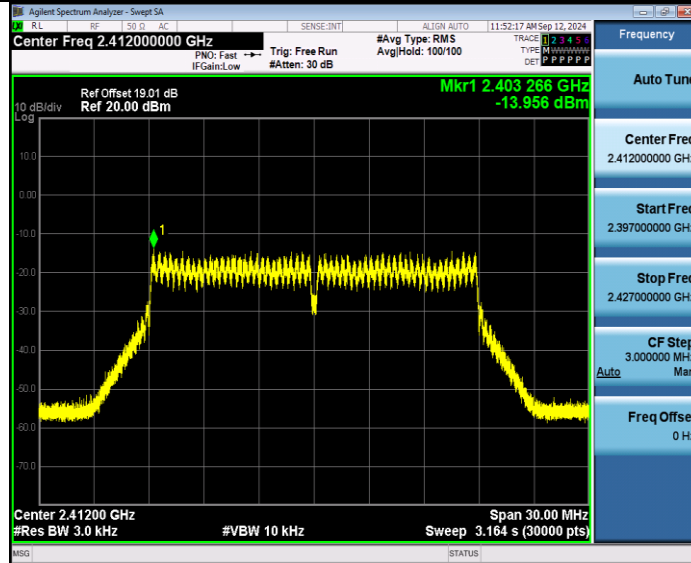
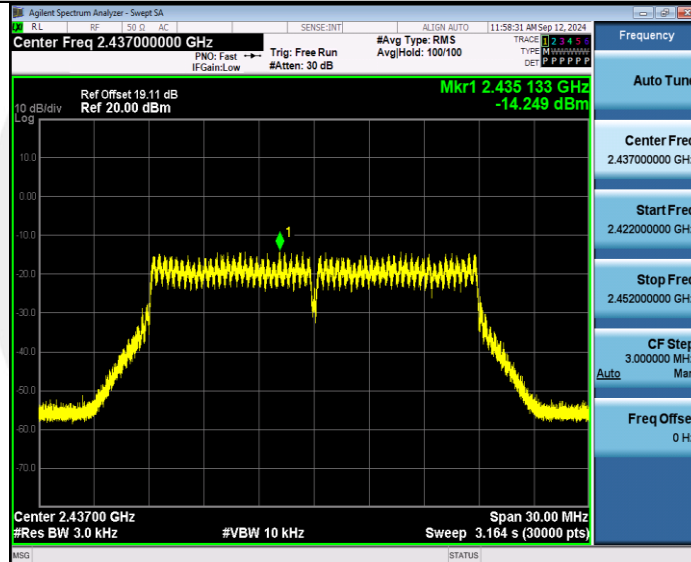


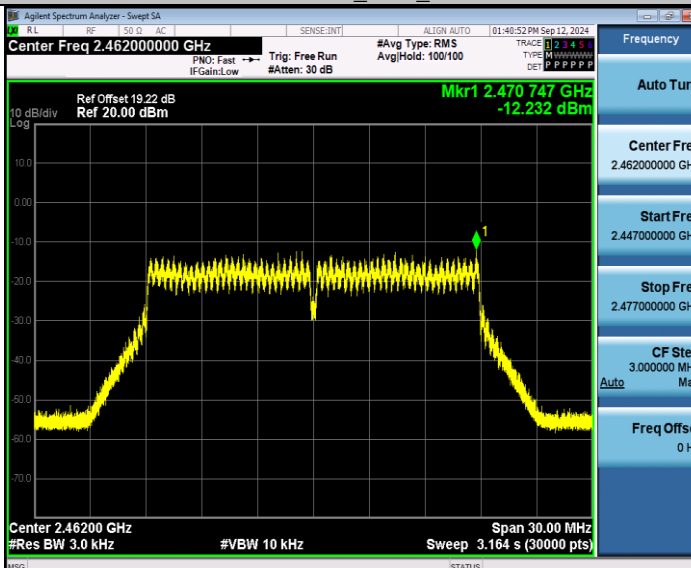
11N20SISO_Ant1_2412

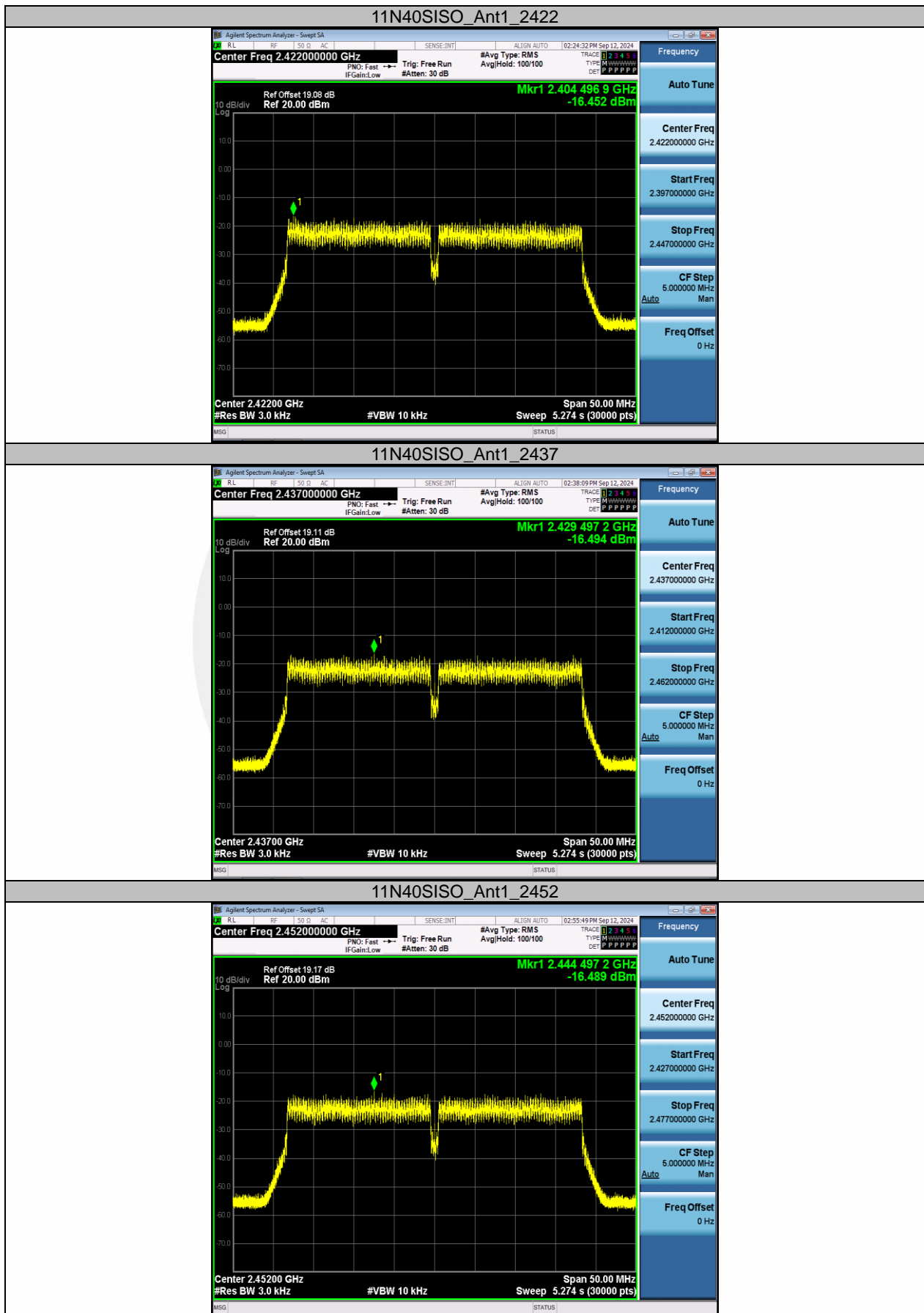


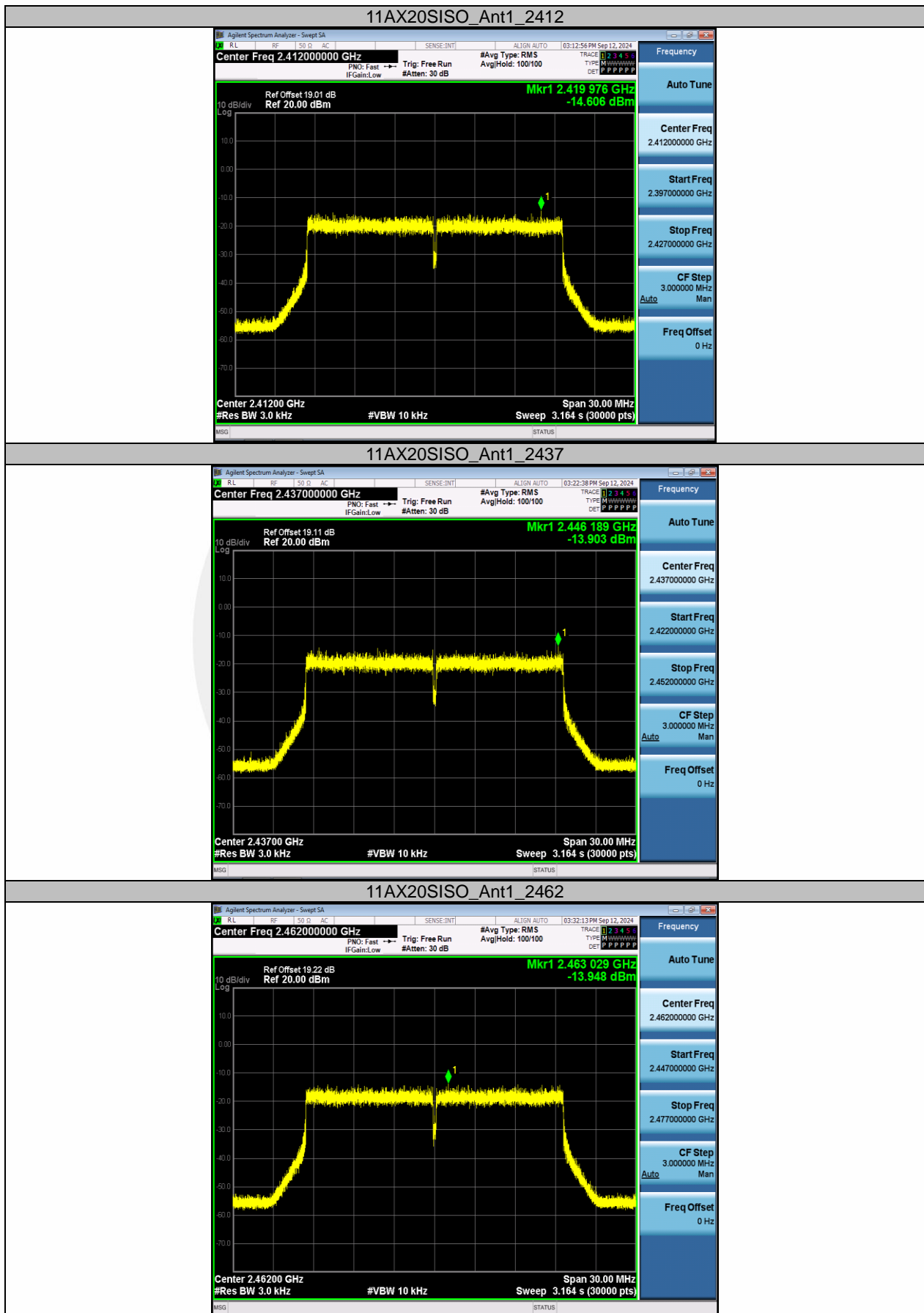
11N20SISO_Ant1_2437

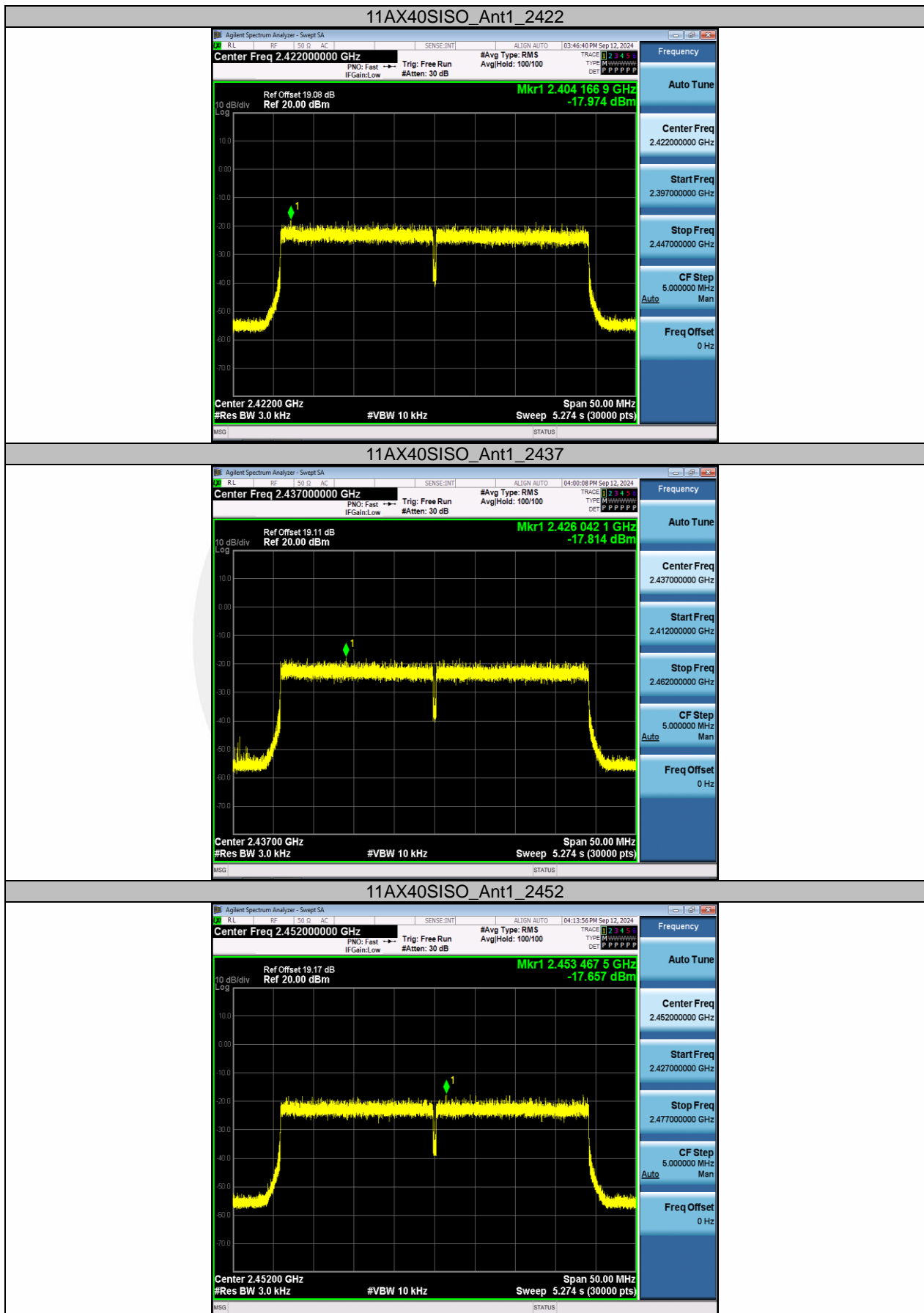


11N20SISO_Ant1_2462









7.4 UNWANTED SPURIOUS EMISSIONS

7.4.1 Applicable Standard

According to FCC Part 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02

7.4.2 Conformance Limit

According to FCC Part 15.247(d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

7.4.3 Test Configuration

Test according to clause 6.1 radio frequency test setup

7.4.4 Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

■ Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW $\geq 3 \times$ RBW.

Set Detector = peak.

Set Sweep time = auto couple.

Set Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

■ Emission level measurement

Set the center frequency and span to encompass frequency range to be measured.

Set the RBW = 100 kHz.

Set the VBW = 300 kHz.

Set Detector = peak

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements. Report the three highest emissions relative to the limit.

7.4.5 Test Results

All modes 2.4G 802.11b/g/n have been tested, and the worst result recorded was report as below:

Band edge measurements

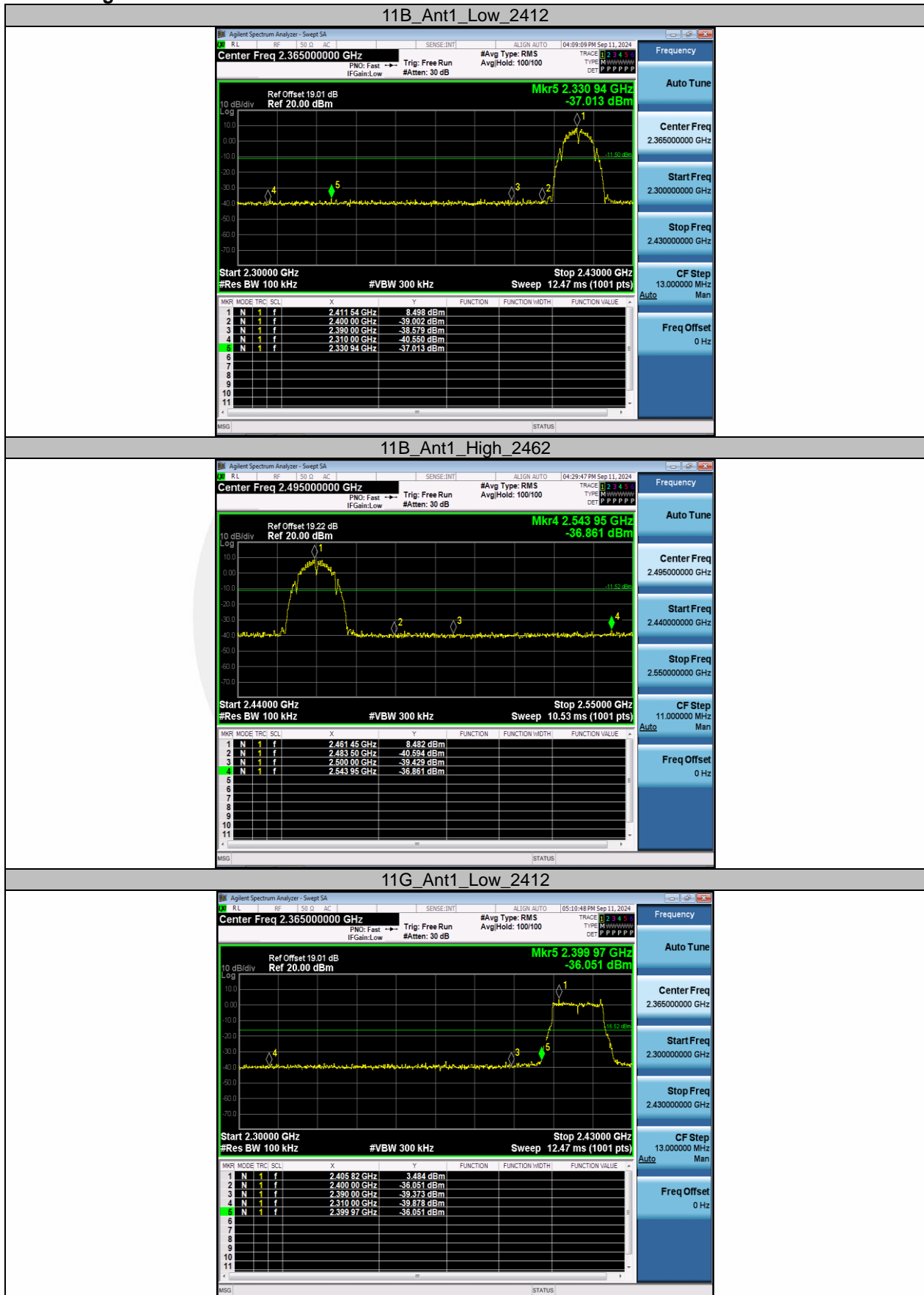
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.50	-37.01	≤-11.5	PASS
		High	2462	8.48	-36.86	≤-11.52	PASS
11G	Ant1	Low	2412	3.48	-36.05	≤-16.52	PASS
		High	2462	5.02	-37.34	≤-14.99	PASS
11N20SISO	Ant1	Low	2412	4.59	-31.78	≤-15.41	PASS
		High	2462	0.25	-37.51	≤-19.75	PASS
11N40SISO	Ant1	Low	2422	-5.15	-36.97	≤-25.15	PASS
		High	2452	-5.38	-37.22	≤-25.38	PASS
11AX20SISO	Ant1	Low	2412	-2.66	-37.21	≤-22.66	PASS
		High	2462	-1.83	-37.1	≤-21.83	PASS
11AX40SISO	Ant1	Low	2422	-6.77	-37.6	≤-26.77	PASS
		High	2452	-4.79	-37.31	≤-24.79	PASS

Emission level measurement

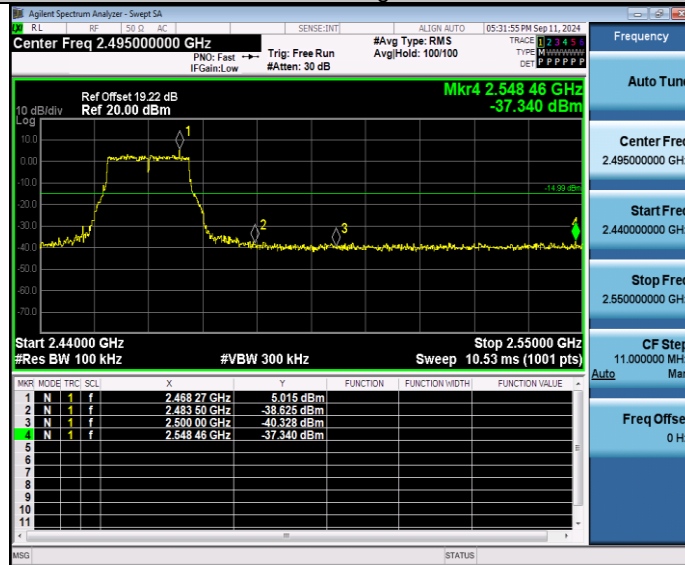
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict	
11B	Ant1	2412	Reference	6.30	6.30	---	PASS	
			30~1000	6.30	-63.49	≤-13.7	PASS	
			1000~26500	6.30	-42.83	≤-13.7	PASS	
		2437	Ant1	Reference	8.37	8.37	---	PASS
				30~1000	8.37	-63.16	≤-11.63	PASS
				1000~26500	8.37	-42.97	≤-11.63	PASS
		2462	Ant1	Reference	7.43	7.43	---	PASS
				30~1000	7.43	-64.01	≤-12.57	PASS
				1000~26500	7.43	-43.56	≤-12.57	PASS
11G	Ant1	2412	Reference	2.62	2.62	---	PASS	
			30~1000	2.62	-68.66	≤-17.38	PASS	
			1000~26500	2.62	-43.55	≤-17.38	PASS	
		2437	Ant1	Reference	1.17	1.17	---	PASS
				30~1000	1.17	-68.51	≤-18.83	PASS
				1000~26500	1.17	-51.72	≤-18.83	PASS
		2462	Ant1	Reference	2.49	2.49	---	PASS
				30~1000	2.49	-68.24	≤-17.51	PASS
				1000~26500	2.49	-51.63	≤-17.51	PASS
11N20SISO	Ant1	2412	Reference	1.00	1.00	---	PASS	
			30~1000	1.00	-68.33	≤-19	PASS	
			1000~26500	1.00	-52.38	≤-19	PASS	
		2437	Ant1	Reference	1.11	1.11	---	PASS
				30~1000	1.11	-67.6	≤-18.89	PASS
				1000~26500	1.11	-39.86	≤-18.89	PASS
		2462	Ant1	Reference	-2.38	-2.38	---	PASS
				30~1000	-2.38	-68.68	≤-22.38	PASS
				1000~26500	-2.38	-52.26	≤-22.38	PASS
11N40SISO	Ant1	2422	Reference	-7.47	-7.47	---	PASS	
			30~1000	-7.47	-68.19	≤-27.47	PASS	
			1000~26500	-7.47	-52.81	≤-27.47	PASS	
		2437	Ant1	Reference	-2.16	-2.16	---	PASS
				30~1000	-2.16	-46.86	≤-22.16	PASS
				1000~26500	-2.16	-52.81	≤-22.16	PASS
		2452	Ant1	Reference	-6.68	-6.68	---	PASS
				30~1000	-6.68	-68.39	≤-26.68	PASS

			1000~26500	-6.68	-52.82	≤ -26.68	PASS
11AX20SISO	Ant1	2412	Reference	-4.33	-4.33	---	PASS
			30~1000	-4.33	-69.23	≤ -24.33	PASS
			1000~26500	-4.33	-52.76	≤ -24.33	PASS
		2437	Reference	-2.70	-2.70	---	PASS
			30~1000	-2.70	-69.25	≤ -22.7	PASS
			1000~26500	-2.70	-53.06	≤ -22.7	PASS
		2462	Reference	-2.23	-2.23	---	PASS
			30~1000	-2.23	-68.65	≤ -22.23	PASS
			1000~26500	-2.23	-52.26	≤ -22.23	PASS
11AX40SISO	Ant1	2422	Reference	-8.30	-8.30	---	PASS
			30~1000	-8.30	-68.63	≤ -28.3	PASS
			1000~26500	-8.30	-45.71	≤ -28.3	PASS
		2437	Reference	-5.91	-5.91	---	PASS
			30~1000	-5.91	-69.03	≤ -25.91	PASS
			1000~26500	-5.91	-50.12	≤ -25.91	PASS
		2452	Reference	-4.55	-4.55	---	PASS
			30~1000	-4.55	-68.75	≤ -24.55	PASS
			1000~26500	-4.55	-52.78	≤ -24.55	PASS

Band edge measurements



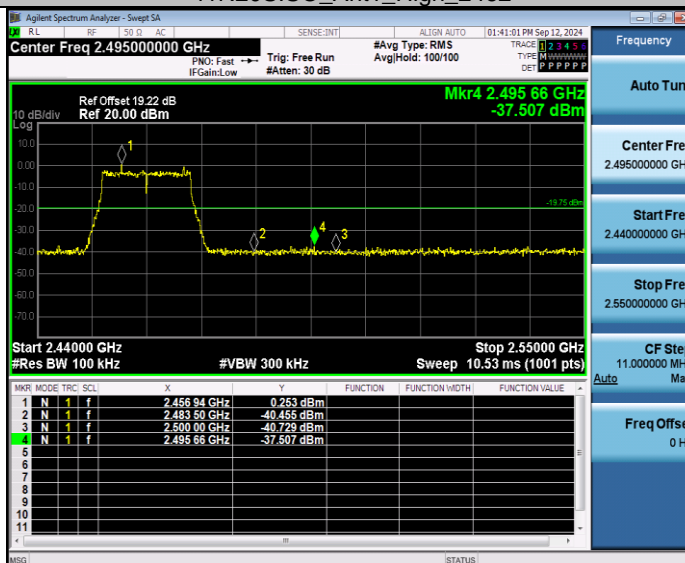
11G_Ant1_High_2462

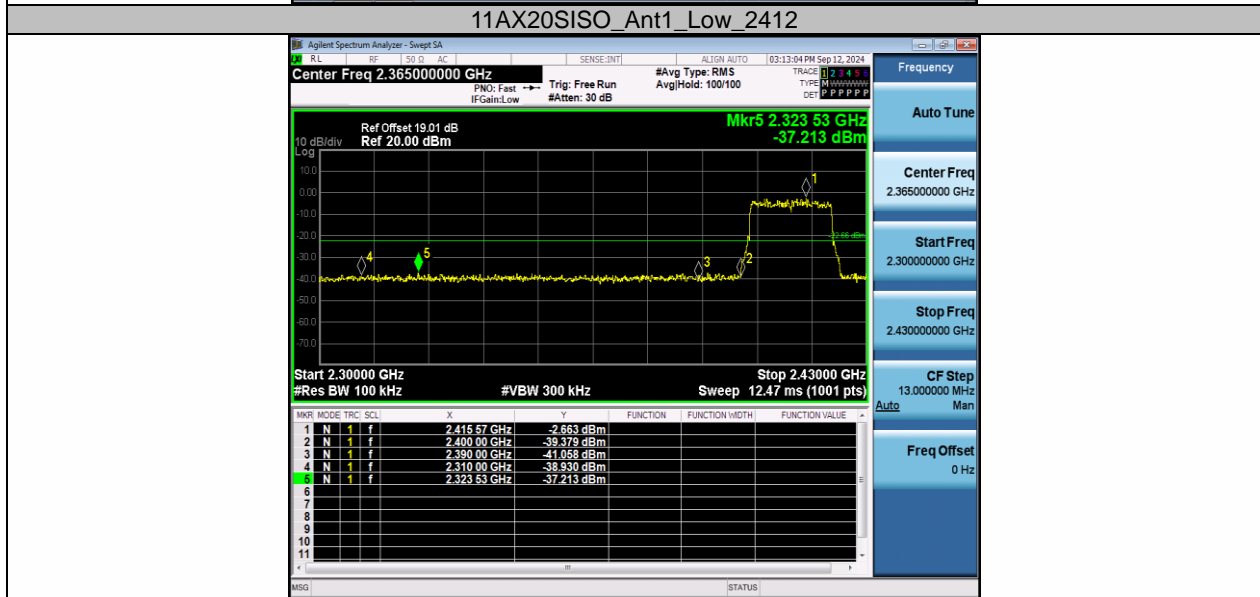
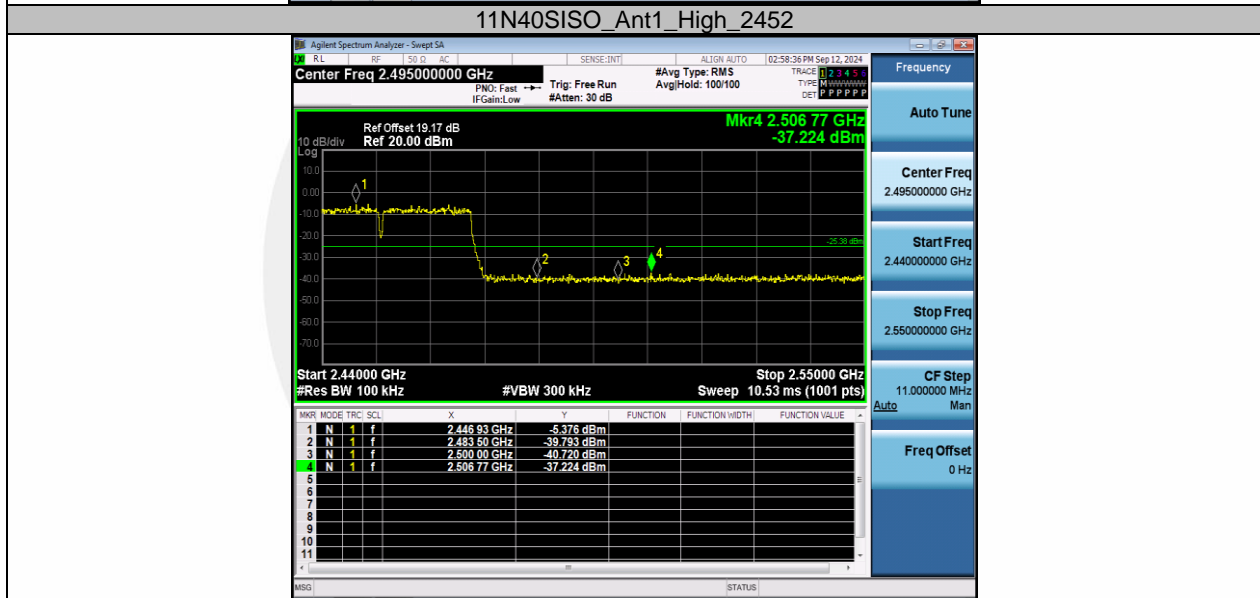
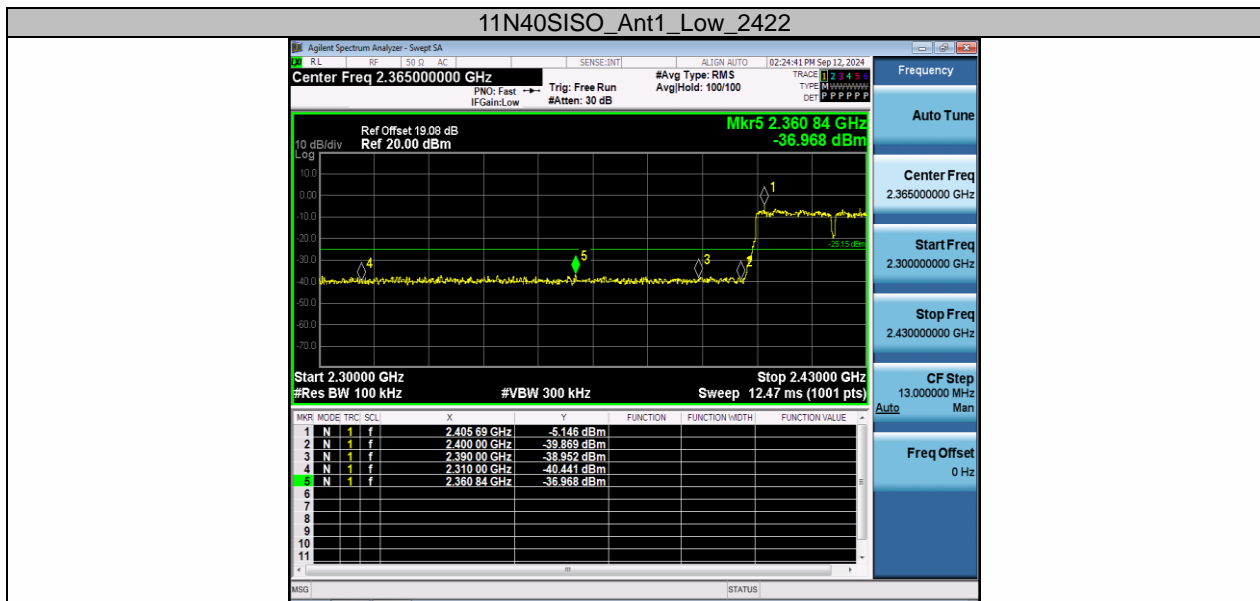


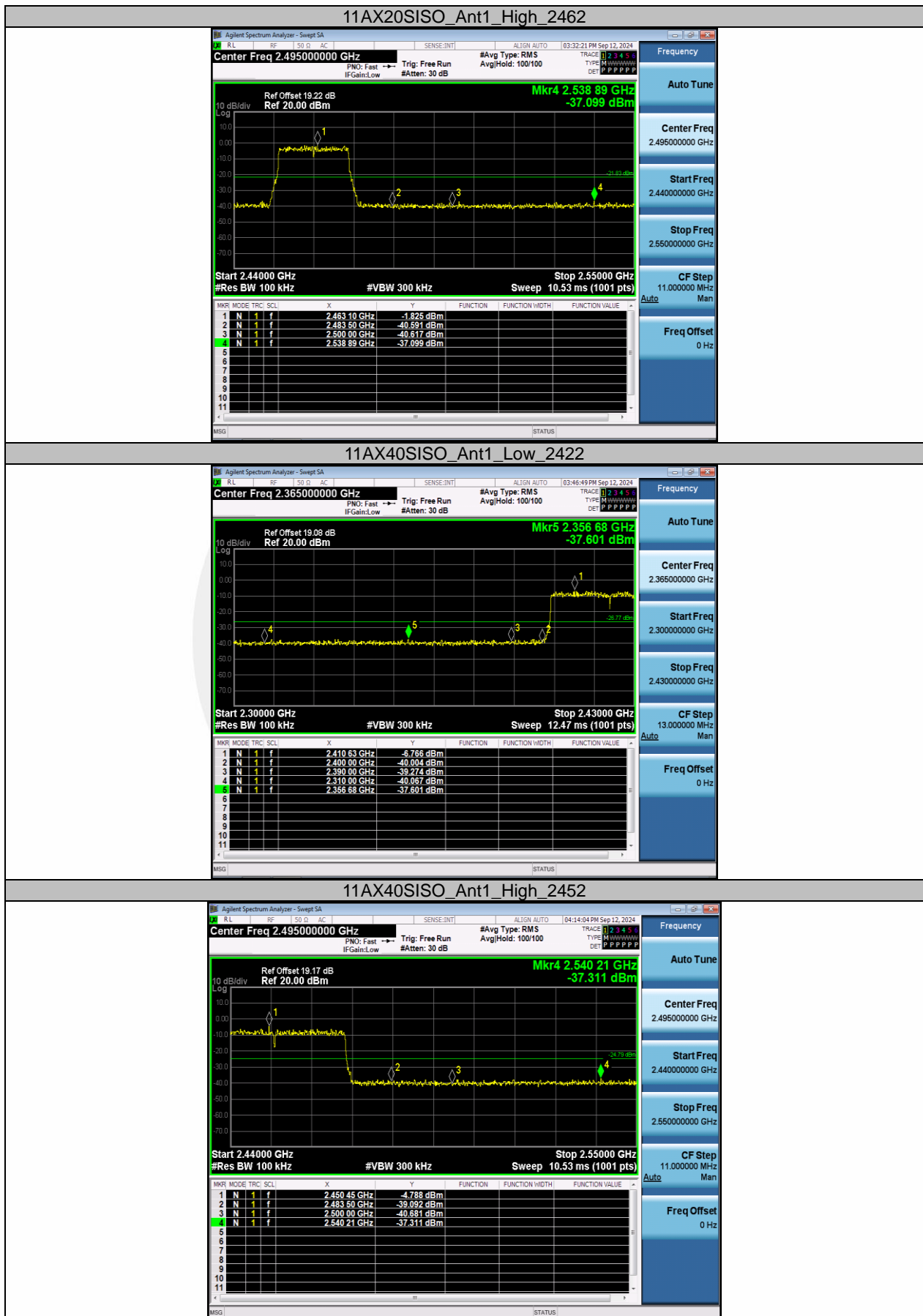
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462







Conducted Spurious Emission

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict		
11B	Ant1	2412	Reference	6.30	6.30	---	PASS		
			30~1000	6.30	-63.49	≤-13.7	PASS		
			1000~26500	6.30	-42.83	≤-13.7	PASS		
		2437	Ant1	2437	Reference	8.37	8.37	---	PASS
					30~1000	8.37	-63.16	≤-11.63	PASS
					1000~26500	8.37	-42.97	≤-11.63	PASS
		2462	Ant1	2462	Reference	7.43	7.43	---	PASS
					30~1000	7.43	-64.01	≤-12.57	PASS
					1000~26500	7.43	-43.56	≤-12.57	PASS
11G	Ant1	2412	Reference	2.62	2.62	---	PASS		
			30~1000	2.62	-68.66	≤-17.38	PASS		
			1000~26500	2.62	-43.55	≤-17.38	PASS		
		2437	Ant1	2437	Reference	1.17	1.17	---	PASS
					30~1000	1.17	-68.51	≤-18.83	PASS
					1000~26500	1.17	-51.72	≤-18.83	PASS
		2462	Ant1	2462	Reference	2.49	2.49	---	PASS
					30~1000	2.49	-68.24	≤-17.51	PASS
					1000~26500	2.49	-51.63	≤-17.51	PASS
11N20SISO	Ant1	2412	Reference	1.00	1.00	---	PASS		
			30~1000	1.00	-68.33	≤-19	PASS		
			1000~26500	1.00	-52.38	≤-19	PASS		
		2437	Ant1	2437	Reference	1.11	1.11	---	PASS
					30~1000	1.11	-67.6	≤-18.89	PASS
					1000~26500	1.11	-39.86	≤-18.89	PASS
		2462	Ant1	2462	Reference	-2.38	-2.38	---	PASS
					30~1000	-2.38	-68.68	≤-22.38	PASS
					1000~26500	-2.38	-52.26	≤-22.38	PASS
11N40SISO	Ant1	2422	Reference	-7.47	-7.47	---	PASS		
			30~1000	-7.47	-68.19	≤-27.47	PASS		
			1000~26500	-7.47	-52.81	≤-27.47	PASS		
		2437	Ant1	2437	Reference	-2.16	-2.16	---	PASS
					30~1000	-2.16	-46.86	≤-22.16	PASS
					1000~26500	-2.16	-52.81	≤-22.16	PASS
		2452	Ant1	2452	Reference	-6.68	-6.68	---	PASS
					30~1000	-6.68	-68.39	≤-26.68	PASS
					1000~26500	-6.68	-52.82	≤-26.68	PASS
11AX20SISO	Ant1	2412	Reference	-4.33	-4.33	---	PASS		
			30~1000	-4.33	-69.23	≤-24.33	PASS		
			1000~26500	-4.33	-52.76	≤-24.33	PASS		
		2437	Ant1	2437	Reference	-2.70	-2.70	---	PASS
					30~1000	-2.70	-69.25	≤-22.7	PASS
					1000~26500	-2.70	-53.06	≤-22.7	PASS
		2462	Ant1	2462	Reference	-2.23	-2.23	---	PASS
					30~1000	-2.23	-68.65	≤-22.23	PASS
					1000~26500	-2.23	-52.26	≤-22.23	PASS
11AX40SISO	Ant1	2422	Reference	-8.30	-8.30	---	PASS		
			30~1000	-8.30	-68.63	≤-28.3	PASS		
			1000~26500	-8.30	-45.71	≤-28.3	PASS		
		2437	Ant1	2437	Reference	-5.91	-5.91	---	PASS
					30~1000	-5.91	-69.03	≤-25.91	PASS
					1000~26500	-5.91	-50.12	≤-25.91	PASS
		2452	Ant1	2452	Reference	-4.55	-4.55	---	PASS
					30~1000	-4.55	-68.75	≤-24.55	PASS

			1000~26500	-4.55	-52.78	≤-24.55	PASS
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