

Appendix for WLAN 2.4G

Model: VNE-N41

BTL-FCCP-3-2204C233

Content

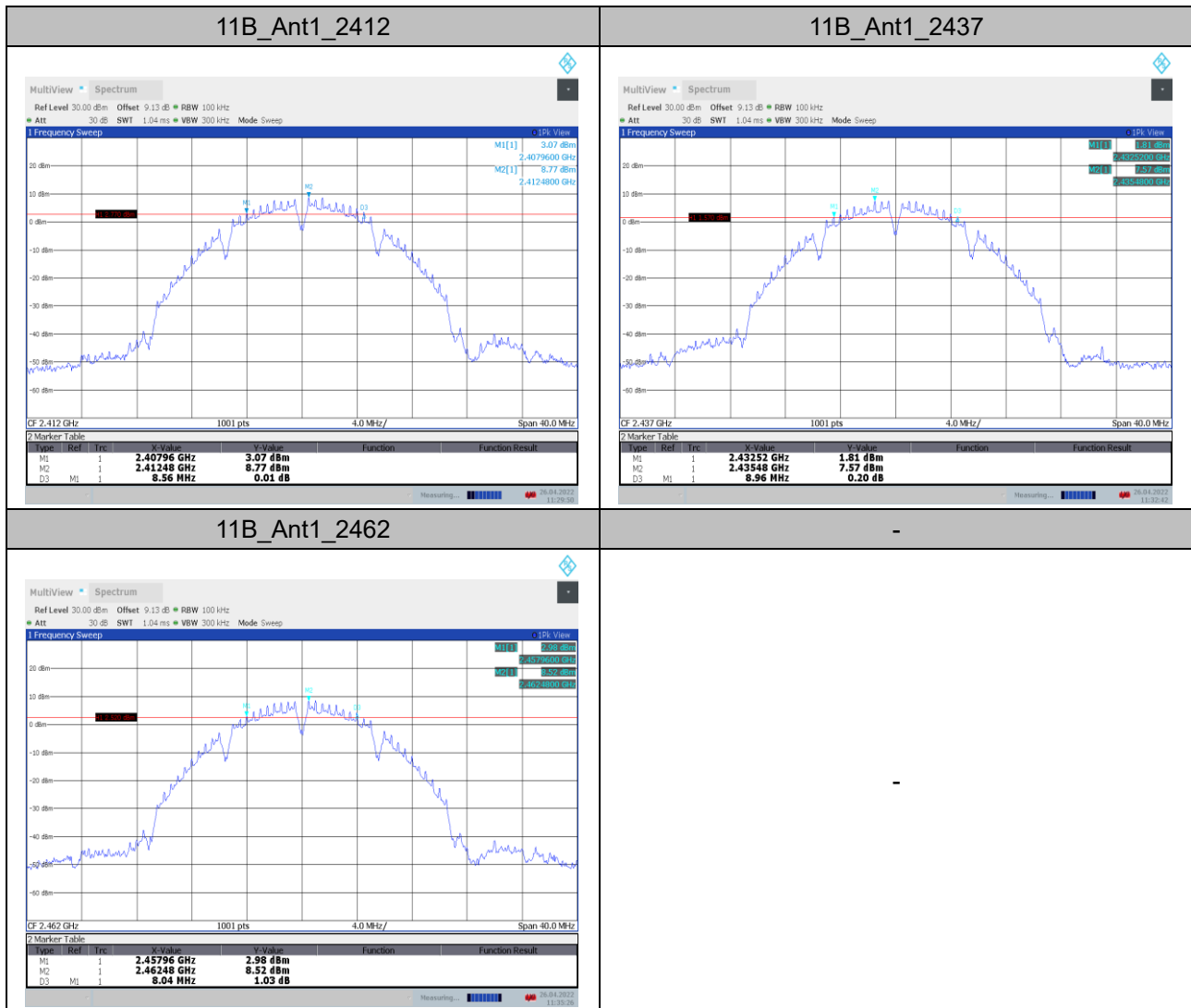
1	Appendix A: 6 dB Bandwidth	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Appendix B: 99% Emission Bandwidth.....	8
2.1	Test Result	8
2.2	Test Graphs	9
3	Appendix C: Maximum conducted output power	13
3.1	Test Result- Peak power	13
3.2	Test Result-Average power	13
4	Appendix D: Maximum power spectral density.....	14
4.1	Test Result	14
4.2	Test Graphs	15
5	Appendix E: Reference level measurement	19
5.1	Test Result	19
5.2	Test Graphs	20
6	Appendix F: Band edge measurements	24
6.1	Test Result	24
6.2	Test Graphs	25
7	Appendix G: Conducted Spurious Emission.....	29
7.1	Test Result	29
7.2	Test Graphs	30
8	Appendix H: Duty Cycle	37
8.1	Test Result	37
8.2	Test Graphs	38

1 Appendix A: 6 dB Bandwidth

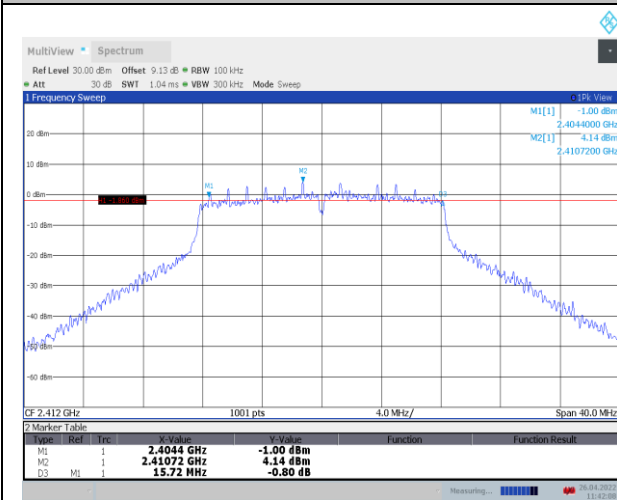
1.1 Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.56	2407.96	2416.52	0.5	PASS
		2437	8.96	2432.52	2441.48	0.5	PASS
		2462	8.04	2457.96	2466.00	0.5	PASS
11G	Ant1	2412	15.72	2404.40	2420.12	0.5	PASS
		2417	15.92	2408.84	2424.76	0.5	PASS
		2437	15.32	2429.20	2444.52	0.5	PASS
		2462	15.48	2454.40	2469.88	0.5	PASS
11N20SISO	Ant1	2412	15.92	2404.44	2420.36	0.5	PASS
		2417	16.08	2409.40	2425.48	0.5	PASS
		2437	15.52	2429.20	2444.72	0.5	PASS
		2462	15.12	2454.40	2469.52	0.5	PASS
11N40SISO	Ant1	2422	35.12	2404.40	2439.52	0.5	PASS
		2427	35.12	2409.40	2444.52	0.5	PASS
		2432	36.32	2413.84	2450.16	0.5	PASS
		2437	36.32	2418.84	2455.16	0.5	PASS
		2452	35.44	2434.40	2469.84	0.5	PASS

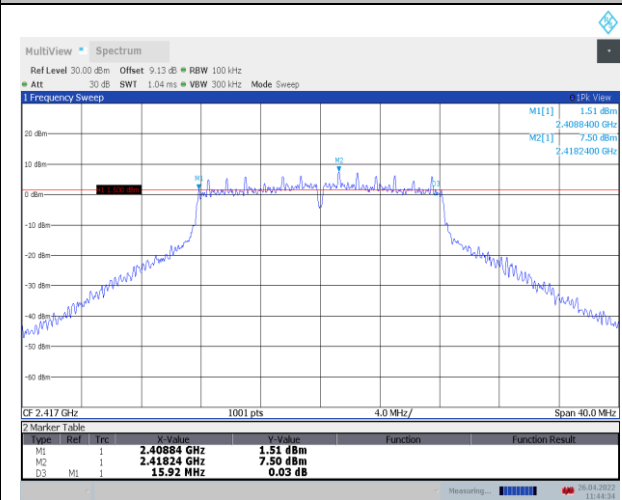
1.2 Test Graphs



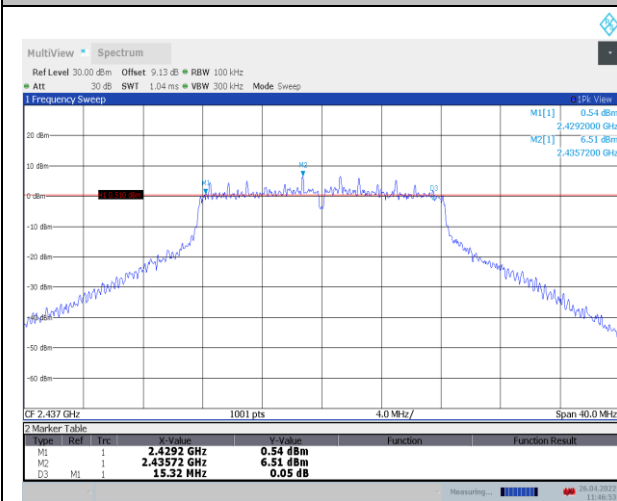
11G_Ant1_2412



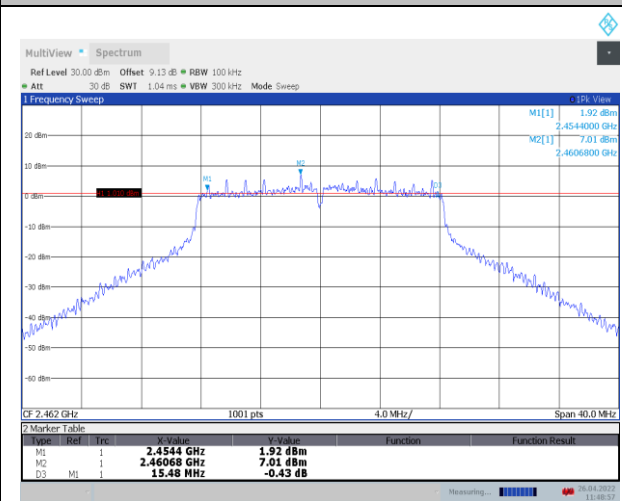
11G_Ant1_2417

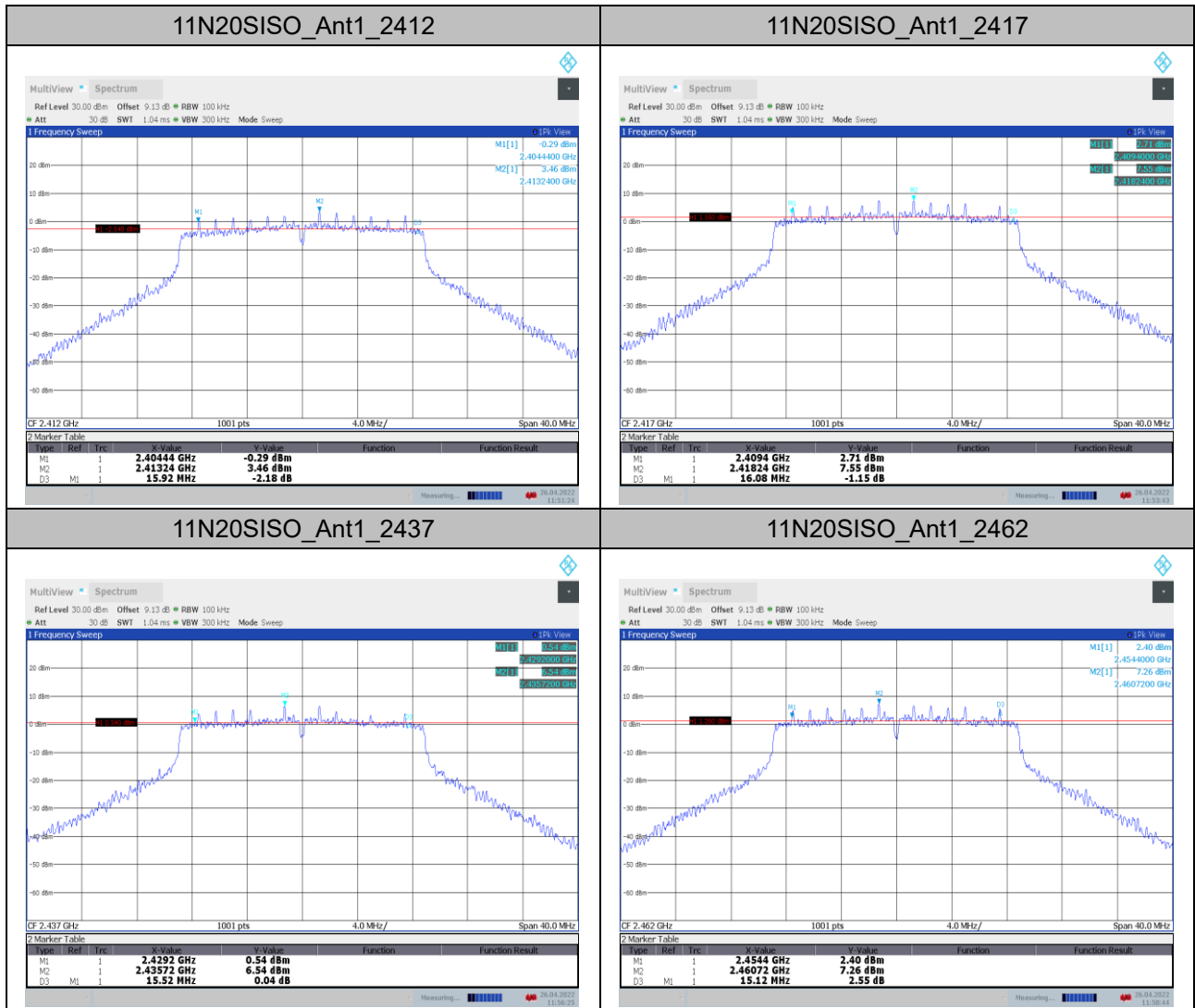


11G_Ant1_2437

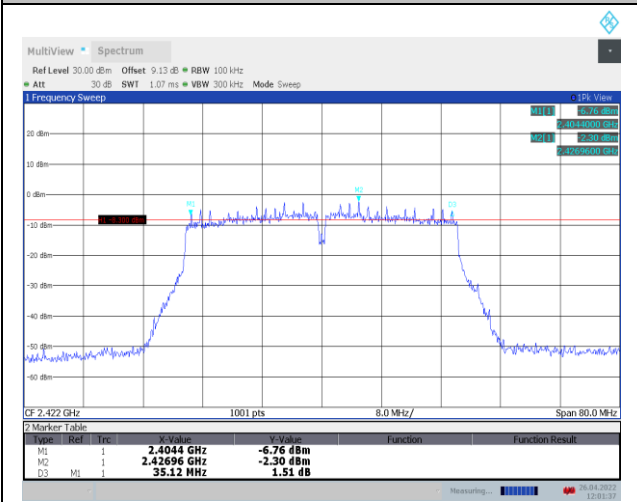


11G_Ant1_2462

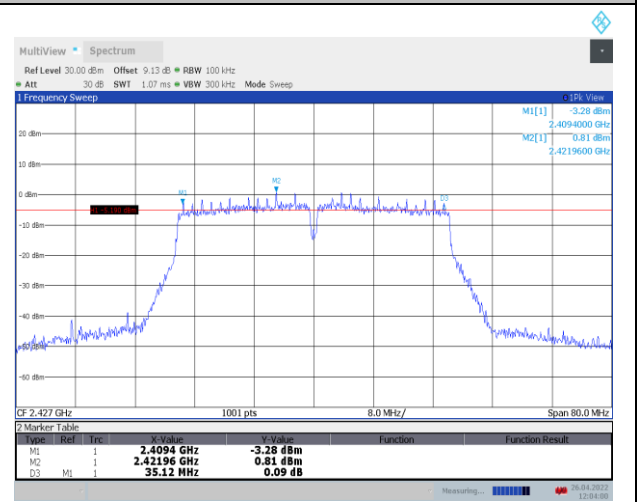




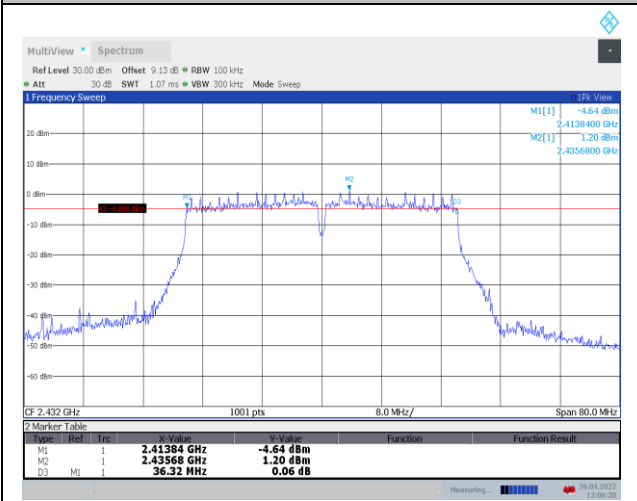
11N40SISO_Ant1_2422



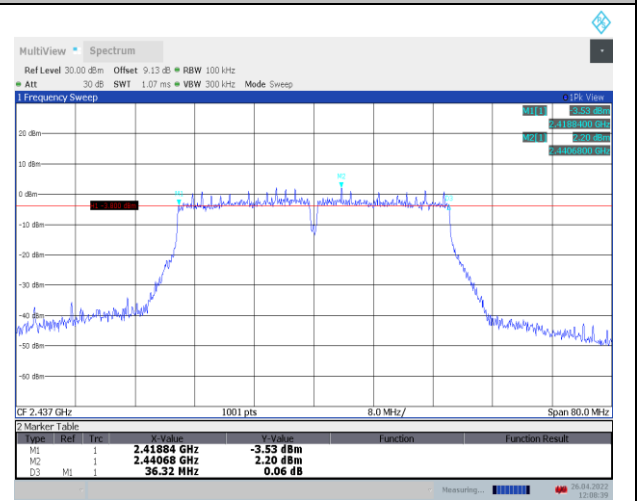
11N40SISO_Ant1_2427



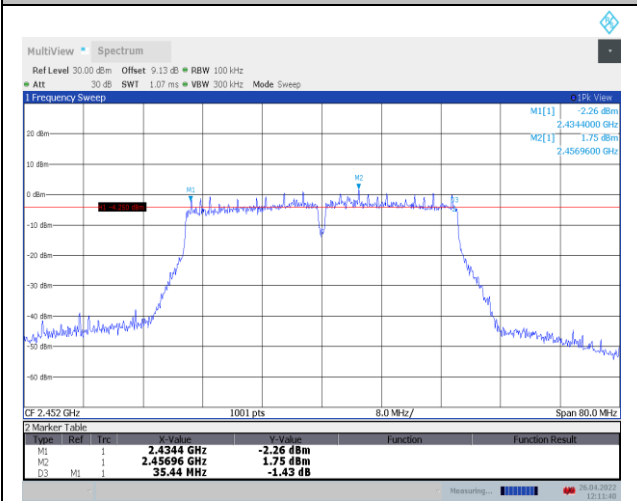
11N40SISO_Ant1_2432



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



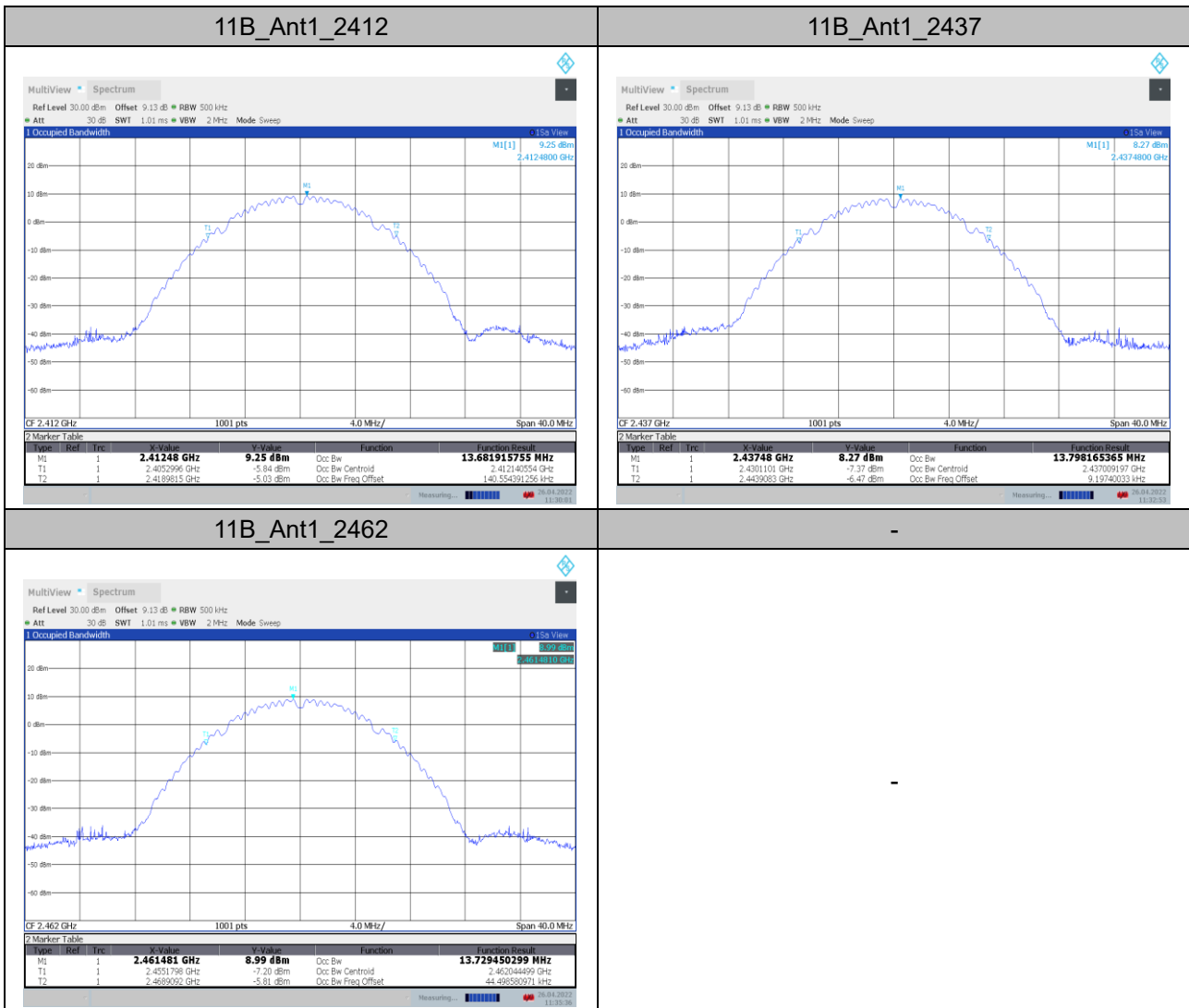
-

2 Appendix B: 99% Emission Bandwidth

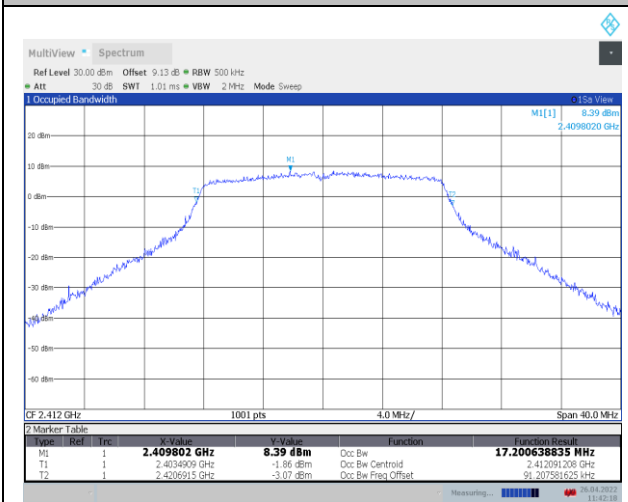
2.1 Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.682	2405.300	2418.982	---	PASS
		2437	13.798	2430.110	2443.908	---	PASS
		2462	13.729	2455.180	2468.909	---	PASS
11G	Ant1	2412	17.201	2403.491	2420.692	---	PASS
		2417	17.145	2408.463	2425.608	---	PASS
		2437	17.324	2428.331	2445.655	---	PASS
		2462	17.209	2453.435	2470.644	---	PASS
11N20SISO	Ant1	2412	18.266	2402.968	2421.234	---	PASS
		2417	18.242	2407.921	2426.163	---	PASS
		2437	18.36	2427.811	2446.172	---	PASS
		2462	18.282	2452.881	2471.163	---	PASS
11N40SISO	Ant1	2422	36.397	2403.887	2440.284	---	PASS
		2427	36.438	2408.791	2445.229	---	PASS
		2432	36.566	2413.749	2450.315	---	PASS
		2437	36.644	2418.695	2455.339	---	PASS
		2452	36.517	2433.786	2470.302	---	PASS

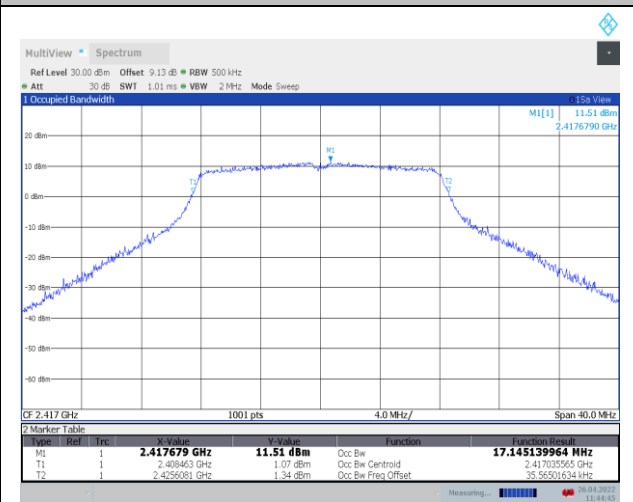
2.2 Test Graphs



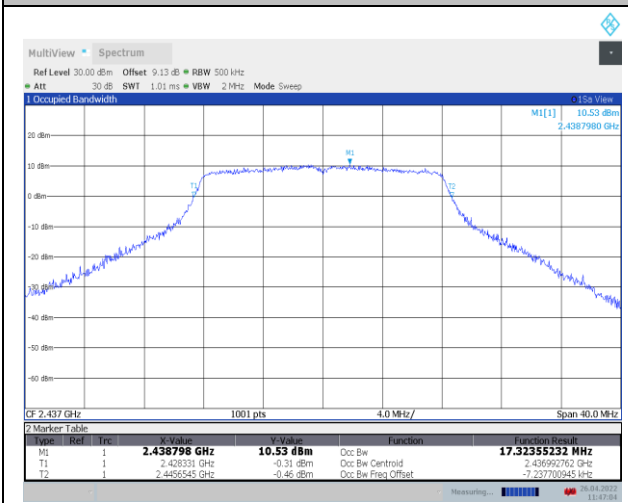
11G_Ant1_2412



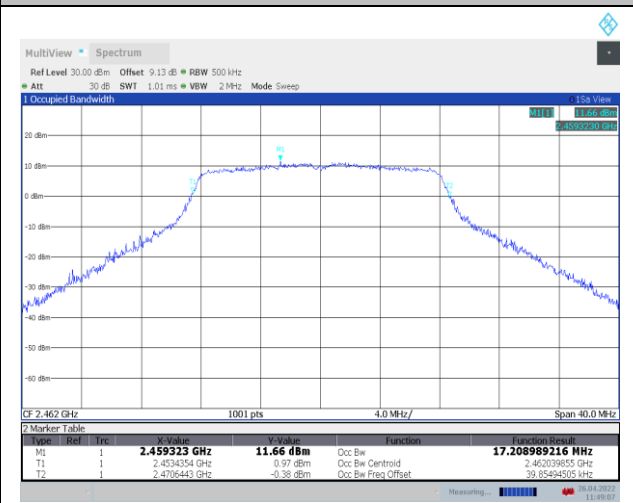
11G_Ant1_2417

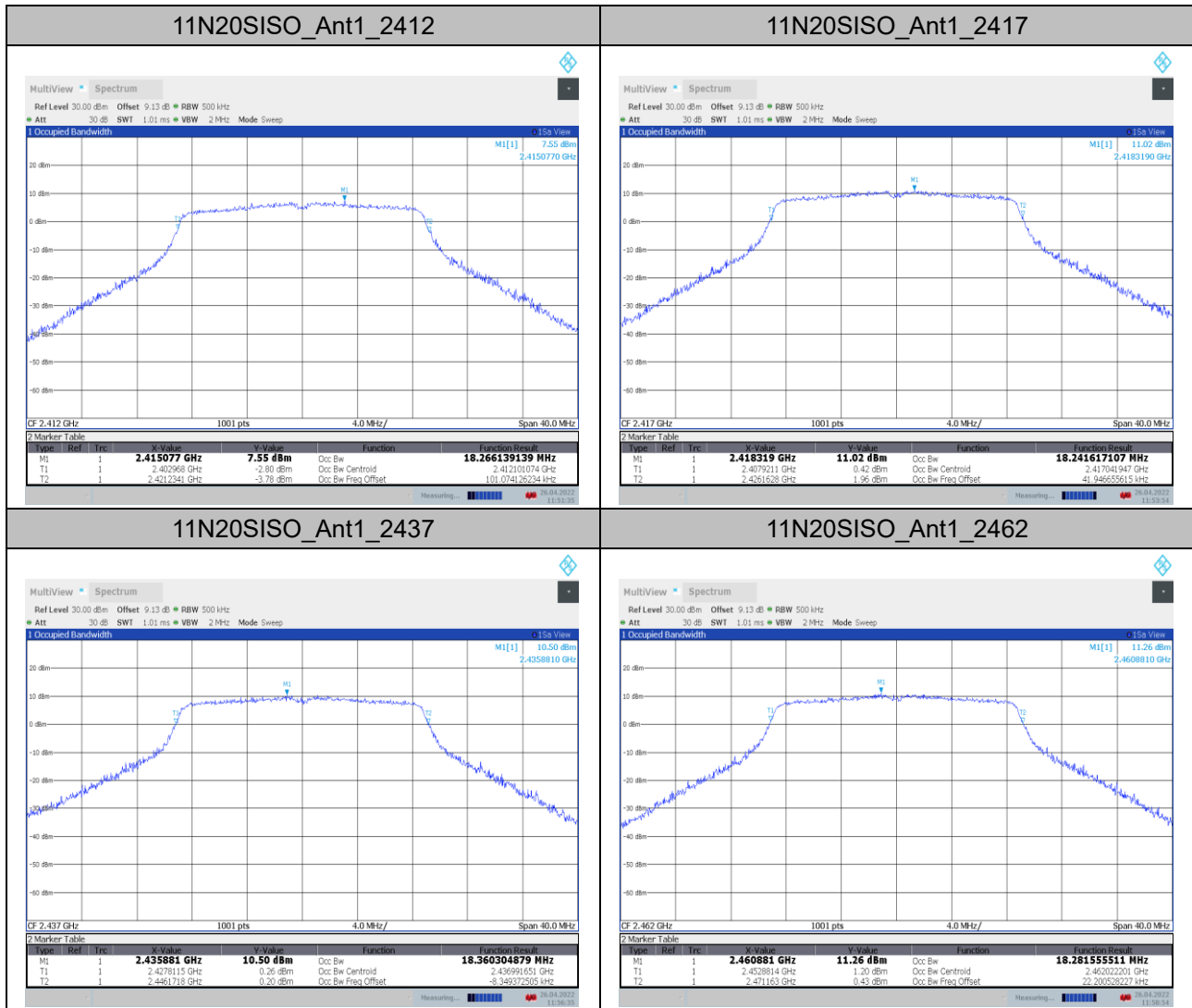


11G_Ant1_2437

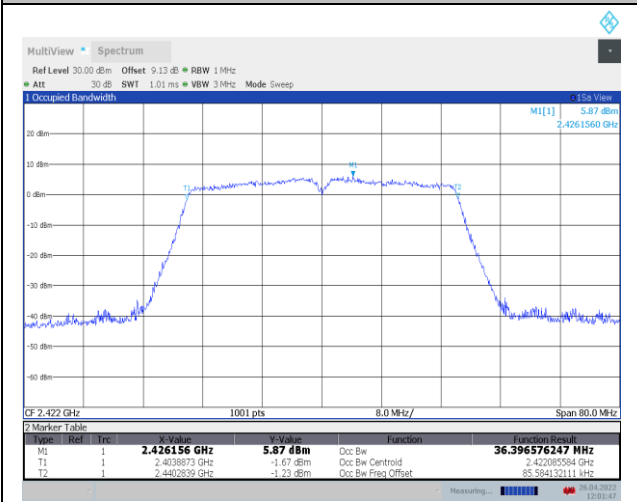


11G_Ant1_2462

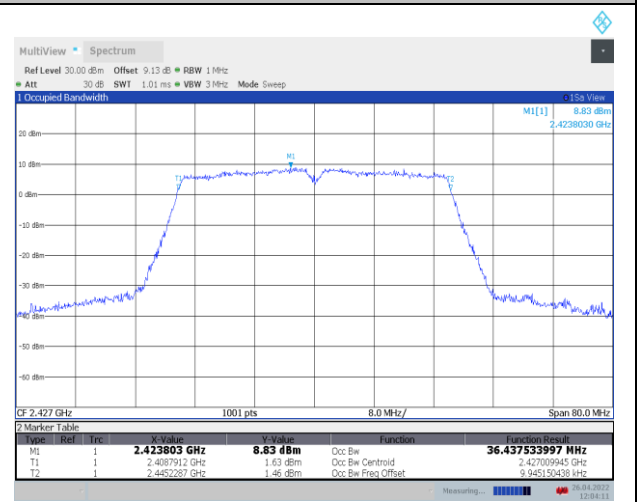




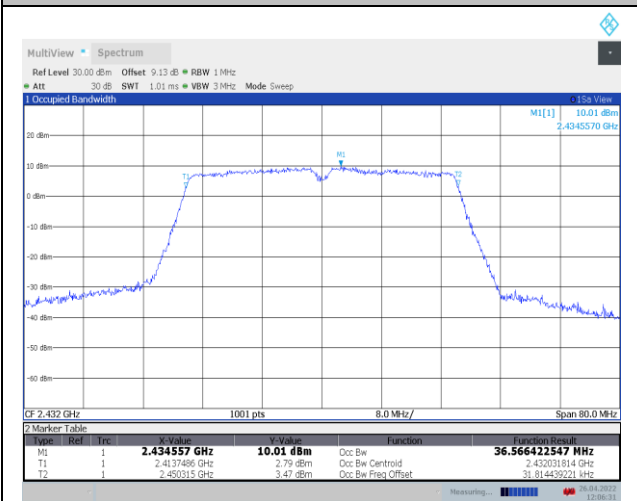
11N40SISO_Ant1_2422



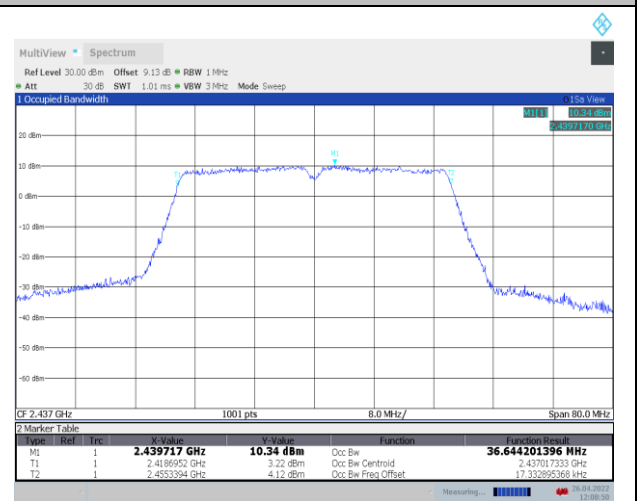
11N40SISO_Ant1_2427



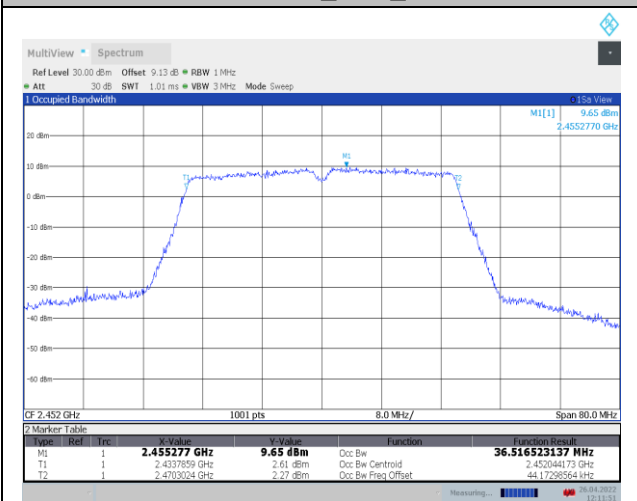
11N40SISO_Ant1_2432



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



-

3 Appendix C: Maximum conducted output power

3.1 Test Result- Peak power

TestMode	Antenna	Frequency[MHz]	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	19.72	≤30.00	PASS
		2437	18.88	≤30.00	PASS
		2462	19.35	≤30.00	PASS
11G	Ant1	2412	20.43	≤30.00	PASS
		2417	23.62	≤30.00	PASS
		2437	22.61	≤30.00	PASS
		2462	23.31	≤30.00	PASS
11N20SISO	Ant1	2412	19.18	≤30.00	PASS
		2417	23.32	≤30.00	PASS
		2437	22.30	≤30.00	PASS
		2462	22.87	≤30.00	PASS
11N40SISO	Ant1	2422	17.30	≤30.00	PASS
		2427	20.47	≤30.00	PASS
		2432	21.68	≤30.00	PASS
		2437	22.33	≤30.00	PASS
		2452	21.33	≤30.00	PASS

3.2 Test Result-Average power

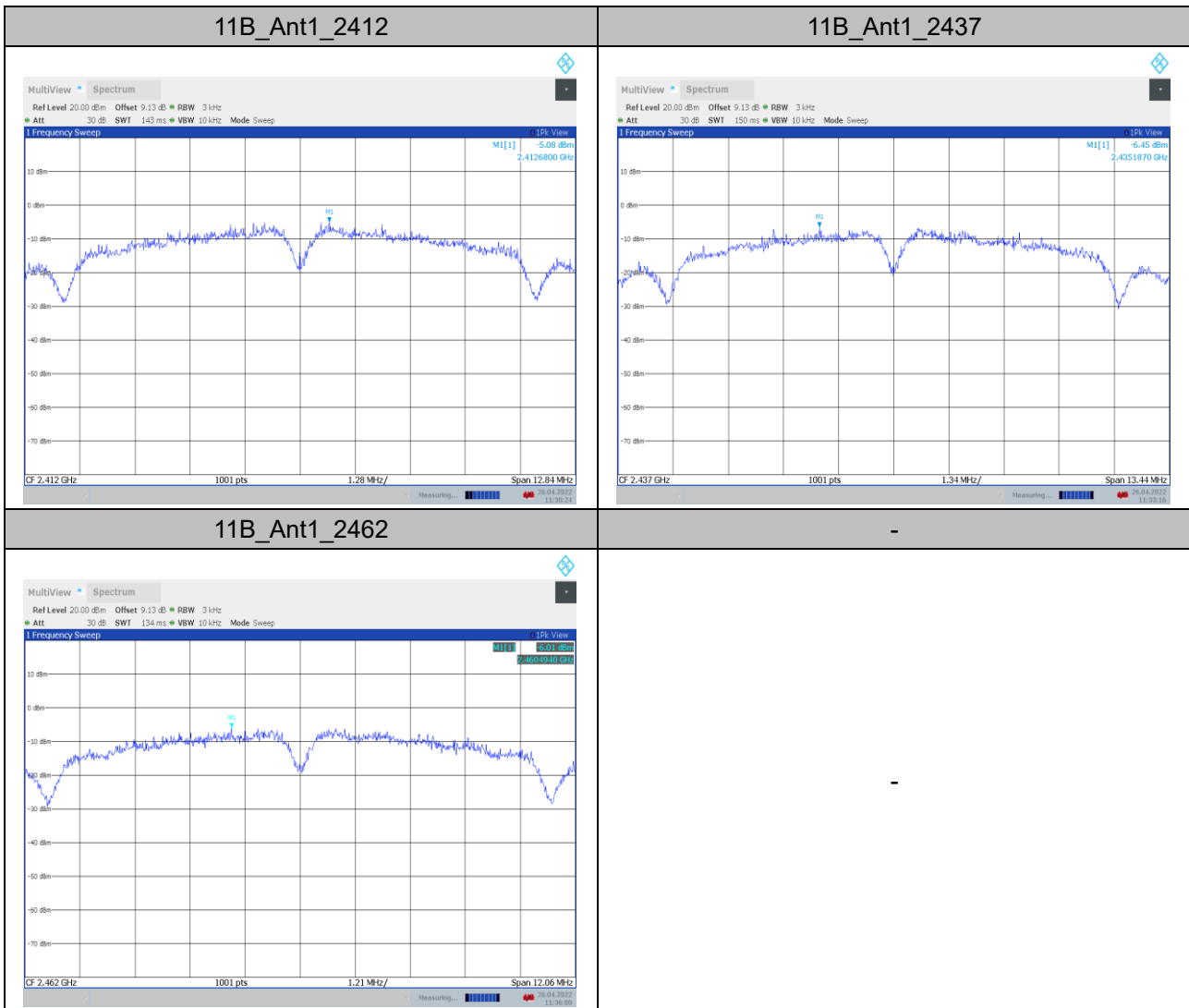
TestMode	Antenna	Frequency[MHz]	Set Power	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	---	16.95	≤30.00	PASS
		2437	---	16.11	≤30.00	PASS
		2462	---	16.77	≤30.00	PASS
11G	Ant1	2412	---	14.03	≤30.00	PASS
		2417	---	17.17	≤30.00	PASS
		2437	---	16.32	≤30.00	PASS
		2462	---	16.94	≤30.00	PASS
11N20SISO	Ant1	2412	---	12.98	≤30.00	PASS
		2417	---	17.04	≤30.00	PASS
		2437	---	16.15	≤30.00	PASS
		2462	---	16.78	≤30.00	PASS
11N40SISO	Ant1	2422	---	10.70	≤30.00	PASS
		2427	---	13.94	≤30.00	PASS
		2432	---	15.01	≤30.00	PASS
		2437	---	15.73	≤30.00	PASS
		2452	---	14.76	≤30.00	PASS

4 Appendix D: Maximum power spectral density

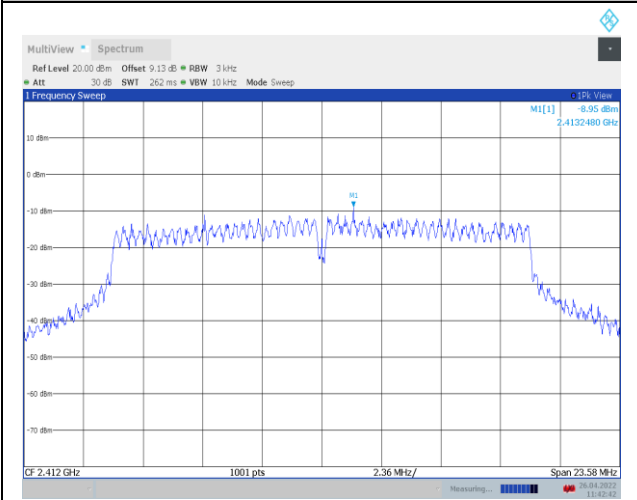
4.1 Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-5.08	≤8.00	PASS
		2437	-6.45	≤8.00	PASS
		2462	-6.01	≤8.00	PASS
11G	Ant1	2412	-8.95	≤8.00	PASS
		2417	-6.14	≤8.00	PASS
		2437	-7.16	≤8.00	PASS
		2462	-8.08	≤8.00	PASS
11N20SISO	Ant1	2412	-12.2	≤8.00	PASS
		2417	-8	≤8.00	PASS
		2437	-8.14	≤8.00	PASS
		2462	-7.51	≤8.00	PASS
11N40SISO	Ant1	2422	-17.71	≤8.00	PASS
		2427	-13.91	≤8.00	PASS
		2432	-13.01	≤8.00	PASS
		2437	-12.17	≤8.00	PASS
		2452	-13.58	≤8.00	PASS

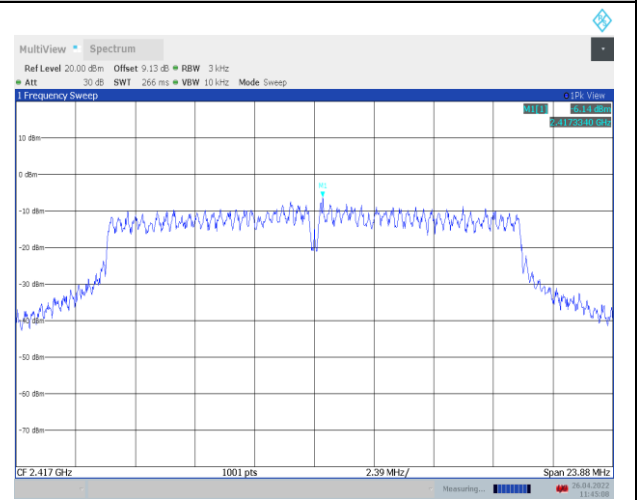
4.2 Test Graphs



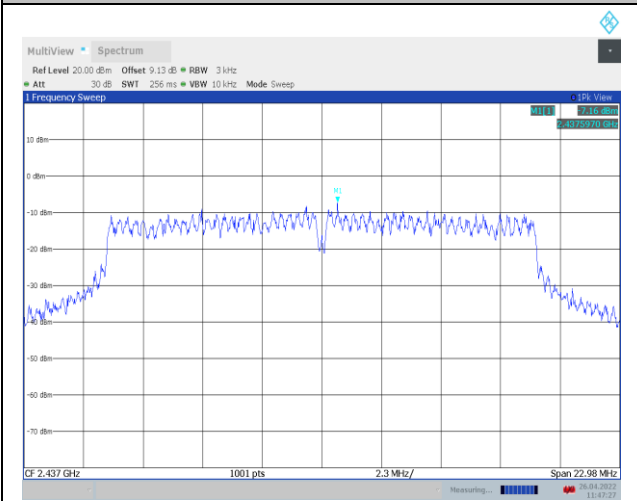
11G_Ant1_2412



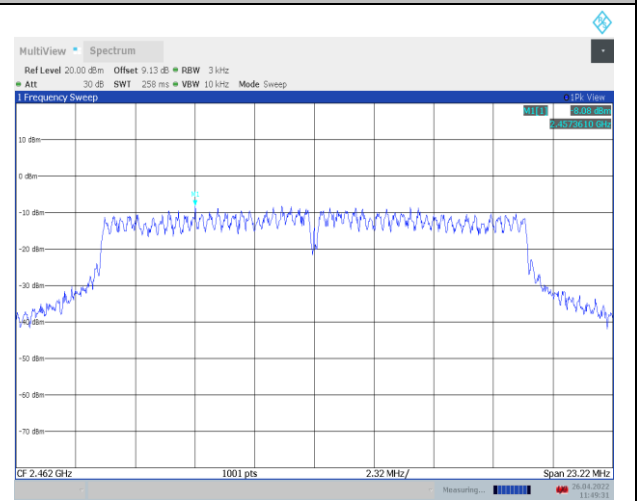
11G_Ant1_2417

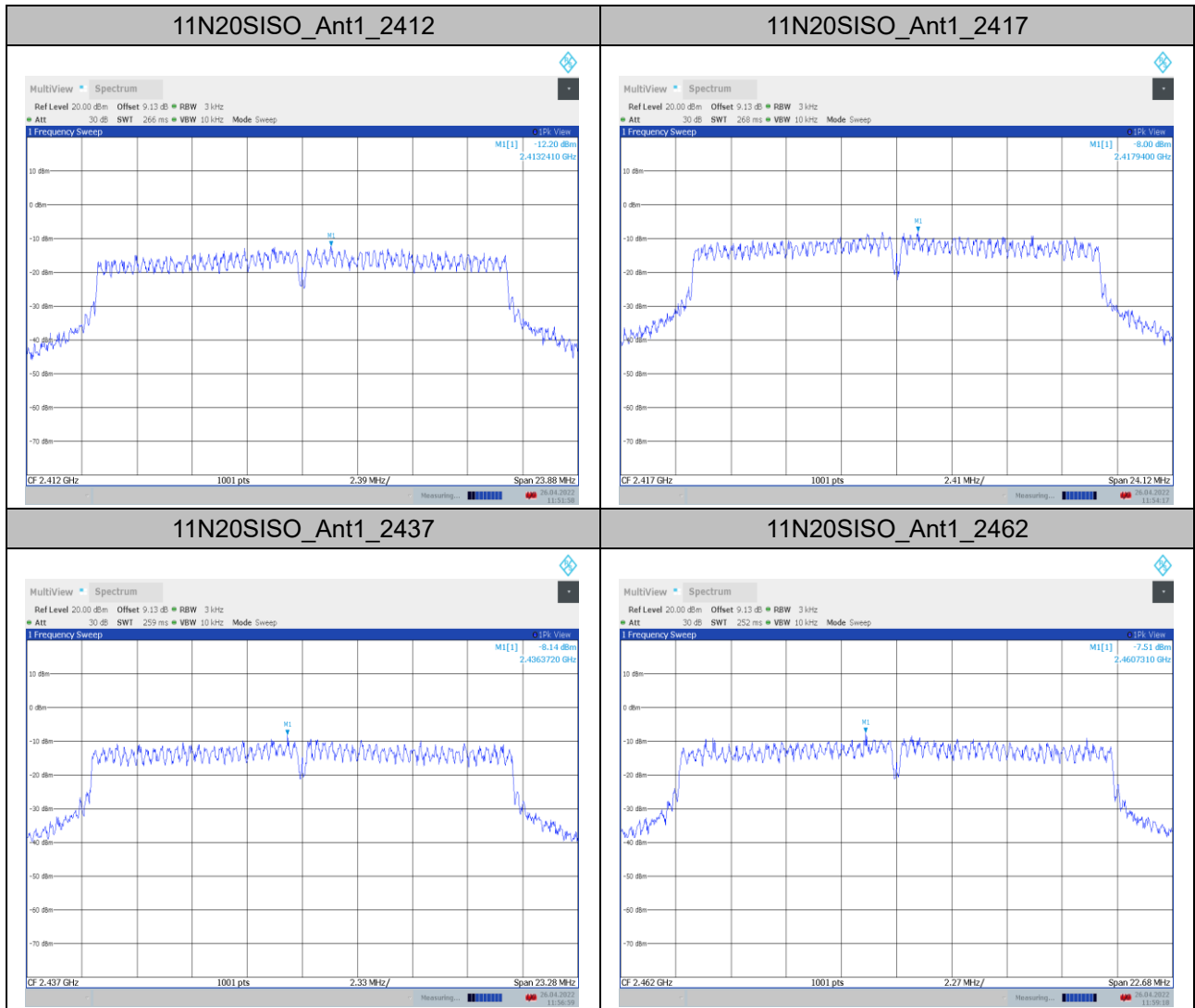


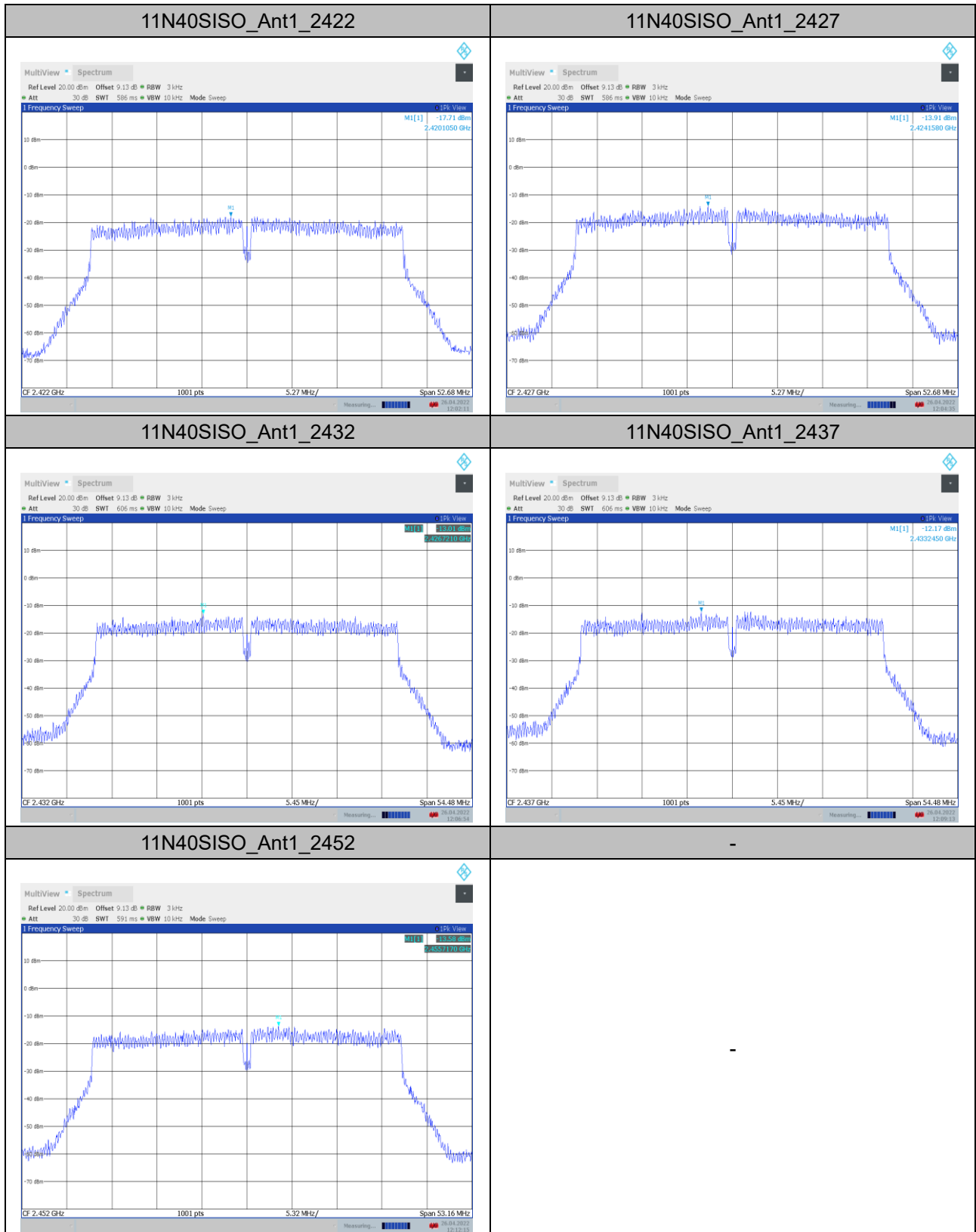
11G_Ant1_2437



11G_Ant1_2462





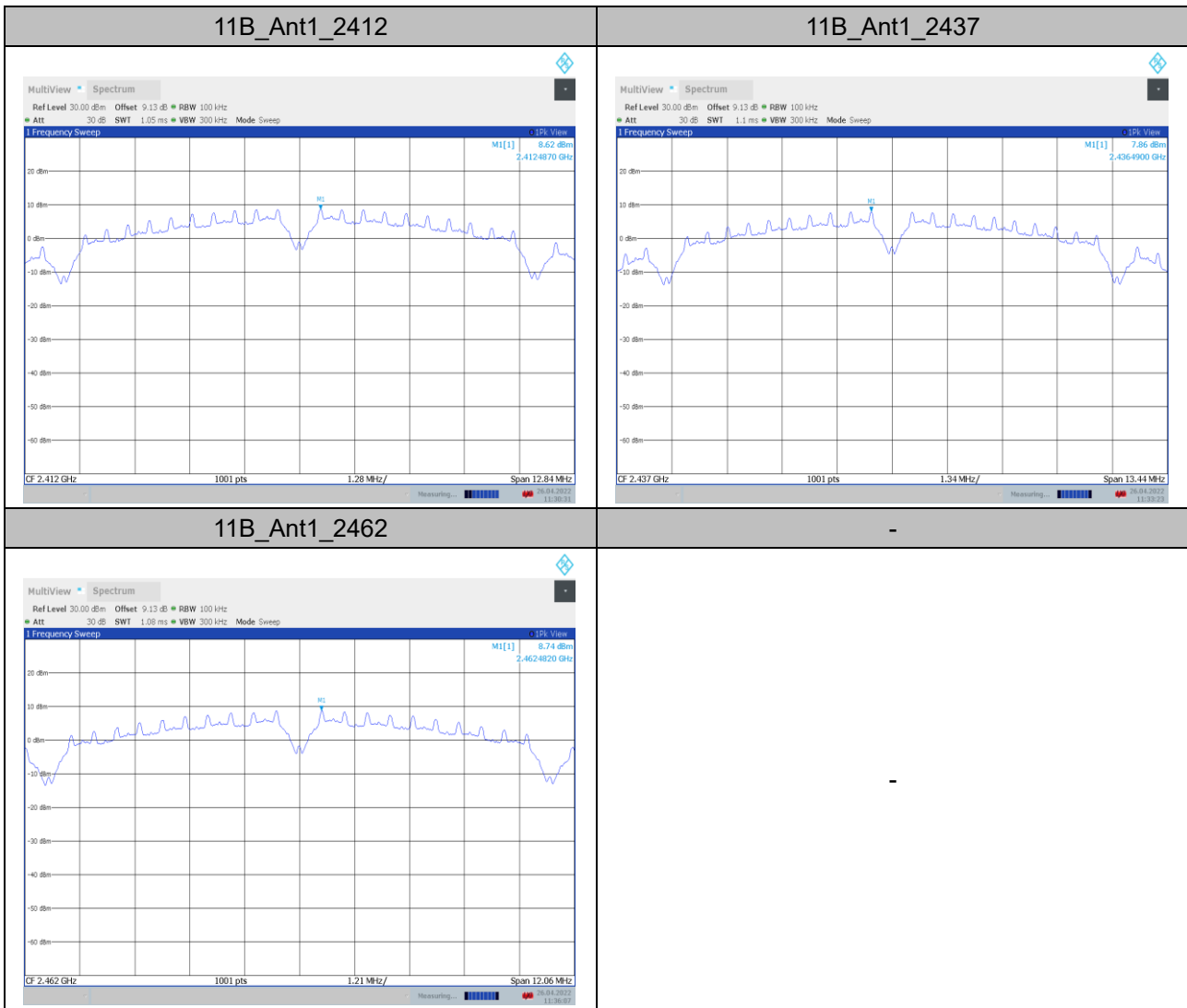


5 Appendix E: Reference level measurement

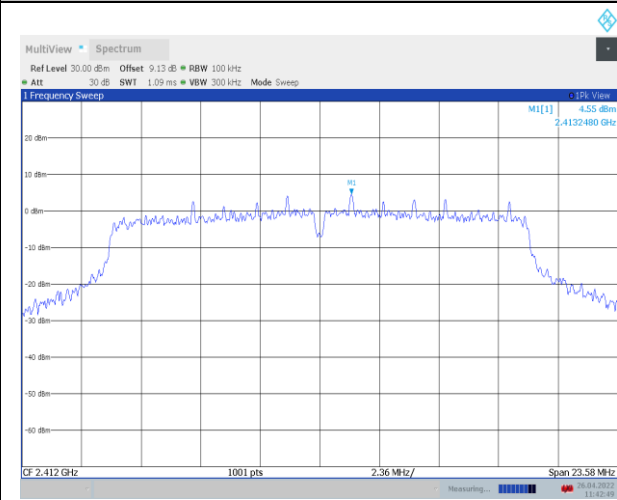
5.1 Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2412.49	8.62
		2437	2436.49	7.86
		2462	2462.48	8.74
11G	Ant1	2412	2413.25	4.55
		2417	2418.22	7.40
		2437	2438.24	6.48
		2462	2460.72	7.23
11N20SISO	Ant1	2412	2414.48	3.06
		2417	2418.23	7.66
		2437	2438.23	6.51
		2462	2463.25	7.28
11N40SISO	Ant1	2422	2418.21	-2.88
		2427	2430.74	0.63
		2432	2435.70	1.58
		2437	2440.70	2.11
		2452	2456.99	1.63

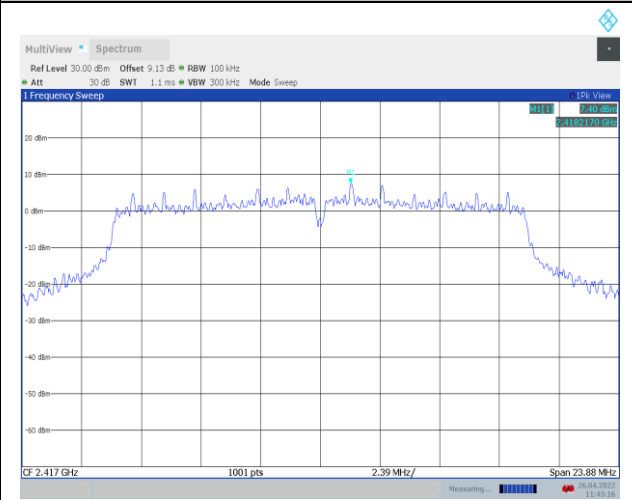
5.2 Test Graphs



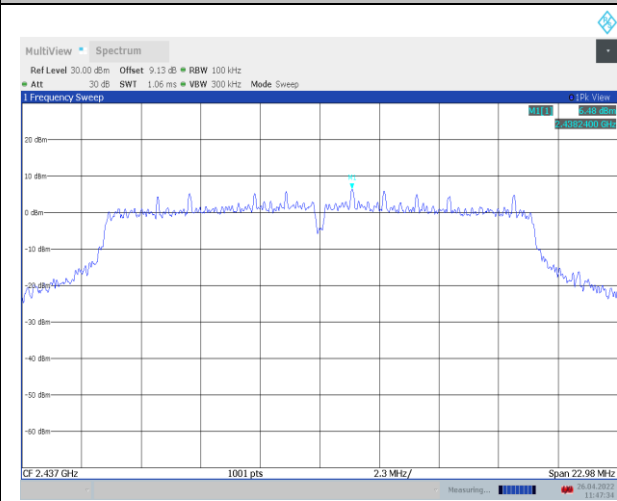
11G_Ant1_2412



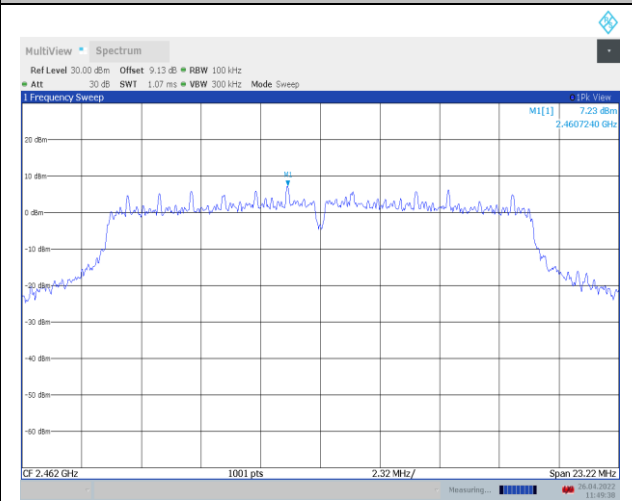
11G_Ant1_2417

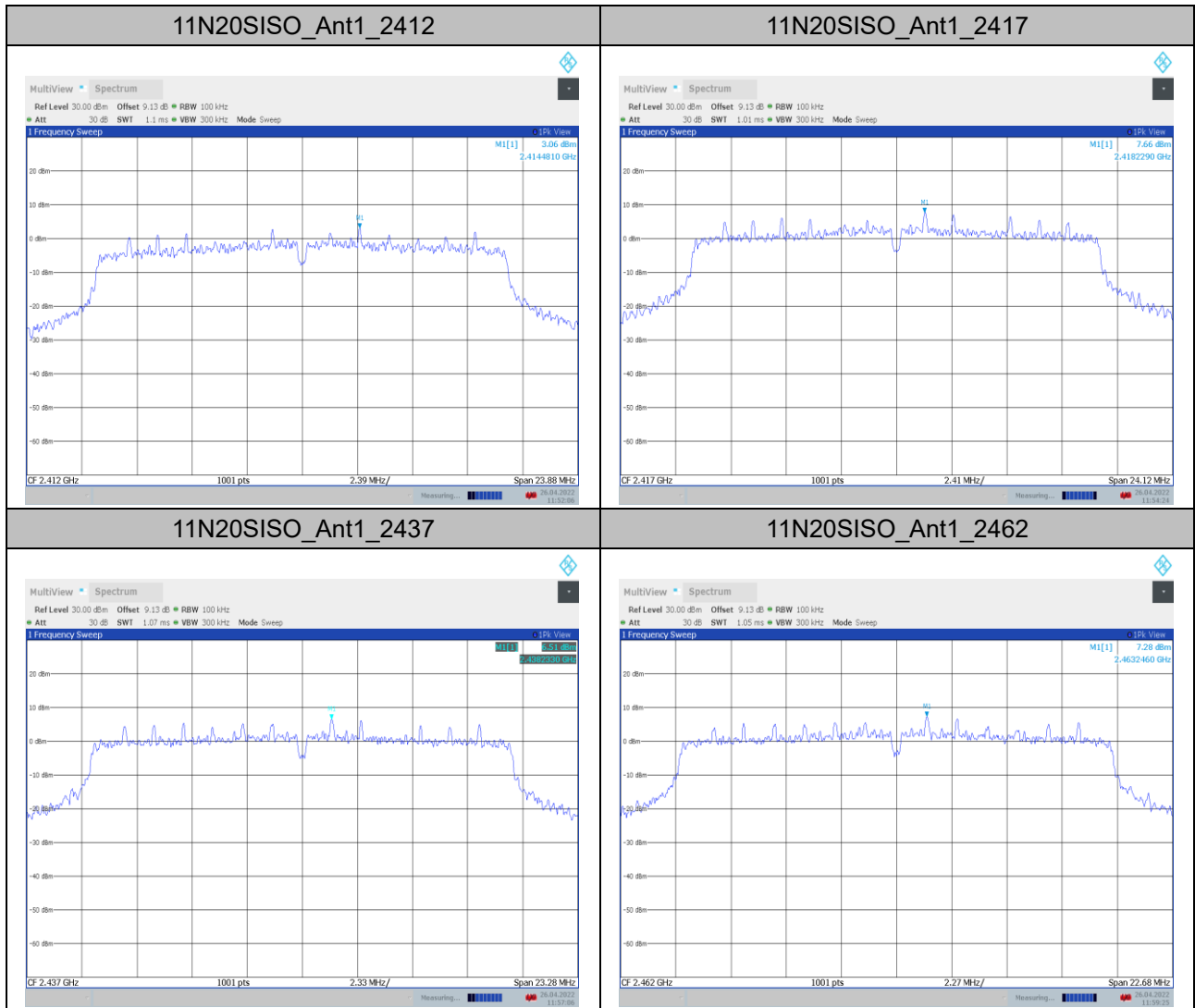


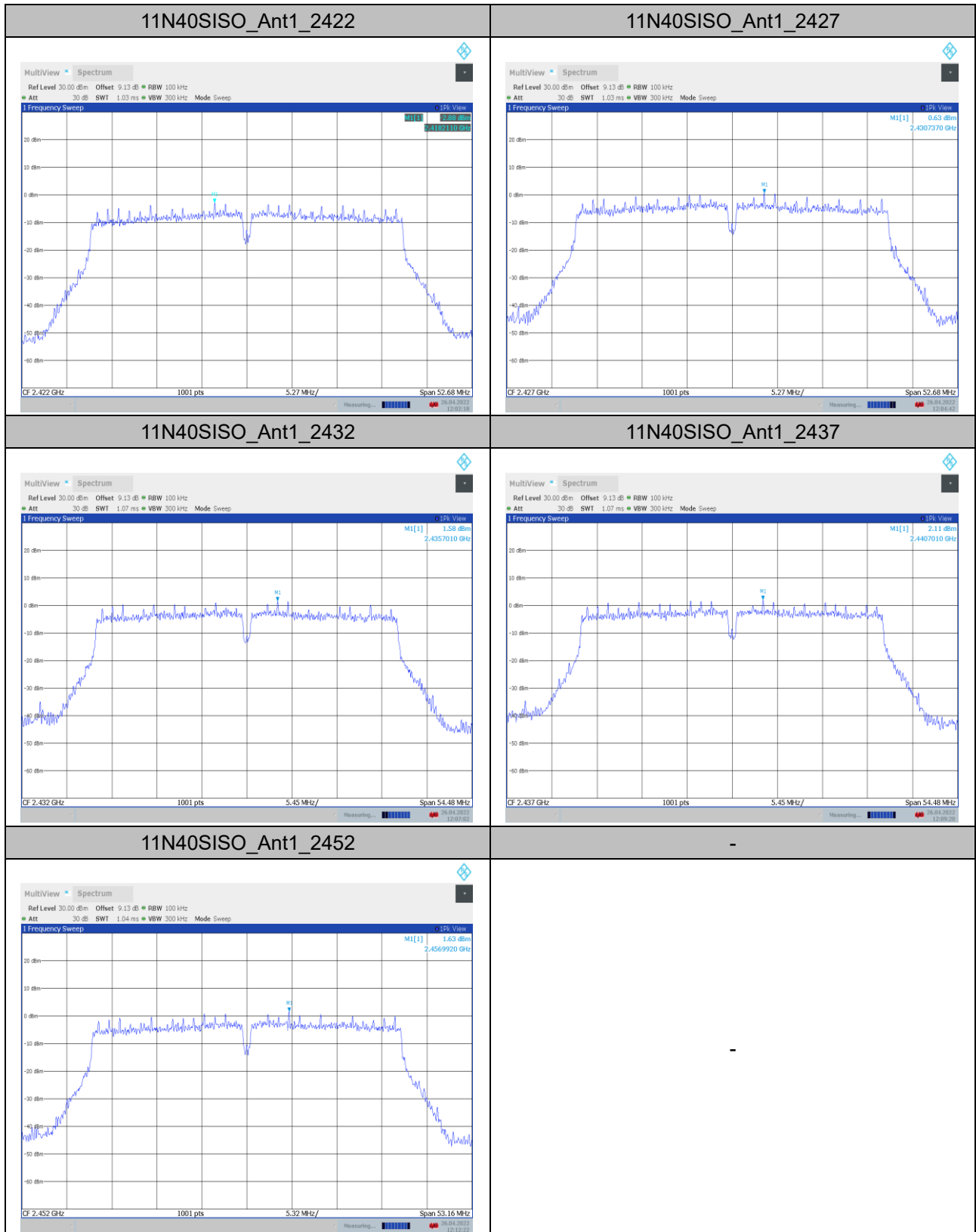
11G_Ant1_2437



11G_Ant1_2462





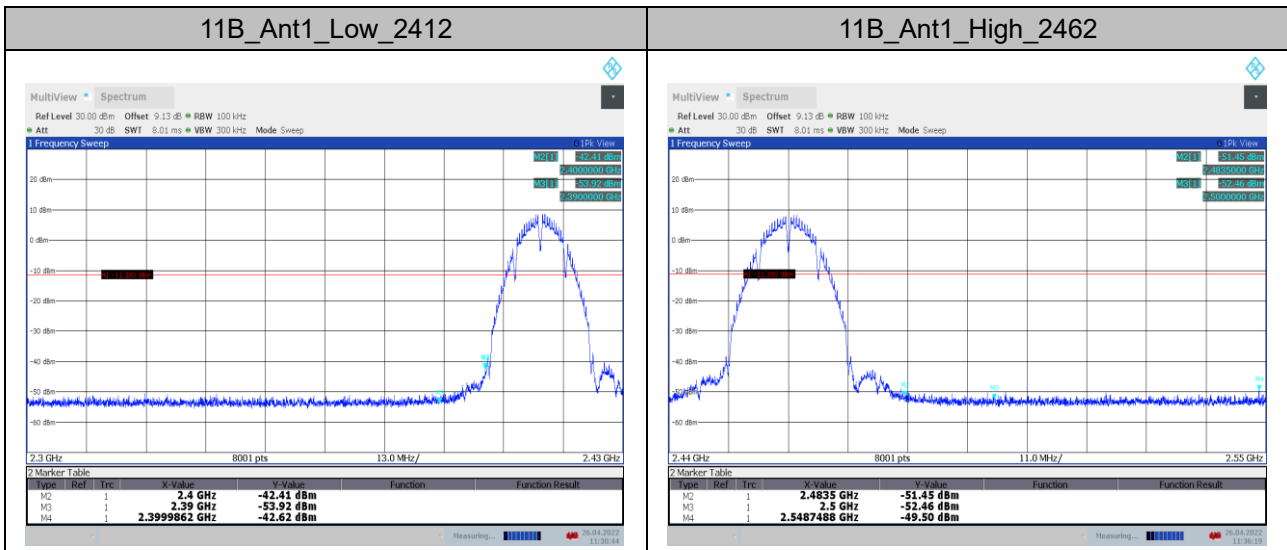


6 Appendix F: Band edge measurements

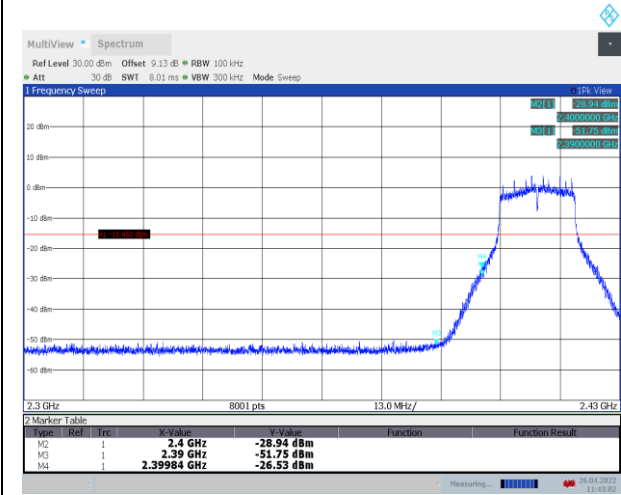
6.1 Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.62	-42.62	≤-11.38	PASS
		High	2462	8.74	-49.5	≤-11.26	PASS
11G	Ant1	Low	2412	4.55	-26.53	≤-15.45	PASS
			2417	7.40	-37.93	≤-12.6	PASS
		High	2462	7.23	-46.12	≤-12.77	PASS
11N20SISO	Ant1	Low	2412	3.06	-27.2	≤-16.94	PASS
			2417	7.66	-36.46	≤-12.34	PASS
		High	2462	7.28	-45.49	≤-12.72	PASS
11N40SISO	Ant1	Low	2422	-2.88	-40.32	≤-22.88	PASS
			2427	0.63	-41.36	≤-19.37	PASS
			2432	1.58	-37.33	≤-18.42	PASS
		High	2452	1.63	-44.51	≤-18.37	PASS

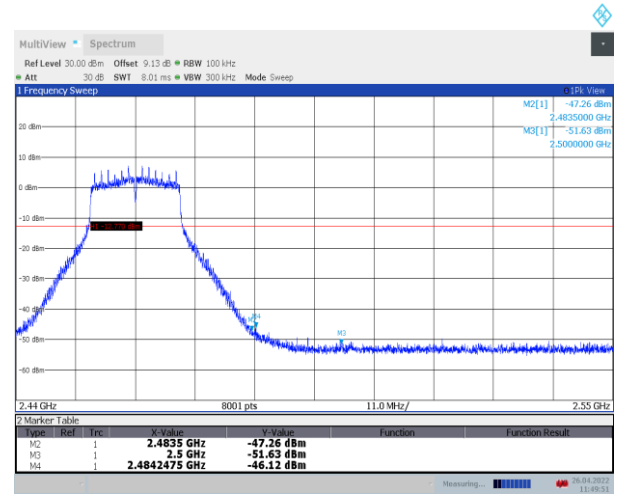
6.2 Test Graphs



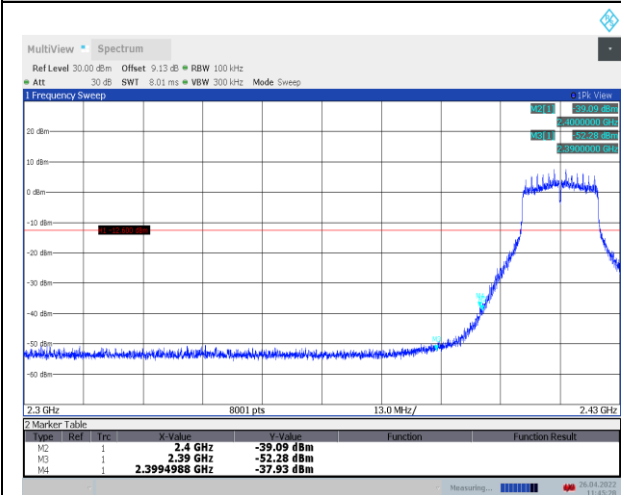
11G_Ant1_Low_2412



11G_Ant1_High_2462



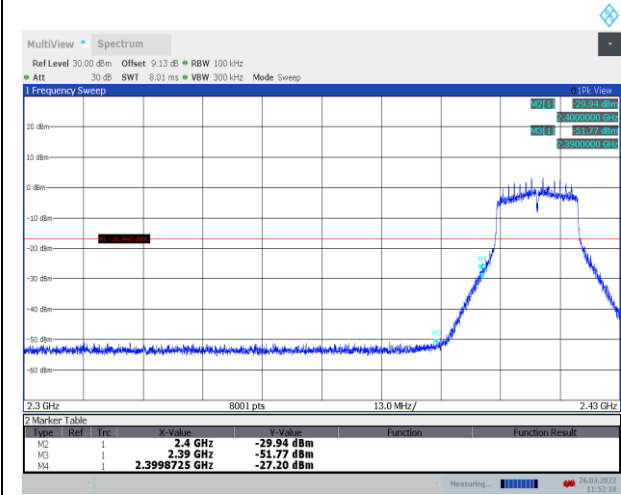
11G_Ant1_Low_2417



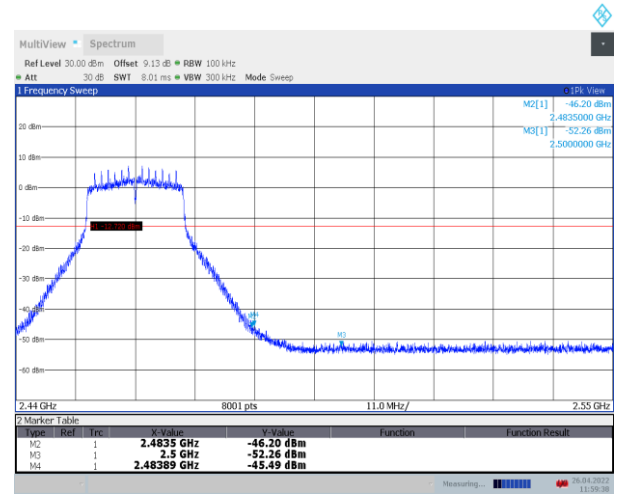
-

-

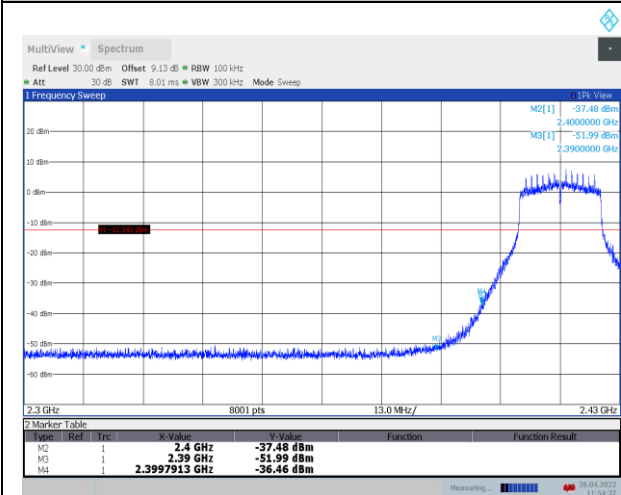
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462

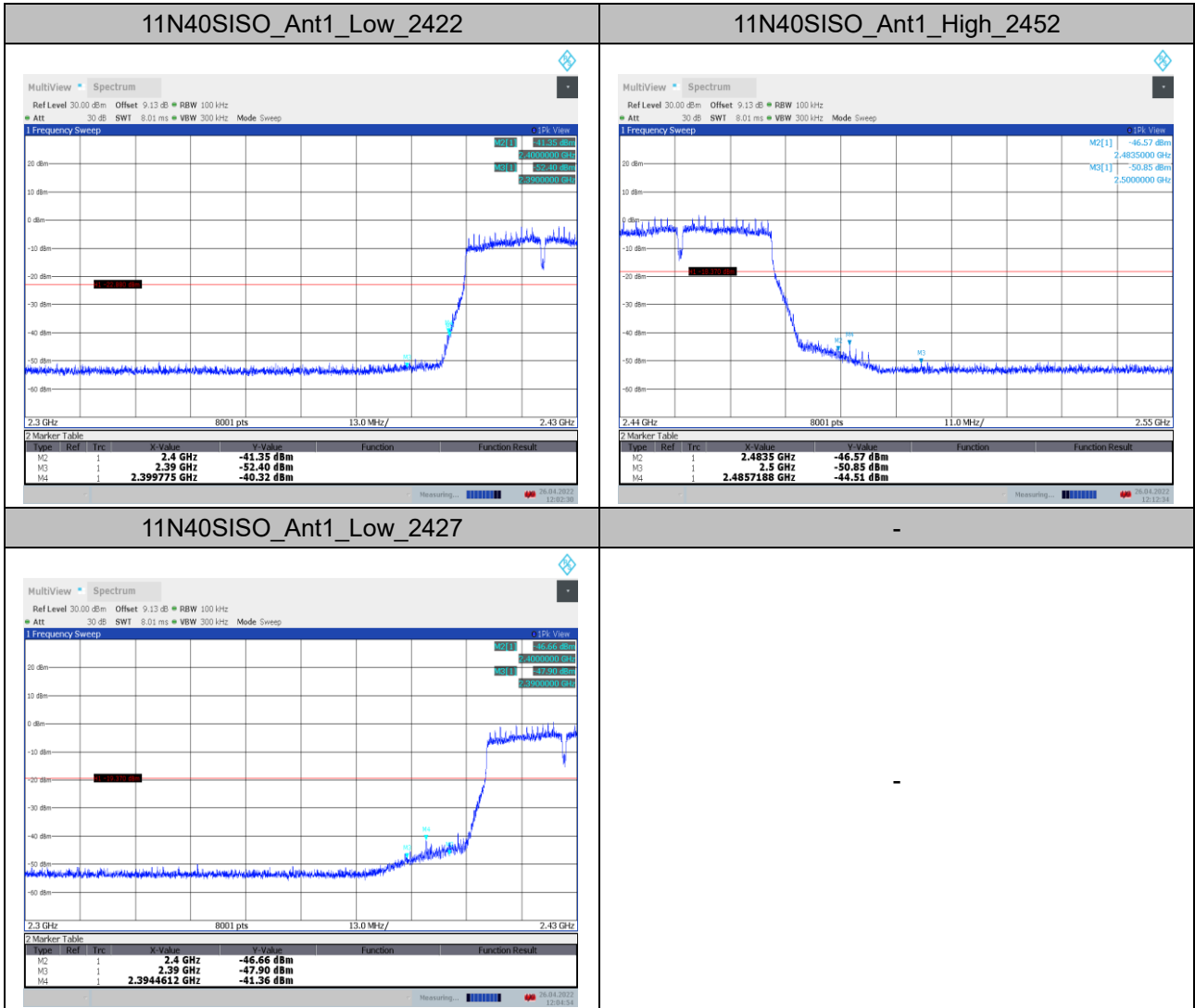


11N20SISO_Ant1_Low_2417



-

-

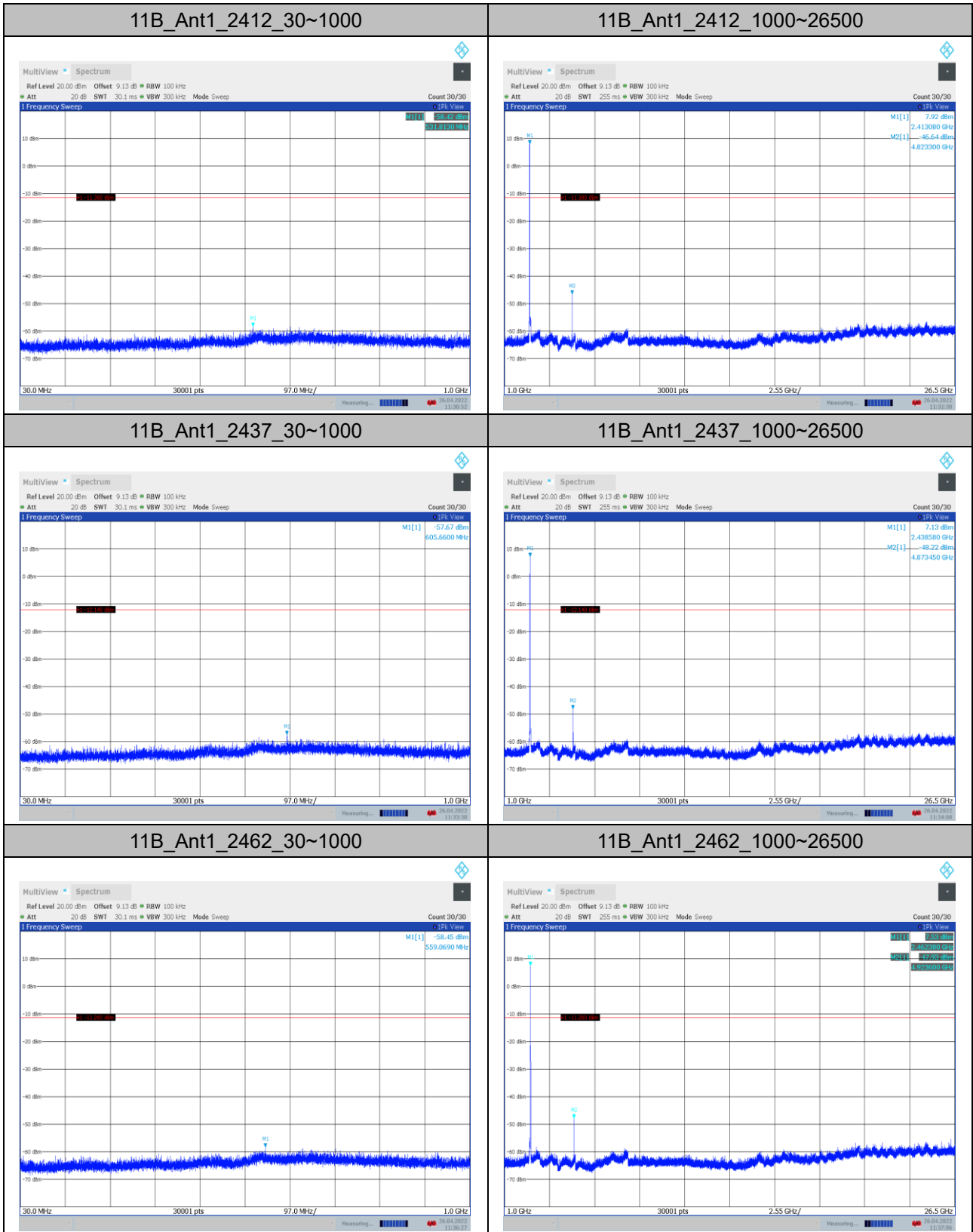


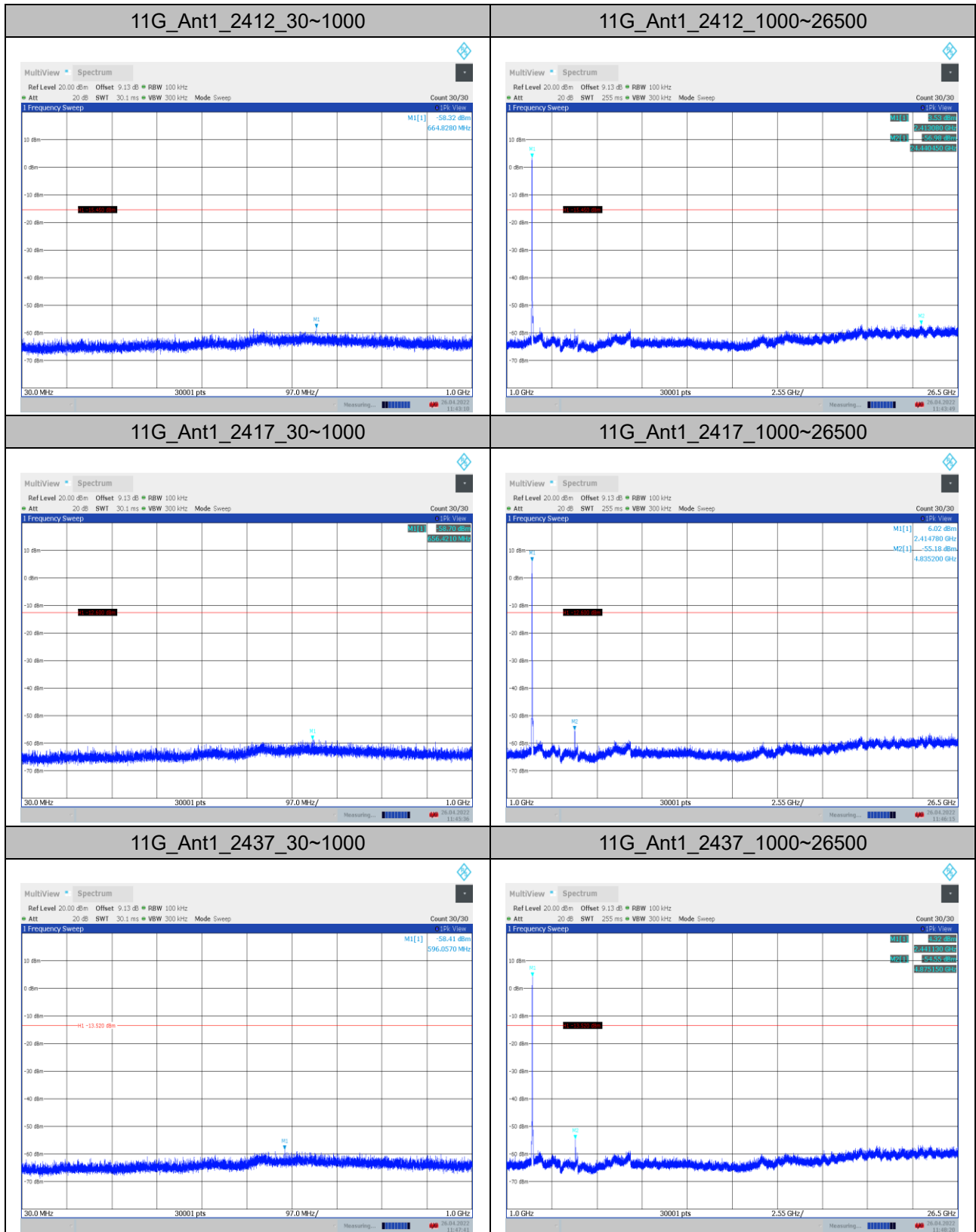
7 Appendix G: Conducted Spurious Emission

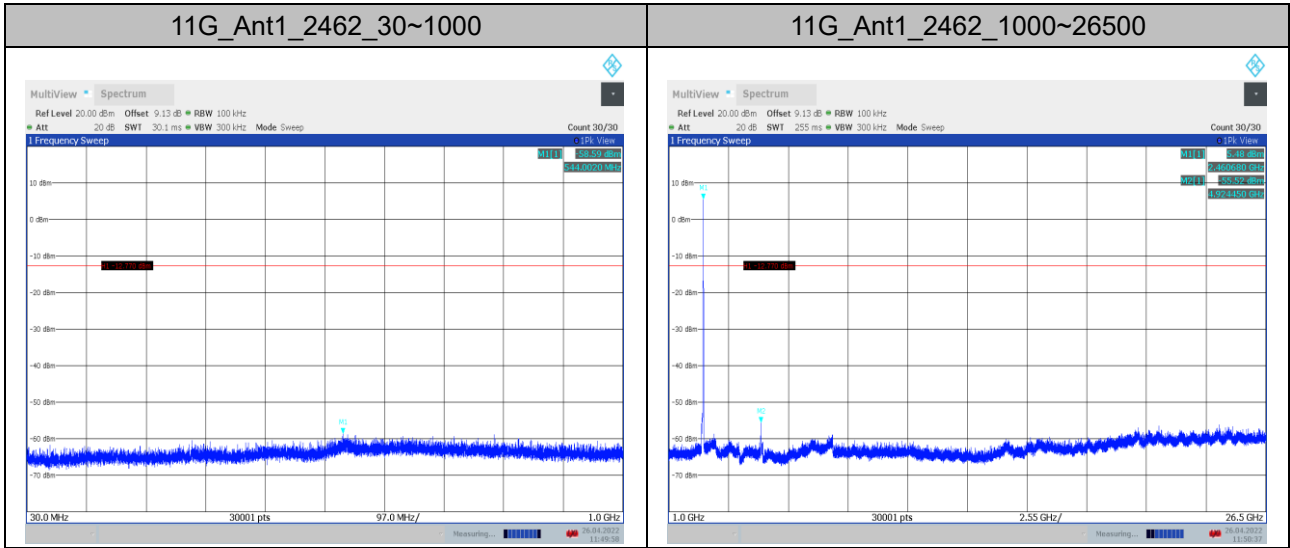
7.1 Test Result

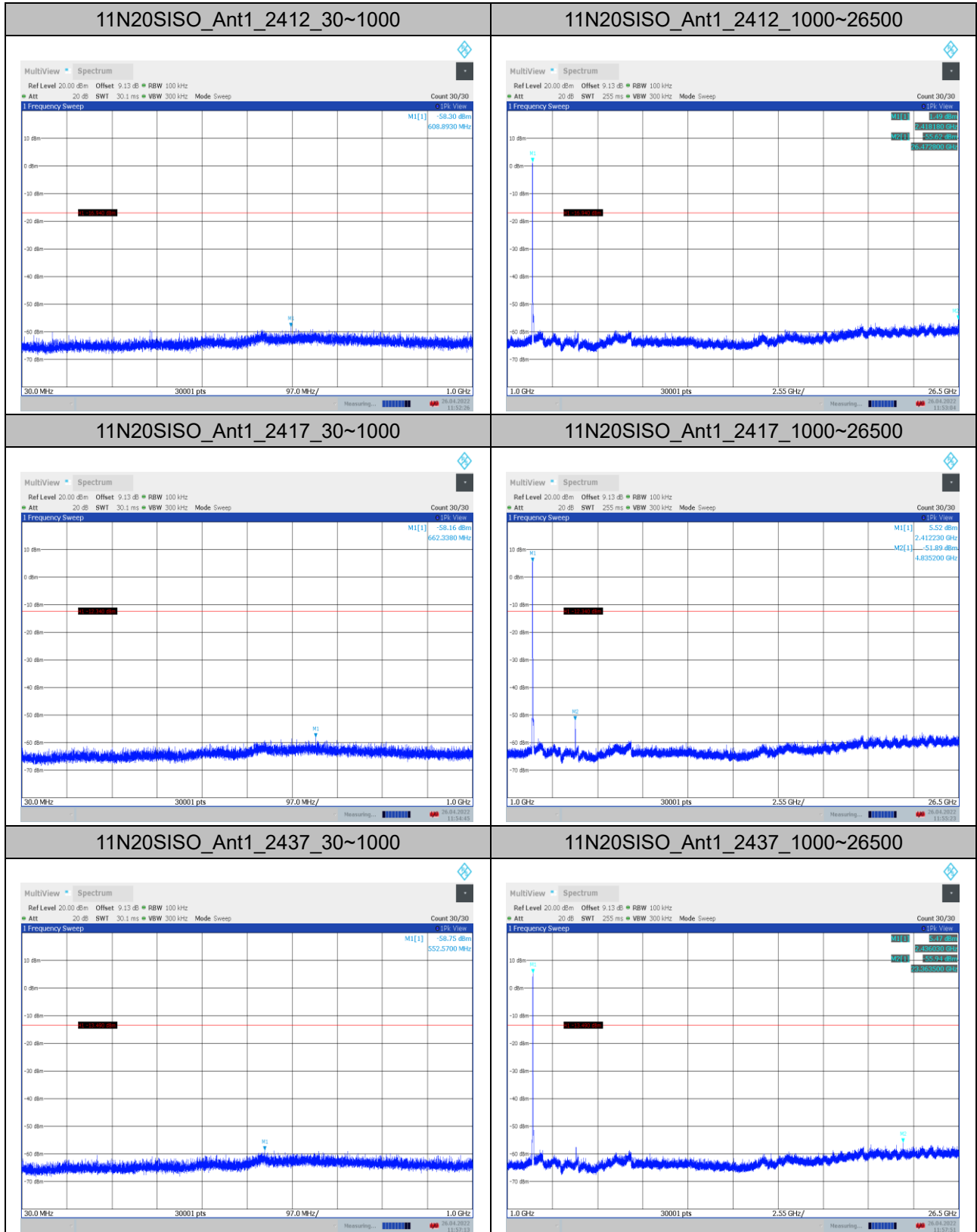
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	8.62	-58.42	≤-11.38	PASS
			1000~26500	8.62	-46.64	≤-11.38	PASS
		2437	30~1000	7.86	-57.67	≤-12.14	PASS
			1000~26500	7.86	-48.22	≤-12.14	PASS
		2462	30~1000	8.74	-58.45	≤-11.26	PASS
			1000~26500	8.74	-47.93	≤-11.26	PASS
11G	Ant1	2412	30~1000	4.55	-58.32	≤-15.45	PASS
			1000~26500	4.55	-56.98	≤-15.45	PASS
		2417	30~1000	7.40	-58.7	≤-12.6	PASS
			1000~26500	7.40	-55.18	≤-12.6	PASS
		2437	30~1000	6.48	-58.41	≤-13.52	PASS
			1000~26500	6.48	-54.55	≤-13.52	PASS
		2462	30~1000	7.23	-58.59	≤-12.77	PASS
			1000~26500	7.23	-55.52	≤-12.77	PASS
11N20SISO	Ant1	2412	30~1000	3.06	-58.3	≤-16.94	PASS
			1000~26500	3.06	-55.62	≤-16.94	PASS
		2417	30~1000	7.66	-58.16	≤-12.34	PASS
			1000~26500	7.66	-51.89	≤-12.34	PASS
		2437	30~1000	6.51	-58.75	≤-13.49	PASS
			1000~26500	6.51	-55.94	≤-13.49	PASS
2462	30~1000	7.28	-58.85	≤-12.72	PASS		
	1000~26500	7.28	-55.98	≤-12.72	PASS		
11N40SISO	Ant1	2422	30~1000	-2.88	-58.72	≤-22.88	PASS
			1000~26500	-2.88	-56.21	≤-22.88	PASS
		2427	30~1000	0.63	-58.8	≤-19.37	PASS
			1000~26500	0.63	-56.22	≤-19.37	PASS
		2432	30~1000	1.58	-58.2	≤-18.42	PASS
			1000~26500	1.58	-55.87	≤-18.42	PASS
		2437	30~1000	2.11	-58.89	≤-17.89	PASS
			1000~26500	2.11	-56.6	≤-17.89	PASS
2452	30~1000	1.63	-58.55	≤-18.37	PASS		
	1000~26500	1.63	-56.77	≤-18.37	PASS		

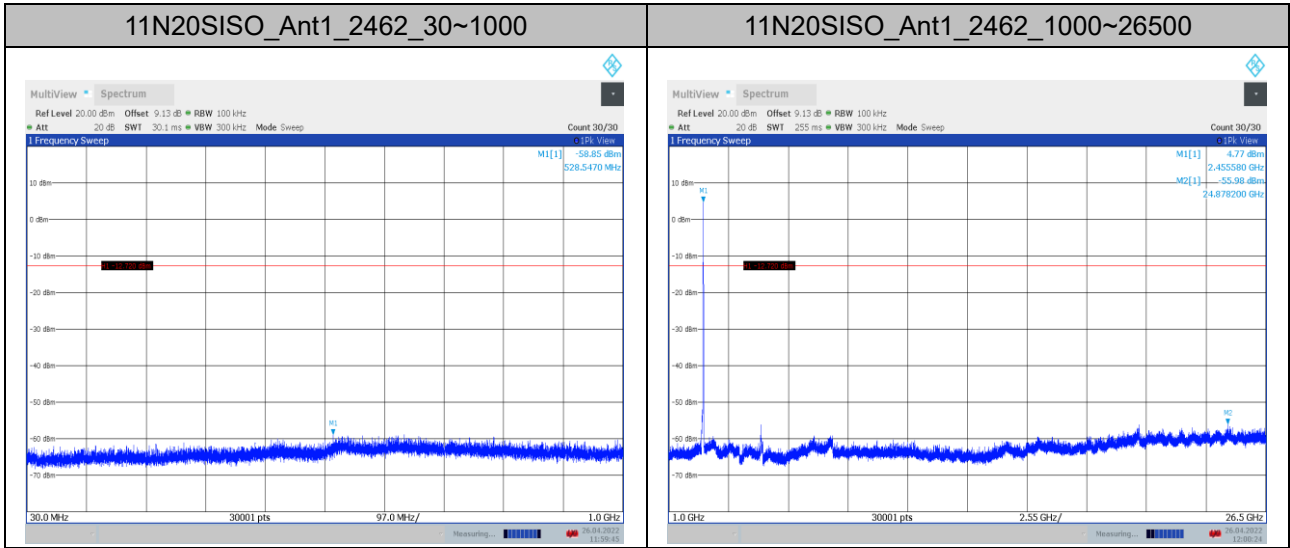
7.2 Test Graphs

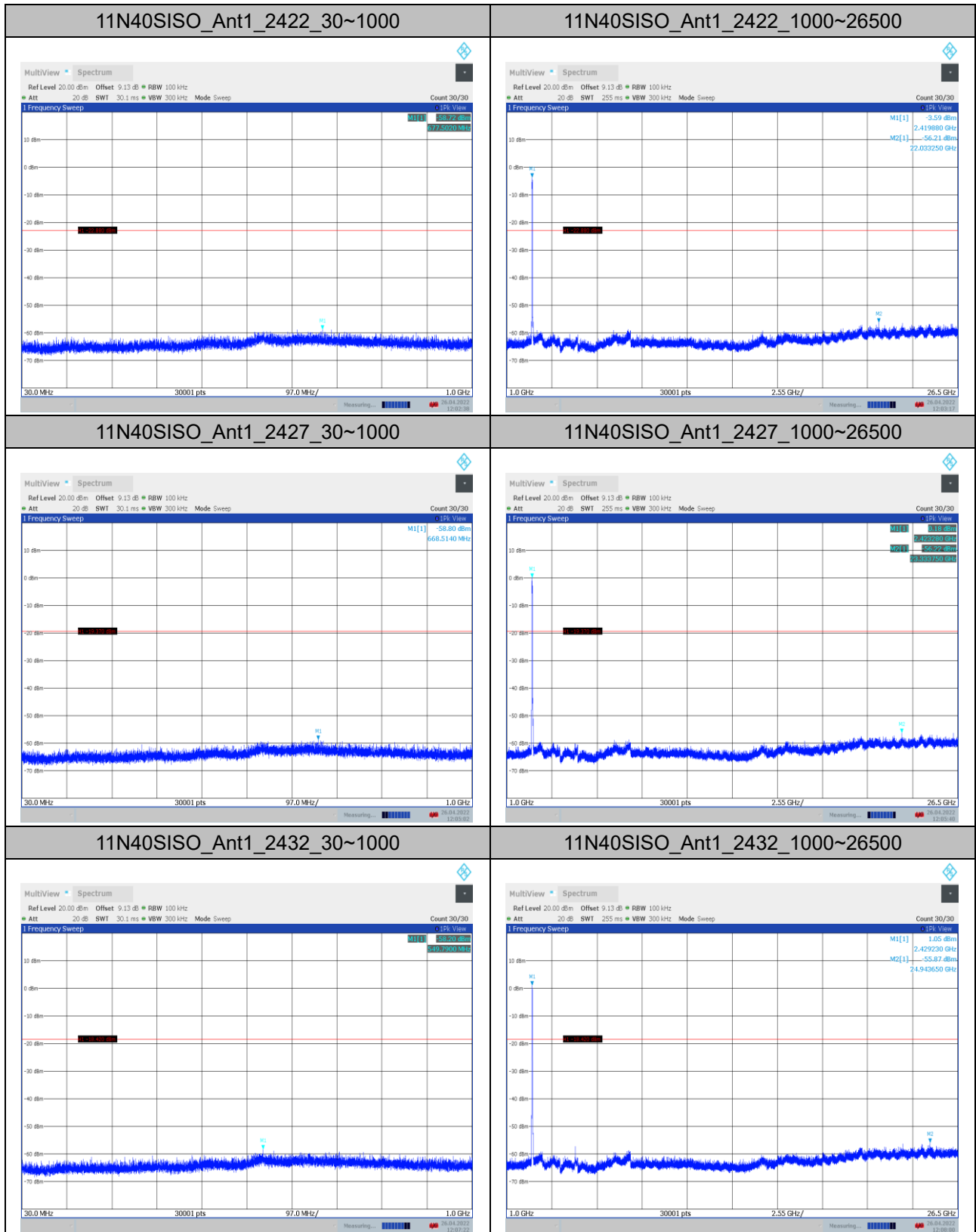


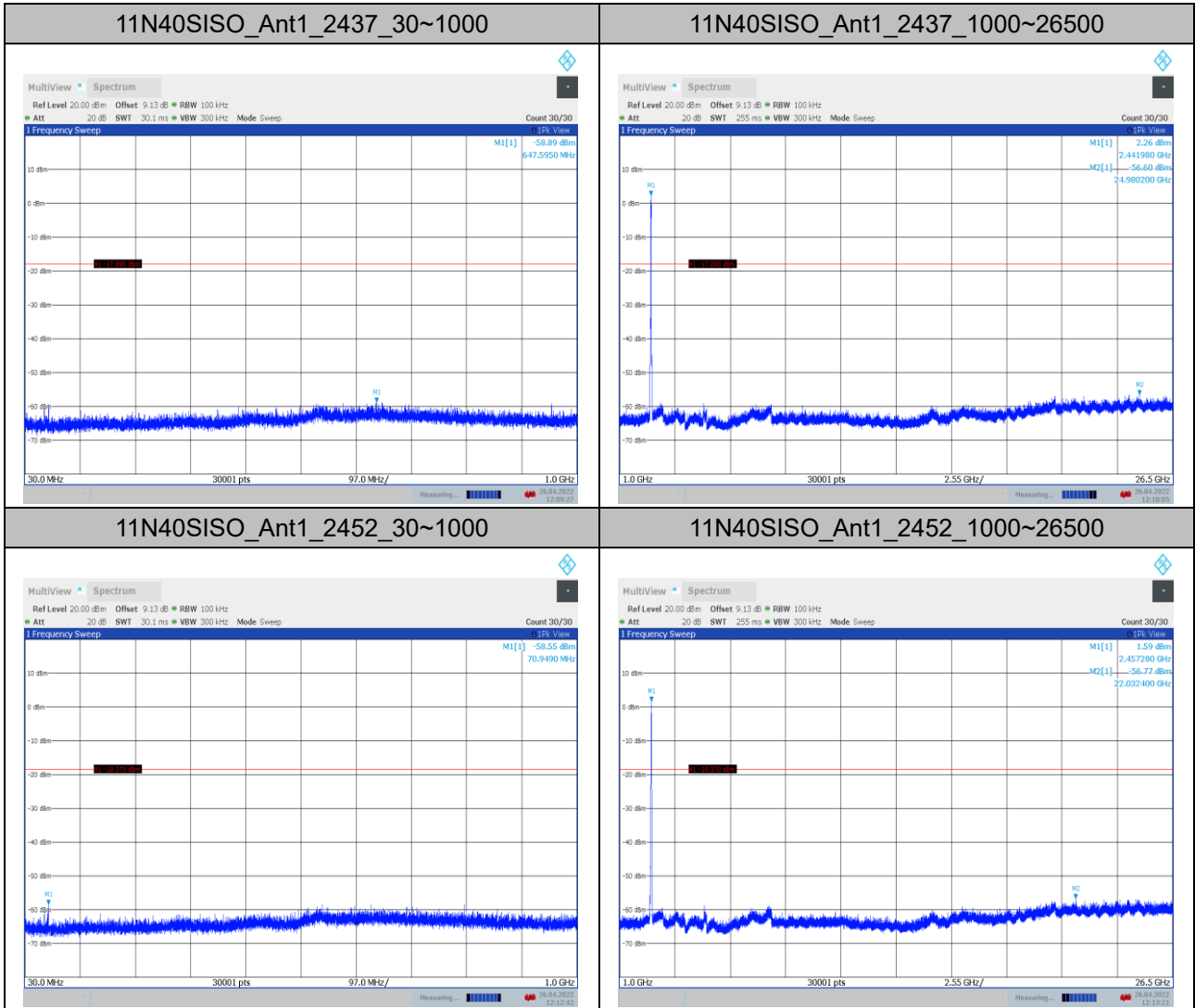










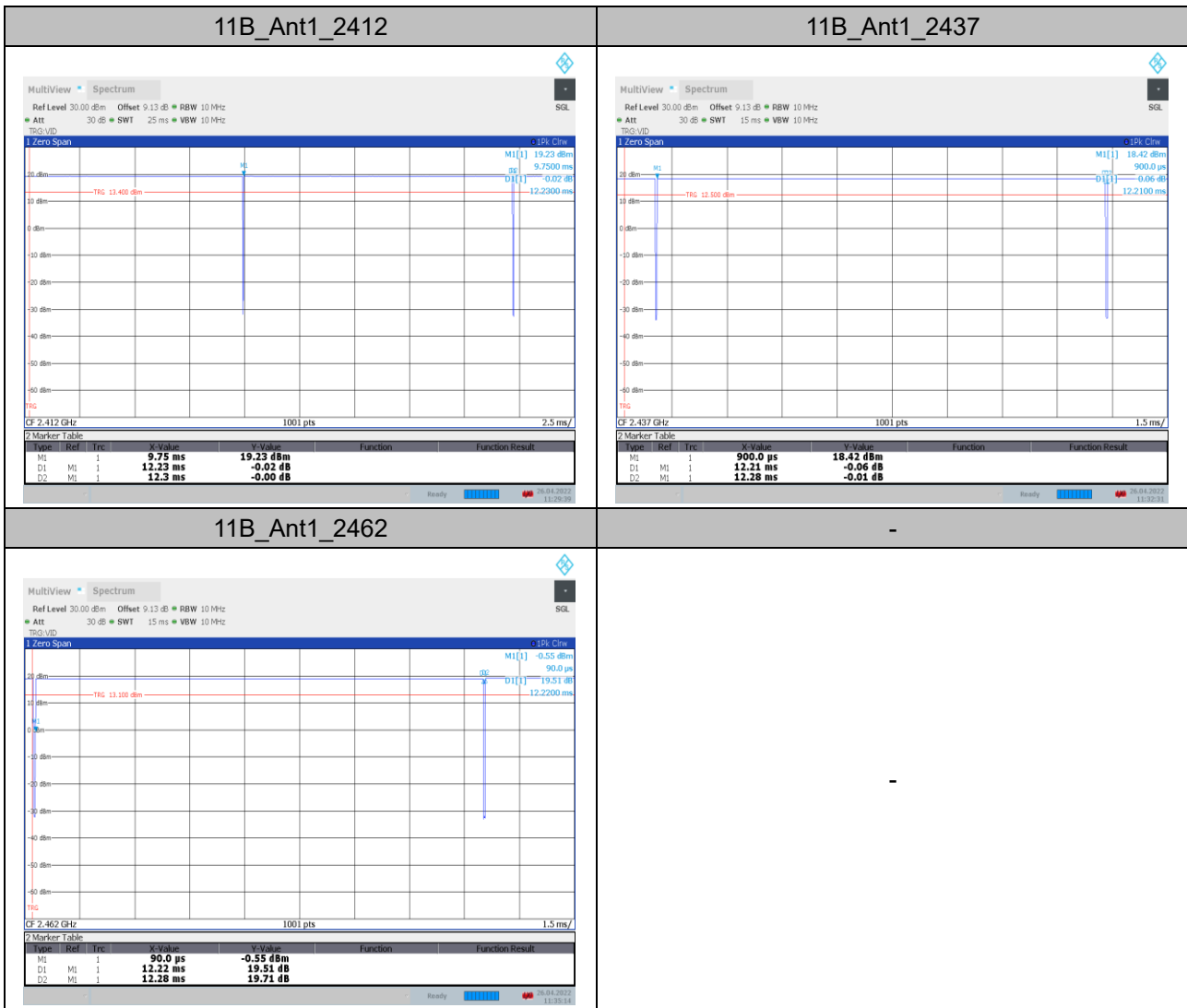


8 Appendix H: Duty Cycle

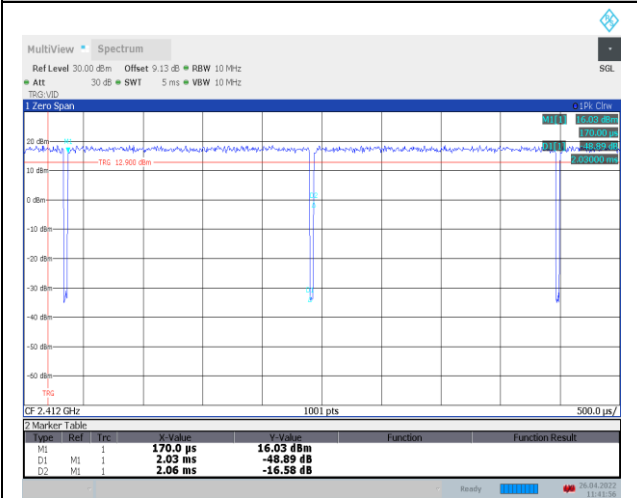
8.1 Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	12.23	12.30	99.43
		2437	12.21	12.28	99.43
		2462	12.22	12.28	99.51
11G	Ant1	2412	2.03	2.06	98.54
		2417	2.03	2.06	98.54
		2437	2.03	2.06	98.54
		2462	2.03	2.06	98.54
11N20SISO	Ant1	2412	1.88	1.92	97.92
		2417	1.89	1.93	97.93
		2437	1.88	1.92	97.92
		2462	1.89	1.93	97.93
11N40SISO	Ant1	2422	0.93	0.98	94.90
		2427	0.93	0.98	94.90
		2432	0.93	0.98	94.90
		2437	0.92	0.97	94.85
		2452	0.93	0.98	94.90

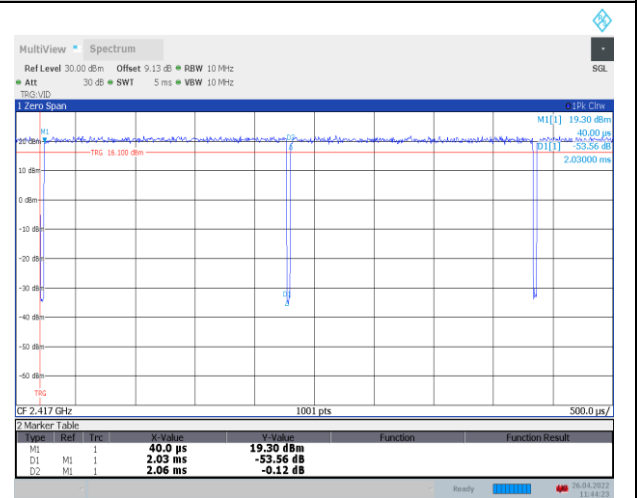
8.2 Test Graphs



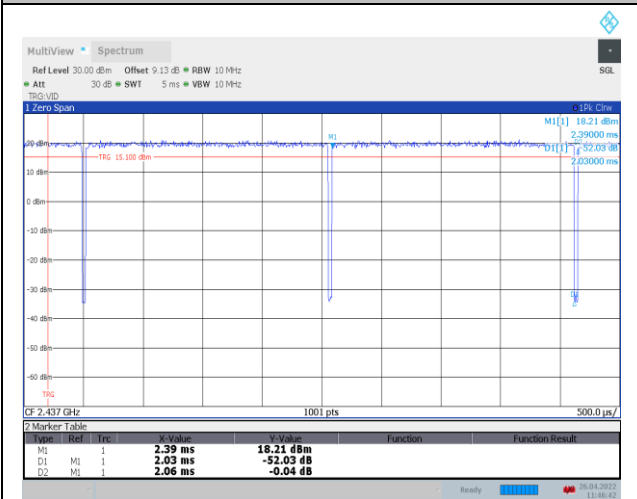
11G_Ant1_2412



11G_Ant1_2417

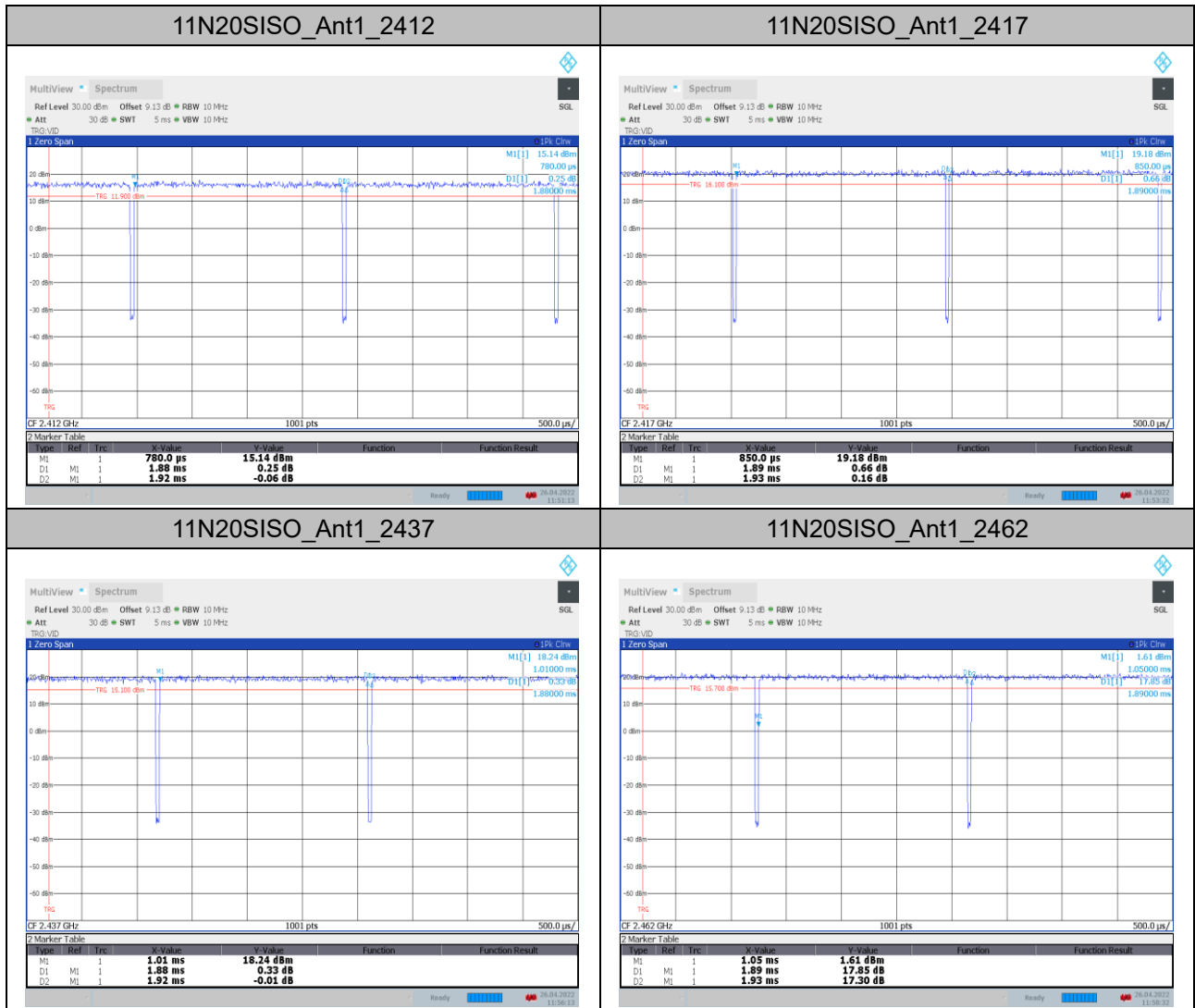


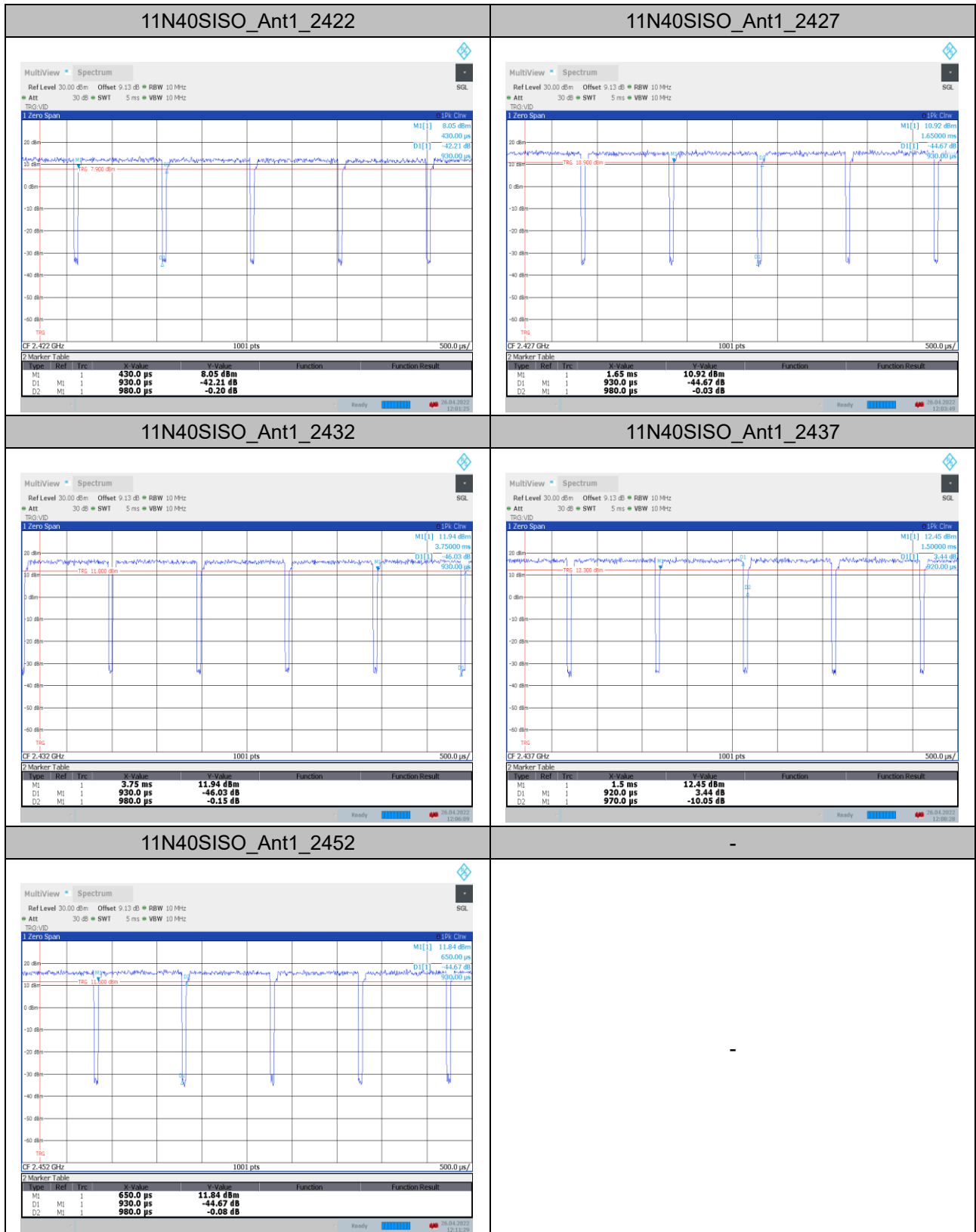
11G_Ant1_2437



11G_Ant1_2462







End of Test Report