

Appendix Test Data for WLAN(2. 4G) (Conducted Measurement)

Product Name: Voter Identification Unit

Trade Mark: SMARTMATIC

Test Model: VIU-500 Model 700

FCC ID: 2AGVK-VIU-500A70-R2

Environmental Conditions

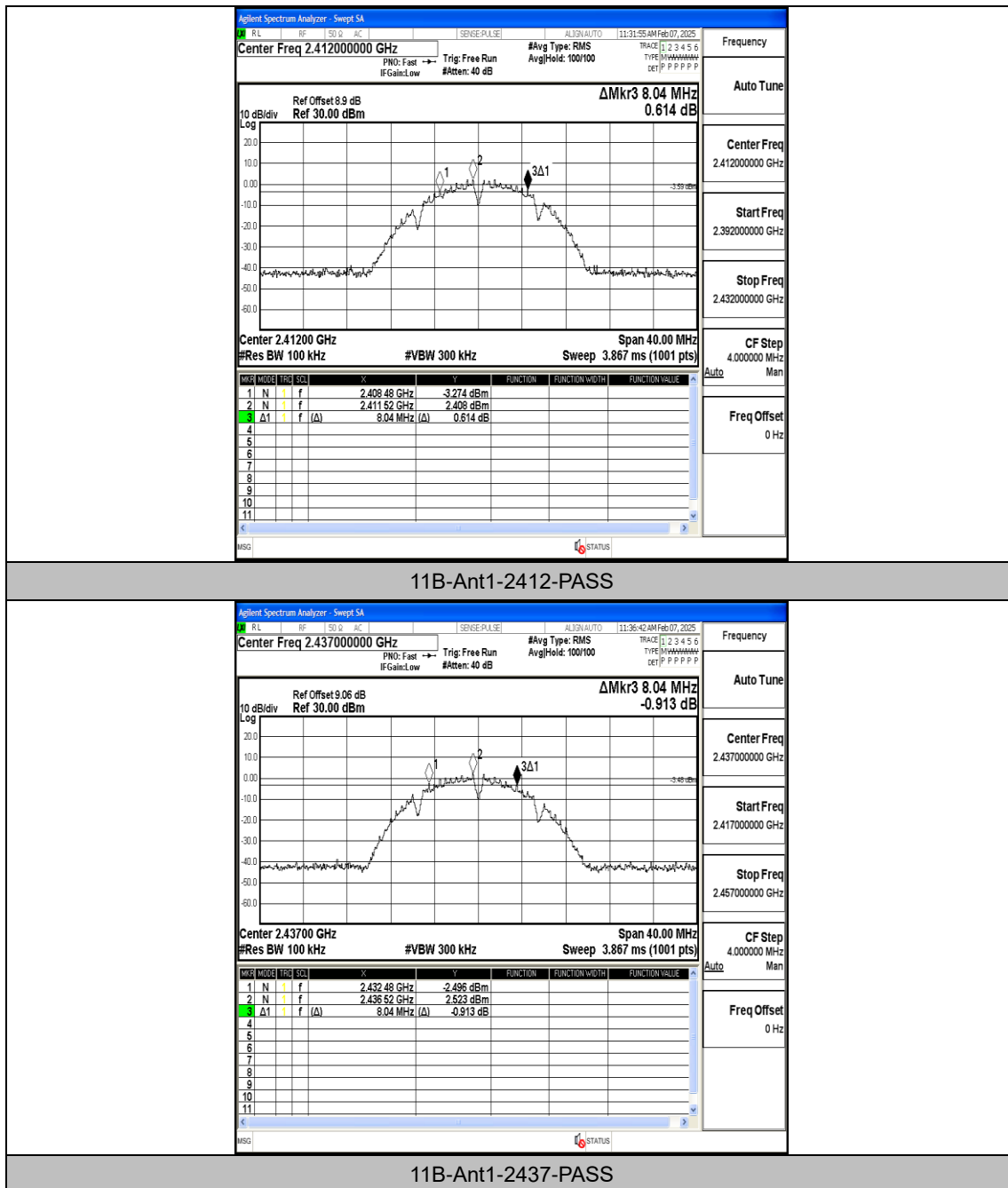
Temperature:	23.5℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

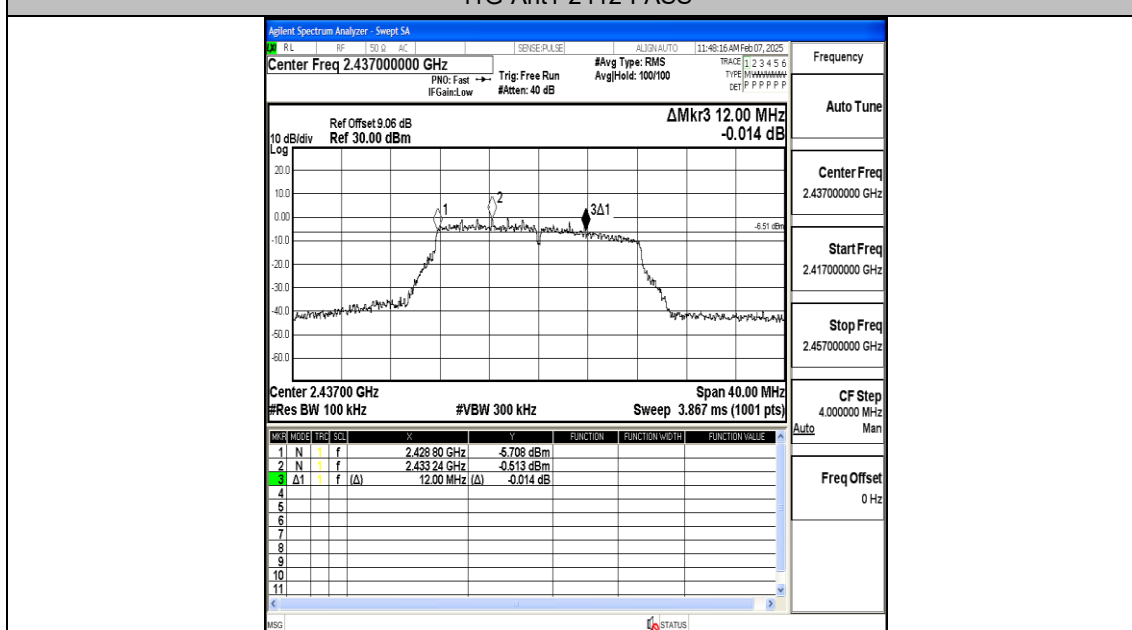
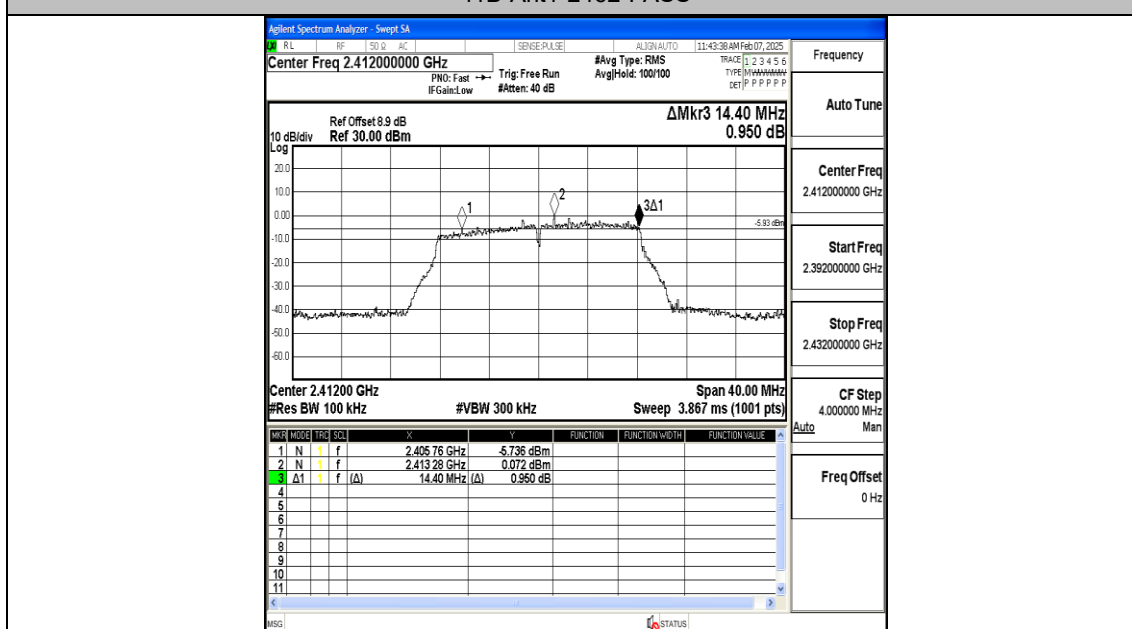
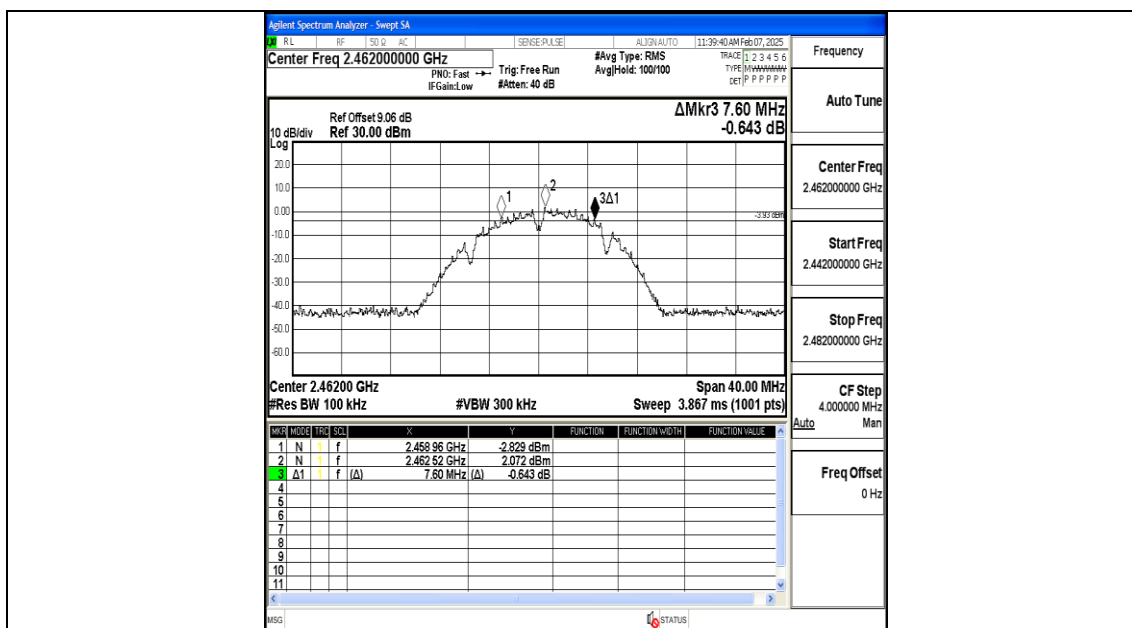
Appendix A: DTS Bandwidth

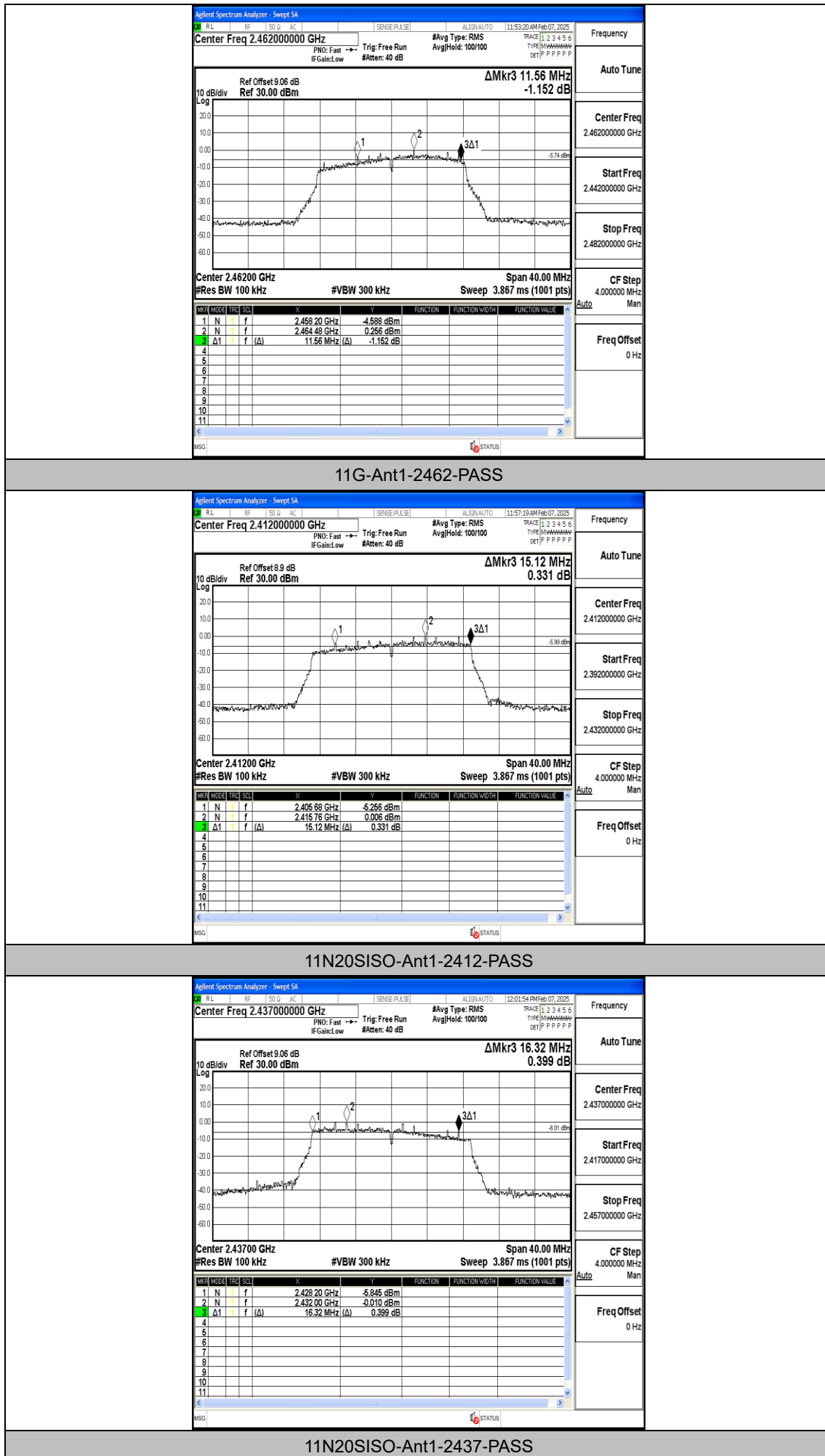
Test Result

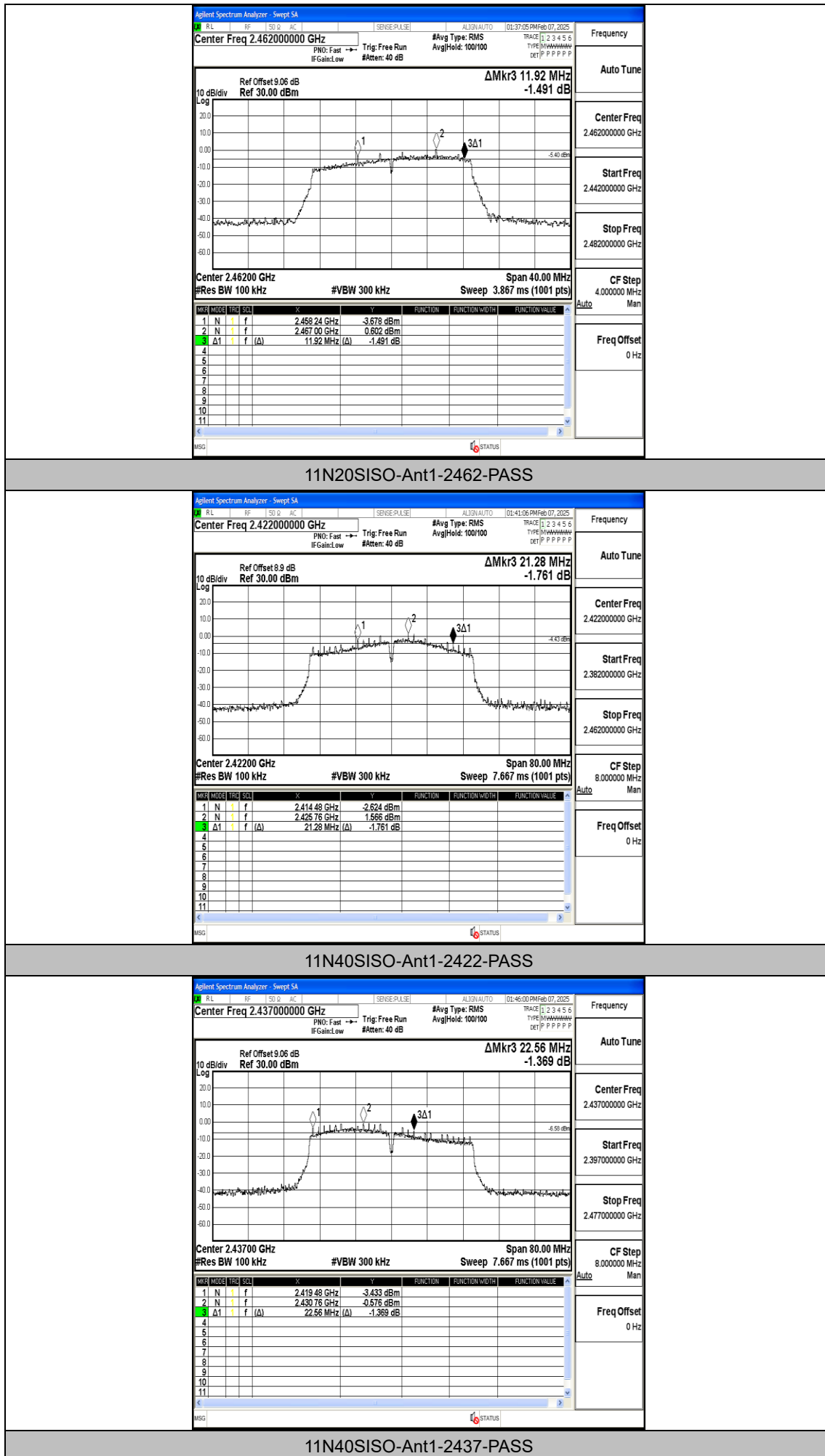
Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	8.040	2408.480	2416.520	0.5	PASS
11B	Ant1	2437	8.040	2432.480	2440.520	0.5	PASS
11B	Ant1	2462	7.600	2458.960	2466.560	0.5	PASS
11G	Ant1	2412	14.400	2405.760	2420.160	0.5	PASS
11G	Ant1	2437	12.000	2428.800	2440.800	0.5	PASS
11G	Ant1	2462	11.560	2458.200	2469.760	0.5	PASS
11N20SISO	Ant1	2412	15.120	2405.680	2420.800	0.5	PASS
11N20SISO	Ant1	2437	16.320	2428.200	2444.520	0.5	PASS
11N20SISO	Ant1	2462	11.920	2458.240	2470.160	0.5	PASS
11N40SISO	Ant1	2422	21.280	2414.480	2435.760	0.5	PASS
11N40SISO	Ant1	2437	22.560	2419.480	2442.040	0.5	PASS
11N40SISO	Ant1	2452	35.680	2434.480	2470.160	0.5	PASS

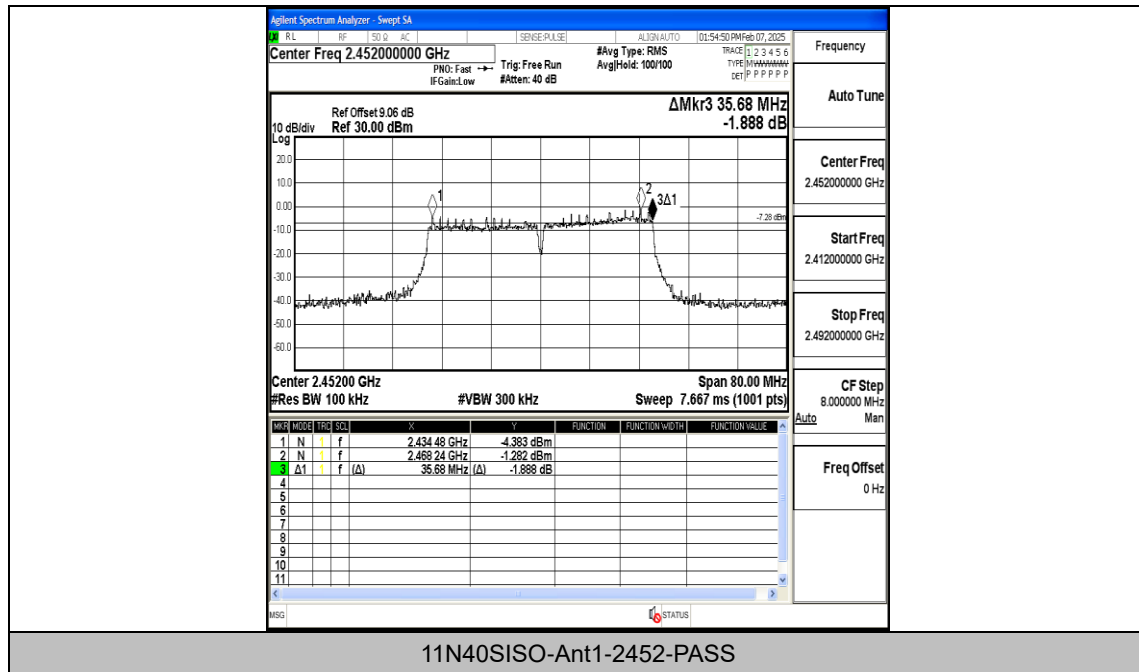
Test Graphs









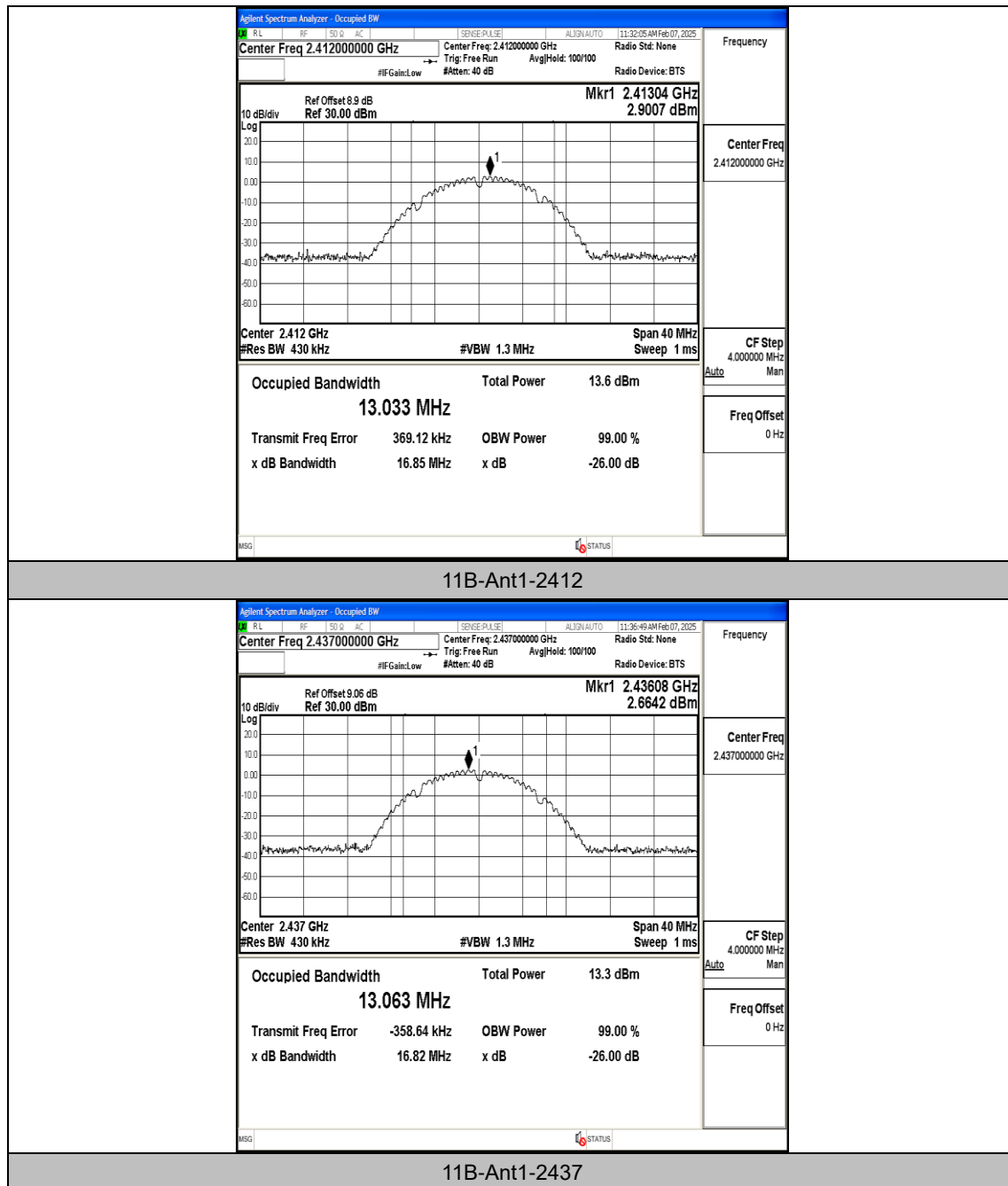


Appendix B: Occupied Channel Bandwidth

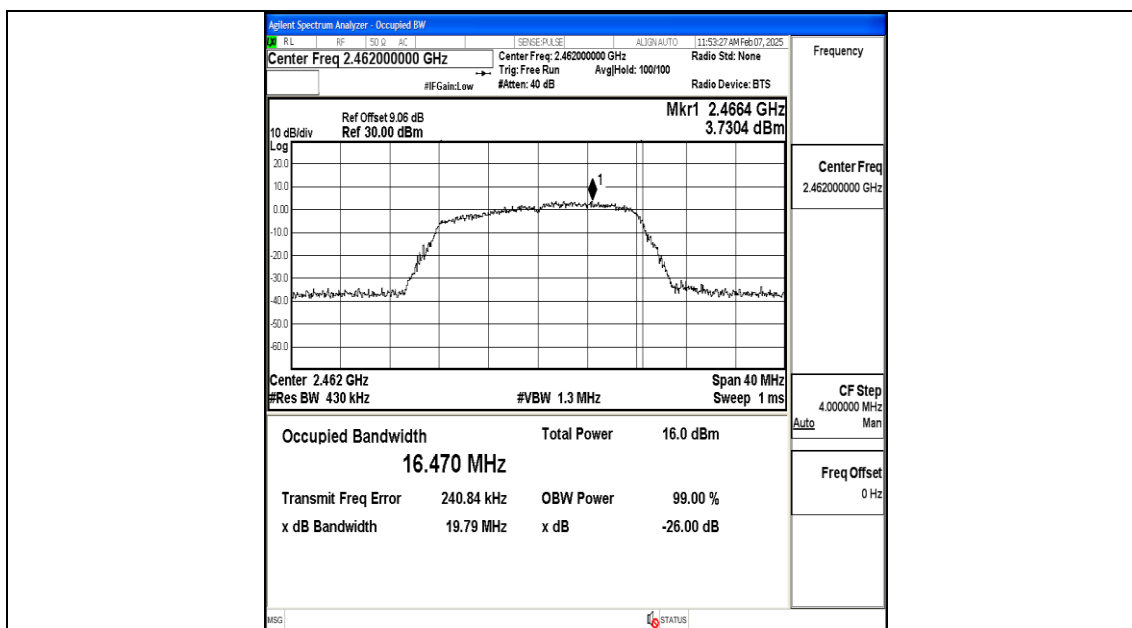
Test Result

Test Mode	Antenna	Channel Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	13.033	2405.8526	2418.8856	---	---
11B	Ant1	2437	13.063	2430.1099	2443.1729	---	---
11B	Ant1	2462	12.565	2456.0924	2468.6574	---	---
11G	Ant1	2412	16.999	2403.7710	2420.7700	---	---
11G	Ant1	2437	16.912	2428.2744	2445.1864	---	---
11G	Ant1	2462	16.470	2454.0058	2470.4758	---	---
11N20SISO	Ant1	2412	17.963	2403.2665	2421.2295	---	---
11N20SISO	Ant1	2437	17.947	2427.7999	2445.7469	---	---
11N20SISO	Ant1	2462	17.711	2453.4320	2471.1430	---	---
11N40SISO	Ant1	2422	35.422	2404.3068	2439.7288	---	---
11N40SISO	Ant1	2437	35.887	2418.8614	2454.7484	---	---
11N40SISO	Ant1	2452	36.905	2433.7393	2470.6443	---	---

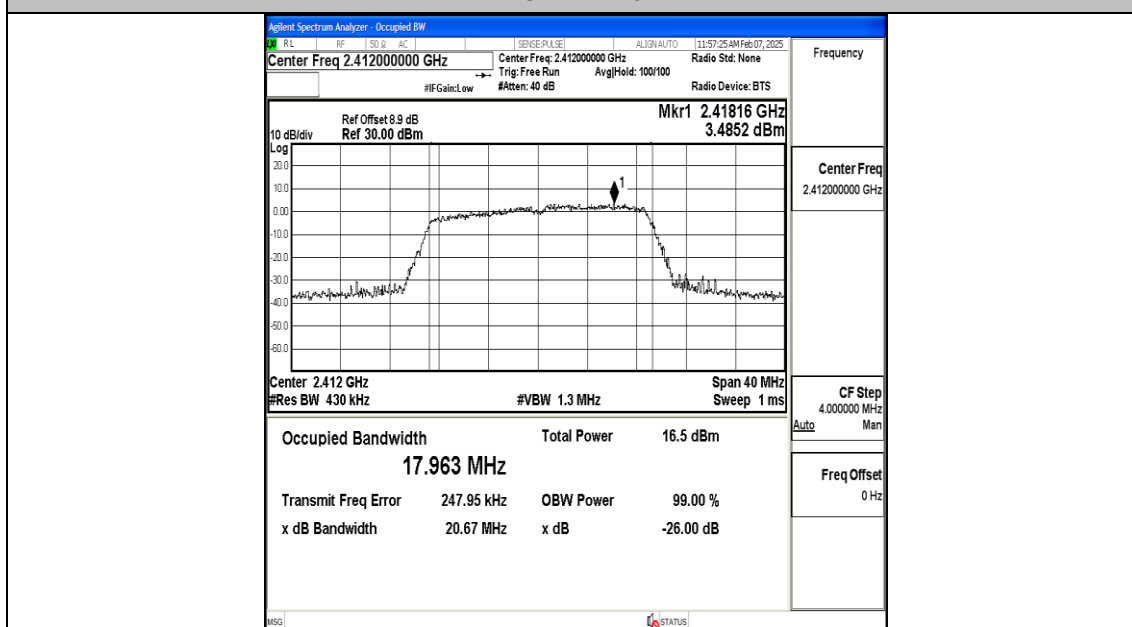
Test Graphs



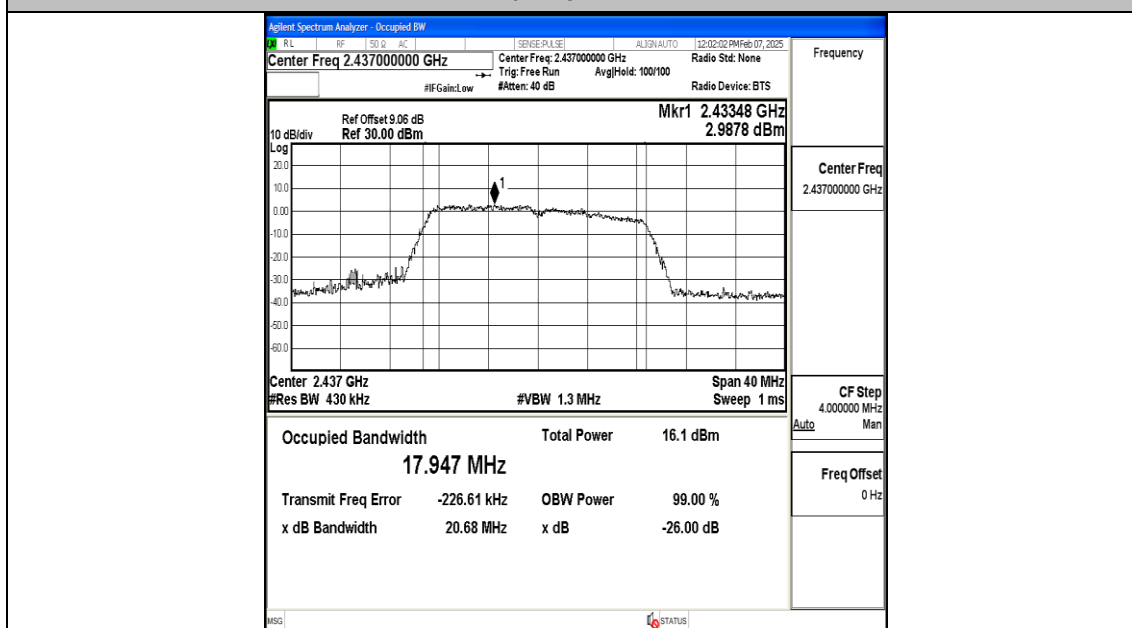




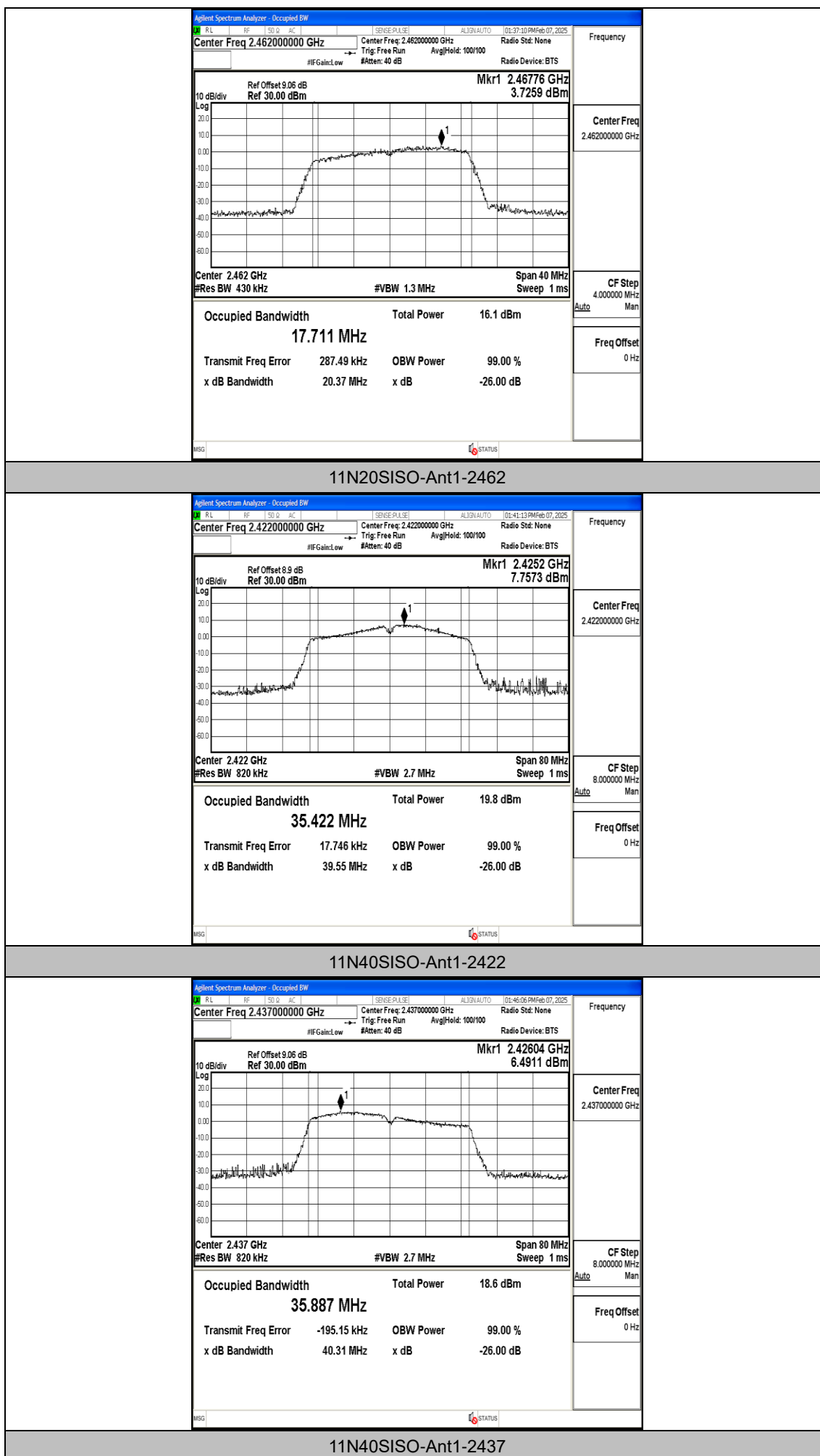
11G-Ant1-2462

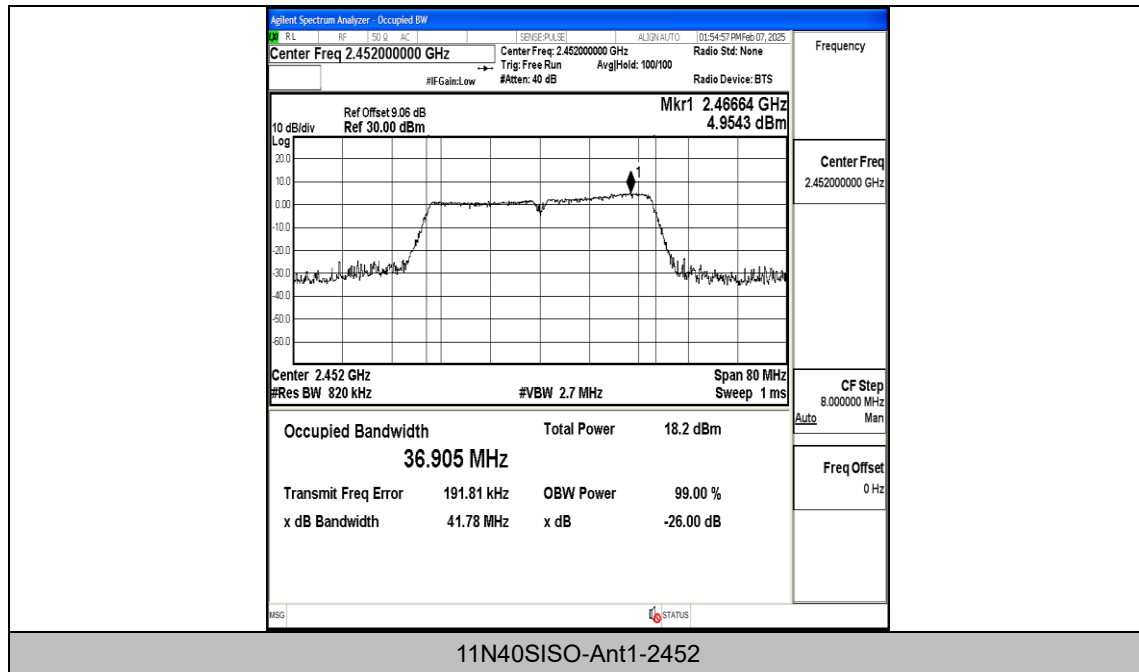


11N20SISO-Ant1-2412



11N20SISO-Ant1-2437





Appendix C: Maximum Average conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11B	Ant1	2412	10.61	≤30.00	PASS
11B	Ant1	2437	10.36	≤30.00	PASS
11B	Ant1	2462	10.13	≤30.00	PASS
11G	Ant1	2412	10.56	≤30.00	PASS
11G	Ant1	2437	10.17	≤30.00	PASS
11G	Ant1	2462	9.96	≤30.00	PASS
11N20SISO	Ant1	2412	10.41	≤30.00	PASS
11N20SISO	Ant1	2437	10.11	≤30.00	PASS
11N20SISO	Ant1	2462	9.98	≤30.00	PASS
11N40SISO	Ant1	2422	13.06	≤30.00	PASS
11N40SISO	Ant1	2437	11.64	≤30.00	PASS
11N40SISO	Ant1	2452	11.37	≤30.00	PASS

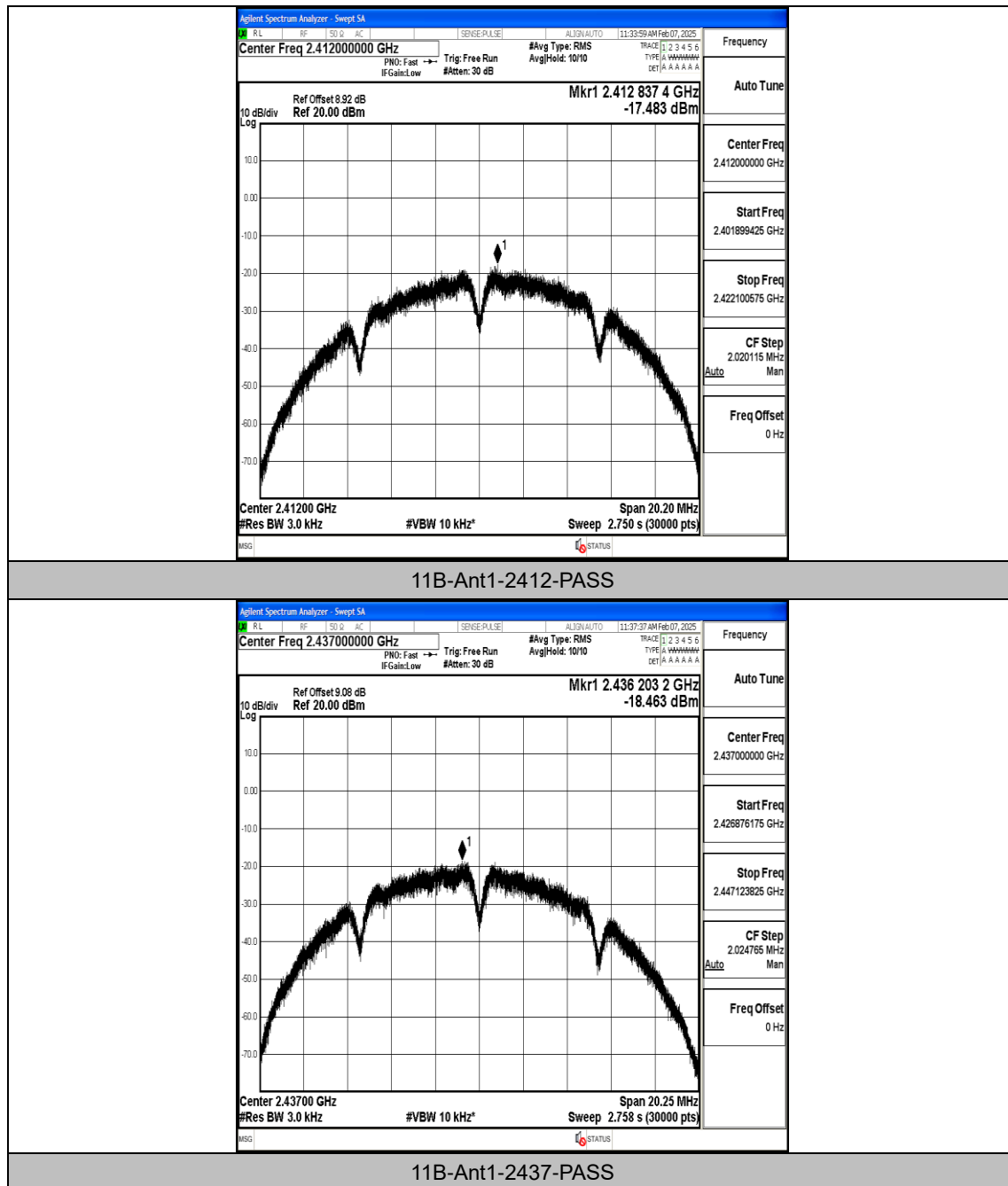
Note: The Duty Cycle Factor is compensated in the result.

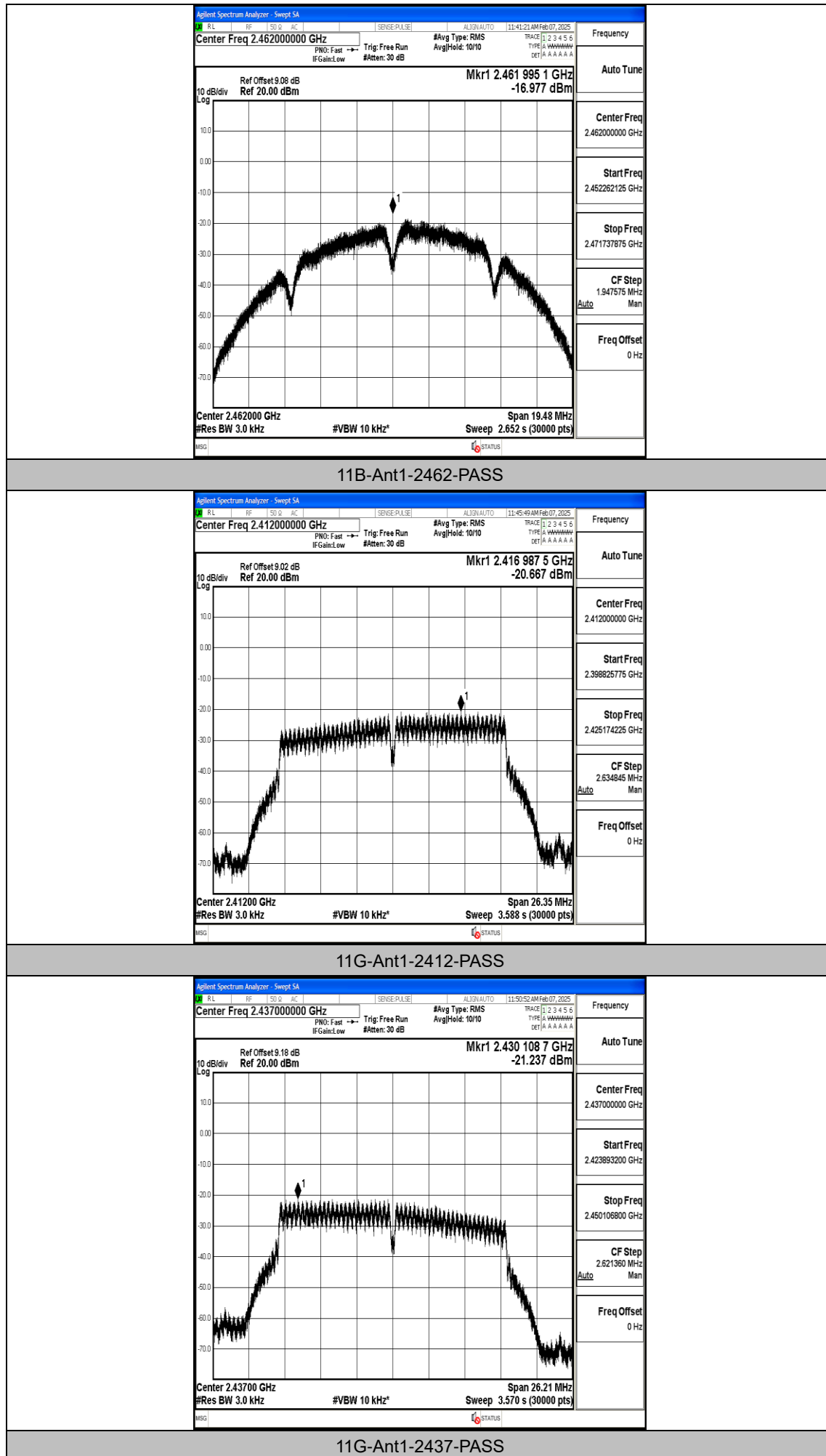
Appendix D: Maximum Average power spectral density

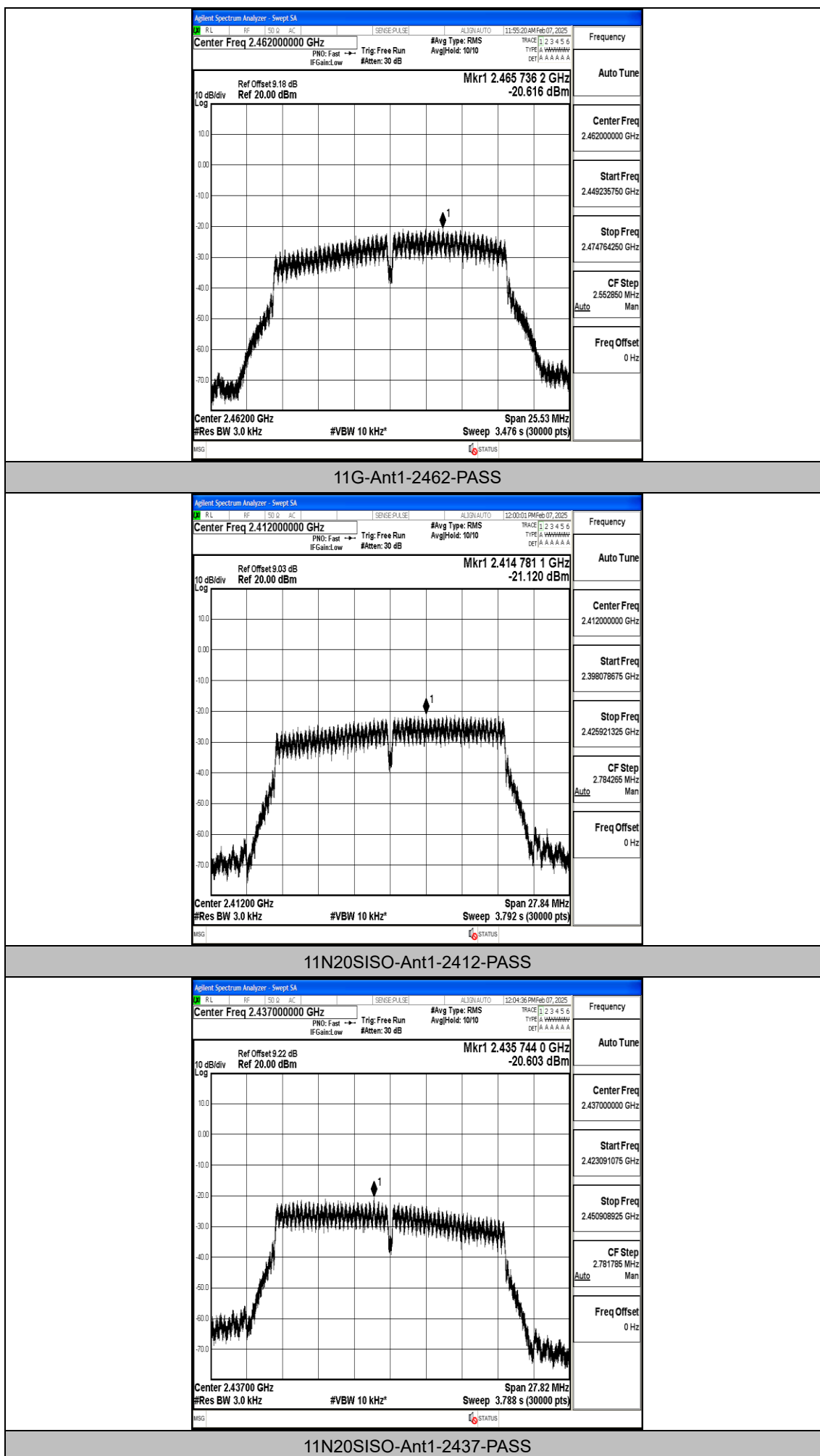
Test Result

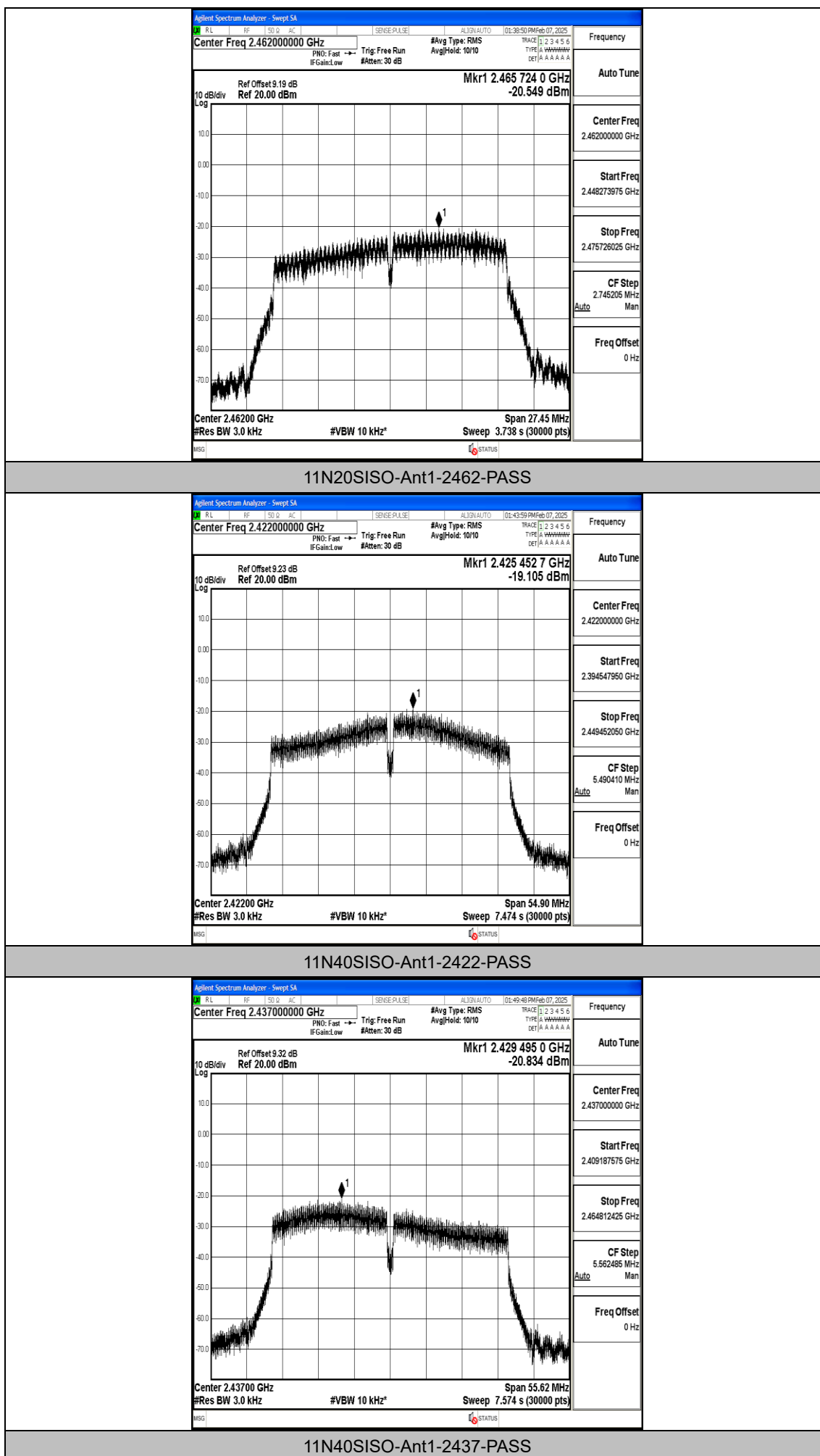
Test Mode	Antenna	Frequency [MHz]	Raw. Data [dBm/3-100kHz]	Dc. Factor	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-17.50	0.02	-17.48	≤8.00	PASS
11B	Ant1	2437	-18.48	0.02	-18.46	≤8.00	PASS
11B	Ant1	2462	-17.00	0.02	-16.98	≤8.00	PASS
11G	Ant1	2412	-20.79	0.12	-20.67	≤8.00	PASS
11G	Ant1	2437	-21.36	0.12	-21.24	≤8.00	PASS
11G	Ant1	2462	-20.74	0.12	-20.62	≤8.00	PASS
11N20SI SO	Ant1	2412	-21.25	0.13	-21.12	≤8.00	PASS
11N20SI SO	Ant1	2437	-20.76	0.16	-20.60	≤8.00	PASS
11N20SI SO	Ant1	2462	-20.68	0.13	-20.55	≤8.00	PASS
11N40SI SO	Ant1	2422	-19.44	0.33	-19.11	≤8.00	PASS
11N40SI SO	Ant1	2437	-21.09	0.26	-20.83	≤8.00	PASS
11N40SI SO	Ant1	2452	-22.38	0.33	-22.05	≤8.00	PASS

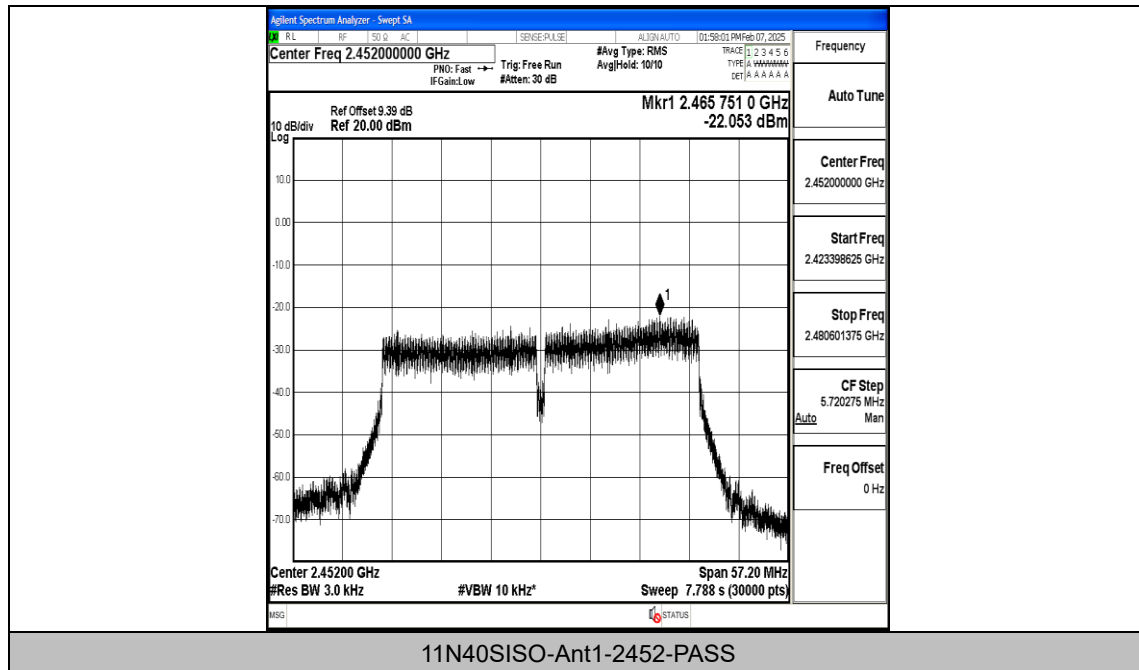
Test Graphs









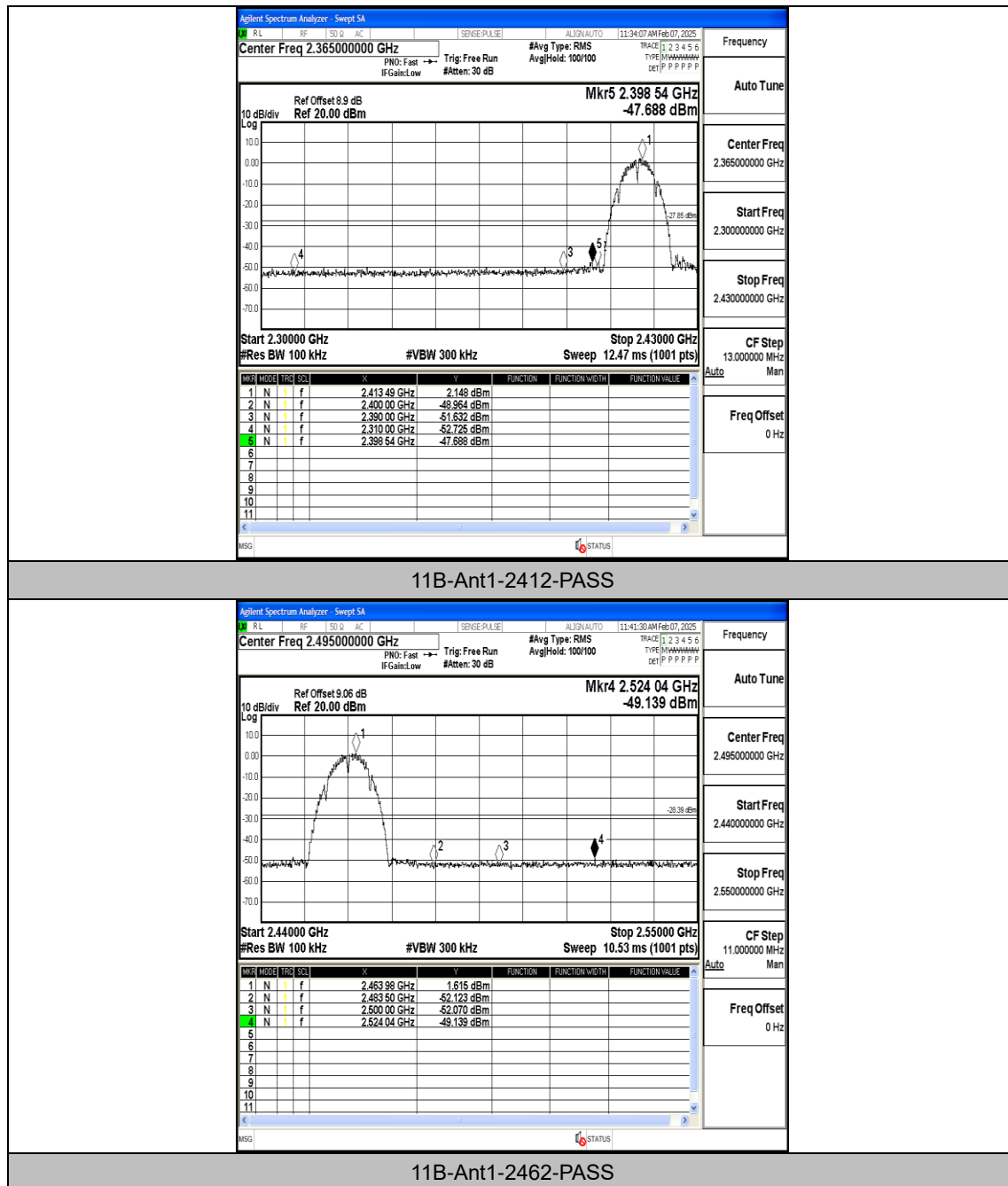


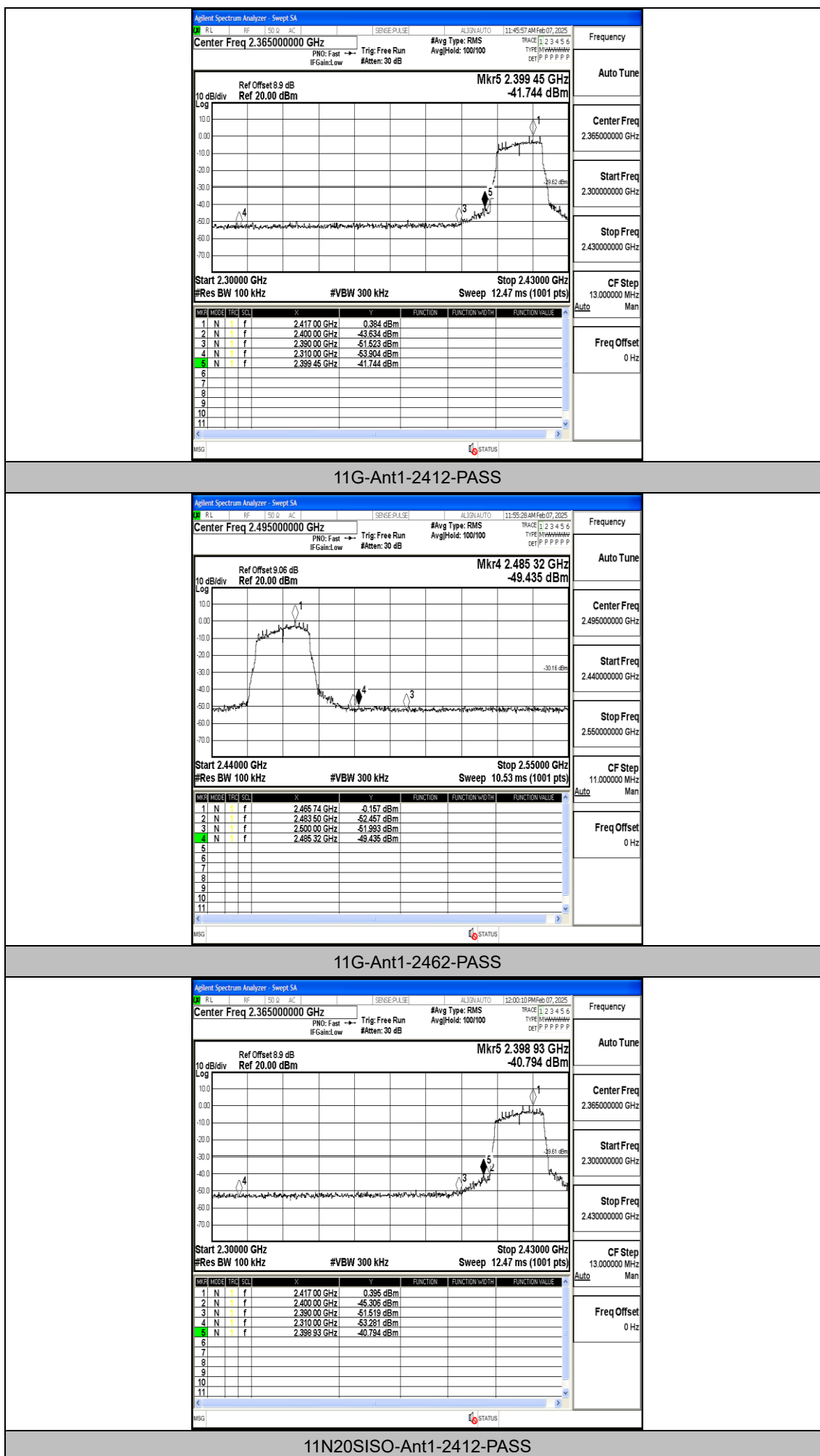
Appendix E: Band edge measurements

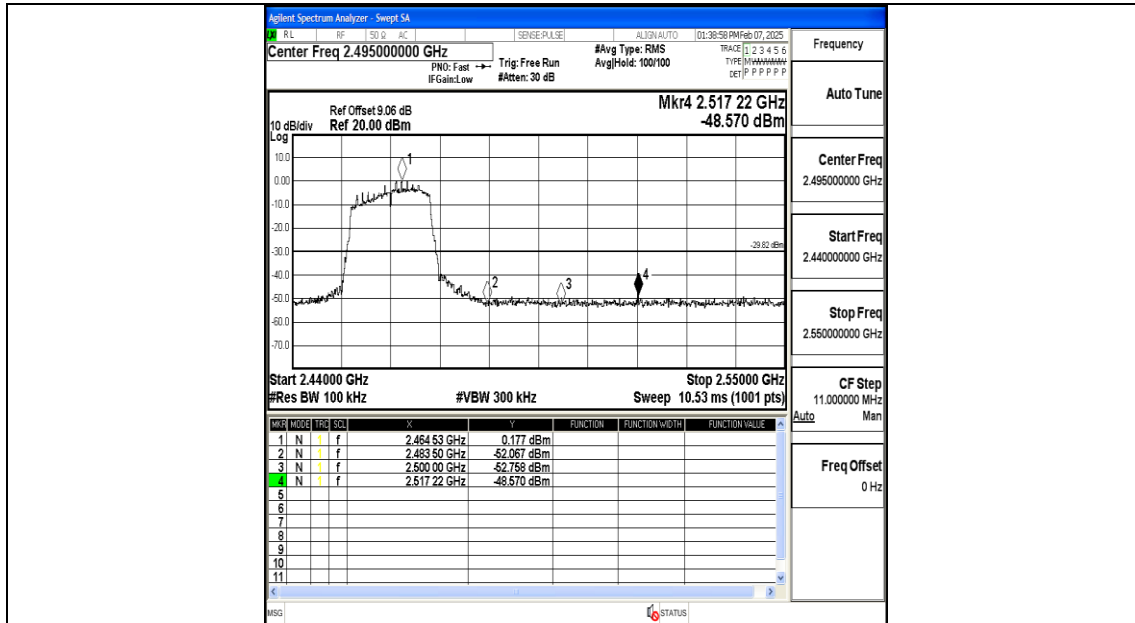
Test Result

Test Mode	Antenna	Ch. Name	Frequency. [MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	2.15	-47.69	≤ -27.85	PASS
11B	Ant1	High	2462	1.62	-49.14	≤ -28.39	PASS
11G	Ant1	Low	2412	0.38	-41.74	≤ -29.62	PASS
11G	Ant1	High	2462	-0.16	-49.44	≤ -30.16	PASS
11N20SI SO	Ant1	Low	2412	0.40	-40.79	≤ -29.61	PASS
11N20SI SO	Ant1	High	2462	0.18	-48.57	≤ -29.82	PASS
11N40SI SO	Ant1	Low	2422	1.92	-37.24	≤ -28.08	PASS
11N40SI SO	Ant1	High	2452	-0.65	-41.11	≤ -30.65	PASS

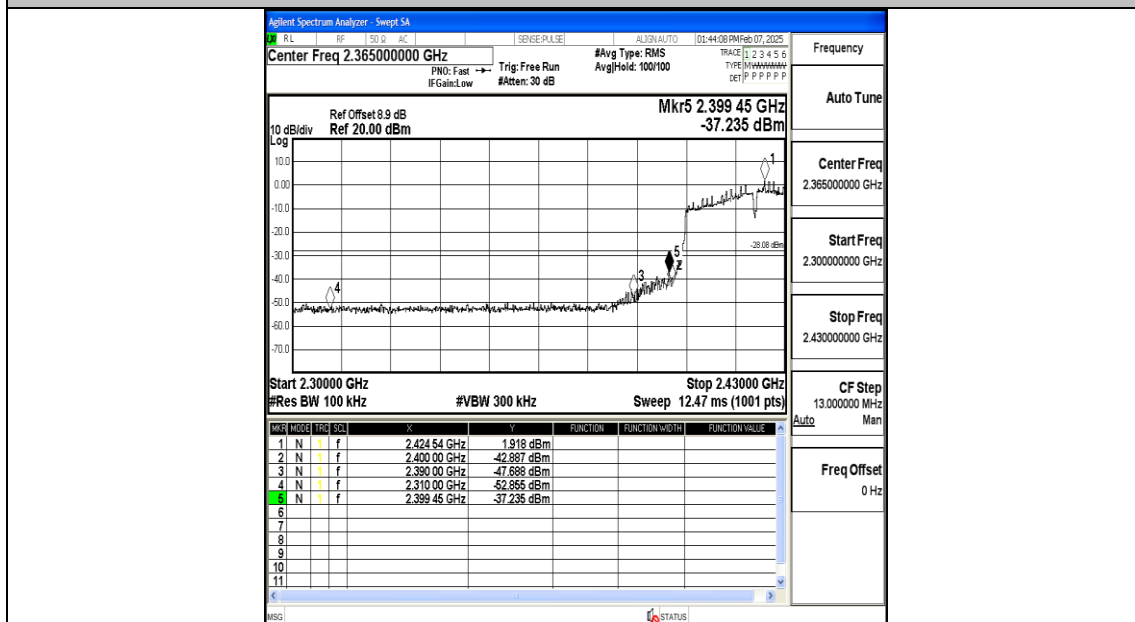
Test Graphs



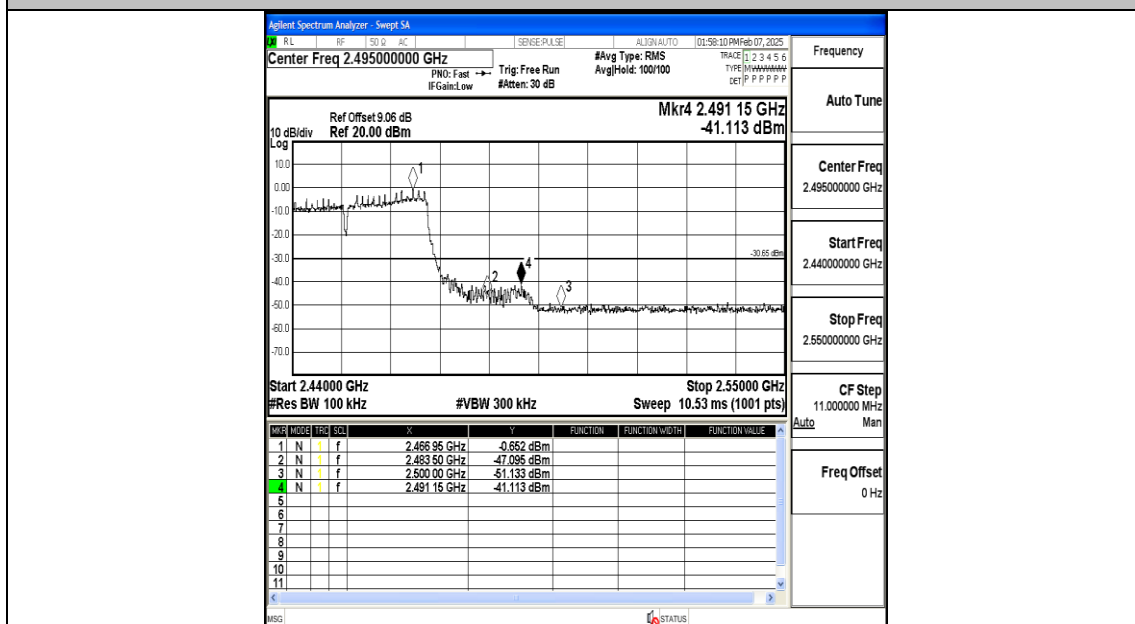




11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



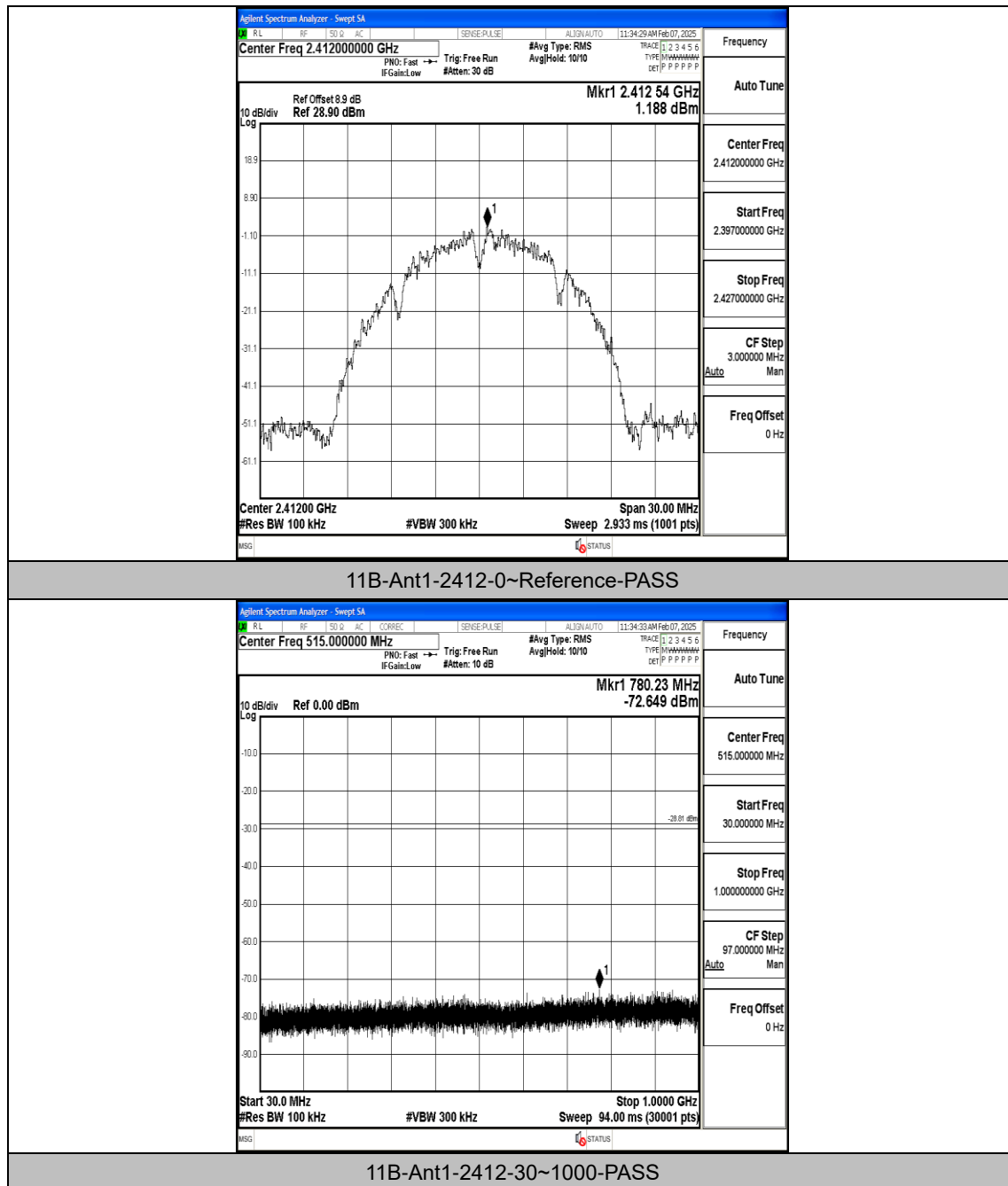
11N40SISO-Ant1-2452-PASS

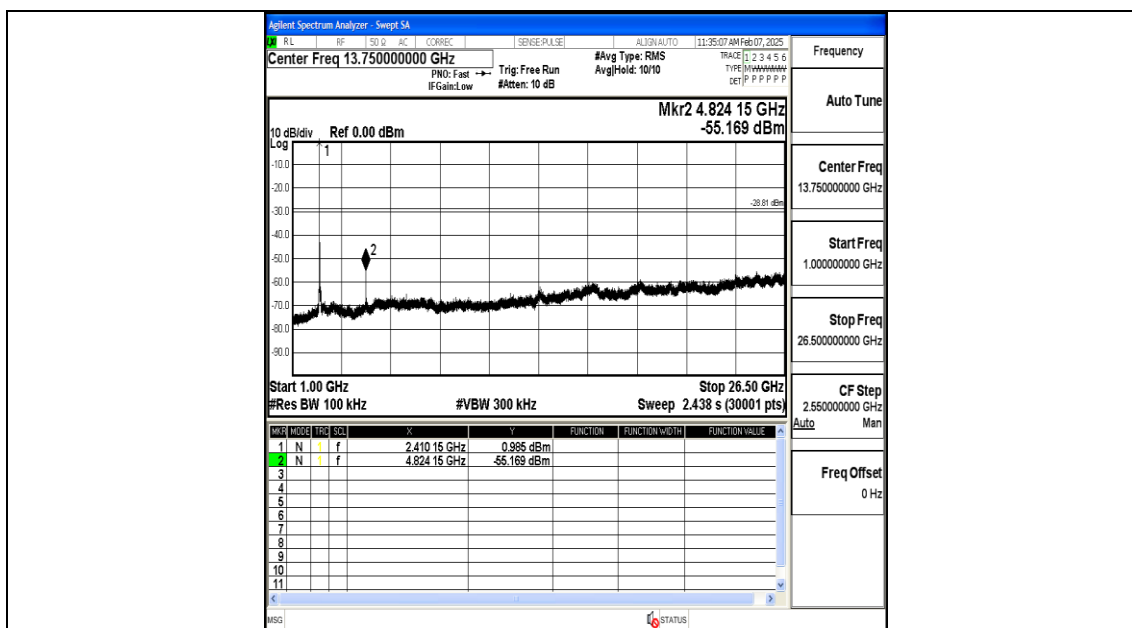
Appendix F: Conducted Spurious Emission

Test Result

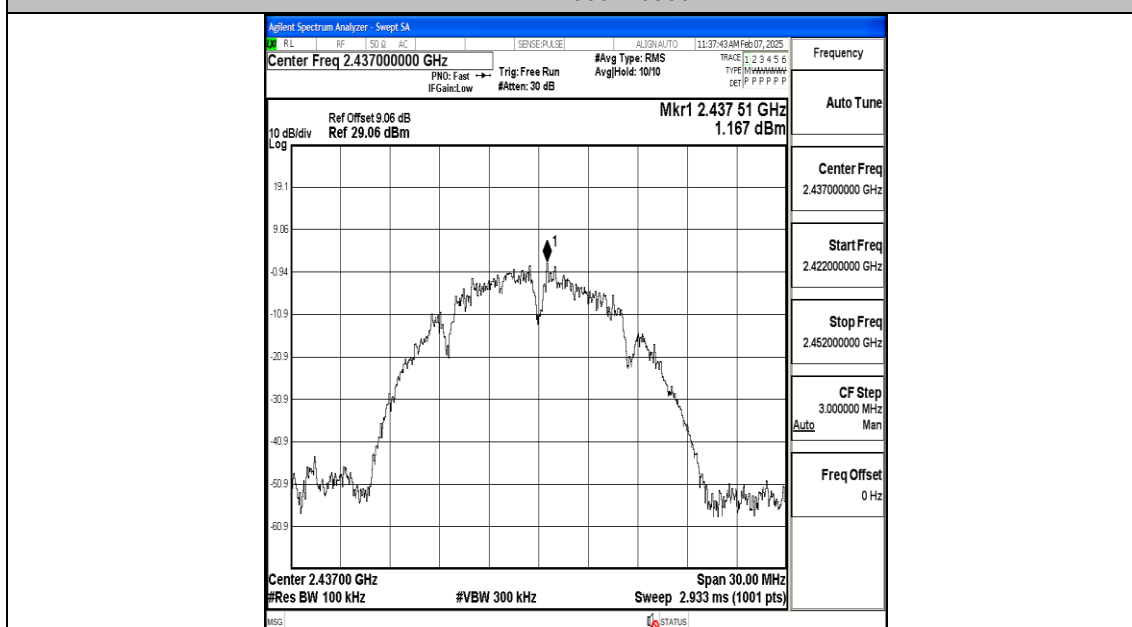
Test Mode	Antenna	Frequency [MHz]	Freq. Range [Mhz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	0~Reference	1.19	1.19	---	PASS
11B	Ant1	2412	30~1000	1.19	-72.65	≤-28.81	PASS
11B	Ant1	2412	1000~26500	1.19	-55.17	≤-28.81	PASS
11B	Ant1	2437	0~Reference	1.17	1.17	---	PASS
11B	Ant1	2437	30~1000	1.17	-72.67	≤-28.83	PASS
11B	Ant1	2437	1000~26500	1.17	-55.2	≤-28.83	PASS
11B	Ant1	2462	0~Reference	0.93	0.93	---	PASS
11B	Ant1	2462	30~1000	0.93	-72.85	≤-29.07	PASS
11B	Ant1	2462	1000~26500	0.93	-55.67	≤-29.07	PASS
11G	Ant1	2412	0~Reference	0.34	0.34	---	PASS
11G	Ant1	2412	30~1000	0.34	-72.57	≤-29.66	PASS
11G	Ant1	2412	1000~26500	0.34	-55.64	≤-29.66	PASS
11G	Ant1	2437	0~Reference	-3.47	-3.47	---	PASS
11G	Ant1	2437	30~1000	-3.47	-73.02	≤-33.47	PASS
11G	Ant1	2437	1000~26500	-3.47	-55.09	≤-33.47	PASS
11G	Ant1	2462	0~Reference	-2.01	-2.01	---	PASS
11G	Ant1	2462	30~1000	-2.01	-72.34	≤-32.01	PASS
11G	Ant1	2462	1000~26500	-2.01	-56.14	≤-32.01	PASS
11N20SISO	Ant1	2412	0~Reference	-1.20	-1.20	---	PASS
11N20SISO	Ant1	2412	30~1000	-1.20	-72.8	≤-31.2	PASS
11N20SISO	Ant1	2412	1000~26500	-1.20	-55.43	≤-31.2	PASS
11N20SISO	Ant1	2437	0~Reference	-3.73	-3.73	---	PASS
11N20SISO	Ant1	2437	30~1000	-3.73	-72.39	≤-33.73	PASS
11N20SISO	Ant1	2437	1000~26500	-3.73	-55.35	≤-33.73	PASS
11N20SISO	Ant1	2462	0~Reference	-3.19	-3.19	---	PASS
11N20SISO	Ant1	2462	30~1000	-3.19	-73.24	≤-33.19	PASS
11N20SISO	Ant1	2462	1000~26500	-3.19	-54.94	≤-33.19	PASS
11N40SISO	Ant1	2422	0~Reference	0.15	0.15	---	PASS
11N40SISO	Ant1	2422	30~1000	0.15	-72.13	≤-29.85	PASS
11N40SISO	Ant1	2422	1000~26500	0.15	-55.48	≤-29.85	PASS
11N40SISO	Ant1	2437	0~Reference	-2.92	-2.92	---	PASS
11N40SISO	Ant1	2437	30~1000	-2.92	-72.4	≤-32.92	PASS
11N40SISO	Ant1	2437	1000~26500	-2.92	-55.46	≤-32.92	PASS
11N40SISO	Ant1	2452	0~Reference	-1.32	-1.32	---	PASS
11N40SISO	Ant1	2452	30~1000	-1.32	-72.88	≤-31.32	PASS
11N40SISO	Ant1	2452	1000~26500	-1.32	-54.91	≤-31.32	PASS

Test Graphs

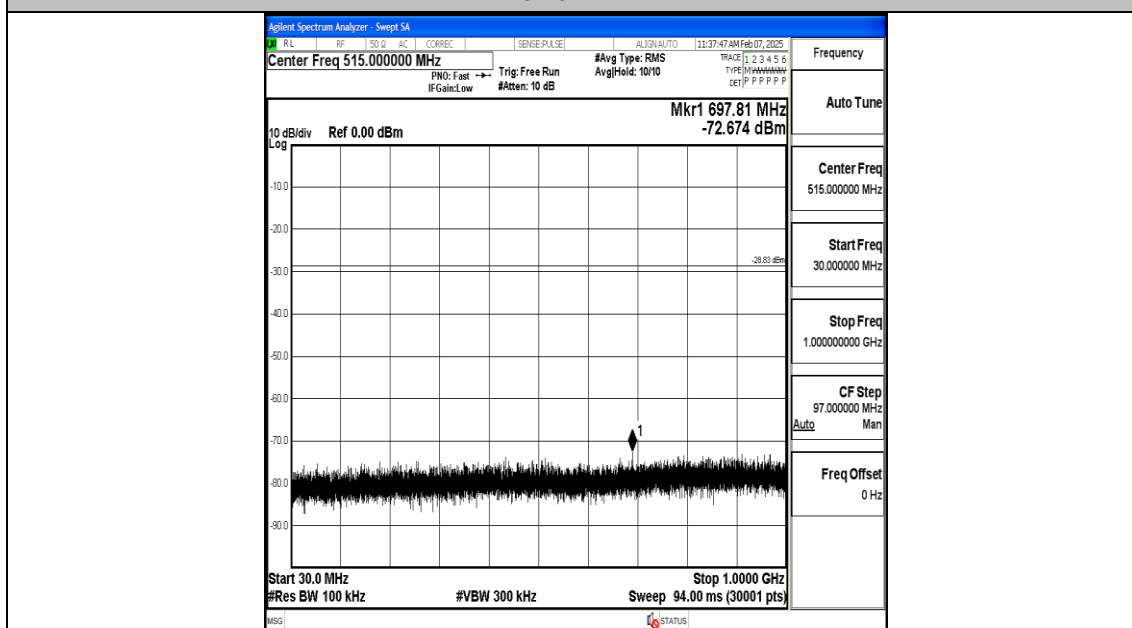




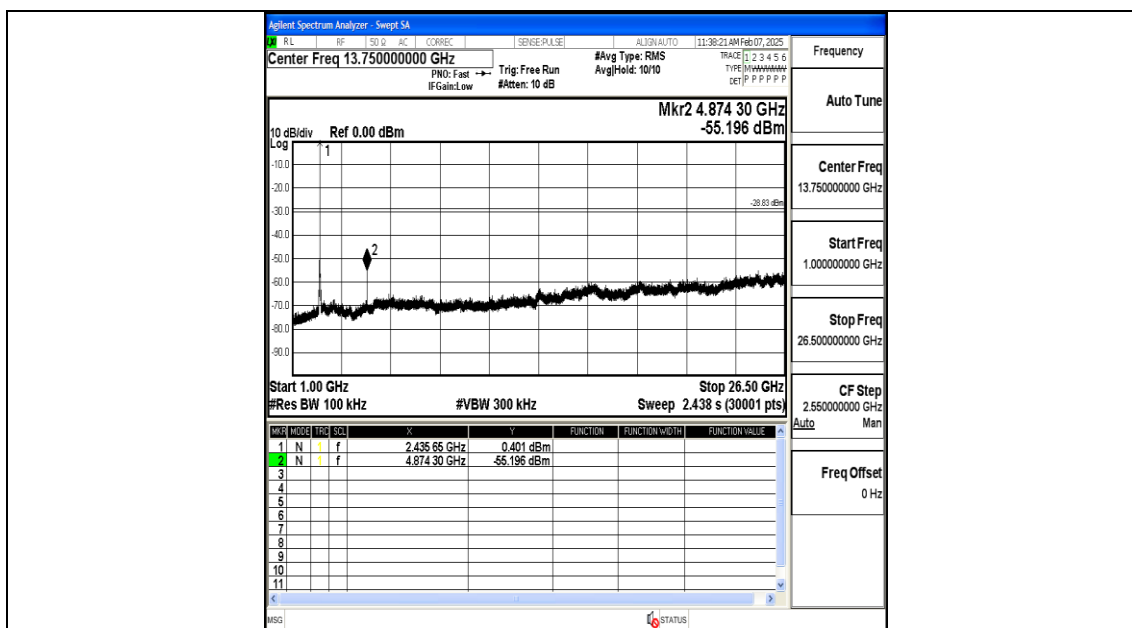
11B-Ant1-2412-1000~26500-PASS



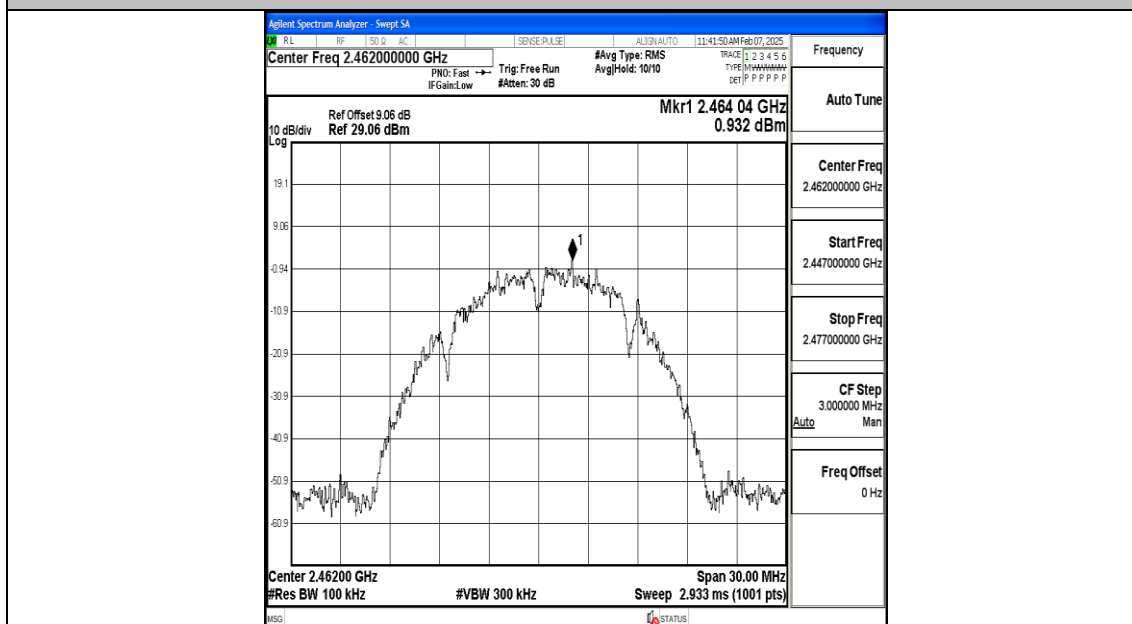
11B-Ant1-2437-0~Reference-PASS



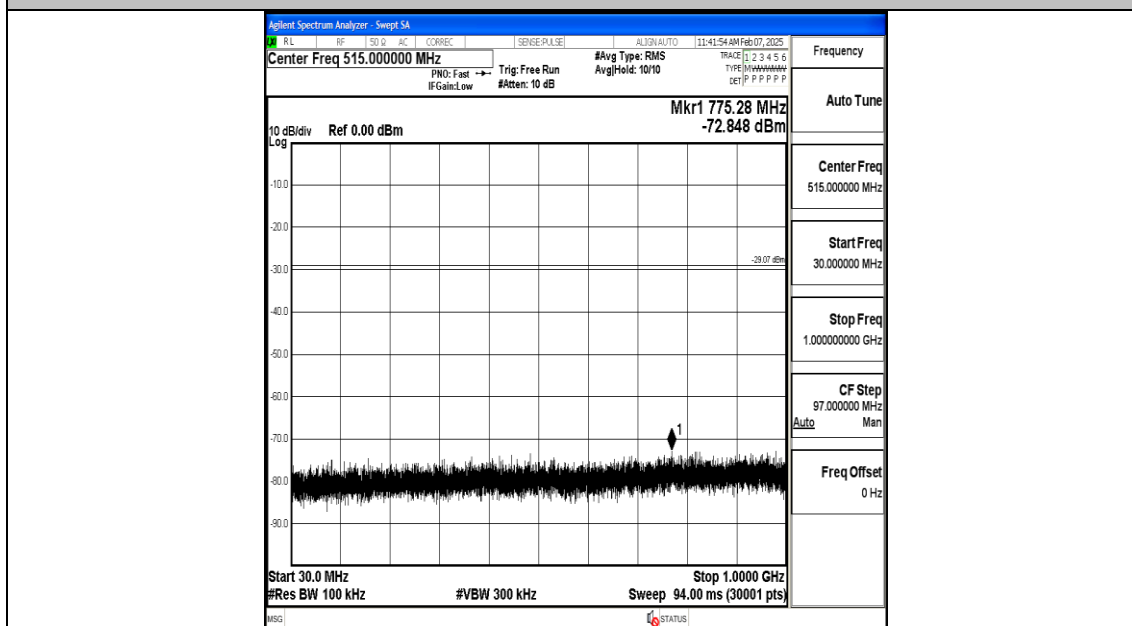
11B-Ant1-2437-30~1000-PASS



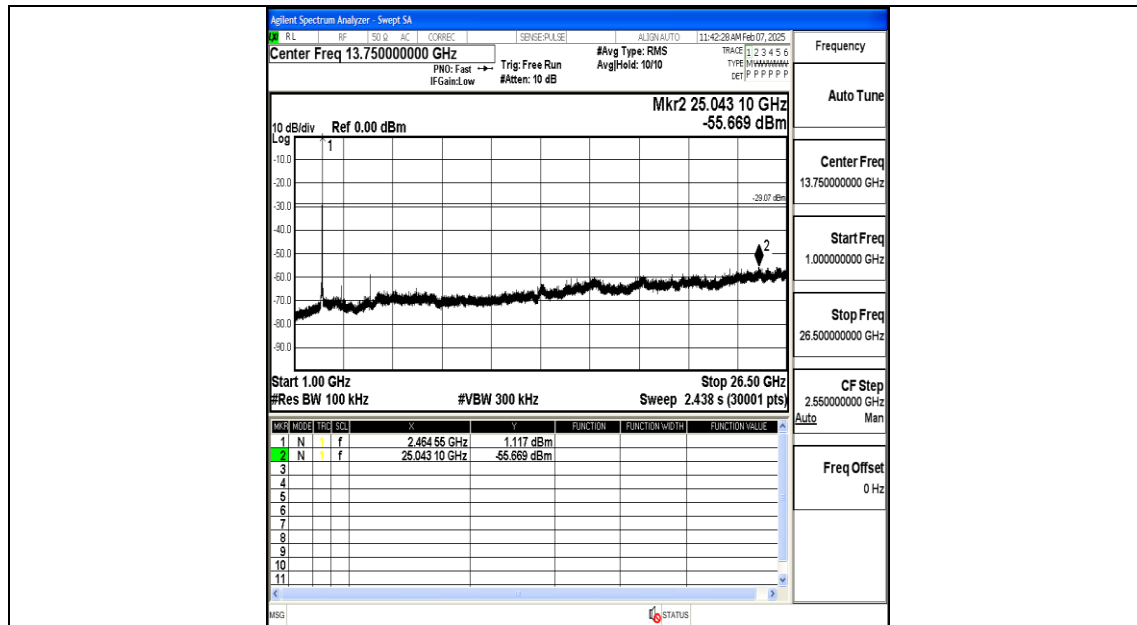
11B-Ant1-2437-1000~26500-PASS



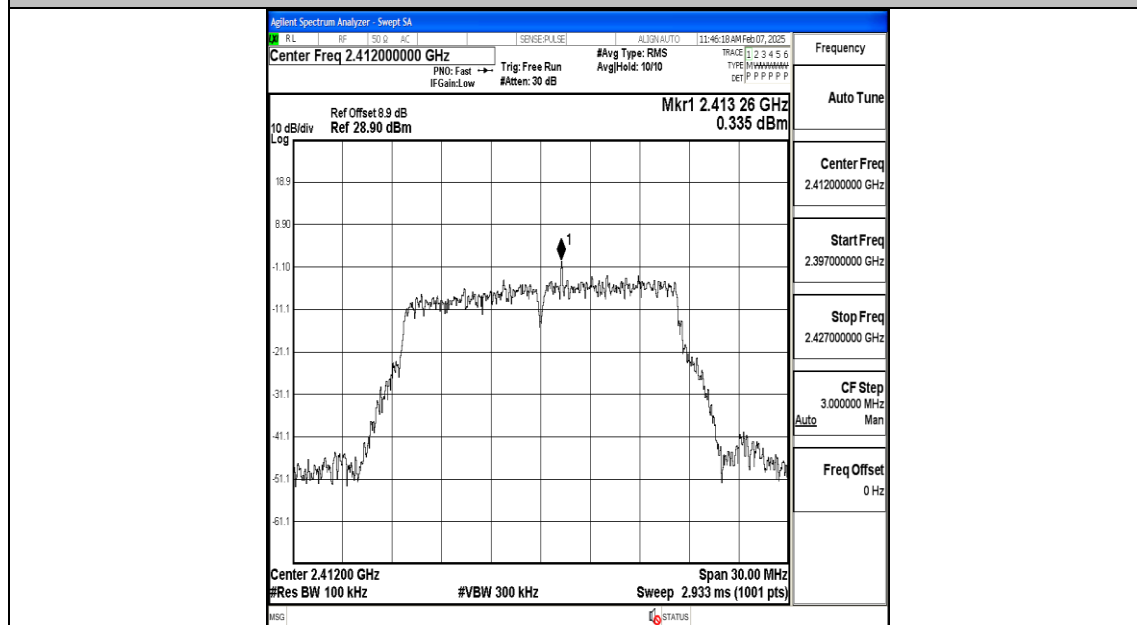
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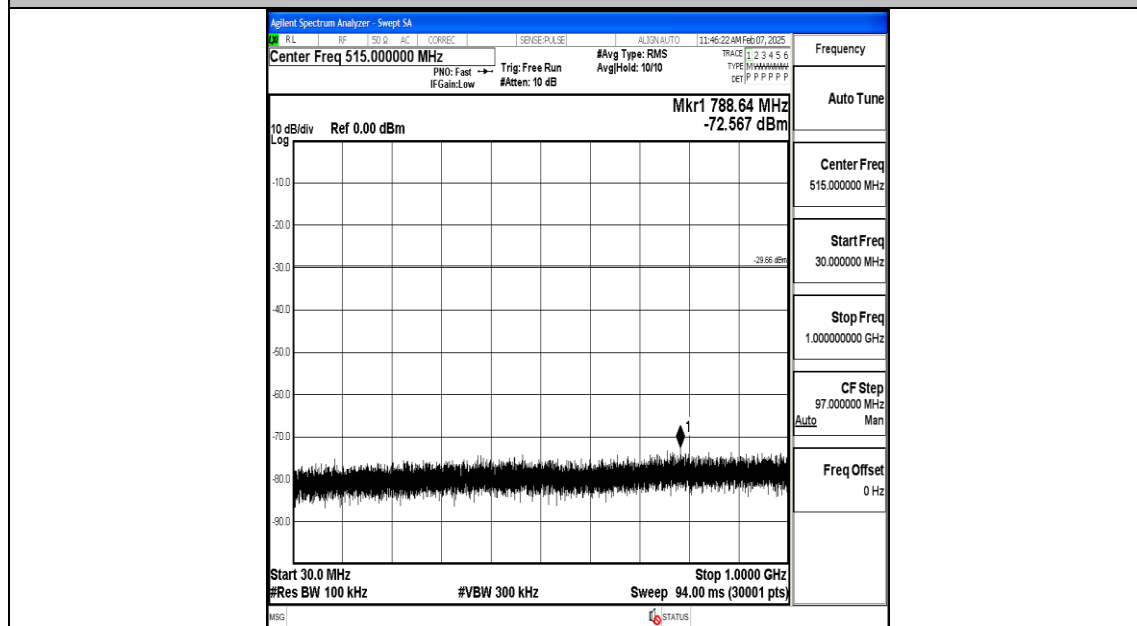
11B-Ant1-2462-30~1000-PASS



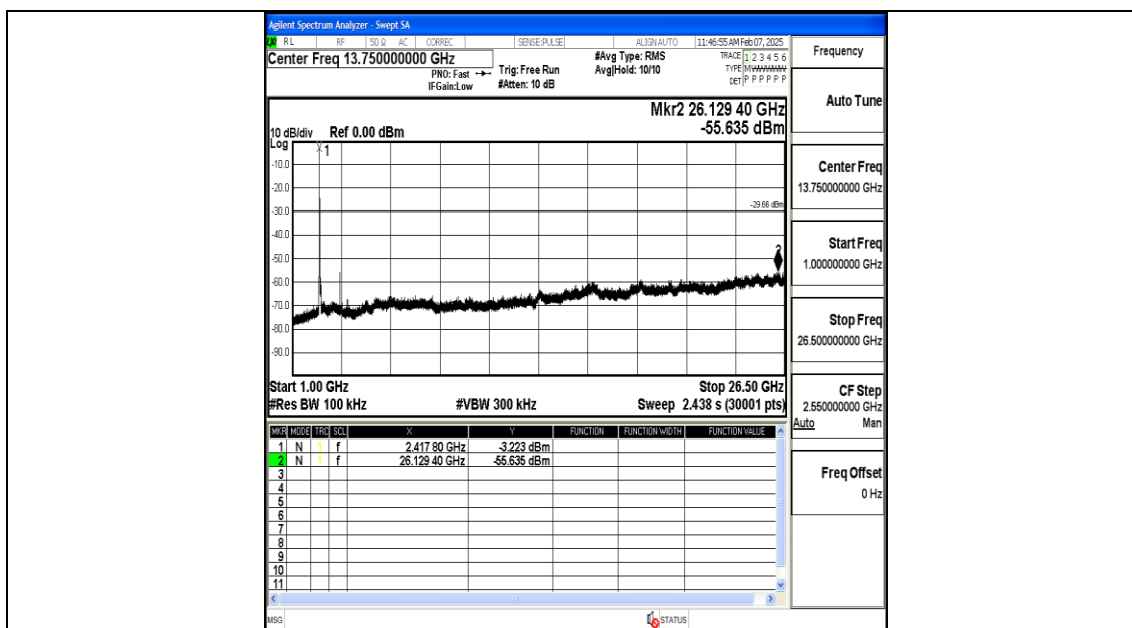
11B-Ant1-2462-1000~26500-PASS



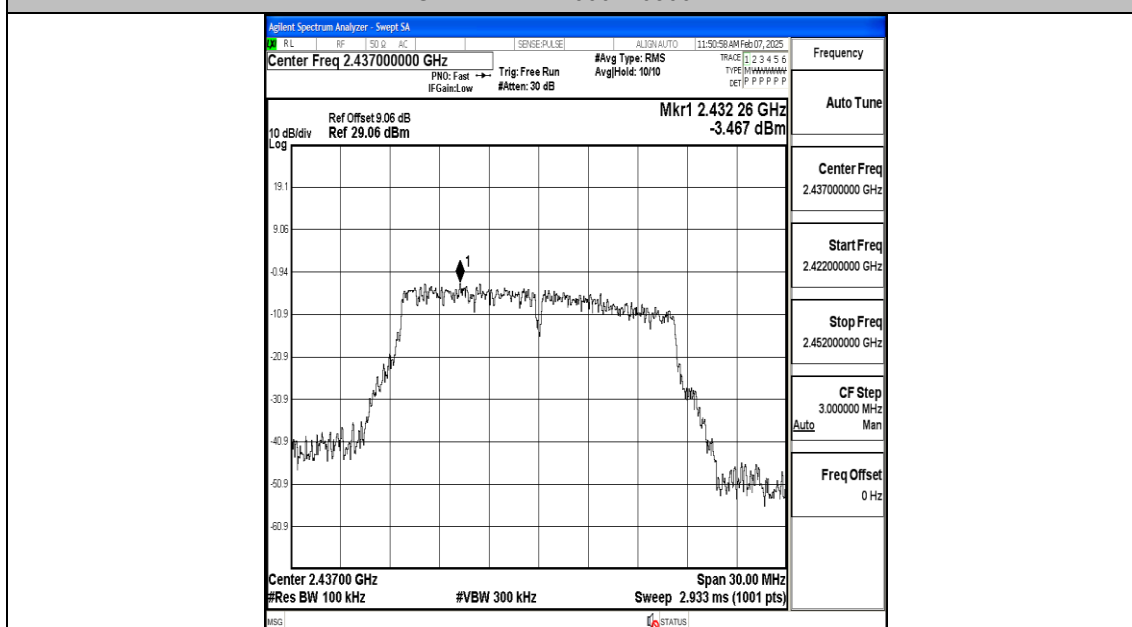
11G-Ant1-2412-0~Reference-PASS



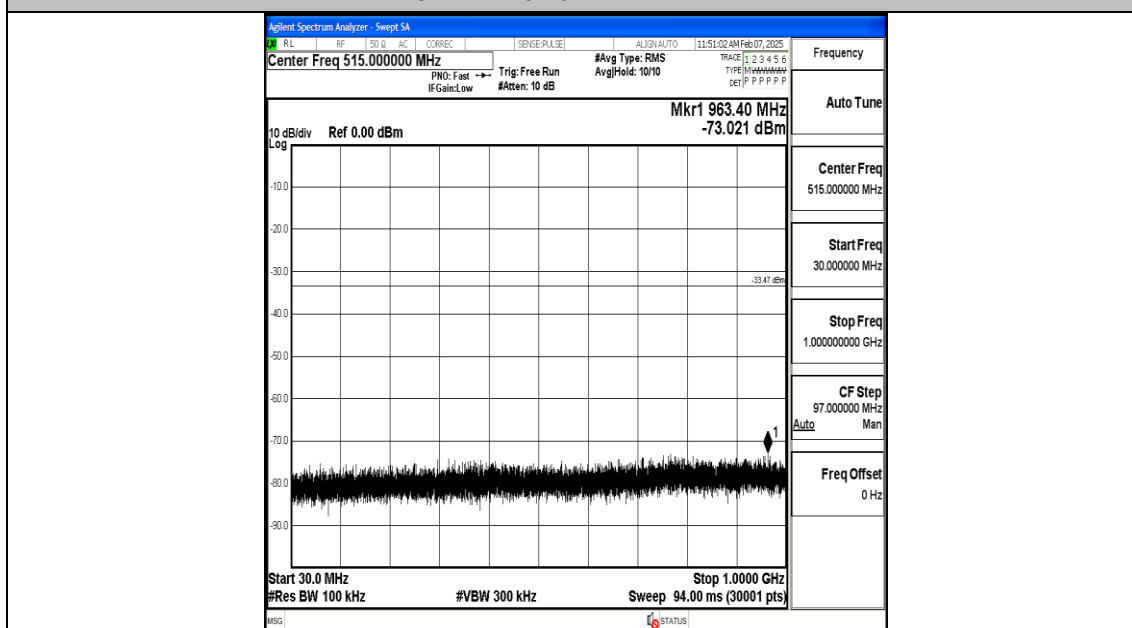
11G-Ant1-2412-30~1000-PASS



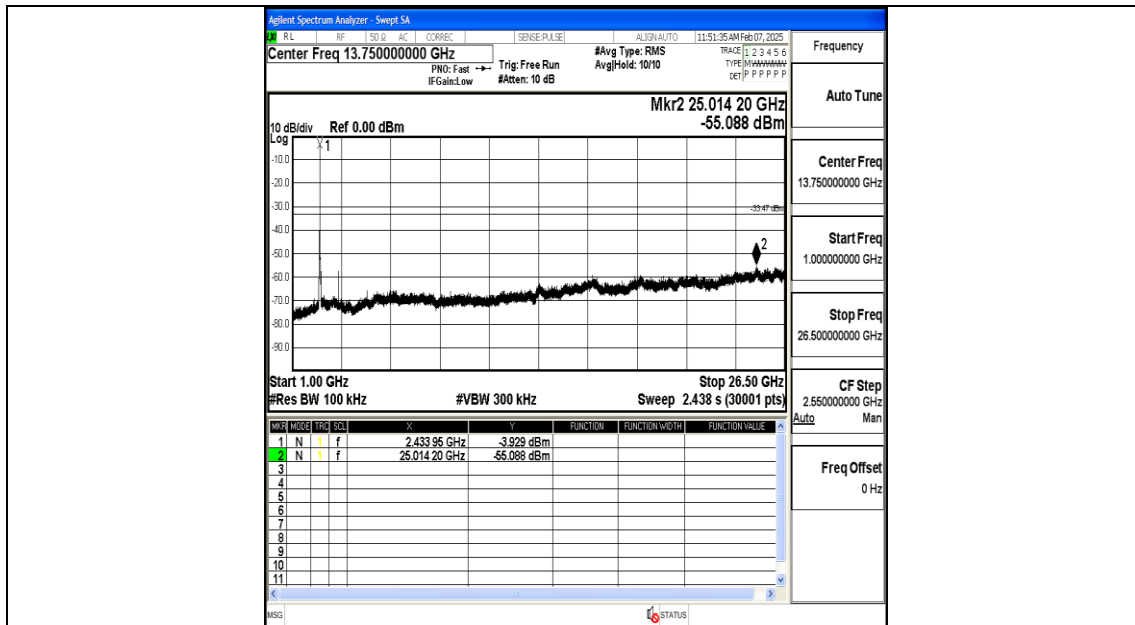
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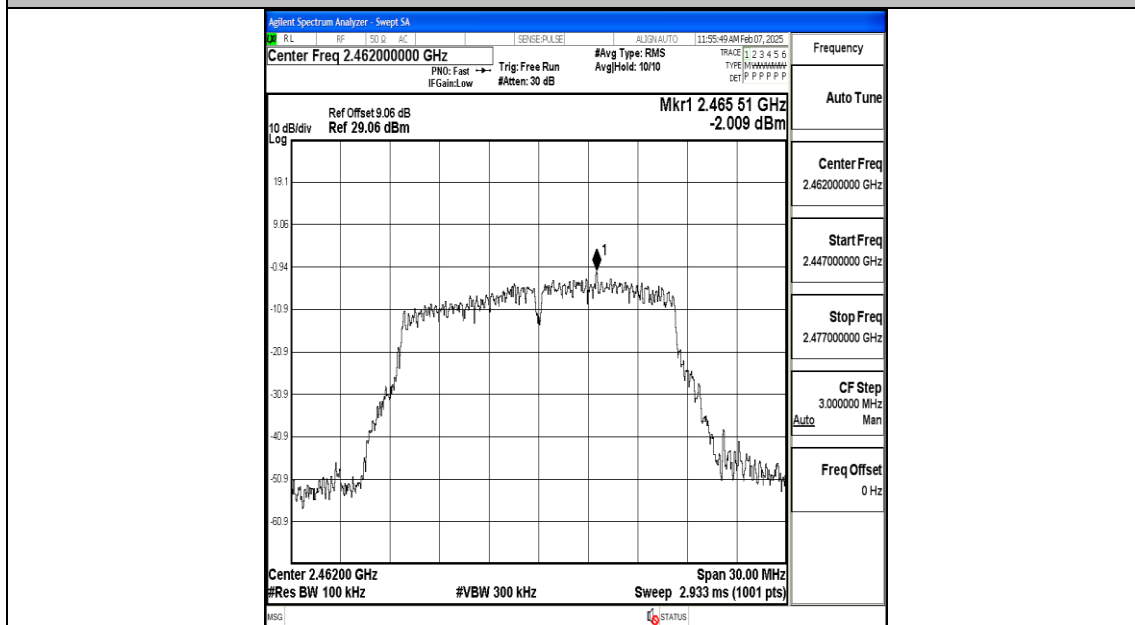
11G-Ant1-2437-0~Reference-PASS



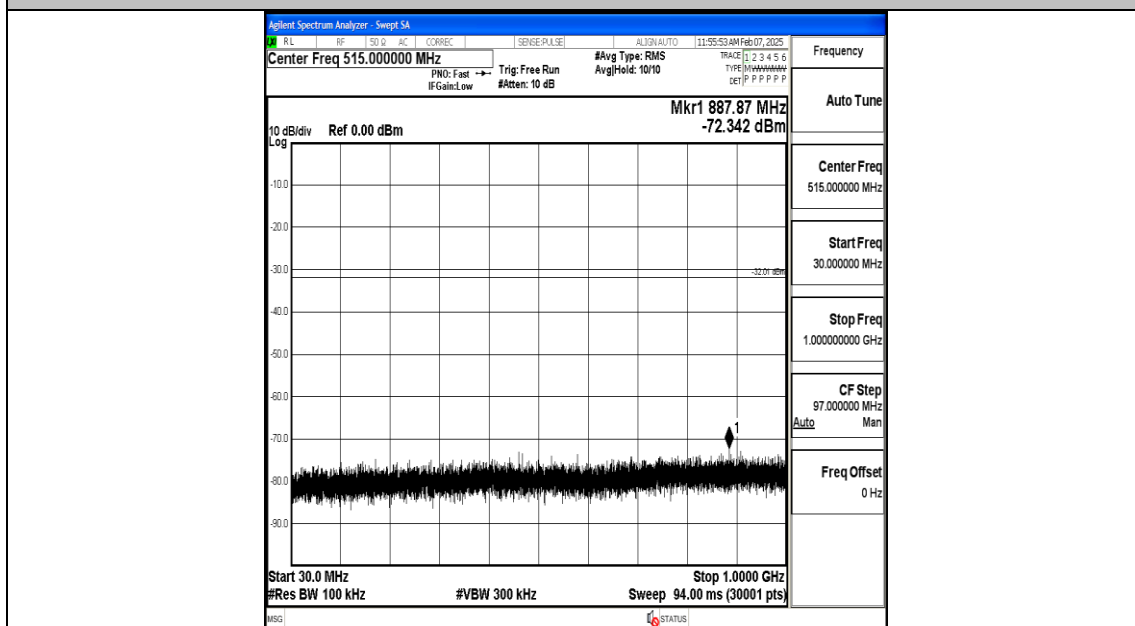
11G-Ant1-2437-30~1000-PASS



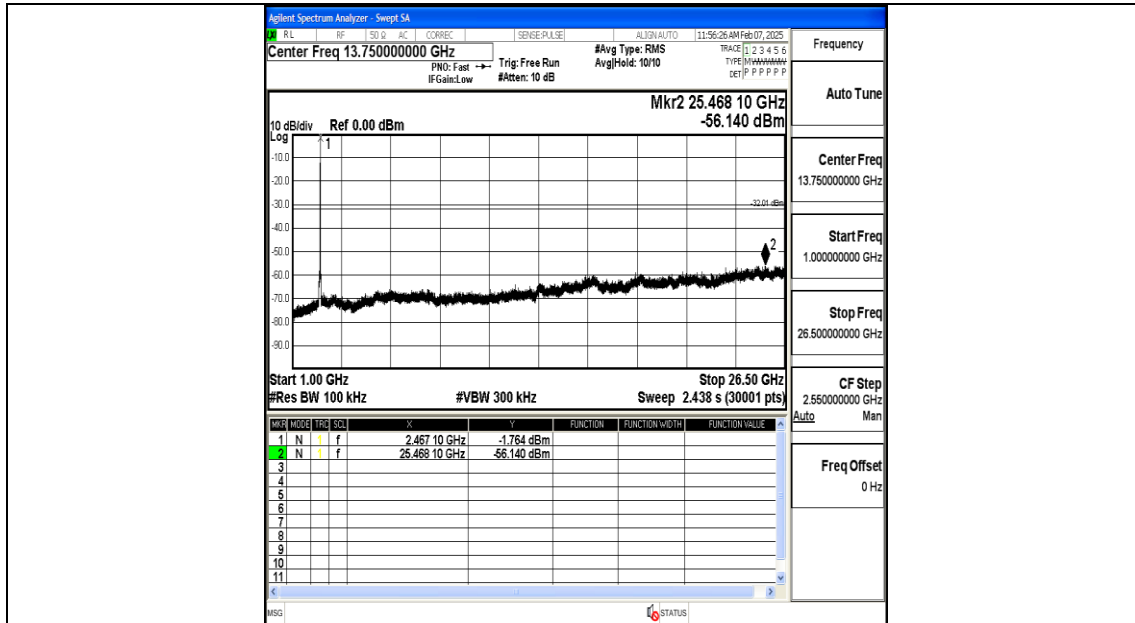
11G-Ant1-2437-1000~26500-PASS



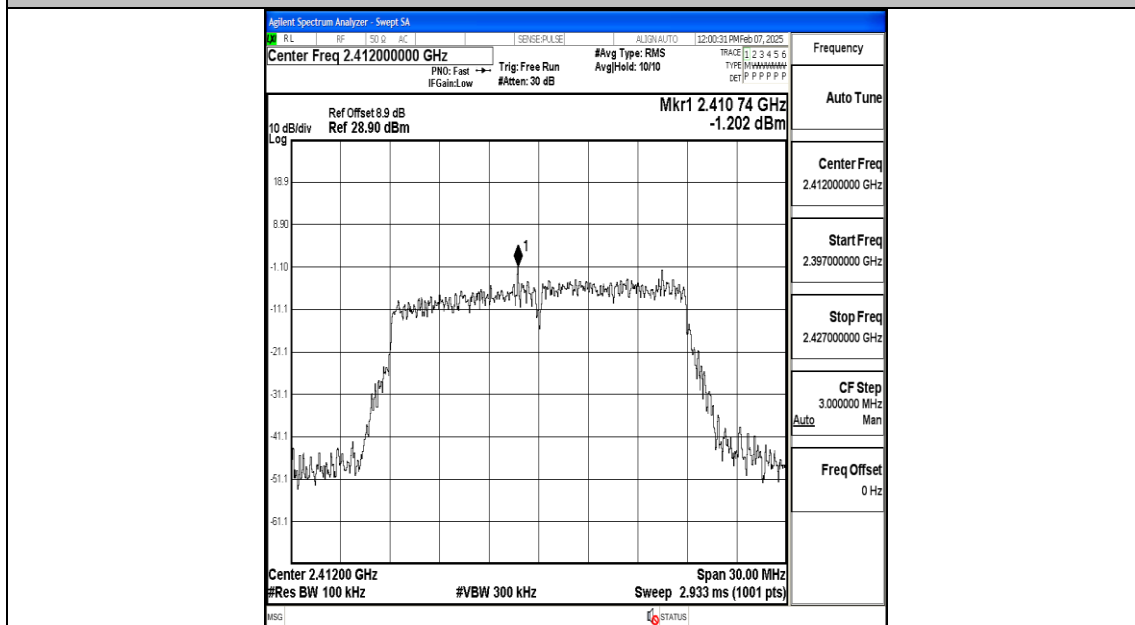
11G-Ant1-2462-0~Reference-PASS



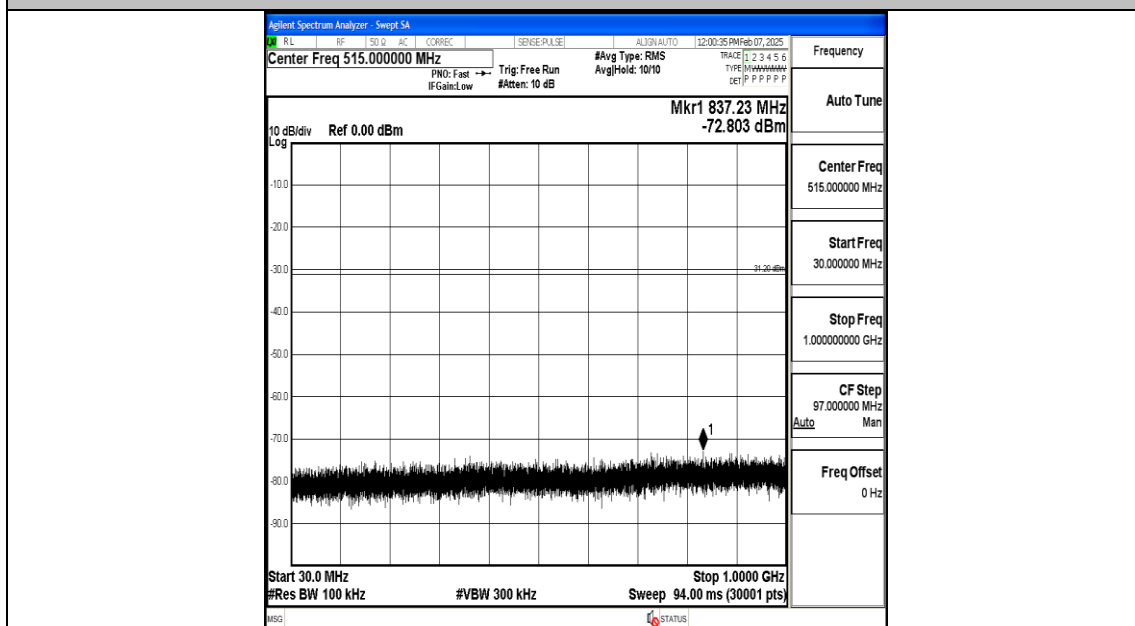
11G-Ant1-2462-30~1000-PASS



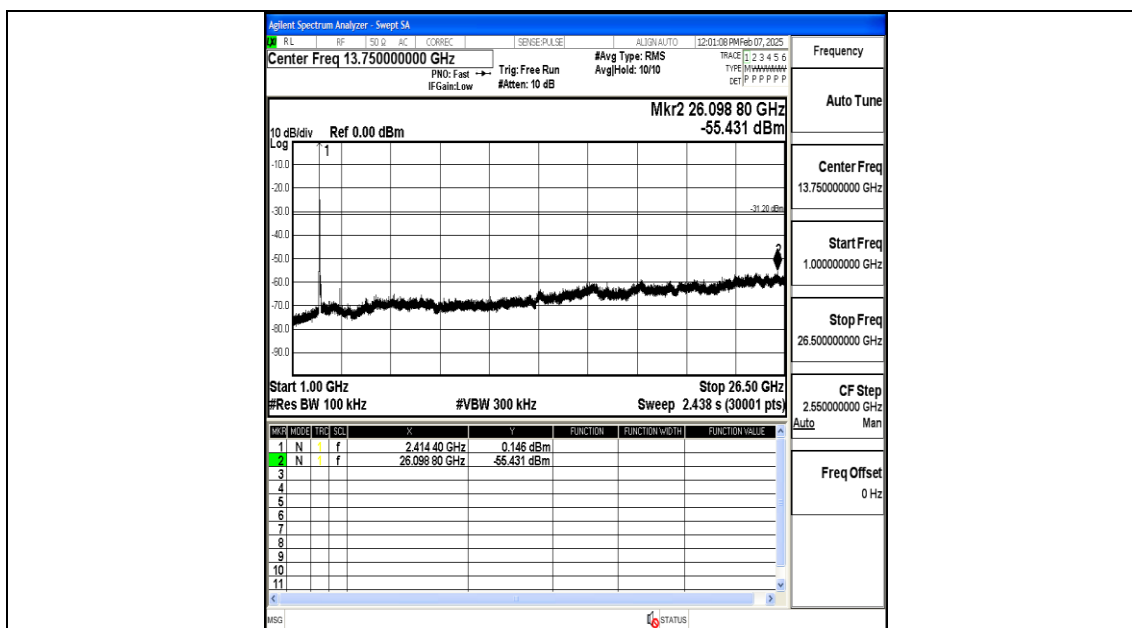
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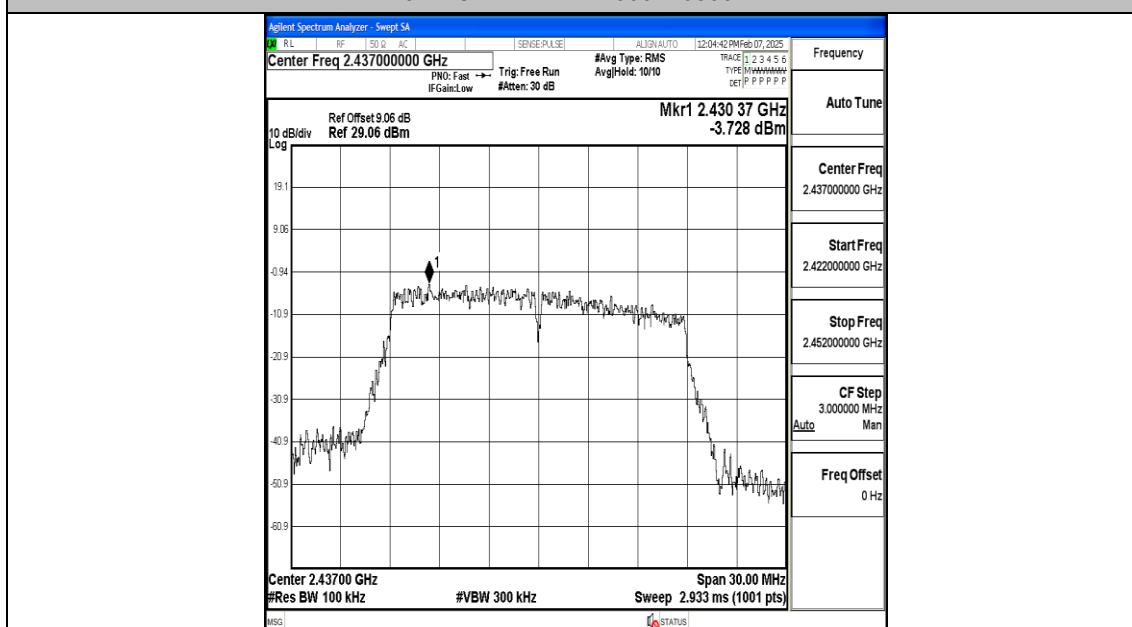
11N20SISO-Ant1-2412-0~Reference-PASS



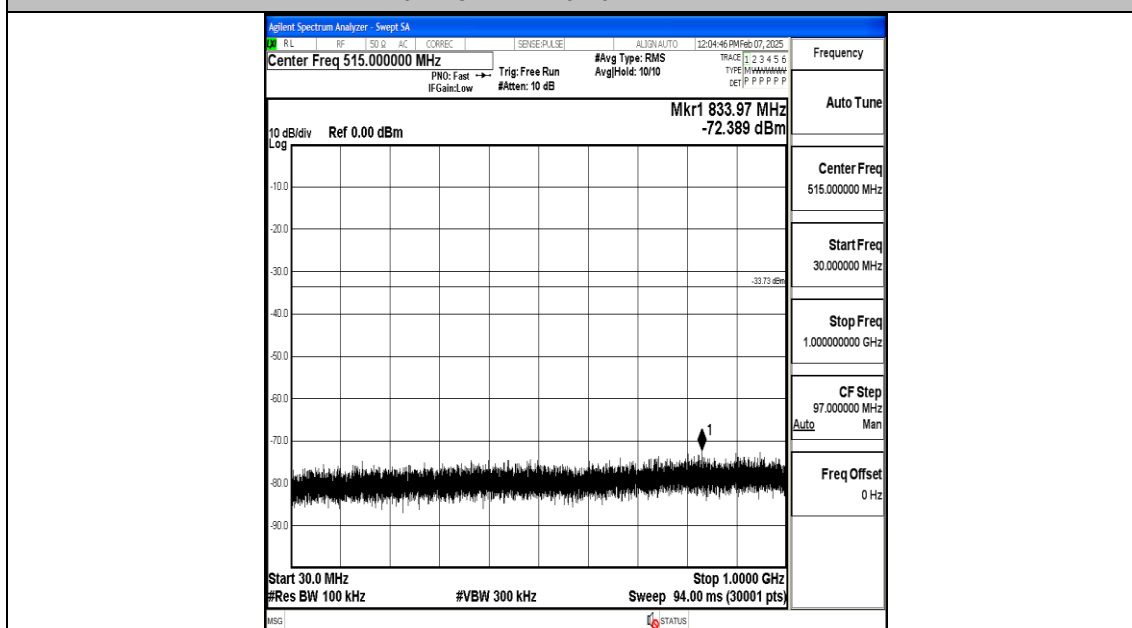
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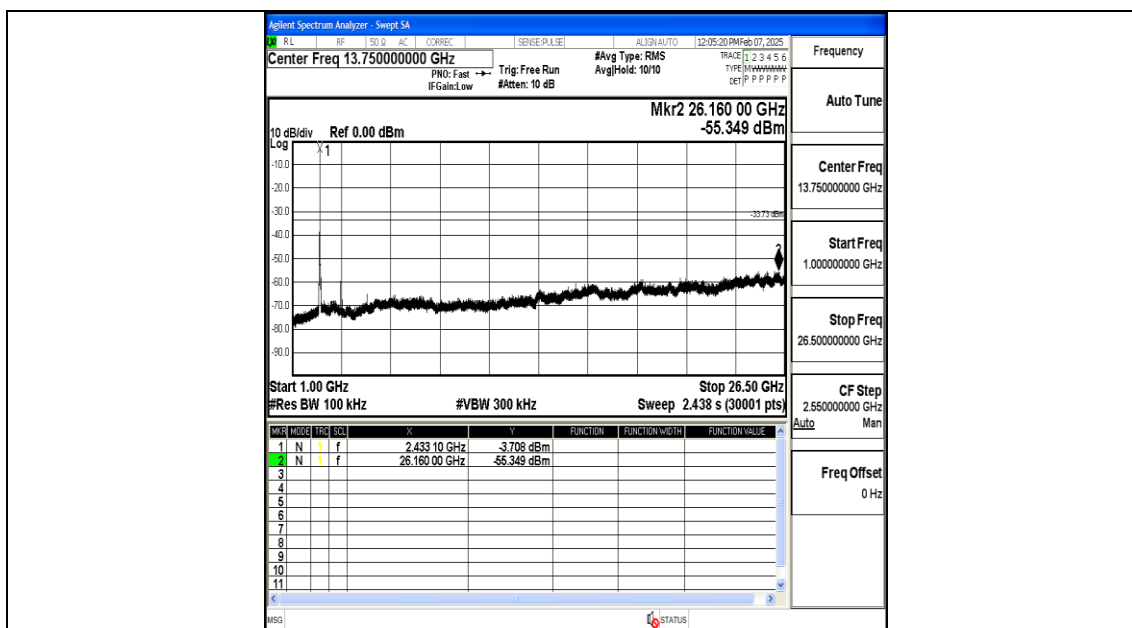
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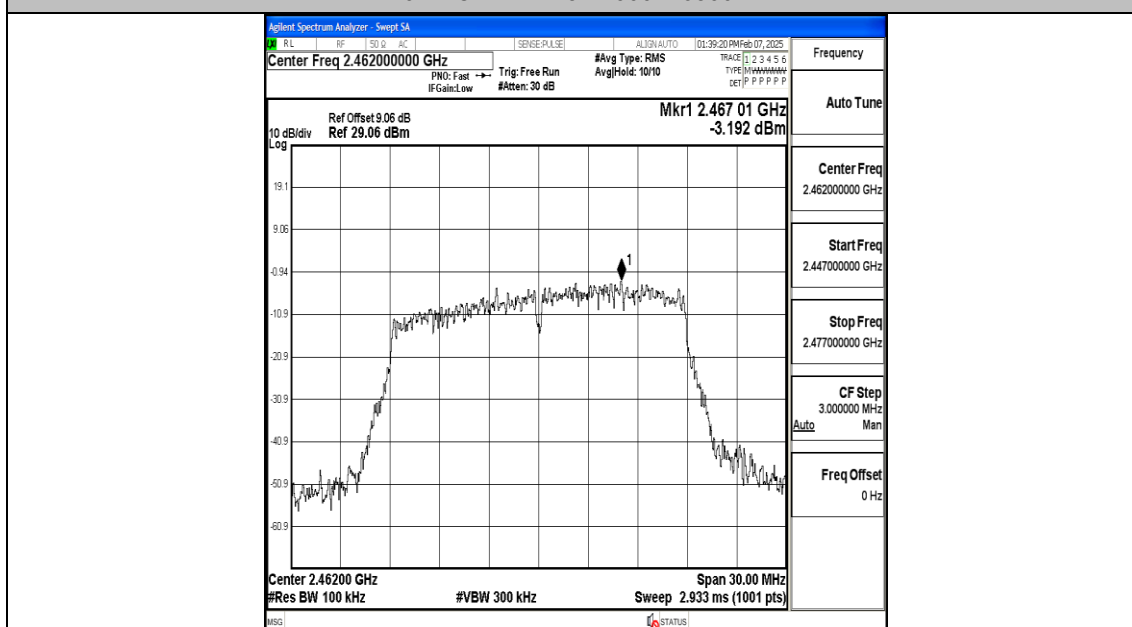
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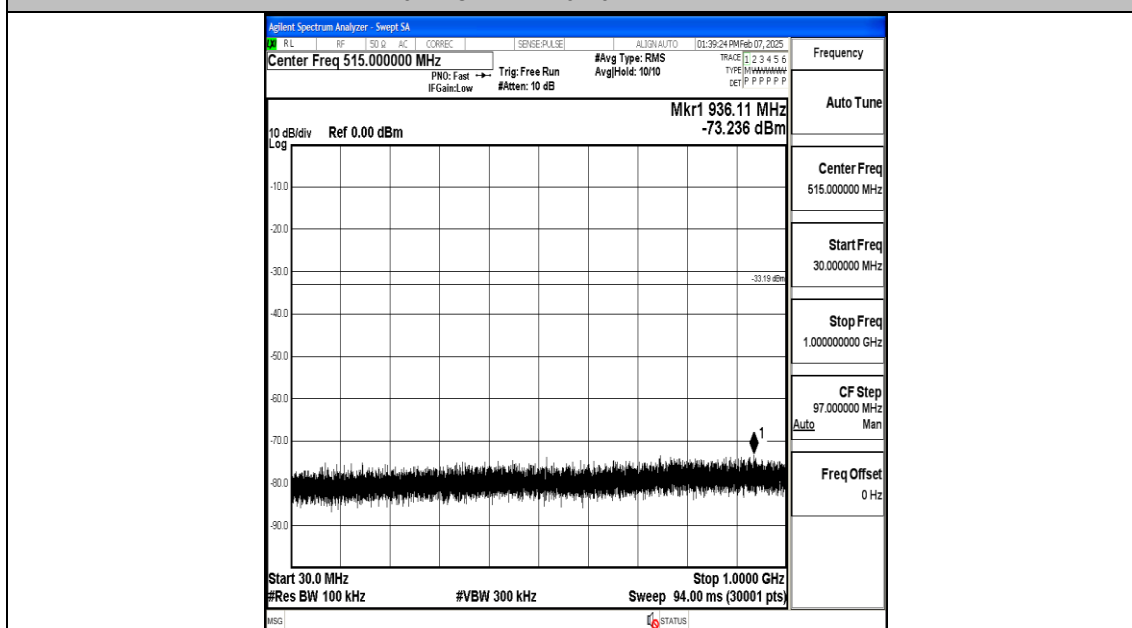
11N20SISO-Ant1-2437-30~1000-PASS



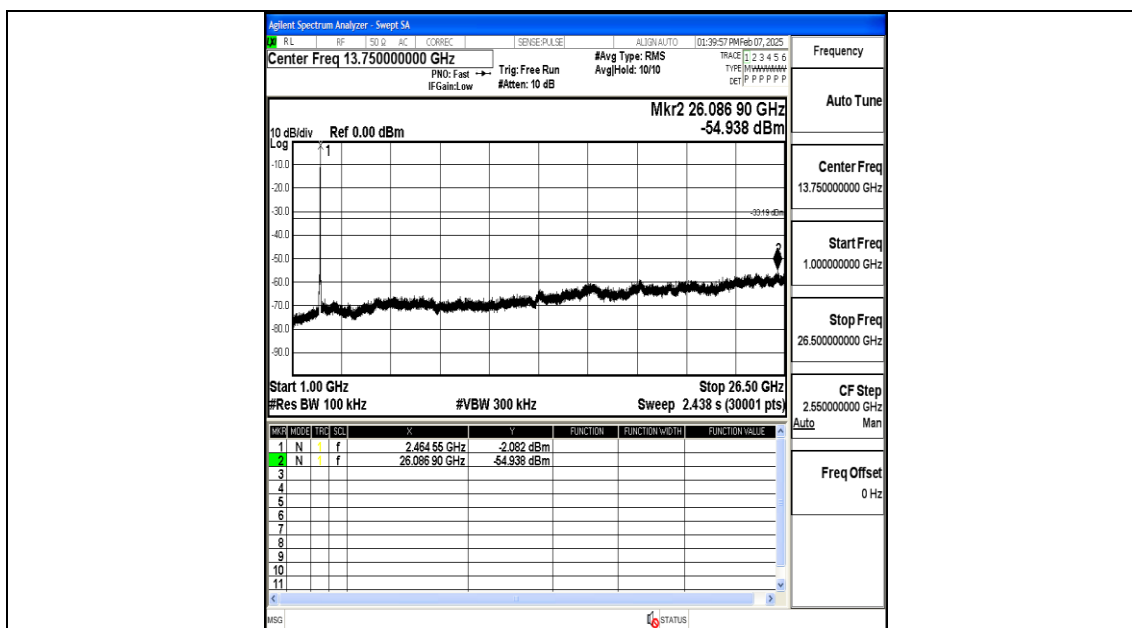
11N20SISO-Ant1-2437-1000~26500-PASS



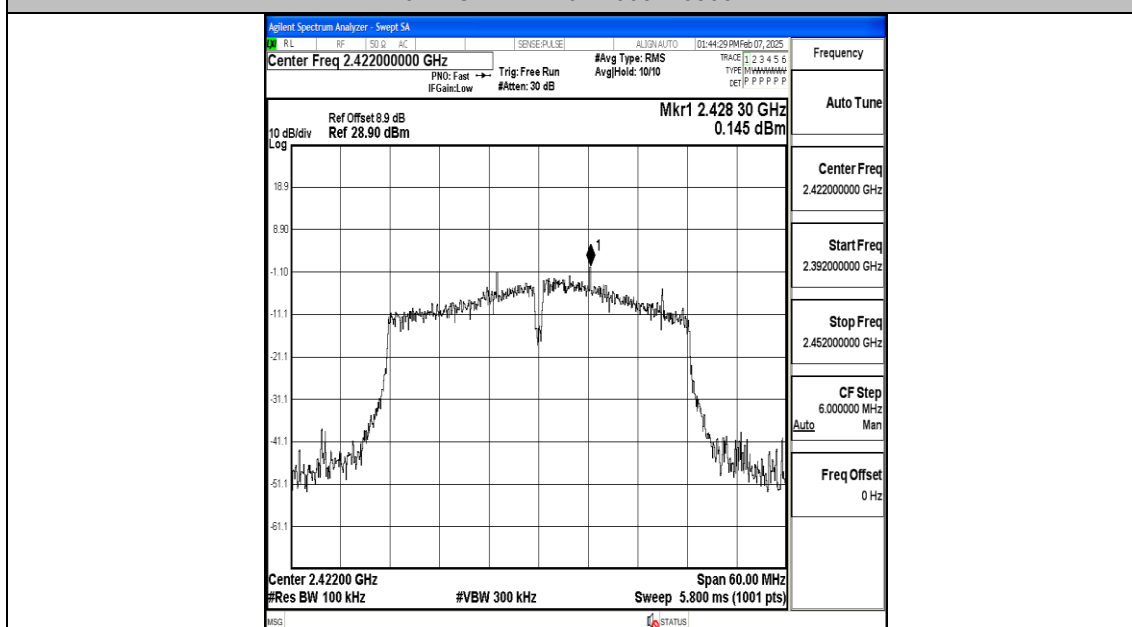
11N20SISO-Ant1-2462-0~Reference-PASS



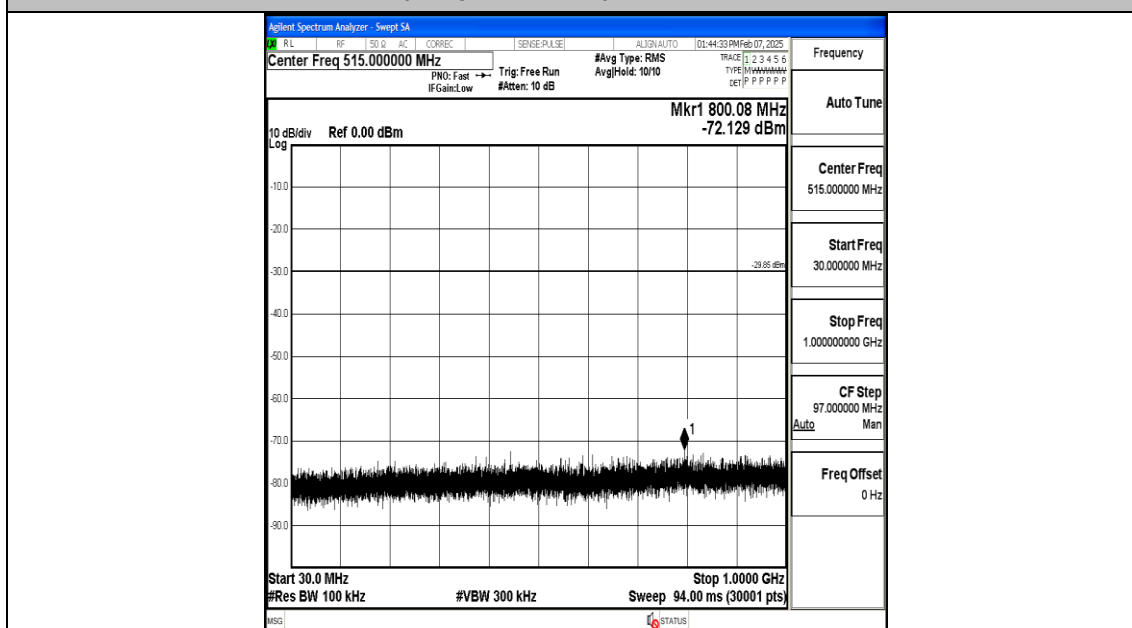
11N20SISO-Ant1-2462-30~1000-PASS



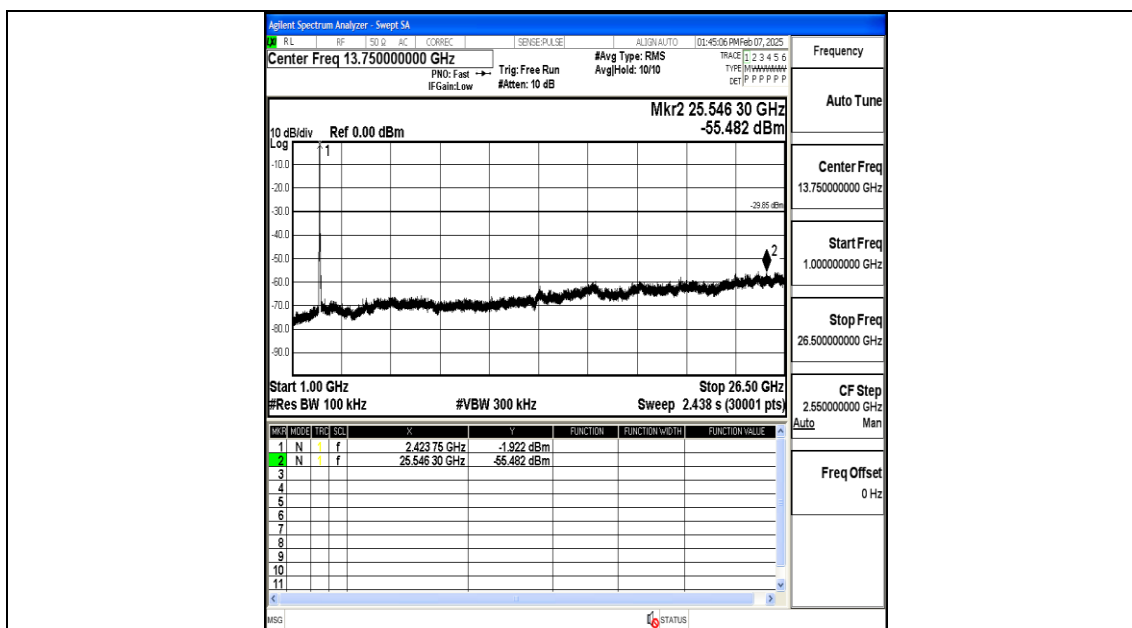
11N20SISO-Ant1-2462-1000~26500-PASS



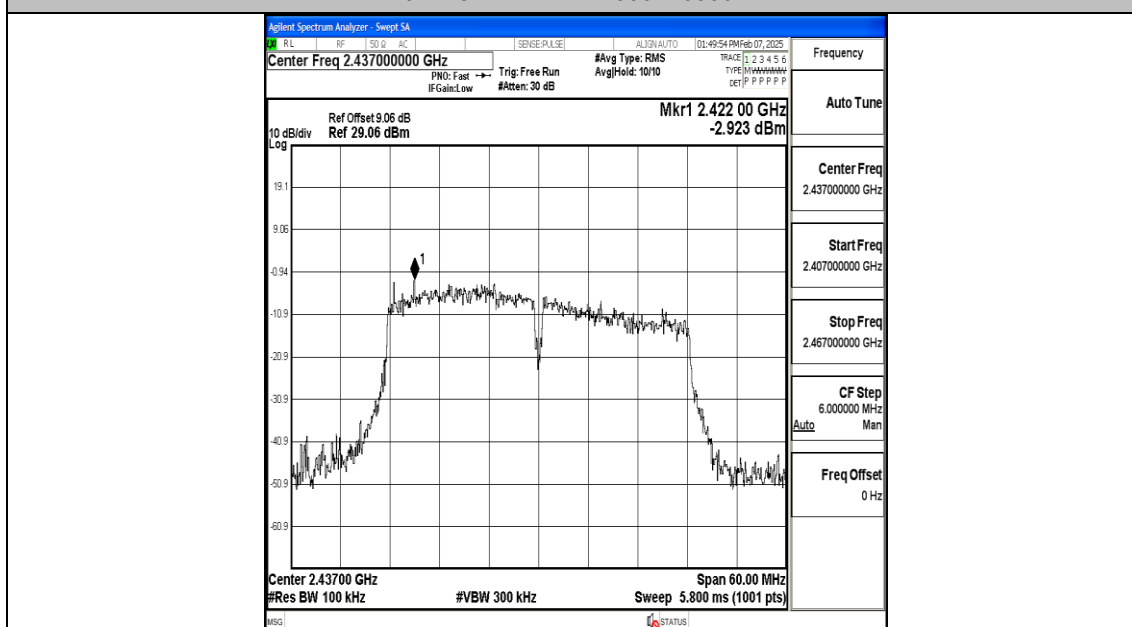
11N40SISO-Ant1-2422-0~Reference-PASS



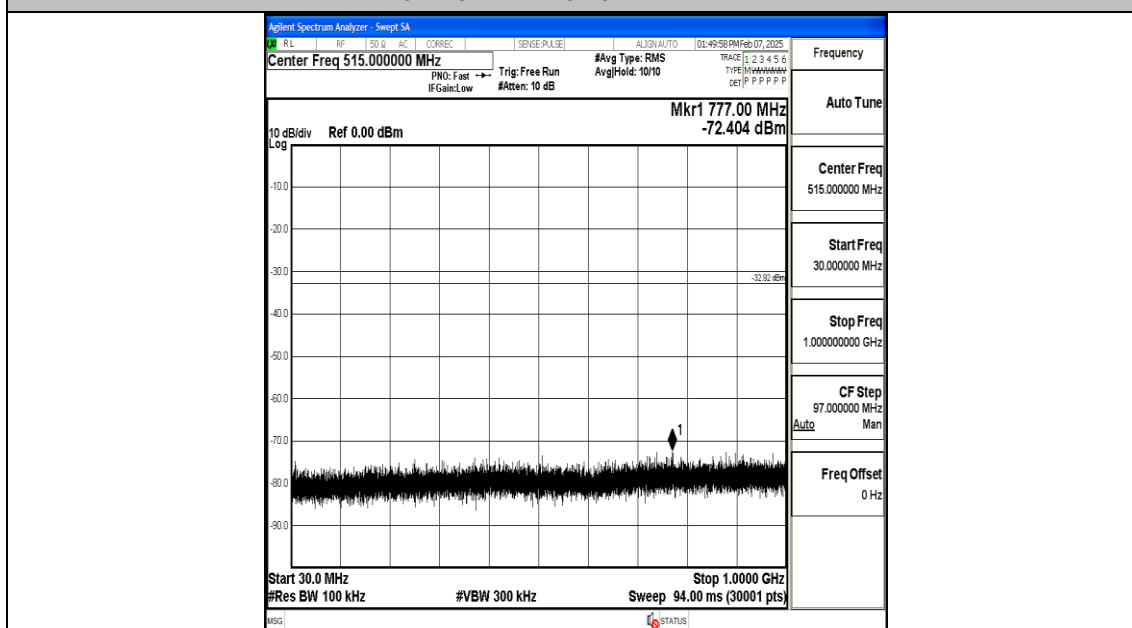
11N40SISO-Ant1-2422-30~1000-PASS



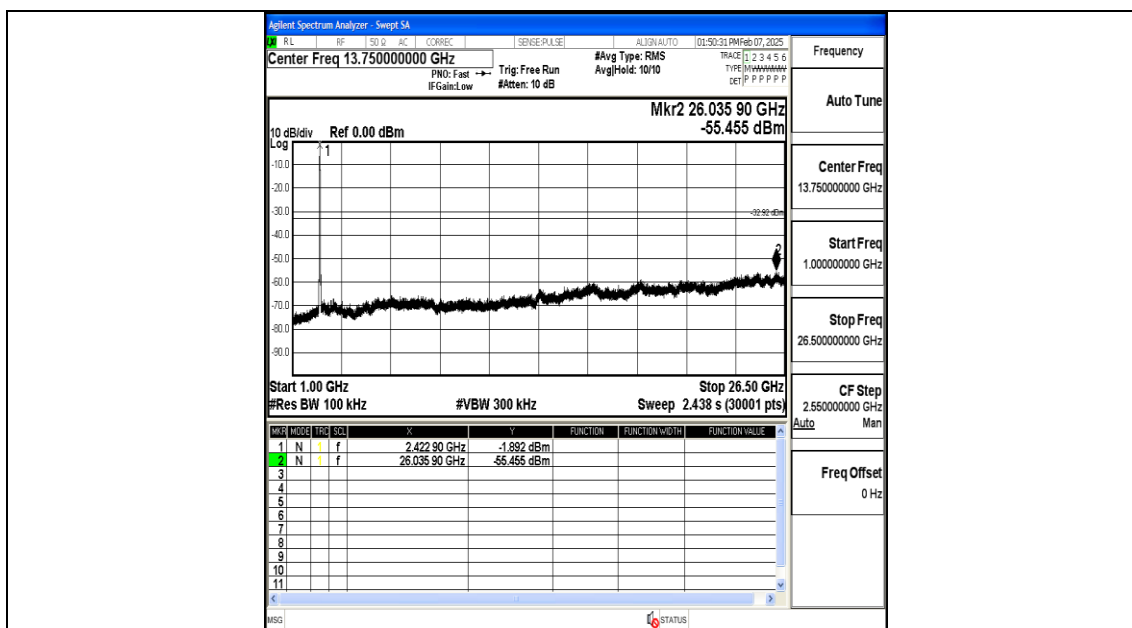
11N40SISO-Ant1-2422-1000~26500-PASS



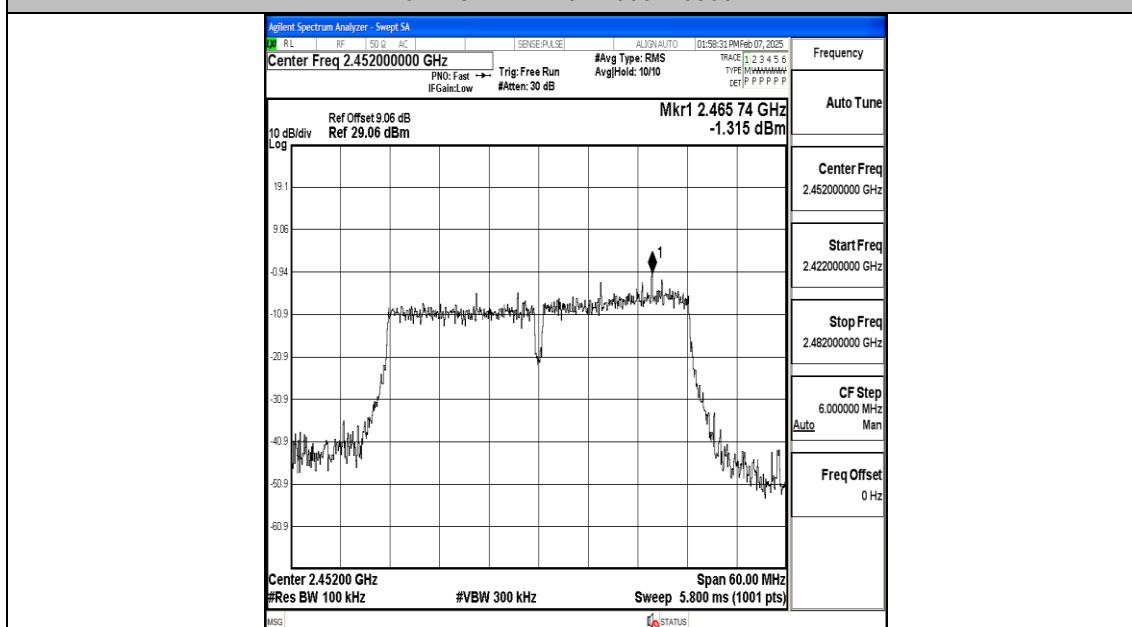
11N40SISO-Ant1-2437-0~Reference-PASS



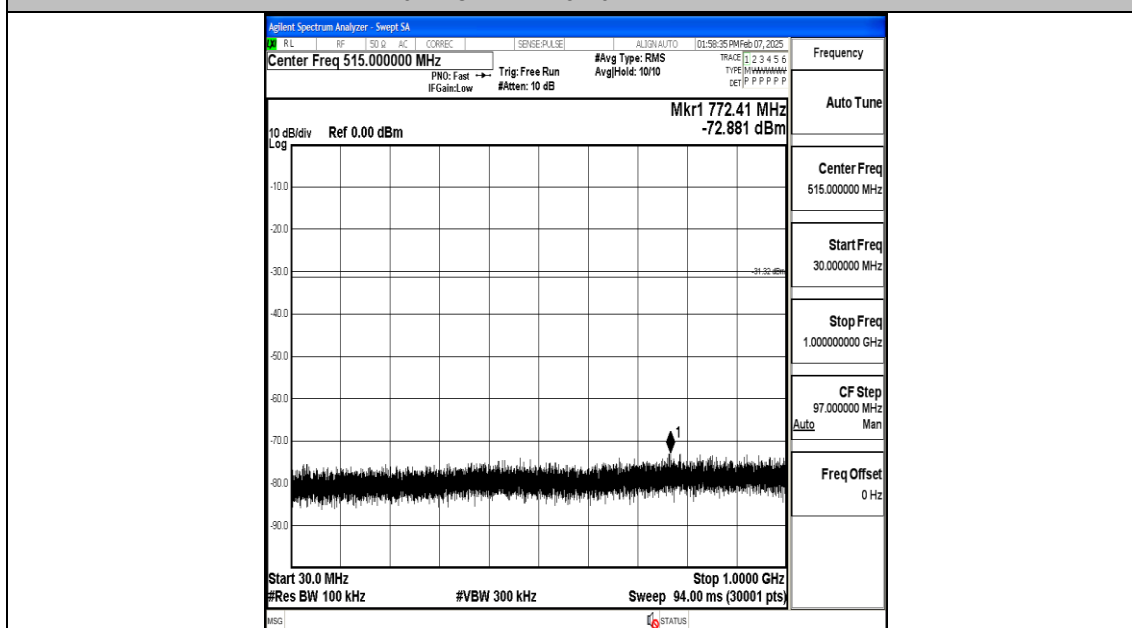
11N40SISO-Ant1-2437-30~1000-PASS



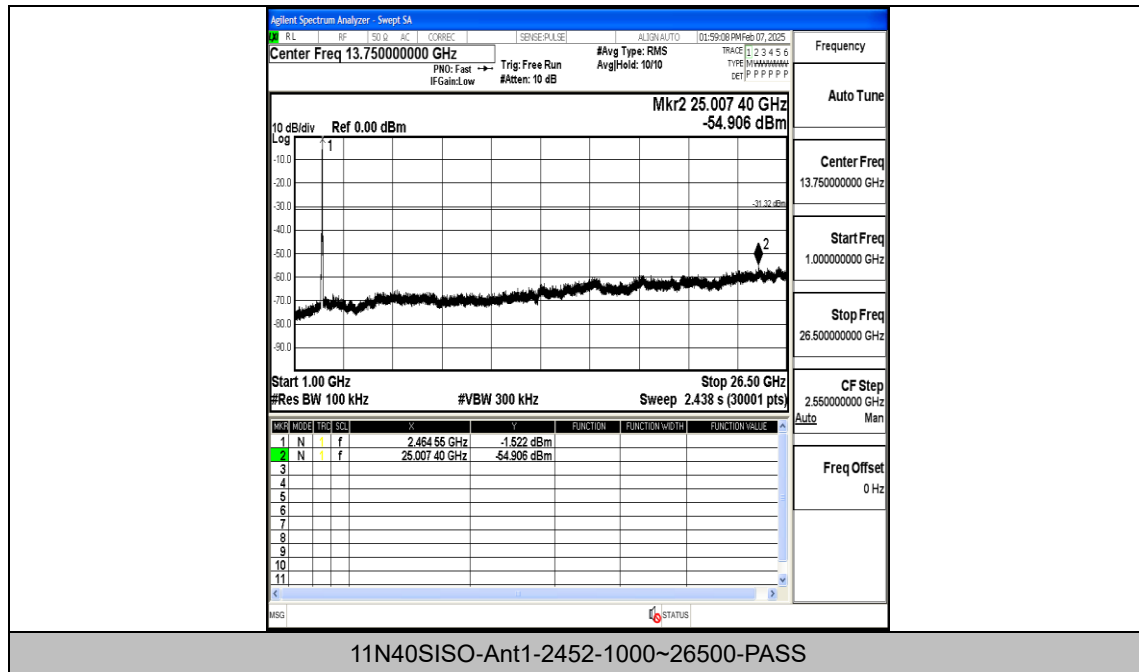
11N40SISO-Ant1-2437-1000~26500-PASS



11N40SISO-Ant1-2452-0~Reference-PASS



11N40SISO-Ant1-2452-30~1000-PASS

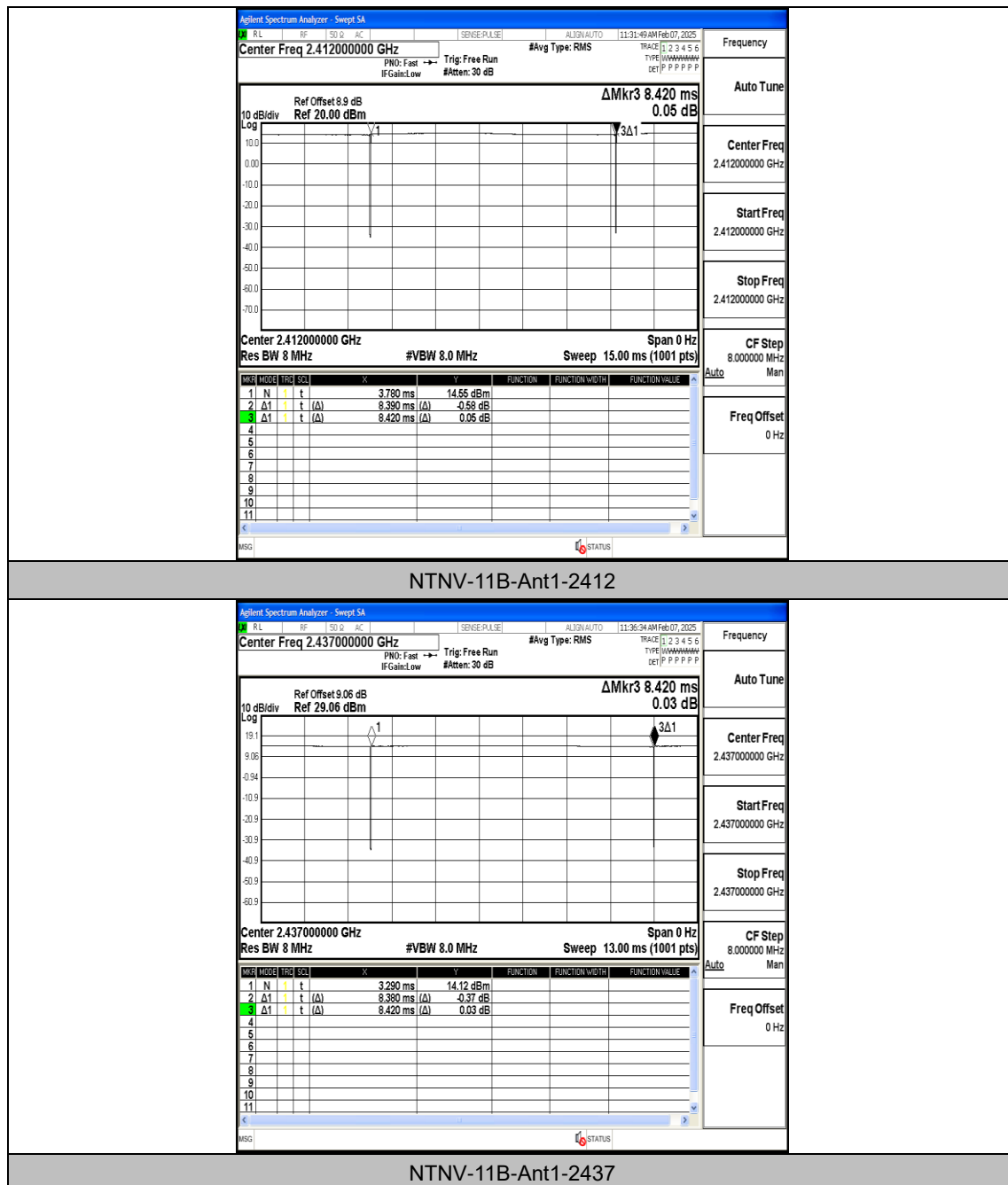


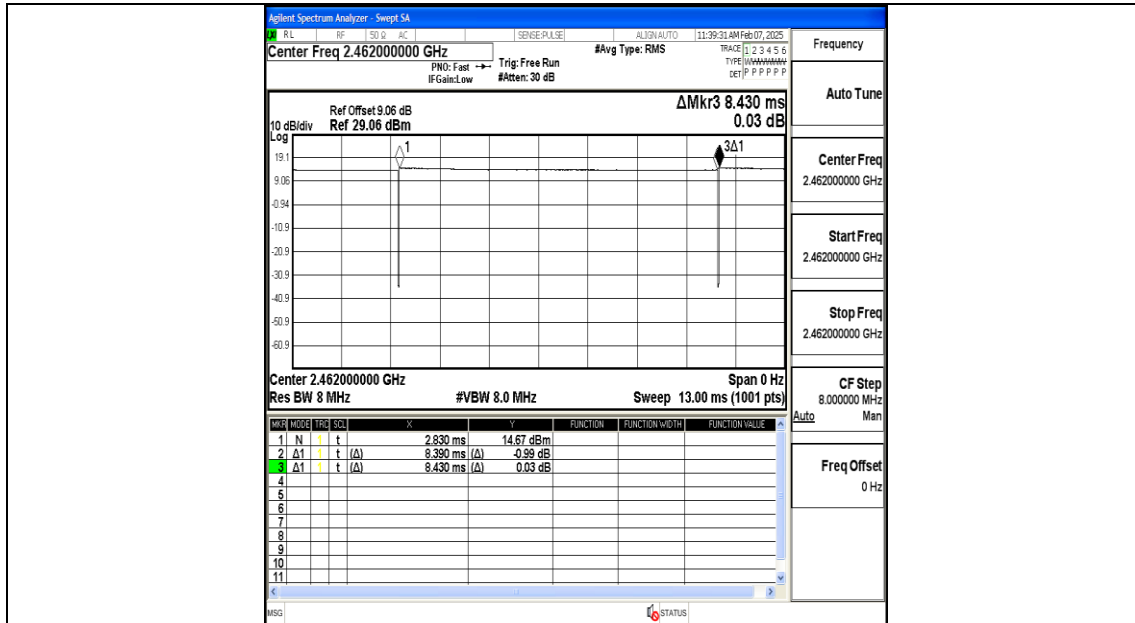
Appendix G: Duty Cycle

Test Result

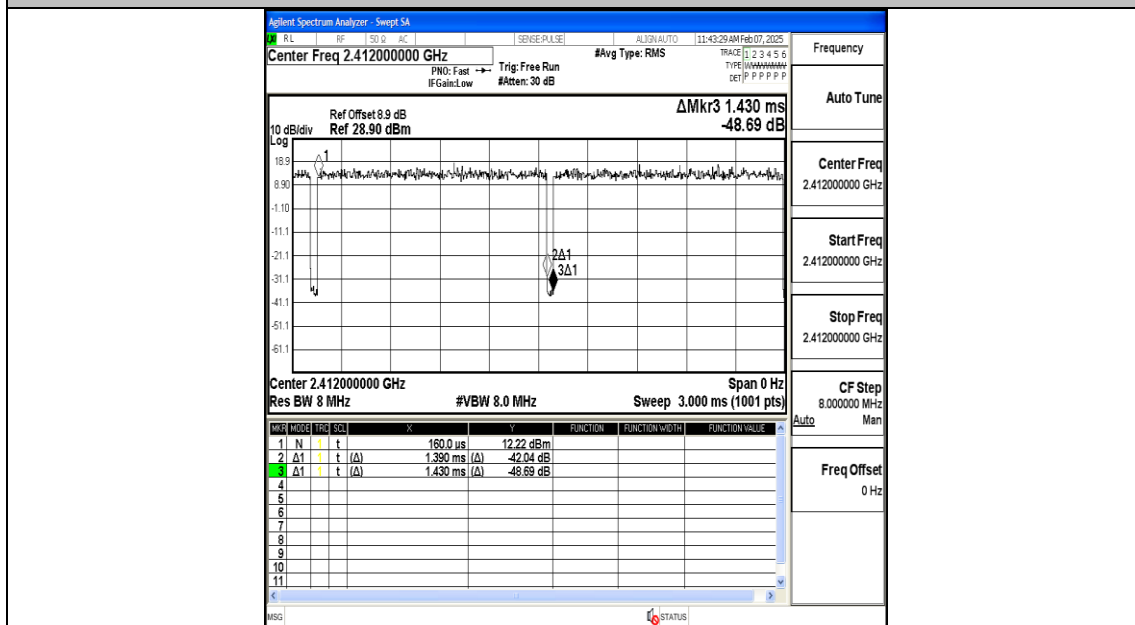
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	8.39	8.42	99.64	0.02
11B	Ant1	2437	8.38	8.42	99.52	0.02
11B	Ant1	2462	8.39	8.43	99.53	0.02
11G	Ant1	2412	1.39	1.43	97.20	0.12
11G	Ant1	2437	1.40	1.44	97.22	0.12
11G	Ant1	2462	1.40	1.44	97.22	0.12
11N20SISO	Ant1	2412	1.30	1.34	97.01	0.13
11N20SISO	Ant1	2437	1.30	1.35	96.30	0.16
11N20SISO	Ant1	2462	1.30	1.34	97.01	0.13
11N40SISO	Ant1	2422	0.64	0.69	92.75	0.33
11N40SISO	Ant1	2437	0.65	0.69	94.20	0.26
11N40SISO	Ant1	2452	0.64	0.69	92.75	0.33

Test Graphs

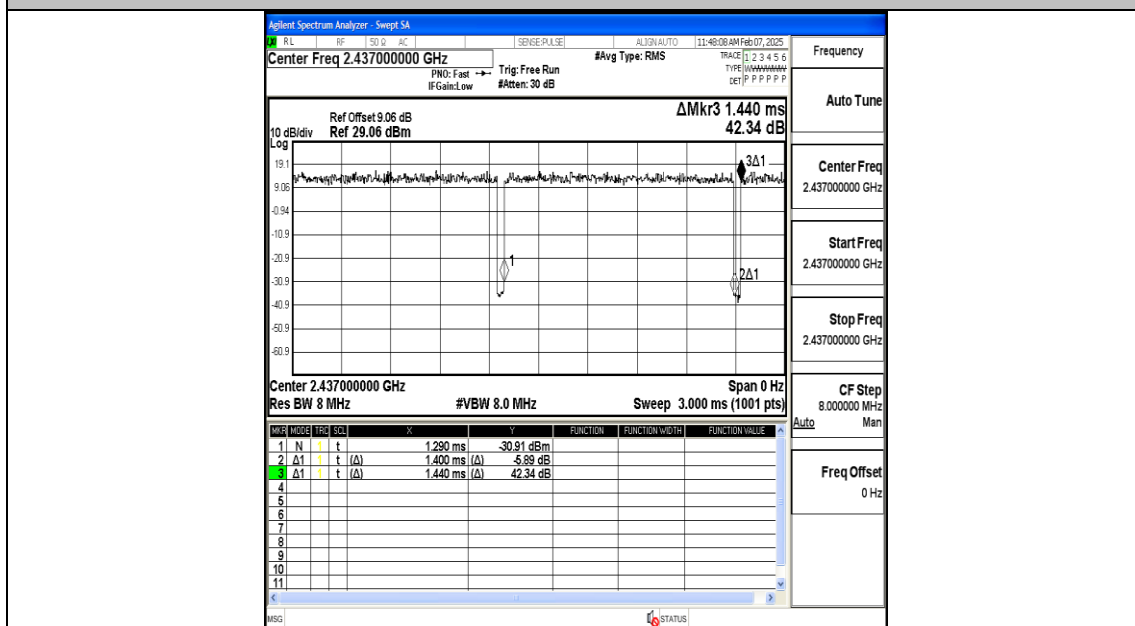




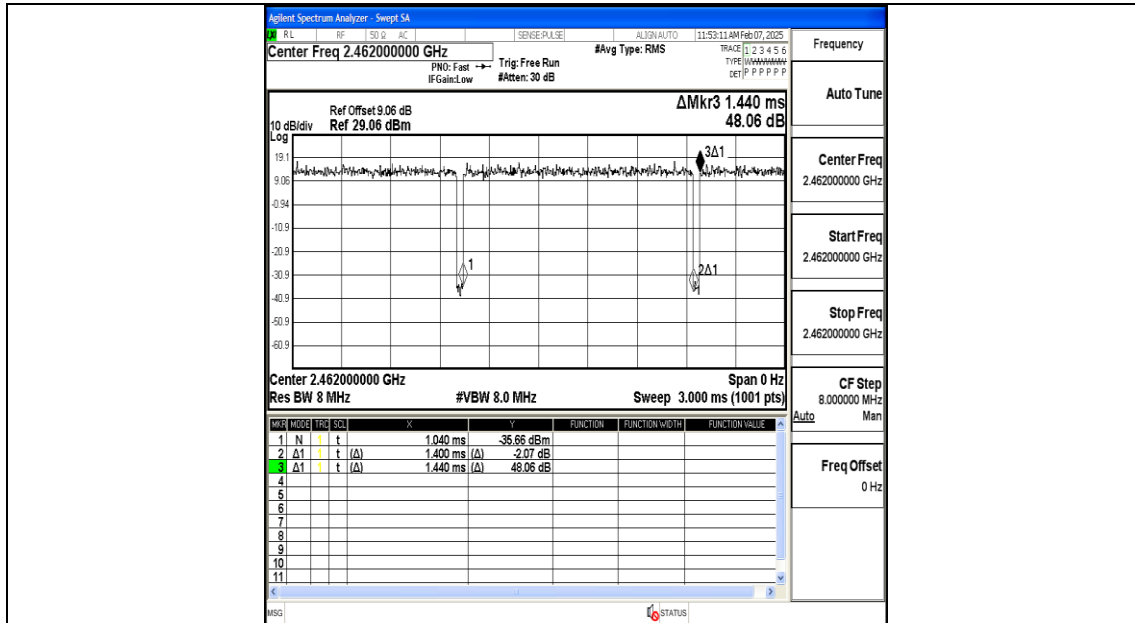
NTNV-11B-Ant1-2462



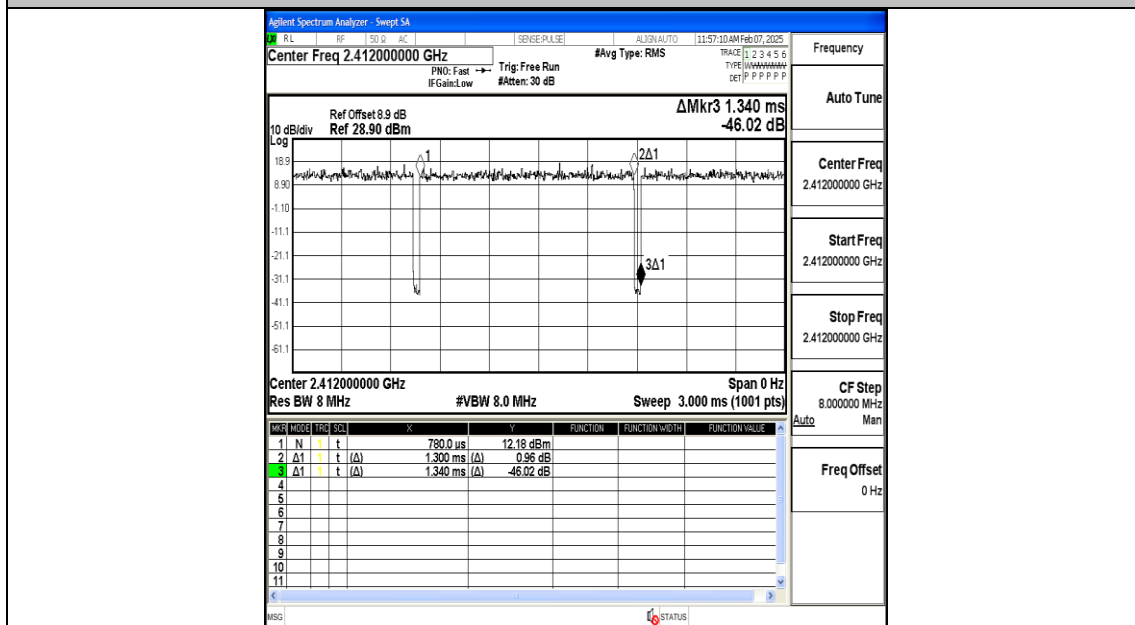
NTNV-11G-Ant1-2412



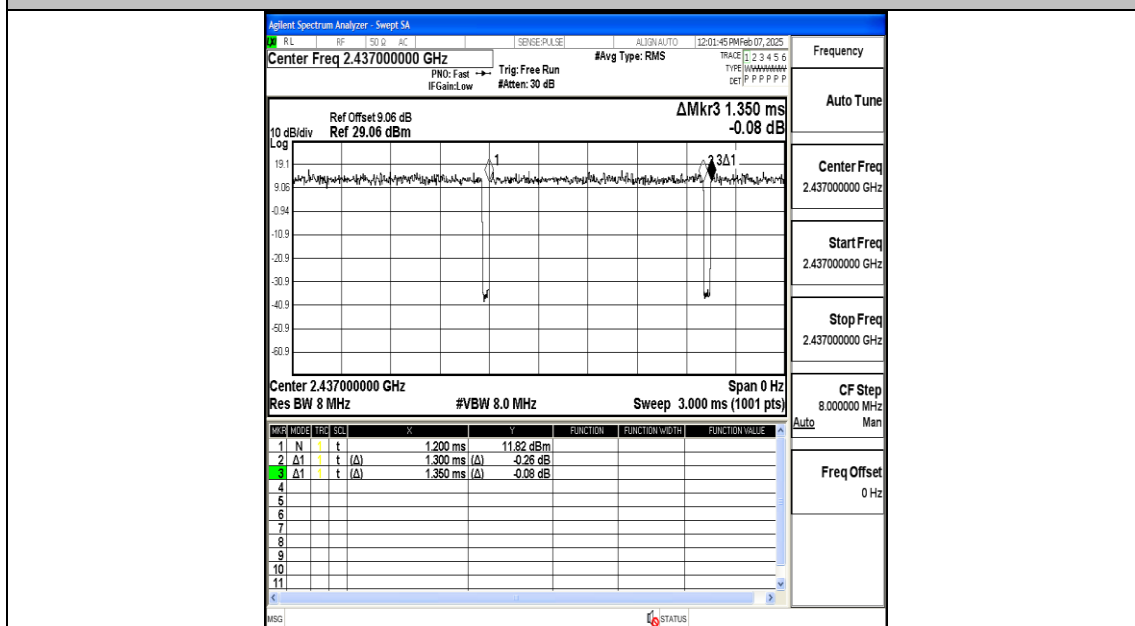
NTNV-11G-Ant1-2437



NTNV-11G-Ant1-2462



NTNV-11N20SISO-Ant1-2412



NTNV-11N20SISO-Ant1-2437

