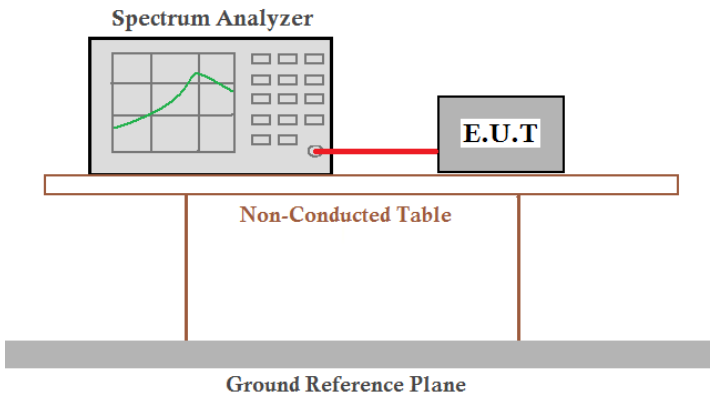


## 4.6 Band edge

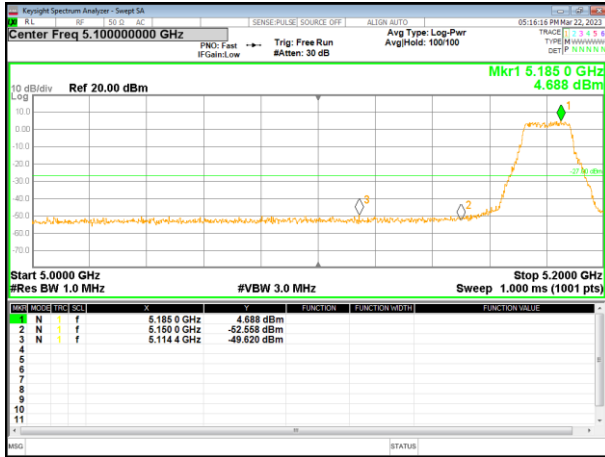
### 4.6.1 Conducted test Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Limit:	All emissions shall be limited to a level of $-27$ dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Procedure:	<ol style="list-style-type: none"> <li>1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.</li> <li>2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.</li> <li>3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.</li> <li>4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.</li> <li>5. Repeat above procedures until all measured frequencies were complete..</li> </ol>
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

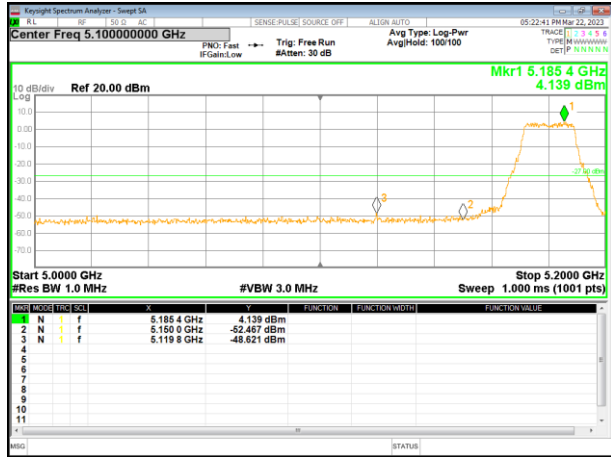
Remarks:/

5.180~5.240 GHz

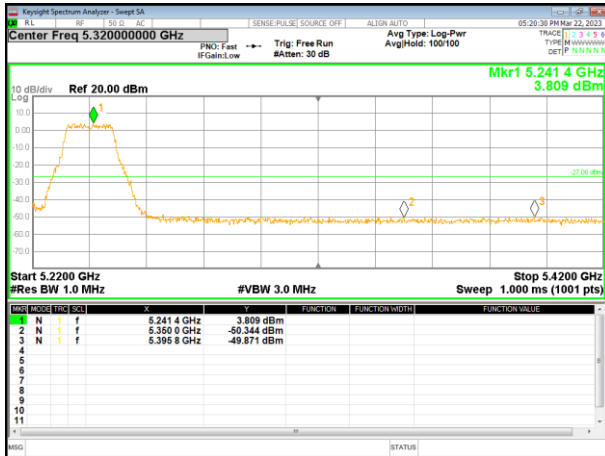
(802.11a) Band Edge, Left Side



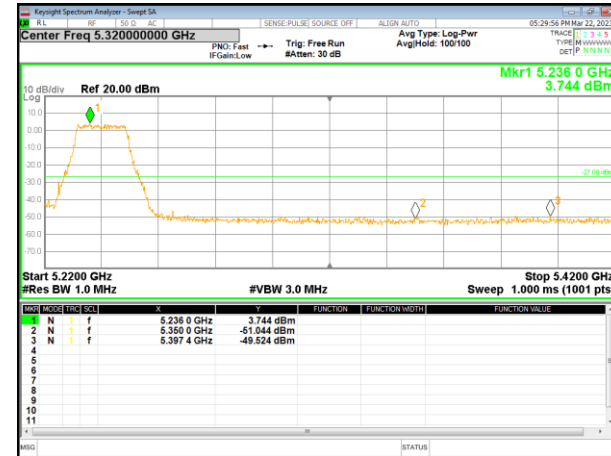
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

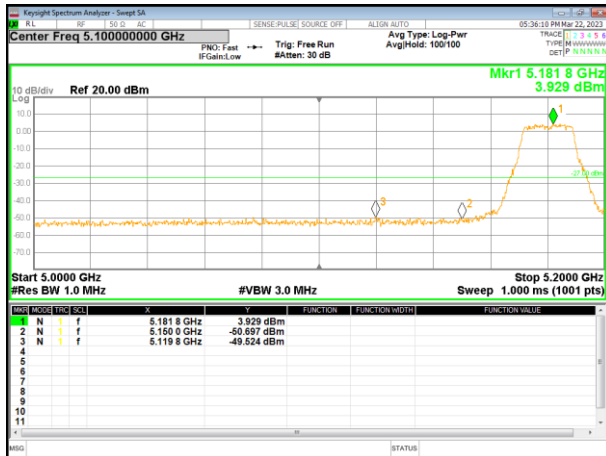


(802.11n20) Band Edge, Right Side

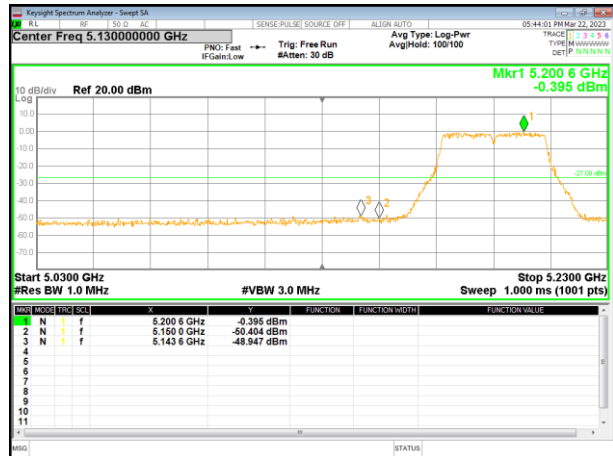


5.180~5.240 GHz

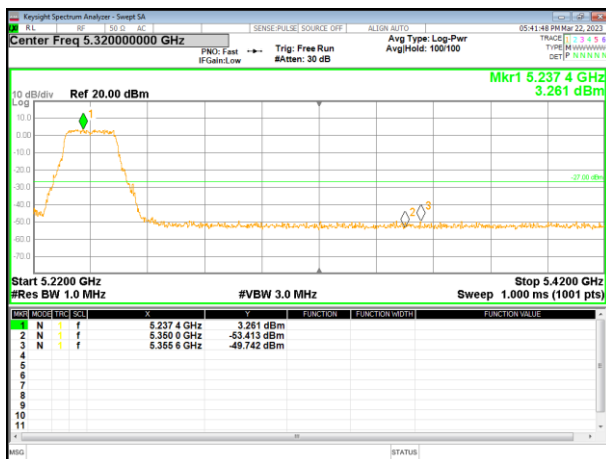
(802.11ac20) Band Edge, Left Side



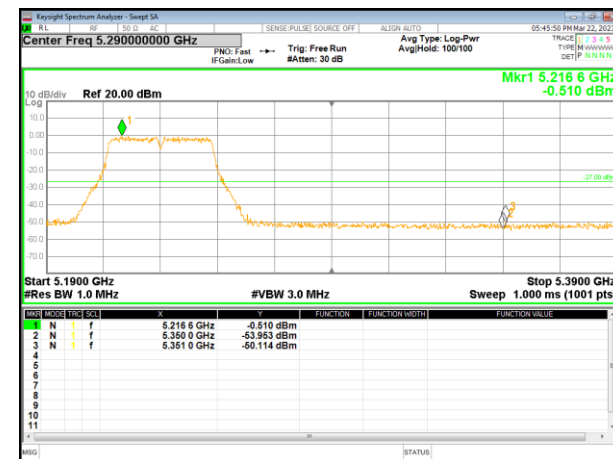
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

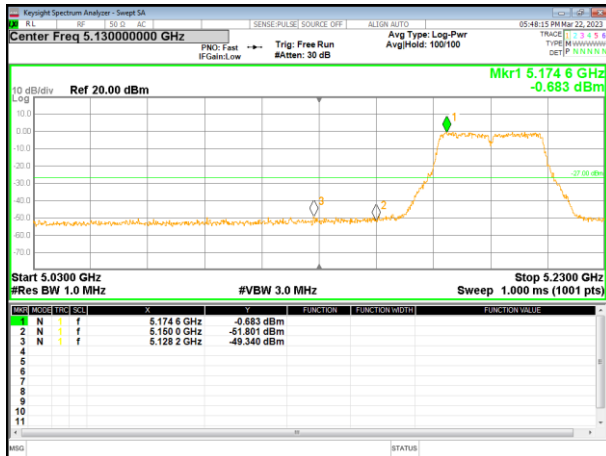


(802.11n40) Band Edge, Right Side

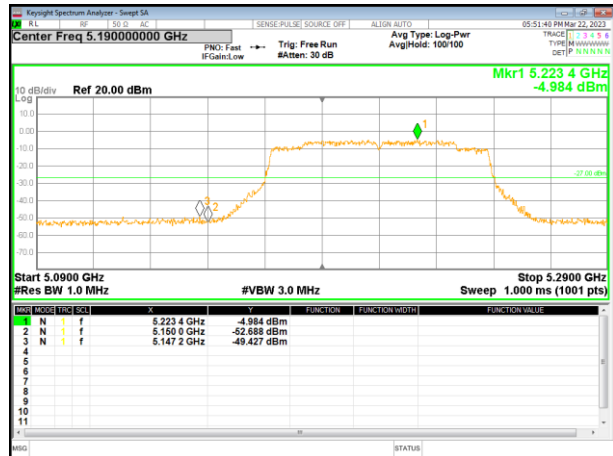


5.180~5.240 GHz

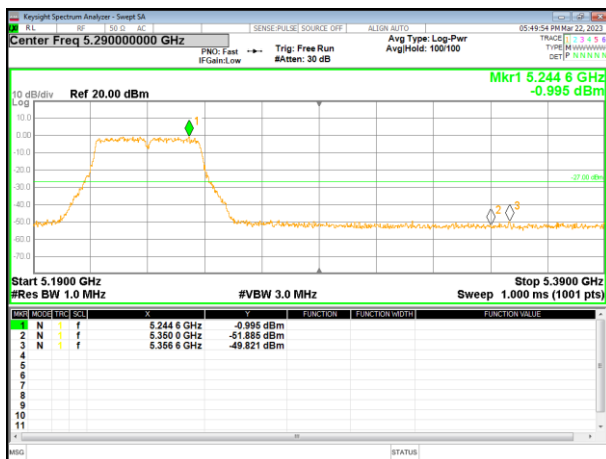
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



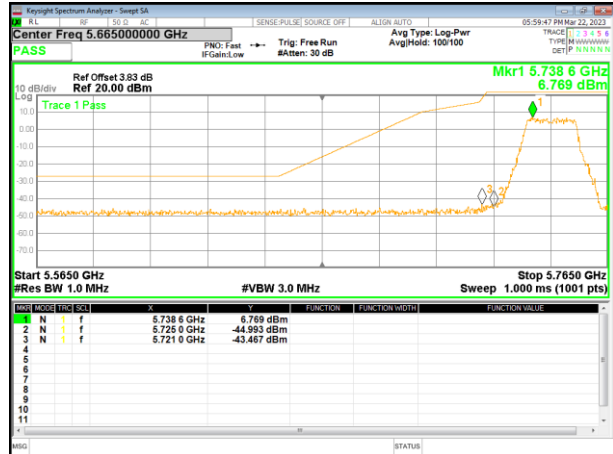
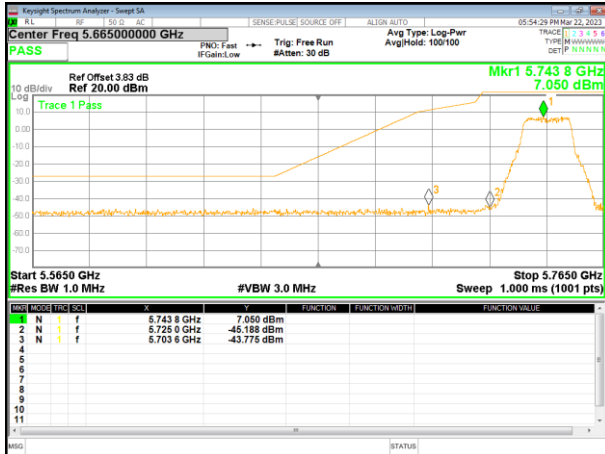
(802.11ac40) Band Edge, Right Side



5.745~5.825 GHz

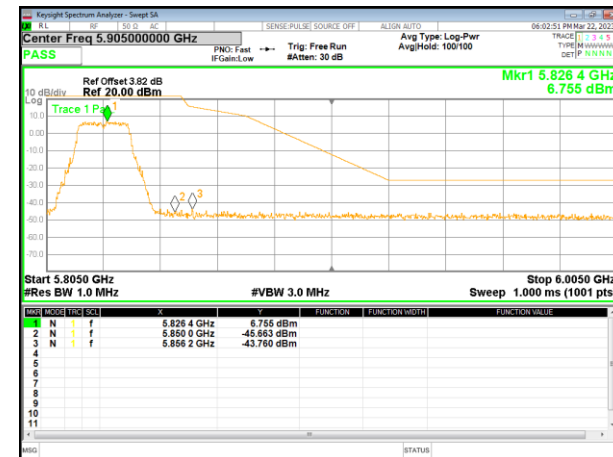
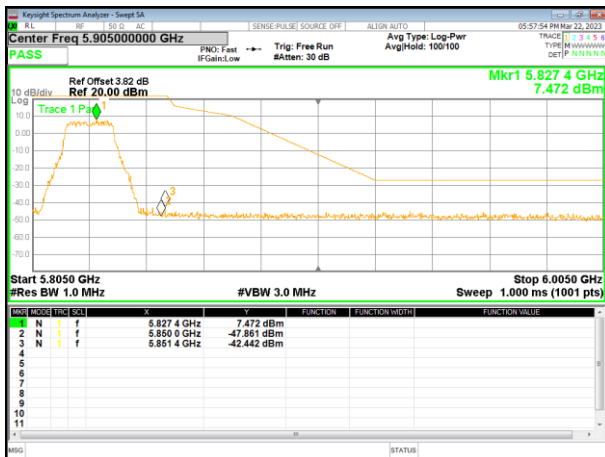
(802.11a) Band Edge, Left Side

(802.11n20) Band Edge, Left Side



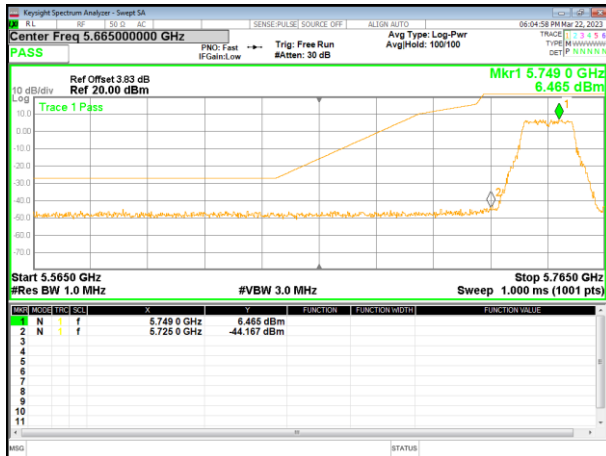
(802.11a) Band Edge, Right Side

(802.11n20) Band Edge, Right Side

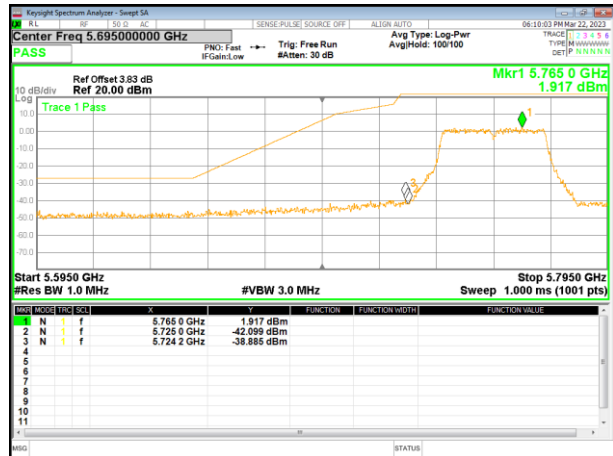


5.745~5.825 GHz

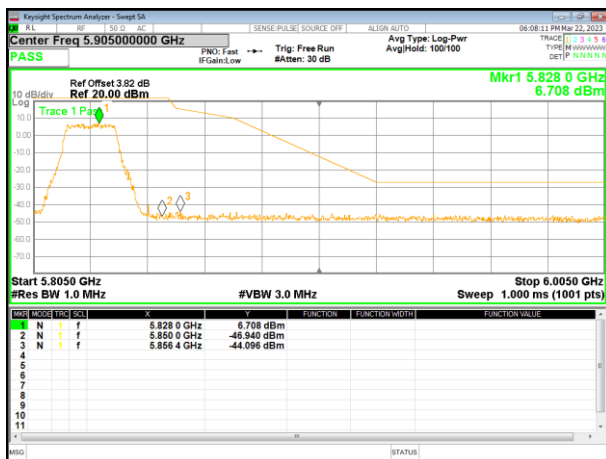
(802.11ac20) Band Edge, Left Side



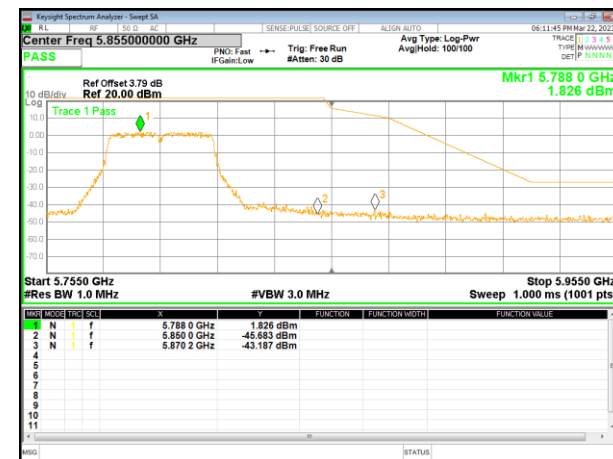
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side



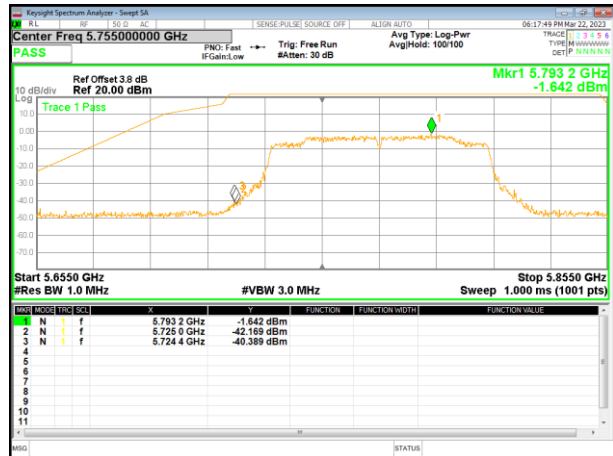
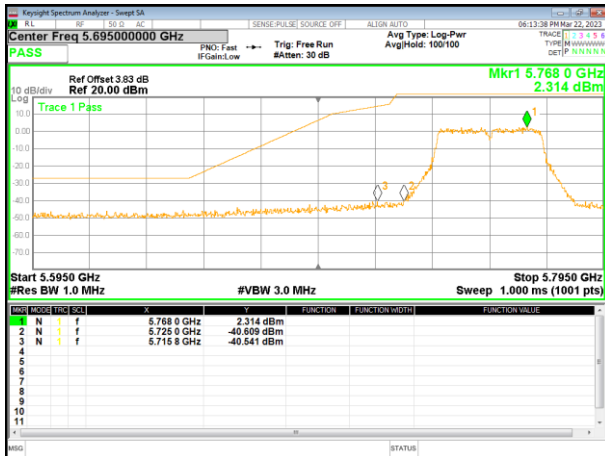
(802.11n40) Band Edge, Right Side



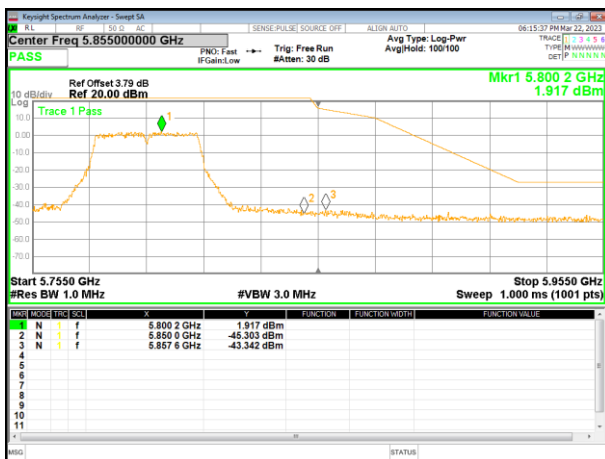
5.745~5.825 GHz

(802.11ac40) Band Edge, Left Side

(802.11ac80) Band Edge

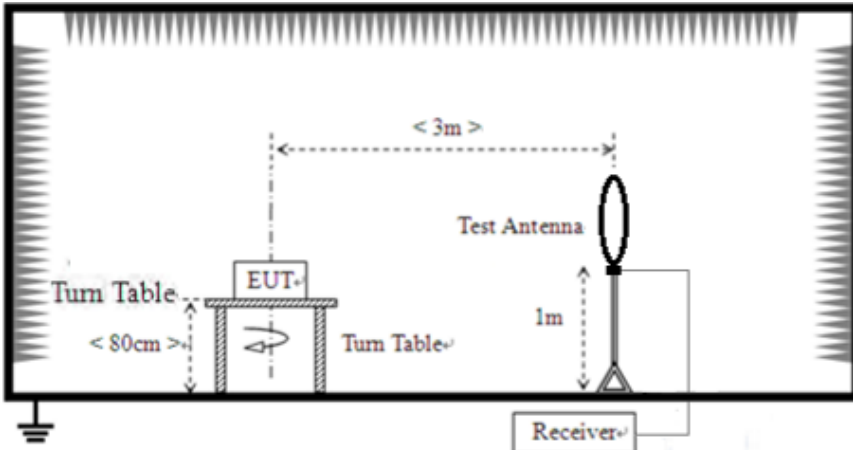


(802.11ac40) Band Edge, Right Side

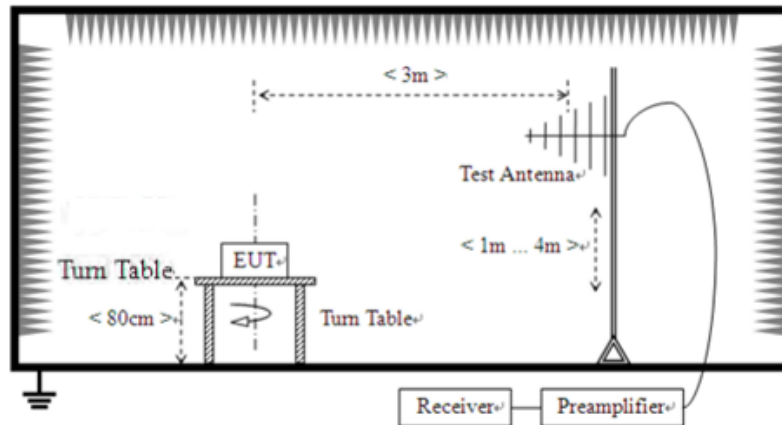


## 4.7 Spurious Emission

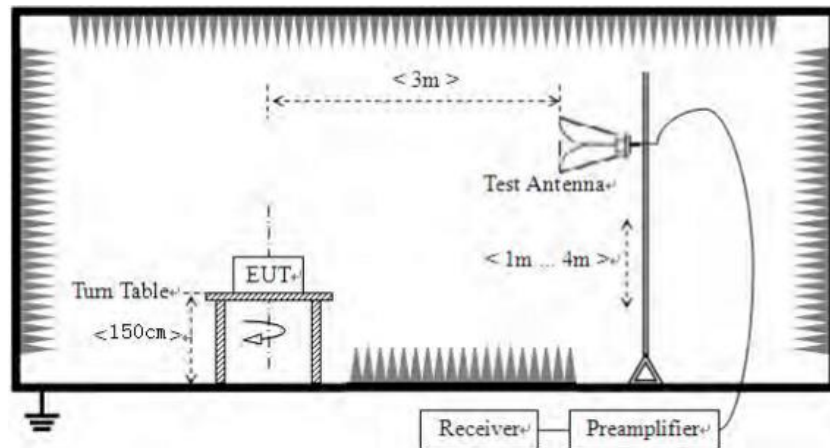
### 4.7.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	9kHz to 40GHz					
Test site:	Measurement Distance: 3m					
Receiver setup:	Frequency	Detector	RBW	VBW	Value	
	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	
AV		1MHz	3MHz	Average Value		
Limit:	Frequency	Limit (uV/m)	Value	Measurement Distance		
	0.009MHz-0.490MHz	2400/F(KHz)	QP	300m		
	0.490MHz-1.705MHz	24000/F(KHz)	QP	300m		
	1.705MHz-30MHz	30	QP	30m		
	30MHz-88MHz	100	QP	3m		
	88MHz-216MHz	150	QP			
	216MHz-960MHz	200	QP			
	960MHz-1GHz	500	QP			
		Frequency	Limit (dBm/MHz)	Remark		
		Above 1GHz	-27.0	Peak Value		
Test setup:	<p>For radiated emissions from 9kHz to 30MHz</p>  <p>For radiated emissions from 30MHz to 1GHz</p>					





For radiated emissions above 1GHz



Test Procedure:

1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average

	method as specified and then reported in a data sheet.					
	7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.					
Test Instruments:	Refer to section 3.0 for details					
Test mode:	Refer to section 2.2 for details					
Test environment:	Temp.:	25.6°C	Humid.:	55%	Press.:	1012mbar
Test voltage:	AC 120V					
Test results:	Pass					

*Remarks:*

1. All antennas was tested, only show the worst case 802.11n20 mode test data.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

**Measurement Data:**

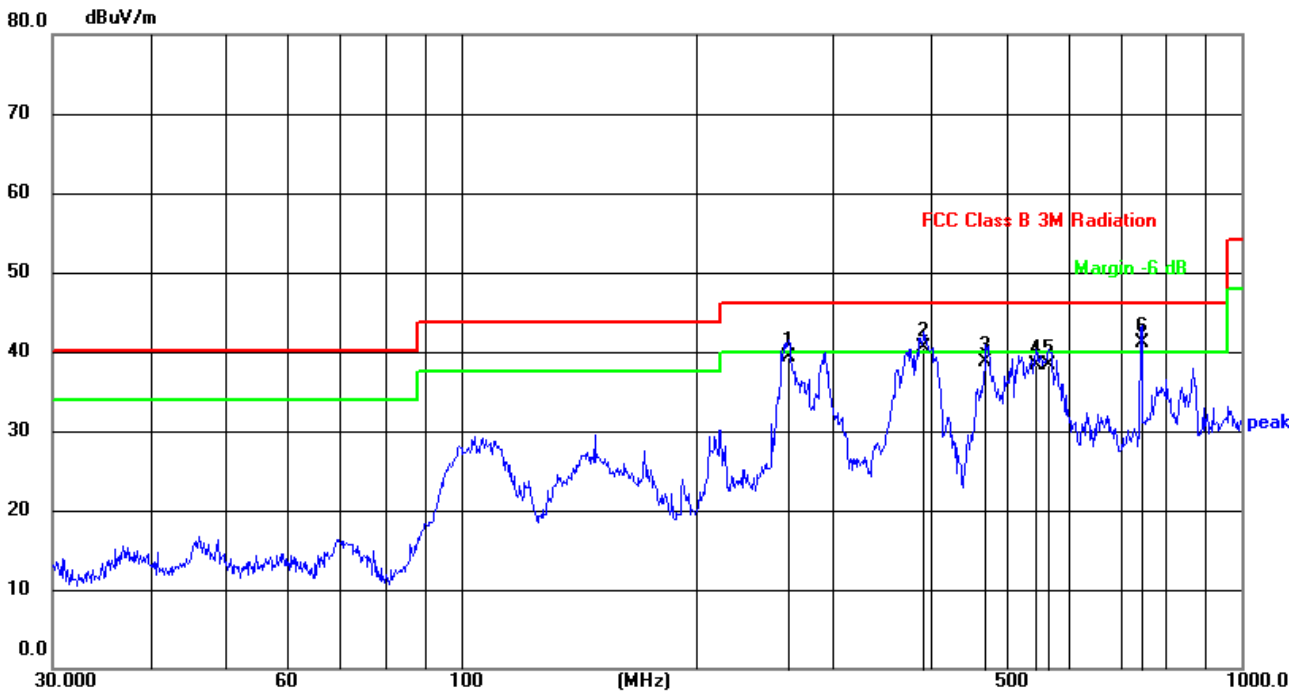
**9 kHz ~ 30 MHz**

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

**Below 1GHz**

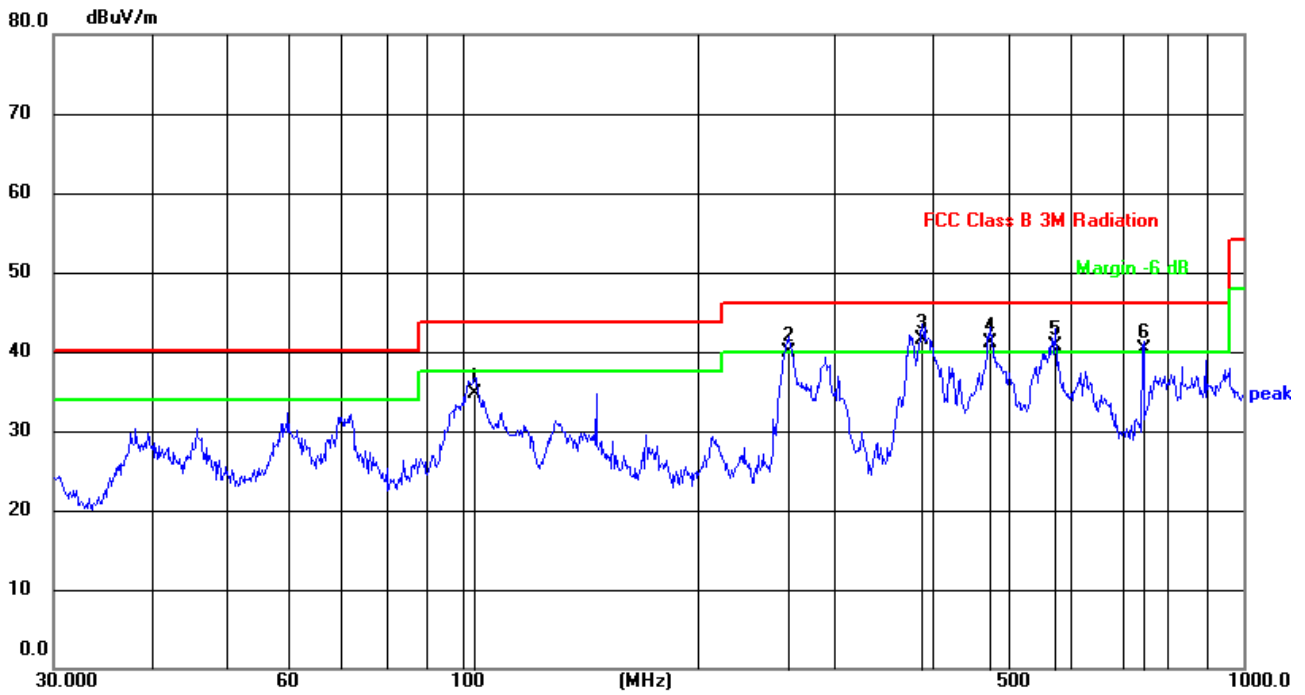
Temperature:	25.3°C	Relative Humidity:	49%
Pressure:	1010 hPa	Test Voltage :	AC120V
Test Mode :	5.2G TX- 802.11a		

**Horizontal:**



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	262.8955	61.36	-21.96	39.40	46.00	-6.60	QP
2	392.0950	58.06	-17.56	40.50	46.00	-5.50	QP
3	470.5230	54.33	-15.53	38.80	46.00	-7.20	QP
4	545.1825	51.26	-12.96	38.30	46.00	-7.70	QP
5	566.6221	50.88	-12.48	38.40	46.00	-7.60	QP
6	744.8659	49.41	-8.21	41.20	46.00	-4.80	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	103.8054	59.49	-24.79	34.70	43.50	-8.80	QP
2	261.9750	61.89	-21.99	39.90	46.00	-6.10	QP
3	387.9917	59.21	-17.71	41.50	46.00	-4.50	QP
4	473.8346	56.73	-15.53	41.20	46.00	-4.80	QP
5	574.6258	53.11	-12.31	40.80	46.00	-5.20	QP
6	744.8659	48.51	-8.21	40.30	46.00	-5.70	QP

Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The test data shows only the worst case 802.11a mode



**Above 1GHz:**

Temperature:	25.3°C	Relative Humidity:	49%
Pressure:	1010 hPa	Test Voltage :	AC120V
Test Mode :	5.2G TX- 802.11a		

802.11n20

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
<i>Low Channel:5180MHz</i>									
V	10360.00	35.69	46.20	8.27	38.50	36.26	68.20	-31.94	PK
V	10360.00	35.86	46.20	8.27	38.50	36.43	54.00	-17.57	AV
V	15540.00	33.52	46.30	10.35	38.70	36.27	74.00	-37.73	PK
V	15540.00	33.05	46.30	10.35	38.70	35.80	54.00	-18.20	AV
V	20720.00	40.35	57.40	11.93	37.80	32.68	68.20	-35.52	PK
V	20720.00	41.73	57.40	11.93	37.80	34.06	54.00	-19.94	AV
V	25900.00	38.58	56.50	13.45	39.70	35.23	68.20	-32.97	PK
V	25900.00	39.10	56.50	13.45	39.70	35.75	54.00	-18.25	AV
H	10360.00	35.63	46.20	8.27	38.50	36.20	68.20	-32.00	PK
H	10360.00	34.55	46.20	8.27	38.50	35.12	54.00	-18.88	AV
H	15540.00	32.78	46.30	10.35	38.70	35.53	74.00	-38.47	PK
H	15540.00	30.72	46.30	10.35	38.70	33.47	54.00	-20.53	AV
H	20720.00	42.01	57.40	11.93	37.80	34.34	68.20	-33.86	PK
H	20720.00	42.59	57.40	11.93	37.80	34.92	54.00	-19.08	AV
H	25900.00	39.34	56.50	13.45	39.70	35.99	68.20	-32.21	PK
H	25900.00	39.13	56.50	13.45	39.70	35.78	54.00	-18.22	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
<i>Middle Channel:5200MHz</i>									
V	10400.00	34.06	46.20	8.27	38.50	34.63	68.20	-33.57	PK
V	10400.00	34.47	46.20	8.27	38.50	35.04	54.00	-18.96	AV
V	15600.00	32.85	46.30	10.35	38.70	35.60	74.00	-38.40	PK
V	15600.00	33.34	46.30	10.35	38.70	36.09	54.00	-17.91	AV
V	20800.00	40.34	57.40	11.93	37.80	32.67	68.20	-35.53	PK
V	20800.00	42.03	57.40	11.93	37.80	34.36	54.00	-19.64	AV
V	26000.00	36.69	56.50	13.45	39.70	33.34	68.20	-34.86	PK
V	26000.00	39.13	56.50	13.45	39.70	35.78	54.00	-18.22	AV
H	10400.00	34.52	46.20	8.27	38.50	35.09	68.20	-33.11	PK
H	10400.00	34.72	46.20	8.27	38.50	35.29	54.00	-18.71	AV
H	15600.00	32.84	46.30	10.35	38.70	35.59	74.00	-38.41	PK
H	15600.00	33.34	46.30	10.35	38.70	36.09	54.00	-17.91	AV
H	20800.00	39.55	57.40	11.93	37.80	31.88	68.20	-36.32	PK
H	20800.00	40.02	57.40	11.93	37.80	32.35	54.00	-21.65	AV
H	26000.00	36.47	56.50	13.45	39.70	33.12	68.20	-35.08	PK
H	26000.00	38.37	56.50	13.45	39.70	35.02	54.00	-18.98	AV

<i>Polar (H/V)</i>	<i>Frequency (MHz)</i>	<i>Meter Reading (dBuV)</i>	<i>Pre-amplifier (dB)</i>	<i>Cable Loss (dB)</i>	<i>Antenna Factor (dB)</i>	<i>Emission Level (dBuV/m)</i>	<i>Limits (dBuV/m)</i>	<i>Margin (dB)</i>	<i>Detect or Type</i>
High Channel:5240MHz									
V	10480.00	34.98	46.20	8.27	38.50	35.55	68.20	-32.65	PK
V	10480.00	34.92	46.20	8.27	38.50	35.49	54.00	-18.51	AV
V	15720.00	33.15	46.30	10.35	38.70	35.90	74.00	-38.10	PK
V	15720.00	32.75	46.30	10.35	38.70	35.50	54.00	-18.50	AV
V	20960.00	40.75	57.40	11.93	37.80	33.08	68.20	-35.12	PK
V	20960.00	43.62	57.40	11.93	37.80	35.95	54.00	-18.05	AV
V	26200.00	37.73	56.50	13.45	39.70	34.38	68.20	-33.82	PK
V	26200.00	38.97	56.50	13.45	39.70	35.62	54.00	-18.38	AV
H	10480.00	35.16	46.20	8.27	38.50	35.73	68.20	-32.47	PK
H	10480.00	34.92	46.20	8.27	38.50	35.49	54.00	-18.51	AV
H	15720.00	33.40	46.30	10.35	38.70	36.15	74.00	-37.85	PK
H	15720.00	32.85	46.30	10.35	38.70	35.60	54.00	-18.40	AV
H	20960.00	40.89	57.40	11.93	37.80	33.22	68.20	-34.98	PK
H	20960.00	43.52	57.40	11.93	37.80	35.85	54.00	-18.15	AV
H	26200.00	37.51	56.50	13.45	39.70	34.16	68.20	-34.04	PK
H	26200.00	38.38	56.50	13.45	39.70	35.03	54.00	-18.97	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. The worst mode is 802.11a, only the worst data is recorded.



Temperature:	25.3℃	Relative Humidity:	49%
Pressure:	1010 hPa	Test Voltage :	AC120V
Test Mode :	5.8G TX- 802.11a		

802.11n20

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenn Factor	Emission Level	Limits	Margin	Detect or Typ
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:5745MHz									
V	11490.00	32.61	46.20	8.27	38.50	33.18	74.00	-40.82	PK
V	11490.00	26.56	46.20	8.27	38.50	27.13	54.00	-26.87	AV
V	17235.00	30.81	46.30	10.35	38.70	33.56	68.20	-34.64	PK
V	17235.00	32.29	46.30	10.35	38.70	35.04	54.00	-18.96	AV
V	22980.00	37.28	57.40	11.93	37.80	29.61	74.00	-44.40	PK
V	22980.00	31.35	57.40	11.93	37.80	23.68	54.00	-30.32	AV
V	28725.00	34.91	56.50	13.45	39.70	31.56	68.20	-36.64	PK
V	28725.00	36.37	56.50	13.45	39.70	33.02	54.00	-20.98	AV
H	11490.00	32.96	46.20	8.27	38.50	33.53	74.00	-40.47	PK
H	11490.00	30.20	46.20	8.27	38.50	30.77	54.00	-23.23	AV
H	17235.00	31.56	46.30	10.35	38.70	34.31	68.20	-33.89	PK
H	17235.00	32.69	46.30	10.35	38.70	35.44	54.00	-18.56	AV
H	22980.00	38.91	57.40	11.93	37.80	31.24	74.00	-42.76	PK
H	22980.00	35.63	57.40	11.93	37.80	27.96	54.00	-26.04	AV
H	28725.00	36.37	56.50	13.45	39.70	33.02	68.20	-35.18	PK
H	28725.00	36.97	56.50	13.45	39.70	33.62	54.00	-20.38	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	33.33	46.20	8.27	38.50	33.90	74.00	-40.10	PK
V	11570.00	26.70	46.20	8.27	38.50	27.27	54.00	-26.73	AV
V	17355.00	32.59	46.30	10.35	38.70	35.34	68.20	-32.86	PK
V	17355.00	33.86	46.30	10.35	38.70	36.61	54.00	-17.39	AV
V	23140.00	38.69	57.40	11.93	37.80	31.02	74.00	-42.98	PK
V	23140.00	32.17	57.40	11.93	37.80	24.50	54.00	-29.51	AV
V	28925.00	35.76	56.50	13.45	39.70	32.41	68.20	-35.79	PK
V	28925.00	37.89	56.50	13.45	39.70	34.54	54.00	-19.46	AV
H	11570.00	34.62	46.20	8.27	38.50	35.19	74.00	-38.82	PK
H	11570.00	31.50	46.20	8.27	38.50	32.07	54.00	-21.93	AV
H	17355.00	32.34	46.30	10.35	38.70	35.09	68.20	-33.11	PK
H	17355.00	33.37	46.30	10.35	38.70	36.12	54.00	-17.88	AV
H	23140.00	39.35	57.40	11.93	37.80	31.68	74.00	-42.32	PK
H	23140.00	37.85	57.40	11.93	37.80	30.18	54.00	-23.82	AV
H	28925.00	36.88	56.50	13.45	39.70	33.53	68.20	-34.67	PK
H	28925.00	38.64	56.50	13.45	39.70	35.29	54.00	-18.71	AV



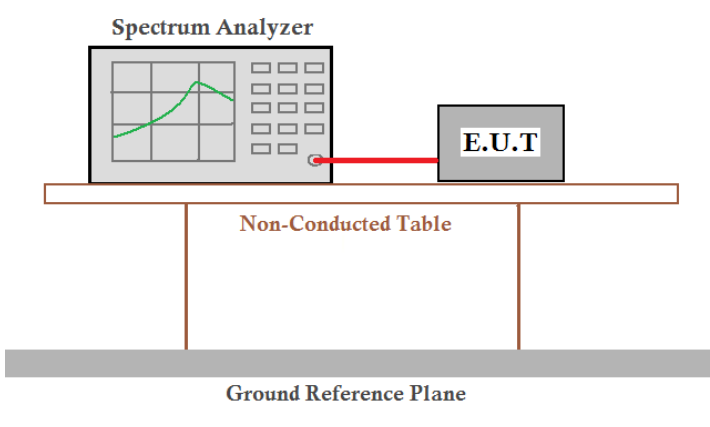
Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650.00	33.27	46.20	8.27	38.50	33.84	74.00	-40.16	PK
V	11650.00	26.55	46.20	8.27	38.50	27.12	54.00	-26.88	AV
V	17475.00	31.70	46.30	10.35	38.70	34.45	68.20	-33.75	PK
V	17475.00	33.08	46.30	10.35	38.70	35.83	54.00	-18.17	AV
V	23300.00	38.86	57.40	11.93	37.80	31.19	74.00	-42.81	PK
V	23300.00	31.90	57.40	11.93	37.80	24.23	54.00	-29.77	AV
V	29125.00	36.44	56.50	13.45	39.70	33.09	68.20	-35.12	PK
V	29125.00	37.97	56.50	13.45	39.70	34.62	54.00	-19.38	AV
H	11650.00	34.76	46.20	8.27	38.50	35.33	74.00	-38.68	PK
H	11650.00	32.37	46.20	8.27	38.50	32.94	54.00	-21.06	AV
H	17475.00	32.59	46.30	10.35	38.70	35.34	68.20	-32.86	PK
H	17475.00	34.28	46.30	10.35	38.70	37.03	54.00	-16.97	AV
H	23300.00	39.90	57.40	11.93	37.80	32.23	74.00	-41.77	PK
H	23300.00	37.68	57.40	11.93	37.80	30.01	54.00	-23.99	AV
H	29125.00	37.22	56.50	13.45	39.70	33.87	68.20	-34.33	PK
H	29125.00	38.66	56.50	13.45	39.70	35.31	54.00	-18.69	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. The worst mode is 802.11a, only the worst data is recorded.



#### 4.7.2 Conducted Emission Method

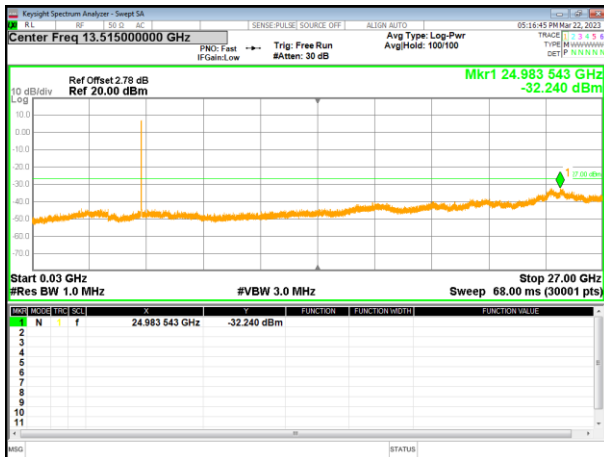
Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)
Test Method:	ANSI C63.10:2013
Limit:	-27dBm/MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which sits on a Ground Reference Plane.</p>
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass



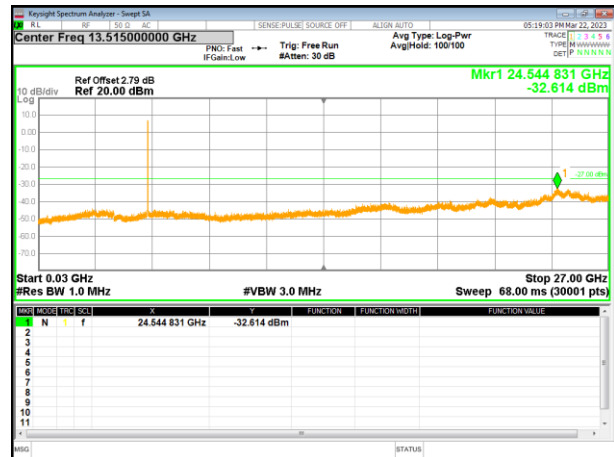
5180-5240MHz

Test Plot

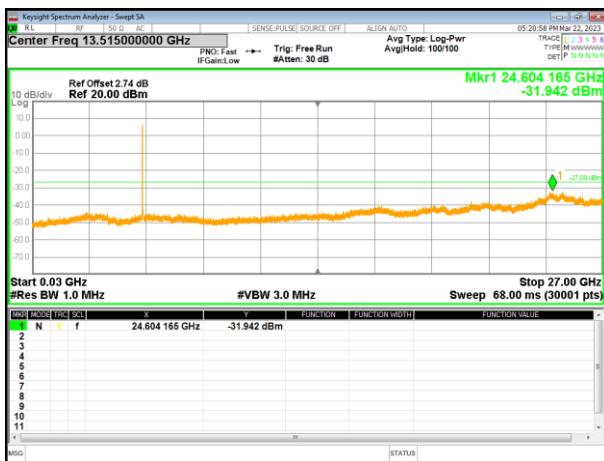
802.11a on channel 36



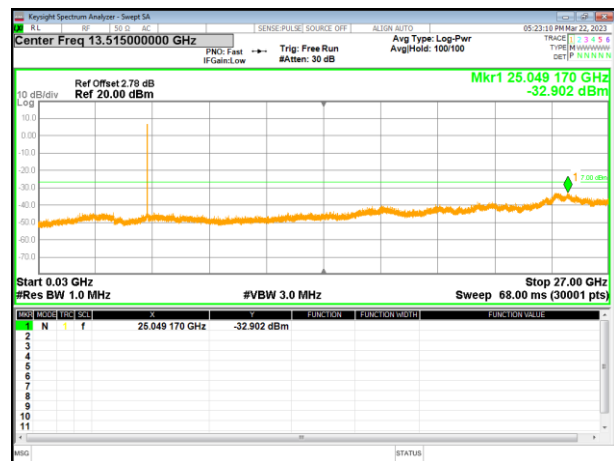
802.11a on channel 40



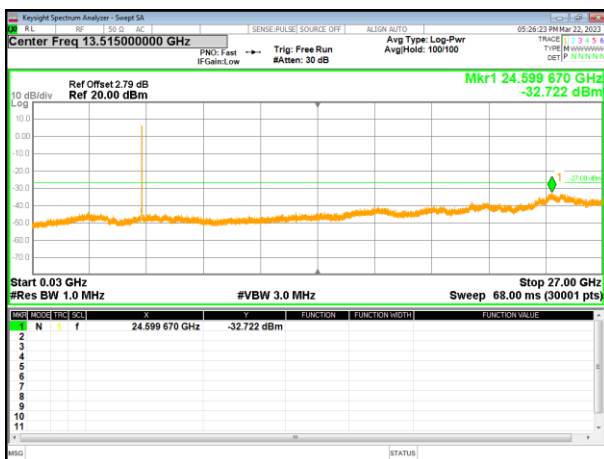
802.11a on channel 48



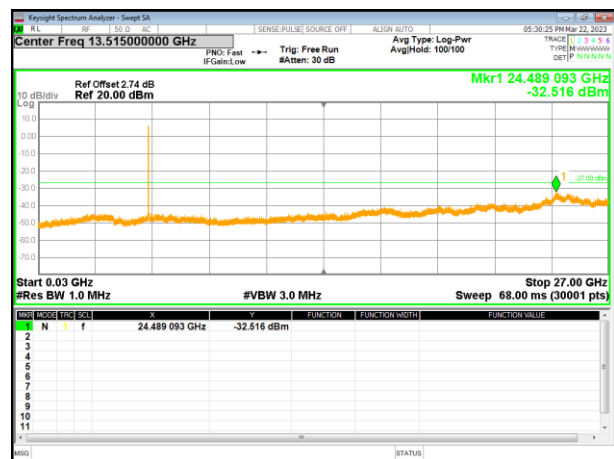
802.11n20 on channel 36



802.11n20 on channel 40

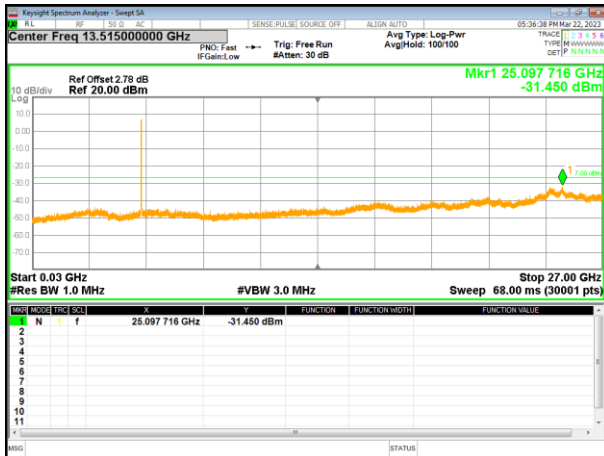


802.11n20 on channel 48

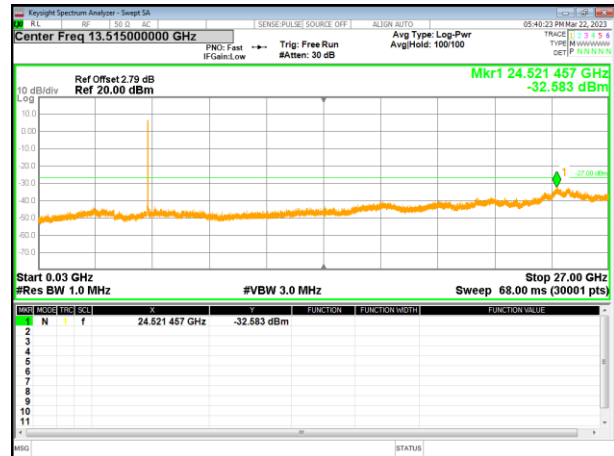


Test Plot

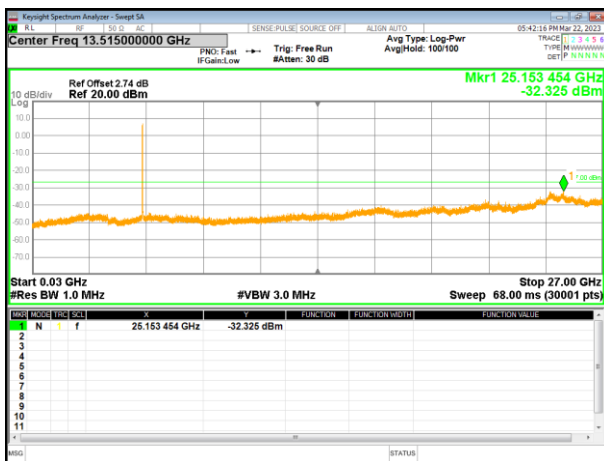
802.11ac20 on channel 36



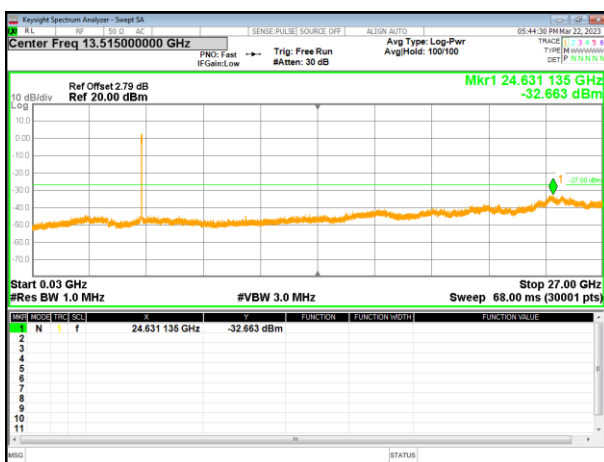
802.11ac20 on channel 40



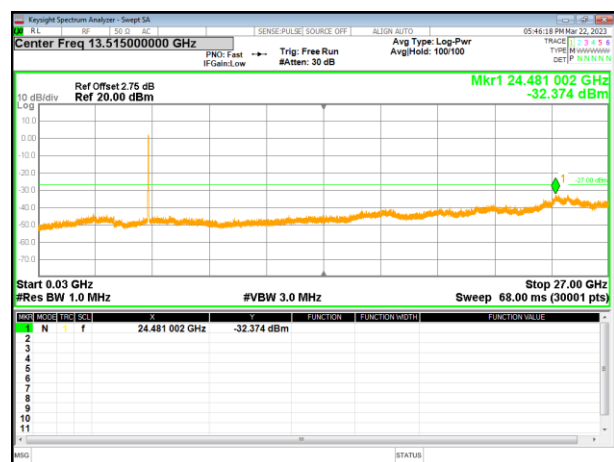
802.11ac20 on channel 48



802.11n40 on channel 38

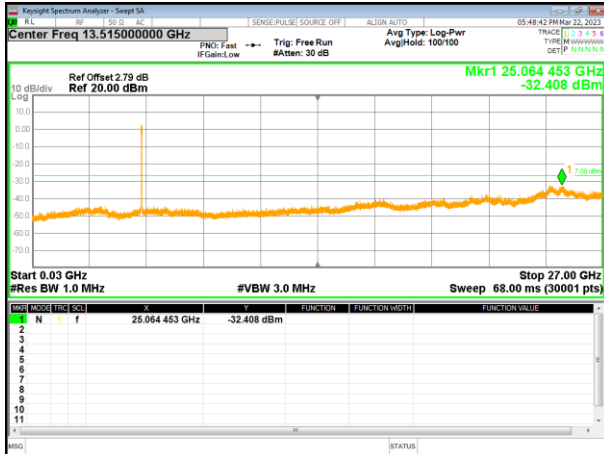


802.11n40 on channel 46

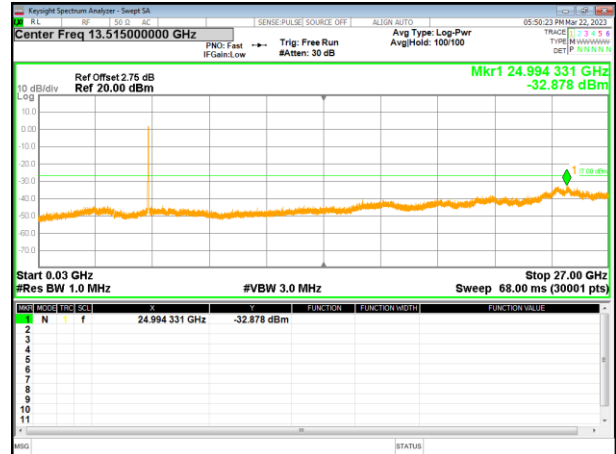


Test Plot

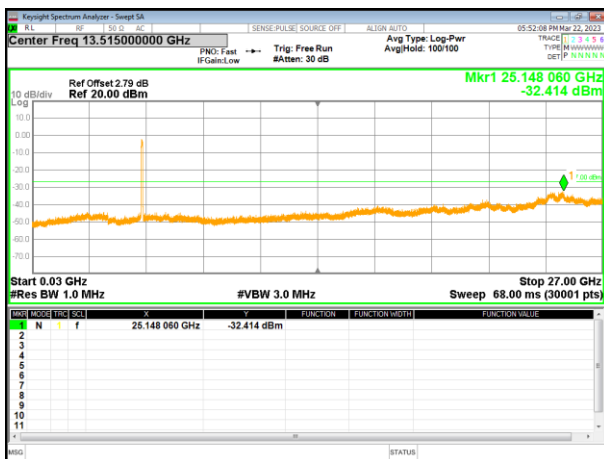
802.11ac40 on channel 38



802.11ac40 on channel 46



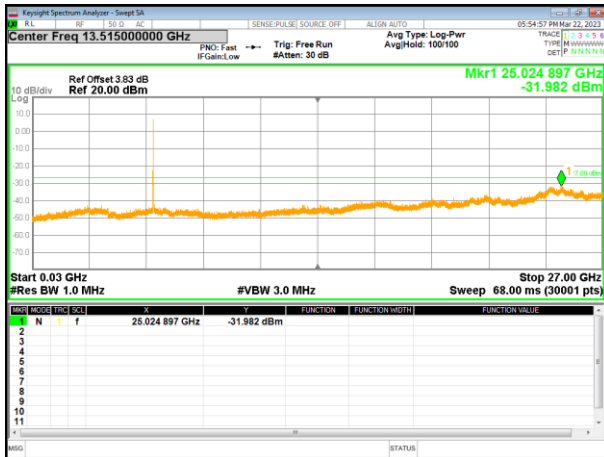
802.11ac80 on channel 42



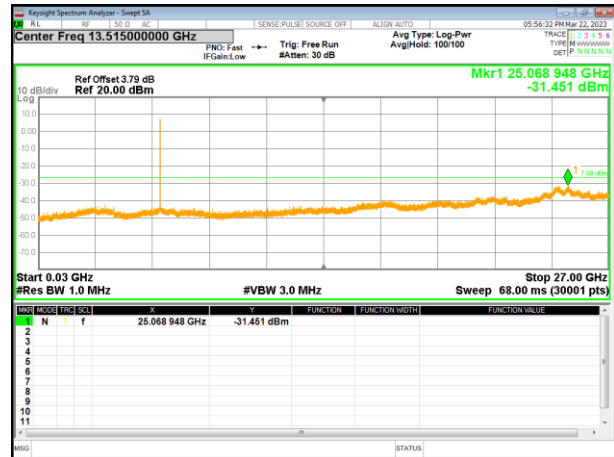
5745-5825MHz

Test Plot

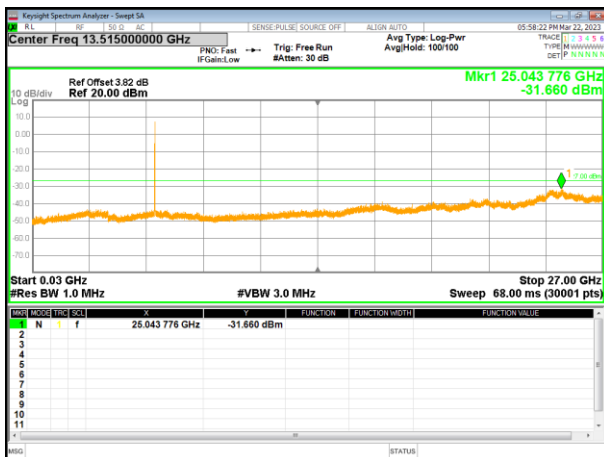
802.11a on channel 149



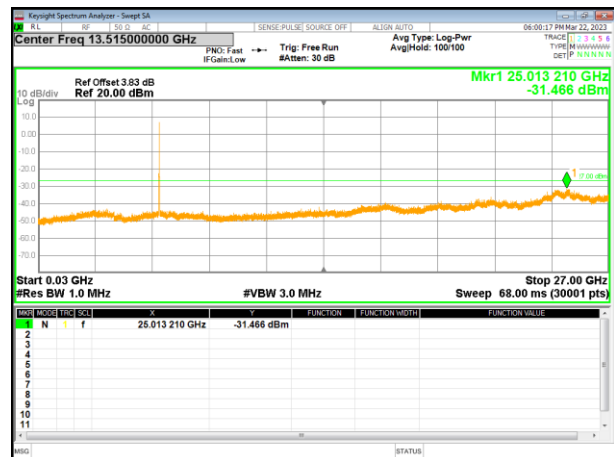
802.11a on channel 157



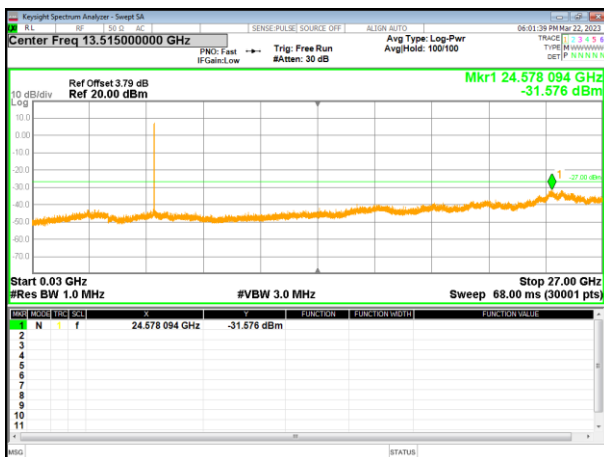
802.11a on channel 165



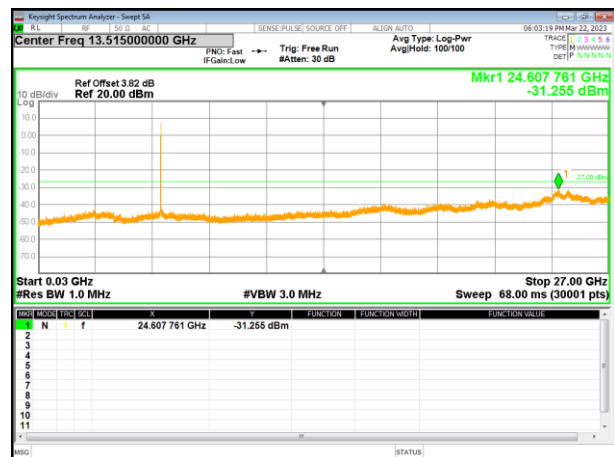
802.11n20 on channel 149



802.11n20 on channel 157

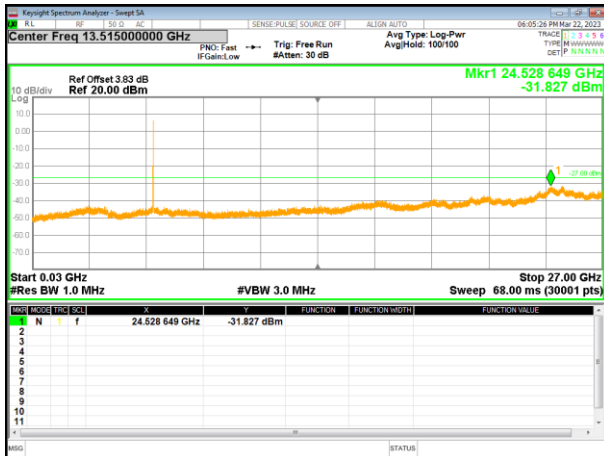


802.11n20 on channel 165

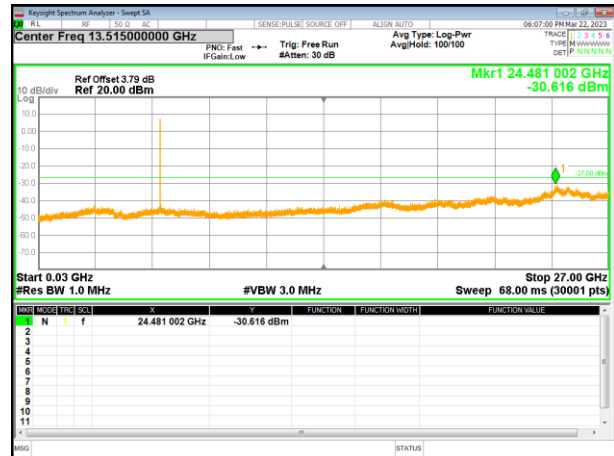


Test Plot

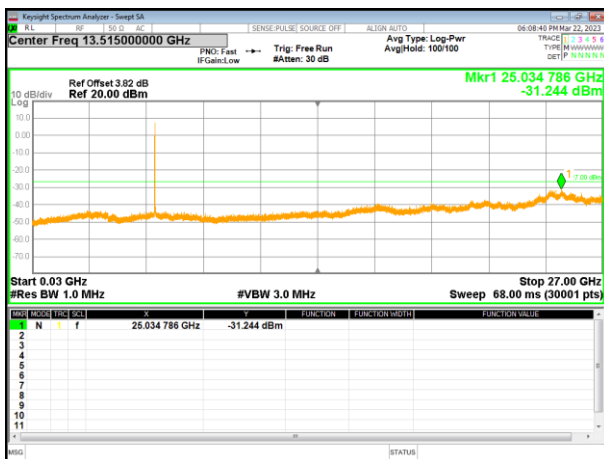
802.11ac20 on channel 149



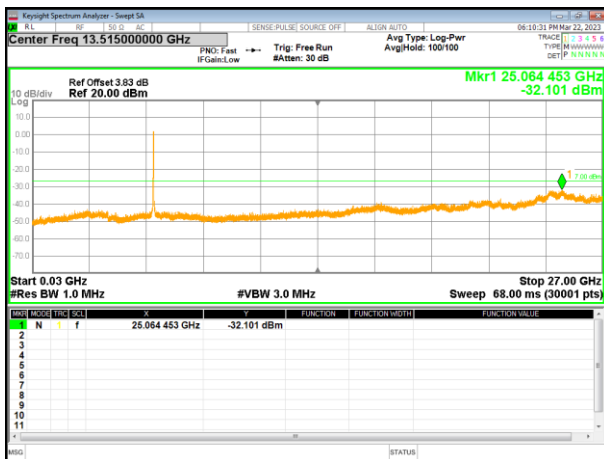
802.11ac20 on channel 157



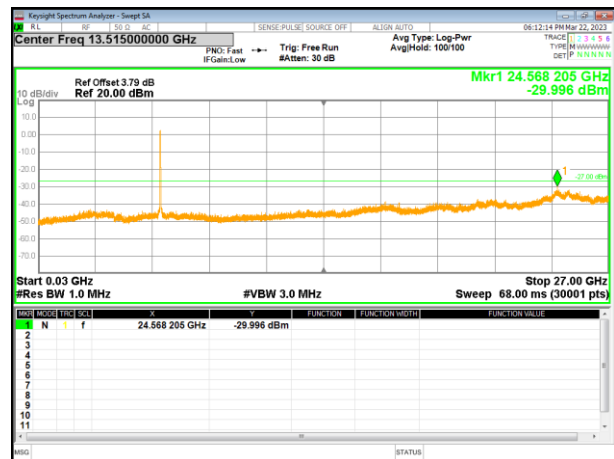
802.11ac20 on channel 165



802.11n40 on channel 151



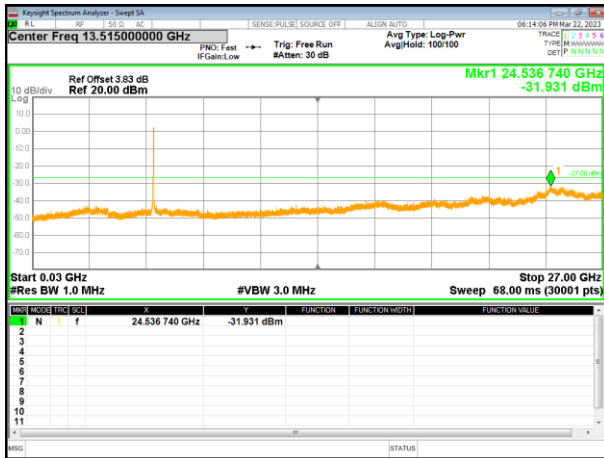
802.11n40 on channel 159



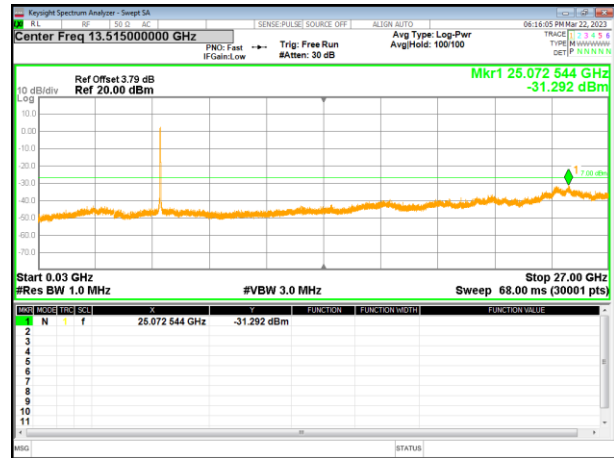


Test Plot

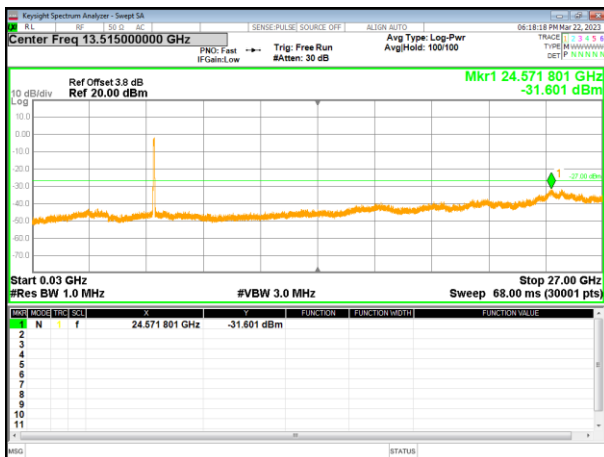
802.11ac40 on channel 151



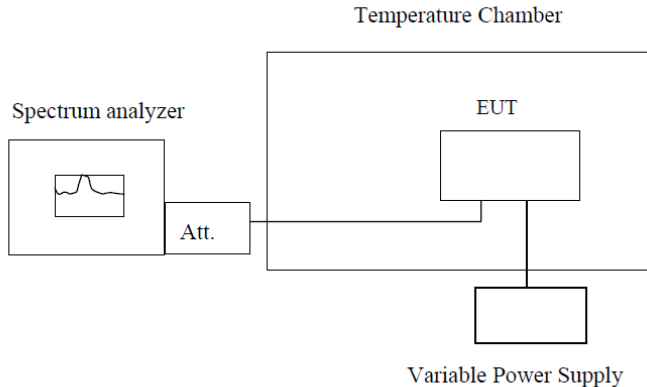
802.11ac40 on channel 159



802.11ac80 on channel 155



#### 4.8 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	<ol style="list-style-type: none"> <li>a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.</li> <li>b. Turn the EUT on and couple its output to a spectrum analyzer.</li> <li>c. Turn the EUT off and set the chamber to the highest temperature specified.</li> <li>d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.</li> <li>e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.</li> <li>f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minute</li> <li>s. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.</li> </ol>
Test setup:	<div style="text-align: center;">  <p style="text-align: center;">Temperature Chamber</p> <p style="text-align: center;">Spectrum analyzer      Att.      EUT</p> <p style="text-align: center;">Variable Power Supply</p> <p><b>Note :</b> Measurement setup for testing on Antenna connector</p> </div>
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.



Measurement data:

Frequency stability versus Temp.					
Power Supply: DC 20V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5180	5179.978	5180.054	5180.089	5180.286
	5190	5189.974	5199.928	5199.964	5190.298
	5200	5199.969	5199.953	5199.989	5200.289
	5210	5209.975	5209.931	5209.967	5210.291
	5220	5219.970	5219.946	5219.982	5220.299
	5230	5229.968	5229.939	5229.975	5230.317
	5240	5239.941	5239.947	5239.983	5240.303
-20	5180	5179.969	5179.930	5179.974	5180.307
	5190	5189.960	5189.920	5189.973	5190.304
	5200	5199.968	5199.928	5199.967	5200.299
	5210	5209.960	5209.920	5209.957	5210.306
	5220	5219.981	5219.941	5219.967	5220.302
	5230	5229.959	5229.919	5229.965	5230.300
	5240	5239.977	5239.937	5239.969	5240.274
-10	5180	5179.978	5179.939	5179.953	5180.286
	5190	5189.974	5189.934	5189.964	5190.298
	5200	5199.969	5199.929	5199.955	5200.289
	5210	5209.975	5209.935	5209.956	5210.291
	5220	5219.970	5219.930	5219.963	5220.299
	5230	5229.968	5229.928	5229.981	5230.317
	5240	5239.941	5239.901	5239.953	5240.290
0	5180	5179.755	5179.918	5179.965	5180.297
	5190	5199.927	5189.928	5189.956	5190.299
	5200	5199.925	5199.919	5199.964	5200.290
	5210	5209.980	5209.920	5209.956	5300.305
	5220	5219.969	5219.927	5219.977	5220.292
	5230	5229.956	5229.945	5229.955	5230.313
	5240	5239.973	5239.917	5239.973	5240.292
10	5180	5179.957	5179.930	5179.974	5180.298
	5190	5189.968	5189.920	5189.970	5190.290
	5200	5199.959	5199.928	5199.965	5200.298
	5210	5209.960	5209.920	5209.971	5210.291
	5220	5219.967	5219.941	5219.966	5220.313
	5230	5229.985	5229.919	5229.964	5230.291
	5240	5239.970	5239.937	5239.937	5240.310

20	5180	5179.978	5179.929	5179.965	5180.259
	5190	5189.974	5189.929	5189.956	5190.290
	5200	5199.969	5199.920	5199.964	5200.315
	5210	5209.975	5299.928	5209.956	5210.300
	5220	5219.970	5219.920	5219.977	5220.292
	5230	5229.968	5229.941	5229.955	5230.320
	5240	5239.941	5239.919	5239.973	5240.309
30	5180	5179.957	5179.930	5179.965	5180.307
	5190	5189.968	5189.920	5189.956	5180.307
	5200	5199.959	5199.928	5199.964	5190.304
	5210	5209.960	5209.920	5209.956	5200.299
	5220	5219.967	5219.941	5219.977	5210.306
	5230	5229.985	5229.919	5229.955	5220.302
	5240	5239.957	5239.937	5239.973	5230.300
40	5180	5179.969	5179.929	5179.751	5180.286
	5190	5189.960	5189.929	5199.923	5190.298
	5200	5199.968	5199.920	5199.921	5200.289
	5210	5209.960	5299.928	5209.976	5210.291
	5220	5219.981	5219.920	5219.965	5220.299
	5230	5229.959	5229.941	5229.952	5230.317
	5240	5239.977	5239.919	5239.969	5240.290
50	5180	5179.969	5179.930	5179.965	5180.259
	5190	5189.960	5189.920	5189.956	5190.290
	5200	5199.968	5199.928	5199.964	5200.315
	5210	5209.960	5209.920	5209.956	5210.300
	5220	5219.981	5219.941	5219.977	5220.292
	5230	5229.959	5229.919	5229.955	5230.320
	5240	5239.977	5239.937	5239.973	5240.309

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
11.58	5180	5179.978	5180.054	5179.965	5180.422
	5190	5189.974	5199.928	5189.956	5200.298
	5200	5199.969	5199.953	5199.964	5200.323
	5210	5209.975	5209.931	5209.956	5210.302
	5220	5219.970	5219.946	5219.977	5220.318
	5230	5229.968	5229.939	5229.955	5230.311
	5240	5239.941	5239.947	5239.973	5240.320
12.04	5180	5179.969	5179.948	5179.964	5180.307
	5190	5189.960	5180.054	5189.965	5190.307
	5200	5199.968	5199.928	5199.956	5200.301
	5210	5209.960	5209.953	5299.964	5210.292
	5220	5219.981	5219.931	5219.956	5220.303
	5230	5229.959	5229.946	5229.977	5300.306
	5240	5239.977	5239.939	5239.955	5240.306
13.26	5180	5179.978	5179.939	5179.953	5180.286
	5190	5189.974	5189.934	5189.964	5190.298
	5200	5199.969	5199.929	5199.955	5200.289
	5210	5209.975	5209.935	5209.956	5210.291
	5220	5219.970	5219.930	5219.963	5220.299
	5230	5229.968	5229.928	5229.981	5230.317
	5240	5239.941	5239.901	5239.953	5240.290

Frequency stability versus Temp.					
Power Supply: DC 20V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5745	5744.961	5744.915	5744.956	5745.324
	5755	5754.968	5754.922	5754.963	5755.313
	5775	5774.984	5774.914	5774.979	5775.326
	5785	5784.960	5784.906	5784.955	5785.333
	5795	5794.956	5794.913	5794.951	5795.352
	5825	5824.959	5824.841	5824.954	5825.346
-20	5745	5744.950	5744.926	5744.950	5745.335
	5755	5754.966	5754.928	5754.975	5755.349
	5775	5774.964	5774.931	5774.955	5775.336
	5785	5784.967	5784.923	5784.964	5785.323
	5795	5794.978	5794.914	5794.962	5795.318
	5825	5824.959	5824.922	5824.972	5825.354
-10	5745	5744.961	5744.916	5744.966	5744.955
	5755	5754.987	5754.923	5754.968	5755.338
	5775	5774.982	5774.940	5774.970	5775.341
	5785	5784.966	5784.916	5784.962	5785.344
	5795	5794.955	5794.912	5794.953	5795.328
	5825	5824.890	5824.914	5824.962	5825.326
0	5745	5744.955	5744.905	5744.966	#####
	5755	5754.980	5754.921	5754.968	5755.351
	5775	5774.960	5774.920	5774.970	5775.349
	5785	5784.969	5784.923	5784.962	5785.333
	5795	5794.967	5794.934	5794.953	5795.323
	5825	5824.977	5824.914	5824.962	5825.260
10	5745	5744.955	5744.915	5744.955	5745.325
	5755	5754.980	5754.932	5754.962	5755.332
	5775	5774.960	5774.933	5774.953	5775.351
	5785	5784.969	5784.915	5784.945	5785.327
	5795	5794.967	5794.932	5794.952	5795.324
	5825	5824.977	5824.929	5824.881	5825.329
20	5745	5744.971	5744.940	5744.966	5745.324
	5755	5754.985	5754.912	5754.980	5755.343
	5775	5774.969	5774.935	5774.964	5775.325
	5785	5784.956	5784.935	5784.951	5785.352
	5795	5794.950	5794.926	5794.945	5795.345
	5825	5744.961	5744.915	5744.956	5745.324
30	5745	5754.968	5754.922	5754.963	5755.313
	5755	5774.984	5774.914	5774.979	5775.326
	5775	5784.960	5784.906	5784.955	5785.333
	5785	5794.956	5794.913	5794.951	5795.352
	5795	5824.959	5824.841	5824.954	5825.346
	5825	5744.950	5744.926	5744.950	5745.335
40	5745	5754.966	5754.928	5754.975	5755.349

	5755	5774.964	5774.931	5774.955	5775.336
	5775	5774.969	5774.916	5774.970	5775.349
	5785	5784.956	5784.925	5784.962	5785.333
	5795	5794.950	5794.923	5794.953	5795.323
	5825	5824.984	5824.932	5824.962	5825.260
50	5745	5744.971	5744.940	5744.966	5745.324
	5755	5754.985	5754.912	5754.980	5755.343
	5775	5774.969	5774.935	5774.964	5775.325
	5785	5784.956	5784.935	5784.951	5785.352
	5795	5794.950	5794.926	5794.945	5795.345
	5825	5824.984	5824.940	5824.979	5825.356

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
11.58	5745	5744.950	5744.915	5744.955	5745.319
	5755	5754.966	5754.922	5754.972	5755.344
	5775	5774.964	5774.914	5774.972	5775.327
	5785	5784.967	5784.906	5784.954	5785.336
	5795	5794.978	5794.913	5794.971	5795.335
	5825	5824.959	5824.841	5824.969	5825.347
12.04	5745	5744.950	5744.926	5744.950	5745.335
	5755	5754.966	5754.928	5754.975	5755.349
	5775	5774.964	5774.931	5774.955	5775.336
	5785	5784.967	5784.923	5784.964	5785.323
	5795	5794.978	5794.914	5794.962	5795.318
	5825	5824.959	5824.922	5824.972	5825.354
13.26	5745	5744.971	5744.940	5744.966	5745.324
	5755	5754.985	5754.912	5754.980	5755.343
	5775	5774.969	5774.935	5774.964	5775.325
	5785	5784.956	5784.935	5784.951	5785.352
	5795	5794.950	5794.926	5794.945	5795.345
	5825	5824.984	5824.940	5824.979	5825.356

## 5 Test Setup Photo

Reference to the **appendix I** for details.

## 6 EUT Constructional Details

Reference to the **appendix II** for details.

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