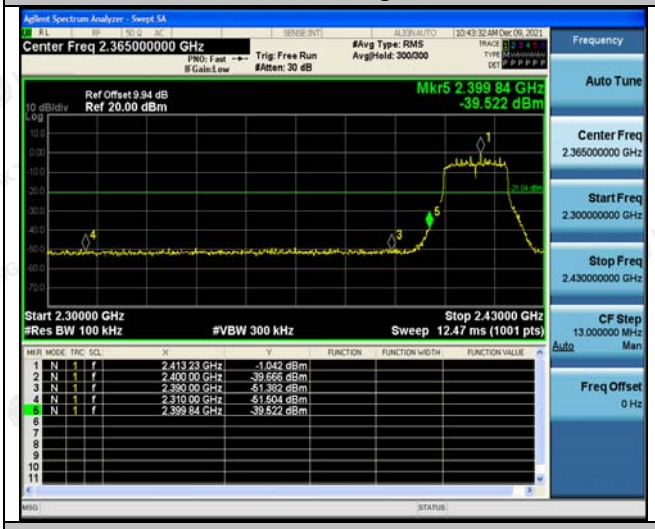
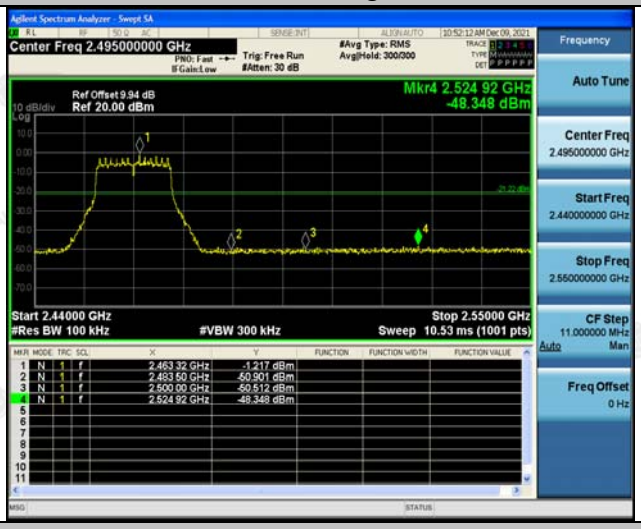
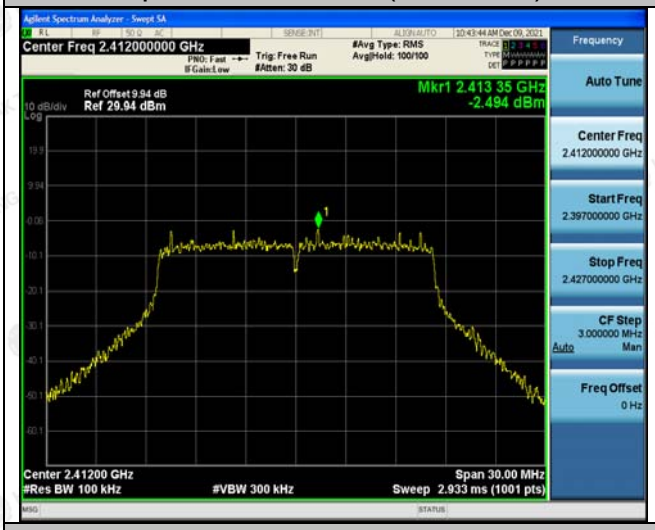
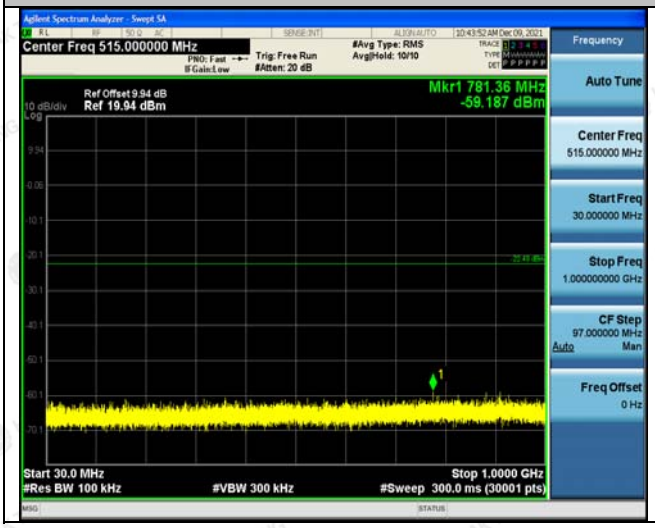
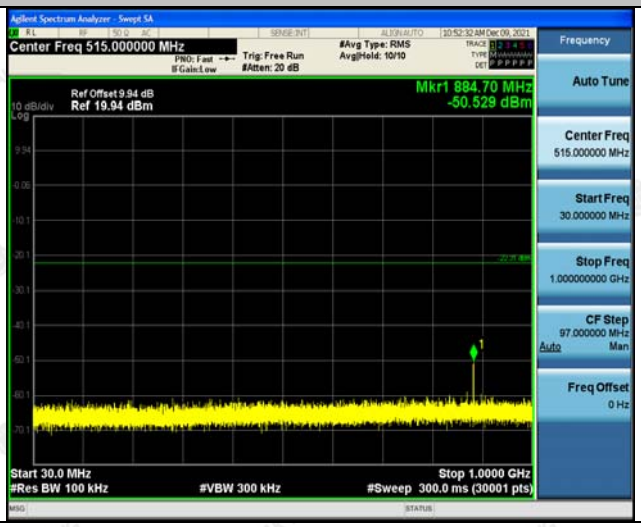
802.11g Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2412MHz)	Spurious Emission(2462MHz)
	
	

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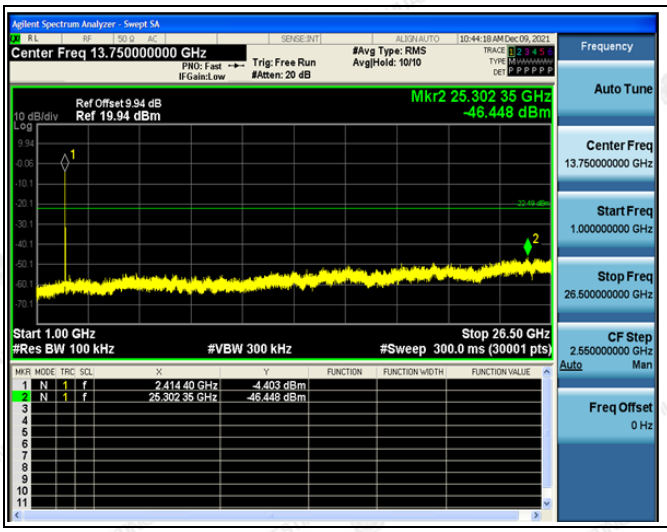
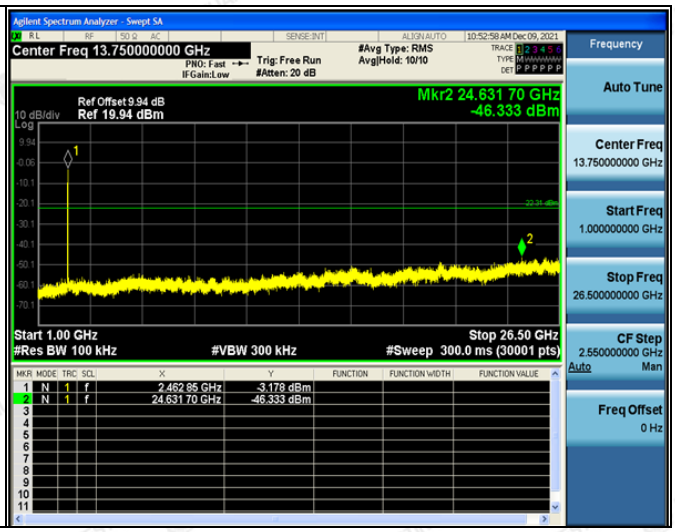
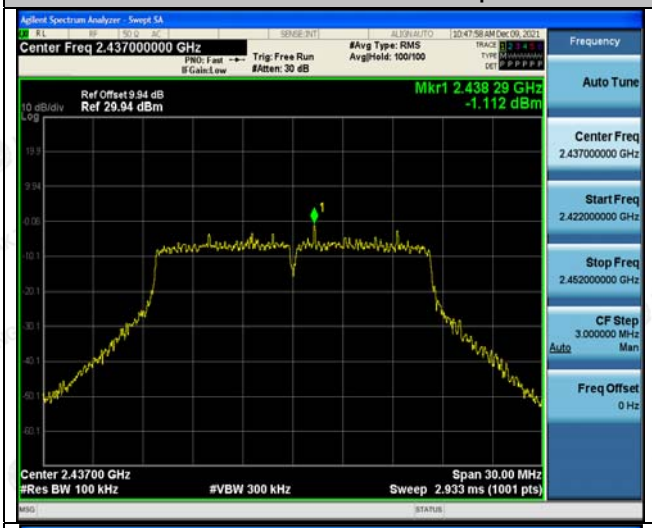
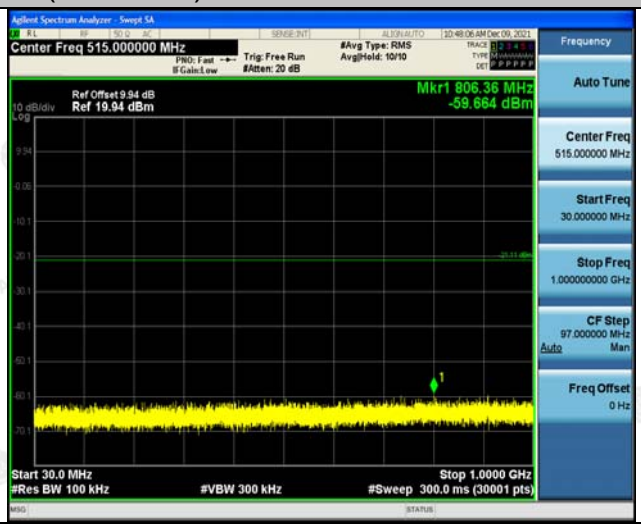
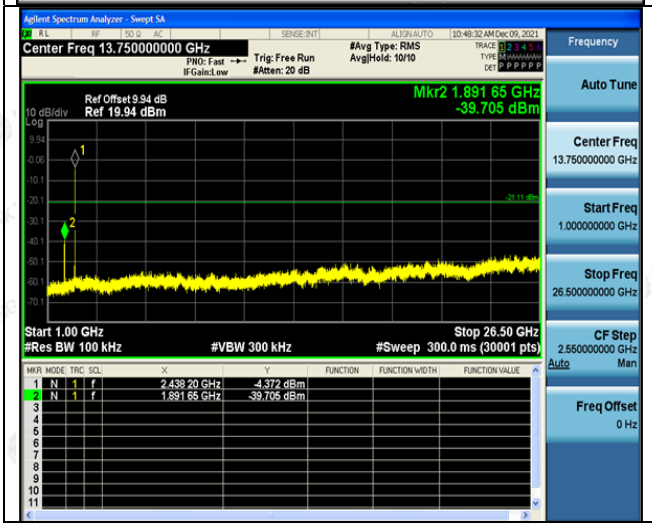




Spurious Emission(2437MHz)







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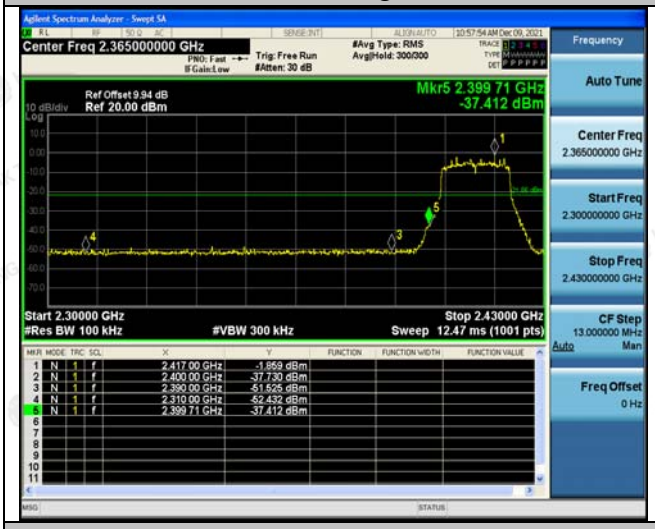
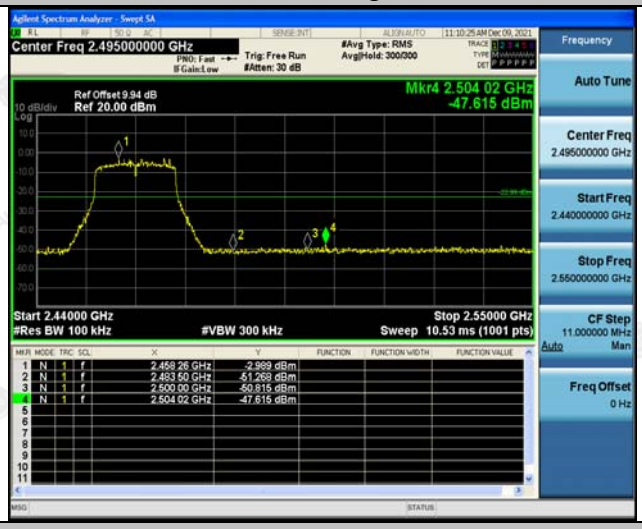
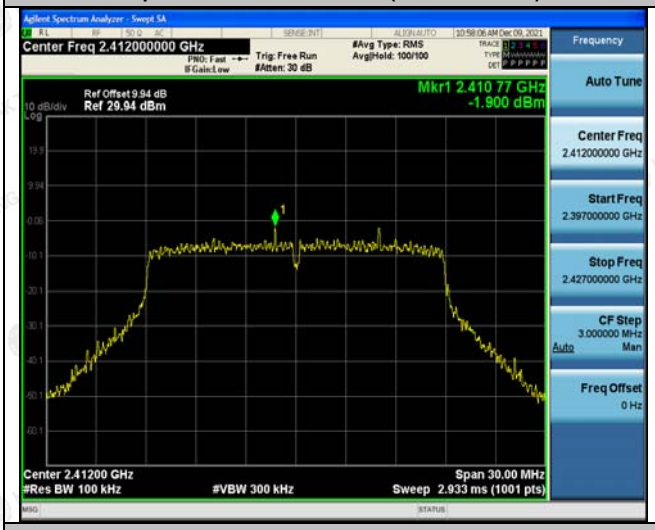
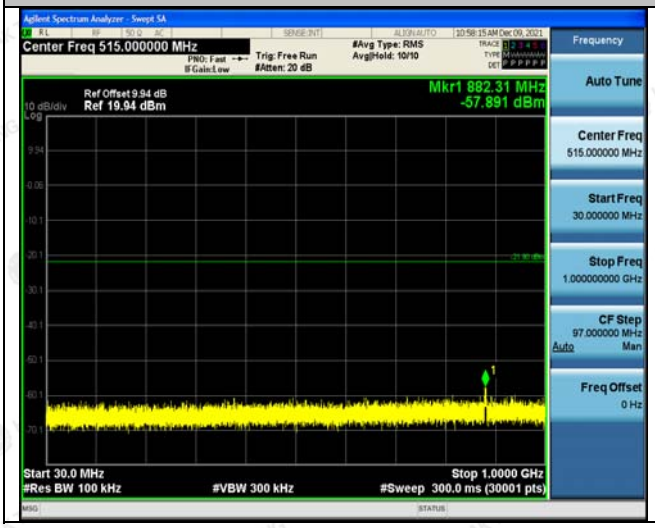
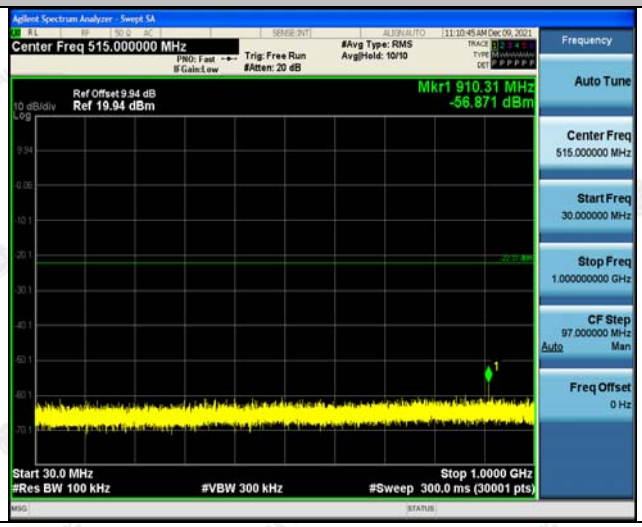
802.11n (HT20) Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2412MHz)	Spurious Emission(2462MHz)
	
	

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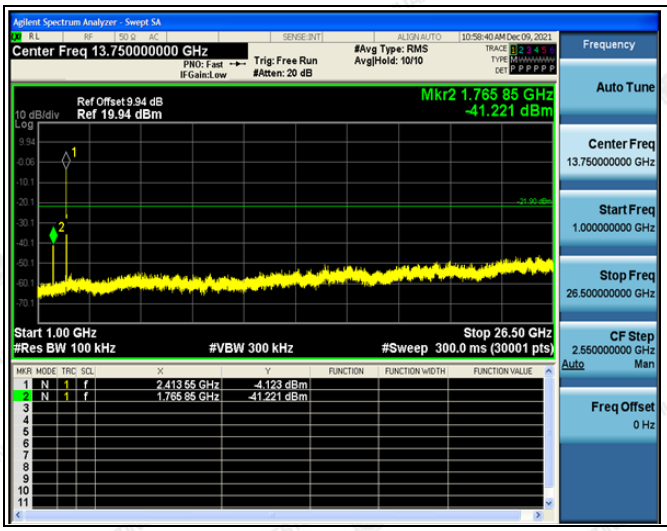
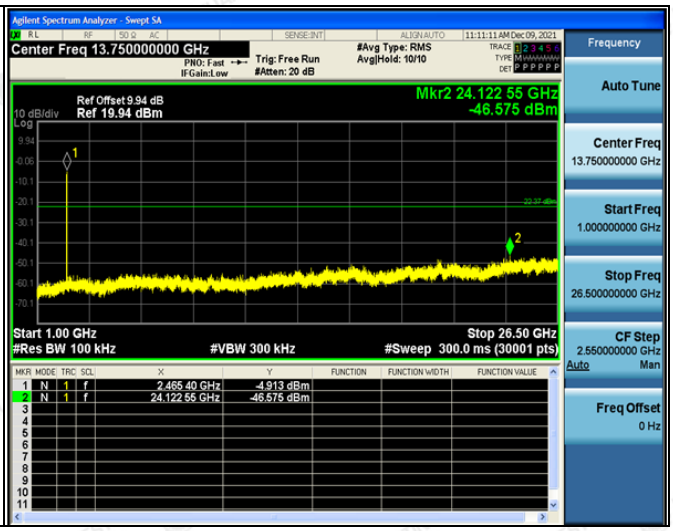
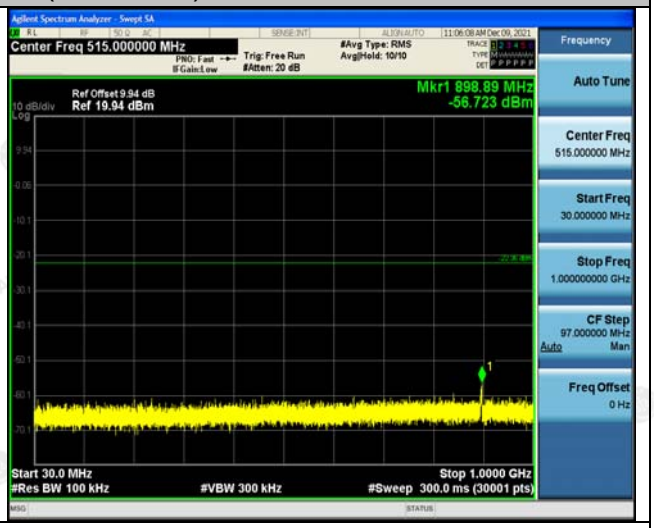
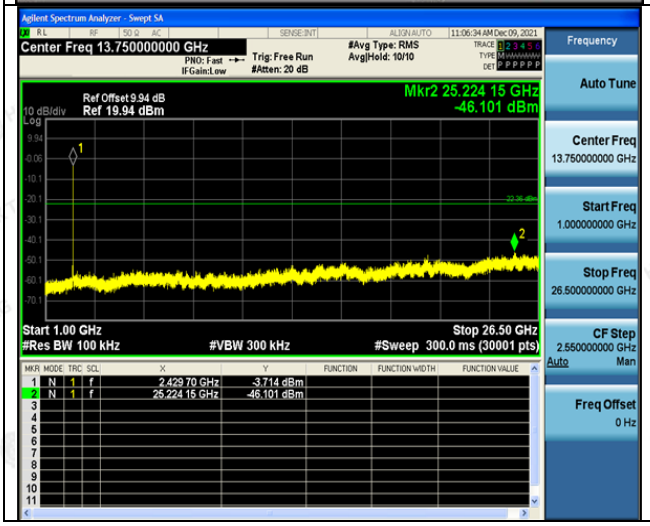




Spurious Emission(2437MHz)





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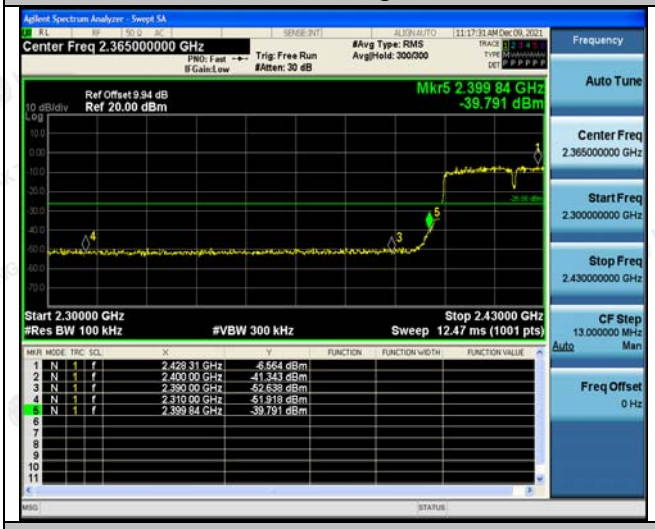
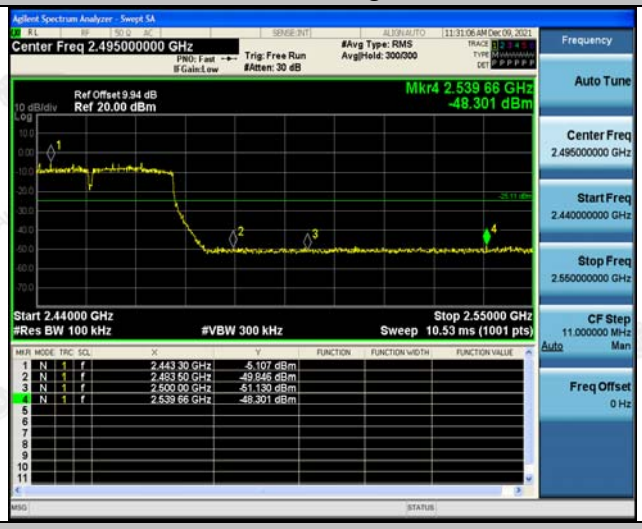
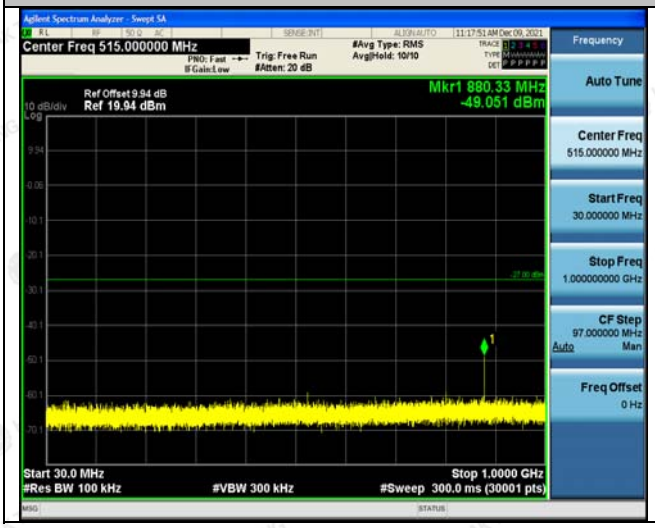
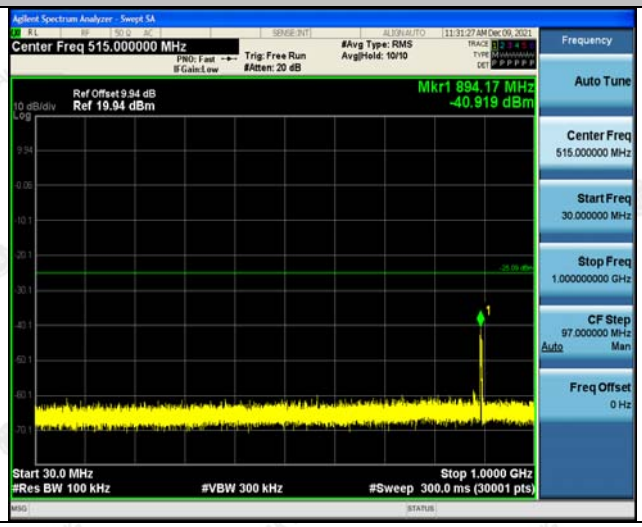
802.11n (HT40) Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2422MHz)	Spurious Emission(2452MHz)
	
	

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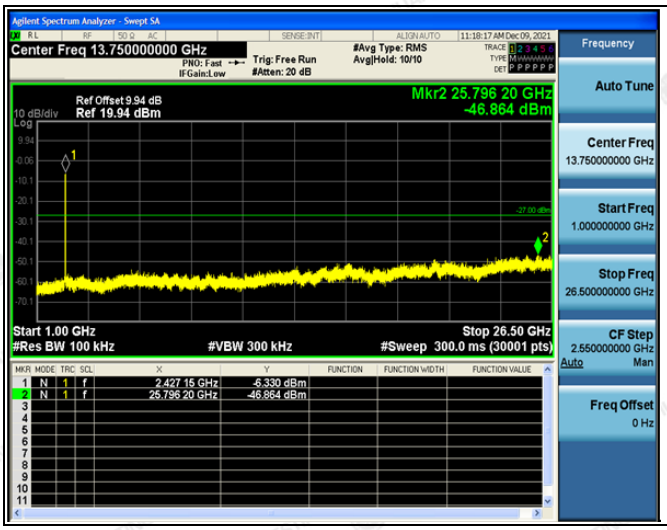
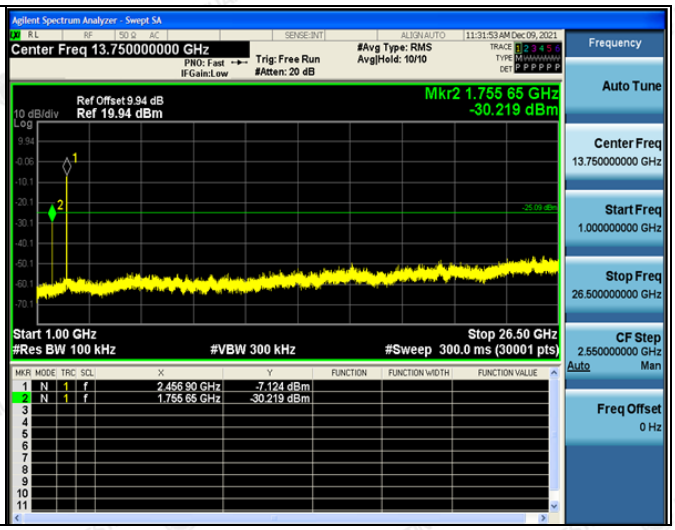
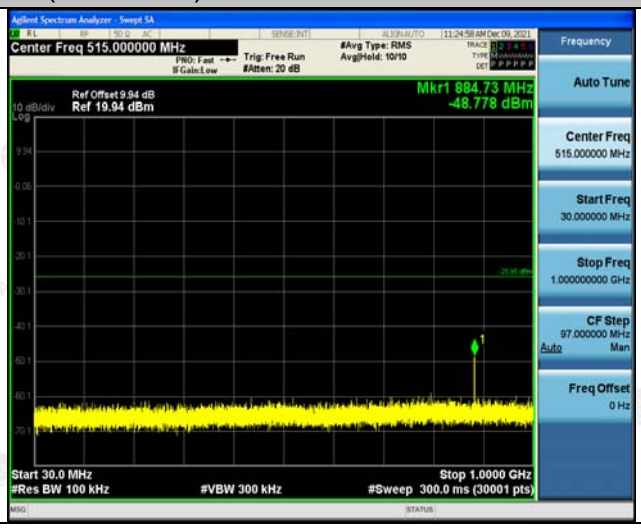
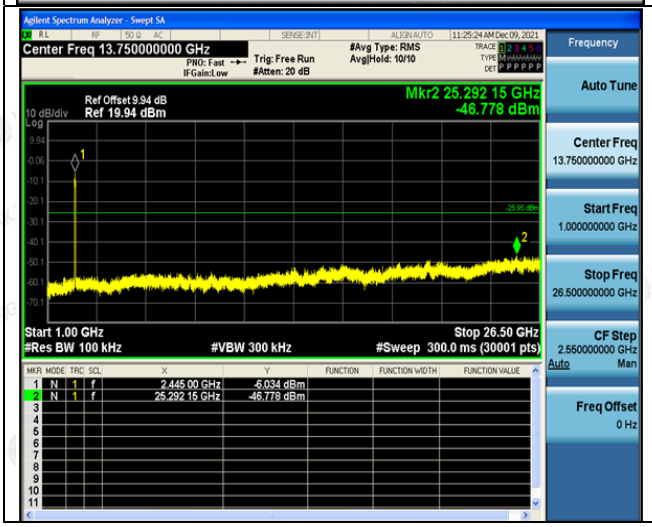




Spurious Emission(2437MHz)





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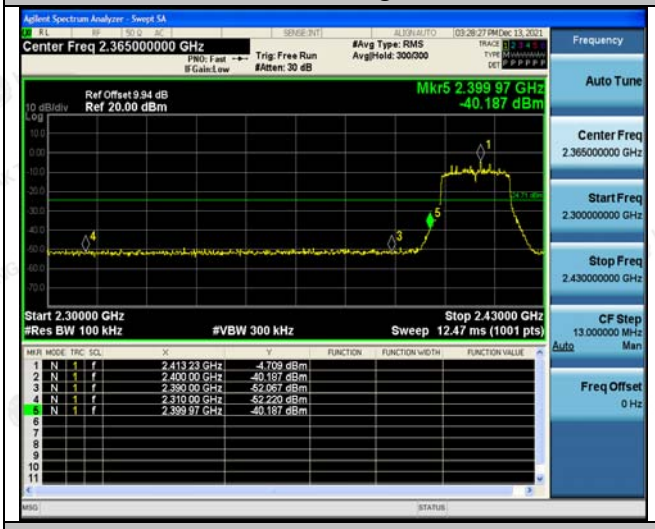
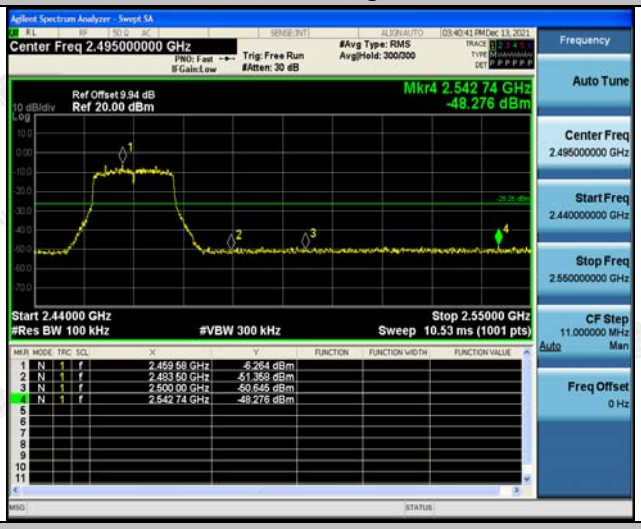
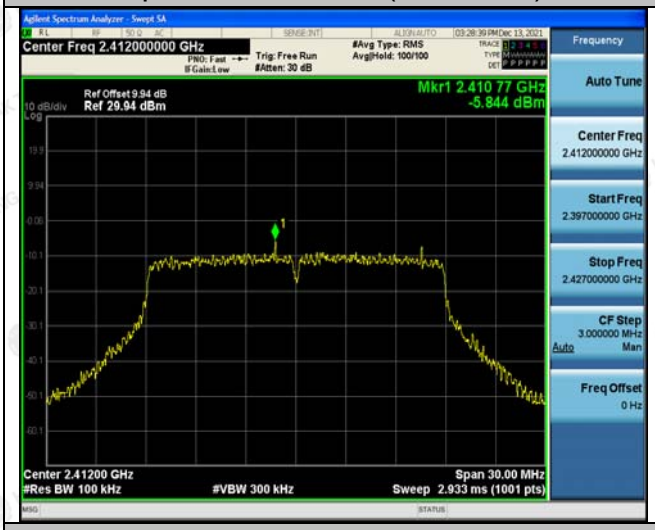
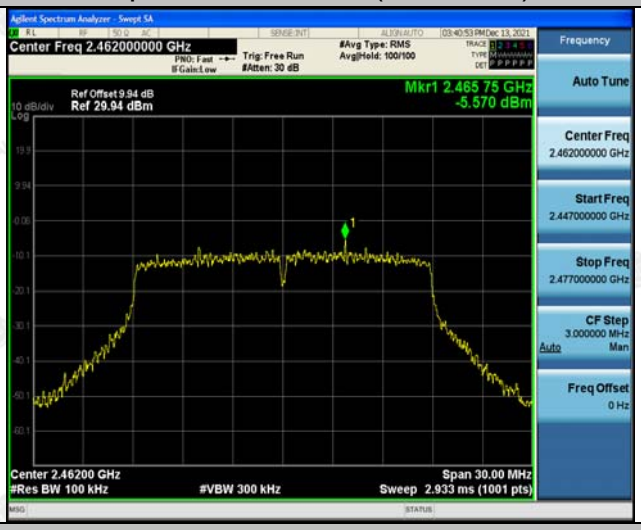
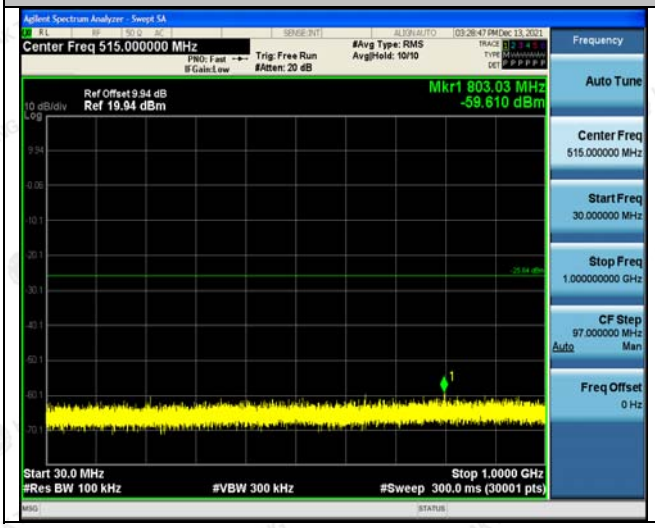
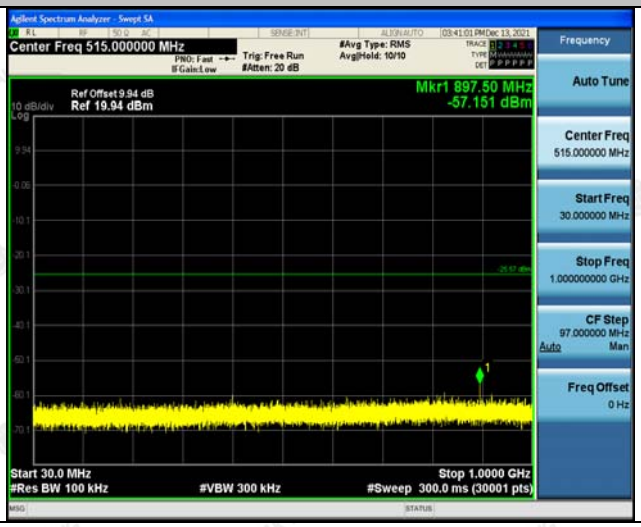
TX ac (HT20) Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2412MHz)	Spurious Emission(2462MHz)
	
	

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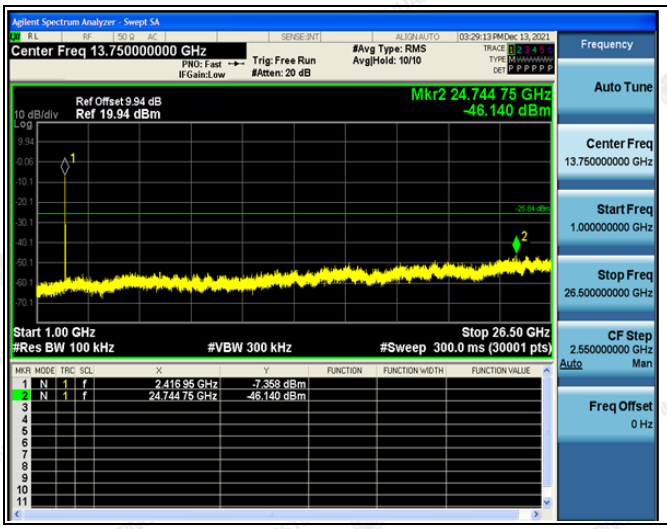
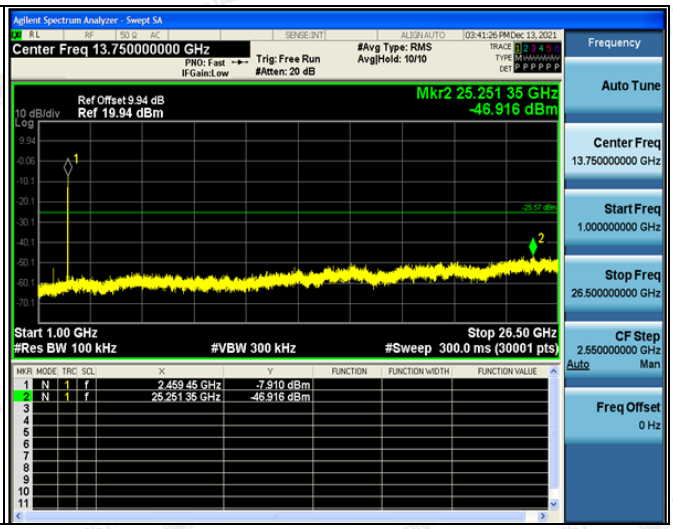
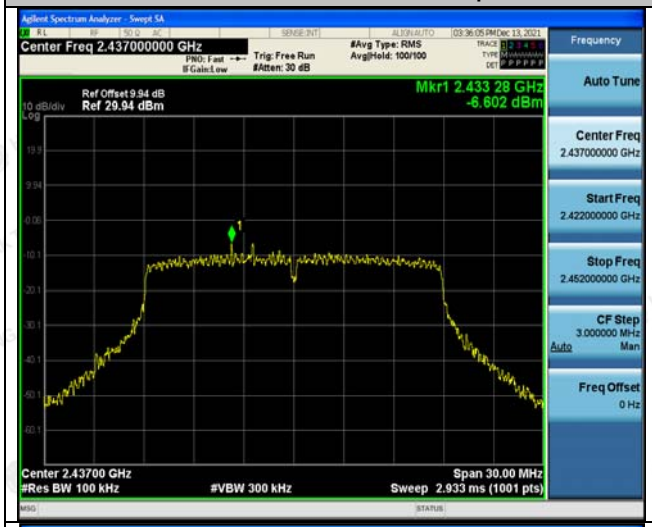
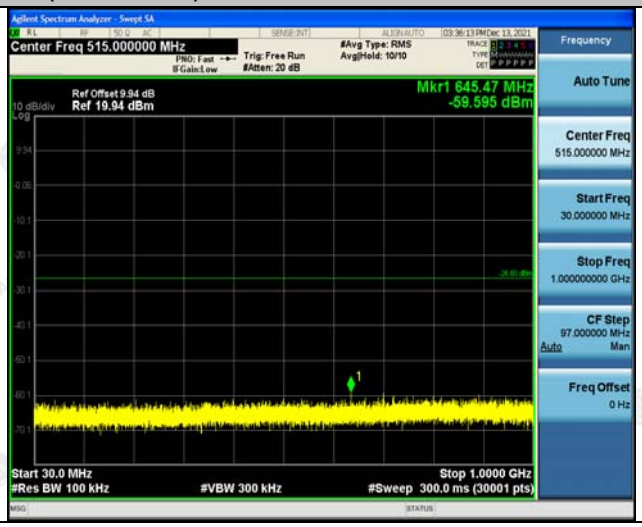
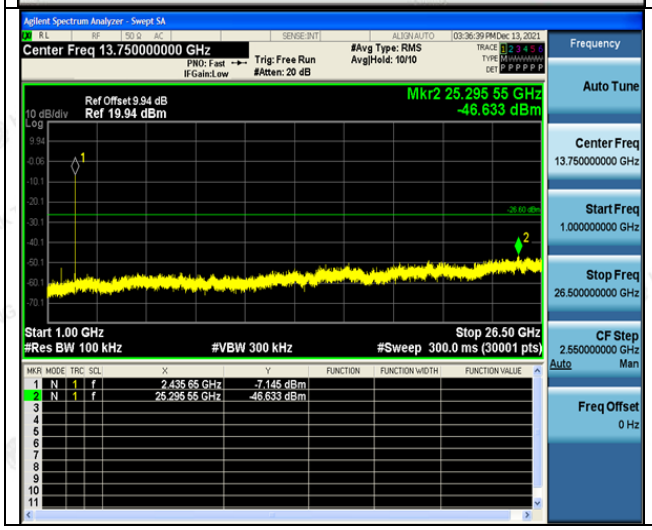




Spurious Emission(2437MHz)







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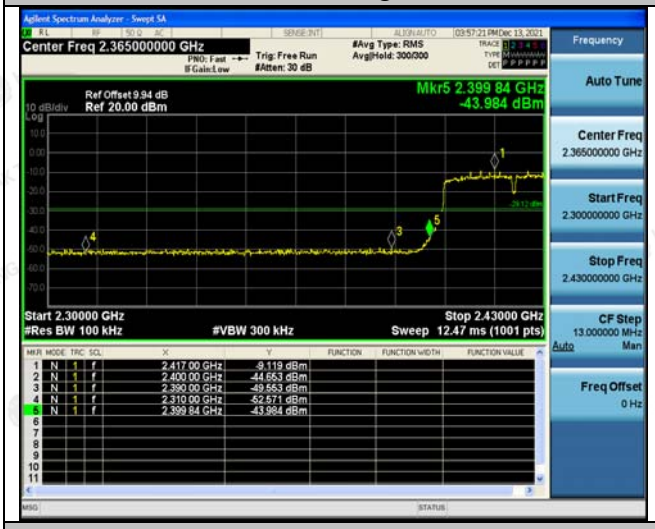
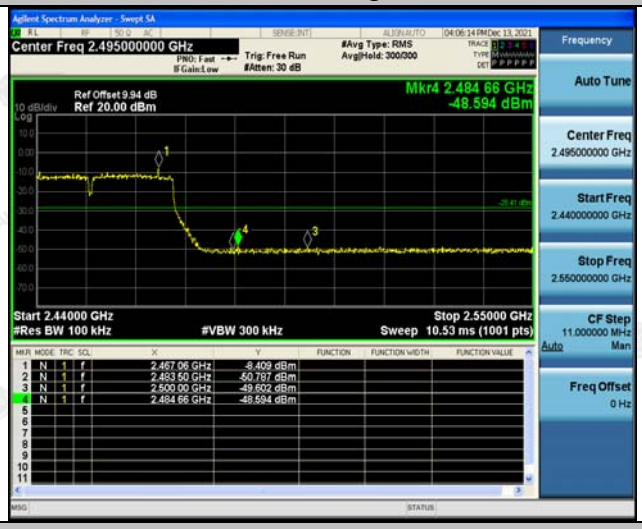
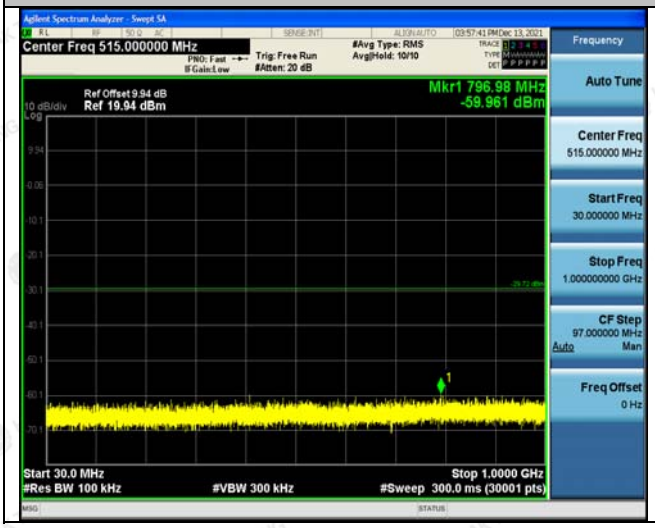
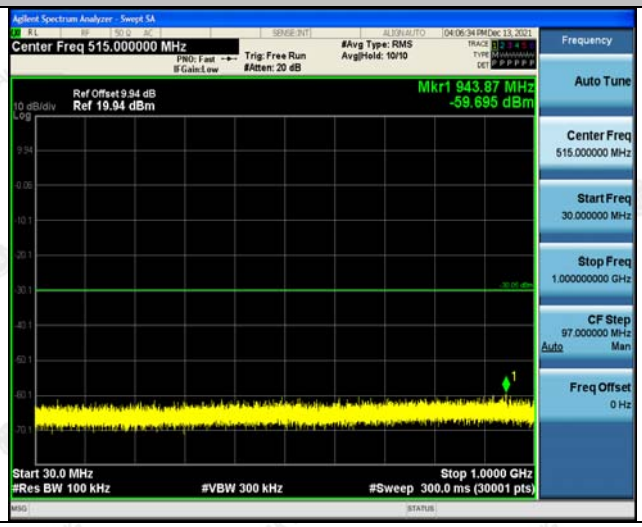
TX ac (HT40) Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2422MHz)	Spurious Emission(2452MHz)
	
	

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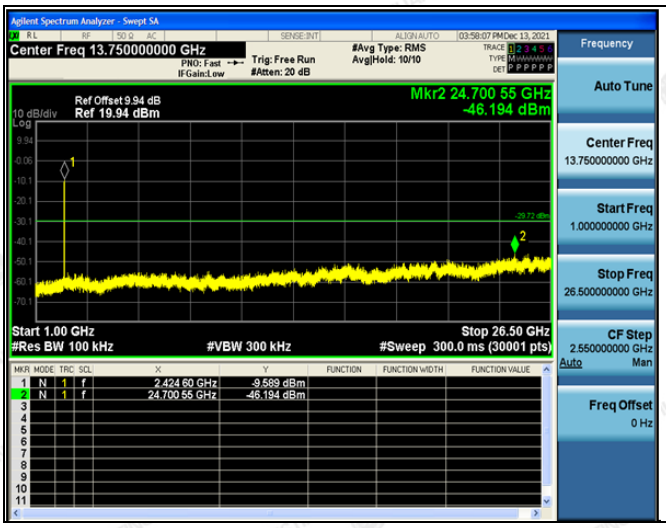
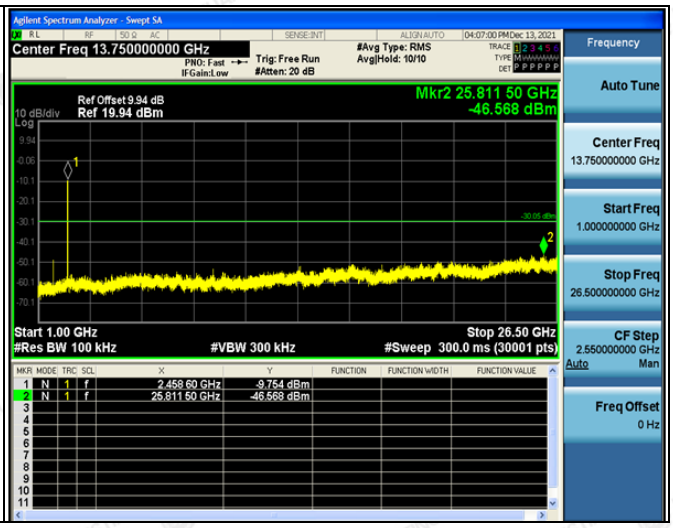
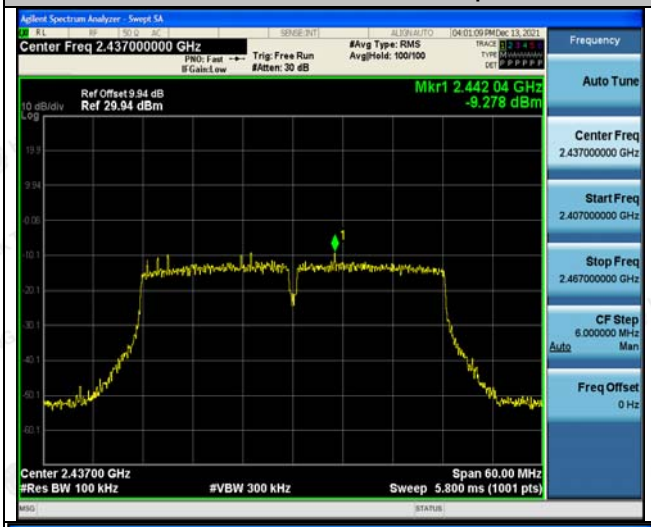
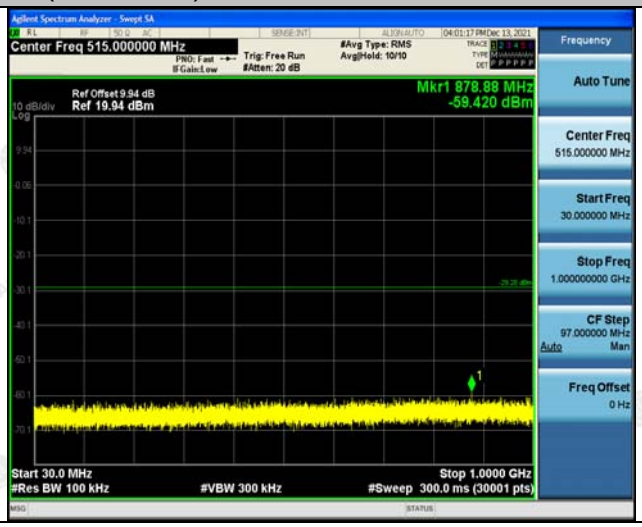
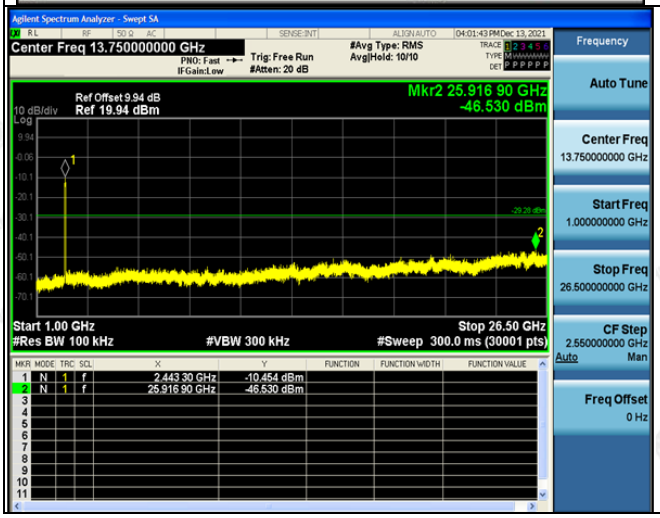




Spurious Emission(2437MHz)







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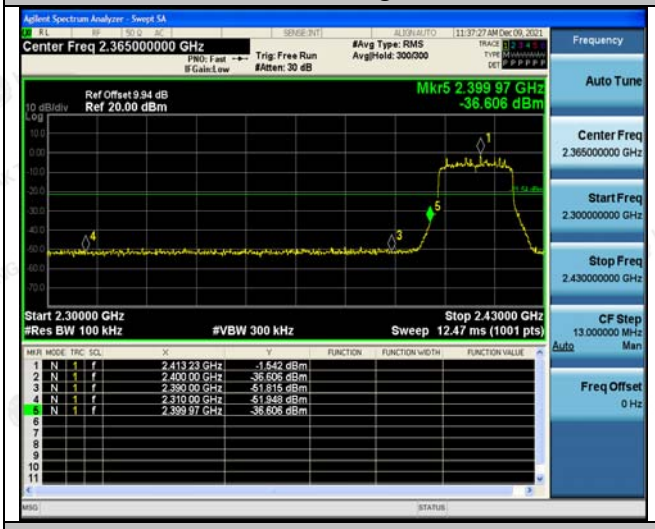
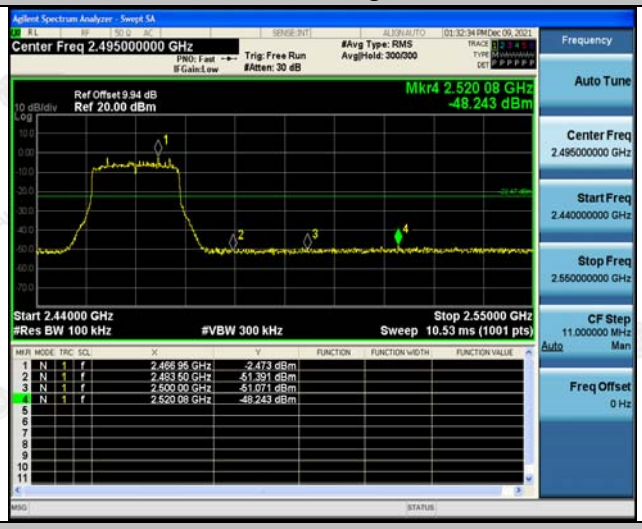
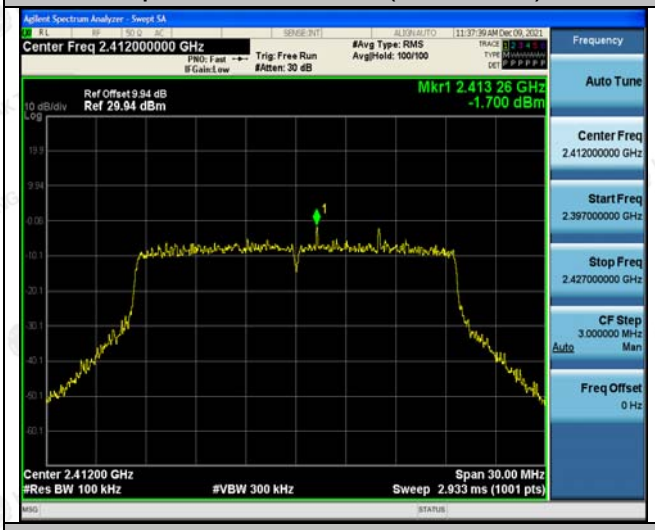
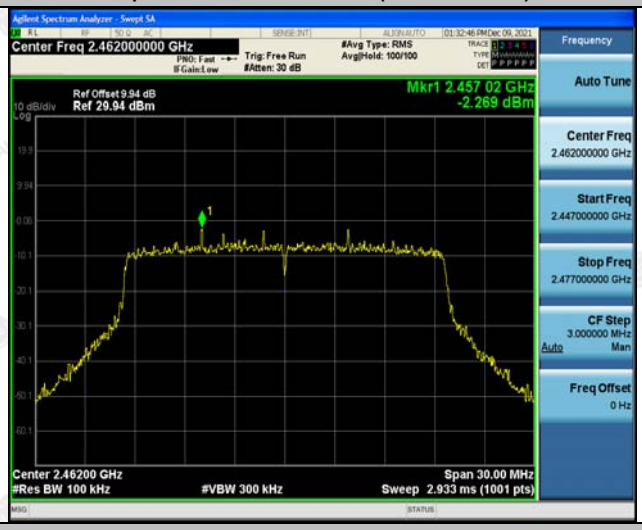
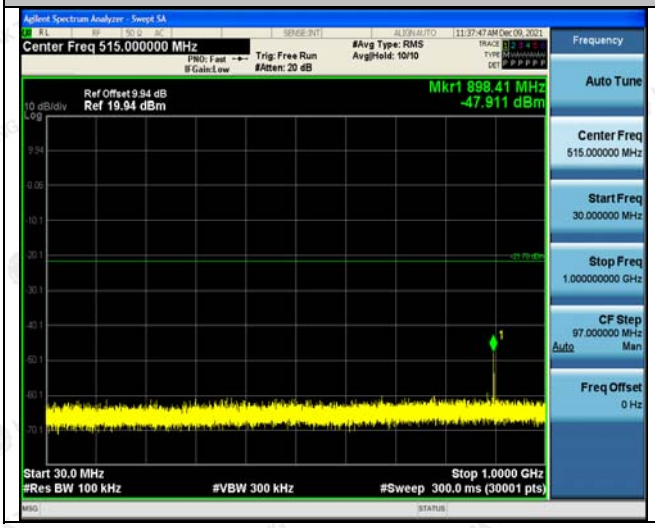
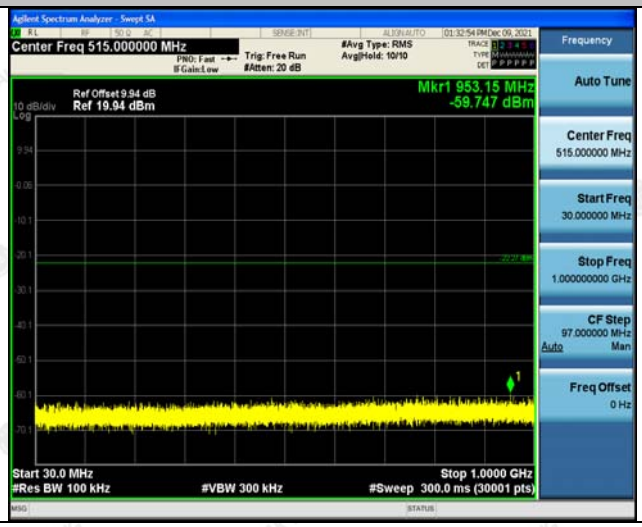
802.11ax (HT20) Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2412MHz)	Spurious Emission(2462MHz)
	
	

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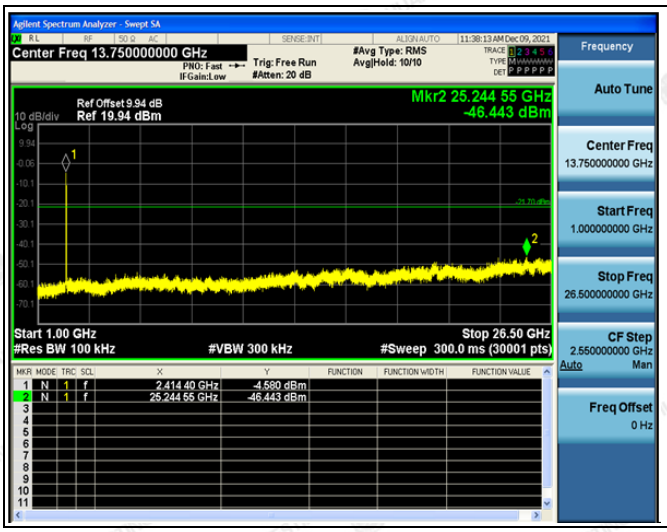
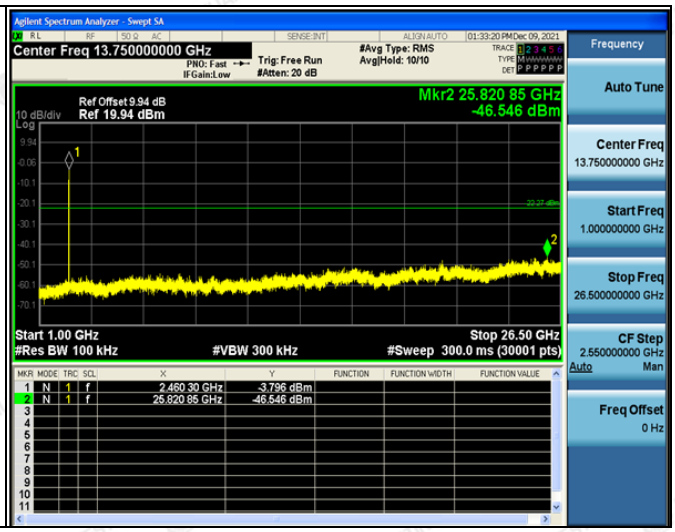
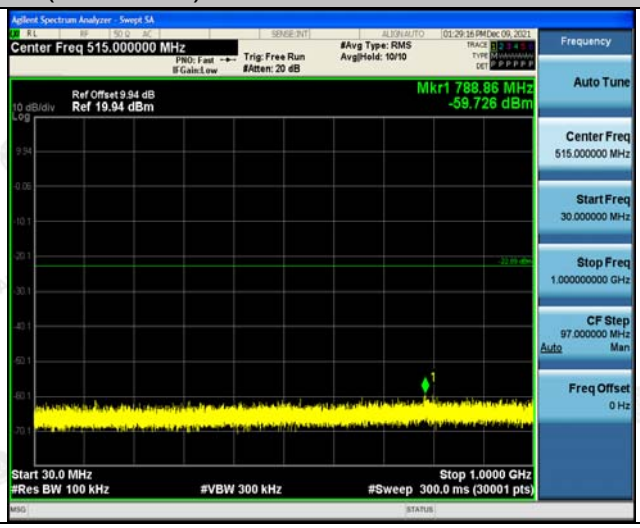
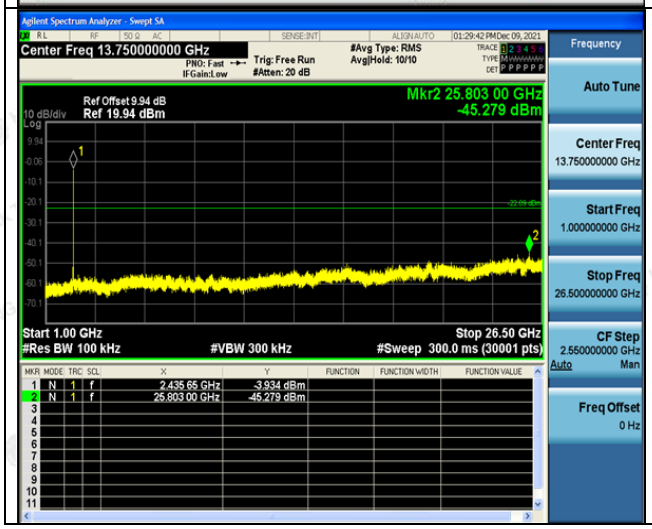




Spurious Emission(2437MHz)





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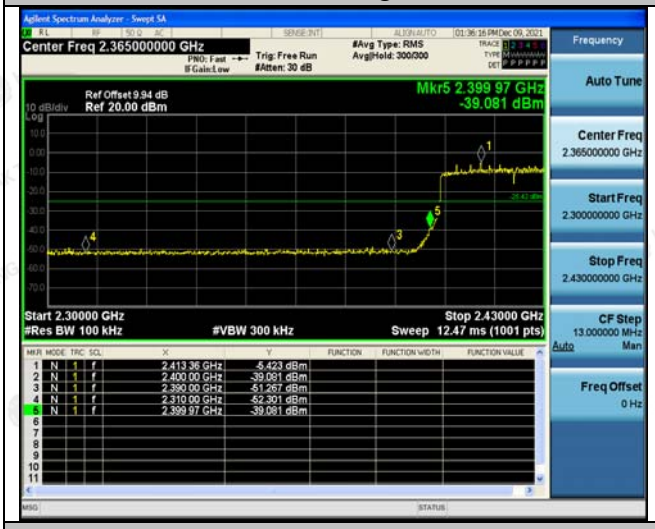
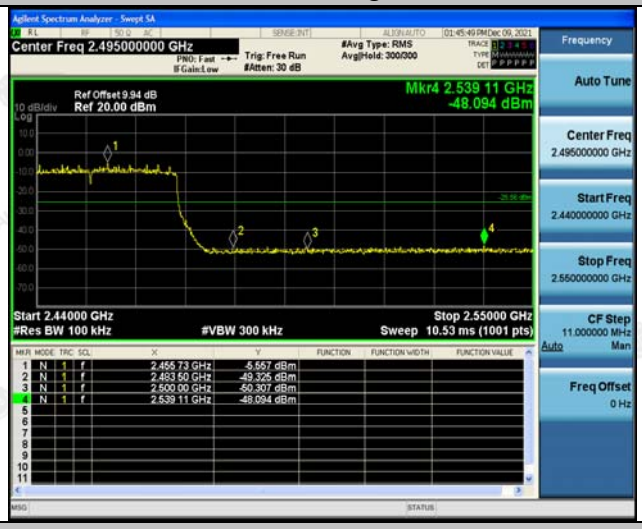
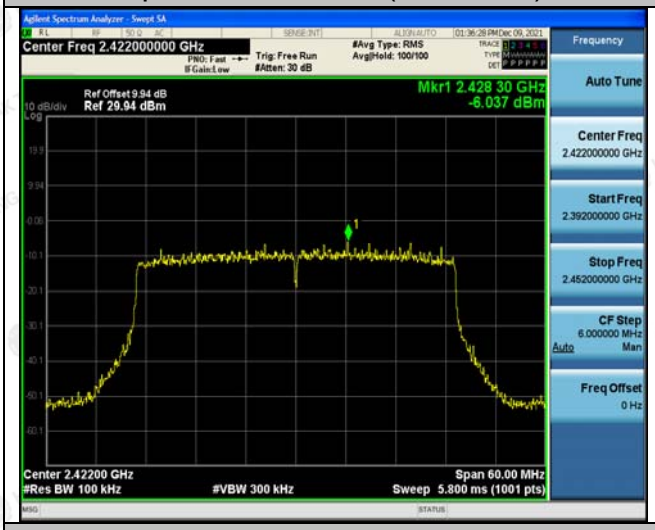
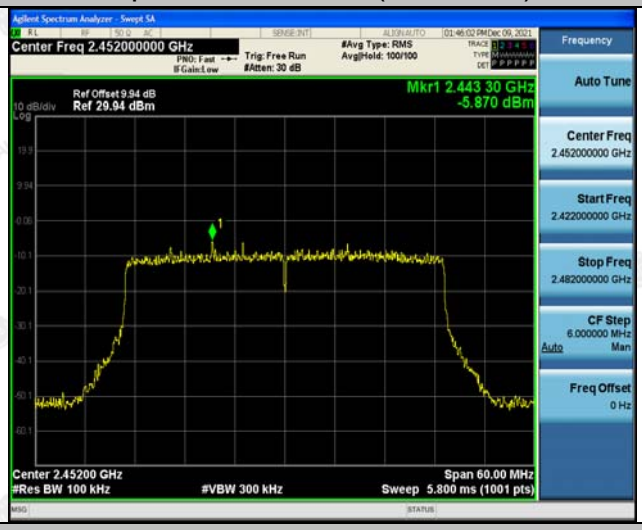
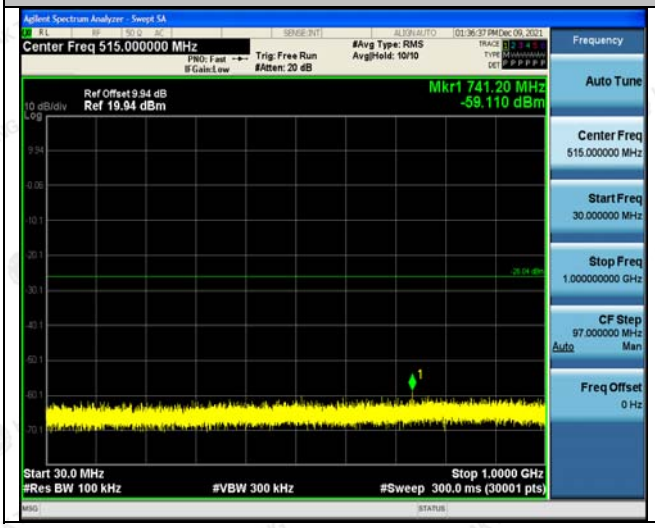
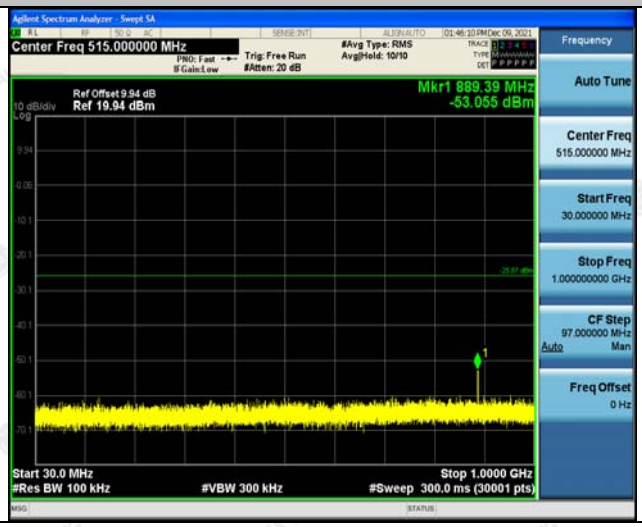
802.11ax (HT40) Modulation

Lowest Channel	Highest Channel
Band Edge	Band Edge
	
Spurious Emission(2422MHz)	Spurious Emission(2452MHz)
	
	

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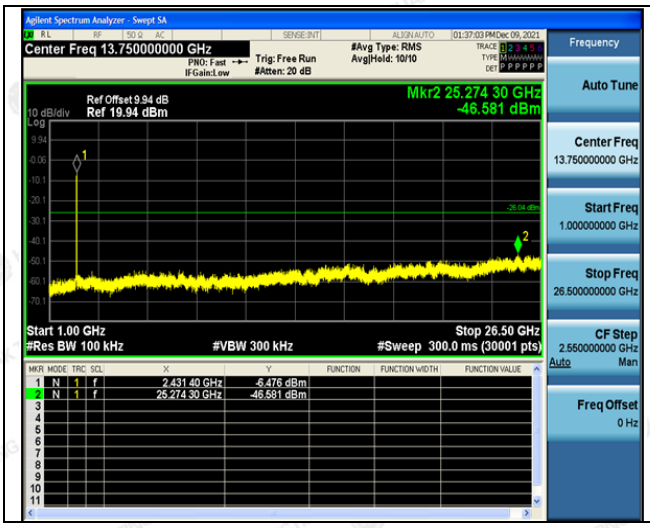
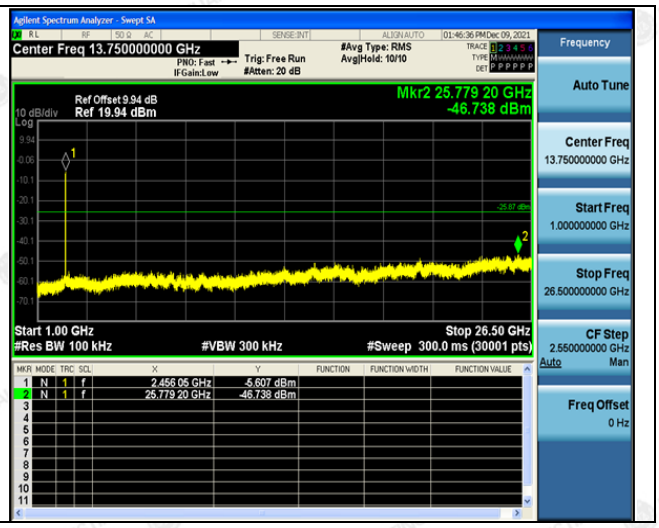
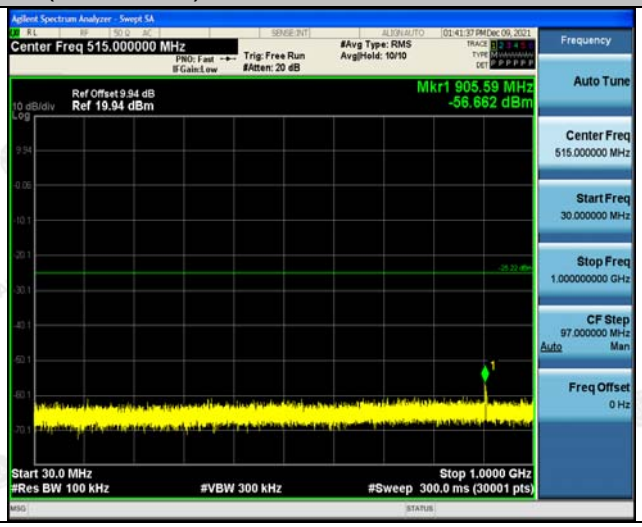
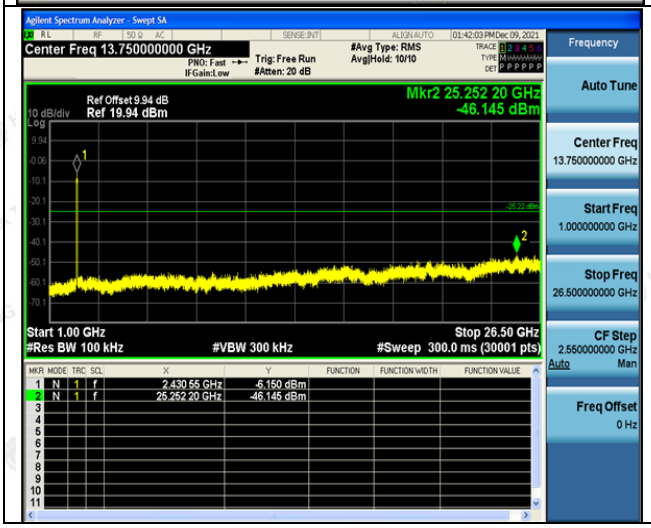




Spurious Emission(2437MHz)





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4.6. RADIATED SPURIOUS EMISSION MEASUREMENT

4.6.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10: 2013
Frequency Range:	9 kHz to 25 GHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical
Operation mode:	Transmitting mode with modulation

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

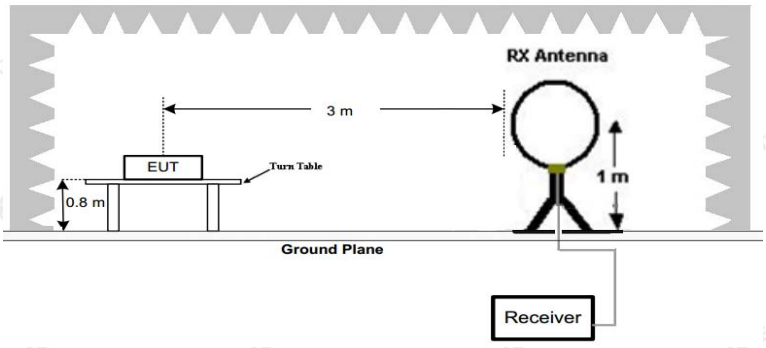
Limit:

Frequency	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	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector
Above 1GHz	500	3	Average
	5000	3	Peak

Test setup:

For radiated emissions below 30MHz



30MHz to 1GHz

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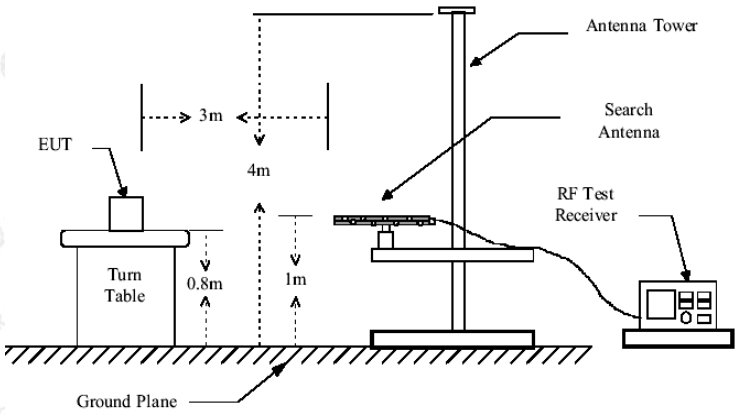
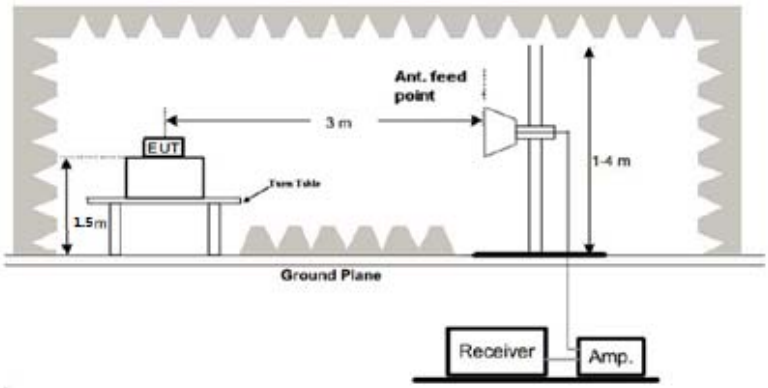
<tr>
<td></td>
<td>


Above 1GHz


</td>
</tr>
<tr>
<td>Test Procedure:</td>
<td>1. For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
2. For the radiated emission test above 1GHz:
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal.</td>
</tr>
</table>

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	The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 5. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement. 6. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 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.
Test results:	PASS

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4.6.2. Test Instruments

Radiated Emission Test Site (966)					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Receiver	R&S	ESR-7	HKE-010	Dec. 09, 2021	Dec. 08, 2022
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 09, 2021	Dec. 08, 2022
Preamplifier	EMCI	EMC051845 SE	HKE-015	Dec. 09, 2021	Dec. 08, 2022
Preamplifier	Agilent	83051A	HKE-016	Dec. 09, 2021	Dec. 08, 2022
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 09, 2021	Dec. 08, 2022
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	Dec. 09, 2021	Dec. 08, 2022
Horn antenna	Schwarzbeck	9120D	HKE-013	Dec. 09, 2021	Dec. 08, 2022
Antenna Mast	Keleto	CC-A-4M	N/A	N/A	N/A
Position controller	Taiwan MF	MF7802	HKE-011	Dec. 09, 2021	Dec. 08, 2022
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A	N/A
RF cable (9KHz-1GHz)	Times	381806-001	N/A	N/A	N/A
RF cable	Times	1-40G	HKE-034	Dec. 09, 2021	Dec. 08, 2022
Horn Antenna	Schewarzbeck	BBHA 9170	HKE-017	Dec. 09, 2021	Dec. 08, 2022

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

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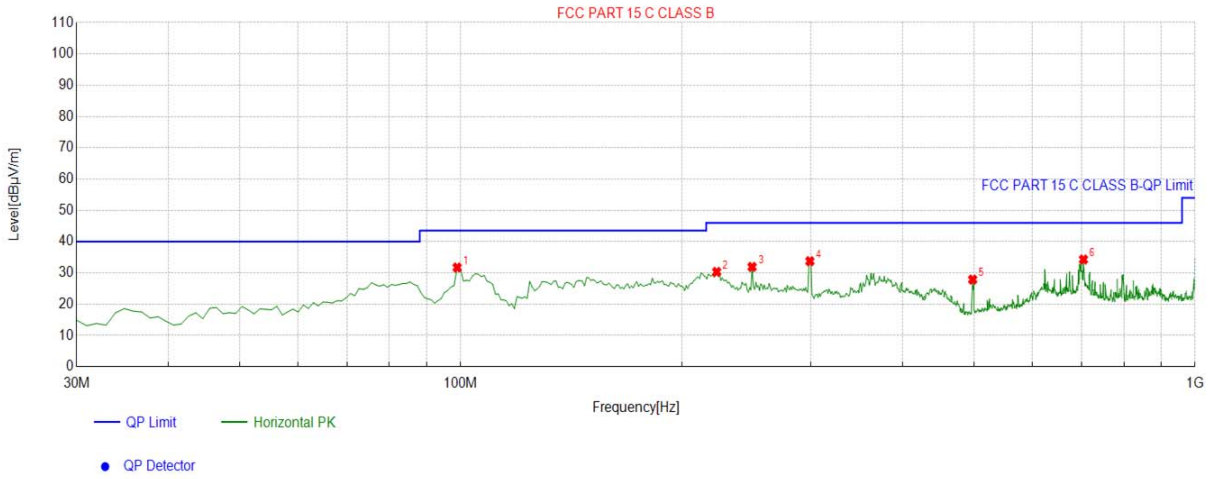
4.6.3. Test Data

Please refer to following diagram for individual
Below 1GHz

All the test modes completed for test. only the worst result of reported as below:

Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	98.9389	-15.58	47.29	31.71	43.50	11.79	100	128	Horizontal
2	223.2232	-14.48	44.79	30.31	46.00	15.69	100	133	Horizontal
3	249.4394	-13.42	45.33	31.91	46.00	14.09	100	102	Horizontal
4	298.9590	-12.75	46.48	33.73	46.00	12.27	100	44	Horizontal
5	498.0080	-8.35	36.20	27.85	46.00	18.15	100	118	Horizontal
6	704.8248	-4.97	39.24	34.27	46.00	11.73	100	318	Horizontal

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

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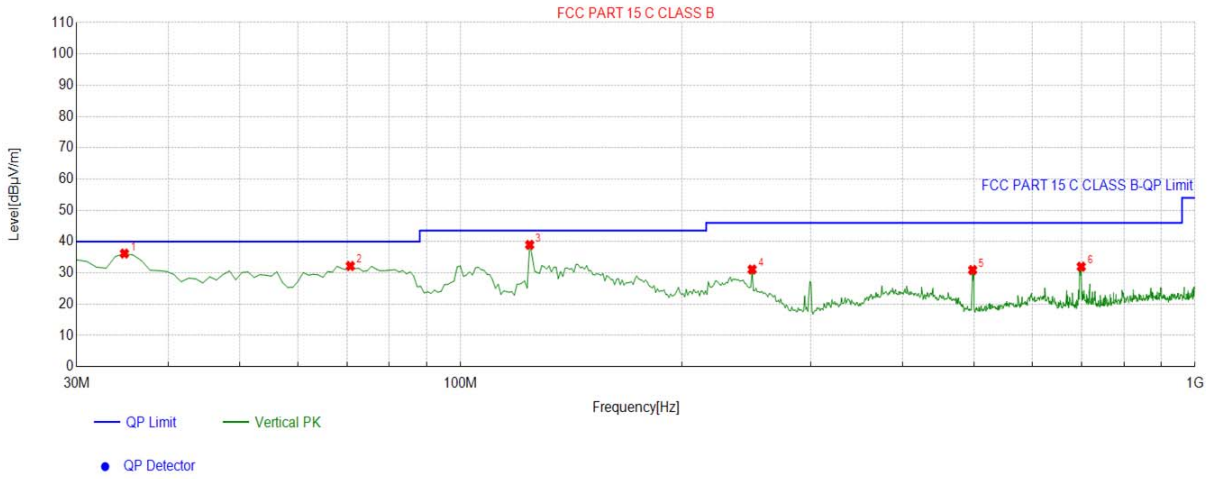
Vertical



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	34.8549	-16.15	52.32	36.17	40.00	3.83	100	40	Vertical
2	70.7808	-17.81	50.00	32.19	40.00	7.81	100	11	Vertical
3	124.1842	-17.72	56.68	38.96	43.50	4.54	100	348	Vertical
4	249.4394	-13.42	44.49	31.07	46.00	14.93	100	61	Vertical
5	498.0080	-8.35	39.25	30.90	46.00	15.10	100	26	Vertical
6	699.9700	-5.06	37.03	31.97	46.00	14.03	100	156	Vertical

Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note: *1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor*

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

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