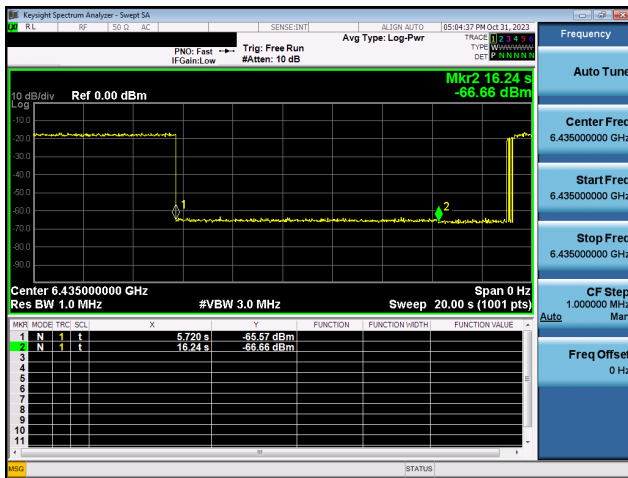
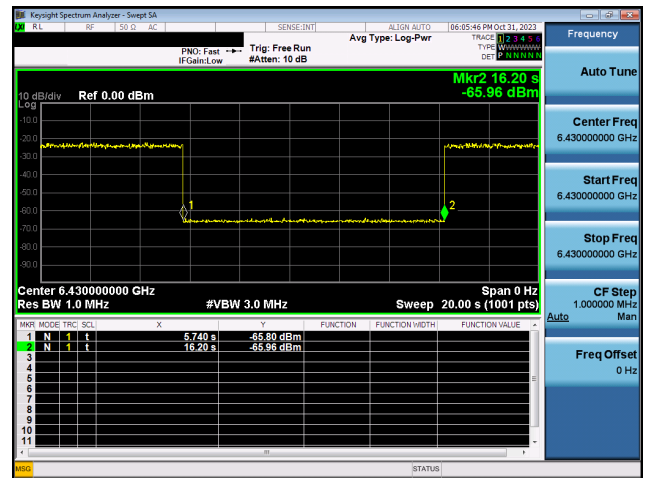


Plots of Start transmitting

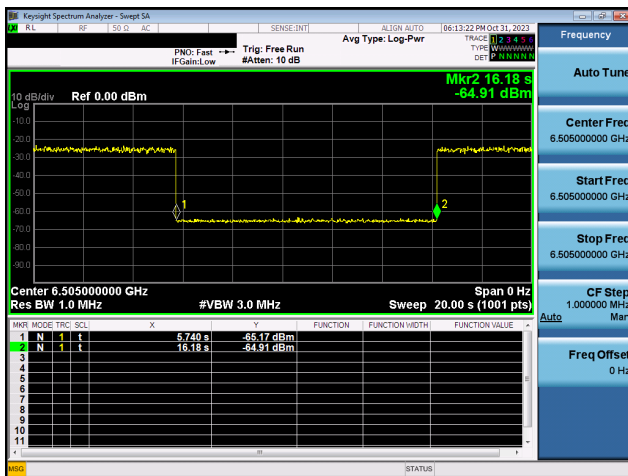
802.11ax-20 MHz / 6435 MHz



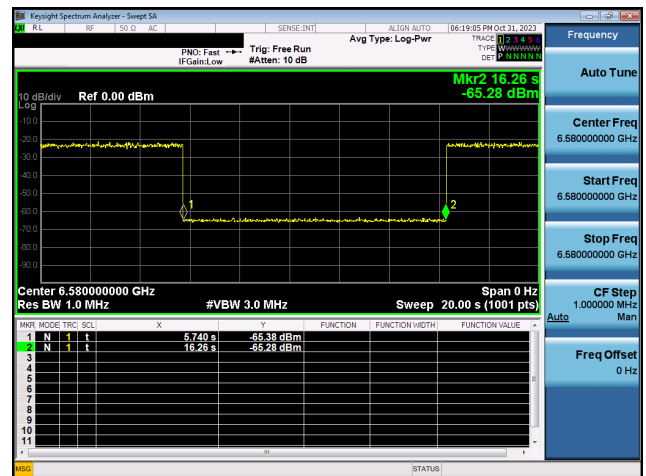
802.11ax-160 MHz / 6430 MHz
(Low Edge - 6430 MHz)



802.11ax-160 MHz / 6505 MHz
(Middle - 6505 MHz)



802.11ax-160 MHz / 6580 MHz
(High Edge - 6580 MHz)



Product : Notebook Computer
 Test Item : Contention Based Protocol

Contention Based Protocol Probability											
Measurement Mode		Conducted measurement			Device Type		client				
Operation Band	Operation Mode	Channel Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	AWGN Signals Frequency (MHz)	The Incumbent Signal (AWGN) Level (dBm)	Test Result				
							Number of Times	Number of Detected	Detection Rate	Limit	Pass/Fail
U-NII 7	802.11ax	20MHz	117	6535	6535	-66.42	10	10	100%	90%	Pass
					6590	-69.71	10	10	100%	90%	Pass
		160MHz	143	6665	6665	-69.40	10	10	100%	90%	Pass
					6740	-63.93	10	10	100%	90%	Pass

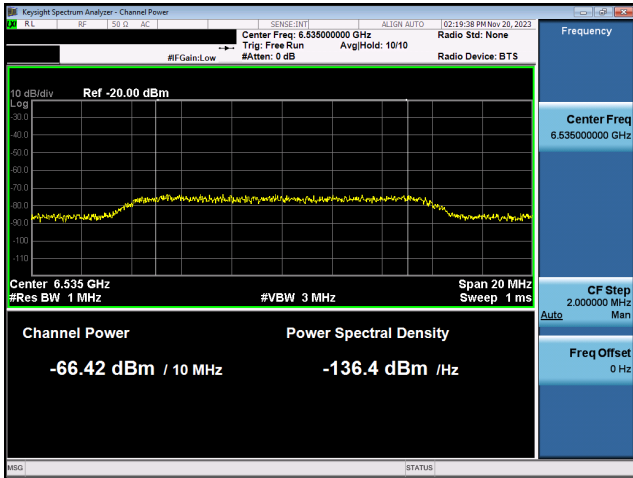
Contention Based Protocol Measurement													
Operation Band	Operation Mode	Channel Bandwidth	Channel Number	Channel Frequency	AWGN Signals Frequency (MHz)	Injected (AWGN) POWER (dBm)	Antenna Gain (dBi)	Path Loss (dB)	Adjusted Power (dBm)	Detection limit (dBm)	EUT Tx Status		
U-NII 7	802.11ax	20MHz	117	6535	6535	-66.42	0.28	0	-66.70	-62	Ceased		
						-67.50	0.28	0	-67.78	-62	Minimal		
						-72.60	0.28	0	-72.88	-62	Normal		
		160MHz	143	6665	6665	6590	-69.71	0.28	0	-69.99	-62	Ceased	
							-70.90	0.28	0	-71.18	-62	Minimal	
							-73.70	0.28	0	-73.98	-62	Normal	
						6740	6740	-69.40	0.28	0	-69.68	-62	Ceased
								-70.20	0.28	0	-70.48	-62	Minimal
								-72.50	0.28	0	-72.78	-62	Normal
		6740	6740	-63.93	0.28	0	-64.21	-62	Ceased				
				-64.50	0.28	0	-64.78	-62	Minimal				
				-66.10	0.28	0	-66.38	-62	Normal				

Note:

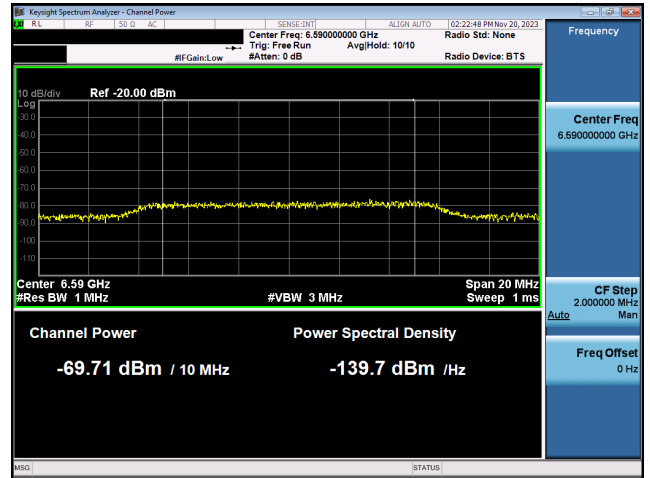
1. Adjusted Power(dBm) = Injected (AWGN) Power - Antenna Gain + Path Loss
2. Antenna Gain includes cable loss
3. Only one chain was performed for testing.
4. The AWGN level is reported for the following conditions:
 - Ceased = AWGN level at which no transmission is detected, consistently for a minimum period of 10 seconds.
 - Minimal = AWGN level at which the system begins to trigger the transmission switch-off, albeit not being kept off consistently.
 - Normal = AWGN level at which no impact on the transmission is detected, consistently for a minimum period of 10 seconds.

Plots of shows Incumbent signal level

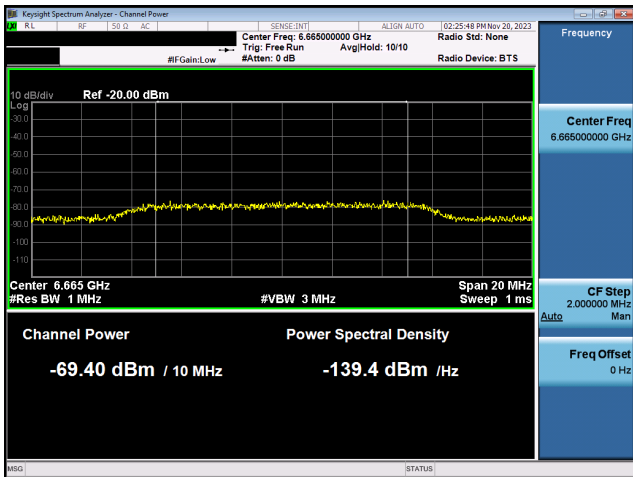
802.11ax-20 MHz / 6535 MHz



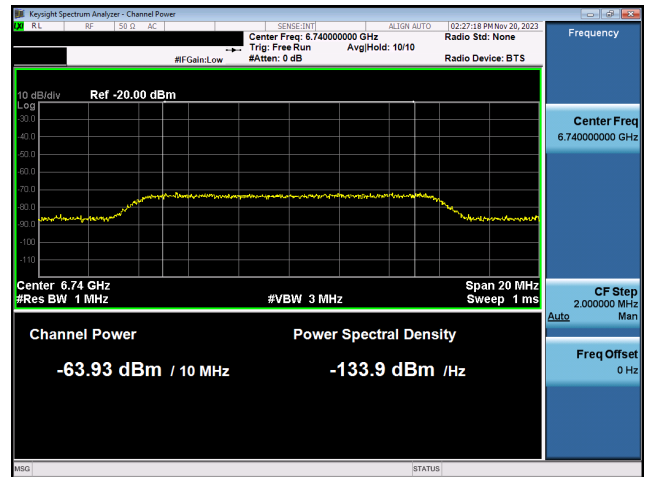
802.11ax-160 MHz / 6590 MHz (Lower Edge)



802.11ax-160 MHz / 6665 MHz (Middle)

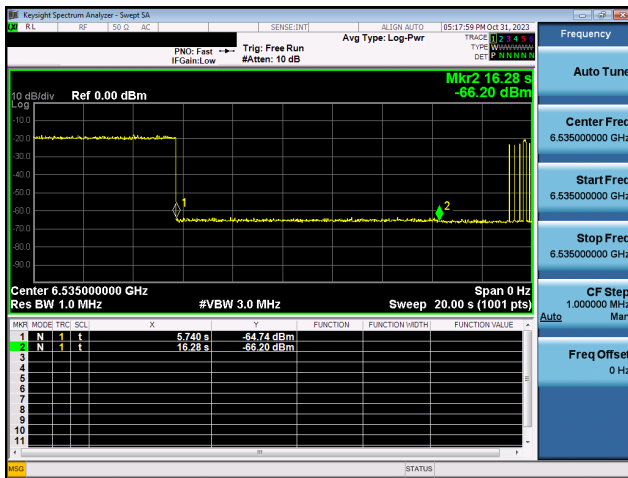


802.11ax-160 MHz / 6740 MHz (Upper Edge)

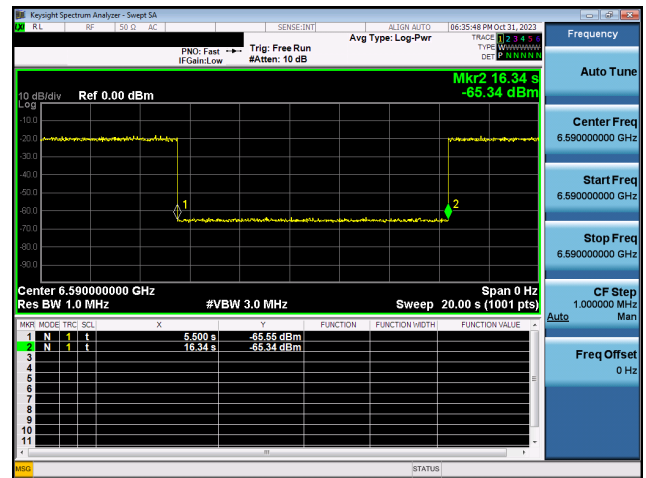


Plots of EUT ceased transmission in the time domain

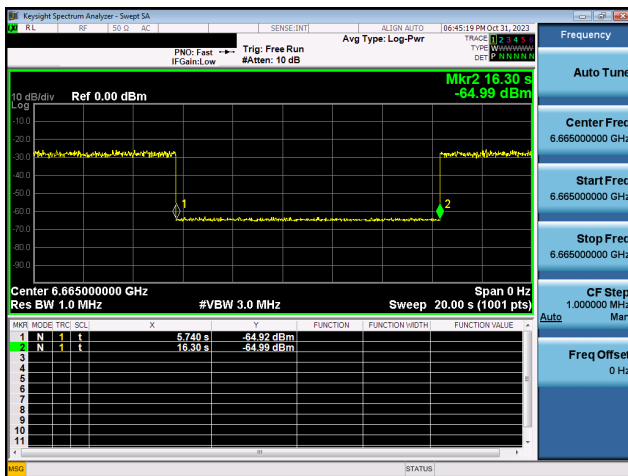
802.11ax-20 MHz / 6535 MHz



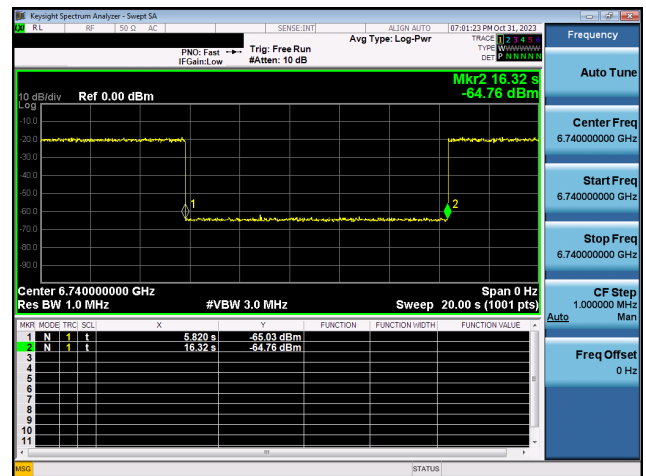
802.11ax-160 MHz / 6590 MHz
(Low Edge - 6590 MHz)



802.11ax-160 MHz / 6665 MHz
(Middle - 6665 MHz)



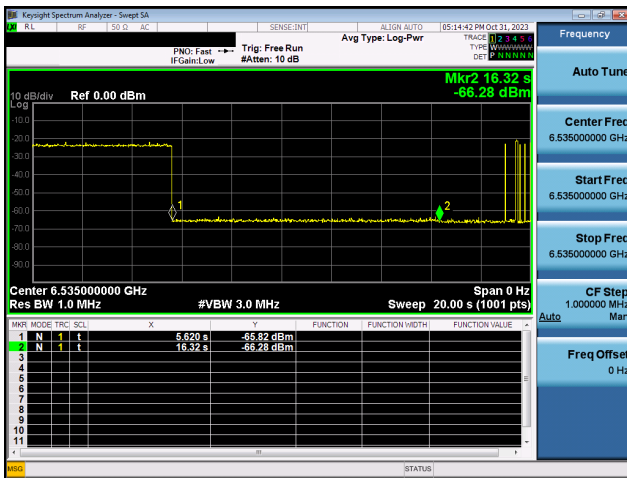
802.11ax-160 MHz / 6740 MHz
(High Edge - 6740 MHz)



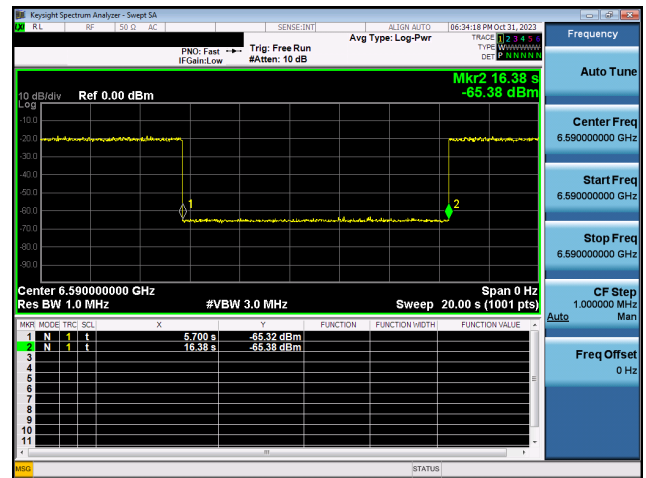
Note: Injected Interference signal at 10 sec.

Plots of Start transmitting

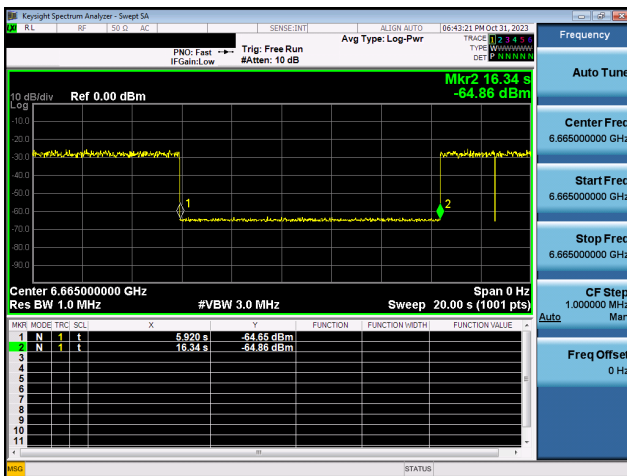
802.11ax-20 MHz / 6535MHz



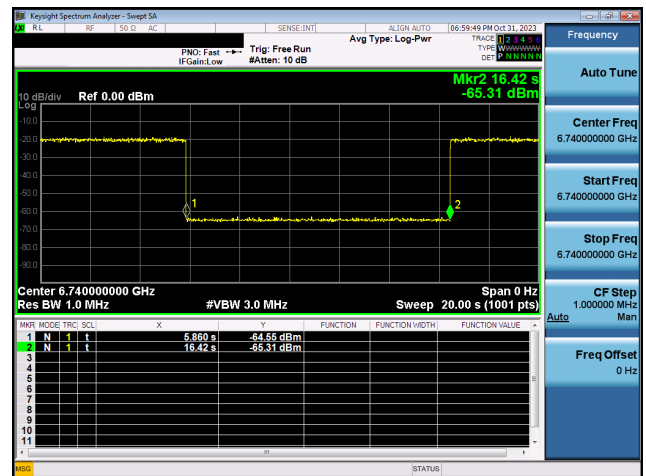
802.11ax-160 MHz / 6590 MHz
(Low Edge - 6590 MHz)



802.11ax-160 MHz / 6665 MHz
(Middle - 6665 MHz)



802.11ax-160 MHz / 6740 MHz
(High Edge - 6740 MHz)



Product : Notebook Computer
 Test Item : Contention Based Protocol

Contention Based Protocol Probability											
Measurement Mode		Conducted measurement			Device Type		client				
Operation Band	Operation Mode	Channel Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	AWGN Signals Frequency (MHz)	The Incumbent Signal (AWGN) Level (dBm)	Test Result				
							Number of Times	Number of Detected	Detection Rate	Limit	Pass/Fail
U-NII 8	802.11ax	20MHz	189	6895	6895	-66.50	10	10	100%	90%	Pass
					6910	-68.80	10	10	100%	90%	Pass
		160MHz	207	6985	6985	-68.02	10	10	100%	90%	Pass
					7060	-65.42	10	10	100%	90%	Pass

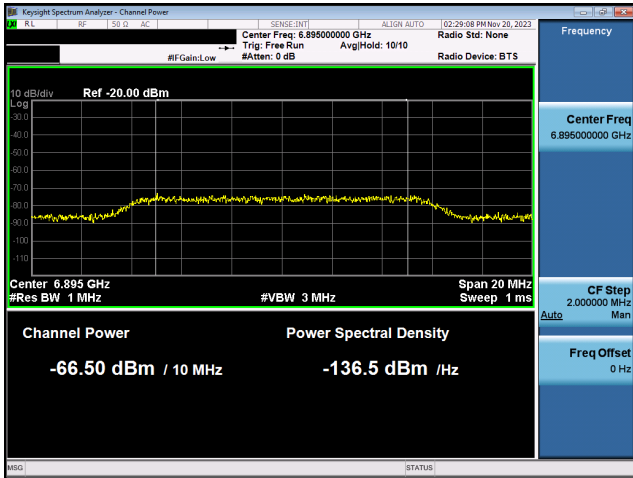
Contention Based Protocol Measurement											
Operation Band	Operation Mode	Channel Bandwidth	Channel Number	Channel Frequency	AWGN Signals Frequency (MHz)	Injected (AWGN) POWER (dBm)	Antenna Gain (dBi)	Path Loss (dB)	Adjusted Power (dBm)	Detection limit (dBm)	EUT Tx Status
U-NII 8	802.11ax	20MHz	189	6895	6895	-66.50	0.28	0	-66.78	-62	Ceased
						-67.60	0.28	0	-67.88	-62	Minimal
						-72.20	0.28	0	-72.48	-62	Normal
		160MHz	207	6985	6910	-68.80	0.28	0	-69.08	-62	Ceased
						-70.10	0.28	0	-70.38	-62	Minimal
						-72.10	0.28	0	-72.38	-62	Normal
						-68.02	0.28	0	-68.30	-62	Ceased
						-68.20	0.28	0	-68.48	-62	Minimal
						-69.90	0.28	0	-70.18	-62	Normal
		7060	-65.42	0.28	0	-65.70	-62	Ceased			
			-65.60	0.28	0	-65.88	-62	Minimal			
			-70.20	0.28	0	-70.48	-62	Normal			

Note:

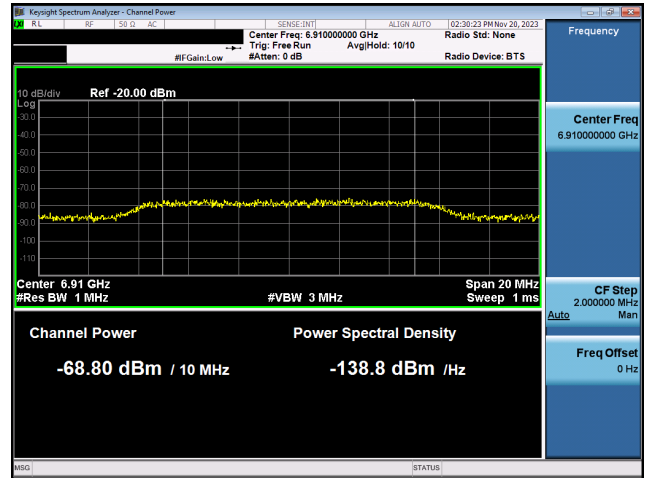
- Adjusted Power(dBm) = Injected (AWGN) Power - Antenna Gain + Path Loss
- Antenna Gain includes cable loss
- Only one chain was performed for testing.
- The AWGN level is reported for the following conditions:
 - Ceased = AWGN level at which no transmission is detected, consistently for a minimum period of 10 seconds.
 - Minimal = AWGN level at which the system begins to trigger the transmission switch-off, albeit not being kept off consistently.
 - Normal = AWGN level at which no impact on the transmission is detected, consistently for a minimum period of 10 seconds.

Plots of shows Incumbent signal level

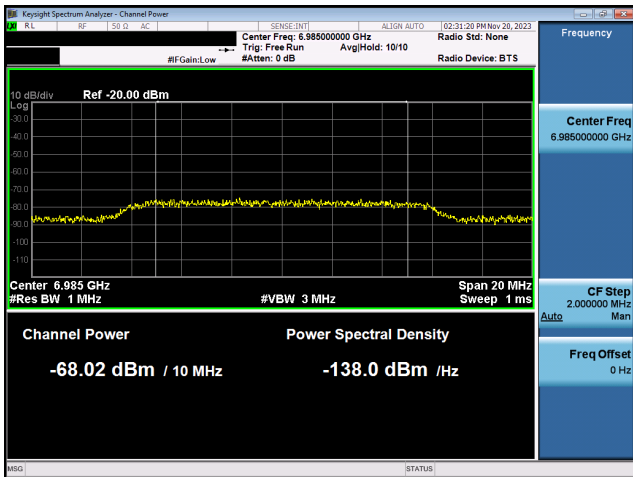
802.11ax-20 MHz / 6895 MHz



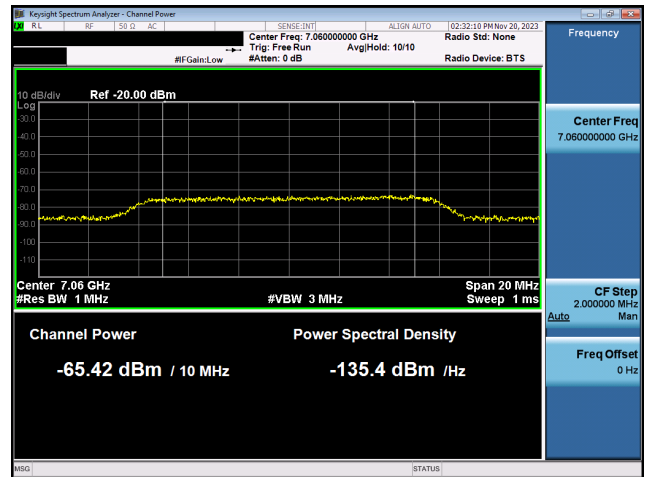
802.11ax-160 MHz / 6910 MHz (Lower Edge)



802.11ax-160 MHz / 6985 MHz (Middle)

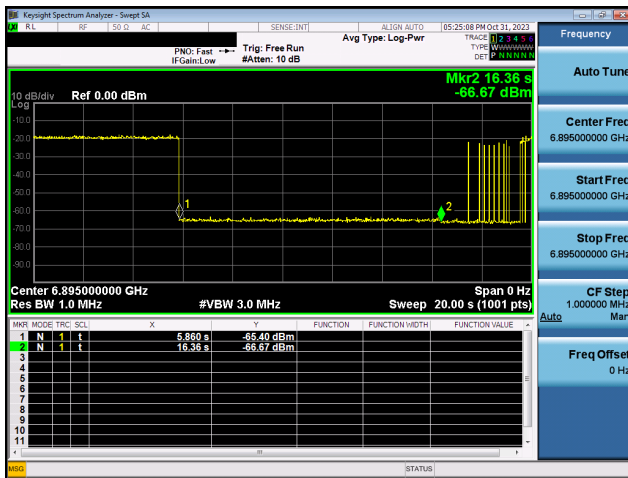


802.11ax-160 MHz / 7060 MHz (Upper Edge)

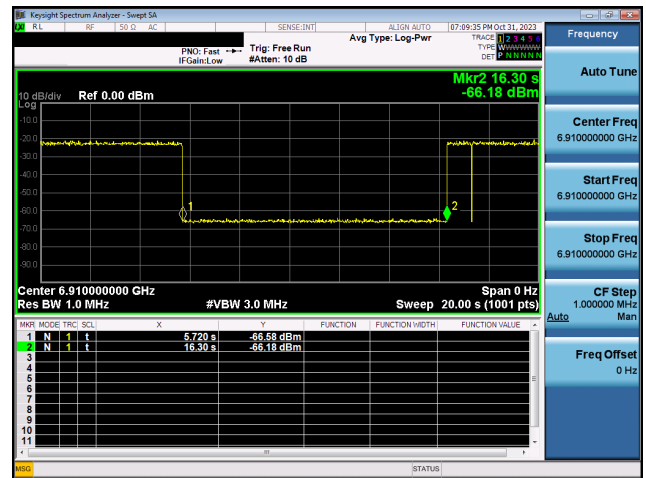


Plots of EUT ceased transmission in the time domain

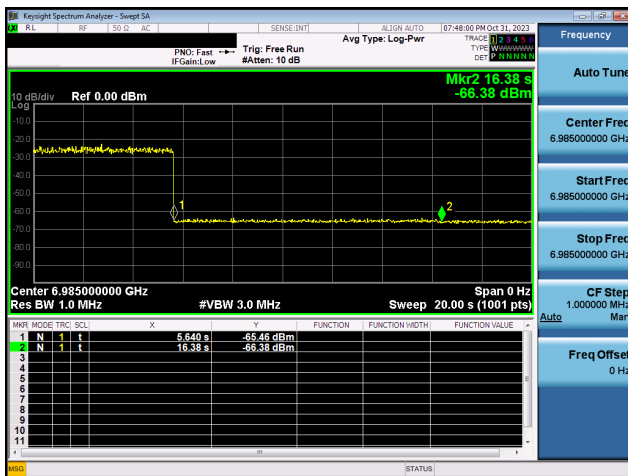
802.11ax-20 MHz / 6895 MHz



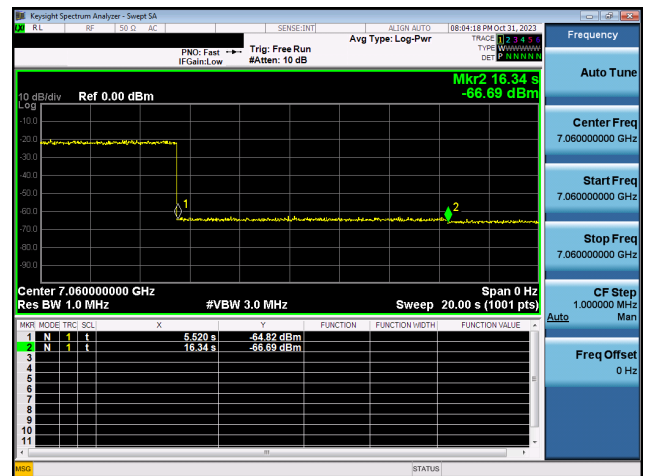
802.11ax-160 MHz / 6910 MHz
(Low Edge - 6910 MHz)



802.11ax-160 MHz / 6985 MHz
(Middle - 6985 MHz)



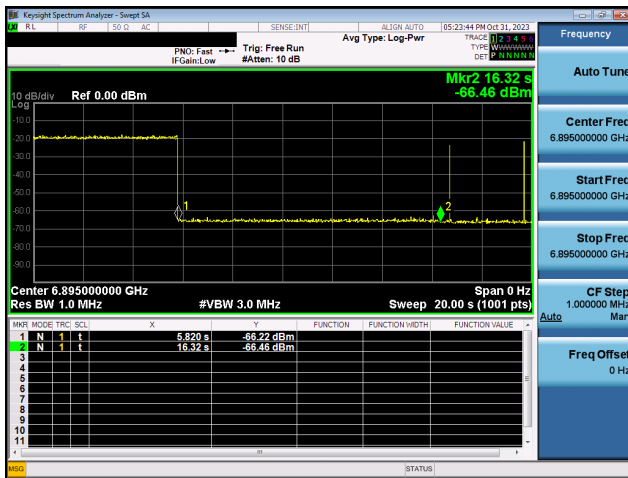
802.11ax-160 MHz / 7060 MHz
(High Edge - 7060 MHz)



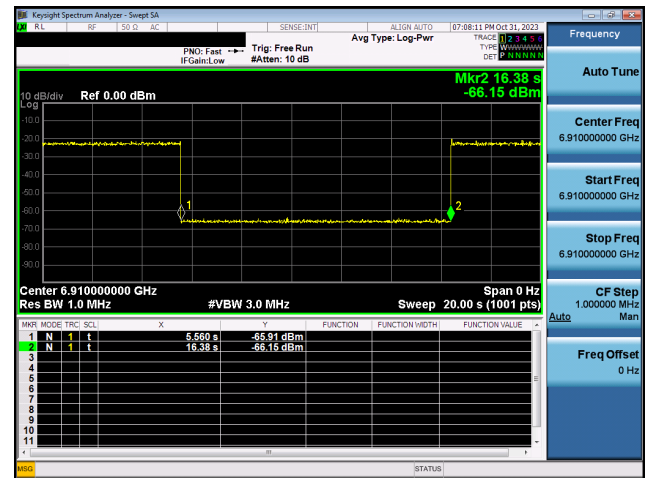
Note: Injected Interference signal at 10 sec.

Plots of Start transmitting

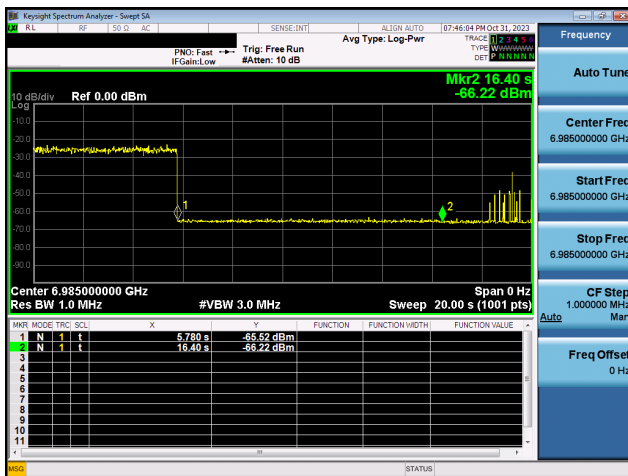
802.11ax (20MHz) / 6895 MHz



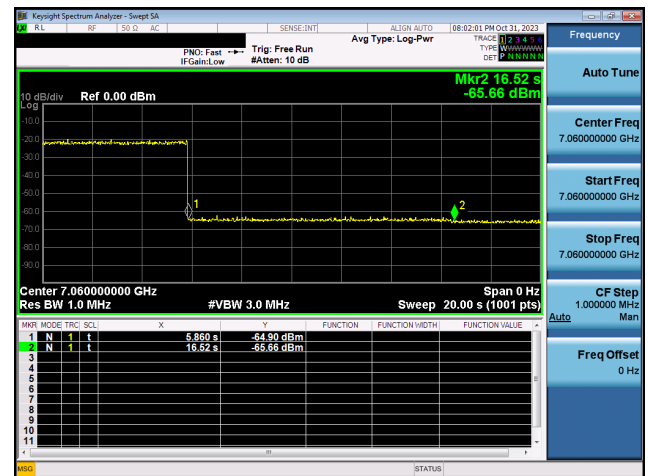
802.11ax-160 MHz / 6910 MHz
(Low Edge - 6910 MHz)



802.11ax-160 MHz / 6985 MHz
(Middle - 6985 MHz)

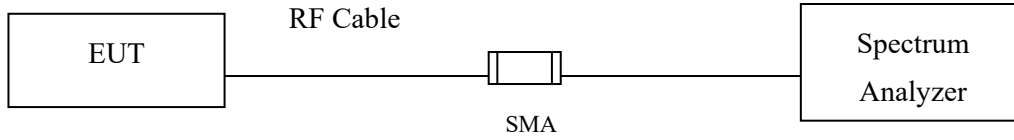


802.11ax-160 MHz / 7060 MHz
(High Edge - 7060 MHz)



10. Duty Cycle

10.1. Test Setup



10.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to U-NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.

10.3. Duty Cycle

Product : Notebook Computer
 Test Item : Duty Cycle

SISO A

Mode	Time On (ms)	Time On + Time Off (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11ax-20 MHz	4.0000	4.0435	98.92	0.05
802.11ax-40 MHz	4.0000	4.0435	98.92	0.05
802.11ax-80 MHz	4.0000	4.0435	98.92	0.05
802.11ax-160 MHz	4.0000	4.0435	98.92	0.05

SISO B

Mode	Time On (ms)	Time On + Time Off (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11ax-20 MHz	2.5855	2.6203	98.67	0.06
802.11ax-40 MHz	2.5971	2.6319	98.68	0.06
802.11ax-80 MHz	2.5971	2.6319	98.68	0.06
802.11ax-160 MHz	2.5971	2.6319	98.68	0.06

MIMO

Mode	Time On (ms)	Time On + Time Off (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11ax-20 MHz	3.9800	4.0300	98.76	0.05
802.11ax-40 MHz	3.9900	4.0400	98.76	0.05
802.11ax-80 MHz	3.9900	4.0300	99.01	0.04
802.11ax-160 MHz	2.3100	2.3600	97.88	0.09

Note:

Offset = $20 \log(1/\text{duty cycle})$

According to KDB 789033

If power averaging (rms) mode was used in step (iv) above, the correction factor is $10 \log(1/x)$, where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB must be added to the measured emission levels.

If linear voltage averaging mode was used in step (iv) above, the correction factor is $20 \log(1/x)$, where x is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB must be added to the measured emission levels.

