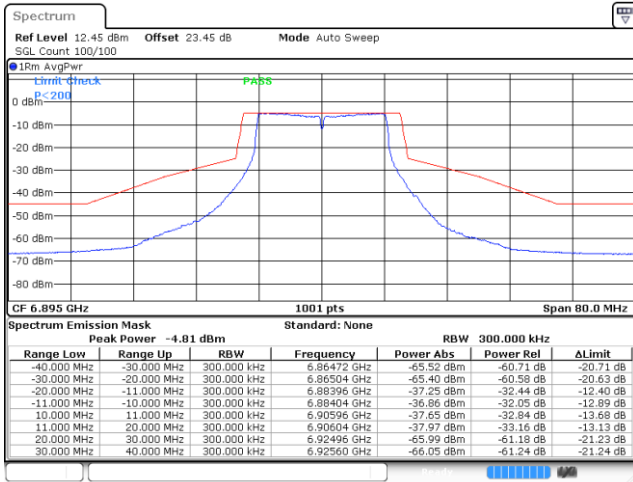


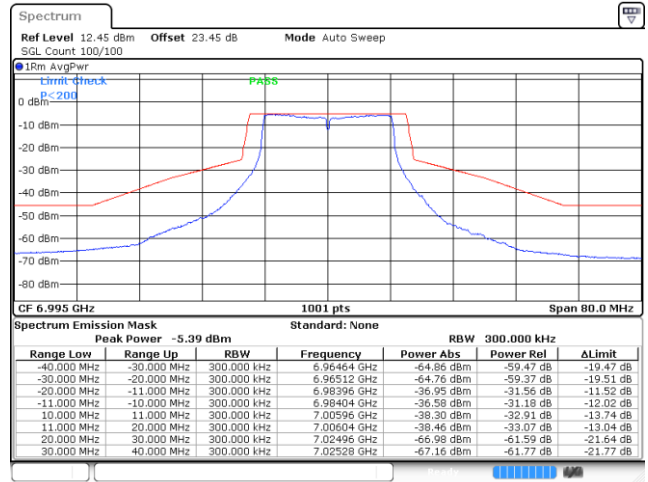


Plot on Channel 6895MHz



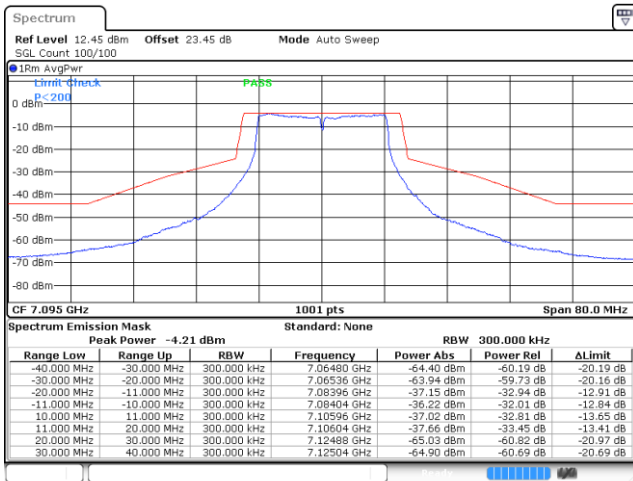
Date: 19 APR 2022 23:33:36

Plot on Channel 6995MHz



Date: 19 APR 2022 23:42:24

Plot on Channel 7095MHz

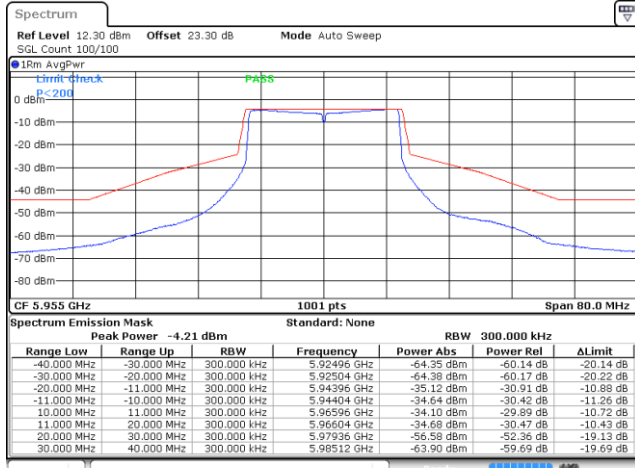


Date: 22 APR 2022 19:31:01



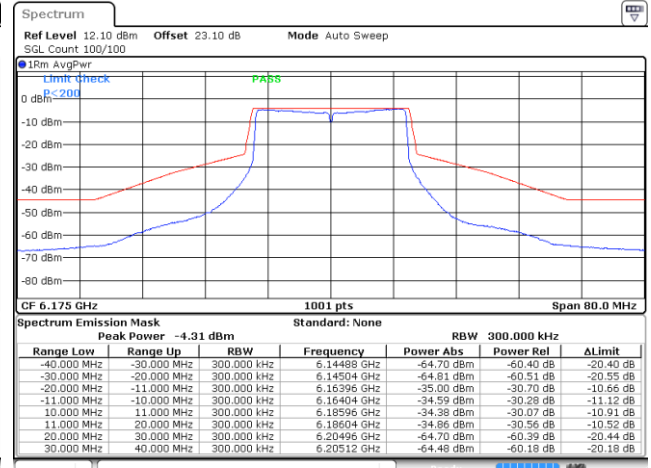
EUT Mode : 802.11ax HE20

Plot on Channel 5955MHz



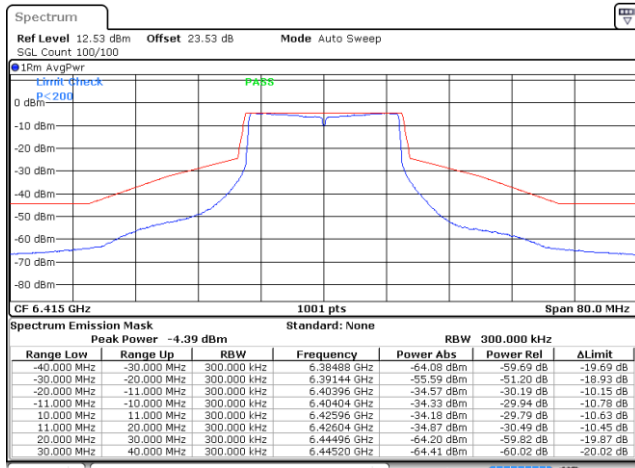
Date: 20 APR 2022 00:15:21

Plot on Channel 6175MHz



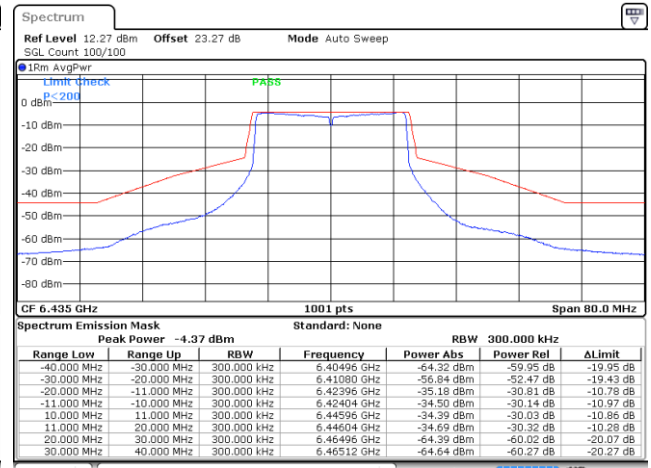
Date: 20 APR 2022 00:25:57

Plot on Channel 6415MHz



Date: 20 APR 2022 00:32:54

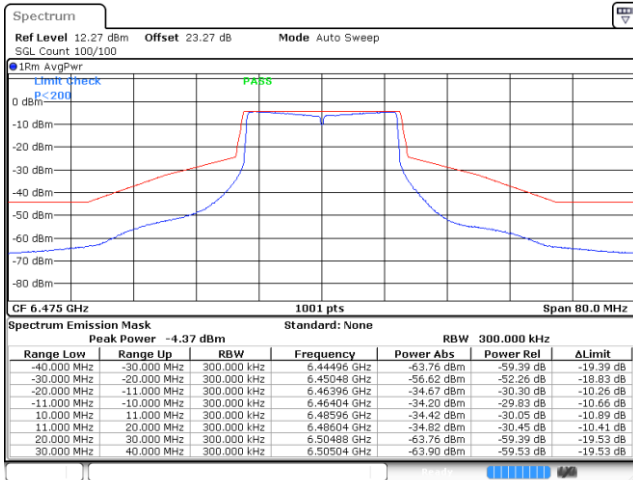
Plot on Channel 6435MHz



Date: 20 APR 2022 00:41:26

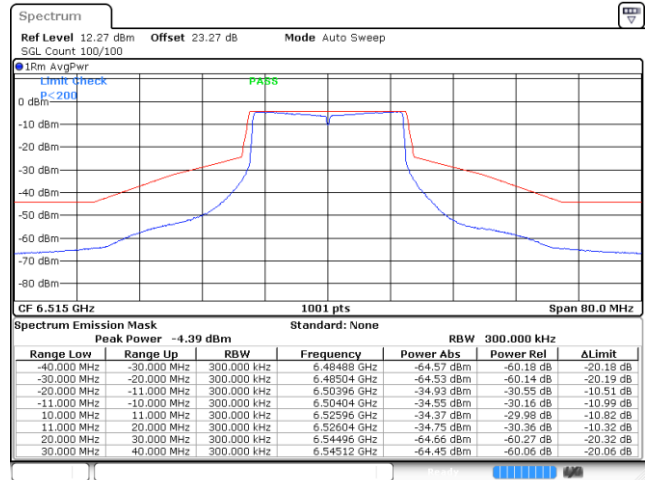


Plot on Channel 6475MHz



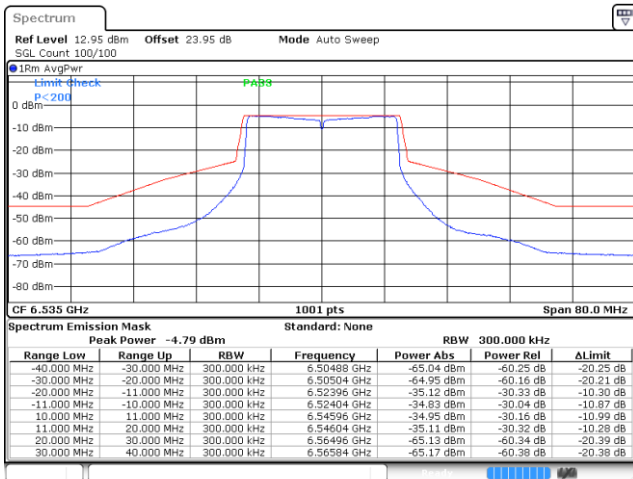
Date: 20 APR 2022 00:48:02

Plot on Channel 6515MHz



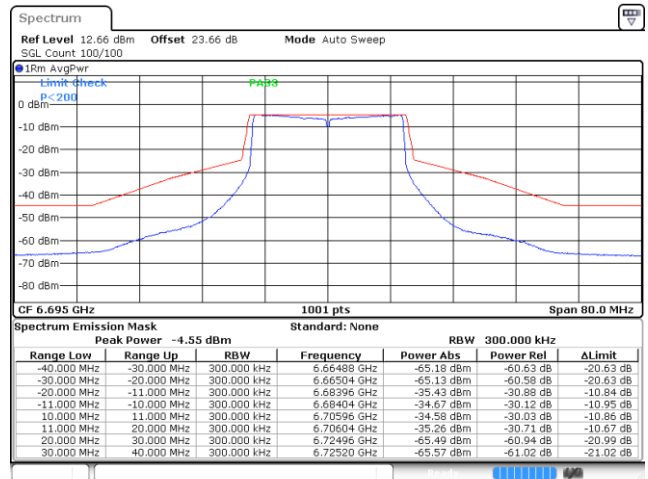
Date: 20 APR 2022 00:58:27

Plot on Channel 6535MHz



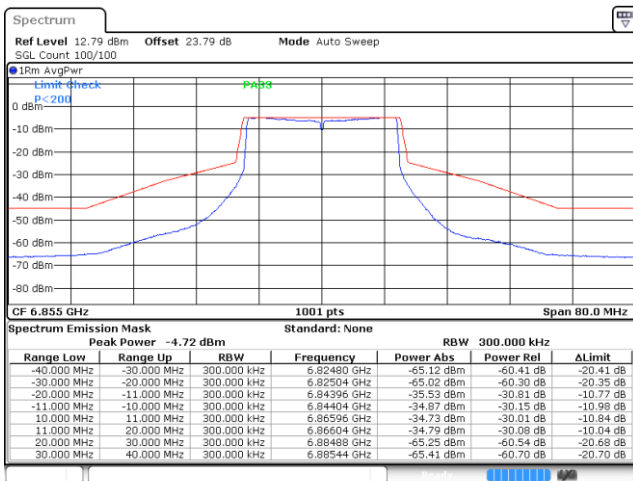
Date: 20 APR 2022 01:12:02

Plot on Channel 6695MHz



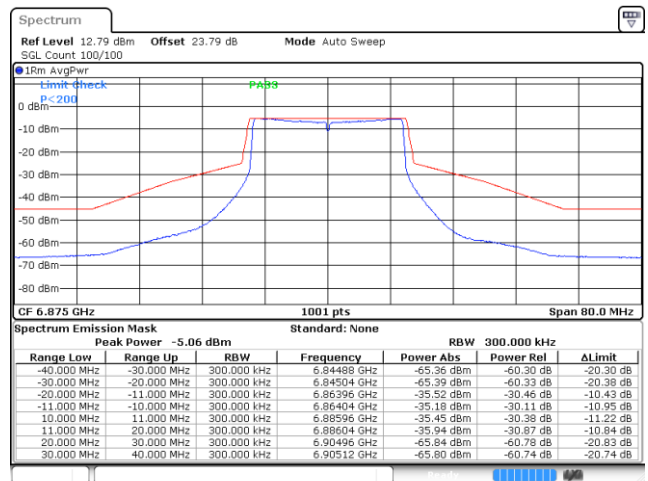
Date: 20 APR 2022 01:22:55

Plot on Channel 6855MHz



Date: 20 APR 2022 01:32:28

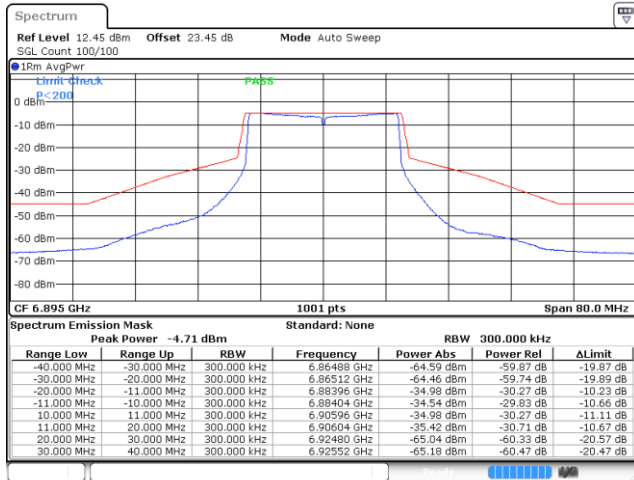
Plot on Channel 6875MHz



Date: 20 APR 2022 01:43:39

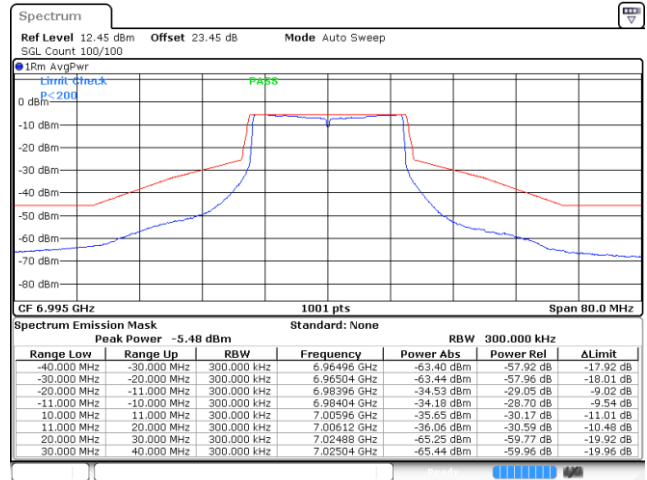


Plot on Channel 6895MHz



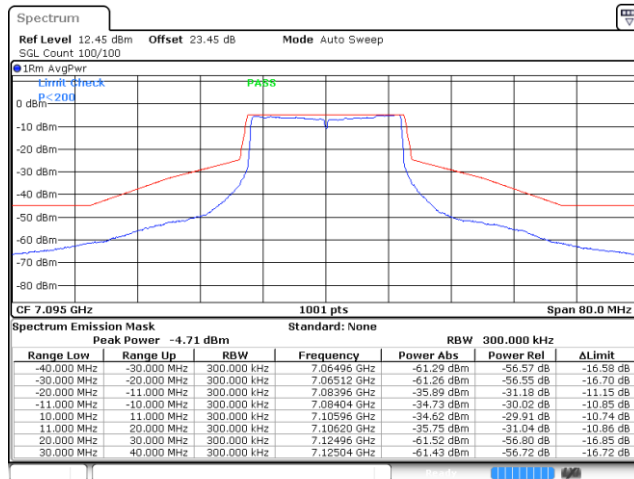
Date: 20 APR 2022 01:52:33

Plot on Channel 6995MHz



Date: 20 APR 2022 02:01:08

Plot on Channel 7095MHz

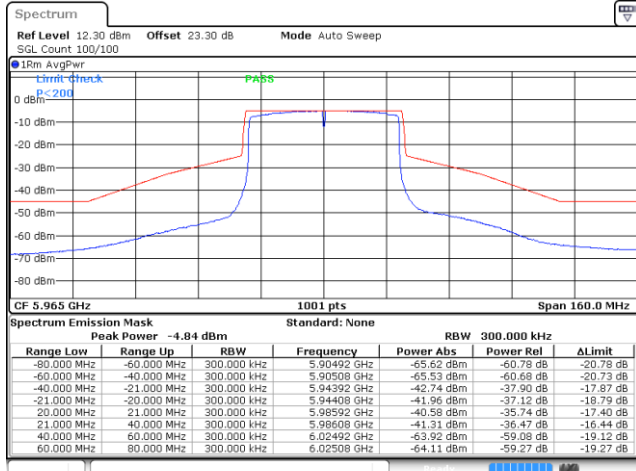


Date: 22 APR 2022 19:47:08



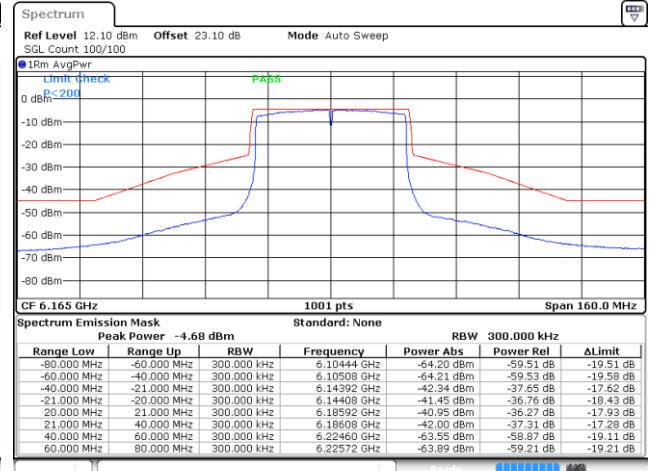
EUT Mode : 802.11ax HE40

Plot on Channel 5965MHz



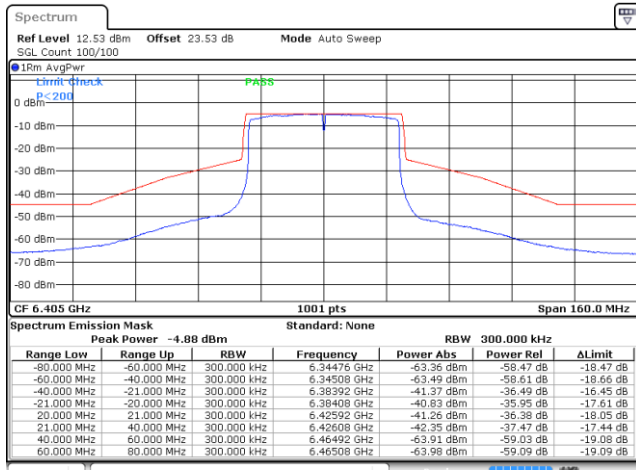
Date: 20 APR 2022 23:06:48

Plot on Channel 6165MHz



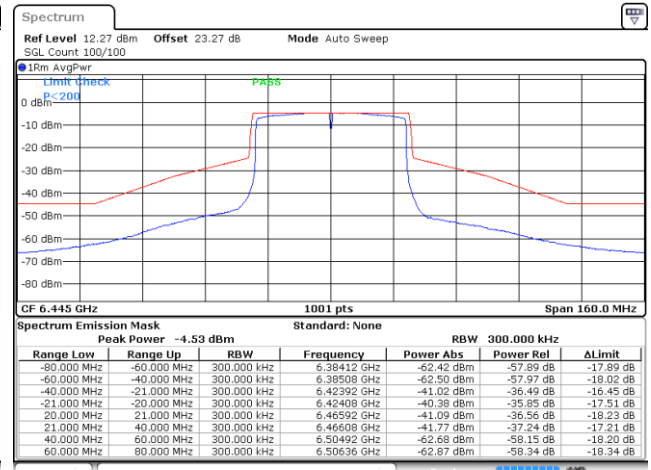
Date: 20 APR 2022 23:17:52

Plot on Channel 6405MHz



Date: 20 APR 2022 23:37:27

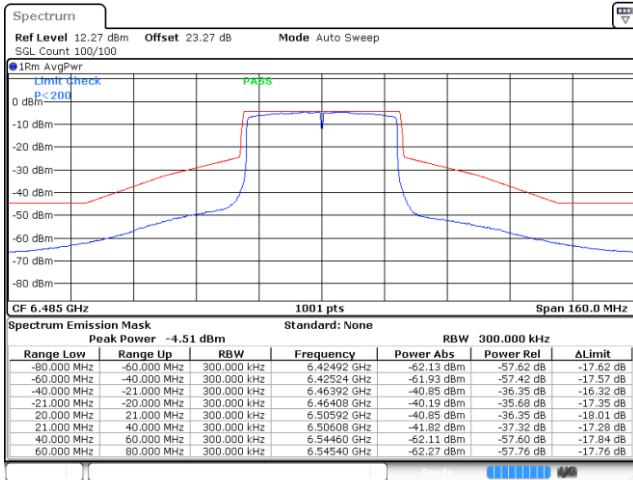
Plot on Channel 6445MHz



Date: 21 APR 2022 00:19:44

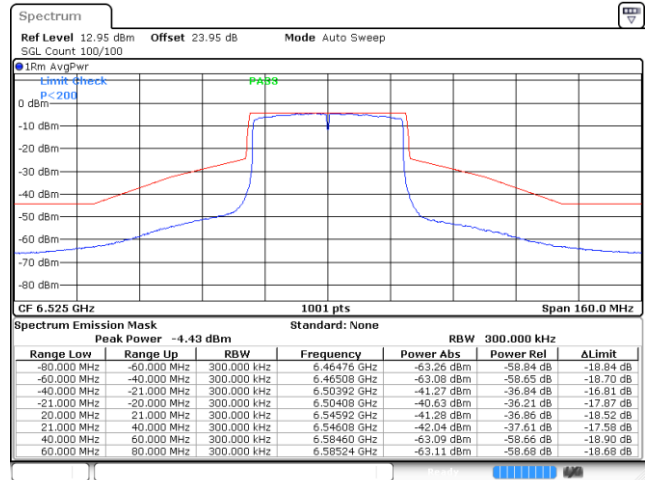


Plot on Channel 6485MHz



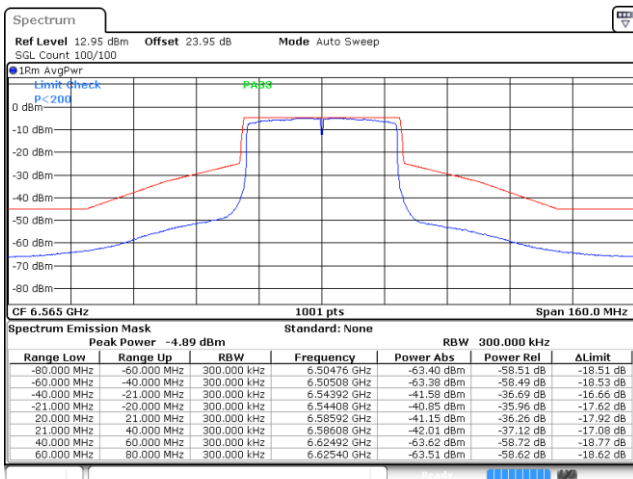
Date: 21 APR 2022 00:39:42

Plot on Channel 6525MHz



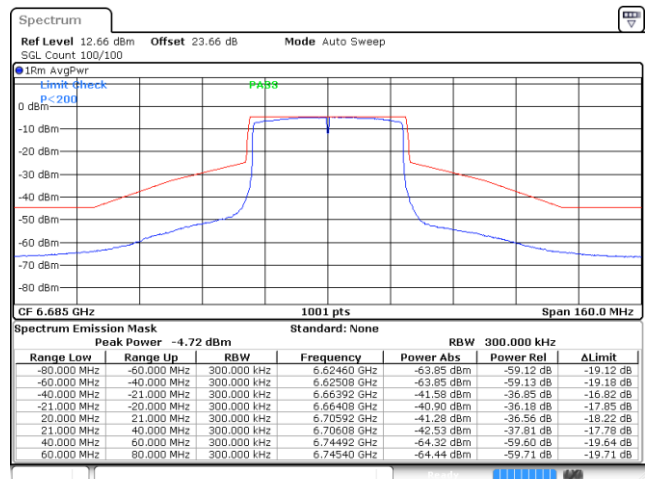
Date: 21 APR 2022 02:33:21

Plot on Channel 6565MHz



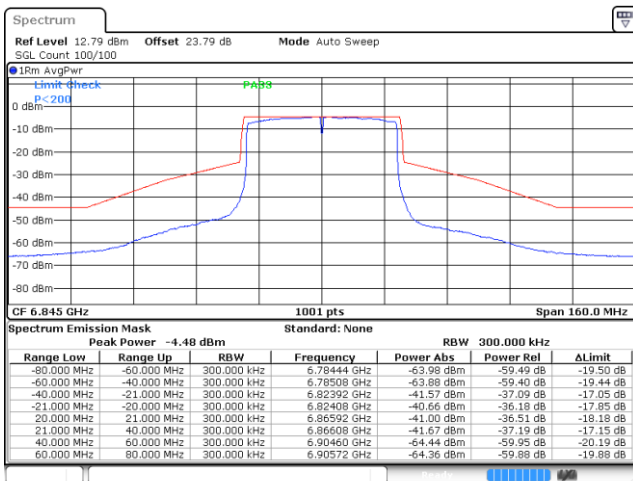
Date: 21 APR 2022 00:59:27

Plot on Channel 6685MHz



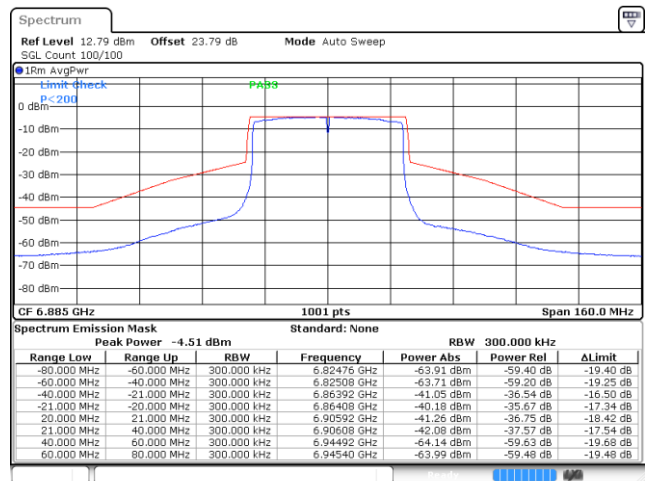
Date: 21 APR 2022 01:15:06

Plot on Channel 6845MHz



Date: 21 APR 2022 01:28:13

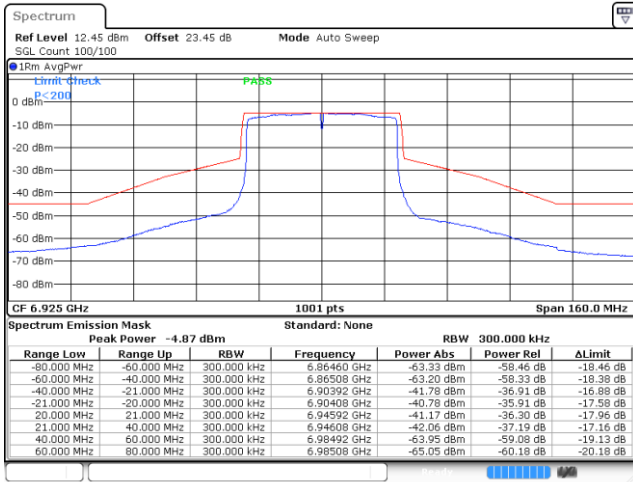
Plot on Channel 6885MHz



Date: 21 APR 2022 02:43:56

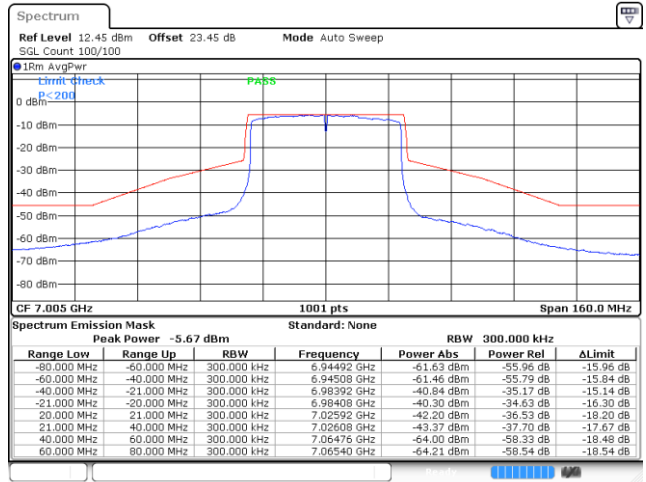


Plot on Channel 6925MHz



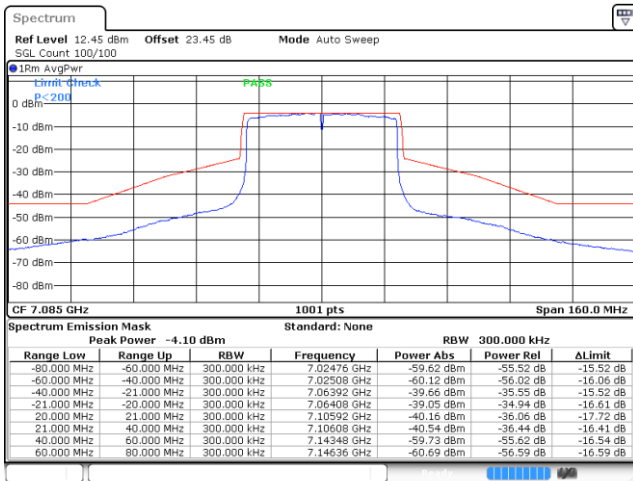
Date: 21 APR 2022 01:41:07

Plot on Channel 7005MHz



Date: 21 APR 2022 01:58:15

Plot on Channel 7085MHz

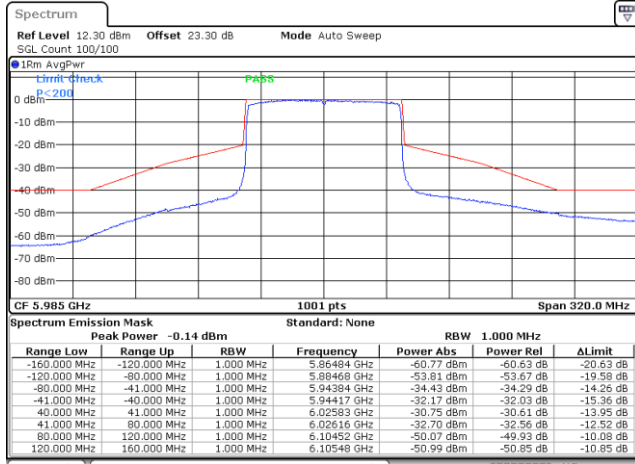


Date: 21 APR 2022 02:15:41



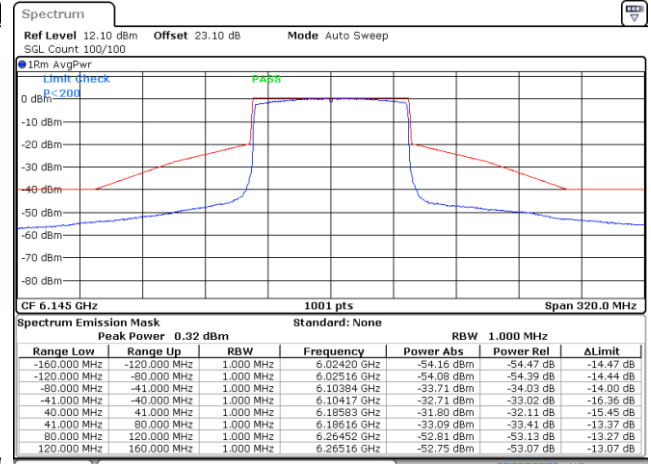
EUT Mode : 802.11ax HE80

Plot on Channel 5985MHz



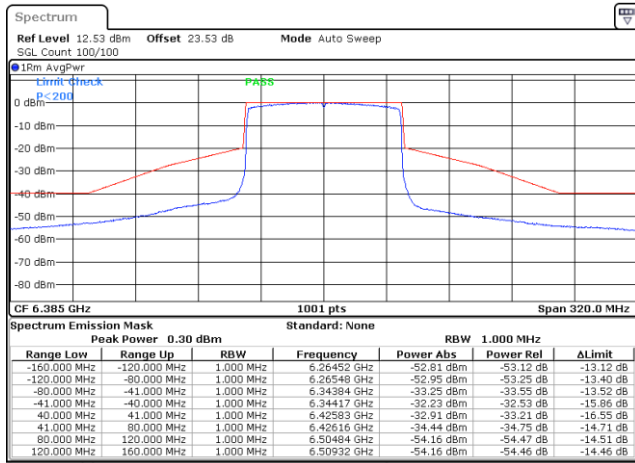
Date: 21 APR 2022 19:14:00

Plot on Channel 6145MHz



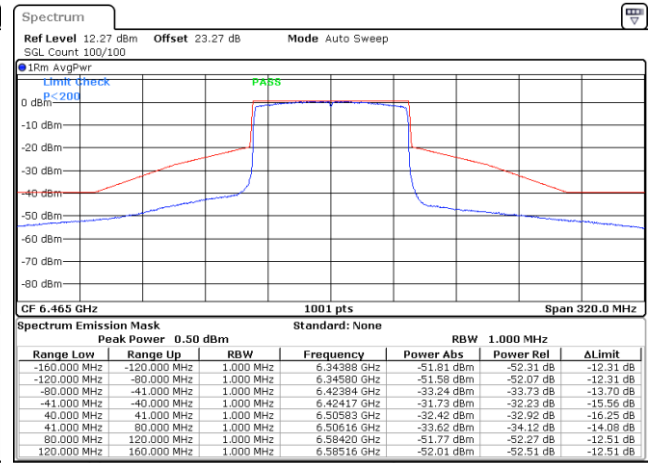
Date: 21 APR 2022 19:20:47

Plot on Channel 6385MHz



Date: 21 APR 2022 19:40:16

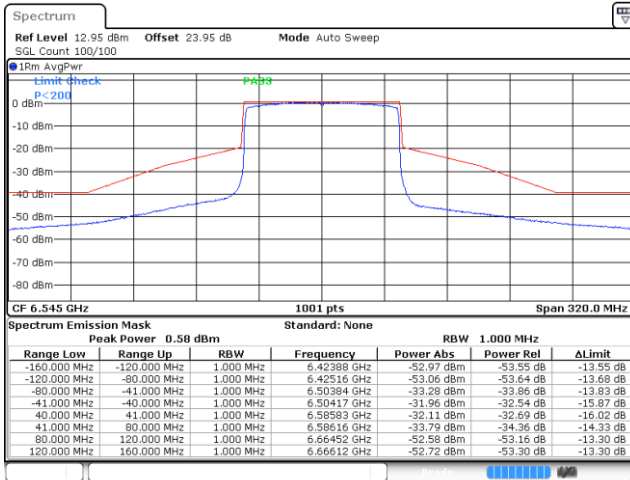
Plot on Channel 6465MHz



Date: 21 APR 2022 19:52:48

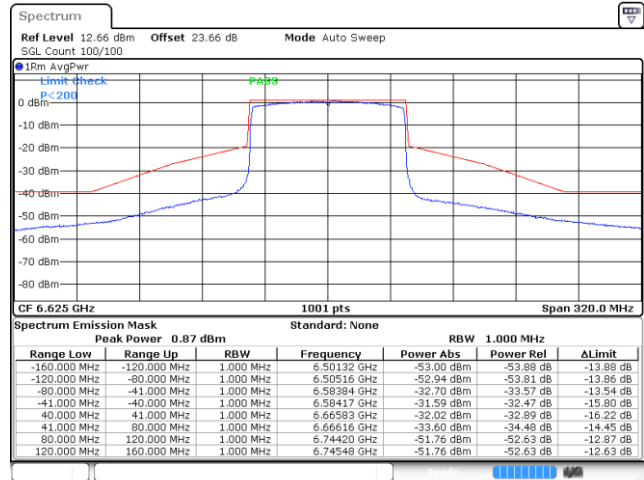


Plot on Channel 6545MHz



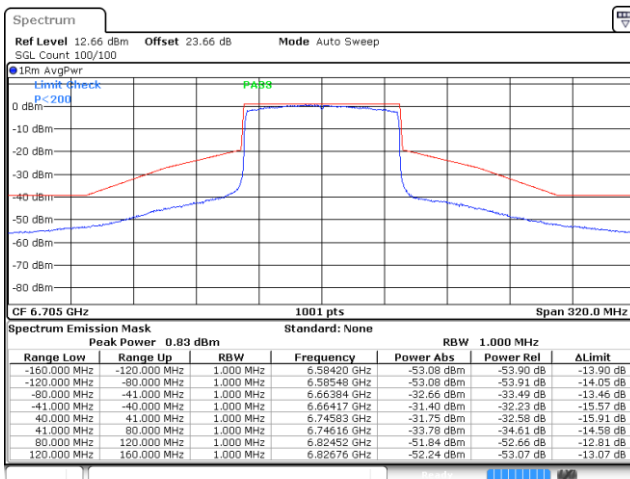
Date: 21 APR 2022 20:01:31

Plot on Channel 6625MHz



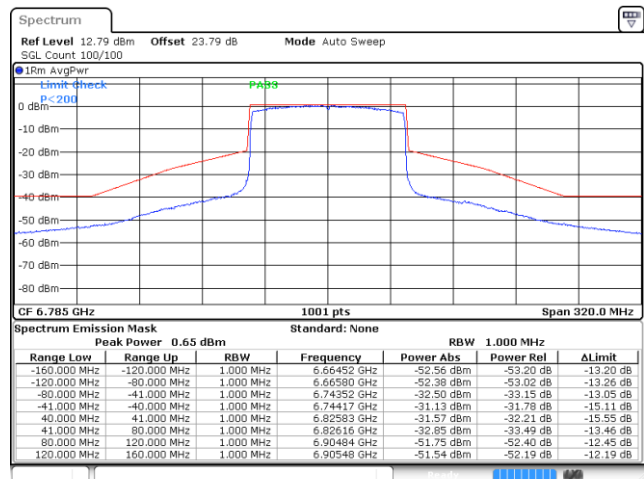
Date: 21 APR 2022 20:16:25

Plot on Channel 6705MHz



Date: 21 APR 2022 20:25:47

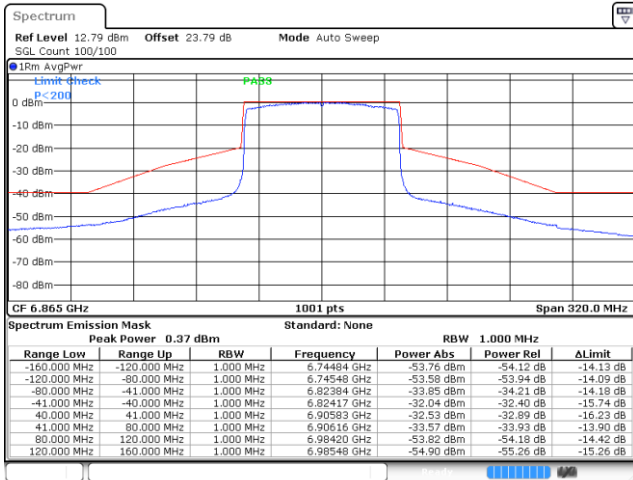
Plot on Channel 6785MHz



Date: 21 APR 2022 20:35:54

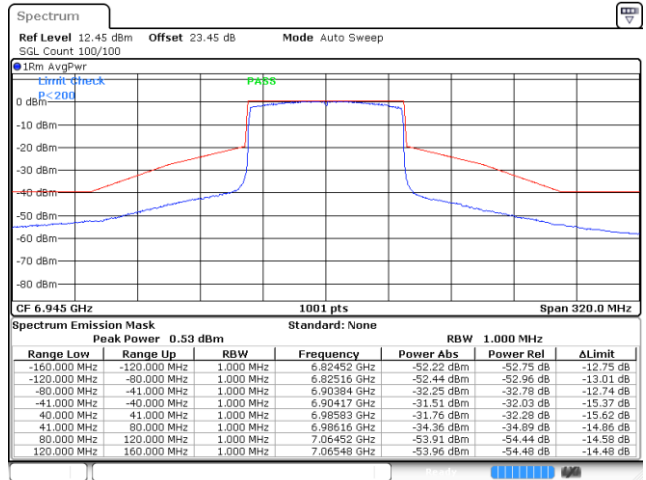


Plot on Channel 6865MHz



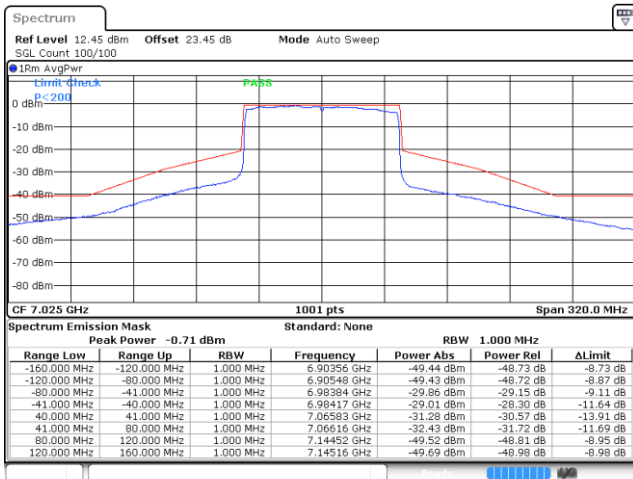
Date: 21 APR 2022 20:48:19

Plot on Channel 6945MHz



Date: 21 APR 2022 20:54:18

Plot on Channel 7025MHz

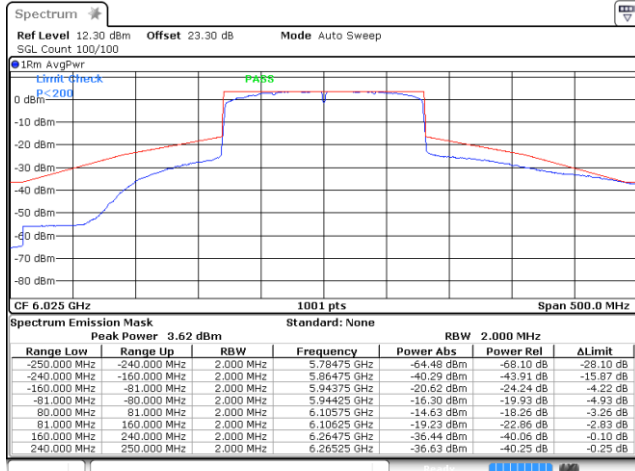


Date: 21 APR 2022 21:03:54



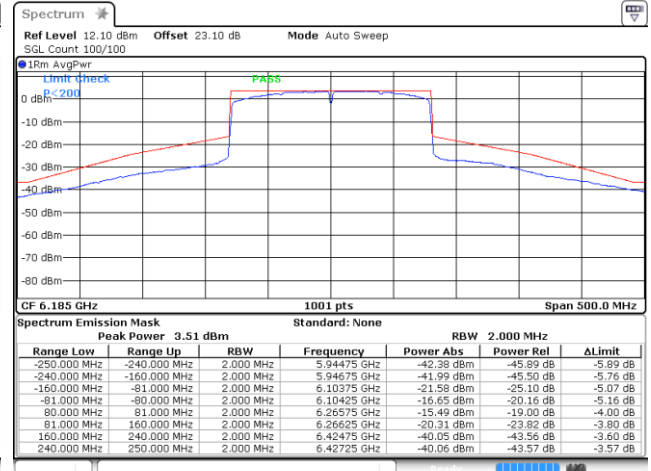
EUT Mode : 802.11ax HE160

Plot on Channel 6025MHz



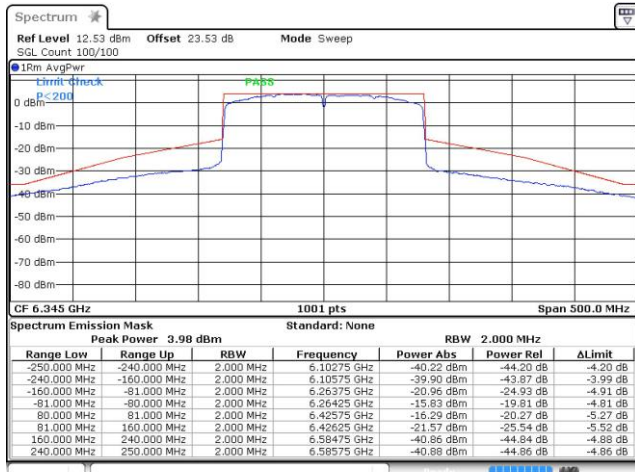
Date: 21 APR 2022 23:50:05

Plot on Channel 6185MHz



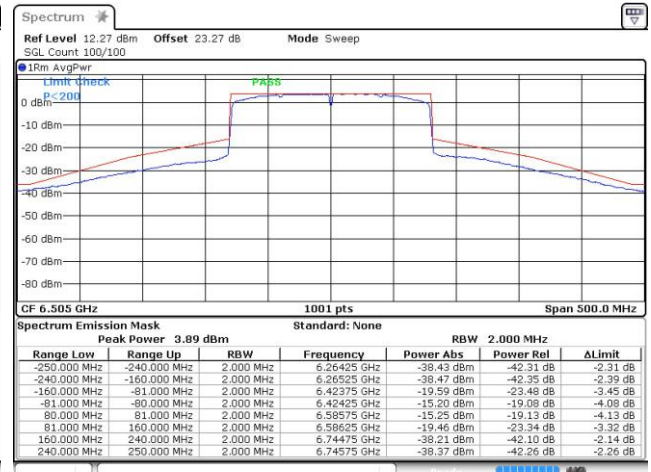
Date: 21 APR 2022 23:33:21

Plot on Channel 6345MHz



Date: 22 APR 2022 00:04:01

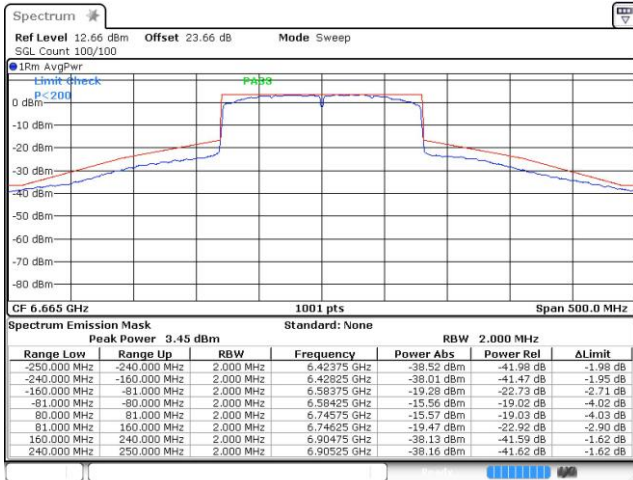
Plot on Channel 6505MHz



Date: 22 APR 2022 00:22:43

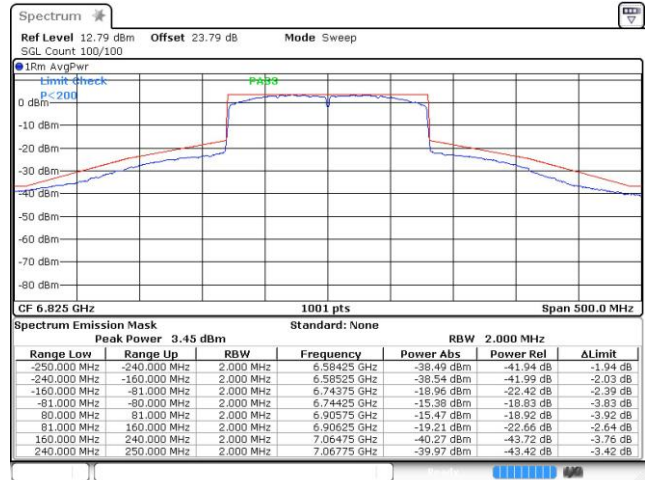


Plot on Channel 6665MHz



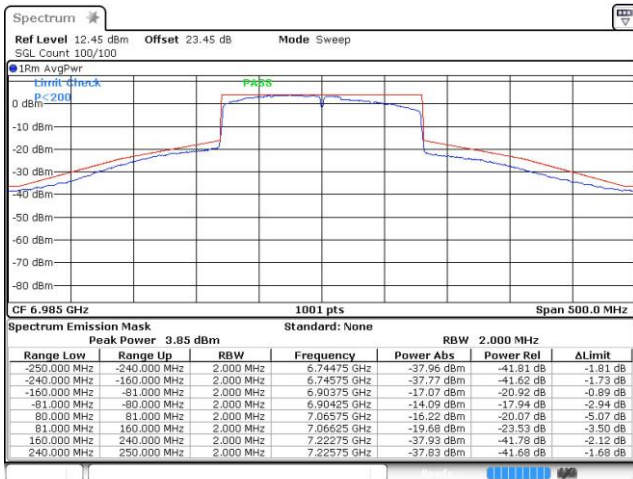
Date: 22 APR 2022 00:42:54

Plot on Channel 6825MHz



Date: 22 APR 2022 01:04:16

Plot on Channel 6985MHz



Date: 22 APR 2022 01:28:08



3.5 Contention Based Protocol

3.5.1 Limit of Contention Based Protocol

<FCC 14-30 CFR 15.407>

(d)(5) In the 5.925-7.125 GHz band, client devices, except fixed client devices, must operate under the control of a standard power access point, indoor access point or subordinate devices; Subordinate devices must operate under the control of an indoor access point. In all cases, an exception exists for transmitting brief messages to an access point when attempting to join its network after detecting a signal that confirms that an access point is operating on a particular channel. Access points and subordinate devices may connect to other access points or subordinate devices. Client devices are prohibited from connecting directly to another client device.

(d)(6) Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band must employ a contention-based protocol.

FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain. To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

where:

BW_{EUT} : Transmission bandwidth of EUT signal

BW_{Inc} : Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)

f_{c1} : Center frequency of EUT transmission

f_{c2} : Center frequency of simulated incumbent signal

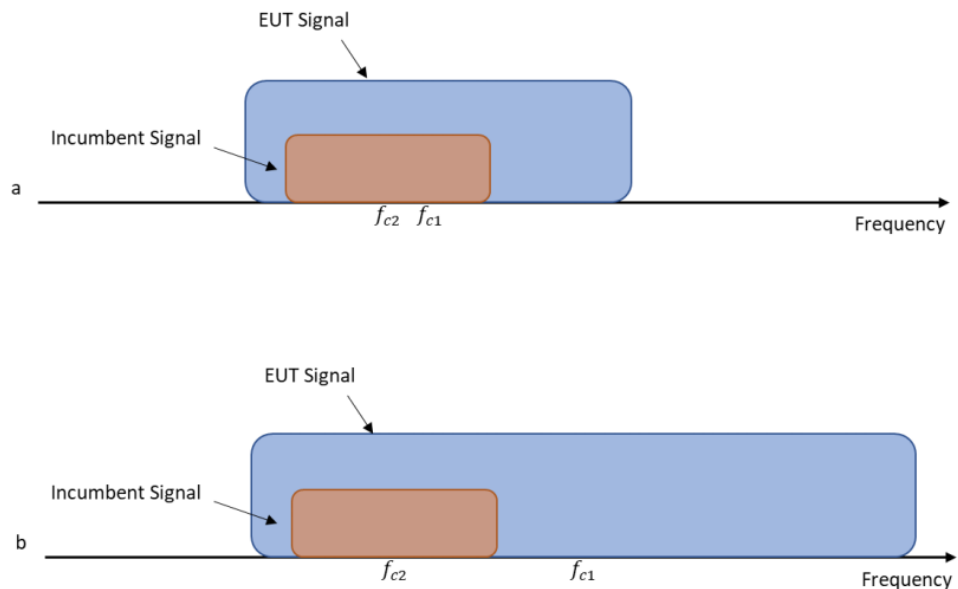


Figure 1. Two possible scenarios where a) center frequency of EUT transmission falls within incumbent's bandwidth, or b) outside of it



3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.5.3 Test Procedures

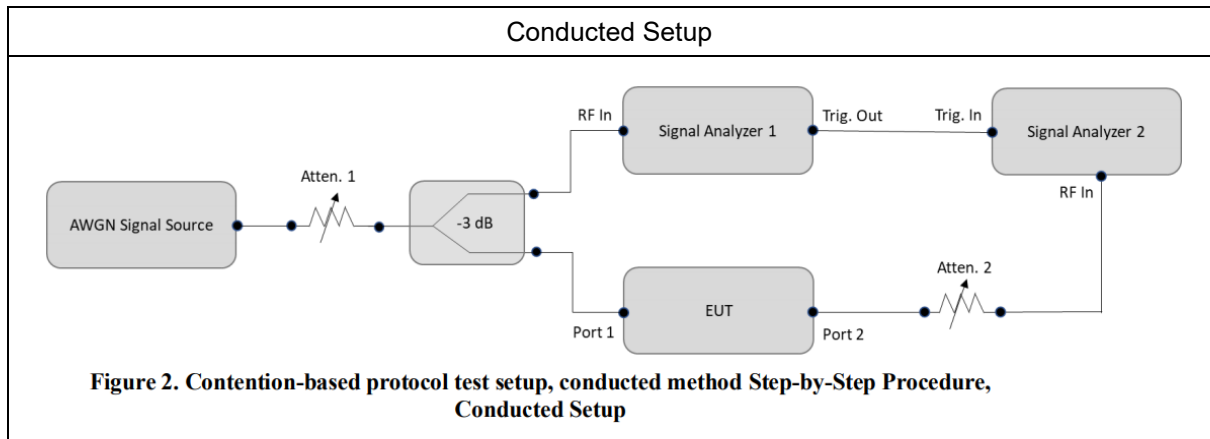
The testing follows FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01.

Section I) Contention Based Protocol

Conducted method Step-by-Step Procedure, Conducted Setup

1. Configure the EUT to transmit with a constant duty cycle.
2. Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.
3. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT.
4. Connect the output port of the EUT to the signal analyzer 2, as shown in test setup Figure 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
5. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.
6. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
7. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in test setup Figure 2.
8. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
9. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
10. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
11. Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.
12. For the contention-based protocol test where only one channel in each supported sub-band needs to be tested. The narrowest and widest bandwidth in each channel shall be measured EUT was driven in MIMO mode, the interferer level was injected to both chains to monitor the performance, while the interferer level is determined according the lowest antenna gain among both antennas (i.e, lower interferer level).

3.5.4 Test Setup



3.5.5 Support Unit used in test configuration and system

Instrument	Brand Name	Model No.	Characteristics
WLAN AP	MSI	MS-17F3	WiFi
Notebook	Lenovo	ThinkPad E14 Gen 4	LAN



3.5.6 Test Summary of Contention Based Protocol Test

Test Engineer :	Kaying Xiong	Temperature :	20.5~22.5°C
		Relative Humidity :	40.5~43.5%

Band	Channel Freq. (MHz)	Channel BW (MHz)	Incumbent freq. (MHz)	Injected AWGN Level (dBm)	Detection Rate (%)	Regulated Threshold level (dBm)	Adjusted Power (dBm)	Margin (dB)	
UNII-5	6135	20	6135	-67.95	100	-62	-71.85	9.85	
				Result: Stop Transmission					
				-70.95	< 90	-62	-74.85	12.85	
				Result: Minimal Operation					
				-71.95	0	-62	-75.85	13.85	
				Result: Normal Operation					
	6185	160	6110	-66.28	100	-62	-70.18	8.18	
				Result: Stop Transmission					
				-70.28	< 90	-62	-74.18	12.18	
				Result: Minimal Operation					
				-71.28	0	-62	-75.18	13.18	
				Result: Normal Operation					
			6260	6185	-64.13	100	-62	-68.03	6.03
					Result: Stop Transmission				
					-67.13	< 90	-62	-71.03	9.03
					Result: Minimal Operation				
					-68.13	0	-62	-72.03	10.03
					Result: Normal Operation				
	6260	160	-66.21	100	-62	-70.11	8.11		
			Result: Stop Transmission						
			-71.21	< 90	-62	-75.11	13.11		
			Result: Minimal Operation						
			-72.21	0	-62	-76.11	14.11		
			Result: Normal Operation						

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (3.9 dBi).

Note 2: Path Loss is negligible. (0 dB)

Note 3: Margin = Regulated Threshold level - Adjusted Power.



Band	Channel Freq. (MHz)	Channel BW (MHz)	Incumbent freq. (MHz)	Injected AWGN Level (dBm)	Detection Rate (%)	Regulated Threshold level (dBm)	Adjusted Power (dBm)	Margin (dB)		
UNII-6	6455	20	6455	-67.41	100	-62	-71.11	9.11		
				Result: Stop Transmission						
				-71.41	< 90	-62	-75.11	13.11		
				Result: Minimal Operation						
				-72.41	0	-62	-76.11	14.11		
				Result: Normal Operation						
	6505	160	6430	-66.51	100	-62	-70.21	8.21		
				Result: Stop Transmission						
				-69.51	< 90	-62	-73.21	11.21		
				Result: Minimal Operation						
				-70.51	0	-62	-74.21	12.21		
				Result: Normal Operation						
			6505	160	6505	-64.48	100	-62	-68.18	6.18
						Result: Stop Transmission				
						-68.48	< 90	-62	-72.18	10.18
						Result: Minimal Operation				
						-69.48	0	-62	-73.18	11.18
						Result: Normal Operation				
	6580	160	6580	-65.75	100	-62	-69.45	7.45		
				Result: Stop Transmission						
				-69.75	< 90	-62	-73.45	11.45		
				Result: Minimal Operation						
				-70.75	0	-62	-74.75	12.45		
				Result: Normal Operation						

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (3.7 dBi).

Note 2: Path Loss is negligible. (0 dB)

Note 3: Margin = Regulated Threshold level - Adjusted Power.



Band	Channel Freq. (MHz)	Channel BW (MHz)	Incumbent freq. (MHz)	Injected AWGN Level (dBm)	Detection Rate (%)	Regulated Threshold level (dBm)	Adjusted Power (dBm)	Margin (dB)	
UNII-7	6695	20	6695	-67.45	100	-62	-71.05	9.05	
				Result: Stop Transmission					
				-72.45	< 90	-62	-76.05	14.05	
				Result: Minimal Operation					
				-73.45	0	-62	-77.05	15.05	
				Result: Normal Operation					
	6665	160	6590	-66.06	100	-62	-69.66	7.66	
				Result: Stop Transmission					
				-70.06	< 90	-62	-73.66	11.66	
				Result: Minimal Operation					
				-71.06	0	-62	-74.66	12.66	
				Result: Normal Operation					
			6740	6665	-63.96	100	-62	-67.56	5.56
					Result: Stop Transmission				
					-67.96	< 90	-62	-71.56	9.56
					Result: Minimal Operation				
					-68.96	0	-62	-72.56	10.56
					Result: Normal Operation				
	6740	6665	-66.16	100	-62	-69.76	7.76		
			Result: Stop Transmission						
			-69.16	< 90	-62	-72.76	10.76		
			Result: Minimal Operation						
			-70.16	0	-62	-73.76	11.76		
			Result: Normal Operation						

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (3.6 dBi).

Note 2: Path Loss is negligible. (0 dB)

Note 3: Margin = Regulated Threshold level - Adjusted Power.



Band	Channel Freq. (MHz)	Channel BW (MHz)	Incumbent freq. (MHz)	Injected AWGN Level (dBm)	Detection Rate (%)	Regulated Threshold level (dBm)	Adjusted Power (dBm)	Margin (dB)	
UNII-8	7015	20	7015	-68.17	100	-62	-72.27	10.27	
				Result: Stop Transmission					
				-72.17	< 90	-62	-76.27	14.27	
				Result: Minimal Operation					
				-73.17	0	-62	-77.27	15.27	
				Result: Normal Operation					
	6985	160	6910	-66.92	100	-62	-71.02	9.02	
				Result: Stop Transmission					
				-70.92	< 90	-62	-75.02	13.02	
				Result: Minimal Operation					
				-71.92	0	-62	-76.02	14.02	
				Result: Normal Operation					
			7060	7060	-65.07	100	-62	-69.17	7.17
					Result: Stop Transmission				
					-69.07	< 90	-62	-73.17	11.17
					Result: Minimal Operation				
					-70.07	0	-62	-74.17	12.17
					Result: Normal Operation				
7060	7060	-67.33	100	-62	-71.43	9.43			
		Result: Stop Transmission							
		-71.33	< 90	-62	-75.43	13.43			
		Result: Minimal Operation							
-72.33	0	-62	-76.43	14.43					
Result: Normal Operation									

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (4.1 dBi).

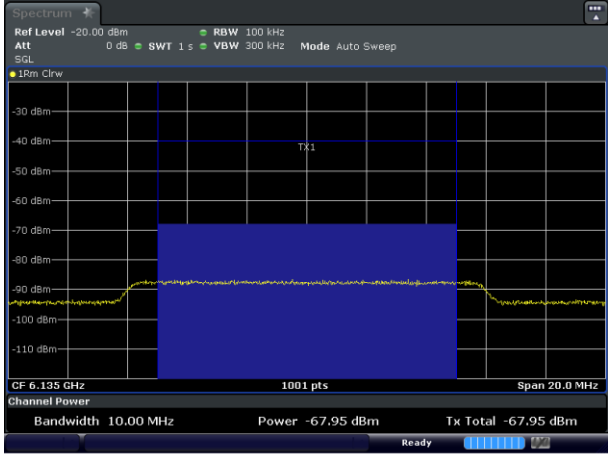
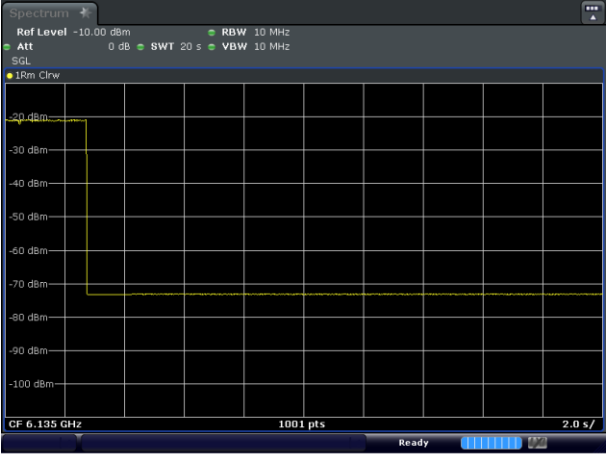
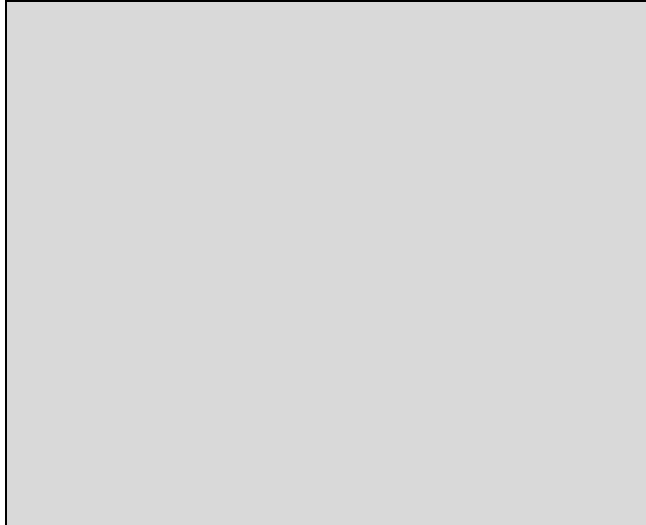

Note 2: Path Loss is negligible. (0 dB)

Note 3: Margin = Regulated Threshold level - Adjusted Power.



3.5.7 Test Plots of Contention Based Protocol Test

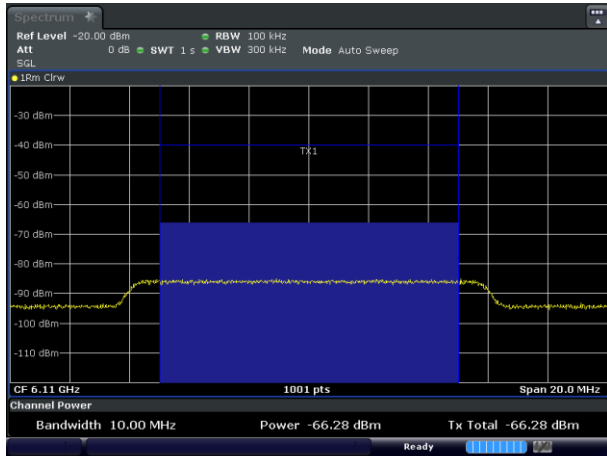
Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

<p>802.11ax (HE20) / 6135MHz Threshold Level (TL) = -67.95dBm</p>	<p>802.11ax (HE20) / CH37 Test result is pass due to no transmission occur.</p>
 <p>Date: 1.SEP.2022 18:56:34</p>	 <p>Date: 1.SEP.2022 16:27:16</p>
<p>802.11ax (HE20) / 6135MHz Threshold Level (TL) = -68.95dBm</p>	<p>802.11ax (HE20) / CH37 Transmit when the interferer is 1dB lower.</p>
	 <p>Date: 1.SEP.2022 19:30:27</p>



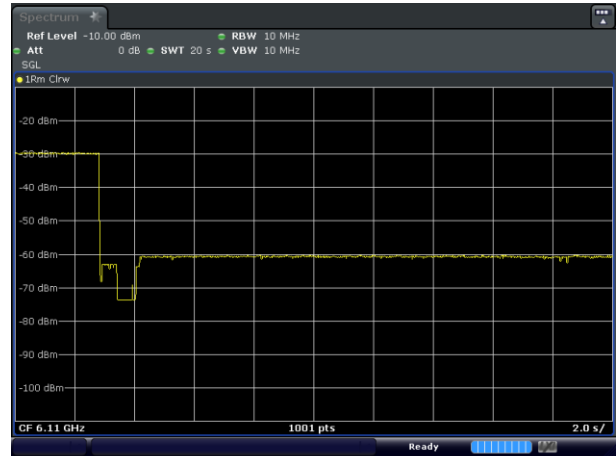
Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

802.11ax (HE160) / 6110MHz (Lower edge)
Threshold Level (TL) = -66.28dBm



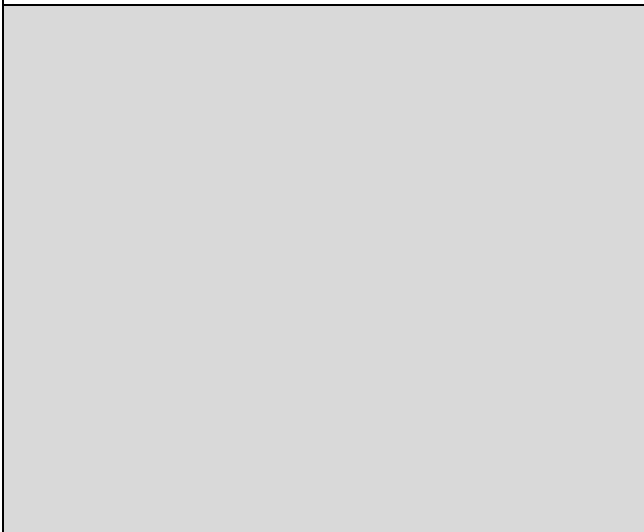
Date: 1 SEP 2022 18:55:31

802.11ax (HE160) / CH47 (Lower edge)
Test result is pass due to no transmission occur.

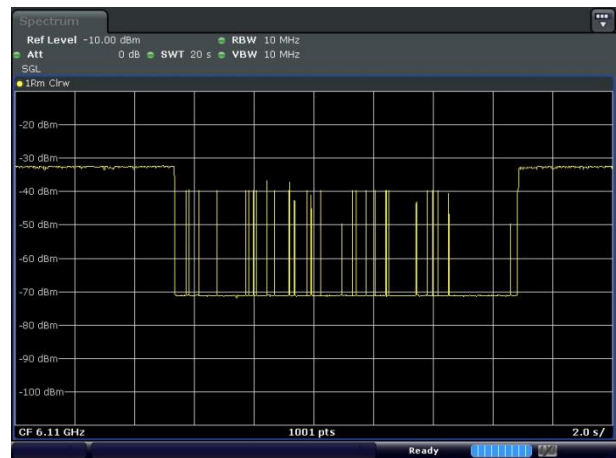


Date: 1 SEP 2022 16:32:54

802.11ax (HE160) / 6110MHz (Lower edge)
Threshold Level (TL) = -67.28dBm



802.11ax (HE160) / CH47 (Lower edge)
Transmit when the interferer is 1dB lower.



Date: 1 SEP 2022 19:40:43

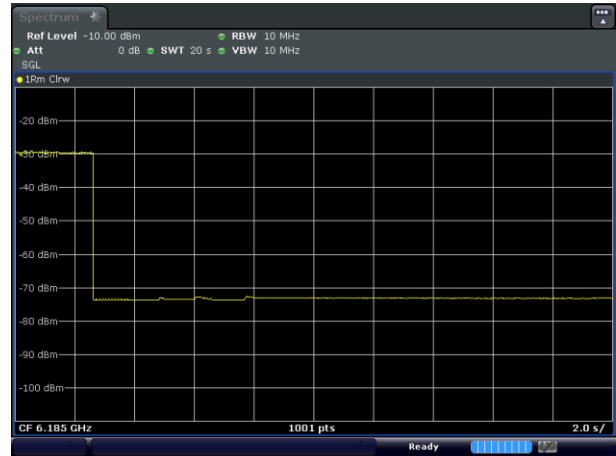
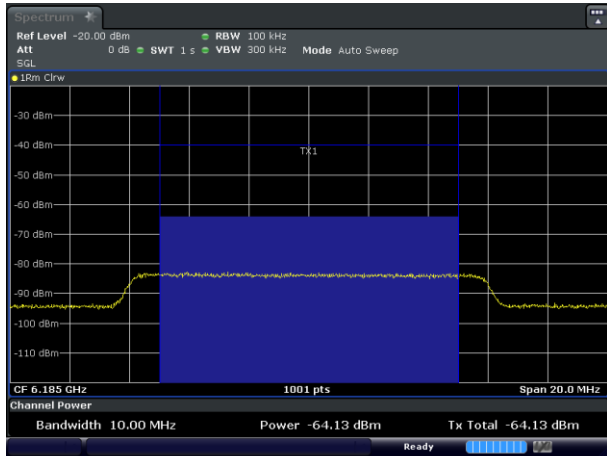


Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

802.11ax (HE160) / 6185MHz (Middle)
Threshold Level (TL) = -64.13dBm

802.11ax (HE160) / CH47 (Middle)

Test result is pass due to no transmission occur.



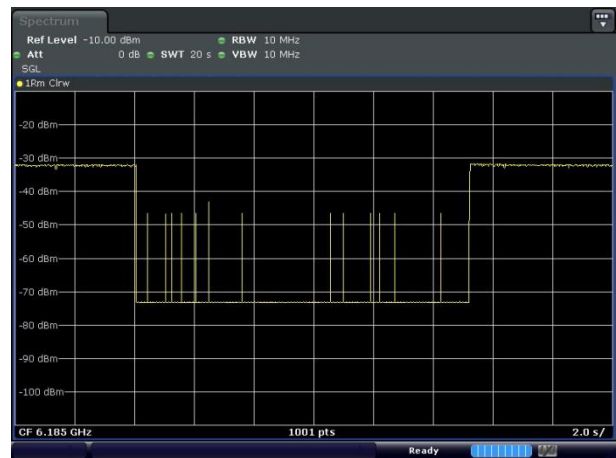
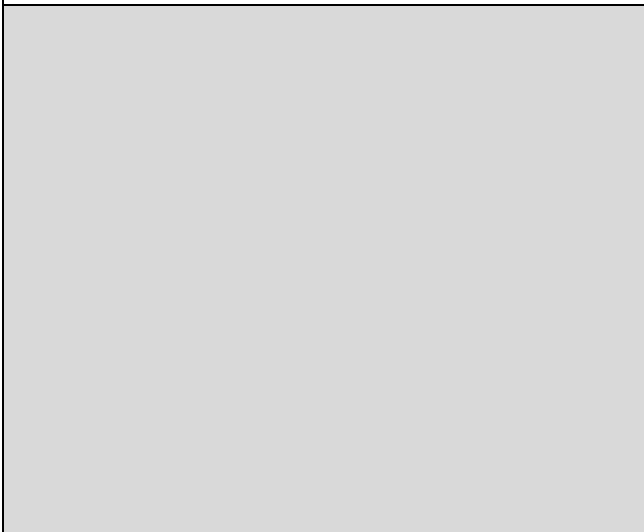
Date: 1 SEP 2022 18:57:19

Date: 1 SEP 2022 16:43:19

802.11ax (HE160) / 6185MHz (Middle)
Threshold Level (TL) = -65.13dBm

802.11ax (HE160) / CH47 (Middle)

Transmit when the interferer is 1dB lower.

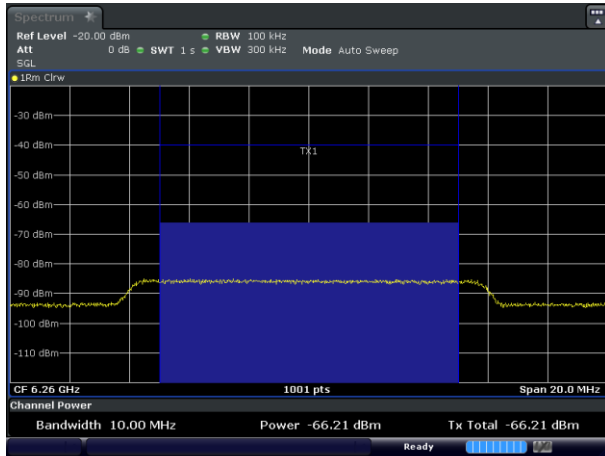


Date: 1 SEP 2022 19:45:22



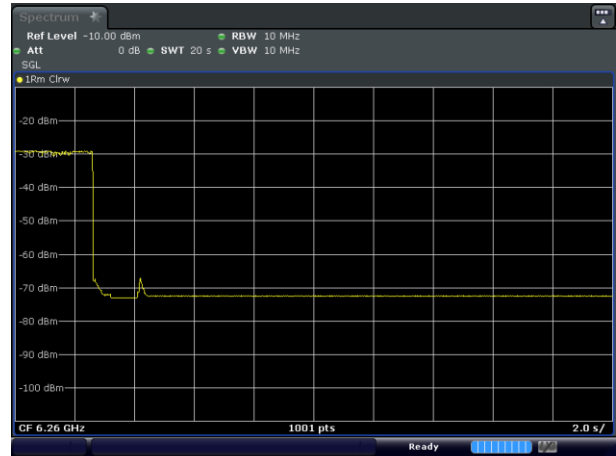
Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

802.11ax (HE160) / 6260MHz (Upper edge)
Threshold Level (TL) = -66.21dBm



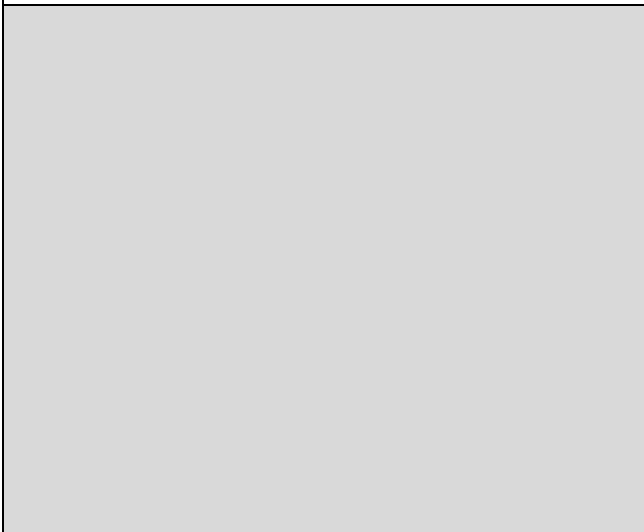
Date: 1 SEP 2022 18:58:03

802.11ax (HE160) / CH47 (Upper edge)
Test result is pass due to no transmission occur.

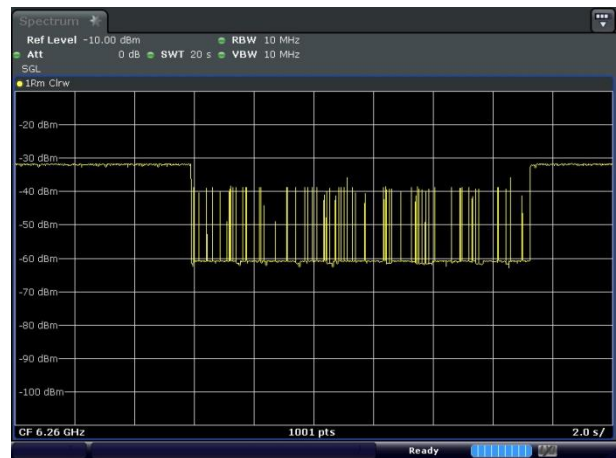


Date: 1 SEP 2022 16:36:05

802.11ax (HE160) / 6260MHz (Upper edge)
Threshold Level (TL) = -67.21dBm



802.11ax (HE160) / CH47 (Upper edge)
Transmit when the interferer is 1dB lower.

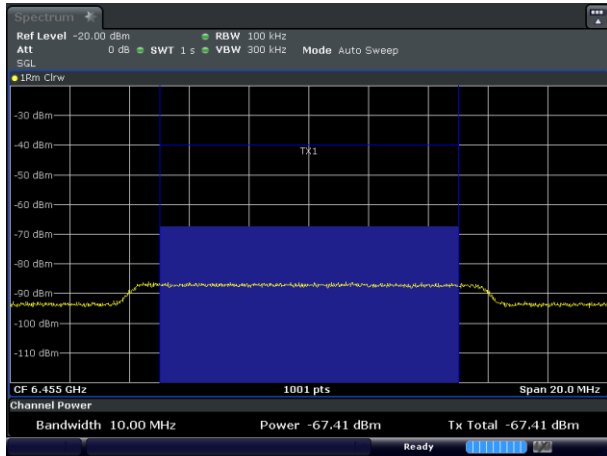


Date: 1 SEP 2022 19:48:03



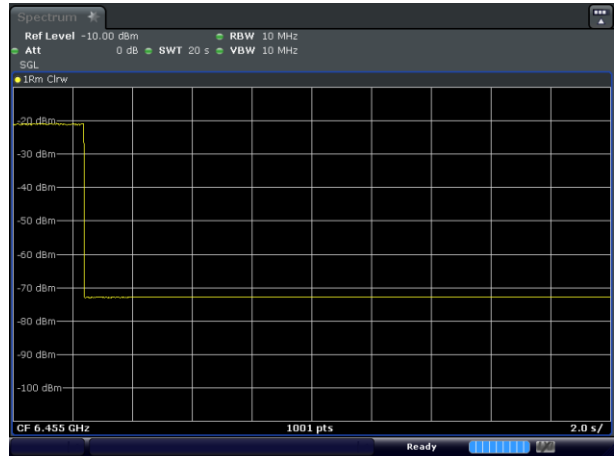
Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

802.11ax (HE20) / 6455MHz
Threshold Level (TL) = -67.41dBm



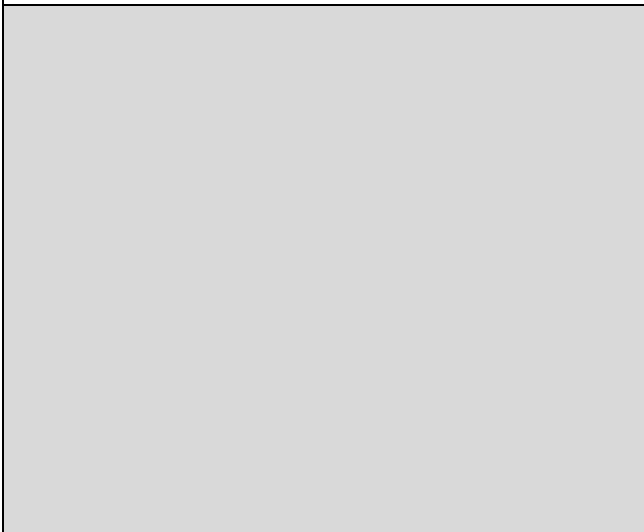
Date: 1 SEP 2022 18:58:48

802.11ax (HE20) / CH101
Test result is pass due to no transmission occur.

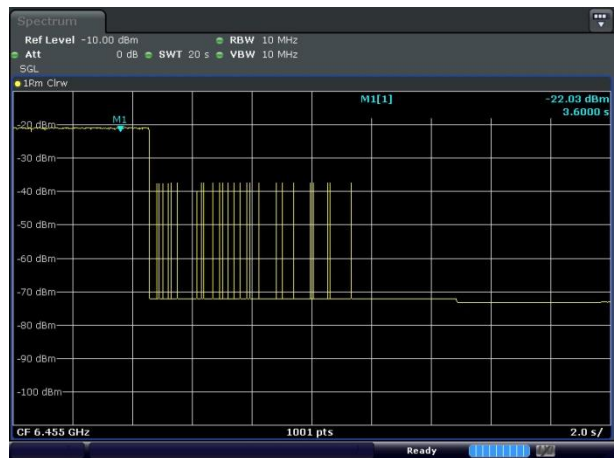


Date: 1 SEP 2022 17:23:20

802.11ax (HE20) / 6455MHz
Threshold Level (TL) = -68.41dBm



802.11ax (HE20) / CH101
Transmit when the interferer is 1dB lower.



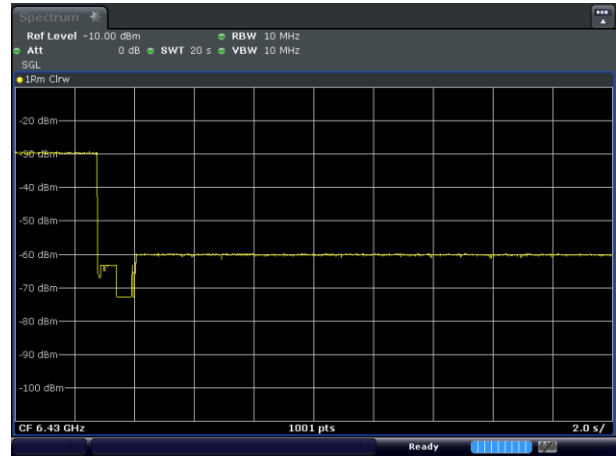
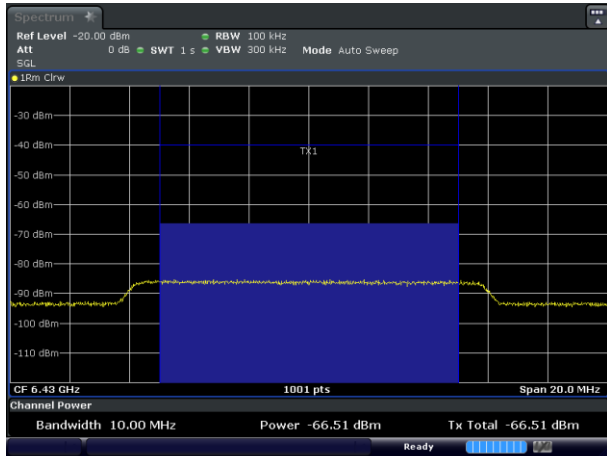
Date: 1 SEP 2022 20:14:22



Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

802.11ax (HE160) / 6430MHz (Lower edge)
Threshold Level (TL) = -66.51dBm

802.11ax (HE160) / CH111 (Lower edge)
Test result is pass due to no transmission occur.

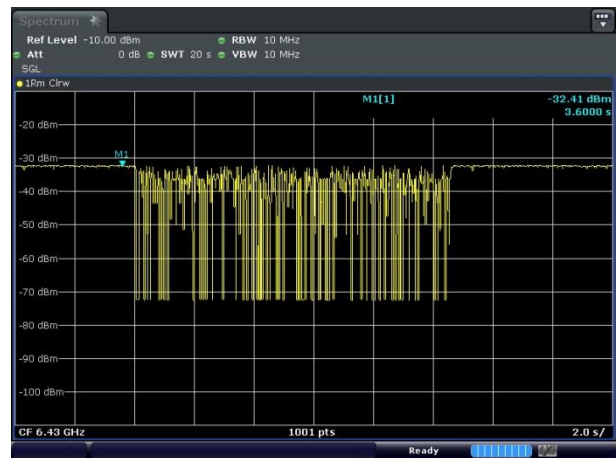
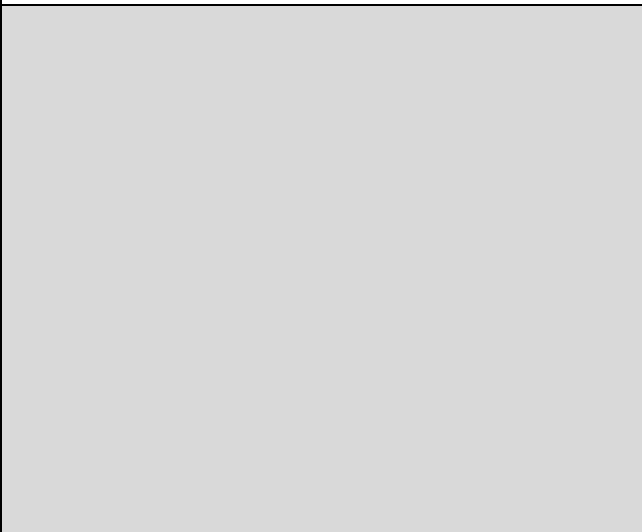


Date: 1 SEP 2022 18:59:35

Date: 1 SEP 2022 16:56:06

802.11ax (HE160) / 6430MHz (Lower edge)
Threshold Level (TL) = -67.51dBm

802.11ax (HE160) / CH111 (Lower edge)
Transmit when the interferer is 1dB lower.



Date: 1 SEP 2022 20:18:35

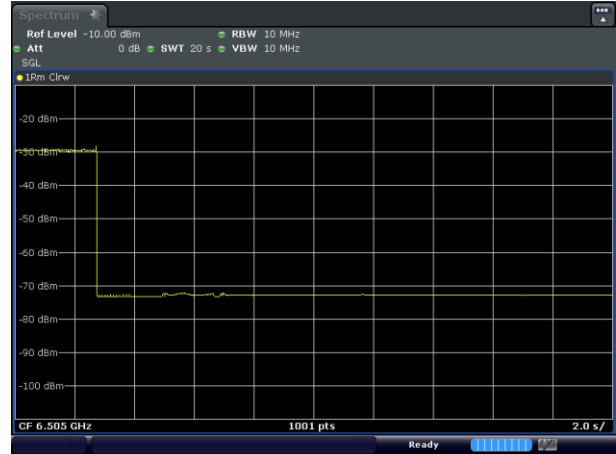
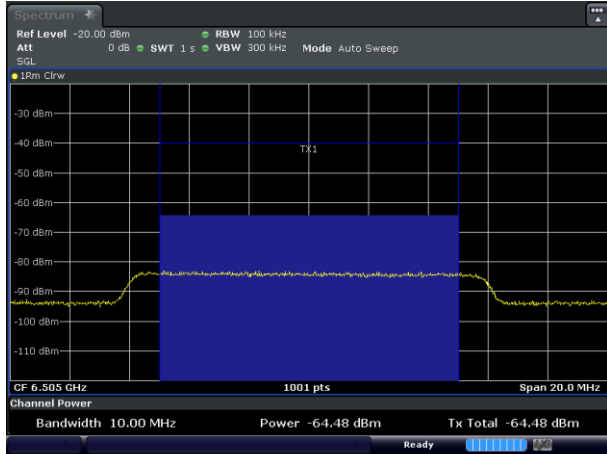


Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

802.11ax (HE160) / 6505MHz (Middle)
Threshold Level (TL) = -65.05dBm

802.11ax (HE160) / CH111 (Middle)

Test result is pass due to no transmission occur.



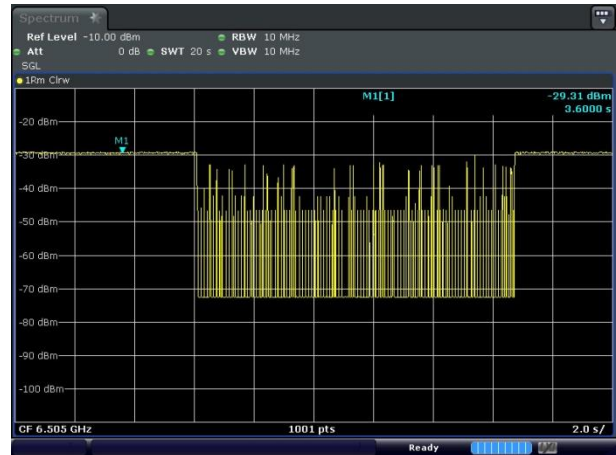
Date: 1 SEP 2022 19:01:39

Date: 1 SEP 2022 17:19:26

802.11ax (HE160) / 6505MHz (Middle)
Threshold Level (TL) = -66.05dBm

802.11ax (HE160) / CH111 (Middle)

Transmit when the interferer is 1dB lower.



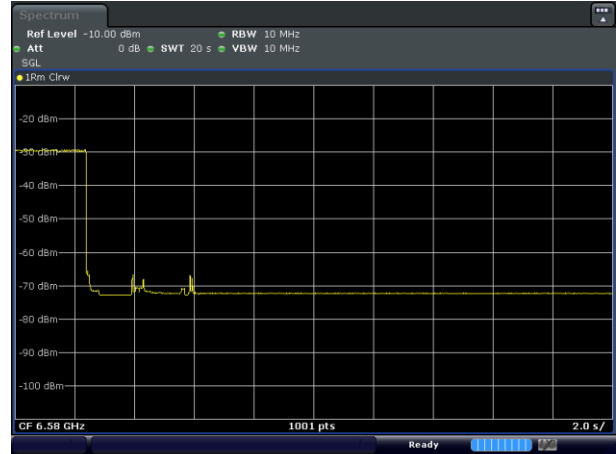
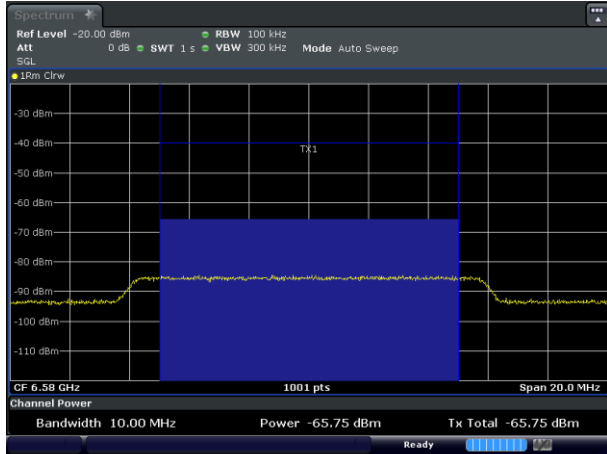
Date: 1 SEP 2022 20:21:31



Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

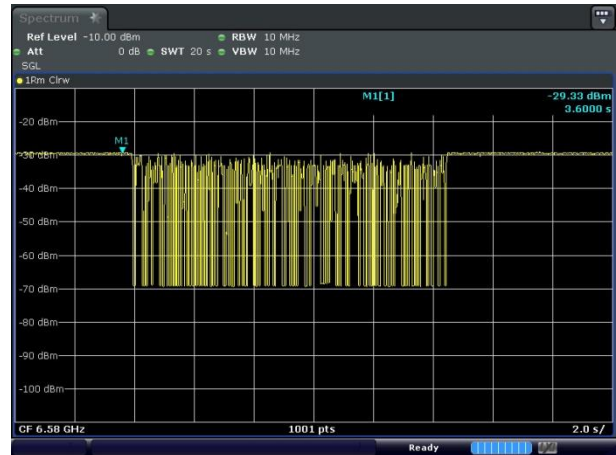
802.11ax (HE160) / 6580MHz (Upper edge)
Threshold Level (TL) = -65.75dBm

802.11ax (HE160) / CH111 (Upper edge)
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6580MHz (Upper edge)
Threshold Level (TL) = -66.75dBm

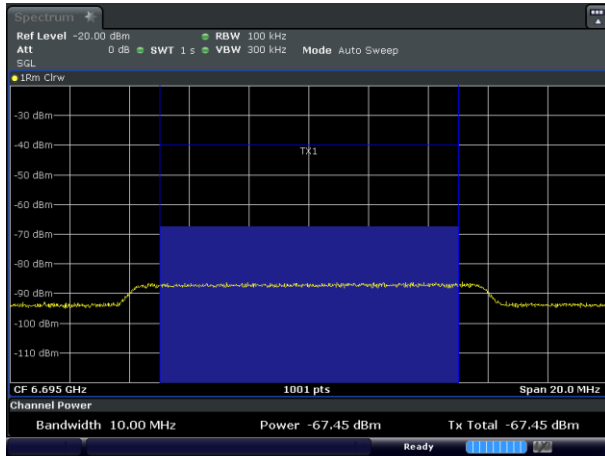
802.11ax (HE160) / CH111 (Upper edge)
Transmit when the interferer is 1dB lower.





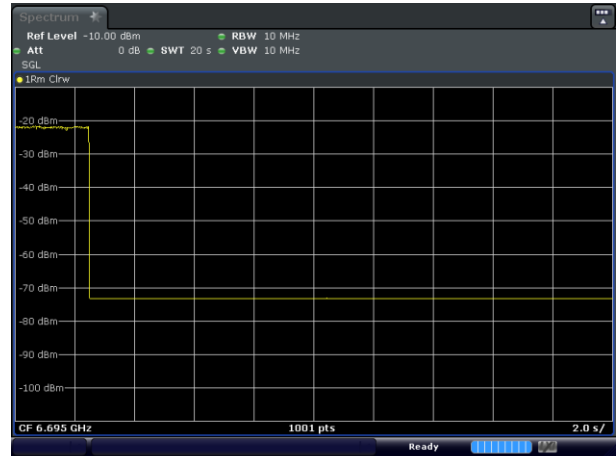
Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

802.11ax (HE20) / 6695MHz
Threshold Level (TL) = -67.45dBm



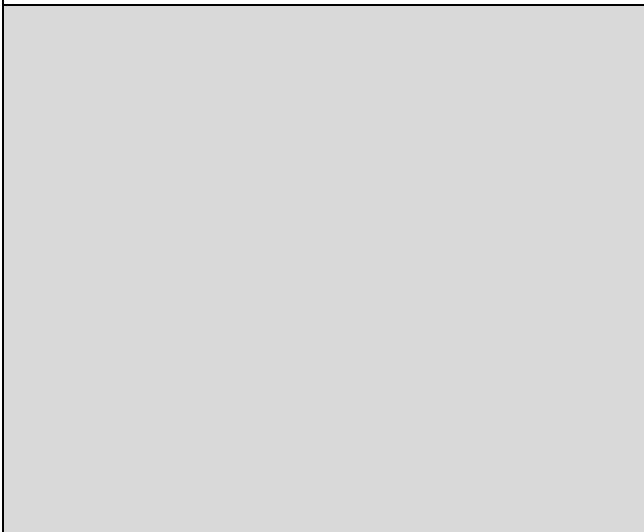
Date: 1 SEP 2022 19:03:36

802.11ax (HE20) / CH149
Test result is pass due to no transmission occur.

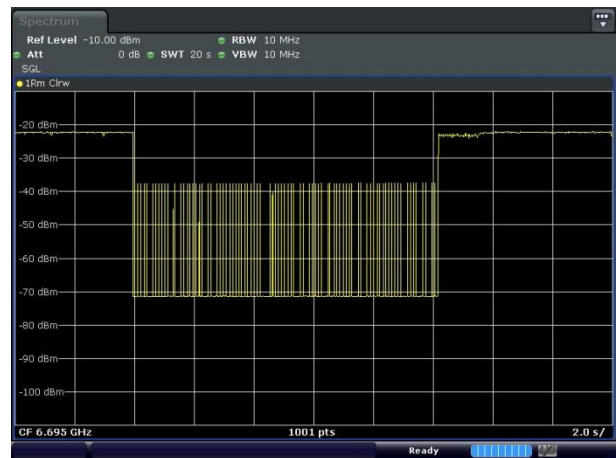


Date: 1 SEP 2022 17:30:27

802.11ax (HE20) / 6695MHz
Threshold Level (TL) = -68.45dBm



802.11ax (HE20) / CH149
Transmit when the interferer is 1dB lower.



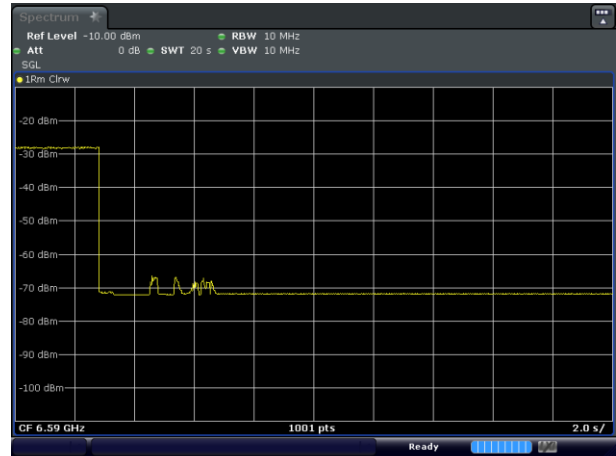
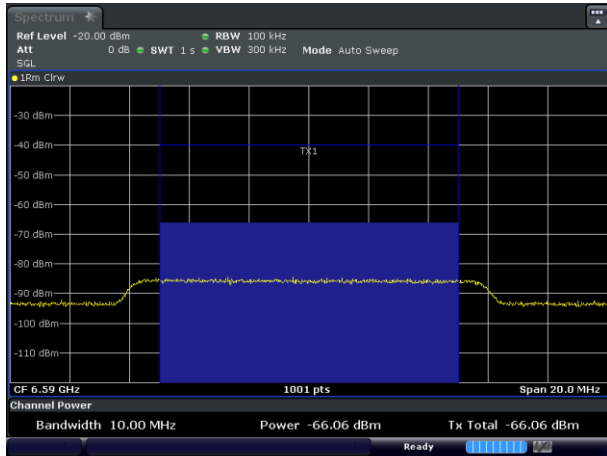
Date: 1 SEP 2022 20:27:25



Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

802.11ax (HE160) / 6590MHz (Lower edge)
Threshold Level (TL) = -66.06dBm

802.11ax (HE160) / CH143 (Lower edge)
Test result is pass due to no transmission occur.

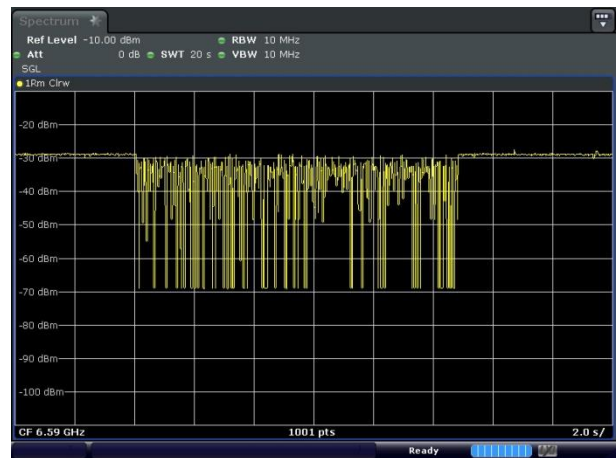


Date: 1 SEP 2022 19:04:14

Date: 1 SEP 2022 17:38:48

802.11ax (HE160) / 6590MHz (Lower edge)
Threshold Level (TL) = -67.06dBm

802.11ax (HE160) / CH143 (Lower edge)
Transmit when the interferer is 1dB lower.

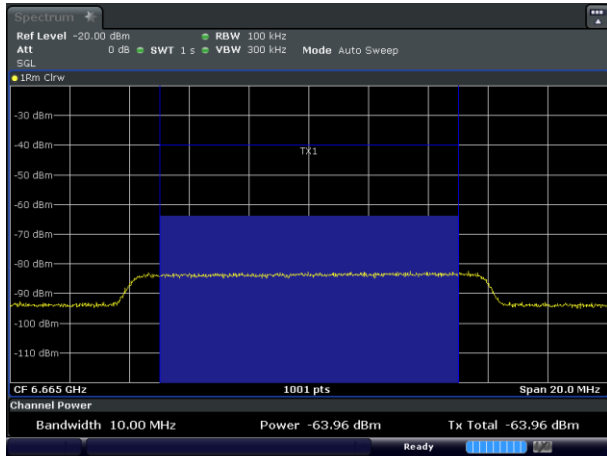


Date: 1 SEP 2022 20:34:47



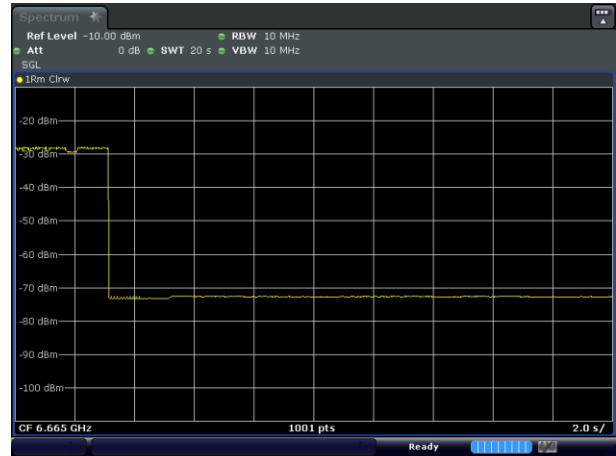
Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

802.11ax (HE160) / 6665MHz (Middle)
Threshold Level (TL) = -63.96dBm



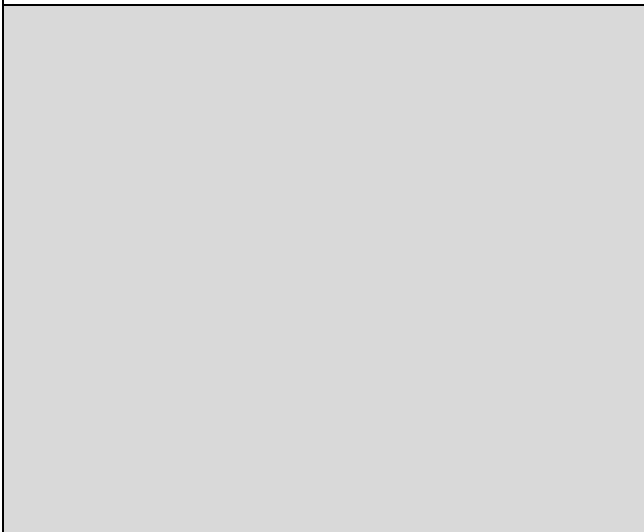
Date: 1 SEP 2022 19:04:45

802.11ax (HE160) / CH143 (Middle)
Test result is pass due to no transmission occur.

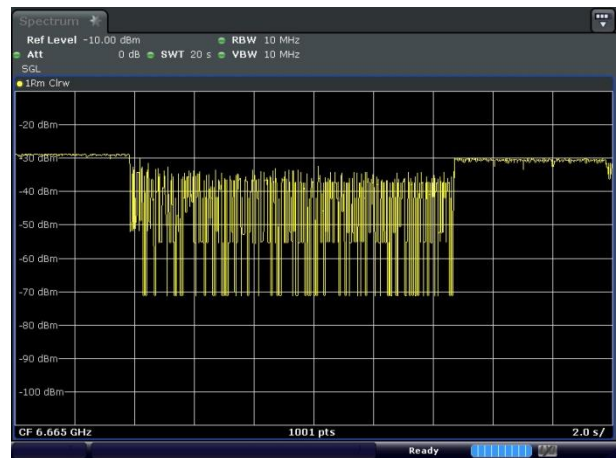


Date: 1 SEP 2022 17:48:55

802.11ax (HE160) / 6665MHz (Middle)
Threshold Level (TL) = -64.96dBm



802.11ax (HE160) / CH143 (Middle)
Transmit when the interferer is 1dB lower.

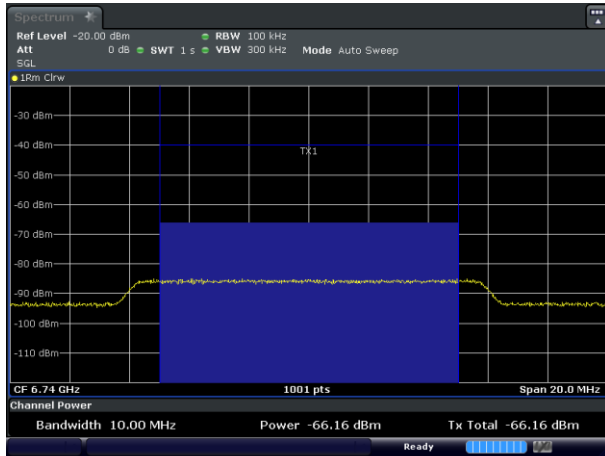


Date: 1 SEP 2022 20:36:30

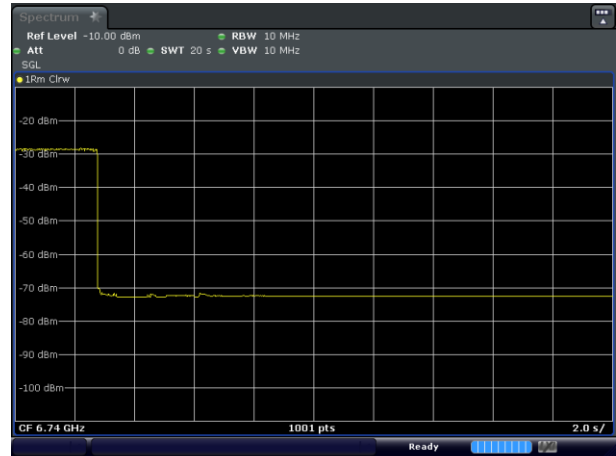


Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

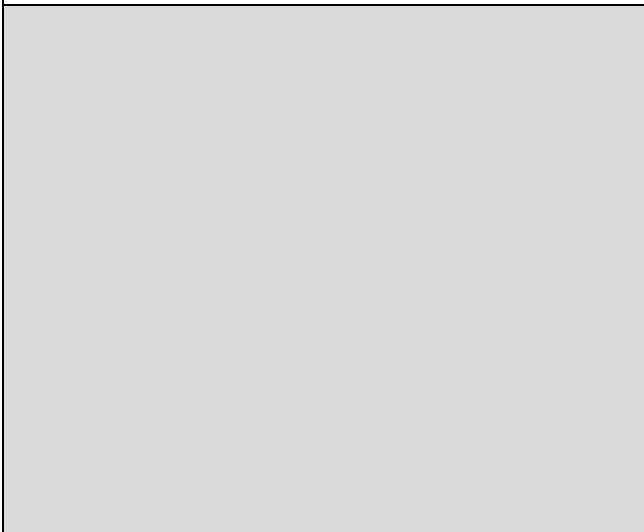
802.11ax (HE160) / 6740MHz (Upper edge)
Threshold Level (TL) = -66.16dBm



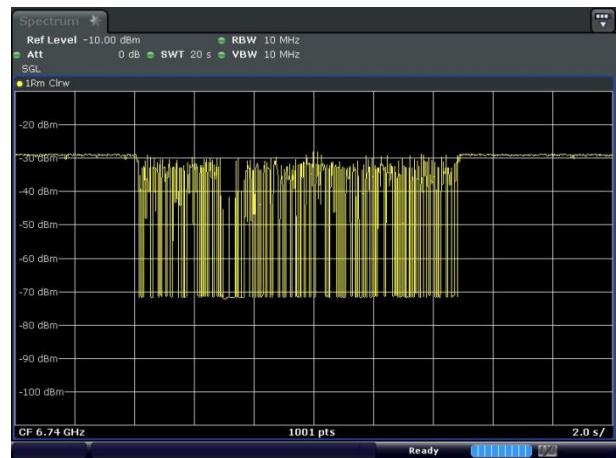
802.11ax (HE160) / CH143 (Upper edge)
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6740MHz (Upper edge)
Threshold Level (TL) = -67.16dBm



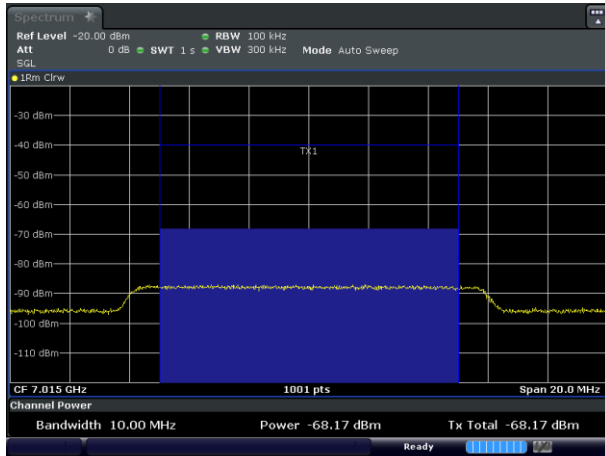
802.11ax (HE160) / CH143 (Upper edge)
Transmit when the interferer is 1dB lower.





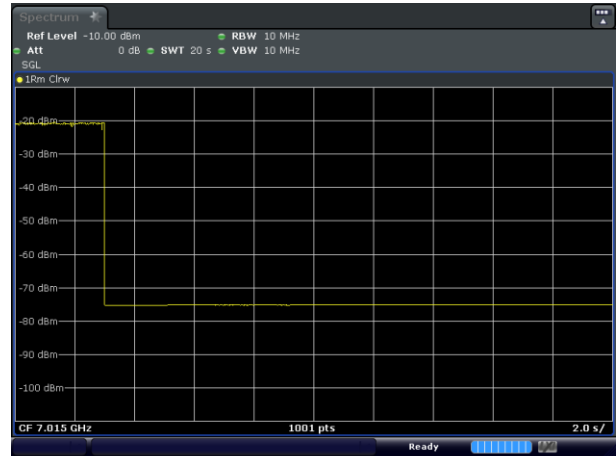
Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

802.11ax (HE20) / 7015MHz
Threshold Level (TL) = -68.17dBm



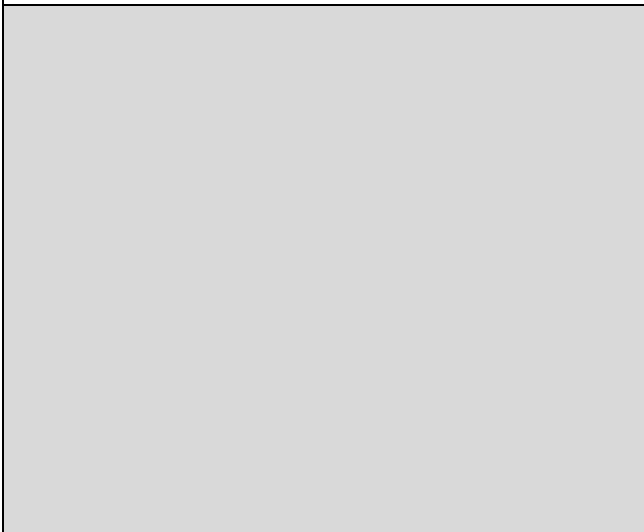
Date: 1 SEP 2022 19:06:19

802.11ax (HE20) / CH213
Test result is pass due to no transmission occur.

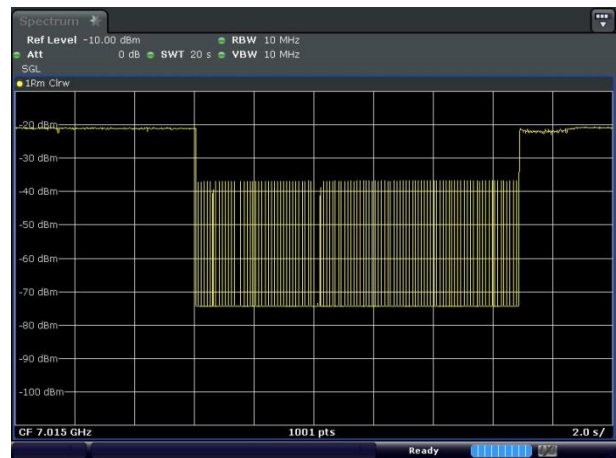


Date: 1 SEP 2022 17:53:44

802.11ax (HE20) / 7015MHz
Threshold Level (TL) = -69.17dBm



802.11ax (HE20) / CH213
Transmit when the interferer is 1dB lower.



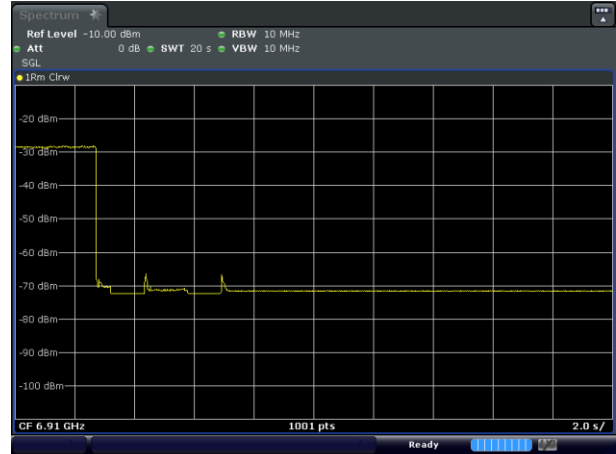
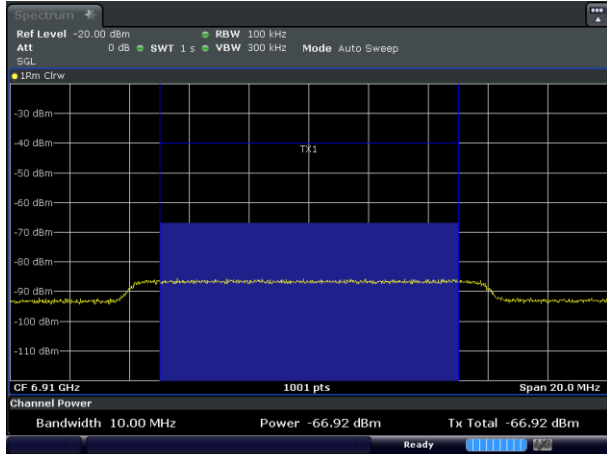
Date: 1 SEP 2022 20:42:11



Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

802.11ax (HE160) / 6910MHz (Lower edge)
Threshold Level (TL) = -66.92dBm

802.11ax (HE160) / CH207 (Lower edge)
Test result is pass due to no transmission occur.

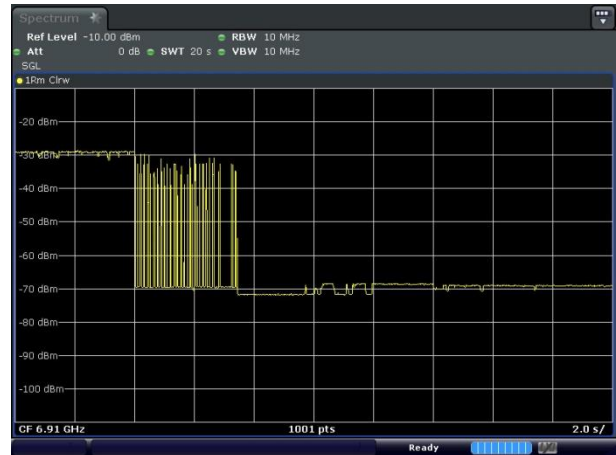
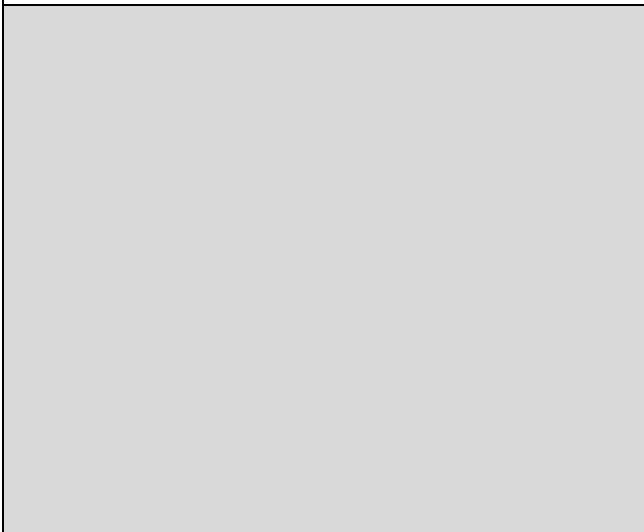


Date: 1 SEP 2022 19:06:58

Date: 1 SEP 2022 18:04:21

802.11ax (HE160) / 6910MHz (Lower edge)
Threshold Level (TL) = -70.92dBm

802.11ax (HE160) / CH207 (Lower edge)
Transmit when the interferer is 1dB lower.

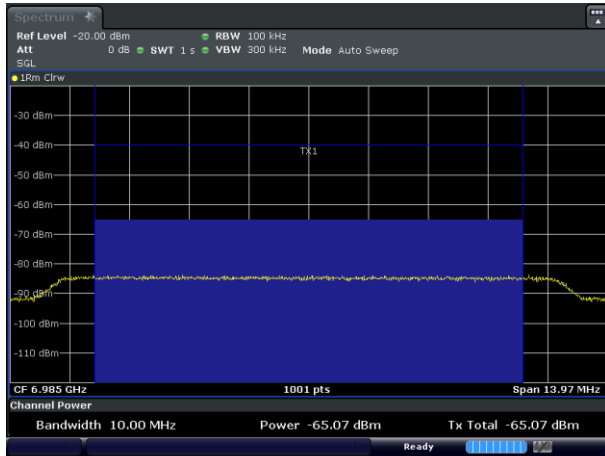


Date: 1 SEP 2022 20:44:07



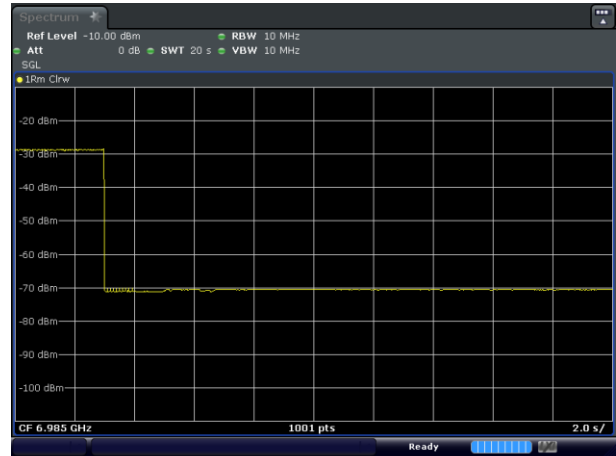
Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

802.11ax (HE160) / 6985MHz (Middle)
Threshold Level (TL) = -65.07dBm



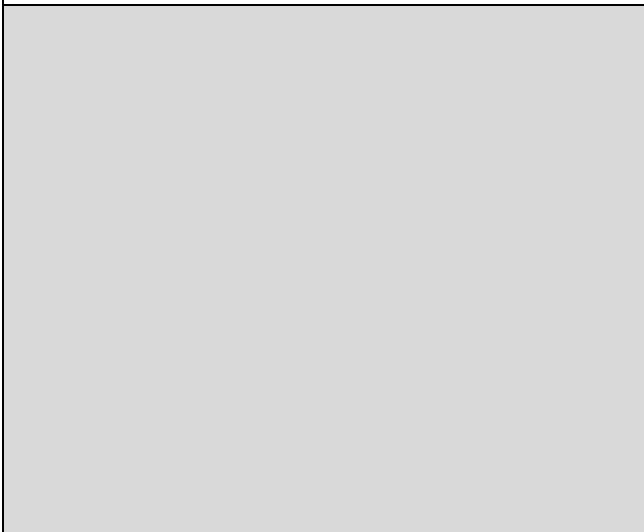
Date: 1 SEP 2022 19:08:13

802.11ax (HE160) / CH207 (Middle)
Test result is pass due to no transmission occur.

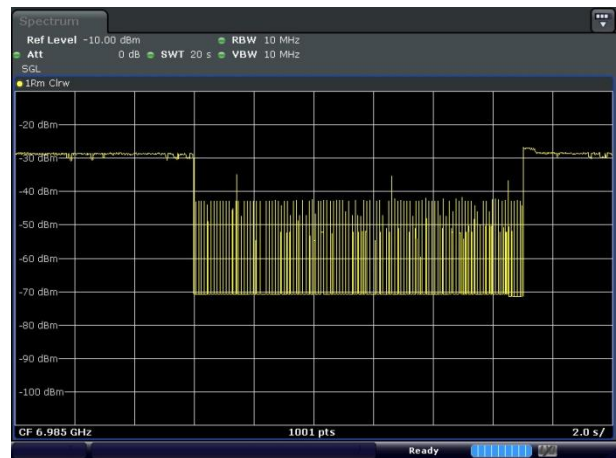


Date: 1 SEP 2022 18:13:41

802.11ax (HE160) / 6985MHz (Middle)
Threshold Level (TL) = -66.07dBm



802.11ax (HE160) / CH207 (Middle)
Transmit when the interferer is 1dB lower.



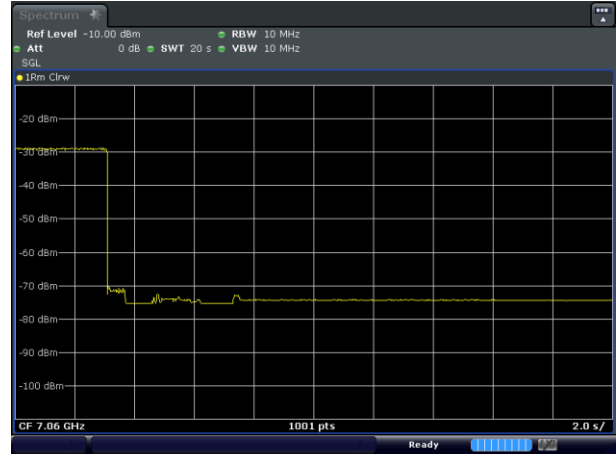
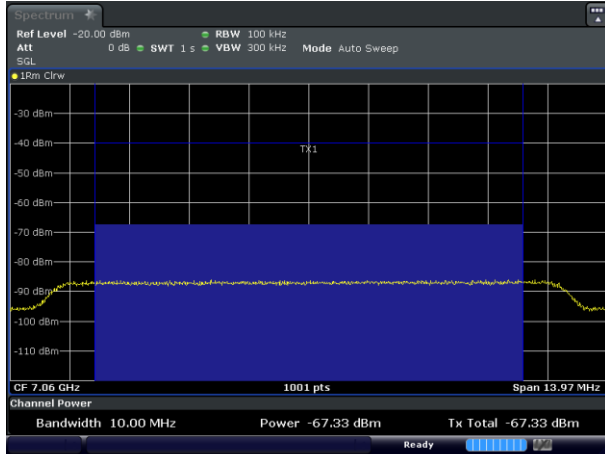
Date: 1 SEP 2022 20:47:30



Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

802.11ax (HE160) / 7060MHz (Upper edge)
Threshold Level (TL) = -67.33dBm

802.11ax (HE160) / CH207 (Upper edge)
Test result is pass due to no transmission occur.

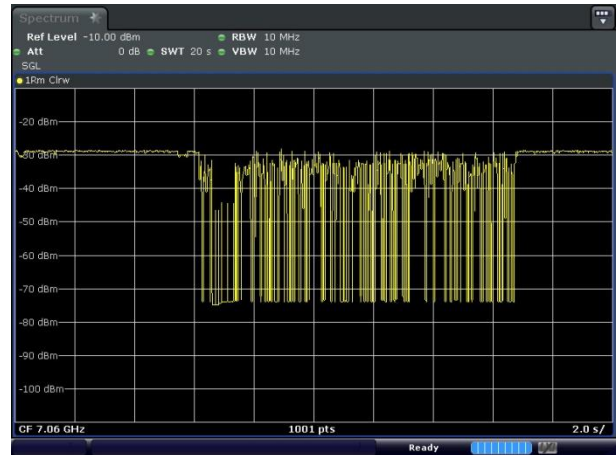


Date: 1 SEP. 2022 19:09:03

Date: 1 SEP. 2022 18:08:54

802.11ax (HE160) / 7060MHz (Upper edge)
Threshold Level (TL) = -68.33dBm

802.11ax (HE160) / CH207 (Upper edge)
Transmit when the interferer is 1dB lower.



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3.6 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.6.1 Limit of Unwanted Emissions

- (1) For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27 (RMS)	68.3
- 7 (Peak)	88.3

According 987594 D02 U-NII 6GHz EMC Measurement v01 section G:

Unwanted emissions outside of restricted bands are measured with a RMS detector.

In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

3.6.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.



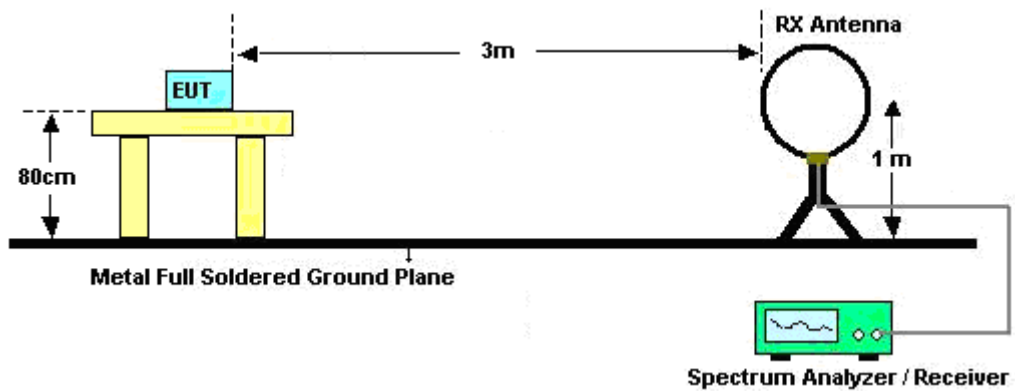
3.6.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW \geq 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as "-".

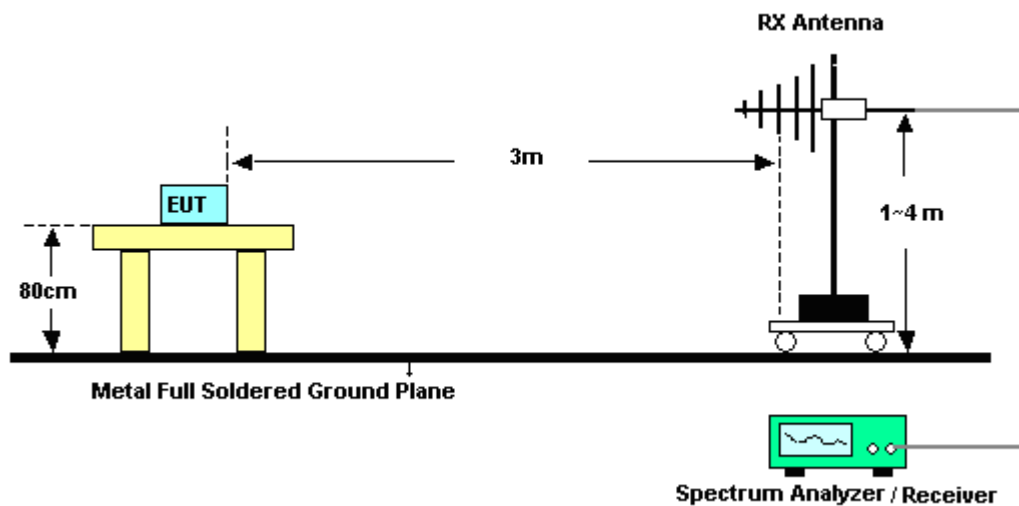
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-“..

3.6.4 Test Setup

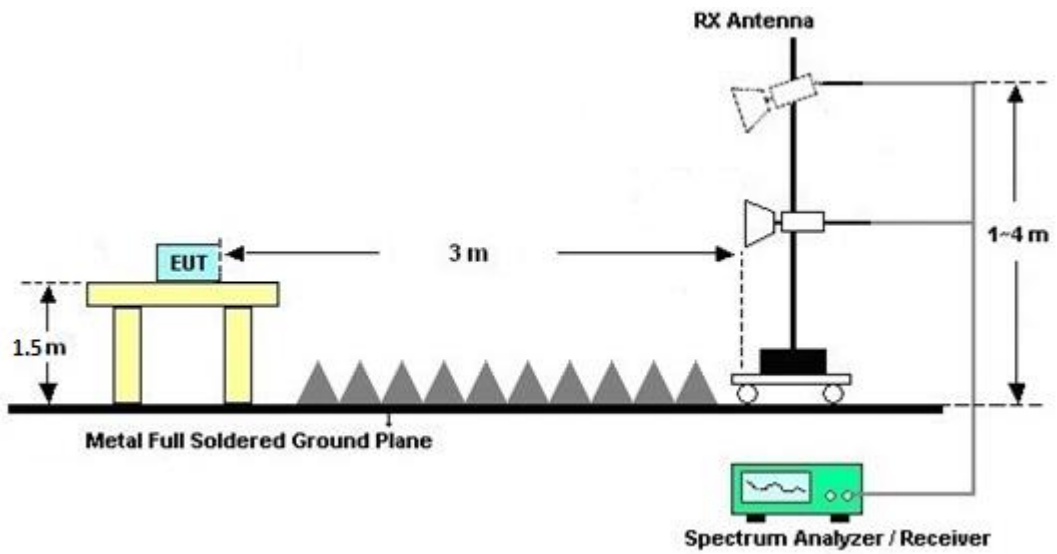
For radiated emissions below 30MHz



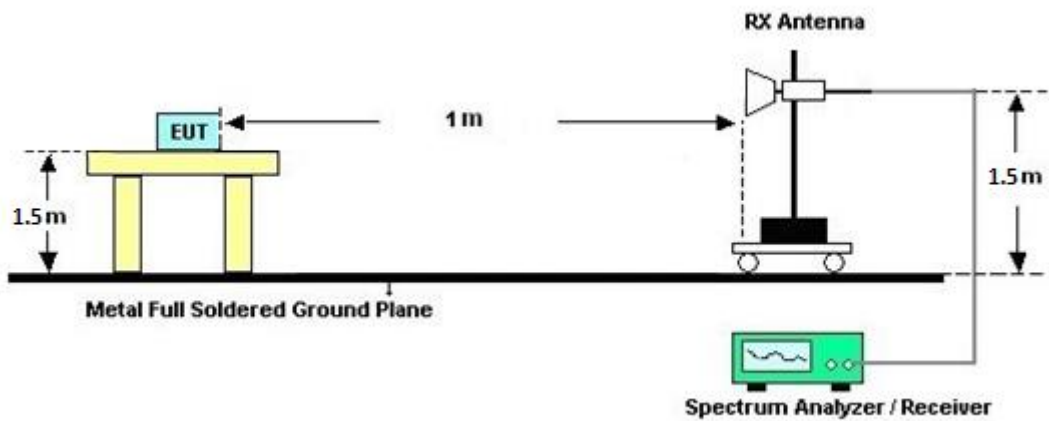
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





3.6.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.6.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.6.7 Duty Cycle

Please refer to Appendix E.

3.6.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.



3.7 AC Conducted Emission Measurement

3.7.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

3.7.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.7.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.