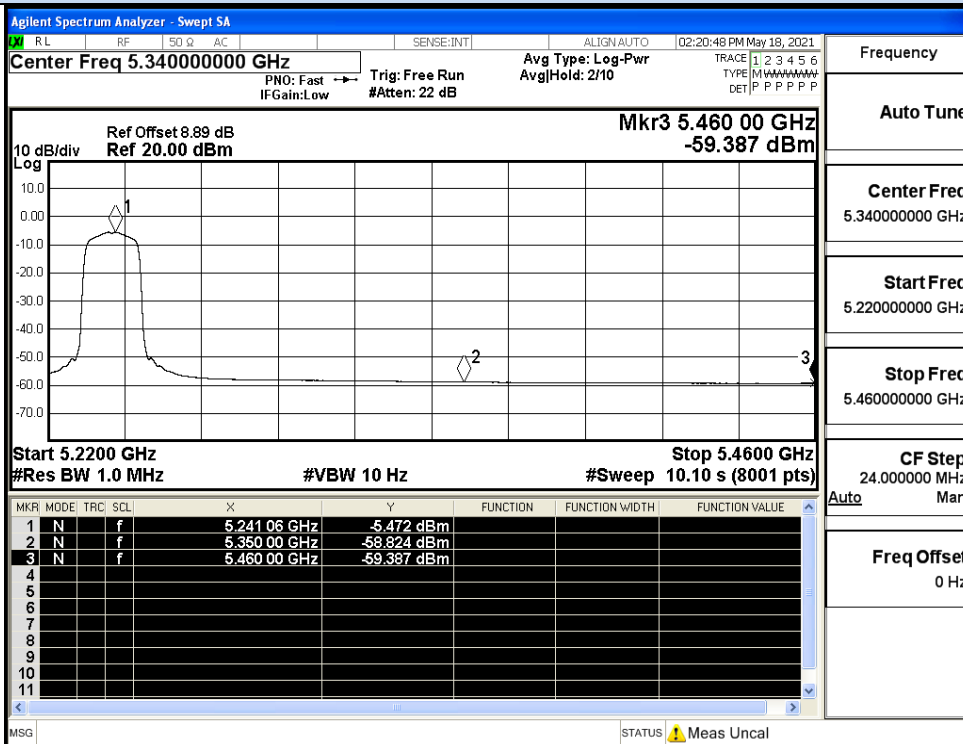


IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

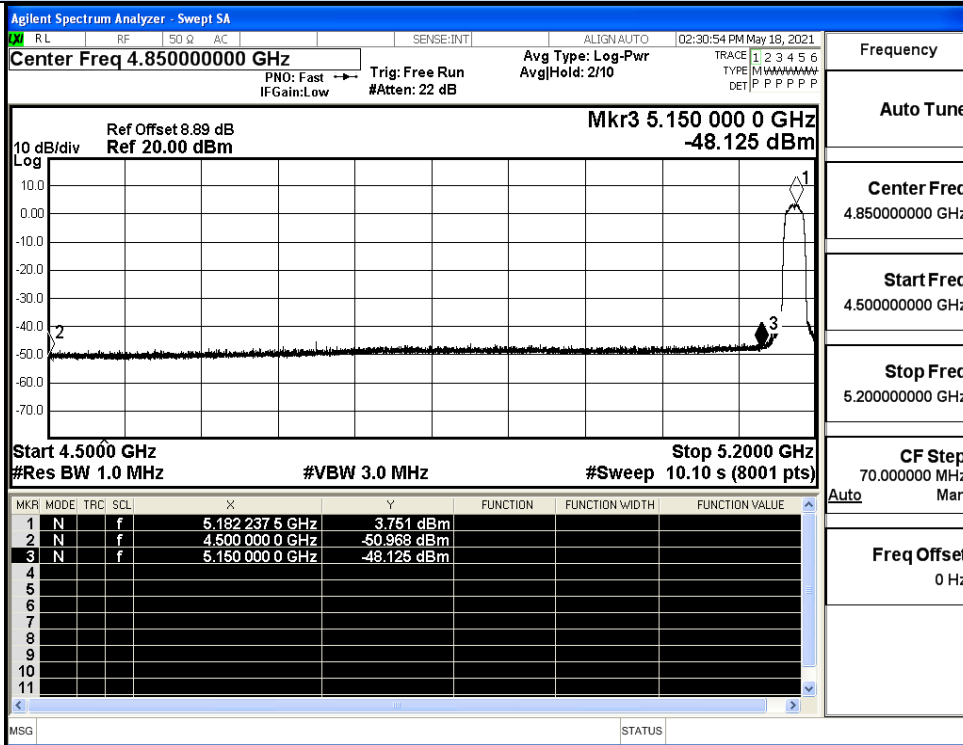


IEEE 802.11a / Channel 48 / 5240MHz / Peak

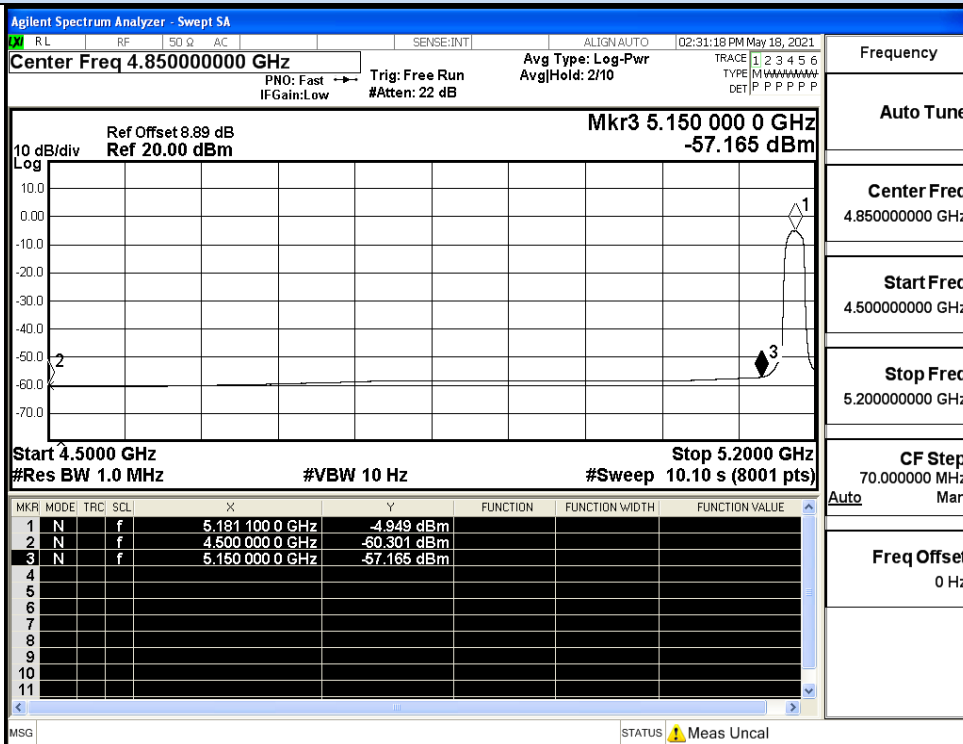


IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

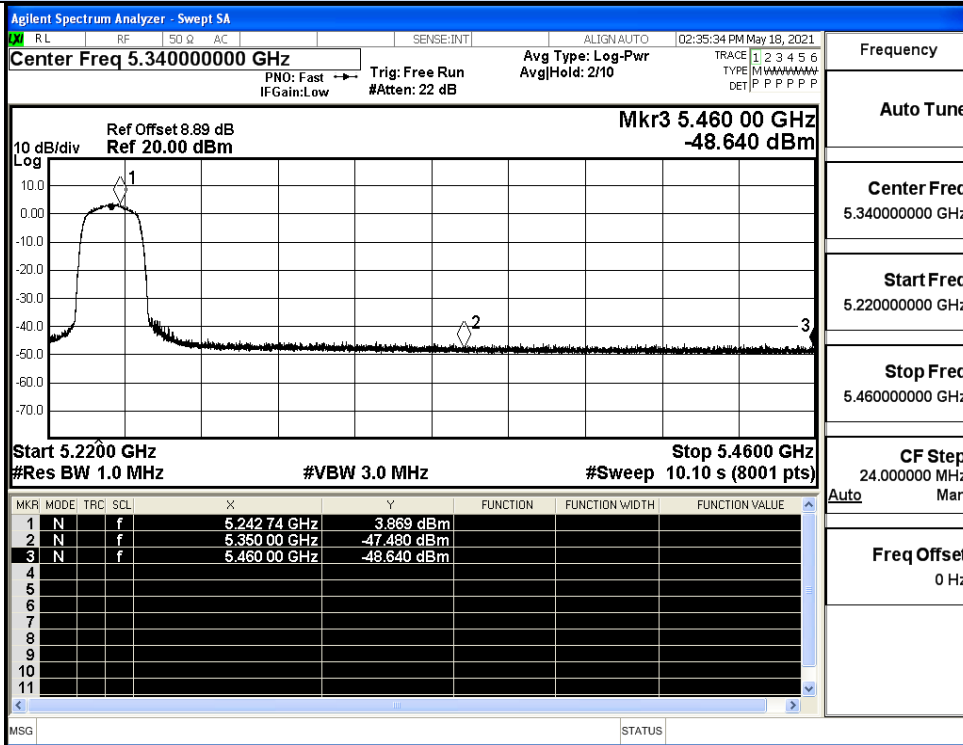


IEEE 802.11n20 / Channel 36 / 5180MHz / Peak

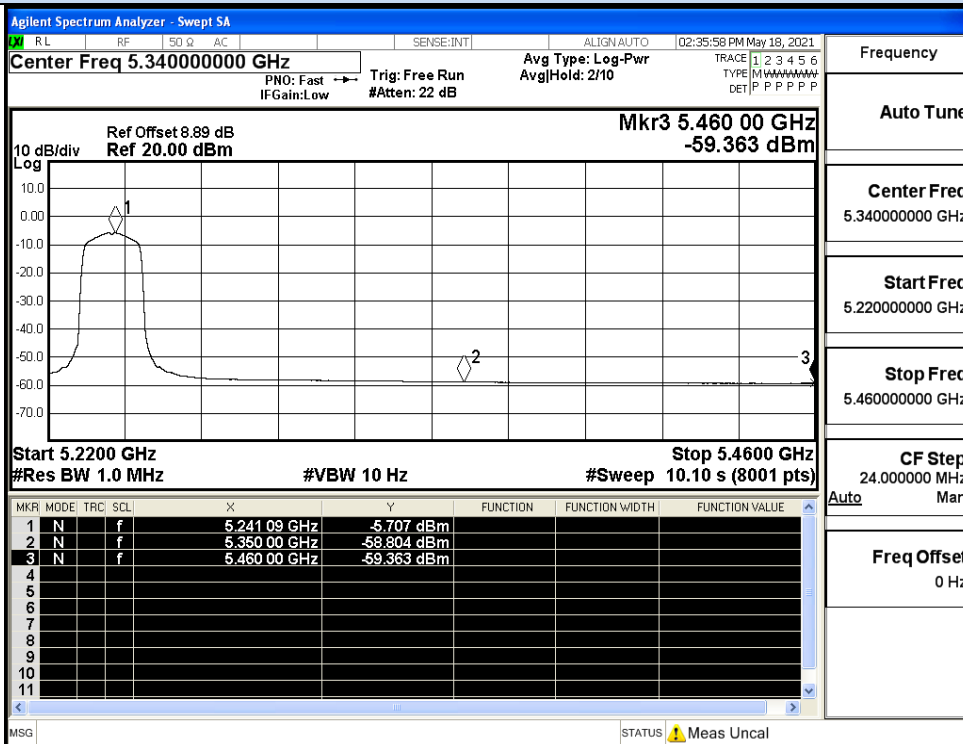


IEEE 802.11n20 / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement

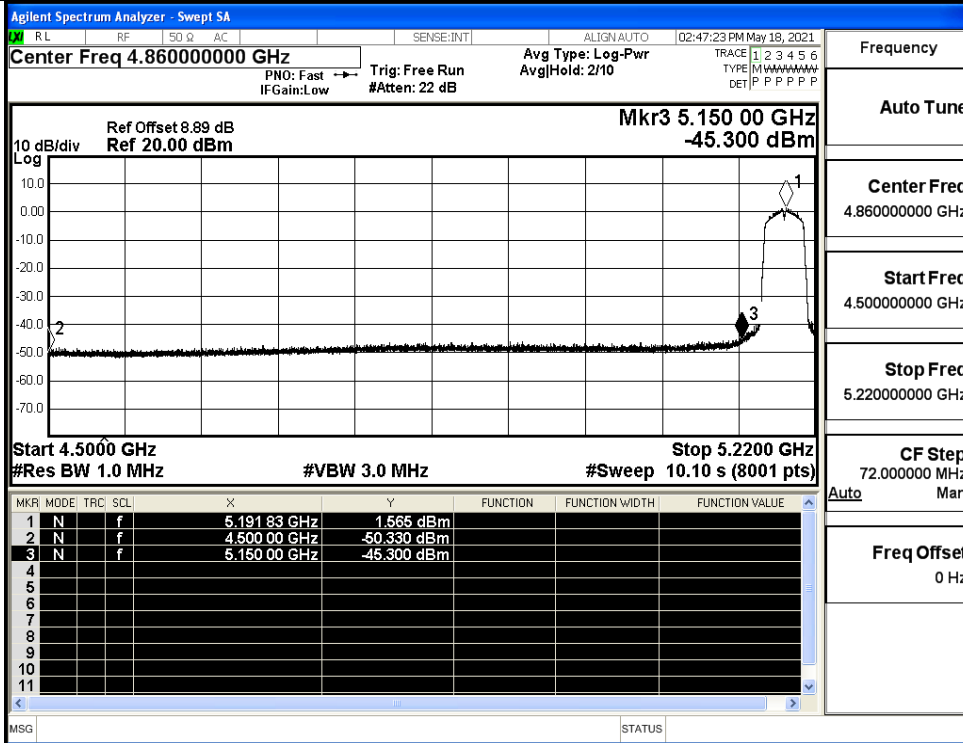


IEEE 802.11n20 / Channel 48 / 5240MHz / Peak

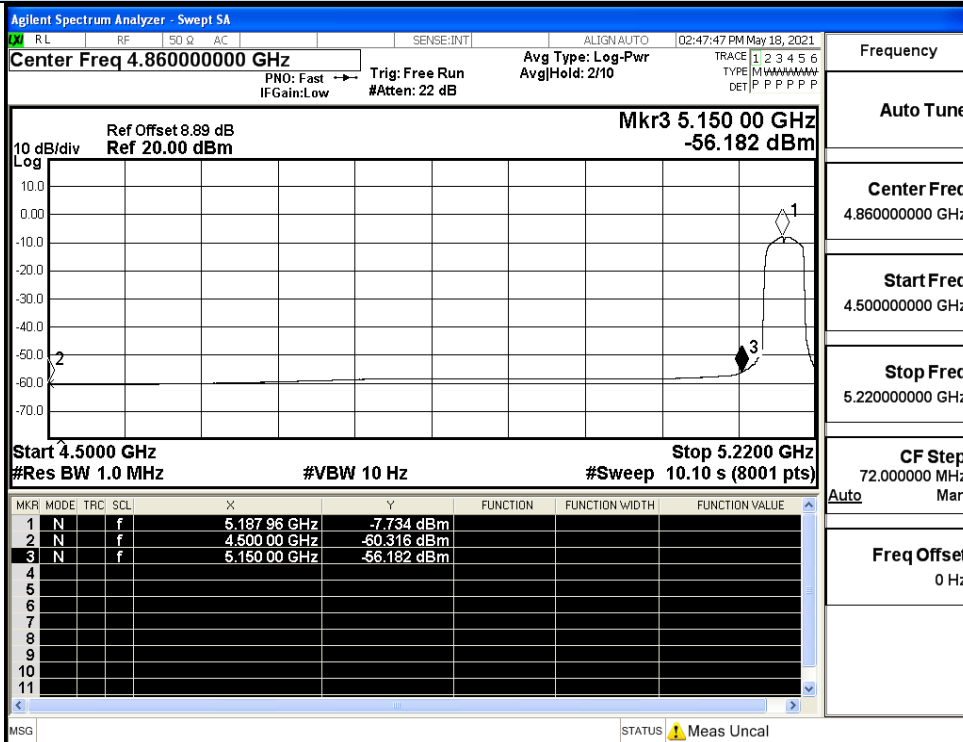


IEEE 802.11n20 / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

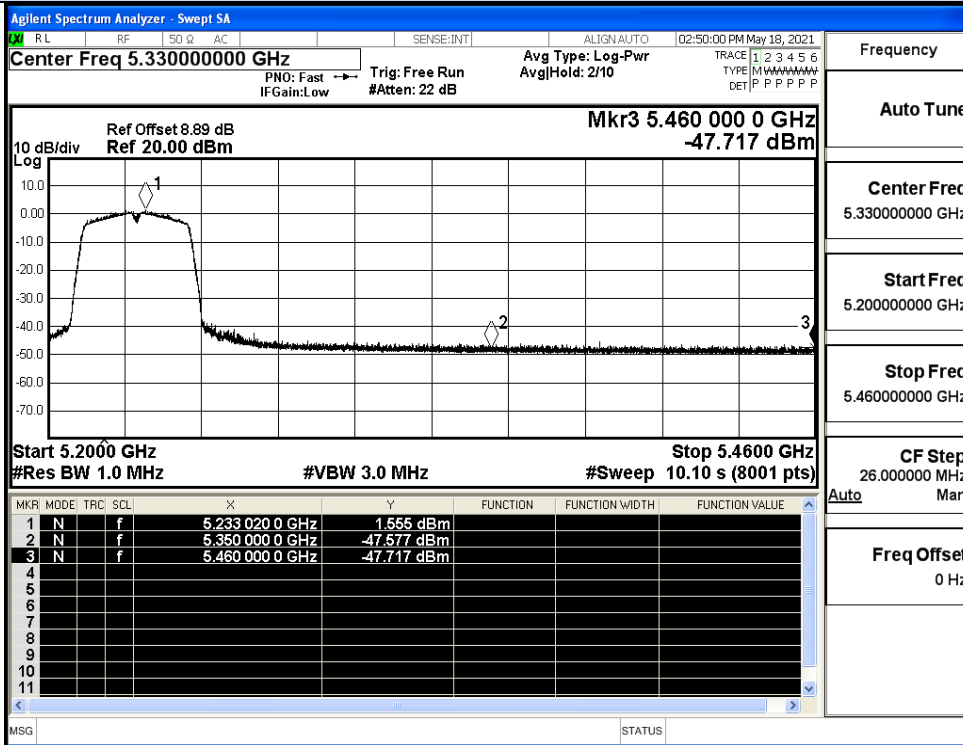


IEEE 802.11n40 / Channel 38 / 5190MHz / Peak

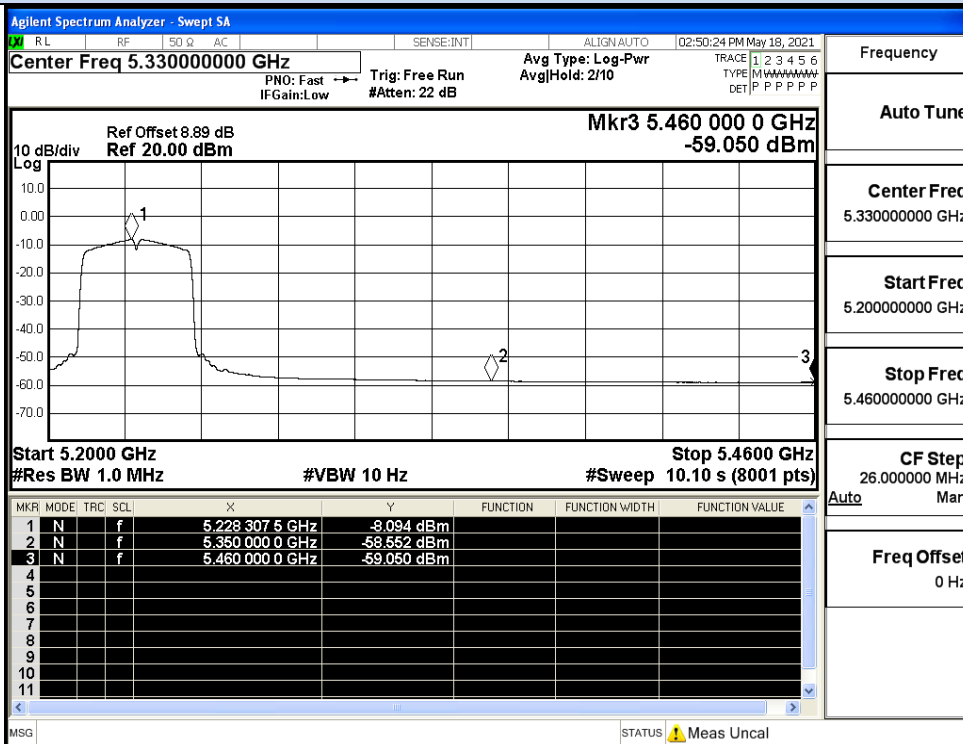


IEEE 802.11n40 / Channel 38 / 5190MHz / Average

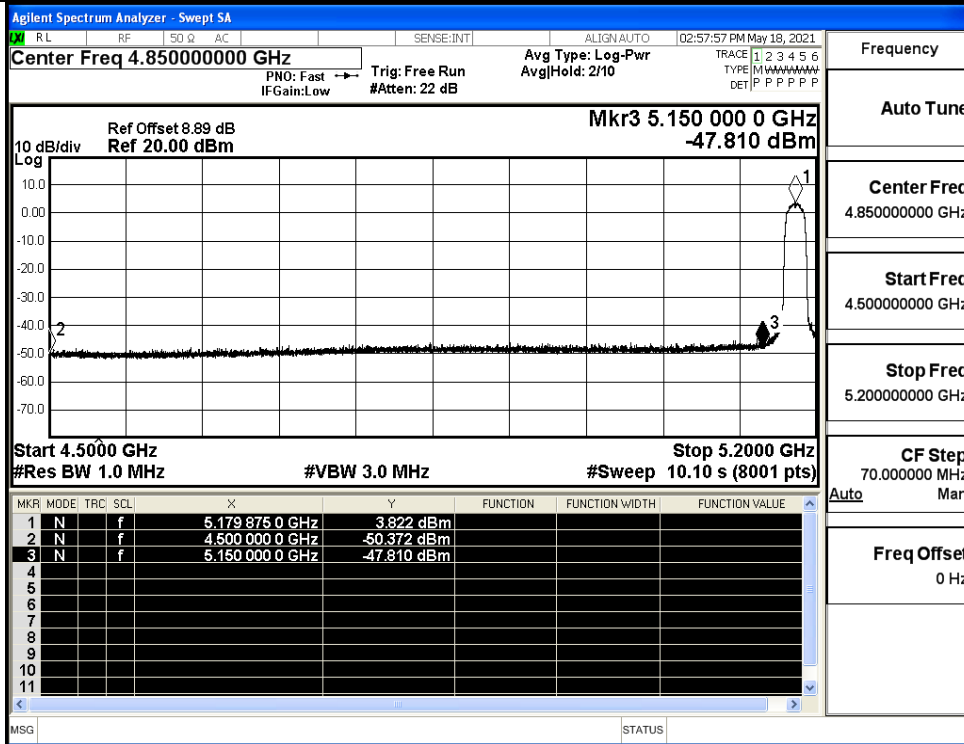
Undesirable Emissions Measurement



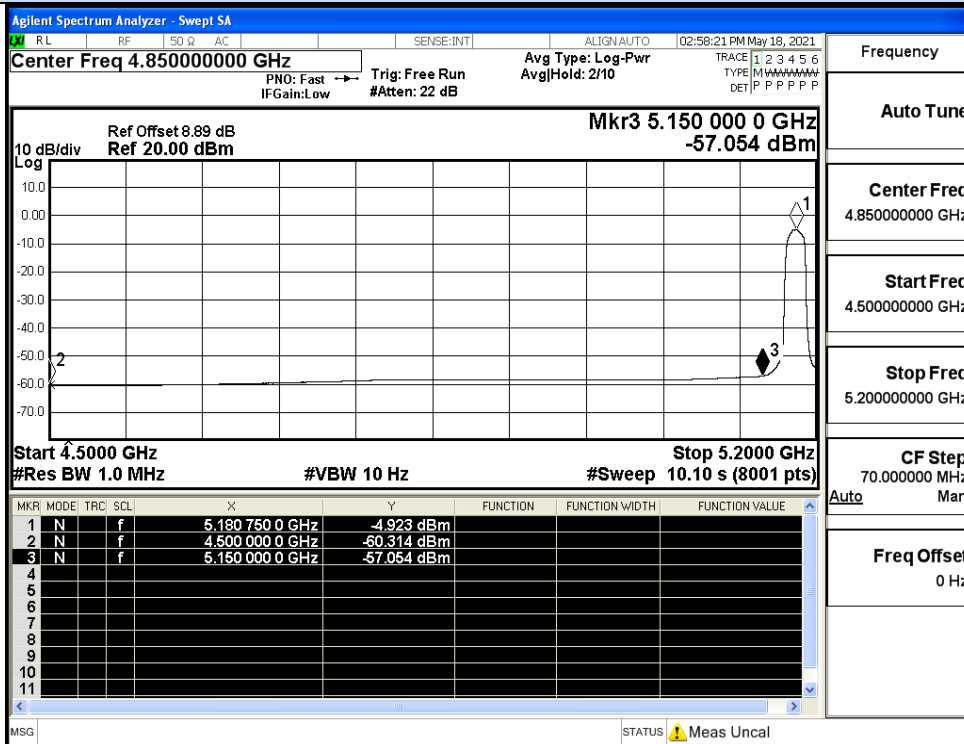
IEEE 802.11n40 / Channel 48 / 5230MHz / Peak



IEEE 802.11n40 / Channel 48 / 5230MHz / Average

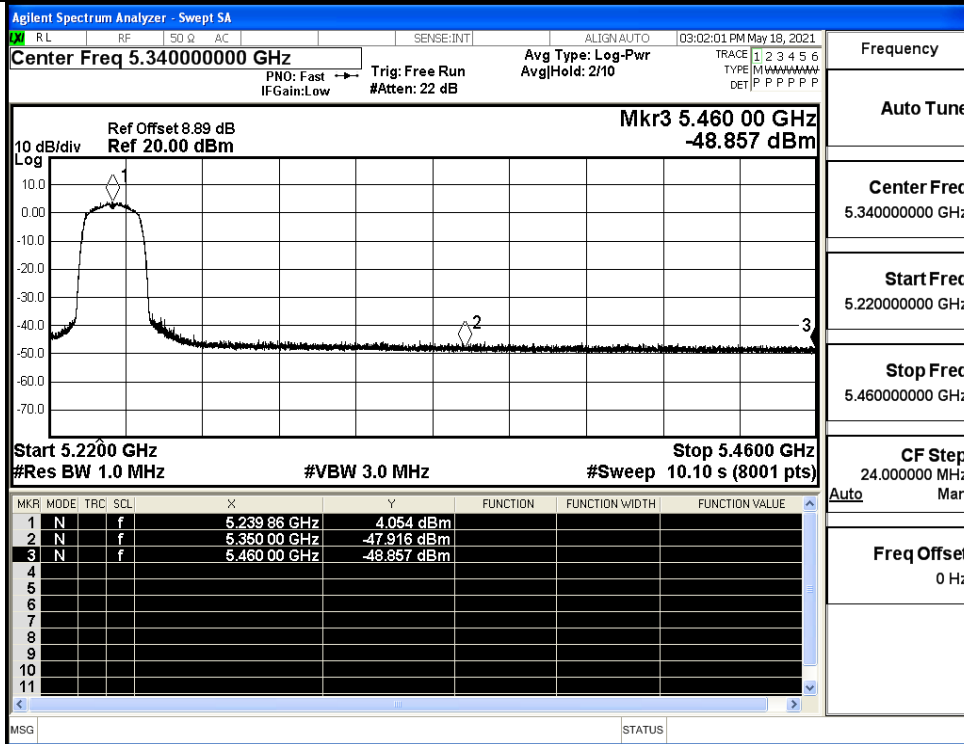


IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak

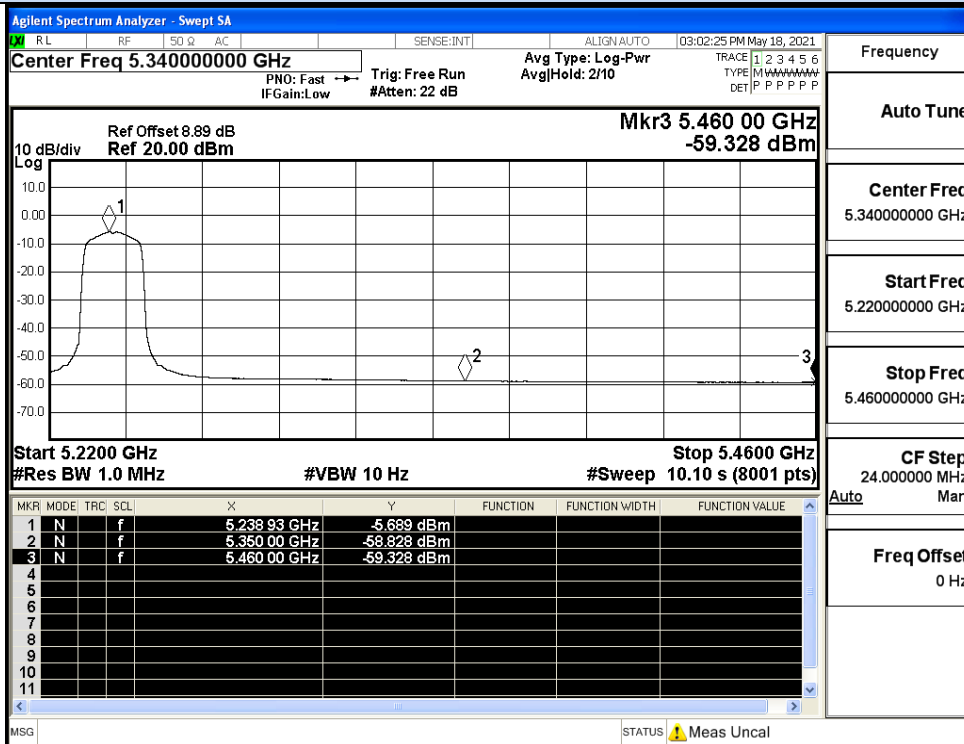


IEEE 802.11ac20 / Channel 36 / 5180MHz / Average

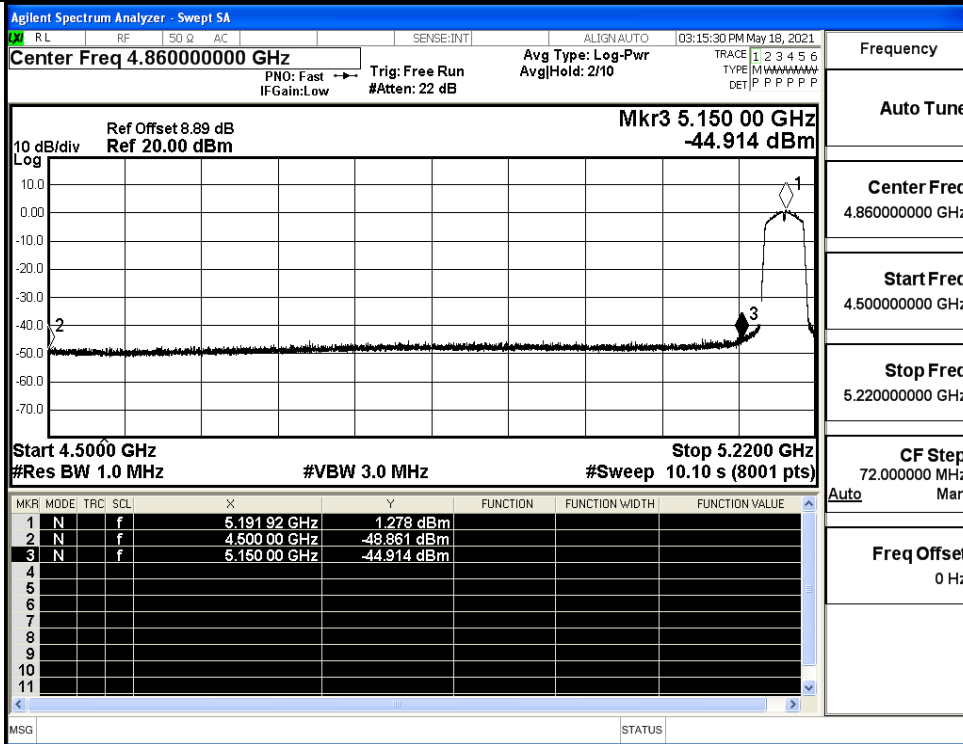




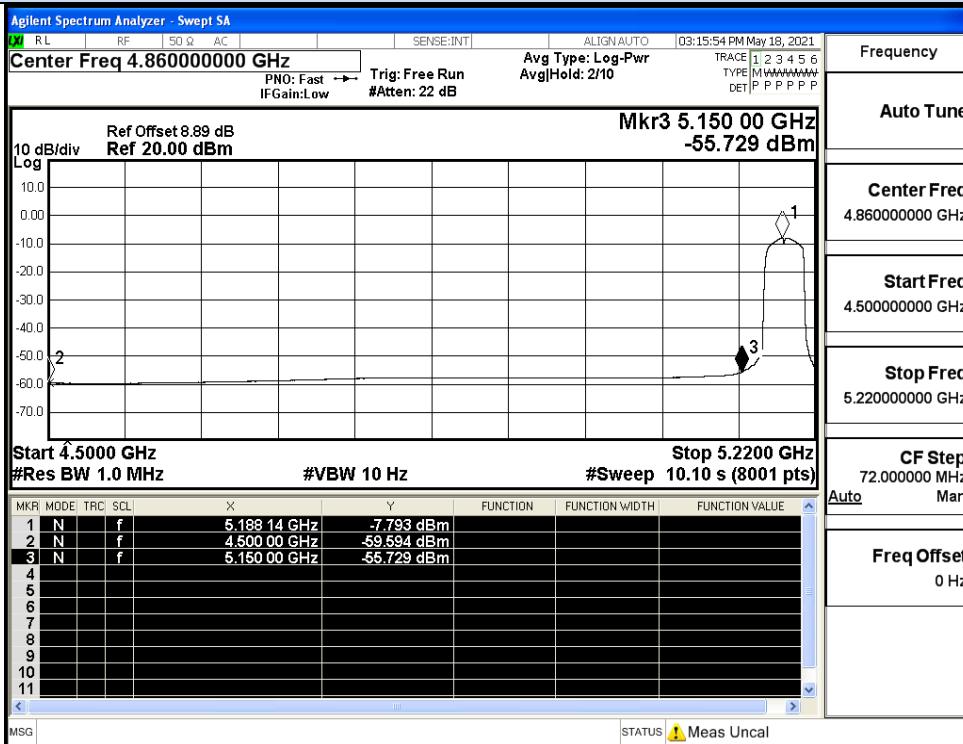
IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



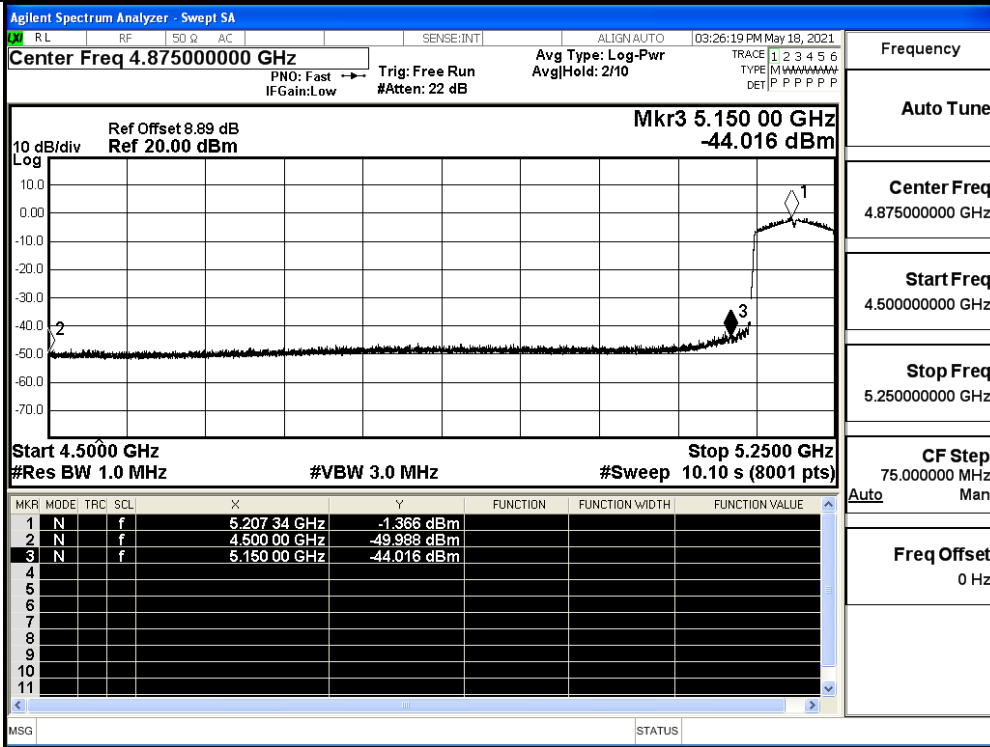
IEEE 802.11ac20 / Channel 48 / 5240MHz / Average



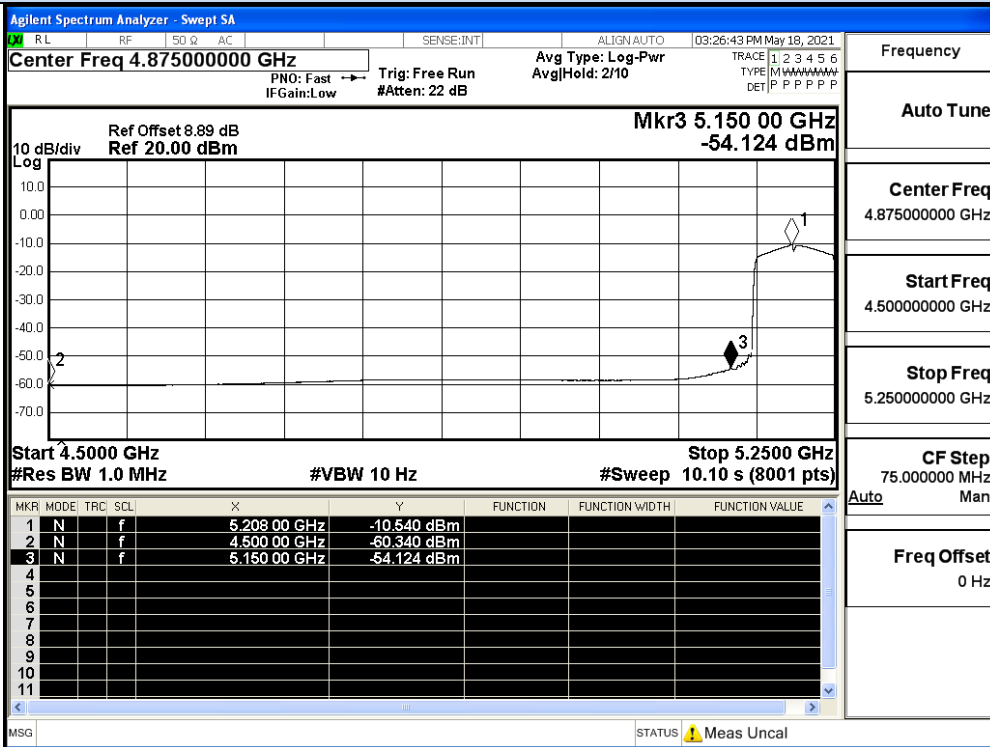
IEEE 802.11ac40 / Channel 38 / 5190MHz / Peak



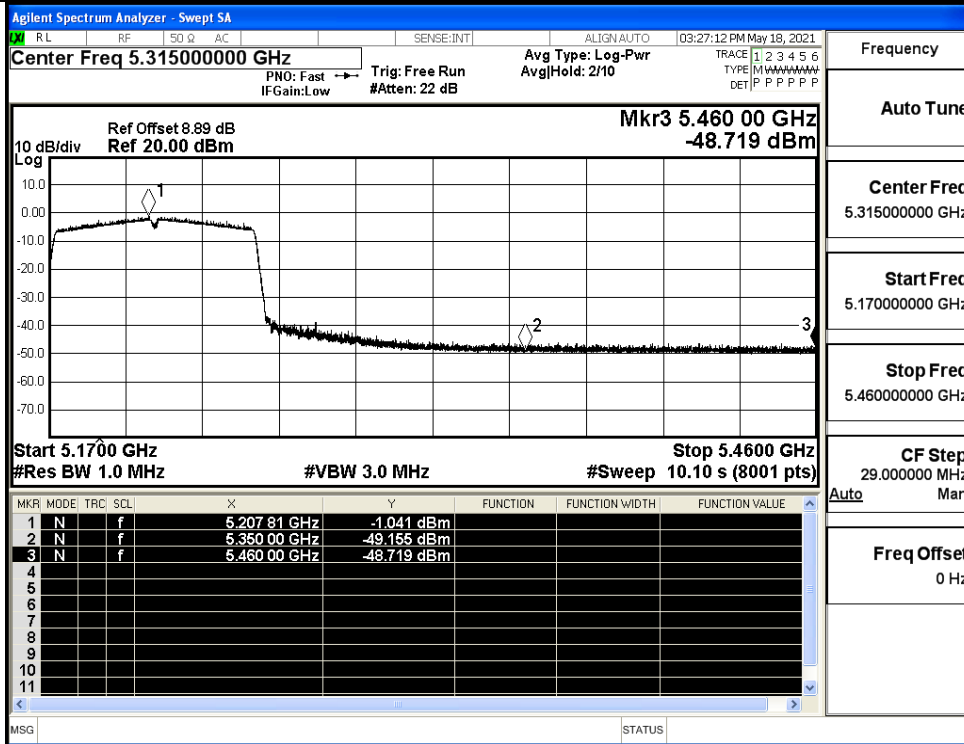
IEEE 802.11ac40 / Channel 38 / 5190MHz / Average



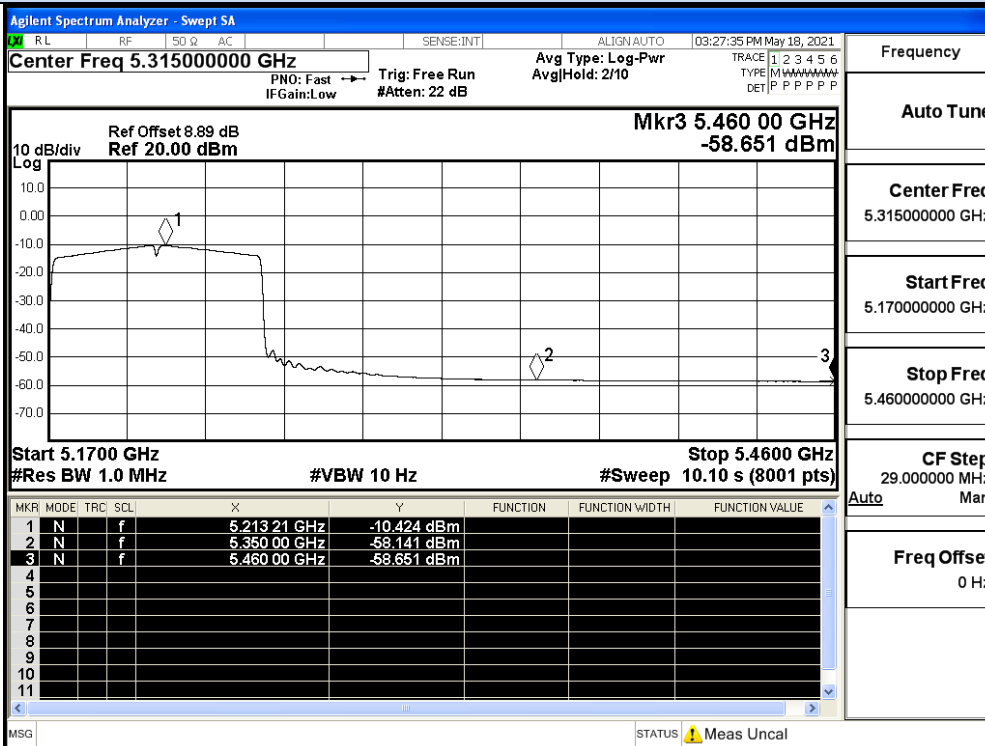
IEEE 802.11ac40 / Channel 48 / 5230MHz / Peak



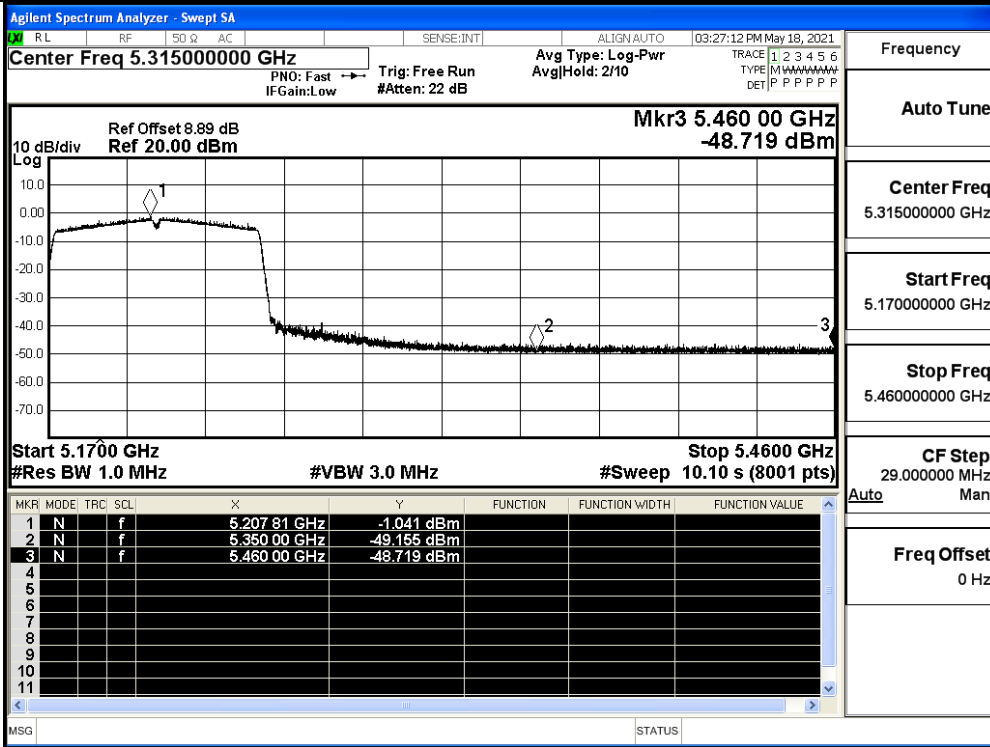
IEEE 802.11ac40 / Channel 48 / 5230MHz / Average



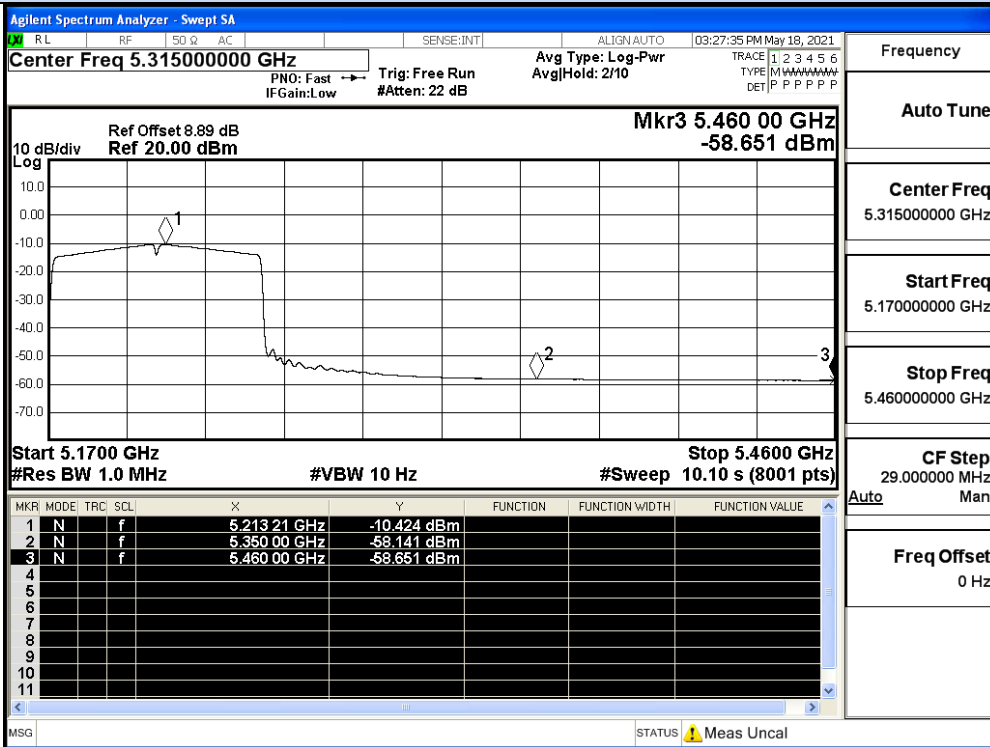
IEEE 802.11ac80 / Channel 42 / 5210MHz / Peak



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	-49.40	-50.97	-47.10	6.01	0	54.14	Peak	68.20	Pass
		4500.0	-59.62	-60.30	-56.94	6.01	0	44.30	Average	54.00	Pass
		5150.0	-46.41	-48.13	-44.18	6.01	0	57.06	Peak	68.20	Pass
		5150.0	-56.61	-57.17	-53.87	6.01	0	47.37	Average	54.00	Pass
	48	5350.0	-47.10	-47.48	-44.28	6.01	0	56.96	Peak	68.20	Pass
		5350.0	-58.89	-58.80	-55.83	6.01	0	45.41	Average	54.00	Pass
		5460.0	-48.56	-48.64	-45.59	6.01	0	55.65	Peak	68.20	Pass
11N40	38	4500.0	-49.73	-50.33	-47.01	6.01	0	54.23	Peak	68.20	Pass
		4500.0	-60.39	-60.32	-57.34	6.01	0	43.90	Average	54.00	Pass
		5150.0	-43.73	-45.30	-41.43	6.01	0	59.81	Peak	68.20	Pass
		5150.0	-55.40	-56.18	-52.76	6.01	0	48.48	Average	54.00	Pass
	46	5350.0	-48.33	-47.58	-44.93	6.01	0	56.31	Peak	68.20	Pass
		5350.0	-58.63	-58.55	-55.58	6.01	0	45.66	Average	54.00	Pass
		5460.0	-48.72	-47.72	-45.18	6.01	0	56.06	Peak	68.20	Pass
11AC20	36	4500.0	-50.69	-50.37	-47.52	6.01	0	53.72	Peak	68.20	Pass
		4500.0	-60.32	-60.31	-57.30	6.01	0	43.94	Average	54.00	Pass
		5150.0	-47.34	-47.81	-44.56	6.01	0	56.68	Peak	68.20	Pass
		5150.0	-56.55	-57.05	-53.78	6.01	0	47.46	Average	54.00	Pass
	48	4500.0	-50.69	-50.37	-47.52	6.01	0	53.72	Peak	68.20	Pass
		4500.0	-60.32	-60.31	-57.30	6.01	0	43.94	Average	54.00	Pass
		5150.0	-47.34	-47.81	-44.56	6.01	0	56.68	Peak	68.20	Pass
11AC40	38	4500.0	-49.73	-48.86	-46.26	6.01	0	54.98	Peak	68.20	Pass
		4500.0	-60.30	-59.59	-56.92	6.01	0	44.32	Average	54.00	Pass
		5150.0	-47.09	-44.91	-42.85	6.01	0	58.39	Peak	68.20	Pass
		5150.0	-56.13	-55.73	-52.92	6.01	0	48.32	Average	54.00	Pass
	46	5350.0	-49.18	-49.25	-46.20	6.01	0	55.04	Peak	68.20	Pass
		5350.0	-58.61	-58.60	-55.59	6.01	0	45.65	Average	54.00	Pass
		5460.0	-48.28	-47.31	-44.76	6.01	0	56.48	Peak	68.20	Pass
11AC80	42	4500.0	-48.11	-49.16	-45.59	6.01	0	55.65	Peak	68.20	Pass
		5150.0	-58.16	-58.14	-55.14	6.01	0	46.10	Average	54.00	Pass
		4500.0	-49.28	-48.72	-45.98	6.01	0	55.26	Peak	68.20	Pass
		5150.0	-58.64	-58.65	-55.63	6.01	0	45.61	Average	54.00	Pass
		5350.0	-48.11	-49.16	-45.59	6.01	0	55.65	Peak	68.20	Pass
		5460.0	-58.16	-58.14	-55.14	6.01	0	46.10	Average	54.00	Pass
		5350.0	-49.28	-48.72	-45.98	6.01	0	55.26	Peak	68.20	Pass
5460.0	-58.64	-58.65	-55.63	6.01	0	45.61	Average	54.00	Pass		

$E [dBuV/m] = Power [dBm] + Gain + Ground Factor + 95.23$

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 =  $3dBi + 10 \log (2) = 6.01dBi$