

Appendix A

RF Test Data for 2.4GWIFI(Conducted Measurement)

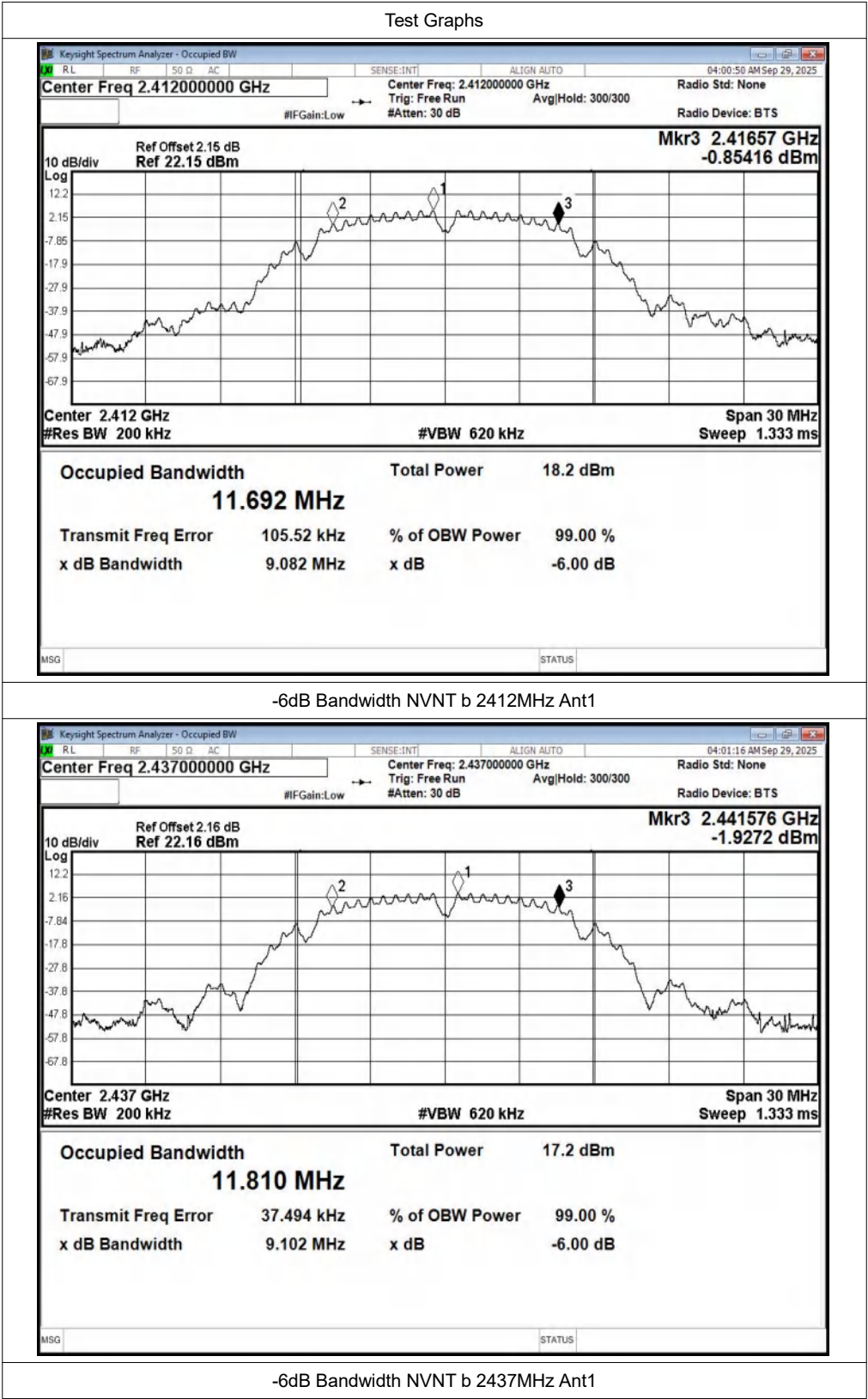
Product Name: Wireless Diagnostics Module / Vehicle Communication Interface

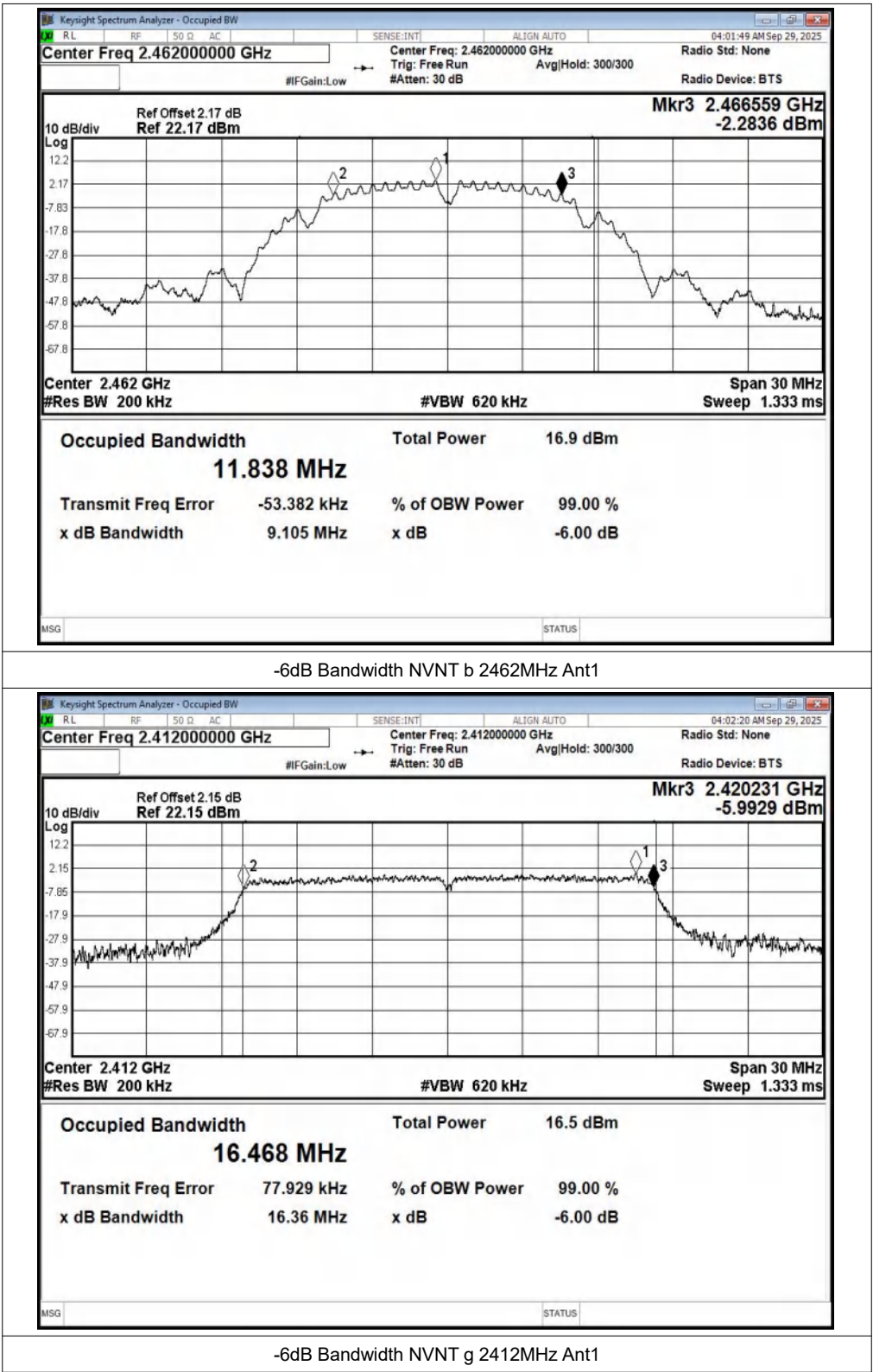
Test Model: V01

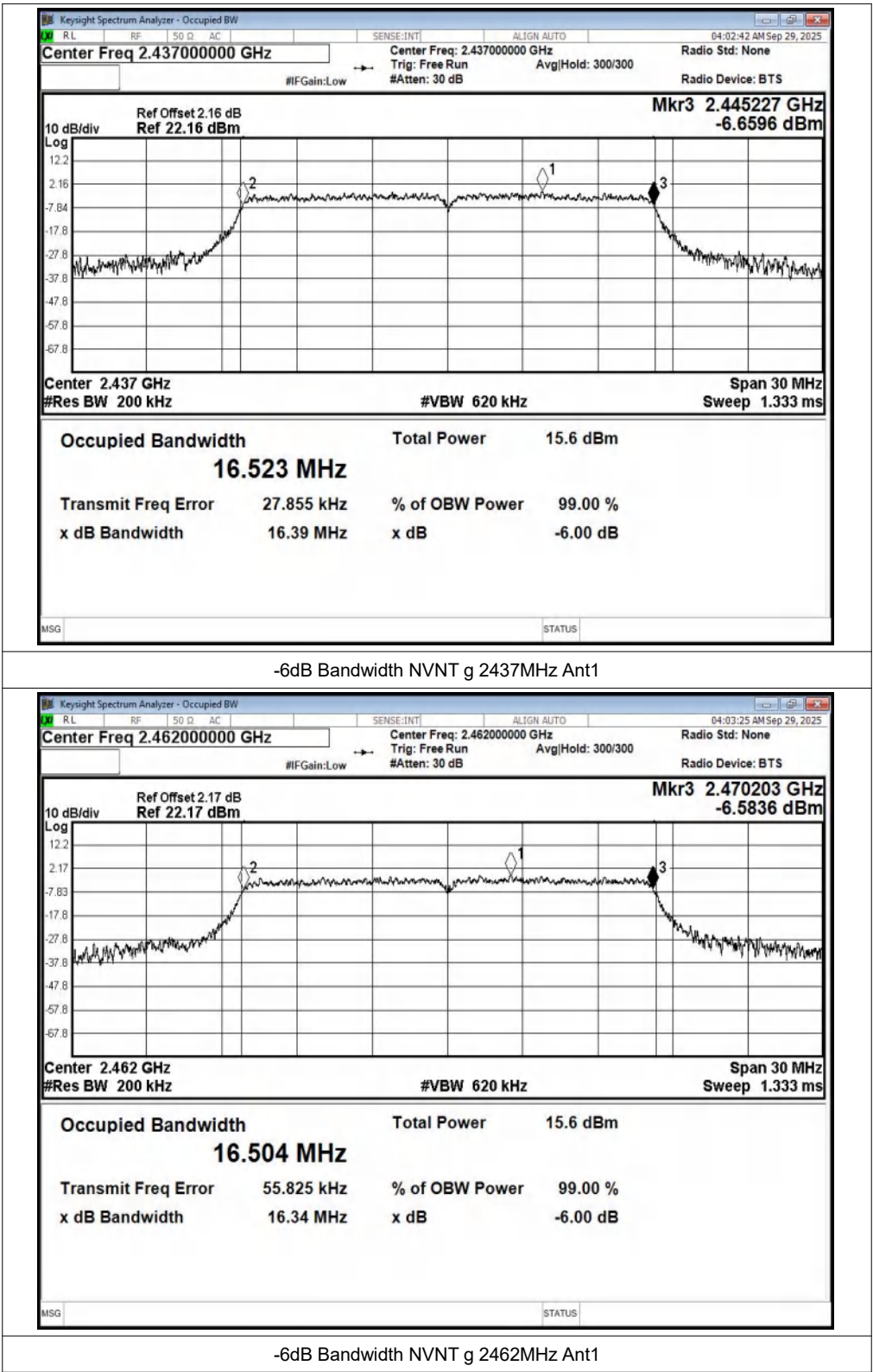
Environmental Conditions	
Temperature:	23.5° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

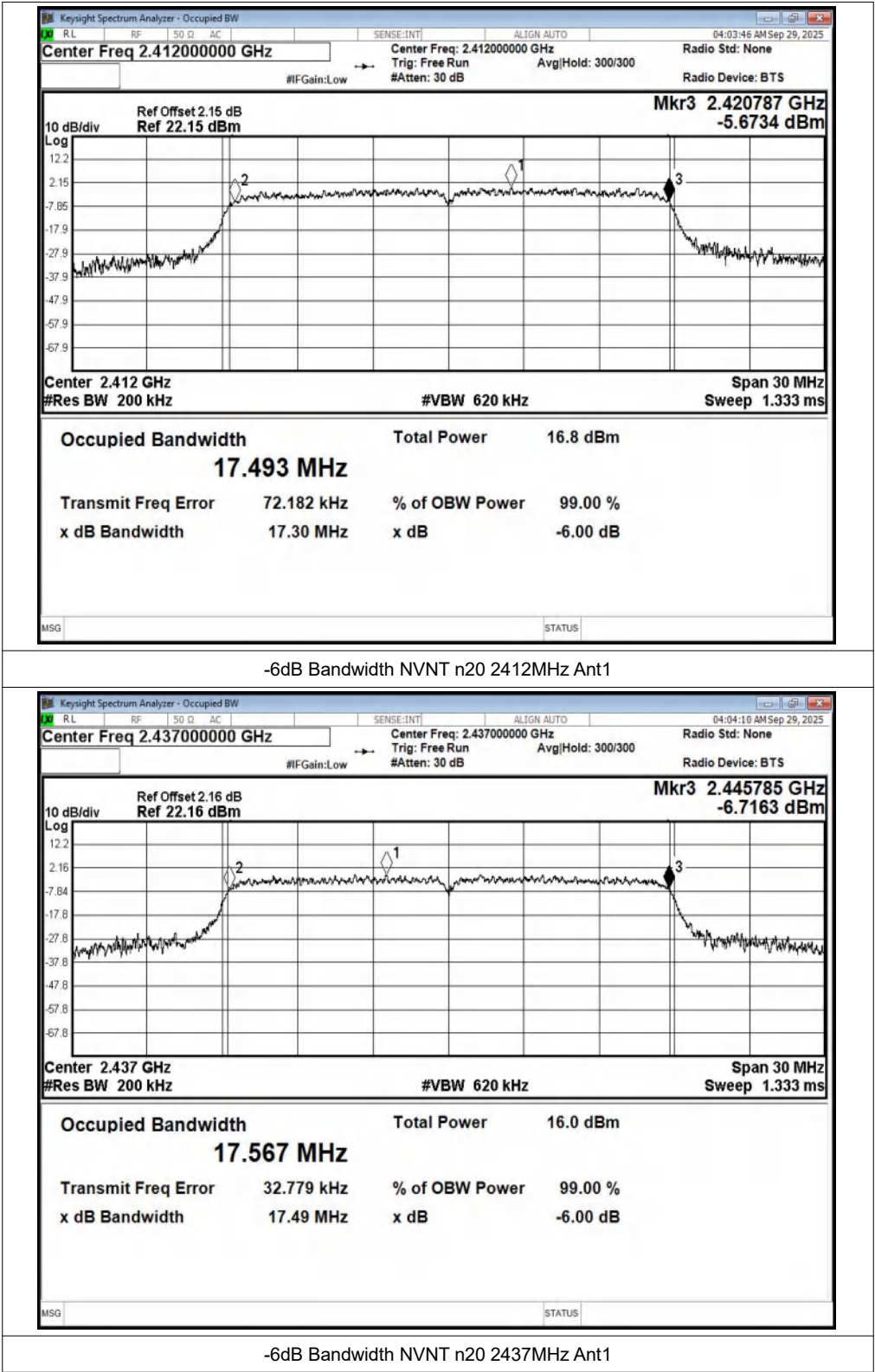
A.1 -6dB Bandwidth

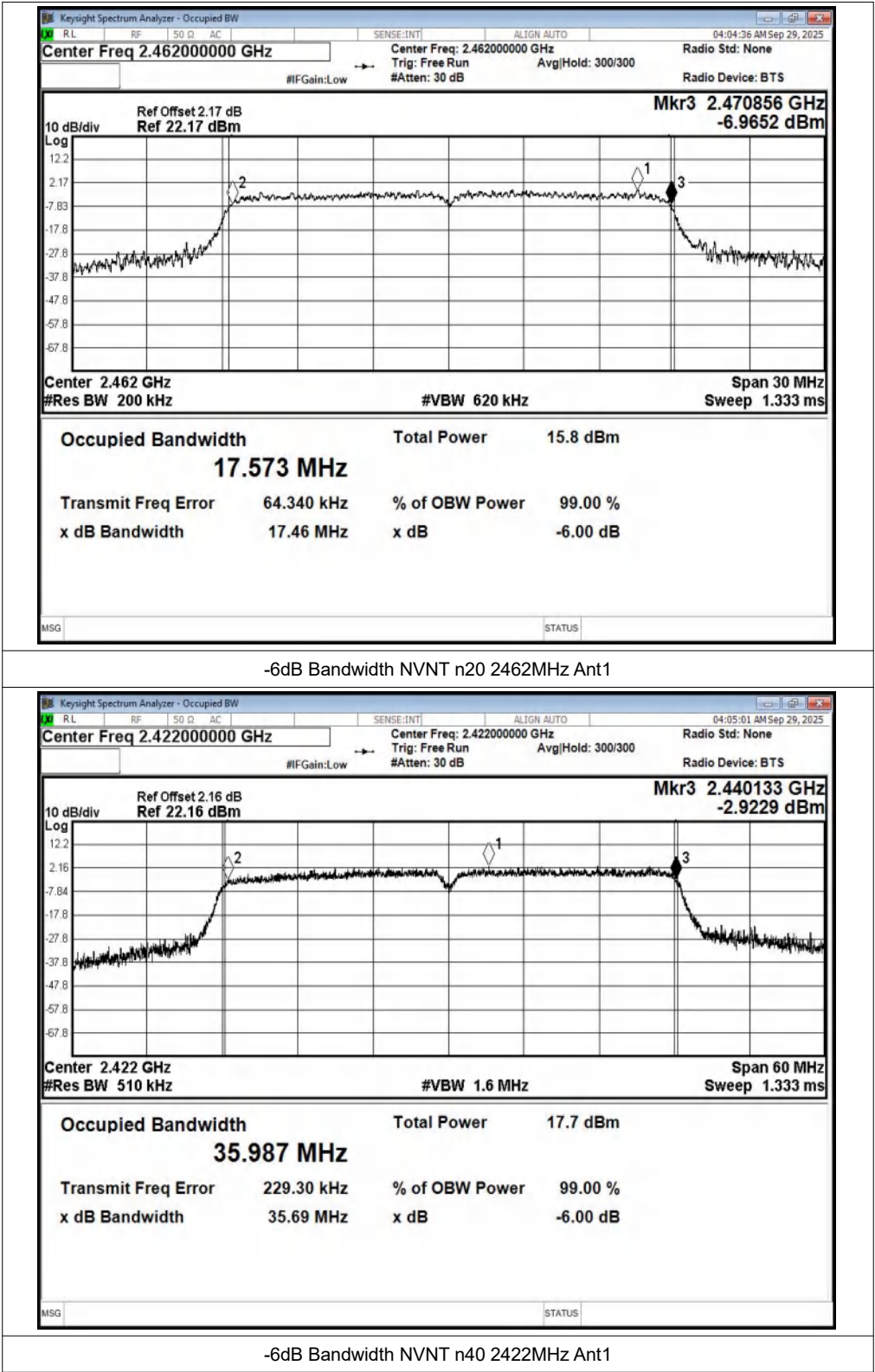
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.082	≥ 0.5	Pass
NVNT	b	2437	Ant1	9.102	≥ 0.5	Pass
NVNT	b	2462	Ant1	9.105	≥ 0.5	Pass
NVNT	g	2412	Ant1	16.36	≥ 0.5	Pass
NVNT	g	2437	Ant1	16.39	≥ 0.5	Pass
NVNT	g	2462	Ant1	16.34	≥ 0.5	Pass
NVNT	n20	2412	Ant1	17.3	≥ 0.5	Pass
NVNT	n20	2437	Ant1	17.49	≥ 0.5	Pass
NVNT	n20	2462	Ant1	17.46	≥ 0.5	Pass
NVNT	n40	2422	Ant1	35.69	≥ 0.5	Pass
NVNT	n40	2437	Ant1	35.83	≥ 0.5	Pass
NVNT	n40	2452	Ant1	35.97	≥ 0.5	Pass

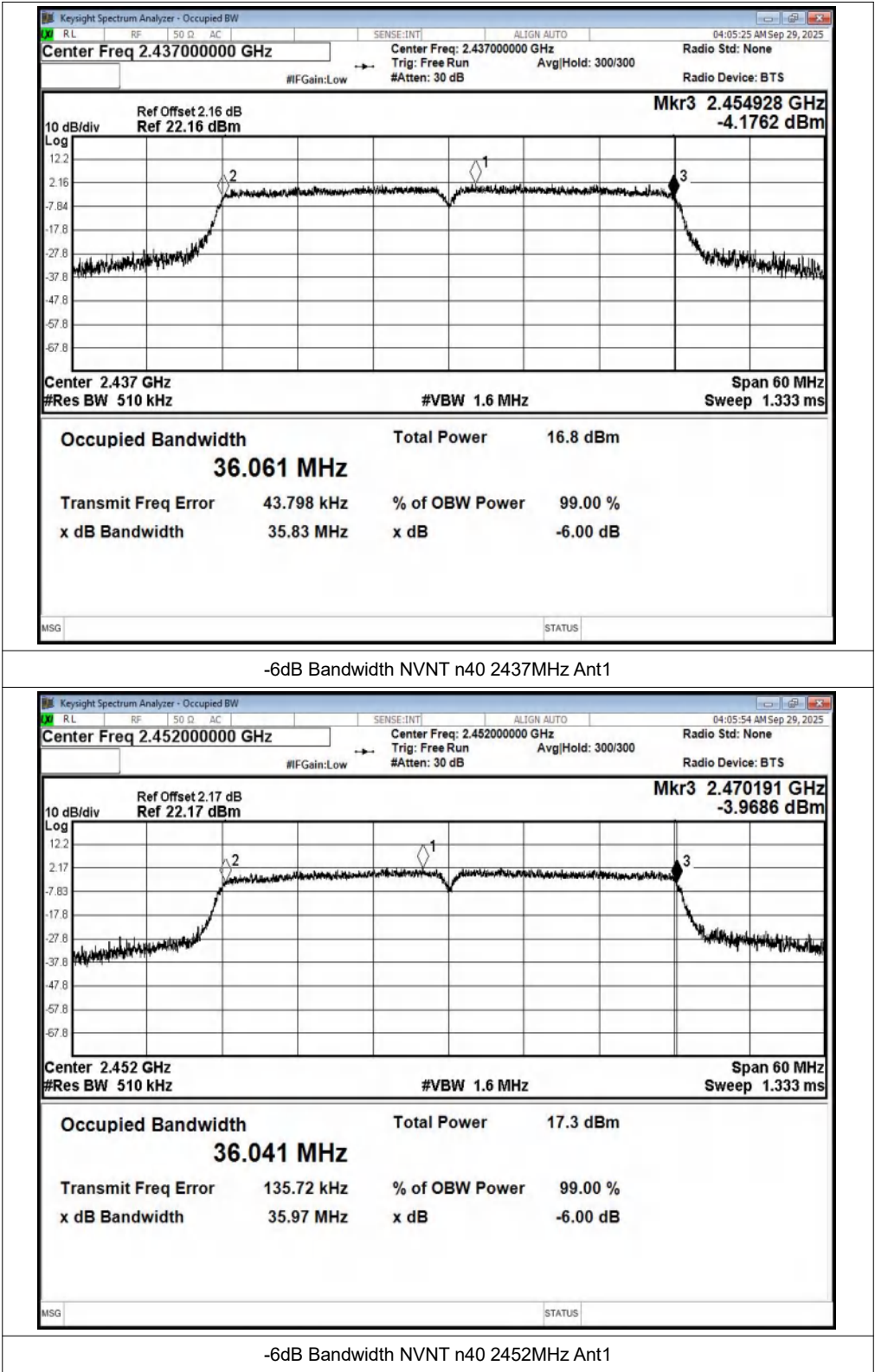










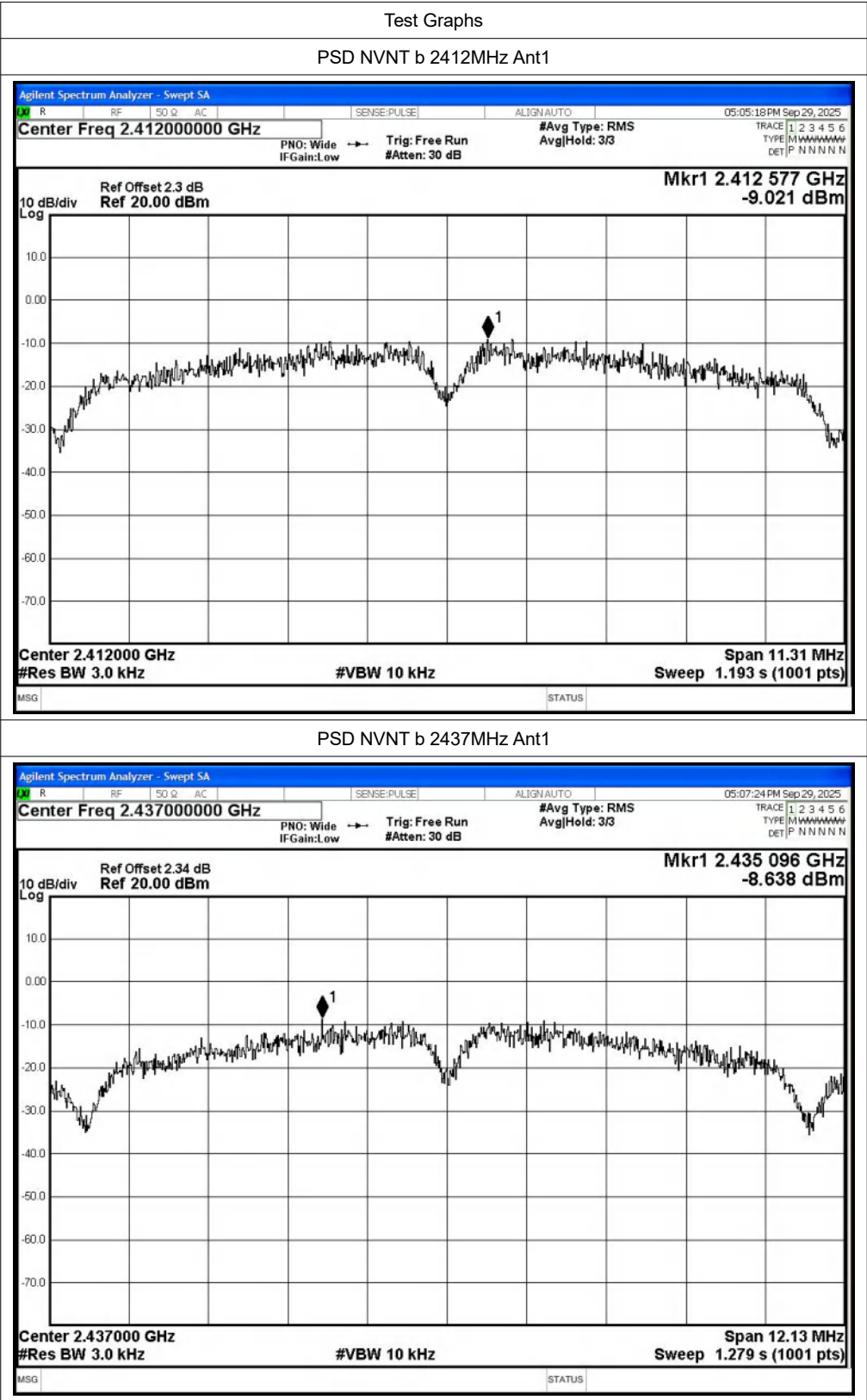


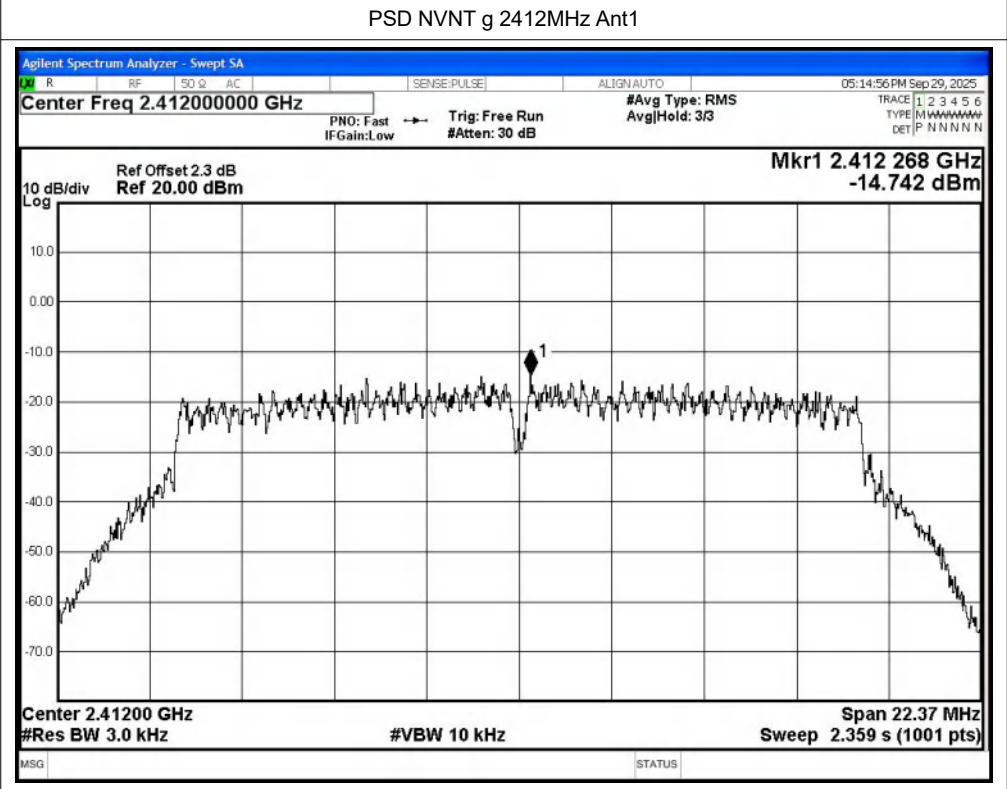
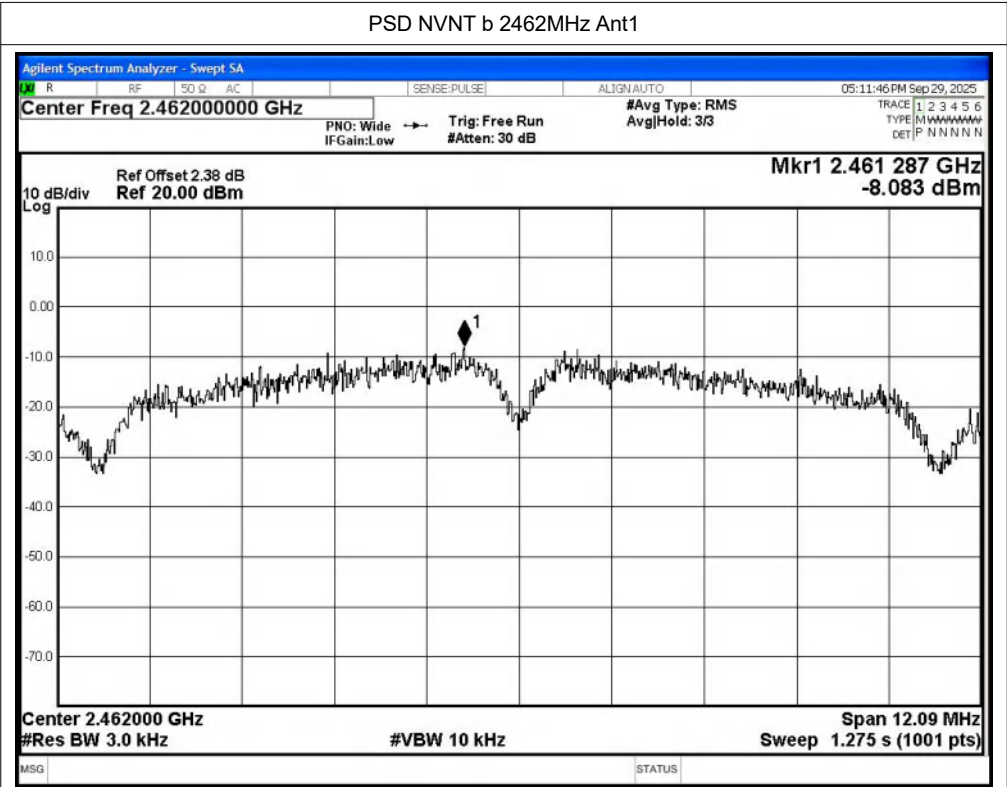
A.2 Maximum Peak Conducted Output Power

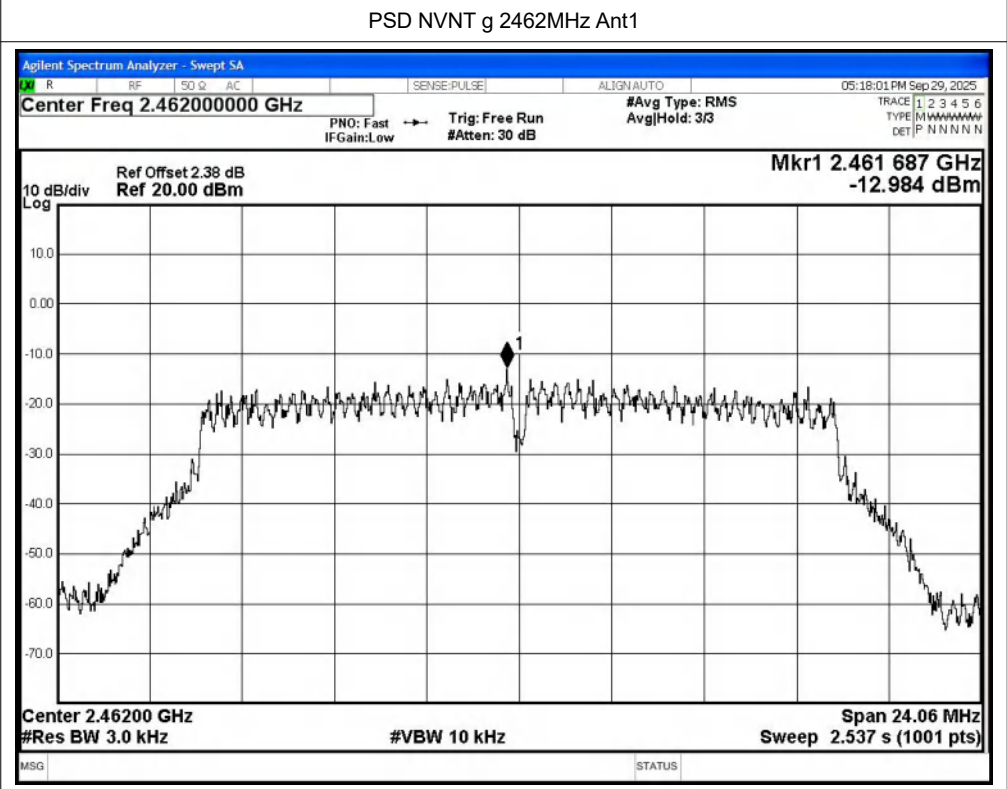
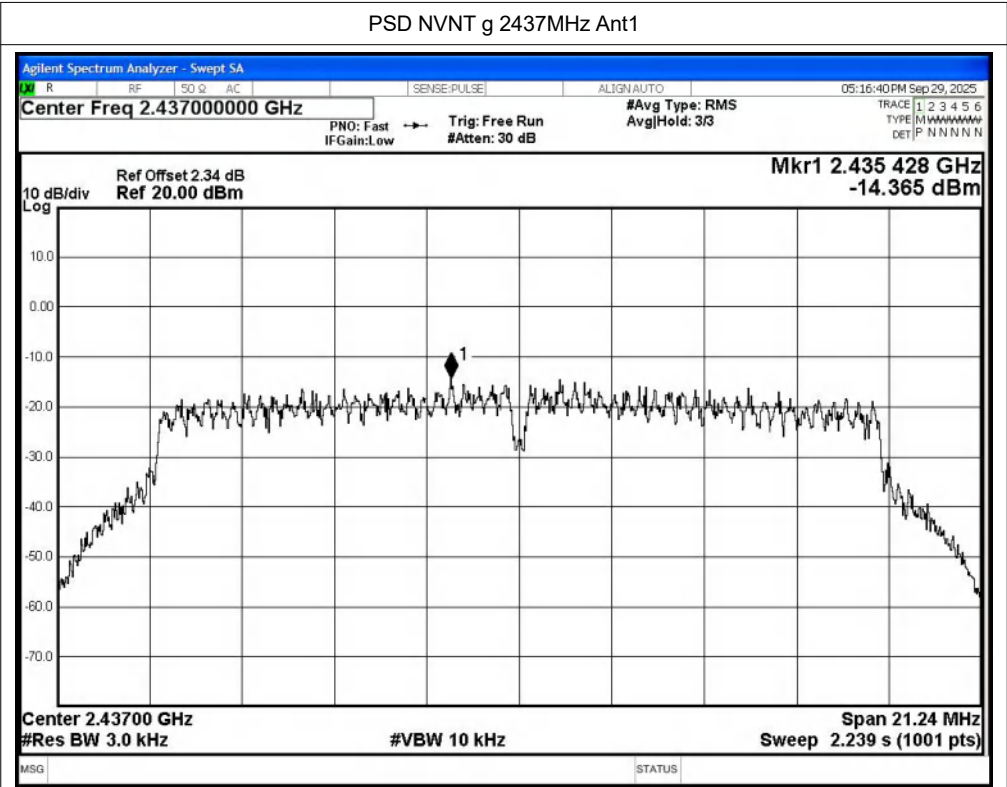
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	15.36	30	Pass
NVNT	b	2437	Ant1	15.51	30	Pass
NVNT	b	2462	Ant1	15.53	30	Pass
NVNT	g	2412	Ant1	14.42	30	Pass
NVNT	g	2437	Ant1	14.83	30	Pass
NVNT	g	2462	Ant1	14.85	30	Pass
NVNT	n20	2412	Ant1	13.36	30	Pass
NVNT	n20	2437	Ant1	13.61	30	Pass
NVNT	n20	2462	Ant1	13.55	30	Pass
NVNT	n40	2422	Ant1	12.66	30	Pass
NVNT	n40	2437	Ant1	12.8	30	Pass
NVNT	n40	2452	Ant1	12.79	30	Pass

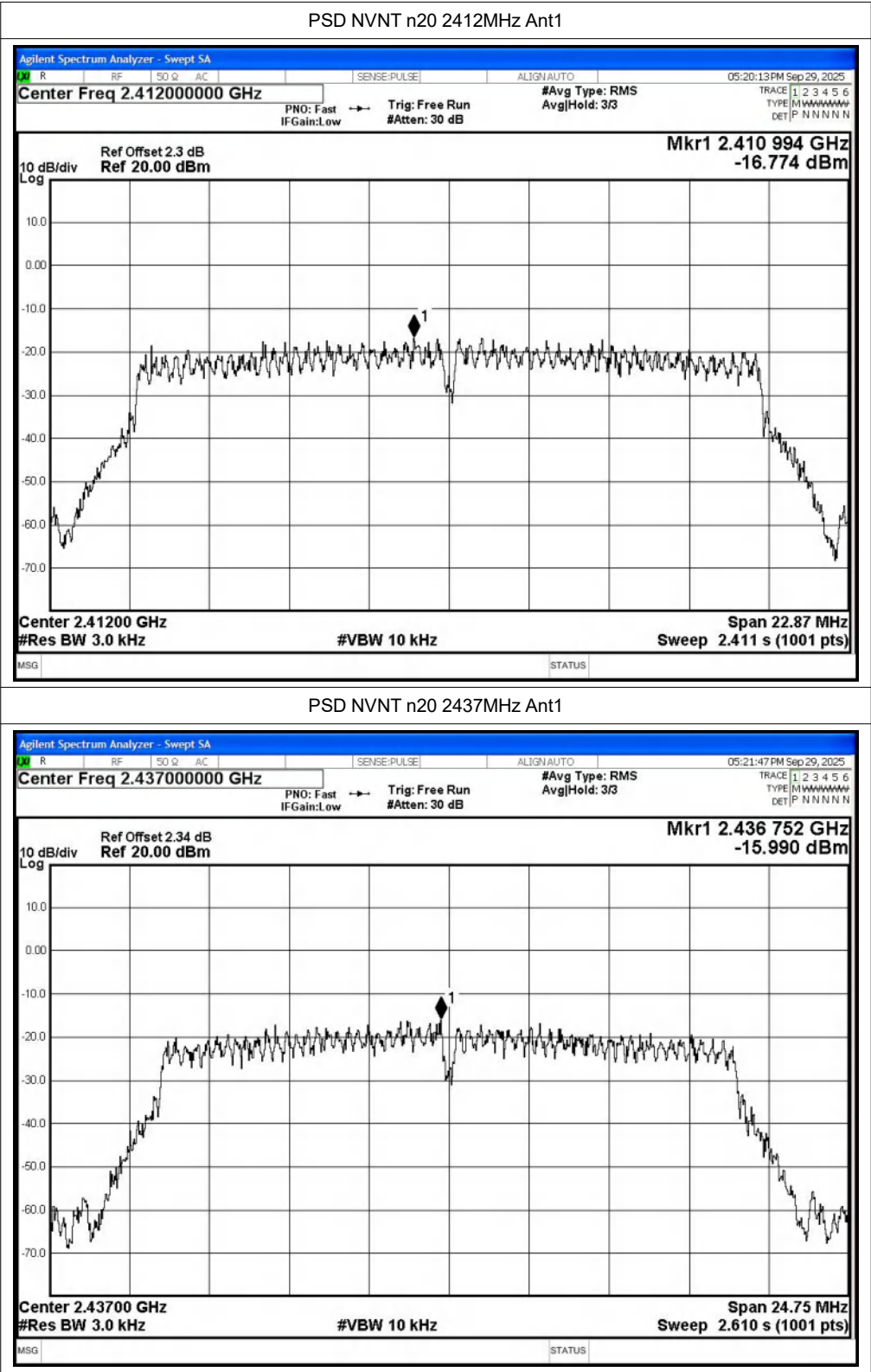
A.3 Maximum Power Spectral Density Level

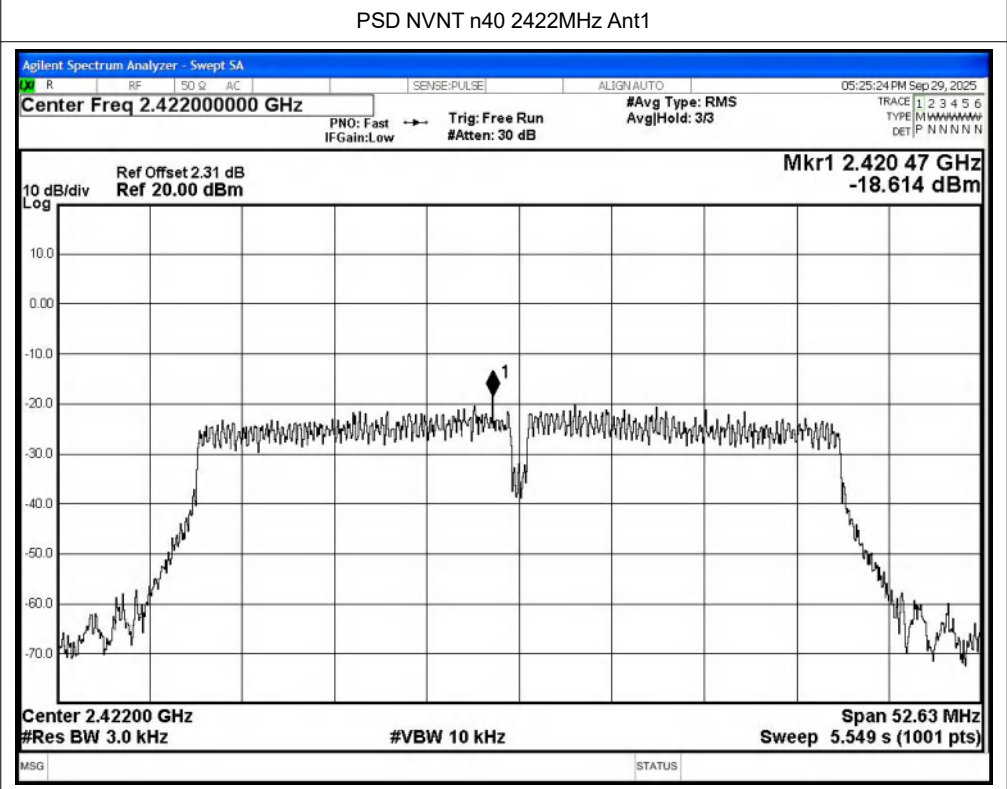
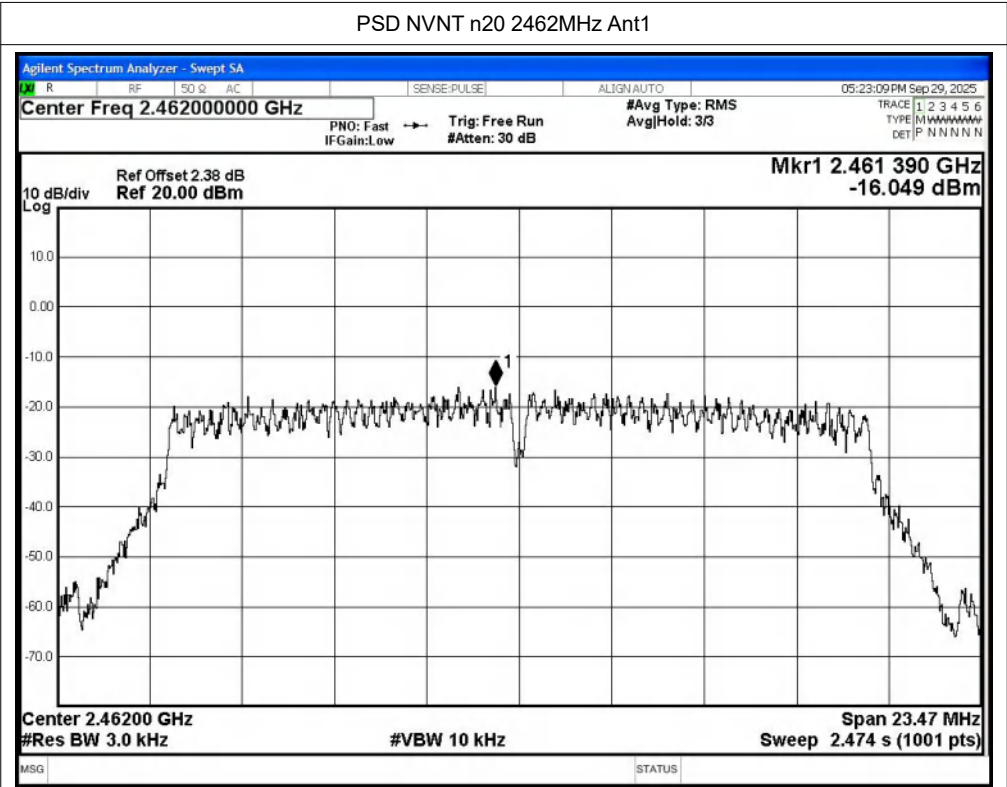
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-9.02	8	Pass
NVNT	b	2437	Ant1	-8.64	8	Pass
NVNT	b	2462	Ant1	-8.08	8	Pass
NVNT	g	2412	Ant1	-14.74	8	Pass
NVNT	g	2437	Ant1	-14.37	8	Pass
NVNT	g	2462	Ant1	-12.98	8	Pass
NVNT	n20	2412	Ant1	-16.77	8	Pass
NVNT	n20	2437	Ant1	-15.99	8	Pass
NVNT	n20	2462	Ant1	-16.05	8	Pass
NVNT	n40	2422	Ant1	-18.61	8	Pass
NVNT	n40	2437	Ant1	-18.63	8	Pass
NVNT	n40	2452	Ant1	-18.94	8	Pass

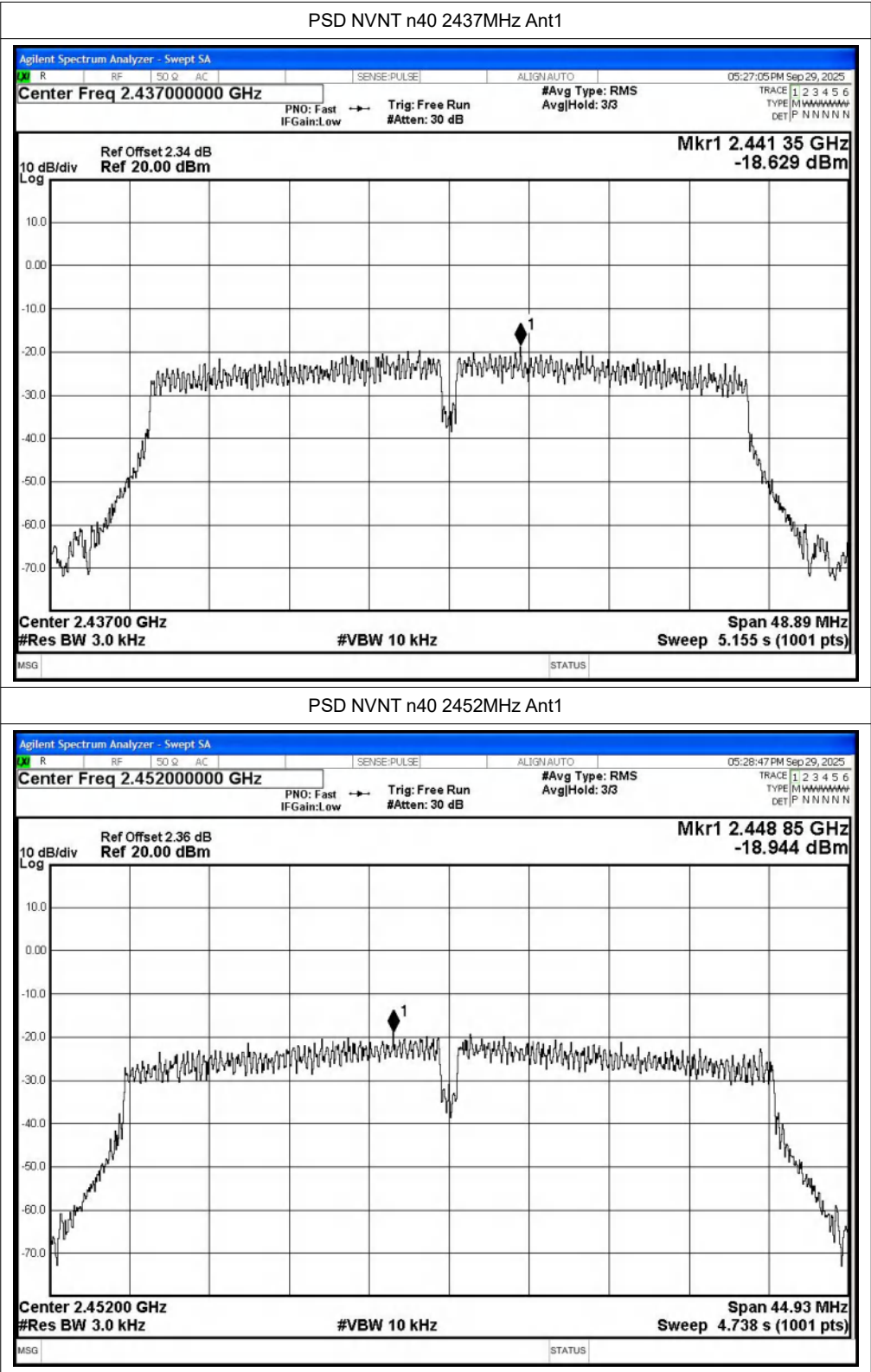






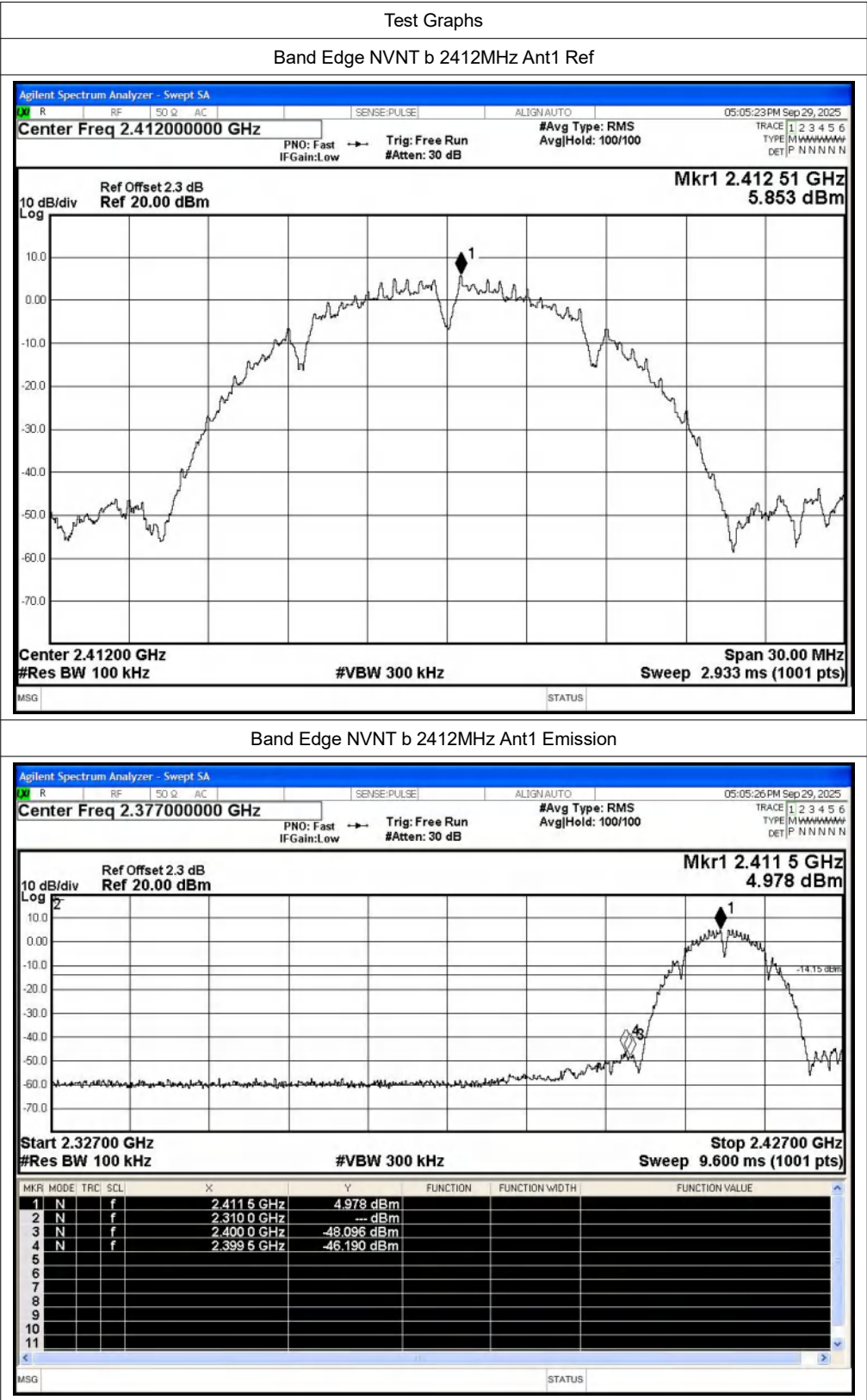


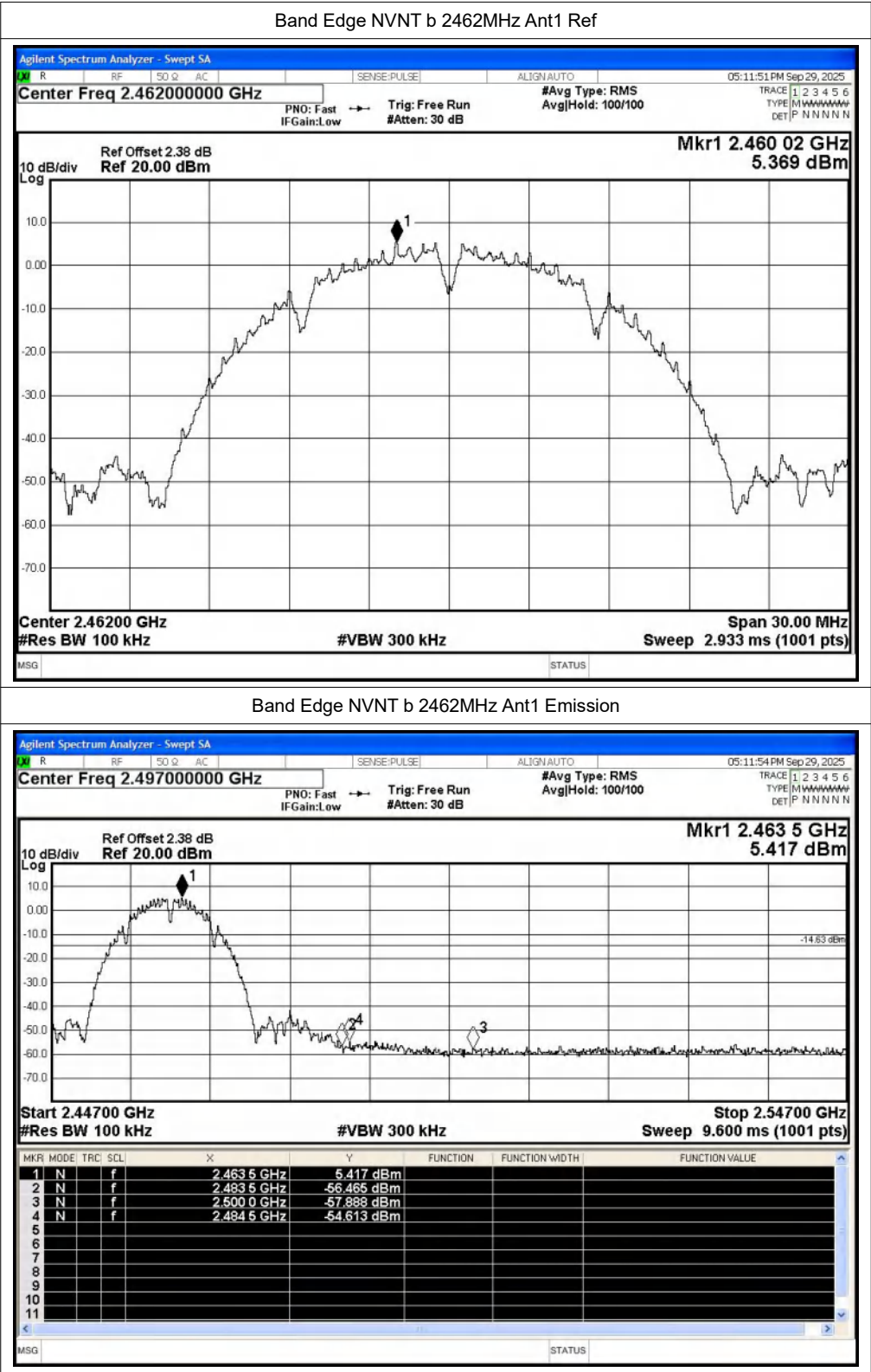


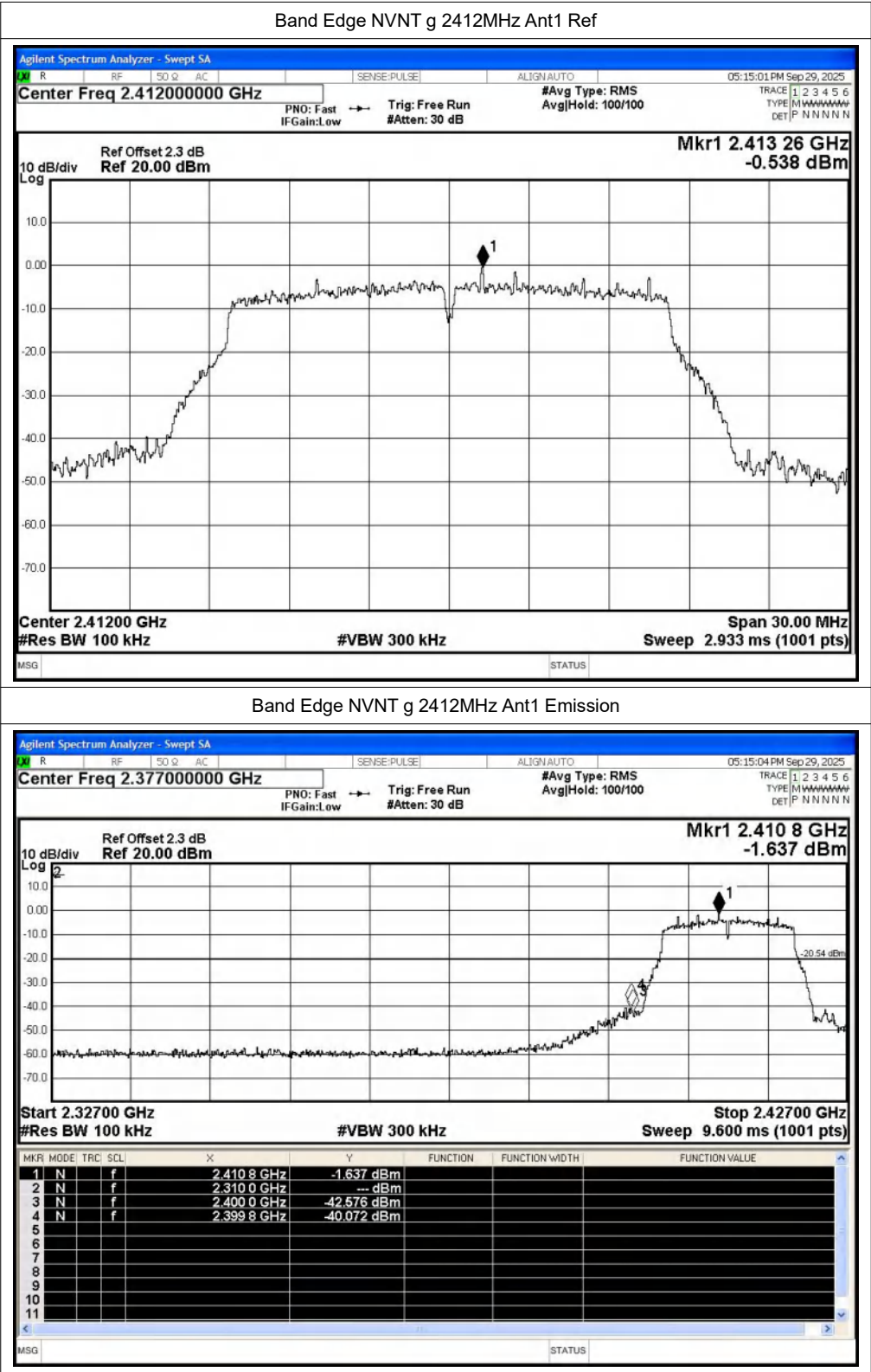


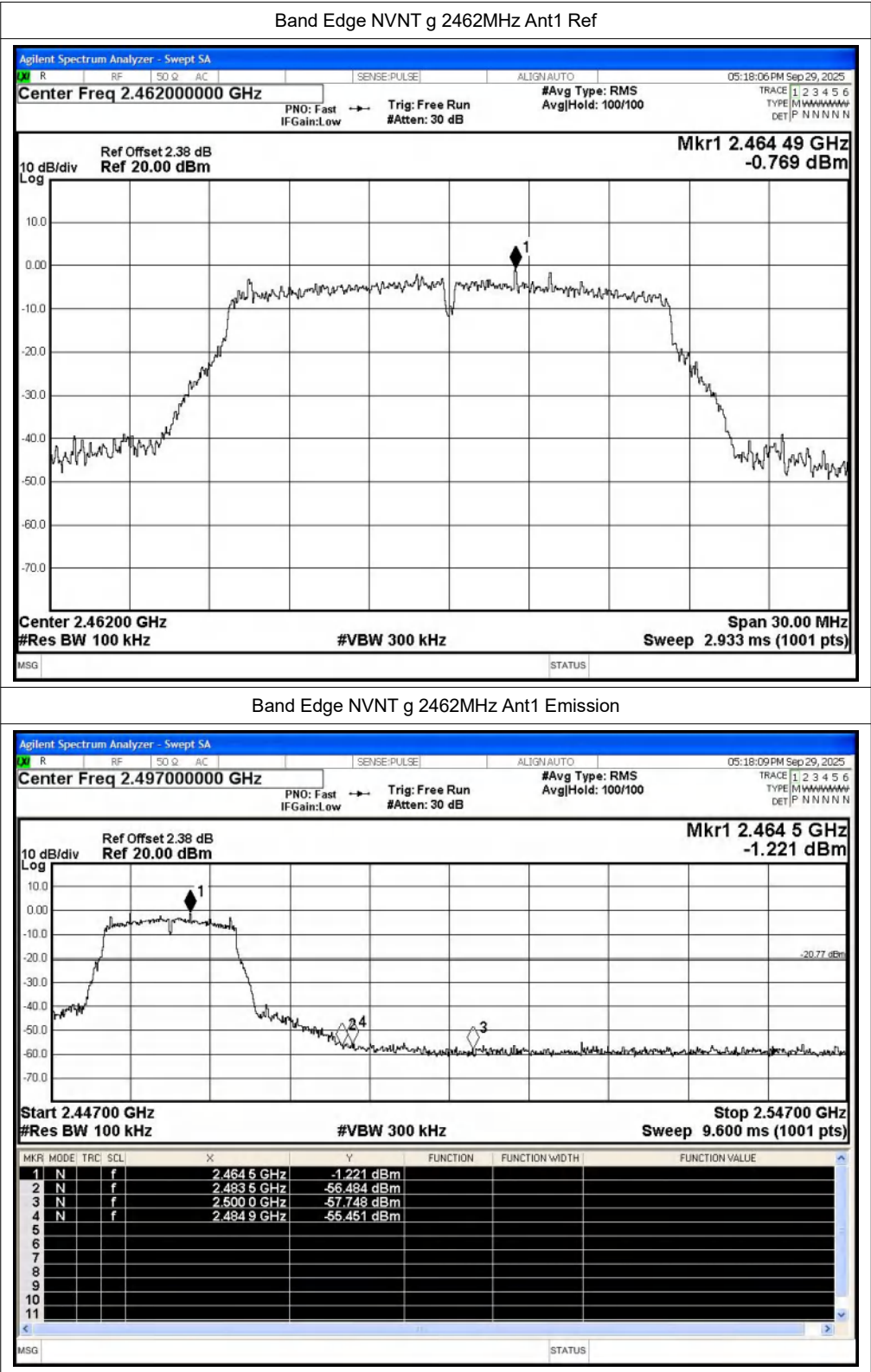
A.4 Band Edge

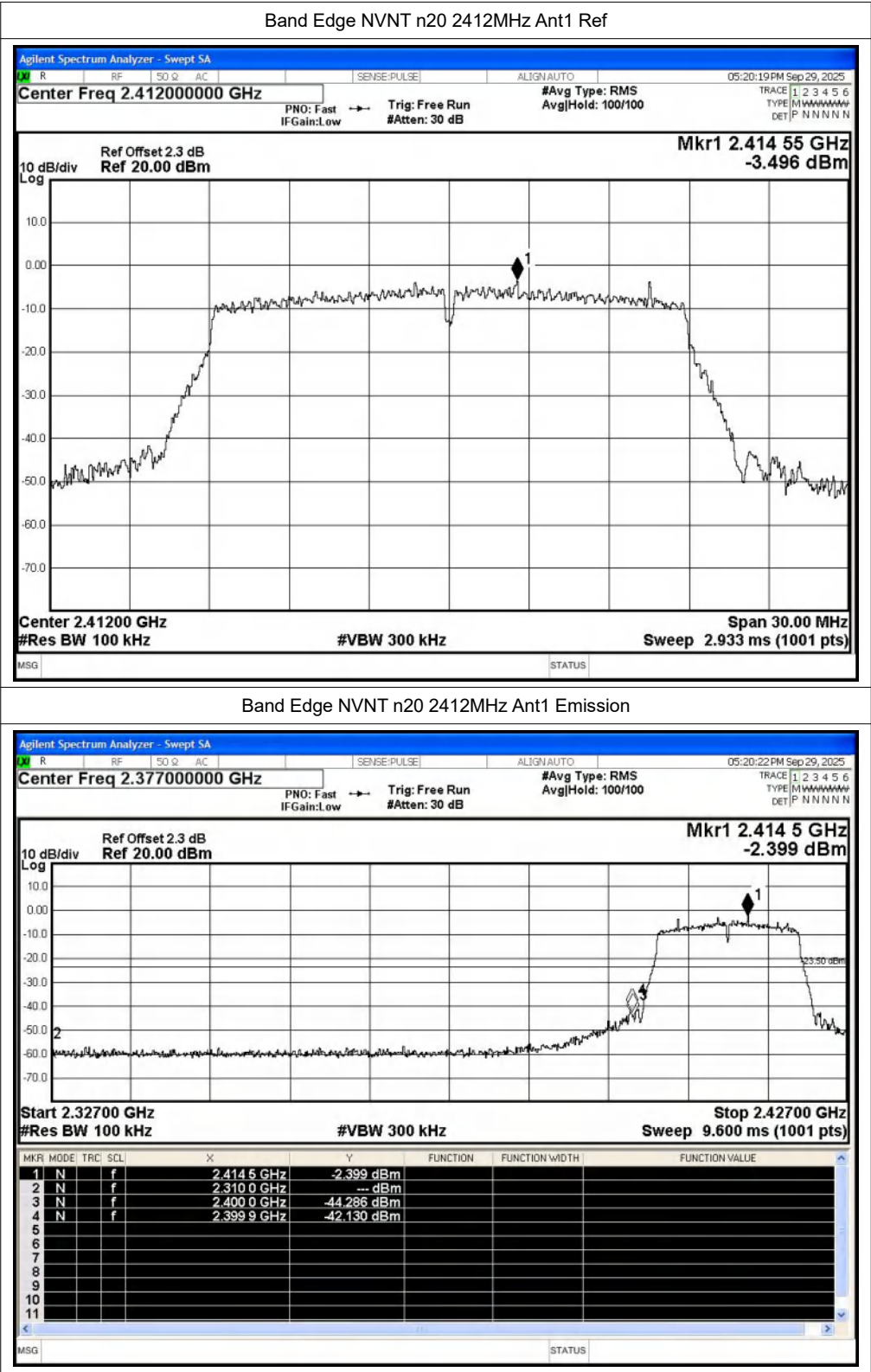
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-52.04	-20	Pass
NVNT	b	2462	Ant1	-59.98	-20	Pass
NVNT	g	2412	Ant1	-39.53	-20	Pass
NVNT	g	2462	Ant1	-54.68	-20	Pass
NVNT	n20	2412	Ant1	-38.63	-20	Pass
NVNT	n20	2462	Ant1	-52.55	-20	Pass
NVNT	n40	2422	Ant1	-40.78	-20	Pass
NVNT	n40	2452	Ant1	-49.53	-20	Pass

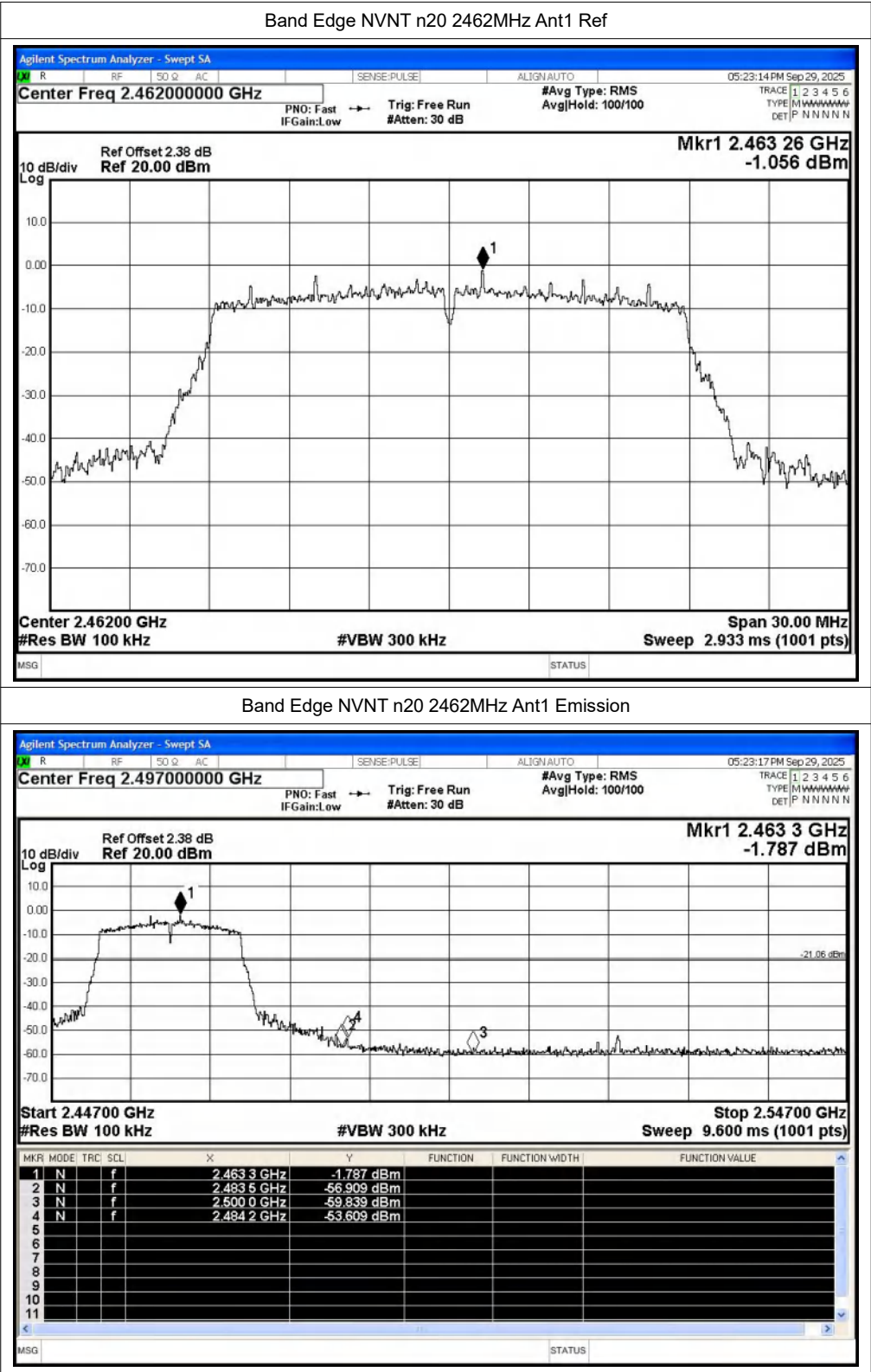


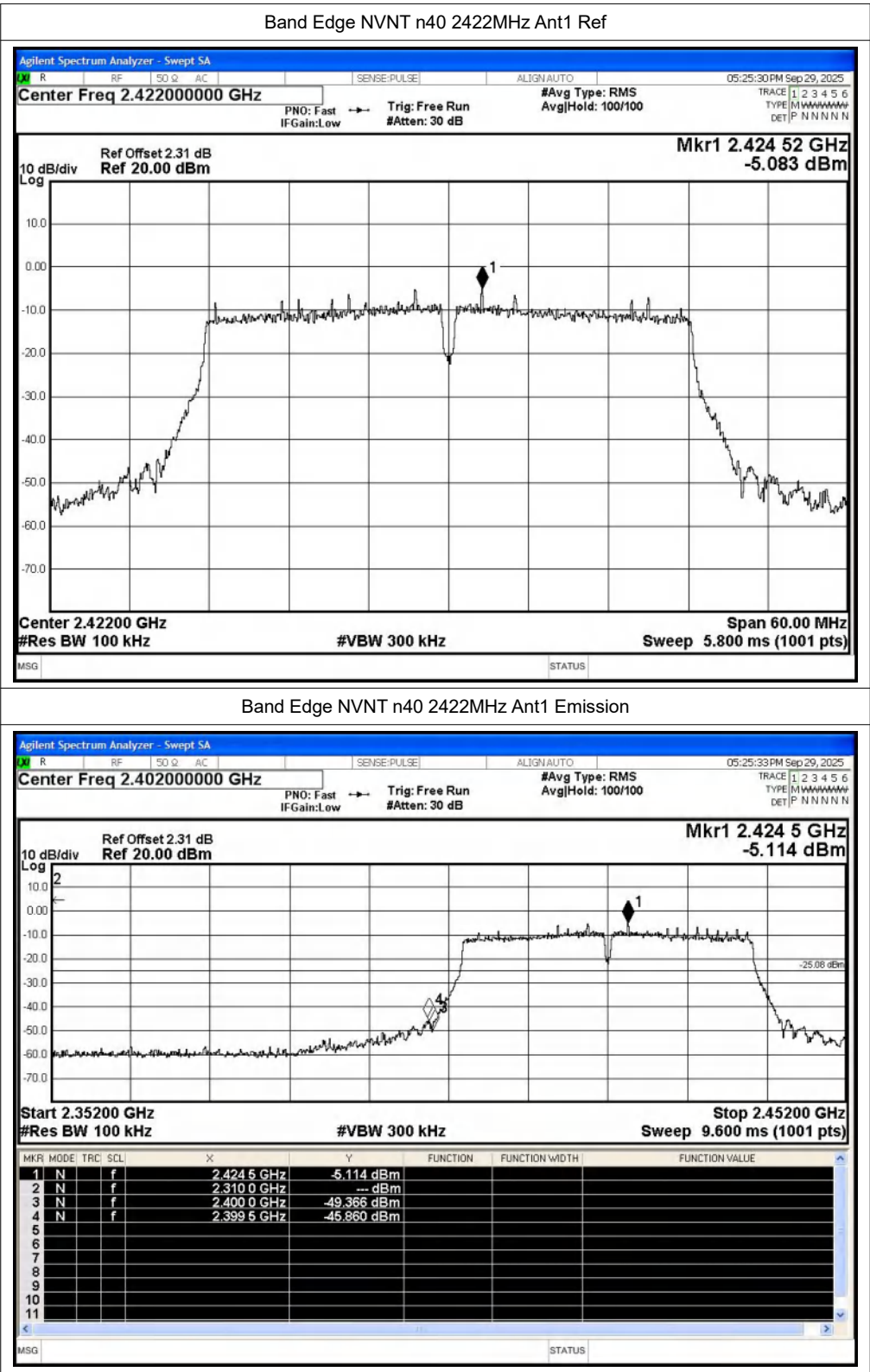


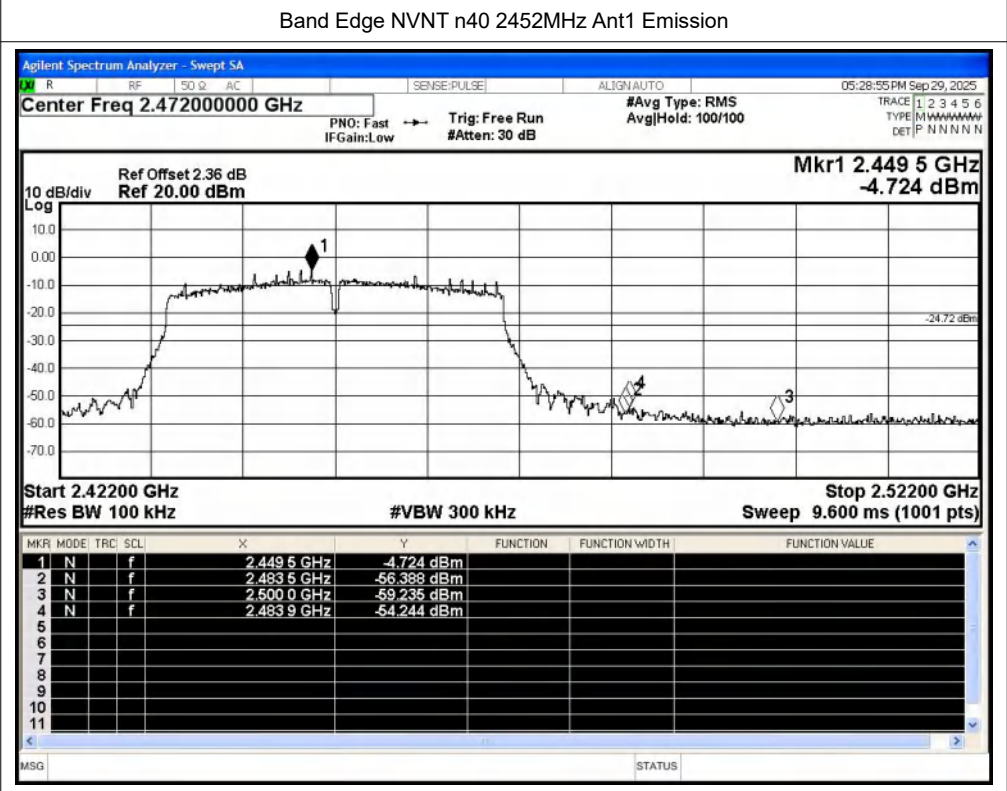
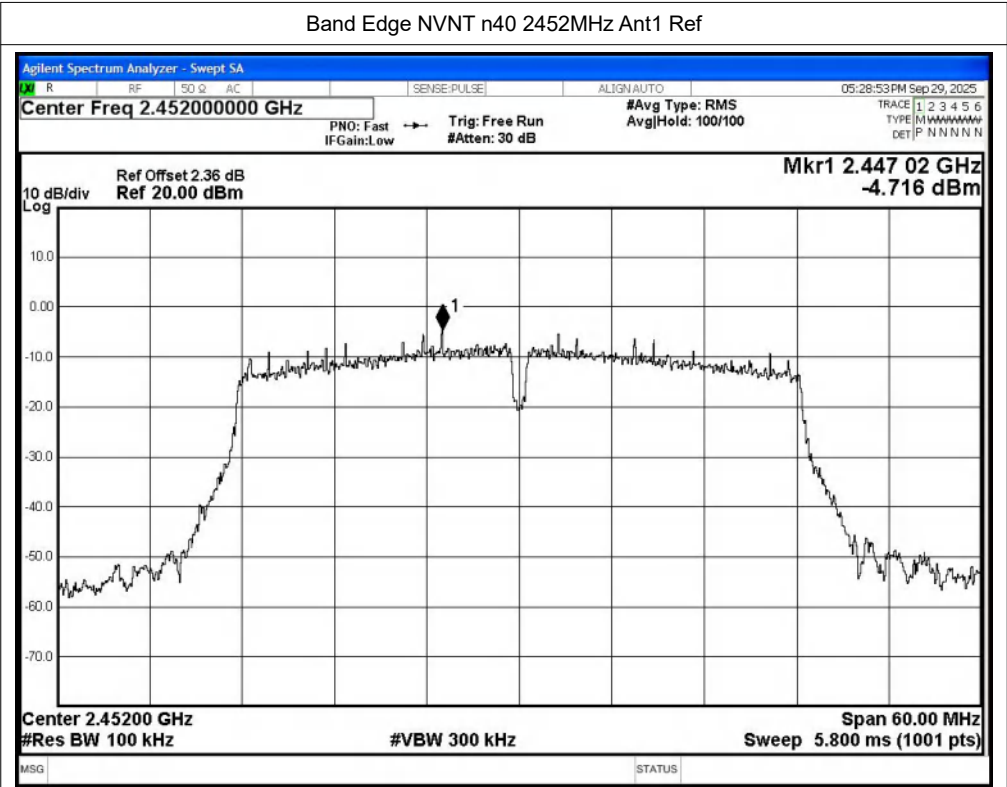






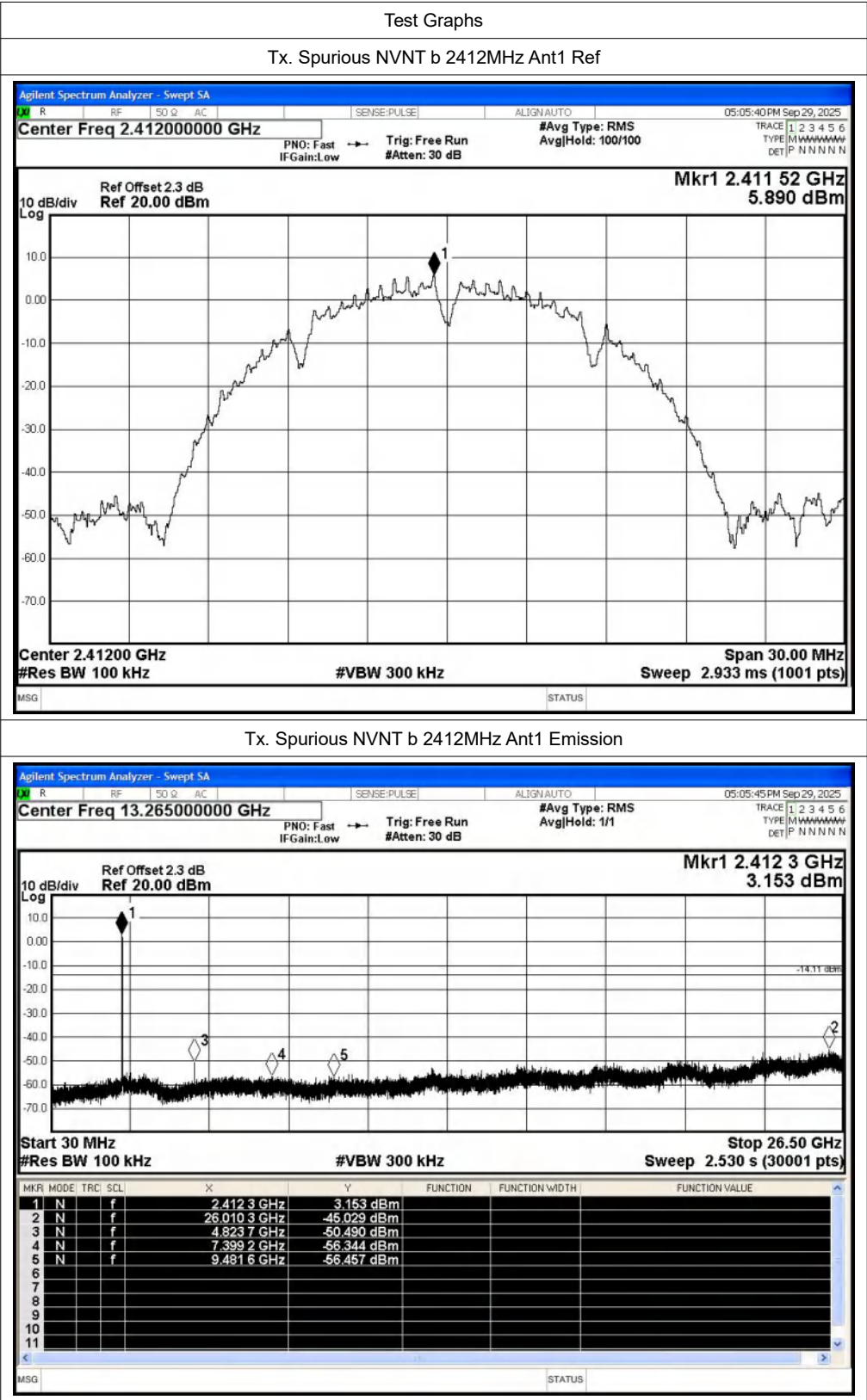


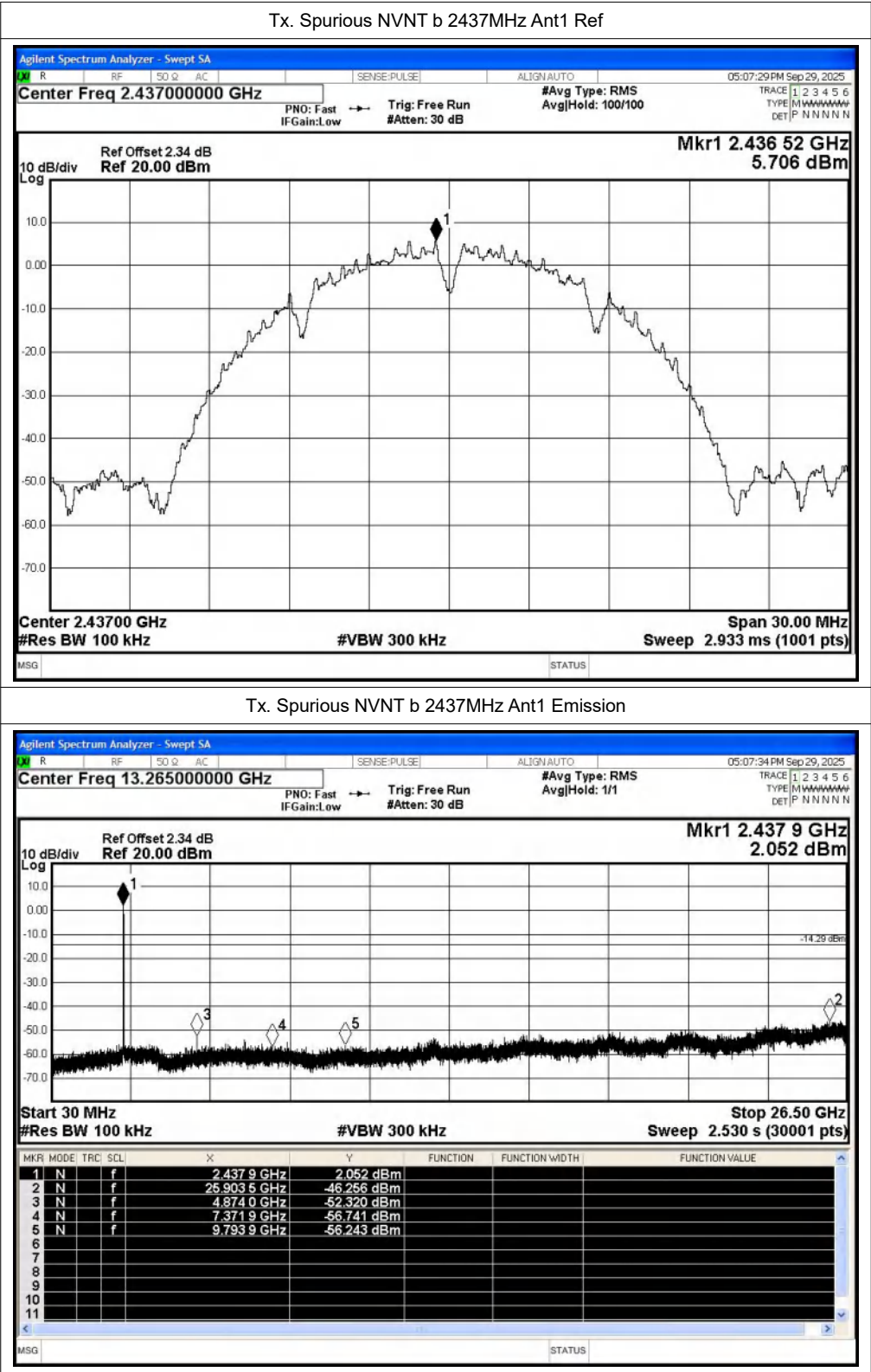


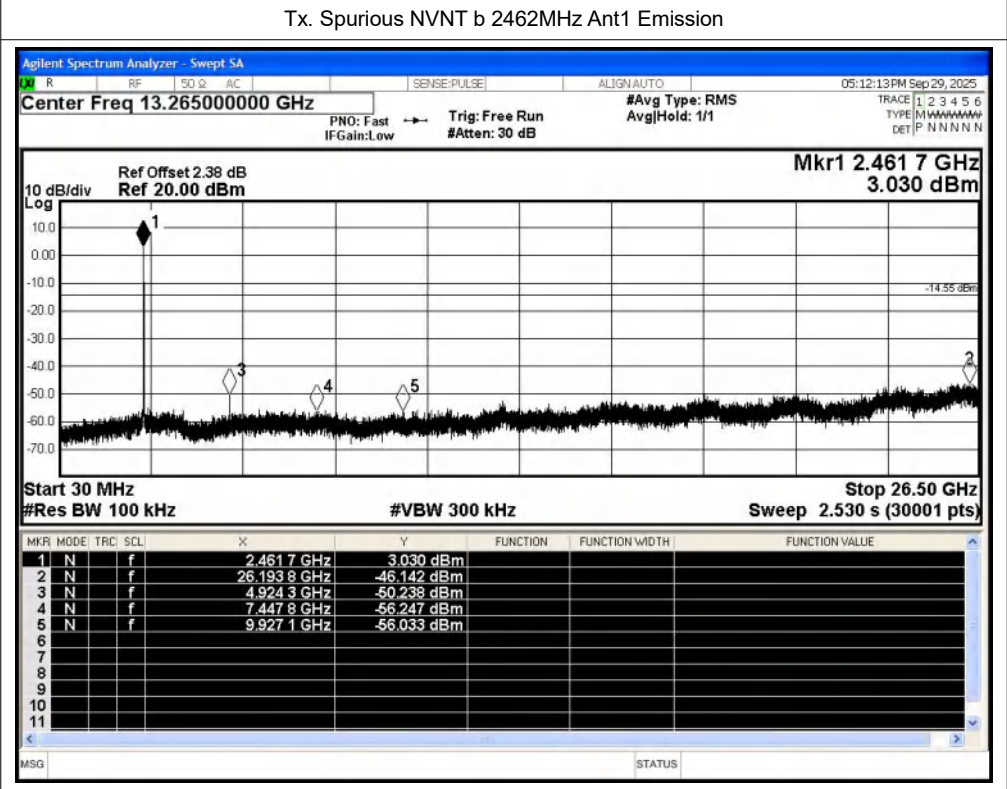
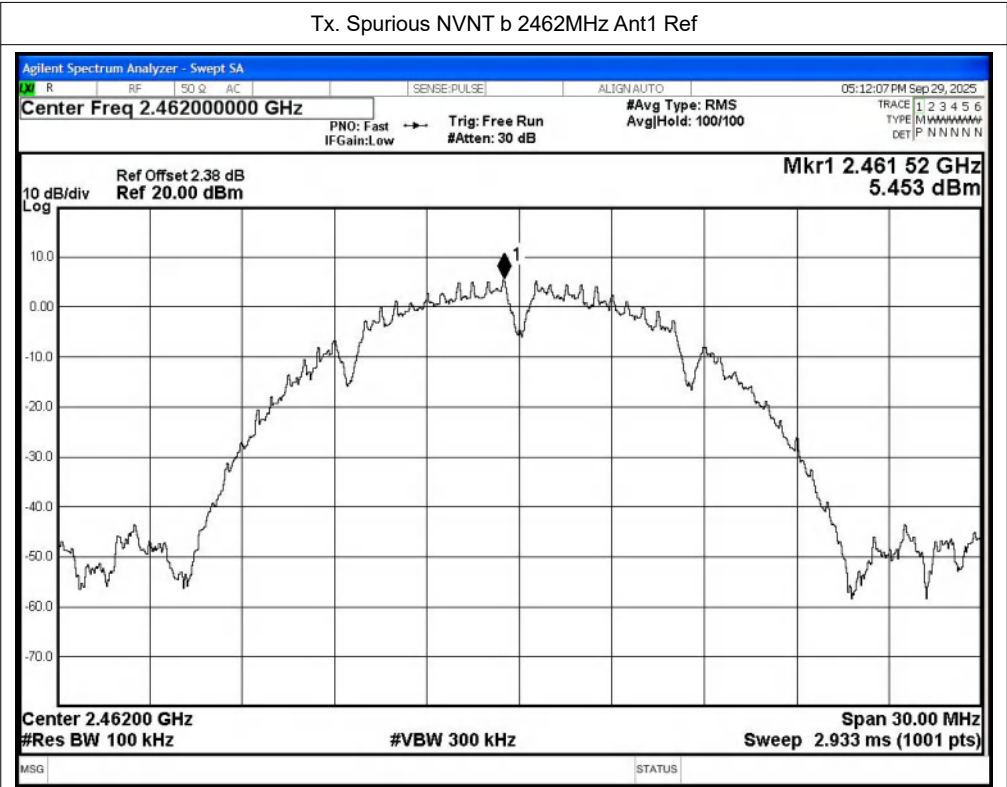


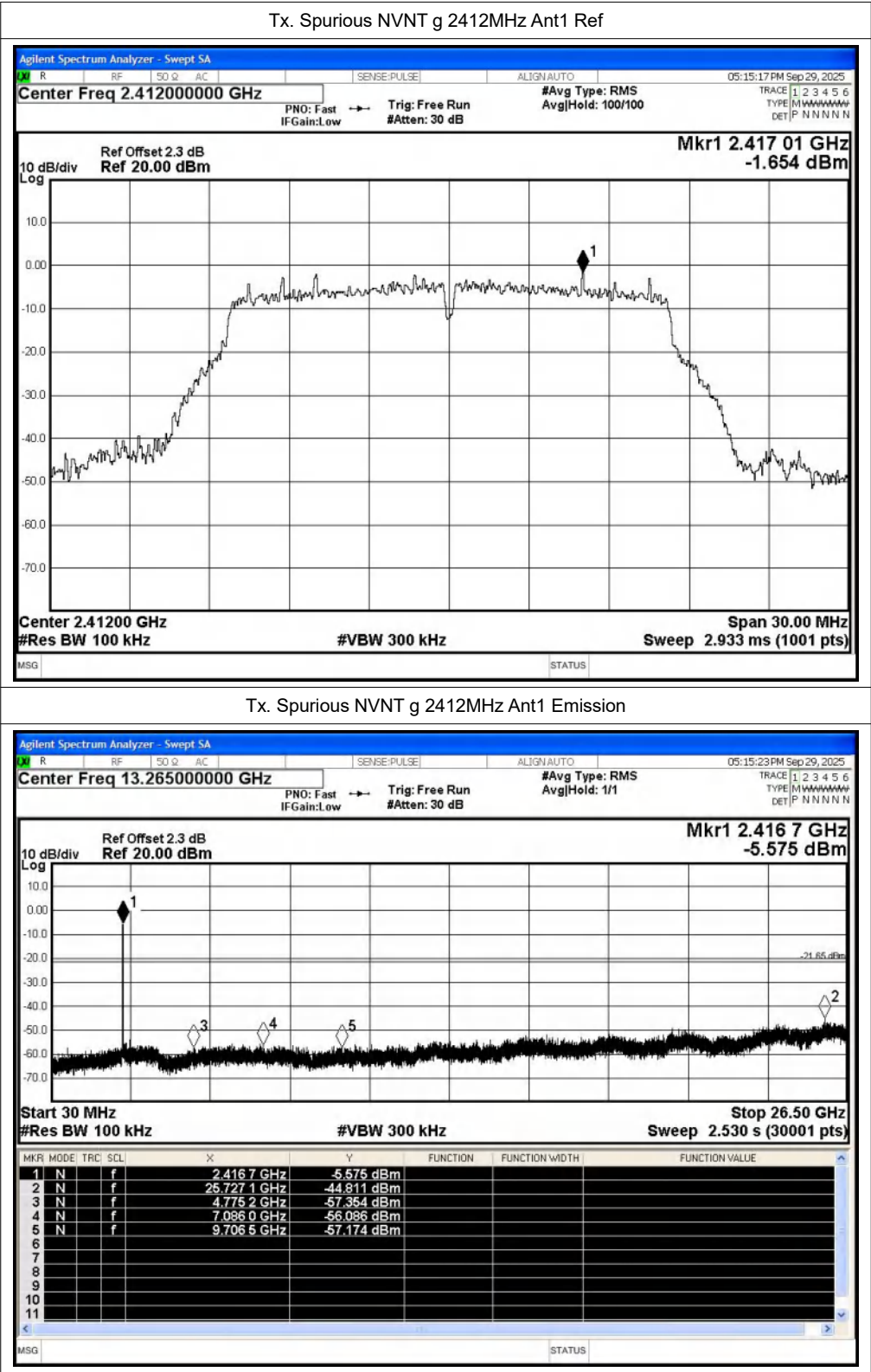
A.5 Conducted RF Spurious Emission

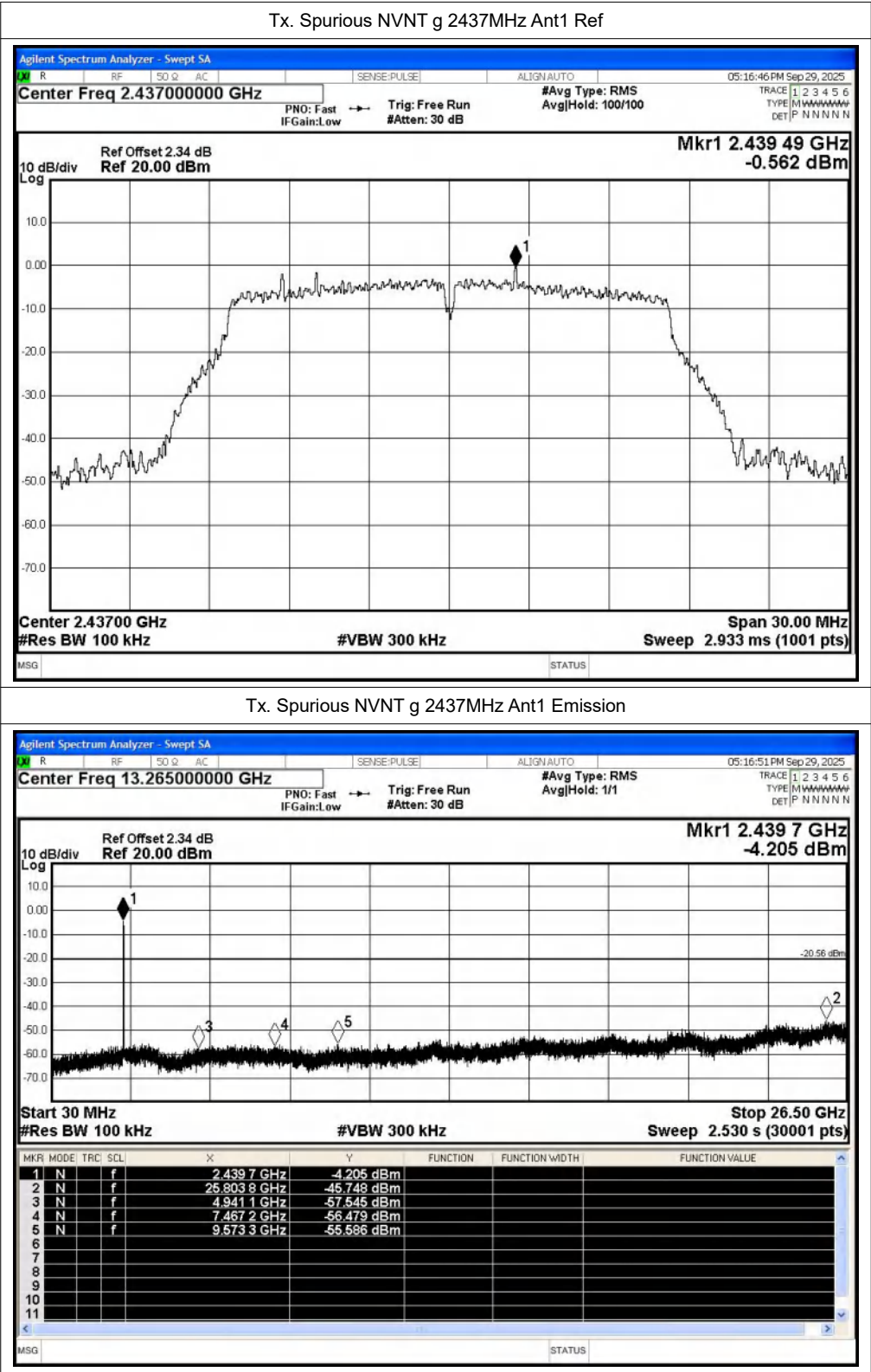
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-50.92	-20	Pass
NVNT	b	2437	Ant1	-51.96	-20	Pass
NVNT	b	2462	Ant1	-51.6	-20	Pass
NVNT	g	2412	Ant1	-43.16	-20	Pass
NVNT	g	2437	Ant1	-45.19	-20	Pass
NVNT	g	2462	Ant1	-44.58	-20	Pass
NVNT	n20	2412	Ant1	-43.21	-20	Pass
NVNT	n20	2437	Ant1	-43.27	-20	Pass
NVNT	n20	2462	Ant1	-45.12	-20	Pass
NVNT	n40	2422	Ant1	-39.69	-20	Pass
NVNT	n40	2437	Ant1	-40.06	-20	Pass
NVNT	n40	2452	Ant1	-40.66	-20	Pass

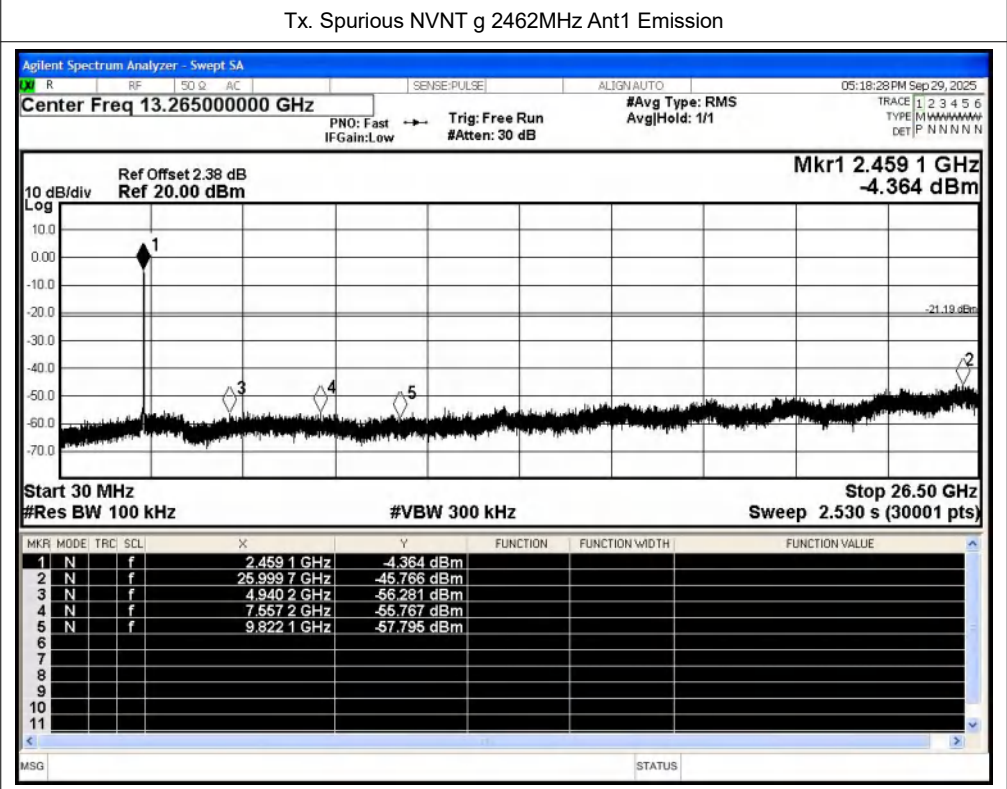
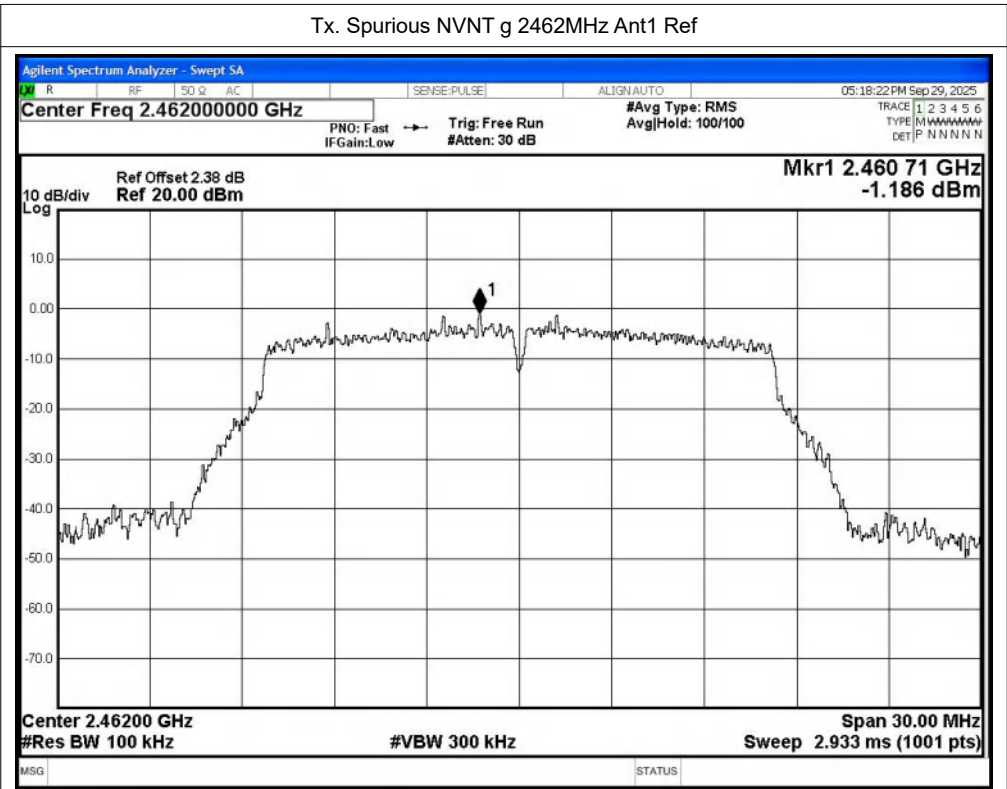


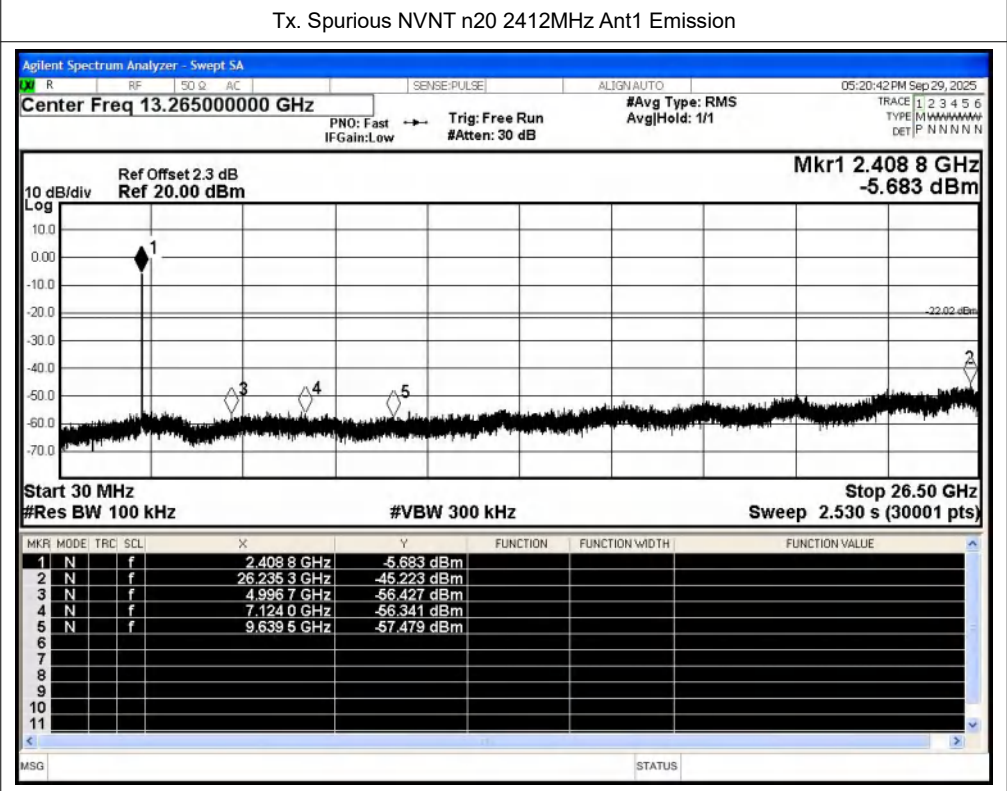
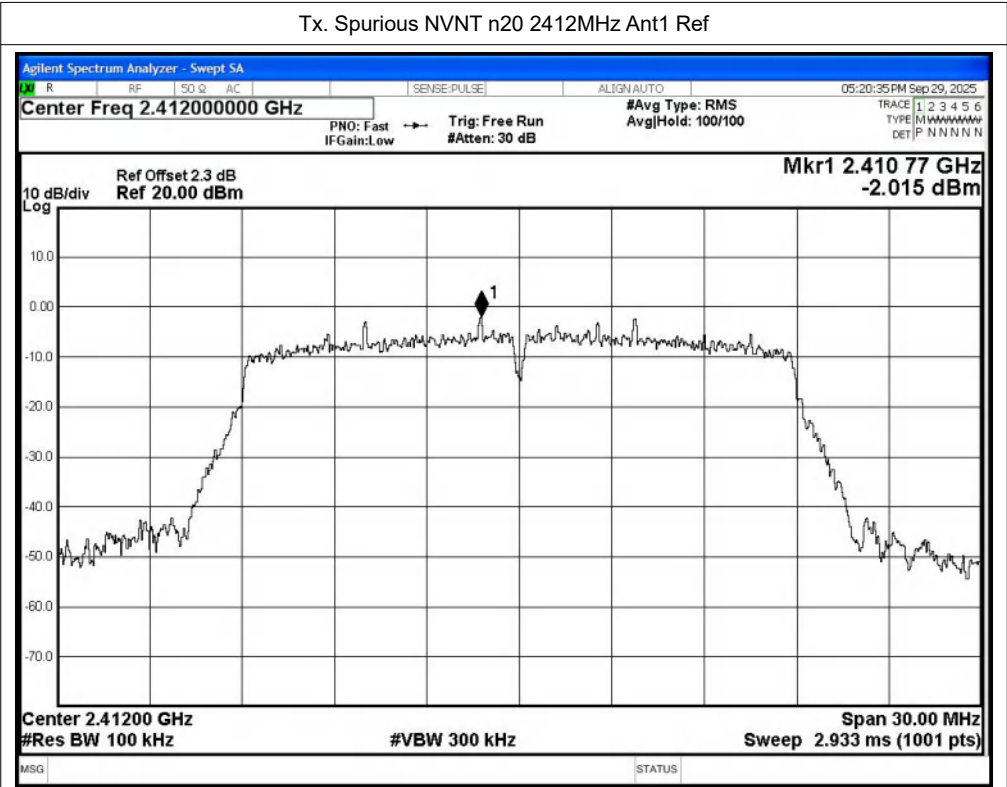


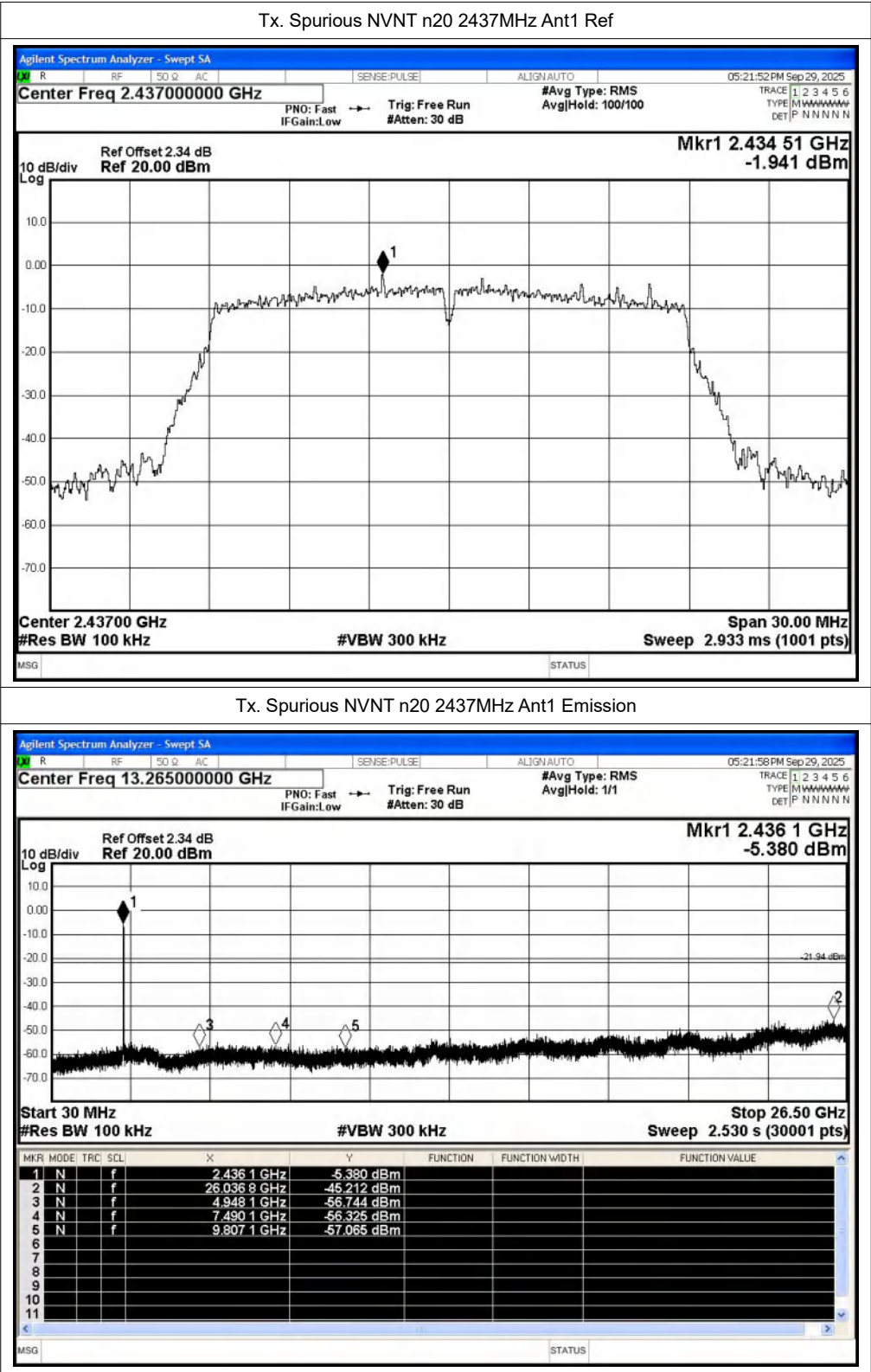


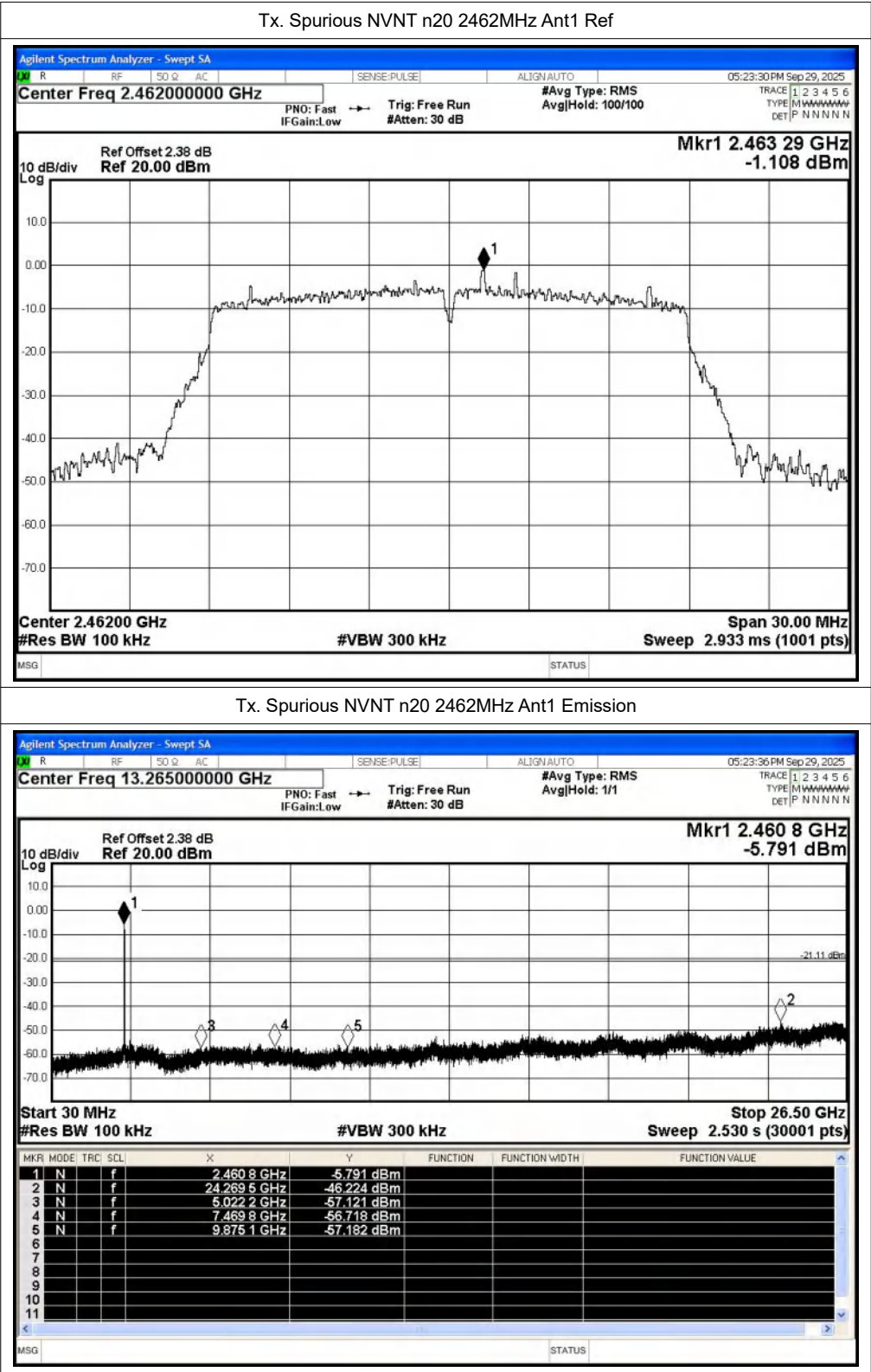


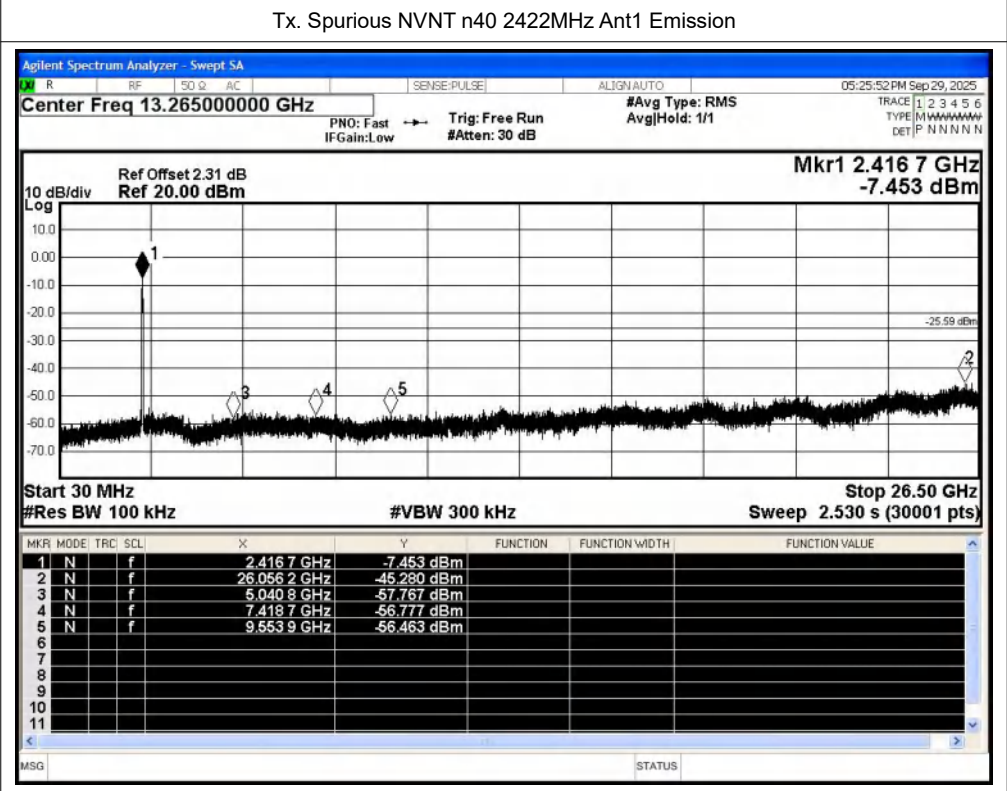
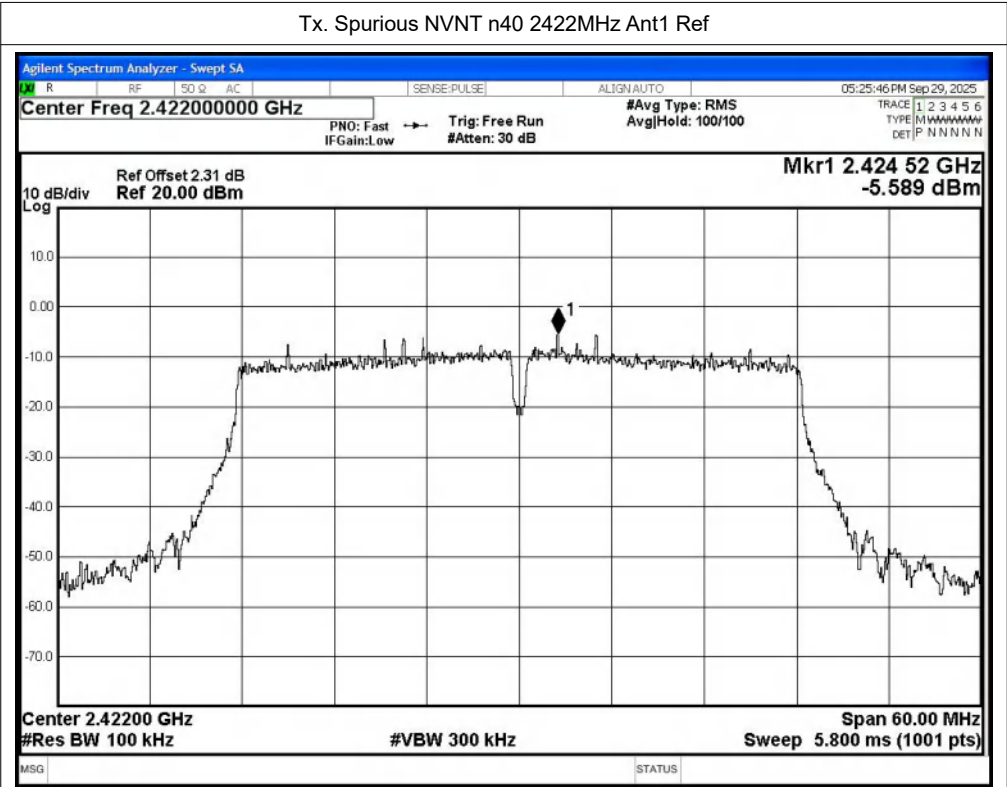


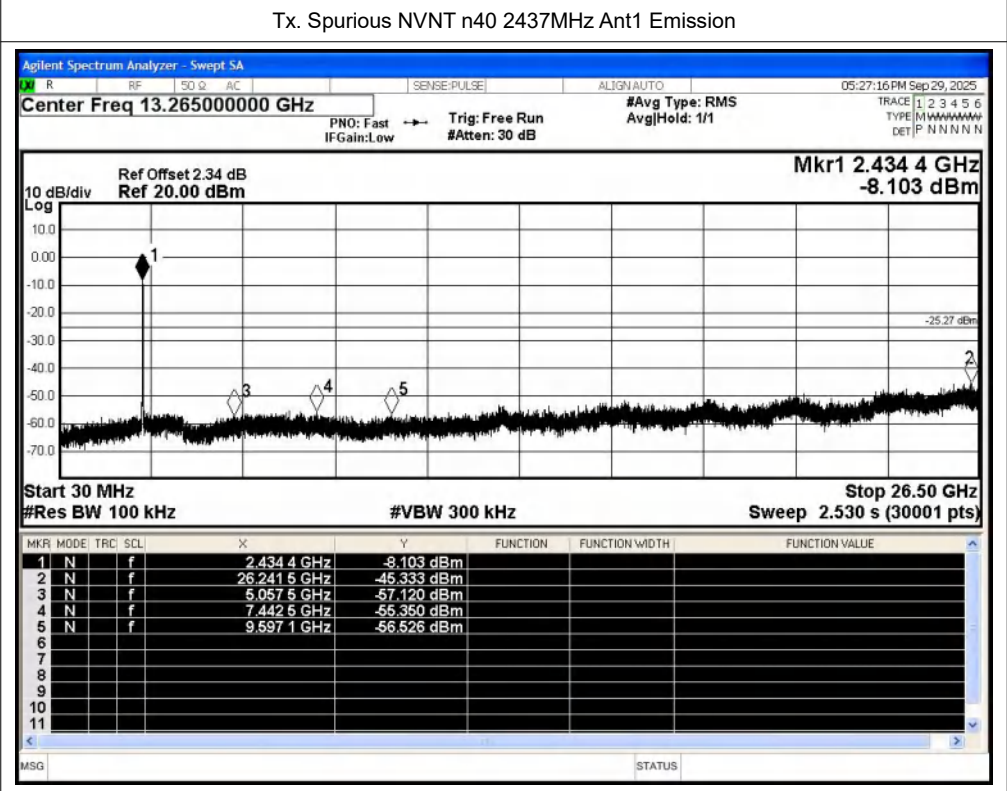
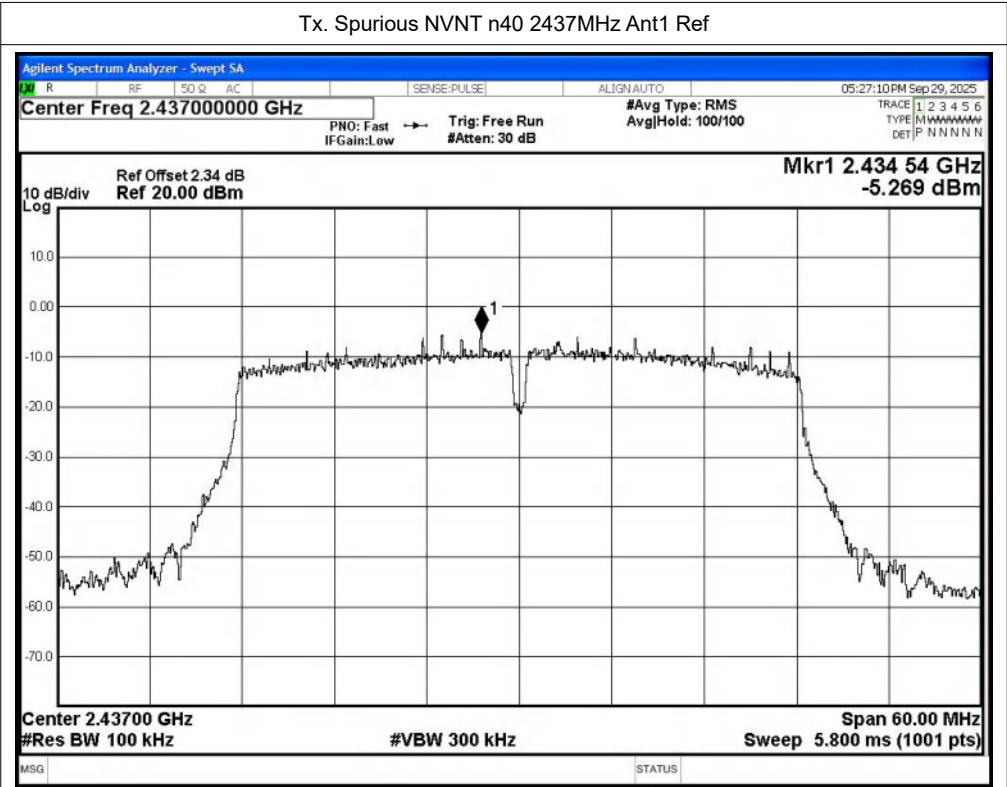


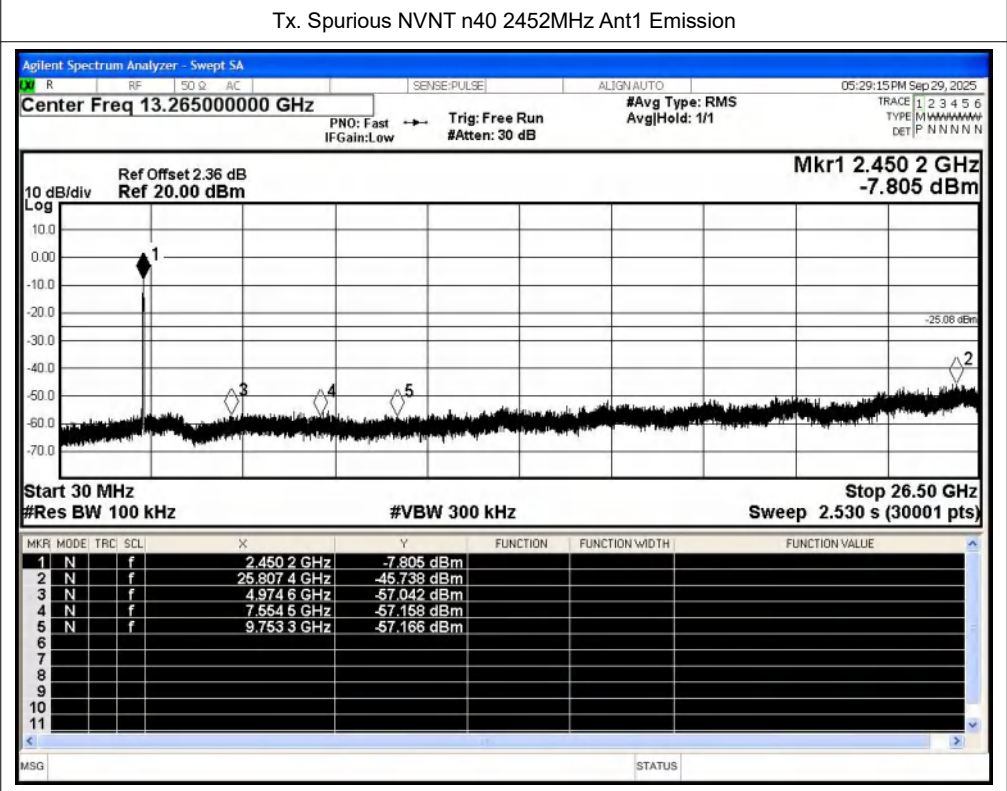
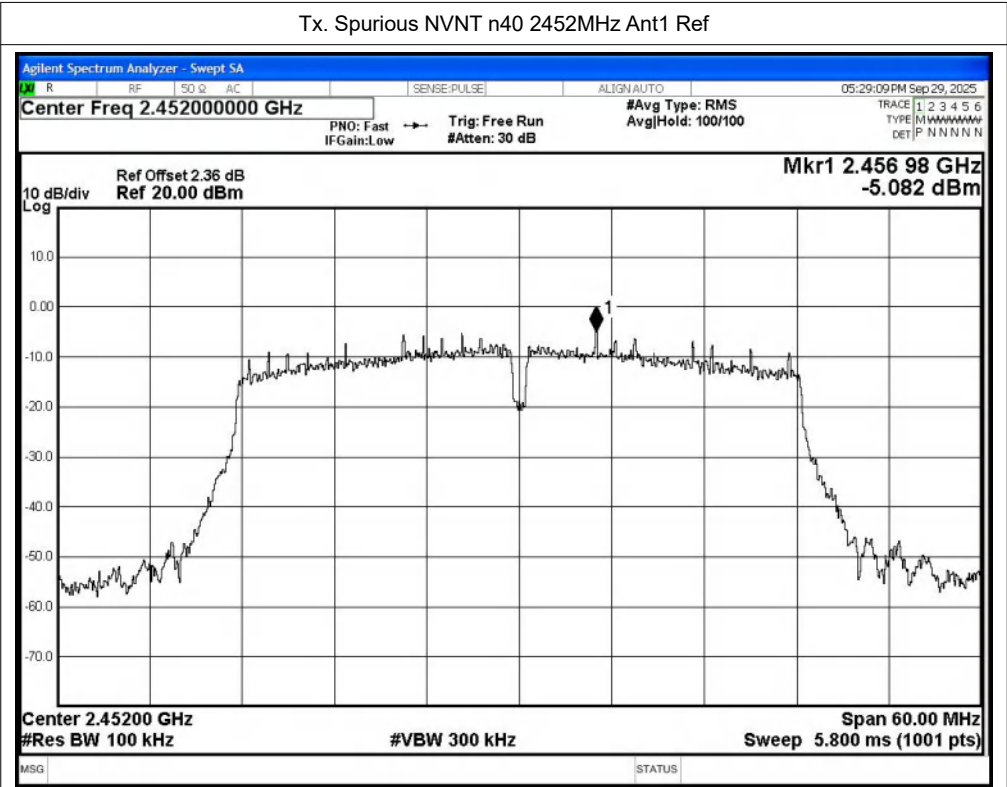






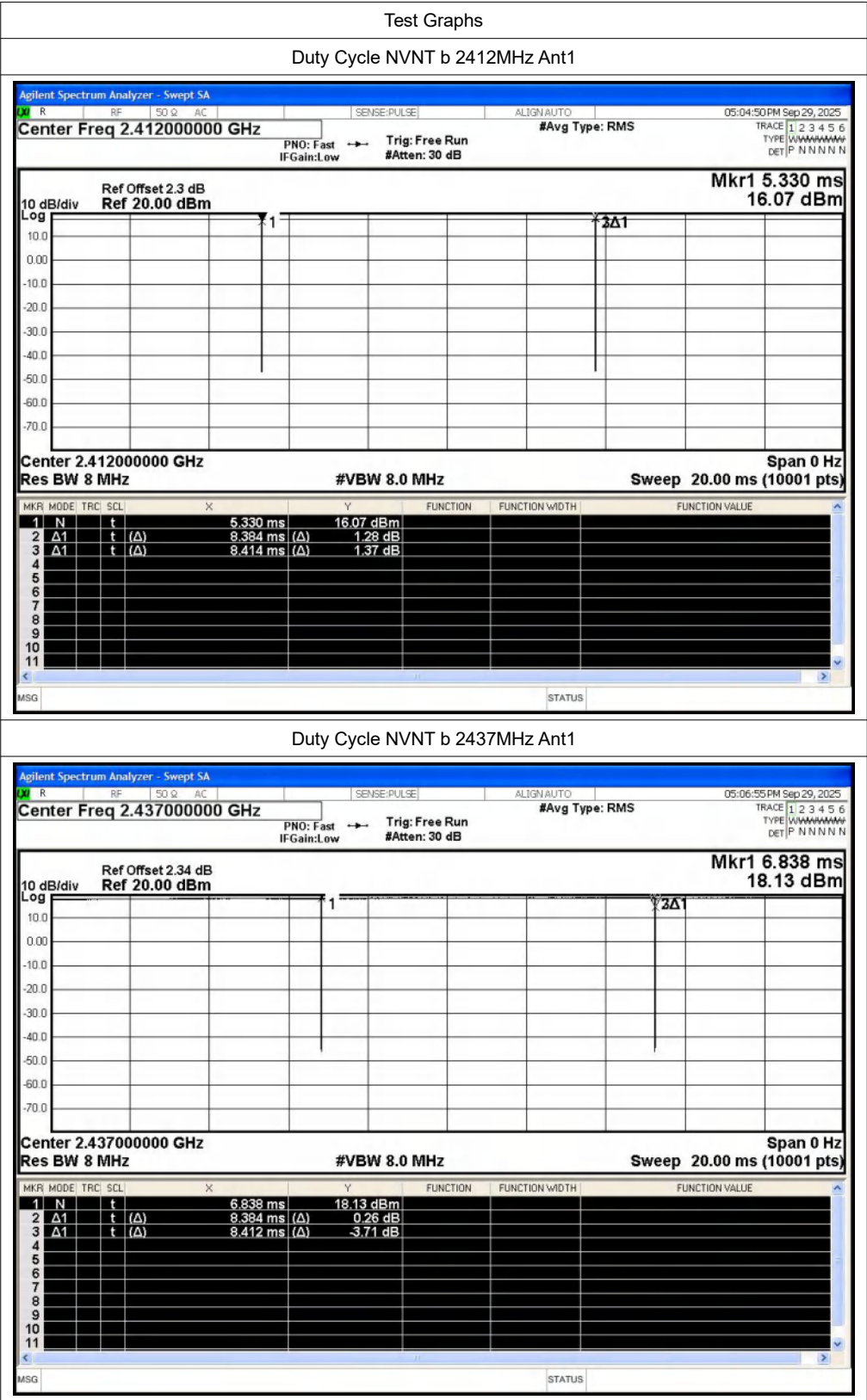


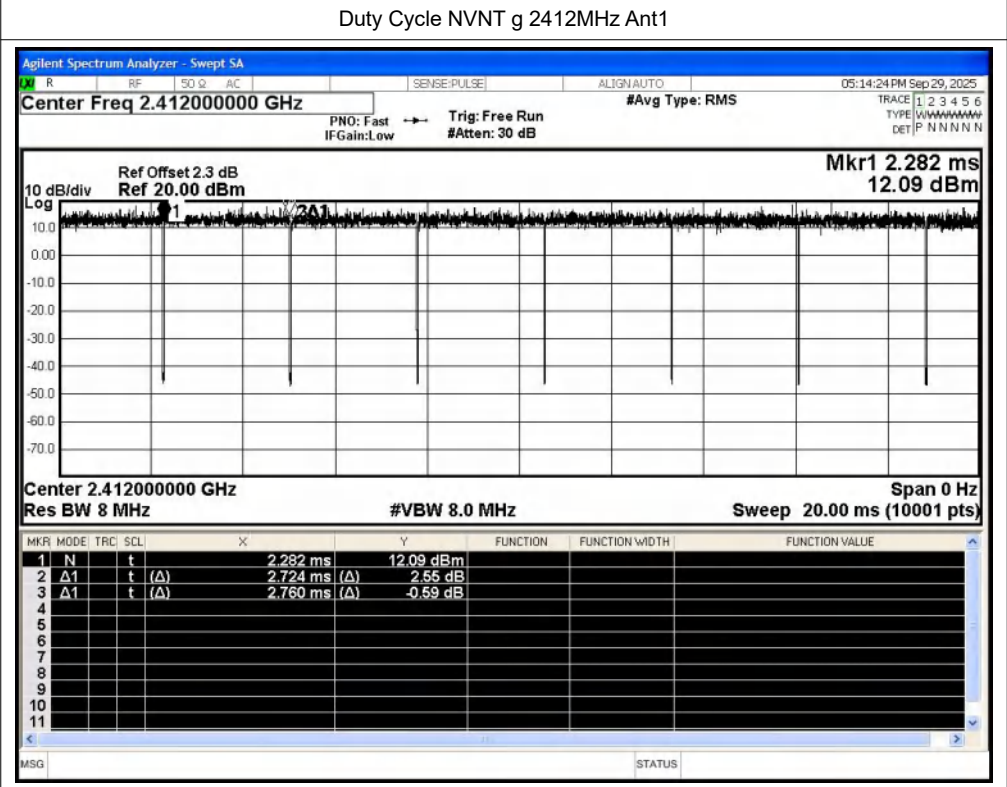
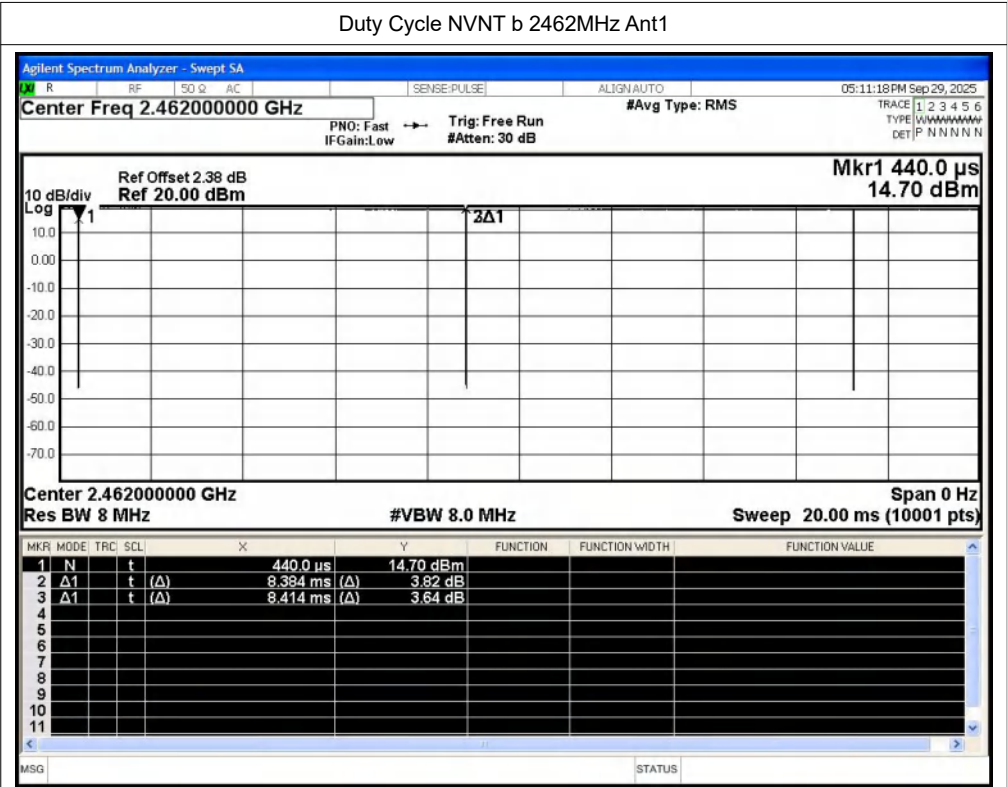


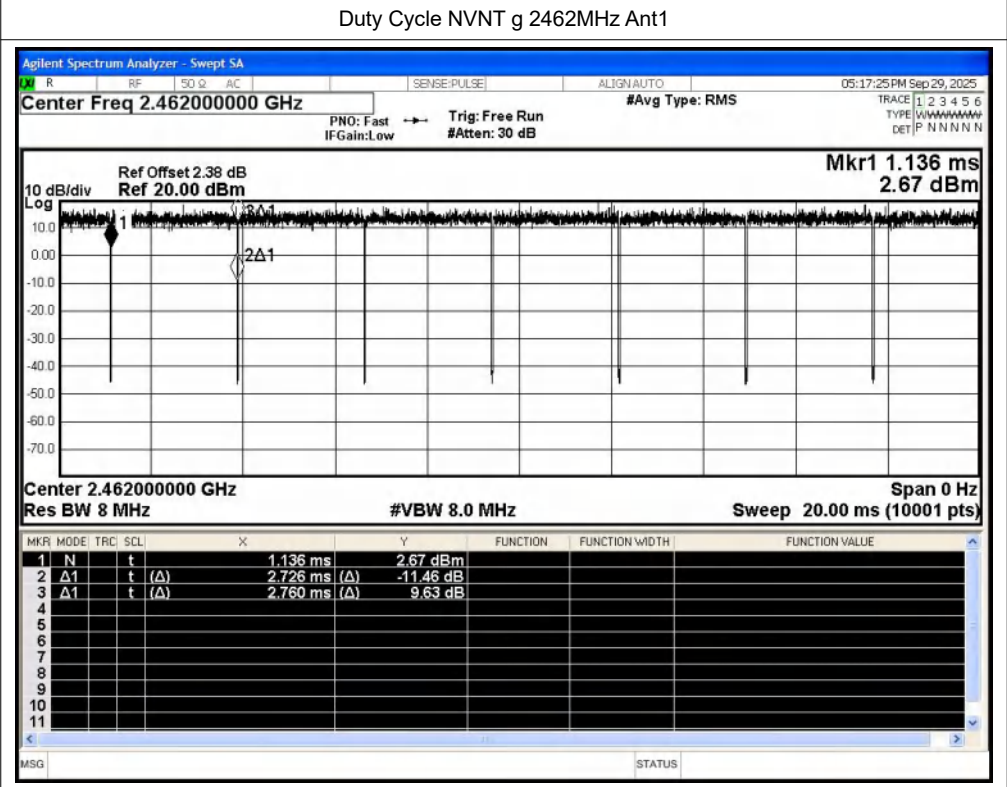
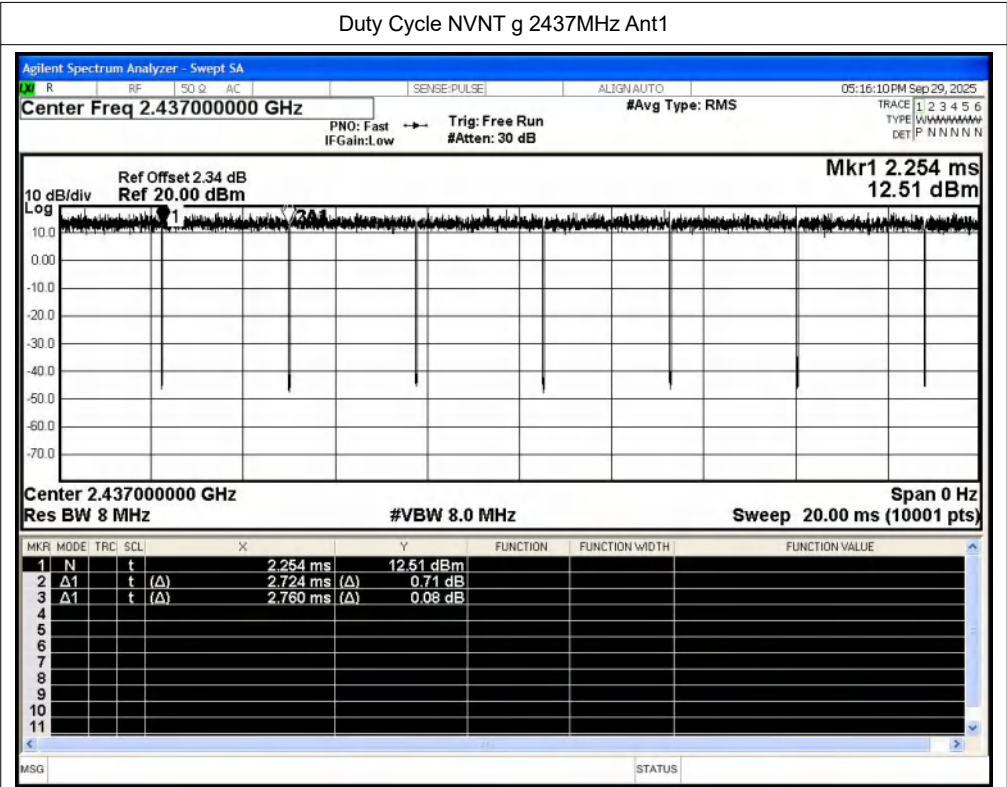


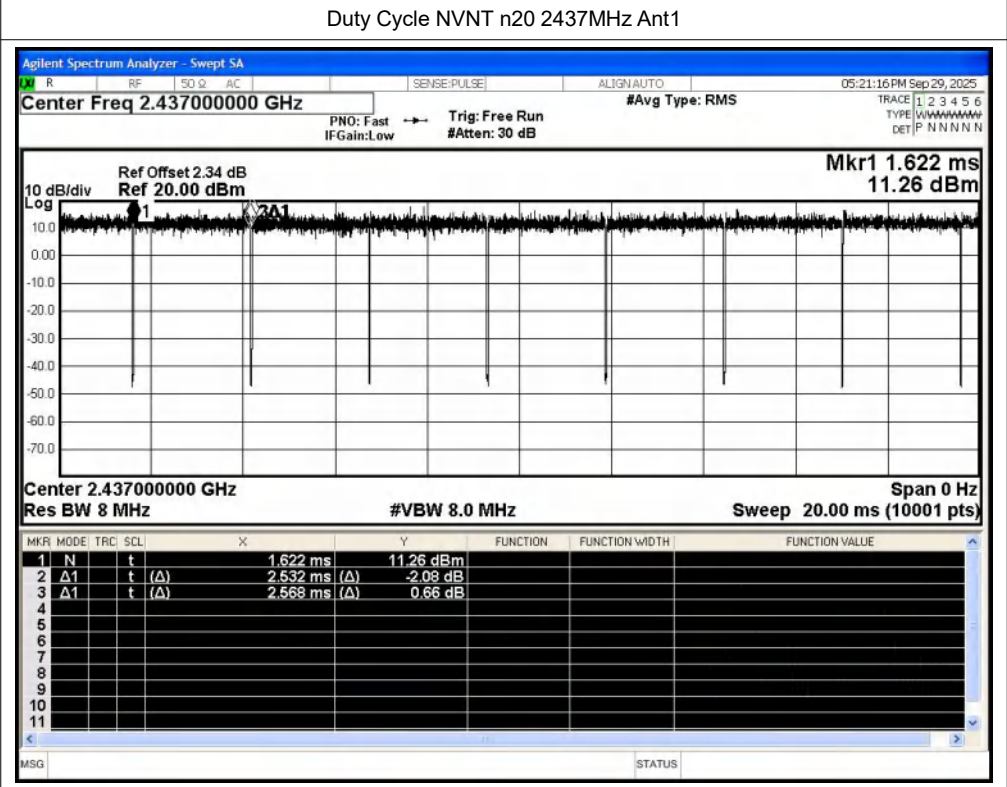
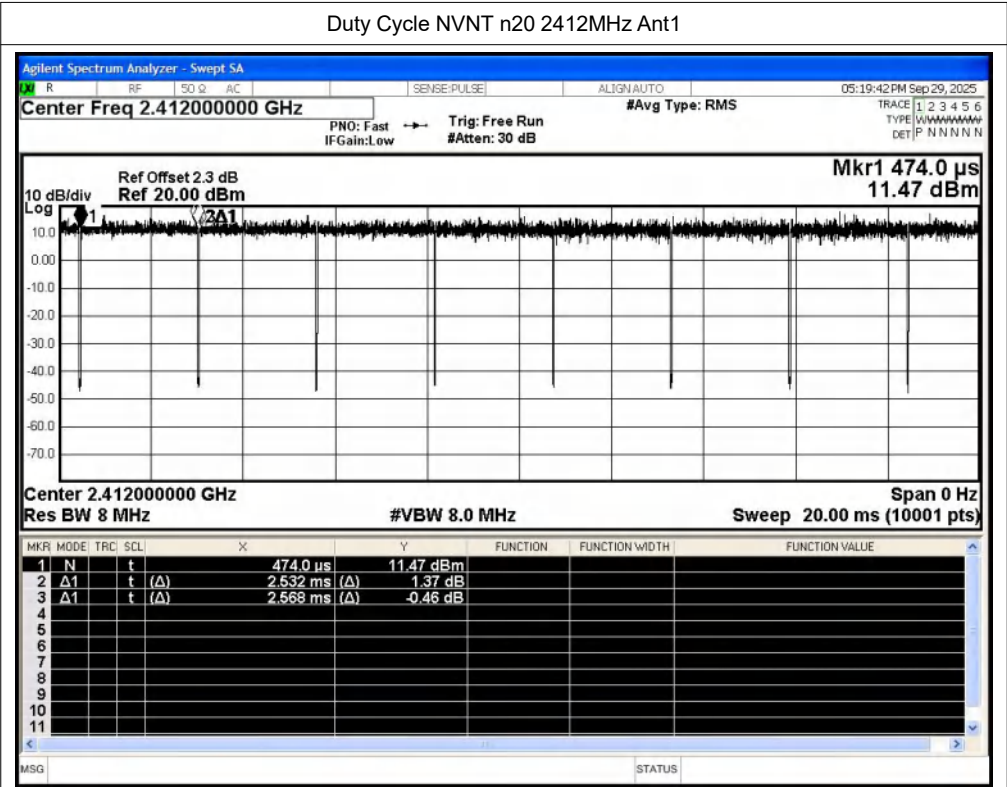
A.6 Duty Cycle

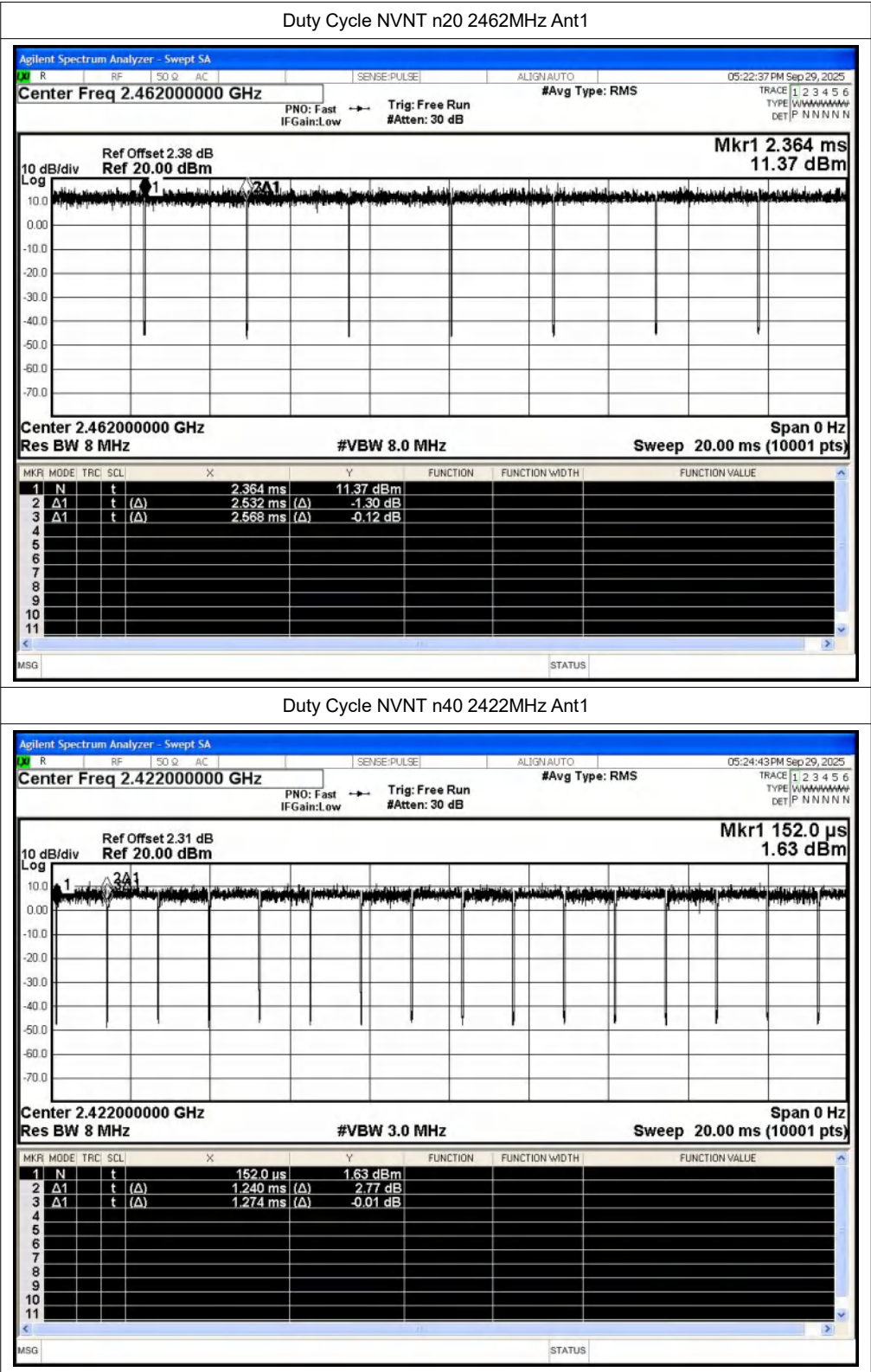
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.64	0	0.12
NVNT	b	2437	Ant1	99.67	0	0.12
NVNT	b	2462	Ant1	99.64	0	0.12
NVNT	g	2412	Ant1	98.7	0	0.37
NVNT	g	2437	Ant1	98.7	0	0.37
NVNT	g	2462	Ant1	98.77	0	0.37
NVNT	n20	2412	Ant1	98.6	0	0.39
NVNT	n20	2437	Ant1	98.6	0	0.39
NVNT	n20	2462	Ant1	98.6	0	0.39
NVNT	n40	2422	Ant1	97.33	0.12	0.81
NVNT	n40	2437	Ant1	97.34	0.12	0.81
NVNT	n40	2452	Ant1	97.33	0.12	0.81

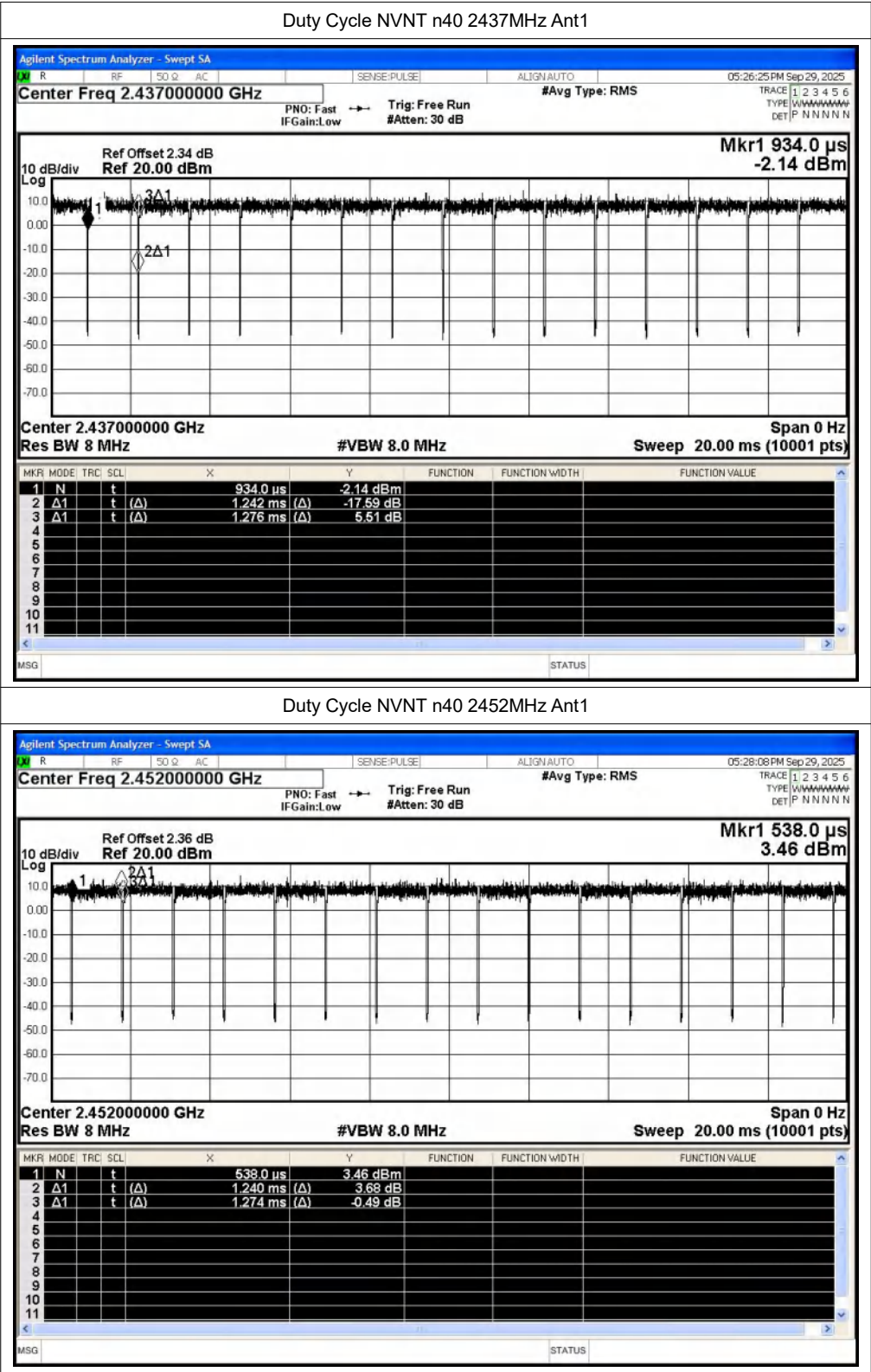












A.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-49.84	4.55	-	49.97	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-57.66	4.55	0	42.15	Average	54	Pass
NVNT	b	2412	Ant1	2387.337	-44.9	4.55	-	54.91	Peak	74	Pass
NVNT	b	2412	Ant1	2387.454	-55.13	4.55	0	44.68	Average	54	Pass
NVNT	b	2412	Ant1	2390	-49.14	4.55	-	50.67	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-55.81	4.55	0	44.00	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-45.99	4.55	-	53.82	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-54.97	4.55	0	44.84	Average	54	Pass
NVNT	b	2462	Ant1	2487.651	-45.07	4.55	-	54.74	Peak	74	Pass
NVNT	b	2462	Ant1	2486.326	-54.74	4.55	0	45.07	Average	54	Pass
NVNT	b	2462	Ant1	2500	-50.37	4.55	-	49.44	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-57.12	4.55	0	42.69	Average	54	Pass
NVNT	g	2412	Ant1	2310	-50.27	4.55	-	49.54	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-58.26	4.55	0	41.55	Average	54	Pass
NVNT	g	2412	Ant1	2389.56	-44.82	4.55	-	54.99	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-54.93	4.55	0	44.88	Average	54	Pass
NVNT	g	2412	Ant1	2390	-46.46	4.55	-	53.35	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-55.34	4.55	0	44.47	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-47.02	4.55	-	52.79	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-54.71	4.55	0	45.10	Average	54	Pass
NVNT	g	2462	Ant1	2483.835	-44.02	4.55	-	55.79	Peak	74	Pass
NVNT	g	2462	Ant1	2483.729	-54.33	4.55	0	45.48	Average	54	Pass
NVNT	g	2462	Ant1	2500	-49.6	4.55	-	50.21	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-57.56	4.55	0	42.25	Average	54	Pass
NVNT	n20	2412	Ant1	2310	-50.59	4.55	-	49.22	Peak	74	Pass
NVNT	n20	2412	Ant1	2310	-57.79	4.55	0	42.02	Average	54	Pass
NVNT	n20	2412	Ant1	2388.624	-45.11	4.55	-	54.70	Peak	74	Pass
NVNT	n20	2412	Ant1	2388.975	-55.23	4.55	0	44.58	Average	54	Pass
NVNT	n20	2412	Ant1	2390	-47	4.55	-	52.81	Peak	74	Pass
NVNT	n20	2412	Ant1	2390	-55.44	4.55	0	44.37	Average	54	Pass
NVNT	n20	2462	Ant1	2483.5	-45.83	4.55	-	53.98	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.5	-54.74	4.55	0	45.07	Average	54	Pass
NVNT	n20	2462	Ant1	2483.941	-43.83	4.55	-	55.98	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.835	-54.52	4.55	0	45.29	Average	54	Pass
NVNT	n20	2462	Ant1	2500	-50.02	4.55	-	49.79	Peak	74	Pass
NVNT	n20	2462	Ant1	2500	-57.81	4.55	0	42.00	Average	54	Pass
NVNT	n40	2422	Ant1	2310	-50.15	4.55	-	49.66	Peak	74	Pass

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NVNT	n40	2422	Ant1	2310	-58.02	4.55	0.12	41.91	Average	54	Pass
NVNT	n40	2422	Ant1	2387.674	-41.49	4.55	-	58.32	Peak	74	Pass
NVNT	n40	2422	Ant1	2389.662	-54.46	4.55	0.12	45.47	Average	54	Pass
NVNT	n40	2422	Ant1	2390	-45.43	4.55	-	54.38	Peak	74	Pass
NVNT	n40	2422	Ant1	2390	-55.05	4.55	0.12	44.88	Average	54	Pass
NVNT	n40	2452	Ant1	2483.5	-46.34	4.55	-	53.47	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.5	-54.6	4.55	0.12	45.33	Average	54	Pass
NVNT	n40	2452	Ant1	2484.868	-42.01	4.55	-	57.80	Peak	74	Pass
NVNT	n40	2452	Ant1	2484.088	-53.76	4.55	0.12	46.17	Average	54	Pass
NVNT	n40	2452	Ant1	2500	-49.07	4.55	-	50.74	Peak	74	Pass
NVNT	n40	2452	Ant1	2500	-58.02	4.55	0.12	41.91	Average	54	Pass

