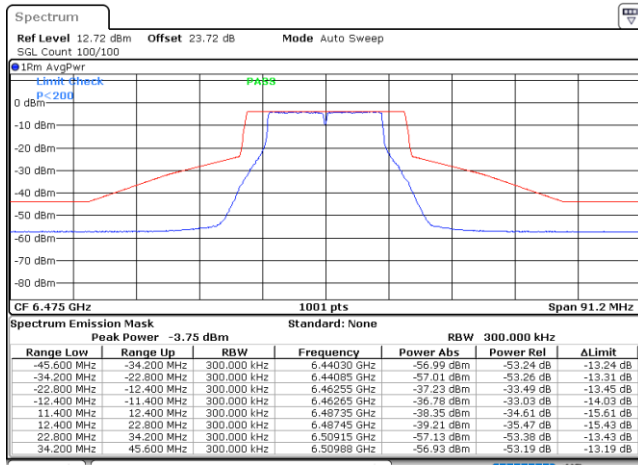


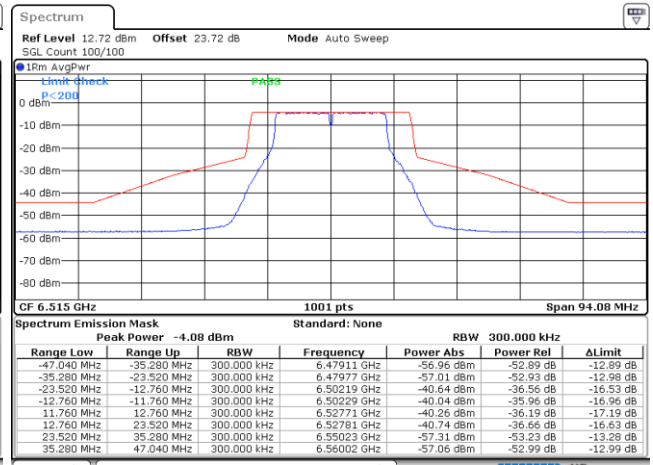


Plot on Channel 6475MHz



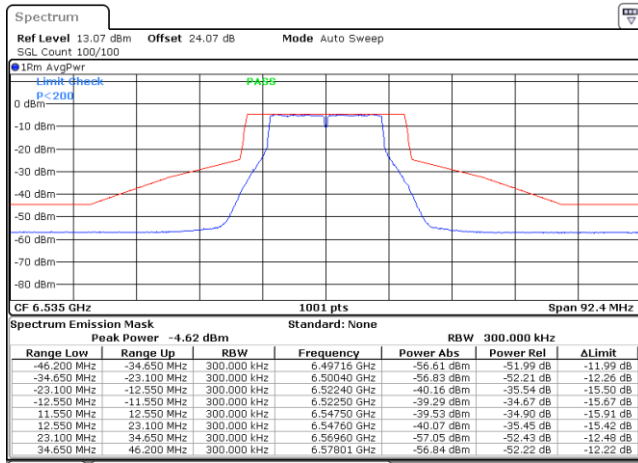
Date: 22.AUG.2023 16:26:43

Plot on Channel 6515MHz



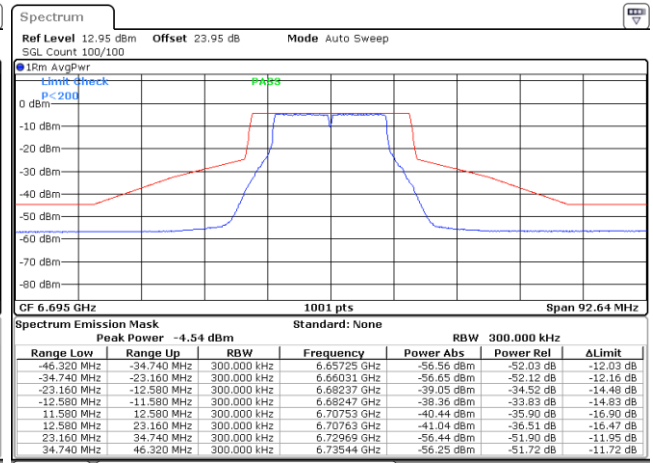
Date: 22.AUG.2023 16:42:39

Plot on Channel 6535MHz



Date: 23.AUG.2023 09:51:31

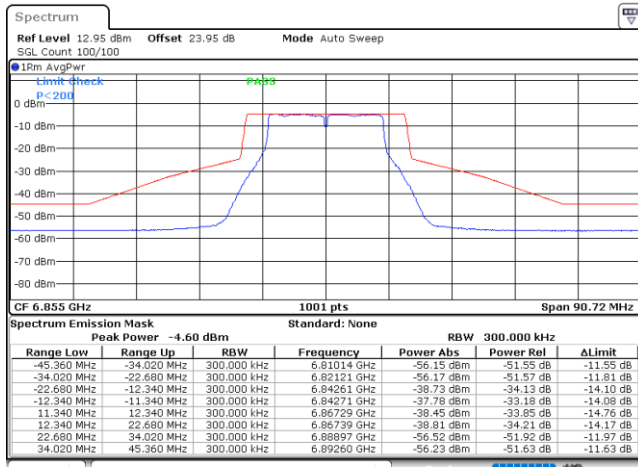
Plot on Channel 6695MHz



Date: 23.AUG.2023 09:24:01

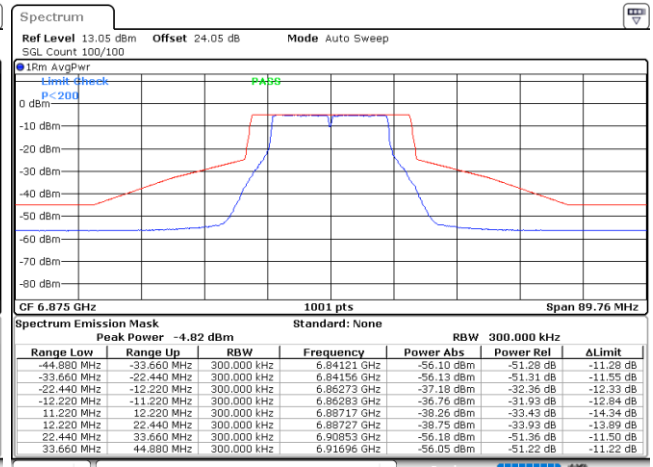


Plot on Channel 6855MHz



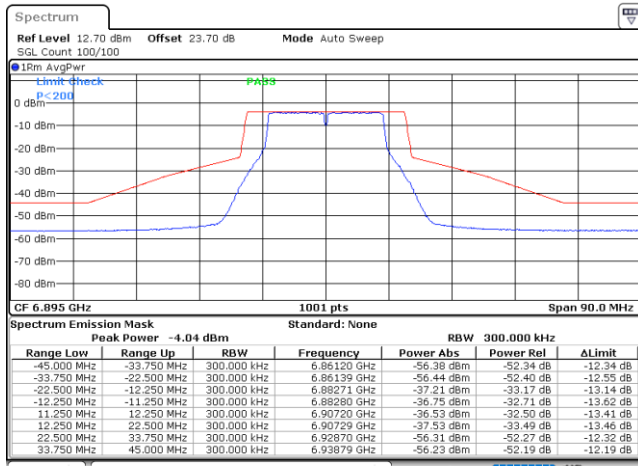
Date: 23.AUG.2023 09:33:38

Plot on Channel 6875MHz



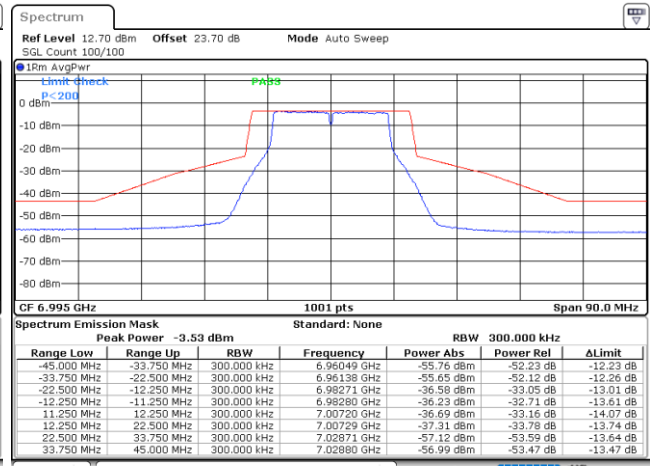
Date: 23.AUG.2023 09:45:39

Plot on Channel 6895MHz



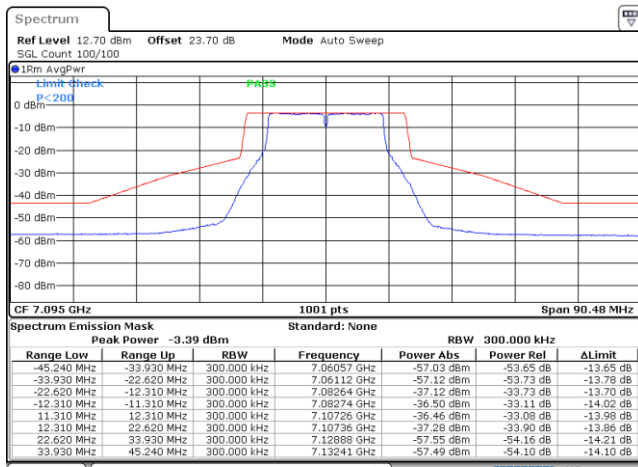
Date: 23.AUG.2023 10:04:47

Plot on Channel 6995MHz



Date: 23.AUG.2023 10:15:28

Plot on Channel 7095MHz

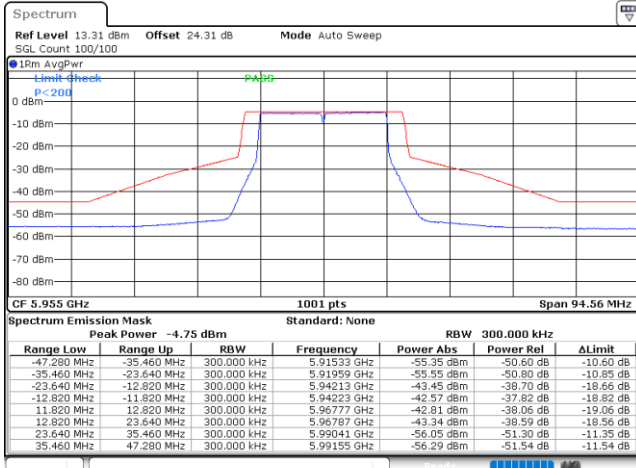


Date: 23.AUG.2023 10:34:50



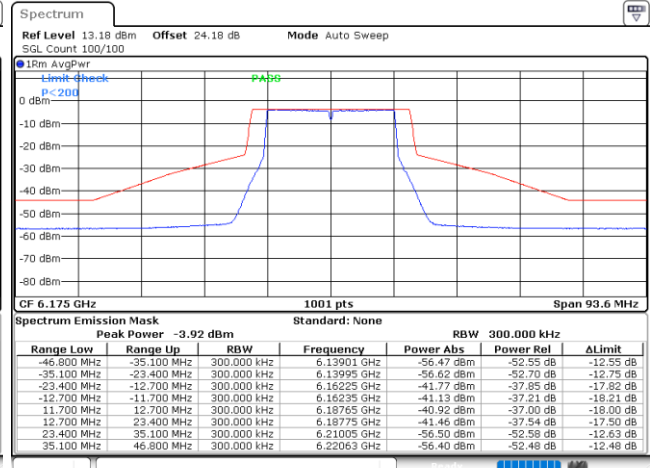
EUT Mode : 802.11be EHT 20

Plot on Channel 5955MHz



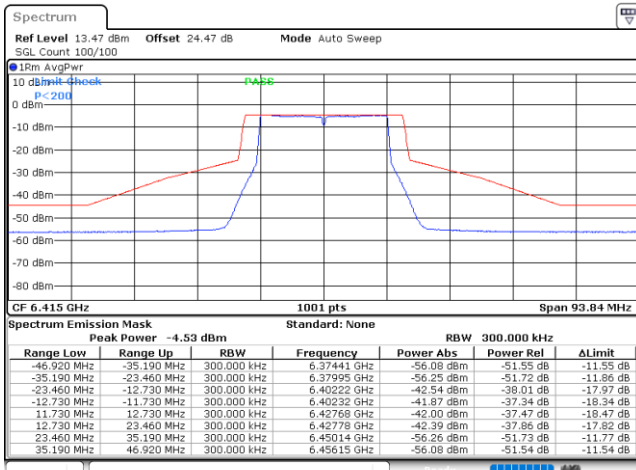
Date: 16.AUG.2023 15:40:08

Plot on Channel 6195MHz



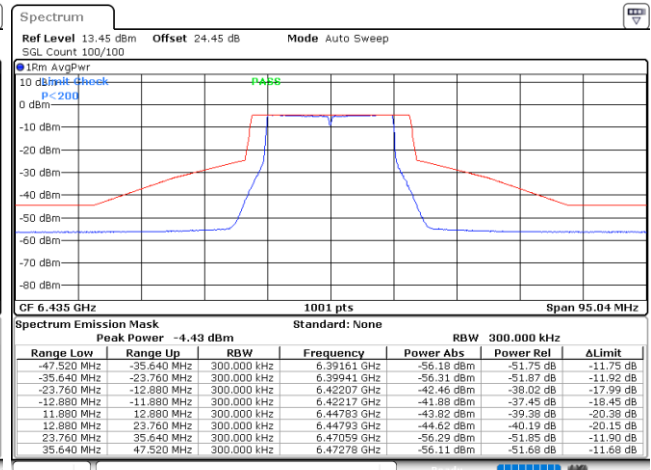
Date: 16.AUG.2023 16:04:21

Plot on Channel 6415MHz



Date: 16.AUG.2023 16:16:58

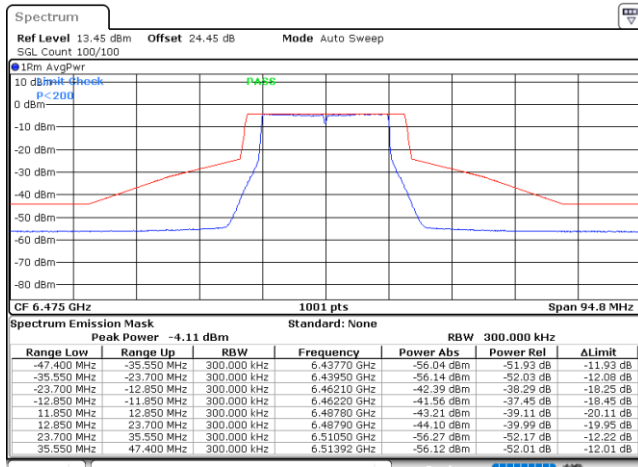
Plot on Channel 6435MHz



Date: 16.AUG.2023 16:56:51

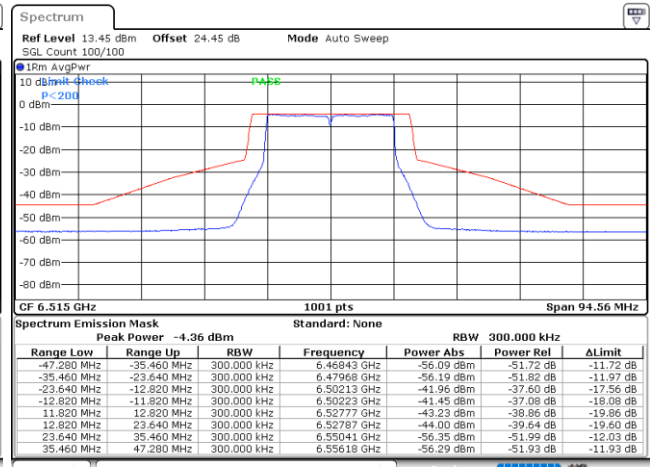


Plot on Channel 6475MHz



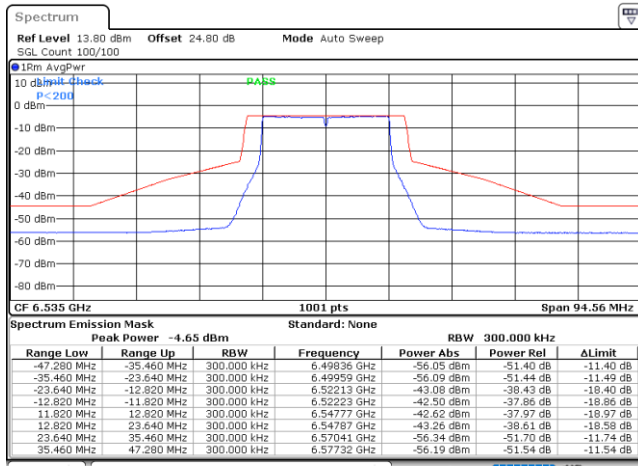
Date: 17.AUG.2023 09:41:08

Plot on Channel 6515MHz



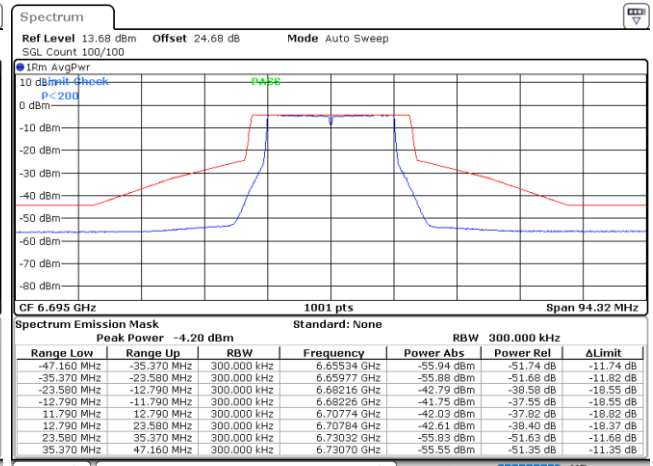
Date: 17.AUG.2023 10:07:21

Plot on Channel 6535MHz



Date: 17.AUG.2023 10:35:19

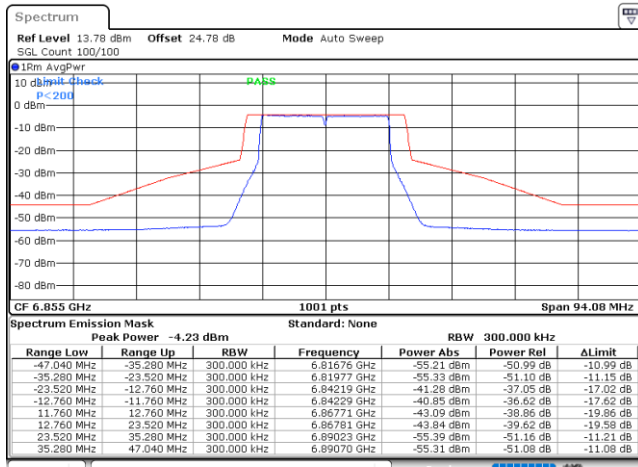
Plot on Channel 6695MHz



Date: 17.AUG.2023 11:06:12

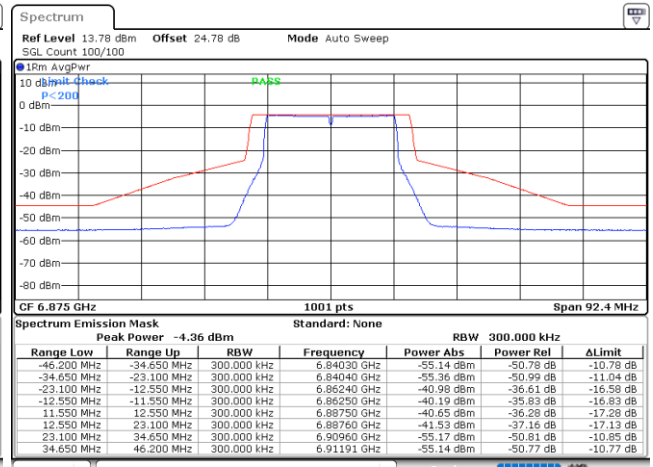


Plot on Channel 6855MHz



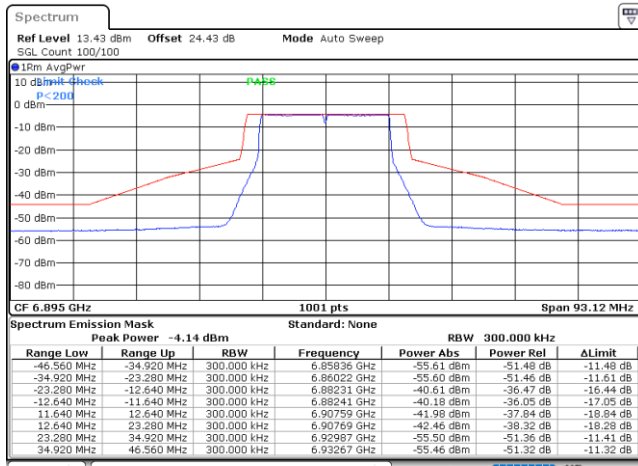
Date: 17.AUG.2023 11:35:11

Plot on Channel 6875MHz



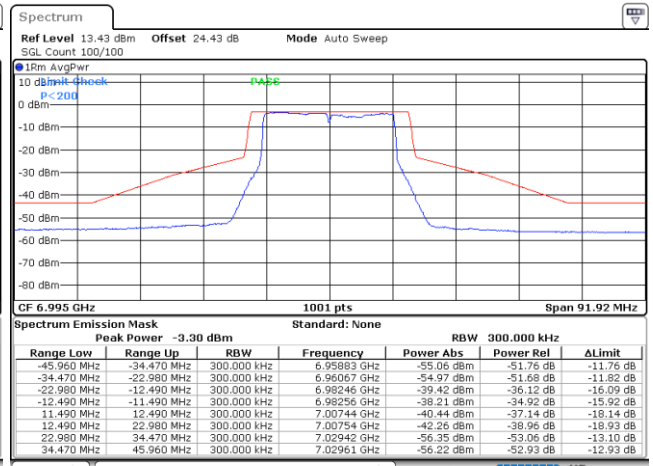
Date: 17.AUG.2023 11:53:49

Plot on Channel 6895MHz



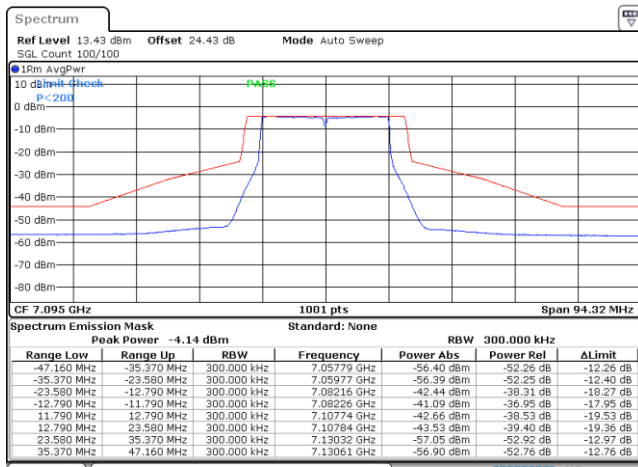
Date: 17.AUG.2023 13:25:55

Plot on Channel 6995MHz



Date: 17.AUG.2023 13:38:42

Plot on Channel 7095MHz

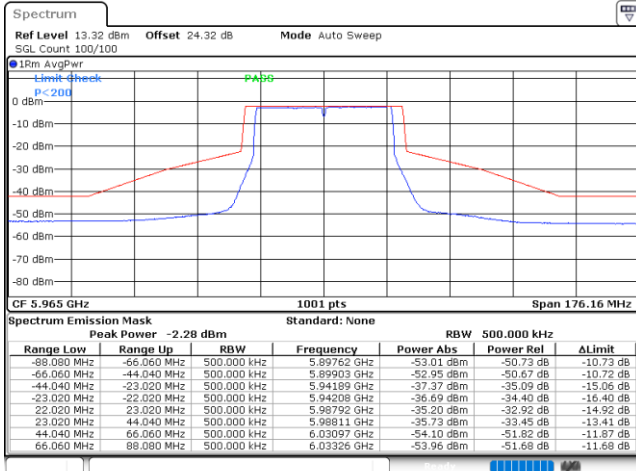


Date: 24.AUG.2023 09:27:21



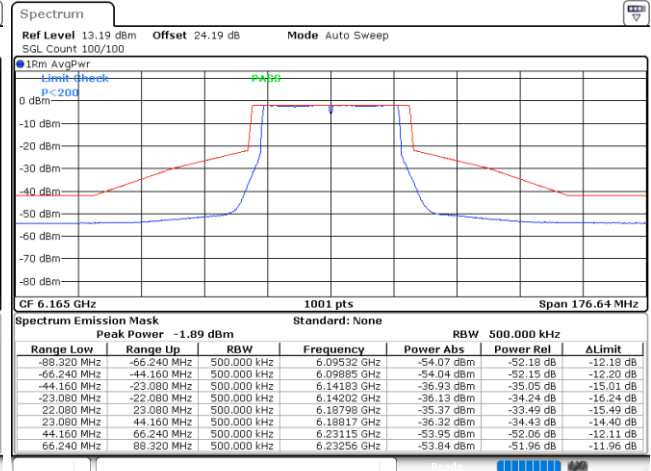
EUT Mode : 802.11be EHT 40

Plot on Channel 5965MHz



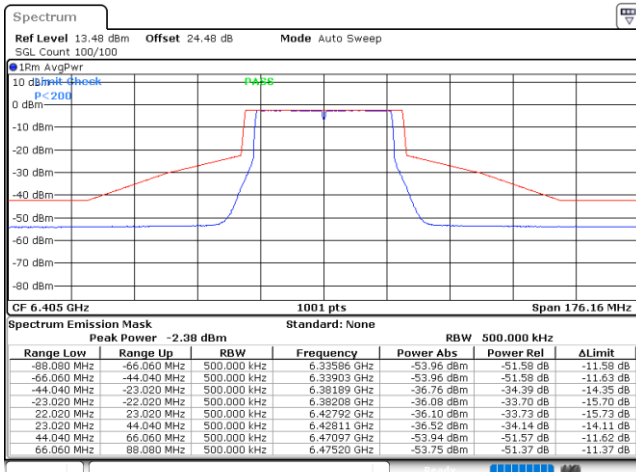
Date: 17.AUG.2023 14:26:19

Plot on Channel 6205MHz



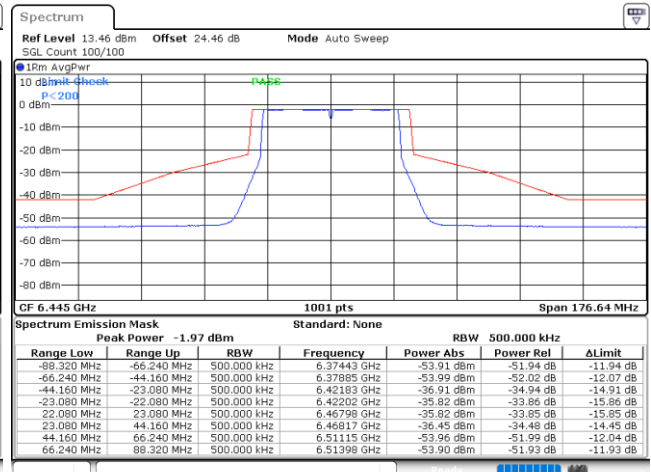
Date: 17.AUG.2023 14:42:40

Plot on Channel 6405MHz



Date: 17.AUG.2023 15:02:20

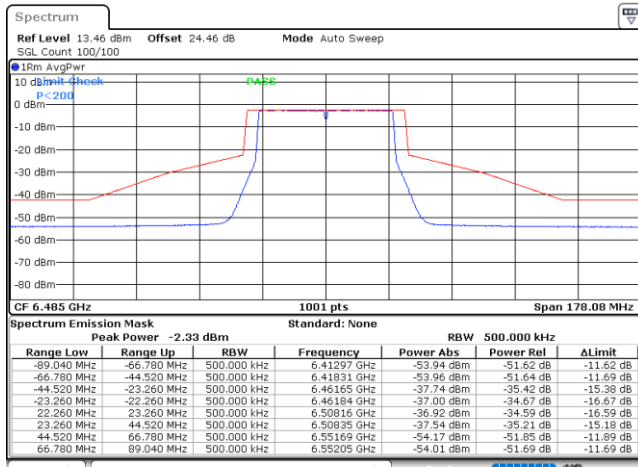
Plot on Channel 6445MHz



Date: 17.AUG.2023 15:19:17

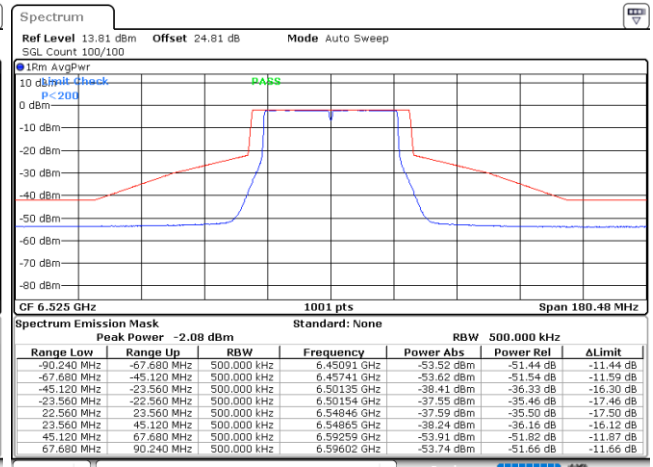


Plot on Channel 6485MHz



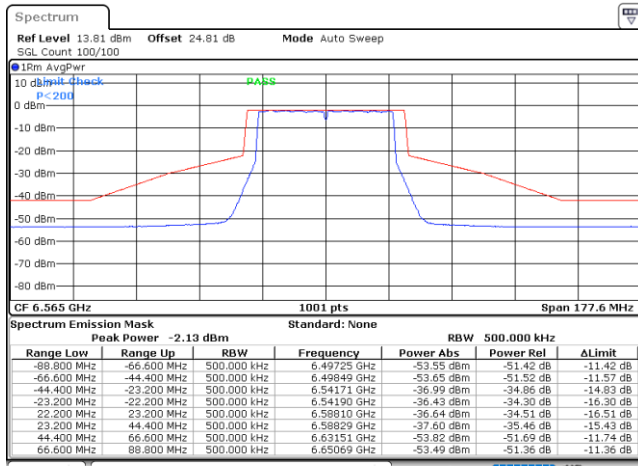
Date: 17.AUG.2023 15:34:37

Plot on Channel 6525MHz



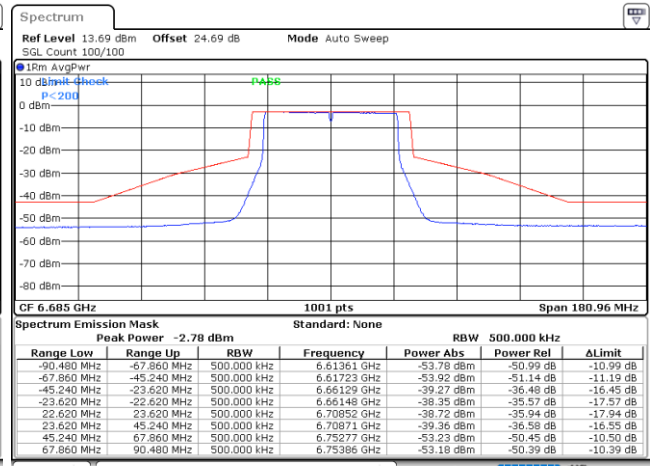
Date: 17.AUG.2023 15:52:07

Plot on Channel 6565MHz



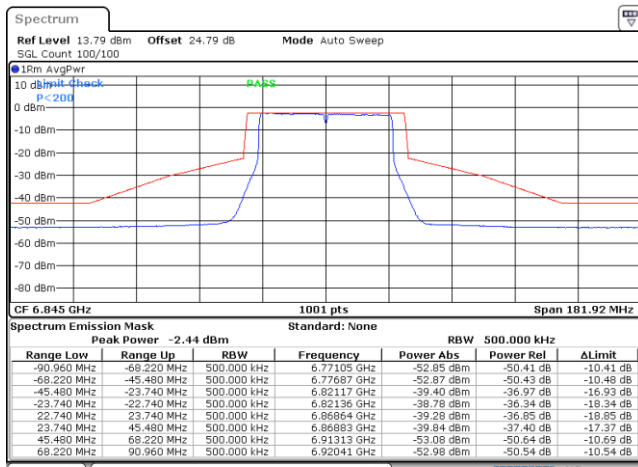
Date: 17.AUG.2023 16:11:15

Plot on Channel 6685MHz



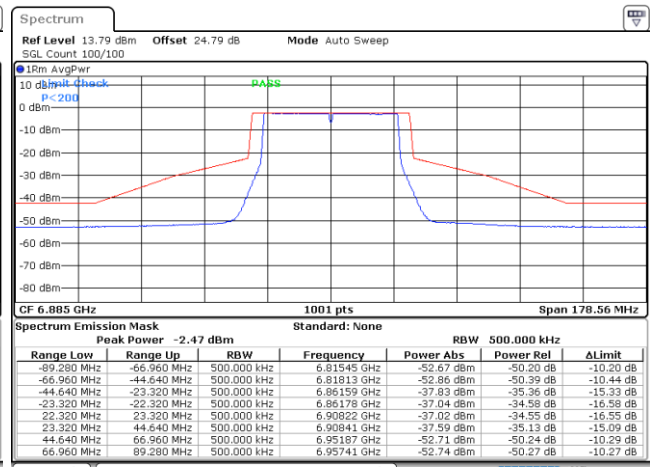
Date: 17.AUG.2023 16:27:07

Plot on Channel 6845MHz



Date: 17.AUG.2023 16:39:44

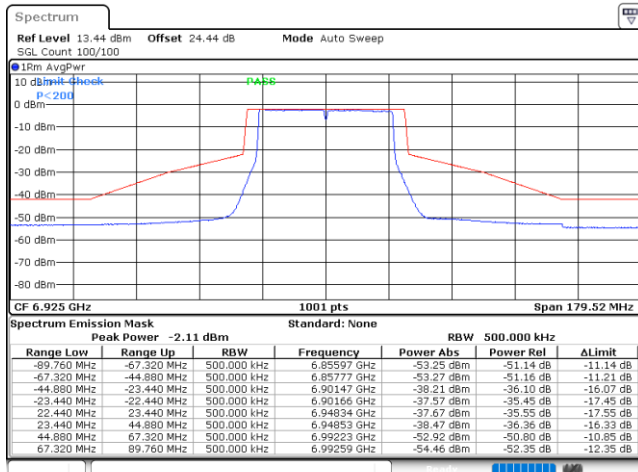
Plot on Channel 6885MHz



Date: 17.AUG.2023 17:07:57

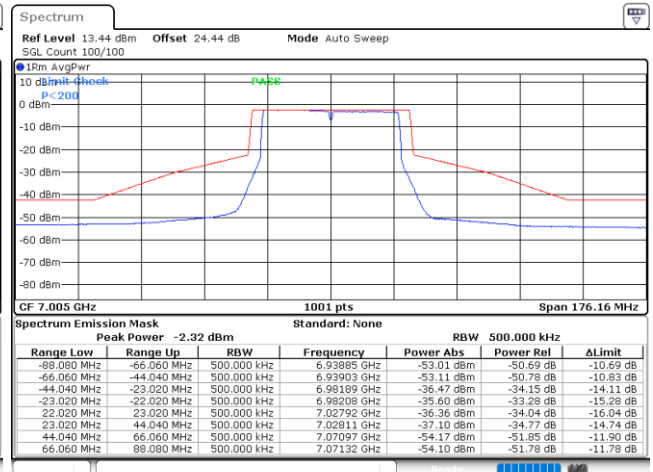


Plot on Channel 6925MHz



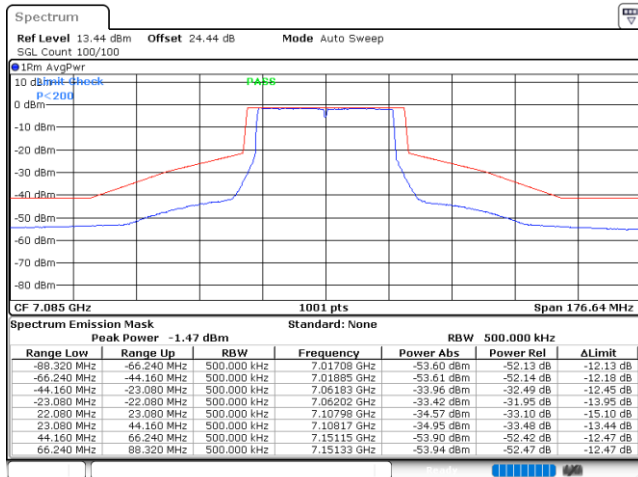
Date: 18.AUG.2023 10:19:18

Plot on Channel 7005MHz



Date: 18.AUG.2023 10:35:19

Plot on Channel 7085MHz

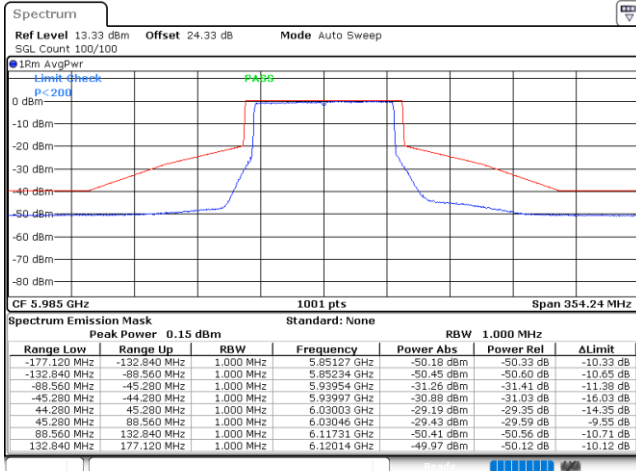


Date: 18.AUG.2023 10:51:51



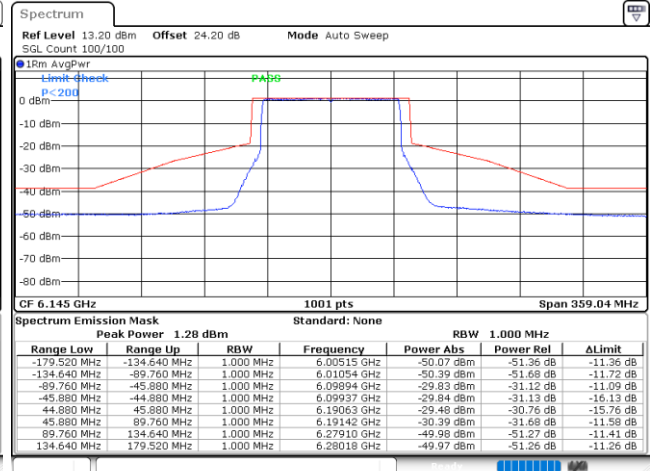
EUT Mode : 802.11be EHT 80

Plot on Channel 5985MHz



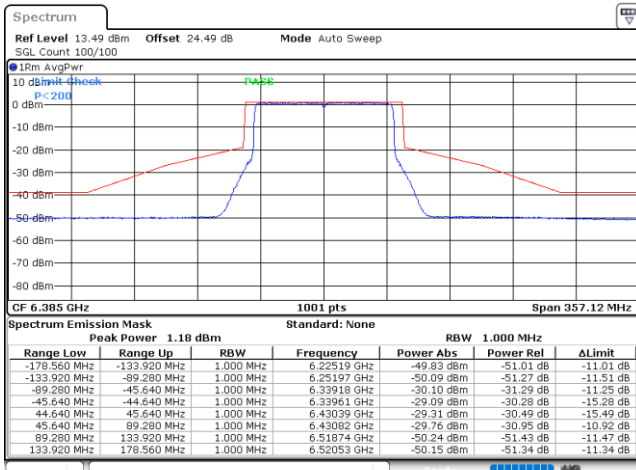
Date: 18.AUG.2023 11:21:08

Plot on Channel 6225MHz



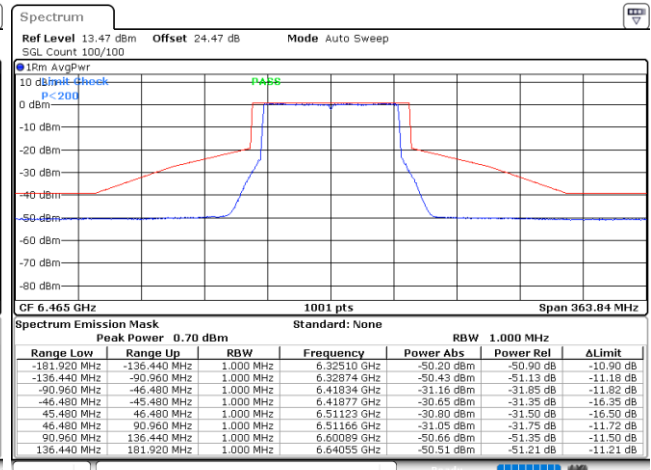
Date: 18.AUG.2023 11:35:56

Plot on Channel 6385MHz



Date: 18.AUG.2023 11:43:27

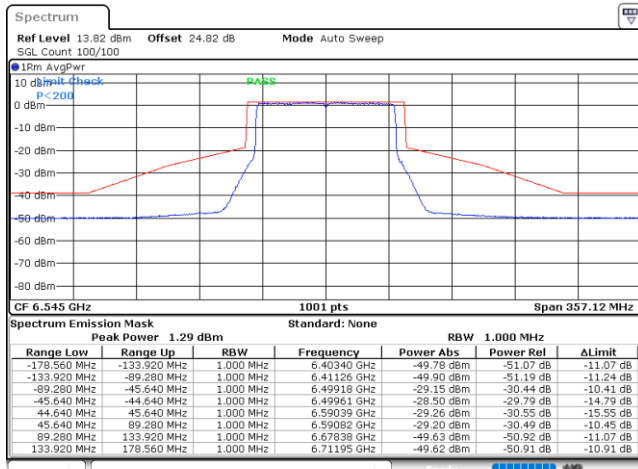
Plot on Channel 6465MHz



Date: 18.AUG.2023 11:51:51

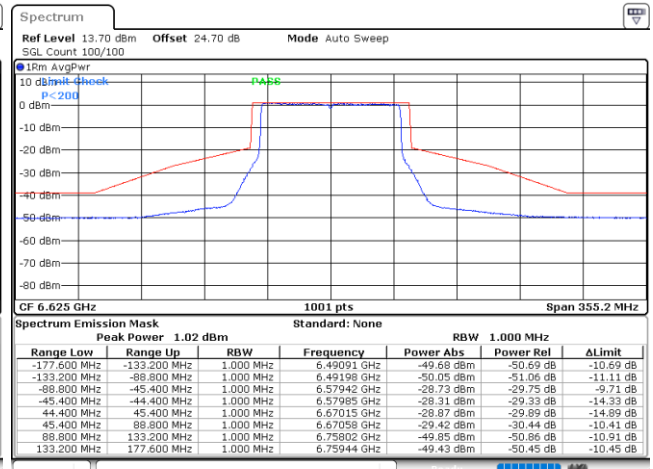


Plot on Channel 6545MHz



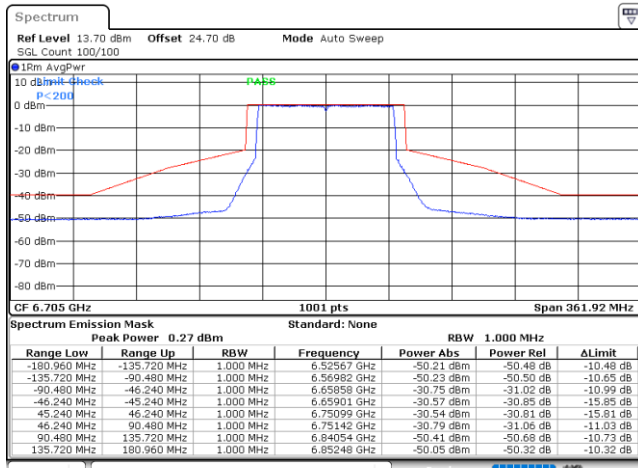
Date: 18.AUG.2023 13:23:09

Plot on Channel 6625MHz



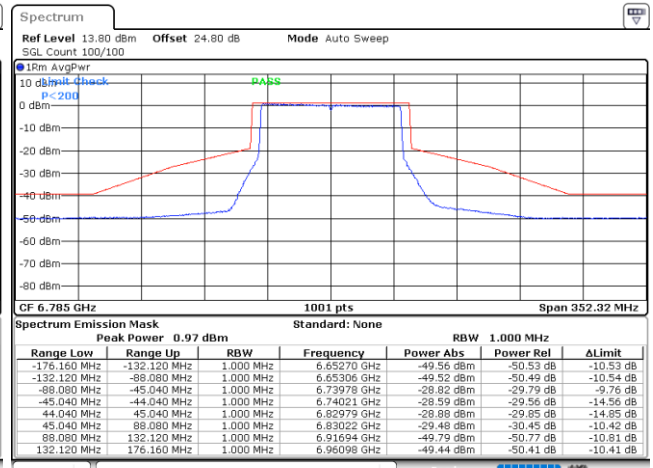
Date: 18.AUG.2023 13:40:47

Plot on Channel 6705MHz



Date: 18.AUG.2023 14:00:10

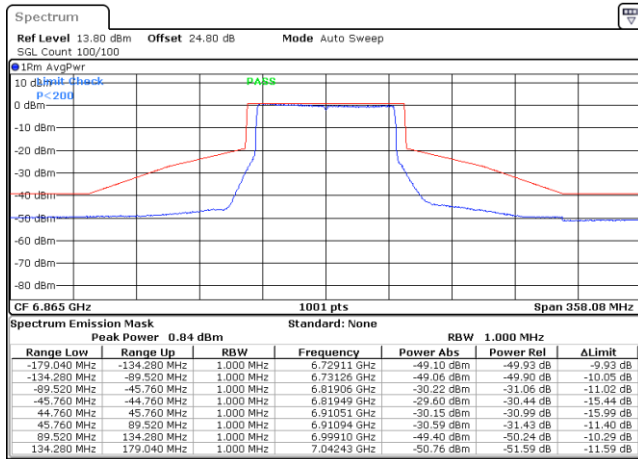
Plot on Channel 6785MHz



Date: 18.AUG.2023 14:26:56

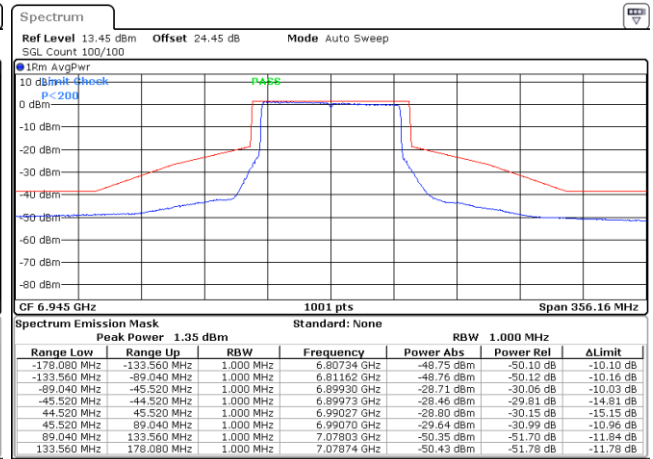


Plot on Channel 6865MHz



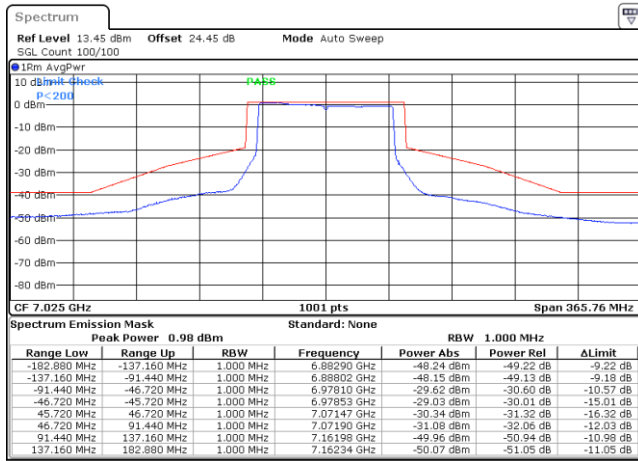
Date: 18.AUG.2023 14:50:49

Plot on Channel 6945MHz



Date: 18.AUG.2023 15:10:46

Plot on Channel 7025MHz

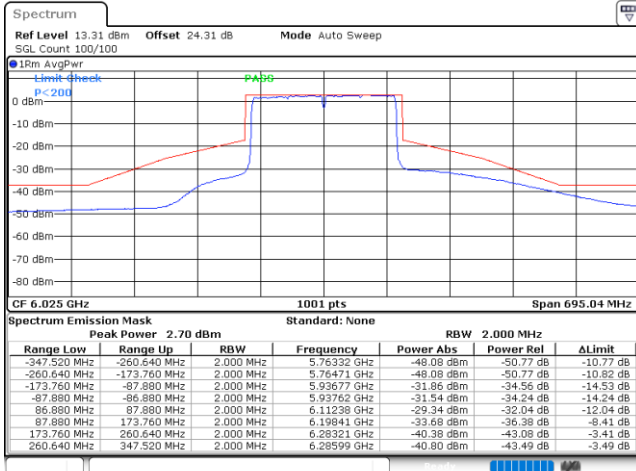


Date: 18.AUG.2023 15:36:09



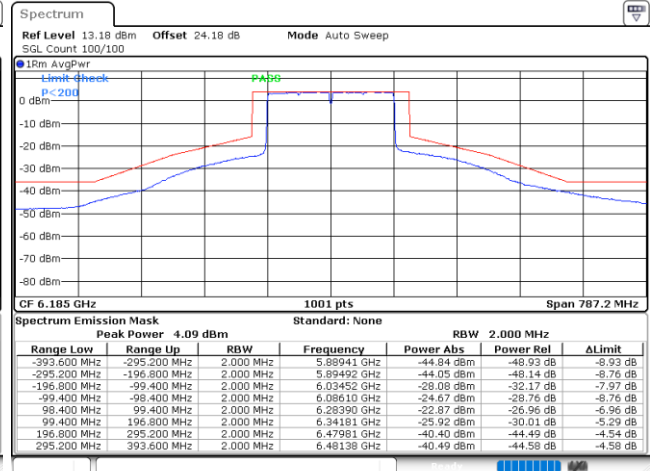
EUT Mode : 802.11be EHT160

Plot on Channel 6025MHz



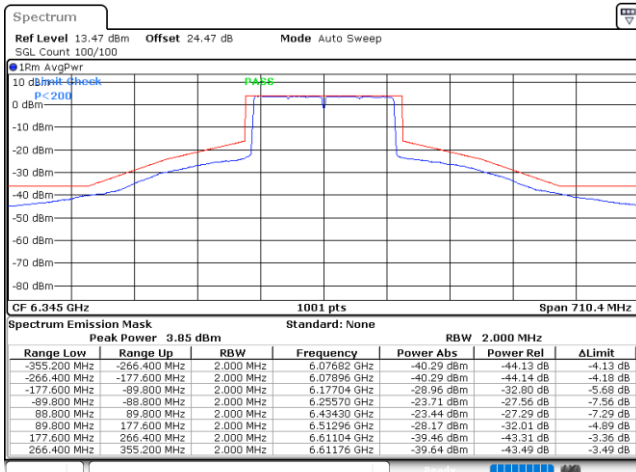
Date: 18.AUG.2023 16:45:44

Plot on Channel 6185MHz



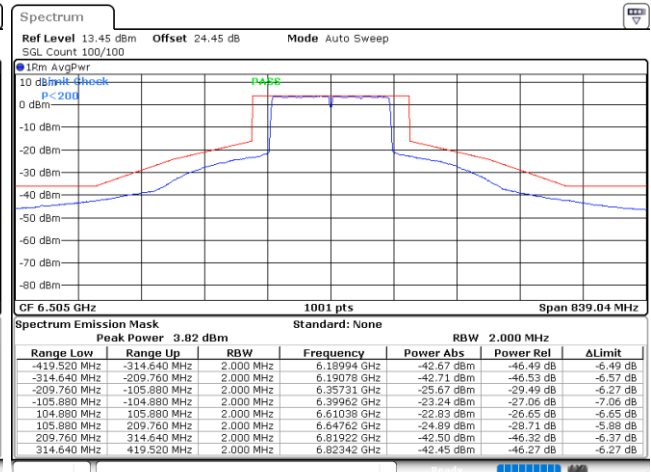
Date: 18.AUG.2023 16:41:11

Plot on Channel 6345MHz



Date: 18.AUG.2023 17:06:53

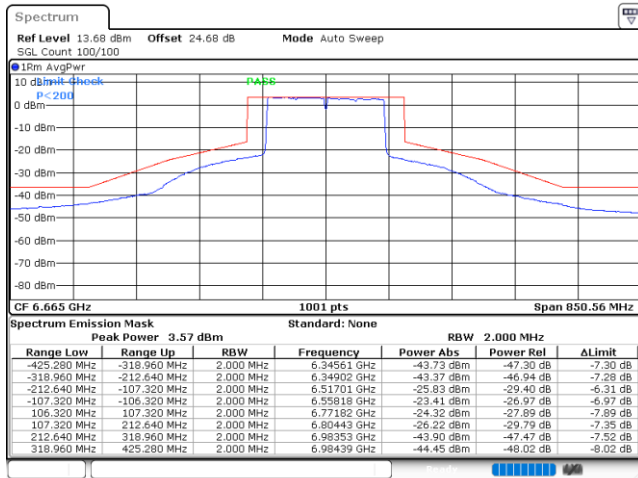
Plot on Channel 6505MHz



Date: 21.AUG.2023 10:09:24

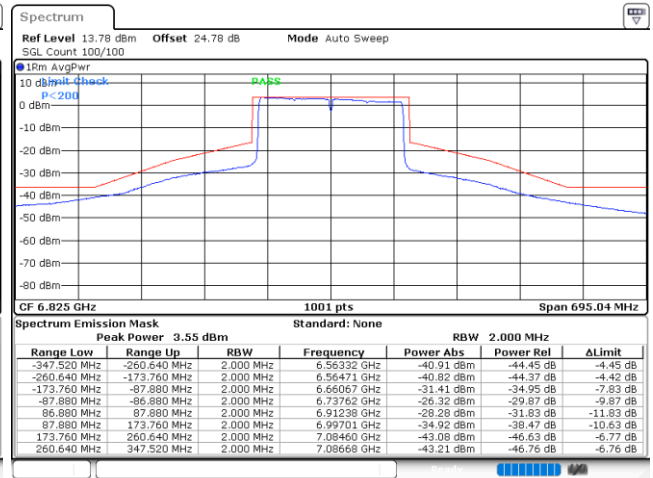


Plot on Channel 6665MHz



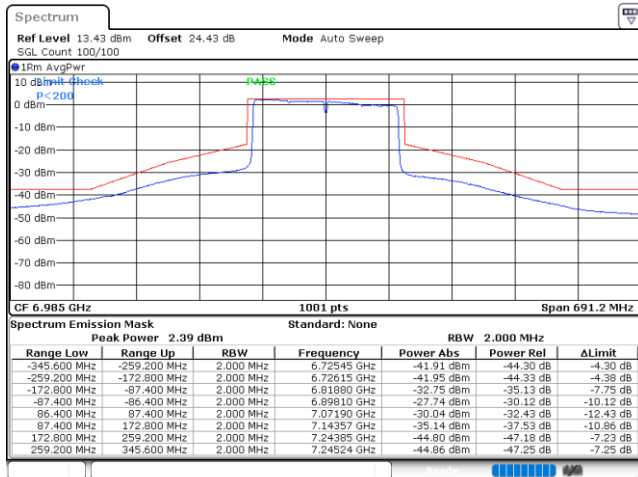
Date: 21.AUG.2023 11:11:48

Plot on Channel 6825MHz



Date: 21.AUG.2023 11:13:21

Plot on Channel 6985MHz

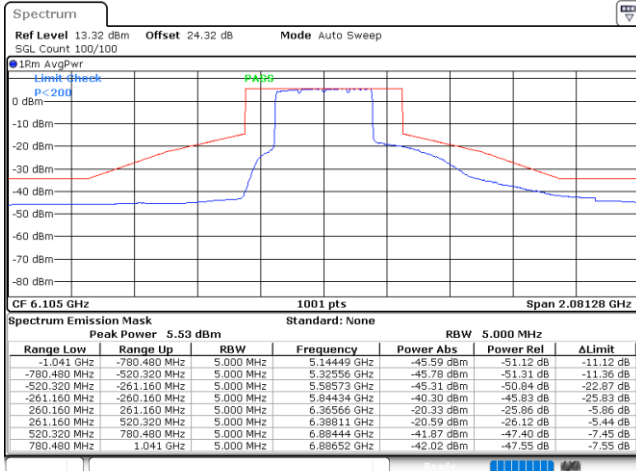


Date: 21.AUG.2023 13:26:49



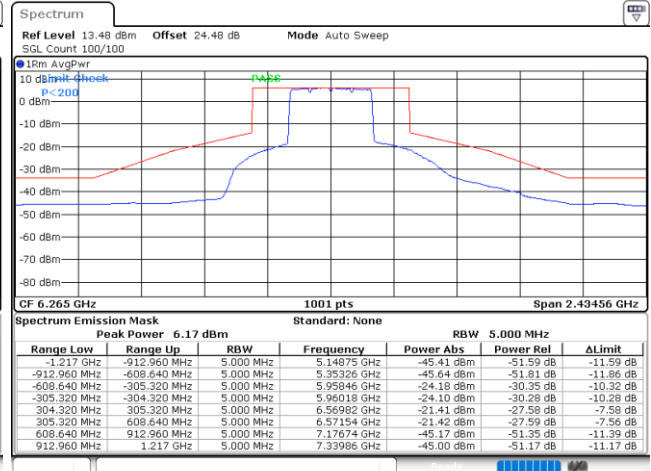
EUT Mode : 802.11be EHT320

Plot on Channel 6105MHz



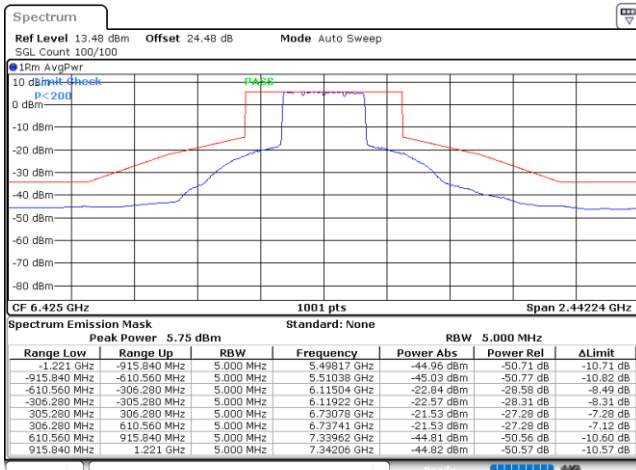
Date: 21.AUG.2023 14:31:34

Plot on Channel 6265MHz



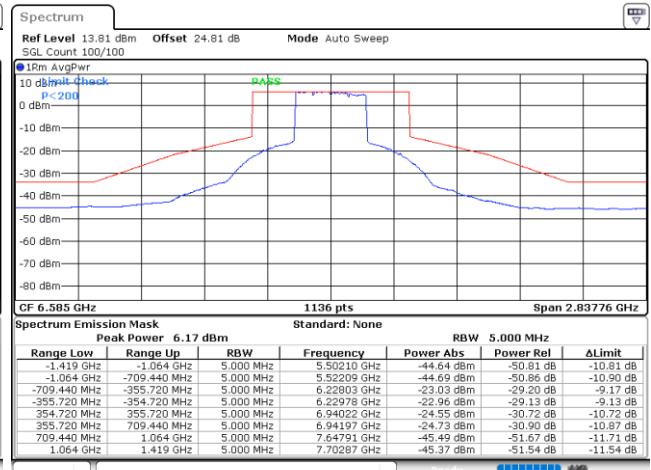
Date: 21.AUG.2023 14:41:06

Plot on Channel 6425MHz



Date: 21.AUG.2023 14:49:19

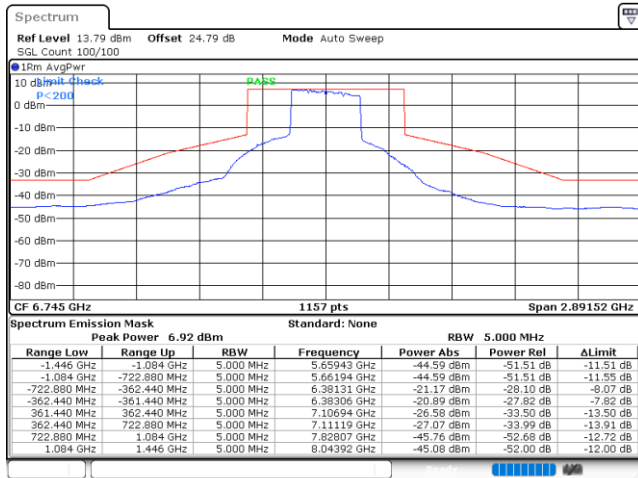
Plot on Channel 6585MHz



Date: 21.AUG.2023 14:57:57

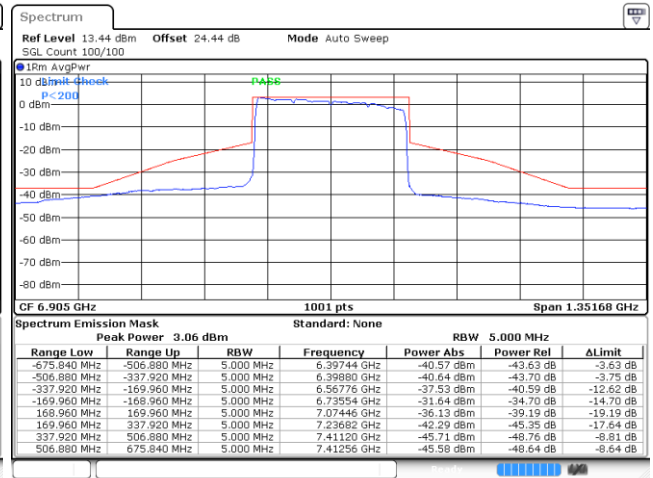


Plot on Channel 6745MHz



Date: 21.AUG.2023 15:10:45

Plot on Channel 6905MHz



Date: 25 OCT 2023 20:31:58



3.5 Contention Based Protocol

3.5.1 Limit of Contention Based Protocol

<FCC 14-30 CFR 15.407>

(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

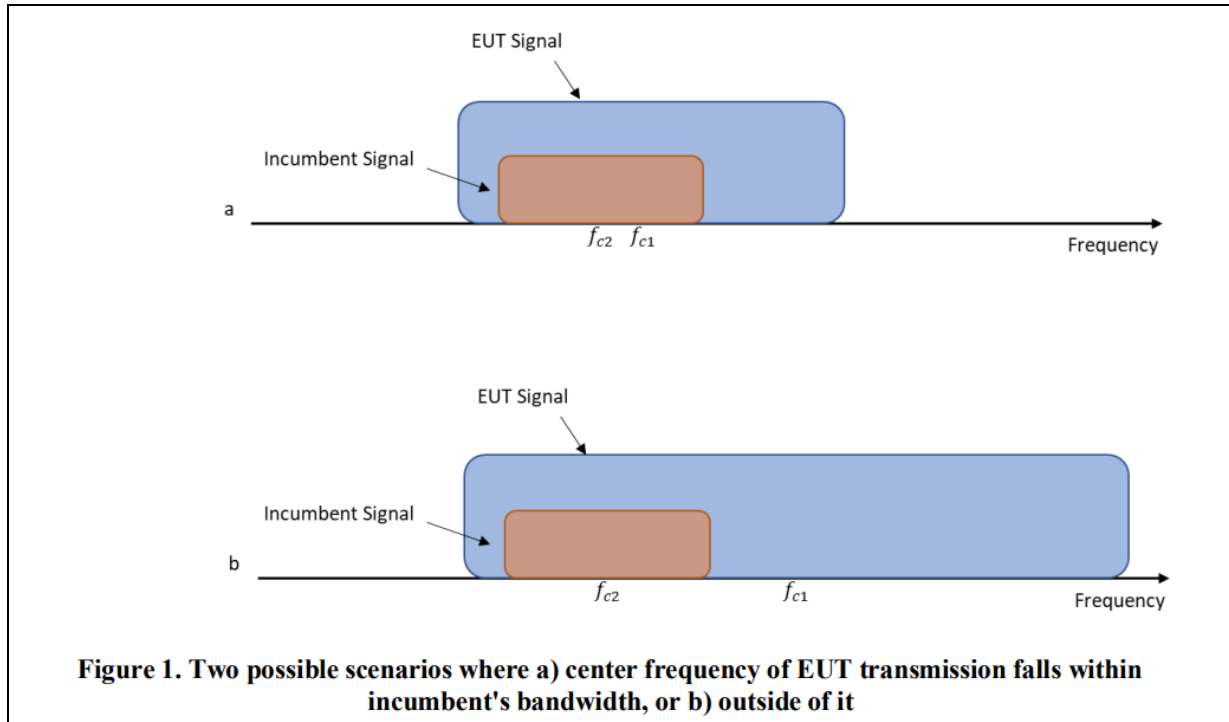
where:

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



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.

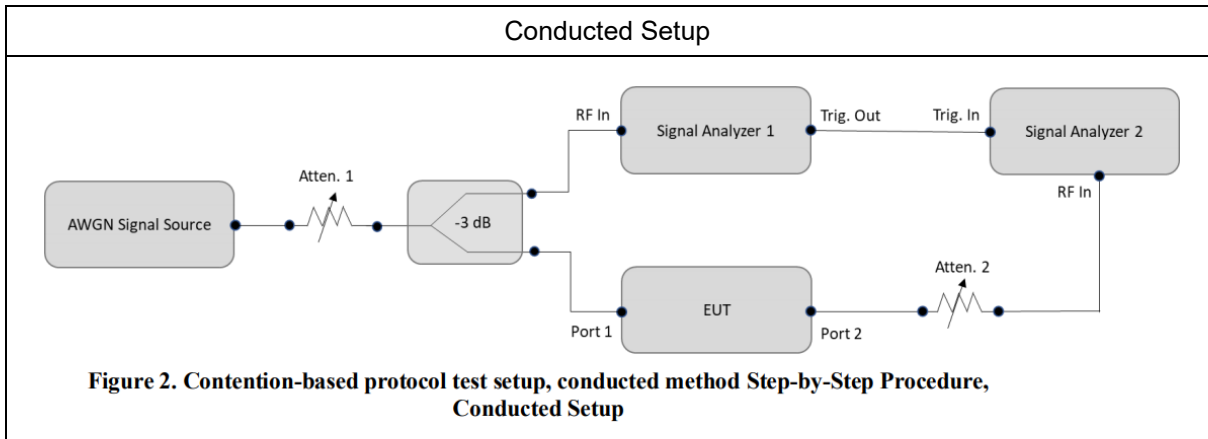
Section I) Contention Based Protocol

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 Minimum Antenna gain for Contention Based Protocol Test

CBP Antenna Gain	<UNII-5>: 3.0 dBi <UNII-6>: 3.0 dBi <UNII-7>: 3.2 dBi <UNII-8>: 3.0 dBi
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Note: The CBP antenna gain is considering the minimum gain from closed mode as worse case.



3.5.6 Test Summary of Contention Based Protocol Test

Test Engineer :	Liliana Gonzalez	Temperature :	22~22.6°C
		Relative Humidity :	52~60.6%

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 Band 5	6135	20	6135	-69.42	90	-62	-72.42	10.42		
				Result: Stop Transmission						
				-70.42	< 90	-62	-73.42	11.42		
				Result: Minimal Operation						
				-74.42	0	-62	-77.42	15.42		
				Result: Normal Operation						
	6105	320	5950	-65.28	100	-62	-68.28	6.28		
				Result: Stop Transmission						
				-66.28	< 90	-62	-69.28	7.28		
				Result: Minimal Operation						
				-70.28	0	-62	-73.28	11.28		
				Result: Normal Operation						
			6105	320	6105	-69.82	100	-62	-72.82	10.82
						Result: Stop Transmission				
						-70.82	< 90	-62	-73.82	11.82
						Result: Minimal Operation				
						-74.82	0	-62	-77.82	15.82
						Result: Normal Operation				
	6260	320	6260	-70.20	90	-62	-73.20	11.2		
				Result: Stop Transmission						
				-71.20	< 90	-62	-74.20	12.2		
				Result: Minimal Operation						
				-75.20	0	-62	-78.20	16.2		
				Result: Normal Operation						

- Note 1:** Adjusted Power = Injected AWGN Level - minimum antenna gain (3.0dBi).
- Note 2:** The antenna gain has included the path loss between RF connector and antenna.
- 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 Band 6	6455	20	6455	-69.99	90	-62	-72.99	10.99		
				Result: Stop Transmission						
				-70.99	< 90	-62	-73.99	11.99		
				Result: Minimal Operation						
				-74.99	0	-62	-77.99	15.99		
				Result: Normal Operation						
	6425	320	6270	-67.14	90	-62	-70.14	8.14		
				Result: Stop Transmission						
				-68.14	< 90	-62	-71.14	9.14		
				Result: Minimal Operation						
				-72.14	0	-62	-75.14	13.14		
				Result: Normal Operation						
			6425	320	6425	-69.87	90	-62	-72.87	10.87
						Result: Stop Transmission				
						-70.87	< 90	-62	-73.87	11.87
						Result: Minimal Operation				
						-74.87	0	-62	-77.87	15.87
						Result: Normal Operation				
6580	320	6580	-68.78	90	-62	-71.78	9.78			
			Result: Stop Transmission							
			-69.78	< 90	-62	-72.78	10.78			
			Result: Minimal Operation							
-73.78	0	-62	-76.78	14.78						
Result: Normal Operation										

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (3.0dBi).

Note 2: The antenna gain has included the path loss between RF connector and antenna.

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 Band 7	6695	20	6695	-71.54	100	-62	-74.74	12.74		
				Result: Stop Transmission						
				-72.54	< 90	-62	-75.74	13.74		
				Result: Minimal Operation						
				-76.54	0	-62	-79.74	17.74		
				Result: Normal Operation						
	6745	320	6590	-64.50	90	-62	-67.50	5.50		
				Result: Stop Transmission						
				-65.50	< 90	-62	-68.50	6.50		
				Result: Minimal Operation						
				-69.50	0	-62	-72.50	10.50		
				Result: Normal Operation						
			6745	320	6745	-67.63	90	-62	-70.63	8.63
						Result: Stop Transmission				
						-68.63	< 90	-62	-71.63	9.63
						Result: Minimal Operation				
						-72.63	0	-62	-75.63	13.63
						Result: Normal Operation				
6900	320	6900	-68.81	90	-62	-71.81	9.81			
			Result: Stop Transmission							
			-69.81	< 90	-62	-72.81	10.81			
			Result: Minimal Operation							
-73.81	0	-62	-76.81	14.81						
Result: Normal Operation										

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (3.2dBi for 20MHz, 3.0dBi for 320MHz).

Note 2: The antenna gain has included the path loss between RF connector and antenna.

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 Band 8	7015	20	7015	-72.53	100	-62	-75.53	13.53		
				Result: Stop Transmission						
				-73.53	< 90	-62	-76.53	14.53		
				Result: Minimal Operation						
				-77.53	0	-62	-80.53	18.53		
				Result: Normal Operation						
	6905	320	6750	-71.84	100	-62	-74.84	12.84		
				Result: Stop Transmission						
				-72.84	< 90	-62	-75.84	13.84		
				Result: Minimal Operation						
				-76.84	0	-62	-79.84	17.84		
				Result: Normal Operation						
			6905	320	6905	-70.98	100	-62	-73.98	11.98
						Result: Stop Transmission				
						-71.98	< 90	-62	-74.98	12.98
						Result: Minimal Operation				
						-75.98	0	-62	-78.98	16.98
						Result: Normal Operation				
7060	320	7060	-75.37	90	-62	-78.37	16.37			
			Result: Stop Transmission							
			-76.37	< 90	-62	-79.37	17.37			
			Result: Minimal Operation							
			-80.37	0	-62	-83.37	21.37			
			Result: Normal Operation							

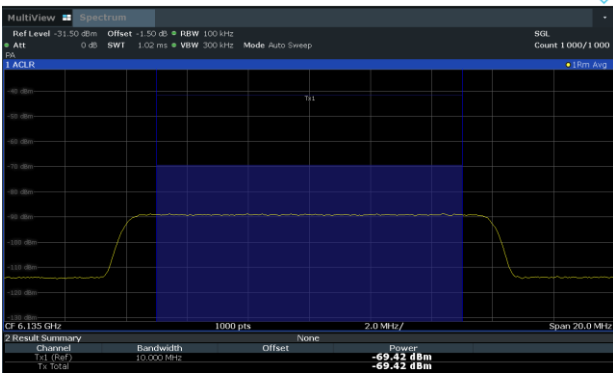
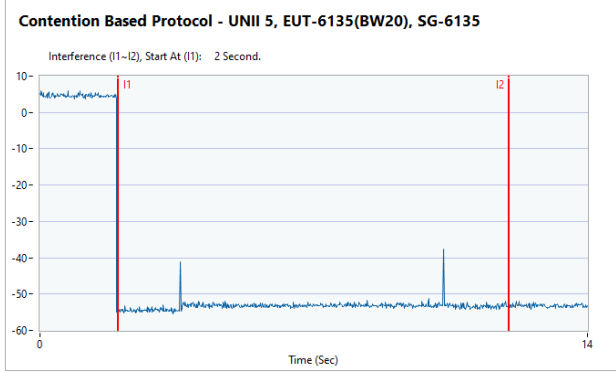
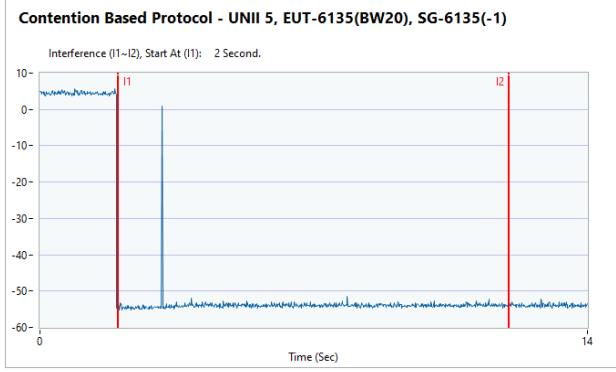
Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (3.0dBi).

Note 2: The antenna gain has included the path loss between RF connector and antenna.

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



3.5.7 Test Plots of Contention Based Protocol Test

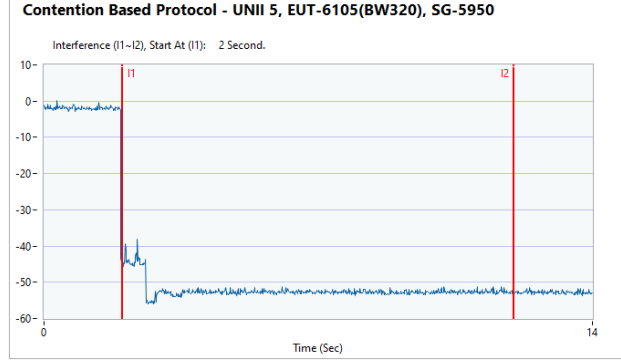
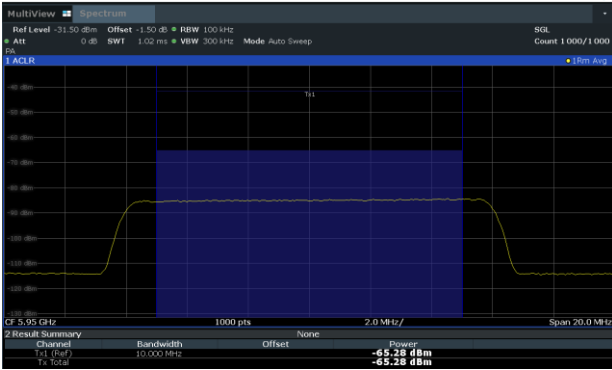
Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)																	
<p>802.11be (EHT20) / 6135MHz Threshold Level (TL) = -69.42 dBm</p>	<p>802.11be (EHT20) / CH37 Test result is pass due to no transmission occur.</p>																
 <table border="1" data-bbox="164 846 780 891"> <thead> <tr> <th colspan="4">2 Result Summary</th> </tr> <tr> <th>Channel</th> <th>Bandwidth</th> <th>Offset</th> <th>Power</th> </tr> </thead> <tbody> <tr> <td>Tx (Ref)</td> <td>10.000 MHz</td> <td></td> <td>-69.42 dBm</td> </tr> <tr> <td>Tx Total</td> <td></td> <td></td> <td>-69.42 dBm</td> </tr> </tbody> </table>	2 Result Summary				Channel	Bandwidth	Offset	Power	Tx (Ref)	10.000 MHz		-69.42 dBm	Tx Total			-69.42 dBm	
2 Result Summary																	
Channel	Bandwidth	Offset	Power														
Tx (Ref)	10.000 MHz		-69.42 dBm														
Tx Total			-69.42 dBm														
<p>802.11be (EHT20) / 6135MHz Threshold Level (TL) = -70.42 dBm</p>	<p>802.11be (EHT20) / CH37 Transmit when the interferer is 1dB lower.</p>																
																	



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

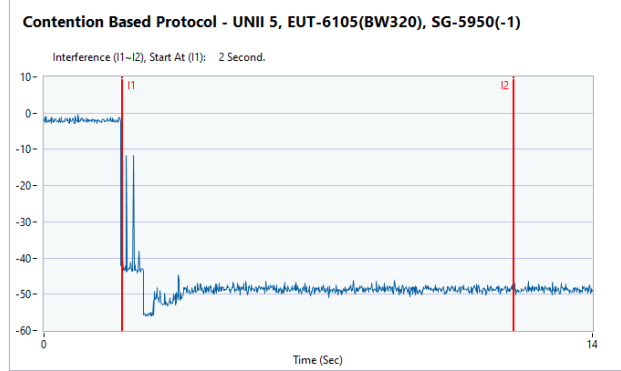
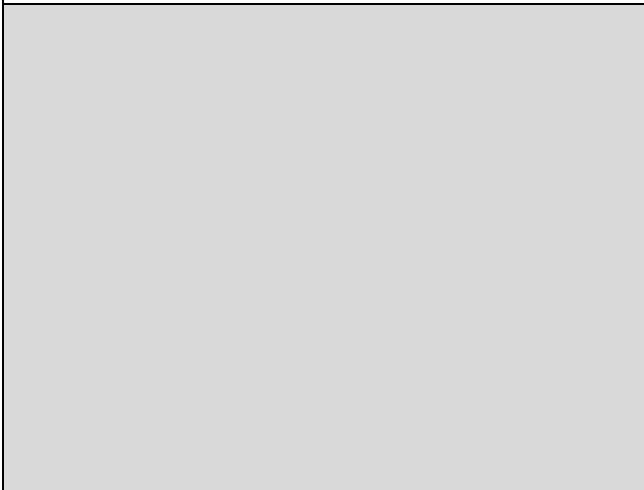
802.11be (EHT320) / 5950MHz (Lower edge)
Threshold Level (TL) = -65.28dBm

802.11be (EHT320) / CH31 (Lower edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 5950MHz (Lower edge)
Threshold Level (TL) = -66.28dBm

802.11be (EHT320) / CH31 (Lower edge)
Transmit when the interferer is 1dB lower.

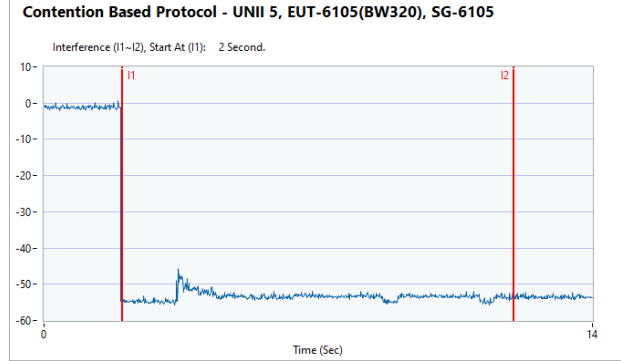
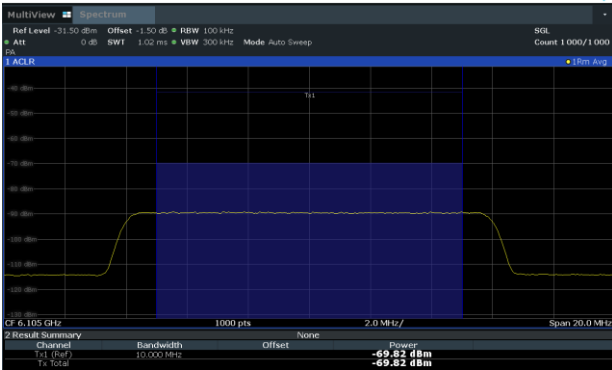




Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

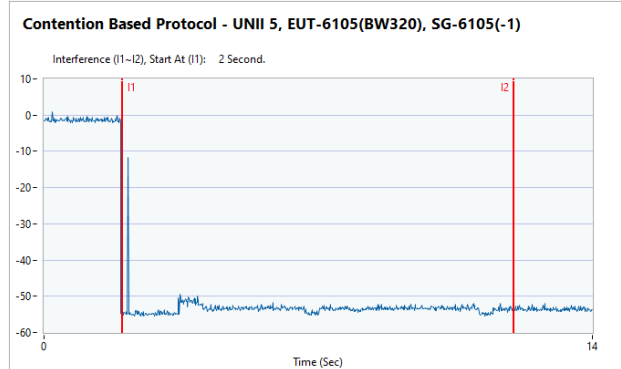
802.11be (EHT320) / 6105MHz (Middle)
Threshold Level (TL) = -69.82dBm

802.11be (EHT320) / CH31 (Middle)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6105MHz (Middle)
Threshold Level (TL) = -70.82dBm

802.11be (EHT320) / CH31 (Middle)
Transmit when the interferer is 1dB lower.

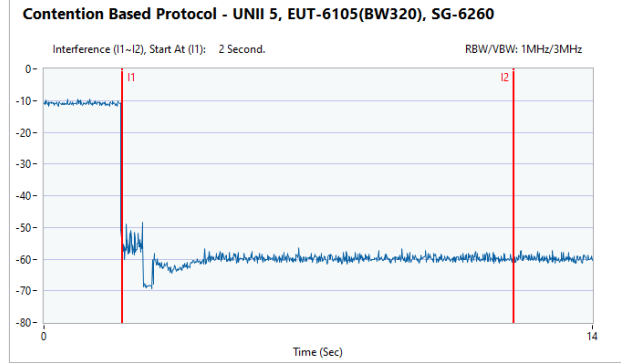
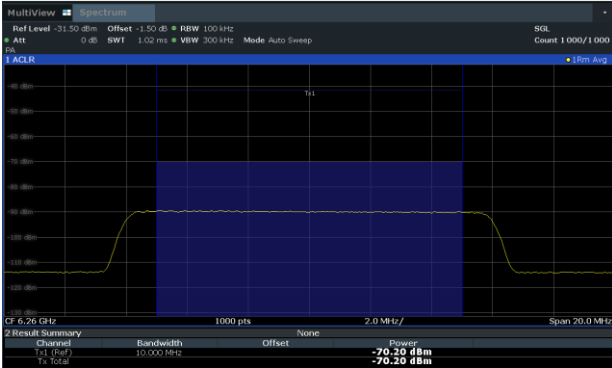




Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

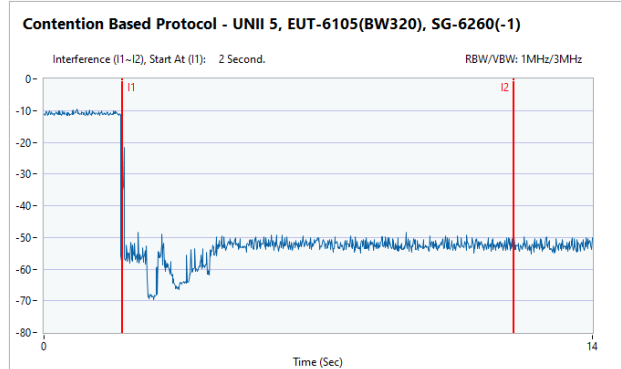
802.11be (EHT320) / 6260MHz (Upper edge)
Threshold Level (TL) = -70.20dBm

802.11be (EHT320) / CH31 (Upper edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6260MHz (Upper edge)
Threshold Level (TL) = -71.20dBm

802.11be (EHT320) / CH31 (Upper edge)
Transmit when the interferer is 1dB lower.

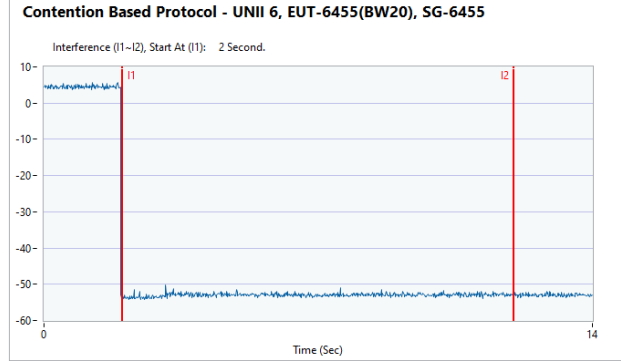
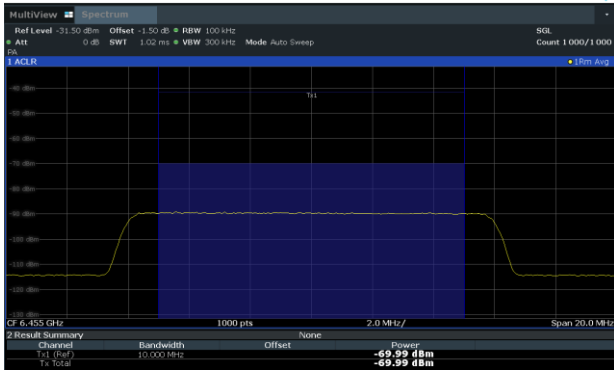




Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

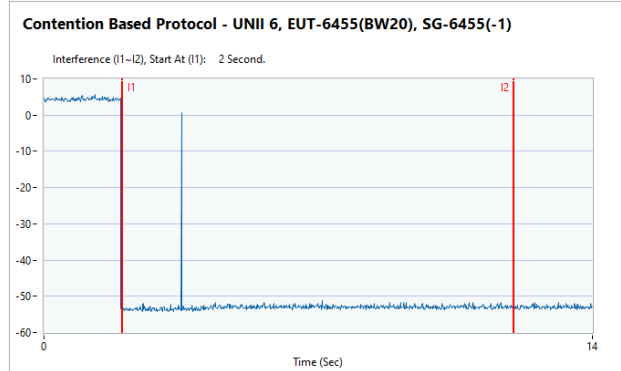
802.11be (EHT20) / 6455MHz
Threshold Level (TL) = -69.99dBm

802.11be (EHT20) / CH101
Test result is pass due to no transmission occur.



802.11be (EHT20) / 6455MHz
Threshold Level (TL) = -70.99dBm

802.11be (EHT20) / CH101
Transmit when the interferer is 1dB lower.

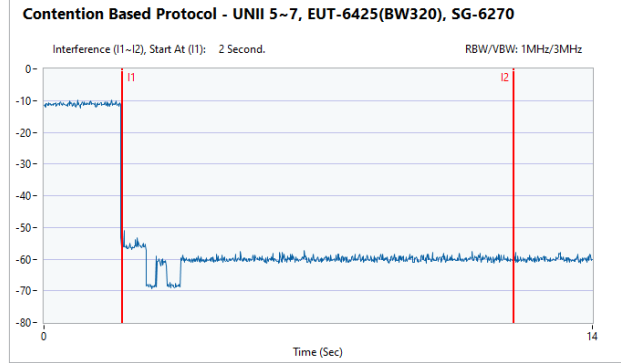
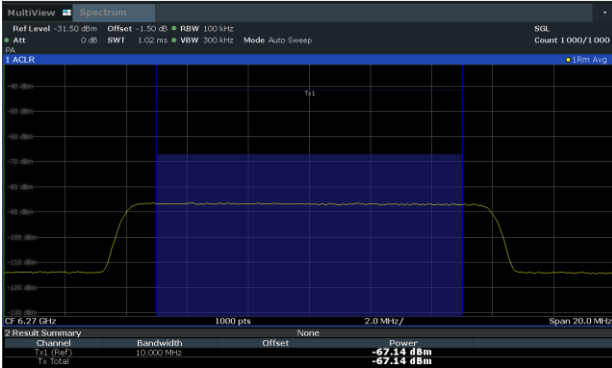




Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

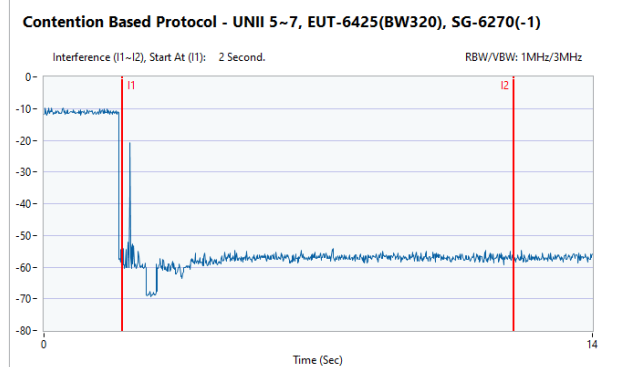
802.11be (EHT320) / 6270MHz (Lower edge)
Threshold Level (TL) = -67.14dBm

802.11be (EHT320) / CH95 (Lower edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6270MHz (Lower edge)
Threshold Level (TL) = -68.14dBm

802.11be (EHT320) / CH95 (Lower edge)
Transmit when the interferer is 1dB lower.

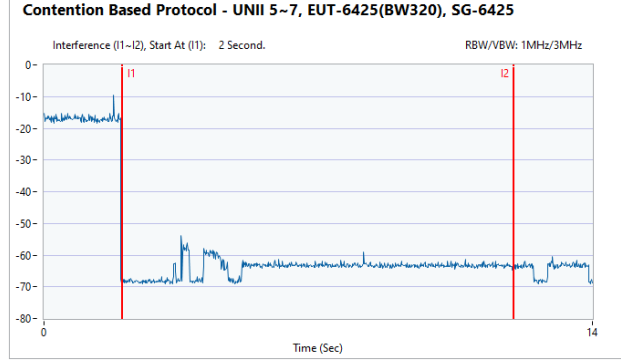
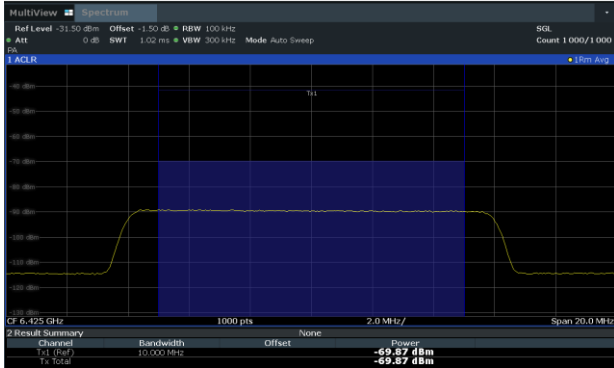




Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

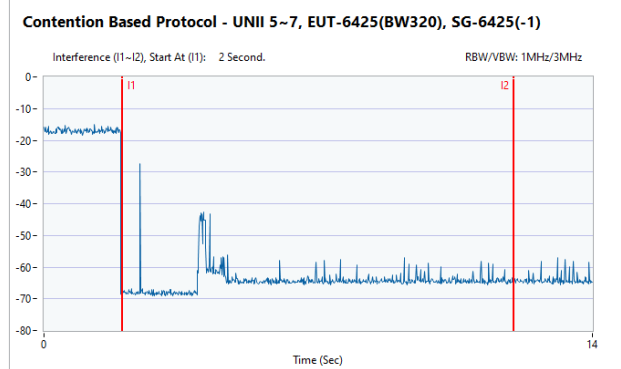
802.11be (EHT320) / 6425MHz (Middle)
Threshold Level (TL) = -69.87dBm

802.11be (EHT320) / CH95 (Middle)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6425MHz (Middle)
Threshold Level (TL) = -70.87dBm

802.11be (EHT320) / CH95 (Middle)
Transmit when the interferer is 1dB lower.

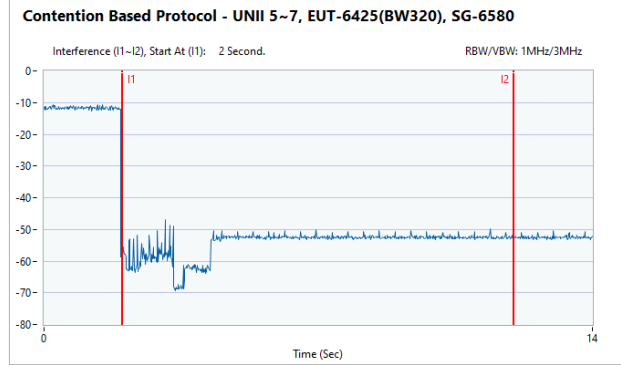
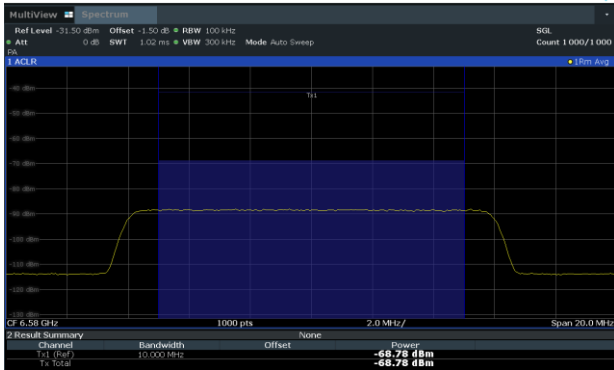




Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

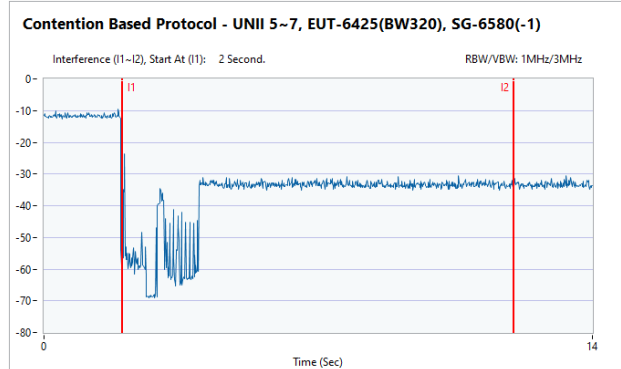
802.11be (EHT320) / 6580MHz (Upper edge)
Threshold Level (TL) = -68.78dBm

802.11be (EHT320) / CH95 (Upper edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6580MHz (Upper edge)
Threshold Level (TL) = -69.78dBm

802.11be (EHT320) / CH95 (Upper edge)
Transmit when the interferer is 1dB lower.

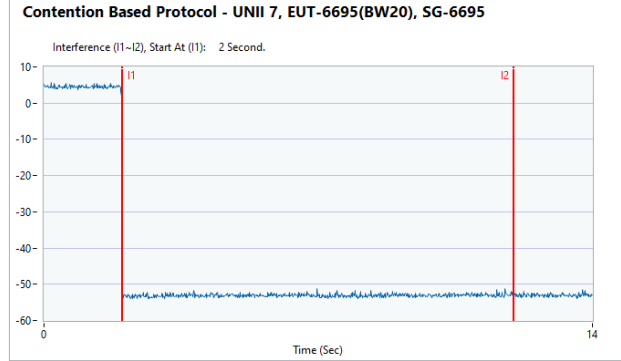
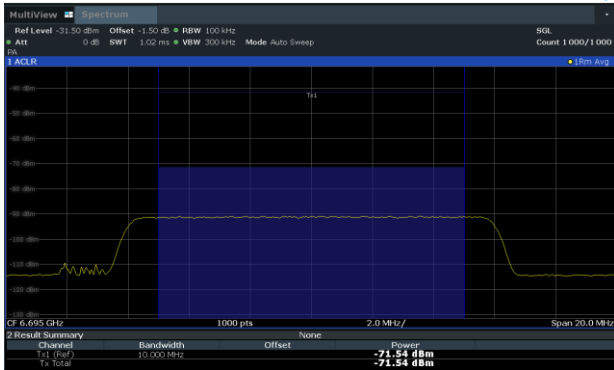




Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

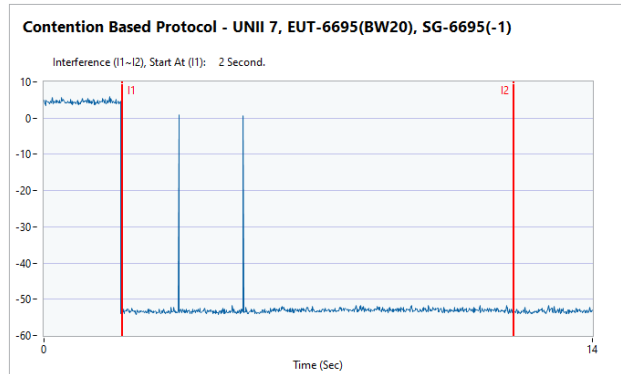
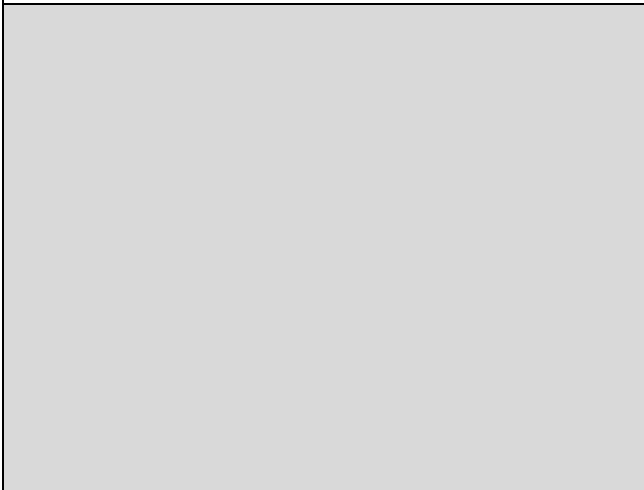
802.11be (EHT20) / 6695MHz
Threshold Level (TL) = -71.54dBm

802.11be (EHT20) / CH149
Test result is pass due to no transmission occur.



802.11be (EHT20) / 6695MHz
Threshold Level (TL) = -72.54dBm

802.11be (EHT20) / CH149
Transmit when the interferer is 1dB lower.

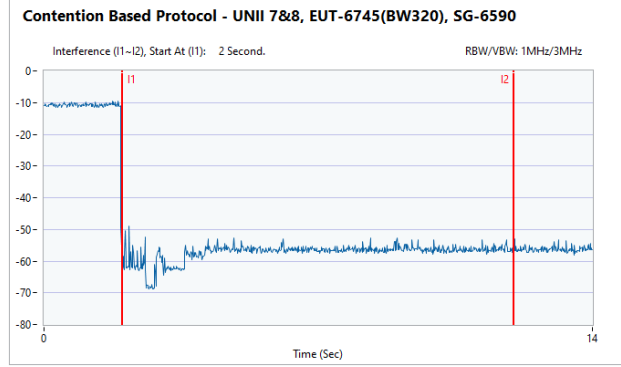
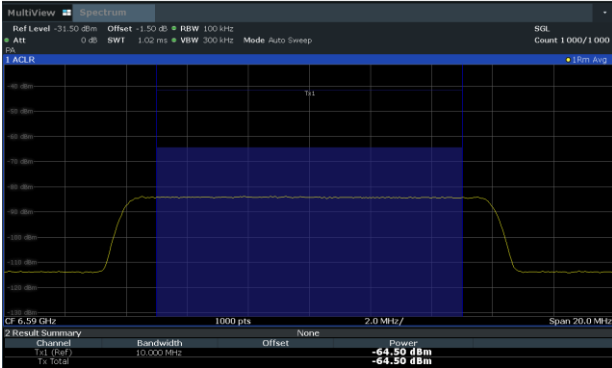




Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

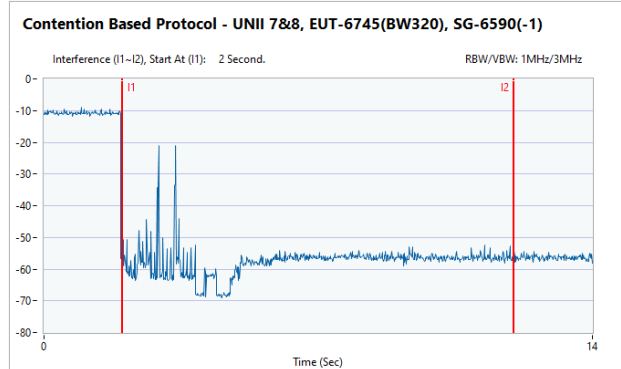
802.11be (EHT320) / 6590MHz (Lower edge)
Threshold Level (TL) = -64.50dBm

802.11be (EHT320) / CH159 (Lower edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6590MHz (Lower edge)
Threshold Level (TL) = -65.50dBm

802.11be (EHT320) / CH159 (Lower edge)
Transmit when the interferer is 1dB lower.

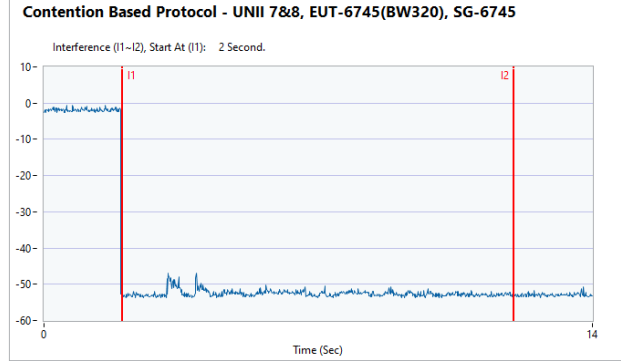
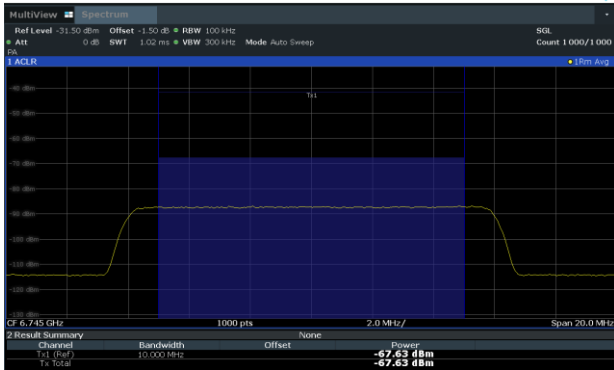




Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

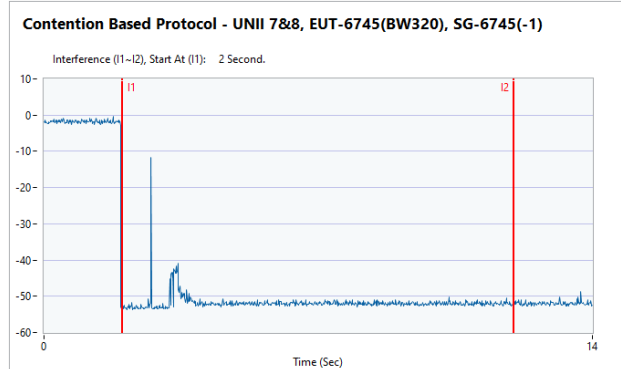
802.11be (EHT320) / 6745MHz (Middle)
Threshold Level (TL) = -67.63dBm

802.11be (EHT320) / CH159 (Middle)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6745MHz (Middle)
Threshold Level (TL) = -68.63dBm

802.11be (EHT320) / CH159 (Middle)
Transmit when the interferer is 1dB lower.

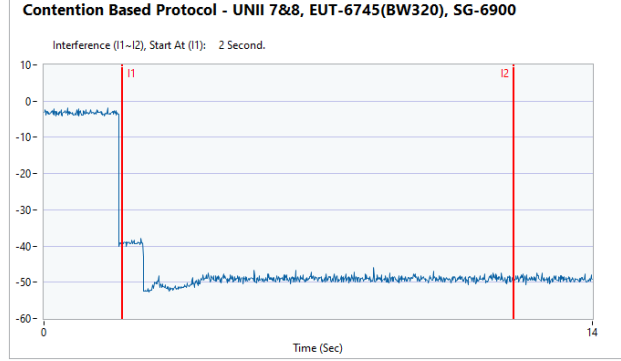
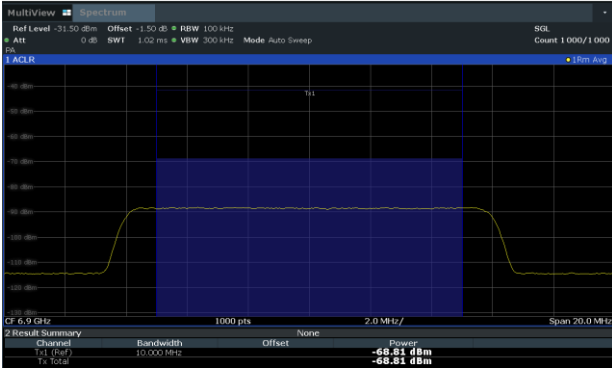




Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

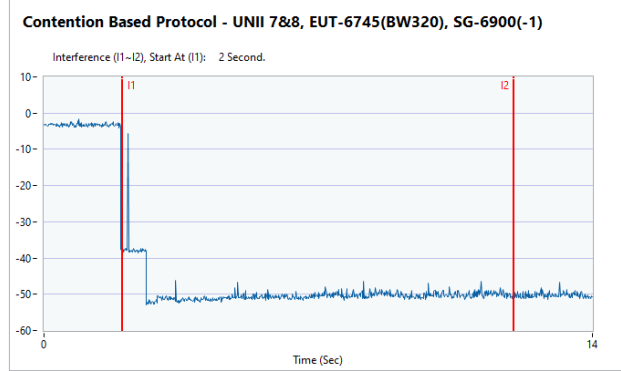
802.11be (EHT320) / 6900MHz (Upper edge)
Threshold Level (TL) = -68.81dBm

802.11be (EHT320) / CH159 (Upper edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6900MHz (Upper edge)
Threshold Level (TL) = -69.81dBm

802.11be (EHT320) / CH159 (Upper edge)
Transmit when the interferer is 1dB lower.

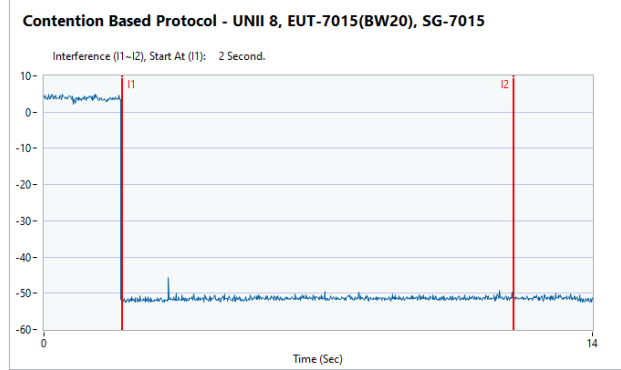
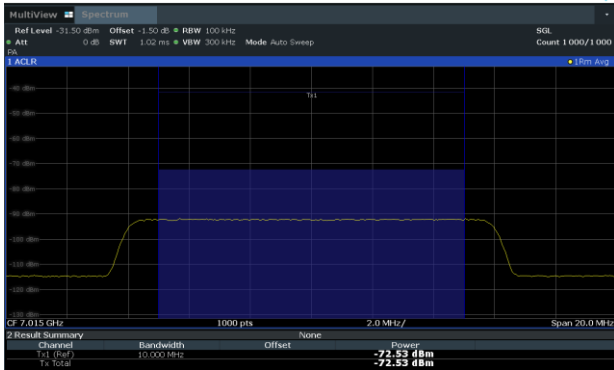




Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

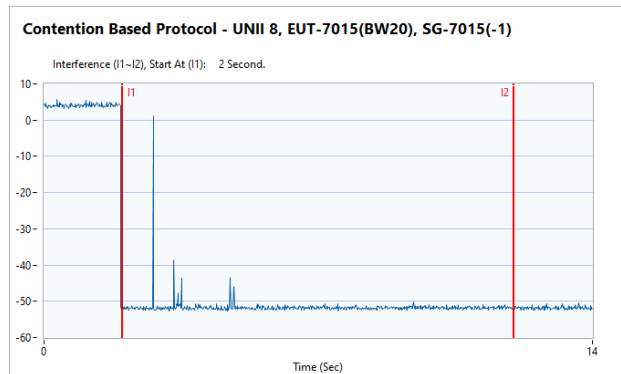
802.11be (EHT20) / 7015MHz
Threshold Level (TL) = -72.53dBm

802.11be (EHT20) / CH213
Test result is pass due to no transmission occur.



802.11be (EHT20) / 7015MHz
Threshold Level (TL) = -73.53dBm

802.11be (EHT20) / CH213
Transmit when the interferer is 1dB lower.

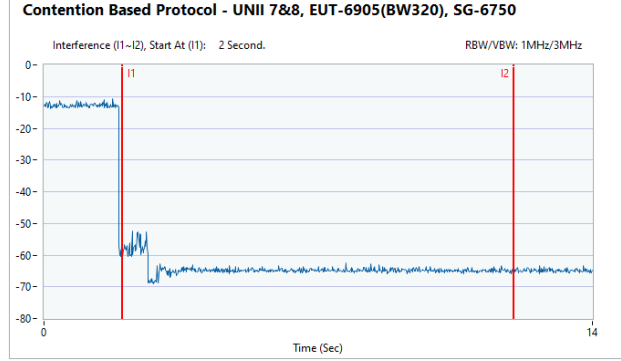
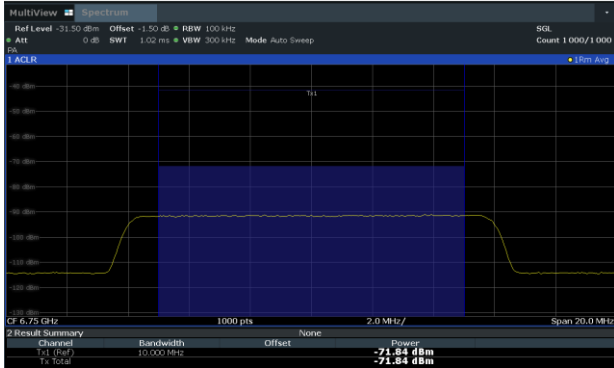




Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

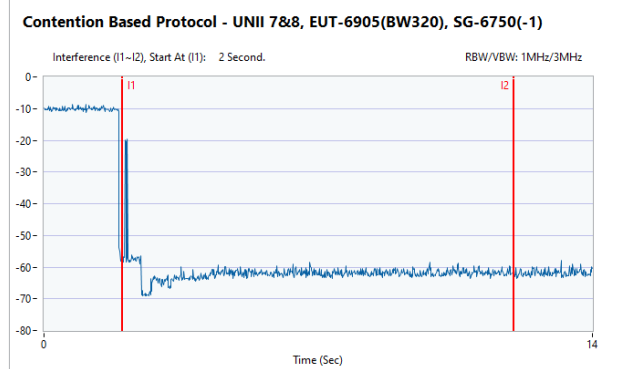
802.11be (EHT320) / 6750MHz (Lower edge)
Threshold Level (TL) = -71.84dBm

802.11be (EHT320) / CH191 (Lower edge)
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6750MHz (Lower edge)
Threshold Level (TL) = -72.84dBm

802.11be (EHT320) / CH191 (Lower edge)
Transmit when the interferer is 1dB lower.



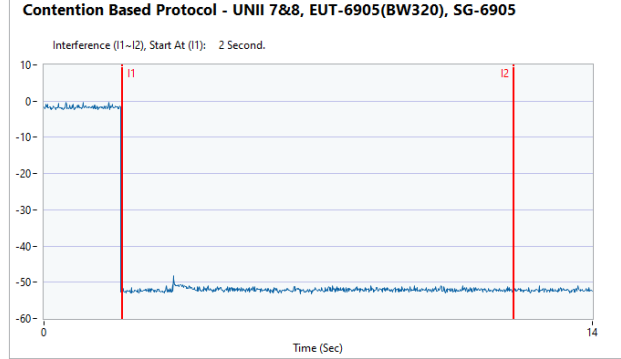
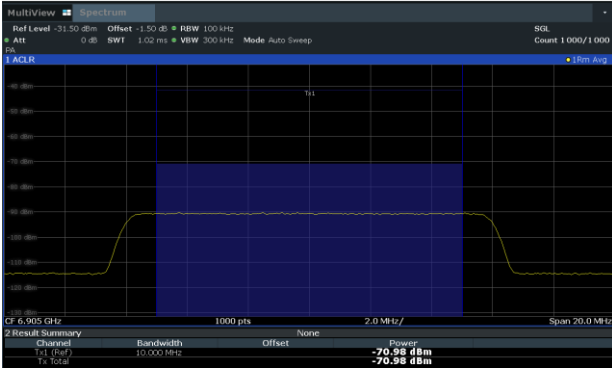


Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

802.11be (EHT320) / 6905MHz (Middle)
Threshold Level (TL) = -70.98dBm

802.11be (EHT320) / CH191 (Middle)

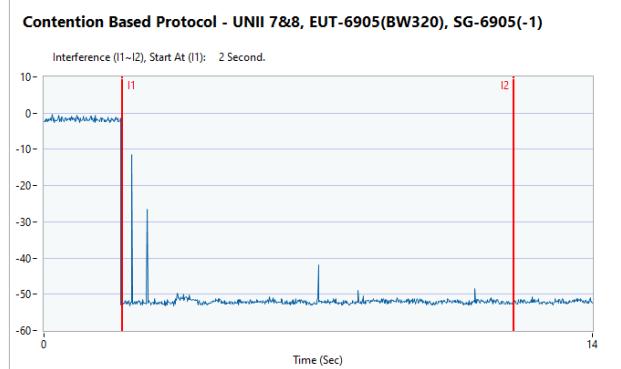
Test result is pass due to no transmission occur.



802.11be (EHT320) / 6905MHz (Middle)
Threshold Level (TL) = -71.98dBm

802.11be (EHT320) / CH191 (Middle)

Transmit when the interferer is 1dB lower.





Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)	
<p>802.11be (EHT320) / 7060MHz (Upper edge) Threshold Level (TL) = -75.37dBm</p>	<p>802.11be (EHT320) / CH191 (Upper edge) Test result is pass due to no transmission occur.</p>
<p>802.11be (EHT320) / 7060MHz (Upper edge) Threshold Level (TL) = -76.37dBm</p>	<p>802.11be (EHT320) / CH191 (Upper edge) Transmit when the interferer is 1dB lower.</p>

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.

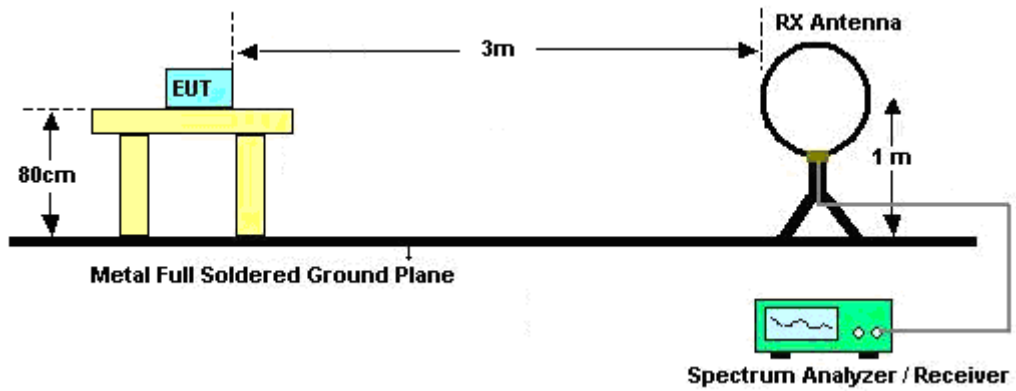


3.6.3 Test Procedures

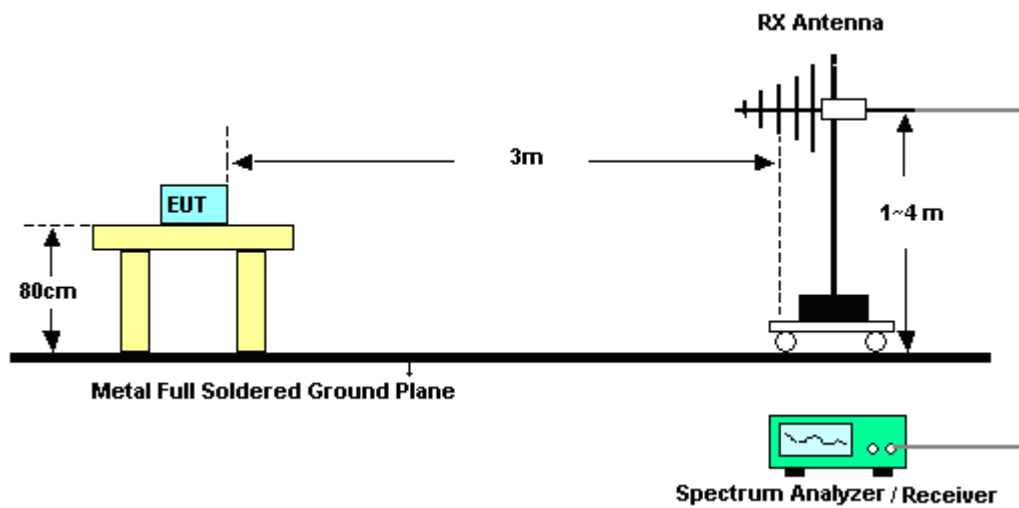
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak 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

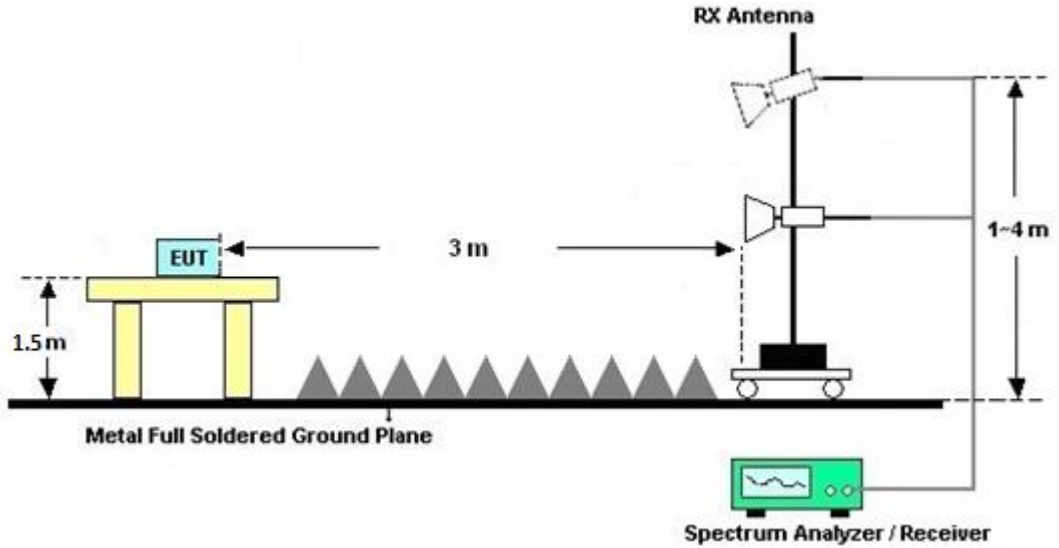
For radiated emissions below 30MHz



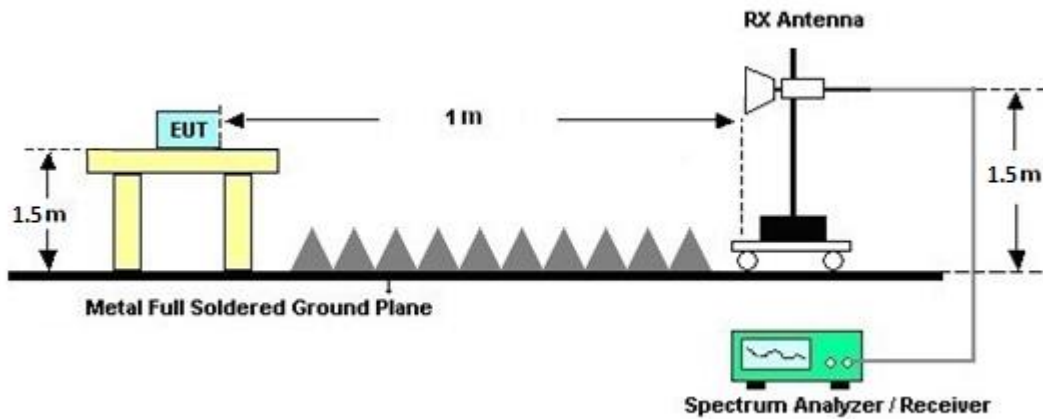
For radiated emissions from 30MHz to 1GHz



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.

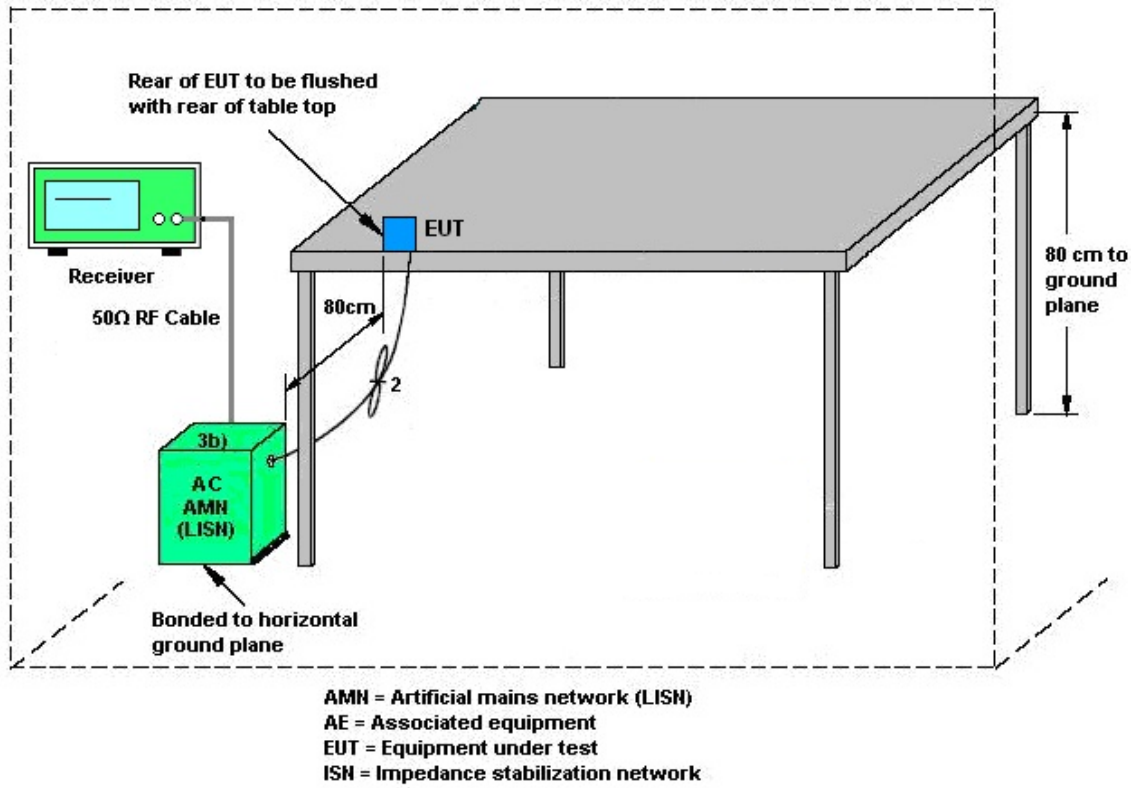
3.7.2 Measuring Instruments

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.

3.7.4 Test Setup



3.7.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.8 Antenna Requirements

3.8.1 Standard Applicable

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
RF Vector Signal Generator	Keysight	N5182B	MY57300963	9KHz~6GHz	Mar. 25, 2023	Oct. 20, 2023~ Oct. 23, 2023	Mar. 24, 2024	CBP (DFS01-CA)
Frequency Extender for EXG or MXG	Keysight	N5182BX07	MY59360230	9kHz~7.2GHz	Mar. 25, 2023	Oct. 20, 2023~ Oct. 23, 2023	Mar. 24, 2024	CBP (DFS01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSW43	104042	2Hz~43GHz	Dec. 11, 2022	Oct. 20, 2023~ Oct. 23, 2023	Dec. 10, 2023	CBP (DFS01-CA)
Hygrometer	Testo	608-H1	45142588	Temperature & Humidity	Jul. 26, 2023	Oct. 20, 2023~ Oct. 23, 2023	Jul. 25, 2024	CBP (DFS01-CA)
Manual Step Attenuator	Keysight	8496B	MY42151805	N/A	Jan. 30, 2023	Oct. 20, 2023~ Oct. 23, 2023	Jan. 29, 2024	CBP (DFS01-CA)
Manual Step Attenuator	Keysight	8496B	MY42158324	N/A	Jan. 30, 2023	Oct. 20, 2023~ Oct. 23, 2023	Jan. 29, 2024	CBP (DFS01-CA)
Power Divider	Woken	0120A0405800 1M	DDTB6SW3G 2	0.5Hz-8GHz	Calibration from System	Oct. 20, 2023~ Oct. 23, 2023	Calibration from System	CBP (DFS01-CA)
Power Divider	Woken	0120A0405800 1M	DDTB6SW3A 7	0.5GHz-8GHz	Calibration from System	Oct. 20, 2023~ Oct. 23, 2023	Calibration from System	CBP (DFS01-CA)
Power Divider	Woken	0120A0205800 1M	DDTB6SW5A 4	0.5GHz-8GHz	Calibration from System	Oct. 20, 2023~ Oct. 23, 2023	Calibration from System	CBP (DFS01-CA)
Hygrometer	Testo	608-H1	45141354	N/A	July 26, 2023	Aug. 16, 2023~ Nov. 20, 2023	Jul. 25, 2024	Conducted (TH01-CA)
Power Sensor	DARE!!	RPR3008W	RPR8W-2301 002	10MHz-8GHz	Feb. 08, 2023	Aug. 16, 2023~ Nov. 20, 2023	Feb. 07, 2024	Conducted (TH01-CA)
Switch Box	EM Electronics	EMSW18	1070902	N/A	Aug. 25, 2023	Aug. 16, 2023~ Nov. 20, 2023	Aug. 24, 2024	Conducted (TH01-CA)
Switch Box	EM Electronics	EMSW26	1090304	N/A	Dec. 05, 2022	Aug. 16, 2023~ Nov. 20, 2023	Dec. 04, 2023	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101089	10Hz-40GHz	May .22, 2023	Aug. 16, 2023~ Nov. 20, 2023	May .21, 2024	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101545	10Hz-40GHz	May 03, 2023	Aug. 16, 2023~ Nov. 20, 2023	May 02, 2024	Conducted (TH01-CA)
Loop Antenna	R&S	HFH2-Z2E	100840	9kHz~30MHz	Jun. 29, 2023	Aug. 01, 2023~ Aug. 28, 2023	Jun. 28, 2024	Radiation (03CH02-CA)
Bilog Antenna	TESEQ	6111D	54683	30MHz~1GHz	Nov. 01, 2022	Aug. 01, 2023~ Aug. 28, 2023	Oct. 31, 2023	Radiation (03CH02-CA)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	02140	1GHz~18GHz	Jan. 09, 2023	Aug. 01, 2023~ Aug. 28, 2023	Jan. 08, 2024	Radiation (03CH02-CA)
Horn Antenna	SCHWARZBE CK	BBHA9170	00841	18GHz~40GHz	Sep. 12, 2022	Aug. 01, 2023~ Aug. 28, 2023	Sep. 11, 2023	Radiation (03CH02-CA)
Amplifier	SONOMA	310N	372240	N/A	May 03, 2023	Aug. 01, 2023~ Aug. 28, 2023	May 02, 2024	Radiation (03CH02-CA)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Preamplifier	Keysight	83017A	MY53270323	1GHz~26.5GHz	May 04, 2023	Aug. 01, 2023~ Aug. 28, 2023	May 03, 2024	Radiation (03CH02-CA)
Preamplifier	E-instrument	ERA-100M-18 G-56-01-A70	EC1900252	1GHz~18GHz	May 23, 2023	Aug. 01, 2023~ Aug. 28, 2023	May 22, 2024	Radiation (03CH02-CA)
Preamplifier	EMEC	EMC18G40G	060725	18GHz~40GHz	May 04, 2023	Aug. 01, 2023~ Aug. 28, 2023	May 03, 2024	Radiation (03CH02-CA)
RF Cable	HUBER+SUHNER	SUCOFLEX 102	804209/2, 802406/2, 802875/2, 802952/2	N/A	Nov. 14, 2022	Aug. 01, 2023~ Aug. 28, 2023	Nov. 13, 2023	Radiation (03CH02-CA)
High Pass Filter	WOKEN	WFIL-H8000-2 5000F-01	WR32BNW2B 1	8G~25G	Jun. 05, 2023	Aug. 01, 2023~ Aug. 28, 2023	Jun. 04, 2024	Radiation (03CH02-CA)
Filter	Wainwright	WLK12-1200-1 272-11000-40 SS	SN2	1.2GHz Low Pass Filter	Jun. 05, 2023	Aug. 01, 2023~ Aug. 28, 2023	Jun. 04, 2024	Radiation (03CH02-CA)
Hygrometer	TESEO	608-H1	45142602	N/A	Sep. 12, 2022	Aug. 01, 2023~ Aug. 28, 2023	Sep. 11, 2023	Radiation (03CH02-CA)
Controller	ChainTek	EM-1000	060876	NA	N/A	Aug. 01, 2023~ Aug. 28, 2023	N/A	Radiation (03CH02-CA)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Aug. 01, 2023~ Aug. 28, 2023	N/A	Radiation (03CH02-CA)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Aug. 01, 2023~ Aug. 28, 2023	N/A	Radiation (03CH02-CA)
Software	Audix	E3	N/A	N/A	N/A	Aug. 01, 2023~ Aug. 28, 2023	N/A	Radiation (03CH02-CA)
LISN	TESEQ	NNB51	47415	N/A	Aug. 04, 2023	Sep. 21, 2023	Aug. 03, 2024	Conduction (CO01-CA)
EMI Test Receiver	R&S	ESR7	102177	9kHz~7GHz	May 23, 2023	Sep. 21, 2023	May 22, 2024	Conduction (CO01-CA)
Pulse limiter with 10dB attenuation	R&S	VTSD 9561-F N	9561-F- N00412	N/A	Jun. 05, 2023	Sep. 21, 2023	Jun. 04, 2024	Conduction (CO01-CA)
Test Software	R&S	EMC32 V10.30.0	N/A	N/A	N/A	Sep. 21, 2023	N/A	Conduction (CO01-CA)



5 Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.0 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.2 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.4 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Liliana Gonzalez / Vincent Lam	Temperature:	16.7~25	°C
Test Date:	2023/08/16 ~ 2023/11/20	Relative Humidity:	32.2~62.5	%