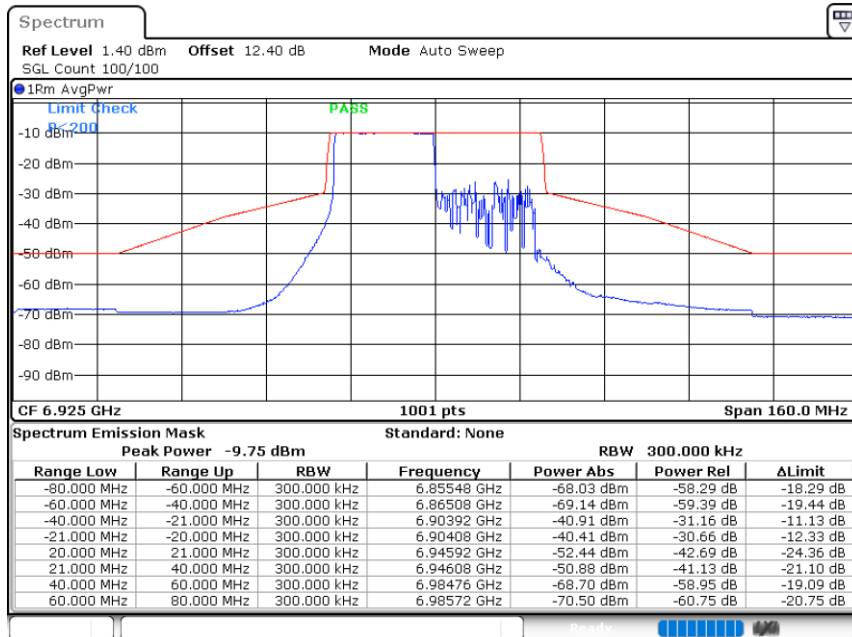


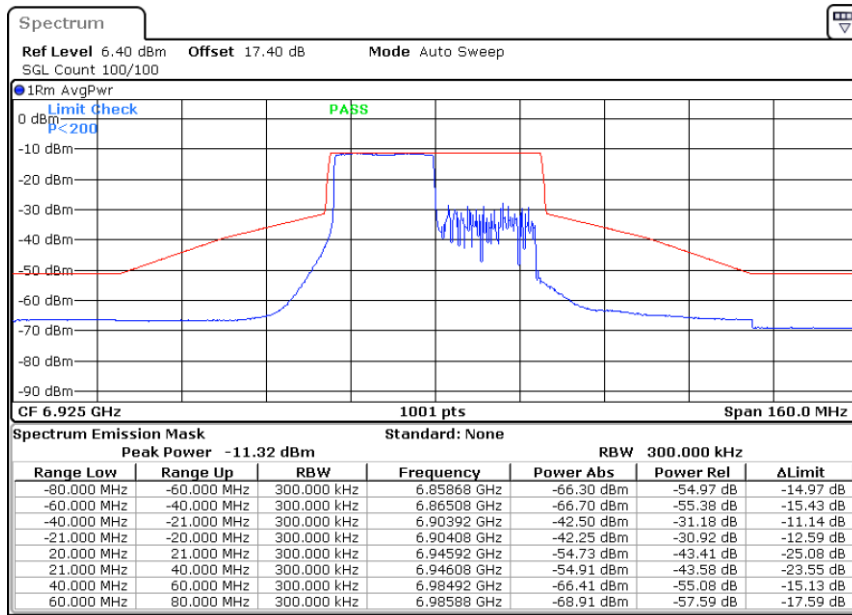


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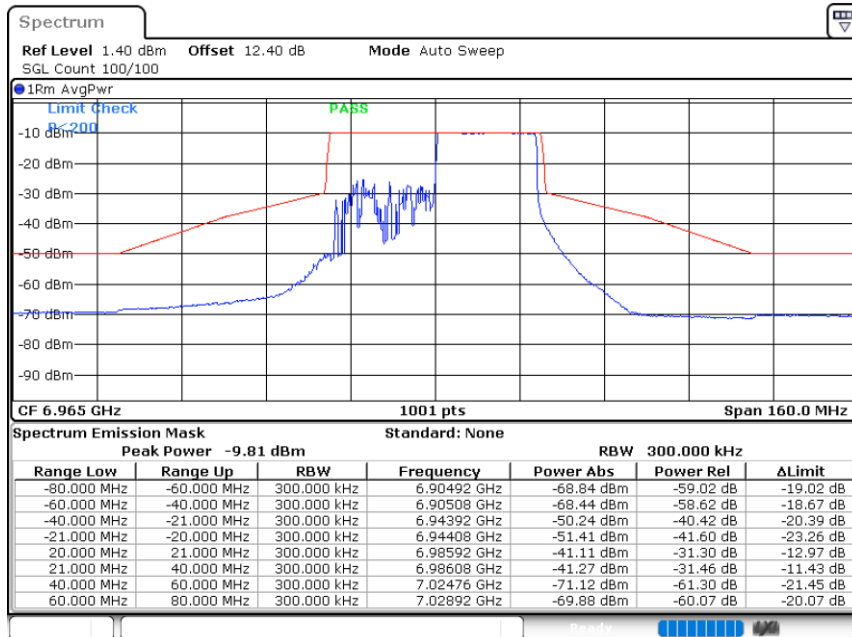
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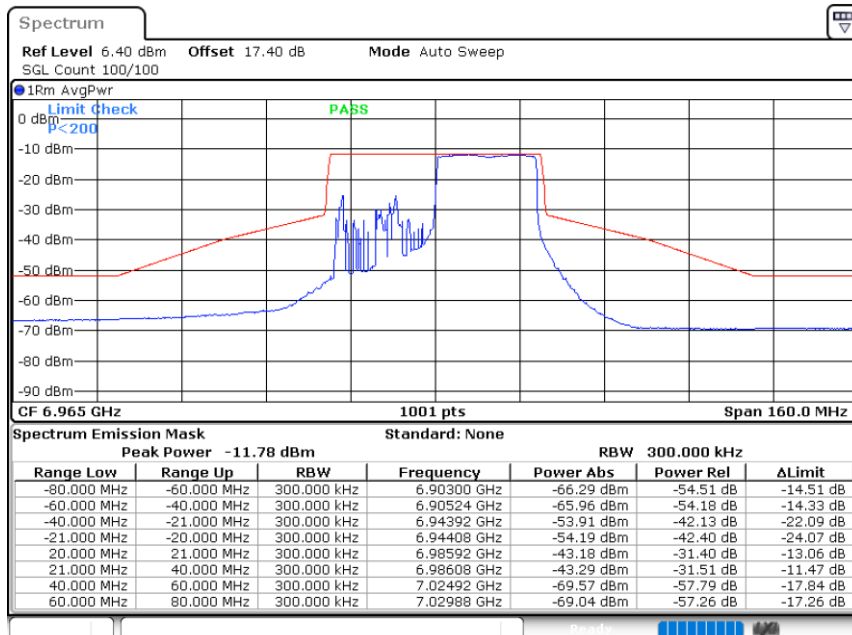


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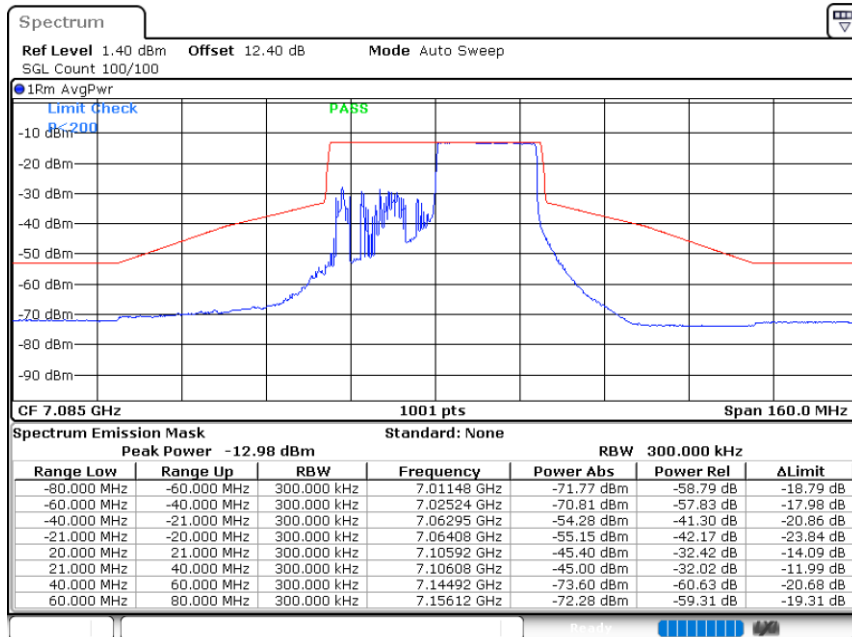
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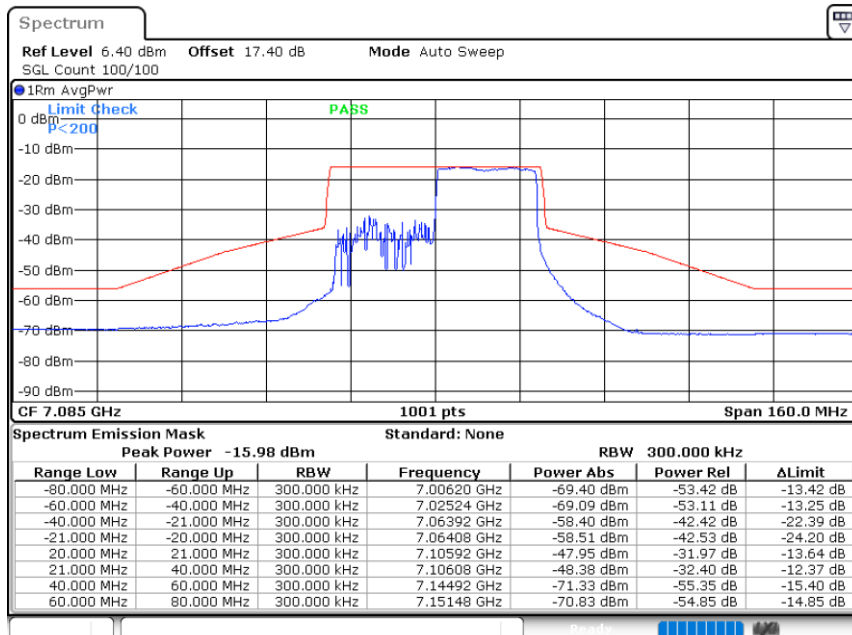


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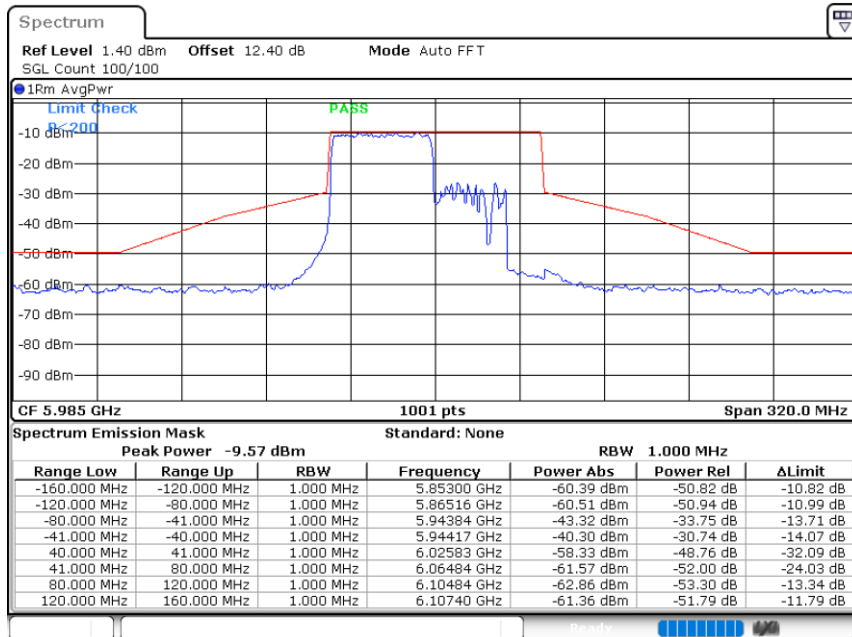
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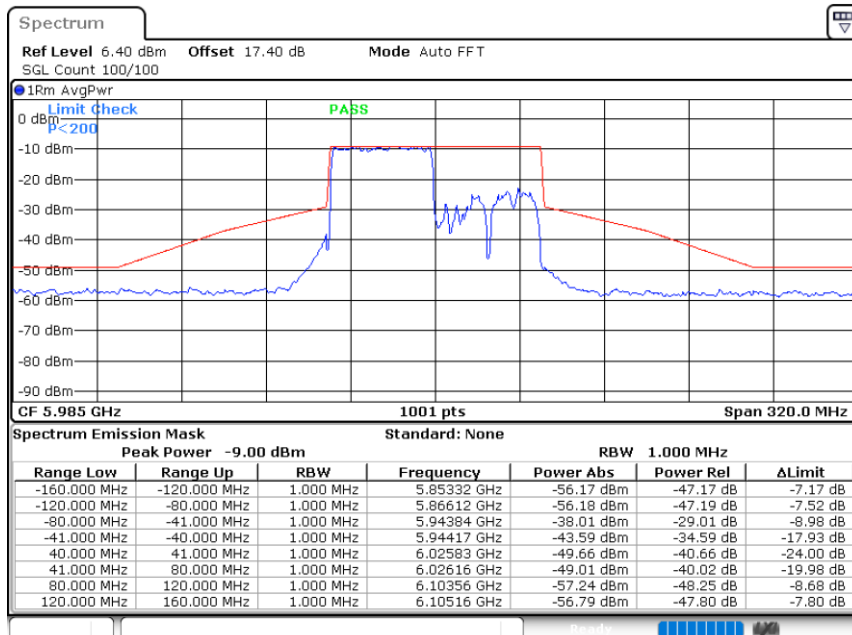


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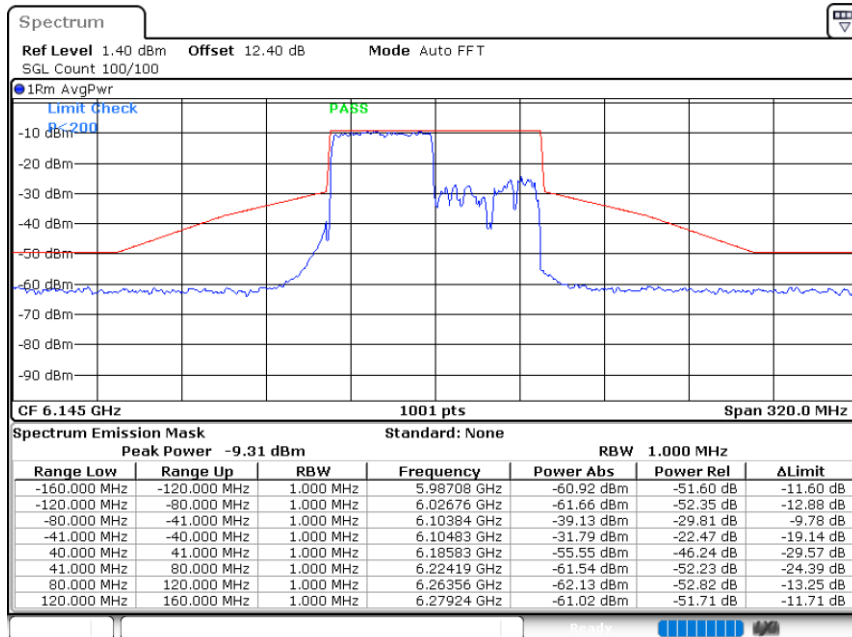
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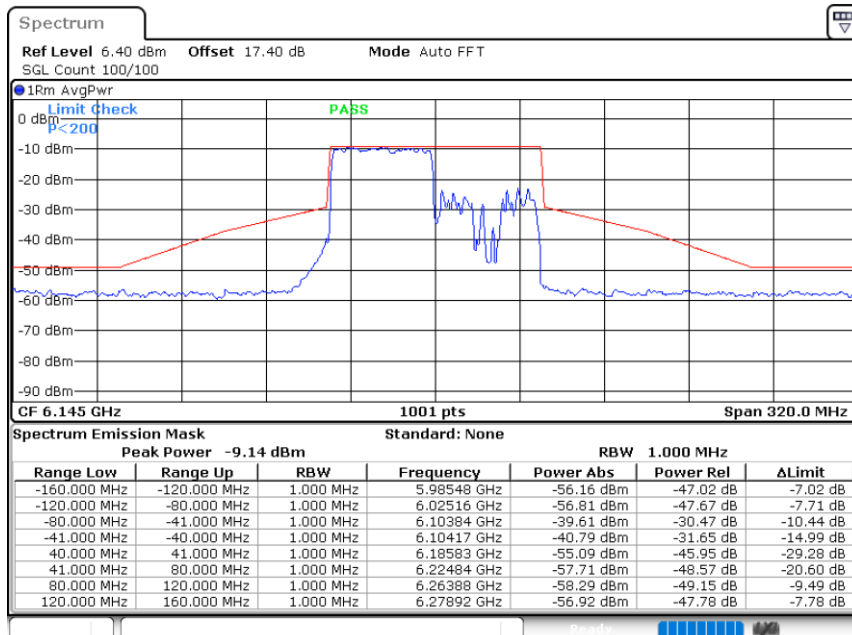


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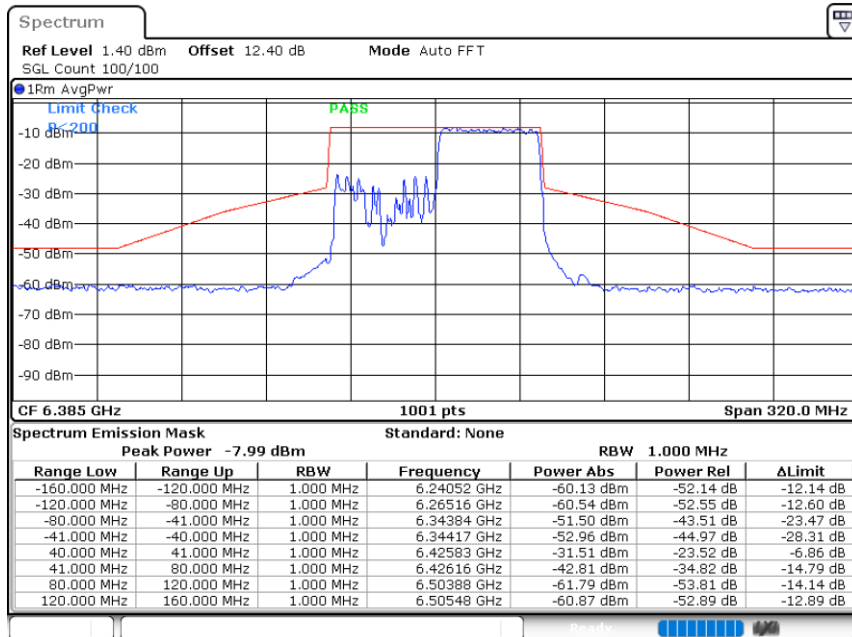
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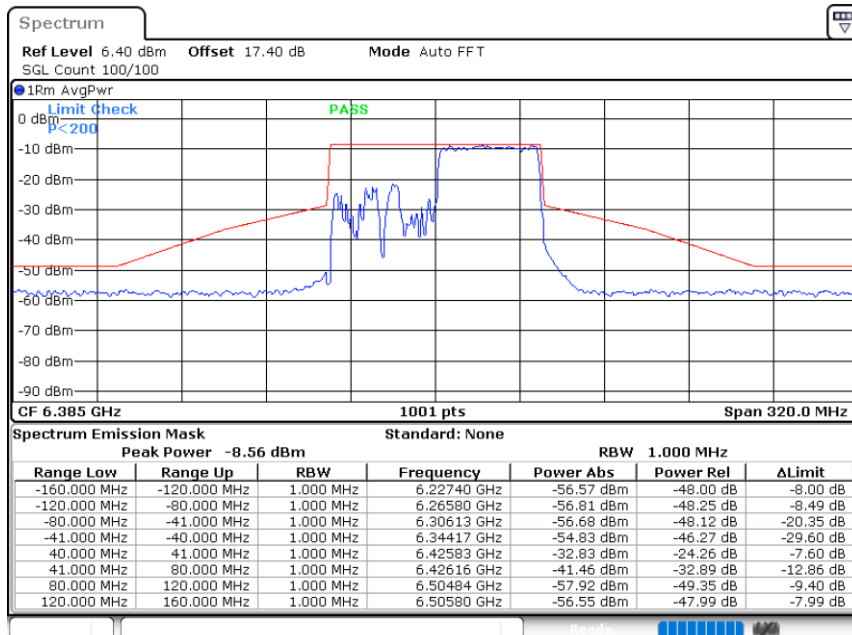


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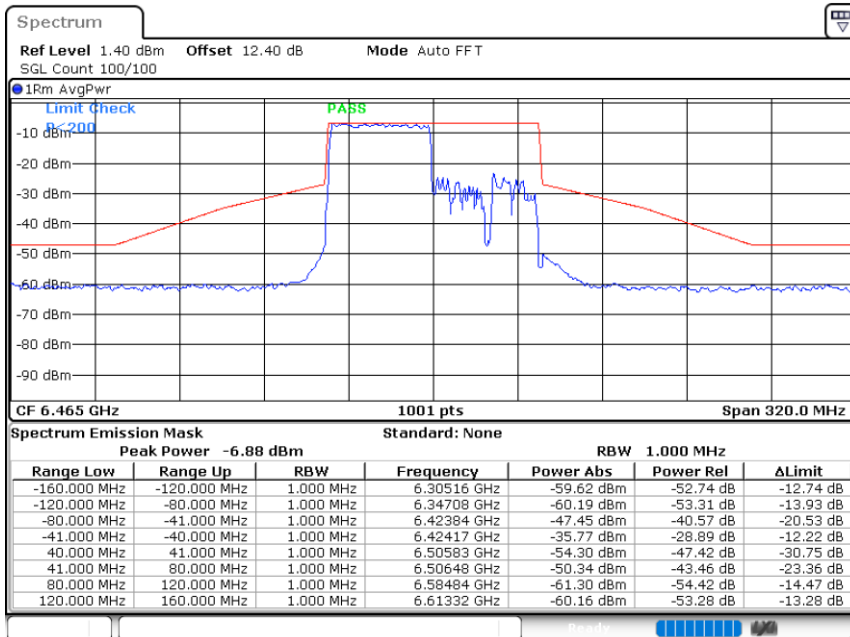
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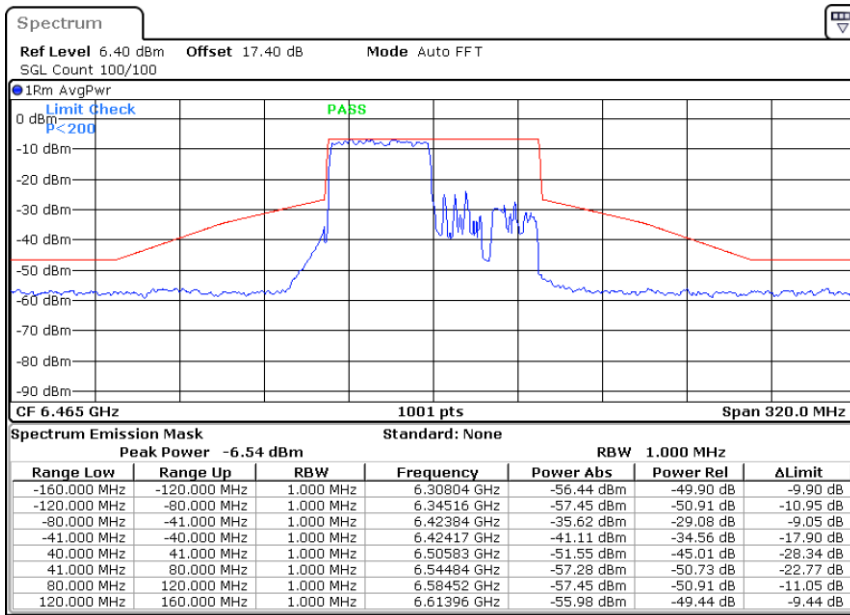


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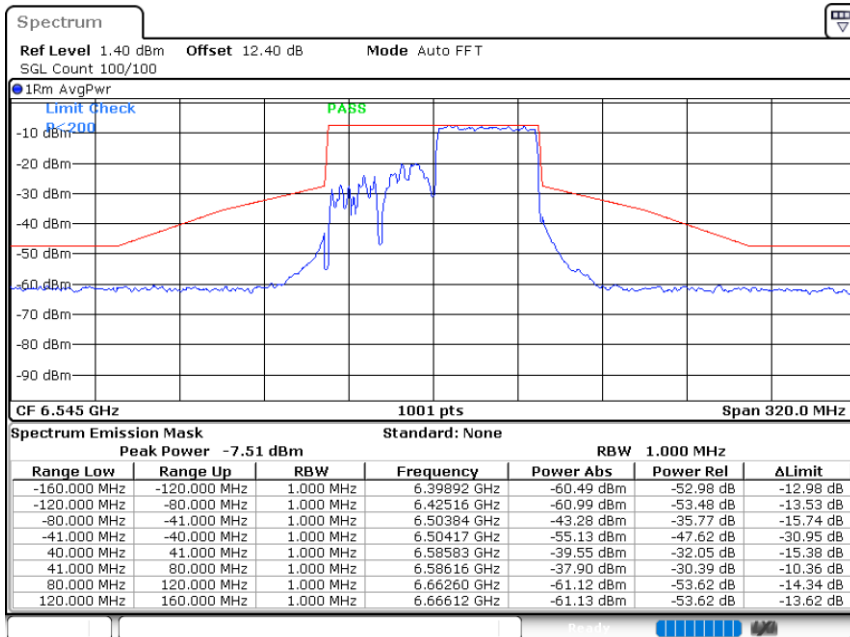
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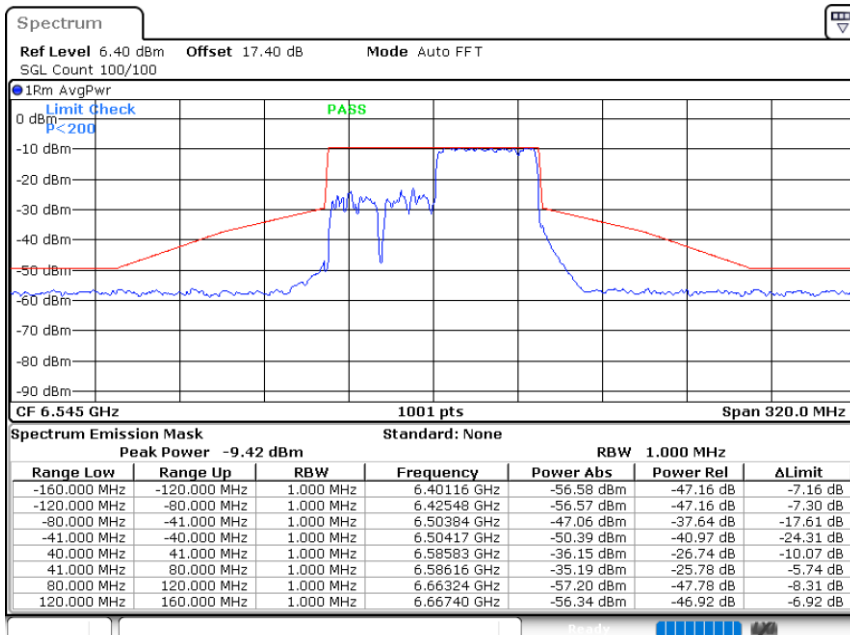


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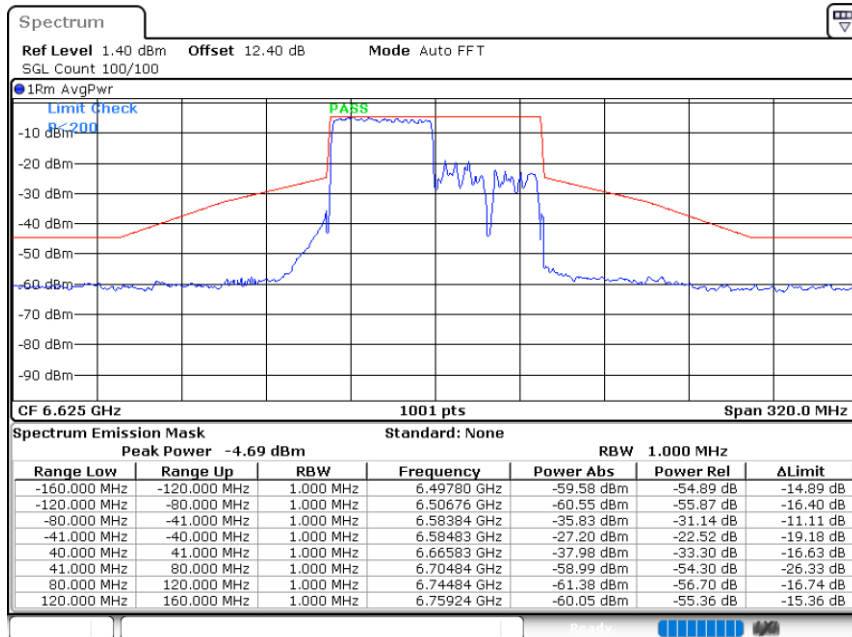
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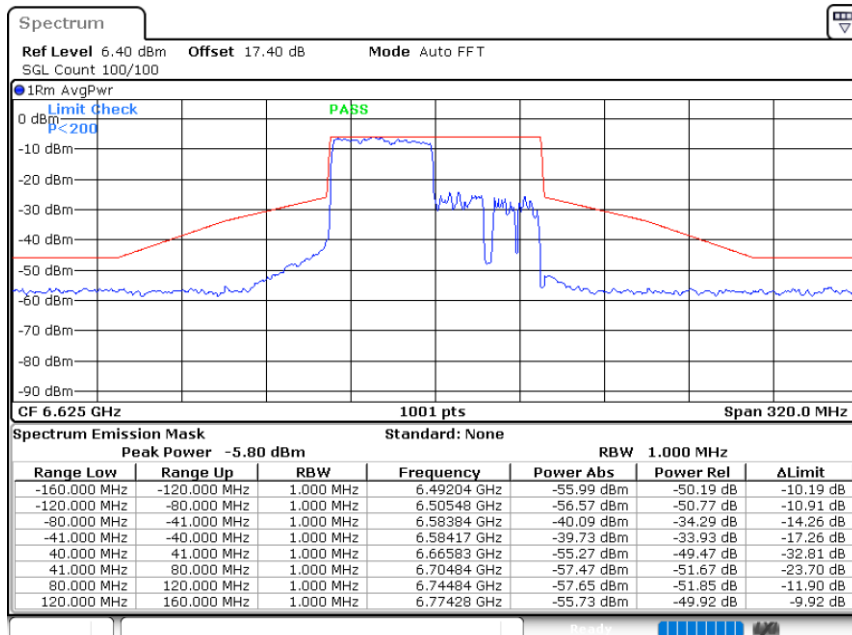


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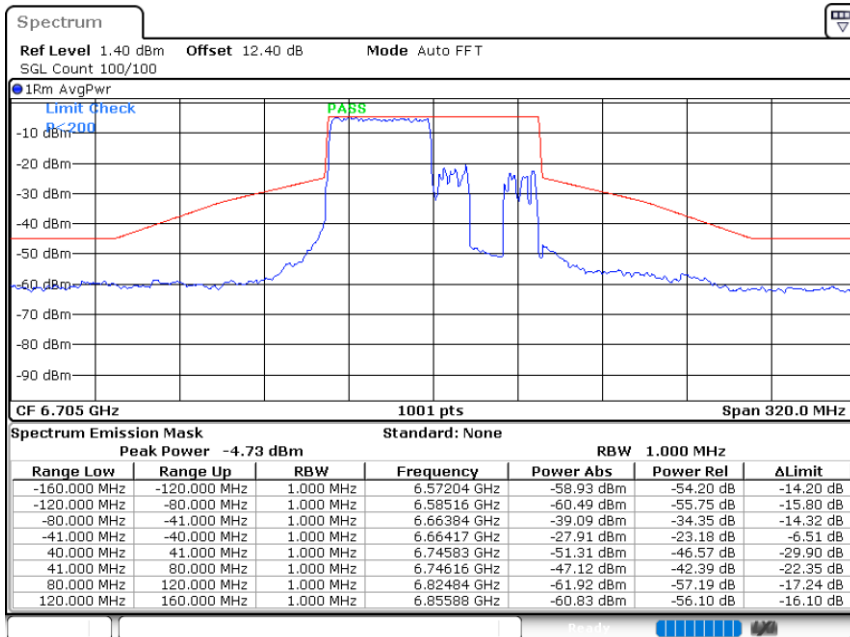
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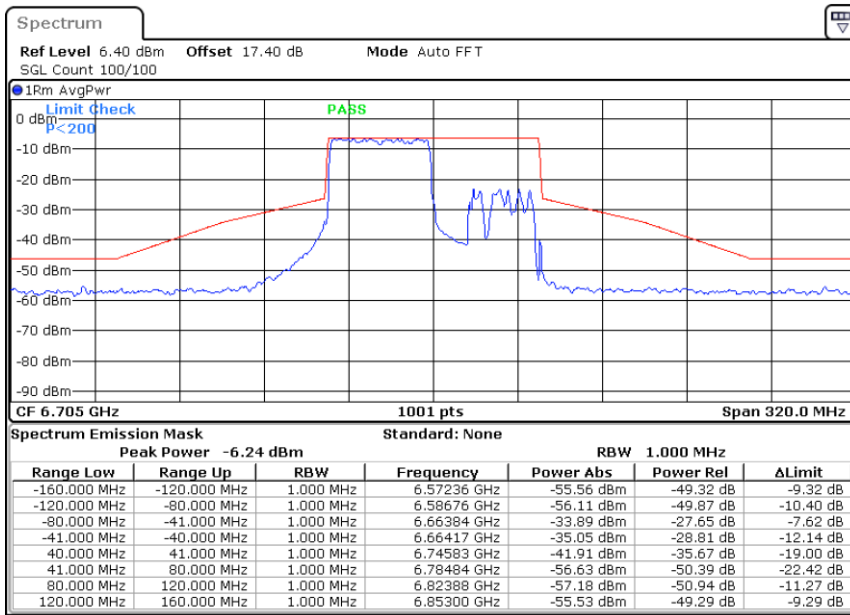


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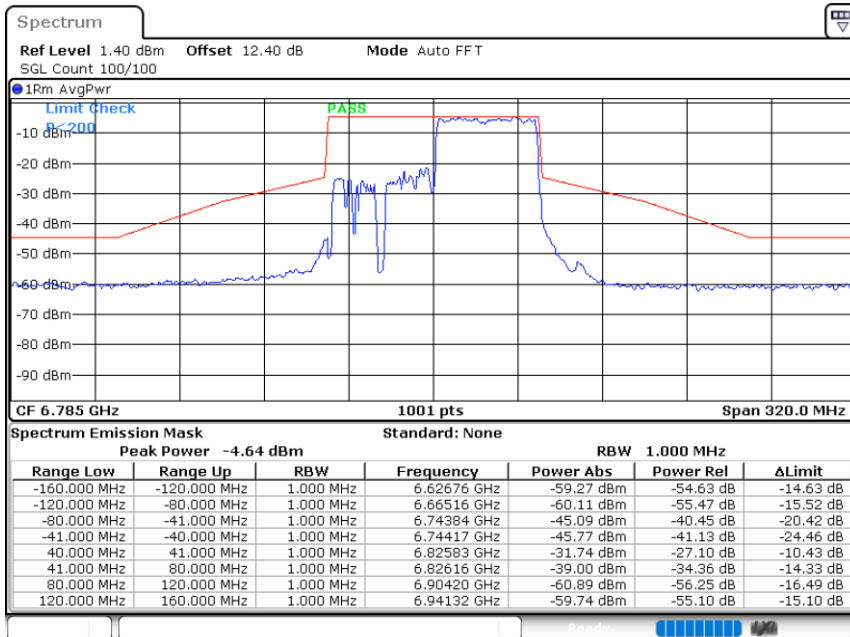
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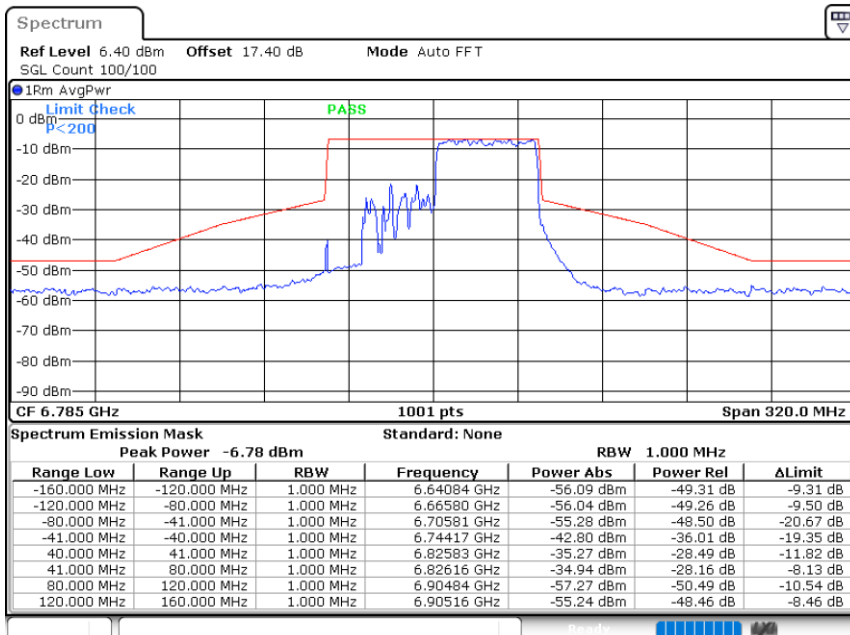


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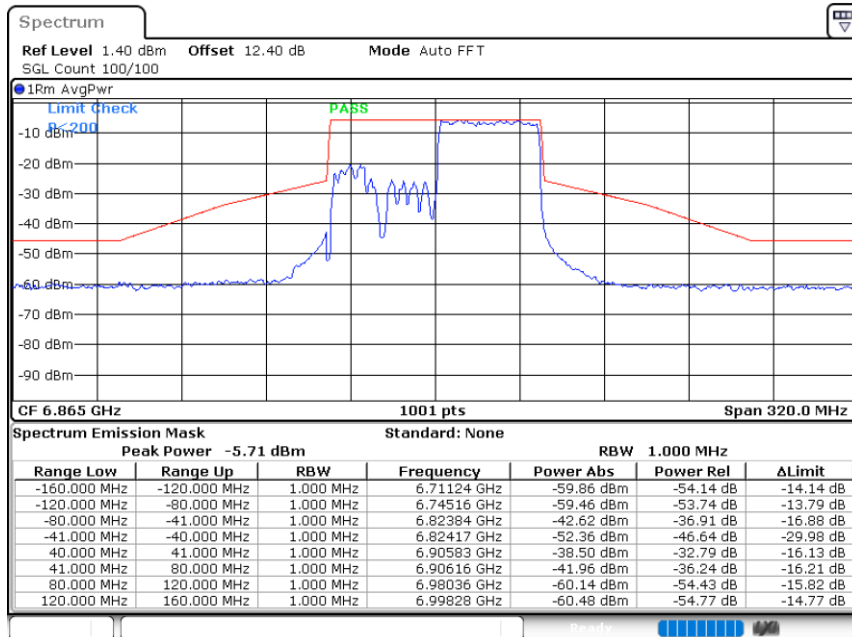
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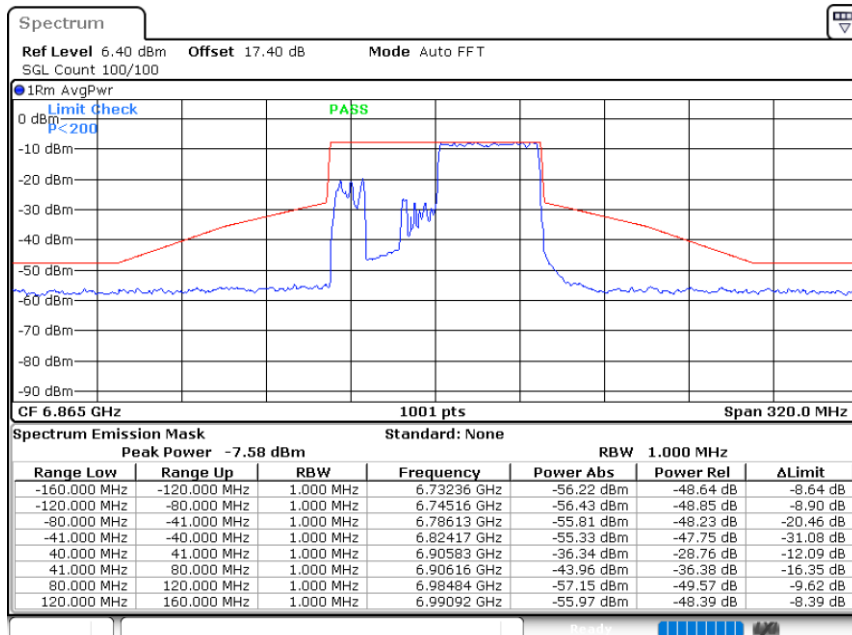


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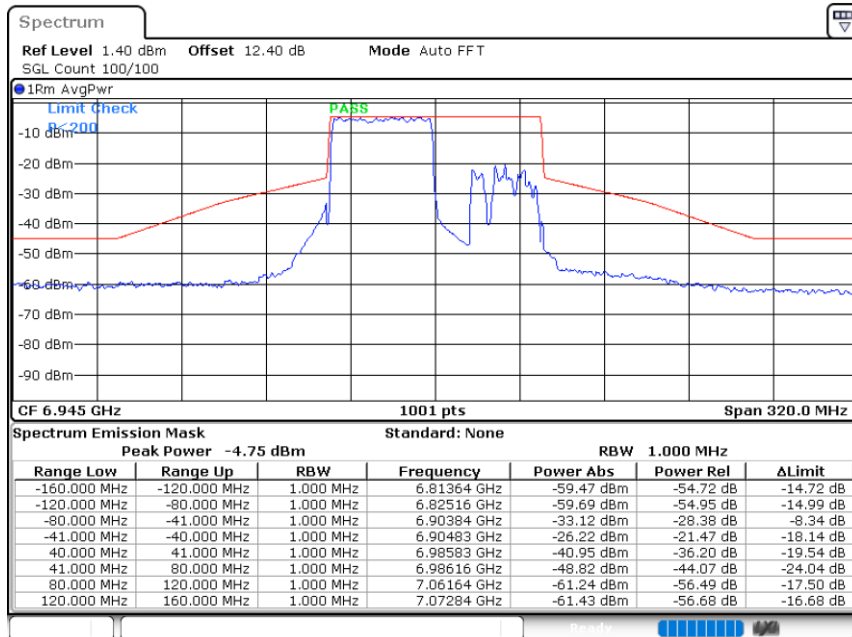
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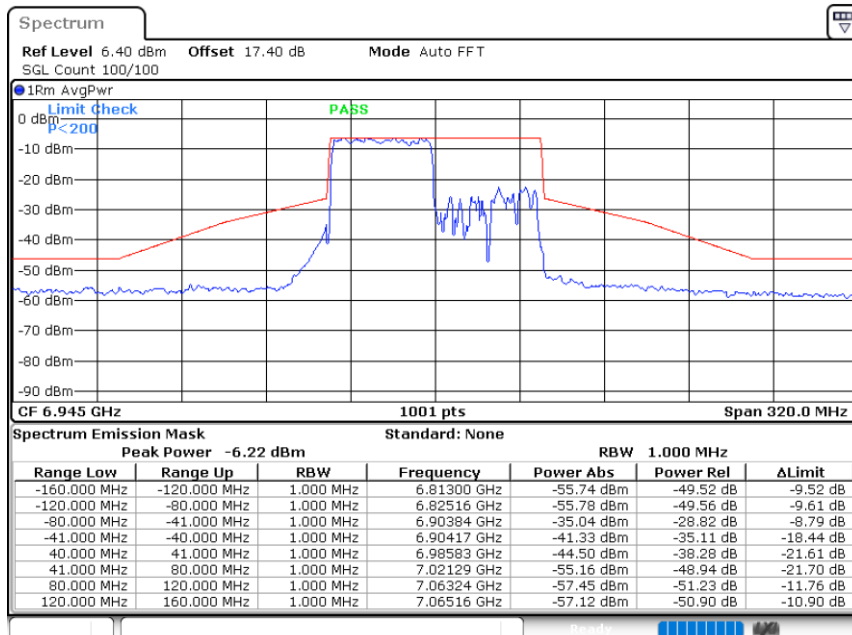


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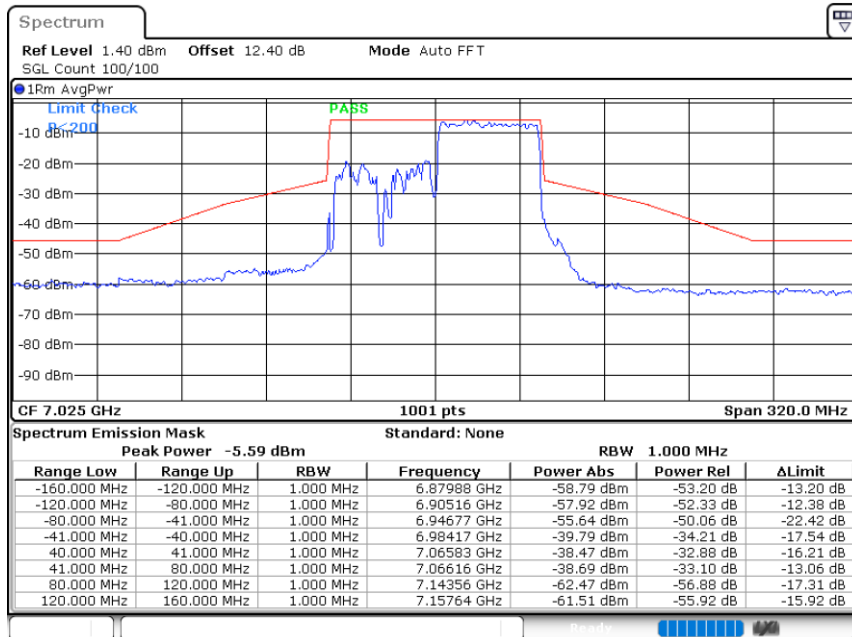
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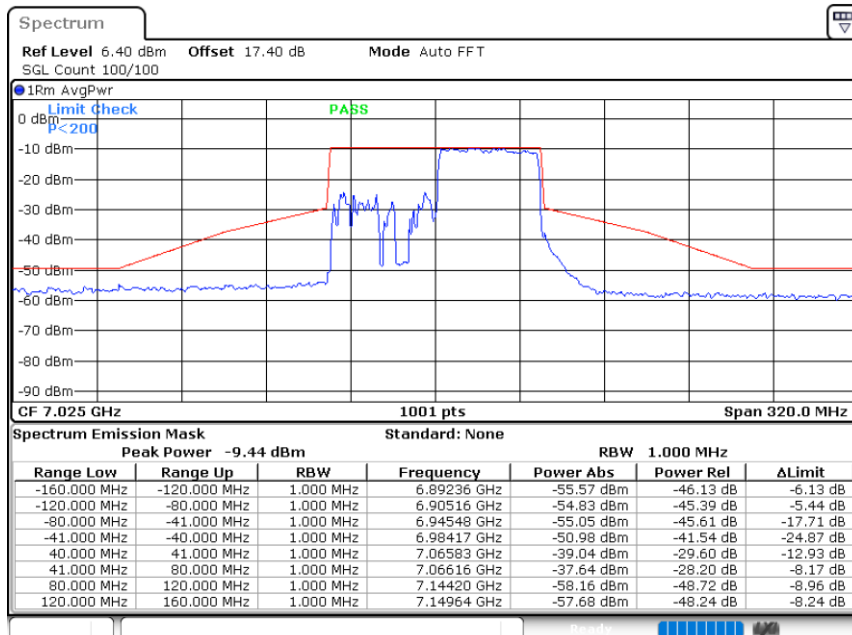


11AX80MIMO_Ant.5+6(5)_7025_484Tone_RU66



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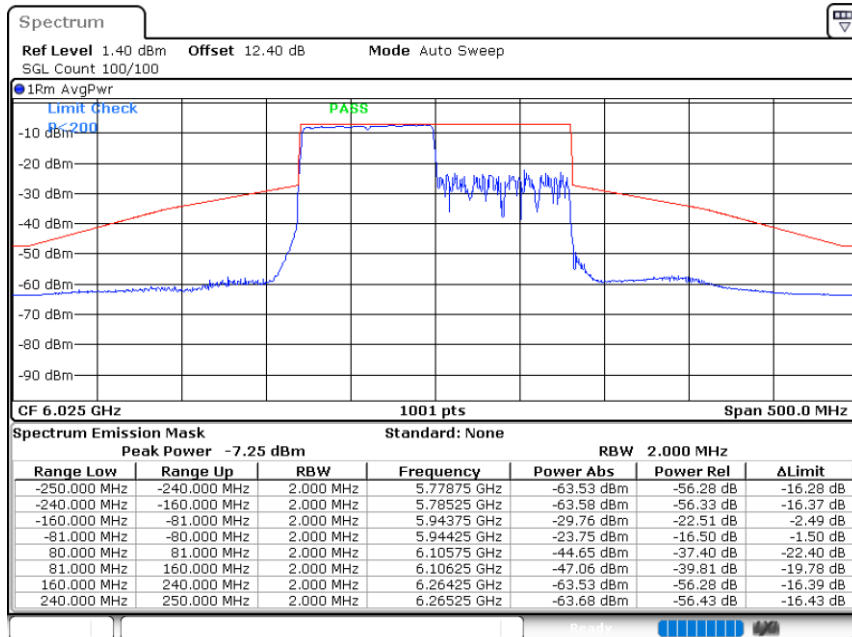
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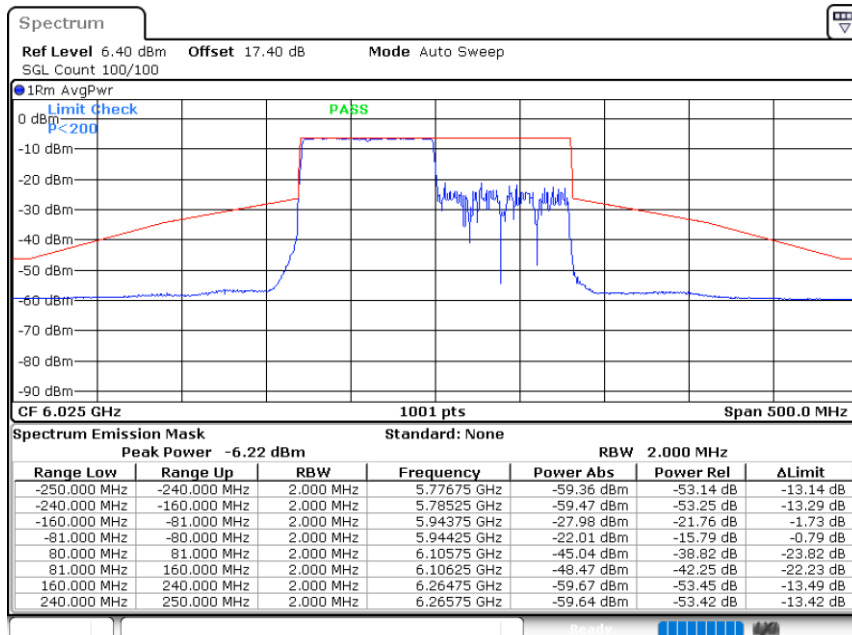


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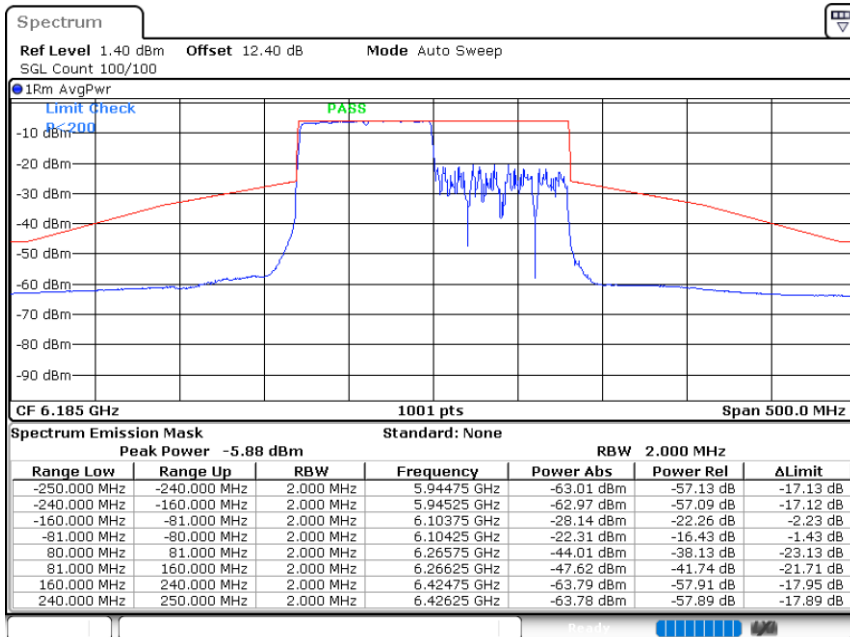
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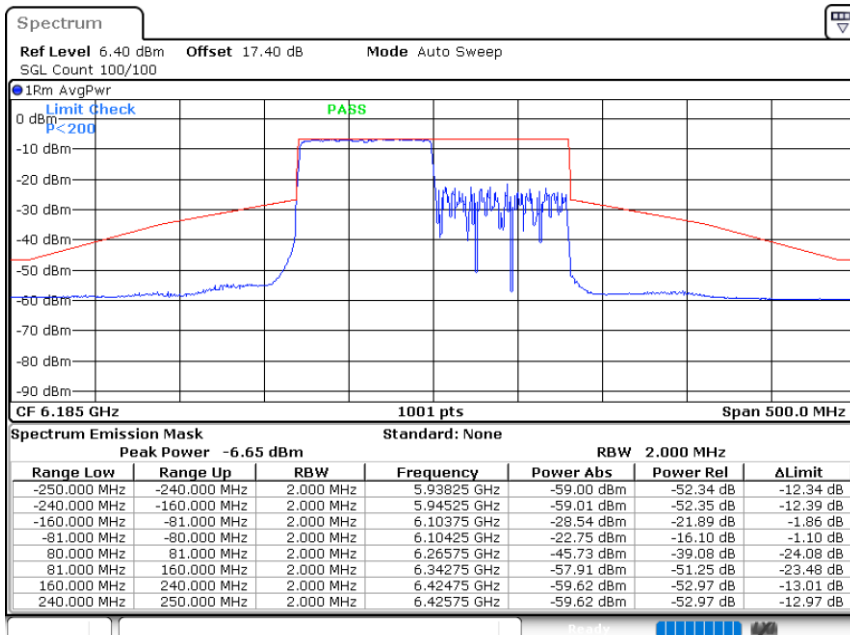


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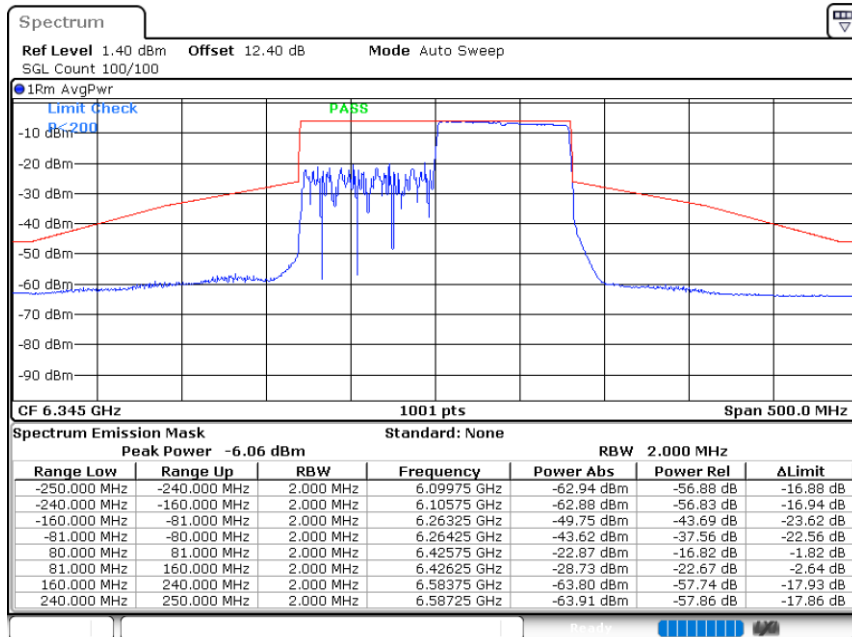
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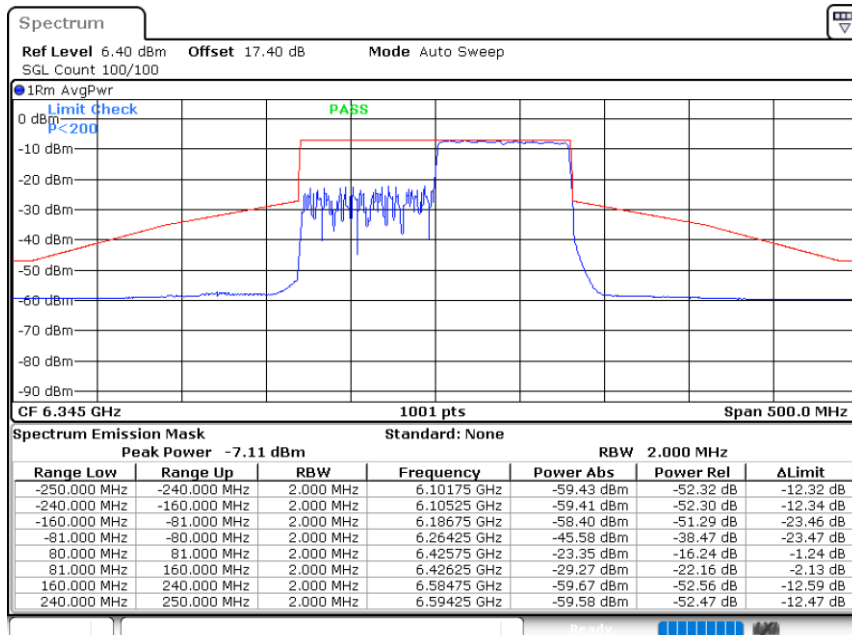


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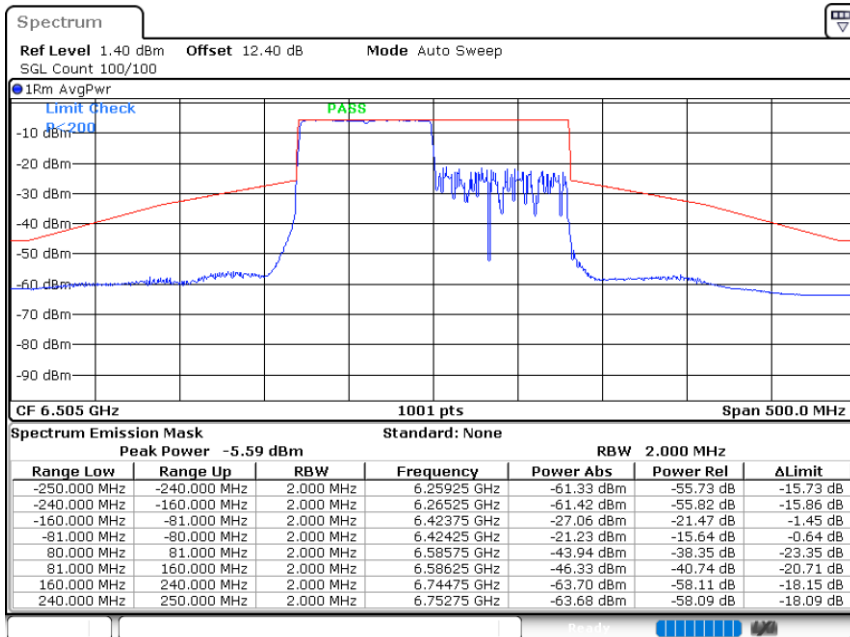
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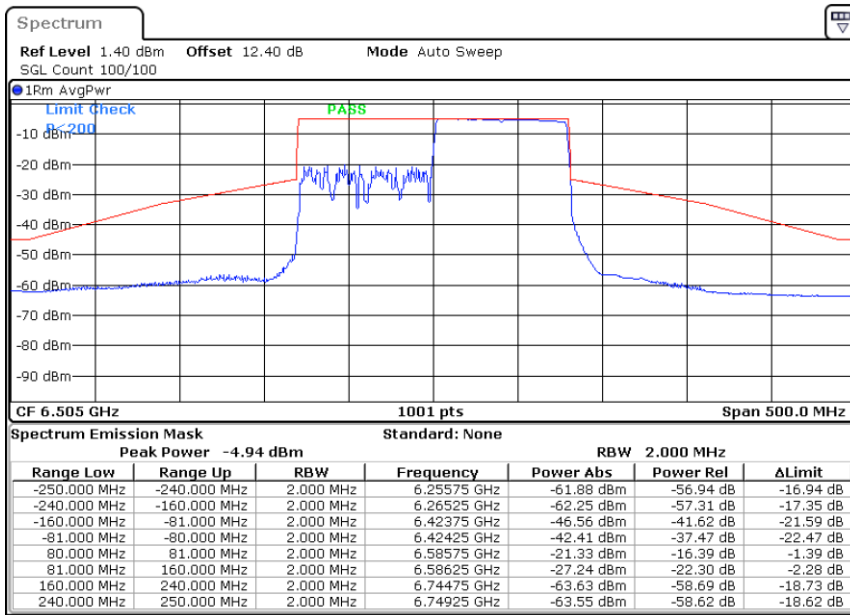


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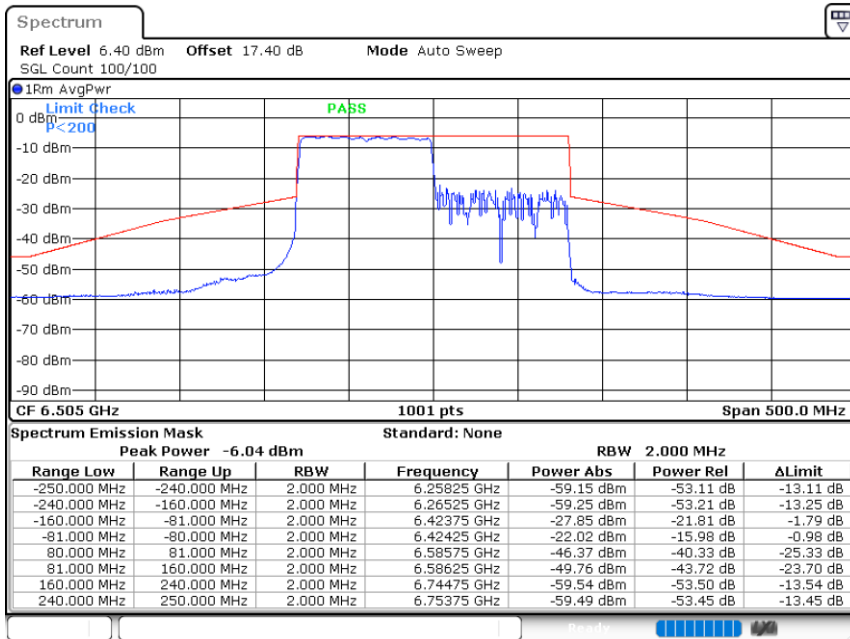
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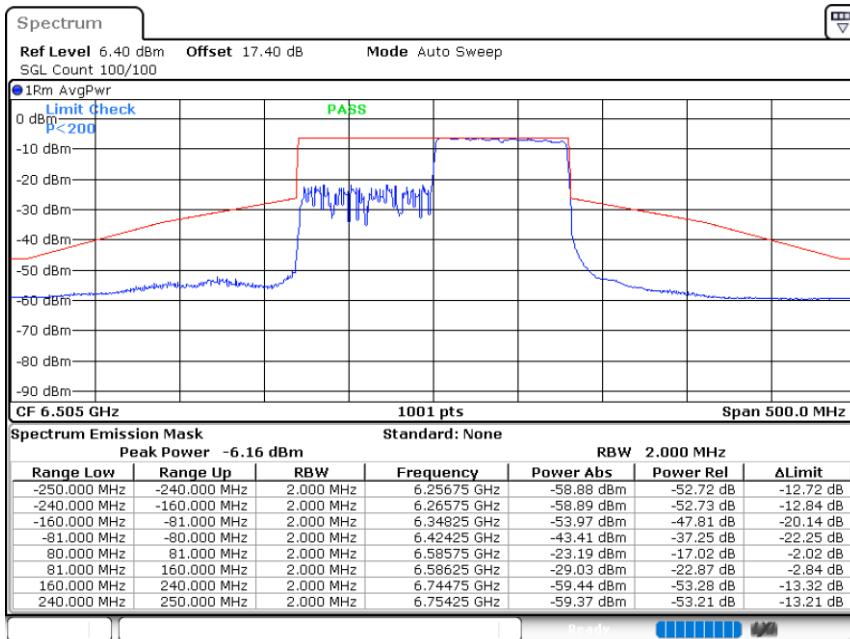


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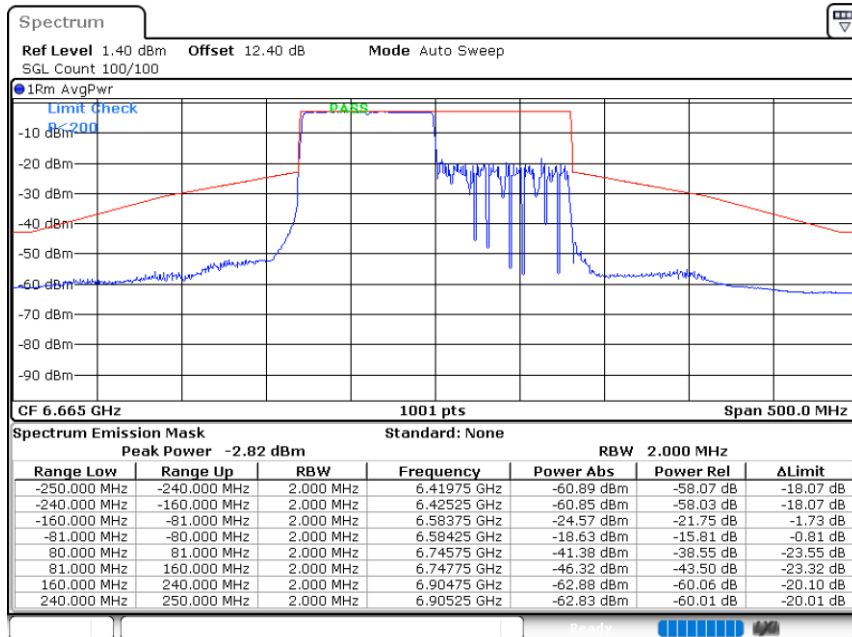
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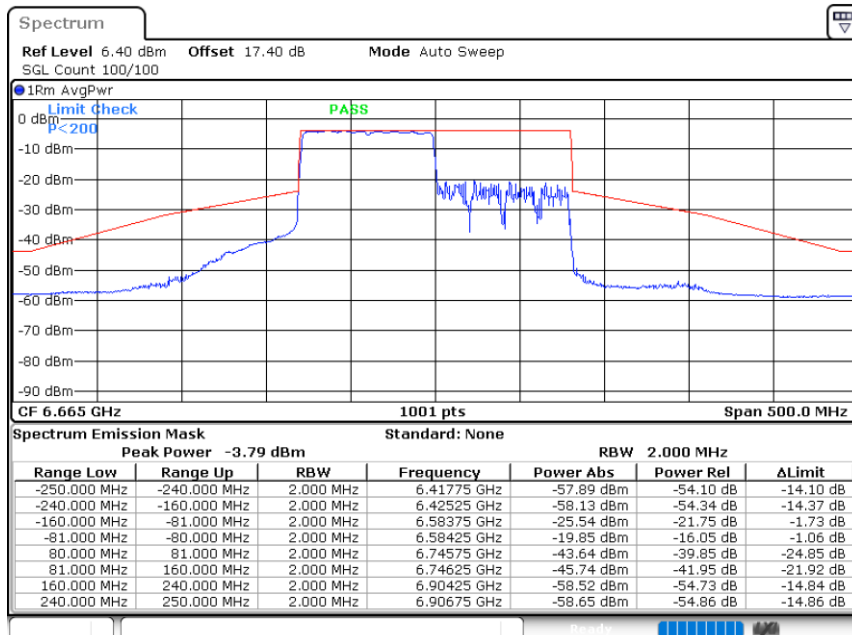


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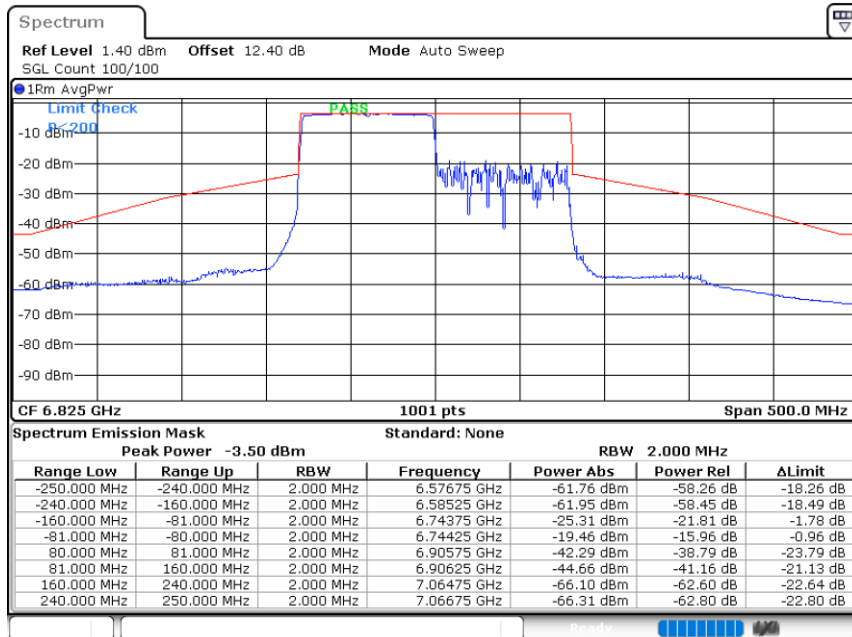
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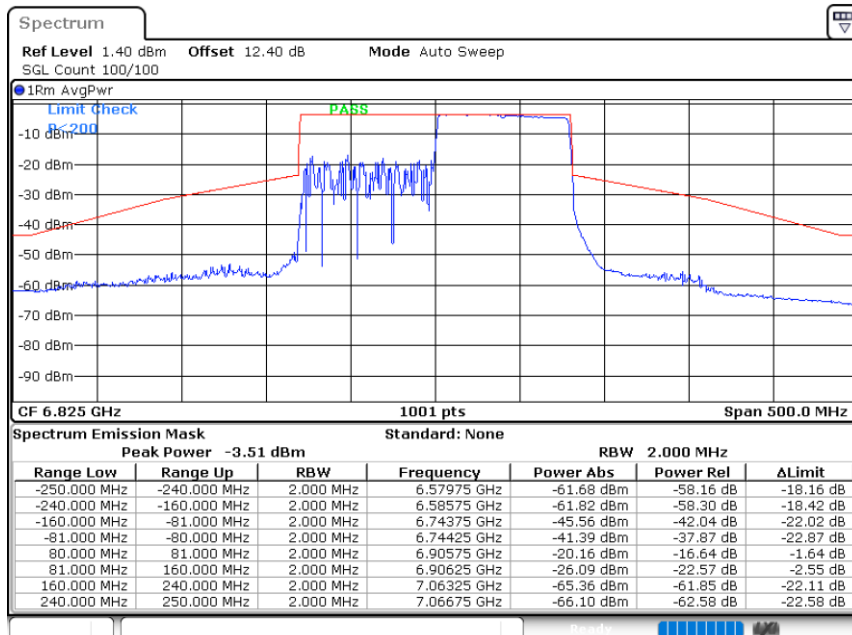


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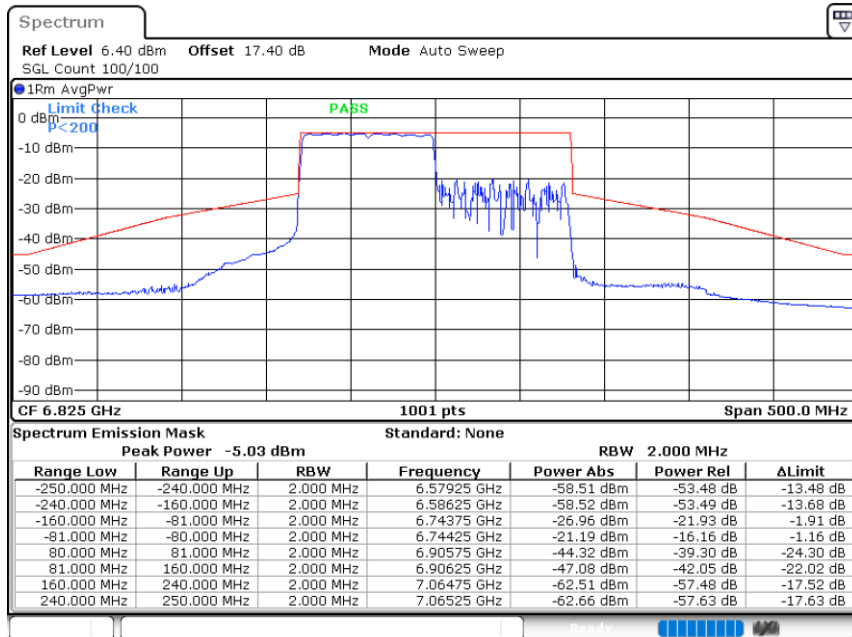
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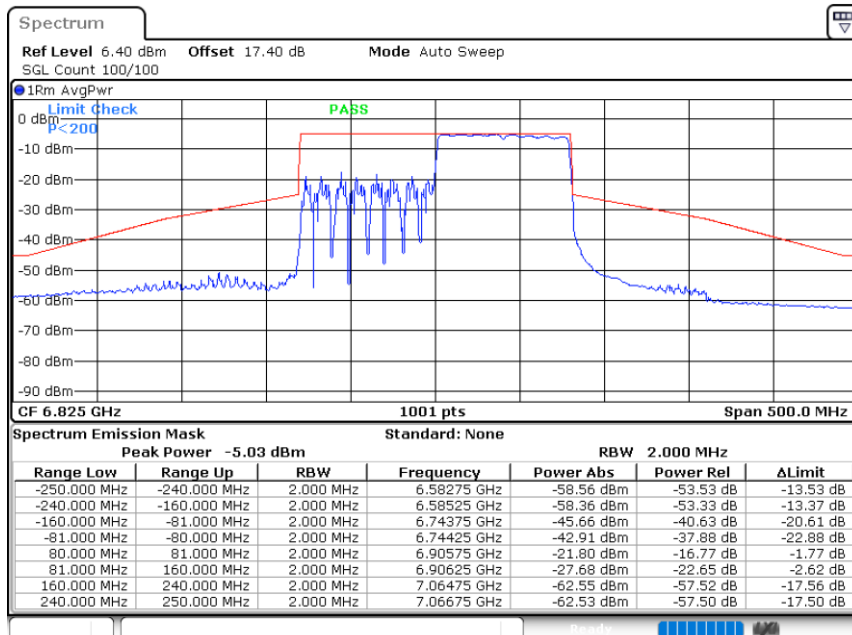


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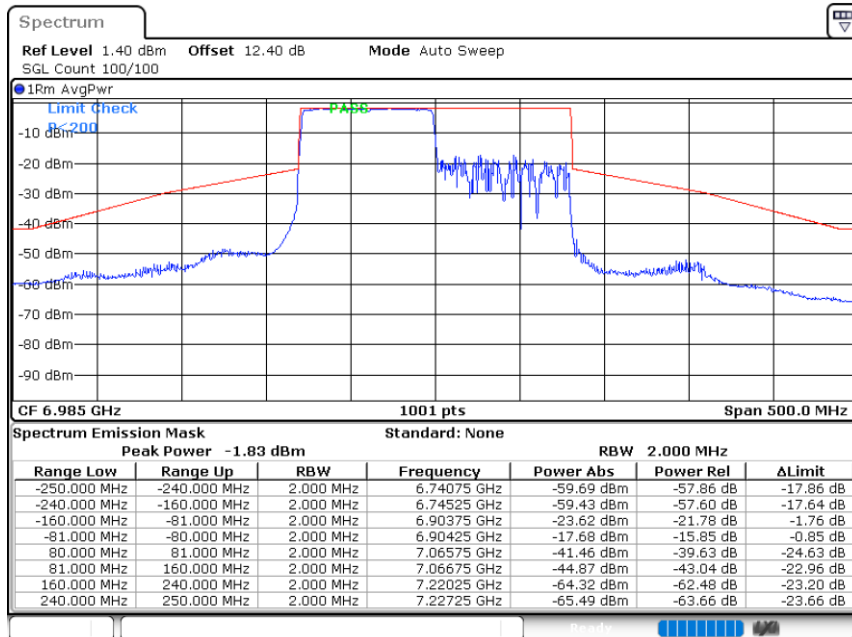
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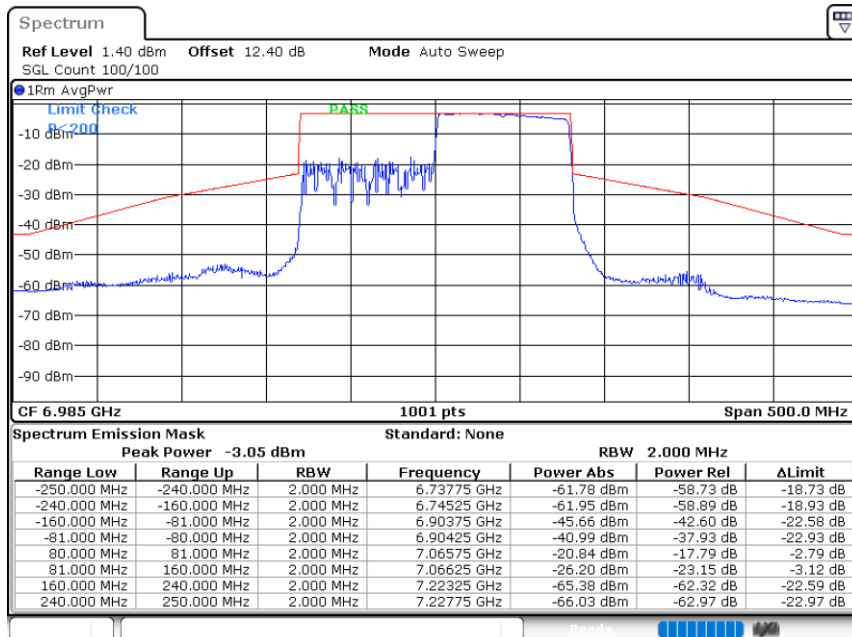


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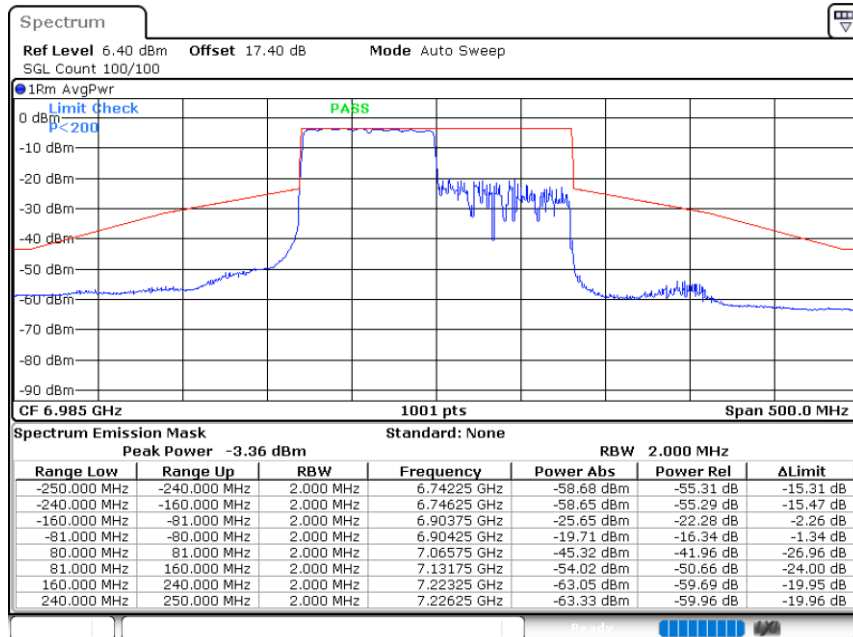
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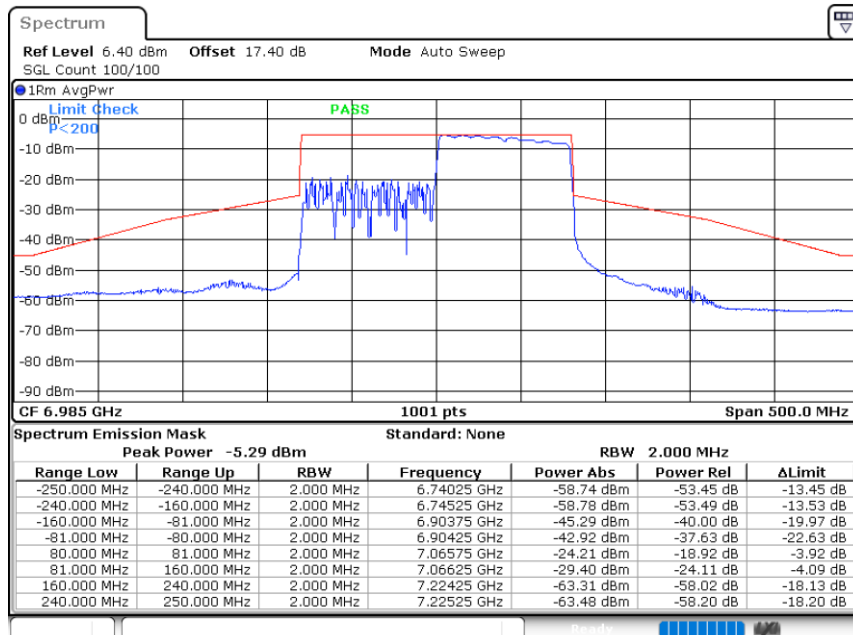


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Date: 22.APR.2022 13:08:38

11AX160MIMO_Ant.5+6(6)_6985_996Tone_Left-RU67



Date: 22.APR.2022 13:07:37

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

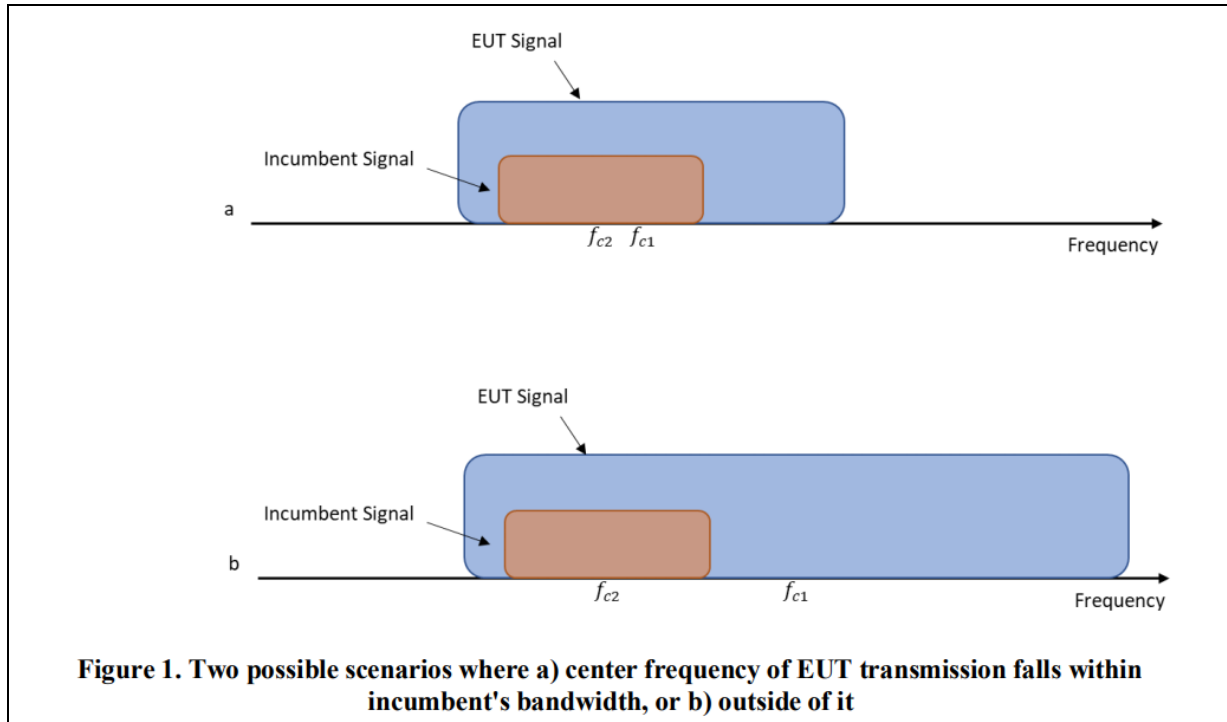
where:

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

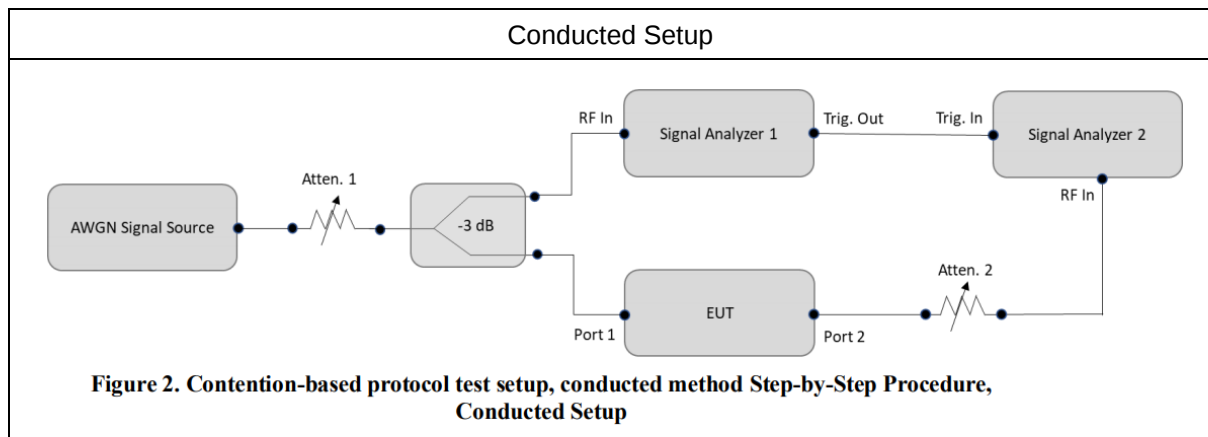
See list of measuring equipment of this test report.

3.5.3 Test Procedures

Refer to KDB 987594 D02 v01v01.

1. To ensure EUT reliably detects an incumbent signal in both scenarios shown in Figure 1, the detection threshold test may be repeated more than once with the incumbent signal (having center frequency f_{c2}) tuned to different center frequencies within the UT transmission bandwidth. The criteria specified in Table 1 determines how many times the detection threshold test must be performed
2. 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.
3. Monitor the signal analyzer 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.
4. (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.
5. 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 2, choose a different center frequency for the AWGN signal and repeat the process.

3.5.4 Test Setup



3.5.5 Support Unit used in test configuration and system

Instrument	Brand Name	Model No.	Characteristics
WLAN AP	ASUS	GT-AXE11000	Dual Band AP
Notebook	Acer	N15C1	LAN

3.5.6 Test Summary of Contention Based Protocol Test

MIMO <Ant. 4+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 Band 5	6135	20	6135	-67.51	100	-62	-68.017	6.017
				Result: Stop Transmission				
				-68.51	<90	-62	-69.017	7.017
				Result: Minimal Operation				
				-69.51	=0	-62	-70.017	8.017
				Result: Normal Operation				
	6185	160	6110	-67.96	100	-62	-68.467	6.467
				Result: Stop Transmission				
				-68.96	<90	-62	-69.467	7.467
				Result: Minimal Operation				
				-74.46	=0	-62	-74.967	12.967
				Result: Normal Operation				
			6185	-66.92	100	-62	-67.427	5.427
				Result: Stop Transmission				
				-67.92	<90	-62	-68.427	6.427
				Result: Minimal Operation				
				-70.42	=0	-62	-70.927	8.927
				Result: Normal Operation				
			6260	-69.05	100	-62	-69.557	7.557
				Result: Stop Transmission				
				-70.05	<90	-62	-70.557	8.557
				Result: Minimal Operation				
				-74.05	=0	-62	-74.557	12.557
				Result: Normal Operation				

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 4, gain = 0.507dBi)

Note 2: Pass 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 Band 6	6455	20	6455	-71.10	100	-62	-70.90	8.90
				Result: Stop Transmission				
				-72.10	<90	-62	-71.90	9.90
				Result: Minimal Operation				
				-76.10	=0	-62	-75.90	13.90
				Result: Normal Operation				
	6505	160	6430	-72.49	100	-62	-72.29	10.29
				Result: Stop Transmission				
				-73.49	<90	-62	-73.29	11.29
				Result: Minimal Operation				
				-74.49	=0	-62	-74.29	12.29
				Result: Normal Operation				
			6505	-68.65	100	-62	-68.45	6.45
				Result: Stop Transmission				
				-69.65	<90	-62	-69.45	7.45
				Result: Minimal Operation				
				-70.15	=0	-62	-69.95	7.95
				Result: Normal Operation				
			6580	-69.75	100	-62	-69.55	7.55
				Result: Stop Transmission				
				-70.75	<90	-62	-70.55	8.55
				Result: Minimal Operation				
				-72.25	=0	-62	-72.05	10.05
				Result: Normal Operation				

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 4, gain = -0.2dBi)

Note 2: Pass 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 Band 7	6695	20	6695	-72.66	100	-62	-69.66	7.66
				Result: Stop Transmission				
				-73.66	<90	-62	-70.66	8.66
				Result: Minimal Operation				
				-78.16	=0	-62	-75.16	13.16
				Result: Normal Operation				
	6665	160	6590	-70.61	100	-62	-67.61	5.61
				Result: Stop Transmission				
				-71.61	<90	-62	-68.61	6.61
				Result: Minimal Operation				
				-73.61	=0	-62	-70.61	8.61
				Result: Normal Operation				
			6665	-69.70	100	-62	-66.70	4.70
				Result: Stop Transmission				
				-70.70	<90	-62	-67.70	5.70
				Result: Minimal Operation				
				-71.20	=0	-62	-68.20	6.20
				Result: Normal Operation				
			6740	-70.95	100	-62	-67.95	5.95
				Result: Stop Transmission				
				-71.95	<90	-62	-68.95	6.95
				Result: Minimal Operation				
				-73.45	=0	-62	-70.45	8.45
				Result: Normal Operation				

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 4, gain = -3.0dBi)

Note 2: Pass 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 Band 8	7015	20	7015	-71.43	100	-62	-68.68	6.68
				Result: Stop Transmission				
				-72.43	<90	-62	-69.68	7.68
				Result: Minimal Operation				
				-76.93	=0	-62	-74.18	12.18
				Result: Normal Operation				
	6985	160	6910	-70.86	100	-62	-68.11	6.11
				Result: Stop Transmission				
				-71.86	<90	-62	-69.11	7.11
				Result: Minimal Operation				
				-72.36	=0	-62	-69.61	7.61
				Result: Normal Operation				
			6985	-67.90	100	-62	-65.15	3.15
				Result: Stop Transmission				
				-68.90	<90	-62	-66.15	4.15
				Result: Minimal Operation				
				-69.40	=0	-62	-66.65	4.65
				Result: Normal Operation				
			7060	-69.03	100	-62	-66.28	4.28
				Result: Stop Transmission				
				-70.03	<90	-62	-67.28	5.28
				Result: Minimal Operation				
				-70.53	=0	-62	-67.78	5.78
				Result: Normal Operation				

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 5, gain = -2.75dBi)

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

Note 3: Margin = Regulated Threshold level - Adjusted Power

MIMO <Ant. 5+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	-67.65	100	-62	-68.33	6.33
					Result: Stop Transmission			
				-68.65	<90	-62	-69.33	7.33
					Result: Minimal Operation			
				-69.65	=0	-62	-70.33	8.33
					Result: Normal Operation			
	6185	160	6110	-68.56	100	-62	-69.24	7.24
					Result: Stop Transmission			
				-69.56	<90	-62	-70.24	8.24
					Result: Minimal Operation			
				-75.06	=0	-62	-75.74	13.74
					Result: Normal Operation			
			6185	-67.15	100	-62	-67.83	5.83
					Result: Stop Transmission			
				-68.15	<90	-62	-68.83	6.83
					Result: Minimal Operation			
				-70.65	=0	-62	-71.33	9.33
					Result: Normal Operation			
			6260	-68.22	100	-62	-68.90	6.90
					Result: Stop Transmission			
				-69.22	<90	-62	-69.90	7.90
					Result: Minimal Operation			
				-73.22	=0	-62	-73.90	11.90
					Result: Normal Operation			

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain(Antenna 6, gain = 0.68dBi)

Note 2: Pass 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 Band 6	6455	20	6455	-72.93	100	-62	-71.73	9.73
				Result: Stop Transmission				
				-73.93	<90	-62	-72.73	10.73
				Result: Minimal Operation				
				-77.93	=0	-62	-76.73	14.73
				Result: Normal Operation				
	6505	160	6430	-70.54	100	-62	-69.34	7.34
				Result: Stop Transmission				
				-71.54	<90	-62	-70.34	8.34
				Result: Minimal Operation				
				-72.54	=0	-62	-71.34	9.34
				Result: Normal Operation				
			6505	-68.13	100	-62	-66.93	4.93
				Result: Stop Transmission				
				-69.13	<90	-62	-67.93	5.93
				Result: Minimal Operation				
				-69.63	=0	-62	-68.43	6.43
				Result: Normal Operation				
			6580	-70.27	100	-62	-69.07	7.07
				Result: Stop Transmission				
				-71.27	<90	-62	-70.07	8.07
				Result: Minimal Operation				
				-72.77	=0	-62	-71.57	9.57
				Result: Normal Operation				

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain(Antenna 6, gain = -1.2dBi)

Note 2: Pass 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 Band 7	6695	20	6695	-72.75	100	-62	-69.85	7.85
					Result: Stop Transmission			
				-73.75	<90	-62	-70.85	8.85
					Result: Minimal Operation			
				-78.25	=0	-62	-75.35	13.35
					Result: Normal Operation			
	6665	160	6590	-70.53	100	-62	-67.63	5.63
					Result: Stop Transmission			
				-71.53	<90	-62	-68.63	6.63
					Result: Minimal Operation			
				-73.53	=0	-62	-70.63	8.63
					Result: Normal Operation			
			6665	-68.56	100	-62	-65.66	3.66
					Result: Stop Transmission			
				-69.56	<90	-62	-66.66	4.66
					Result: Minimal Operation			
				-70.06	=0	-62	-67.16	5.16
					Result: Normal Operation			
			6740	-70.85	100	-62	-67.95	5.95
					Result: Stop Transmission			
				-71.85	<90	-62	-68.95	6.95
					Result: Minimal Operation			
				-73.35	=0	-62	-70.45	8.45
					Result: Normal Operation			

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 6, gain = -2.9dBi)

Note 2: Pass 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 Band 8	7015	20	7015	-69.50	100	-62	-66.75	4.75
					Result: Stop Transmission			
				-70.50	<90	-62	-67.75	5.75
					Result: Minimal Operation			
				-75.00	=0	-62	-72.25	10.25
					Result: Normal Operation			
	6985	160	6910	-69.96	100	-62	-67.21	5.21
					Result: Stop Transmission			
				-70.96	<90	-62	-68.21	6.21
					Result: Minimal Operation			
				-71.46	=0	-62	-68.71	6.71
					Result: Normal Operation			
			6985	-67.90	100	-62	-65.15	3.15
					Result: Stop Transmission			
				-68.90	<90	-62	-66.15	4.15
					Result: Minimal Operation			
				-69.40	=0	-62	-66.65	4.65
					Result: Normal Operation			
			7060	-67.99	100	-62	-65.24	3.24
					Result: Stop Transmission			
				-68.99	<90	-62	-66.24	4.24
					Result: Minimal Operation			
				-69.49	=0	-62	-66.74	4.74
					Result: Normal Operation			

Note 1: Adjusted Power = Injected AWGN Level - minimum antenna gain (Antenna 5, gain = -2.75dBi)

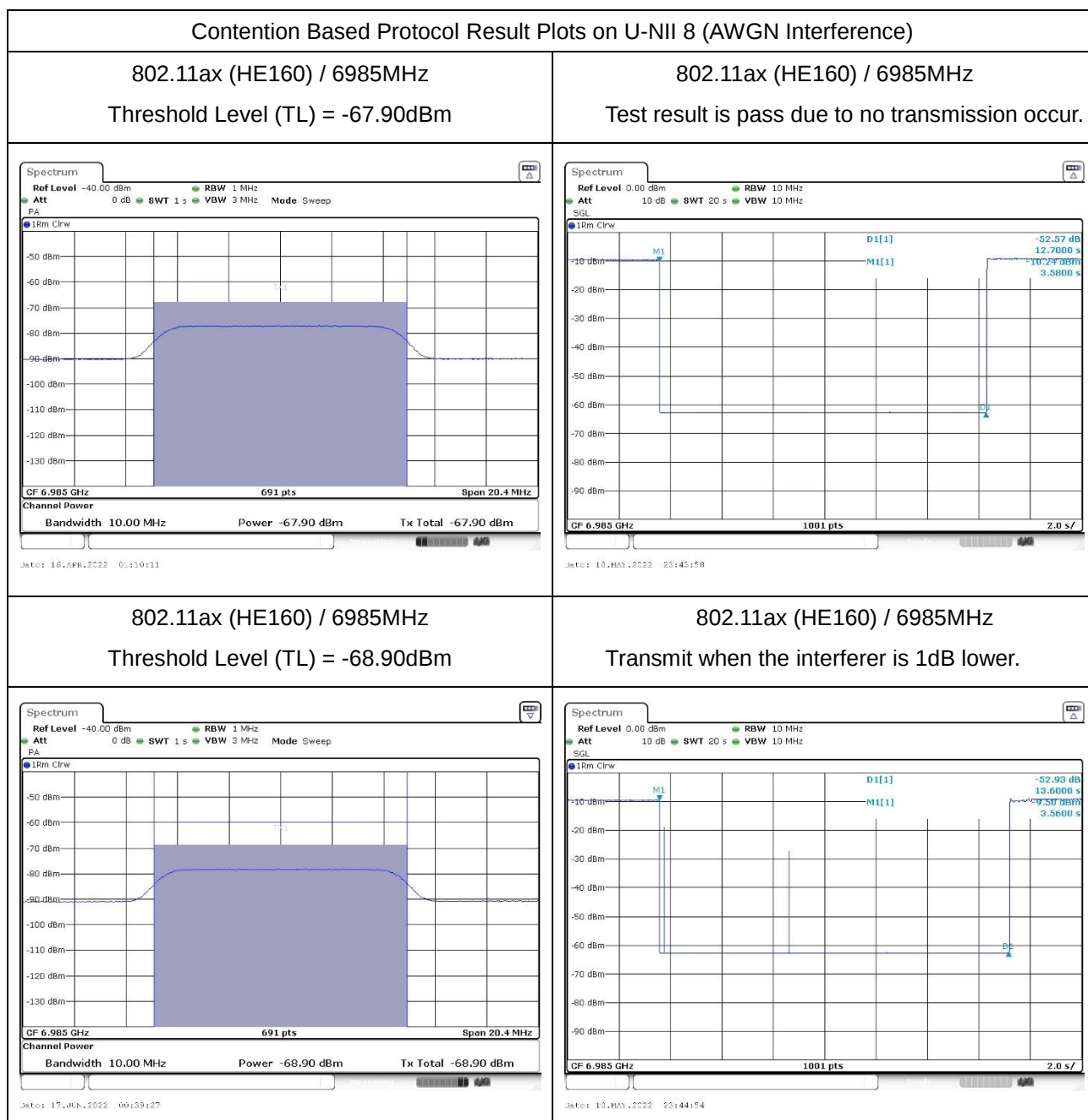
Note 2: Pass Loss is negligible. (0 dB)

Note 3: Margin = Regulated Threshold level - Adjusted Power



3.5.7 Worst Case Plots of Contention Based Protocol

MIMO <Ant. 4+5>



Remark: M1: Injection of AWGN signal, D1: Removal of AWGN signal

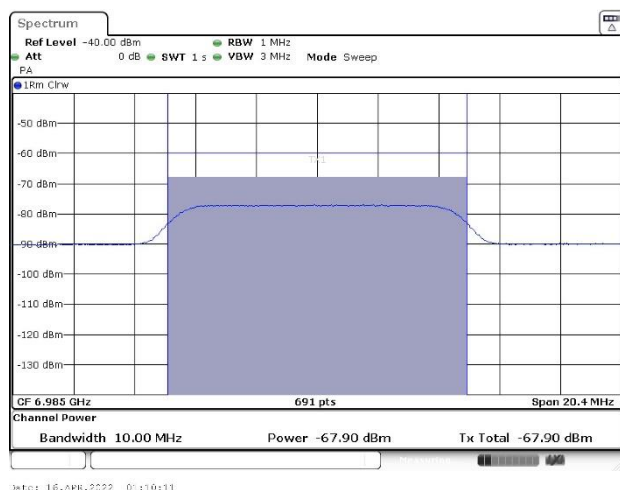


MIMO <Ant. 5+6>

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

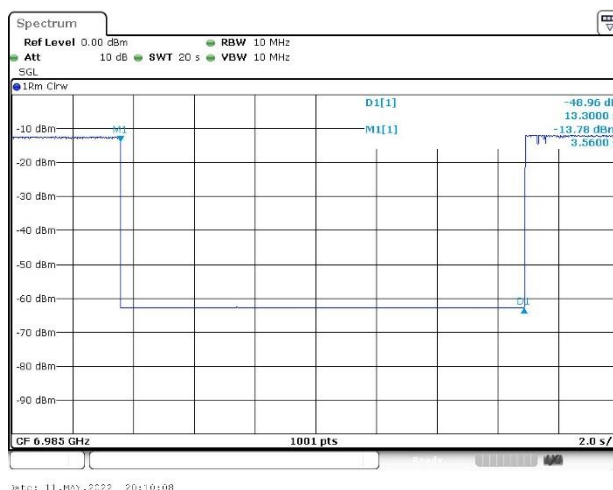
802.11ax (HE160) / 6985MHz

Threshold Level (TL) = -67.90dBm



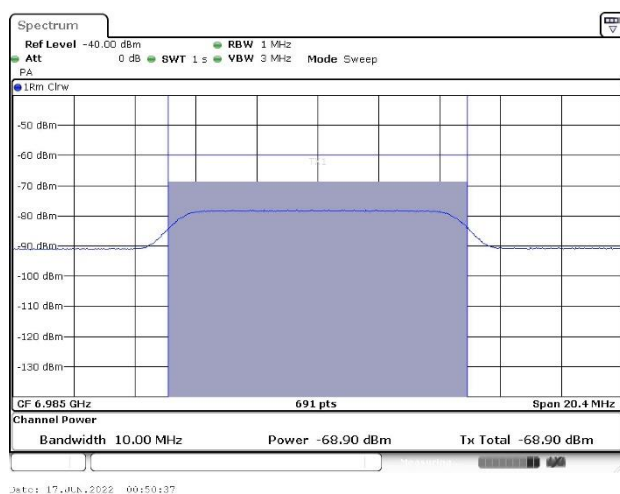
802.11ax (HE160) / 6985MHz

Test result is pass due to no transmission occur.



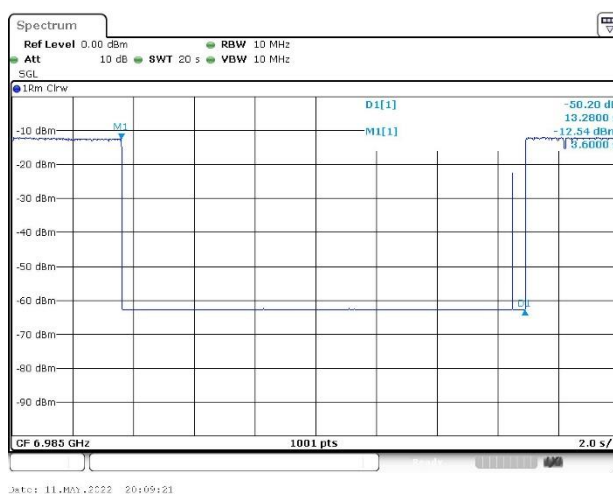
802.11ax (HE160) / 6985MHz

Threshold Level (TL) = -68.90dBm



802.11ax (HE160) / 6985MHz

Transmit when the interferer is 1dB lower.



Remark: M1: Injection of AWGN signal, D1: Removal of AWGN signal

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)	68.2
- 7 (Peak)	88.2

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

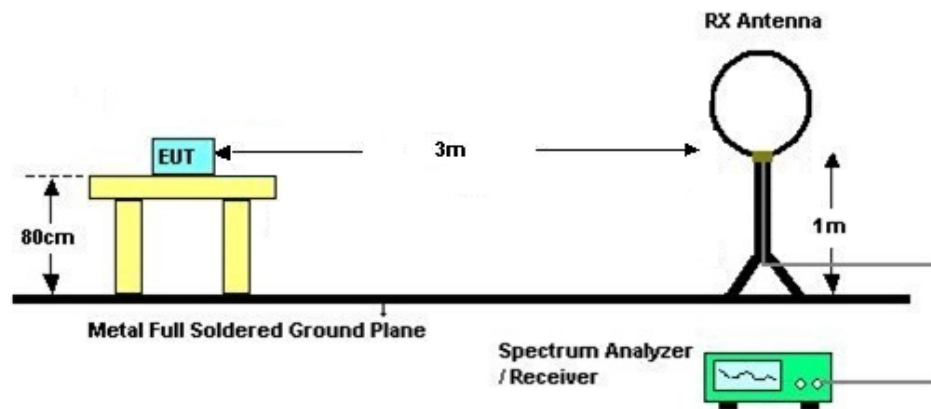
See list of measuring equipment of this test report.

3.6.3 Test Procedures

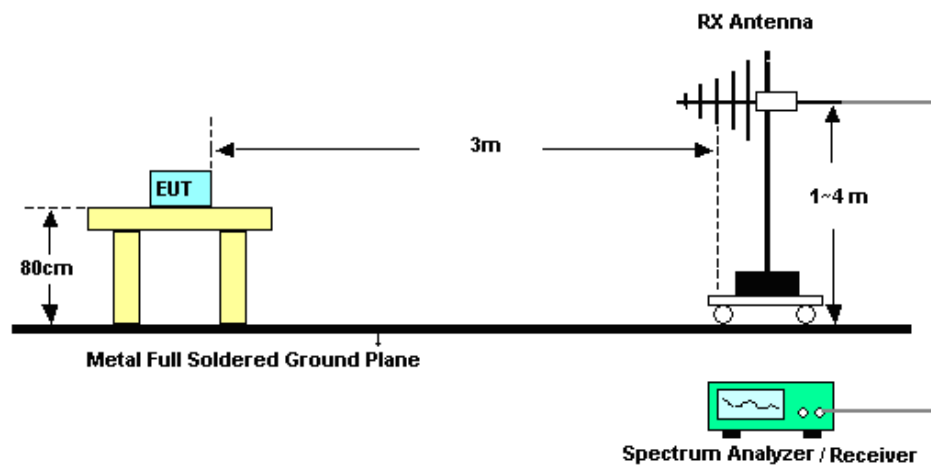
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak 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 was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was 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 was 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. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.6.4 Test Setup

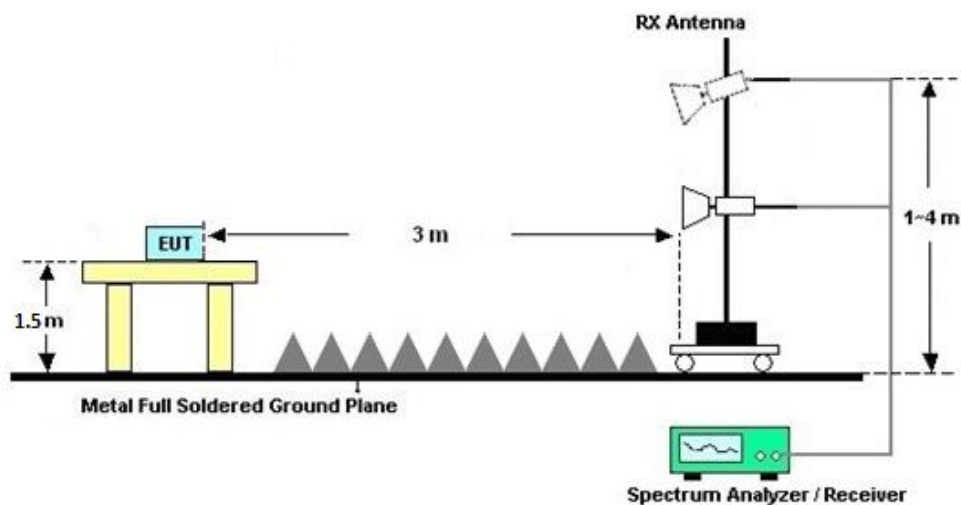
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was 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&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&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 (dBμV)	
	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.

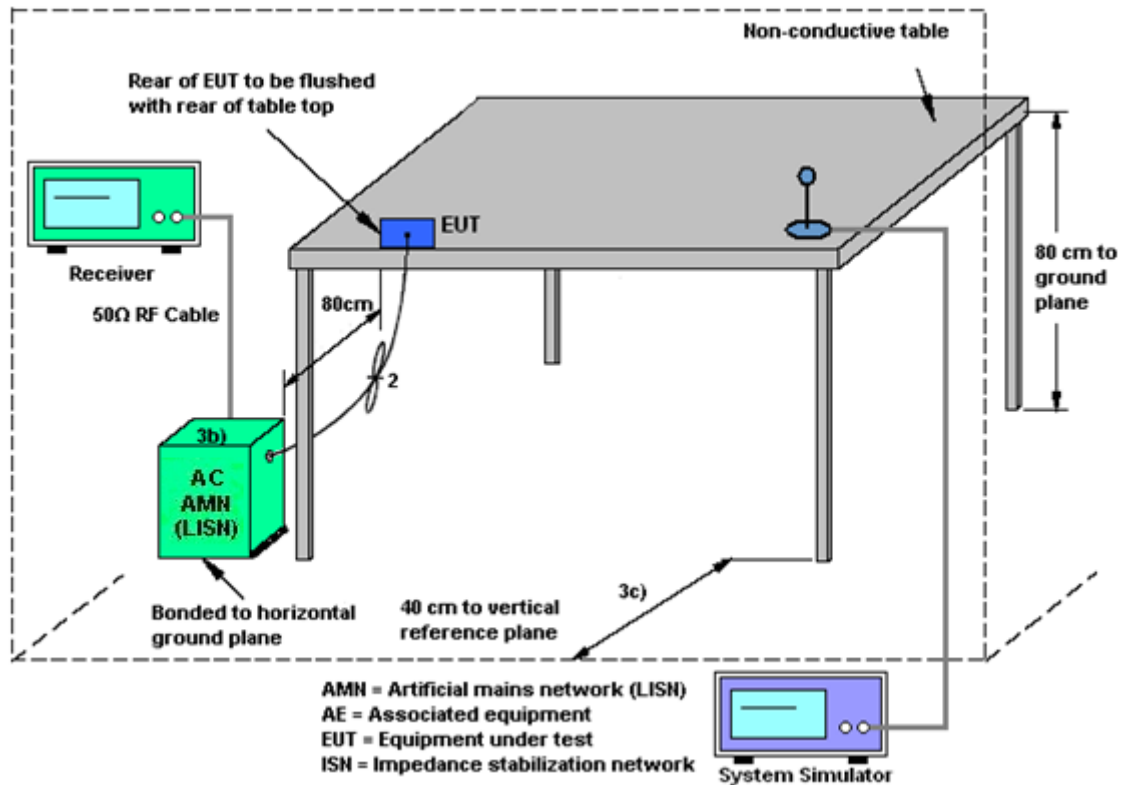
3.7.2 Measuring Instruments

See list of measuring equipment of this test report.

3.7.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was 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 sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
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

§15.203: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this section.

3.8.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used. The EUT complies with the requirement of 15.203.

3.8.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e.,

Directional gain = $G_{ANT\ MAX}(Ant.1\ Gain, Ant.2\ Gain, \dots) + \text{Array Gain}$, as following table for Power, where Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

For PSD, the directional gain calculation is following,

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / N_{ANT}]$ dBi, as following table for PSD.

N_{ANT} = number of transmit antennas

N_{SS} = number of spatial streams. (The worst case directional gain will occur when $N_{SS} = 1$)

For Antenna 4+5:

<CDD Modes>				
			DG for Power (dBi)	DG for PSD (dBi)
	Ant. 5 (dBi)	Ant. 4 (dBi)		
U-NII-5	1.57	0.507	1.57	4.07
U-NII-6	0.48	-0.20	0.48	3.16
U-NII-7	-0.83	-3.00	-0.83	1.16
U-NII-8	-2.75	-2.70	-2.70	0.29

For Antenna 5+6:

<CDD Modes>				
			DG for Power (dBi)	DG for PSD (dBi)
	Ant. 5 (dBi)	Ant. 6 (dBi)		
U-NII-5	1.57	0.68	1.57	4.15
U-NII-6	0.48	-1.20	0.48	2.69
U-NII-7	-0.83	-2.90	-0.83	1.21
U-NII-8	-2.75	-1.49	-1.49	0.91

This device supports CDD (Cyclic Delay Diversity) mode which controlled by Qualcomm chipset software.