

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Duty Cycle

Test Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor(dB)	Plot
802.11a	5500	99.94%	0	Fig.1
802.11n HT20	5500	99.95%	0	Fig.2
802.11ac VHT20	5500	99.96%	0	Fig.3
802.11n HT40	5510	99.91%	0	Fig.4
802.11ac VHT40	5510	99.88%	0	Fig.5
802.11ac VHT80	5530	99.73%	0	Fig.6

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

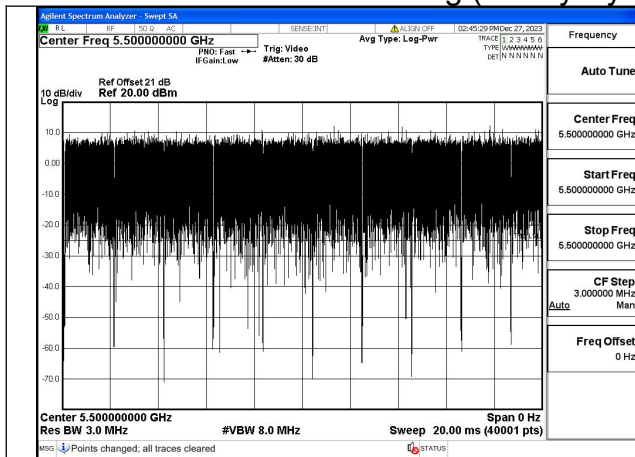


Fig.1

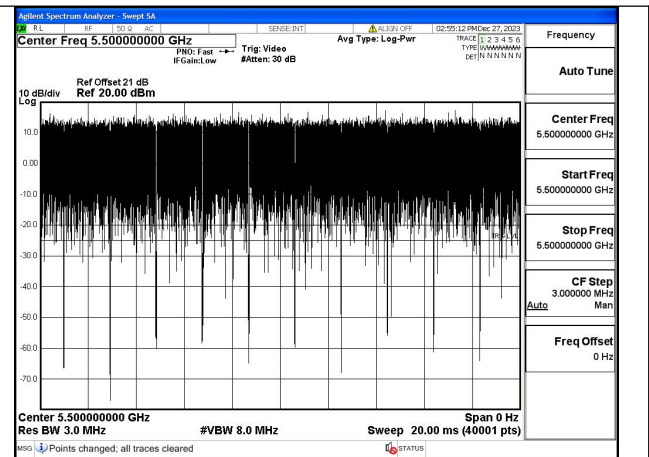


Fig.2

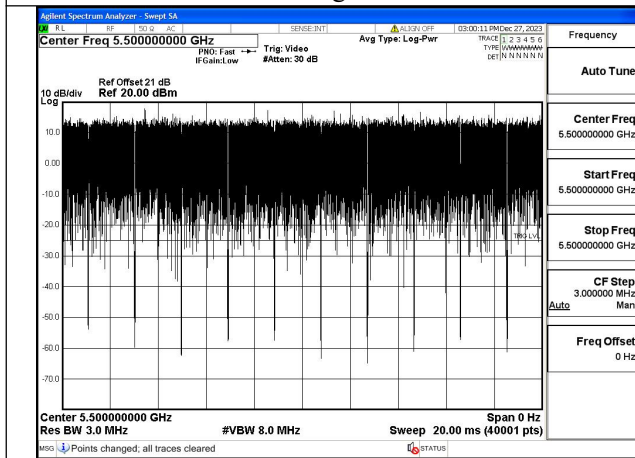


Fig.3

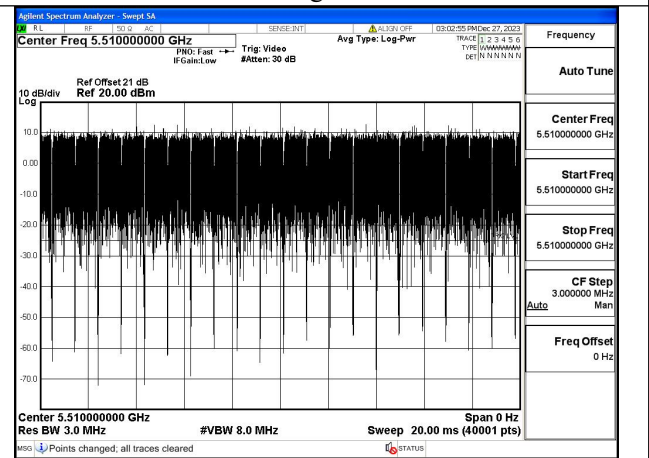


Fig.4

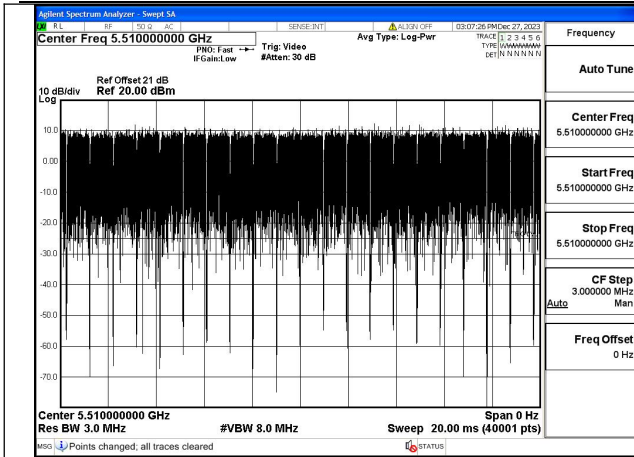


Fig.5

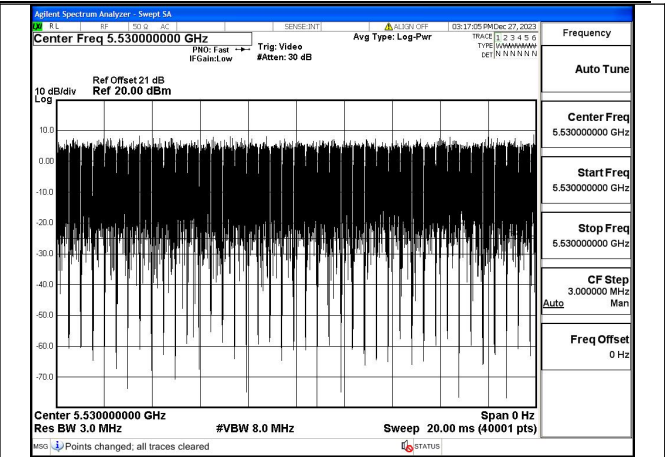


Fig.6

Output Power

Mode	Tones/ RU Index	Frequency (MHz)	Antenna	Conducted average power output(dBm)	EIRP (dBm)
802.11a	NA	5500	Chain0	10.40	10.00
802.11a	NA	5580	Chain0	10.22	9.82
802.11a	NA	5700	Chain0	10.70	10.30
802.11n HT20	NA	5500	Chain0	10.41	10.01
802.11n HT20	NA	5580	Chain0	10.20	9.80
802.11n HT20	NA	5700	Chain0	10.68	10.28
802.11ac VHT20	NA	5500	Chain0	10.43	10.03
802.11ac VHT20	NA	5580	Chain0	10.18	9.78
802.11ac VHT20	NA	5700	Chain0	10.66	10.26
802.11n HT40	NA	5510	Chain0	10.68	10.28
802.11n HT40	NA	5590	Chain0	10.37	9.97
802.11n HT40	NA	5670	Chain0	10.42	10.02
802.11ac VHT40	NA	5510	Chain0	10.60	10.20
802.11ac VHT40	NA	5590	Chain0	10.34	9.94
802.11ac VHT40	NA	5670	Chain0	10.39	9.99
802.11ac VHT80	NA	5530	Chain0	10.45	10.05
802.11ac VHT80	NA	5610	Chain0	10.12	9.72

Emission Bandwidth

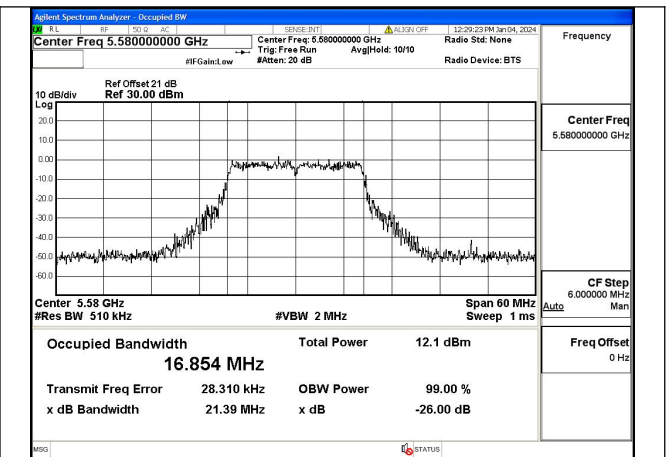
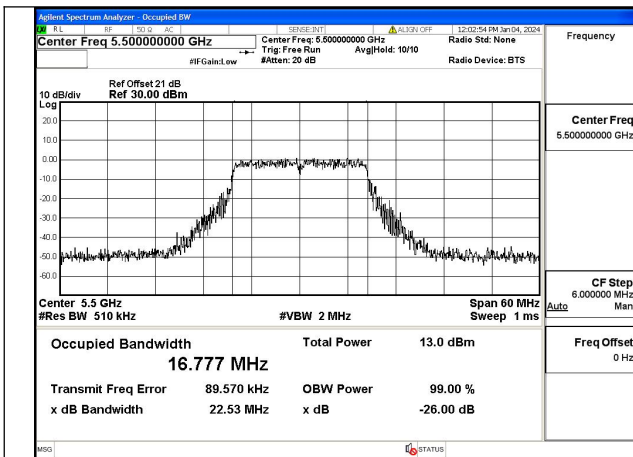
Offset 21dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5500MHz	5580MHz	5700MHz
802.11a	Chain0	22.53	21.39	21.58
802.11n HT20	Chain0	22.55	23.09	23.87
802.11ac VHT20	Chain0	22.36	22.09	22.04

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5510MHz	5590MHz	5670MHz
802.11n HT40	Chain0	42.83	41.24	41.61
802.11ac VHT40	Chain0	41.40	41.92	41.37

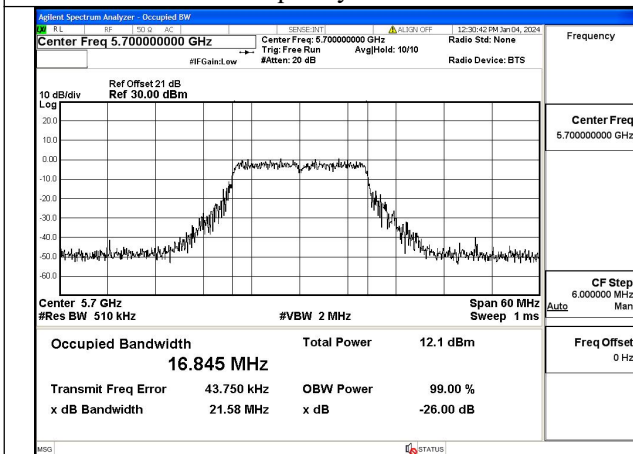
Test Mode	Antenna	26dB Bandwidth (MHz)		
		5530MHz	---	5610MHz
802.11ac VHT80	Chain0	84.06	---	84.45

Test Mode: 802.11a



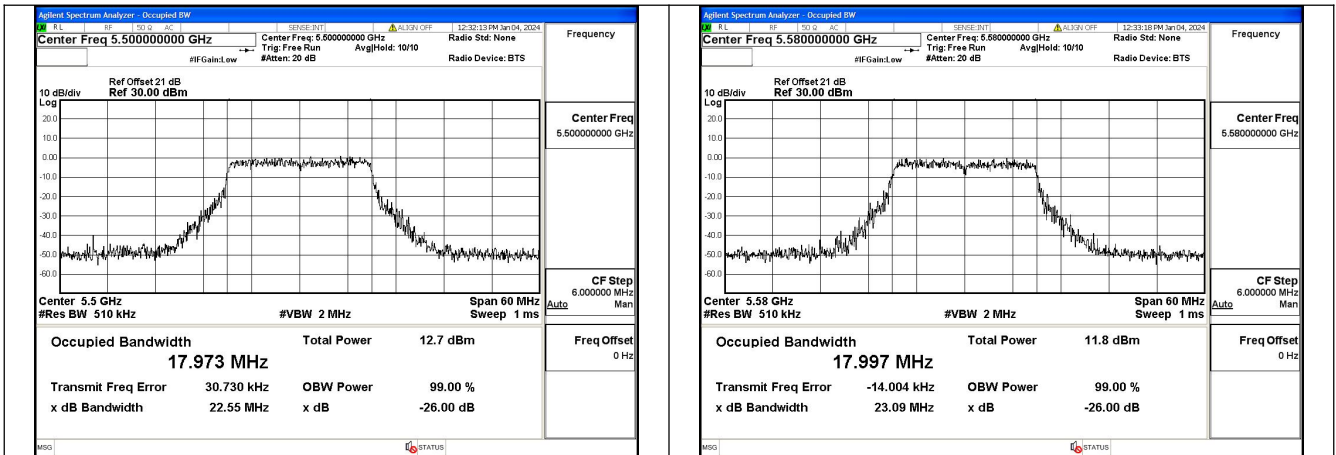
Mode:802.11a Frequency:5500MHz Ant:Chain0

Mode:802.11a Frequency:5580MHz Ant:Chain0



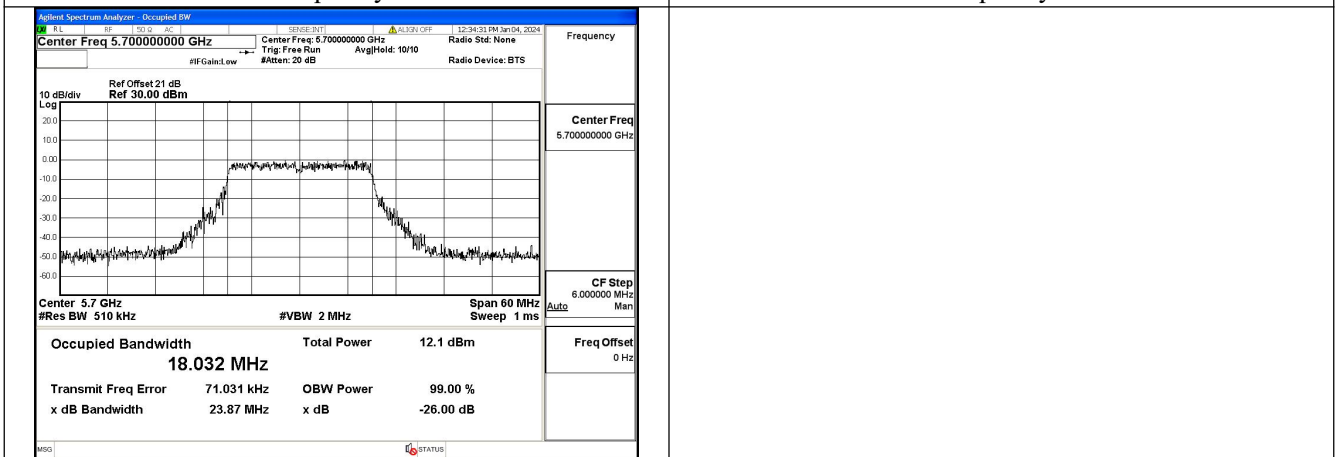
Mode:802.11a Frequency:5700MHz Ant:Chain0

Test Mode: 802.11n HT20



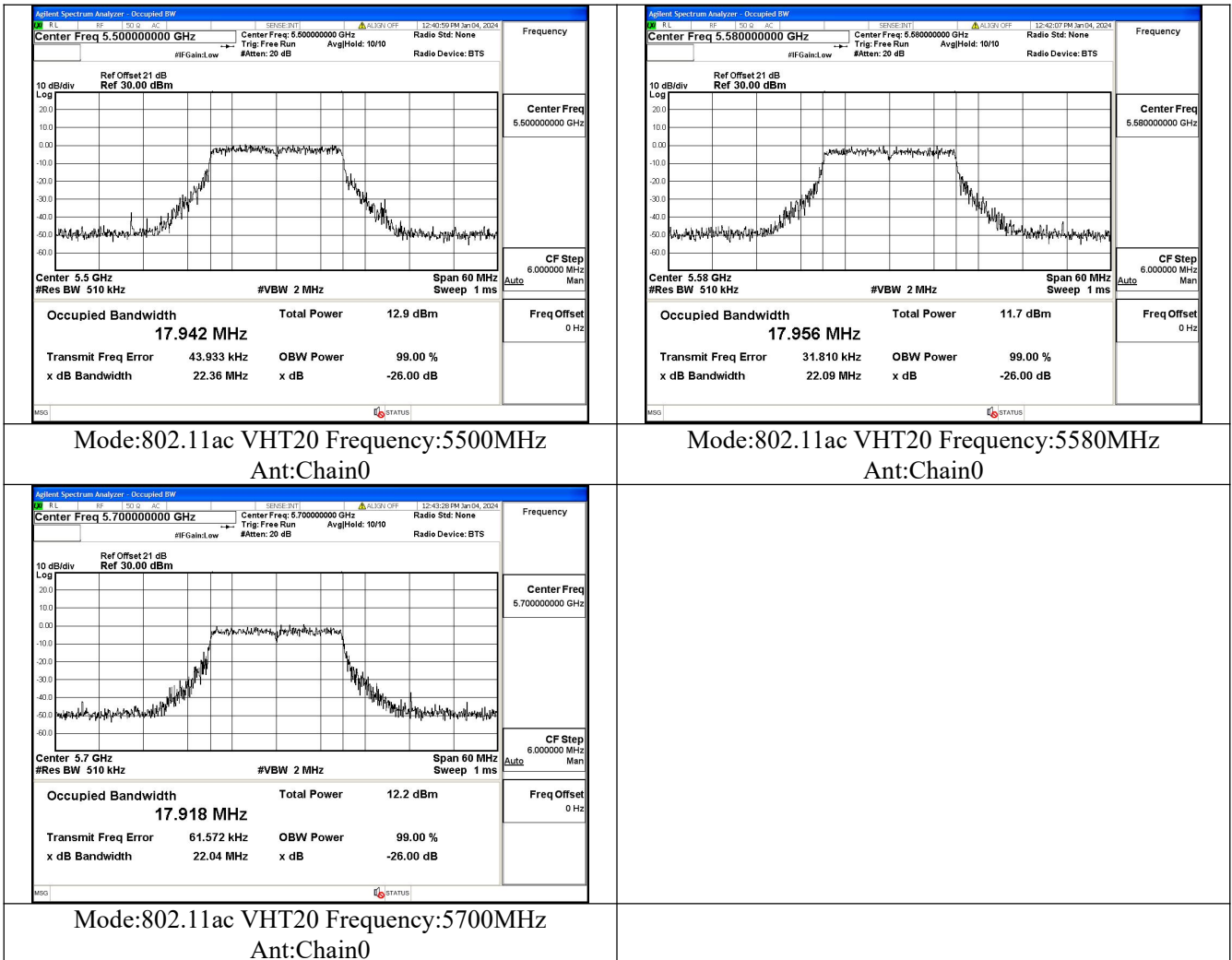
Mode:802.11n HT20 Frequency:5500MHz Ant:Chain0

Mode:802.11n HT20 Frequency:5580MHz Ant:Chain0



Mode:802.11n HT20 Frequency:5700MHz Ant:Chain0

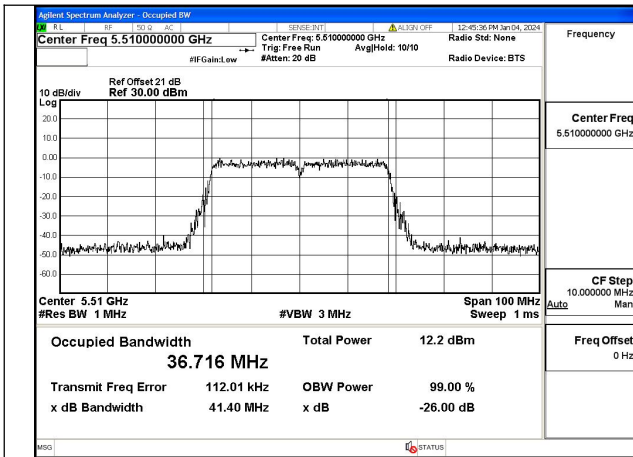
Test Mode: 802.11ac VHT20



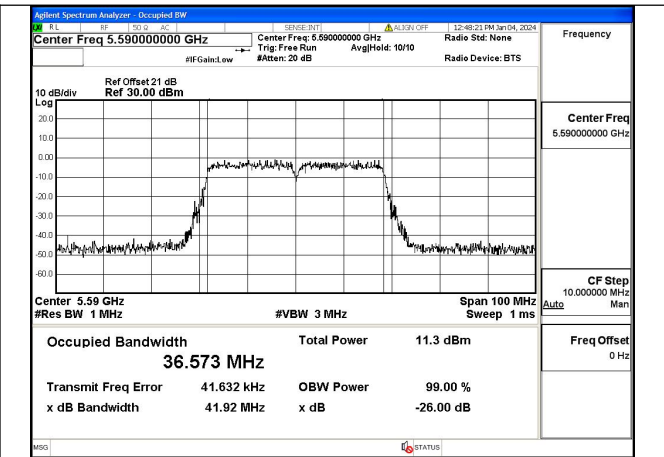
Test Mode: 802.11n HT40

<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.510000000 GHz</p> <p>Center Freq 5.510000000 GHz</p> <p>Trig: Free Run</p> <p>Avg/Hold: 10/10</p> <p>Radio Device: BTS</p> <p>Ref Offset 21 dB</p> <p>Ref 30.00 dBm</p> <p>Center 5.51 GHz</p> <p>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 100 MHz</p> <p>Sweep 1 ms</p> <p>Occupied Bandwidth 36.715 MHz</p> <p>Total Power 12.2 dBm</p> <p>Transmit Freq Error 65.335 kHz</p> <p>x dB Bandwidth 42.83 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.590000000 GHz</p> <p>Center Freq 5.590000000 GHz</p> <p>Trig: Free Run</p> <p>Avg/Hold: 10/10</p> <p>Radio Device: BTS</p> <p>Ref Offset 21 dB</p> <p>Ref 30.00 dBm</p> <p>Center 5.59 GHz</p> <p>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 100 MHz</p> <p>Sweep 1 ms</p> <p>Occupied Bandwidth 36.645 MHz</p> <p>Total Power 11.4 dBm</p> <p>Transmit Freq Error 83.097 kHz</p> <p>x dB Bandwidth 41.24 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>
<p>Mode:802.11n HT40 Frequency:5510MHz Ant:Chain0</p> <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.670000000 GHz</p> <p>Center Freq 5.670000000 GHz</p> <p>Trig: Free Run</p> <p>Avg/Hold: 10/10</p> <p>Radio Device: BTS</p> <p>Ref Offset 21 dB</p> <p>Ref 30.00 dBm</p> <p>Center 5.67 GHz</p> <p>#Res BW 1 MHz</p> <p>#VBW 3 MHz</p> <p>Span 100 MHz</p> <p>Sweep 1 ms</p> <p>Occupied Bandwidth 36.681 MHz</p> <p>Total Power 11.3 dBm</p> <p>Transmit Freq Error 116.92 kHz</p> <p>x dB Bandwidth 41.61 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -26.00 dB</p>	<p>Mode:802.11n HT40 Frequency:5590MHz Ant:Chain0</p>
<p>Mode:802.11n HT40 Frequency:5670MHz Ant:Chain0</p>	

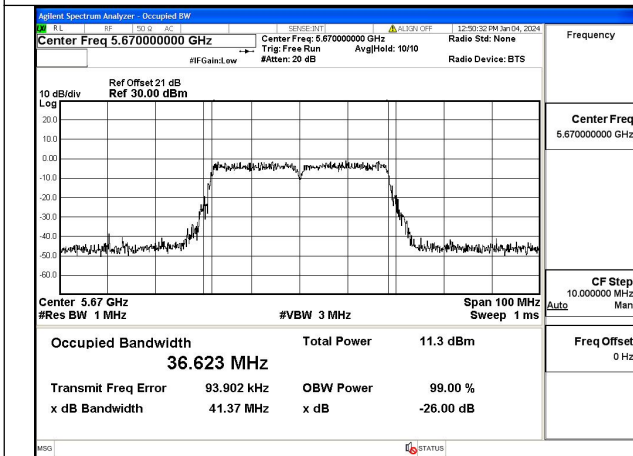
Test Mode: 802.11ac VHT40



Mode:802.11ac VHT40 Frequency:5510MHz
Ant:Chain0

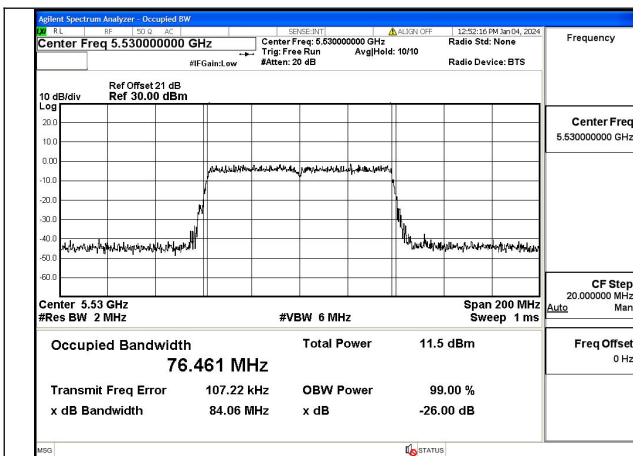


Mode:802.11ac VHT40 Frequency:5590MHz
Ant:Chain0

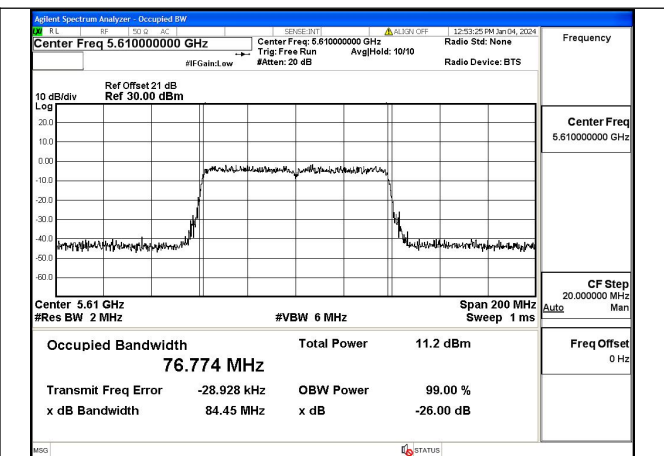


Mode:802.11ac VHT40 Frequency:5670MHz
Ant:Chain0

Test Mode: 802.11ac VHT80



Mode:802.11ac VHT80 Frequency:5530MHz
Ant:Chain0



Mode:802.11ac VHT80 Frequency:5610MHz
Ant:Chain0

Occupied Bandwidth

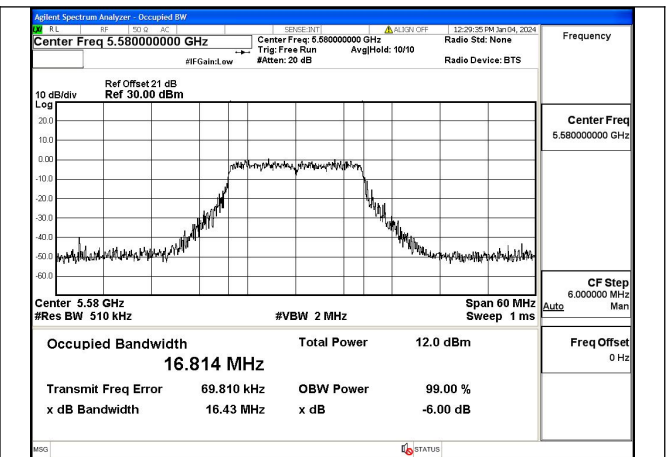
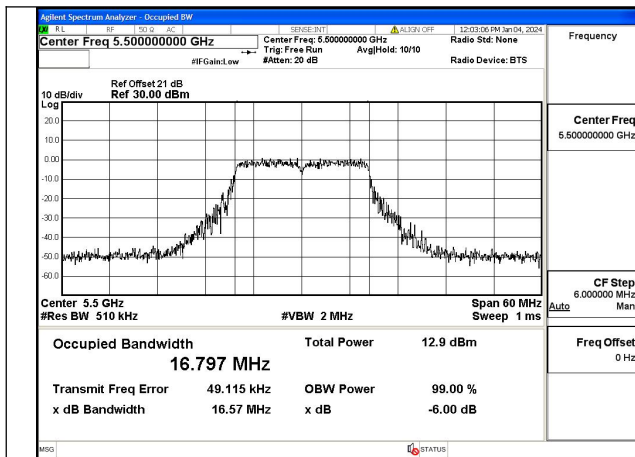
Offset 21dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5500MHz	5580MHz	5700MHz
802.11a	Chain0	16.797	16.814	16.876
802.11n HT20	Chain0	17.911	18.078	17.915
802.11ac VHT20	Chain0	18.125	18.089	18.042

Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5510MHz	5590MHz	5670MHz
802.11n HT40	Chain0	36.685	36.717	36.631
802.11ac VHT40	Chain0	36.653	36.720	36.641

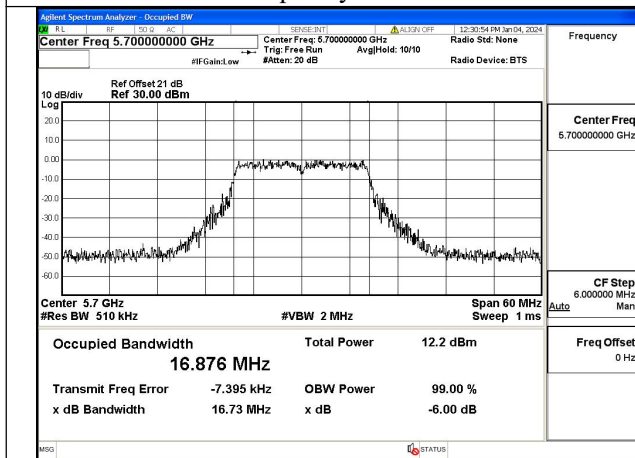
Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5530MHz	---	5610MHz
802.11ac VHT80	Chain0	76.558	---	76.658

Test Mode: 802.11a



Mode:802.11a Frequency:5500MHz Ant:Chain0

Mode:802.11a Frequency:5580MHz Ant:Chain0

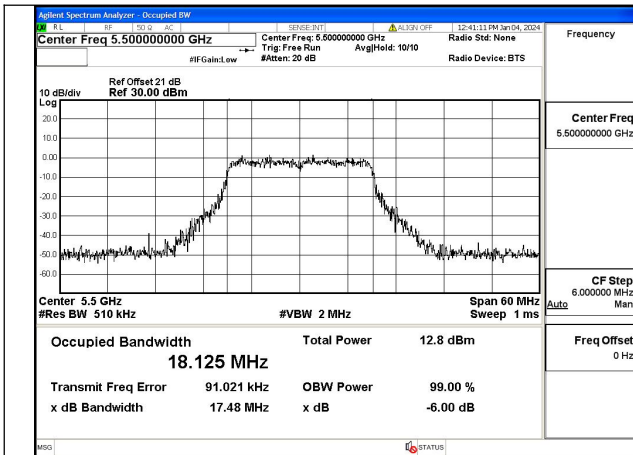


Mode:802.11a Frequency:5700MHz Ant:Chain0

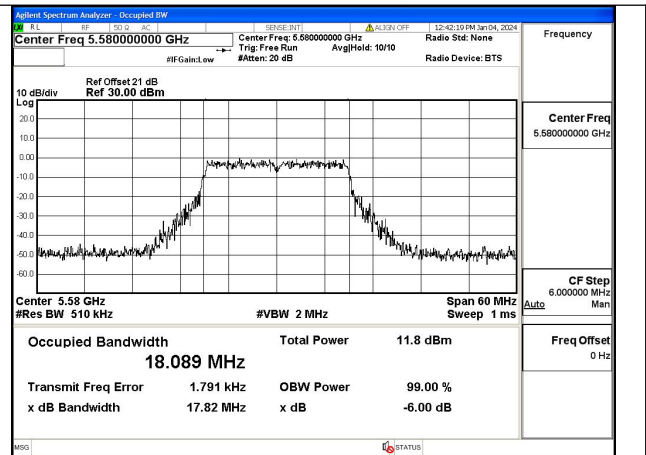
Test Mode: 802.11n HT20

<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.500000000 GHz</p> <p>Ref Offset 21 dB Ref 30.00 dBm</p> <p>Center 5.5 GHz #Res BW 510 kHz #VBW 2 MHz Span 60 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.911 MHz</p> <p>Total Power 12.6 dBm</p> <p>Transmit Freq Error 52.846 kHz</p> <p>x dB Bandwidth 17.78 MHz</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.580000000 GHz</p> <p>Ref Offset 21 dB Ref 30.00 dBm</p> <p>Center 5.58 GHz #Res BW 510 kHz #VBW 2 MHz Span 60 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 18.078 MHz</p> <p>Total Power 11.9 dBm</p> <p>Transmit Freq Error 73.643 kHz</p> <p>x dB Bandwidth 17.65 MHz</p>
<p>Mode:802.11n HT20 Frequency:5500MHz Ant:Chain0</p> <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.700000000 GHz</p> <p>Ref Offset 21 dB Ref 30.00 dBm</p> <p>Center 5.7 GHz #Res BW 510 kHz #VBW 2 MHz Span 60 MHz Sweep 1 ms</p> <p>Occupied Bandwidth 17.915 MHz</p> <p>Total Power 12.2 dBm</p> <p>Transmit Freq Error 52.017 kHz</p> <p>x dB Bandwidth 17.63 MHz</p>	<p>Mode:802.11n HT20 Frequency:5580MHz Ant:Chain0</p>
<p>Mode:802.11n HT20 Frequency:5700MHz Ant:Chain0</p>	

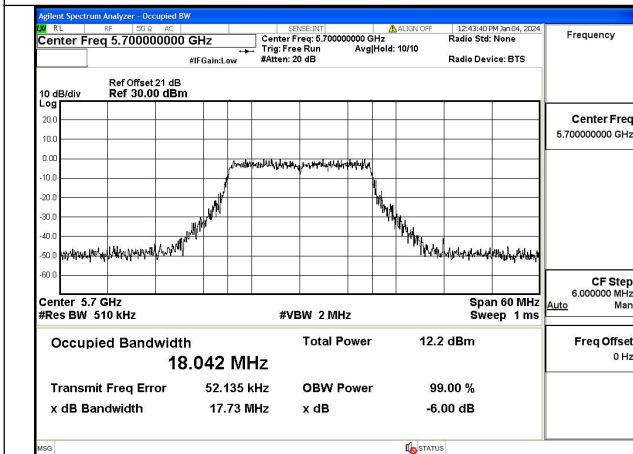
Test Mode: 802.11ac VHT20



Mode:802.11ac VHT20 Frequency:5500MHz
Ant:Chain0



Mode:802.11ac VHT20 Frequency:5580MHz
Ant:Chain0

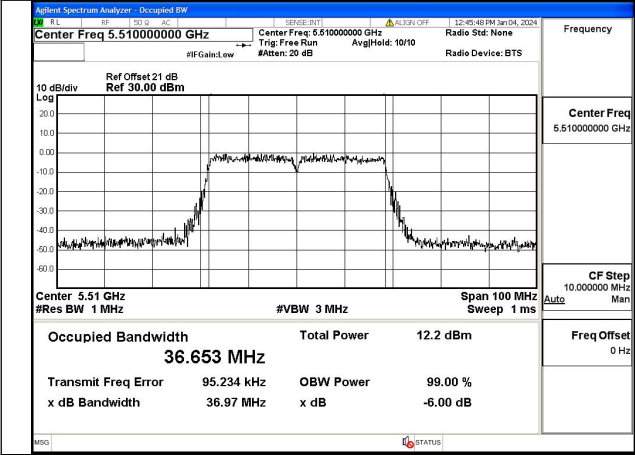
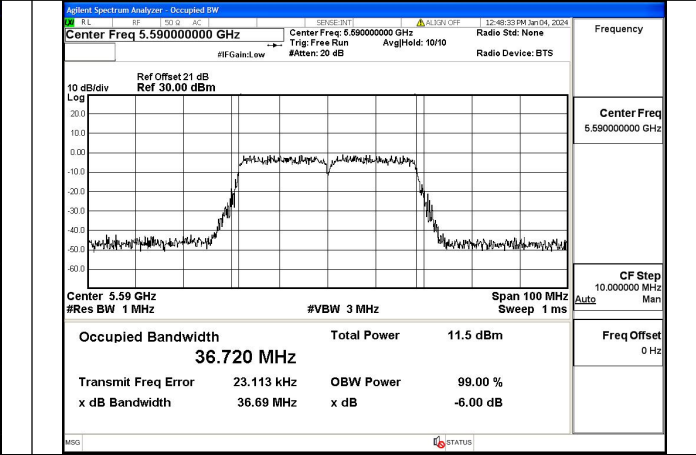
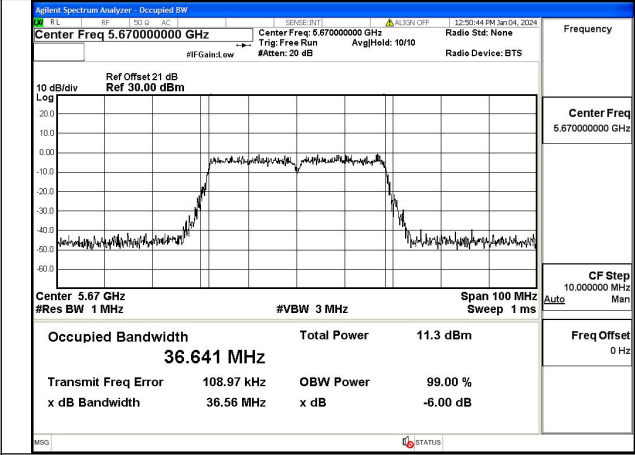


Mode:802.11ac VHT20 Frequency:5700MHz
Ant:Chain0

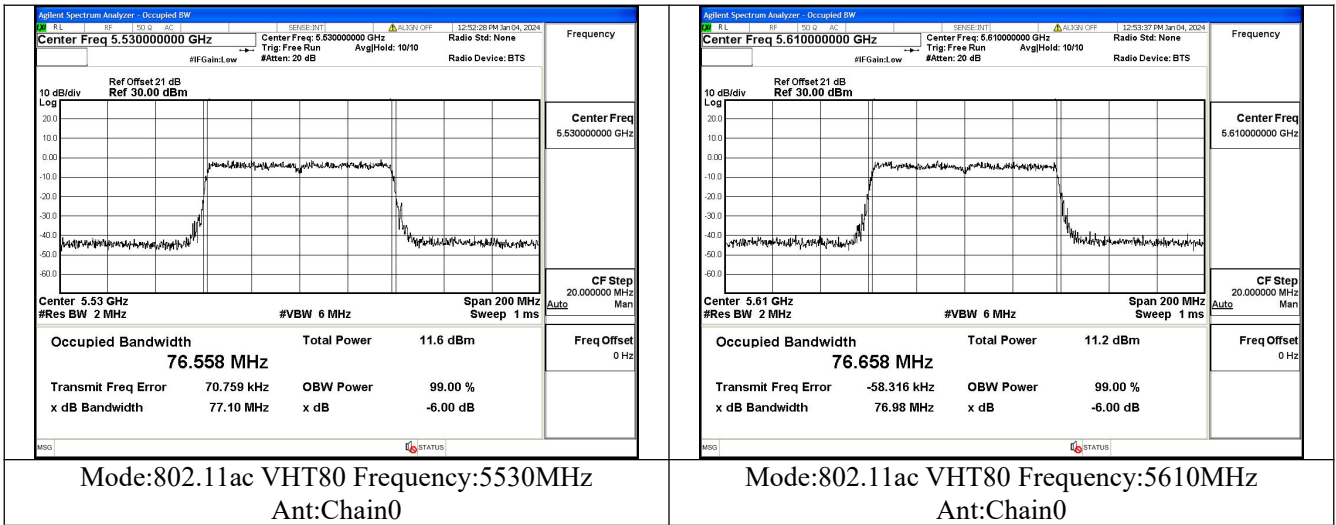
Test Mode: 802.11n HT40

<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.510000000 GHz</p> <p>Center Freq 5.510000000 GHz</p> <p>Occupied Bandwidth 36.685 MHz</p> <p>Total Power 12.1 dBm</p> <p>Transmit Freq Error 83.160 kHz</p> <p>x dB Bandwidth 36.48 MHz</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.590000000 GHz</p> <p>Center Freq 5.590000000 GHz</p> <p>Occupied Bandwidth 36.717 MHz</p> <p>Total Power 11.3 dBm</p> <p>Transmit Freq Error 101.35 kHz</p> <p>x dB Bandwidth 36.39 MHz</p>
<p>Mode:802.11n HT40 Frequency:5510MHz Ant:Chain0</p> <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.670000000 GHz</p> <p>Center Freq 5.670000000 GHz</p> <p>Occupied Bandwidth 36.631 MHz</p> <p>Total Power 11.4 dBm</p> <p>Transmit Freq Error 103.25 kHz</p> <p>x dB Bandwidth 36.59 MHz</p>	<p>Mode:802.11n HT40 Frequency:5590MHz Ant:Chain0</p>
<p>Mode:802.11n HT40 Frequency:5670MHz Ant:Chain0</p>	

Test Mode: 802.11ac VHT40

 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.510000000 GHz</p> <p>Center Freq: 5.510000000 GHz</p> <p>Ref Offset 21 dB</p> <p>Ref 30.00 dBm</p> <p>Occupied Bandwidth: 36.653 MHz</p> <p>Total Power: 12.2 dBm</p> <p>Transmit Freq Error: 95.234 kHz</p> <p>x dB Bandwidth: 36.97 MHz</p>	 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.590000000 GHz</p> <p>Center Freq: 5.590000000 GHz</p> <p>Ref Offset 21 dB</p> <p>Ref 30.00 dBm</p> <p>Occupied Bandwidth: 36.720 MHz</p> <p>Total Power: 11.5 dBm</p> <p>Transmit Freq Error: 23.113 kHz</p> <p>x dB Bandwidth: 36.69 MHz</p>
<p>Mode:802.11ac VHT40 Frequency:5510MHz Ant:Chain0</p>	<p>Mode:802.11ac VHT40 Frequency:5590MHz Ant:Chain0</p>
 <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 5.670000000 GHz</p> <p>Center Freq: 5.670000000 GHz</p> <p>Ref Offset 21 dB</p> <p>Ref 30.00 dBm</p> <p>Occupied Bandwidth: 36.641 MHz</p> <p>Total Power: 11.3 dBm</p> <p>Transmit Freq Error: 108.97 kHz</p> <p>x dB Bandwidth: 36.56 MHz</p>	
<p>Mode:802.11ac VHT40 Frequency:5670MHz Ant:Chain0</p>	

Test Mode: 802.11ac VHT80



Transmitter Power Spectral Density

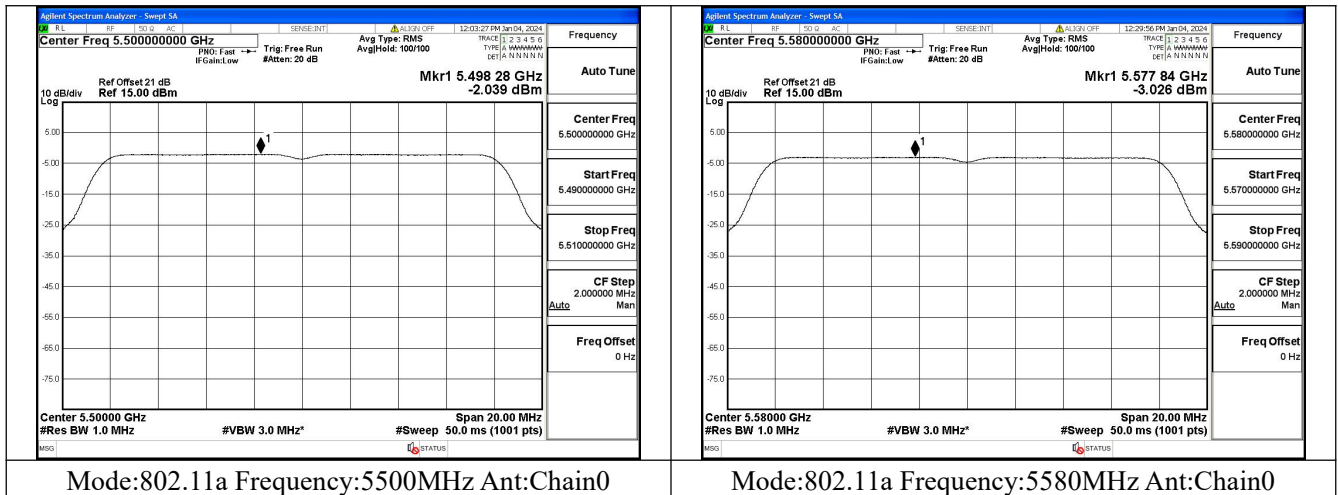
Offset 21dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	Tones	5500MHz		5580MHz		5700MHz	
			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	-2.039	0	-3.026	0	-2.795
802.11n HT20	Chain0	NA	0	-2.490	0	-3.339	0	-3.131
802.11ac VHT20	Chain0	NA	0	-2.439	0	-3.437	0	-3.149

Test Mode	Antenna	Tones	5510MHz		5590MHz		5670MHz	
			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	-5.647	0	-6.552	0	-6.627
802.11ac VHT40	Chain0	NA	0	-5.664	0	-6.468	0	-6.623

Test Mode	Antenna	Tones	5530MHz		---		5610MHz	
			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	-9.185	---	---	0	-9.589

Test Mode: 802.11a



Mode:802.11a Frequency:5500MHz Ant:Chain0

Mode:802.11a Frequency:5580MHz Ant:Chain0