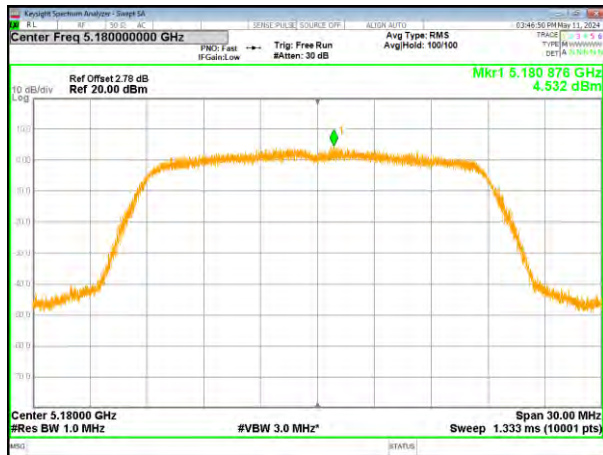


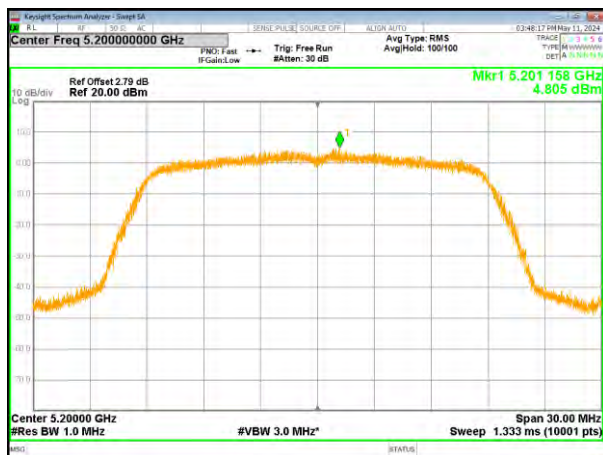
(802.11ac20) PSD plot on channel 36



(802.11n40) PSD plot on channel 38



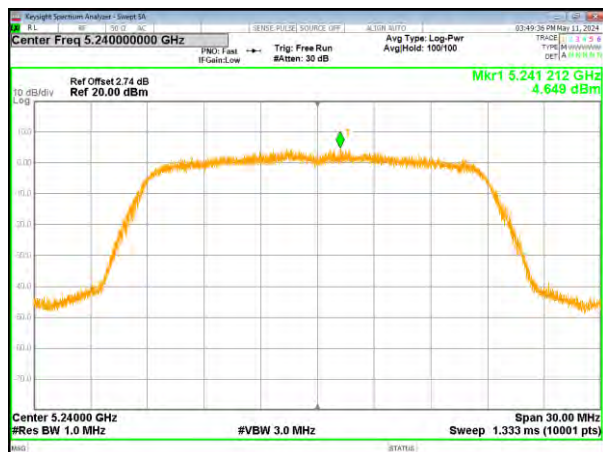
(802.11ac20) PSD plot on channel 40



(802.11n40) PSD plot on channel 46



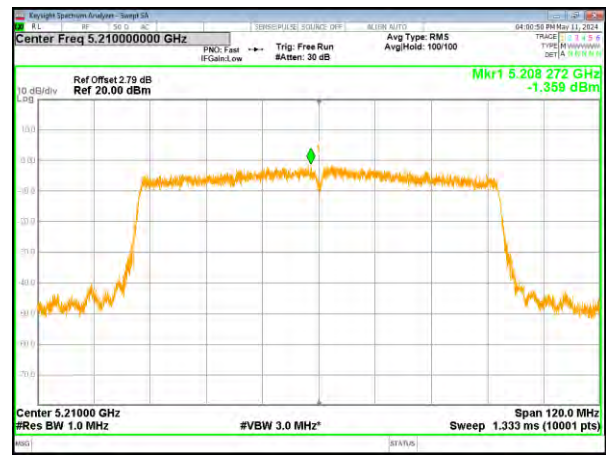
(802.11ac20) PSD plot on channel 48



(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46





5745-55825MHz

Module: WB800D.3(ANT2)

Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density(dBm/500K Hz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/MHz)
802.11 a	5745 MHz	4.371	4.285	0.72	5.005	30
	5785 MHz	5.118	5.032	0.72	5.752	30
	5825 MHz	5.306	5.220	0.72	5.940	30
802.11 n20	5745 MHz	3.772	3.686	0.72	4.406	30
	5785 MHz	3.994	3.908	0.72	4.628	30
	5825 MHz	4.020	3.934	0.72	4.654	30
802.11ac20	5745 MHz	3.575	3.489	0.72	4.209	30
	5785 MHz	3.631	3.545	0.72	4.265	30
	5825 MHz	4.065	3.979	0.72	4.699	30
802.11 n40	5755 MHz	-0.853	-0.939	0.73	-0.209	30
	5795 MHz	-0.335	-0.421	0.73	0.309	30
802.11ac40	5755 MHz	-0.756	-0.842	0.74	-0.102	30
	5795 MHz	-0.634	-0.720	0.74	0.020	30
802.11ac80	5775 MHz	-4.924	-5.010	0.76	-4.250	30

5745-55825MHz

Module: WB663U.1(ANT4)

Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density(dBm/500K Hz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/MHz)
802.11 a	5745 MHz	2.880	2.794	0.720	3.514	30
	5785 MHz	2.853	2.767	0.720	3.487	30
	5825 MHz	2.473	2.387	0.720	3.107	30
802.11 n20	5745 MHz	1.996	1.910	0.720	2.630	30
	5785 MHz	1.854	1.768	0.720	2.488	30
	5825 MHz	1.529	1.443	0.720	2.163	30
802.11ac20	5745 MHz	1.485	1.399	0.720	2.119	30
	5785 MHz	1.943	1.857	0.720	2.577	30
	5825 MHz	0.960	0.874	0.720	1.594	30
802.11 n40	5755 MHz	-2.020	-2.106	0.730	-1.376	30
	5795 MHz	-2.617	-2.703	0.730	-1.973	30
802.11ac40	5755 MHz	-1.808	-1.894	0.730	-1.164	30
	5795 MHz	-2.580	-2.666	0.730	-1.936	30
802.11ac80	5775 MHz	-5.745	-5.831	0.760	-5.071	30

Note: 1. If the measurement is X dBm/510kHz, thus $X \text{ dBm/510kHz} = (10^{X/10}) * (500 / 510) \text{ dBm/500kHz}$

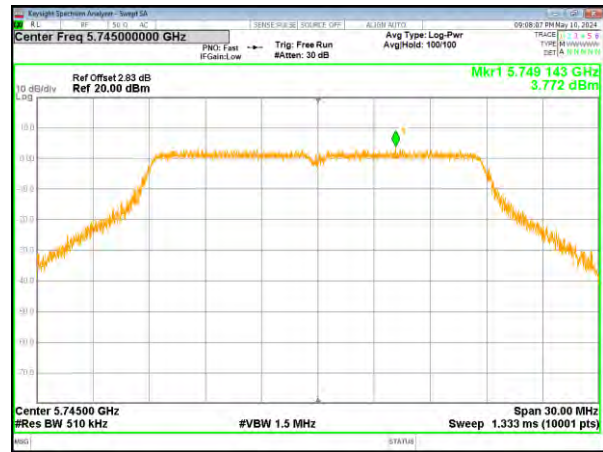
2. Correction Factor (dB)= duty cycle factor+RBW factor

Module: WB800D.3(ANT2)

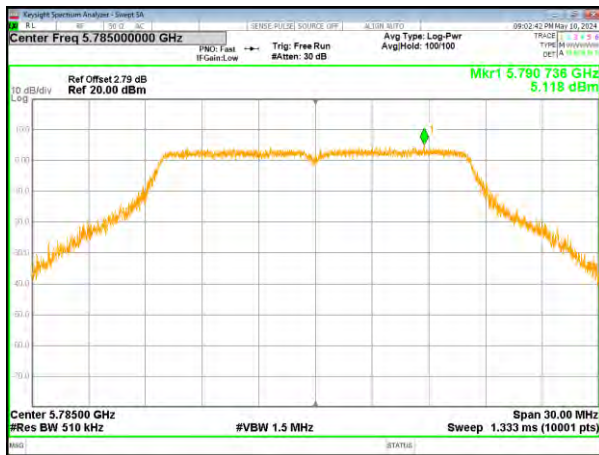
(802.11a) PSD plot on channel 149



(802.11n20) PSD plot on channel 149



(802.11a) PSD plot on channel 157



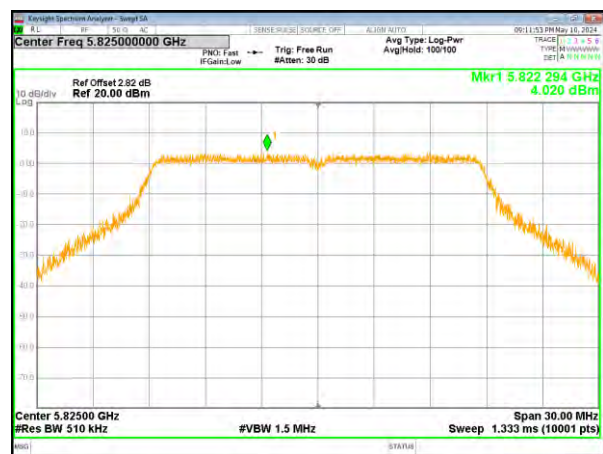
(802.11n20) PSD plot on channel 157



(802.11a) PSD plot on channel 165



(802.11n20) PSD plot on channel 165



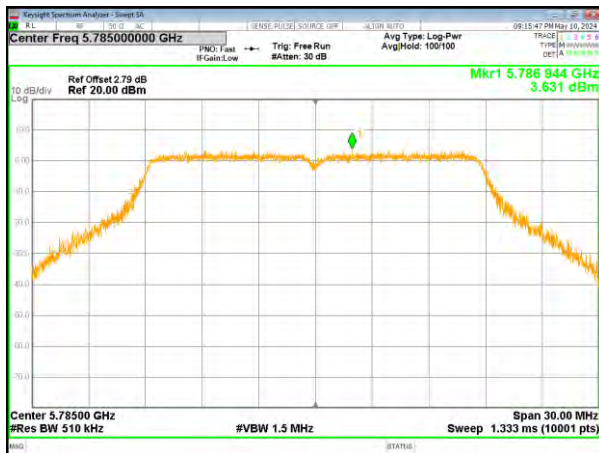
(802.11ac20) PSD plot on channel 149



(802.11n40) PSD plot on channel 151



(802.11ac20) PSD plot on channel 157



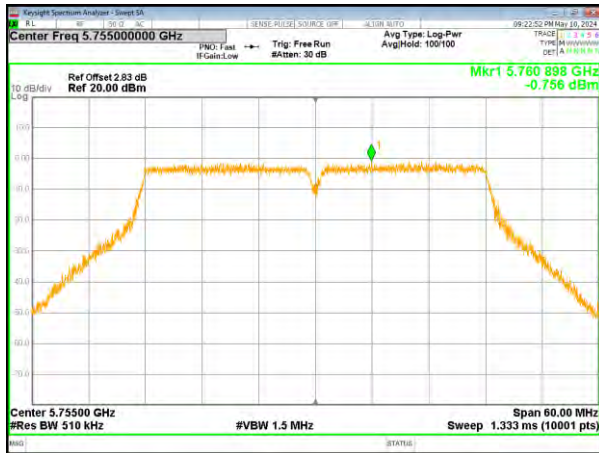
(802.11n40) PSD plot on channel 159



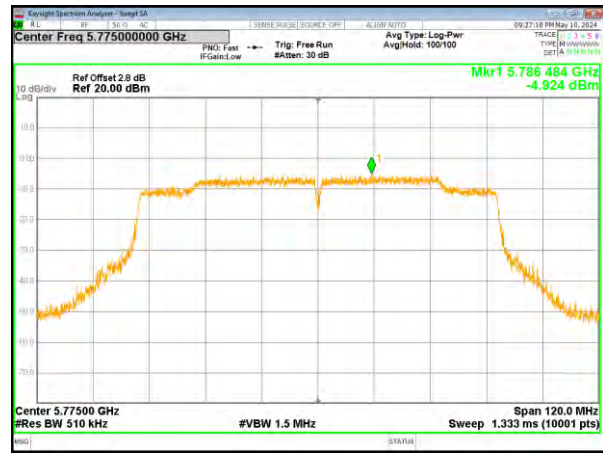
(802.11ac20) PSD plot on channel 165



(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155



(802.11ac40) PSD plot on channel 159



Module: WB663U.1(ANT4)

(802.11a) PSD plot on channel 149



(802.11n20) PSD plot on channel 149



(802.11a) PSD plot on channel 157



(802.11n20) PSD plot on channel 157



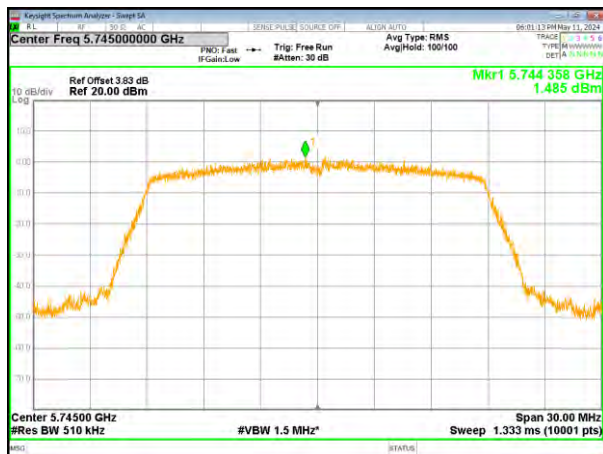
(802.11a) PSD plot on channel 165



(802.11n20) PSD plot on channel 165



(802.11ac20) PSD plot on channel 149



(802.11n40) PSD plot on channel 151



(802.11ac20) PSD plot on channel 157



(802.11n40) PSD plot on channel 159



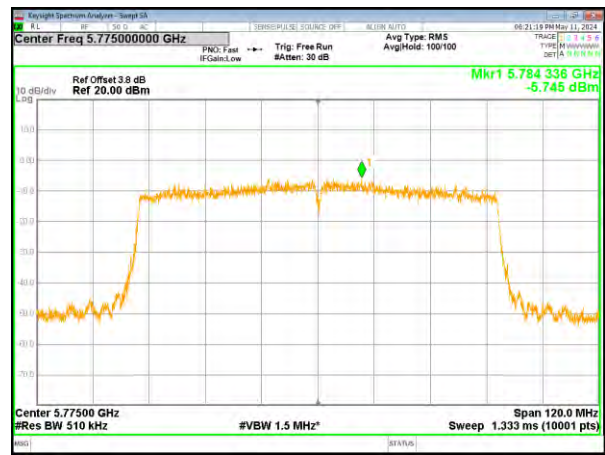
(802.11ac20) PSD plot on channel 165



(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

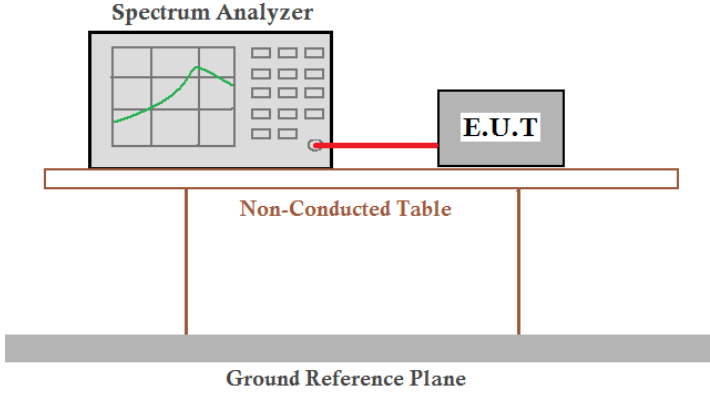


(802.11ac40) PSD plot on channel 159



4.7 Band edge

4.7.1 Conducted test Method

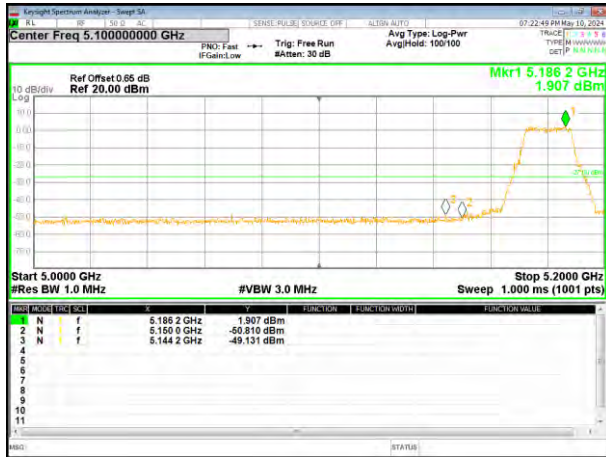
Test Requirement:	FCC Part15 C Section 15.209 and 15.205	
Test Method:	ANSI C63.10: 2013	
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below 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:	 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. The table is supported by two vertical legs and sits on a Ground Reference Plane, which is represented by a thick grey bar at the bottom.	
Test Procedure:	1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. 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. 3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span. 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. 5. Repeat above procedures until all measured frequencies were complete..	
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 22.7°C	Humid.: 52%RH
Test voltage:	DC 5V	
Test results:	Pass	

Remark: Antenna gain and cable loss data included in Offset.

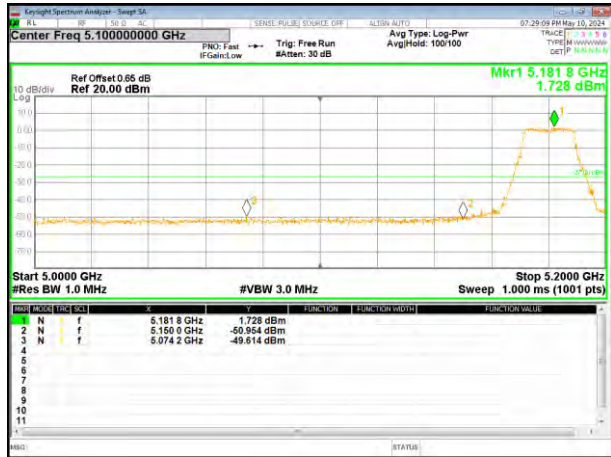
Module: WB800D.3(ANT2)

5.180~5.240 GHz

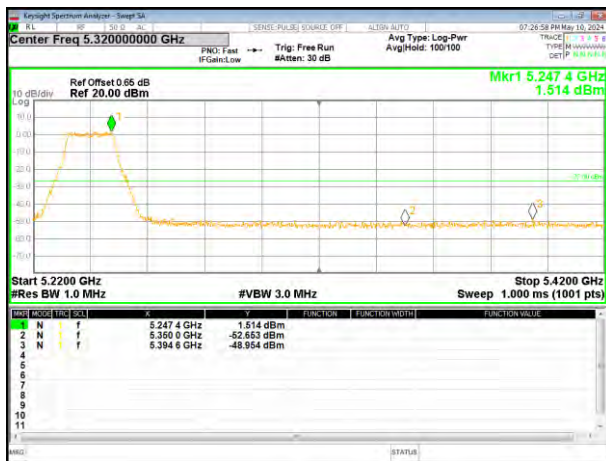
(802.11a) Band Edge, Left Side



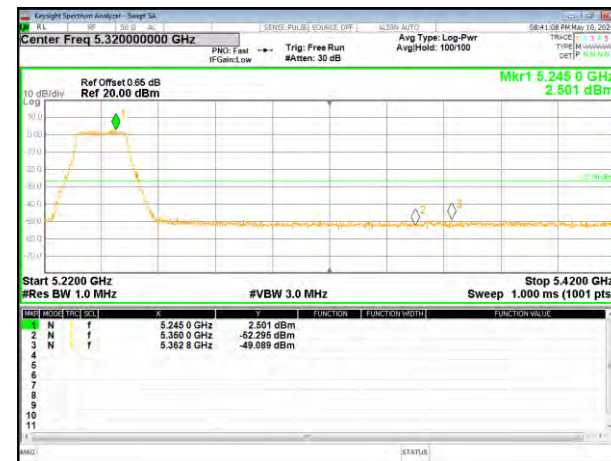
(802.11n20) Band Edge, Left Side



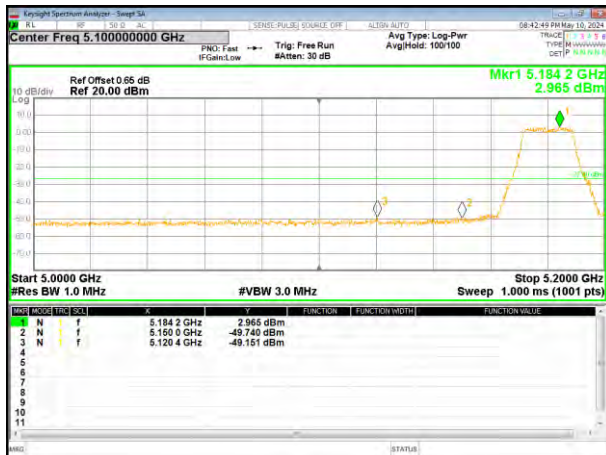
(802.11a) Band Edge, Right Side



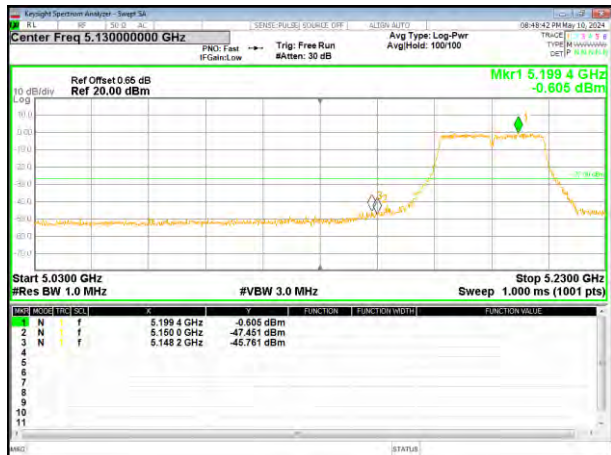
(802.11n20) Band Edge, Right Side



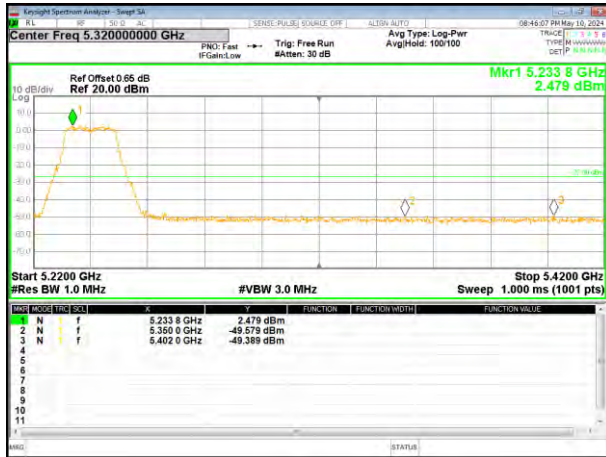
(802.11ac20) Band Edge, Left Side



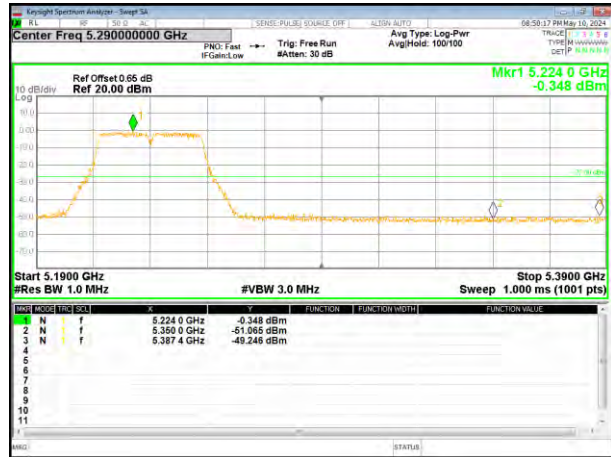
(802.11n40) Band Edge, Left Side



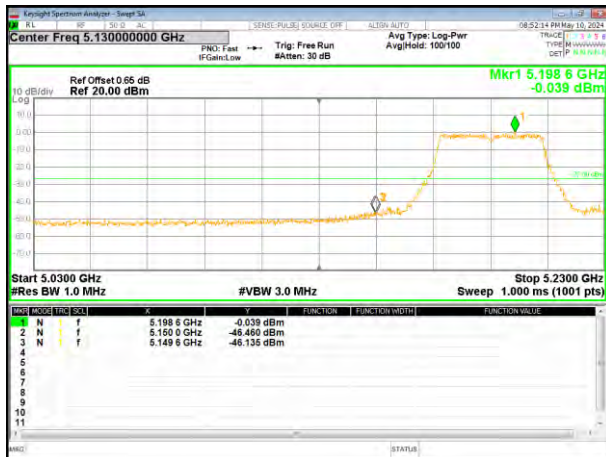
(802.11ac20) Band Edge, Right Side



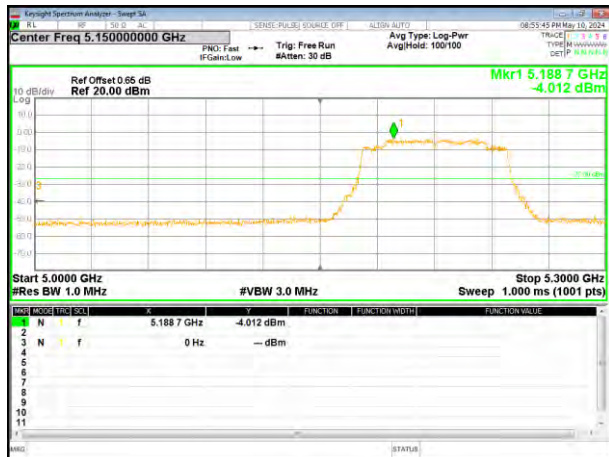
(802.11n40) Band Edge, Right Side



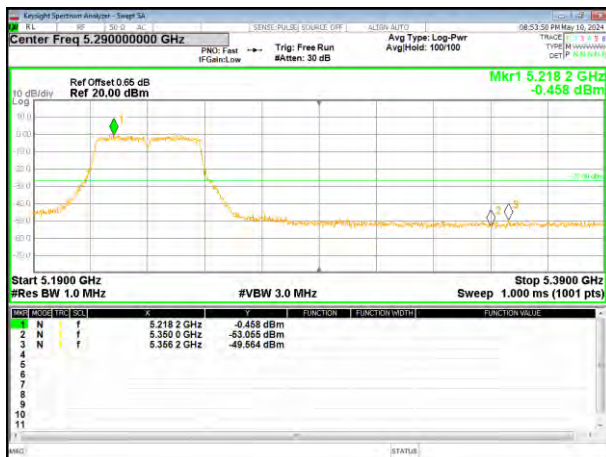
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



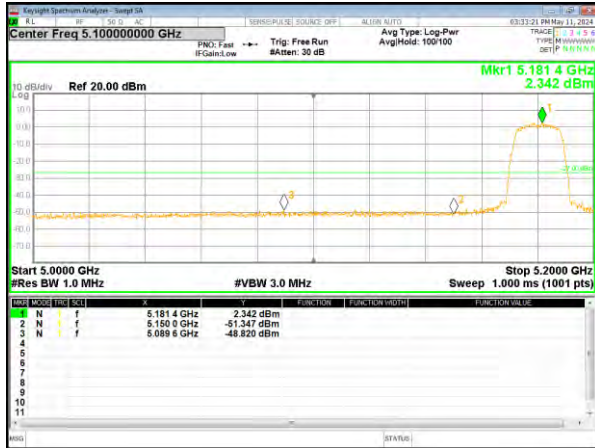
(802.11ac40) Band Edge, Right Side



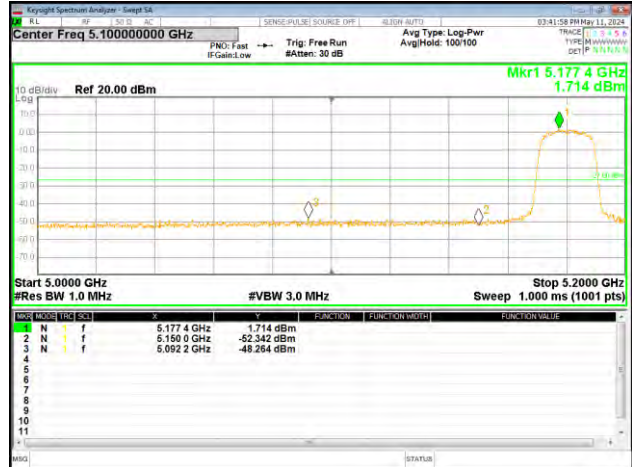
Module: WB663U.1(ANT4)

5.180~5.240 GHz

(802.11a) Band Edge, Left Side



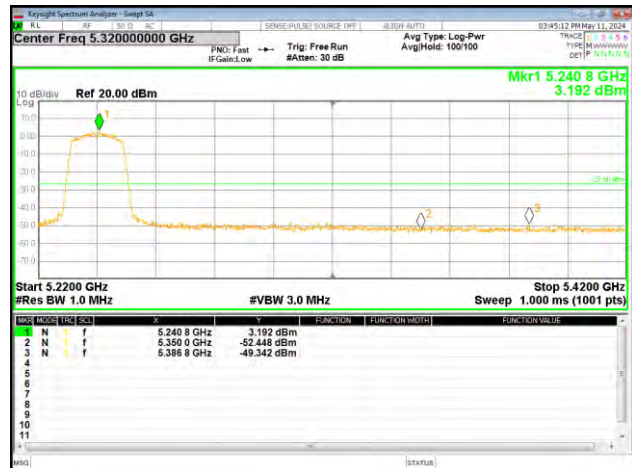
(802.11n20) Band Edge, Left Side



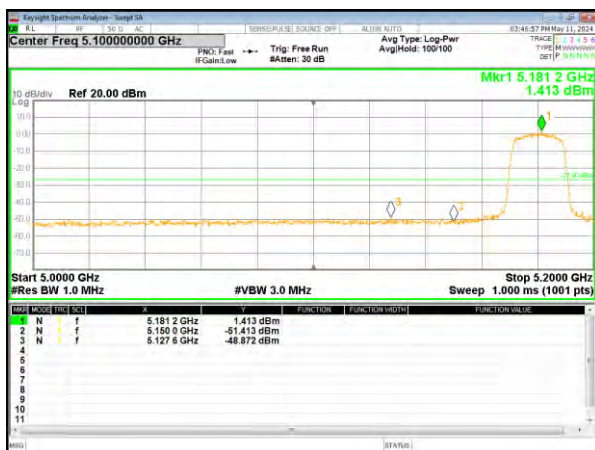
(802.11a) Band Edge, Right Side



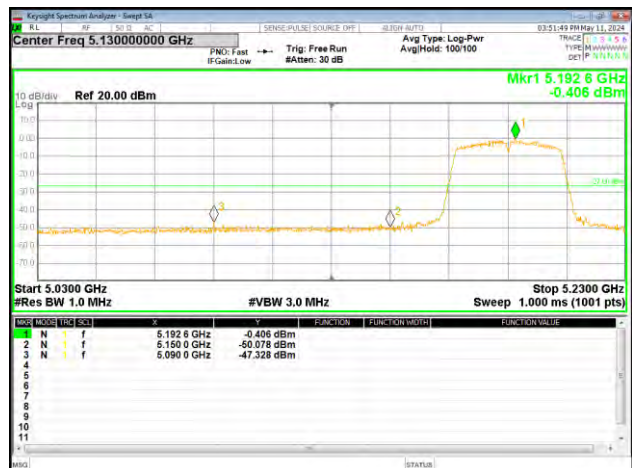
(802.11n20) Band Edge, Right Side



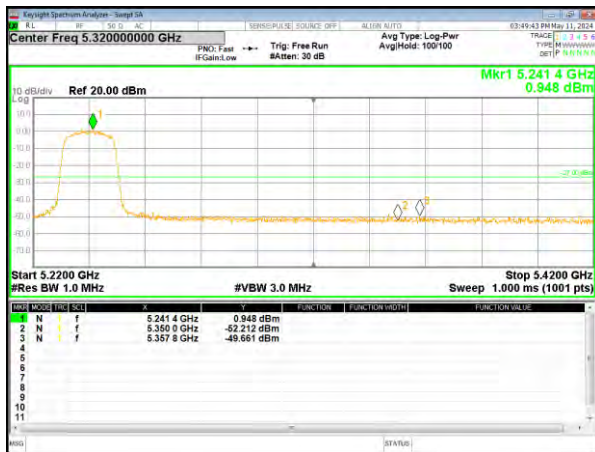
(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



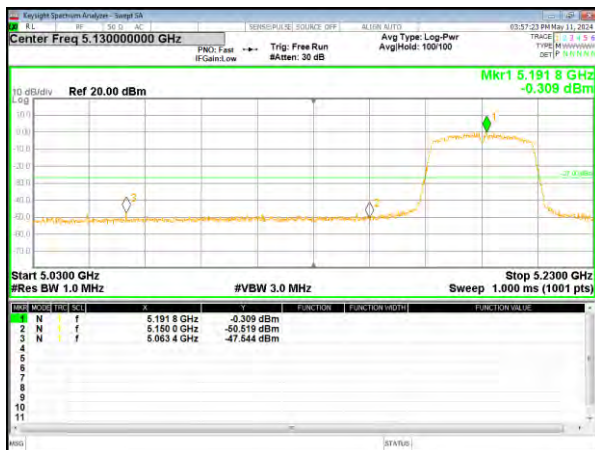
(802.11ac20) Band Edge, Right Side



(802.11n40) Band Edge, Right Side



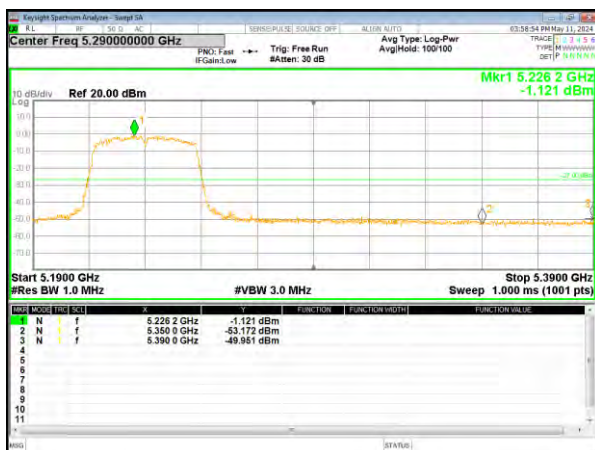
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



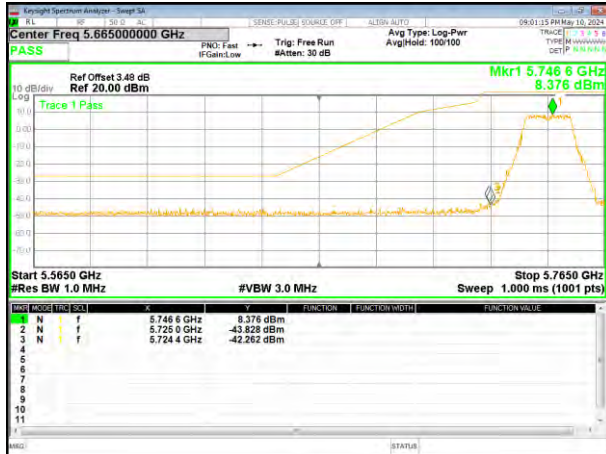
(802.11ac40) Band Edge, Right Side



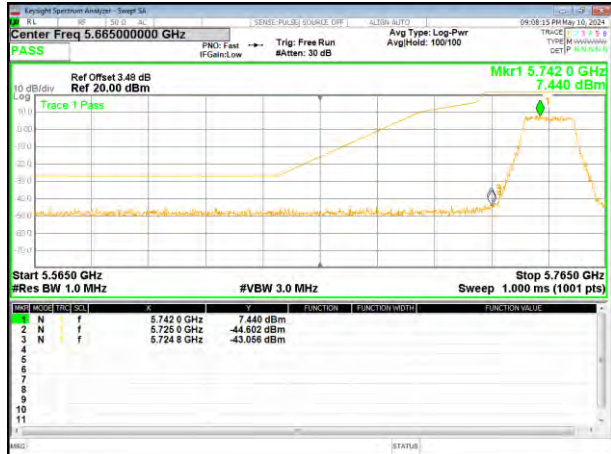


Module: WB800D.3(ANT2) 5.745~5.825 GHz

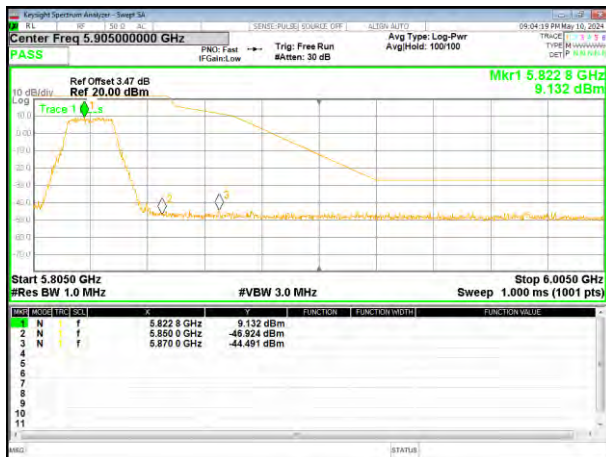
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



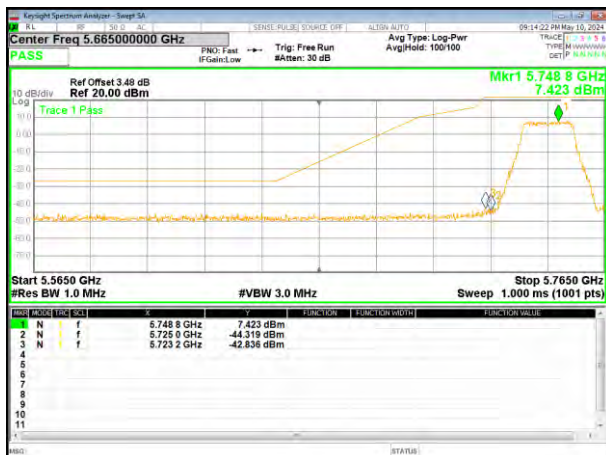
(802.11a) Band Edge, Right Side



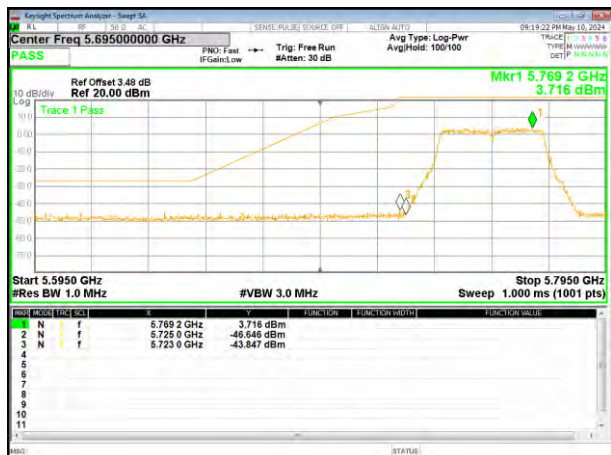
(802.11n20) Band Edge, Right Side



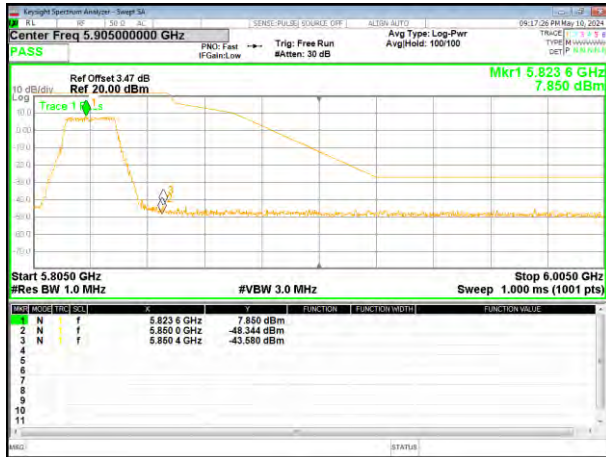
(802.11ac20) Band Edge, Left Side



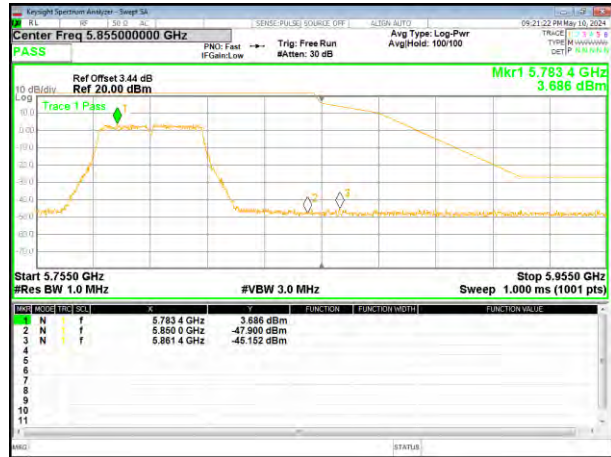
(802.11n40) Band Edge, Left Side



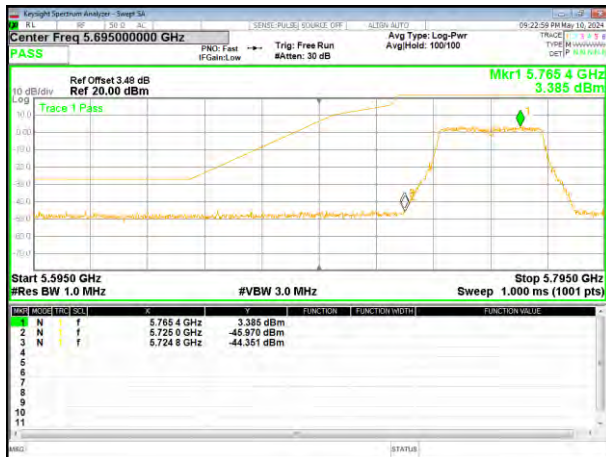
(802.11ac20) Band Edge, Right Side



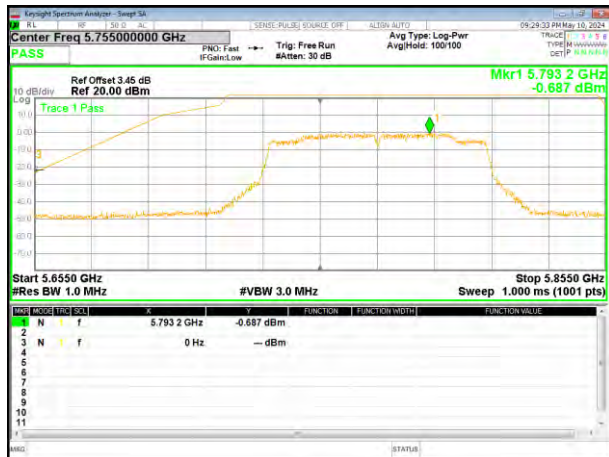
(802.11n40) Band Edge, Right Side



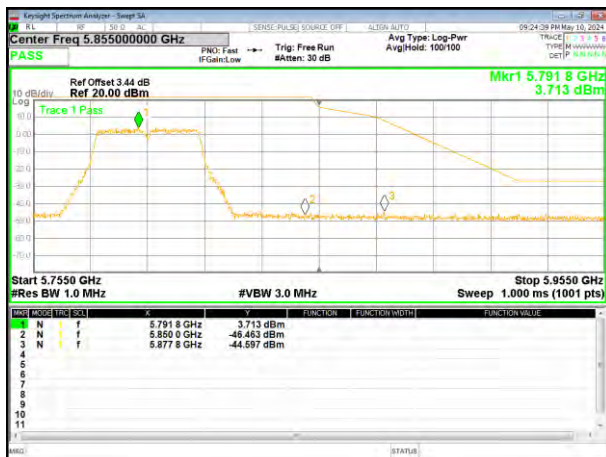
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



(802.11ac40) Band Edge, Right Side

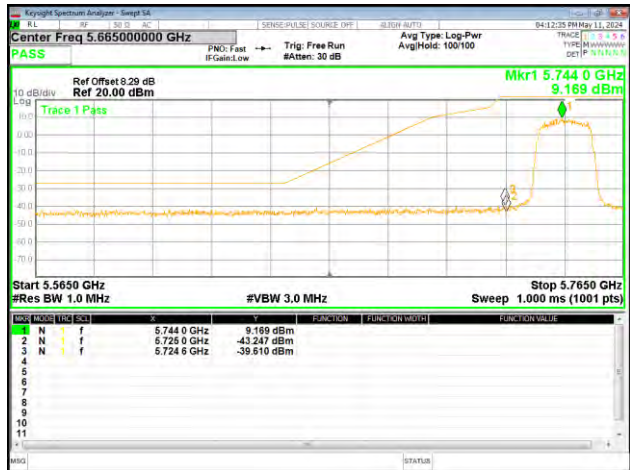


Module: WB663U.1(ANT4) 5.745~5.825 GHz

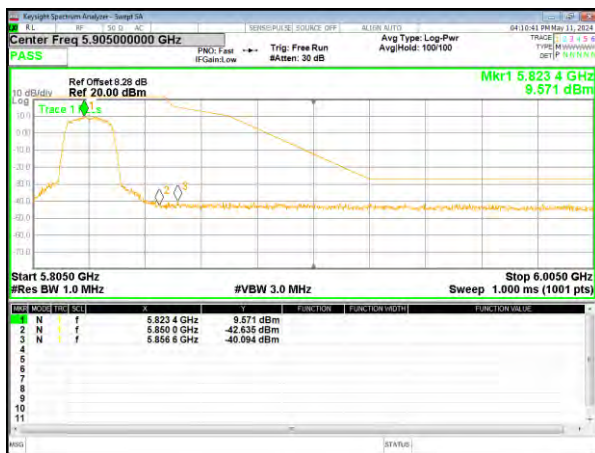
(802.11a) Band Edge, Left Side



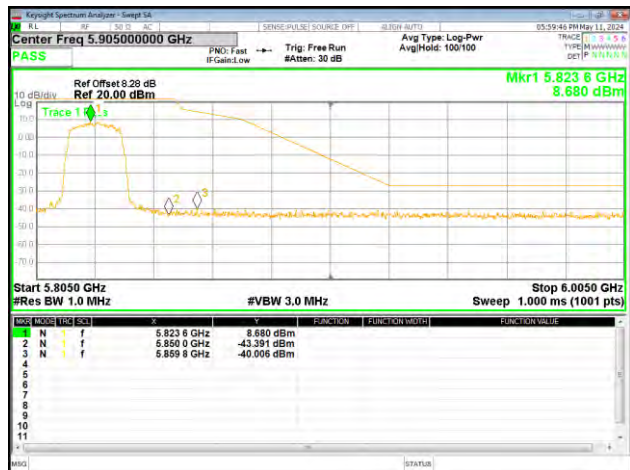
(802.11n20) Band Edge, Left Side



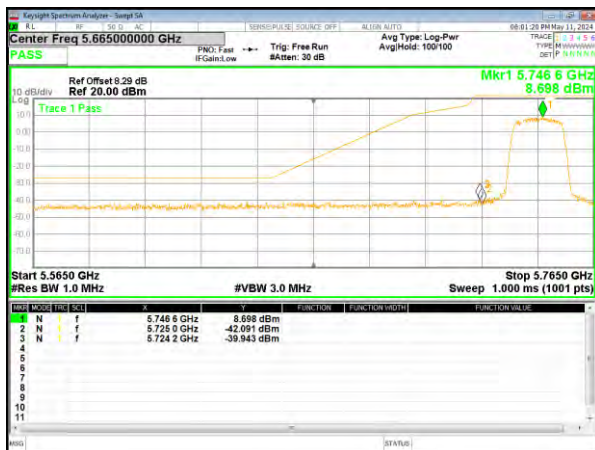
(802.11a) Band Edge, Right Side



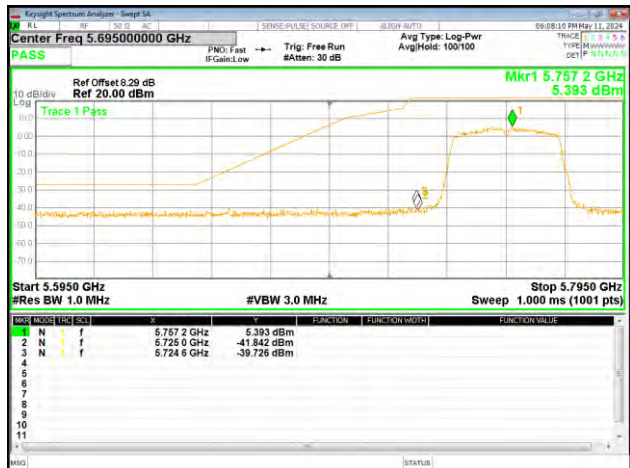
(802.11n20) Band Edge, Right Side



(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side



(802.11n40) Band Edge, Right Side



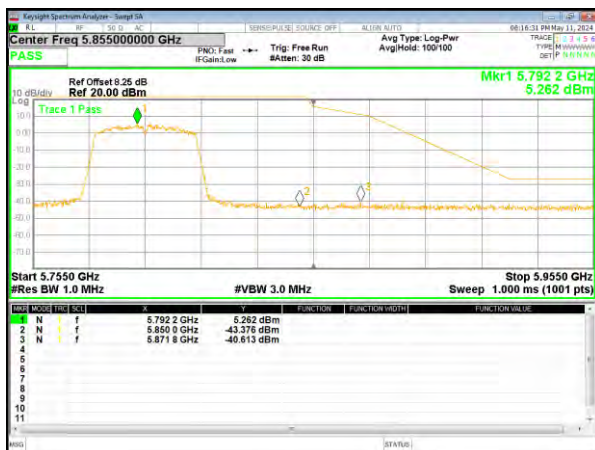
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge

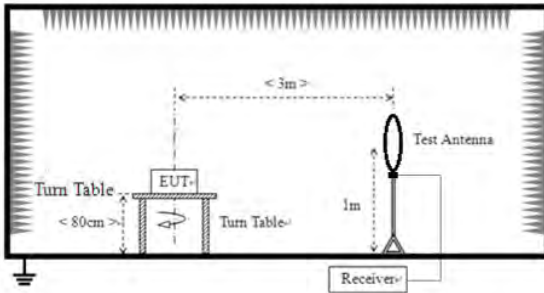
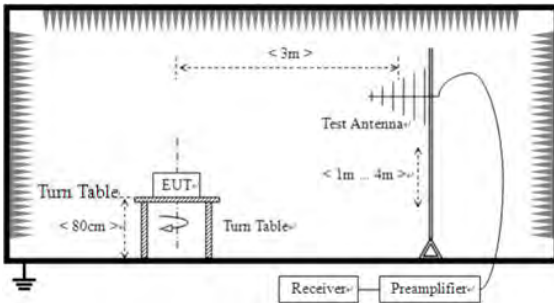


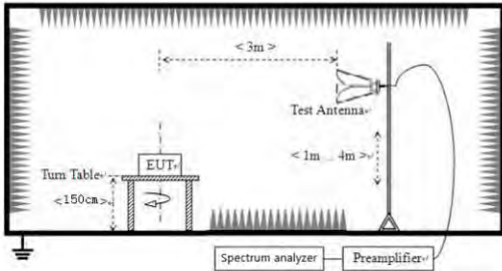
(802.11ac40) Band Edge, Right Side



4.8 Spurious Emission

4.8.1 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:	For radiated emissions from 9kHz to 30MHz				
					
Test setup:	For radiated emissions from 30MHz to 1GHz				
					

	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. 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 results:	Pass

Remarks:

1. The report only shows the worst mode.
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

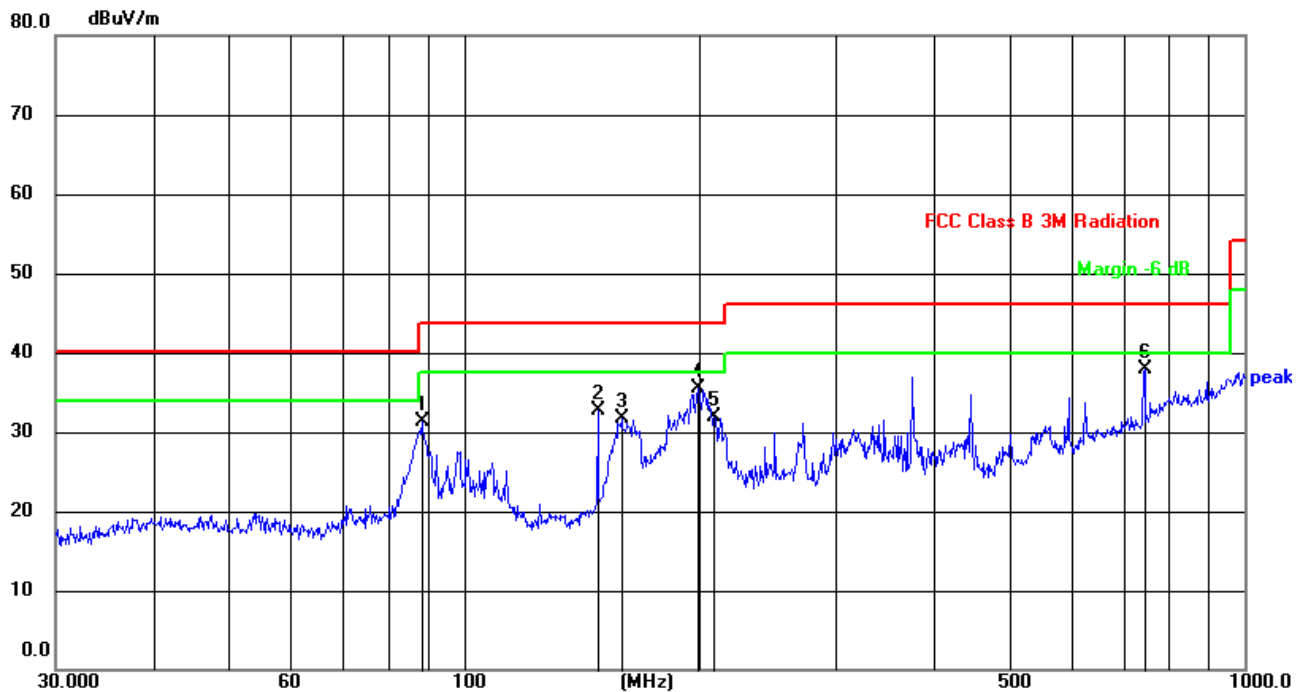
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

Remark: All antenna and all mode had been tested, The test data shows only the worst case (ANT2+ANT4:802.11a) mode.

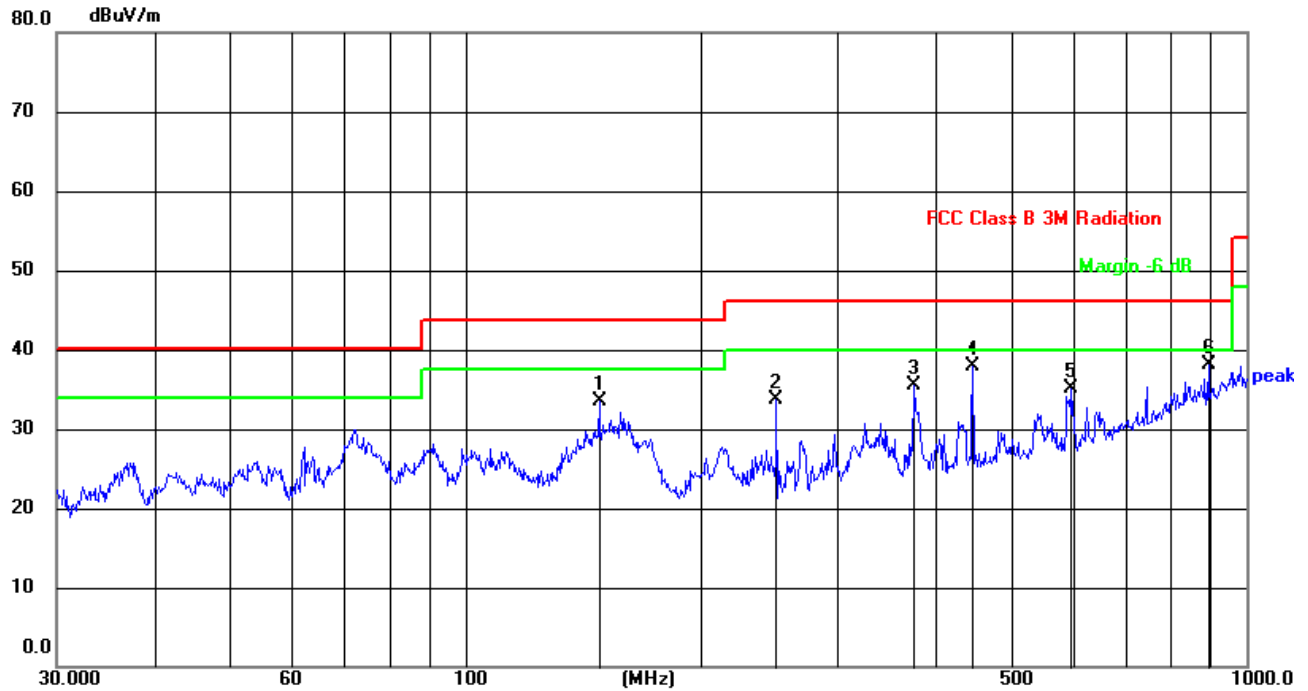
Temperature:	22.7°C	Relative Humidity:	52%
Pressure:	101.2kPa	Test Voltage :	DC 5V
Test Mode :	5.8G TX- 802.11a		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	88.3421	56.78	-25.52	31.26	43.50	-12.24	QP
2	148.4410	53.39	-20.68	32.71	43.50	-10.79	QP
3	159.2251	52.27	-20.57	31.70	43.50	-11.80	QP
4	199.2855	58.86	-23.36	35.50	43.50	-8.00	QP
5	209.3129	55.34	-23.47	31.87	43.50	-11.63	QP
6	744.8661	46.21	-8.21	38.00	46.00	-8.00	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	148.4410	54.23	-20.68	33.55	43.50	-9.95	QP
2	250.3011	55.93	-22.25	33.68	46.00	-12.32	QP
3	374.6225	53.73	-18.18	35.55	46.00	-10.45	QP
4	446.4140	53.53	-15.65	37.88	46.00	-8.12	QP
5	597.2234	46.93	-11.82	35.11	46.00	-10.89	QP
6	893.8566	43.59	-5.54	38.05	46.00	-7.95	QP

Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

**Above 1GHz:**

Remark: All antenna and all mode had been tested, The test data shows only the worst case (ANT2+ANT4:802.11a) mode.

Temperature:	22.7°C	Relative Humidity:	52%
Pressure:	101.2kPa	Test Voltage :	DC 5V
Test Mode :	5.8G TX- 802.11a		

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	
Low Channel:5180MHz									
V	10360.00	50.72	46.20	8.27	38.50	51.29	68.20	-16.92	PK
V	10360.00	40.72	46.20	8.27	38.50	41.29	54.00	-12.71	AV
V	15540.00	47.81	46.30	10.35	38.70	50.56	74.00	-23.44	PK
V	15540.00	37.77	46.30	10.35	38.70	40.52	54.00	-13.48	AV
V	20720.00	56.93	57.40	11.93	37.80	49.26	68.20	-18.94	PK
V	20720.00	46.89	57.40	11.93	37.80	39.22	54.00	-14.78	AV
V	25900.00	54.57	56.50	13.45	39.70	51.22	68.20	-16.98	PK
V	25900.00	44.14	56.50	13.45	39.70	40.79	54.00	-13.21	AV
H	10360.00	50.64	46.20	8.27	38.50	51.21	68.20	-16.99	PK
H	10360.00	39.35	46.20	8.27	38.50	39.92	54.00	-14.08	AV
H	15540.00	46.83	46.30	10.35	38.70	49.58	74.00	-24.42	PK
H	15540.00	35.34	46.30	10.35	38.70	38.09	54.00	-15.91	AV
H	20720.00	59.15	57.40	11.93	37.80	51.48	68.20	-16.72	PK
H	20720.00	47.78	57.40	11.93	37.80	40.11	54.00	-13.89	AV
H	25900.00	55.60	56.50	13.45	39.70	52.25	68.20	-15.95	PK
H	25900.00	44.17	56.50	13.45	39.70	40.82	54.00	-13.18	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:5200MHz									
V	10400.00	49.76	46.20	8.27	38.50	50.33	68.20	-17.87	PK
V	10400.00	40.47	46.20	8.27	38.50	41.04	54.00	-12.96	AV
V	15600.00	48.14	46.30	10.35	38.40	50.59	74.00	-23.41	PK
V	15600.00	39.30	46.30	10.35	38.40	41.75	54.00	-12.25	AV
V	20800.00	58.14	57.40	11.93	37.80	50.47	68.20	-17.73	PK
V	20800.00	48.41	57.40	11.93	37.80	40.74	54.00	-13.26	AV
V	26000.00	53.24	56.50	13.45	39.80	49.99	68.20	-18.21	PK
V	26000.00	45.37	56.50	13.45	39.80	42.12	54.00	-11.88	AV
H	10400.00	50.36	46.20	8.27	38.50	50.93	68.20	-17.27	PK
H	10400.00	40.74	46.20	8.27	38.50	41.31	54.00	-12.69	AV
H	15600.00	48.12	46.30	10.35	38.40	50.57	74.00	-23.43	PK
H	15600.00	39.30	46.30	10.35	38.40	41.75	54.00	-12.25	AV
H	20800.00	57.09	57.40	11.93	37.80	49.42	68.20	-18.79	PK
H	20800.00	46.31	57.40	11.93	37.80	38.64	54.00	-15.37	AV
H	26000.00	52.98	56.50	13.45	39.80	49.73	68.20	-18.47	PK
H	26000.00	44.58	56.50	13.45	39.80	41.33	54.00	-12.67	AV

<i>Polar (H/V)</i>	<i>Frequency</i>	<i>Meter Reading</i>	<i>Pre- amplifier</i>	<i>Cable Loss</i>	<i>Antenna Factor</i>	<i>Emission Level</i>	<i>Limits</i>	<i>Margin</i>	<i>Detect or Type</i>
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5240MHz									
V	10480.00	47.52	46.57	46.20	8.27	38.60	47.24	68.20	PK
V	10480.00	37.27	36.52	46.20	8.27	38.60	37.19	54.00	AV
V	15720.00	45.04	44.14	46.30	10.35	38.40	46.59	74.00	PK
V	15720.00	34.97	34.27	46.30	10.35	38.40	36.72	54.00	AV
V	20960.00	55.36	54.25	57.40	11.93	37.50	46.28	68.20	PK
V	20960.00	46.61	45.68	57.40	11.93	37.50	37.71	54.00	AV
V	26200.00	51.25	50.23	56.50	13.45	40.10	47.28	68.20	PK
V	26200.00	41.62	40.79	56.50	13.45	40.10	37.84	54.00	AV
H	10480.00	47.76	46.80	46.20	8.27	38.60	47.47	68.20	PK
H	10480.00	37.27	36.52	46.20	8.27	38.60	37.19	54.00	AV
H	15720.00	45.36	44.45	46.30	10.35	38.40	46.90	74.00	PK
H	15720.00	35.05	34.35	46.30	10.35	38.40	36.80	54.00	AV
H	20960.00	55.57	54.46	57.40	11.93	37.50	46.49	68.20	PK
H	20960.00	46.49	45.56	57.40	11.93	37.50	37.59	54.00	AV
H	26200.00	50.96	49.94	56.50	13.45	40.10	46.99	68.20	PK
H	26200.00	40.98	40.16	56.50	13.45	40.10	37.21	54.00	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.



Temperature:	22.7°C	Relative Humidity:	52%
Pressure:	101.2kPa	Test Voltage :	DC 5V
Test Mode :	5.8G TX- 802.11a		

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	45.89	46.10	8.77	39.10	47.66	74.00	-26.34	PK
V	11490.00	37.99	46.10	8.77	39.10	39.76	54.00	-14.24	AV
V	17235.00	43.56	47.60	11.10	38.70	45.76	68.20	-22.44	PK
V	17235.00	36.49	47.60	11.10	38.70	38.69	54.00	-15.31	AV
V	22980.00	52.02	56.90	12.73	37.70	45.55	74.00	-28.45	PK
V	22980.00	44.25	56.90	12.73	37.70	37.78	54.00	-16.22	AV
V	28725.00	48.93	55.60	14.25	40.30	47.88	68.20	-20.32	PK
V	28725.00	40.68	55.60	14.25	40.30	39.63	54.00	-14.37	AV
H	11490.00	46.37	46.10	8.77	39.10	48.14	74.00	-25.86	PK
H	11490.00	37.82	46.10	8.77	39.10	39.59	54.00	-14.41	AV
H	17235.00	44.55	47.60	11.10	38.70	46.75	68.20	-21.45	PK
H	17235.00	36.87	47.60	11.10	38.70	39.07	54.00	-14.93	AV
H	22980.00	54.17	56.90	12.73	37.70	47.70	74.00	-26.30	PK
H	22980.00	44.03	56.90	12.73	37.70	37.56	54.00	-16.44	AV
H	28725.00	50.83	55.60	14.25	40.30	49.78	68.20	-18.42	PK
H	28725.00	41.29	55.60	14.25	40.30	40.24	54.00	-13.76	AV

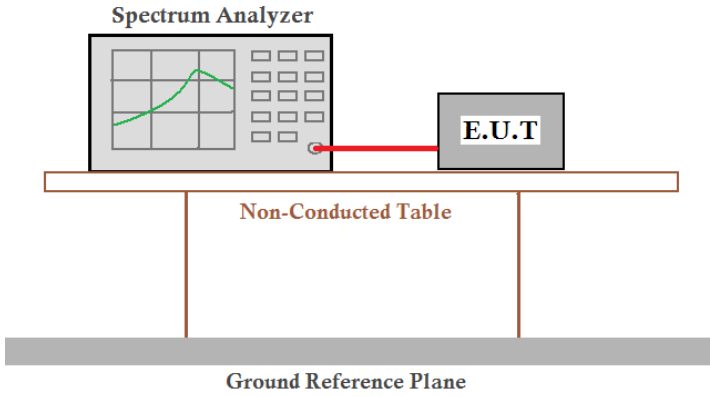
Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	45.71	46.10	8.77	39.10	47.48	74.00	-26.52	PK
V	11570.00	37.81	46.10	8.77	39.10	39.58	54.00	-14.42	AV
V	17355.00	43.38	47.60	11.10	38.70	45.58	68.20	-22.62	PK
V	17355.00	36.27	47.60	11.10	38.70	38.47	54.00	-15.53	AV
V	23140.00	51.85	56.90	12.73	37.70	45.38	74.00	-28.62	PK
V	23140.00	44.07	56.90	12.73	37.70	37.60	54.00	-16.40	AV
V	28925.00	48.74	55.60	14.25	40.30	47.69	68.20	-20.51	PK
V	28925.00	40.48	55.60	14.25	40.30	39.43	54.00	-14.57	AV
H	11570.00	46.18	46.10	8.77	39.10	47.95	74.00	-26.05	PK
H	11570.00	37.62	46.10	8.77	39.10	39.39	54.00	-14.61	AV
H	17355.00	44.36	47.60	11.10	38.70	46.56	68.20	-21.64	PK
H	17355.00	36.69	47.60	11.10	38.70	38.89	54.00	-15.11	AV
H	23140.00	53.97	56.90	12.73	37.70	47.50	74.00	-26.50	PK
H	23140.00	43.86	56.90	12.73	37.70	37.39	54.00	-16.61	AV
H	28925.00	50.66	55.60	14.25	40.30	49.61	68.20	-18.59	PK
H	28925.00	41.10	55.60	14.25	40.30	40.05	54.00	-13.95	AV

<i>Polar (H/V)</i>	<i>Frequency</i>	<i>Meter Reading</i>	<i>Pre- amplifier</i>	<i>Cable Loss</i>	<i>Antenna Factor</i>	<i>Emission Level</i>	<i>Limits</i>	<i>Margin</i>	<i>Detect or Type</i>
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:5825MHz									
V	11650.00	46.78	46.10	8.77	39.10	48.55	74.00	-25.45	PK
V	11650.00	37.99	46.10	8.77	39.10	39.76	54.00	-14.24	AV
V	17475.00	44.70	47.90	11.23	38.90	46.93	68.20	-21.27	PK
V	17475.00	37.28	47.90	11.23	38.90	39.51	54.00	-14.49	AV
V	23300.00	54.10	57.10	12.73	37.80	47.53	68.20	-20.67	PK
V	23300.00	44.96	57.10	12.73	37.80	38.39	54.00	-15.61	AV
V	29125.00	50.92	55.80	14.25	40.50	49.87	68.20	-18.33	PK
V	29125.00	42.33	55.80	14.25	40.50	41.28	54.00	-12.72	AV
H	11650.00	48.72	46.10	8.77	39.10	50.49	74.00	-23.51	PK
H	11650.00	40.31	46.10	8.77	39.10	42.08	54.00	-11.92	AV
H	17475.00	45.88	47.90	11.23	38.90	48.11	68.20	-20.09	PK
H	17475.00	38.52	47.90	11.23	38.90	40.75	54.00	-13.25	AV
H	23300.00	55.45	57.10	12.73	37.80	48.88	68.20	-19.32	PK
H	23300.00	46.39	57.10	12.73	37.80	39.82	54.00	-14.18	AV
H	29125.00	51.95	55.80	14.25	40.50	50.90	68.20	-17.30	PK
H	29125.00	43.02	55.80	14.25	40.50	41.97	54.00	-12.03	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.

4.8.2 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:	 The diagram illustrates the test setup for conducted emissions. A Spectrum Analyzer is connected to an Equipment Under Test (E.U.T.) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two vertical legs and sits on a Ground Reference Plane.	
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 22.7°C	Humid.:52%RH
Test voltage:	DC 5V	
Test results:	Pass	

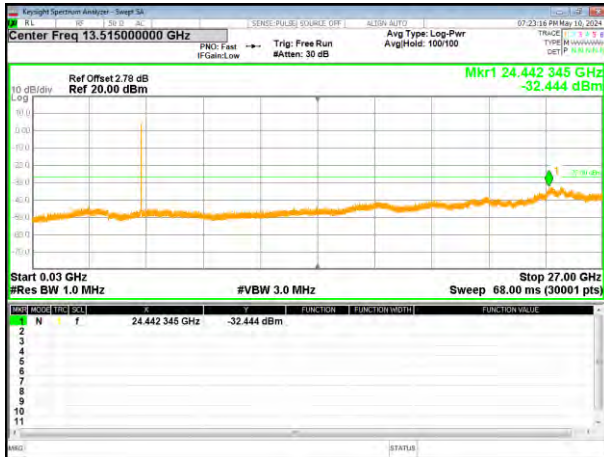
Remark: Antenna gain and cable loss data included in Offset.



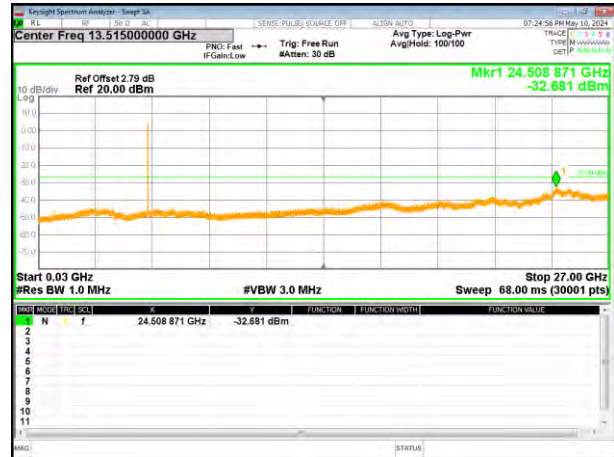
Module: WB800D.3(ANT2) 5180-5240MHz

Test Plot

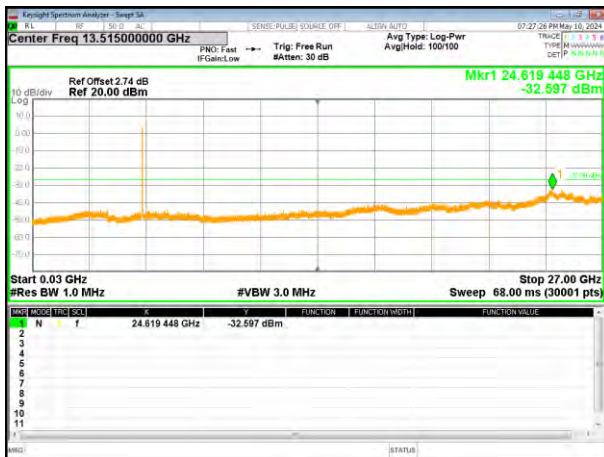
802.11a on channel 36



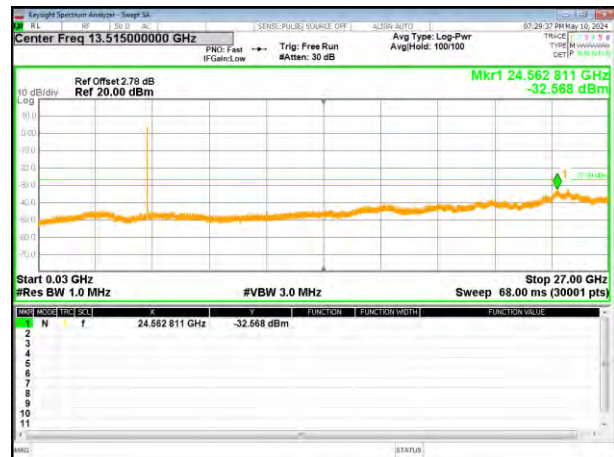
802.11a on channel 40



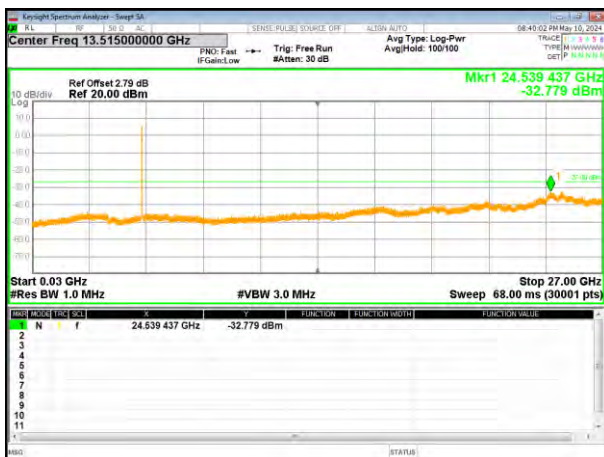
802.11a on channel 48



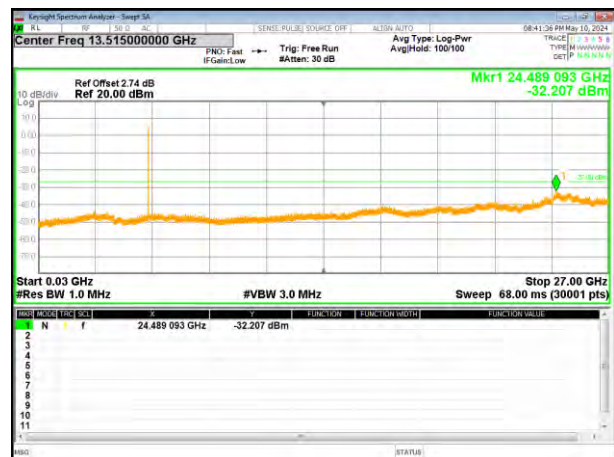
802.11n20 on channel 36



802.11n20 on channel 40

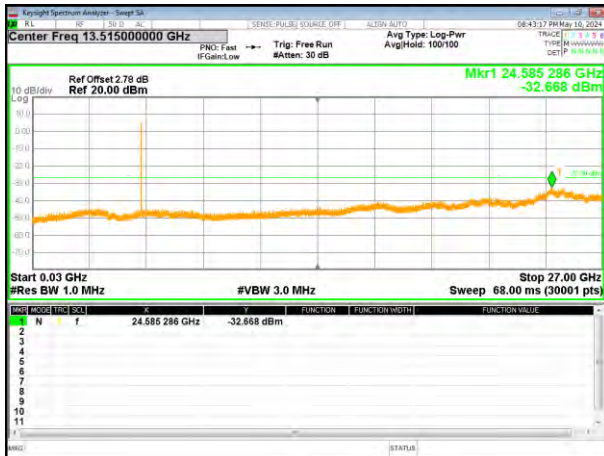


802.11n20 on channel 48

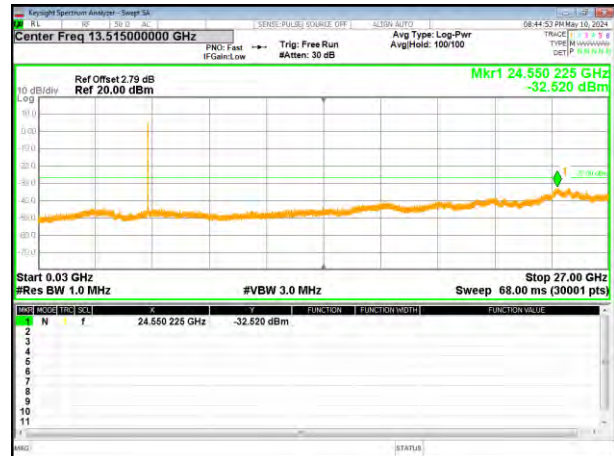


Test Plot

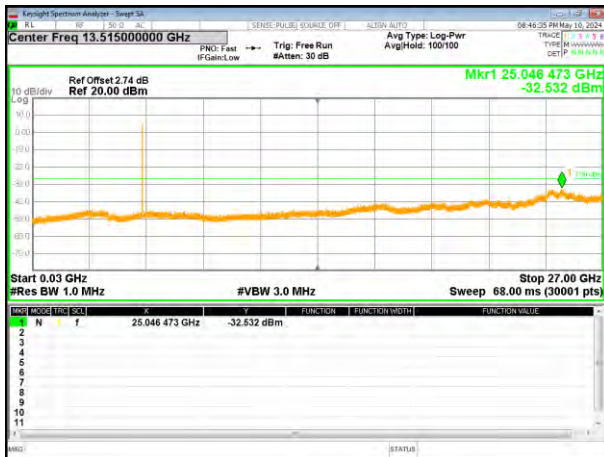
802.11ac20 on channel 36



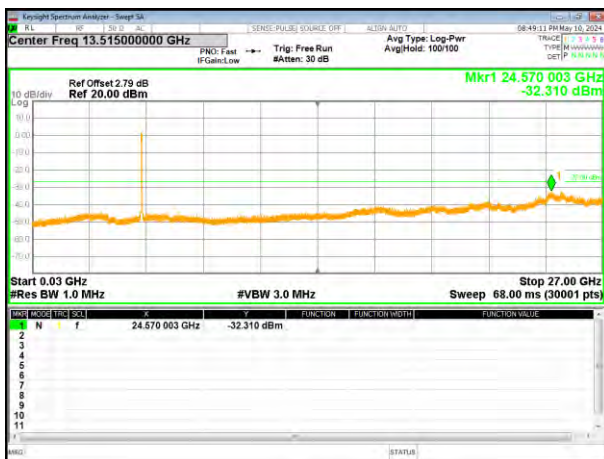
802.11ac20 on channel 40



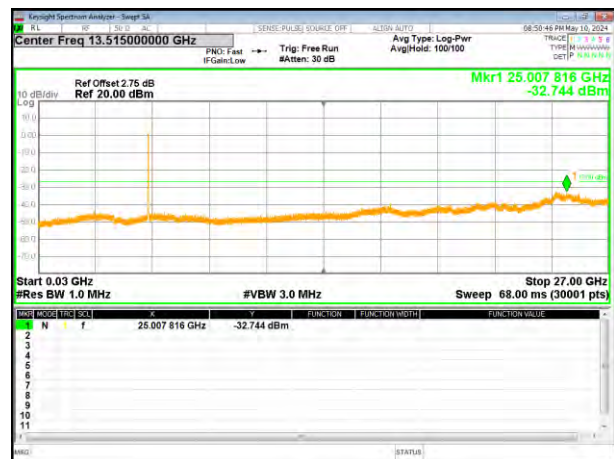
802.11ac20 on channel 48



802.11n40 on channel 38

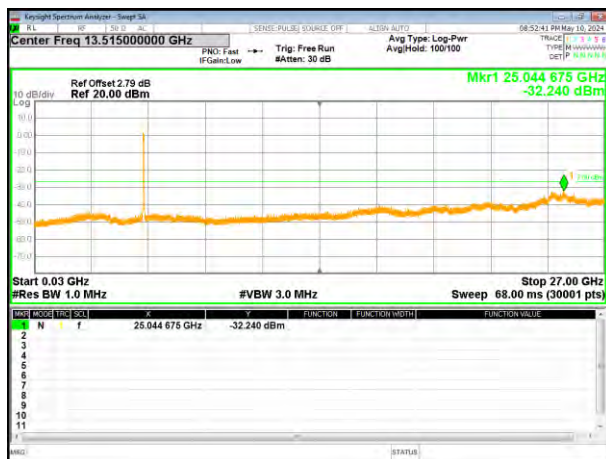


802.11n40 on channel 46



Test Plot

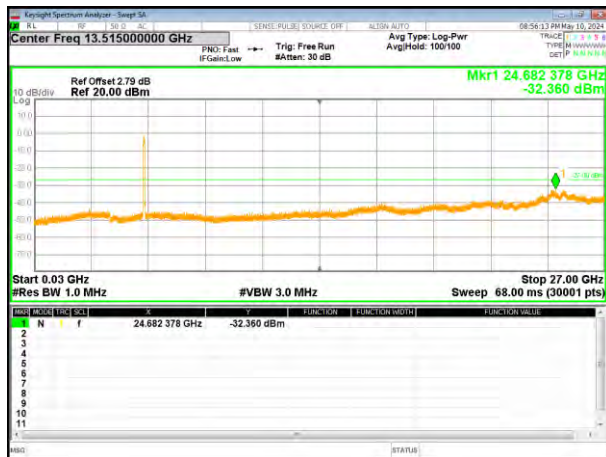
802.11ac40 on channel 38



802.11ac40 on channel 46



802.11ac80 on channel 42

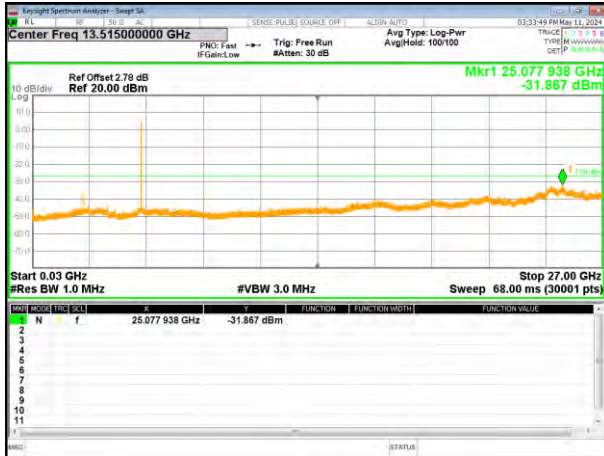




Module: WB663U.1(ANT4) 5180-5240MHz

Test Plot

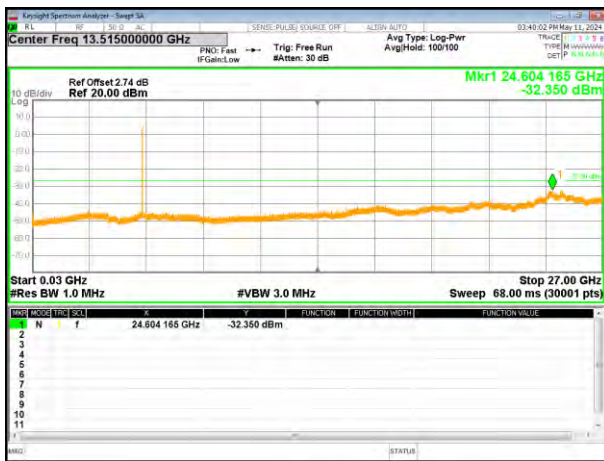
802.11a on channel 36



802.11a on channel 40



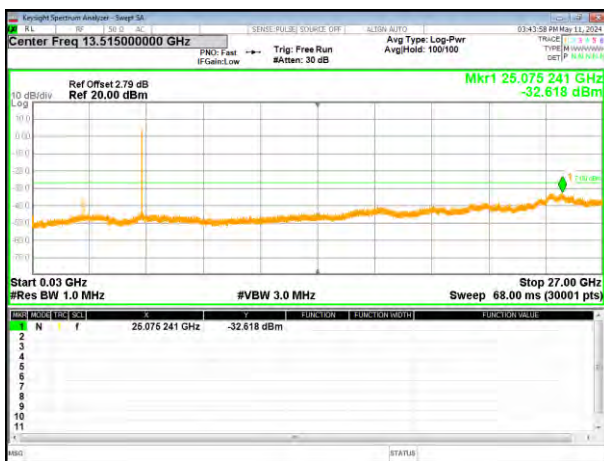
802.11a on channel 48



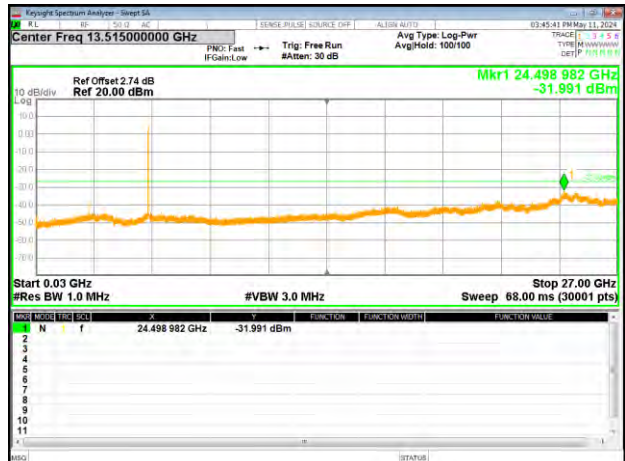
802.11n20 on channel 36



802.11n20 on channel 40

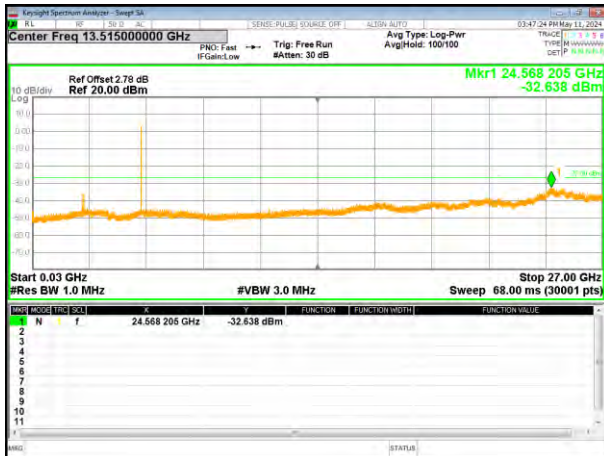


802.11n20 on channel 48

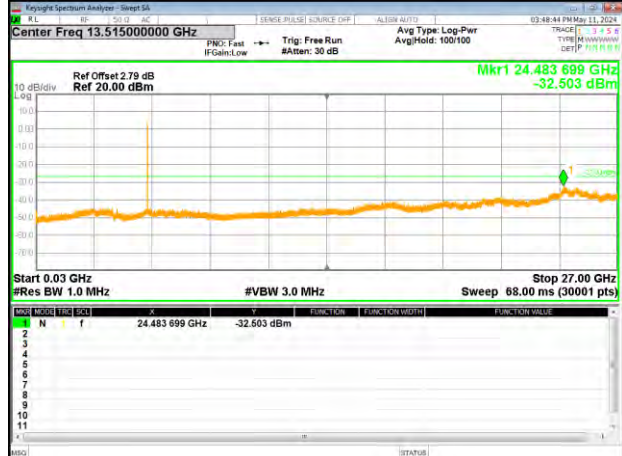


Test Plot

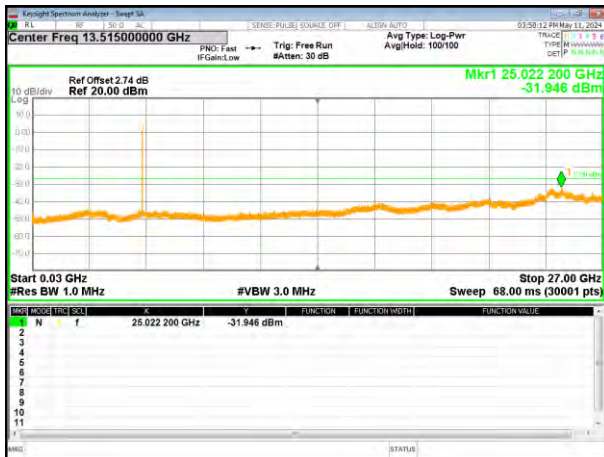
802.11ac20 on channel 36



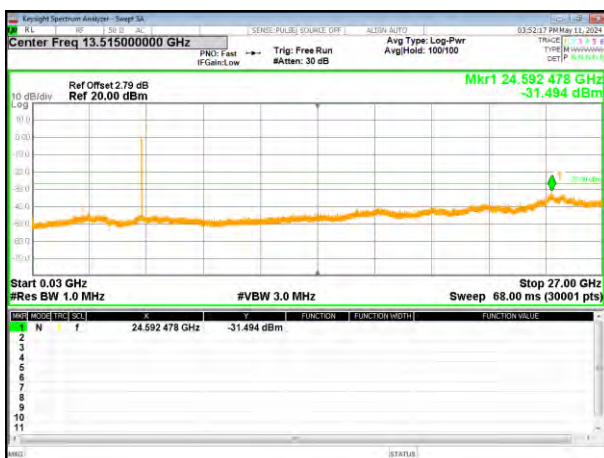
802.11ac20 on channel 40



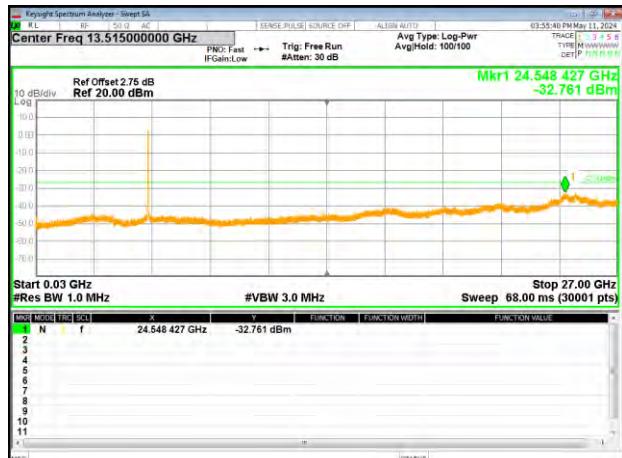
802.11ac20 on channel 48



802.11n40 on channel 38



802.11n40 on channel 46



Test Plot

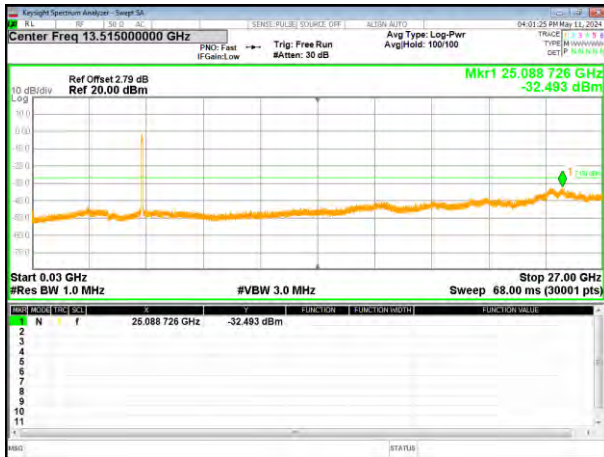
802.11ac40 on channel 38



802.11ac40 on channel 46



802.11ac80 on channel 42



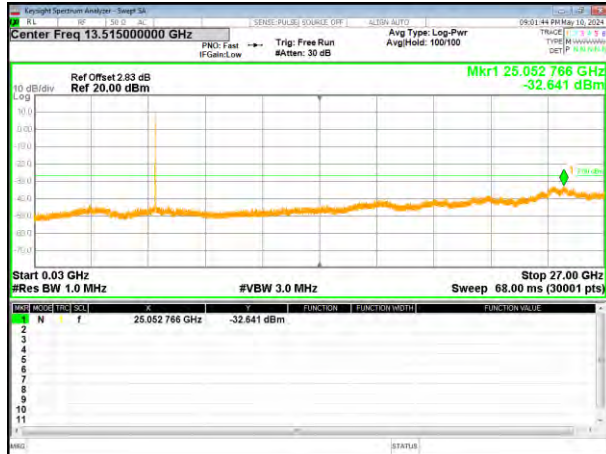


Module: WB800D.3(ANT2)

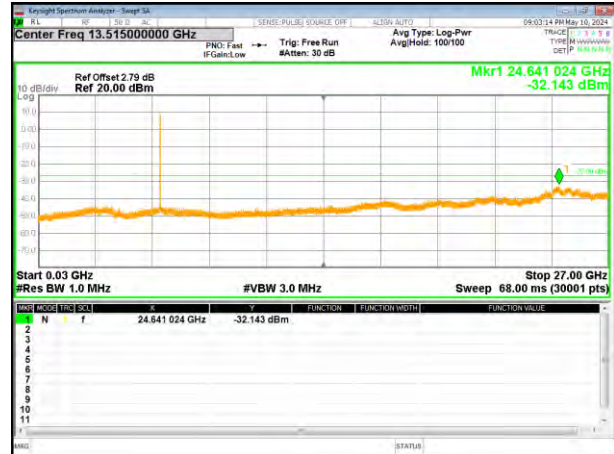
5745-5825MHz

Test Plot

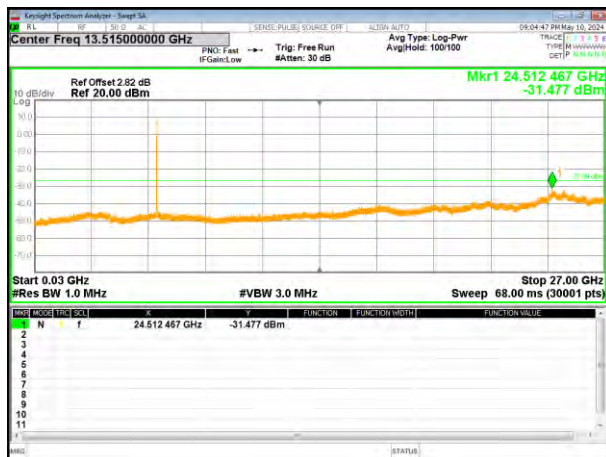
802.11a on channel 149



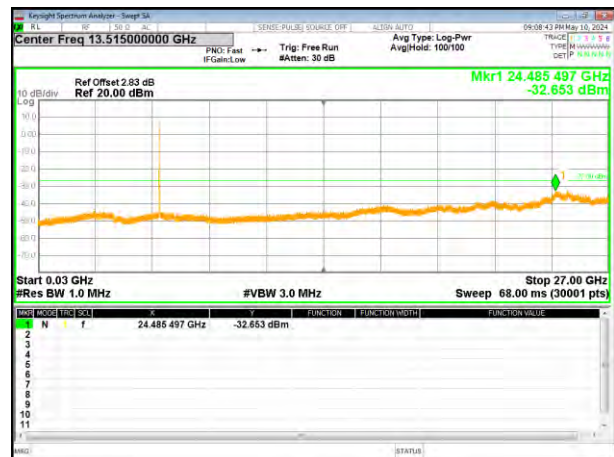
802.11a on channel 157



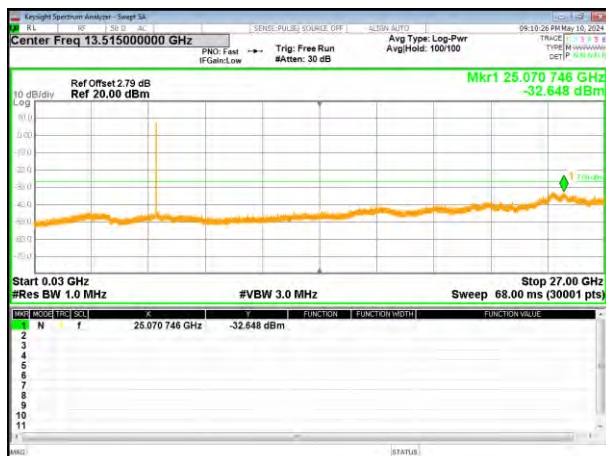
802.11a on channel 165



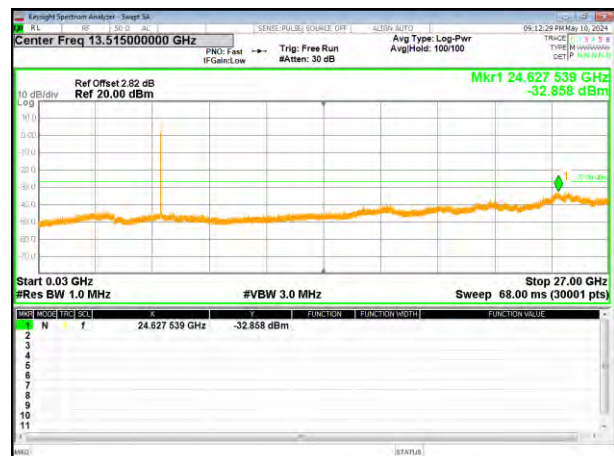
802.11n20 on channel 149



802.11n20 on channel 157

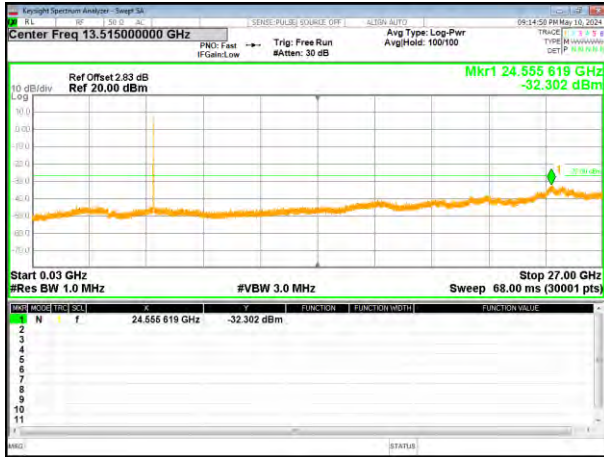


802.11n20 on channel 165

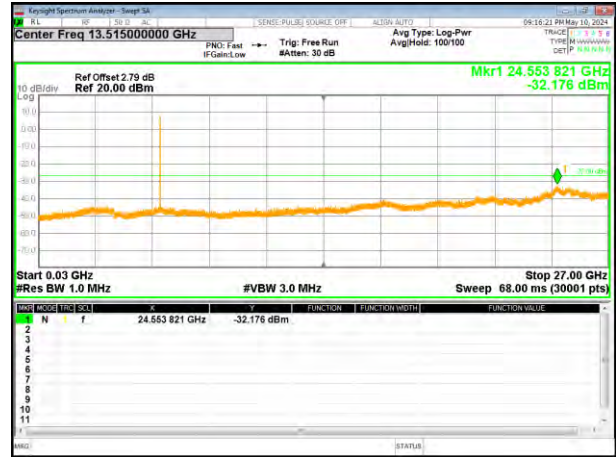


Test Plot

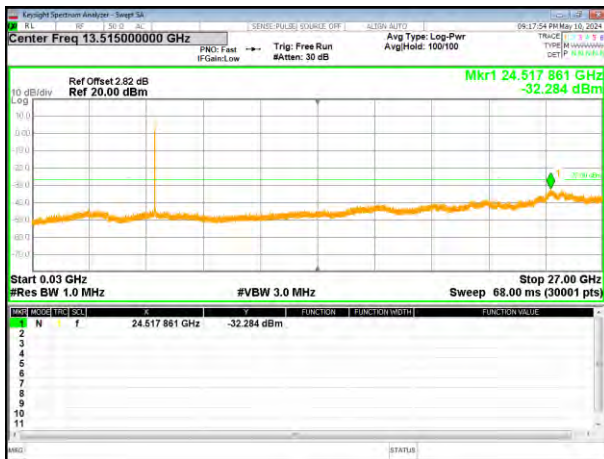
802.11ac20 on channel 149



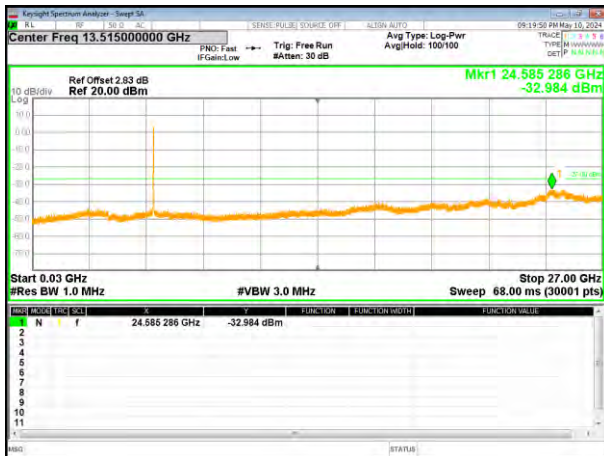
802.11ac20 on channel 157



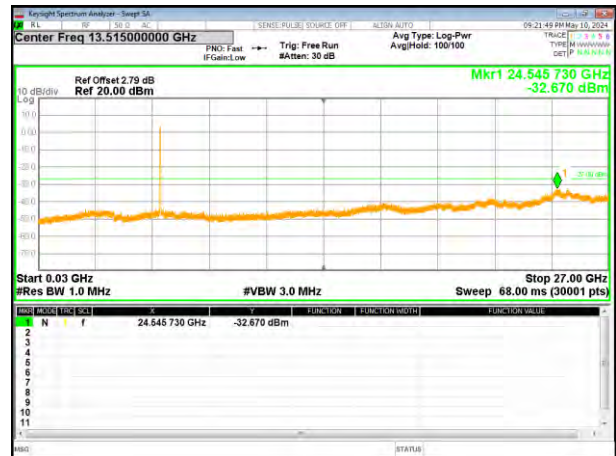
802.11ac20 on channel 165



802.11n40 on channel 151

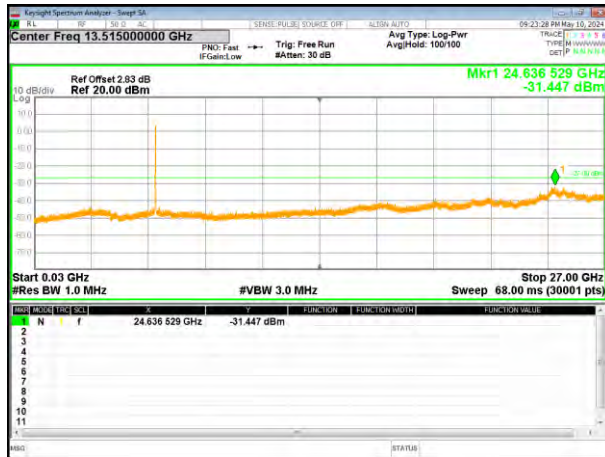


802.11n40 on channel 159

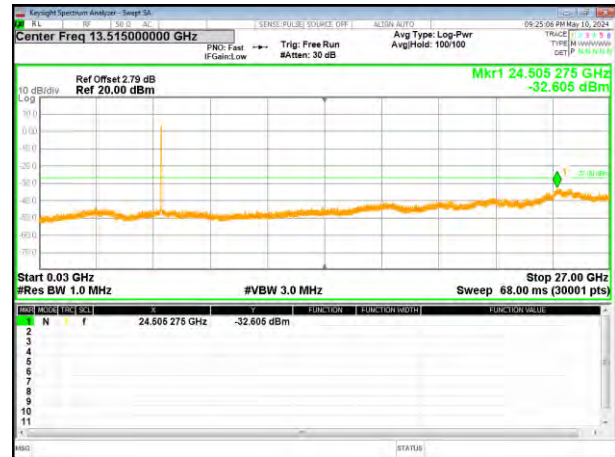


Test Plot

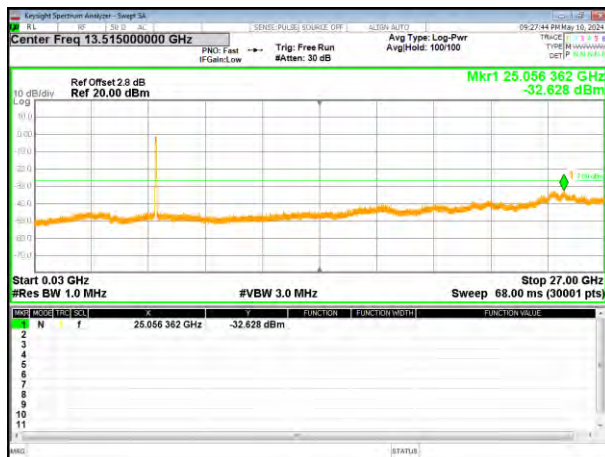
802.11ac40 on channel 151



802.11ac40 on channel 159



802.11ac80 on channel 155



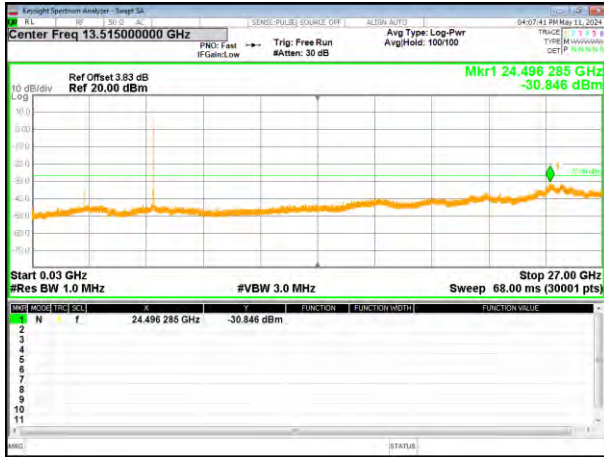


Module: WB663U.1(ANT4)

5745-5825MHz

Test Plot

802.11a on channel 149



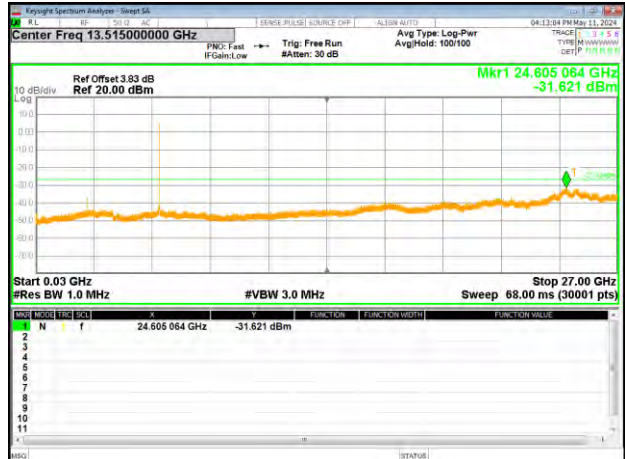
802.11a on channel 157



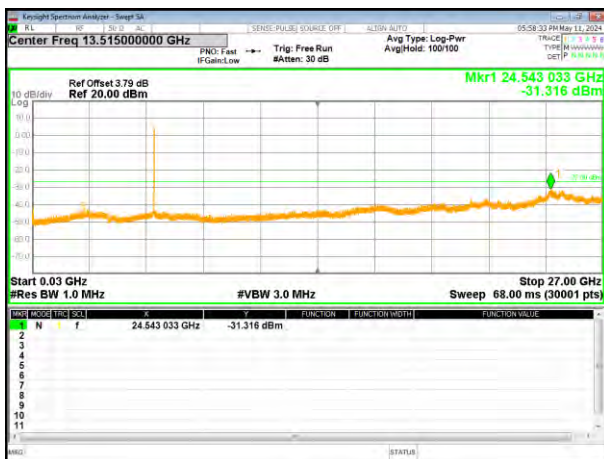
802.11a on channel 165



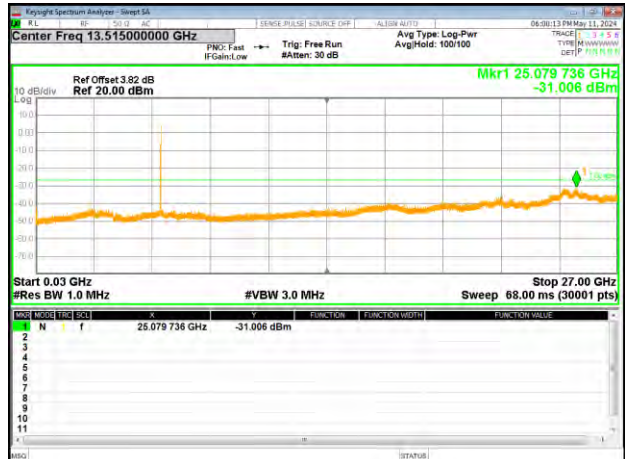
802.11n20 on channel 149



802.11n20 on channel 157

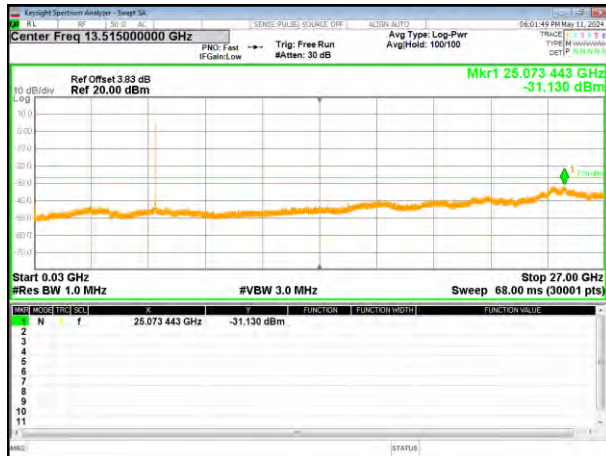


802.11n20 on channel 165

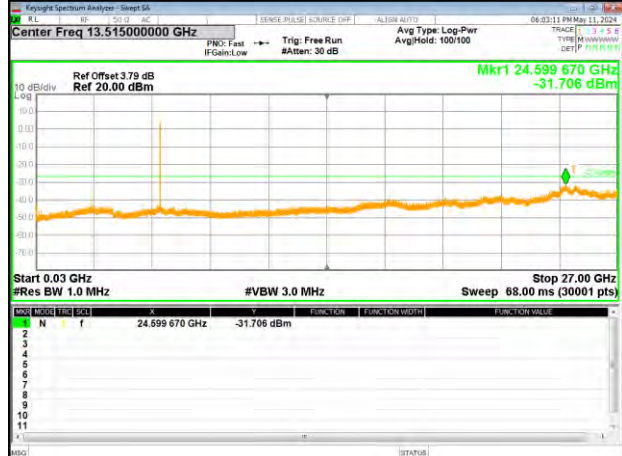


Test Plot

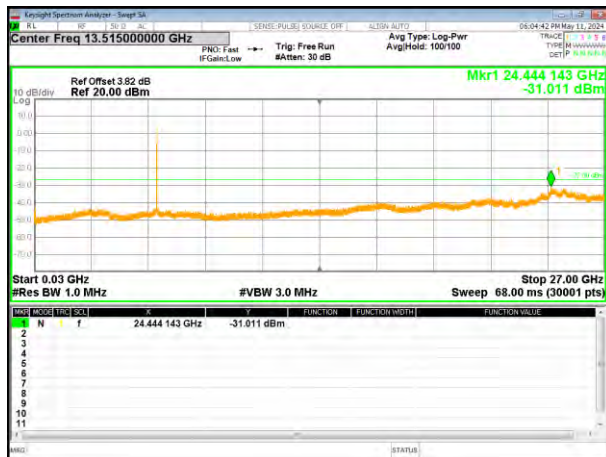
802.11ac20 on channel 149



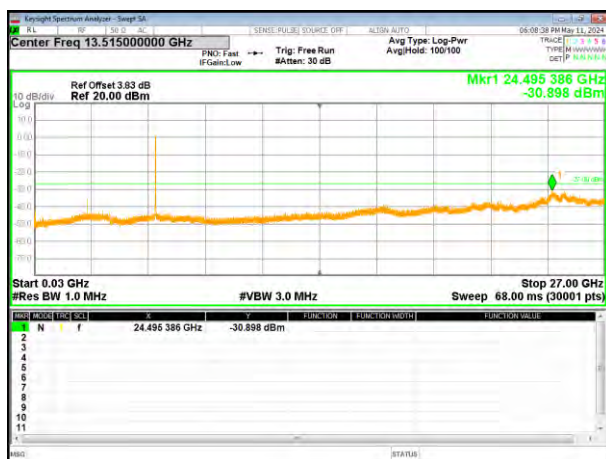
802.11ac20 on channel 157



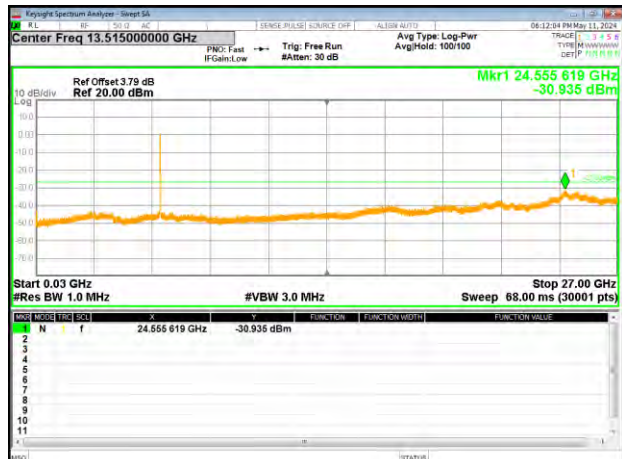
802.11ac20 on channel 165



802.11n40 on channel 151

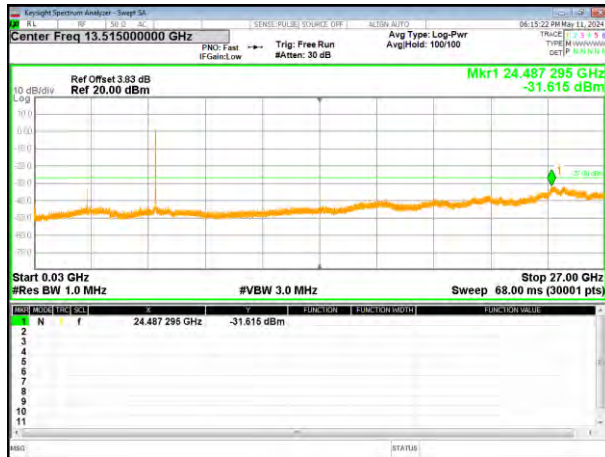


802.11n40 on channel 159

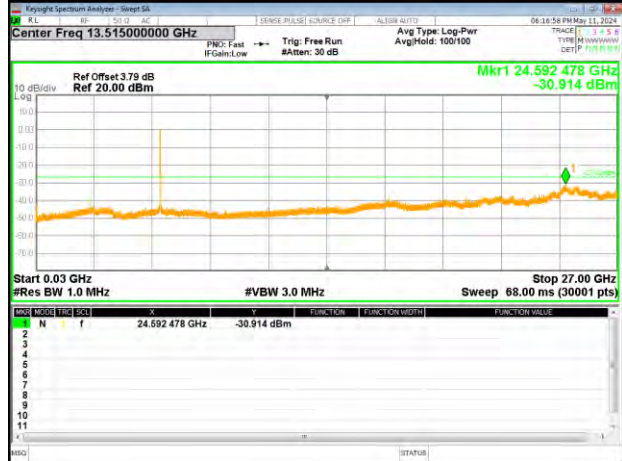


Test Plot

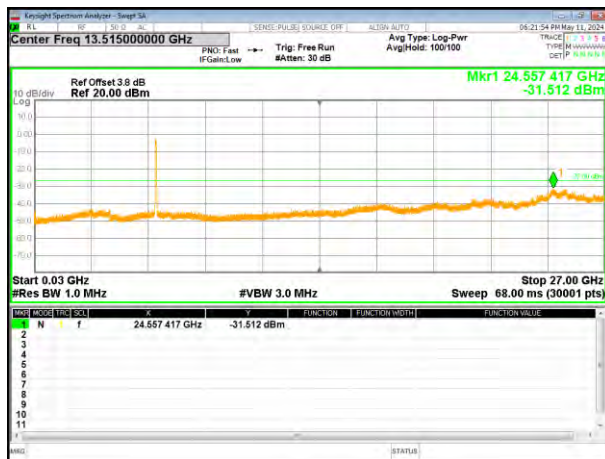
802.11ac40 on channel 151



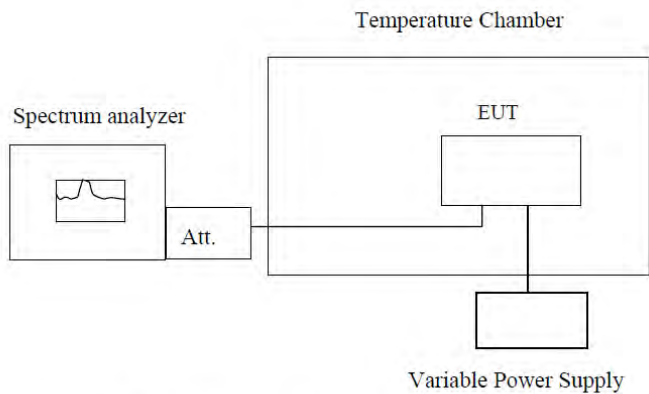
802.11ac40 on channel 159



802.11ac80 on channel 155



4.9 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:	a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. 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. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minute s. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test setup:	 Note : Measurement setup for testing on Antenna connector
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 5V					
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	5180.353	5179.789	5180.151	5179.559
	5190	5190.343	5199.804	5200.027	5189.569
	5200	5200.346	5199.789	5200.052	5199.560
	5210	5210.352	5209.767	5210.030	5209.561
	5220	5220.347	5219.782	5220.046	5219.566
	5230	5230.345	5229.775	5230.038	5229.584
	5240	5240.318	5239.784	5240.047	5239.569
-20	5180	5180.346	5179.765	5180.036	5179.580
	5190	5190.337	5189.756	5190.036	5189.575
	5200	5200.345	5199.764	5200.030	5199.570
	5210	5210.337	5209.756	5210.020	5209.576
	5220	5220.358	5219.777	5220.031	5219.569
	5230	5230.336	5229.755	5300.030	5229.567
	5240	5240.354	5239.774	5240.033	5239.540
-10	5180	5180.355	5179.774	5180.015	5179.559
	5190	5190.351	5189.770	5190.027	5189.569
	5200	5200.346	5199.765	5200.018	5199.560
	5210	5210.352	5209.771	5210.019	5209.561
	5220	5220.347	5219.766	5220.027	5219.566
	5230	5230.345	5229.764	5230.044	5229.584
	5240	5240.318	5239.738	5240.017	5239.556
0	5180	5180.132	5179.753	5180.027	5179.570
	5190	5200.304	5189.764	5190.019	5189.570
	5200	5200.302	5199.755	5200.027	5199.561
	5210	5210.357	5209.756	5210.019	5299.565
	5220	5220.346	5219.763	5220.041	5219.559
	5230	5230.333	5229.781	5230.018	5229.580
	5240	5240.350	5239.754	5240.037	5239.558
10	5180	5180.334	5179.765	5180.036	5179.571
	5190	5190.345	5189.756	5190.033	5189.561
	5200	5200.336	5199.764	5200.028	5199.569
	5210	5210.337	5209.756	5210.034	5209.561
	5220	5220.344	5219.777	5220.030	5219.580
	5230	5230.362	5229.755	5230.027	5229.558
	5240	5240.347	5239.774	5240.001	5239.576
20	5180	5180.412	5179.018	5180.285	5179.333



	5190	5190.355	5189.807	5190.330	5189.597
	5200	5200.350	5199.798	5200.339	5199.622
	5210	5210.356	5299.809	5210.332	5209.606
	5220	5220.351	5219.798	5220.354	5219.596
	5230	5230.349	5229.819	5230.332	5229.624
	5240	5240.322	5239.798	5240.351	5239.612
30	5180	5180.338	5179.806	5180.338	5179.616
	5190	5190.349	5189.798	5190.330	5179.616
	5200	5200.340	5199.806	5200.339	5189.611
	5210	5210.341	5209.798	5210.332	5199.606
	5220	5220.348	5219.819	5220.354	5209.612
	5230	5230.366	5229.797	5230.332	5219.606
	5240	5240.338	5239.816	5240.351	5229.604
40	5180	5180.350	5179.805	5180.124	5179.595
	5190	5190.341	5189.807	5200.298	5189.605
	5200	5200.349	5199.798	5200.296	5199.596
	5210	5210.341	5299.809	5210.352	5209.597
	5220	5220.362	5219.798	5220.342	5219.603
	5230	5230.340	5229.819	5230.329	5229.621
	5240	5240.358	5239.798	5240.347	5239.593
50	5180	5180.350	5179.806	5180.338	5179.568
	5190	5190.341	5189.798	5190.330	5189.597
	5200	5200.349	5199.806	5200.339	5199.622
	5210	5210.341	5209.798	5210.332	5209.606
	5220	5220.362	5219.819	5220.354	5219.596
	5230	5230.340	5229.797	5230.332	5229.624
	5240	5240.358	5239.816	5240.351	5239.612

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)
DC 4.25V	5180	5180.359	5179.809	5180.338	5179.731
	5190	5190.355	5199.803	5190.330	5199.605
	5200	5200.350	5199.831	5200.339	5199.630
	5210	5210.356	5209.809	5210.332	5209.608
	5220	5220.351	5219.824	5220.354	5219.622
	5230	5230.349	5229.817	5230.332	5229.615
	5240	5240.322	5239.826	5240.347	5239.623
DC 5V	5180	5180.345	5179.824	5180.337	5179.616
	5190	5190.341	5179.930	5190.339	5189.614
	5200	5200.349	5199.806	5200.331	5199.608
	5210	5210.342	5209.831	5300.347	5209.598
	5220	5220.362	5219.809	5220.333	5219.607
	5230	5230.340	5229.824	5230.353	5299.603
	5240	5240.358	5239.818	5240.333	5239.609
DC 5.75V	5180	5180.359	5179.815	5180.326	5179.595
	5190	5190.355	5189.812	5190.338	5189.605
	5200	5200.350	5199.807	5200.330	5199.595
	5210	5210.356	5209.813	5210.332	5209.597
	5220	5220.351	5219.808	5220.340	5219.603
	5230	5230.349	5229.806	5230.358	5229.626
	5240	5240.322	5239.780	5240.331	5239.593

Frequency stability versus Temp.					
Power Supply: DC 5V					
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	5745.336	5744.816	5745.375	5744.581
	5755	5755.346	5754.823	5755.383	5754.569
	5775	5775.367	5774.816	5775.402	5774.580
	5785	5785.343	5784.808	5785.378	5784.586
	5795	5795.339	5794.815	5795.375	5794.604
	5825	5825.337	5824.745	5825.381	5824.595
-20	5745	5745.333	5744.827	5745.369	5744.592
	5755	5755.348	5754.829	5755.395	5754.605
	5775	5775.347	5774.833	5775.378	5774.590
	5785	5785.350	5784.825	5785.387	5784.576
	5795	5795.360	5794.816	5795.386	5794.570
	5825	5825.342	5824.826	5825.399	5824.603
-10	5745	5745.343	5744.817	5745.385	5744.211
	5755	5755.369	5754.824	5755.388	5754.594
	5775	5775.365	5774.842	5775.393	5774.595
	5785	5785.349	5784.818	5785.385	5784.597
	5795	5795.338	5794.814	5795.377	5794.580
	5825	5825.273	5824.817	5825.389	5824.575
0	5745	5745.337	5744.806	5745.385	5744.582
	5755	5755.362	5754.822	5755.388	5754.607
	5775	5775.343	5774.822	5775.393	5774.603
	5785	5785.352	5784.825	5785.385	5784.586
	5795	5795.350	5794.838	5795.377	5794.575
	5825	5825.360	5824.818	5825.389	5824.509
10	5745	5745.337	5744.816	5745.374	5744.577
	5755	5755.362	5754.833	5755.382	5754.588
	5775	5775.343	5774.835	5775.376	5774.605
	5785	5785.352	5784.817	5785.368	5784.580
	5795	5795.350	5794.834	5795.376	5794.576
	5825	5825.360	5824.833	5825.308	5824.578
20	5745	5745.353	5744.841	5745.383	5744.581
	5755	5755.367	5754.813	5755.400	5754.599
	5775	5775.352	5774.837	5775.387	5774.579
	5785	5785.339	5784.837	5785.374	5784.605
	5795	5795.333	5794.828	5795.369	5794.597
	5825	5825.367	5824.844	5825.406	5824.605
30	5745	5745.343	5744.827	5745.368	5744.606
	5755	5755.350	5754.829	5755.392	5754.577
	5775	5775.367	5774.833	5775.395	5774.600
	5785	5785.343	5784.825	5785.377	5784.599
	5795	5795.339	5794.816	5795.395	5794.590
	5825	5825.342	5824.826	5825.396	5824.604
40	5745	5745.353	5744.811	5745.385	5744.575
	5755	5755.367	5754.836	5755.388	5754.607



	5775	5775.352	5774.818	5775.393	5774.603
	5785	5785.339	5784.827	5785.385	5784.586
	5795	5795.333	5794.825	5795.377	5794.575
	5825	5825.367	5824.836	5825.389	5824.509
50	5745	5745.353	5744.841	5745.385	5744.581
	5755	5755.347	5754.813	5755.399	5754.599
	5775	5775.352	5774.837	5775.387	5774.579
	5785	5785.339	5784.837	5785.374	5784.606
	5795	5795.333	5794.827	5795.369	5794.597
	5825	5825.367	5824.848	5825.406	5824.605

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
DC 4.25V	5745	5745.332	5744.816	5745.374	5744.576
	5755	5755.348	5754.823	5755.392	5754.600
	5775	5775.347	5774.816	5775.395	5774.581
	5785	5785.350	5784.808	5785.377	5784.589
	5795	5795.361	5794.815	5795.396	5794.587
	5825	5825.342	5824.745	5825.396	5824.596
DC 5V	5745	5745.332	5744.827	5745.369	5744.592
	5755	5755.348	5754.829	5755.395	5754.605
	5775	5775.347	5774.833	5775.378	5774.590
	5785	5785.350	5784.825	5785.387	5784.576
	5795	5795.357	5794.816	5795.386	5794.570
	5825	5825.342	5824.826	5825.399	5824.603
DC 5.75V	5745	5745.353	5744.840	5745.385	5744.581
	5755	5755.367	5754.813	5755.400	5754.599
	5775	5775.352	5774.837	5775.387	5774.579
	5785	5785.339	5784.837	5785.374	5784.605
	5795	5795.333	5794.828	5795.369	5794.597
	5825	5825.367	5824.844	5825.406	5824.605



5 Test Setup Photo

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

6 EUT Constructional Details

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

-----END-----