

Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Commercial Dartboard Machine

Test Model: EDmini Max

Environmental Conditions

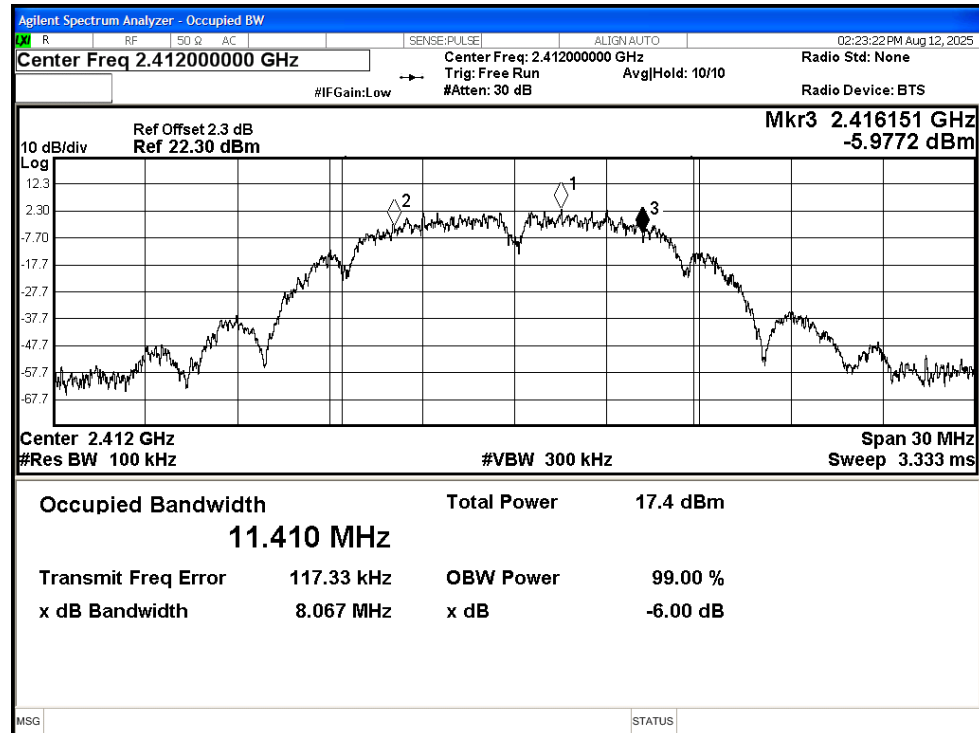
Temperature:	25.6°C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Jone.Lee
Supervised by:	Yan Chen

A.1 -6dB Bandwidth

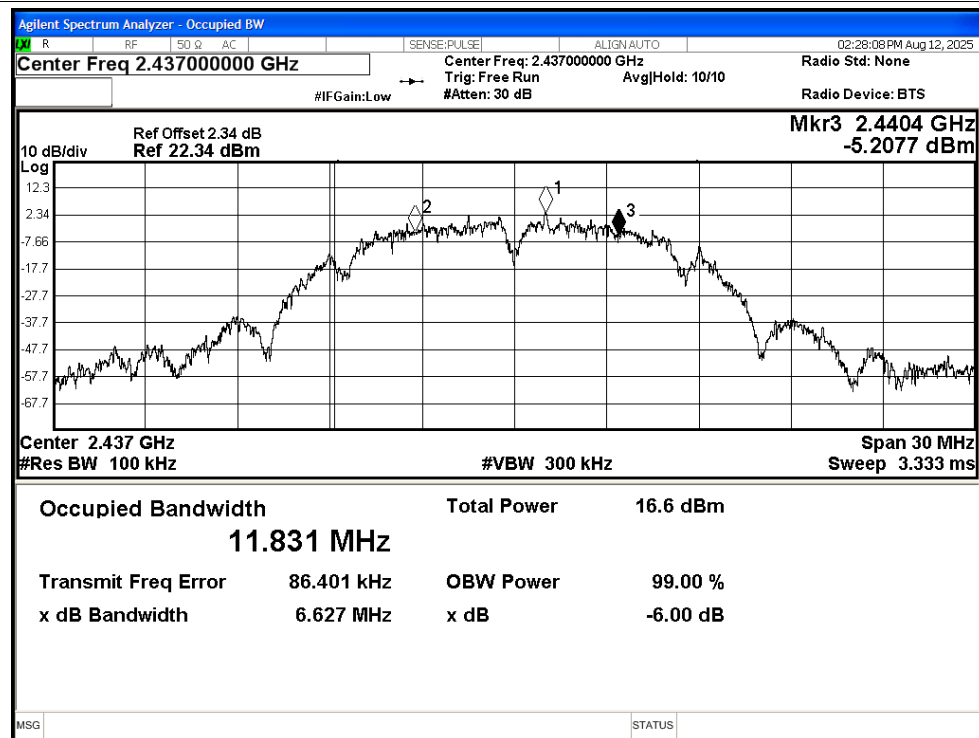
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.067	≥ 0.5	Pass
NVNT	b	2437	Ant1	6.627	≥ 0.5	Pass
NVNT	b	2462	Ant1	8.431	≥ 0.5	Pass
NVNT	g	2412	Ant1	15.191	≥ 0.5	Pass
NVNT	g	2437	Ant1	16.449	≥ 0.5	Pass
NVNT	g	2462	Ant1	16.141	≥ 0.5	Pass
NVNT	n20	2412	Ant1	17.172	≥ 0.5	Pass
NVNT	n20	2437	Ant1	17.101	≥ 0.5	Pass
NVNT	n20	2462	Ant1	17.55	≥ 0.5	Pass
NVNT	n40	2422	Ant1	33.948	≥ 0.5	Pass
NVNT	n40	2437	Ant1	35.438	≥ 0.5	Pass
NVNT	n40	2452	Ant1	35.493	≥ 0.5	Pass
NVNT	ax20	2412	Ant1	17.133	≥ 0.5	Pass
NVNT	ax20	2437	Ant1	17.218	≥ 0.5	Pass
NVNT	ax20	2462	Ant1	17.228	≥ 0.5	Pass
NVNT	ax40	2422	Ant1	35.476	≥ 0.5	Pass
NVNT	ax40	2437	Ant1	35.627	≥ 0.5	Pass
NVNT	ax40	2452	Ant1	35.482	≥ 0.5	Pass

Test Graphs

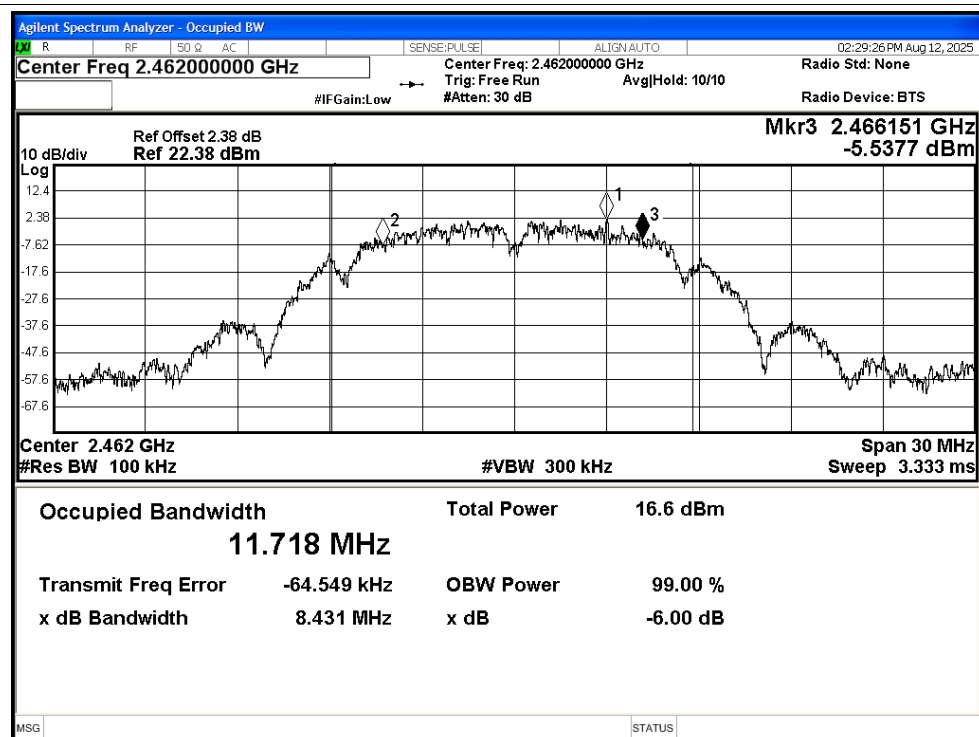
-6dB Bandwidth NVNT b 2412MHz Ant1



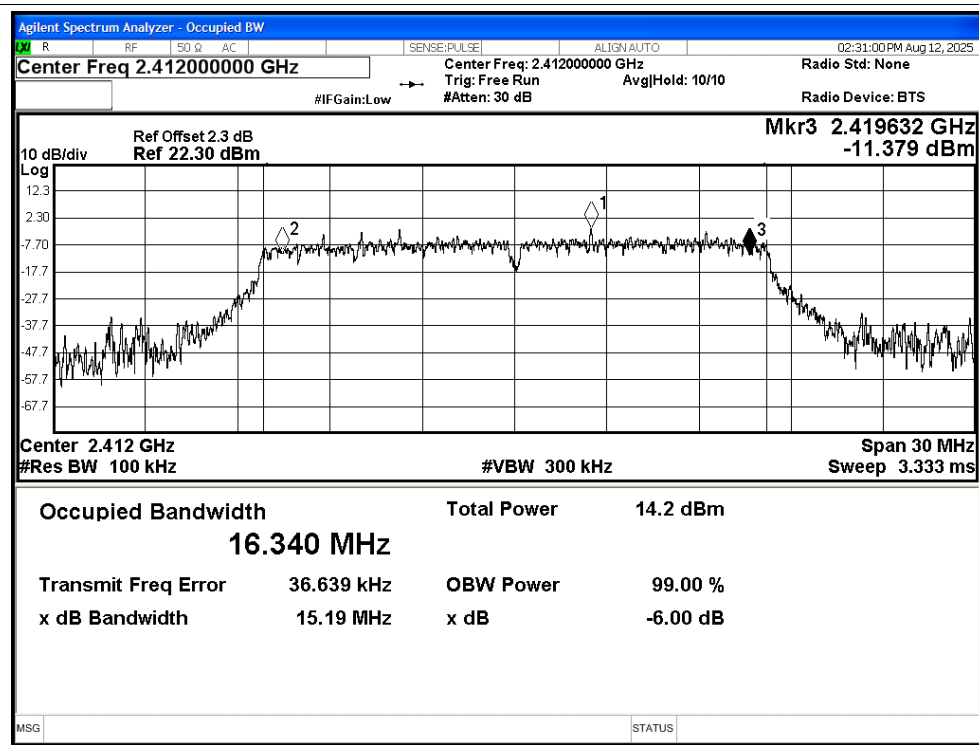
-6dB Bandwidth NVNT b 2437MHz Ant1



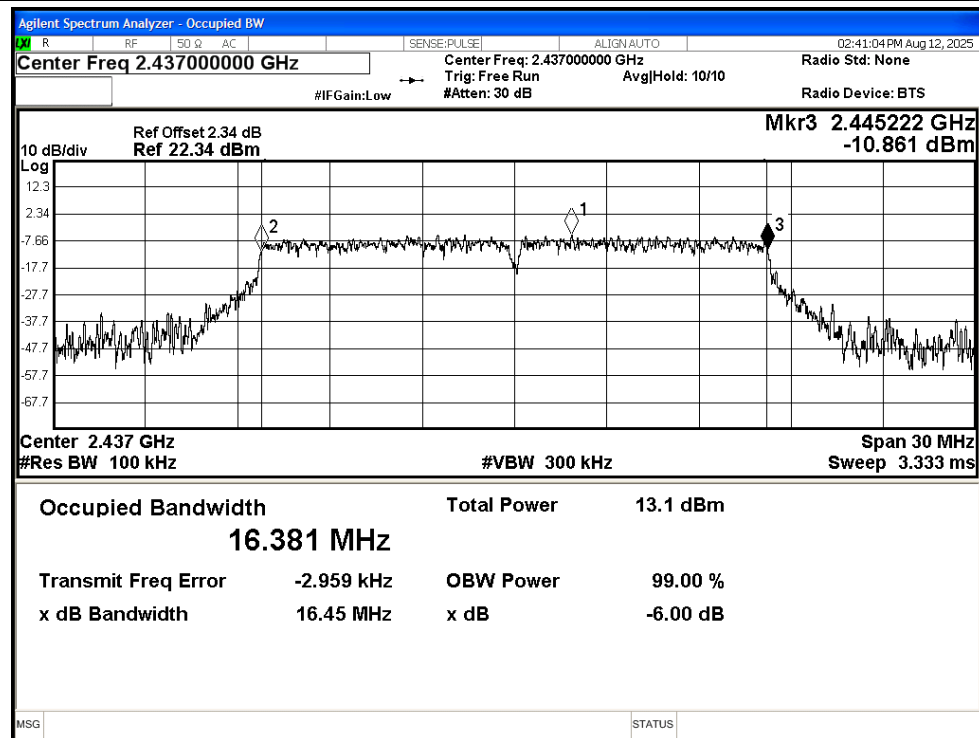
-6dB Bandwidth NVNT b 2462MHz Ant1



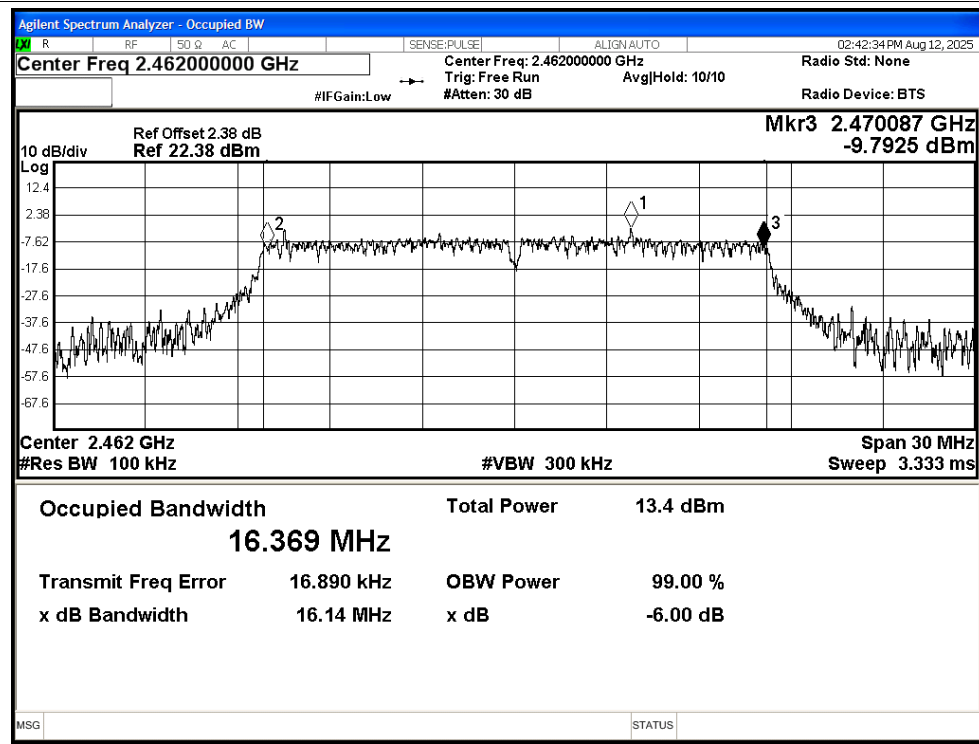
-6dB Bandwidth NVNT g 2412MHz Ant1

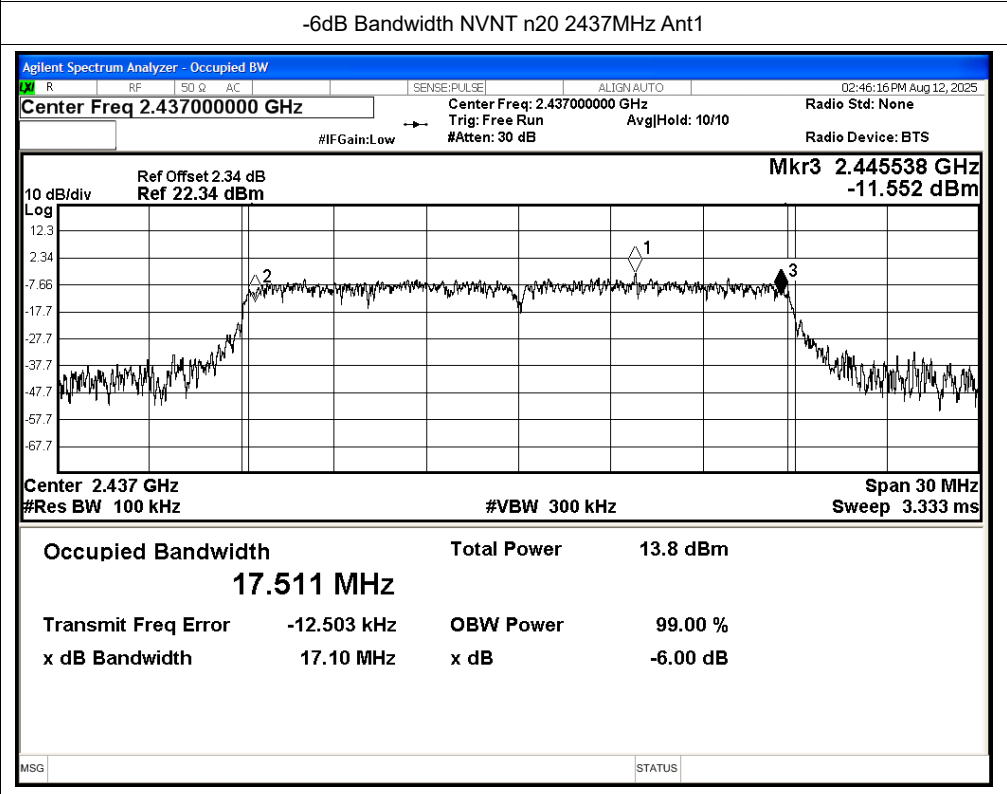
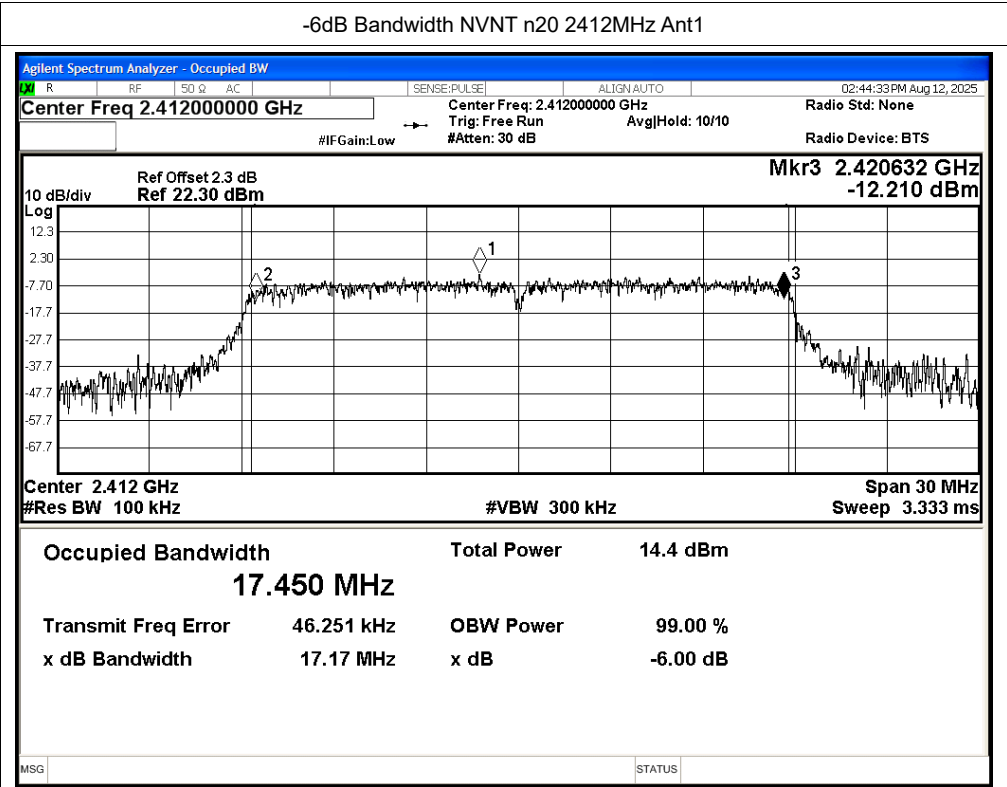


-6dB Bandwidth NVNT g 2437MHz Ant1

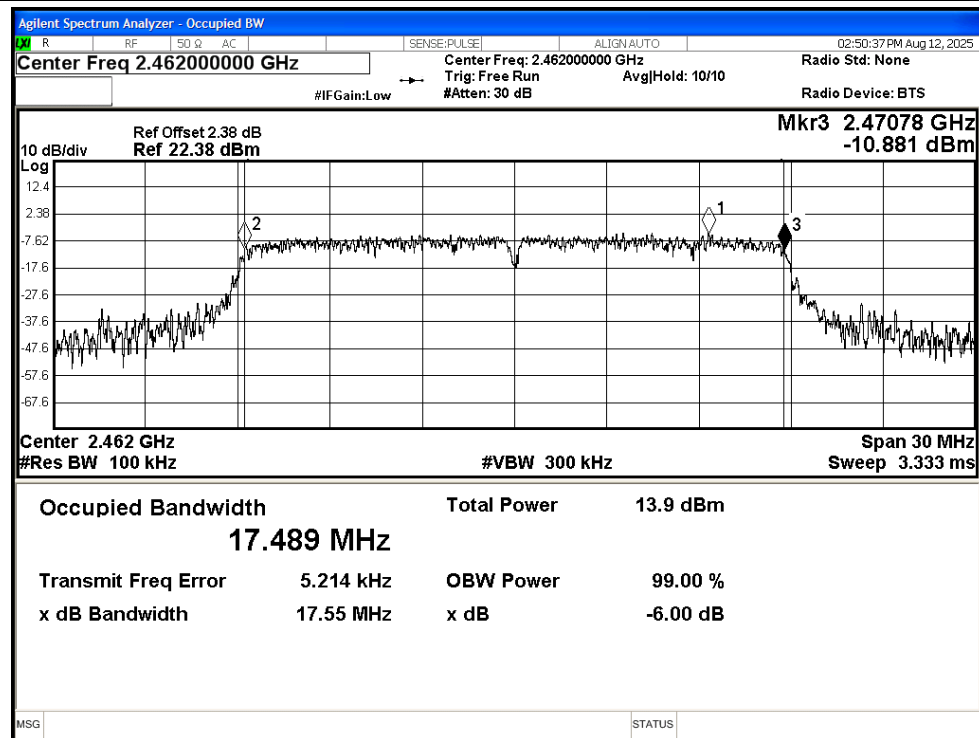


-6dB Bandwidth NVNT g 2462MHz Ant1

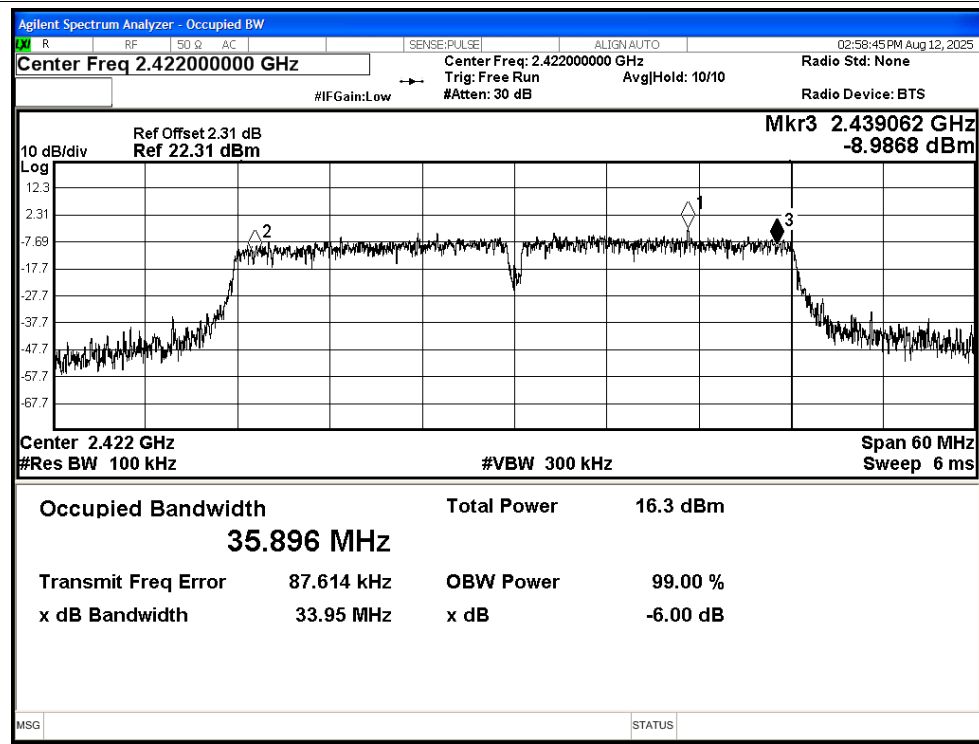




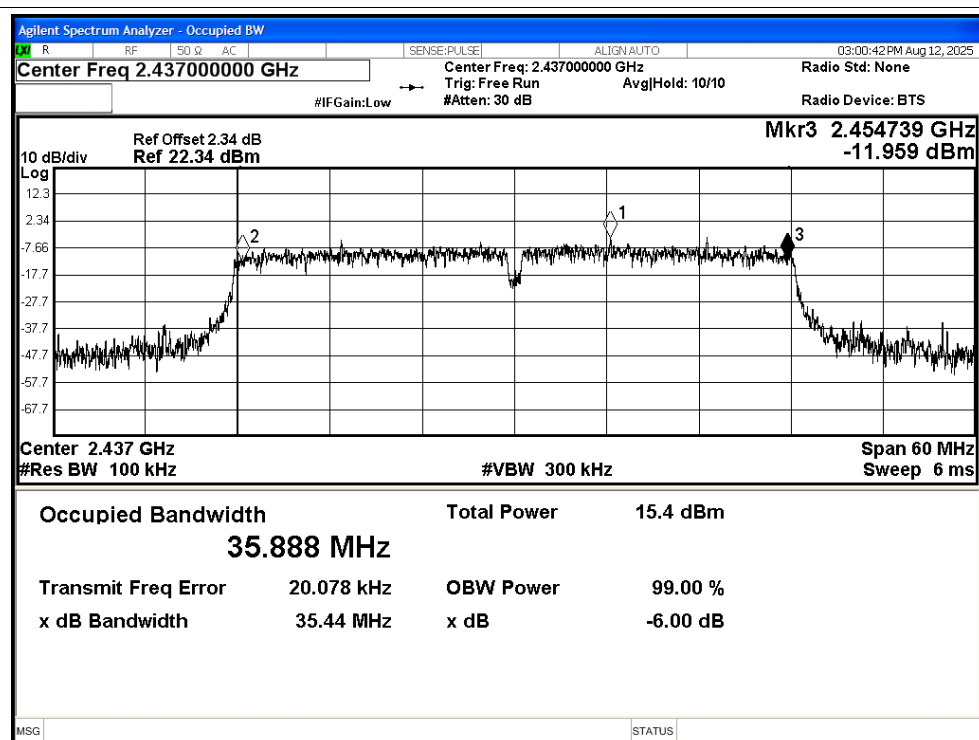
-6dB Bandwidth NVNT n20 2462MHz Ant1



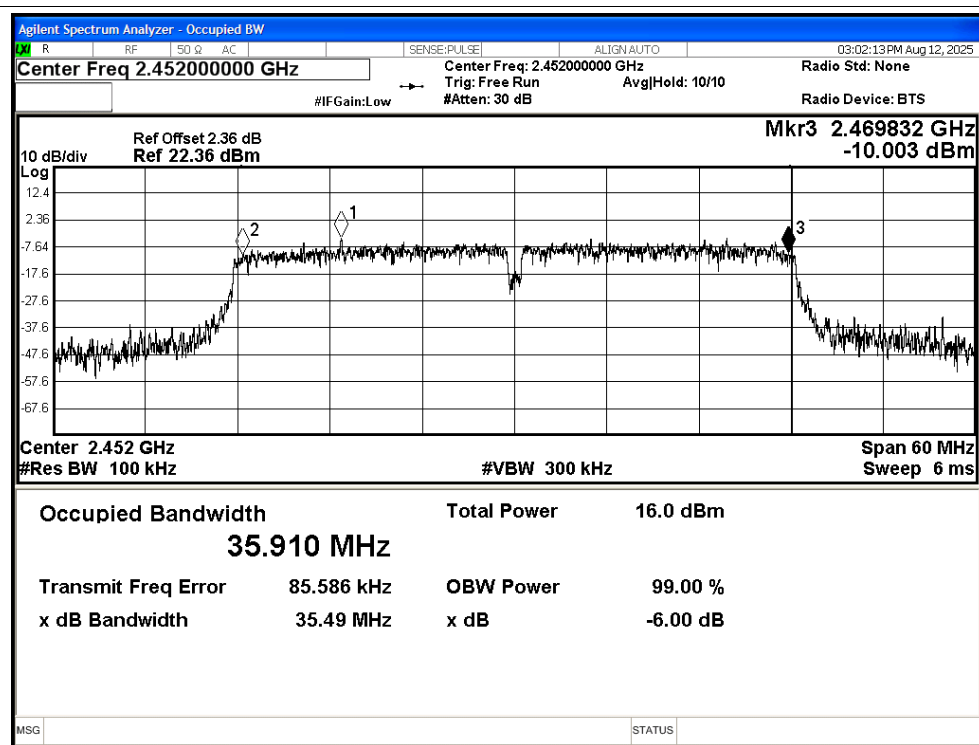
-6dB Bandwidth NVNT n40 2422MHz Ant1



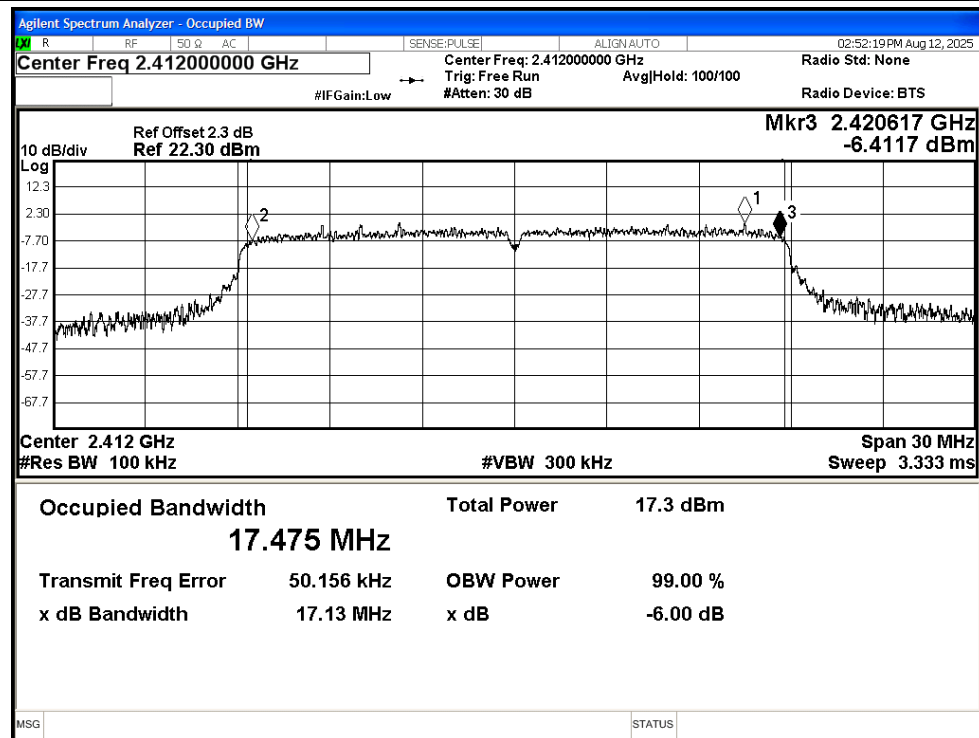
-6dB Bandwidth NVNT n40 2437MHz Ant1



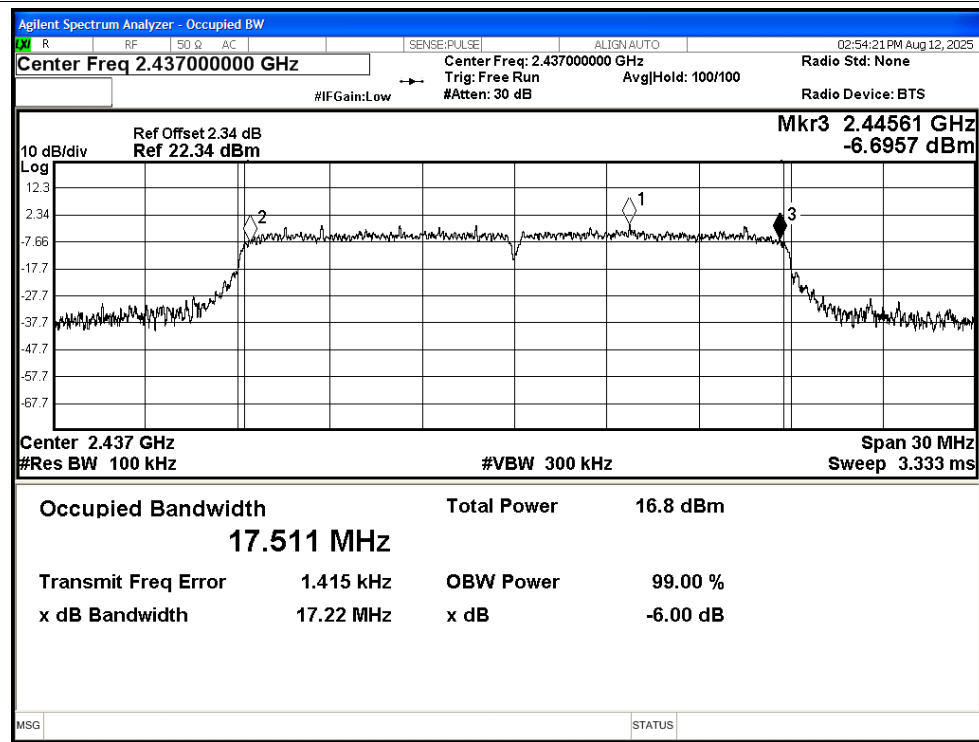
-6dB Bandwidth NVNT n40 2452MHz Ant1



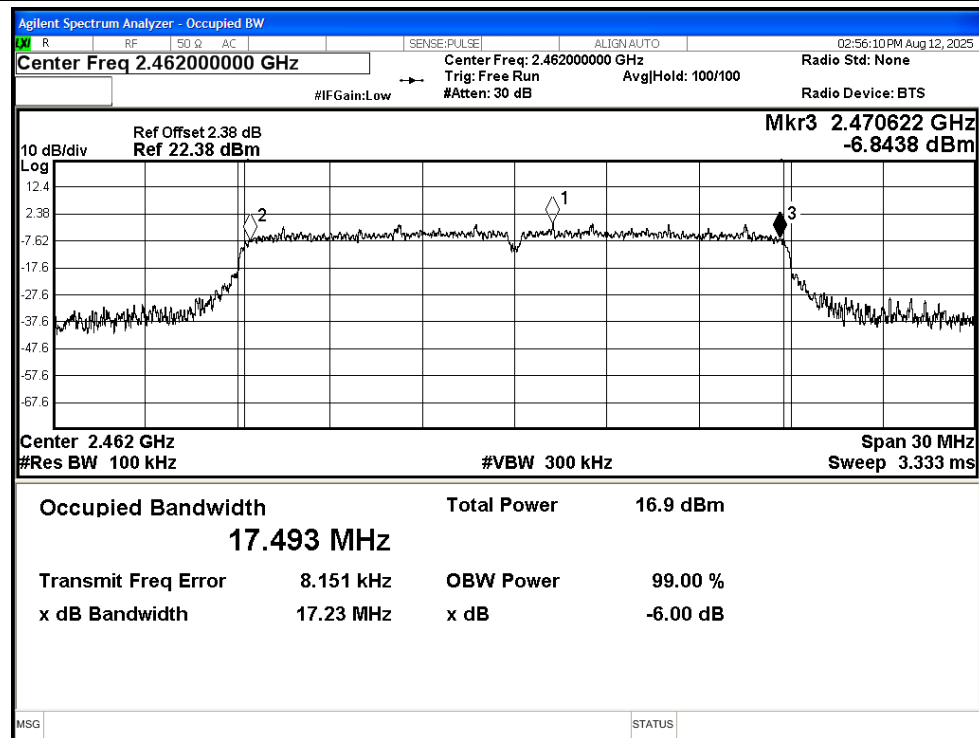
-6dB Bandwidth NVNT ax20 2412MHz Ant1



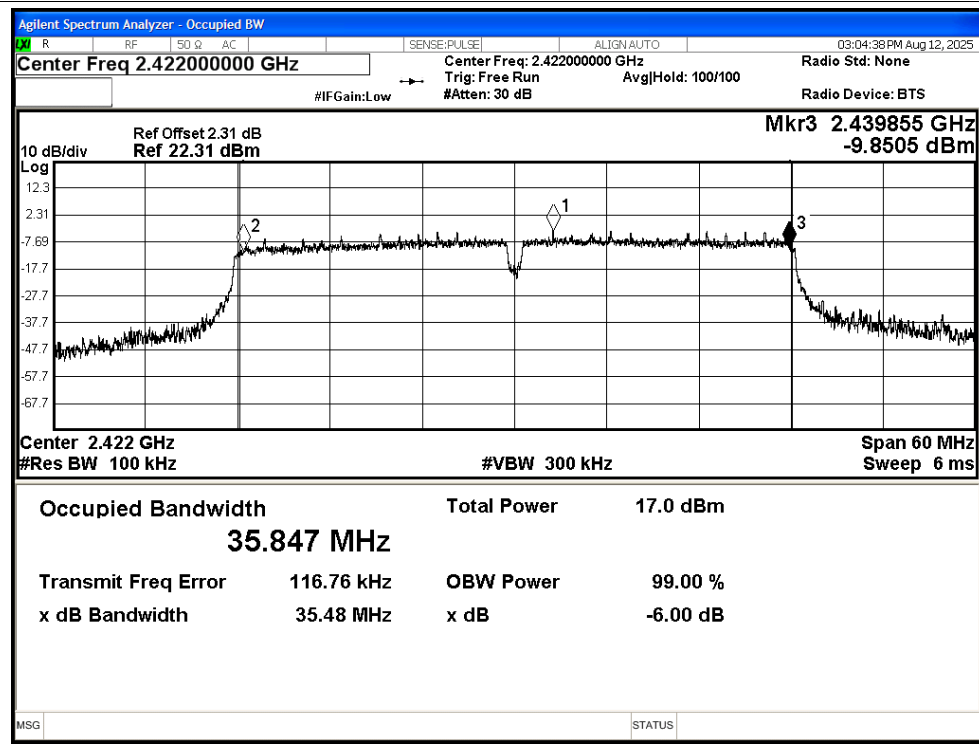
-6dB Bandwidth NVNT ax20 2437MHz Ant1



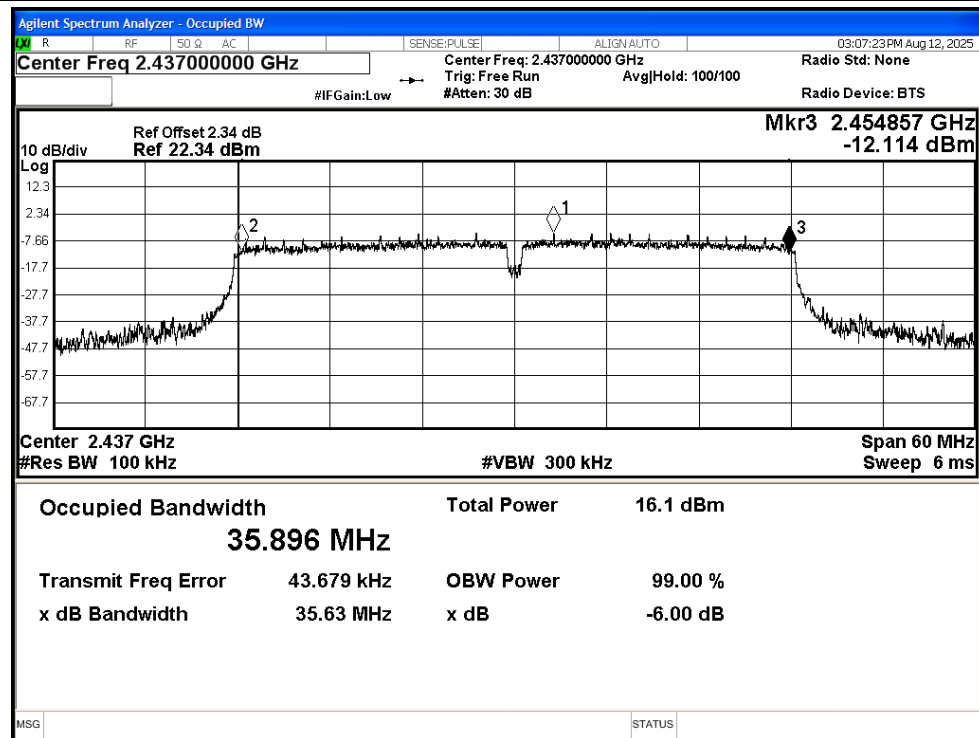
-6dB Bandwidth NVNT ax20 2462MHz Ant1



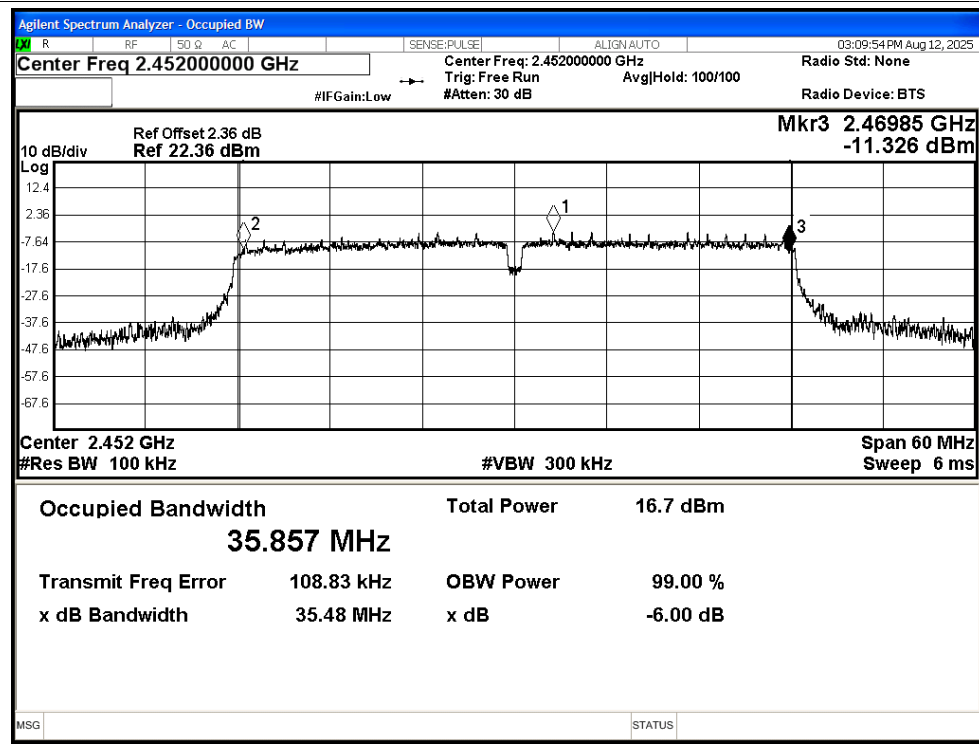
-6dB Bandwidth NVNT ax40 2422MHz Ant1



-6dB Bandwidth NVNT ax40 2437MHz Ant1



-6dB Bandwidth NVNT ax40 2452MHz Ant1



A.2 Maximum Peak Conducted Output Power

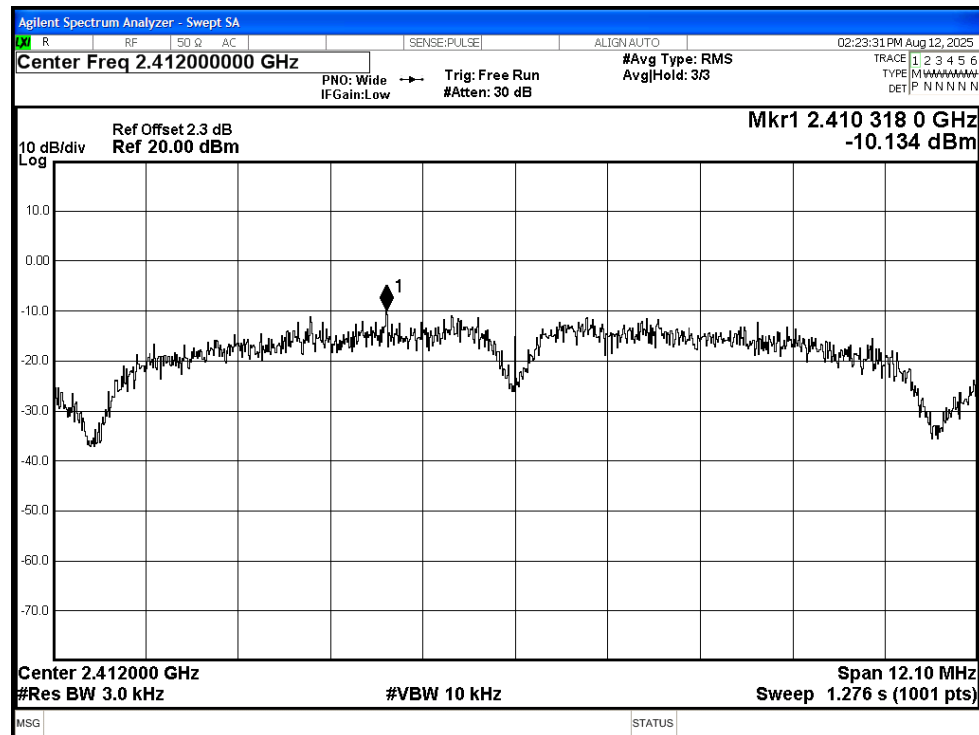
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	13.7	30	Pass
NVNT	b	2437	Ant1	12.83	30	Pass
NVNT	b	2462	Ant1	13	30	Pass
NVNT	g	2412	Ant1	12.58	30	Pass
NVNT	g	2437	Ant1	11.89	30	Pass
NVNT	g	2462	Ant1	12.13	30	Pass
NVNT	n20	2412	Ant1	12.9	30	Pass
NVNT	n20	2437	Ant1	12.12	30	Pass
NVNT	n20	2462	Ant1	14.17	30	Pass
NVNT	n40	2422	Ant1	14.54	30	Pass
NVNT	n40	2437	Ant1	13.7	30	Pass
NVNT	n40	2452	Ant1	14.27	30	Pass
NVNT	ax20	2412	Ant1	15.87	30	Pass
NVNT	ax20	2437	Ant1	15.4	30	Pass
NVNT	ax20	2462	Ant1	15.42	30	Pass
NVNT	ax40	2422	Ant1	15.38	30	Pass
NVNT	ax40	2437	Ant1	14.42	30	Pass
NVNT	ax40	2452	Ant1	15.01	30	Pass

A.4 Maximum Power Spectral Density Level

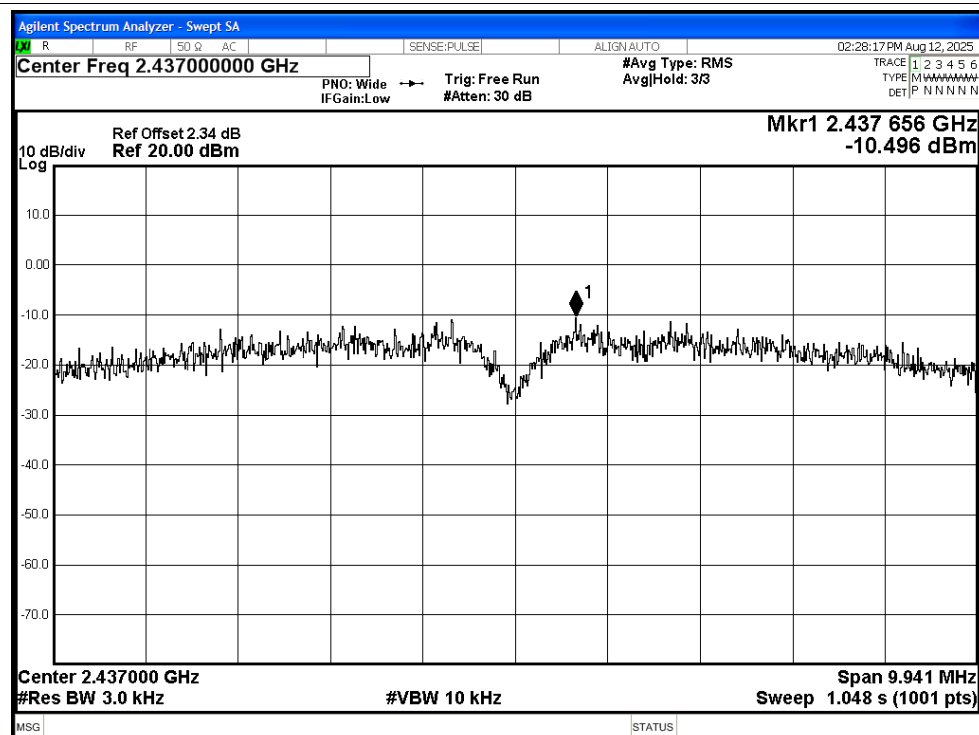
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NVNT	b	2412	Ant1	-10.13	8	Pass
NVNT	b	2437	Ant1	-10.5	8	Pass
NVNT	b	2462	Ant1	-10.16	8	Pass
NVNT	g	2412	Ant1	-15.96	8	Pass
NVNT	g	2437	Ant1	-17.17	8	Pass
NVNT	g	2462	Ant1	-16.33	8	Pass
NVNT	n20	2412	Ant1	-15.56	8	Pass
NVNT	n20	2437	Ant1	-15.71	8	Pass
NVNT	n20	2462	Ant1	-15.63	8	Pass
NVNT	n40	2422	Ant1	-16.91	8	Pass
NVNT	n40	2437	Ant1	-17.77	8	Pass
NVNT	n40	2452	Ant1	-16.79	8	Pass
NVNT	ax20	2412	Ant1	-14.76	8	Pass
NVNT	ax20	2437	Ant1	-13.72	8	Pass
NVNT	ax20	2462	Ant1	-14.8	8	Pass
NVNT	ax40	2422	Ant1	-17.47	8	Pass
NVNT	ax40	2437	Ant1	-19.02	8	Pass
NVNT	ax40	2452	Ant1	-17.47	8	Pass

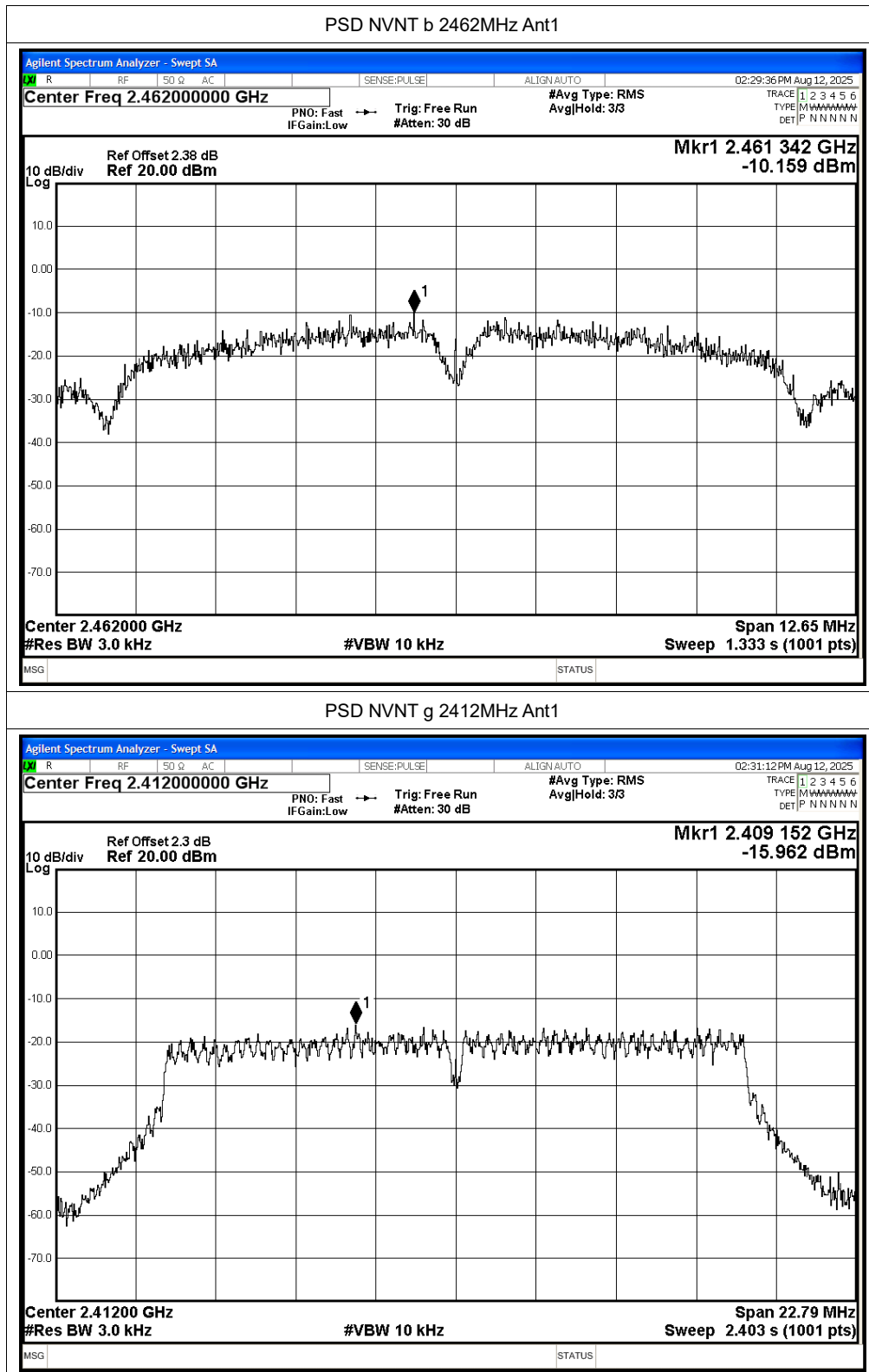
Test Graphs

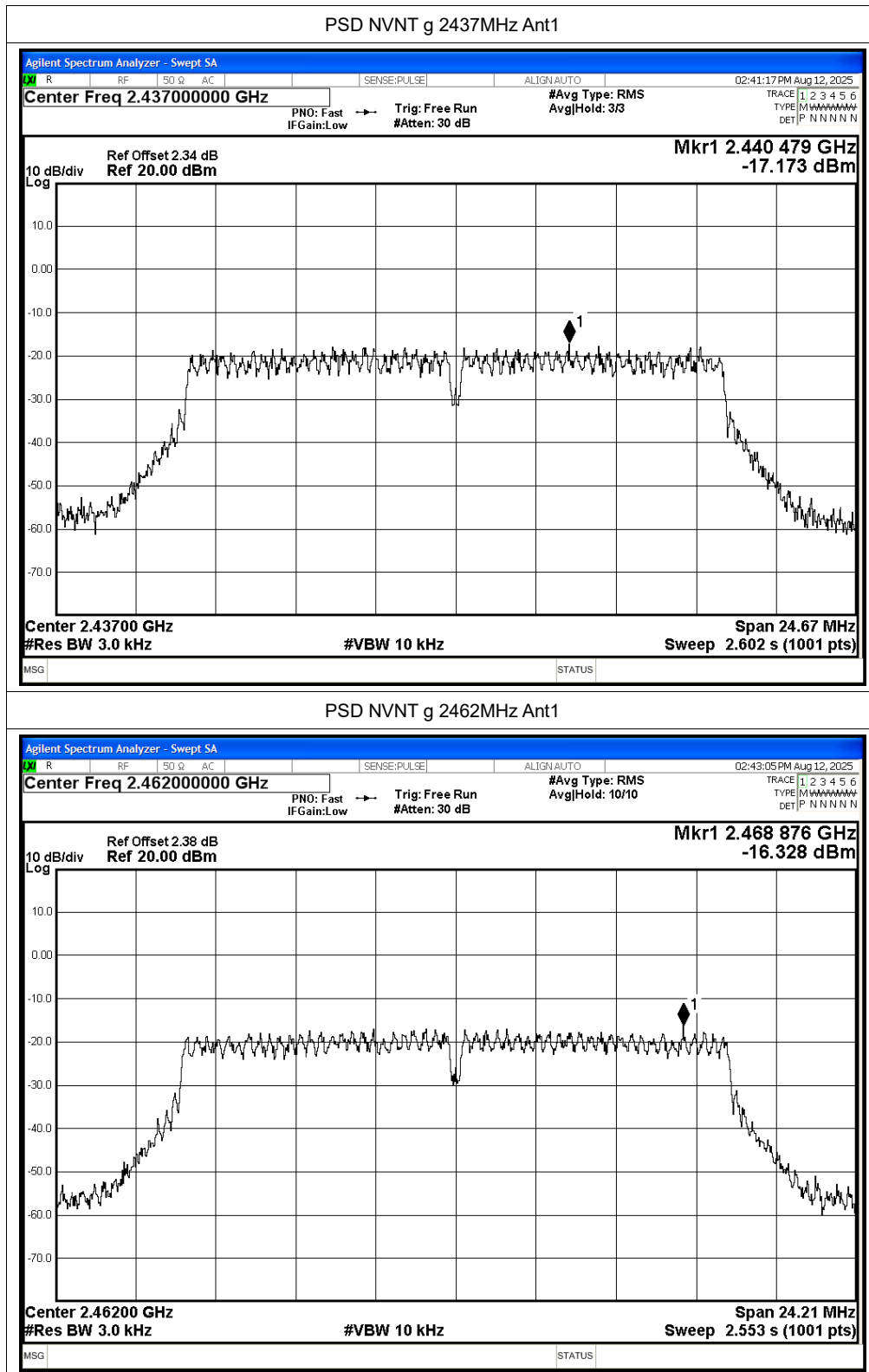
PSD NVNT b 2412MHz Ant1

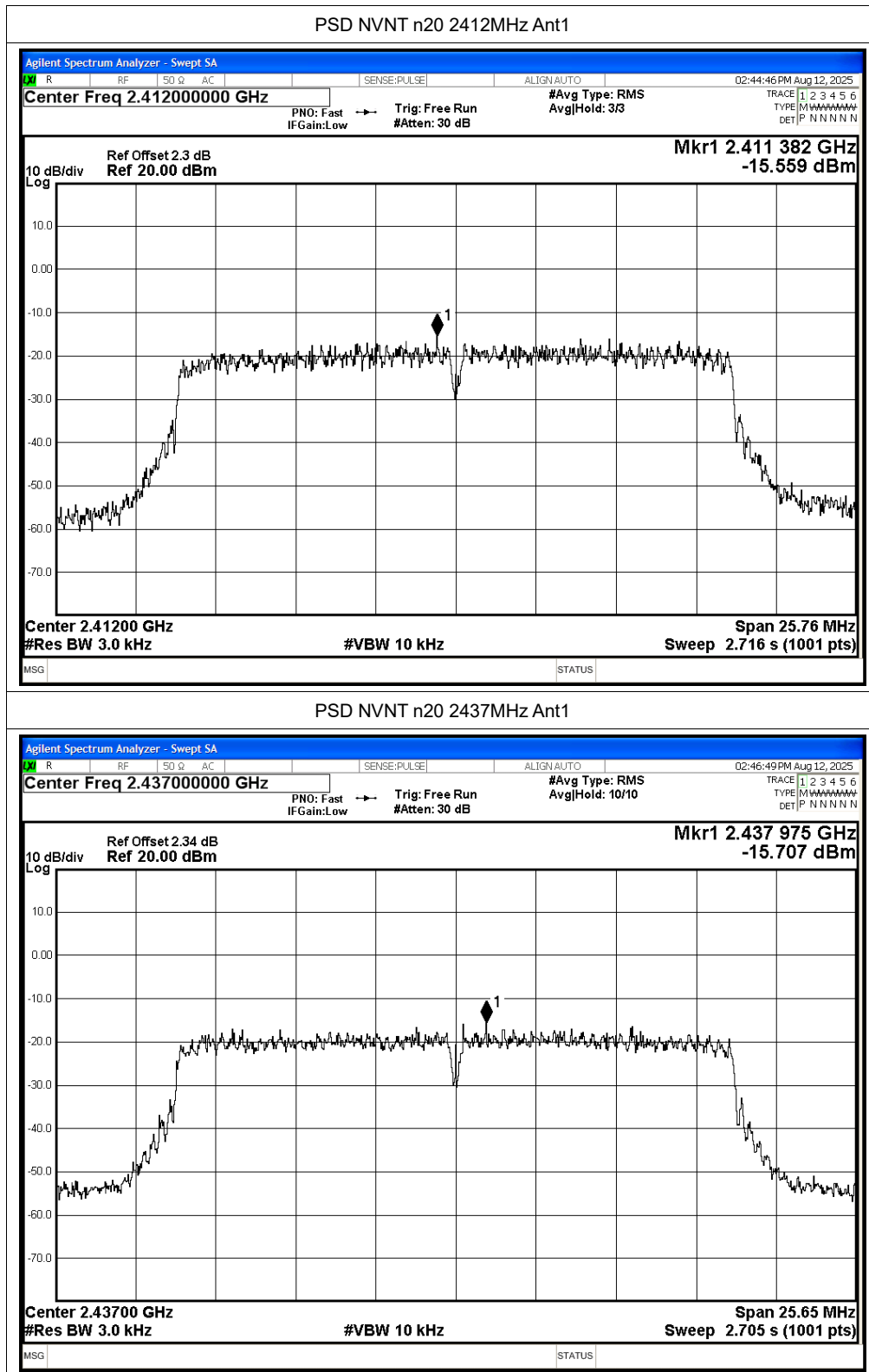


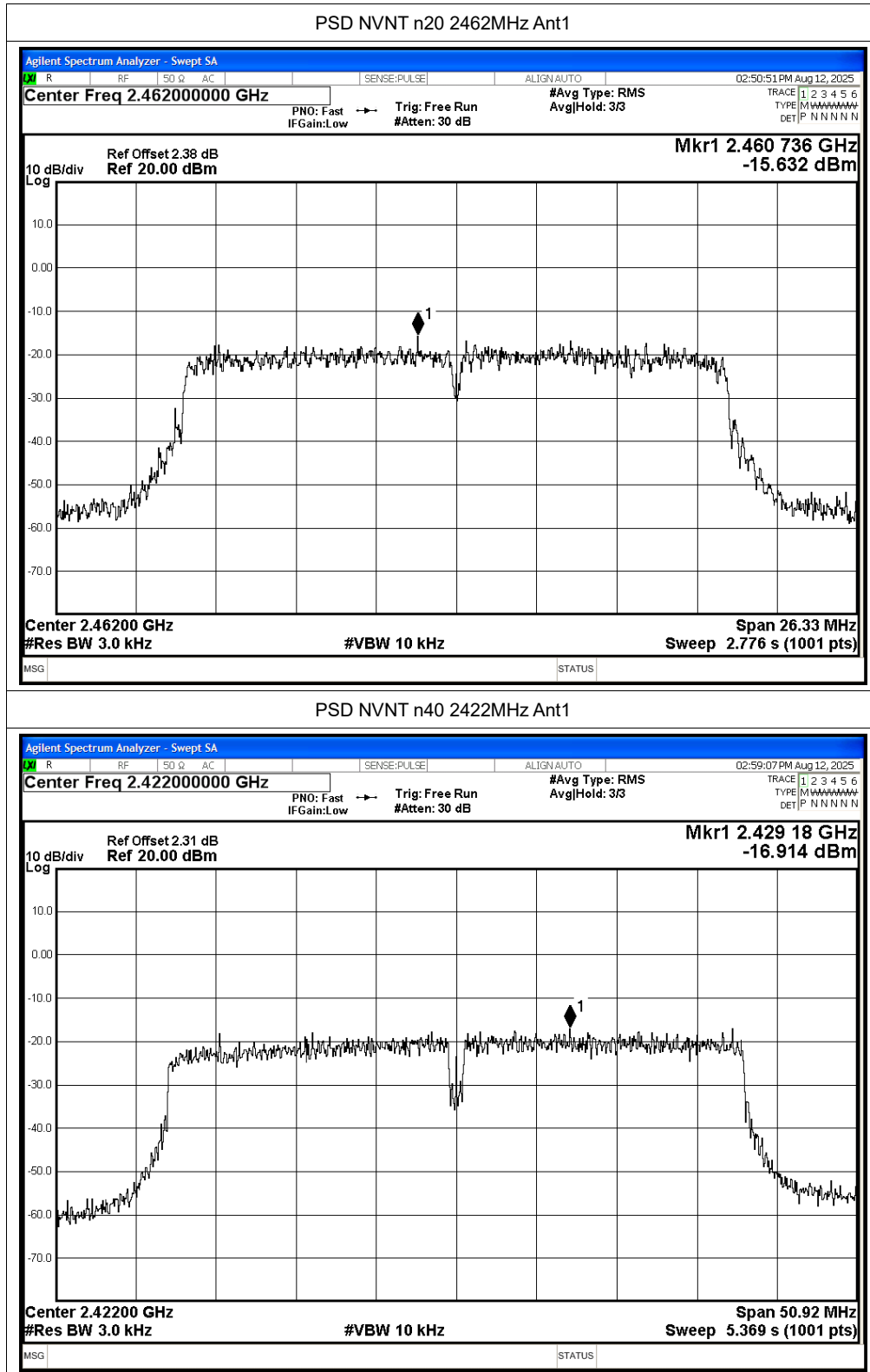
PSD NVNT b 2437MHz Ant1

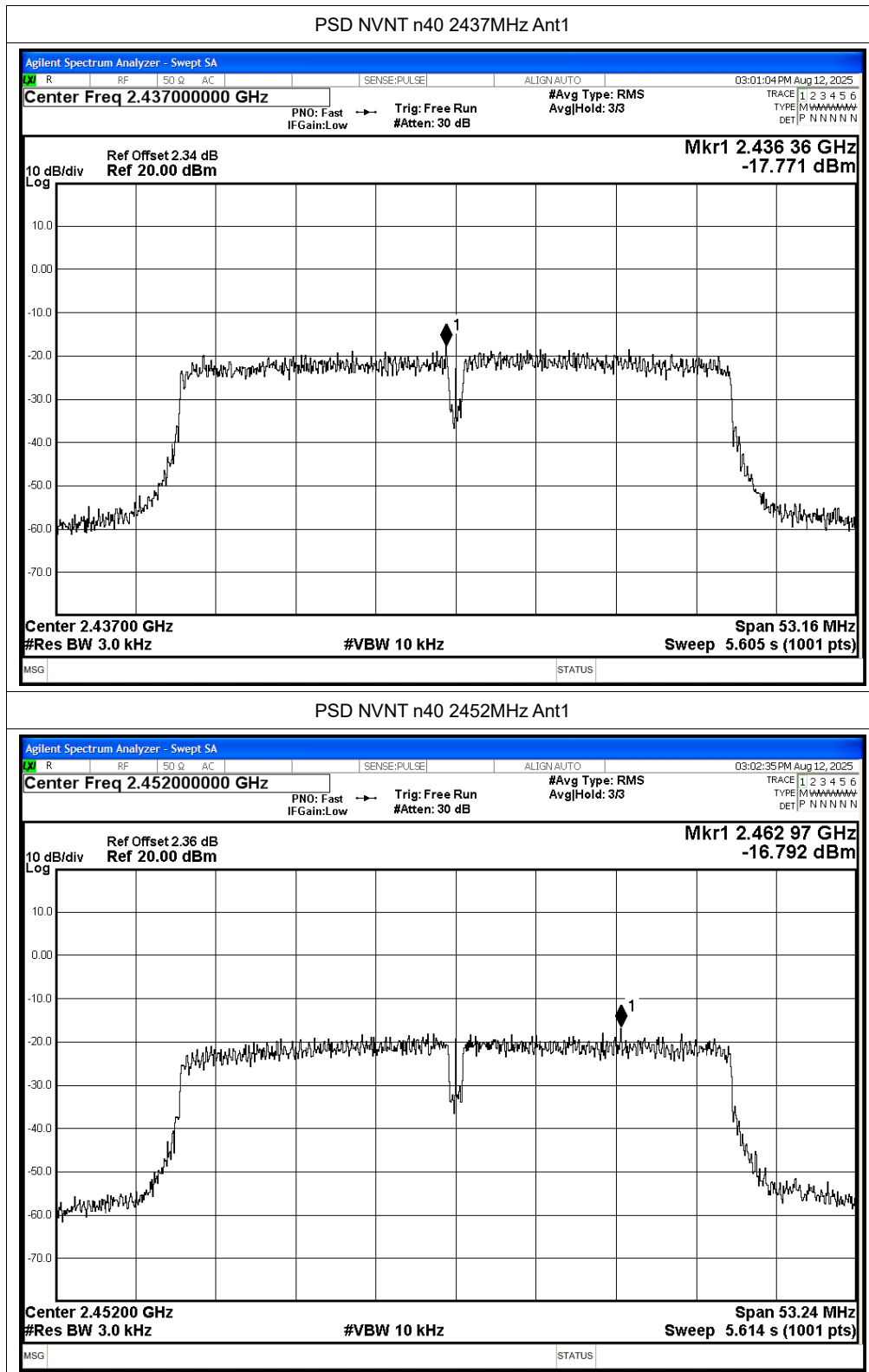


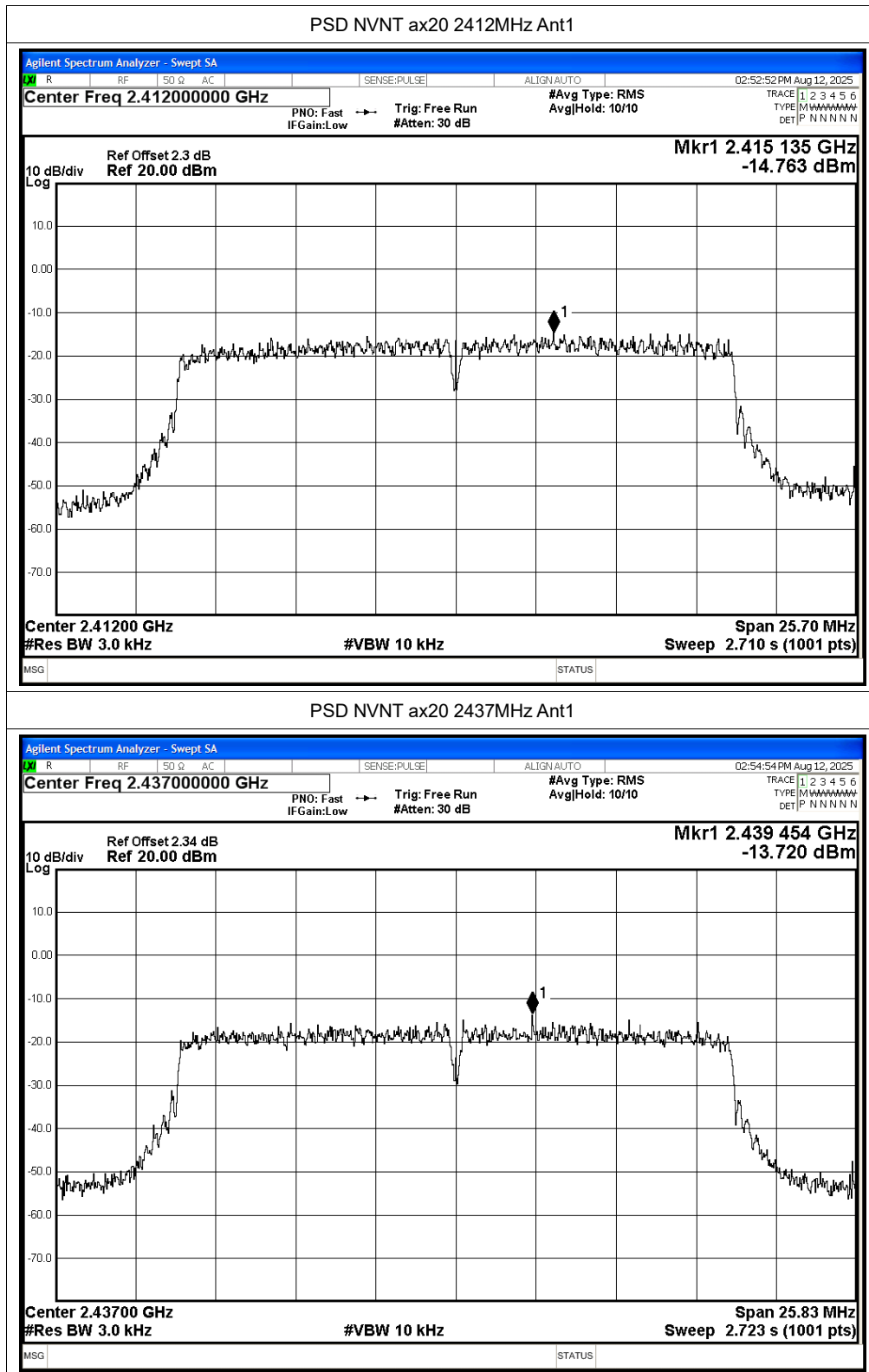


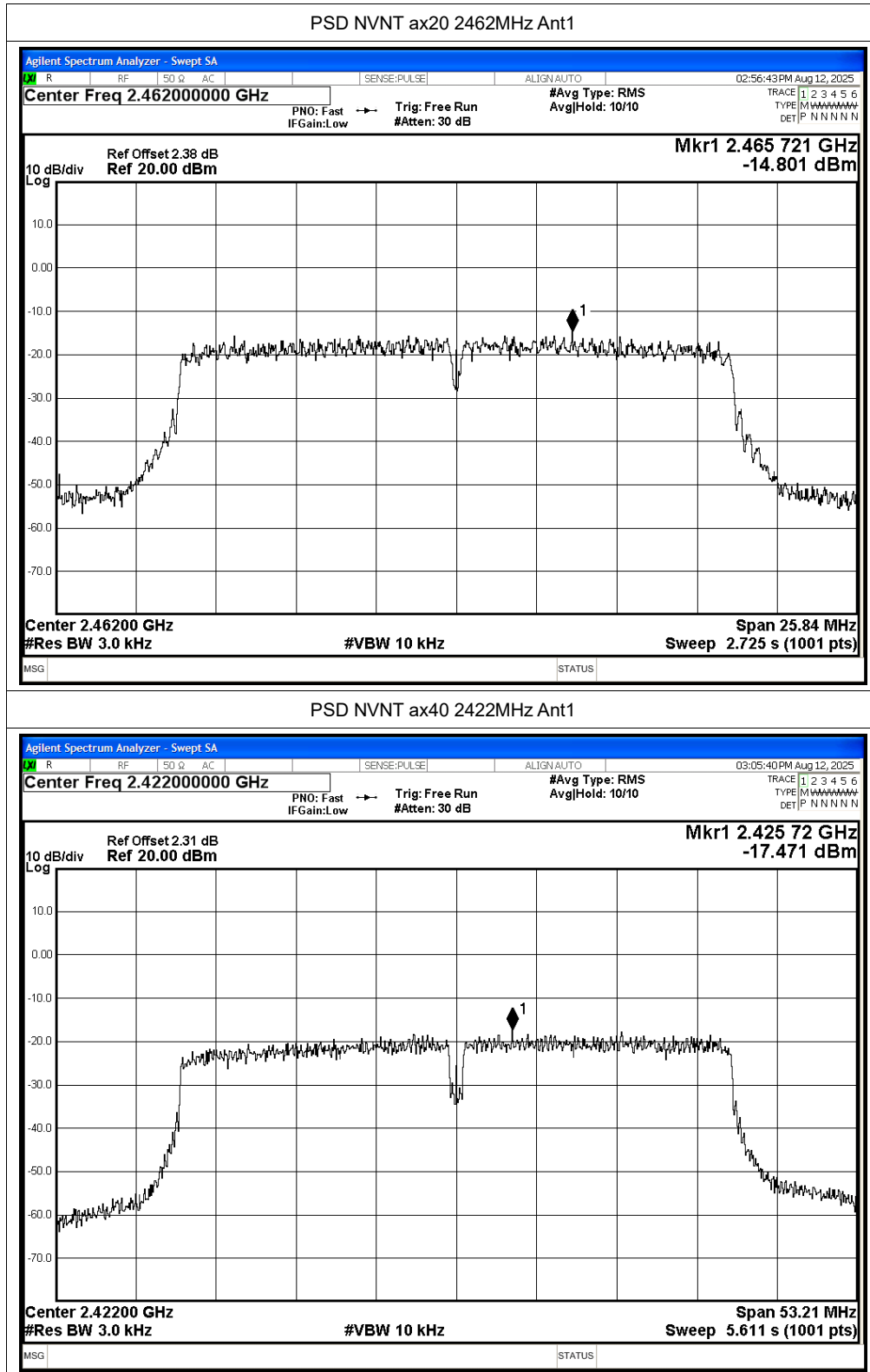


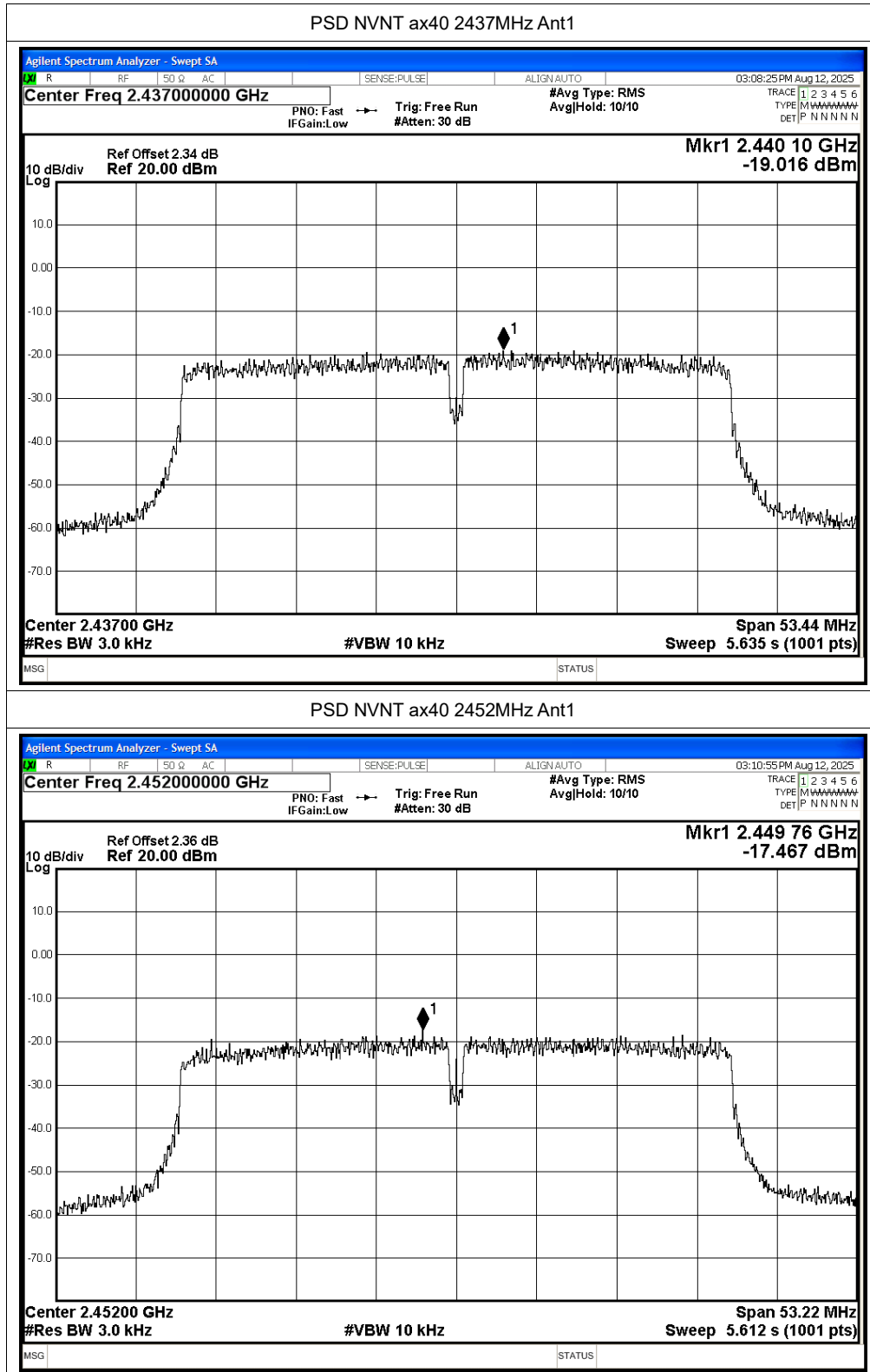






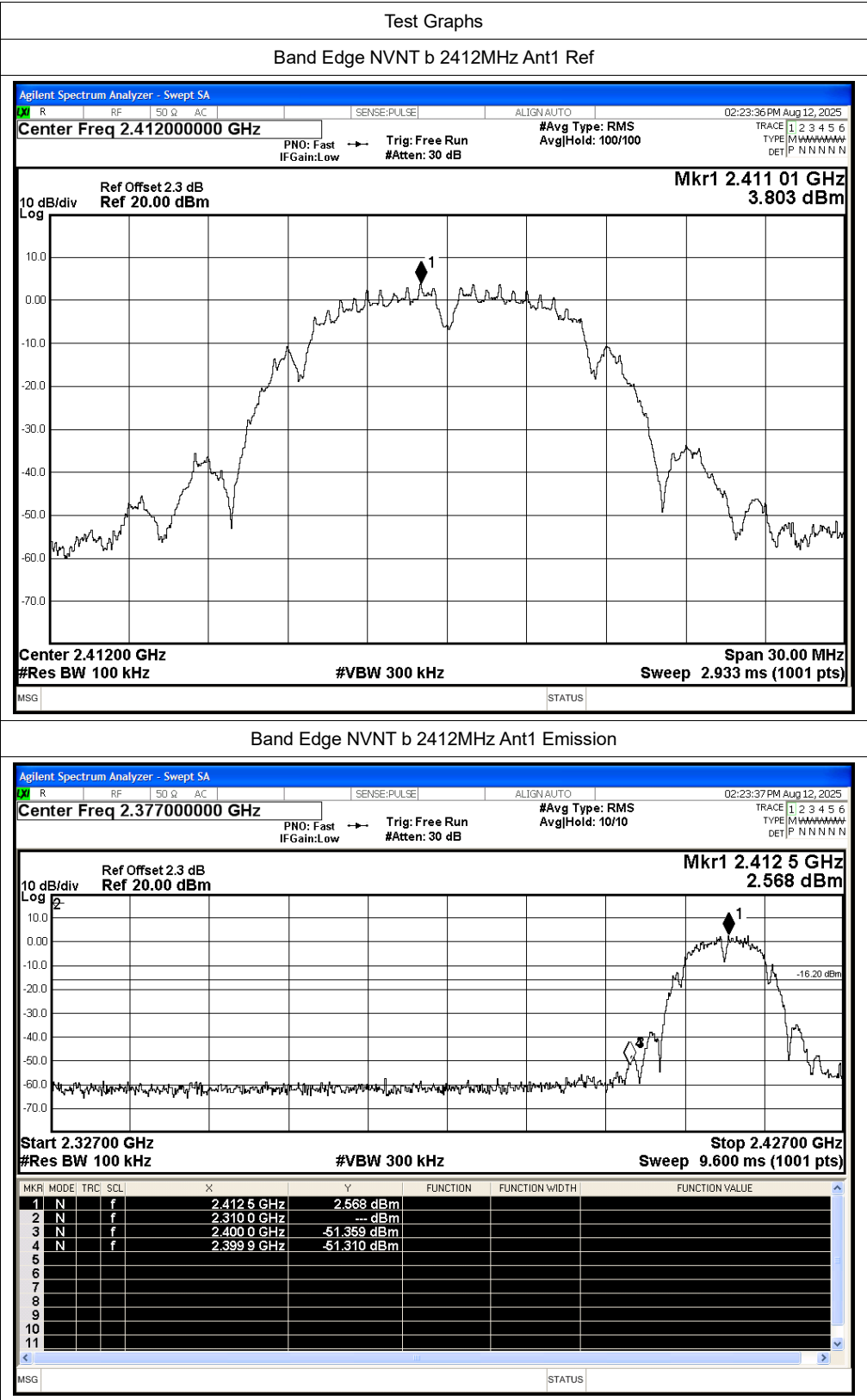


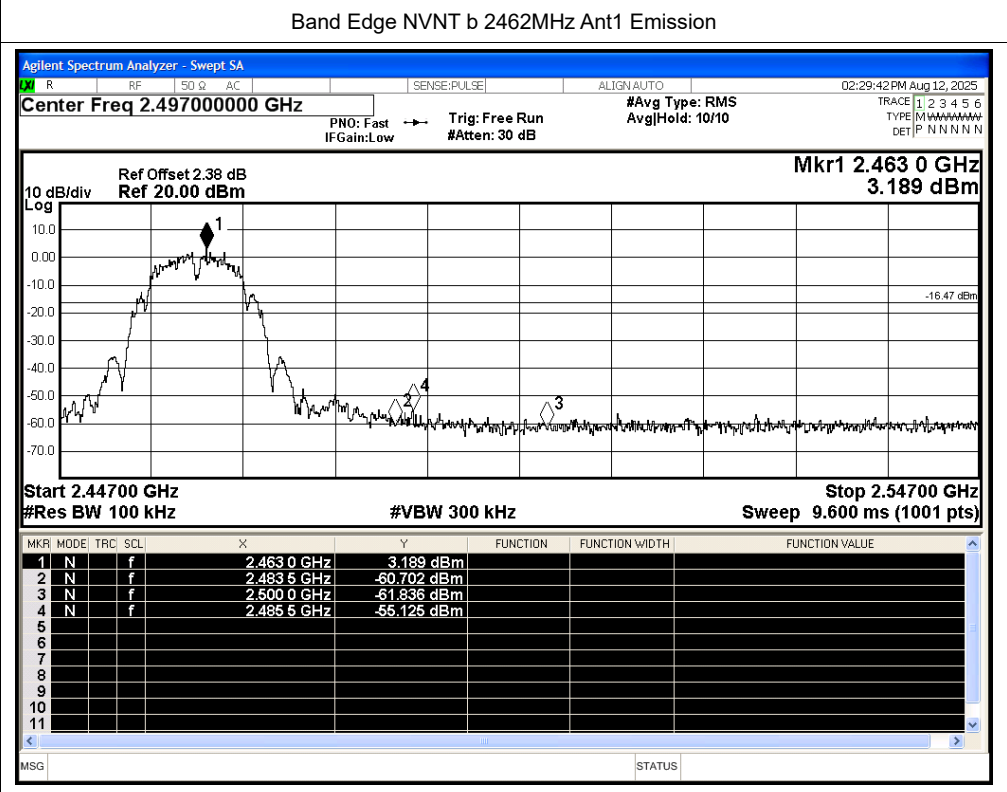
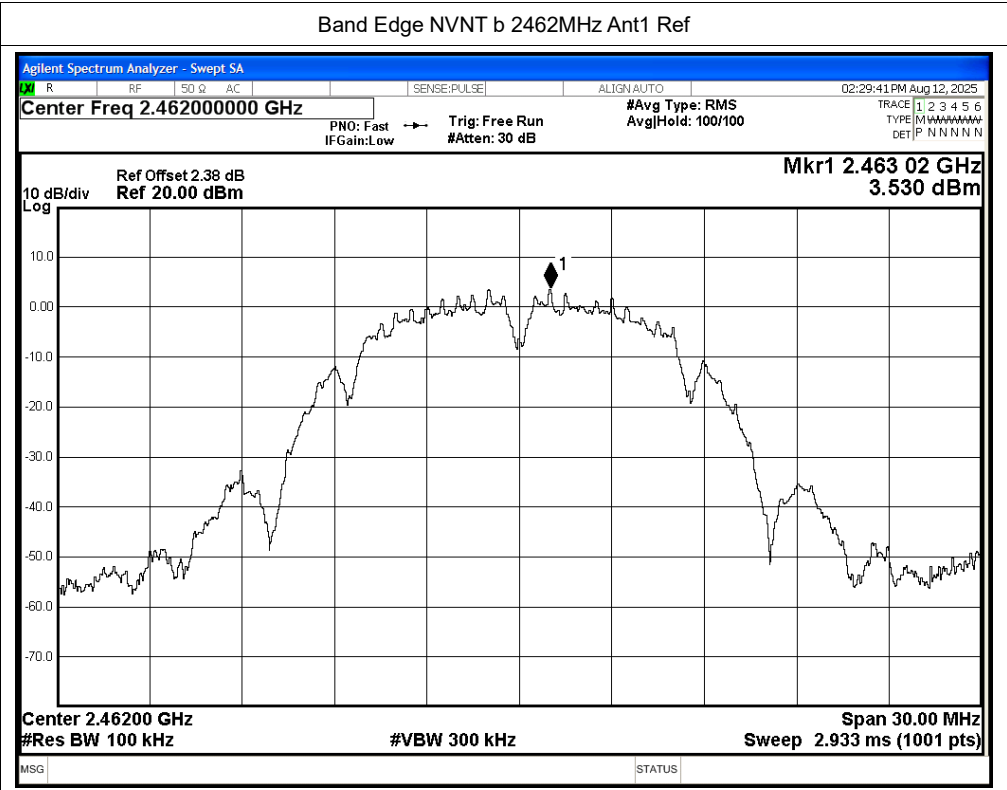


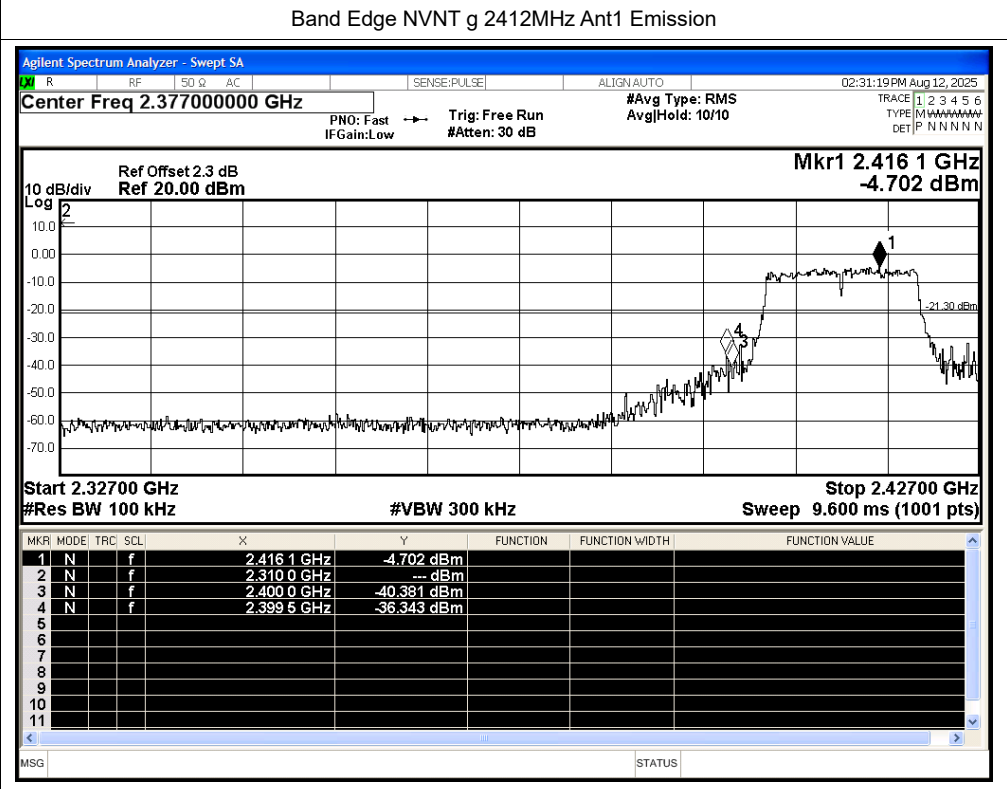
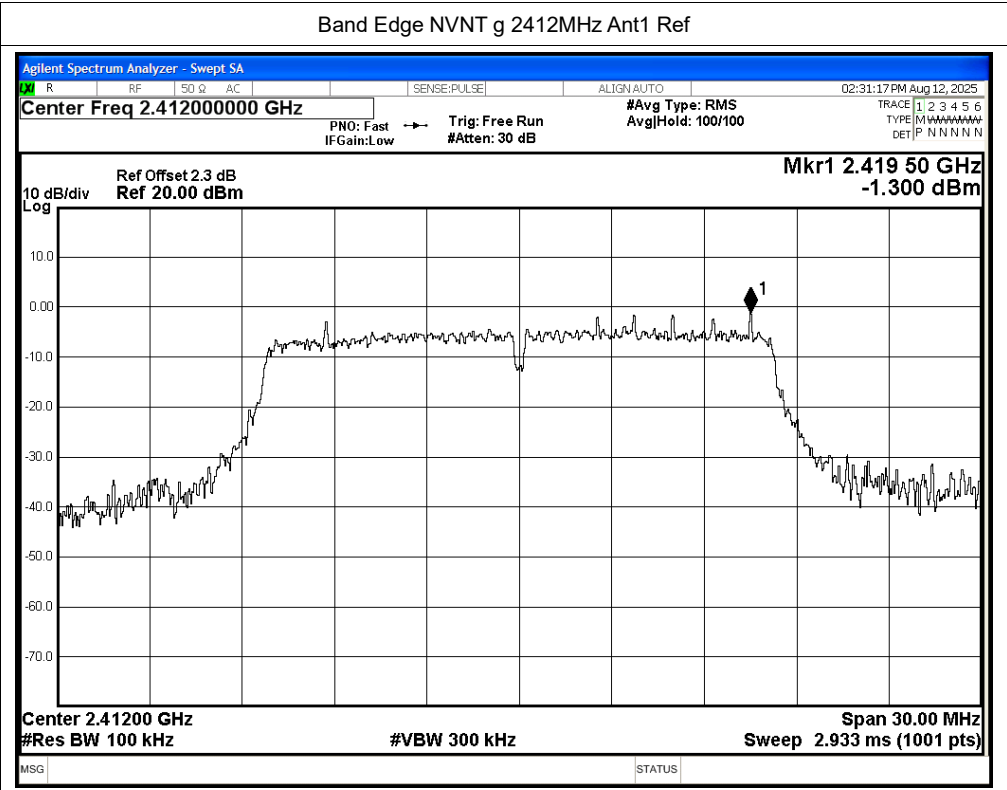


A.4 Band Edge

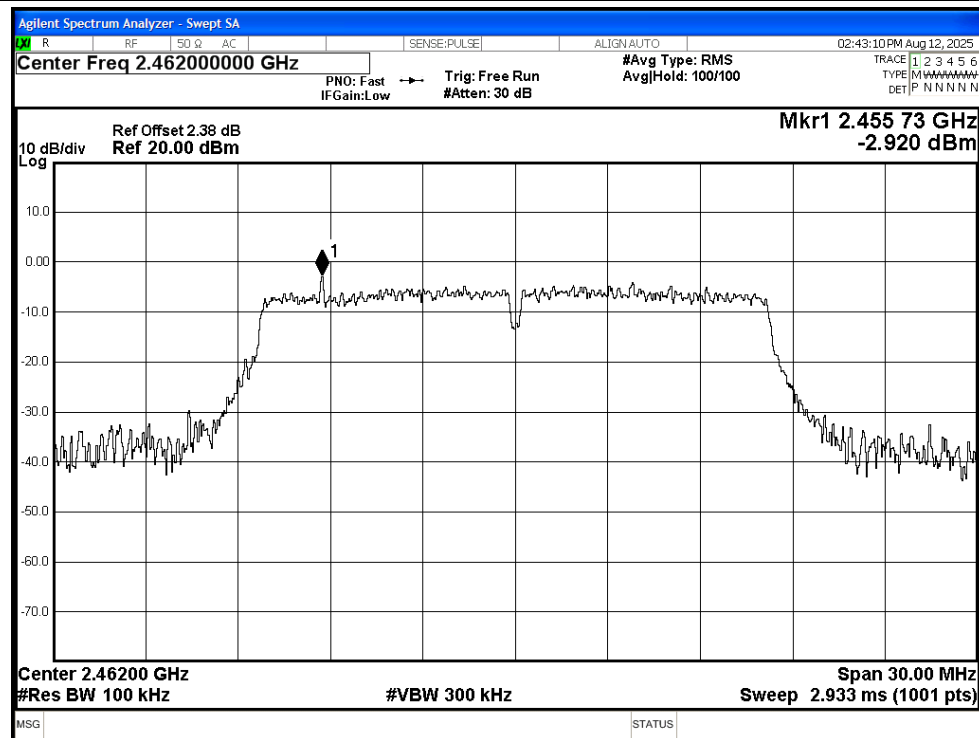
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-55.11	-20	Pass
NVNT	b	2462	Ant1	-58.66	-20	Pass
NVNT	g	2412	Ant1	-35.04	-20	Pass
NVNT	g	2462	Ant1	-44.96	-20	Pass
NVNT	n20	2412	Ant1	-33.49	-20	Pass
NVNT	n20	2462	Ant1	-45.23	-20	Pass
NVNT	n40	2422	Ant1	-34.34	-20	Pass
NVNT	n40	2452	Ant1	-39.44	-20	Pass
NVNT	ax20	2412	Ant1	-30.56	-20	Pass
NVNT	ax20	2462	Ant1	-42.49	-20	Pass
NVNT	ax40	2422	Ant1	-33.07	-20	Pass
NVNT	ax40	2452	Ant1	-38.58	-20	Pass



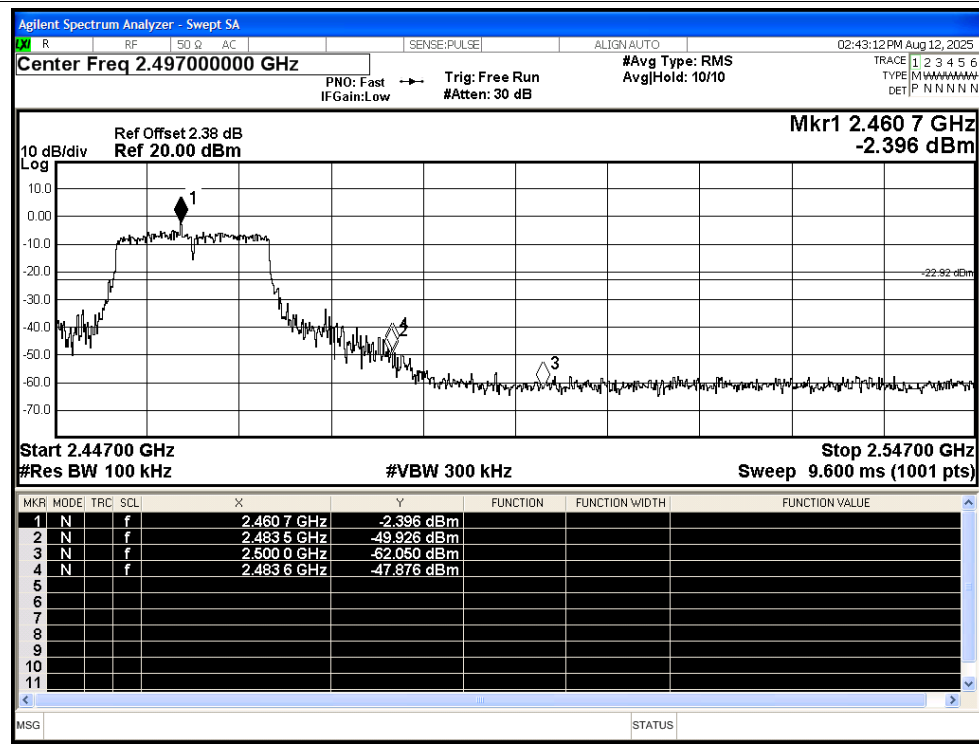


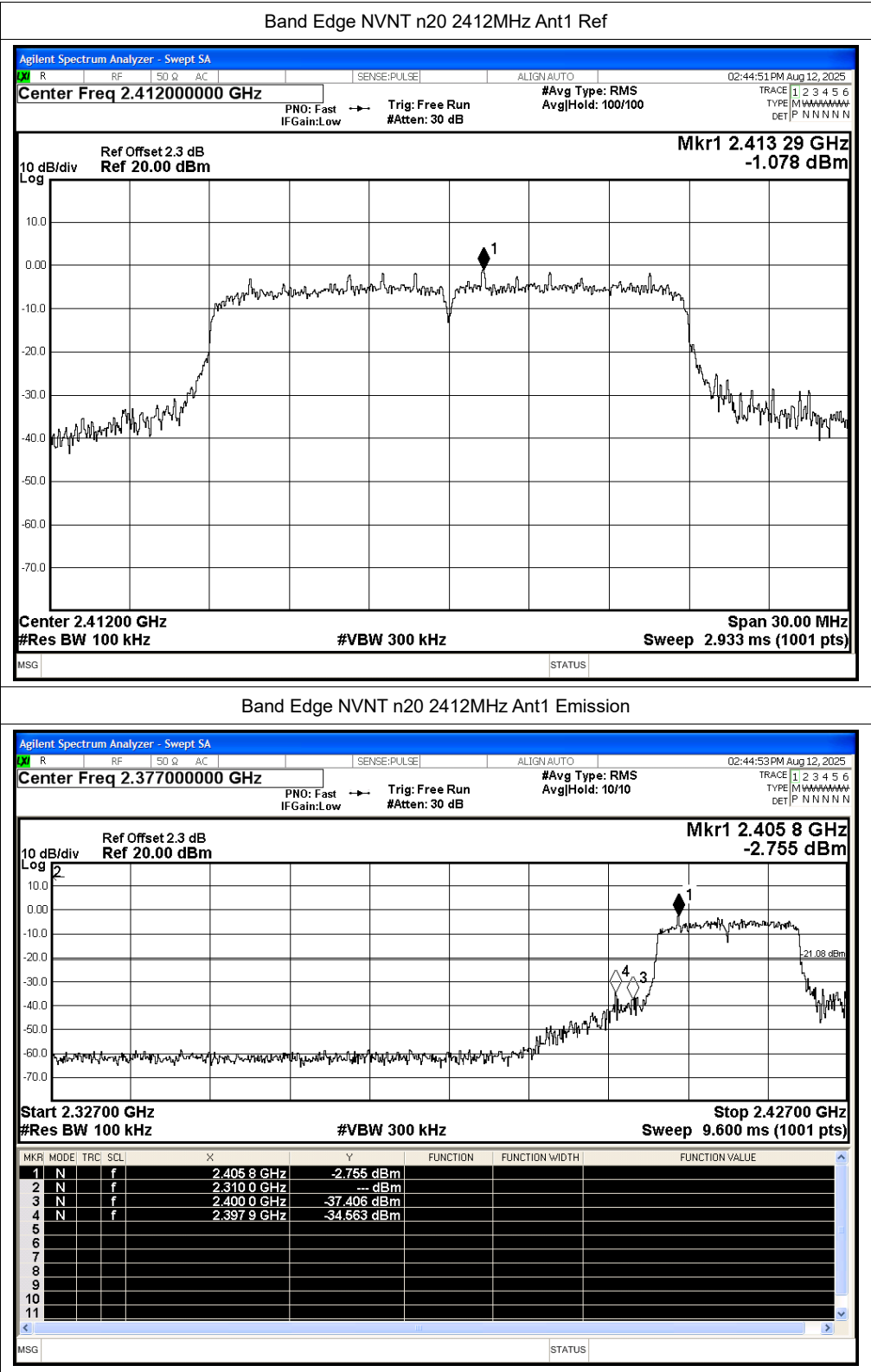


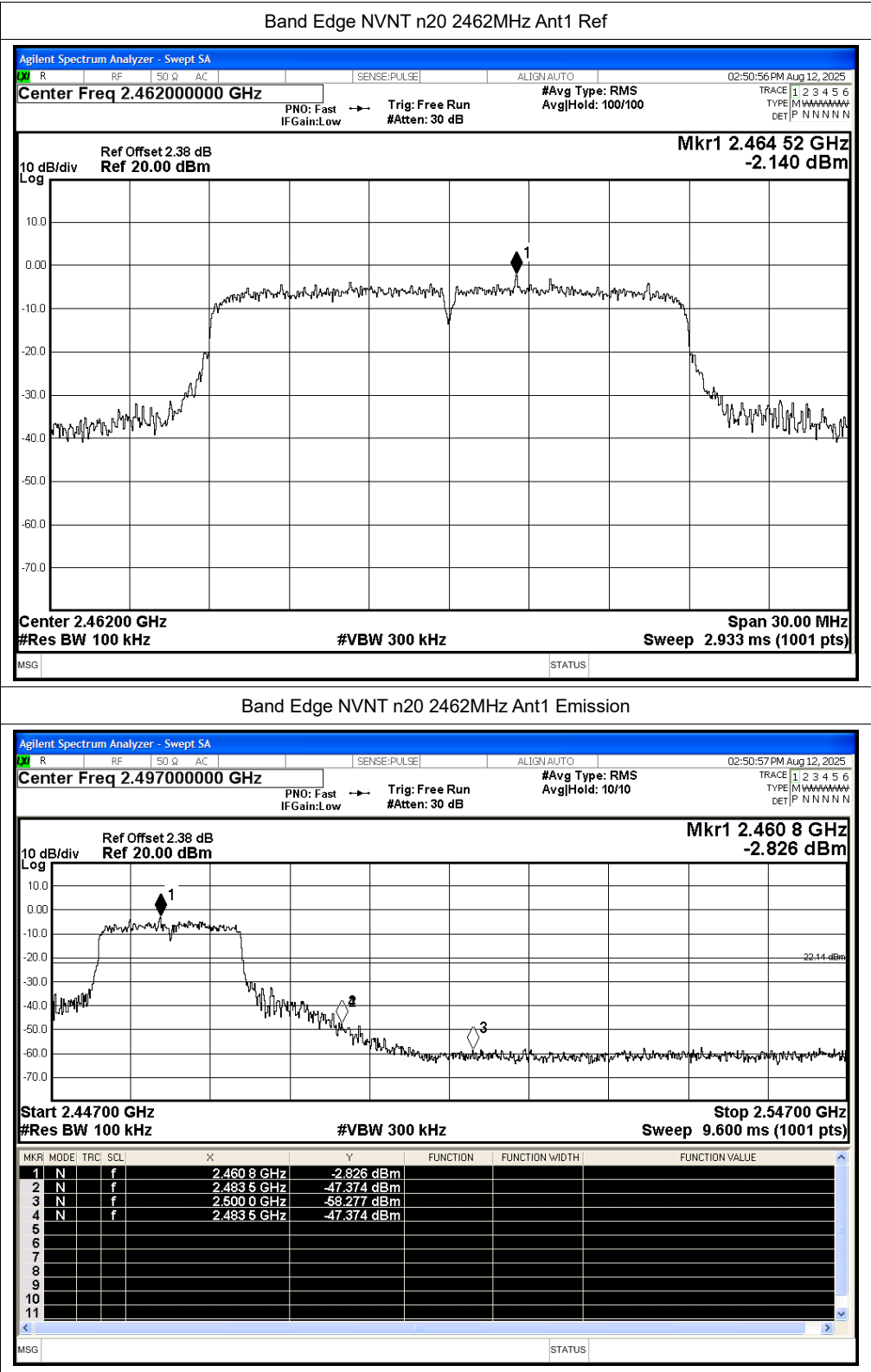
Band Edge NVNT g 2462MHz Ant1 Ref

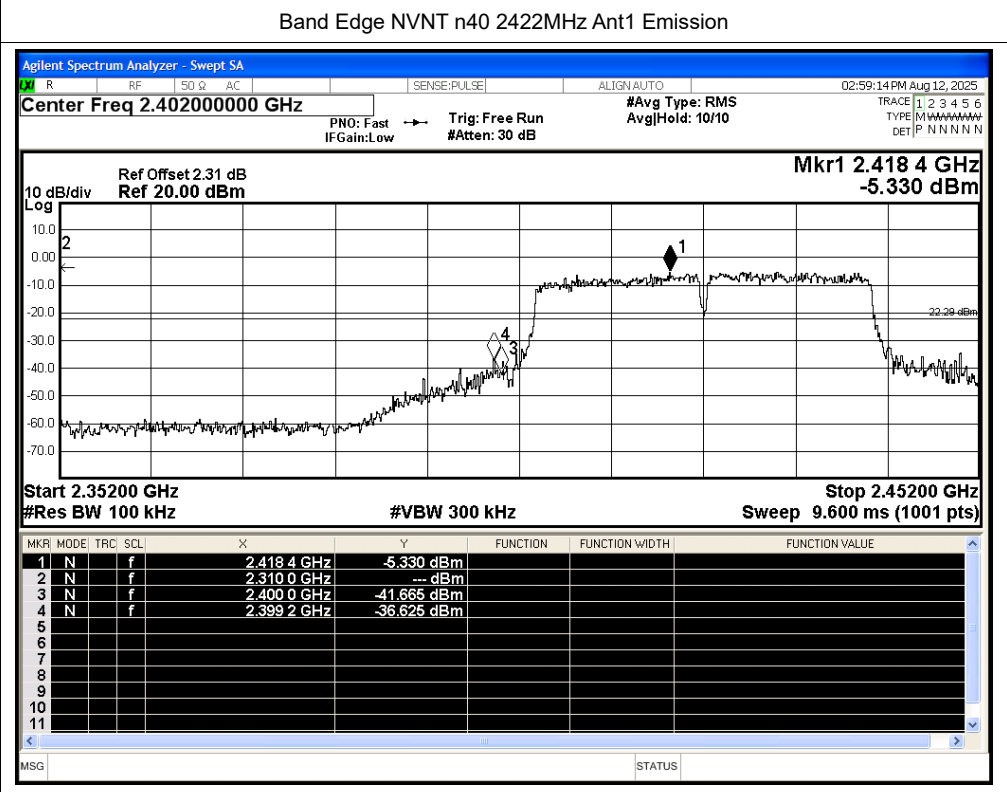
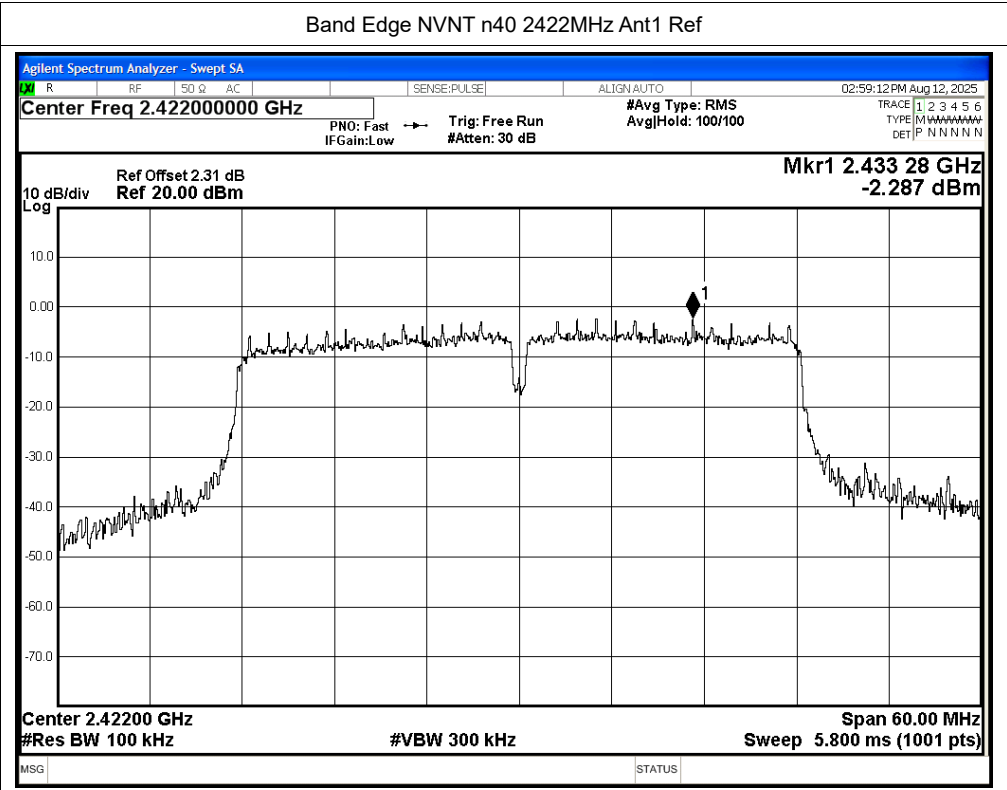


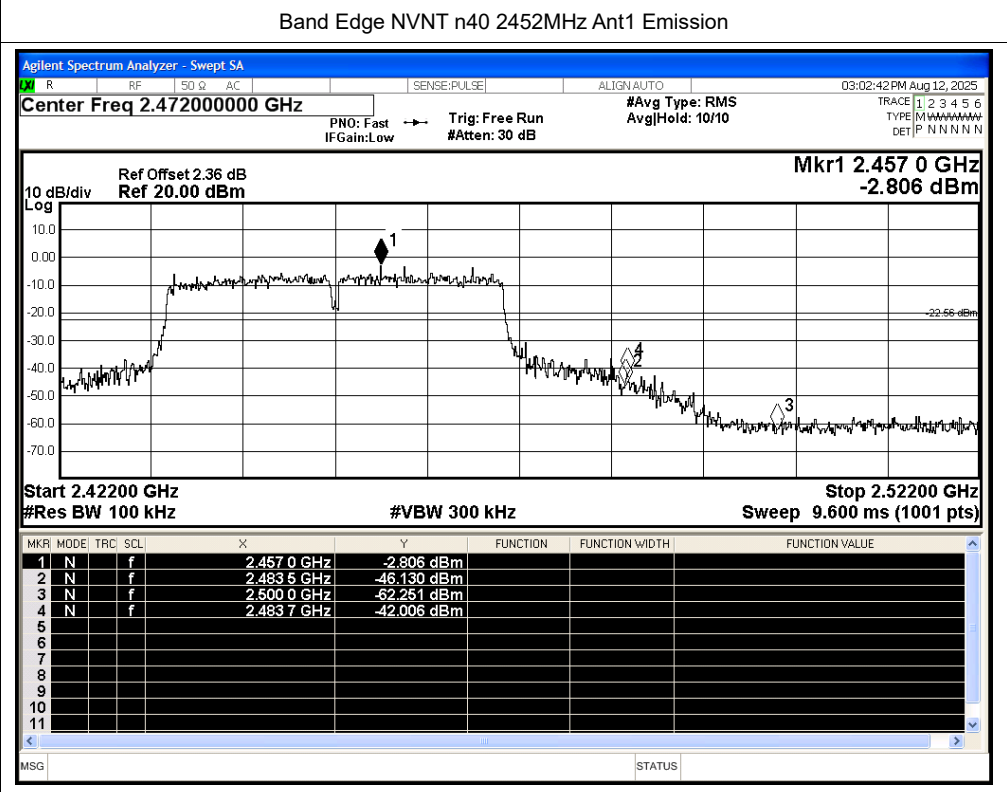
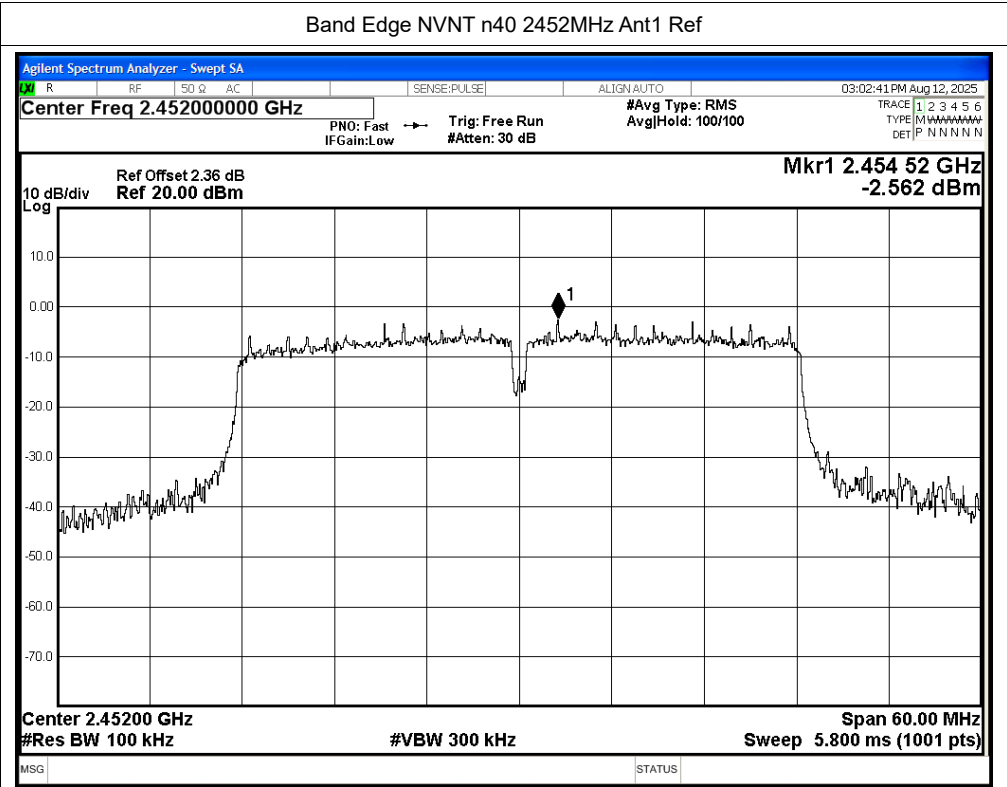
Band Edge NVNT g 2462MHz Ant1 Emission

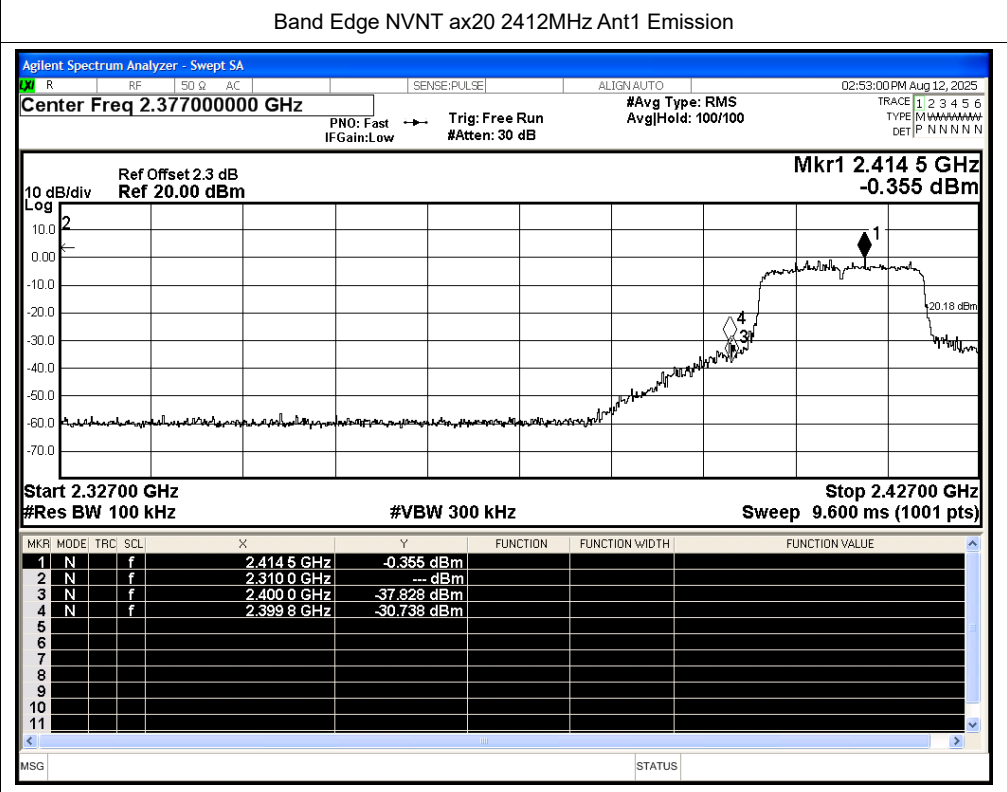
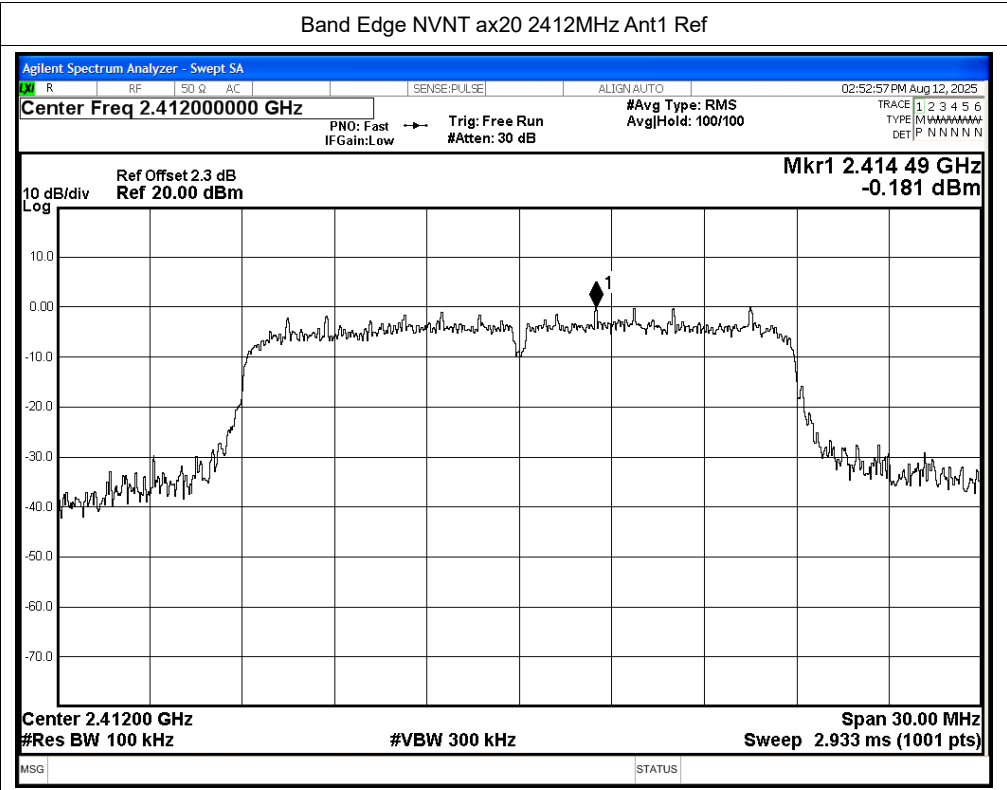




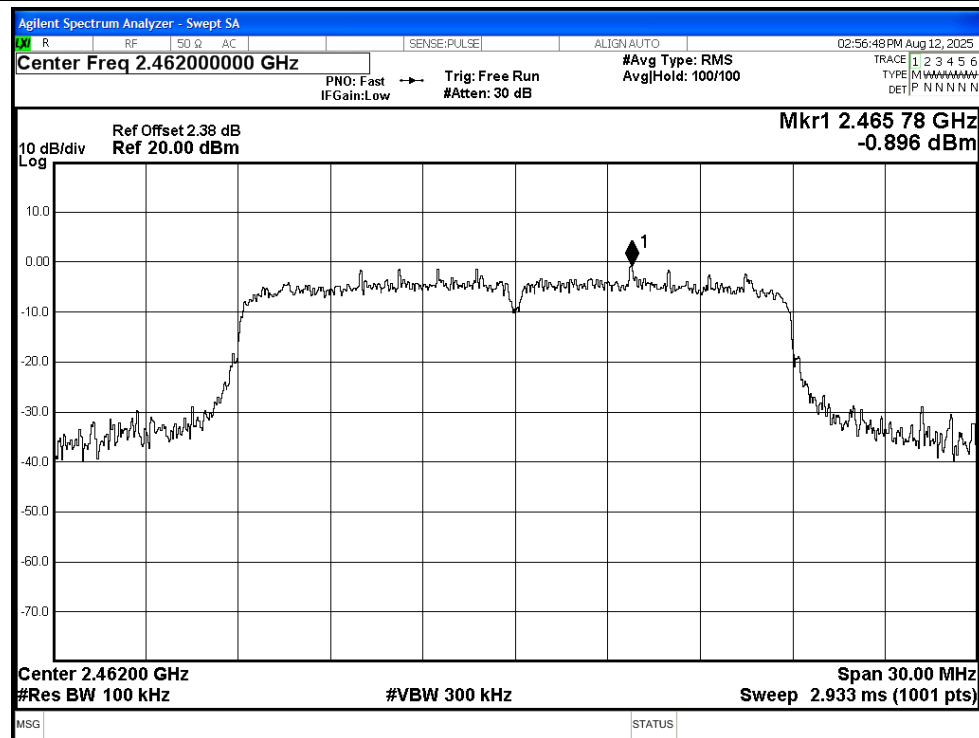




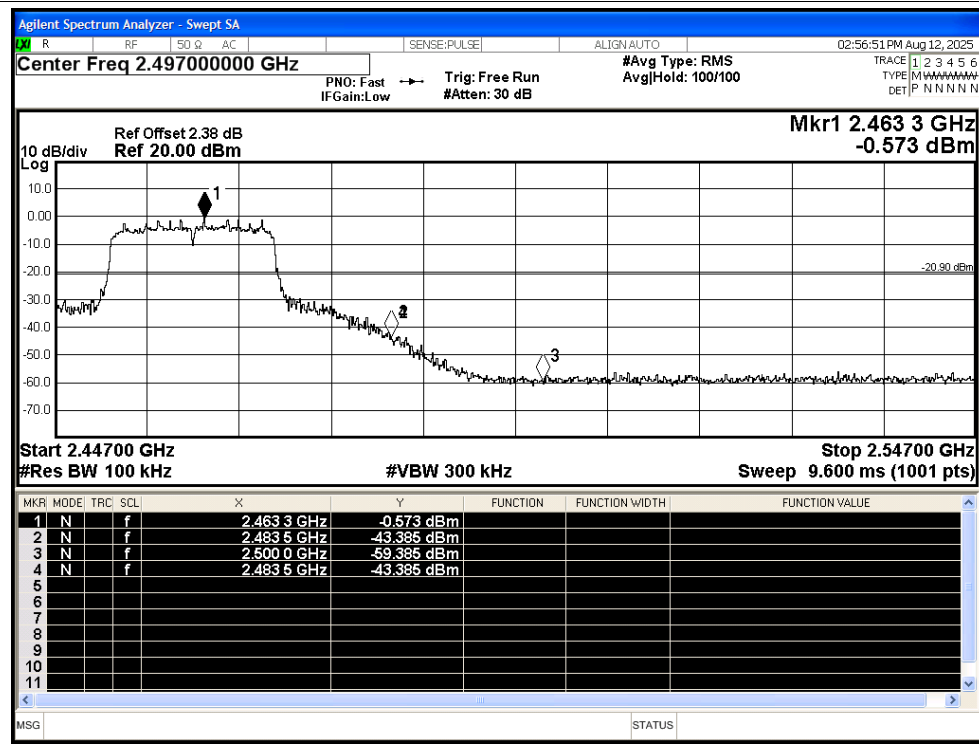


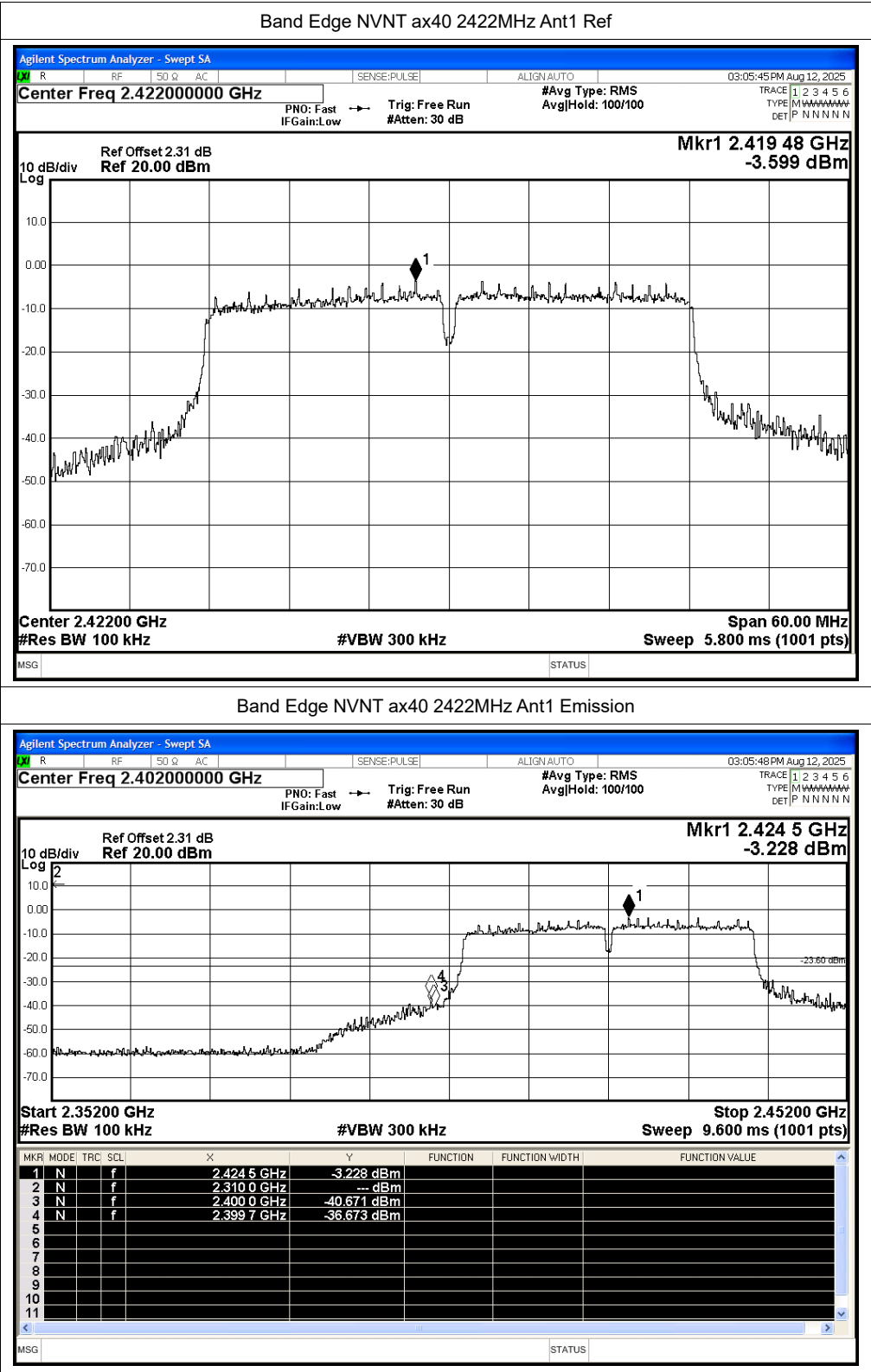


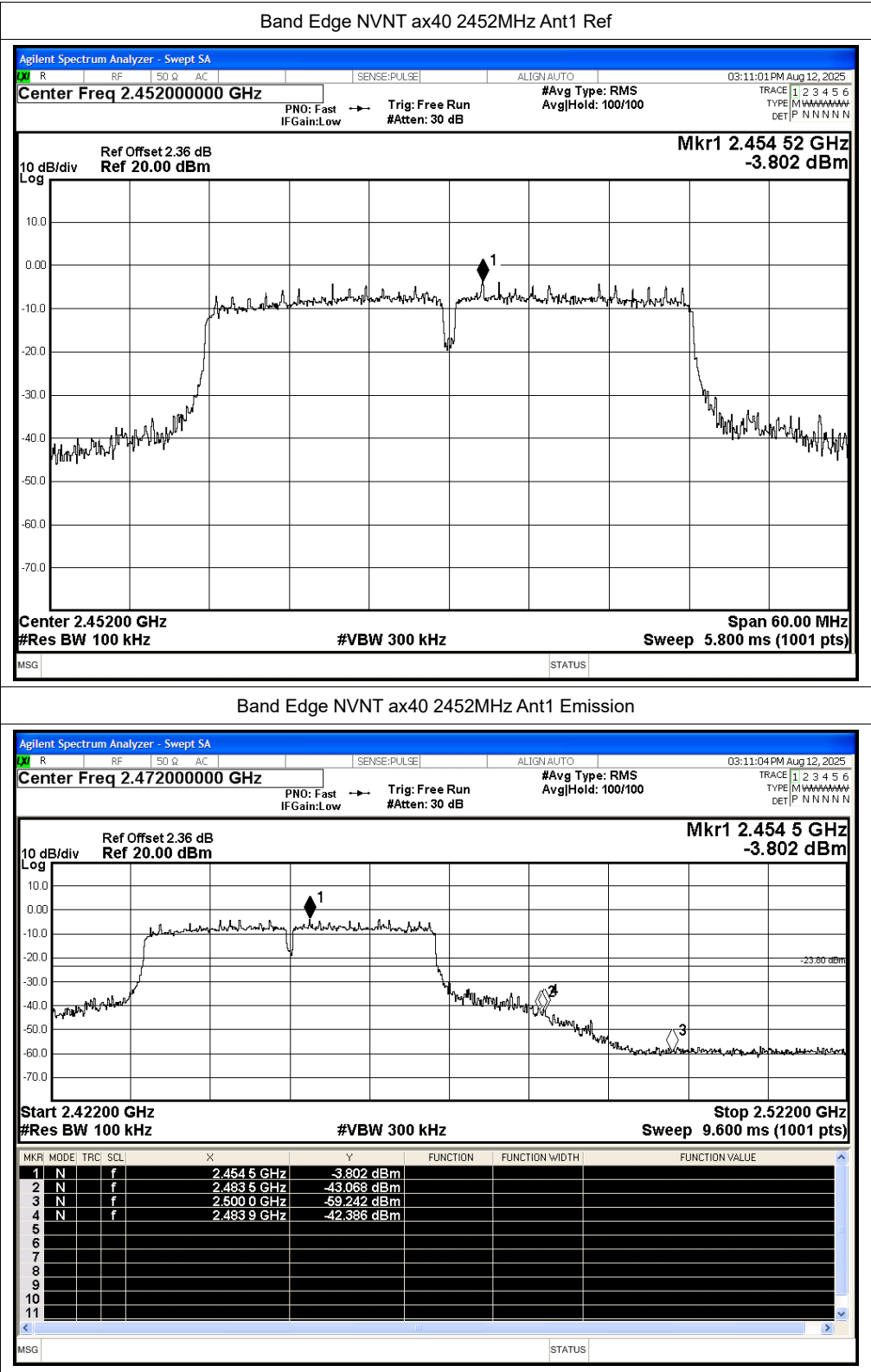
Band Edge NVNT ax20 2462MHz Ant1 Ref



Band Edge NVNT ax20 2462MHz Ant1 Emission

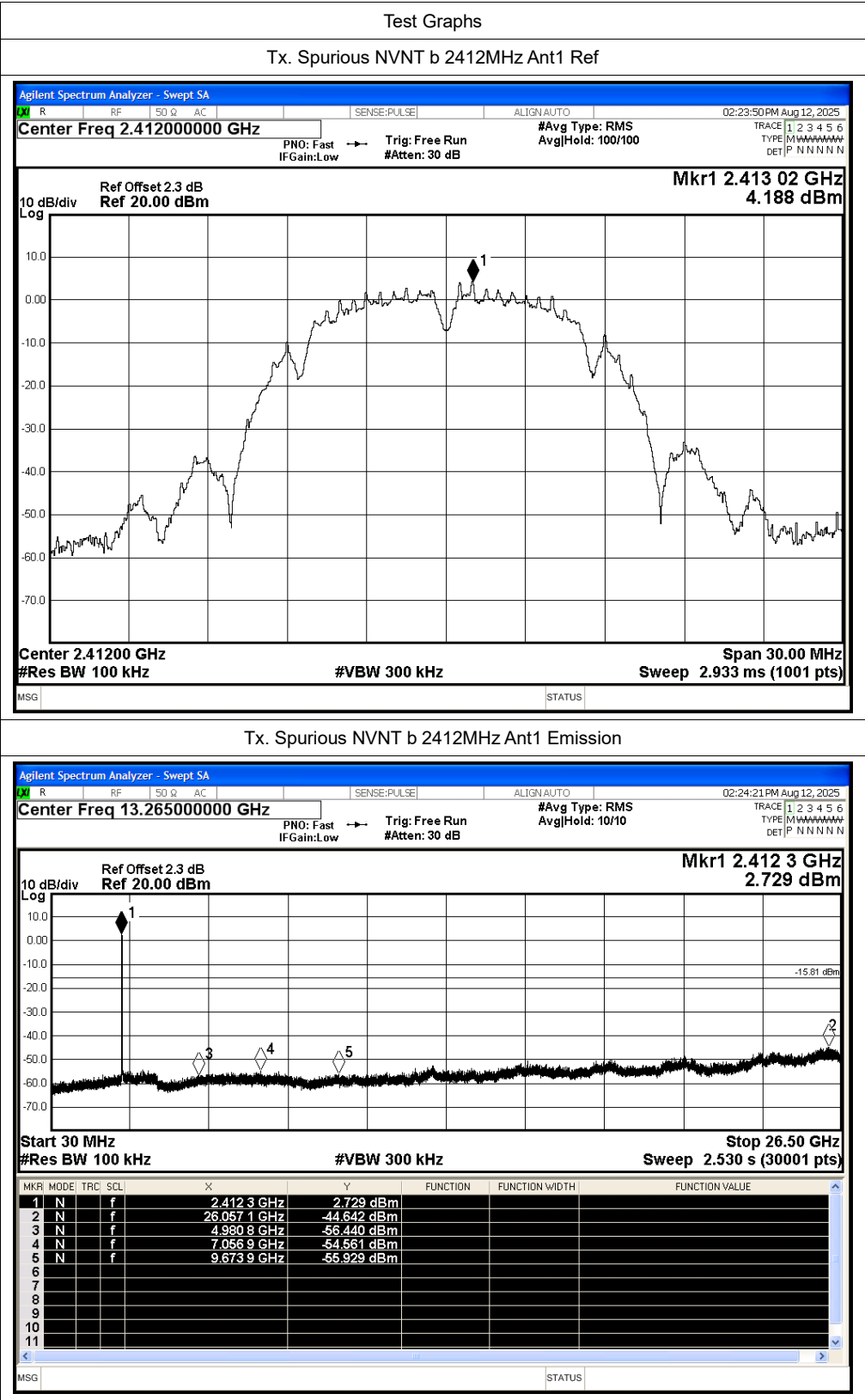


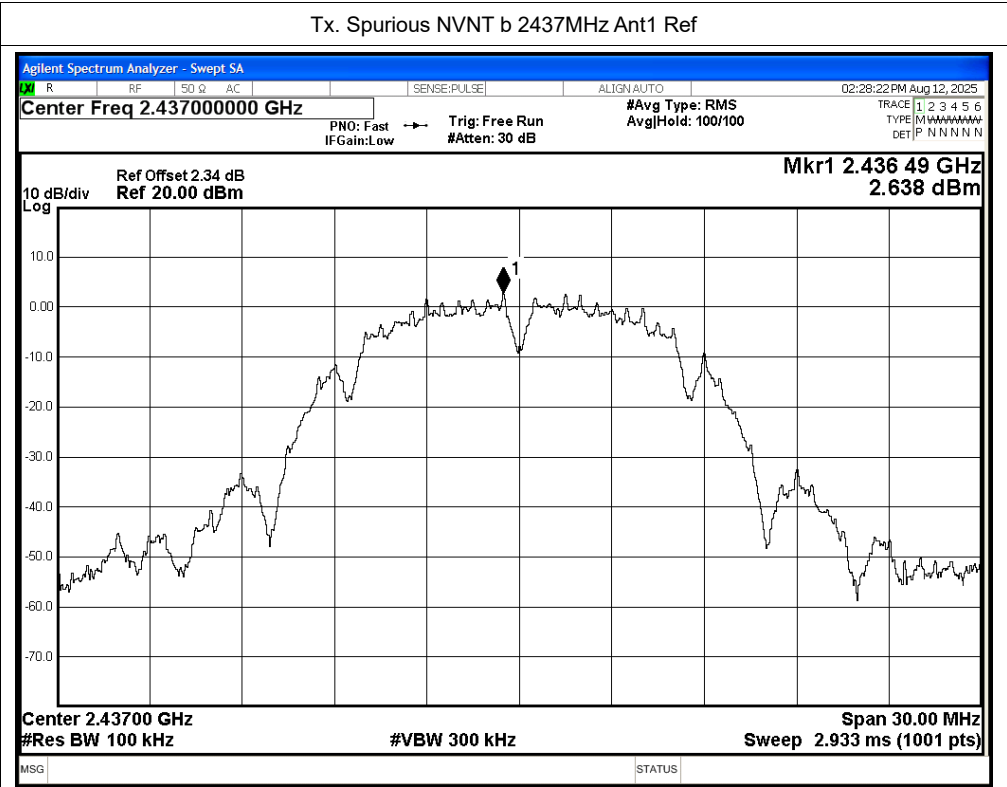




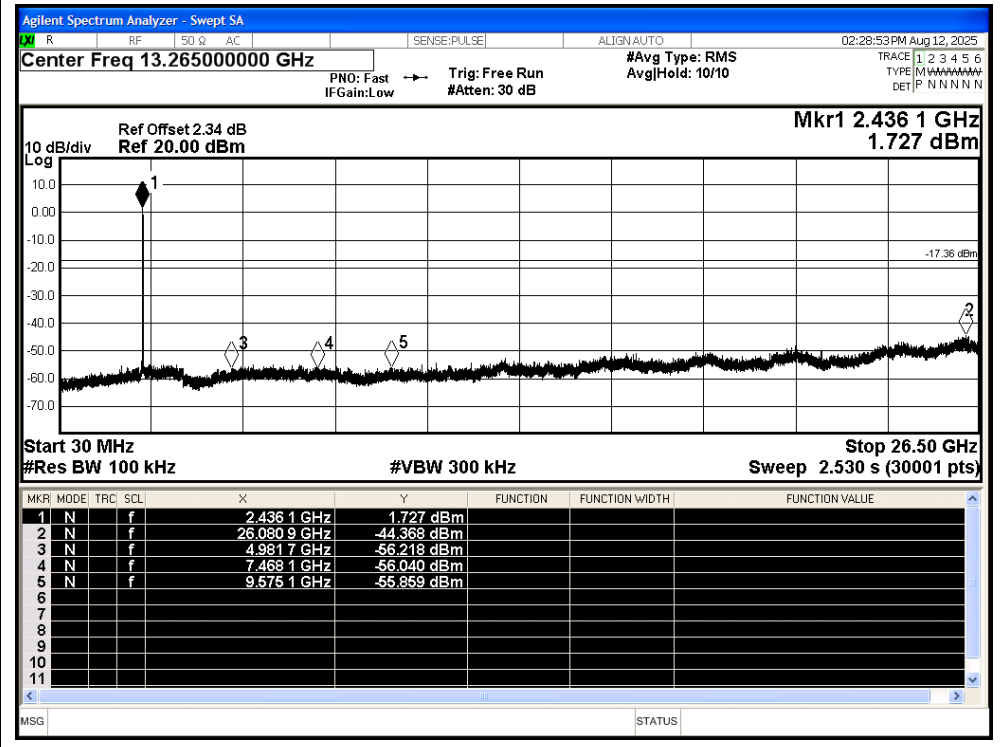
A.5 Conducted RF Spurious Emission

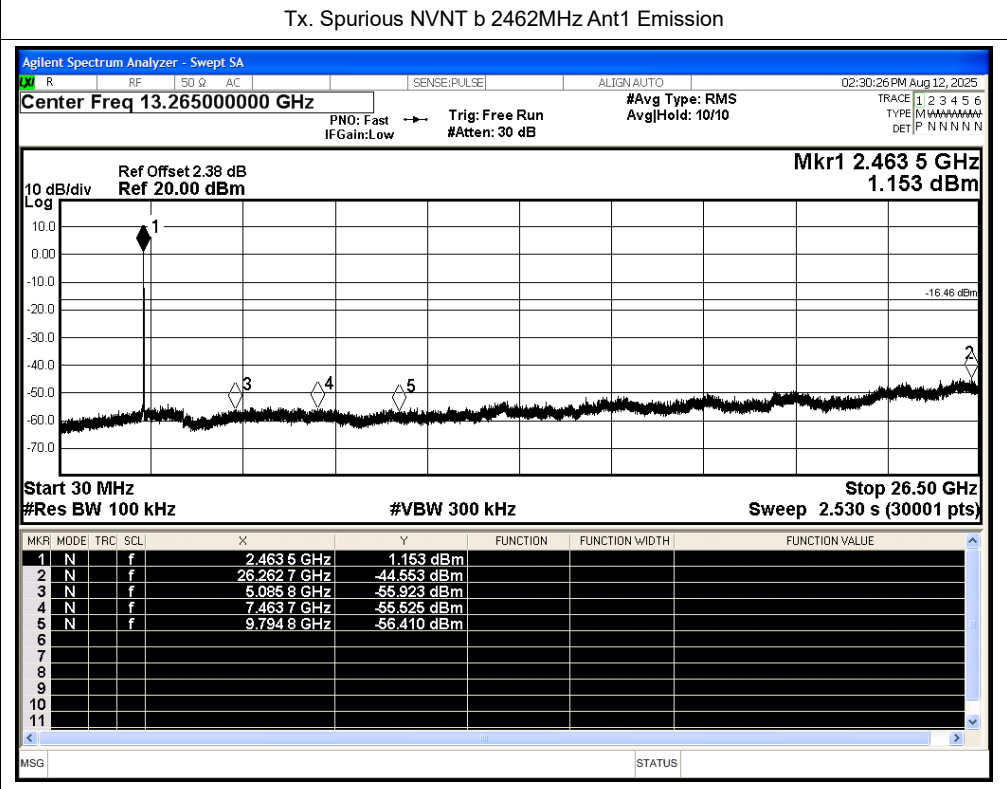
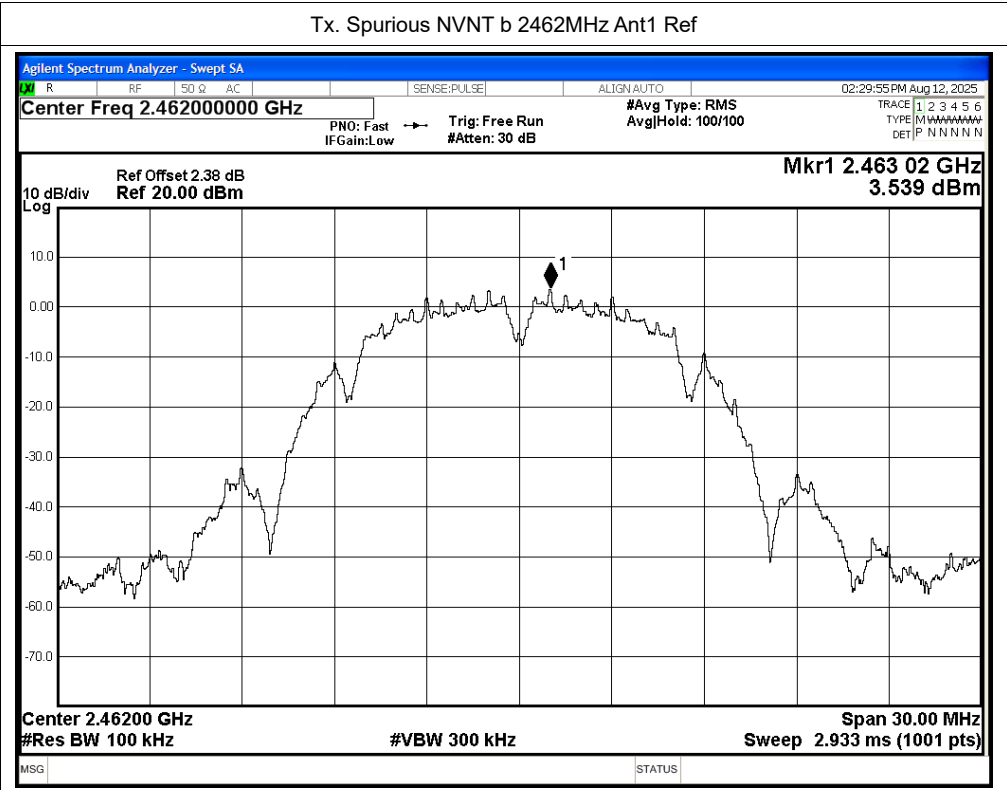
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-48.83	-20	Pass
NVNT	b	2437	Ant1	-47.01	-20	Pass
NVNT	b	2462	Ant1	-48.09	-20	Pass
NVNT	g	2412	Ant1	-43.98	-20	Pass
NVNT	g	2437	Ant1	-42.35	-20	Pass
NVNT	g	2462	Ant1	-42.57	-20	Pass
NVNT	n20	2412	Ant1	-43.52	-20	Pass
NVNT	n20	2437	Ant1	-42.49	-20	Pass
NVNT	n20	2462	Ant1	-41.86	-20	Pass
NVNT	n40	2422	Ant1	-42.96	-20	Pass
NVNT	n40	2437	Ant1	-41.41	-20	Pass
NVNT	n40	2452	Ant1	-42.24	-20	Pass
NVNT	ax20	2412	Ant1	-43.47	-20	Pass
NVNT	ax20	2437	Ant1	-44.1	-20	Pass
NVNT	ax20	2462	Ant1	-43.4	-20	Pass
NVNT	ax40	2422	Ant1	-41.13	-20	Pass
NVNT	ax40	2437	Ant1	-40.23	-20	Pass
NVNT	ax40	2452	Ant1	-40.33	-20	Pass

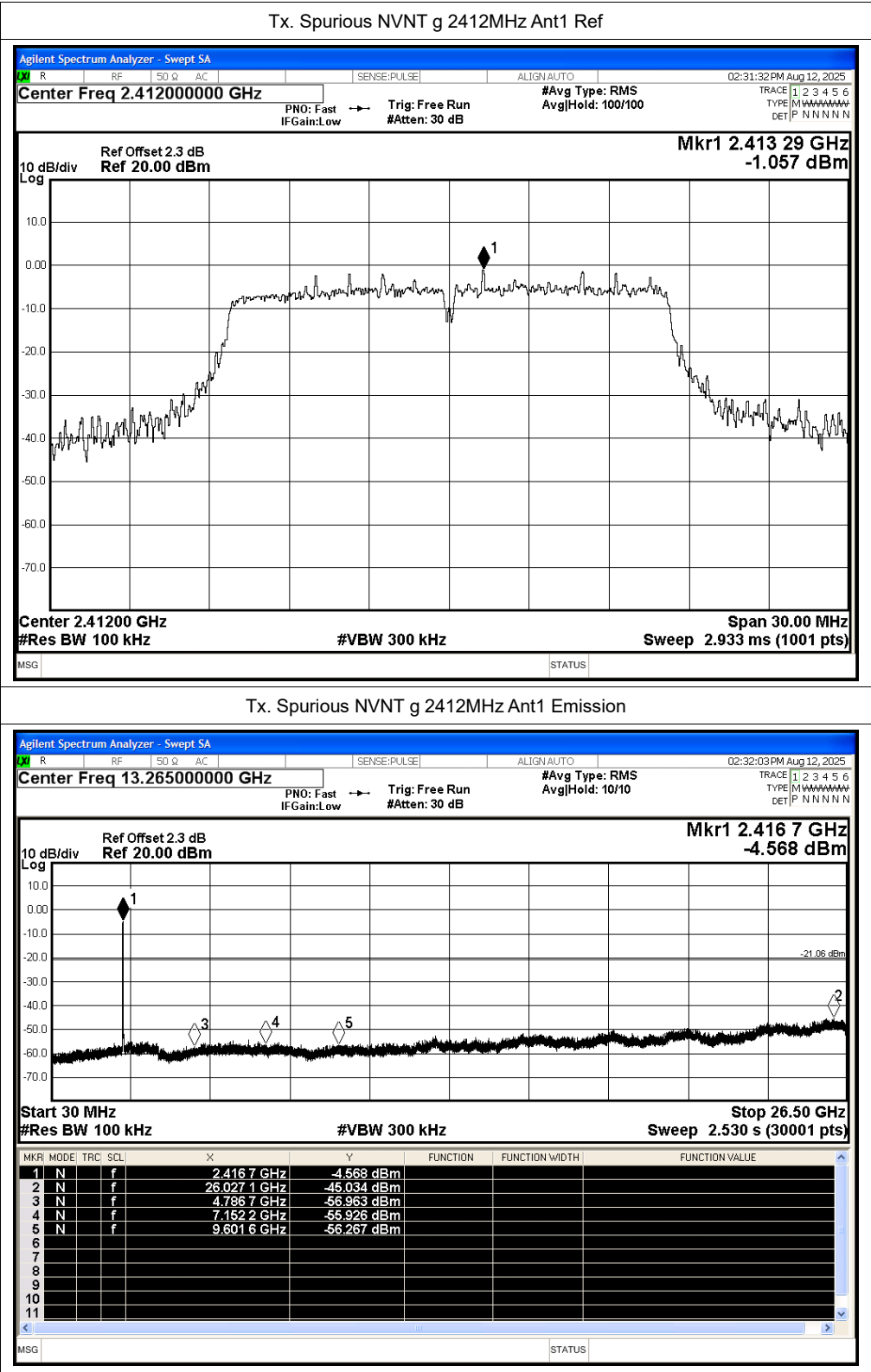


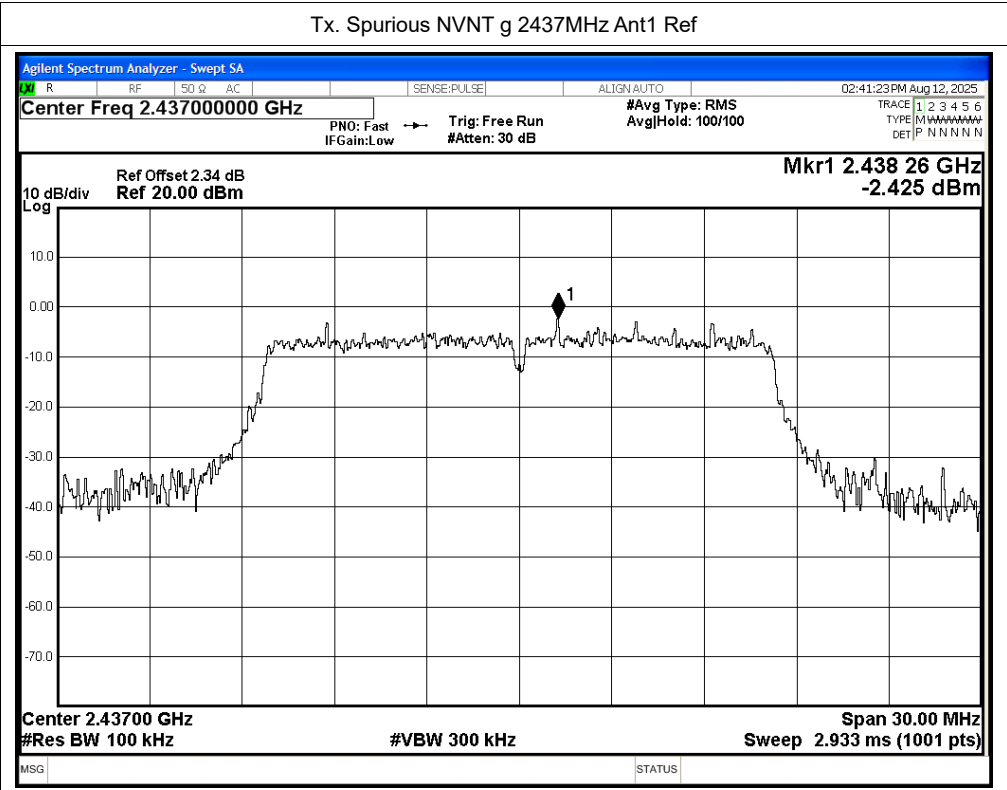


Tx. Spurious NVNT b 2437MHz Ant1 Emission

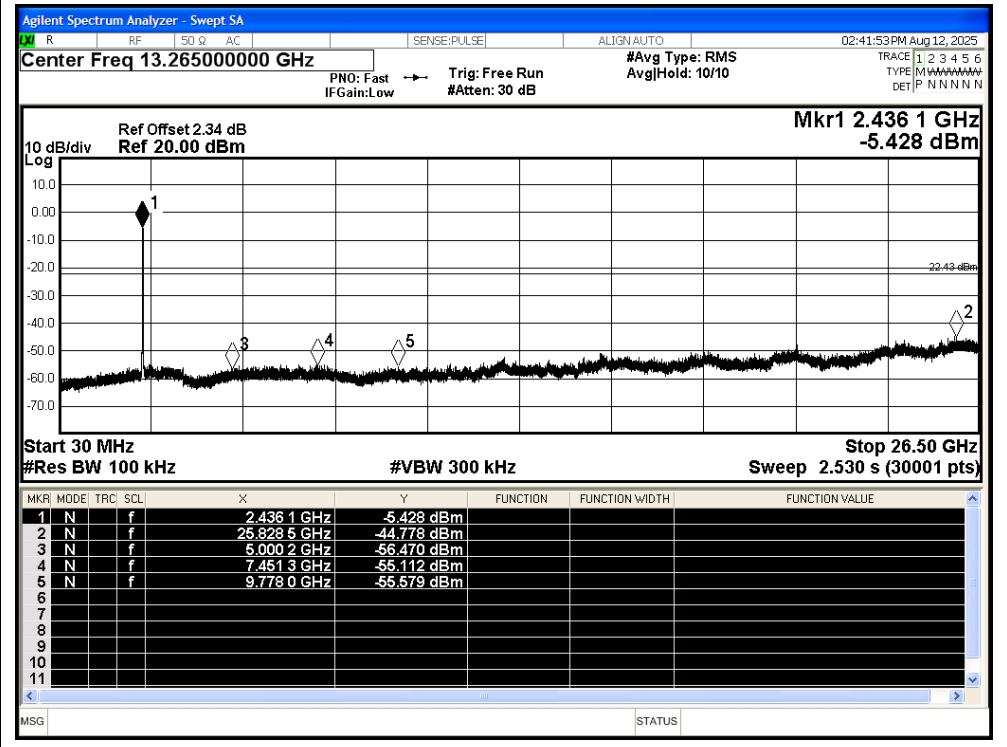


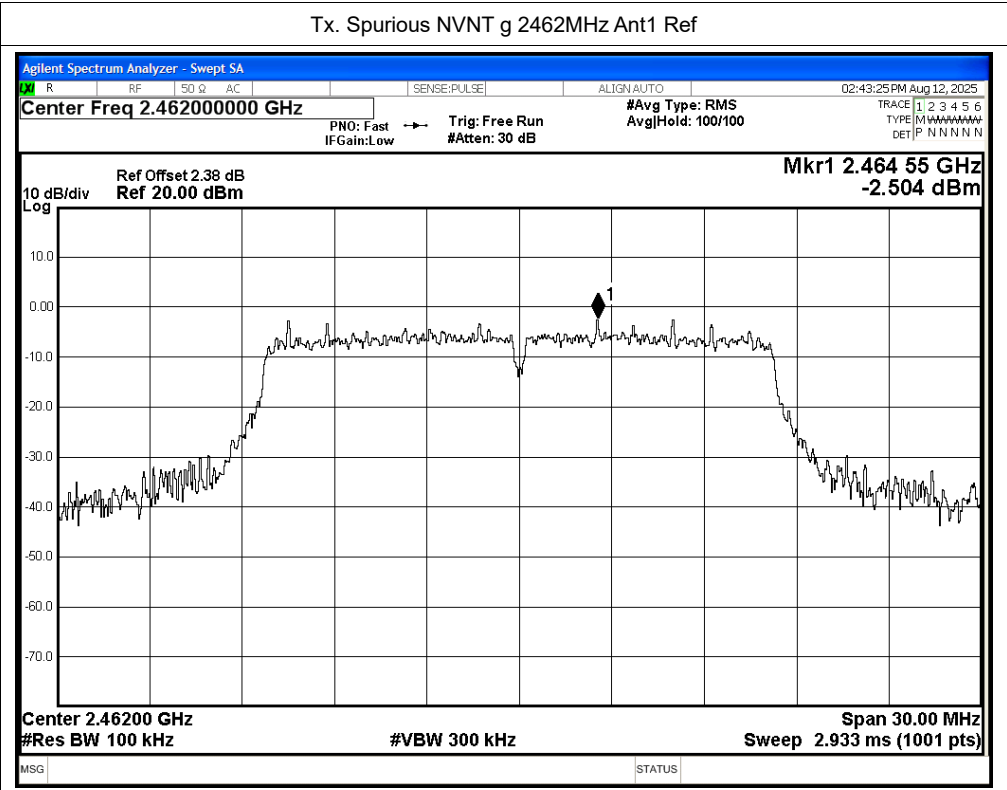




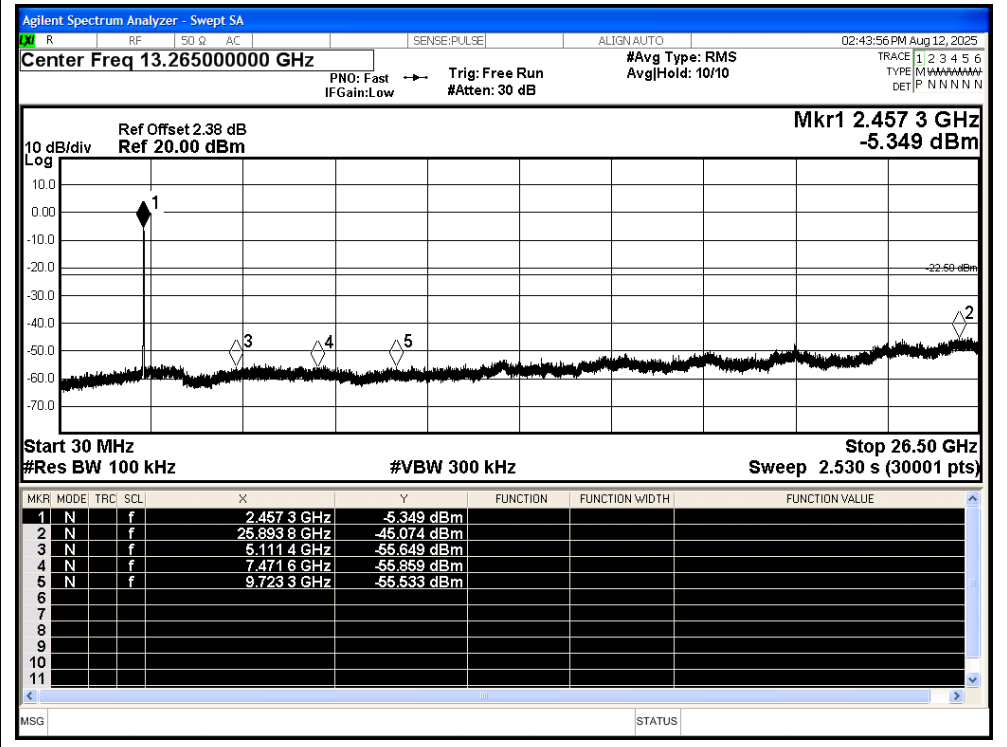


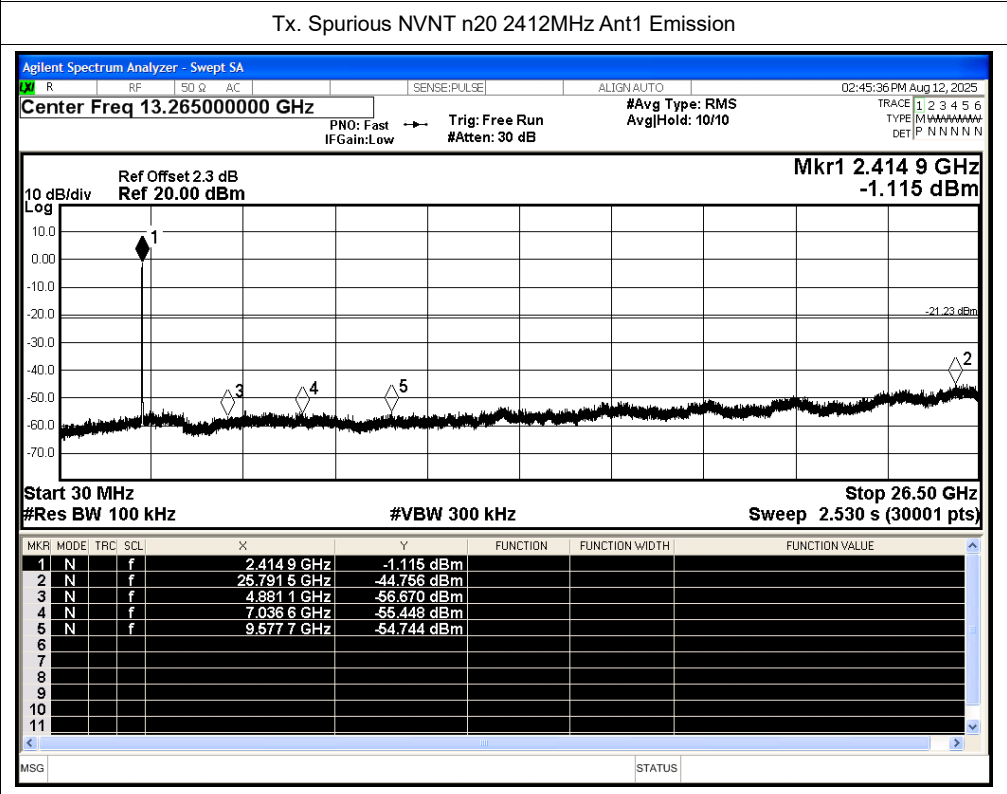
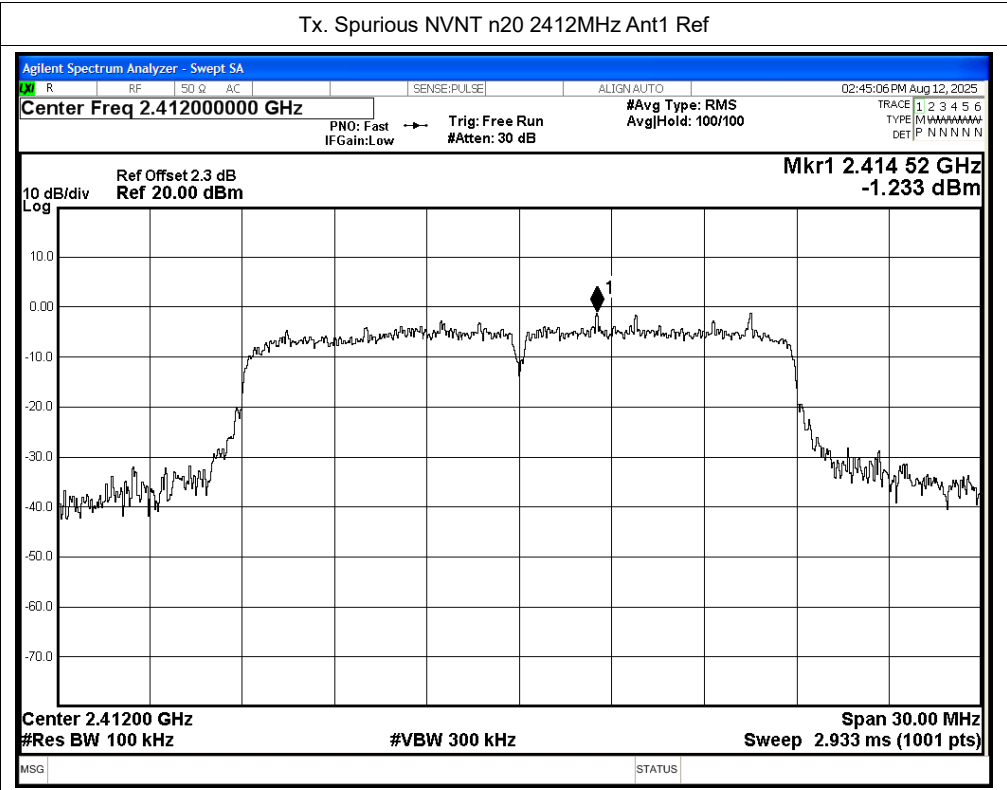
Tx. Spurious NVNT g 2437MHz Ant1 Emission



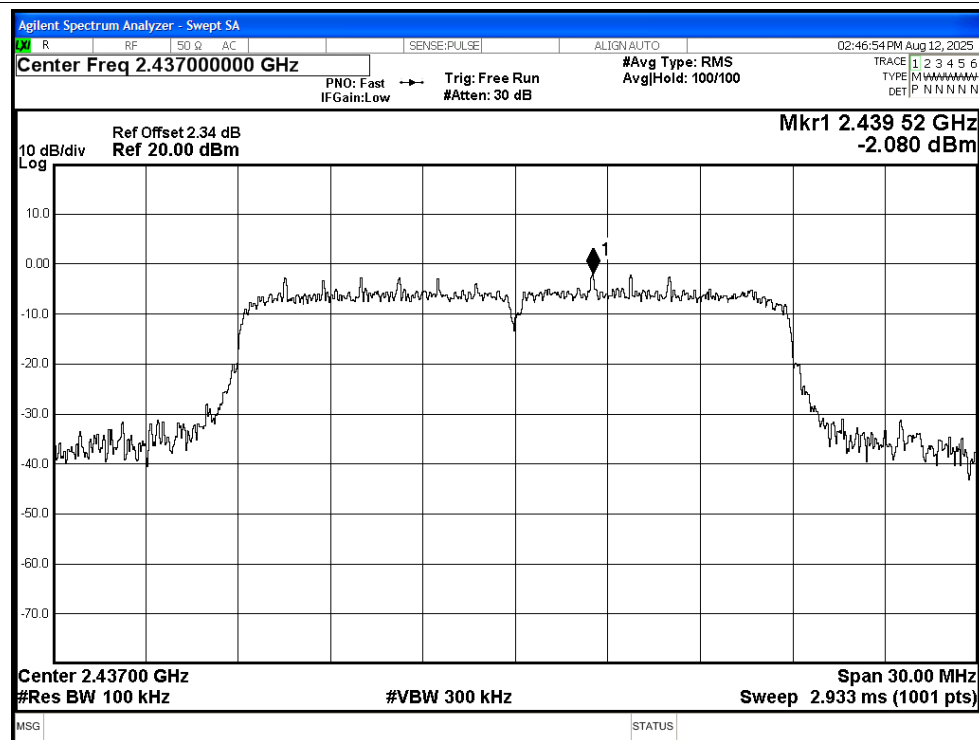


Tx. Spurious NVNT g 2462MHz Ant1 Emission

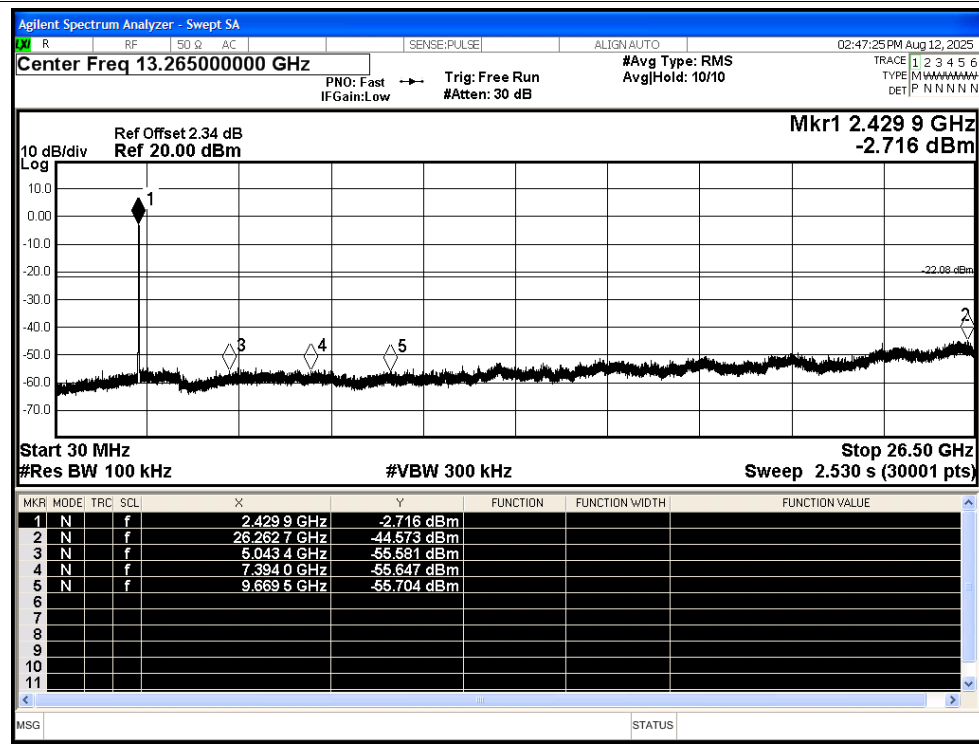




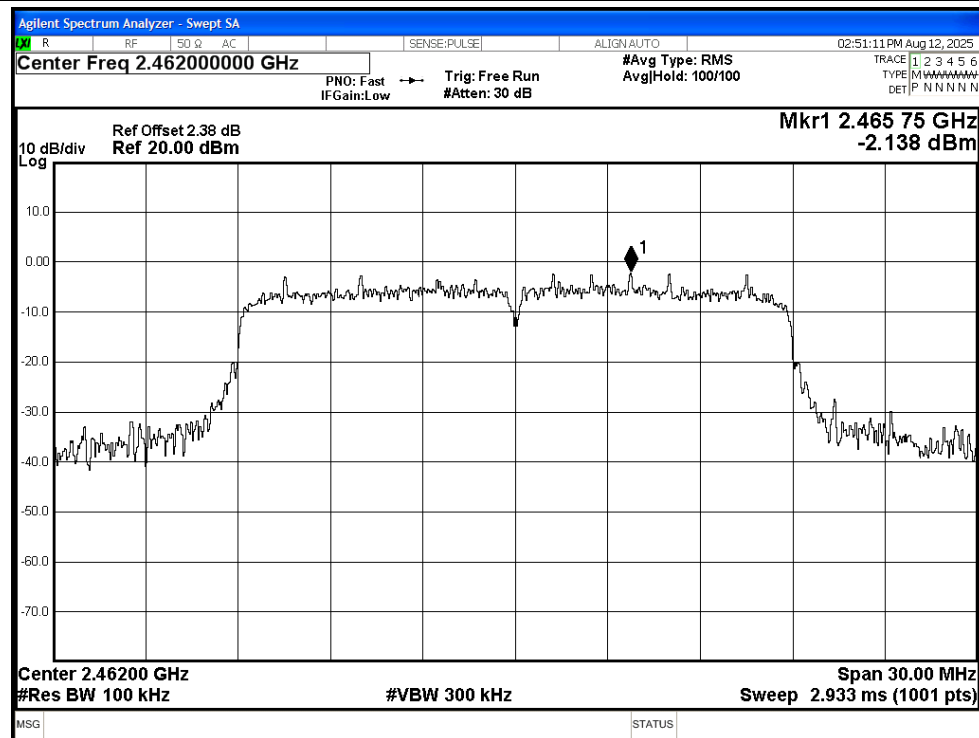
Tx. Spurious NVNT n20 2437MHz Ant1 Ref



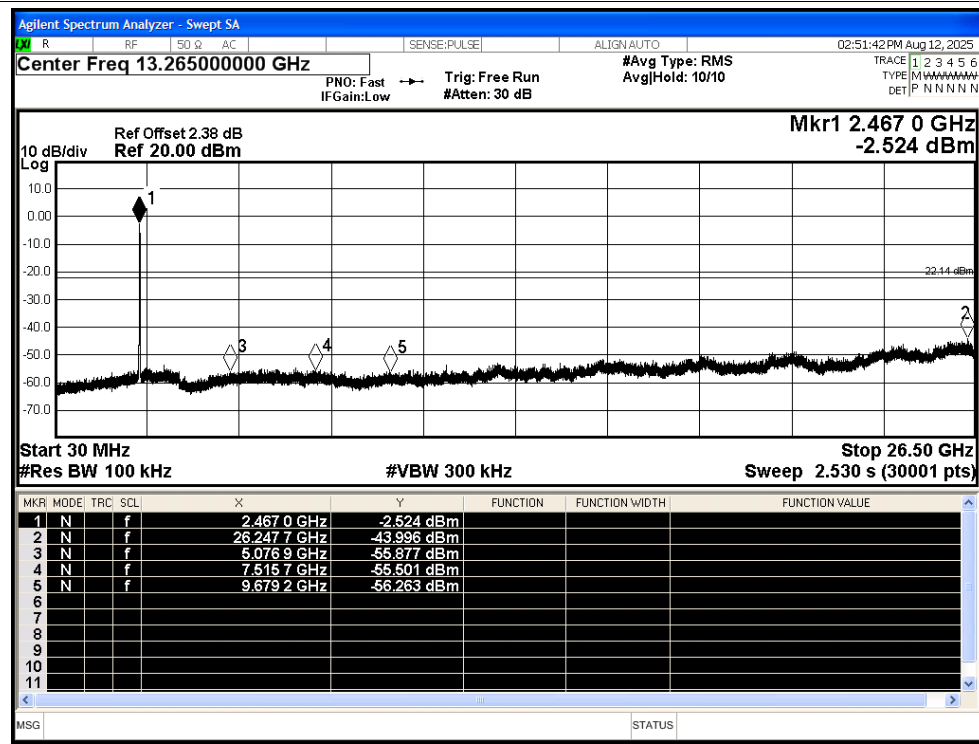
Tx. Spurious NVNT n20 2437MHz Ant1 Emission



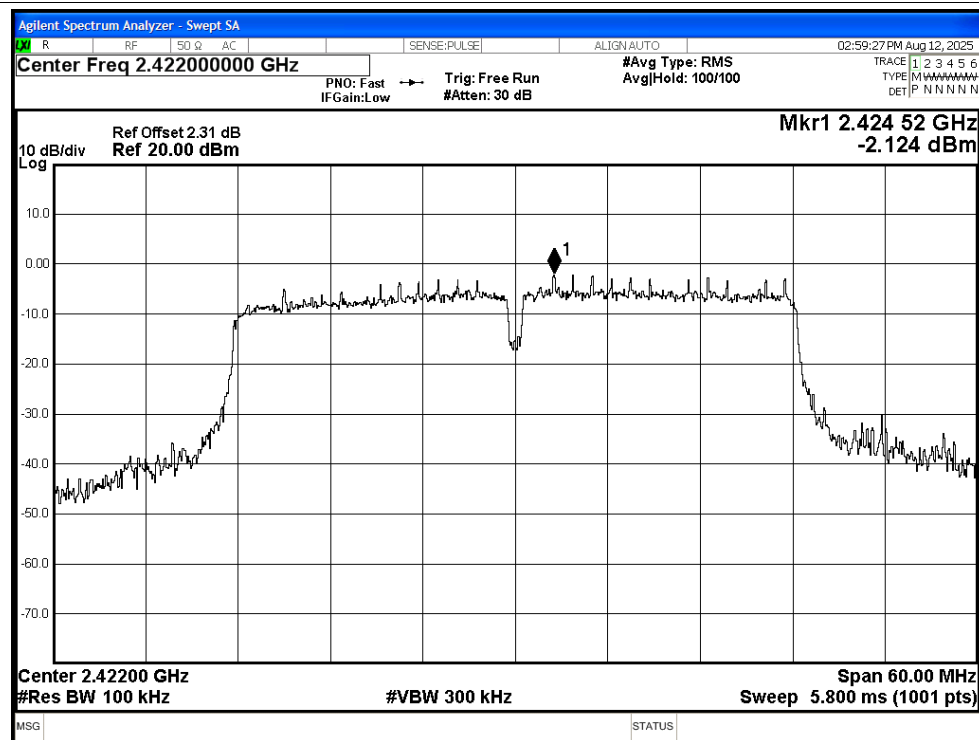
Tx. Spurious NVNT n20 2462MHz Ant1 Ref



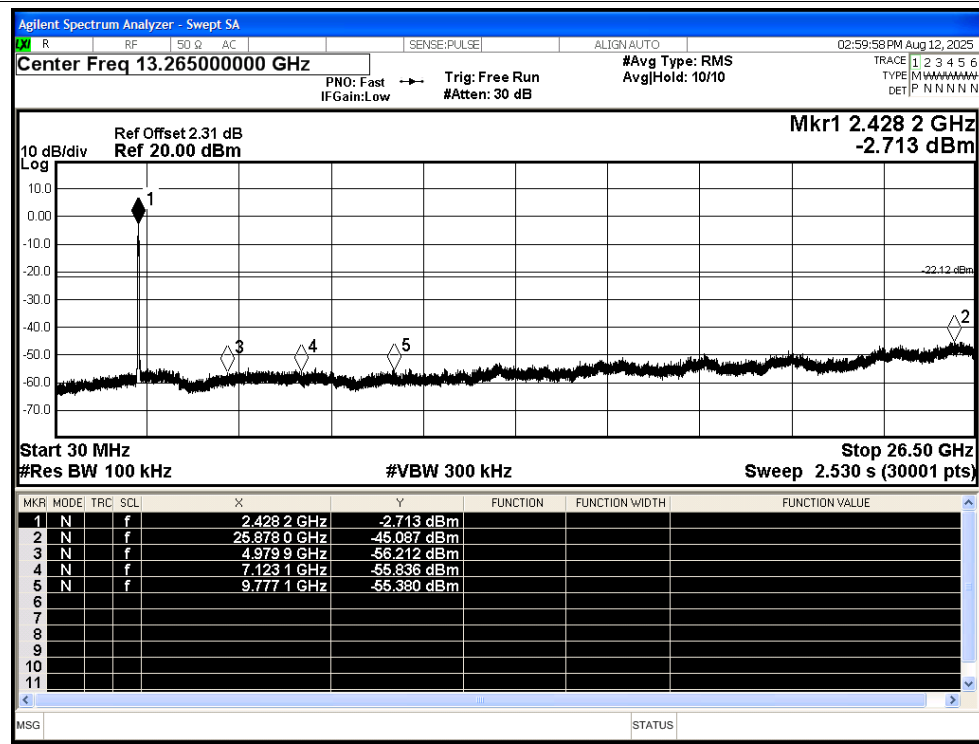
Tx. Spurious NVNT n20 2462MHz Ant1 Emission



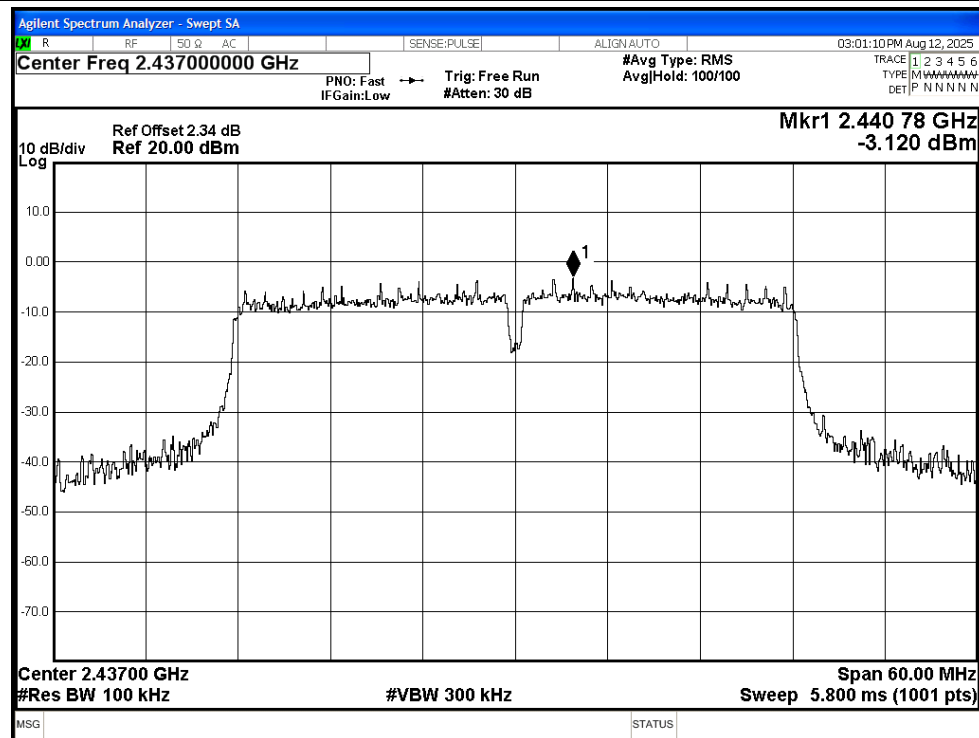
Tx. Spurious NVNT n40 2422MHz Ant1 Ref



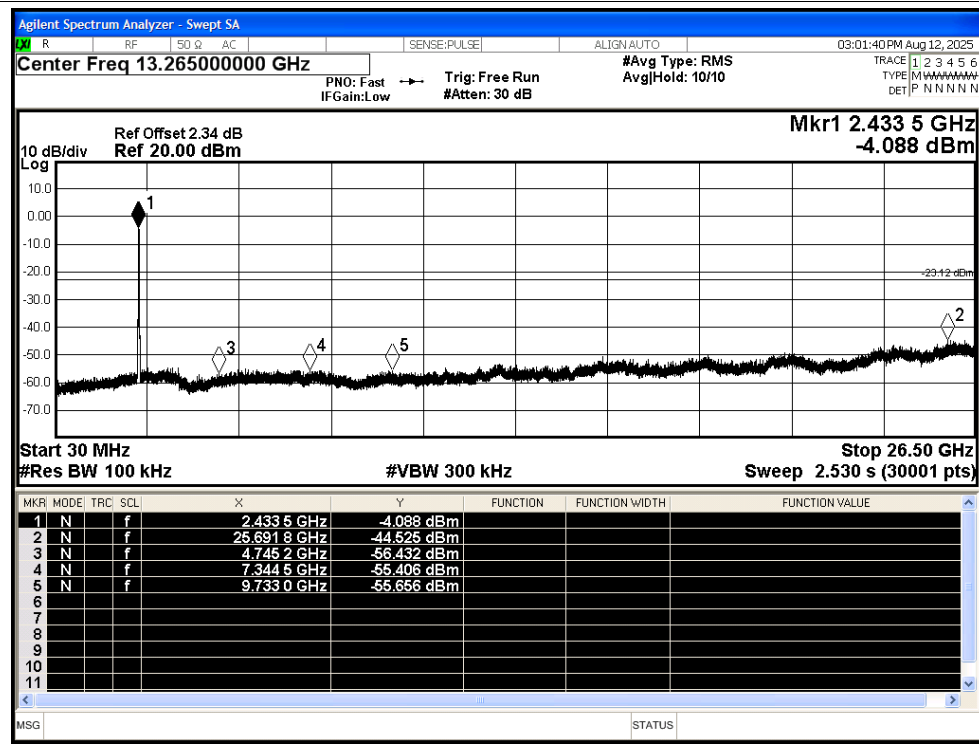
Tx. Spurious NVNT n40 2422MHz Ant1 Emission

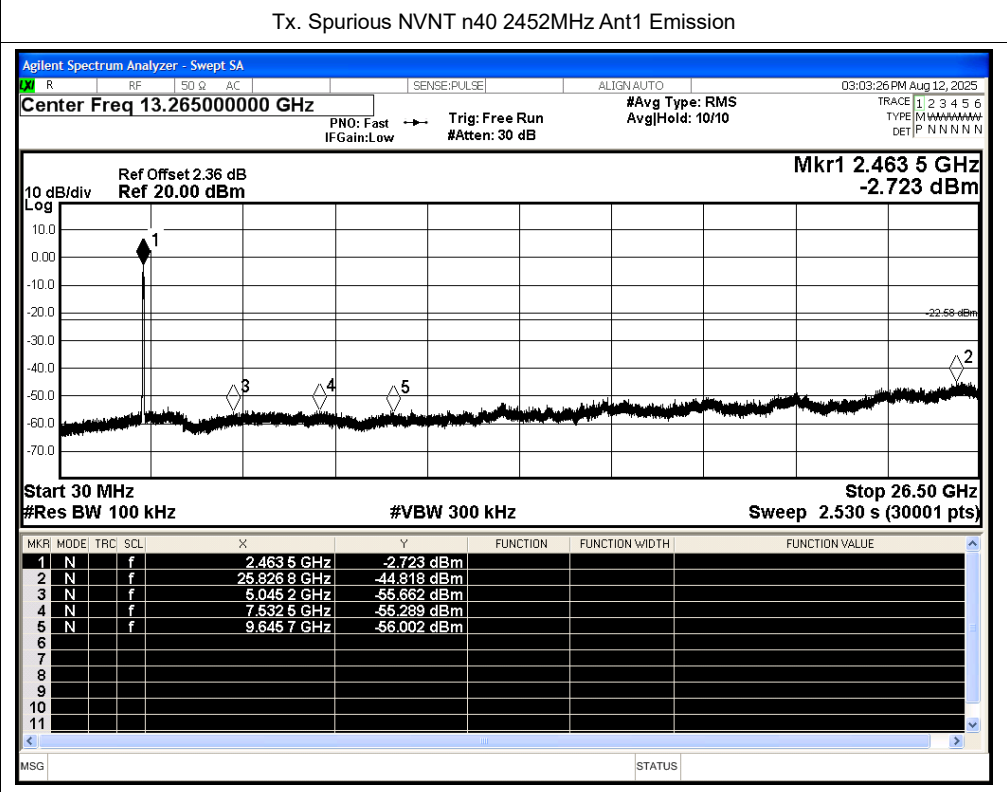
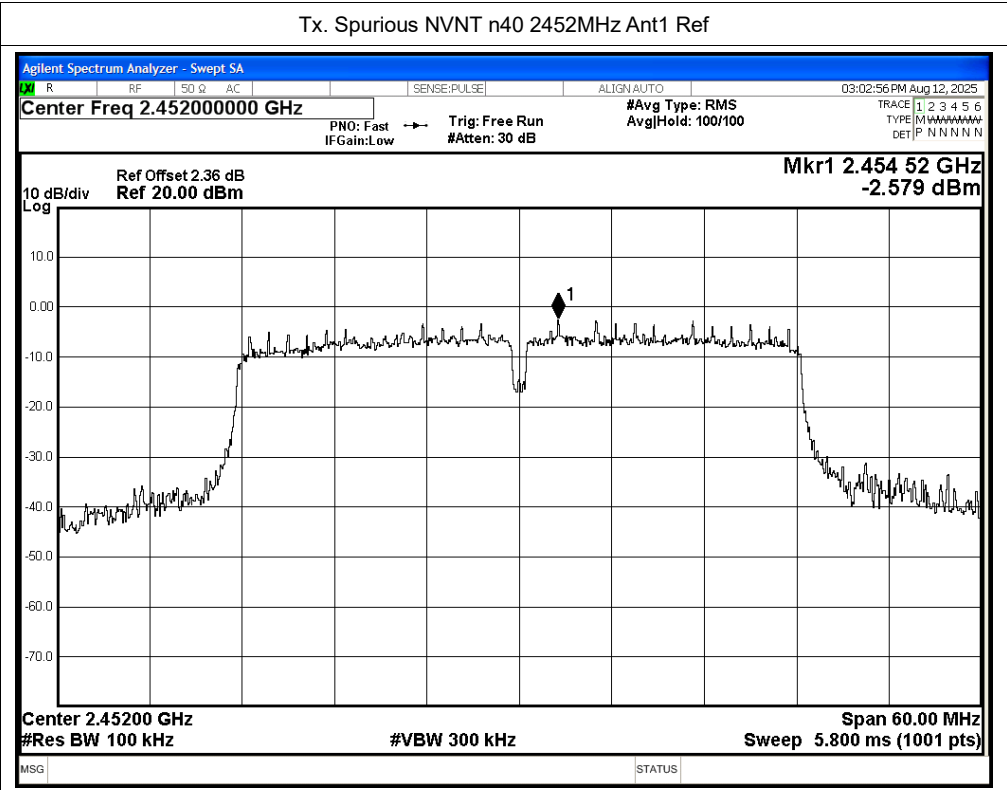


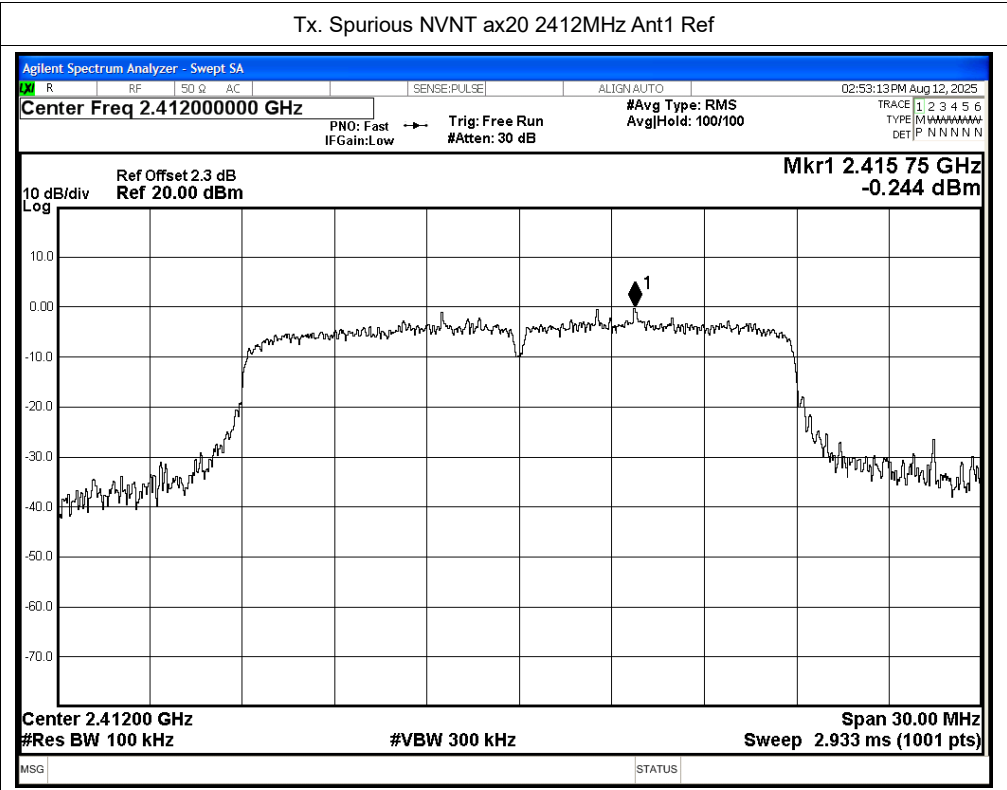
Tx. Spurious NVNT n40 2437MHz Ant1 Ref



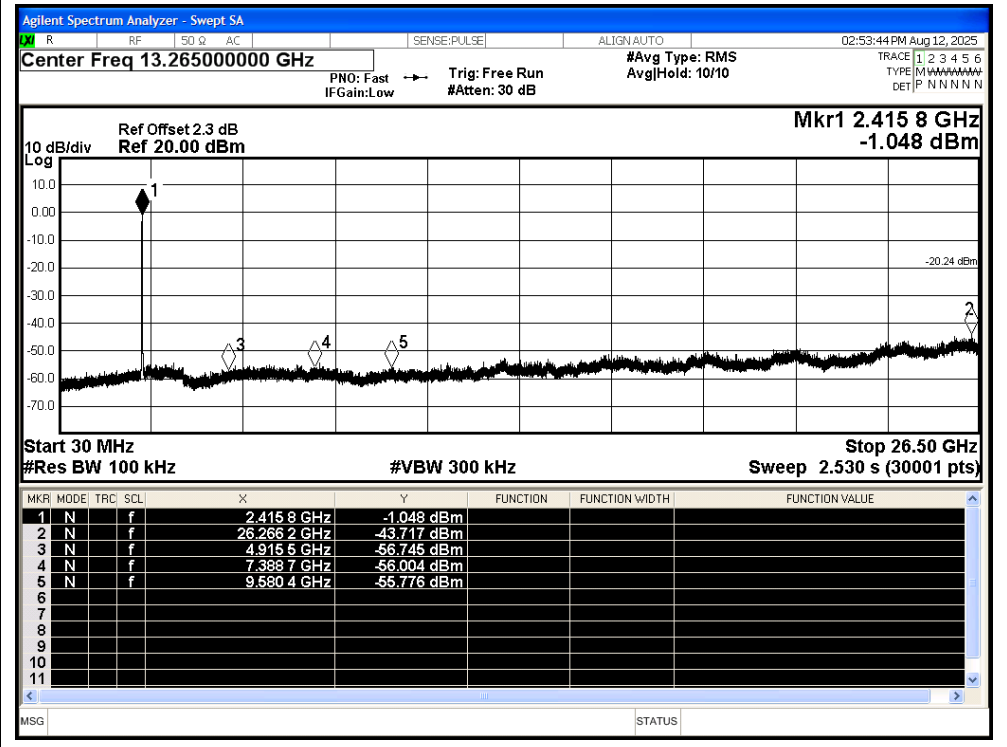
Tx. Spurious NVNT n40 2437MHz Ant1 Emission

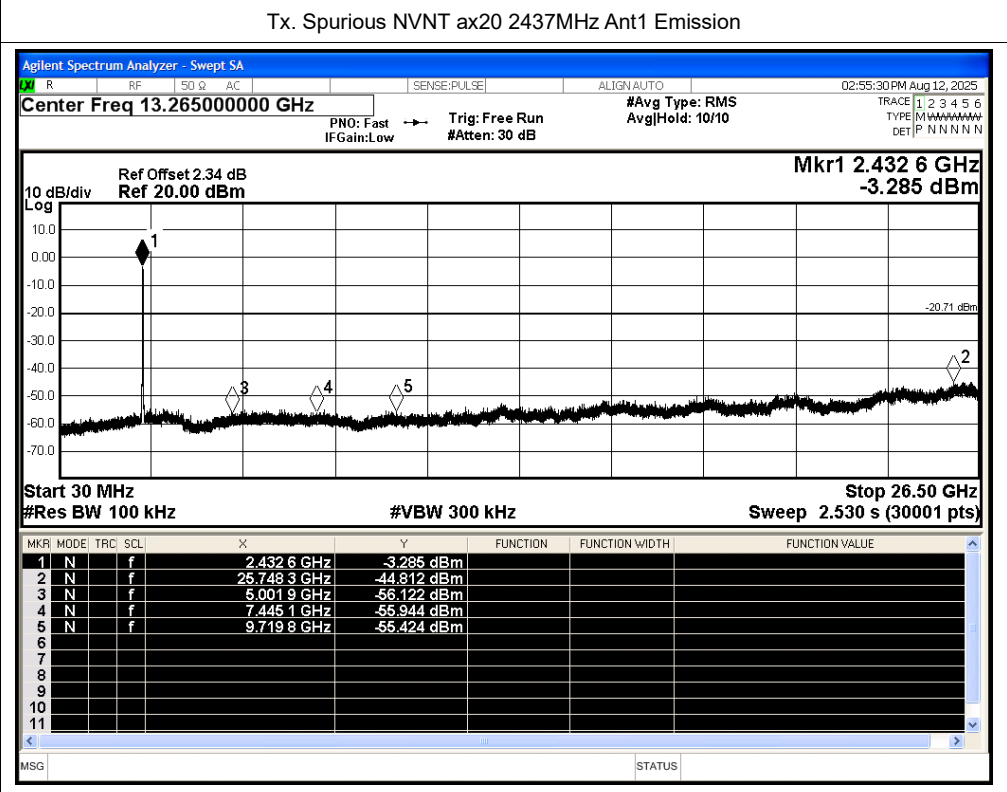
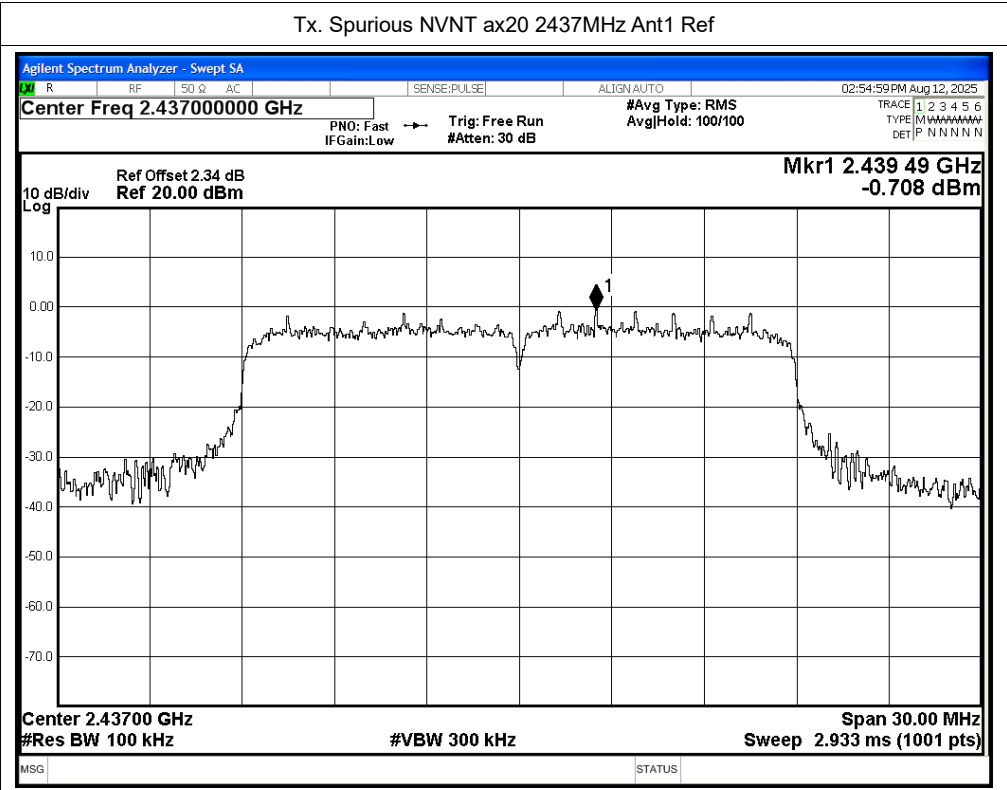


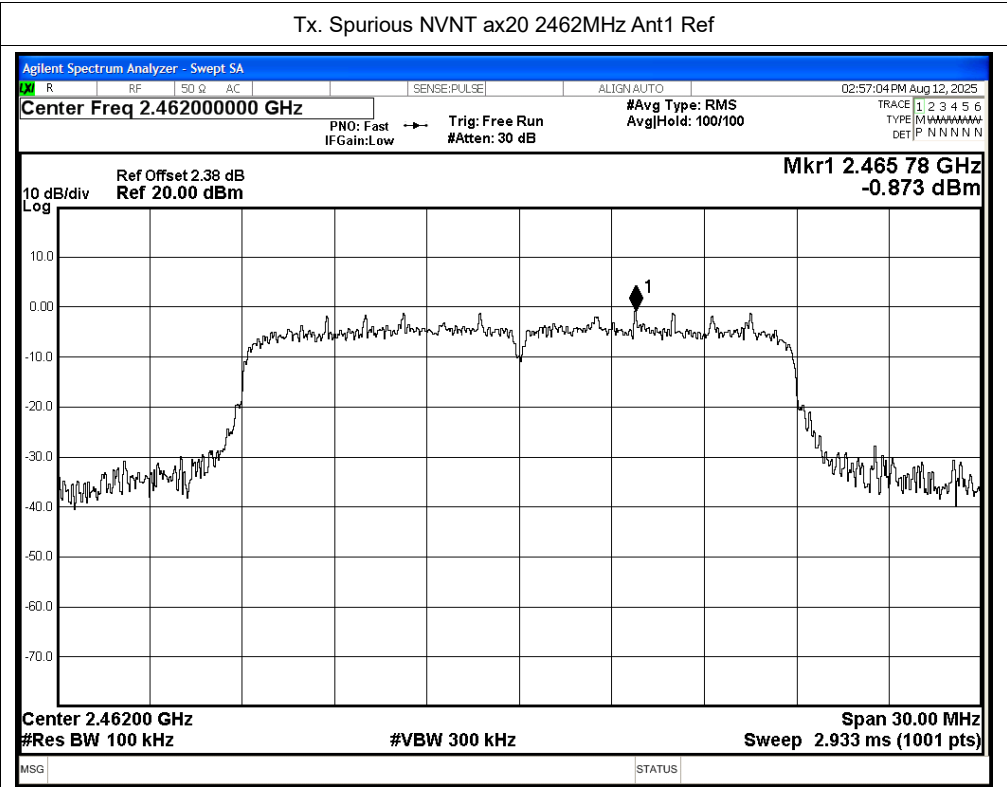




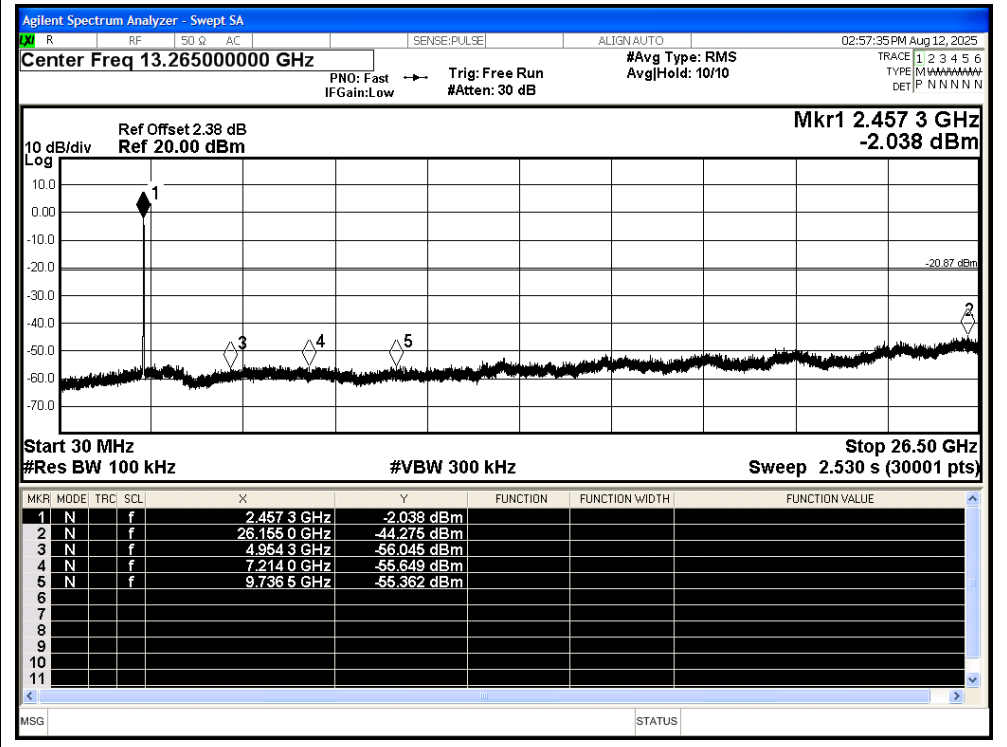
Tx. Spurious NVNT ax20 2412MHz Ant1 Emission

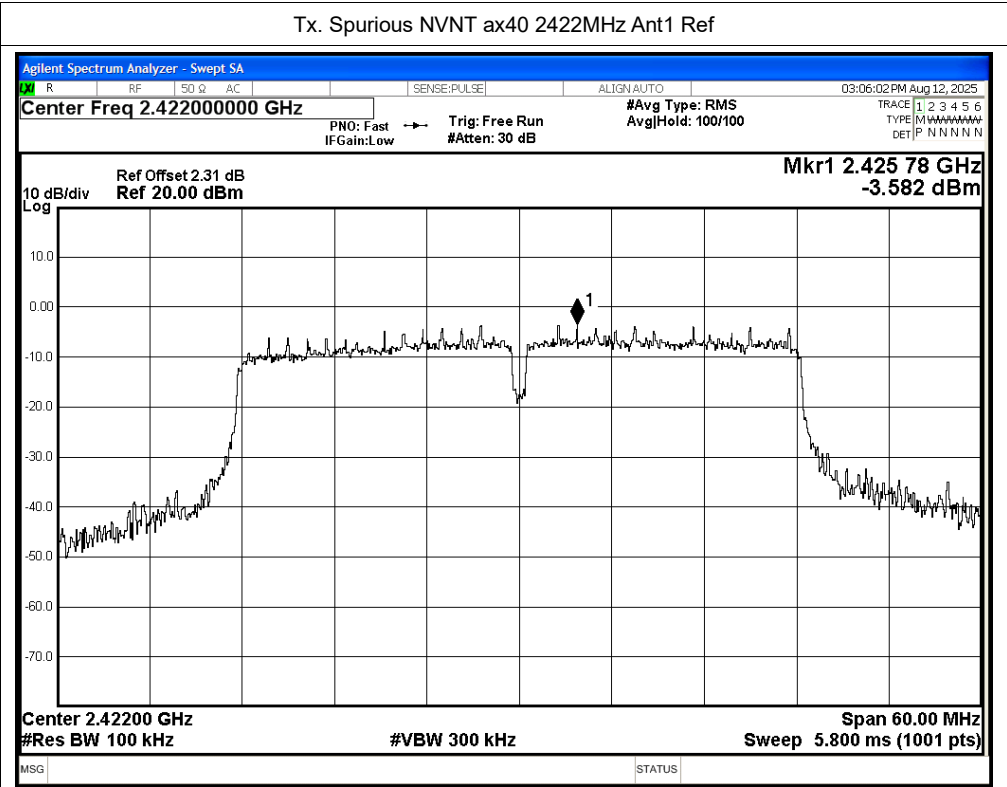


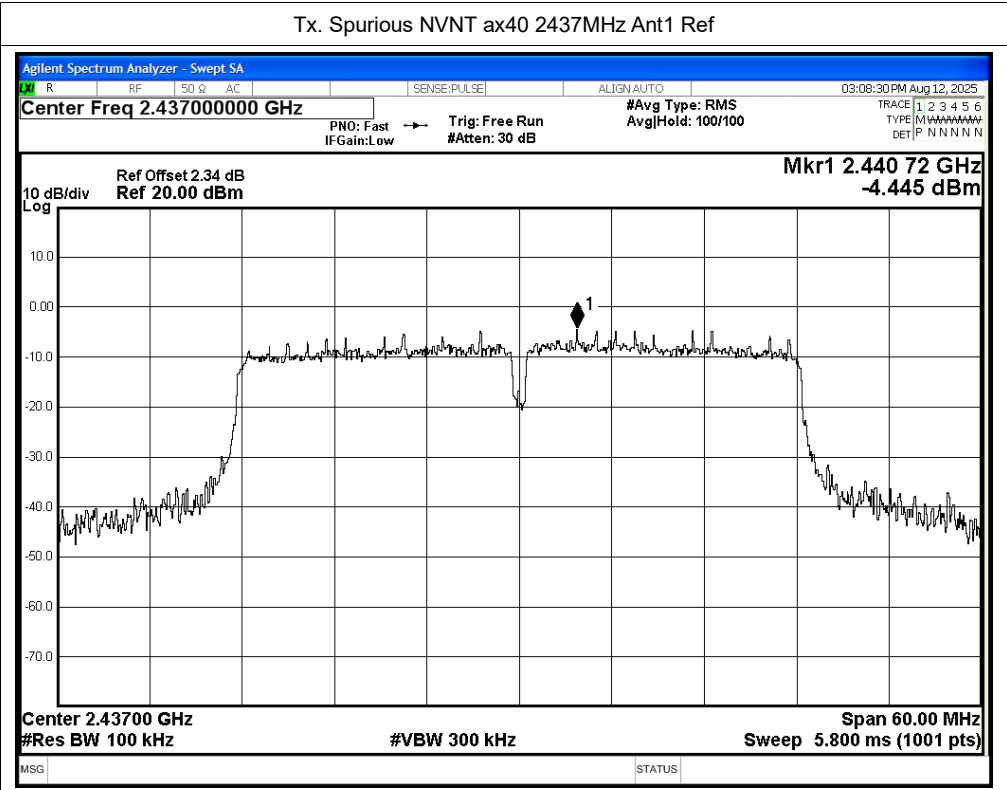




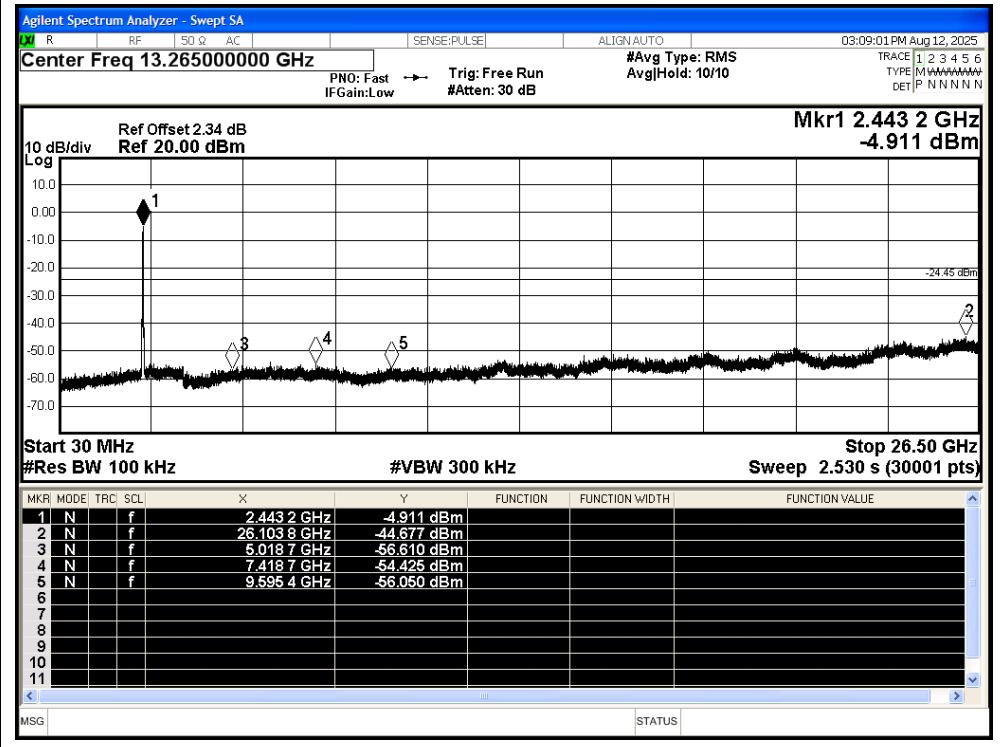
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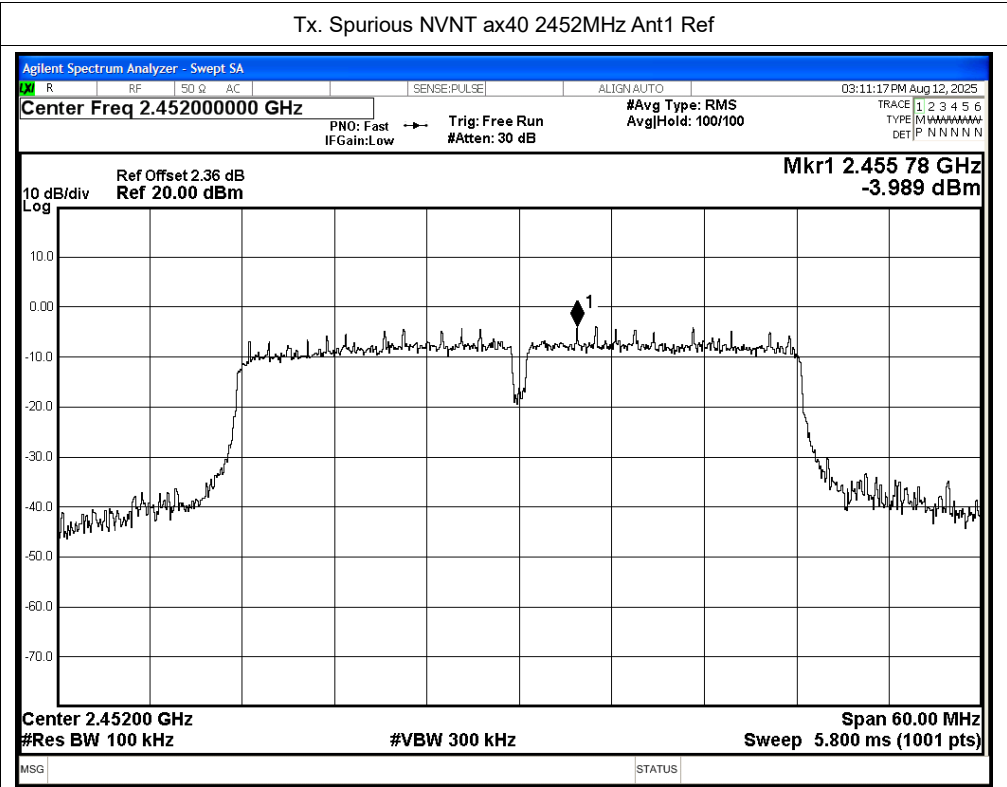




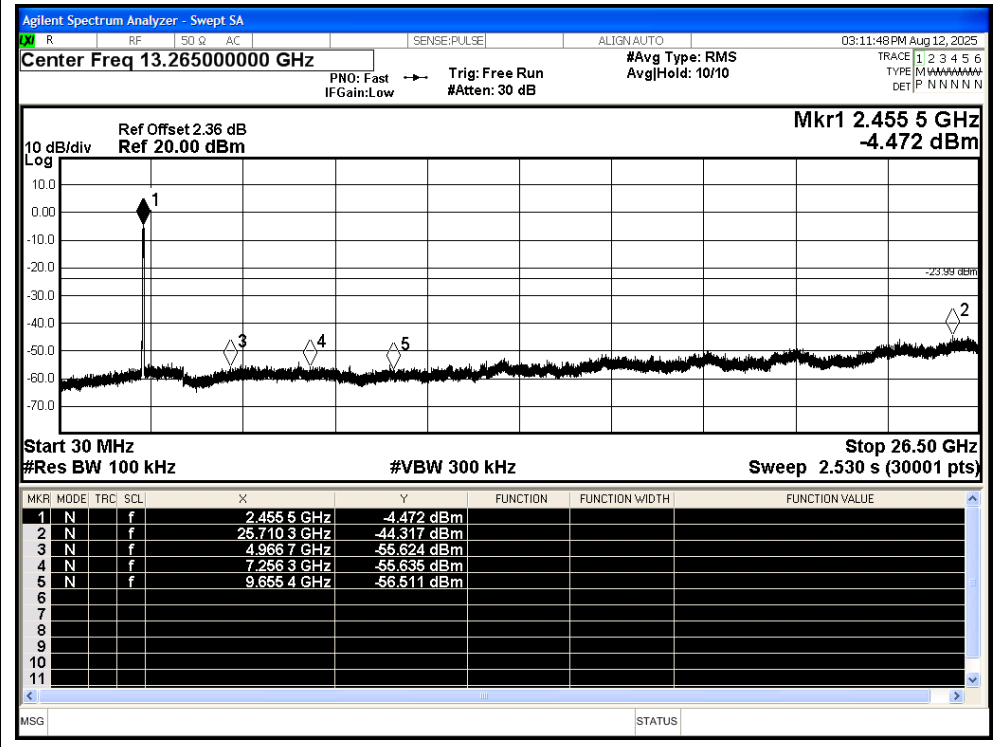


Tx. Spurious NVNT ax40 2437MHz Ant1 Emission



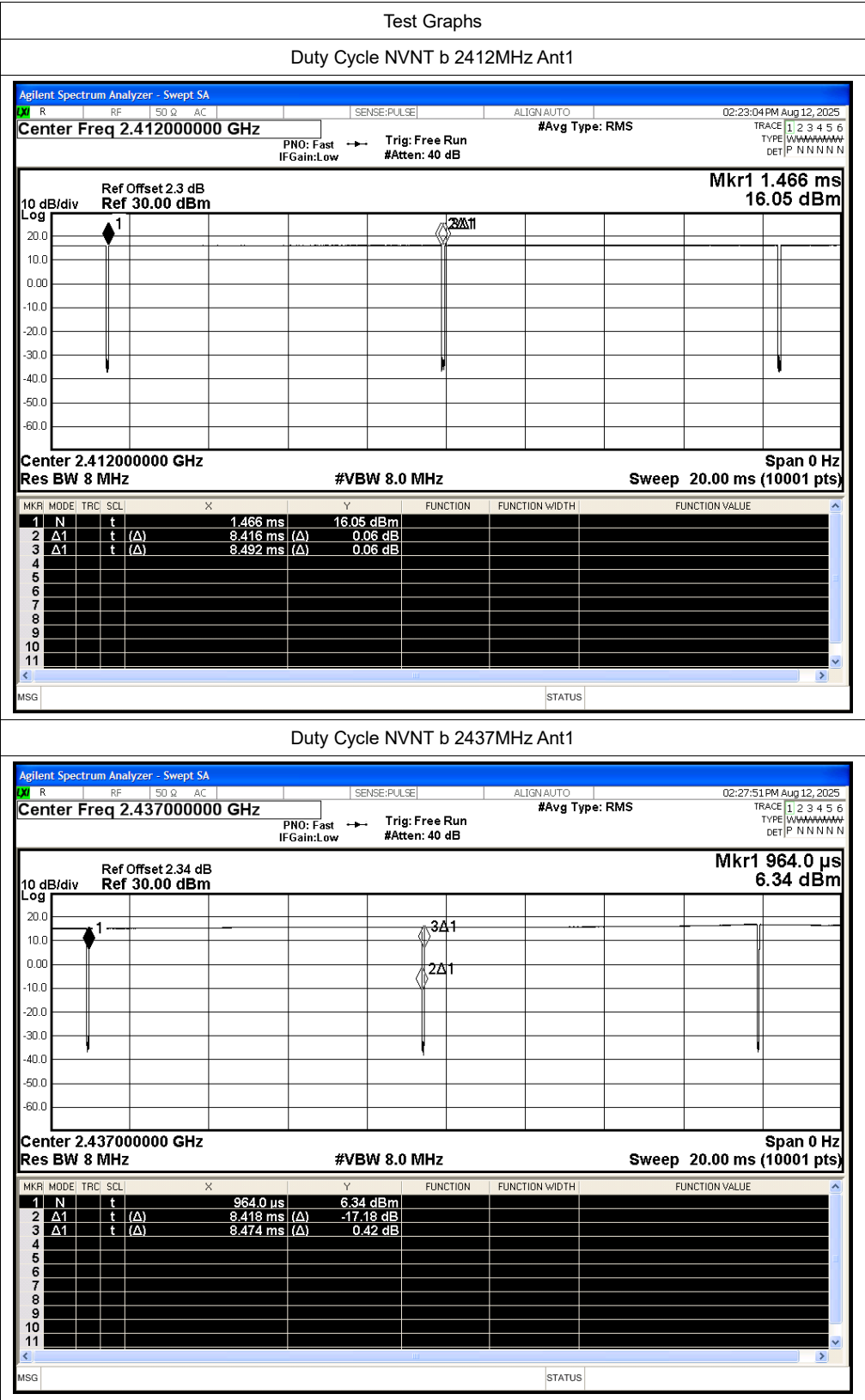


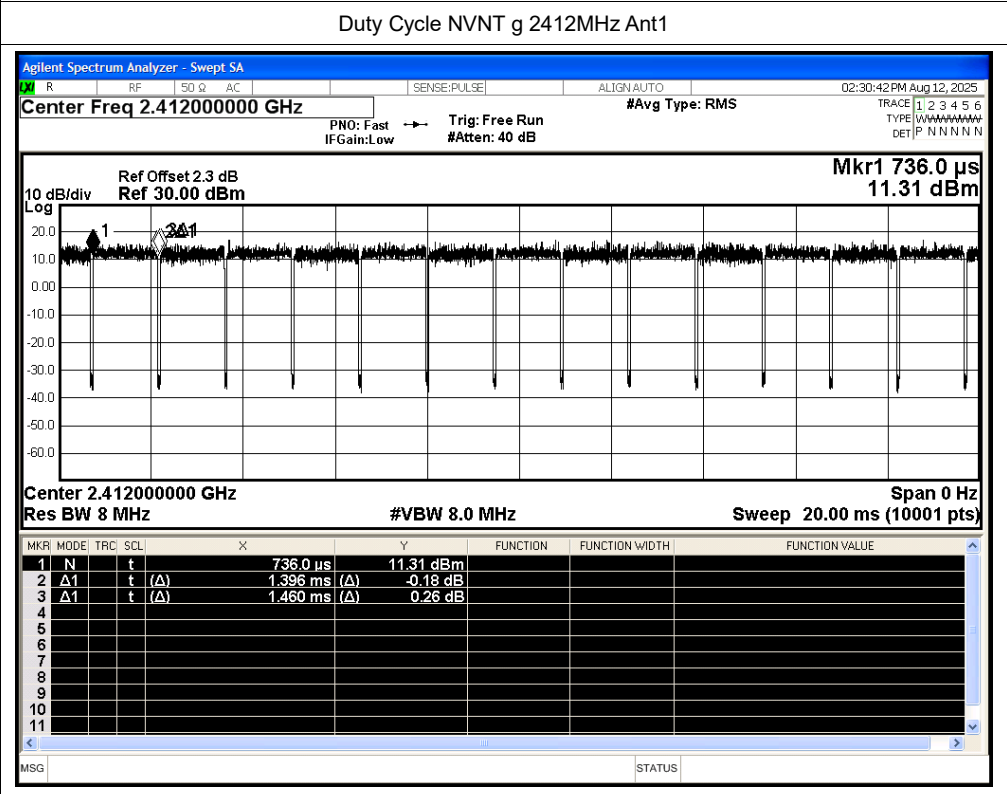
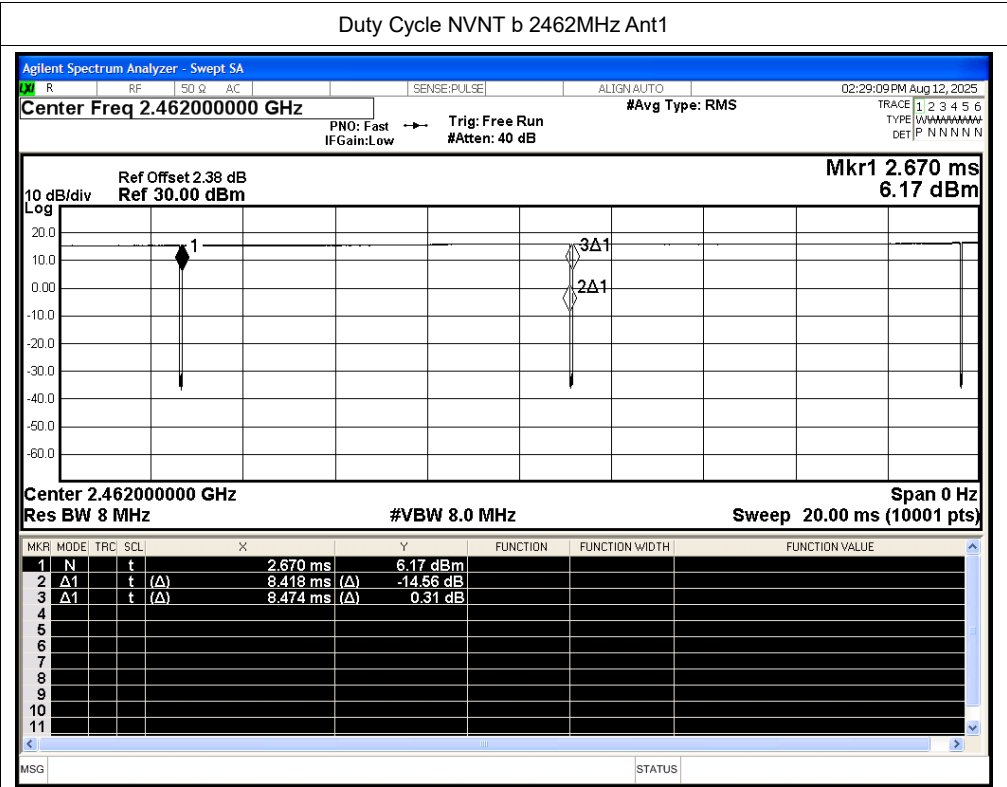
Tx. Spurious NVNT ax40 2452MHz Ant1 Emission

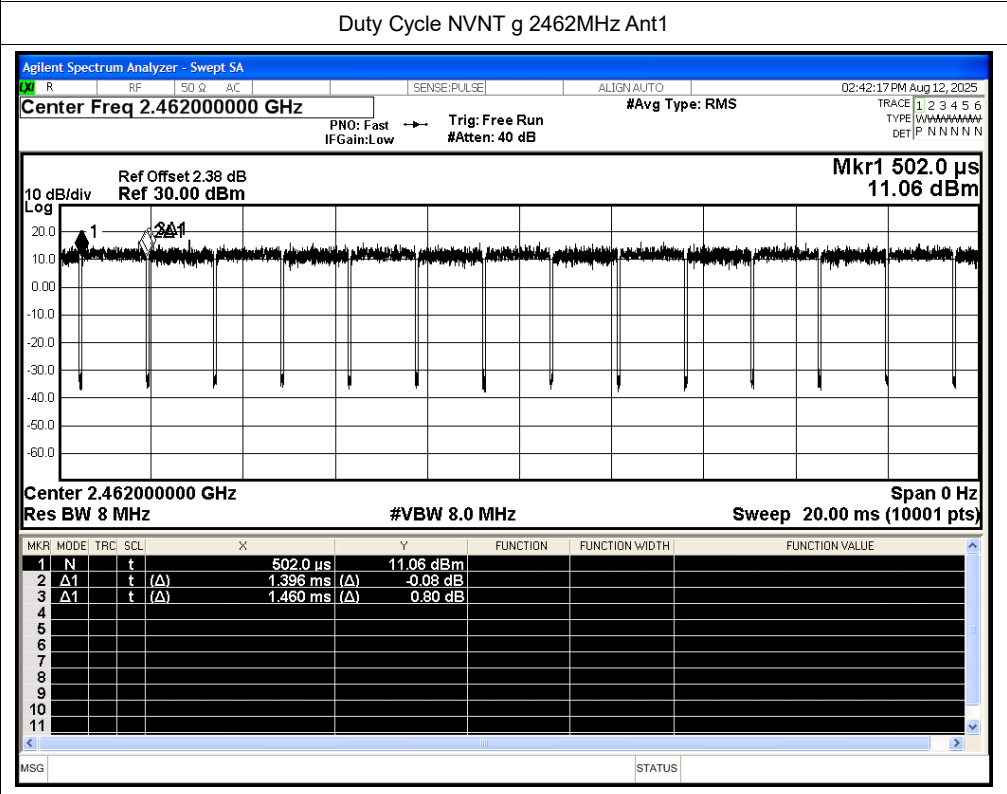
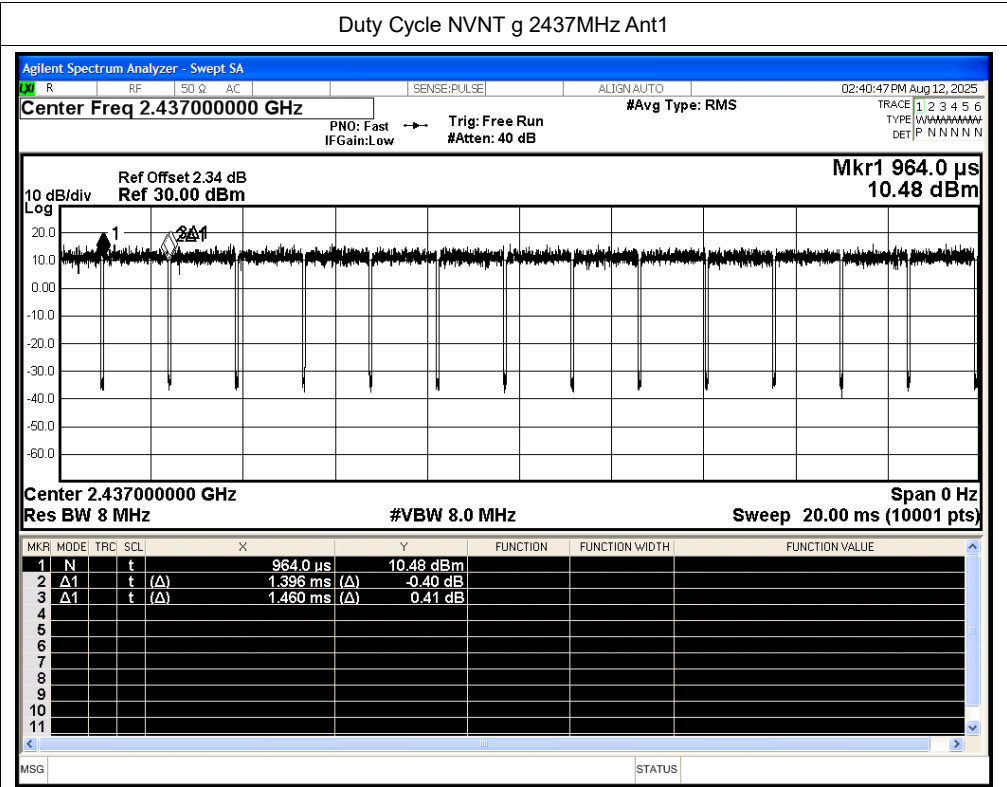


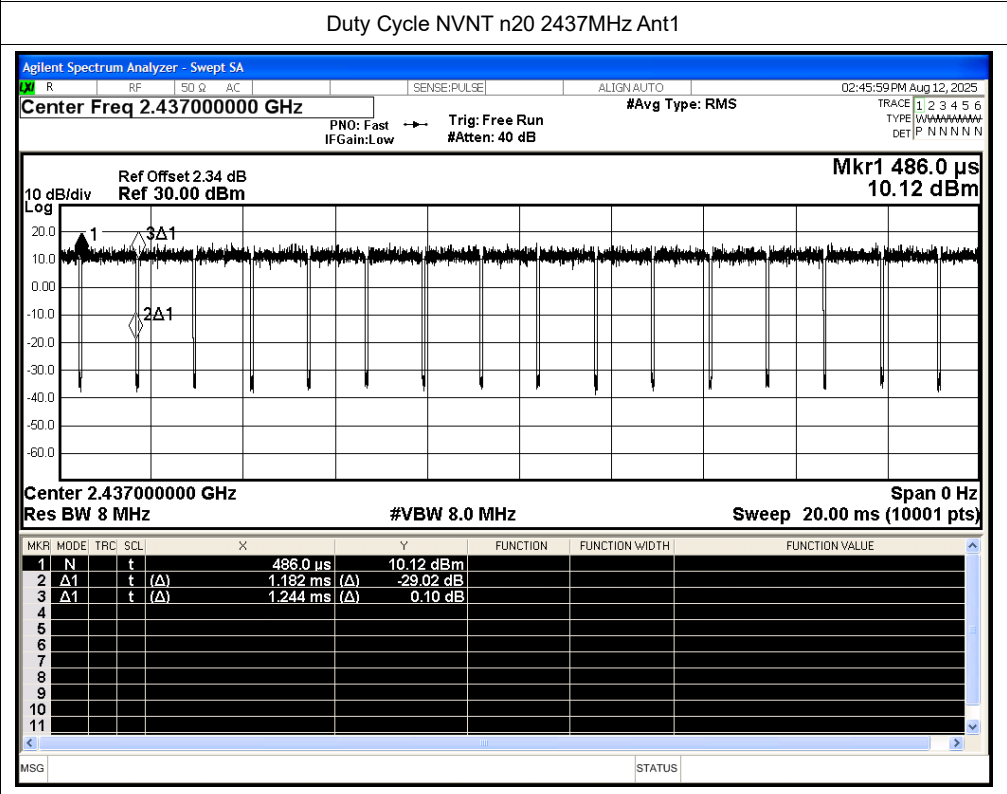
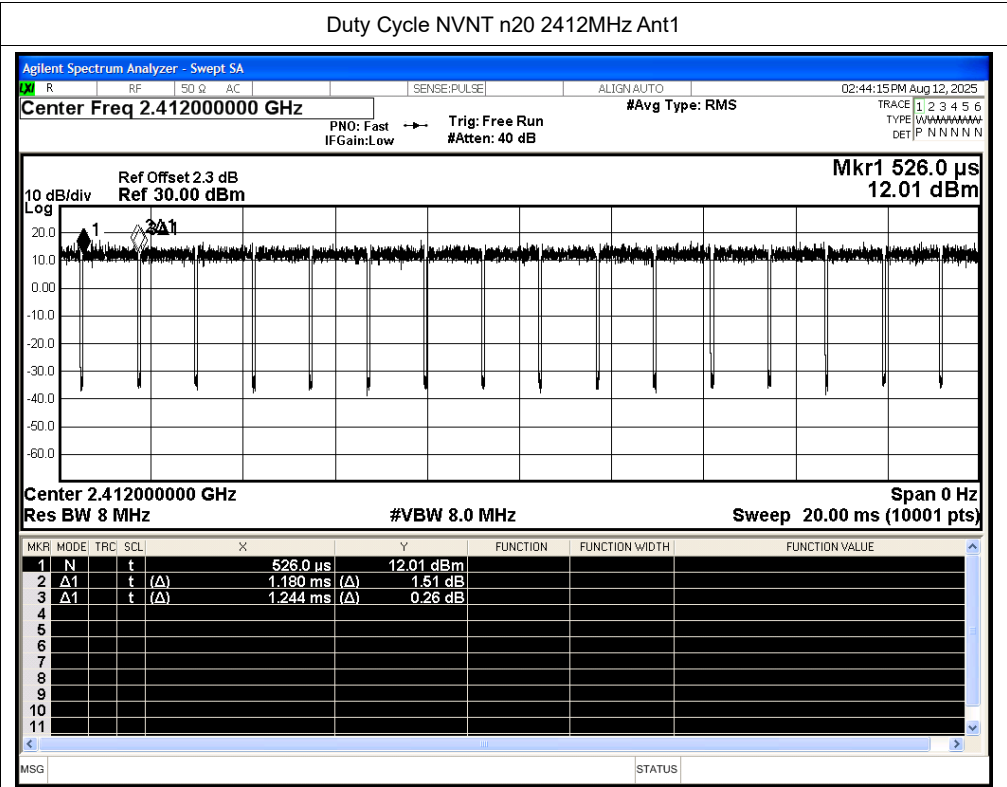
A.6 Duty Cycle

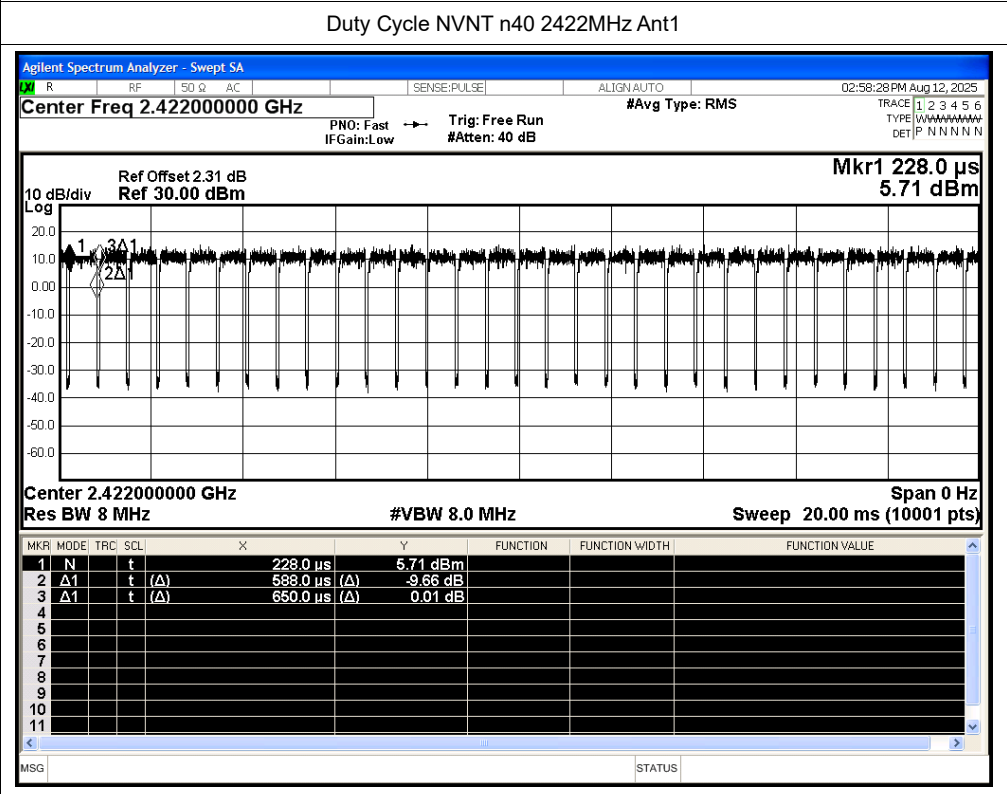
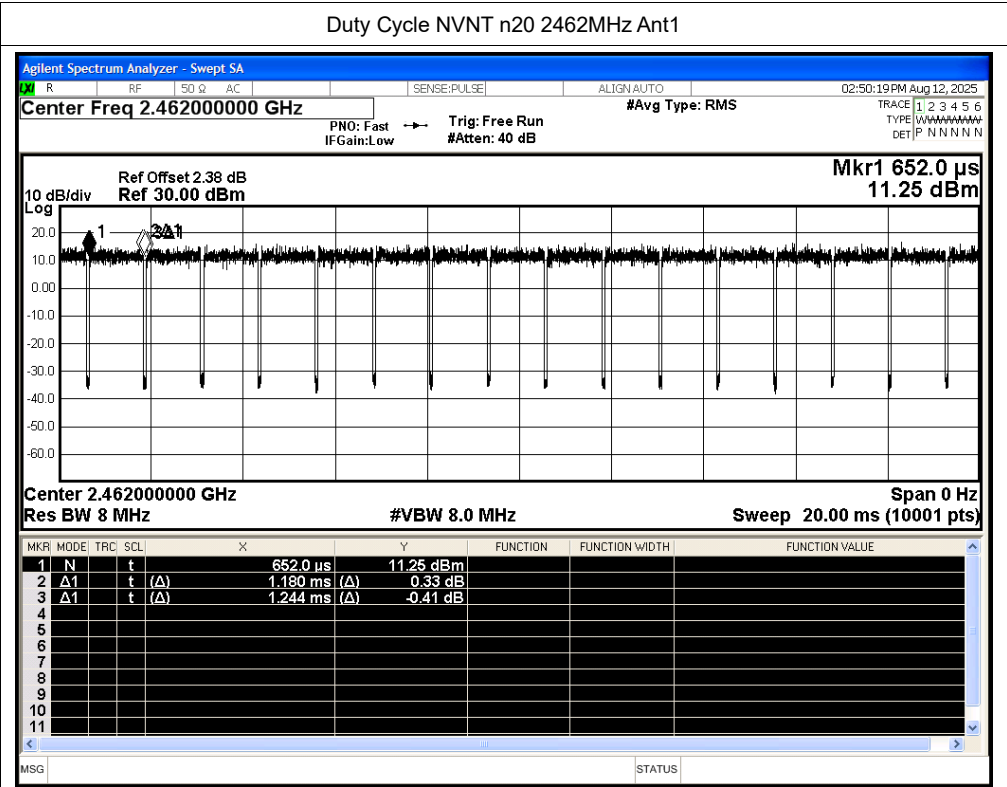
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.11	0	0.12
NVNT	b	2437	Ant1	99.34	0	0.12
NVNT	b	2462	Ant1	99.34	0	0.12
NVNT	g	2412	Ant1	95.62	0.19	0.72
NVNT	g	2437	Ant1	95.62	0.19	0.72
NVNT	g	2462	Ant1	95.62	0.19	0.72
NVNT	n20	2412	Ant1	94.86	0.23	0.85
NVNT	n20	2437	Ant1	95.02	0.22	0.85
NVNT	n20	2462	Ant1	94.86	0.23	0.85
NVNT	n40	2422	Ant1	90.46	0.44	1.7
NVNT	n40	2437	Ant1	90.43	0.44	1.71
NVNT	n40	2452	Ant1	90.46	0.44	1.7
NVNT	ax20	2412	Ant1	95.02	0.22	0.85
NVNT	ax20	2437	Ant1	95.02	0.22	0.85
NVNT	ax20	2462	Ant1	94.86	0.23	0.85
NVNT	ax40	2422	Ant1	90.46	0.44	1.7
NVNT	ax40	2437	Ant1	90.43	0.44	1.71
NVNT	ax40	2452	Ant1	90.46	0.44	1.7

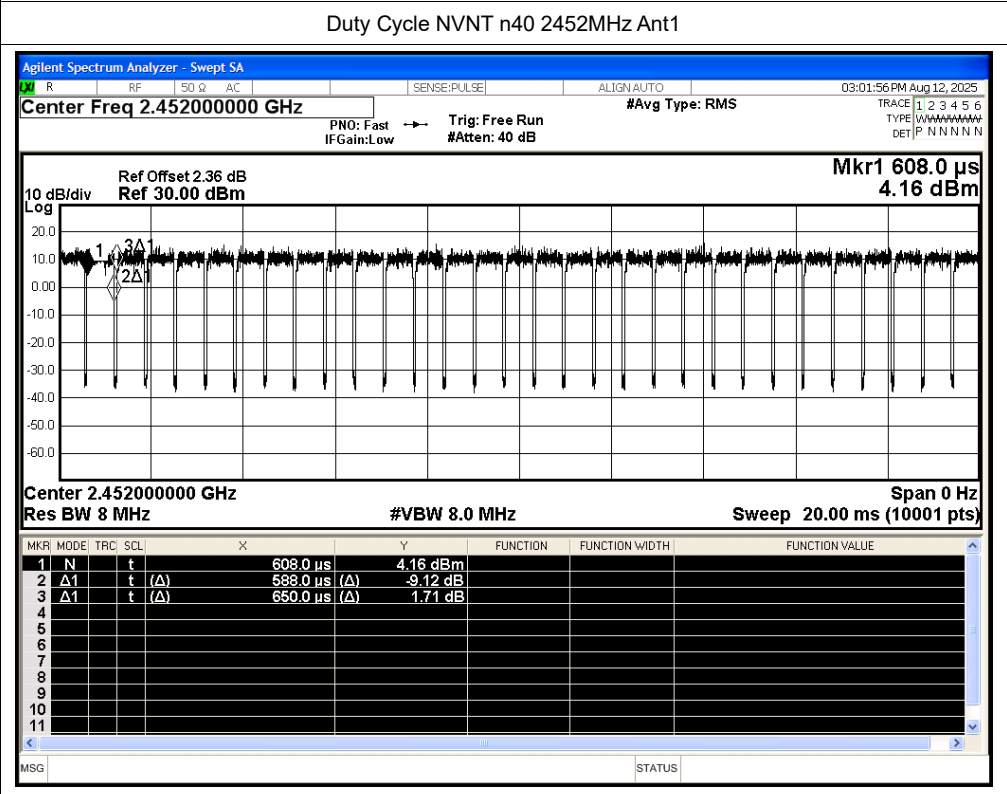
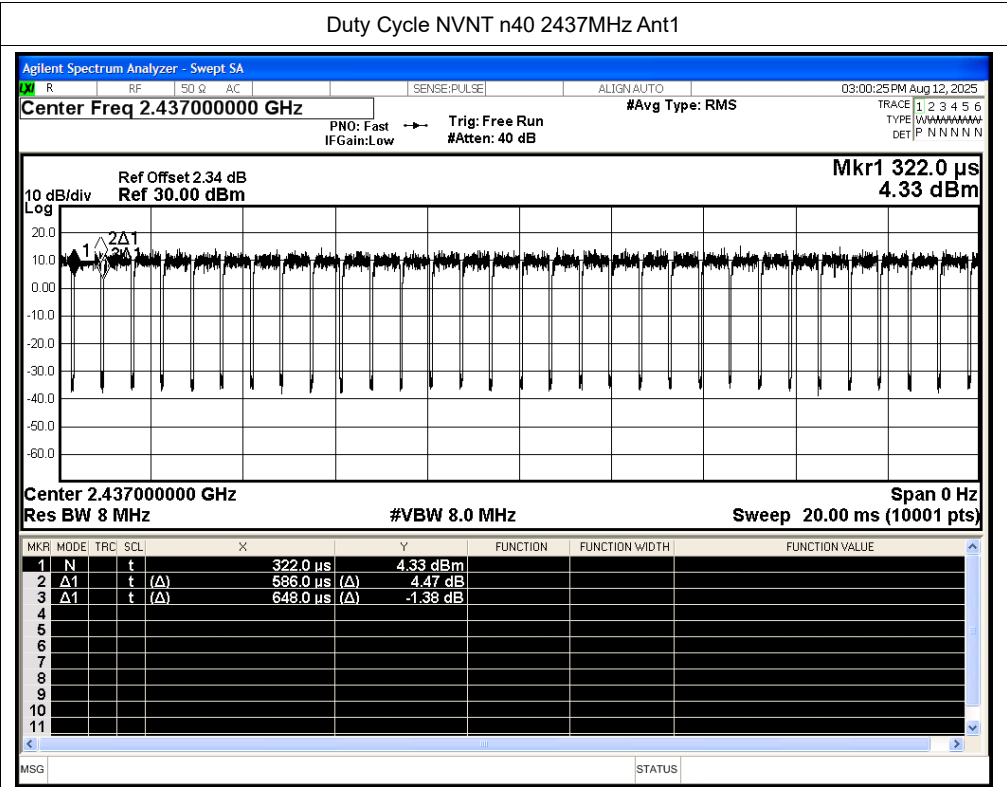


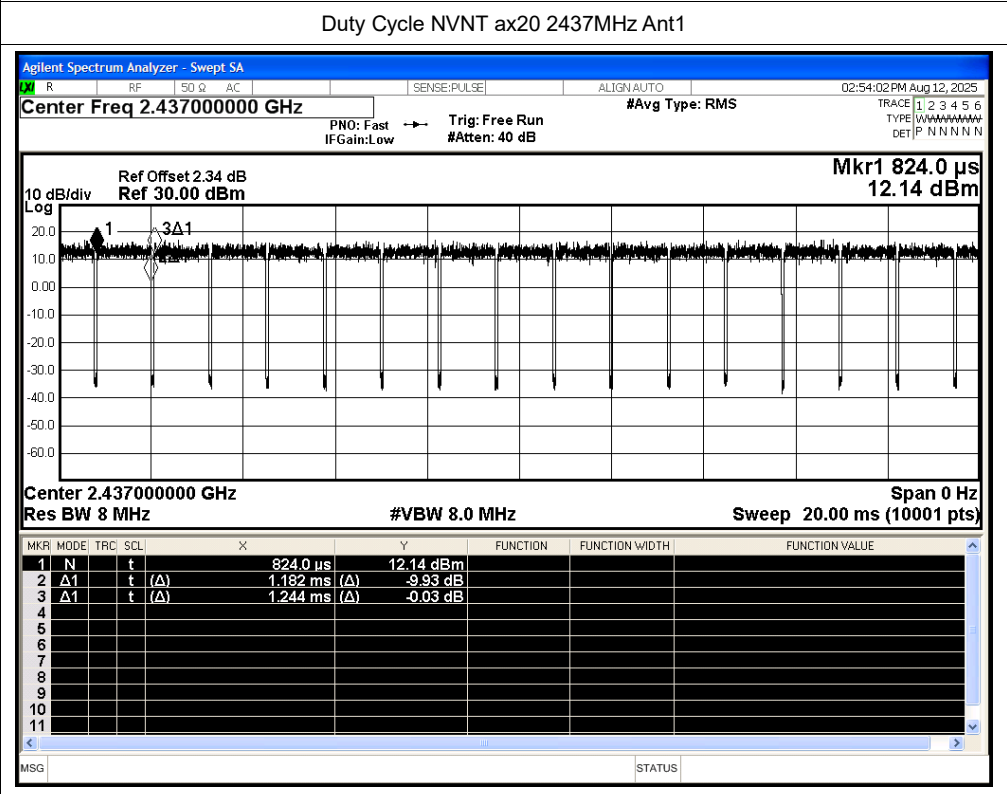
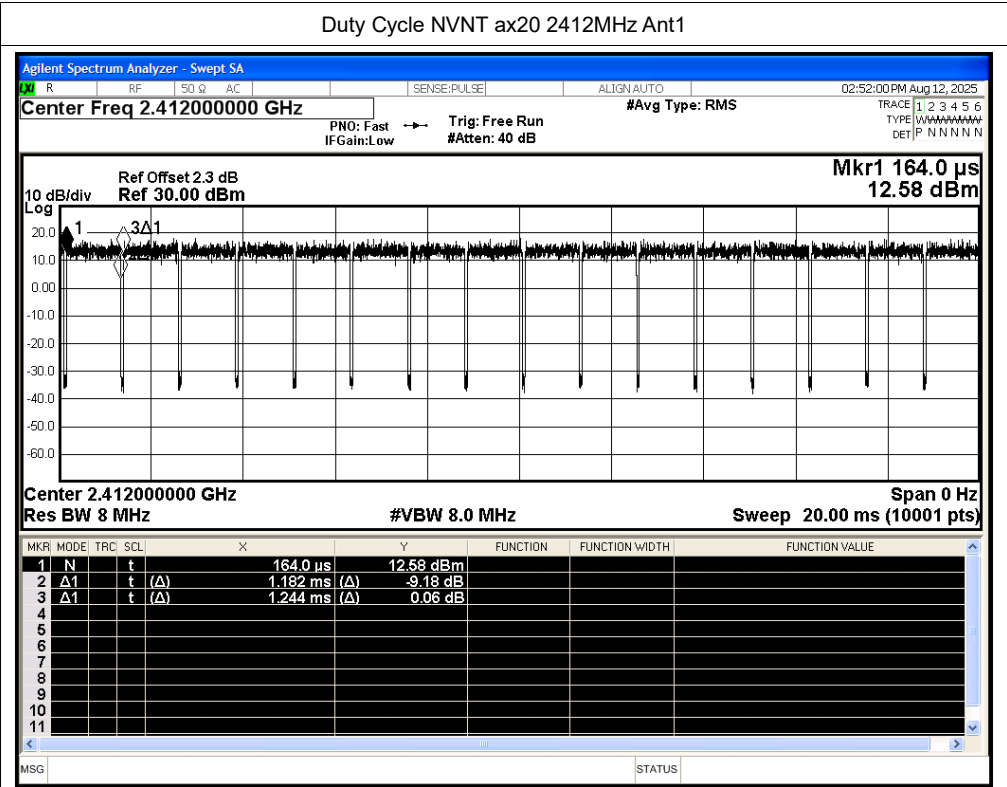


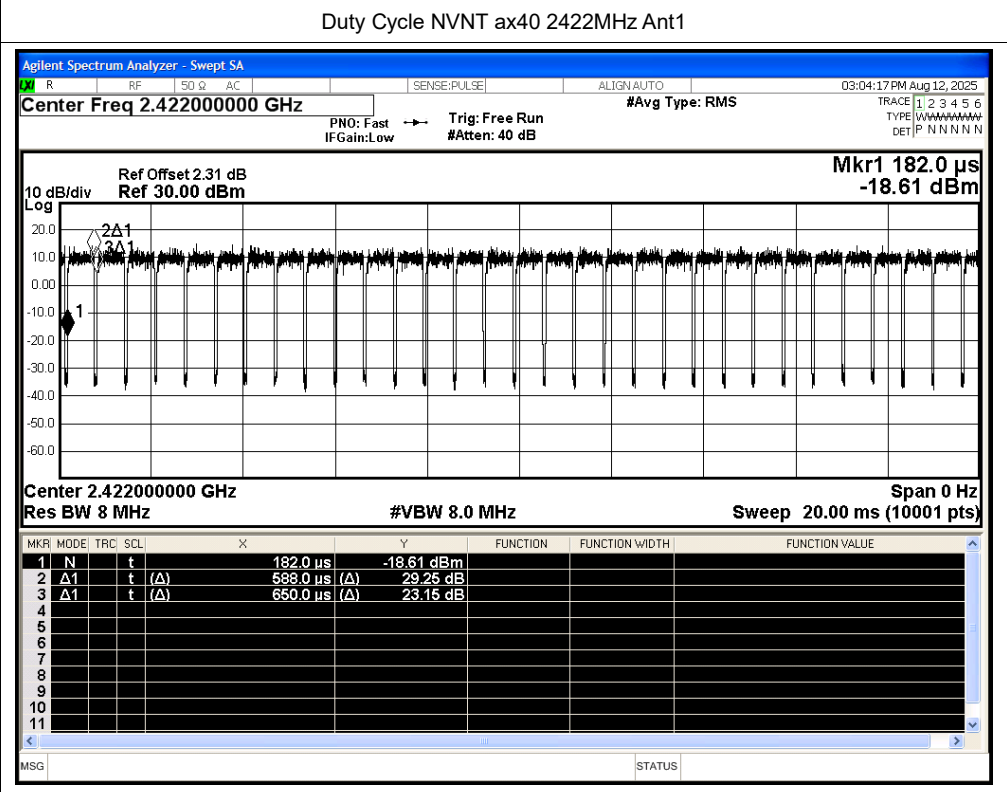
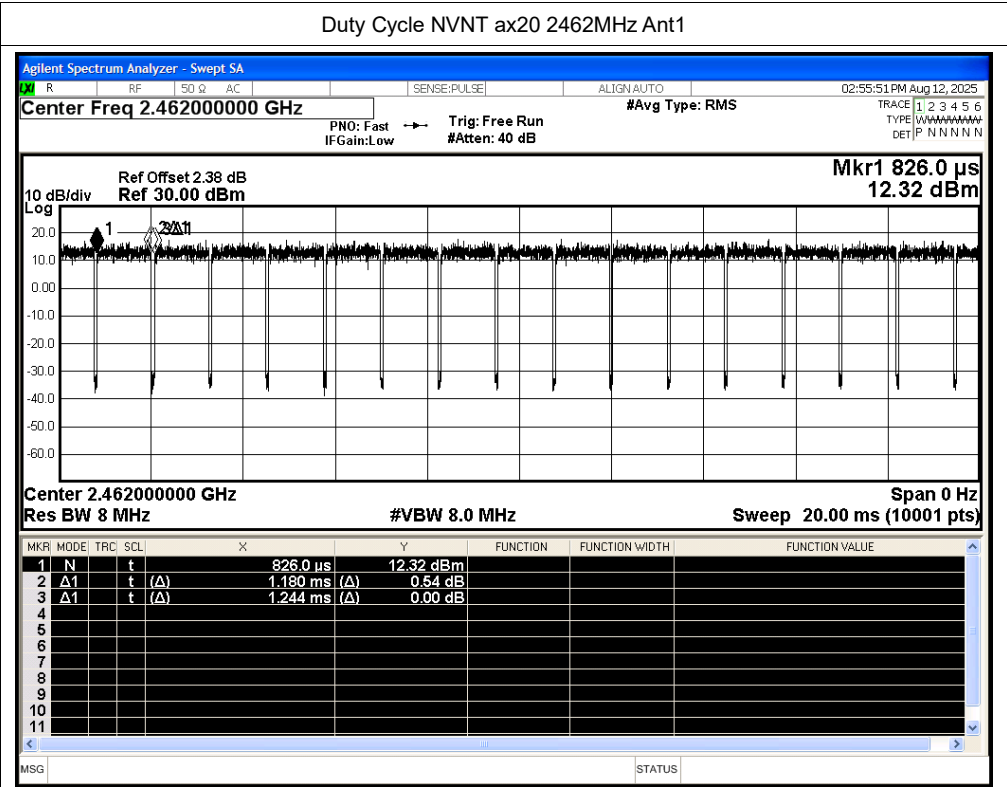


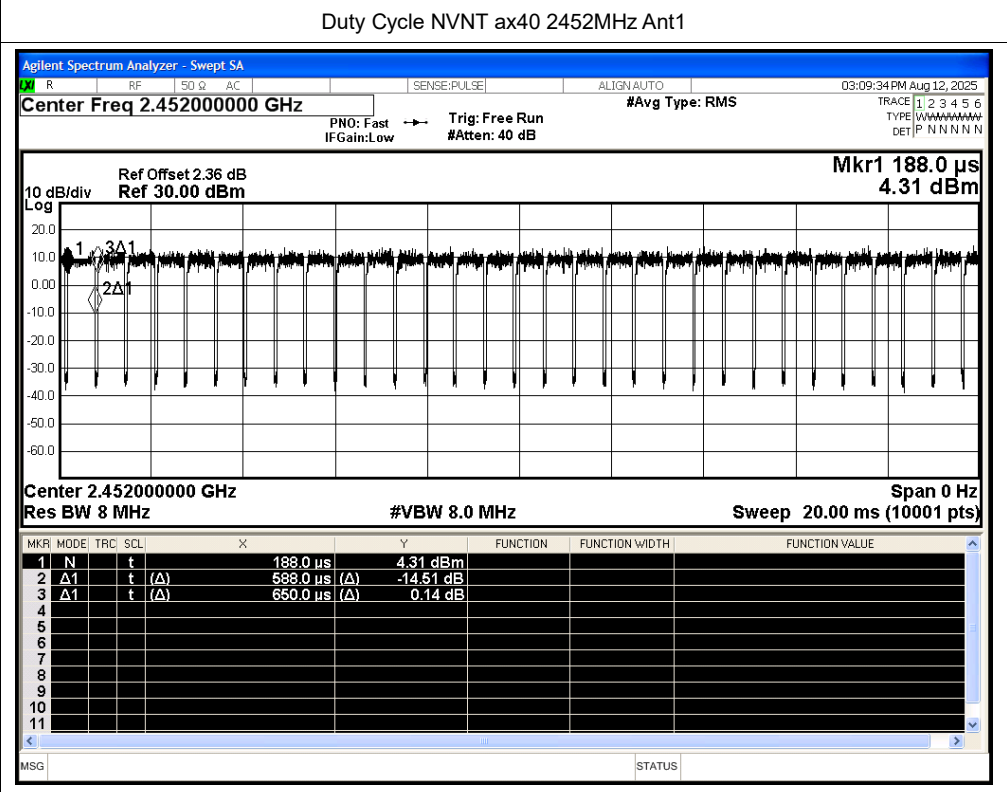
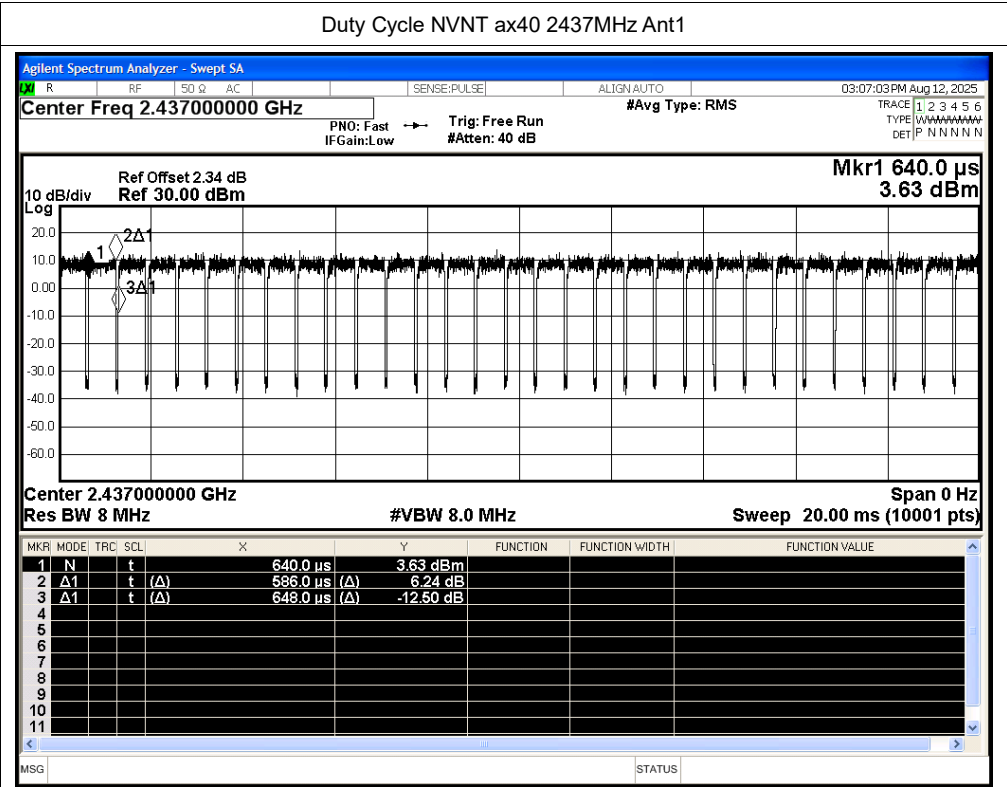












A.7 Restrict Band

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	-50.26	5.42	-	50.42	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-58.93	5.42	0	41.75	Average	54	Pass
NVNT	b	2412	Ant1	2389.677	-47.26	5.42	-	53.42	Peak	74	Pass
NVNT	b	2412	Ant1	2389.56	-57.26	5.42	0	43.42	Average	54	Pass
NVNT	b	2412	Ant1	2390	-50.02	5.42	-	50.66	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-57.6	5.42	0	43.08	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-49.17	5.42	-	51.51	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-56.8	5.42	0	43.88	Average	54	Pass
NVNT	b	2462	Ant1	2486.803	-42.62	5.42	-	58.06	Peak	74	Pass
NVNT	b	2462	Ant1	2484.1	-56.62	5.42	0	44.06	Average	54	Pass
NVNT	b	2462	Ant1	2500	-50.48	5.42	-	50.20	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-57.22	5.42	0	43.46	Average	54	Pass
NVNT	g	2412	Ant1	2310	-51.02	5.42	-	49.66	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-58.42	5.42	0.19	42.45	Average	54	Pass
NVNT	g	2412	Ant1	2389.677	-41.52	5.42	-	59.16	Peak	74	Pass
NVNT	g	2412	Ant1	2389.677	-56.03	5.42	0.19	44.84	Average	54	Pass
NVNT	g	2412	Ant1	2390	-43.08	5.42	-	57.60	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-56.06	5.42	0.19	44.81	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-38.71	5.42	-	61.97	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-53.65	5.42	0.19	47.22	Average	54	Pass
NVNT	g	2462	Ant1	2484.471	-36.83	5.42	-	63.85	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-53	5.42	0.19	47.87	Average	54	Pass
NVNT	g	2462	Ant1	2500	-48.88	5.42	-	51.80	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-57.62	5.42	0.19	43.25	Average	54	Pass
NVNT	n20	2412	Ant1	2310	-50.18	5.42	-	50.50	Peak	74	Pass
NVNT	n20	2412	Ant1	2310	-58.23	5.42	0.23	42.68	Average	54	Pass
NVNT	n20	2412	Ant1	2388.741	-38.23	5.42	-	62.45	Peak	74	Pass
NVNT	n20	2412	Ant1	2389.794	-54.32	5.42	0.23	46.59	Average	54	Pass
NVNT	n20	2412	Ant1	2390	-41.65	5.42	-	59.03	Peak	74	Pass
NVNT	n20	2412	Ant1	2390	-54.32	5.42	0.23	46.59	Average	54	Pass
NVNT	n20	2462	Ant1	2483.5	-38.45	5.42	-	62.23	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.5	-53.06	5.42	0.23	47.85	Average	54	Pass
NVNT	n20	2462	Ant1	2483.57	-35.62	5.42	-	65.06	Peak	74	Pass
NVNT	n20	2462	Ant1	2484.365	-51.31	5.42	0.23	49.60	Average	54	Pass
NVNT	n20	2462	Ant1	2500	-49.82	5.42	-	50.86	Peak	74	Pass
NVNT	n20	2462	Ant1	2500	-57.24	5.42	0.23	43.67	Average	54	Pass

Guangzhou LCS Compliance Testing Laboratory Ltd.

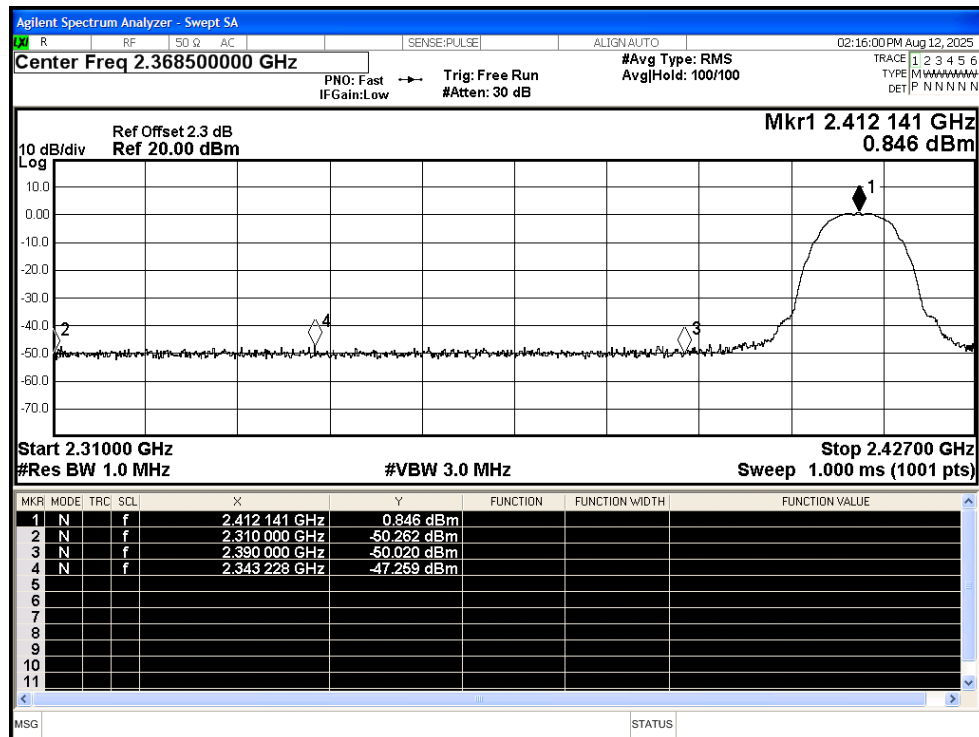
Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

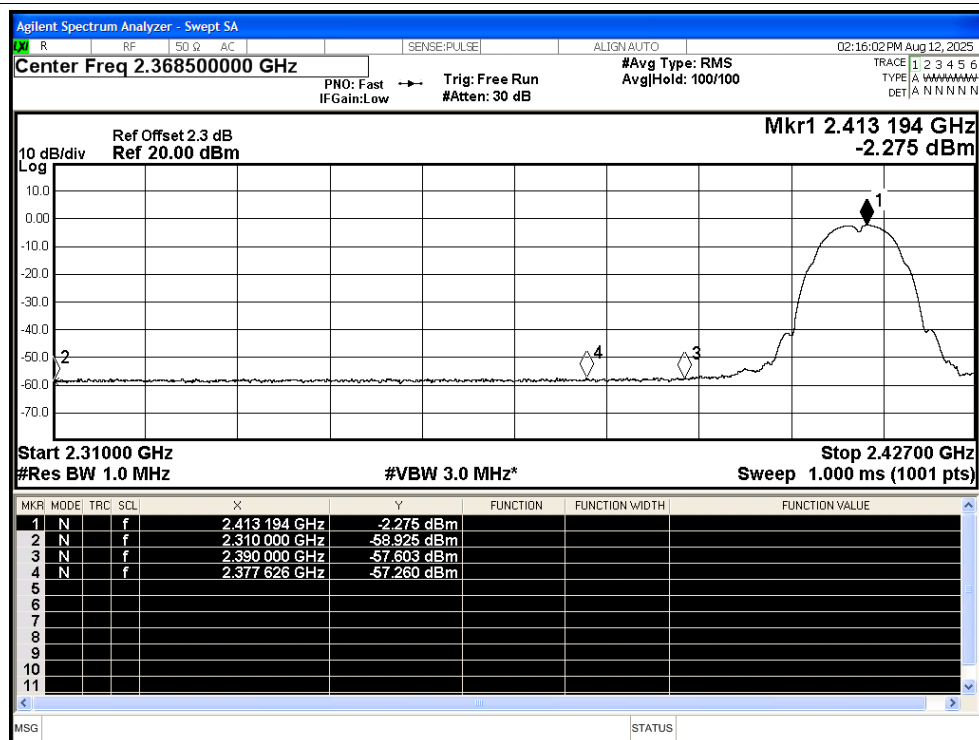
NVNT	n40	2422	Ant1	2310	-51.38	5.42	-	49.30	Peak	74	Pass
NVNT	n40	2422	Ant1	2310	-58.36	5.42	0.44	42.76	Average	54	Pass
NVNT	n40	2422	Ant1	2389.946	-33.74	5.42	-	66.94	Peak	74	Pass
NVNT	n40	2422	Ant1	2389.804	-50.71	5.42	0.44	50.41	Average	54	Pass
NVNT	n40	2422	Ant1	2390	-38.9	5.42	-	61.78	Peak	74	Pass
NVNT	n40	2422	Ant1	2390	-50.71	5.42	0.44	50.41	Average	54	Pass
NVNT	n40	2452	Ant1	2483.5	-35.01	5.42	-	65.67	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.5	-48.54	5.42	0.44	52.58	Average	54	Pass
NVNT	n40	2452	Ant1	2484.01	-31.69	5.42	-	68.99	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.542	-49.1	5.42	0.44	52.02	Average	54	Pass
NVNT	n40	2452	Ant1	2500	-49.83	5.42	-	50.85	Peak	74	Pass
NVNT	n40	2452	Ant1	2500	-57.81	5.42	0.44	43.31	Average	54	Pass
NVNT	ax20	2412	Ant1	2310	-50.72	5.42	-	49.96	Peak	74	Pass
NVNT	ax20	2412	Ant1	2310	-58.63	5.42	0.22	42.27	Average	54	Pass
NVNT	ax20	2412	Ant1	2389.911	-36.71	5.42	-	63.97	Peak	74	Pass
NVNT	ax20	2412	Ant1	2389.209	-54.27	5.42	0.22	46.63	Average	54	Pass
NVNT	ax20	2412	Ant1	2390	-39.33	5.42	-	61.35	Peak	74	Pass
NVNT	ax20	2412	Ant1	2390	-53.32	5.42	0.22	47.58	Average	54	Pass
NVNT	ax20	2462	Ant1	2483.5	-35.56	5.42	-	65.12	Peak	74	Pass
NVNT	ax20	2462	Ant1	2483.5	-52.42	5.42	0.23	48.49	Average	54	Pass
NVNT	ax20	2462	Ant1	2484.206	-32.89	5.42	-	67.79	Peak	74	Pass
NVNT	ax20	2462	Ant1	2484.1	-49.92	5.42	0.23	50.99	Average	54	Pass
NVNT	ax20	2462	Ant1	2500	-47.8	5.42	-	52.88	Peak	74	Pass
NVNT	ax20	2462	Ant1	2500	-57.84	5.42	0.23	43.07	Average	54	Pass
NVNT	ax40	2422	Ant1	2310	-50.51	5.42	-	50.17	Peak	74	Pass
NVNT	ax40	2422	Ant1	2310	-58.83	5.42	0.44	42.29	Average	54	Pass
NVNT	ax40	2422	Ant1	2389.236	-35.1	5.42	-	65.58	Peak	74	Pass
NVNT	ax40	2422	Ant1	2389.662	-51.39	5.42	0.44	49.73	Average	54	Pass
NVNT	ax40	2422	Ant1	2390	-35.1	5.42	-	65.58	Peak	74	Pass
NVNT	ax40	2422	Ant1	2390	-52.11	5.42	0.44	49.01	Average	54	Pass
NVNT	ax40	2452	Ant1	2483.5	-35.88	5.42	-	64.80	Peak	74	Pass
NVNT	ax40	2452	Ant1	2483.5	-50.85	5.42	0.44	50.27	Average	54	Pass
NVNT	ax40	2452	Ant1	2483.854	-35.36	5.42	-	65.32	Peak	74	Pass
NVNT	ax40	2452	Ant1	2483.62	-49.28	5.42	0.44	51.84	Average	54	Pass
NVNT	ax40	2452	Ant1	2500	-49.65	5.42	-	51.03	Peak	74	Pass
NVNT	ax40	2452	Ant1	2500	-57.76	5.42	0.44	43.36	Average	54	Pass

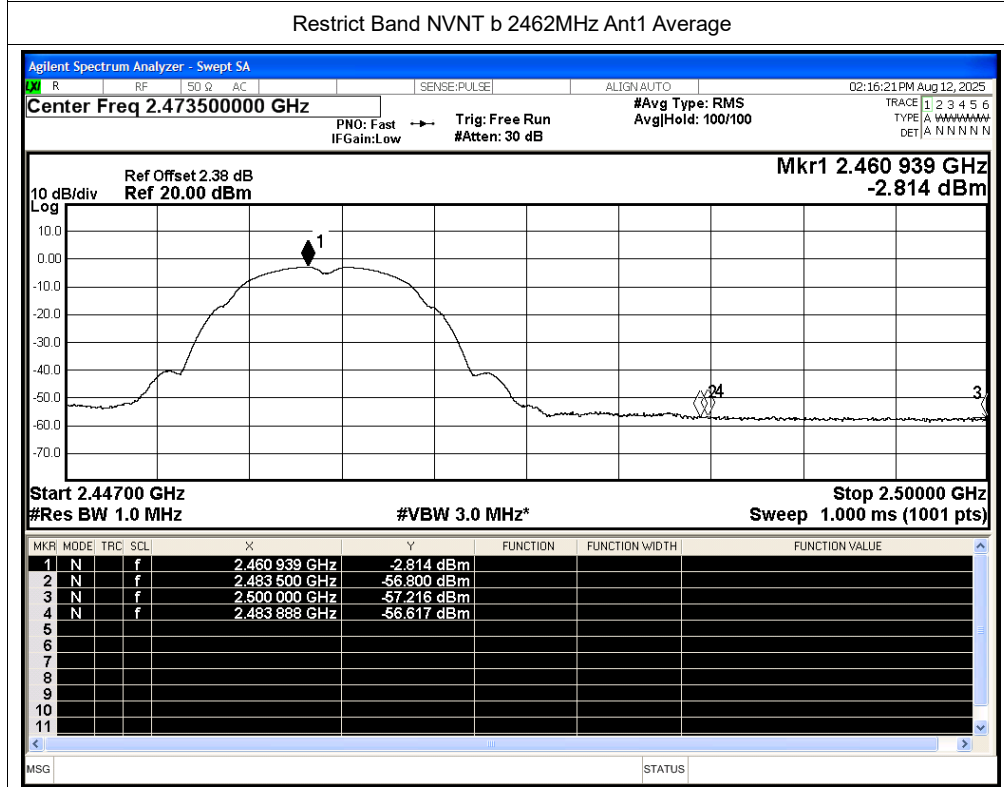
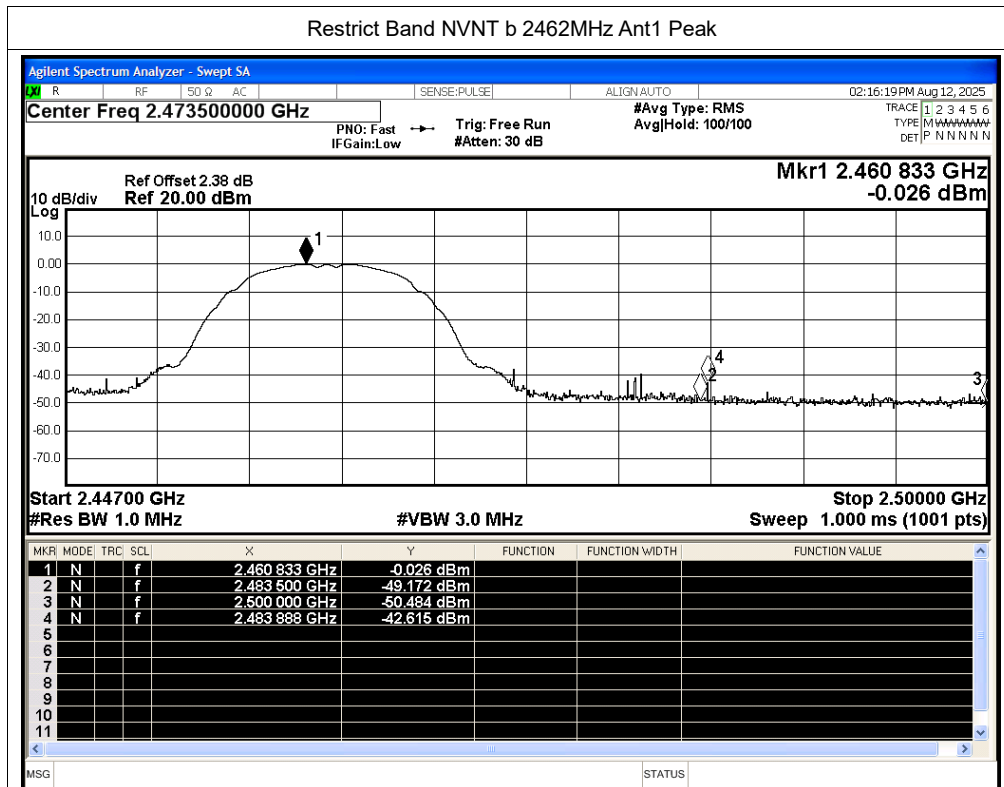
Test Graphs

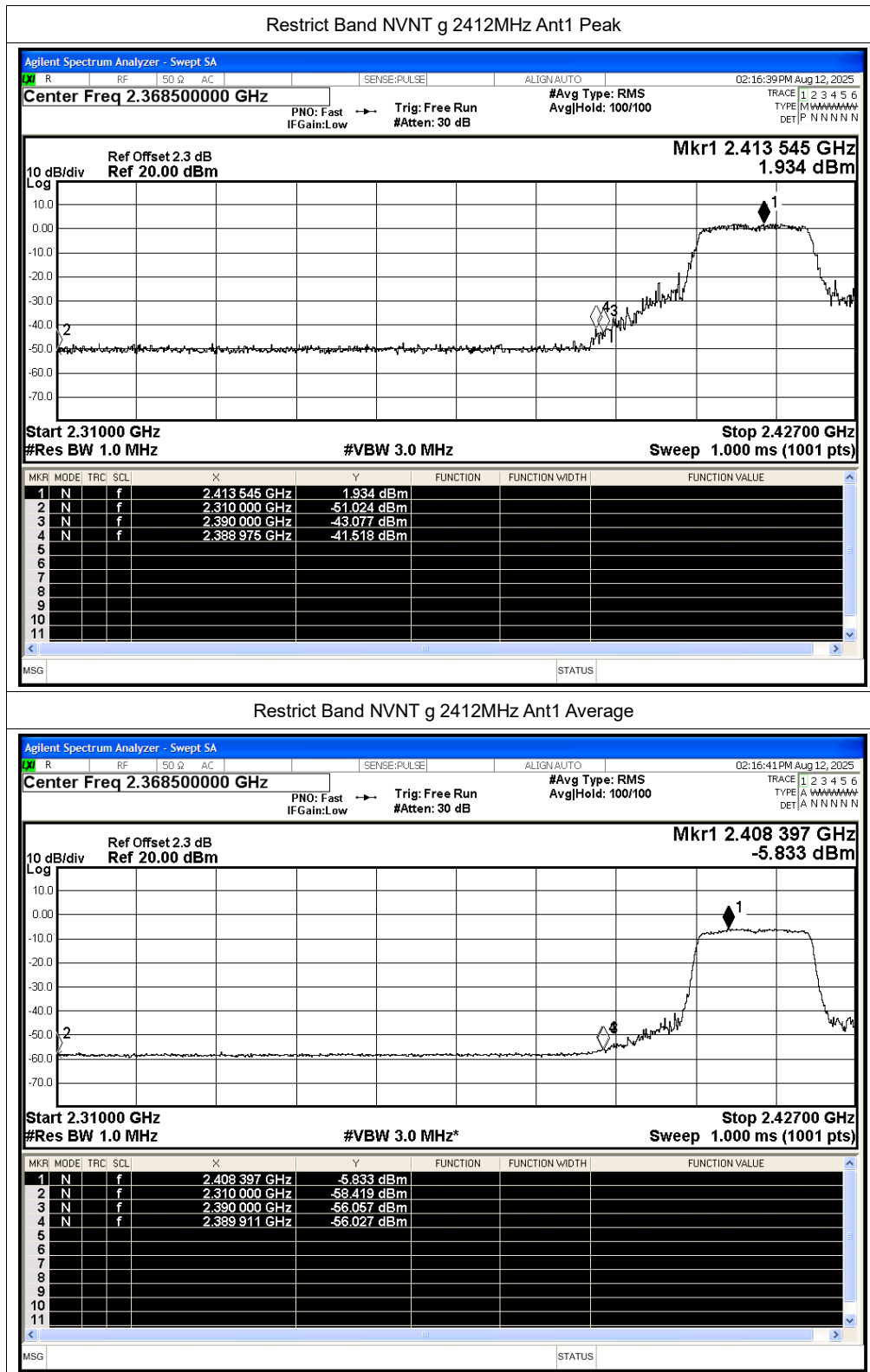
Restrict Band NVNT b 2412MHz Ant1 Peak

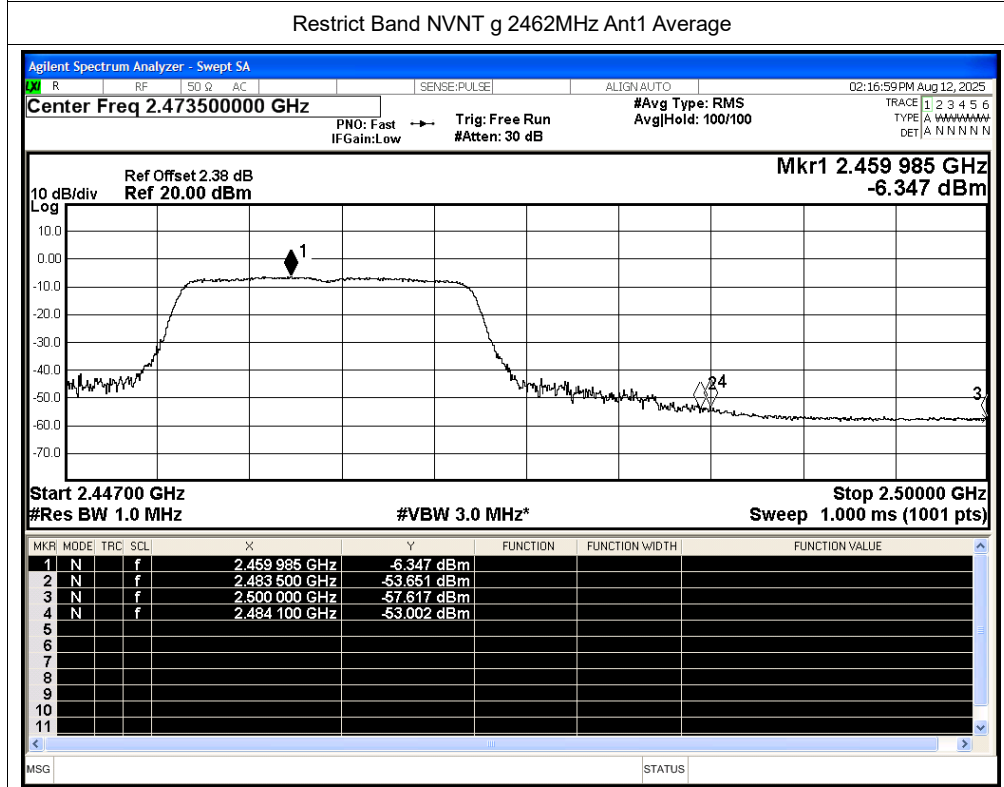
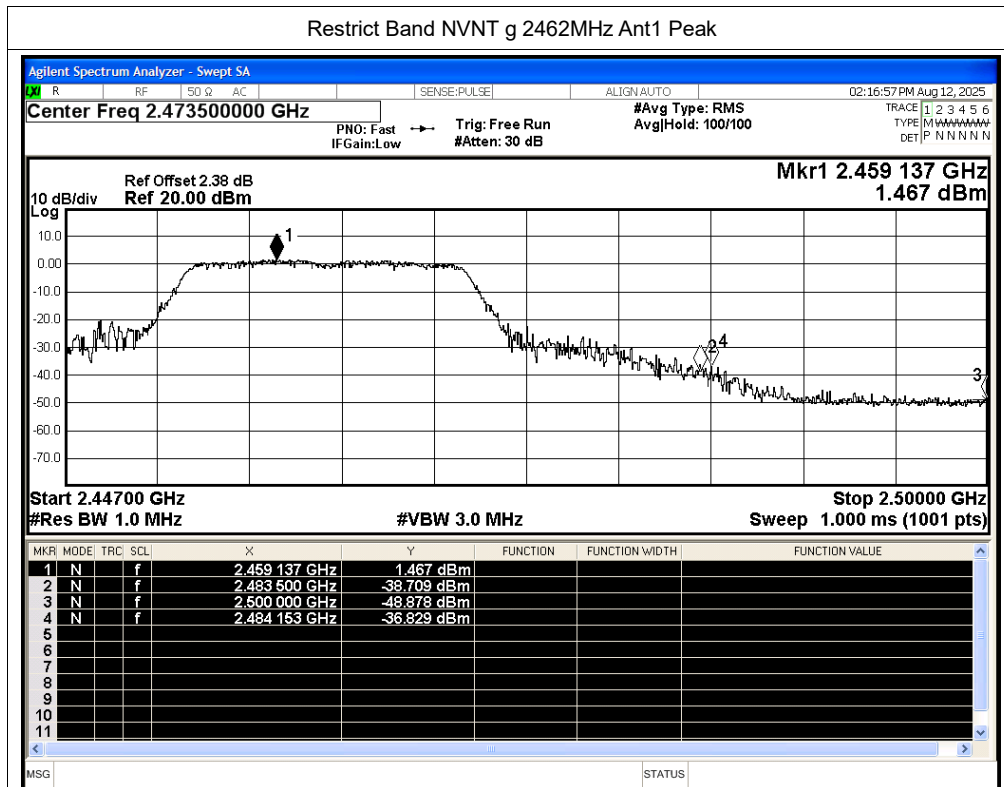


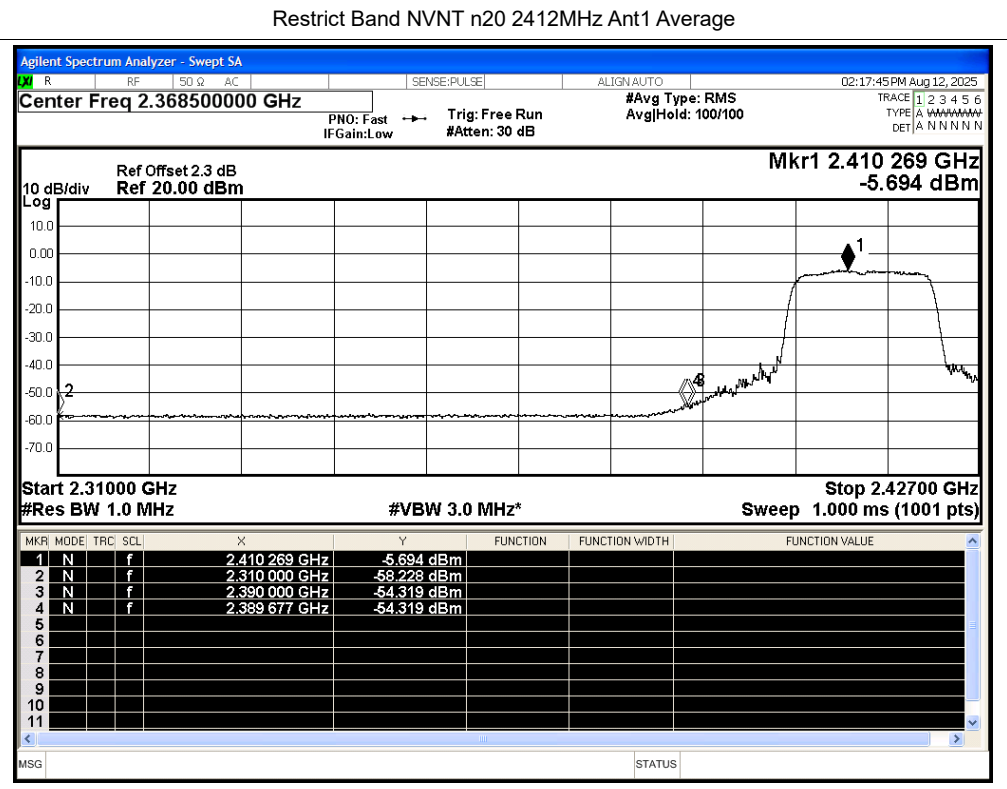
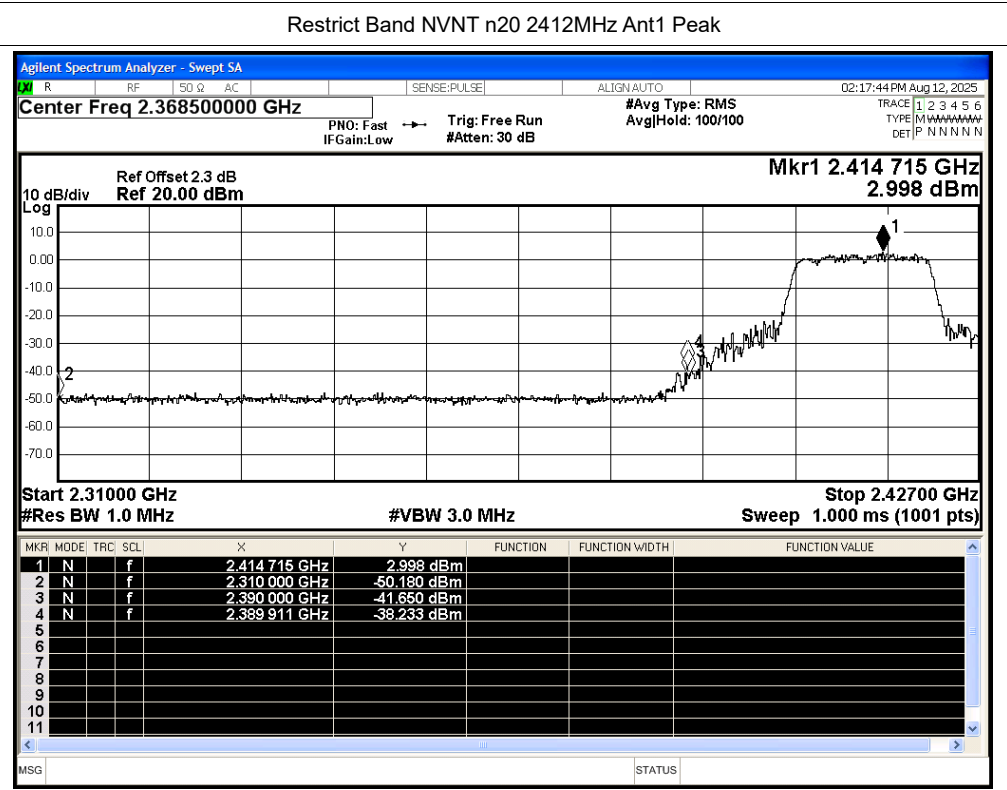
Restrict Band NVNT b 2412MHz Ant1 Average



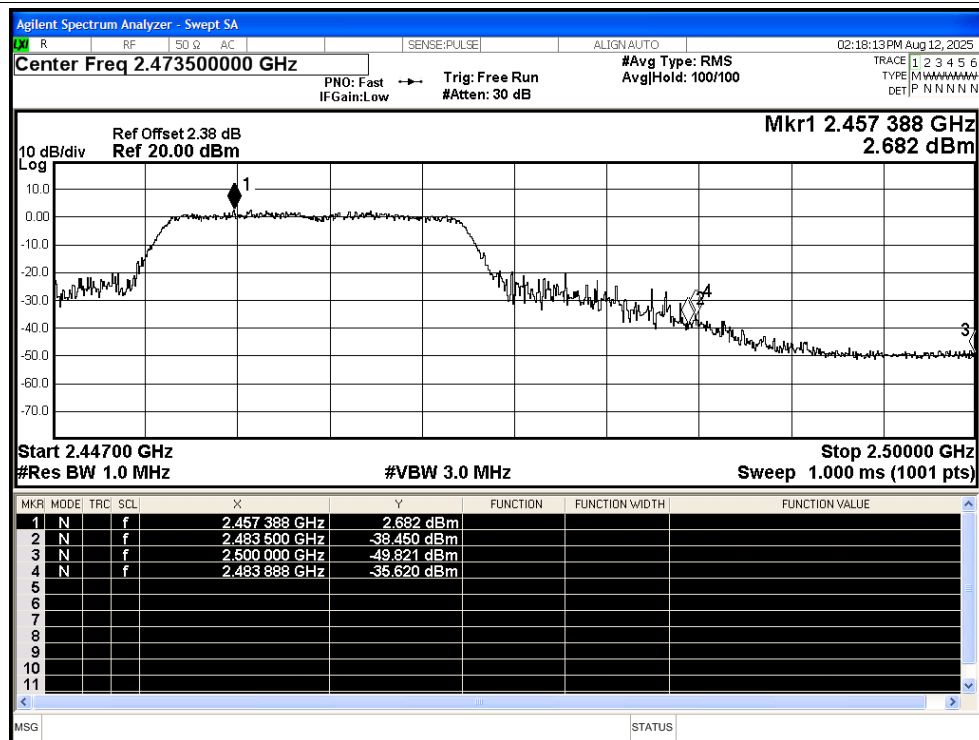




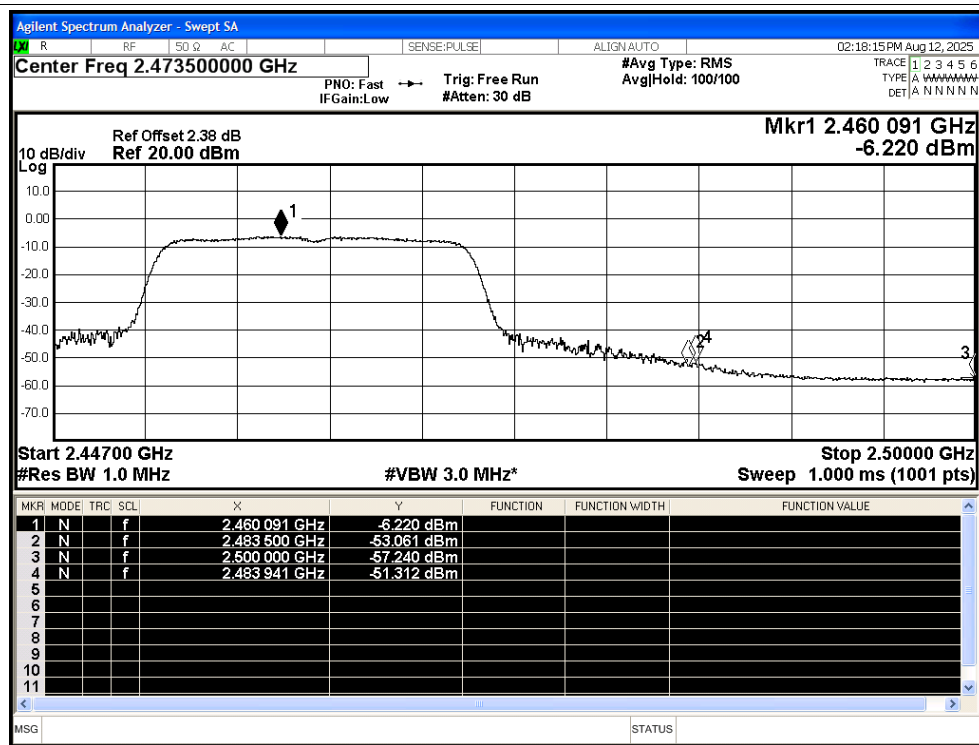




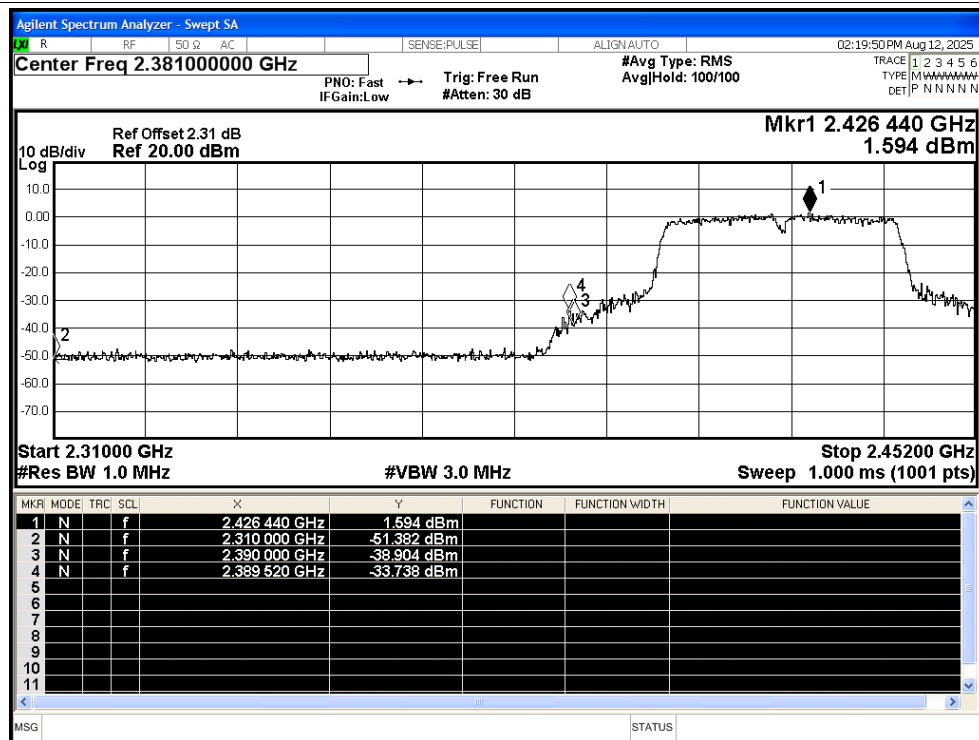
Restrict Band NVNT n20 2462MHz Ant1 Peak



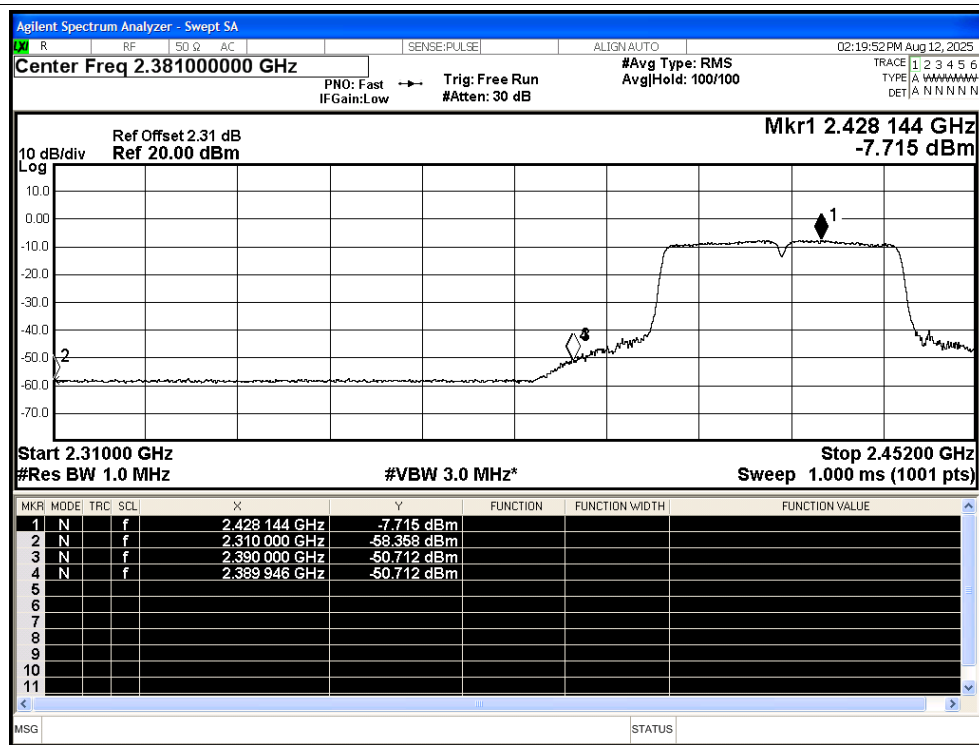
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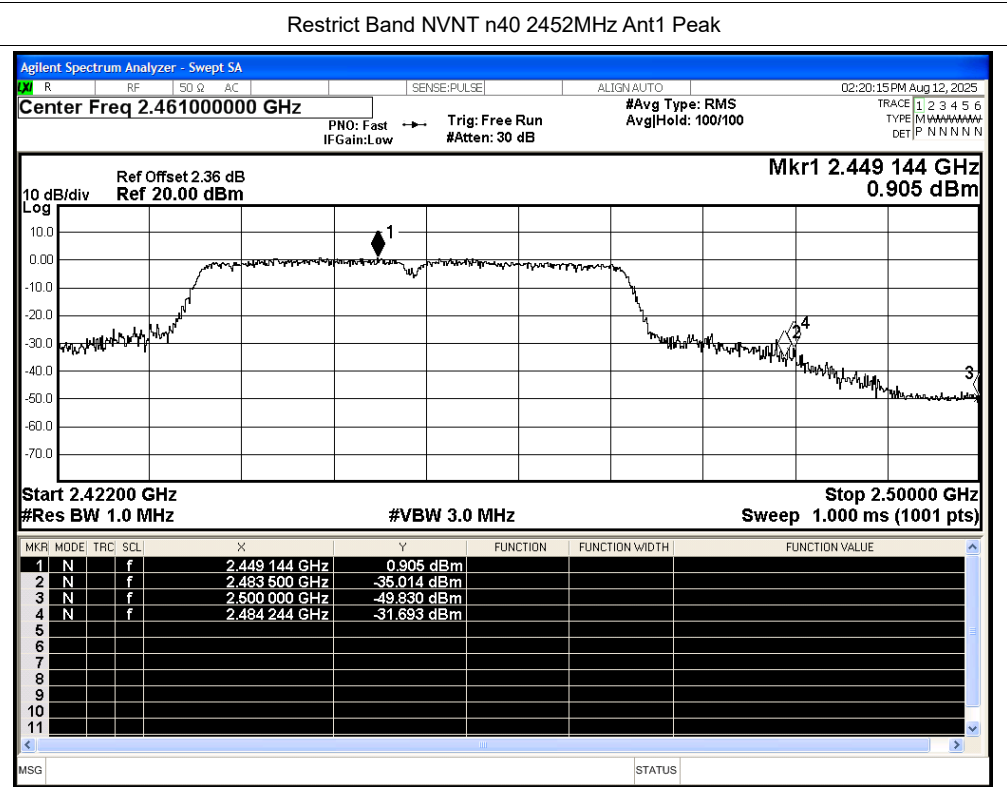


Restrict Band NVNT n40 2422MHz Ant1 Peak

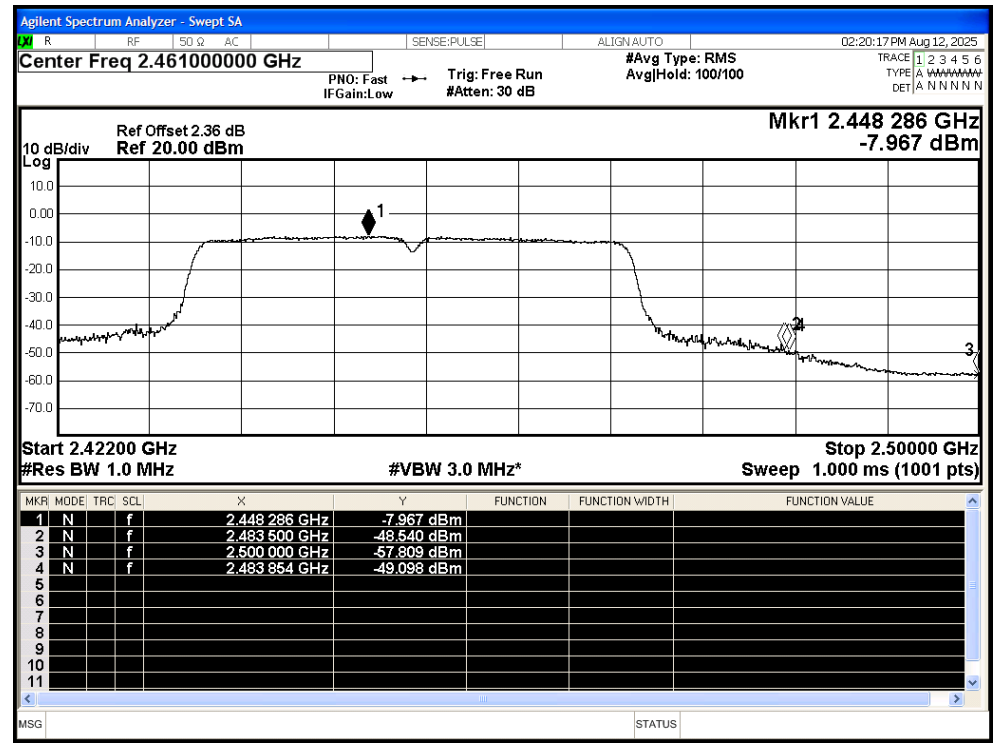


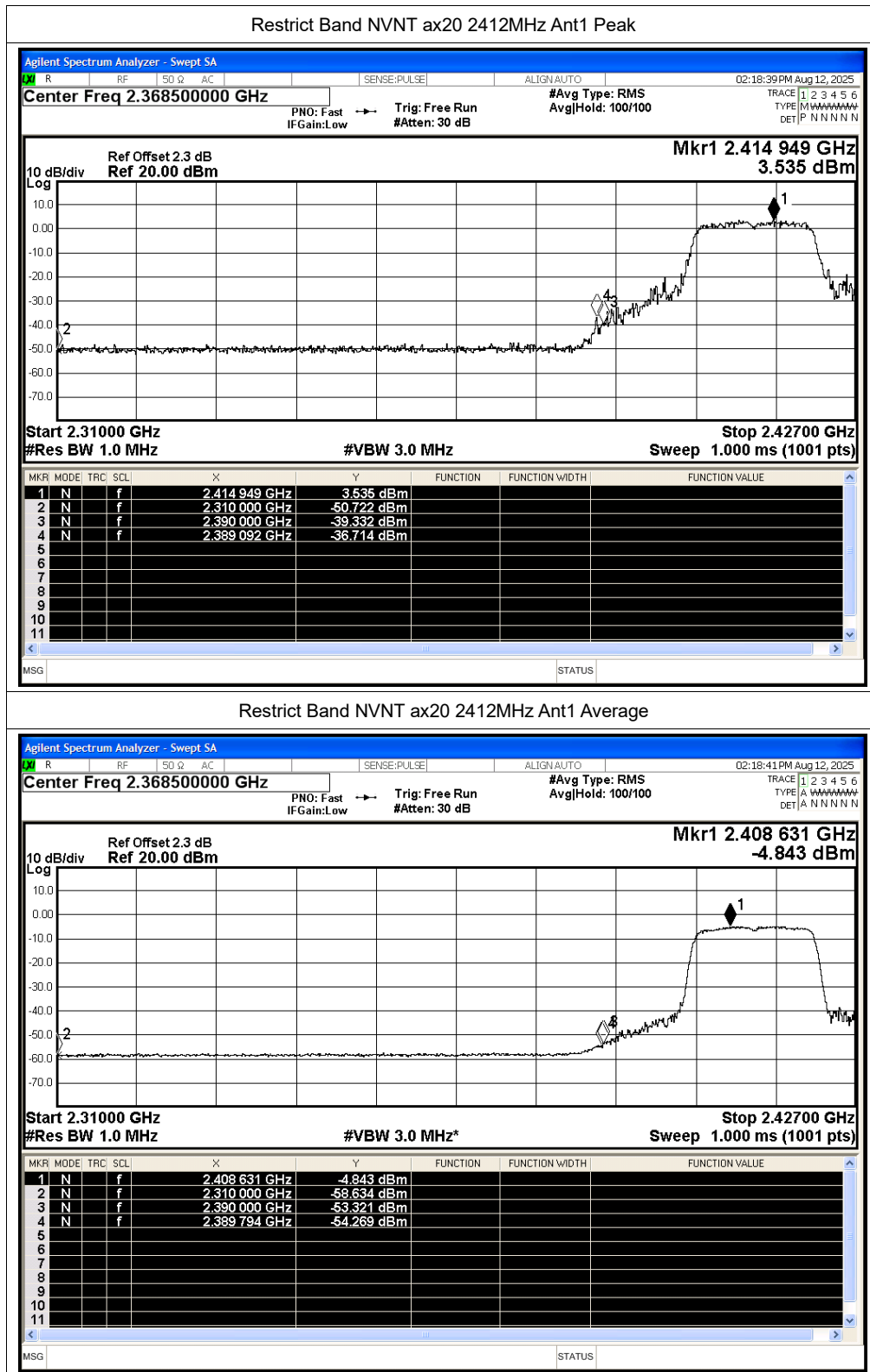
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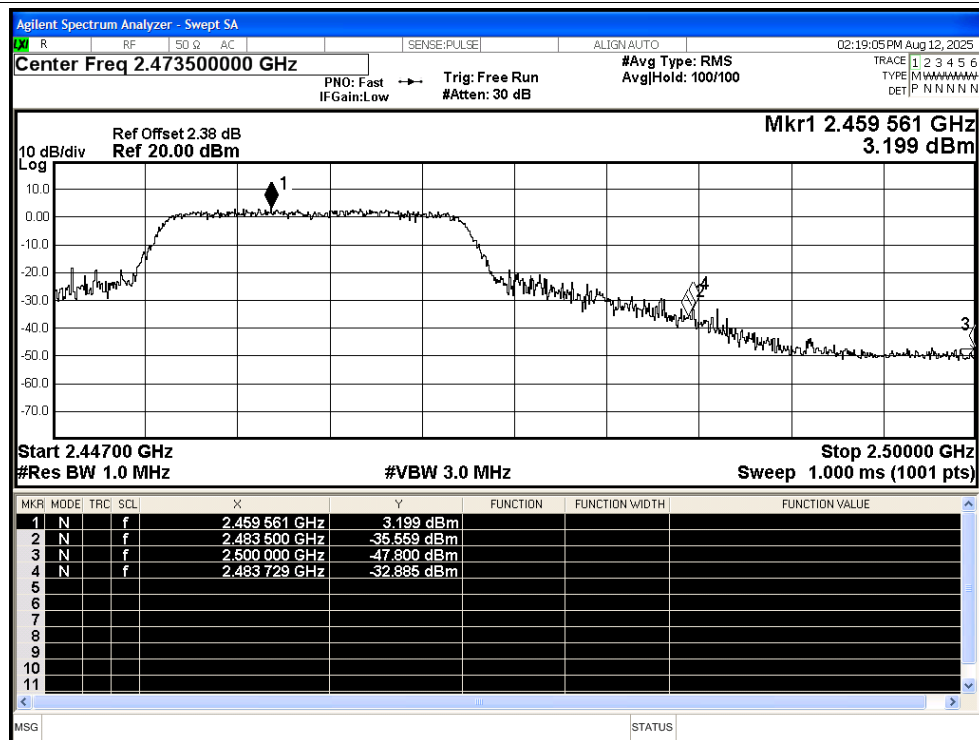


Restrict Band NVNT n40 2452MHz Ant1 Average

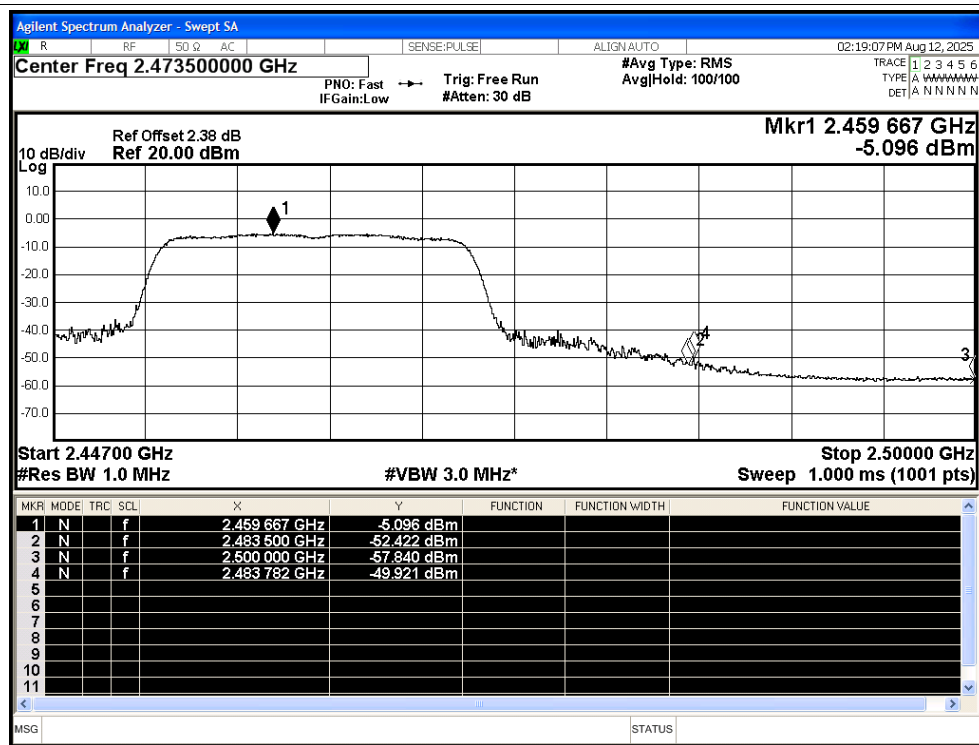


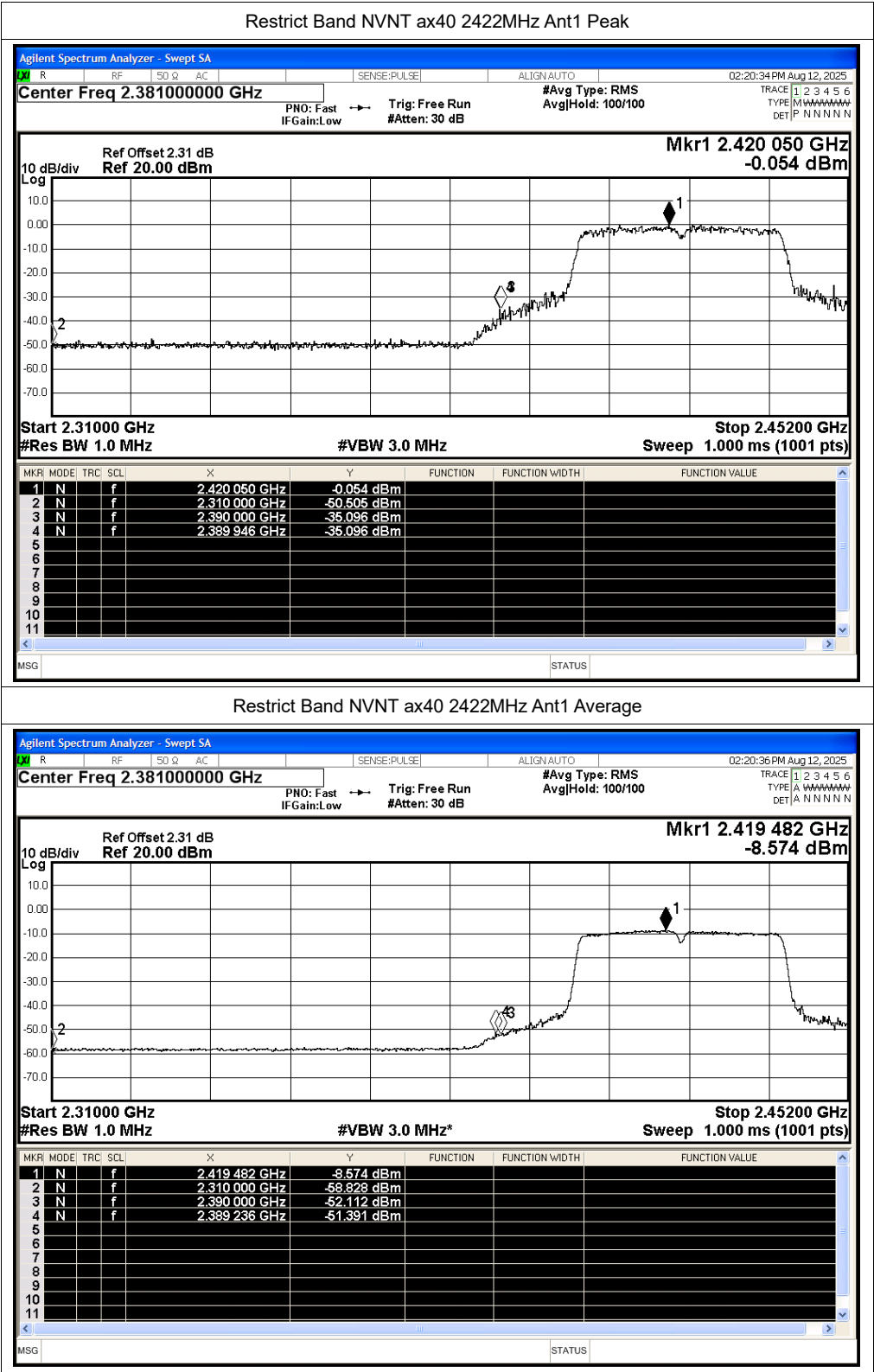


Restrict Band NVNT ax20 2462MHz Ant1 Peak

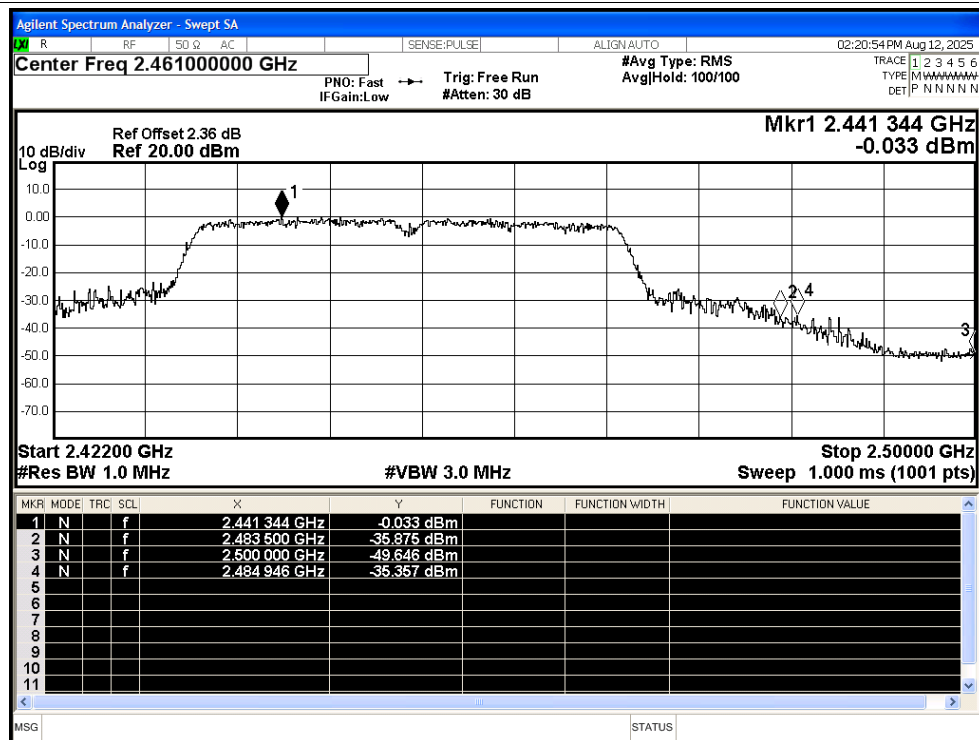


Restrict Band NVNT ax20 2462MHz Ant1 Average





Restrict Band NVNT ax40 2452MHz Ant1 Peak



Restrict Band NVNT ax40 2452MHz Ant1 Average

