

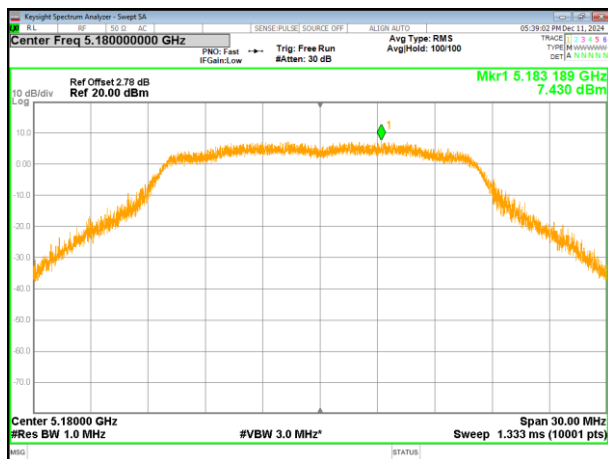
5180-5240MHz

Mode	Frequency	Measured Power Density (dBm/MHz)	Correction Factor (dB)	Total Measured Power Density (dBm/MHz)	Limit (dBm/MHz)
802.11 a	5180 MHz	7.430	0.24	7.670	11
	5200 MHz	7.210	0.24	7.450	11
	5240 MHz	6.697	0.24	6.937	11
802.11 n20	5180 MHz	7.298	0.24	7.538	11
	5200 MHz	7.266	0.24	7.506	11
	5240 MHz	6.618	0.24	6.858	11
802.11 ac20	5180 MHz	3.249	0.24	3.489	11
	5200 MHz	2.978	0.24	3.218	11
	5240 MHz	7.136	0.24	7.376	11
802.11 n40	5190 MHz	7.015	0.24	7.255	11
	5230 MHz	6.403	0.24	6.643	11
802.11 ac40	5190 MHz	3.416	0.24	3.656	11
	5230 MHz	3.793	0.24	4.033	11
802.11 ac80	5210 MHz	-0.671	0.24	-0.431	11

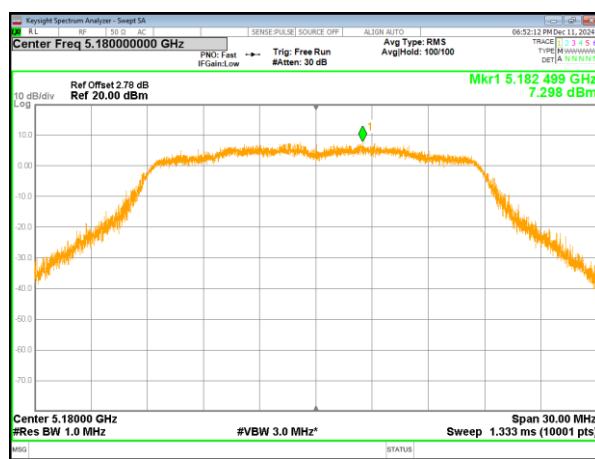
e.i.r.p spectral density

Mode	Frequency	Measured Power Density (dBm/MHz)	ANT Gain(dBi)	e.i.r.p. spectral density	Limit (dBm/MHz)
802.11 a	5180 MHz	7.670	2.22	9.890	10
	5200 MHz	7.450	2.22	9.670	10
	5240 MHz	6.937	2.22	9.157	10
802.11 n20	5180 MHz	7.538	2.22	9.758	10
	5200 MHz	7.506	2.22	9.726	10
	5240 MHz	6.858	2.22	9.078	10
802.11 ac20	5180 MHz	3.489	2.22	5.709	10
	5200 MHz	3.218	2.22	5.438	10
	5240 MHz	7.376	2.22	9.596	10
802.11 n40	5190 MHz	7.255	2.22	9.475	10
	5230 MHz	6.643	2.22	8.863	10
802.11 ac40	5190 MHz	3.656	2.22	5.876	10
	5230 MHz	4.033	2.22	6.253	10
802.11 ac80	5210 MHz	-0.431	2.22	1.789	10

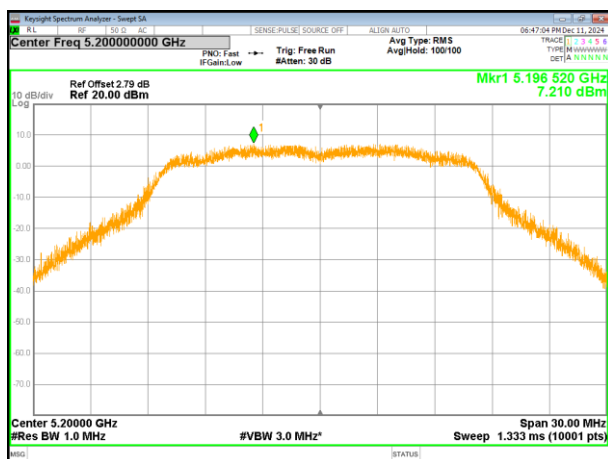
(802.11a) PSD plot on channel 36



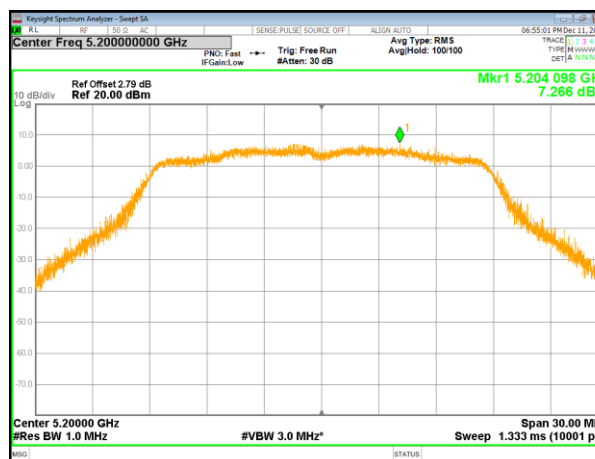
(802.11n20) PSD plot on channel 36



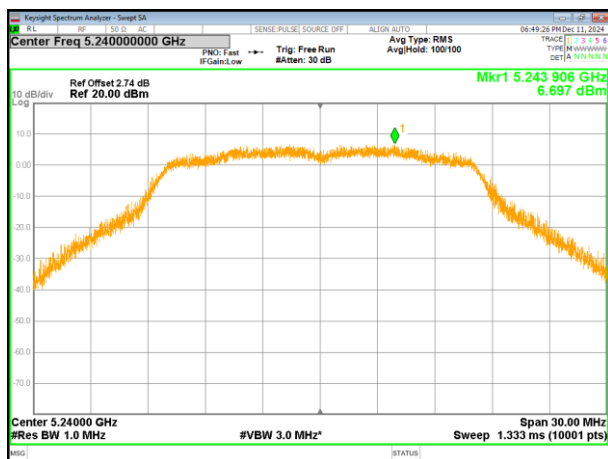
(802.11a) PSD plot on channel 40



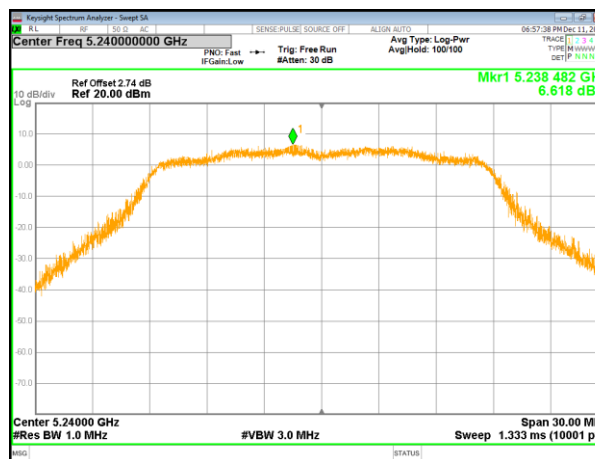
(802.11n20) PSD plot on channel 40



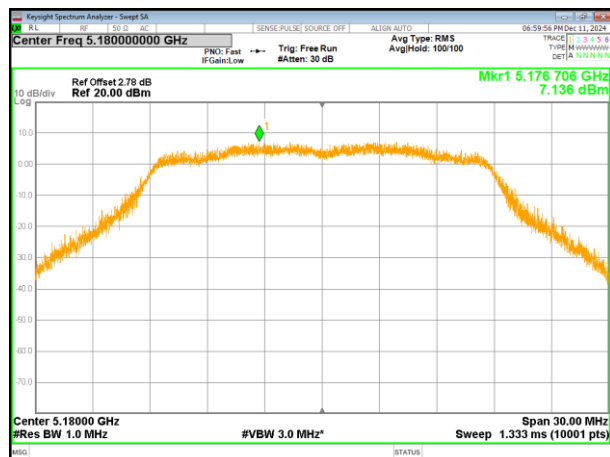
(802.11a) PSD plot on channel 48



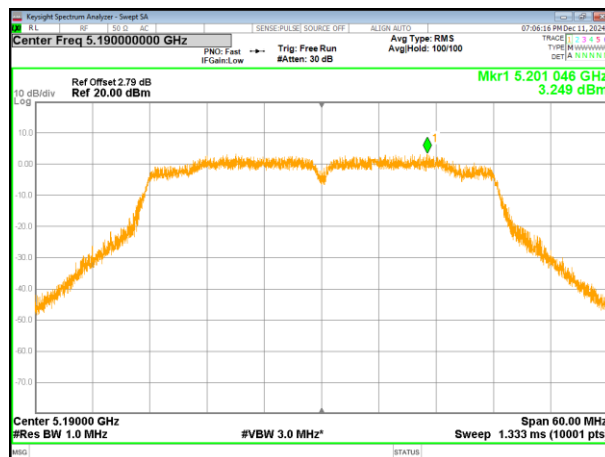
(802.11n20) PSD plot on channel 48



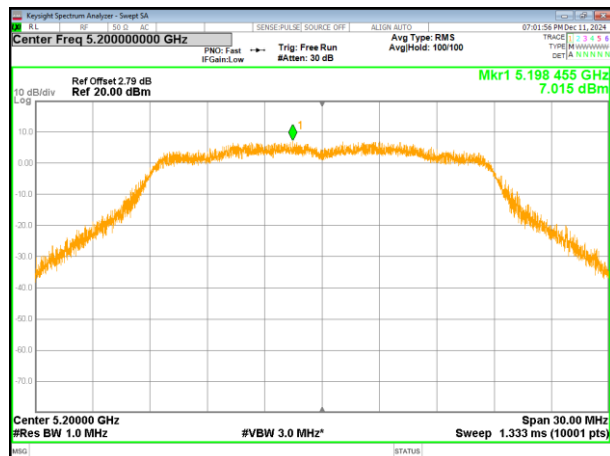
(802.11ac20) PSD plot on channel 36



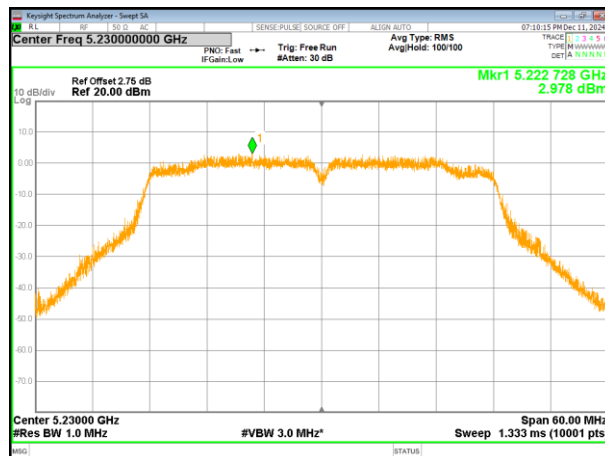
(802.11n40) PSD plot on channel 38



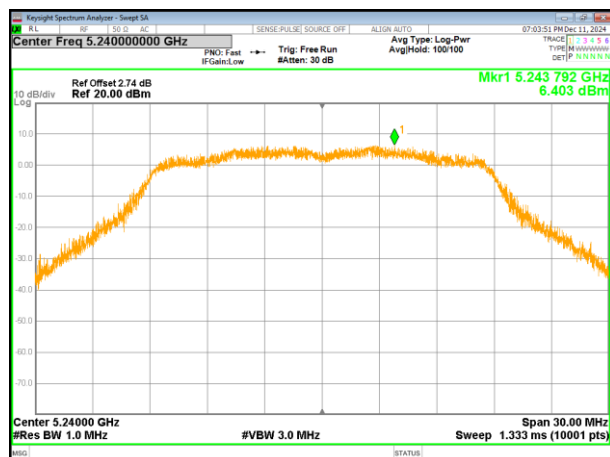
(802.11ac20) PSD plot on channel 40



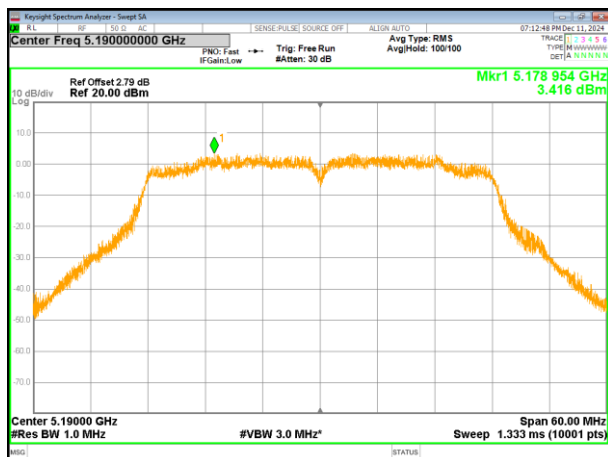
(802.11n40) PSD plot on channel 46



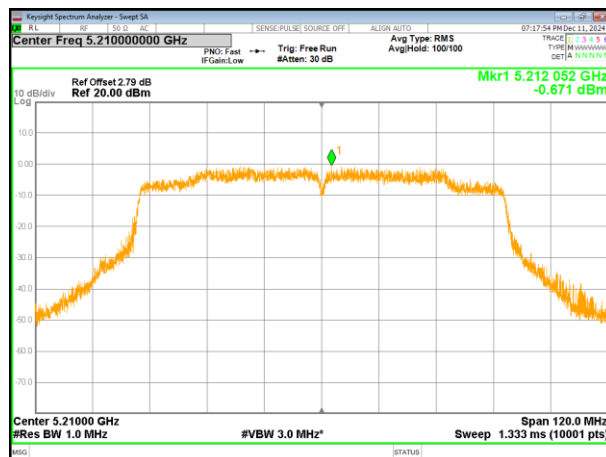
(802.11ac20) PSD plot on channel 48



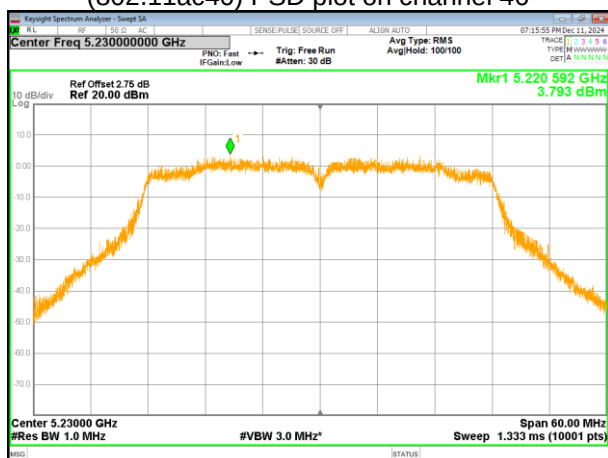
(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46



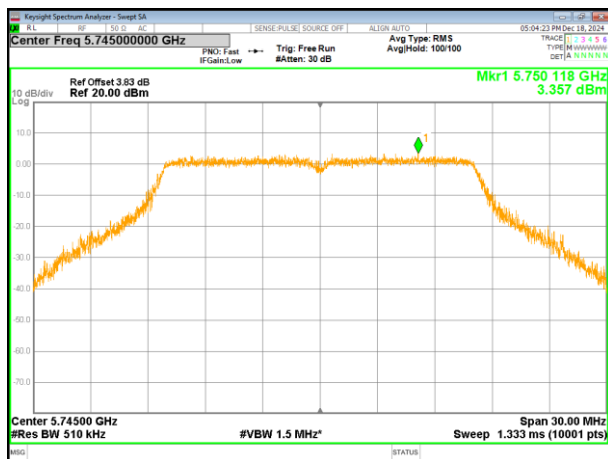
5745-5825MHz

Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density (dBm/500KHz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/500KHz)
802.11 a	5745 MHz	3.357	3.271	0.43	3.701	30
	5785 MHz	2.924	2.838	0.43	3.268	30
	5825 MHz	3.699	3.613	0.43	4.043	30
802.11 n20	5745 MHz	3.707	3.621	0.38	4.001	30
	5785 MHz	3.593	3.507	0.38	3.887	30
	5825 MHz	3.624	3.538	0.38	3.918	30
802.11ac20	5745 MHz	4.031	3.945	0.38	4.325	30
	5785 MHz	3.371	3.285	0.38	3.665	30
	5825 MHz	3.725	3.639	0.38	4.019	30
802.11 n40	5755 MHz	0.691	0.605	0.28	0.885	30
	5795 MHz	0.404	0.318	0.28	0.598	30
802.11ac40	5755 MHz	-0.729	-0.815	0.46	-0.355	30
	5795 MHz	0.006	-0.080	0.46	0.380	30
802.11ac80	5775 MHz	-4.126	-4.212	0.45	-3.762	30

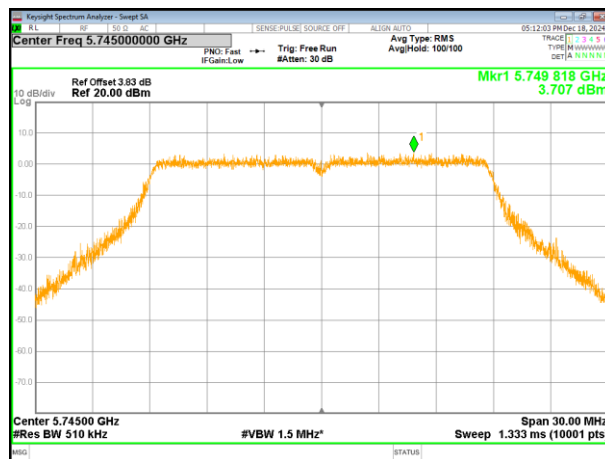
Note: 1. If the measurement is X dBm/510kHz, thus $X \text{ dBm/510kHz} = (10^{X/10}) * (500 / 510) \text{ dBm/500kHz}$

2. Correction Factor (dB)= duty cycle factor

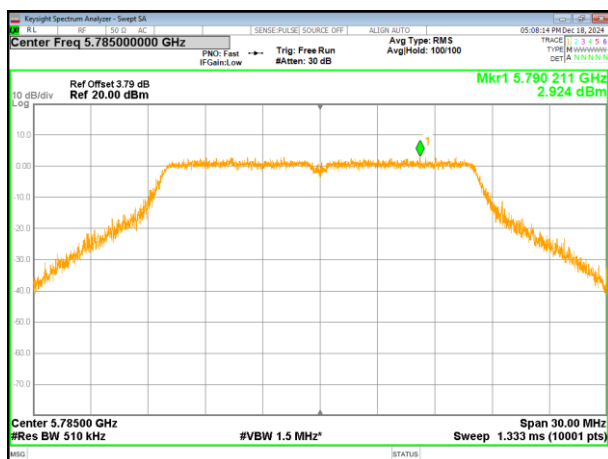
(802.11a) PSD plot on channel 149



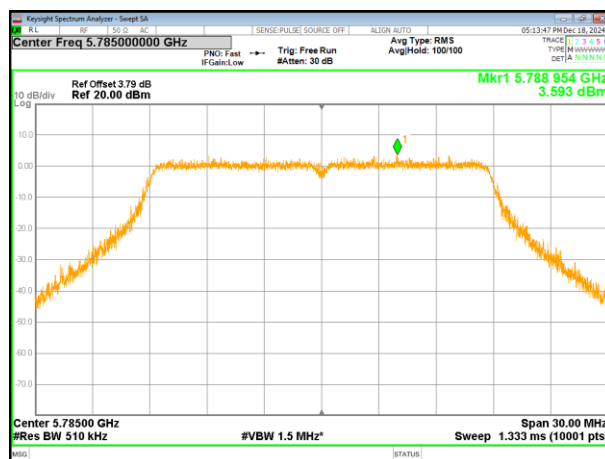
(802.11n20) PSD plot on channel 149



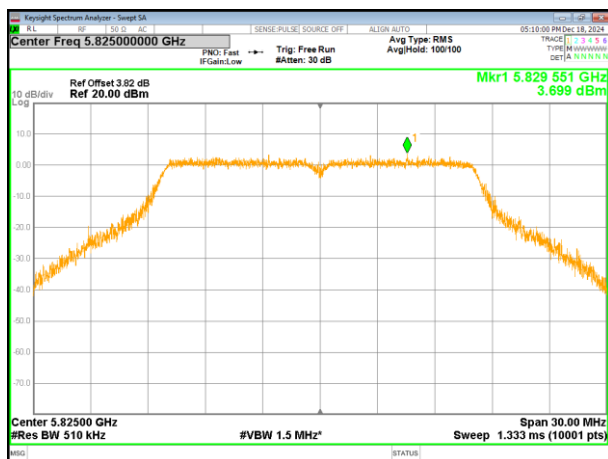
(802.11a) PSD plot on channel 157



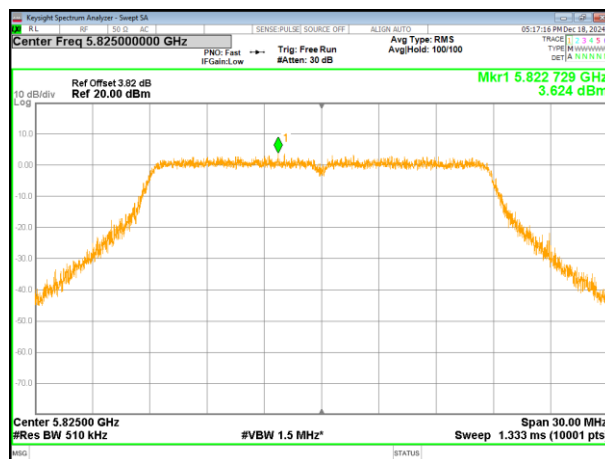
(802.11n20) PSD plot on channel 157



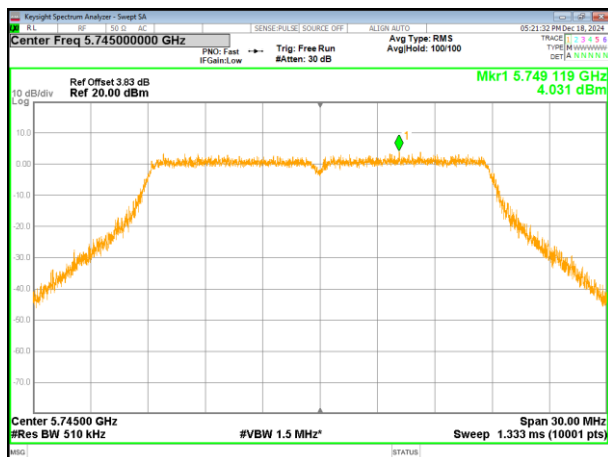
(802.11a) PSD plot on channel 165



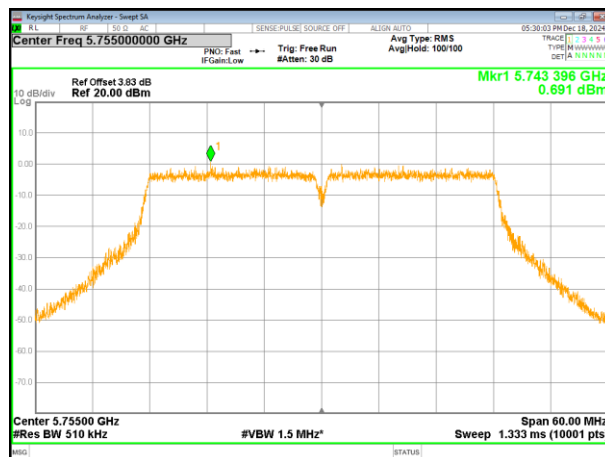
(802.11n20) PSD plot on channel 165



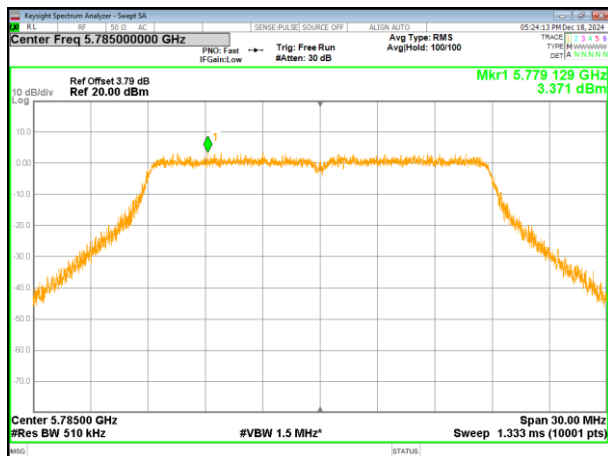
(802.11ac20) PSD plot on channel 149



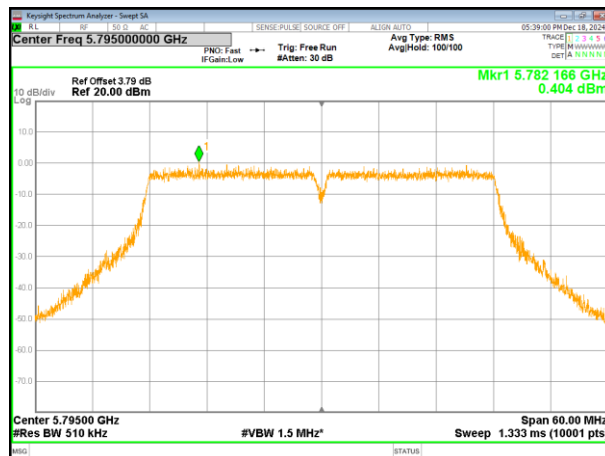
(802.11n40) PSD plot on channel 151



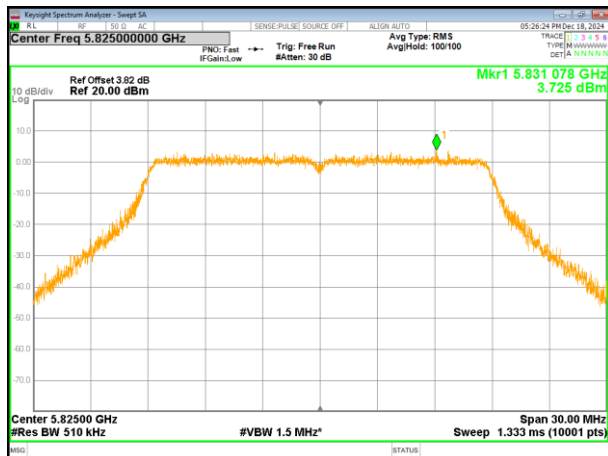
(802.11ac20) PSD plot on channel 157



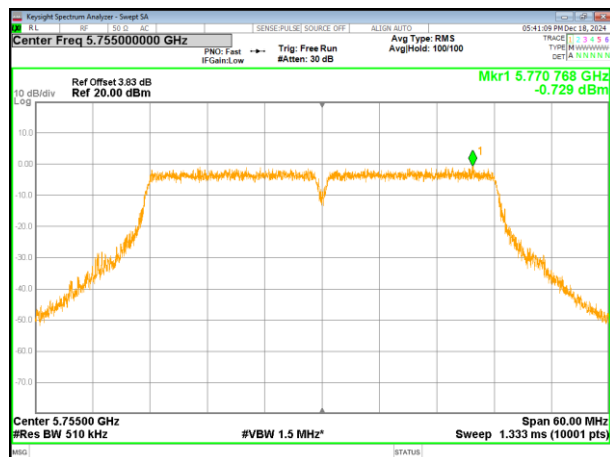
(802.11n40) PSD plot on channel 159



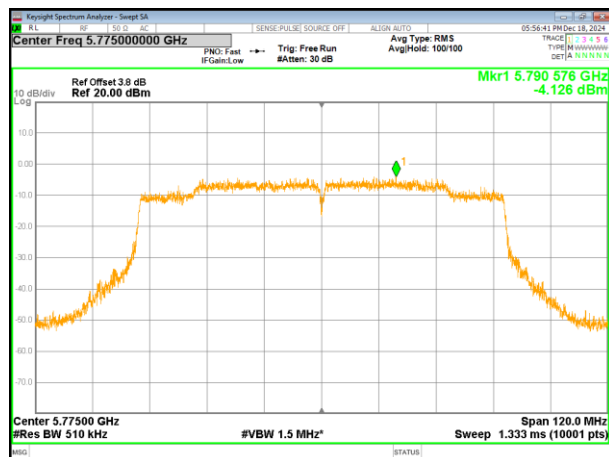
(802.11ac20) PSD plot on channel 165



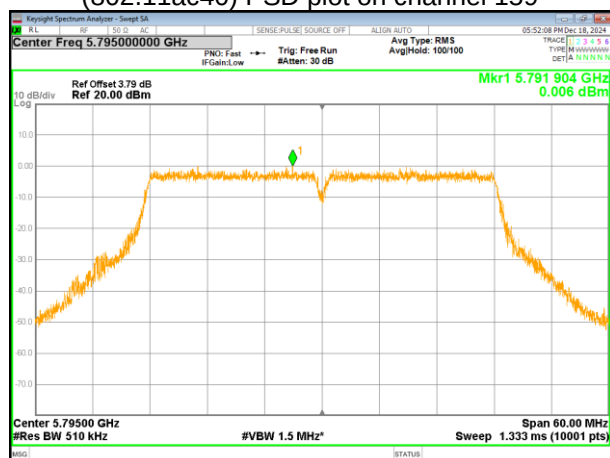
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

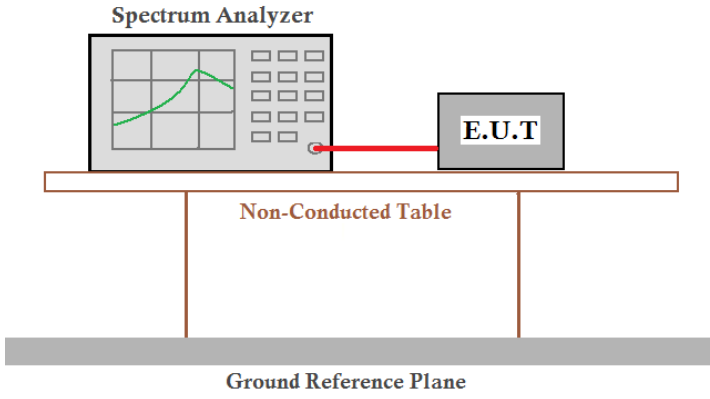


(802.11ac40) PSD plot on channel 159



4.7 Band edge

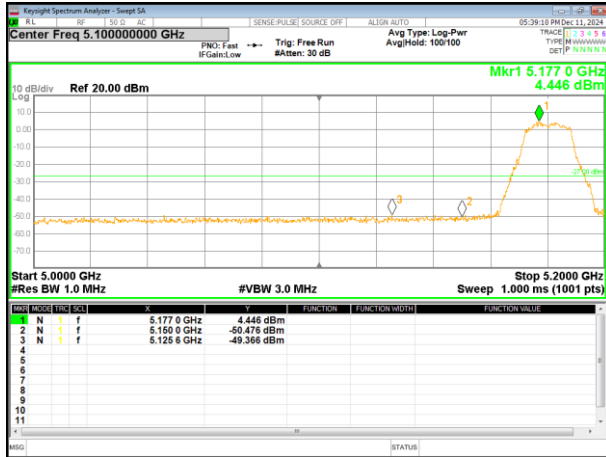
4.7.1 Conducted test Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205, RSS-247 §6.2.1.2&6.2.4.3	
Test Method:	ANSI C63.10: 2013, RSS-Gen	
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 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.: 23.0°C	Humid.: 35%RH
Test voltage:	DC 19V From Adapter	
Test results:	Pass	

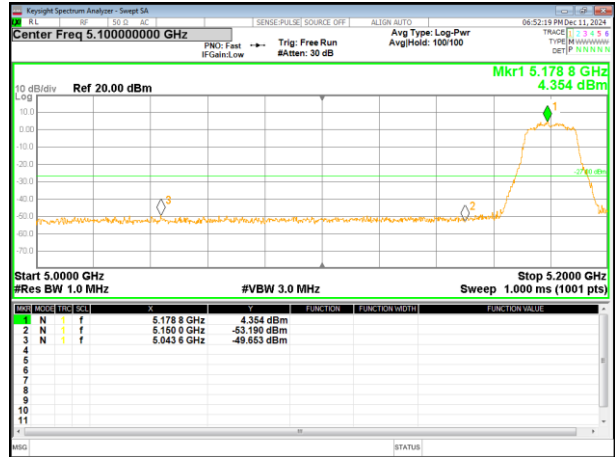
Remark: Due to the margin value of the sideband test being greater than the antenna gain value, the test meets the requirements

5.180~5.240 GHz

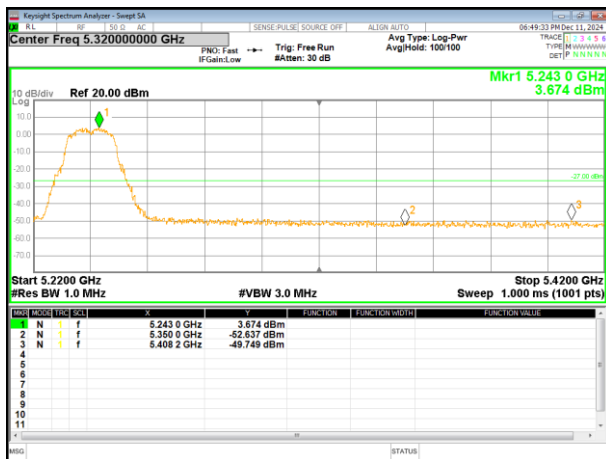
(802.11a) Band Edge, Left Side



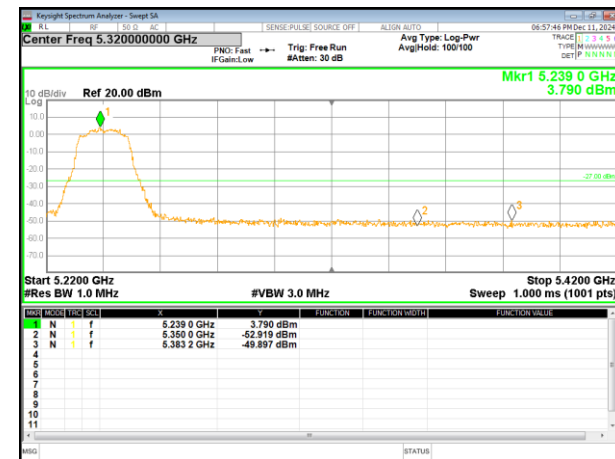
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

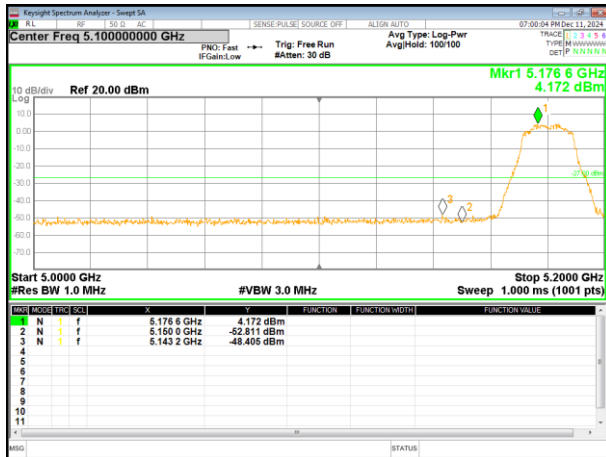


(802.11n20) Band Edge, Right Side

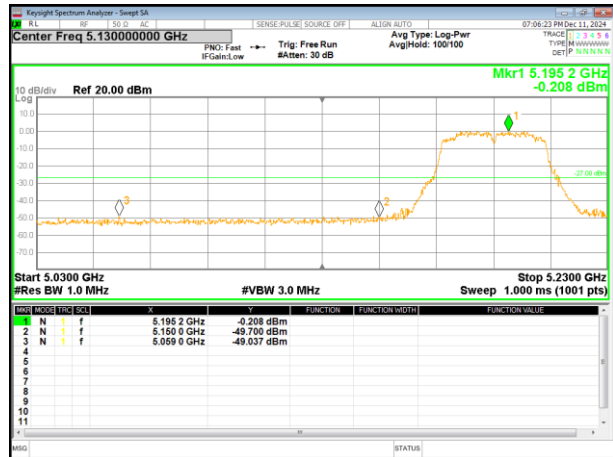


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

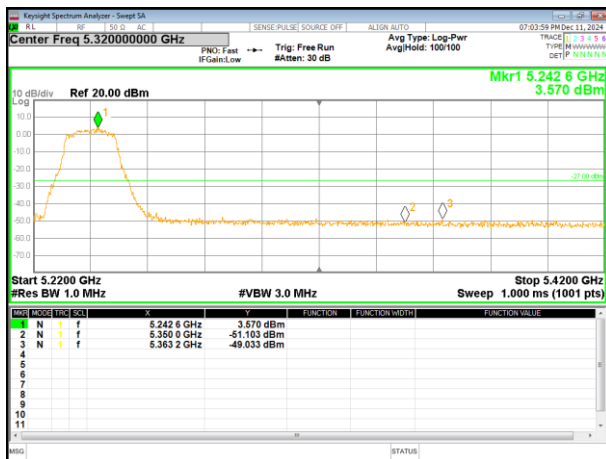
(802.11ac20) Band Edge, Left Side



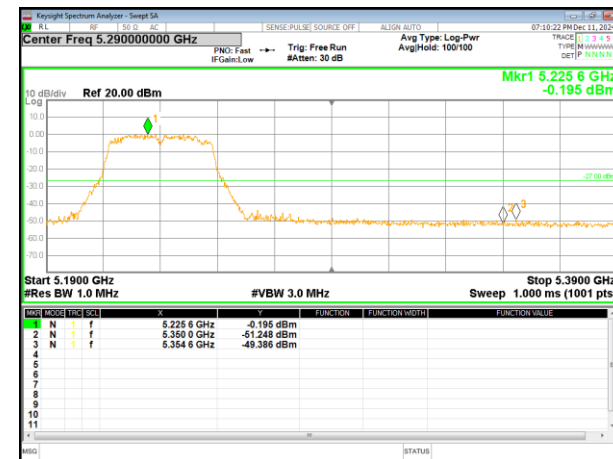
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

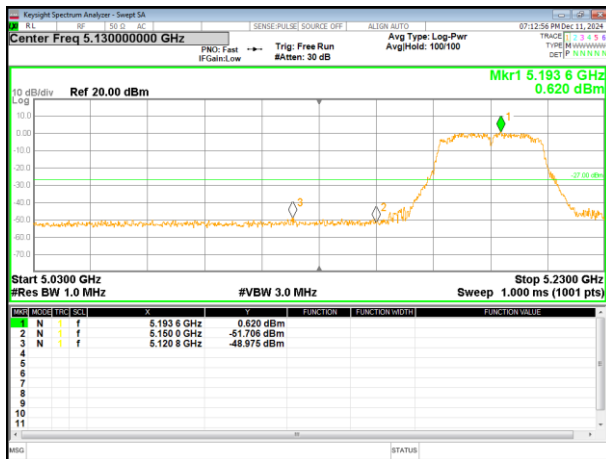


(802.11n40) Band Edge, Right Side

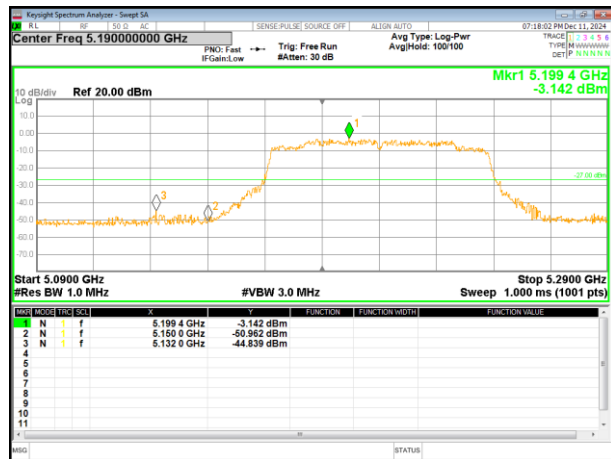


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

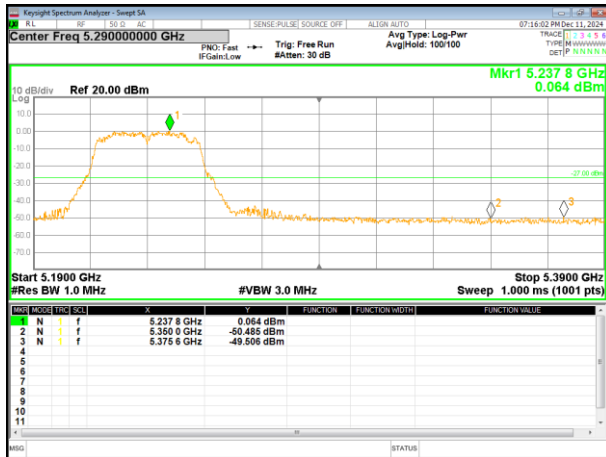
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



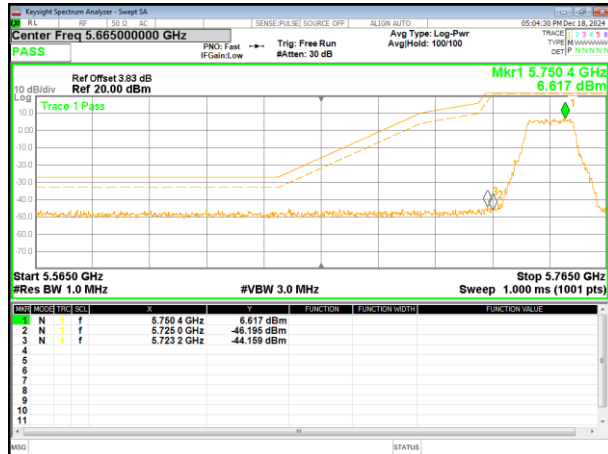
(802.11ac40) Band Edge, Right Side



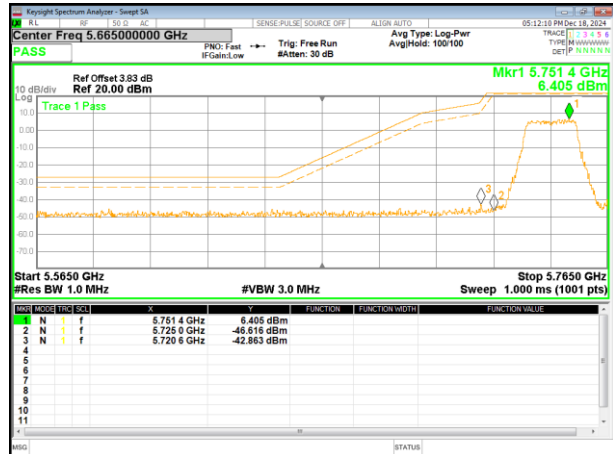
Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

5.745~5.825 GHz

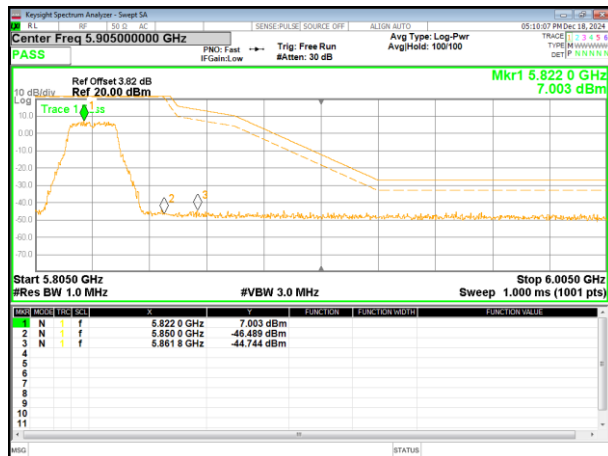
(802.11a) Band Edge, Left Side



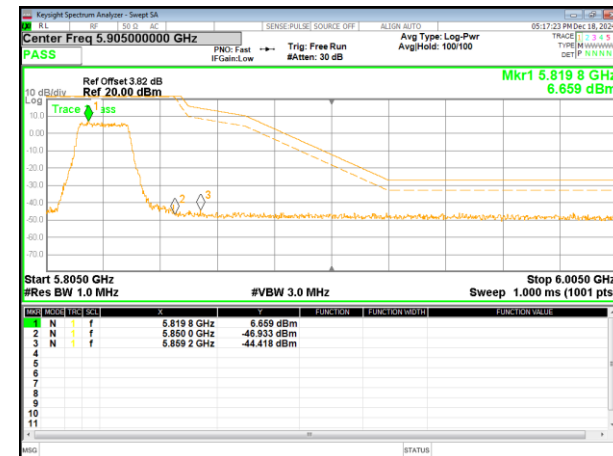
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

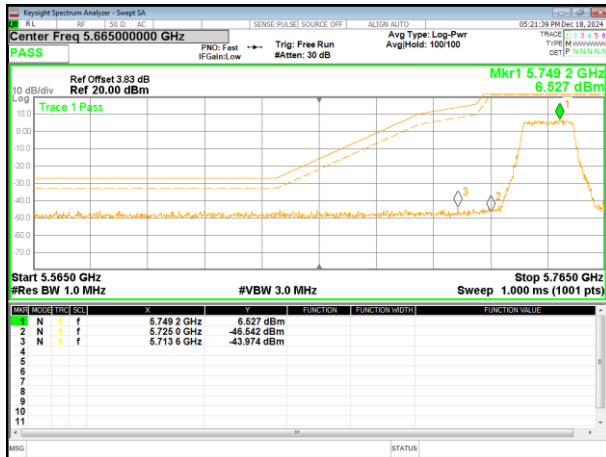


(802.11n20) Band Edge, Right Side

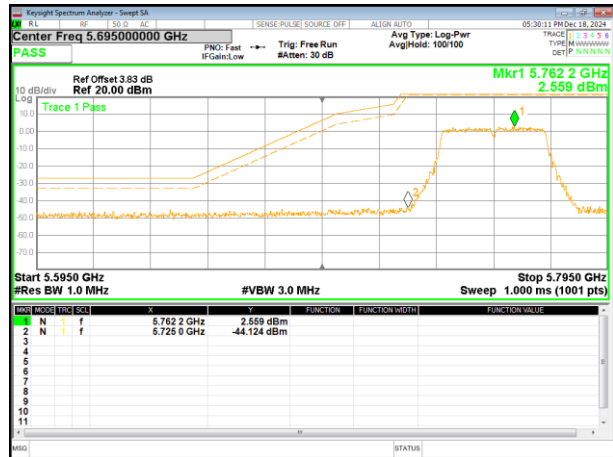


Remark: Antenna gain and cable loss data included in Offset.

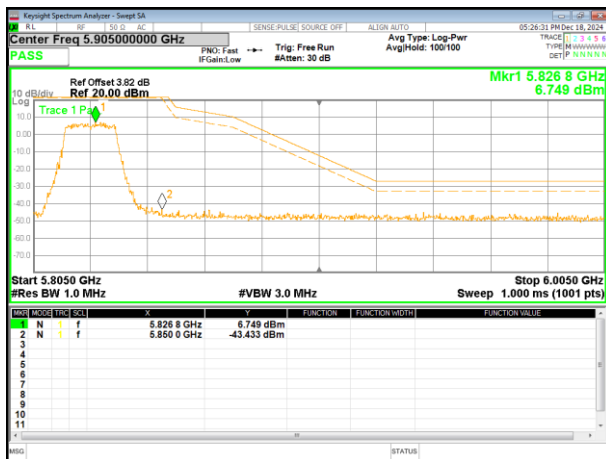
(802.11ac20) Band Edge, Left Side



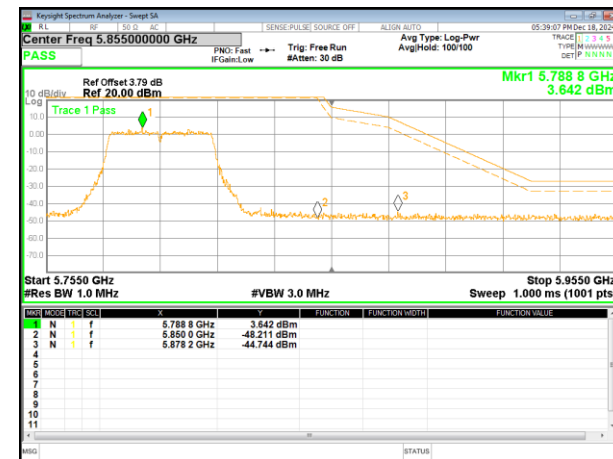
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

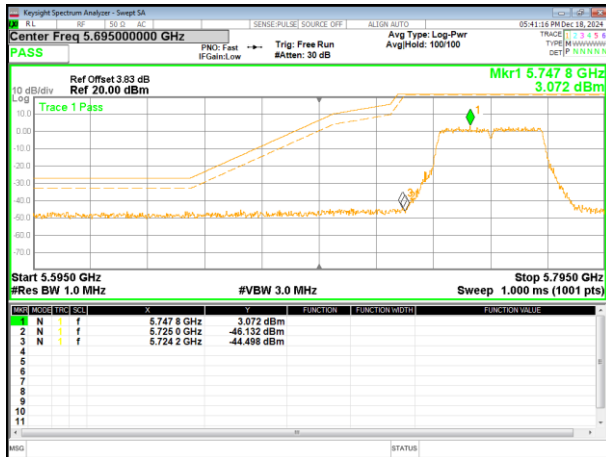


(802.11n40) Band Edge, Right Side

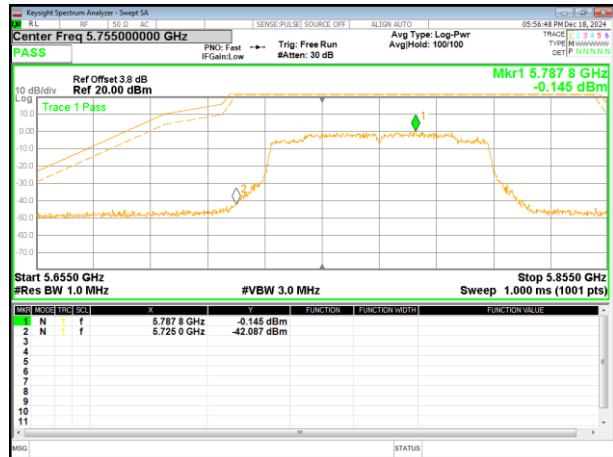


Remark: Antenna gain and cable loss data included in Offset.

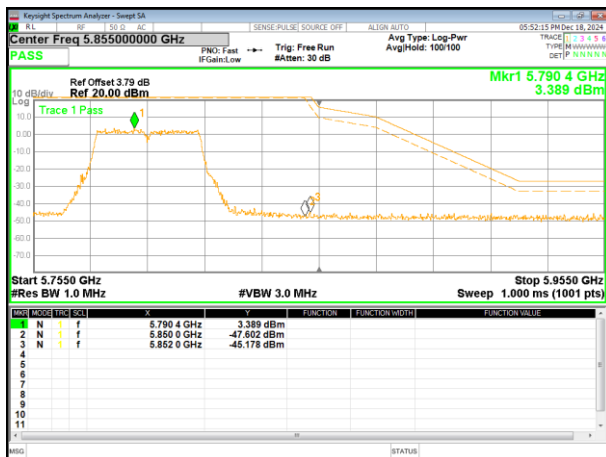
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



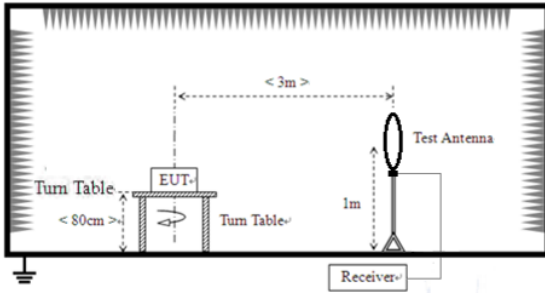
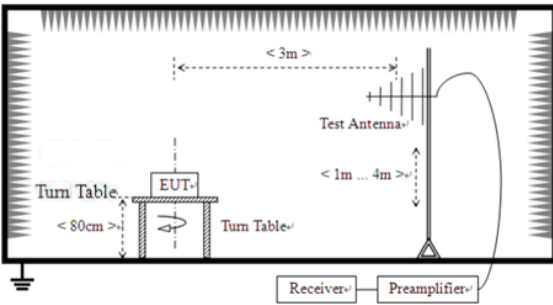
(802.11ac40) Band Edge, Right Side

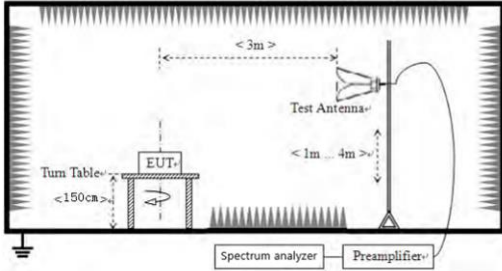


Remark: Antenna gain and cable loss data included in Offset.

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) RSS-247 §6.2.1.2&6.2.4.3				
Test Method:	ANSI C63.10:2013, , RSS-Gen				
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

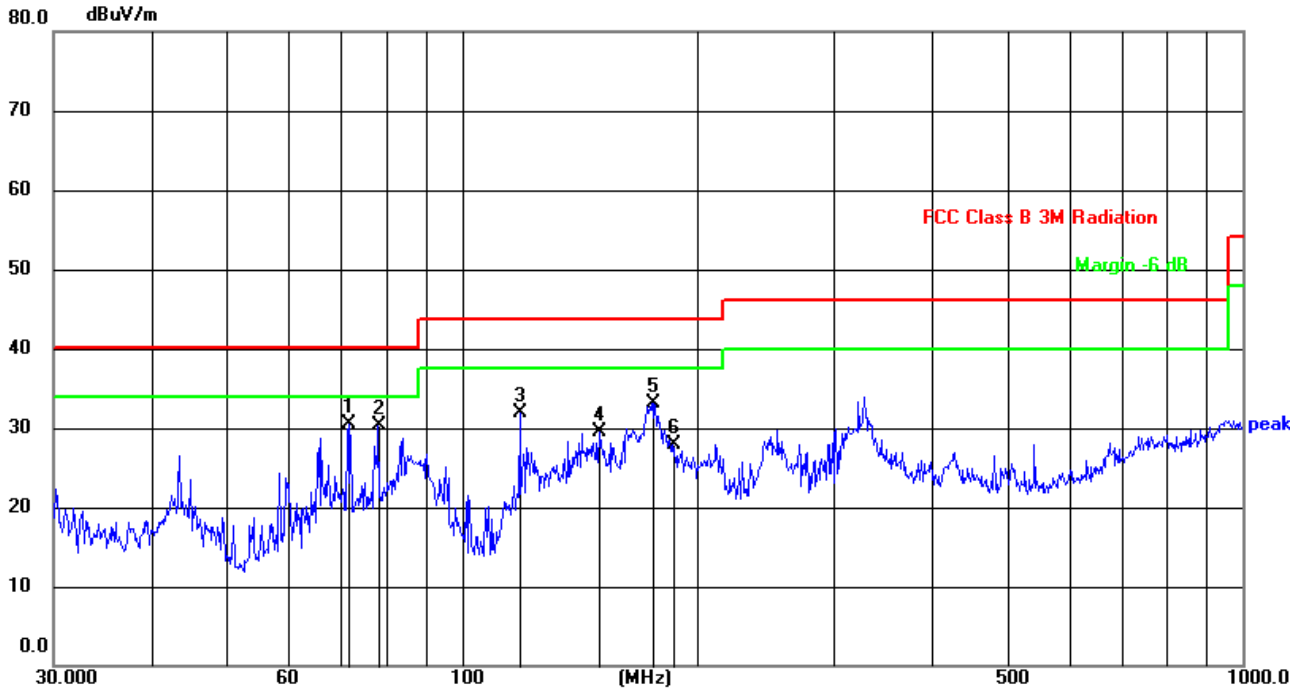
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

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

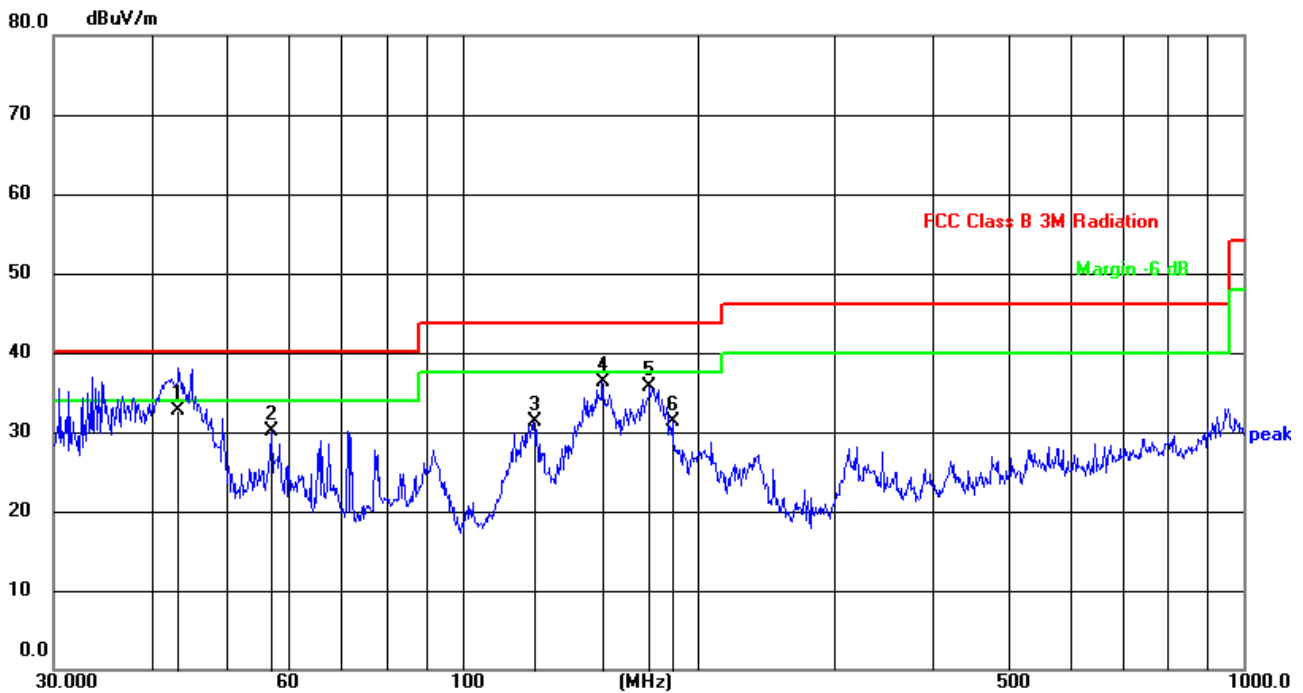
Temperature:	23°C	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.8G TX- 802.11n20 (5745MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	71.5806	54.93	-24.47	30.46	40.00	-9.54	QP
2	78.1389	56.09	-25.72	30.37	40.00	-9.63	QP
3	118.6014	55.23	-23.30	31.93	43.50	-11.57	QP
4	150.0108	50.08	-20.50	29.58	43.50	-13.92	QP
5	176.2686	55.10	-21.94	33.16	43.50	-10.34	QP
6	186.4409	50.83	-22.90	27.93	43.50	-15.57	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	43.3534	53.80	-21.10	32.70	40.00	-7.30	QP
2	56.9912	52.43	-22.32	30.11	40.00	-9.89	QP
3	123.2655	54.36	-22.97	31.39	43.50	-12.11	QP
4	151.0666	56.85	-20.51	36.34	43.50	-7.16	QP
5	173.8135	57.19	-21.56	35.63	43.50	-7.87	QP
6	185.7882	54.07	-22.86	31.21	43.50	-12.29	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 802.11n20 mode

Above 1GHz:

Remark: The test data shows only the worst case 802.11ac20 mode.

Temperature:	23℃	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
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	48.31	46.20	8.27	38.50	48.88	68.20	-19.32	PK
V	10360.00	42.73	46.20	8.27	38.50	43.30	54.00	-10.70	AV
V	15540.00	52.79	46.30	10.35	38.70	55.54	74.00	-18.47	PK
V	15540.00	42.59	46.30	10.35	38.70	45.34	54.00	-8.67	AV
V	20720.00	56.59	57.40	11.93	37.80	48.92	68.20	-19.28	PK
V	20720.00	53.49	57.40	11.93	37.80	45.82	54.00	-8.18	AV
V	25900.00	52.10	56.50	13.45	39.70	48.75	68.20	-19.45	PK
V	25900.00	47.05	56.50	13.45	39.70	43.70	54.00	-10.30	AV
V	31080.00	50.10	56.10	16.12	41.60	51.72	68.20	-16.48	PK
V	31080.00	43.90	56.10	16.12	41.60	45.52	54.00	-8.48	AV
V	36260.00	47.23	56.80	18.29	42.80	51.52	68.20	-16.68	PK
V	36260.00	42.18	56.80	18.29	42.80	46.47	54.00	-7.53	AV
H	10360.00	47.33	46.20	8.27	38.50	47.90	68.20	-20.30	PK
H	10360.00	41.92	46.20	8.27	38.50	42.49	54.00	-11.51	AV
H	15540.00	52.13	46.30	10.35	38.70	54.88	74.00	-19.12	PK
H	15540.00	40.45	46.30	10.35	38.70	43.20	54.00	-10.80	AV
H	20720.00	56.45	57.40	11.93	37.80	48.78	68.20	-19.42	PK
H	20720.00	51.42	57.40	11.93	37.80	43.75	54.00	-10.25	AV
H	25900.00	53.35	56.50	13.45	39.70	50.00	68.20	-18.20	PK
H	25900.00	49.08	56.50	13.45	39.70	45.73	54.00	-8.27	AV
H	31080.00	49.98	56.10	16.12	41.60	51.60	68.20	-16.60	PK
H	31080.00	44.97	56.10	16.12	41.60	46.59	54.00	-7.41	AV
H	36260.00	46.19	56.80	18.29	42.80	50.48	68.20	-17.72	PK
H	36260.00	41.96	56.80	18.29	42.80	46.25	54.00	-7.75	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	48.13	46.20	8.27	38.50	48.70	68.20	-19.50	PK
V	10400.00	42.52	46.20	8.27	38.50	43.09	54.00	-10.91	AV
V	15600.00	50.47	46.30	10.35	38.40	52.92	74.00	-21.08	PK
V	15600.00	39.36	46.30	10.35	38.40	41.81	54.00	-12.19	AV
V	20800.00	55.69	57.40	11.93	37.80	48.02	68.20	-20.18	PK
V	20800.00	50.52	57.40	11.93	37.80	42.85	54.00	-11.15	AV
V	26000.00	51.50	56.50	13.45	39.80	48.25	68.20	-19.95	PK
V	26000.00	47.03	56.50	13.45	39.80	43.78	54.00	-10.22	AV
V	31200.00	49.74	56.10	16.12	41.60	51.36	68.20	-16.84	PK
V	31200.00	44.86	56.10	16.12	41.60	46.48	54.00	-7.52	AV
V	36400.00	46.88	56.80	18.29	42.80	51.17	68.20	-17.03	PK
V	36400.00	41.62	56.80	18.29	42.80	45.91	54.00	-8.09	AV
H	10400.00	48.07	46.20	8.27	38.50	48.64	68.20	-19.56	PK
H	10400.00	43.67	46.20	8.27	38.50	44.24	54.00	-9.76	AV
H	15600.00	51.30	46.30	10.35	38.40	53.75	74.00	-20.25	PK
H	15600.00	39.92	46.30	10.35	38.40	42.37	54.00	-11.63	AV
H	20800.00	54.99	57.40	11.93	37.80	47.32	68.20	-20.88	PK
H	20800.00	49.86	57.40	11.93	37.80	42.19	54.00	-11.81	AV
H	26000.00	51.10	56.50	13.45	39.80	47.85	68.20	-20.35	PK
H	26000.00	46.33	56.50	13.45	39.80	43.08	54.00	-10.92	AV
H	31200.00	49.88	56.10	16.12	41.60	51.50	68.20	-16.70	PK
H	31200.00	44.43	56.10	16.12	41.60	46.05	54.00	-7.95	AV
H	36400.00	47.73	56.80	18.29	42.80	52.02	68.20	-16.18	PK
H	36400.00	42.14	56.80	18.29	42.80	46.43	54.00	-7.57	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	46.20	46.20	8.27	38.60	46.87	68.20	-21.33	PK
V	10480.00	41.15	46.20	8.27	38.60	41.82	54.00	-12.18	AV
V	15720.00	50.11	46.30	10.35	38.40	52.56	74.00	-21.44	PK
V	15720.00	38.91	46.30	10.35	38.40	41.36	54.00	-12.64	AV
V	20960.00	56.14	57.40	11.93	37.50	48.17	68.20	-20.03	PK
V	20960.00	50.92	57.40	11.93	37.50	42.95	54.00	-11.05	AV
V	26200.00	52.96	56.50	13.45	40.10	50.01	68.20	-18.19	PK
V	26200.00	48.09	56.50	13.45	40.10	45.14	54.00	-8.86	AV
V	31440.00	50.29	56.10	16.12	41.30	51.61	68.20	-16.59	PK
V	31440.00	45.06	56.10	16.12	41.30	46.38	54.00	-7.62	AV
V	36680.00	45.90	56.80	18.29	43.10	50.49	68.20	-17.71	PK
V	36680.00	40.81	56.80	18.29	43.10	45.40	54.00	-8.60	AV
H	10480.00	45.01	46.20	8.27	38.60	45.68	68.20	-22.52	PK
H	10480.00	39.99	46.20	8.27	38.60	40.66	54.00	-13.34	AV
H	15720.00	50.37	46.30	10.35	38.40	52.82	74.00	-21.18	PK
H	15720.00	38.87	46.30	10.35	38.40	41.32	54.00	-12.68	AV
H	20960.00	55.60	57.40	11.93	37.50	47.63	68.20	-20.57	PK
H	20960.00	50.82	57.40	11.93	37.50	42.85	54.00	-11.15	AV
H	26200.00	49.73	56.50	13.45	40.10	46.78	68.20	-21.43	PK
H	26200.00	44.39	56.50	13.45	40.10	41.44	54.00	-12.56	AV
H	31440.00	49.13	56.10	16.12	41.30	50.45	68.20	-17.75	PK
H	31440.00	44.24	56.10	16.12	41.30	45.56	54.00	-8.44	AV
H	36680.00	46.99	56.80	18.29	43.10	51.58	68.20	-16.62	PK
H	36680.00	42.09	56.80	18.29	43.10	46.68	54.00	-7.32	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:	23℃	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.8G TX- 802.11n20		

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	50.95	46.10	8.77	39.10	52.72	74.00	-21.28	PK
V	11490.00	39.60	46.10	8.77	39.10	41.37	54.00	-12.63	AV
V	17235.00	45.58	47.60	11.10	38.70	47.78	68.20	-20.42	PK
V	17235.00	40.33	47.60	11.10	38.70	42.53	54.00	-11.47	AV
V	22980.00	59.64	56.90	12.73	37.70	53.17	74.00	-20.83	PK
V	22980.00	48.07	56.90	12.73	37.70	41.60	54.00	-12.40	AV
V	28725.00	49.52	55.60	14.25	40.30	48.47	68.20	-19.73	PK
V	28725.00	44.96	55.60	14.25	40.30	43.91	54.00	-10.09	AV
V	34470.00	48.36	55.90	17.26	42.10	51.82	68.20	-16.38	PK
V	34470.00	42.92	55.90	17.26	42.10	46.38	54.00	-7.62	AV
H	11490.00	50.47	46.10	8.77	39.10	52.24	74.00	-21.76	PK
H	11490.00	39.44	46.10	8.77	39.10	41.21	54.00	-12.79	AV
H	17235.00	45.49	47.60	11.10	38.70	47.69	68.20	-20.51	PK
H	17235.00	40.20	47.60	11.10	38.70	42.40	54.00	-11.60	AV
H	22980.00	58.71	56.90	12.73	37.70	52.24	74.00	-21.76	PK
H	22980.00	48.46	56.90	12.73	37.70	41.99	54.00	-12.01	AV
H	28725.00	50.96	55.60	14.25	40.30	49.91	68.20	-18.29	PK
H	28725.00	46.57	55.60	14.25	40.30	45.52	54.00	-8.48	AV
H	34470.00	48.29	55.90	17.26	42.10	51.75	68.20	-16.45	PK
H	34470.00	43.05	55.90	17.26	42.10	46.51	54.00	-7.49	AV

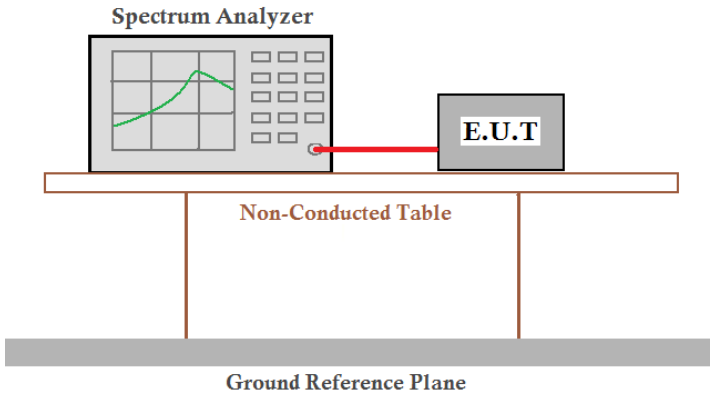
Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	51.52	46.10	8.77	39.10	53.29	74.00	-20.71	PK
V	11570.00	40.77	46.10	8.77	39.10	42.54	54.00	-11.46	AV
V	17355.00	45.17	47.60	11.10	38.70	47.37	68.20	-20.83	PK
V	17355.00	40.75	47.60	11.10	38.70	42.95	54.00	-11.05	AV
V	23140.00	61.48	56.90	12.73	37.70	55.01	74.00	-18.99	PK
V	23140.00	50.24	56.90	12.73	37.70	43.77	54.00	-10.24	AV
V	28925.00	51.07	55.60	14.25	40.30	50.02	68.20	-18.18	PK
V	28925.00	45.92	55.60	14.25	40.30	44.87	54.00	-9.13	AV
V	34710.00	47.24	55.90	17.26	42.40	51.00	68.20	-17.20	PK
V	34710.00	42.41	55.90	17.26	42.40	46.17	54.00	-7.83	AV
H	11570.00	50.70	46.10	8.77	39.10	52.47	74.00	-21.53	PK
H	11570.00	39.91	46.10	8.77	39.10	41.68	54.00	-12.32	AV
H	17355.00	45.59	47.60	11.10	38.70	47.79	68.20	-20.41	PK
H	17355.00	40.64	47.60	11.10	38.70	42.84	54.00	-11.16	AV
H	23140.00	62.69	56.90	12.73	37.70	56.22	74.00	-17.78	PK
H	23140.00	51.29	56.90	12.73	37.70	44.82	54.00	-9.18	AV
H	28925.00	50.15	55.60	14.25	40.30	49.10	68.20	-19.10	PK
H	28925.00	45.94	55.60	14.25	40.30	44.89	54.00	-9.11	AV
H	34710.00	47.55	55.90	17.26	42.40	51.31	68.20	-16.89	PK
H	34710.00	42.68	55.90	17.26	42.40	46.44	54.00	-7.56	AV

<i>Polar (H/V)</i>	<i>Frequency (MHz)</i>	<i>Meter Reading (dBuV)</i>	<i>Pre- amplifier (dB)</i>	<i>Cable Loss (dB)</i>	<i>Antenna Factor (dB)</i>	<i>Emission Level (dBuV/m)</i>	<i>Limits (dBuV/m)</i>	<i>Margin (dB)</i>	<i>Detect or Type</i>
High Channel:5825MHz									
V	11650.00	52.10	46.10	8.77	39.10	53.87	74.00	-20.13	PK
V	11650.00	40.73	46.10	8.77	39.10	42.50	54.00	-11.50	AV
V	17475.00	43.29	47.90	11.23	38.90	45.52	68.20	-22.68	PK
V	17475.00	38.68	47.90	11.23	38.90	40.91	54.00	-13.09	AV
V	23300.00	55.61	57.10	12.73	37.80	49.04	68.20	-19.16	PK
V	23300.00	50.48	57.10	12.73	37.80	43.91	54.00	-10.09	AV
V	29125.00	51.02	55.80	14.25	40.50	49.97	68.20	-18.23	PK
V	29125.00	45.71	55.80	14.25	40.50	44.66	54.00	-9.34	AV
V	34950.00	46.70	56.30	17.91	42.50	50.81	68.20	-17.39	PK
V	34950.00	42.25	56.30	17.91	42.50	46.36	54.00	-7.64	AV
H	11650.00	50.96	46.10	8.77	39.10	52.73	74.00	-21.27	PK
H	11650.00	40.05	46.10	8.77	39.10	41.82	54.00	-12.18	AV
H	17475.00	45.39	47.90	11.23	38.90	47.62	68.20	-20.58	PK
H	17475.00	40.18	47.90	11.23	38.90	42.41	54.00	-11.59	AV
H	23300.00	56.49	57.10	12.73	37.80	49.92	68.20	-18.28	PK
H	23300.00	52.34	57.10	12.73	37.80	45.77	54.00	-8.23	AV
H	29125.00	49.94	55.80	14.25	40.50	48.89	68.20	-19.31	PK
H	29125.00	44.46	55.80	14.25	40.50	43.41	54.00	-10.59	AV
H	34950.00	47.45	56.30	17.91	42.50	51.56	68.20	-16.64	PK
H	34950.00	41.80	56.30	17.91	42.50	45.91	54.00	-8.09	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) RSS-247 §6.2.1.2&6.2.4.3	
Test Method:	ANSI C63.10:2013 , RSS-Gen	
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.: 23.0°C	Humid.: 35%RH
Test voltage:	DC 19V From Adapter	
Test results:	Pass	

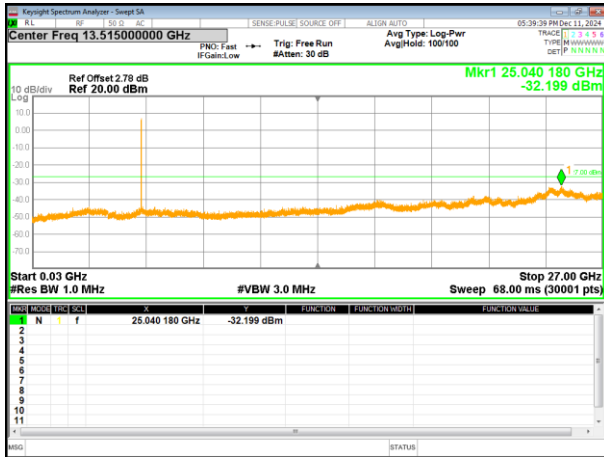
Remark:

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.

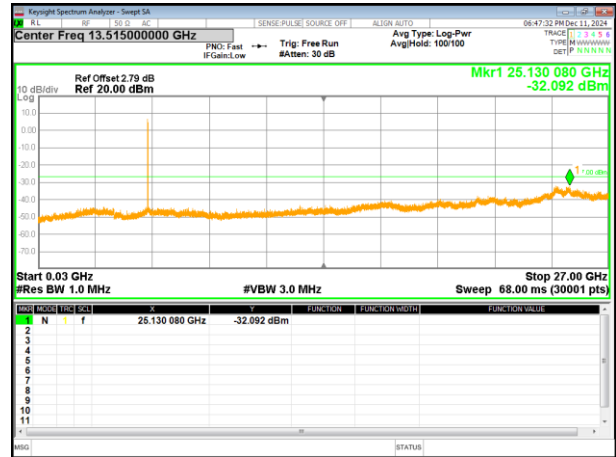
5180-5240MHz

Test Plot

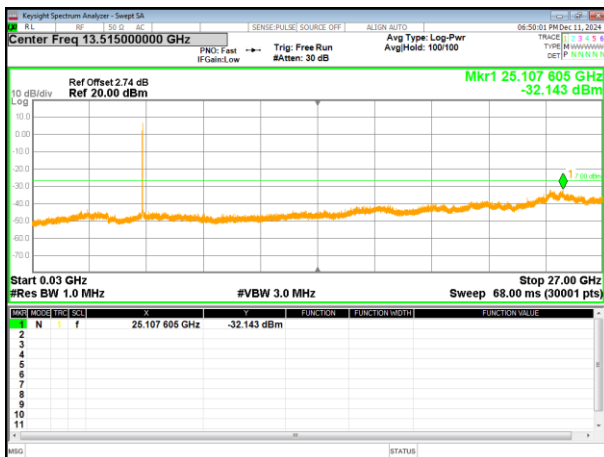
802.11a on channel 36



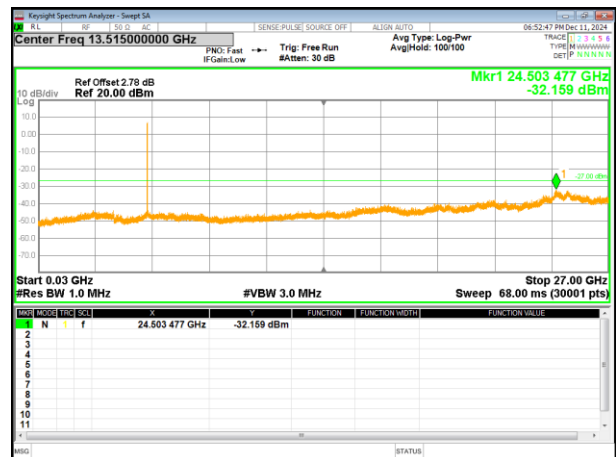
802.11a on channel 40



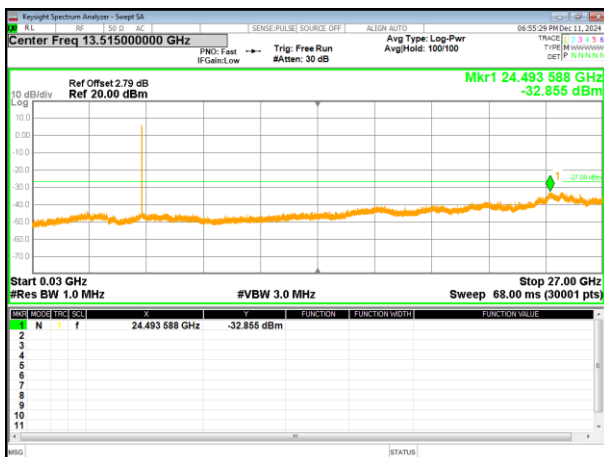
802.11a on channel 48



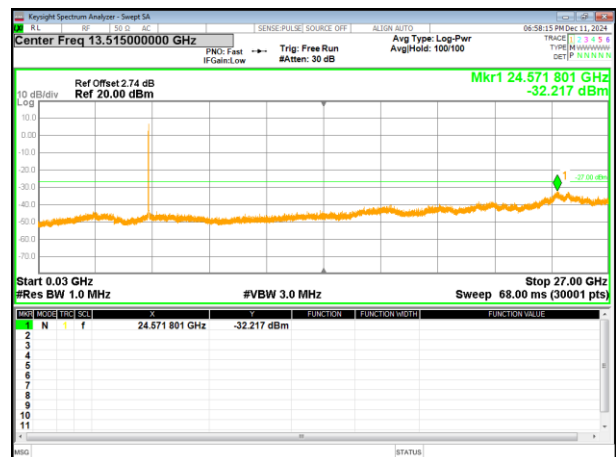
802.11n20 on channel 36



802.11n20 on channel 40

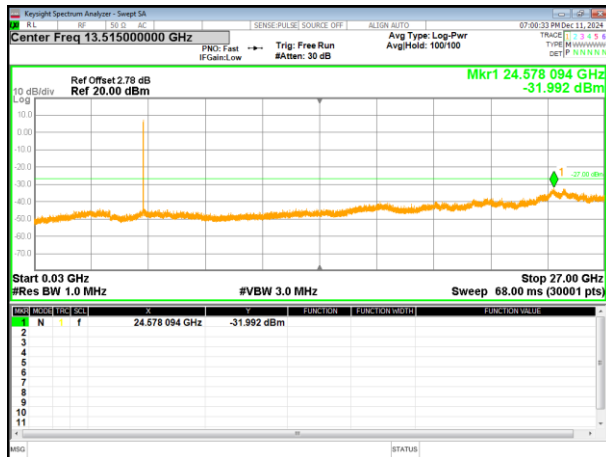


802.11n20 on channel 48

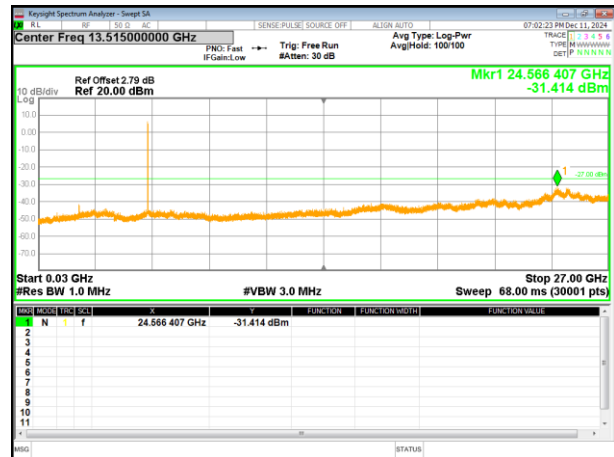


Test Plot

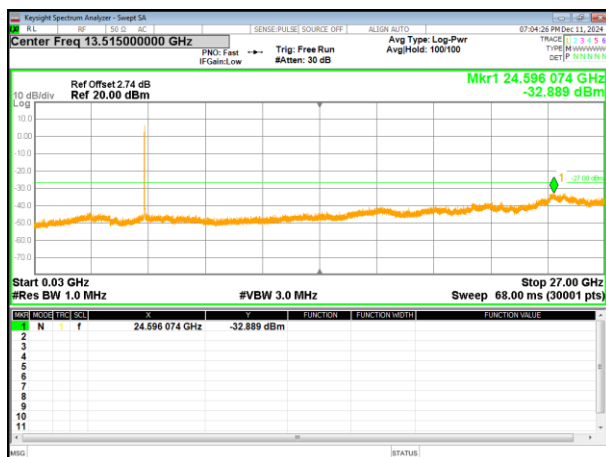
802.11ac20 on channel 36



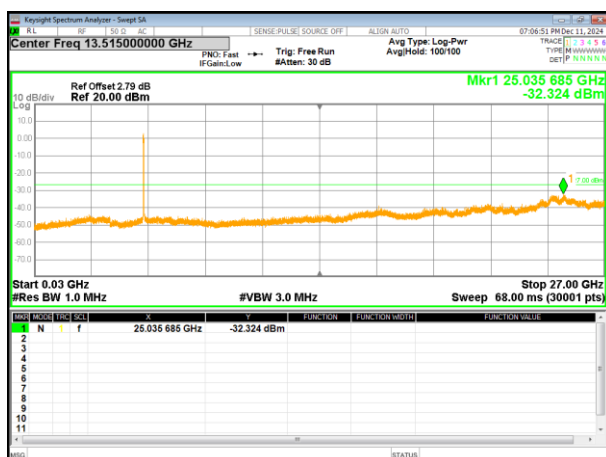
802.11ac20 on channel 40



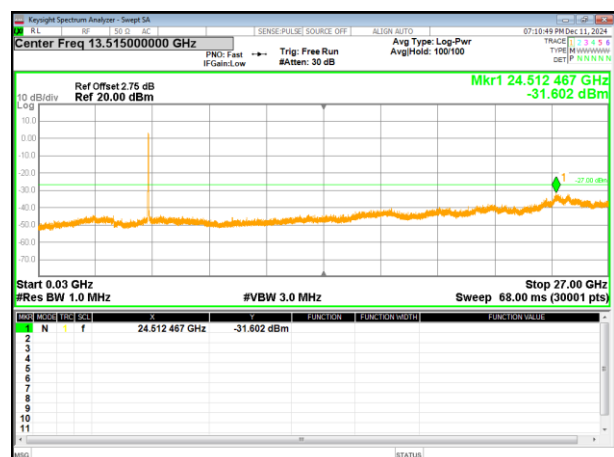
802.11ac20 on channel 48



802.11n40 on channel 38

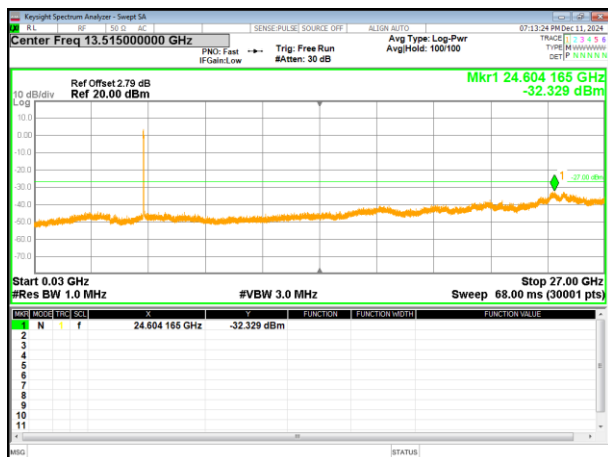


802.11n40 on channel 46

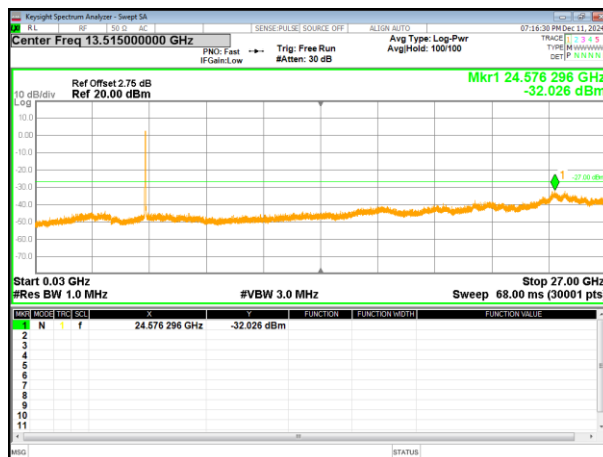


Test Plot

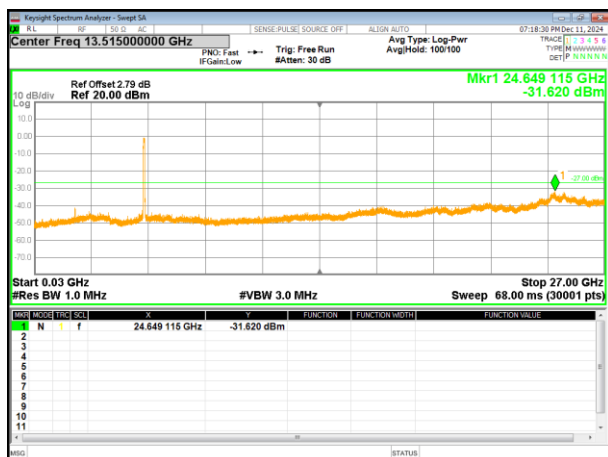
802.11ac40 on channel 38



802.11ac40 on channel 46



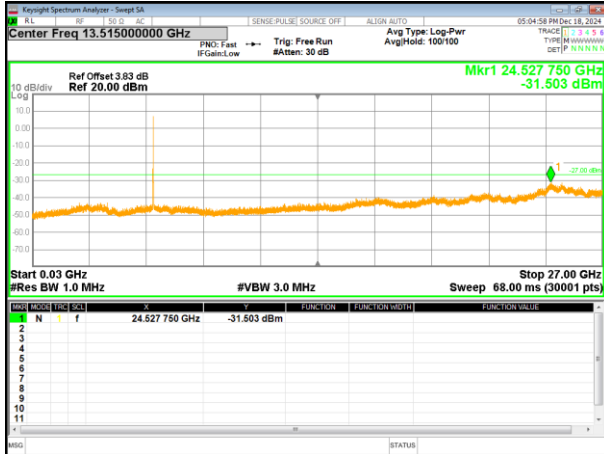
802.11ac80 on channel 42



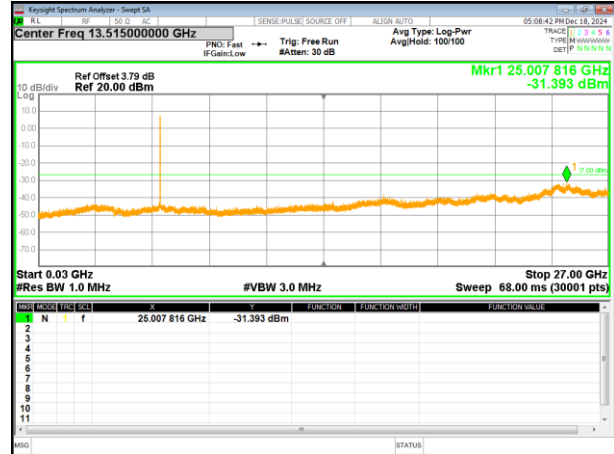
5745-5825MHz

Test Plot

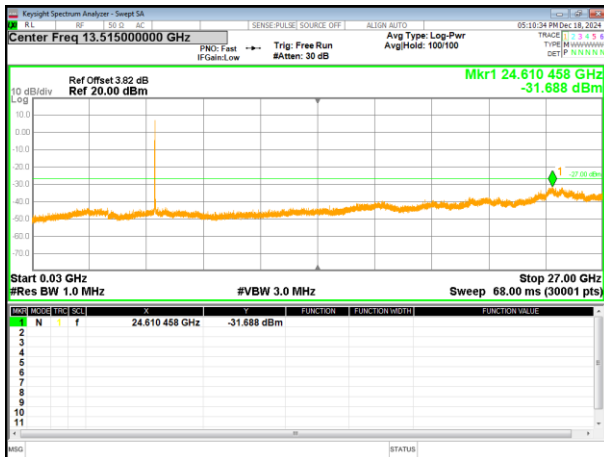
802.11a on channel 149



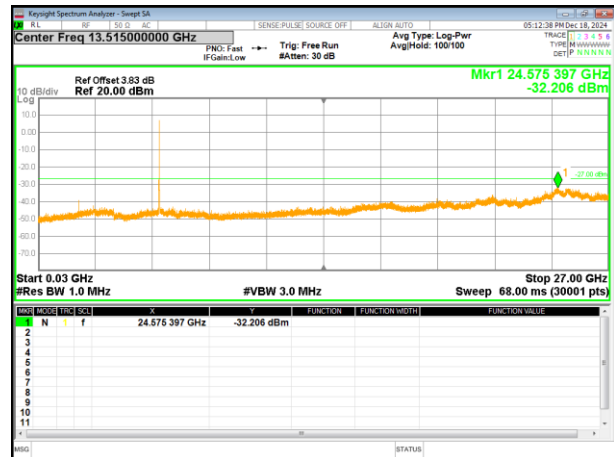
802.11a on channel 157



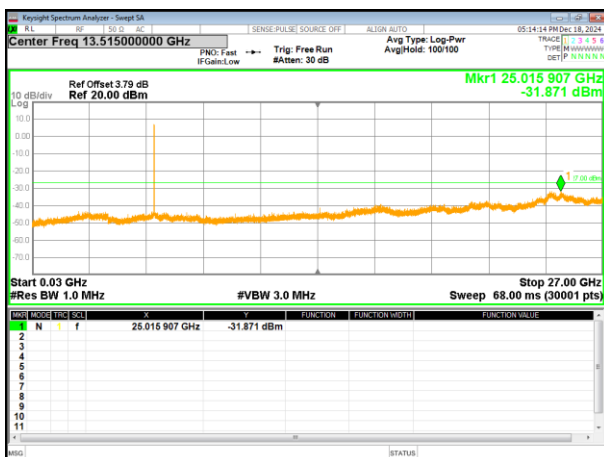
802.11a on channel 165



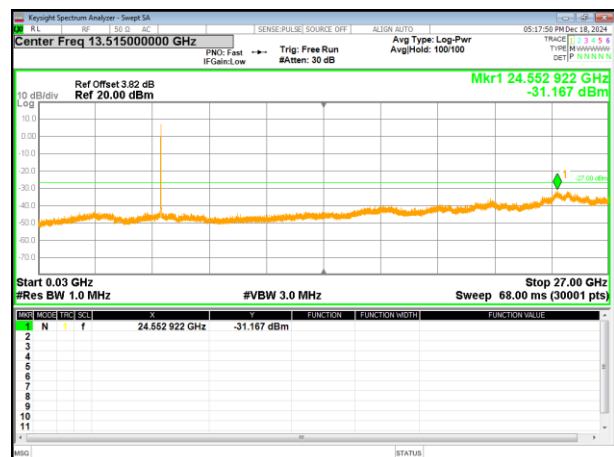
802.11n20 on channel 149



802.11n20 on channel 157

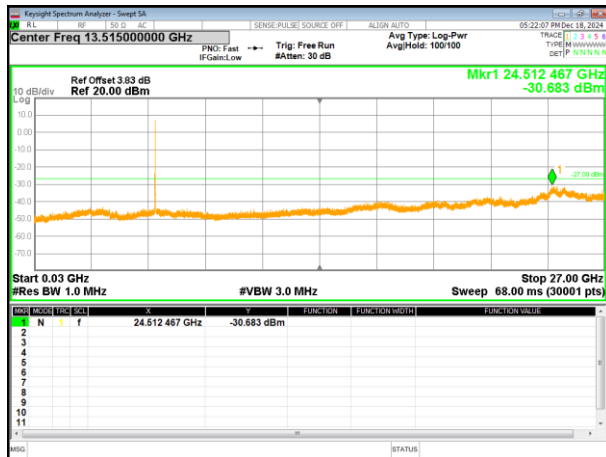


802.11n20 on channel 165

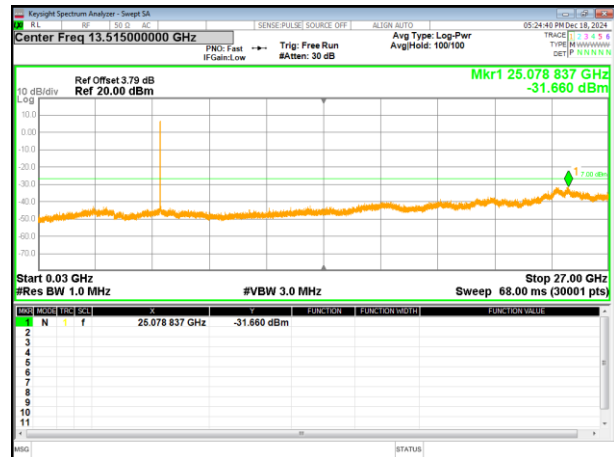


Test Plot

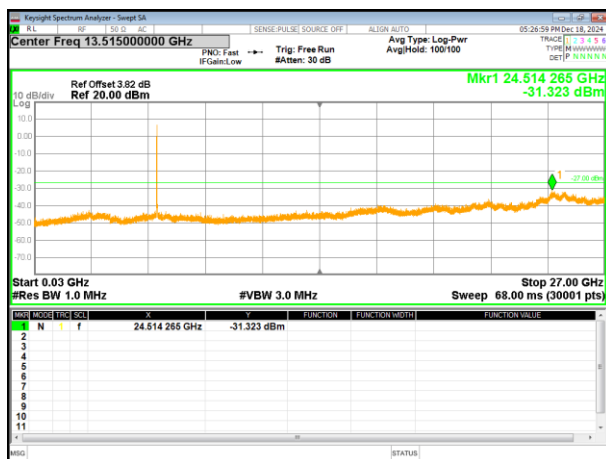
802.11ac20 on channel 149



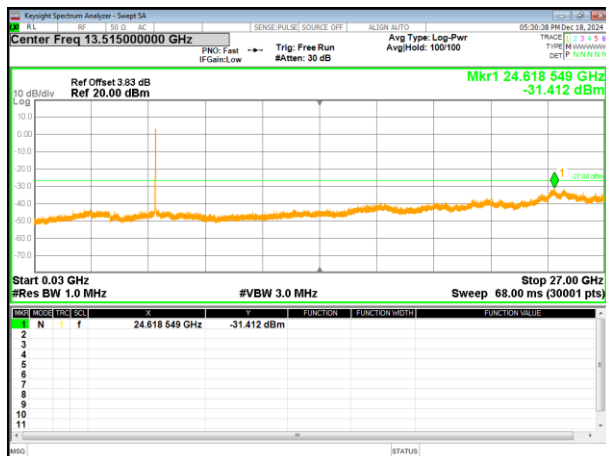
802.11ac20 on channel 157



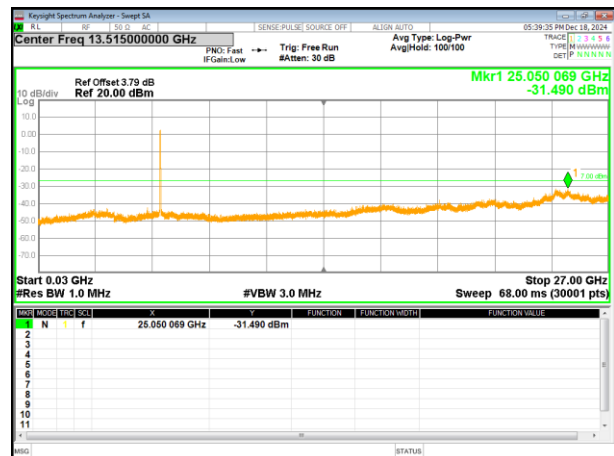
802.11ac20 on channel 165



802.11n40 on channel 151

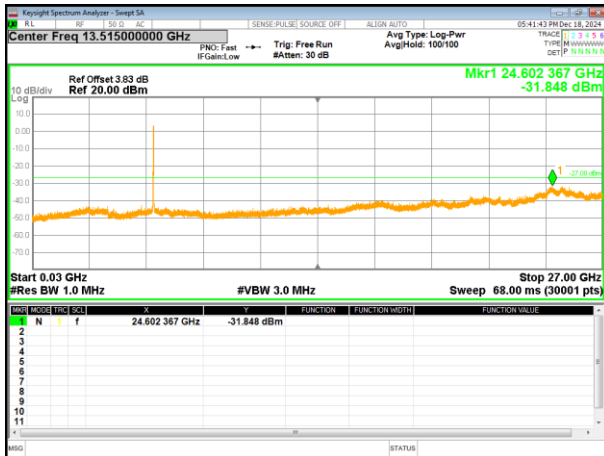


802.11n40 on channel 159

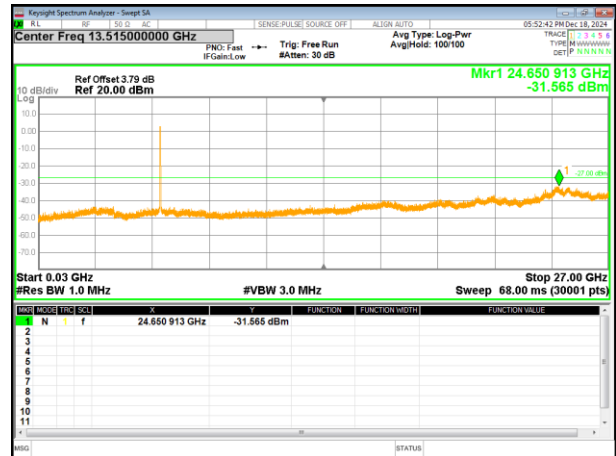


Test Plot

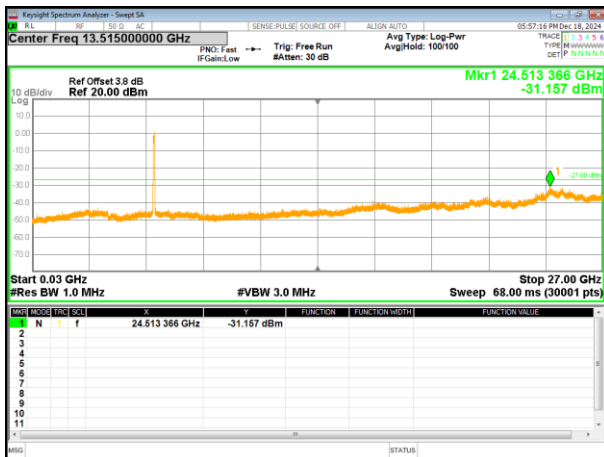
802.11ac40 on channel 151



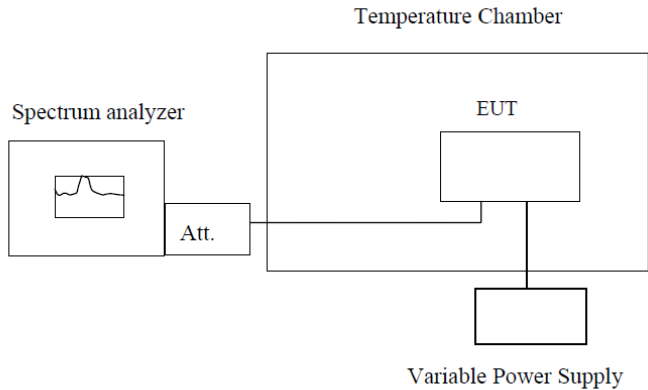
802.11ac40 on channel 159



802.11ac80 on channel 155



4.9 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g) , RSS Gen§ 8.11
Test Method:	ANSI C63.10:2013, FCC Part 2.1055, RSS Gen
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 19V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5180	5179.992	5179.966	5180.090	5180.009
	5190	5189.986	5189.977	5190.091	5190.008
	5200	5199.999	5199.968	5200.082	5200.002
	5210	5210.003	5209.969	5300.093	5209.992
	5220	5219.989	5219.976	5220.083	5220.002
	5230	5229.982	5229.994	5230.104	5300.000
	5240	5179.992	5179.966	5240.083	5240.004
-20	5180	5179.784	5179.966	5180.091	5179.999
	5190	5199.956	5189.977	5190.082	5190.000
	5200	5199.954	5199.968	5200.090	5199.991
	5210	5210.009	5209.969	5210.083	5299.999
	5220	5219.998	5219.976	5220.104	5219.991
	5230	5229.985	5229.994	5230.082	5230.012
	5240	5240.002	5239.966	5240.101	5239.990
-10	5180	5180.007	5179.977	5180.091	5179.961
	5190	5190.003	5189.978	5190.082	5189.991
	5200	5199.998	5199.969	5200.090	5200.016
	5210	5210.004	5299.977	5210.083	5210.000
	5220	5219.999	5219.969	5220.104	5219.991
	5230	5229.997	5229.990	5230.082	5230.019
	5240	5239.970	5239.968	5240.101	5240.007
0	5180	5179.998	5179.939	5180.090	5180.009
	5190	5189.989	5189.969	5190.091	5190.008
	5200	5199.997	5199.994	5200.082	5200.002
	5210	5209.989	5209.978	5300.093	5209.992
	5220	5220.010	5219.969	5220.083	5220.002
	5230	5229.988	5229.997	5230.104	5300.000
	5240	5240.006	5239.985	5240.083	5240.004
10	5180	5179.986	5179.978	5180.091	5180.009
	5190	5189.997	5189.969	5190.082	5180.009
	5200	5199.988	5199.977	5200.090	5190.005
	5210	5209.989	5209.969	5210.083	5200.000

	5220	5219.996	5219.990	5220.104	5210.006
	5230	5230.014	5229.968	5230.082	5220.001
	5240	5239.986	5239.986	5240.101	5229.999
20	5180	5180.007	5179.977	5180.091	5179.961
	5190	5190.003	5189.978	5190.082	5189.991
	5200	5199.998	5199.969	5200.090	5200.016
	5210	5210.004	5299.977	5210.083	5210.000
	5220	5219.999	5219.969	5220.104	5219.991
	5230	5229.997	5229.990	5230.082	5230.019
	5240	5239.970	5239.968	5240.101	5240.007
30	5180	5180.007	5179.977	5180.091	5179.961
	5190	5190.003	5189.978	5190.082	5189.991
	5200	5199.998	5199.969	5200.090	5200.016
	5210	5210.004	5299.977	5210.083	5210.000
	5220	5219.999	5219.969	5220.104	5219.991
	5230	5229.997	5229.990	5230.082	5230.019
	5240	5239.970	5239.968	5240.101	5240.007
40	5180	5179.997	5179.966	5180.091	5179.999
	5190	5189.998	5189.977	5190.082	5190.000
	5200	5199.989	5199.968	5200.090	5199.991
	5210	5299.997	5209.969	5210.083	5299.999
	5220	5219.989	5219.976	5220.104	5219.991
	5230	5230.010	5229.994	5230.082	5230.012
	5240	5239.988	5239.966	5240.101	5239.990
50	5180	5179.959	5179.977	5180.079	5180.124
	5190	5189.989	5189.978	5190.090	5199.999
	5200	5200.014	5199.969	5200.081	5200.024
	5210	5209.998	5299.977	5210.083	5210.002
	5220	5219.989	5219.969	5220.090	5220.017
	5230	5230.017	5229.990	5230.108	5230.010
	5240	5240.005	5239.968	5240.081	5240.018

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
DC 16.15V	5180	5179.992	5179.966	5180.100	5180.005
	5190	5189.986	5189.977	5190.096	5189.991
	5200	5199.999	5199.968	5200.091	5199.992
	5210	5210.003	5209.969	5210.098	5210.014
	5220	5219.989	5219.976	5220.093	5220.000
	5230	5229.982	5229.994	5230.091	5230.010
	5240	5180.122	5179.982	5180.091	5179.988
DC 19V	5180	5199.997	5189.976	5190.082	5189.999
	5190	5200.022	5199.976	5200.090	5199.990
	5200	5210.000	5209.988	5210.083	5209.991
	5210	5220.015	5219.979	5220.104	5219.998
	5220	5230.008	5299.982	5230.082	5230.016
	5230	5240.016	5239.979	5240.101	5240.001
	5240	5180.122	5179.982	5180.091	5179.988
DC 21.85V	5180	5189.997	5179.978	5180.090	5179.999
	5190	5199.988	5189.969	5190.091	5190.000
	5200	5209.989	5199.977	5200.082	5199.991
	5210	5219.996	5209.969	5300.093	5299.999
	5220	5230.014	5219.990	5220.083	5219.991
	5230	5239.999	5229.968	5230.104	5230.012
	5240	5179.986	5239.986	5240.083	5239.990

Frequency stability versus Temp.					
Power Supply: DC 19V					
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	5745.020	5744.959	5744.725	5744.969
	5755	5744.968	5754.975	5755.109	5754.991
	5775	5754.990	5774.974	5775.110	5775.000
	5785	5774.999	5784.977	5785.113	5784.991
	5795	5784.991	5794.988	5795.097	5795.002
	5825	5795.002	5824.969	5825.093	5825.005
-20	5745	5744.985	5744.959	5745.106	5744.992
	5755	5755.010	5754.975	5755.108	5755.018
	5775	5774.991	5774.974	5775.111	5775.014
	5785	5785.001	5784.977	5785.103	5784.998
	5795	5794.999	5794.988	5795.095	5794.987
	5825	5825.009	5824.969	5825.104	5824.922
-10	5745	5744.990	5744.970	5745.090	5745.056
	5755	5754.997	5754.977	5755.115	5744.621
	5775	5774.989	5774.994	5775.096	5755.005
	5785	5784.982	5784.970	5785.105	5775.006
	5795	5794.989	5794.966	5795.104	5785.009
	5825	5824.918	5824.969	5825.114	5794.992
0	5745	5744.985	5744.969	5745.095	5744.992
	5755	5755.010	5754.986	5755.102	5754.999
	5775	5774.991	5774.987	5775.094	5775.016
	5785	5785.001	5784.969	5785.086	5784.992
	5795	5794.999	5794.986	5795.094	5794.988
	5825	5825.009	5824.984	5825.023	5824.991
10	5745	5744.991	5744.969	5745.096	5744.991
	5755	5754.998	5754.976	5755.103	5754.980
	5775	5775.015	5774.968	5775.120	5774.991
	5785	5784.992	5784.960	5785.096	5784.998
	5795	5794.988	5794.967	5795.093	5795.016
	5825	5824.991	5824.896	5825.096	5825.008
20	5745	5745.001	5744.994	5745.106	5744.991
	5755	5755.015	5754.966	5755.120	5755.010
	5775	5775.000	5774.989	5775.105	5774.990
	5785	5784.988	5784.989	5785.092	5785.017
	5795	5794.982	5794.980	5795.087	5795.009
	5825	5825.016	5824.995	5825.121	5825.018
30	5745	5744.980	5744.980	5745.090	5745.002
	5755	5754.996	5754.982	5755.115	5755.016
	5775	5774.995	5774.985	5775.096	5775.001
	5785	5784.999	5784.977	5785.105	5784.988
	5795	5795.010	5794.968	5795.104	5794.982
	5825	5824.991	5824.977	5825.114	5825.016
40	5745	5745.001	5744.969	5745.090	5744.986
	5755	5755.003	5754.986	5755.115	5755.011
	5775	5775.006	5774.987	5775.096	5774.992
	5785	5784.999	5784.969	5785.105	5785.001

50	5795	5794.990	5794.986	5795.104	5794.999
	5825	5824.999	5824.984	5825.114	5825.009
	5745	5744.985	5744.969	5745.095	5744.992
	5755	5755.010	5754.986	5755.102	5754.999
	5775	5774.991	5774.987	5775.094	5775.016
	5785	5785.001	5784.969	5785.086	5784.992
	5795	5794.999	5794.986	5795.094	5794.988
	5825	5825.009	5824.984	5825.023	5824.991

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
DC 16.15V	5745	5744.985	5744.969	5745.095	5744.992
	5755	5755.010	5754.986	5755.102	5754.999
	5775	5774.991	5774.987	5775.094	5775.016
	5785	5785.001	5784.969	5785.086	5784.992
	5795	5794.999	5794.986	5795.094	5794.988
	5825	5825.009	5824.984	5825.023	5824.991
DC 19V	5745	5744.991	5744.980	5745.095	5745.016
	5755	5754.998	5754.982	5755.112	5754.988
	5775	5775.015	5774.985	5775.113	5775.011
	5785	5784.992	5784.977	5785.095	5785.011
	5795	5794.988	5794.968	5795.113	5795.002
	5825	5824.991	5824.977	5825.111	5825.017
DC 21.85V	5745	5745.001	5744.948	5745.073	5744.991
	5755	5755.003	5754.919	5755.095	5754.998
	5775	5775.006	5774.943	5775.104	5774.990
	5785	5784.999	5784.944	5785.095	5784.982
	5795	5794.990	5794.934	5795.107	5794.989
	5825	5824.999	5824.955	5825.110	5824.918

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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