

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Test Mode	Data Rate
802.11a	6Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

We chose the Worst-modes are shown as following table:

Test Mode	Note
802.11a	---
802.11n HT20	Cover 802.11ac VHT20
802.11n HT40	Cover 802.11ac VHT40
802.11ac VHT80	---

Directional gain

Band	Ant Gain (dBi)	Power Limit (dBm)	PSD Limit
5.2&5.3&5.6GHz	1.1	24.0	11.0(dBm/MHz)
5.8GHz	1.1	30.0	30.0(dBm/500kHz)

Duty Cycle

Test Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor(dB)
802.11a	5180	97.87%	0.09
802. 11n HT20	5180	97.74%	0.10
802. 11n HT40	5190	95.22%	0.21
802. 11ac VHT20	5180	97.64%	0.10
802. 11ac VHT40	5190	95.41%	0.20
802. 11ac VHT80	5210	90.40%	0.44

Output Power
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Mode	Freq (MHz)	Chain	Conducted average power output(dBm)
802.11a	5180	Chain0	17.37
	5220	Chain0	17.16
	5240	Chain0	17.27
802.11n20M	5180	Chain0	16.11
	5240	Chain0	16.18
802.11n40M	5190	Chain0	16.91
	5230	Chain0	16.75
802.11ac20M	5180	Chain0	14.35
	5220	Chain0	14.17
	5240	Chain0	14.08
802.11ac40M	5190	Chain0	15.13
	5230	Chain0	14.96
802.11ac80M	5210	Chain0	14.61

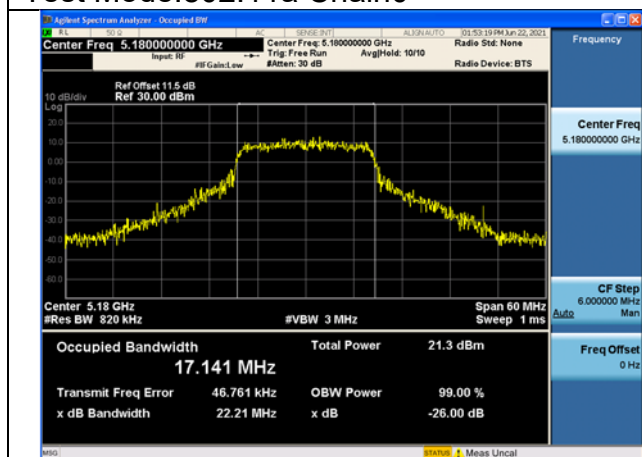
Emission Bandwidth

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.5dB+ Cable loss 1dB

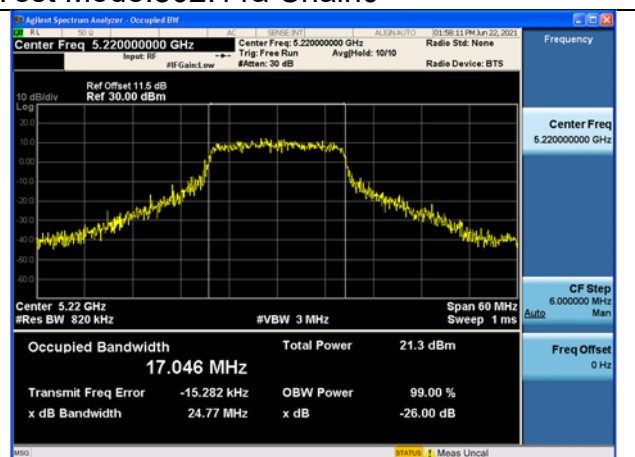
Test Mode:802.11a

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5180	Chain0	22.21
5220	Chain0	24.77
5240	Chain0	24.86

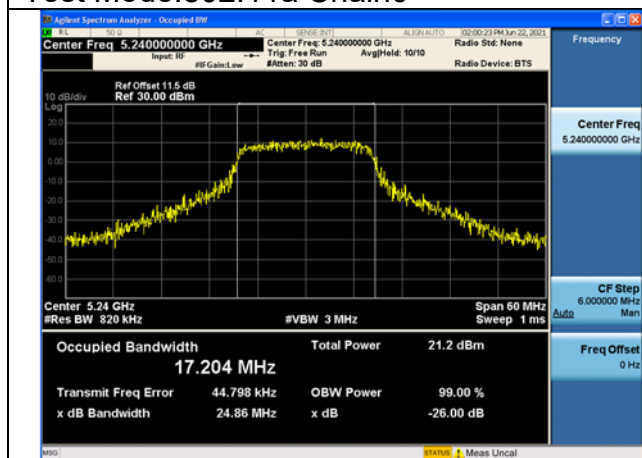
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



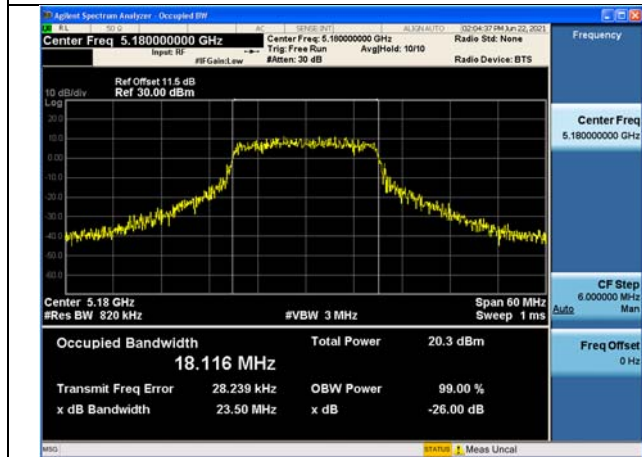
Test Mode:802.11a Chain0



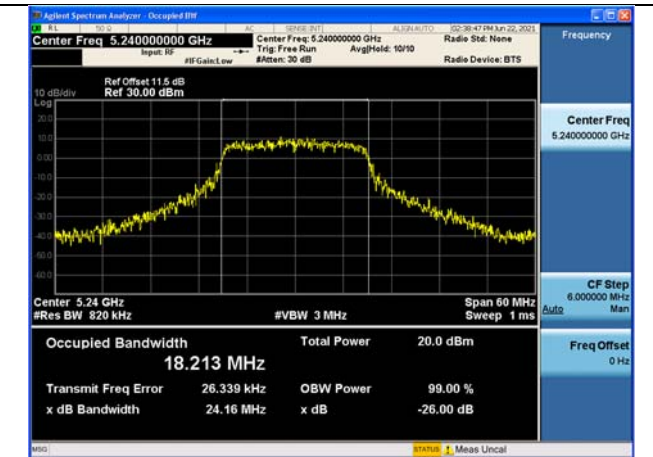
Test Mode:802. 11n HT20

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5180	Chain0	23.50
5240	Chain0	24.16

Test Mode:802. 11n HT20 Chain0



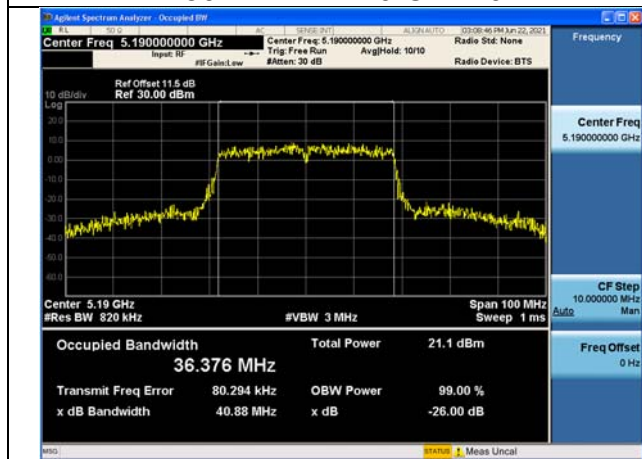
Test Mode:802. 11n HT20 Chain0



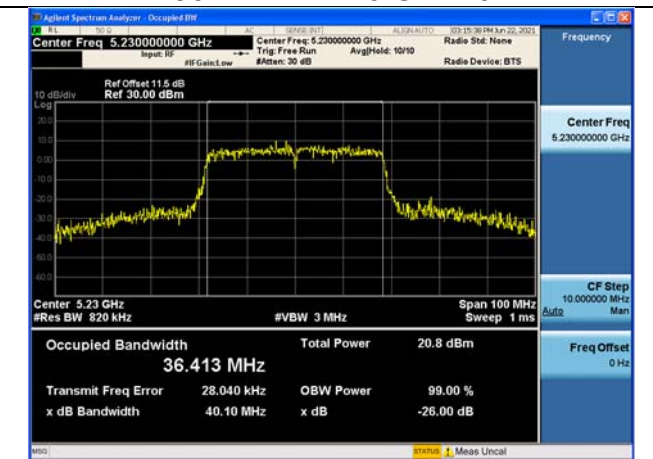
Test Mode:802. 11n HT40

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5190	Chain0	40.88
5230	Chain0	40.10

Test Mode:802. 11n HT40 Chain0



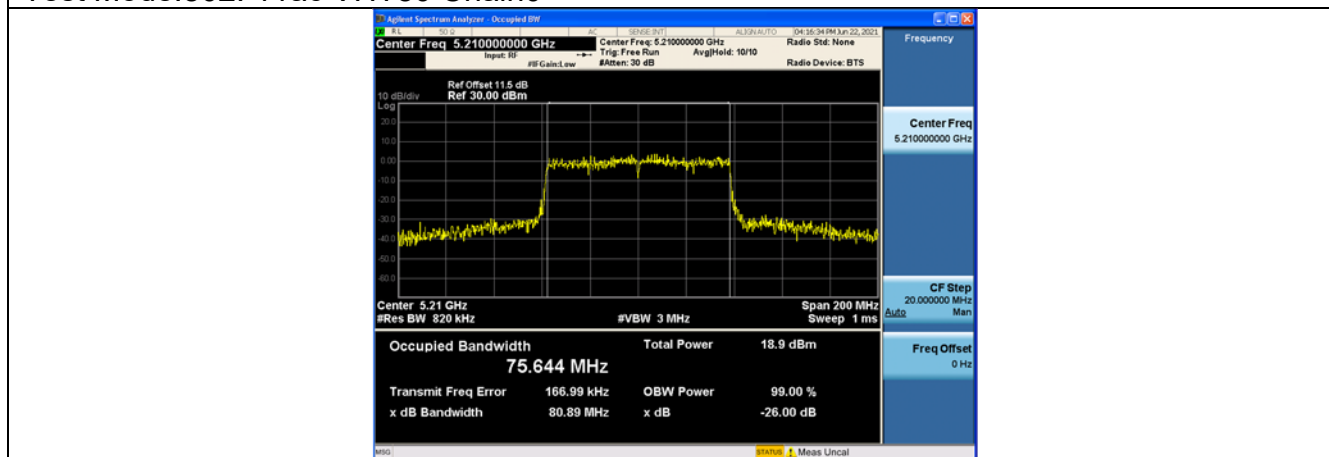
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11ac VHT80

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5210	Chain0	80.89

Test Mode:802. 11ac VHT80 Chain0



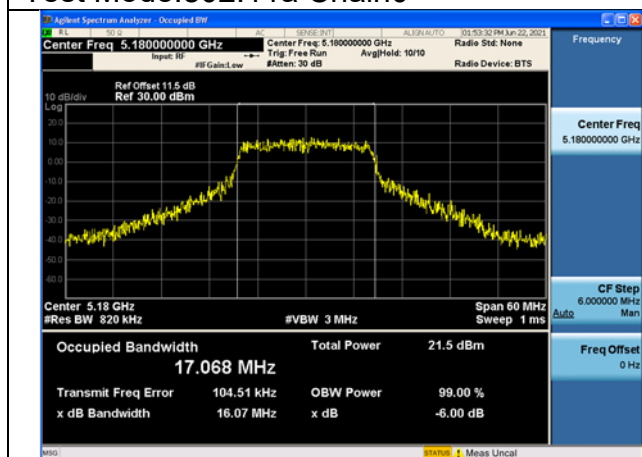
Occupied Bandwidth

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.5dB+ Cable loss 1dB

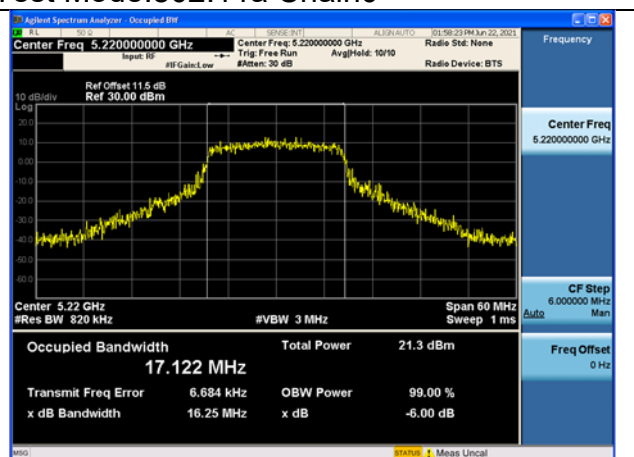
Test Mode:802.11a

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5180	Chain0	17.068
5220	Chain0	17.122
5240	Chain0	16.988

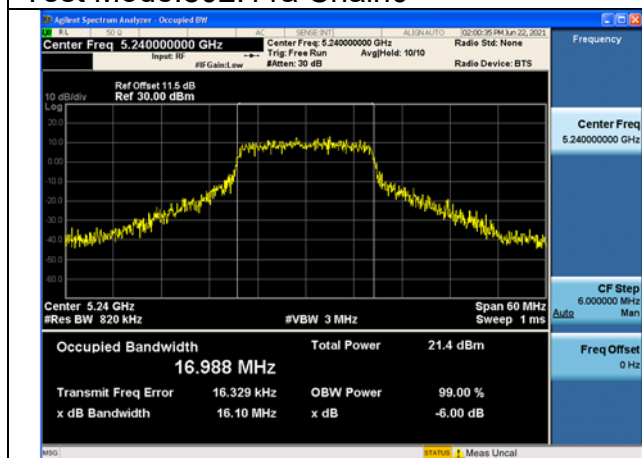
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



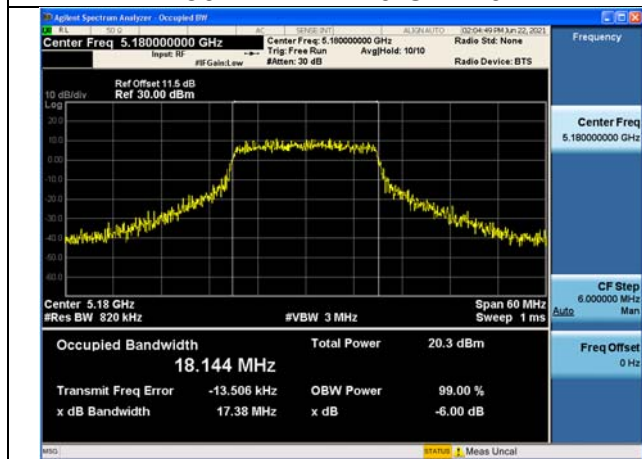
Test Mode:802.11a Chain0



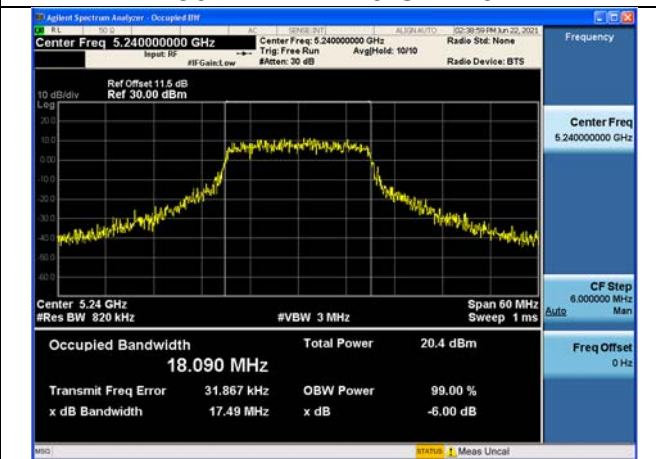
Test Mode:802. 11n HT20

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5180	Chain0	18.144
5240	Chain0	18.090

Test Mode:802. 11n HT20 Chain0



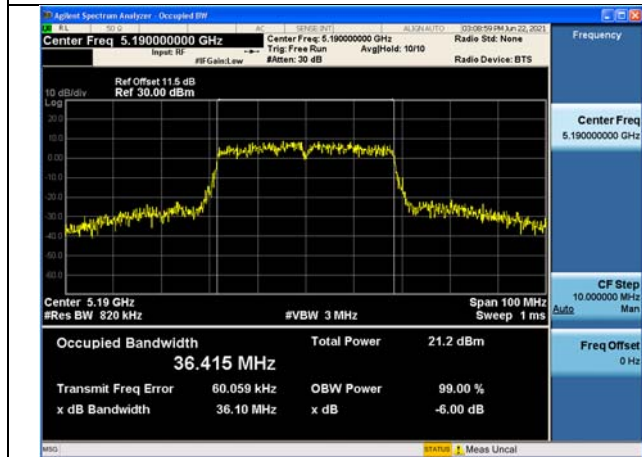
Test Mode:802. 11n HT20 Chain0



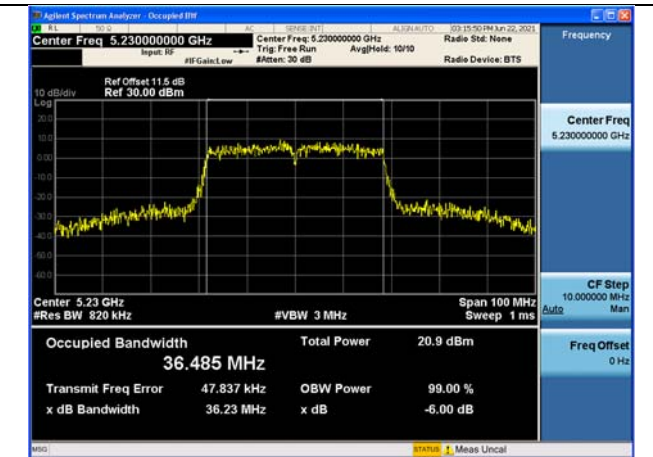
Test Mode:802. 11n HT40

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5190	Chain0	36.415
5230	Chain0	36.485

Test Mode:802. 11n HT40 Chain0



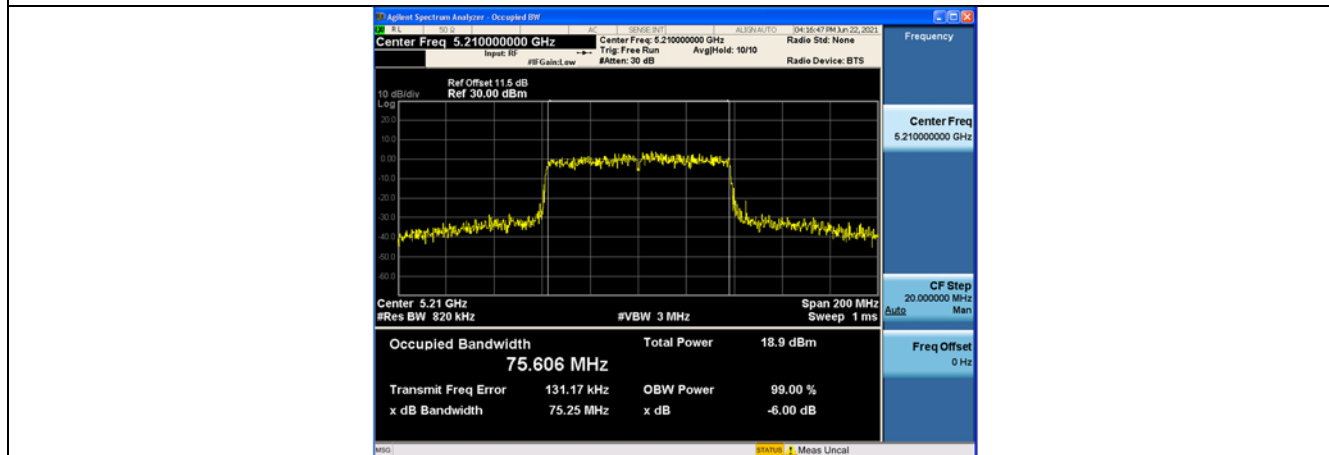
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11ac VHT80

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5210	Chain0	75.606

Test Mode:802. 11ac VHT80 Chain0



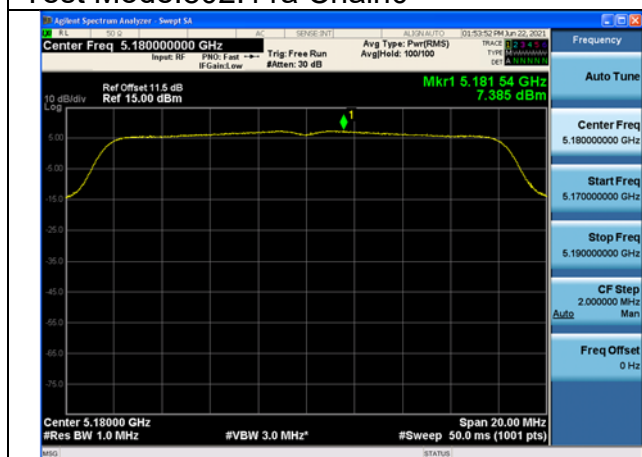
Transmitter Power Spectral Density

Offset 11.5dB = Attenuator 10dB+ Temporary antenna connector loss 0.5dB+ Cable loss 1dB

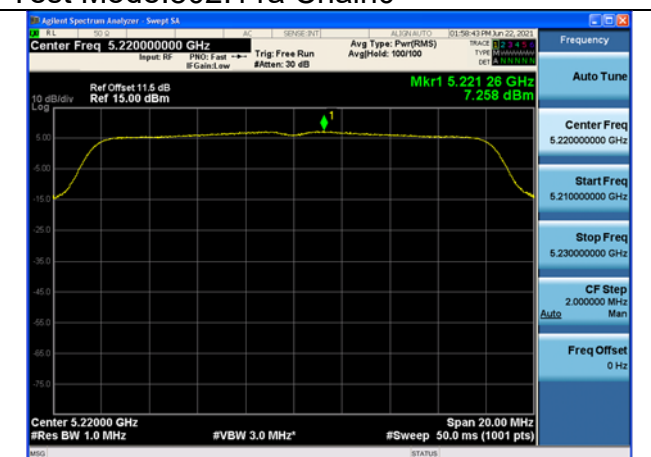
Test Mode:802.11a

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5180	0.09	Chain0	7.475
5220		Chain0	7.348
5240		Chain0	7.558

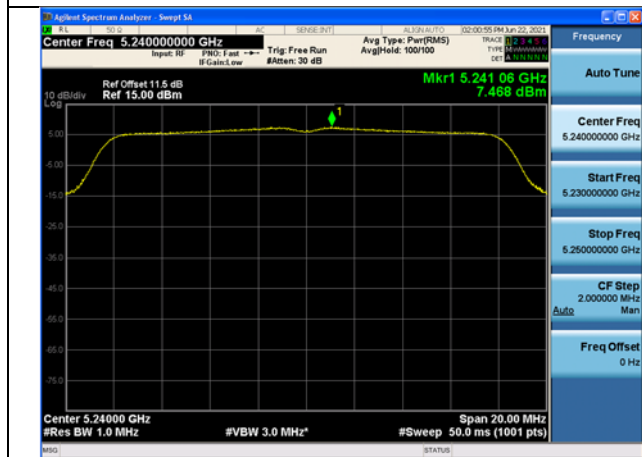
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



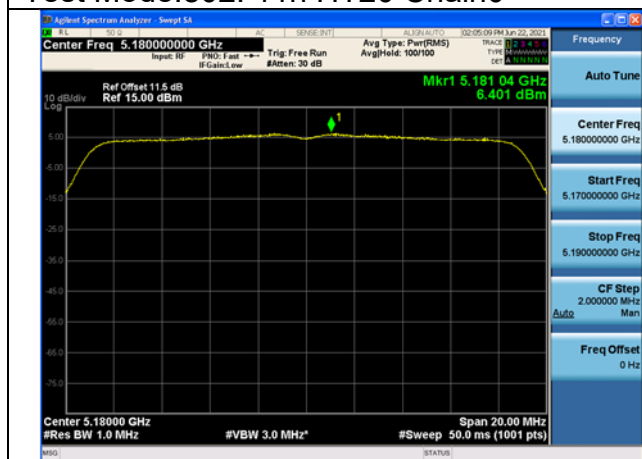
Test Mode:802.11a Chain0



Test Mode:802. 11n HT20

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5180	0.10	Chain0	6.501
5240		Chain0	6.53

Test Mode:802. 11n HT20 Chain0



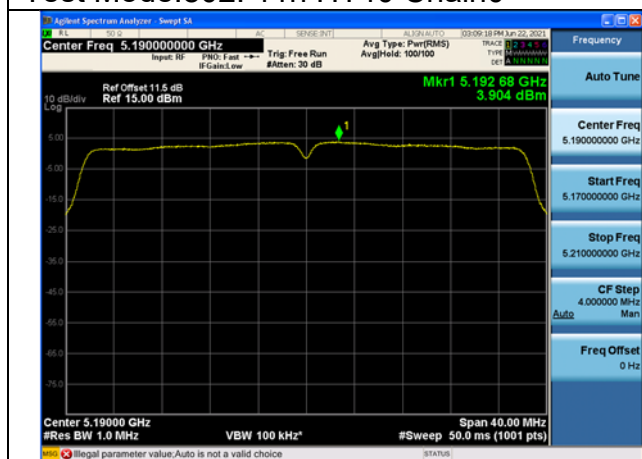
Test Mode:802. 11n HT20 Chain0



Test Mode:802. 11n HT40

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5190	0.21	Chain0	4.114
5230		Chain0	3.836

Test Mode:802. 11n HT40 Chain0



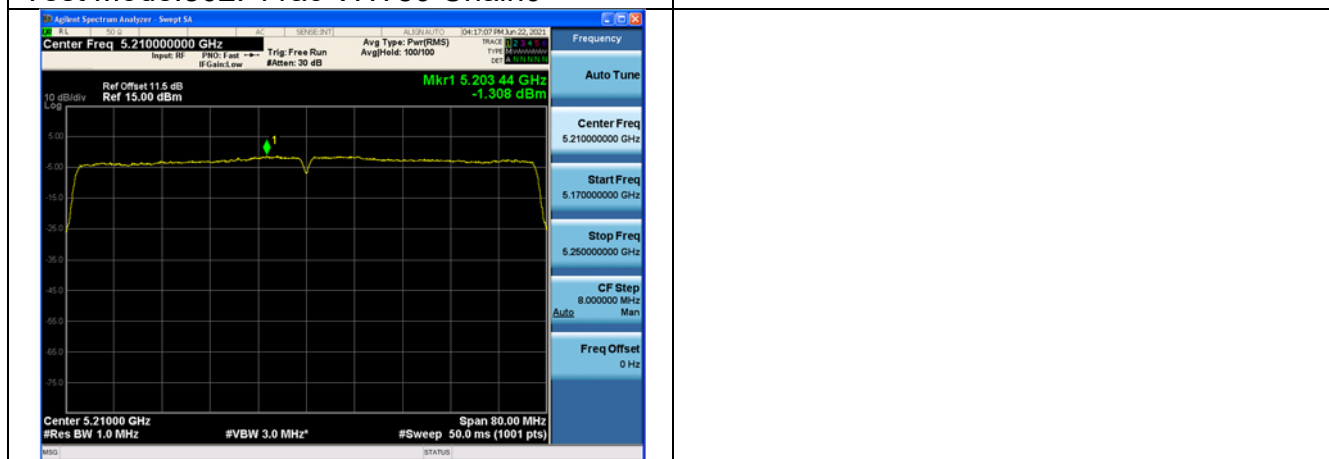
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11ac VHT80

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5210	0.44	Chain0	-0.868

Test Mode:802. 11ac VHT80 Chain0



Frequency Stability

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Mode	Data Rate	Chain	Center Frequency (MHz)	Measured Frequency (MHz)	Frequency Stability (ppm)	Voltage (V)	Temperature (°C)
802.11a	6Mbps	Chain0	5180	5179.98151	3.57	HV	+20
			5180	5179.98157	3.56	LV	+20
			5180	5179.98145	3.58	NV	+30
			5180	5179.98130	3.61	NV	+40
			5180	5179.98140	3.59	NV	+50
			5180	5179.98165	3.54	NV	+55
			5180	5179.98179	3.52	NV	+20
			5180	5179.98168	3.54	NV	+10
			5180	5179.98184	3.51	NV	0
			5180	5179.98171	3.53	NV	-10