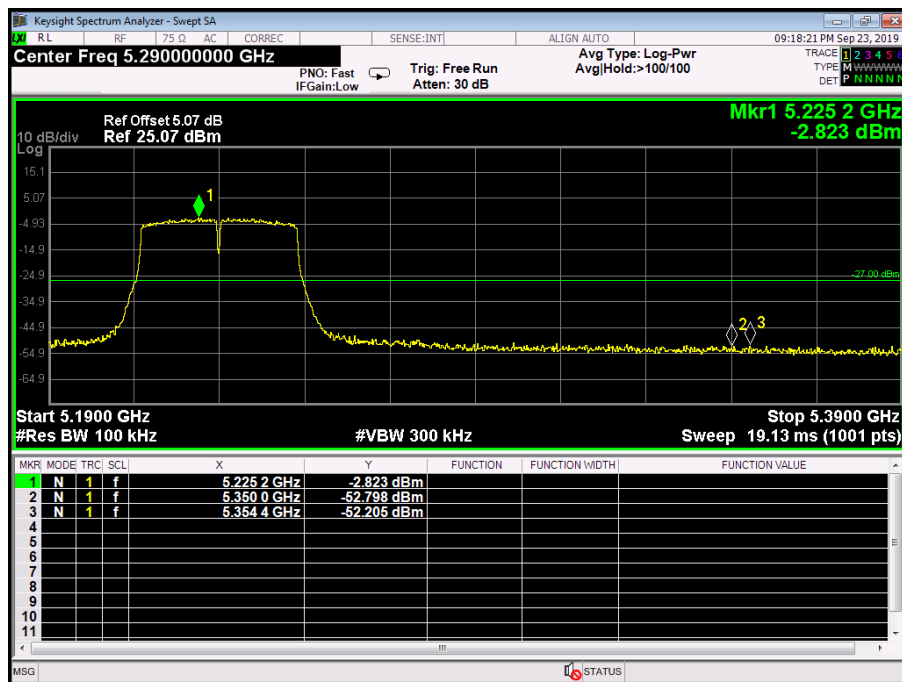
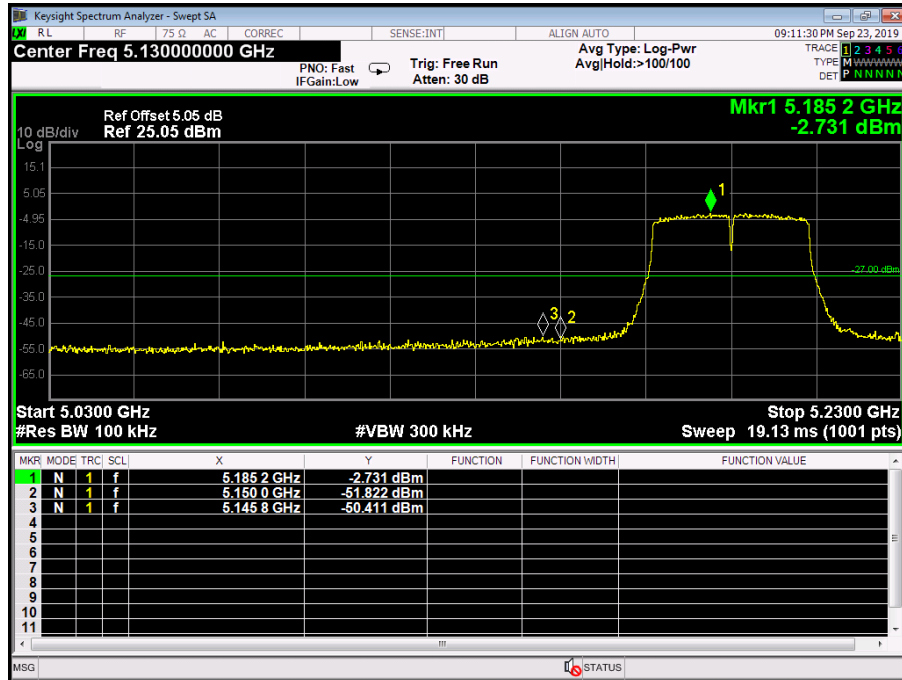
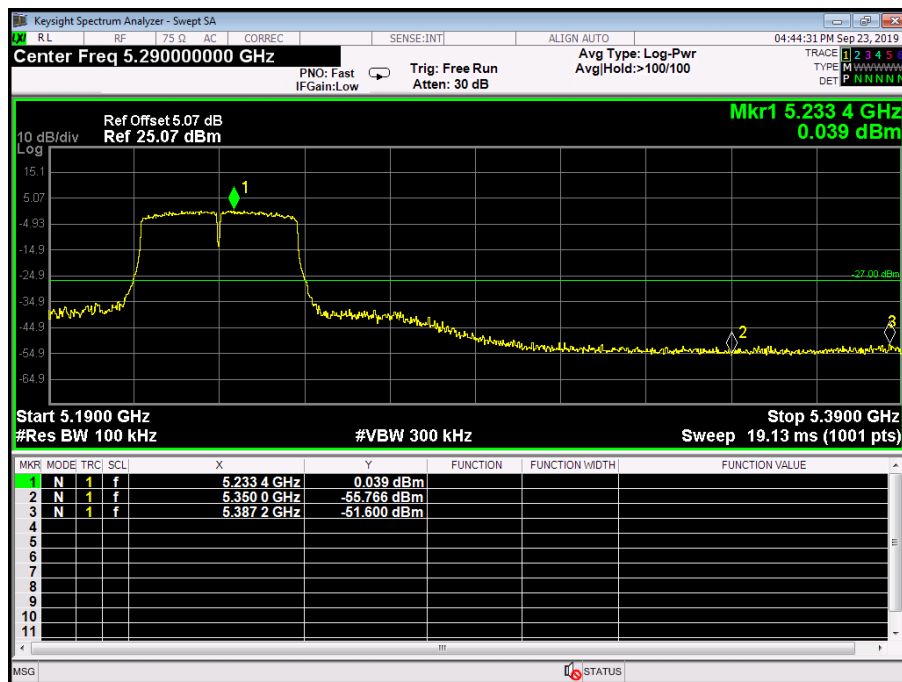
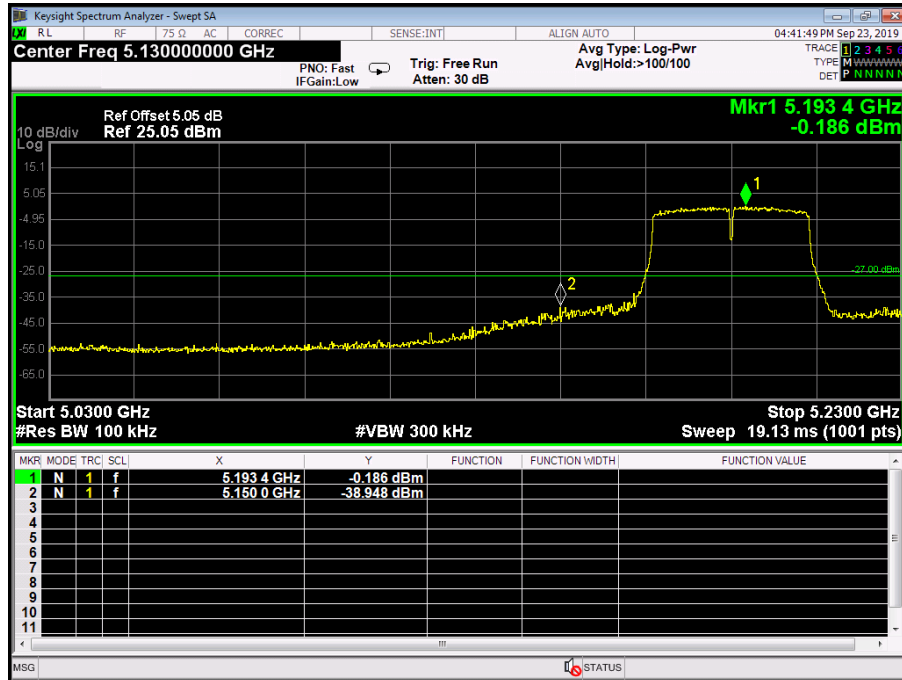


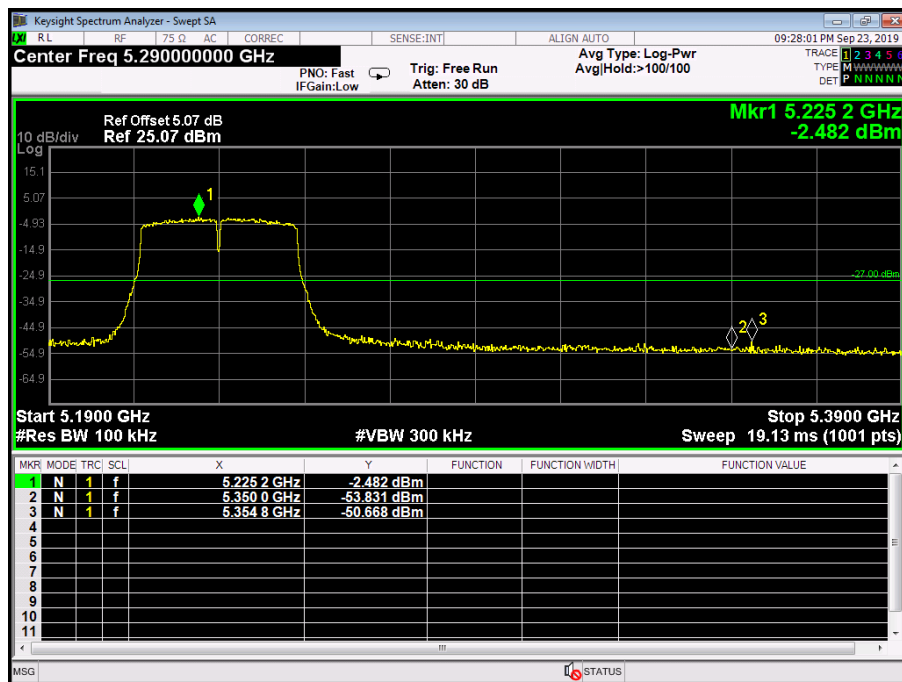
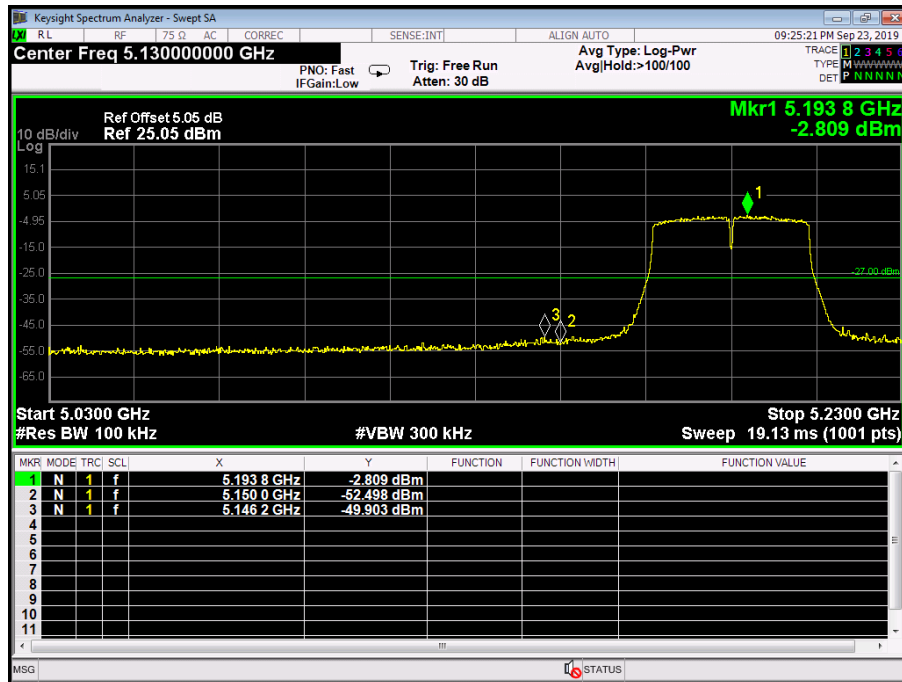
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11n(HT40) mode(U-NII-1) / 5190MHz&5230MHz Antenna A		
Remark:	The EUT is programed in continuously transmitting mode		



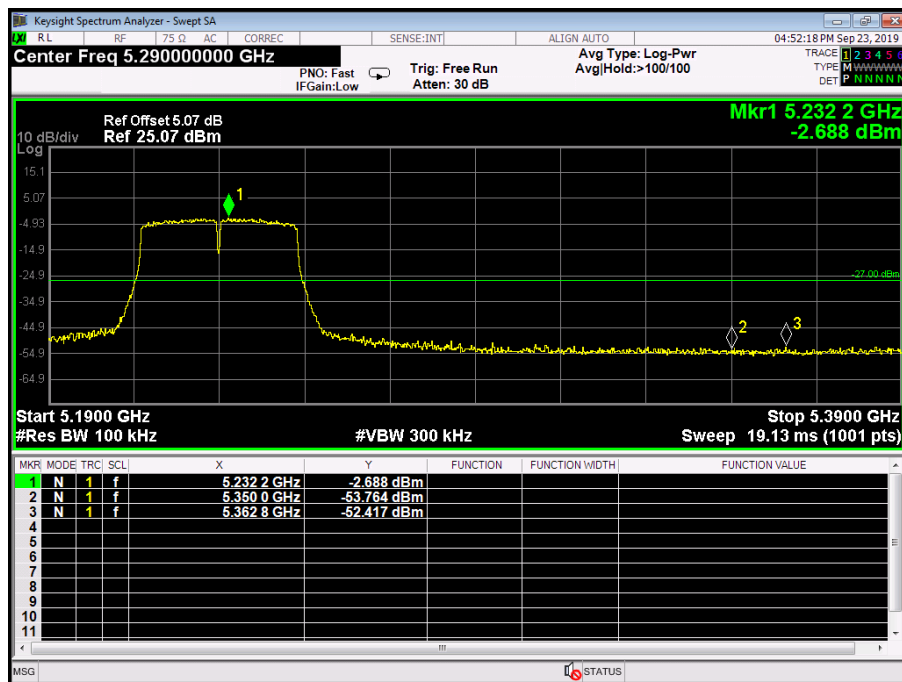
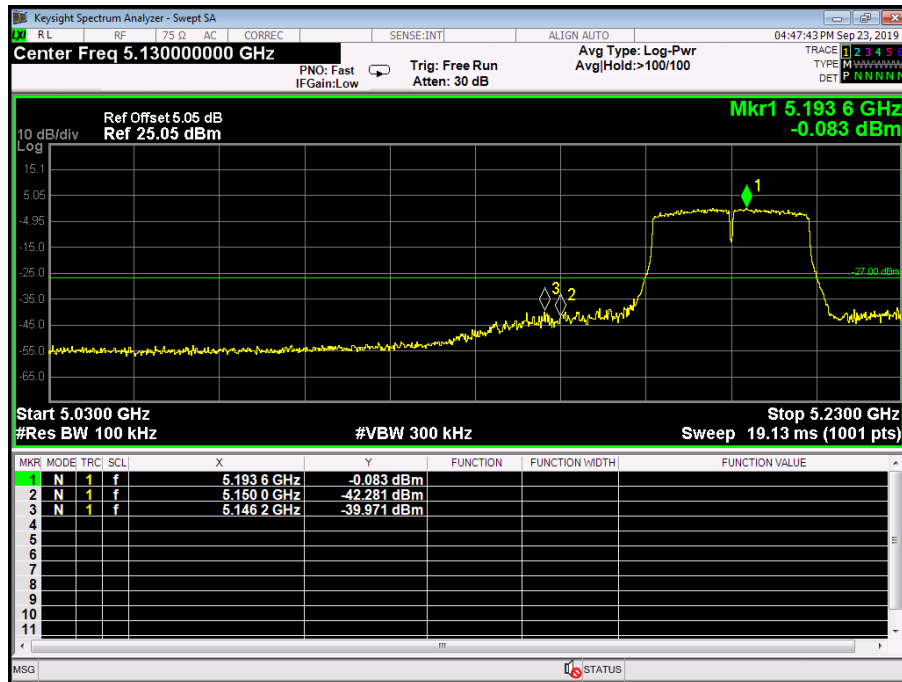
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11n(HT40) mode(U-NII-1) / 5190MHz&5230MHz Antenna B		
Remark:	The EUT is programed in continuously transmitting mode		



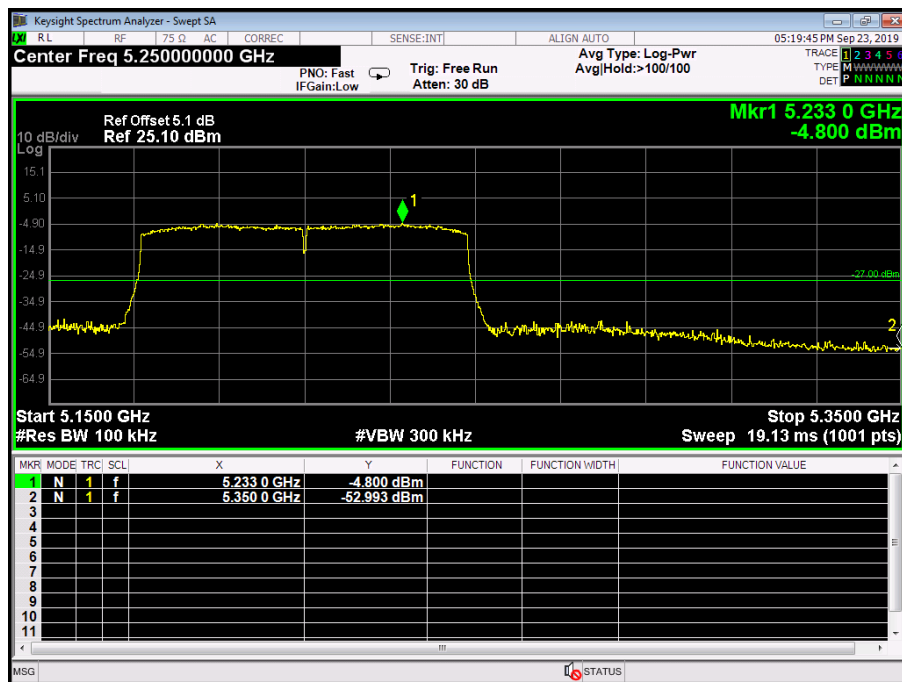
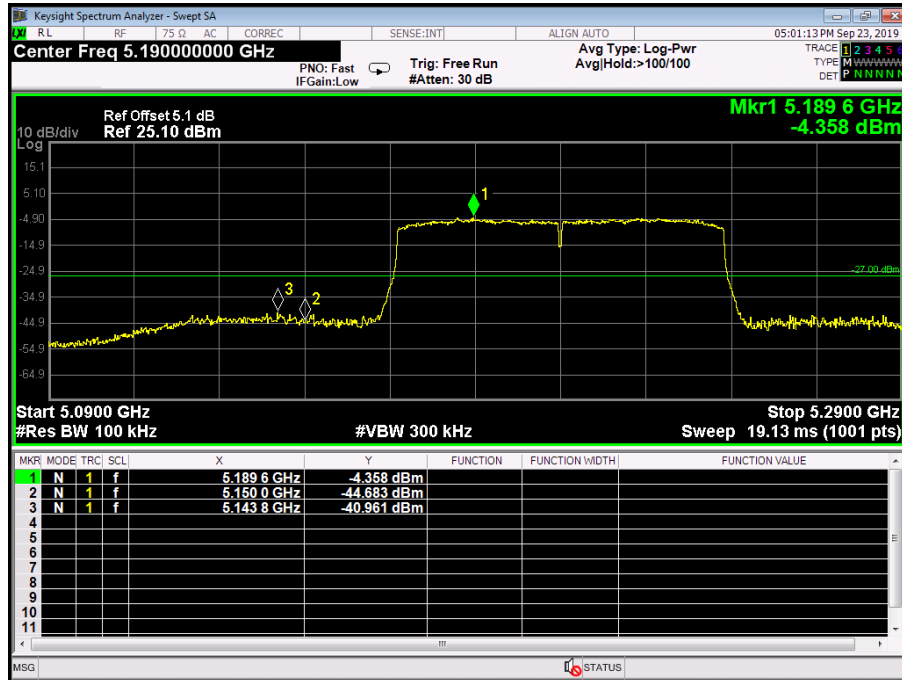
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11ac(VHT40) mode(U-NII-1) / 5190MHz&5230MHz Antenna A		
Remark:	The EUT is programed in continuously transmitting mode		



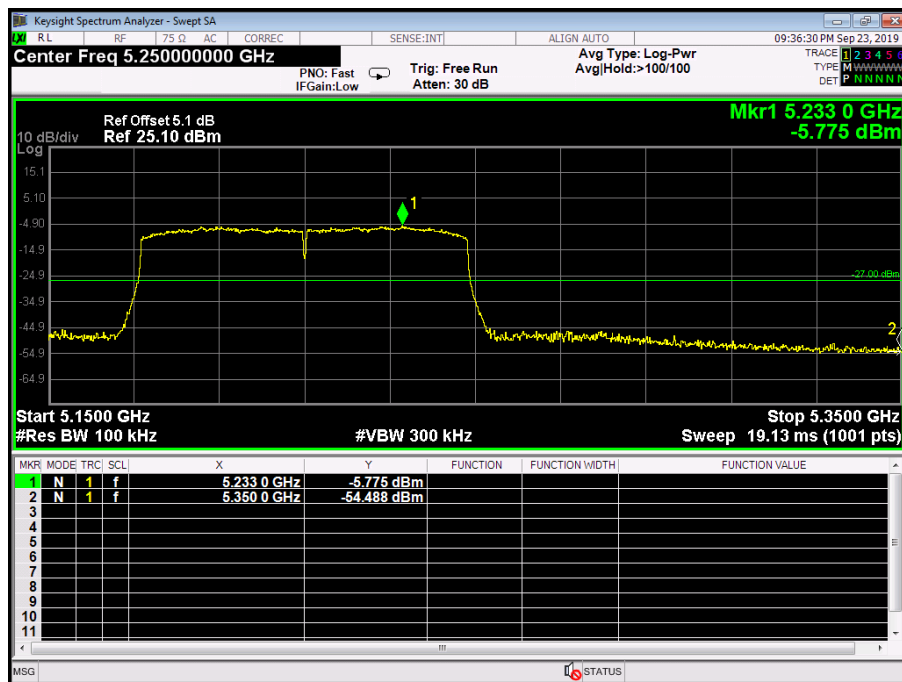
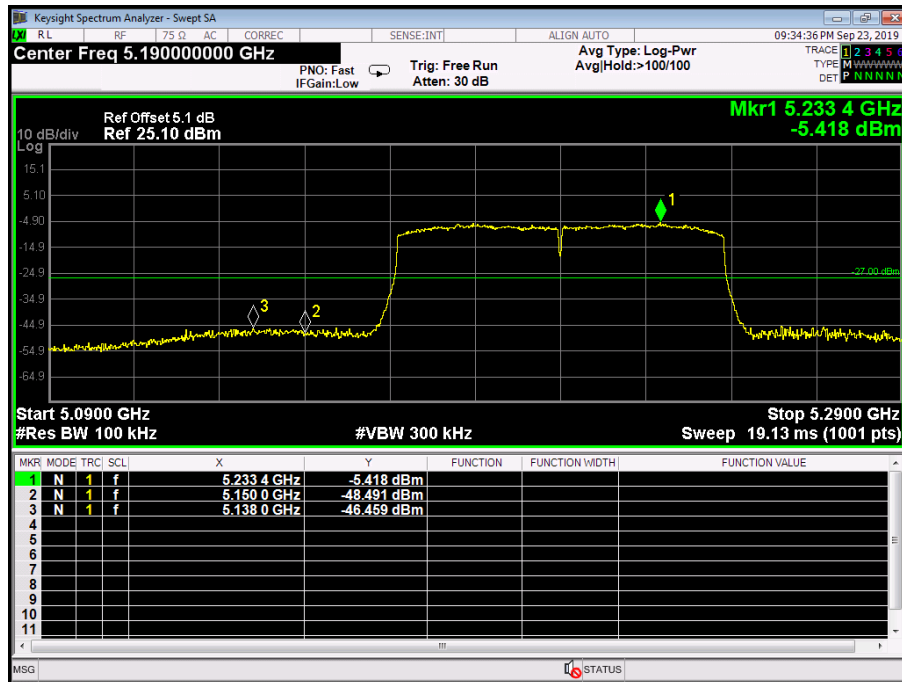
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11ac(VHT40) mode(U-NII-1) / 5190MHz&5230MHz Antenna B		
Remark:	The EUT is programed in continuously transmitting mode		

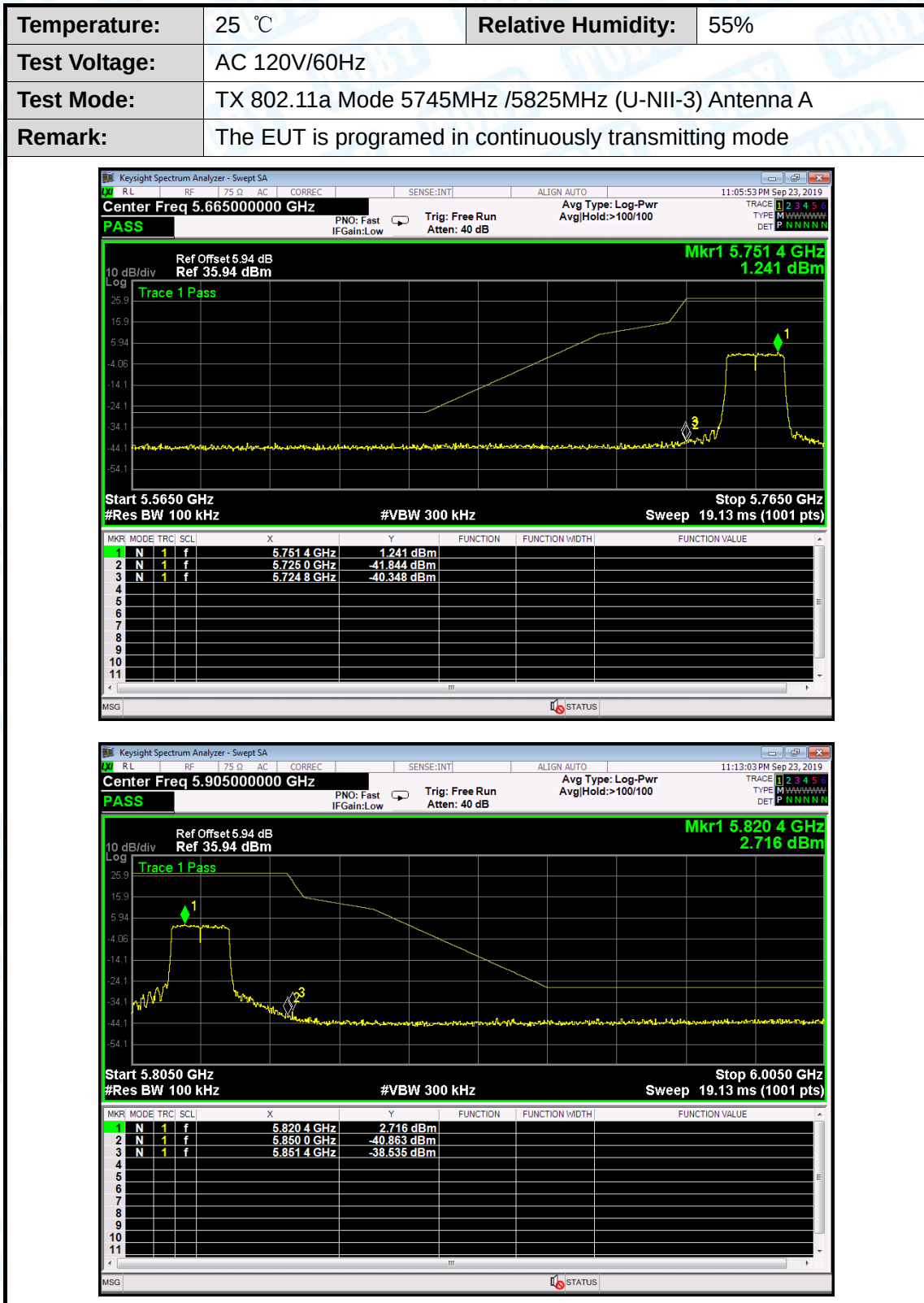


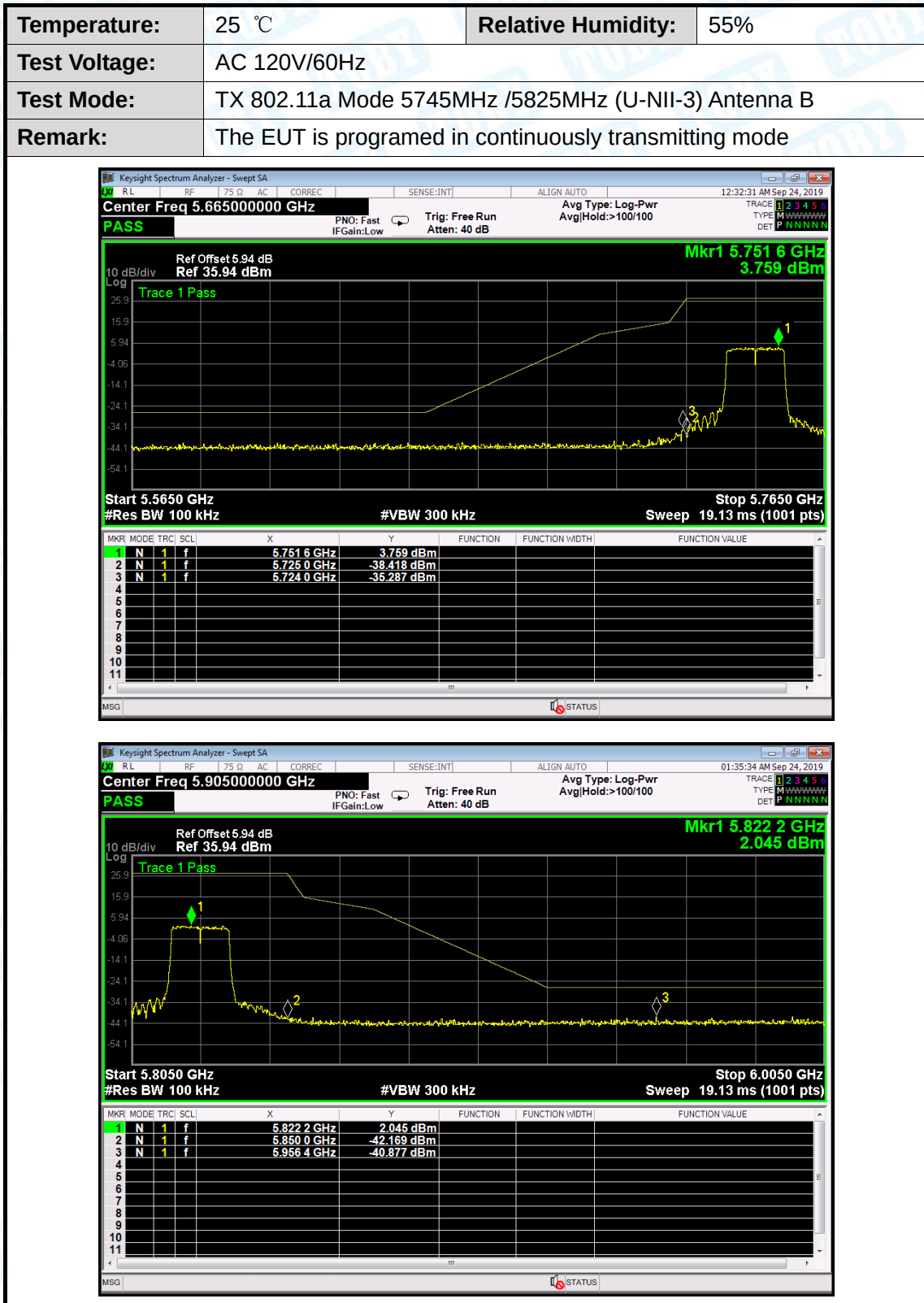
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11ac(80) mode(U-NII-1) / 5210MHz Antenna A		
Remark:	The EUT is programed in continuously transmitting mode		

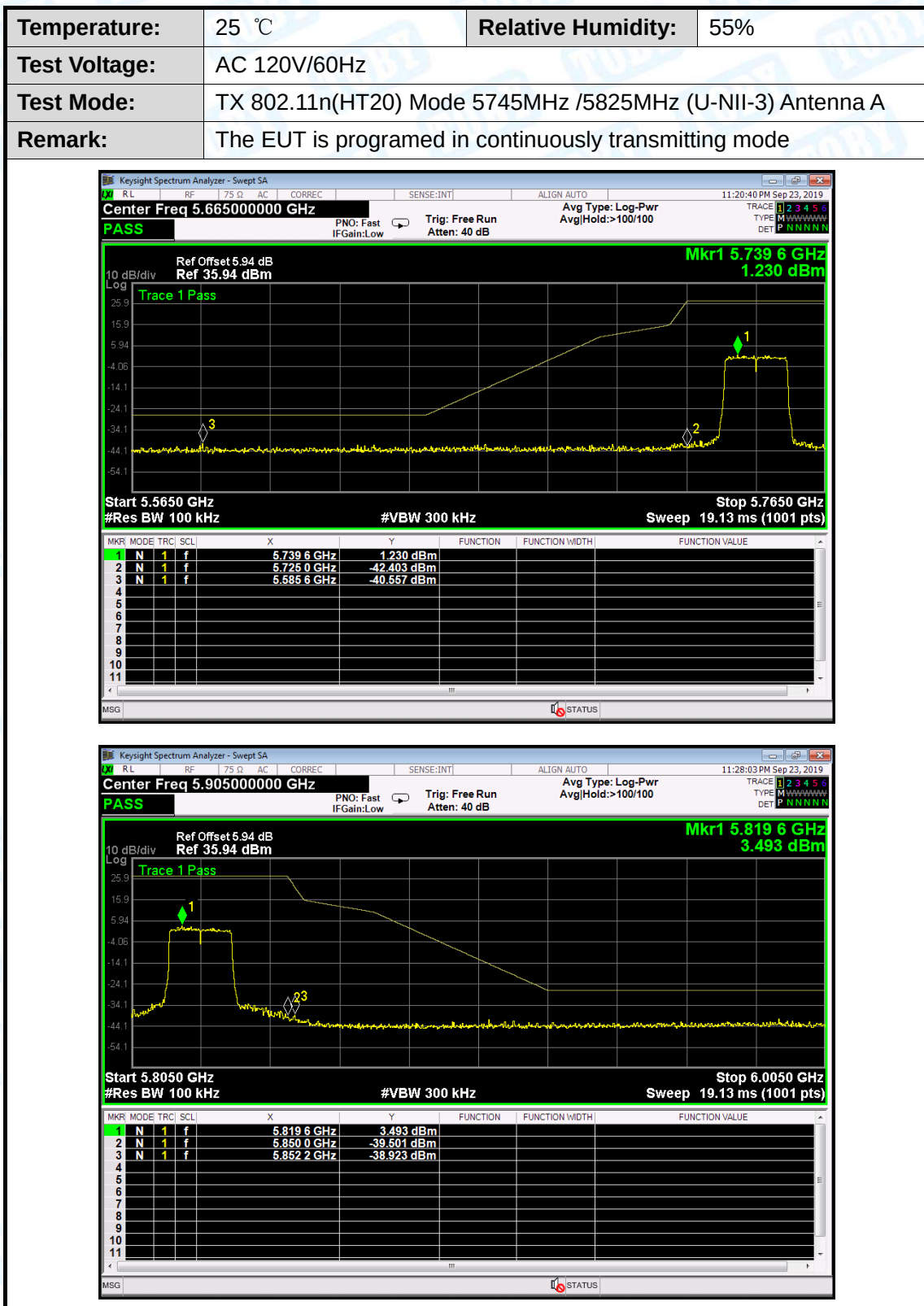


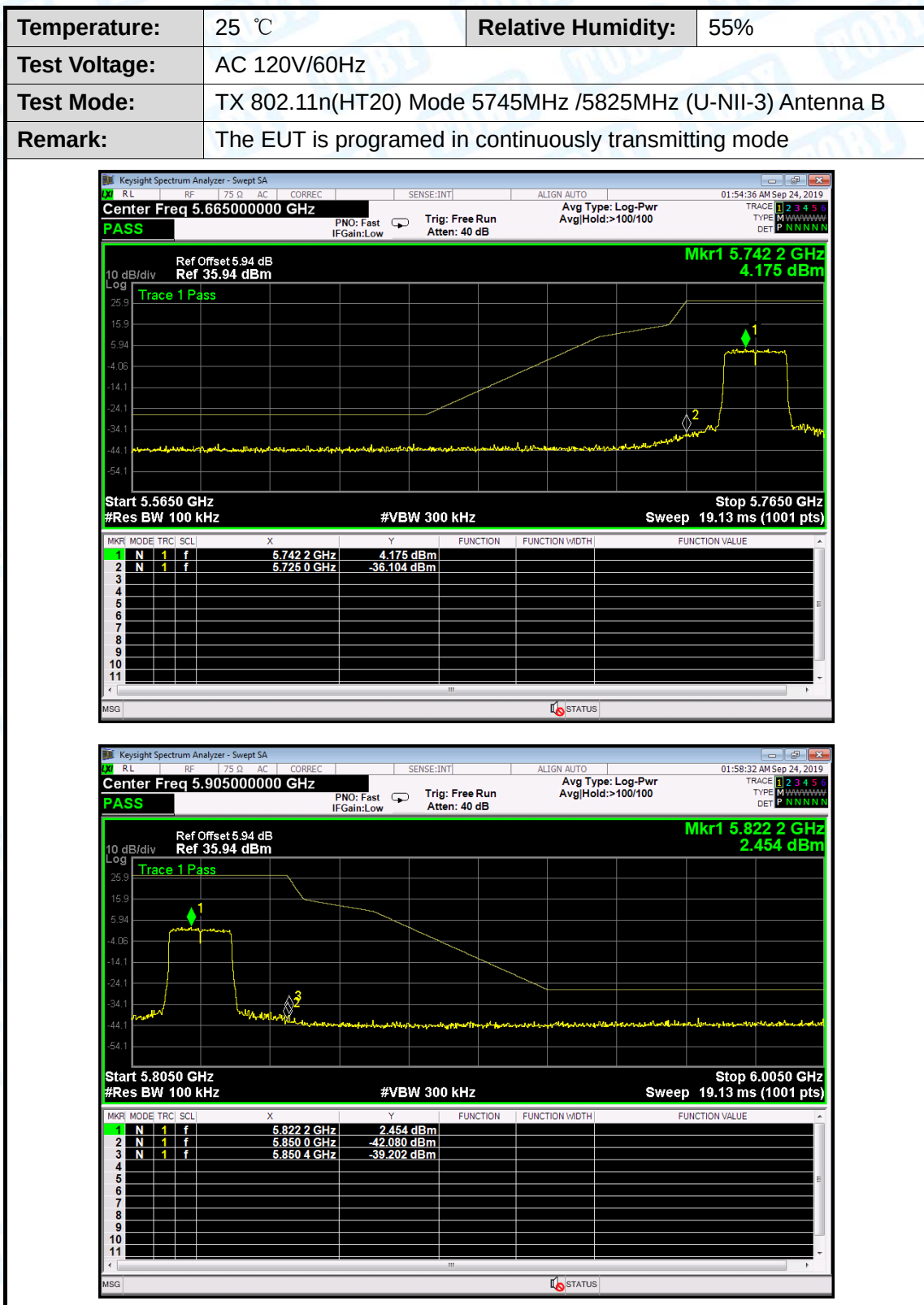
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11ac(80) mode(U-NII-1) / 5210MHz Antenna B		
Remark:	The EUT is programed in continuously transmitting mode		



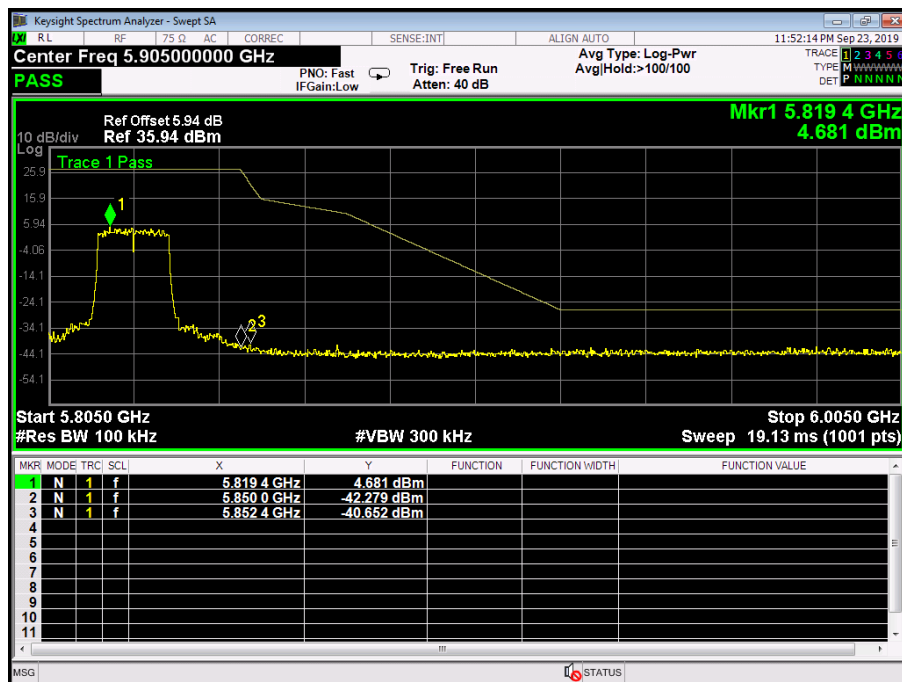
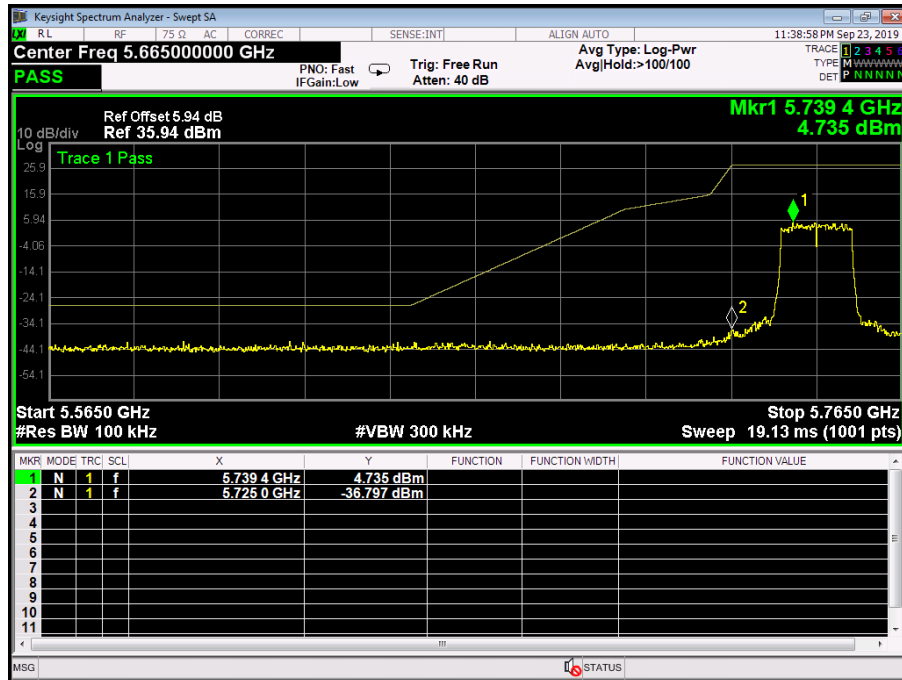




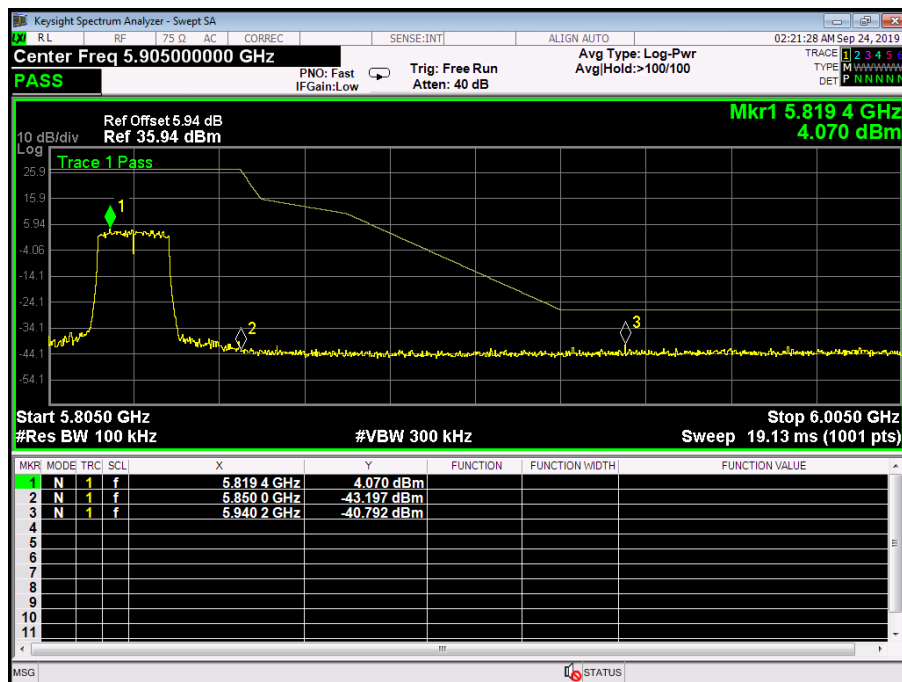
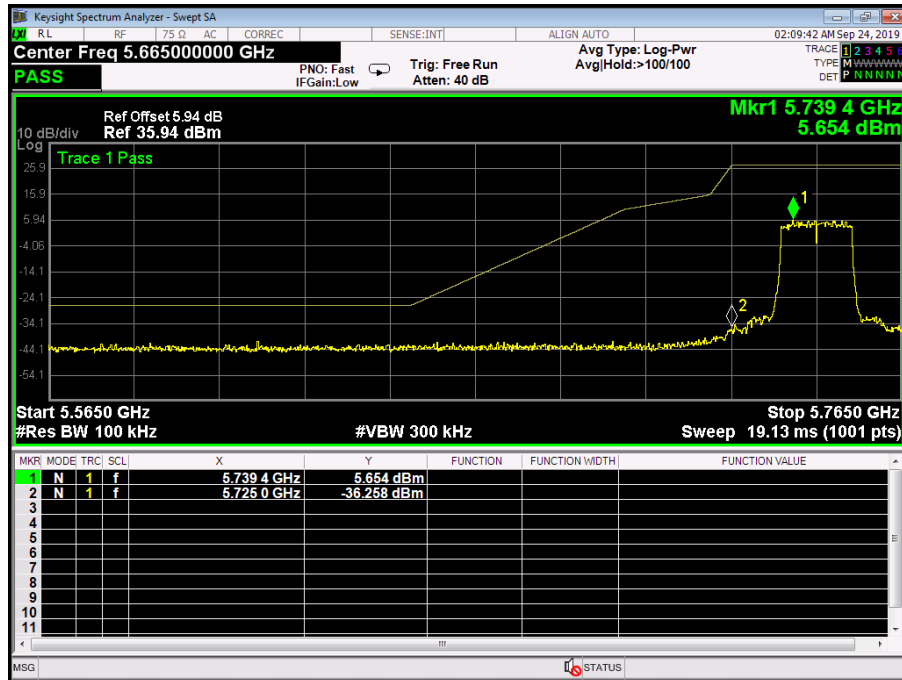


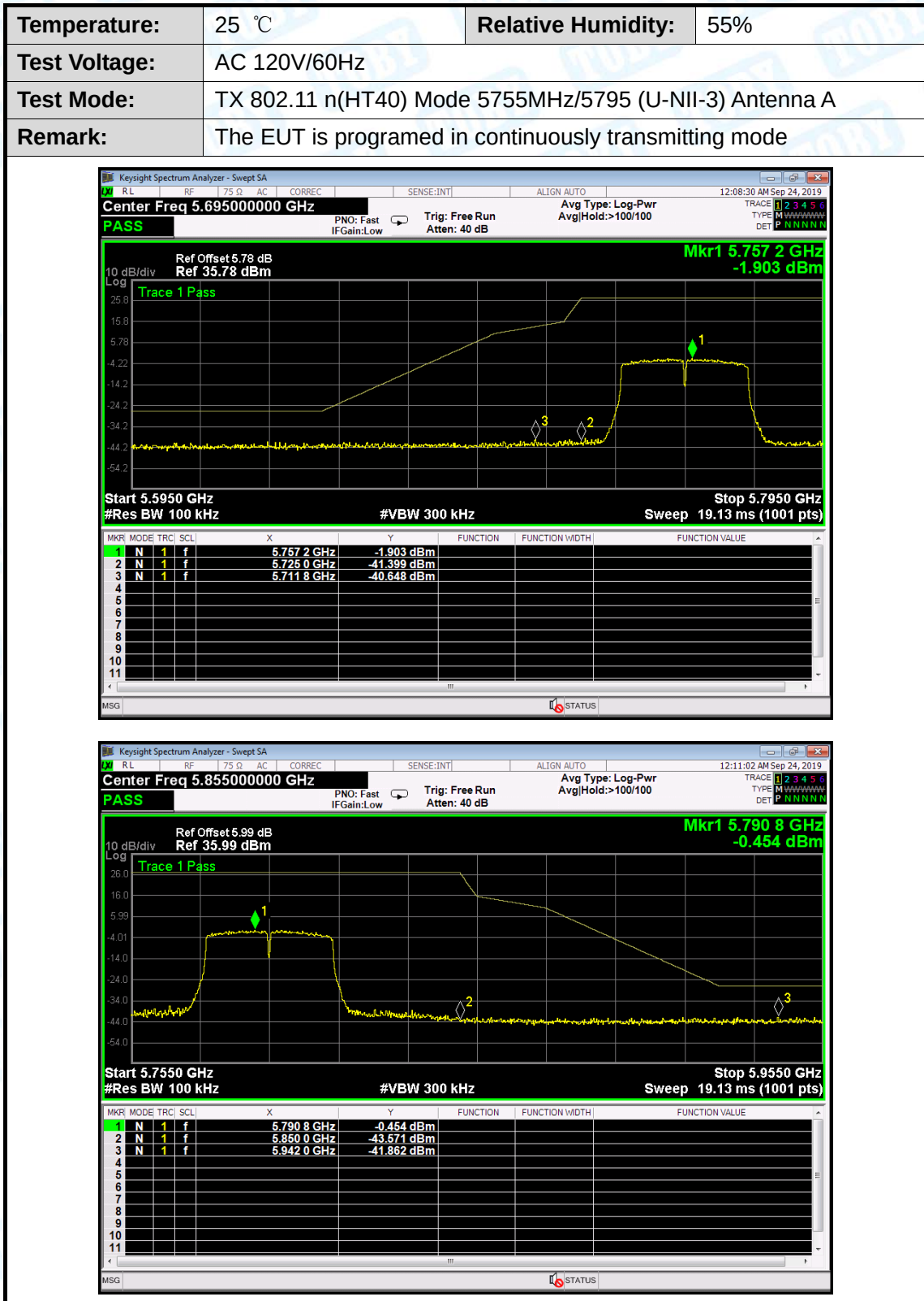


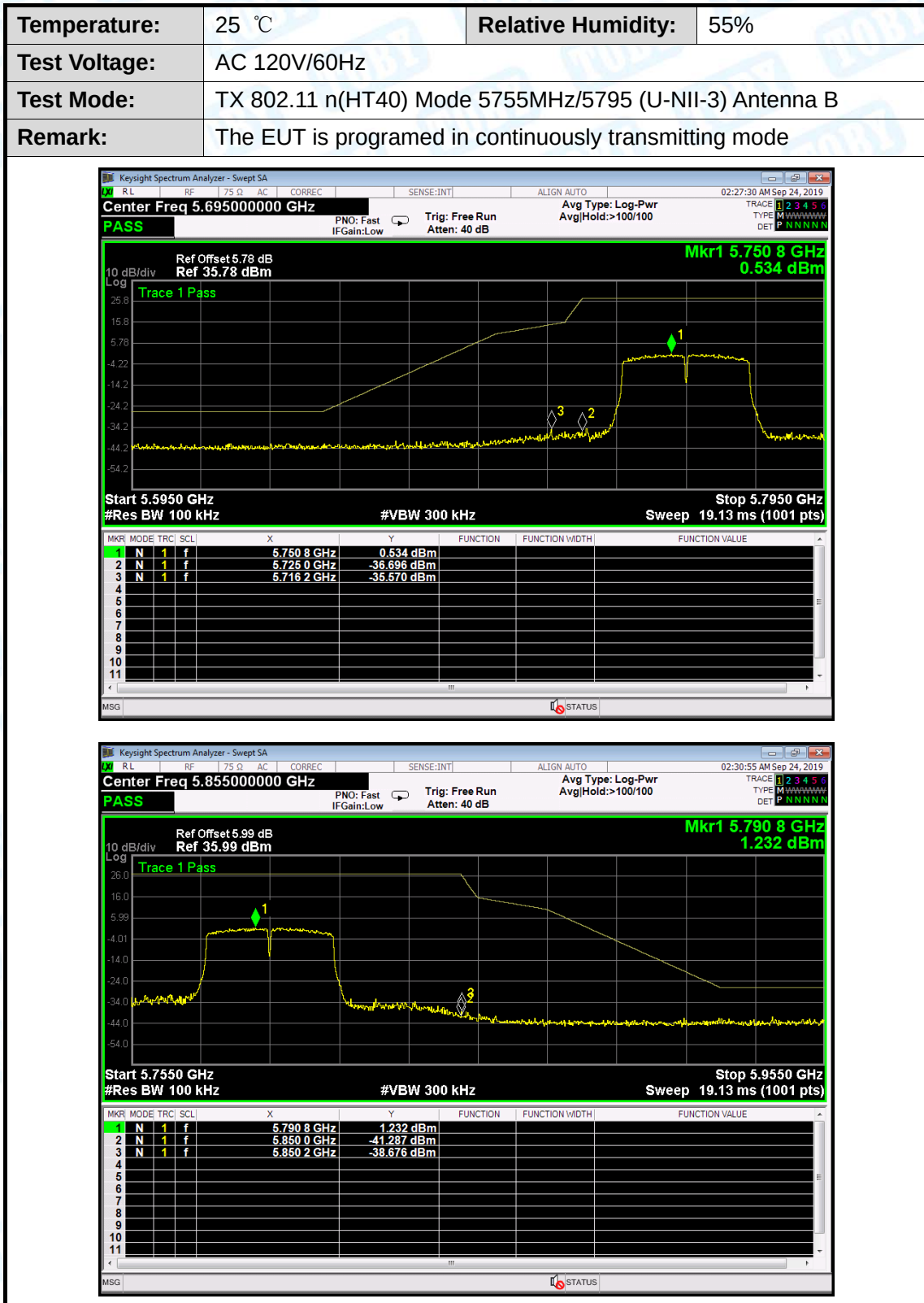
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11ac(VHT20) Mode 5745MHz /5825MHz (U-NII-3) Antenna A		
Remark:	The EUT is programed in continuously transmitting mode		

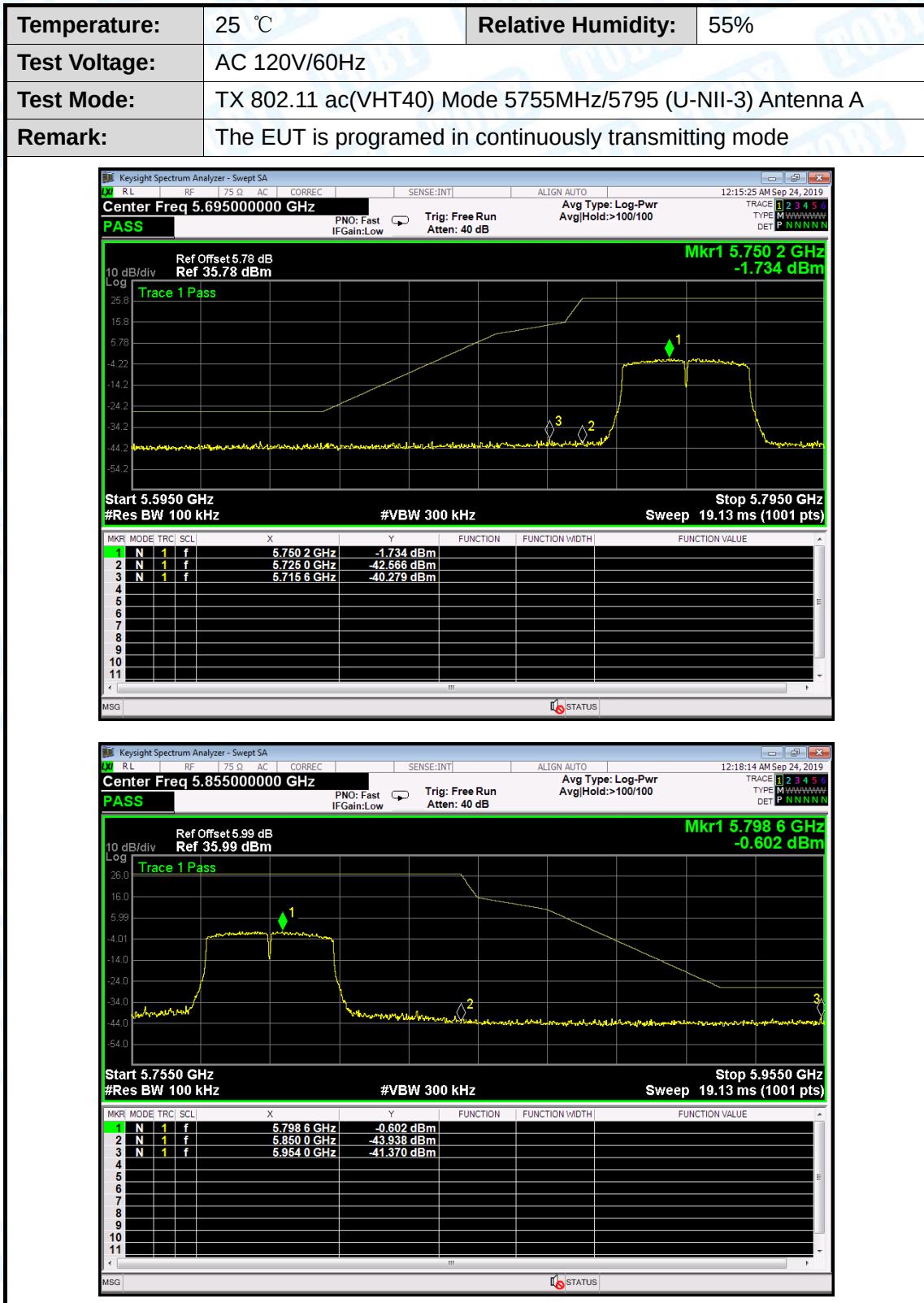


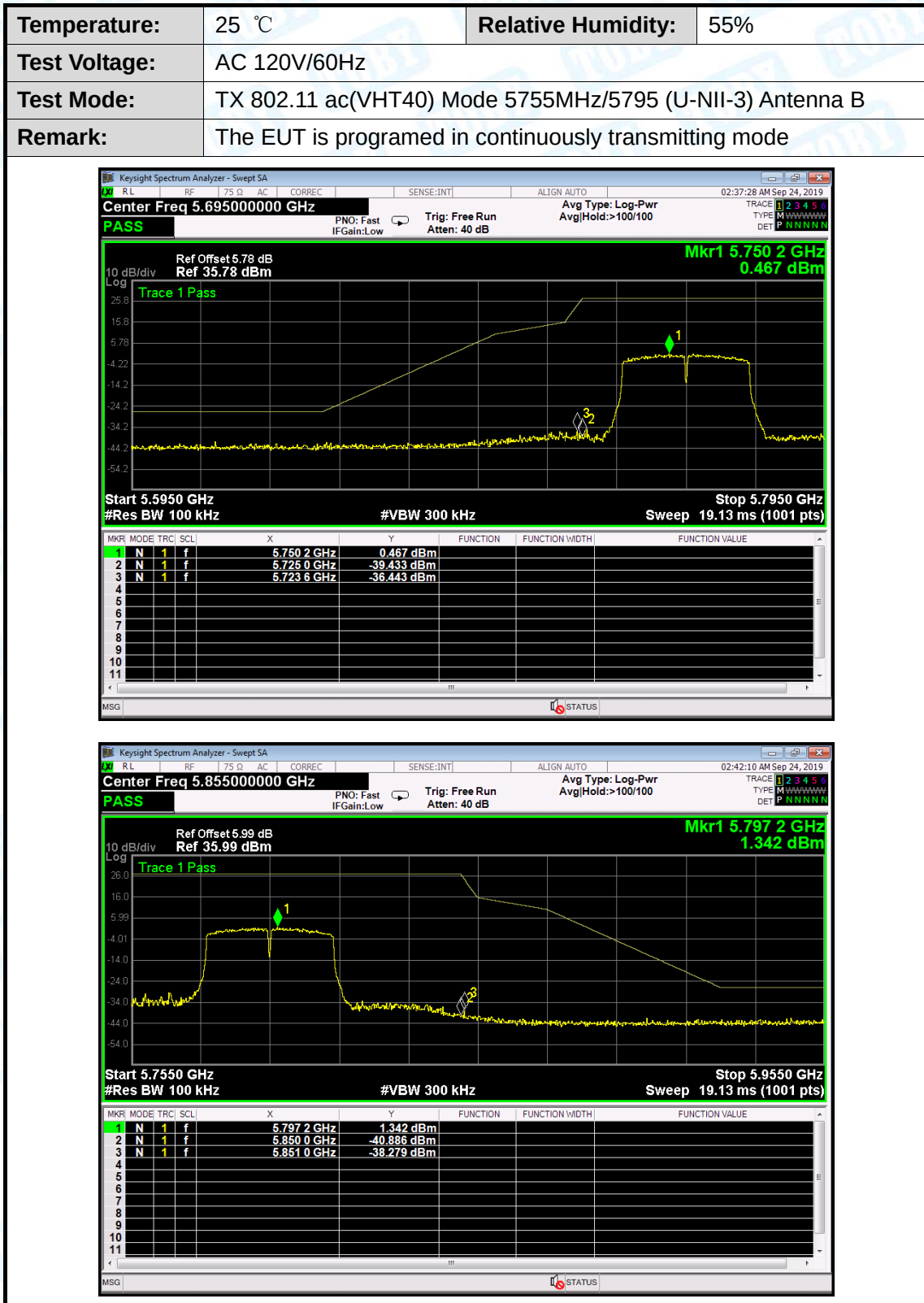
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11ac(VHT20) Mode 5745MHz /5825MHz (U-NII-3) Antenna B		
Remark:	The EUT is programed in continuously transmitting mode		

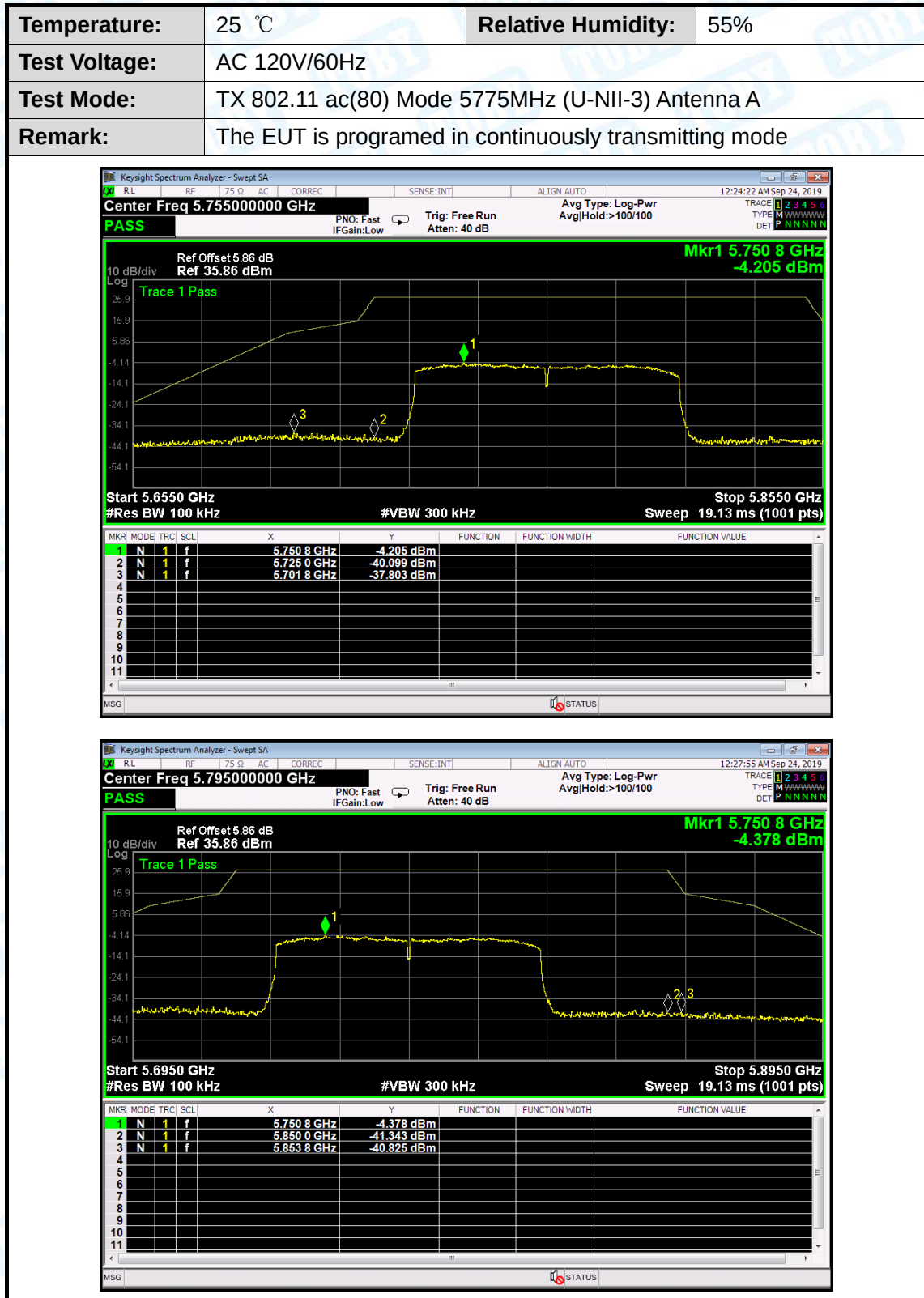


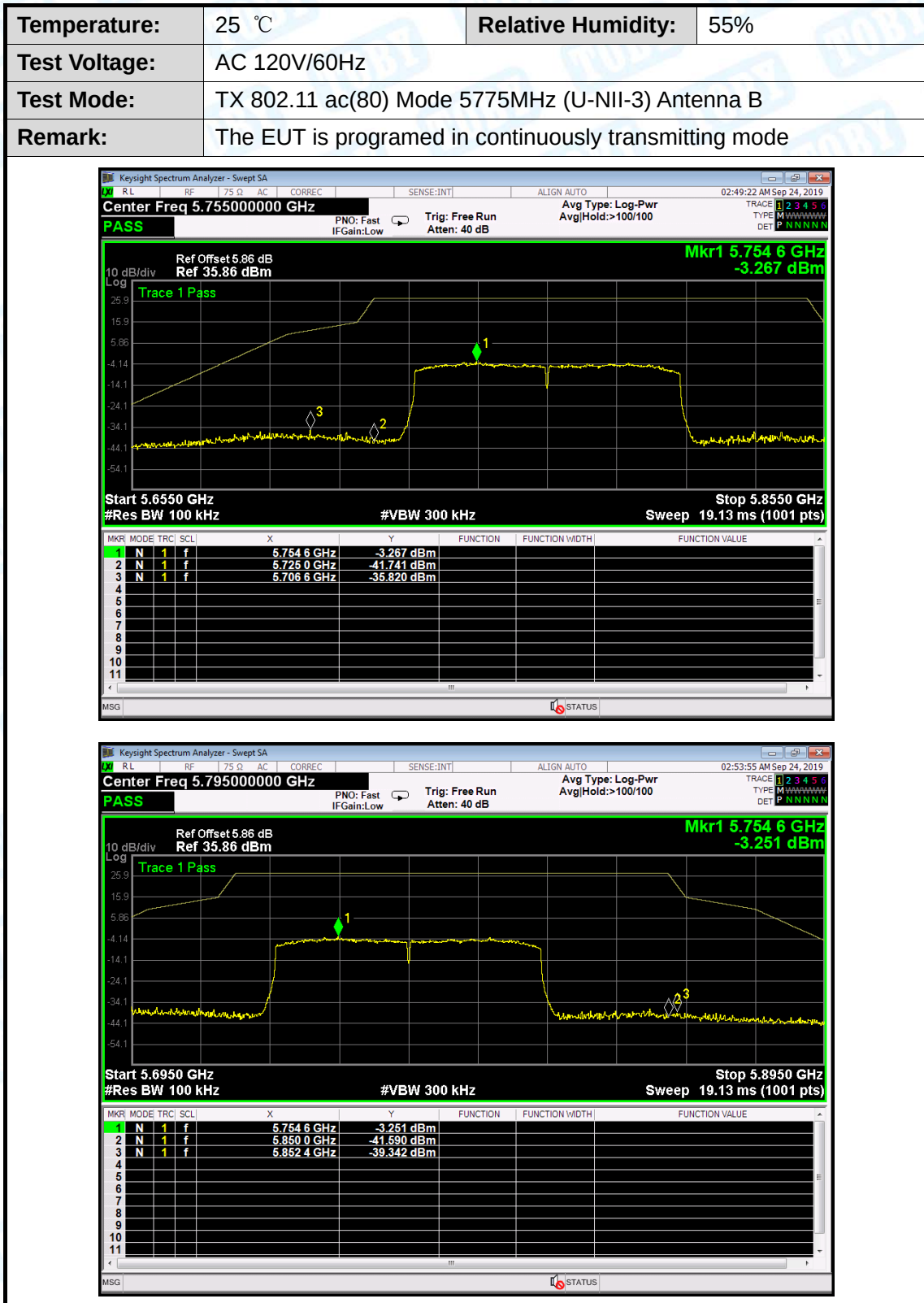












Attachment D--Bandwidth Test Data

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX 802.11a Mode (U-NII-1) Antenna A		
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
36	5180	18.44	16.386
40	5200	18.58	16.414
48	5240	18.64	16.402

802.11a Mode

5180 MHz

Keysight Spectrum Analyzer - Occupied BW

RL RF 75 Ω AC CORREC SENSE:INT ALIGN AUTO 05:33:15 PM Sep 23, 2019

Center Freq 5.180000000 GHz Center Freq: 5.180000000 GHz Radio Std: None

#IFGain:Low Trig: Free Run Avg|Hold:>10/10 Radio Device: BTS

#Atten: 30 dB

10 dB/div Ref 20.00 dBm

Log

Center 5.18 GHz Span 40 MHz

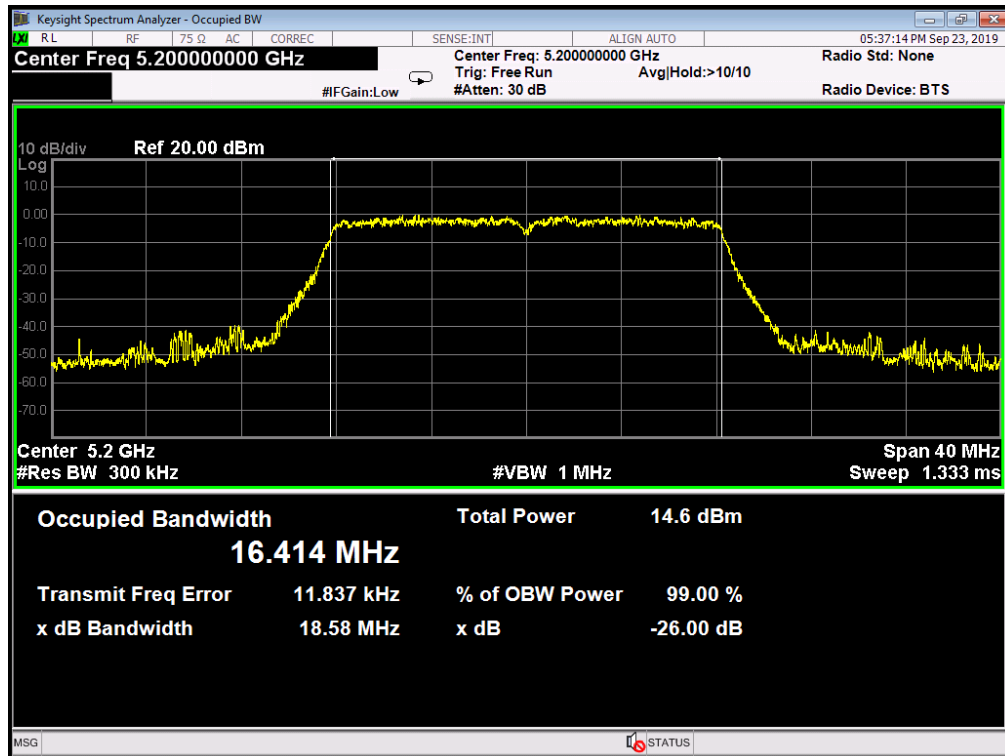
#Res BW 300 kHz #VBW 1 MHz Sweep 1.333 ms

Occupied Bandwidth	Total Power	14.6 dBm
16.386 MHz		
Transmit Freq Error	13.866 kHz	% of OBW Power 99.00 %
x dB Bandwidth	18.44 MHz	x dB -26.00 dB

MSG STATUS

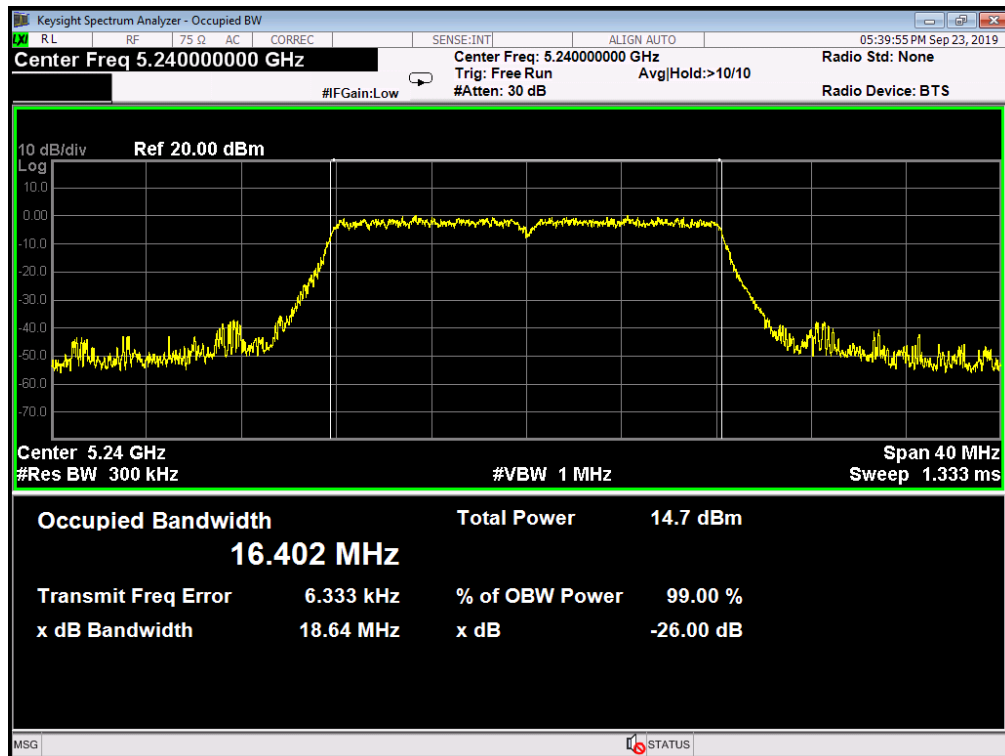
802.11a Mode

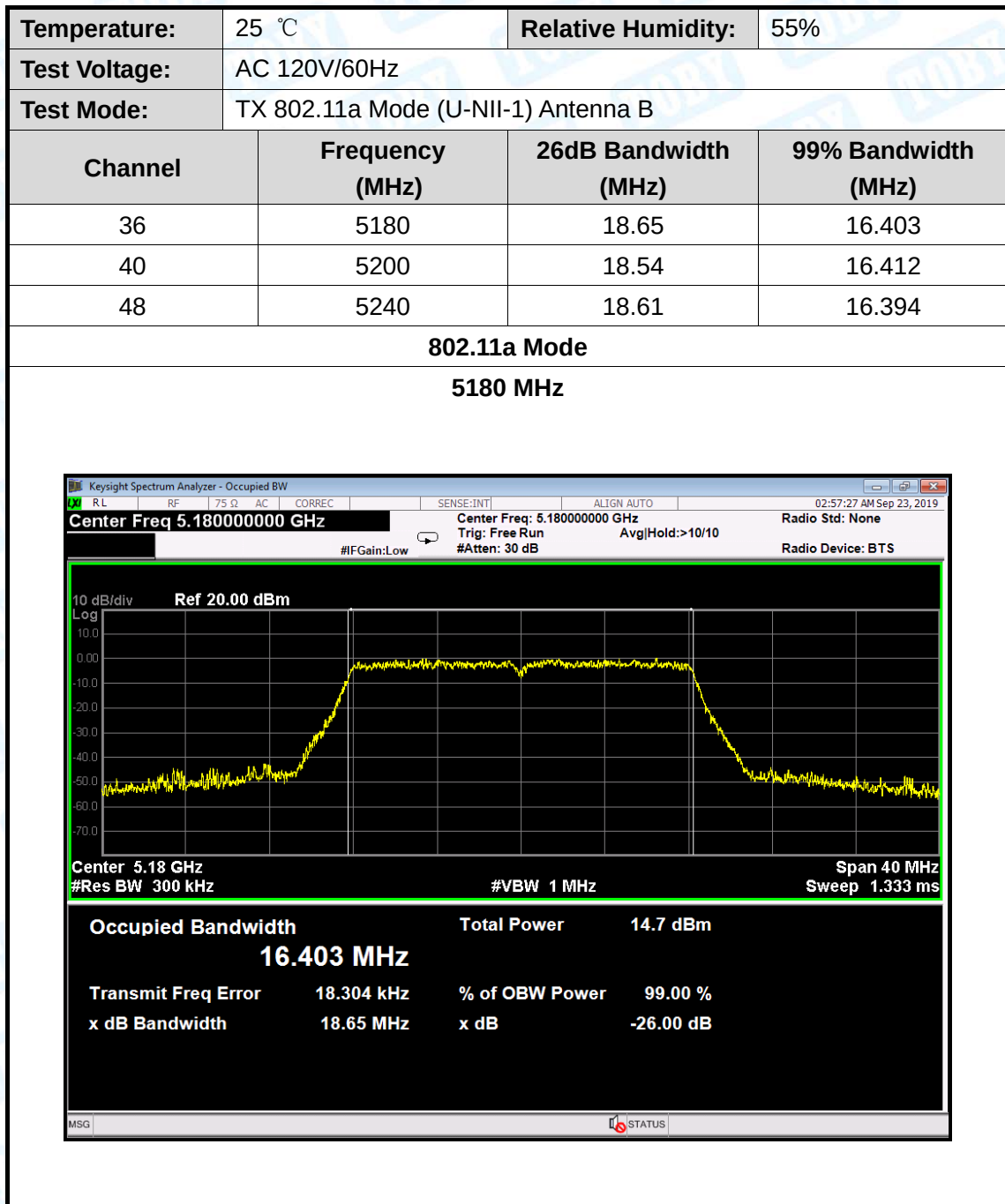
5200 MHz



802.11a Mode

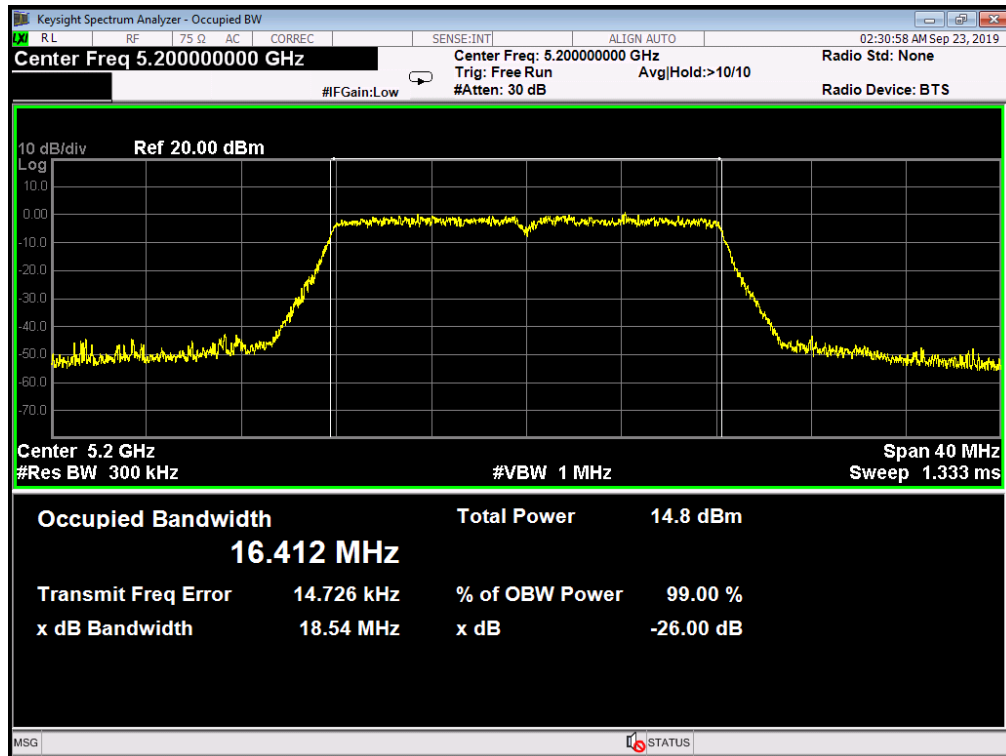
5240 MHz





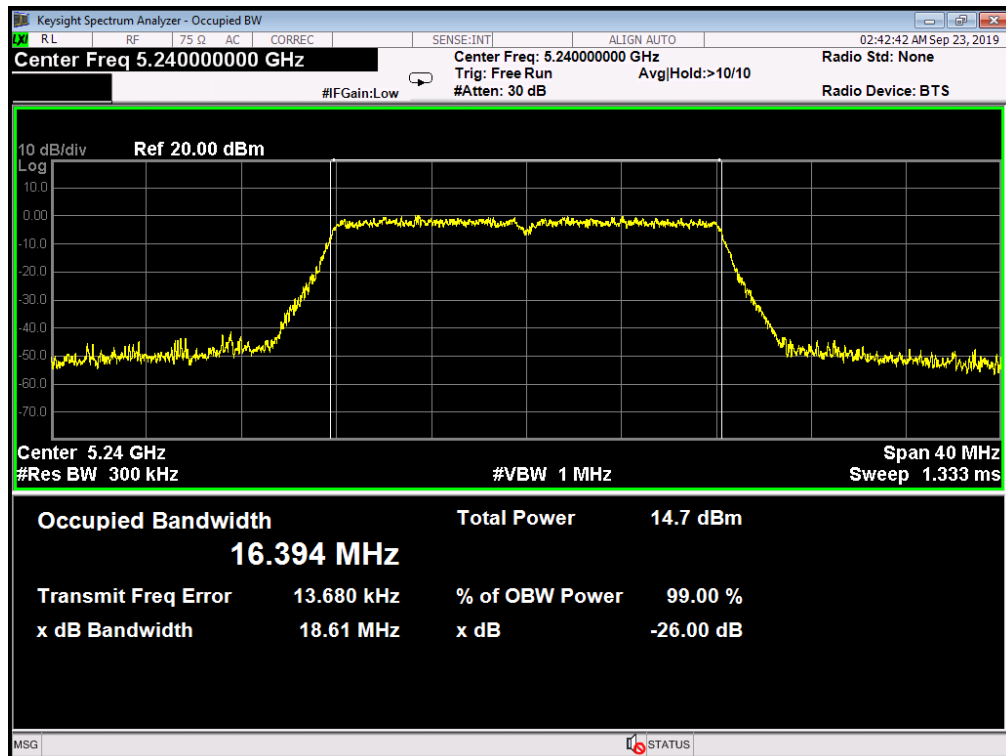
802.11a Mode

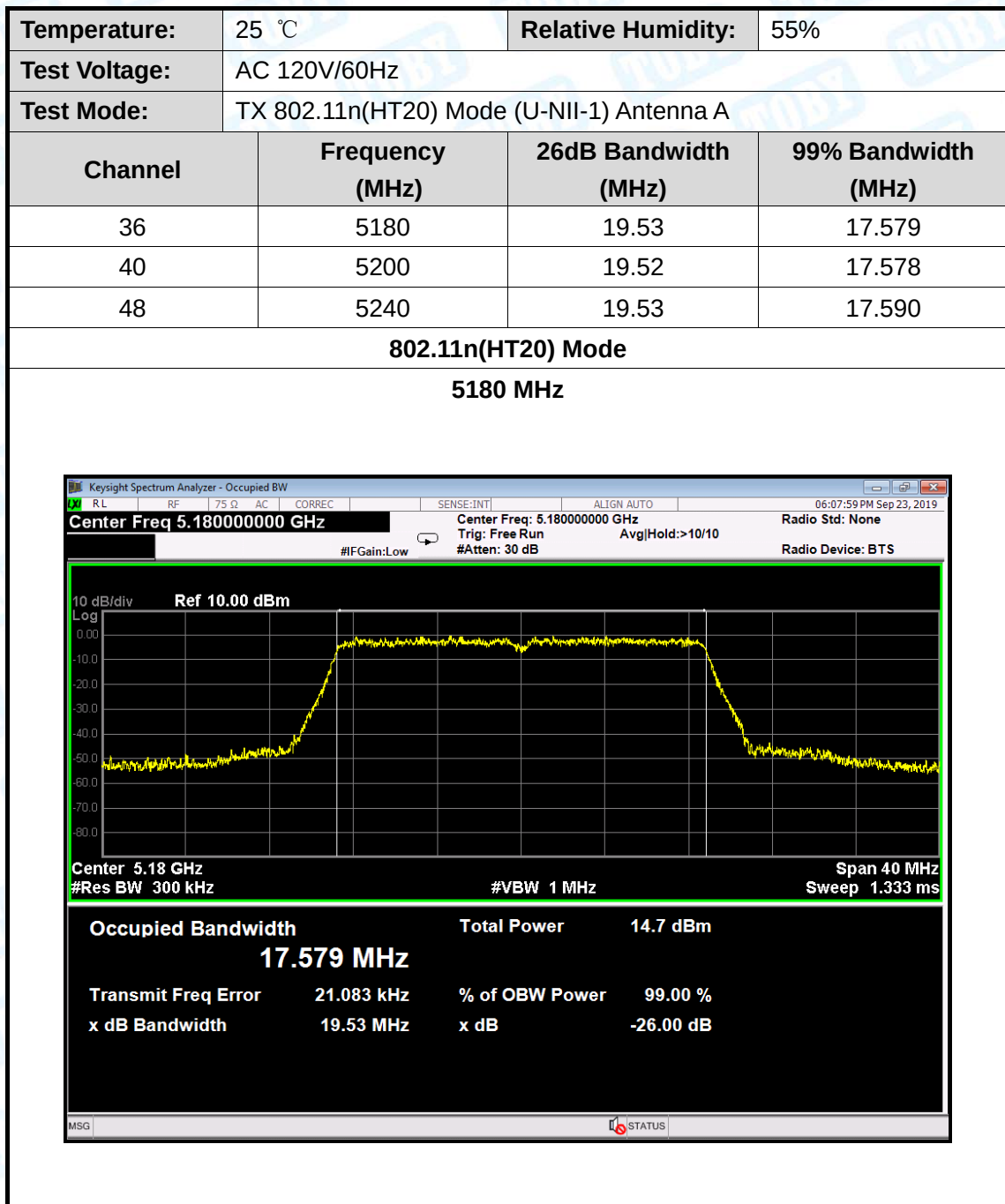
5200 MHz



802.11a Mode

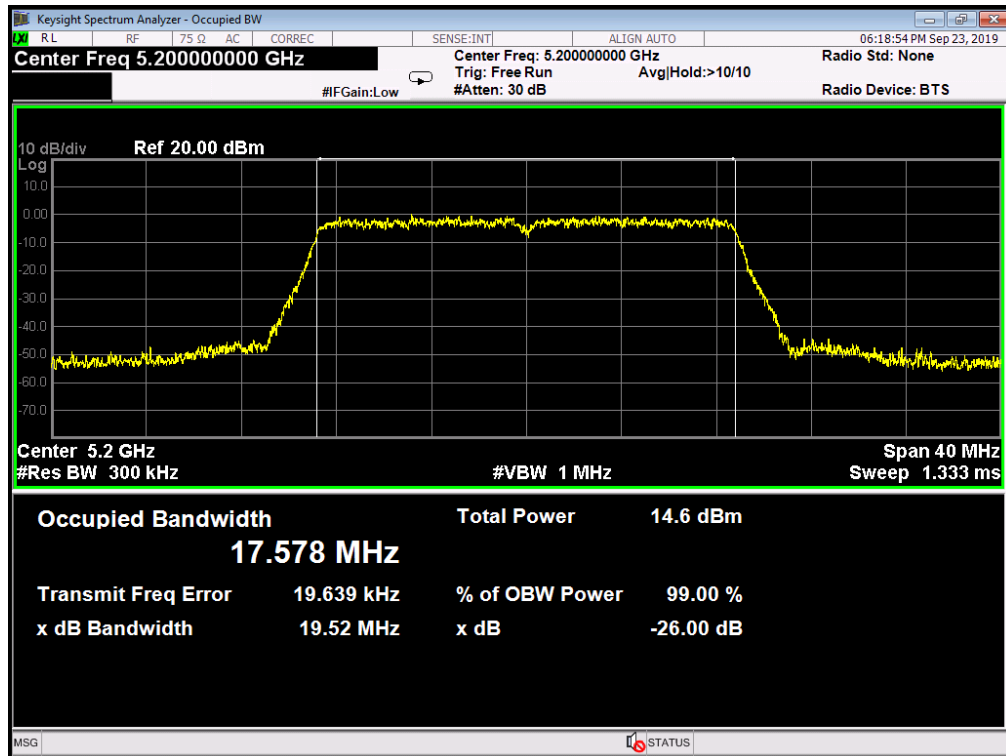
5240 MHz





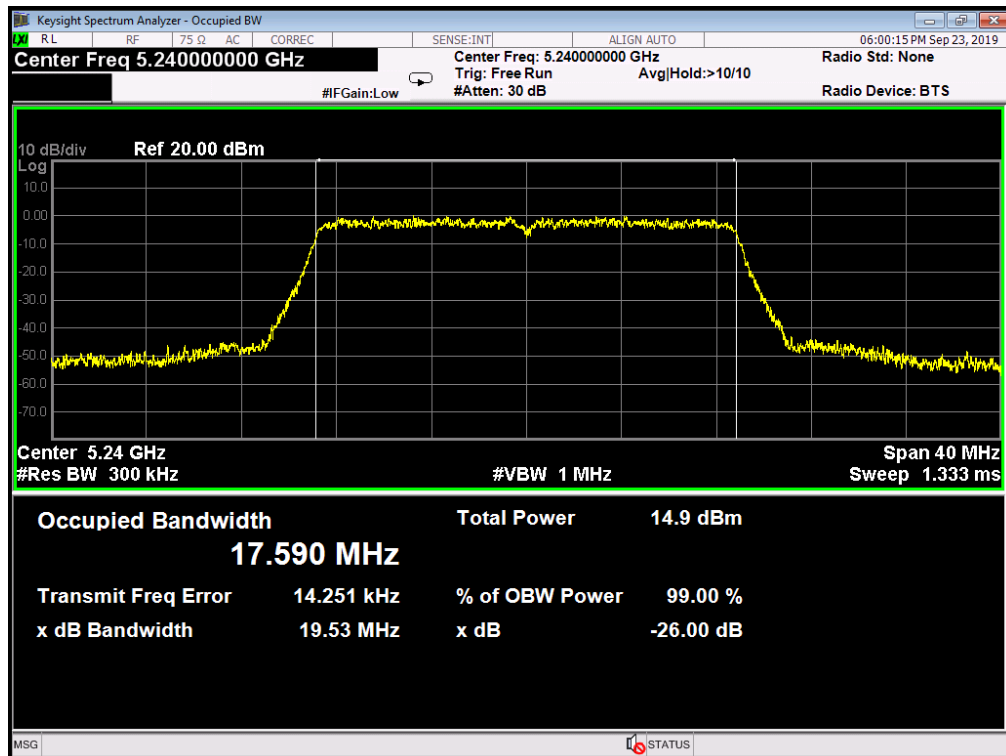
802.11n(HT20) Mode

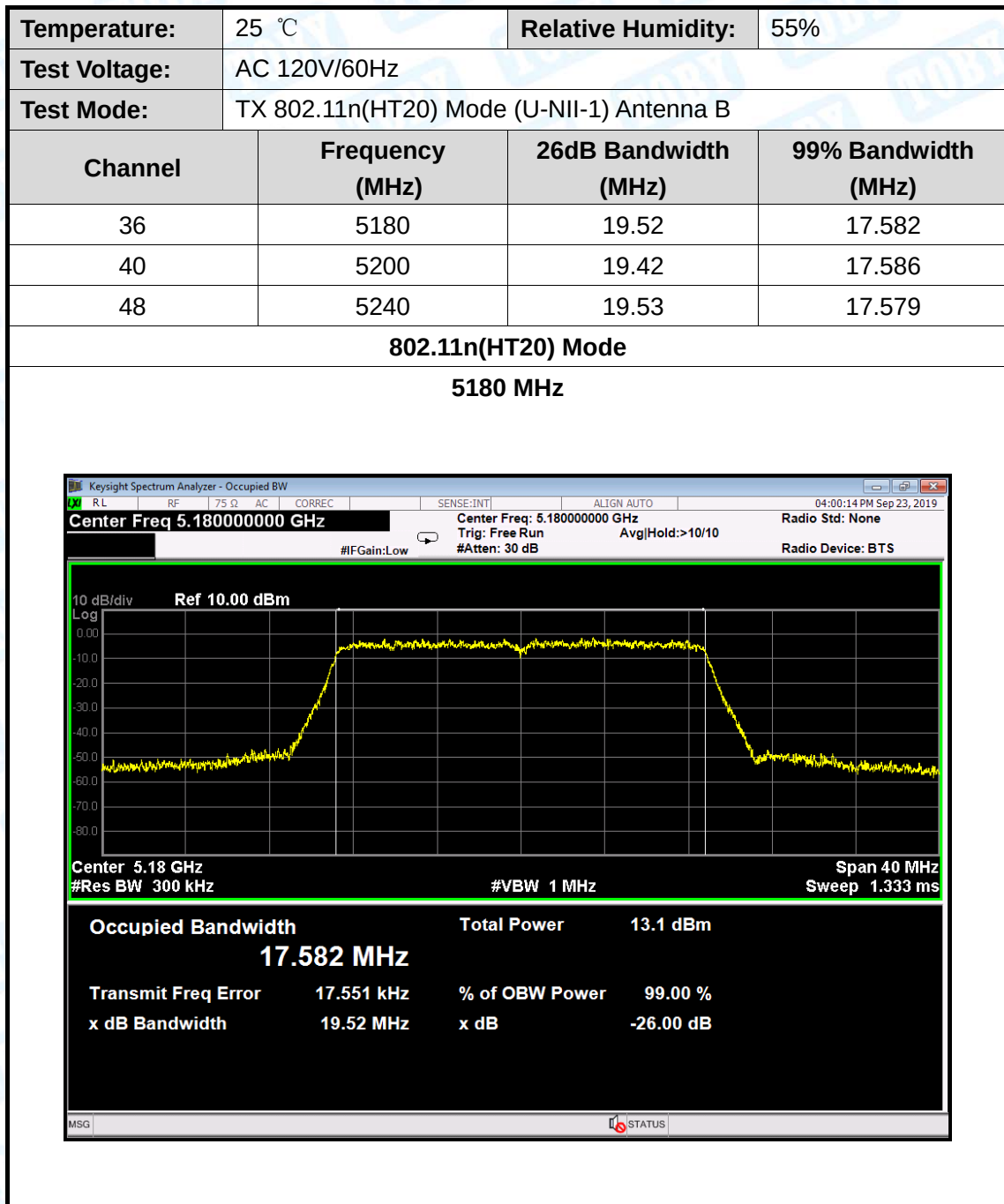
5200 MHz



802.11n(HT20) Mode

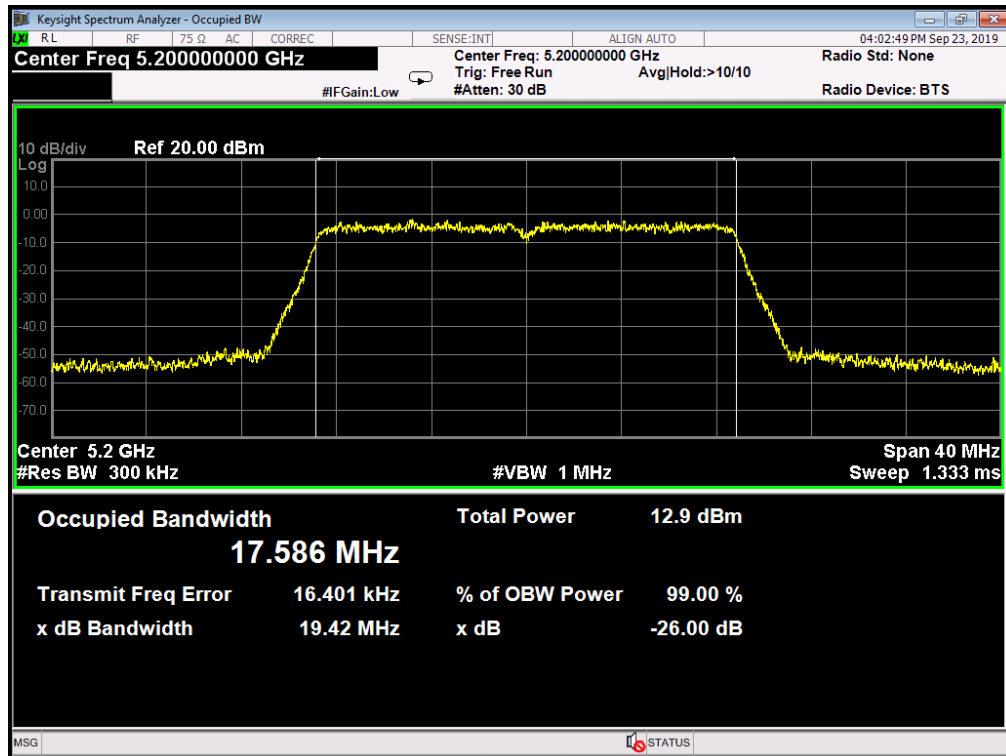
5240 MHz





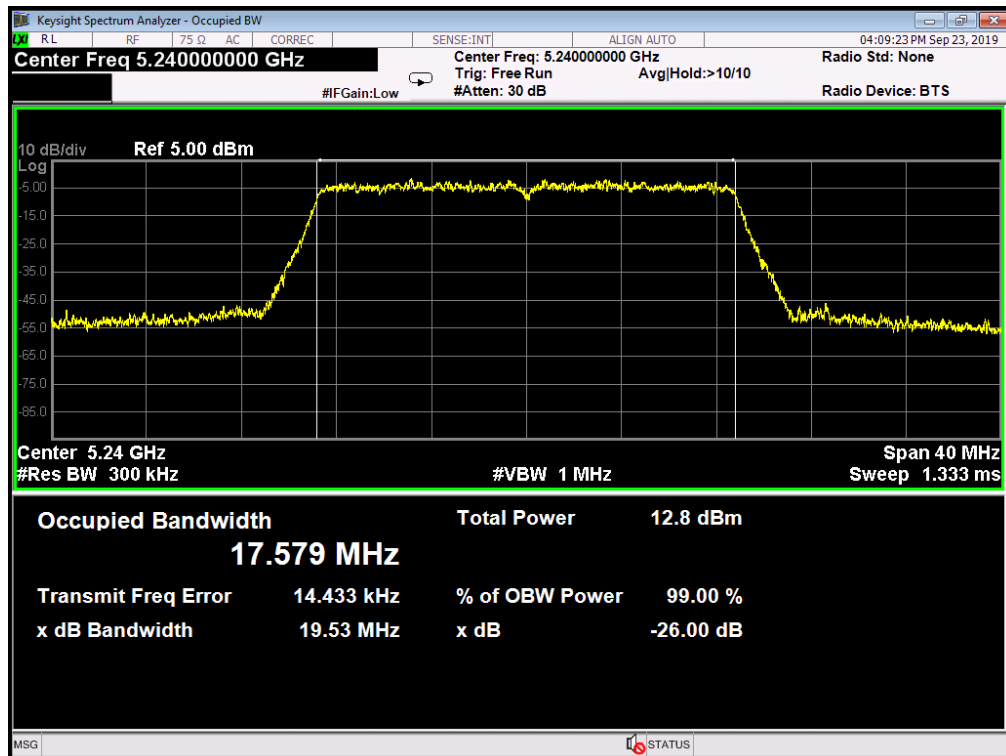
802.11n(HT20) Mode

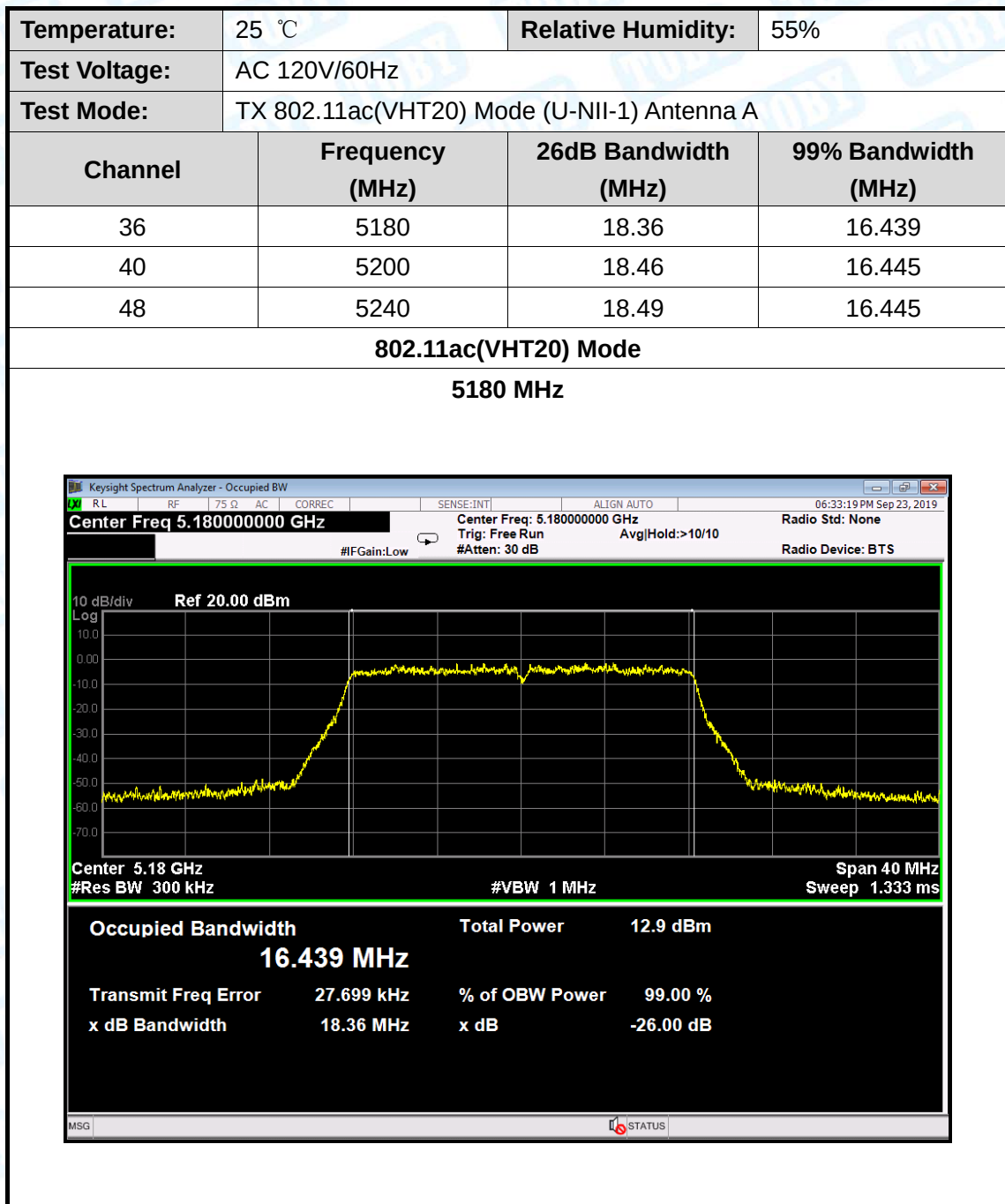
5200 MHz



802.11n(HT20) Mode

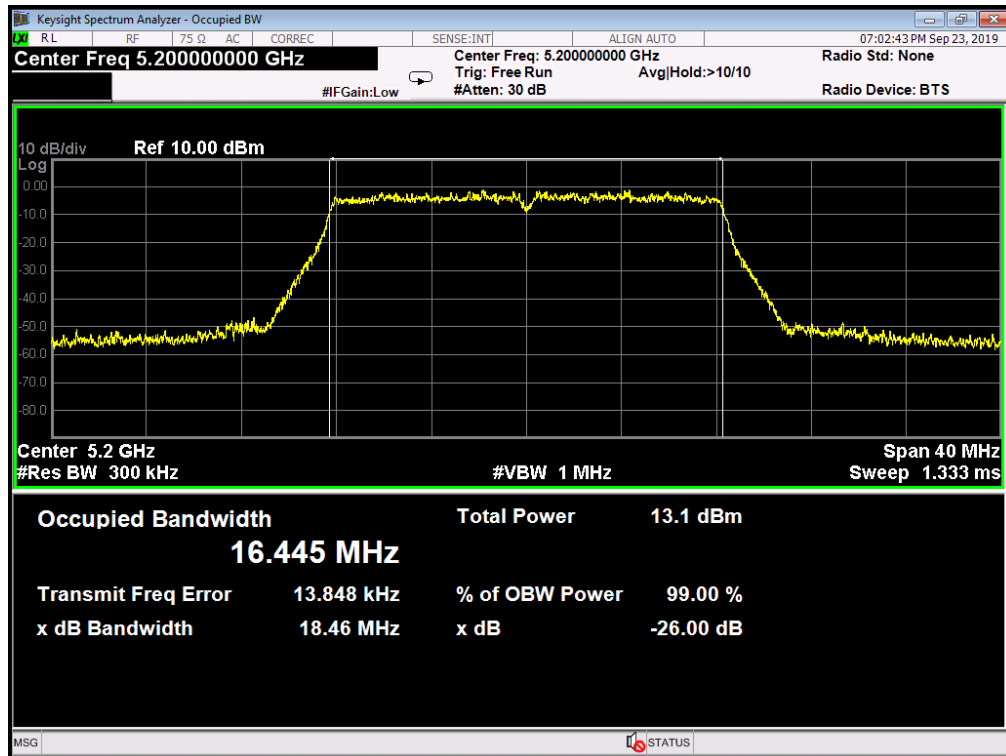
5240 MHz





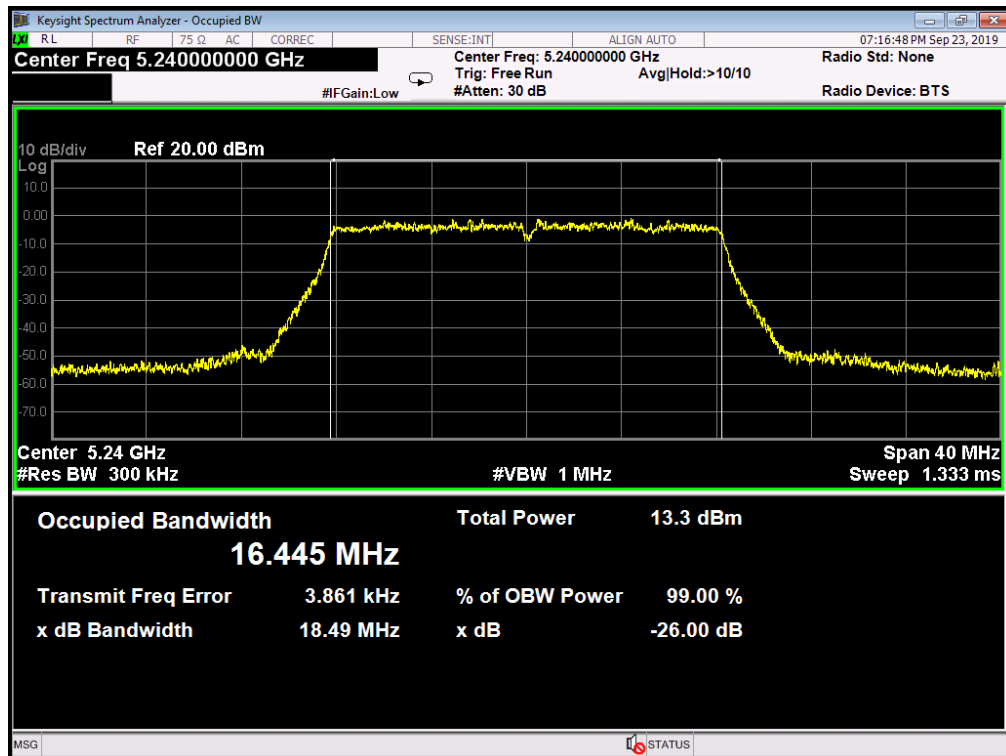
802.11ac(VHT20) Mode

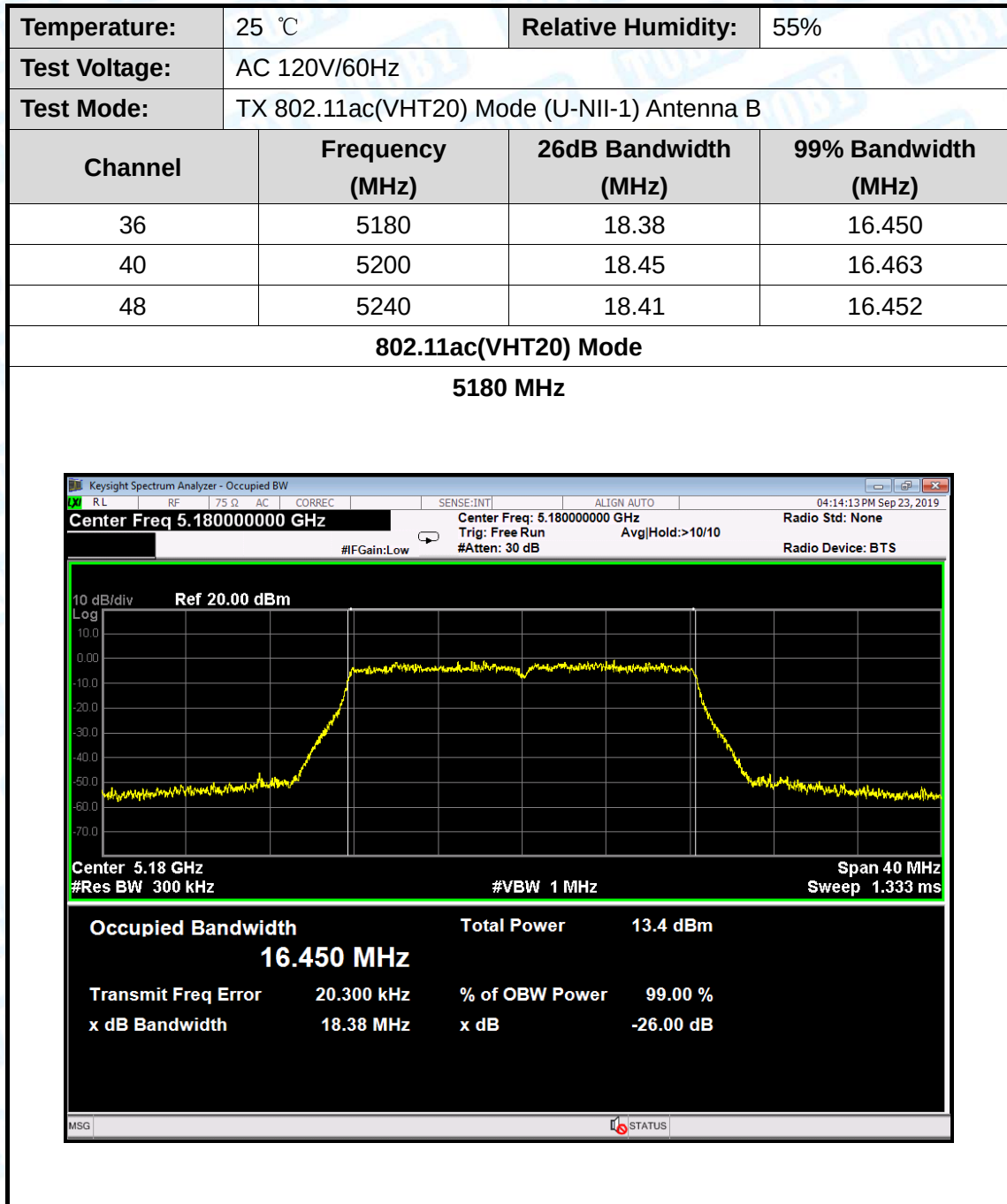
5200 MHz



802.11ac(VHT20) Mode

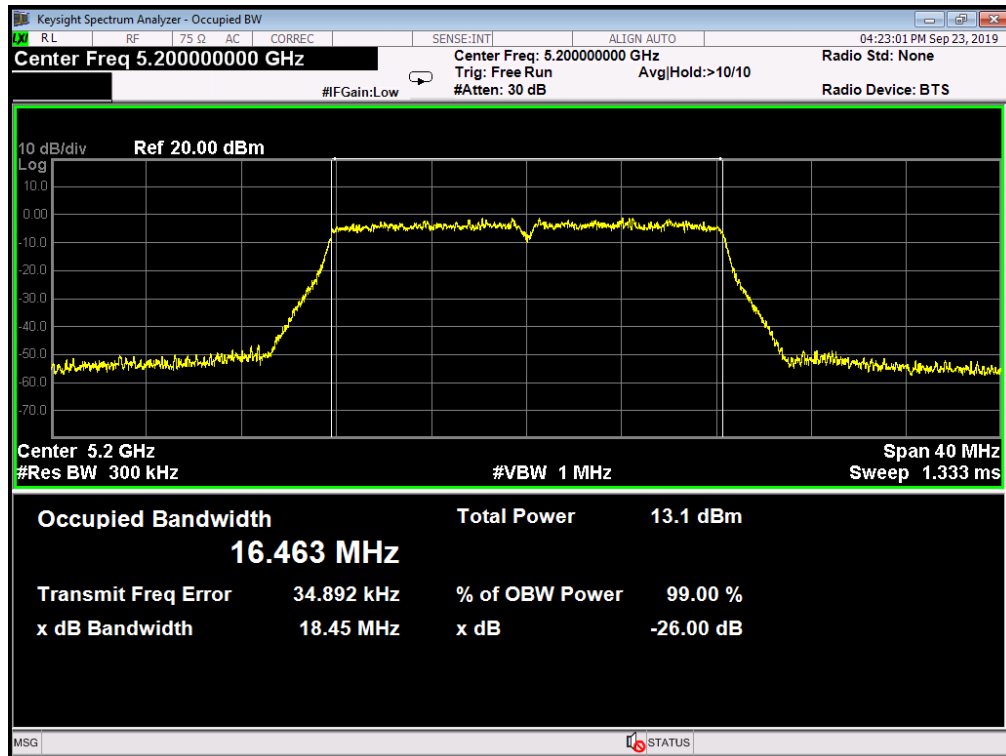
5240 MHz





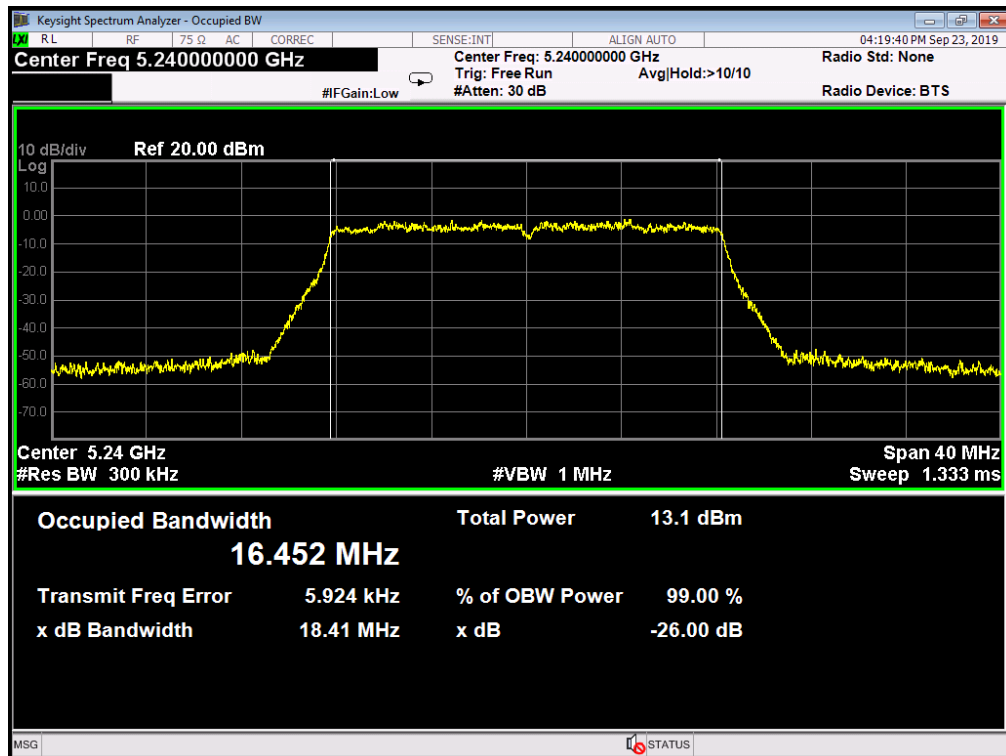
802.11ac(VHT20) Mode

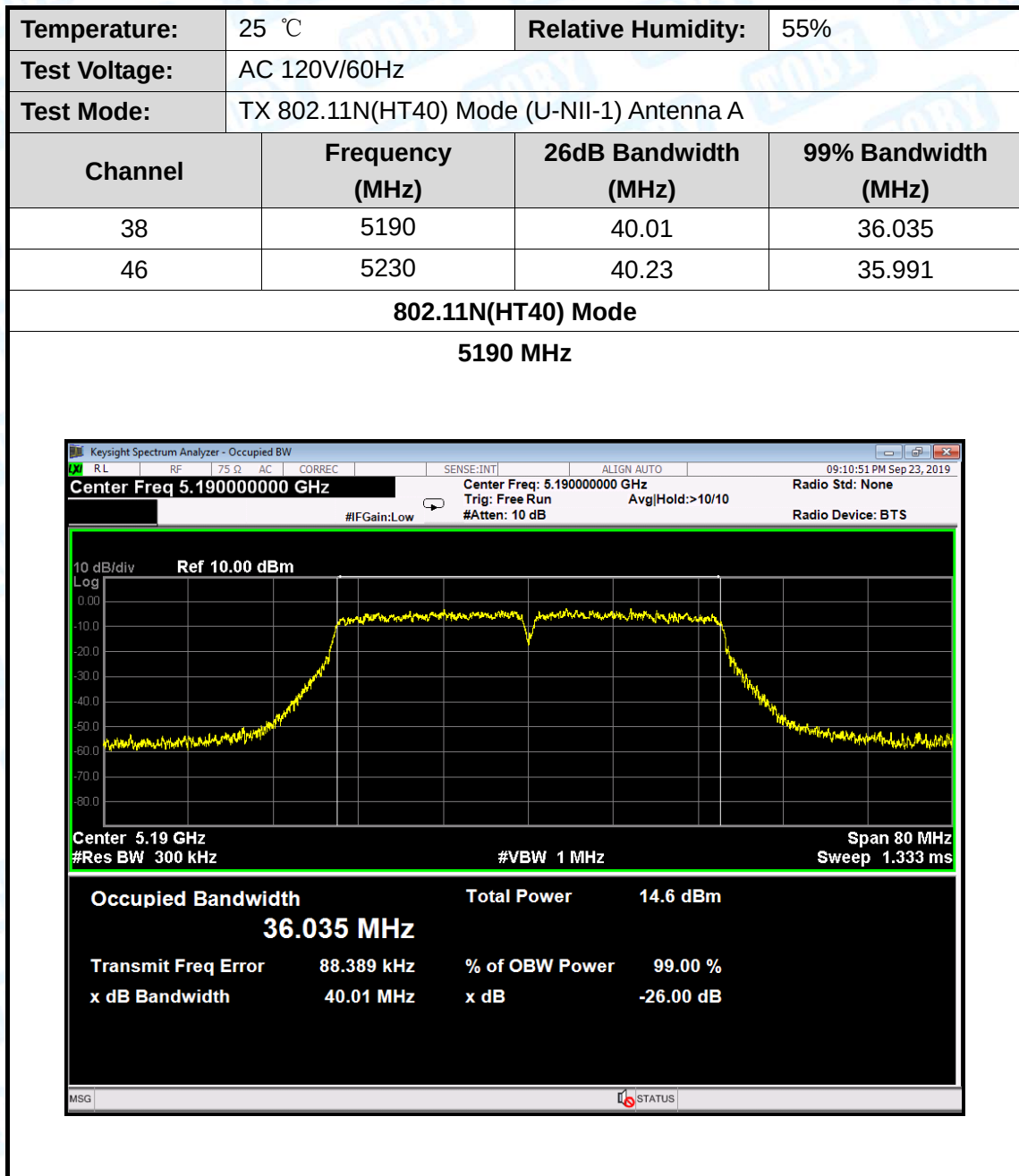
5200 MHz

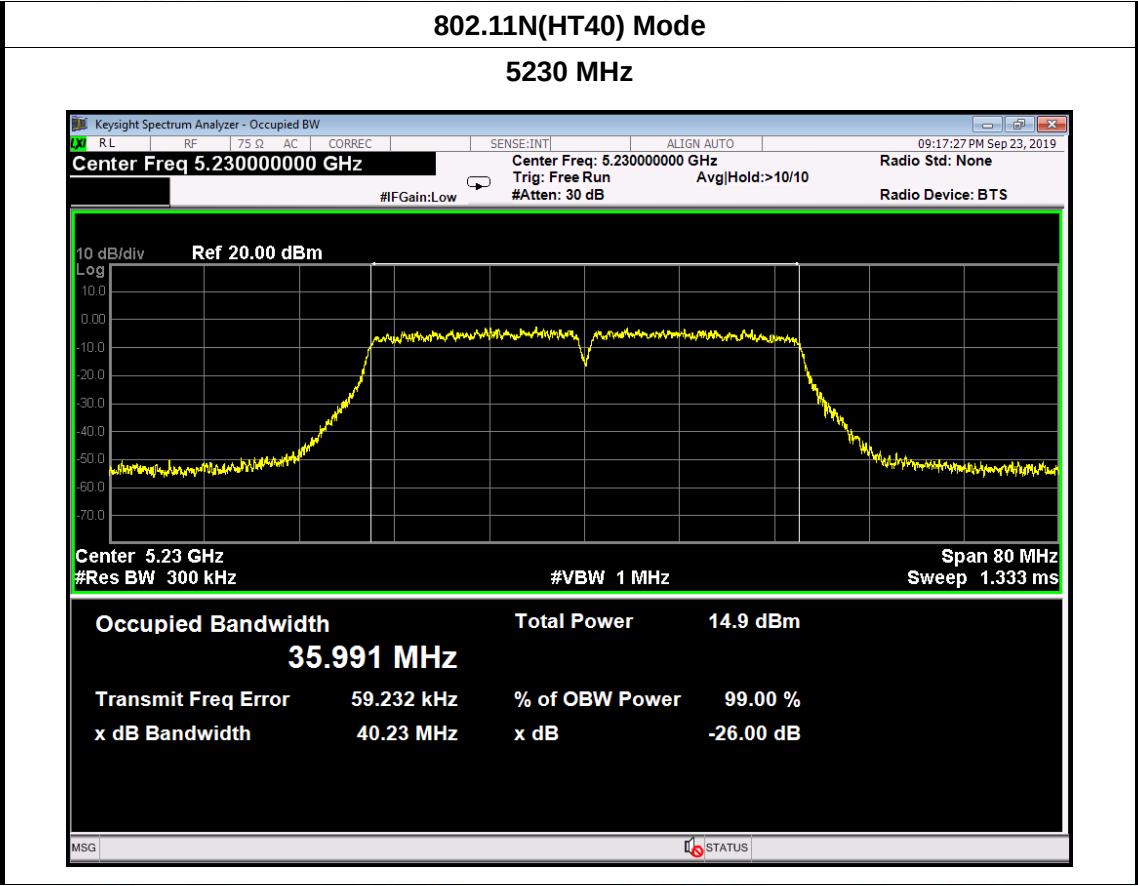


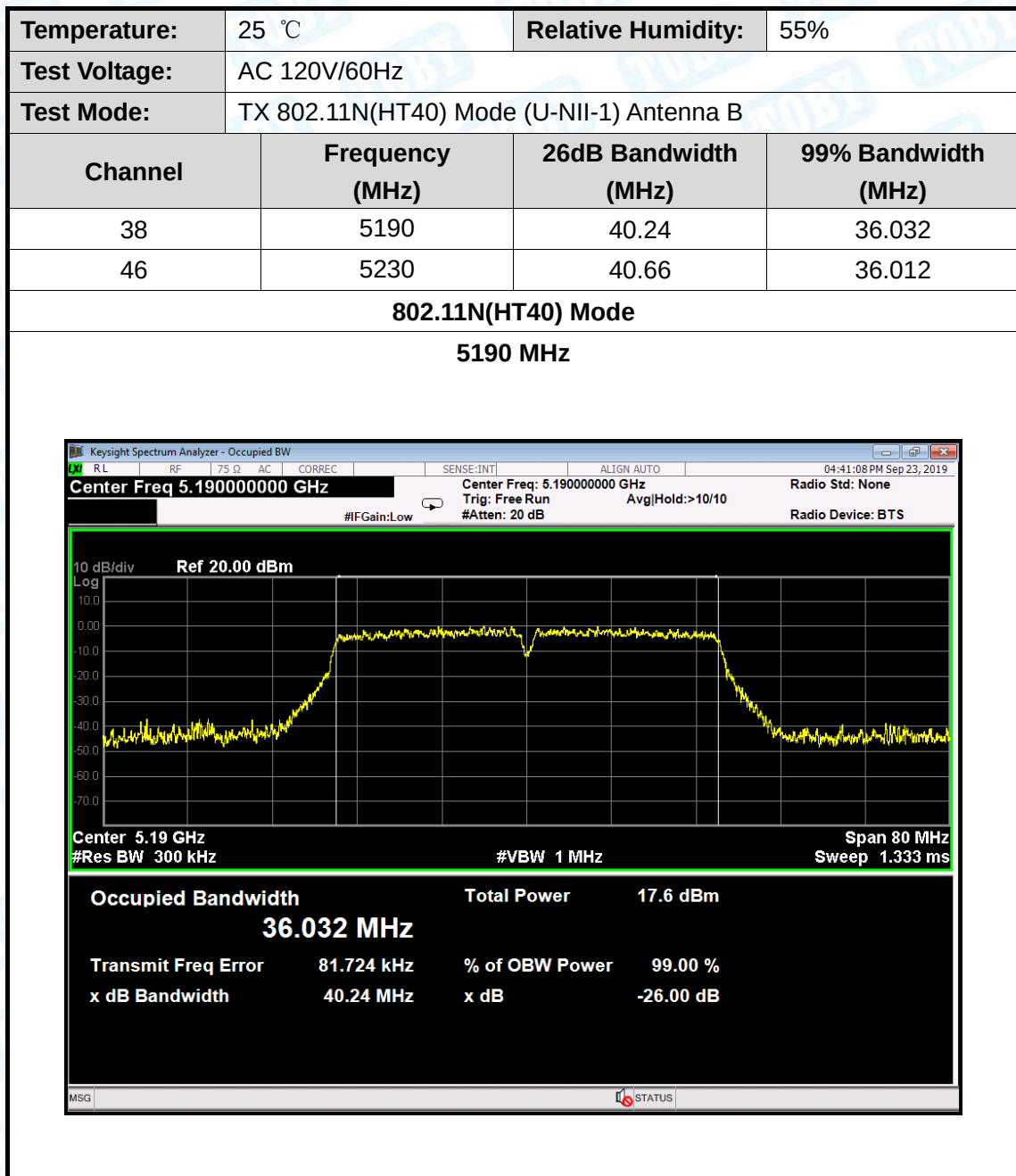
802.11ac(VHT20) Mode

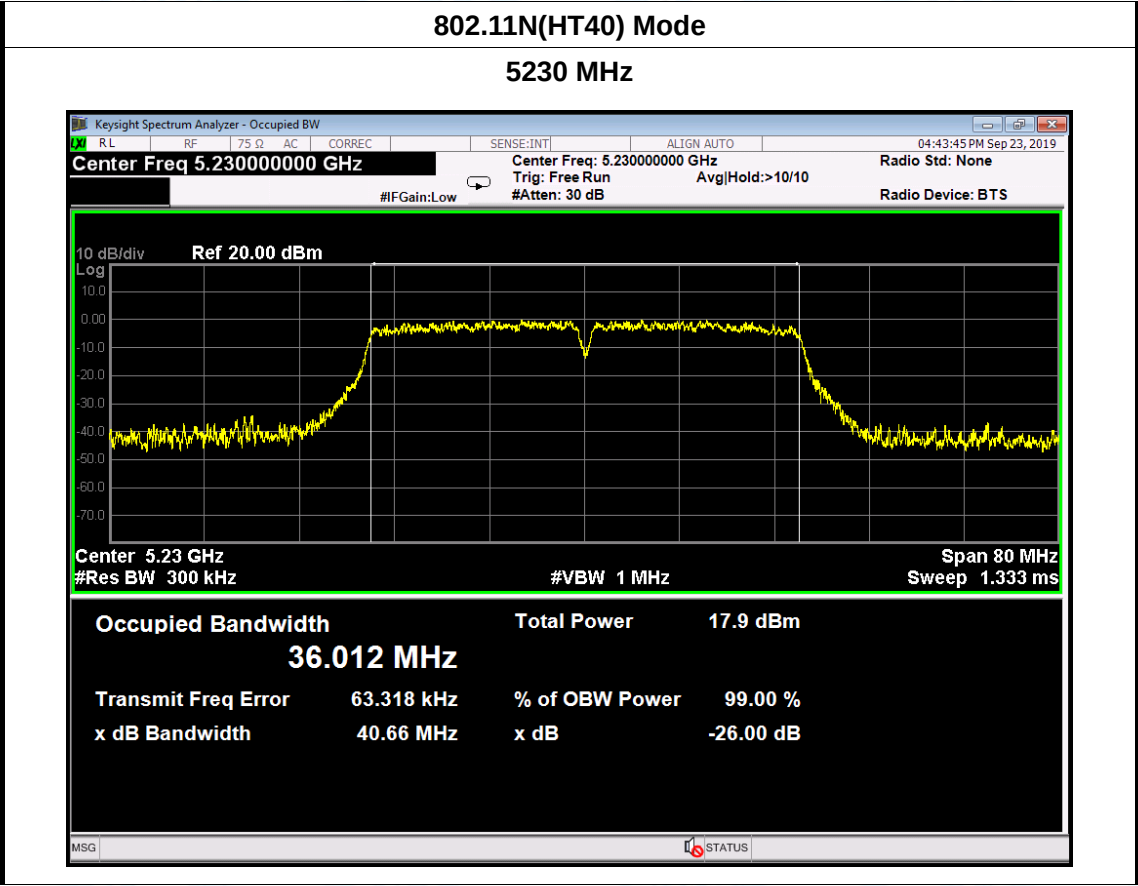
5240 MHz

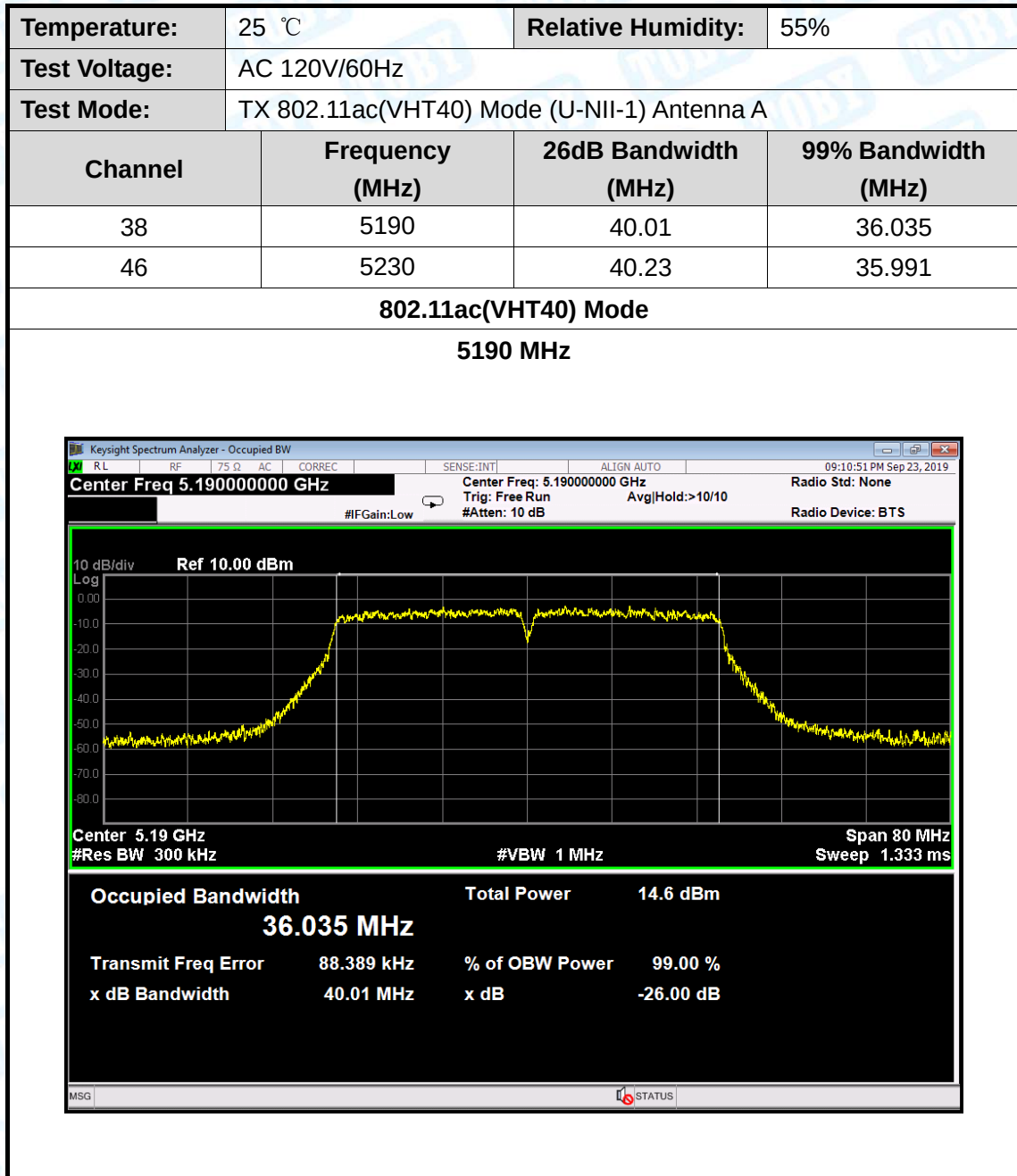


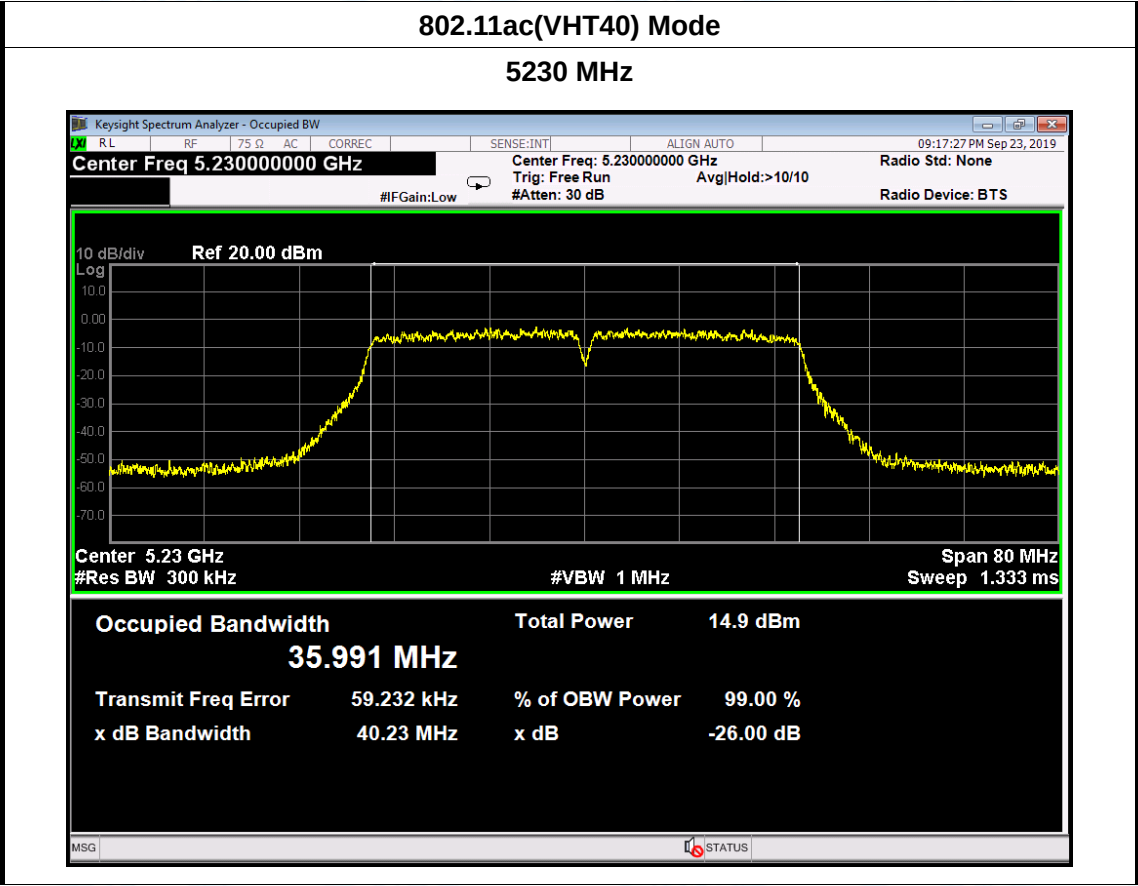


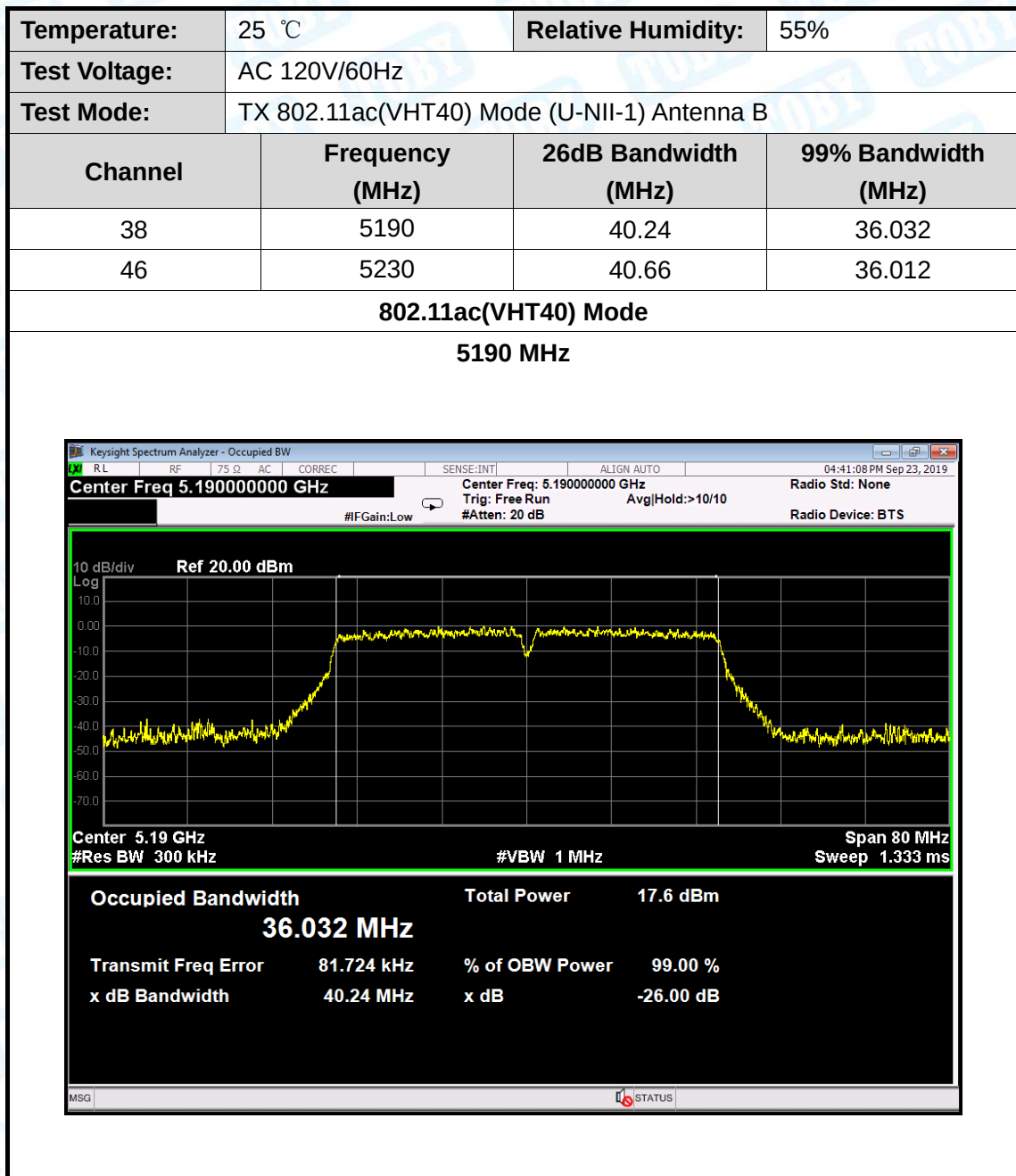


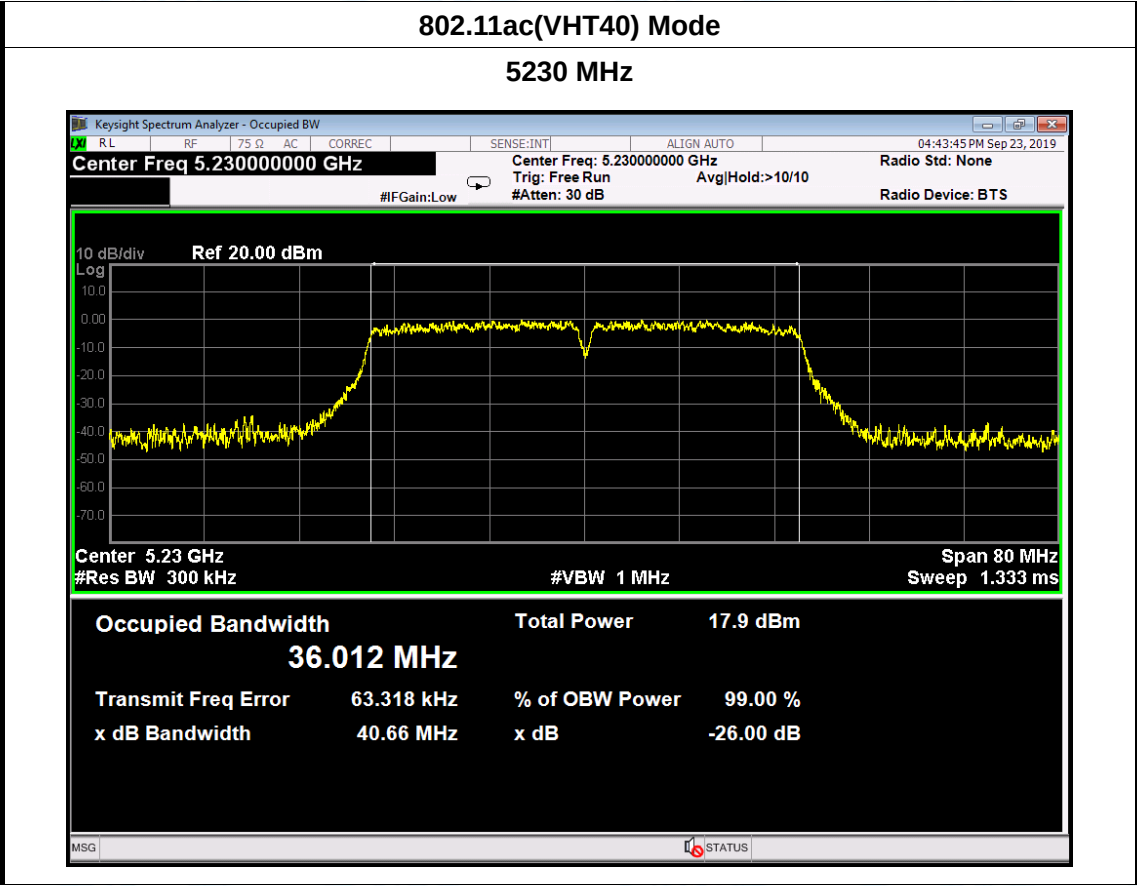


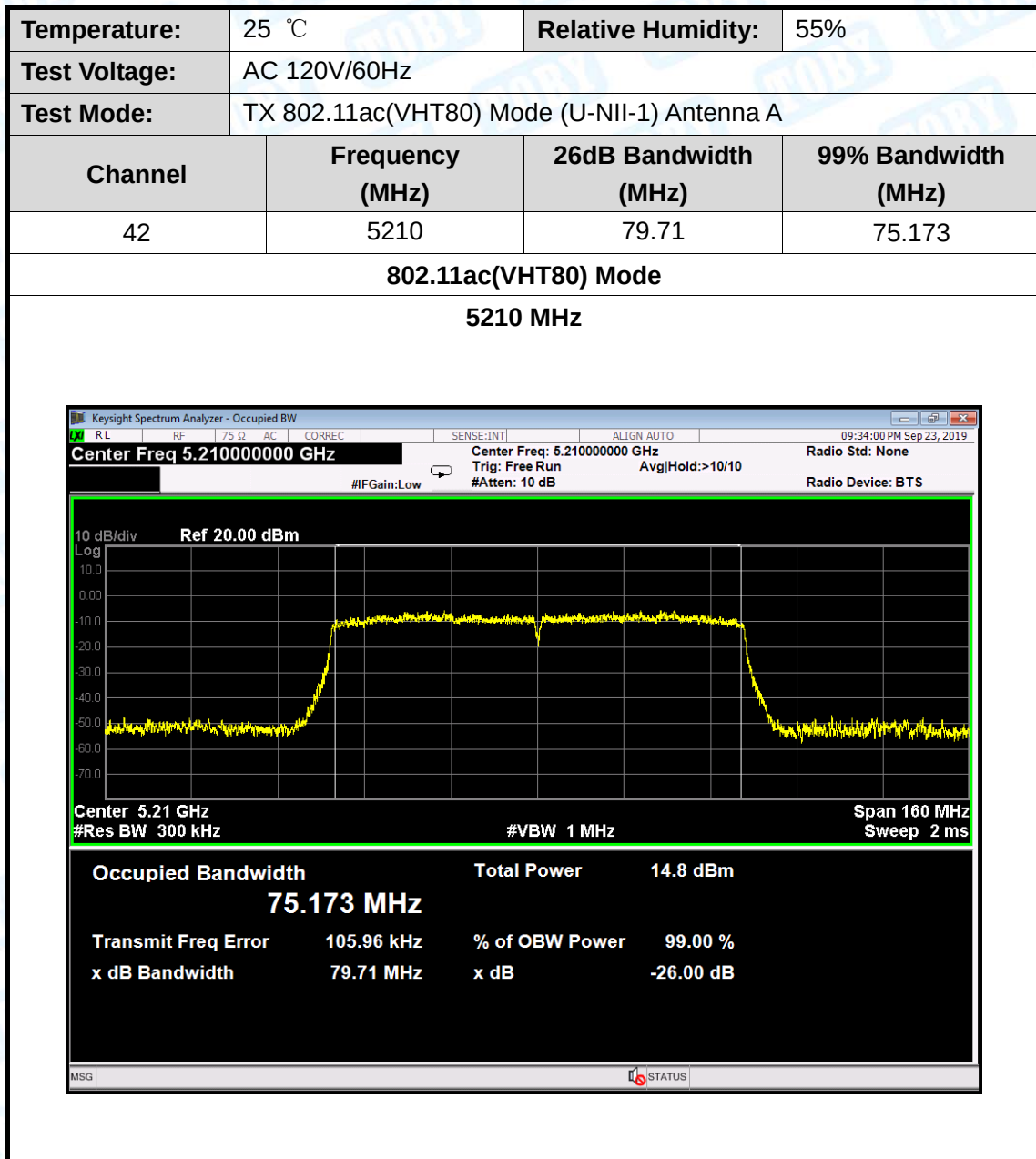


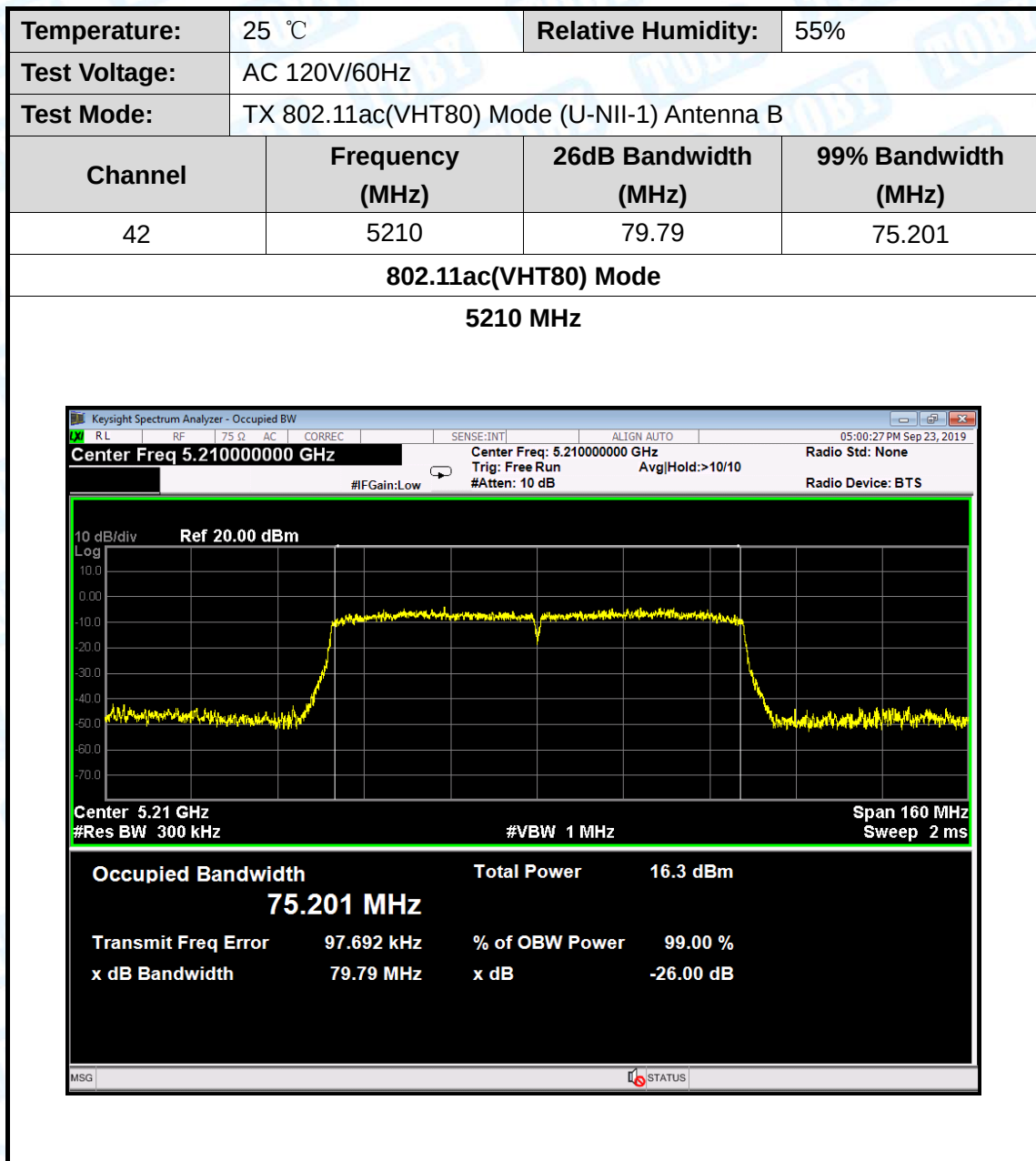


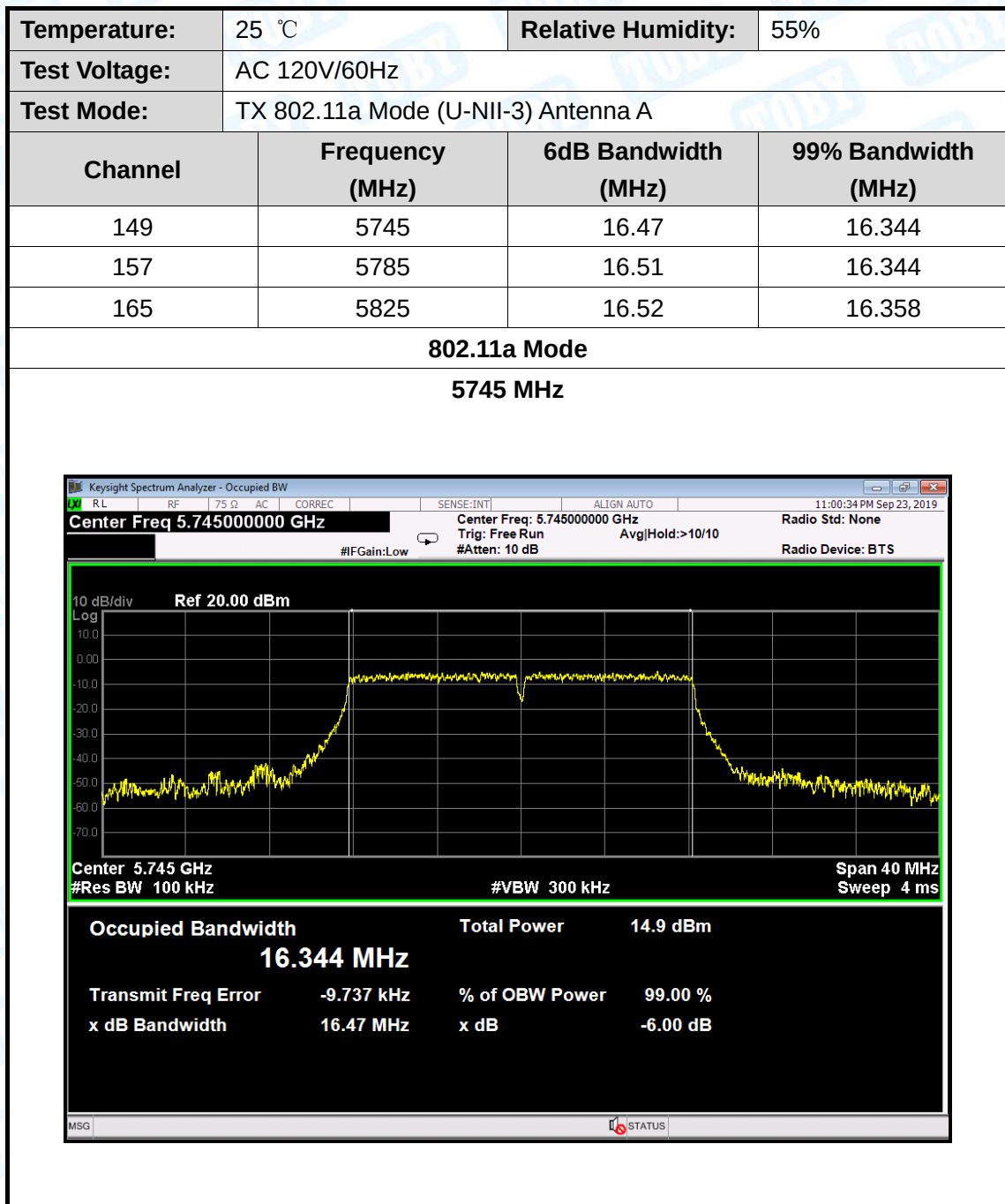






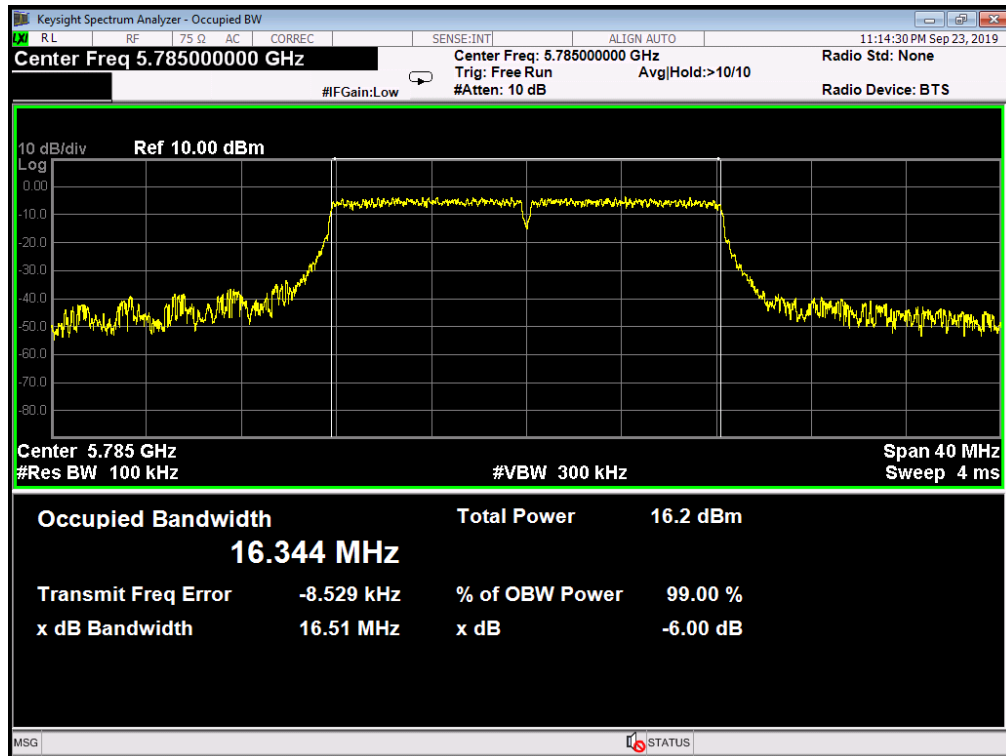






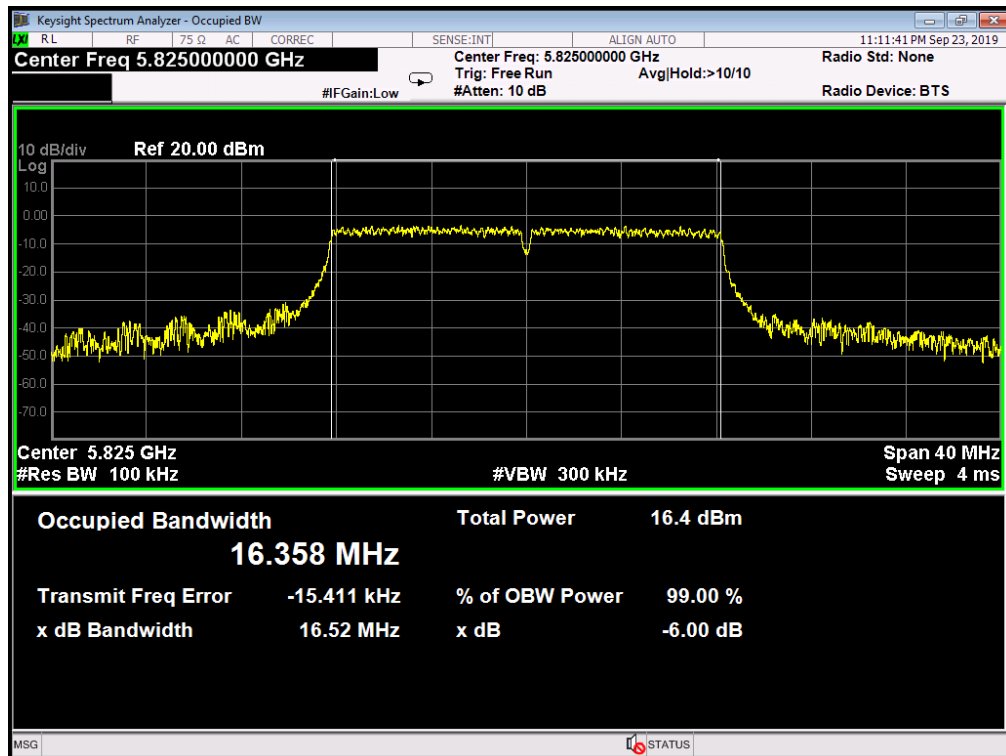
802.11a Mode

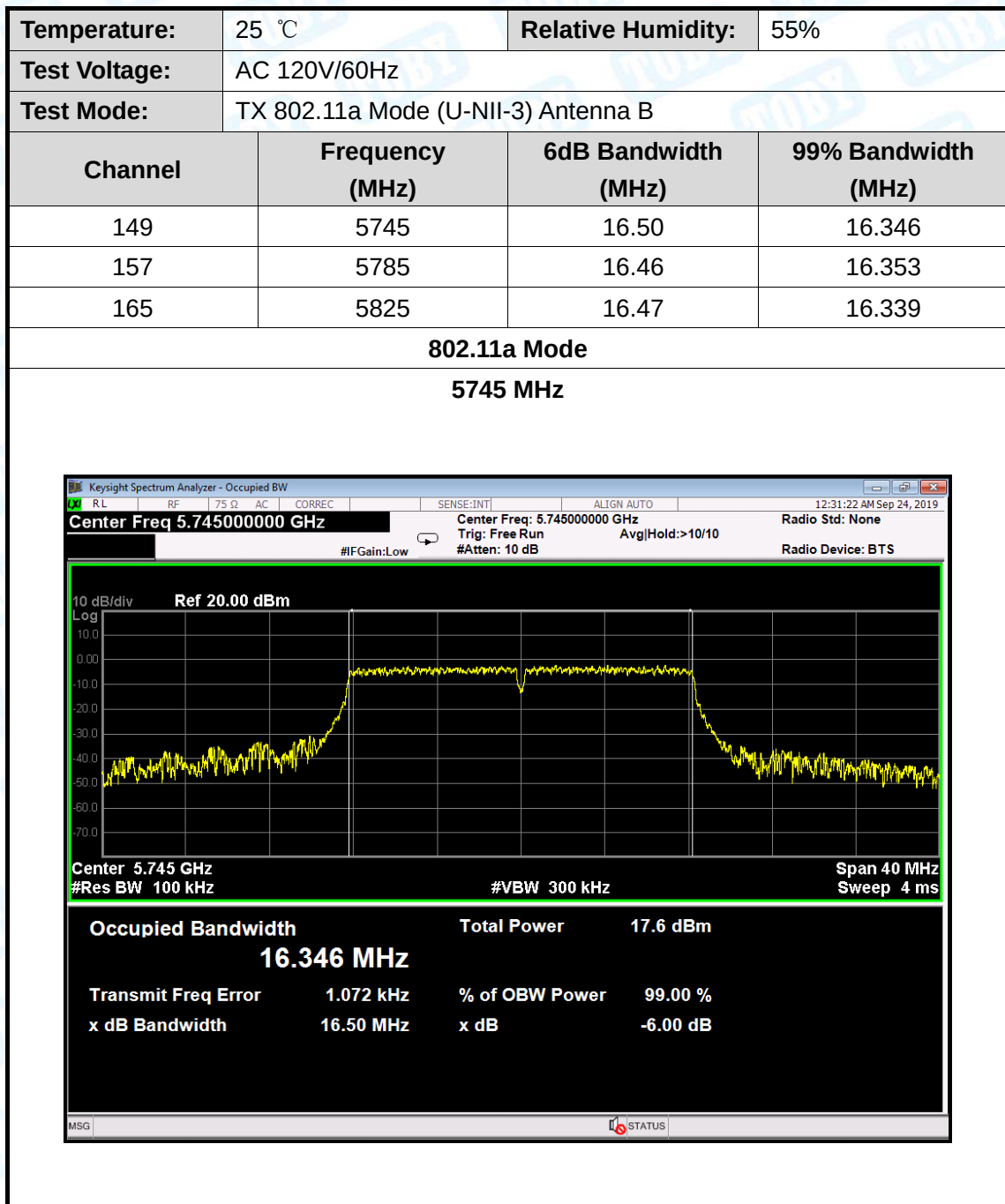
5785 MHz



802.11a Mode

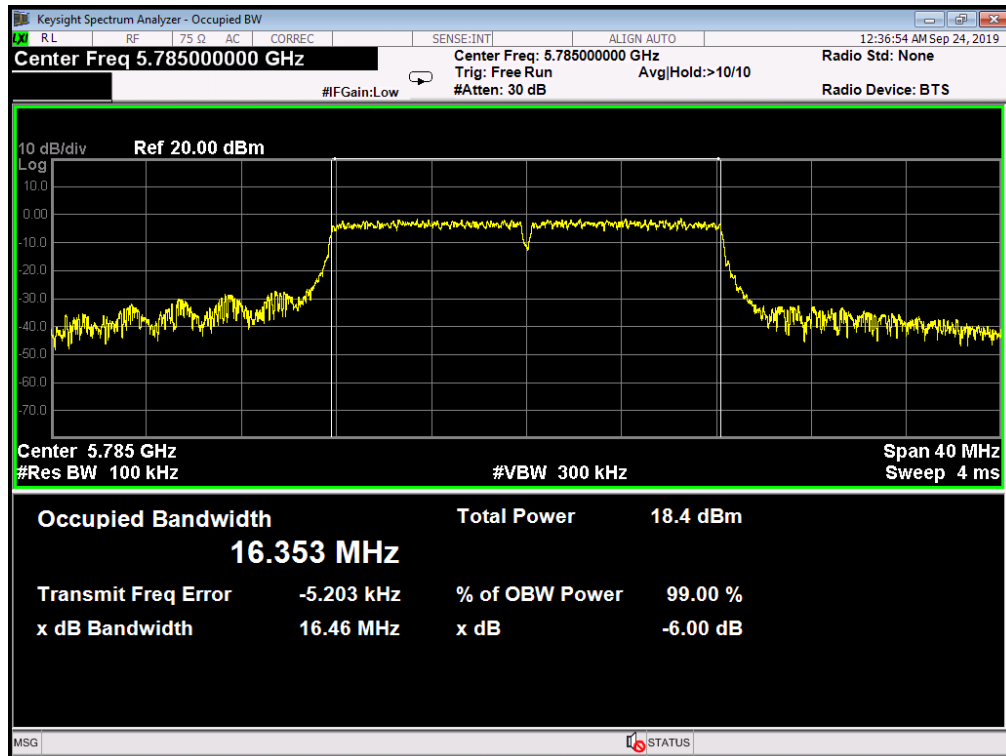
5825 MHz





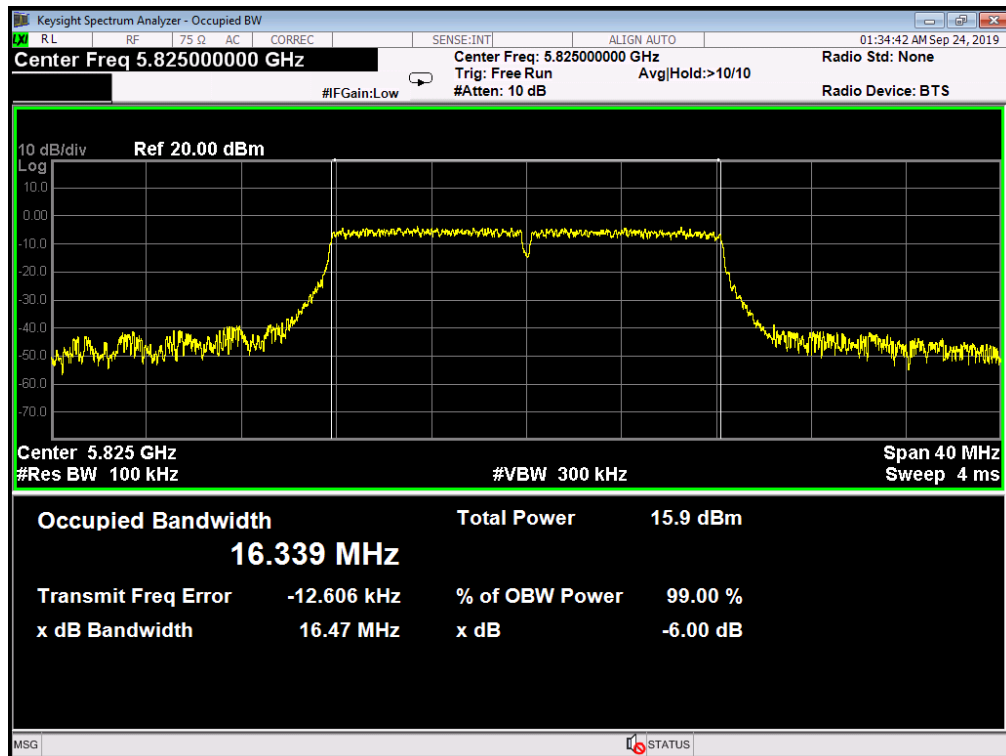
802.11a Mode

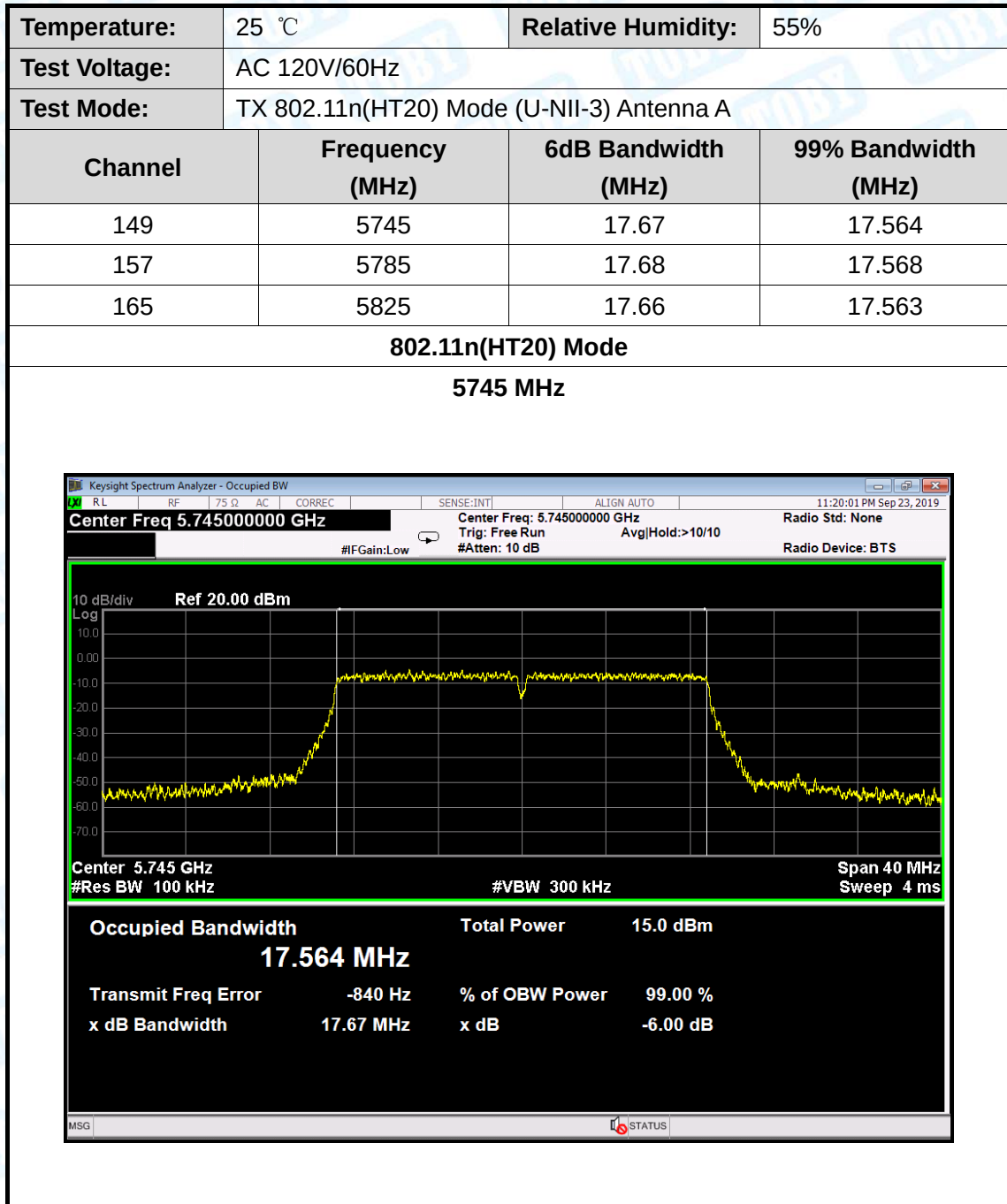
5785 MHz



802.11a Mode

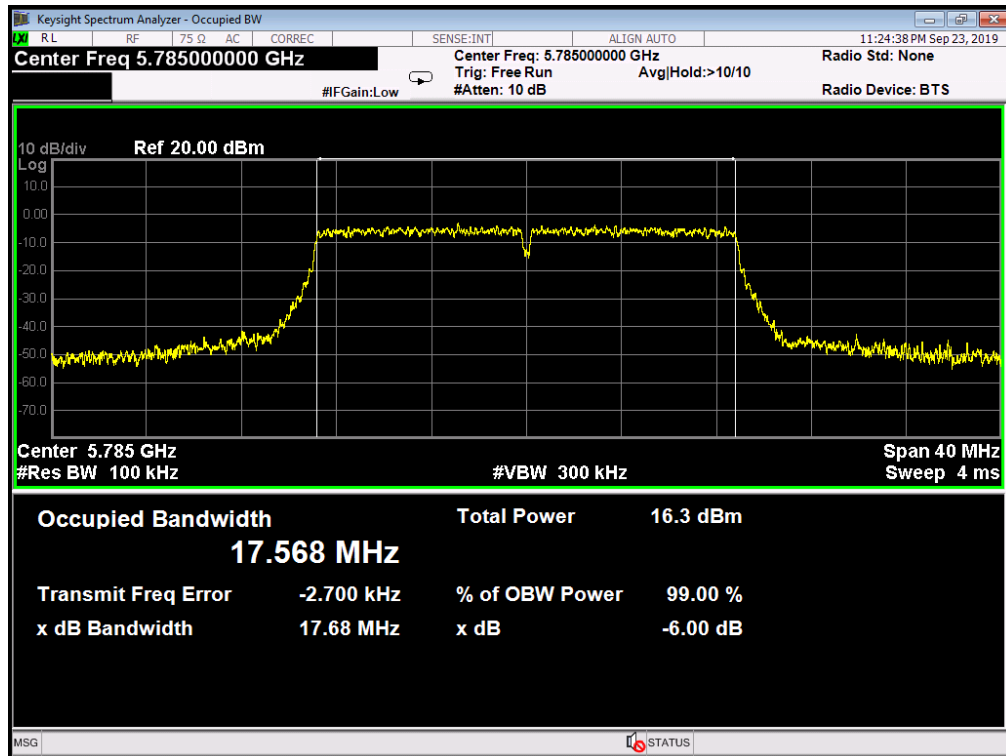
5825 MHz





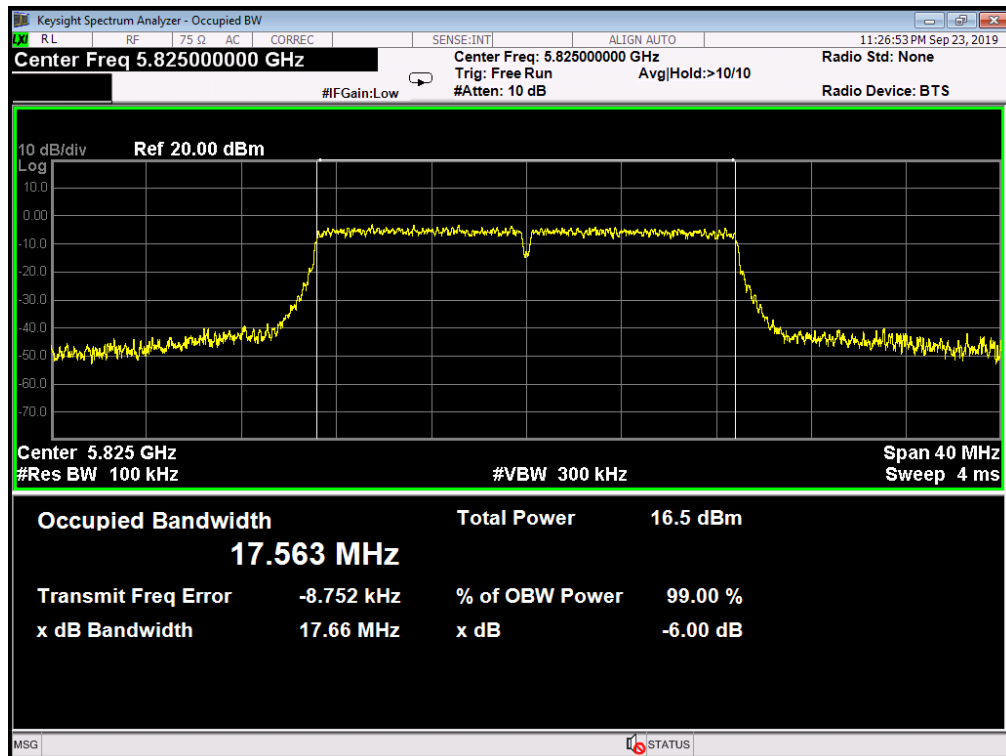
802.11n(HT20) Mode

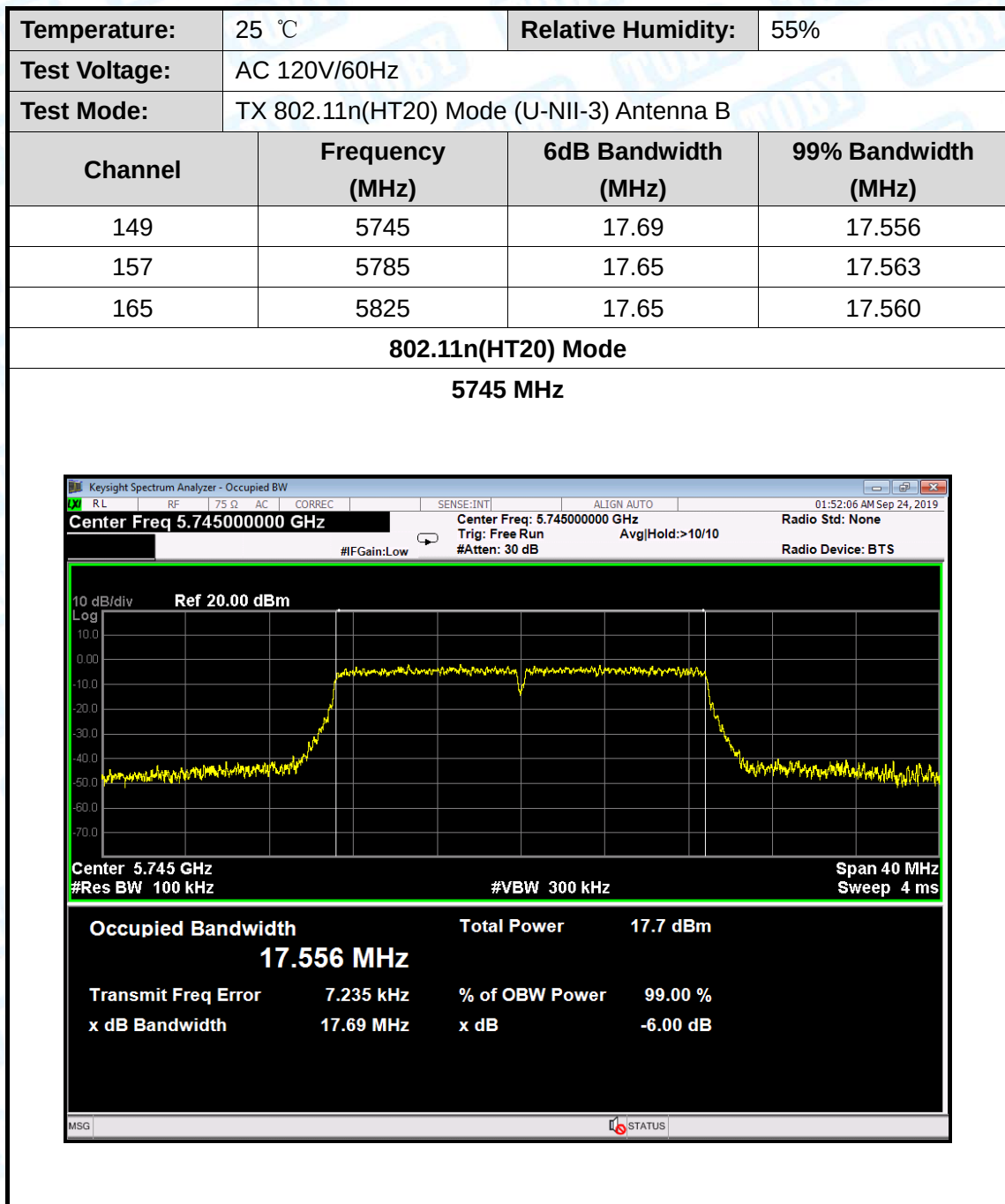
5785 MHz



802.11n(HT20) Mode

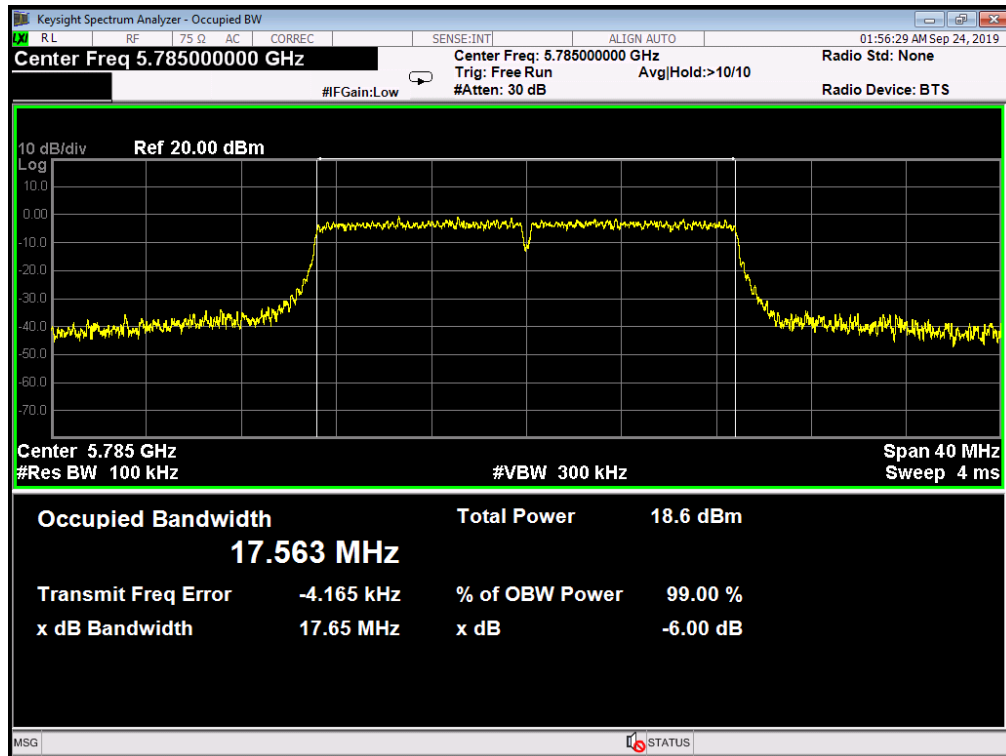
5825 MHz





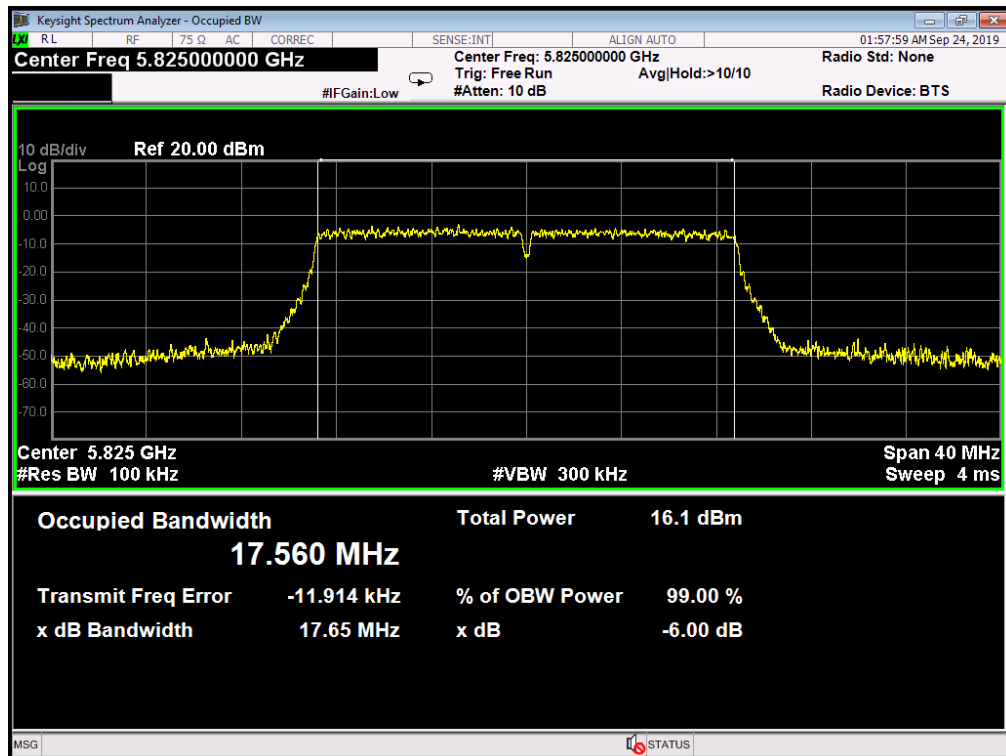
802.11n(HT20) Mode

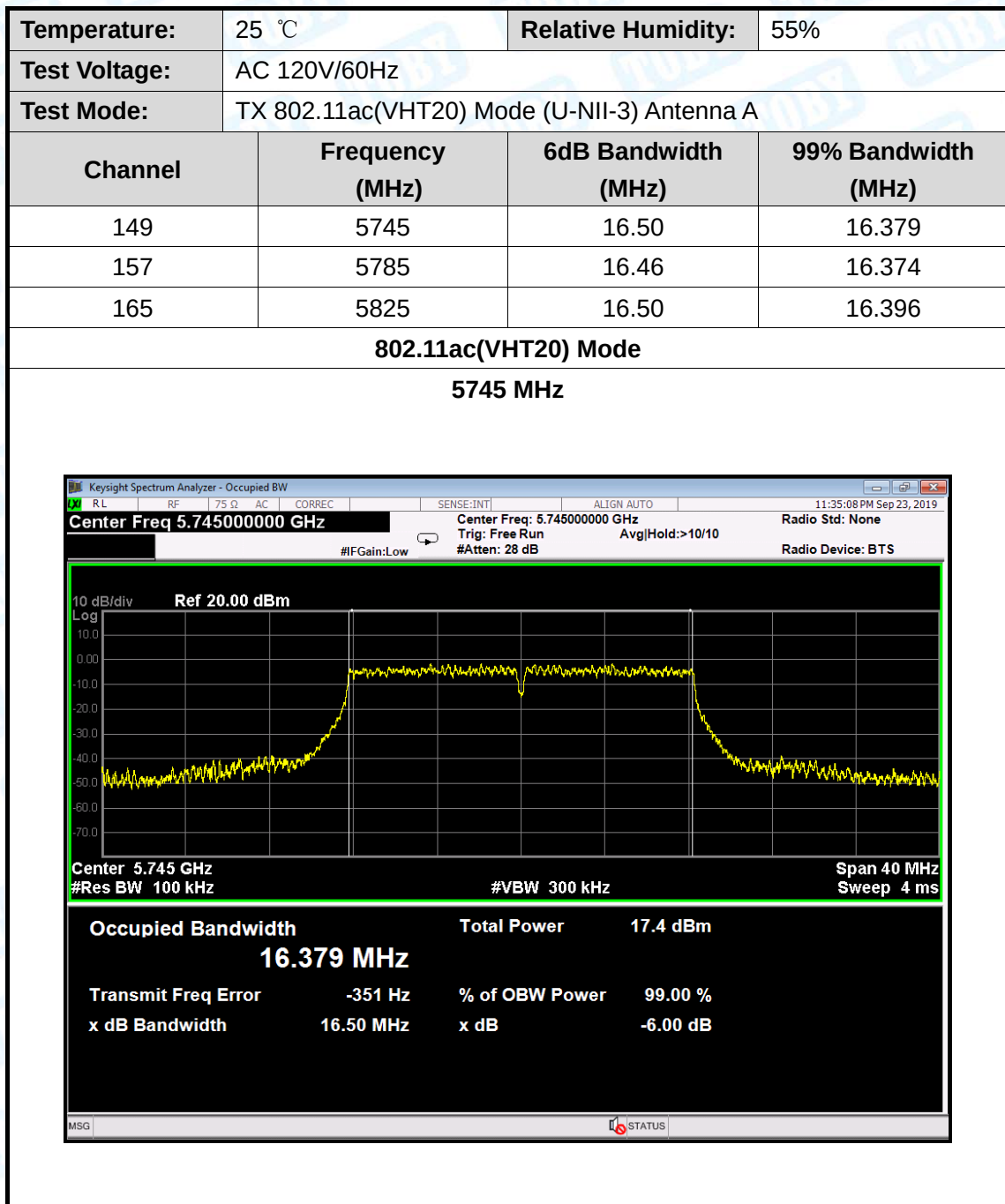
5785 MHz



802.11n(HT20) Mode

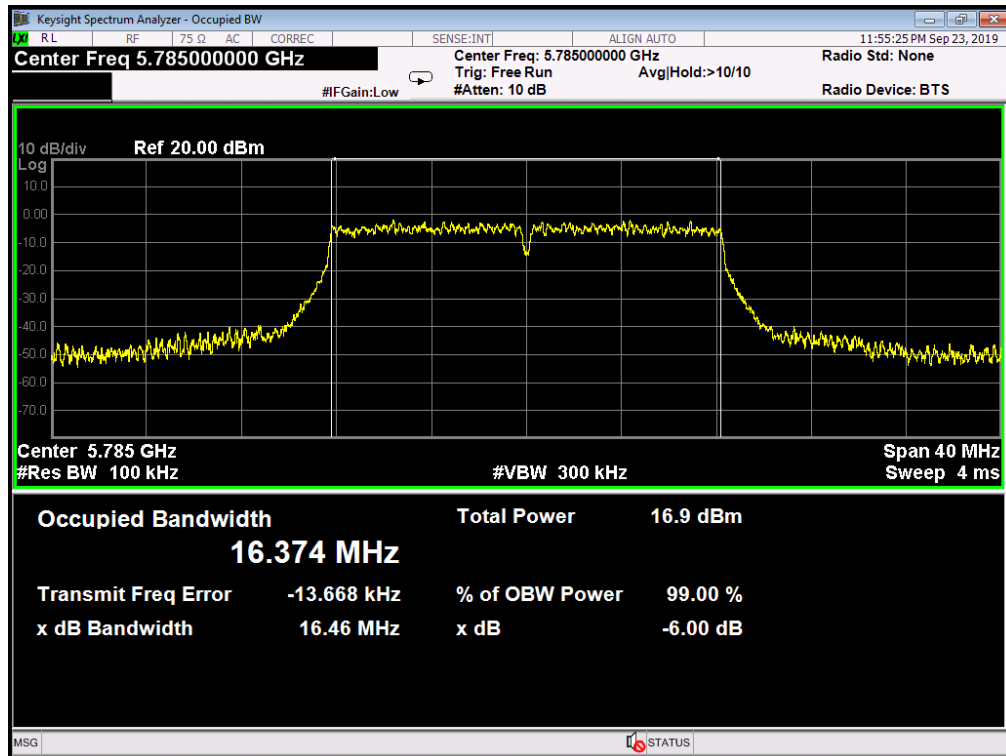
5825 MHz





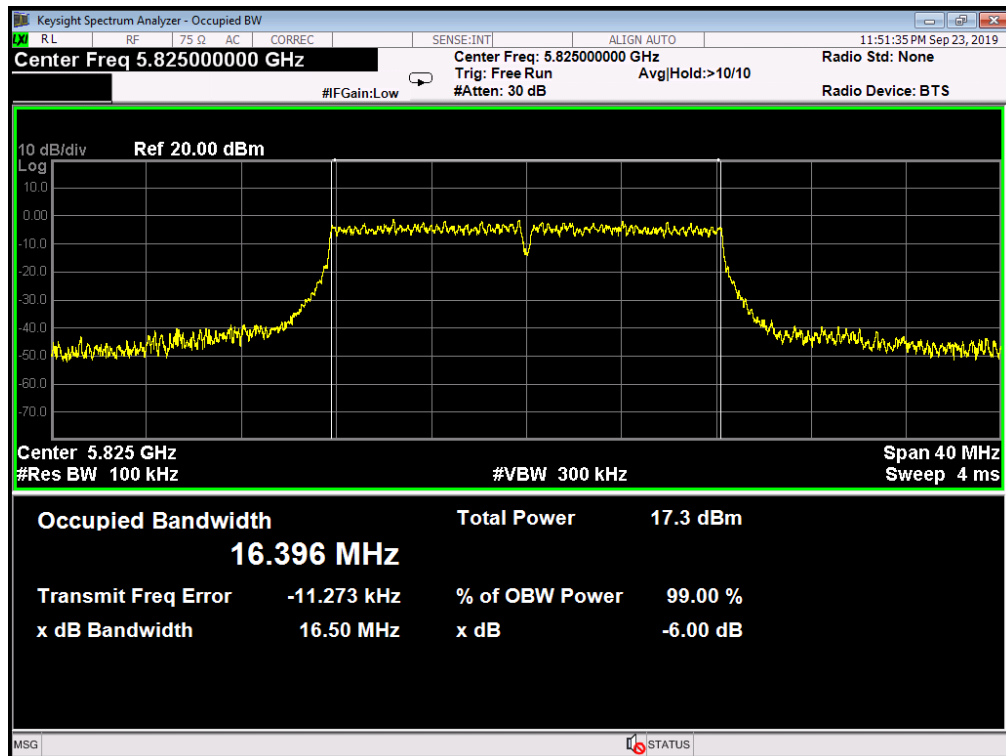
802.11ac(VHT20) Mode

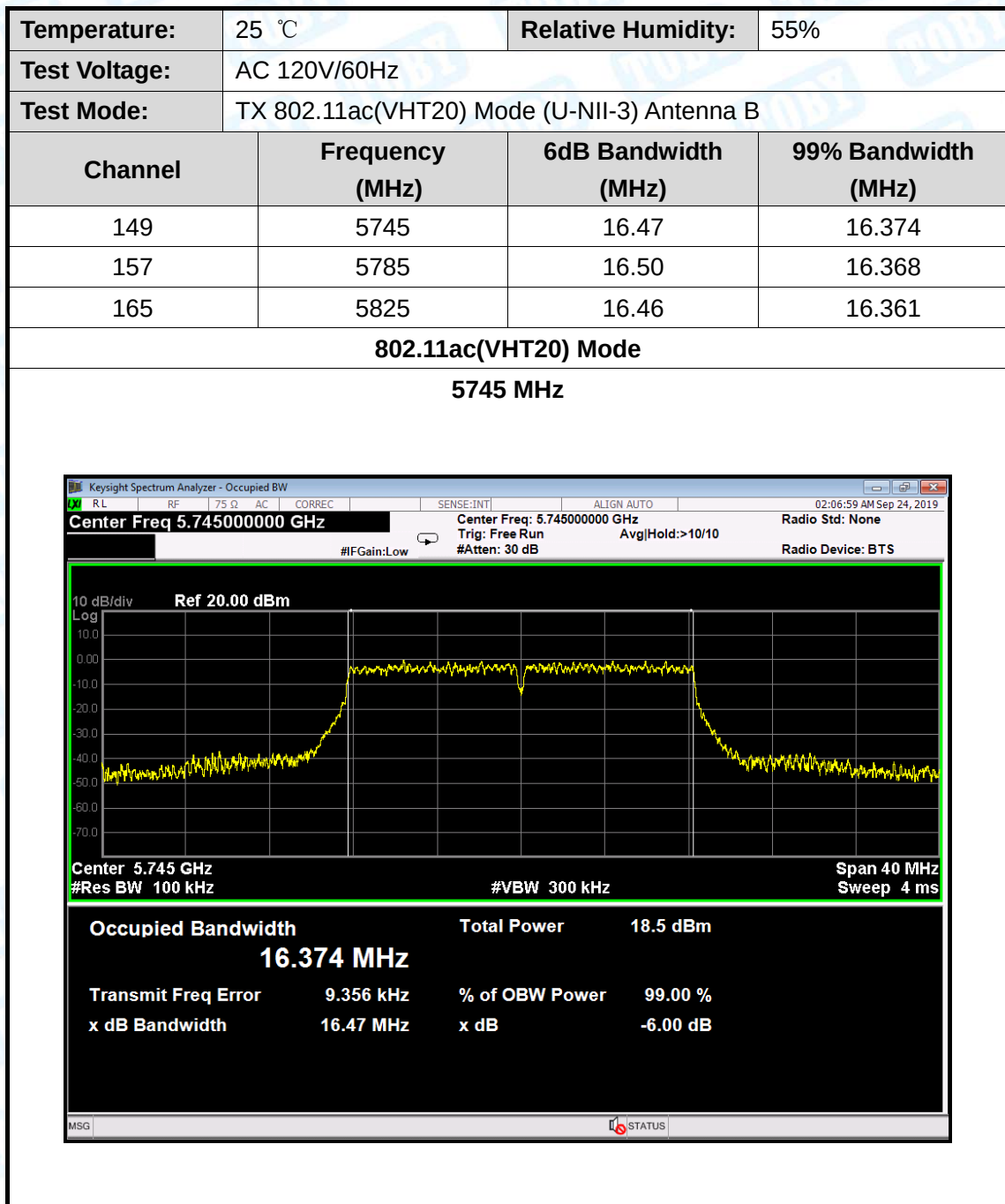
5785 MHz



802.11ac(VHT20) Mode

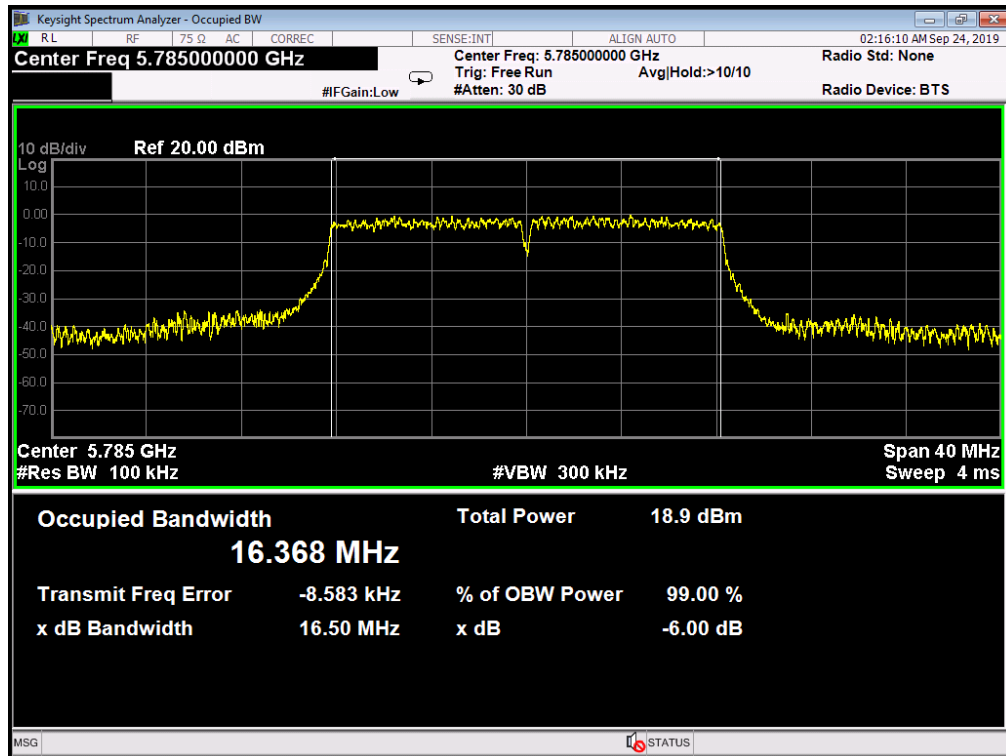
5825 MHz





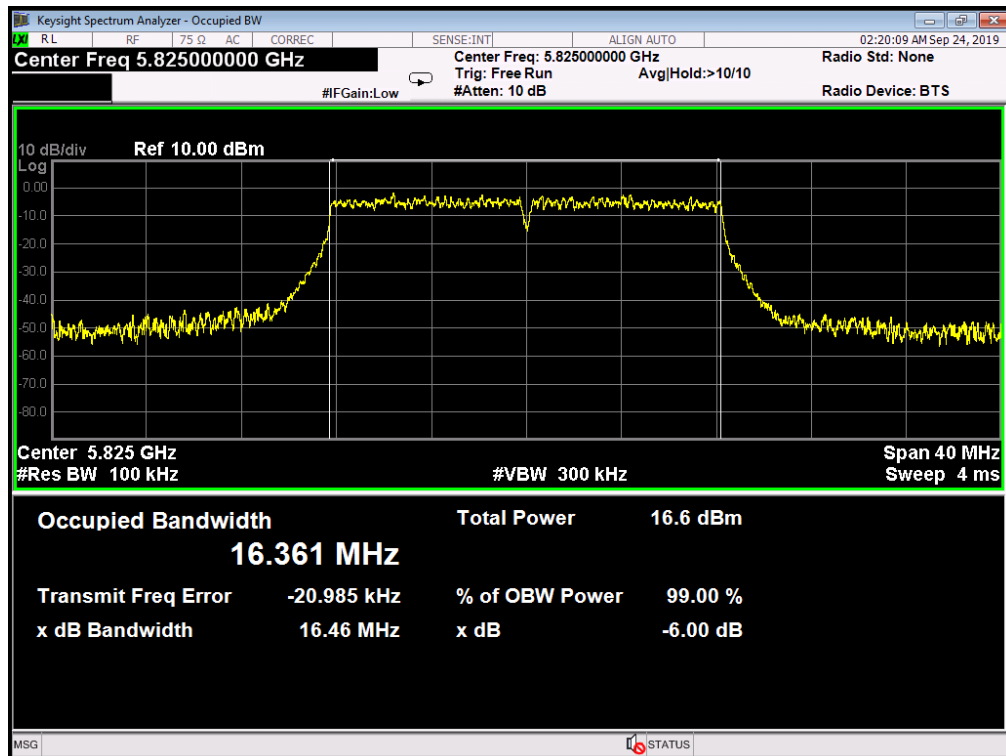
802.11ac(VHT20) Mode

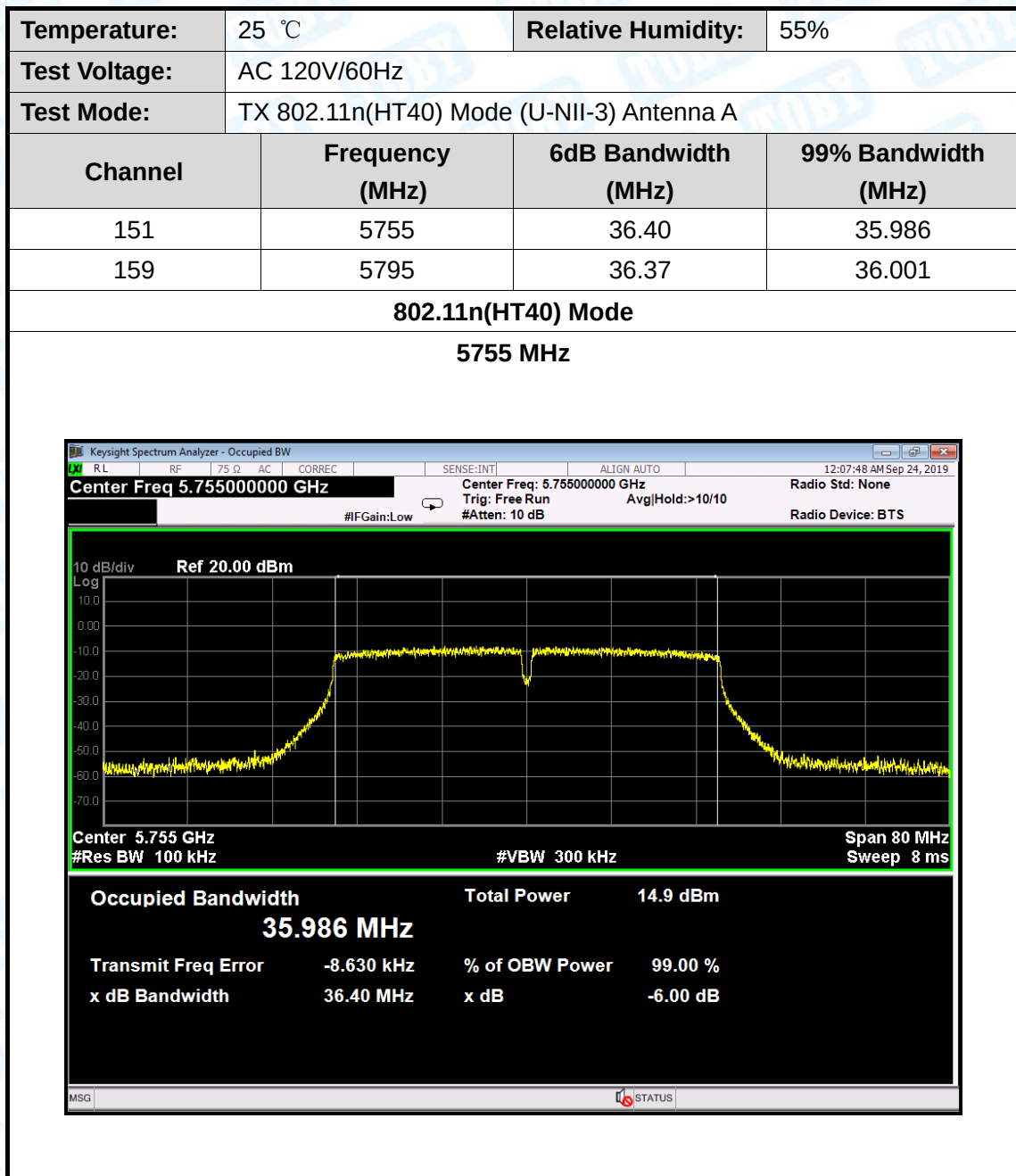
5785 MHz

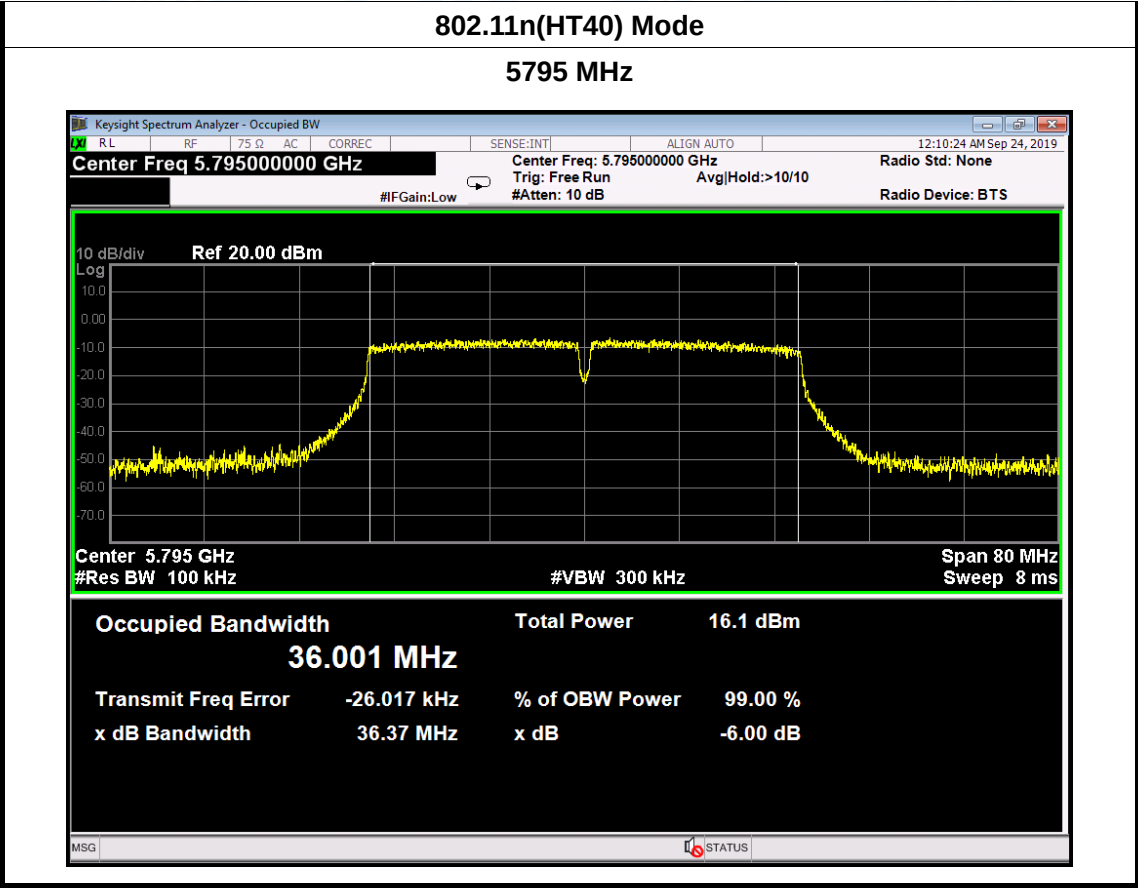


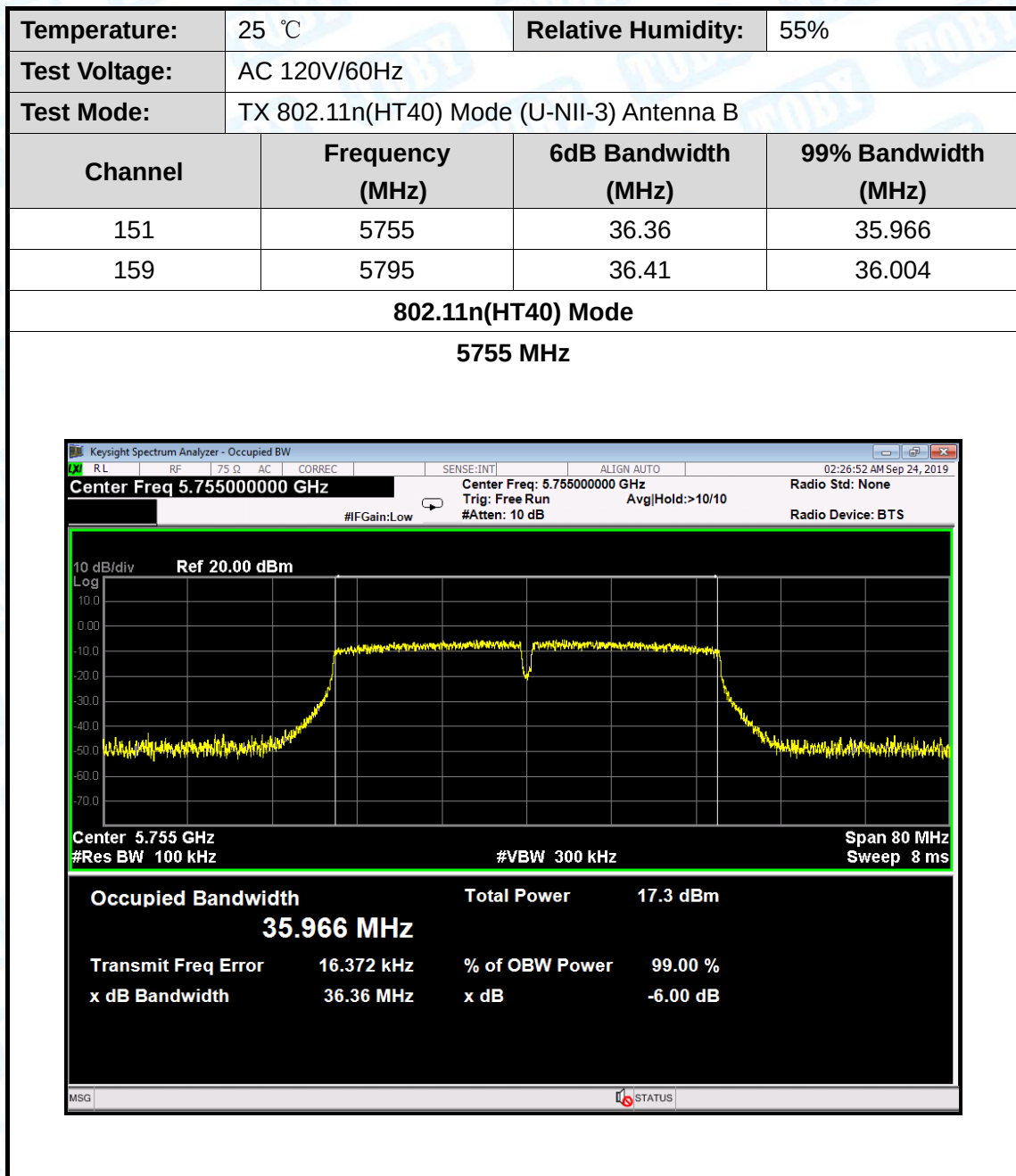
802.11ac(VHT20) Mode

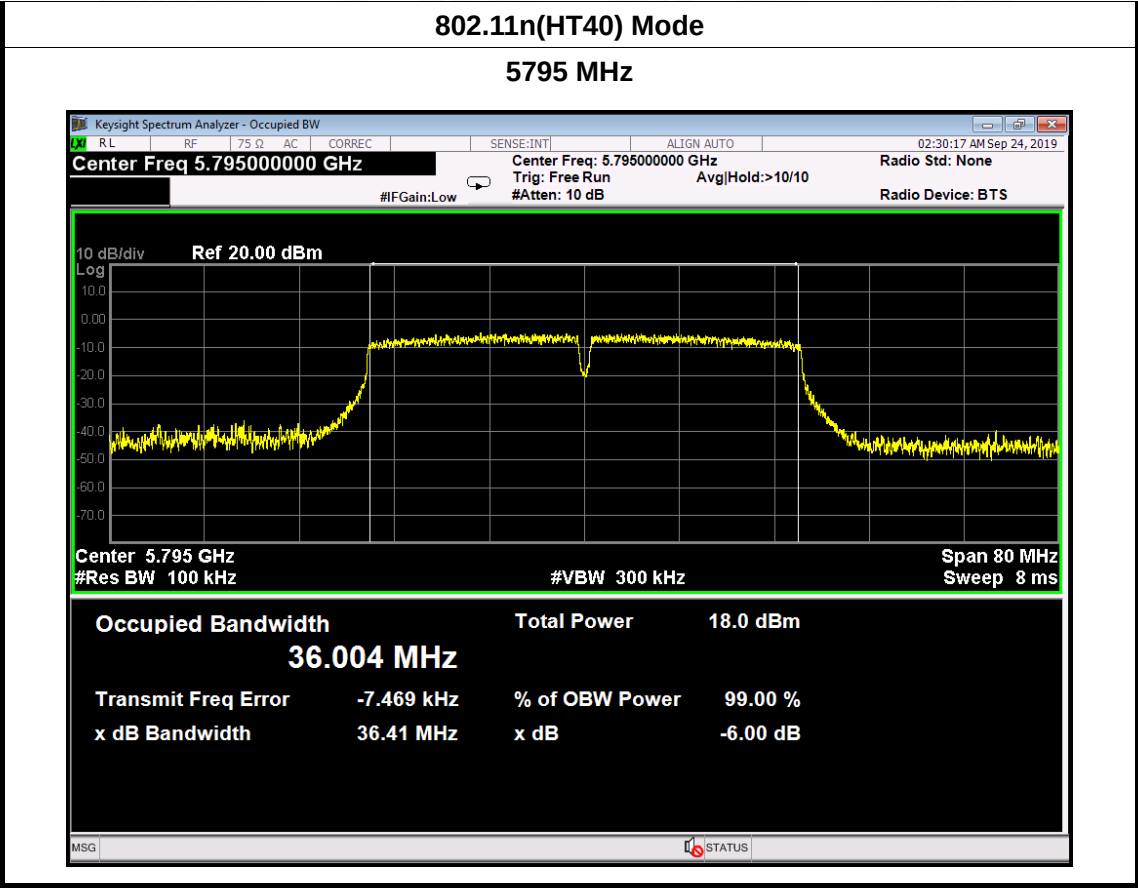
5825 MHz

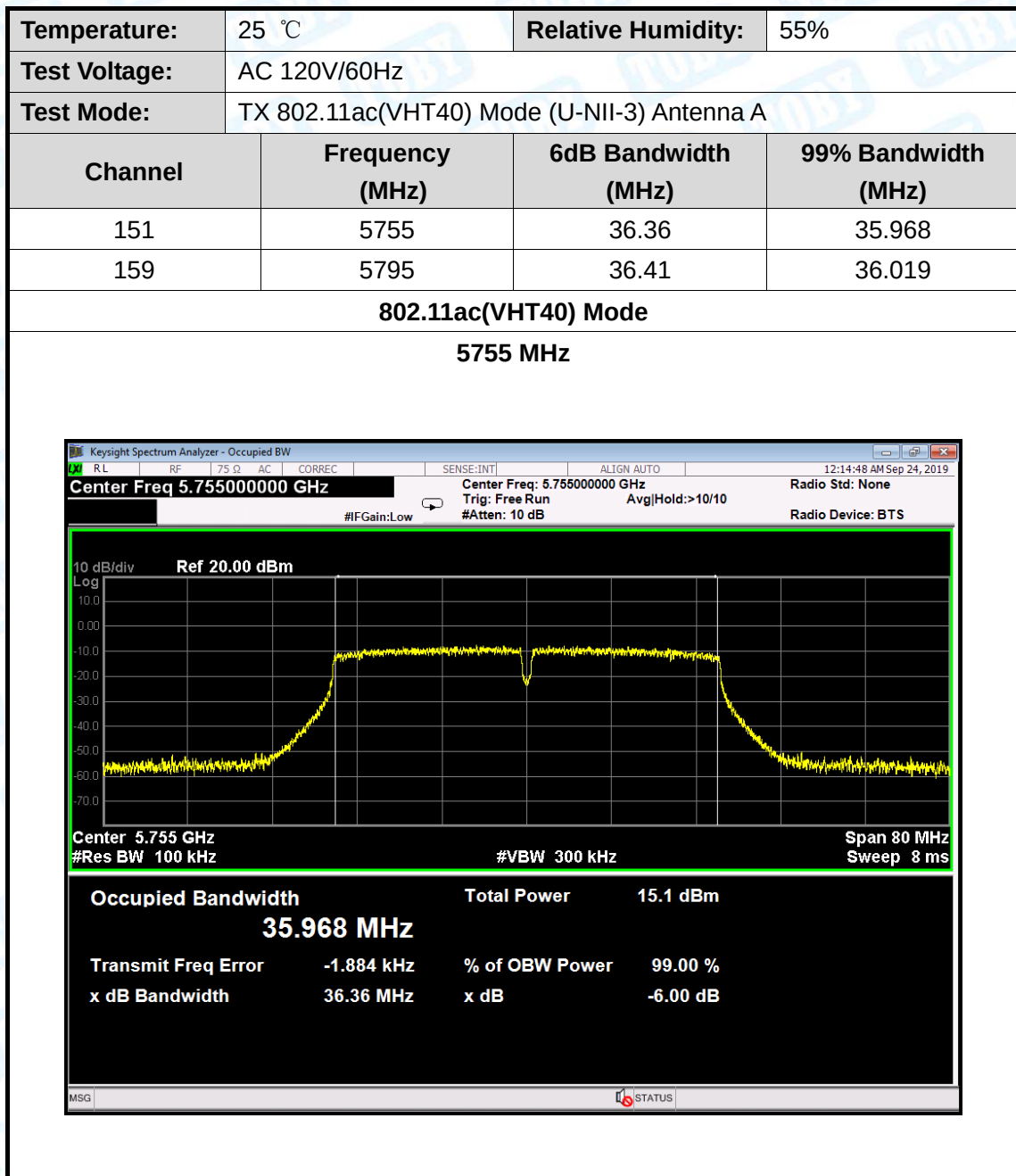


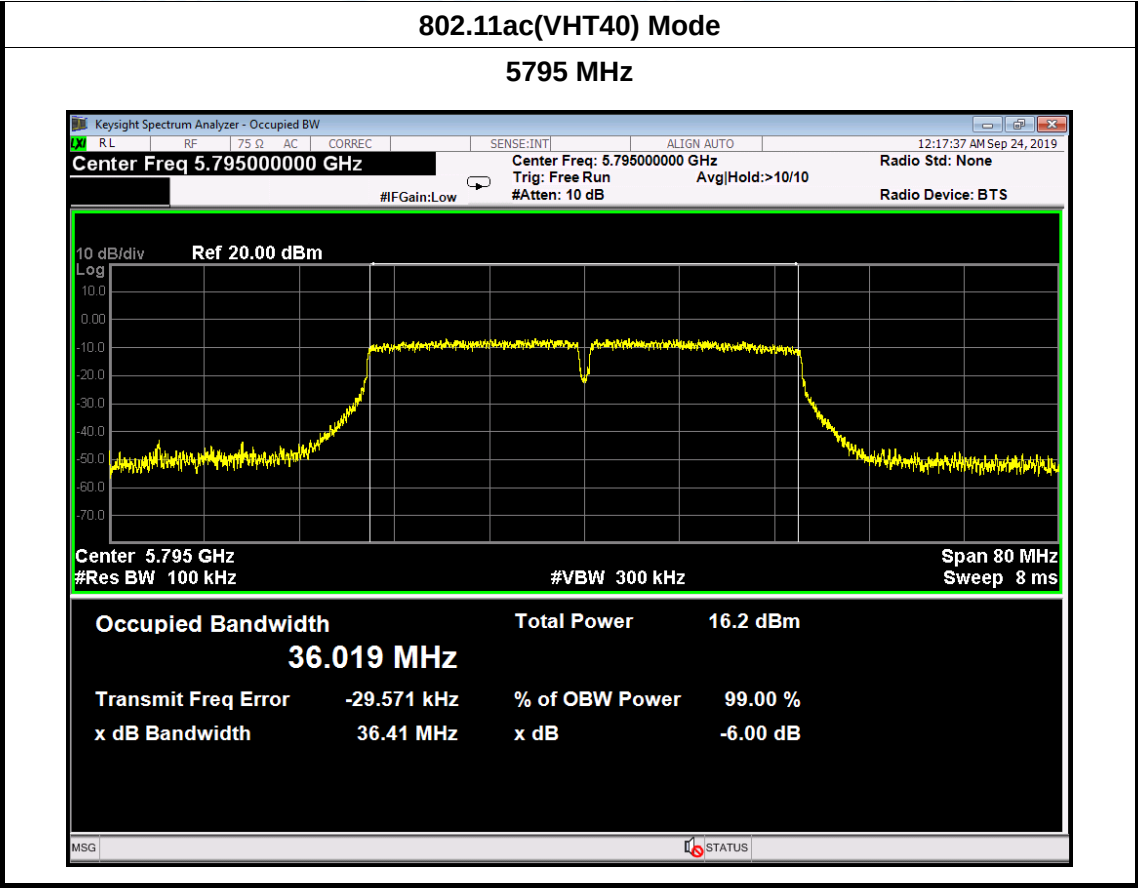


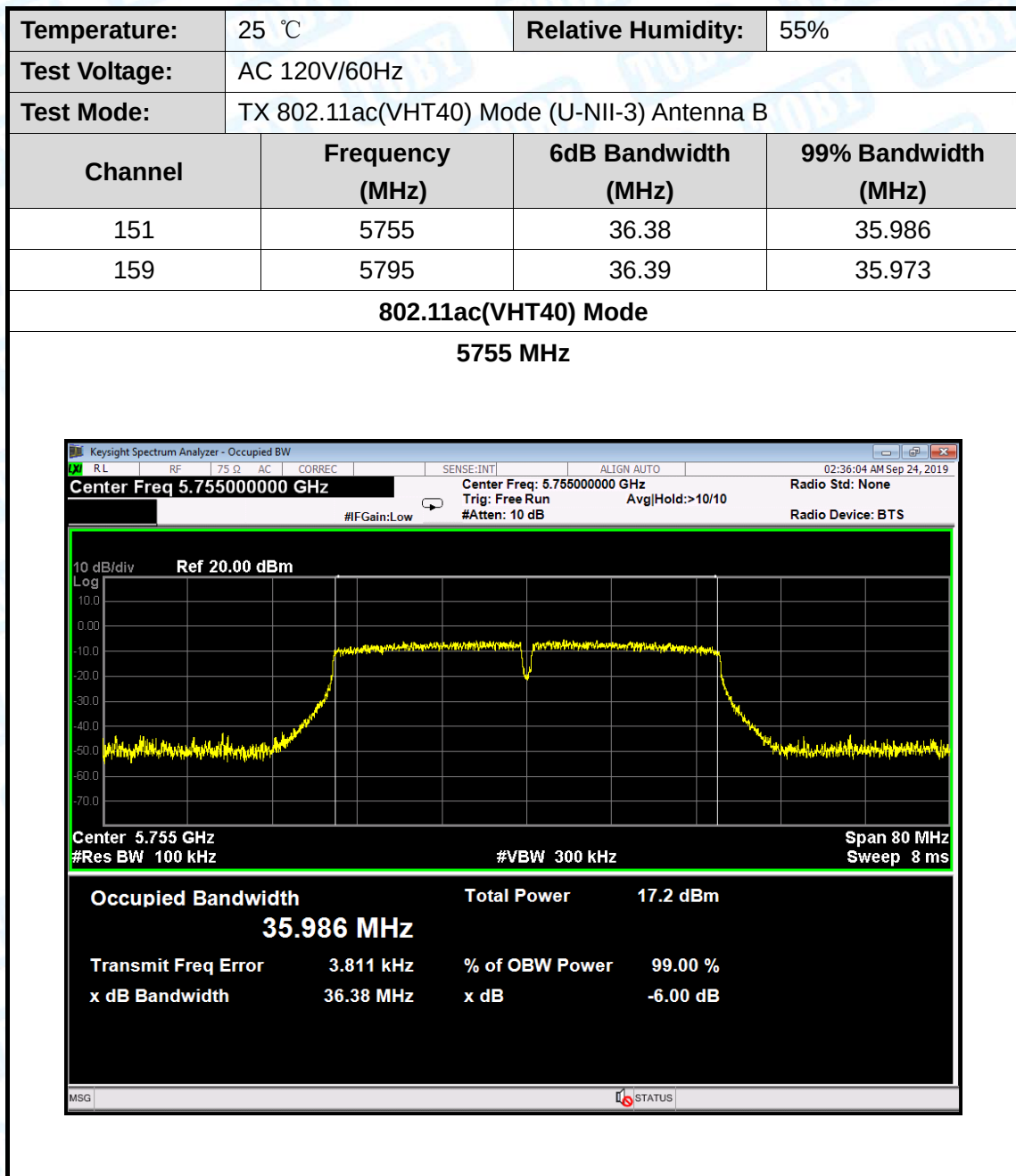


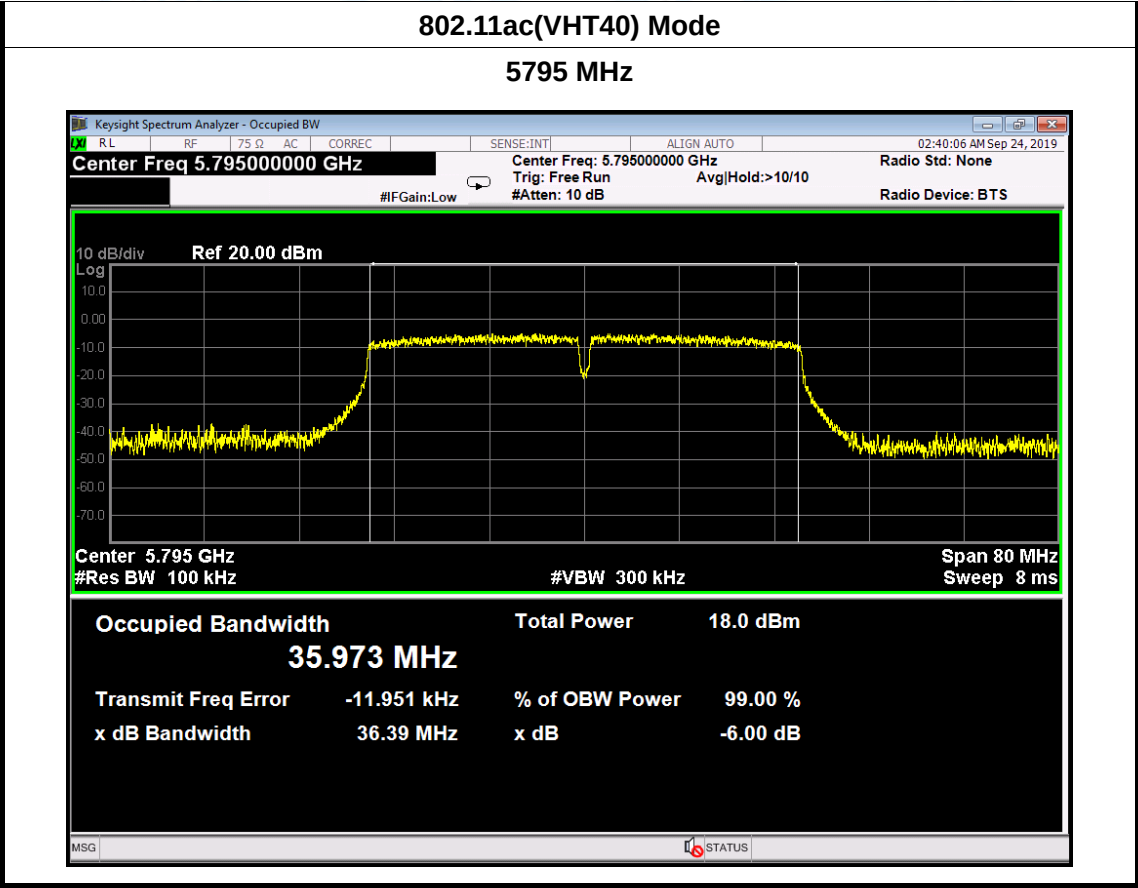


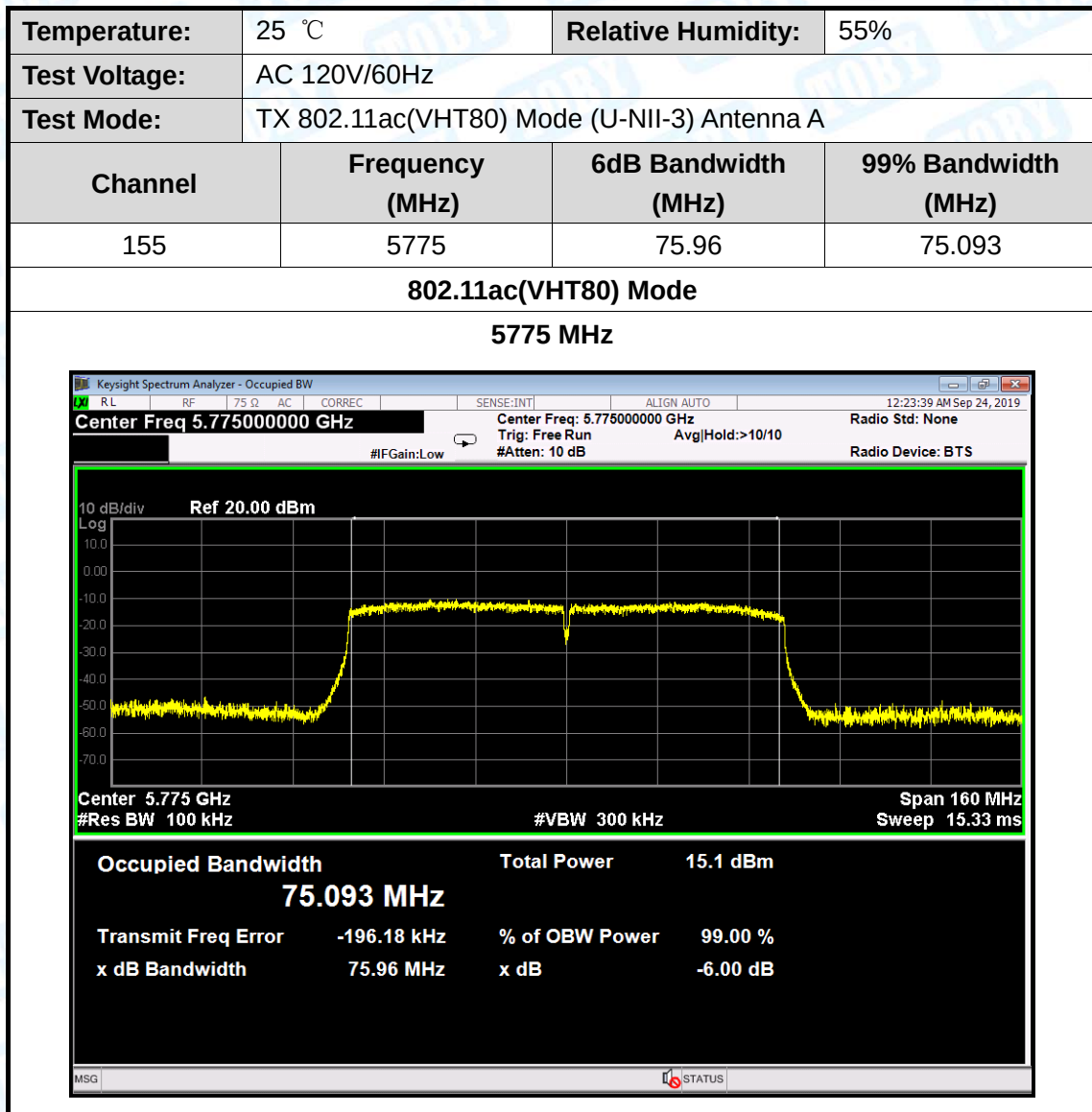


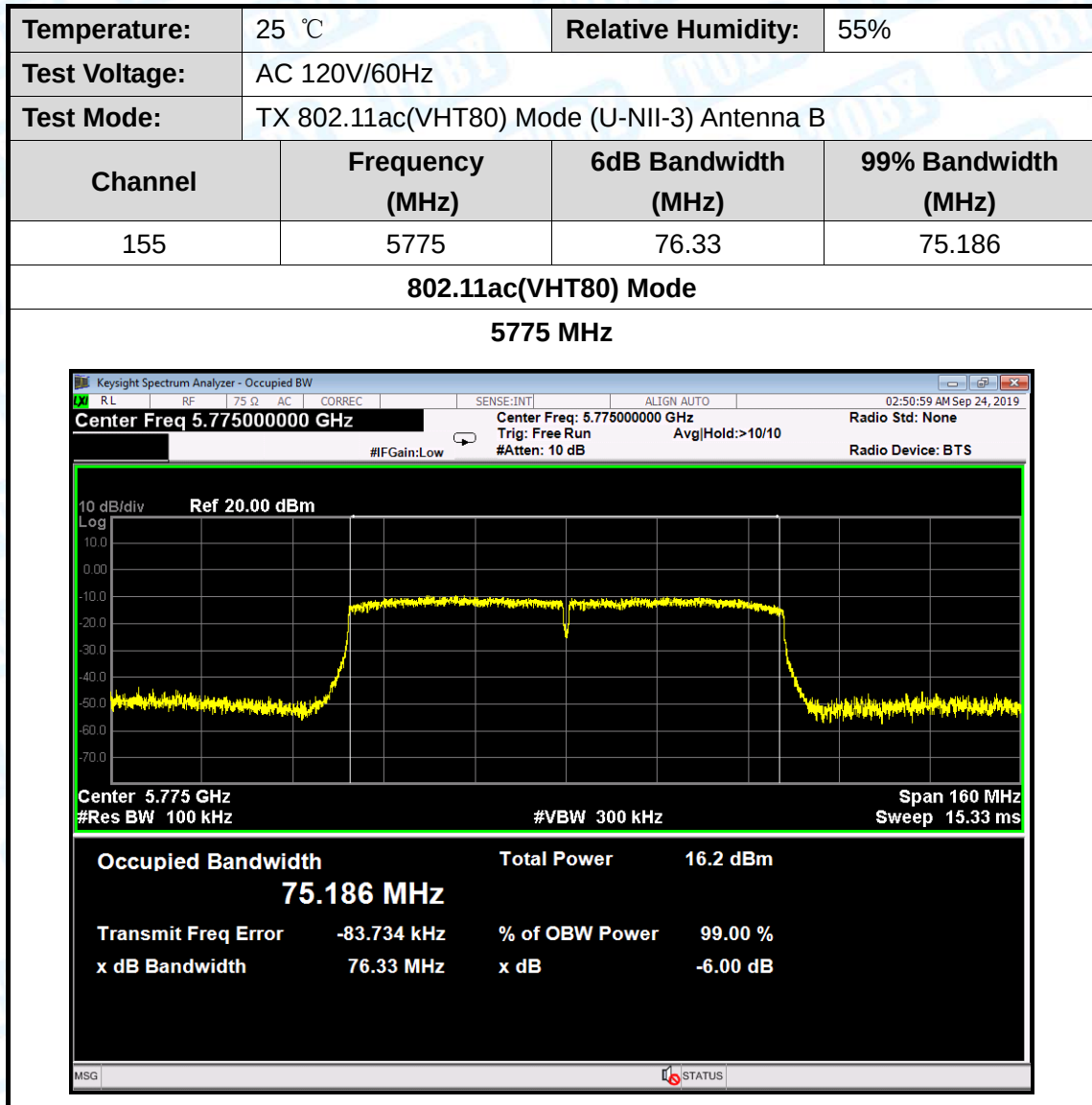












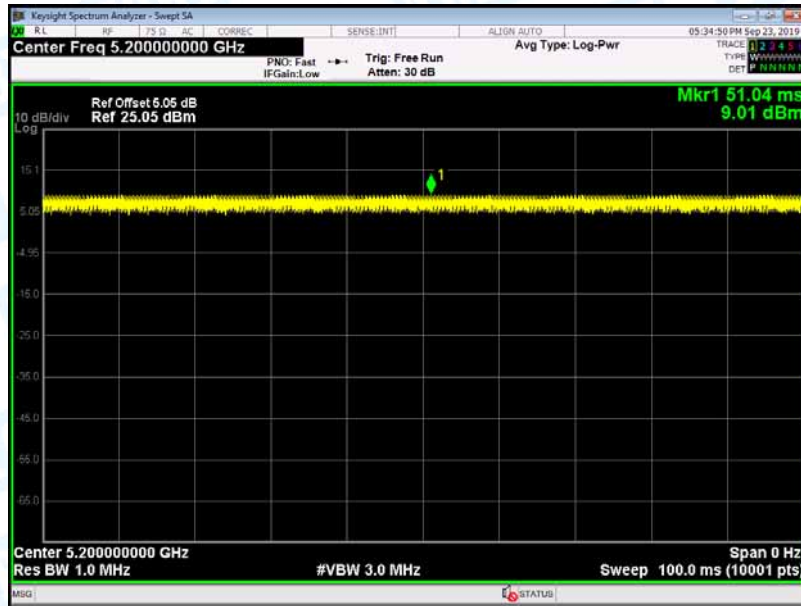
Attachment E--AVG Output Power Test Data

Temperature:		25 °C		Relative Humidity:		55%		
Test Voltage:		AC 120V/60Hz						
U-NII-1								
Test Mode	Frequency (MHz)	Test Data				Limit (dBm)		
		Conducted Power (dBm)		Duty Factor (dB)	Total Power (dBm)			
		Ant. A	Ant. B					
802.11a	5180	18.94	19.23	0	---	24		
	5200	19.04	19.31	0	---			
	5240	19.25	19.35	0	---			
802.11n (HT20)	5180	16.10	14.70	0	18.47	23.99		
	5200	16.13	15.00	0	18.61			
	5240	16.39	15.23	0	18.86			
802.11ac (VHT20)	5180	15.61	14.43	0	18.07			
	5200	15.58	14.18	0	17.95			
	5240	15.79	14.67	0	18.27			
802.11n (HT40)	5190	15.97	16.67	0	19.34			
	5230	16.37	17.05	0	19.73			
802.11 ac(VHT40)	5190	17.23	16.68	0	19.97			
	5230	15.76	16.44	0	19.12			
802.11 ac(VHT80)	5210	16.27	14.79	0	18.61			
Result: PASS								
Remark: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.								
When ANT. A and ANT. B transmitting simultaneously, the total Antenna Gain= ANT. A n Gain + ANT. B x Gani =6.01 dBi>6 dBi.								
So P _{out} = P _{limit} -(G _{TX} -6)]=24-0.01=23.99dBm								

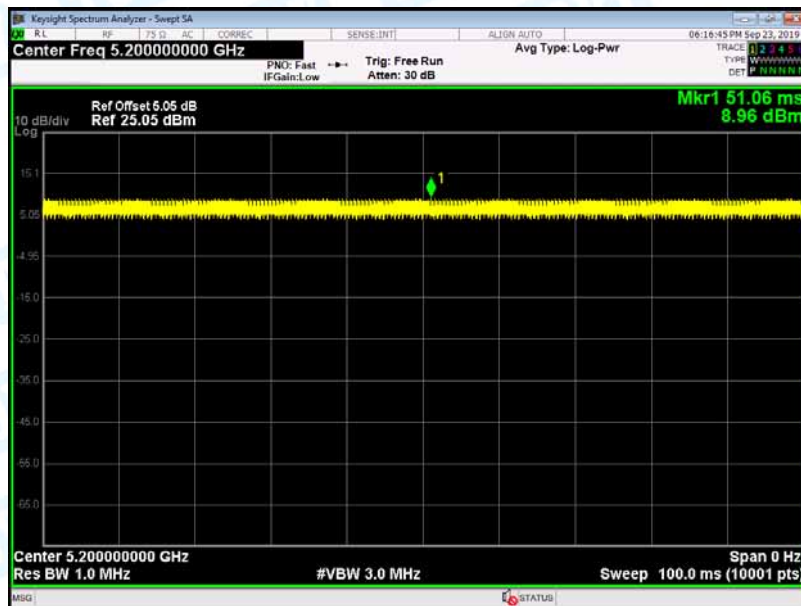
Temperature:		25 °C		Relative Humidity:		55%			
Test Voltage:		AC 120V/60Hz							
U-NII-3									
Test Mode	Frequency (MHz)	Test Data				Limit (dBm)			
		Conducted Power (dBm)		Duty Factor (dB)	Total Power (dBm)				
		Ant. A	Ant. B						
802.11a	5745	20.19	22.98	0	---	30			
	5785	21.56	23.59	0	---				
	5825	21.64	21.14	0	---				
802.11n (HT20)	5745	20.53	23.01	0	24.95	29.99			
	5785	21.91	24.03	0	26.11				
	5825	21.96	21.52	0	24.76				
802.11ac (VHT20)	5745	22.76	23.72	0	26.28				
	5785	22.29	24.22	0	26.37				
	5825	22.47	21.73	0	25.13				
802.11n (HT40)	5755	20.13	22.58	0	24.54				
	5795	21.59	23.39	0	25.59				
802.11 ac(VHT40)	5755	21.41	22.51	0	25.01				
	5795	21.61	23.46	0	25.64				
802.11 ac(VHT80)	5775	20.47	21.66	0	24.12				
Result: PASS									
Remark: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.									
When ANT. A and ANT. B transmitting simultaneously, the total Antenna Gain= ANT. A n Gain + ANT. B x Gani =6.01 dBi>6 dBi.									
So P _{out} = P _{limit} -(G _{TX} -6)]=30-0.01=29.99dBm									

Test Mode		Duty cycle
U-NII-1	802.11 a	>98%
	802.11 n(HT20)	
	802.11 ac(VHT20)	
	802.11 n(HT40)	
	802.11 ac(HT40)	
	802.11 ac(VHT80)	
U-NII-3	802.11 a	
	802.11 n(HT20)	
	802.11 ac(VHT20)	
	802.11 n(HT40)	
	802.11 ac(VHT40)	
	802.11 ac(VHT80)	
Please see the next plots.		

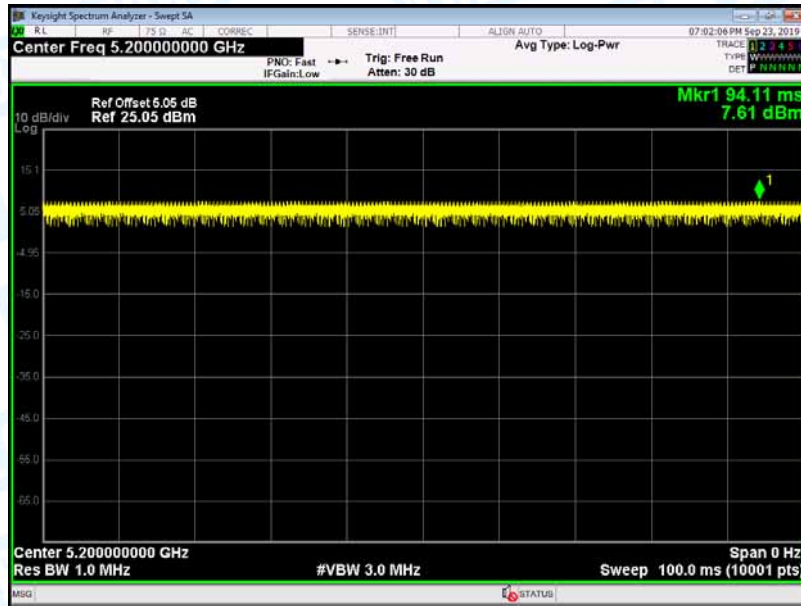
802.11 a 5200MHz U-NII-1



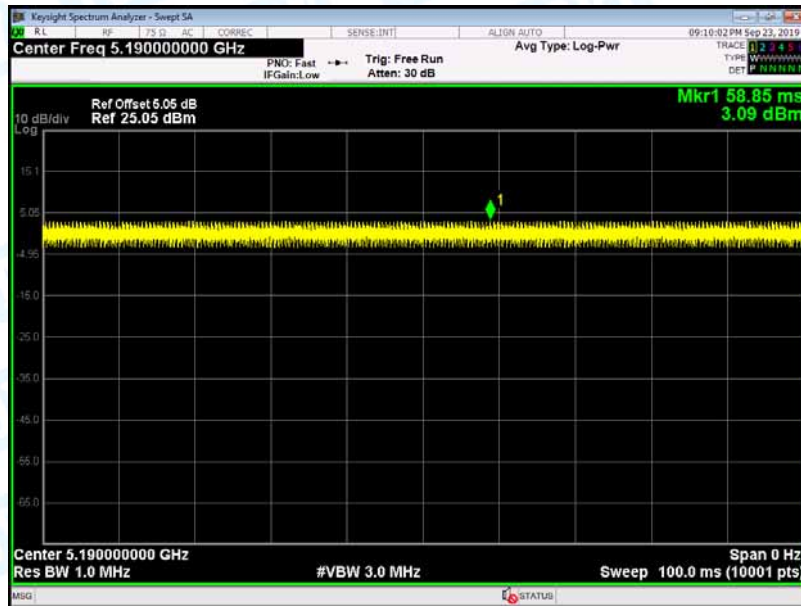
802.11 n(HT20) 5200MHz U-NII-1



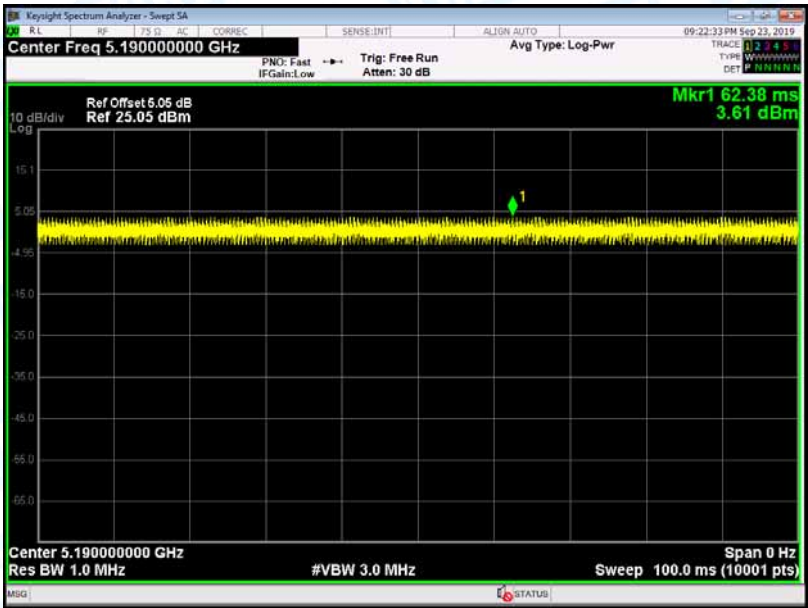
802.11 ac(VHT20) 5200MHz U-NII-1



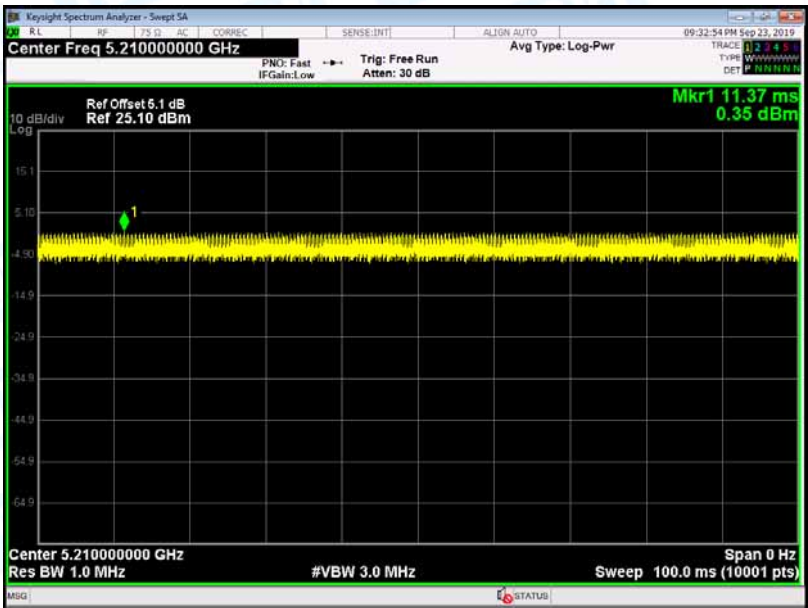
802.11 n(HT40) 5190MHz U-NII-1



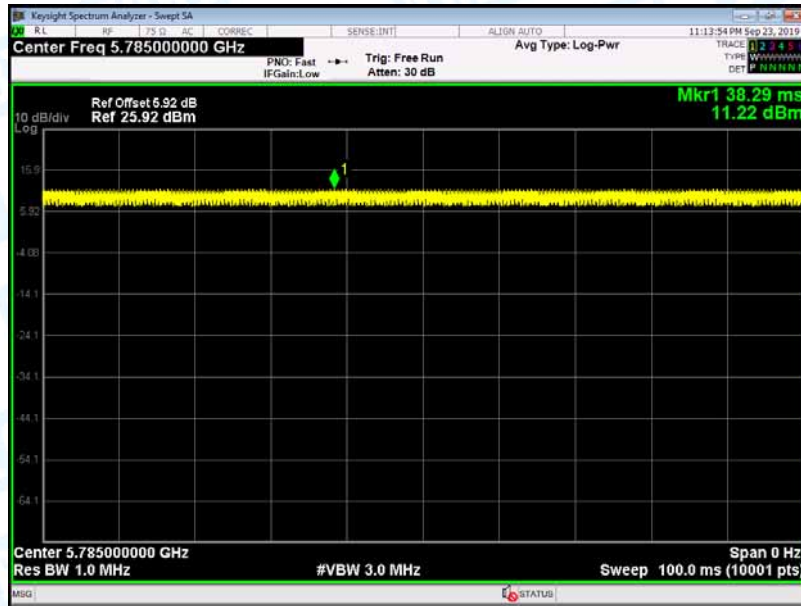
802.11 ac(VHT40) 5190MHz U-NII-1



802.11 ac(VHT80) 5210MHz U-NII-1



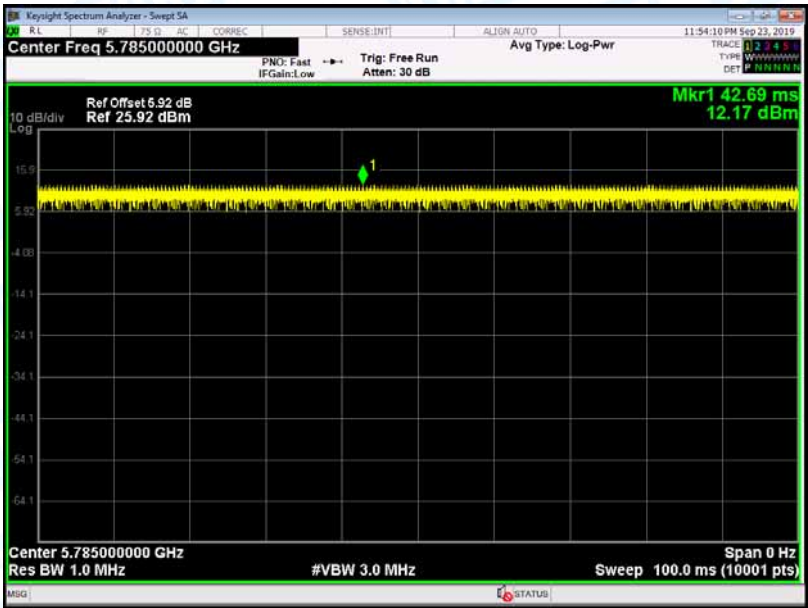
802.11 a 5785MHz U-NII-3



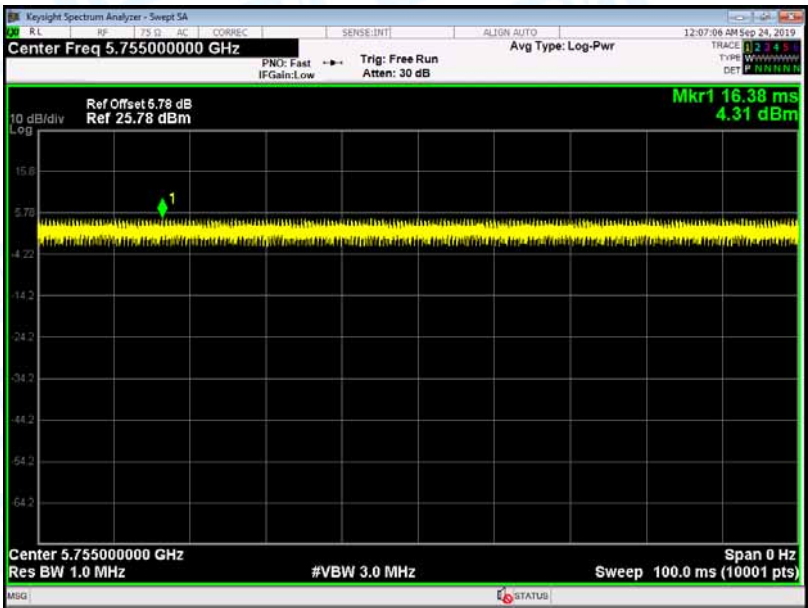
802.11 n(HT20) 5785MHz U-NII-3



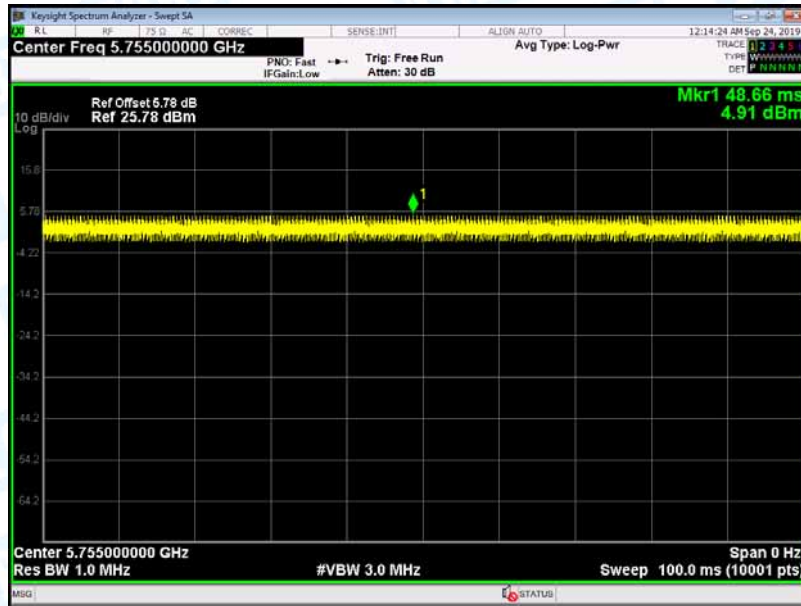
802.11 ac(VHT20) 5785MHz U-NII-3



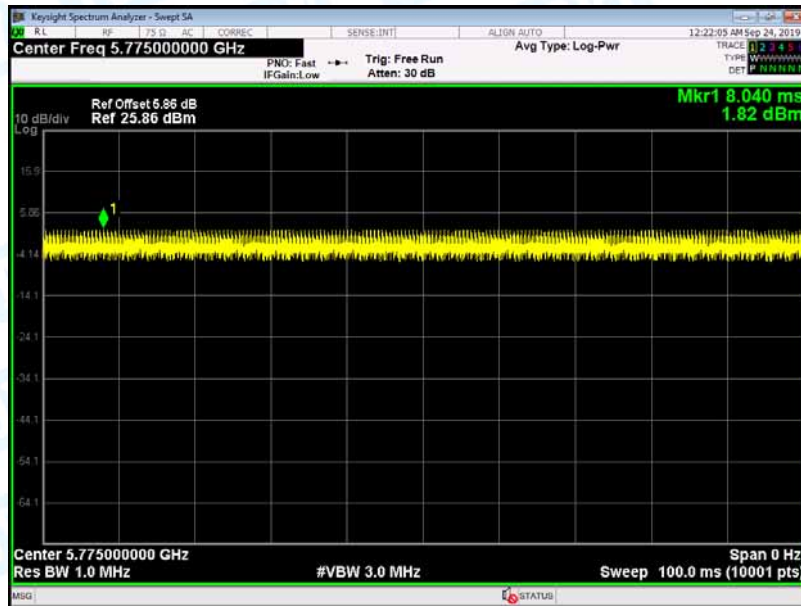
802.11 n(HT40) 5755MHz U-NII-3



802.11 ac(VHT40) 5755MHz U-NII-3



802.11 ac(VHT80) 5775MHz U-NII-3

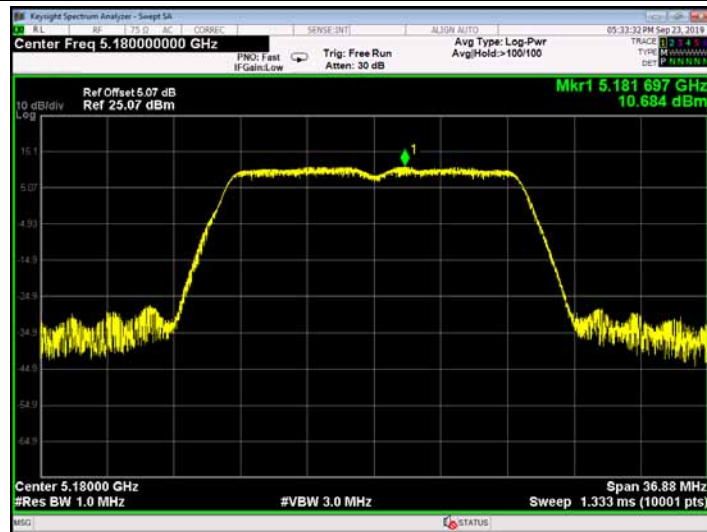


Attachment F-- Power Spectral Density Test Data

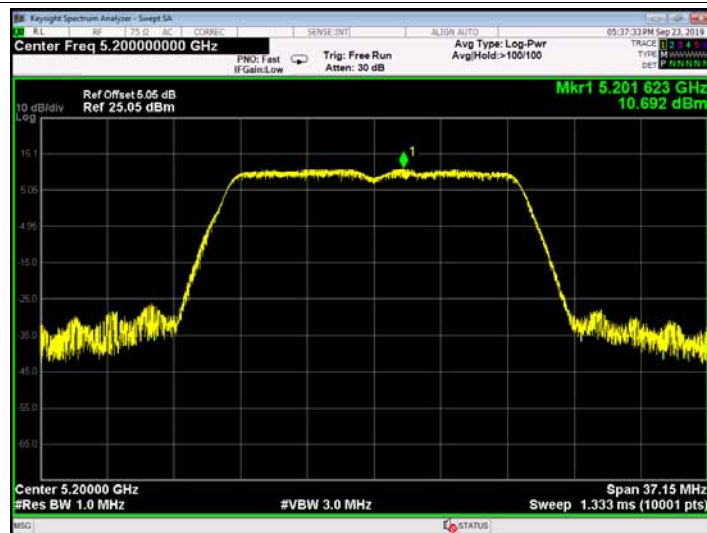
Temperature:	25 °C	Relative Humidity:		55%			
Test Voltage:	AC 120V/60Hz						
U-NII-1							
Test Mode	Frequency (MHz)	Test Data				Limit (dBm/MHz)	
		Main ANT. (dBm/MHz)	AUX ANT. (dBm/MHz)	Duty Factor (dB)	Total Power (dBm/MHz)		
802.11a	5180	10.684	10.947	0		11	
	5200	10.692	10.926	0	---		
	5240	10.882	10.848	0	---		
802.11n (HT20)	5180	7.925	5.789	0	9.997	10.99	
	5200	7.947	6.131	0	10.144		
	5240	8.198	6.241	0	10.339		
802.11ac (VHT20)	5180	8.620	6.341	0	10.639		
	5200	8.589	6.003	0	10.496		
	5240	7.983	6.427	0	10.285		
802.11n (HT40)	5190	6.017	6.166	0	9.102		
	5230	5.303	5.699	0	8.516		
802.11 ac(VHT40)	5190	7.055	5.252	0	9.257		
	5230	4.507	6.141	0	8.411		
802.11 ac(VHT80)	5210	4.018	2.797	0	6.461		
Result: PASS							
Remark: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.							
When ANT. A and ANT. B transmitting simultaneously, the total Antenna							
Gain= ANT. A n Gain + ANT. B x Gani =6.01 dBi>6 dBi.							
So P _{out} = P _{limit} -(G _{TX} -6)=11-0.01=10.99dBm							

Antenna A

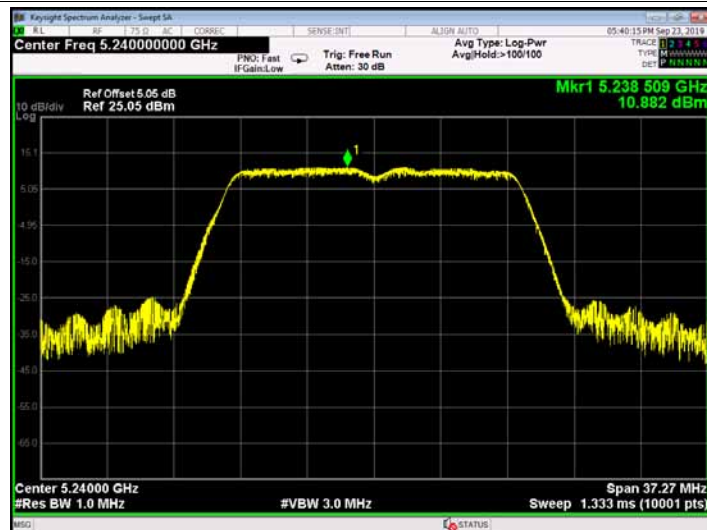
802.11 a 5180 MHz



802.11 a 5200 MHz

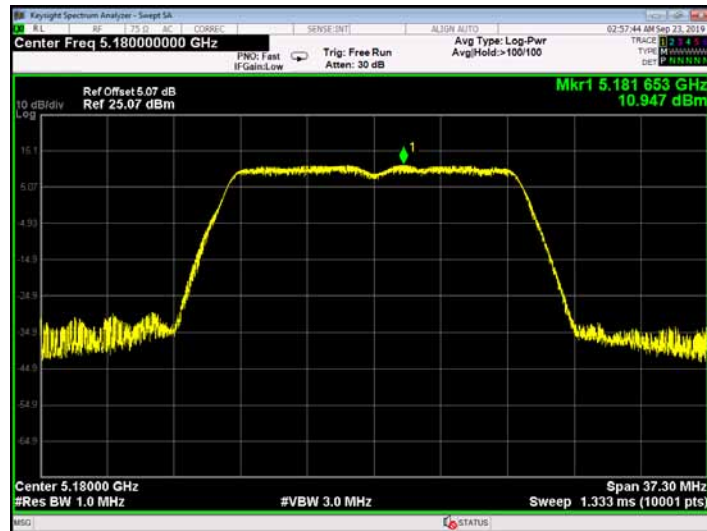


802.11 a 5240 MHz

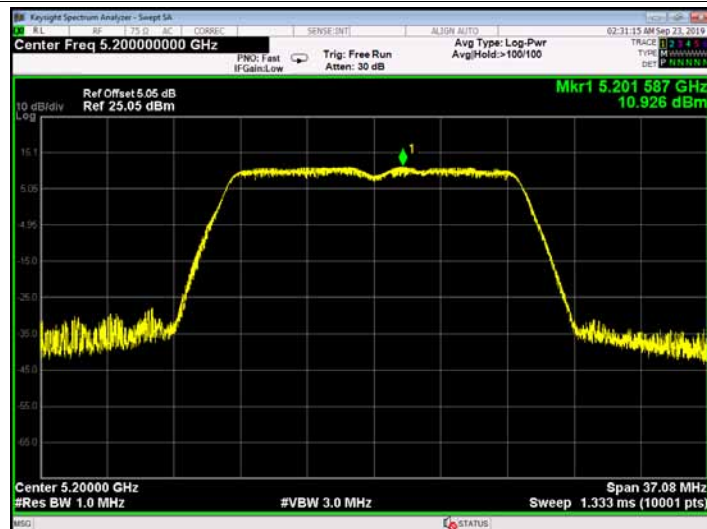


Antenna B

802.11 a 5180 MHz



802.11 a 5200 MHz



802.11 a 5240 MHz

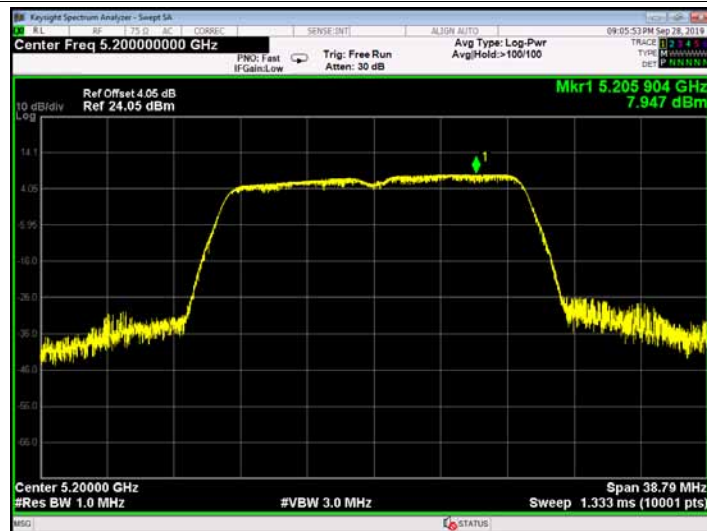


Antenna A

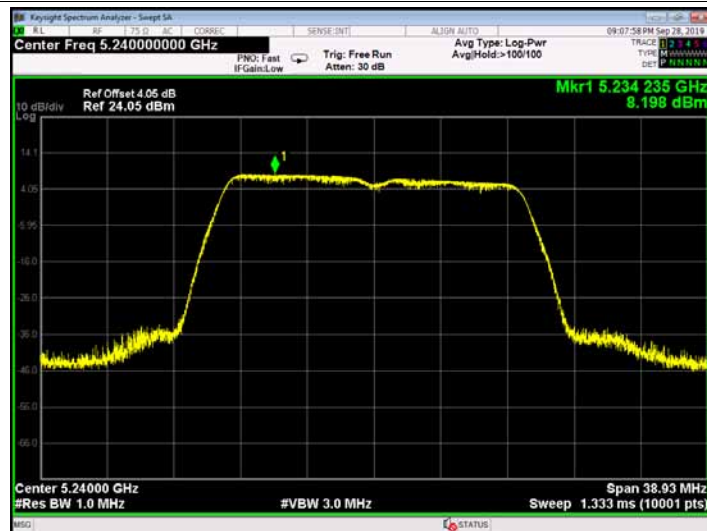
802.11 n(HT20) 5180 MHz



802.11 n(HT20) 5200 MHz

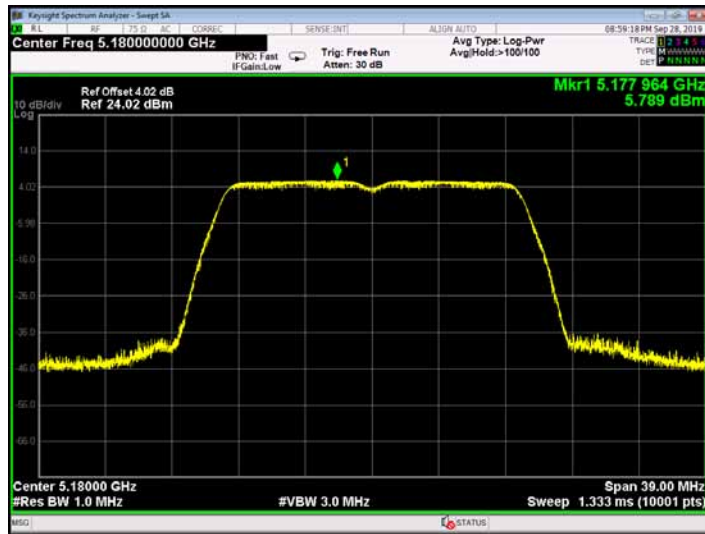


802.11 n(HT20) 5240 MHz

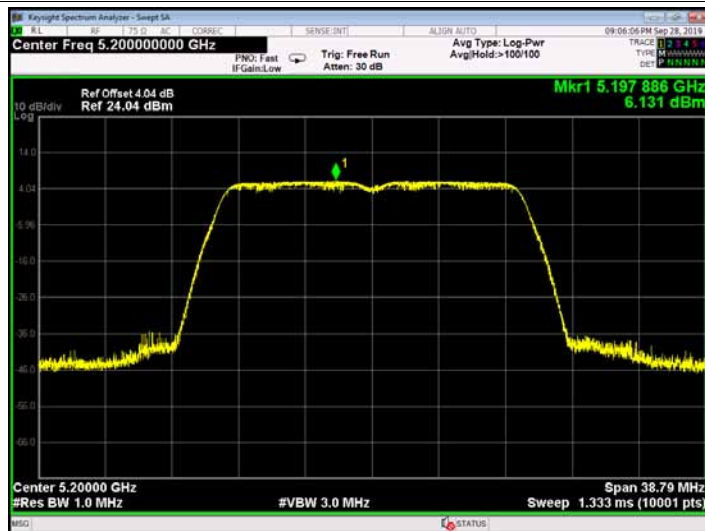


Antenna B

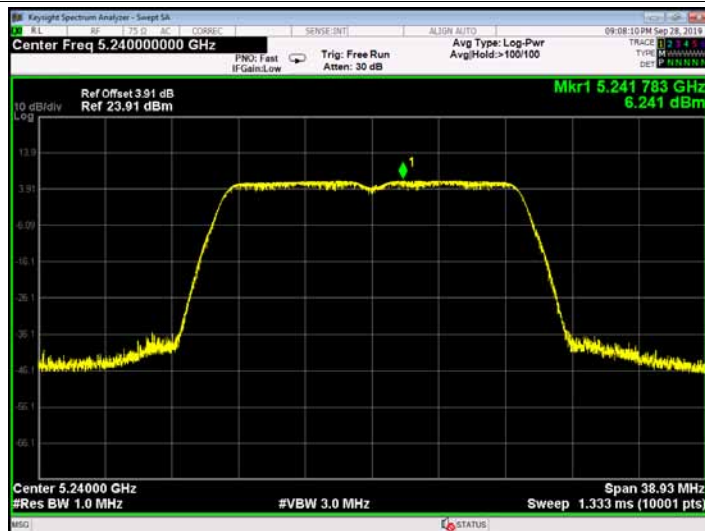
802.11 n(HT20) 5180 MHz



802.11 n(HT20) 5200 MHz

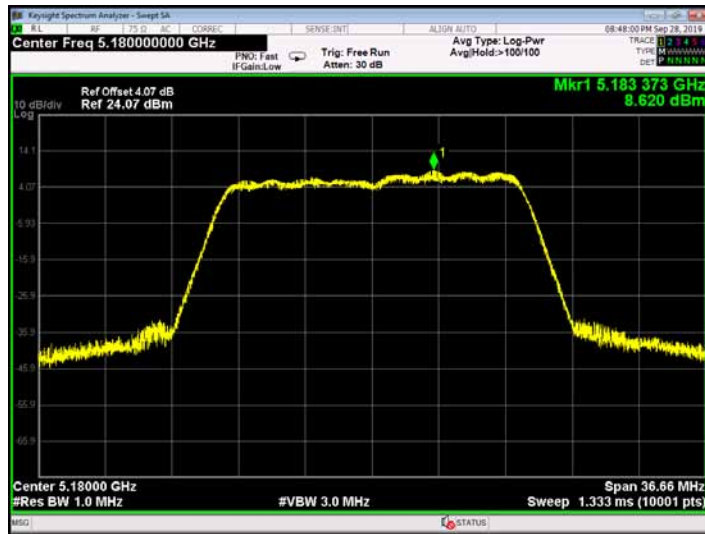


802.11 n(HT20) 5240 MHz

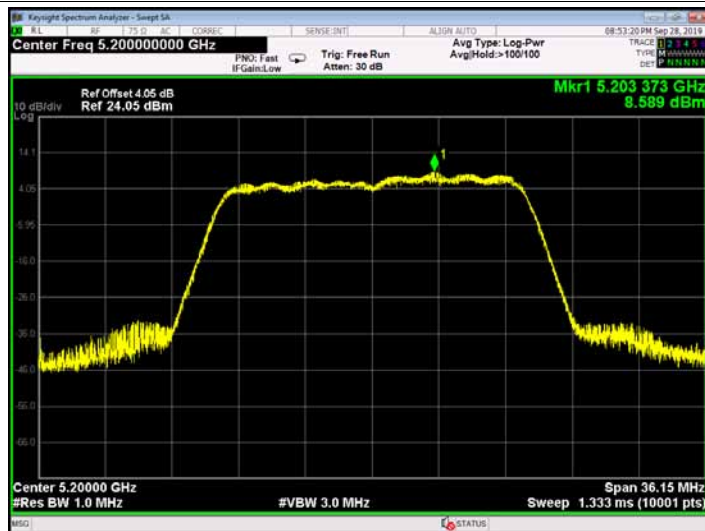


Antenna A

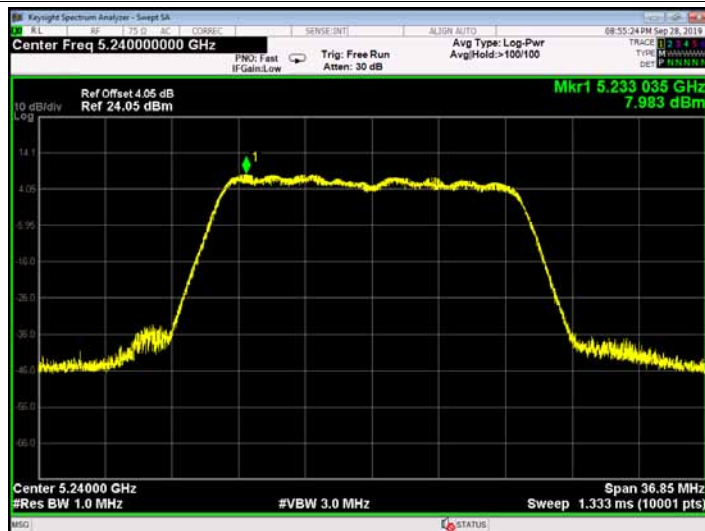
802.11 ac(VHT20) 5180 MHz



802.11 ac(VHT20) 5200 MHz

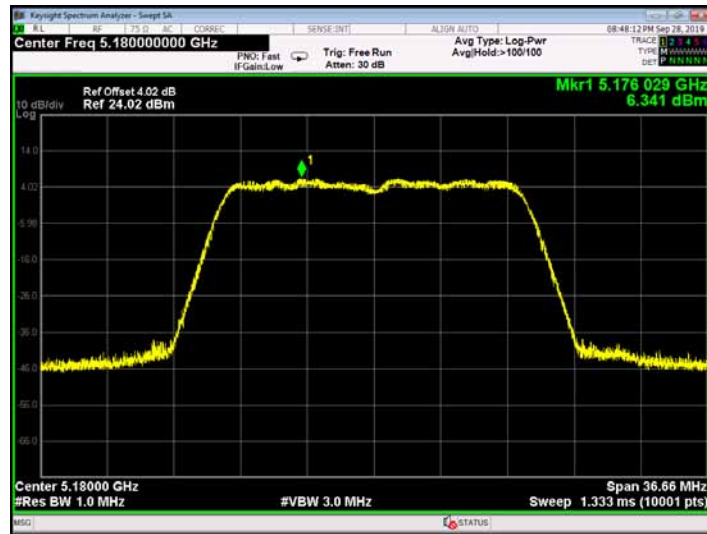


802.11 ac(VHT20) 5240 MHz

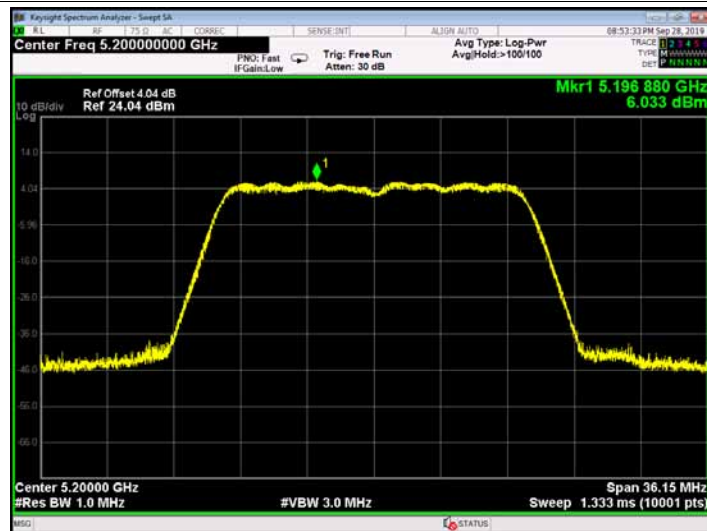


Antenna B

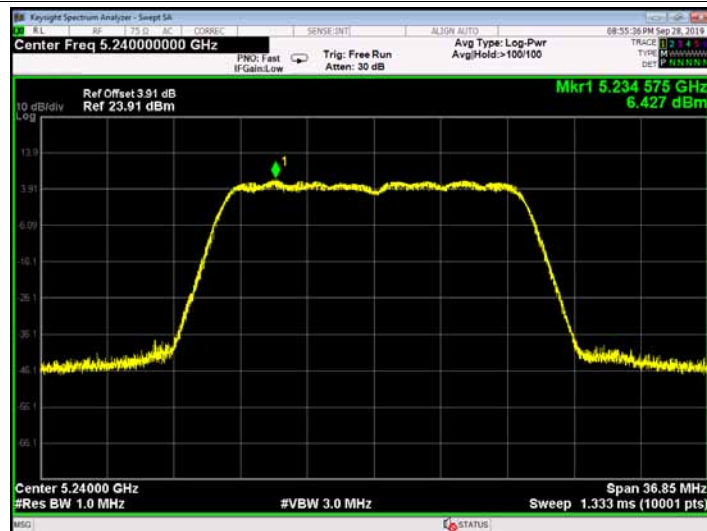
802.11 ac(VHT20) 5180 MHz



802.11 ac(VHT20) 5200 MHz

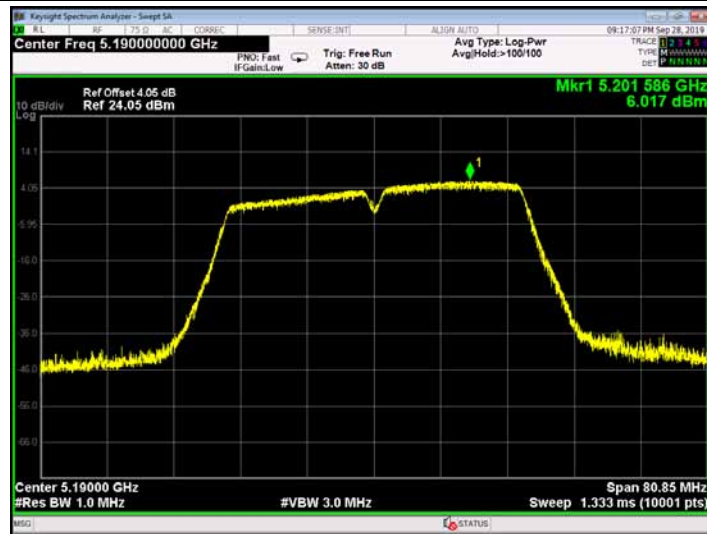


802.11 ac(VHT20) 5240 MHz

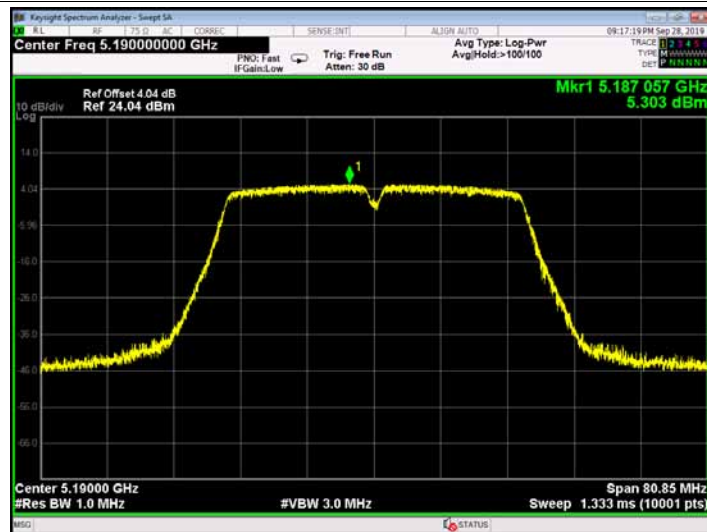


Antenna A

802.11 n(HT40) 5190 MHz

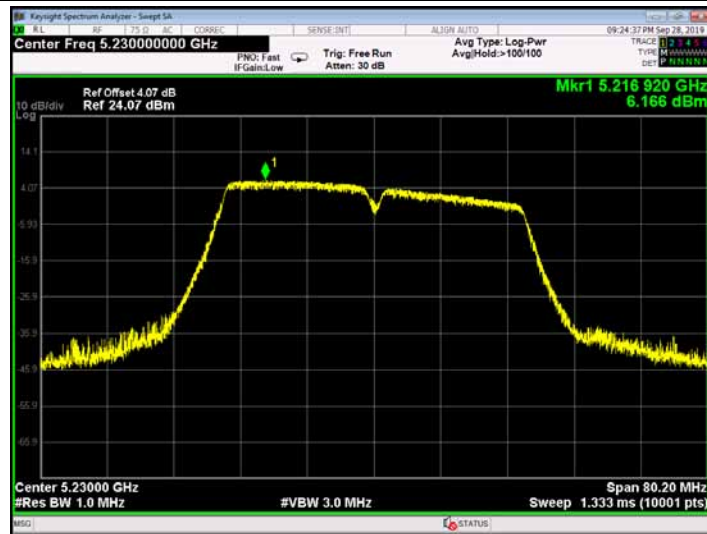


802.11 n(HT40) 5230 MHz

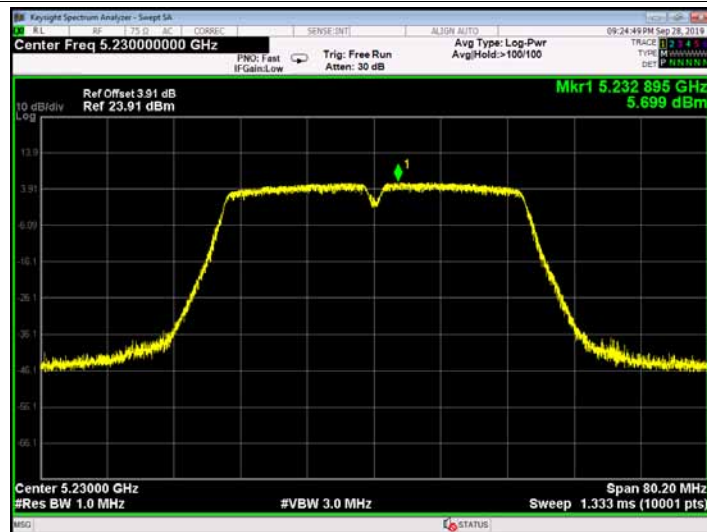


Antenna B

802.11 n(HT40) 5190 MHz

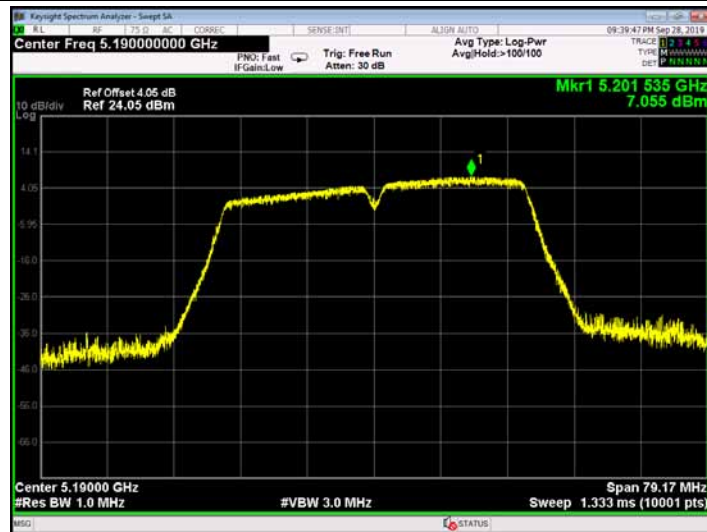


802.11 n(HT40) 5230 MHz

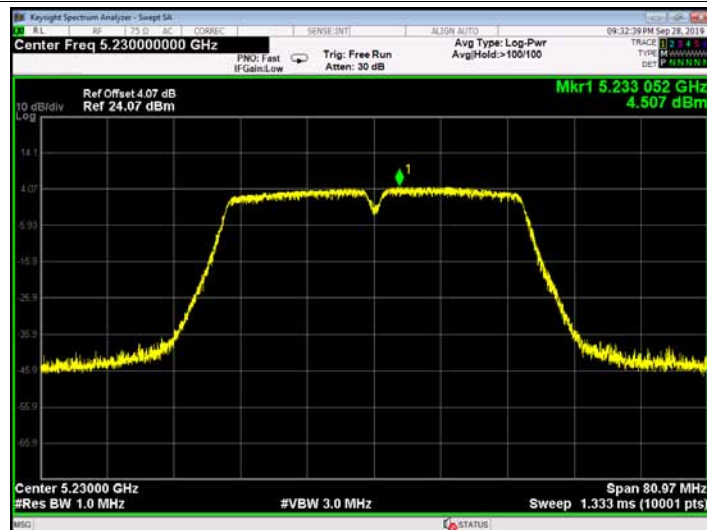


Antenna A

802.11 ac(VHT40) 5190 MHz

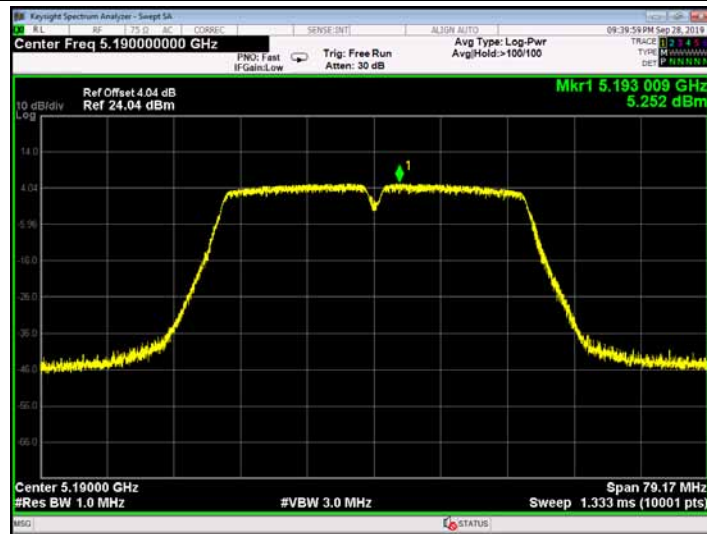


802.11 ac(VHT40) 5230 MHz

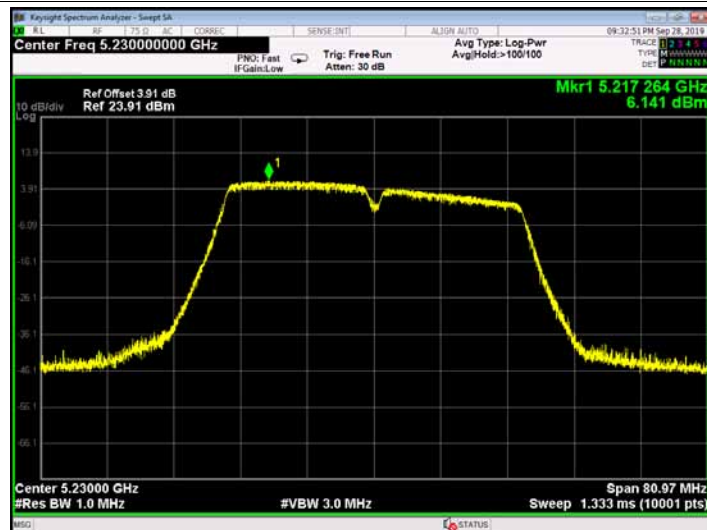


Antenna B

802.11 ac(VHT40) 5190 MHz



802.11 ac(VHT40) 5230 MHz



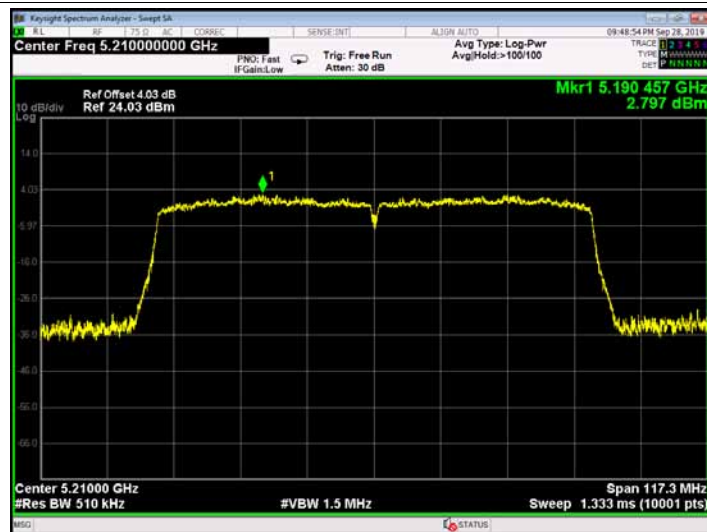
Antenna A

802.11 ac(VHT80) 5210 MHz



Antenna B

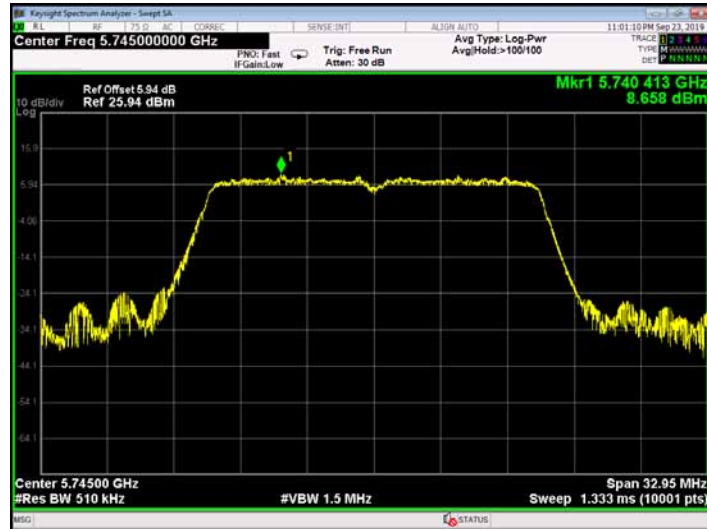
802.11 ac(VHT80) 5210 MHz



Temperature:	25 °C	Relative Humidity:		55%			
Test Voltage:	AC 120V/60Hz						
U-NII-3							
Test Mode	Frequency (MHz)	Test Data				Limit (dBm/500KHz)	
		Main ANT. (dBm/500KHz)	AUX ANT. (dBm/500KHz)	Duty Factor (dB)	Total Power (dBm/500KHz)		
802.11a	5745	8.658	11.232	0	---	30	
	5785	10.012	11.927	0	---		
	5825	10.352	9.784	0	---		
802.11n (HT20)	5745	8.611	11.191	0	13.100	29.99	
	5785	10.083	11.878	0	14.083		
	5825	10.269	9.792	0	13.047		
802.11ac (VHT20)	5745	11.304	12.303	0	14.842		
	5785	10.818	12.819	0	14.943		
	5825	10.937	10.390	0	13.682		
802.11n (HT40)	5755	5.496	7.669	0	9.727		
	5795	6.694	8.643	0	10.787		
802.11 ac(VHT40)	5755	5.656	7.581	0	9.735		
	5795	6.604	8.545	0	10.692		
802.11 ac(VHT80)	5775	3.331	4.289	0	6.847		
Result: PASS							
Remark: The EUT incorporates a MIMO function. Physically, the EUT provides two antennas for transmitting and receiving.							
When ANT. A and ANT. B transmitting simultaneously, the total Antenna Gain= ANT. A n Gain + ANT. B x Gani =6.01 dBi>6 dBi.							
So P _{out} = P _{limit} -(G _{TX} -6)]=30-0.01=29.99dBm							

Antenna A

802.11 a 5745 MHz



802.11 a 5785 MHz



802.11 a 5825 MHz



Antenna B

802.11 a 5745 MHz



802.11 a 5785 MHz

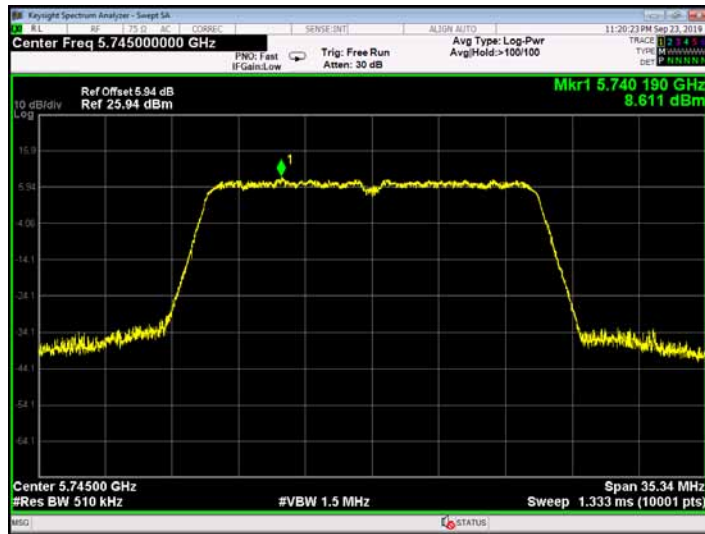


802.11 a 5825 MHz

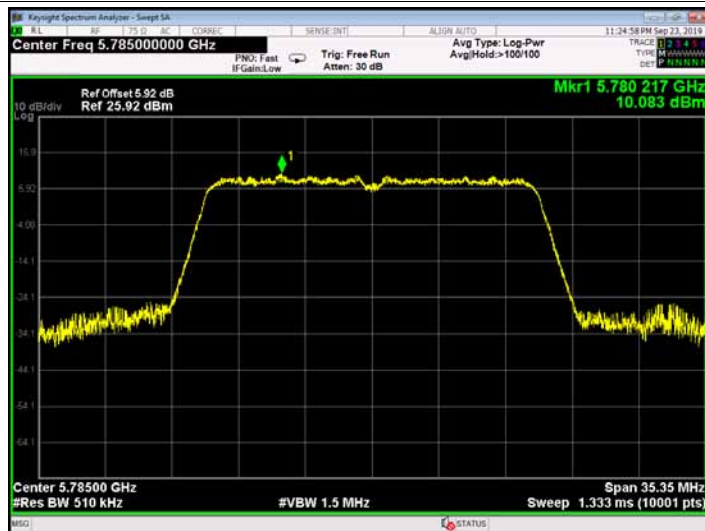


Antenna A

802.11 n(HT20) 5745 MHz



802.11 n(HT20) 5785 MHz



802.11 n(HT20) 5825 MHz



Antenna B

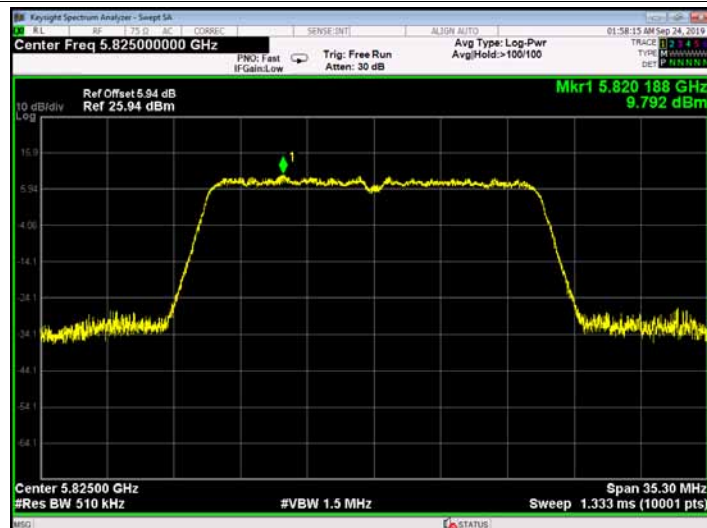
802.11 n(HT20) 5745 MHz



802.11 n(HT20) 5785 MHz

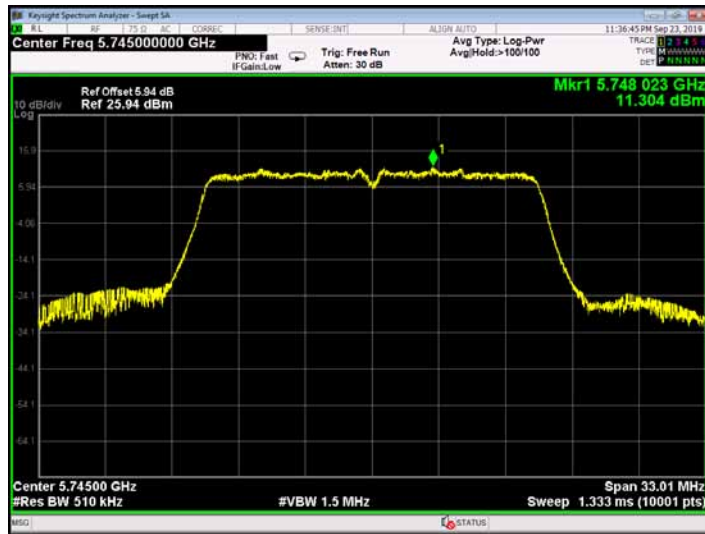


802.11 n(HT20) 5825 MHz

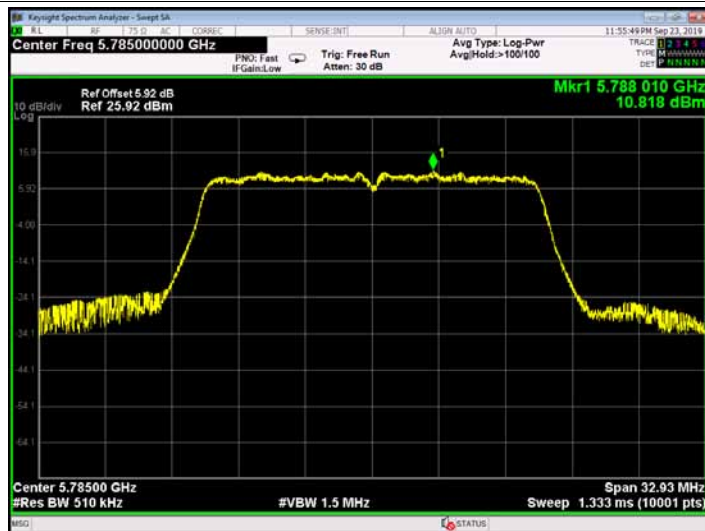


Antenna A

802.11 ac(VHT20) 5745 MHz



802.11 ac(VHT20) 5785 MHz



802.11 ac(VHT20) 5825 MHz

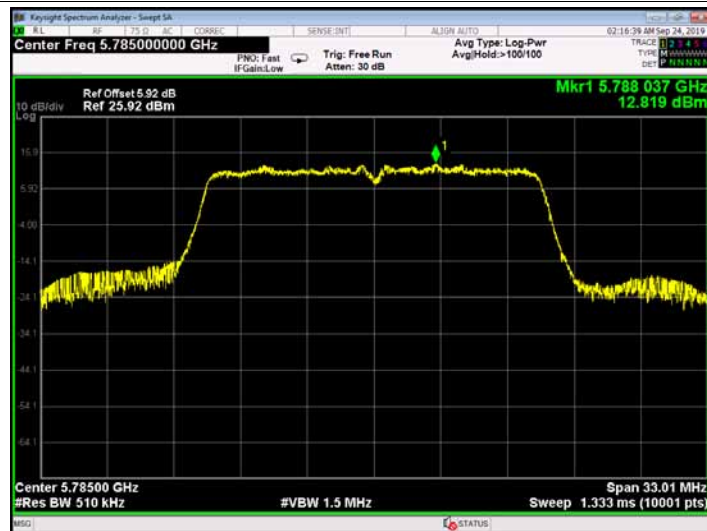


Antenna B

802.11 ac(VHT20) 5745 MHz



802.11 ac(VHT20) 5785 MHz



802.11 ac(VHT20) 5825 MHz



Antenna A

802.11 n(HT40) 5755 MHz

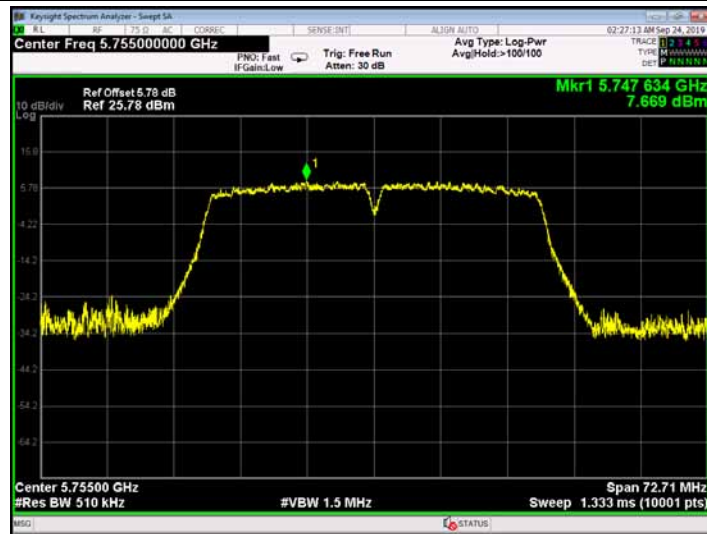


802.11 n(HT40) 5795 MHz

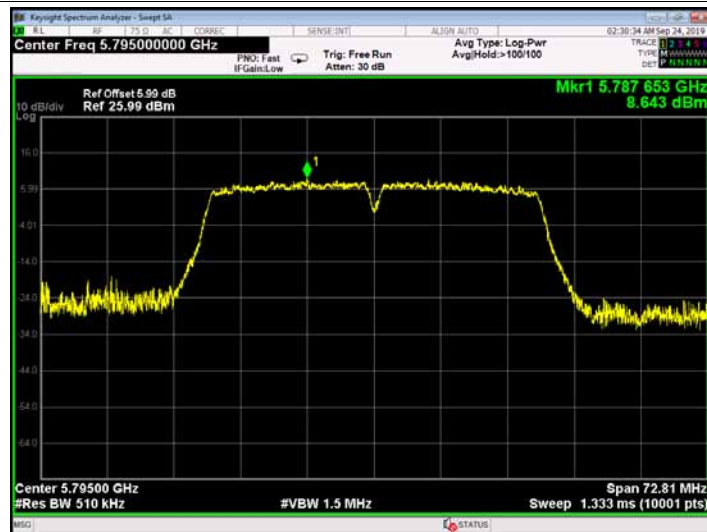


Antenna B

802.11 n(HT40) 5755 MHz

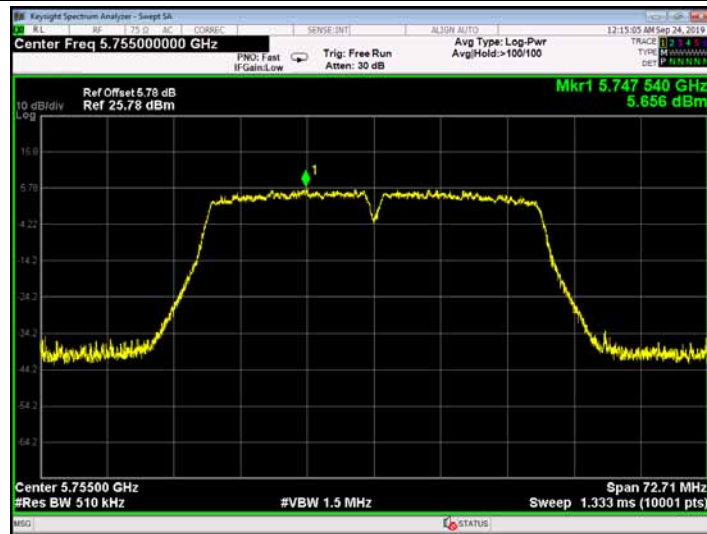


802.11 n(HT40) 5795 MHz

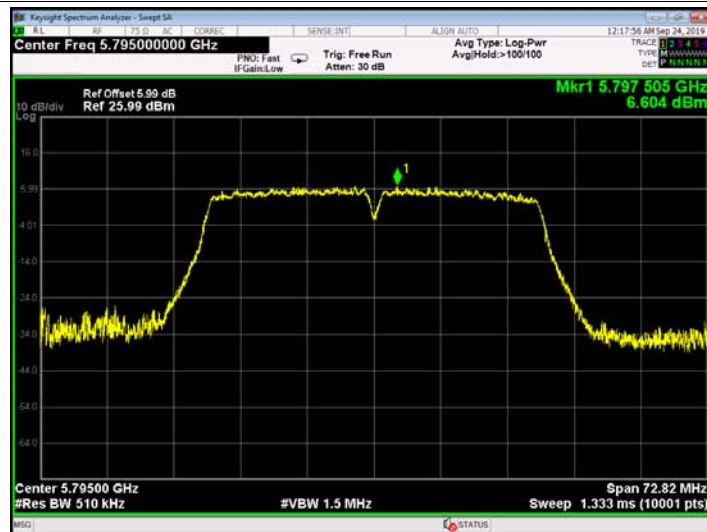


Antenna A

802.11 ac(VHT40) 5755 MHz



802.11 ac(VHT40) 5795 MHz

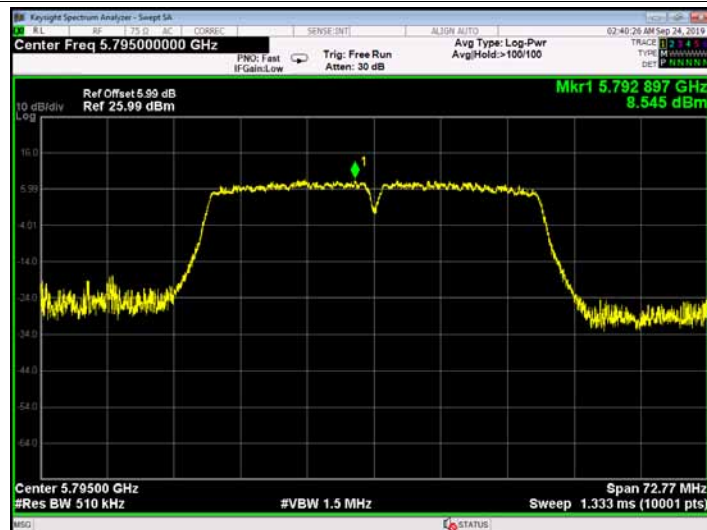


Antenna B

802.11 ac(VHT40) 5755 MHz



802.11 ac(VHT40) 5795 MHz



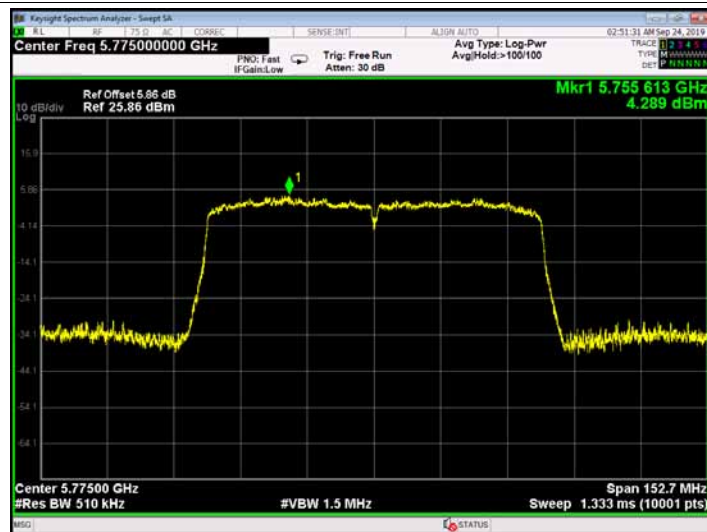
Antenna A

802.11 ac(VHT80) 5775 MHz



Antenna B

802.11 ac(VHT80) 5775 MHz



Attachment G----Frequency Stability Measurement Data

Only show the worst case 802.11 a Mode 5180MHz.

801.11a U-NII-1: 5180 MHz	
Voltage vs. Frequency Stability	
Voltage (V)	Measurement Frequency (MHz)
132	5179.9642
120	5180.0000
118	5179.9585
Max. Deviation (MHz)	0.0415
Max. Deviation (ppm)	8.01
Temperature vs. Frequency Stability	
Temperature (°C)	Measurement Frequency (MHz)
0	5179.9752
10	5179.9743
20	5179.9725
30	5179.9765
40	5179.9735
50	5179.9785
Max. Deviation (MHz)	0.0275
Max. Deviation (ppm)	5.31
Limit (ppm)	20
Result	Pass

Only show the worst case 802.11 a Mode 5745MHz.

801.11a U-NII-3: 5745 MHz	
Voltage vs. Frequency Stability	
Voltage (V)	Measurement Frequency (MHz)
132	5744.9658
120	5745.0000
118	5744.9523
Max. Deviation (MHz)	0.0477
Max. Deviation (ppm)	8.30
Temperature vs. Frequency Stability	
Temperature (°C)	Measurement Frequency (MHz)
0	5744.9632
10	5744.9724
20	5744.9569
30	5744.9658
40	5744.9515
50	5744.9768
Max. Deviation (MHz)	0.0485
Max. Deviation (ppm)	8.44
Limit (ppm)	20
Result	Pass

-----END OF REPORT-----