

RF Test Data for WLAN(2.4G) (Conducted Measurement)**Product Name: 4K Set top box****Trade Mark: eSTREAM4K****Test Model: IPA1114HDW-02****FCC ID: 2AOVU-SN6BBAXS****IC: 25669-IPA1114HDWS****Environmental Conditions**

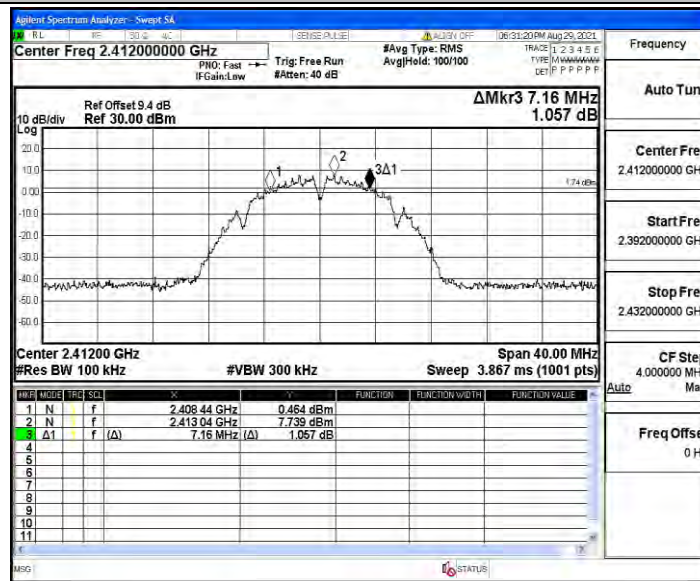
Temperature:	24.3℃
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth**Test Result**

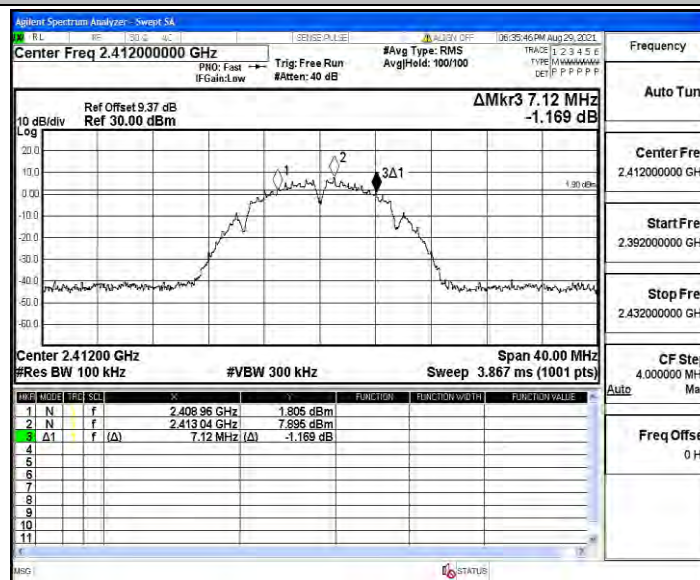
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.160	2408.440	2415.600	0.5	PASS
	Ant2	2412	7.120	2408.960	2416.080	0.5	PASS
	Ant1	2437	7.680	2432.960	2440.640	0.5	PASS
	Ant2	2437	7.160	2433.480	2440.640	0.5	PASS
	Ant1	2462	7.600	2458.480	2466.080	0.5	PASS
	Ant2	2462	7.120	2458.480	2465.600	0.5	PASS
11G	Ant1	2412	16.440	2403.840	2420.280	0.5	PASS
	Ant2	2412	16.480	2403.800	2420.280	0.5	PASS
	Ant1	2437	16.400	2428.840	2445.240	0.5	PASS
	Ant2	2437	16.480	2428.800	2445.280	0.5	PASS
	Ant1	2462	16.400	2453.840	2470.240	0.5	PASS
	Ant2	2462	16.400	2453.840	2470.240	0.5	PASS
11N20MIMO	Ant1	2412	17.800	2403.160	2420.960	0.5	PASS
	Ant2	2412	17.800	2403.160	2420.960	0.5	PASS
	Ant1	2437	17.760	2428.160	2445.920	0.5	PASS
	Ant2	2437	17.840	2428.120	2445.960	0.5	PASS
	Ant1	2462	17.800	2453.160	2470.960	0.5	PASS
	Ant2	2462	17.760	2453.160	2470.920	0.5	PASS

Test Graphs

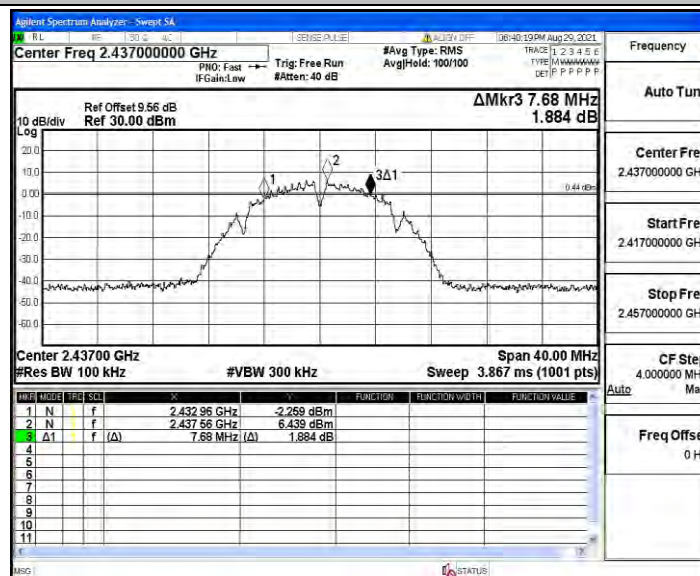
11B_Ant1_2412



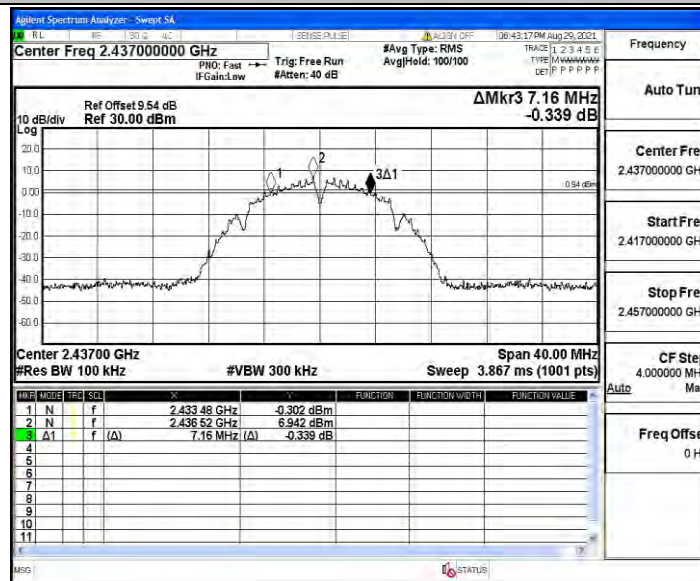
11B_Ant2_2412



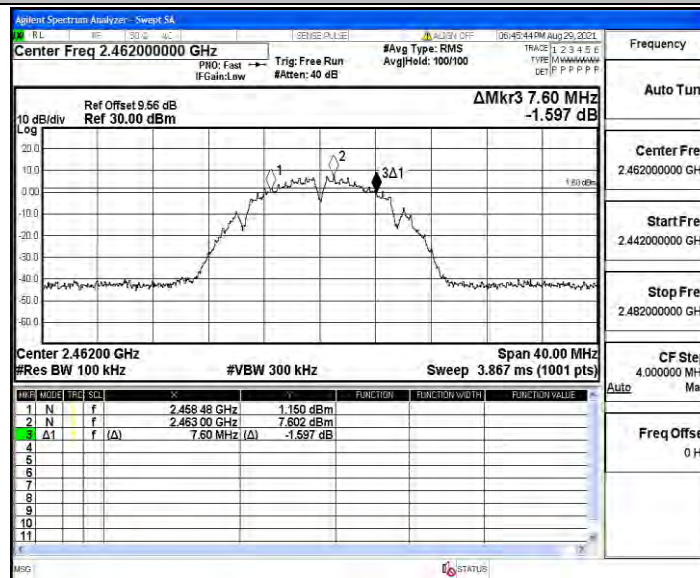
11B_Ant1_2437



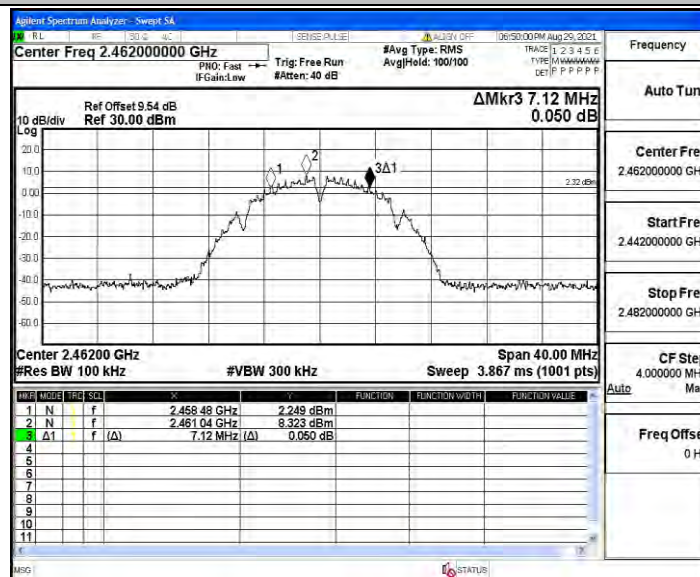
11B_Ant2_2437



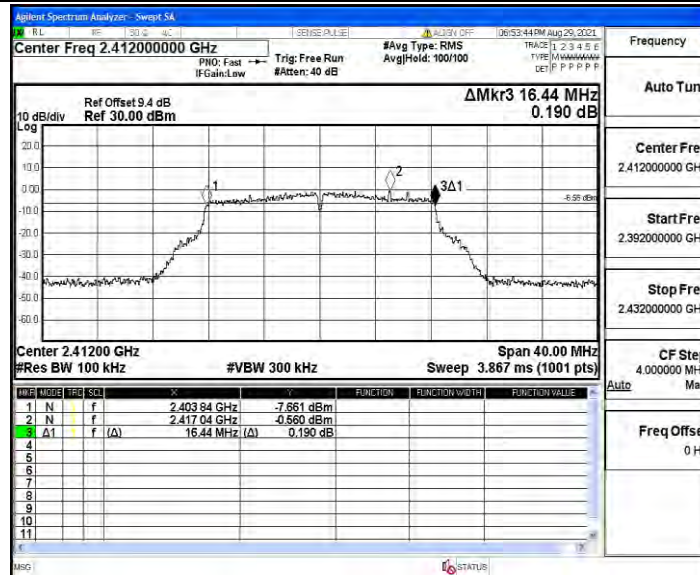
11B_Ant1_2462



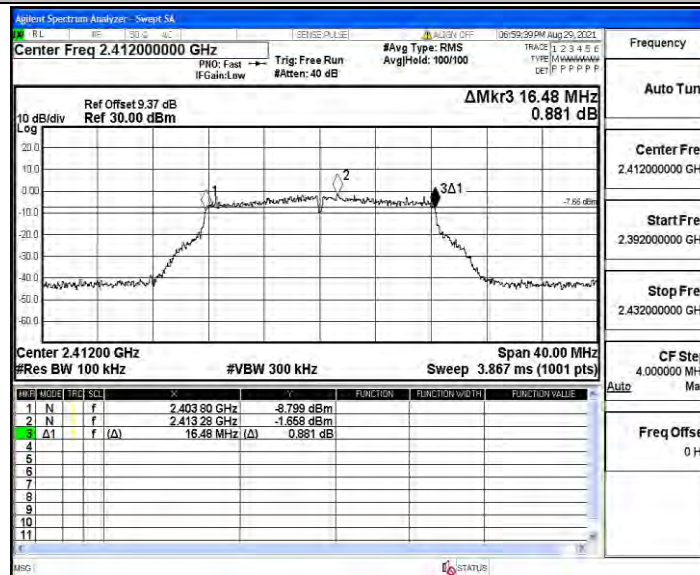
11B_Ant2_2462



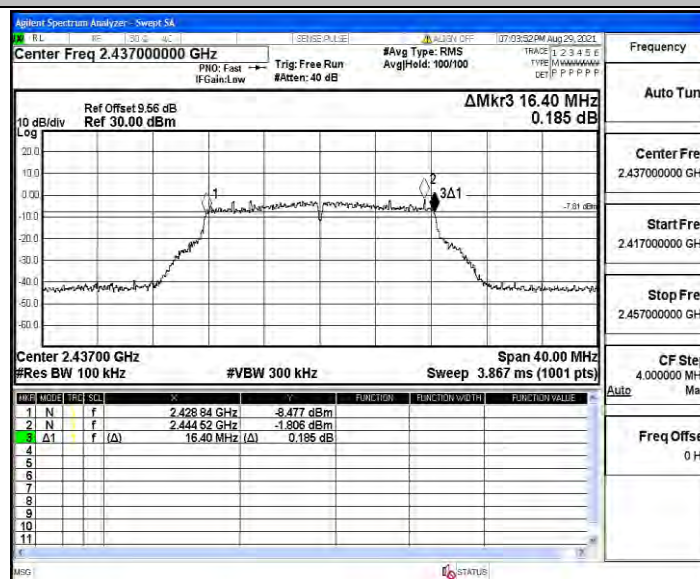
11G_Ant1_2412



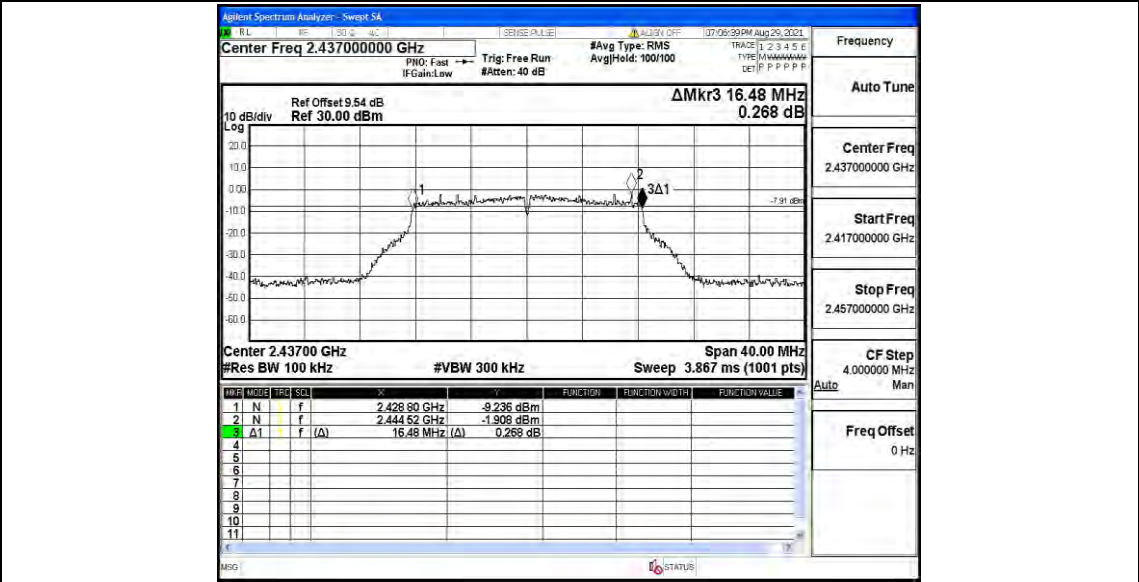
11G_Ant2_2412



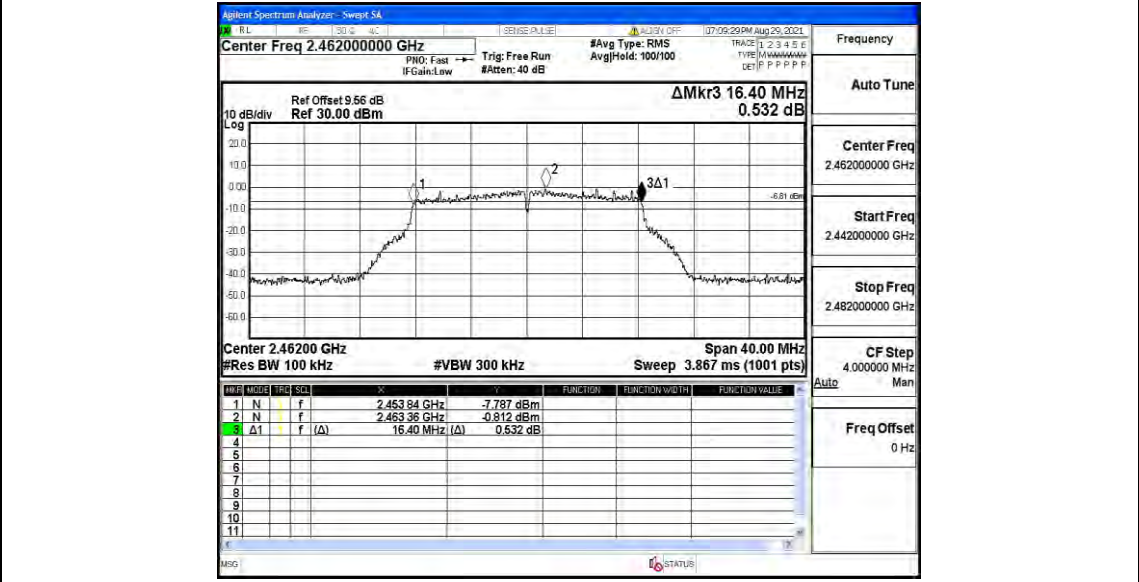
11G_Ant1_2437



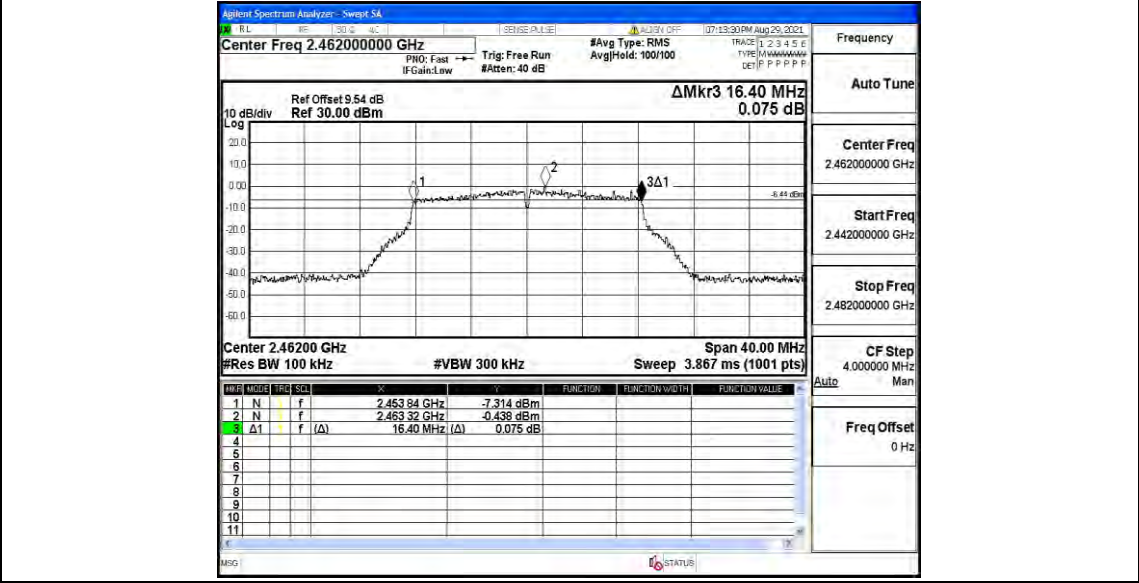
11G_Ant2_2437



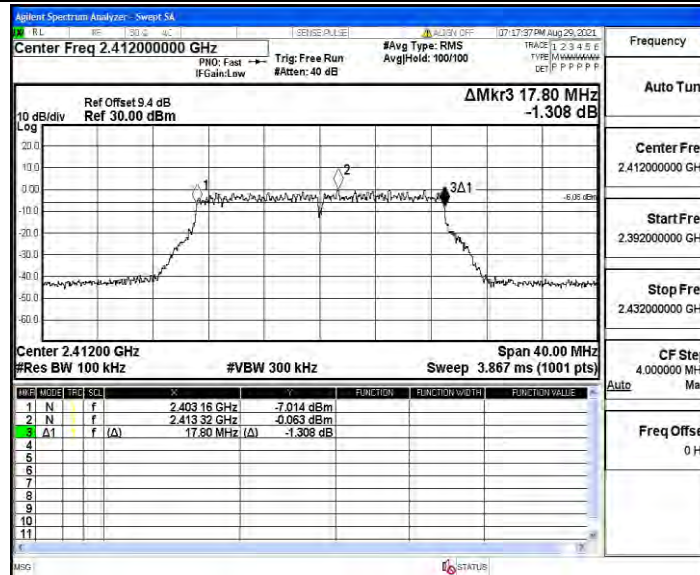
11G_Ant1_2462



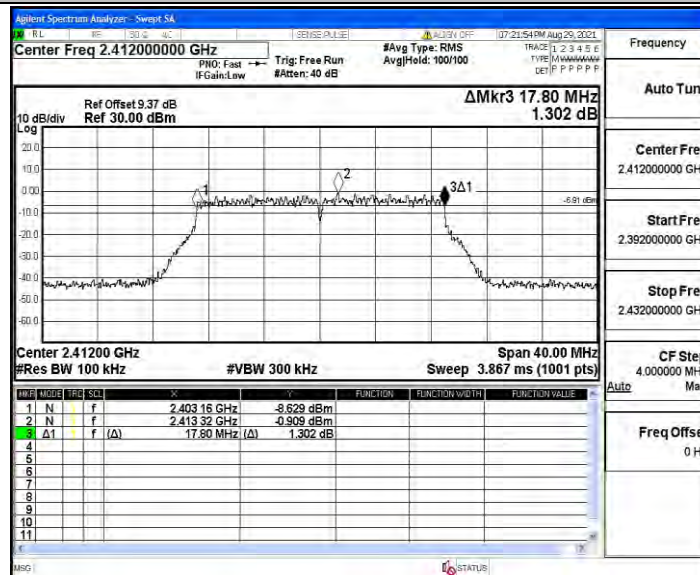
11G_Ant2_2462



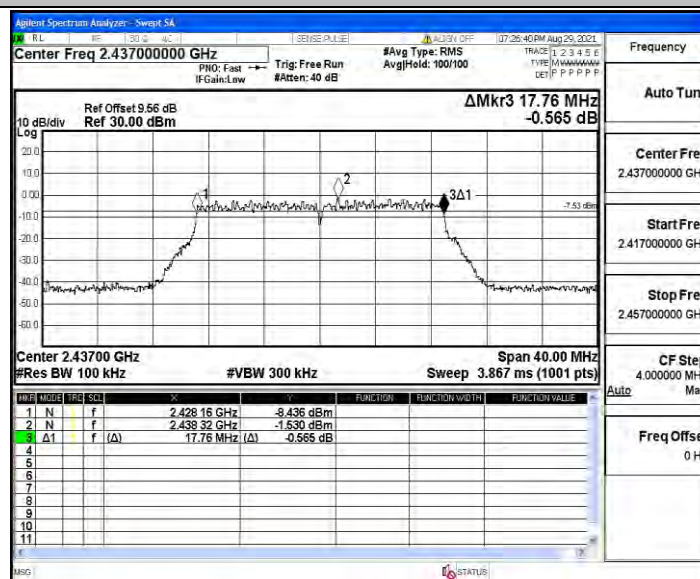
11N20MIMO_Ant1_2412



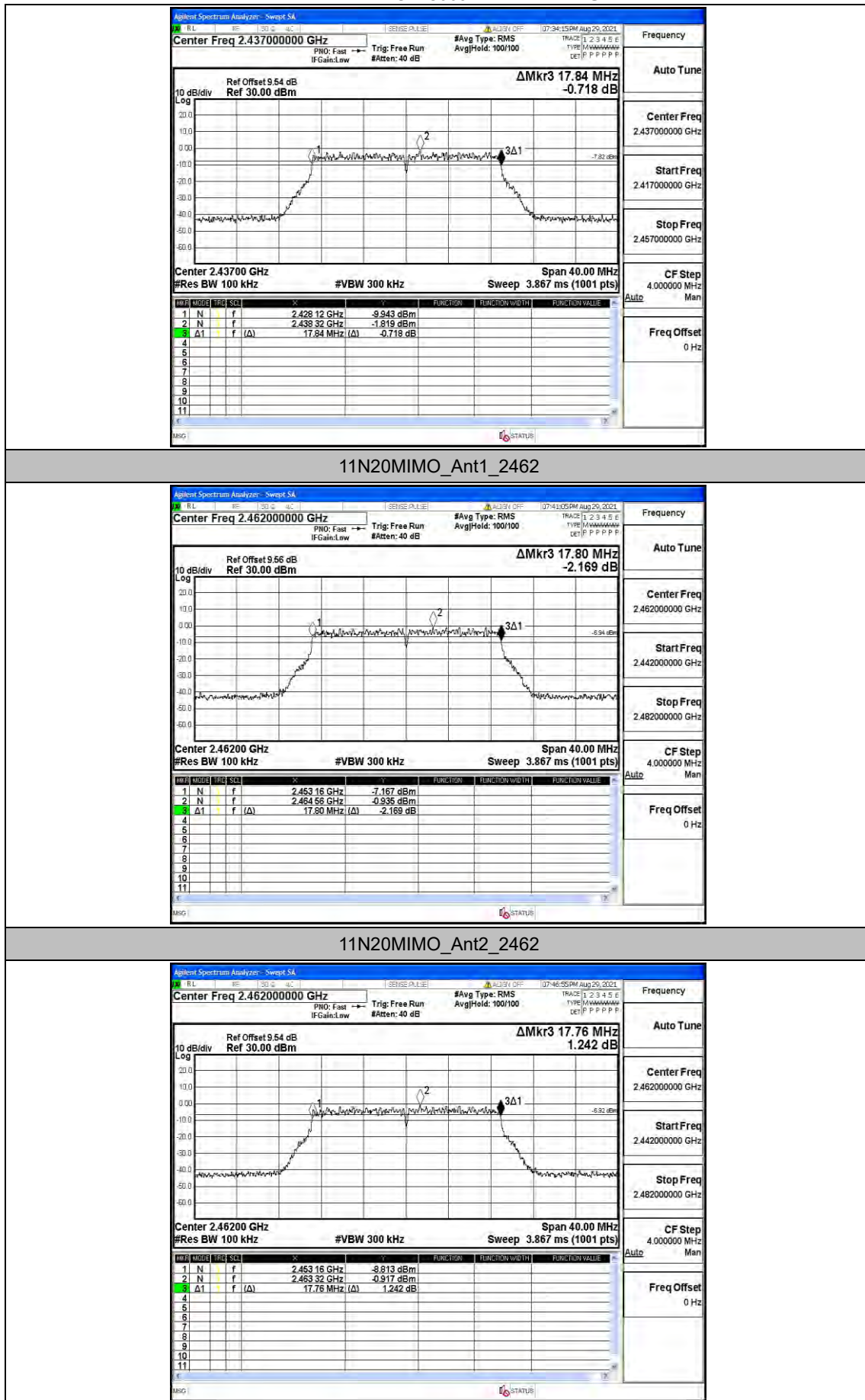
11N20MIMO_Ant2_2412



11N20MIMO_Ant1_2437



11N20MIMO_Ant2_2437



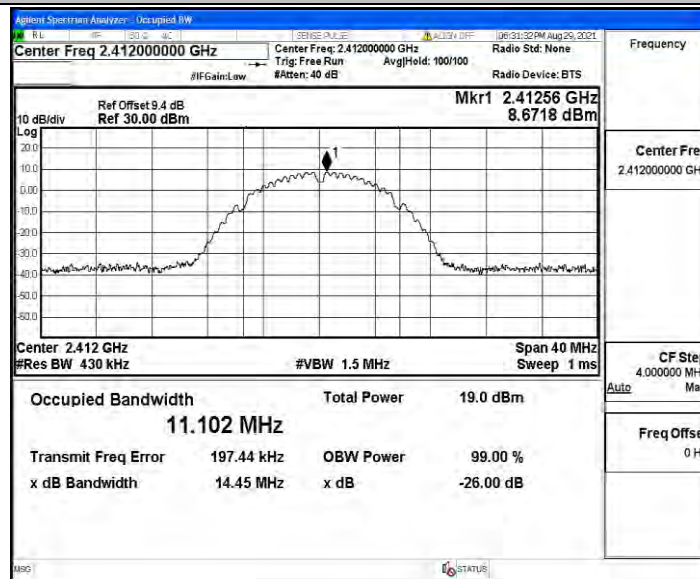
Appendix B: Occupied Channel Bandwidth

Test Result

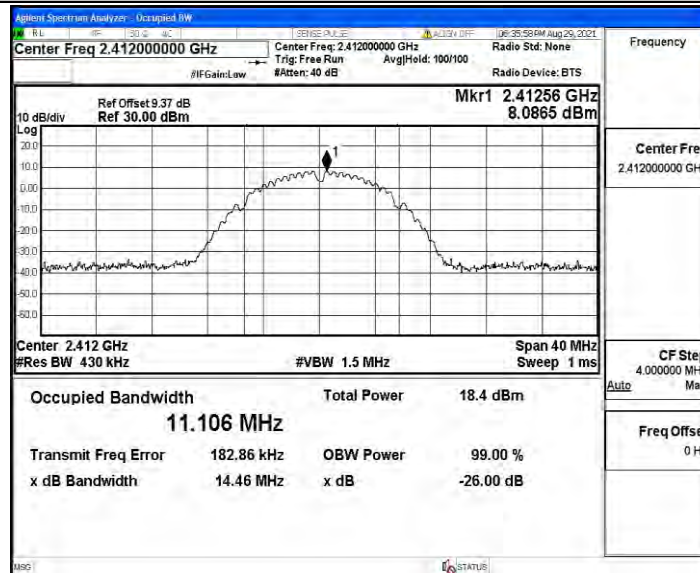
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.102	2406.646	2417.748	---	PASS
	Ant2	2412	11.106	2406.630	2417.736	---	PASS
	Ant1	2437	11.320	2431.519	2442.839	---	PASS
	Ant2	2437	11.237	2431.523	2442.760	---	PASS
	Ant1	2462	11.085	2456.668	2467.753	---	PASS
	Ant2	2462	11.021	2456.652	2467.673	---	PASS
11G	Ant1	2412	17.107	2403.560	2420.667	---	PASS
	Ant2	2412	17.144	2403.556	2420.700	---	PASS
	Ant1	2437	17.159	2428.549	2445.708	---	PASS
	Ant2	2437	17.373	2428.432	2445.805	---	PASS
	Ant1	2462	17.112	2453.562	2470.674	---	PASS
	Ant2	2462	17.132	2453.556	2470.688	---	PASS
11N20MIMO	Ant1	2412	18.087	2403.080	2421.167	---	PASS
	Ant2	2412	18.202	2403.055	2421.257	---	PASS
	Ant1	2437	18.158	2428.008	2446.166	---	PASS
	Ant2	2437	18.217	2427.937	2446.154	---	PASS
	Ant1	2462	18.159	2453.012	2471.171	---	PASS
	Ant2	2462	18.037	2453.077	2471.114	---	PASS

Test Graphs

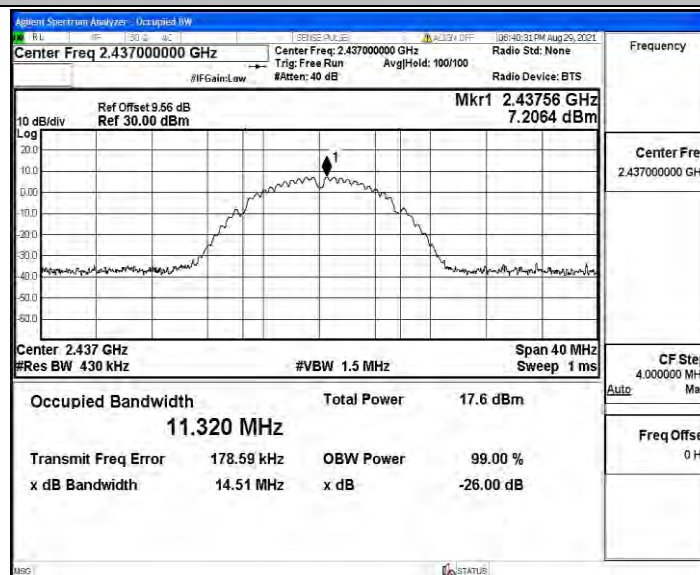
11B_Ant1_2412



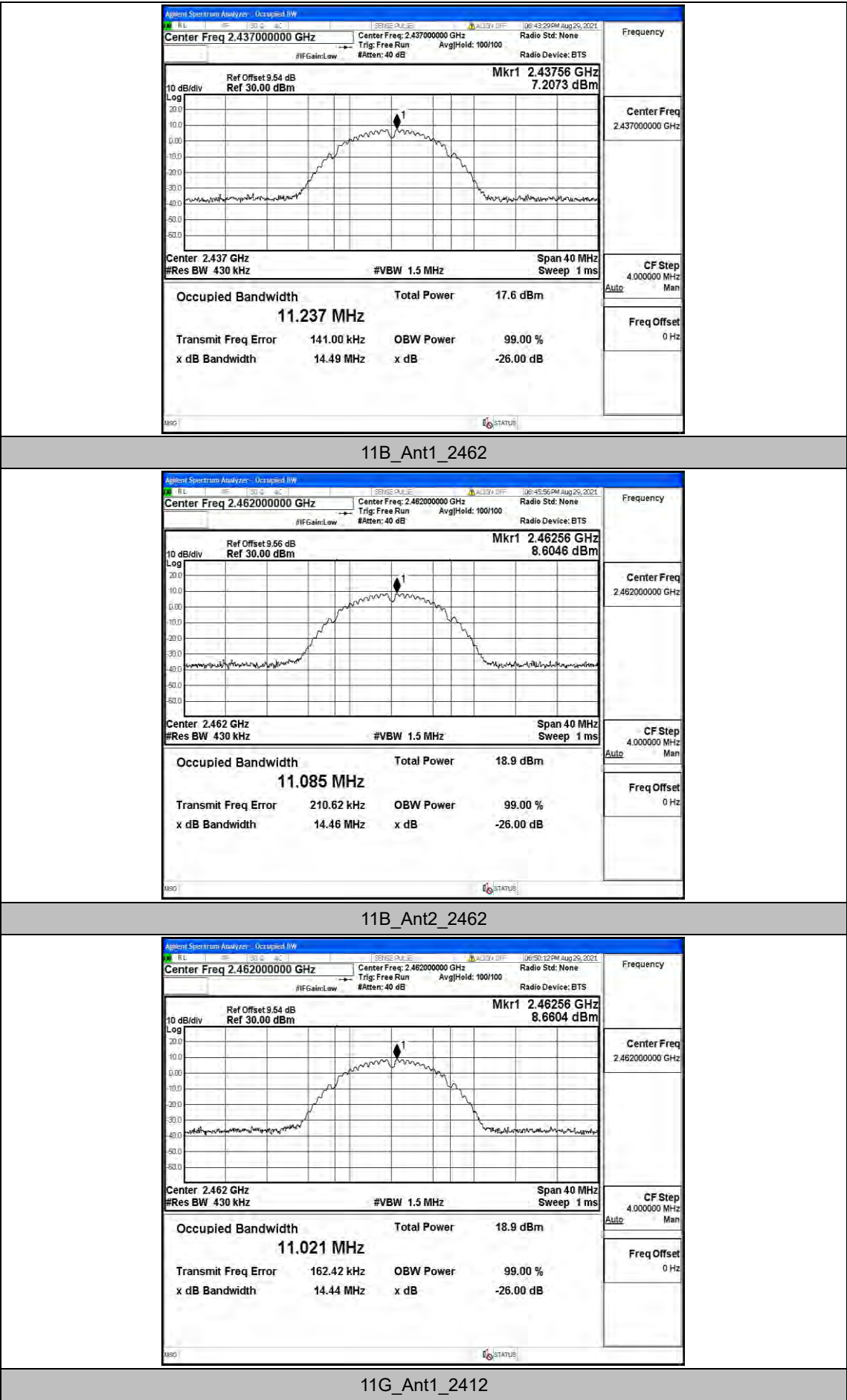
11B_Ant2_2412

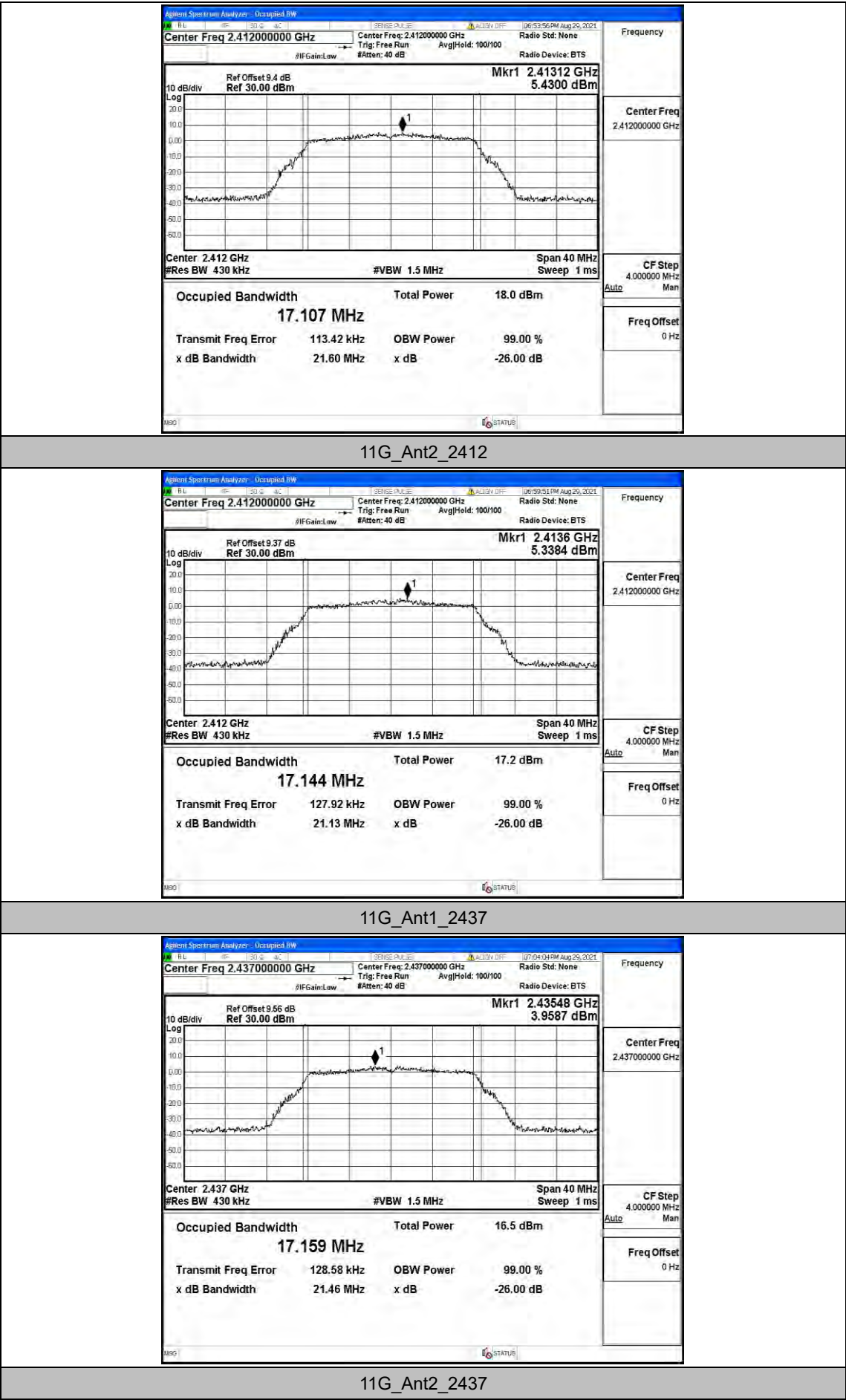


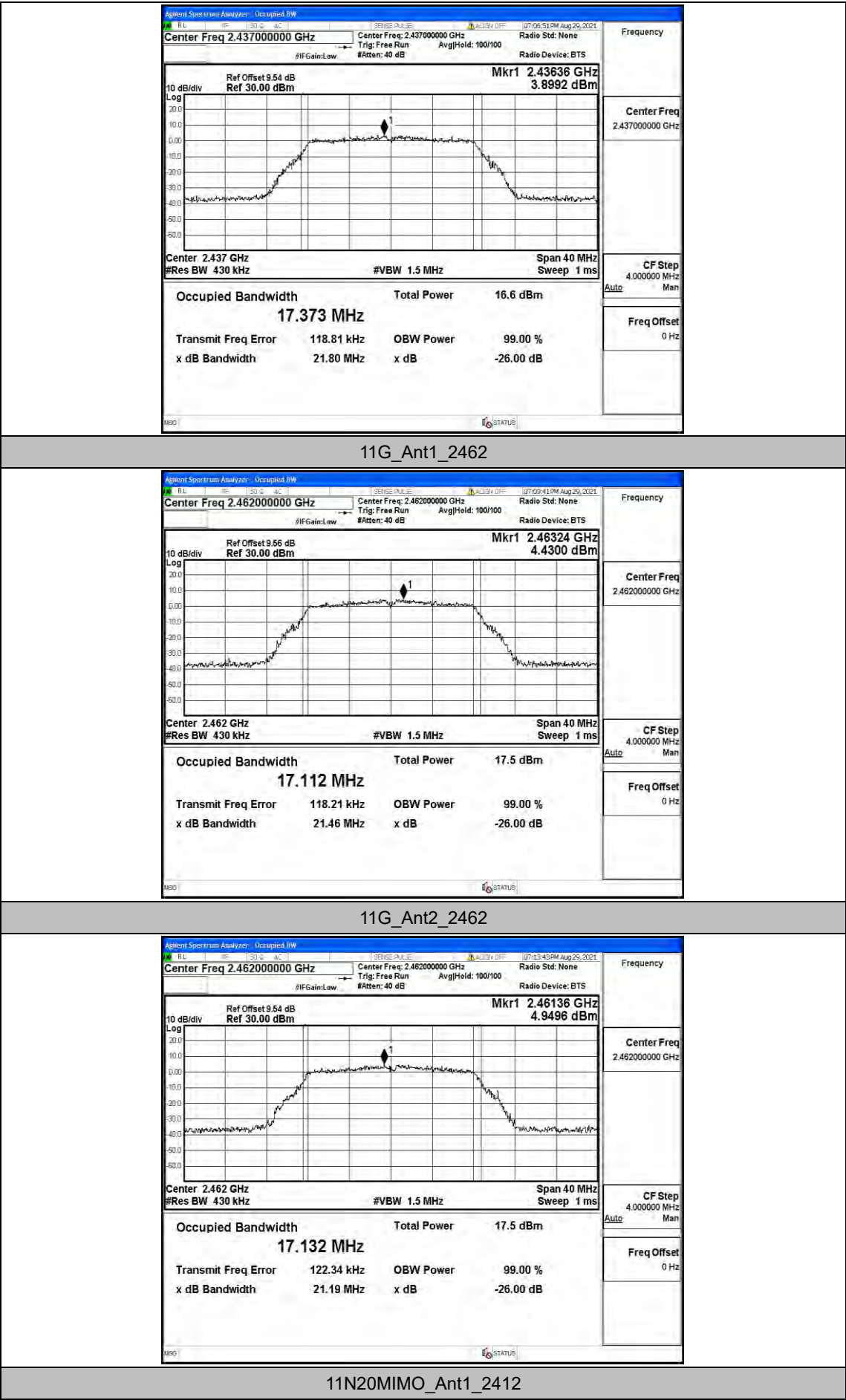
11B_Ant1_2437

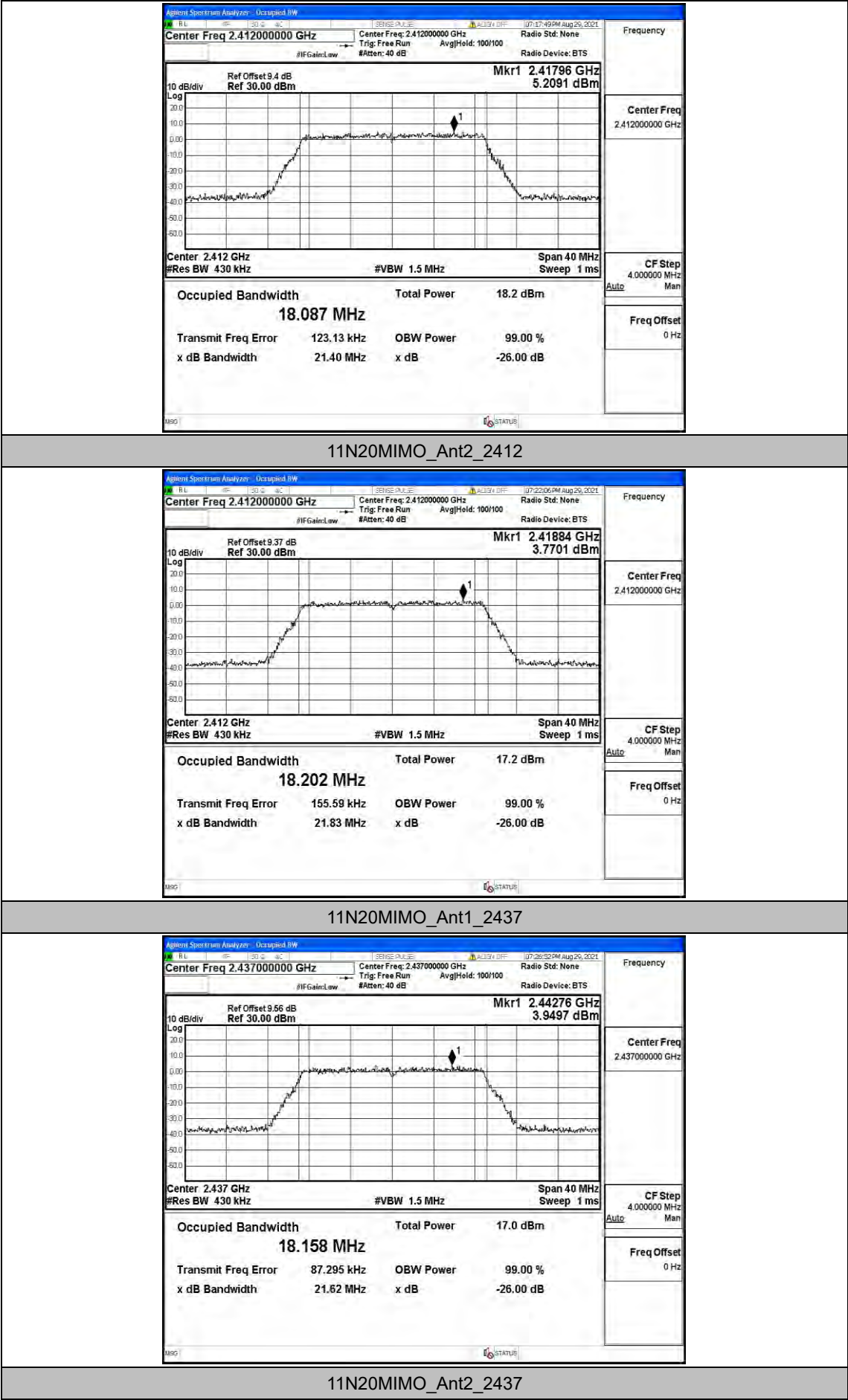


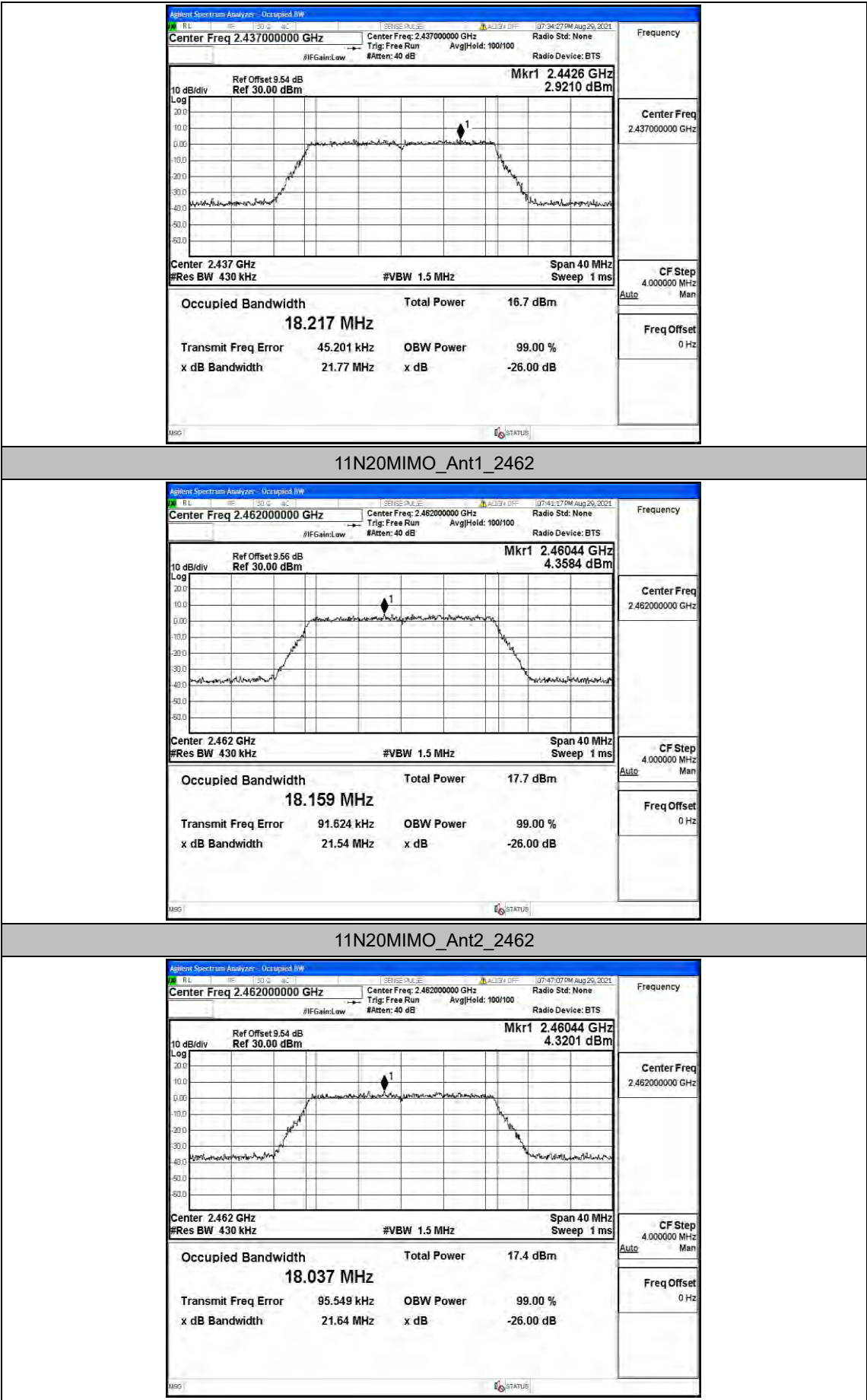
11B_Ant2_2437











Appendix C: Maximum conducted output power**Test Result**

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	16.09	≤30	PASS
	Ant2	2412	15.40	≤30	PASS
	Ant1	2437	14.59	≤30	PASS
	Ant2	2437	14.63	≤30	PASS
	Ant1	2462	15.80	≤30	PASS
	Ant2	2462	15.93	≤30	PASS
11G	Ant1	2412	11.95	≤30	PASS
	Ant2	2412	11.02	≤30	PASS
	Ant1	2437	10.50	≤30	PASS
	Ant2	2437	10.56	≤30	PASS
	Ant1	2462	11.49	≤30	PASS
	Ant2	2462	11.36	≤30	PASS
11N20MIMO	Ant1	2412	11.67	≤30	PASS
	Ant2	2412	10.87	≤30	PASS
	total	2412	14.3	≤30	PASS
	Ant1	2437	10.33	≤30	PASS
	Ant2	2437	10.44	≤30	PASS
	total	2437	13.4	≤30	PASS
	Ant1	2462	11.40	≤30	PASS
	Ant2	2462	9.95	≤30	PASS
	total	2462	13.7	≤30	PASS

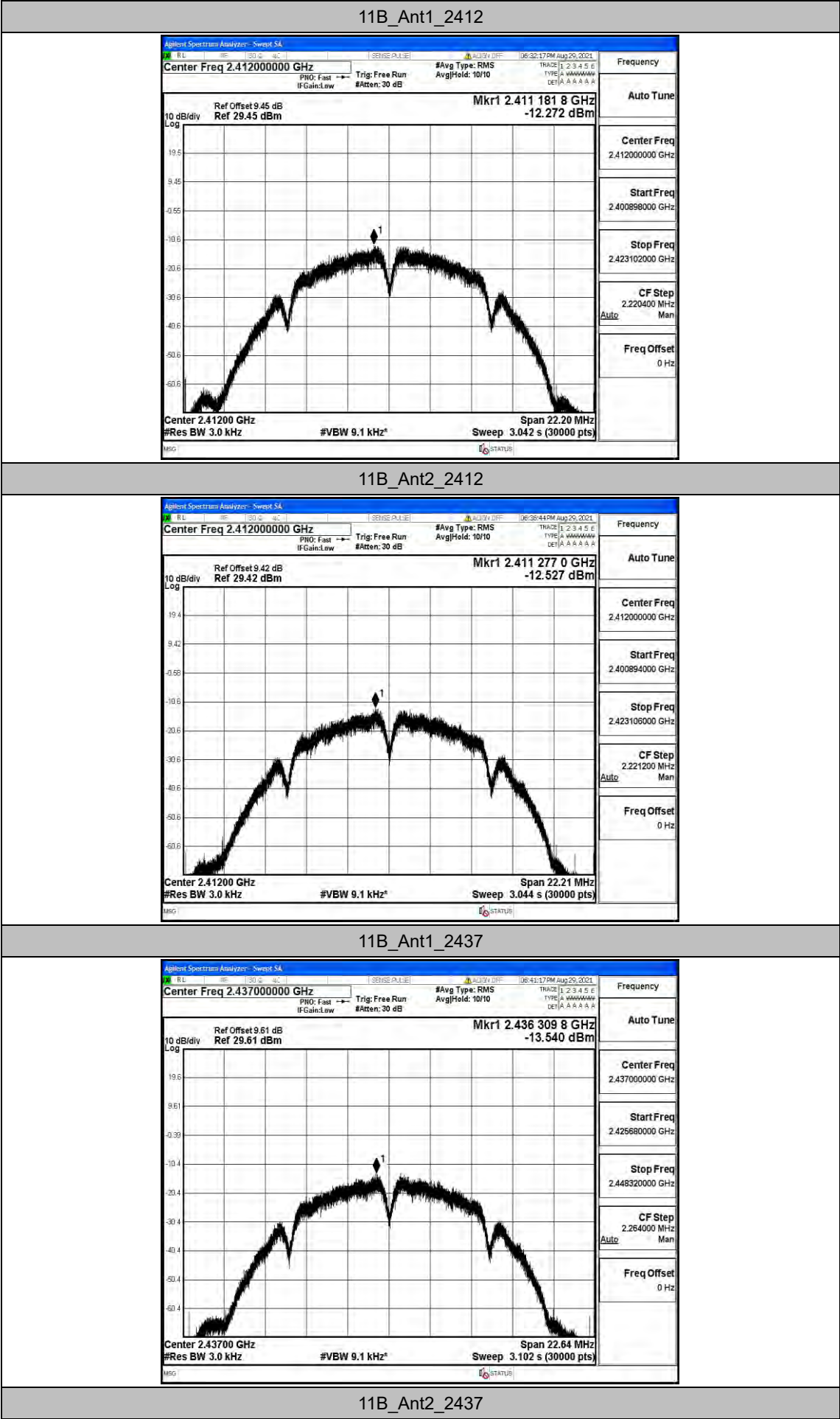
Note: The Duty Cycle Factor is compensated in the test result.

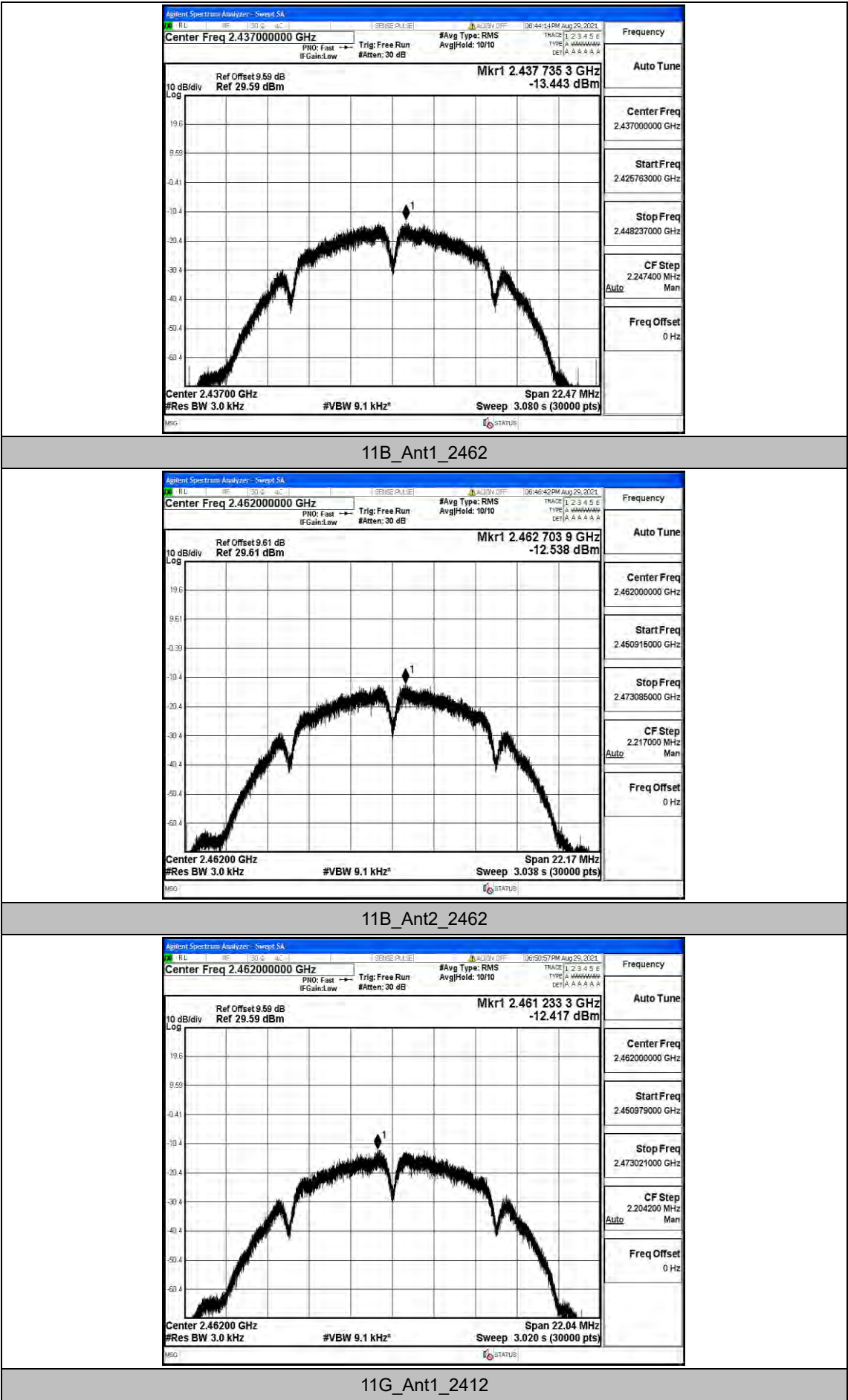
Appendix D: Maximum power spectral density**Test Result**

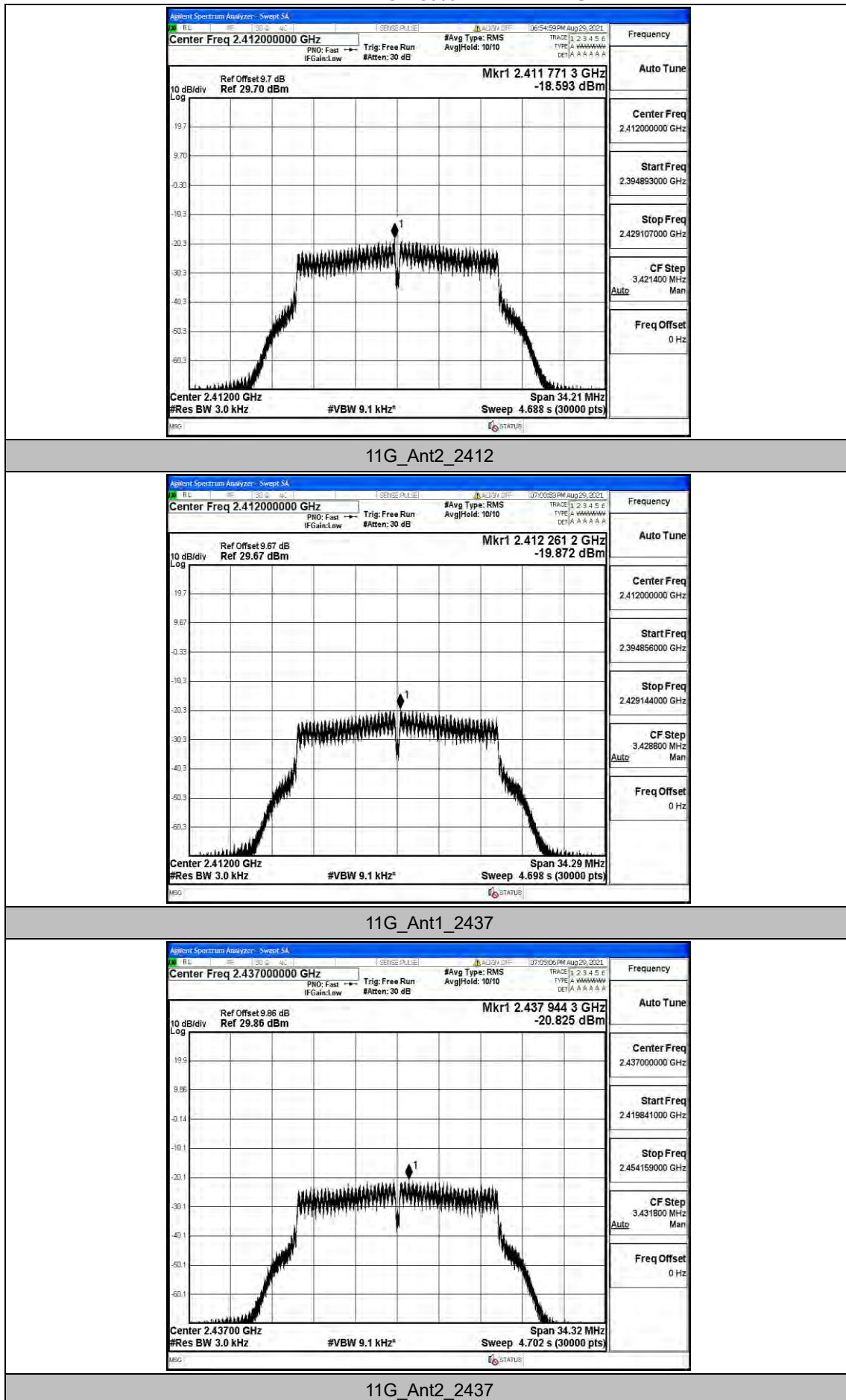
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-12.27	≤8	PASS
	Ant2	2412	-12.53	≤8	PASS
	Ant1	2437	-13.54	≤8	PASS
	Ant2	2437	-13.44	≤8	PASS
	Ant1	2462	-12.54	≤8	PASS
	Ant2	2462	-12.42	≤8	PASS
11G	Ant1	2412	-18.59	≤8	PASS
	Ant2	2412	-19.87	≤8	PASS
	Ant1	2437	-20.83	≤8	PASS
	Ant2	2437	-20.22	≤8	PASS
	Ant1	2462	-19.35	≤8	PASS
	Ant2	2462	-19.51	≤8	PASS
11N20MIMO	Ant1	2412	-18.08	≤8	PASS
	Ant2	2412	-18.79	≤8	PASS
	total	2412	-15.41	≤8	PASS
	Ant1	2437	-18.96	≤8	PASS
	Ant2	2437	-19.39	≤8	PASS
	total	2437	-16.16	≤8	PASS
	Ant1	2462	-18.45	≤8	PASS
	Ant2	2462	-19.18	≤8	PASS
	total	2462	-15.79	≤8	PASS

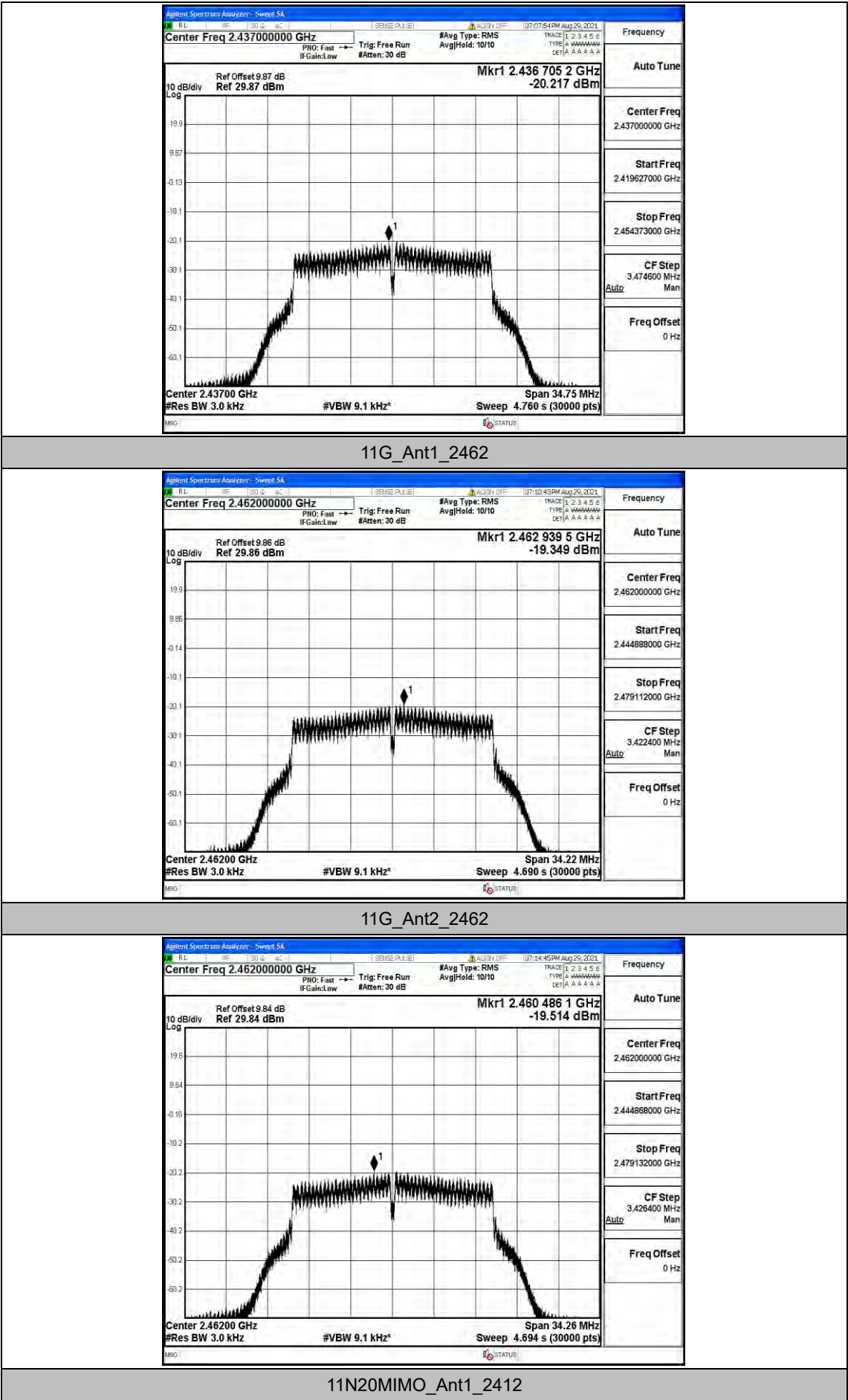
Note: The Duty Cycle Factor is compensated in the test result.

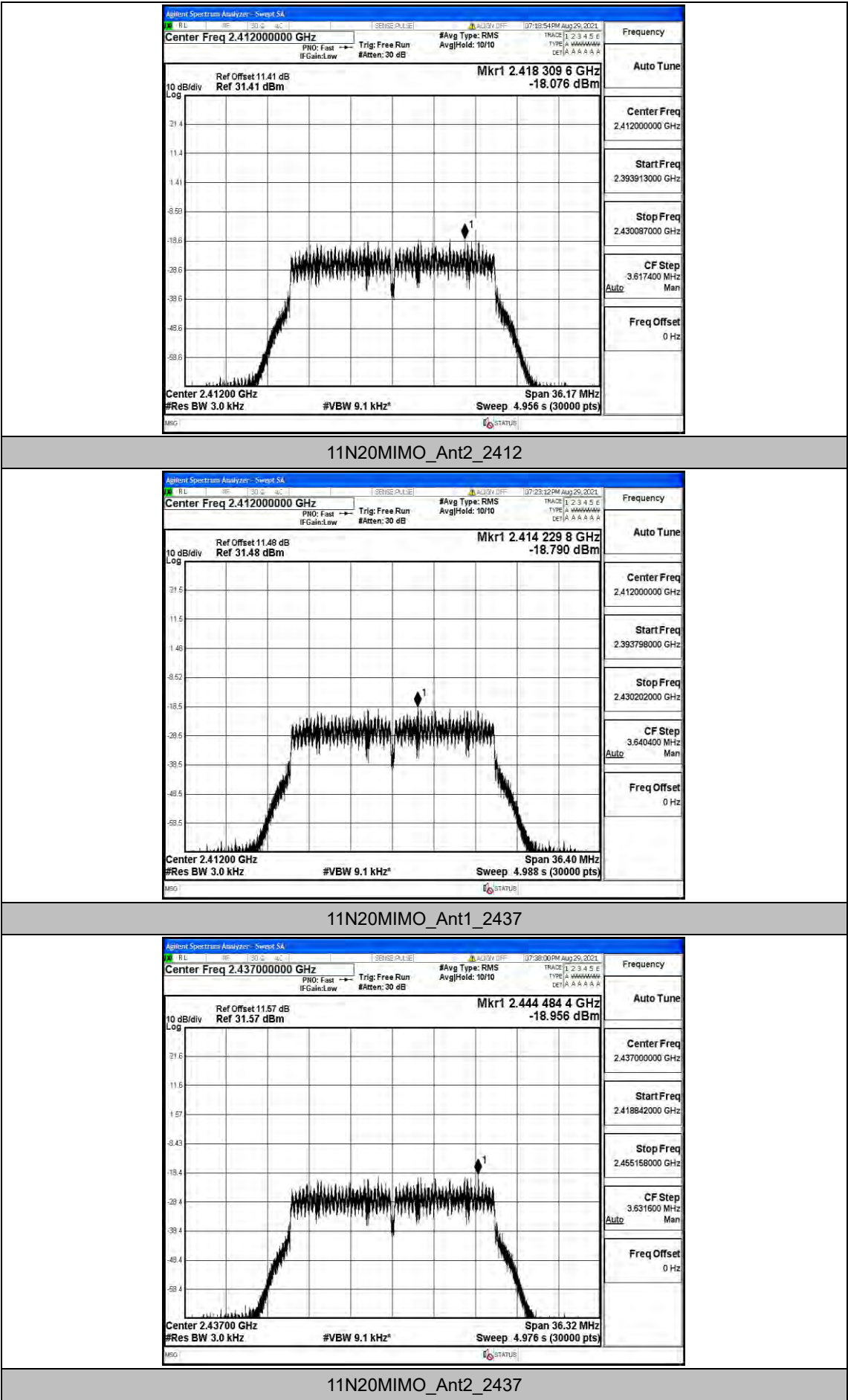
Test Graphs

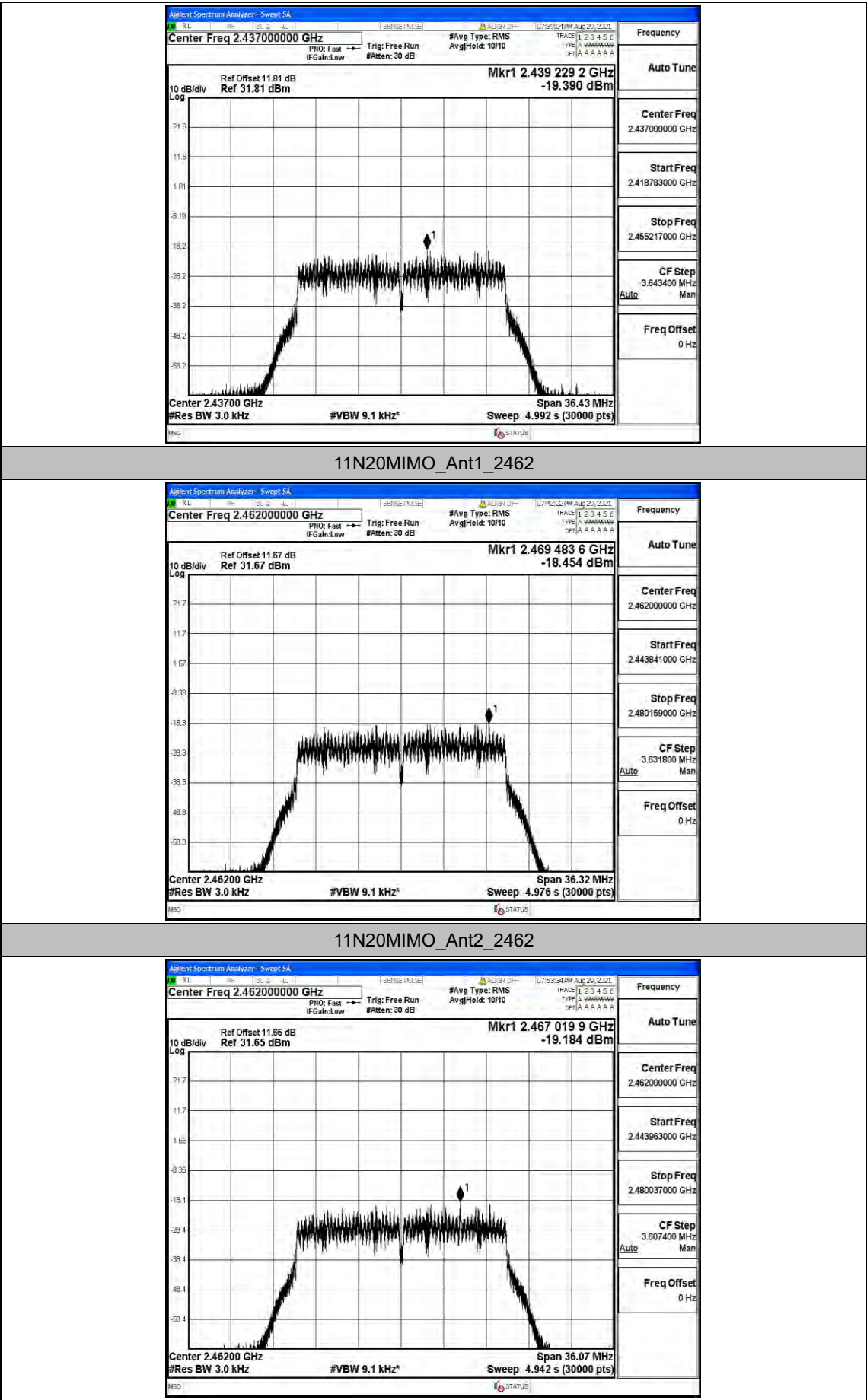










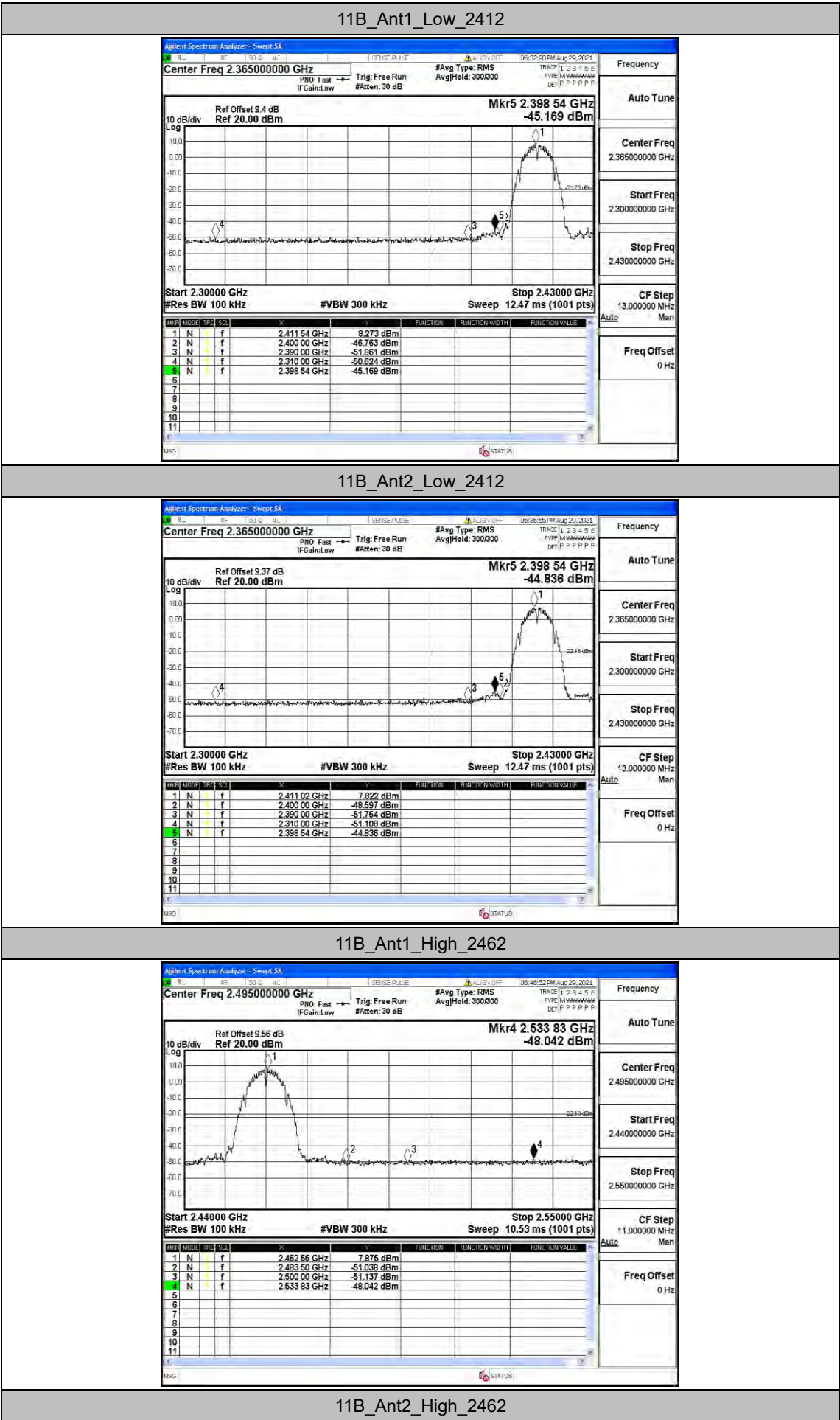


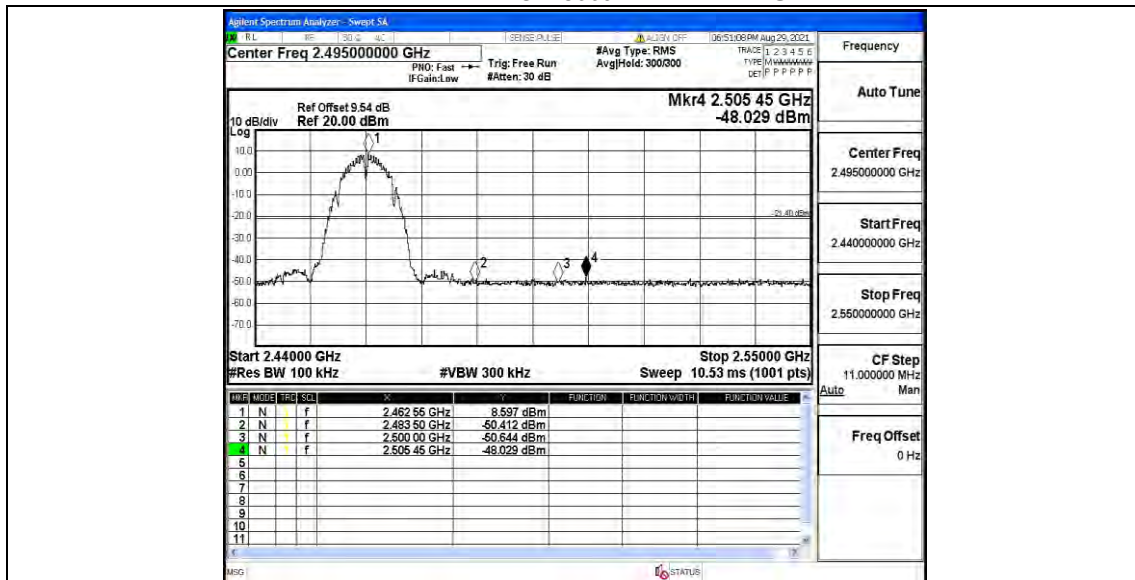
Appendix E: Band edge measurements

Test Result

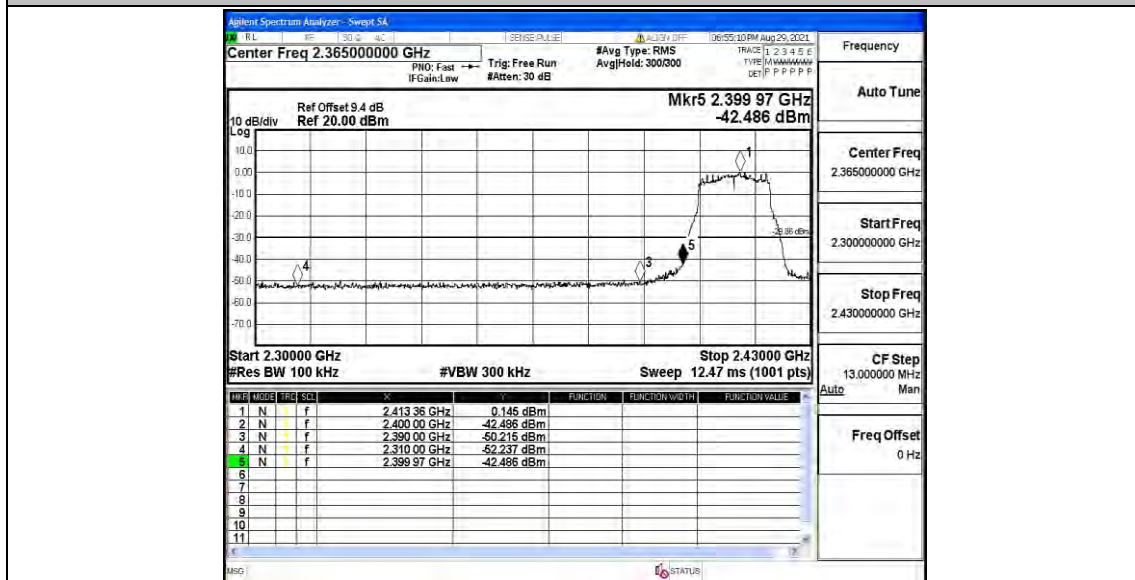
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.27	-45.17	≤ -21.73	PASS
	Ant2	Low	2412	7.82	-44.84	≤ -22.18	PASS
	Ant1	High	2462	7.88	-48.04	≤ -22.13	PASS
	Ant2	High	2462	8.60	-48.03	≤ -21.4	PASS
11G	Ant1	Low	2412	0.15	-42.49	≤ -29.86	PASS
	Ant2	Low	2412	-0.63	-43.64	≤ -30.63	PASS
	Ant1	High	2462	-0.23	-47.93	≤ -30.23	PASS
	Ant2	High	2462	-0.89	-48.93	≤ -30.89	PASS
11N20MIMO	Ant1	Low	2412	-0.04	-43.02	≤ -30.04	PASS
	Ant2	Low	2412	-0.88	-42.37	≤ -30.88	PASS
	Ant1	High	2462	-0.39	-48.26	≤ -30.39	PASS
	Ant2	High	2462	-0.71	-46.88	≤ -30.71	PASS

Test Graphs

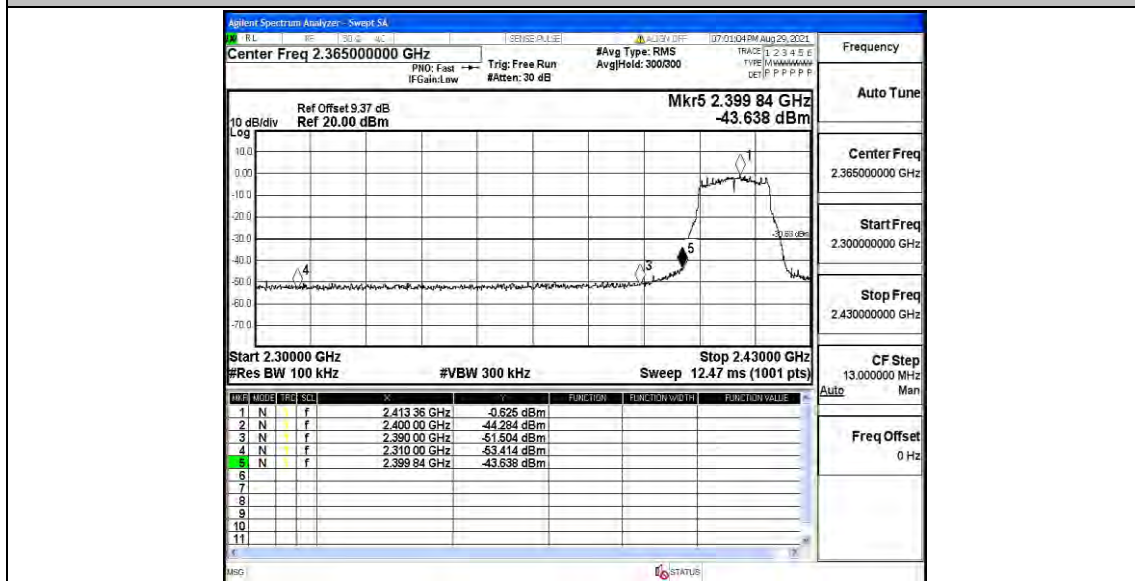




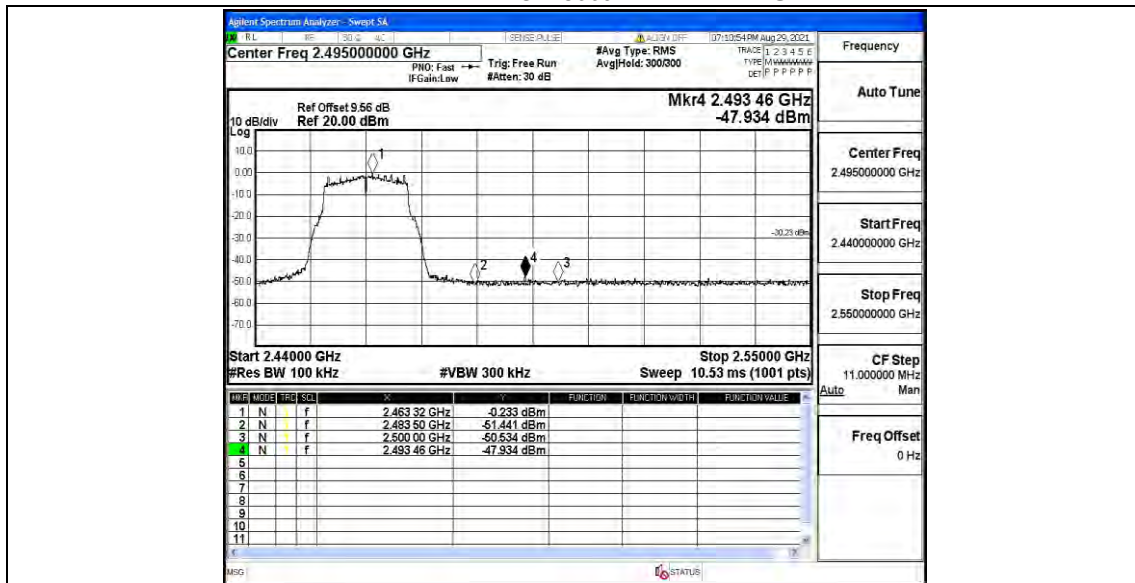
11G_Ant1_Low_2412



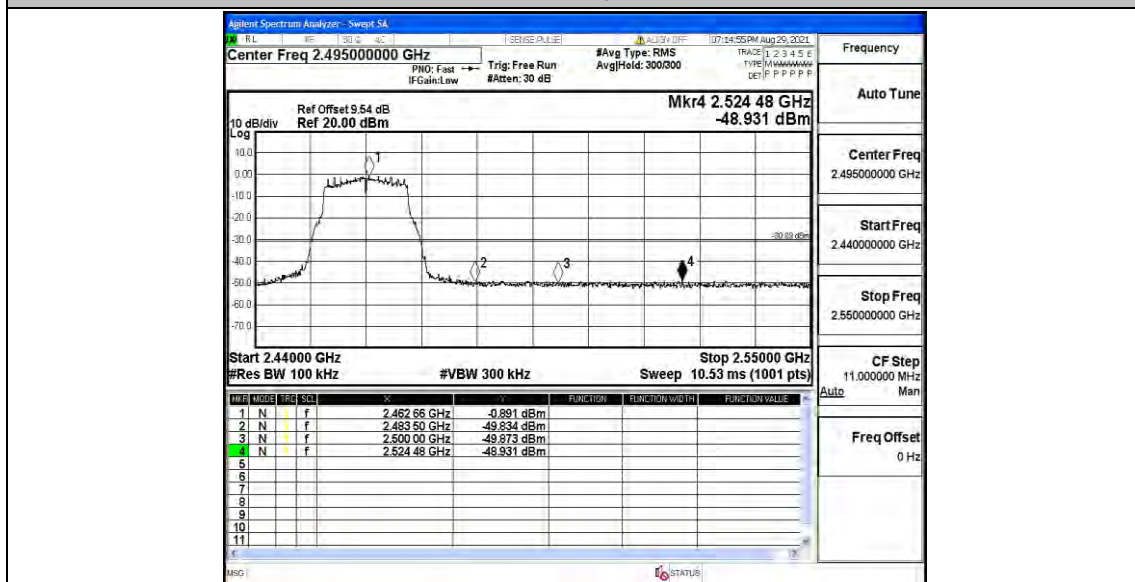
11G_Ant2_Low_2412



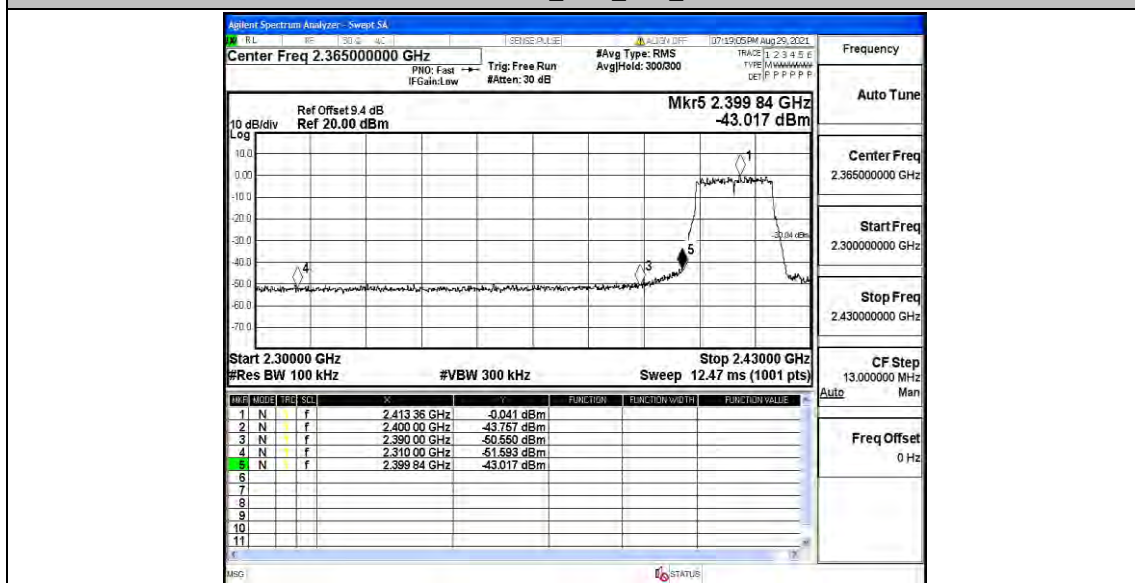
11G_Ant1_High_2462



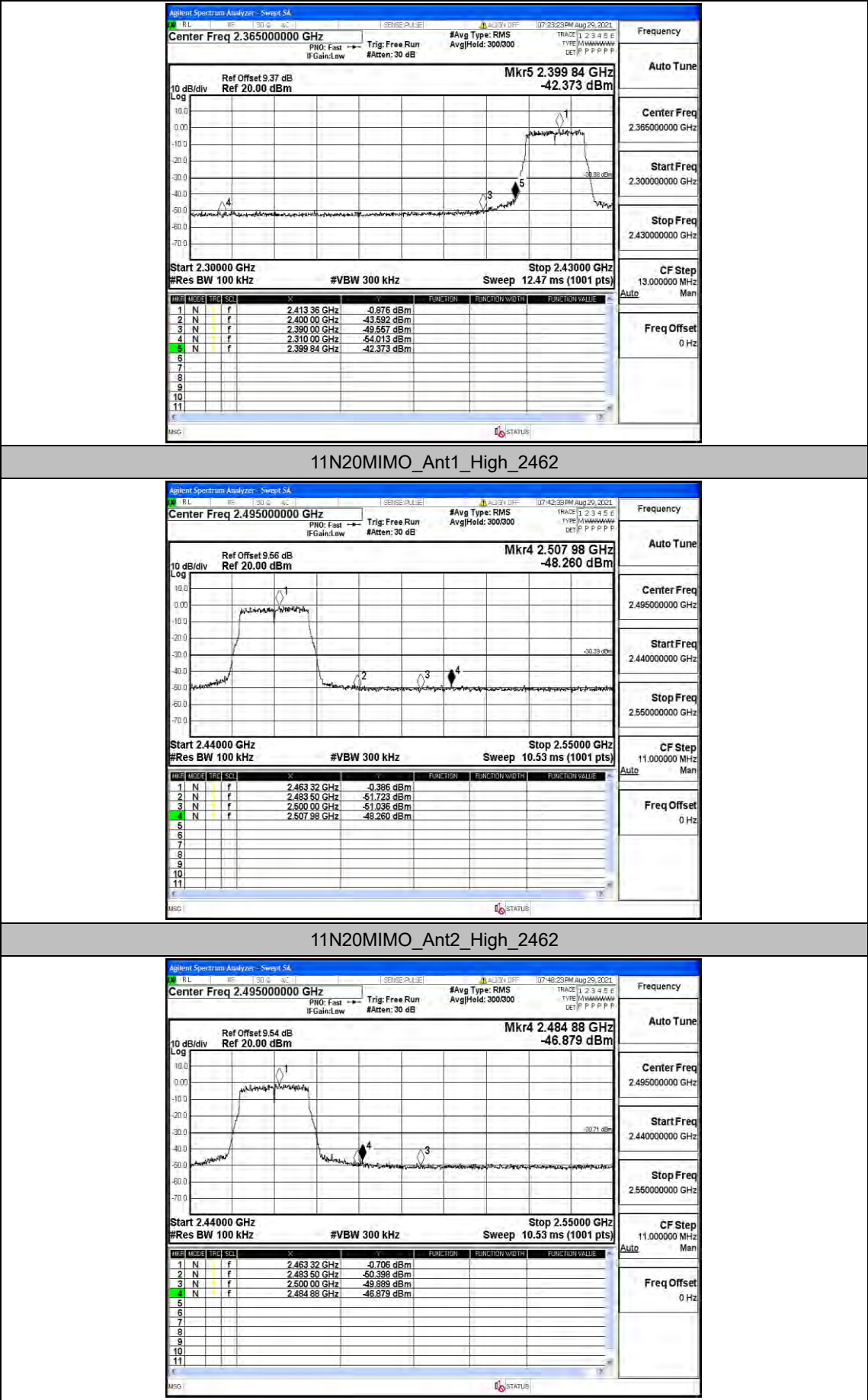
11G_Ant2_High_2462



11N20MIMO_Ant1_Low_2412



11N20MIMO_Ant2_Low_2412



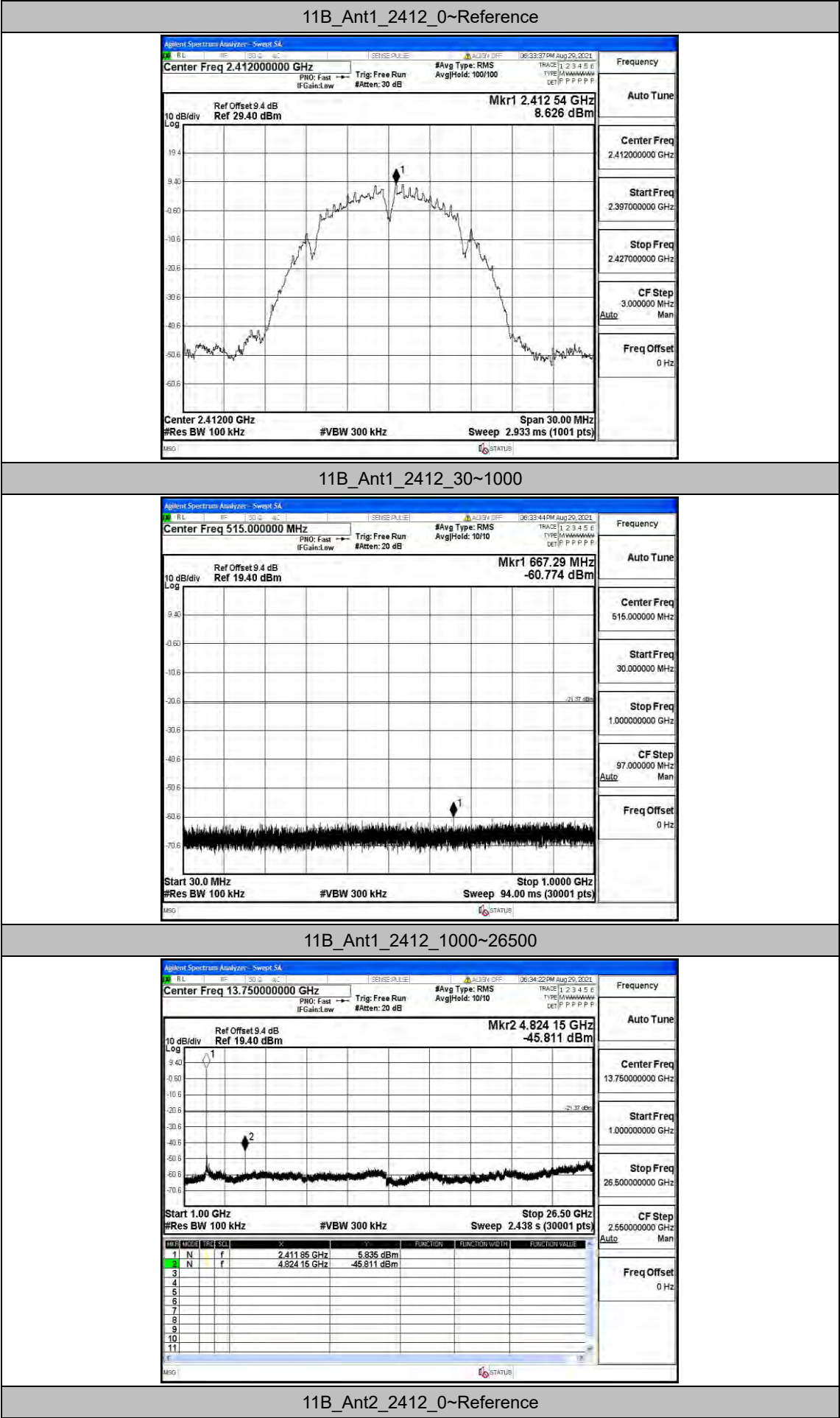
Appendix F: Conducted Spurious Emission

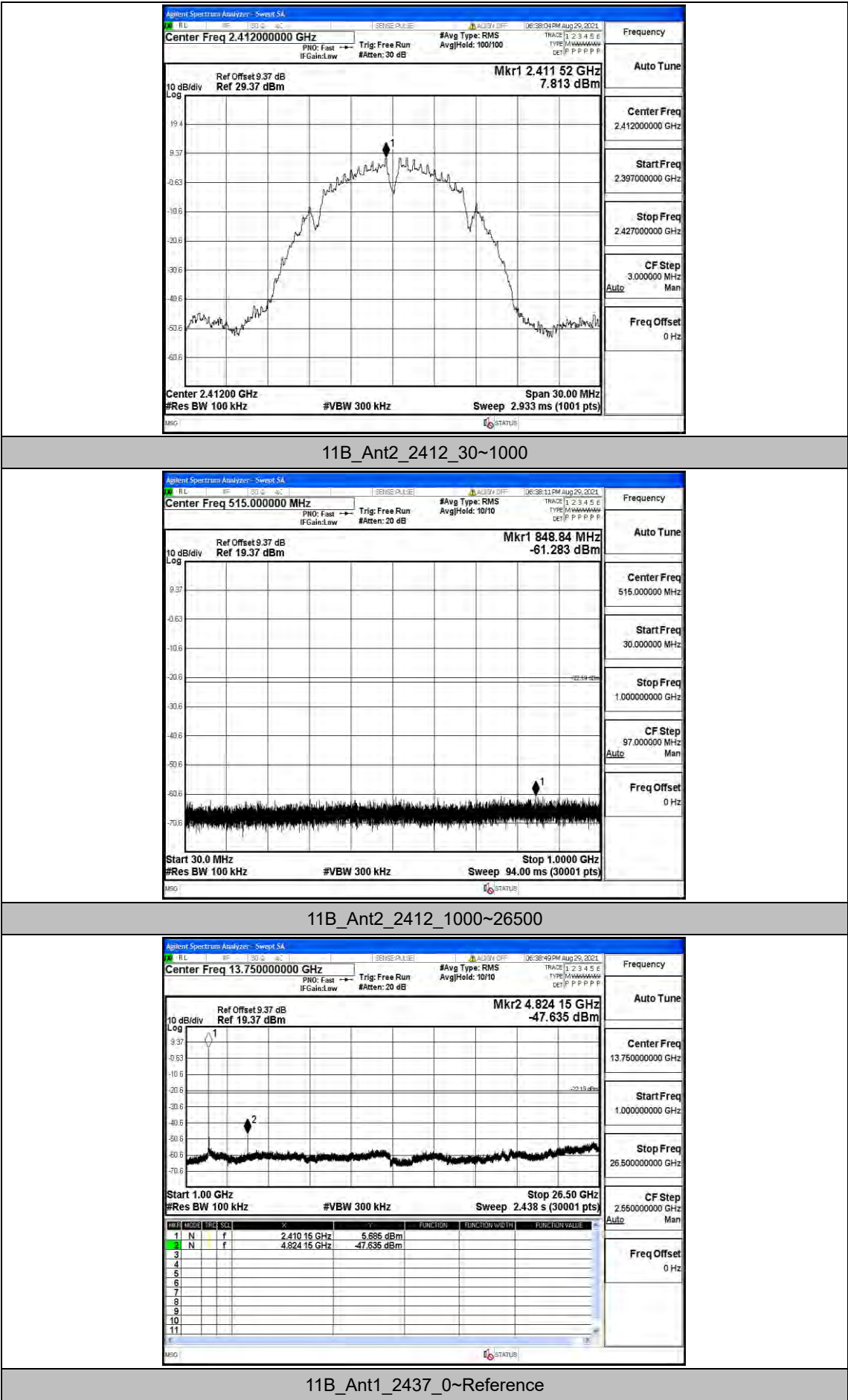
Test Result

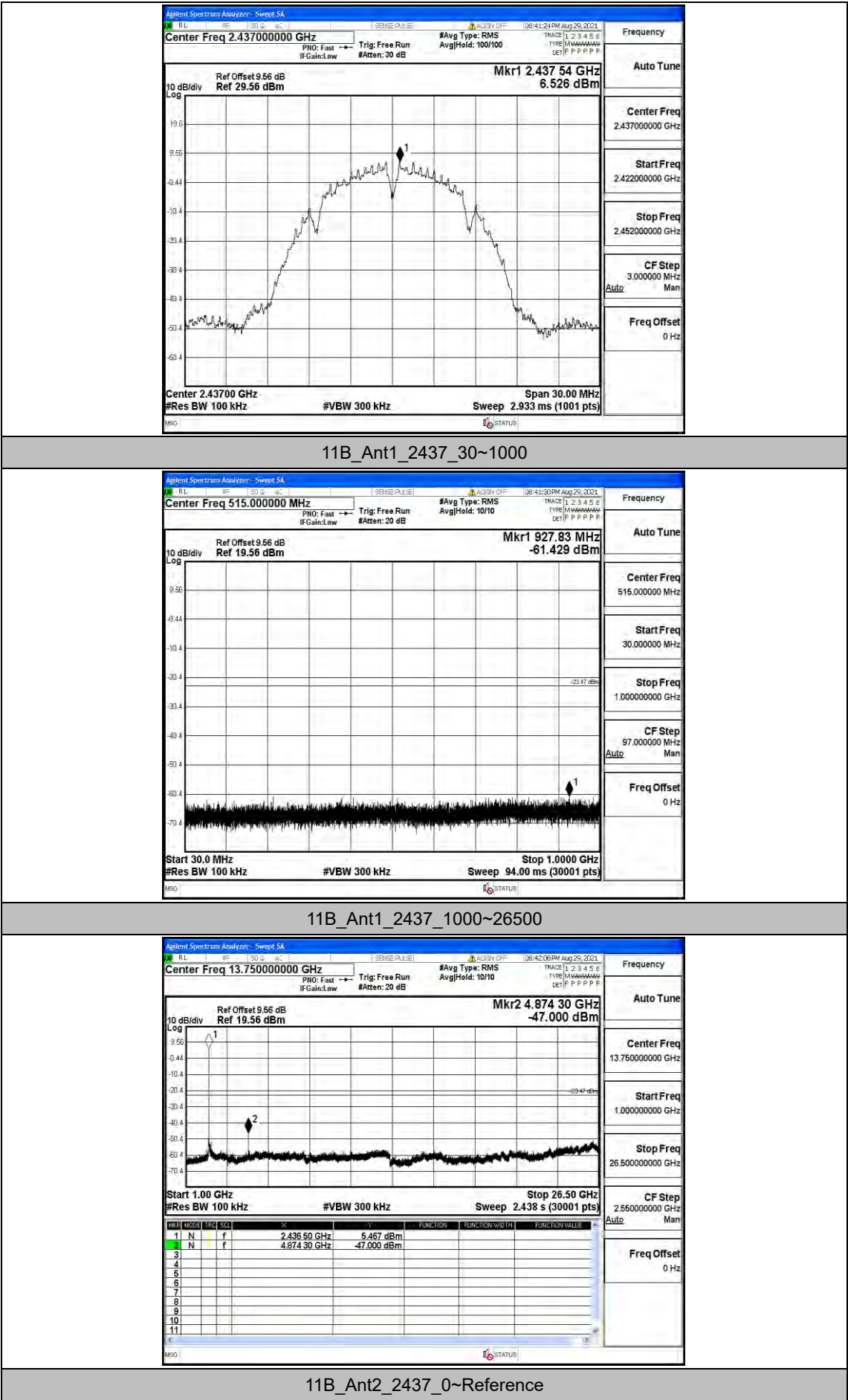
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	8.63	8.63	---	PASS
			30~1000	8.63	-60.77	≤-21.37	PASS
			1000~26500	8.63	-45.81	≤-21.37	PASS
	Ant2	2412	Reference	7.81	7.81	---	PASS
			30~1000	7.81	-61.28	≤-22.19	PASS
			1000~26500	7.81	-47.64	≤-22.19	PASS
	Ant1	2437	Reference	6.53	6.53	---	PASS
			30~1000	6.53	-61.43	≤-23.47	PASS
			1000~26500	6.53	-47	≤-23.47	PASS
	Ant2	2437	Reference	6.63	6.63	---	PASS
			30~1000	6.63	-60.85	≤-23.37	PASS
			1000~26500	6.63	-49.2	≤-23.37	PASS
	Ant1	2462	Reference	7.70	7.70	---	PASS
			30~1000	7.70	-60.66	≤-22.3	PASS
			1000~26500	7.70	-48.42	≤-22.3	PASS
	Ant2	2462	Reference	8.20	8.20	---	PASS
			30~1000	8.20	-60.18	≤-21.8	PASS
			1000~26500	8.20	-49.94	≤-21.8	PASS
11G	Ant1	2412	Reference	-0.32	-0.32	---	PASS
			30~1000	-0.32	-60.6	≤-30.32	PASS
			1000~26500	-0.32	-51.16	≤-30.32	PASS
	Ant2	2412	Reference	-1.37	-1.37	---	PASS
			30~1000	-1.37	-60.37	≤-31.37	PASS
			1000~26500	-1.37	-52.49	≤-31.37	PASS
	Ant1	2437	Reference	-1.72	-1.72	---	PASS
			30~1000	-1.72	-60.62	≤-31.72	PASS
			1000~26500	-1.72	-50.76	≤-31.72	PASS
	Ant2	2437	Reference	-1.64	-1.64	---	PASS
			30~1000	-1.64	-60.96	≤-31.64	PASS
			1000~26500	-1.64	-51.73	≤-31.64	PASS
	Ant1	2462	Reference	-0.27	-0.27	---	PASS
			30~1000	-0.27	-60.08	≤-30.27	PASS
			1000~26500	-0.27	-52	≤-30.27	PASS
	Ant2	2462	Reference	-0.86	-0.86	---	PASS
			30~1000	-0.86	-60.83	≤-30.86	PASS
			1000~26500	-0.86	-52.02	≤-30.86	PASS
11N20MIMO	Ant1	2412	Reference	-0.11	-0.11	---	PASS
			30~1000	-0.11	-61.12	≤-30.11	PASS
			1000~26500	-0.11	-51.11	≤-30.11	PASS
	Ant2	2412	Reference	-0.94	-0.94	---	PASS
			30~1000	-0.94	-61.3	≤-30.94	PASS

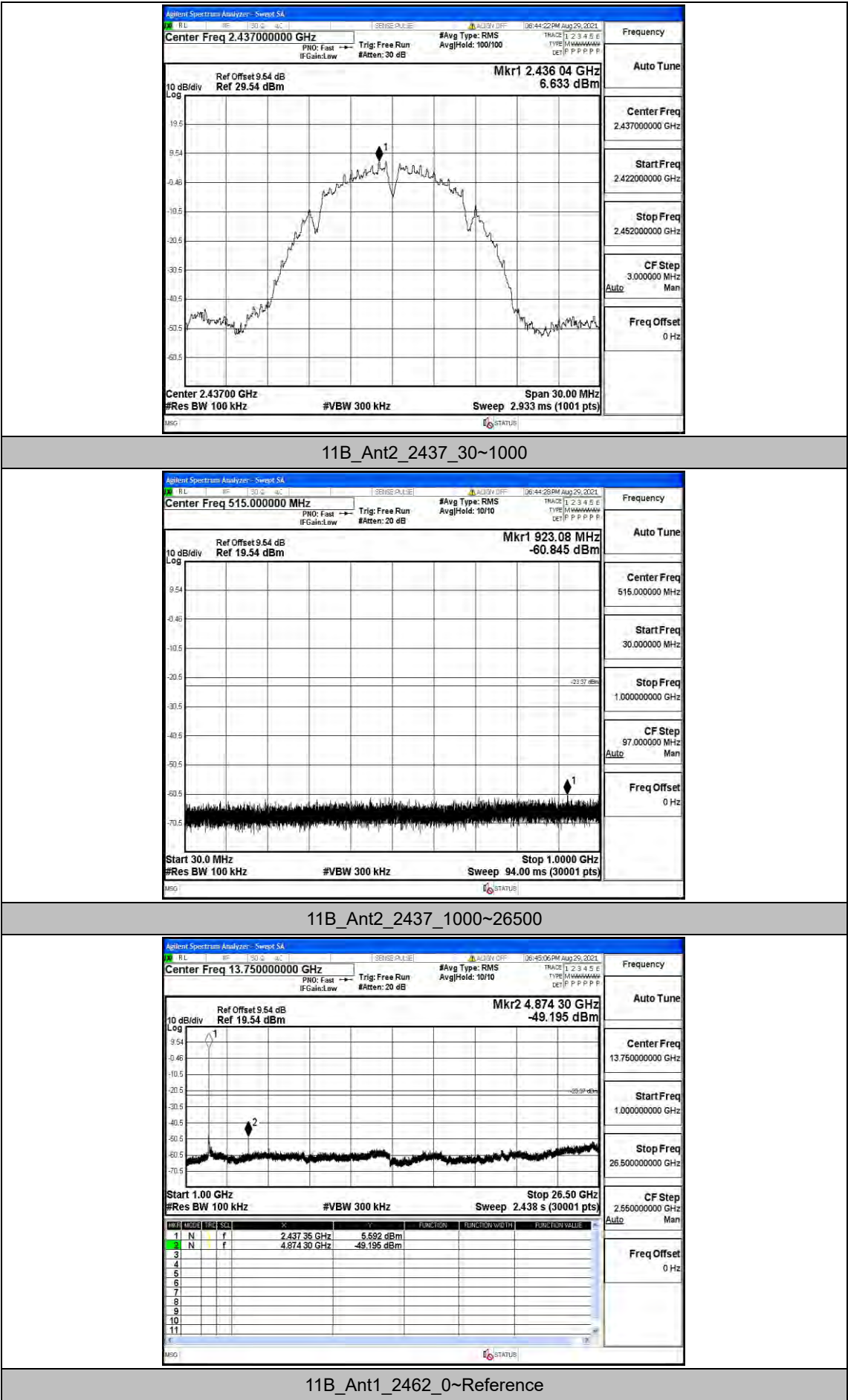
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
			1000~26500	-0.94	-51.77	≤-30.94	PASS
	Ant1	2437	Reference	-1.49	-1.49	---	PASS
			30~1000	-1.49	-60.63	≤-31.49	PASS
			1000~26500	-1.49	-52.08	≤-31.49	PASS
	Ant2	2437	Reference	-2.07	-2.07	---	PASS
			30~1000	-2.07	-60.37	≤-32.07	PASS
			1000~26500	-2.07	-51.1	≤-32.07	PASS
	Ant1	2462	Reference	-0.66	-0.66	---	PASS
			30~1000	-0.66	-60.76	≤-30.66	PASS
			1000~26500	-0.66	-50.69	≤-30.66	PASS
	Ant2	2462	Reference	-1.04	-1.04	---	PASS
			30~1000	-1.04	-60.69	≤-31.04	PASS
			1000~26500	-1.04	-52.16	≤-31.04	PASS

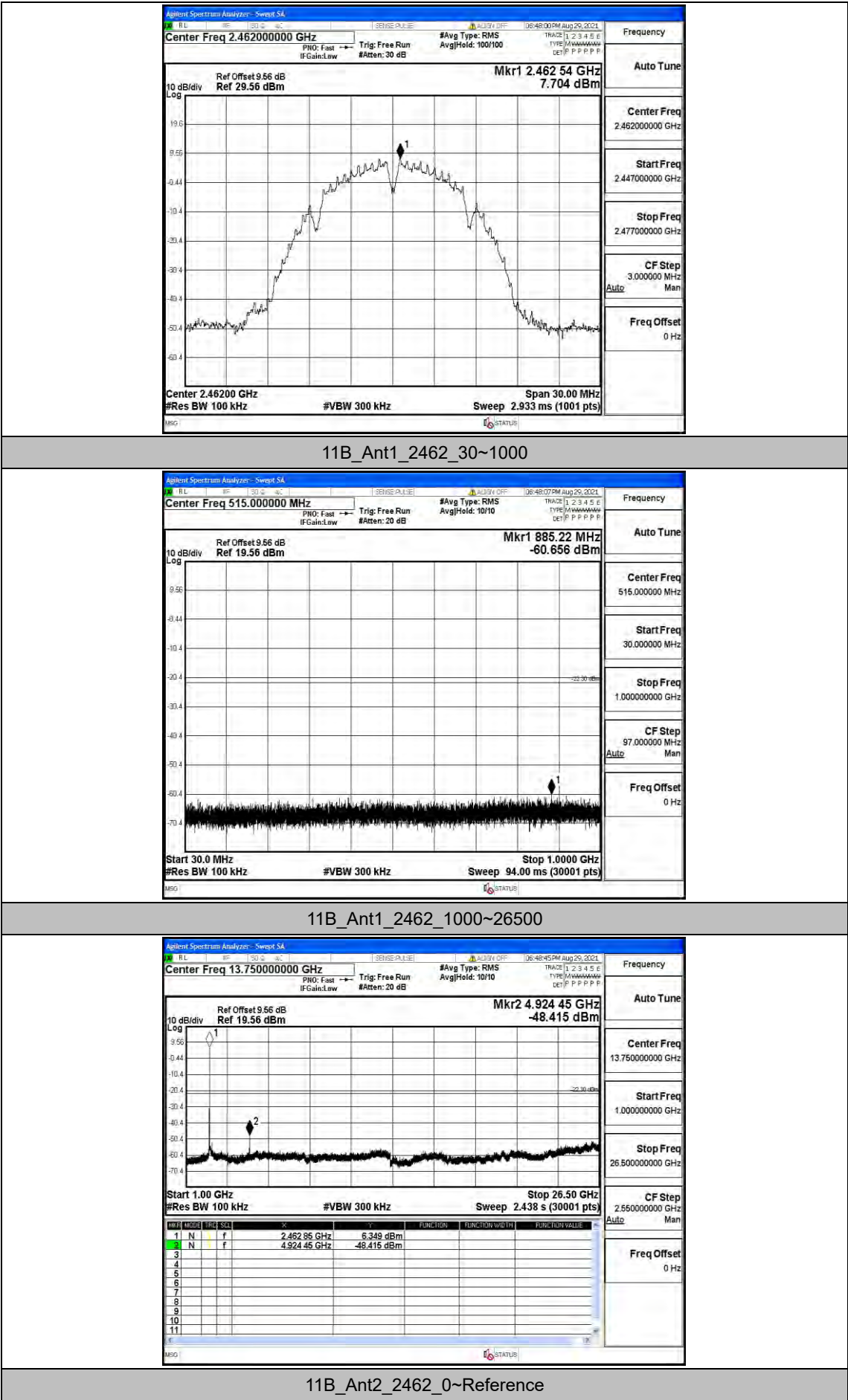
Test Graphs

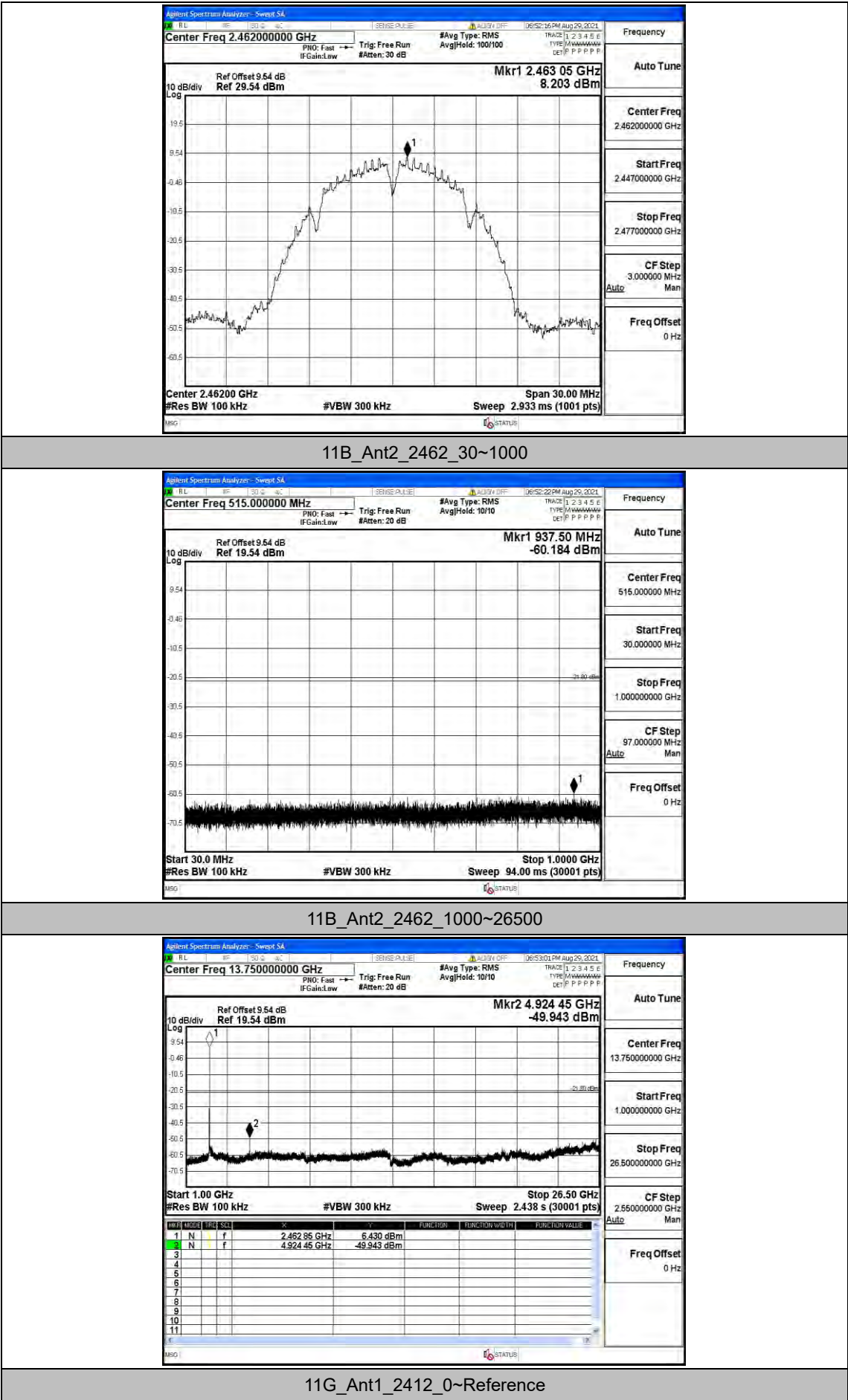


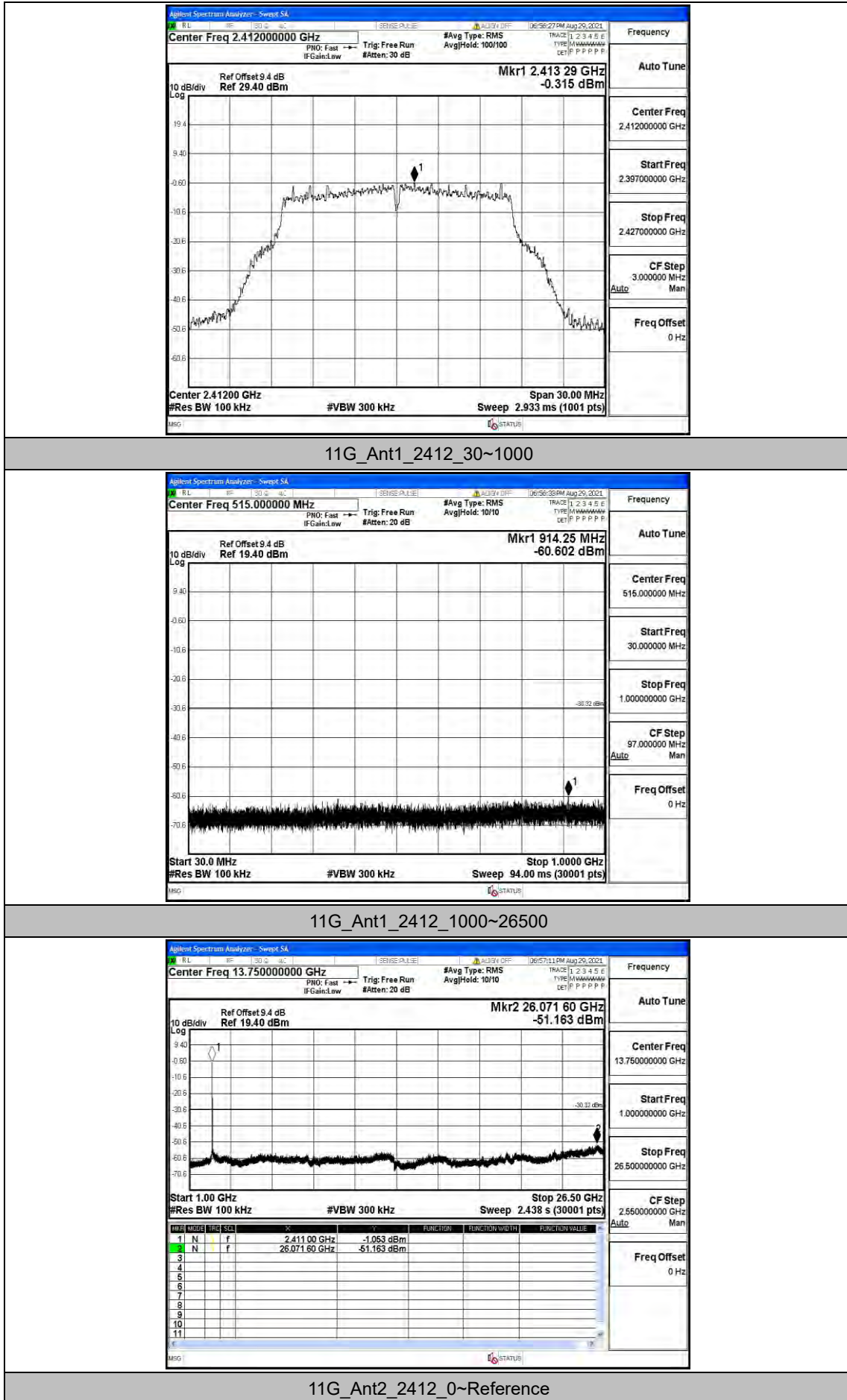


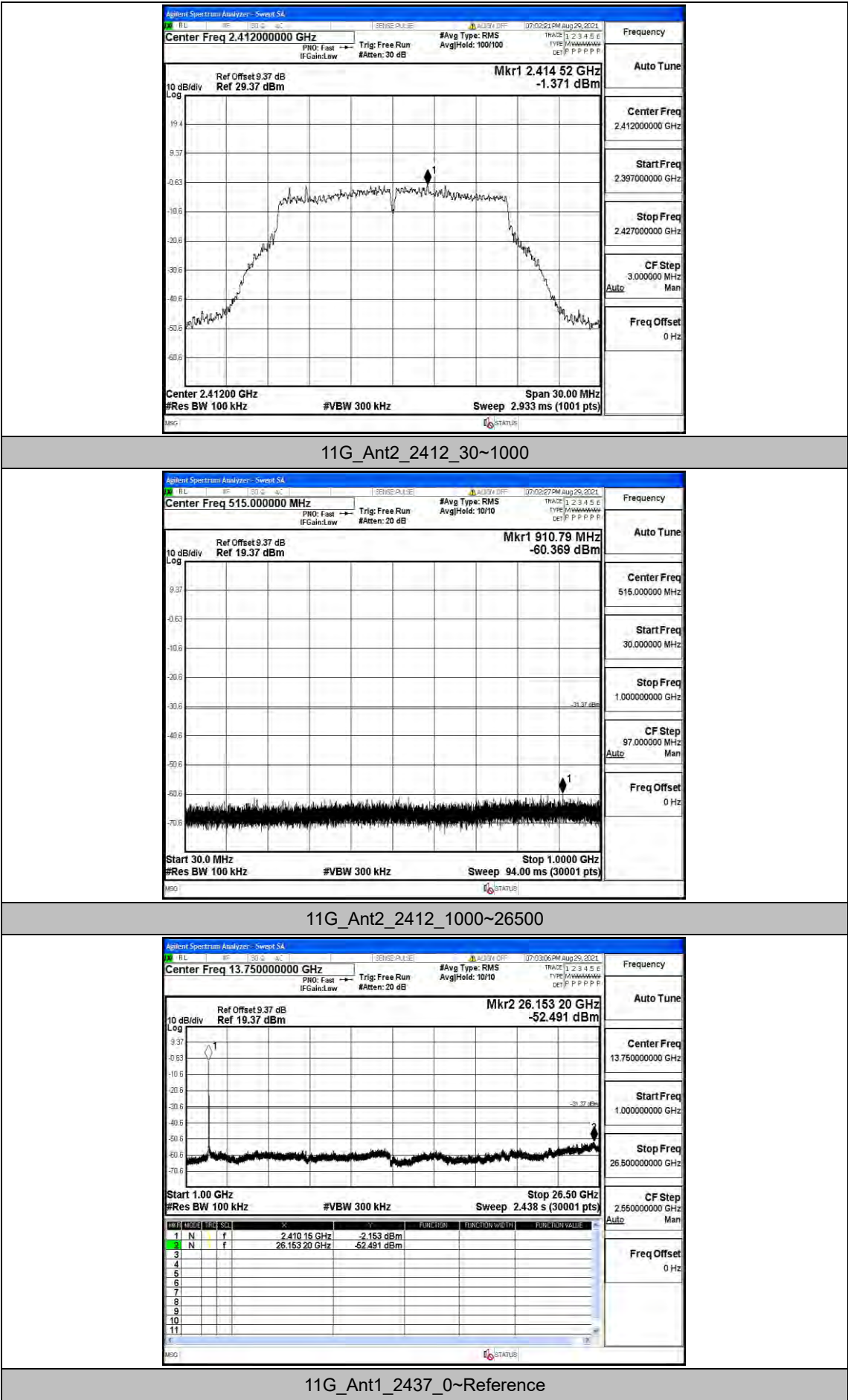


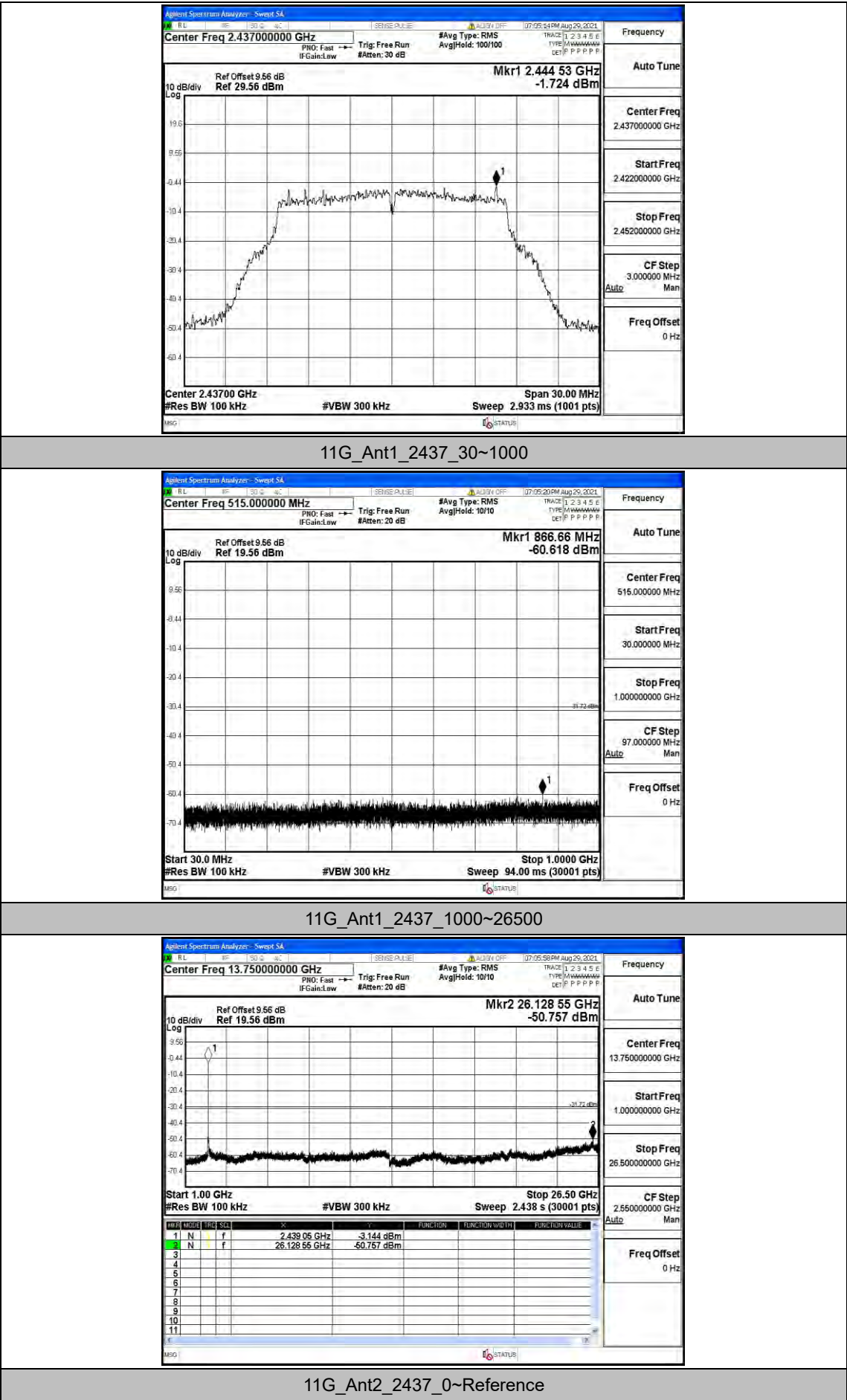


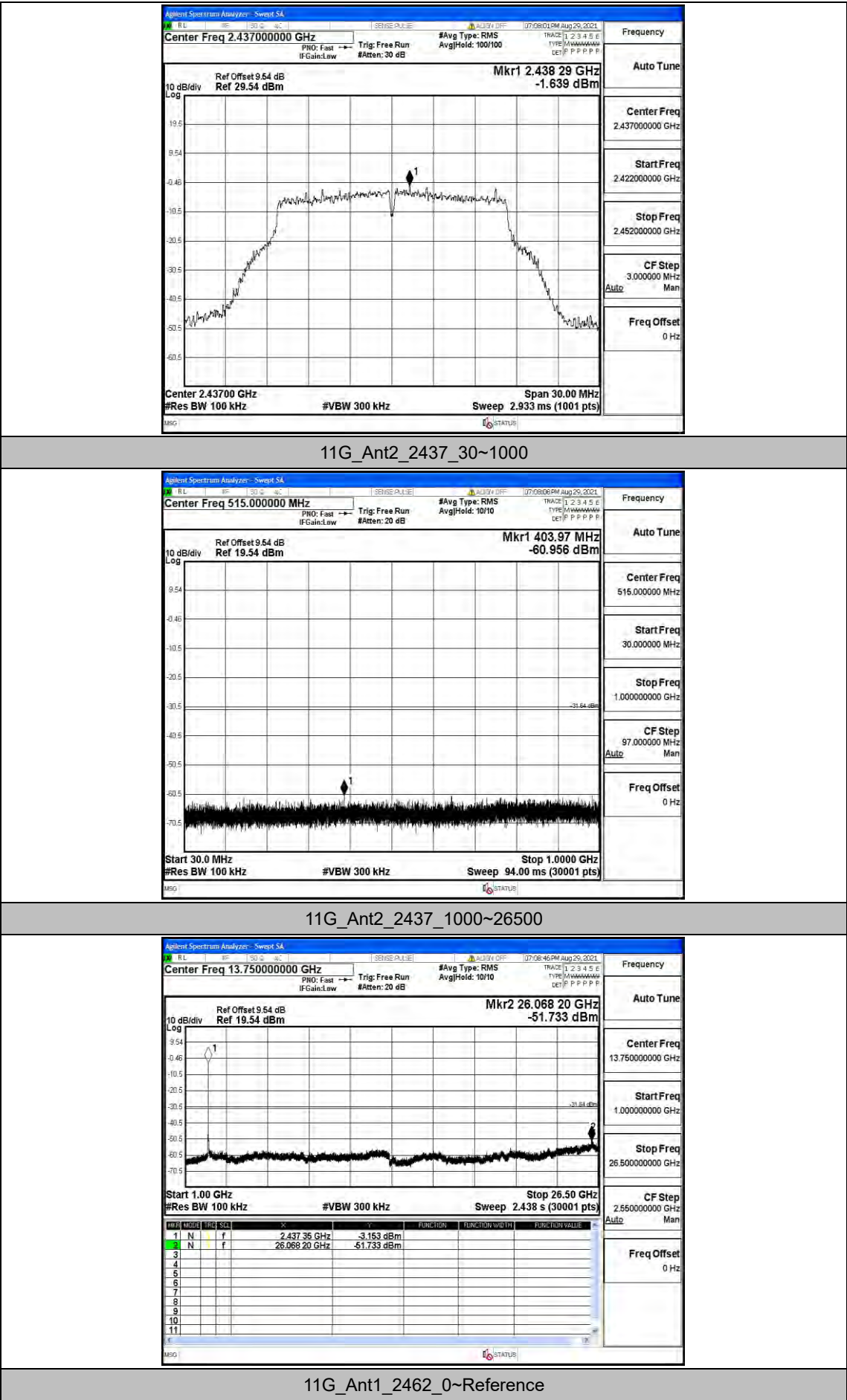


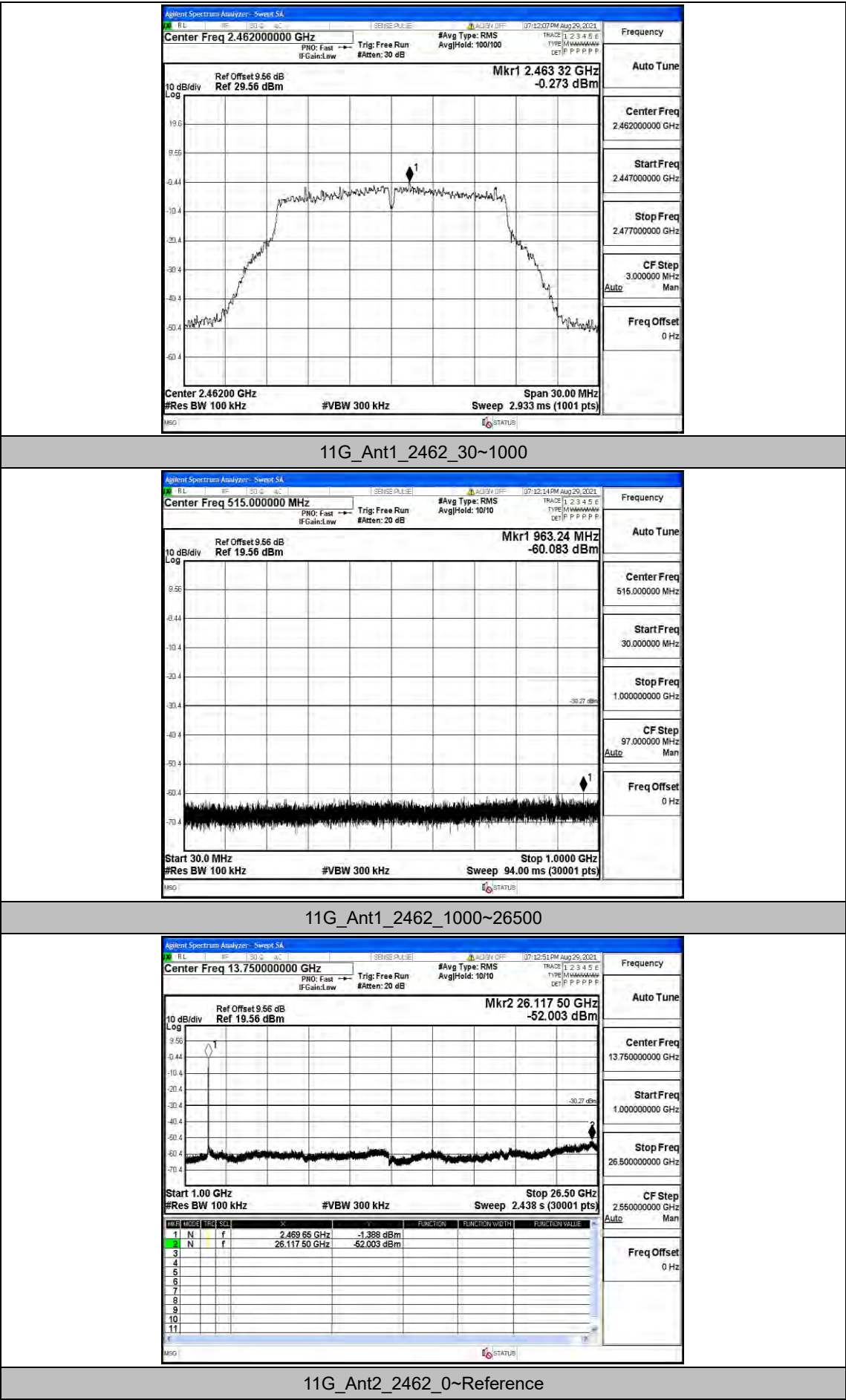


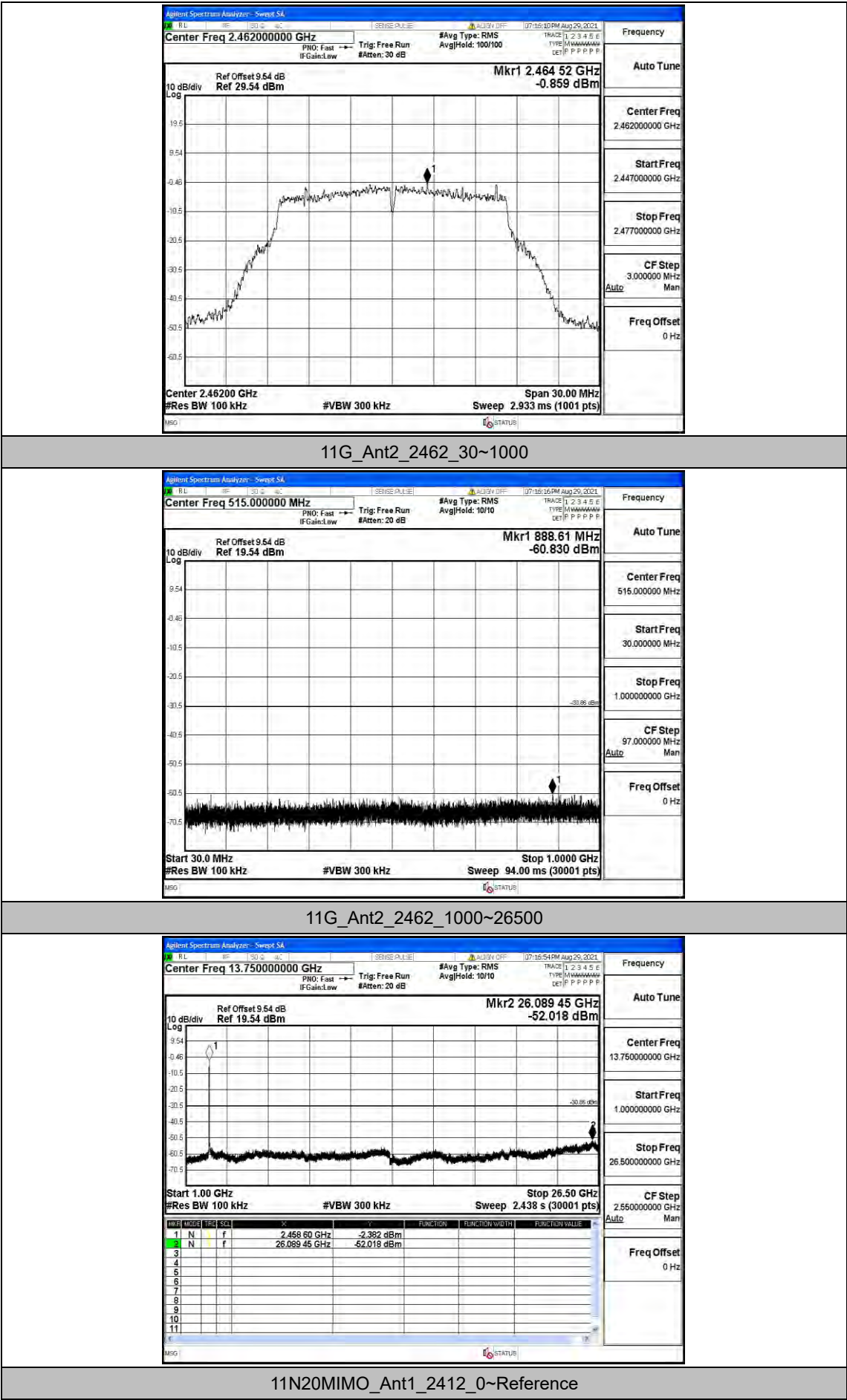


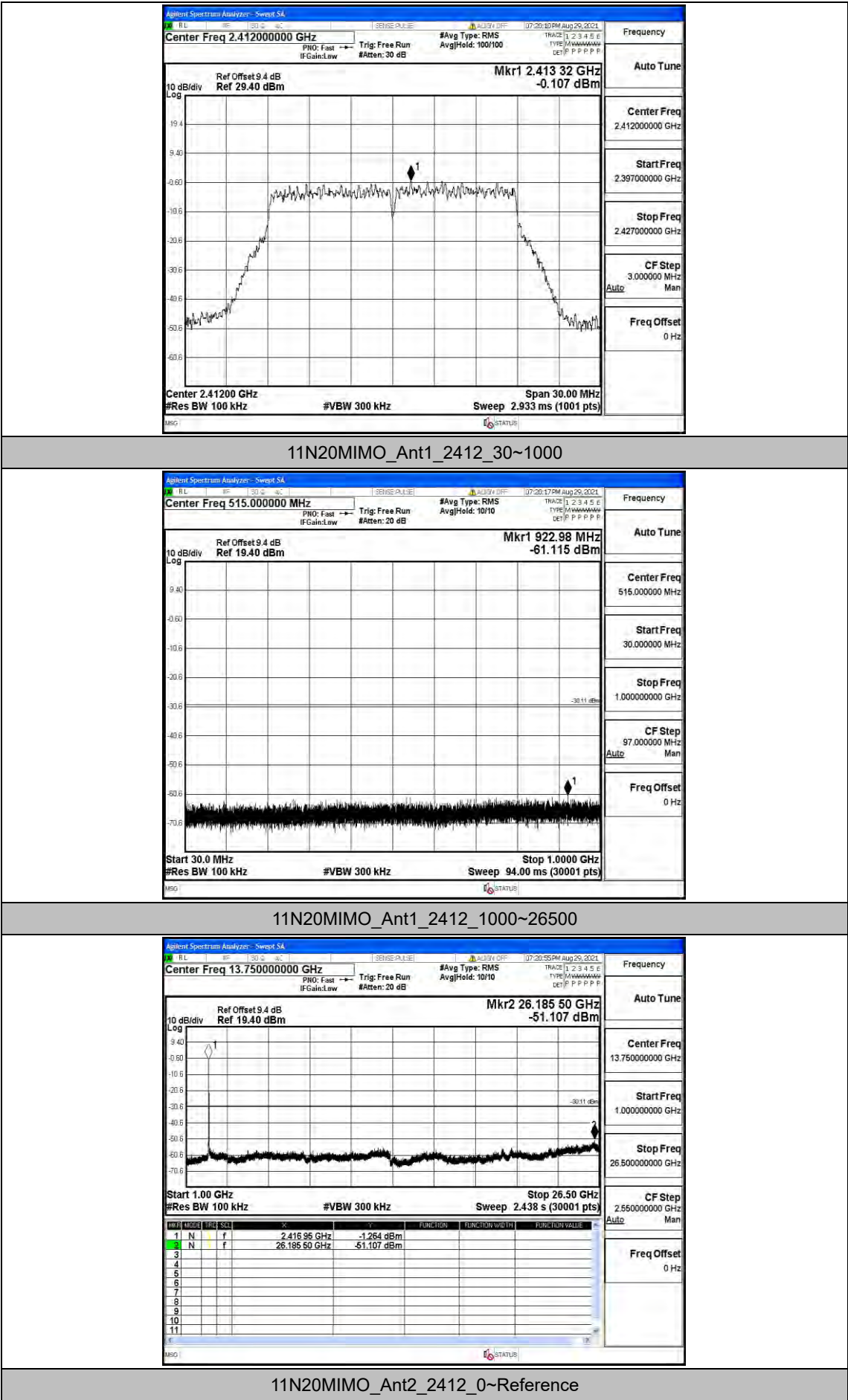


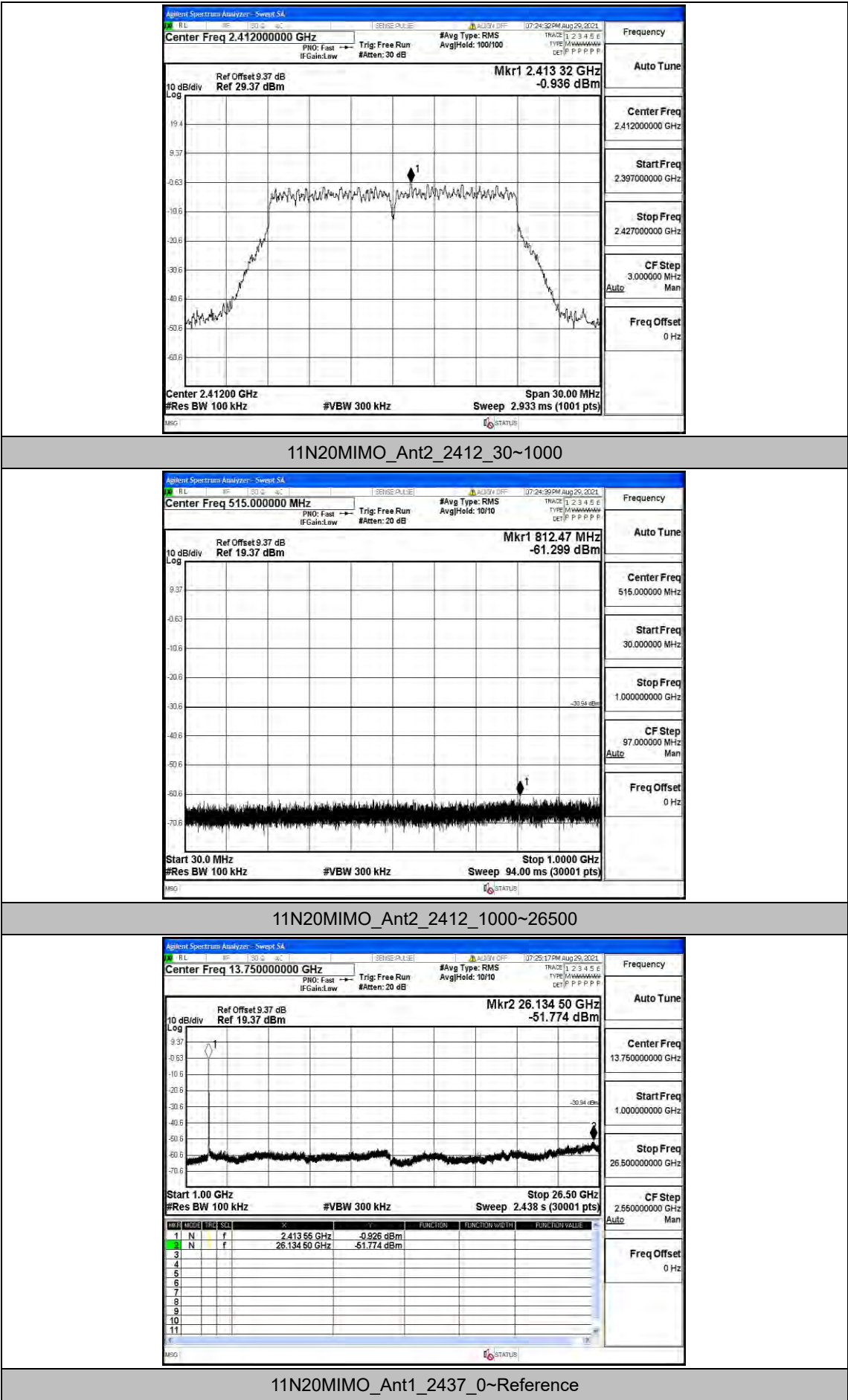


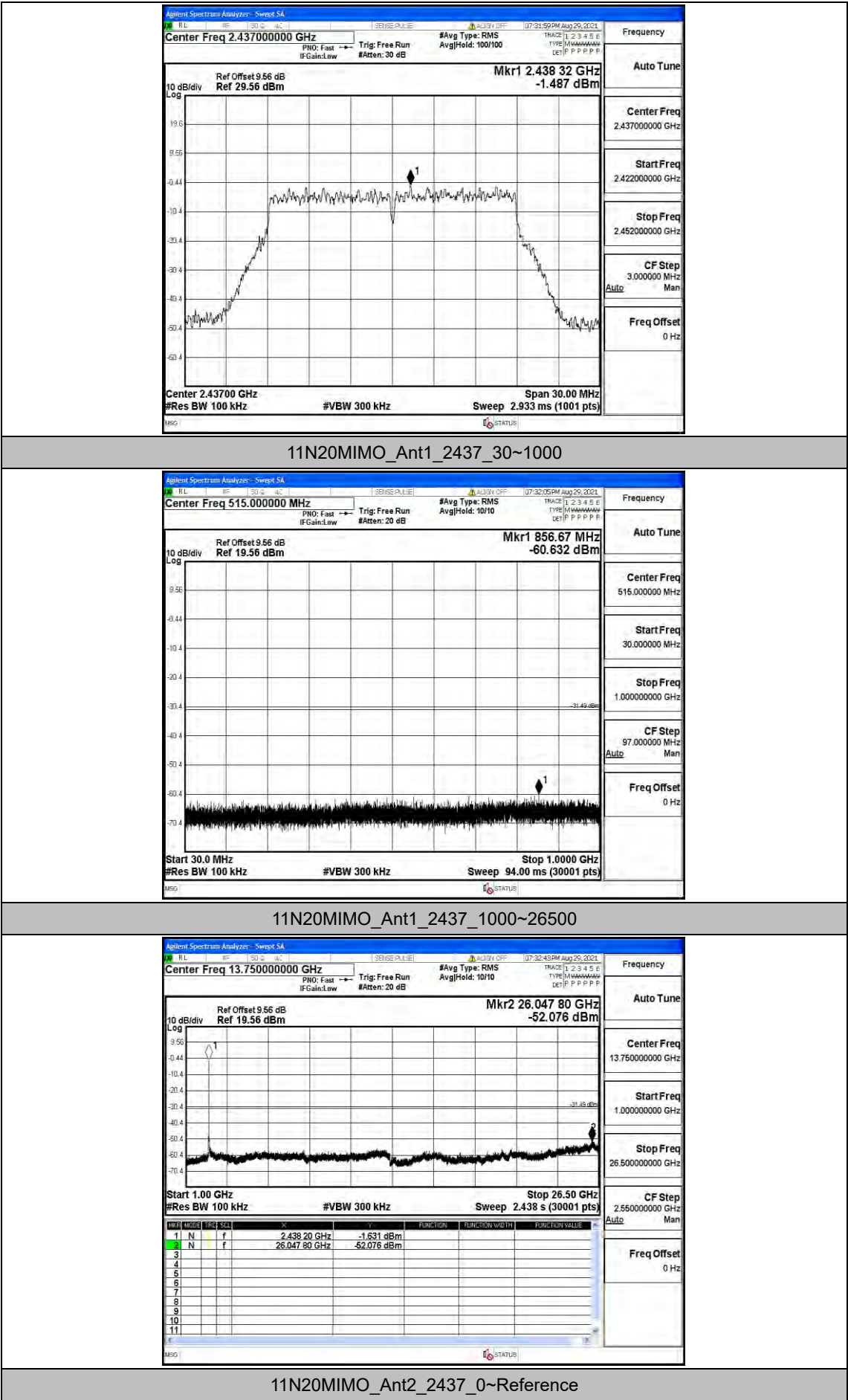


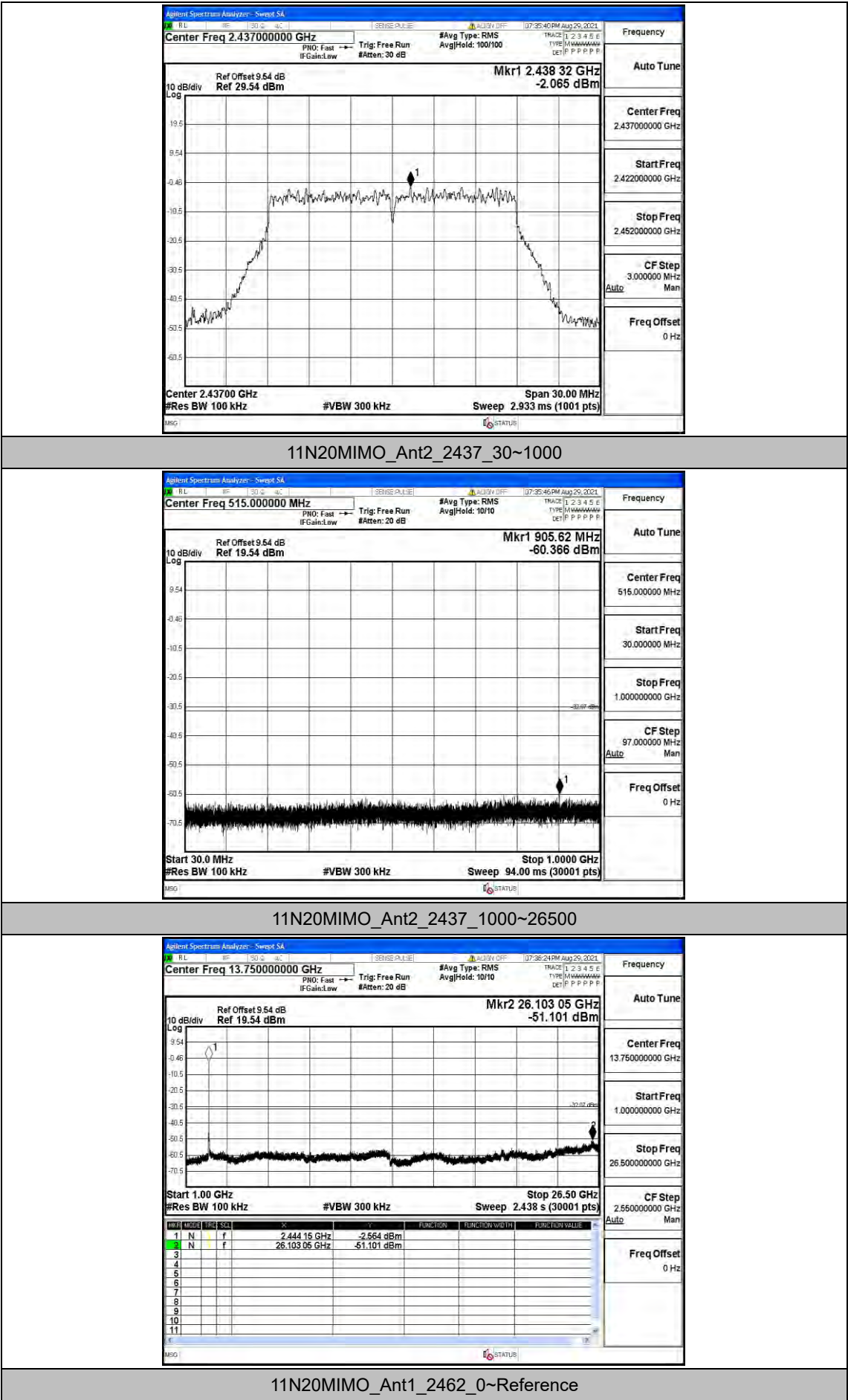


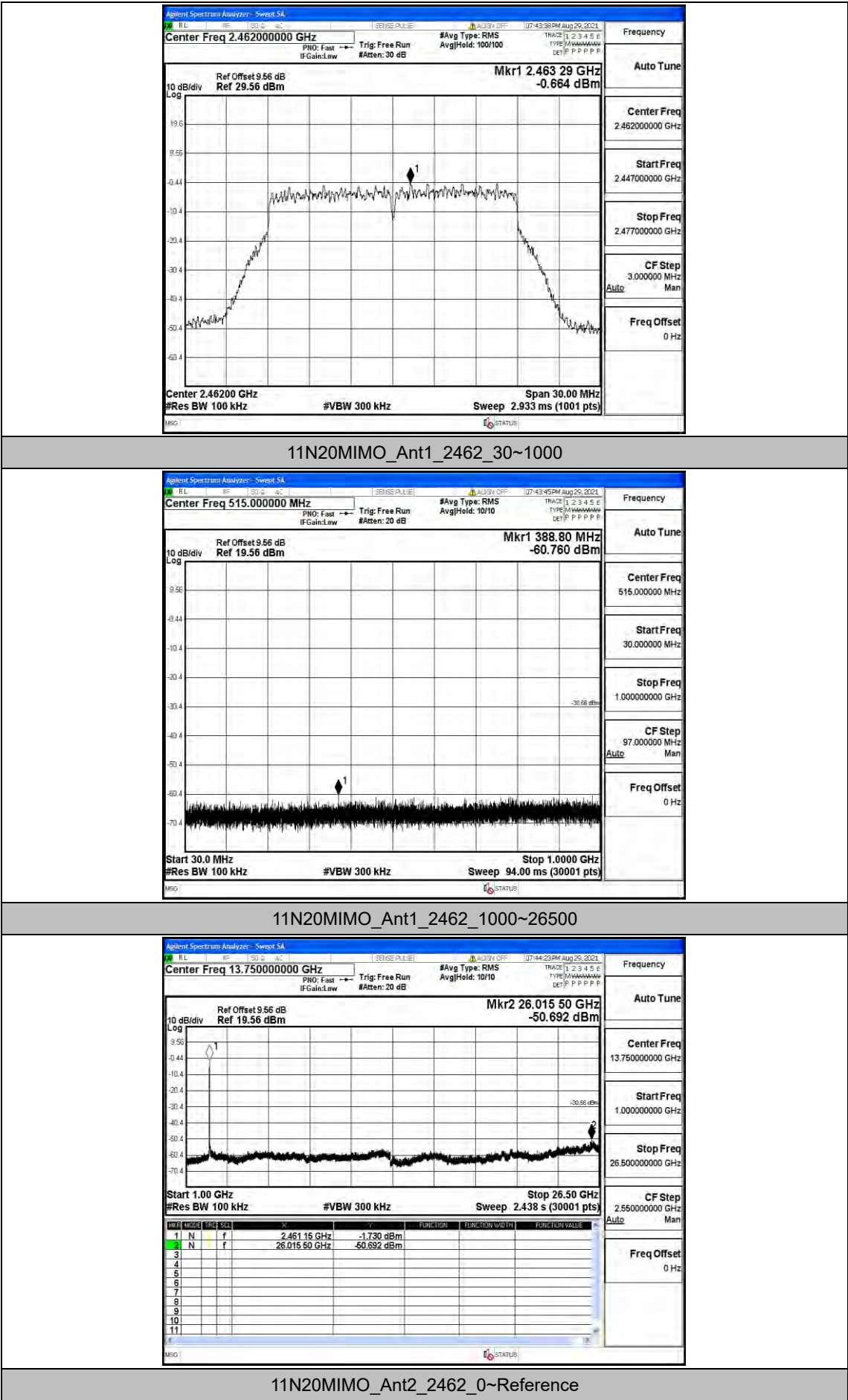


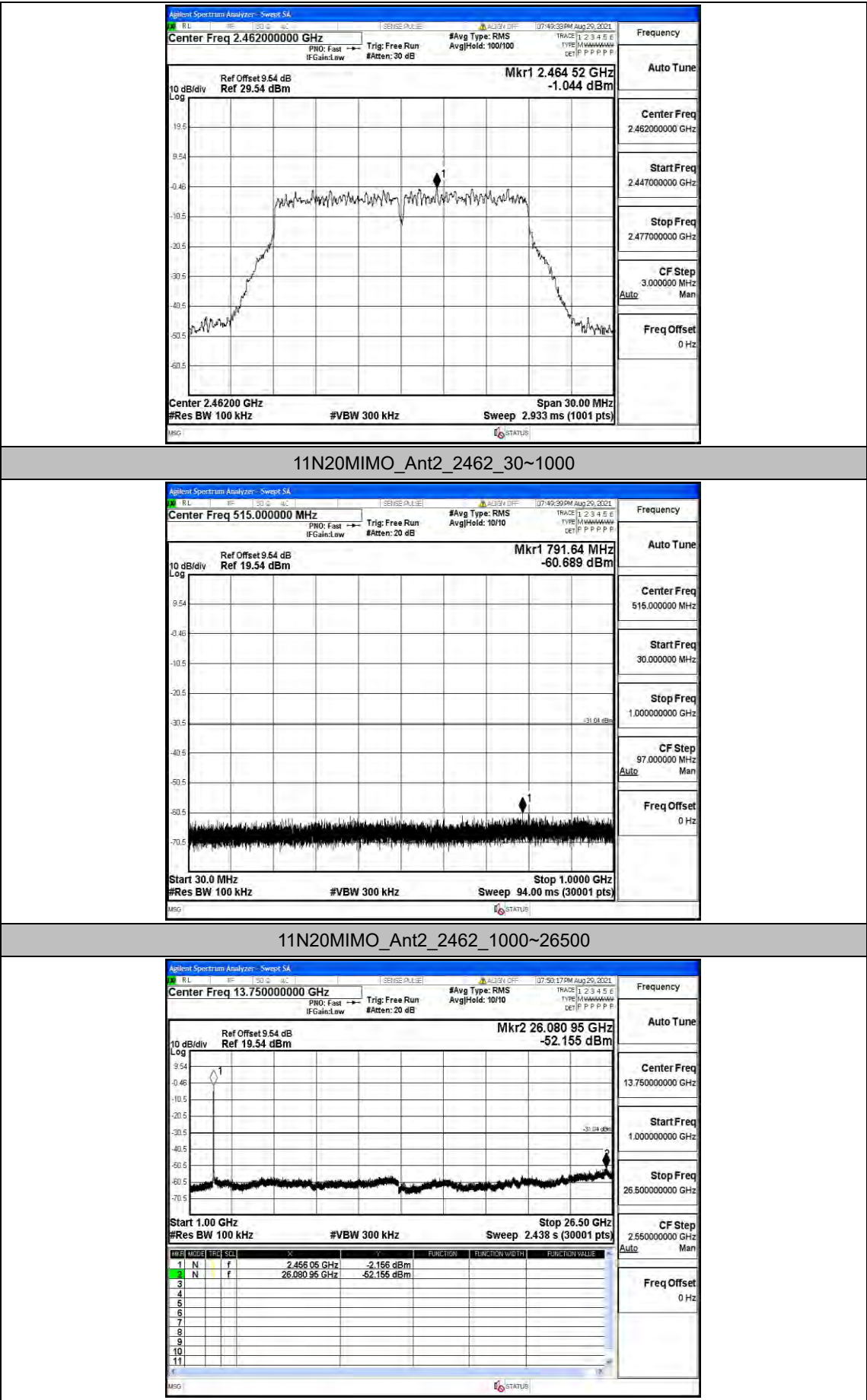










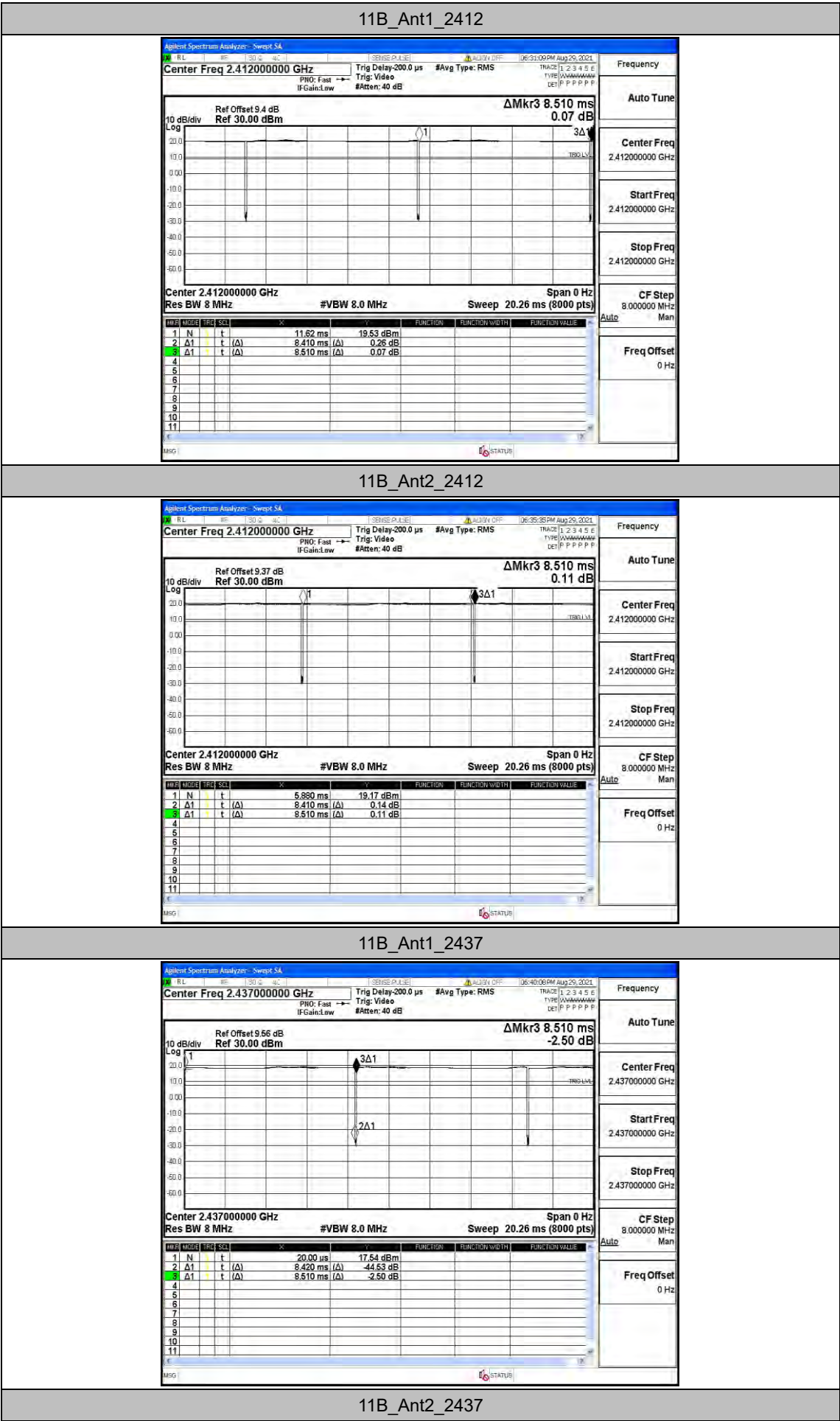


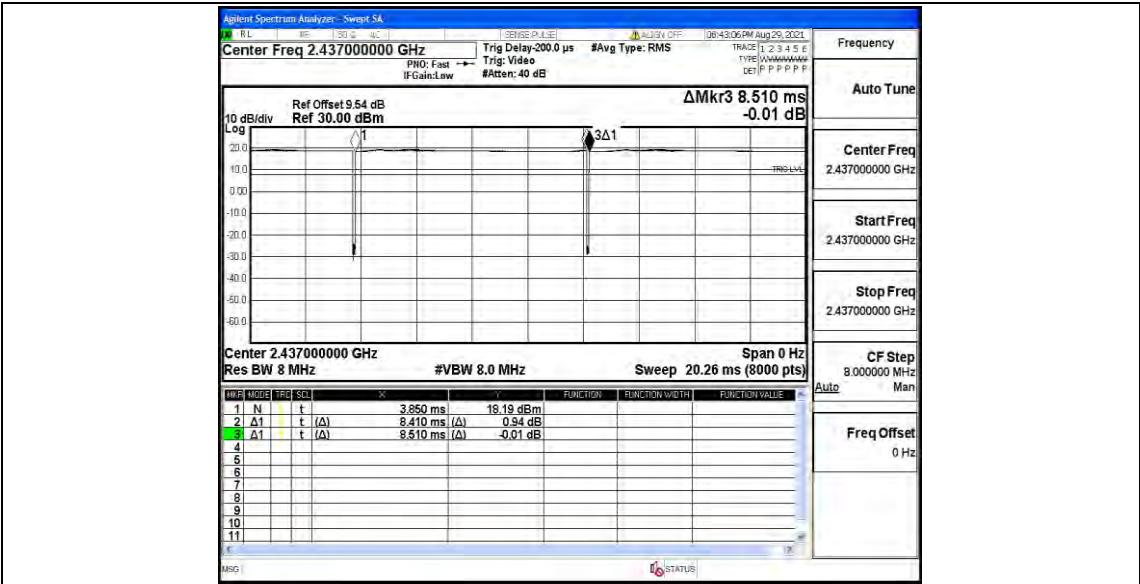
Appendix G: Duty Cycle

Test Result

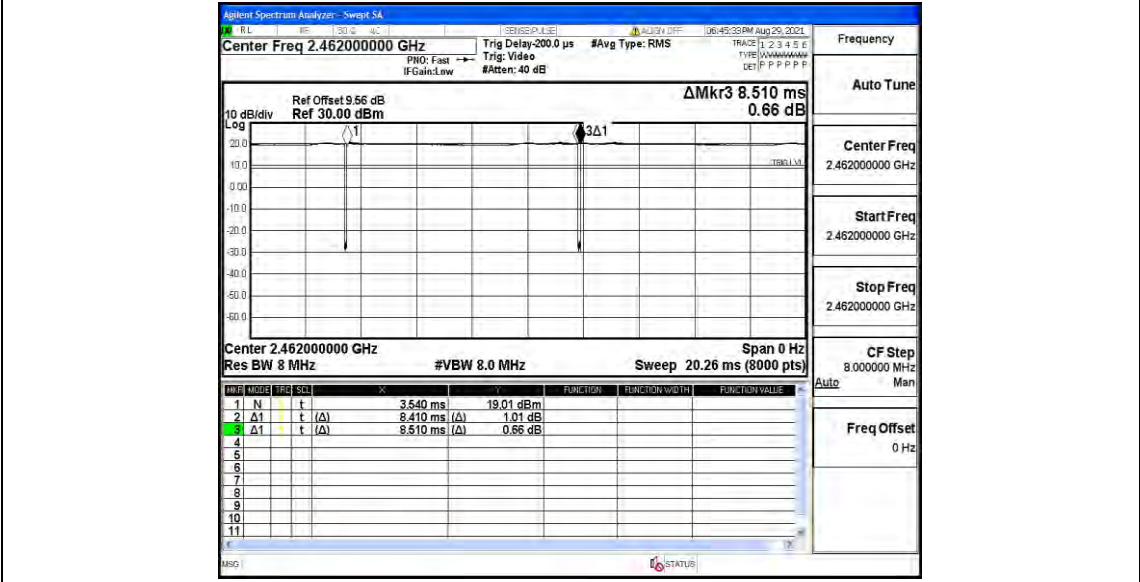
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/B (KHz)
11B	Ant1	2412	8.41	8.51	98.82	0.1
	Ant2	2412	8.41	8.51	98.82	0.1
	Ant1	2437	8.42	8.51	98.94	0.1
	Ant2	2437	8.41	8.51	98.82	0.1
	Ant1	2462	8.41	8.51	98.82	0.1
	Ant2	2462	8.42	8.51	98.94	0.1
11G	Ant1	2412	1.40	1.50	93.33	0.7
	Ant2	2412	1.40	1.50	93.33	0.7
	Ant1	2437	1.39	1.49	93.29	0.7
	Ant2	2437	1.39	1.50	92.67	0.7
	Ant1	2462	1.39	1.49	93.29	0.7
	Ant2	2462	1.40	1.50	93.33	0.7
11N20MIMO	Ant1	2412	0.17	0.27	62.96	5.9
	Ant2	2412	0.16	0.26	61.54	6.3
	Ant1	2437	0.17	0.27	62.96	5.9
	Ant2	2437	0.16	0.27	59.26	6.3
	Ant1	2462	0.16	0.26	61.54	6.3
	Ant2	2462	0.16	0.26	61.54	6.3

Test Graphs

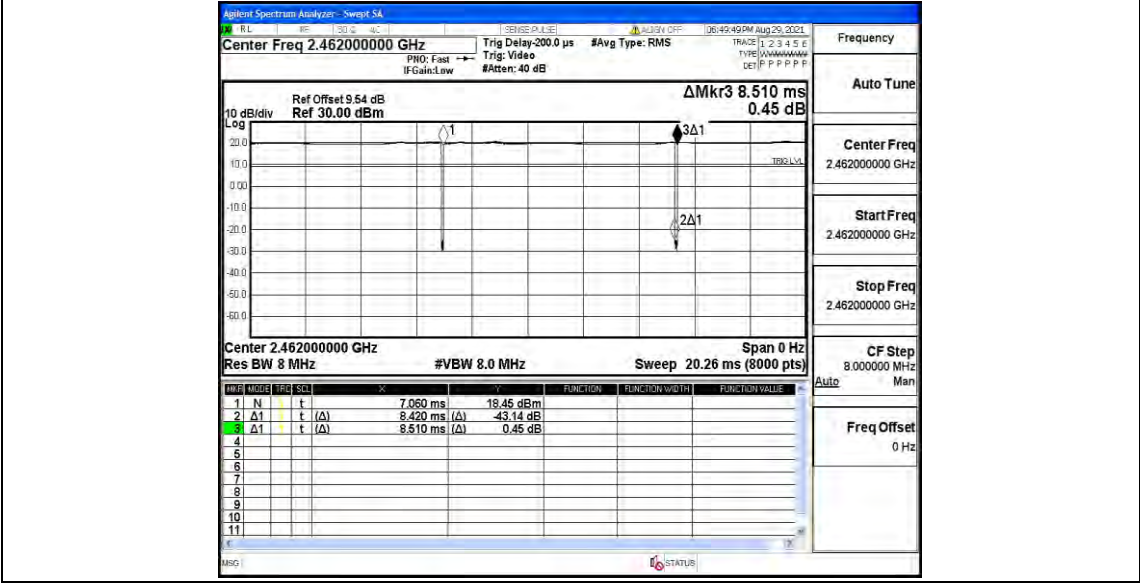




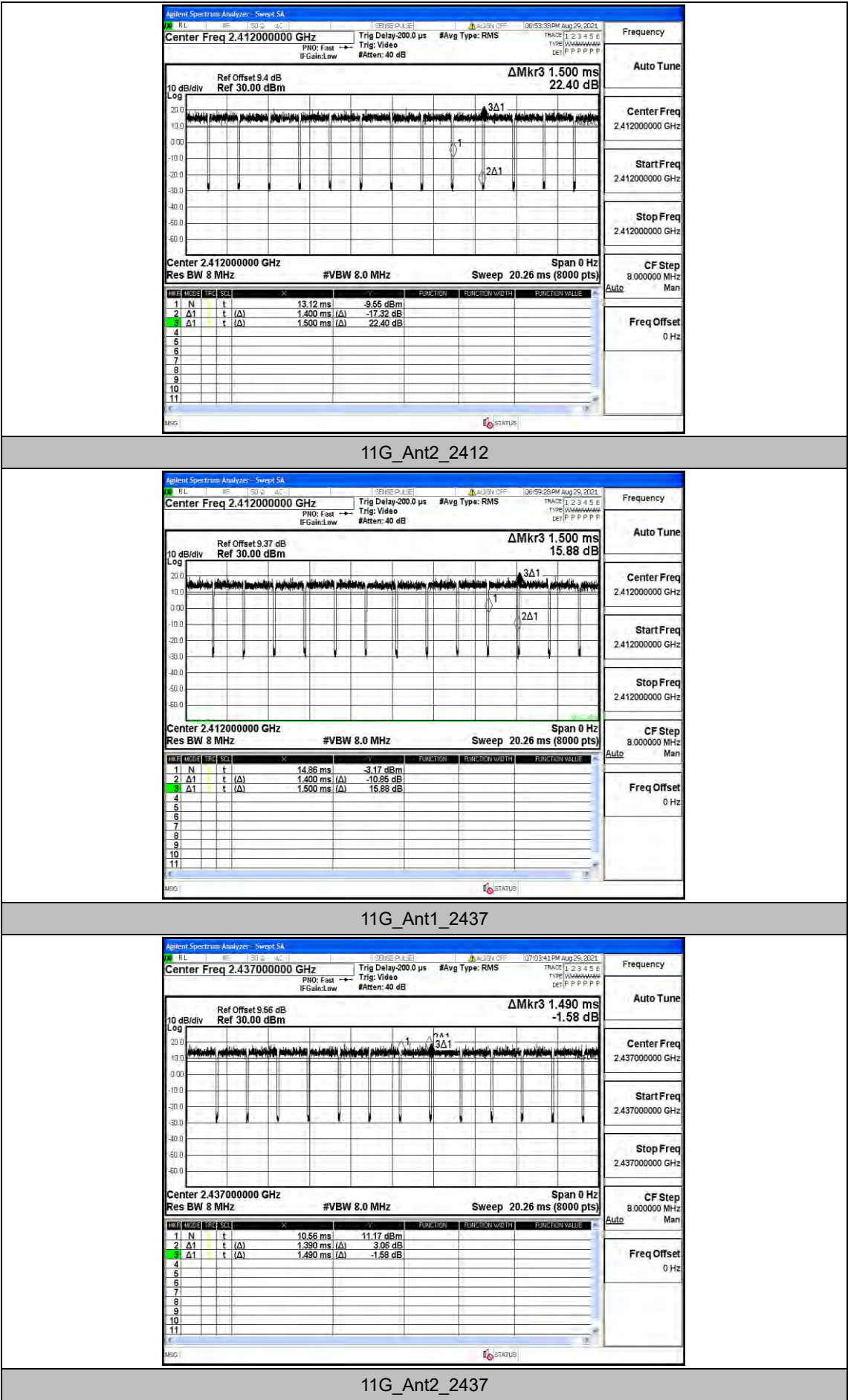
11B_Ant1_2462

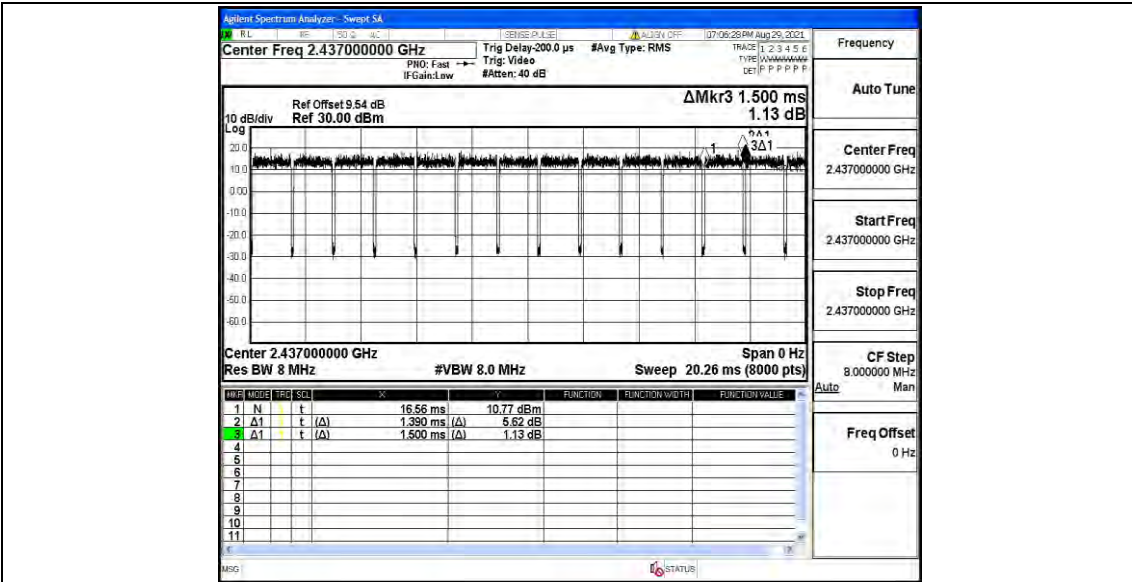


11B_Ant2_2462

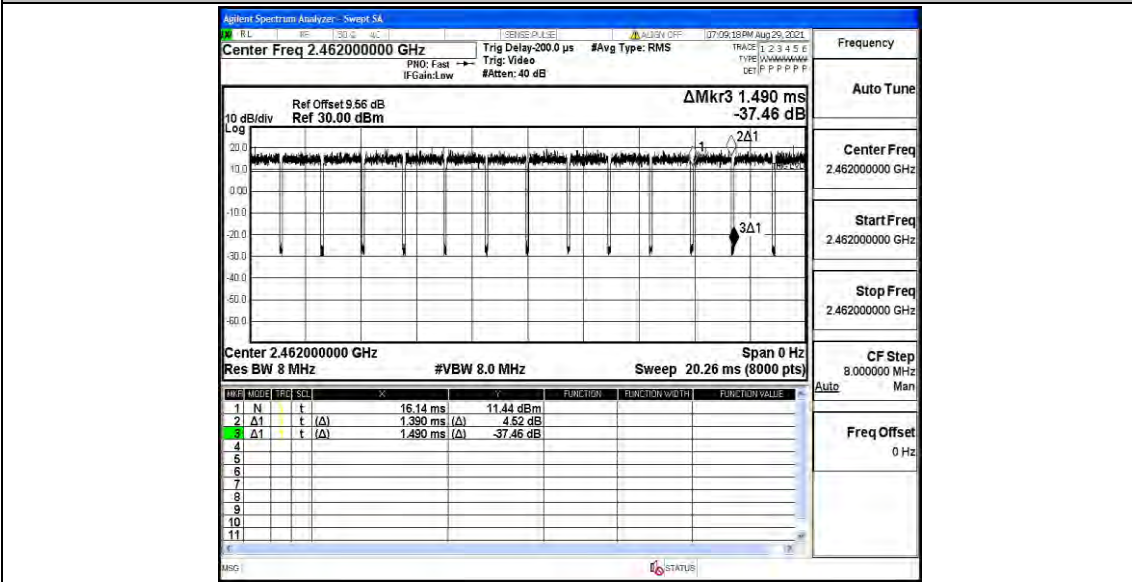


11G_Ant1_2412

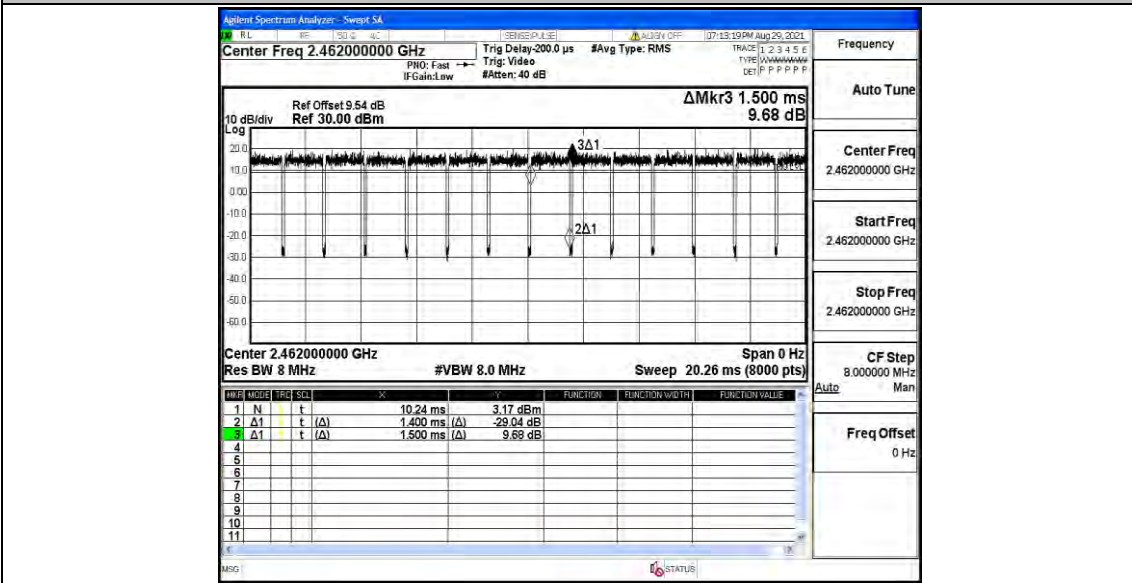




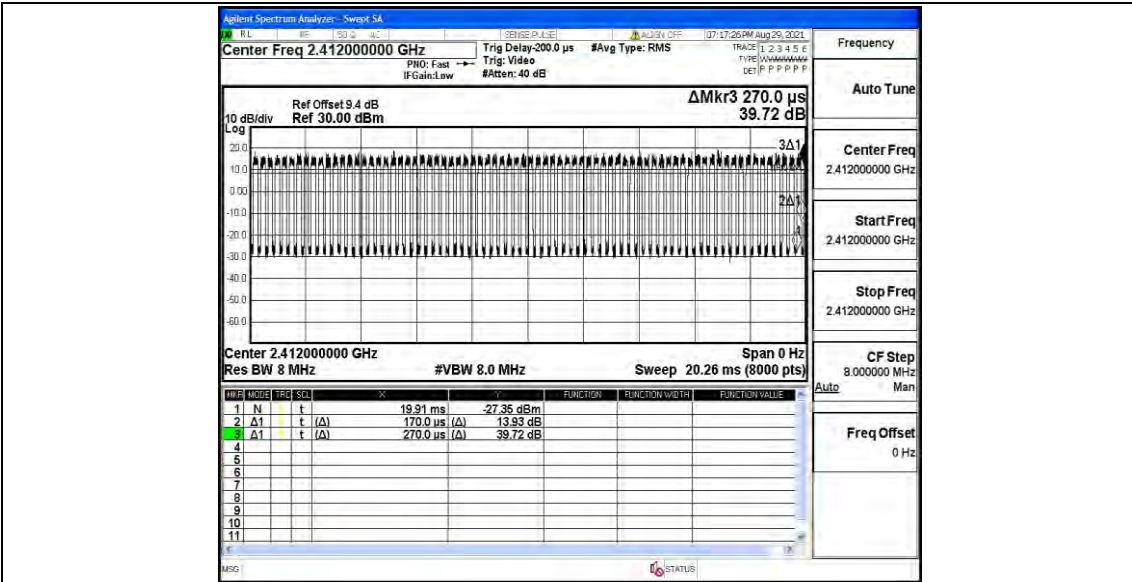
11G_Ant1_2462



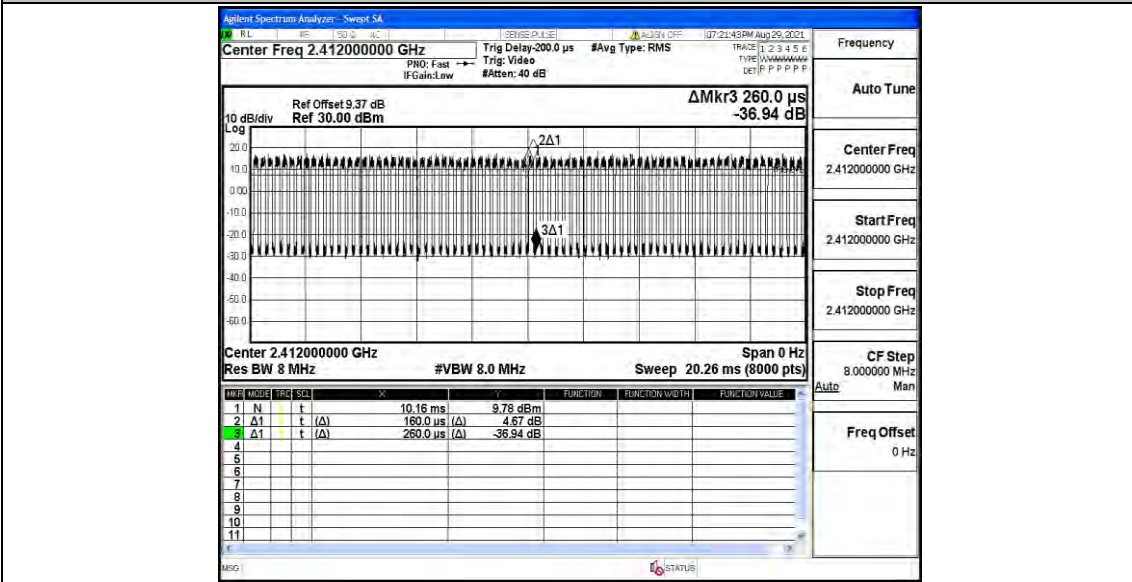
11G_Ant2_2462



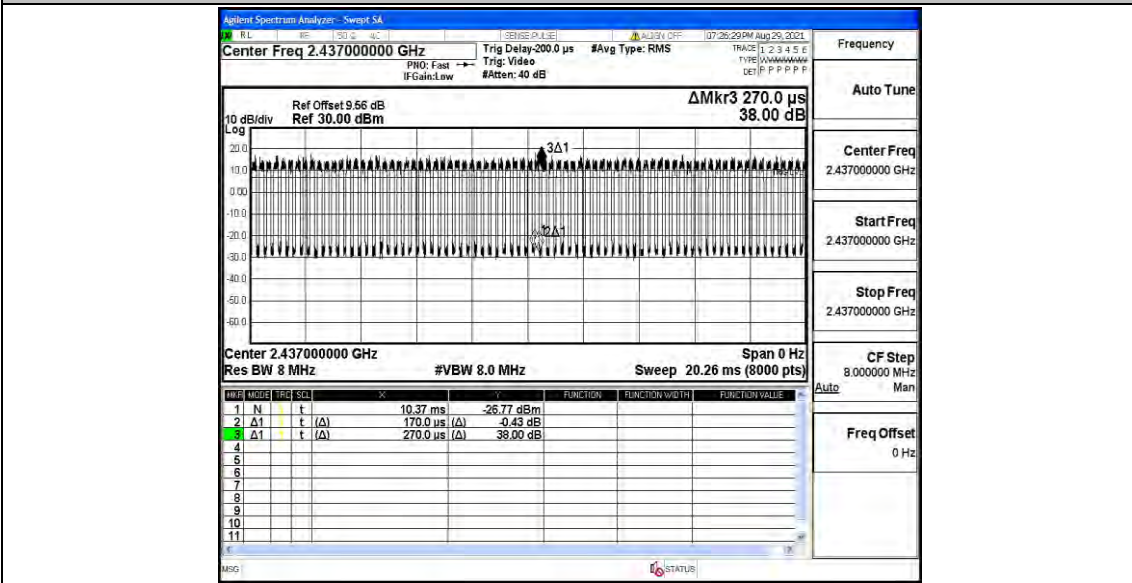
11N20MIMO_Ant1_2412



11N20MIMO_Ant2_2412



11N20MIMO_Ant1_2437



11N20MIMO_Ant2_2437

