

IC:SKI.WB663U.1 ANT4

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	2.941	2.855	0.110	2.965	30
	5785 MHz	2.926	2.840	0.110	2.950	30
	5825 MHz	2.497	2.411	0.110	2.521	30
802.11 n20	5745 MHz	2.989	2.903	0.380	3.283	30
	5785 MHz	3.191	3.105	0.380	3.485	30
	5825 MHz	3.472	3.386	0.380	3.766	30
802.11ac20	5745 MHz	2.658	2.572	0.050	2.622	30
	5785 MHz	3.503	3.417	0.050	3.467	30
	5825 MHz	3.215	3.129	0.050	3.179	30
802.11 n40	5755 MHz	-0.320	-0.406	0.340	-0.066	30
	5795 MHz	-1.286	-1.372	0.340	-1.032	30
802.11ac40	5755 MHz	-0.900	-0.986	0.600	-0.386	30
	5795 MHz	-0.969	-1.055	0.600	-0.455	30
802.11ac80	5775 MHz	-4.373	-4.459	0.430	-4.029	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

IC:SKI.WB800D.3 ANT2

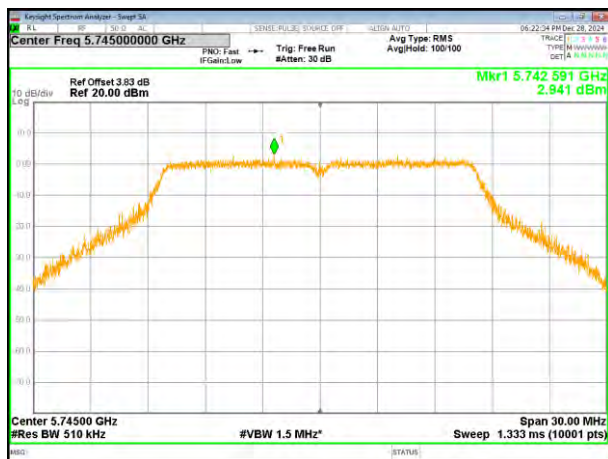
Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density (dBm/500KHz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/MHz)
802.11 a	5745 MHz	2.585	2.499	0.75	3.25	30
	5785 MHz	2.251	2.165	0.75	2.92	30
	5825 MHz	2.143	2.057	0.75	2.81	30
802.11 n20	5745 MHz	2.757	2.671	0.51	3.18	30
	5785 MHz	2.292	2.206	0.51	2.72	30
	5825 MHz	2.105	2.019	0.51	2.53	30
802.11ac20	5745 MHz	3.176	3.09	1.96	5.05	30
	5785 MHz	1.182	1.096	1.96	3.06	30
	5825 MHz	1.782	1.696	1.96	3.66	30
802.11 n40	5755 MHz	-1.587	-1.673	0.64	-1.03	30
	5795 MHz	-0.181	-0.267	0.64	0.37	30
802.11ac40	5755 MHz	-0.304	-0.39	0.25	-0.14	30
	5795 MHz	-1.317	-1.403	0.25	-1.15	30
802.11ac80	5775 MHz	-4.235	-4.321	0.16	-4.16	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

IC:SKI.WB663U.1 ANT4

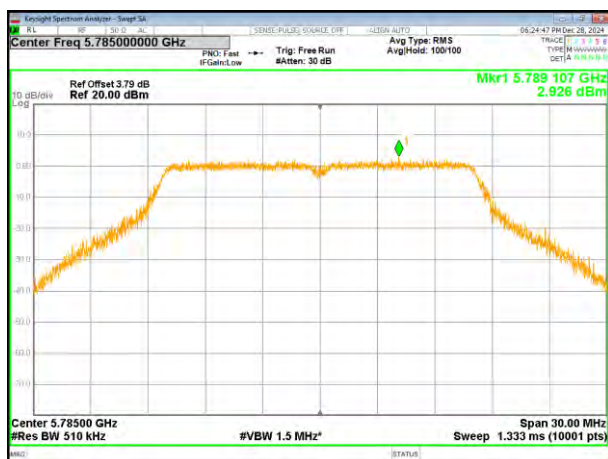
(802.11a) PSD plot on channel 149



(802.11n20) PSD plot on channel 149



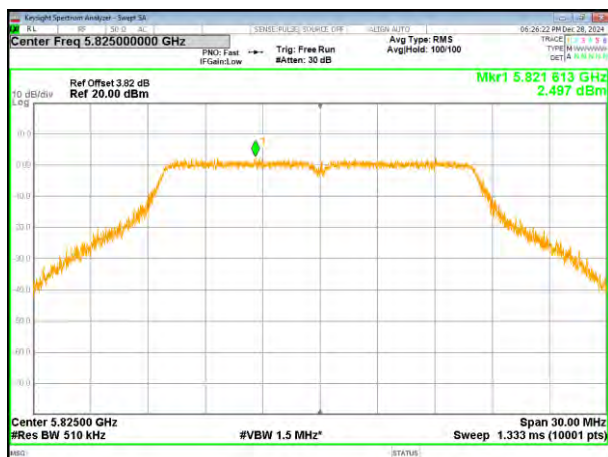
(802.11a) PSD plot on channel 157



(802.11n20) PSD plot on channel 157



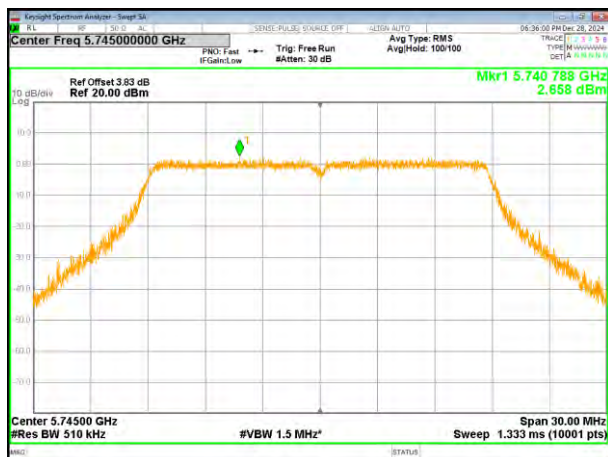
(802.11a) PSD plot on channel 165



(802.11n20) PSD plot on channel 165



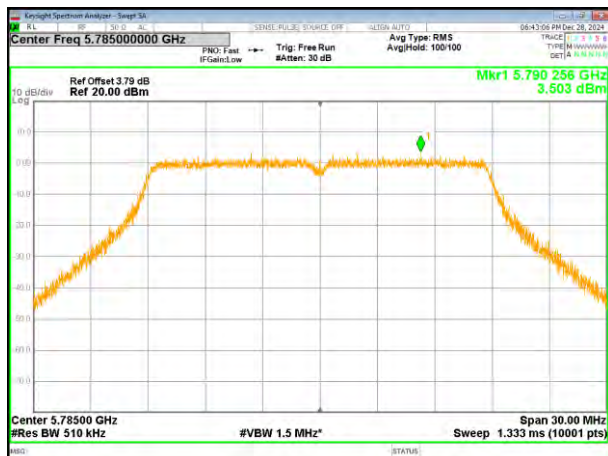
(802.11ac20) PSD plot on channel 149



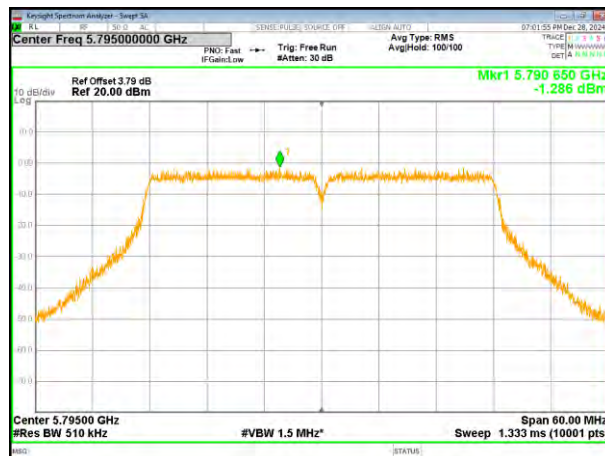
(802.11n40) PSD plot on channel 151



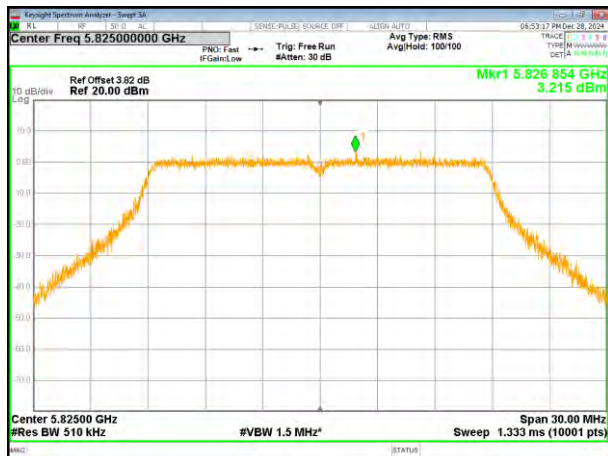
(802.11ac20) PSD plot on channel 157



(802.11n40) PSD plot on channel 159



(802.11ac20) PSD plot on channel 165



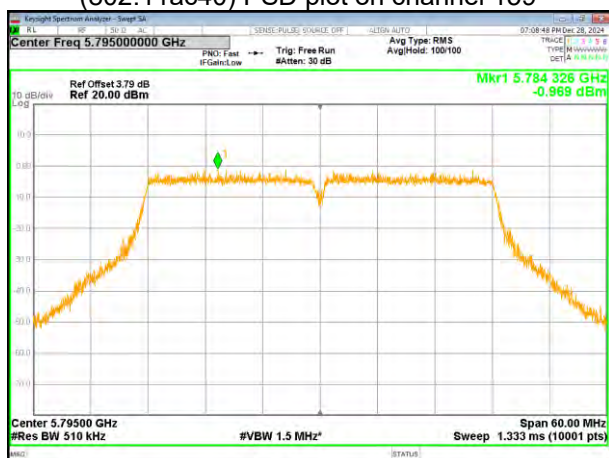
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

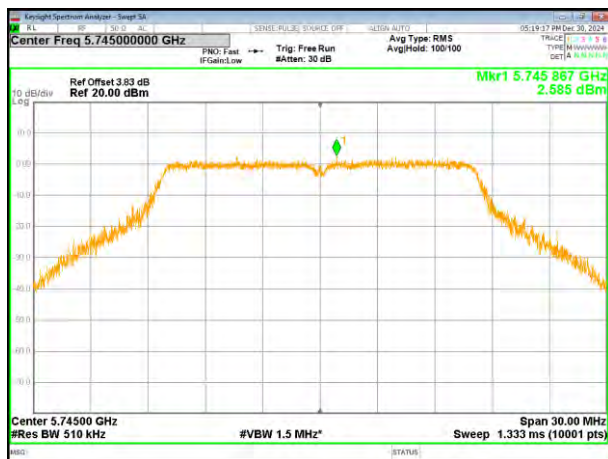


(802.11ac40) PSD plot on channel 159

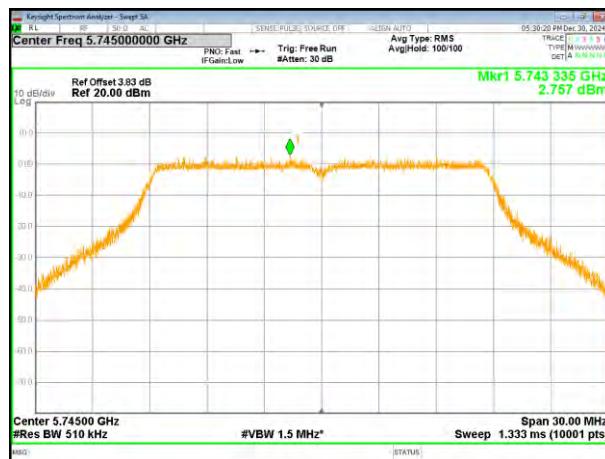


IC:SKI.WB800D.3 ANT2

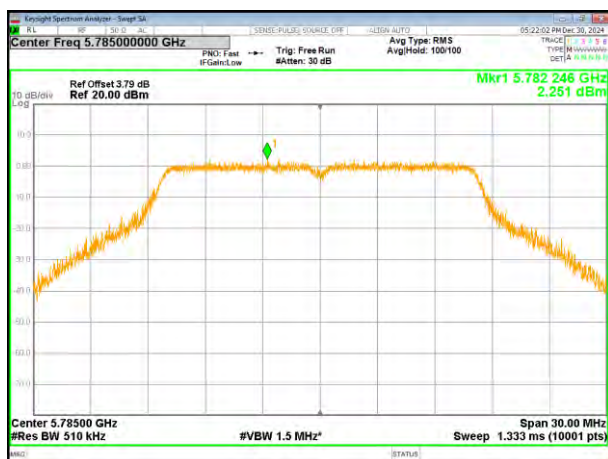
(802.11a) PSD plot on channel 149



(802.11n20) PSD plot on channel 149



(802.11a) PSD plot on channel 157



(802.11n20) PSD plot on channel 157



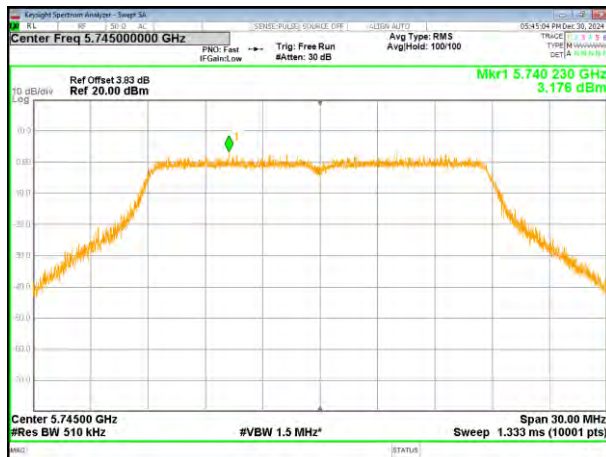
(802.11a) PSD plot on channel 165



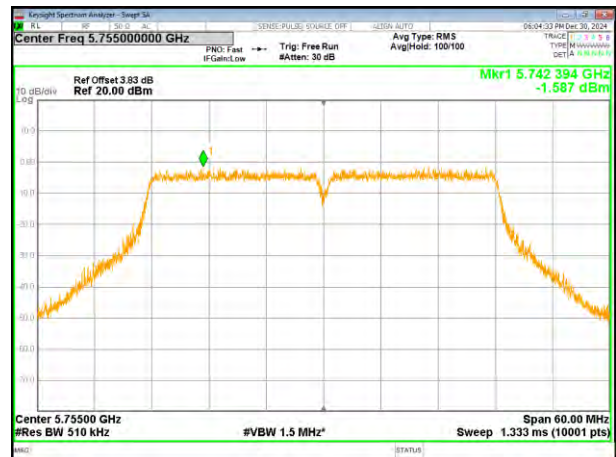
(802.11n20) PSD plot on channel 165



(802.11ac20) PSD plot on channel 149



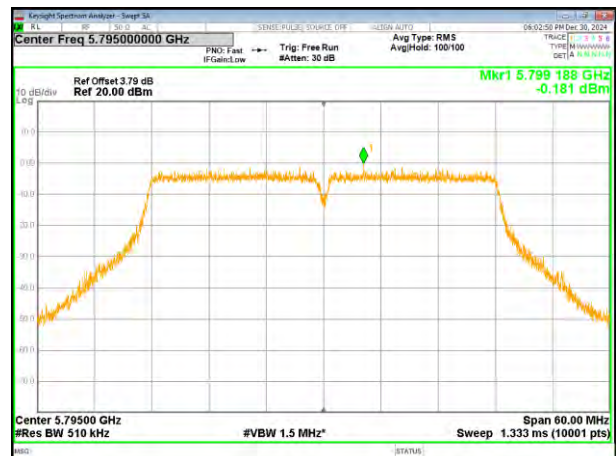
(802.11n40) PSD plot on channel 151



(802.11ac20) PSD plot on channel 157



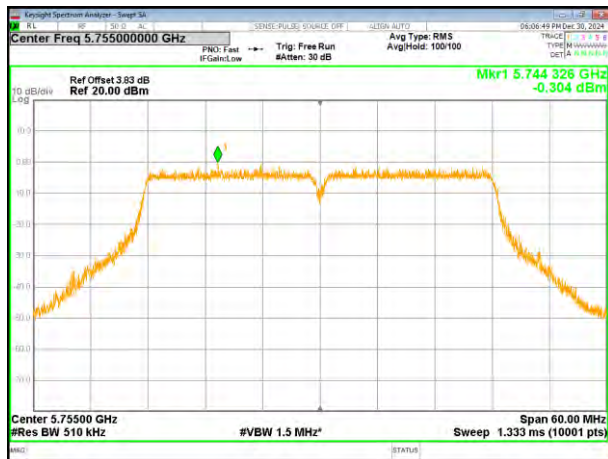
(802.11n40) PSD plot on channel 159



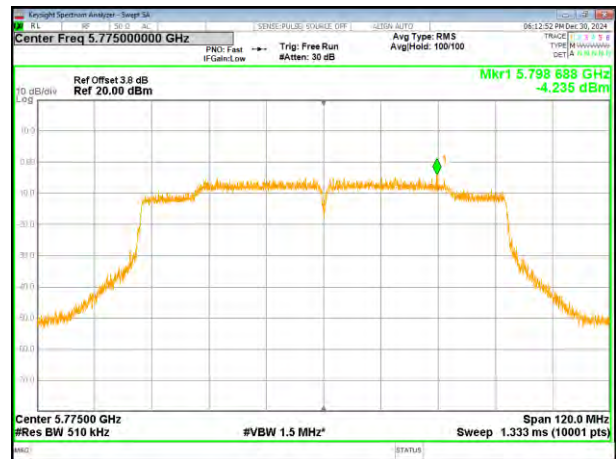
(802.11ac20) PSD plot on channel 165



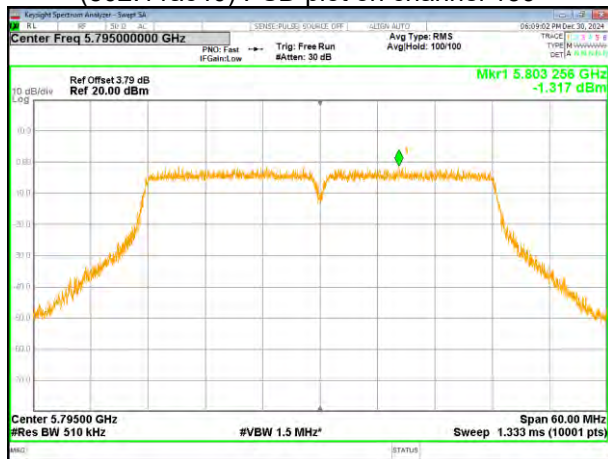
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

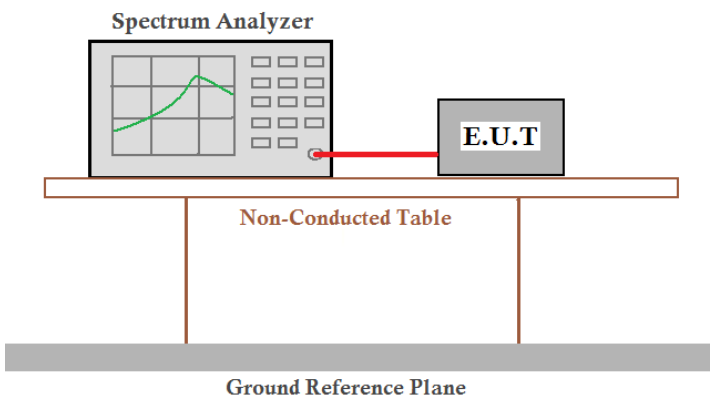


(802.11ac40) PSD plot on channel 159



4.7 Band edge

4.7.1 Conducted test Method

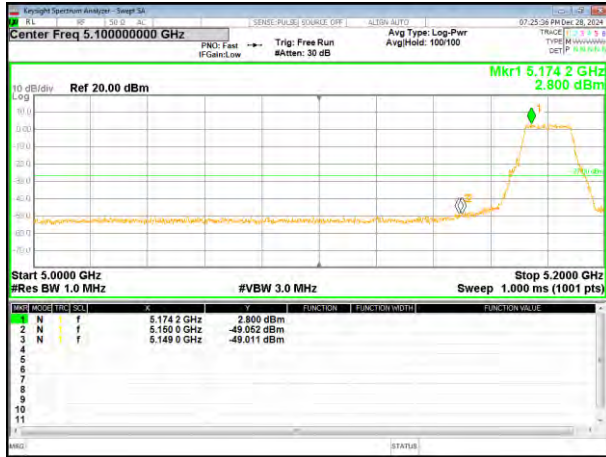
Test Requirement:	FCC Part15 C Section 15.209 and 15.205	
Test Method:	ANSI C63.10: 2013	
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table. The table is supported by 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:	AC120/60Hz	
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

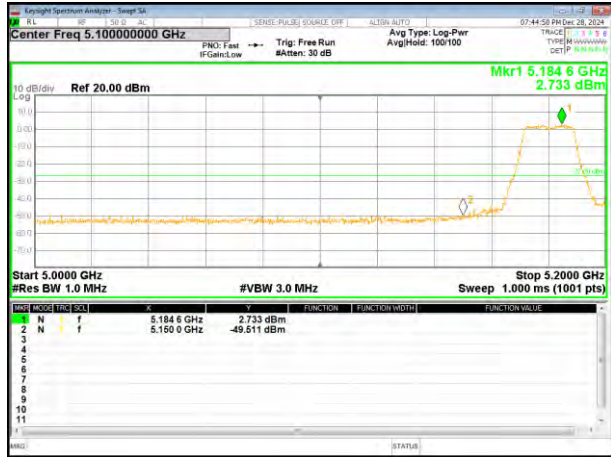
IC:SKI.WB663U.1 ANT4

5.180~5.240 GHz

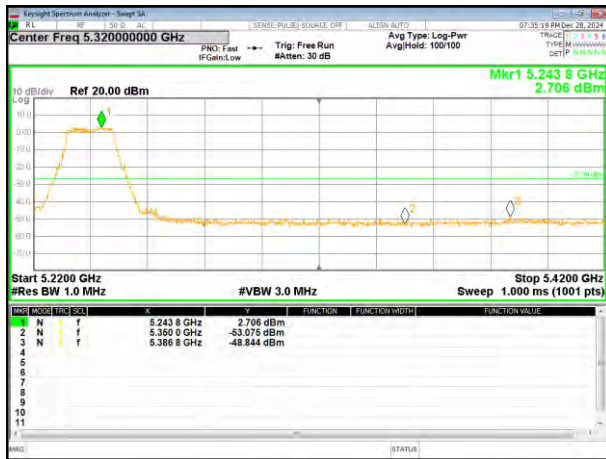
(802.11a) Band Edge, Left Side



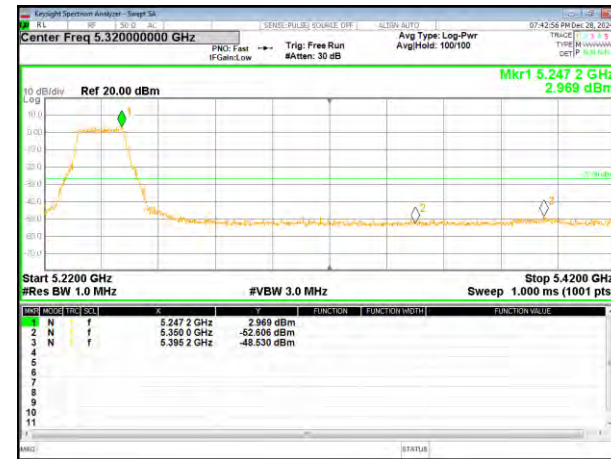
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

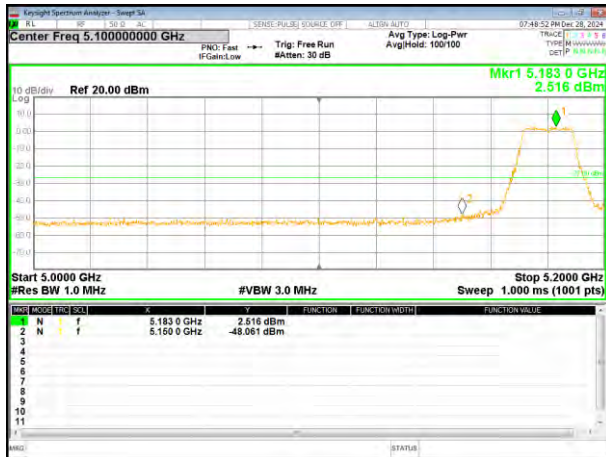


(802.11n20) Band Edge, Right Side

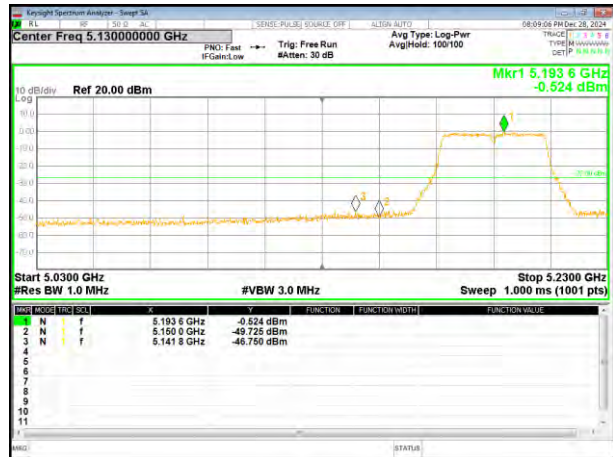


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

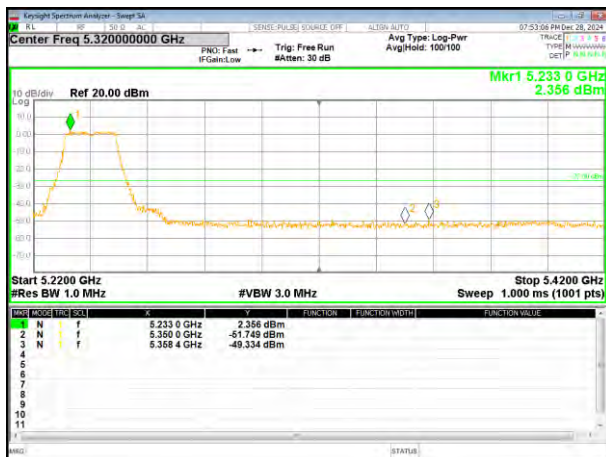
(802.11ac20) Band Edge, Left Side



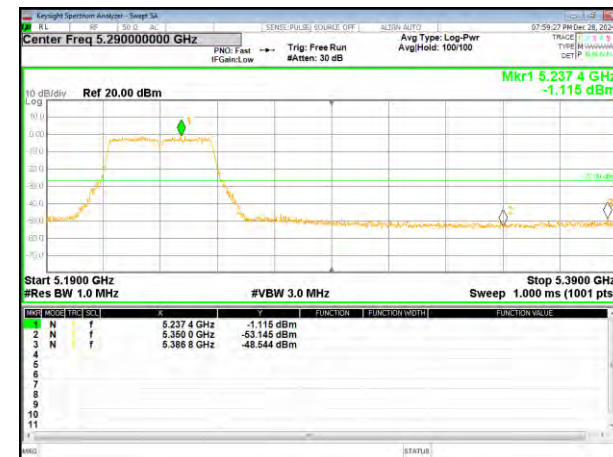
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

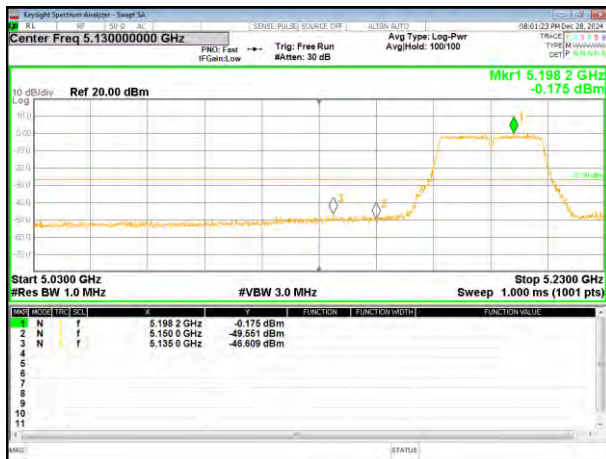


(802.11n40) Band Edge, Right Side



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

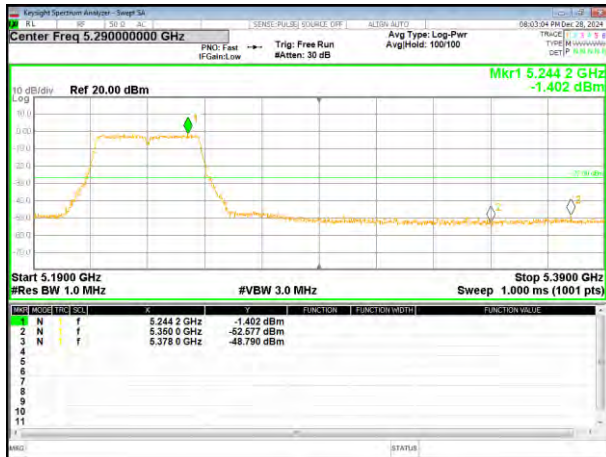
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



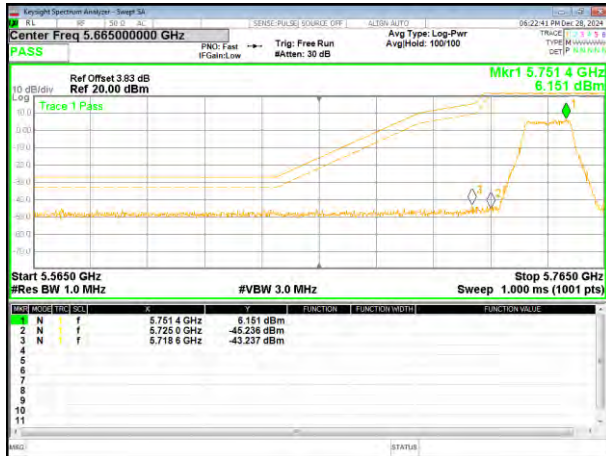
(802.11ac40) Band Edge, Right Side



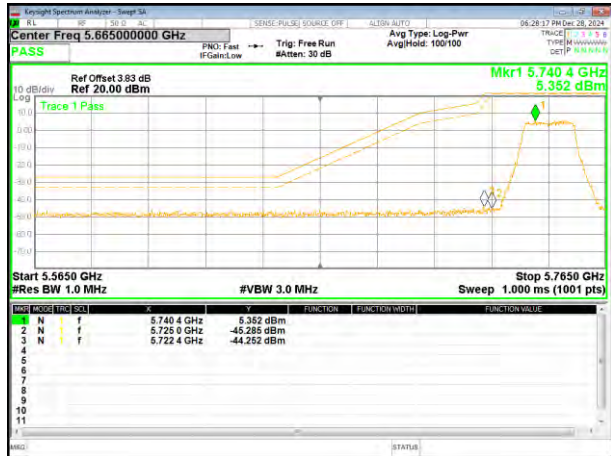
Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

5.745~5.825 GHz

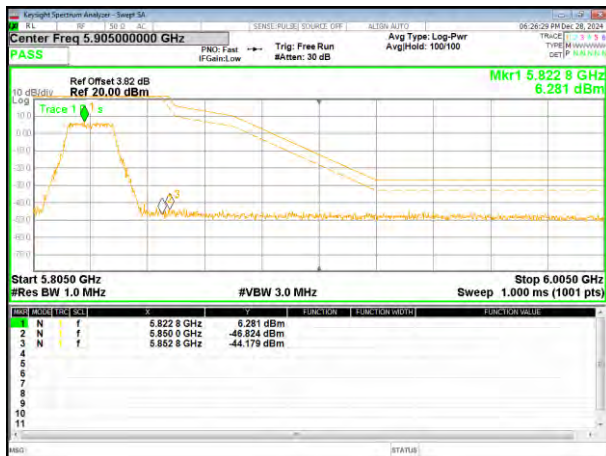
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

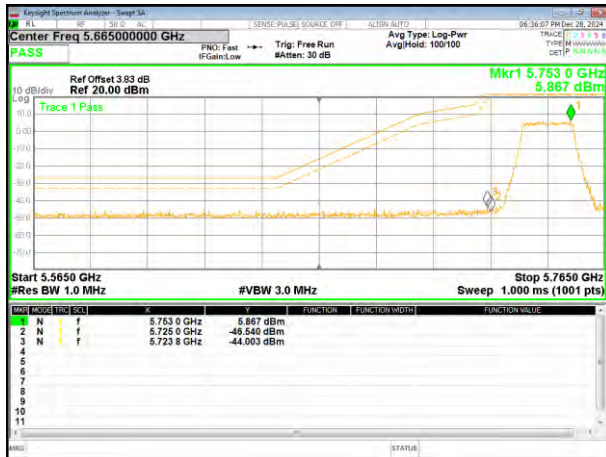


(802.11n20) Band Edge, Right Side

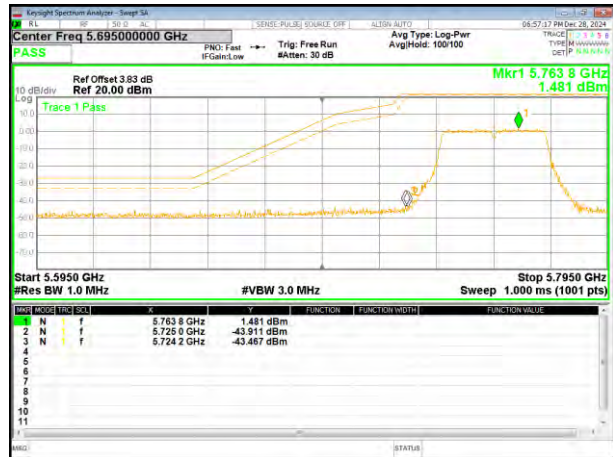


Remark: Antenna gain and cable loss data included in Offset.

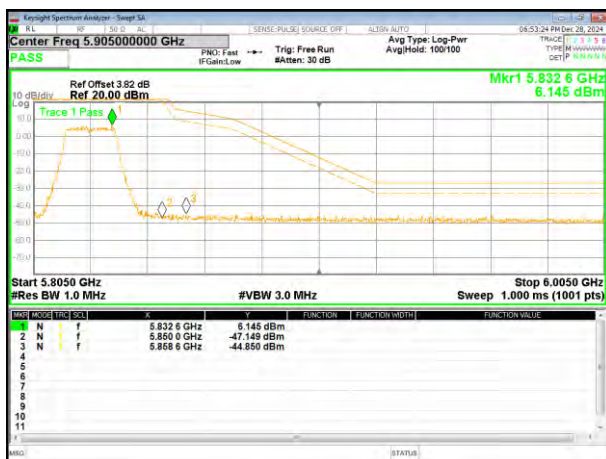
(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

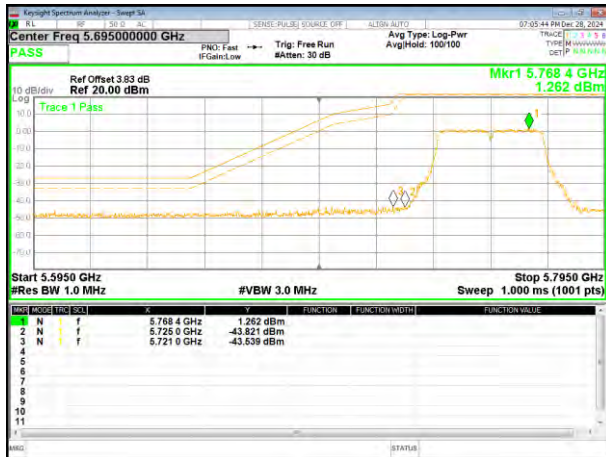


(802.11n40) Band Edge, Right Side



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

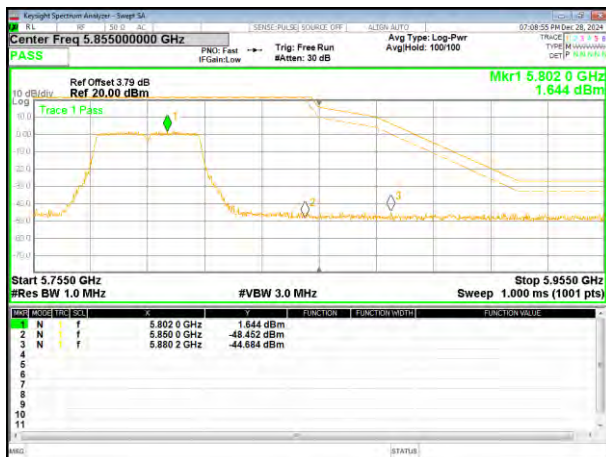
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



(802.11ac40) Band Edge, Right Side

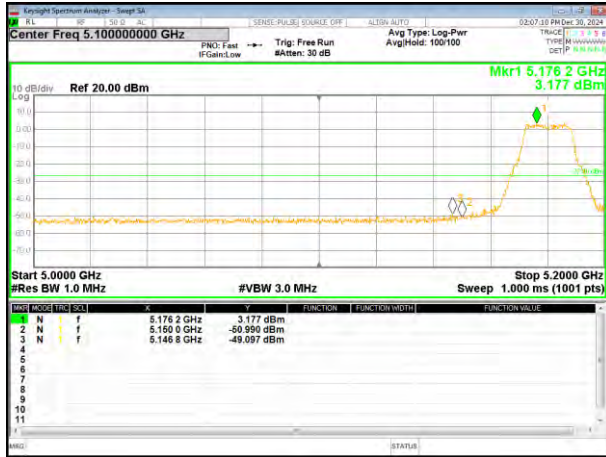


Remark: Antenna gain and cable loss data included in Offset.

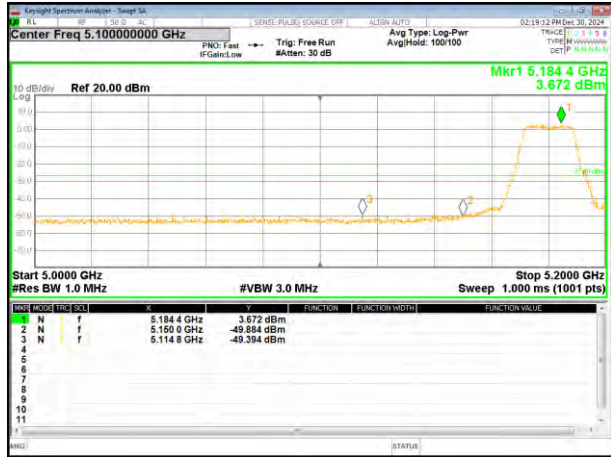
IC:SKI.WB800D.3 ANT2

5.180~5.240 GHz

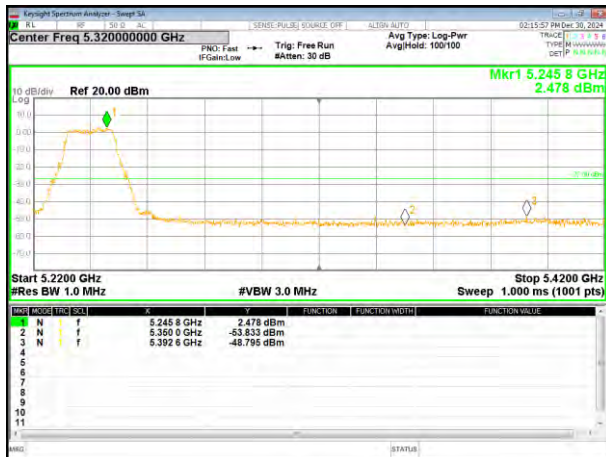
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

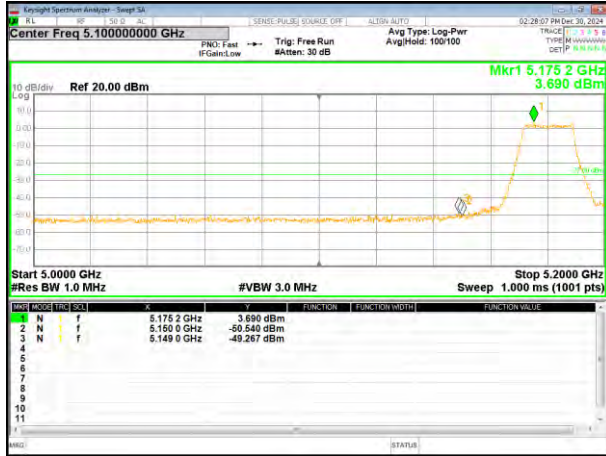


(802.11n20) Band Edge, Right Side

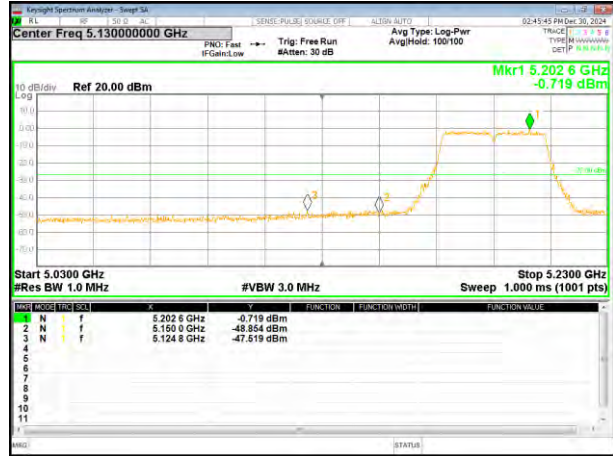


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

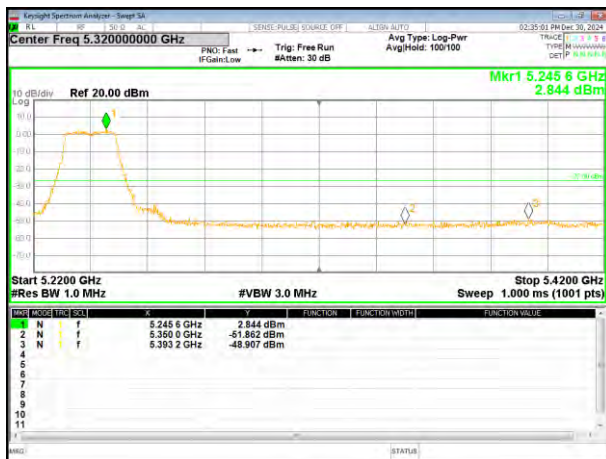
(802.11ac20) Band Edge, Left Side



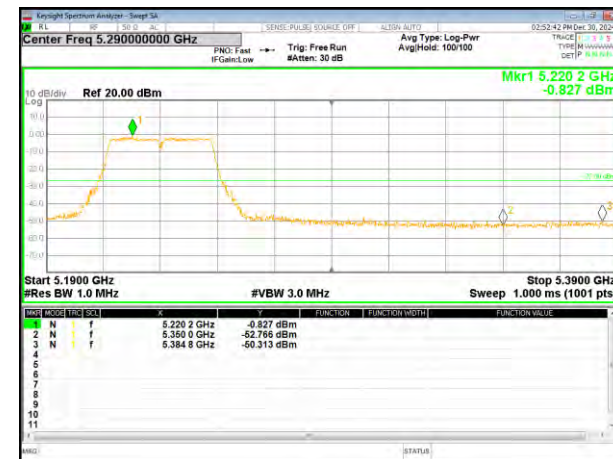
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

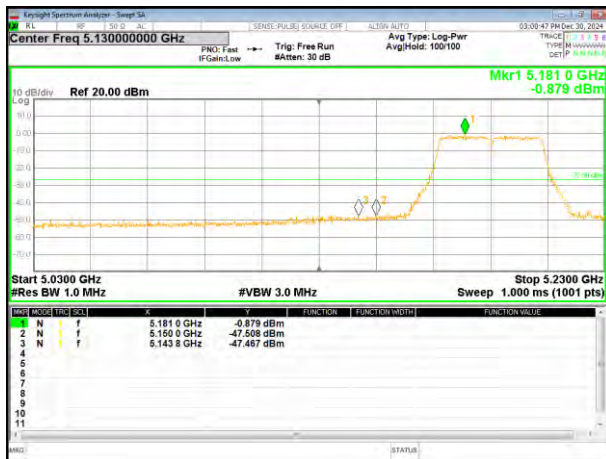


(802.11n40) Band Edge, Right Side

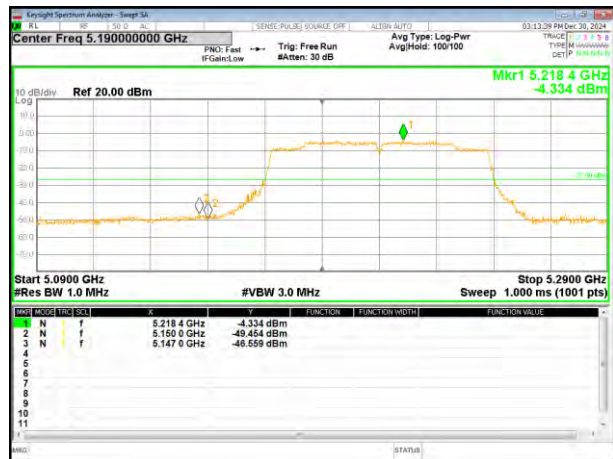


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

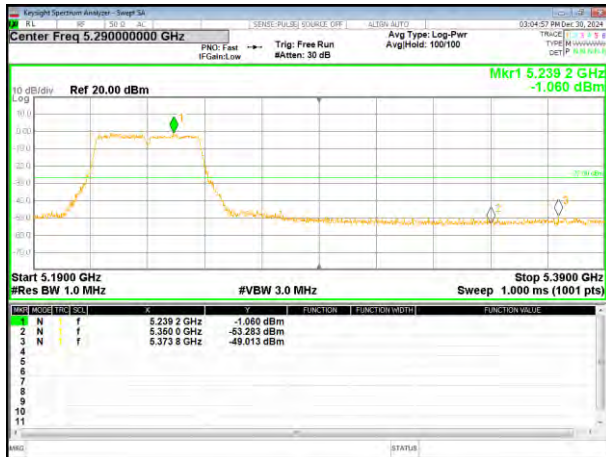
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



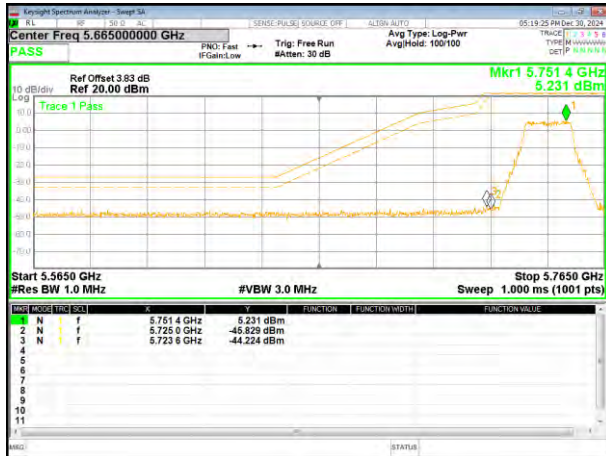
(802.11ac40) Band Edge, Right Side



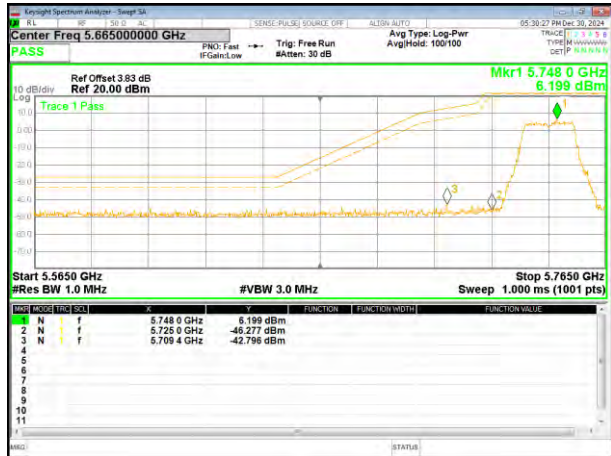
Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

5.745~5.825 GHz

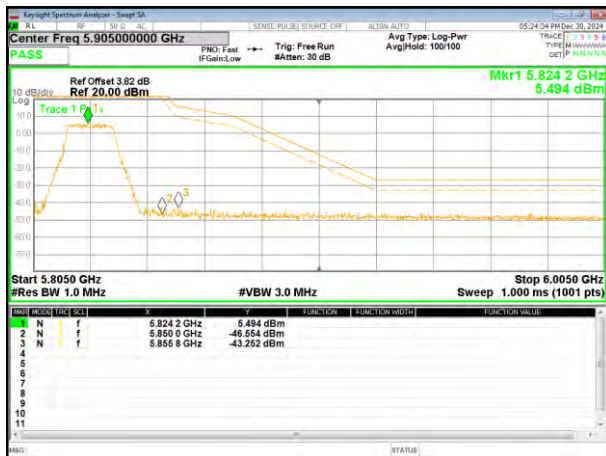
(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

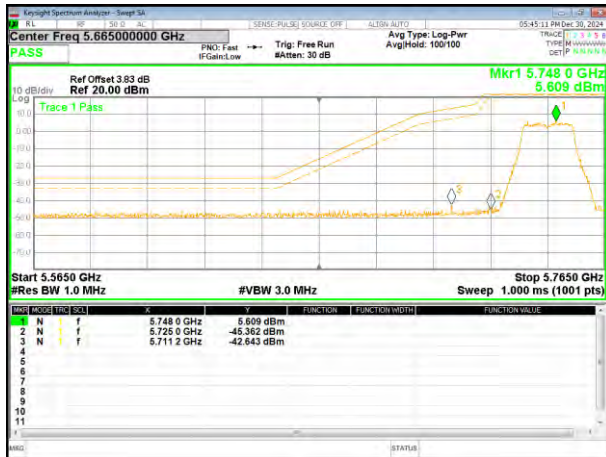


(802.11n20) Band Edge, Right Side

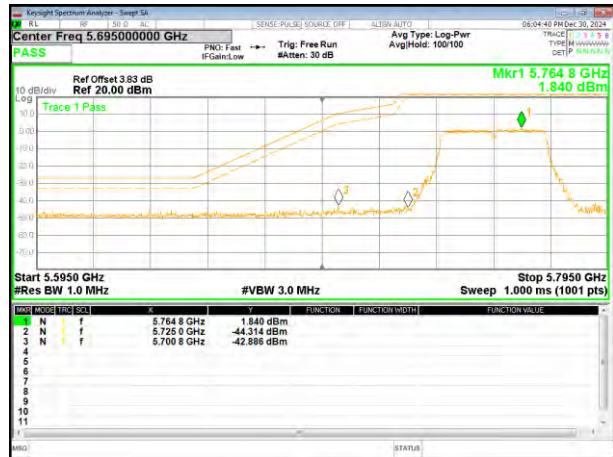


Remark: Antenna gain and cable loss data included in Offset.

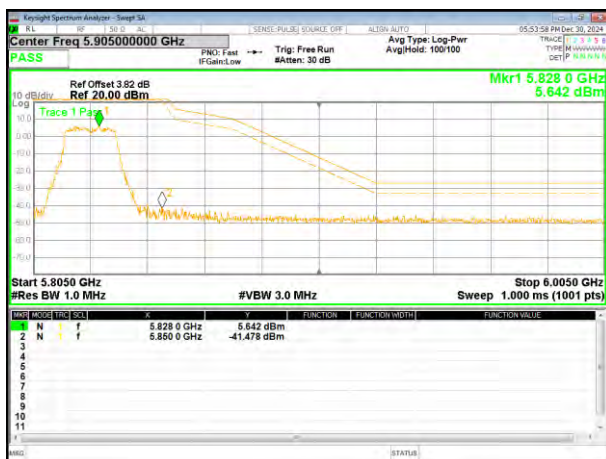
(802.11ac20) Band Edge, Left Side



(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

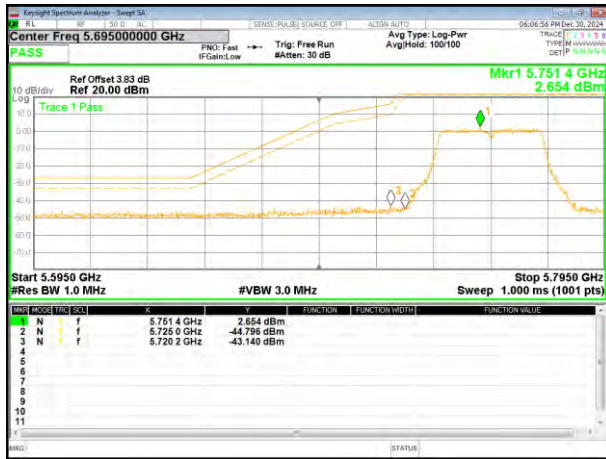


(802.11n40) Band Edge, Right Side



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

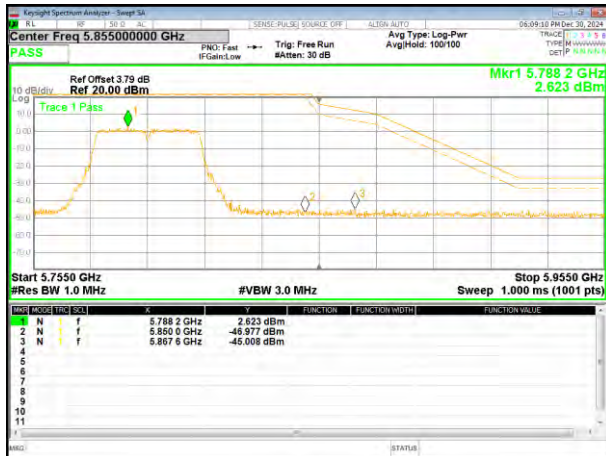
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



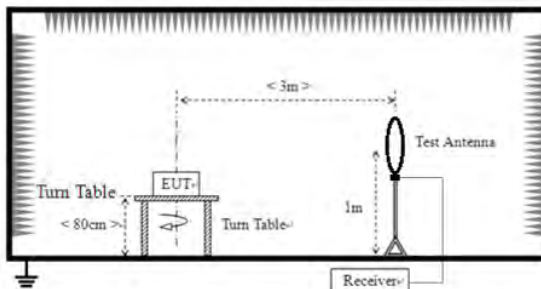
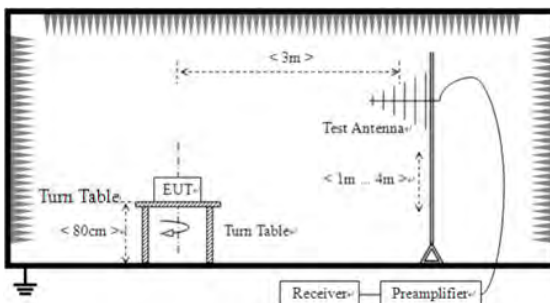
(802.11ac40) Band Edge, Right Side

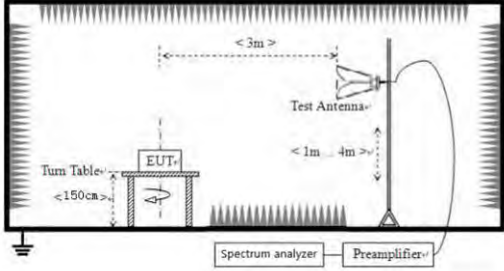


Remark: Antenna gain and cable loss data included in Offset.

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)				
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				
					
	For radiated emissions above 1GHz				

	
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

Remarks:

1. The report only shows the worst mode.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

Measurement Data:

9 kHz ~ 30 MHz

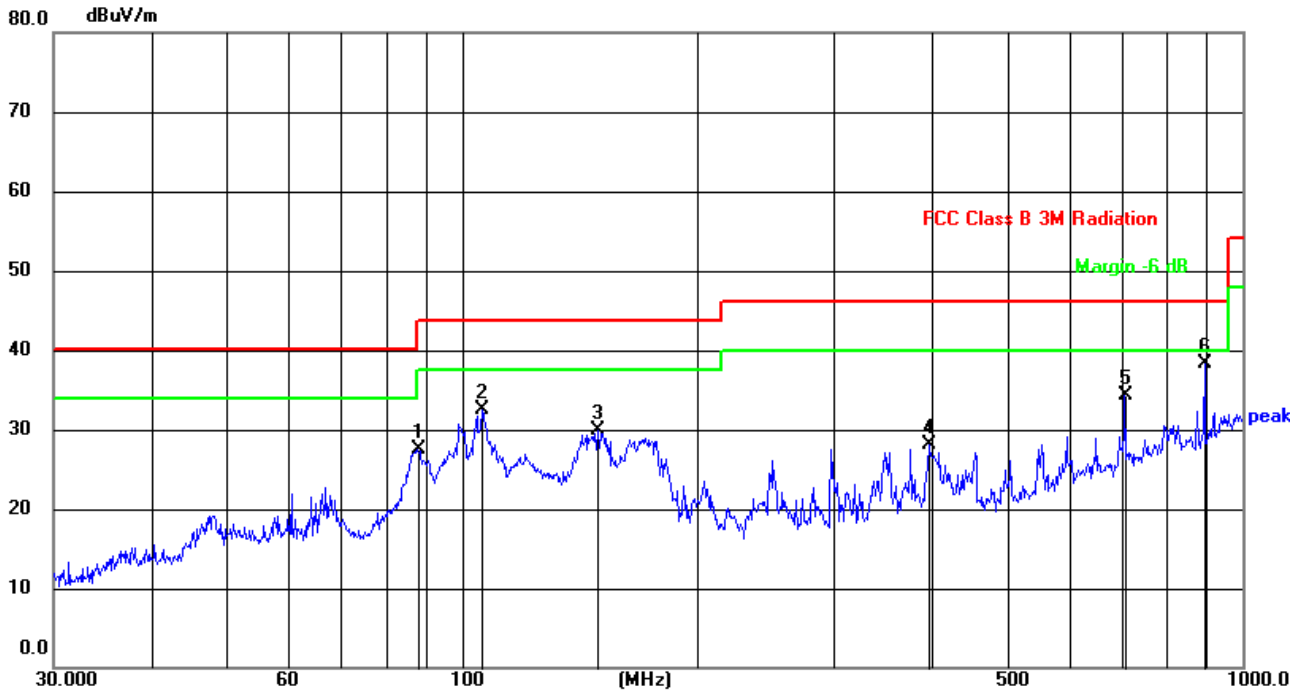
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

Remark: All antenna and all mode had been tested, The test data shows only the worst case (ANT2+ANT4:802.11n20) mode.

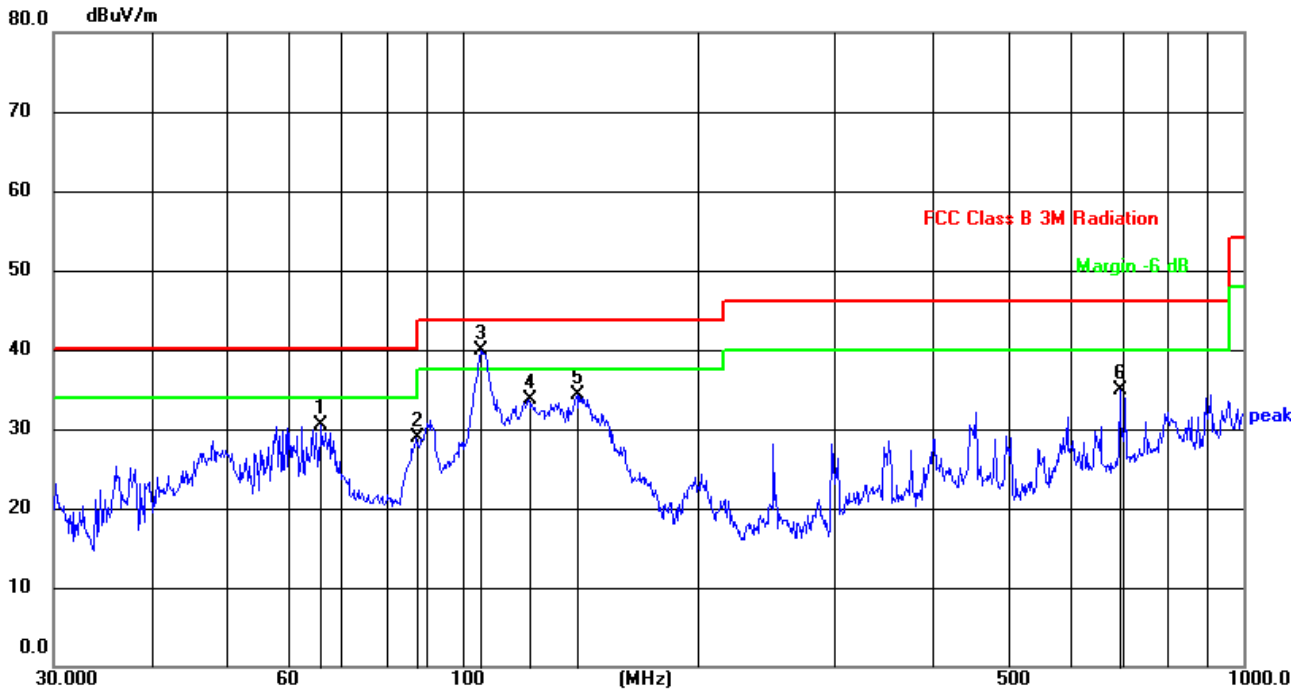
Temperature:	23.0°C	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC120V/60Hz
Test Mode :	5.8G TX- 802.11a		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	87.7248	53.11	-25.56	27.55	40.00	-12.45	QP
2	106.0126	57.08	-24.54	32.54	43.50	-10.96	QP
3	149.4857	50.41	-20.55	29.86	43.50	-13.64	QP
4	396.2415	45.62	-17.42	28.20	46.00	-17.80	QP
5	706.6999	43.38	-8.99	34.39	46.00	-11.61	QP
6	893.8567	43.76	-5.54	38.22	46.00	-7.78	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	66.0342	54.04	-23.52	30.52	40.00	-9.48	QP
2	87.4177	54.41	-25.57	28.84	40.00	-11.16	QP
3	105.6415	64.51	-24.59	39.92	43.50	-3.58	QP
4	121.5486	56.73	-23.08	33.65	43.50	-9.85	QP
5	140.3421	55.96	-21.59	34.37	43.50	-9.13	QP
6	694.4174	44.14	-9.32	34.82	46.00	-11.18	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: All antenna and all mode had been tested, The test data shows only the worst case (ANT2+ANT4:802.11n20) mode

Temperature:	23.0°C	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC120V/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	49.71	46.20	8.27	38.50	50.28	68.20	-17.92	PK
V	10360.00	39.44	46.20	8.27	38.50	40.01	54.00	-13.99	AV
V	15540.00	45.36	46.30	10.35	38.70	48.11	74.00	-25.89	PK
V	15540.00	35.32	46.30	10.35	38.70	38.07	54.00	-15.93	AV
V	20720.00	53.87	57.40	11.93	37.80	46.20	68.20	-22.00	PK
V	20720.00	44.36	57.40	11.93	37.80	36.69	54.00	-17.31	AV
V	25900.00	51.32	56.50	13.45	39.70	47.97	68.20	-20.23	PK
V	25900.00	42.39	56.50	13.45	39.70	39.04	54.00	-14.96	AV
V	31080.00	49.89	56.10	16.12	41.60	51.51	68.20	-16.69	PK
V	31080.00	42.30	56.10	16.12	41.60	43.92	54.00	-10.08	AV
V	36260.00	47.02	56.80	18.29	42.80	51.31	68.20	-16.89	PK
V	36260.00	39.96	56.80	18.29	42.80	44.25	54.00	-9.75	AV
H	10360.00	48.57	46.20	8.27	38.50	49.14	68.20	-19.06	PK
H	10360.00	37.23	46.20	8.27	38.50	37.80	54.00	-16.20	AV
H	15540.00	44.39	46.30	10.35	38.70	47.14	74.00	-26.86	PK
H	15540.00	33.49	46.30	10.35	38.70	36.24	54.00	-17.76	AV
H	20720.00	56.25	57.40	11.93	37.80	48.58	68.20	-19.62	PK
H	20720.00	45.37	57.40	11.93	37.80	37.70	54.00	-16.30	AV
H	25900.00	52.81	56.50	13.45	39.70	49.46	68.20	-18.74	PK
H	25900.00	42.42	56.50	13.45	39.70	39.07	54.00	-14.93	AV
H	31080.00	49.99	56.10	16.12	41.60	51.61	68.20	-16.59	PK
H	31080.00	42.24	56.10	16.12	41.60	43.86	54.00	-10.14	AV
H	36260.00	45.99	56.80	18.29	42.80	50.28	68.20	-17.92	PK
H	36260.00	40.82	56.80	18.29	42.80	45.11	54.00	-8.89	AV

Polar (H/V)	Frequency	Meter Reading	Pre- amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5200MHz									
V	10400.00	47.17	46.20	8.27	38.50	47.74	68.20	-20.46	PK
V	10400.00	38.13	46.20	8.27	38.50	38.70	54.00	-15.30	AV
V	15600.00	45.25	46.30	10.35	38.40	47.70	74.00	-26.30	PK
V	15600.00	37.13	46.30	10.35	38.40	39.58	54.00	-14.42	AV
V	20800.00	55.16	57.40	11.93	37.80	47.49	68.20	-20.71	PK
V	20800.00	45.72	57.40	11.93	37.80	38.05	54.00	-15.95	AV
V	26000.00	50.89	56.50	13.45	39.80	47.64	68.20	-20.56	PK
V	26000.00	42.81	56.50	13.45	39.80	39.56	54.00	-14.44	AV
V	31200.00	49.97	56.10	16.12	41.60	51.59	68.20	-16.61	PK
V	31200.00	43.27	56.10	16.12	41.60	44.89	54.00	-9.11	AV
V	36400.00	46.32	56.80	18.29	42.80	50.61	68.20	-17.59	PK
V	36400.00	39.78	56.80	18.29	42.80	44.07	54.00	-9.93	AV
H	10400.00	47.77	46.20	8.27	38.50	48.34	68.20	-19.86	PK
H	10400.00	38.70	46.20	8.27	38.50	39.27	54.00	-14.73	AV
H	15600.00	45.63	46.30	10.35	38.40	48.08	74.00	-25.92	PK
H	15600.00	37.21	46.30	10.35	38.40	39.66	54.00	-14.34	AV
H	20800.00	53.81	57.40	11.93	37.80	46.14	68.20	-22.06	PK
H	20800.00	43.45	57.40	11.93	37.80	35.78	54.00	-18.22	AV
H	26000.00	50.28	56.50	13.45	39.80	47.03	68.20	-21.17	PK
H	26000.00	41.90	56.50	13.45	39.80	38.65	54.00	-15.35	AV
H	31200.00	49.19	56.10	16.12	41.60	50.81	68.20	-17.39	PK
H	31200.00	42.09	56.10	16.12	41.60	43.71	54.00	-10.29	AV
H	36400.00	46.45	56.80	18.29	42.80	50.74	68.20	-17.46	PK
H	36400.00	40.61	56.80	18.29	42.80	44.90	54.00	-9.10	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	44.26	46.20	8.27	38.60	44.93	68.20	-23.27	PK
V	10480.00	34.45	46.20	8.27	38.60	35.12	54.00	-18.88	AV
V	15720.00	42.66	46.30	10.35	38.40	45.11	74.00	-28.89	PK
V	15720.00	32.18	46.30	10.35	38.40	34.63	54.00	-19.37	AV
V	20960.00	51.52	57.40	11.93	37.50	43.55	68.20	-24.65	PK
V	20960.00	43.29	57.40	11.93	37.50	35.32	54.00	-18.68	AV
V	26200.00	47.70	56.50	13.45	40.10	44.75	68.20	-23.45	PK
V	26200.00	38.35	56.50	13.45	40.10	35.40	54.00	-18.60	AV
V	31440.00	49.92	56.10	16.12	41.30	51.24	68.20	-16.96	PK
V	31440.00	42.97	56.10	16.12	41.30	44.29	54.00	-9.71	AV
V	36680.00	45.20	56.80	18.29	43.10	49.79	68.20	-18.41	PK
V	36680.00	39.76	56.80	18.29	43.10	44.35	54.00	-9.65	AV
H	10480.00	44.09	46.20	8.27	38.60	44.76	68.20	-23.44	PK
H	10480.00	34.52	46.20	8.27	38.60	35.19	54.00	-18.81	AV
H	15720.00	42.30	46.30	10.35	38.40	44.75	74.00	-29.25	PK
H	15720.00	32.24	46.30	10.35	38.40	34.69	54.00	-19.31	AV
H	20960.00	51.96	57.40	11.93	37.50	43.99	68.20	-24.21	PK
H	20960.00	42.86	57.40	11.93	37.50	34.89	54.00	-19.11	AV
H	26200.00	46.91	56.50	13.45	40.10	43.96	68.20	-24.24	PK
H	26200.00	37.40	56.50	13.45	40.10	34.45	54.00	-19.55	AV
H	31440.00	49.16	56.10	16.12	41.30	50.48	68.20	-17.72	PK
H	31440.00	43.23	56.10	16.12	41.30	44.55	54.00	-9.45	AV
H	36680.00	46.28	56.80	18.29	43.10	50.87	68.20	-17.33	PK
H	36680.00	40.52	56.80	18.29	43.10	45.11	54.00	-8.89	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:	23.0°C	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC120V/60Hz
Test Mode :	5.8G TX- 802.11ac		

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	48.16	46.10	8.77	39.10	49.93	74.00	-24.07	PK
V	11490.00	35.96	46.10	8.77	39.10	37.73	54.00	-16.27	AV
V	17235.00	42.32	47.60	11.10	38.70	44.52	68.20	-23.68	PK
V	17235.00	34.63	47.60	11.10	38.70	36.83	54.00	-17.17	AV
V	22980.00	55.74	56.90	12.73	37.70	49.27	74.00	-24.73	PK
V	22980.00	42.58	56.90	12.73	37.70	36.11	54.00	-17.89	AV
V	28725.00	49.26	55.60	14.25	40.30	48.21	68.20	-19.99	PK
V	28725.00	42.56	55.60	14.25	40.30	41.51	54.00	-12.49	AV
V	34470.00	48.93	55.90	17.26	42.10	52.39	68.20	-15.82	PK
V	34470.00	40.99	55.90	17.26	42.10	44.45	54.00	-9.55	AV
H	11490.00	46.89	46.10	8.77	39.10	48.66	74.00	-25.34	PK
H	11490.00	35.65	46.10	8.77	39.10	37.42	54.00	-16.58	AV
H	17235.00	41.36	47.60	11.10	38.70	43.56	68.20	-24.64	PK
H	17235.00	34.91	47.60	11.10	38.70	37.11	54.00	-16.89	AV
H	22980.00	57.38	56.90	12.73	37.70	50.91	74.00	-23.09	PK
H	22980.00	47.64	56.90	12.73	37.70	41.17	54.00	-12.83	AV
H	28725.00	48.50	55.60	14.25	40.30	47.45	68.20	-20.75	PK
H	28725.00	42.93	55.60	14.25	40.30	41.88	54.00	-12.12	AV
H	34470.00	48.10	55.90	17.26	42.10	51.56	68.20	-16.64	PK
H	34470.00	41.23	55.90	17.26	42.10	44.69	54.00	-9.31	AV

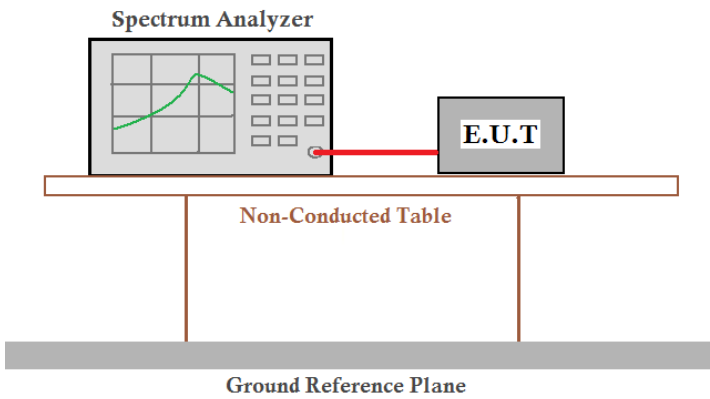
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Middle Channel:5785MHz									
V	11570.00	47.61	46.10	8.77	39.10	49.38	74.00	-24.62	PK
V	11570.00	36.16	46.10	8.77	39.10	37.93	54.00	-16.07	AV
V	17355.00	41.97	47.60	11.10	38.70	44.17	68.20	-24.03	PK
V	17355.00	36.33	47.60	11.10	38.70	38.53	54.00	-15.47	AV
V	23140.00	57.64	56.90	12.73	37.70	51.17	74.00	-22.83	PK
V	23140.00	46.59	56.90	12.73	37.70	40.12	54.00	-13.88	AV
V	28925.00	46.17	55.60	14.25	40.30	45.12	68.20	-23.08	PK
V	28925.00	42.21	55.60	14.25	40.30	41.16	54.00	-12.84	AV
V	34710.00	47.67	55.90	17.26	42.40	51.43	68.20	-16.77	PK
V	34710.00	41.56	55.90	17.26	42.40	45.32	54.00	-8.68	AV
H	11570.00	48.20	46.10	8.77	39.10	49.97	74.00	-24.03	PK
H	11570.00	37.05	46.10	8.77	39.10	38.82	54.00	-15.18	AV
H	17355.00	42.90	47.60	11.10	38.70	45.10	68.20	-23.10	PK
H	17355.00	36.08	47.60	11.10	38.70	38.28	54.00	-15.72	AV
H	23140.00	58.91	56.90	12.73	37.70	52.44	74.00	-21.56	PK
H	23140.00	47.43	56.90	12.73	37.70	40.96	54.00	-13.04	AV
H	28925.00	48.29	55.60	14.25	40.30	47.24	68.20	-20.96	PK
H	28925.00	41.86	55.60	14.25	40.30	40.81	54.00	-13.19	AV
H	34710.00	46.12	55.90	17.26	42.40	49.88	68.20	-18.32	PK
H	34710.00	41.47	55.90	17.26	42.40	45.23	54.00	-8.77	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	47.86	46.10	8.77	39.10	49.63	74.00	-24.37	PK
V	11650.00	35.96	46.10	8.77	39.10	37.73	54.00	-16.27	AV
V	17475.00	42.75	47.90	11.23	38.90	44.98	68.20	-23.23	PK
V	17475.00	37.73	47.90	11.23	38.90	39.96	54.00	-14.04	AV
V	23300.00	51.85	57.10	12.73	37.80	45.28	68.20	-22.92	PK
V	23300.00	46.67	57.10	12.73	37.80	40.10	54.00	-13.90	AV
V	29125.00	47.91	55.80	14.25	40.50	46.86	68.20	-21.34	PK
V	29125.00	43.08	55.80	14.25	40.50	42.03	54.00	-11.97	AV
V	34950.00	46.92	56.30	17.91	42.50	51.03	68.20	-17.17	PK
V	34950.00	41.20	56.30	17.91	42.50	45.31	54.00	-8.69	AV
H	11650.00	48.50	46.10	8.77	39.10	50.27	74.00	-23.73	PK
H	11650.00	34.58	46.10	8.77	39.10	36.35	54.00	-17.65	AV
H	17475.00	42.62	47.90	11.23	38.90	44.85	68.20	-23.35	PK
H	17475.00	37.49	47.90	11.23	38.90	39.72	54.00	-14.28	AV
H	23300.00	53.16	57.10	12.73	37.80	46.59	68.20	-21.61	PK
H	23300.00	47.43	57.10	12.73	37.80	40.86	54.00	-13.14	AV
H	29125.00	49.33	55.80	14.25	40.50	48.28	68.20	-19.92	PK
H	29125.00	43.14	55.80	14.25	40.50	42.09	54.00	-11.91	AV
H	34950.00	46.63	56.30	17.91	42.50	50.74	68.20	-17.46	PK
H	34950.00	41.04	56.30	17.91	42.50	45.15	54.00	-8.85	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.: 23.0°C	Humid.: 35%RH
Test voltage:	AC120/60Hz	
Test results:	Pass	

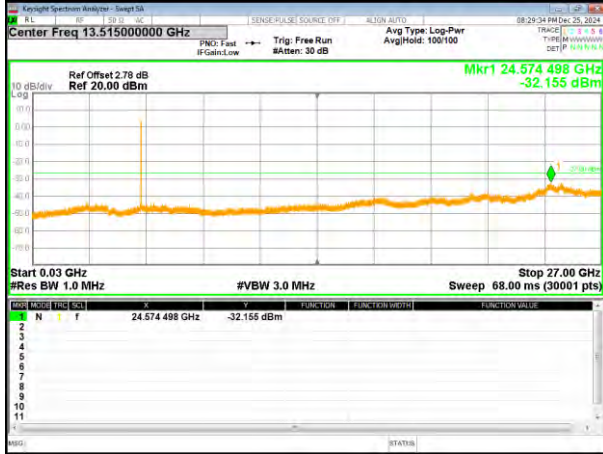
Remark:

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.

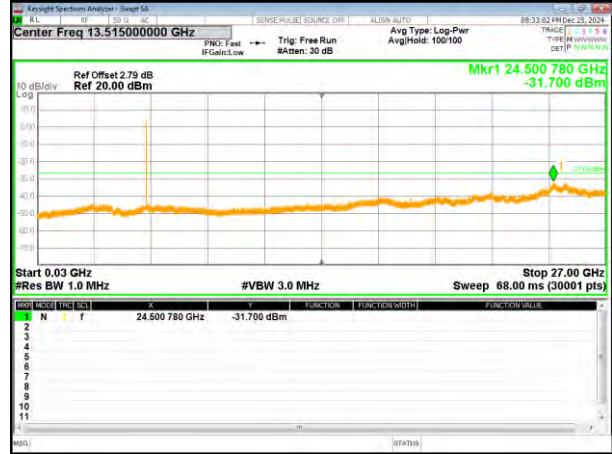
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5180-5240MHz

Test Plot

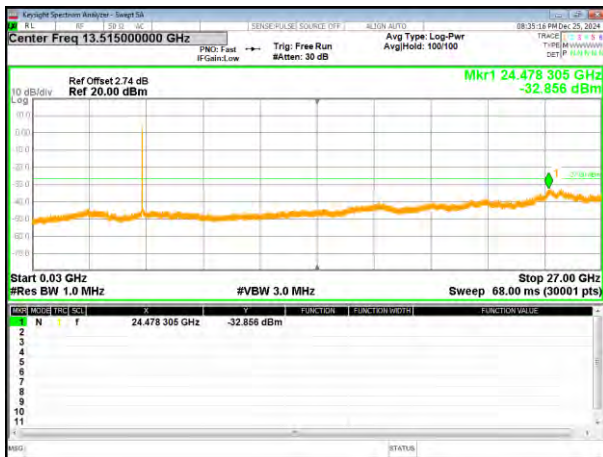
802.11a on channel 36



802.11a on channel 40



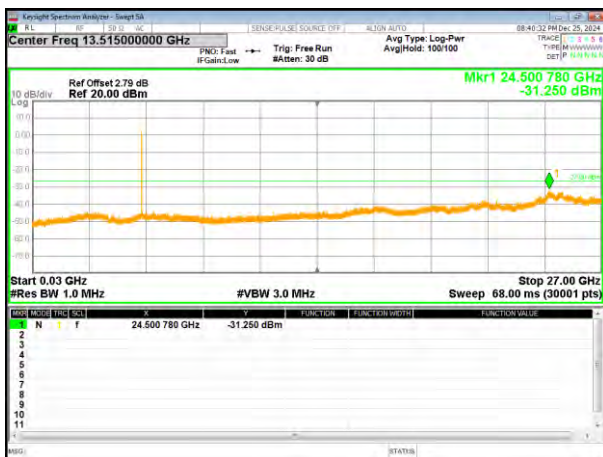
802.11a on channel 48



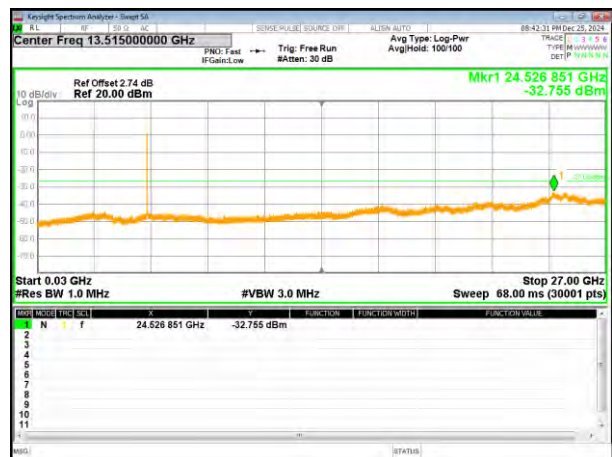
802.11n20 on channel 36



802.11n20 on channel 40

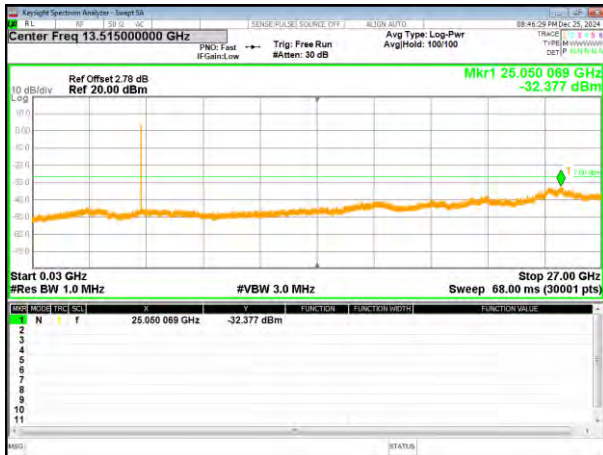


802.11n20 on channel 48



Test Plot

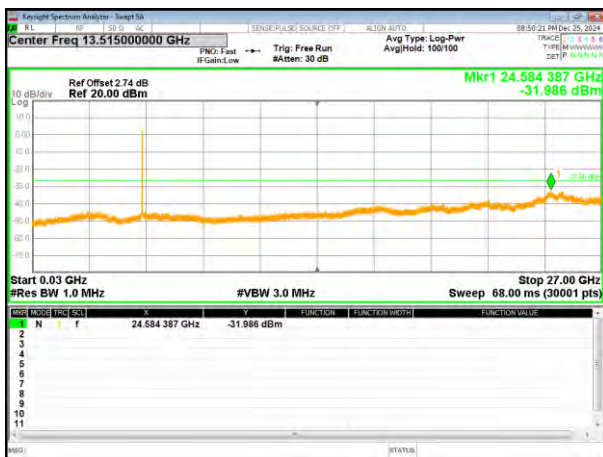
802.11ac20 on channel 36



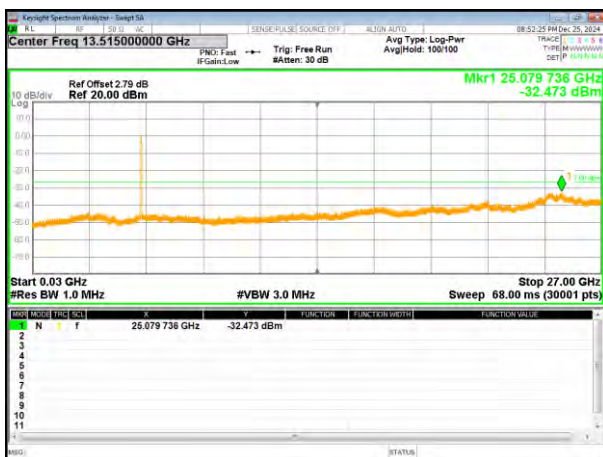
802.11ac20 on channel 40



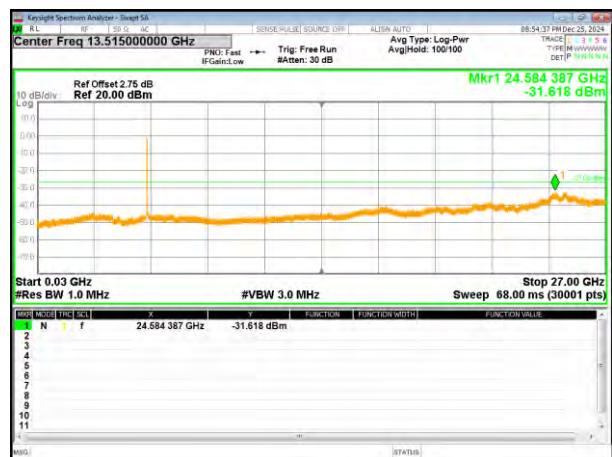
802.11ac20 on channel 48



802.11n40 on channel 38

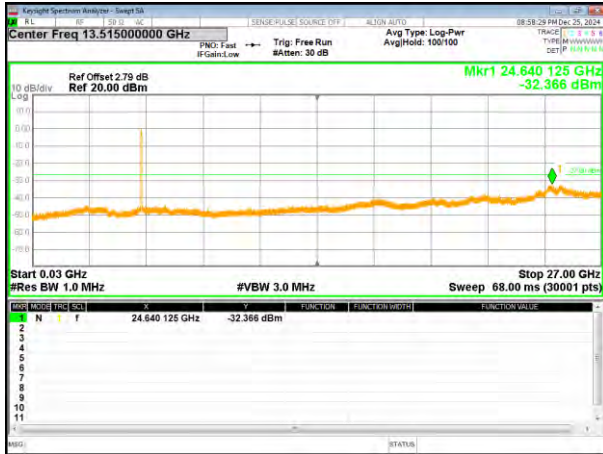


802.11n40 on channel 46

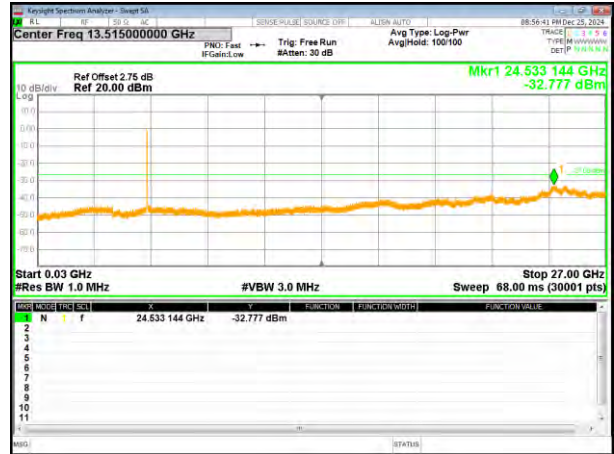


Test Plot

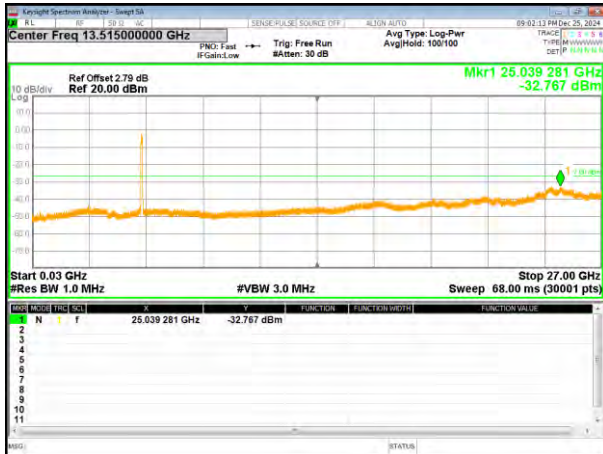
802.11ac40 on channel 38



802.11ac40 on channel 46



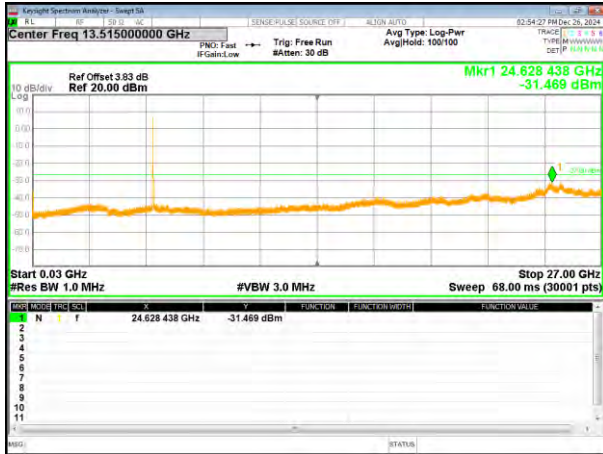
802.11ac80 on channel 42



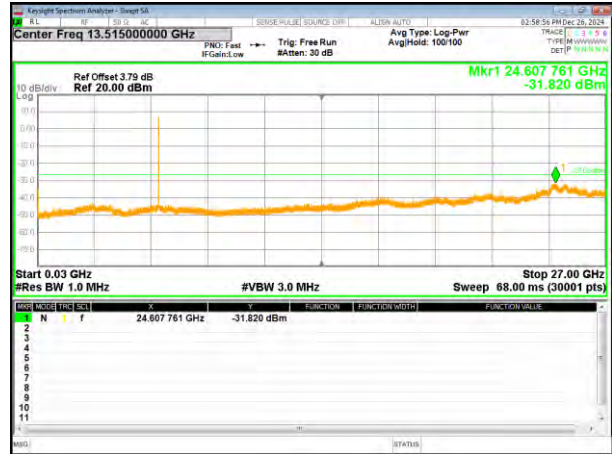
5745-5825MHz

Test Plot

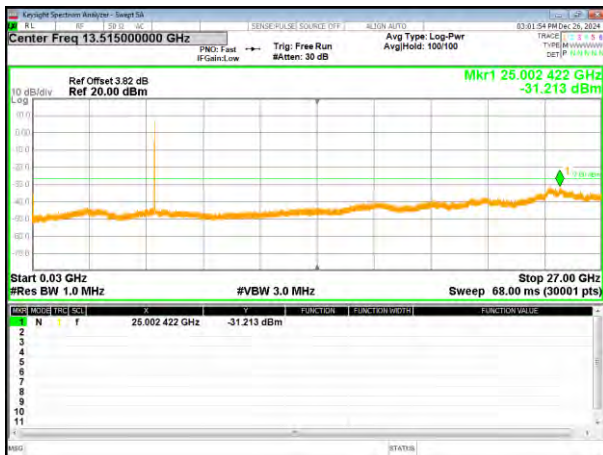
802.11a on channel 149



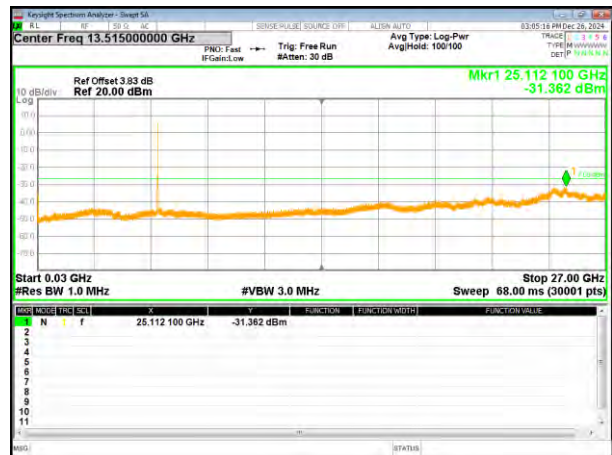
802.11a on channel 157



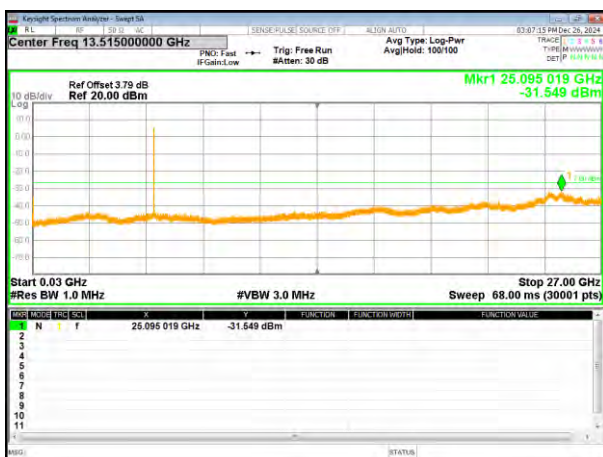
802.11a on channel 165



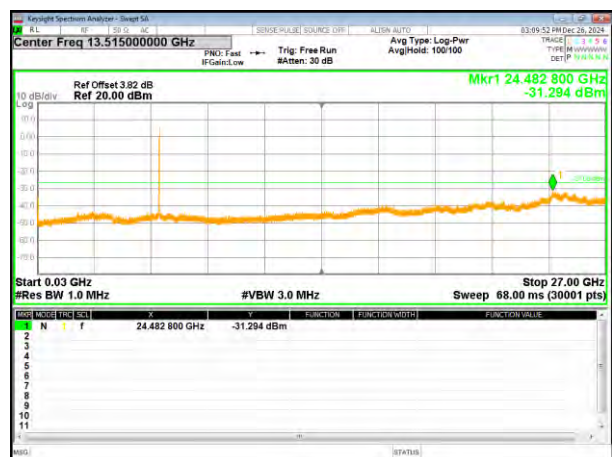
802.11n20 on channel 149



802.11n20 on channel 157

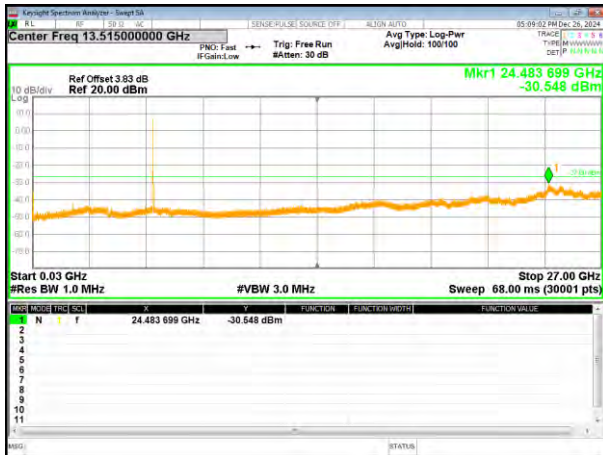


802.11n20 on channel 165



Test Plot

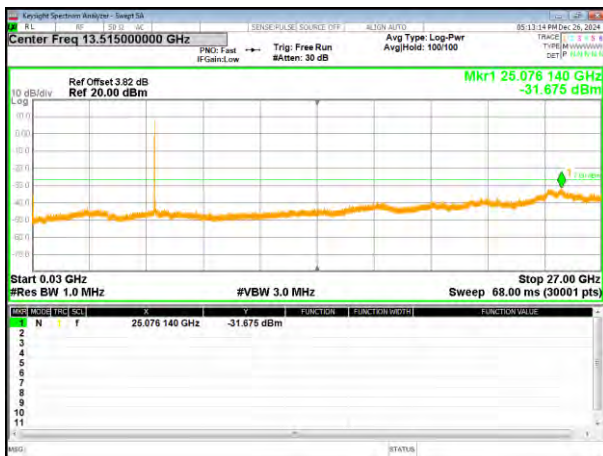
802.11ac20 on channel 149



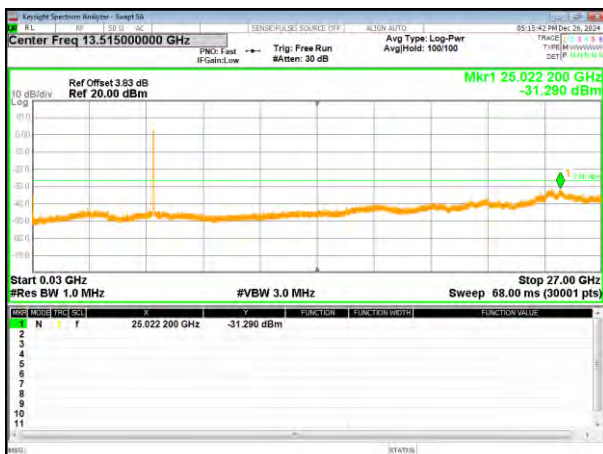
802.11ac20 on channel 157



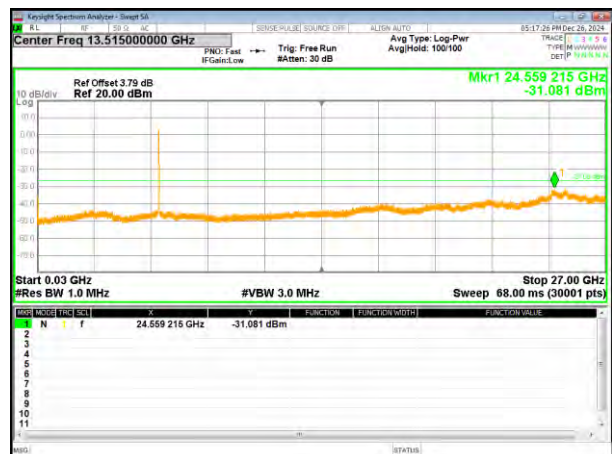
802.11ac20 on channel 165



802.11n40 on channel 151



802.11n40 on channel 159



802.11ac40 on channel 159



Keysight Spectrum Analyzer - Setup 2/5

Center Freq 13.515000000 GHz

Ref Offset 3.9 dB
Ref 20.00 dBm

Mkr1 25.082 433 GHz
-31.605 dBm

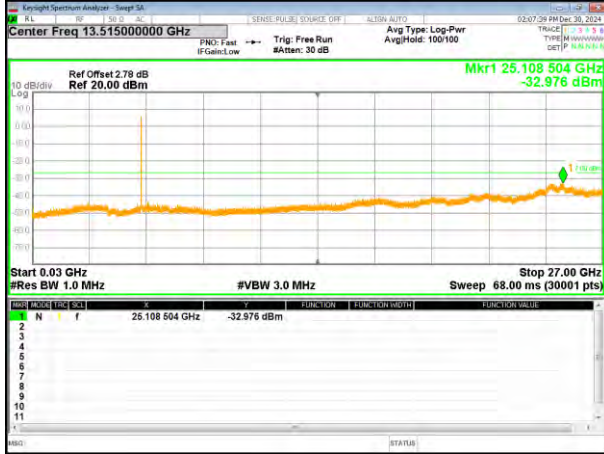
Start 0.03 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 68.00 ms (30001 pts)

Marker	Freq (GHz)	Power (dBm)	Function	Function Width	Function Value
1	25.082 433	-31.605	dBm		

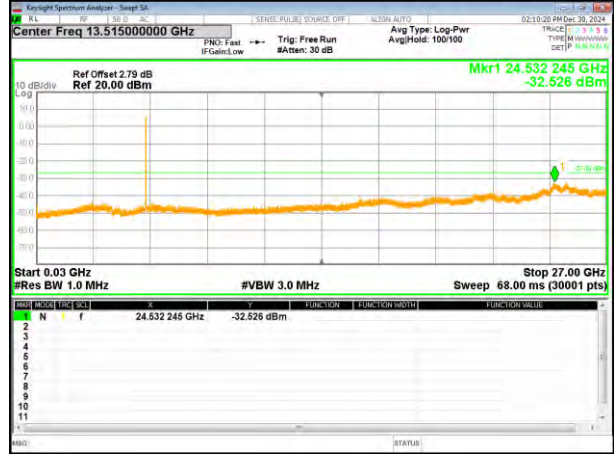
IC:SKI.WB800D.3 ANT2
5180-5240MHz

Test Plot

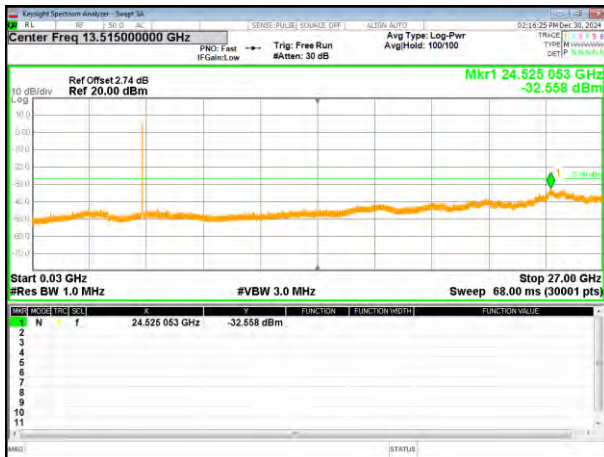
802.11a on channel 36



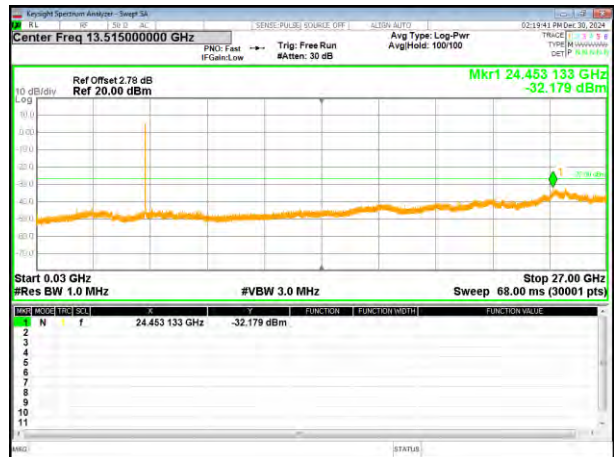
802.11a on channel 40



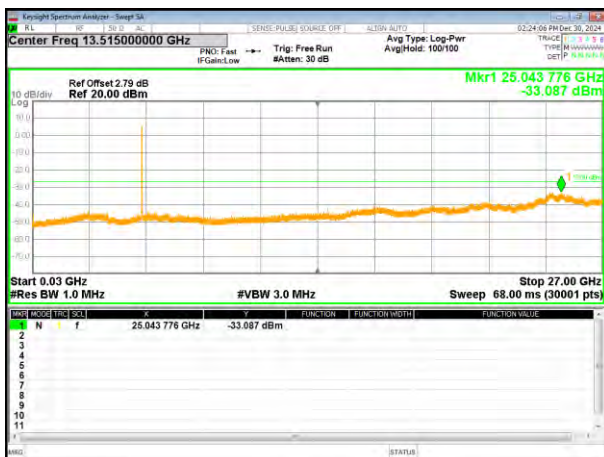
802.11a on channel 48



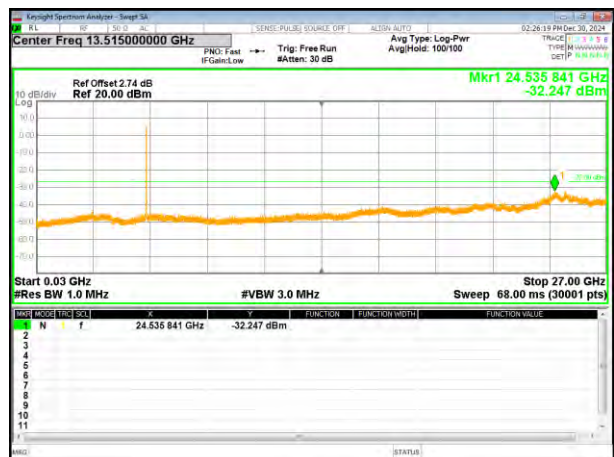
802.11n20 on channel 36



802.11n20 on channel 40

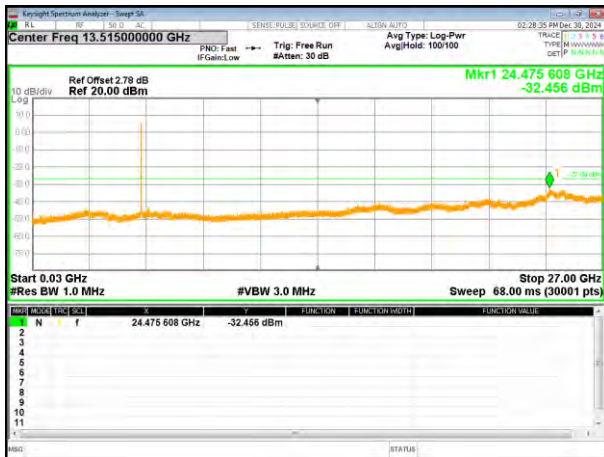


802.11n20 on channel 48

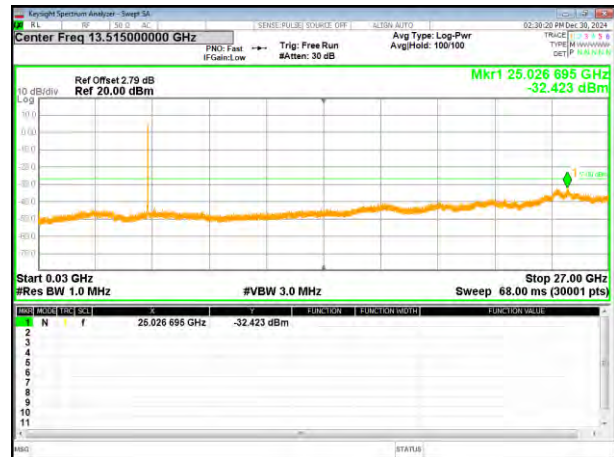


Test Plot

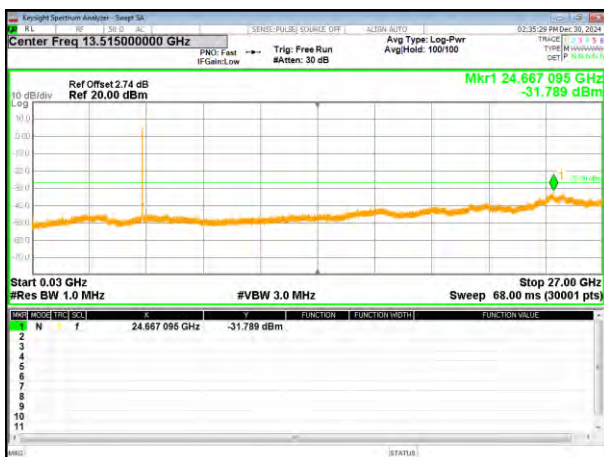
802.11ac20 on channel 36



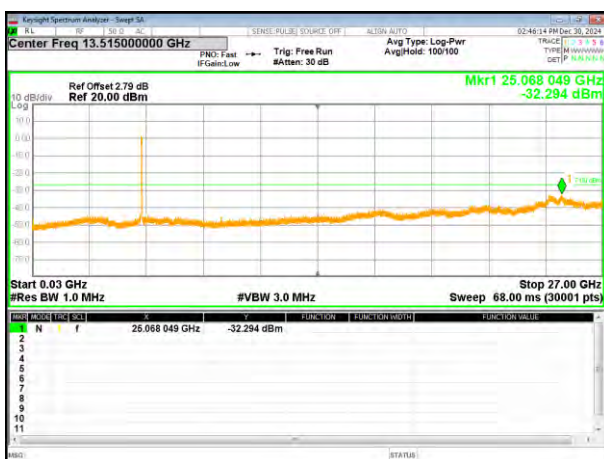
802.11ac20 on channel 40



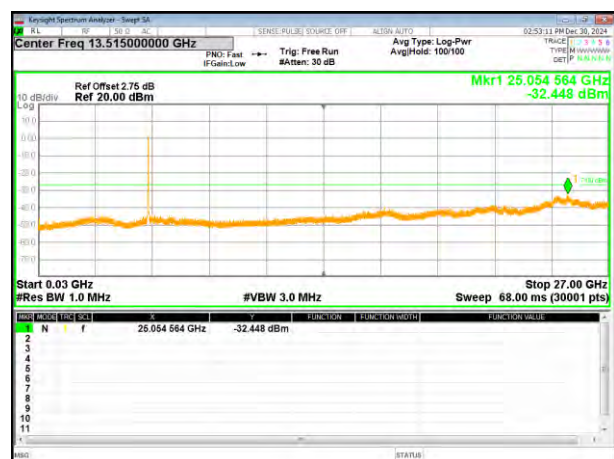
802.11ac20 on channel 48



802.11n40 on channel 38

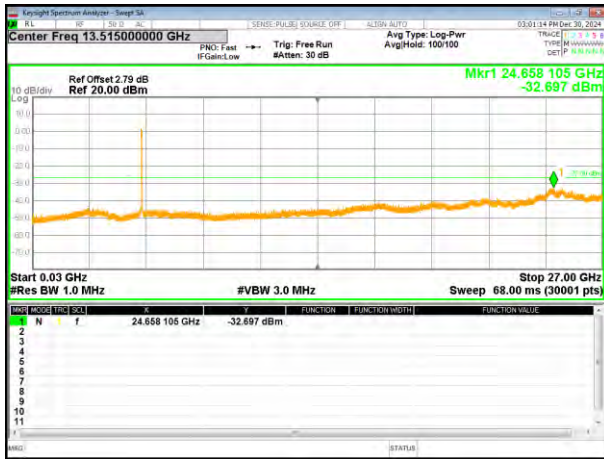


802.11n40 on channel 46

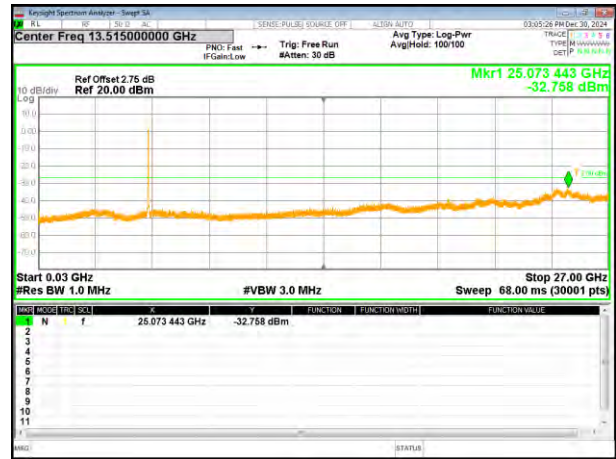


Test Plot

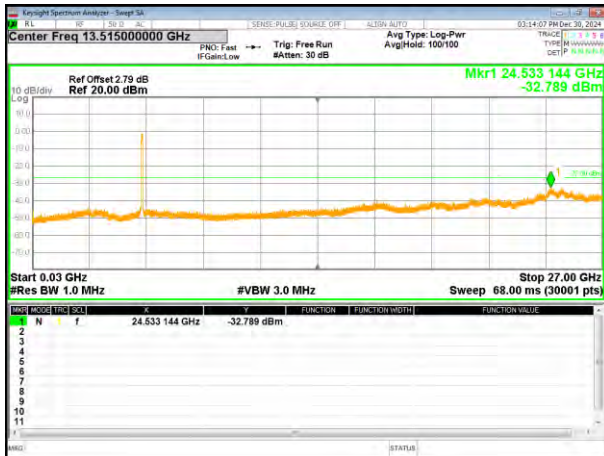
802.11ac40 on channel 38



802.11ac40 on channel 46



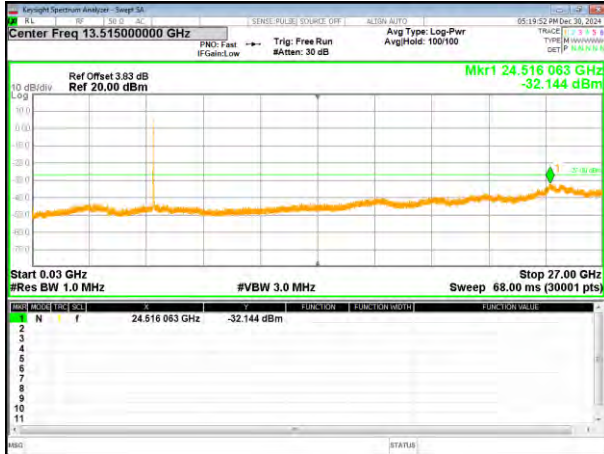
802.11ac80 on channel 42



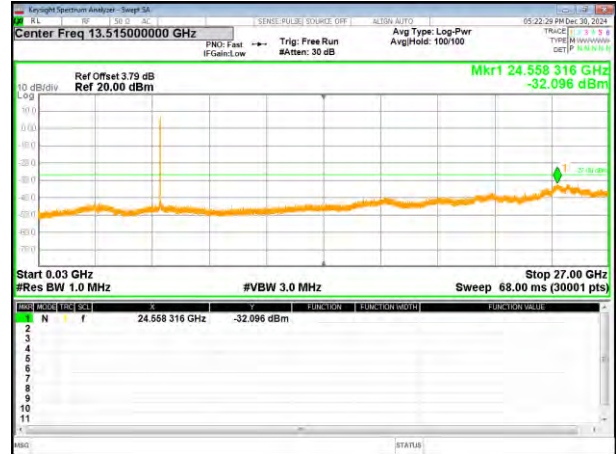
5745-5825MHz

Test Plot

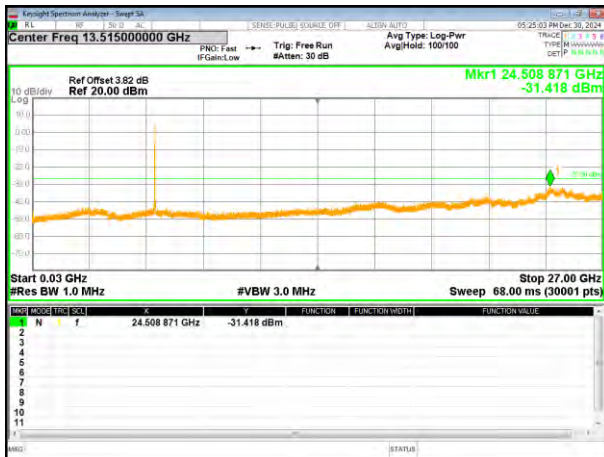
802.11a on channel 149



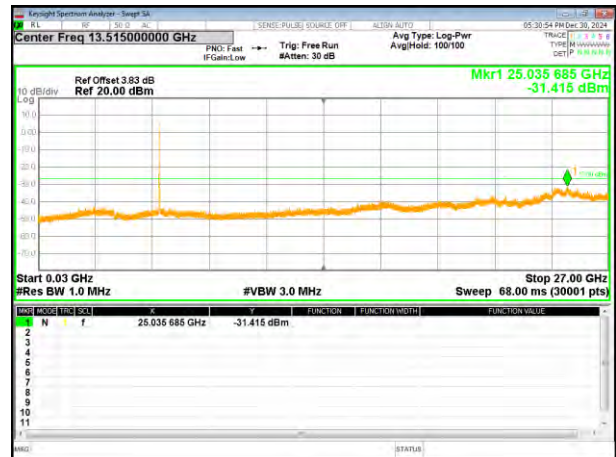
802.11a on channel 157



802.11a on channel 165



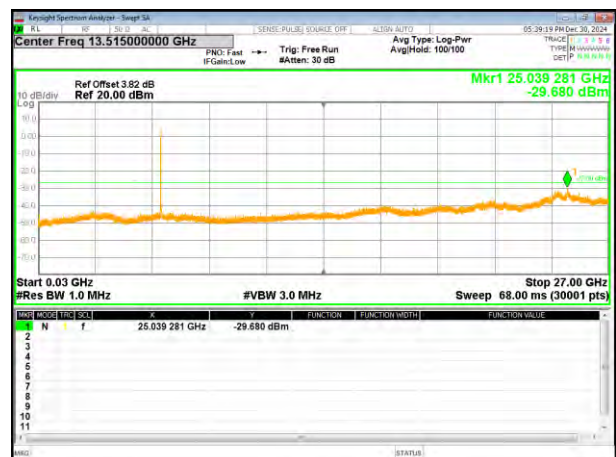
802.11n20 on channel 149



802.11n20 on channel 157

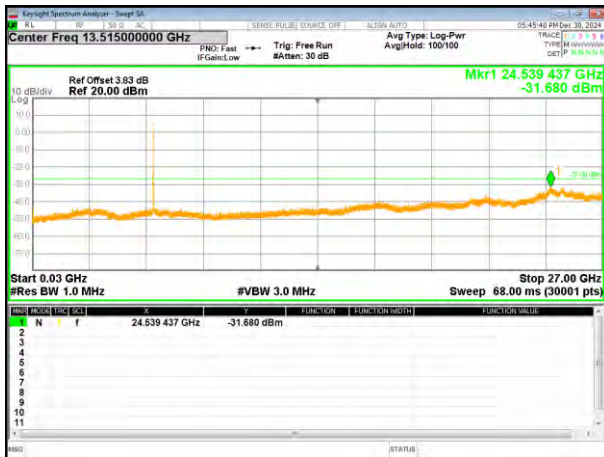


802.11n20 on channel 165

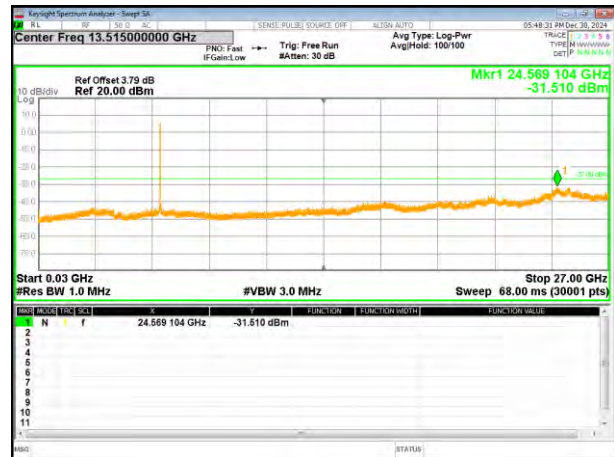


Test Plot

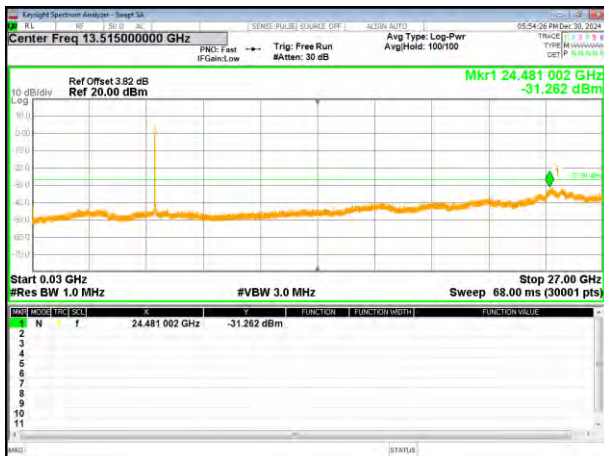
802.11ac20 on channel 149



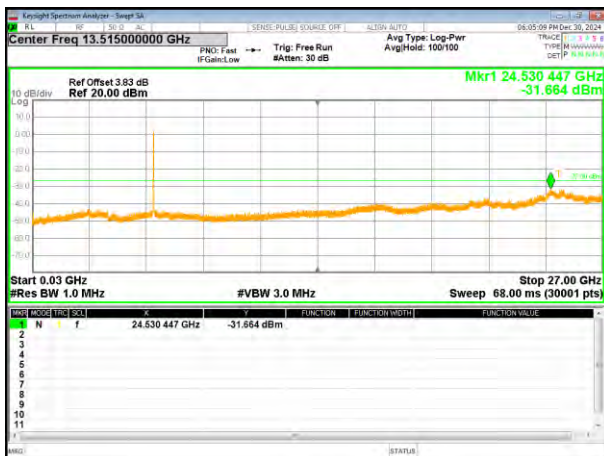
802.11ac20 on channel 157



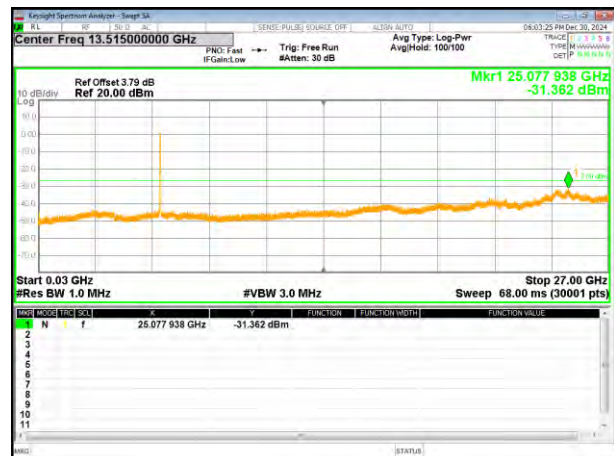
802.11ac20 on channel 165



802.11n40 on channel 151

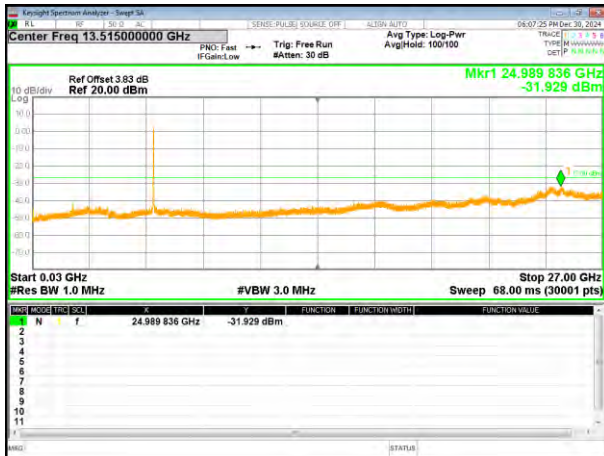


802.11n40 on channel 159

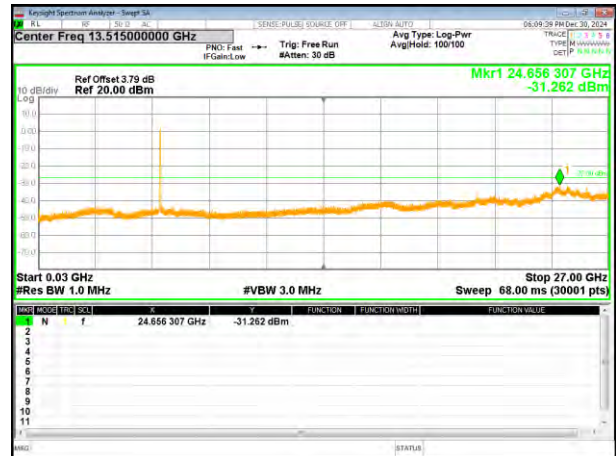


Test Plot

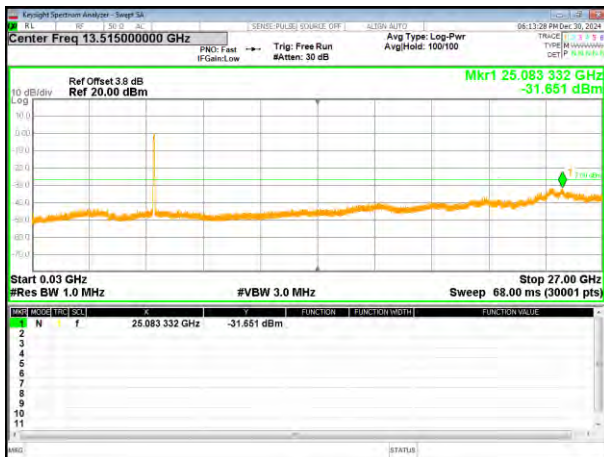
802.11ac40 on channel 151



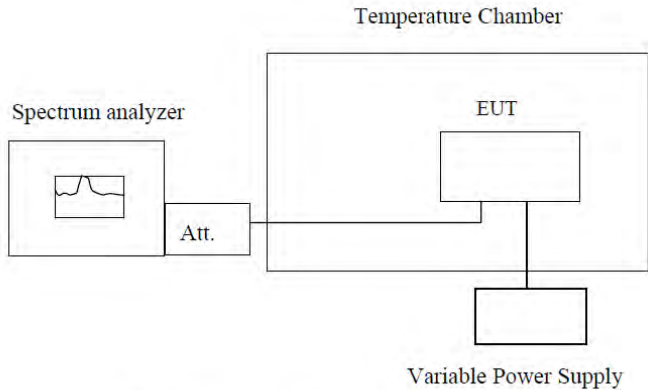
802.11ac40 on channel 159



802.11ac80 on channel 155



4.9 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minute s. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

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

Measurement data:

Frequency stability versus Temp.					
Power Supply: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	5179.986	5180.040	5179.800	5179.924
	5190	5189.982	5199.914	5199.674	5189.935
	5200	5199.977	5199.939	5199.699	5199.926
	5210	5209.983	5209.917	5209.676	5209.927
	5220	5219.978	5219.932	5219.691	5219.933
	5230	5229.976	5229.925	5229.683	5229.951
	5240	5239.949	5239.933	5239.691	5239.936
-20	5180	5179.981	5179.975	5179.986	5179.981
	5190	5189.972	5180.081	5189.987	5189.980
	5200	5199.980	5199.956	5199.978	5199.974
	5210	5209.972	5209.981	5299.986	5209.964
	5220	5219.993	5219.959	5219.978	5219.974
	5230	5229.971	5229.974	5229.999	5299.972
	5240	5239.989	5239.967	5239.977	5239.976
-10	5180	5179.986	5179.925	5179.664	5179.924
	5190	5189.982	5189.920	5189.675	5189.935
	5200	5199.977	5199.915	5199.665	5199.926
	5210	5209.983	5209.921	5209.665	5209.927
	5220	5219.978	5219.916	5219.672	5219.933
	5230	5229.976	5229.914	5229.689	5229.951
	5240	5239.949	5239.887	5239.661	5239.923
0	5180	5179.763	5179.904	5179.676	5179.935
	5190	5199.935	5189.914	5189.667	5189.936
	5200	5199.933	5199.905	5199.674	5199.927
	5210	5209.988	5209.906	5209.665	5299.934
	5220	5219.977	5219.913	5219.686	5219.926
	5230	5229.964	5229.931	5229.663	5229.947
	5240	5239.981	5239.903	5239.681	5239.925
10	5180	5179.965	5179.916	5179.685	5179.936
	5190	5189.976	5189.906	5189.681	5189.927
	5200	5199.967	5199.914	5199.675	5199.935
	5210	5209.968	5209.906	5209.680	5209.927
	5220	5219.975	5219.927	5219.675	5219.947
	5230	5229.993	5229.905	5229.672	5229.925
	5240	5239.978	5239.923	5239.645	5239.943
20	5180	5179.767	5179.945	5179.987	5179.971
	5190	5199.939	5189.956	5189.978	5189.972

	5200	5199.937	5199.947	5199.986	5199.963
	5210	5209.992	5209.948	5209.978	5299.971
	5220	5219.981	5219.955	5219.999	5219.963
	5230	5229.968	5229.973	5229.977	5229.984
	5240	5239.985	5239.945	5239.995	5239.962
30	5180	5179.942	5179.956	5179.975	5180.096
	5190	5189.972	5189.957	5189.986	5199.971
	5200	5199.997	5199.948	5199.977	5199.996
	5210	5209.981	5299.956	5209.978	5209.974
	5220	5219.972	5219.948	5219.985	5219.989
	5230	5230.000	5229.969	5230.003	5229.982
	5240	5239.988	5239.947	5239.975	5239.990
40	5180	5179.767	5179.945	5179.987	5179.971
	5190	5199.939	5189.956	5189.978	5189.972
	5200	5199.937	5199.947	5199.986	5199.963
	5210	5209.992	5209.948	5209.978	5299.971
	5220	5219.981	5219.955	5219.999	5219.963
	5230	5229.968	5229.973	5229.977	5229.984
	5240	5239.985	5239.945	5239.995	5239.962
50	5180	5179.969	5179.957	5179.987	5179.981
	5190	5189.980	5189.948	5189.978	5179.981
	5200	5199.971	5199.956	5199.986	5189.977
	5210	5209.972	5209.948	5209.978	5199.972
	5220	5219.979	5219.969	5219.999	5209.978
	5230	5229.997	5229.947	5229.977	5219.973
	5240	5239.969	5239.965	5239.995	5229.971

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	5179.975	5179.945	5179.996	5179.977
	5190	5189.969	5189.956	5189.992	5189.963
	5200	5199.982	5199.947	5199.987	5199.964
	5210	5209.986	5209.948	5209.993	5209.986
	5220	5219.972	5219.955	5219.988	5219.972
	5230	5229.965	5229.973	5229.986	5229.982
	5240	5180.105	5179.961	5179.987	5179.960
AC 120V	5180	5199.980	5189.955	5189.978	5189.971
	5190	5200.005	5199.955	5199.986	5199.962
	5200	5209.983	5209.967	5209.978	5209.963
	5210	5219.998	5219.958	5219.999	5219.970
	5220	5229.991	5299.961	5229.977	5229.988
	5230	5239.999	5239.958	5239.995	5239.973
	5240	5180.105	5179.961	5179.987	5179.960
AC 138V	5180	5179.980	5179.957	5179.986	5179.971
	5190	5189.981	5189.948	5189.987	5189.972
	5200	5199.972	5199.956	5199.978	5199.963
	5210	5299.980	5209.948	5299.986	5299.971
	5220	5219.972	5219.969	5219.978	5219.963
	5230	5229.993	5229.947	5229.999	5229.984
	5240	5239.971	5239.965	5239.977	5239.962

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	5744.963	5744.948	5744.978	5744.957
	5755	5754.979	5754.955	5754.995	5754.982
	5775	5774.978	5774.947	5774.996	5774.963
	5785	5784.981	5784.939	5784.978	5784.972
	5795	5794.992	5794.946	5794.996	5794.970
	5825	5824.973	5824.875	5824.993	5824.980
-20	5745	5744.963	5744.959	5744.973	5744.973
	5755	5754.979	5754.961	5754.998	5754.987
	5775	5774.978	5774.964	5774.979	5774.972
	5785	5784.981	5784.956	5784.988	5784.959
	5795	5794.988	5794.947	5794.986	5794.953
	5825	5824.973	5824.956	5824.996	5824.987
-10	5745	5744.984	5744.972	5744.989	5744.962
	5755	5754.998	5754.945	5755.003	5754.981
	5775	5774.983	5774.968	5774.988	5774.961
	5785	5784.970	5784.968	5784.975	5784.988
	5795	5794.964	5794.959	5794.969	5794.980
	5825	5824.998	5824.974	5825.003	5824.989
0	5745	5744.967	5744.948	5744.979	5744.962
	5755	5754.977	5754.955	5754.986	5754.951
	5775	5774.998	5774.947	5775.003	5774.962
	5785	5784.974	5784.939	5784.979	5784.969
	5795	5794.970	5794.946	5794.975	5794.987
	5825	5824.968	5824.875	5824.978	5824.979
10	5745	5744.964	5744.959	5744.973	5744.973
	5755	5754.979	5754.961	5754.998	5754.987
	5775	5774.978	5774.964	5774.979	5774.972
	5785	5784.981	5784.956	5784.988	5784.959
	5795	5794.991	5794.947	5794.986	5794.953
	5825	5824.973	5824.956	5824.996	5824.987
20	5745	5745.015	5744.949	5744.989	5744.593
	5755	5755.000	5754.956	5754.991	5754.976
	5775	5774.996	5774.973	5774.994	5774.977
	5785	5784.980	5784.949	5784.986	5784.980
	5795	5794.969	5794.945	5794.977	5794.963
	5825	5824.904	5824.947	5824.986	5824.959
30	5745	5744.964	5744.959	5744.973	5744.973
	5755	5754.979	5754.961	5754.998	5754.987
	5775	5774.978	5774.964	5774.979	5774.972
	5785	5784.981	5784.956	5784.988	5784.959
	5795	5794.991	5794.947	5794.986	5794.953
	5825	5824.973	5824.956	5824.996	5824.987
40	5745	5745.015	5744.949	5744.989	5744.593
	5755	5755.000	5754.956	5754.991	5754.976
	5775	5774.996	5774.973	5774.994	5774.977
	5785	5784.980	5784.949	5784.986	5784.980

50	5795	5794.992	5794.946	5794.996	5794.970
	5825	5824.973	5824.875	5824.993	5824.980
	5745	5744.967	5744.948	5744.979	5744.962
	5755	5754.977	5754.955	5754.986	5754.951
	5775	5774.998	5774.947	5775.003	5774.962
	5785	5784.974	5784.939	5784.979	5784.969
	5795	5794.970	5794.946	5794.975	5794.987
	5825	5824.968	5824.875	5824.978	5824.979

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	5744.968	5744.948	5744.978	5744.958
	5755	5754.993	5754.965	5754.985	5754.970
	5775	5774.974	5774.966	5774.977	5774.987
	5785	5784.983	5784.948	5784.969	5784.963
	5795	5794.981	5794.965	5794.976	5794.959
	5825	5824.991	5824.963	5824.905	5824.962
AC 120V	5745	5744.984	5744.973	5744.987	5744.962
	5755	5754.998	5754.945	5755.003	5754.981
	5775	5774.983	5774.968	5774.988	5774.961
	5785	5784.970	5784.968	5784.975	5784.988
	5795	5794.964	5794.959	5794.969	5794.980
	5825	5824.998	5824.974	5825.003	5824.989
AC 132V	5745	5744.974	5744.959	5744.972	5744.987
	5755	5754.981	5754.961	5754.995	5754.959
	5775	5774.998	5774.964	5774.996	5774.982
	5785	5784.974	5784.956	5784.978	5784.982
	5795	5794.970	5794.947	5794.995	5794.973
	5825	5824.973	5824.956	5824.993	5824.988

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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