

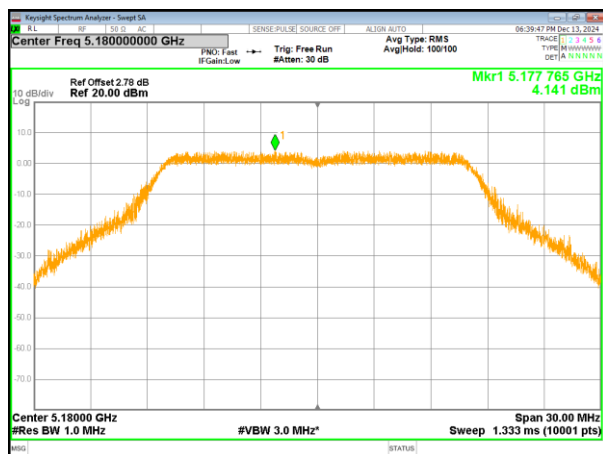
5180-5240MHz

Mode	Frequency	Measured Power Density (dBm/MHz)	Correction Factor (dB)	Total Measured Power Density (dBm/MHz)	Limit (dBm/MHz)
802.11 a	5180 MHz	4.141	0.71	4.851	11
	5200 MHz	4.112	0.71	4.822	11
	5240 MHz	3.813	0.71	4.523	11
802.11 n20	5180 MHz	3.812	0.51	4.322	11
	5200 MHz	3.733	0.51	4.243	11
	5240 MHz	3.583	0.51	4.093	11
802.11 ac20	5180 MHz	3.895	0.52	4.415	11
	5200 MHz	3.579	0.52	4.099	11
	5240 MHz	3.935	0.52	4.455	11
802.11 n40	5190 MHz	-0.064	0.50	0.436	11
	5230 MHz	-0.698	0.50	-0.198	11
802.11 ac40	5190 MHz	-0.256	0.52	0.264	11
	5230 MHz	-0.592	0.52	-0.072	11
802.11 ac80	5210 MHz	-4.524	0.51	-4.014	11

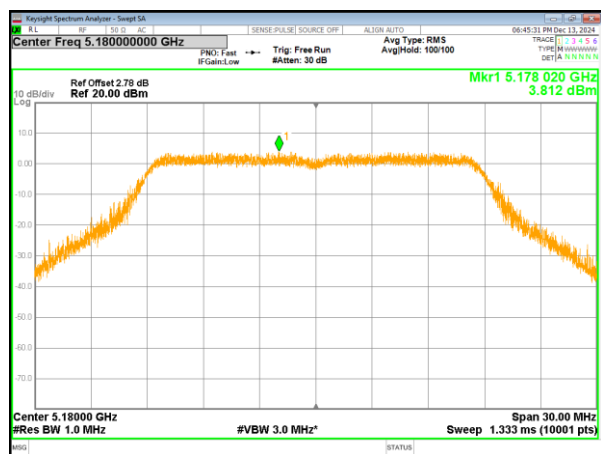
e.i.r.p spectral density

Mode	Frequency	Measured Power Density (dBm/MHz)	ANT Gain(dBi)	e.i.r.p. spectral density	Limit (dBm/MHz)
802.11 a	5180 MHz	4.851	3.42	8.271	10
	5200 MHz	4.822	3.42	8.242	10
	5240 MHz	4.523	3.42	7.943	10
802.11 n20	5180 MHz	4.322	3.42	7.742	10
	5200 MHz	4.243	3.42	7.663	10
	5240 MHz	4.093	3.42	7.513	10
802.11 ac20	5180 MHz	4.415	3.42	7.835	10
	5200 MHz	4.099	3.42	7.519	10
	5240 MHz	4.455	3.42	7.875	10
802.11 n40	5190 MHz	0.436	3.42	3.856	10
	5230 MHz	-0.198	3.42	3.222	10
802.11 ac40	5190 MHz	0.264	3.42	3.684	10
	5230 MHz	-0.072	3.42	3.348	10
802.11 ac80	5210 MHz	-4.014	3.42	-0.594	10

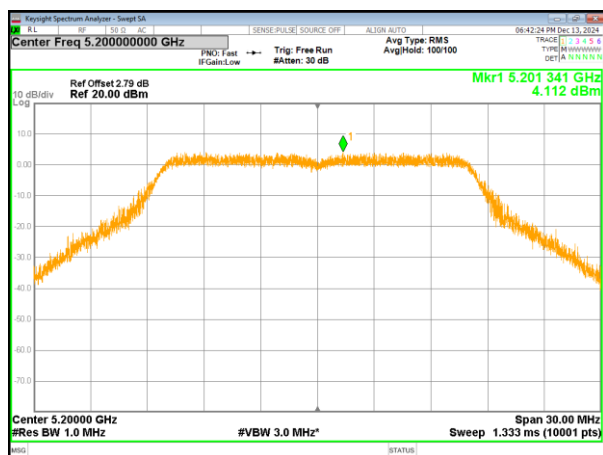
(802.11a) PSD plot on channel 36



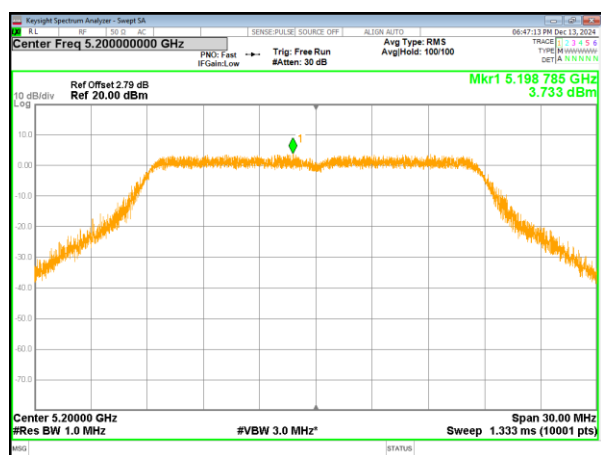
(802.11n20) PSD plot on channel 36



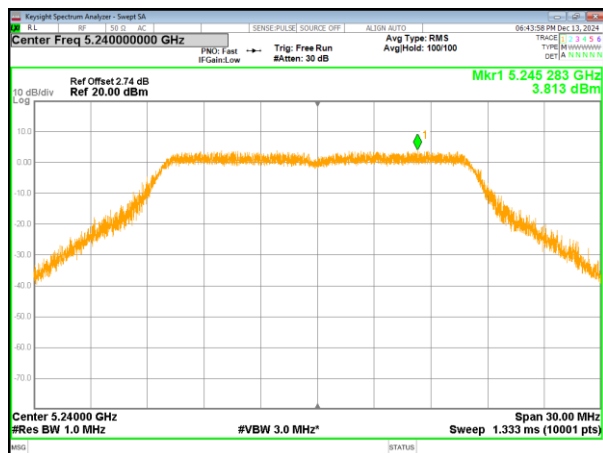
(802.11a) PSD plot on channel 40



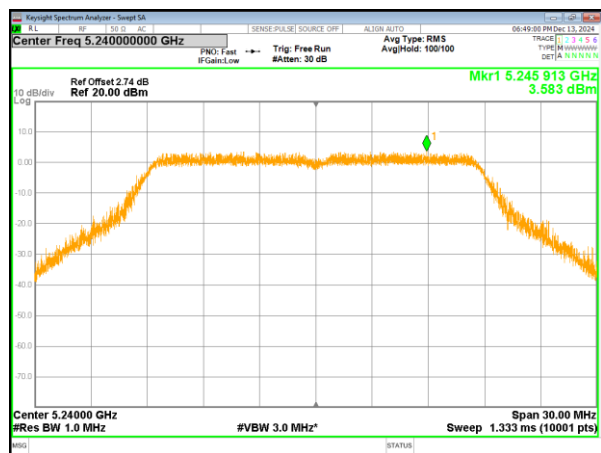
(802.11n20) PSD plot on channel 40



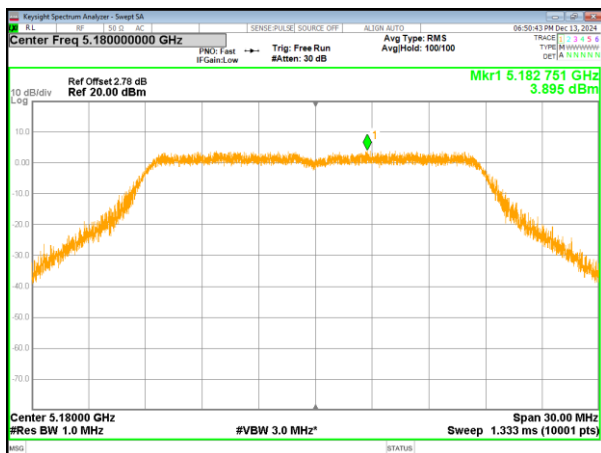
(802.11a) PSD plot on channel 48



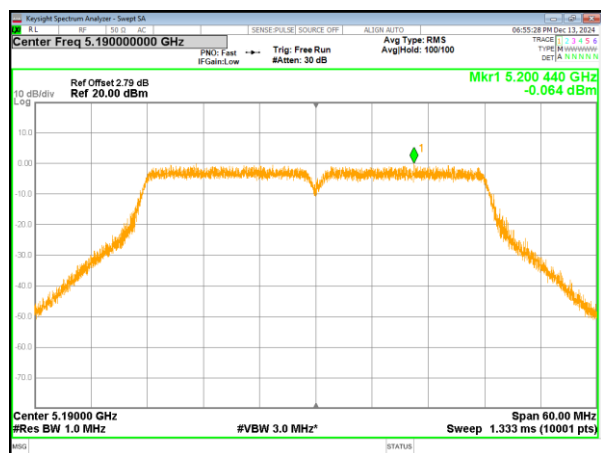
(802.11n20) PSD plot on channel 48



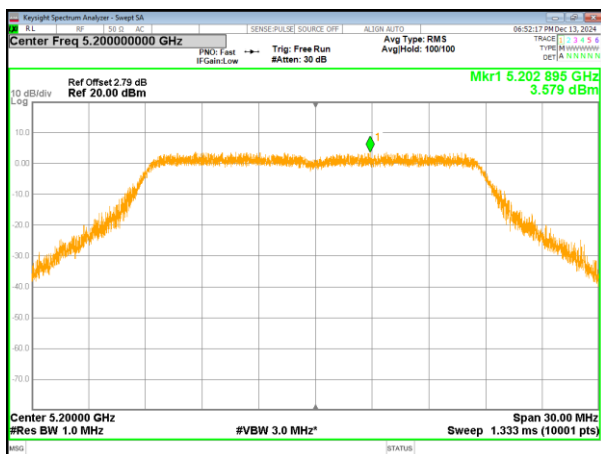
(802.11ac20) PSD plot on channel 36



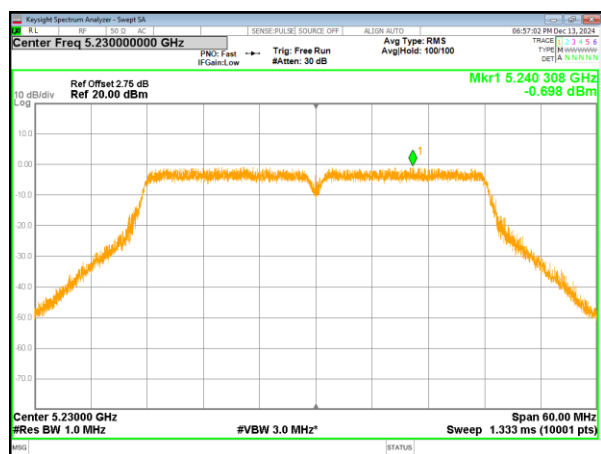
(802.11n40) PSD plot on channel 38



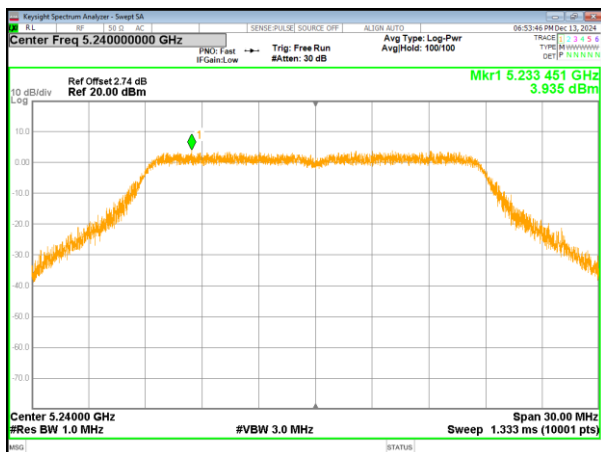
(802.11ac20) PSD plot on channel 40



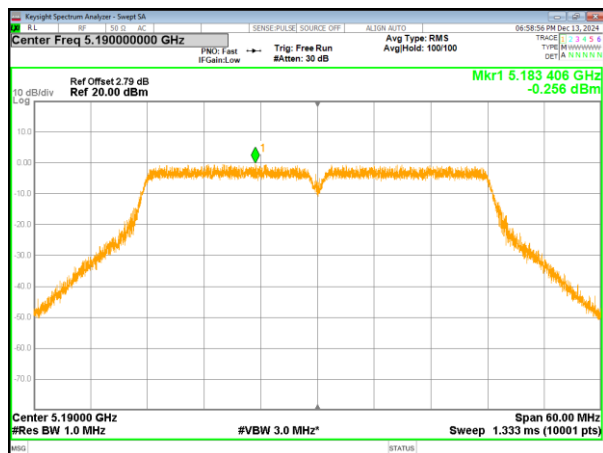
(802.11n40) PSD plot on channel 46



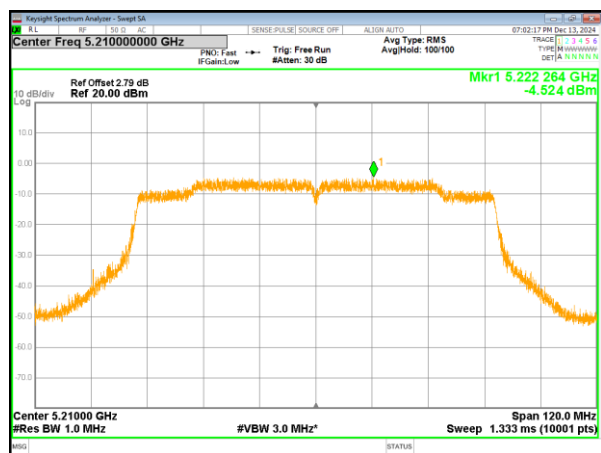
(802.11ac20) PSD plot on channel 48



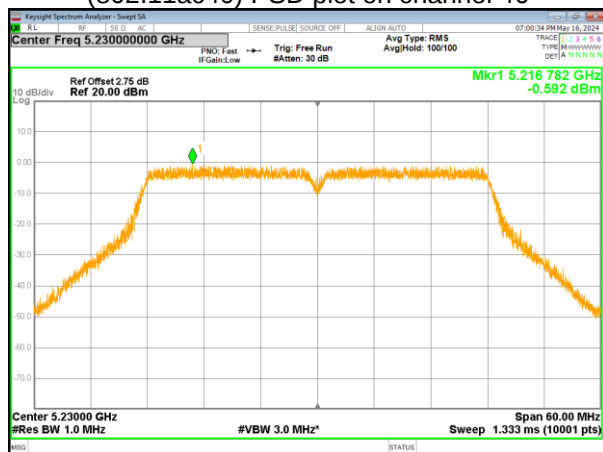
(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46



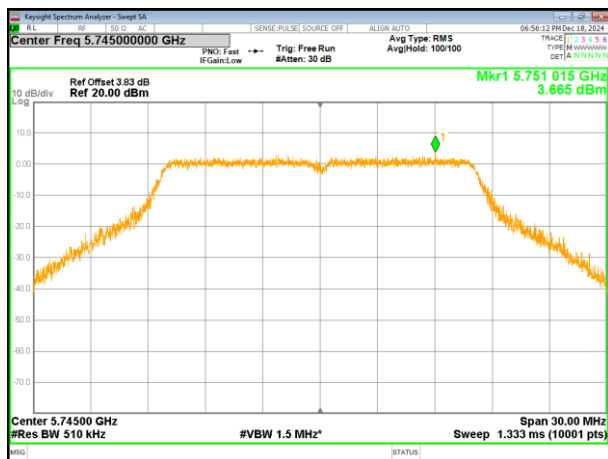
5745-5825MHz

Mode	Frequency	Measured Power Density (dBm/510KHz)	Measured Power Density (dBm/500KHz)	Correction Factor (dB)	Total Measured Power Density (dBm/500KHz)	Limit (dBm/500KHz)
802.11 a	5745 MHz	3.665	3.579	0.71	4.289	30
	5785 MHz	3.619	3.533	0.71	4.243	30
	5825 MHz	3.259	3.173	0.71	3.883	30
802.11 n20	5745 MHz	4.309	4.223	0.51	4.733	30
	5785 MHz	3.943	3.857	0.51	4.367	30
	5825 MHz	4.354	4.268	0.51	4.778	30
802.11ac20	5745 MHz	3.515	3.429	0.52	3.949	30
	5785 MHz	3.38	3.294	0.52	3.814	30
	5825 MHz	3.86	3.774	0.52	4.294	30
802.11 n40	5755 MHz	-0.004	-0.09	0.5	0.410	30
	5795 MHz	-0.127	-0.213	0.5	0.287	30
802.11ac40	5755 MHz	-0.275	-0.361	0.52	0.159	30
	5795 MHz	-0.441	-0.527	0.52	-0.007	30
802.11ac80	5775 MHz	-3.356	-3.442	0.51	-2.932	30

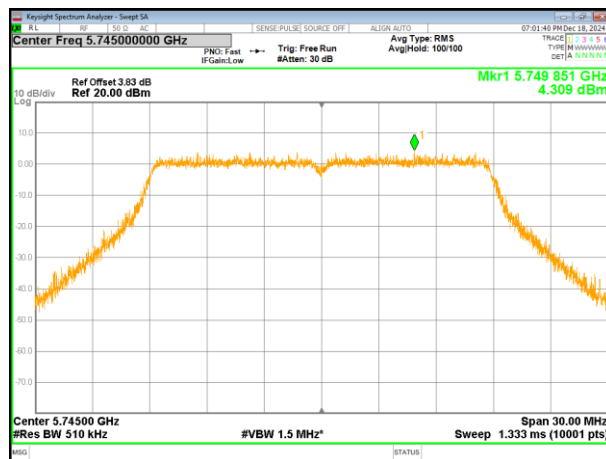
Note: 1. If the measurement is X dBm/510kHz, thus $X \text{ dBm/510kHz} = (10^{X/10}) * (500 / 510) \text{ dBm/500kHz}$

2. Correction Factor (dB)= duty cycle factor

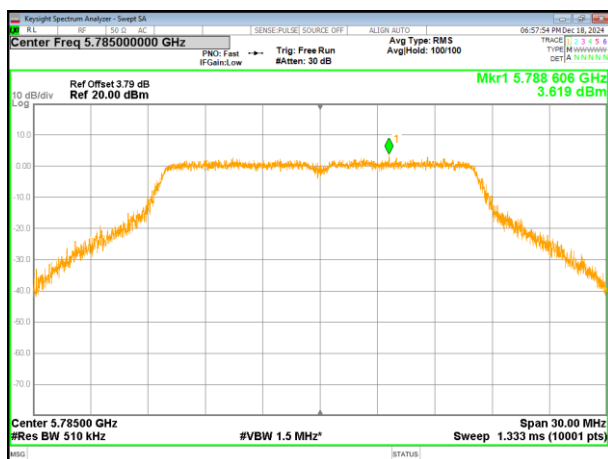
(802.11a) PSD plot on channel 149



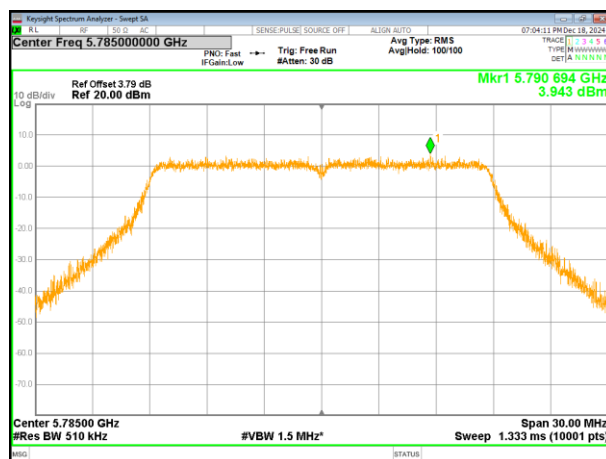
(802.11n20) PSD plot on channel 149



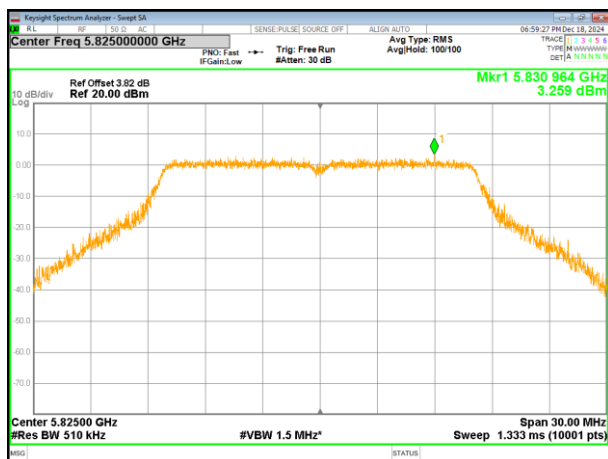
(802.11a) PSD plot on channel 157



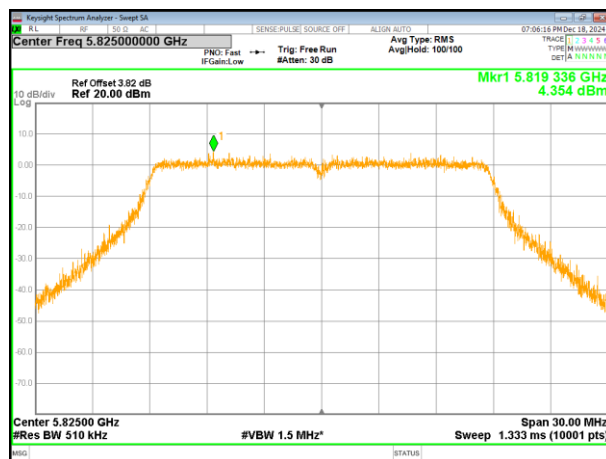
(802.11n20) PSD plot on channel 157



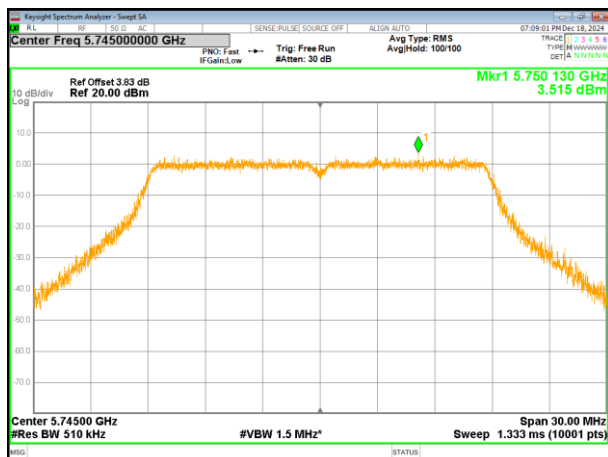
(802.11a) PSD plot on channel 165



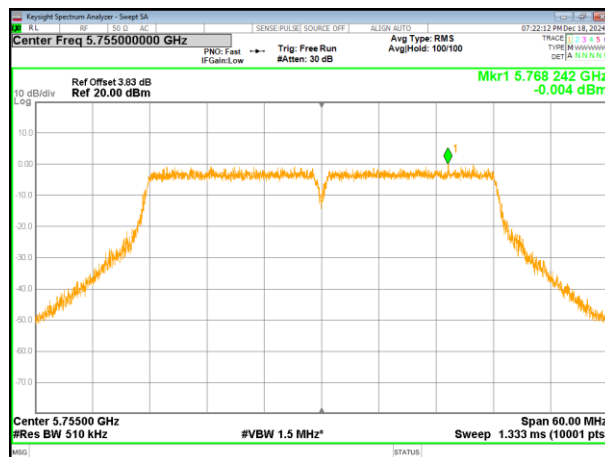
(802.11n20) PSD plot on channel 165



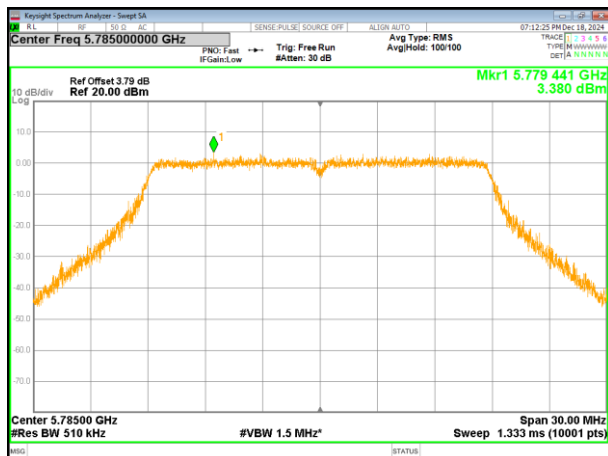
(802.11ac20) PSD plot on channel 149



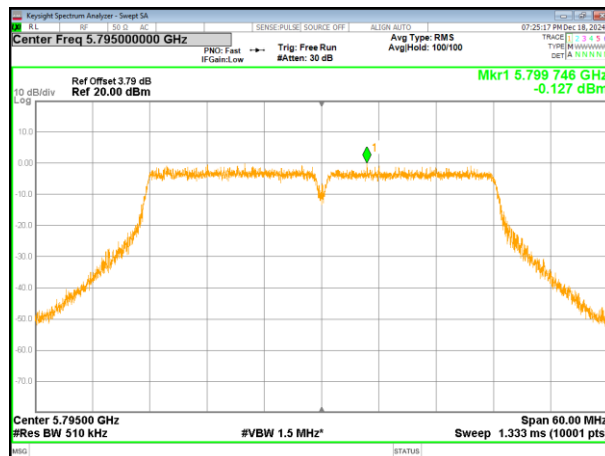
(802.11n40) PSD plot on channel 151



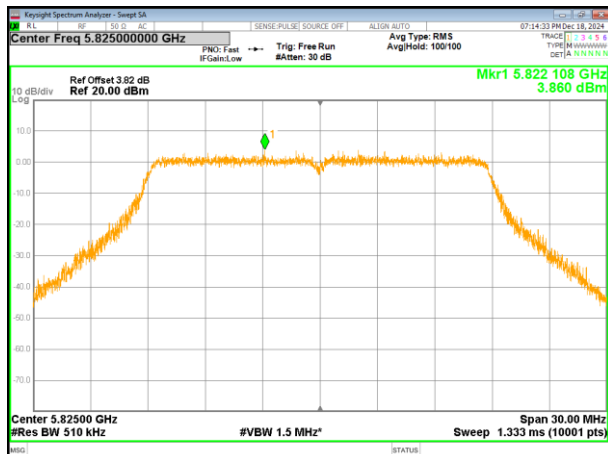
(802.11ac20) PSD plot on channel 157



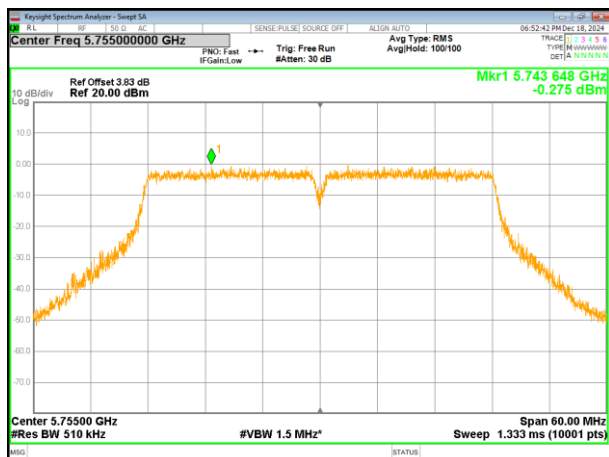
(802.11n40) PSD plot on channel 159



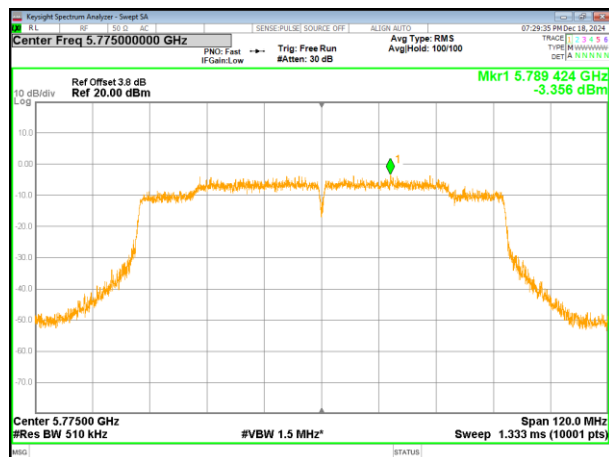
(802.11ac20) PSD plot on channel 165



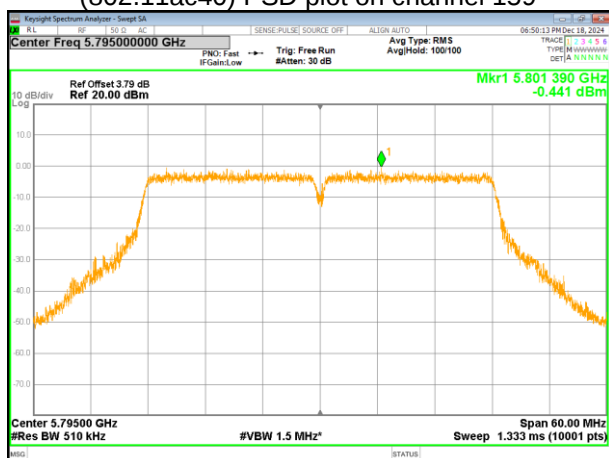
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

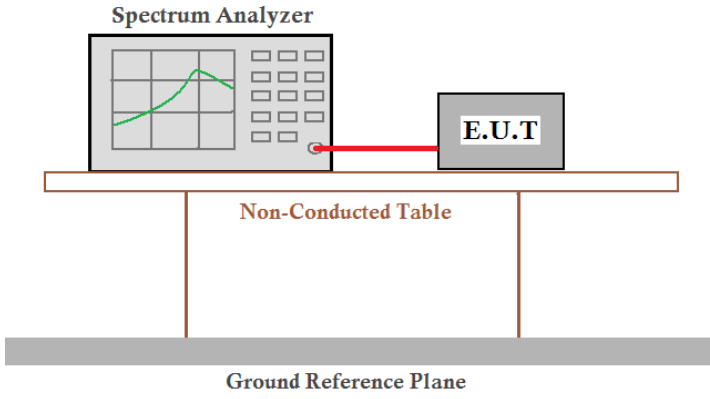


(802.11ac40) PSD plot on channel 159



4.7 Band edge

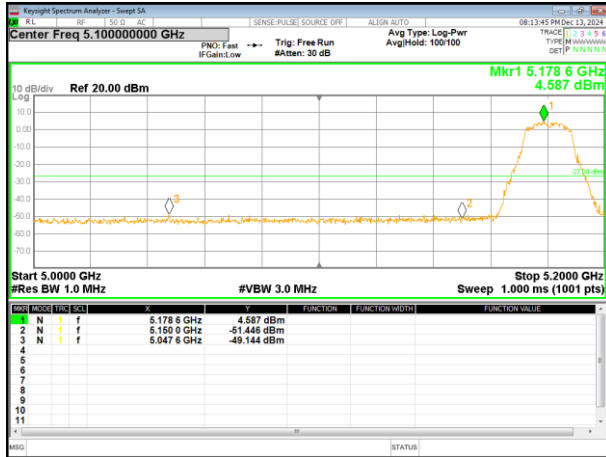
4.7.1 Conducted test Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205, RSS-247 §6.2.1.2&6.2.4.3	
Test Method:	ANSI C63.10: 2013, RSS-Gen	
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.	
Test Procedure:	1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. 2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range. 3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span. 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency. 5. Repeat above procedures until all measured frequencies were complete..	
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 23.0°C	Humid.: 35%RH
Test voltage:	AC 120V, 60Hz	
Test results:	Pass	

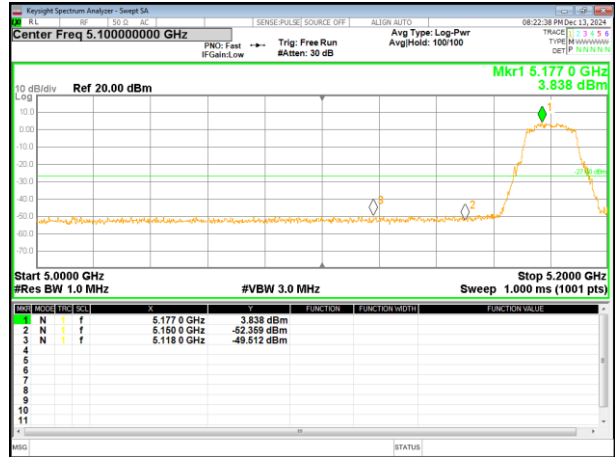
Remark: Due to the margin value of the sideband test being greater than the antenna gain value, the test meets the requirements

5.180~5.240 GHz

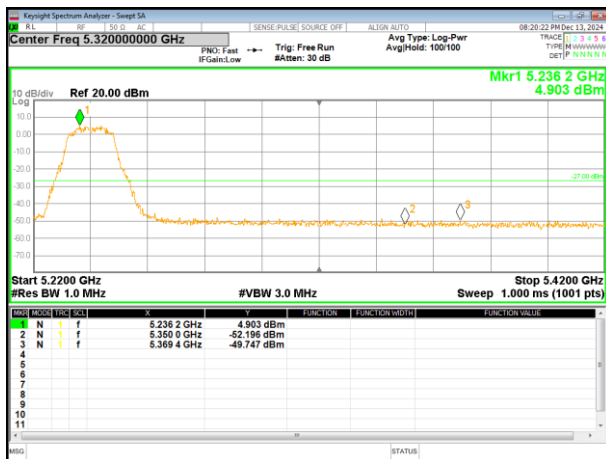
(802.11a) Band Edge, Left Side



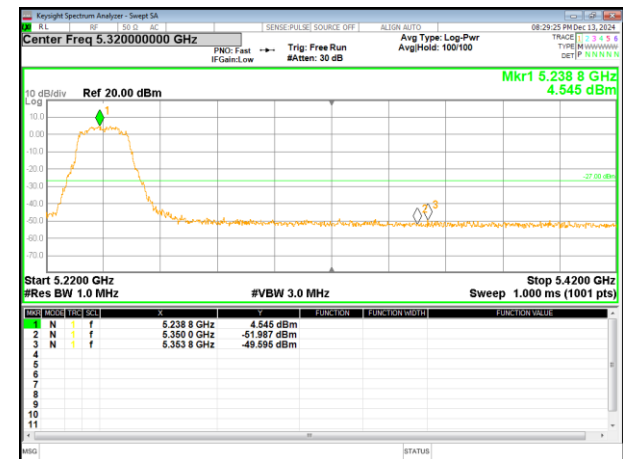
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

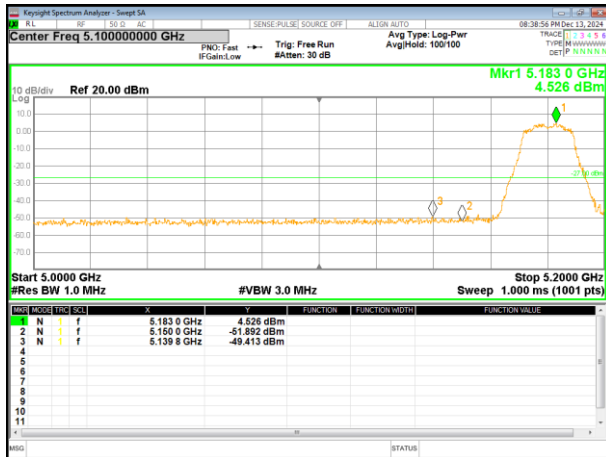


(802.11n20) Band Edge, Right Side

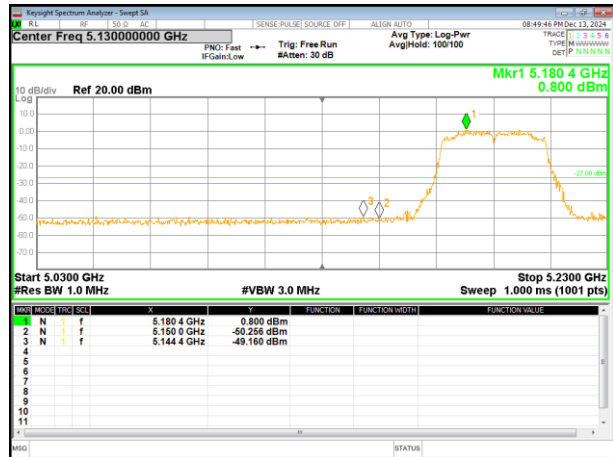


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

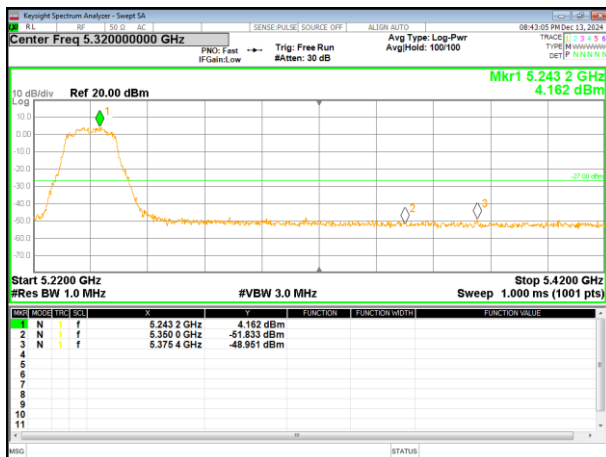
(802.11ac20) Band Edge, Left Side



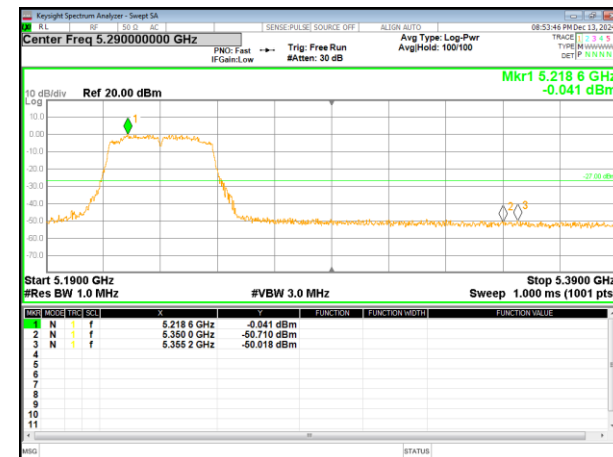
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

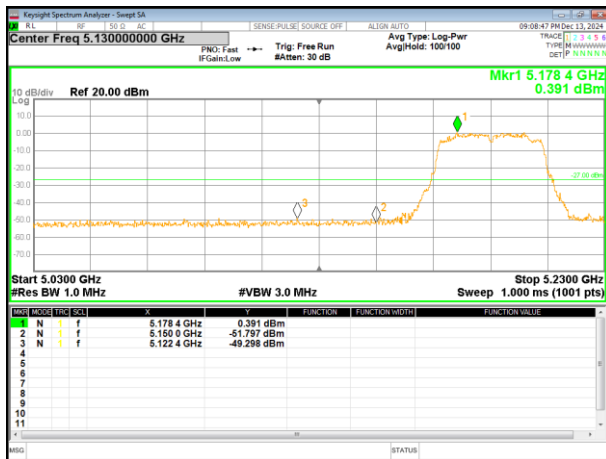


(802.11n40) Band Edge, Right Side

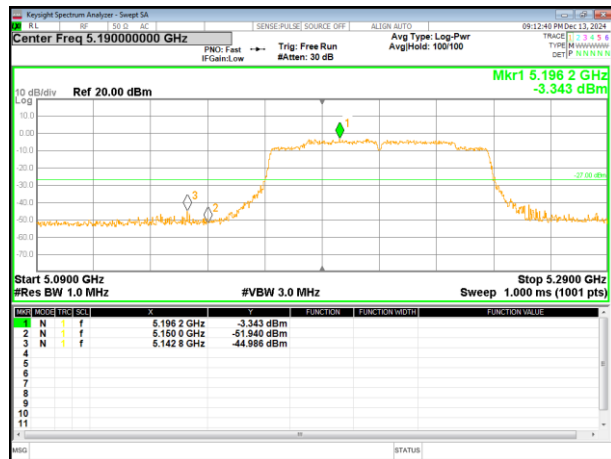


Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

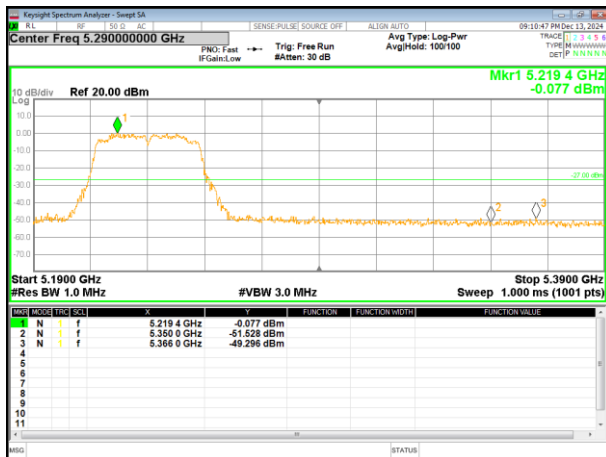
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



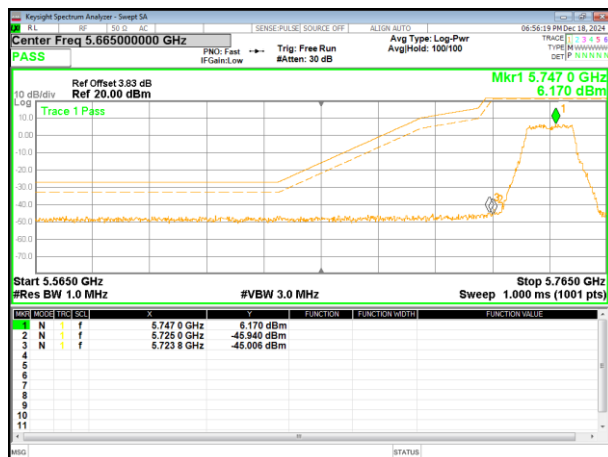
(802.11ac40) Band Edge, Right Side



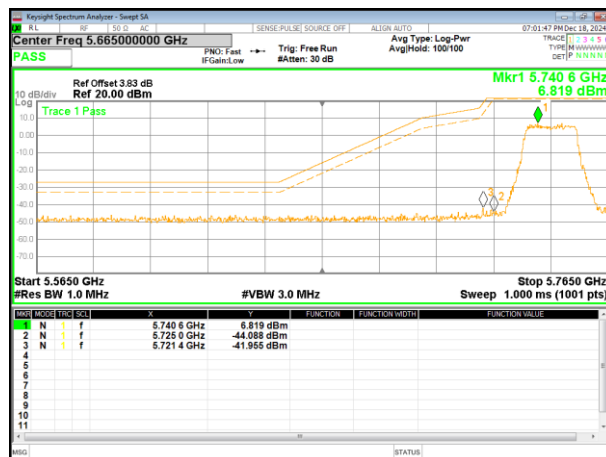
Remark: The antenna gain and cable loss were not compensated in the test data, and the margin value of the Band Edge test was greater than the sum of the antenna gain and cable loss, so the test met the requirements

5.745~5.825 GHz

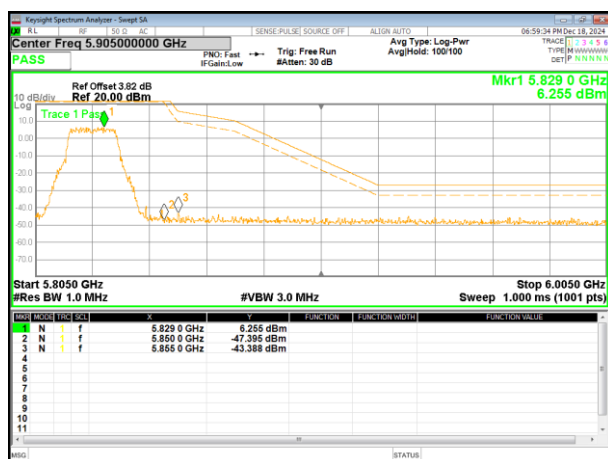
(802.11a) Band Edge, Left Side



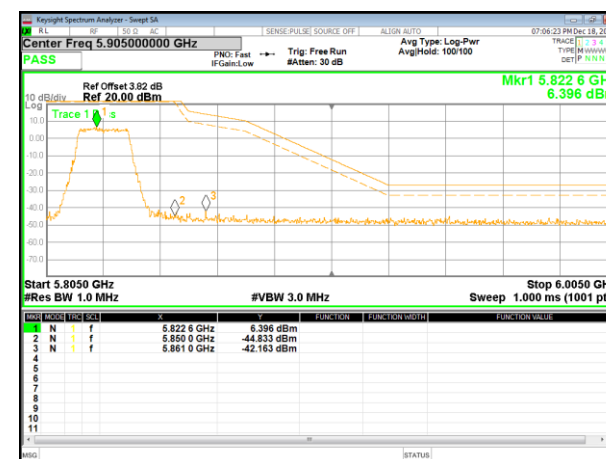
(802.11n20) Band Edge, Left Side



(802.11a) Band Edge, Right Side

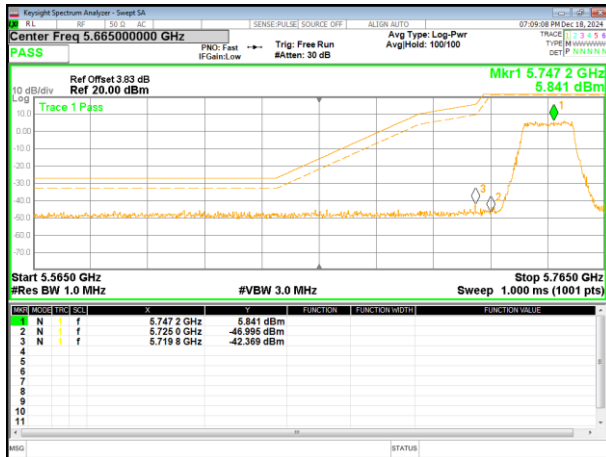


(802.11n20) Band Edge, Right Side

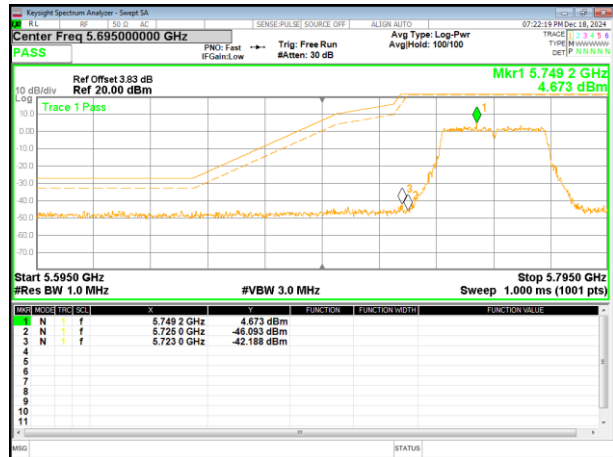


Remark: Antenna gain and cable loss data included in Offset.

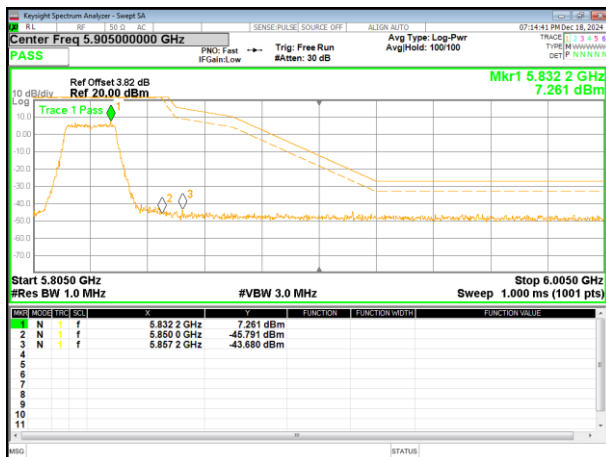
(802.11ac20) Band Edge, Left Side



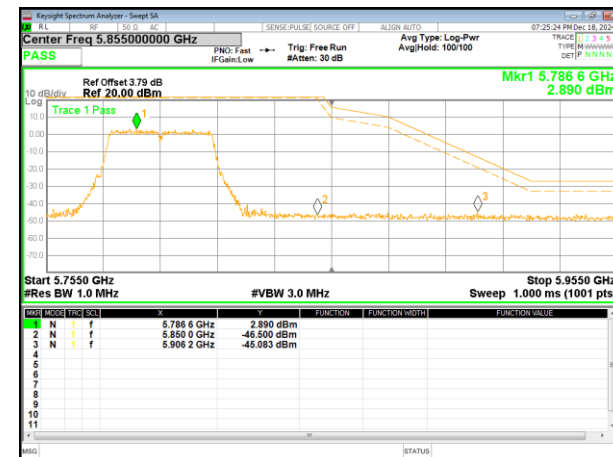
(802.11n40) Band Edge, Left Side



(802.11ac20) Band Edge, Right Side

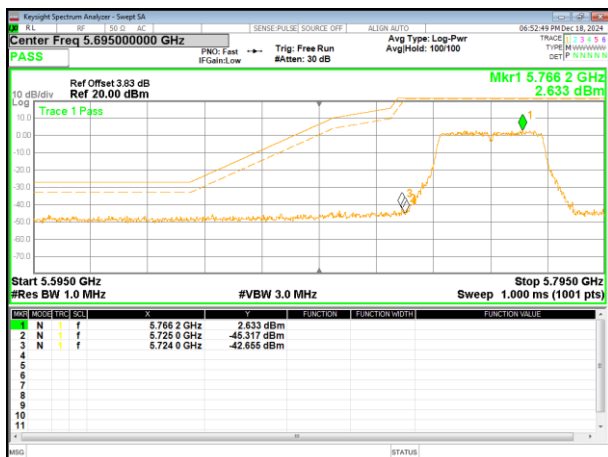


(802.11n40) Band Edge, Right Side

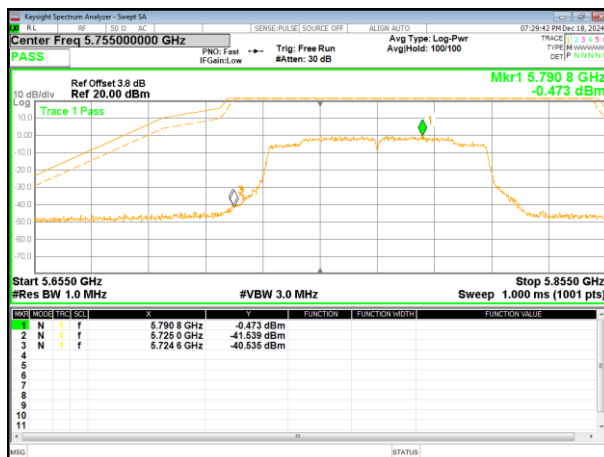


Remark: Antenna gain and cable loss data included in Offset.

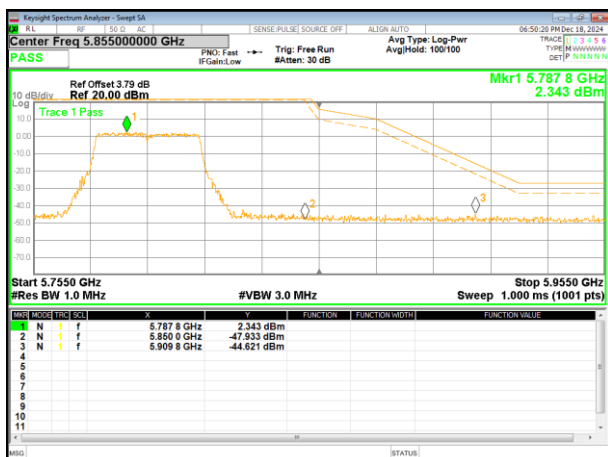
(802.11ac40) Band Edge, Left Side



(802.11ac80) Band Edge



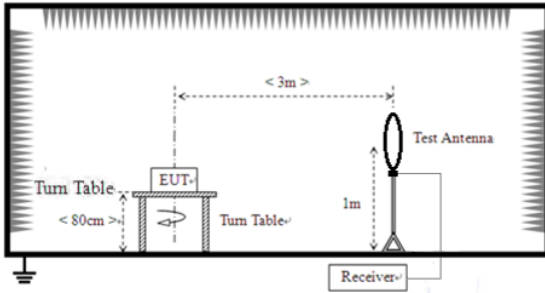
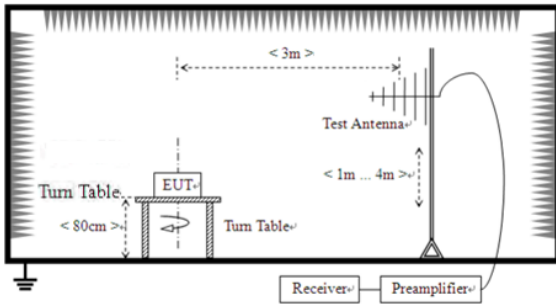
(802.11ac40) Band Edge, Right Side

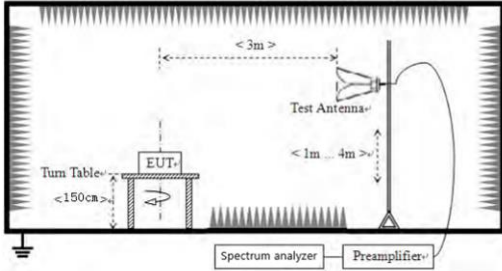


Remark: Antenna gain and cable loss data included in Offset.

4.8 Spurious Emission

4.8.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4) RSS-247 §6.2.1.2&6.2.4.3				
Test Method:	ANSI C63.10:2013, , RSS-Gen				
Test Frequency Range:	9kHz to 40GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9kHz-150KHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak AV	1MHz 1MHz	3MHz 3MHz	Peak Value 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 to 1GHz				
					

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

Remarks:

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

Measurement Data:

9 kHz ~ 30 MHz

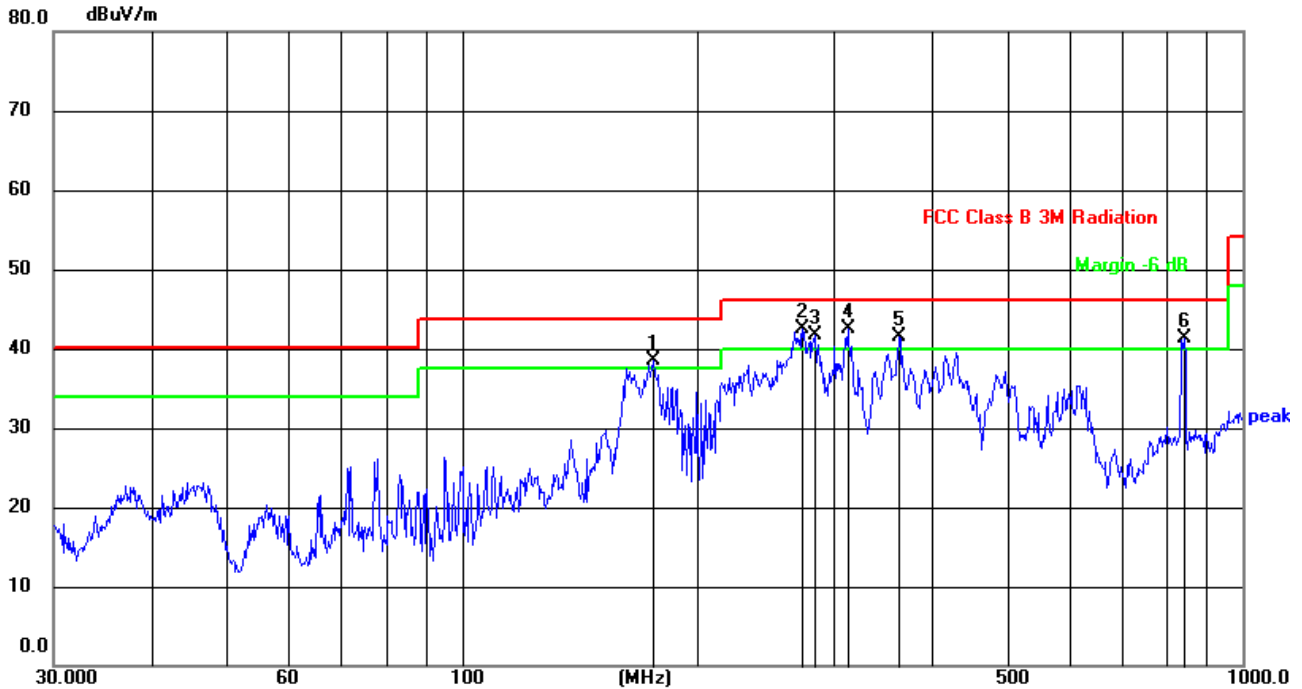
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Below 1GHz

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

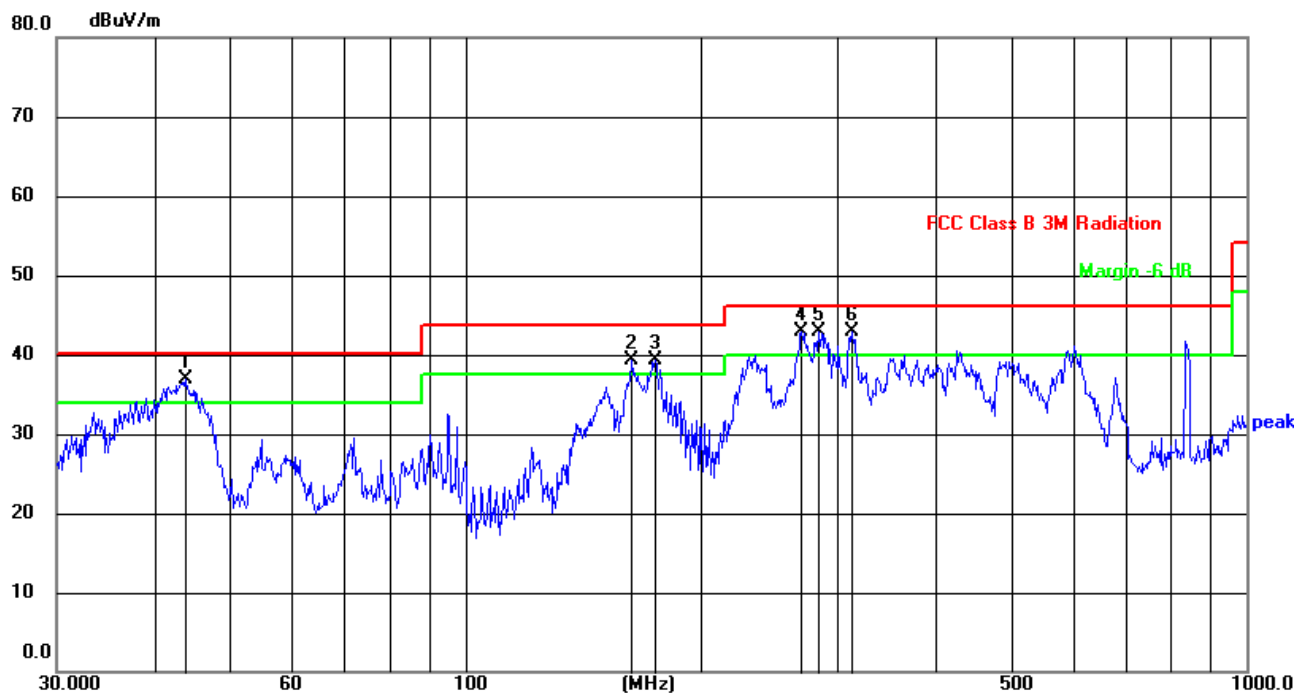
Temperature:	23°C	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.8G TX- 802.11n20 (5745MHz)		

Horizontal:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	176.2685	60.49	-21.94	38.55	43.50	-4.95	QP
2	273.2339	64.13	-21.60	42.53	46.00	-3.47	QP
3	283.9791	62.92	-21.14	41.78	46.00	-4.22	QP
4	312.1792	62.33	-19.78	42.55	46.00	-3.45	QP
5	362.9843	60.20	-18.76	41.44	46.00	-4.56	QP
6	842.1295	47.67	-6.30	41.37	46.00	-4.63	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	43.8119	57.95	-21.13	36.82	40.00	-3.18	QP
2	163.1817	59.93	-20.69	39.24	43.50	-4.26	QP
3	175.0365	61.05	-21.75	39.30	43.50	-4.20	QP
4	269.4282	64.72	-21.73	42.99	46.00	-3.01	QP
5	282.9849	64.16	-21.19	42.97	46.00	-3.03	QP
6	312.1792	62.65	-19.78	42.87	46.00	-3.13	QP

Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The test data shows only the worst case 802.11n20 mode

Above 1GHz:

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

Temperature:	23℃	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.2G TX- 802.11ac20		

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	47.36	46.20	8.27	38.50	47.93	68.20	-20.27	PK
V	10360.00	41.89	46.20	8.27	38.50	42.46	54.00	-11.54	AV
V	15540.00	51.75	46.30	10.35	38.70	54.50	74.00	-19.50	PK
V	15540.00	41.75	46.30	10.35	38.70	44.50	54.00	-9.50	AV
V	20720.00	55.48	57.40	11.93	37.80	47.81	68.20	-20.39	PK
V	20720.00	52.44	57.40	11.93	37.80	44.77	54.00	-9.23	AV
V	25900.00	51.08	56.50	13.45	39.70	47.73	68.20	-20.47	PK
V	25900.00	46.13	56.50	13.45	39.70	42.78	54.00	-11.22	AV
V	31080.00	49.12	56.10	16.12	41.60	50.74	68.20	-17.46	PK
V	31080.00	43.04	56.10	16.12	41.60	44.66	54.00	-9.34	AV
V	36260.00	46.30	56.80	18.29	42.80	50.59	68.20	-17.61	PK
V	36260.00	41.35	56.80	18.29	42.80	45.64	54.00	-8.36	AV
H	10360.00	46.40	46.20	8.27	38.50	46.97	68.20	-21.23	PK
H	10360.00	41.10	46.20	8.27	38.50	41.67	54.00	-12.33	AV
H	15540.00	51.11	46.30	10.35	38.70	53.86	74.00	-20.14	PK
H	15540.00	39.66	46.30	10.35	38.70	42.41	54.00	-11.59	AV
H	20720.00	55.34	57.40	11.93	37.80	47.67	68.20	-20.54	PK
H	20720.00	50.41	57.40	11.93	37.80	42.74	54.00	-11.26	AV
H	25900.00	52.30	56.50	13.45	39.70	48.95	68.20	-19.25	PK
H	25900.00	48.12	56.50	13.45	39.70	44.77	54.00	-9.23	AV
H	31080.00	49.00	56.10	16.12	41.60	50.62	68.20	-17.58	PK
H	31080.00	44.09	56.10	16.12	41.60	45.71	54.00	-8.29	AV
H	36260.00	45.28	56.80	18.29	42.80	49.57	68.20	-18.63	PK
H	36260.00	41.14	56.80	18.29	42.80	45.43	54.00	-8.57	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Middle Channel:5200MHz									
V	10400.00	47.19	46.20	8.27	38.50	47.76	68.20	-20.44	PK
V	10400.00	41.69	46.20	8.27	38.50	42.26	54.00	-11.74	AV
V	15600.00	49.48	46.30	10.35	38.40	51.93	74.00	-22.07	PK
V	15600.00	38.59	46.30	10.35	38.40	41.04	54.00	-12.96	AV
V	20800.00	54.60	57.40	11.93	37.80	46.93	68.20	-21.27	PK
V	20800.00	49.53	57.40	11.93	37.80	41.86	54.00	-12.14	AV
V	26000.00	50.49	56.50	13.45	39.80	47.24	68.20	-20.96	PK
V	26000.00	46.11	56.50	13.45	39.80	42.86	54.00	-11.14	AV
V	31200.00	48.76	56.10	16.12	41.60	50.38	68.20	-17.82	PK
V	31200.00	43.98	56.10	16.12	41.60	45.60	54.00	-8.40	AV
V	36400.00	45.96	56.80	18.29	42.80	50.25	68.20	-17.95	PK
V	36400.00	40.80	56.80	18.29	42.80	45.09	54.00	-8.91	AV
H	10400.00	47.13	46.20	8.27	38.50	47.70	68.20	-20.50	PK
H	10400.00	42.81	46.20	8.27	38.50	43.38	54.00	-10.62	AV
H	15600.00	50.29	46.30	10.35	38.40	52.74	74.00	-21.26	PK
H	15600.00	39.14	46.30	10.35	38.40	41.59	54.00	-12.41	AV
H	20800.00	53.91	57.40	11.93	37.80	46.24	68.20	-21.96	PK
H	20800.00	48.88	57.40	11.93	37.80	41.21	54.00	-12.79	AV
H	26000.00	50.10	56.50	13.45	39.80	46.85	68.20	-21.35	PK
H	26000.00	45.42	56.50	13.45	39.80	42.17	54.00	-11.83	AV
H	31200.00	48.90	56.10	16.12	41.60	50.52	68.20	-17.68	PK
H	31200.00	43.56	56.10	16.12	41.60	45.18	54.00	-8.82	AV
H	36400.00	46.79	56.80	18.29	42.80	51.08	68.20	-17.12	PK
H	36400.00	41.31	56.80	18.29	42.80	45.60	54.00	-8.40	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	45.29	46.20	8.27	38.60	45.96	68.20	-22.24	PK
V	10480.00	40.34	46.20	8.27	38.60	41.01	54.00	-12.99	AV
V	15720.00	49.13	46.30	10.35	38.40	51.58	74.00	-22.42	PK
V	15720.00	38.15	46.30	10.35	38.40	40.60	54.00	-13.40	AV
V	20960.00	55.04	57.40	11.93	37.50	47.07	68.20	-21.13	PK
V	20960.00	49.92	57.40	11.93	37.50	41.95	54.00	-12.05	AV
V	26200.00	51.92	56.50	13.45	40.10	48.97	68.20	-19.23	PK
V	26200.00	47.15	56.50	13.45	40.10	44.20	54.00	-9.80	AV
V	31440.00	49.30	56.10	16.12	41.30	50.62	68.20	-17.58	PK
V	31440.00	44.18	56.10	16.12	41.30	45.50	54.00	-8.50	AV
V	36680.00	45.00	56.80	18.29	43.10	49.59	68.20	-18.61	PK
V	36680.00	40.01	56.80	18.29	43.10	44.60	54.00	-9.40	AV
H	10480.00	44.13	46.20	8.27	38.60	44.80	68.20	-23.40	PK
H	10480.00	39.21	46.20	8.27	38.60	39.88	54.00	-14.12	AV
H	15720.00	49.38	46.30	10.35	38.40	51.83	74.00	-22.17	PK
H	15720.00	38.11	46.30	10.35	38.40	40.56	54.00	-13.44	AV
H	20960.00	54.51	57.40	11.93	37.50	46.54	68.20	-21.66	PK
H	20960.00	49.82	57.40	11.93	37.50	41.85	54.00	-12.15	AV
H	26200.00	48.75	56.50	13.45	40.10	45.80	68.20	-22.40	PK
H	26200.00	43.52	56.50	13.45	40.10	40.57	54.00	-13.43	AV
H	31440.00	48.17	56.10	16.12	41.30	49.49	68.20	-18.71	PK
H	31440.00	43.37	56.10	16.12	41.30	44.69	54.00	-9.31	AV
H	36680.00	46.07	56.80	18.29	43.10	50.66	68.20	-17.54	PK
H	36680.00	41.26	56.80	18.29	43.10	45.85	54.00	-8.15	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°C	Relative Humidity:	35%
Pressure:	101.2kPa	Test Voltage :	AC 120V 60Hz
Test Mode :	5.8G TX- 802.11n20		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenn Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Typ
Low Channel:5745MHz									
V	11490.00	49.95	46.10	8.77	39.10	51.72	74.00	-22.28	PK
V	11490.00	38.82	46.10	8.77	39.10	40.59	54.00	-13.41	AV
V	17235.00	44.69	47.60	11.10	38.70	46.89	68.20	-21.31	PK
V	17235.00	39.54	47.60	11.10	38.70	41.74	54.00	-12.26	AV
V	22980.00	58.47	56.90	12.73	37.70	52.00	74.00	-22.00	PK
V	22980.00	47.13	56.90	12.73	37.70	40.66	54.00	-13.34	AV
V	28725.00	48.55	55.60	14.25	40.30	47.50	68.20	-20.70	PK
V	28725.00	44.08	55.60	14.25	40.30	43.03	54.00	-10.97	AV
V	34470.00	47.41	55.90	17.26	42.10	50.87	68.20	-17.33	PK
V	34470.00	42.08	55.90	17.26	42.10	45.54	54.00	-8.46	AV
H	11490.00	49.48	46.10	8.77	39.10	51.25	74.00	-22.75	PK
H	11490.00	38.67	46.10	8.77	39.10	40.44	54.00	-13.56	AV
H	17235.00	44.60	47.60	11.10	38.70	46.80	68.20	-21.40	PK
H	17235.00	39.41	47.60	11.10	38.70	41.61	54.00	-12.39	AV
H	22980.00	57.56	56.90	12.73	37.70	51.09	74.00	-22.91	PK
H	22980.00	47.51	56.90	12.73	37.70	41.04	54.00	-12.96	AV
H	28725.00	49.96	55.60	14.25	40.30	48.91	68.20	-19.29	PK
H	28725.00	45.66	55.60	14.25	40.30	44.61	54.00	-9.39	AV
H	34470.00	47.34	55.90	17.26	42.10	50.80	68.20	-17.40	PK
H	34470.00	42.21	55.90	17.26	42.10	45.67	54.00	-8.33	AV

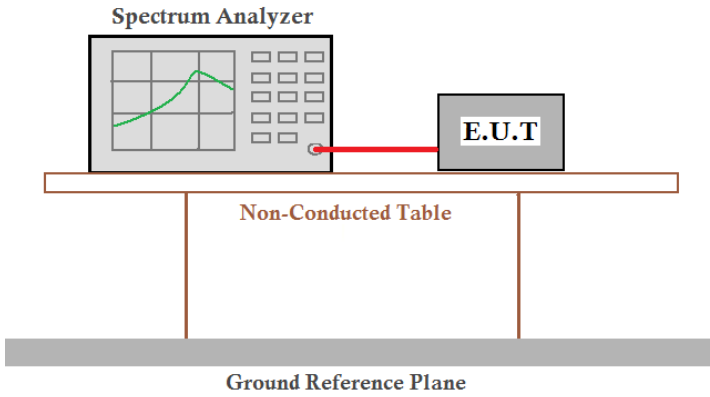
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detect or Type
Middle Channel:5785MHz									
V	11570.00	50.51	46.10	8.77	39.10	52.28	74.00	-21.72	PK
V	11570.00	39.97	46.10	8.77	39.10	41.74	54.00	-12.26	AV
V	17355.00	44.28	47.60	11.10	38.70	46.48	68.20	-21.72	PK
V	17355.00	39.95	47.60	11.10	38.70	42.15	54.00	-11.85	AV
V	23140.00	60.27	56.90	12.73	37.70	53.80	74.00	-20.20	PK
V	23140.00	49.25	56.90	12.73	37.70	42.78	54.00	-11.22	AV
V	28925.00	50.07	55.60	14.25	40.30	49.02	68.20	-19.18	PK
V	28925.00	45.02	55.60	14.25	40.30	43.97	54.00	-10.03	AV
V	34710.00	46.31	55.90	17.26	42.40	50.07	68.20	-18.13	PK
V	34710.00	41.58	55.90	17.26	42.40	45.34	54.00	-8.66	AV
H	11570.00	49.71	46.10	8.77	39.10	51.48	74.00	-22.52	PK
H	11570.00	39.13	46.10	8.77	39.10	40.90	54.00	-13.10	AV
H	17355.00	44.70	47.60	11.10	38.70	46.90	68.20	-21.30	PK
H	17355.00	39.84	47.60	11.10	38.70	42.04	54.00	-11.96	AV
H	23140.00	61.46	56.90	12.73	37.70	54.99	74.00	-19.02	PK
H	23140.00	50.28	56.90	12.73	37.70	43.81	54.00	-10.19	AV
H	28925.00	49.17	55.60	14.25	40.30	48.12	68.20	-20.08	PK
H	28925.00	45.04	55.60	14.25	40.30	43.99	54.00	-10.01	AV
H	34710.00	46.62	55.90	17.26	42.40	50.38	68.20	-17.82	PK
H	34710.00	41.84	55.90	17.26	42.40	45.60	54.00	-8.40	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	51.08	46.10	8.77	39.10	52.85	74.00	-21.15	PK
V	11650.00	39.93	46.10	8.77	39.10	41.70	54.00	-12.30	AV
V	17475.00	42.44	47.90	11.23	38.90	44.67	68.20	-23.53	PK
V	17475.00	37.92	47.90	11.23	38.90	40.15	54.00	-13.85	AV
V	23300.00	54.52	57.10	12.73	37.80	47.95	68.20	-20.25	PK
V	23300.00	49.49	57.10	12.73	37.80	42.92	54.00	-11.08	AV
V	29125.00	50.02	55.80	14.25	40.50	48.97	68.20	-19.23	PK
V	29125.00	44.81	55.80	14.25	40.50	43.76	54.00	-10.24	AV
V	34950.00	45.78	56.30	17.91	42.50	49.89	68.20	-18.31	PK
V	34950.00	41.42	56.30	17.91	42.50	45.53	54.00	-8.47	AV
H	11650.00	49.96	46.10	8.77	39.10	51.73	74.00	-22.27	PK
H	11650.00	39.26	46.10	8.77	39.10	41.03	54.00	-12.97	AV
H	17475.00	44.50	47.90	11.23	38.90	46.73	68.20	-21.47	PK
H	17475.00	39.39	47.90	11.23	38.90	41.62	54.00	-12.38	AV
H	23300.00	55.38	57.10	12.73	37.80	48.81	68.20	-19.39	PK
H	23300.00	51.31	57.10	12.73	37.80	44.74	54.00	-9.26	AV
H	29125.00	48.96	55.80	14.25	40.50	47.91	68.20	-20.29	PK
H	29125.00	43.59	55.80	14.25	40.50	42.54	54.00	-11.46	AV
H	34950.00	46.52	56.30	17.91	42.50	50.63	68.20	-17.57	PK
H	34950.00	40.98	56.30	17.91	42.50	45.09	54.00	-8.91	AV

Remark:

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

4.8.2 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4) RSS-247 §6.2.1.2&6.2.4.3	
Test Method:	ANSI C63.10:2013 , RSS-Gen	
Limit:	-27dBm/MHz	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 23.0°C	Humid.: 35%RH
Test voltage:	AC 120V, 60Hz	
Test results:	Pass	

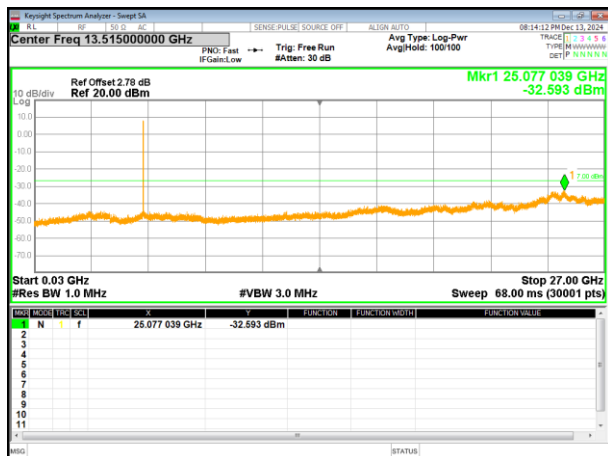
Remark:

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.

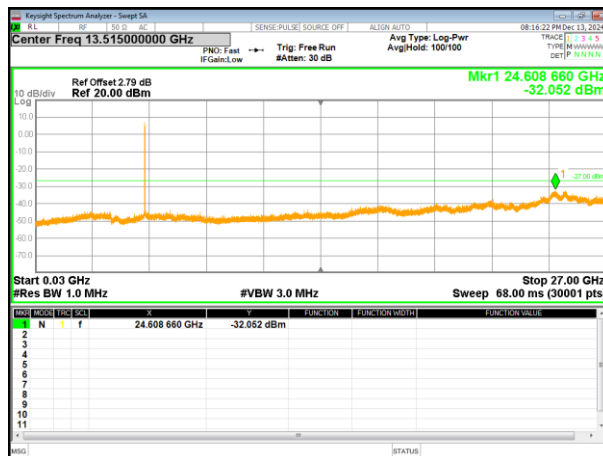
5180-5240MHz

Test Plot

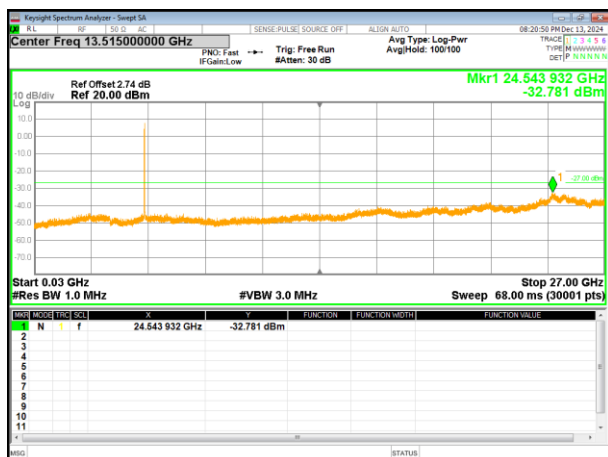
802.11a on channel 36



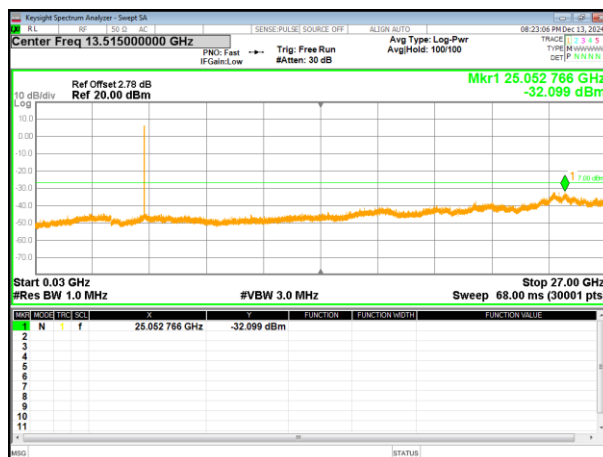
802.11a on channel 40



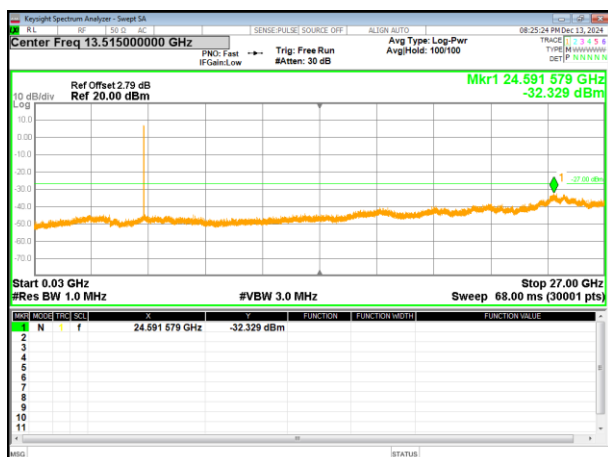
802.11a on channel 48



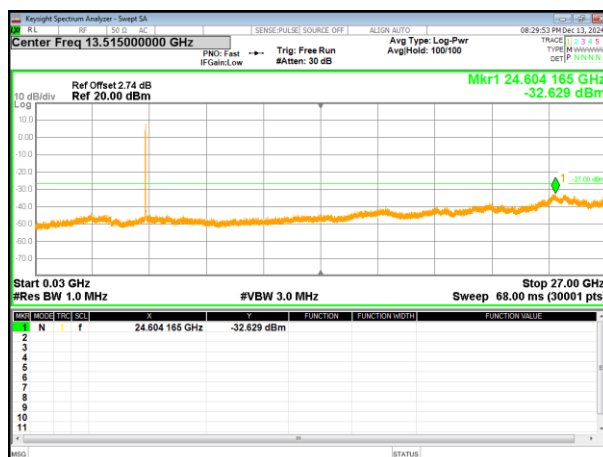
802.11n20 on channel 36



802.11n20 on channel 40

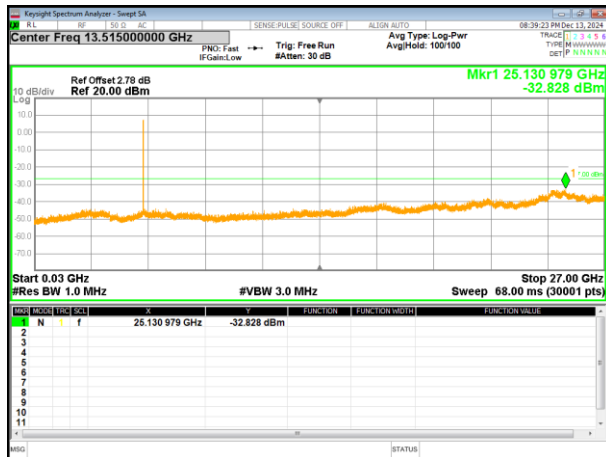


802.11n20 on channel 48

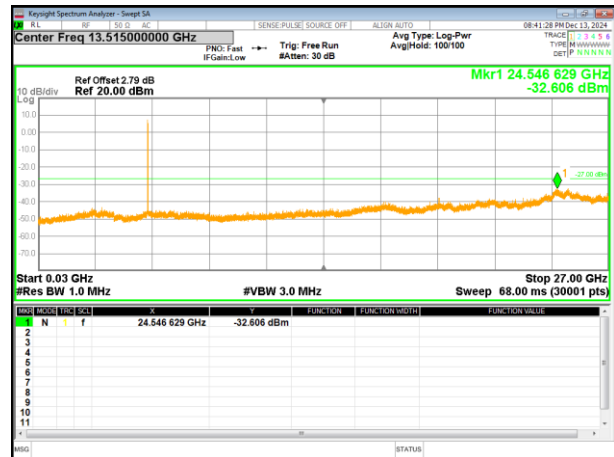


Test Plot

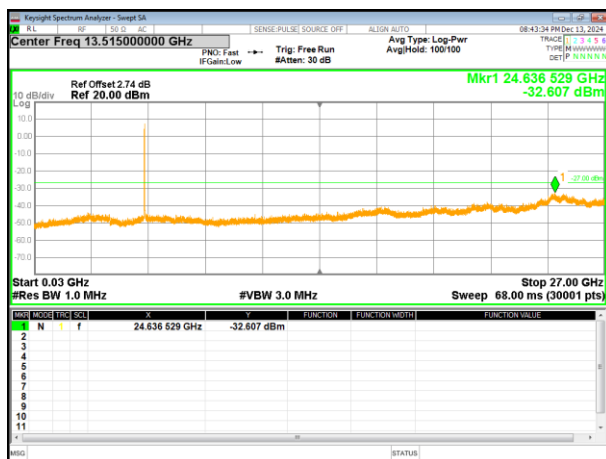
802.11ac20 on channel 36



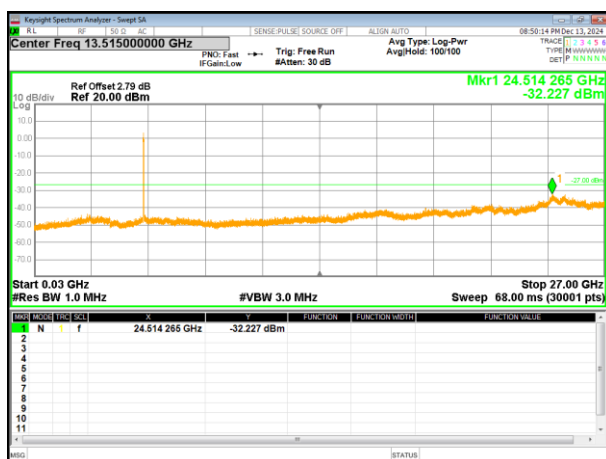
802.11ac20 on channel 40



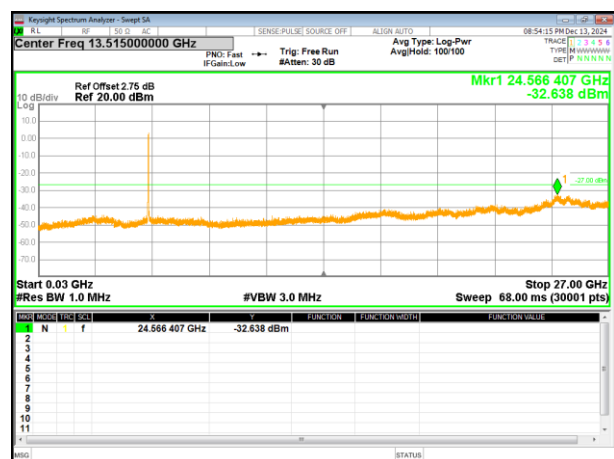
802.11ac20 on channel 48



802.11n40 on channel 38

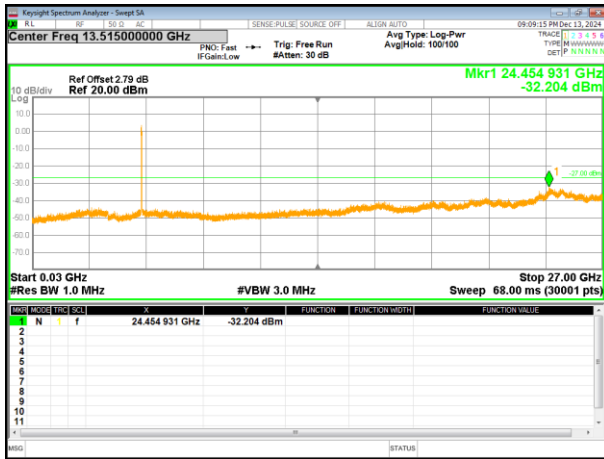


802.11n40 on channel 46

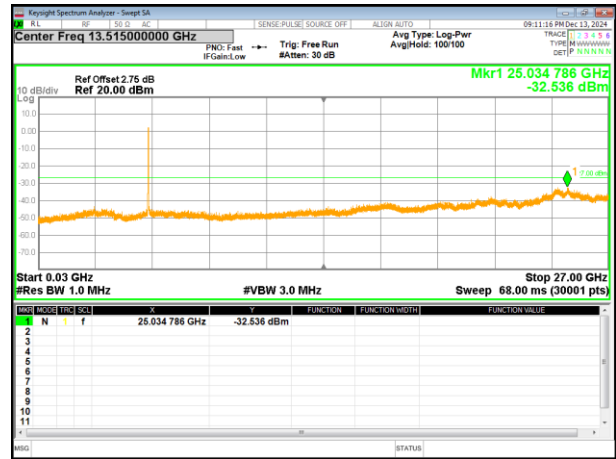


Test Plot

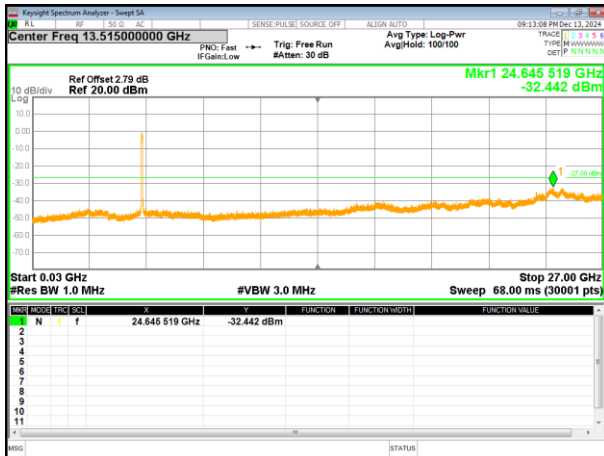
802.11ac40 on channel 38



802.11ac40 on channel 46



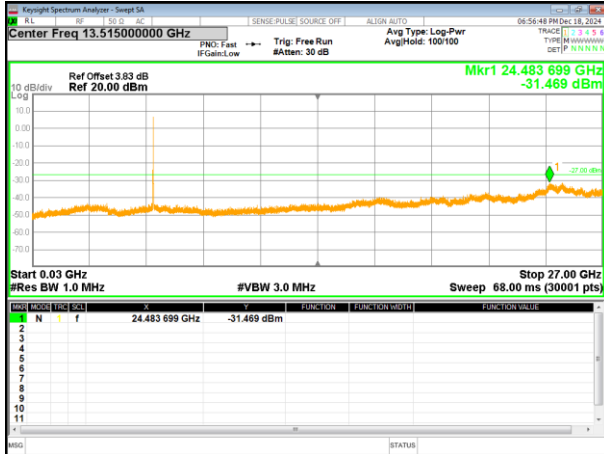
802.11ac80 on channel 42



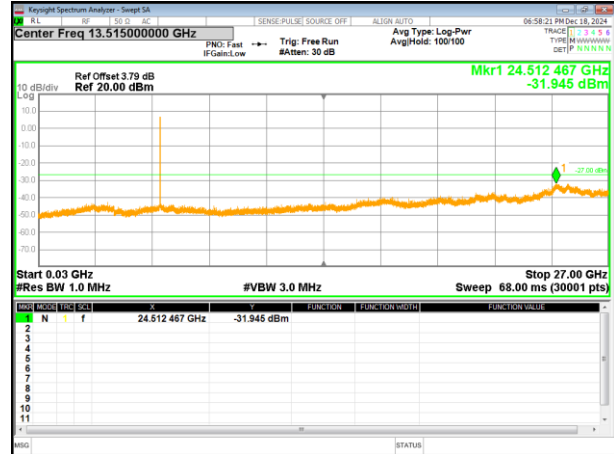
5745-5825MHz

Test Plot

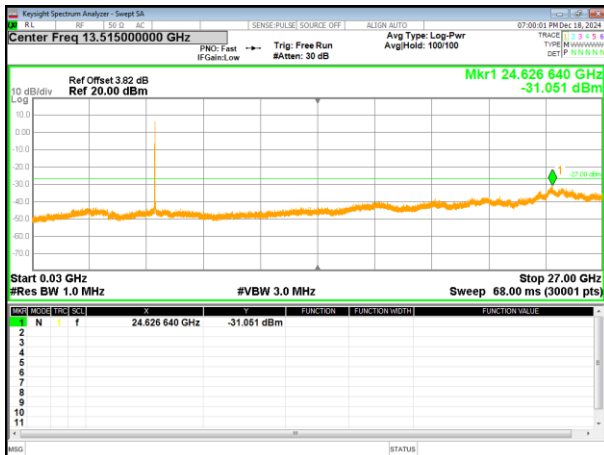
802.11a on channel 149



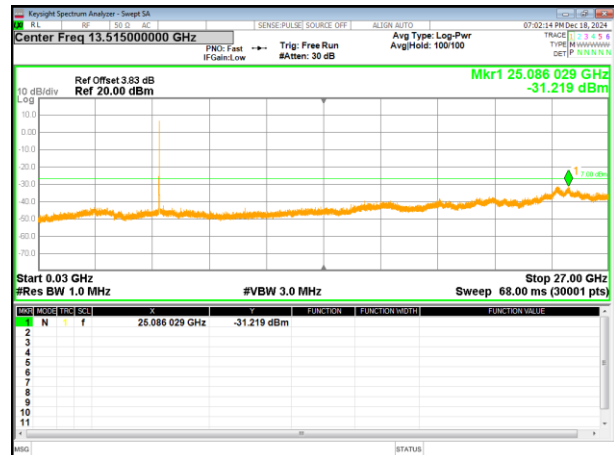
802.11a on channel 157



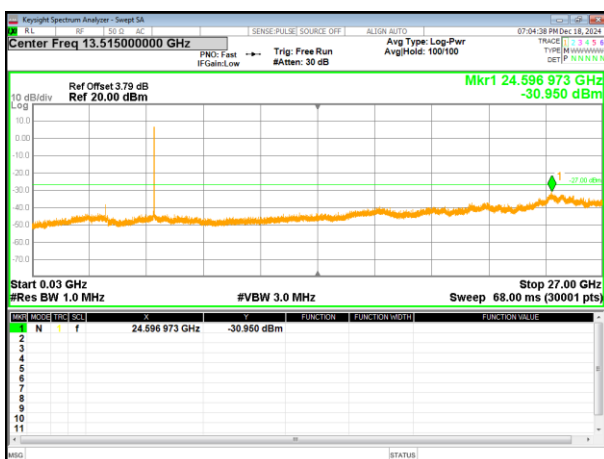
802.11a on channel 165



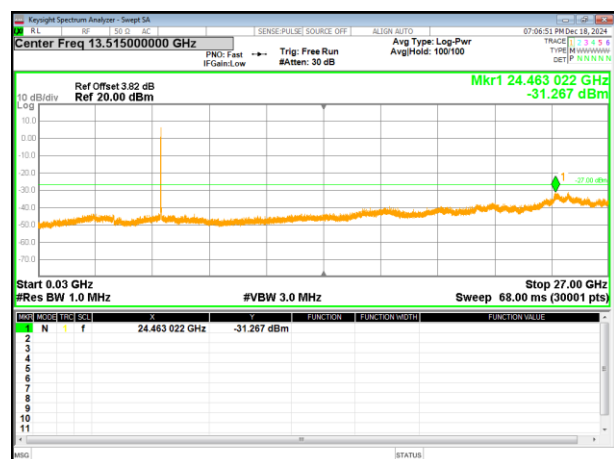
802.11n20 on channel 149



802.11n20 on channel 157

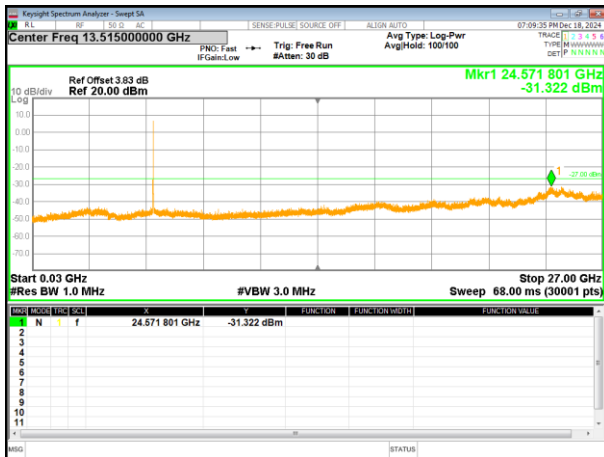


802.11n20 on channel 165

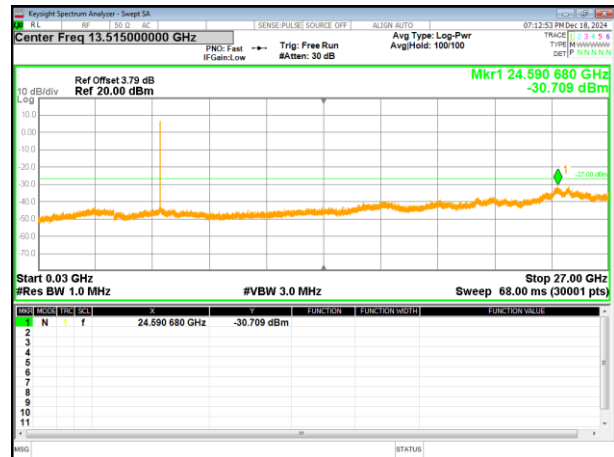


Test Plot

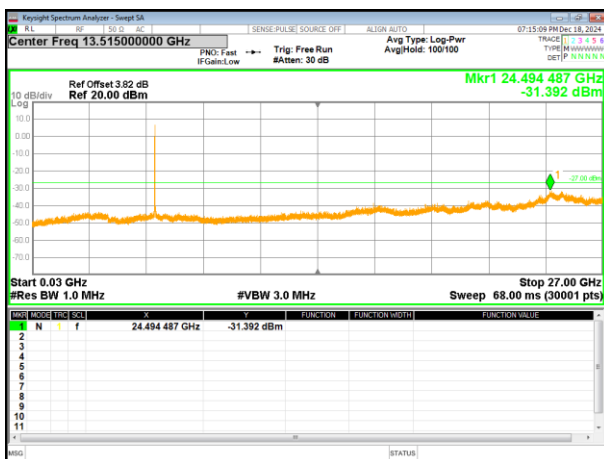
802.11ac20 on channel 149



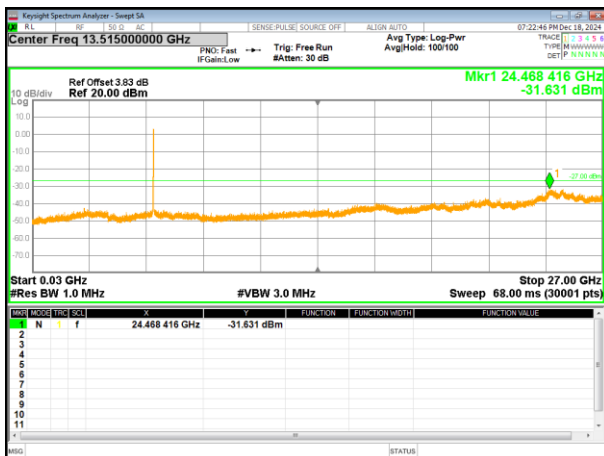
802.11ac20 on channel 157



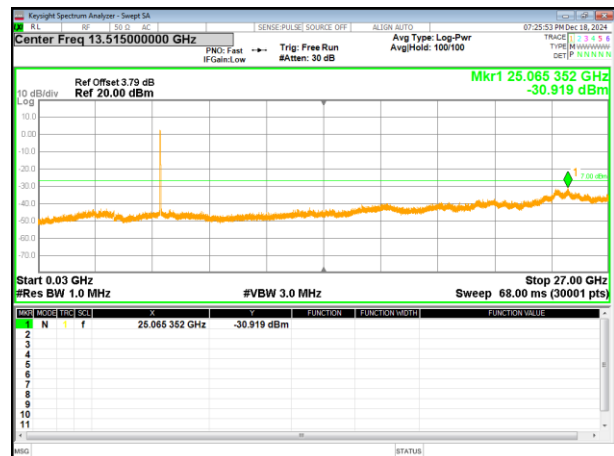
802.11ac20 on channel 165



802.11n40 on channel 151

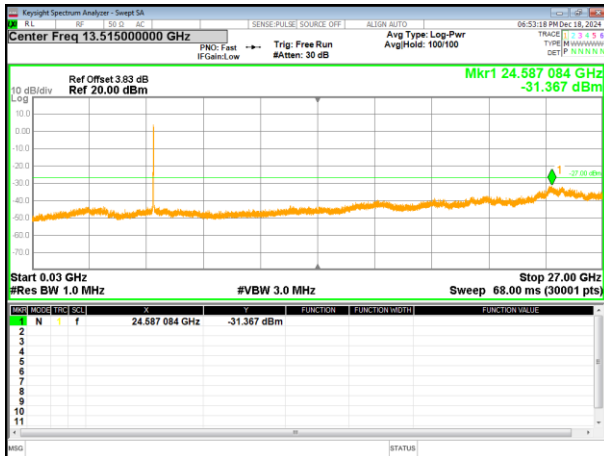


802.11n40 on channel 159

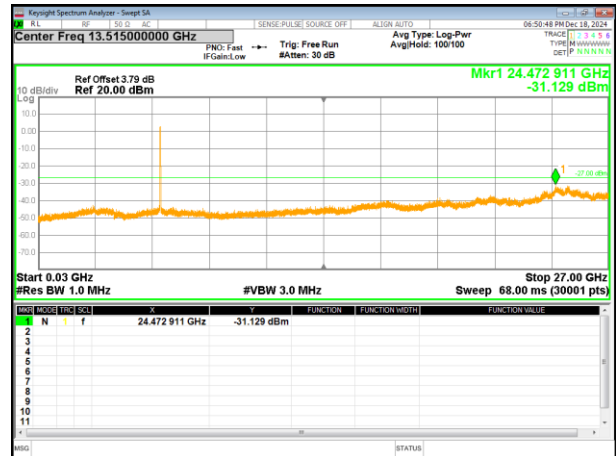


Test Plot

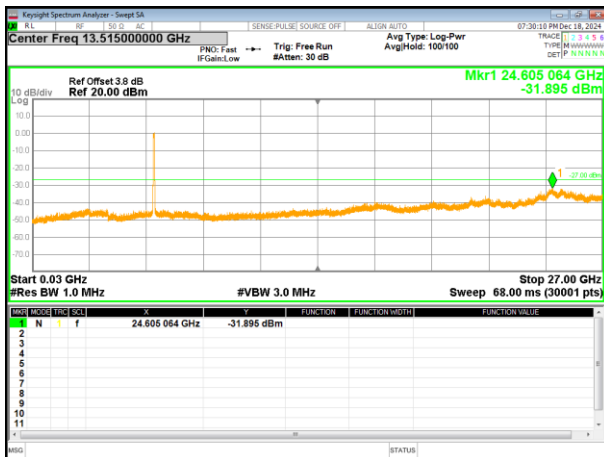
802.11ac40 on channel 151



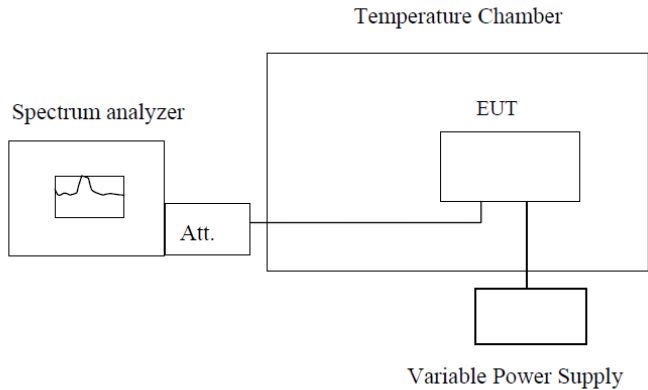
802.11ac40 on channel 159



802.11ac80 on channel 155



4.9 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g) , RSS Gen§ 8.11
Test Method:	ANSI C63.10:2013, FCC Part 2.1055, RSS Gen
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minute s. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 3.0 for details
Test mode:	Refer to section 2.2 for details
Test results:	Pass

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

Measurement data:

Frequency stability versus Temp.					
Power Supply: AC 120V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5180	5179.988	5179.971	5180.038	5180.007
	5190	5189.982	5189.982	5190.039	5190.006
	5200	5199.995	5199.973	5200.030	5200.000
	5210	5209.999	5209.974	5300.040	5209.990
	5220	5219.985	5219.981	5220.031	5220.000
	5230	5229.978	5229.999	5230.052	5299.998
	5240	5179.988	5179.971	5240.030	5240.002
-20	5180	5179.780	5179.971	5180.039	5179.997
	5190	5199.952	5189.982	5190.030	5189.998
	5200	5199.950	5199.973	5200.038	5199.989
	5210	5210.005	5209.974	5210.031	5299.997
	5220	5219.994	5219.981	5220.052	5219.989
	5230	5229.981	5229.999	5230.030	5230.010
	5240	5239.998	5239.971	5240.048	5239.988
-10	5180	5180.003	5179.982	5180.039	5179.959
	5190	5189.999	5189.983	5190.030	5189.989
	5200	5199.994	5199.974	5200.038	5200.014
	5210	5210.000	5299.982	5210.031	5209.998
	5220	5219.995	5219.974	5220.052	5219.989
	5230	5229.993	5229.995	5230.030	5230.017
	5240	5239.966	5239.973	5240.048	5240.005
0	5180	5179.994	5179.944	5180.038	5180.007
	5190	5189.985	5189.974	5190.039	5190.006
	5200	5199.993	5199.999	5200.030	5200.000
	5210	5209.985	5209.983	5300.040	5209.990
	5220	5220.006	5219.974	5220.031	5220.000
	5230	5229.984	5230.002	5230.052	5299.998
	5240	5240.002	5239.990	5240.030	5240.002
10	5180	5179.982	5179.983	5180.039	5180.007
	5190	5189.993	5189.974	5190.030	5180.007
	5200	5199.984	5199.982	5200.038	5190.003
	5210	5209.985	5209.974	5210.031	5199.998

	5220	5219.992	5219.995	5220.052	5210.004
	5230	5230.010	5229.973	5230.030	5219.999
	5240	5239.982	5239.991	5240.048	5229.997
20	5180	5180.003	5179.982	5180.039	5179.959
	5190	5189.999	5189.983	5190.030	5189.989
	5200	5199.994	5199.974	5200.038	5200.014
	5210	5210.000	5299.982	5210.031	5209.998
	5220	5219.995	5219.974	5220.052	5219.989
	5230	5229.993	5229.995	5230.030	5230.017
	5240	5239.966	5239.973	5240.048	5240.005
30	5180	5180.003	5179.982	5180.039	5179.959
	5190	5189.999	5189.983	5190.030	5189.989
	5200	5199.994	5199.974	5200.038	5200.014
	5210	5210.000	5299.982	5210.031	5209.998
	5220	5219.995	5219.974	5220.052	5219.989
	5230	5229.993	5229.995	5230.030	5230.017
	5240	5239.966	5239.973	5240.048	5240.005
40	5180	5179.993	5179.971	5180.039	5179.997
	5190	5189.994	5189.982	5190.030	5189.998
	5200	5199.985	5199.973	5200.038	5199.989
	5210	5299.993	5209.974	5210.031	5299.997
	5220	5219.985	5219.981	5220.052	5219.989
	5230	5230.006	5229.999	5230.030	5230.010
	5240	5239.984	5239.971	5240.048	5239.988
50	5180	5179.955	5179.982	5180.027	5180.122
	5190	5189.985	5189.983	5190.038	5199.997
	5200	5200.010	5199.974	5200.029	5200.022
	5210	5209.994	5299.982	5210.031	5210.000
	5220	5219.985	5219.974	5220.038	5220.015
	5230	5230.013	5229.995	5230.056	5230.008
	5240	5240.001	5239.973	5240.028	5240.016

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
AC102V	5180	5179.988	5179.971	5180.048	5180.003
	5190	5189.982	5189.982	5190.044	5189.989
	5200	5199.995	5199.973	5200.039	5199.990
	5210	5209.999	5209.974	5210.046	5210.012
	5220	5219.985	5219.981	5220.041	5219.998
	5230	5229.978	5229.999	5230.039	5230.008
	5240	5180.118	5179.987	5180.039	5179.986
AC120V	5180	5199.993	5189.981	5190.030	5189.997
	5190	5200.018	5199.981	5200.038	5199.988
	5200	5209.996	5209.993	5210.031	5209.989
	5210	5220.011	5219.984	5220.052	5219.996
	5220	5230.004	5299.987	5230.030	5230.014
	5230	5240.012	5239.984	5240.048	5239.999
	5240	5180.118	5179.987	5180.039	5179.986
AC138V	5180	5189.993	5179.983	5180.038	5179.997
	5190	5199.984	5189.974	5190.039	5189.998
	5200	5209.985	5199.982	5200.030	5199.989
	5210	5219.992	5209.974	5300.040	5299.997
	5220	5230.010	5219.995	5220.031	5219.989
	5230	5239.995	5229.973	5230.052	5230.010
	5240	5179.982	5239.991	5240.030	5239.988

Frequency stability versus Temp.					
Power Supply: AC 120V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5745	5745.016	5744.965	5744.667	5744.967
	5755	5744.964	5754.981	5755.051	5754.989
	5775	5754.986	5774.980	5775.052	5774.998
	5785	5774.995	5784.983	5785.055	5784.989
	5795	5784.987	5794.994	5795.039	5795.000
	5825	5794.998	5824.975	5825.035	5825.003
-20	5745	5744.981	5744.965	5745.048	5744.990
	5755	5755.006	5754.981	5755.050	5755.016
	5775	5774.987	5774.980	5775.053	5775.012
	5785	5784.997	5784.983	5785.045	5784.996
	5795	5794.995	5794.994	5795.037	5794.985
	5825	5825.005	5824.975	5825.046	5824.920
-10	5745	5744.986	5744.976	5745.032	5745.054
	5755	5754.993	5754.983	5755.057	5744.619
	5775	5774.985	5775.000	5775.038	5755.003
	5785	5784.978	5784.976	5785.047	5775.004
	5795	5794.985	5794.972	5795.046	5785.007
	5825	5824.914	5824.975	5825.056	5794.990
0	5745	5744.981	5744.975	5745.037	5744.990
	5755	5755.006	5754.992	5755.044	5754.997
	5775	5774.987	5774.993	5775.036	5775.014
	5785	5784.997	5784.975	5785.028	5784.990
	5795	5794.995	5794.992	5795.036	5794.986
	5825	5825.005	5824.990	5824.965	5824.989
10	5745	5744.987	5744.975	5745.038	5744.989
	5755	5754.994	5754.982	5755.045	5754.978
	5775	5775.011	5774.974	5775.062	5774.989
	5785	5784.988	5784.966	5785.038	5784.996
	5795	5794.984	5794.973	5795.035	5795.014
	5825	5824.987	5824.902	5825.038	5825.006
20	5745	5744.997	5745.000	5745.048	5744.989
	5755	5755.011	5754.972	5755.062	5755.008
	5775	5774.996	5774.995	5775.047	5774.988
	5785	5784.984	5784.995	5785.034	5785.015
	5795	5794.978	5794.986	5795.029	5795.007
	5825	5825.012	5825.001	5825.063	5825.016
30	5745	5744.976	5744.986	5745.032	5745.000
	5755	5754.992	5754.988	5755.057	5755.014
	5775	5774.991	5774.991	5775.038	5774.999
	5785	5784.995	5784.983	5785.047	5784.986
	5795	5795.006	5794.974	5795.046	5794.980
	5825	5824.987	5824.983	5825.056	5825.014
40	5745	5744.997	5744.975	5745.032	5744.984
	5755	5754.999	5754.992	5755.057	5755.009
	5775	5775.002	5774.993	5775.038	5774.990
	5785	5784.995	5784.975	5785.047	5784.999

50	5795	5794.986	5794.992	5795.046	5794.997
	5825	5824.995	5824.990	5825.056	5825.007
	5745	5744.981	5744.975	5745.037	5744.990
	5755	5755.006	5754.992	5755.044	5754.997
	5775	5774.987	5774.993	5775.036	5775.014
	5785	5784.997	5784.975	5785.028	5784.990
	5795	5794.995	5794.992	5795.036	5794.986
	5825	5825.005	5824.990	5824.965	5824.989

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
AC102 V	5745	5744.981	5744.975	5745.037	5744.990
	5755	5755.006	5754.992	5755.044	5754.997
	5775	5774.987	5774.993	5775.036	5775.014
	5785	5784.997	5784.975	5785.028	5784.990
	5795	5794.995	5794.992	5795.036	5794.986
	5825	5825.005	5824.990	5824.965	5824.989
AC120 V	5745	5744.987	5744.986	5745.037	5745.014
	5755	5754.994	5754.988	5755.054	5754.986
	5775	5775.011	5774.991	5775.055	5775.009
	5785	5784.988	5784.983	5785.037	5785.009
	5795	5794.984	5794.974	5795.055	5795.000
	5825	5824.987	5824.983	5825.053	5825.015
AC138 V	5745	5744.997	5744.954	5745.015	5744.989
	5755	5754.999	5754.925	5755.037	5754.996
	5775	5775.002	5774.949	5775.046	5774.988
	5785	5784.995	5784.950	5785.037	5784.980
	5795	5794.986	5794.940	5795.049	5794.987
	5825	5824.995	5824.961	5825.052	5824.916

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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