

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	Chain	Note
802.11a	Chain0	---
802.11n HT20	Chain0	Cover 802.11ac VHT20
802.11n HT40	Chain0	Cover 802.11ac VHT40
802.11ac VHT80	Chain0	---

Duty Cycle

Test Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor(dB)
802.11a	5745	85.87%	0.66
802. 11n HT20	5745	78.86%	1.03
802. 11n HT40	5755	63.64%	1.96
802. 11ac VHT20	5745	79.24%	1.01
802. 11ac VHT40	5755	76.66%	1.15
802. 11ac VHT80	5775	64.09%	1.93

Directional gain

Band	Chain0 Ant Gain (dBi)	Power Limit (dBm)	PSD Limit
5.2GHz	-3.58	24.0	11.0(dBm/MHz)
5.8GHz	-3.58	30.0	30.0(dBm/500kHz)

**Output Power
UNII-1**

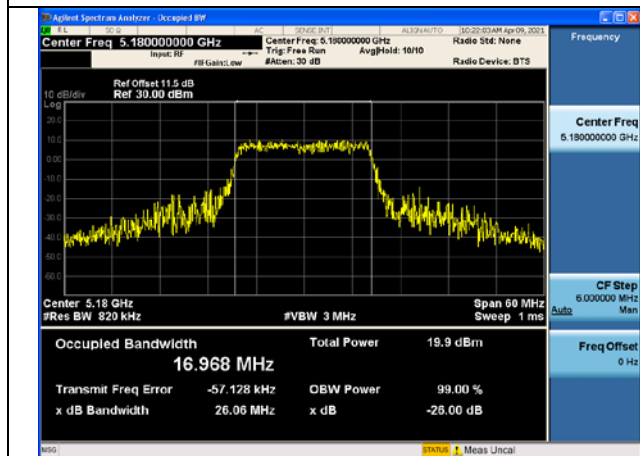
Mode	Freq (MHz)	Chain	Conducted average power output(dBm)
802.11a	5180	Chain0	15.61
	5220	Chain0	14.37
	5240	Chain0	14.09
802.11n20M	5180	Chain0	14.50
	5240	Chain0	13.49
802.11n40M	5190	Chain0	12.21
	5230	Chain0	11.30
802.11ac20M	5180	Chain0	12.87
	5220	Chain0	11.87
	5240	Chain0	11.68
802.11ac40M	5190	Chain0	12.21
	5230	Chain0	11.29
802.11ac80M	5210	Chain0	8.21

Emission Bandwidth

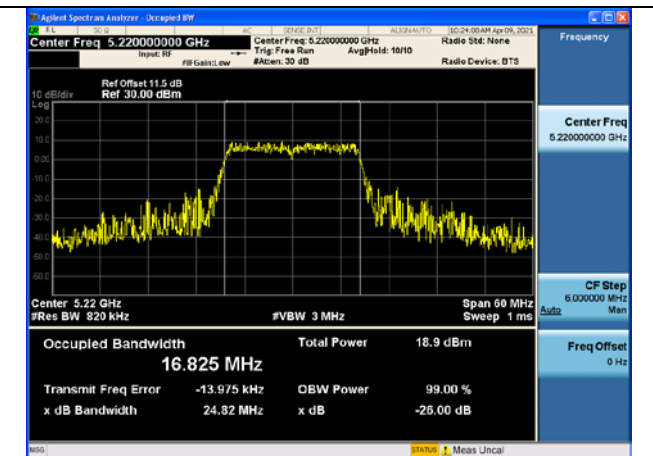
Test Mode:802.11a

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5180	Chain0	26.06
5220	Chain0	24.82
5240	Chain0	19.86

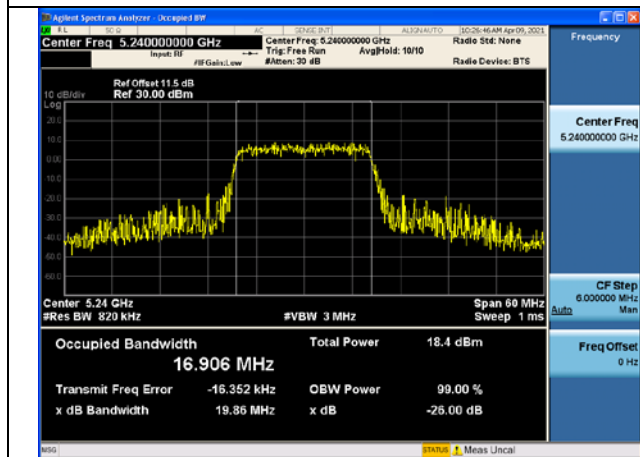
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



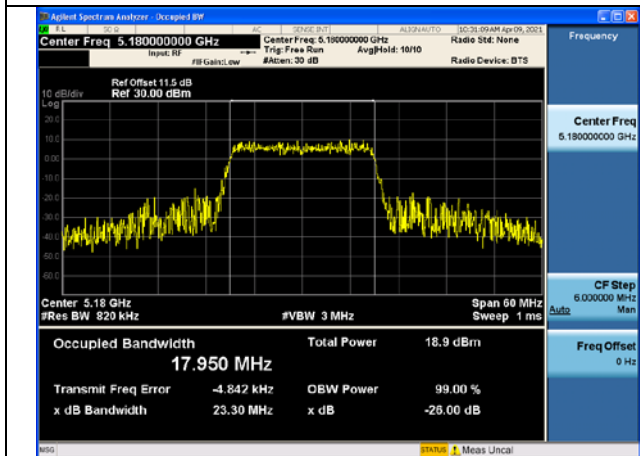
Test Mode:802.11a Chain0



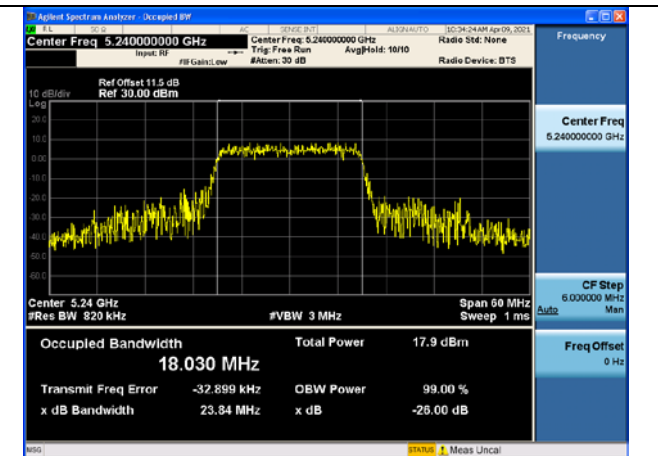
Test Mode:802. 11n HT20

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5180	Chain0	23.30
5240	Chain0	23.84

Test Mode:802. 11n HT20 Chain0



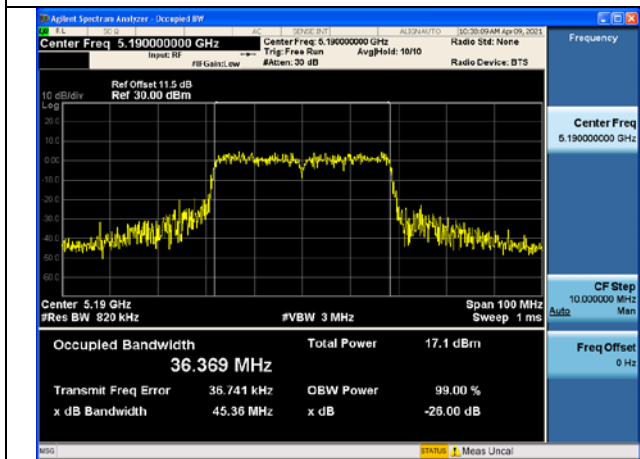
Test Mode:802. 11n HT20 Chain0



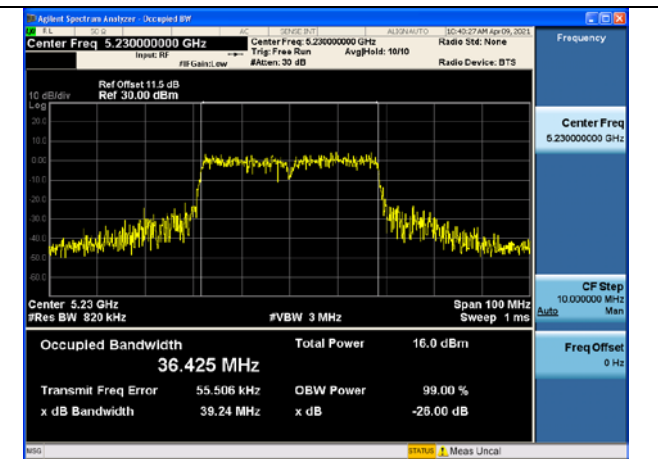
Test Mode:802. 11n HT40

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5190	Chain0	45.36
5230	Chain0	39.24

Test Mode:802. 11n HT40 Chain0



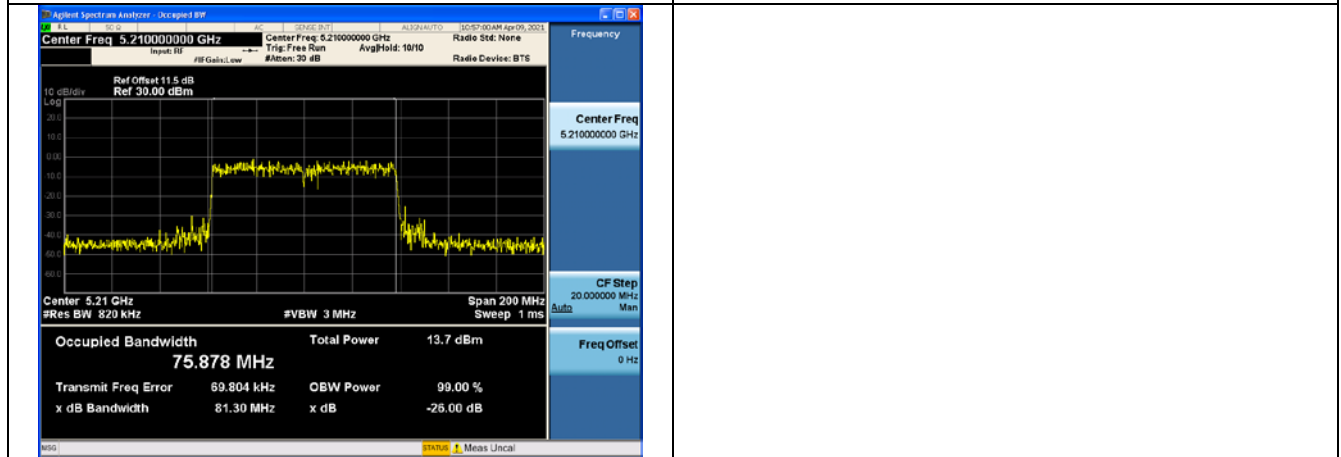
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11ac VHT80

Carrier frequency (MHz)	Chain	26dB Bandwidth (MHz)
5210	Chain0	81.30

Test Mode:802. 11ac VHT80 Chain0



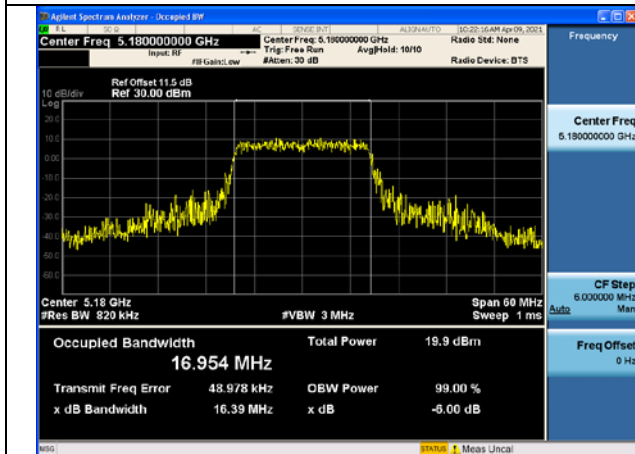
Occupied Bandwidth

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

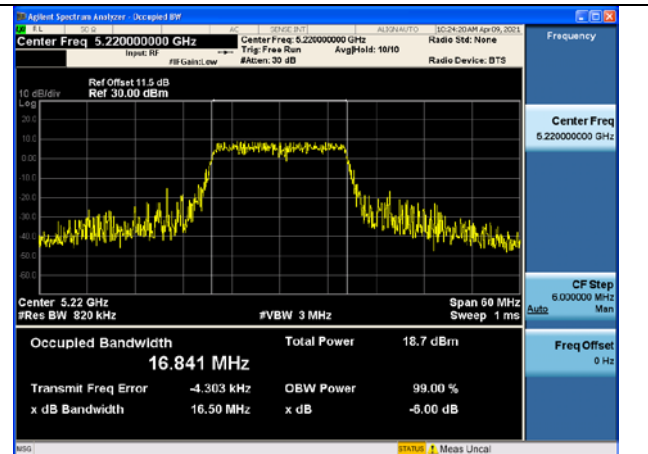
Test Mode:802.11a

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5180	Chain0	16.954
5220	Chain0	16.841
5240	Chain0	17.050

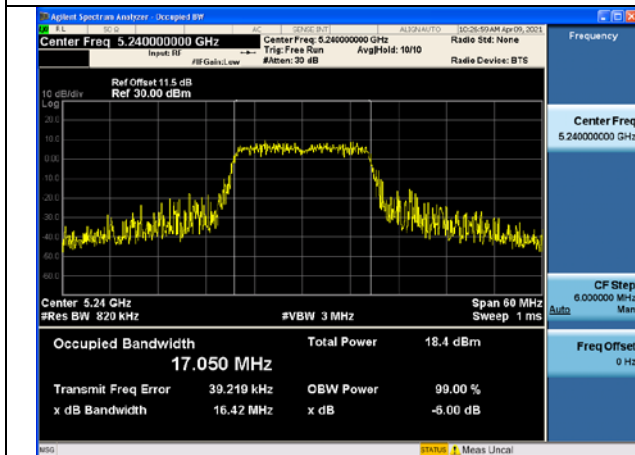
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



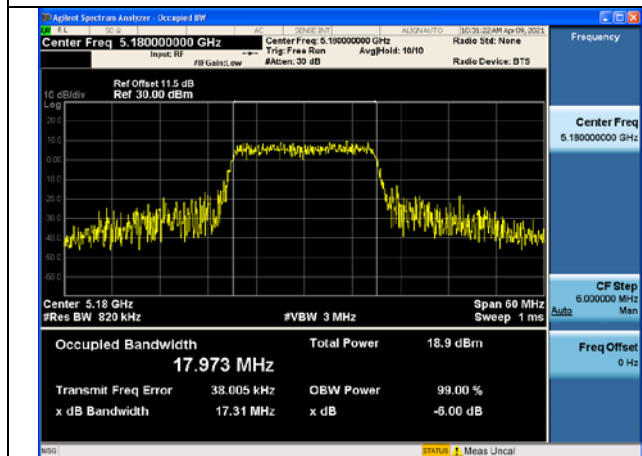
Test Mode:802.11a Chain0



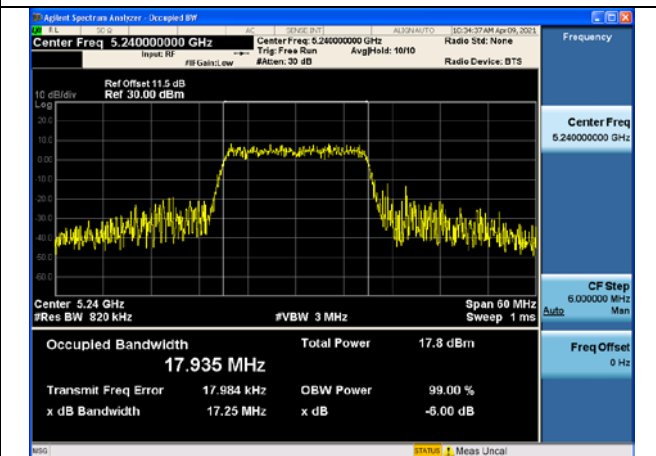
Test Mode:802. 11n HT20

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5180	Chain0	17.973
5240	Chain0	17.935

Test Mode:802. 11n HT20 Chain0



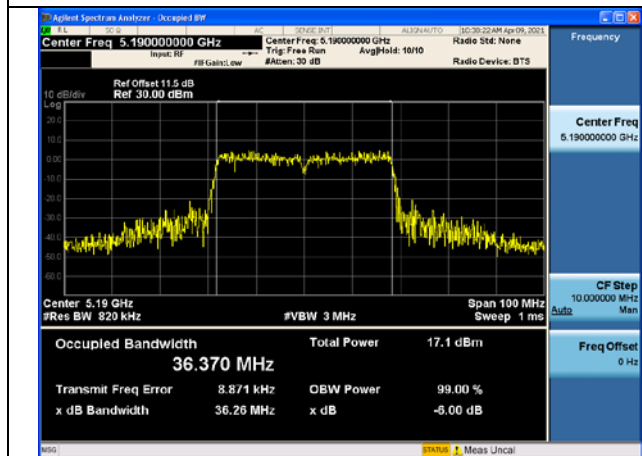
Test Mode:802. 11n HT20 Chain0



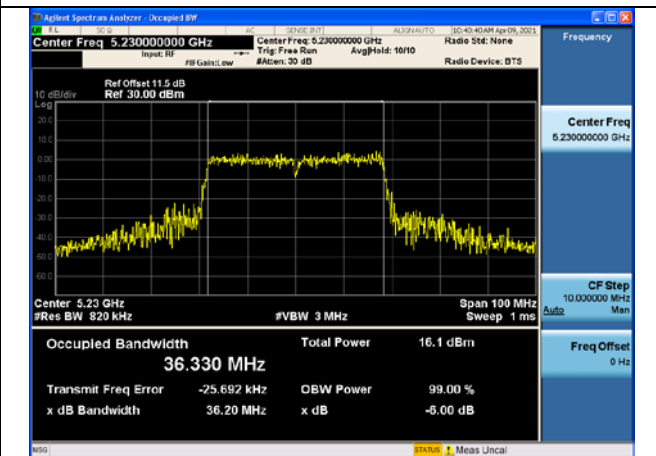
Test Mode:802. 11n HT40

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5190	Chain0	36.370
5230	Chain0	36.330

Test Mode:802. 11n HT40 Chain0



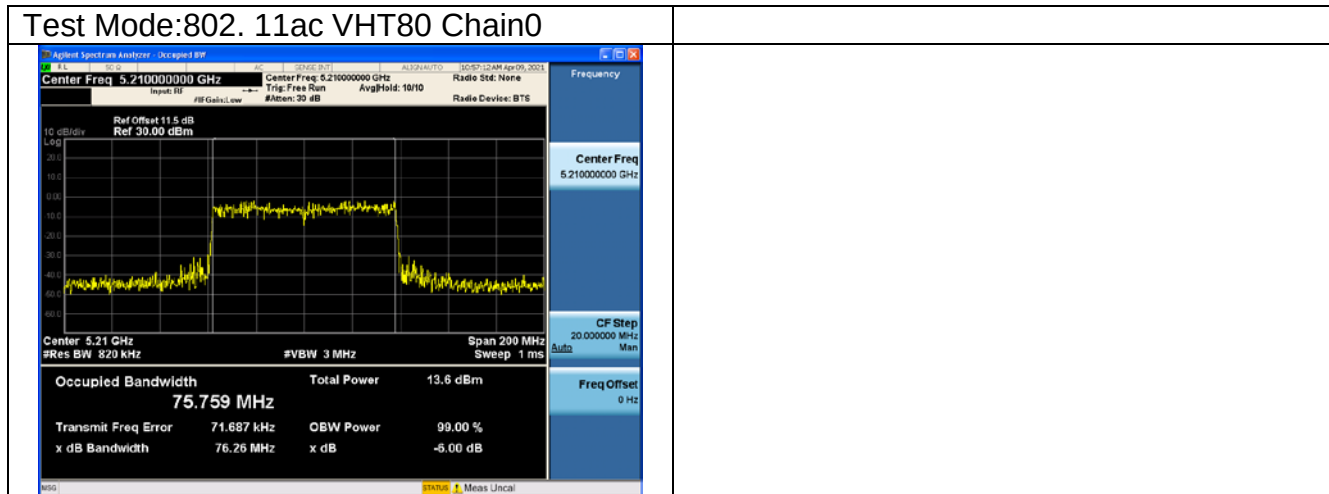
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11ac VHT80

Carrier frequency (MHz)	Chain	Occupied Bandwidth (MHz)
5210	Chain0	75.759

Test Mode:802. 11ac VHT80 Chain0



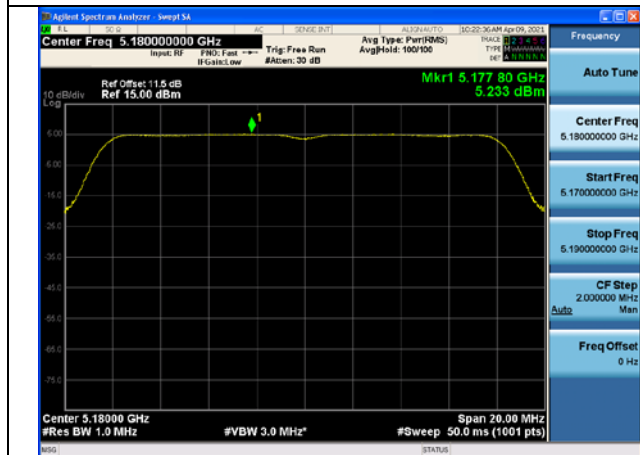
Transmitter Power Spectral Density

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

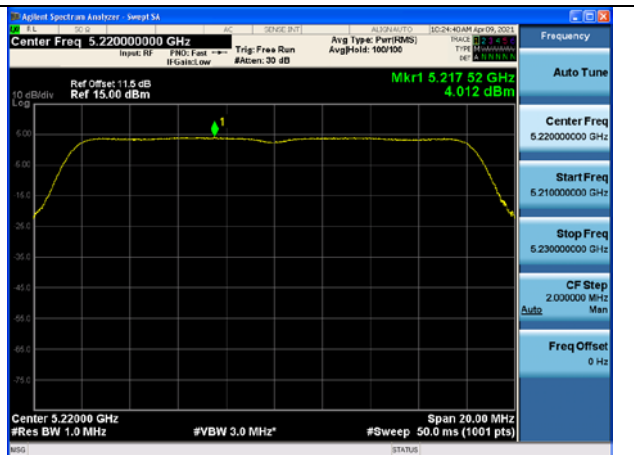
Test Mode:802.11a

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5180	0.66	Chain0	5.821
5220		Chain0	4.600
5240		Chain0	4.248

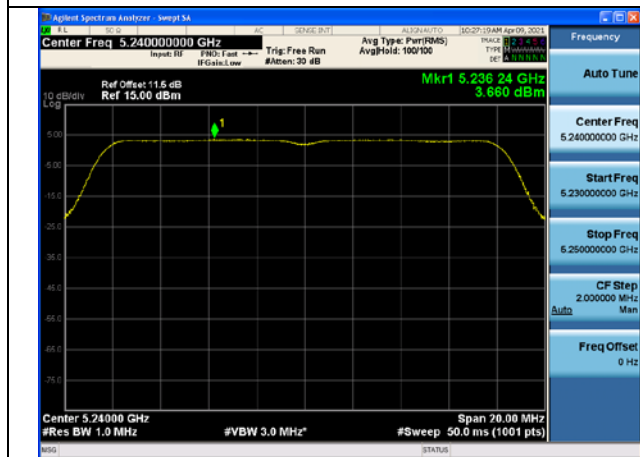
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



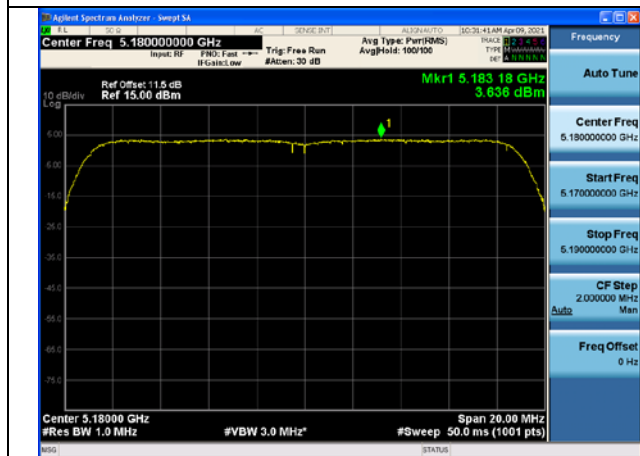
Test Mode:802.11a Chain0



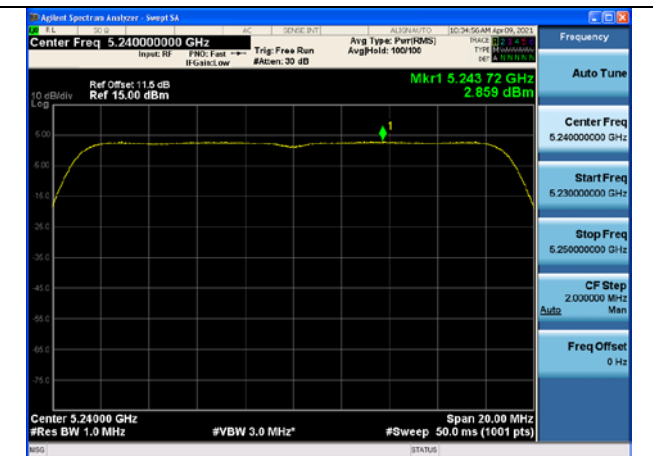
Test Mode:802. 11n HT20

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5180	1.03	Chain0	4.702
5240		Chain0	3.925

Test Mode:802. 11n HT20 Chain0



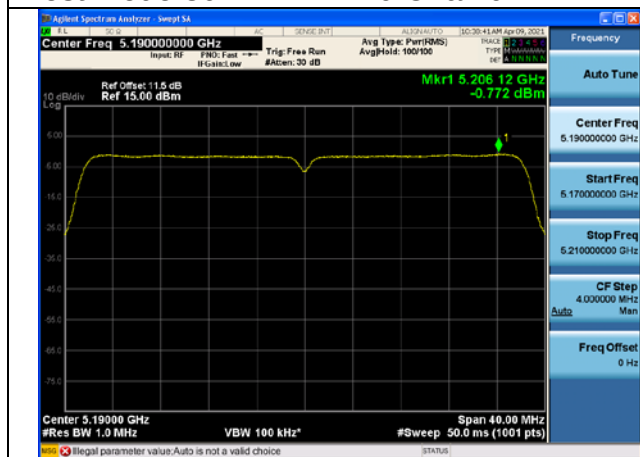
Test Mode:802. 11n HT20 Chain0



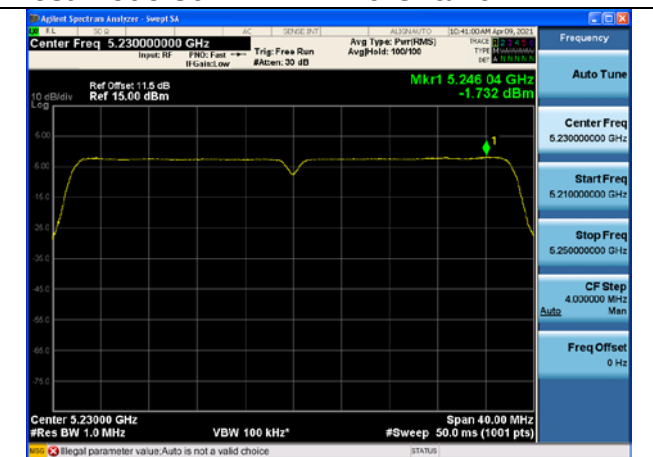
Test Mode:802. 11n HT40

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5190	1.96	Chain0	1.265
5230		Chain0	0.306

Test Mode:802. 11n HT40 Chain0



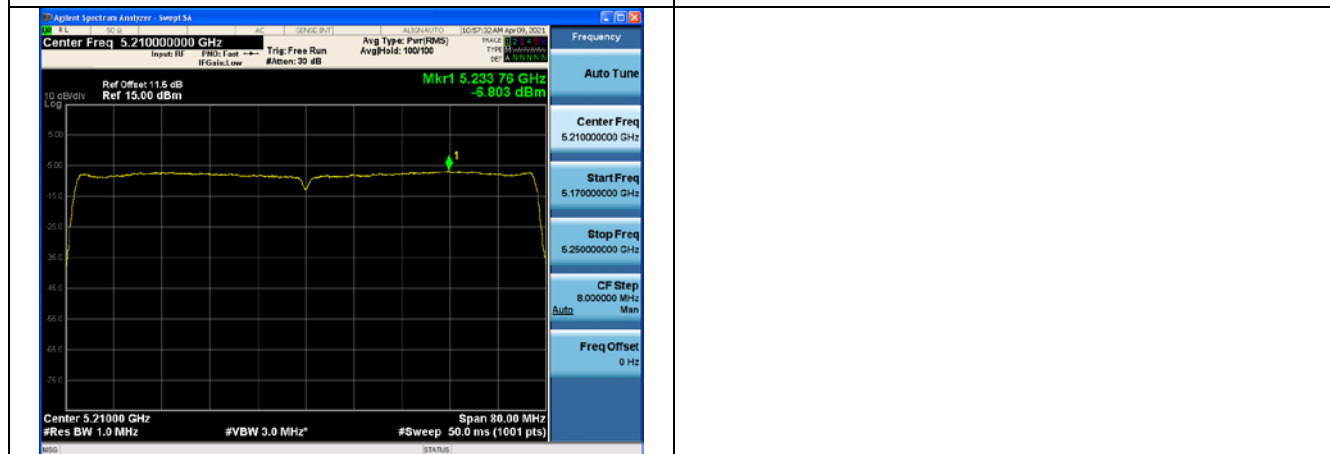
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11ac VHT80

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5210	1.93	Chain0	-4.801

Test Mode:802. 11ac VHT80 Chain0



Frequency Stability UNII-1

Mode	Data Rate	Chain	Center Frequency (MHz)	Measured Frequency (MHz)	Frequency Stability (ppm)	Voltage (V)	Temperature (°C)
802.11a	6Mbps	Chain0	5180	5180.020254	3.91	NV	-10
			5180	5179.990831	-1.77	NV	0
			5180	5179.984097	-3.07	NV	+10
			5180	5179.990054	-1.92	NV	+20
			5180	5179.98907	-2.11	HV	+20
			5180	5180.019477	3.76	LV	+20
			5180	5179.975032	-4.82	NV	+30
			5180	5179.983372	-3.21	NV	+40
			5180	5180.022947	4.43	NV	+50
			5180	5179.998446	-0.30	NV	+55