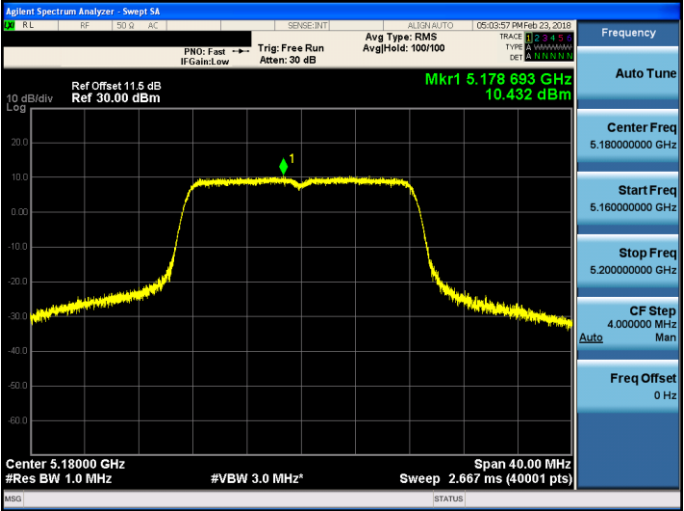
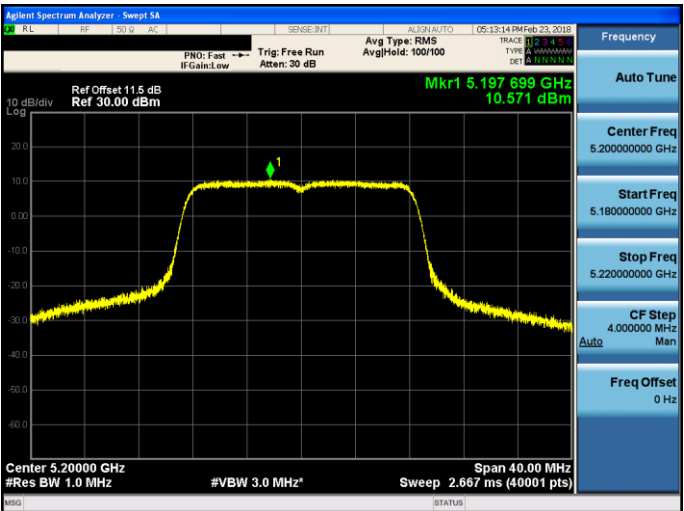
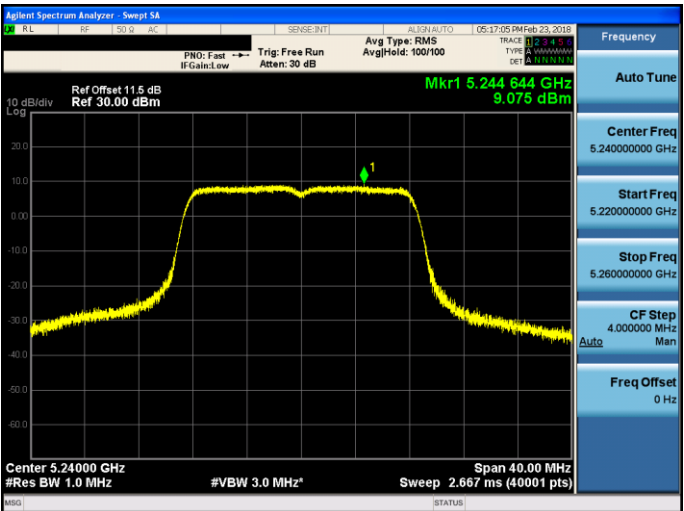


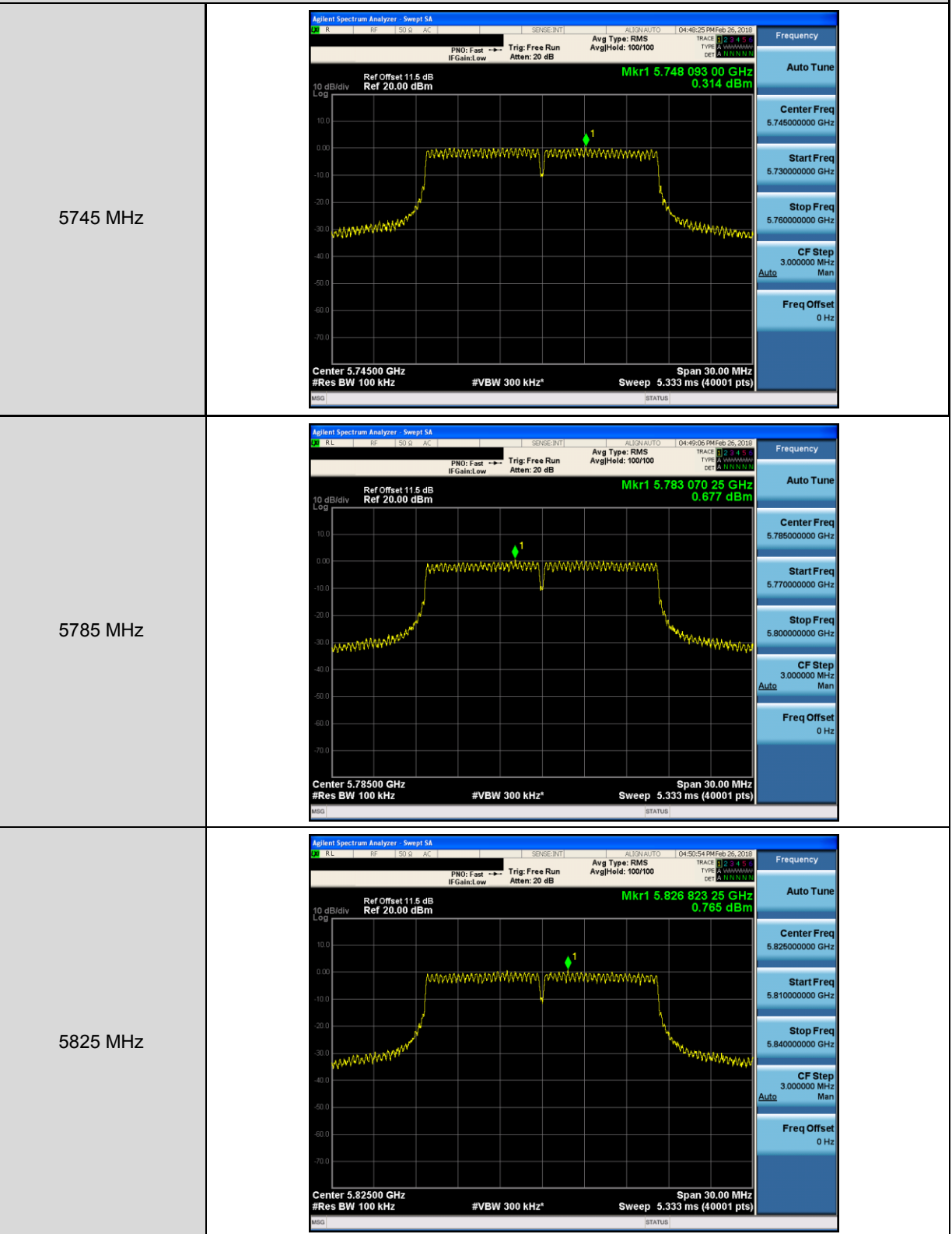


Mode 2: IEEE 802.11a Continuous TX mode _ ANT-1

5180 MHz	 Agilent Spectrum Analyzer: Swept SA Ref Offset 11.5 dB Ref 30.00 dBm Mkr1 5.178 693 GHz 10.432 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 2.667 ms (40001 pts) Span 40.00 MHz Frequency Auto Tune Center Freq 5.180000000 GHz Start Freq 5.160000000 GHz Stop Freq 5.200000000 GHz CF Step 4.000000 MHz Auto Freq Offset 0 Hz
5200 MHz	 Agilent Spectrum Analyzer: Swept SA Ref Offset 11.5 dB Ref 30.00 dBm Mkr1 5.197 699 GHz 10.571 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 2.667 ms (40001 pts) Span 40.00 MHz Frequency Auto Tune Center Freq 5.200000000 GHz Start Freq 5.180000000 GHz Stop Freq 5.220000000 GHz CF Step 4.000000 MHz Auto Freq Offset 0 Hz
5240 MHz	 Agilent Spectrum Analyzer: Swept SA Ref Offset 11.5 dB Ref 30.00 dBm Mkr1 5.244 644 GHz 9.075 dBm Center 5.24000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 2.667 ms (40001 pts) Span 40.00 MHz Frequency Auto Tune Center Freq 5.240000000 GHz Start Freq 5.220000000 GHz Stop Freq 5.260000000 GHz CF Step 4.000000 MHz Auto Freq Offset 0 Hz

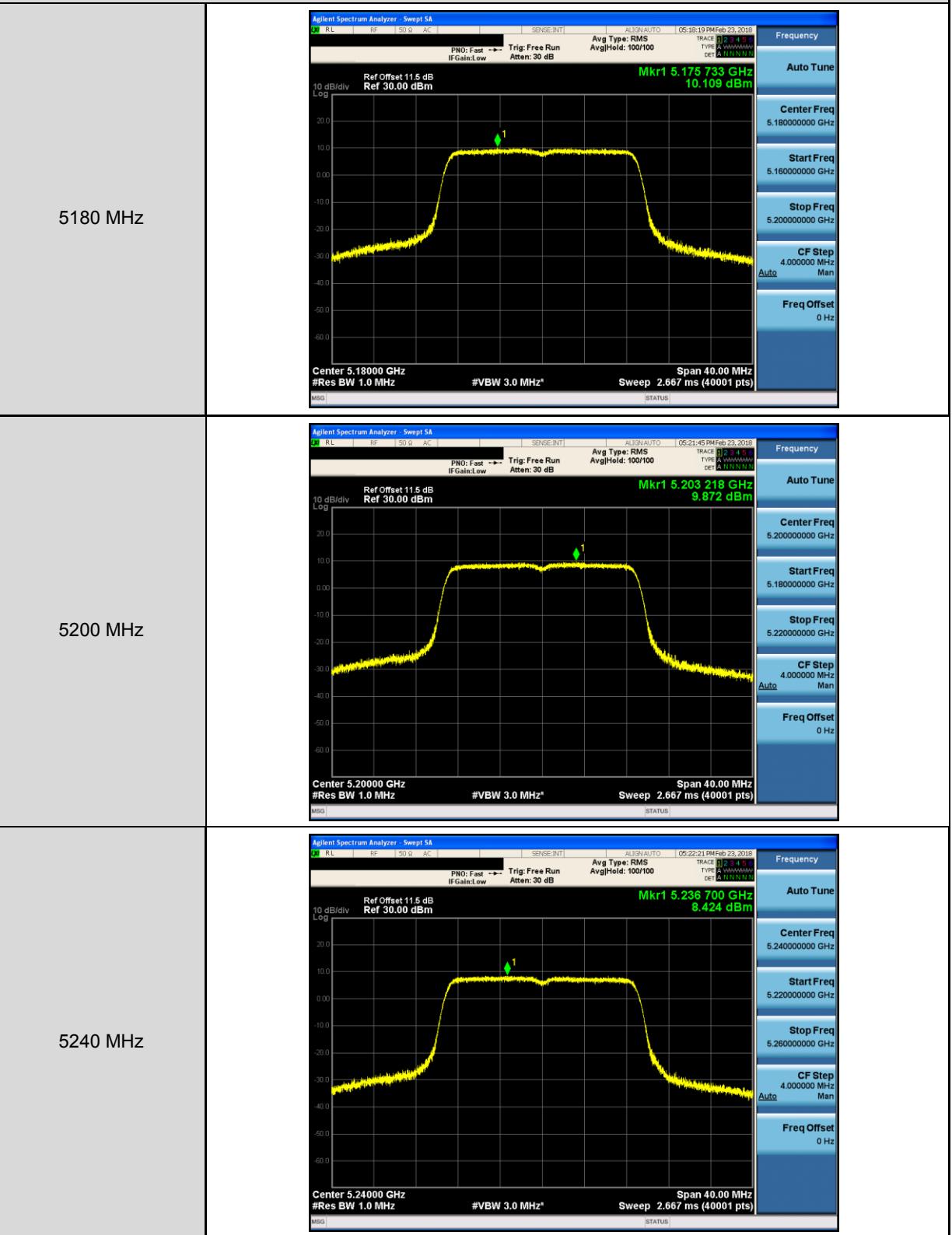


Mode 2: IEEE 802.11a Continuous TX mode_ ANT-1



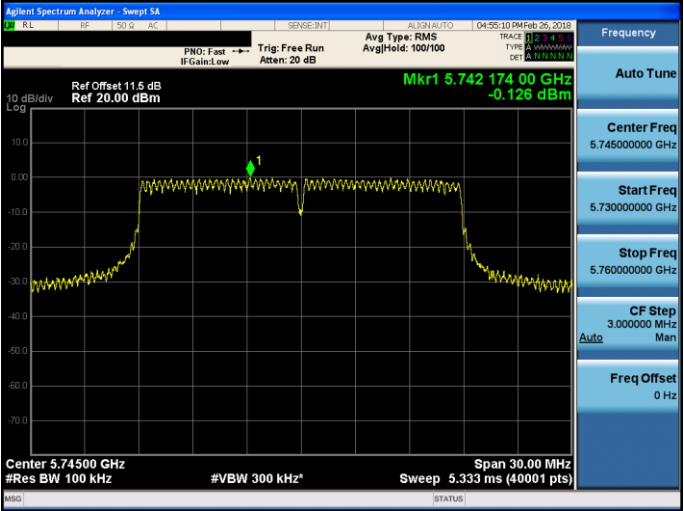
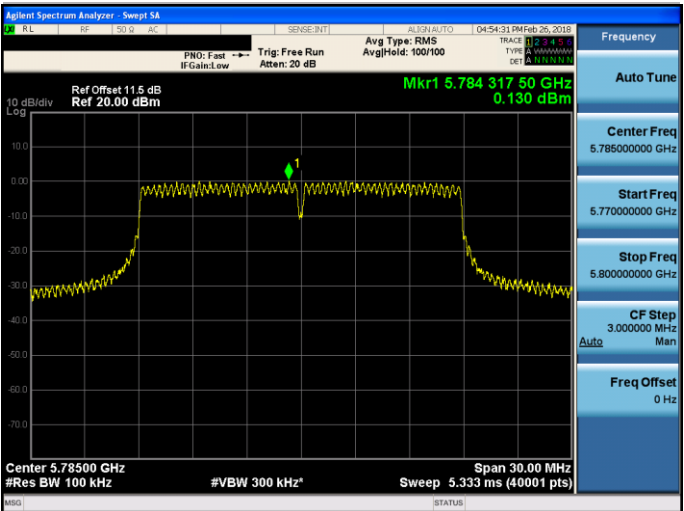
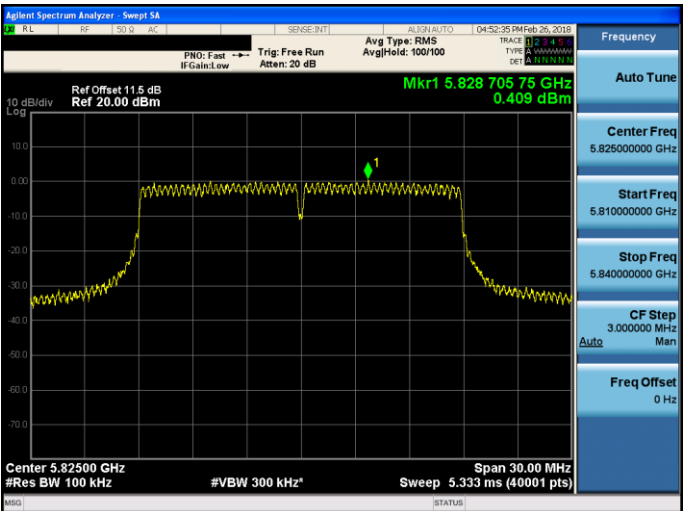


Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ANT-1



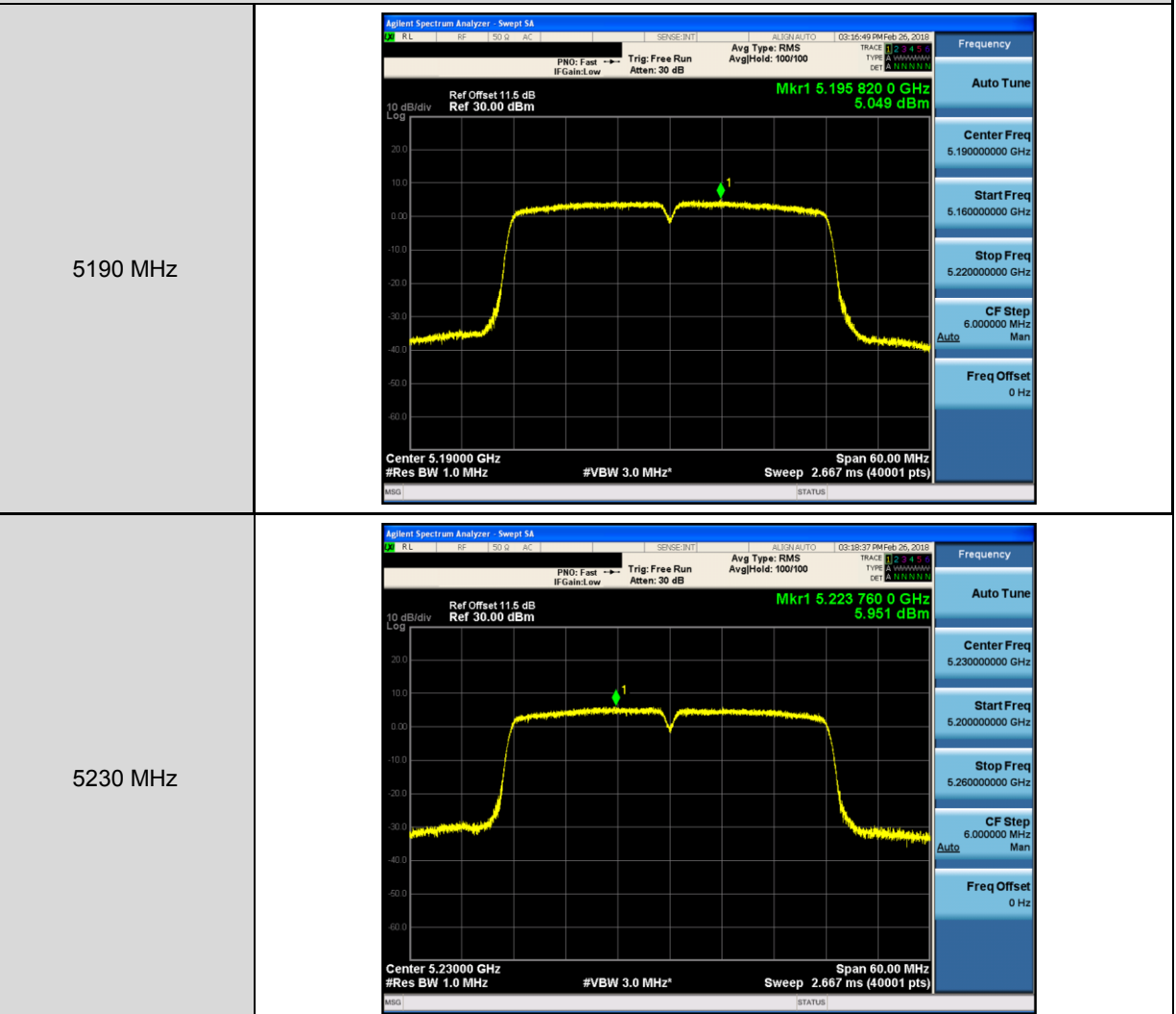


Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ANT-1

5745 MHz	 Agilent Spectrum Analyzer: Sweep SA RL SP 50.0 AC SENSE INT Align: AUTO 04:55:10 PM Feb 26, 2018 PN0: Fast IF Gain: Low Trig: Free Run Avg Type: RMS Avg Hold: 100/100 Ref Offset 11.5 dB Ref 20.00 dBm Mkr1 5.742 174.00 GHz -0.126 dBm 10 dB/div Log Center 5.74500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 5.333 ms (40001 pts) Frequency Auto Tune Center Freq 5.745000000 GHz Start Freq 5.730000000 GHz Stop Freq 5.760000000 GHz CF Step 3.000000 MHz Man Freq Offset 0 Hz
5785 MHz	 Agilent Spectrum Analyzer: Sweep SA RL SP 50.0 AC SENSE INT Align: AUTO 04:54:31 PM Feb 26, 2018 PN0: Fast IF Gain: Low Trig: Free Run Avg Type: RMS Avg Hold: 100/100 Ref Offset 11.5 dB Ref 20.00 dBm Mkr1 5.784 317.50 GHz 0.130 dBm 10 dB/div Log Center 5.78500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 5.333 ms (40001 pts) Frequency Auto Tune Center Freq 5.785000000 GHz Start Freq 5.770000000 GHz Stop Freq 5.800000000 GHz CF Step 3.000000 MHz Man Freq Offset 0 Hz
5825 MHz	 Agilent Spectrum Analyzer: Sweep SA RL SP 50.0 AC SENSE INT Align: AUTO 04:52:35 PM Feb 26, 2018 PN0: Fast IF Gain: Low Trig: Free Run Avg Type: RMS Avg Hold: 100/100 Ref Offset 11.5 dB Ref 20.00 dBm Mkr1 5.828 705.75 GHz 0.409 dBm 10 dB/div Log Center 5.82500 GHz #Res BW 100 kHz #VBW 300 kHz* Span 30.00 MHz Sweep 5.333 ms (40001 pts) Frequency Auto Tune Center Freq 5.825000000 GHz Start Freq 5.810000000 GHz Stop Freq 5.840000000 GHz CF Step 3.000000 MHz Man Freq Offset 0 Hz

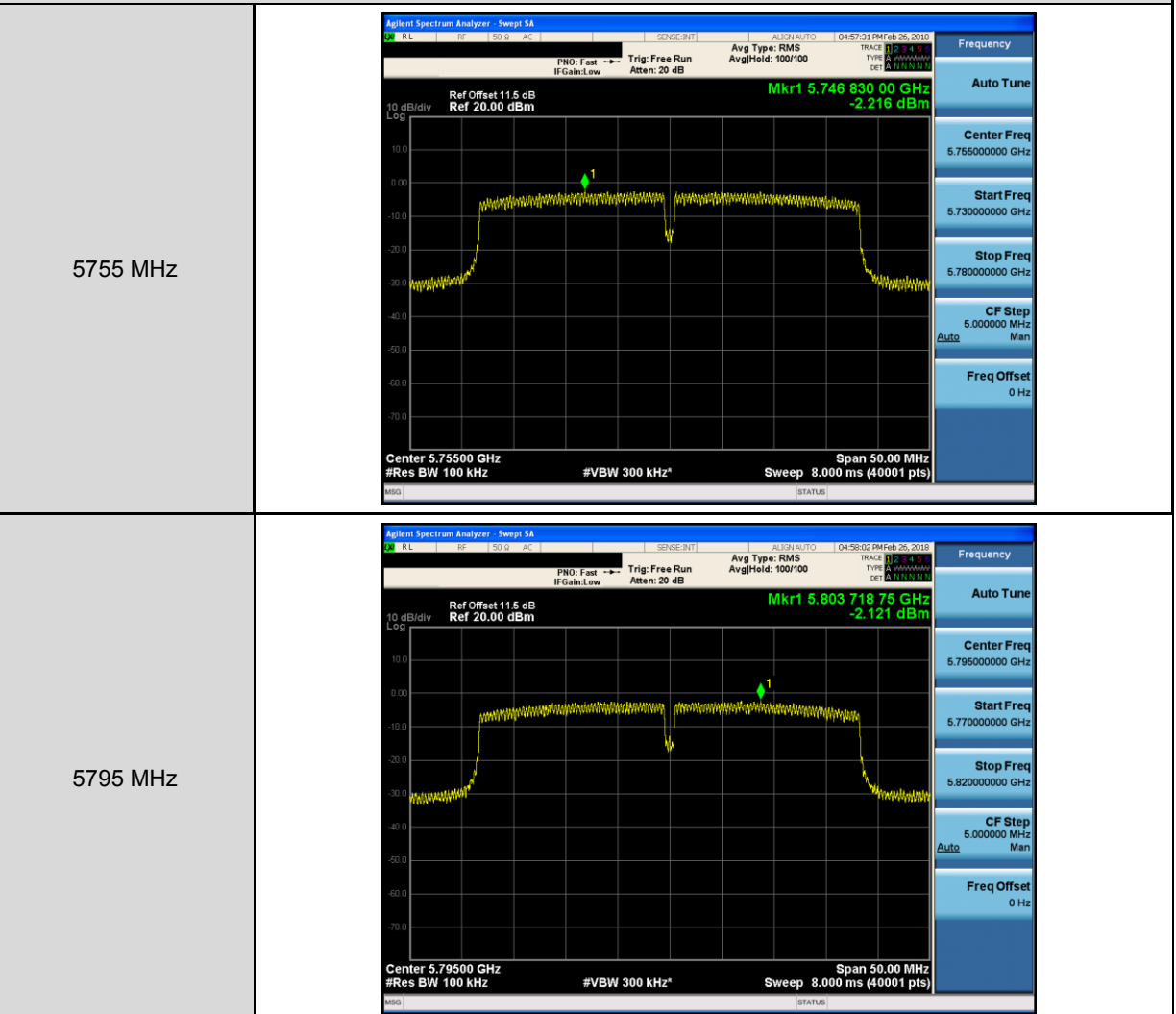


Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1





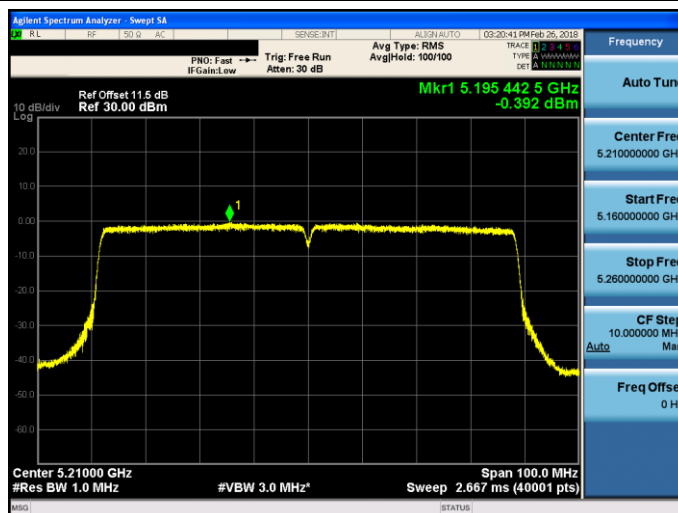
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1





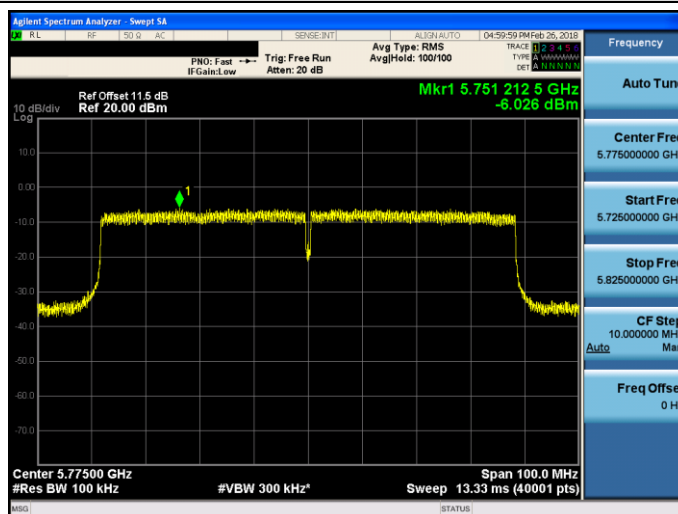
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ANT-1

5210 MHz



Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ANT-1

5775 MHz

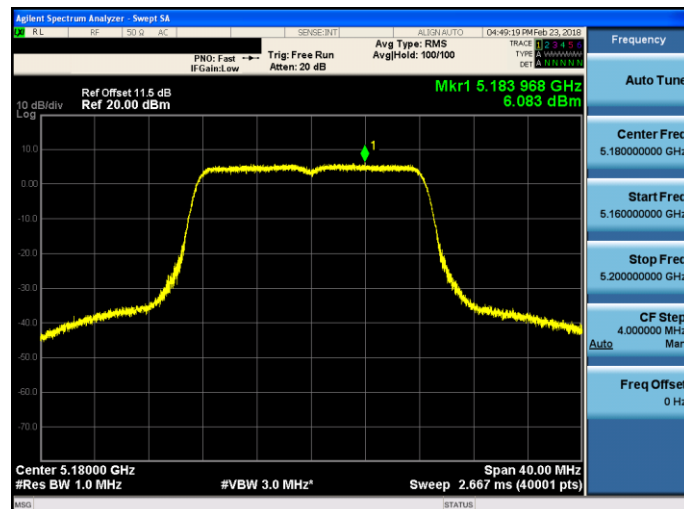




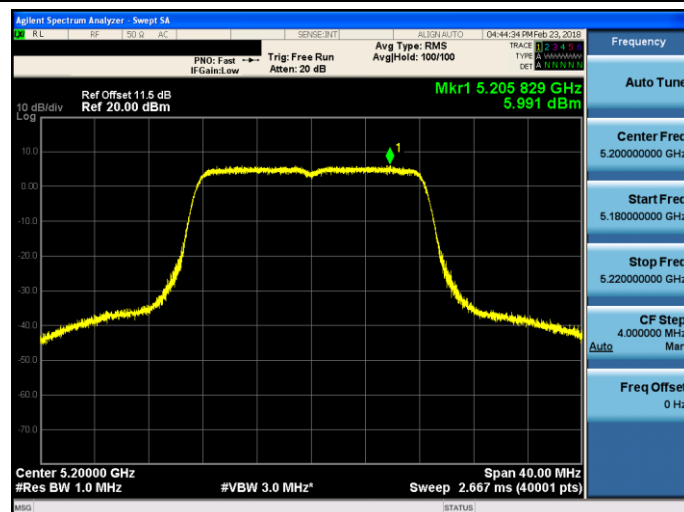
Beamforming on

Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

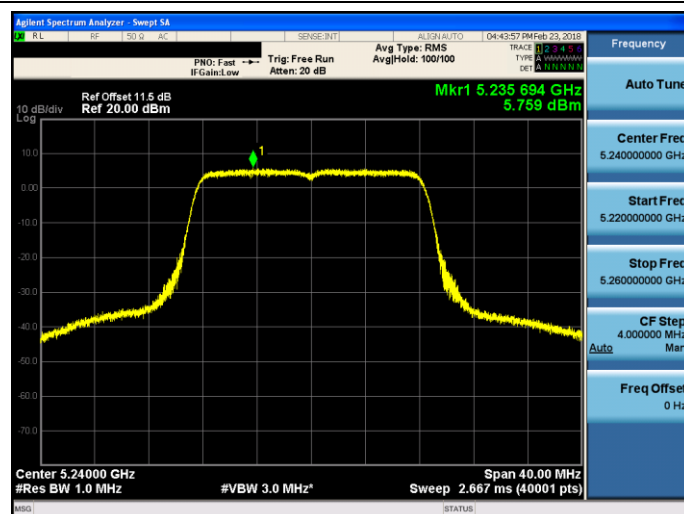
5180 MHz



5200 MHz

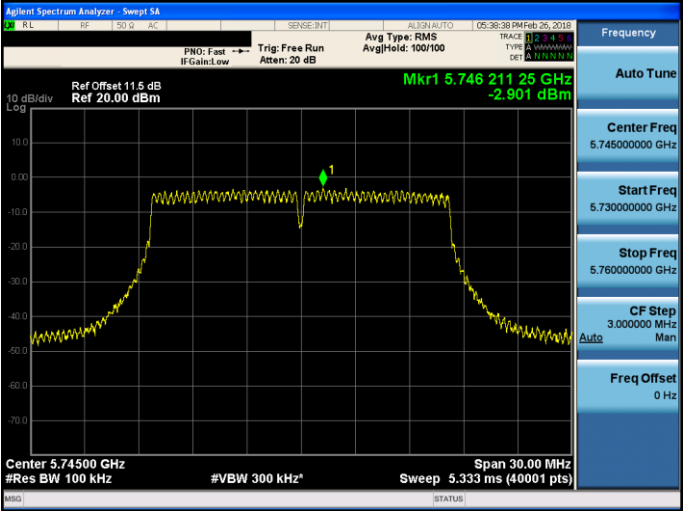
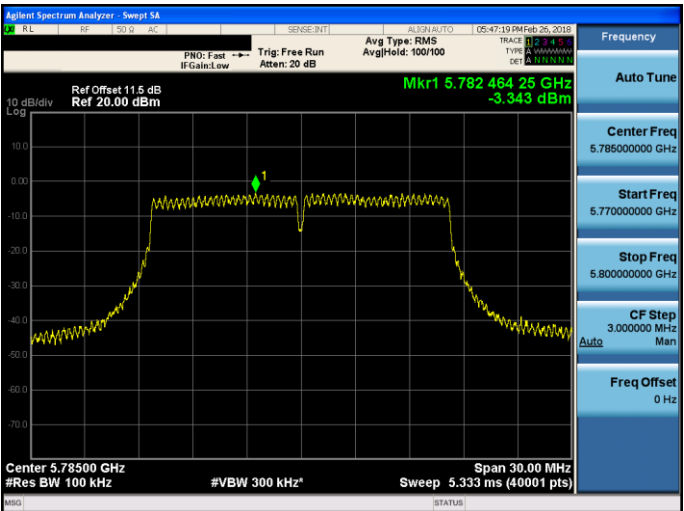
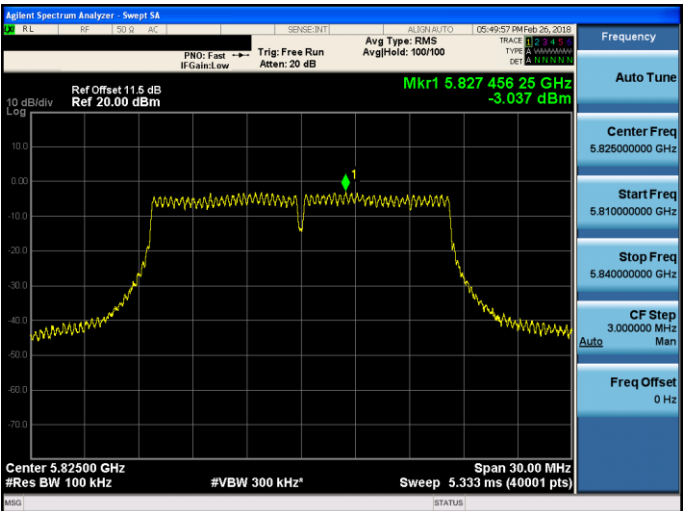


5240 MHz



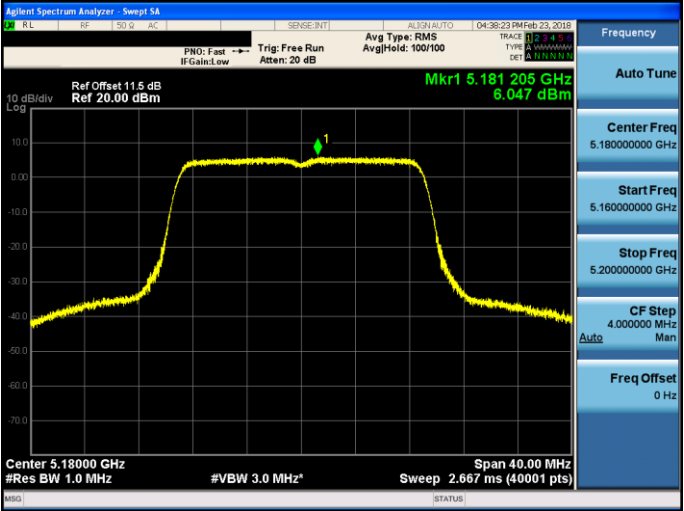
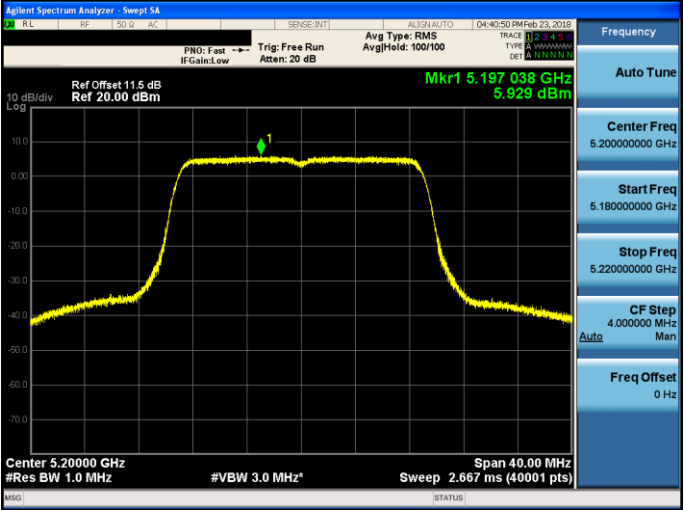
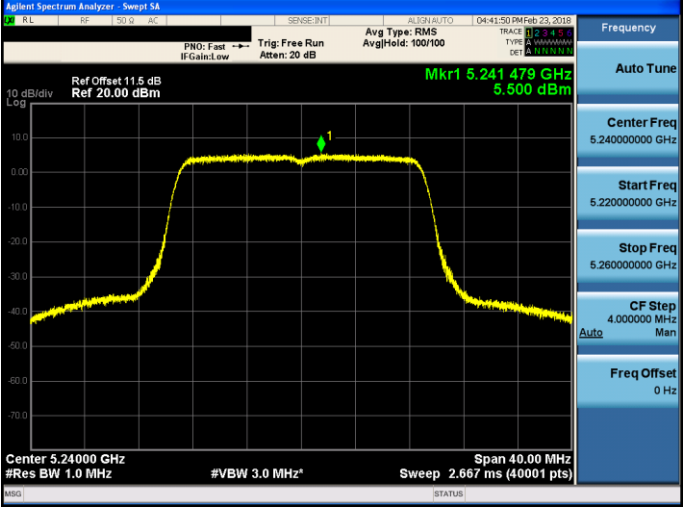


Mode 2: IEEE 802.11a Continuous TX mode_ ANT-0

5745 MHz	
5785 MHz	
5825 MHz	

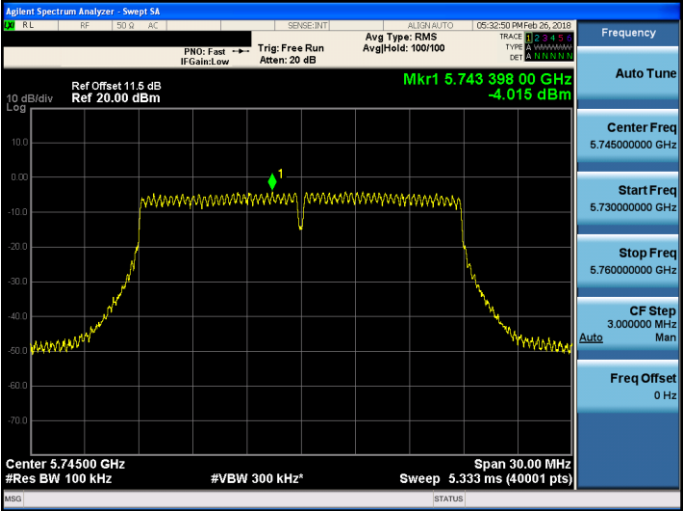
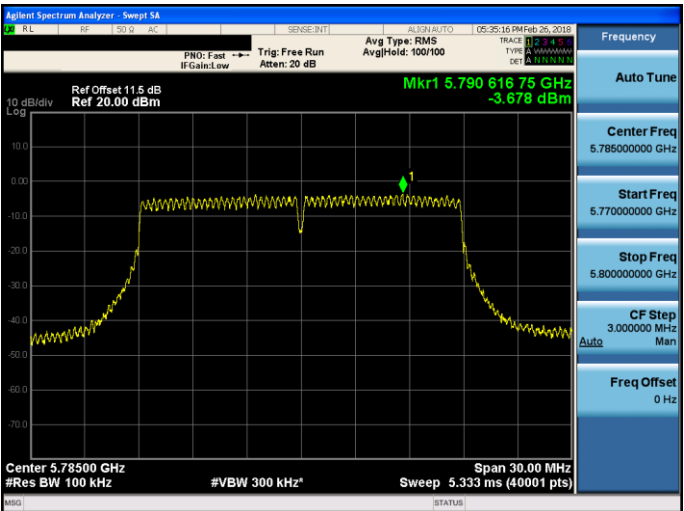
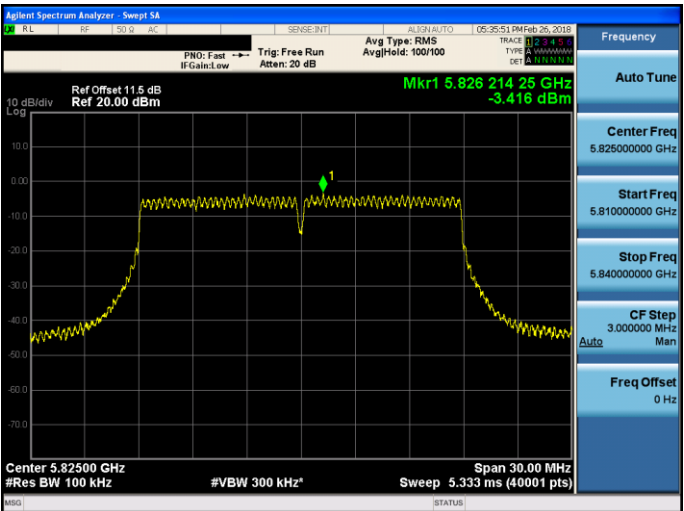


Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ANT-0

5180 MHz	 Agilent Spectrum Analyzer: Sweep SA RL SP 50 dB AC SENSE INT Align: AUTO 04:38:23 PM Feb 23, 2018 PN0: Fast IF Gain: Low Trig: Free Run Avg Type: RMS Avg Hold: 100/100 Ref Offset 11.5 dB Ref 20.00 dBm Mkr1 5.181 205 GHz 6.047 dBm Center 5.18000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 40.00 MHz Sweep 2.667 ms (40001 pts) Frequency Auto Tune Center Freq 5.180000000 GHz Start Freq 5.160000000 GHz Stop Freq 5.200000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
5200 MHz	 Agilent Spectrum Analyzer: Sweep SA RL SP 50 dB AC SENSE INT Align: AUTO 04:40:50 PM Feb 23, 2018 PN0: Fast IF Gain: Low Trig: Free Run Avg Type: RMS Avg Hold: 100/100 Ref Offset 11.5 dB Ref 20.00 dBm Mkr1 5.197 038 GHz 5.929 dBm Center 5.20000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 40.00 MHz Sweep 2.667 ms (40001 pts) Frequency Auto Tune Center Freq 5.200000000 GHz Start Freq 5.180000000 GHz Stop Freq 5.220000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
5240 MHz	 Agilent Spectrum Analyzer: Sweep SA RL SP 50 dB AC SENSE INT Align: AUTO 04:41:50 PM Feb 23, 2018 PN0: Fast IF Gain: Low Trig: Free Run Avg Type: RMS Avg Hold: 100/100 Ref Offset 11.5 dB Ref 20.00 dBm Mkr1 5.241 479 GHz 5.500 dBm Center 5.24000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Span 40.00 MHz Sweep 2.667 ms (40001 pts) Frequency Auto Tune Center Freq 5.240000000 GHz Start Freq 5.220000000 GHz Stop Freq 5.260000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz

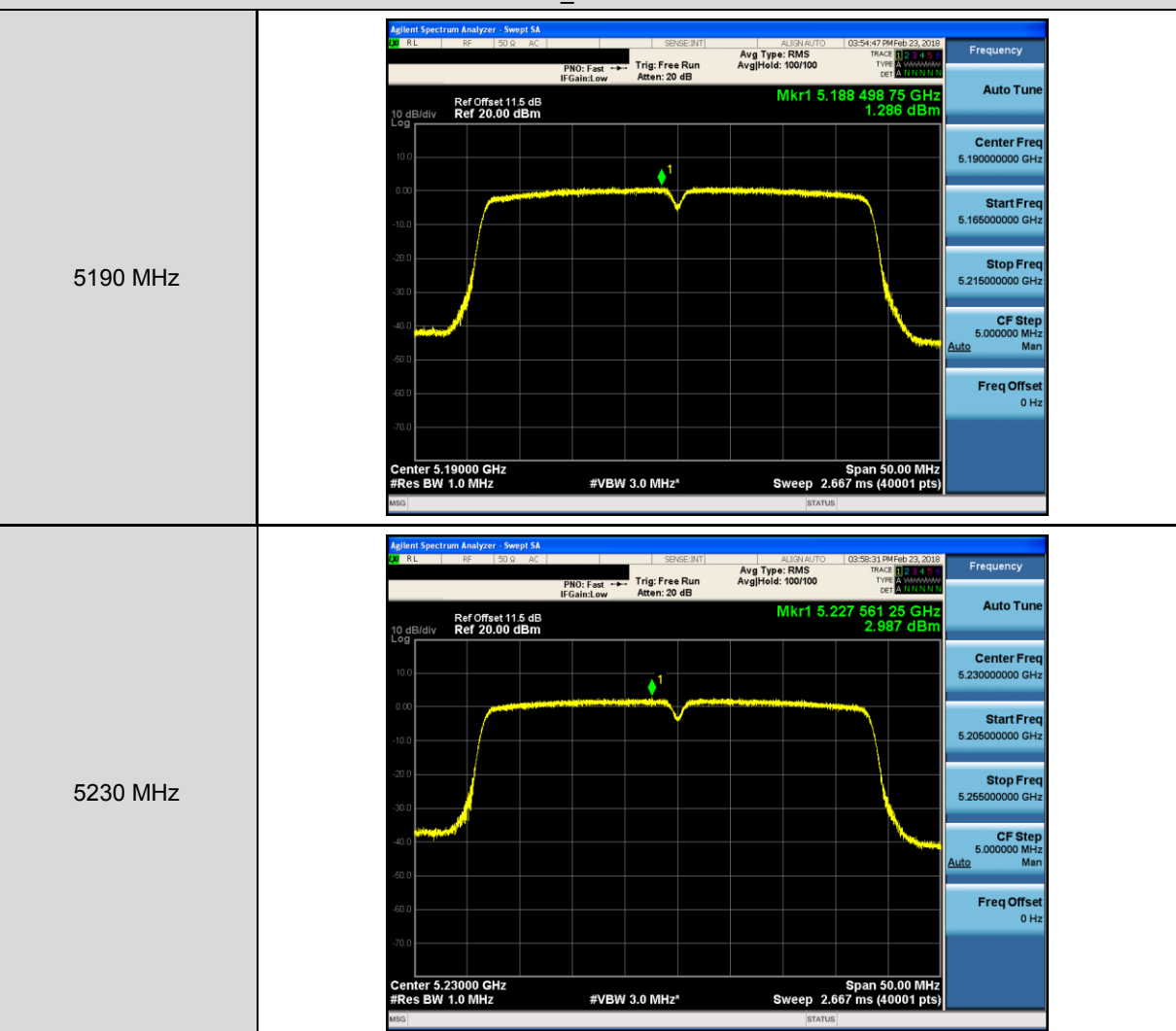


Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ANT-0

5745 MHz	
5785 MHz	
5825 MHz	



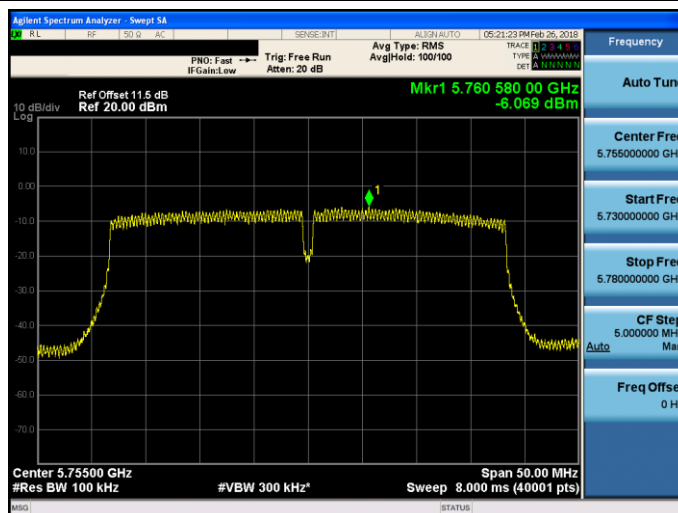
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0



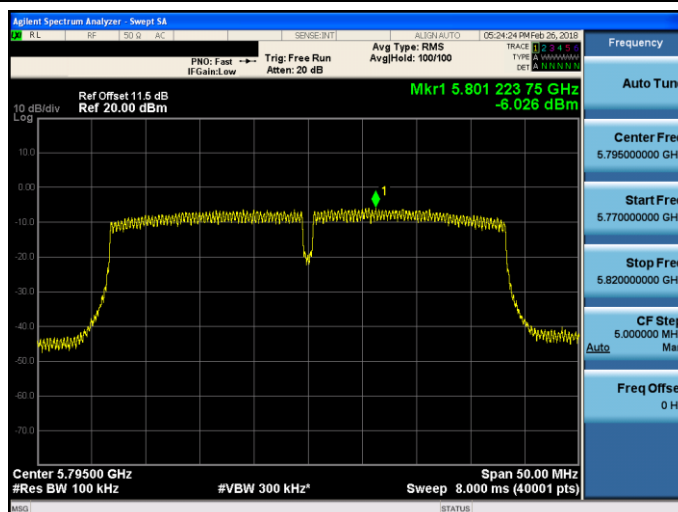


Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-0

5755 MHz



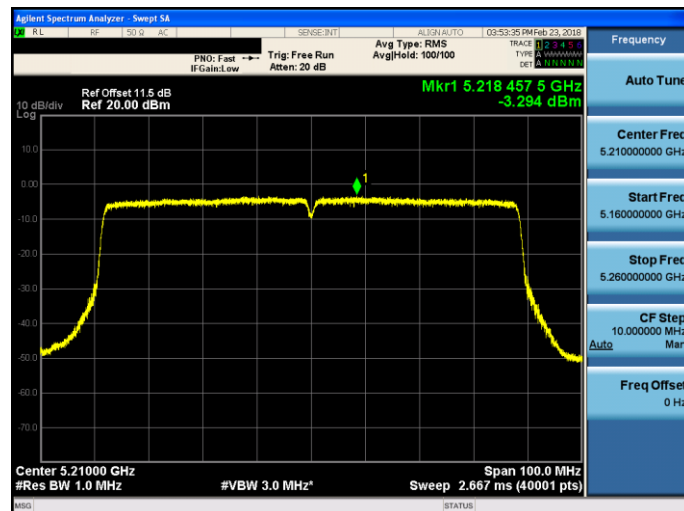
5795 MHz





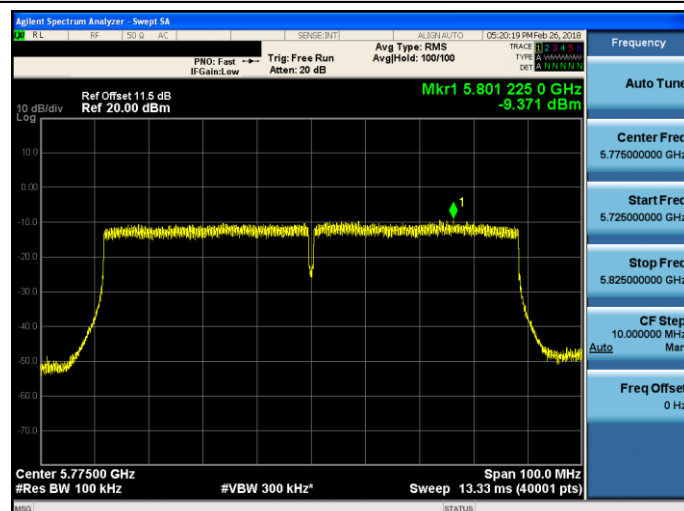
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ANT-0

5210 MHz



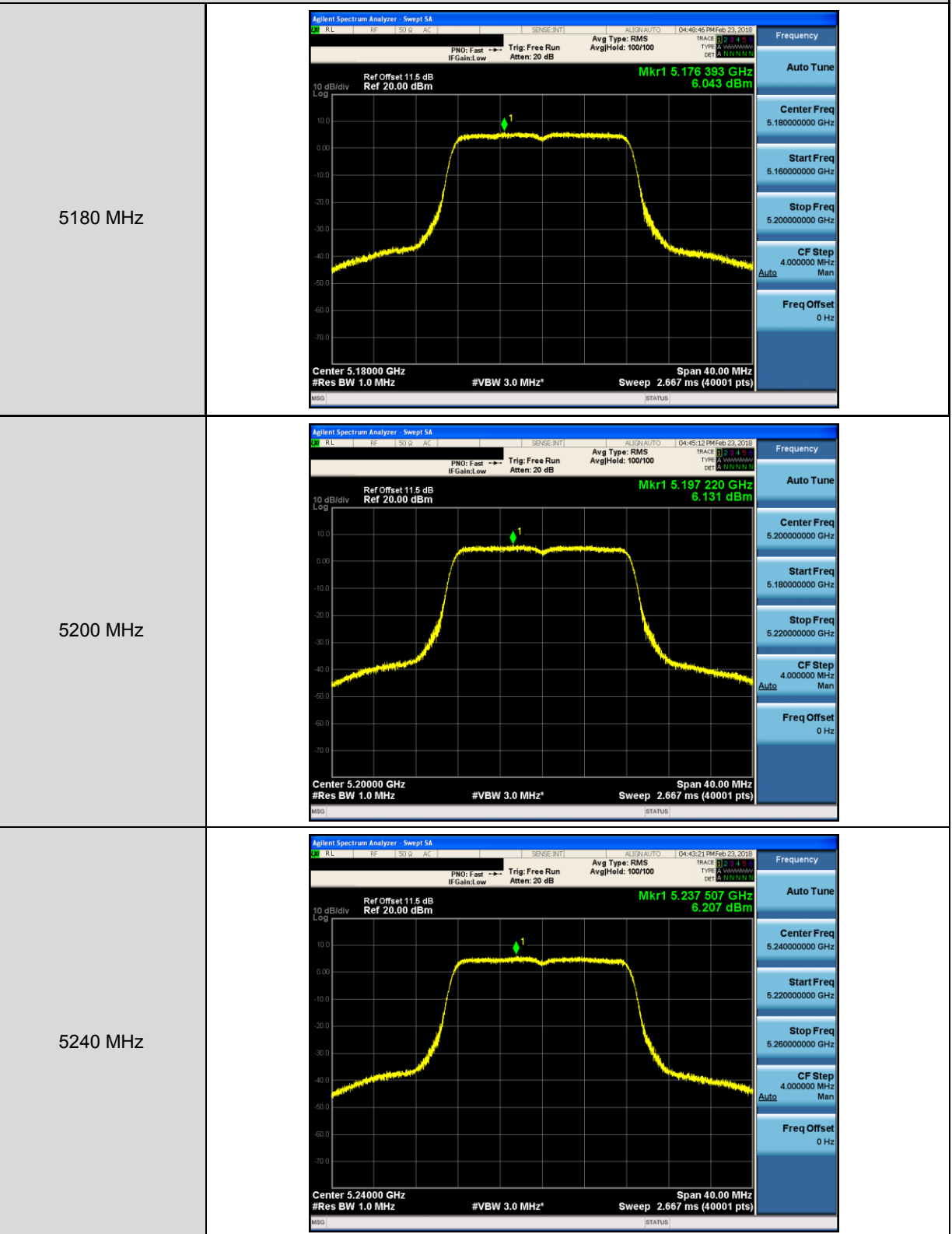
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ANT-0

5775 MHz



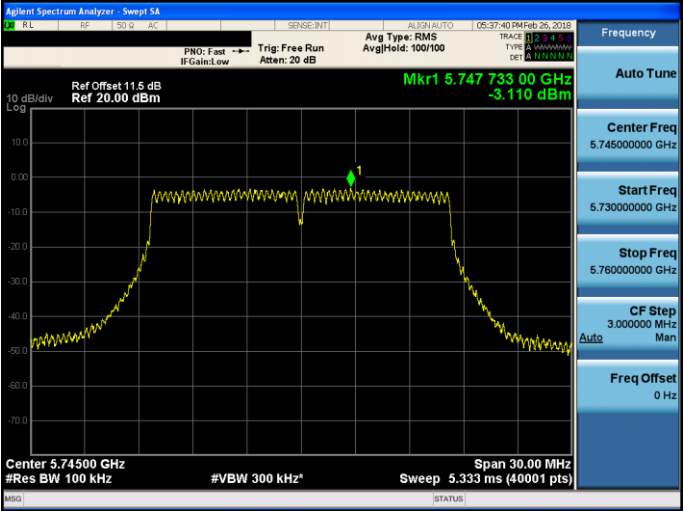
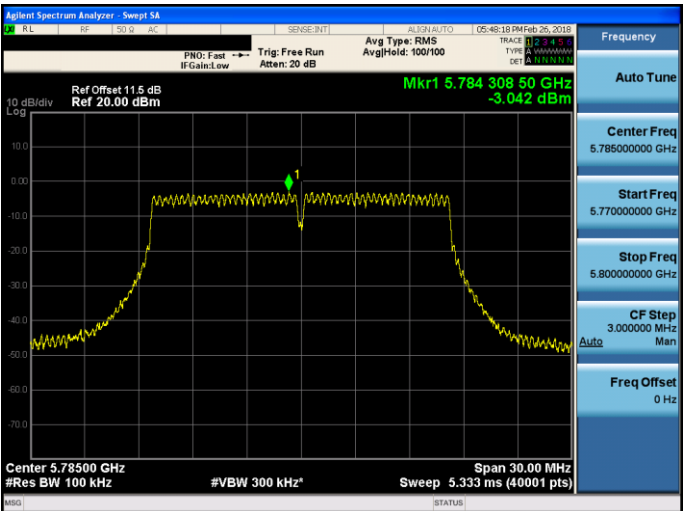
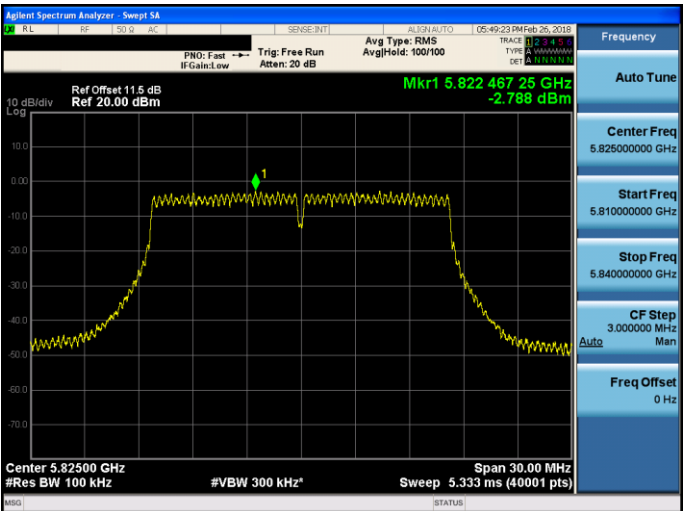


Mode 2: IEEE 802.11a Continuous TX mode _ ANT-1





Mode 2: IEEE 802.11a Continuous TX mode_ ANT-1

5745 MHz	
5785 MHz	
5825 MHz	

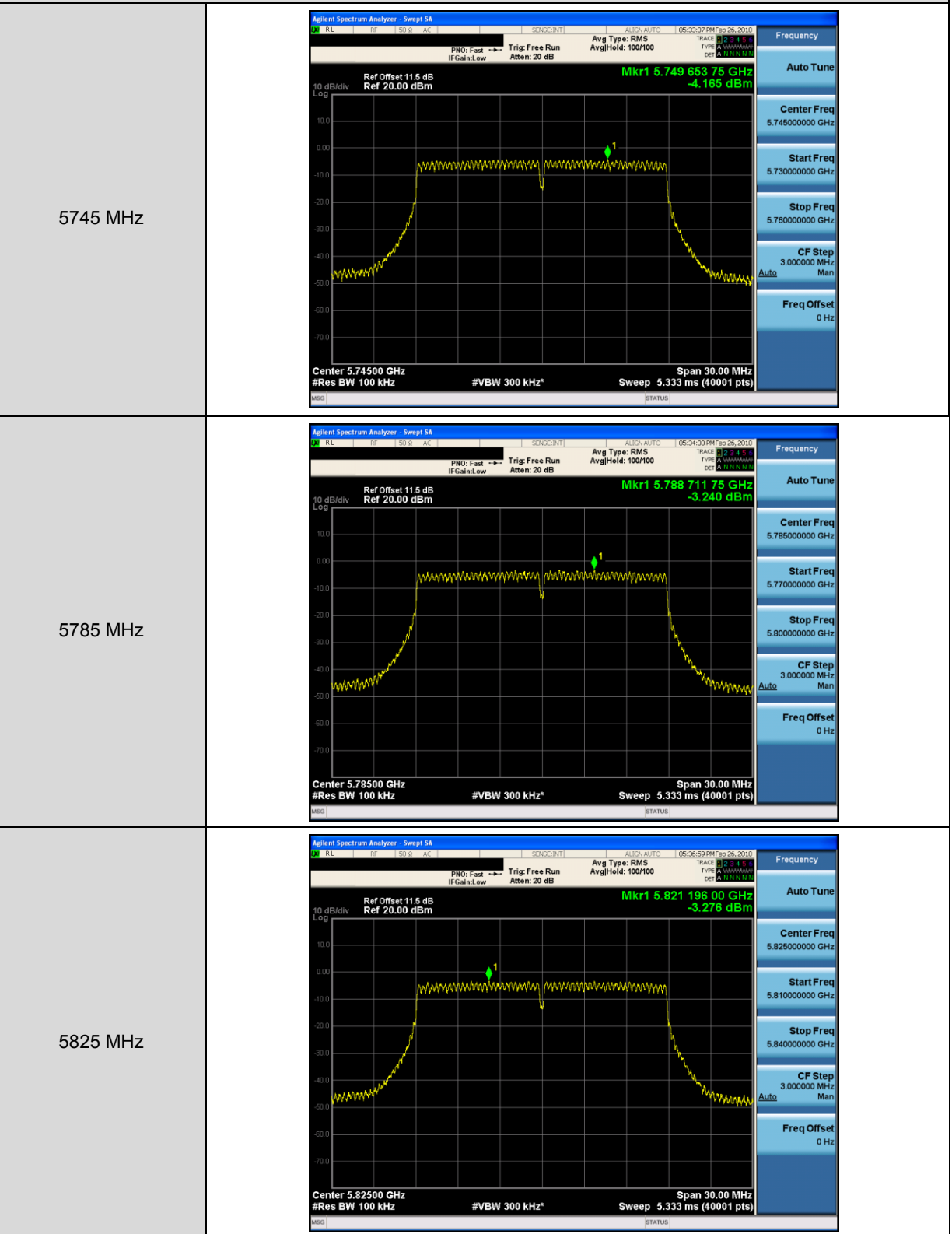


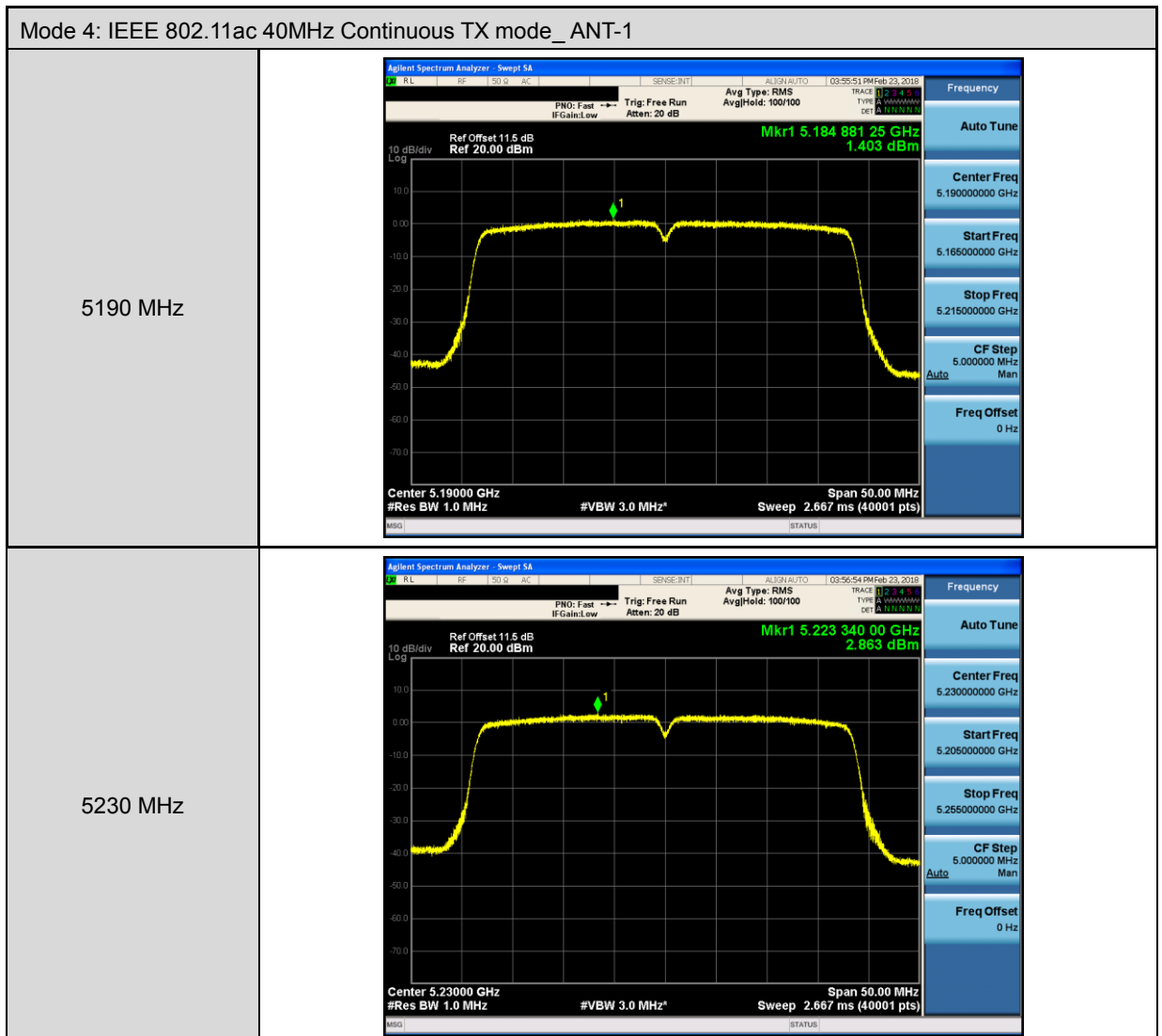
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ANT-1

5180 MHz	
5200 MHz	
5240 MHz	



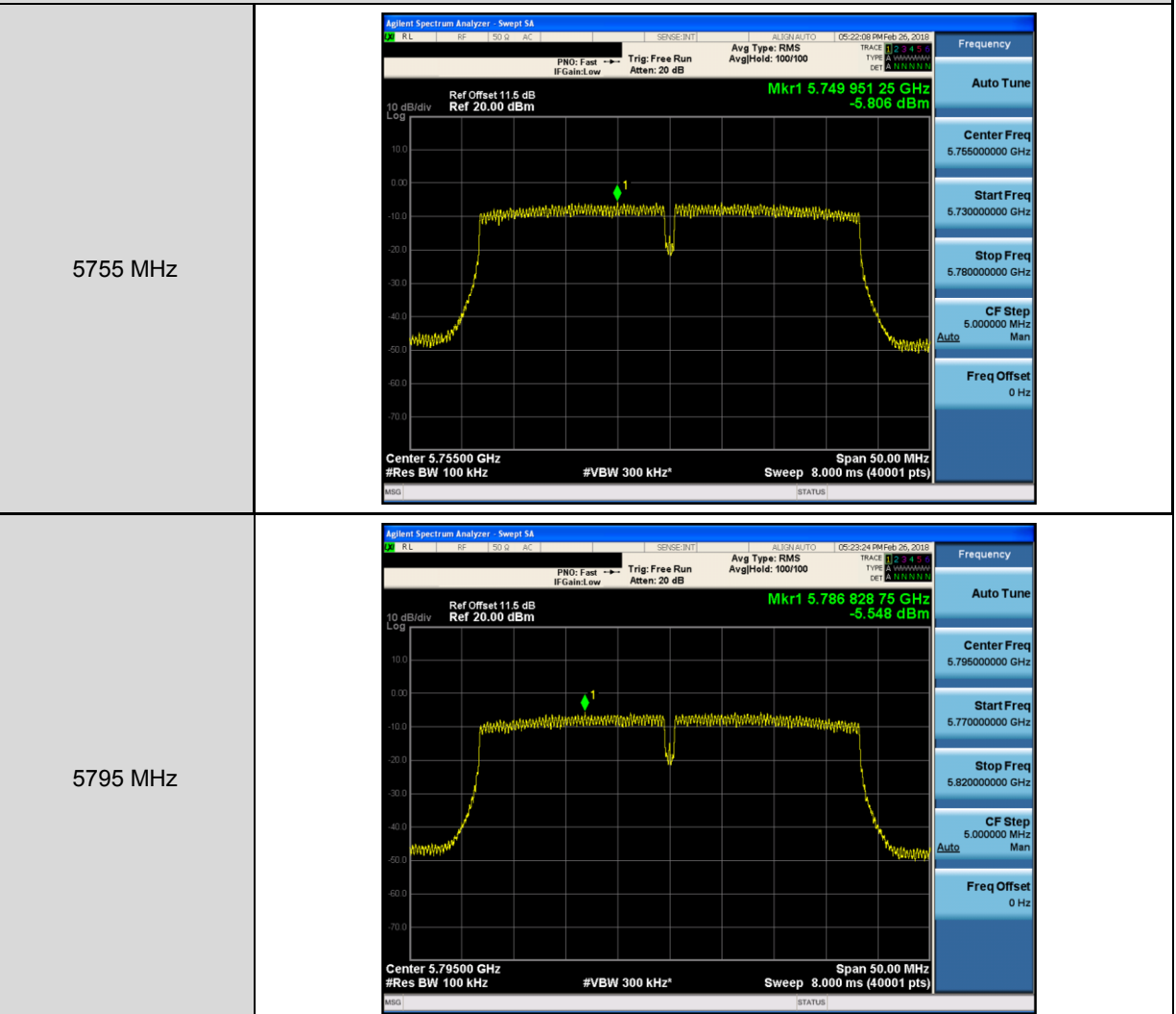
Mode 3: IEEE 802.11ac 20MHz Continuous TX mode _ANT-1







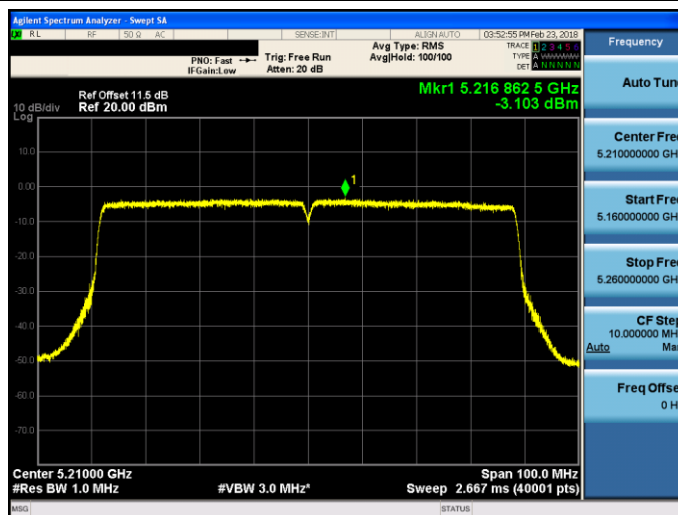
Mode 4: IEEE 802.11ac 40MHz Continuous TX mode_ ANT-1





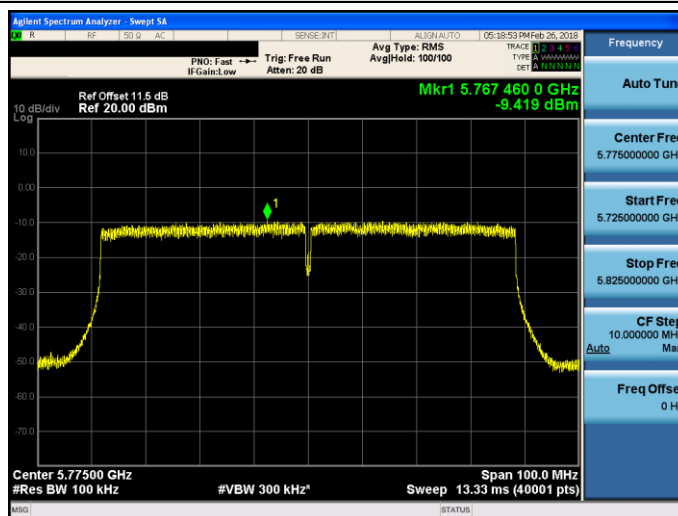
Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ANT-1

5210 MHz



Mode 5: IEEE 802.11ac 80MHz Continuous TX mode _ANT-1

5775 MHz



5.7. Frequency Stability Measurement

Temperature Variations

Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5199.9743	-25700	-4.942	Pass
	10		5199.9768	-23200	-4.462	Pass
	20		5199.9772	-22800	-4.385	Pass
	30		5199.9777	-22300	-4.288	Pass
	40		5199.9782	-21800	-4.192	Pass
	50		5199.9786	-21400	-4.115	Pass
5785 MHz	0	120	5784.9558	-44200	-7.640	Pass
	10		5784.9563	-43700	-7.554	Pass
	20		5784.9568	-43200	-7.468	Pass
	30		5784.9575	-42500	-7.347	Pass
	40		5784.9578	-42200	-7.295	Pass
	50		5784.9584	-41600	-7.191	Pass

Voltage Variations

Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5199.977	-23000	-4.423	Pass
		120.00	5199.9772	-22800	-4.385	Pass
		102.00	5199.9777	-22300	-4.288	Pass
5785 MHz	20	138.00	5784.9567	-43300	-7.485	Pass
		120.00	5784.9568	-43200	-7.468	Pass
		102.00	5784.9572	-42800	-7.398	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.



Beamforming on

Temperature Variations

Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	0	120	5199.9743	-25700	-4.942	Pass
	10		5199.9768	-23200	-4.462	Pass
	20		5199.9772	-22800	-4.385	Pass
	30		5199.9777	-22300	-4.288	Pass
	40		5199.9782	-21800	-4.192	Pass
	50		5199.9786	-21400	-4.115	Pass
5785 MHz	0	120	5784.9558	-44200	-7.640	Pass
	10		5784.9563	-43700	-7.554	Pass
	20		5784.9568	-43200	-7.468	Pass
	30		5784.9575	-42500	-7.347	Pass
	40		5784.9578	-42200	-7.295	Pass
	50		5784.9584	-41600	-7.191	Pass

Voltage Variations

Frequency	Temp. (°C)	Voltage (Vac)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	138.00	5199.977	-23000	-4.423	Pass
		120.00	5199.9772	-22800	-4.385	Pass
		102.00	5199.9777	-22300	-4.288	Pass
5785 MHz	20	138.00	5784.9567	-43300	-7.485	Pass
		120.00	5784.9568	-43200	-7.468	Pass
		102.00	5784.9572	-42800	-7.398	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.

5.8. Automatically discontinue transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving.

5.9. Antenna Requirement

■ Antenna Connector Construction

See section 2 – antenna information.

■ Directional Gain Calculated

Directional Gain = $10 \cdot \log\{[10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20}]^2 / NANT\}$

Operate Freq. Band		Directional Gain (dBi)
IEEE 802.11a	U-NII Band I	7.02
	U-NII Band III	7.16
IEEE 802.11ac 20MHz	U-NII Band I	7.02
	U-NII Band III	7.16
IEEE 802.11ac 40MHz	U-NII Band I	7.02
	U-NII Band III	7.16
IEEE 802.11ac 80MHz	U-NII Band I	7.02
	U-NII Band III	7.16