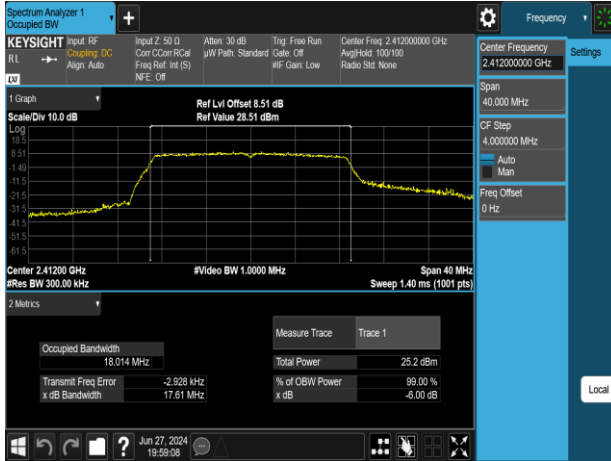
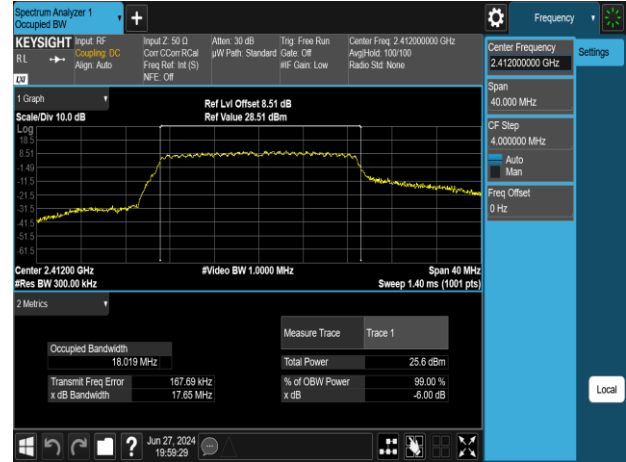


### 3. MIMO

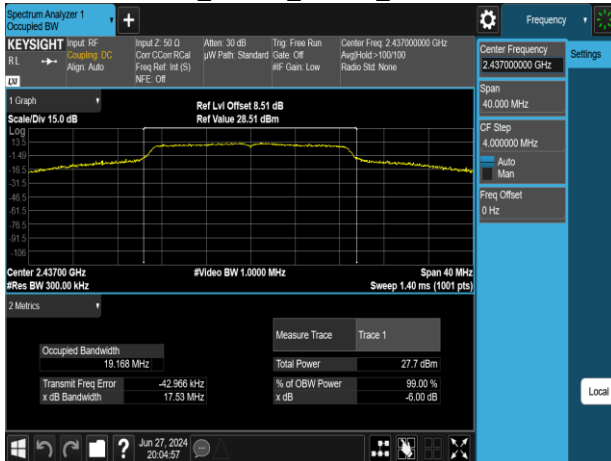
802.11n\_20MHz\_Chain0\_2412MHz



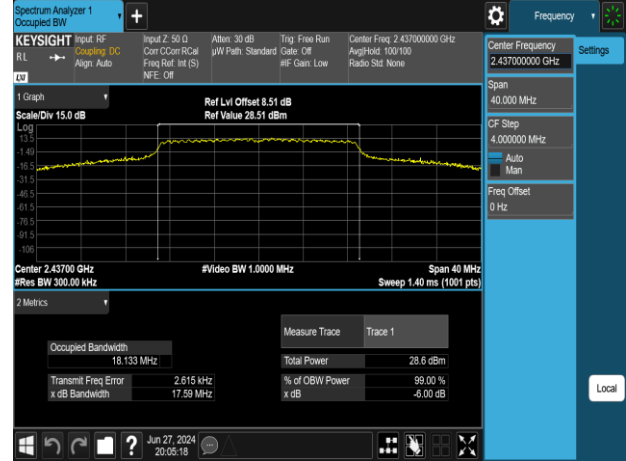
802.11n\_20MHz\_Chain1\_2412MHz



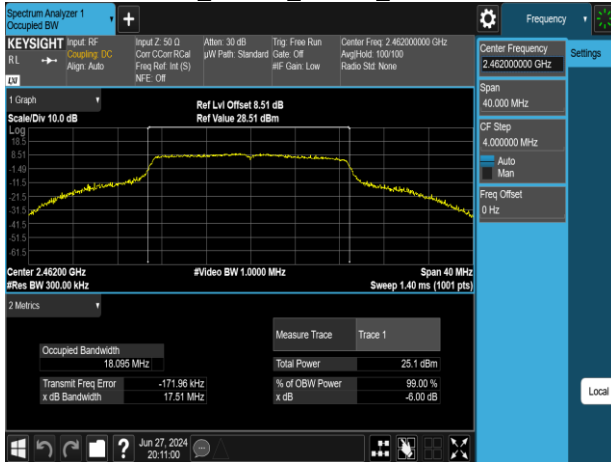
802.11n\_20MHz\_Chain0\_2437MHz



802.11n\_20MHz\_Chain1\_2437MHz



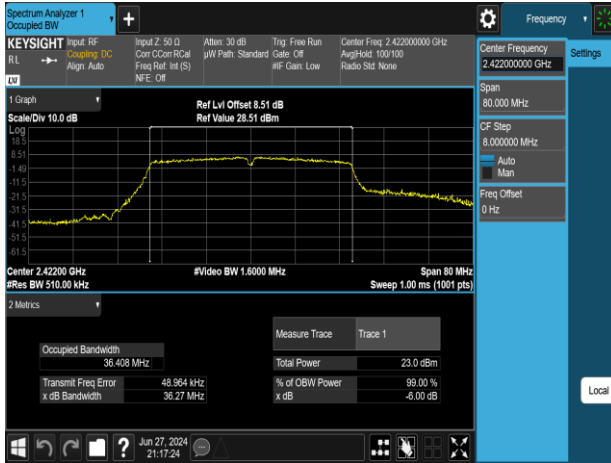
802.11n\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain1\_2462MHz



802.11n\_40MHz\_Chain0\_2422MHz



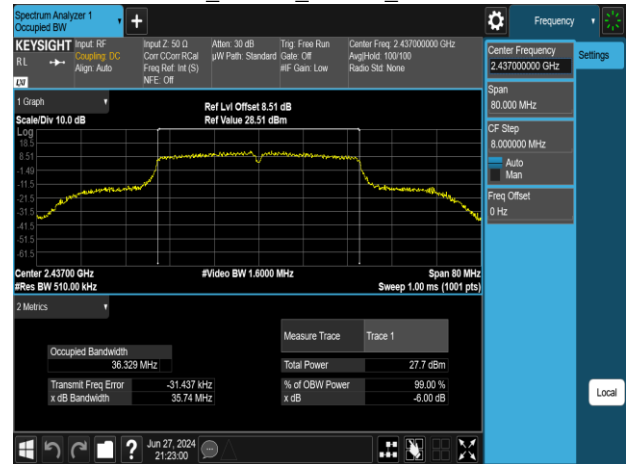
802.11n\_40MHz\_Chain1\_2422MHz



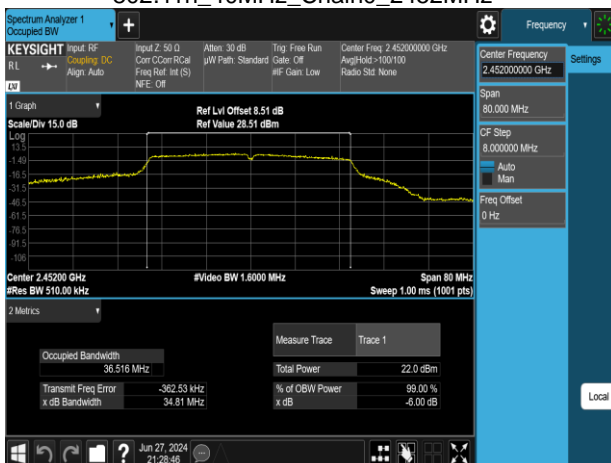
802.11n\_40MHz\_Chain0\_2437MHz



802.11n\_40MHz\_Chain1\_2437MHz



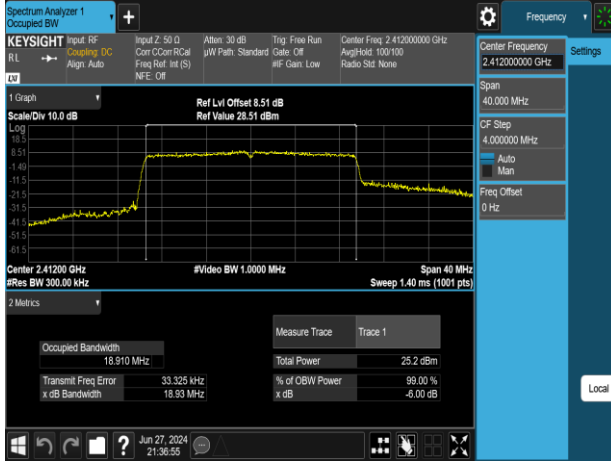
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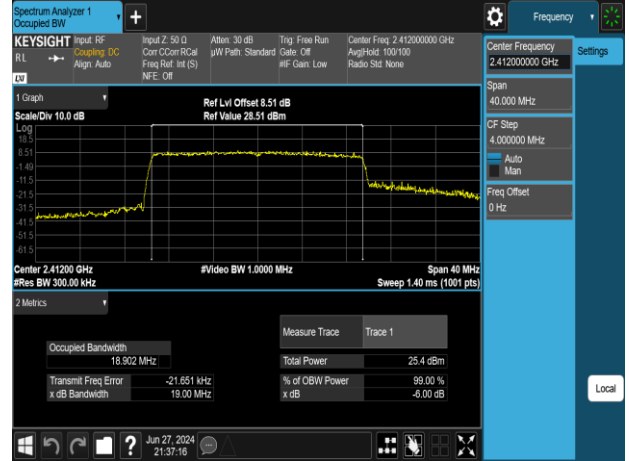
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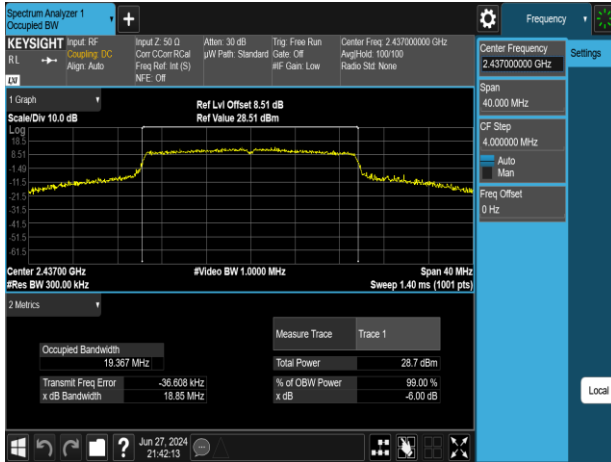
802.11ax\_20MHz\_Chain0\_2412MHz



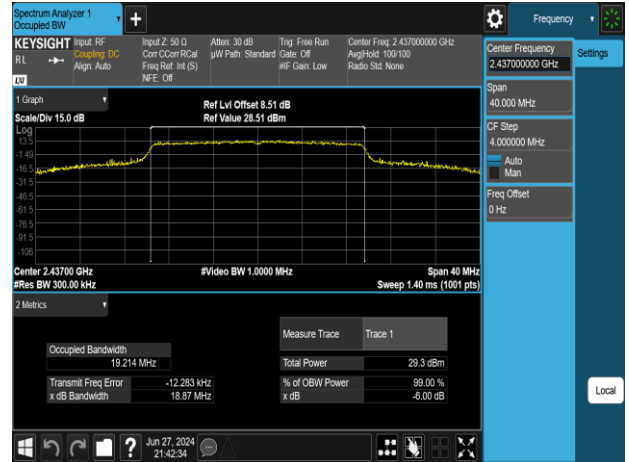
802.11ax\_20MHz\_Chain1\_2412MHz



802.11ax\_20MHz\_Chain0\_2437MHz



802.11ax\_20MHz\_Chain1\_2437MHz



802.11ax\_20MHz\_Chain0\_2462MHz



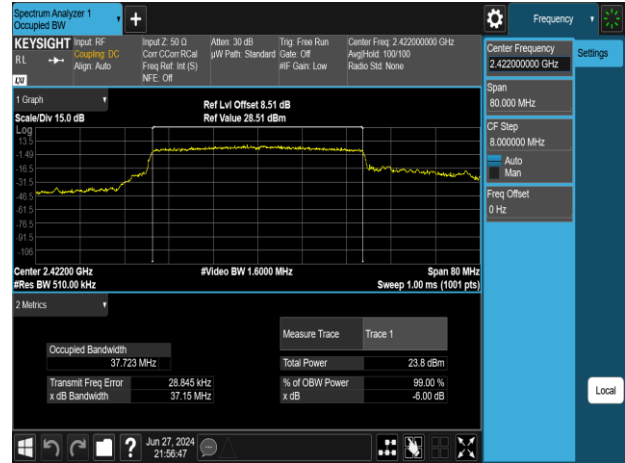
802.11ax\_20MHz\_Chain1\_2462MHz



802.11ax\_40MHz\_Chain0\_2422MHz



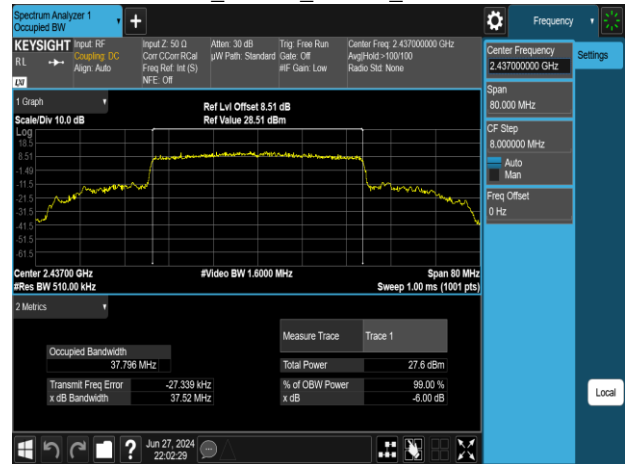
802.11ax\_40MHz\_Chain1\_2422MHz



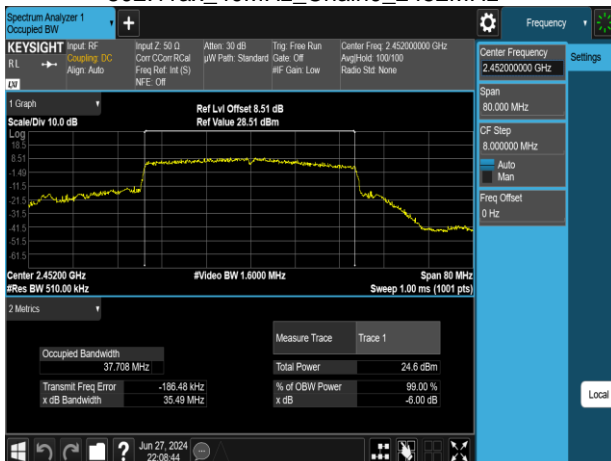
802.11ax\_40MHz\_Chain0\_2437MHz



802.11ax\_40MHz\_Chain1\_2437MHz



802.11ax\_40MHz\_Chain0\_2452MHz



802.11ax\_40MHz\_Chain1\_2452MHz



**Beamformig**

Temperature: 23.7 ~ 23.8°C

Test date: June 13 ~ 14, 2024

Humidity: 55 ~ 58% RH

Tested by: Marco Chan

**6dB BANDWIDTH**

**802.11n\_HT\_20M Ch0**

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17640.00	≥ 500	PASS
2437	17620.00	≥ 500	PASS
2462	17320.00	≥ 500	PASS

**802.11n\_HT\_20M Ch1**

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16960.00	≥ 500	PASS
2437	17630.00	≥ 500	PASS
2462	17630.00	≥ 500	PASS

**802.11n\_HT\_40M Ch0**

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35550.00	≥ 500	PASS
2437	35730.00	≥ 500	PASS
2452	35770.00	≥ 500	PASS

**802.11n\_HT\_40M Ch1**

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	35980.00	≥ 500	PASS
2437	35720.00	≥ 500	PASS
2452	36080.00	≥ 500	PASS

**802.11ax\_HE\_20M Ch0**

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	18910.00	$\geq 500$	PASS
2437	full	<b>18940.00</b>	$\geq 500$	PASS
2462	full	18910.00	$\geq 500$	PASS

**802.11ax\_HE\_20M Ch1**

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2412	full	<b>18940.00</b>	$\geq 500$	PASS
2437	full	<b>18940.00</b>	$\geq 500$	PASS
2462	full	18640.00	$\geq 500$	PASS

**802.11ax\_HE\_40M Ch0**

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	37810.00	$\geq 500$	PASS
2437	full	37950.00	$\geq 500$	PASS
2452	full	37490.00	$\geq 500$	PASS

**802.11ax\_HE\_40M Ch1**

Freq. (MHz)	RU Config	6dB BW (kHz)	Limit (kHz)	Result
2422	full	38050.00	$\geq 500$	PASS
2437	full	37980.00	$\geq 500$	PASS
2452	full	<b>38080.00</b>	$\geq 500$	PASS

**BANDWIDTH 99%**

**802.11n\_HT20M Ch0**

Freq. (MHz)	99% BW (MHz)
2412	17.814
2437	<b>17.840</b>
2462	17.824

**802.11n\_HT20M Ch1**

Freq. (MHz)	99% BW (MHz)
2412	17.773
2437	<b>17.875</b>
2462	17.804

**802.11n\_HT40M Ch0**

Freq. (MHz)	99% BW (MHz)
2422	36.346
2437	<b>36.392</b>
2452	36.349

**802.11n\_HT40M Ch1**

Freq. (MHz)	99% BW (MHz)
2422	<b>36.420</b>
2437	36.370
2452	36.413

**802.11ax\_HE20M Ch0**

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.837
2437	full	<b>19.056</b>
2462	full	19.052

**802.11ax\_HE20M Ch1**

Freq. (MHz)	RU Config	99% BW (MHz)
2412	full	18.869
2437	full	<b>19.096</b>
2462	full	19.047

**802.11ax\_HE40M Ch0**

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	37.705
2437	full	<b>37.731</b>
2452	full	37.677

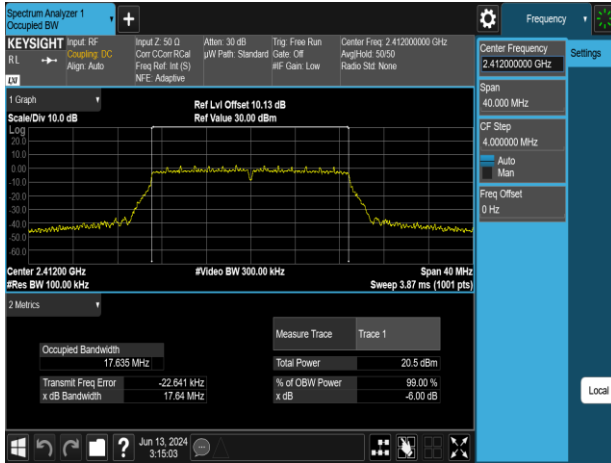
**802.11ax\_HE40M Ch1**

Freq. (MHz)	RU Config	99% BW (MHz)
2422	full	<b>37.769</b>
2437	full	37.758
2452	full	37.755

Report No.: TMWK2309003308KR

## Test Data 6dB BANDWIDTH

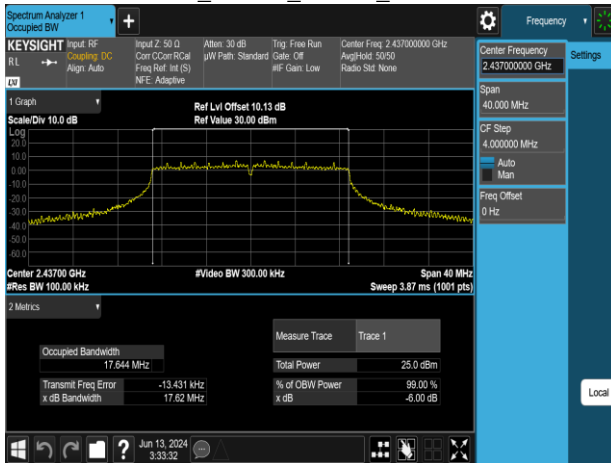
802.11n\_20MHz\_Chain0\_2412MHz



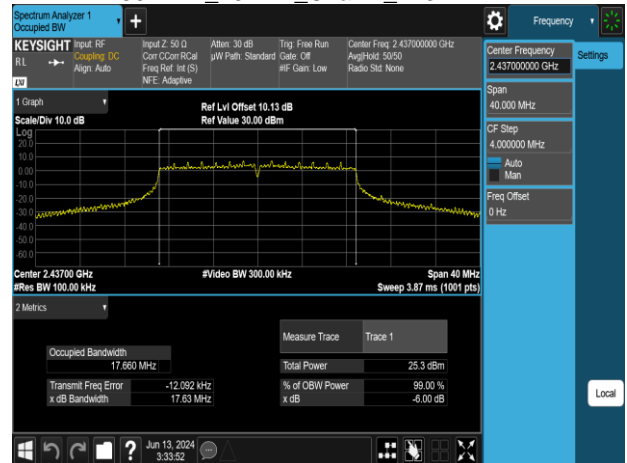
802.11n\_20MHz\_Chain1\_2412MHz



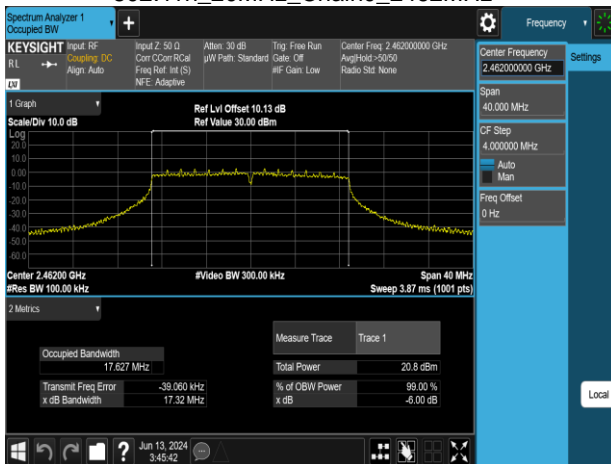
802.11n\_20MHz\_Chain0\_2437MHz



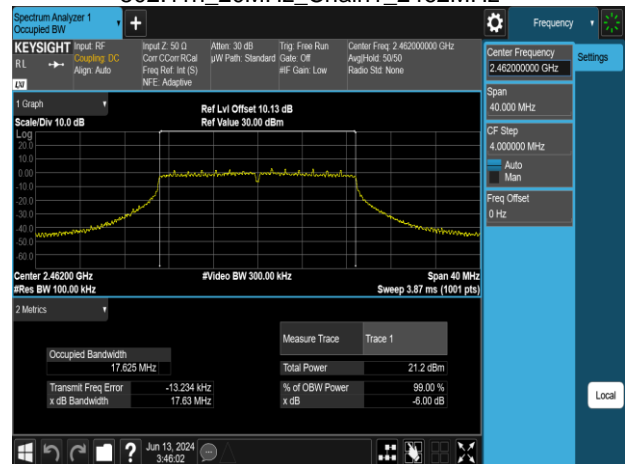
802.11n\_20MHz\_Chain1\_2437MHz



802.11n\_20MHz\_Chain0\_2462MHz

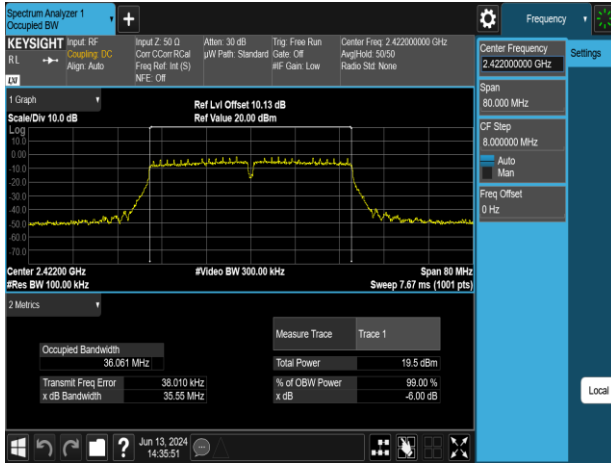


802.11n\_20MHz\_Chain1\_2462MHz

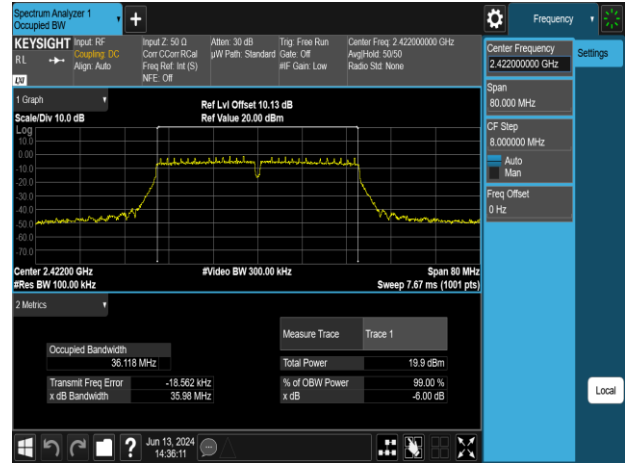




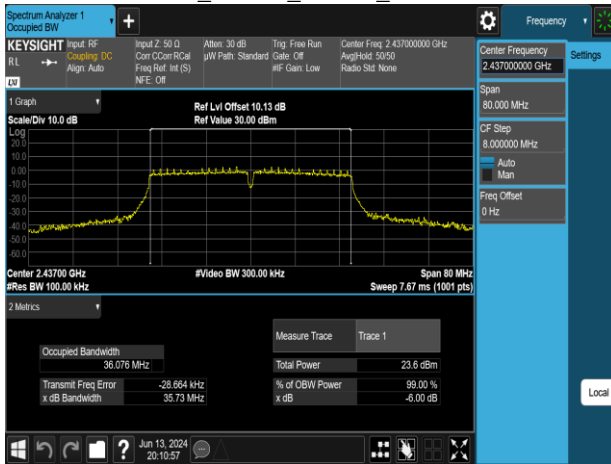
802.11n\_40MHz\_Chain0\_2422MHz



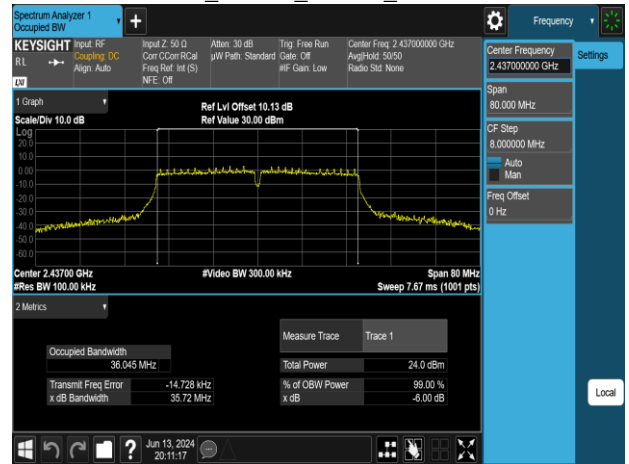
802.11n\_40MHz\_Chain1\_2422MHz



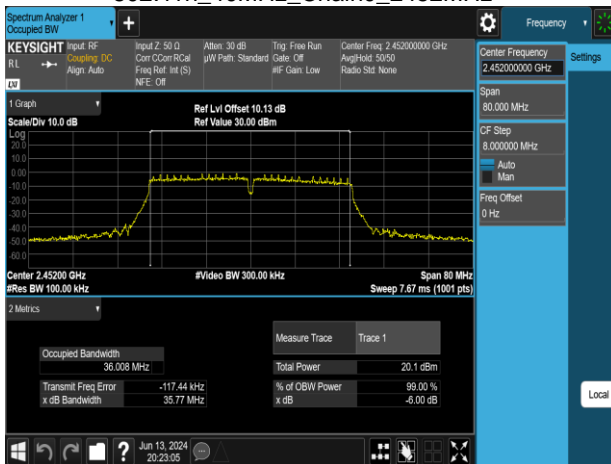
802.11n\_40MHz\_Chain0\_2437MHz



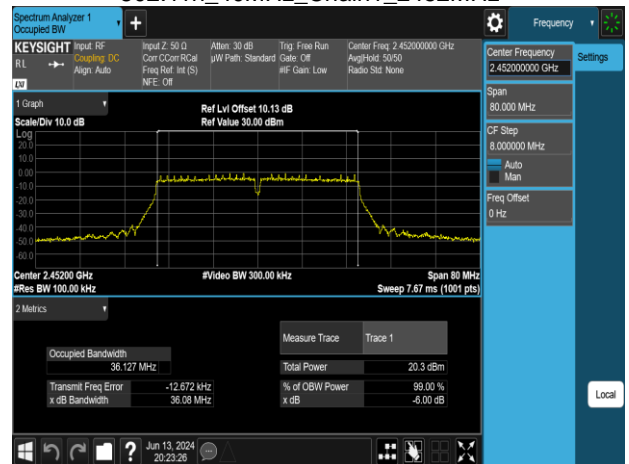
802.11n\_40MHz\_Chain1\_2437MHz



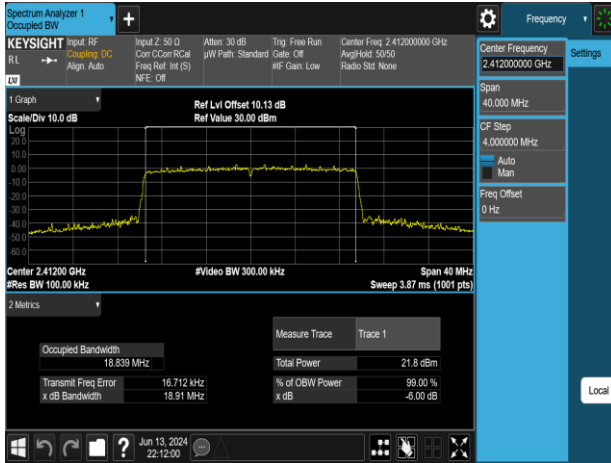
802.11n\_40MHz\_Chain0\_2452MHz



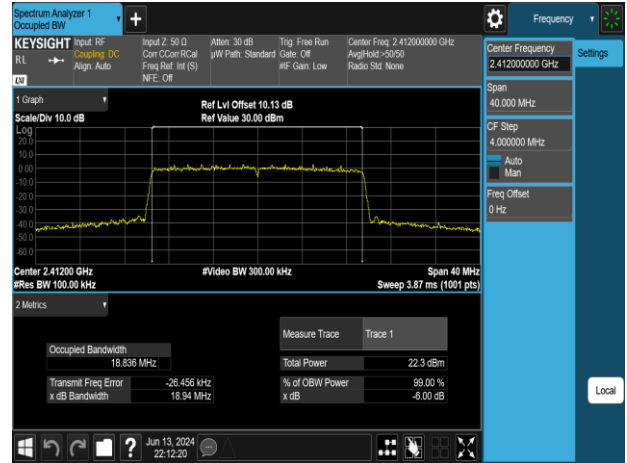
802.11n\_40MHz\_Chain1\_2452MHz



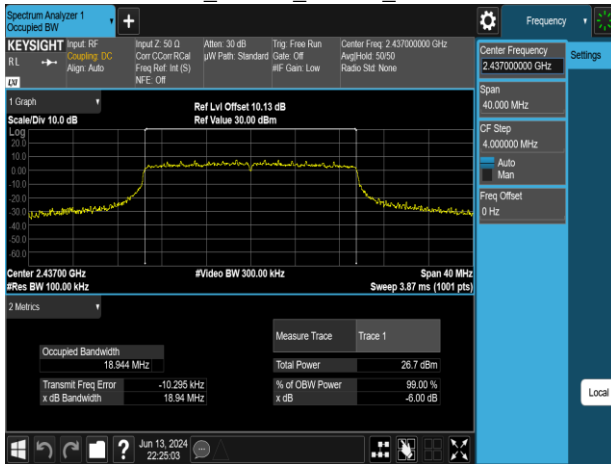
802.11ax\_20MHz\_Chain0\_2412MHz



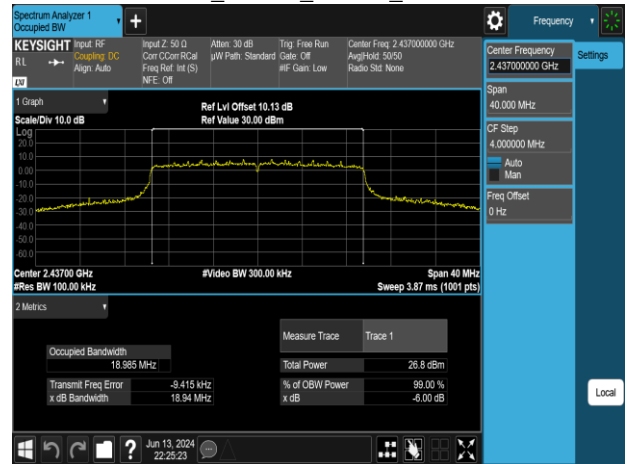
802.11ax\_20MHz\_Chain1\_2412MHz



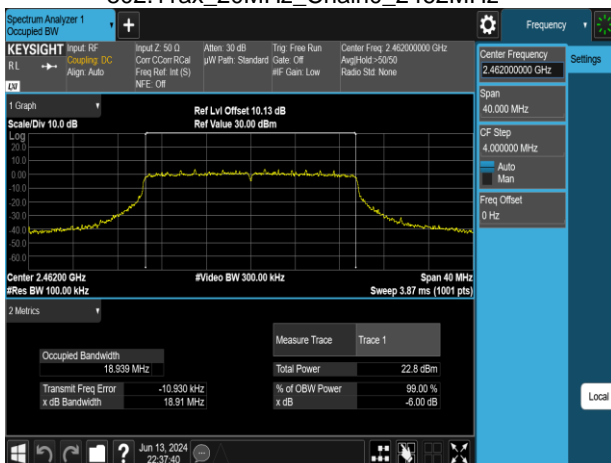
802.11ax\_20MHz\_Chain0\_2437MHz



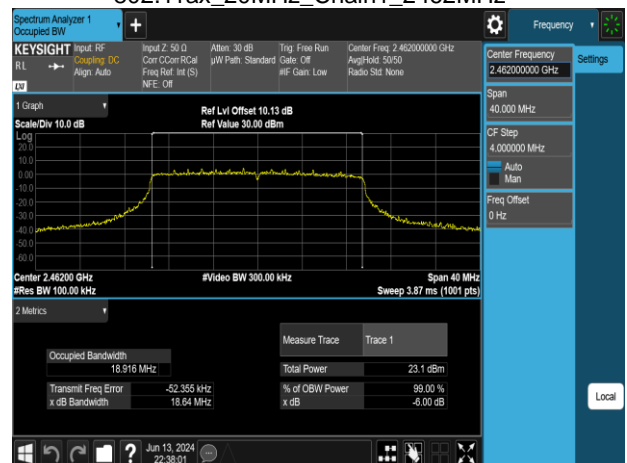
802.11ax\_20MHz\_Chain1\_2437MHz



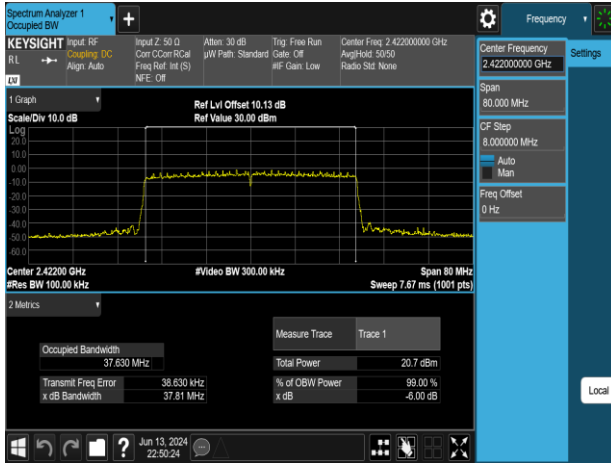
802.11ax\_20MHz\_Chain0\_2462MHz



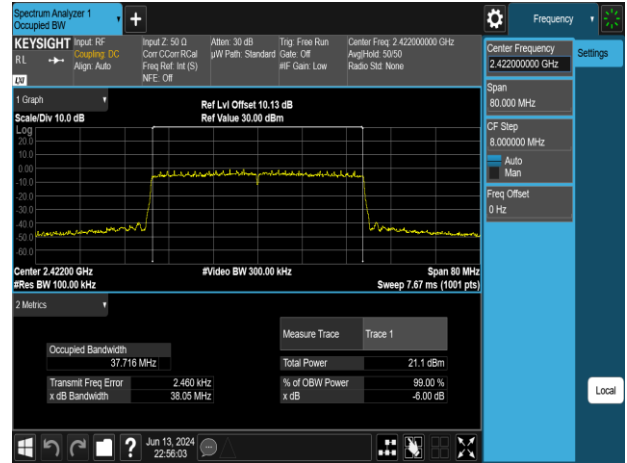
802.11ax\_20MHz\_Chain1\_2462MHz



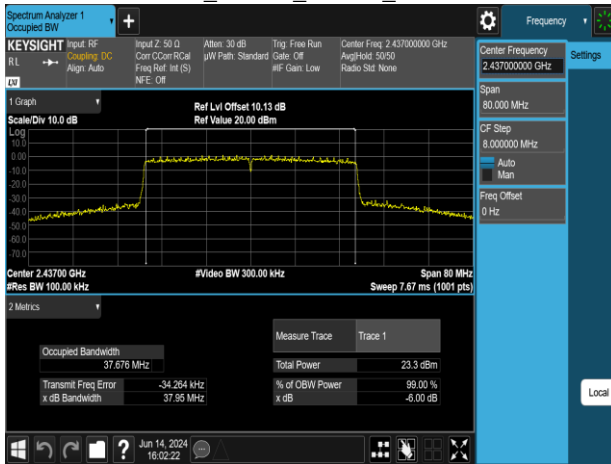
802.11ax\_40MHz\_Chain0\_2422MHz



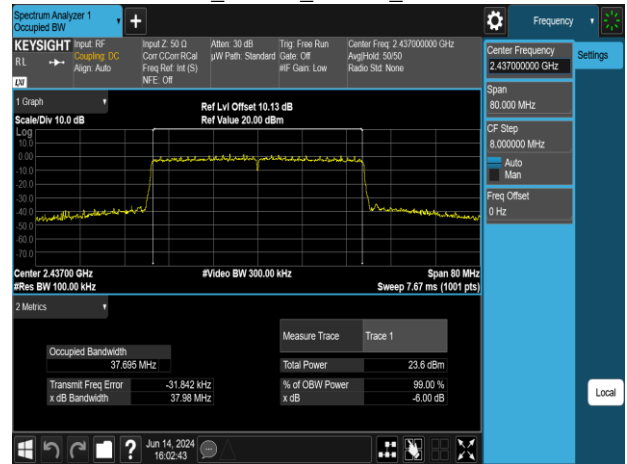
802.11ax\_40MHz\_Chain1\_2422MHz



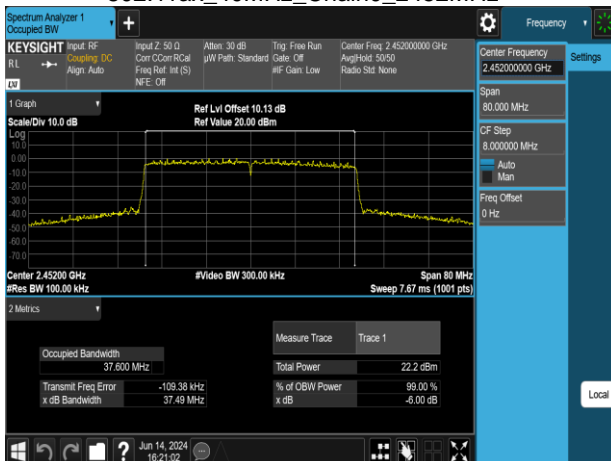
802.11ax\_40MHz\_Chain0\_2437MHz



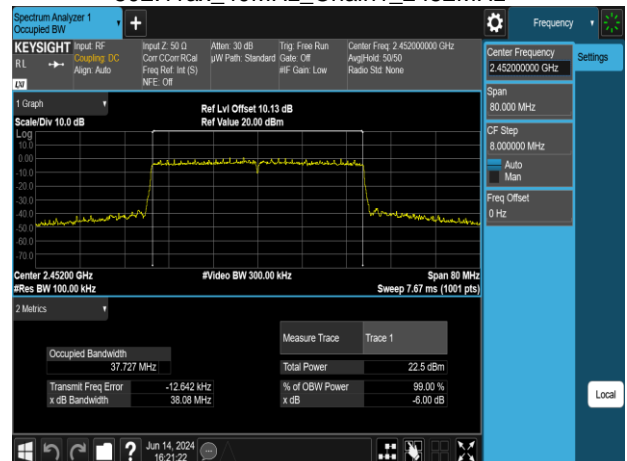
802.11ax\_40MHz\_Chain1\_2437MHz



802.11ax\_40MHz\_Chain0\_2452MHz

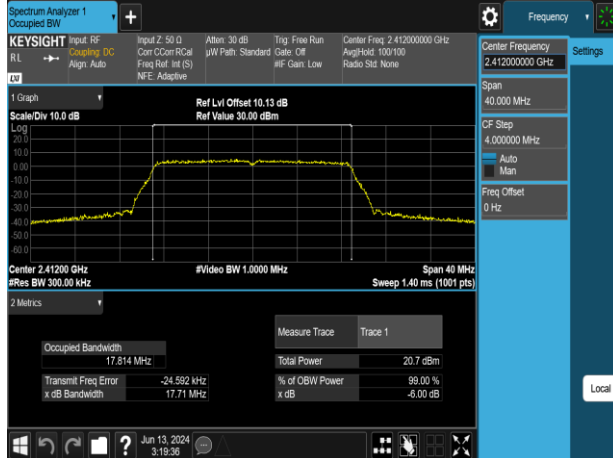


802.11ax\_40MHz\_Chain1\_2452MHz

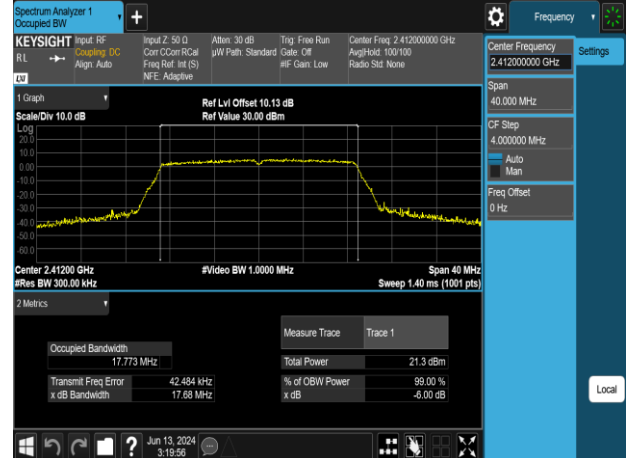


## BANDWIDTH 99%

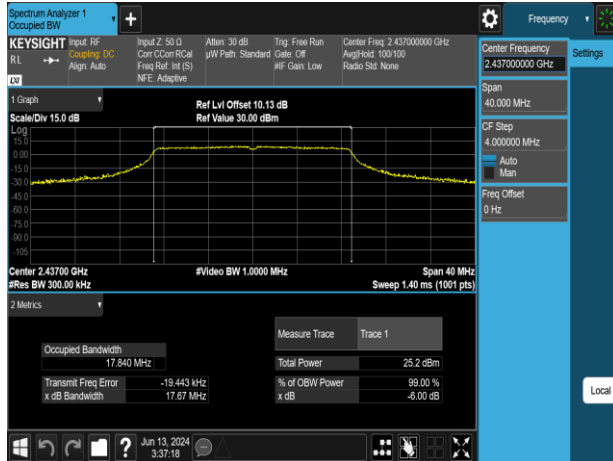
802.11n\_20MHz\_Chain0\_2412MHz



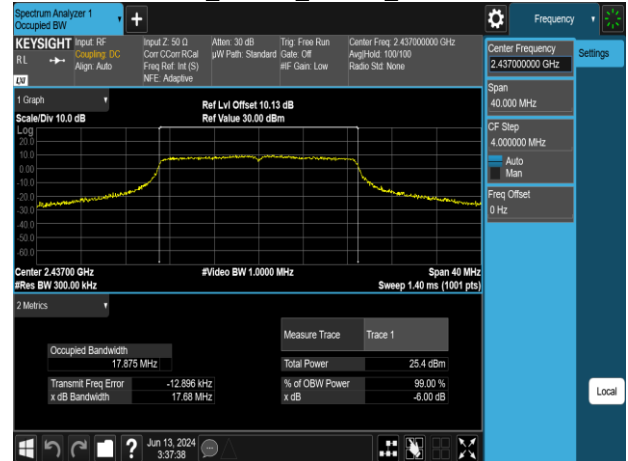
802.11n\_20MHz\_Chain1\_2412MHz



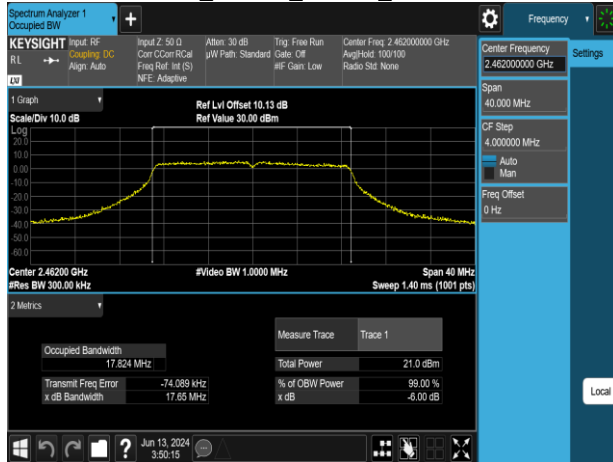
802.11n\_20MHz\_Chain0\_2437MHz



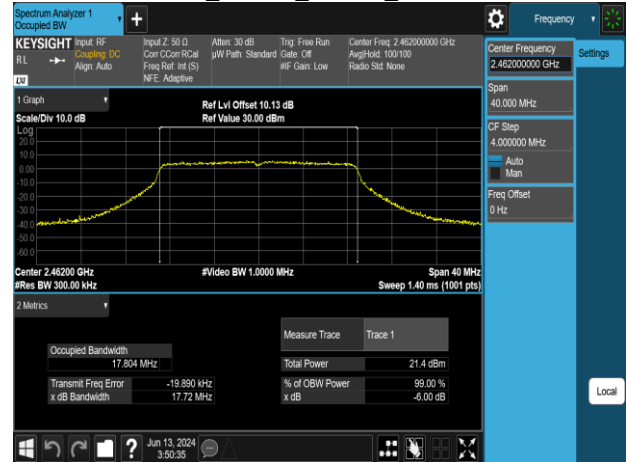
802.11n\_20MHz\_Chain1\_2437MHz



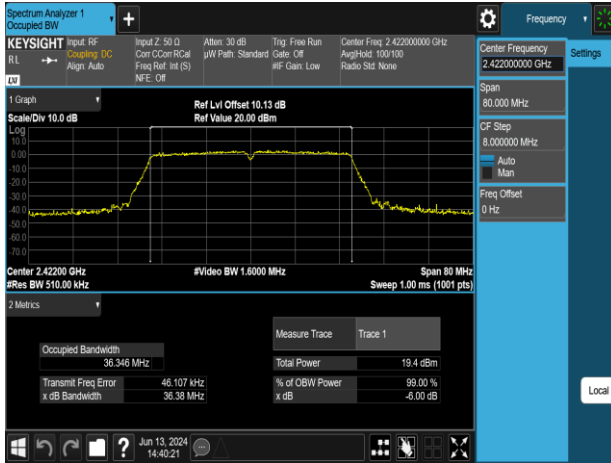
802.11n\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain1\_2462MHz



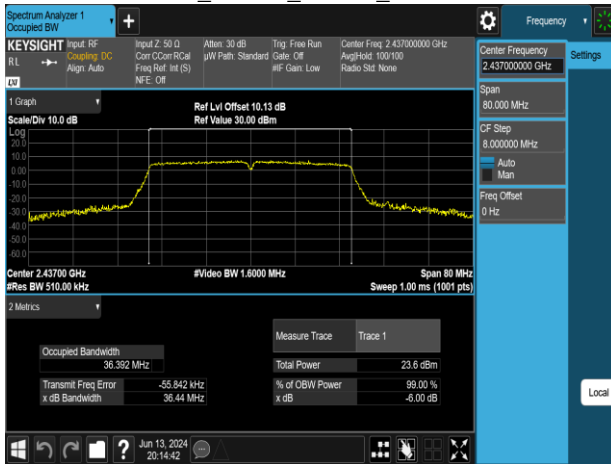
802.11n\_40MHz\_Chain0\_2422MHz



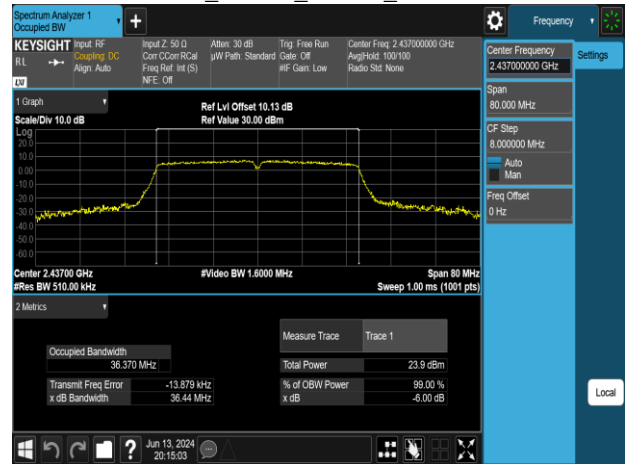
802.11n\_40MHz\_Chain1\_2422MHz



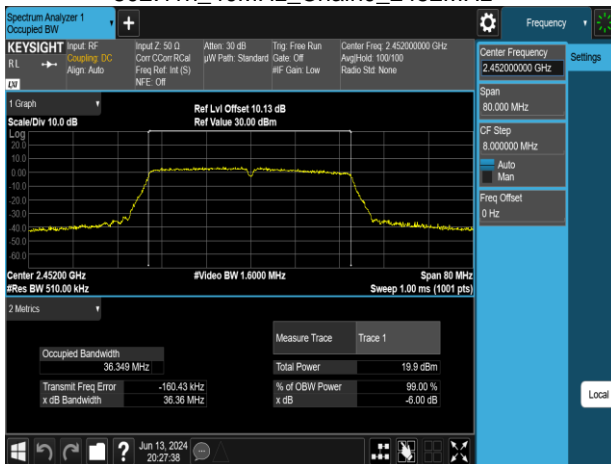
802.11n\_40MHz\_Chain0\_2437MHz



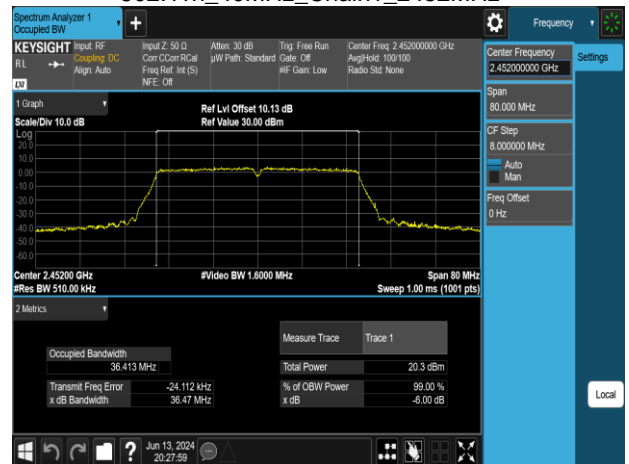
802.11n\_40MHz\_Chain1\_2437MHz



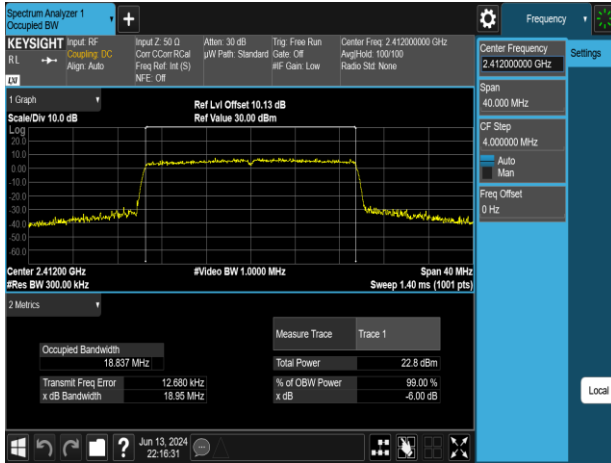
802.11n\_40MHz\_Chain0\_2452MHz



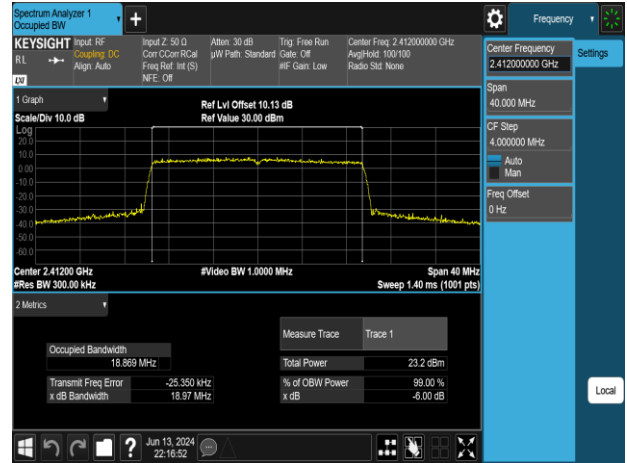
802.11n\_40MHz\_Chain1\_2452MHz



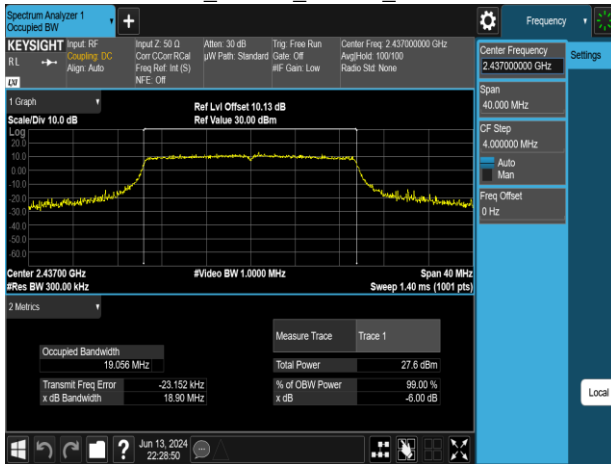
802.11ax\_20MHz\_Chain0\_2412MHz



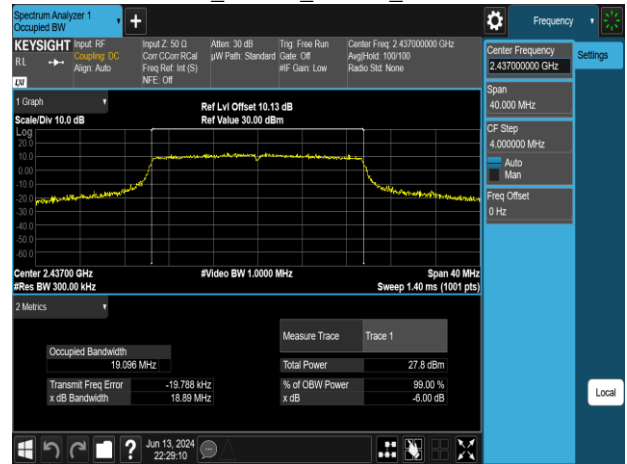
802.11ax\_20MHz\_Chain1\_2412MHz



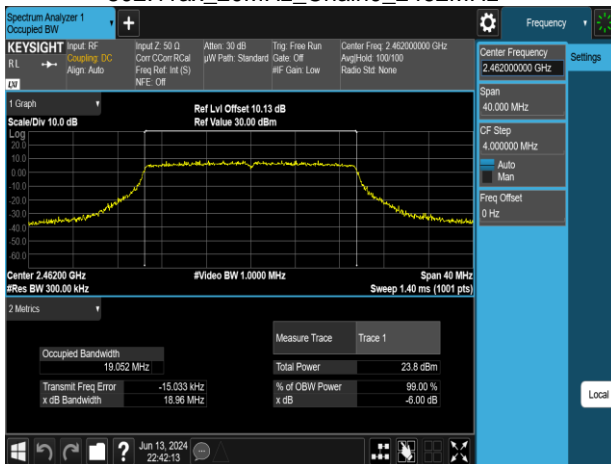
802.11ax\_20MHz\_Chain0\_2437MHz



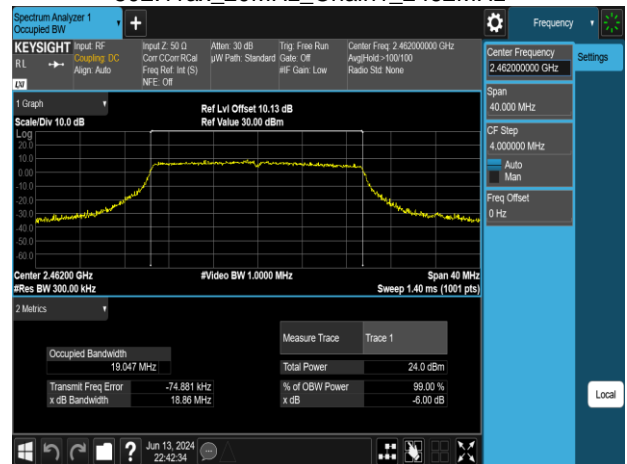
802.11ax\_20MHz\_Chain1\_2437MHz



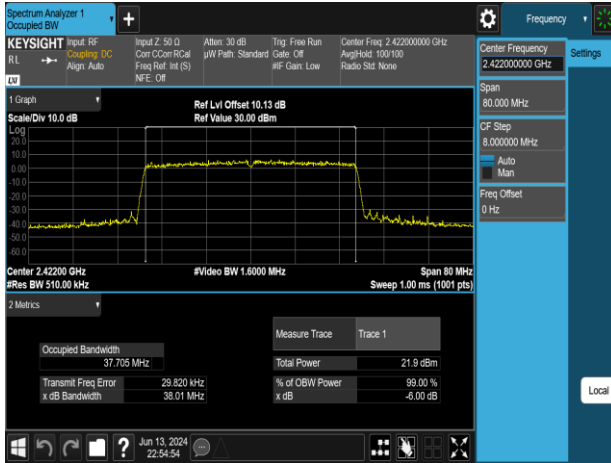
802.11ax\_20MHz\_Chain0\_2462MHz



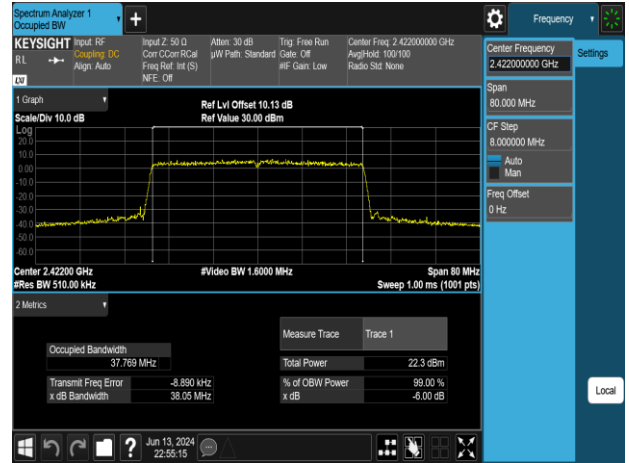
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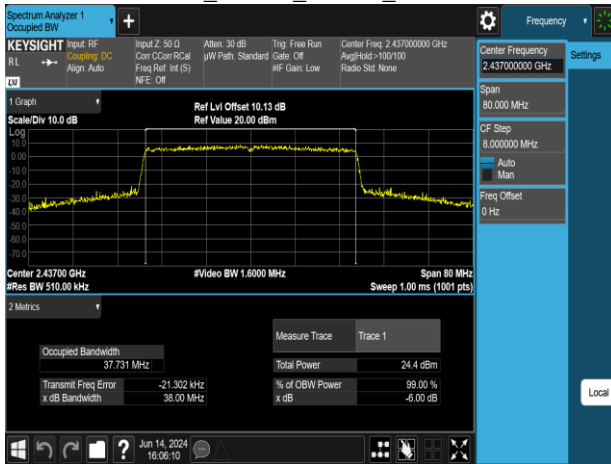
802.11ax\_40MHz\_Chain0\_2422MHz



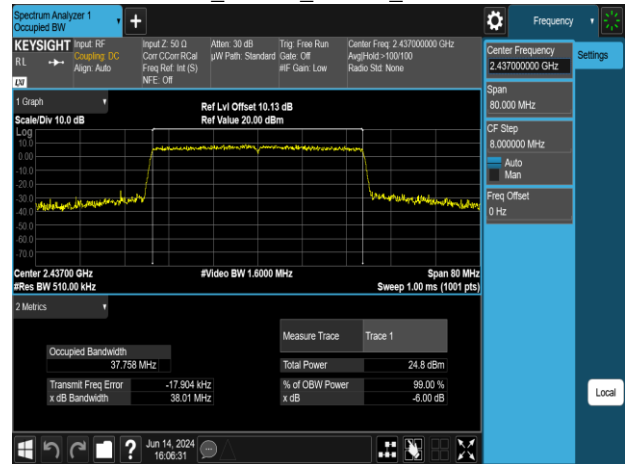
802.11ax\_40MHz\_Chain1\_2422MHz



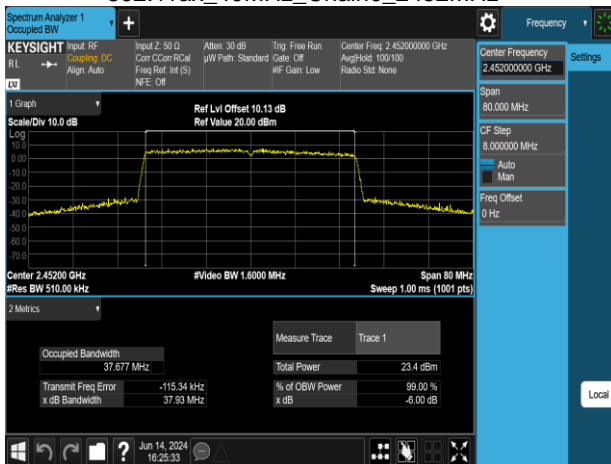
802.11ax\_40MHz\_Chain0\_2437MHz



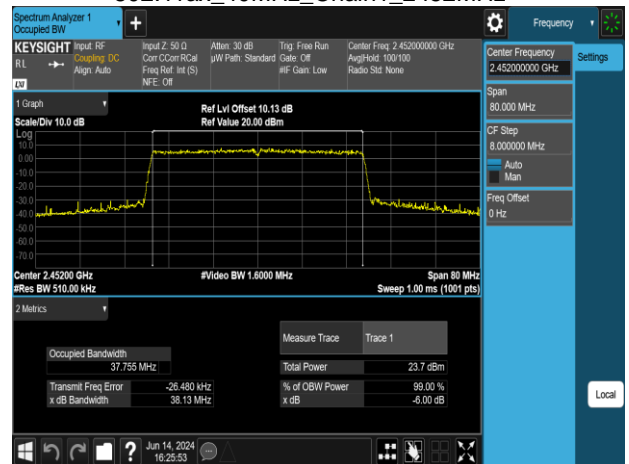
802.11ax\_40MHz\_Chain1\_2437MHz



802.11ax\_40MHz\_Chain0\_2452MHz



802.11ax\_40MHz\_Chain1\_2452MHz



Report No.: TMWK2309003308KR

## 4.3 OUTPUT POWER MEASUREMENT

### 4.3.1 Test Limit

According to §15.247(b),

#### Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 30dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] <input type="checkbox"/> Point-to-point operation :
-------	---

Average output power : For reporting purposes only.

### 4.3.2 Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

### 4.3.3 Test Setup

Refer to section 1.8.



### 4.3.4 Test Result

#### Non-Beamformig

Temperature: 20.3 ~ 24.5°C

Test date: May 21 ~ June 27, 2024

Humidity: 53 ~ 64% RH

Tested by: Marco Chan

#### Peak & Average output power :

##### 1. Chain 0

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	21.5	390.84	<b>25.92</b>	30.00	PASS
6	2437	1	20	314.05	24.97	30.00	PASS
10	2457	1	21.5	355.63	25.51	30.00	PASS
11	2462	1	19	223.87	23.50	30.00	PASS
802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	21.5	221.25	<b>23.45</b>	30.00	PASS
6	2437	1	20	173.33	22.39	30.00	PASS
10	2457	1	21.5	202.71	23.07	30.00	PASS
11	2462	1	19	127.31	21.05	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	18	431.52	26.35	30.00	PASS
2	2417	6	18	336.51	25.27	30.00	PASS
3	2422	6	18.5	366.44	25.64	30.00	PASS
4	2427	6	19	381.07	25.81	30.00	PASS
5	2432	6	19.5	318.42	25.03	30.00	PASS
6	2437	6	19.5	349.95	25.44	30.00	PASS
10	2457	6	19.5	399.94	26.02	30.00	PASS
11	2462	6	18	319.15	25.04	30.00	PASS
802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	18	86.43	19.37	30.00	PASS
2	2417	6	18	82.16	19.15	30.00	PASS
3	2422	6	18.5	91.56	19.62	30.00	PASS
4	2427	6	19	101.55	20.07	30.00	PASS
5	2432	6	19.5	106.09	20.26	30.00	PASS
6	2437	6	19.5	118.49	20.74	30.00	PASS
10	2457	6	19.5	113.16	20.54	30.00	PASS
11	2462	6	18	81.04	19.09	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

## 2. Chain 1

802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	20	340.41	25.32	30.00	PASS
6	2437	1	19	284.45	24.54	30.00	PASS
10	2457	1	20	288.40	24.60	30.00	PASS
11	2462	1	18	197.24	22.95	30.00	PASS
802.11b Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	20	190.93	22.81	30.00	PASS
6	2437	1	19	160.28	22.05	30.00	PASS
10	2457	1	20	167.83	22.25	30.00	PASS
11	2462	1	18	114.78	20.60	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11g Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	18	448.75	<b>26.52</b>	30.00	PASS
2	2417	6	19	442.59	26.46	30.00	PASS
3	2422	6	19	440.55	26.44	30.00	PASS
4	2427	6	19.5	444.63	26.48	30.00	PASS
5	2432	6	20	381.94	25.82	30.00	PASS
6	2437	6	20	416.87	26.20	30.00	PASS
7	2442	6	20	443.61	26.47	30.00	PASS
8	2447	6	19.5	431.52	26.35	30.00	PASS
9	2452	6	19	415.91	26.19	30.00	PASS
10	2457	6	19	412.10	26.15	30.00	PASS
11	2462	6	18.5	402.72	26.05	30.00	PASS
802.11g Ch1							
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	18	94.55	19.76	30.00	PASS
2	2417	6	19	109.57	20.40	30.00	PASS
3	2422	6	19	112.12	20.50	30.00	PASS
4	2427	6	19.5	123.22	20.91	30.00	PASS
5	2432	6	20	132.95	21.24	30.00	PASS
6	2437	6	20	144.11	21.59	30.00	PASS
7	2442	6	20	148.14	<b>21.71</b>	30.00	PASS
8	2447	6	19.5	130.82	21.17	30.00	PASS
9	2452	6	19	114.20	20.58	30.00	PASS
10	2457	6	19	111.60	20.48	30.00	PASS
11	2462	6	18.5	102.25	20.10	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

### 3. MIMO

802.11n_HT20M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	18	24.15	25.28	597.30	27.76	30.00	PASS
2	2417	MCS0	19	24.81	24.31	572.47	27.58	30.00	PASS
3	2422	MCS0	19.5	24.44	25.95	671.52	28.27	30.00	PASS
4	2427	MCS0	20	25.62	24.92	675.21	28.29	30.00	PASS
5	2432	MCS0	20.5	25.87	25.24	720.56	28.58	30.00	PASS
6	2437	MCS0	20.5	25.89	25.60	751.23	28.76	30.00	PASS
9	2452	MCS0	20.5	25.40	26.18	761.69	<b>28.82</b>	30.00	PASS
10	2457	MCS0	20	25.32	25.34	682.39	28.34	30.00	PASS
11	2462	MCS0	18	23.78	24.32	509.18	27.07	30.00	PASS
802.11n_HT20M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	18	17.86	18.15	126.38	21.02	30.00	PASS
2	2417	MCS0	19	18.65	18.96	151.95	21.82	30.00	PASS
3	2422	MCS0	19.5	19.09	19.66	173.53	22.39	30.00	PASS
4	2427	MCS0	20	19.68	19.97	192.17	22.84	30.00	PASS
5	2432	MCS0	20.5	20.03	20.34	208.79	23.20	30.00	PASS
6	2437	MCS0	20.5	20.45	20.77	230.27	<b>23.62</b>	30.00	PASS
9	2452	MCS0	20.5	20.03	20.70	218.14	23.39	30.00	PASS
10	2457	MCS0	20	19.52	19.93	187.90	22.74	30.00	PASS
11	2462	MCS0	18	17.71	18.20	125.06	20.97	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11n_HT40M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	16	22.03	22.74	347.52	25.41	30.00	PASS
4	2427	MCS0	16.5	22.08	22.12	324.37	25.11	30.00	PASS
5	2432	MCS0	17.5	22.88	22.92	389.97	25.91	30.00	PASS
6	2437	MCS0	19	24.02	25.22	585.01	<b>27.67</b>	30.00	PASS
7	2442	MCS0	18.5	24.03	23.95	501.24	27.00	30.00	PASS
8	2447	MCS0	18	23.22	24.01	461.66	26.64	30.00	PASS
9	2452	MCS0	15	20.93	21.09	252.41	24.02	30.00	PASS
802.11n_HT40M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	16	15.68	16.00	76.73	18.85	30.00	PASS
4	2427	MCS0	16.5	15.98	16.50	84.23	19.25	30.00	PASS
5	2432	MCS0	17.5	16.89	17.39	103.61	20.15	30.00	PASS
6	2437	MCS0	19	18.81	19.26	160.23	<b>22.05</b>	30.00	PASS
7	2442	MCS0	18.5	18.22	18.74	141.07	21.49	30.00	PASS
8	2447	MCS0	18	17.64	18.15	123.29	20.91	30.00	PASS
9	2452	MCS0	15	14.85	15.19	63.53	18.03	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11ax_HE20M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
1	2412	MCS0	full	16.5	23.18	24.16	468.59	26.71	30.00	PASS
2	2417	MCS0	full	18.5	24.77	24.25	565.99	27.53	30.00	PASS
3	2422	MCS0	full	19	25.16	24.74	625.95	27.97	30.00	PASS
4	2427	MCS0	full	19.5	25.31	24.65	631.37	28.00	30.00	PASS
5	2432	MCS0	full	20	24.61	26.21	706.90	28.49	30.00	PASS
6	2437	MCS0	full	20	25.82	25.27	718.46	<b>28.56</b>	30.00	PASS
10	2457	MCS0	full	20	25.48	25.46	704.74	28.48	30.00	PASS
11	2462	MCS0	full	17.5	23.86	23.91	489.26	26.90	30.00	PASS
802.11ax_HE20M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
1	2412	MCS0	full	16.5	16.66	16.90	95.43	19.80	30.00	PASS
2	2417	MCS0	full	18.5	18.40	18.71	143.64	21.57	30.00	PASS
3	2422	MCS0	full	19	18.88	19.22	161.00	22.07	30.00	PASS
4	2427	MCS0	full	19.5	19.36	19.57	177.06	22.48	30.00	PASS
5	2432	MCS0	full	20	19.57	20.22	195.98	22.92	30.00	PASS
6	2437	MCS0	full	20	20.16	20.38	213.13	<b>23.29</b>	30.00	PASS
10	2457	MCS0	full	20	19.67	20.15	196.41	22.93	30.00	PASS
11	2462	MCS0	full	17.5	17.38	17.80	115.08	20.61	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11ax_HE40M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
3	2422	MCS0	full	14.5	20.81	20.95	244.96	23.89	30.00	PASS
4	2427	MCS0	full	16.5	21.93	22.74	343.89	25.36	30.00	PASS
5	2432	MCS0	full	17	22.57	22.67	365.64	25.63	30.00	PASS
6	2437	MCS0	full	18	24.02	23.75	489.49	26.90	30.00	PASS
7	2442	MCS0	full	18	24.16	23.75	497.75	<b>26.97</b>	30.00	PASS
8	2447	MCS0	full	17	22.81	23.03	391.89	25.93	30.00	PASS
9	2452	MCS0	full	15.5	21.74	21.95	305.95	24.86	30.00	PASS
802.11ax_HE40M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
3	2422	MCS0	full	14.5	14.41	14.78	57.67	17.61	30.00	PASS
4	2427	MCS0	full	16.5	16.20	16.64	87.83	19.44	30.00	PASS
5	2432	MCS0	full	17	16.67	17.12	97.99	19.91	30.00	PASS
6	2437	MCS0	full	18	18.05	18.47	134.15	<b>21.28</b>	30.00	PASS
7	2442	MCS0	full	18	17.97	18.42	132.18	21.21	30.00	PASS
8	2447	MCS0	full	17	16.90	17.41	104.07	20.17	30.00	PASS
9	2452	MCS0	full	15.5	15.56	15.94	75.25	18.77	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.



**Beamformig**

Temperature: 23.7 ~ 23.8°C

Test date: June 13 ~ 14, 2024

Humidity: 55 ~ 58% RH

Tested by: Marco Chan

**Peak & Average output power :**

802.11n_HT20M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	28	23.89	23.93	492.08	26.92	30.00	PASS
2	2417	MCS0	31	24.81	24.34	574.34	27.59	30.00	PASS
3	2422	MCS0	35	25.91	25.57	750.52	28.75	30.00	PASS
4	2427	MCS0	36	26.06	25.85	788.24	28.97	30.00	PASS
5	2432	MCS0	36	26.03	25.72	774.12	28.89	30.00	PASS
6	2437	MCS0	36	26.16	26.13	823.25	<b>29.16</b>	30.00	PASS
9	2452	MCS0	30	24.16	24.70	555.74	27.45	30.00	PASS
10	2457	MCS0	26	22.32	23.06	372.91	25.72	30.00	PASS
11	2462	MCS0	28	23.94	24.09	504.19	27.03	30.00	PASS
802.11n_HT20M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
1	2412	MCS0	28	13.94	14.45	52.65	17.21	30.00	PASS
2	2417	MCS0	31	14.84	15.33	64.62	18.10	30.00	PASS
3	2422	MCS0	35	17.07	17.39	105.80	20.24	30.00	PASS
4	2427	MCS0	36	17.65	17.80	118.51	20.74	30.00	PASS
5	2432	MCS0	36	17.55	17.75	116.49	20.66	30.00	PASS
6	2437	MCS0	36	18.23	18.46	136.72	<b>21.36</b>	30.00	PASS
9	2452	MCS0	30	14.55	14.88	59.29	17.73	30.00	PASS
10	2457	MCS0	26	12.67	13.03	38.60	15.87	30.00	PASS
11	2462	MCS0	28	14.00	14.35	52.36	17.19	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11n_HT40M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	26	22.11	23.04	363.93	25.61	30.00	PASS
4	2427	MCS0	28	23.13	24.63	495.99	26.95	30.00	PASS
5	2432	MCS0	32	24.16	25.03	579.04	27.63	30.00	PASS
6	2437	MCS0	32	24.45	24.79	579.91	27.63	30.00	PASS
7	2442	MCS0	32	25.21	24.85	637.39	<b>28.04</b>	30.00	PASS
8	2447	MCS0	28	23.08	23.69	437.12	26.41	30.00	PASS
9	2452	MCS0	25	22.12	23.01	362.92	25.60	30.00	PASS
802.11n_HT40M_2TX									
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
				Ch0	Ch1				
3	2422	MCS0	26	12.18	12.59	34.68	15.40	30.00	PASS
4	2427	MCS0	28	13.09	13.53	42.92	16.33	30.00	PASS
5	2432	MCS0	32	15.31	15.73	71.38	18.54	30.00	PASS
6	2437	MCS0	32	15.64	16.13	77.67	<b>18.90</b>	30.00	PASS
7	2442	MCS0	32	15.59	15.97	75.77	18.79	30.00	PASS
8	2447	MCS0	28	13.65	14.06	48.65	16.87	30.00	PASS
9	2452	MCS0	25	12.28	12.57	34.98	15.44	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11ax_HE20M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
1	2412	MCS0	full	27	23.86	24.15	503.24	27.02	30.00	PASS
2	2417	MCS0	full	31	24.97	25.93	705.79	28.49	30.00	PASS
3	2422	MCS0	full	33	25.12	26.24	745.81	28.73	30.00	PASS
4	2427	MCS0	full	34	26.09	25.78	784.89	28.95	30.00	PASS
5	2432	MCS0	full	34	26.13	25.90	799.25	29.03	30.00	PASS
6	2437	MCS0	full	36	26.35	26.15	843.62	<b>29.26</b>	30.00	PASS
10	2457	MCS0	full	27	24.09	23.95	504.76	27.03	30.00	PASS
11	2462	MCS0	full	29	24.49	24.67	574.28	27.59	30.00	PASS
802.11ax_HE20M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
1	2412	MCS0	full	27	13.54	13.97	47.52	16.77	30.00	PASS
2	2417	MCS0	full	31	15.54	15.89	74.60	18.73	30.00	PASS
3	2422	MCS0	full	33	16.33	16.88	91.67	19.62	30.00	PASS
4	2427	MCS0	full	34	16.96	17.19	101.98	20.09	30.00	PASS
5	2432	MCS0	full	34	16.83	17.09	99.33	19.97	30.00	PASS
6	2437	MCS0	full	36	18.32	18.49	138.50	<b>21.41</b>	30.00	PASS
10	2457	MCS0	full	27	13.57	13.86	47.06	16.73	30.00	PASS
11	2462	MCS0	full	29	14.37	14.73	57.05	17.56	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

802.11ax_HE40M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Peak Output Power (dBm)		Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
3	2422	MCS0	full	25	22.56	23.10	384.48	25.85	30.00	PASS
4	2427	MCS0	full	27	23.01	23.61	429.60	26.33	30.00	PASS
5	2432	MCS0	full	31	24.08	24.37	529.39	27.24	30.00	PASS
6	2437	MCS0	full	31	24.18	25.07	583.18	27.66	30.00	PASS
7	2442	MCS0	full	31	24.50	25.17	610.69	<b>27.86</b>	30.00	PASS
8	2447	MCS0	full	29	23.74	24.55	521.69	27.17	30.00	PASS
9	2452	MCS0	full	29	23.93	24.85	552.66	27.42	30.00	PASS
802.11ax_HE40M_2TX										
CH	Freq. (MHz)	Data Rate	RU Config	Power Setting	Avg. Output Power (dBm)		Total Avg. Output Power (mW)	Total Avg. Output Power (dBm)	Limit (dBm)	RESULT
					Ch0	Ch1				
3	2422	MCS0	full	25	12.25	12.73	35.55	15.51	30.00	PASS
4	2427	MCS0	full	27	13.18	13.59	43.67	16.40	30.00	PASS
5	2432	MCS0	full	31	14.78	15.13	62.67	17.97	30.00	PASS
6	2437	MCS0	full	31	15.27	15.52	69.32	<b>18.41</b>	30.00	PASS
7	2442	MCS0	full	31	15.17	15.50	68.39	18.35	30.00	PASS
8	2447	MCS0	full	29	14.11	14.39	53.26	17.26	30.00	PASS
9	2452	MCS0	full	29	14.17	14.37	53.49	17.28	30.00	PASS

Note: Measured by power meter, cable loss + Duty cycle factor has been offsetted to the power meter for Avg. power and cable loss has been offsetted for Peak power measurement.

Report No.: TMWK2309003308KR

## 4.4 POWER SPECTRAL DENSITY

### 4.4.1 Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 8dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [ Limit = 8 – (DG – 6) ] <input type="checkbox"/> Point-to-point operation :
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### 4.4.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

### 4.4.3 Test Setup

Refer to section 1.8.

### 4.4.4 Test Result

#### Non-Beamformig

Temperature: 20.3 ~ 24.5°C

Test date: May 21 ~ June 27, 2024

Humidity: 53 ~ 64% RH

Tested by: Marco Chan

#### 1. Chain 0

POWER DENSITY 802.11b				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	2.02	2.02	8.00	PASS
2437	1.02	1.02	8.00	PASS
2462	-1.36	-1.36	8.00	PASS

POWER DENSITY 802.11g				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-5.53	-5.53	8.00	PASS
2437	-2.98	-2.98	8.00	PASS
2462	-4.67	-4.67	8.00	PASS

#### 2. Chain 1

POWER DENSITY 802.11b				
Freq. (MHz)	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	0.71	0.71	8.00	PASS
2437	-0.40	-0.40	8.00	PASS
2462	-1.36	-1.36	8.00	PASS

POWER DENSITY 802.11g				
Freq. (MHz)	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-5.19	-5.19	8.00	PASS
2437	-3.16	-3.16	8.00	PASS
2462	-3.67	-3.67	8.00	PASS

### 3. MIMO

POWER DENSITY 802.11n HT20					
Freq. (MHz)	Ch0 PSD	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-7.33	-6.70	-3.99	8.00	PASS
2437	-3.95	-3.97	-0.95	8.00	PASS
2462	-7.08	-7.20	-4.13	8.00	PASS

POWER DENSITY 802.11n HT40					
Freq. (MHz)	Ch0 PSD	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2422	-11.80	-11.49	-8.63	8.00	PASS
2437	-9.14	-8.78	-5.95	8.00	PASS
2452	-12.91	-12.84	-9.87	8.00	PASS

POWER DENSITY 802.11ax HE20						
Freq. (MHz)	RU Config	Ch0 PSD	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	full	-9.75	-9.62	-6.67	8.00	PASS
2437	full	-5.18	-4.96	-2.06	8.00	PASS
2462	full	-9.14	-8.28	-5.68	8.00	PASS

POWER DENSITY 802.11ax HE40						
Freq. (MHz)	RU Config	Ch0 PSD	Ch1 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2422	full	-14.60	-13.98	-11.27	8.00	PASS
2437	full	-11.18	-10.23	-7.67	8.00	PASS
2452	full	-13.86	-12.77	-10.27	8.00	PASS