

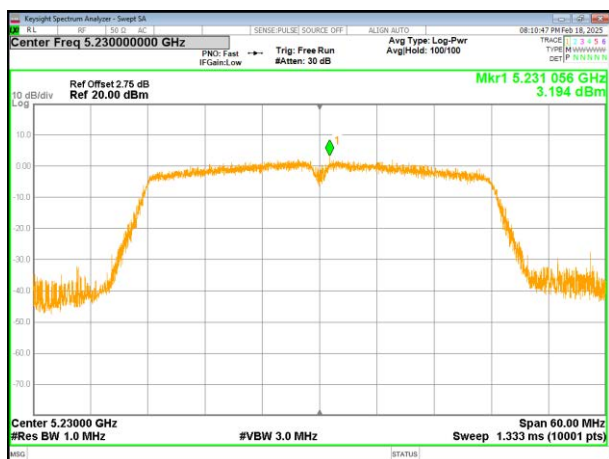
(802.11ax40) PSD plot on channel 38



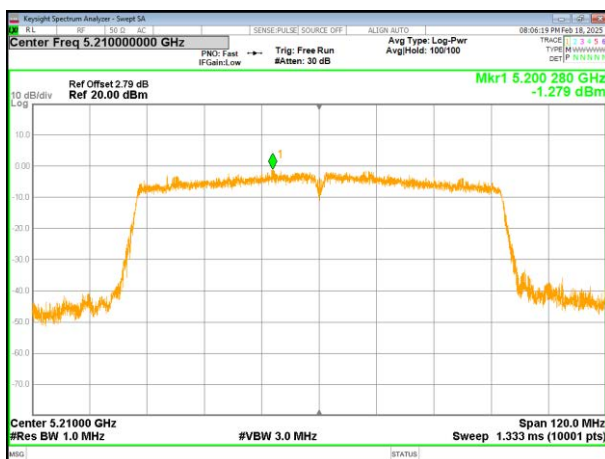
(802.11ac80) PSD plot on channel 42



(802.11ax40) PSD plot on channel 46



(802.11ax80) PSD plot on channel 42

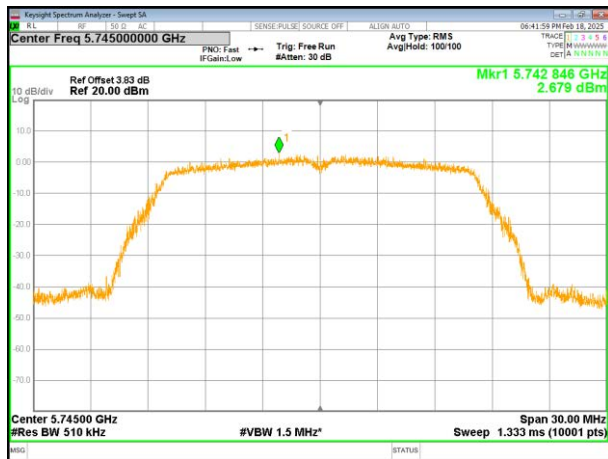


Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density (dBm/500KHz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/MHz)
802.11 a	5745 MHz	2.679	2.593	0.120	2.713	30
	5785 MHz	3.712	3.626	0.120	3.746	30
	5825 MHz	3.318	3.232	0.120	3.352	30
802.11 n20	5745 MHz	3.261	3.175	0.180	3.355	30
	5785 MHz	5.091	5.005	0.180	5.185	30
	5825 MHz	3.603	3.517	0.180	3.697	30
802.11ac20	5745 MHz	3.498	3.412	0.260	3.672	30
	5785 MHz	3.550	3.464	0.260	3.724	30
	5825 MHz	3.149	3.063	0.260	3.323	30
802.11ax20	5745 MHz	3.132	3.046	0.310	3.356	30
	5785 MHz	4.009	3.923	0.310	4.233	30
	5825 MHz	3.835	3.749	0.310	4.059	30
802.11 n40	5755 MHz	-0.189	-0.275	0.490	0.215	30
	5795 MHz	0.369	0.283	0.490	0.773	30
802.11ac40	5755 MHz	0.035	-0.051	0.670	0.619	30
	5795 MHz	-0.610	-0.696	0.670	-0.026	30
802.11ax40	5755 MHz	-0.753	-0.839	0.890	0.051	30
	5795 MHz	-0.771	-0.857	0.890	0.033	30
802.11ac80	5775 MHz	-4.991	-5.077	0.580	-4.497	30
802.11ax80	5775 MHz	-4.978	-5.064	0.890	-4.174	30

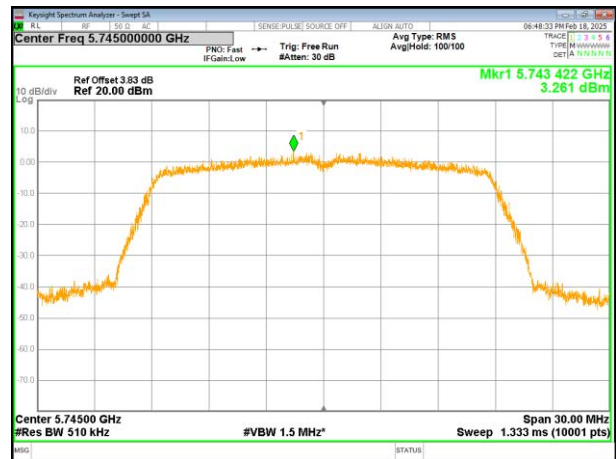
Note: 1. If the measurement is X dBm/510kHz, thus $X \text{ dBm/510kHz} = (10^{X/10}) * (500 / 510) \text{ dBm/500kHz}$

2. Correction Factor (dB)= duty cycle factor

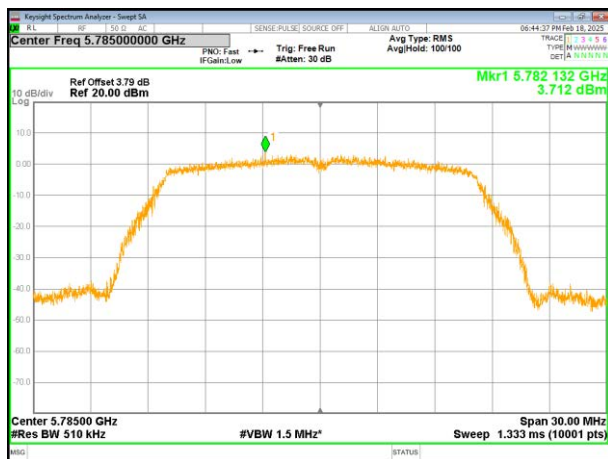
(802.11a) PSD plot on channel 149



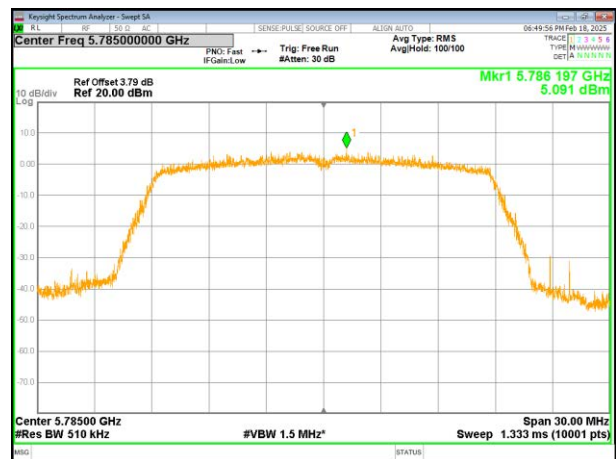
(802.11n20) PSD plot on channel 149



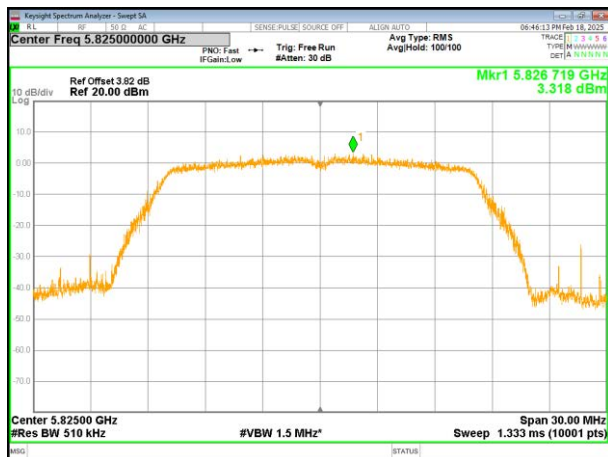
(802.11a) PSD plot on channel 157



(802.11n20) PSD plot on channel 157



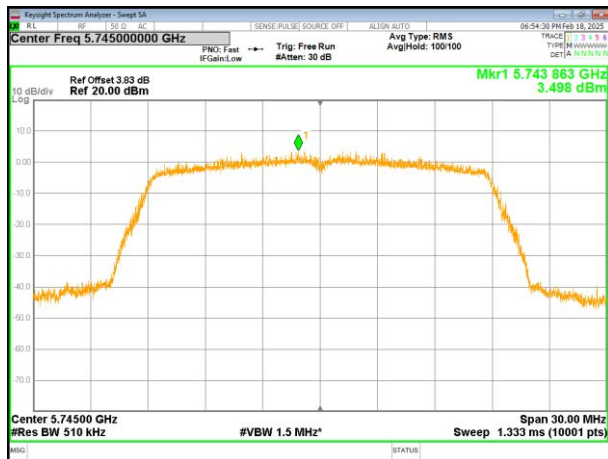
(802.11a) PSD plot on channel 165



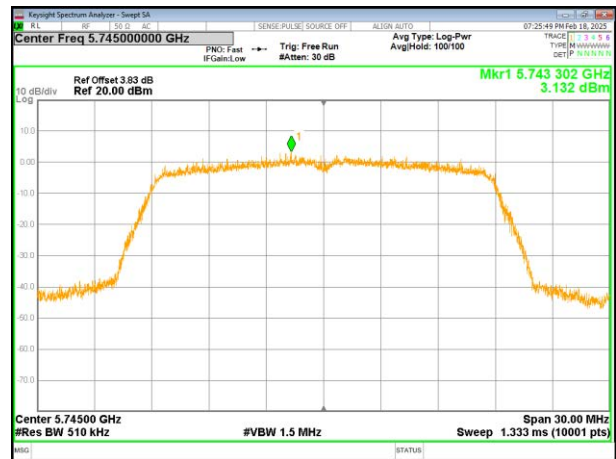
(802.11n20) PSD plot on channel 165



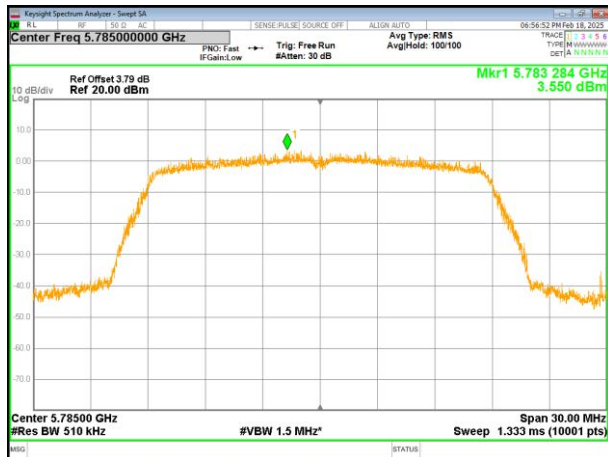
(802.11ac20) PSD plot on channel 149



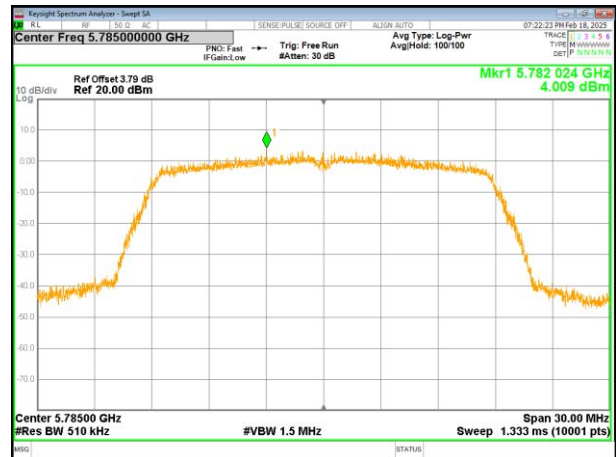
(802.11ax20) PSD plot on channel 149



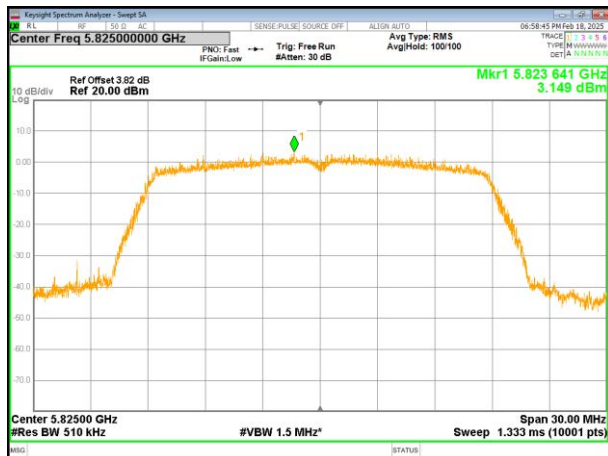
(802.11ac20) PSD plot on channel 157



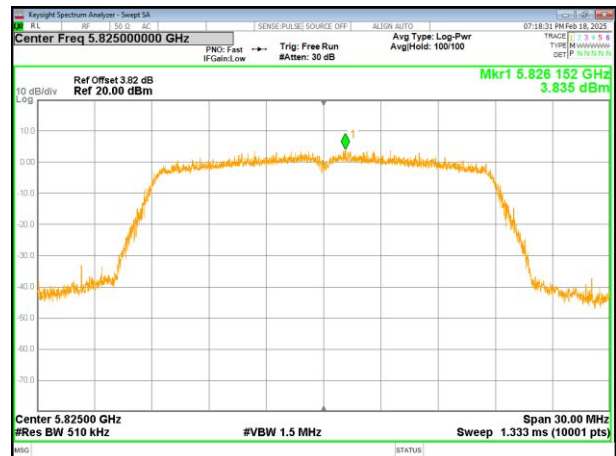
(802.11ax20) PSD plot on channel 157



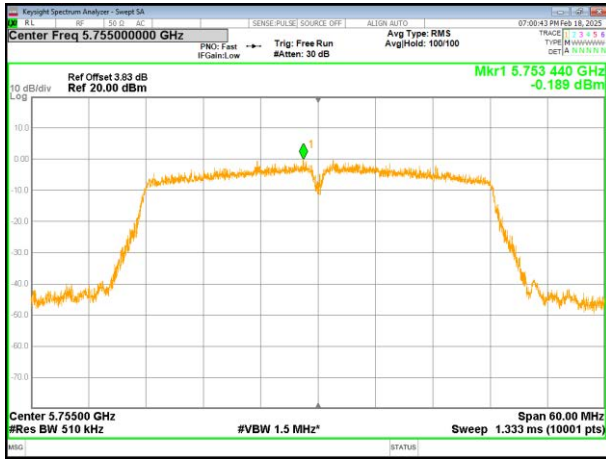
(802.11ac20) PSD plot on channel 165



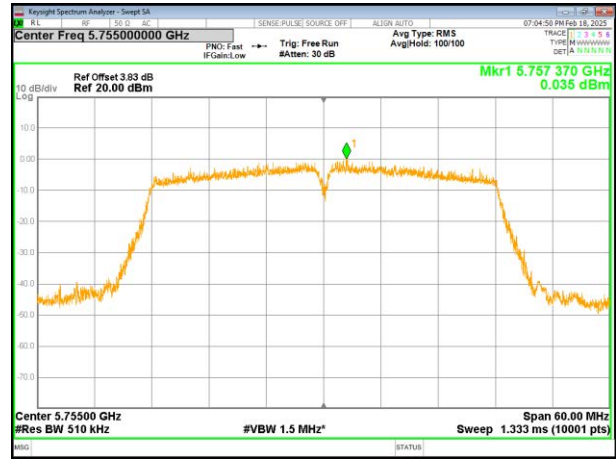
(802.11ax20) PSD plot on channel 165



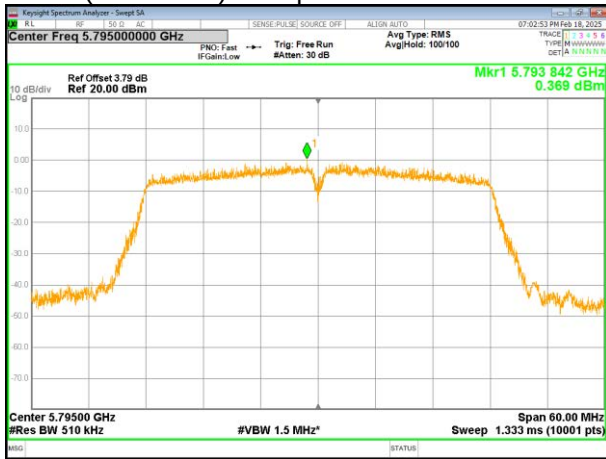
(802.11n40) PSD plot on channel 151



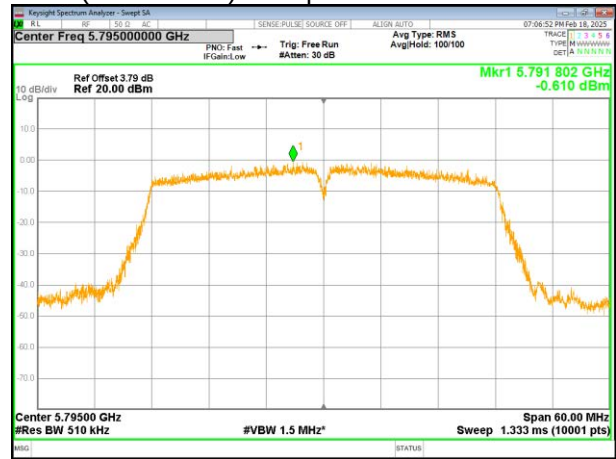
(802.11ac40) PSD plot on channel 151



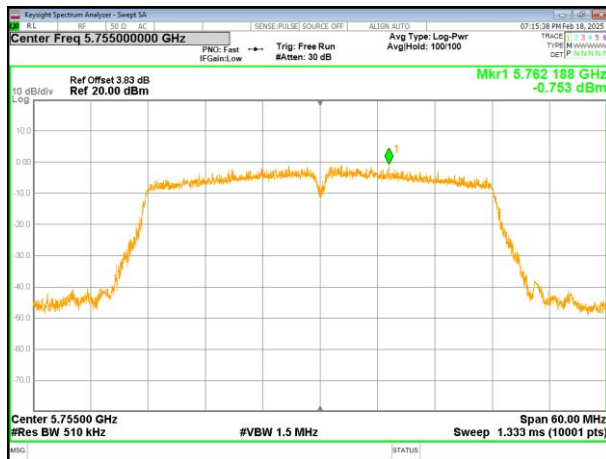
(802.11n40) PSD plot on channel 159



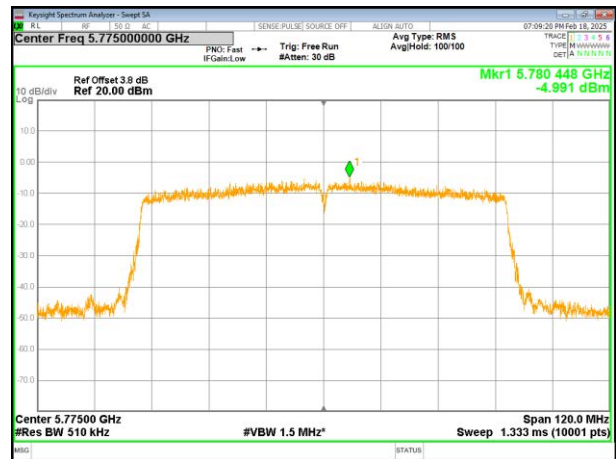
(802.11ac40) PSD plot on channel 159



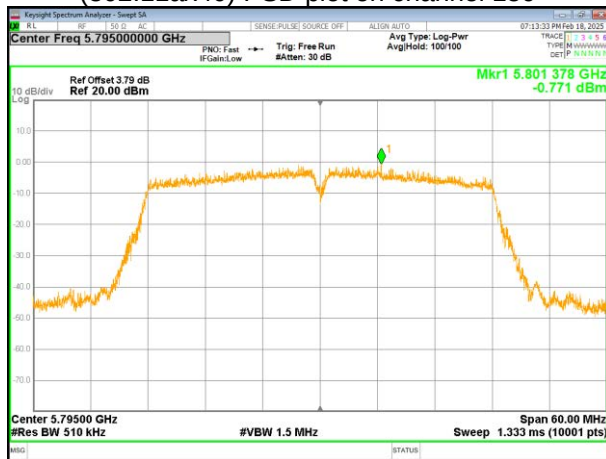
(802.11ax40) PSD plot on channel 151



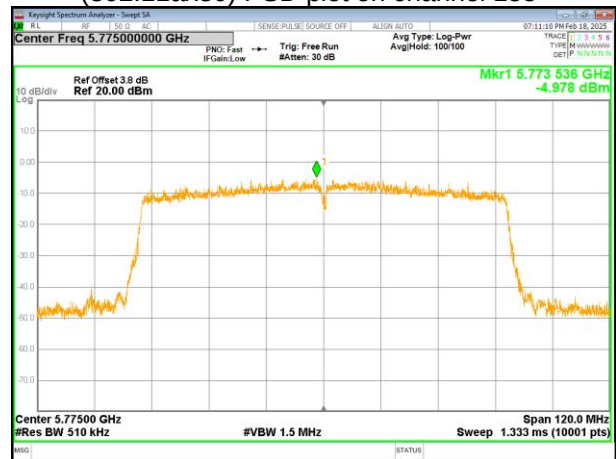
(802.11ac80) PSD plot on channel 155



(802.11ax40) PSD plot on channel 159

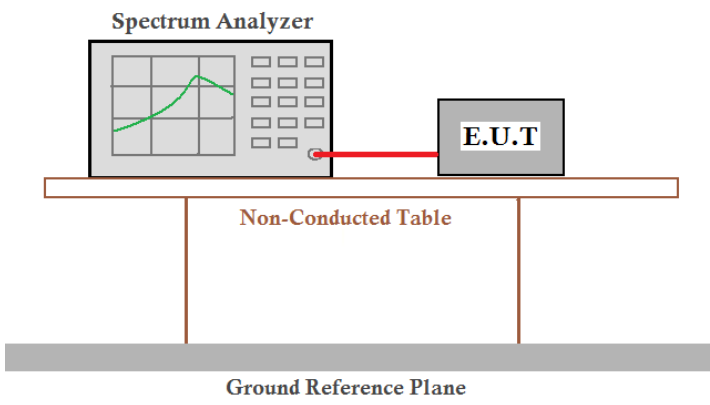


(802.11ax80) PSD plot on channel 155



4.7 Band edge

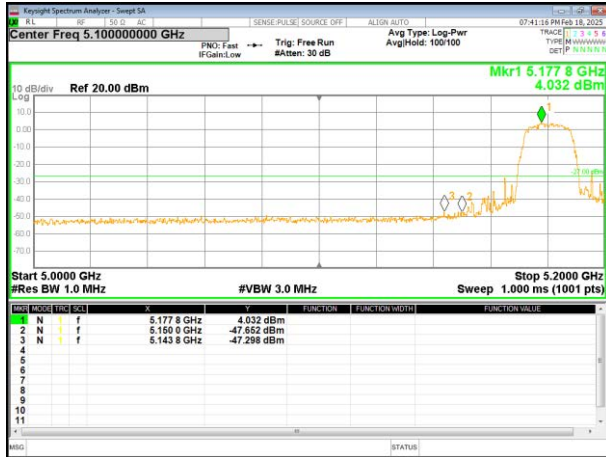
4.7.1 Conducted test Method

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, which is supported by a Ground Reference Plane.	
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.: 22.9°C	Humid.: 46%RH
Test voltage:	AC 120V	
Test results:	Pass	

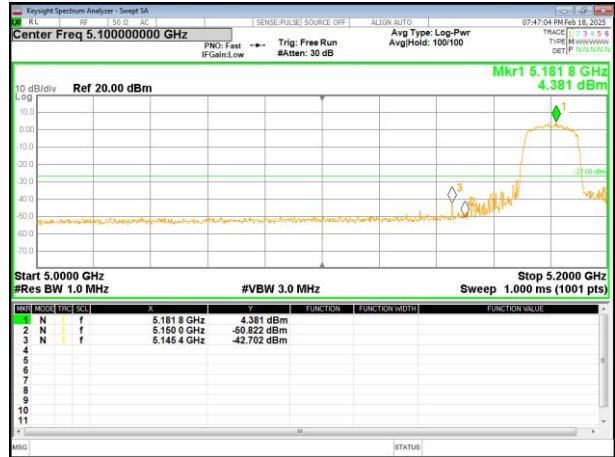
Remark: Due to the margin value of the sideband test being greater than the antenna gain value, the test meets the requirements

5.180~5.240 GHz

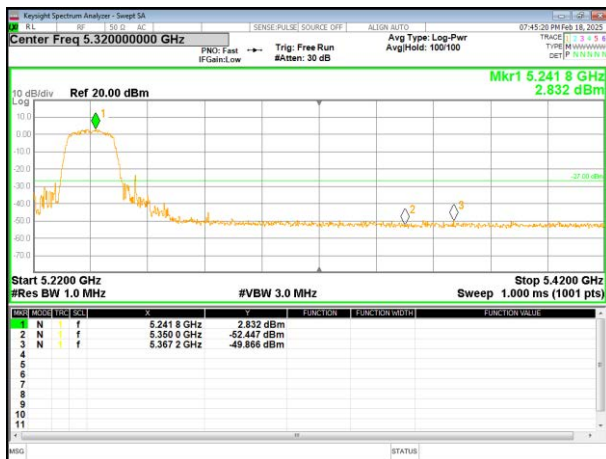
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

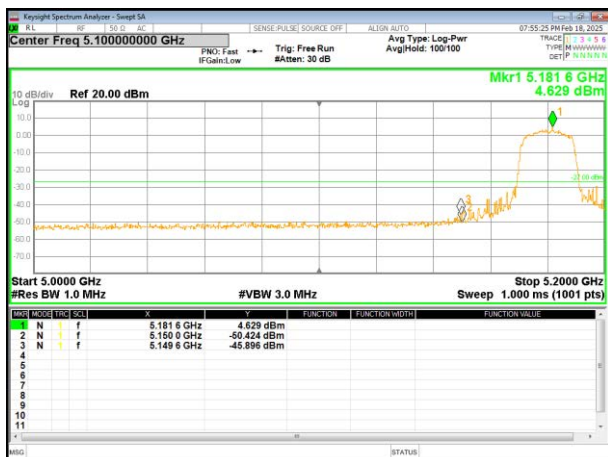


(802.11n20) Band Edge, Right Side

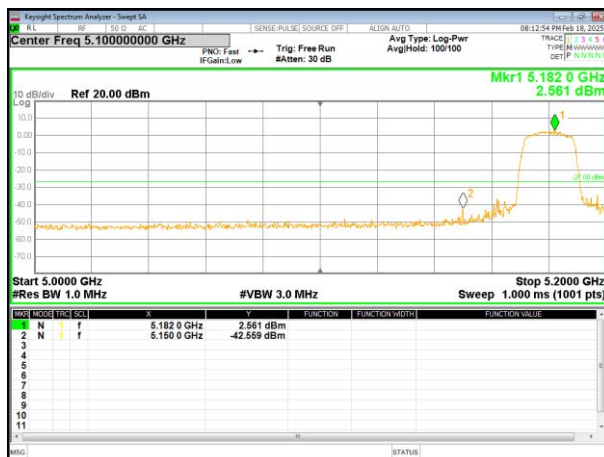


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

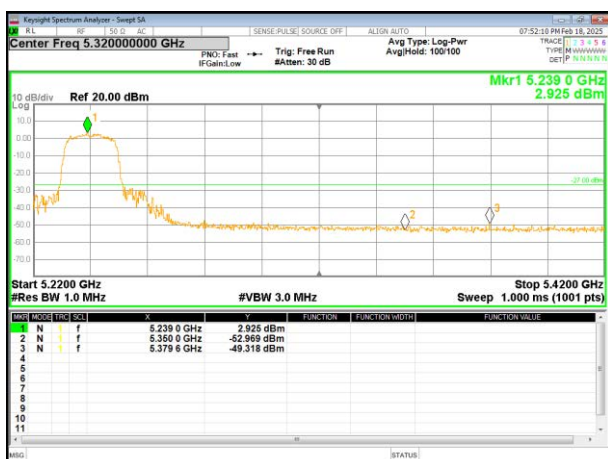
(802.11ac20) Band Edge, Left Side



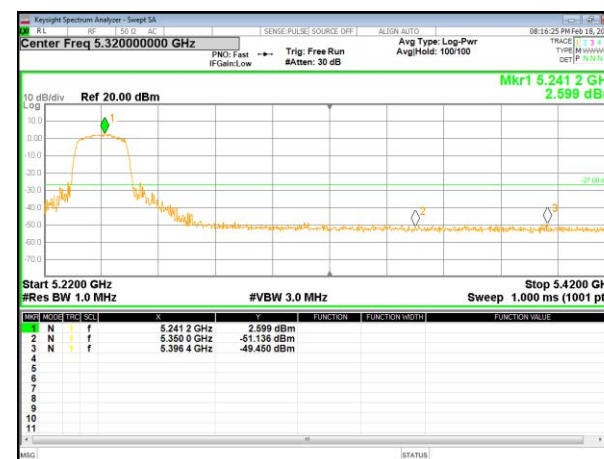
(802.11ax20) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

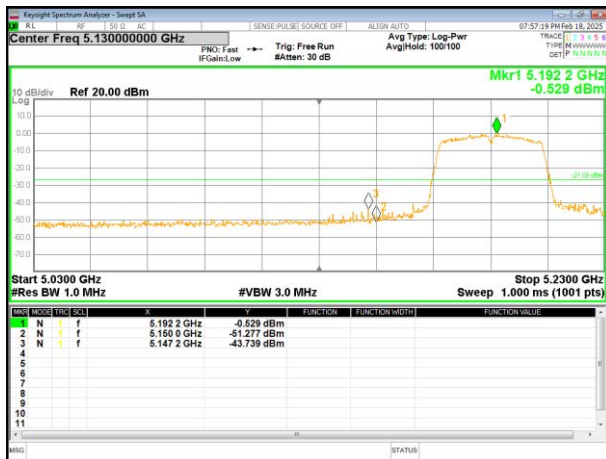


(802.11ax20) Band Edge, Right Side

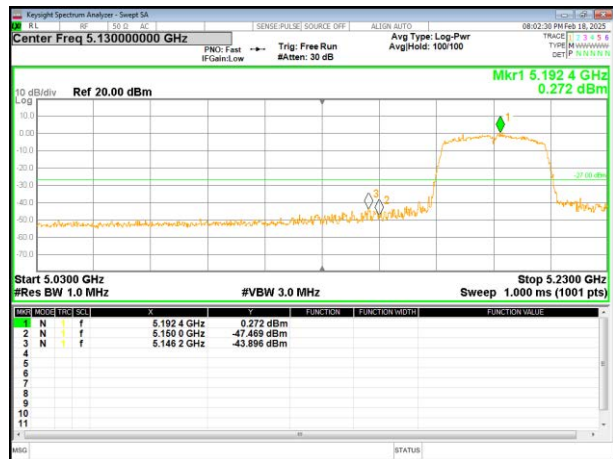


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

(802.11n40) Band Edge, Left Side



(802.11ac40) Band Edge



(802.11n40) Band Edge, Right Side

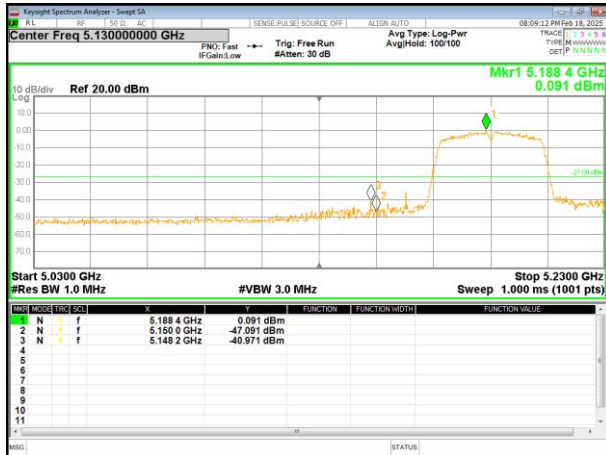


(802.11ac40) Band Edge



Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

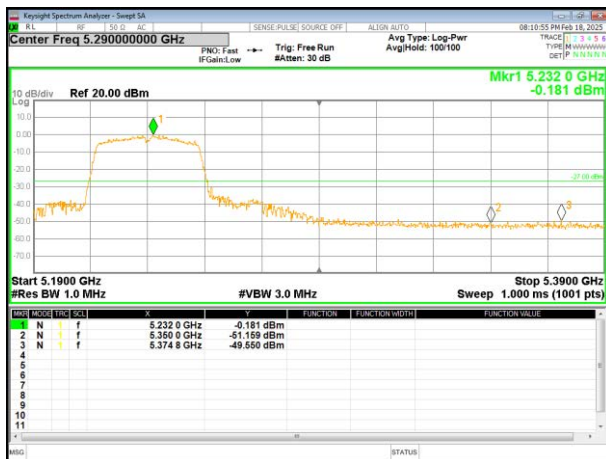
(802.11ax40) Band Edge, Left Side



(802.11ac80) Band Edge



(802.11ax40) Band Edge, Right Side



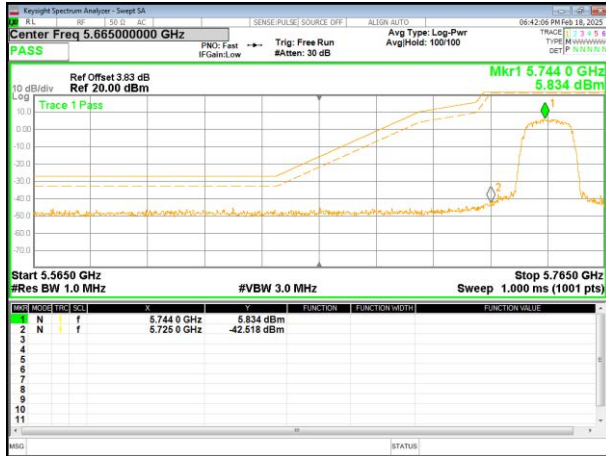
(802.11ax80) Band Edge



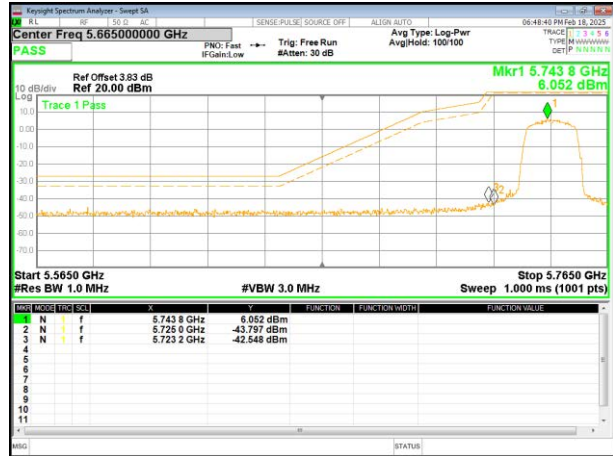
Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

5.745~5.825 GHz

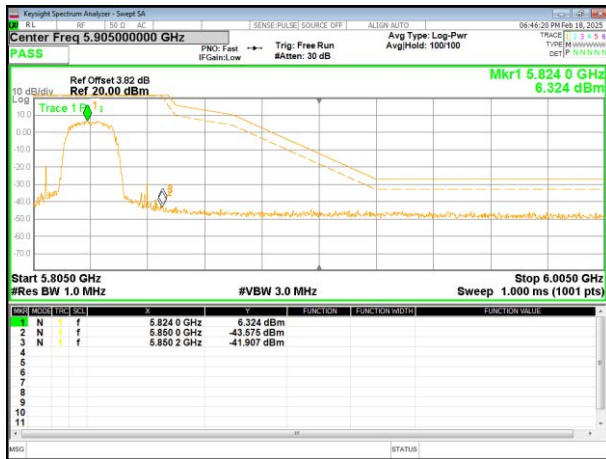
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



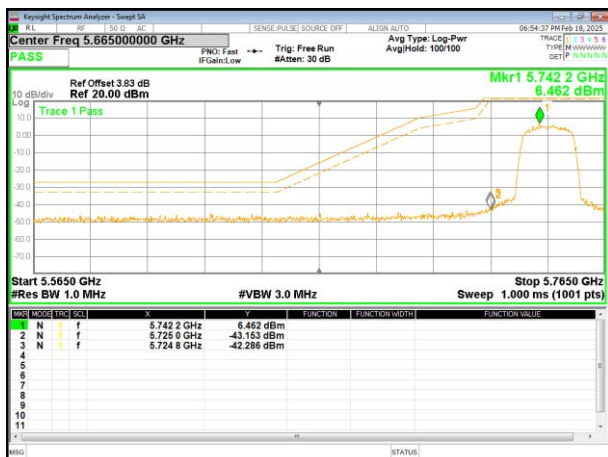
(802.11a) Band Edge, Right Side



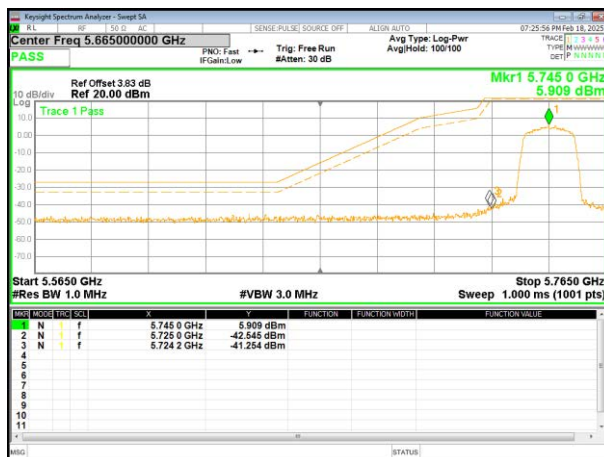
(802.11n20) Band Edge, Right Side



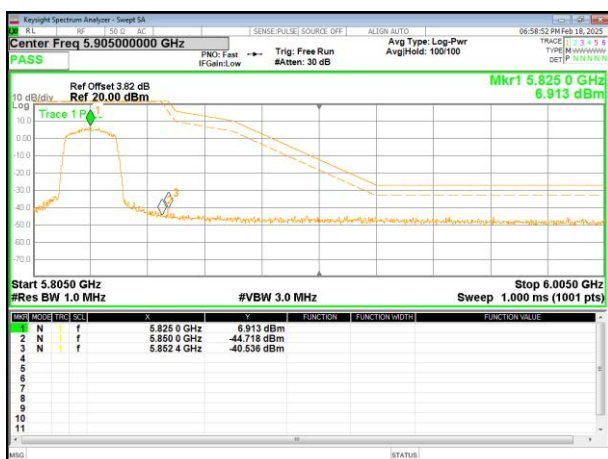
(802.11ac20) Band Edge, Left Side



(802.11ax20) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

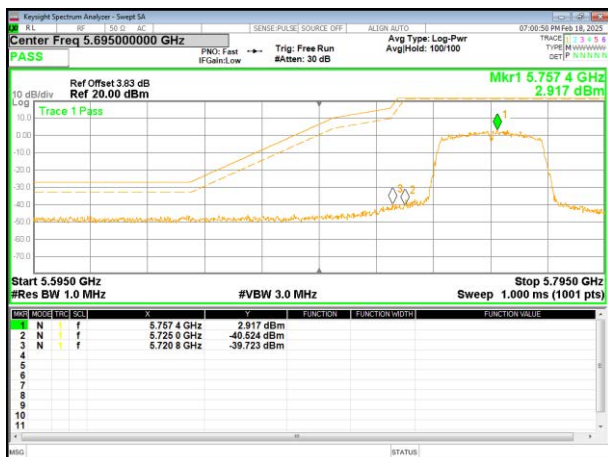


(802.11ax20) Band Edge, Right Side

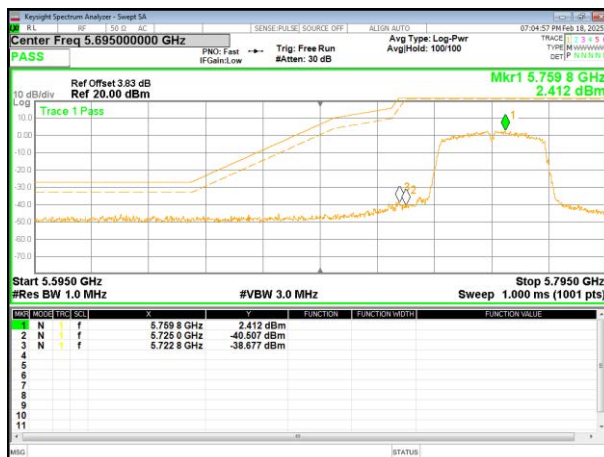


Remark: Antenna gain and cable loss data included in Offset.

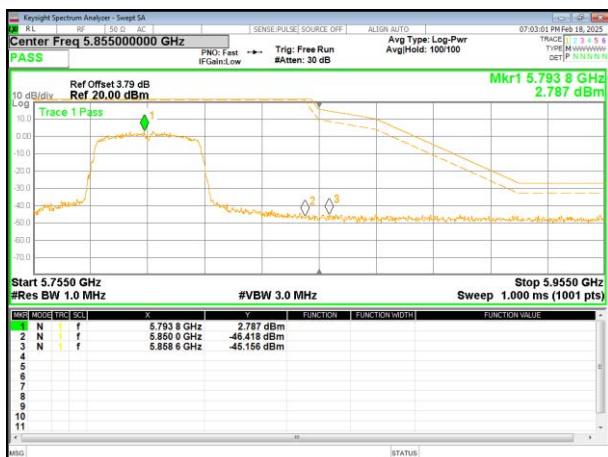
(802.11n40) Band Edge, Left Side



(802.11ac40) Band Edge



(802.11n40) Band Edge, Right Side

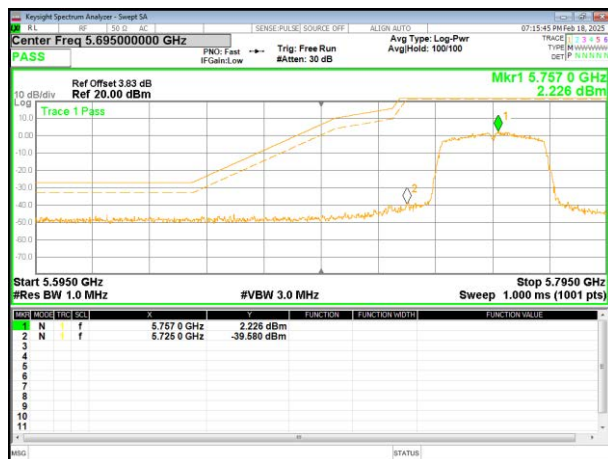


(802.11ac40) Band Edge



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

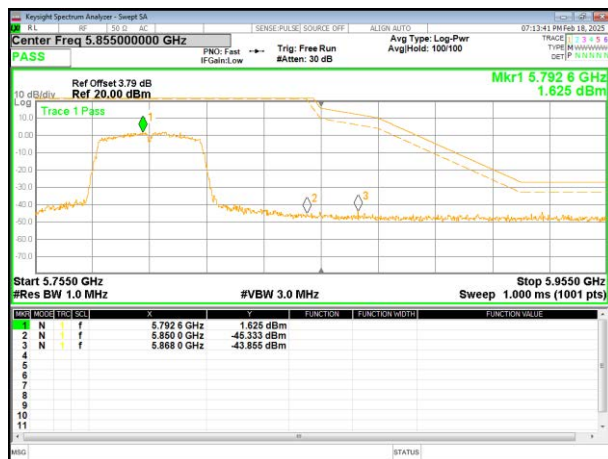
(802.11ax40) Band Edge, Left Side



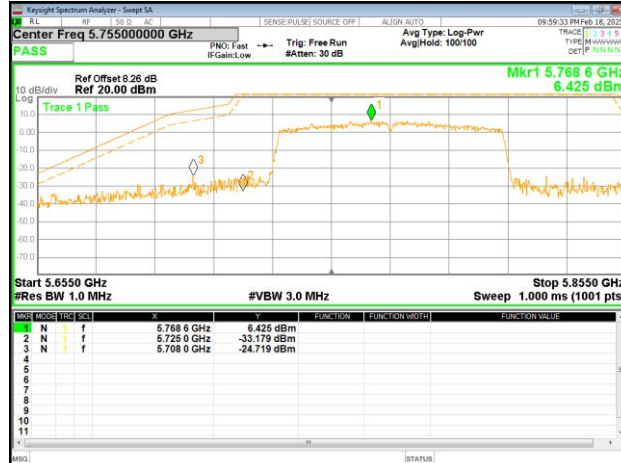
(802.11ac80) Band Edge



(802.11ax40) Band Edge, Right Side



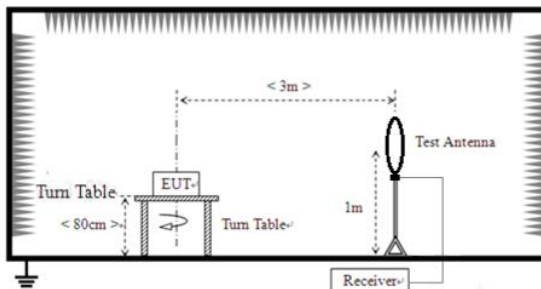
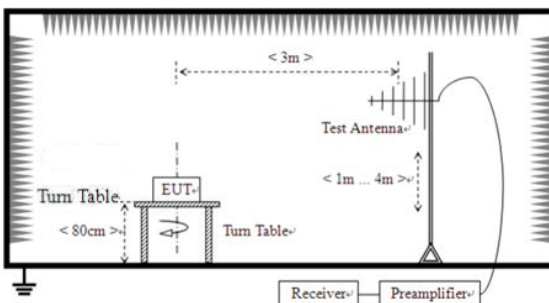
(802.11ax80) Band Edge

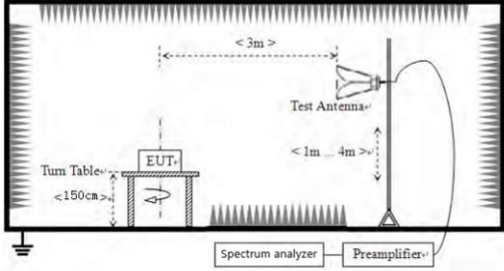


Remark: Antenna gain and cable loss data included in Offset.

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				
					
	For radiated emissions from 30MHz to1GHz				
Test setup:					
	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

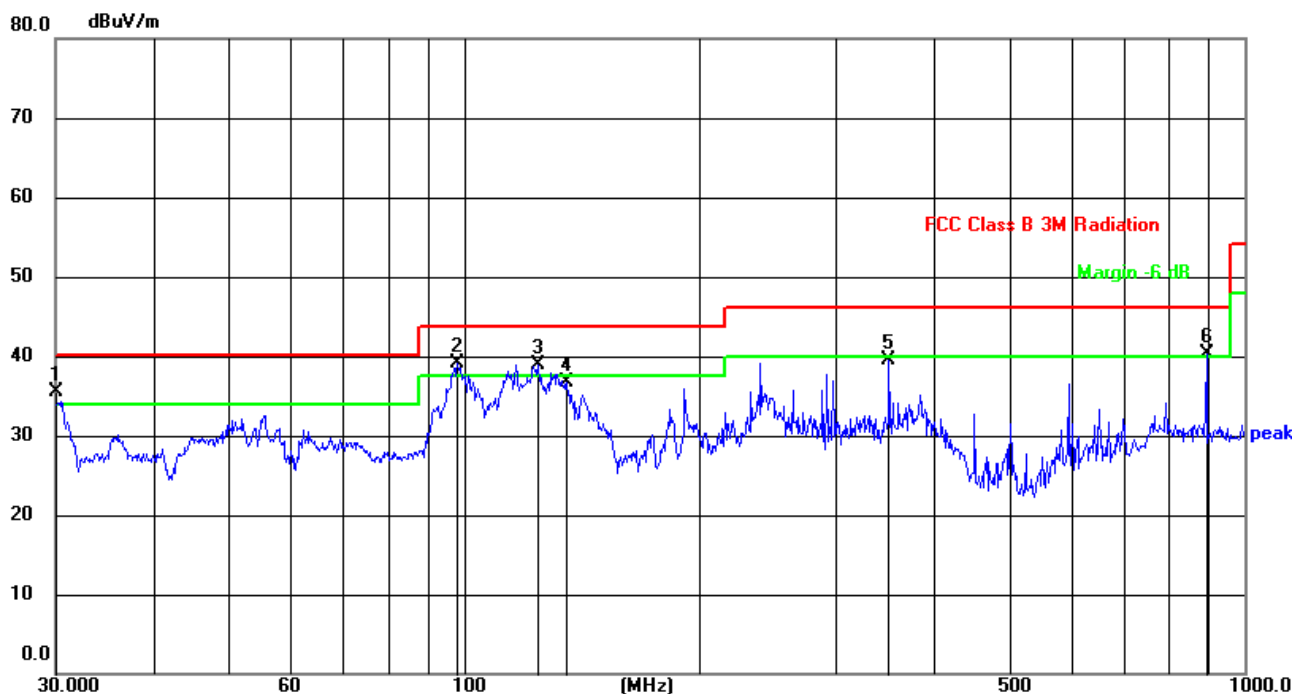
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

Remark: The test data shows only the worst case 802.11n20 mode.

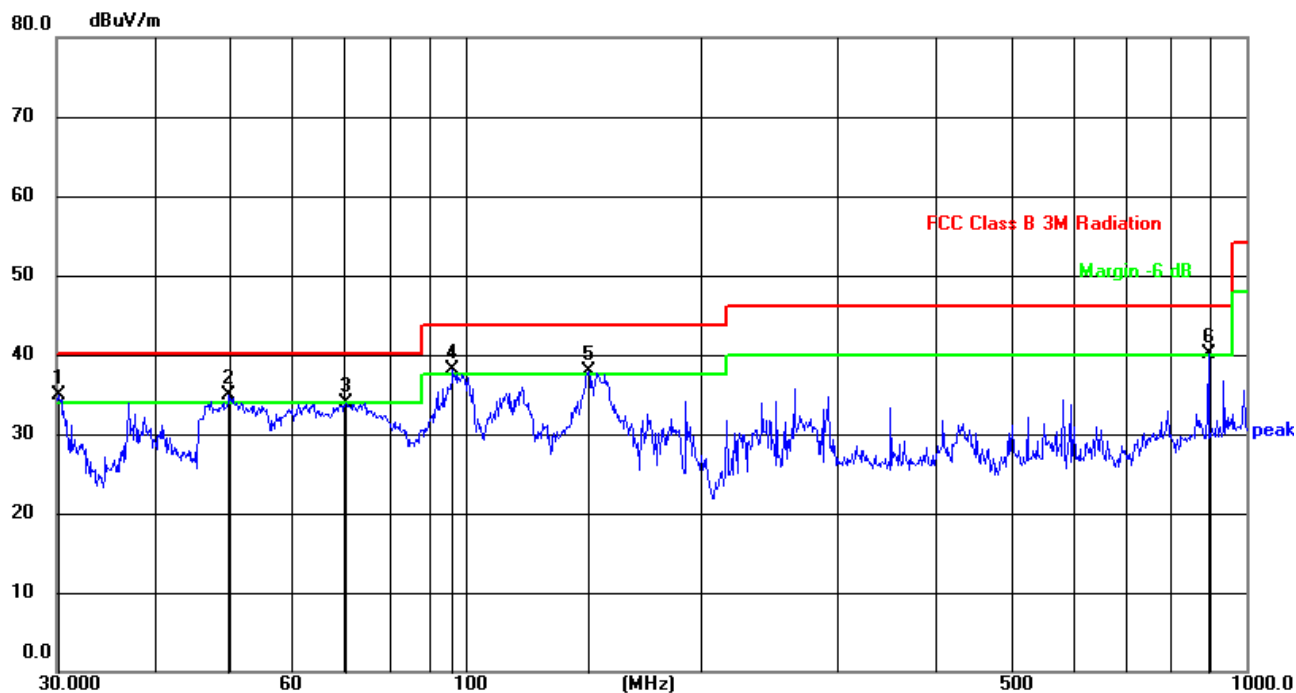
Temperature:	22.9°C	Relative Humidity:	46%
Pressure:	101.2kPa	Test Voltage :	AC 120V
Test Mode :	5.2G TX- 802.11n20 (5180MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.0000	58.24	-22.77	35.47	40.00	-4.53	QP
2	98.1418	64.42	-25.25	39.17	43.50	-4.33	QP
3	124.5690	61.83	-22.88	38.95	43.50	-4.55	QP
4	135.5061	58.71	-22.04	36.67	43.50	-6.83	QP
5	350.4766	58.99	-19.40	39.59	46.00	-6.41	QP
6	893.8564	45.92	-5.54	40.38	46.00	-5.62	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.2109	57.69	-22.73	34.96	40.00	-5.04	QP
2	49.8813	56.67	-21.80	34.87	40.00	-5.13	QP
3	70.3365	58.22	-24.23	33.99	40.00	-6.01	QP
4	96.4360	63.45	-25.29	38.16	43.50	-5.34	QP
5	143.8293	59.14	-21.20	37.94	43.50	-5.56	QP
6	893.8564	45.57	-5.54	40.03	46.00	-5.97	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.
3. The test data shows only the worst case 802.11a mode

Above 1GHz:

Remark: The test data shows only the worst case 802.11n20 mode.

Temperature:	22.9°C	Relative Humidity:	46%
Pressure:	101.2kPa	Test Voltage :	AC 120V
Test Mode :	5.2G TX- 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	
Low Channel:5180MHz									
V	10360.00	48.22	46.20	8.27	38.50	48.79	68.20	-19.41	PK
V	10360.00	38.26	46.20	8.27	38.50	38.83	54.00	-15.17	AV
V	15540.00	44.00	46.30	10.35	38.70	46.75	74.00	-27.25	PK
V	15540.00	34.26	46.30	10.35	38.70	37.01	54.00	-16.99	AV
V	20720.00	52.25	57.40	11.93	37.80	44.58	68.20	-23.62	PK
V	20720.00	43.03	57.40	11.93	37.80	35.36	54.00	-18.64	AV
V	25900.00	49.78	56.50	13.45	39.70	46.43	68.20	-21.77	PK
V	25900.00	41.12	56.50	13.45	39.70	37.77	54.00	-16.23	AV
V	31080.00	48.39	56.10	16.12	41.60	50.01	68.20	-18.19	PK
V	31080.00	41.03	56.10	16.12	41.60	42.65	54.00	-11.35	AV
V	36260.00	45.61	56.80	18.29	42.80	49.90	68.20	-18.30	PK
V	36260.00	38.76	56.80	18.29	42.80	43.05	54.00	-10.95	AV
H	10360.00	47.11	46.20	8.27	38.50	47.68	68.20	-20.52	PK
H	10360.00	36.11	46.20	8.27	38.50	36.68	54.00	-17.32	AV
H	15540.00	43.06	46.30	10.35	38.70	45.81	74.00	-28.19	PK
H	15540.00	32.49	46.30	10.35	38.70	35.24	54.00	-18.76	AV
H	20720.00	54.56	57.40	11.93	37.80	46.89	68.20	-21.31	PK
H	20720.00	44.01	57.40	11.93	37.80	36.34	54.00	-17.66	AV
H	25900.00	51.23	56.50	13.45	39.70	47.88	68.20	-20.32	PK
H	25900.00	41.15	56.50	13.45	39.70	37.80	54.00	-16.20	AV
H	31080.00	48.49	56.10	16.12	41.60	50.11	68.20	-18.09	PK
H	31080.00	40.97	56.10	16.12	41.60	42.59	54.00	-11.41	AV
H	36260.00	44.61	56.80	18.29	42.80	48.90	68.20	-19.30	PK
H	36260.00	39.60	56.80	18.29	42.80	43.89	54.00	-10.11	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Middle Channel:5200MHz									
V	10400.00	45.75	46.20	8.27	38.50	46.32	68.20	-21.88	PK
V	10400.00	36.99	46.20	8.27	38.50	37.56	54.00	-16.44	AV
V	15600.00	43.89	46.30	10.35	38.40	46.34	74.00	-27.66	PK
V	15600.00	36.02	46.30	10.35	38.40	38.47	54.00	-15.53	AV
V	20800.00	53.51	57.40	11.93	37.80	45.84	68.20	-22.36	PK
V	20800.00	44.35	57.40	11.93	37.80	36.68	54.00	-17.32	AV
V	26000.00	49.36	56.50	13.45	39.80	46.11	68.20	-22.09	PK
V	26000.00	41.53	56.50	13.45	39.80	38.28	54.00	-15.72	AV
V	31200.00	48.47	56.10	16.12	41.60	50.09	68.20	-18.11	PK
V	31200.00	41.97	56.10	16.12	41.60	43.59	54.00	-10.41	AV
V	36400.00	44.93	56.80	18.29	42.80	49.22	68.20	-18.98	PK
V	36400.00	38.59	56.80	18.29	42.80	42.88	54.00	-11.12	AV
H	10400.00	46.34	46.20	8.27	38.50	46.91	68.20	-21.29	PK
H	10400.00	37.54	46.20	8.27	38.50	38.11	54.00	-15.89	AV
H	15600.00	44.26	46.30	10.35	38.40	46.71	74.00	-27.29	PK
H	15600.00	36.09	46.30	10.35	38.40	38.54	54.00	-15.46	AV
H	20800.00	52.20	57.40	11.93	37.80	44.53	68.20	-23.67	PK
H	20800.00	42.15	57.40	11.93	37.80	34.48	54.00	-19.52	AV
H	26000.00	48.77	56.50	13.45	39.80	45.52	68.20	-22.68	PK
H	26000.00	40.64	56.50	13.45	39.80	37.39	54.00	-16.61	AV
H	31200.00	47.71	56.10	16.12	41.60	49.33	68.20	-18.87	PK
H	31200.00	40.83	56.10	16.12	41.60	42.45	54.00	-11.55	AV
H	36400.00	45.06	56.80	18.29	42.80	49.35	68.20	-18.85	PK
H	36400.00	39.39	56.80	18.29	42.80	43.68	54.00	-10.32	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
High Channel:5240MHz									
V	10480.00	42.93	46.20	8.27	38.60	43.60	68.20	-24.60	PK
V	10480.00	33.42	46.20	8.27	38.60	34.09	54.00	-19.91	AV
V	15720.00	41.38	46.30	10.35	38.40	43.83	74.00	-30.17	PK
V	15720.00	31.21	46.30	10.35	38.40	33.66	54.00	-20.34	AV
V	20960.00	49.97	57.40	11.93	37.50	42.00	68.20	-26.20	PK
V	20960.00	41.99	57.40	11.93	37.50	34.02	54.00	-19.98	AV
V	26200.00	46.27	56.50	13.45	40.10	43.32	68.20	-24.88	PK
V	26200.00	37.20	56.50	13.45	40.10	34.25	54.00	-19.75	AV
V	31440.00	48.42	56.10	16.12	41.30	49.74	68.20	-18.46	PK
V	31440.00	41.68	56.10	16.12	41.30	43.00	54.00	-11.00	AV
V	36680.00	43.84	56.80	18.29	43.10	48.43	68.20	-19.77	PK
V	36680.00	38.57	56.80	18.29	43.10	43.16	54.00	-10.84	AV
H	10480.00	42.77	46.20	8.27	38.60	43.44	68.20	-24.76	PK
H	10480.00	33.48	46.20	8.27	38.60	34.15	54.00	-19.85	AV
H	15720.00	41.03	46.30	10.35	38.40	43.48	74.00	-30.52	PK
H	15720.00	31.27	46.30	10.35	38.40	33.72	54.00	-20.28	AV
H	20960.00	50.40	57.40	11.93	37.50	42.43	68.20	-25.77	PK
H	20960.00	41.57	57.40	11.93	37.50	33.60	54.00	-20.40	AV
H	26200.00	45.50	56.50	13.45	40.10	42.55	68.20	-25.65	PK
H	26200.00	36.28	56.50	13.45	40.10	33.33	54.00	-20.67	AV
H	31440.00	47.69	56.10	16.12	41.30	49.01	68.20	-19.19	PK
H	31440.00	41.93	56.10	16.12	41.30	43.25	54.00	-10.75	AV
H	36680.00	44.89	56.80	18.29	43.10	49.48	68.20	-18.72	PK
H	36680.00	39.30	56.80	18.29	43.10	43.89	54.00	-10.11	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:	22.9°C	Relative Humidity:	46%
Pressure:	101.2kPa	Test Voltage :	AC 120V
Test Mode :	5.8G TX- 802.11a		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenn Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Typ
Low Channel:5745MHz									
V	11490.00	46.72	46.10	8.77	39.10	48.49	74.00	-25.51	PK
V	11490.00	34.88	46.10	8.77	39.10	36.65	54.00	-17.35	AV
V	17235.00	41.05	47.60	11.10	38.70	43.25	68.20	-24.95	PK
V	17235.00	33.59	47.60	11.10	38.70	35.79	54.00	-18.21	AV
V	22980.00	54.07	56.90	12.73	37.70	47.60	74.00	-26.40	PK
V	22980.00	41.30	56.90	12.73	37.70	34.83	54.00	-19.17	AV
V	28725.00	47.78	55.60	14.25	40.30	46.73	68.20	-21.47	PK
V	28725.00	41.28	55.60	14.25	40.30	40.23	54.00	-13.77	AV
V	34470.00	47.46	55.90	17.26	42.10	50.92	68.20	-17.28	PK
V	34470.00	39.76	55.90	17.26	42.10	43.22	54.00	-10.78	AV
H	11490.00	45.48	46.10	8.77	39.10	47.25	74.00	-26.75	PK
H	11490.00	34.58	46.10	8.77	39.10	36.35	54.00	-17.65	AV
H	17235.00	40.12	47.60	11.10	38.70	42.32	68.20	-25.88	PK
H	17235.00	33.86	47.60	11.10	38.70	36.06	54.00	-17.94	AV
H	22980.00	55.66	56.90	12.73	37.70	49.19	74.00	-24.81	PK
H	22980.00	46.21	56.90	12.73	37.70	39.74	54.00	-14.26	AV
H	28725.00	47.05	55.60	14.25	40.30	46.00	68.20	-22.21	PK
H	28725.00	41.64	55.60	14.25	40.30	40.59	54.00	-13.41	AV
H	34470.00	46.66	55.90	17.26	42.10	50.12	68.20	-18.08	PK
H	34470.00	39.99	55.90	17.26	42.10	43.45	54.00	-10.55	AV

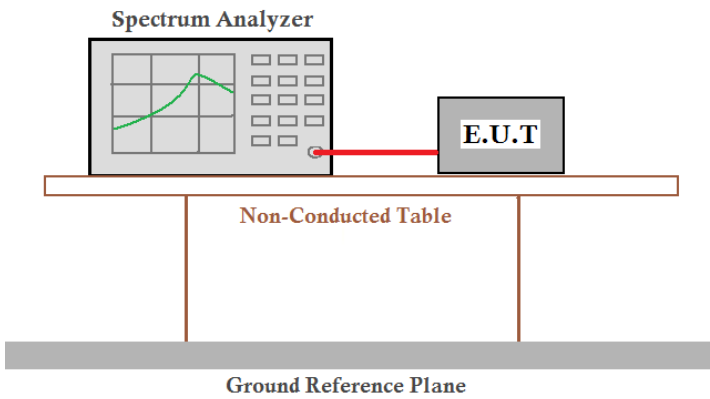
Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	46.18	46.10	8.77	39.10	47.95	74.00	-26.05	PK
V	11570.00	35.08	46.10	8.77	39.10	36.85	54.00	-17.15	AV
V	17355.00	40.71	47.60	11.10	38.70	42.91	68.20	-25.29	PK
V	17355.00	35.24	47.60	11.10	38.70	37.44	54.00	-16.56	AV
V	23140.00	55.91	56.90	12.73	37.70	49.44	74.00	-24.56	PK
V	23140.00	45.19	56.90	12.73	37.70	38.72	54.00	-15.28	AV
V	28925.00	44.78	55.60	14.25	40.30	43.73	68.20	-24.47	PK
V	28925.00	40.94	55.60	14.25	40.30	39.89	54.00	-14.11	AV
V	34710.00	46.24	55.90	17.26	42.40	50.00	68.20	-18.20	PK
V	34710.00	40.31	55.90	17.26	42.40	44.07	54.00	-9.93	AV
H	11570.00	46.75	46.10	8.77	39.10	48.52	74.00	-25.48	PK
H	11570.00	35.94	46.10	8.77	39.10	37.71	54.00	-16.29	AV
H	17355.00	41.61	47.60	11.10	38.70	43.81	68.20	-24.39	PK
H	17355.00	35.00	47.60	11.10	38.70	37.20	54.00	-16.80	AV
H	23140.00	57.14	56.90	12.73	37.70	50.67	74.00	-23.33	PK
H	23140.00	46.01	56.90	12.73	37.70	39.54	54.00	-14.46	AV
H	28925.00	46.84	55.60	14.25	40.30	45.79	68.20	-22.41	PK
H	28925.00	40.60	55.60	14.25	40.30	39.55	54.00	-14.45	AV
H	34710.00	44.74	55.90	17.26	42.40	48.50	68.20	-19.70	PK
H	34710.00	40.23	55.90	17.26	42.40	43.99	54.00	-10.01	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
High Channel:5825MHz									
V	11650.00	46.42	46.10	8.77	39.10	48.19	74.00	-25.81	PK
V	11650.00	34.88	46.10	8.77	39.10	36.65	54.00	-17.35	AV
V	17475.00	41.47	47.90	11.23	38.90	43.70	68.20	-24.50	PK
V	17475.00	36.60	47.90	11.23	38.90	38.83	54.00	-15.17	AV
V	23300.00	50.29	57.10	12.73	37.80	43.72	68.20	-24.48	PK
V	23300.00	45.27	57.10	12.73	37.80	38.70	54.00	-15.30	AV
V	29125.00	46.47	55.80	14.25	40.50	45.42	68.20	-22.78	PK
V	29125.00	41.79	55.80	14.25	40.50	40.74	54.00	-13.26	AV
V	34950.00	45.51	56.30	17.91	42.50	49.62	68.20	-18.58	PK
V	34950.00	39.96	56.30	17.91	42.50	44.07	54.00	-9.93	AV
H	11650.00	47.05	46.10	8.77	39.10	48.82	74.00	-25.19	PK
H	11650.00	33.54	46.10	8.77	39.10	35.31	54.00	-18.69	AV
H	17475.00	41.34	47.90	11.23	38.90	43.57	68.20	-24.63	PK
H	17475.00	36.37	47.90	11.23	38.90	38.60	54.00	-15.40	AV
H	23300.00	51.57	57.10	12.73	37.80	45.00	68.20	-23.20	PK
H	23300.00	46.01	57.10	12.73	37.80	39.44	54.00	-14.56	AV
H	29125.00	47.85	55.80	14.25	40.50	46.80	68.20	-21.40	PK
H	29125.00	41.85	55.80	14.25	40.50	40.80	54.00	-13.20	AV
H	34950.00	45.23	56.30	17.91	42.50	49.34	68.20	-18.86	PK
H	34950.00	39.81	56.30	17.91	42.50	43.92	54.00	-10.08	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:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 22.9°C	Humid.: 46%RH
Test voltage:	AC 120V	
Test results:	Pass	

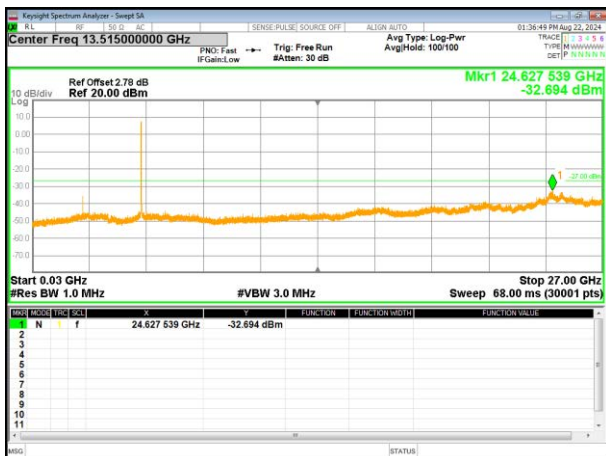
Remark:

1. Antenna gain and cable loss data included in Offset.
2. We tested 30MHz-40GHz frequency and found 27GHz-40GHz test data was very lower (close to the noise of the spectrum analyzer). The test report only showed data for 30MHz-27GHz.

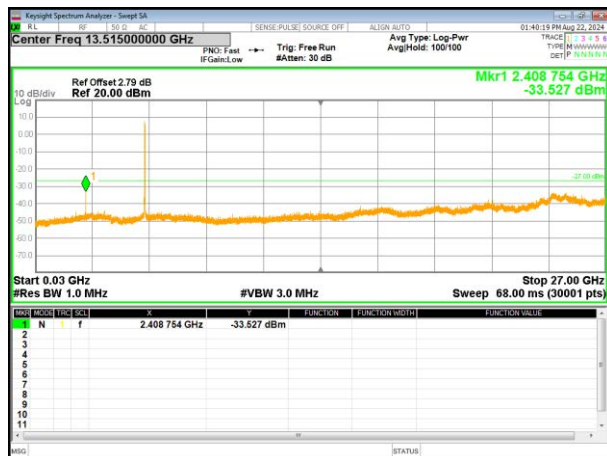
5180-5240MHz

Test Plot

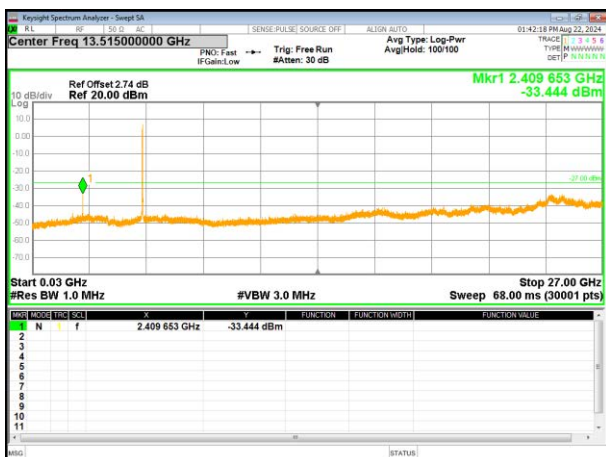
802.11a on channel 36



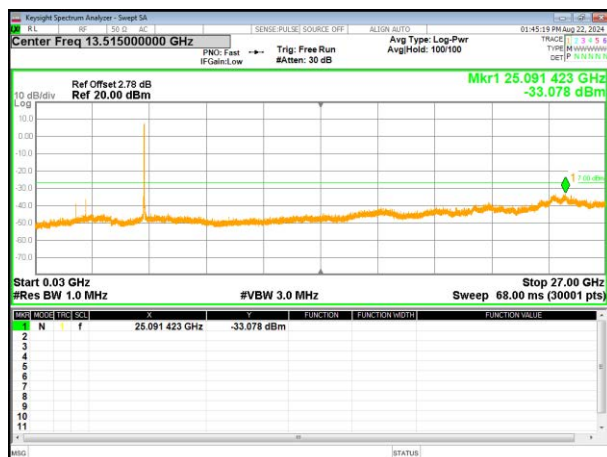
802.11a on channel 40



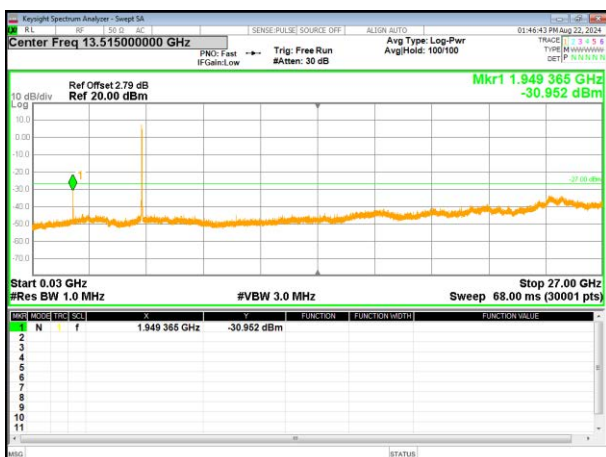
802.11a on channel 48



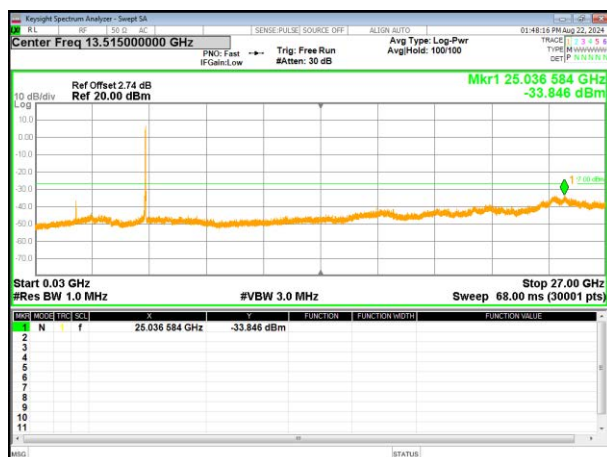
802.11n20 on channel 36



802.11n20 on channel 40

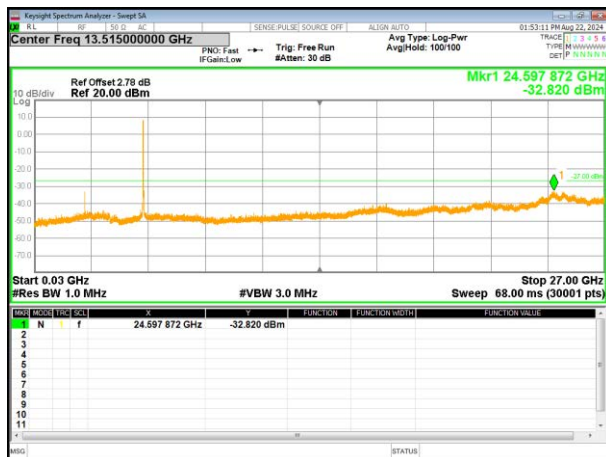


802.11n20 on channel 48

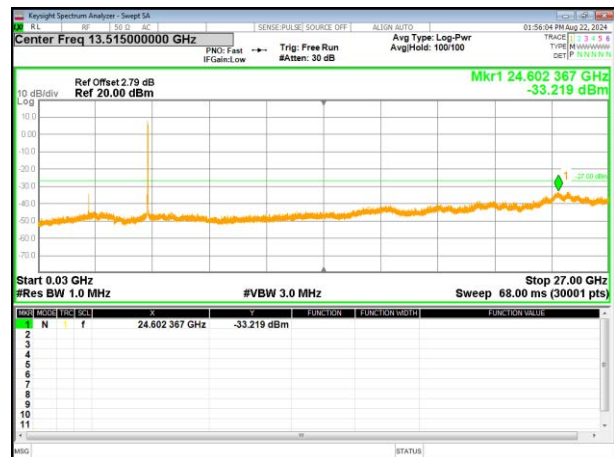


Test Plot

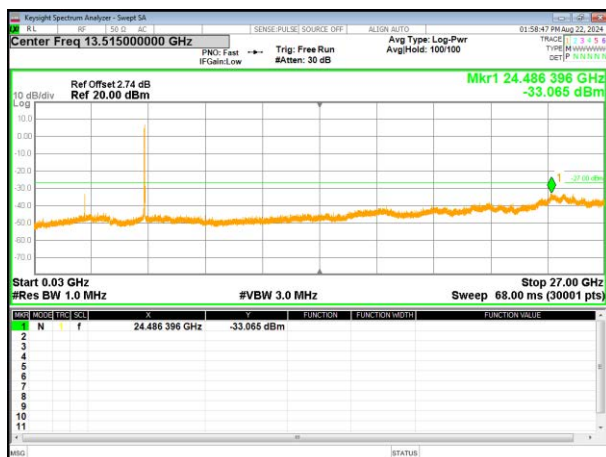
802.11ac20 on channel 36



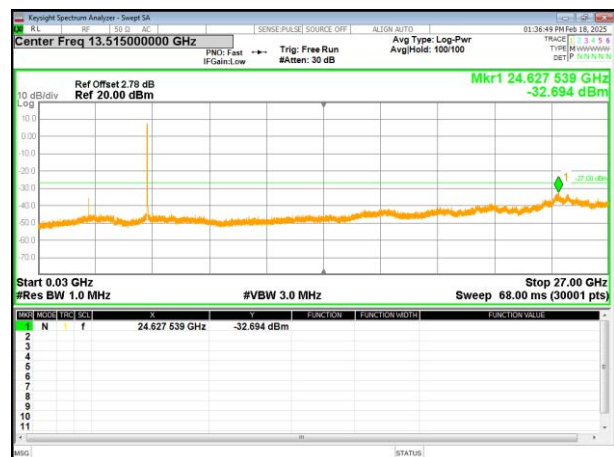
802.11ac20 on channel 40



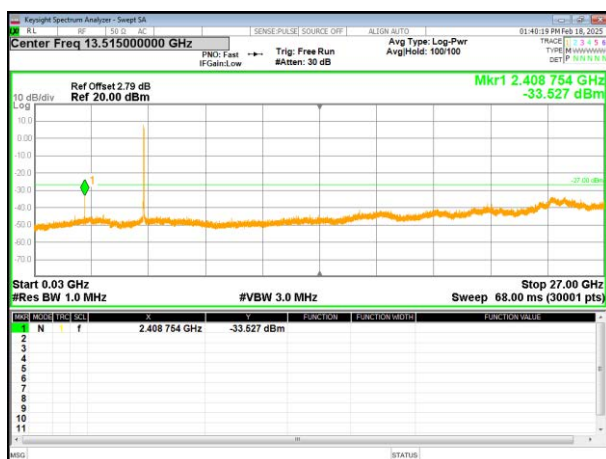
802.11ac20 on channel 48



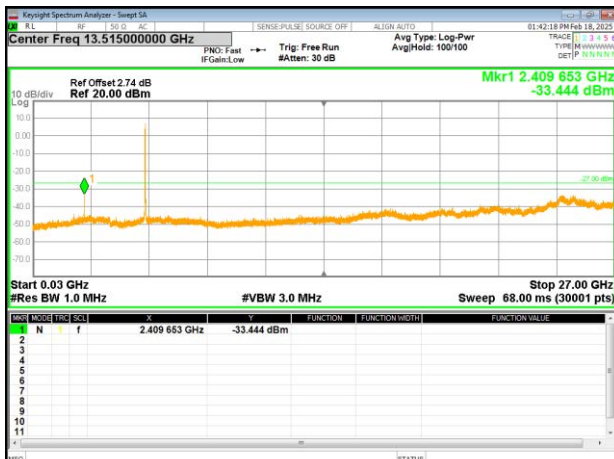
802.11ax20 on channel 36



802.11ax20 on channel 40

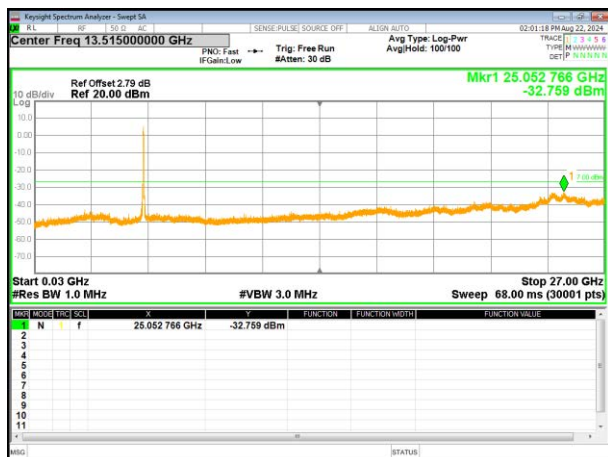


802.11ax20 on channel 48

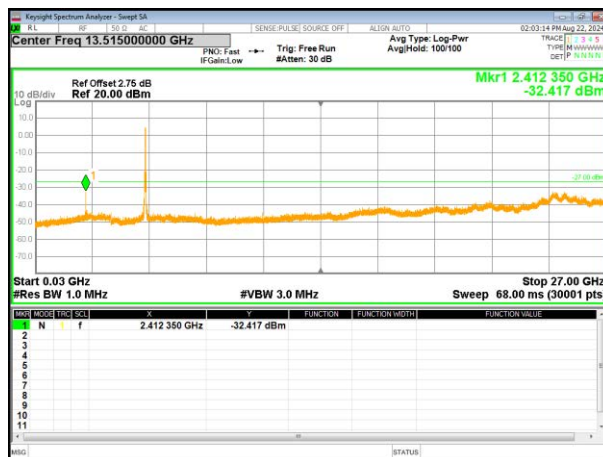


Test Plot

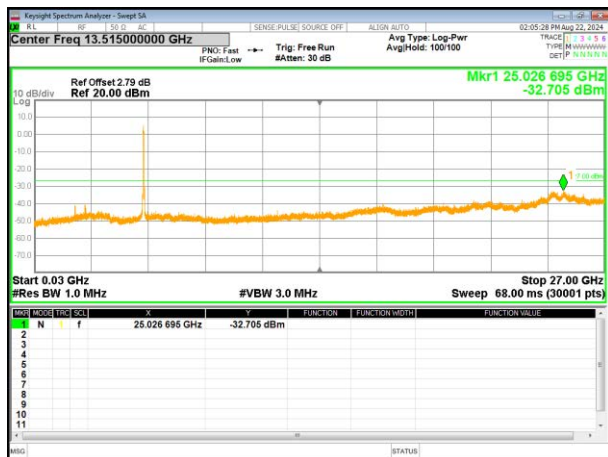
802.11n40 on channel 38



802.11n40 on channel 46



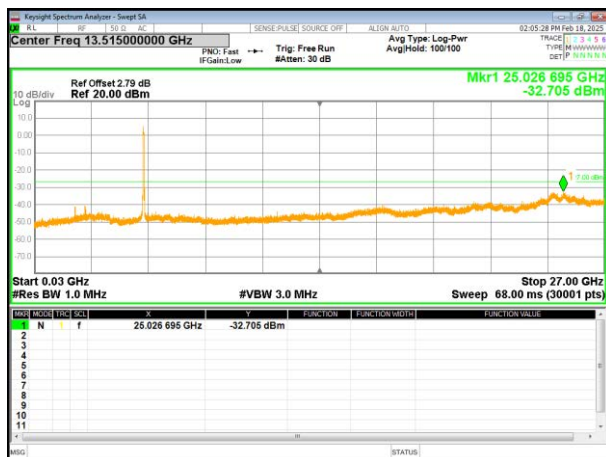
802.11ac40 on channel 38



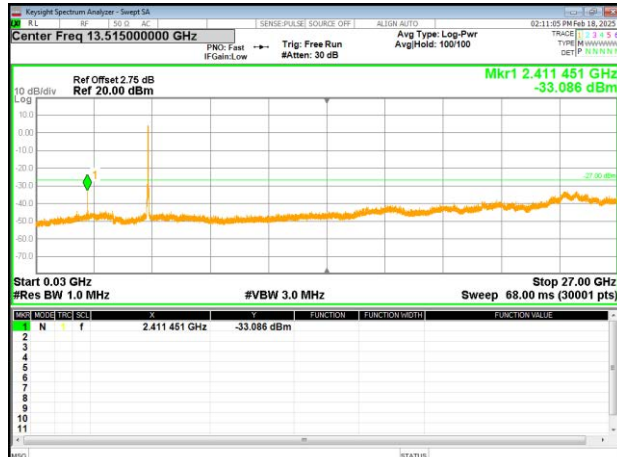
802.11ac40 on channel 46



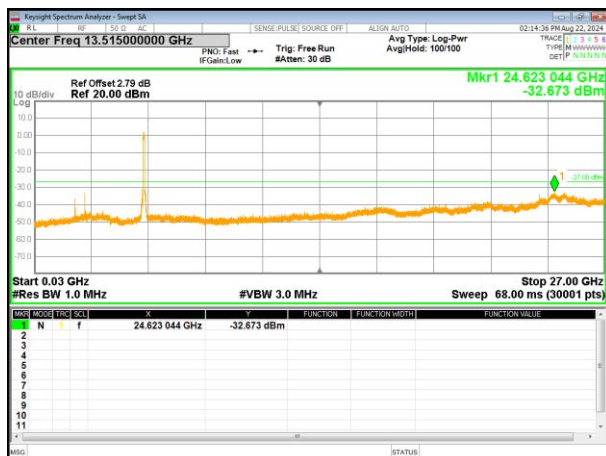
802.11ax40 on channel 38



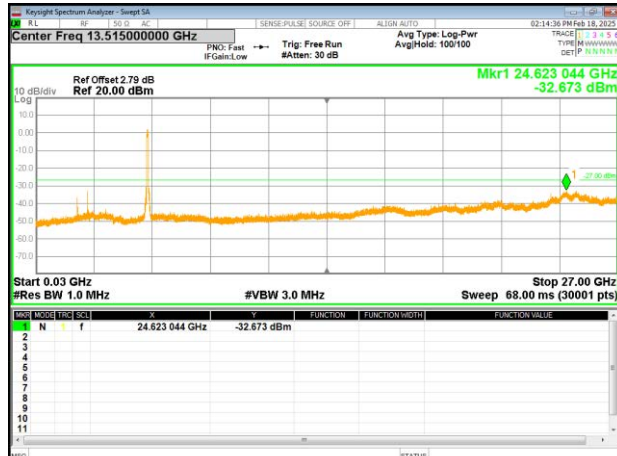
802.11ax40 on channel 46



802.11ac80 on channel 42



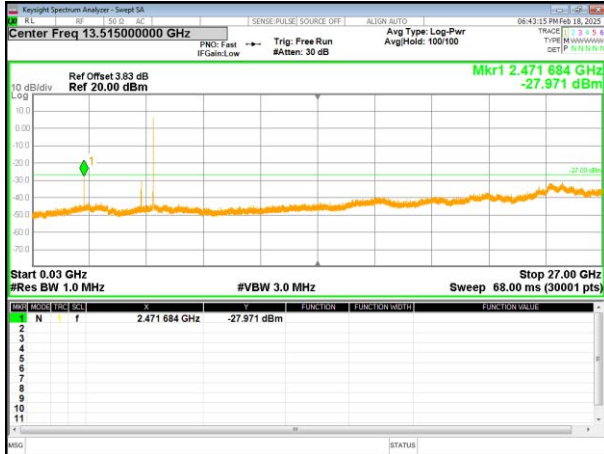
802.11ax80 on channel 42



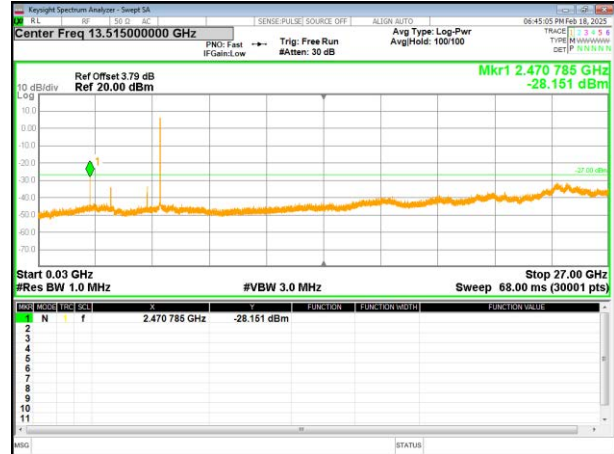
5745-5825MHz

Test Plot

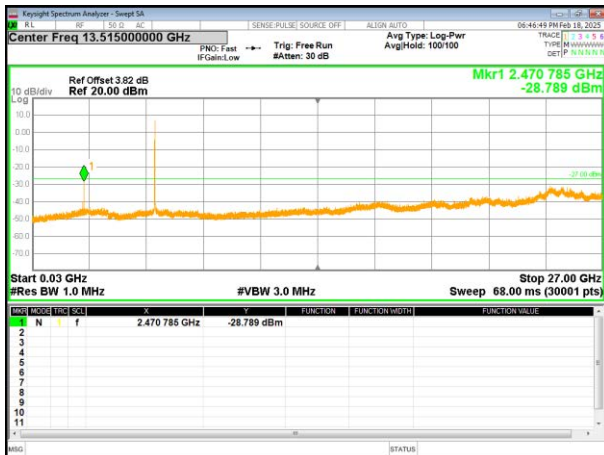
802.11a on channel 149



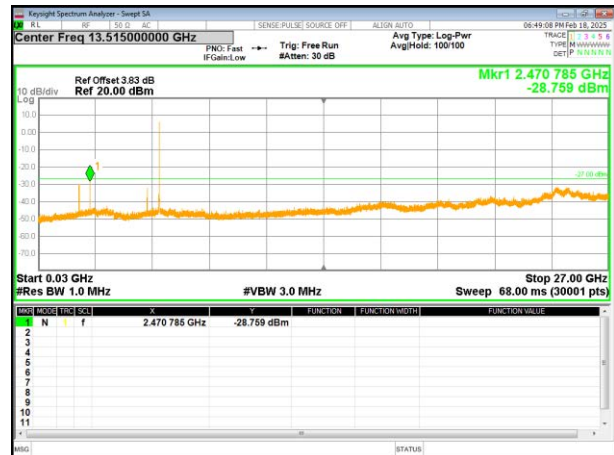
802.11a on channel 157



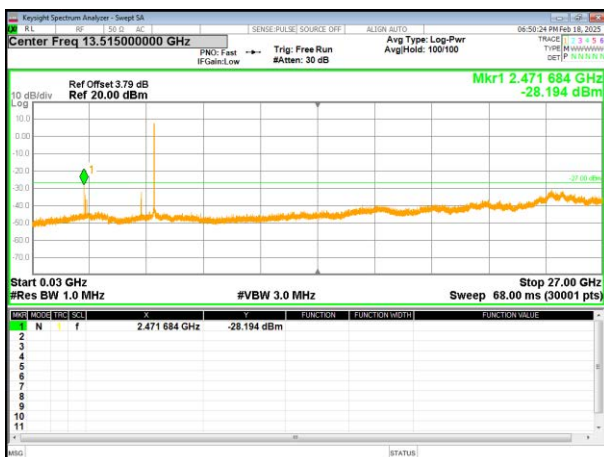
802.11a on channel 165



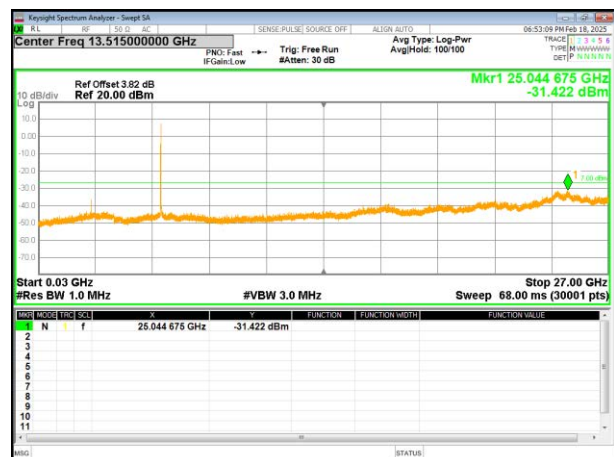
802.11n20 on channel 149



802.11n20 on channel 157

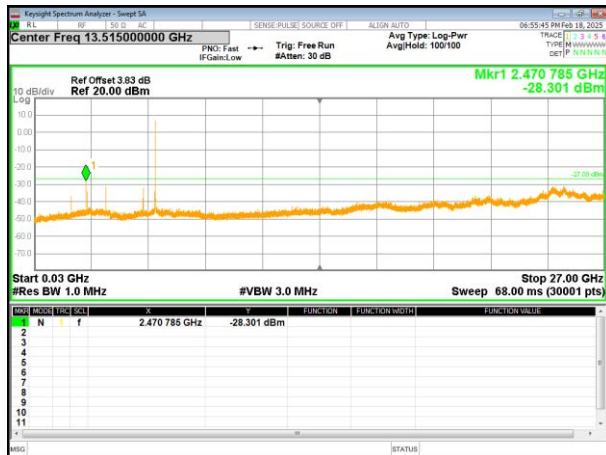


802.11n20 on channel 165

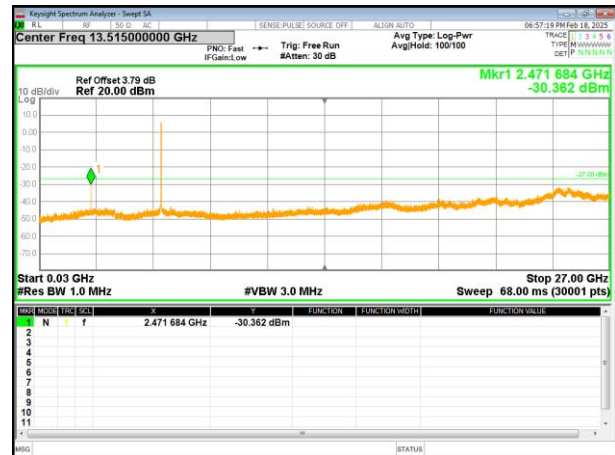


Test Plot

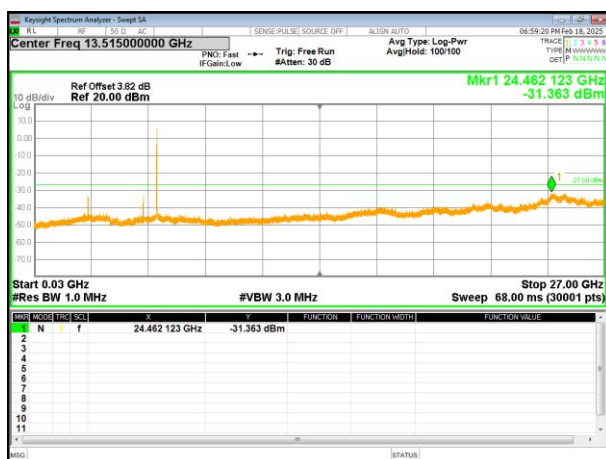
802.11ac20 on channel 149



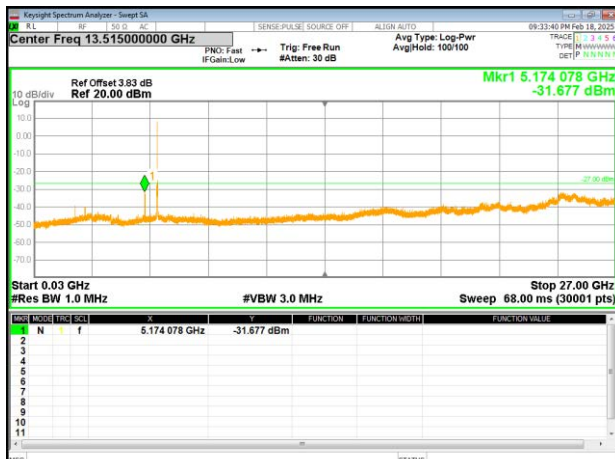
802.11ac20 on channel 157



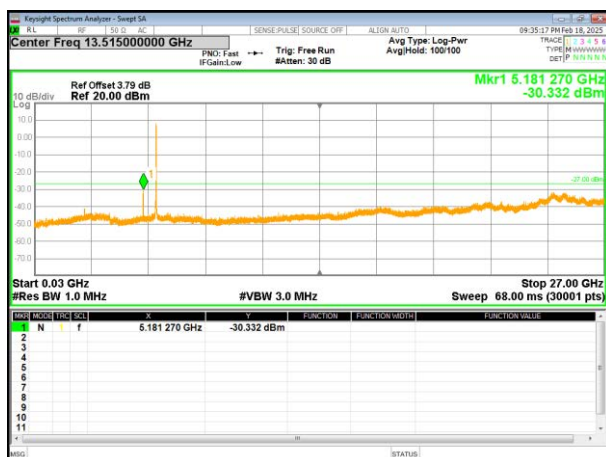
802.11ac20 on channel 165



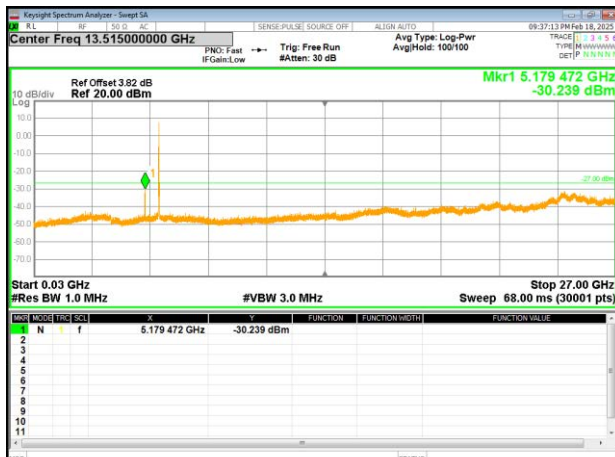
802.11ax20 on channel 149



802.11ax20 on channel 157

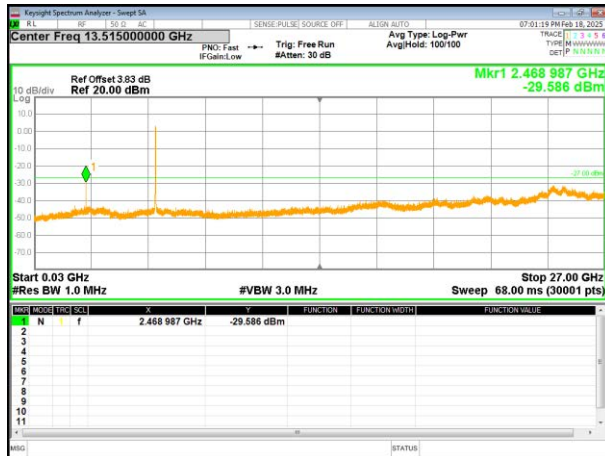


802.11ax20 on channel 165

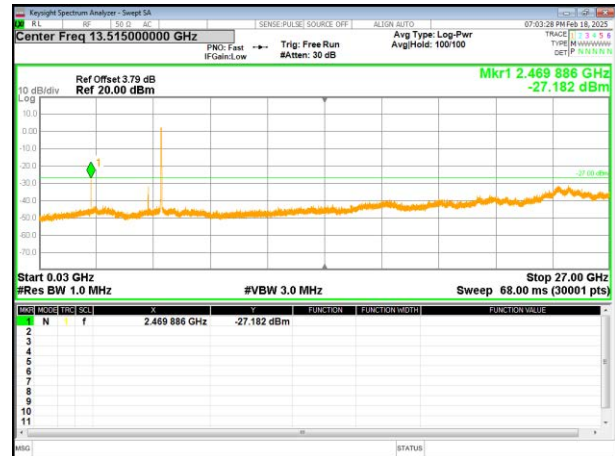


Test Plot

802.11n40 on channel 151



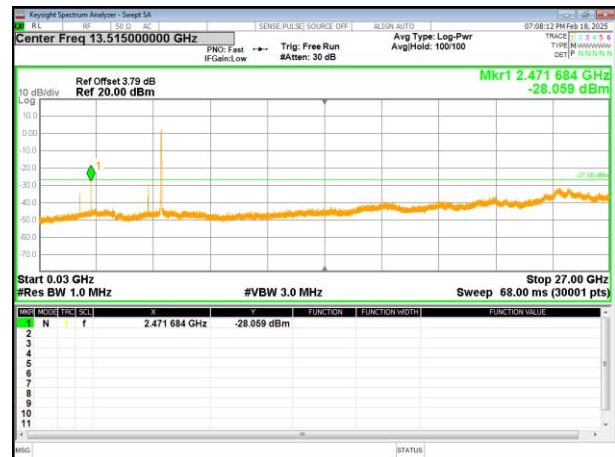
802.11n40 on channel 159



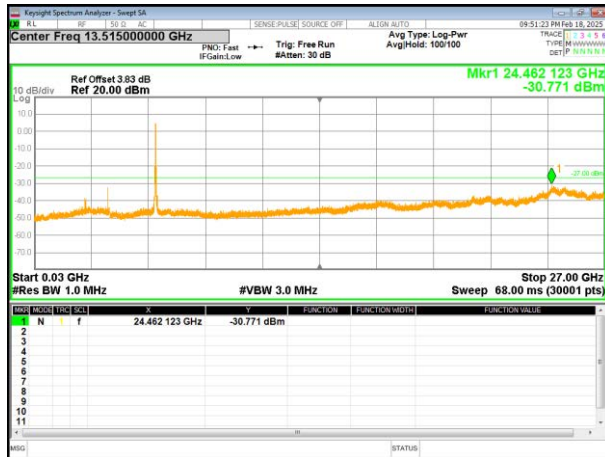
802.11ac40 on channel 151



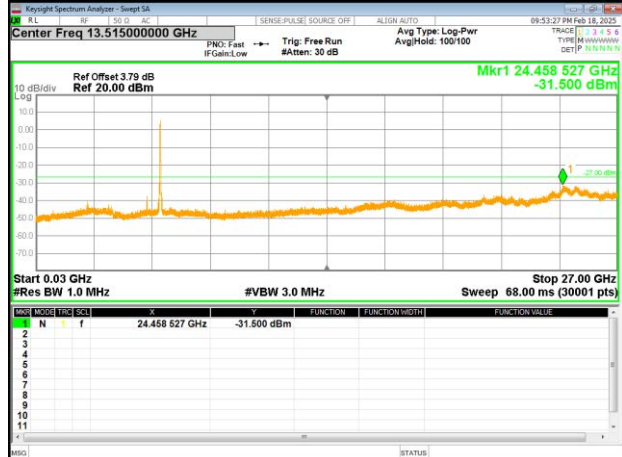
802.11ac40 on channel 159



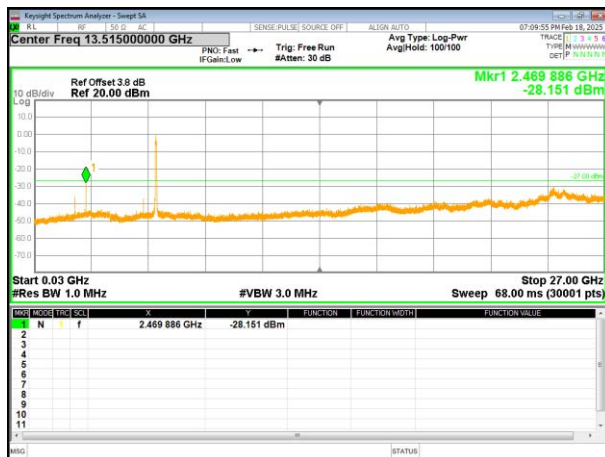
802.11ax40 on channel 151



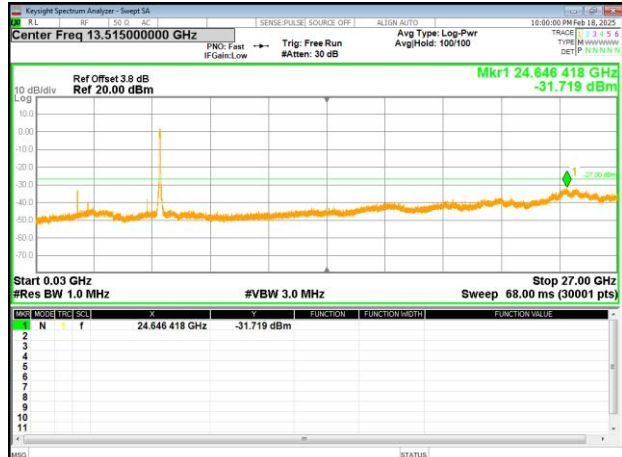
802.11ax40 on channel 159



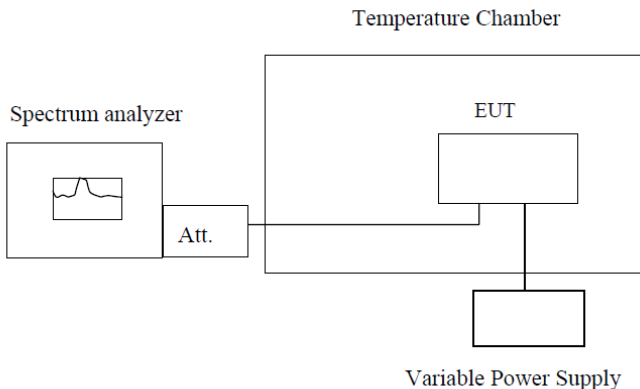
802.11ac80 on channel 155



802.11ax80 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:AC120V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5180	5179.98	5180.04	5179.83	5179.90
	5190	5189.98	5199.91	5199.71	5189.91
	5200	5199.98	5199.94	5199.73	5199.90
	5210	5209.98	5209.92	5209.71	5209.90
	5220	5219.98	5219.93	5219.72	5219.91
	5230	5229.98	5229.92	5229.72	5229.92
	5240	5239.95	5239.93	5239.72	5239.91
-20	5180	5179.98	5179.97	5180.02	5179.95
	5190	5189.97	5180.08	5190.02	5189.95
	5200	5199.98	5199.95	5200.01	5199.95
	5210	5209.97	5209.98	5300.02	5209.94
	5220	5219.99	5219.96	5220.01	5219.95
	5230	5229.97	5229.97	5230.03	5299.95
	5240	5239.99	5239.97	5240.01	5239.95
-10	5180	5179.98	5179.92	5179.70	5179.90
	5190	5189.98	5189.92	5189.71	5189.91
	5200	5199.98	5199.91	5199.70	5199.90
	5210	5209.98	5209.92	5209.70	5209.90
	5220	5219.98	5219.91	5219.70	5219.91
	5230	5229.98	5229.91	5229.72	5229.92
	5240	5239.95	5239.89	5239.69	5239.90
0	5180	5179.76	5179.90	5179.71	5179.91
	5190	5199.93	5189.91	5189.70	5189.91
	5200	5199.93	5199.90	5199.71	5199.90
	5210	5209.99	5209.90	5209.70	5299.91
	5220	5219.98	5219.91	5219.72	5219.90
	5230	5229.96	5229.93	5229.70	5229.92
	5240	5239.98	5239.90	5239.71	5239.90
10	5180	5179.96	5179.91	5179.72	5179.91
	5190	5189.97	5189.90	5189.71	5189.90
	5200	5199.97	5199.91	5199.71	5199.91
	5210	5209.97	5209.90	5209.71	5209.90
	5220	5219.97	5219.93	5219.71	5219.92
	5230	5229.99	5229.90	5229.70	5229.90
	5240	5239.98	5239.92	5239.68	5239.92
20	5180	5179.77	5179.94	5180.02	5179.94
	5190	5199.94	5189.95	5190.01	5189.95

	5200	5199.94	5199.95	5200.02	5199.94
	5210	5209.99	5209.95	5210.01	5299.94
	5220	5219.98	5219.95	5220.03	5219.94
	5230	5229.97	5229.97	5230.01	5229.96
	5240	5239.98	5239.94	5240.03	5239.94
30	5180	5179.94	5179.95	5180.01	5180.07
	5190	5189.97	5189.96	5190.02	5199.94
	5200	5200.00	5199.95	5200.01	5199.97
	5210	5209.98	5299.95	5210.01	5209.95
	5220	5219.97	5219.95	5220.02	5219.96
	5230	5230.00	5229.97	5230.04	5229.96
	5240	5239.99	5239.95	5240.01	5239.96
40	5180	5179.77	5179.94	5180.02	5179.94
	5190	5199.94	5189.95	5190.01	5189.95
	5200	5199.94	5199.95	5200.02	5199.94
	5210	5209.99	5209.95	5210.01	5299.94
	5220	5219.98	5219.95	5220.03	5219.94
	5230	5229.97	5229.97	5230.01	5229.96
	5240	5239.98	5239.94	5240.03	5239.94
50	5180	5179.97	5179.96	5180.02	5179.95
	5190	5189.98	5189.95	5190.01	5179.95
	5200	5199.97	5199.95	5200.02	5189.95
	5210	5209.97	5209.95	5210.01	5199.95
	5220	5219.98	5219.97	5220.03	5209.95
	5230	5230.00	5229.95	5230.01	5219.95
	5240	5239.97	5239.96	5240.03	5229.94

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)
AC 102V	5180	5179.97	5179.94	5180.03	5179.95
	5190	5189.97	5189.95	5190.02	5189.94
	5200	5199.98	5199.95	5200.02	5199.94
	5210	5209.99	5209.95	5210.03	5209.96
	5220	5219.97	5219.95	5220.02	5219.95
	5230	5229.96	5229.97	5230.02	5229.96
	5240	5180.10	5179.96	5180.02	5179.93
AC 120V	5180	5199.98	5189.95	5190.01	5189.94
	5190	5200.00	5199.95	5200.02	5199.94
	5200	5209.98	5209.97	5210.01	5209.94
	5210	5220.00	5219.96	5220.03	5219.94
	5220	5229.99	5299.96	5230.01	5229.96
	5230	5240.00	5239.96	5240.03	5239.95
	5240	5180.10	5179.96	5180.02	5179.93
AC 138V	5180	5179.98	5179.96	5180.02	5179.94
	5190	5189.98	5189.95	5190.02	5189.95
	5200	5199.97	5199.95	5200.01	5199.94
	5210	5299.98	5209.95	5300.02	5299.94
	5220	5219.97	5219.97	5220.01	5219.94
	5230	5229.99	5229.95	5230.03	5229.96
	5240	5239.97	5239.96	5240.01	5239.94

Frequency stability versus Temp.					
Power Supply: AC120V					
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	5744.96	5744.95	5745.01	5744.93
	5755	5754.98	5754.95	5755.03	5754.96
	5775	5774.98	5774.95	5775.03	5774.94
	5785	5784.98	5784.94	5785.01	5784.95
	5795	5794.99	5794.94	5795.03	5794.94
	5825	5824.97	5824.87	5825.03	5824.95
-20	5745	5744.96	5744.96	5745.01	5744.95
	5755	5754.98	5754.96	5755.03	5754.96
	5775	5774.98	5774.96	5775.01	5774.95
	5785	5784.98	5784.95	5785.02	5784.93
	5795	5794.99	5794.95	5795.02	5794.93
	5825	5824.97	5824.95	5825.03	5824.96
-10	5745	5744.98	5744.97	5745.02	5744.94
	5755	5755.00	5754.94	5755.04	5754.96
	5775	5774.98	5774.97	5775.02	5774.94
	5785	5784.97	5784.97	5785.01	5784.96
	5795	5794.96	5794.96	5795.00	5794.95
	5825	5825.00	5824.97	5825.04	5824.96
0	5745	5744.97	5744.95	5745.01	5744.94
	5755	5754.98	5754.95	5755.02	5754.93
	5775	5775.00	5774.95	5775.04	5774.94
	5785	5784.97	5784.94	5785.01	5784.94
	5795	5794.97	5794.94	5795.01	5794.96
	5825	5824.97	5824.87	5825.01	5824.95
10	5745	5744.96	5744.96	5745.01	5744.95
	5755	5754.98	5754.96	5755.03	5754.96
	5775	5774.98	5774.96	5775.01	5774.95
	5785	5784.98	5784.95	5785.02	5784.93
	5795	5794.99	5794.95	5795.02	5794.93
	5825	5824.97	5824.95	5825.03	5824.96
20	5745	5744.97	5744.95	5745.02	5744.57
	5755	5755.00	5754.95	5755.02	5754.95
	5775	5775.00	5774.97	5775.03	5774.95
	5785	5784.98	5784.95	5785.02	5784.95
	5795	5794.97	5794.94	5795.01	5794.94
	5825	5824.90	5824.95	5825.02	5824.93
30	5745	5744.96	5744.96	5745.01	5744.95
	5755	5754.98	5754.96	5755.03	5754.96
	5775	5774.98	5774.96	5775.01	5774.95
	5785	5784.98	5784.95	5785.02	5784.93
	5795	5794.99	5794.95	5795.02	5794.93
	5825	5824.97	5824.95	5825.03	5824.96
40	5745	5744.97	5744.95	5745.02	5744.57
	5755	5755.00	5754.95	5755.02	5754.95
	5775	5775.00	5774.97	5775.03	5774.95
	5785	5784.98	5784.95	5785.02	5784.95

50	5795	5794.99	5794.94	5795.03	5794.94
	5825	5824.97	5824.87	5825.03	5824.95
	5745	5744.97	5744.95	5745.01	5744.94
	5755	5754.98	5754.95	5755.02	5754.93
	5775	5775.00	5774.95	5775.04	5774.94
	5785	5784.97	5784.94	5785.01	5784.94
	5795	5794.97	5794.94	5795.01	5794.96
	5825	5824.97	5824.87	5825.01	5824.95

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)
AC 108V	5745	5744.97	5744.95	5745.01	5744.93
	5755	5754.99	5754.96	5755.02	5754.94
	5775	5774.97	5774.96	5775.01	5774.96
	5785	5784.98	5784.95	5785.00	5784.94
	5795	5794.98	5794.96	5795.01	5794.93
	5825	5824.99	5824.96	5824.94	5824.94
AC 120V	5745	5744.98	5744.97	5745.02	5744.94
	5755	5755.00	5754.94	5755.04	5754.96
	5775	5774.98	5774.97	5775.02	5774.94
	5785	5784.97	5784.97	5785.01	5784.96
	5795	5794.96	5794.96	5795.00	5794.95
	5825	5825.00	5824.97	5825.04	5824.96
AC 132V	5745	5744.97	5744.96	5745.00	5744.96
	5755	5754.98	5754.96	5755.03	5754.93
	5775	5775.00	5774.96	5775.03	5774.96
	5785	5784.97	5784.95	5785.01	5784.96
	5795	5794.97	5794.95	5795.03	5794.95
	5825	5824.97	5824.95	5825.03	5824.96

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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