

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

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

Test Mode	Chain	Note
802.11a	Chain0/Chain1	---
802.11n HT20	Chain0/Chain1	---
802.11n HT40	Chain0/Chain1	---

Directional gain

Band	Chain0 Ant Gain (dBi)	Chain1 Ant Gain (dBi)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit
5.2&5.3&5.6GHz	1.0	1.0	4.0	24.0	11.0(dBm/MHz)
5.8GHz	1.0	1.0	4.0	30.0	30.0(dBm/500kHz)

Duty cycle

Test Mode	Duty Cycle (%)	Correction Factor(dB)
802.11a	98.93	0.05
802.11n HT20	98.69	0.06
802.11n HT40	97.80	0.10

Output Power UNII-1

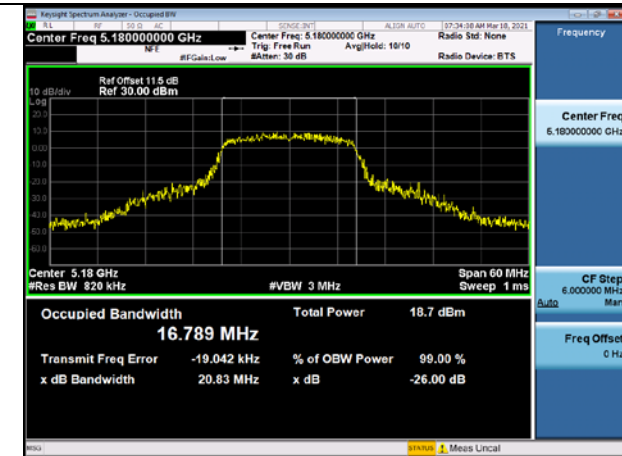
Mode	Freq (MHz)	Chain	Conducted average power output (dBm)
802.11a	5180	Chain0	15.65
		Chain1	15.26
	5220	Chain0	15.24
		Chain1	15.23
	5240	Chain0	15.31
		Chain1	15.14
802.11n20M	5180	Chain0	14.47
		Chain1	14.12
		Chain0+Chain1	17.31
	5240	Chain0	14.93
		Chain1	14.00
		Chain0+Chain1	17.50
802.11n40M	5190	Chain0	14.70
		Chain1	13.41
		Chain0+Chain1	17.11
	5230	Chain0	14.84
		Chain1	13.30
		Chain0+Chain1	17.15

Emission Bandwidth

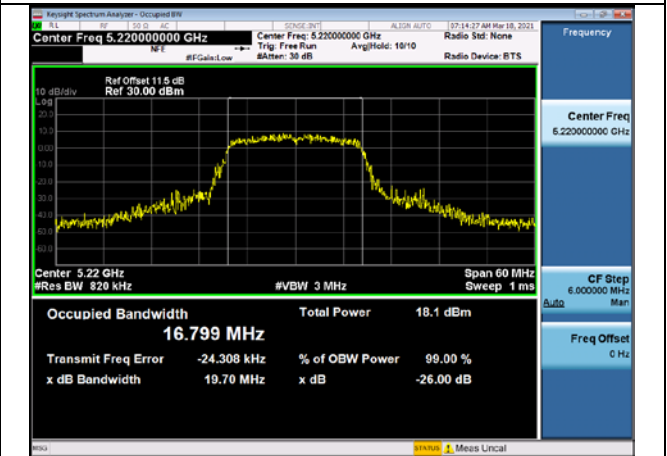
Offset 11.5dB =Attenuator 10dB+ Temporary antenna connector loss 0.5dB+ Cable loss 1dB
Test Mode:802.11a

Carrier frequency(MHz)	Chain	26dB Bandwidth (MHz)
5180	Chain0	20.83
	Chain1	20.19
5220	Chain0	19.70
	Chain1	19.89
5240	Chain0	19.62
	Chain1	19.98

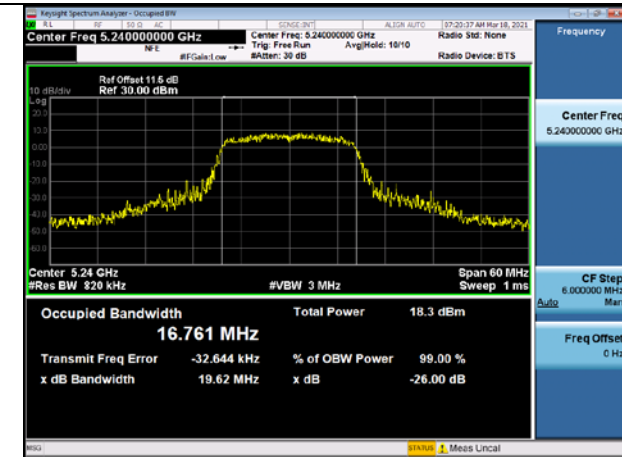
Test Mode:802.11a Chain0



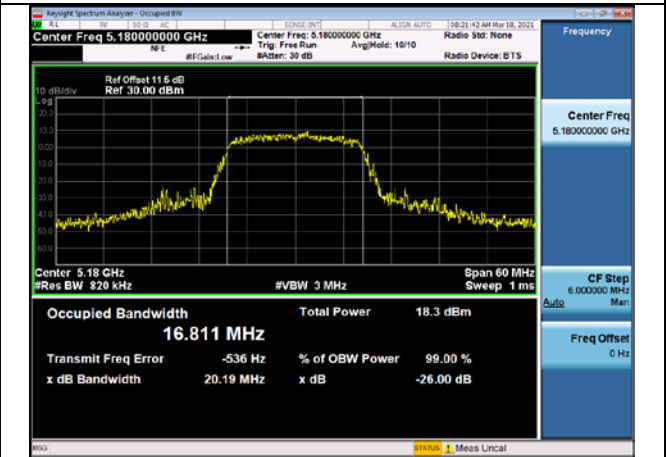
Test Mode:802.11a Chain0



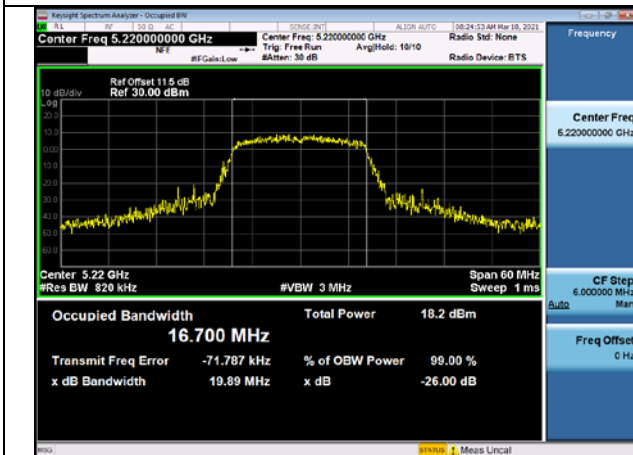
Test Mode:802.11a Chain0



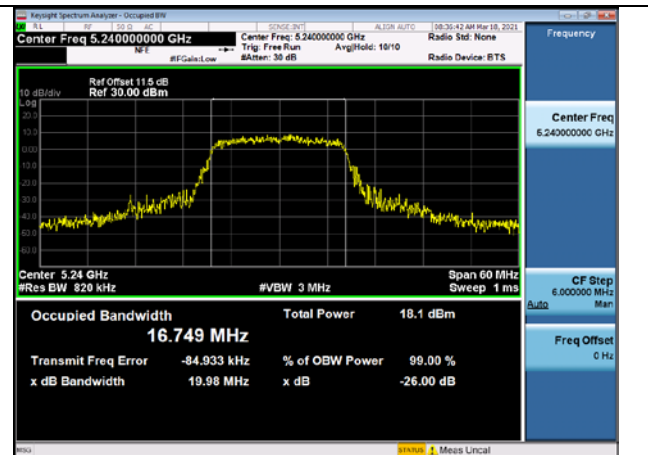
Test Mode:802.11a Chain1



Test Mode:802.11a Chain1



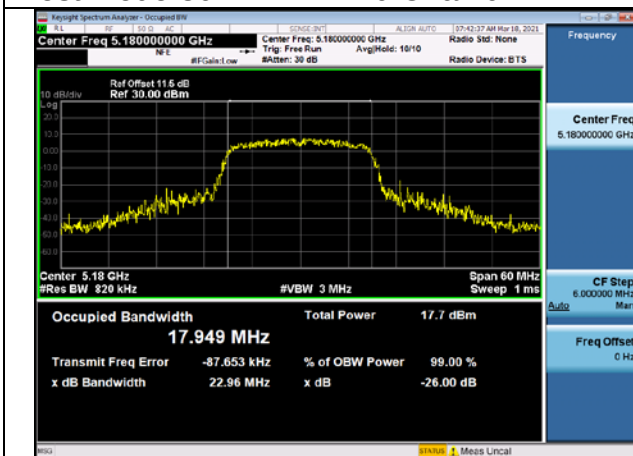
Test Mode:802.11a Chain1



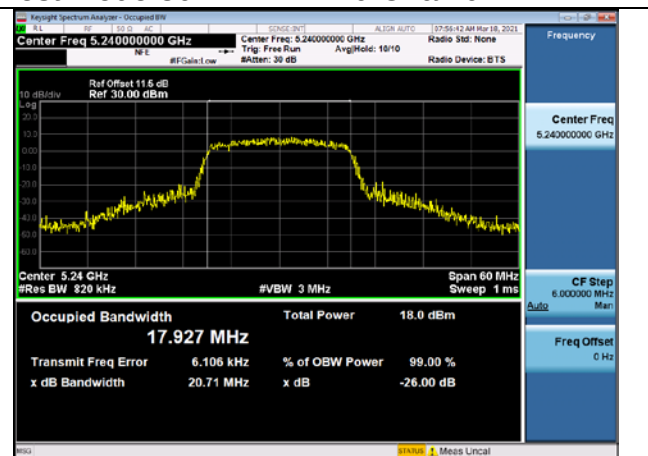
Test Mode:802. 11n HT20

Carrier frequency(MHz)	Chain	26dB Bandwidth (MHz)
5180	Chain0	22.96
	Chain1	20.35
5240	Chain0	20.71
	Chain1	20.56

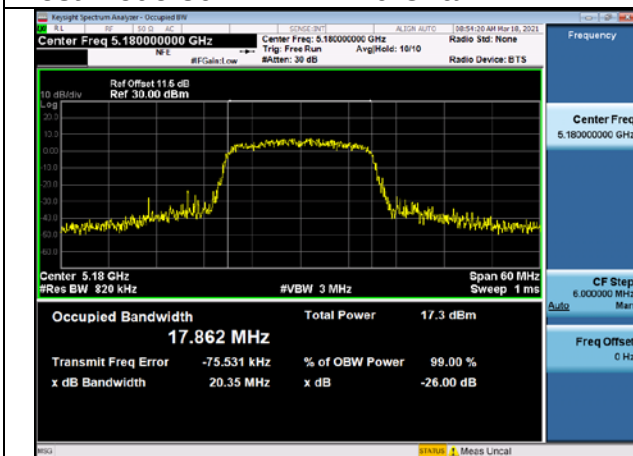
Test Mode:802. 11n HT20 Chain0



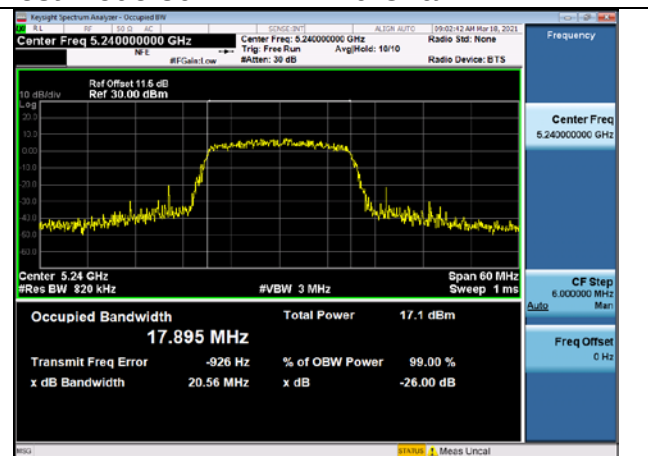
Test Mode:802. 11n HT20 Chain0



Test Mode:802. 11n HT20 Chain1



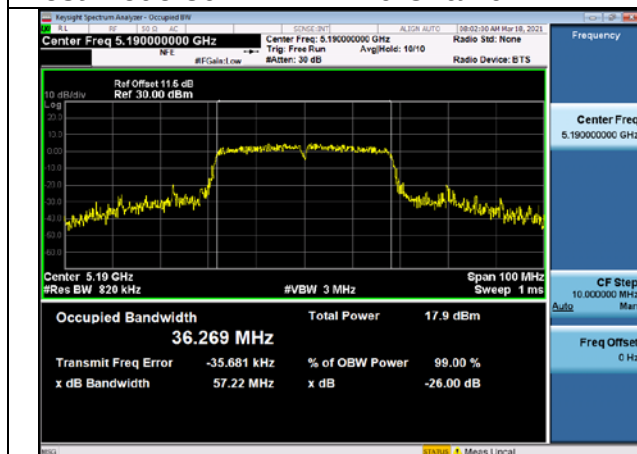
Test Mode:802. 11n HT20 Chain1



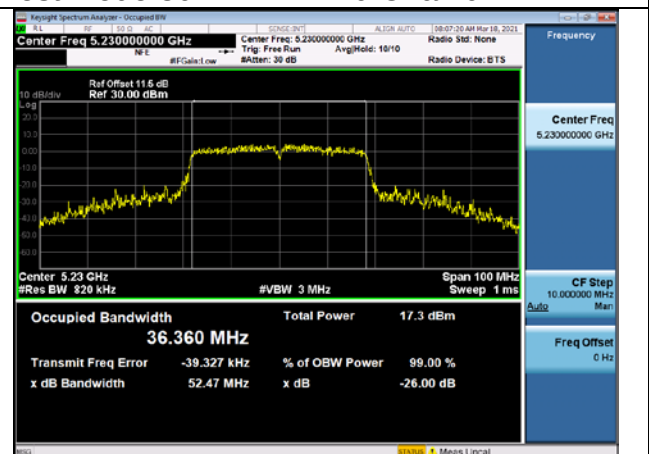
Test Mode:802. 11n HT40

Carrier frequency(MHz)	Chain	26dB Bandwidth (MHz)
5190	Chain0	57.22
	Chain1	40.27
5230	Chain0	52.47
	Chain1	40.42

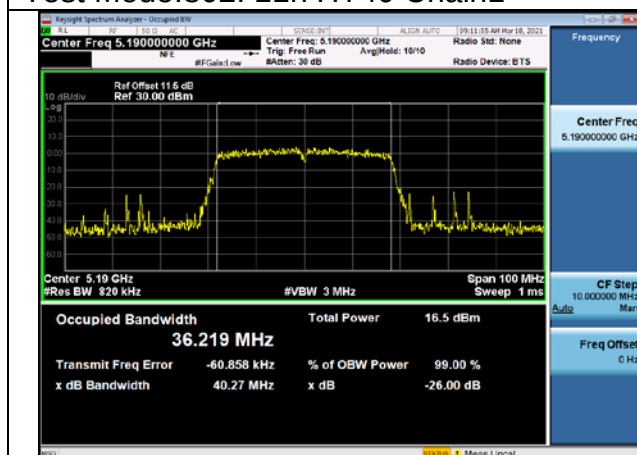
Test Mode:802. 11n HT40 Chain0



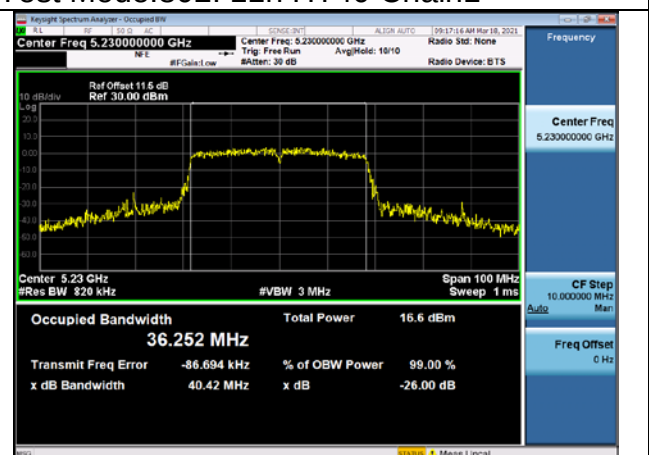
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11n HT40 Chain1



Test Mode:802. 11n HT40 Chain1



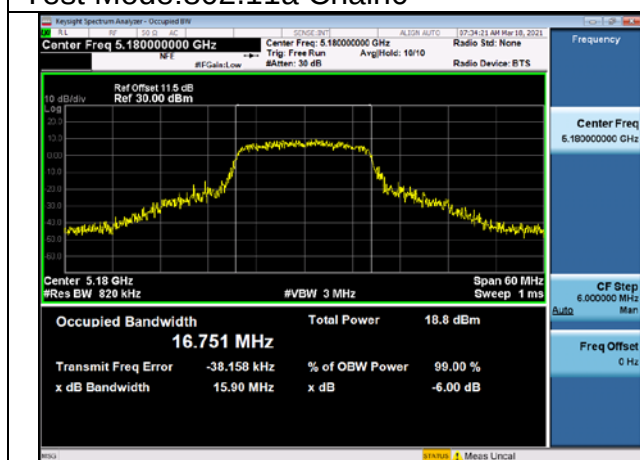
Occupied Bandwidth

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

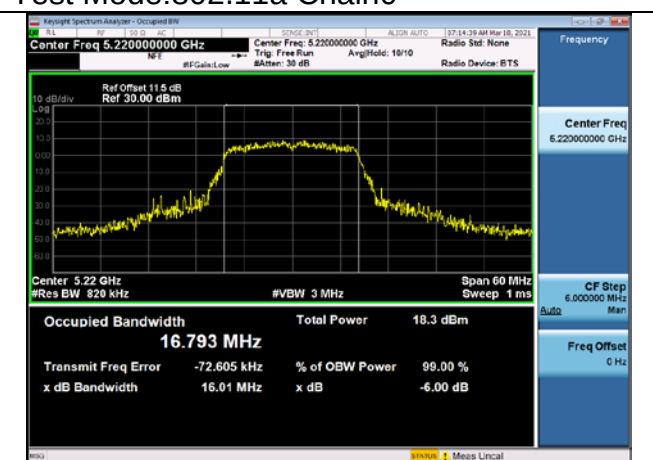
Test Mode:802.11a

Carrier frequency(MHz)	Chain	Occupied Bandwidth (MHz)
5180	Chain0	16.751
	Chain1	16.668
5220	Chain0	16.793
	Chain1	16.871
5240	Chain0	16.720
	Chain1	16.801

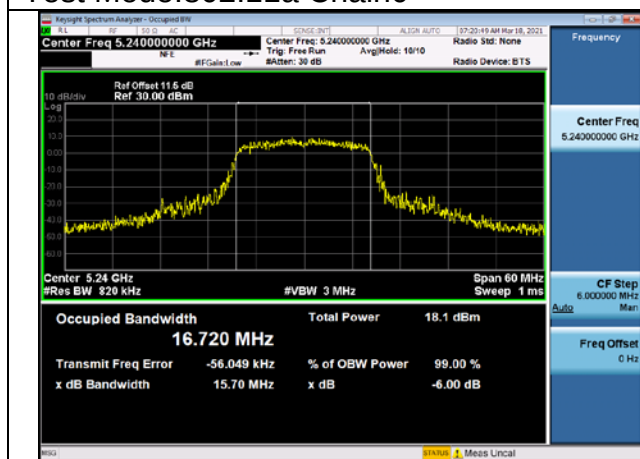
Test Mode:802.11a Chain0



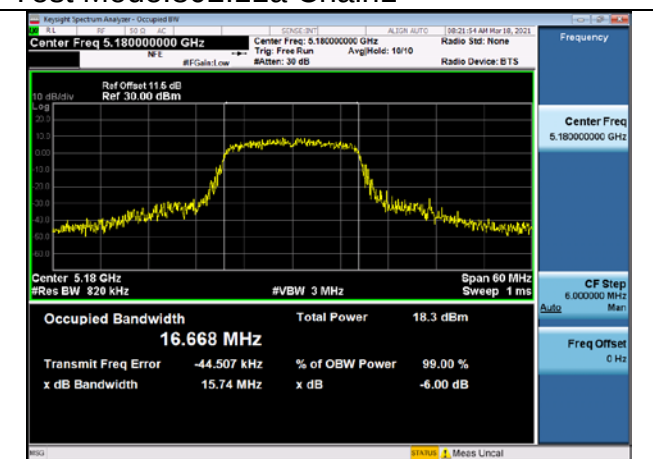
Test Mode:802.11a Chain0



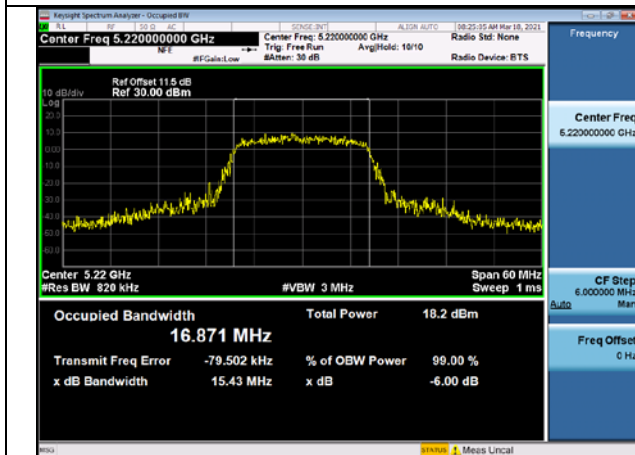
Test Mode:802.11a Chain0



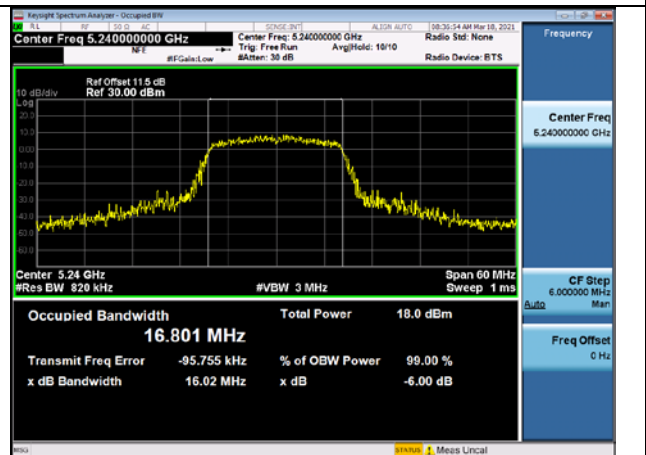
Test Mode:802.11a Chain1



Test Mode:802.11a Chain1



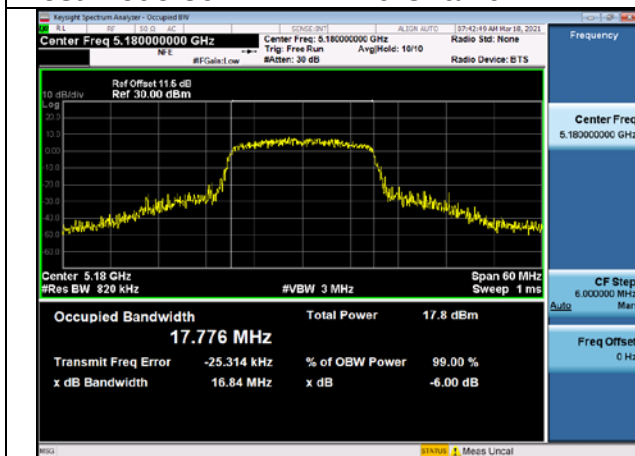
Test Mode:802.11a Chain1



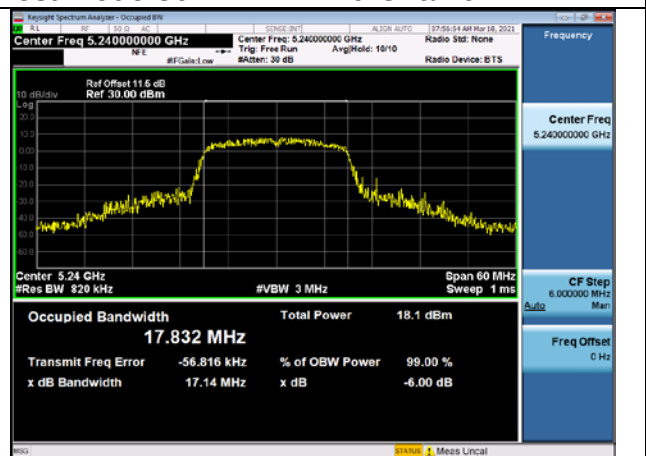
Test Mode:802.11n HT20

Carrier frequency(MHz)	Chain	Occupied Bandwidth (MHz)
5180	Chain0	17.776
	Chain1	17.870
5240	Chain0	17.832
	Chain1	17.796

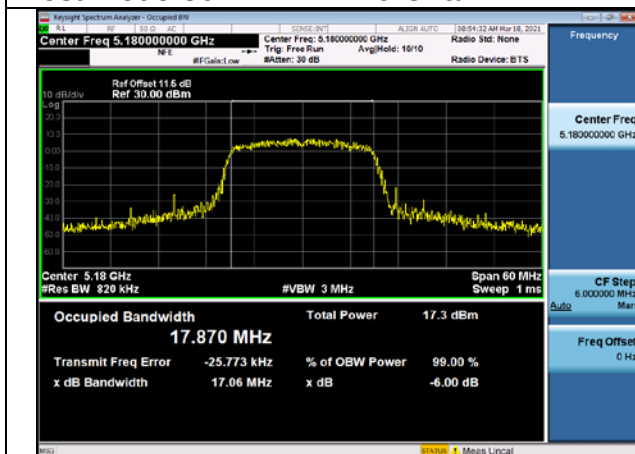
Test Mode:802.11n HT20 Chain0



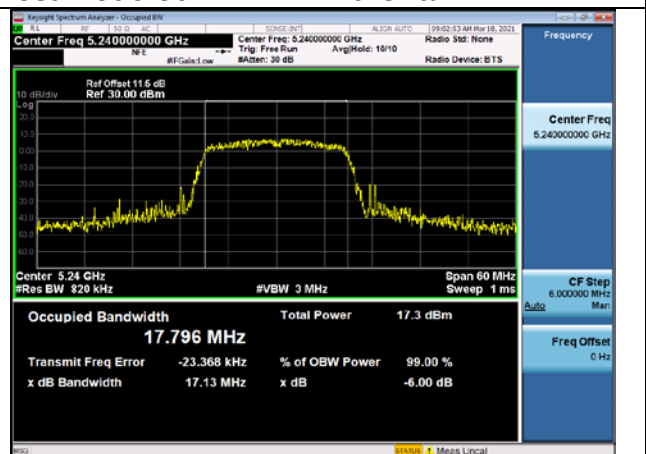
Test Mode:802.11n HT20 Chain0



Test Mode:802.11n HT20 Chain1



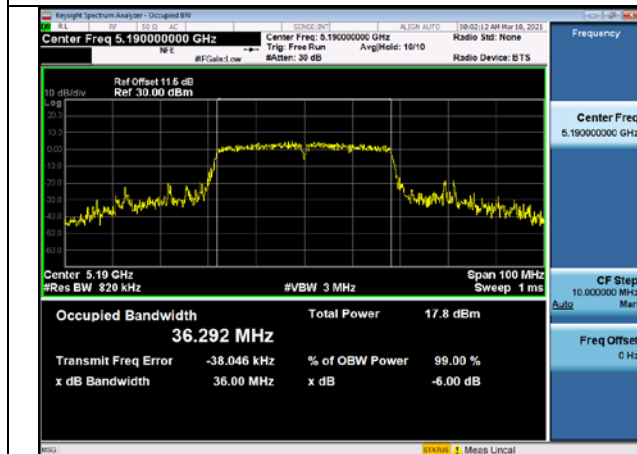
Test Mode:802.11n HT20 Chain1



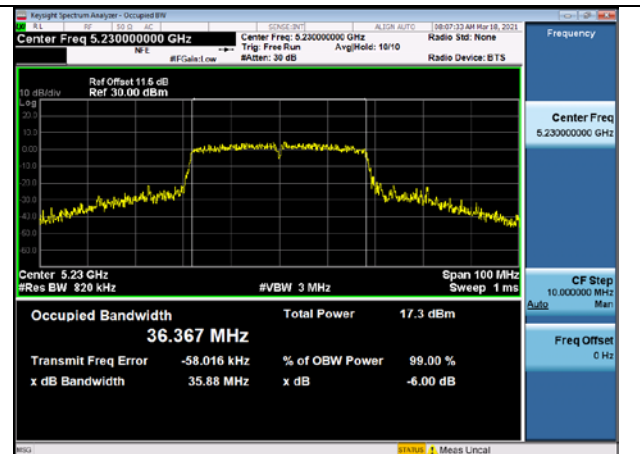
Test Mode:802. 11n HT40

Carrier frequency(MHz)	Chain	Occupied Bandwidth (MHz)
5190	Chain0	36.292
	Chain1	36.181
5230	Chain0	36.367
	Chain1	36.201

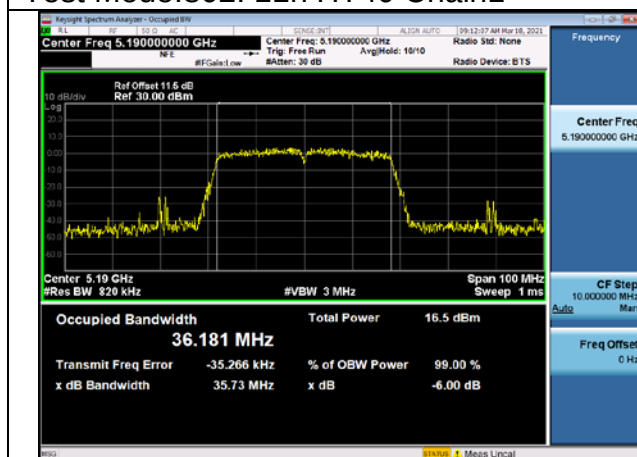
Test Mode:802. 11n HT40 Chain0



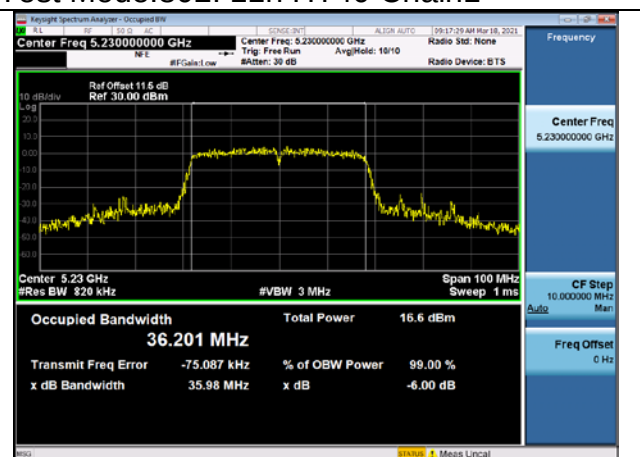
Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11n HT40 Chain1



Test Mode:802. 11n HT40 Chain1



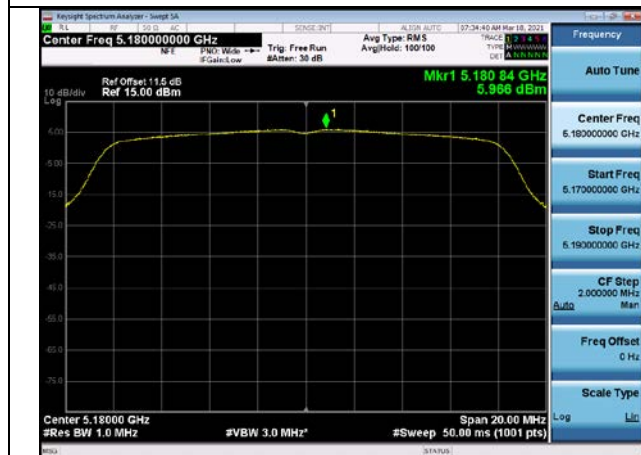
Transmitter Power Spectral Density

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	0.05	Chain0	6.016
		Chain1	5.303
5220		Chain0	5.264
		Chain1	5.314
5240		Chain0	5.291
		Chain1	5.232

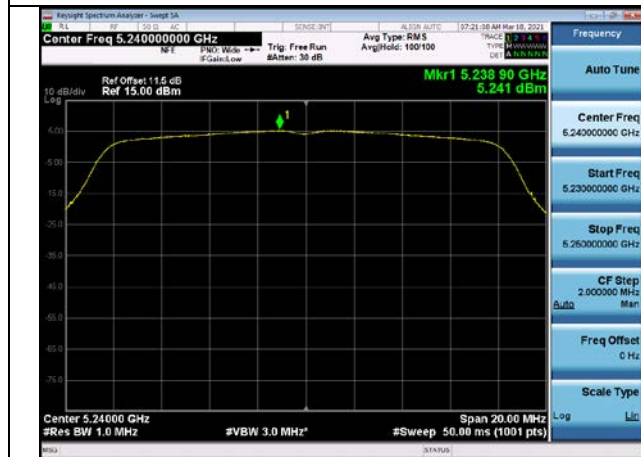
Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



Test Mode:802.11a Chain0



Test Mode:802.11a Chain1



Test Mode:802.11a Chain1



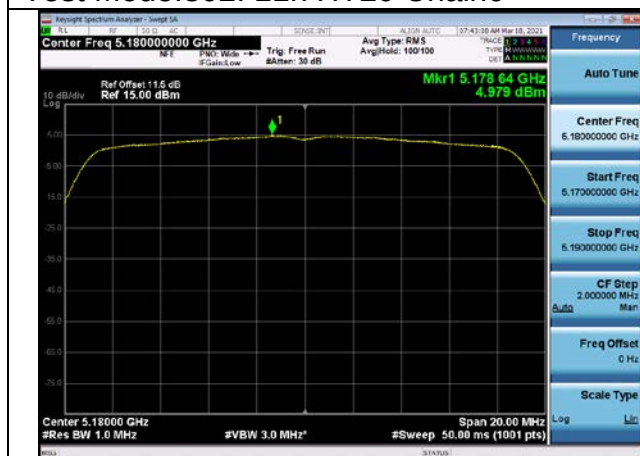
Test Mode:802.11a Chain1



Test Mode:802. 11n HT20

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5180	0.06	Chain0	5.030
		Chain1	4.398
		Chain0+Chain1	7.736
5240		Chain0	5.219
		Chain1	4.357
		Chain0+Chain1	7.820

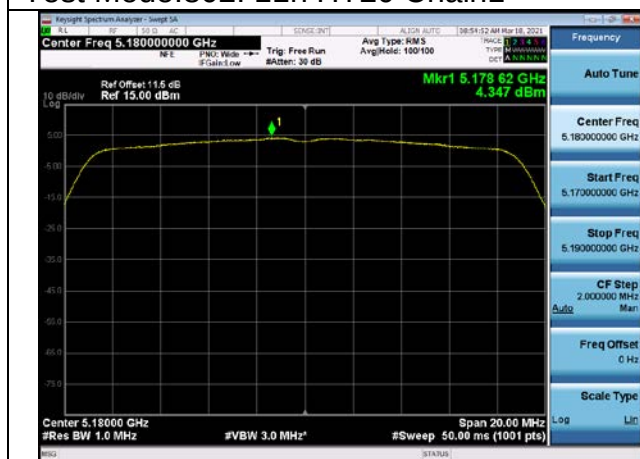
Test Mode:802. 11n HT20 Chain0



Test Mode:802. 11n HT20 Chain0



Test Mode:802. 11n HT20 Chain1



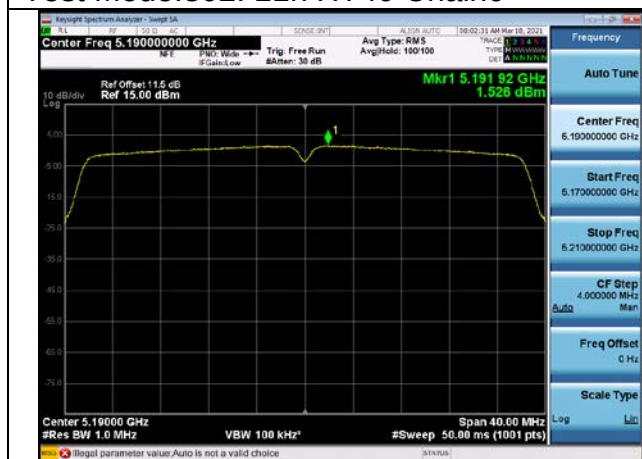
Test Mode:802. 11n HT20 Chain1



Test Mode:802. 11n HT40

Carrier frequency (MHz)	Correction Factor(dB)	Chain	Power Density (dBm)
5190	0.10	Chain0	1.626
		Chain1	0.181
		Chain0+Chain1	3.974
5230		Chain0	0.920
		Chain1	0.248
		Chain0+Chain1	3.607

Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11n HT40 Chain0



Test Mode:802. 11n HT40 Chain1



Test Mode:802. 11n HT40 Chain1



Frequency Stability

Mode	Data Rate	Chain	Center Frequency (MHz)	Measured Frequency (MHz)	Frequency Stability (ppm)	Voltage (V)	Temperature (°C)
802.11a	6Mbps	Chain0	5180	5180.003638	0.70	HV	-10
			5180	5180.048075	9.28	LV	0
			5180	5180.060348	11.65	NV	+10
			5180	5179.978153	-4.22	NV	+20
			5180	5180.079359	15.32	NV	+20
			5180	5180.015830	3.06	NV	+20
			5180	5180.050425	9.73	NV	+30
			5180	5180.018715	3.61	NV	+40
			5180	5180.029479	5.69	NV	+50
			5180	5179.926593	-14.17	NV	+60
		Chain1	5180	5179.974541	-4.91	NV	+70
			5180	5180.003626	0.70	HV	-10
			5180	5180.012661	2.44	LV	0
			5180	5180.076292	14.73	NV	+10
			5180	5180.051553	9.95	NV	+20
			5180	5179.948729	-9.90	NV	+20
			5180	5179.924548	-14.57	NV	+20
			5180	5180.068686	13.26	NV	+30
			5180	5180.033356	6.44	NV	+40
			5180	5180.020579	3.97	NV	+50
			5180	5179.986141	-2.68	NV	+60
			5180	5180.050058	9.66	NV	+70