

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Duty Cycle

Test Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor(dB)	Plot
802.11a	5180	99.96%	0	Fig.1
802.11n HT20	5180	99.96%	0	Fig.2
802.11ac VHT20	5180	99.94%	0	Fig.3
802.11n HT40	5190	99.89%	0	Fig.4
802.11ac VHT40	5190	99.87%	0	Fig.5
802.11ac VHT80	5210	99.81%	0	Fig.6

Note: Correction Factor=10*log (1/Duty Cycle)

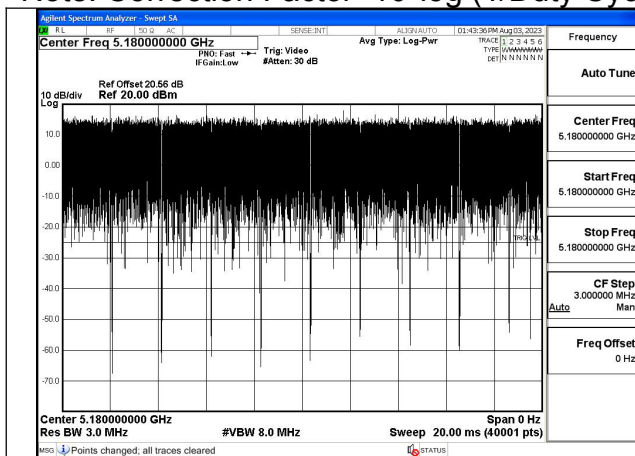


Fig.1

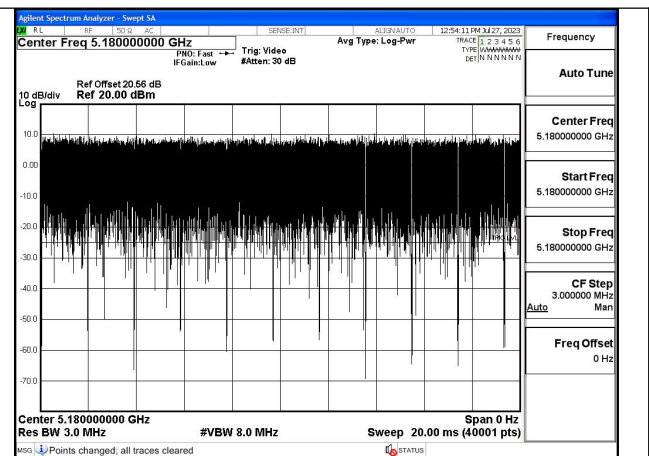


Fig.2

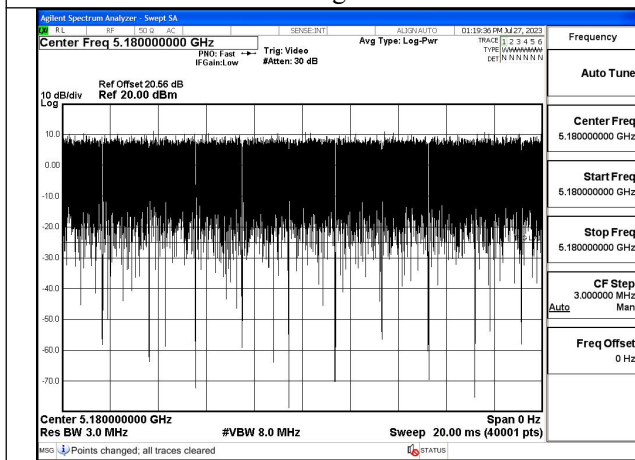


Fig.3

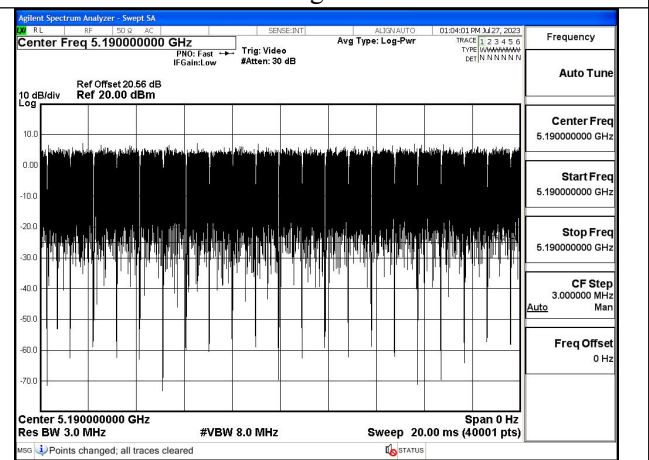


Fig.4

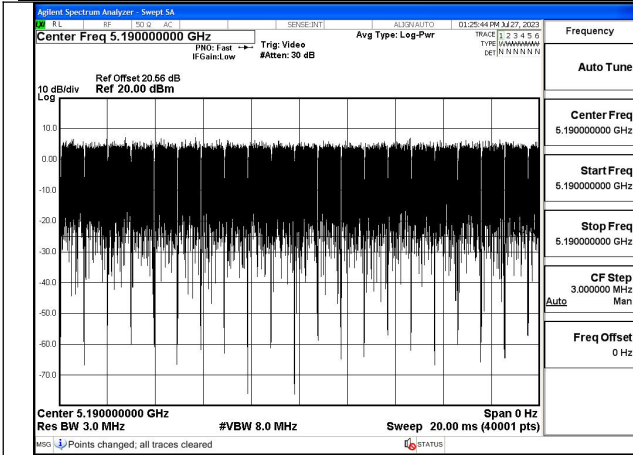


Fig.5

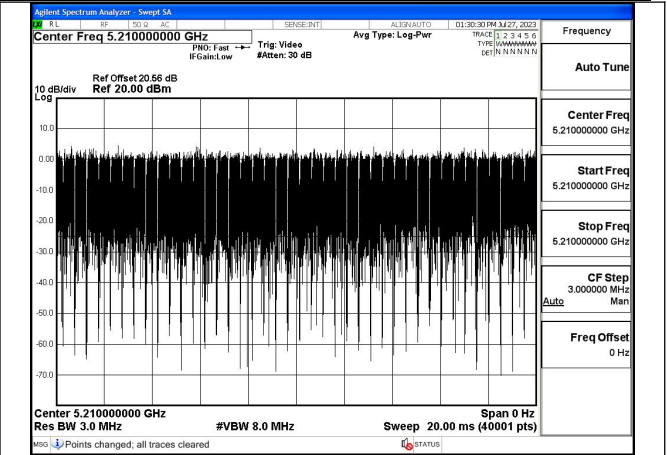


Fig.6

Output Power

Mode	Tones/ RU Index	Frequency (MHz)	Antenna	Conducted average power output(dBm)	EIRP (dBm)
802.11a	NA	5180	Chain0	11.22	7.12
802.11a	NA	5220	Chain0	11.35	7.25
802.11a	NA	5240	Chain0	11.70	7.60
802.11n HT20	NA	5180	Chain0	11.08	6.98
802.11n HT20	NA	5220	Chain0	11.19	7.09
802.11n HT20	NA	5240	Chain0	11.57	7.47
802.11ac VHT20	NA	5180	Chain0	11.04	6.94
802.11ac VHT20	NA	5220	Chain0	11.20	7.10
802.11ac VHT20	NA	5240	Chain0	11.53	7.43
802.11n HT40	NA	5190	Chain0	11.17	7.07
802.11n HT40	NA	5230	Chain0	11.39	7.29
802.11ac VHT40	NA	5190	Chain0	11.21	7.11
802.11ac VHT40	NA	5230	Chain0	11.40	7.30
802.11ac VHT80	NA	5210	Chain0	11.03	6.93

Emission Bandwidth

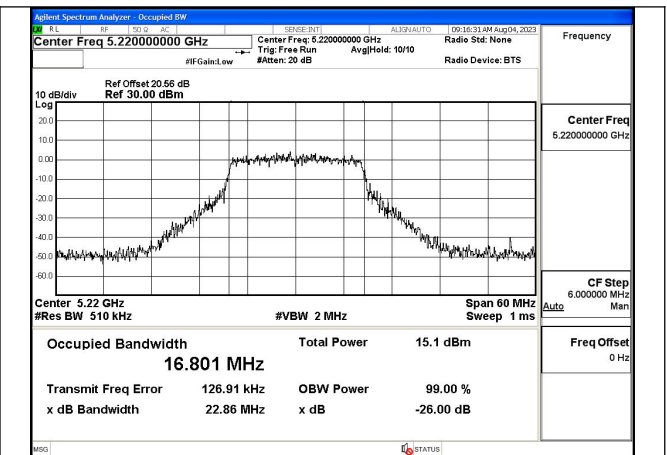
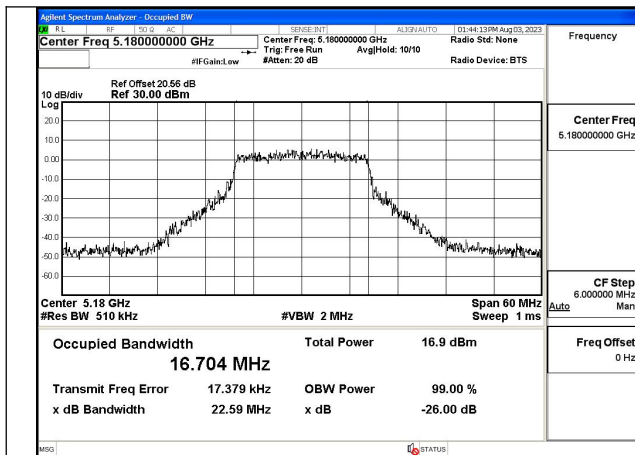
Offset 20.56dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5180MHz	5220MHz	5240MHz
802.11a	Chain0	22.59	22.86	20.62
802.11n HT20	Chain0	23.27	23.88	24.37
802.11ac VHT20	Chain0	22.93	23.77	24.04

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5190MHz	---	5230MHz
802.11n HT40	Chain0	40.45	---	40.11
802.11ac VHT40	Chain0	40.16	---	40.99

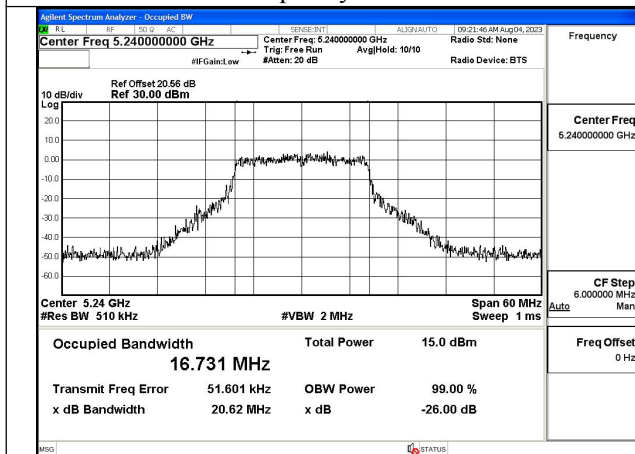
Test Mode	Antenna	26dB Bandwidth (MHz)		
		5210MHz	---	---
802.11ac VHT80	Chain0	81.99	---	---

Test Mode: 802.11a



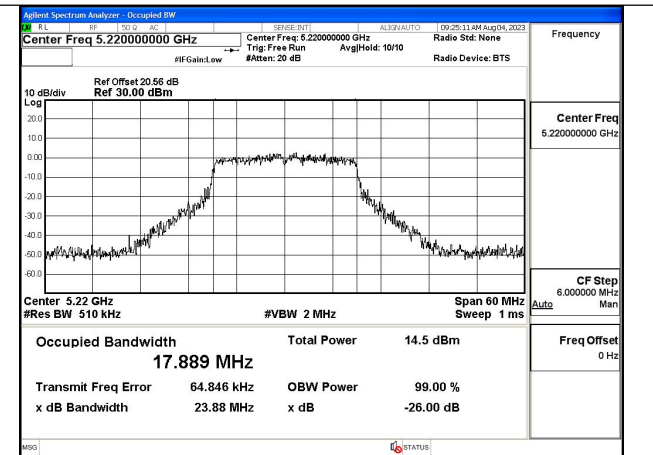
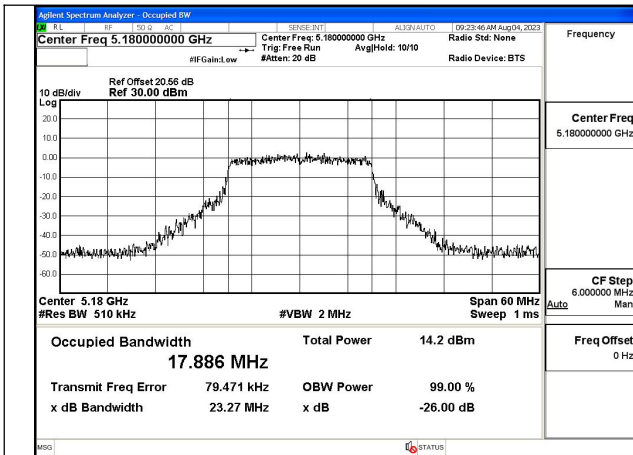
Mode:802.11a Frequency:5180MHz Ant:Chain0

Mode:802.11a Frequency:5220MHz Ant:Chain0



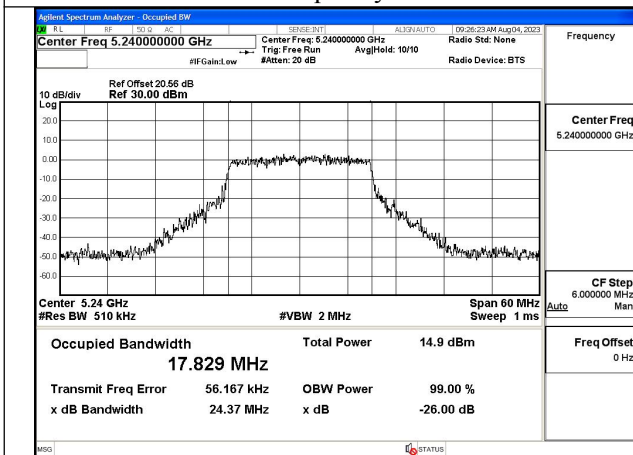
Mode:802.11a Frequency:5240MHz Ant:Chain0

Test Mode: 802.11n HT20



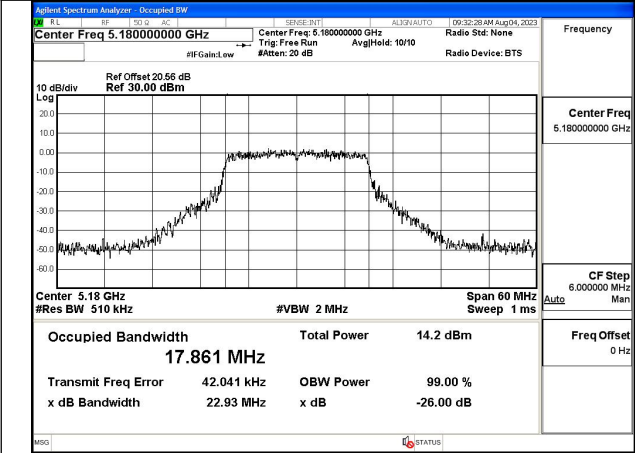
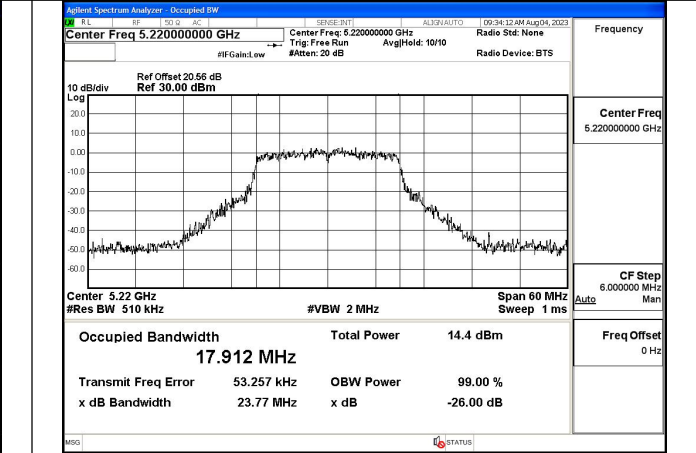
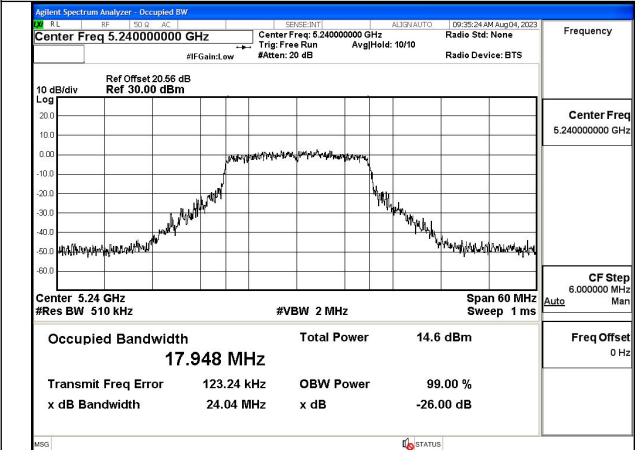
Mode:802.11n HT20 Frequency:5180MHz Ant:Chain0

Mode:802.11n HT20 Frequency:5220MHz Ant:Chain0

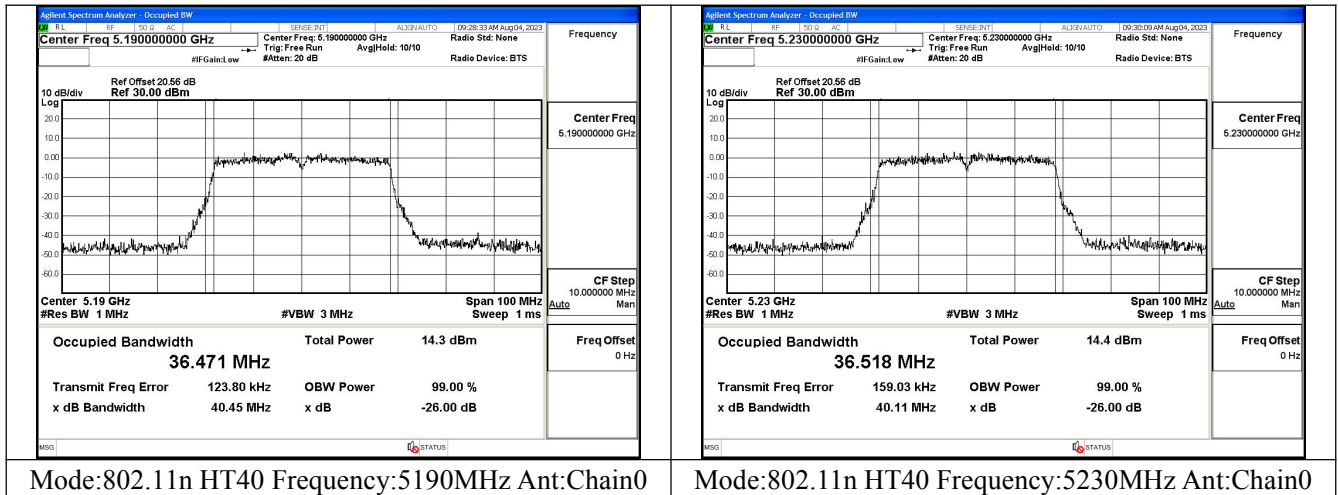


Mode:802.11n HT20 Frequency:5240MHz Ant:Chain0

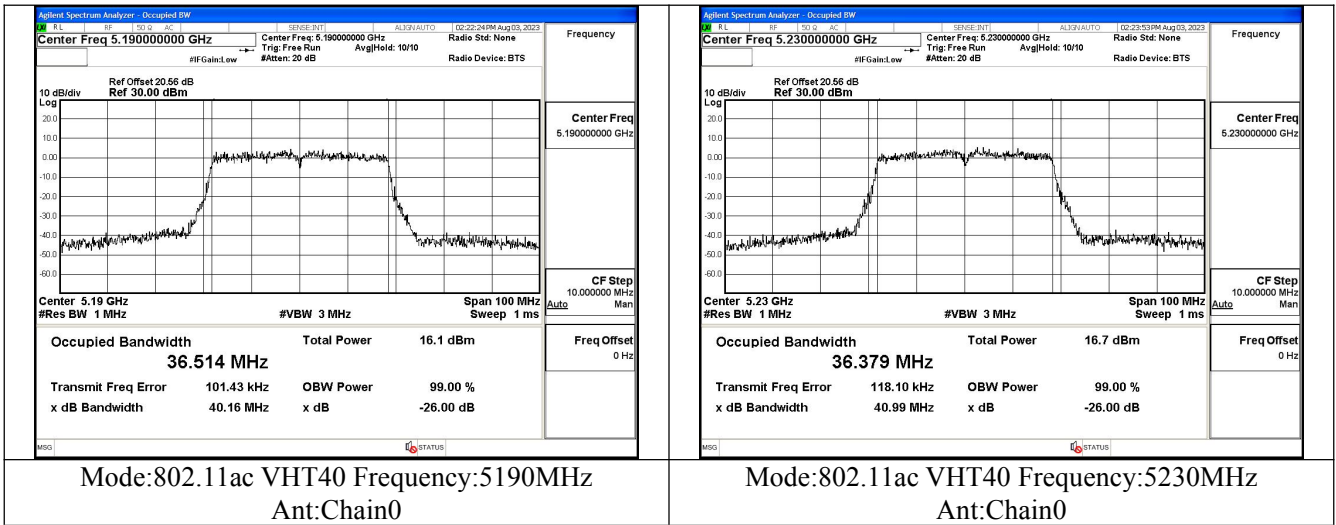
Test Mode: 802.11ac VHT20

 <p>Agilent Spectrum Analyzer - Occupied BW Center Freq 5.18000000 GHz Center Freq: 5.18000000 GHz Trig: Free Run #Att: 20 dB Avg/Hold: 10/10 Radio Device: BTS Ref Offset 20.56 dB Ref 30.00 dBm 10 dB/div Log Center 5.18 GHz #Res BW 510 kHz #VBW 2 MHz Span 60 MHz Sweep 1 ms CF Step 6.000000 MHz Auto Man Occupied Bandwidth 17.861 MHz Total Power 14.2 dBm Transmit Freq Error 42.041 kHz OBW Power 99.00 % x dB Bandwidth 22.93 MHz x dB -26.00 dB Freq Offset 0 Hz</p>	 <p>Agilent Spectrum Analyzer - Occupied BW Center Freq 5.22000000 GHz Center Freq: 5.22000000 GHz Trig: Free Run #Att: 20 dB Avg/Hold: 10/10 Radio Device: BTS Ref Offset 20.56 dB Ref 30.00 dBm 10 dB/div Log Center 5.22 GHz #Res BW 510 kHz #VBW 2 MHz Span 60 MHz Sweep 1 ms CF Step 6.000000 MHz Auto Man Occupied Bandwidth 17.912 MHz Total Power 14.4 dBm Transmit Freq Error 53.257 kHz OBW Power 99.00 % x dB Bandwidth 23.77 MHz x dB -26.00 dB Freq Offset 0 Hz</p>
<p>Mode:802.11ac VHT20 Frequency:5180MHz Ant:Chain0</p>	<p>Mode:802.11ac VHT20 Frequency:5220MHz Ant:Chain0</p>
 <p>Agilent Spectrum Analyzer - Occupied BW Center Freq 5.24000000 GHz Center Freq: 5.24000000 GHz Trig: Free Run #Att: 20 dB Avg/Hold: 10/10 Radio Device: BTS Ref Offset 20.56 dB Ref 30.00 dBm 10 dB/div Log Center 5.24 GHz #Res BW 510 kHz #VBW 2 MHz Span 60 MHz Sweep 1 ms CF Step 6.000000 MHz Auto Man Occupied Bandwidth 17.948 MHz Total Power 14.6 dBm Transmit Freq Error 123.24 kHz OBW Power 99.00 % x dB Bandwidth 24.04 MHz x dB -26.00 dB Freq Offset 0 Hz</p>	
<p>Mode:802.11ac VHT20 Frequency:5240MHz Ant:Chain0</p>	

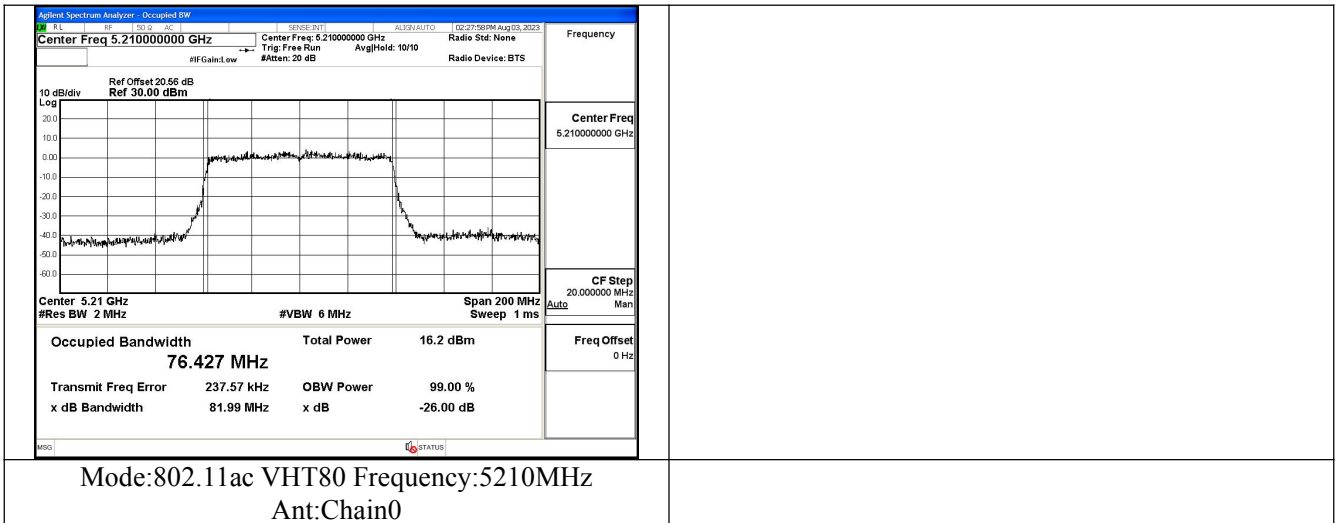
Test Mode: 802.11n HT40



Test Mode: 802.11ac VHT40



Test Mode: 802.11ac VHT80



Occupied Bandwidth

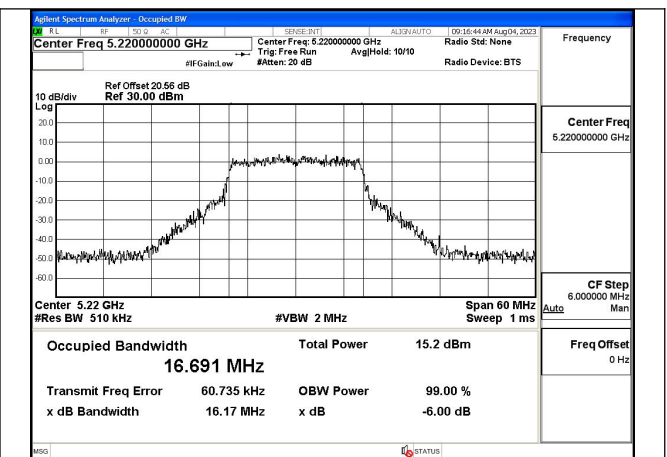
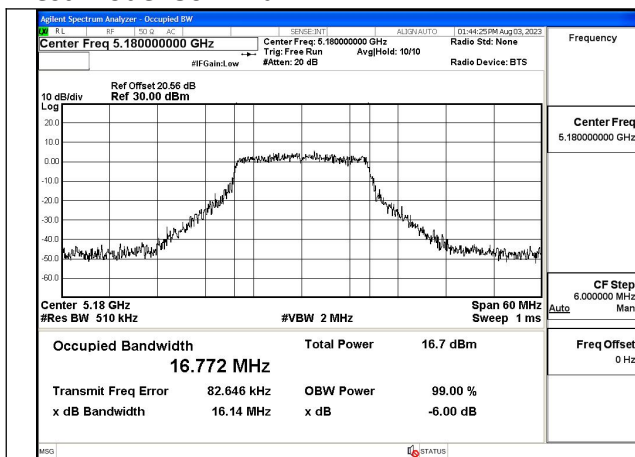
Offset 20.56dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5180MHz	5220MHz	5240MHz
802.11a	Chain0	16.772	16.691	16.714
802.11n HT20	Chain0	17.837	17.916	17.907
802.11ac VHT20	Chain0	17.904	17.929	17.907

Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5190MHz	---	5230MHz
802.11n HT40	Chain0	36.581	---	36.424
802.11ac VHT40	Chain0	36.459	---	36.452

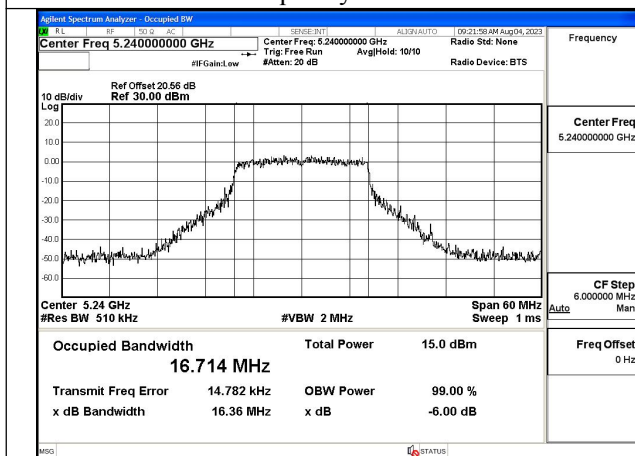
Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5210MHz	---	---
802.11ac VHT80	Chain0	76.169	---	---

Test Mode: 802.11a



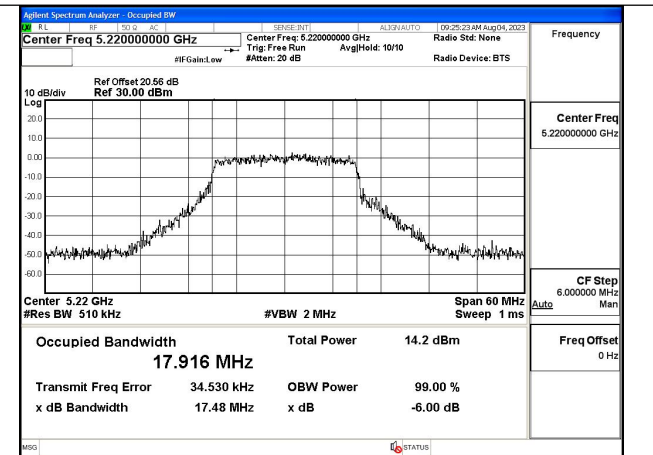
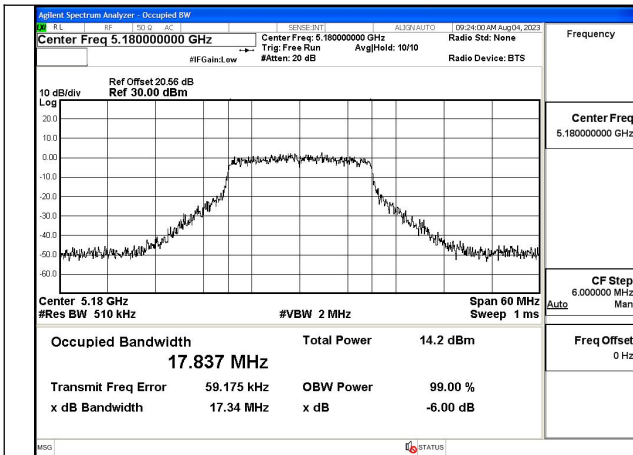
Mode:802.11a Frequency:5180MHz Ant:Chain0

Mode:802.11a Frequency:5220MHz Ant:Chain0



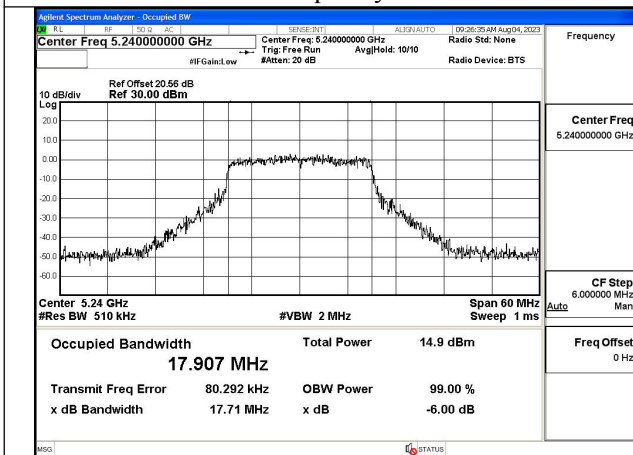
Mode:802.11a Frequency:5240MHz Ant:Chain0

Test Mode: 802.11n HT20



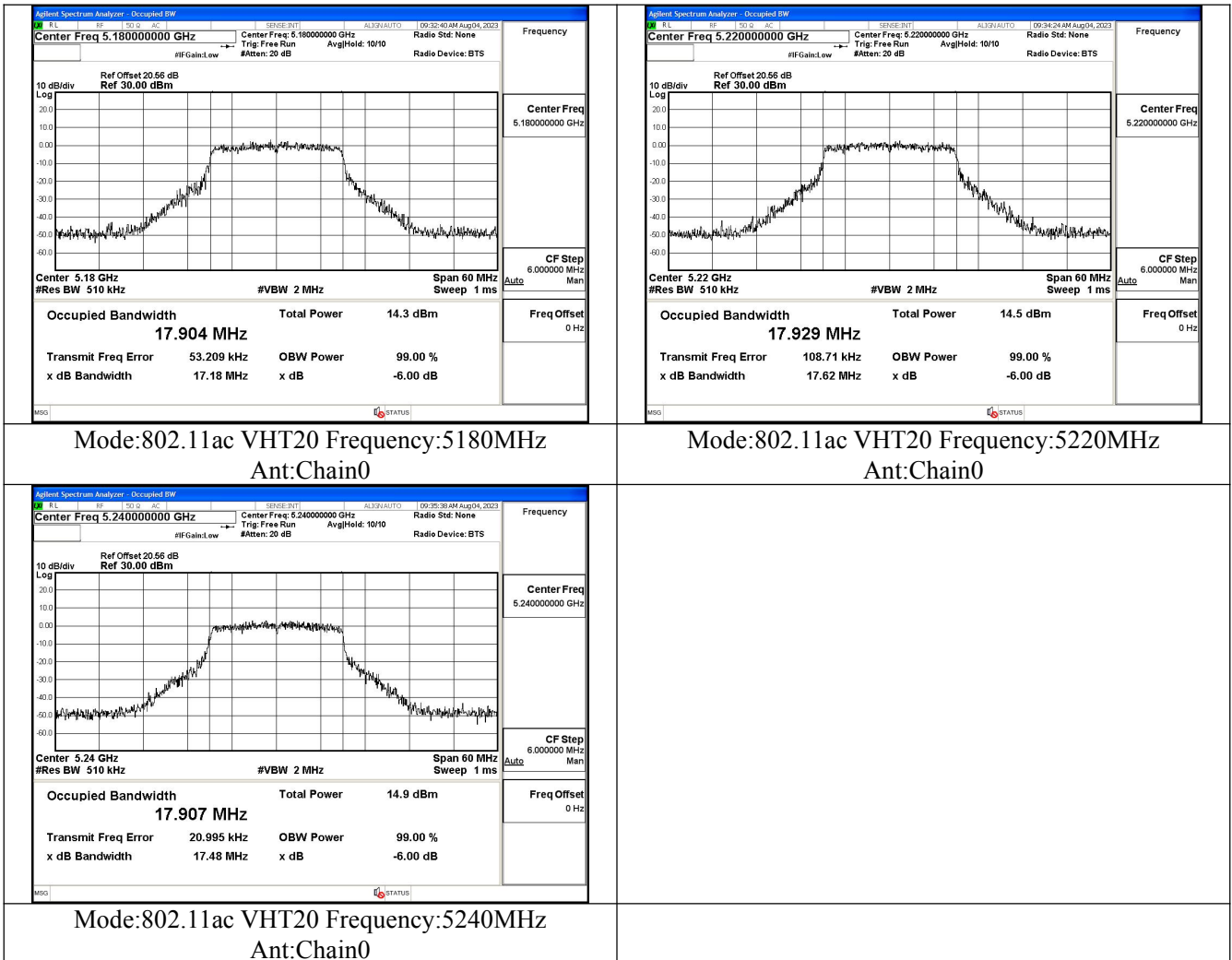
Mode:802.11n HT20 Frequency:5180MHz Ant:Chain0

Mode:802.11n HT20 Frequency:5220MHz Ant:Chain0

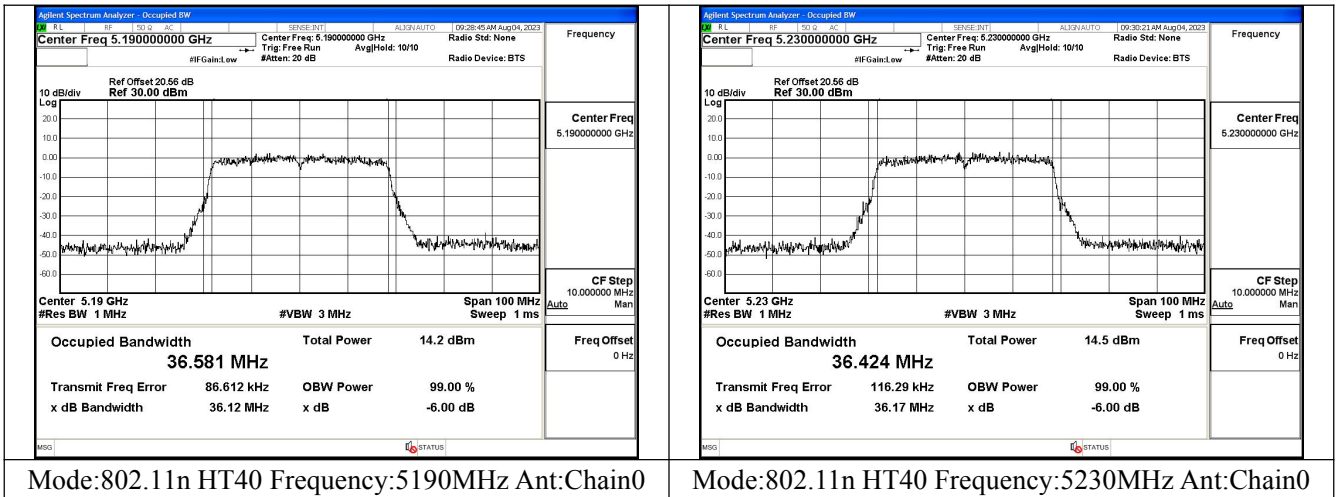


Mode:802.11n HT20 Frequency:5240MHz Ant:Chain0

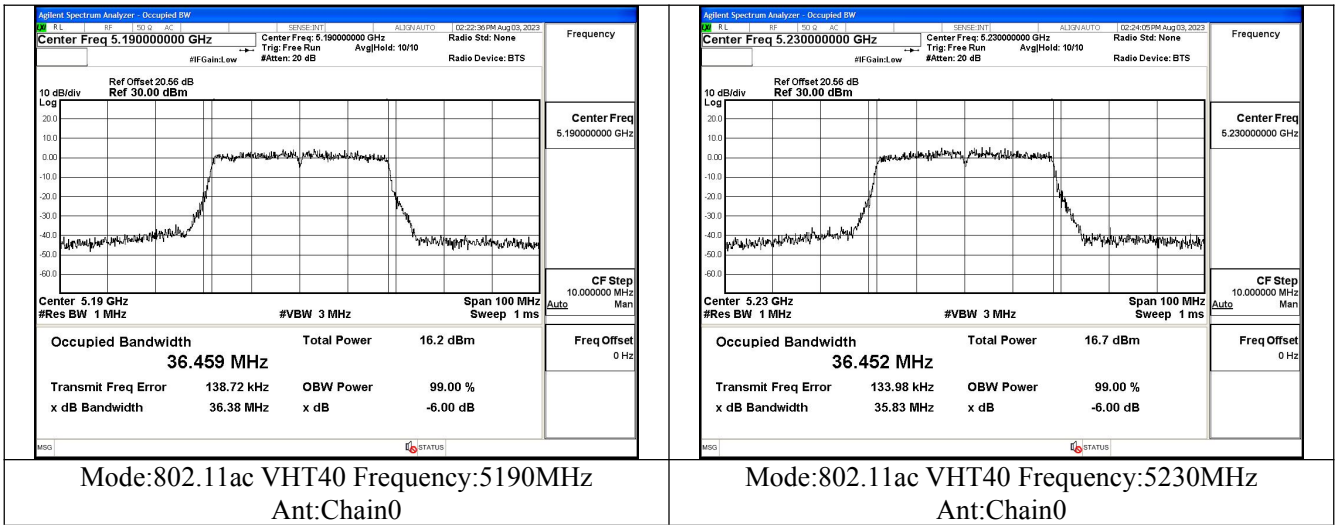
Test Mode: 802.11ac VHT20



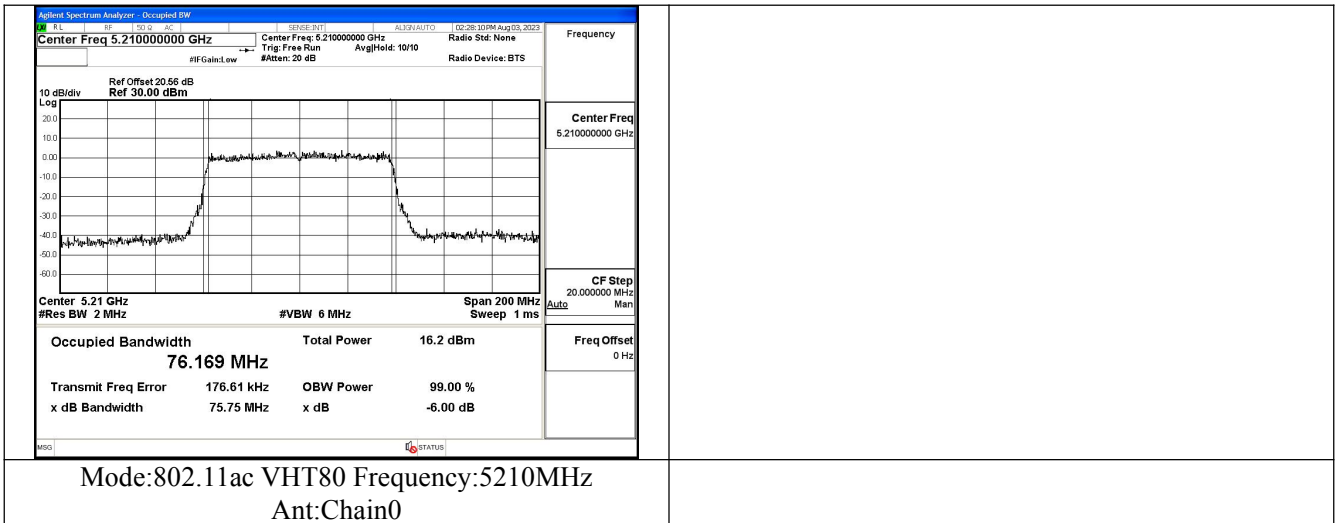
Test Mode: 802.11n HT40



Test Mode: 802.11ac VHT40



Test Mode: 802.11ac VHT80



Transmitter Power Spectral Density

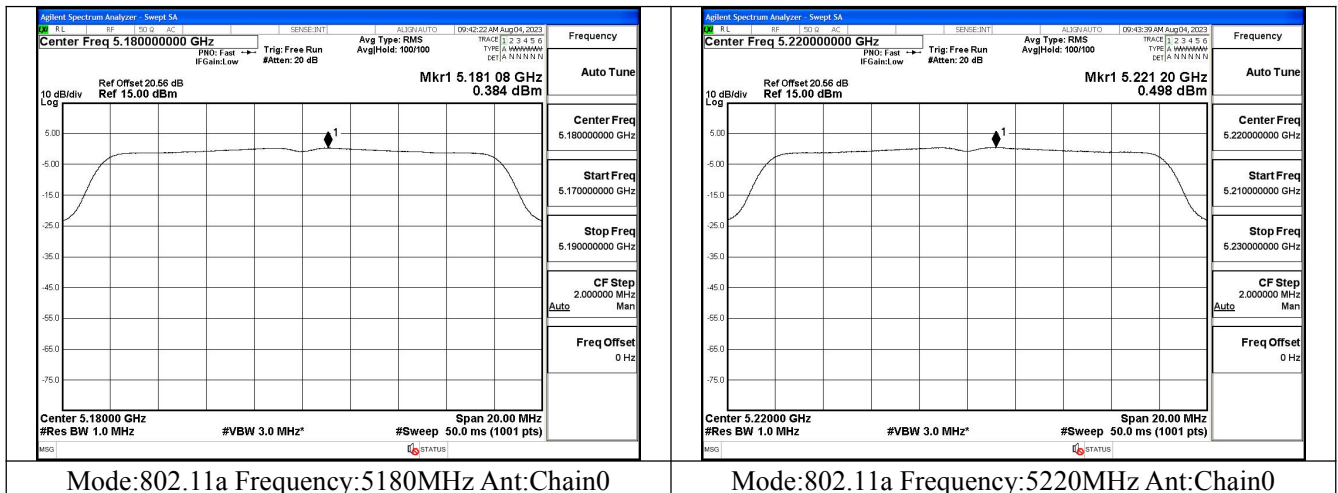
Offset 20.56dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	Tones	5180MHz		5220MHz		5240MHz	
			Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)
802.11a	Chain0	NA	0.00	0.384	0.00	0.498	0.00	0.812
802.11n HT20	Chain0	NA	0.00	-0.085	0.00	0.016	0.00	-0.031
802.11ac VHT20	Chain0	NA	0.00	-0.319	0.00	-0.079	0.00	0.335

Test Mode	Antenna	Tones	5190MHz		---		5230MHz	
			Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)
802.11n HT40	Chain0	NA	0.00	-3.161	---	---	0.00	-2.723
802.11ac VHT40	Chain0	NA	0.00	-2.969	---	---	0.00	-2.709

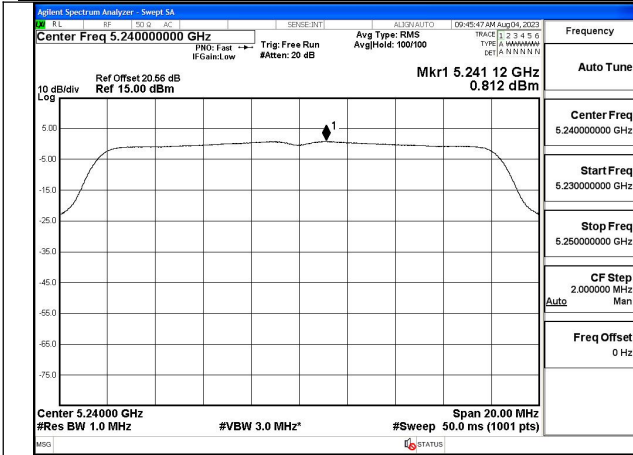
Test Mode	Antenna	Tones	5210MHz		---		---	
			Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)
802.11ac VHT80	Chain0	NA	0.00	-6.321	---	---	---	---

Test Mode: 802.11a



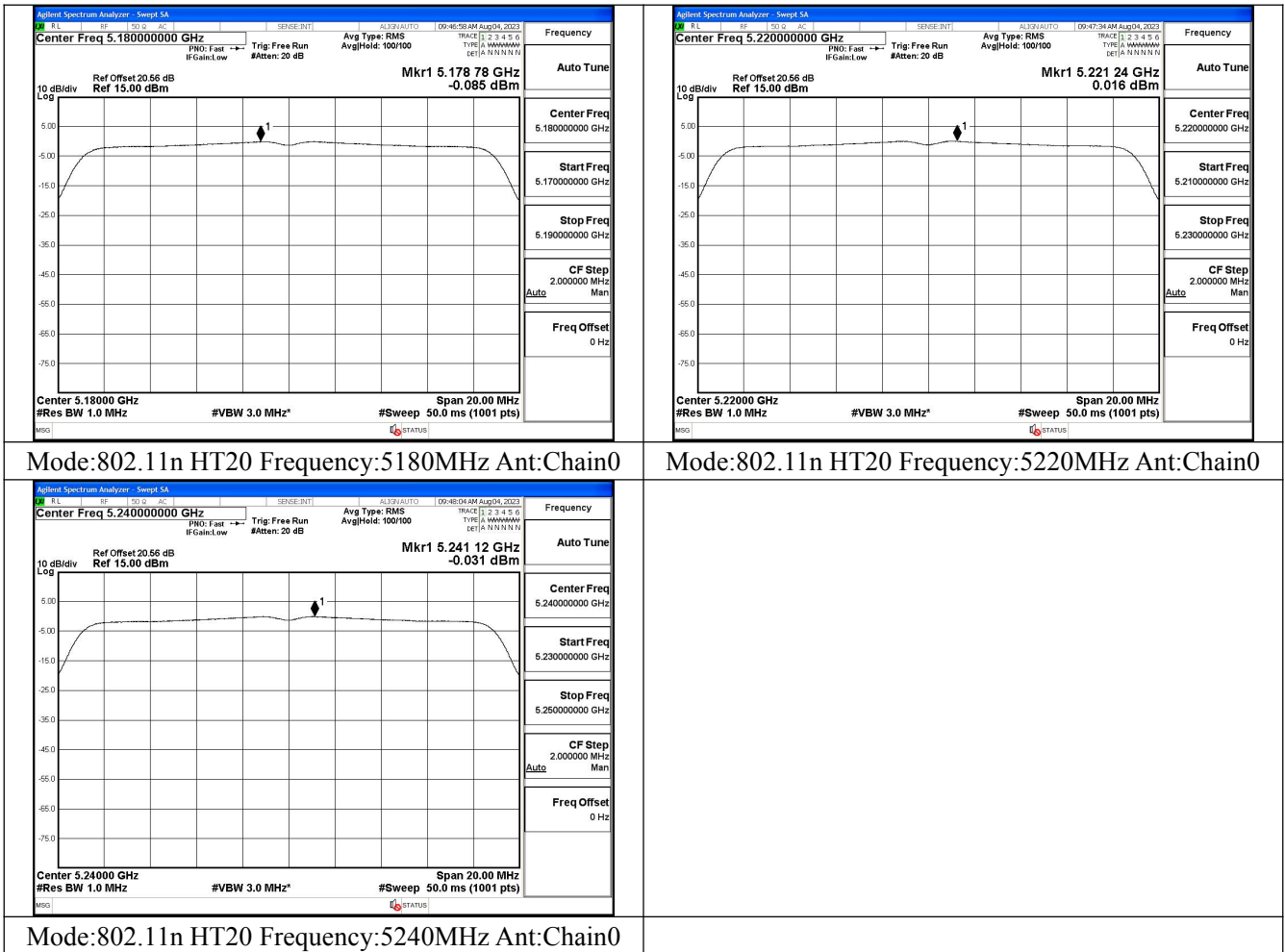
Mode:802.11a Frequency:5180MHz Ant:Chain0

Mode:802.11a Frequency:5220MHz Ant:Chain0

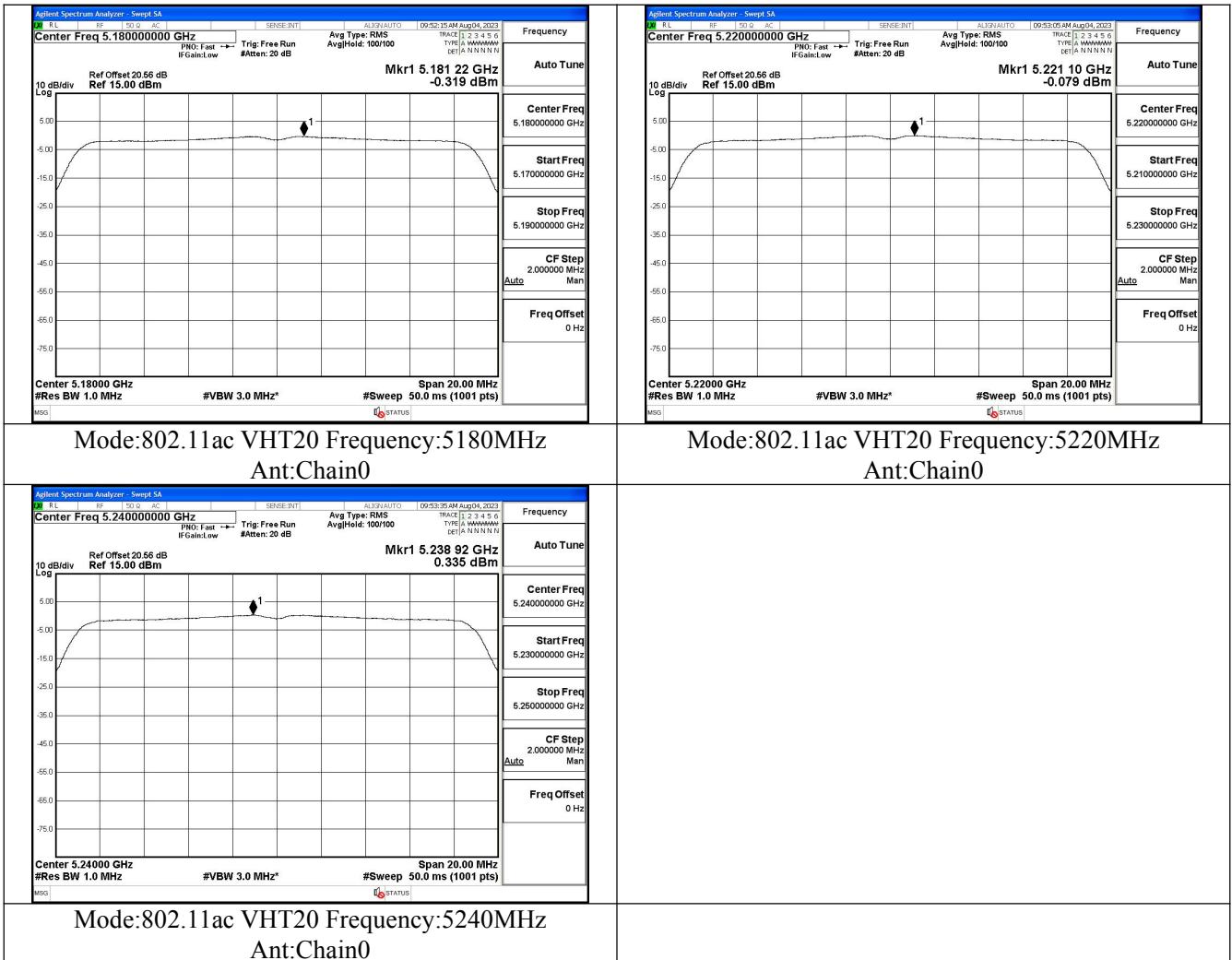


Mode:802.11a Frequency:5240MHz Ant:Chain0

Test Mode: 802.11n HT20



Test Mode: 802.11ac VHT20



Mode:802.11ac VHT20 Frequency:5180MHz
Ant:Chain0

Mode:802.11ac VHT20 Frequency:5220MHz
Ant:Chain0

Mode:802.11ac VHT20 Frequency:5240MHz
Ant:Chain0