

APPENDIX A – TEST DATA OF CONDUCTED EMISSION

Duty Cycle

Test Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor(dB)	Plot
802.11a	5500	98.70%	0	Fig.1
802.11n HT20	5500	99.55%	0	Fig.2
802.11ac VHT20	5500	99.64%	0	Fig.3
802.11ax HE20	5500	99.85%	0	Fig.4
802.11n HT40	5510	99.87%	0	Fig.5
802.11ac VHT40	5510	99.85%	0	Fig.6
802.11ax HE40	5510	99.83%	0	Fig.7

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

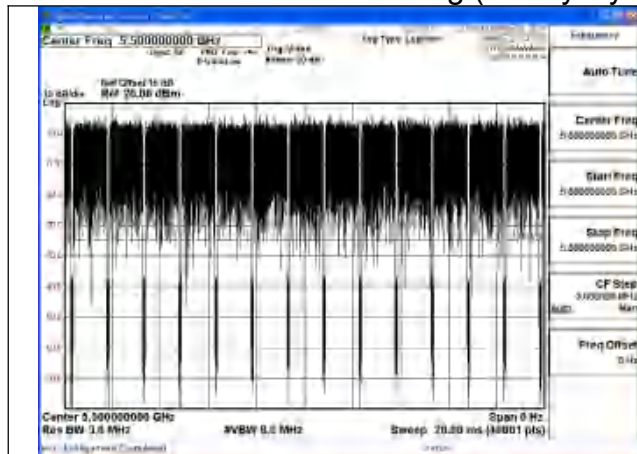


Fig.1

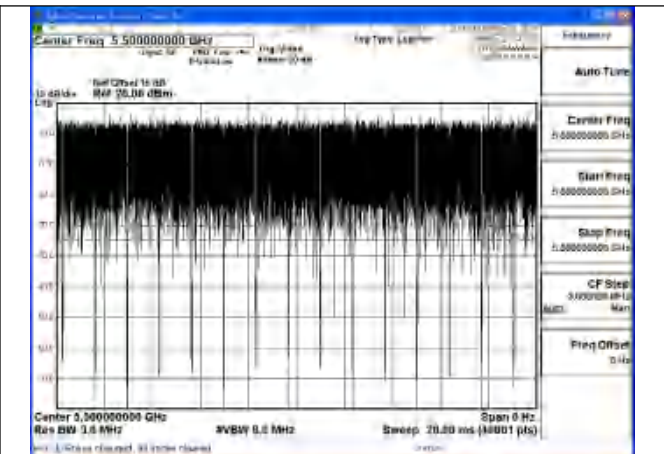


Fig.2

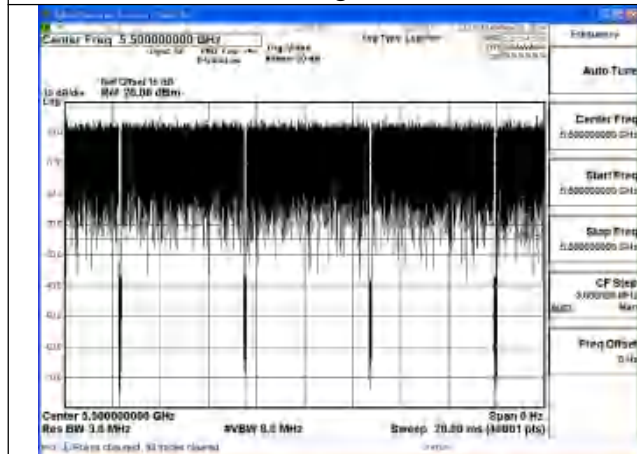


Fig.3

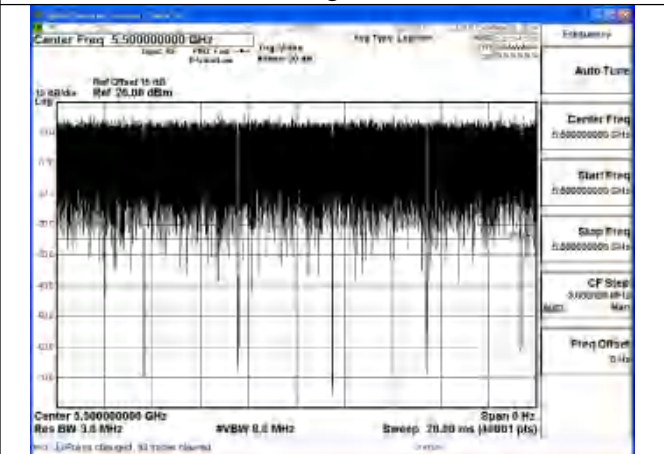


Fig.4

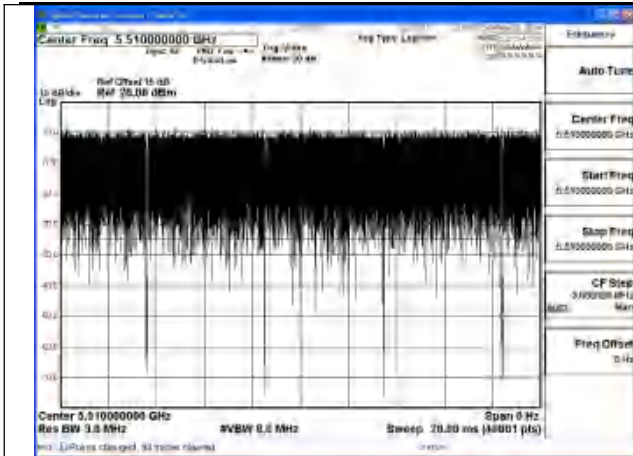


Fig.5

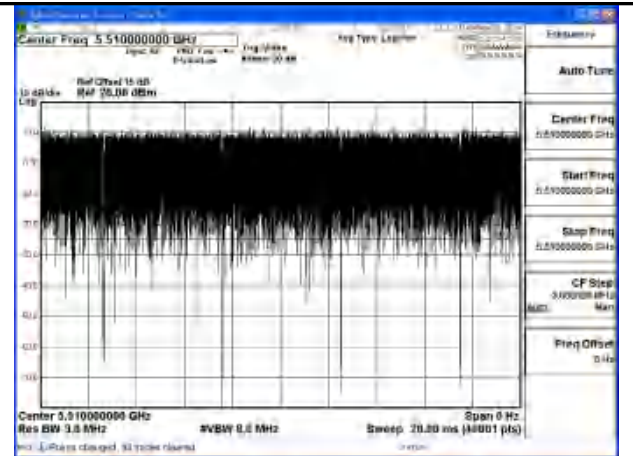


Fig.6

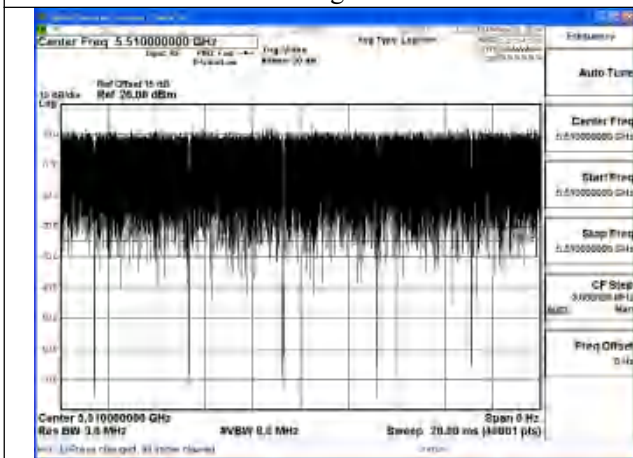


Fig.7



Output Power

Mode	Tones/ RU Index	Frequency (MHz)	Antenna	Conducted average power output(dBm)	EIRP (dBm)
802.11a	NA	5500	Chain0	12.73	14.54
802.11a	NA	5580	Chain0	12.77	14.58
802.11a	NA	5700	Chain0	14.14	15.95
802.11n HT20	NA	5500	Chain0	12.78	14.59
802.11n HT20	NA	5580	Chain0	12.76	14.57
802.11n HT20	NA	5700	Chain0	14.21	16.02
802.11ac VHT20	NA	5500	Chain0	13.25	15.06
802.11ac VHT20	NA	5580	Chain0	13.29	15.10
802.11ac VHT20	NA	5700	Chain0	14.78	16.59
802.11n HT40	NA	5510	Chain0	12.81	14.62
802.11n HT40	NA	5590	Chain0	13.28	15.09
802.11n HT40	NA	5670	Chain0	13.81	15.62
802.11ac VHT40	NA	5510	Chain0	13.34	15.15
802.11ac VHT40	NA	5590	Chain0	13.13	14.94
802.11ac VHT40	NA	5670	Chain0	14.20	16.01

Mode	Tones/ RU Index	Frequency (MHz)	Antenna	Conducted average power output(dBm)	EIRP (dBm)
802.11ax HE20	242T 61	5500	Chain0	13.22	15.03
802.11ax HE20	242T 61	5580	Chain0	12.90	14.71
802.11ax HE20	242T 61	5700	Chain0	14.11	15.92
802.11ax HE40	484T 65	5510	Chain0	12.83	14.64
802.11ax HE40	484T 65	5670	Chain0	13.58	15.39

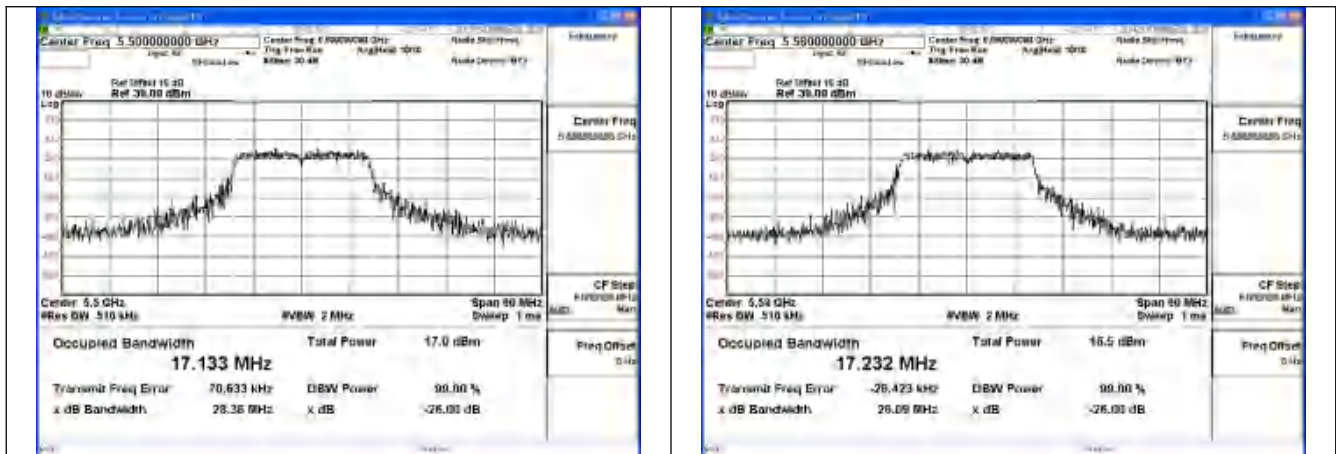
Emission Bandwidth

Offset 15dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	26dB Bandwidth (MHz)		
		5500MHz	5580MHz	5700MHz
802.11a	Chain0	28.36	26.09	25.54
802.11n HT20	Chain0	27.06	28.81	27.17
802.11ac VHT20	Chain0	26.80	27.69	27.14
802.11ax HE20	Chain0	25.48	24.00	24.41

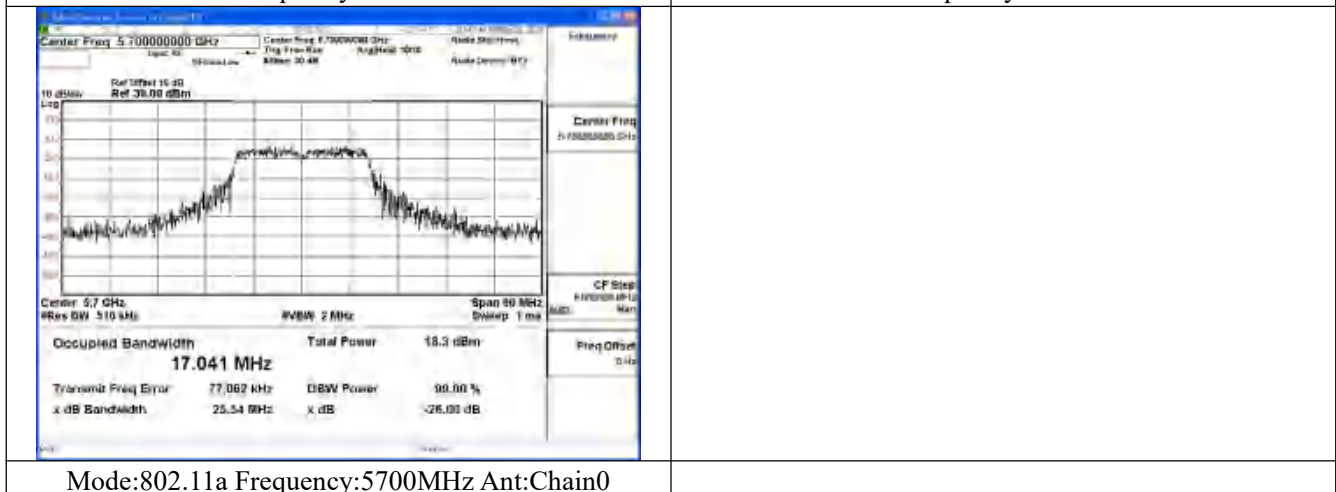
Test Mode	Antenna	26dB Bandwidth (MHz)		
		5510MHz	5590MHz	5670MHz
802.11n HT40	Chain0	46.59	46.08	47.18
802.11ac VHT40	Chain0	45.89	44.82	47.03
802.11ax HE40	Chain0	48.26	47.36	43.72

Test Mode: 802.11a



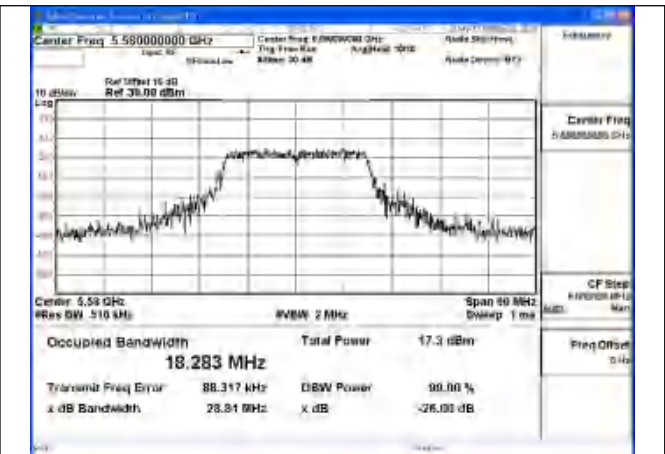
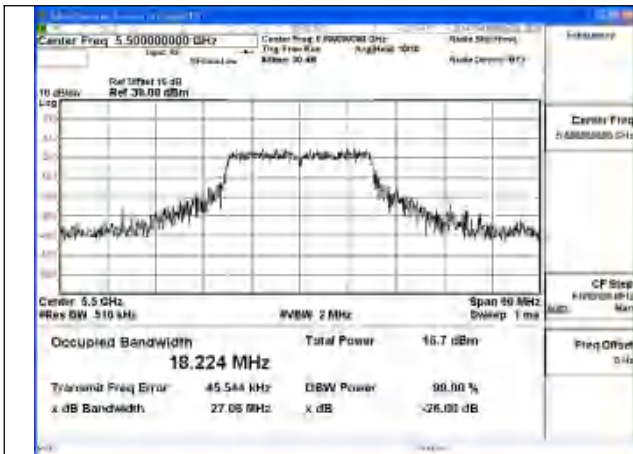
Mode:802.11a Frequency:5500MHz Ant:Chain0

Mode:802.11a Frequency:5580MHz Ant:Chain0



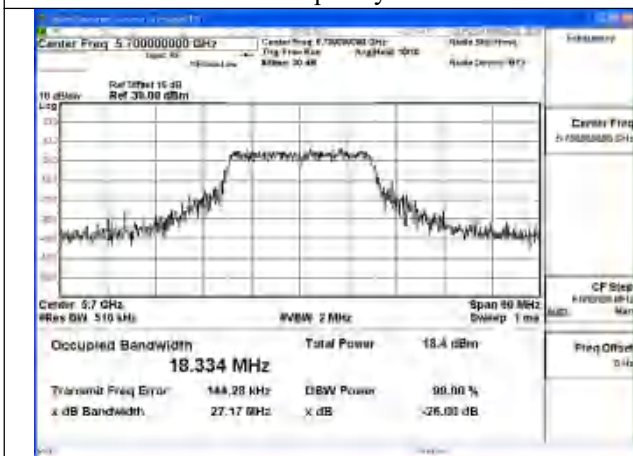
Mode:802.11a Frequency:5700MHz Ant:Chain0

Test Mode: 802.11n HT20



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

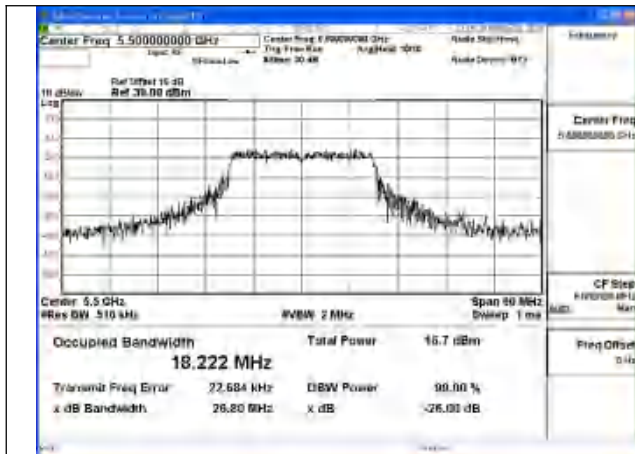
Mode:802.11n HT20 Frequency:5580MHz Ant:Chain0



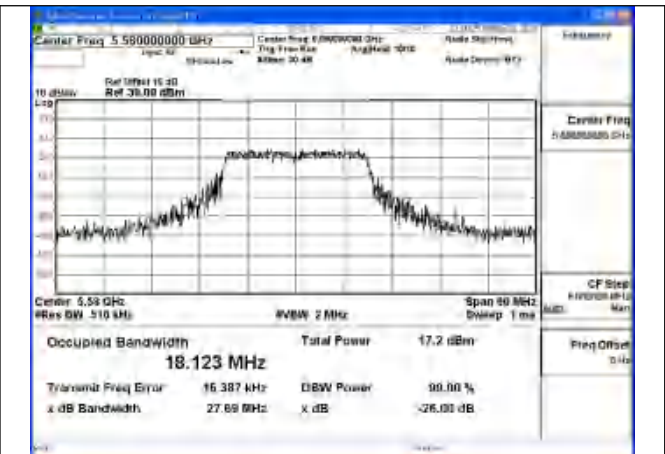
Mode:802.11n HT20 Frequency:5700MHz Ant:Chain0



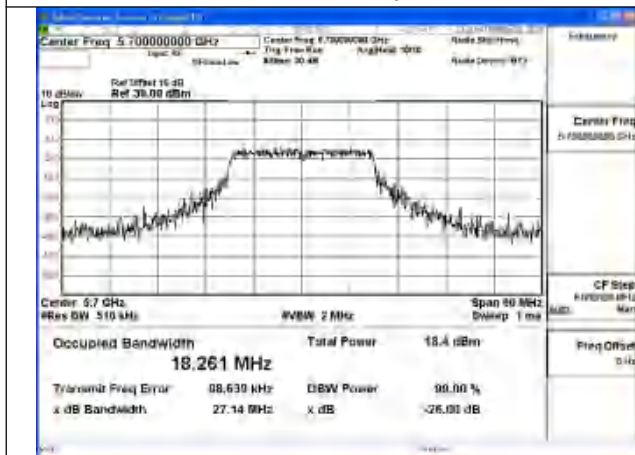
Test Mode: 802.11ac VHT20



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



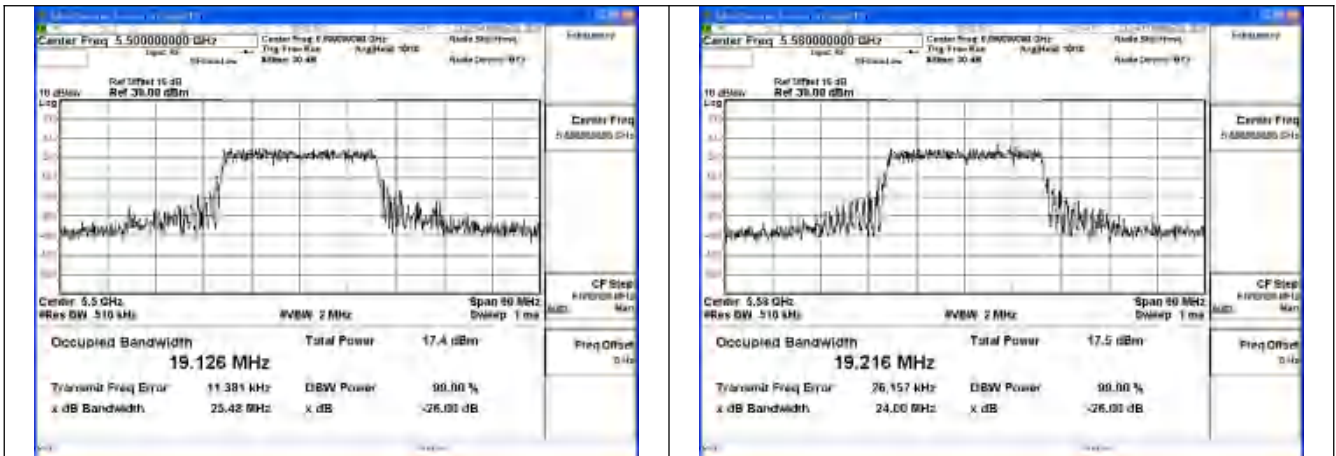
Mode:802.11ac VHT20 Frequency:5580MHz
Ant:Chain0



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

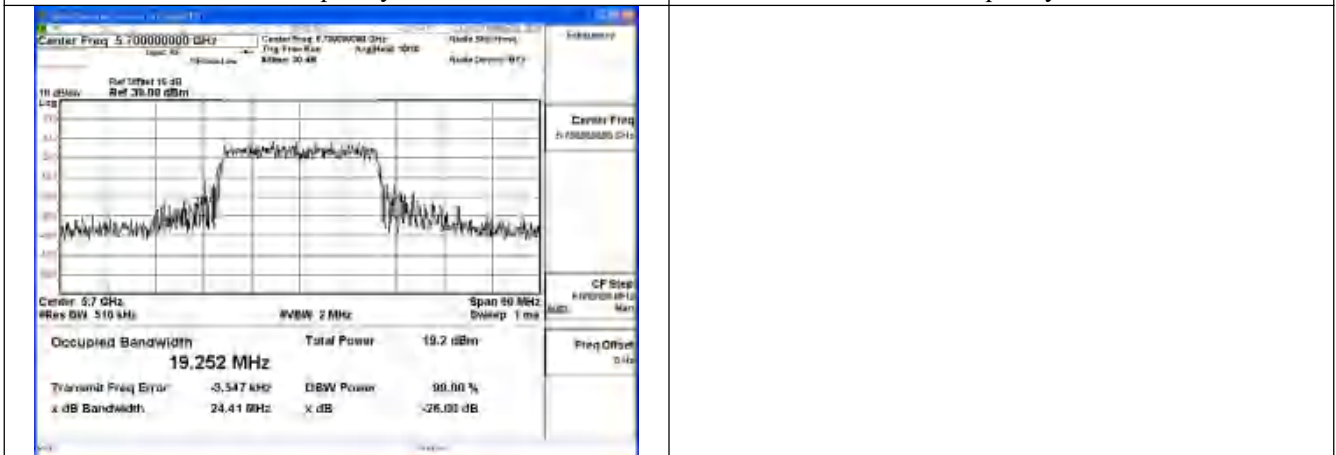


Test Mode: 802.11ax HE20



Mode:802.11ax HE20 Frequency:5500MHz Ant:Chain0

Mode:802.11ax HE20 Frequency:5580MHz Ant:Chain0

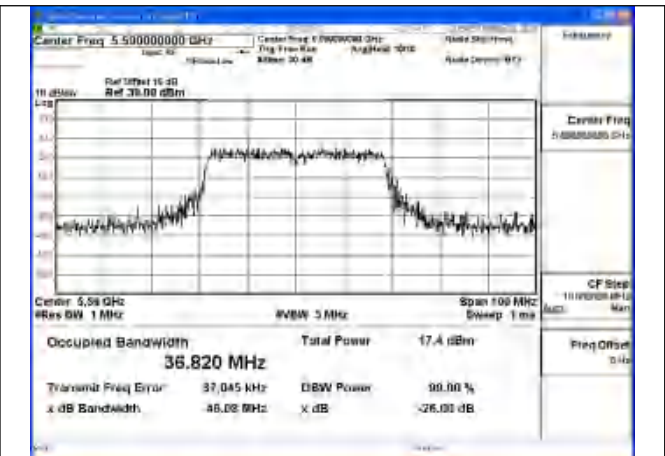
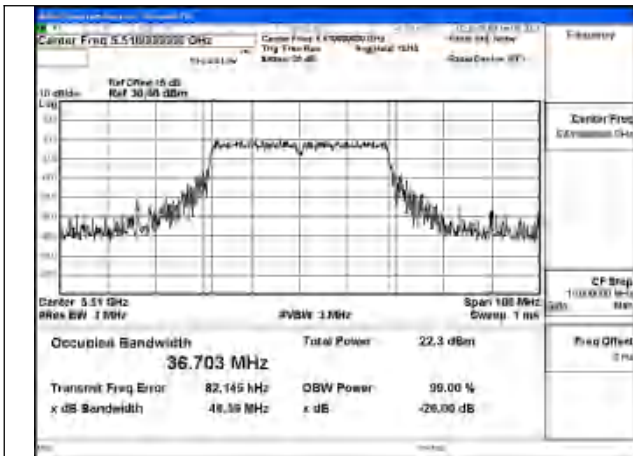


Mode:802.11ax HE20 Frequency:5700MHz Ant:Chain0

Mode:802.11ax HE20 Frequency:5700MHz Ant:Chain0

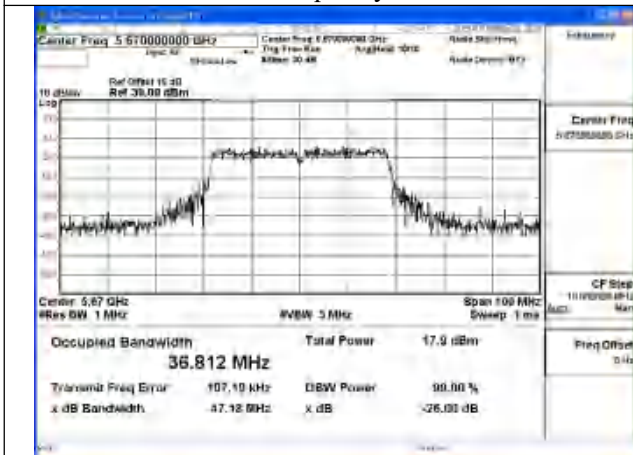


Test Mode: 802.11n HT40



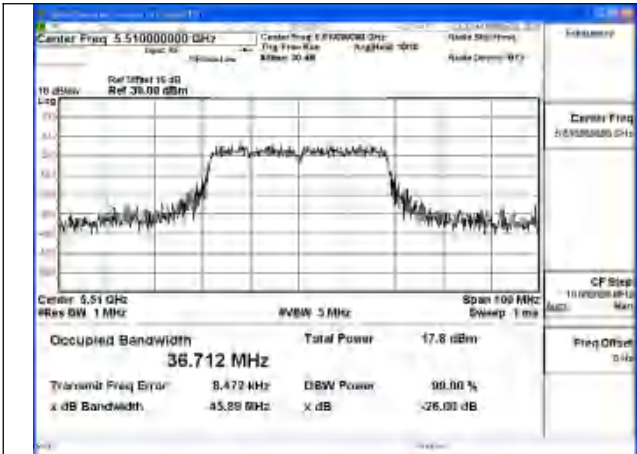
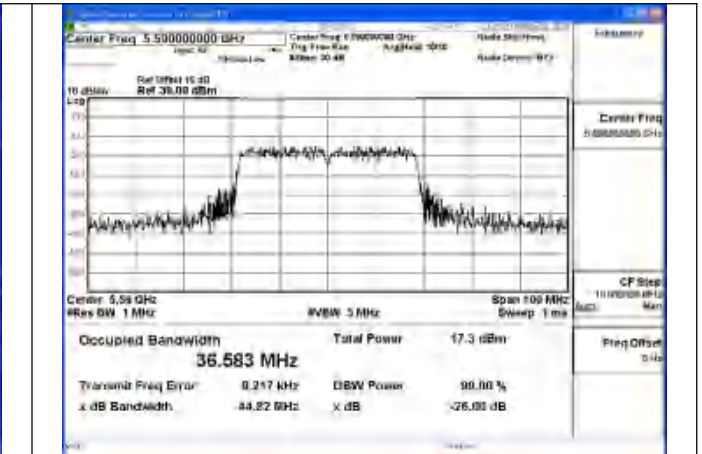
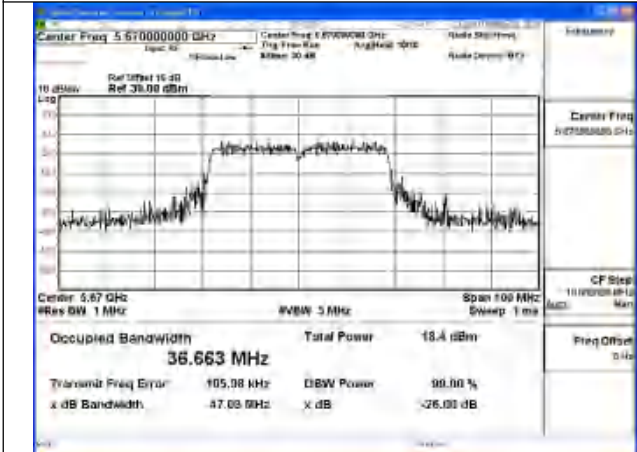
Mode:802.11n HT40 Frequency:5510MHz Ant:Chain0

Mode:802.11n HT40 Frequency:5590MHz Ant:Chain0



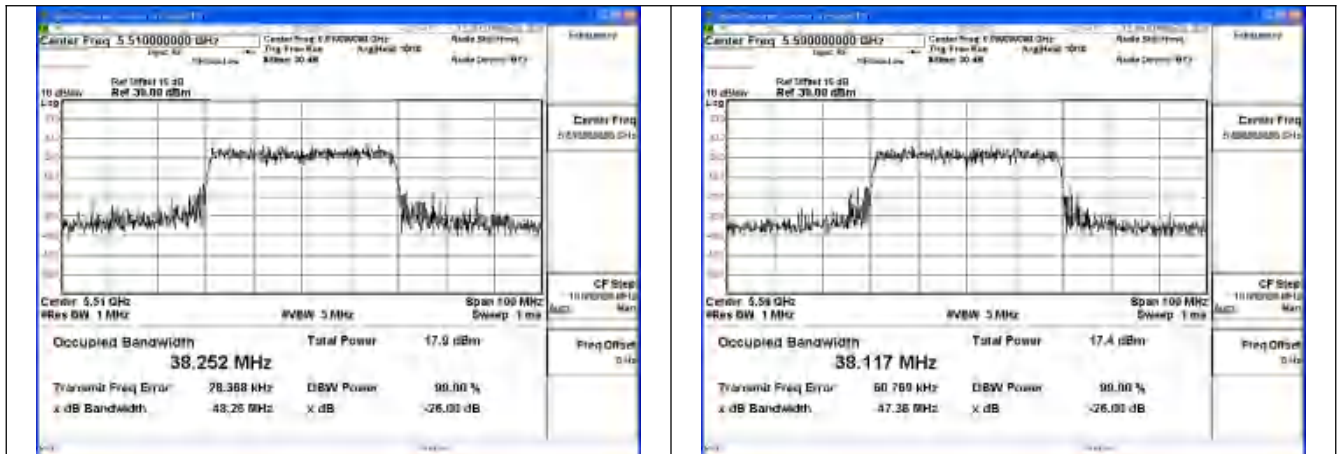
Mode:802.11n HT40 Frequency:5670MHz Ant:Chain0

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	

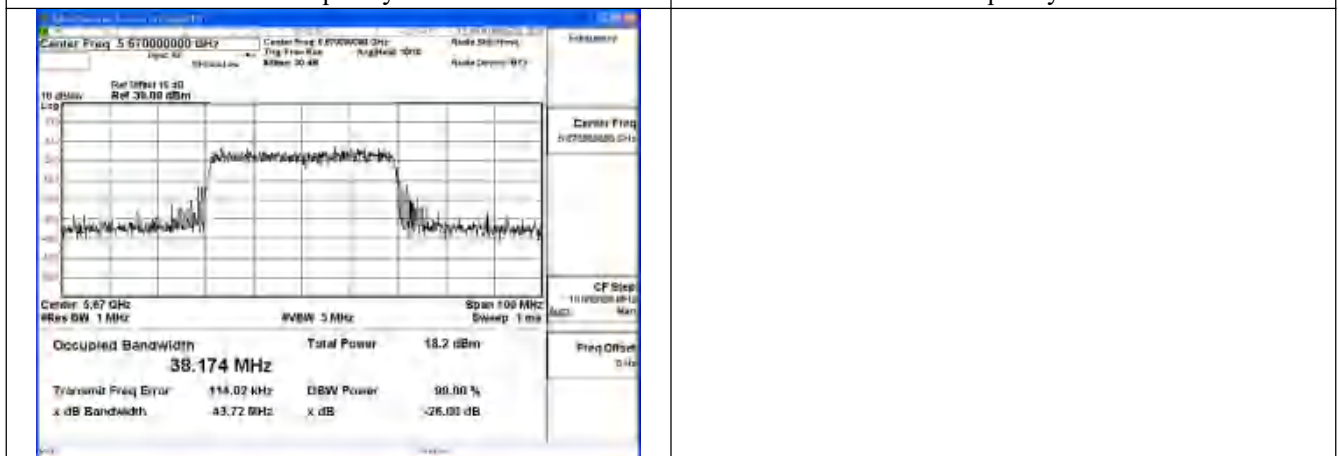


Test Mode: 802.11ax HE40



Mode:802.11ax HE40 Frequency:5510MHz Ant:Chain0

Mode:802.11ax HE40 Frequency:5590MHz Ant:Chain0



Mode:802.11ax HE40 Frequency:5670MHz Ant:Chain0

Mode:802.11ax HE40 Frequency:5670MHz Ant:Chain0

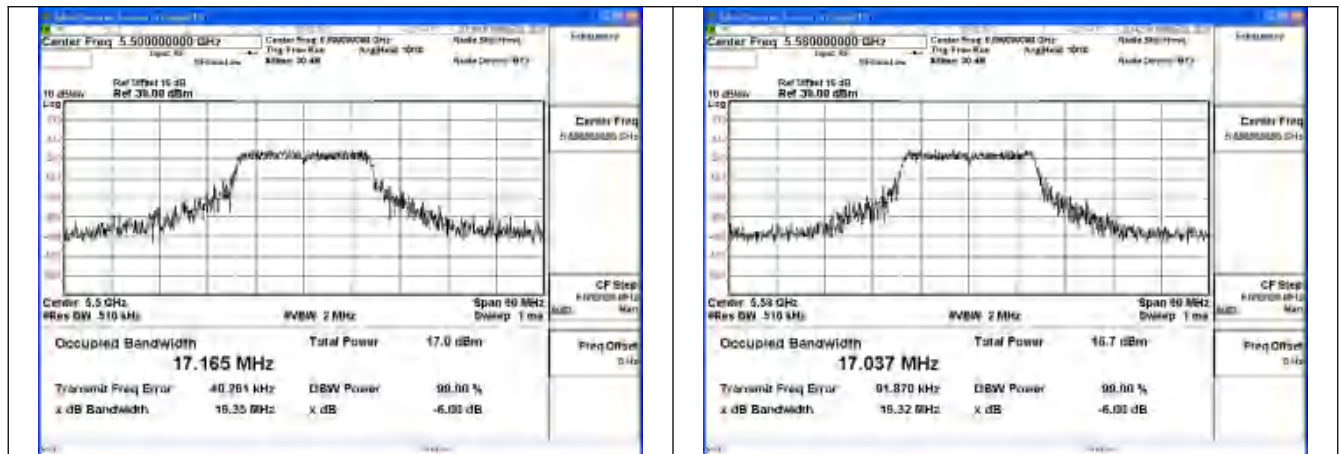
Occupied Bandwidth

Offset 15dB = Attenuator + Temporary antenna connector loss + Cable loss

Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5500MHz	5580MHz	5700MHz
802.11a	Chain0	17.165	17.037	17.171
802.11n HT20	Chain0	18.391	18.287	18.325
802.11ac VHT20	Chain0	18.200	18.287	18.272
802.11ax HE20	Chain0	19.188	19.230	19.245

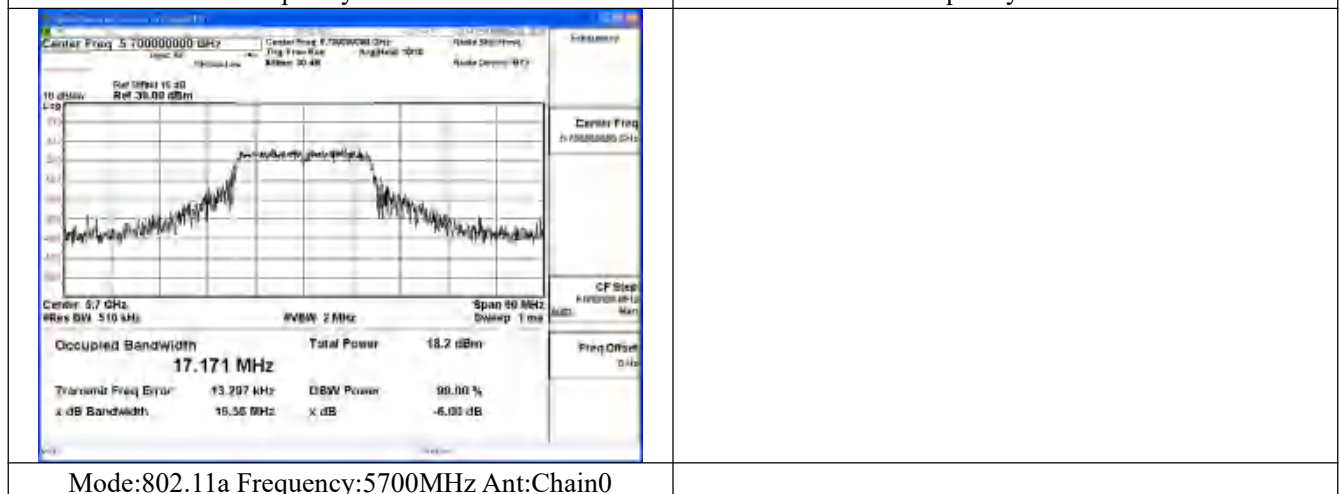
Test Mode	Antenna	Occupied Bandwidth (MHz)		
		5510MHz	5590MHz	5670MHz
802.11n HT40	Chain0	36.807	36.850	36.707
802.11ac VHT40	Chain0	36.885	36.732	36.782
802.11ax HE40	Chain0	38.334	38.214	38.222

Test Mode: 802.11a



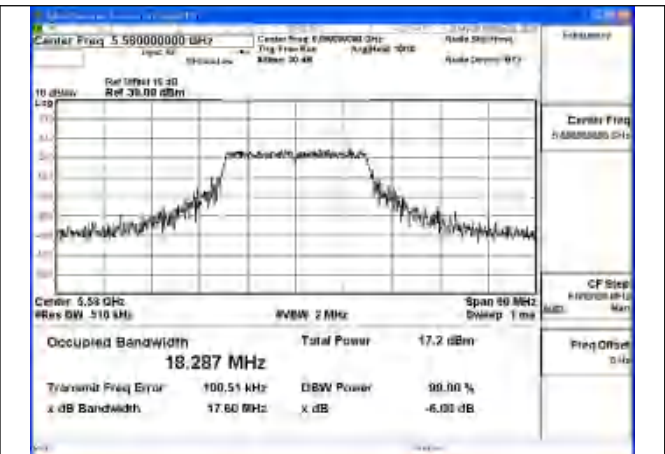
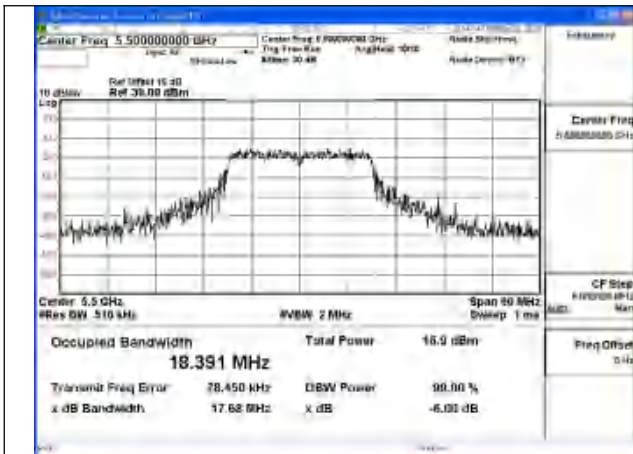
Mode:802.11a Frequency:5500MHz Ant:Chain0

Mode:802.11a Frequency:5580MHz Ant:Chain0



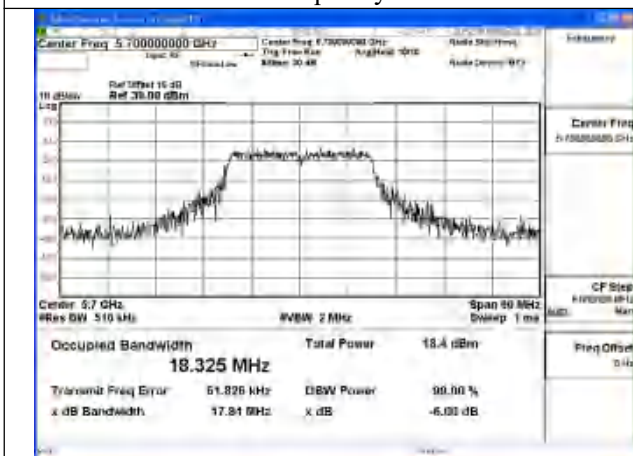
Mode:802.11a Frequency:5700MHz Ant:Chain0

Test Mode: 802.11n HT20



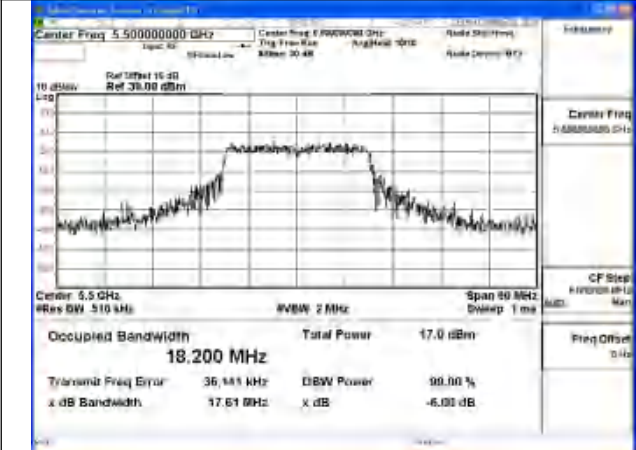
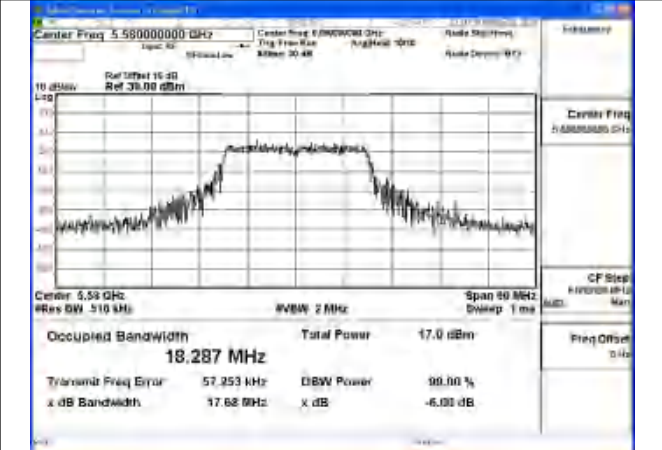
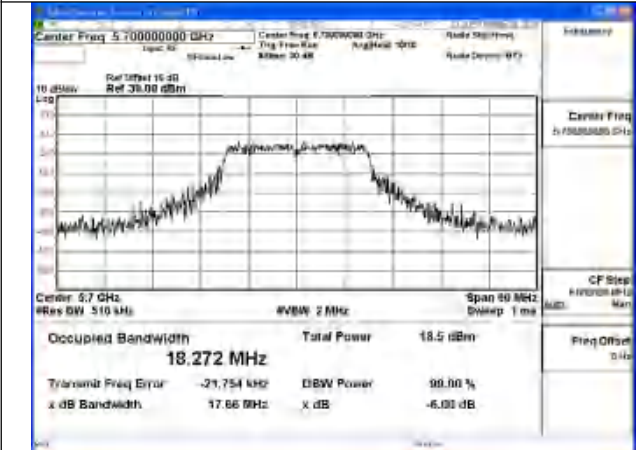
Mode:802.11n HT20 Frequency:5500MHz Ant:Chain0

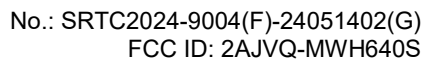
Mode:802.11n HT20 Frequency:5580MHz Ant:Chain0



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

Test Mode: 802.11ac VHT20

 Center Freq: 5.50000000 GHz Span: 40 MHz Res BW: 510 kHz Occupied Bandwidth: 18.200 MHz Total Power: 17.0 dBm Transmit Freq Error: 36.141 kHz dBW Power: 99.00 % x dB Bandwidth: 17.61 MHz x dB: -6.00 dB	 Center Freq: 5.58000000 GHz Span: 40 MHz Res BW: 510 kHz Occupied Bandwidth: 18.287 MHz Total Power: 17.0 dBm Transmit Freq Error: 57.253 kHz dBW Power: 99.00 % x dB Bandwidth: 17.68 MHz x dB: -6.00 dB
Mode:802.11ac VHT20 Frequency:5500MHz Ant:Chain0	Mode:802.11ac VHT20 Frequency:5580MHz Ant:Chain0
 Center Freq: 5.70000000 GHz Span: 40 MHz Res BW: 510 kHz Occupied Bandwidth: 18.272 MHz Total Power: 18.5 dBm Transmit Freq Error: -21.754 kHz dBW Power: 99.00 % x dB Bandwidth: 17.66 MHz x dB: -6.00 dB	
Mode:802.11ac VHT20 Frequency:5700MHz Ant:Chain0	



Carrier Freq 5.500000000 GHz

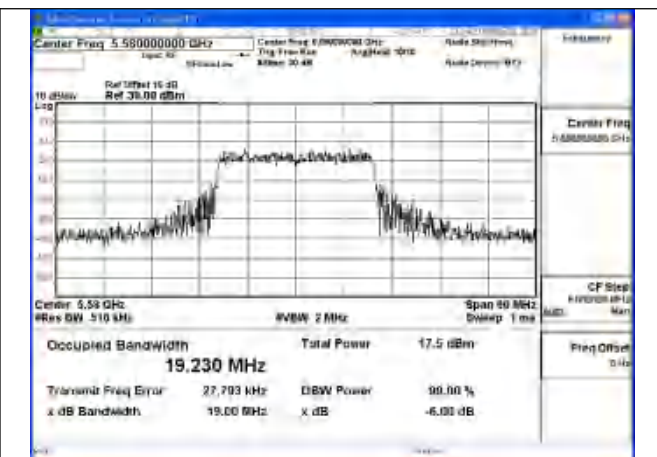
Occupied Bandwidth 19.188 MHz

Total Power 17.6 dBm

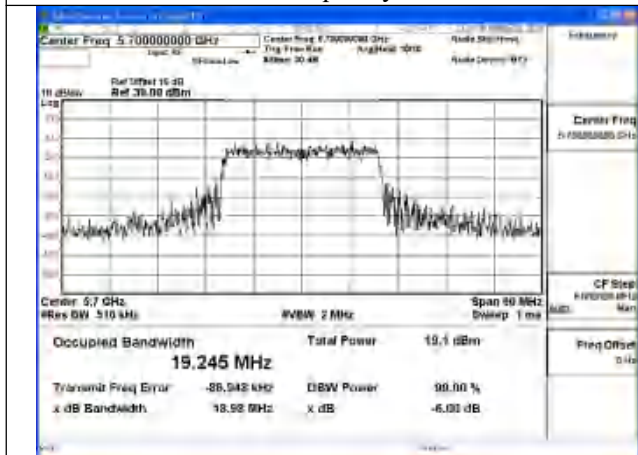
Transmit Freq Error 4.169 kHz

x dB Bandwidth 19.01 GHz

x dB

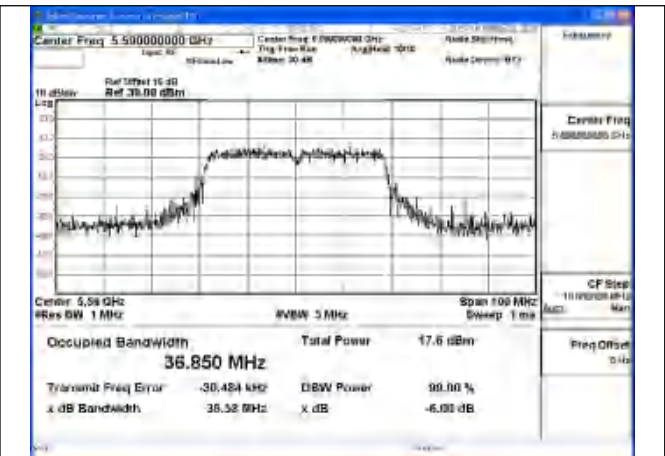
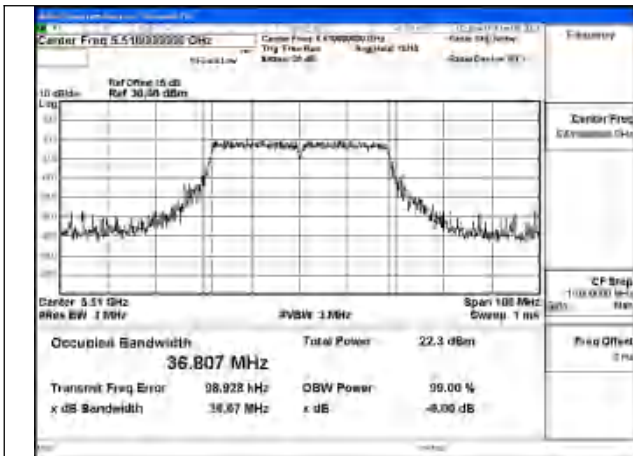


Mode:802.11ax HE20 Frequency:5580MHz Ant:Chain0



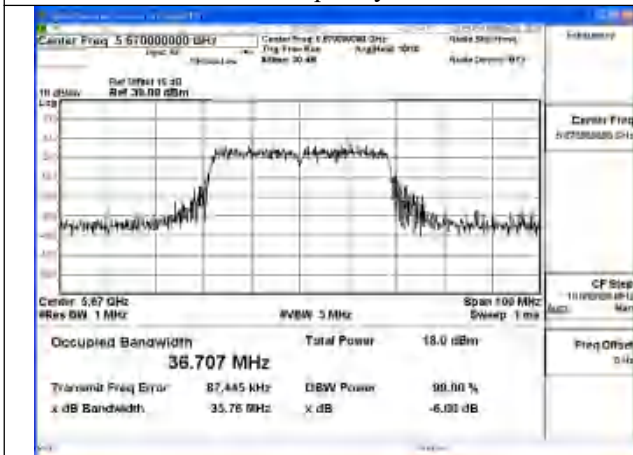
Mode:802.11ax HE20 Frequency:5700MHz Ant:Chain0

Test Mode: 802.11n HT40



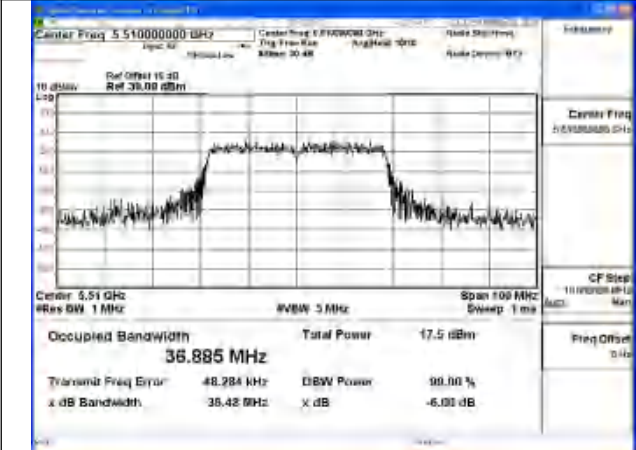
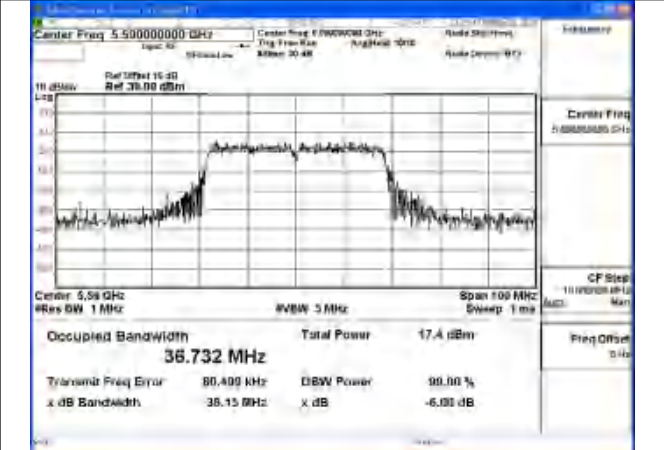
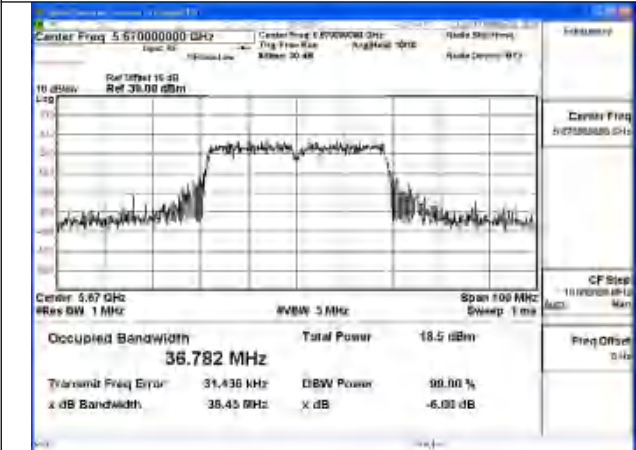
Mode:802.11n HT40 Frequency:5510MHz Ant:Chain0

Mode:802.11n HT40 Frequency:5590MHz Ant:Chain0



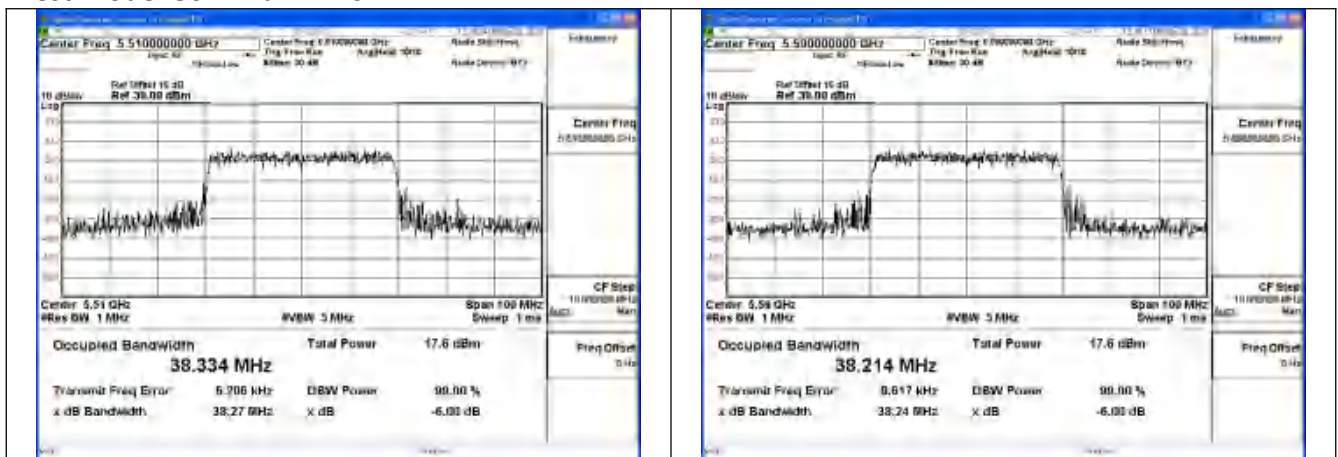
Mode:802.11n HT40 Frequency:5670MHz Ant:Chain0

Test Mode: 802.11ac VHT40

 Center Freq 5.510000000 GHz Occupied Bandwidth 36.885 MHz Total Power 17.5 dBm Transmit Freq Error 48.284 kHz dBW Power 99.00 % 3 dB Bandwidth 36.42 MHz X dB -6.00 dB	 Center Freq 5.590000000 GHz Occupied Bandwidth 36.732 MHz Total Power 17.4 dBm Transmit Freq Error 80.499 kHz dBW Power 99.00 % 3 dB Bandwidth 36.15 MHz X dB -6.00 dB
Mode:802.11ac VHT40 Frequency:5510MHz Ant:Chain0	Mode:802.11ac VHT40 Frequency:5590MHz Ant:Chain0
 Center Freq 5.670000000 GHz Occupied Bandwidth 36.782 MHz Total Power 18.5 dBm Transmit Freq Error 31.436 kHz dBW Power 99.00 % 3 dB Bandwidth 36.43 MHz X dB -6.00 dB	
Mode:802.11ac VHT40 Frequency:5670MHz Ant:Chain0	

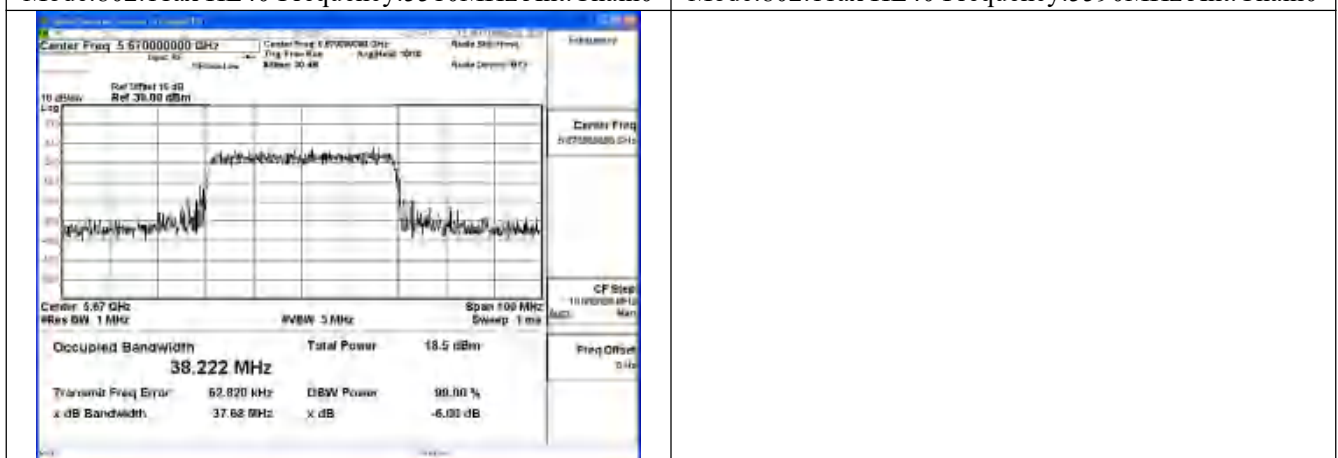


Test Mode: 802.11ax HE40



Mode:802.11ax HE40 Frequency:5510MHz Ant:Chain0

Mode:802.11ax HE40 Frequency:5590MHz Ant:Chain0



Mode:802.11ax HE40 Frequency:5670MHz Ant:Chain0



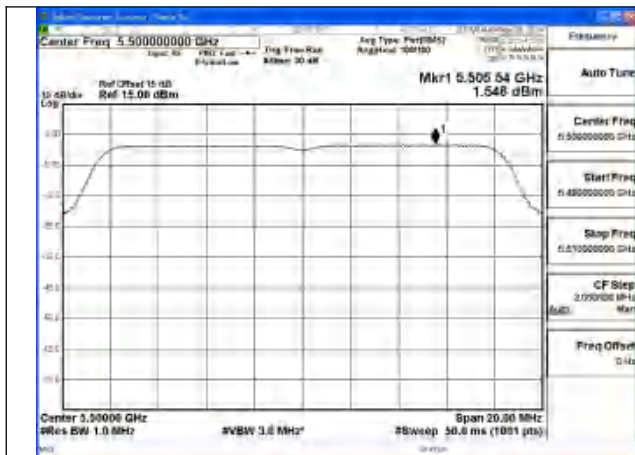
Transmitter Power Spectral Density

Offset 15dB = Attenuator + Temporary antenna connector loss + Cable loss

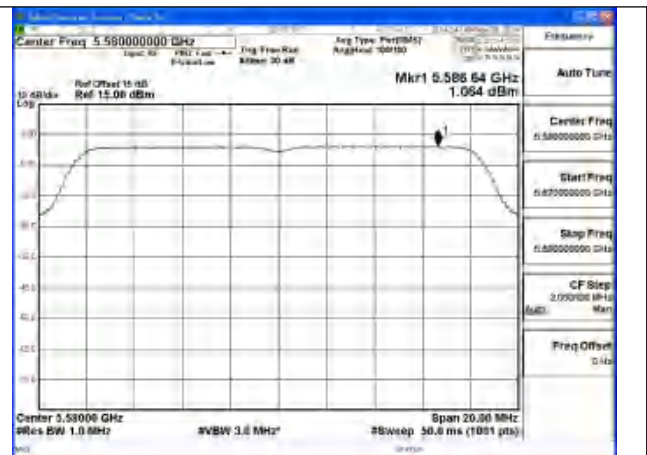
Test Mode	Antenna	Tones	5500MHz		5580MHz		5700MHz	
			Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)	Correction Factor(dB)	Power Density (dBm/MHz)
802.11a	Chain0	NA	0.00	1.546	0.00	1.064	0.00	2.581
802.11n HT20	Chain0	NA	0.00	1.295	0.00	1.256	0.00	2.339
802.11ac VHT20	Chain0	NA	0.00	1.196	0.00	1.227	0.00	2.751
802.11ax HE20	Chain0	242T	0.00	0.809	0.00	0.748	0.00	2.286

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	0.00	-2.085	0.00	-1.988	0.00	-1.084
802.11ac VHT40	Chain0	NA	0.00	-1.884	0.00	-1.998	0.00	-0.642
802.11ax HE40	Chain0	484T	0.00	-2.228	0.00	-2.369	0.00	-1.033

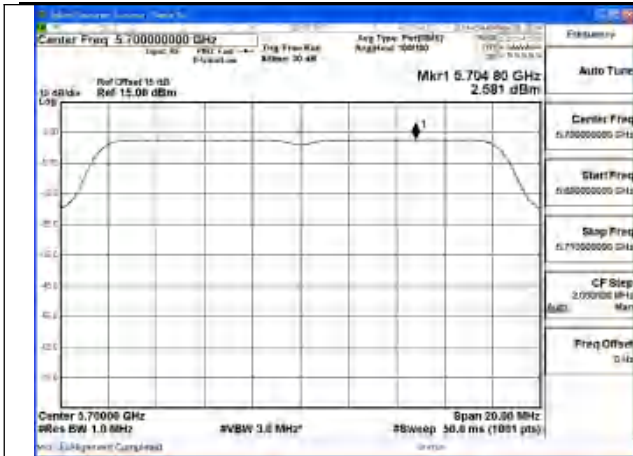
Test Mode: 802.11a



Mode:802.11a Frequency:5500MHz Ant:Chain0

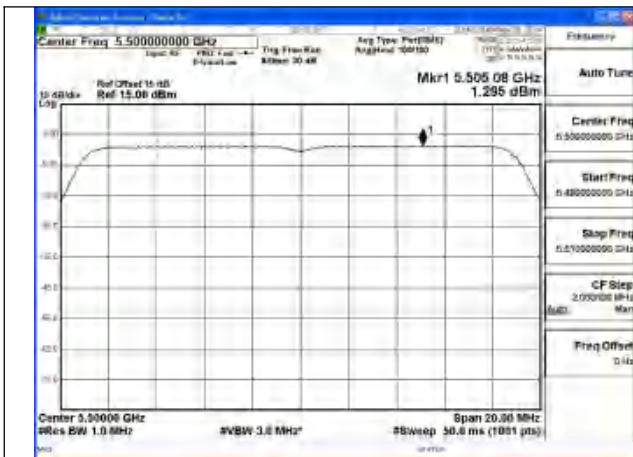


Mode:802.11a Frequency:5580MHz Ant:Chain0

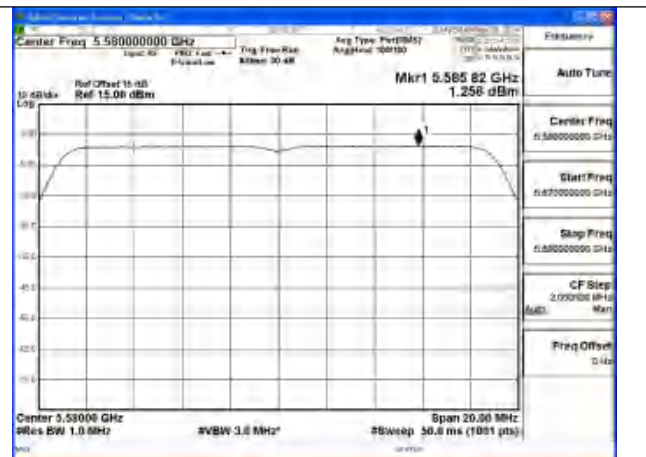


Mode:802.11a Frequency:5700MHz Ant:Chain0

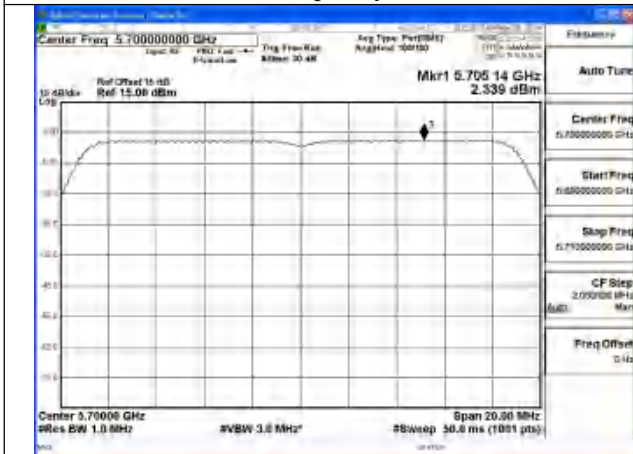
Test Mode: 802.11n HT20



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

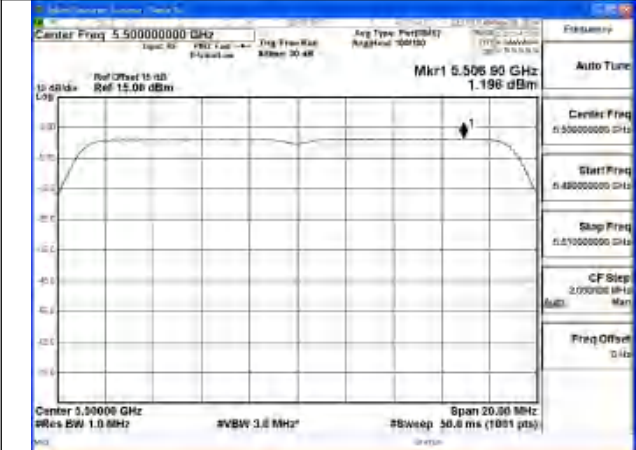
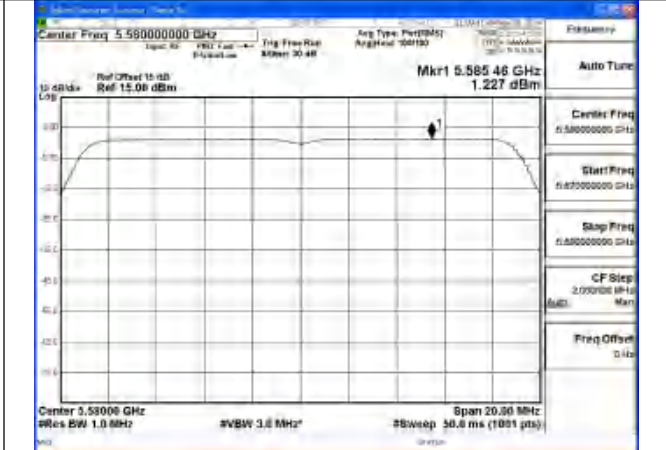
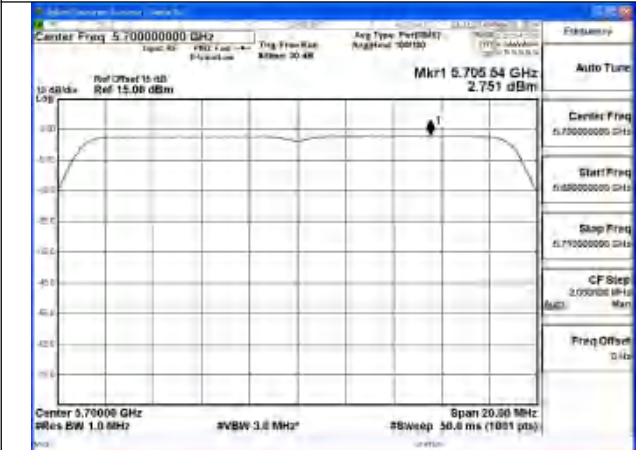


Mode:802.11n HT20 Frequency:5580MHz Ant:Chain0

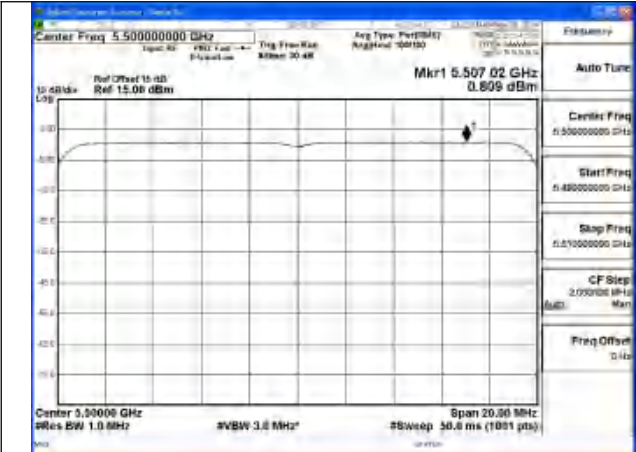
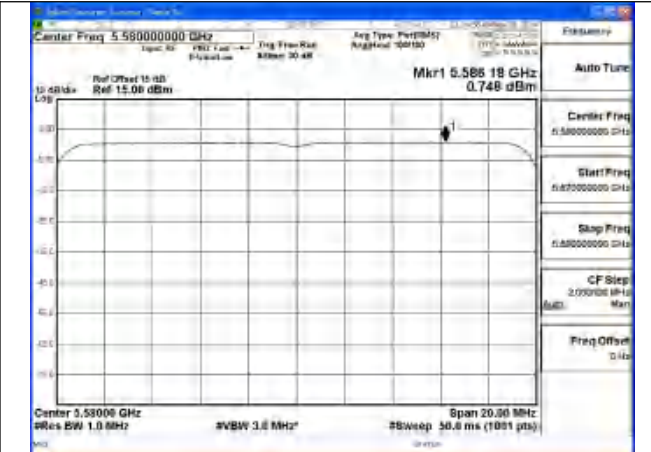
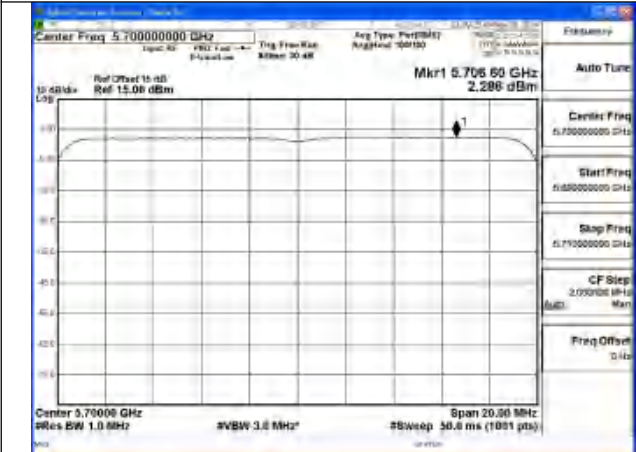


Mode:802.11n HT20 Frequency:5700MHz Ant:Chain0

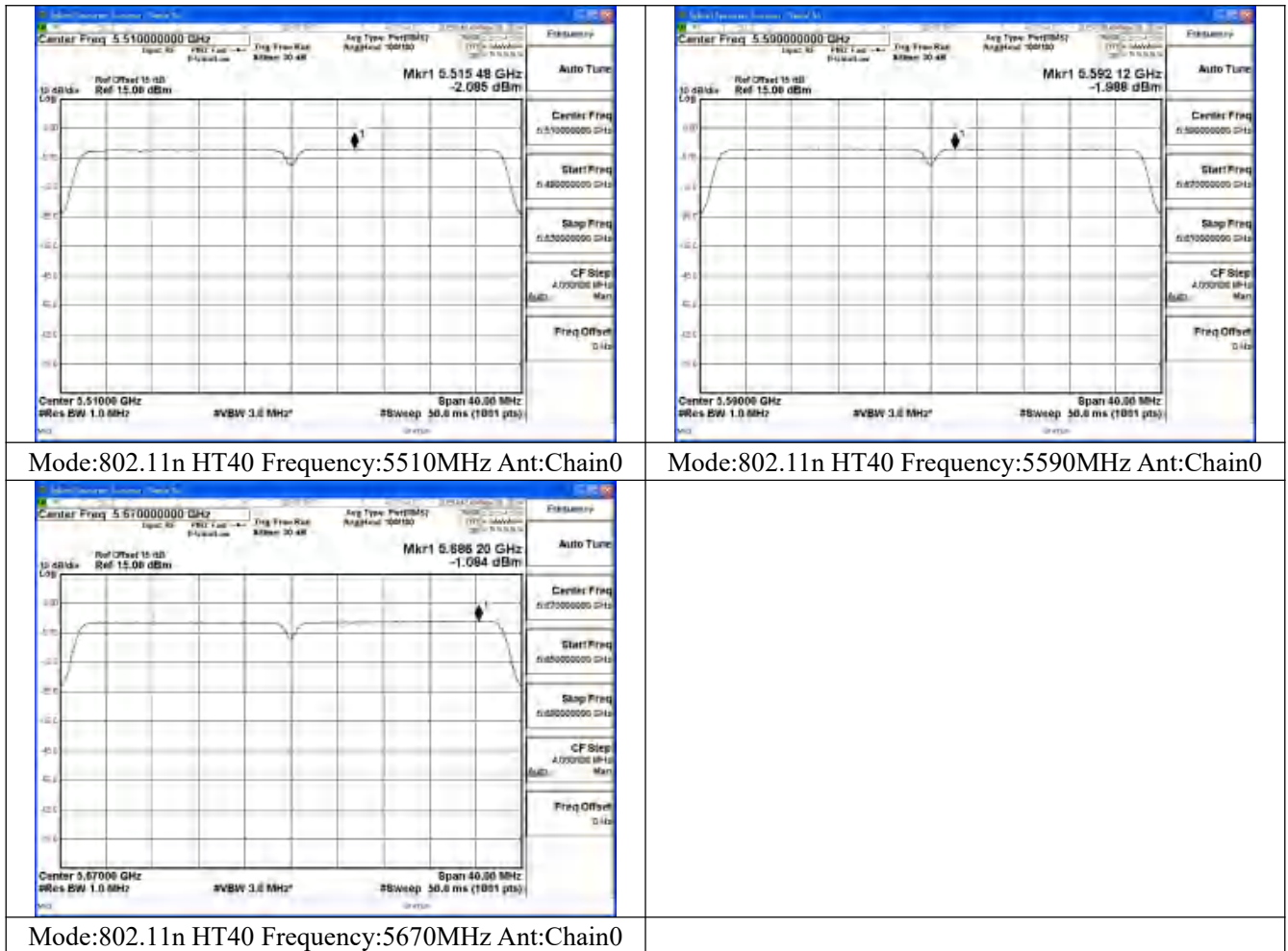
Test Mode: 802.11ac VHT20

	
Mode:802.11ac VHT20 Frequency:5500MHz Ant:Chain0	Mode:802.11ac VHT20 Frequency:5580MHz Ant:Chain0
	
Mode:802.11ac VHT20 Frequency:5700MHz Ant:Chain0	

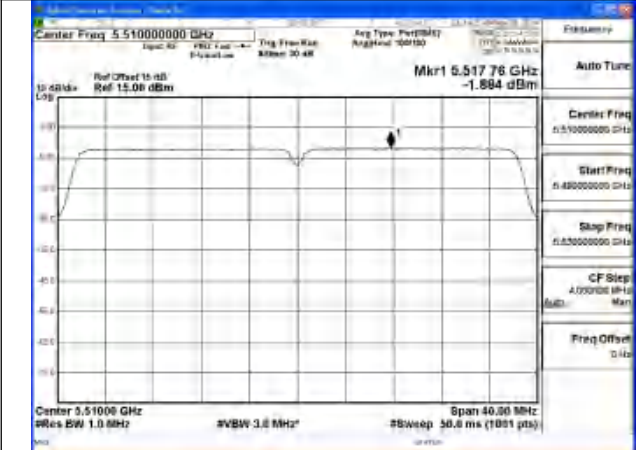
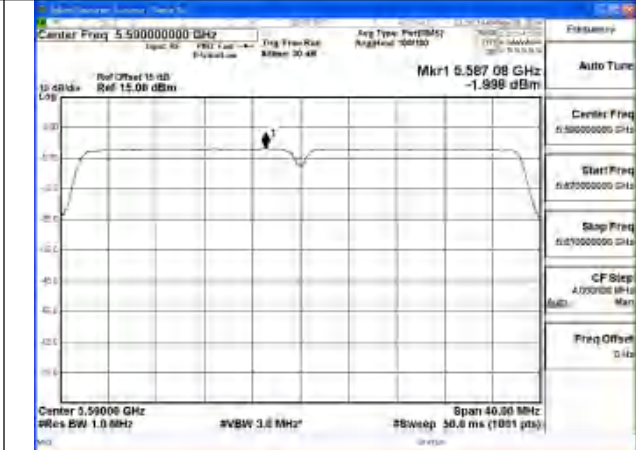
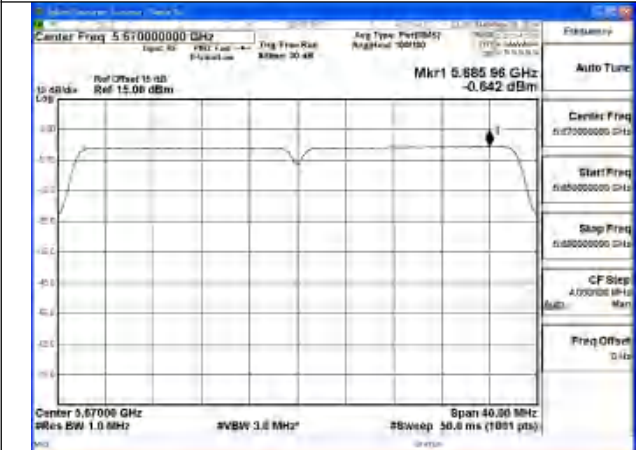
Test Mode: 802.11ax HE20

 Center Freq: 5.50000000 GHz Ref: 15.00 dBm Mkr1 5.507 02 GHz 0.809 dBm Auto Tune Center Freq: 5.50000000 GHz Start Freq: 5.48000000 GHz Stop Freq: 5.52000000 GHz CF Step: 2.000000 MHz Man Freq Offset: 0 kHz Center 5.50000 GHz #VBW 3.0 MHz #Sweep 30.0 ms (1001 pts) Span 20.00 MHz	 Center Freq: 5.58000000 GHz Ref: 15.00 dBm Mkr1 5.585 18 GHz 0.748 dBm Auto Tune Center Freq: 5.58000000 GHz Start Freq: 5.56000000 GHz Stop Freq: 5.60000000 GHz CF Step: 2.000000 MHz Man Freq Offset: 0 kHz Center 5.58000 GHz #VBW 3.0 MHz #Sweep 30.0 ms (1001 pts) Span 20.00 MHz
Mode:802.11ax HE20 Tone:242T Frequency:5500MHz Ant:Chain0	Mode:802.11ax HE20 Tone:242T Frequency:5580MHz Ant:Chain0
 Center Freq: 5.70000000 GHz Ref: 15.00 dBm Mkr1 5.705 60 GHz 2.286 dBm Auto Tune Center Freq: 5.70000000 GHz Start Freq: 5.68000000 GHz Stop Freq: 5.72000000 GHz CF Step: 2.000000 MHz Man Freq Offset: 0 kHz Center 5.70000 GHz #VBW 3.0 MHz #Sweep 30.0 ms (1001 pts) Span 20.00 MHz	
Mode:802.11ax HE20 Tone:242T Frequency:5700MHz Ant:Chain0	

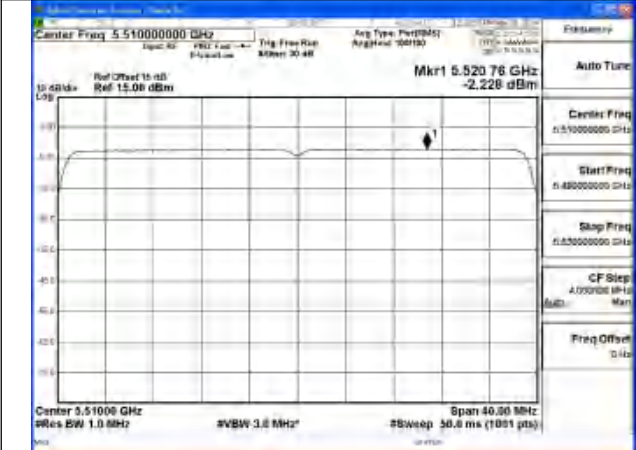
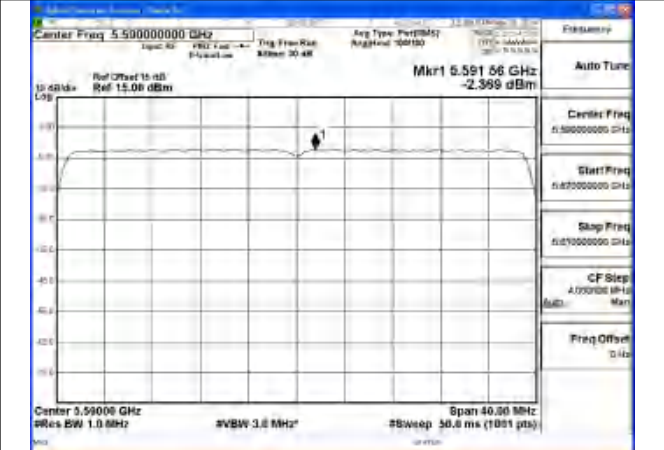
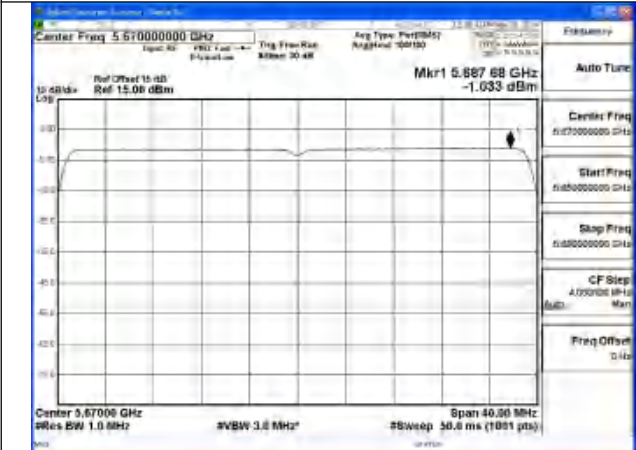
Test Mode: 802.11n HT40



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: 802.11ax HE40

 Center Freq 5.510000000 GHz Ref Offset 15.00 dB Ref 15.00 dBm Mkr1 5.520 76 GHz -2.228 dBm Auto Tune Center Freq 5.510000000 GHz Start Freq 5.480000000 GHz Stop Freq 5.530000000 GHz CF Step 2.000000 MHz Man Freq Offset 0 kHz Center 5.51000 GHz #VBW 3.0 MHz #Sweep 30.0 ms (1001 pts) Span 40.00 MHz	 Center Freq 5.590000000 GHz Ref Offset 15.00 dB Ref 15.00 dBm Mkr1 5.591 56 GHz -2.369 dBm Auto Tune Center Freq 5.590000000 GHz Start Freq 5.560000000 GHz Stop Freq 5.620000000 GHz CF Step 2.000000 MHz Man Freq Offset 0 kHz Center 5.59000 GHz #VBW 3.0 MHz #Sweep 30.0 ms (1001 pts) Span 40.00 MHz
Mode:802.11ax HE40 Tone:484T Frequency:5510MHz Ant:Chain0	Mode:802.11ax HE40 Tone:484T Frequency:5590MHz Ant:Chain0
 Center Freq 5.670000000 GHz Ref Offset 15.00 dB Ref 15.00 dBm Mkr1 5.687 68 GHz -1.633 dBm Auto Tune Center Freq 5.670000000 GHz Start Freq 5.640000000 GHz Stop Freq 5.690000000 GHz CF Step 2.000000 MHz Man Freq Offset 0 kHz Center 5.67000 GHz #VBW 3.0 MHz #Sweep 30.0 ms (1001 pts) Span 40.00 MHz	
Mode:802.11ax HE40 Tone:484T Frequency:5670MHz Ant:Chain0	

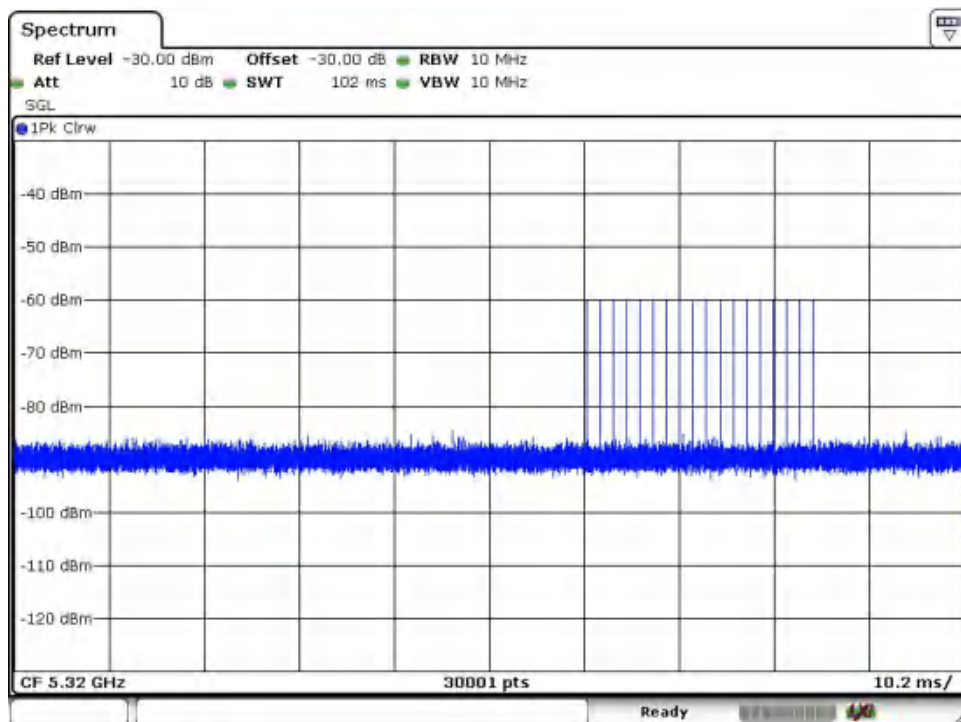
Dynamic Frequency Selection DESCRIPTION OF Master Device

The Master Device is a SKSpruce Technologies Co., Ltd., Indoor Access Point, FCC ID: 2AHKT-WIA3300-20, Antenna gain: 3 dBi. The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64dBm

Radar Waveform Calibration Result

<20MHz / 5320 MHz> Radar Type 0

Radar / DFS detection threshold level and the burst of pulses on the Channel frequency

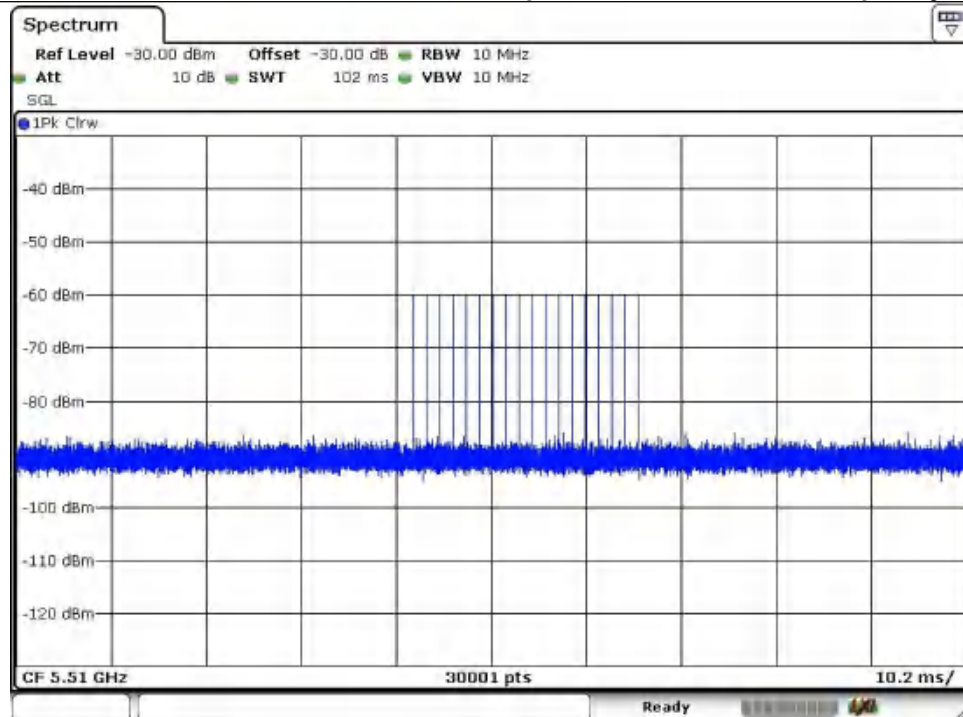


Date: 11 JUN 2024 13:31:43



<40MHz / 5510 MHz> Radar Type 0

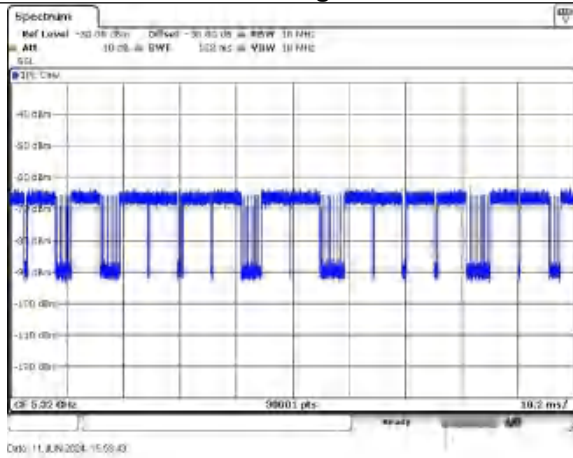
Radar / DFS detection threshold level and the burst of pulses on the Channel frequency



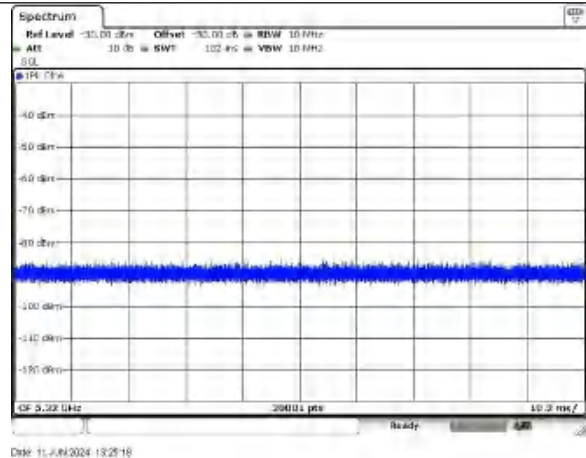
Date: 10 JUN 2024 13:32:39

Data Traffic and Noise Floor Plots

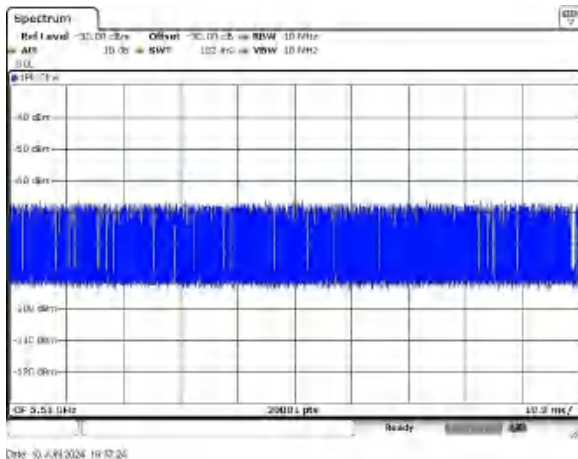
<20MHz / 5320 MHz>
EUT data traffic (Client)
Traffic loading :86.33%



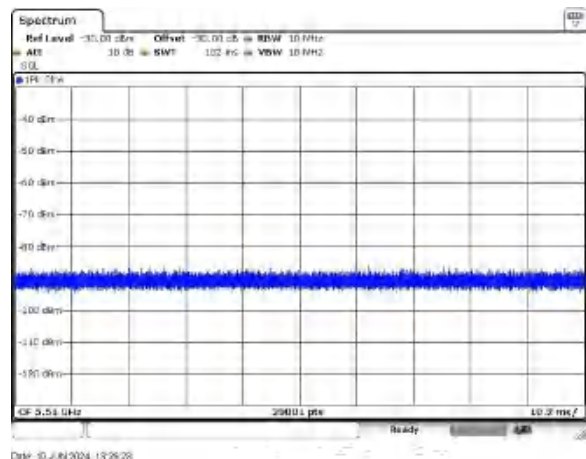
<20MHz / 5320 MHz>
Noise Floor (No transmission)



<40MHz / 5510 MHz>
EUT data traffic (Client)
Traffic loading :90.41%



<40MHz / 5510 MHz>
Noise Floor (No transmission)





Channel Move Time, Channel Closing Transmission Time

Frequency	Test Item	Test Result	Limit	Pass/Fail
5320MHz	Channel Move Time	< 10s*	< 10s	Pass
	Channel Closing Transmission Time	102.0ms	< 260ms	Pass
	Non-Occupancy Period	≥ 30	≥ 30 min	Pass
5510MHz	Channel Move Time	< 10s*	< 10s	Pass
	Channel Closing Transmission Time	102.0ms	< 260ms	Pass
	Non-Occupancy Period	≥ 30	≥ 30 min	Pass

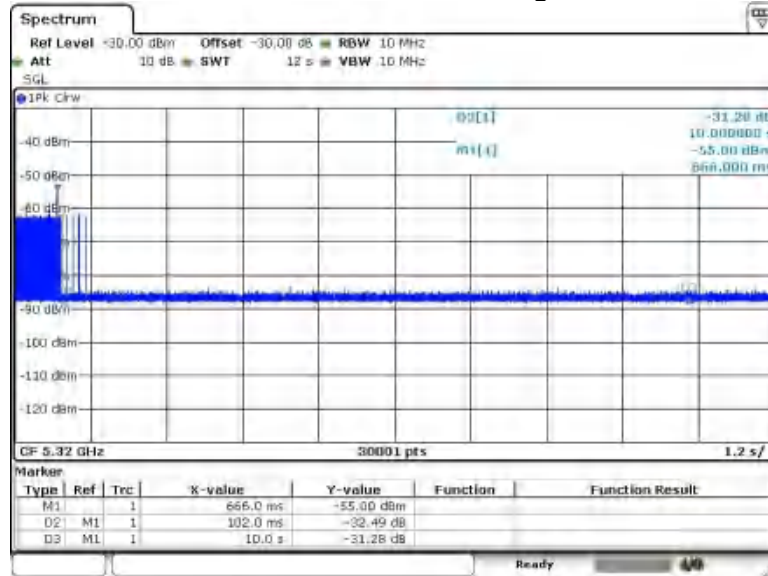
Note*: We notice clearly that "Channel Move Time" is less than 10s from the figure. The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 seconds period. The aggregate duration of control signals will not count quiet periods in between transmissions.



Channel Move Time, Channel Closing Transmission Time

<20MHz / 5320 MHz>

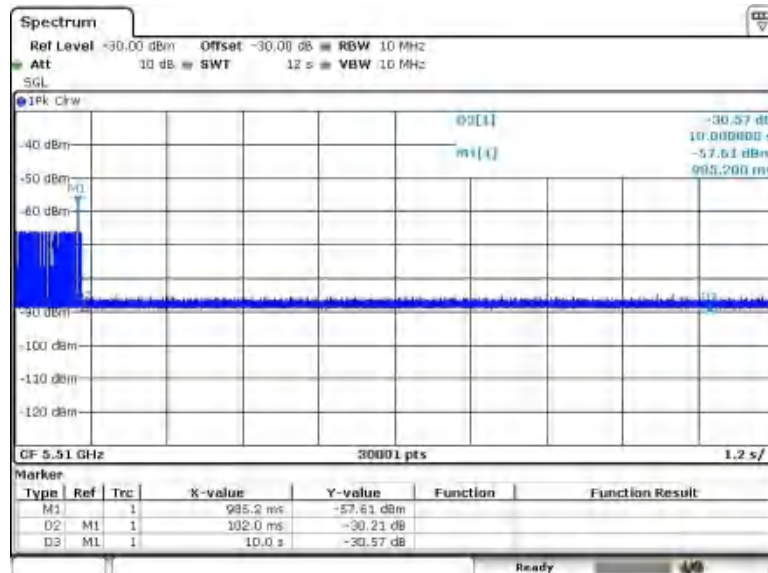
Channel Move Time & Channel Closing Transmission Time



Date: 11 JUN 2024 16:37:00

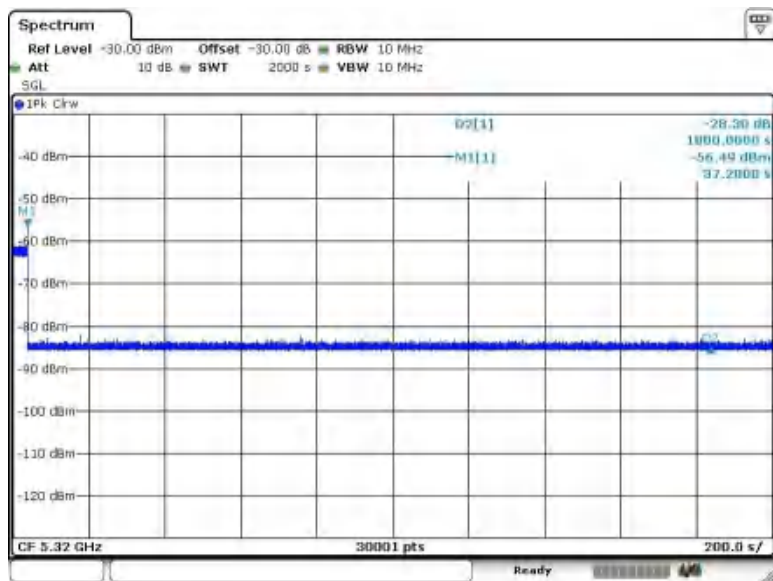
<40MHz / 5510 MHz>

Channel Move Time & Channel Closing Transmission Time



Date: 10 JUN 2024 17:05:30

<20MHz / 5320 MHz>
Non-Occupancy Period



<40MHz / 5510 MHz>
Non-Occupancy Period

