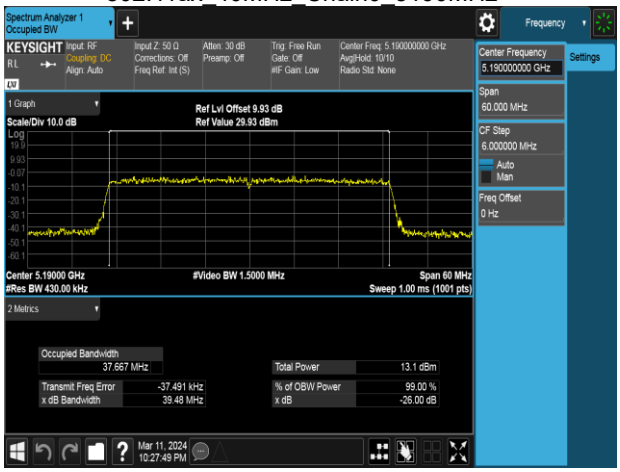
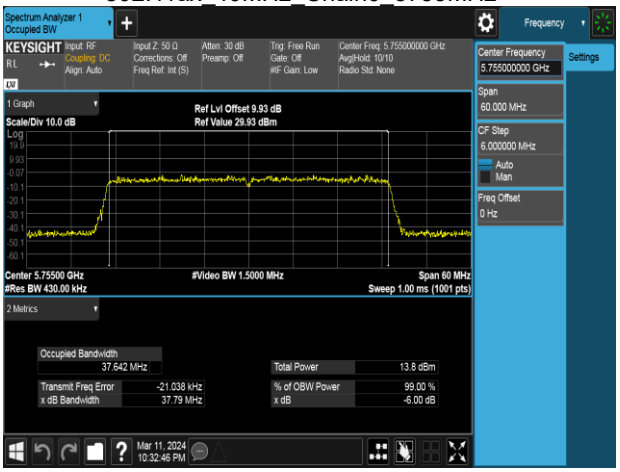
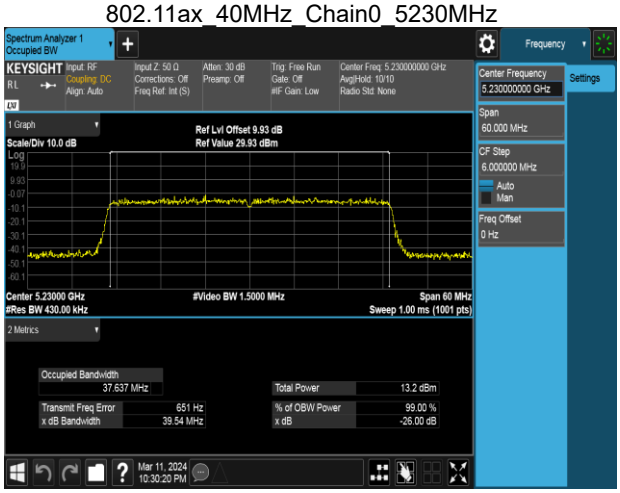
802.11ax_40MHz_Chain0_5190MHz



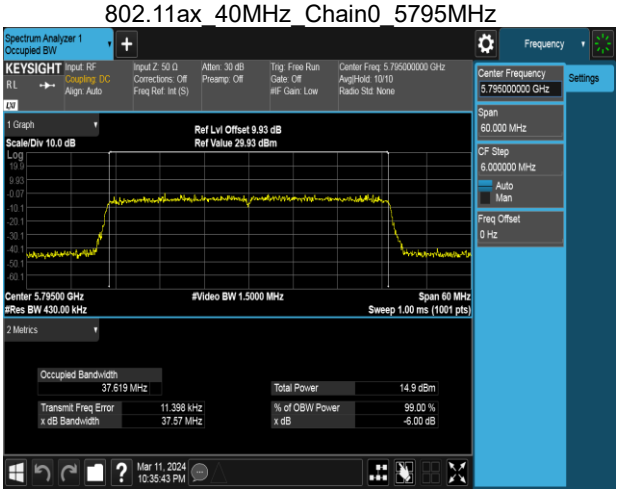
802.11ax_40MHz_Chain0_5755MHz



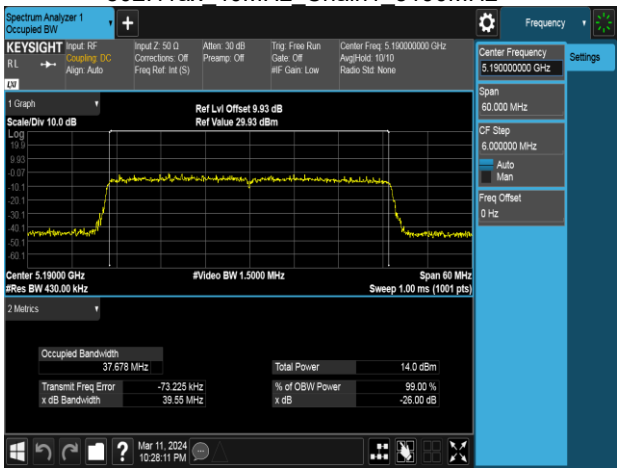
802.11ax_40MHz_Chain0_5230MHz



802.11ax_40MHz_Chain0_5795MHz



802.11ax_40MHz_Chain1_5190MHz



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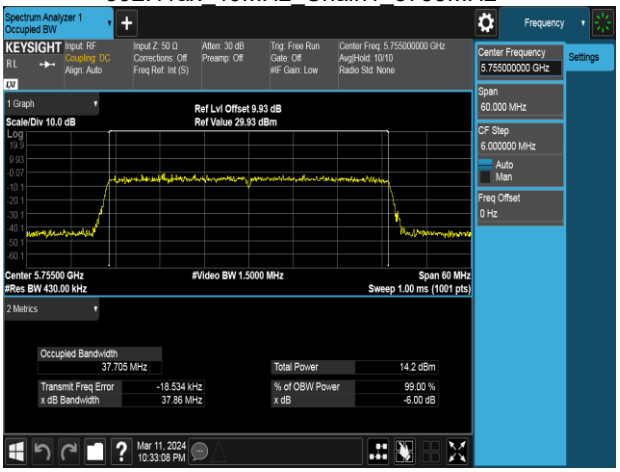

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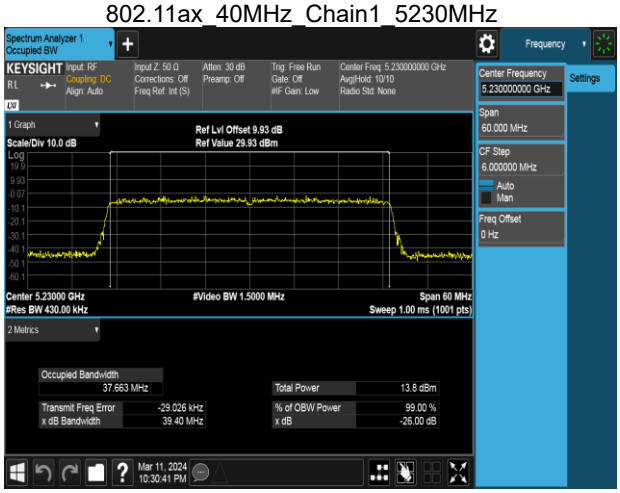
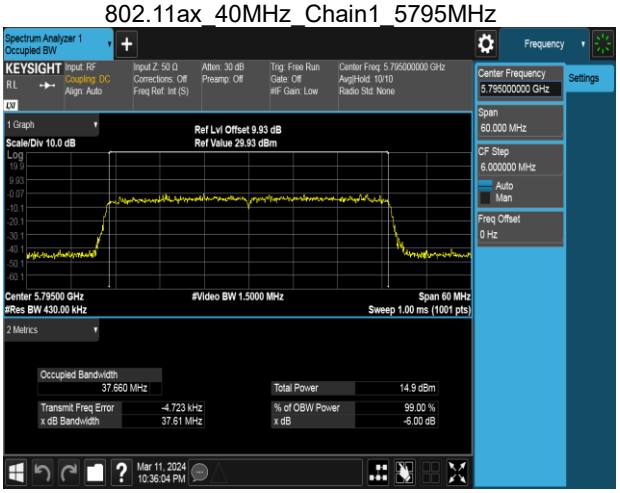
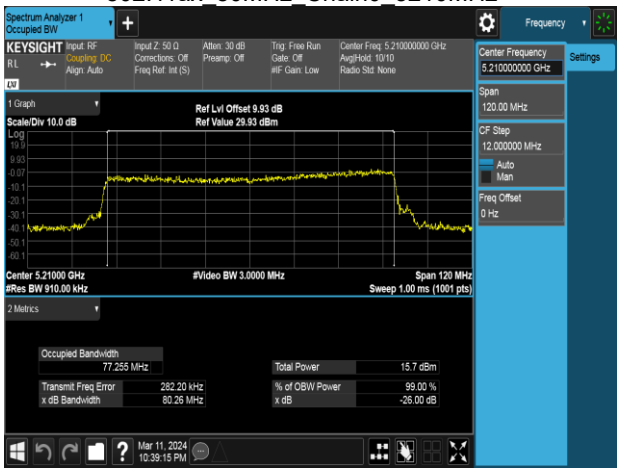


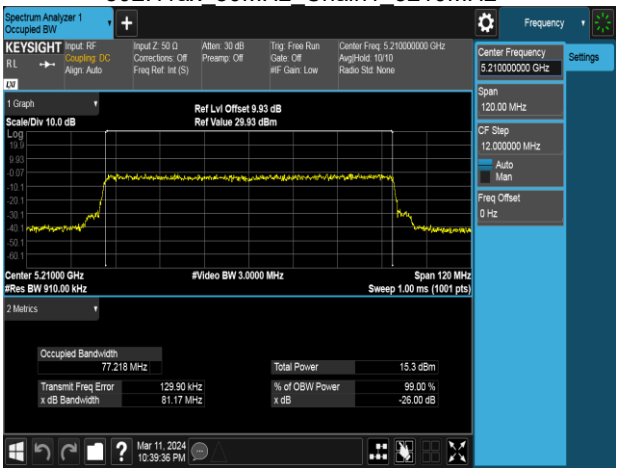
802.11ax_40MHz_Chain1_5795MHz



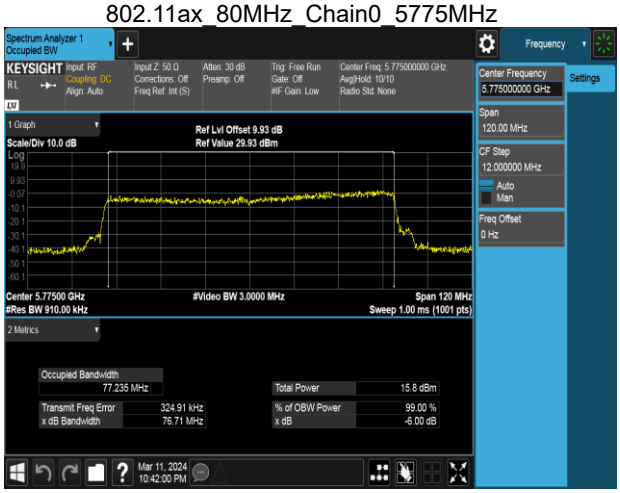
802.11ax_80MHz_Chain0_5210MHz



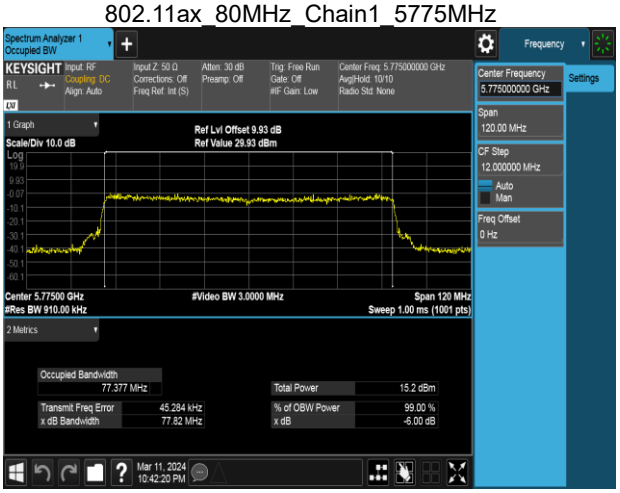
802.11ax_80MHz_Chain1_5210MHz



802.11ax_80MHz_Chain0_5775MHz

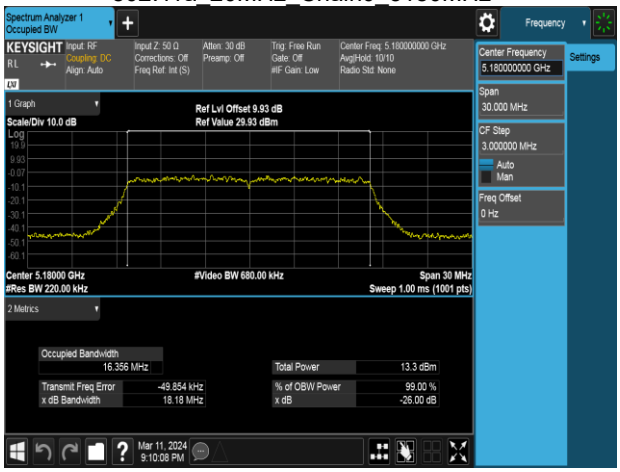


802.11ax_80MHz_Chain1_5775MHz

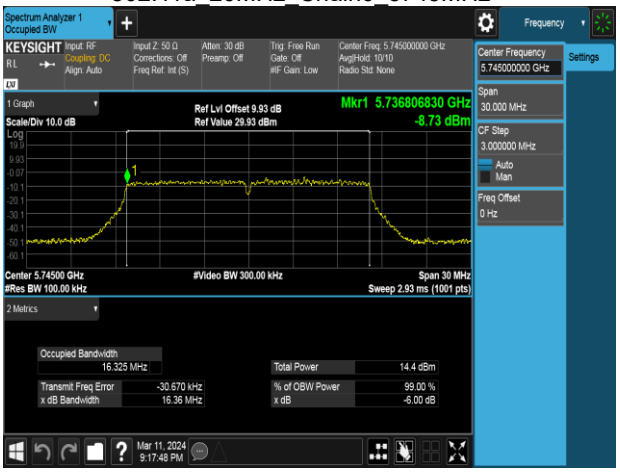


26 dB Bandwidth & 6 dB Bandwidth

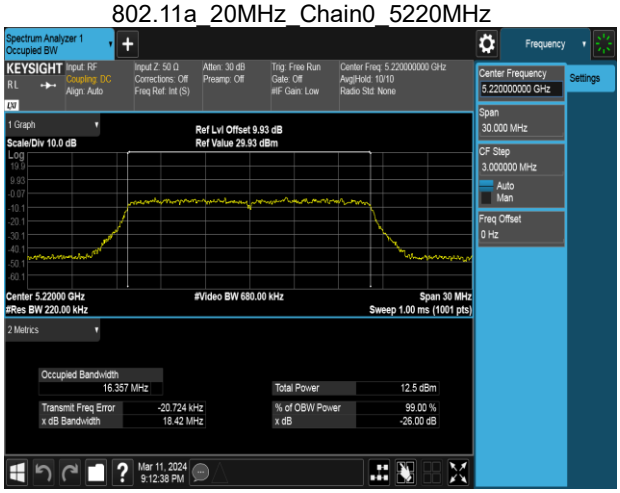
802.11a_20MHz_Chain0_5180MHz



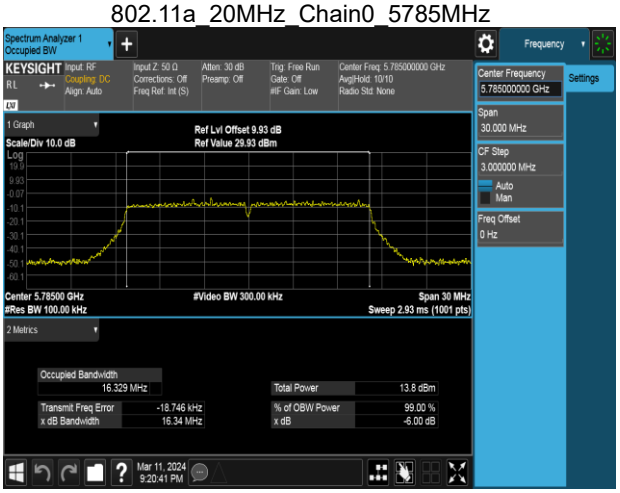
802.11a_20MHz_Chain0_5745MHz



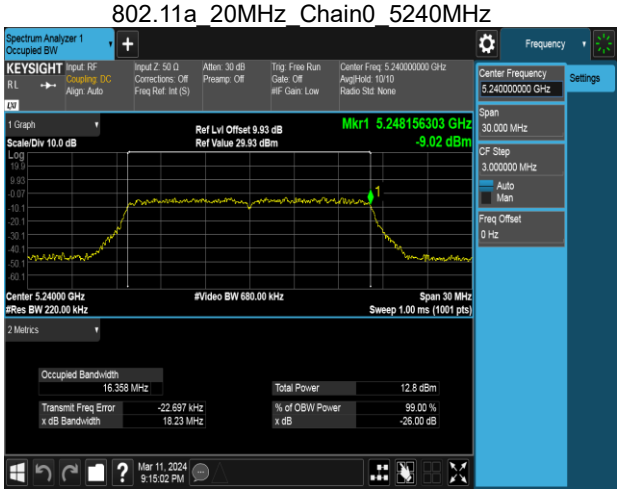
802.11a_20MHz_Chain0_5220MHz



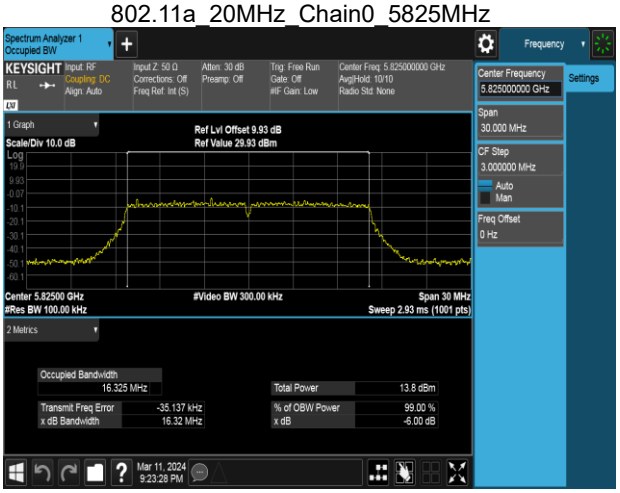
802.11a_20MHz_Chain0_5785MHz



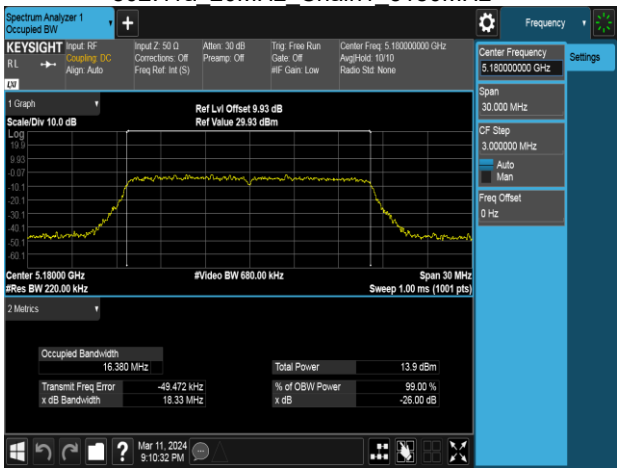
802.11a_20MHz_Chain0_5240MHz



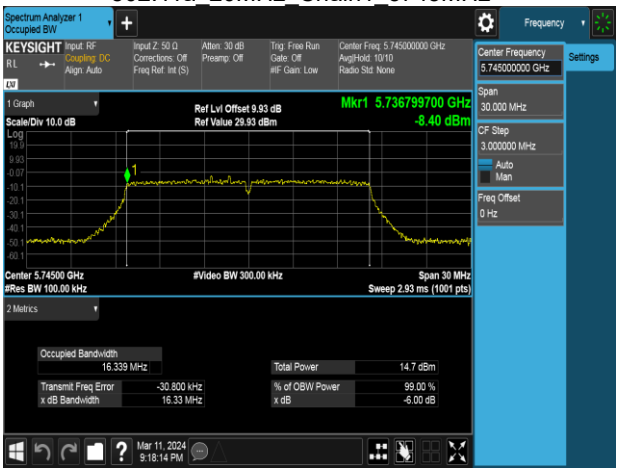
802.11a_20MHz_Chain0_5825MHz



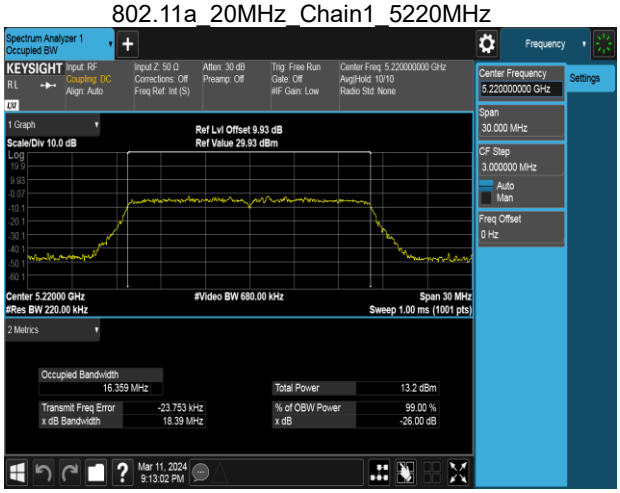
802.11a_20MHz_Chain1_5180MHz



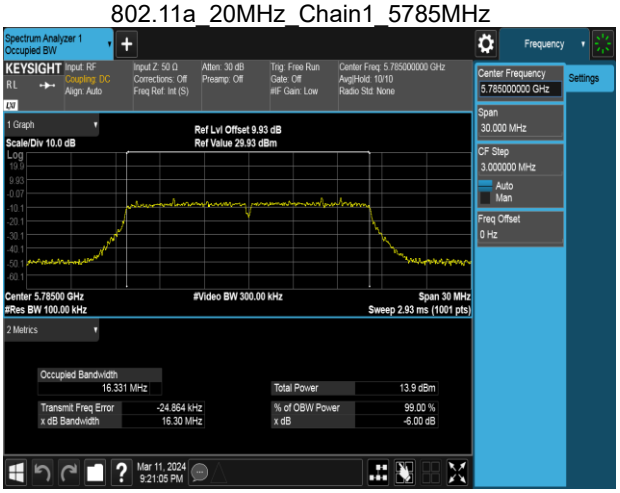
802.11a_20MHz_Chain1_5745MHz



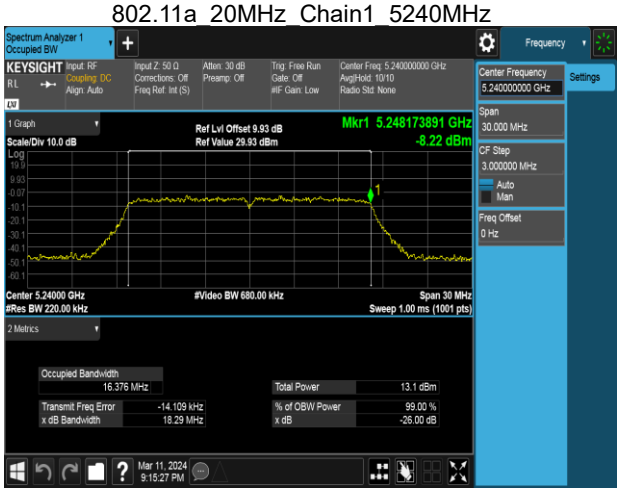
802.11a_20MHz_Chain1_5220MHz



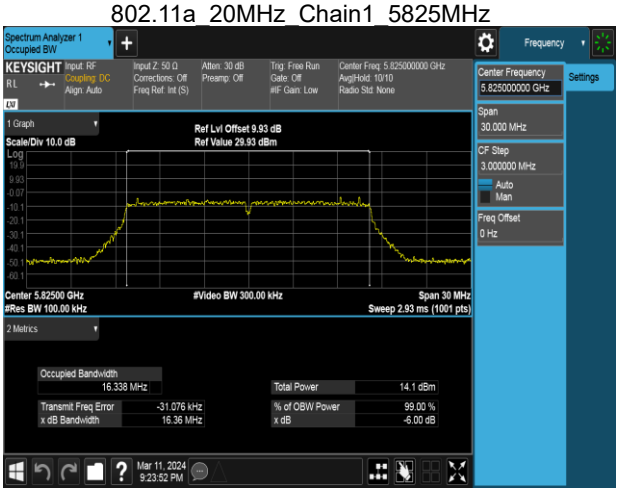
802.11a_20MHz_Chain1_5785MHz



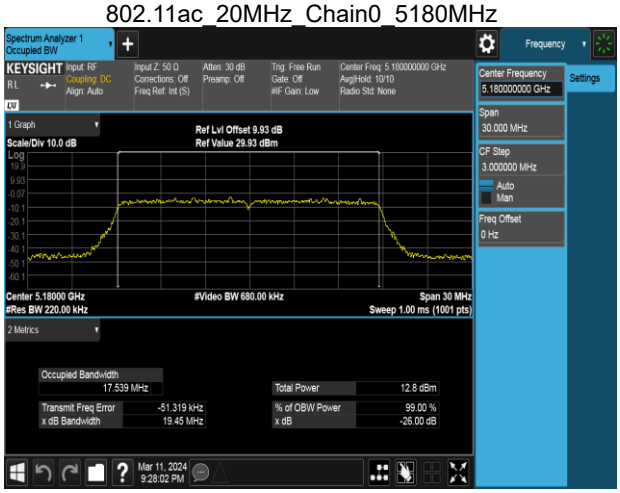
802.11a_20MHz_Chain1_5240MHz



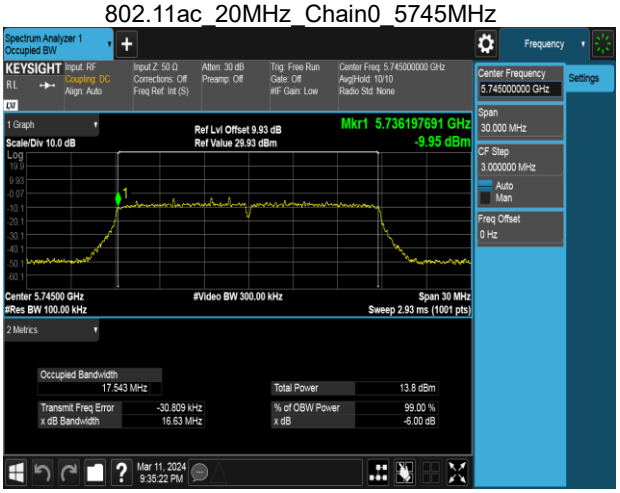
802.11a_20MHz_Chain1_5825MHz



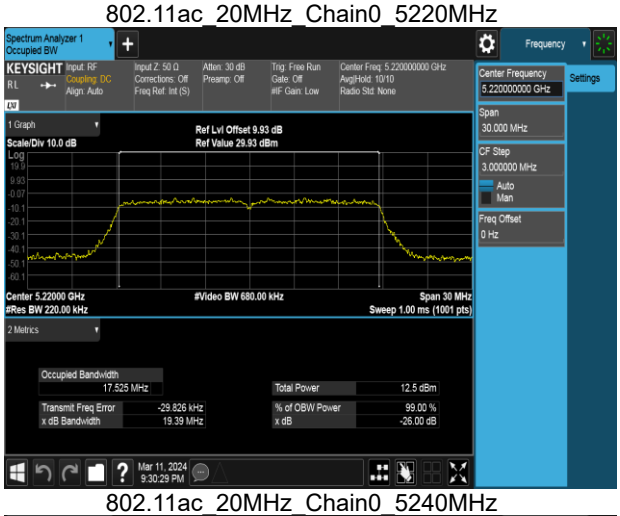
802.11ac_20MHz_Chain0_5180MHz



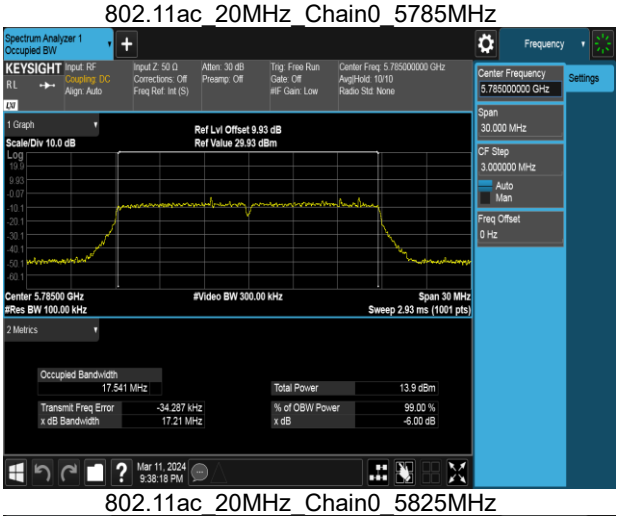
802.11ac_20MHz_Chain0_5745MHz



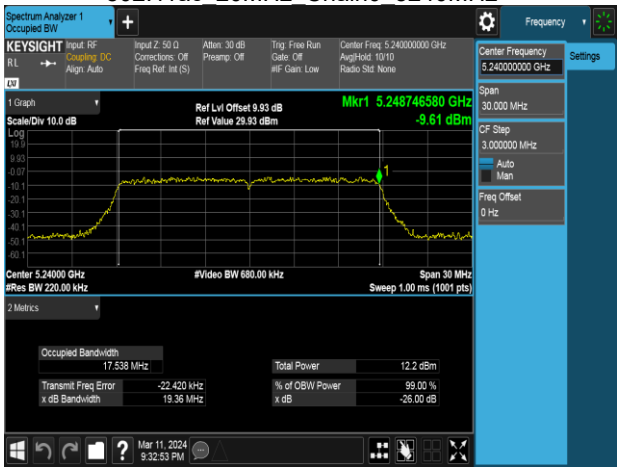
802.11ac_20MHz_Chain0_5220MHz



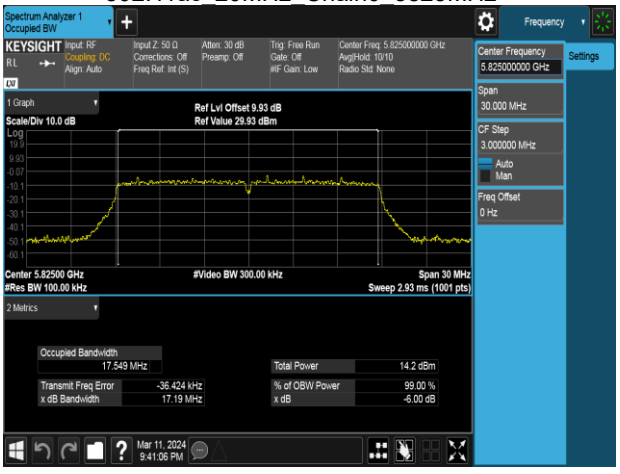
802.11ac_20MHz_Chain0_5785MHz



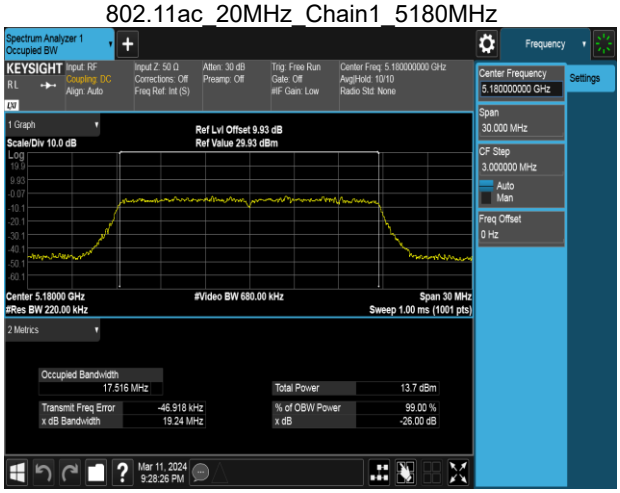
802.11ac_20MHz_Chain0_5240MHz



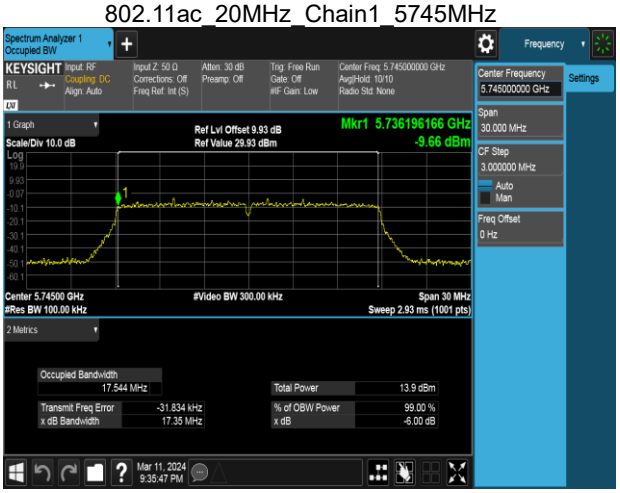
802.11ac_20MHz_Chain0_5825MHz



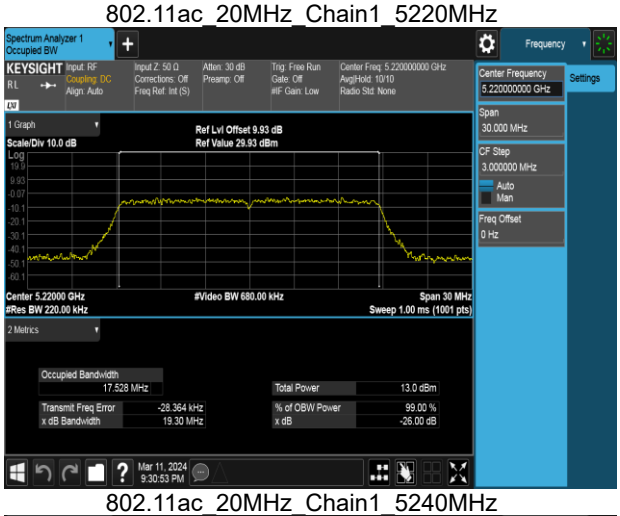
802.11ac_20MHz_Chain1_5180MHz



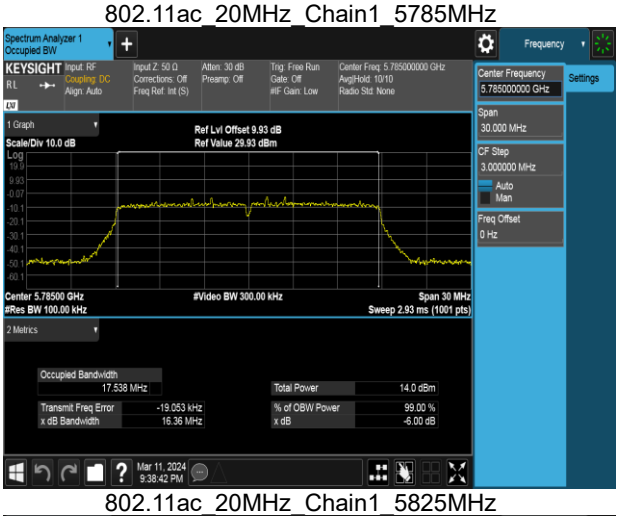
802.11ac_20MHz_Chain1_5745MHz



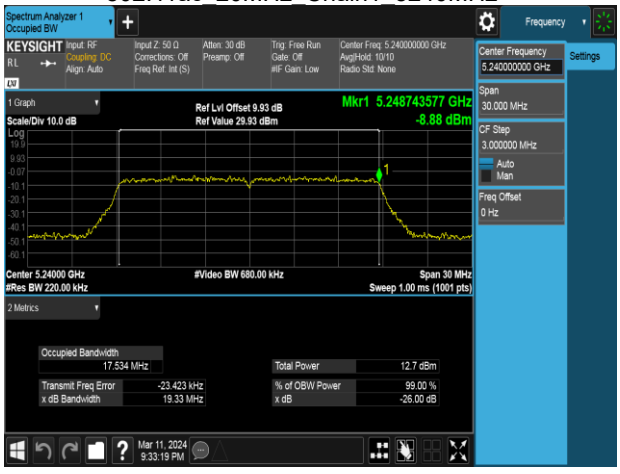
802.11ac_20MHz_Chain1_5220MHz



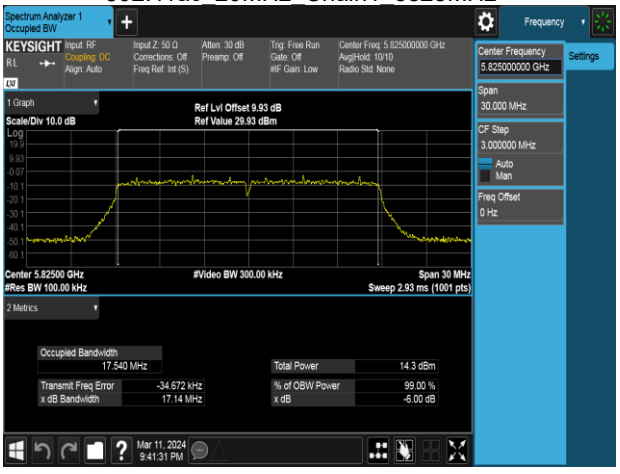
802.11ac_20MHz_Chain1_5785MHz



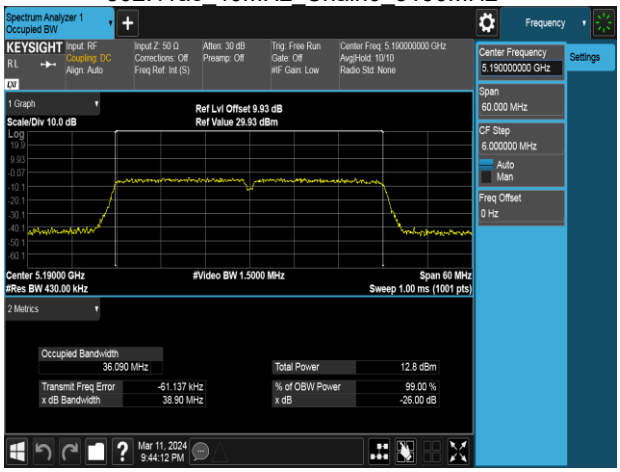
802.11ac_20MHz_Chain1_5240MHz



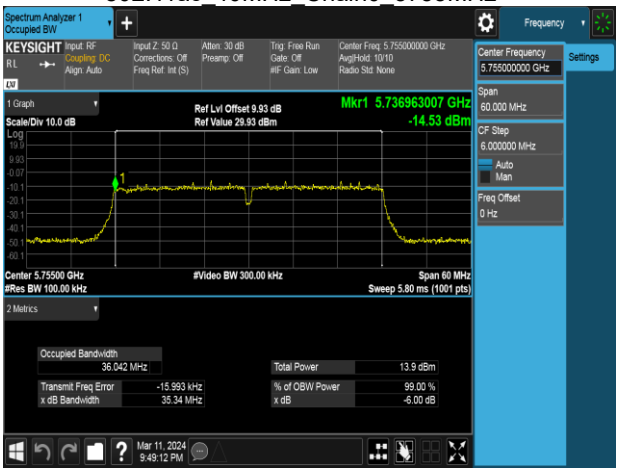
802.11ac_20MHz_Chain1_5825MHz



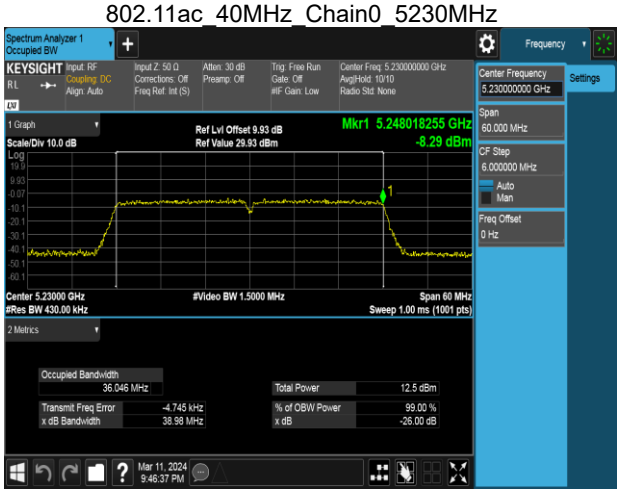
802.11ac_40MHz_Chain0_5190MHz



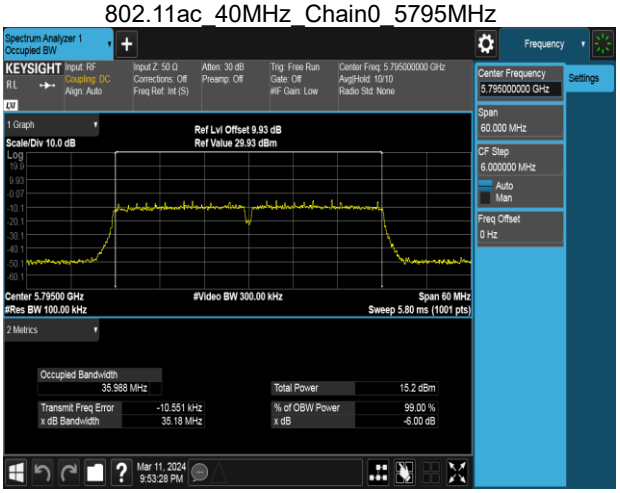
802.11ac_40MHz_Chain0_5755MHz



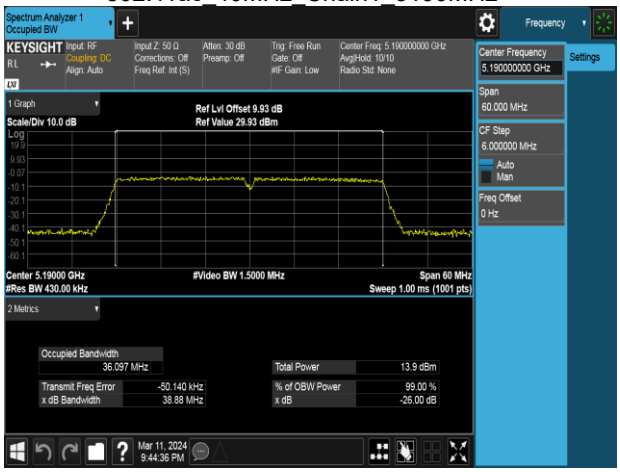
802.11ac_40MHz_Chain0_5230MHz



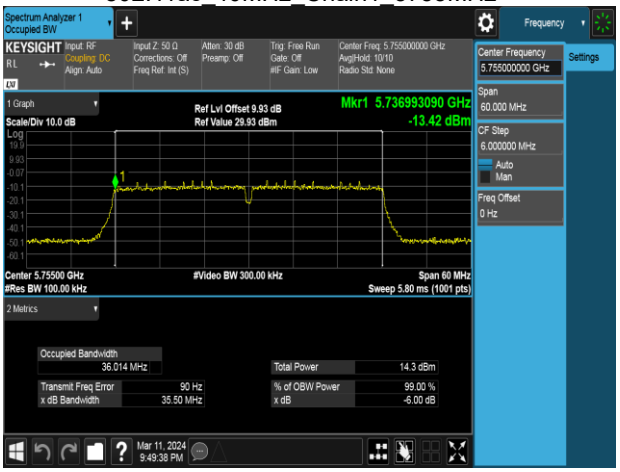
802.11ac_40MHz_Chain0_5795MHz



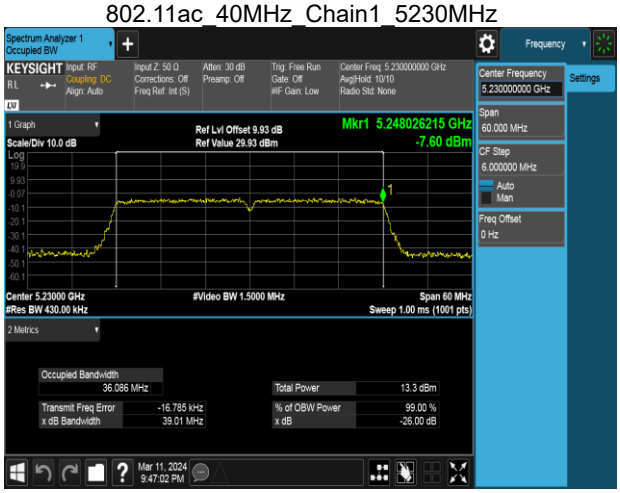
802.11ac_40MHz_Chain1_5190MHz



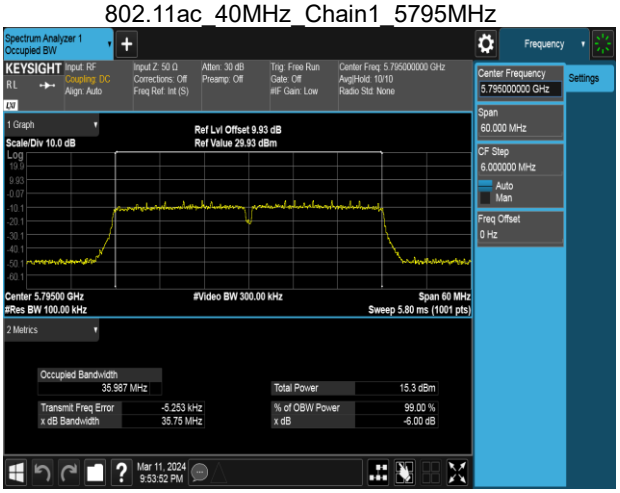
802.11ac_40MHz_Chain1_5755MHz



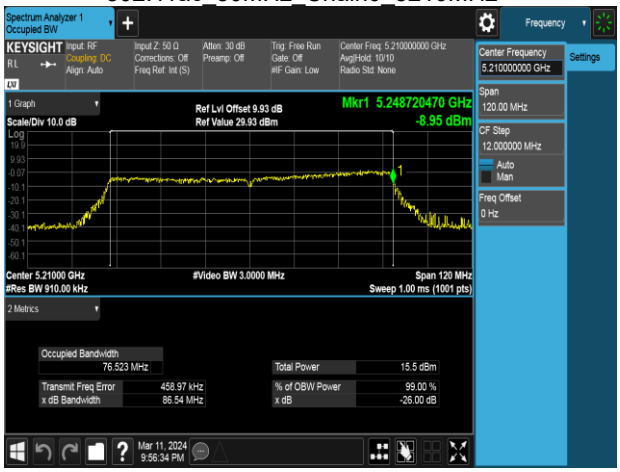
802.11ac_40MHz_Chain1_5230MHz



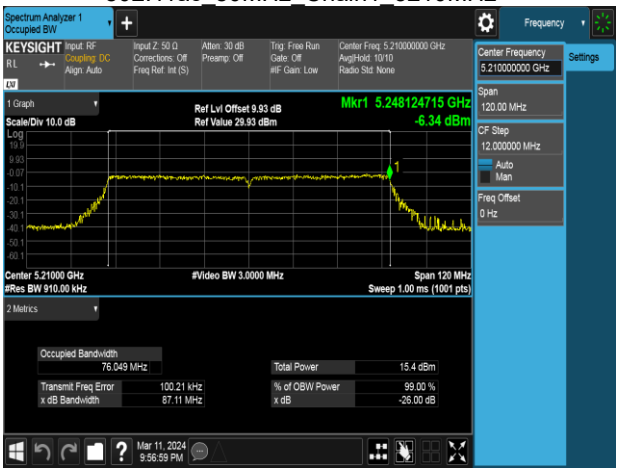
802.11ac_40MHz_Chain1_5795MHz



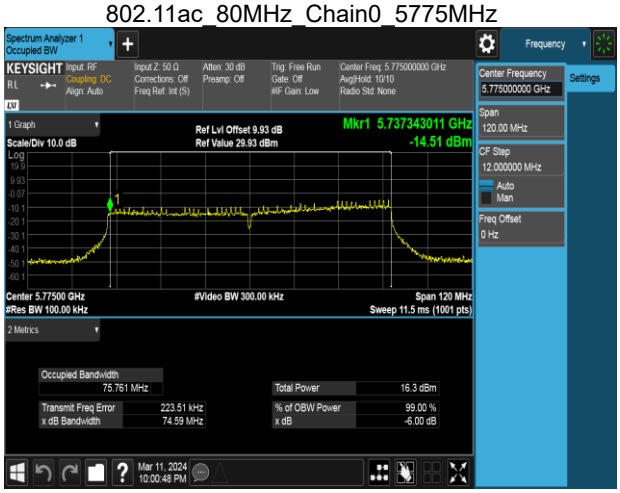
802.11ac_80MHz_Chain0_5210MHz



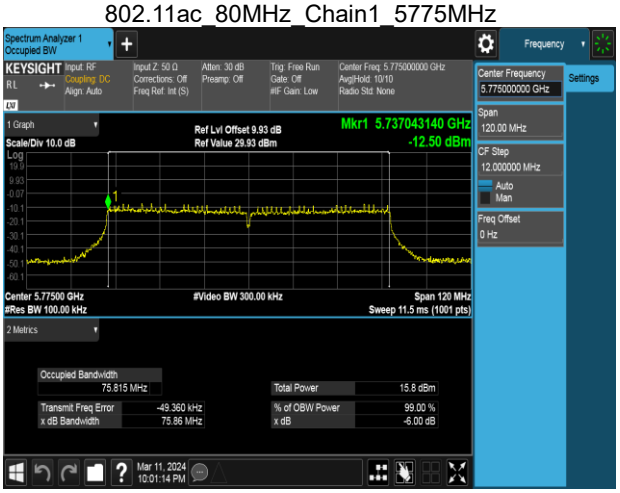
802.11ac_80MHz_Chain1_5210MHz



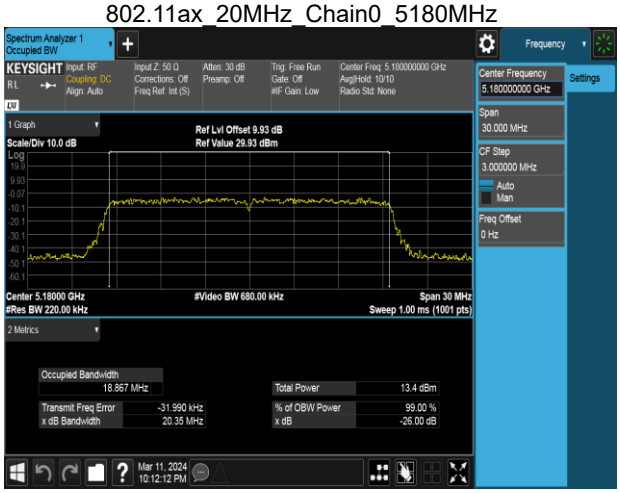
802.11ac_80MHz_Chain0_5775MHz



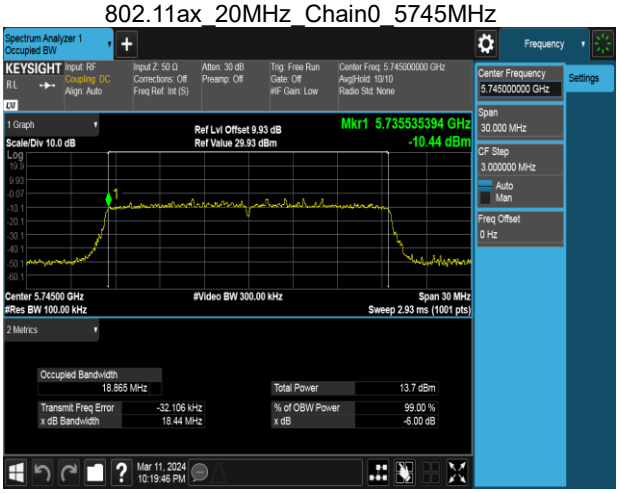
802.11ac_80MHz_Chain1_5775MHz



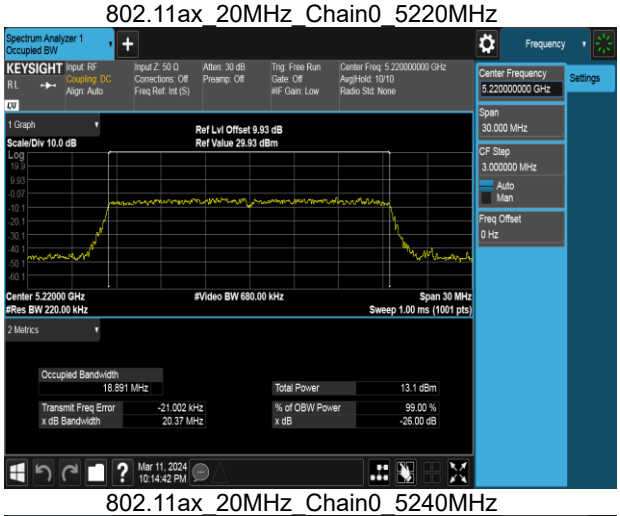
802.11ax_20MHz_Chain0_5180MHz



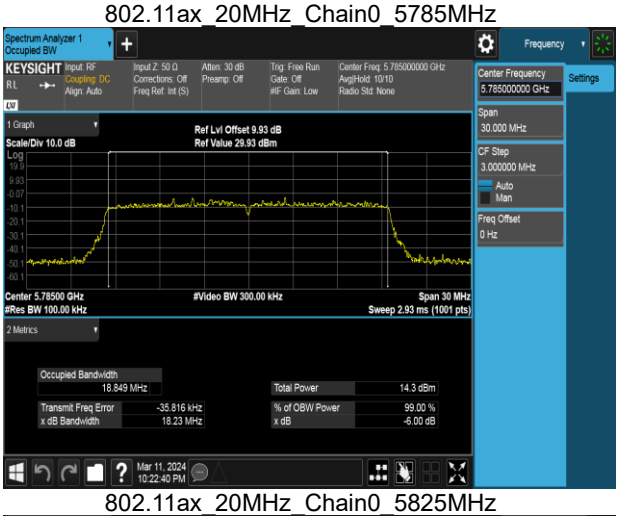
802.11ax_20MHz_Chain0_5745MHz



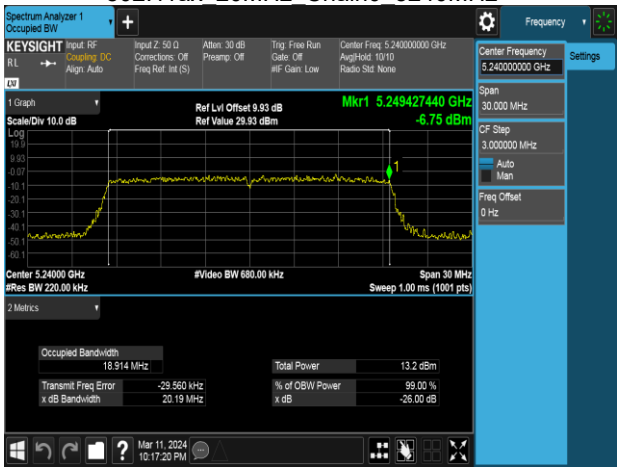
802.11ax_20MHz_Chain0_5220MHz



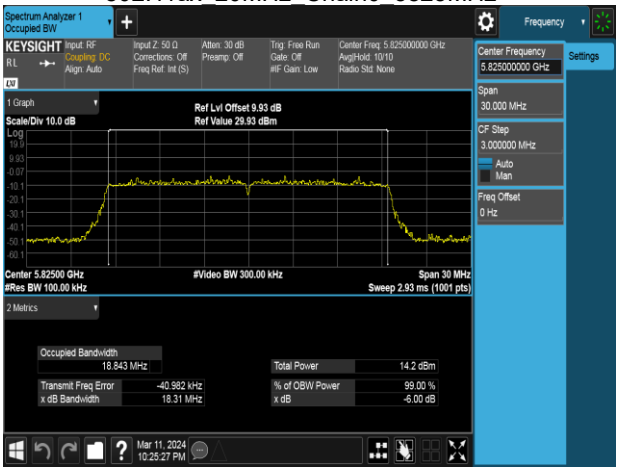
802.11ax_20MHz_Chain0_5785MHz



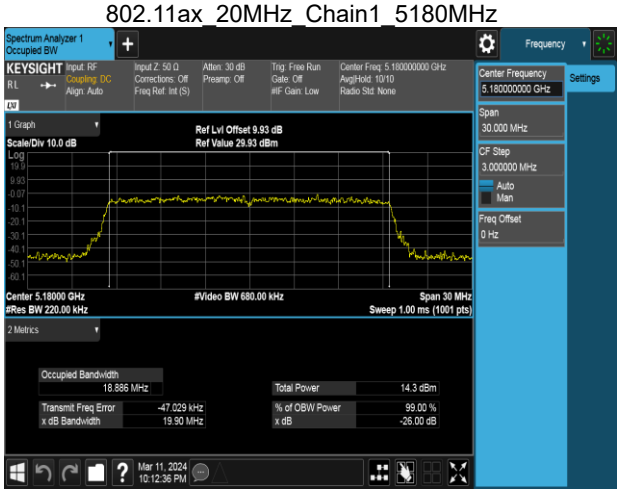
802.11ax_20MHz_Chain0_5240MHz



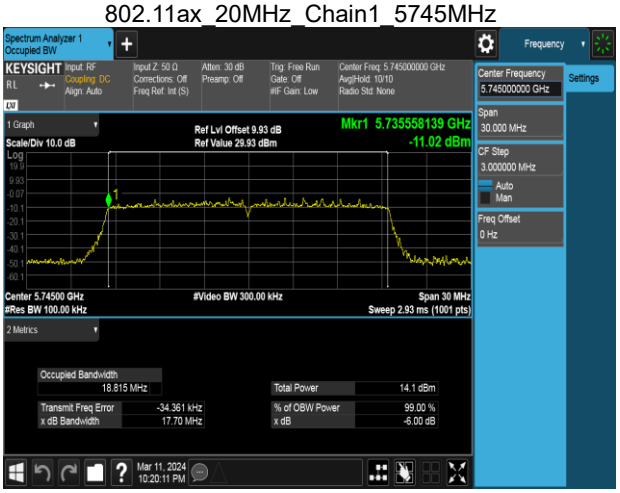
802.11ax_20MHz_Chain0_5825MHz



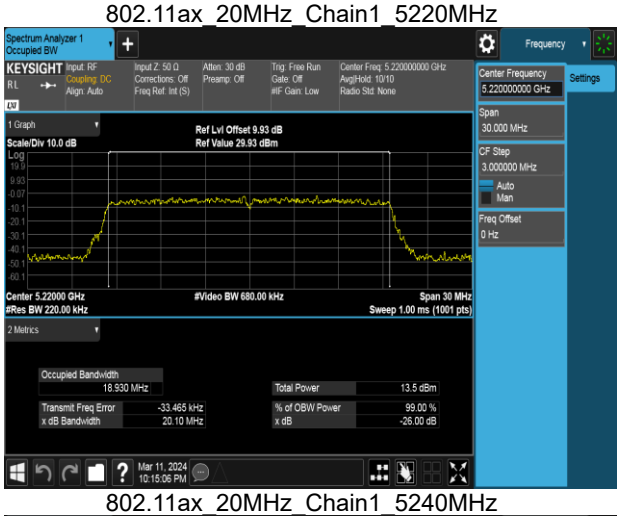
802.11ax_20MHz_Chain1_5180MHz



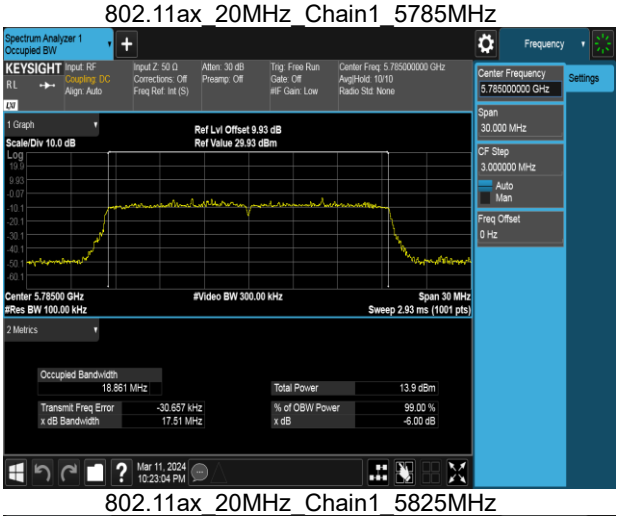
802.11ax_20MHz_Chain1_5745MHz



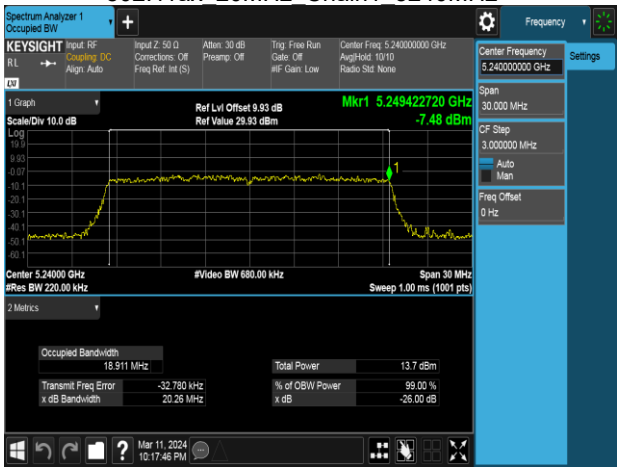
802.11ax_20MHz_Chain1_5220MHz



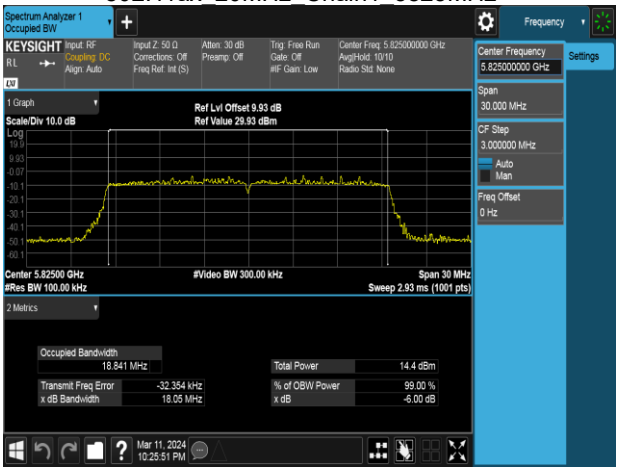
802.11ax_20MHz_Chain1_5785MHz



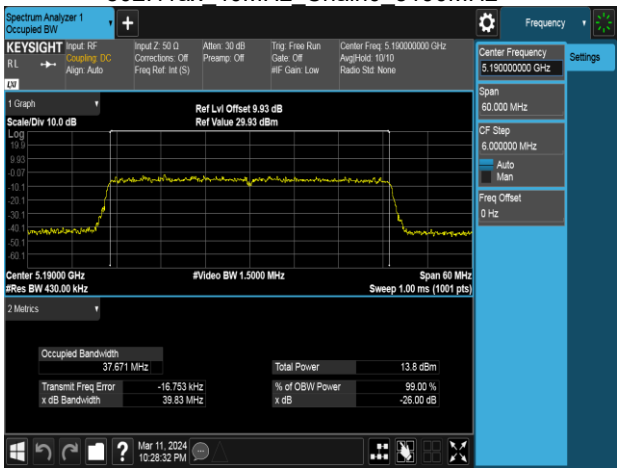
802.11ax_20MHz_Chain1_5240MHz



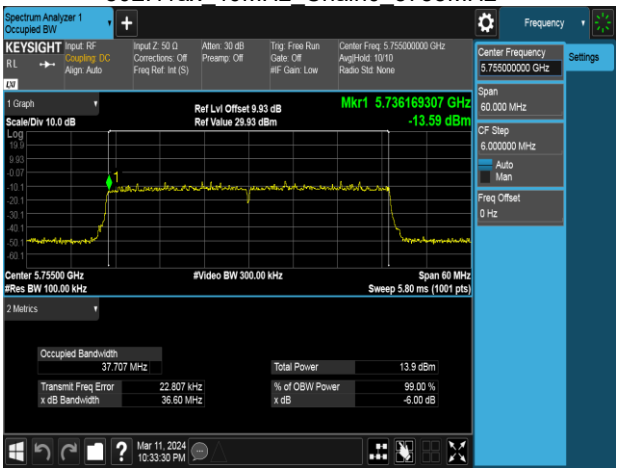
802.11ax_20MHz_Chain1_5825MHz



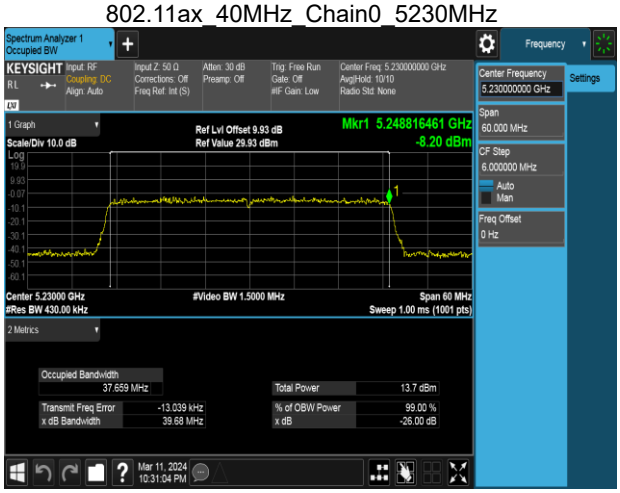
802.11ax_40MHz_Chain0_5190MHz



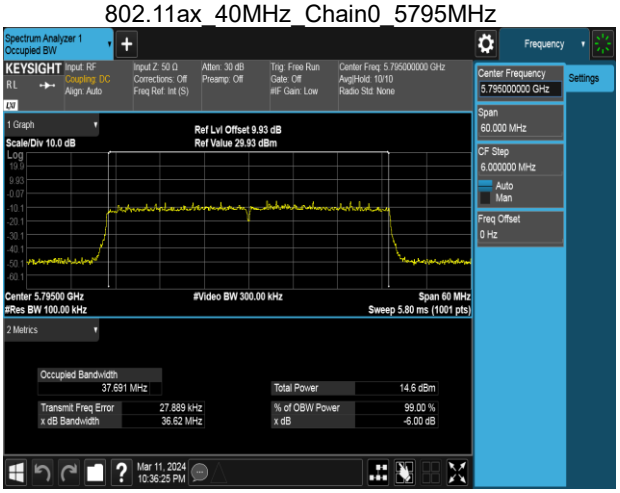
802.11ax_40MHz_Chain0_5755MHz



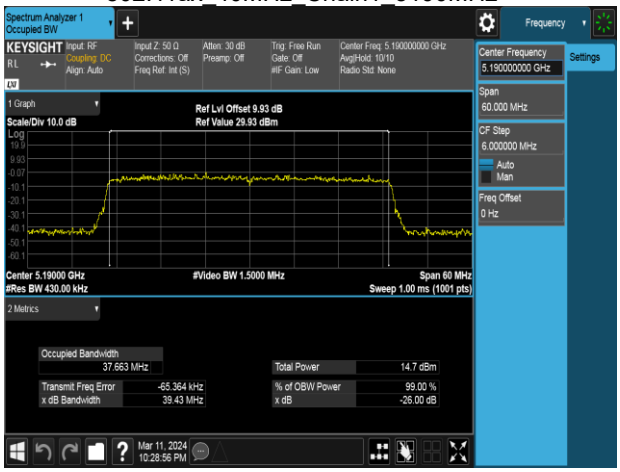
802.11ax_40MHz_Chain0_5230MHz



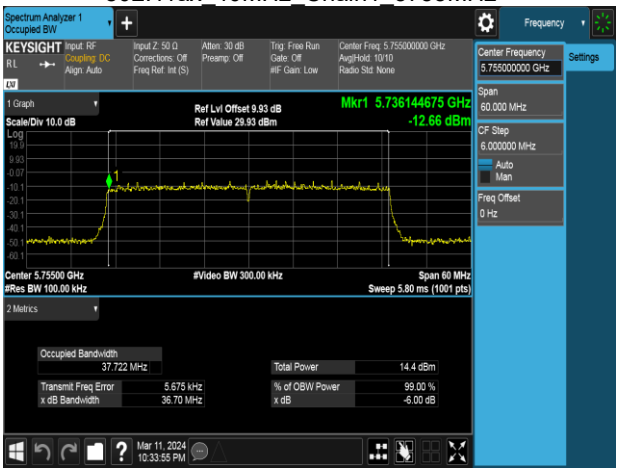
802.11ax_40MHz_Chain0_5795MHz



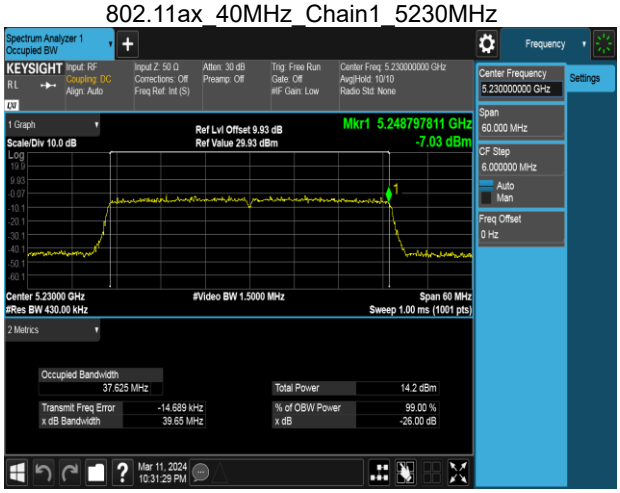
802.11ax_40MHz_Chain1_5190MHz



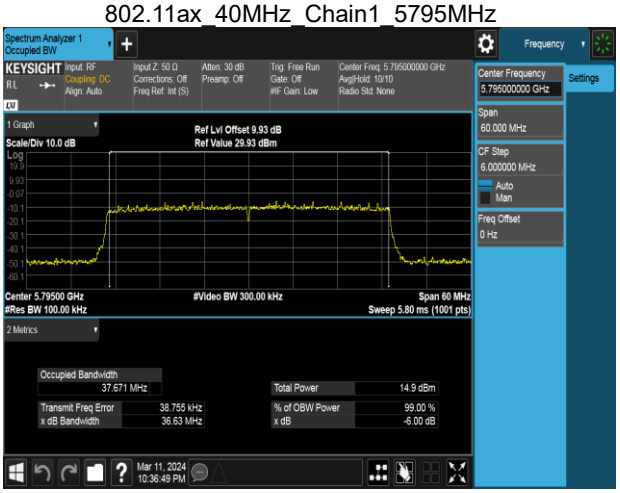
802.11ax_40MHz_Chain1_5755MHz



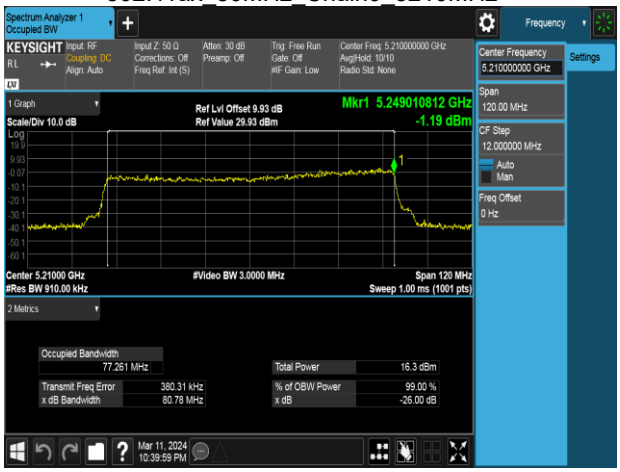
802.11ax_40MHz_Chain1_5230MHz



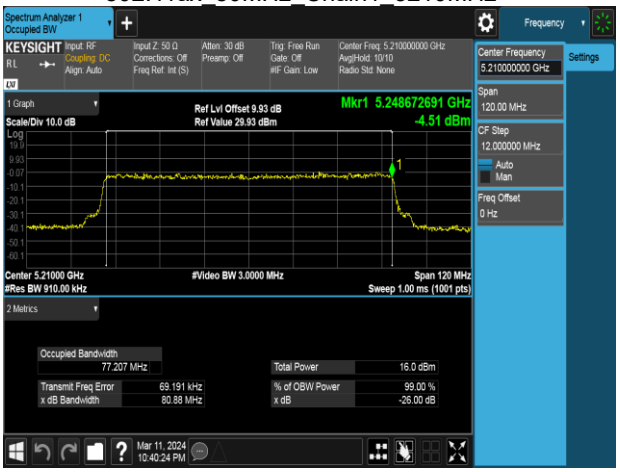
802.11ax_40MHz_Chain1_5795MHz



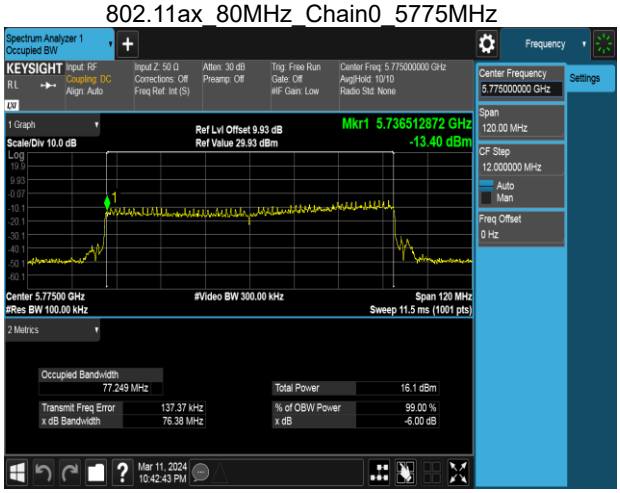
802.11ax_80MHz_Chain0_5210MHz



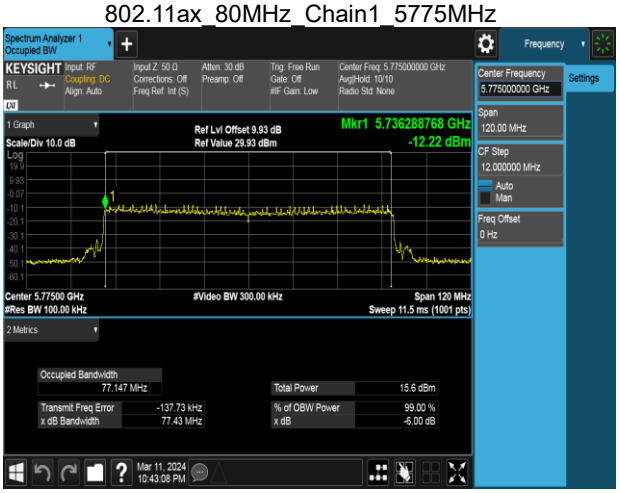
802.11ax_80MHz_Chain1_5210MHz



802.11ax_80MHz_Chain0_5775MHz



802.11ax_80MHz_Chain1_5775MHz



4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.407 (a)(1), 15.407(a)(2) and 15.407(a)(3)

FCC:

UNII-1 :

(iv) For client devices, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

UNII-1 Limit	☒ Antenna not exceed 6 dBi：24dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 24 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)]

According to RSS-247 section 6.2.1.1, section 6.2.2.1, section 6.2.3.1 and section 6.2.4.1

UNII-1 :

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 log10B, dBm, whichever is less. Devices shall implement transmitter power control (TPC) in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.
For other devices, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

UNII-1 Limit	☒ 200mW or 10 + 10 log10B for IC ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)]
UNII-3 Limit	☐ Antenna not exceed 6 dBi：30dBm ☒ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)]

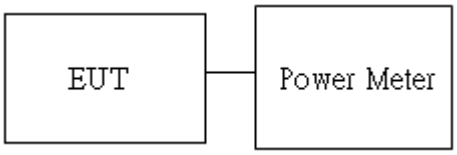
4.3.2 Test Procedure

Test method Refer as KDB 789033 D02, Section E.3.b for BW 20MHz, 40MHz and 80MHz, E.2.b for BW 160MHz.

1. The EUT RF output connected to the power meter or spectrum 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 Average output power. in the test report.

4.3.3 Test Setup

For BW 20MHz ,40MHz and 80MHz



4.3.4 Test Result

Temperature:	16.6 ~ 23.8℃	**Test date:**	January 23 ~ March 12, 2024
Humidity:	49 ~ 66% RH	**Tested by:**	Marco Chan

Conducted output power：

For FCC:

802.11a_2TX

CH	Frequency (MHz)	Data Rate	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
				Ch0	Ch1				
36	5180	6	13	9.08	9.45	12.27	16.883	23.98	PASS
44	5220	6	13.5	8.92	9.49	12.22	16.672	23.98	PASS
48	5240	6	13.5	9.19	9.48	**12.34**	17.151	23.98	PASS
149	5745	6	13	9.74	9.99	**12.87**	19.375	30	PASS
157	5785	6	11.5	9.29	9.64	12.47	17.677	30	PASS
165	5825	6	11	9.40	9.95	12.69	18.575	30	PASS

802.11n_HT20_2TX

CH	Frequency (MHz)	Data Rate	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
				Ch0	Ch1				
36	5180	MCS0	13	9.09	9.37	**12.24**	16.761	23.98	PASS
44	5220	MCS0	13.5	8.83	9.31	12.09	16.171	23.98	PASS
48	5240	MCS0	13	8.75	9.34	12.07	16.091	23.98	PASS
149	5745	MCS0	12.5	9.63	9.82	12.74	18.779	30	PASS
157	5785	MCS0	11.5	9.81	9.94	**12.89**	19.437	30	PASS
165	5825	MCS0	11	9.34	9.88	12.63	18.320	30	PASS

802.11n_HT40_2TX

CH	Frequency (MHz)	Data Rate	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
				Ch0	Ch1				
38	5190	MCS0	13	8.86	9.48	**12.20**	16.579	23.98	PASS
46	5230	MCS0	13	9.02	9.22	12.14	16.352	23.98	PASS
151	5755	MCS0	12	9.54	9.88	12.73	18.741	30	PASS
159	5795	MCS0	11.5	9.87	9.95	**12.92**	19.610	30	PASS

802.11ac_VHT20_2TX

CH	Frequency (MHz)	Data Rate	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
				Ch0	Ch1				
36	5180	MCS0	13	9.13	9.49	**12.32**	17.078	23.98	PASS
44	5220	MCS0	13.5	8.89	9.38	12.15	16.416	23.98	PASS
48	5240	MCS0	13	8.81	9.34	12.09	16.195	23.98	PASS
149	5745	MCS0	12.5	9.67	9.86	12.78	18.953	30	PASS
157	5785	MCS0	11.5	9.86	10.00	**12.94**	19.685	30	PASS
165	5825	MCS0	11	9.38	9.90	12.66	18.444	30	PASS

802.11ac_VHT40_2TX

CH	Frequency (MHz)	Data Rate	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
				Ch0	Ch1				
38	5190	MCS0	13	8.93	9.50	**12.24**	16.745	23.98	PASS
46	5230	MCS0	13	9.08	9.26	12.19	16.540	23.98	PASS
151	5755	MCS0	12	9.59	9.92	12.77	18.935	30	PASS
159	5795	MCS0	11.5	9.94	10.00	**12.98**	19.882	30	PASS

802.11ac_VHT80_2TX

CH	Frequency (MHz)	Data Rate	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
				Ch0	Ch1				
42	5210	MCS0	14	9.37	9.58	**12.49**	17.722	23.98	PASS
155	5775	MCS0	12.5	9.67	9.72	**12.70**	18.638	30	PASS

802.11ax_HE20_2TX

CH	Frequency (MHz)	Data Rate	RU config.	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
					Ch0	Ch1				
36	5180	MCS0	full	12.5	8.79	9.34	12.08	16.144	23.98	PASS
		MCS0	26/0	15	8.67	9.13	11.92	15.558	23.98	PASS
		MCS0	52/37	13	8.76	9.22	12.00	15.856	23.98	PASS
		MCS0	106/53	12.5	8.65	9.25	11.97	15.749	23.98	PASS
44	5220	MCS0	full	13	8.92	9.37	12.16	16.433	23.98	PASS
48	5240	MCS0	full	13	9.14	9.50	**12.33**	17.101	23.98	PASS
149	5745	MCS0	full	12	9.27	9.70	12.50	17.770	30	PASS
		MCS0	26/0	14	9.15	9.33	12.25	16.805	30	PASS
		MCS0	52/37	12	9.12	9.47	12.30	17.000	30	PASS
		MCS0	106/53	12	9.09	9.32	12.22	16.667	30	PASS
157	5785	MCS0	full	11.5	9.64	9.80	12.73	18.738	30	PASS
165	5825	MCS0	full	11	9.52	9.98	**12.76**	18.891	30	PASS
		MCS0	26/8	13.5	9.15	9.62	12.40	17.397	30	PASS
		MCS0	52/40	11.5	9.23	9.86	12.56	18.040	30	PASS
		MCS0	106/54	11	9.46	9.83	12.66	18.454	30	PASS

802.11ax_HE40_2TX

CH	Frequency (MHz)	Data Rate	RU config.	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
					Ch0	Ch1				
38	5190	MCS0	full	13	8.95	9.50	**12.24**	16.764	23.98	PASS
		MCS0	242/61	12.5	8.90	9.29	12.11	16.240	23.98	PASS
46	5230	MCS0	full	13	8.88	9.21	12.06	16.063	23.98	PASS
151	5755	MCS0	full	12	9.52	9.86	12.70	18.636	30	PASS
		MCS0	242/61	12	9.27	9.68	12.49	17.727	30	PASS
159	5795	MCS0	full	11.5	9.90	10.00	**12.96**	19.771	30	PASS
		MCS0	242/62	11	9.70	9.86	12.79	18.998	30	PASS

802.11ax_HE80_2TX

CH	Frequency (MHz)	Data Rate	RU config.	Power set	Avg. POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
					Ch0	Ch1				
42	5210	MCS0	full	14	9.13	9.50	**12.33**	17.107	23.98	PASS
		MCS0	484/65	14	8.99	9.41	12.21	16.638	23.98	PASS
155	5775	MCS0	full	12	9.39	9.74	**12.58**	18.119	30	PASS
		MCS0	484/65	12	9.24	9.61	12.43	17.518	30	PASS
		MCS0	484/66	12	9.31	9.49	12.41	17.406	30	PASS

For IC:

802.11a_2TX

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		Ch0	Ch1				
149	5745	9.74	9.99	**12.87**	**19.375**	30	PASS
157	5785	9.29	9.64	12.47	17.677	30	PASS
165	5825	9.40	9.95	12.69	18.575	30	PASS

802.11n_HT20_2TX

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		Ch0	Ch1				
149	5745	9.63	9.82	12.74	18.779	30	PASS
157	5785	9.81	9.94	**12.89**	**19.437**	30	PASS
165	5825	9.34	9.88	12.63	18.320	30	PASS

802.11n_HT40_2TX

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		Ch0	Ch1				
151	5755	9.54	9.88	12.73	18.741	30	PASS
159	5795	9.87	9.95	**12.92**	**19.610**	30	PASS

802.11ac_VHT20_2TX

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		Ch0	Ch1				
149	5745	9.67	9.86	12.78	18.953	30	PASS
157	5785	9.86	10.00	**12.94**	**19.685**	30	PASS
165	5825	9.38	9.90	12.66	18.444	30	PASS

802.11ac_VHT40_2TX

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		Ch0	Ch1				
151	5755	9.59	9.92	12.77	18.935	30	PASS
159	5795	9.94	10.00	**12.98**	**19.882**	30	PASS

802.11ac_VHT80_2TX

CH	Frequency (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
		Ch0	Ch1				
155	5775	9.67	9.72	**12.70**	**18.638**	30	PASS

802.11ax_HE20_2TX

CH	Frequency (MHz)	RU config.	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
			Ch0	Ch1				
149	5745	full	9.27	9.70	12.50	17.770	30	PASS
		26/0	9.15	9.33	12.25	16.805	30	PASS
		52/37	9.12	9.47	12.30	17.000	30	PASS
		106/53	9.09	9.32	12.22	16.667	30	PASS
157	5785	full	9.64	9.80	12.73	18.738	30	PASS
165	5825	full	9.52	9.98	**12.76**	**18.891**	30	PASS
		26/8	9.15	9.62	12.40	17.397	30	PASS
		52/40	9.23	9.86	12.56	18.040	30	PASS
		106/54	9.46	9.83	12.66	18.454	30	PASS

802.11ax_HE40_2TX

CH	Frequency (MHz)	RU config.	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
			Ch0	Ch1				
151	5755	full	9.52	9.86	12.70	18.636	30	PASS
		242/61	9.27	9.68	12.49	17.727	30	PASS
159	5795	full	9.90	10.00	**12.96**	**19.771**	30	PASS
		242/62	9.70	9.86	12.79	18.998	30	PASS

802.11ax_HE80_2TX

CH	Frequency (MHz)	RU config.	AVERAGE POWER (dBm)		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
			Ch0	Ch1				
155	5775	full	9.39	9.74	**12.58**	**18.119**	30	PASS
		484/65	9.24	9.61	12.43	17.518	30	PASS
		484/66	9.31	9.49	12.41	17.406	30	PASS

EIRP Power:

802.11a_2TX

CH	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	12.27	-0.34	11.93	15.596	22.13	PASS
44	5220	12.22	-0.34	11.88	15.417	22.13	PASS
48	5240	**12.34**	-0.34	**12.00**	**15.849**	22.13	PASS

802.11n_HT20_2TX

CH	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	**12.24**	-0.34	**11.90**	**15.488**	23.01	PASS
44	5220	12.09	-0.34	11.74	14.928	23.01	PASS
48	5240	12.07	-0.34	11.72	14.859	23.01	PASS

802.11n_HT40_2TX

CH	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	**12.20**	-0.34	**11.85**	**15.311**	23.01	PASS
46	5230	12.14	-0.34	11.79	15.101	23.01	PASS

802.11ac_VHT20_2TX

CH	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	**12.32**	-0.34	**11.98**	**15.776**	23.01	PASS
44	5220	12.15	-0.34	11.81	15.171	23.01	PASS
48	5240	12.09	-0.34	11.75	14.962	23.01	PASS

802.11ac_VHT40_2TX

CH	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	**12.24**	-0.34	**11.89**	**15.453**	23.01	PASS
46	5230	12.19	-0.34	11.84	15.276	23.01	PASS

802.11ac_VHT80_2TX

CH	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	**12.49**	0.00	**12.49**	**17.742**	23.01	PASS

802.11ax_HE20_2TX

CH	Frequency (MHz)	RU config.	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	full	12.08	-0.34	11.74	14.928	22.76	PASS
		26/0	11.92	-0.34	11.57	14.355	22.76	PASS
		52/37	12.00	-0.34	11.66	14.655	22.76	PASS
		106/53	11.97	-0.34	11.63	14.555	22.76	PASS
44	5220	full	12.16	-0.34	11.81	15.171	22.76	PASS
48	5240	full	**12.33**	-0.34	**11.99**	**15.812**	22.76	PASS

802.11ax_HE40_2TX

CH	Frequency (MHz)	RU config.	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	full	**12.24**	-0.34	**11.90**	**15.488**	23.01	PASS
		242/61	12.11	-0.34	11.76	14.997	23.01	PASS
46	5230	full	**12.06**	-0.34	**11.71**	**14.825**	23.01	PASS

802.11ax_HE80_2TX

CH	Frequency (MHz)	RU config.	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	full	**12.33**	-0.34	11.99	15.812	23.01	PASS
		484/65	12.21	0.00	**12.21**	**16.634**	23.01	PASS

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.407 (a)(1), 15.407(a)(2) and 15.407(a)(3) and RSS-247 section 6.2.1(1), section 6.2.2(1), section 6.2.3(1) and section 6.2.4(1)

UNII-1 :

FCC:

The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

IC:

The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

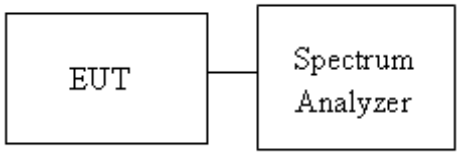
UNII-1 Limit	☒ Antenna not exceed 6 dBi：11 dBm ☒ IC: 10dB/MHz ☐ Antenna with DG greater than 6 dBi： [Limit = 11 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi：30 dBm/500kHz ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6) dBm/500kHz]

4.4.2 Test Procedure

Test method Refer as KDB 789033 D02

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. UNII-1, UNII-2a and UNII-2c, SA set RBW = 1MHz, VBW = 3MHz and Detector = RMS, to measurement Power Density.
4. UNII-3, SA set RBW = 500kHz, VBW = 2MHz and Detector = RMS, to measurement Power Density
5. The path loss and Duty Factor were compensated to the results for each measurement by SA.
6. Mark the maximum level.
7. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup



4.4.4 Test Result

Temperature:	16.6 ~ 23.8℃	**Test date:**	January 23 ~ March 12, 2024
Humidity:	49 ~ 66% RH	**Tested by:**	Marco Chan

POWER DENSITY 802.11a MODE							
Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5180	-2.910	-1.964	0.00	0.60		11.00 dBm/MHz	-10.40
5220	-3.132	-2.296	0.00	0.32		11.00 dBm/MHz	-10.68
5240	-3.186	-2.928	0.00	-0.04		11.00 dBm/MHz	-11.04
Frequency (MHz)	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5745	-7.280	-7.087	0.00	2.22	-1.95	30.00 dBm/500kHz	-31.95
5785	-7.747	-7.576	0.00	2.22	-2.43	30.00 dBm/500kHz	-32.43
5825	-7.708	-7.239	0.00	2.22	-2.24	30.00 dBm/500kHz	-32.24

POWER DENSITY 802.11ac VHT20 MODE							
Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5180	-3.462	-2.321	0.00	0.16		11.00 dBm/MHz	-10.84
5220	-3.495	-3.255	0.00	-0.36		11.00 dBm/MHz	-11.36
5240	-3.984	-3.437	0.00	-0.69		11.00 dBm/MHz	-11.69
Frequency (MHz)	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5745	-7.913	-7.795	0.00	2.22	-2.62	30.00 dBm/500kHz	-32.62
5785	-7.706	-7.788	0.00	2.22	-2.52	30.00 dBm/500kHz	-32.52
5825	-7.565	-7.444	0.00	2.22	-2.27	30.00 dBm/500kHz	-32.27

POWER DENSITY 802.11ac VHT40 MODE							
Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5190	-7.290	-6.099	0.00	-3.64		11.00 dBm/MHz	-14.64
5230	-7.318	-6.667	0.00	-3.97		11.00 dBm/MHz	-14.97
Frequency (MHz)	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5755	-11.416	-11.253	0.00	2.22	-6.10	30.00 dBm/500kHz	-36.10
5795	-10.377	-9.972	0.00	2.22	-4.94	30.00 dBm/500kHz	-34.94

POWER DENSITY 802.11ac VHT80 MODE							
Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5210	-5.797	-8.710	0.11	-3.89		11.00 dBm/MHz	-14.89
Frequency (MHz)	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5775	-10.531	-12.720	0.11	2.22	-6.15	30.00 dBm/500kHz	-36.15

POWER DENSITY 802.11ax HE20 MODE								
Frequency (MHz)	RU config.	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5180	full	-3.805	-2.709	0.00	-0.21		11.00 dBm/MHz	-11.21
5220	full	-4.339	-3.576	0.00	-0.93		11.00 dBm/MHz	-11.93
5240	full	-4.124	-3.479	0.00	-0.78		11.00 dBm/MHz	-11.78
Frequency (MHz)	RU config.	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5745	full	-8.665	-8.030	0.00	2.22	-3.11	30.00 dBm/500kHz	-33.11
5785	full	-7.539	-7.856	0.00	2.22	-2.46	30.00 dBm/500kHz	-32.46
5825	full	-7.890	-6.948	0.00	2.22	-2.16	30.00 dBm/500kHz	-32.16

POWER DENSITY 802.11ax HE40 MODE								
Frequency (MHz)	RU config.	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5190	full	-7.305	-5.786	0.00	-3.47		11.00 dBm/MHz	-14.47
5230	full	-7.411	-6.717	0.00	-4.04		11.00 dBm/MHz	-15.04
Frequency (MHz)	RU config.	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5755	full	-11.487	-11.237	0.00	2.22	-6.13	30.00 dBm/500kHz	-36.13
5795	full	-11.078	-10.508	0.00	2.22	-5.55	30.00 dBm/500kHz	-35.55

POWER DENSITY 802.11ax HE80 MODE								
Frequency (MHz)	RU config.	Ch0 meas PSD (dBm/MHz)	Ch1 meas PSD (dBm/MHz)	Duty Factor (dB)	Total Corr'd PSD(dBm/MHz)		Limit	Margin (dB)
5210	full	-5.715	-8.512	0.12	-3.76		11.00 dBm/MHz	-14.76
Frequency (MHz)	RU config.	Ch0 meas PSD (dBm/300kHz)	Ch1 meas PSD (dBm/300kHz)	Duty Factor (dB)	10log (500kHz/RBW) Factor(dB)	Total Corr'd PSD (dBm/500kHz)	Limit	Margin (dB)
5775	full	-10.939	-12.710	0.12	2.22	-6.38	30.00 dBm/500kHz	-36.38

EIRP spectral density 802.11a MODE					
Freq. (MHz)	PSD (dBm)	Ant. Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)	Margin (dB)
5180	0.599	2.59	3.19	10	-6.81
5220	0.316	2.59	2.91	10	-7.09
5240	-0.045	2.59	2.55	10	-7.45

EIRP spectral density 802.11ac VHT20 MODE					
Freq. (MHz)	PSD (dBm)	Ant. Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)	Margin (dB)
5180	0.156	2.59	2.75	10	-7.25
5220	-0.363	2.59	2.23	10	-7.77
5240	-0.692	2.59	1.90	10	-8.10

EIRP spectral density 802.11ac VHT40 MODE					
Freq. (MHz)	PSD (dBm)	Ant. Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)	Margin (dB)
5190	-3.644	2.59	-1.05	10	-11.05
5230	-3.970	2.59	-1.38	10	-11.38

EIRP spectral density 802.11ac VHT80 MODE					
Freq. (MHz)	PSD (dBm)	Ant. Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)	Margin (dB)
5210	-3.893	3.01	-0.88	10	-10.88

EIRP spectral density 802.11ax HE20 MODE						
Freq. (MHz)	**RU config.**	**PSD (dBm)**	**Ant. Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**	**Margin (dB)**
5180	full	-0.212	2.59	2.38	10	-7.62
5220	full	-0.930	2.59	1.66	10	-8.34
5240	full	-0.779	2.59	1.81	10	-8.19

EIRP spectral density 802.11ax HE40 MODE						
Freq. (MHz)	**RU config.**	**PSD (dBm)**	**Ant. Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**	**Margin (dB)**
5190	full	-3.469	2.59	-0.88	10	-10.88
5230	full	-4.040	2.59	-1.45	10	-11.45

EIRP spectral density 802.11ax HE80 MODE						
Freq. (MHz)	**RU config.**	**PSD (dBm)**	**Ant. Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**	**Margin (dB)**
5210	full	-3.762	2.59	-1.17	10	-11.17