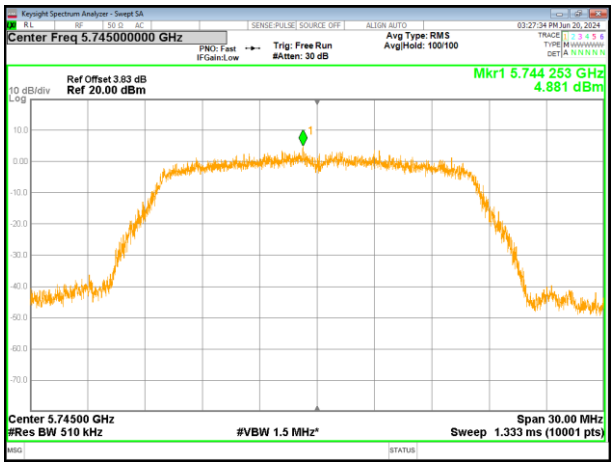
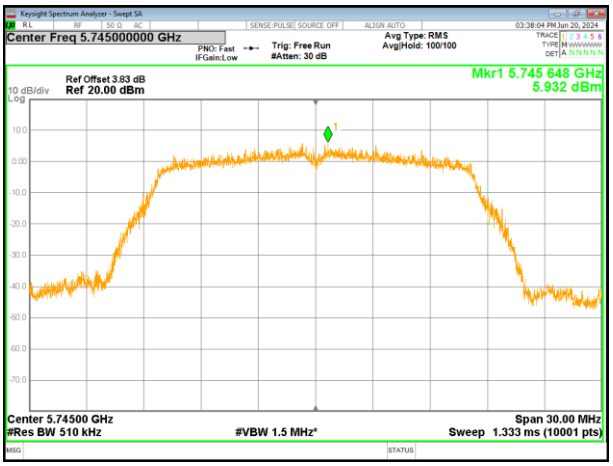
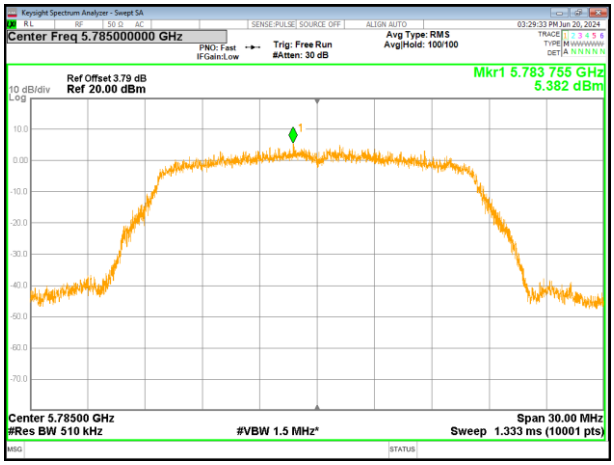
(802.11a) PSD plot on channel 149



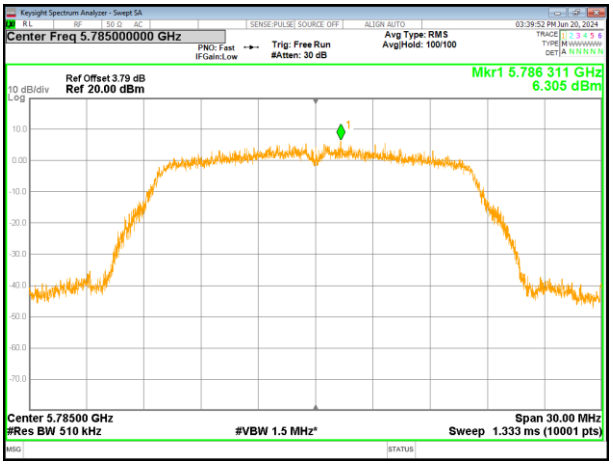
(802.11n20) PSD plot on channel 149



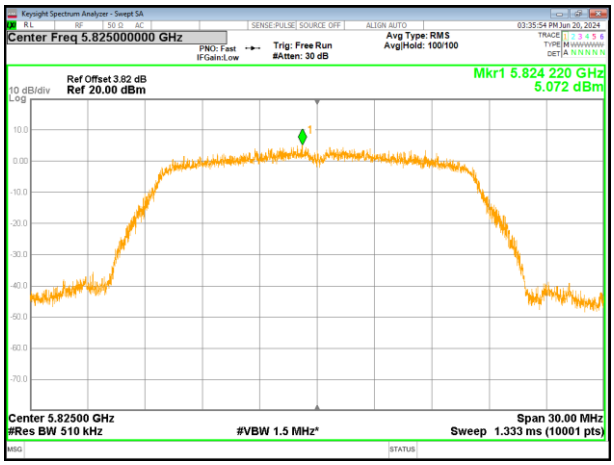
(802.11a) PSD plot on channel 157



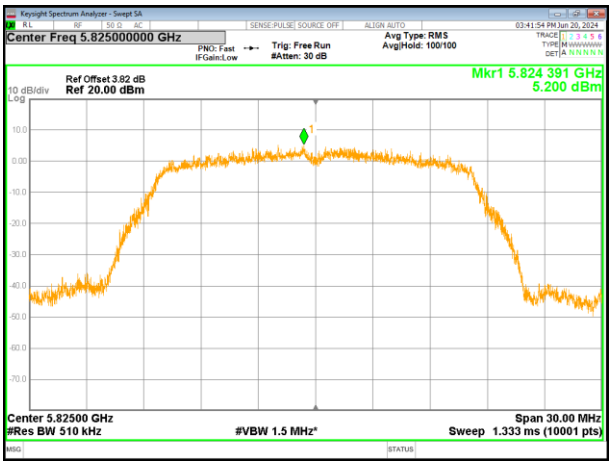
(802.11n20) PSD plot on channel 157



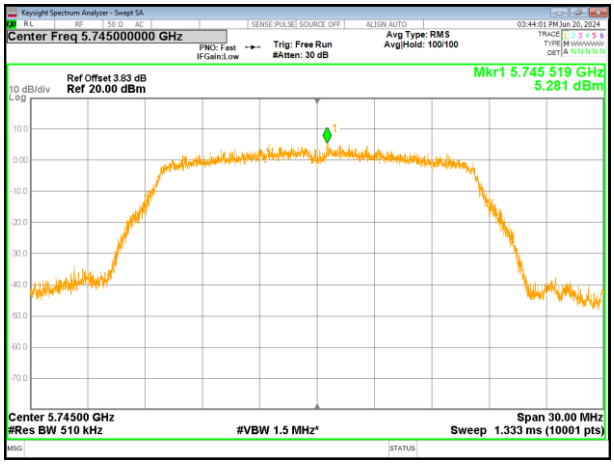
(802.11a) PSD plot on channel 165



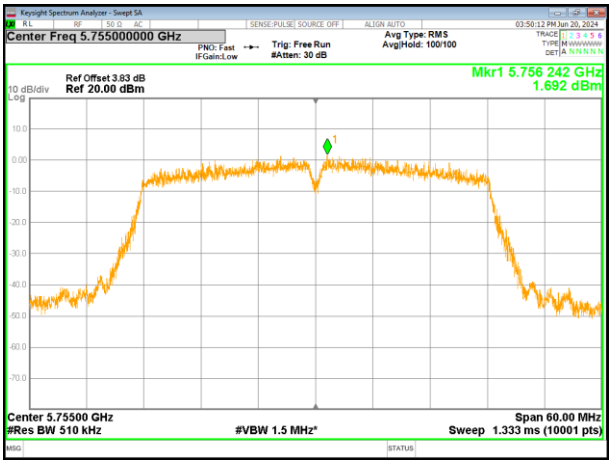
(802.11n20) PSD plot on channel 165



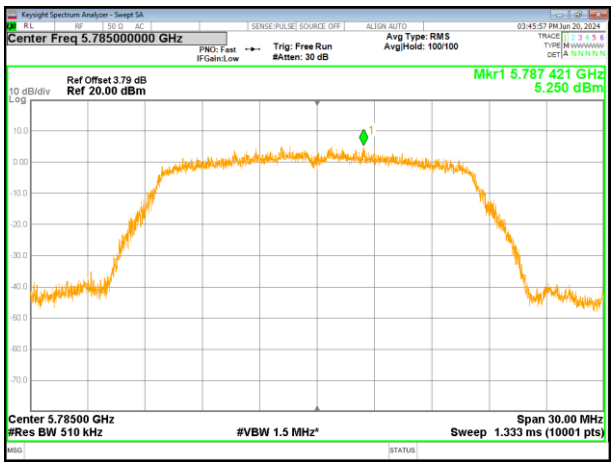
(802.11ac20) PSD plot on channel 149



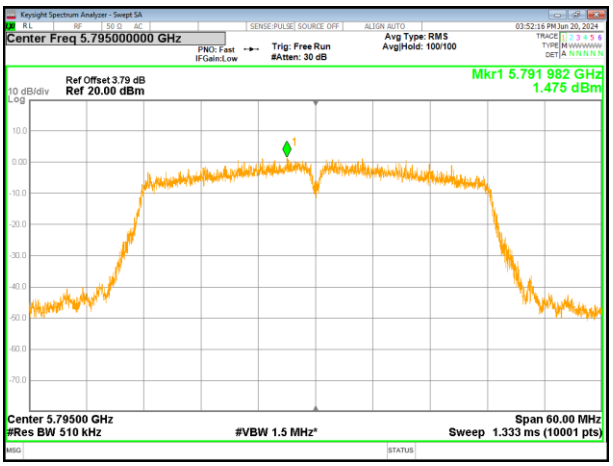
(802.11n40) PSD plot on channel 151



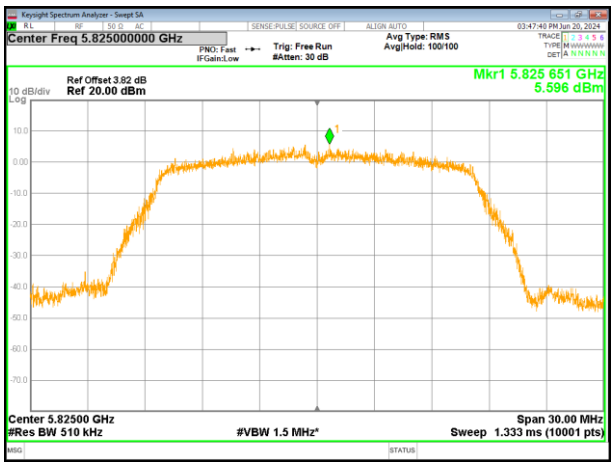
(802.11ac20) PSD plot on channel 157



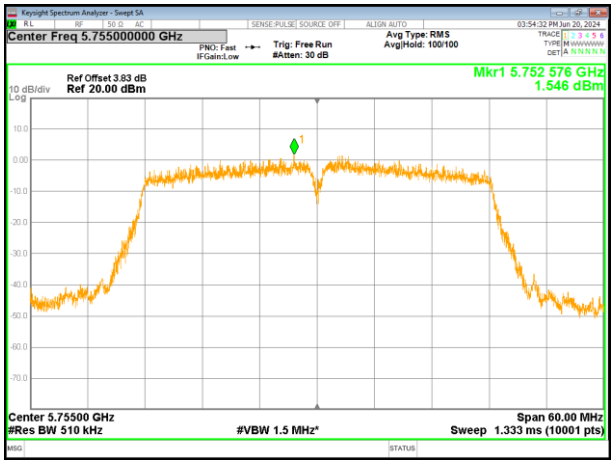
(802.11n40) PSD plot on channel 159



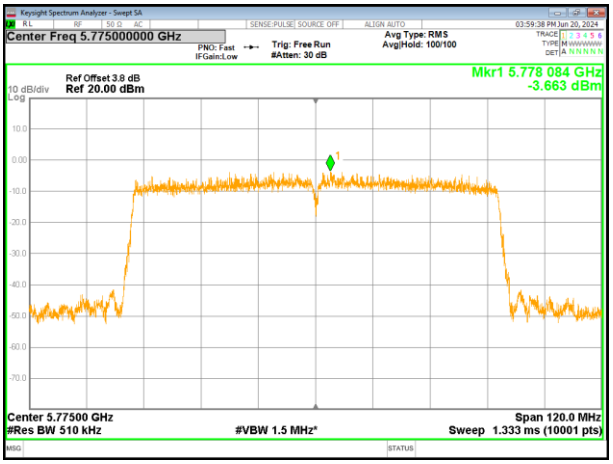
(802.11ac20) PSD plot on channel 165



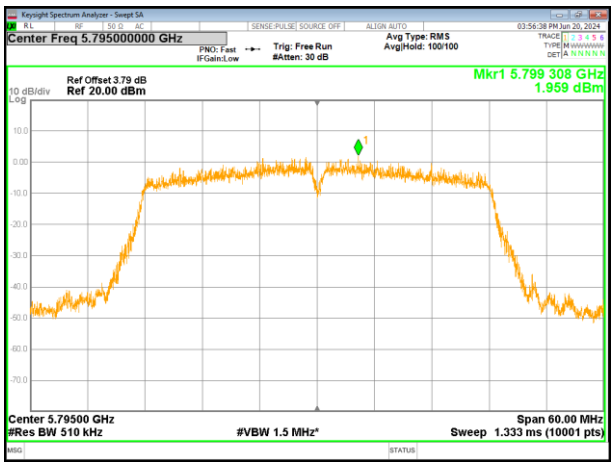
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

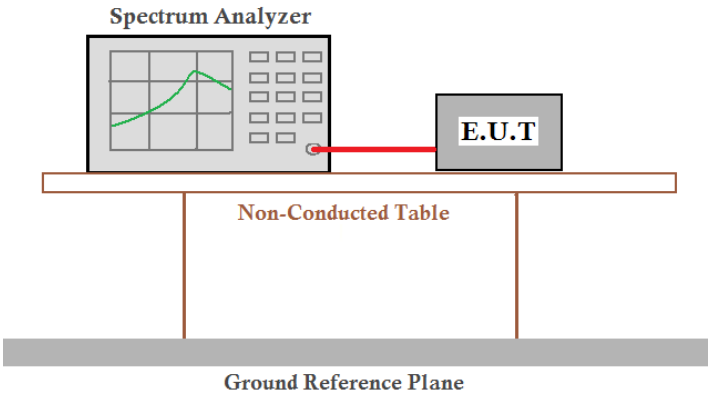


(802.11ac40) PSD plot on channel 159



4.7 Band edge

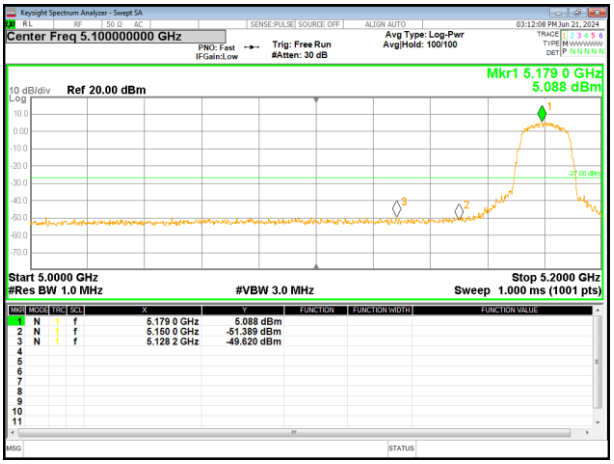
4.7.1 Conducted test Method

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:	
Test Procedure:	1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. 2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range. 3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span. 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency. 5. Repeat above procedures until all measured frequencies were complete..
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test environment:	Temp.: 22.2℃ Humid.: 53%RH
Test voltage:	DC 19V
Test results:	Pass

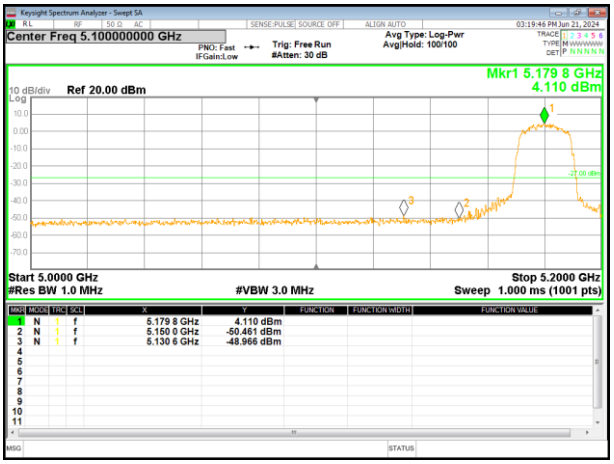
Remark: Due to the margin value of the sideband test being greater than the antenna gain value, the test meets the requirements

5.180~5.240 GHz

(802.11a) Band Edge, Left Side



(802.11n20) Band Edge, Left Side

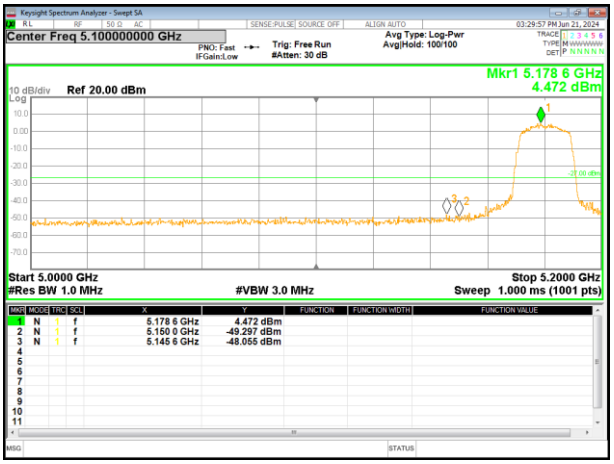


(802.11a) Band Edge, Right Side

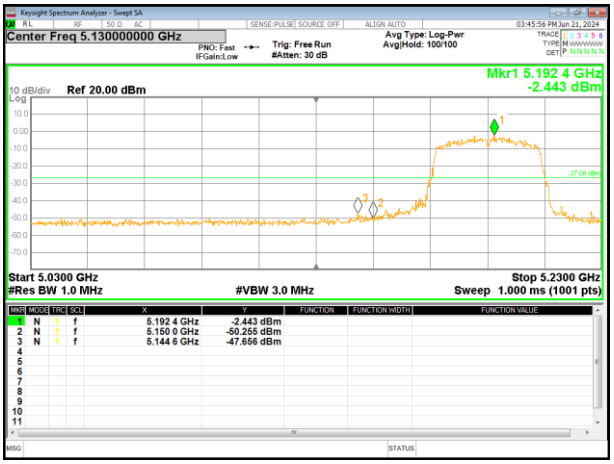
(802.11n20) Band Edge, Right Side

5.180~5.240 GHz

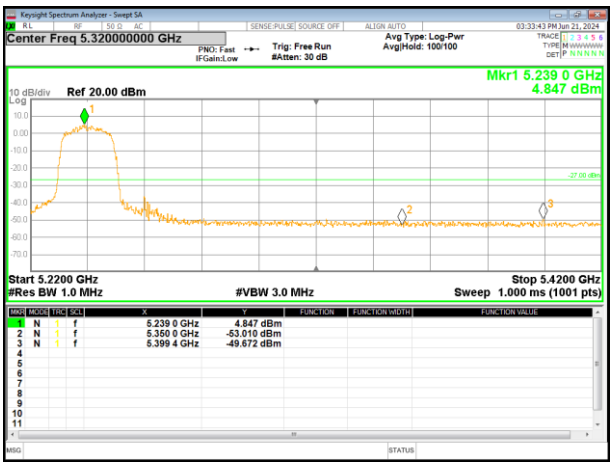
(802.11ac20) Band Edge, Left Side



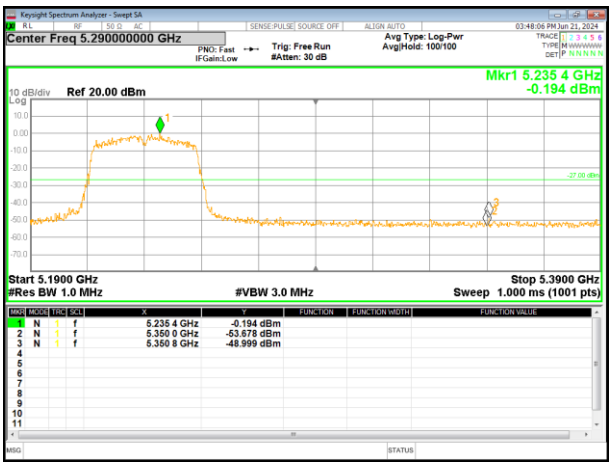
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

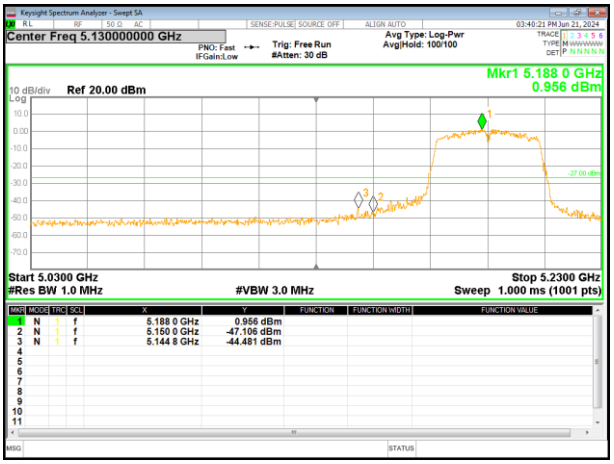


(802.11n40) Band Edge, Right Side



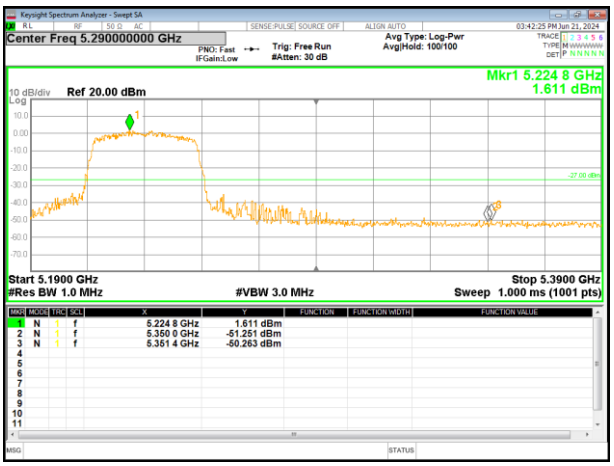
5.180~5.240 GHz

(802.11ac40) Band Edge, Left Side



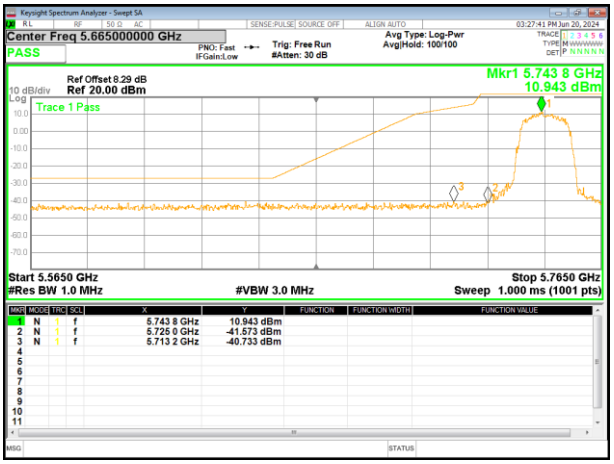
(802.11ac80) Band Edge

(802.11ac40) Band Edge, Right Side

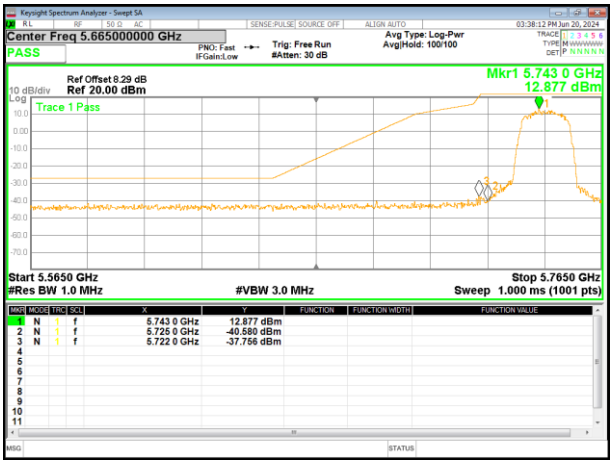


5.745~5.825 GHz

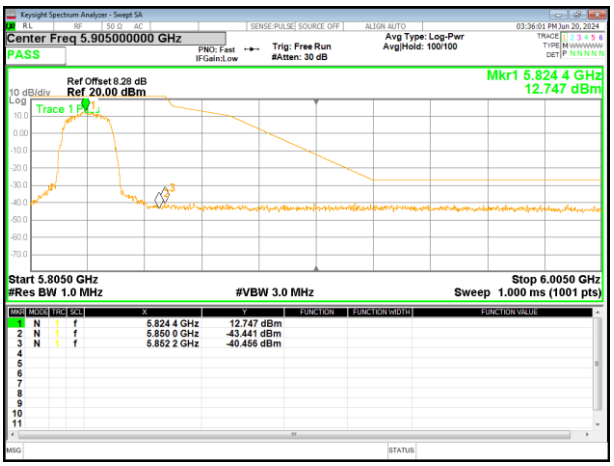
(802.11a) Band Edge, Left Side



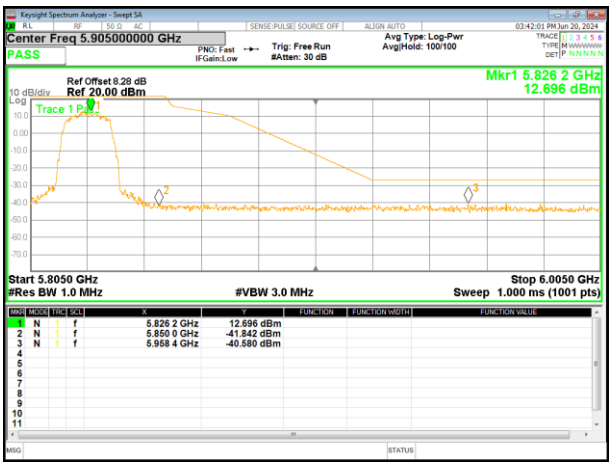
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

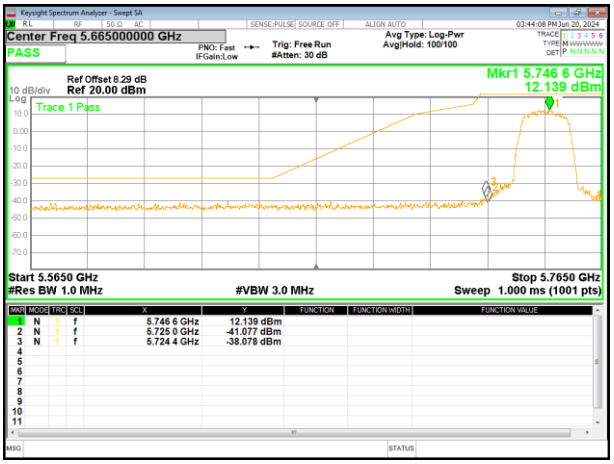


(802.11n20) Band Edge, Right Side

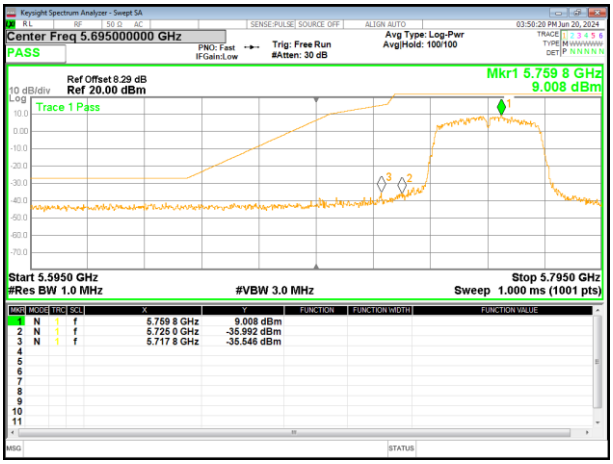


5.745~5.825 GHz

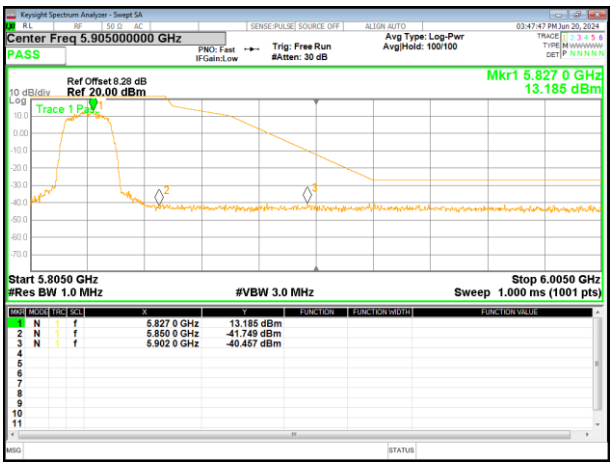
(802.11ac20) Band Edge, Left Side



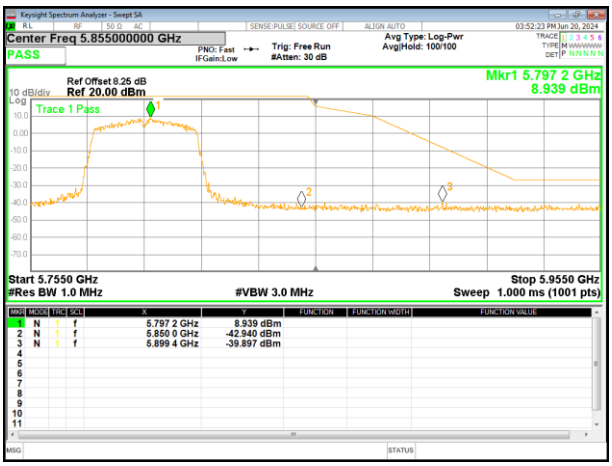
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

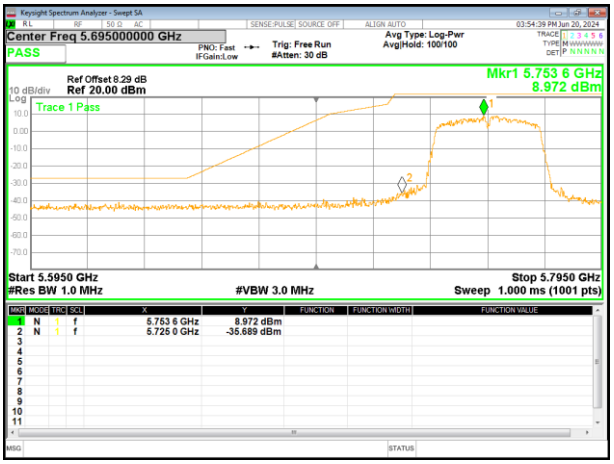


(802.11n40) Band Edge, Right Side

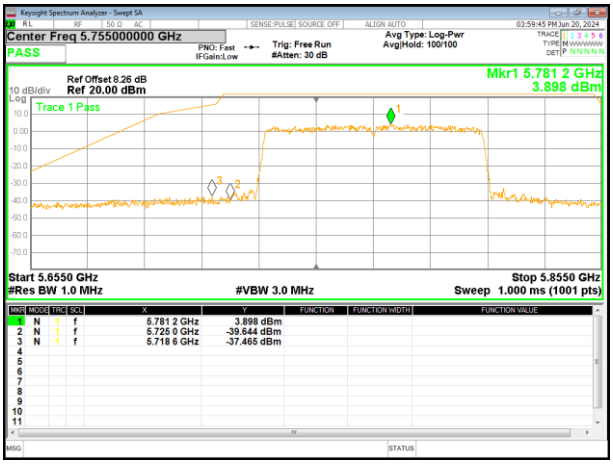


5.745~5.825 GHz

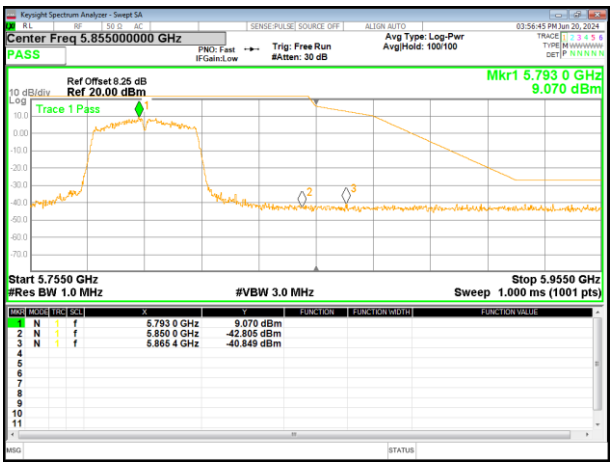
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge

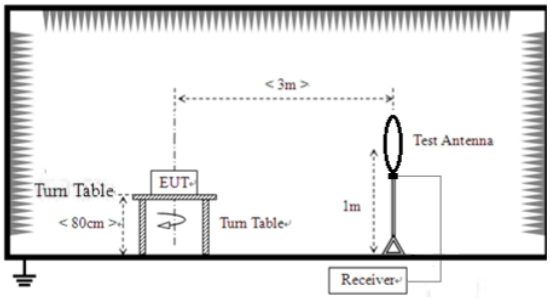


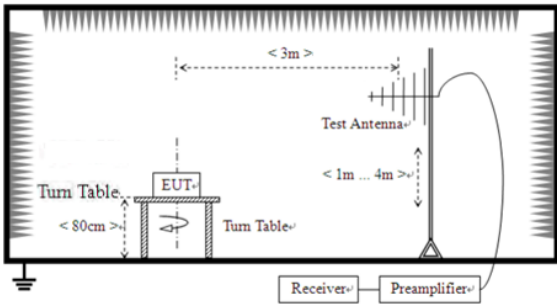
(802.11ac40) Band Edge, Right Side



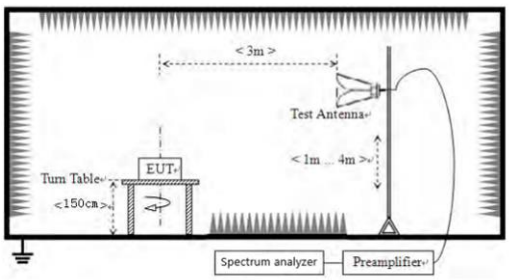
4.8 Spurious Emission

4.8.1 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9kHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="4">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
</table>
<table>
<tr><th>Frequency</th><th>Limit (dBm/MHz)</th><th>Remark</th></tr>
<tr><td>Above 1GHz</td><td>-27.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz
 

For radiated emissions from 30MHz to1GHz
 

</td></tr>
</table>

	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

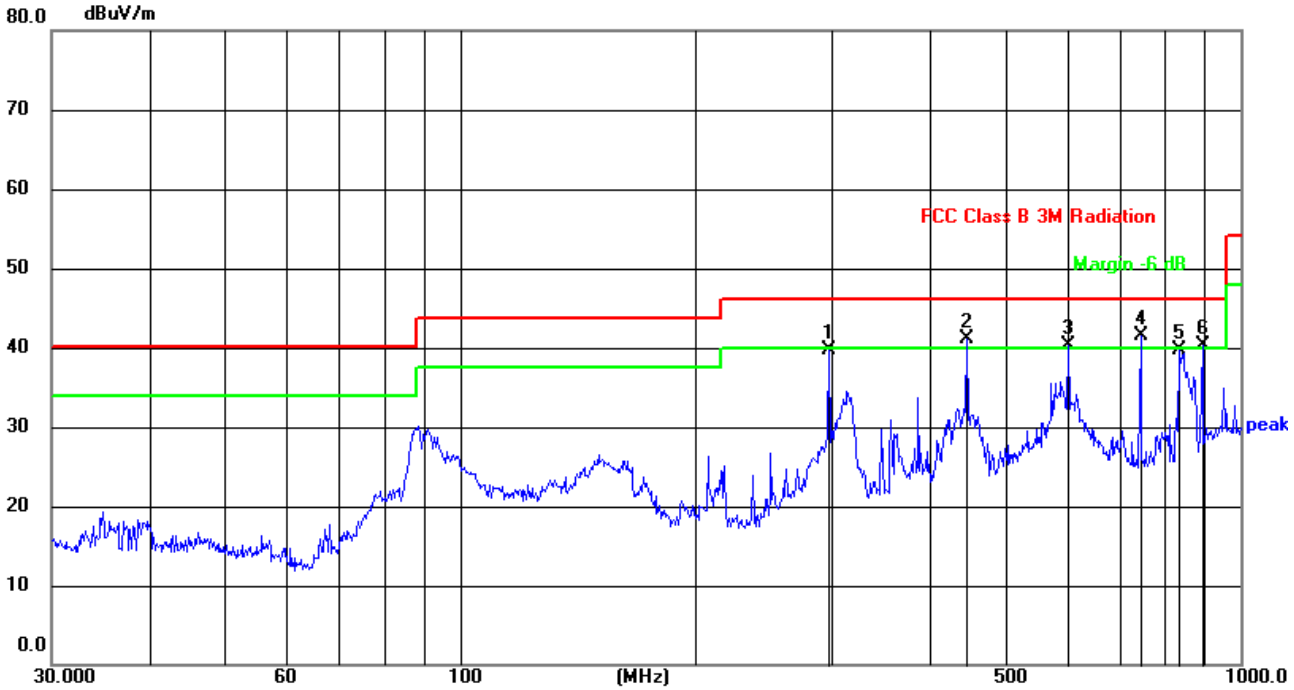
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

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

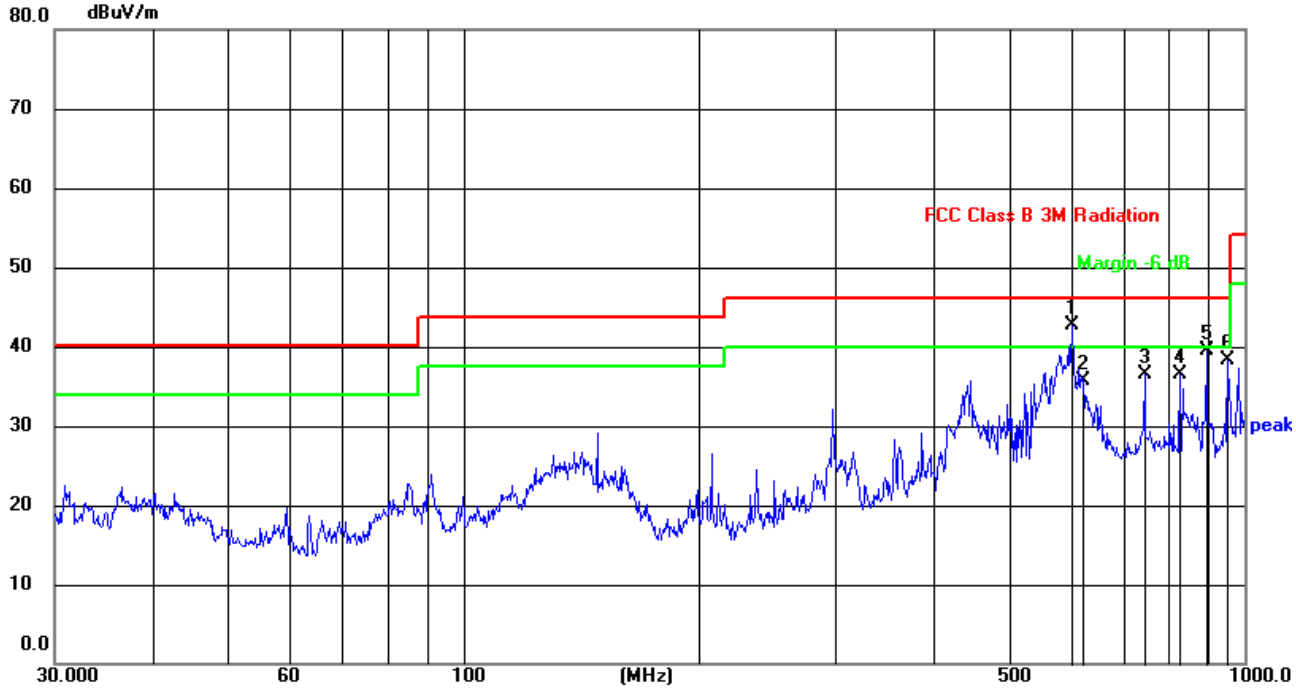
Temperature：	22.2℃	Relative Humidity：	53%
Pressure：	101.2kPar	Test Voltage：	DC 19V
Test Mode：	5.2G TX- 802.11n (5240MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	297.2238	60.07	-20.40	39.67	46.00	-6.33	QP
2	446.4139	56.78	-15.65	41.13	46.00	-4.87	QP
3	601.4265	51.97	-11.70	40.27	46.00	-5.73	QP
4	744.8659	49.65	-8.21	41.44	46.00	-4.56	QP
5	836.2441	46.06	-6.34	39.72	46.00	-6.28	QP
6	893.8564	45.89	-5.54	40.35	46.00	-5.65	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	601.4265	54.42	-11.70	42.72	46.00	-3.28	QP
2	622.8900	46.49	-10.78	35.71	46.00	-10.29	QP
3	744.8659	44.70	-8.21	36.49	46.00	-9.51	QP
4	827.4932	42.89	-6.38	36.51	46.00	-9.49	QP
5	893.8564	45.13	-5.54	39.59	46.00	-6.41	QP
6	952.0937	42.16	-3.79	38.37	46.00	-7.63	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 802.11n mode.

Temperature：	22.2℃	Relative Humidity：	53%
Pressure：	101.2kPar	Test Voltage ：	DC 19V
Test Mode ：	5.2G TX- 802.11n		

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
Low Channel:5180MHz									
V	10360.00	48.78	46.20	8.27	38.50	49.35	68.20	-18.85	PK
V	10360.00	39.09	46.20	8.27	38.50	39.66	54.00	-14.34	AV
V	15540.00	45.97	46.30	10.35	38.70	48.72	74.00	-25.28	PK
V	15540.00	36.23	46.30	10.35	38.70	38.98	54.00	-15.02	AV
V	20720.00	54.81	57.40	11.93	37.80	47.14	68.20	-21.06	PK
V	20720.00	45.08	57.40	11.93	37.80	37.41	54.00	-16.59	AV
V	25900.00	52.52	56.50	13.45	39.70	49.17	68.20	-19.03	PK
V	25900.00	42.41	56.50	13.45	39.70	39.06	54.00	-14.94	AV
H	10360.00	48.71	46.20	8.27	38.50	49.28	68.20	-18.92	PK
H	10360.00	37.76	46.20	8.27	38.50	38.33	54.00	-15.67	AV
H	15540.00	45.02	46.30	10.35	38.70	47.77	74.00	-26.23	PK
H	15540.00	33.88	46.30	10.35	38.70	36.63	54.00	-17.37	AV
H	20720.00	56.96	57.40	11.93	37.80	49.29	68.20	-18.91	PK
H	20720.00	45.94	57.40	11.93	37.80	38.27	54.00	-15.73	AV
H	25900.00	53.51	56.50	13.45	39.70	50.16	68.20	-18.04	PK
H	25900.00	42.44	56.50	13.45	39.70	39.09	54.00	-14.91	AV

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:5200MHz									
V	10400.00	47.86	46.20	8.27	38.50	48.43	68.20	-19.77	PK
V	10400.00	38.86	46.20	8.27	38.50	39.43	54.00	-14.58	AV
V	15600.00	46.28	46.30	10.35	38.40	48.73	74.00	-25.27	PK
V	15600.00	37.72	46.30	10.35	38.40	40.17	54.00	-13.84	AV
V	20800.00	55.98	57.40	11.93	37.80	48.31	68.20	-19.89	PK
V	20800.00	46.55	57.40	11.93	37.80	38.88	54.00	-15.12	AV
V	26000.00	51.23	56.50	13.45	39.80	47.98	68.20	-20.22	PK
V	26000.00	43.61	56.50	13.45	39.80	40.36	54.00	-13.65	AV
H	10400.00	48.44	46.20	8.27	38.50	49.01	68.20	-19.19	PK
H	10400.00	39.11	46.20	8.27	38.50	39.68	54.00	-14.32	AV
H	15600.00	46.27	46.30	10.35	38.40	48.72	74.00	-25.29	PK
H	15600.00	37.72	46.30	10.35	38.40	40.17	54.00	-13.84	AV
H	20800.00	54.96	57.40	11.93	37.80	47.29	68.20	-20.91	PK
H	20800.00	44.51	57.40	11.93	37.80	36.84	54.00	-17.16	AV
H	26000.00	50.98	56.50	13.45	39.80	47.73	68.20	-20.47	PK
H	26000.00	42.84	56.50	13.45	39.80	39.59	54.00	-12.16	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)	Detector Type
High Channel:5240MHz									
V	10480.00	44.76	46.20	8.27	38.60	45.43	68.20	-22.77	PK
V	10480.00	35.03	46.20	8.27	38.60	35.70	54.00	-18.30	AV
V	15720.00	42.41	46.30	10.35	38.40	44.86	74.00	-29.14	PK
V	15720.00	32.84	46.30	10.35	38.40	35.29	54.00	-18.71	AV
V	20960.00	52.21	57.40	11.93	37.50	44.24	68.20	-23.96	PK
V	20960.00	43.90	57.40	11.93	37.50	35.93	54.00	-18.07	AV
V	26200.00	48.31	56.50	13.45	40.10	45.36	68.20	-22.84	PK
V	26200.00	39.16	56.50	13.45	40.10	36.21	54.00	-17.79	AV
H	10480.00	44.99	46.20	8.27	38.60	45.66	68.20	-22.54	PK
H	10480.00	35.03	46.20	8.27	38.60	35.70	54.00	-18.30	AV
H	15720.00	42.71	46.30	10.35	38.40	45.16	74.00	-28.84	PK
H	15720.00	32.92	46.30	10.35	38.40	35.37	54.00	-18.63	AV
H	20960.00	52.41	57.40	11.93	37.50	44.44	68.20	-23.76	PK
H	20960.00	43.79	57.40	11.93	37.50	35.82	54.00	-18.18	AV
H	26200.00	48.03	56.50	13.45	40.10	45.08	68.20	-23.12	PK
H	26200.00	38.55	56.50	13.45	40.10	35.60	54.00	-18.40	AV

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

Temperature：	22.2℃	Relative Humidity：	53%
Pressure：	101.2kPar	Test Voltage ：	DC 19V
Test Mode ：	5.8G TX- 802.11ac		

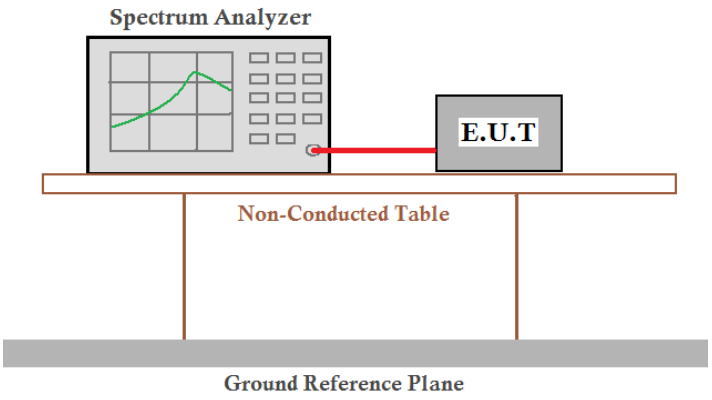
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenn Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Typ
Low Channel:5745MHz									
V	11490.00	44.11	46.10	8.77	39.10	45.88	74.00	-28.12	PK
V	11490.00	36.45	46.10	8.77	39.10	38.22	54.00	-15.78	AV
V	17235.00	41.85	47.60	11.10	38.70	44.05	68.20	-24.15	PK
V	17235.00	34.99	47.60	11.10	38.70	37.19	54.00	-16.81	AV
V	22980.00	50.05	56.90	12.73	37.70	43.58	74.00	-30.42	PK
V	22980.00	42.51	56.90	12.73	37.70	36.04	54.00	-17.96	AV
V	28725.00	47.05	55.60	14.25	40.30	46.00	68.20	-22.20	PK
V	28725.00	39.05	55.60	14.25	40.30	38.00	54.00	-16.00	AV
H	11490.00	44.57	46.10	8.77	39.10	46.34	74.00	-27.66	PK
H	11490.00	36.28	46.10	8.77	39.10	38.05	54.00	-15.95	AV
H	17235.00	42.81	47.60	11.10	38.70	45.01	68.20	-23.19	PK
H	17235.00	35.36	47.60	11.10	38.70	37.56	54.00	-16.44	AV
H	22980.00	52.14	56.90	12.73	37.70	45.67	74.00	-28.33	PK
H	22980.00	42.30	56.90	12.73	37.70	35.83	54.00	-18.17	AV
H	28725.00	48.90	55.60	14.25	40.30	47.85	68.20	-20.35	PK
H	28725.00	39.64	55.60	14.25	40.30	38.59	54.00	-15.41	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)	Detector Type
Middle Channel:5785MHz									
V	11570.00	43.93	46.10	8.77	39.10	45.70	74.00	-28.30	PK
V	11570.00	36.27	46.10	8.77	39.10	38.04	54.00	-15.96	AV
V	17355.00	41.68	47.60	11.10	38.70	43.88	68.20	-24.32	PK
V	17355.00	34.78	47.60	11.10	38.70	36.98	54.00	-17.02	AV
V	23140.00	49.88	56.90	12.73	37.70	43.41	74.00	-30.59	PK
V	23140.00	42.34	56.90	12.73	37.70	35.87	54.00	-18.13	AV
V	28925.00	46.86	55.60	14.25	40.30	45.81	68.20	-22.39	PK
V	28925.00	38.86	55.60	14.25	40.30	37.81	54.00	-16.19	AV
H	11570.00	44.38	46.10	8.77	39.10	46.15	74.00	-27.85	PK
H	11570.00	36.09	46.10	8.77	39.10	37.86	54.00	-16.14	AV
H	17355.00	42.63	47.60	11.10	38.70	44.83	68.20	-23.37	PK
H	17355.00	35.19	47.60	11.10	38.70	37.39	54.00	-16.61	AV
H	23140.00	51.94	56.90	12.73	37.70	45.47	74.00	-28.53	PK
H	23140.00	42.14	56.90	12.73	37.70	35.67	54.00	-18.33	AV
H	28925.00	48.73	55.60	14.25	40.30	47.68	68.20	-20.52	PK
H	28925.00	39.46	55.60	14.25	40.30	38.41	54.00	-15.59	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)	Detector Type
High Channel:5825MHz									
V	11650.00	44.96	46.10	8.77	39.10	46.73	74.00	-27.27	PK
V	11650.00	36.45	46.10	8.77	39.10	38.22	54.00	-15.78	AV
V	17475.00	42.95	47.90	11.23	38.90	45.18	68.20	-23.02	PK
V	17475.00	35.76	47.90	11.23	38.90	37.99	54.00	-16.01	AV
V	23300.00	52.06	57.10	12.73	37.80	45.49	68.20	-22.71	PK
V	23300.00	43.21	57.10	12.73	37.80	36.64	54.00	-17.36	AV
V	29125.00	48.98	55.80	14.25	40.50	47.93	68.20	-20.27	PK
V	29125.00	40.65	55.80	14.25	40.50	39.60	54.00	-14.40	AV
H	11650.00	46.84	46.10	8.77	39.10	48.61	74.00	-25.39	PK
H	11650.00	38.69	46.10	8.77	39.10	40.46	54.00	-13.54	AV
H	17475.00	44.10	47.90	11.23	38.90	46.33	68.20	-21.87	PK
H	17475.00	36.96	47.90	11.23	38.90	39.19	54.00	-14.81	AV
H	23300.00	53.37	57.10	12.73	37.80	46.80	68.20	-21.40	PK
H	23300.00	44.59	57.10	12.73	37.80	38.02	54.00	-15.98	AV
H	29125.00	49.98	55.80	14.25	40.50	48.93	68.20	-19.27	PK
H	29125.00	41.33	55.80	14.25	40.50	40.28	54.00	-13.73	AV

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

4.8.2 Conducted Emission Method

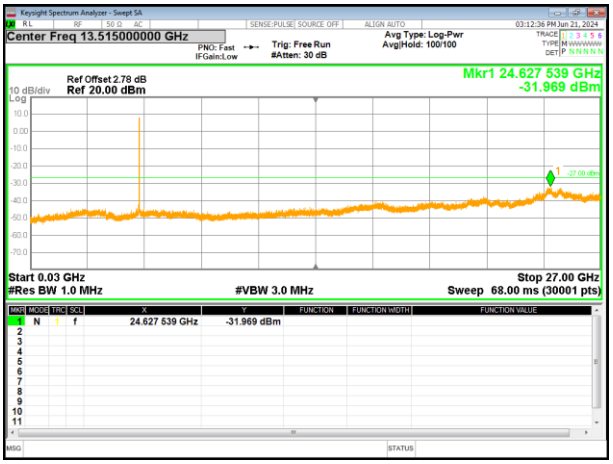
Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)	
Test Method:	ANSI C63.10:2013	
Limit:	-27dBm/MHz	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 22.2℃	Humid.:43%RH
Test voltage:	DC 19V	
Test results:	Pass	

Remark:1. Antenna gain and cable loss data included in Offset.

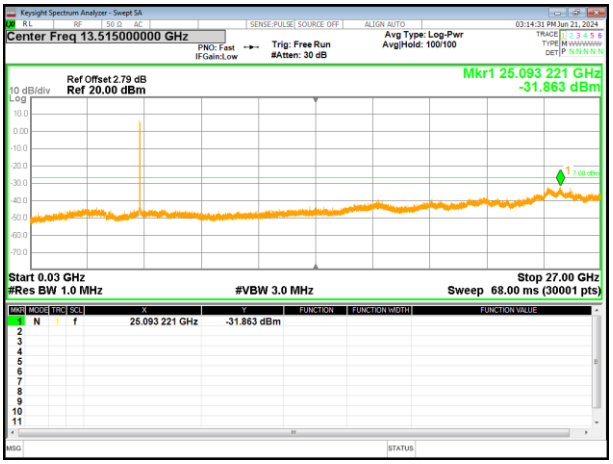
5180-5240MHz

Test Plot

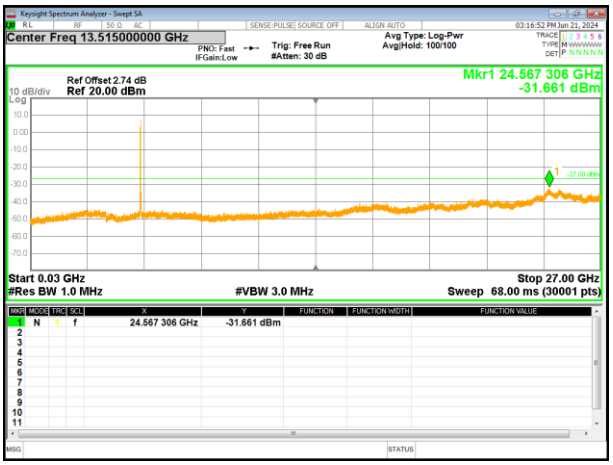
802.11a on channel 36



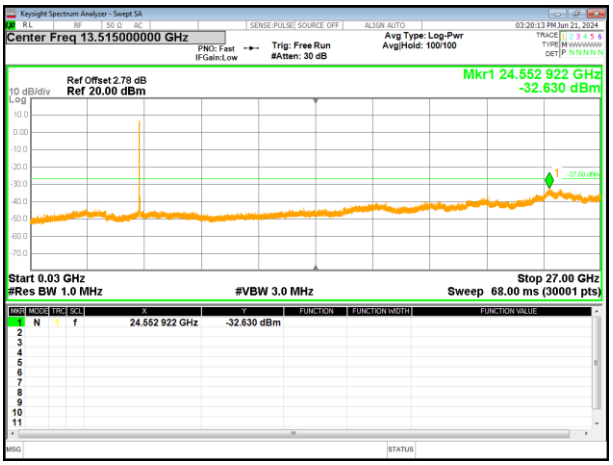
802.11a on channel 40



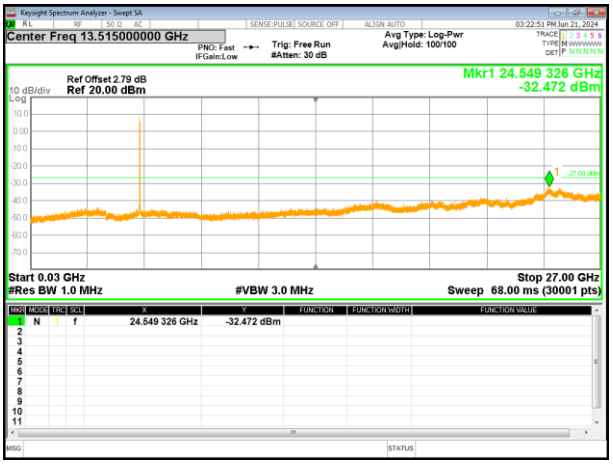
802.11a on channel 48



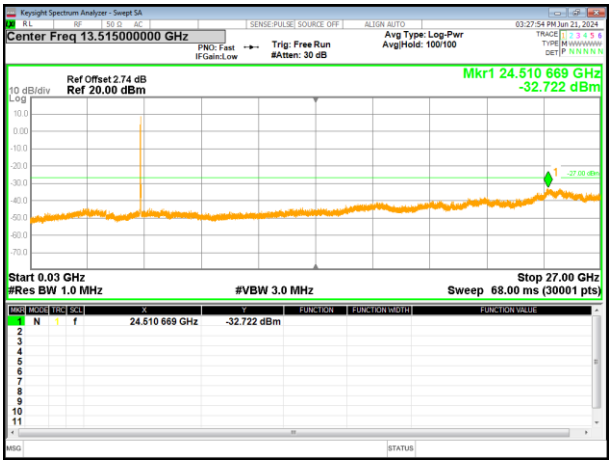
802.11n20 on channel 36



802.11n20 on channel 40

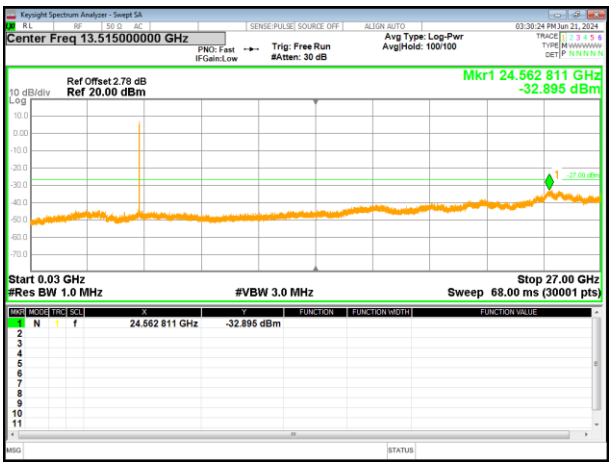


802.11n20 on channel 48

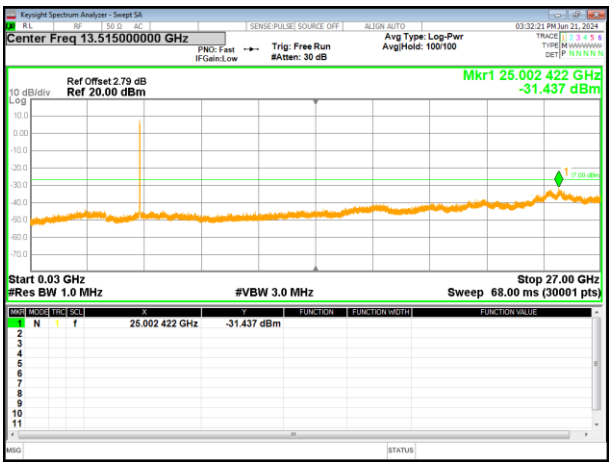


Test Plot

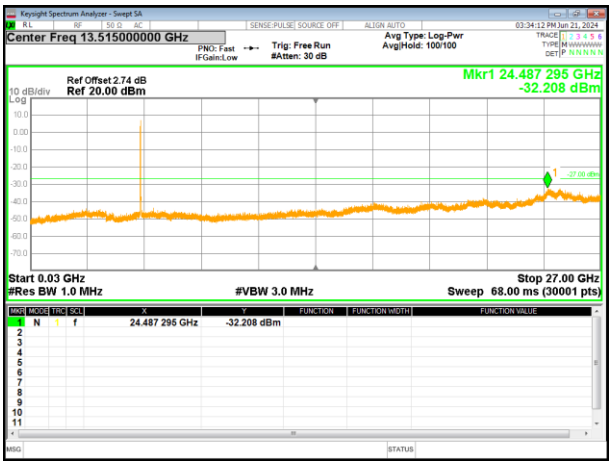
802.11ac20 on channel 36



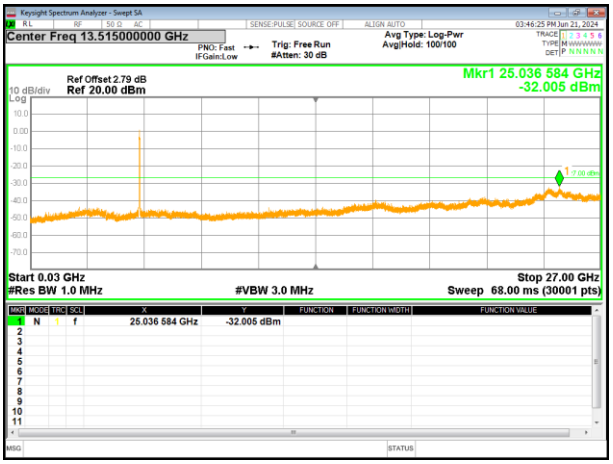
802.11ac20 on channel 40



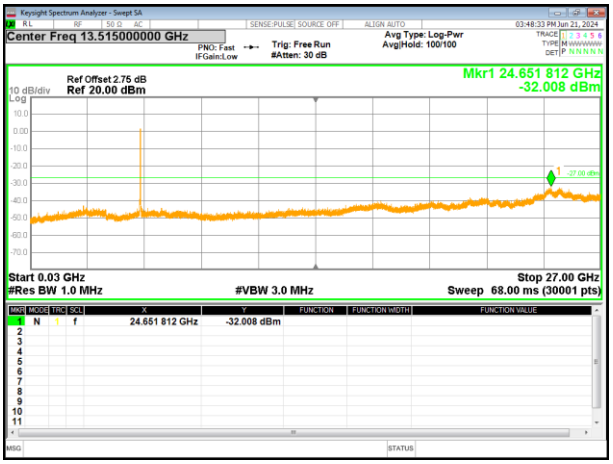
802.11ac20 on channel 48



802.11n40 on channel 38

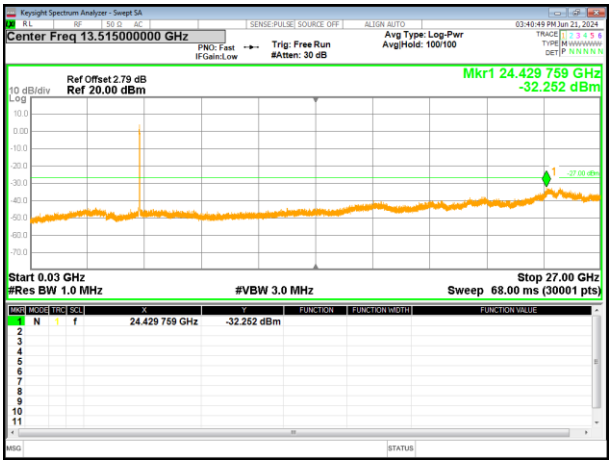


802.11n40 on channel 46

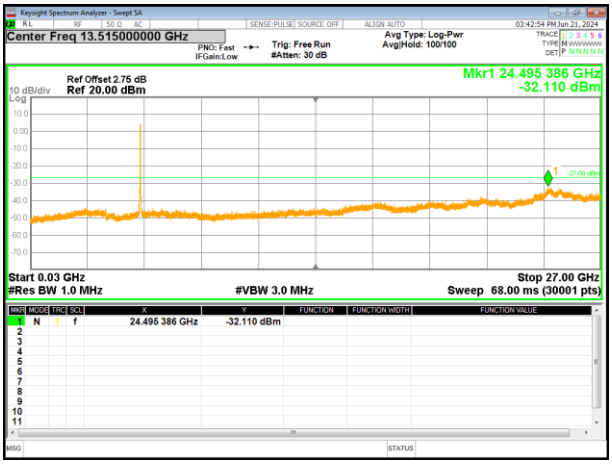


Test Plot

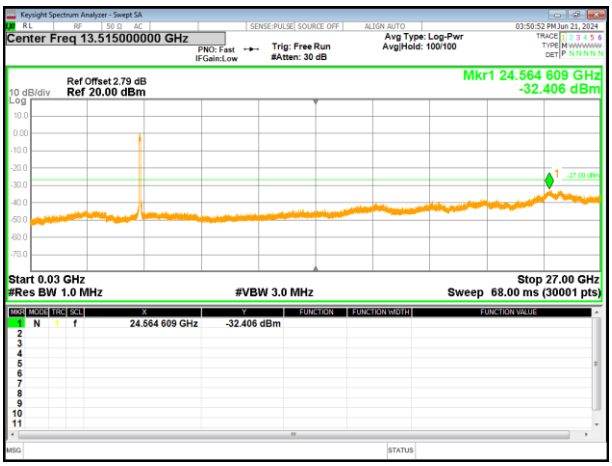
802.11ac40 on channel 38



802.11ac40 on channel 46



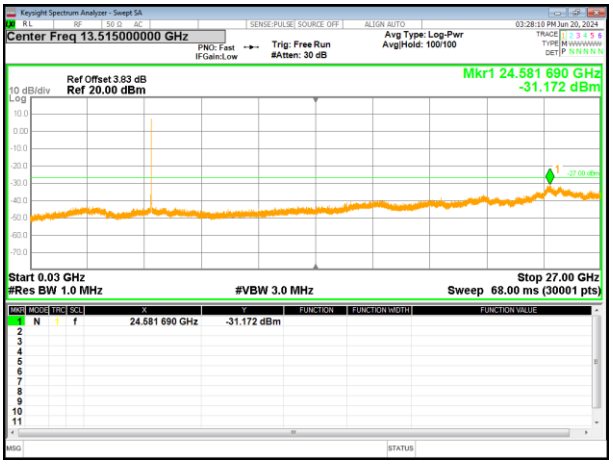
802.11ac80 on channel 42



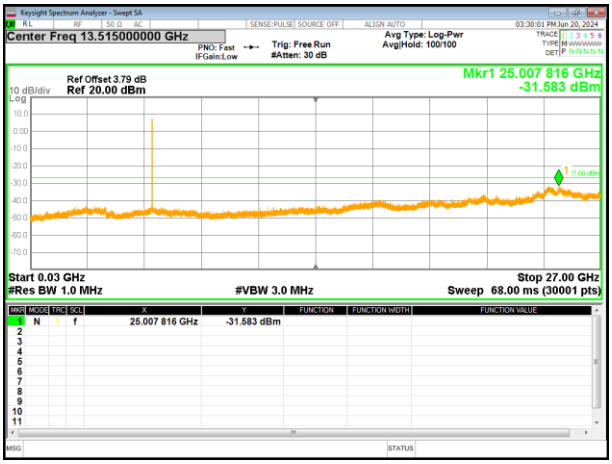
5745-5825MHz

Test Plot

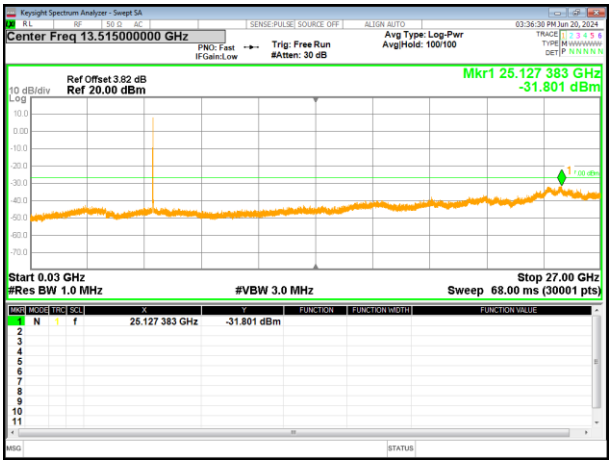
802.11a on channel 149



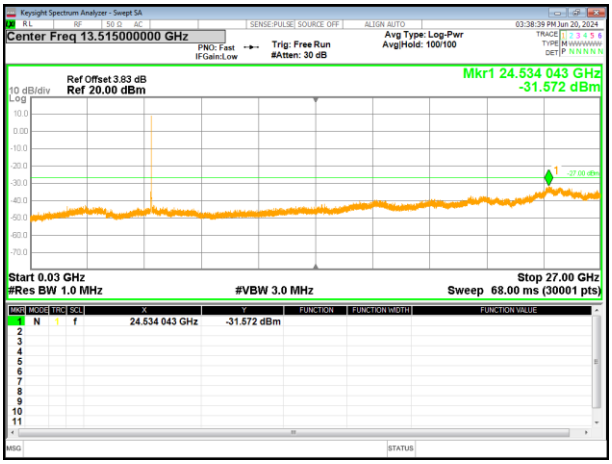
802.11a on channel 157



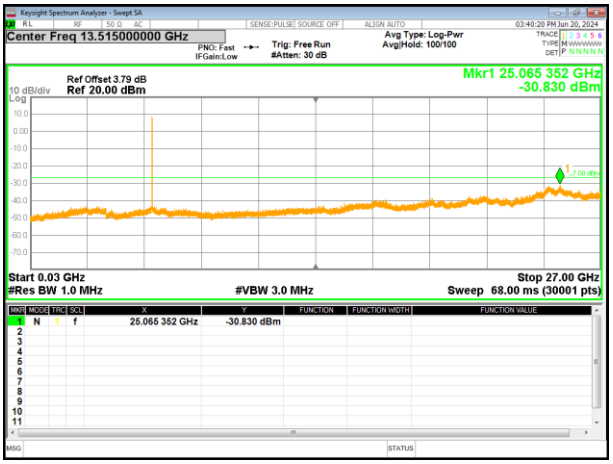
802.11a on channel 165



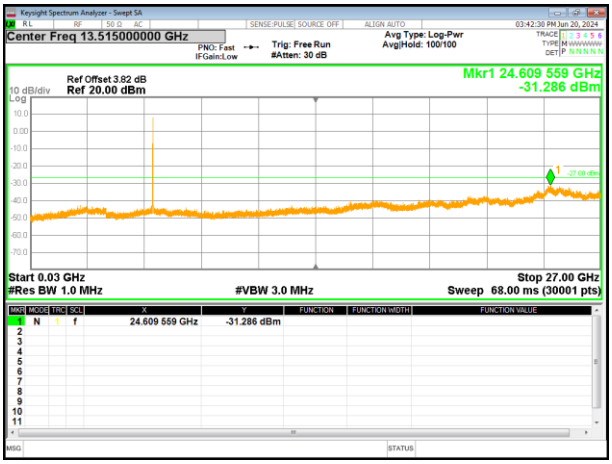
802.11n20 on channel 149



802.11n20 on channel 157



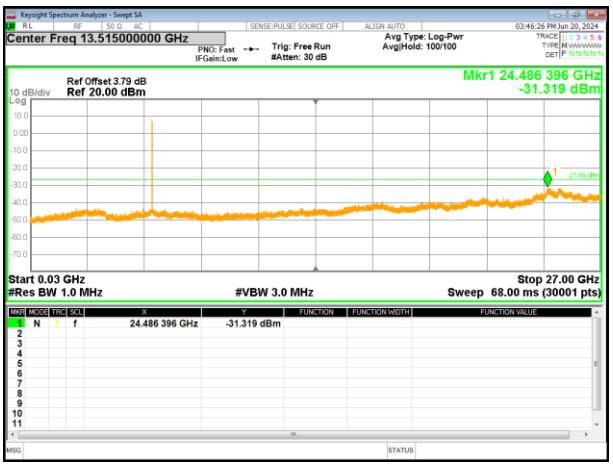
802.11n20 on channel 165



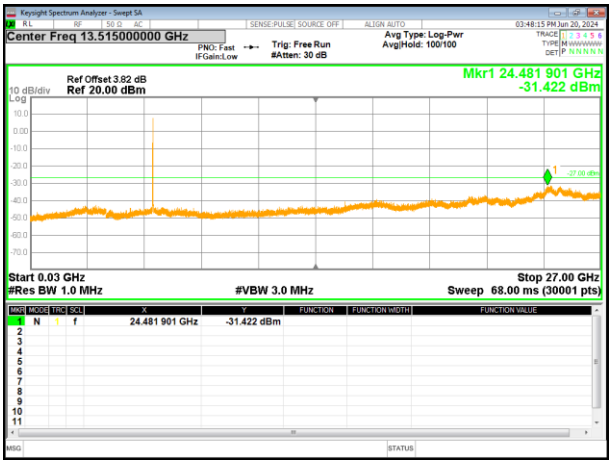
Test Plot

802.11ac20 on channel 149

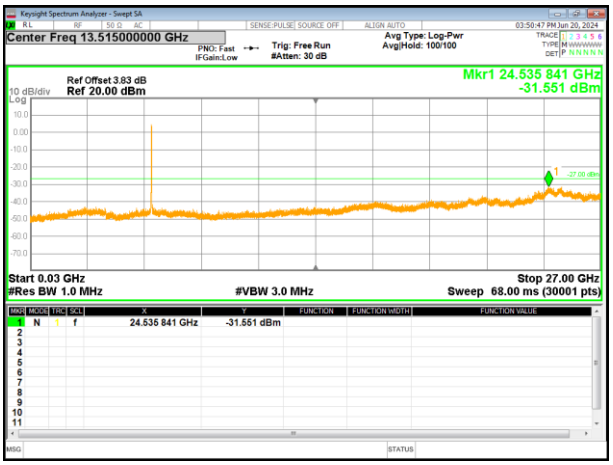
802.11ac20 on channel 157



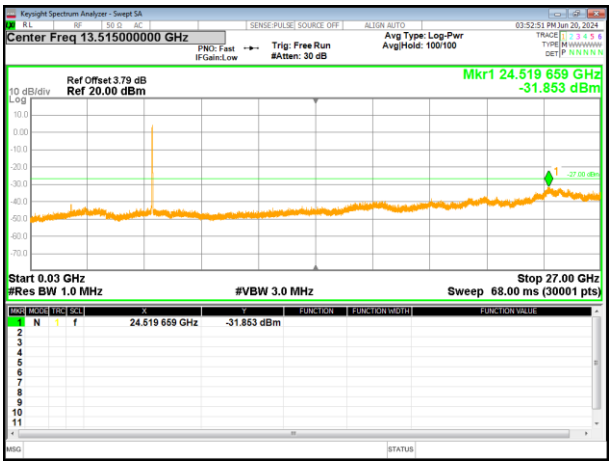
802.11ac20 on channel 165



802.11n40 on channel 151

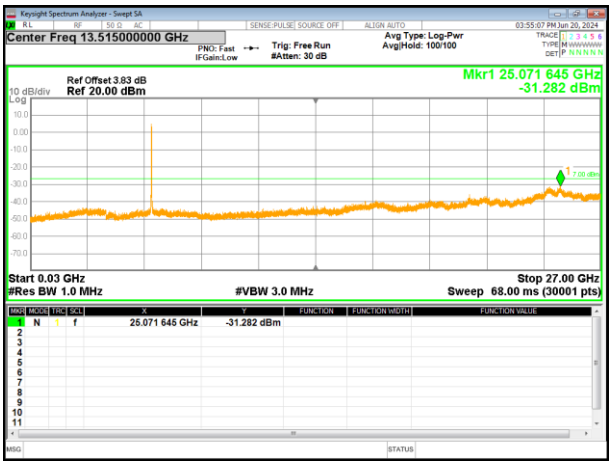


802.11n40 on channel 159

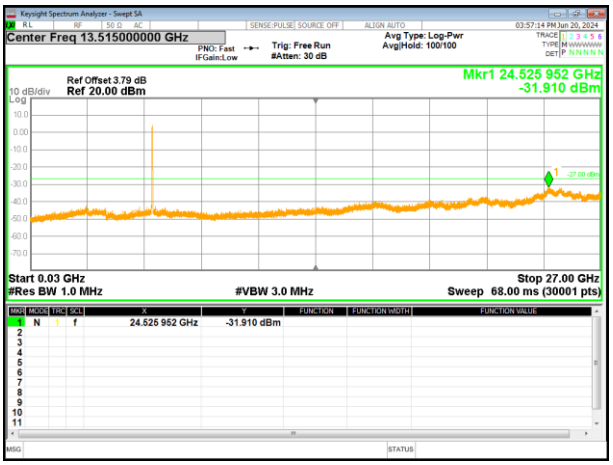


Test Plot

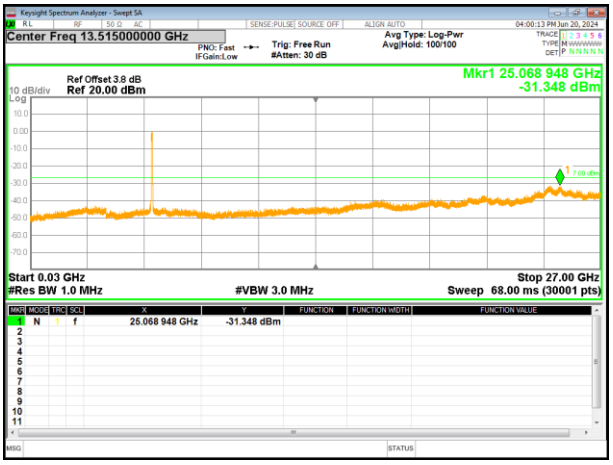
802.11ac40 on channel 151



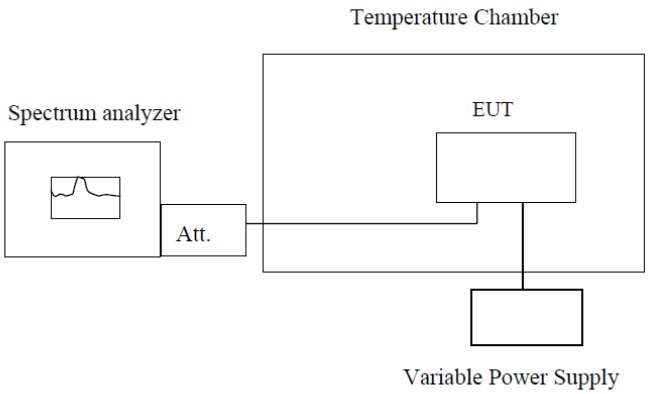
802.11ac40 on channel 159



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: DC 19V					
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	5180.423	5179.780	5180.411	5180.524
	5190	5190.413	5199.795	5200.287	5190.535
	5200	5200.416	5199.780	5200.312	5200.526
	5210	5210.422	5209.758	5210.290	5210.528
	5220	5220.417	5219.773	5220.306	5220.533
	5230	5230.416	5229.766	5230.298	5230.551
	5240	5240.389	5239.775	5240.307	5240.537
-20	5180	5180.416	5179.756	5180.296	5180.545
	5190	5190.407	5189.747	5190.296	5190.541
	5200	5200.415	5199.755	5200.290	5200.536
	5210	5210.407	5209.747	5210.280	5210.543
	5220	5220.428	5219.768	5220.291	5220.536
	5230	5230.407	5229.746	5300.290	5230.534
	5240	5240.425	5239.765	5240.293	5240.508
-10	5180	5180.425	5179.765	5180.275	5180.524
	5190	5190.421	5189.761	5190.287	5190.535
	5200	5200.416	5199.756	5200.278	5200.526
	5210	5210.422	5209.762	5210.279	5210.528
	5220	5220.417	5219.757	5220.287	5220.533
	5230	5230.416	5229.755	5230.304	5230.551
	5240	5240.389	5239.729	5240.277	5240.524
0	5180	5180.202	5179.744	5180.287	5180.535
	5190	5200.374	5189.755	5190.279	5190.536
	5200	5200.372	5199.746	5200.287	5200.527
	5210	5210.427	5209.747	5210.279	5300.535
	5220	5220.416	5219.754	5220.301	5220.526
	5230	5230.404	5229.772	5230.278	5230.547
	5240	5240.421	5239.745	5240.297	5240.526
10	5180	5180.404	5179.756	5180.296	5180.536
	5190	5190.415	5189.747	5190.293	5190.527
	5200	5200.406	5199.755	5200.288	5200.535
	5210	5210.407	5209.747	5210.294	5210.528
	5220	5220.414	5219.768	5220.290	5220.547
	5230	5230.433	5229.746	5230.287	5230.525
	5240	5240.418	5239.765	5240.261	5240.544
20	5180	5180.482	5179.009	5180.545	5180.298

	5190	5190.425	5189.798	5190.590	5190.563
	5200	5200.420	5199.789	5200.599	5200.588
	5210	5210.426	5299.799	5210.592	5210.573
	5220	5220.421	5219.789	5220.614	5220.563
	5230	5230.420	5229.810	5230.592	5230.591
	5240	5240.393	5239.789	5240.611	5240.580
30	5180	5180.408	5179.797	5180.598	5180.581
	5190	5190.419	5189.789	5190.590	5180.581
	5200	5200.410	5199.797	5200.599	5190.577
	5210	5210.411	5209.789	5210.592	5200.572
	5220	5220.418	5219.810	5220.614	5210.579
	5230	5230.437	5229.788	5230.592	5220.573
	5240	5240.409	5239.807	5240.611	5230.571
40	5180	5180.420	5179.796	5180.384	5180.560
	5190	5190.411	5189.798	5200.558	5190.571
	5200	5200.419	5199.789	5200.556	5200.562
	5210	5210.411	5299.799	5210.612	5210.564
	5220	5220.432	5219.789	5220.602	5220.570
	5230	5230.411	5229.810	5230.589	5230.588
	5240	5240.429	5239.789	5240.607	5240.561
50	5180	5180.420	5179.797	5180.598	5180.533
	5190	5190.411	5189.789	5190.590	5190.563
	5200	5200.419	5199.797	5200.599	5200.588
	5210	5210.411	5209.789	5210.592	5210.573
	5220	5220.432	5219.810	5220.614	5220.563
	5230	5230.411	5229.788	5230.592	5230.591
	5240	5240.429	5239.807	5240.611	5240.580

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
16.18	5180	5180.325	5179.800	5180.618	5180.701
	5190	5190.321	5199.794	5190.610	5200.576
	5200	5200.316	5199.822	5200.619	5200.601
	5210	5210.322	5209.800	5210.612	5210.580
	5220	5220.317	5219.815	5220.634	5220.594
	5230	5230.315	5229.808	5230.612	5230.587
	5240	5240.288	5239.817	5240.627	5240.596
19.00	5180	5180.311	5179.815	5180.617	5180.586
	5190	5190.307	5179.921	5190.619	5190.585
	5200	5200.315	5199.797	5200.611	5200.579
	5210	5210.308	5209.822	5300.627	5210.570
	5220	5220.328	5219.800	5220.613	5220.579
	5230	5230.306	5229.815	5230.633	5300.578
	5240	5240.324	5239.809	5240.613	5240.582
24.7	5180	5180.325	5179.806	5180.606	5180.565
	5190	5190.321	5189.803	5190.618	5190.576
	5200	5200.316	5199.798	5200.610	5200.566
	5210	5210.322	5209.804	5210.612	5210.569
	5220	5220.317	5219.799	5220.620	5220.575
	5230	5230.315	5229.797	5230.638	5230.598
	5240	5240.288	5239.771	5240.611	5240.566

Frequency stability versus Temp.					
Power Supply: DC 19V					
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	5745	5745.301	5744.806	5745.655	5745.575
	5755	5755.311	5754.812	5755.663	5755.563
	5775	5775.332	5774.805	5775.682	5775.575
	5785	5785.308	5784.797	5785.658	5785.581
	5795	5795.304	5794.804	5795.655	5795.600
	5825	5825.302	5824.734	5825.661	5825.592
-20	5745	5745.298	5744.817	5745.649	5745.586
	5755	5755.313	5754.818	5755.675	5755.599
	5775	5775.312	5774.822	5775.658	5775.585
	5785	5785.315	5784.814	5785.667	5785.571
	5795	5795.325	5794.805	5795.666	5795.566
	5825	5825.307	5824.815	5825.679	5825.600
-10	5745	5745.308	5744.807	5745.665	5745.205
	5755	5755.334	5754.813	5755.668	5755.588
	5775	5775.330	5774.831	5775.673	5775.590
	5785	5785.314	5784.807	5785.665	5785.592
	5795	5795.303	5794.803	5795.657	5795.576
	5825	5825.238	5824.806	5825.669	5825.572
0	5745	5745.302	5744.796	5745.665	5745.576
	5755	5755.327	5754.811	5755.668	5755.601
	5775	5775.308	5774.811	5775.673	5775.598
	5785	5785.317	5784.814	5785.665	5785.581
	5795	5795.315	5794.827	5795.657	5795.571
	5825	5825.325	5824.807	5825.669	5825.506
10	5745	5745.302	5744.806	5745.654	5745.571
	5755	5755.327	5754.822	5755.662	5755.582
	5775	5775.308	5774.824	5775.656	5775.600
	5785	5785.317	5784.806	5785.648	5785.575
	5795	5795.315	5794.823	5795.656	5795.572
	5825	5825.325	5824.822	5825.588	5825.575
20	5745	5745.318	5744.831	5745.663	5745.575
	5755	5755.332	5754.802	5755.680	5755.593
	5775	5775.317	5774.826	5775.667	5775.574
	5785	5785.304	5784.826	5785.654	5785.600
	5795	5795.298	5794.817	5795.649	5795.593
	5825	5825.332	5824.833	5825.686	5825.602
30	5745	5745.308	5744.817	5745.648	5745.600
	5755	5755.315	5754.818	5755.672	5755.571
	5775	5775.332	5774.822	5775.675	5775.595
	5785	5785.308	5784.814	5785.657	5785.594
	5795	5795.304	5794.805	5795.675	5795.586
	5825	5825.307	5824.815	5825.676	5825.601
40	5745	5745.318	5744.801	5745.665	5745.569

	5755	5755.332	5754.825	5755.668	5755.601
	5775	5775.317	5774.807	5775.673	5775.598
	5785	5785.304	5784.816	5785.665	5785.581
	5795	5795.298	5794.814	5795.657	5795.571
	5825	5825.332	5824.825	5825.669	5825.506
50	5745	5745.318	5744.831	5745.665	5745.575
	5755	5755.312	5754.802	5755.679	5755.593
	5775	5775.317	5774.826	5775.667	5775.574
	5785	5785.304	5784.826	5785.654	5785.601
	5795	5795.298	5794.816	5795.649	5795.593
	5825	5825.332	5824.837	5825.686	5825.602

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)
16.18	5745	5745.412	5744.806	5745.634	5745.564
	5755	5755.428	5754.812	5755.652	5755.588
	5775	5775.428	5774.805	5775.655	5775.570
	5785	5785.431	5784.797	5785.637	5785.578
	5795	5795.442	5794.804	5795.656	5795.577
	5825	5825.424	5824.734	5825.656	5825.587
19.00	5745	5745.412	5744.817	5745.629	5745.580
	5755	5755.428	5754.818	5755.655	5755.593
	5775	5775.428	5774.822	5775.638	5775.579
	5785	5785.431	5784.814	5785.647	5785.565
	5795	5795.438	5794.805	5795.646	5795.560
	5825	5825.424	5824.815	5825.659	5825.594
24.7	5745	5745.433	5744.830	5745.645	5745.569
	5755	5755.447	5754.802	5755.660	5755.587
	5775	5775.433	5774.826	5775.647	5775.568
	5785	5785.420	5784.826	5785.634	5785.594
	5795	5795.414	5794.817	5795.629	5795.587
	5825	5825.449	5824.833	5825.666	5825.596

5 Test Setup Photo

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

6 EUT Constructional Details

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

------END------