



Appendix A

RF Test Data for 2.4GWIFI(Conducted Measurement)

Product Name: Predictive Maintenance Sensor

Test Model: 872.0010

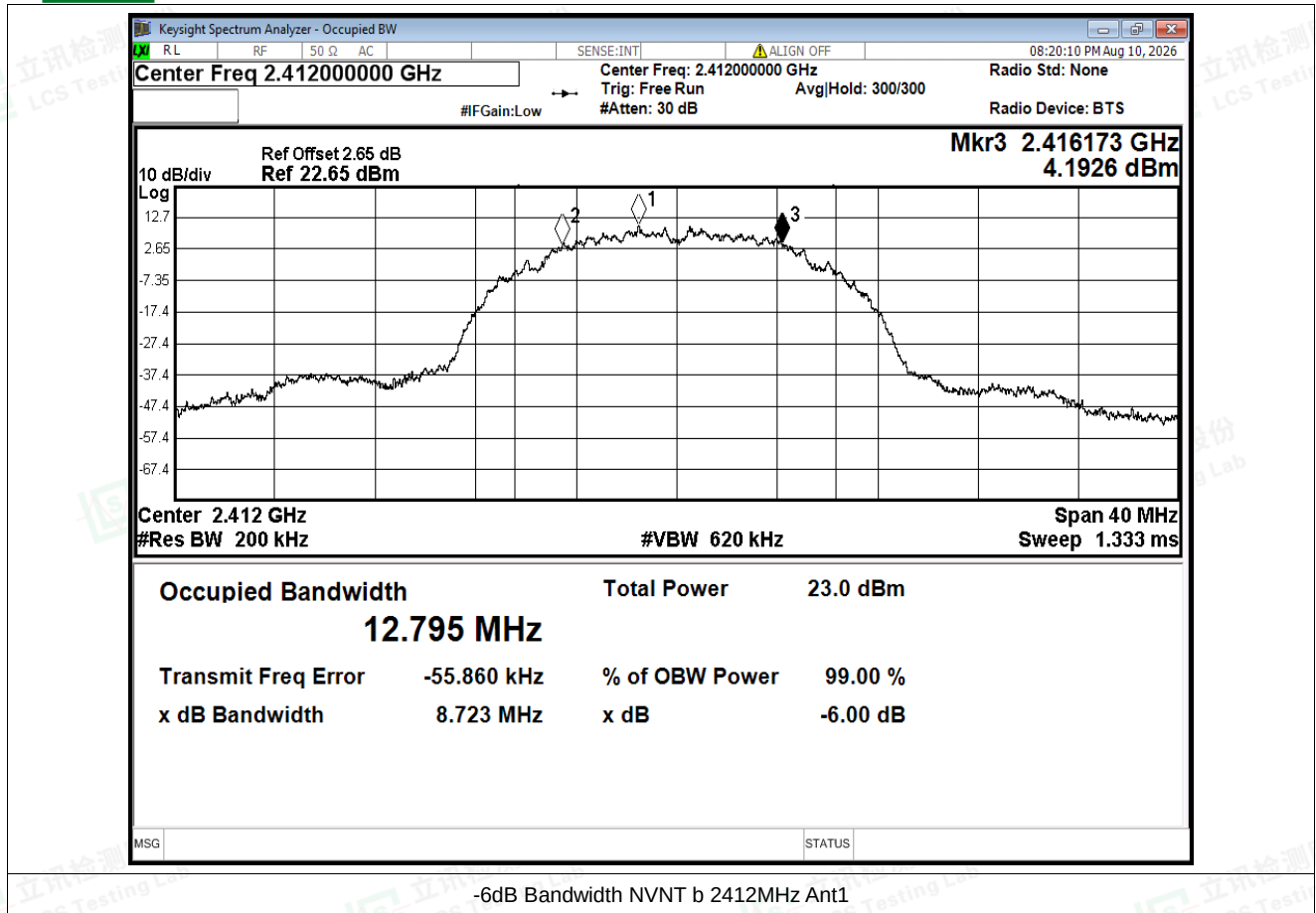
Environmental Conditions

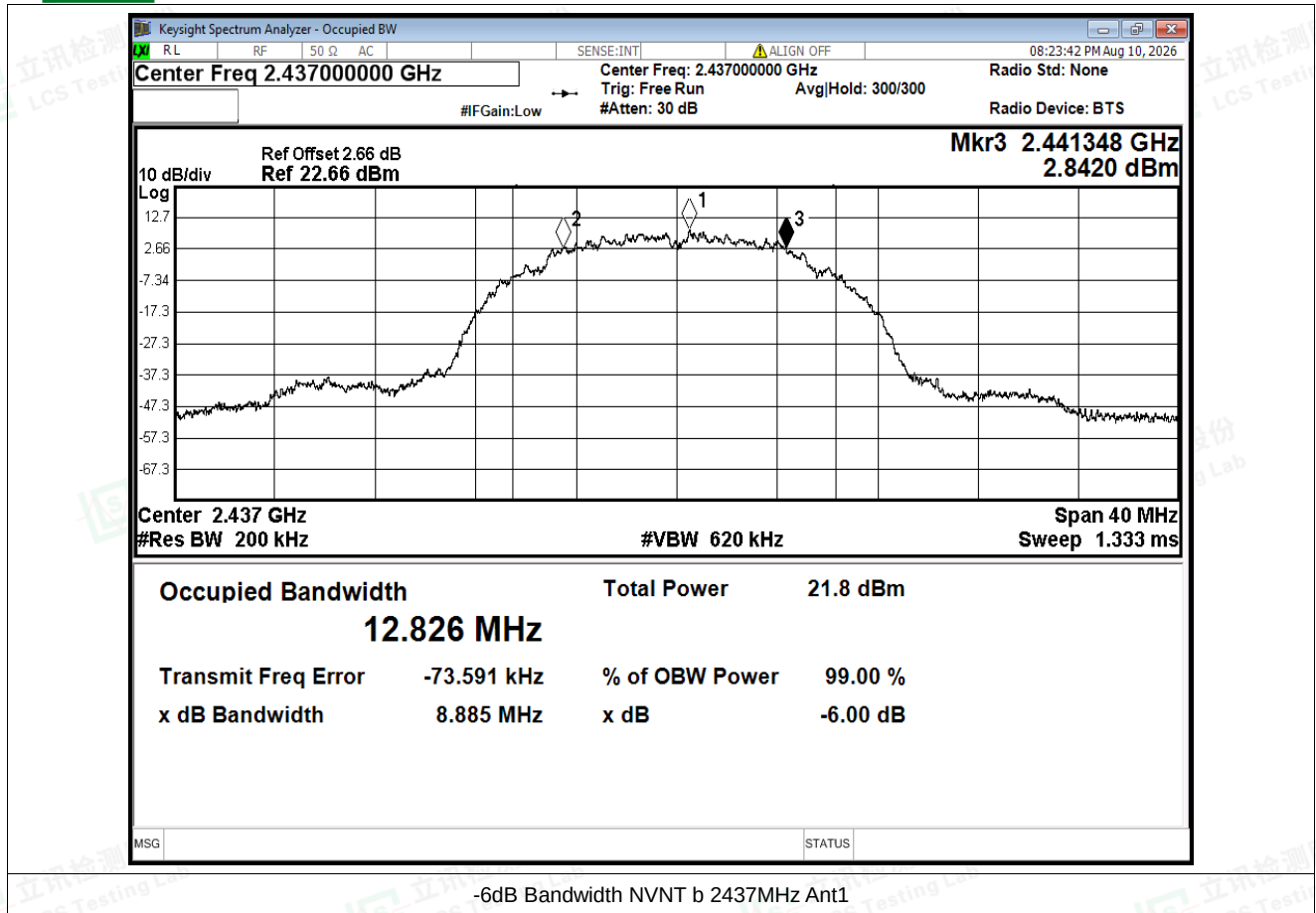
Temperature:	24.2° C
Relative Humidity:	53.0%
ATM Pressure:	100.0 kPa
Test Engineer:	Faith Li
Supervised by:	Can Kun

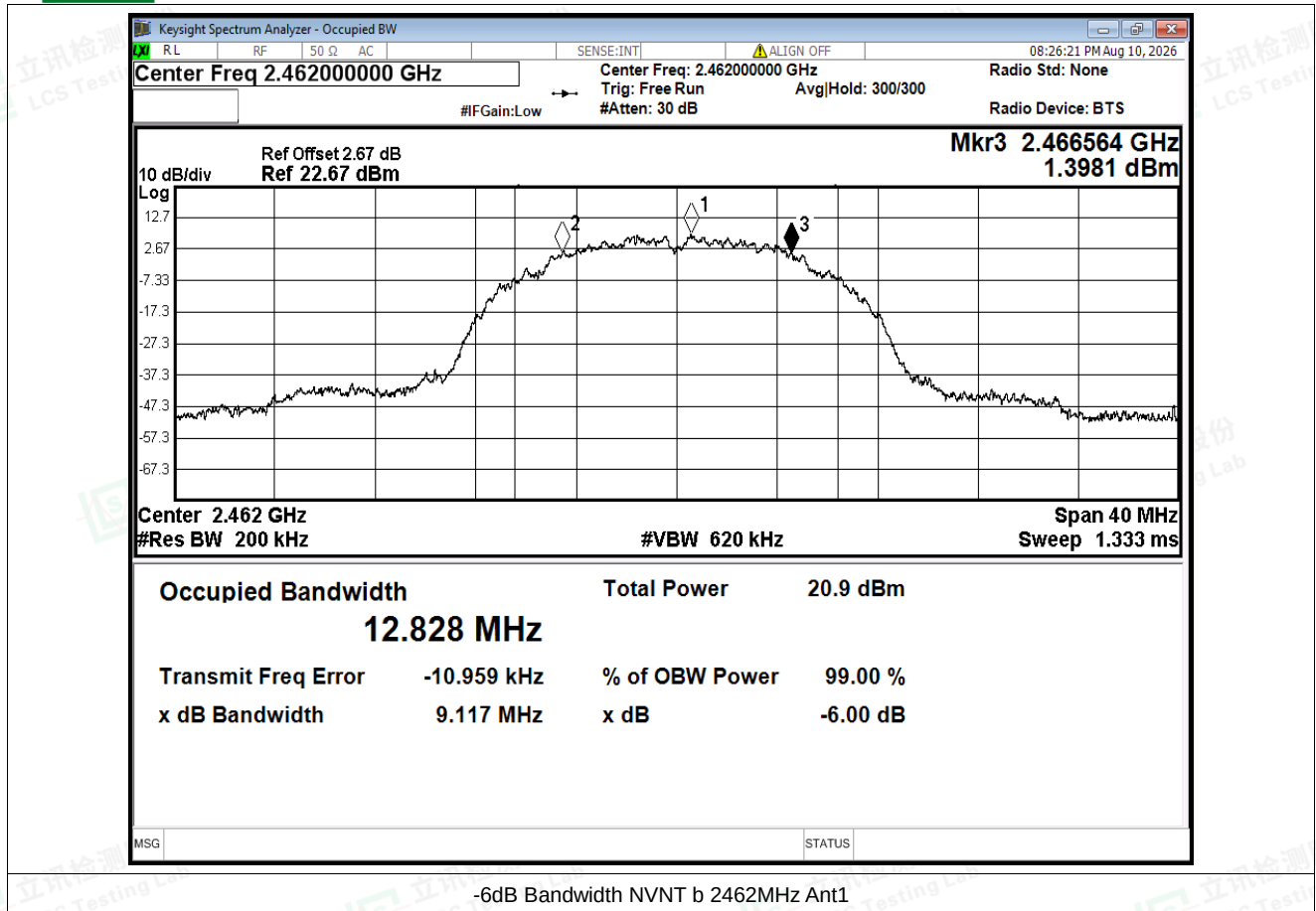


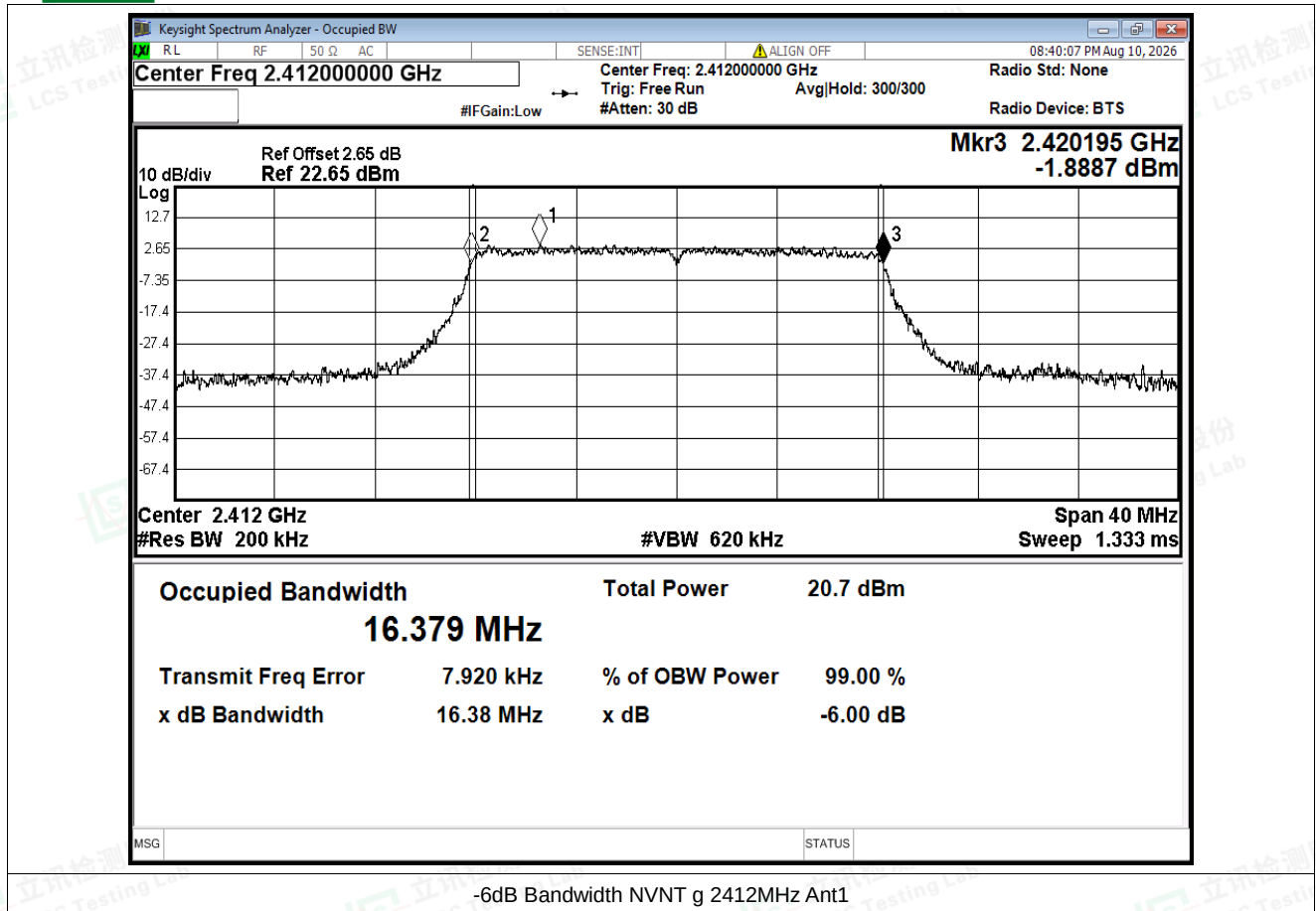
A.1 -6dB Bandwidth

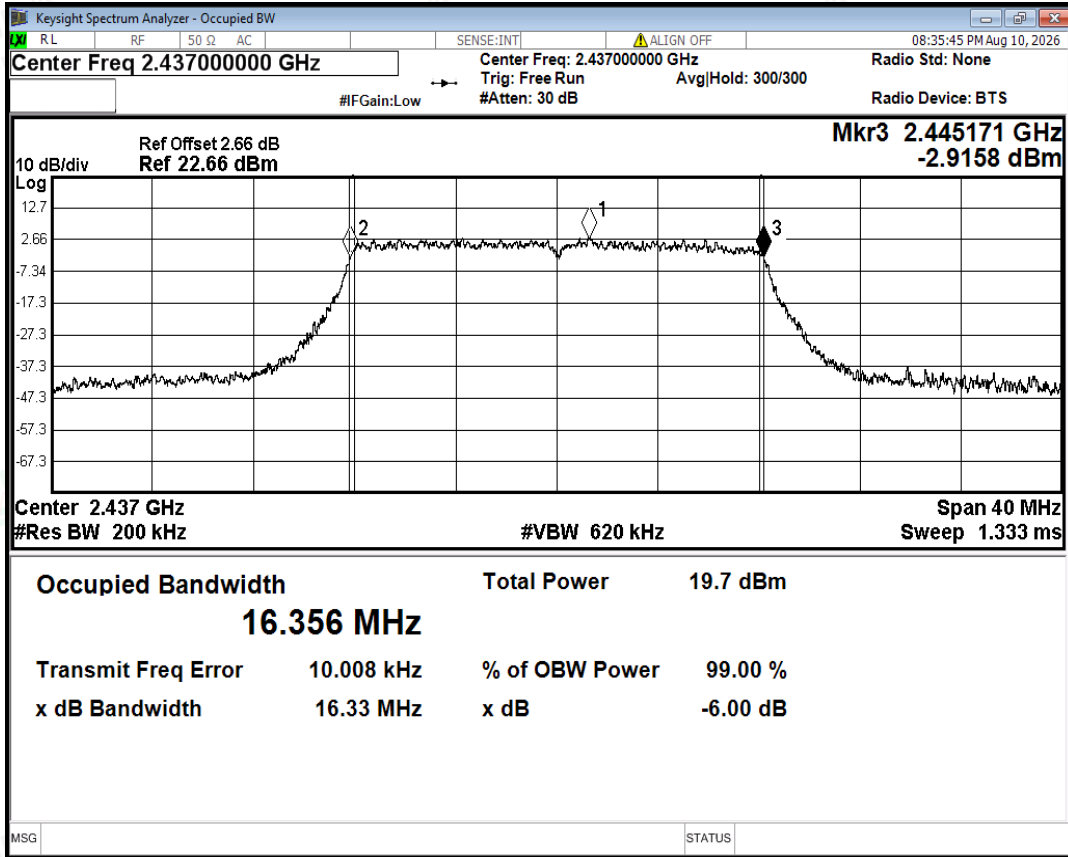
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.723	0.5	Pass
NVNT	b	2437	Ant1	8.885	0.5	Pass
NVNT	b	2462	Ant1	9.117	0.5	Pass
NVNT	g	2412	Ant1	16.38	0.5	Pass
NVNT	g	2437	Ant1	16.33	0.5	Pass
NVNT	g	2462	Ant1	16.35	0.5	Pass
NVNT	n20	2412	Ant1	17.25	0.5	Pass
NVNT	n20	2437	Ant1	17.16	0.5	Pass
NVNT	n20	2462	Ant1	17.19	0.5	Pass
NVNT	n40	2422	Ant1	34.41	0.5	Pass
NVNT	n40	2437	Ant1	35.05	0.5	Pass
NVNT	n40	2452	Ant1	35.26	0.5	Pass



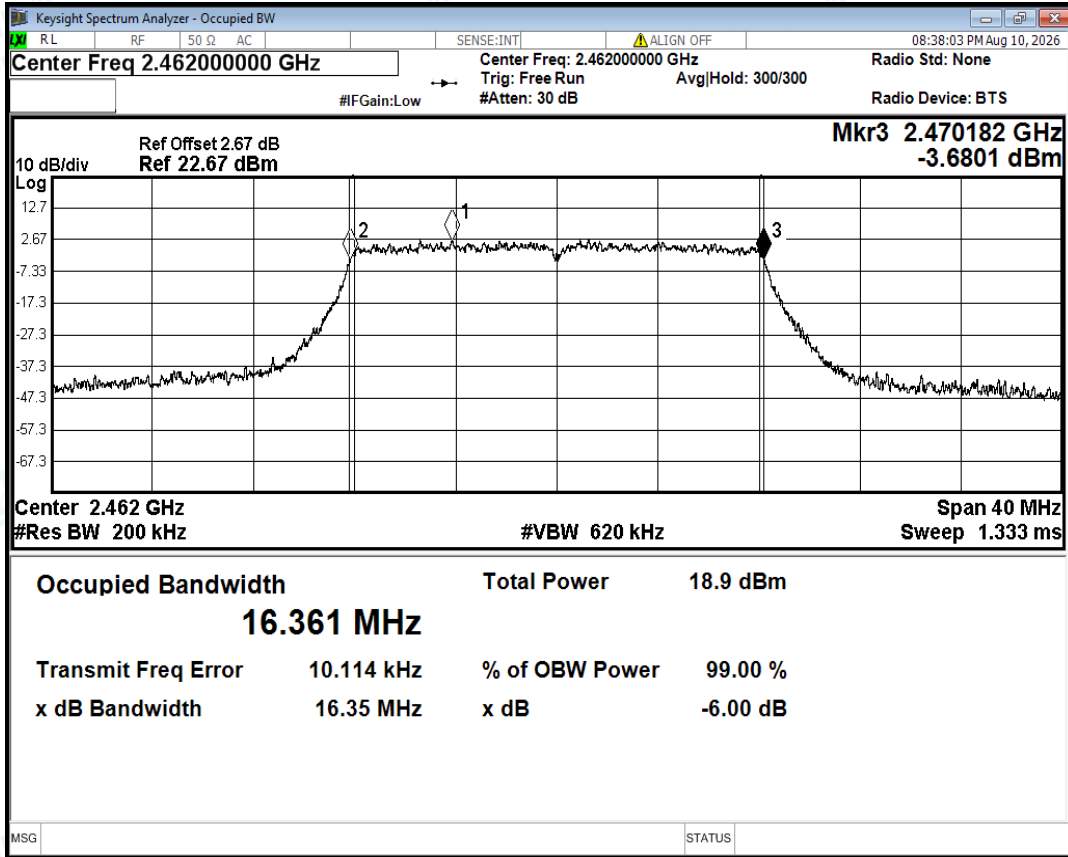




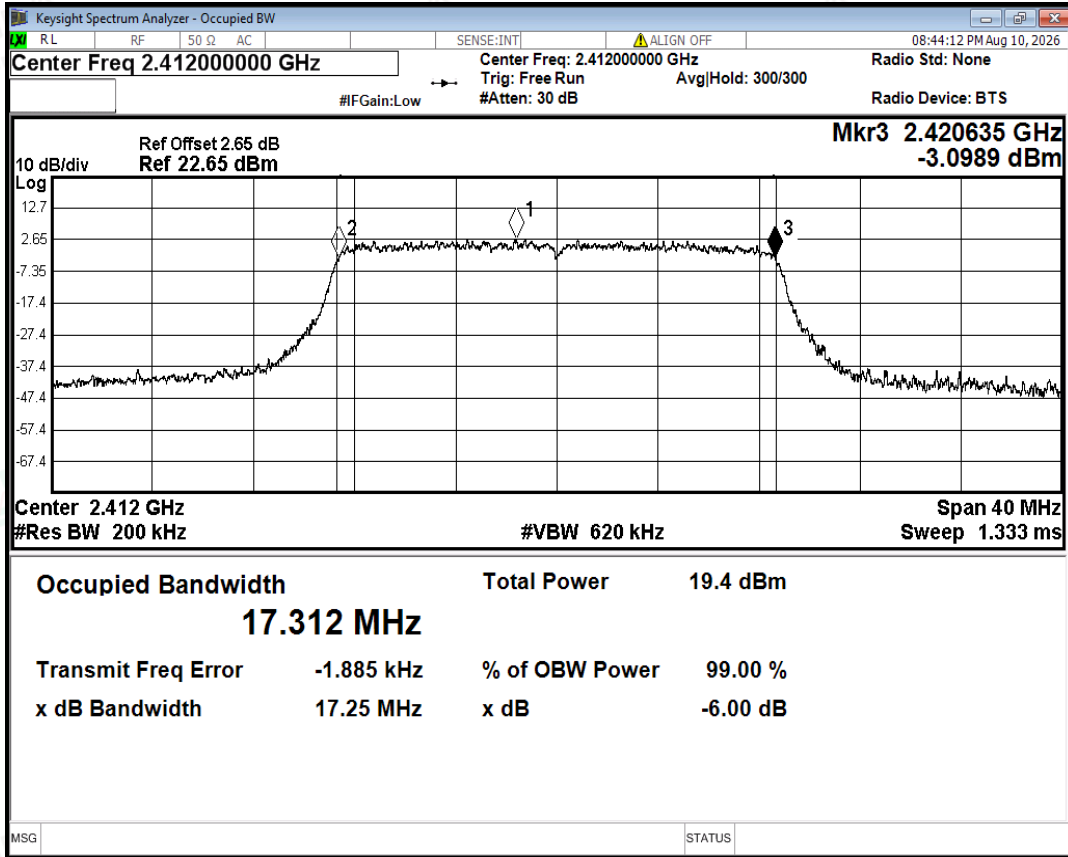




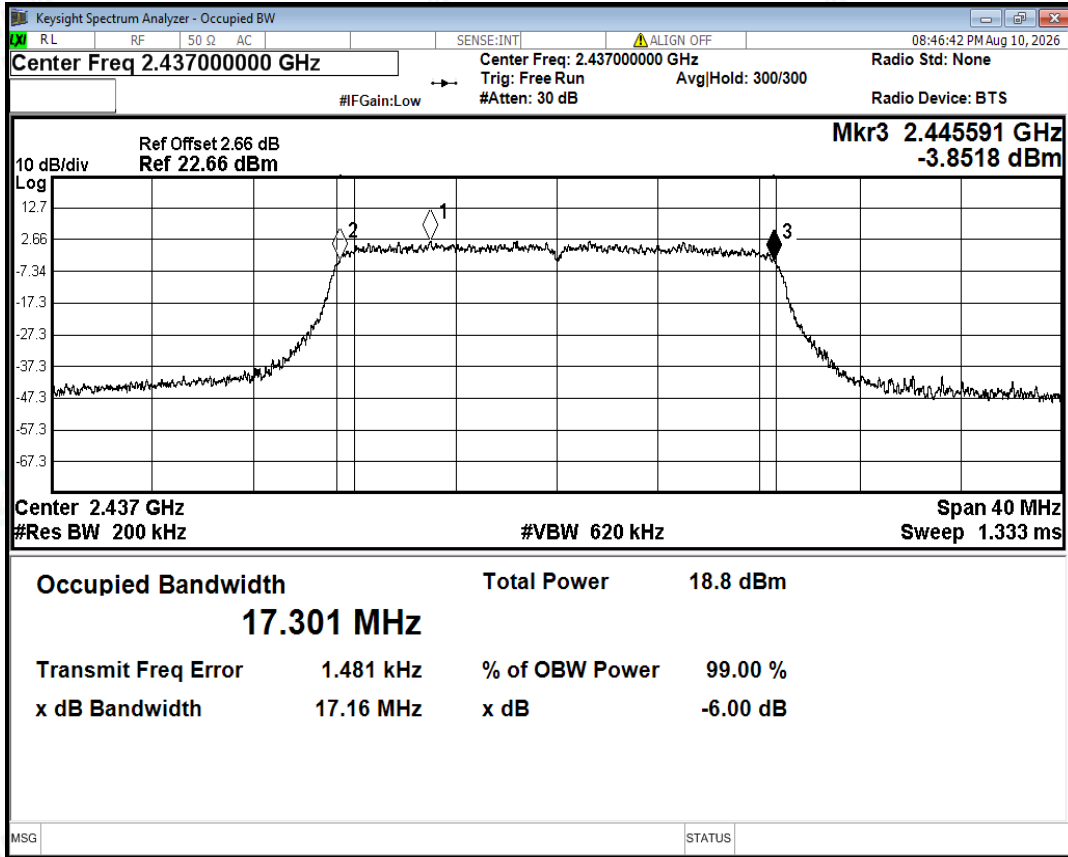
-6dB Bandwidth NVNT g 2437MHz Ant1



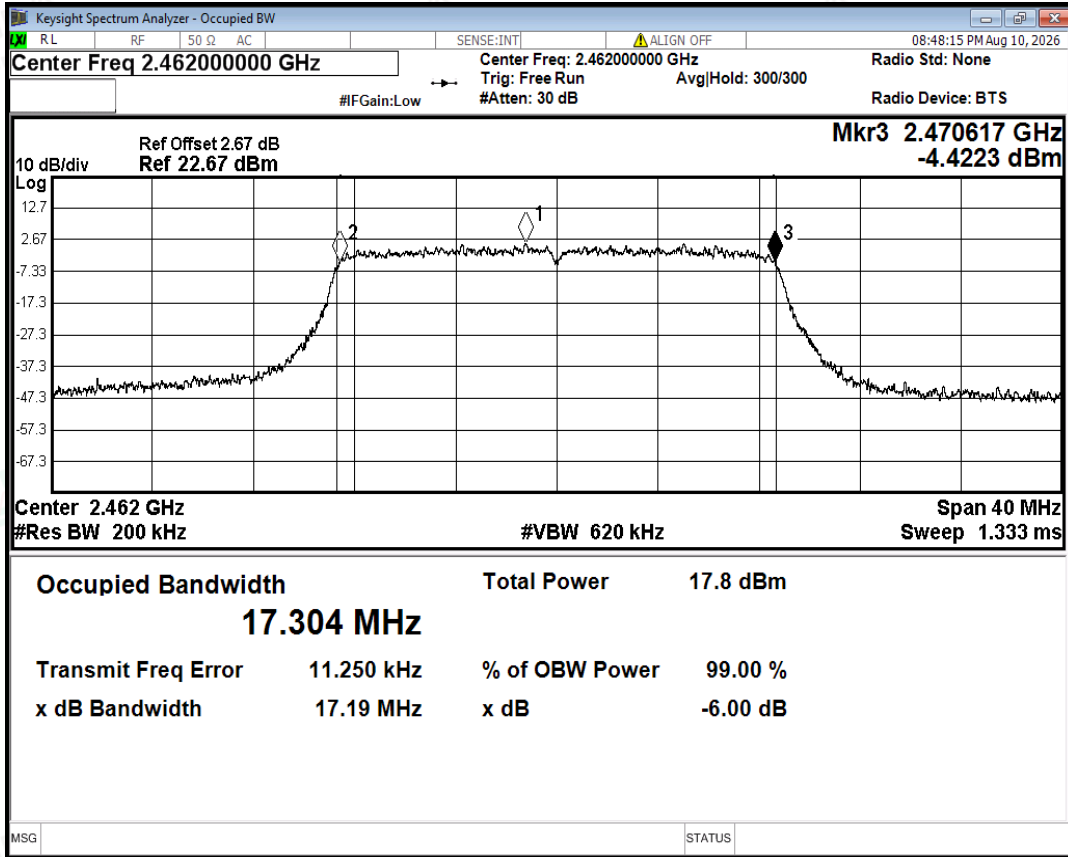
-6dB Bandwidth NVNT g 2462MHz Ant1



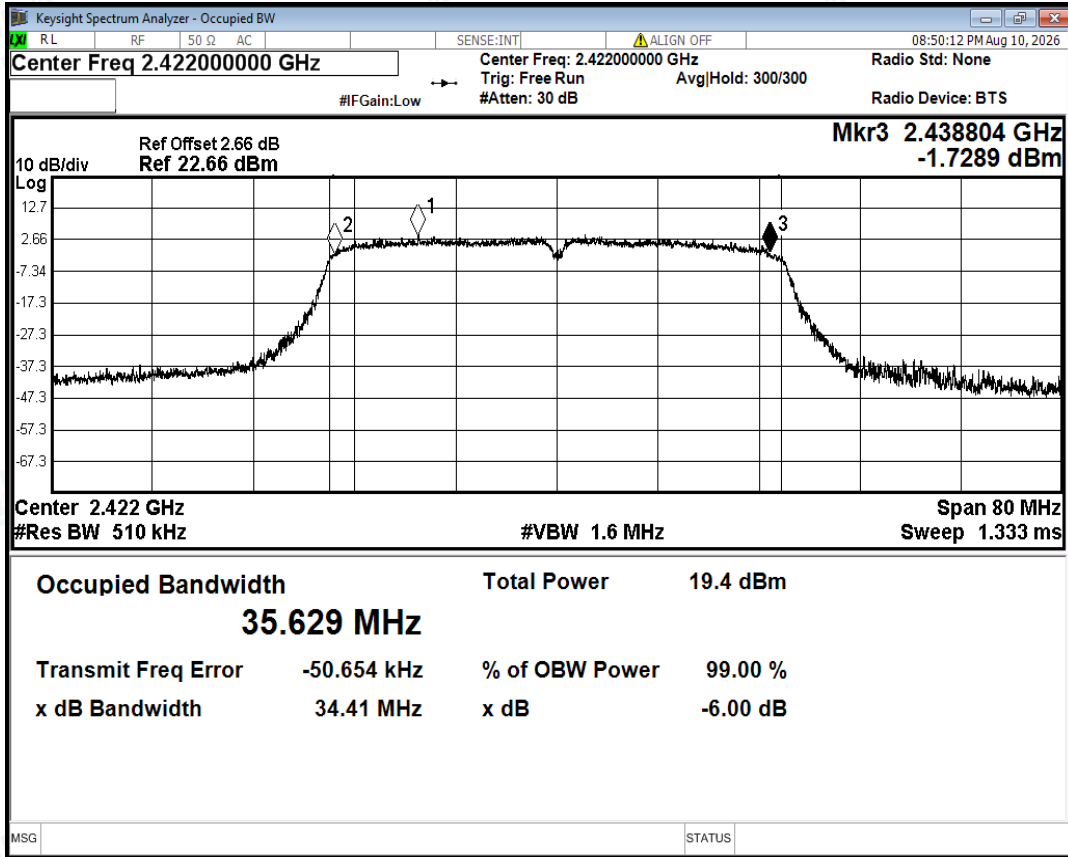
-6dB Bandwidth NVNT n20 2412MHz Ant1



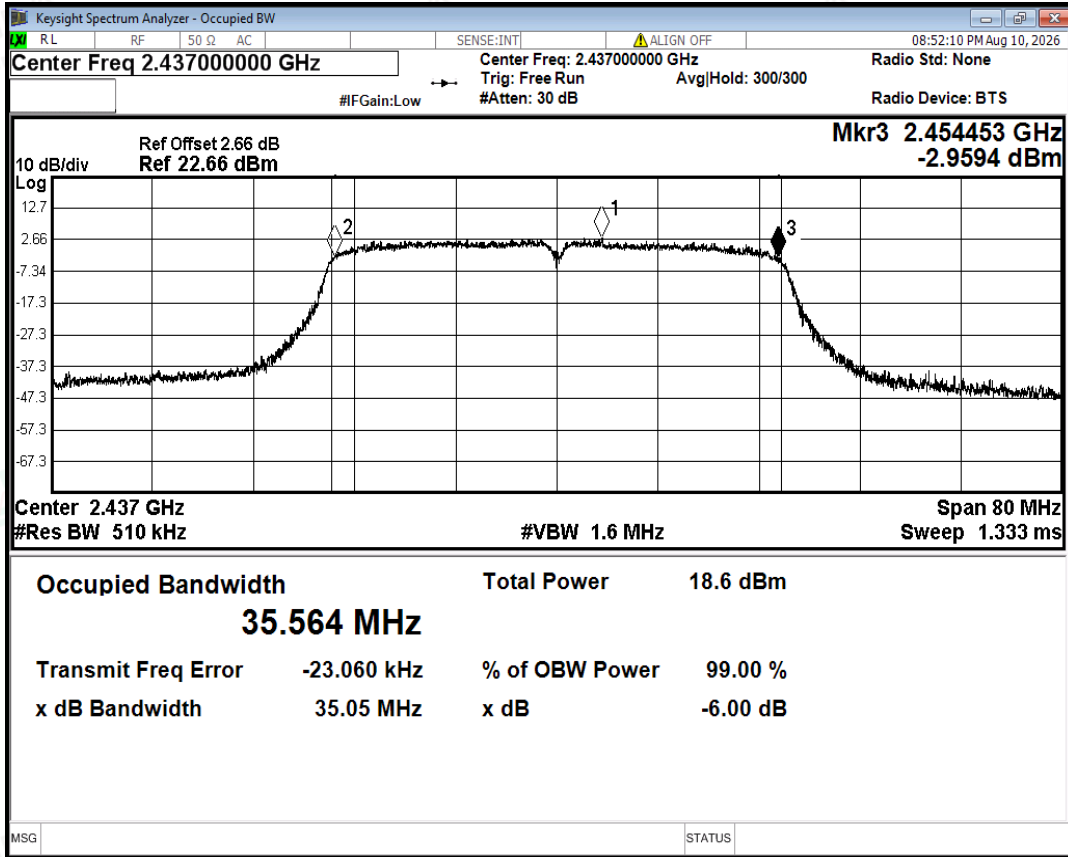
-6dB Bandwidth NVNT n20 2437MHz Ant1



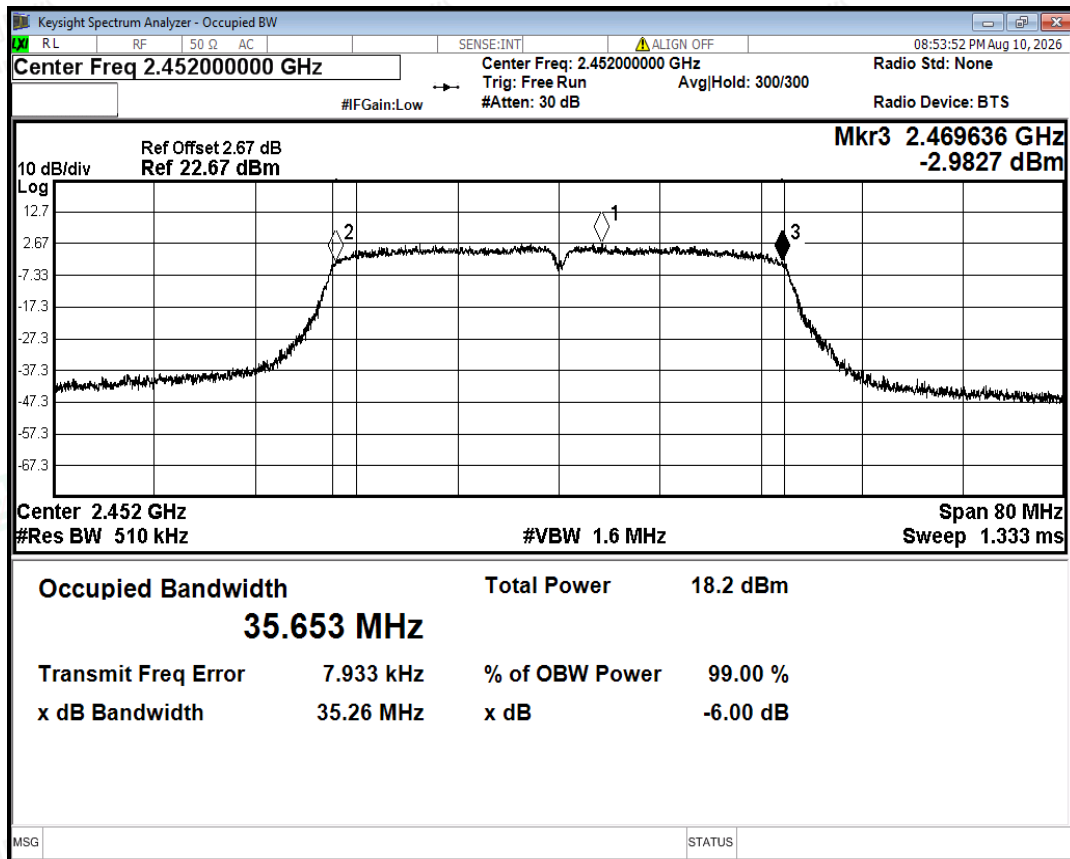
-6dB Bandwidth NVNT n20 2462MHz Ant1



-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1



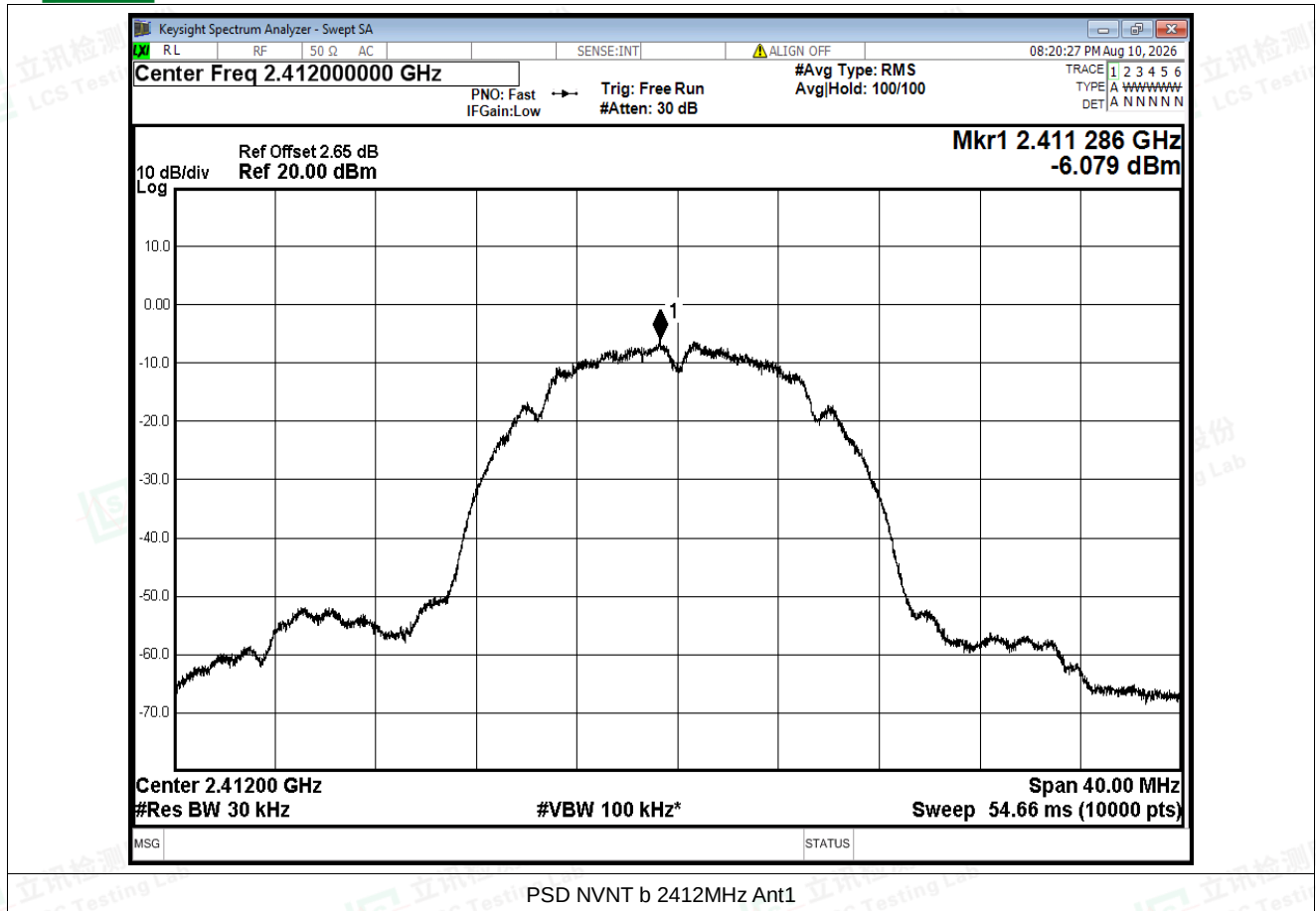
A.2 Maximum Average Conducted Output Power

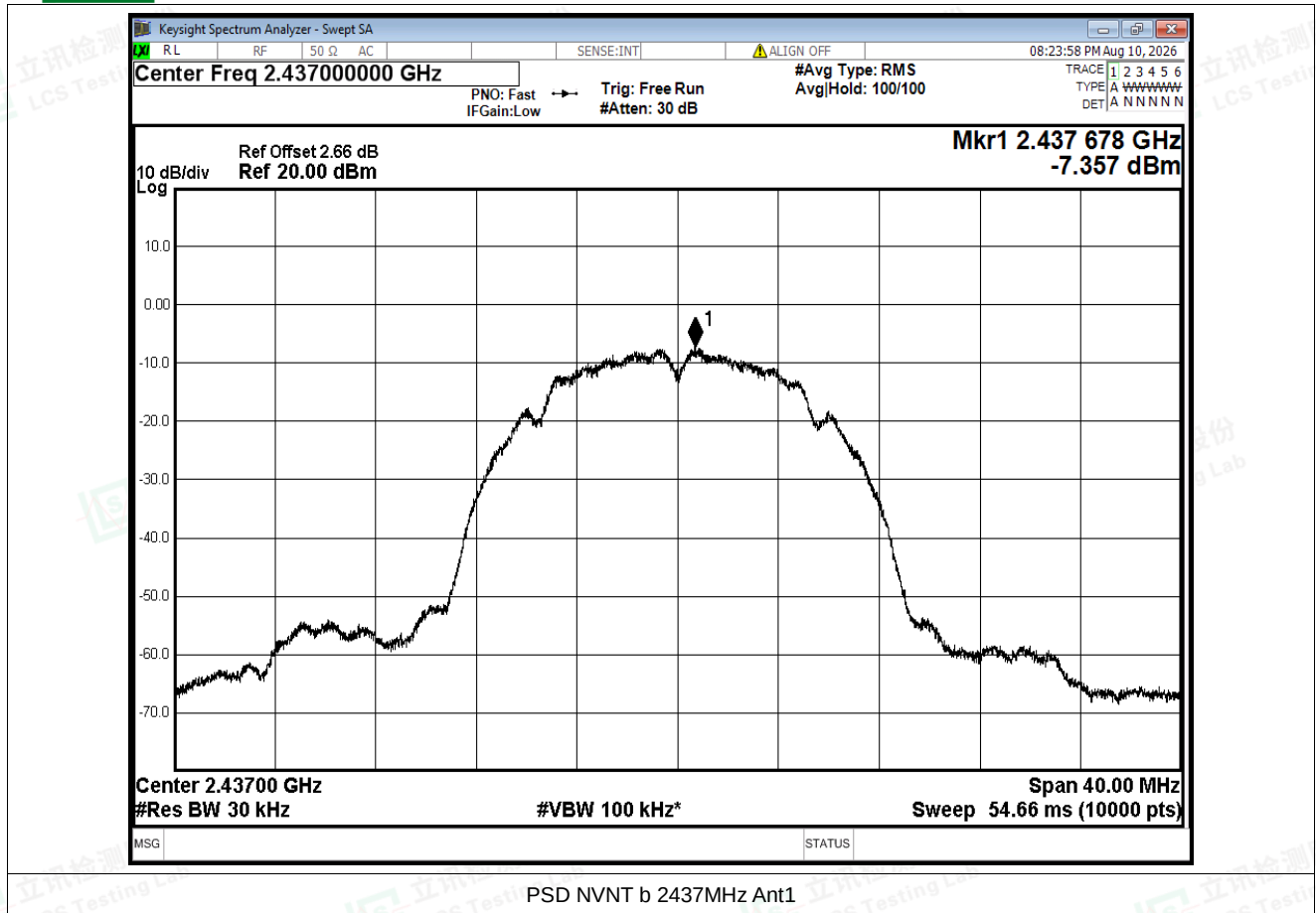
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Conducted Power (dBm)	Limit Conducted(dBm)	Verdict
NVNT	b	2412	Ant1	15.82	0	15.82	30	Pass
NVNT	b	2437	Ant1	14.79	0	14.79	30	Pass
NVNT	b	2462	Ant1	13.79	0.01	13.80	30	Pass
NVNT	g	2412	Ant1	14.54	0.03	14.57	30	Pass
NVNT	g	2437	Ant1	13.72	0.03	13.75	30	Pass
NVNT	g	2462	Ant1	12.77	0.03	12.80	30	Pass
NVNT	n20	2412	Ant1	13.58	0.03	13.61	30	Pass
NVNT	n20	2437	Ant1	12.55	0.03	12.58	30	Pass
NVNT	n20	2462	Ant1	11.65	0.03	11.68	30	Pass
NVNT	n40	2422	Ant1	13.04	0.06	13.10	30	Pass
NVNT	n40	2437	Ant1	12.23	0.06	12.29	30	Pass
NVNT	n40	2452	Ant1	11.81	0.06	11.87	30	Pass

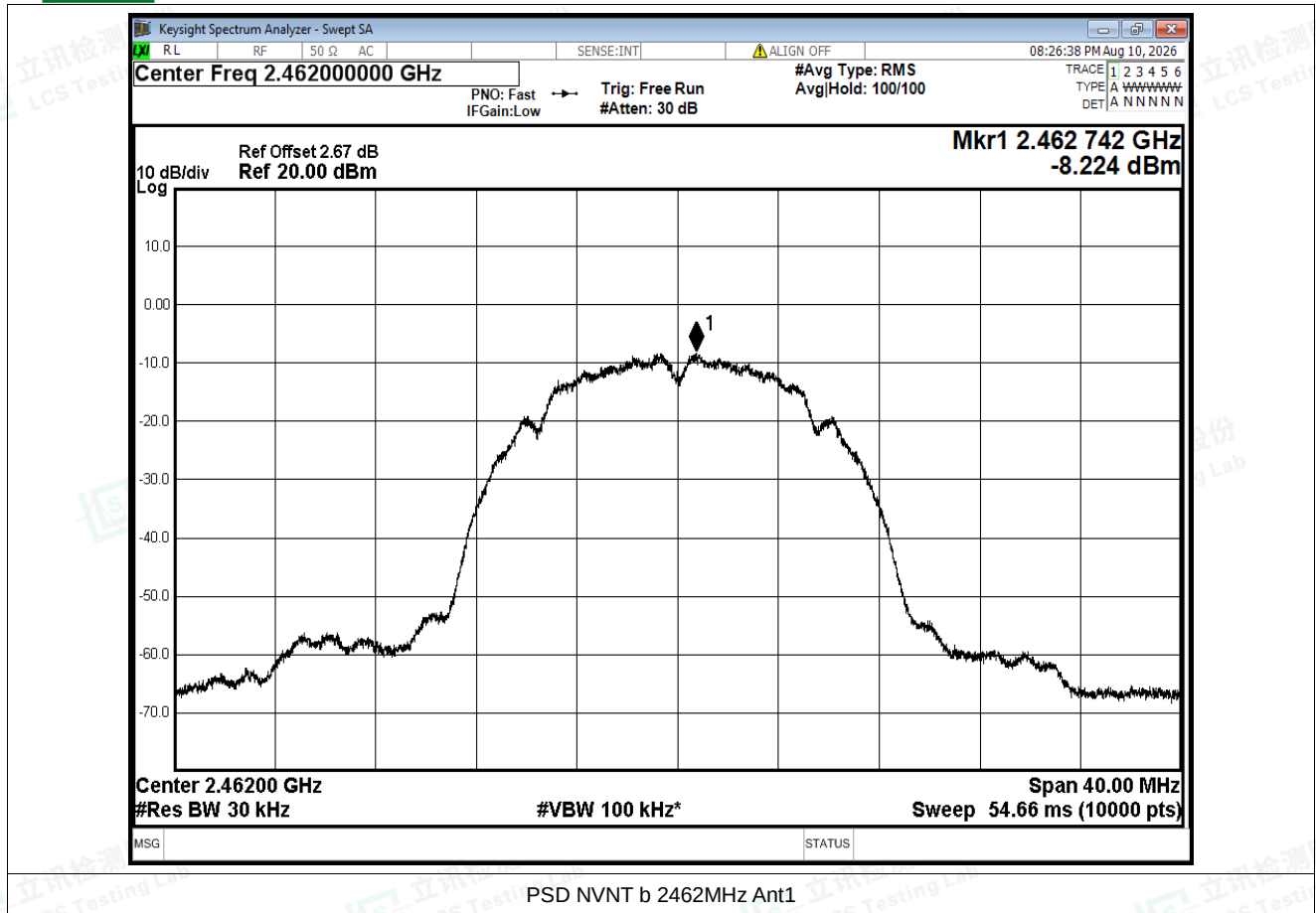


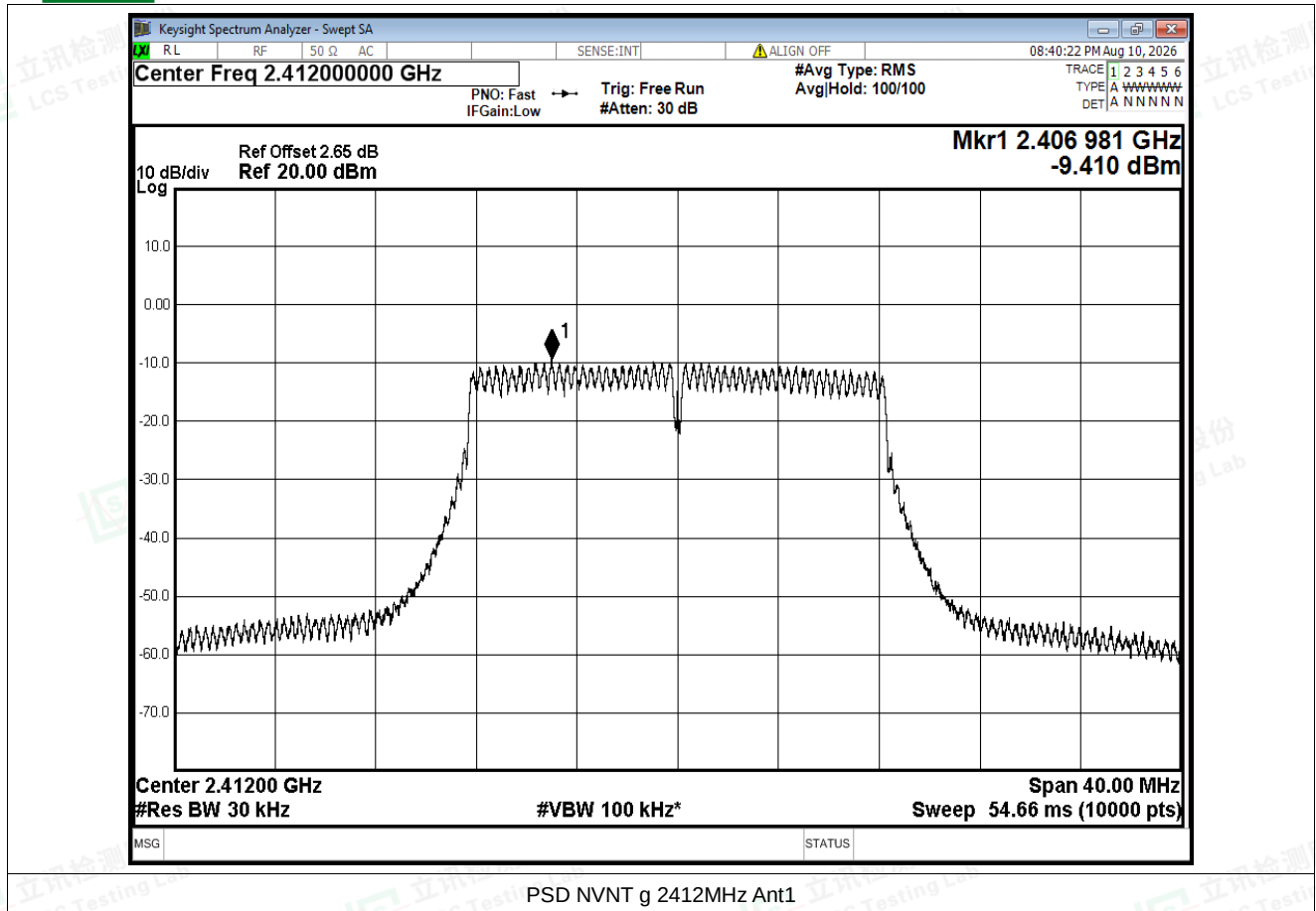
A.3 Maximum Power Spectral Density Level

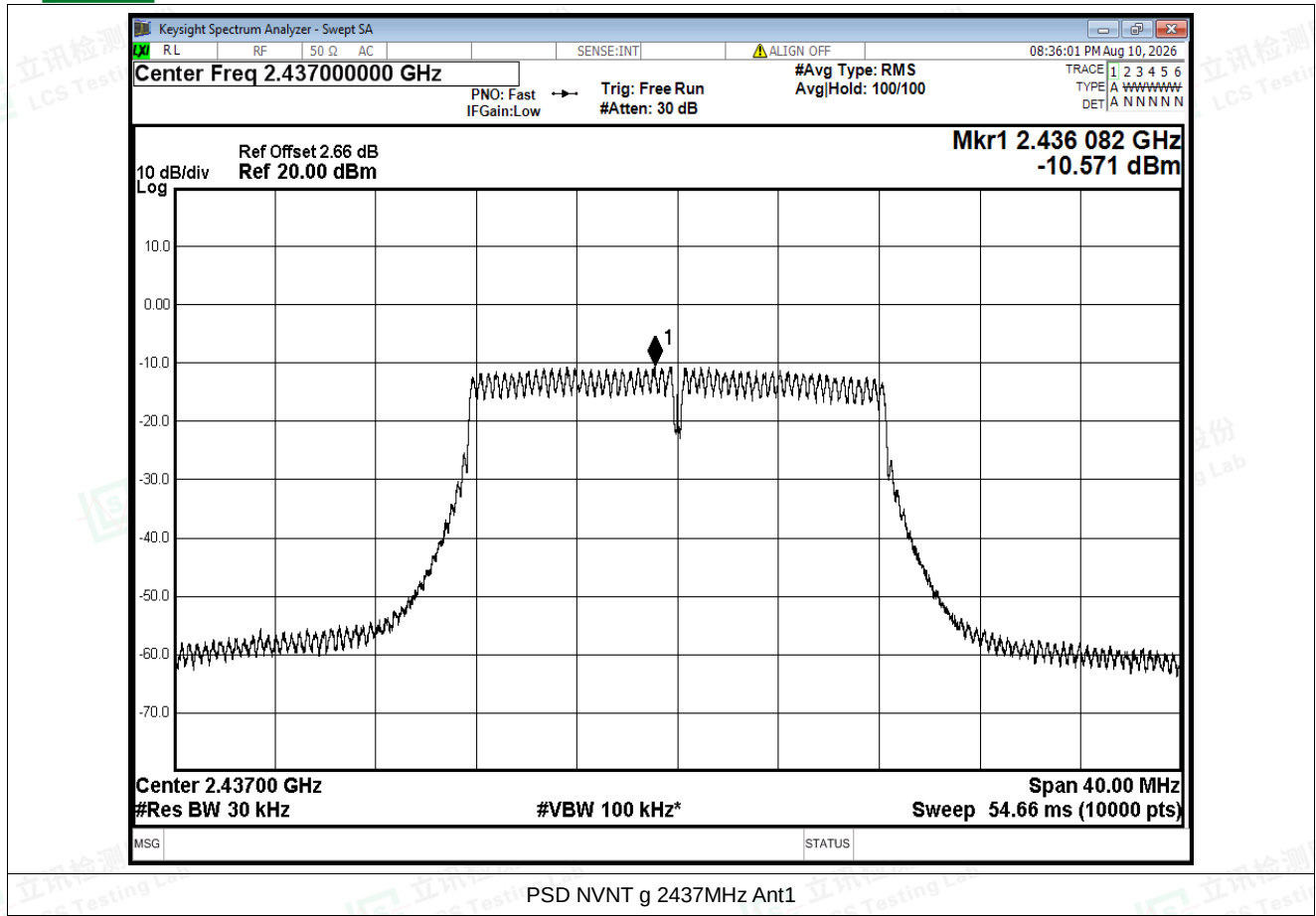
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/30kHz)	Duty Factor (dB)	Total PSD (dBm/30kHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-6.08	0	-6.08	-16.08	8	Pass
NVNT	b	2437	Ant1	-7.36	0	-7.36	-17.36	8	Pass
NVNT	b	2462	Ant1	-8.22	0	-8.22	-18.22	8	Pass
NVNT	g	2412	Ant1	-9.41	0.03	-9.38	-19.38	8	Pass
NVNT	g	2437	Ant1	-10.57	0.03	-10.54	-20.54	8	Pass
NVNT	g	2462	Ant1	-11.06	0.03	-11.03	-21.03	8	Pass
NVNT	n20	2412	Ant1	-10.66	0.03	-10.63	-20.63	8	Pass
NVNT	n20	2437	Ant1	-11.33	0.03	-11.3	-21.30	8	Pass
NVNT	n20	2462	Ant1	-11.89	0.03	-11.86	-21.86	8	Pass
NVNT	n40	2422	Ant1	-13.68	0.06	-13.62	-23.62	8	Pass
NVNT	n40	2437	Ant1	-14.28	0.06	-14.22	-24.22	8	Pass
NVNT	n40	2452	Ant1	-14.74	0.06	-14.68	-24.68	8	Pass

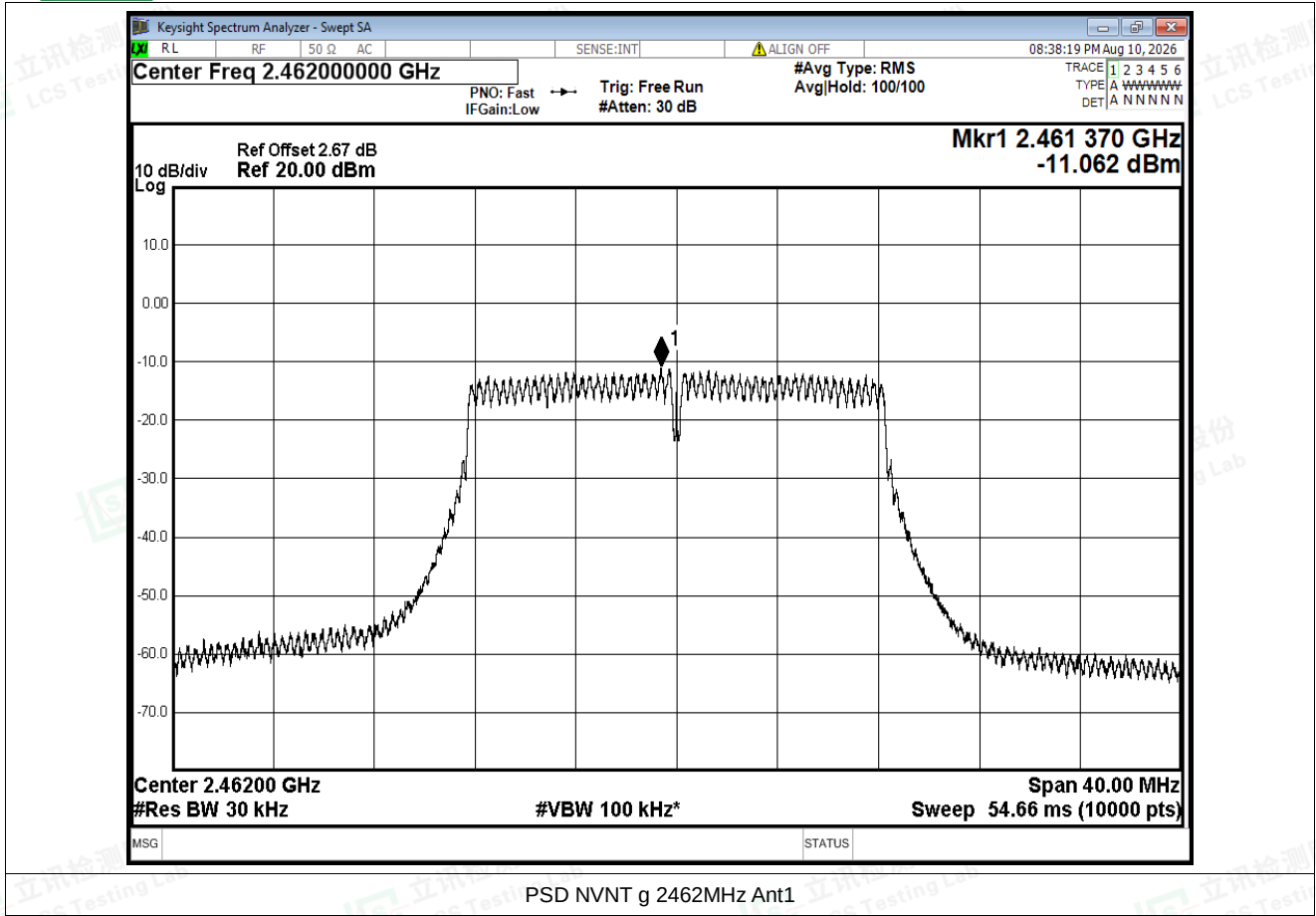


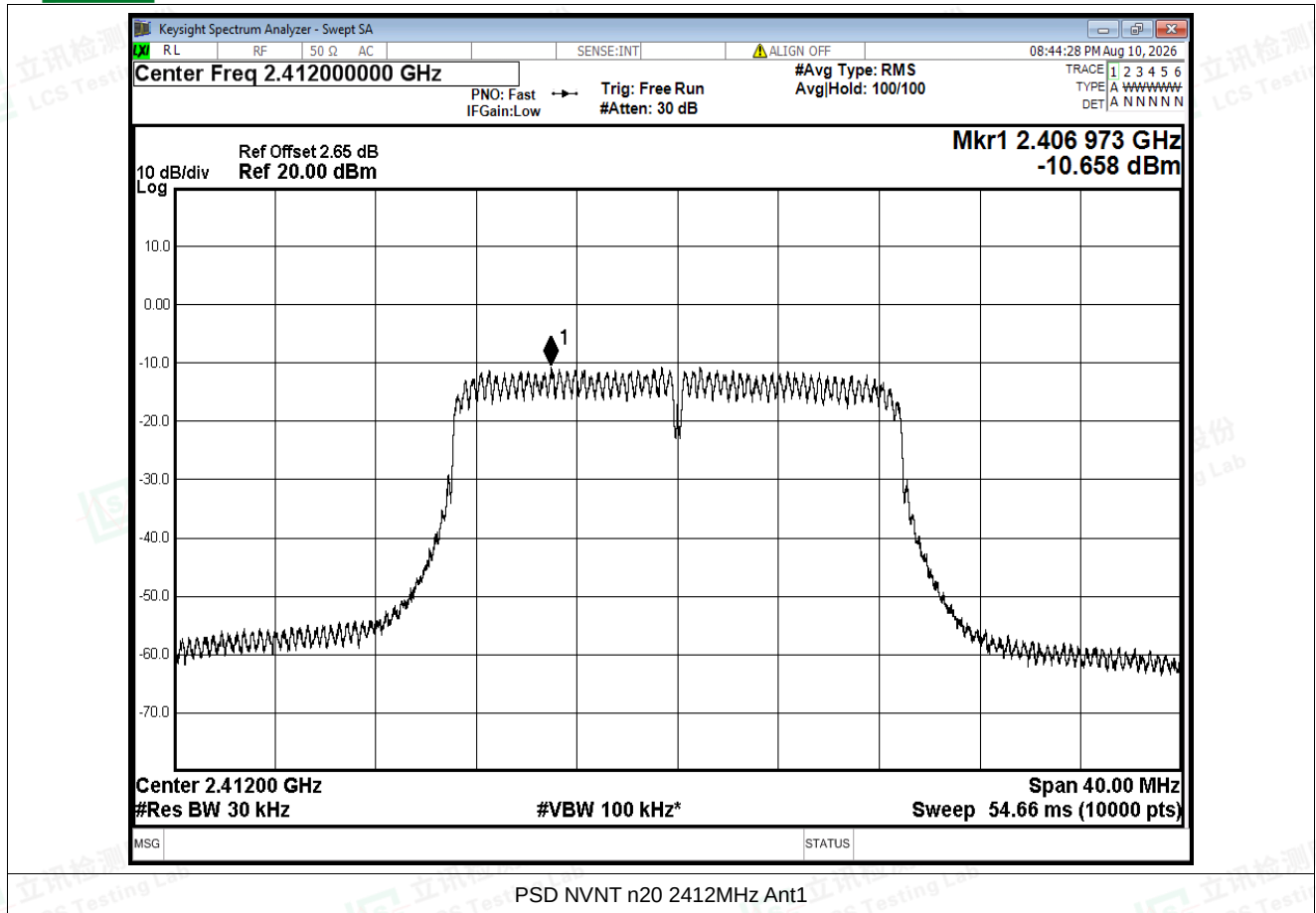


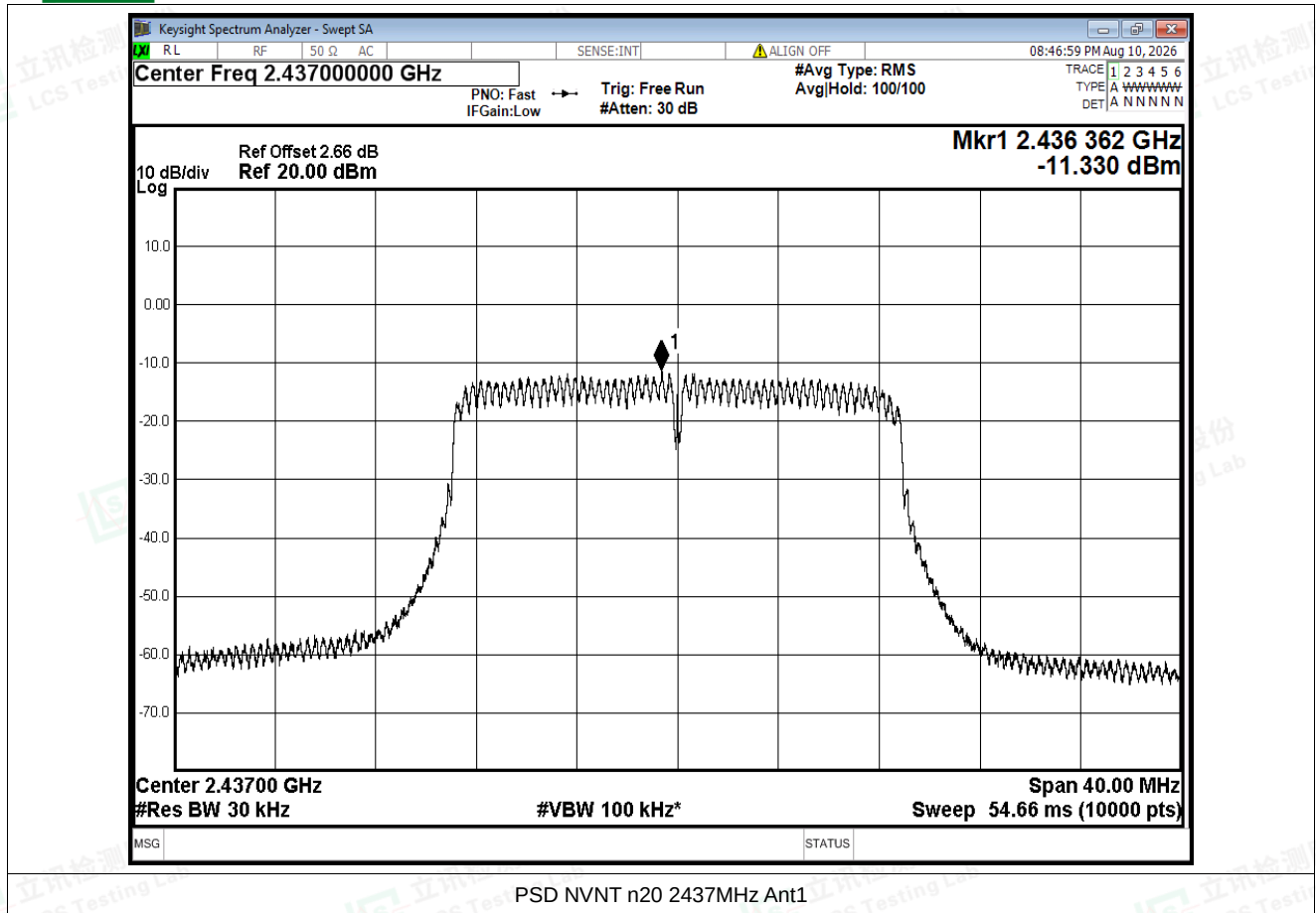


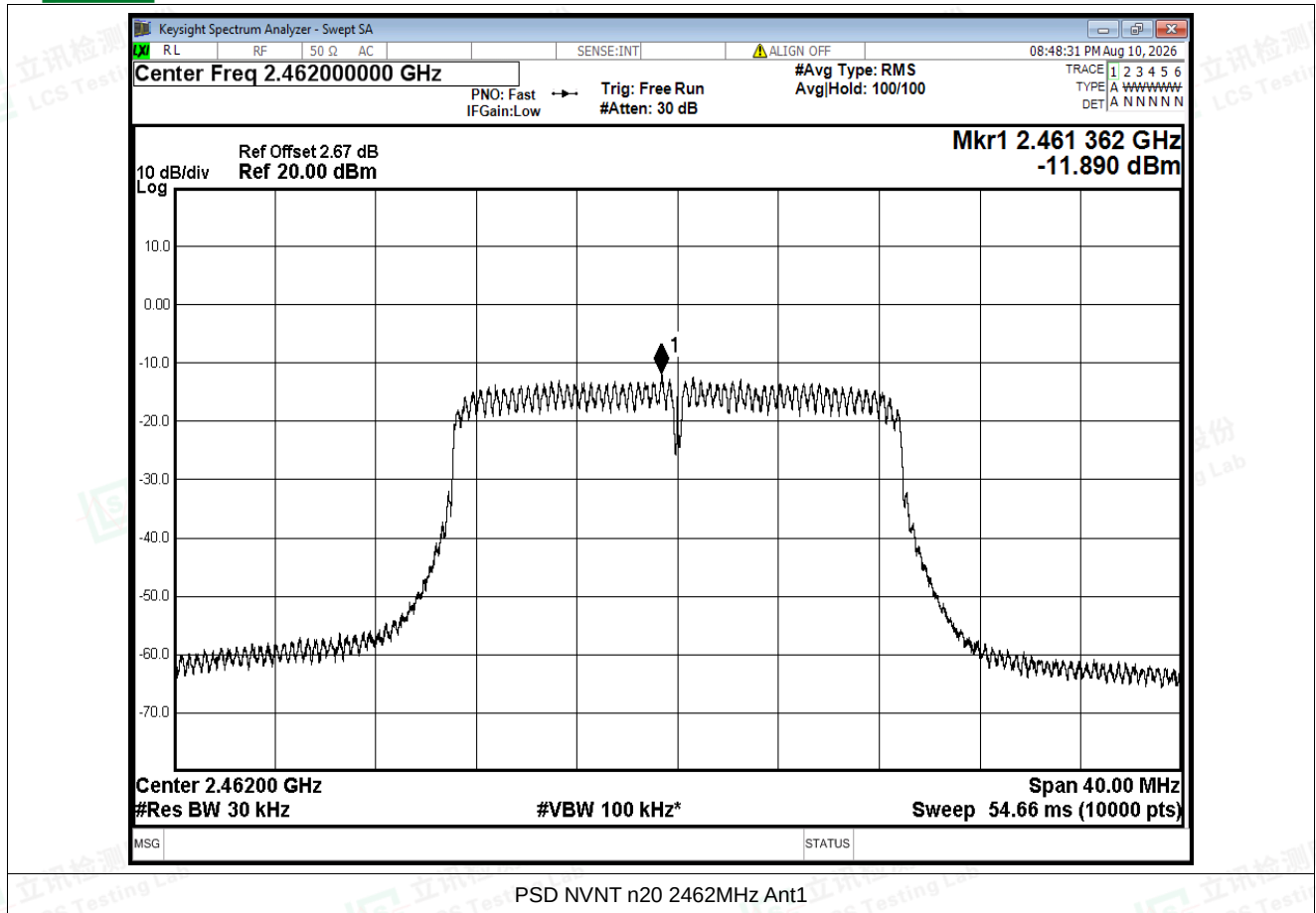


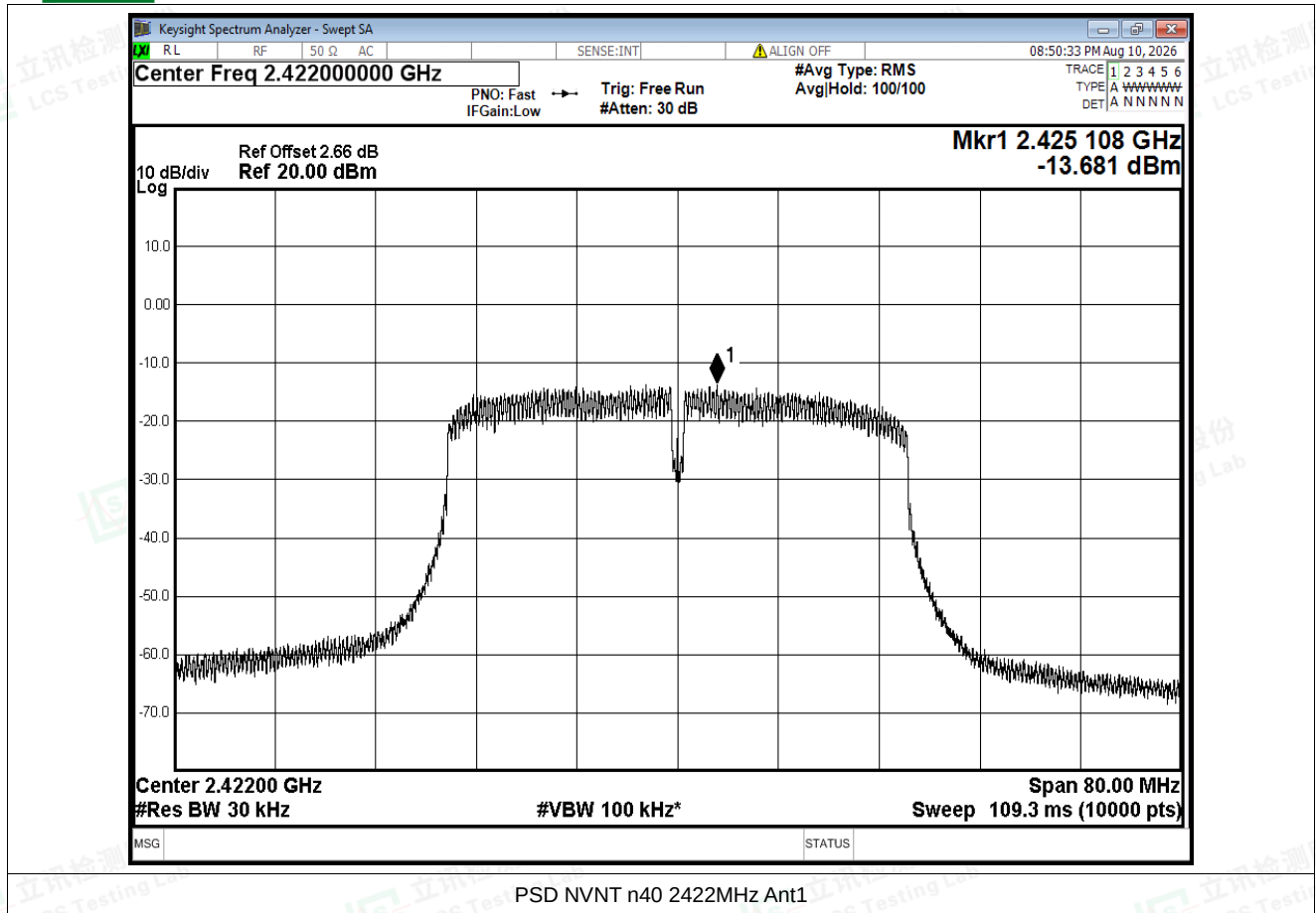


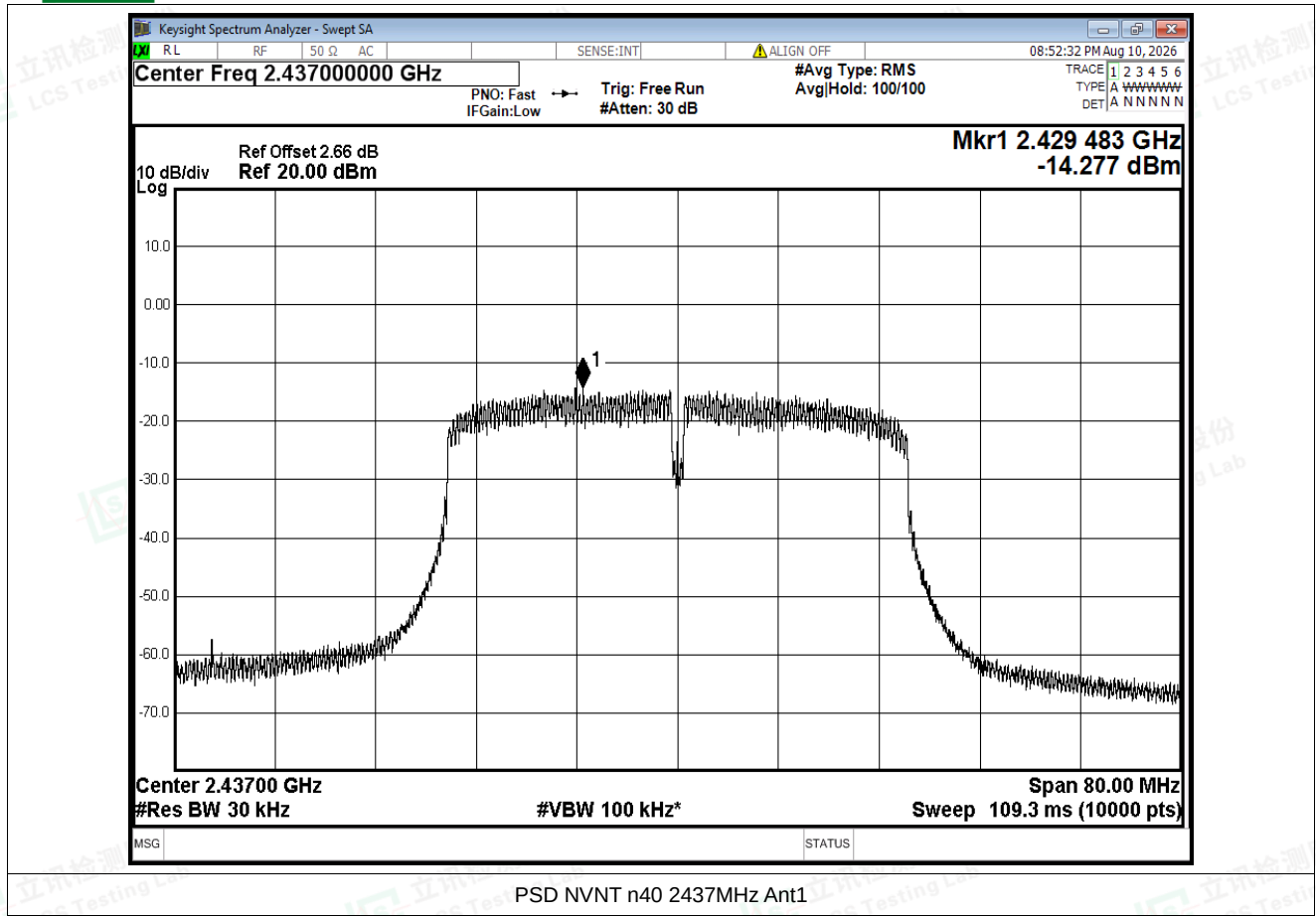


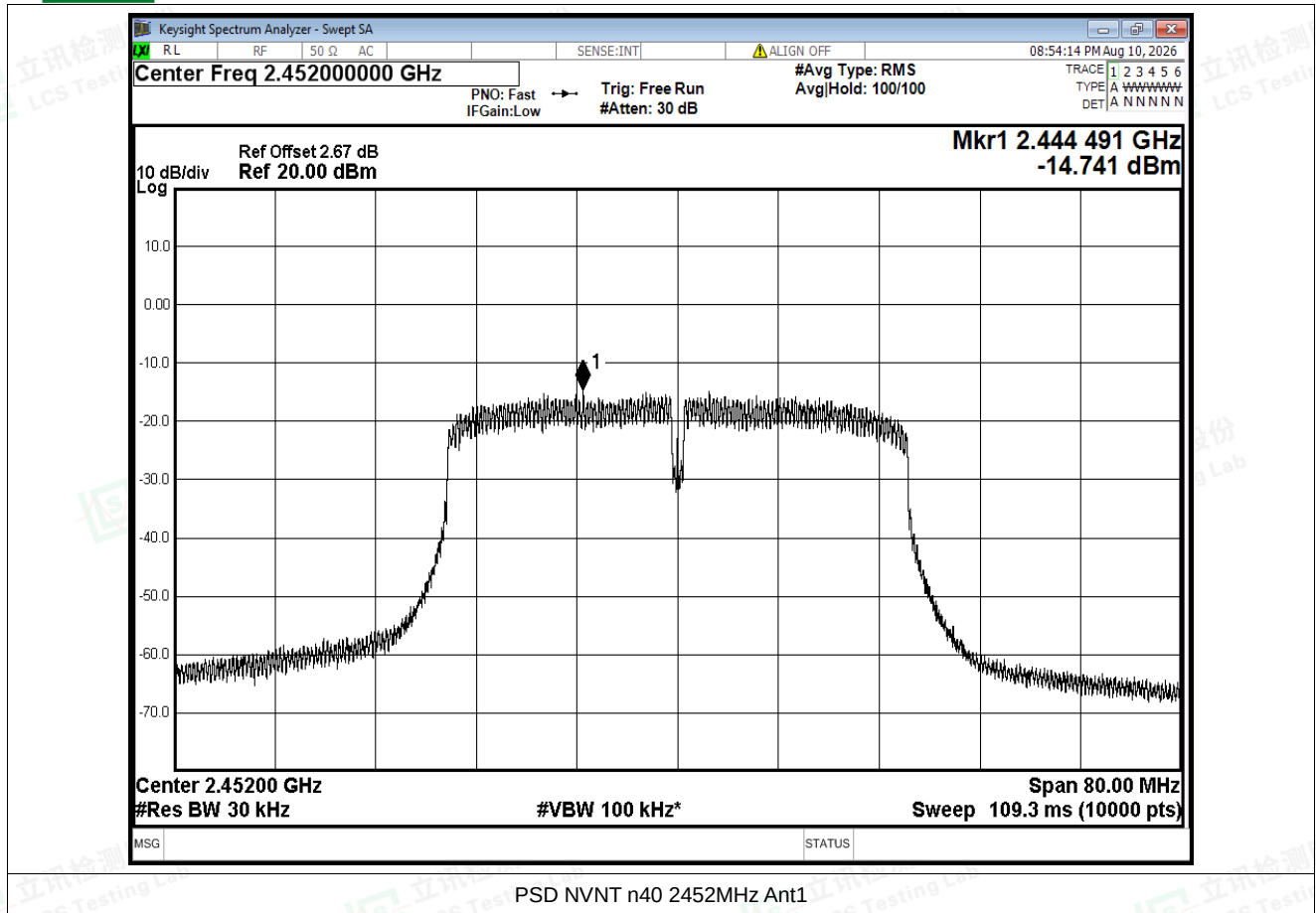








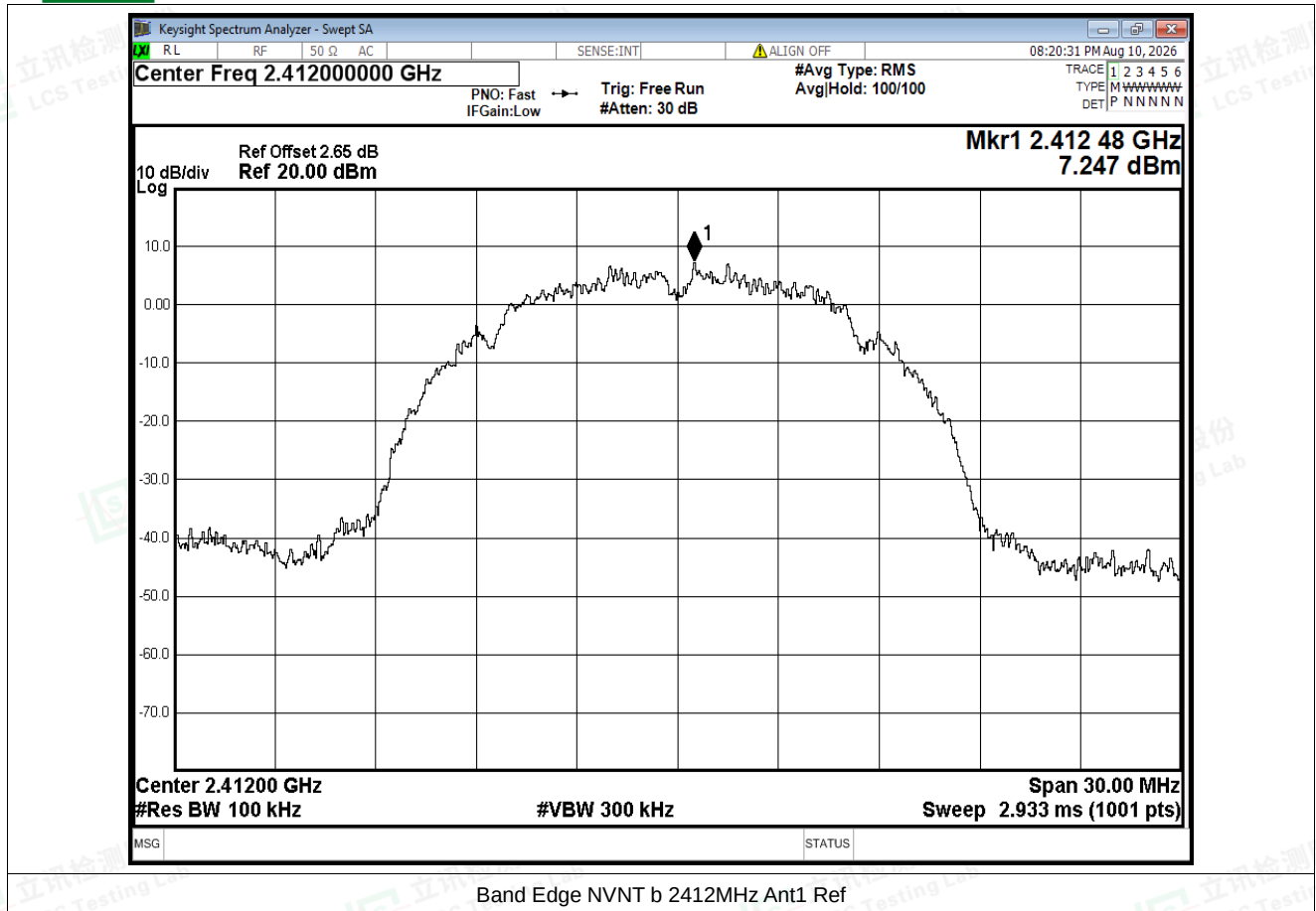


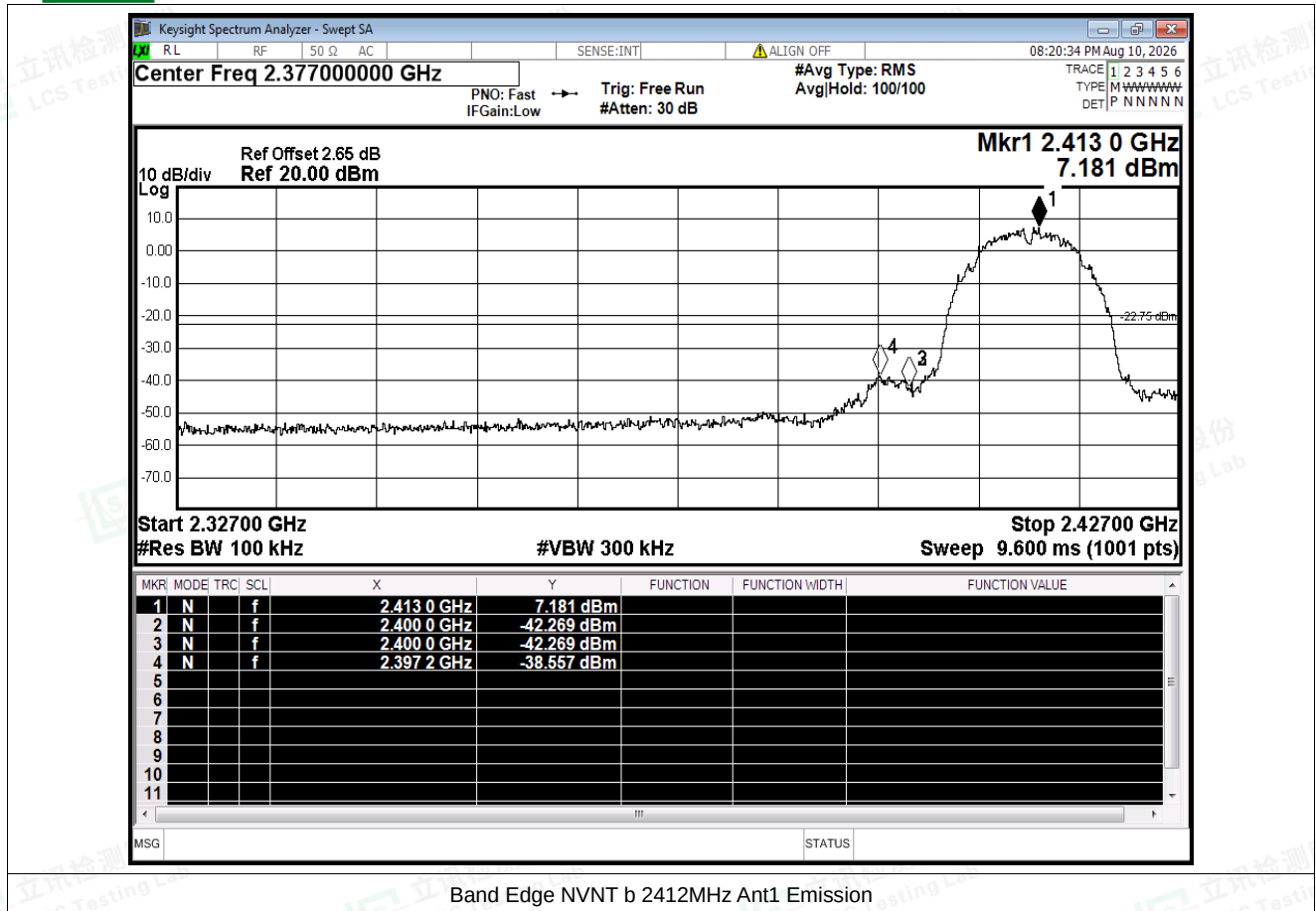


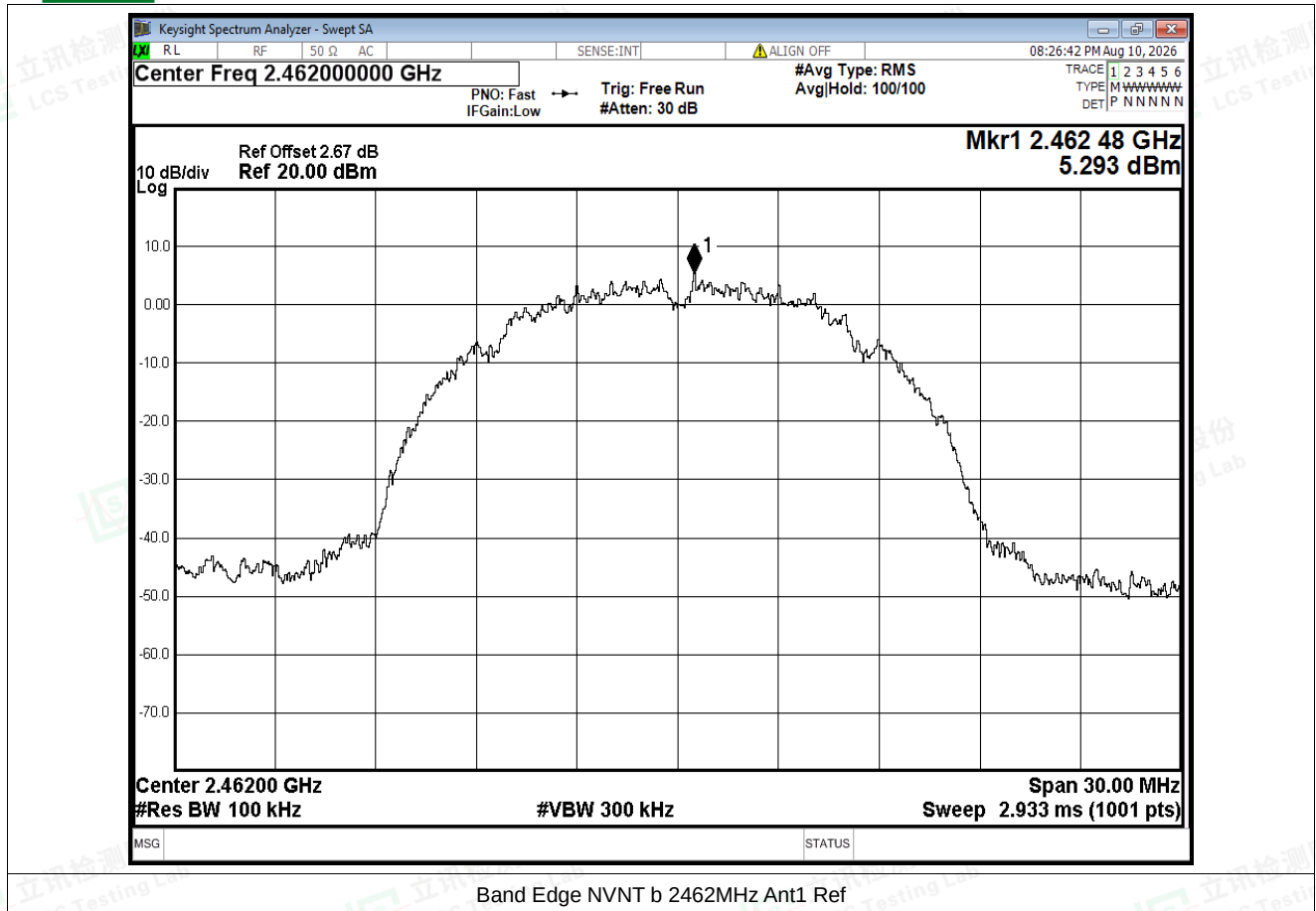


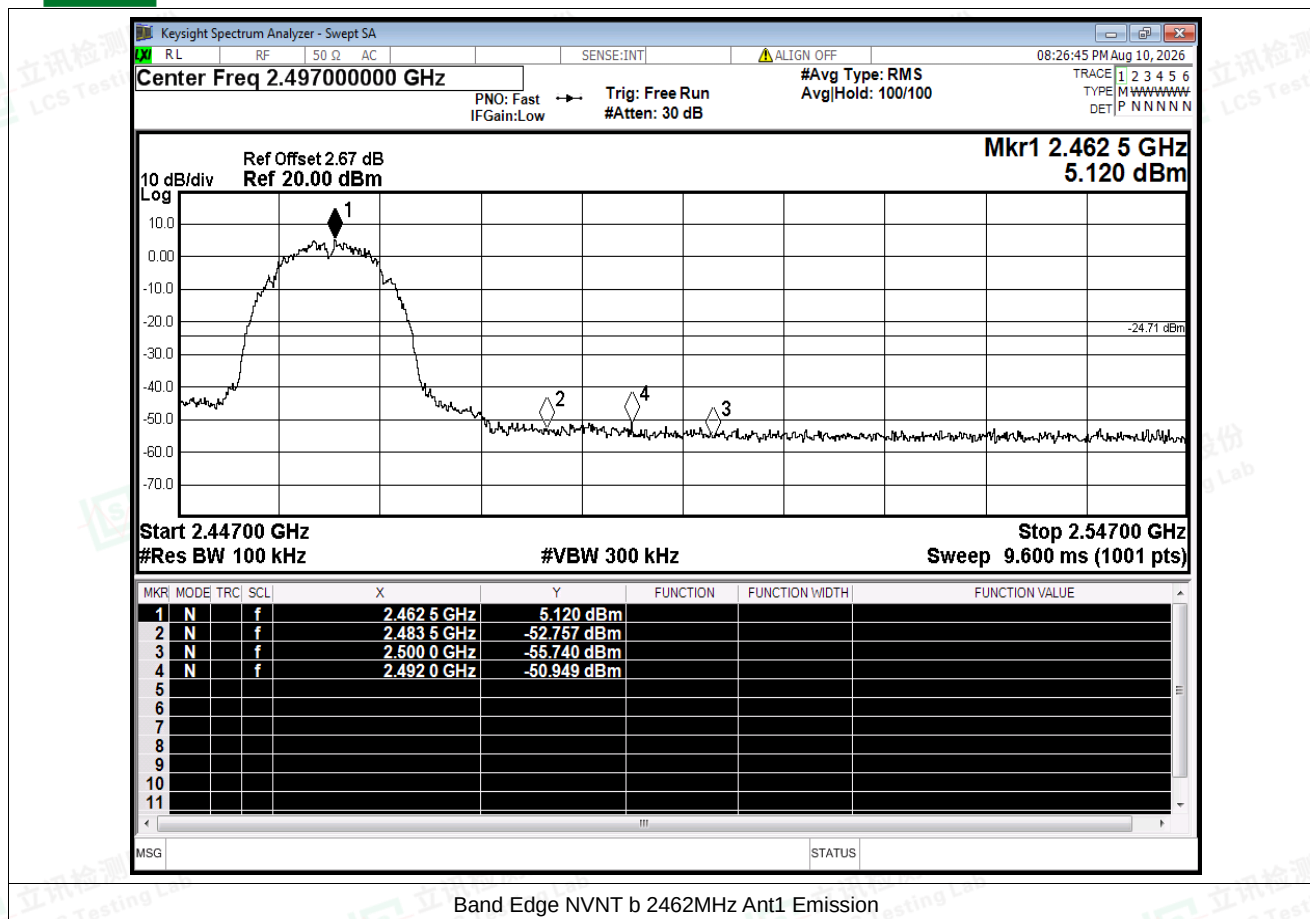
A.4 Band Edge

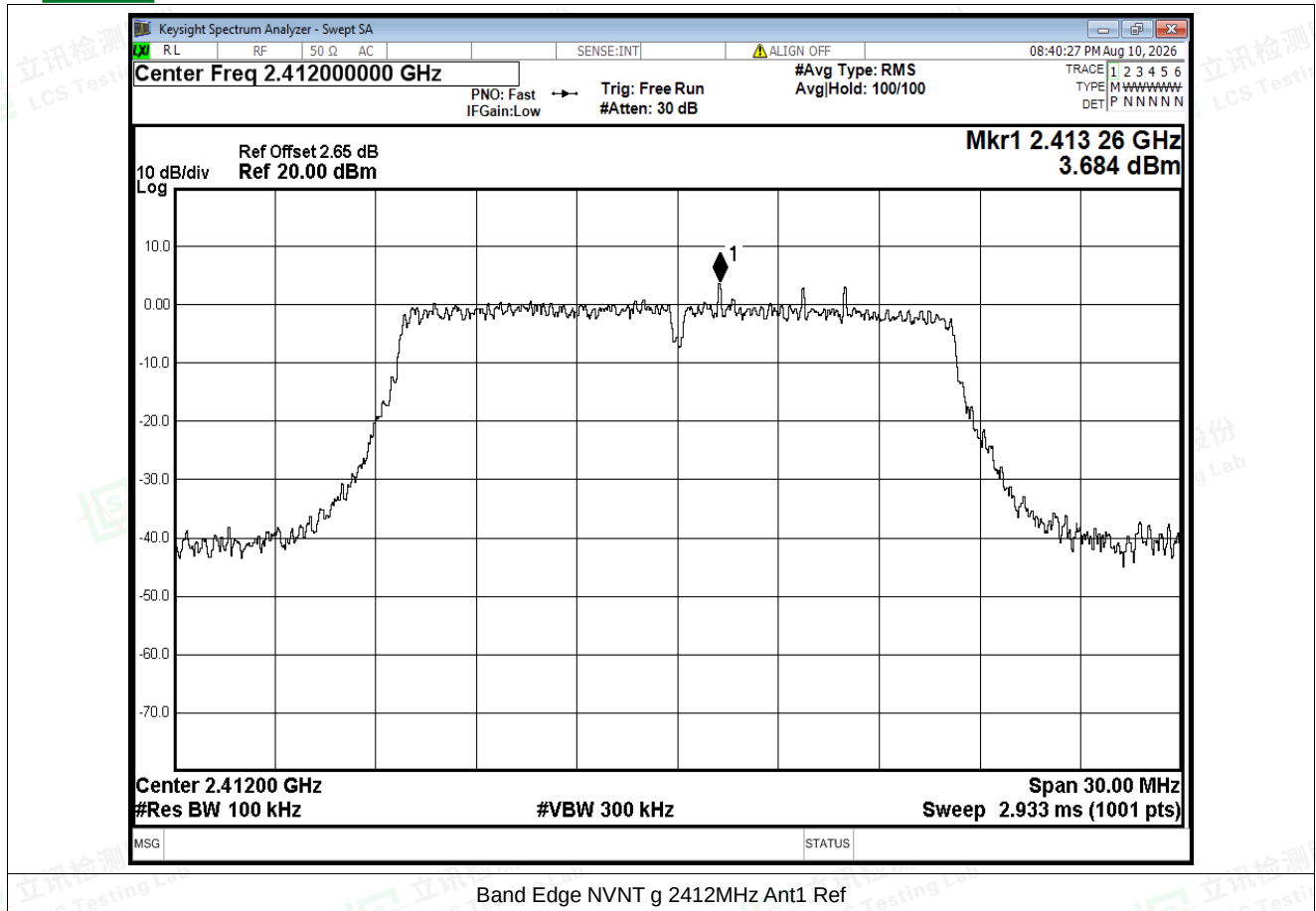
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-45.8	-30	Pass
NVNT	b	2462	Ant1	-56.23	-30	Pass
NVNT	g	2412	Ant1	-41.16	-30	Pass
NVNT	g	2462	Ant1	-49.04	-30	Pass
NVNT	n20	2412	Ant1	-41.06	-30	Pass
NVNT	n20	2462	Ant1	-49.3	-30	Pass
NVNT	n40	2422	Ant1	-38.95	-30	Pass
NVNT	n40	2452	Ant1	-46.85	-30	Pass

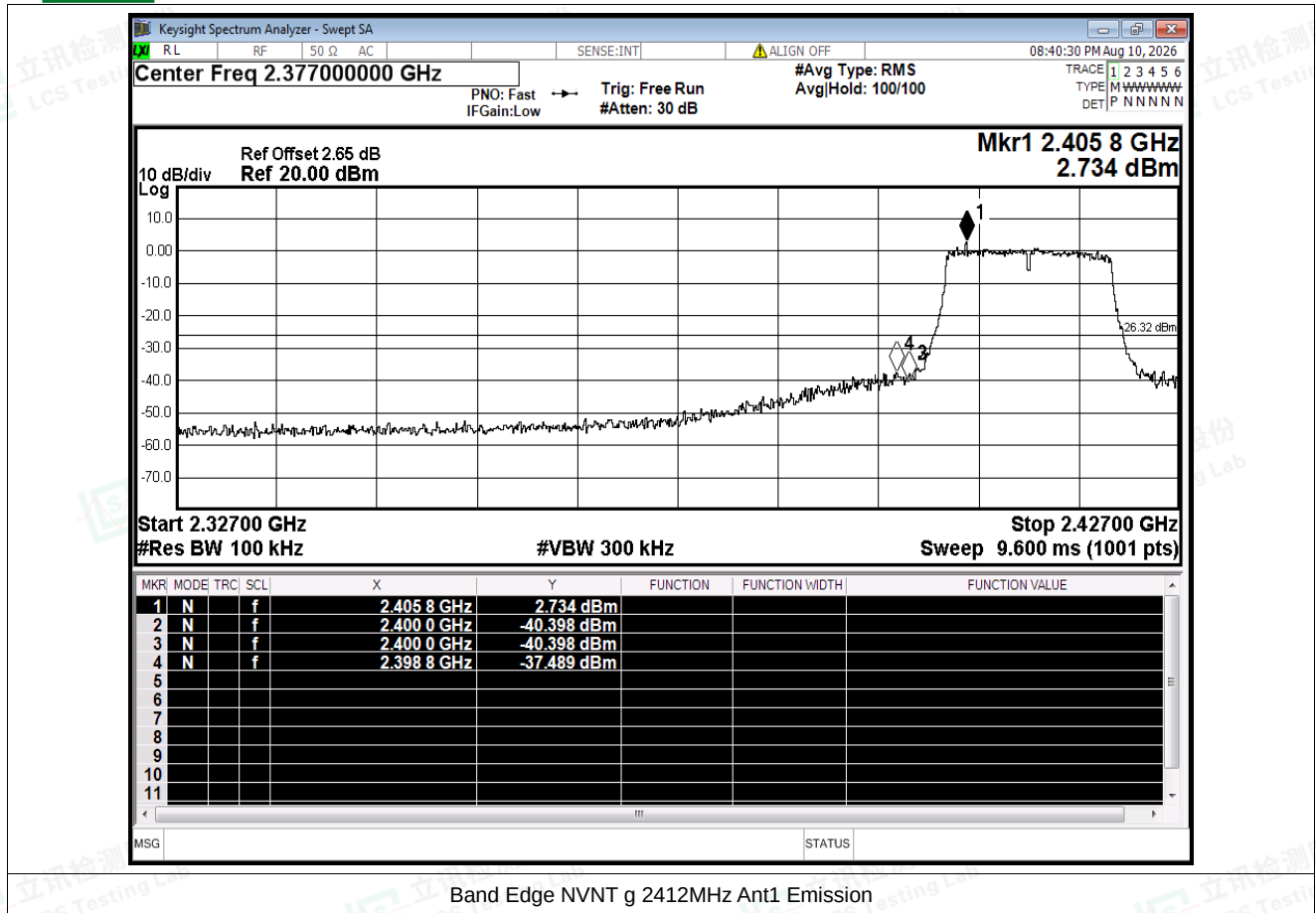


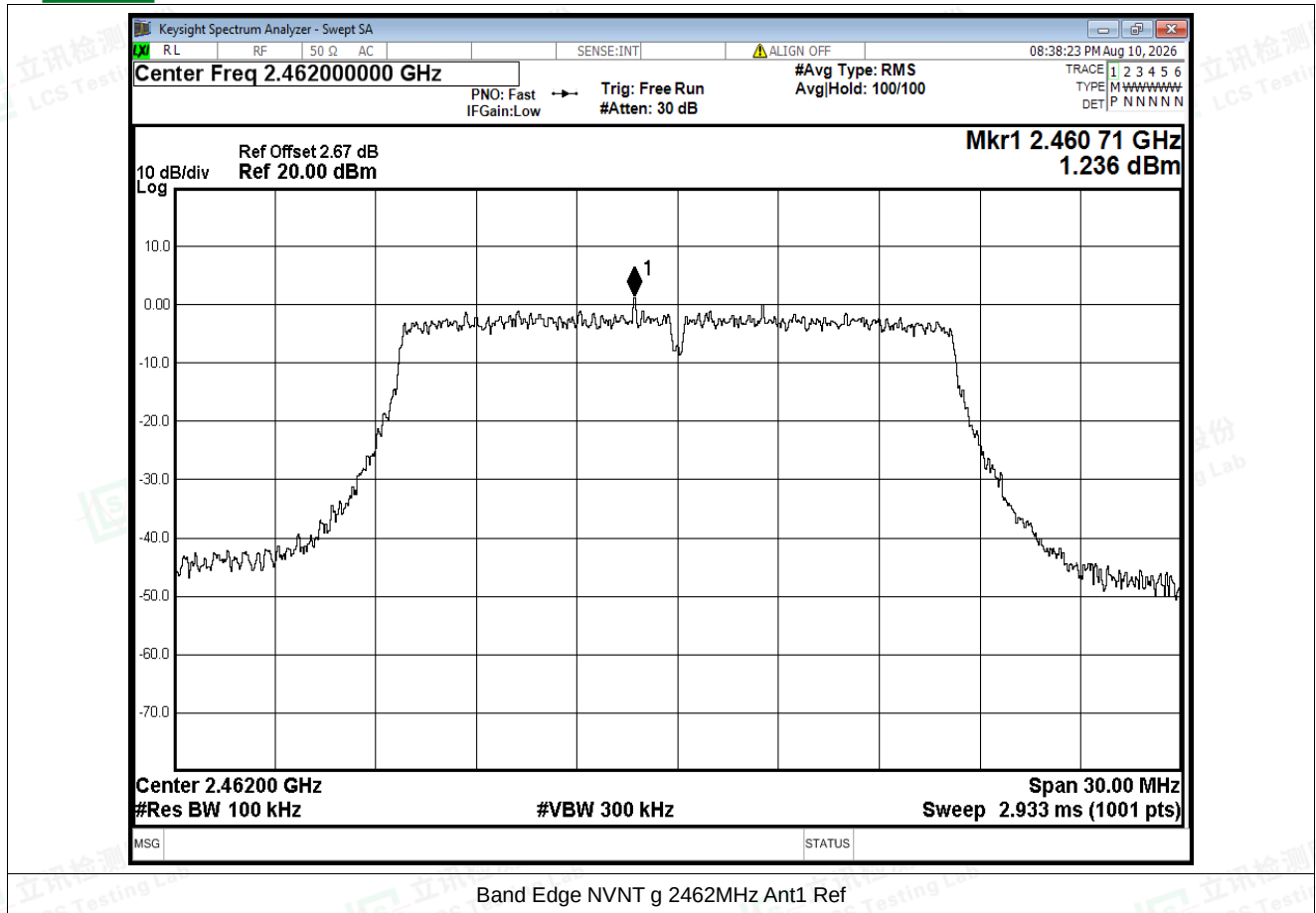


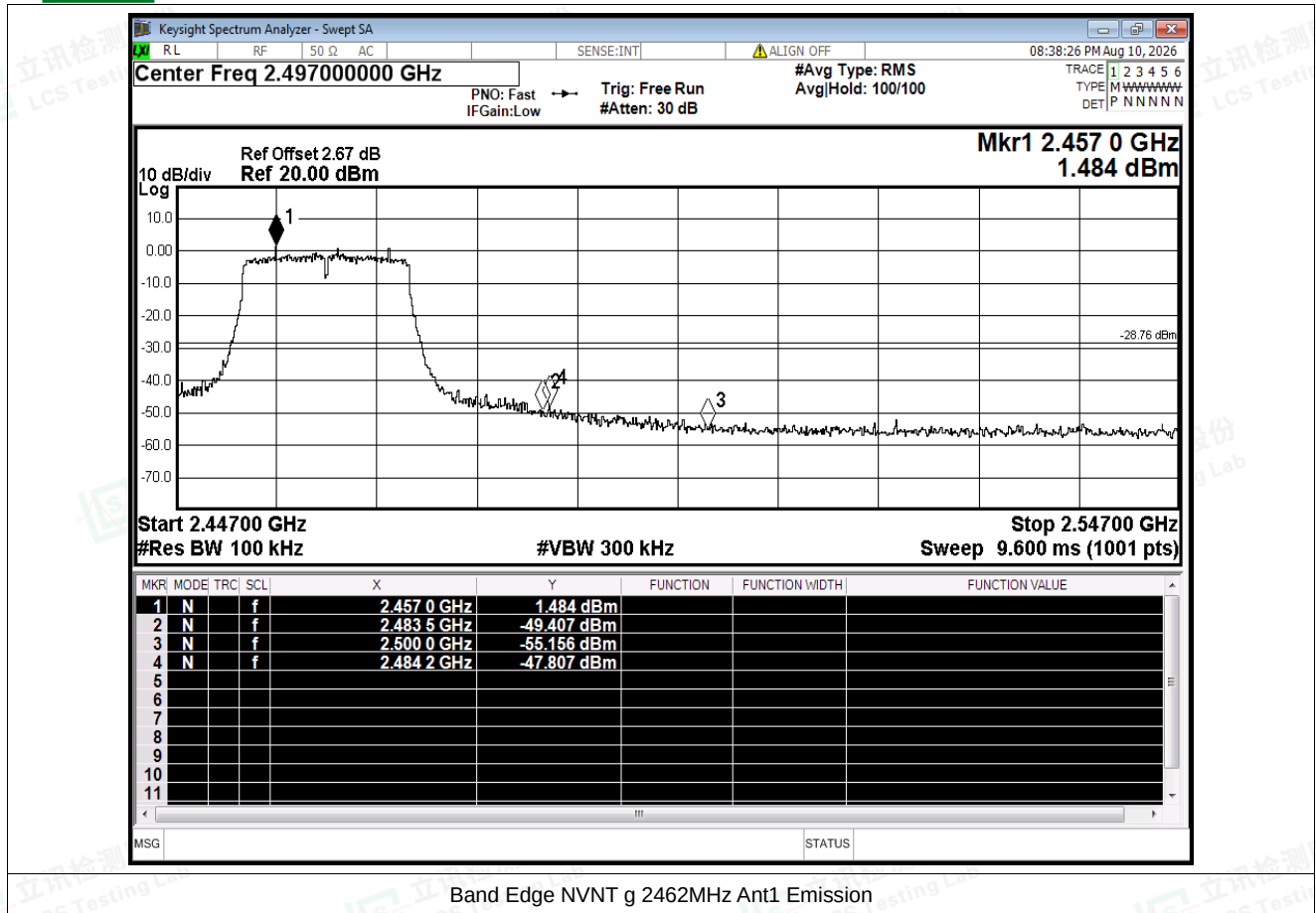


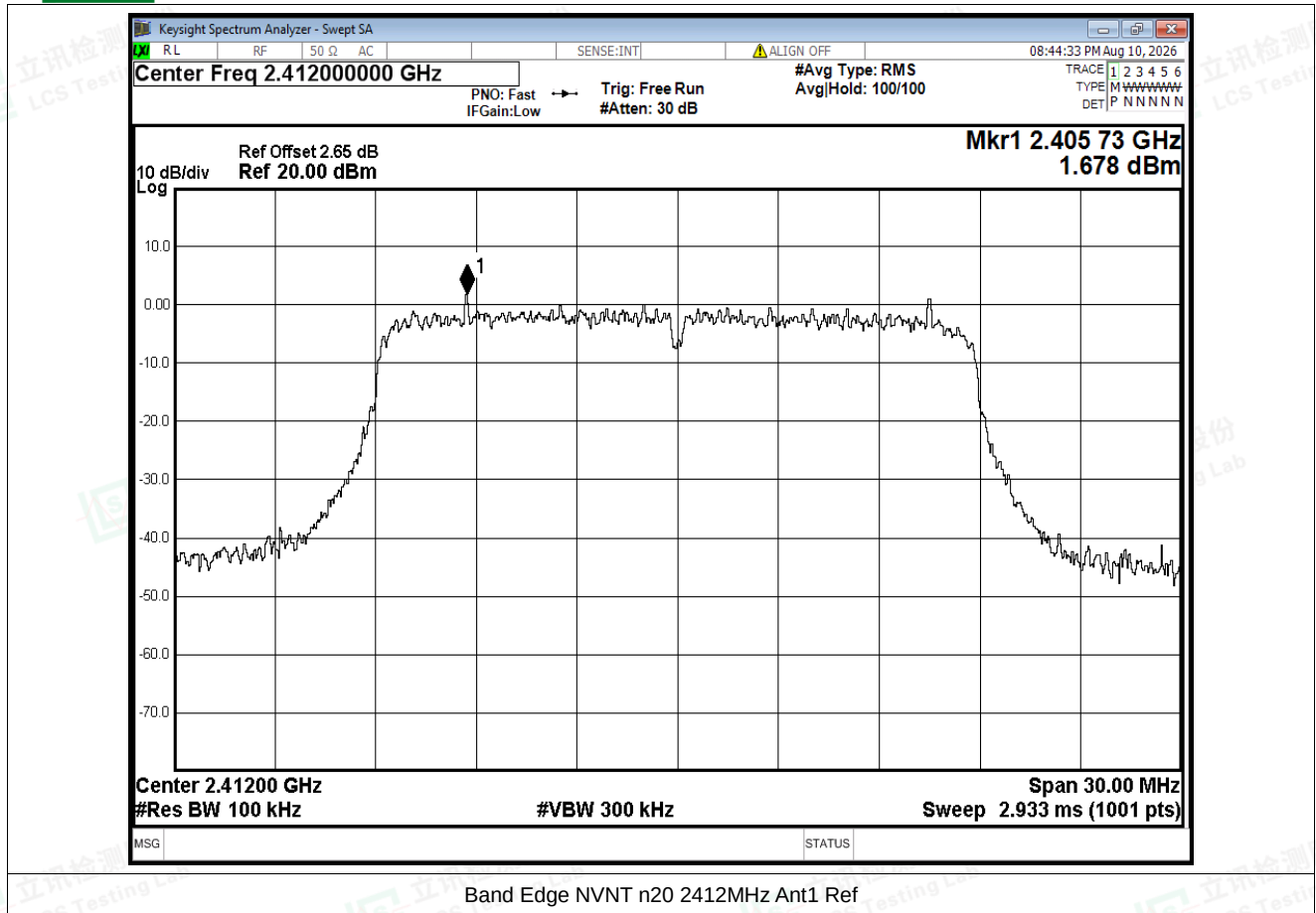


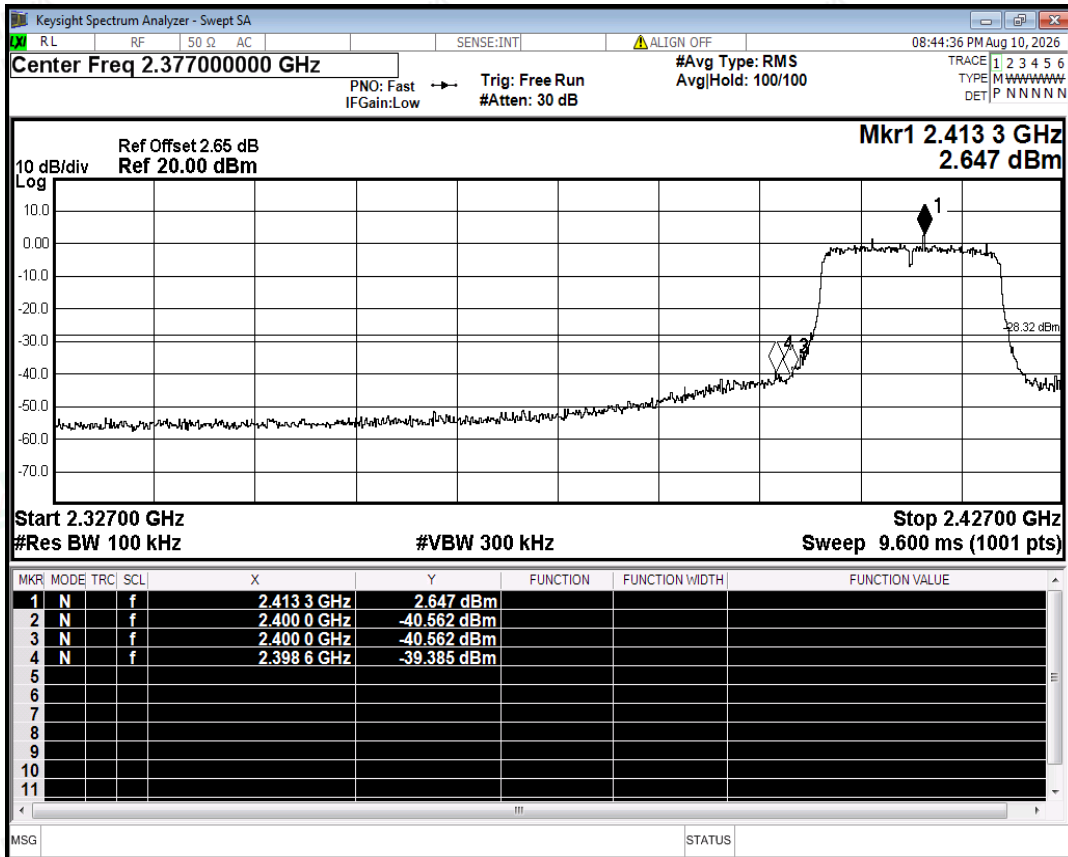




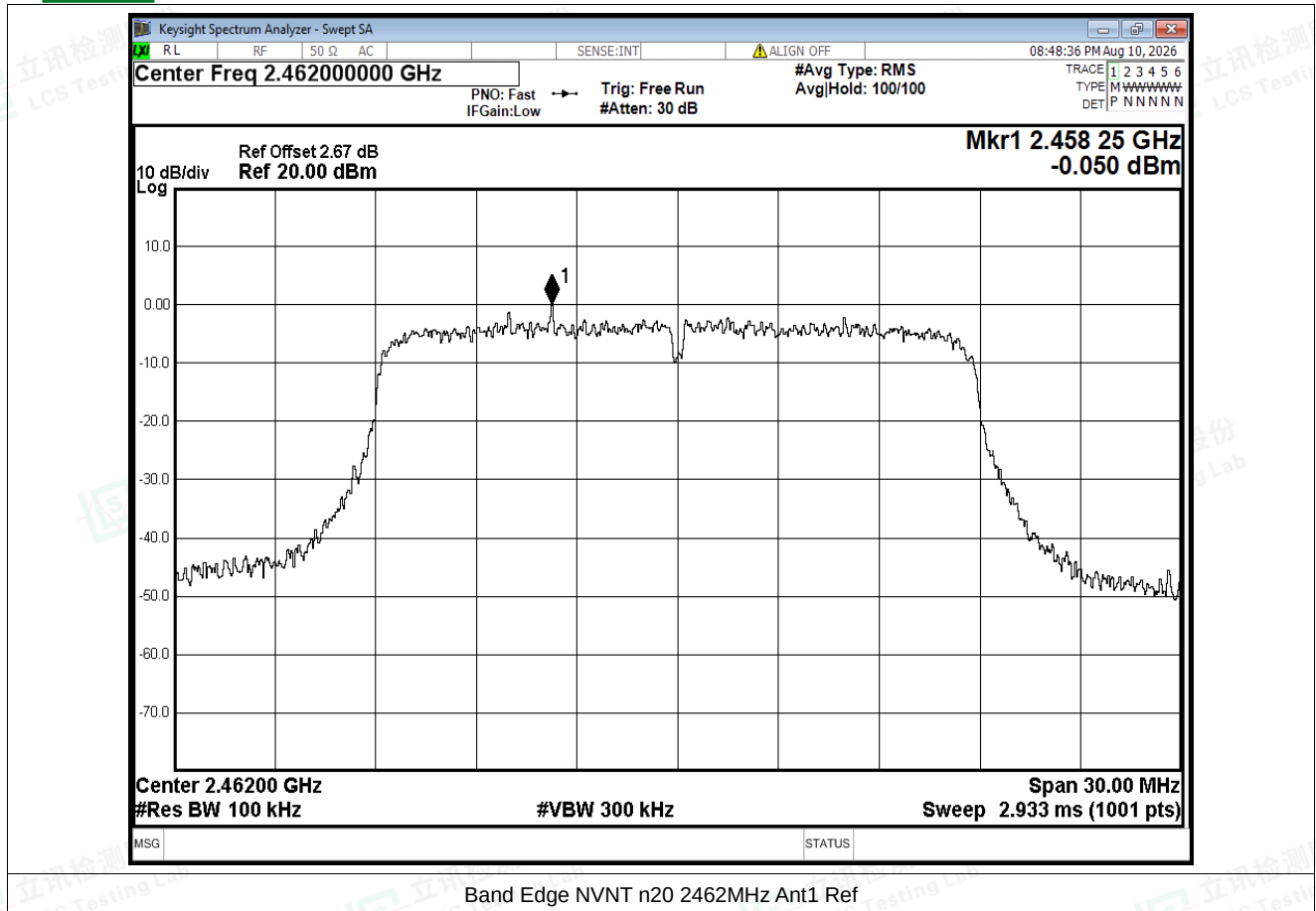


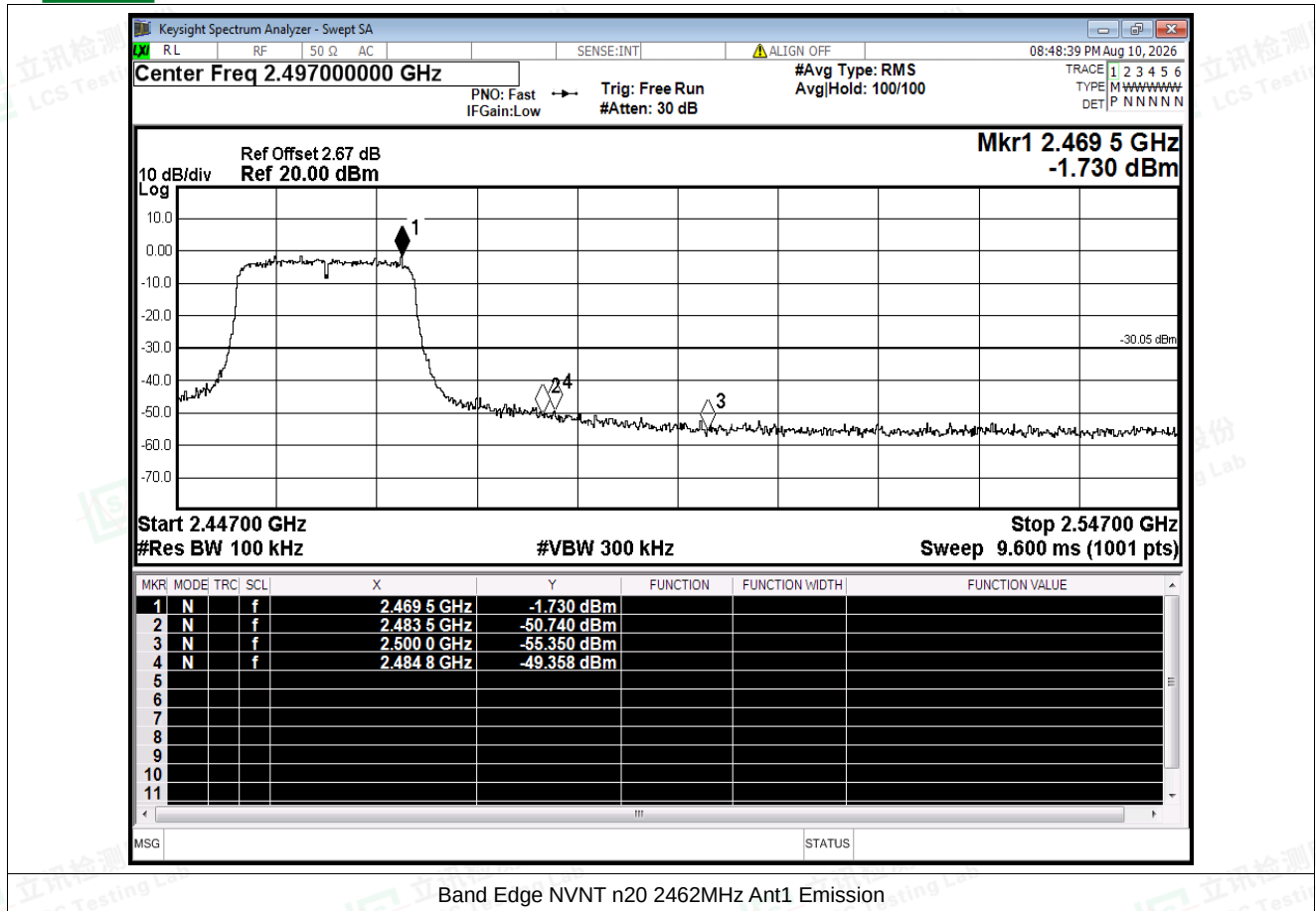


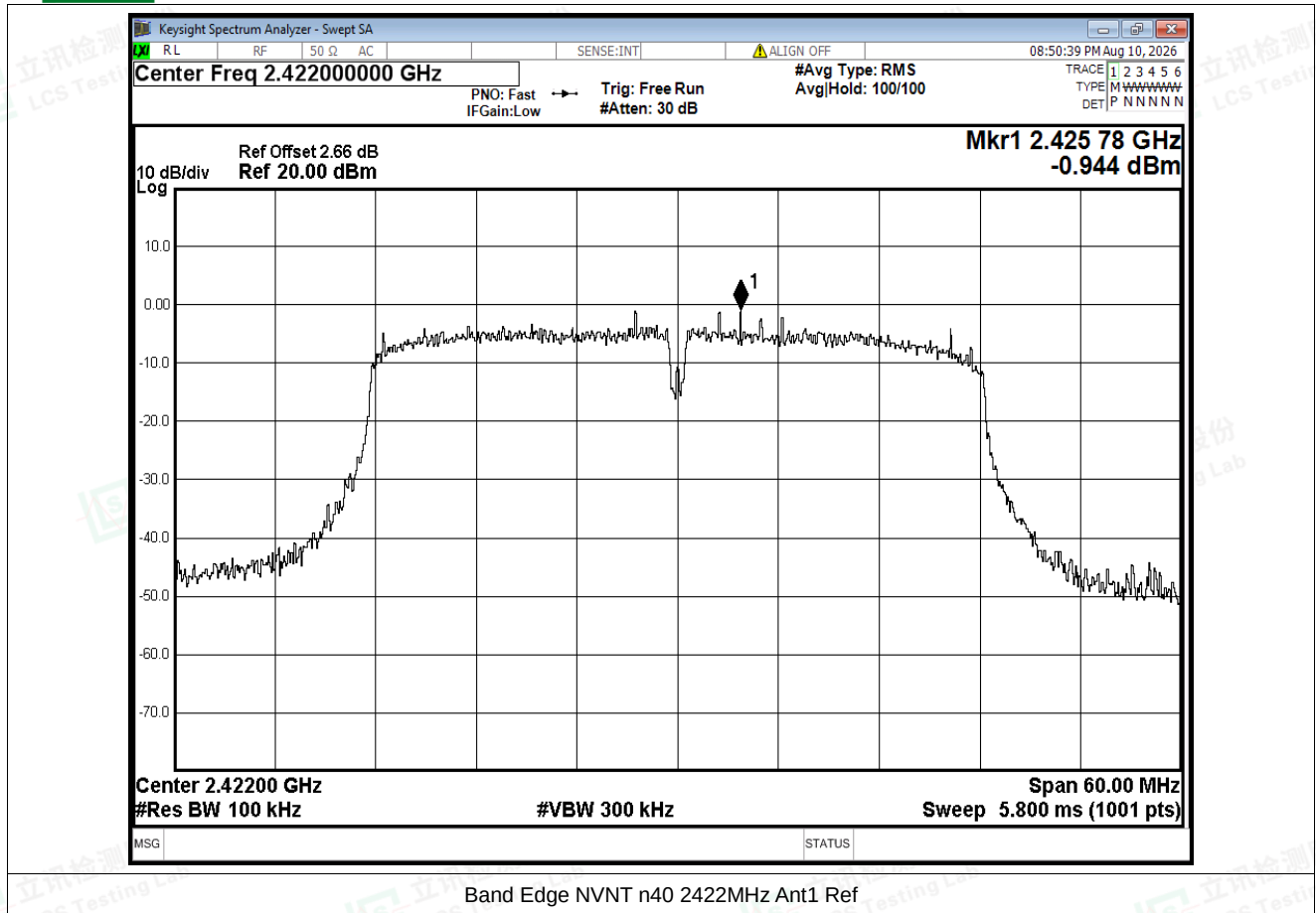


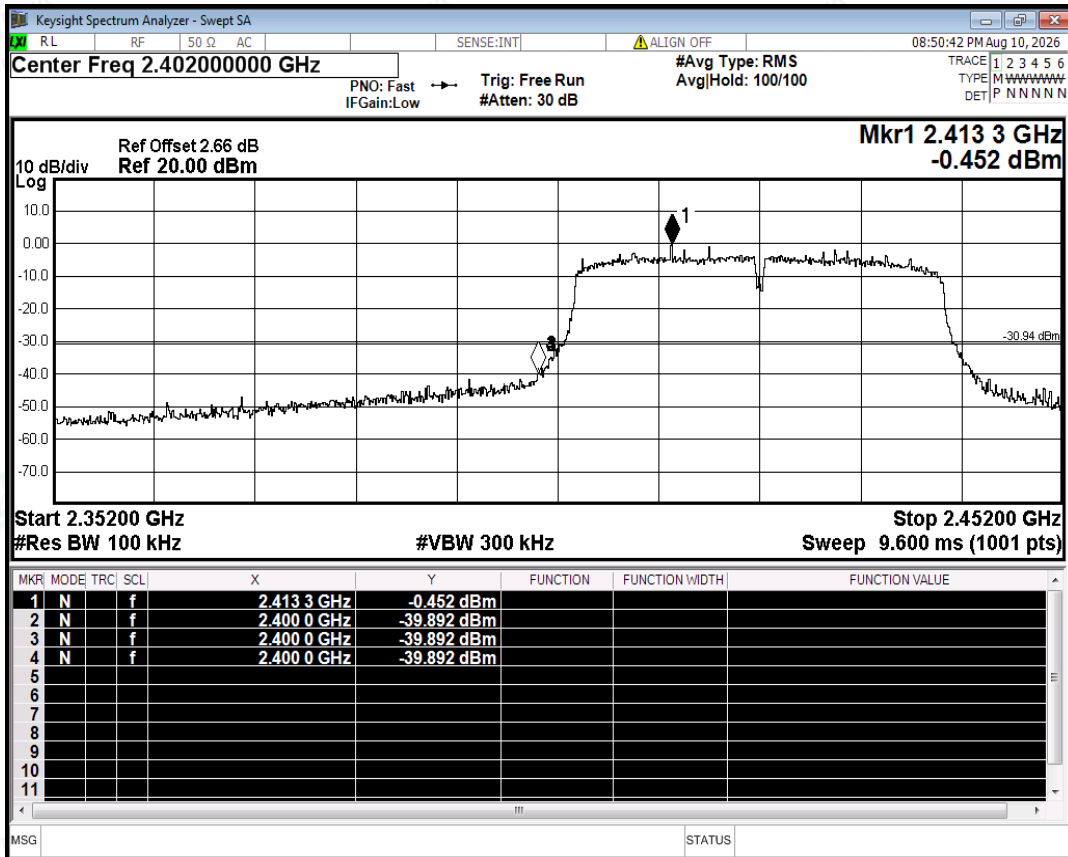


Band Edge NVNT n20 2412MHz Ant1 Emission

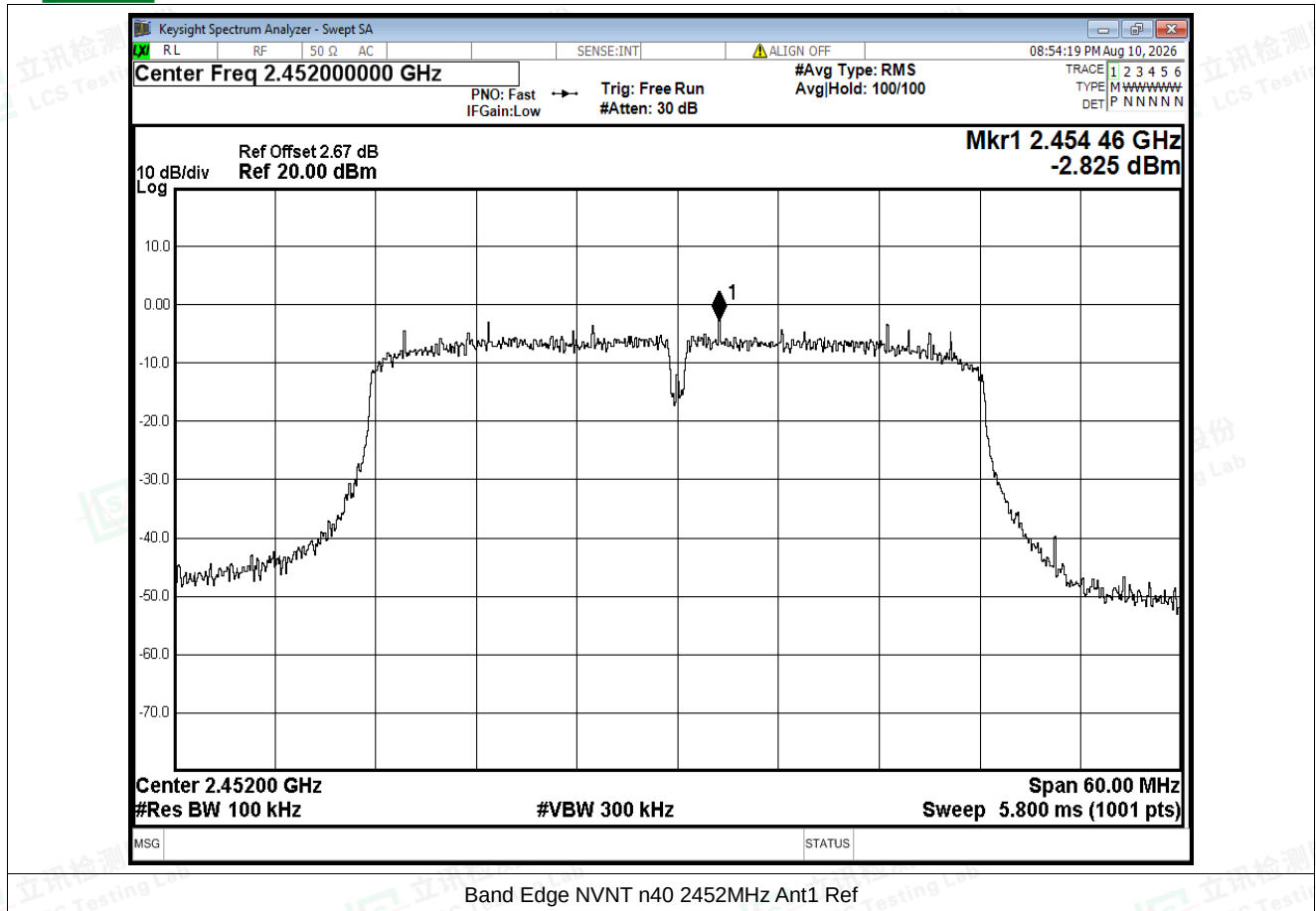


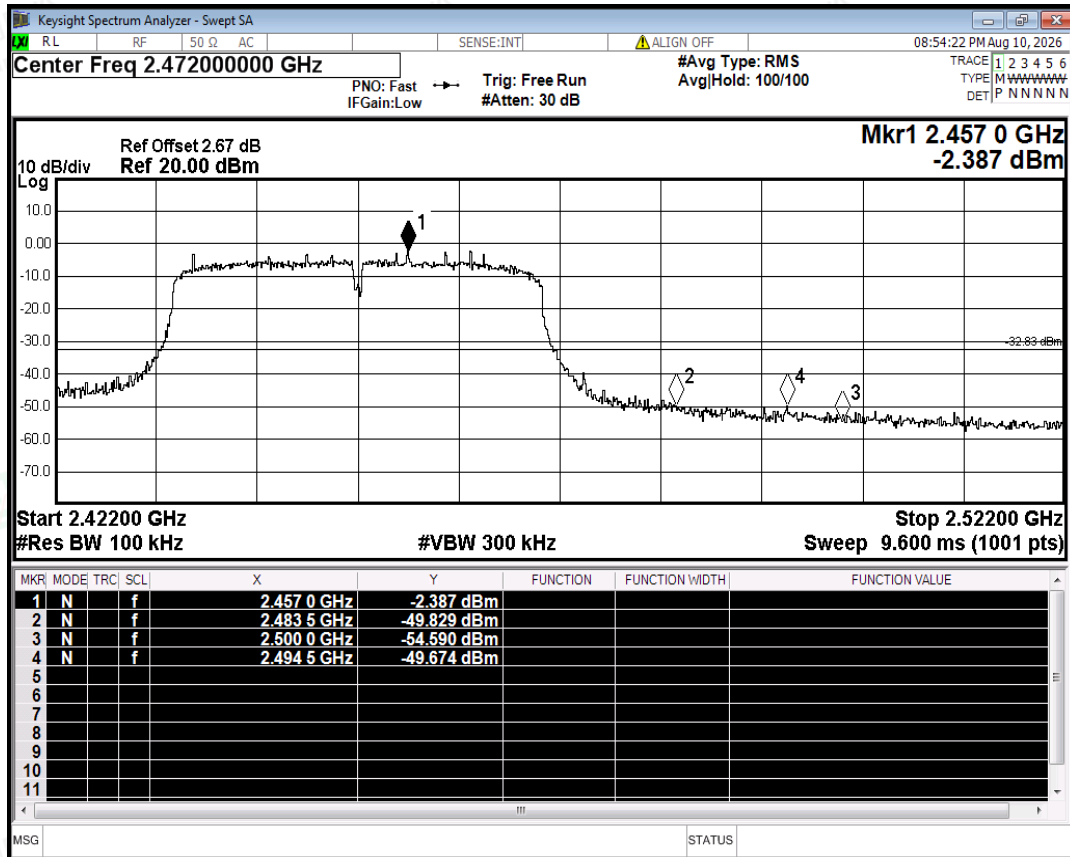






Band Edge NVNT n40 2422MHz Ant1 Emission



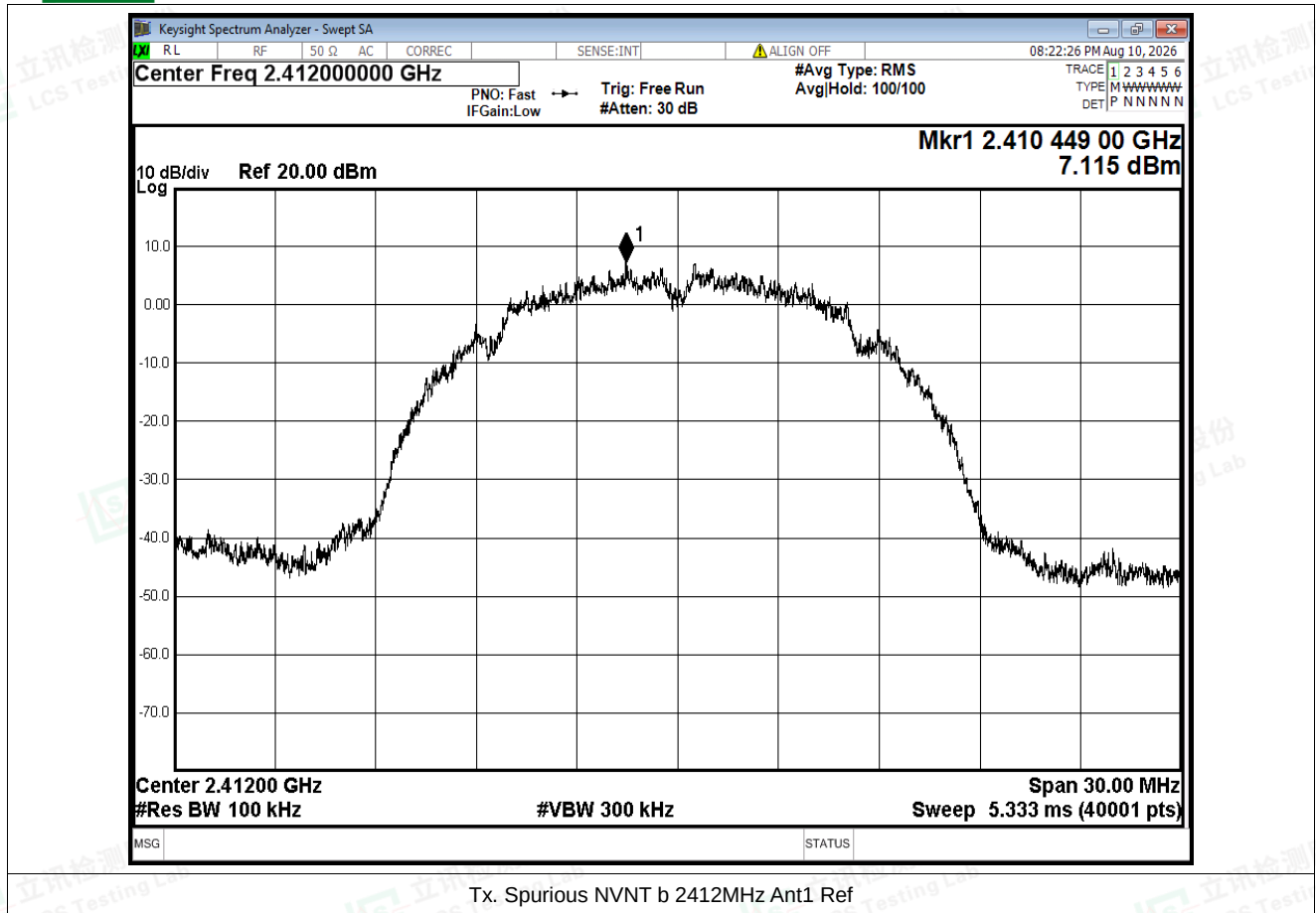


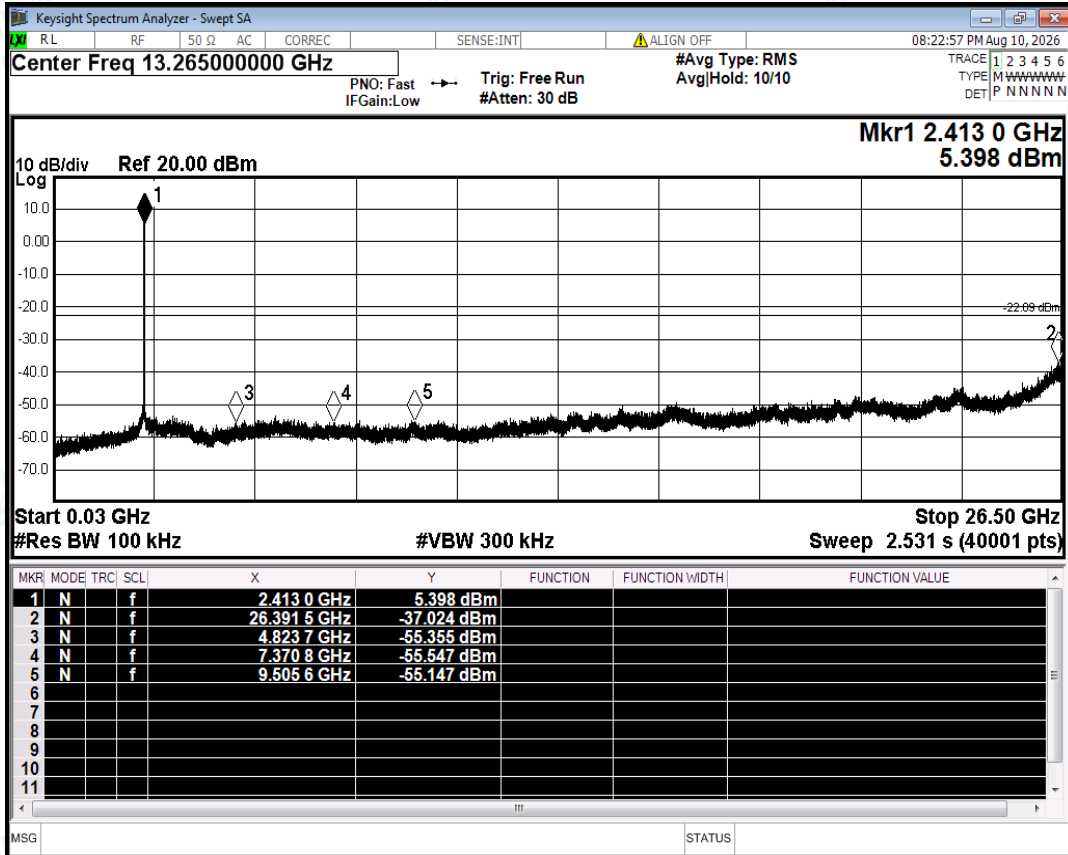
Band Edge NVNT n40 2452MHz Ant1 Emission



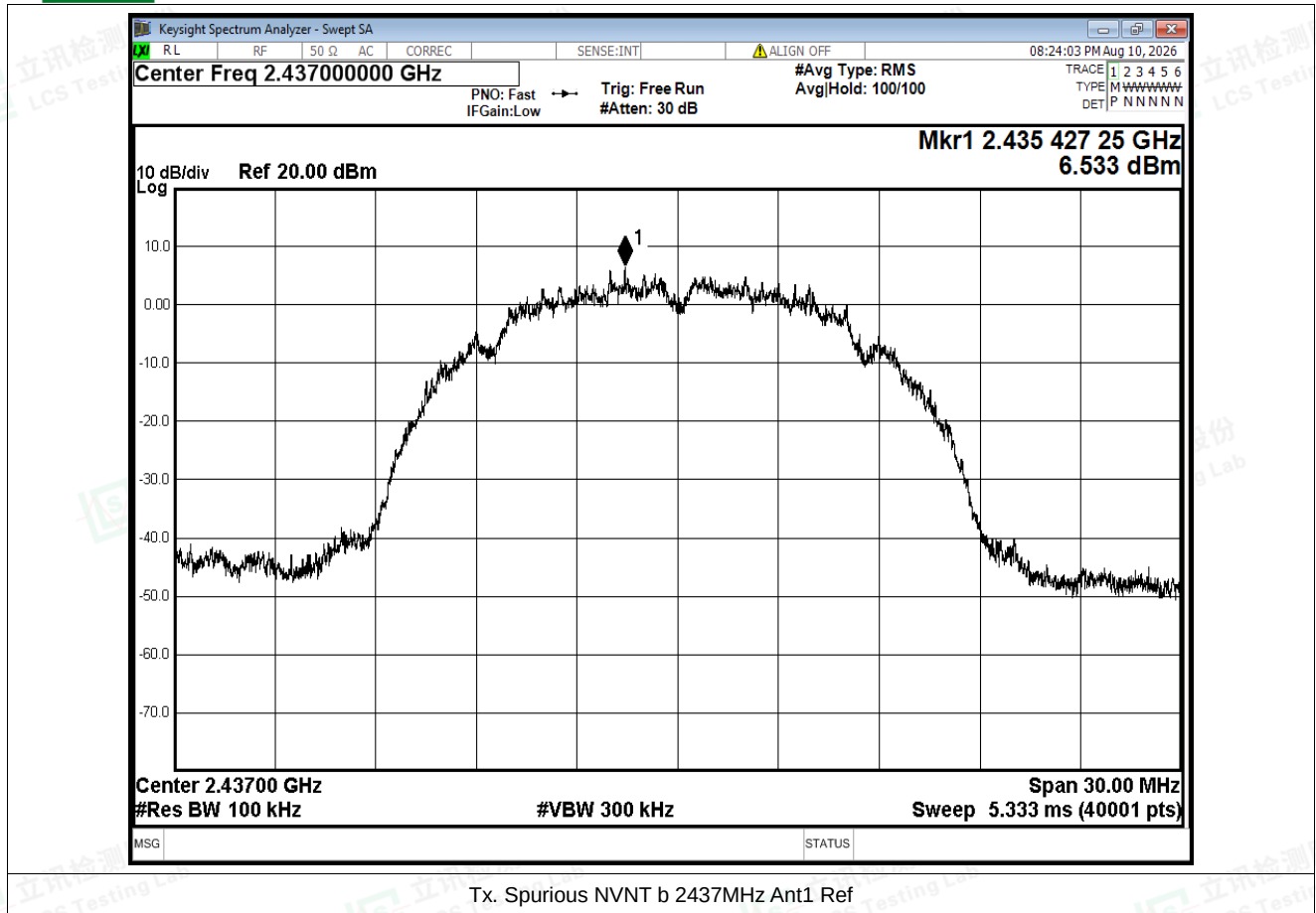
A.5 Conducted RF Spurious Emission

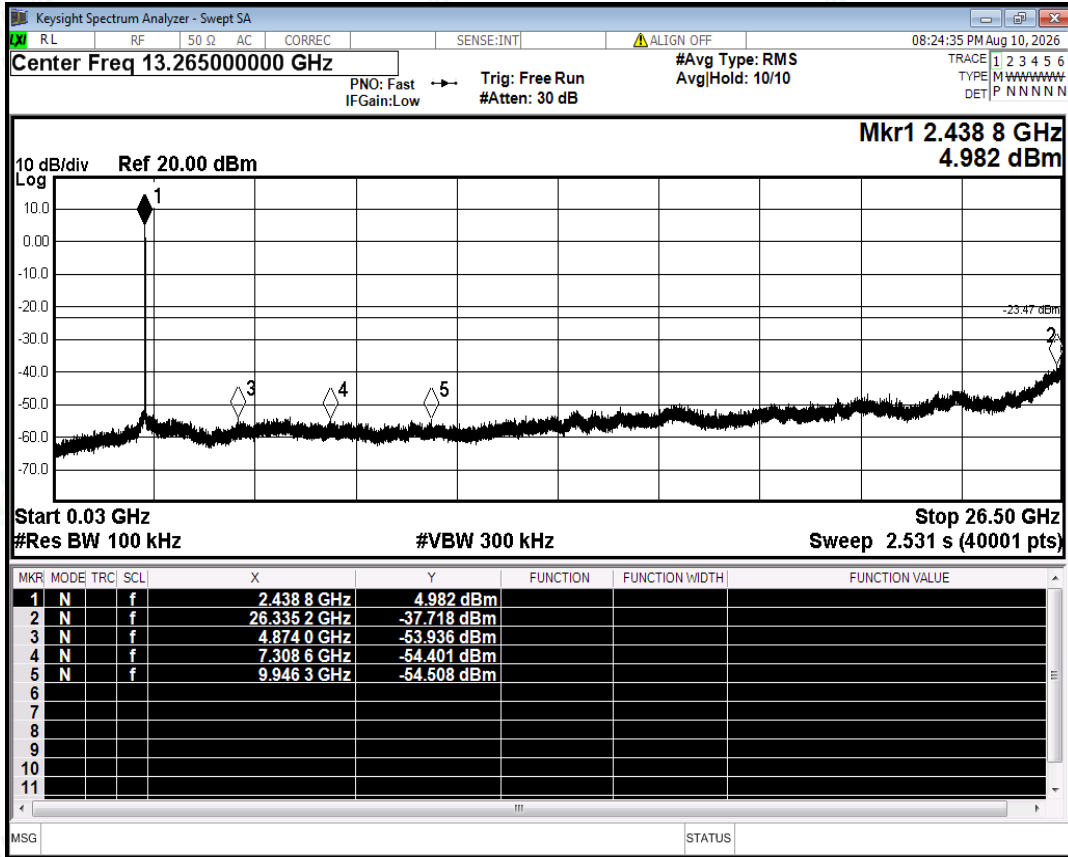
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-44.14	-30	Pass
NVNT	b	2437	Ant1	-44.24	-30	Pass
NVNT	b	2462	Ant1	-43.89	-30	Pass
NVNT	g	2412	Ant1	-40.56	-30	Pass
NVNT	g	2437	Ant1	-39.96	-30	Pass
NVNT	g	2462	Ant1	-38.84	-30	Pass
NVNT	n20	2412	Ant1	-39.86	-30	Pass
NVNT	n20	2437	Ant1	-38.9	-30	Pass
NVNT	n20	2462	Ant1	-37.79	-30	Pass
NVNT	n40	2422	Ant1	-36.55	-30	Pass
NVNT	n40	2437	Ant1	-35.74	-30	Pass
NVNT	n40	2452	Ant1	-34.3	-30	Pass



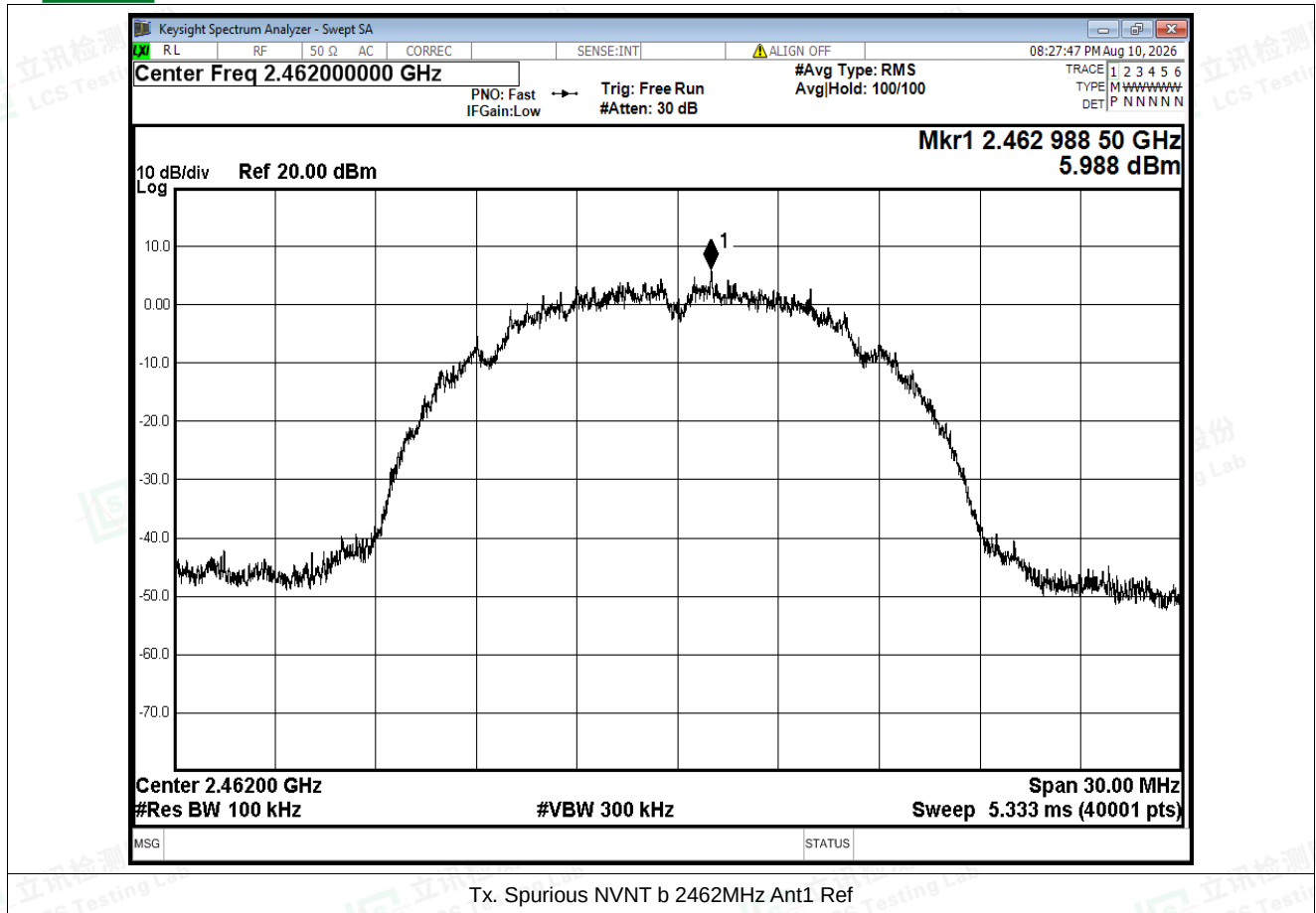


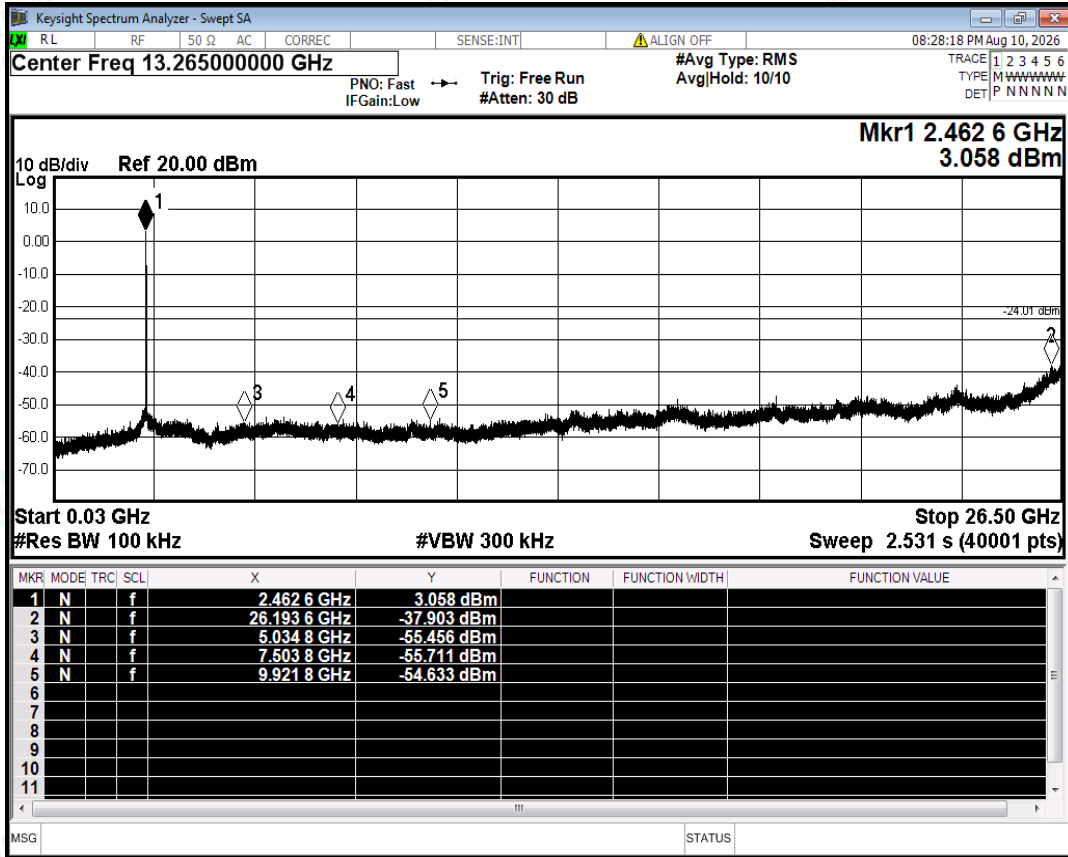
Tx. Spurious NVNT b 2412MHz Ant1 Emission



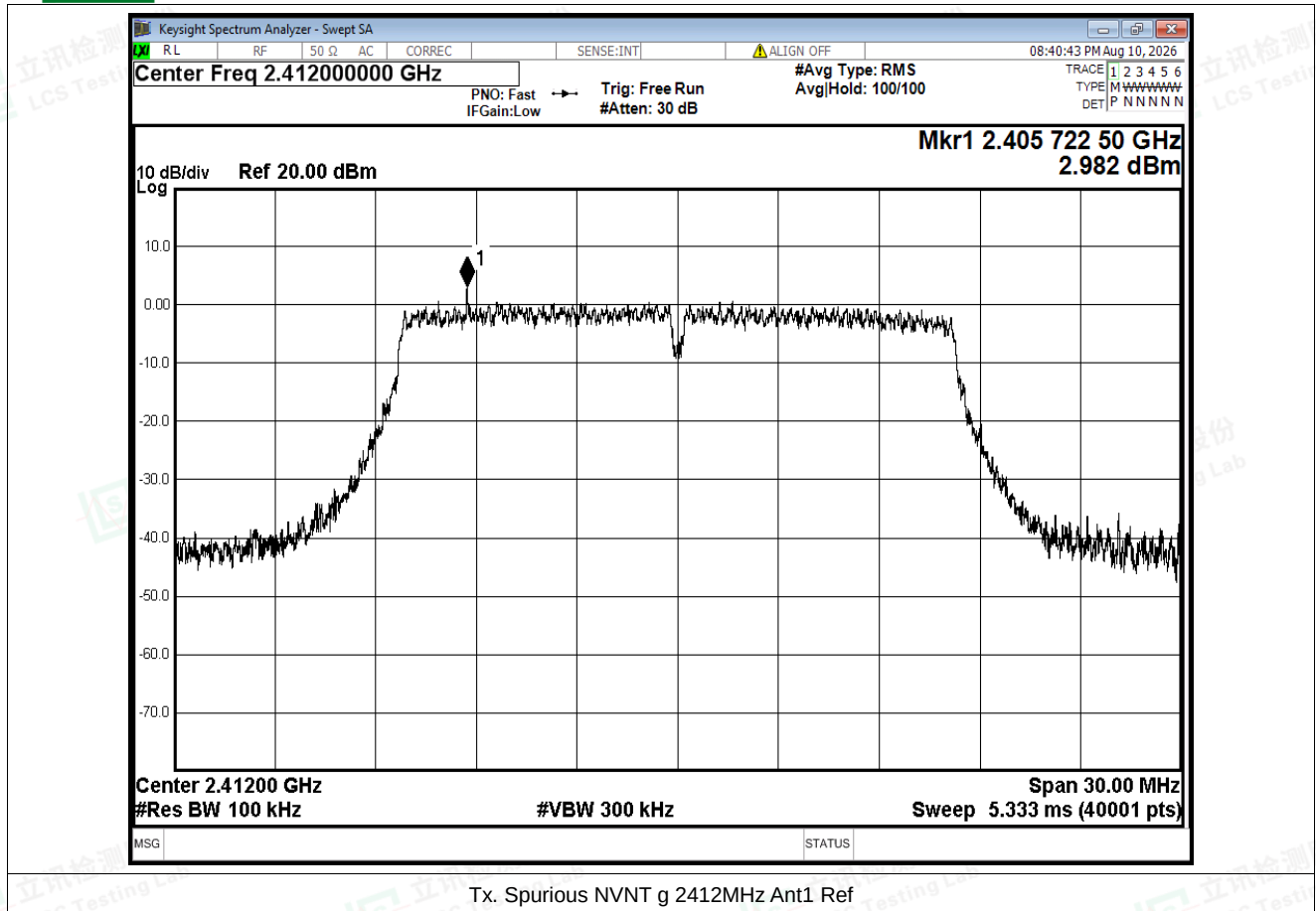


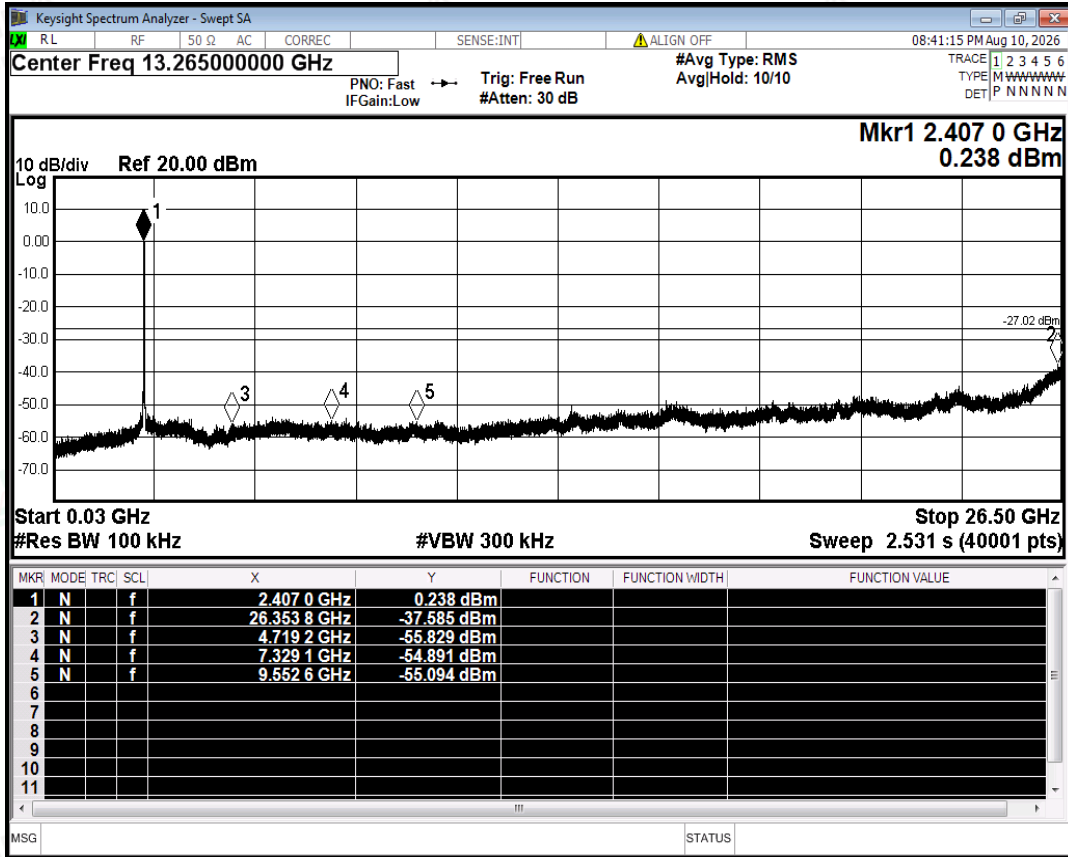
Tx. Spurious NVNT b 2437MHz Ant1 Emission



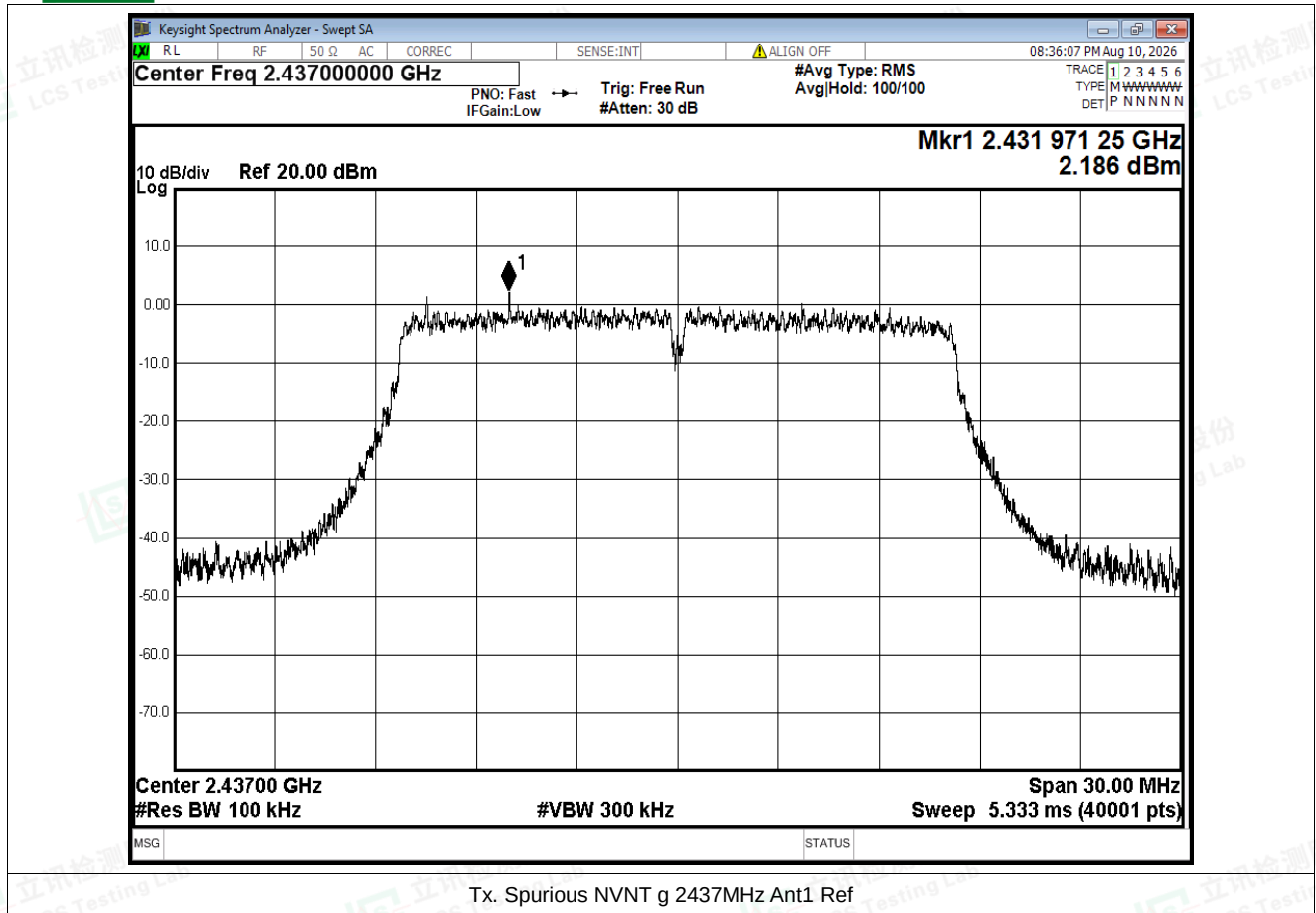


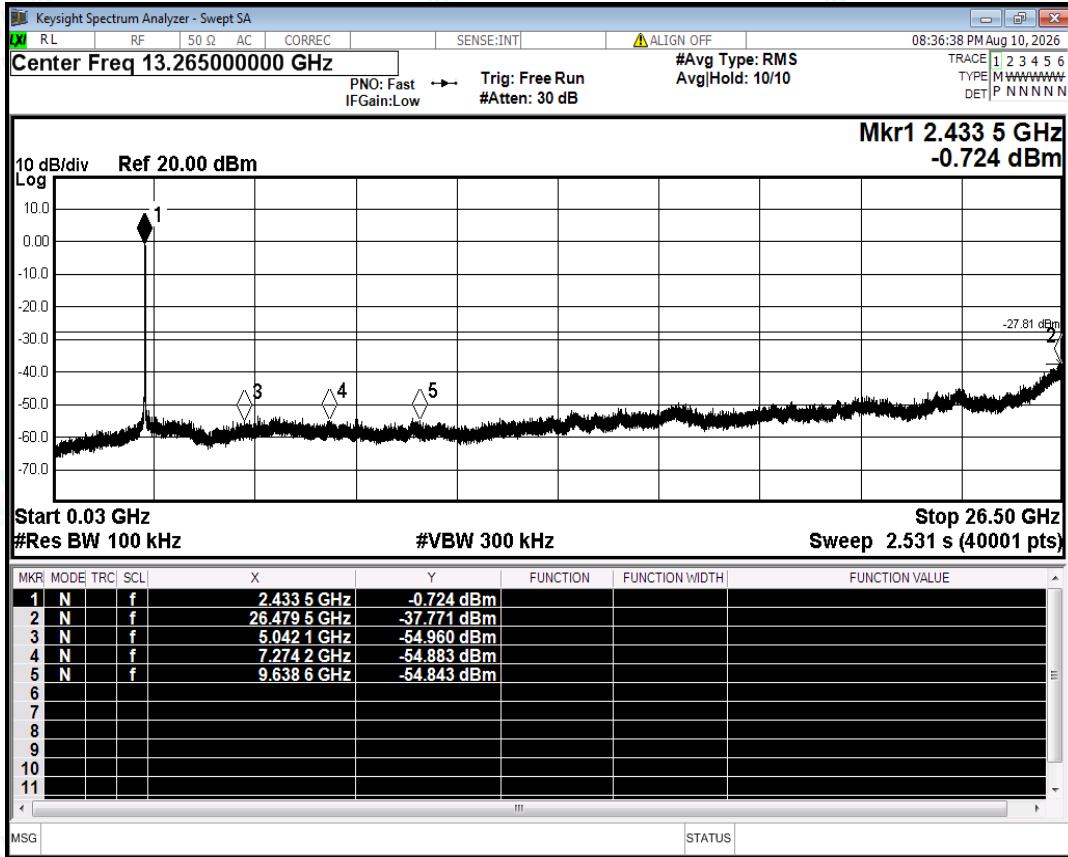
Tx. Spurious NVNT b 2462MHz Ant1 Emission



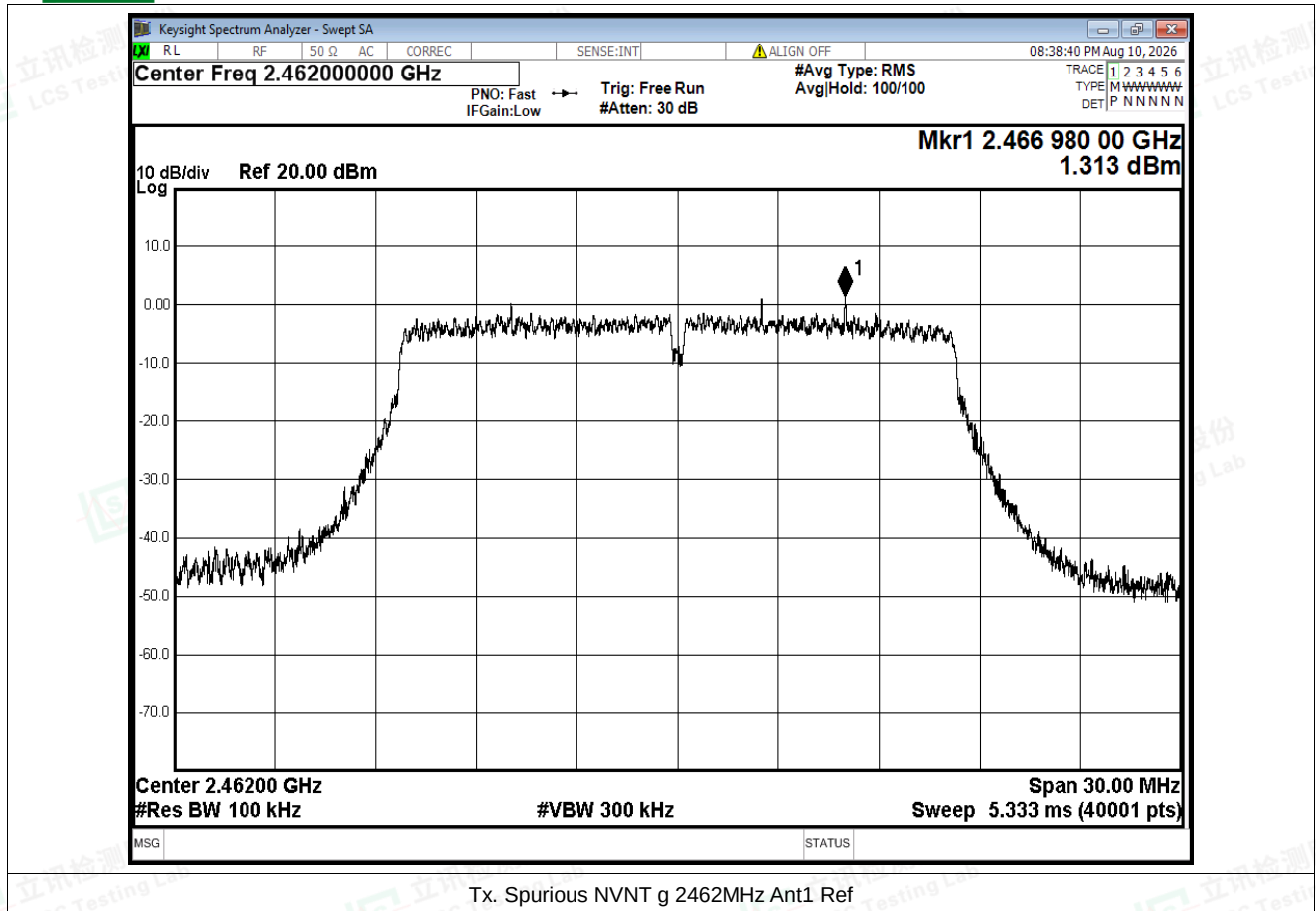


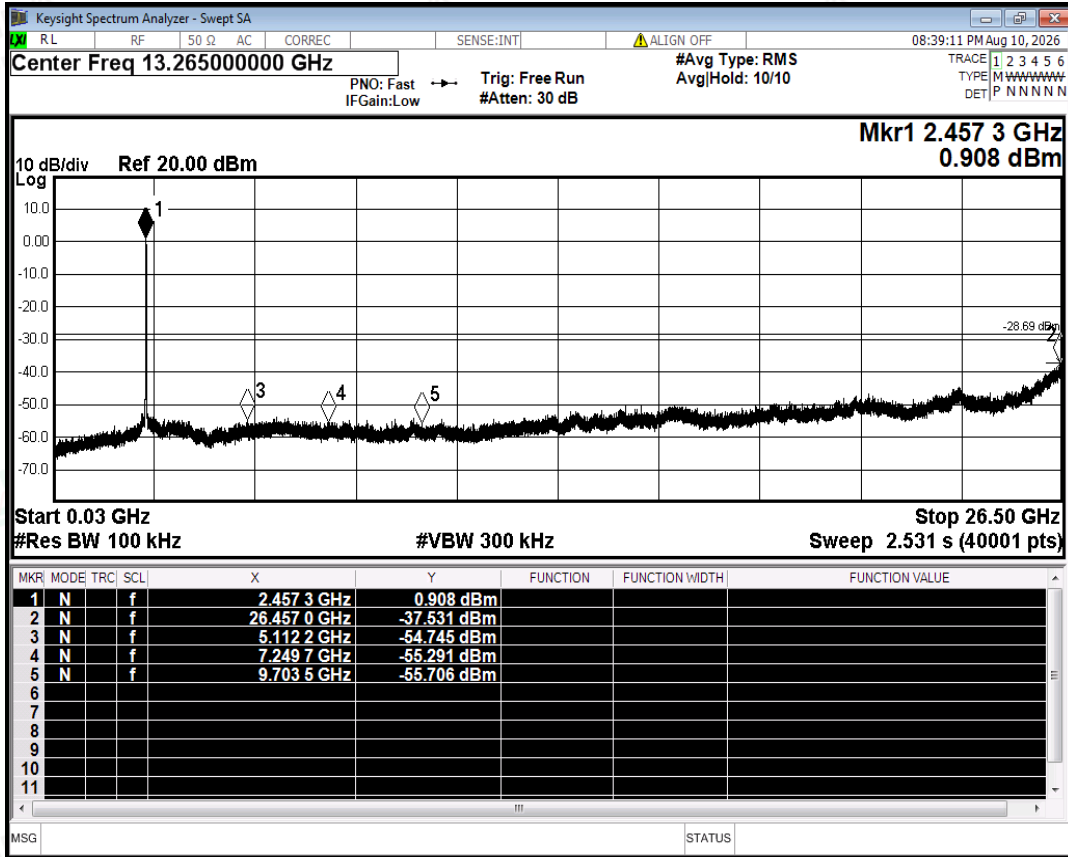
Tx. Spurious NVNT g 2412MHz Ant1 Emission



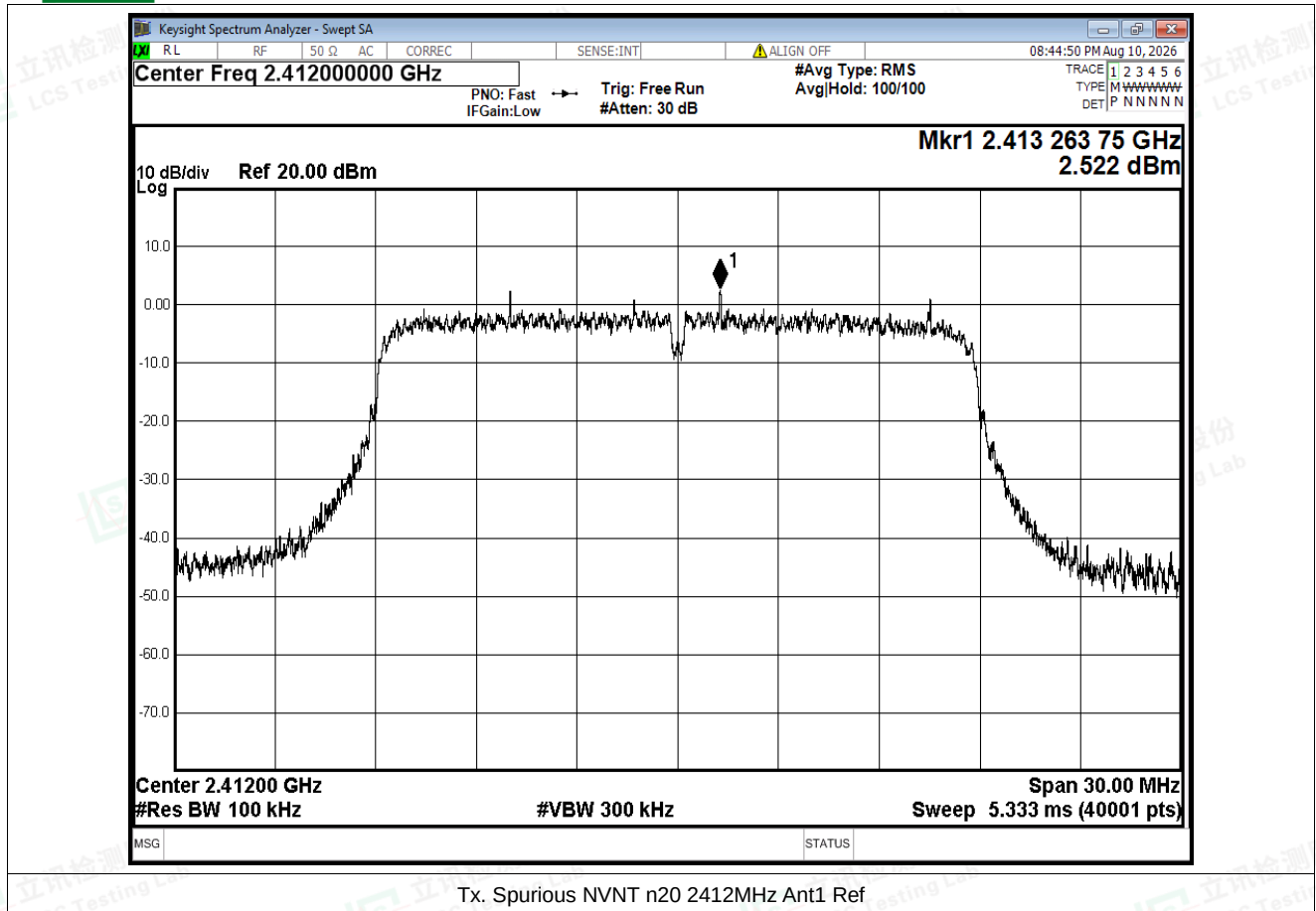


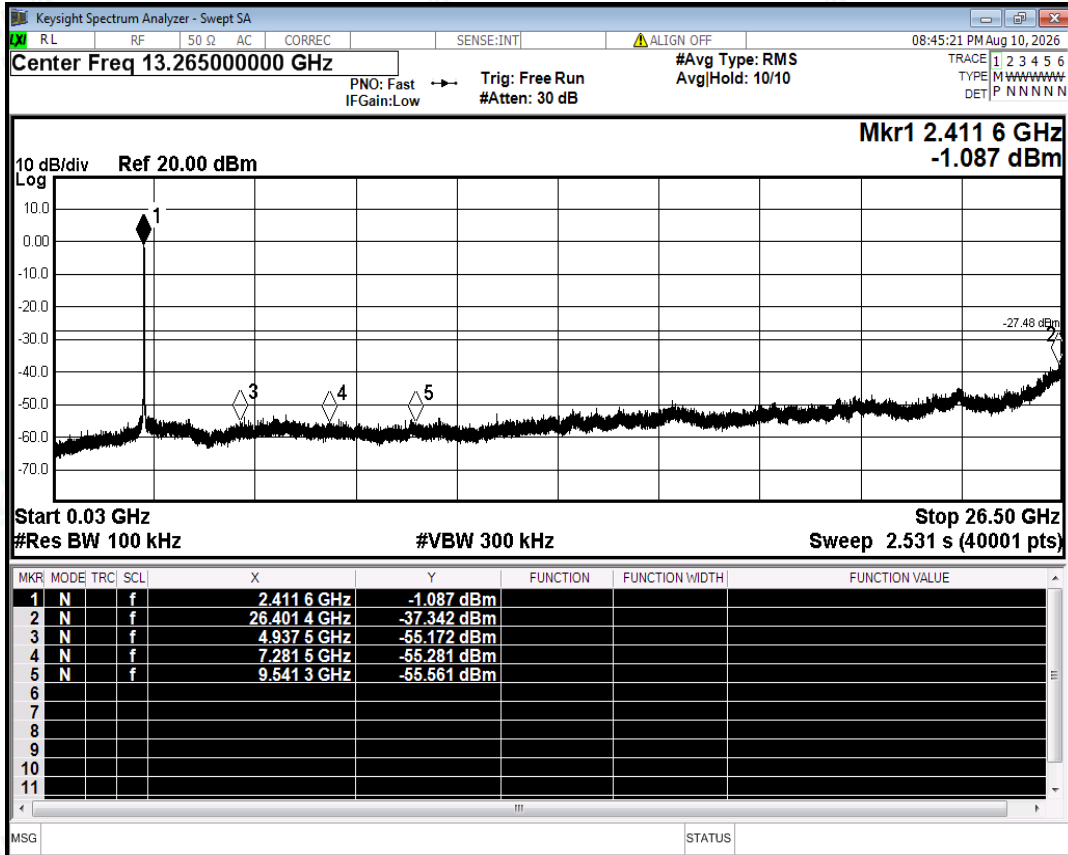
Tx. Spurious NVNT g 2437MHz Ant1 Emission



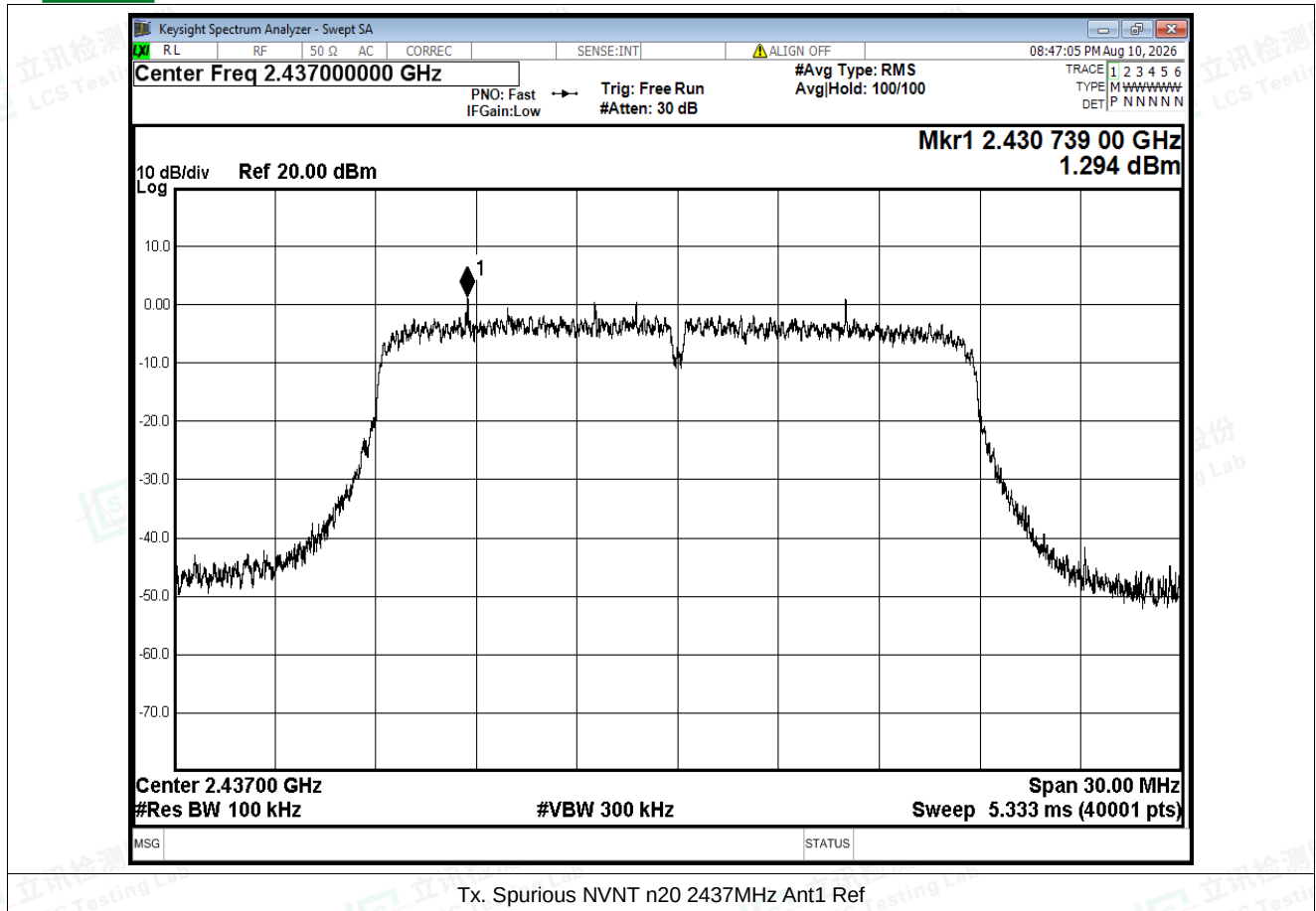


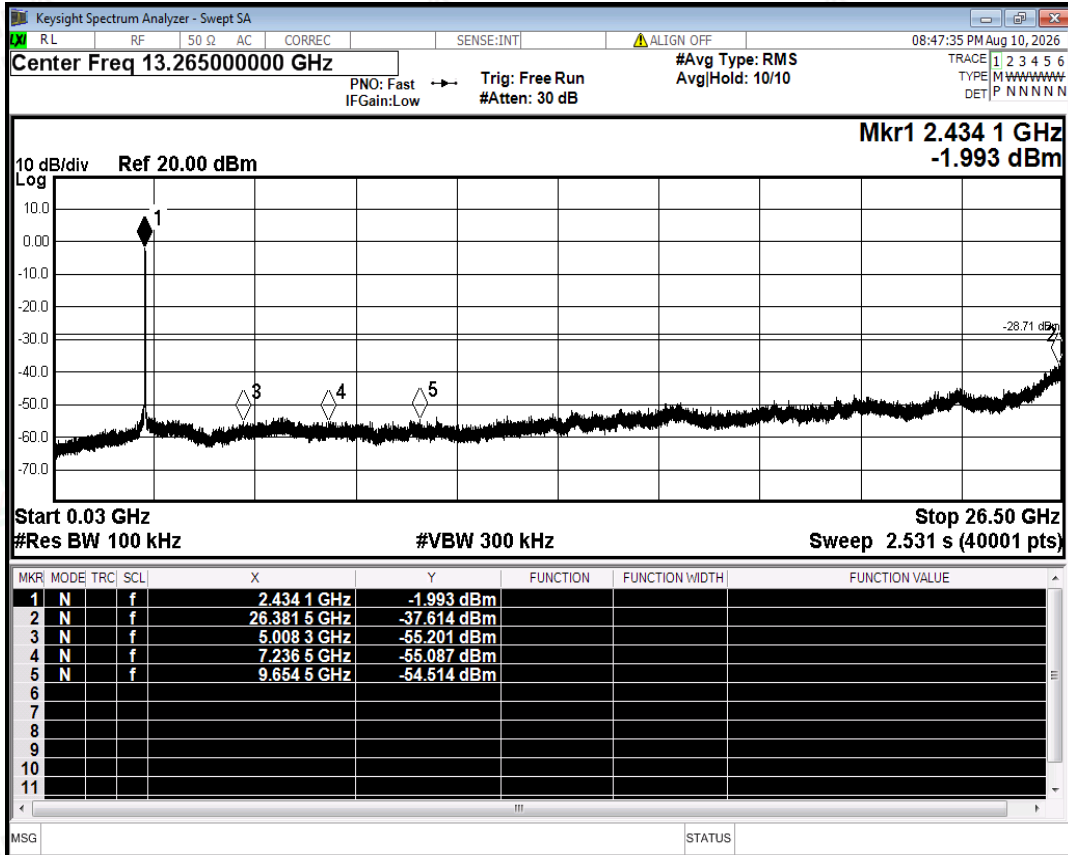
Tx. Spurious NVNT g 2462MHz Ant1 Emission



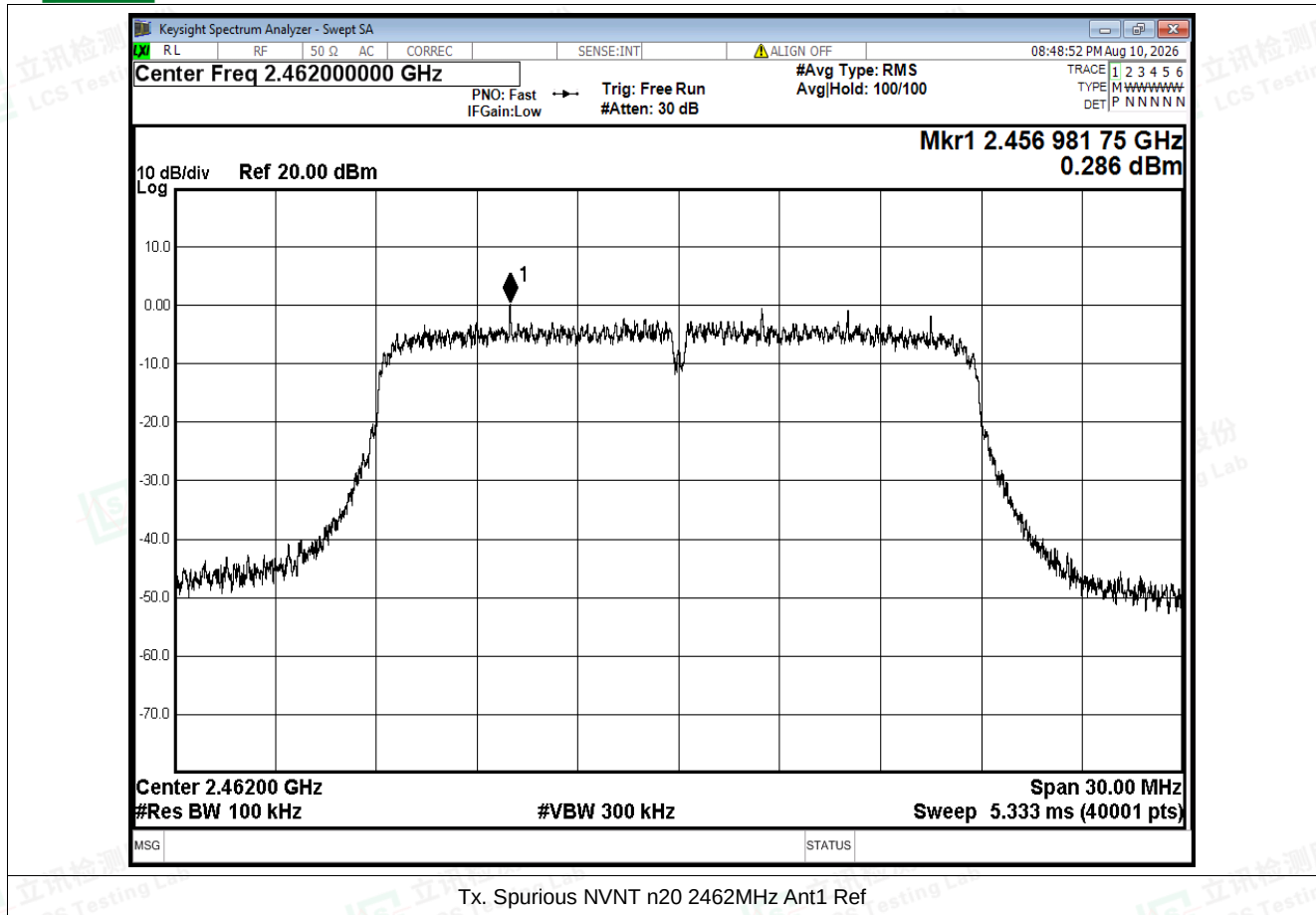


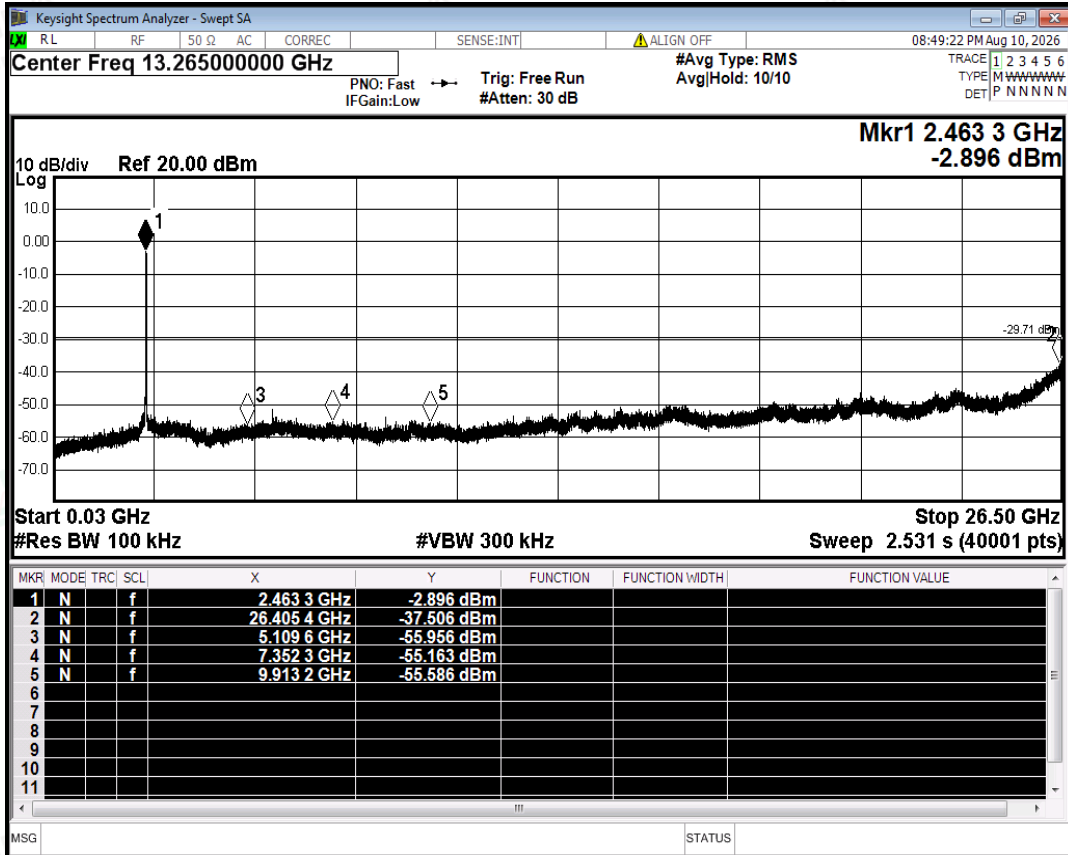
Tx. Spurious NVNT n20 2412MHz Ant1 Emission



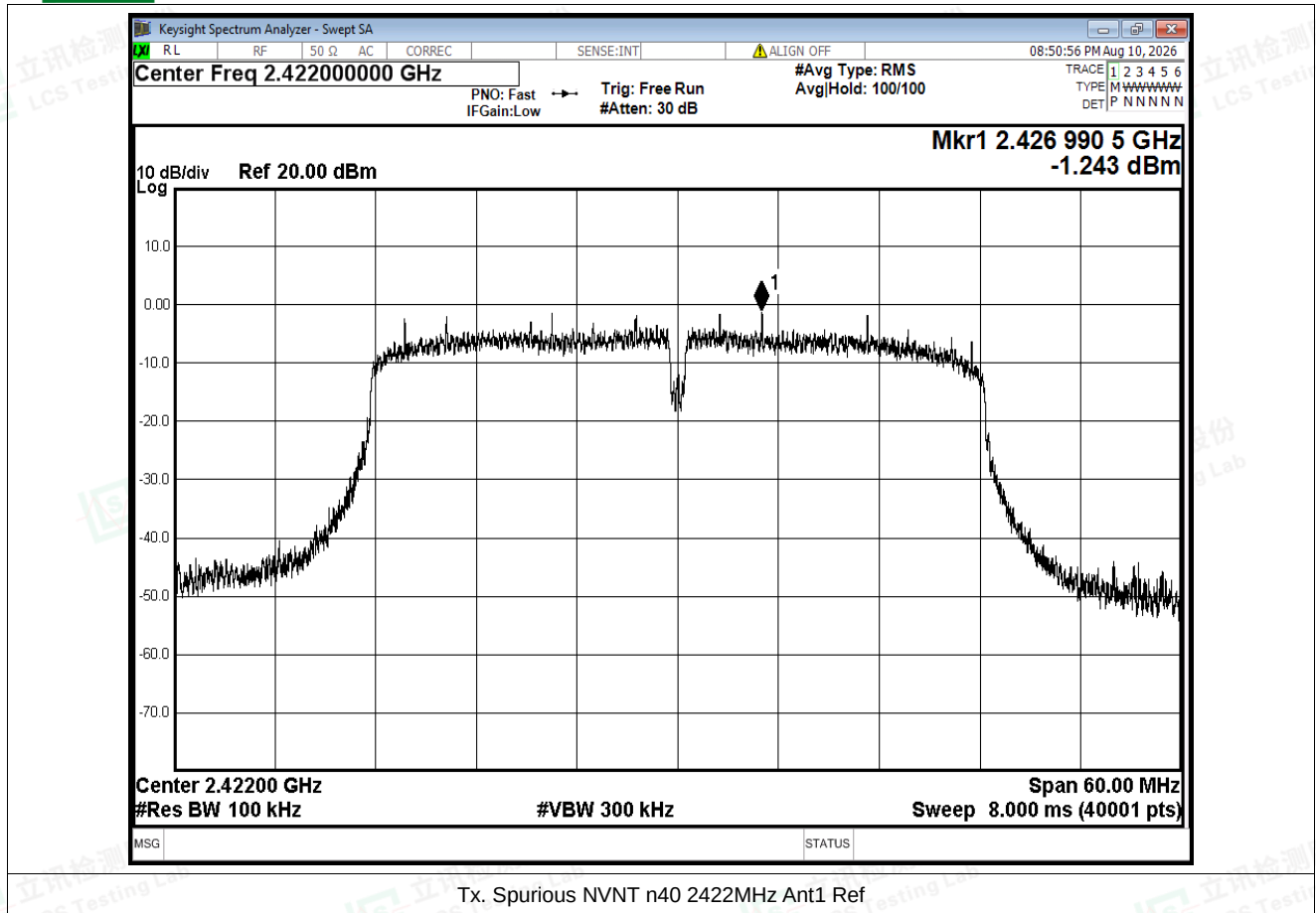


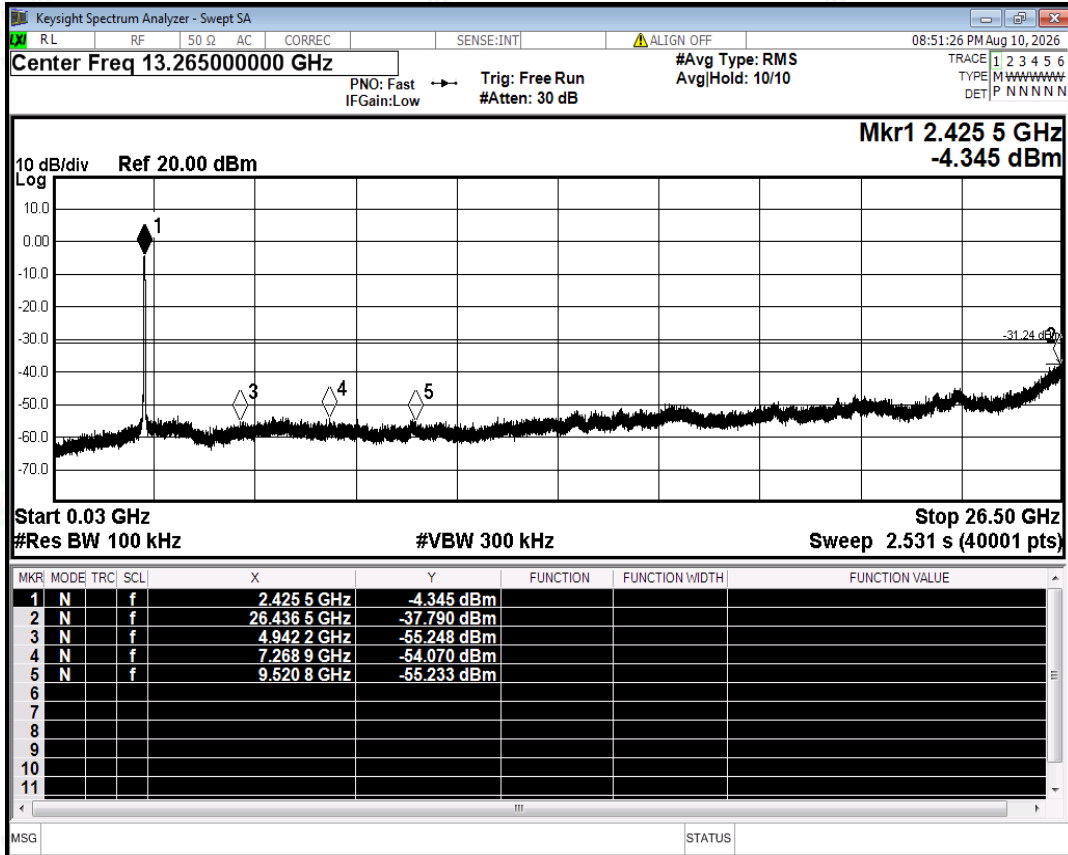
Tx. Spurious NVNT n20 2437MHz Ant1 Emission



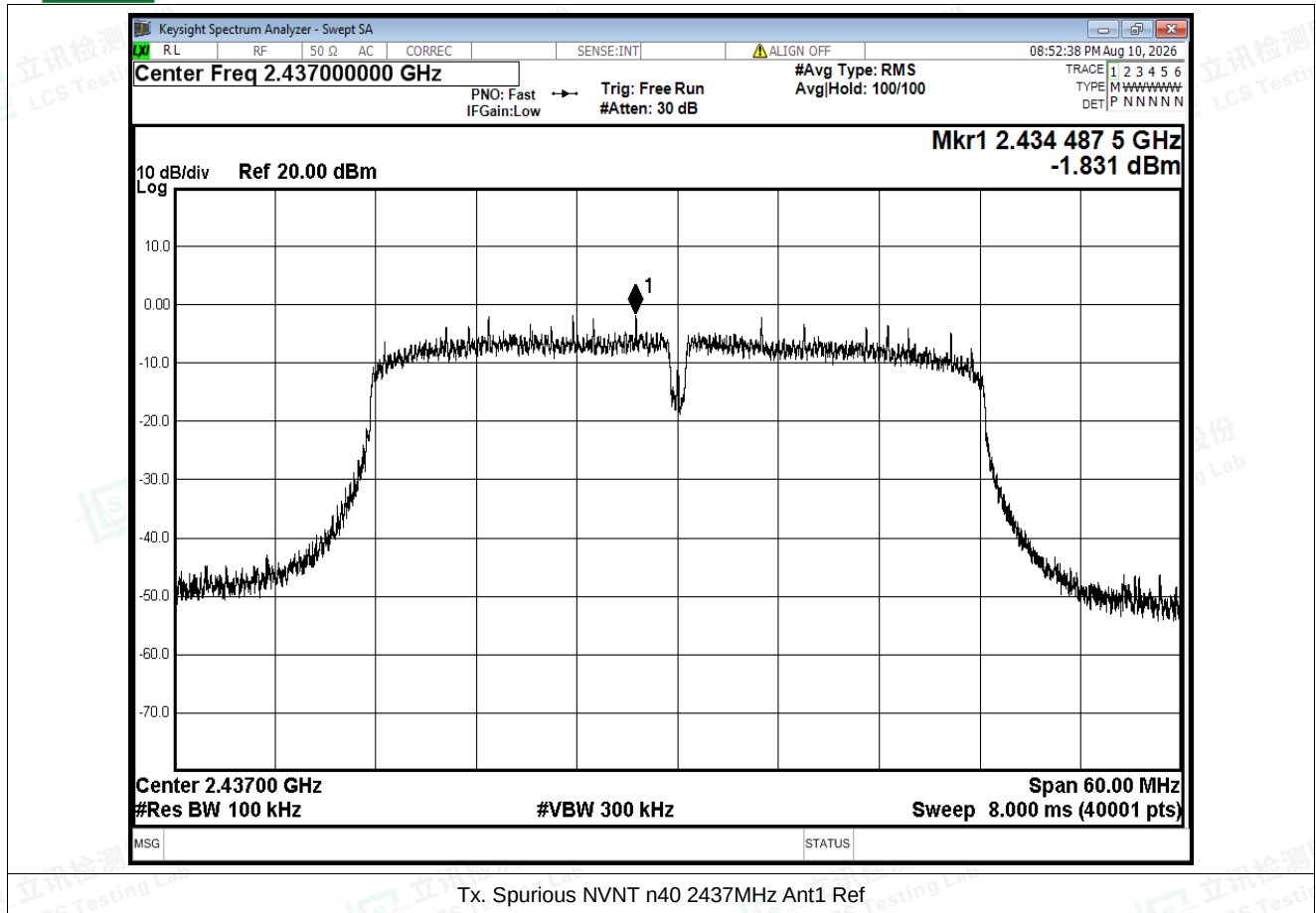


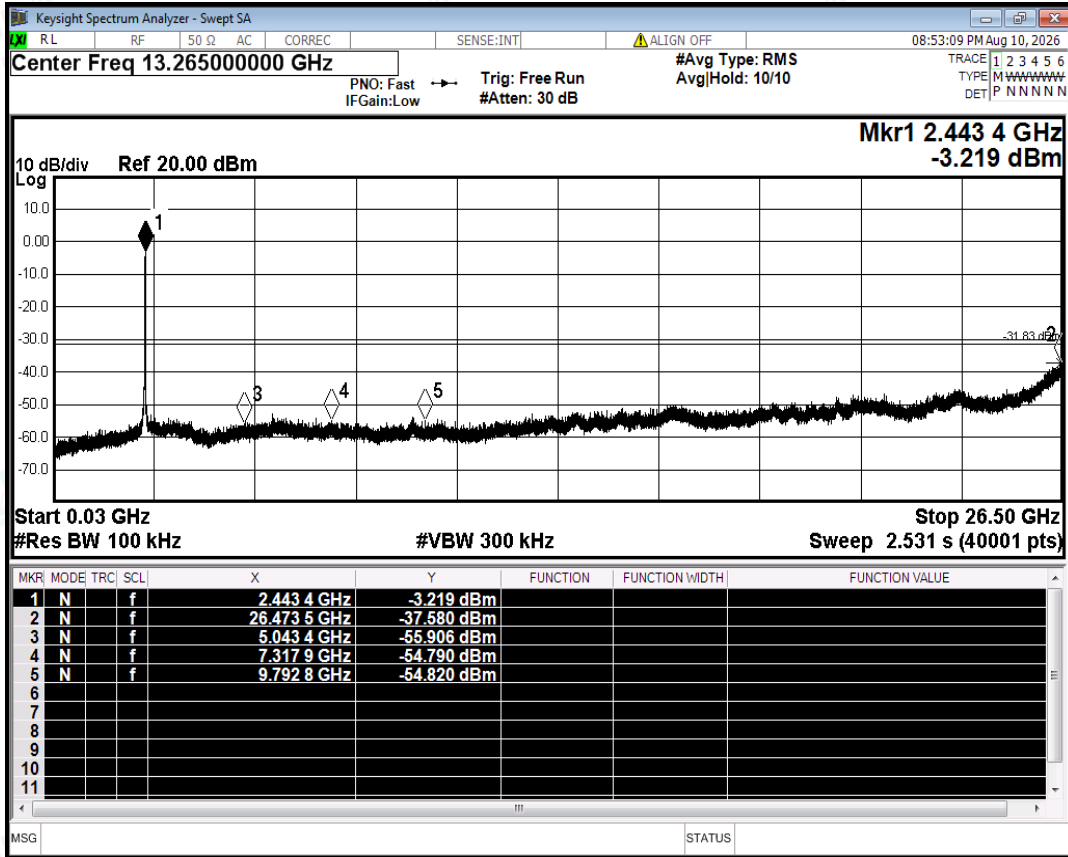
Tx. Spurious NVNT n20 2462MHz Ant1 Emission



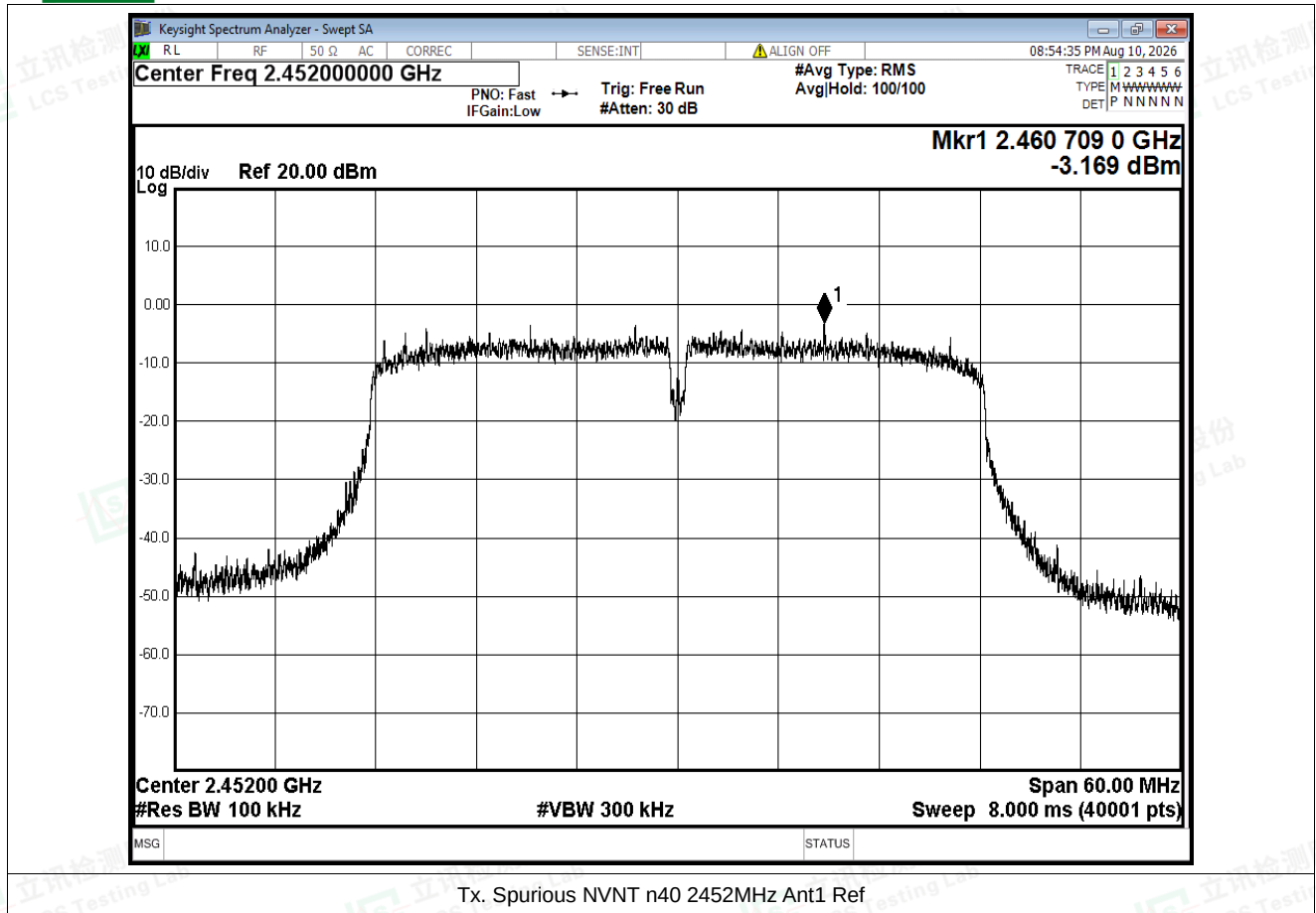


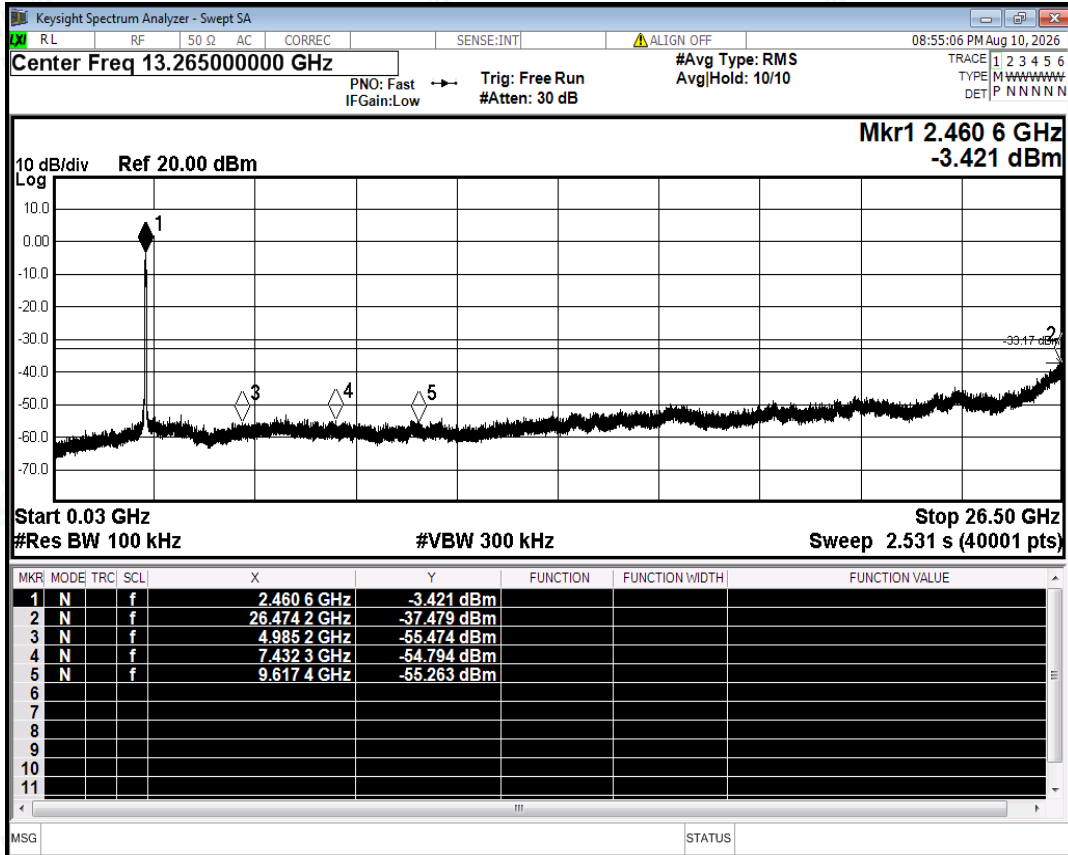
Tx. Spurious NVNT n40 2422MHz Ant1 Emission





Tx. Spurious NVNT n40 2437MHz Ant1 Emission



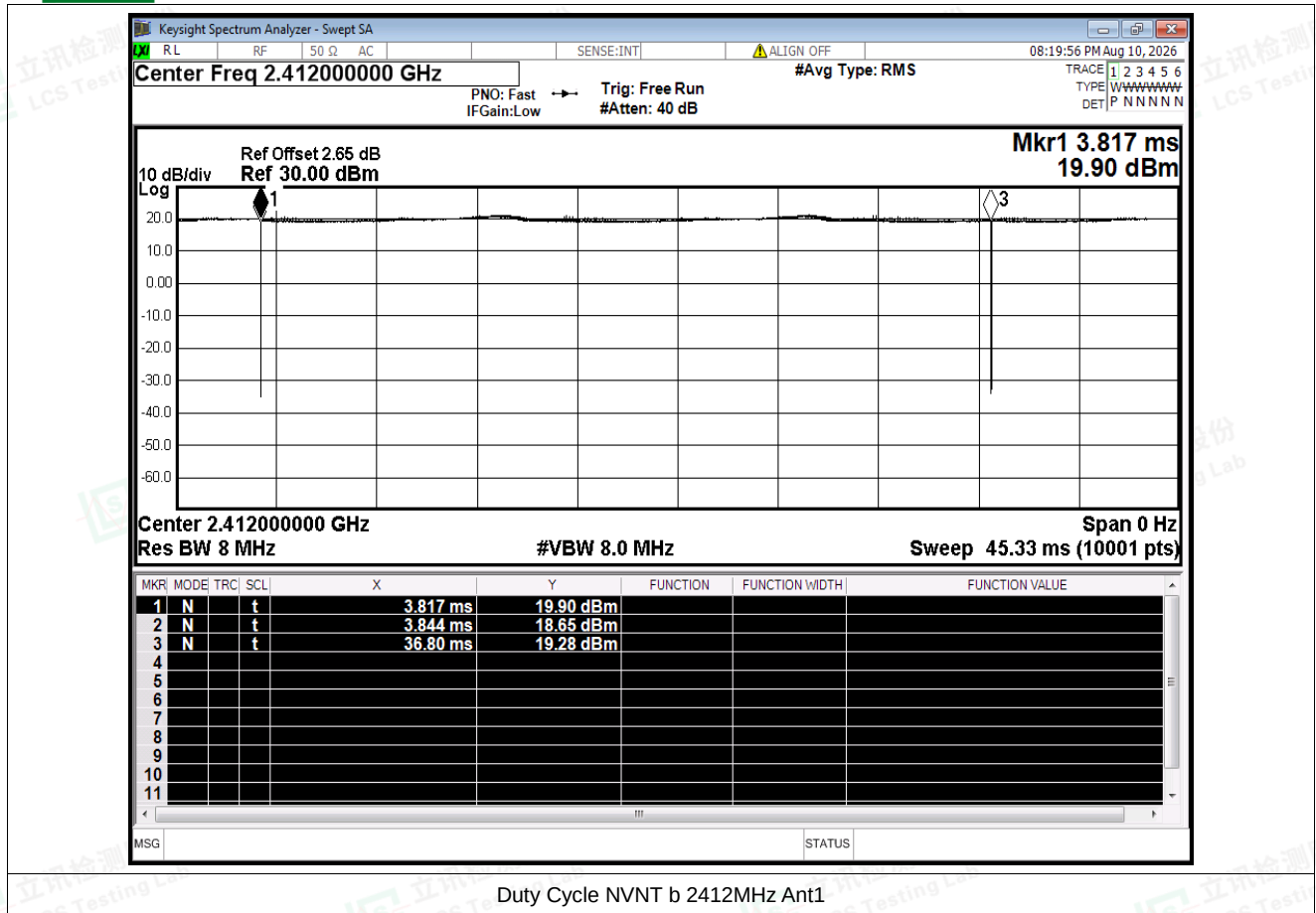


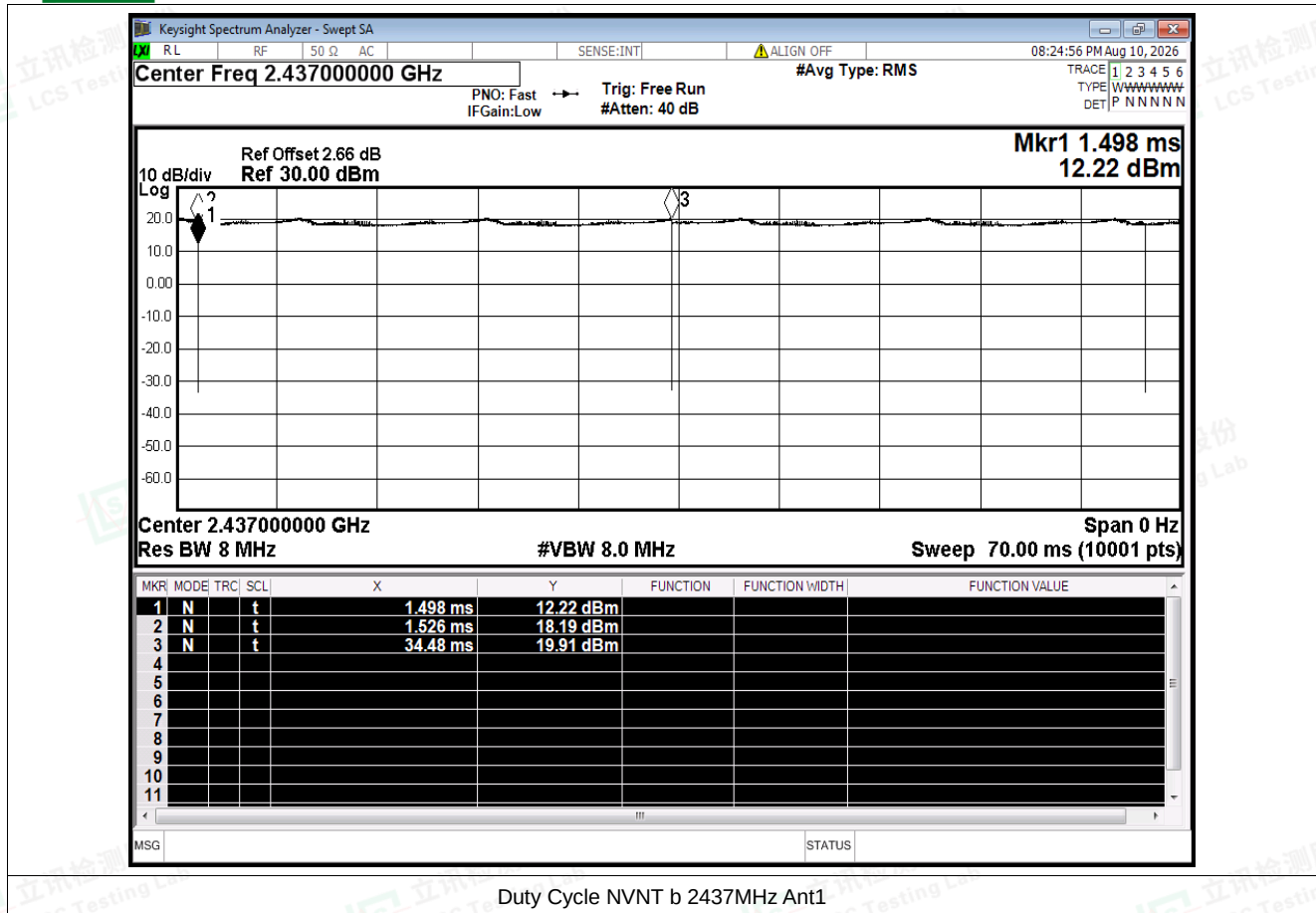
Tx. Spurious NVNT n40 2452MHz Ant1 Emission

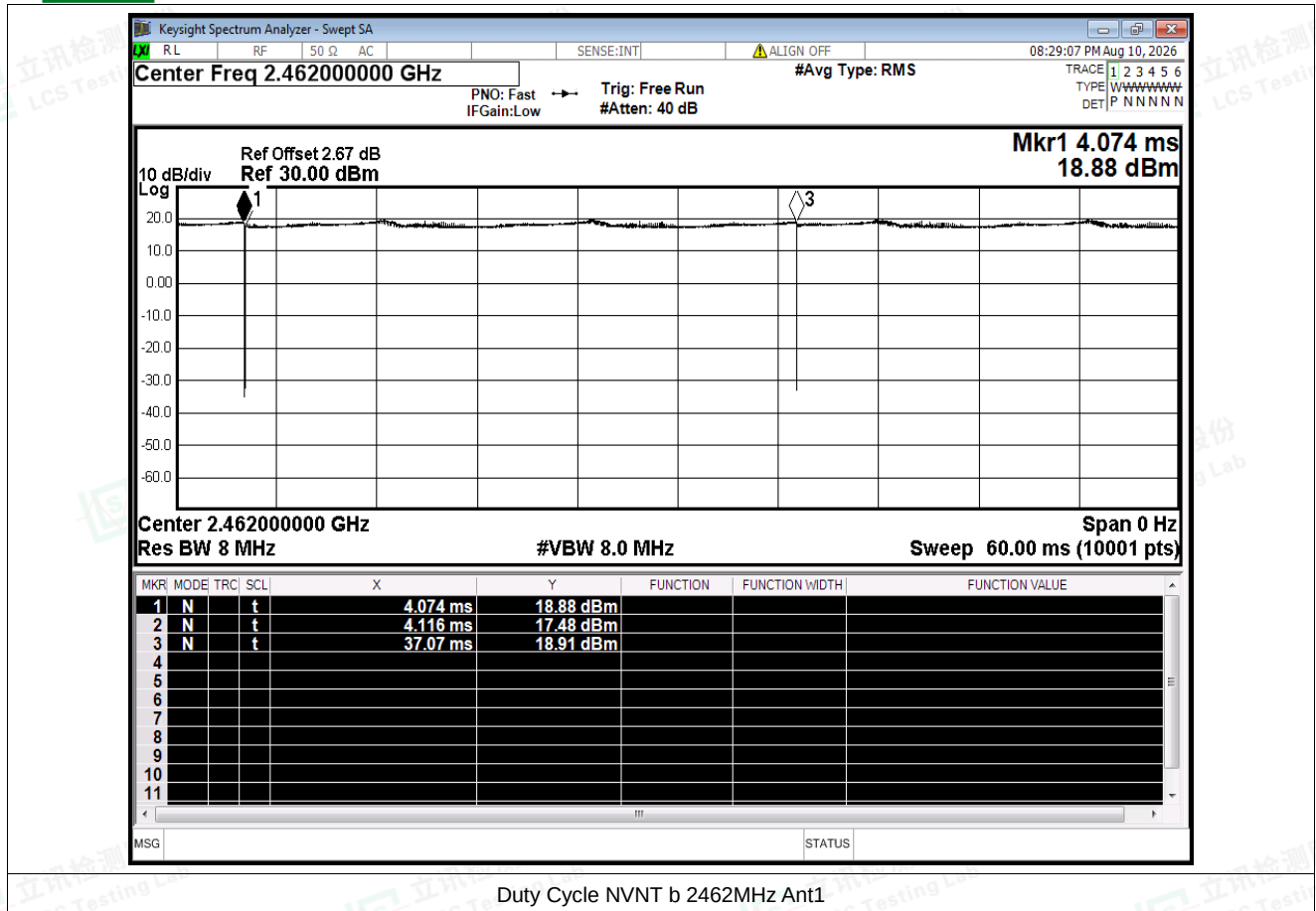


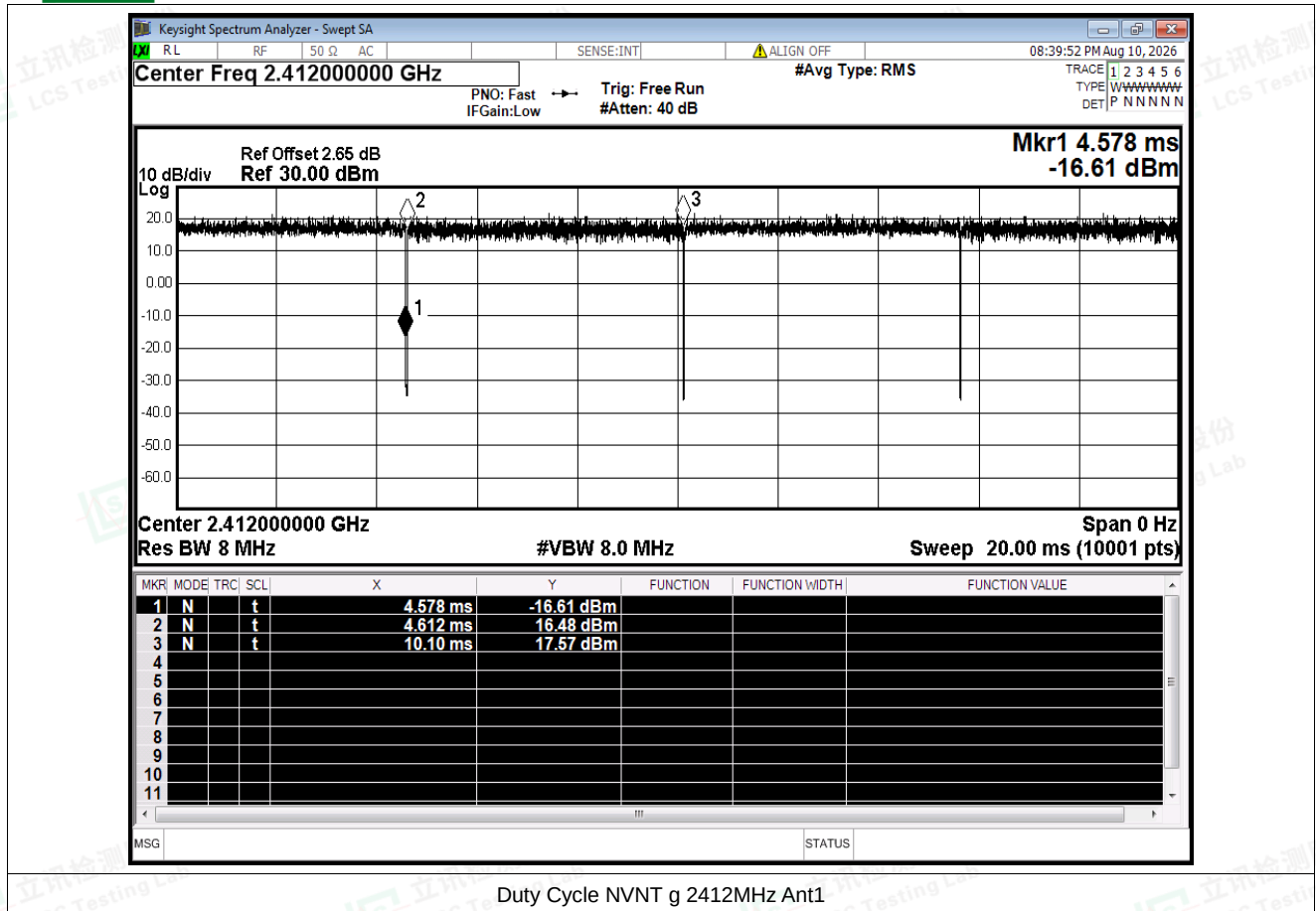
A.6 Duty Cycle

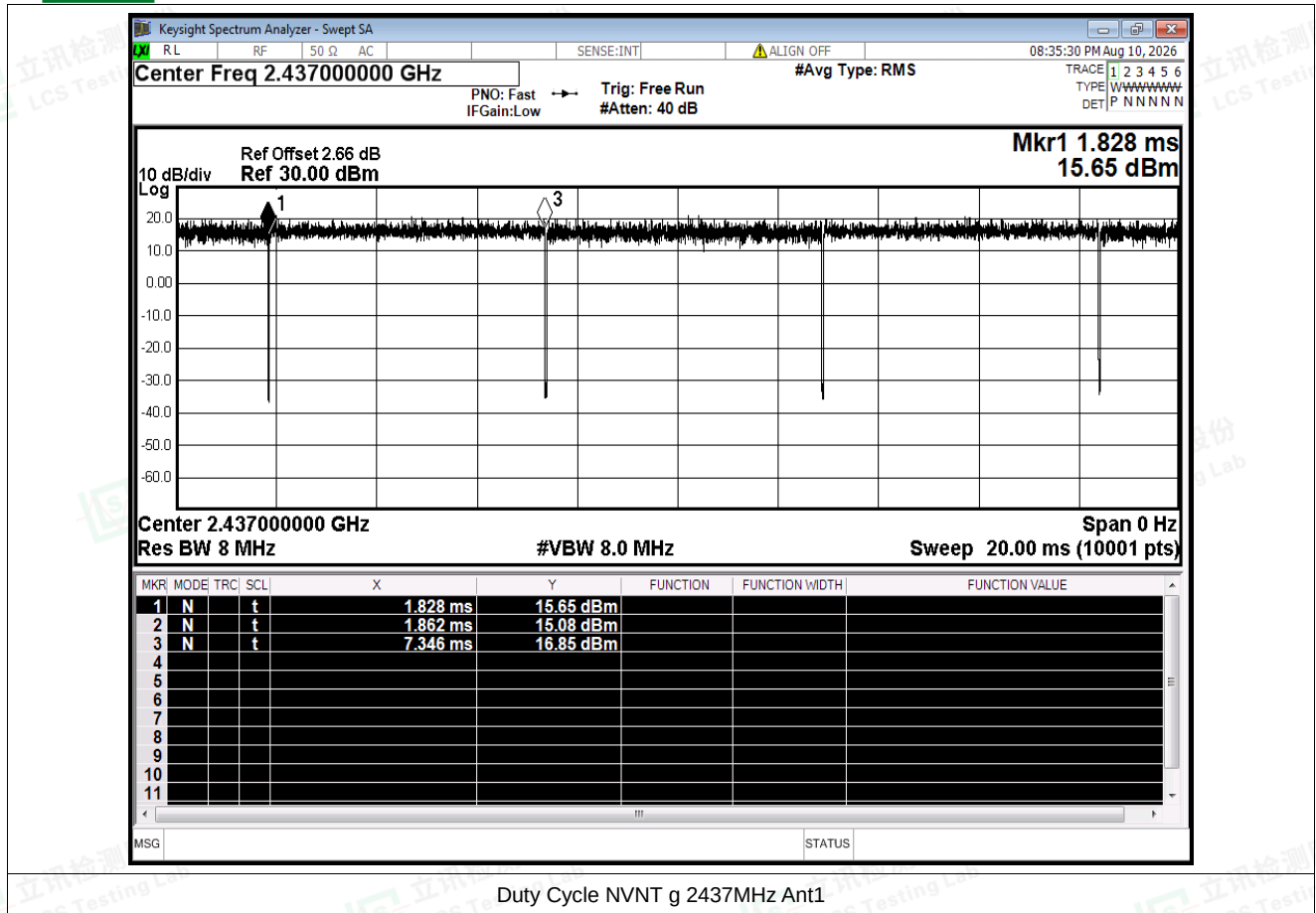
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.92	0	0.03
NVNT	b	2437	Ant1	99.92	0	0.03
NVNT	b	2462	Ant1	99.87	0.01	0.03
NVNT	g	2412	Ant1	99.38	0.03	0.18
NVNT	g	2437	Ant1	99.38	0.03	0.18
NVNT	g	2462	Ant1	99.38	0.03	0.18
NVNT	n20	2412	Ant1	99.3	0.03	0.2
NVNT	n20	2437	Ant1	99.34	0.03	0.2
NVNT	n20	2462	Ant1	99.34	0.03	0.2
NVNT	n40	2422	Ant1	98.64	0.06	0.41
NVNT	n40	2437	Ant1	98.64	0.06	0.41
NVNT	n40	2452	Ant1	98.64	0.06	0.41

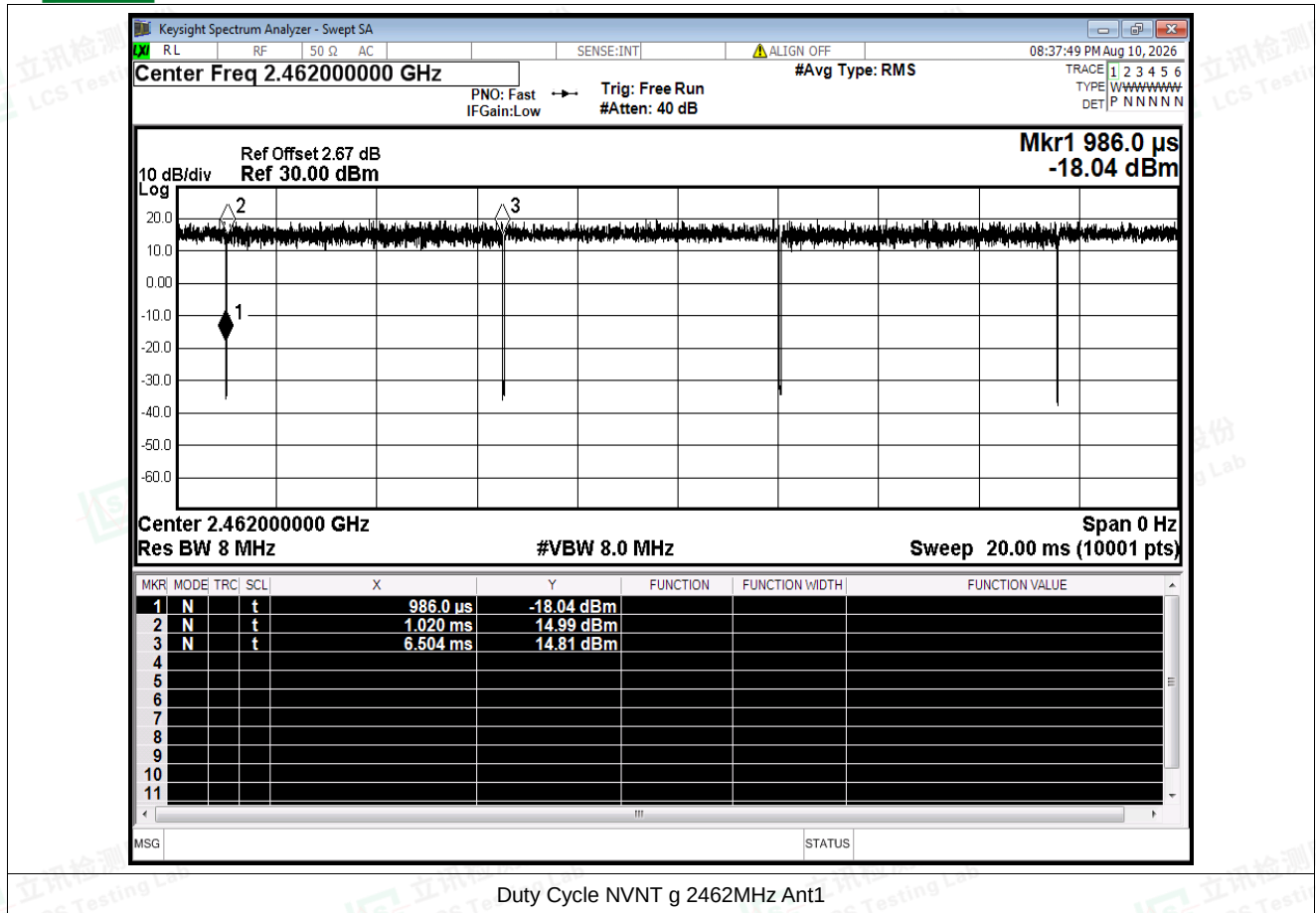


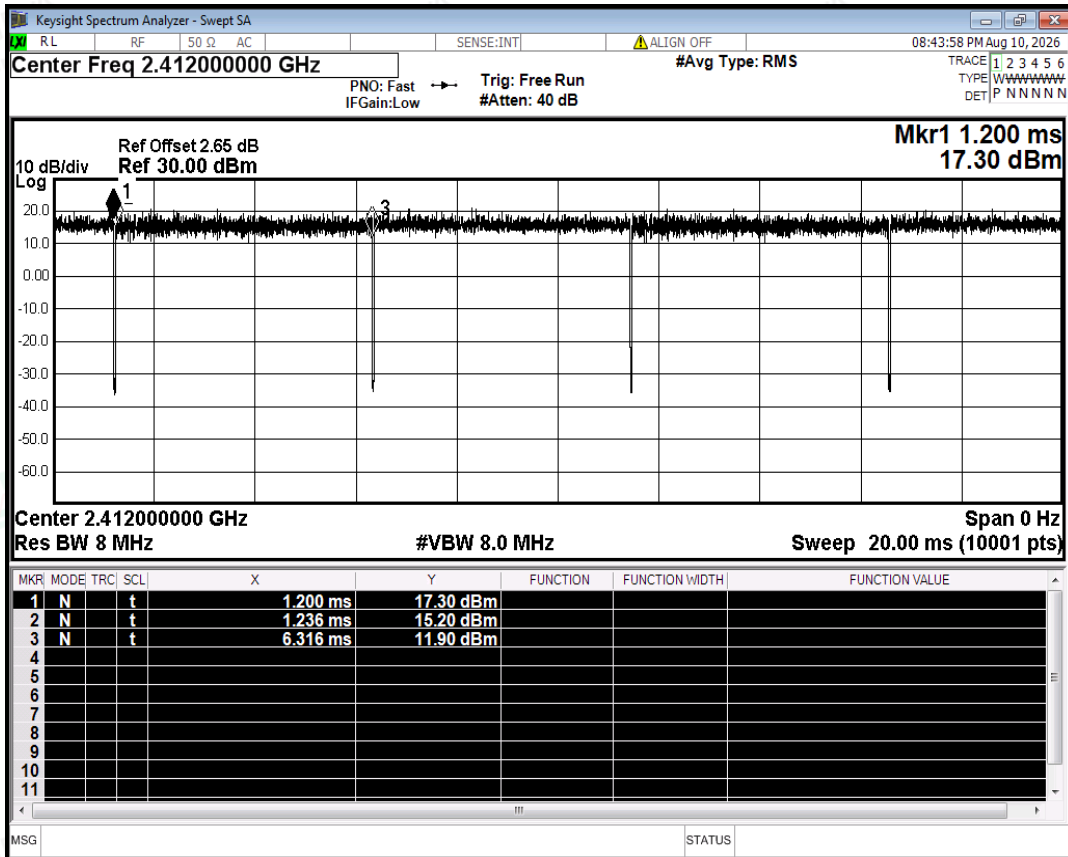




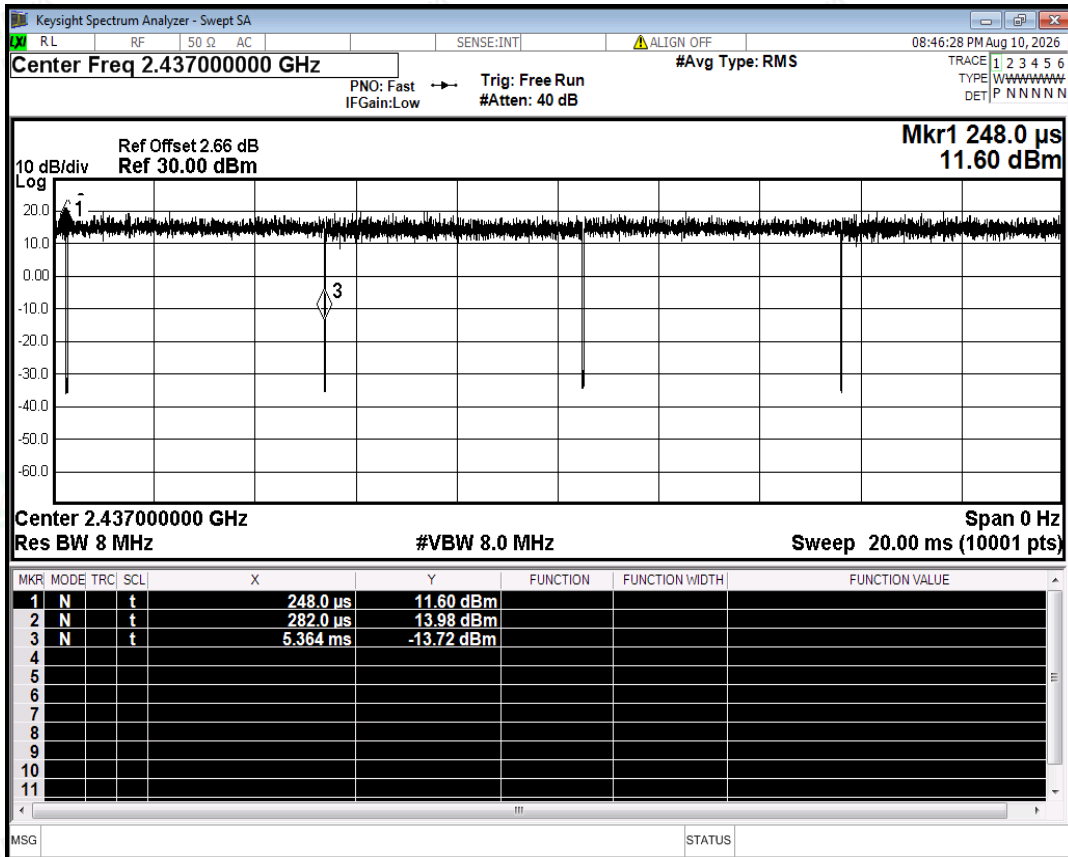




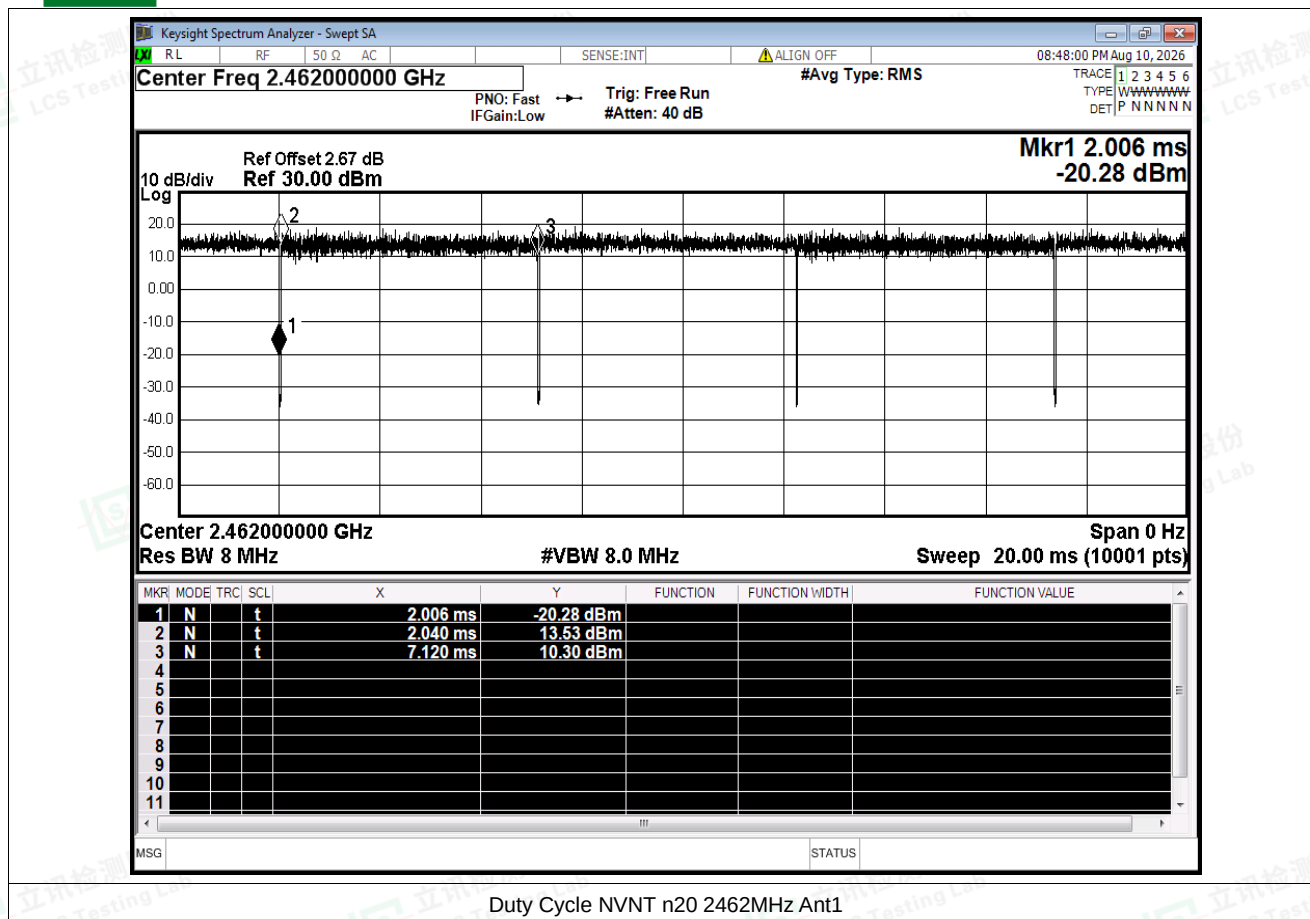


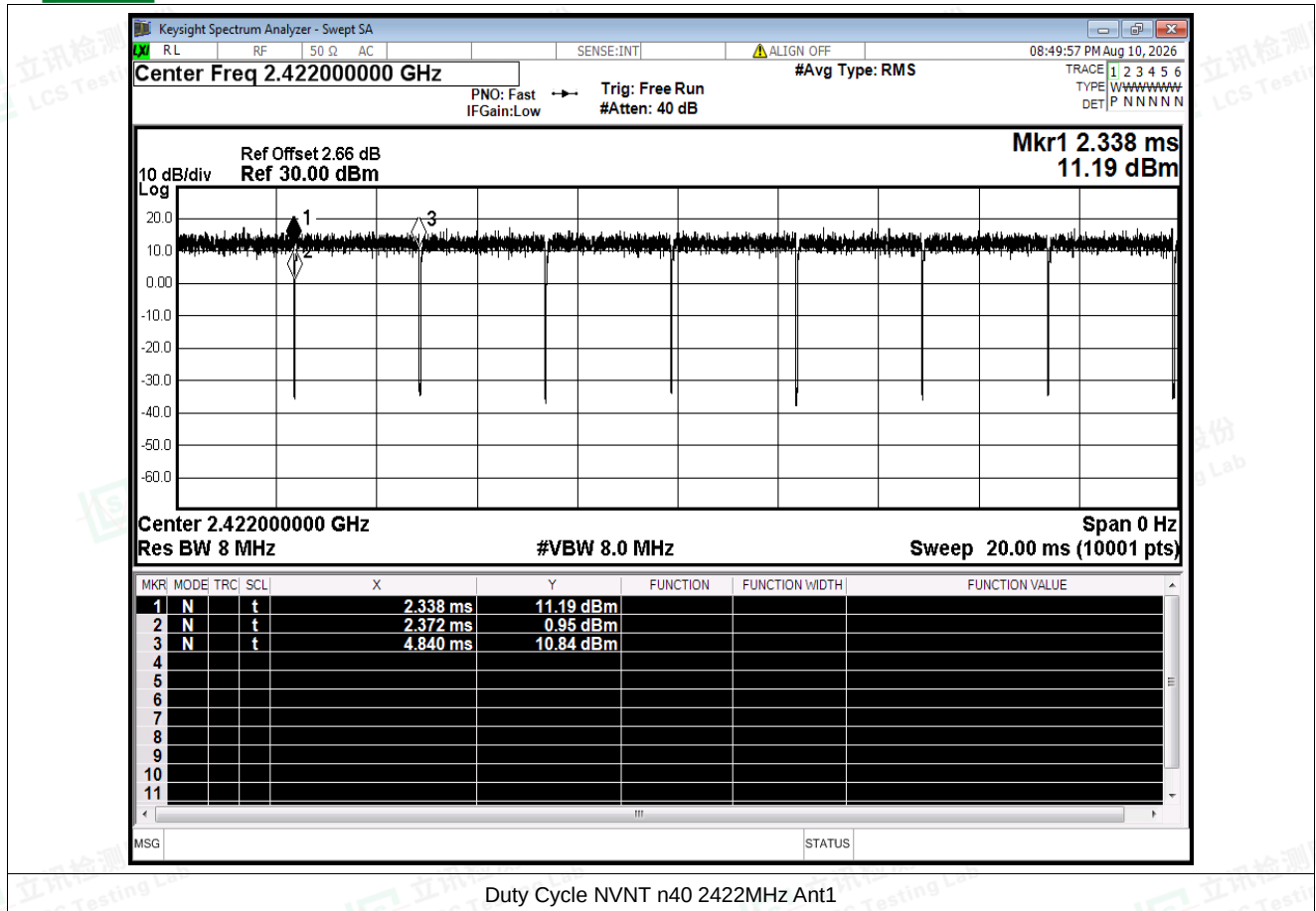


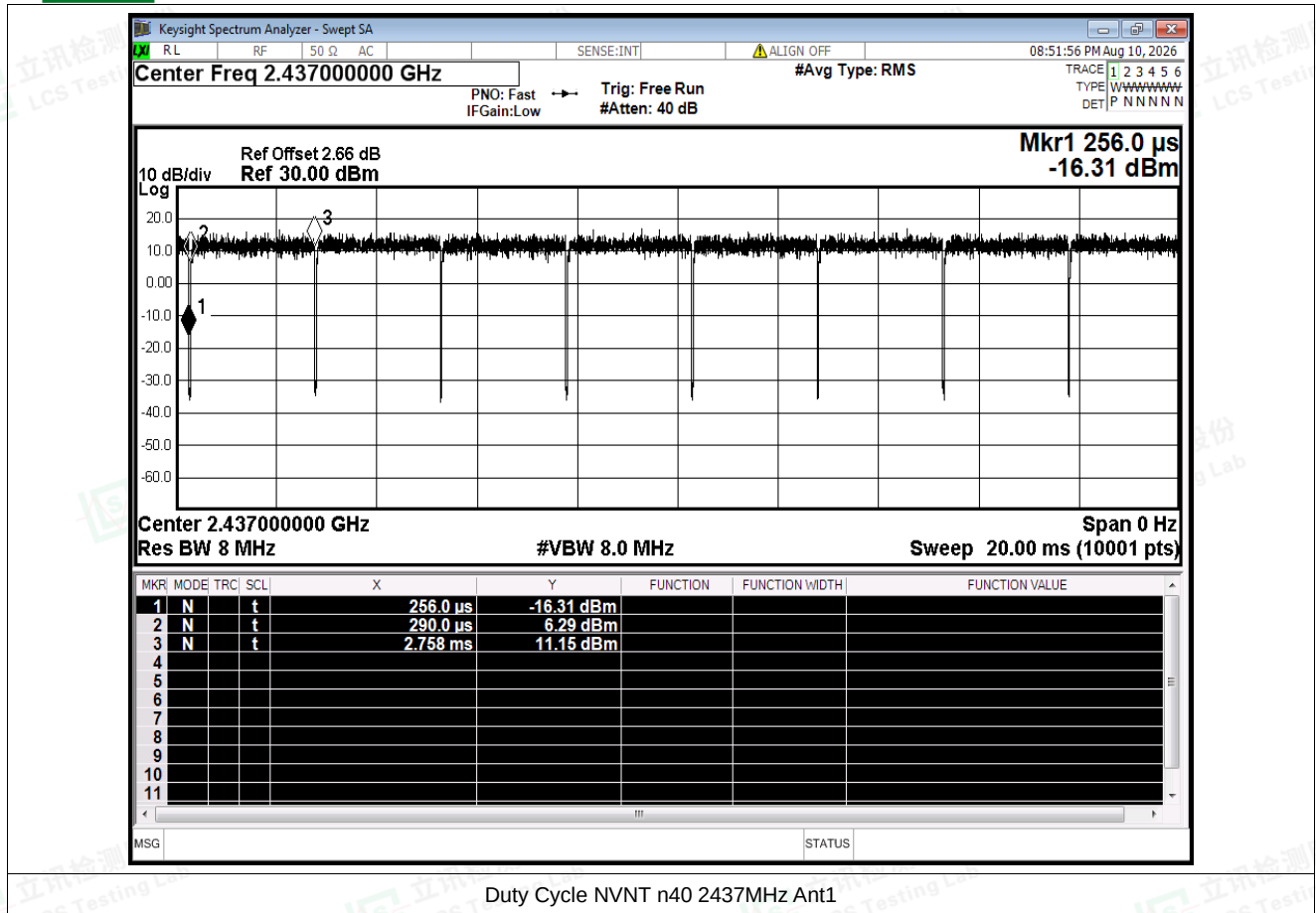
Duty Cycle NVNT n20 2412MHz Ant1

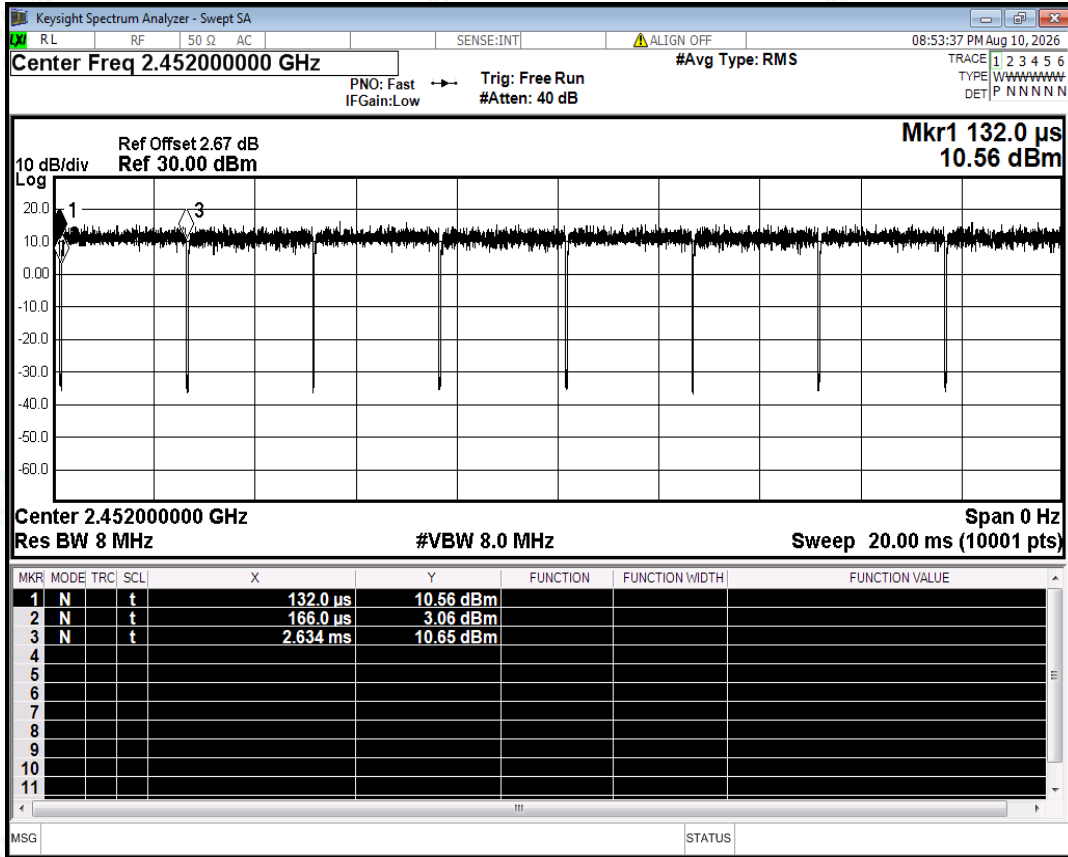


Duty Cycle NVNT n20 2437MHz Ant1









Duty Cycle NVNT n40 2452MHz Ant1



A.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-48.91	3.37	49.72	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-57.24	3.37	41.39	Average	54	Pass
NVNT	b	2412	Ant1	2350.131	-47.15	3.37	51.48	Peak	74	Pass
NVNT	b	2412	Ant1	2323.572	-56.99	3.37	41.64	Average	54	Pass
NVNT	b	2412	Ant1	2390	-50.24	3.37	48.39	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-57.26	3.37	41.37	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-49.22	3.37	49.41	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-56.42	3.37	42.21	Average	54	Pass
NVNT	b	2462	Ant1	2488.605	-47.27	3.37	51.36	Peak	74	Pass
NVNT	b	2462	Ant1	2487.969	-56.28	3.37	42.35	Average	54	Pass
NVNT	b	2462	Ant1	2500	-47.76	3.37	50.87	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-56.96	3.37	41.67	Average	54	Pass
NVNT	g	2412	Ant1	2310	-50.29	3.37	48.34	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-56.82	3.37	41.81	Average	54	Pass
NVNT	g	2412	Ant1	2371.542	-47.36	3.37	51.27	Peak	74	Pass
NVNT	g	2412	Ant1	2314.797	-56.73	3.37	41.90	Average	54	Pass
NVNT	g	2412	Ant1	2390	-50.32	3.37	48.31	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-57.05	3.37	41.58	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-48.93	3.37	49.70	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-55.99	3.37	42.64	Average	54	Pass
NVNT	g	2462	Ant1	2483.57	-42.86	3.37	55.77	Peak	74	Pass
NVNT	g	2462	Ant1	2484.047	-55.9	3.37	42.73	Average	54	Pass
NVNT	g	2462	Ant1	2500	-50.55	3.37	48.08	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-56.83	3.37	41.80	Average	54	Pass
NVNT	n20	2412	Ant1	2310	-48.98	3.37	49.65	Peak	74	Pass
NVNT	n20	2412	Ant1	2310	-57.01	3.37	41.62	Average	54	Pass
NVNT	n20	2412	Ant1	2320.296	-46.37	3.37	52.26	Peak	74	Pass
NVNT	n20	2412	Ant1	2312.808	-56.67	3.37	41.96	Average	54	Pass
NVNT	n20	2412	Ant1	2390	-49.72	3.37	48.91	Peak	74	Pass
NVNT	n20	2412	Ant1	2390	-57.09	3.37	41.54	Average	54	Pass
NVNT	n20	2462	Ant1	2483.5	-48.28	3.37	50.35	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.5	-55.46	3.37	43.17	Average	54	Pass
NVNT	n20	2462	Ant1	2483.623	-41.78	3.37	56.85	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.888	-55.13	3.37	43.50	Average	54	Pass
NVNT	n20	2462	Ant1	2500	-49.86	3.37	48.77	Peak	74	Pass
NVNT	n20	2462	Ant1	2500	-56.94	3.37	41.69	Average	54	Pass
NVNT	n40	2422	Ant1	2310	-50.67	3.37	47.96	Peak	74	Pass
NVNT	n40	2422	Ant1	2310	-57.14	3.37	41.49	Average	54	Pass

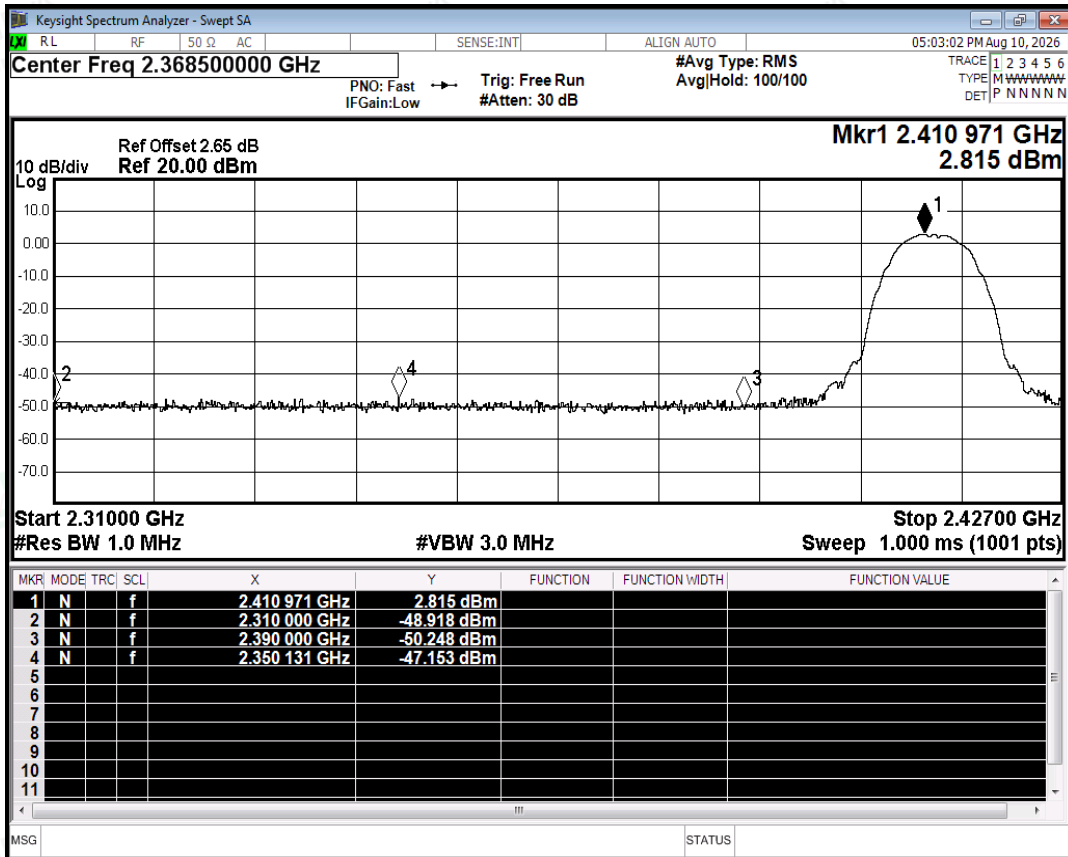
Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

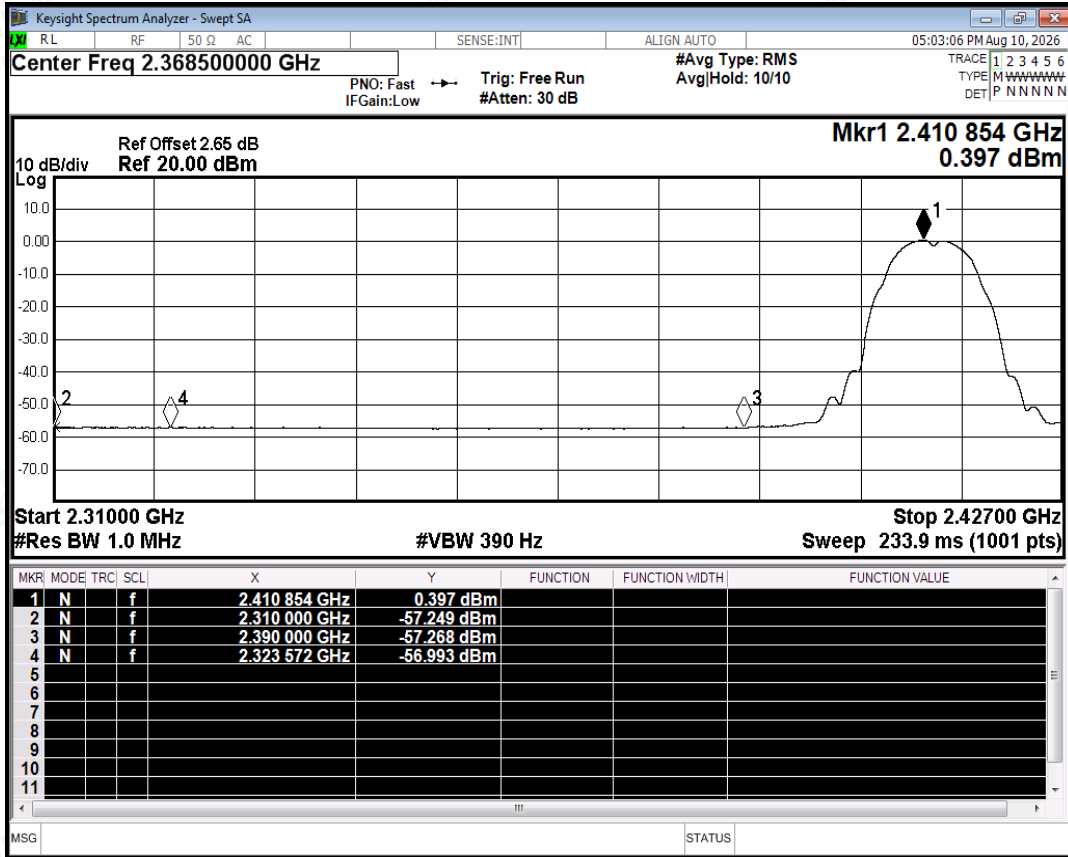
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com



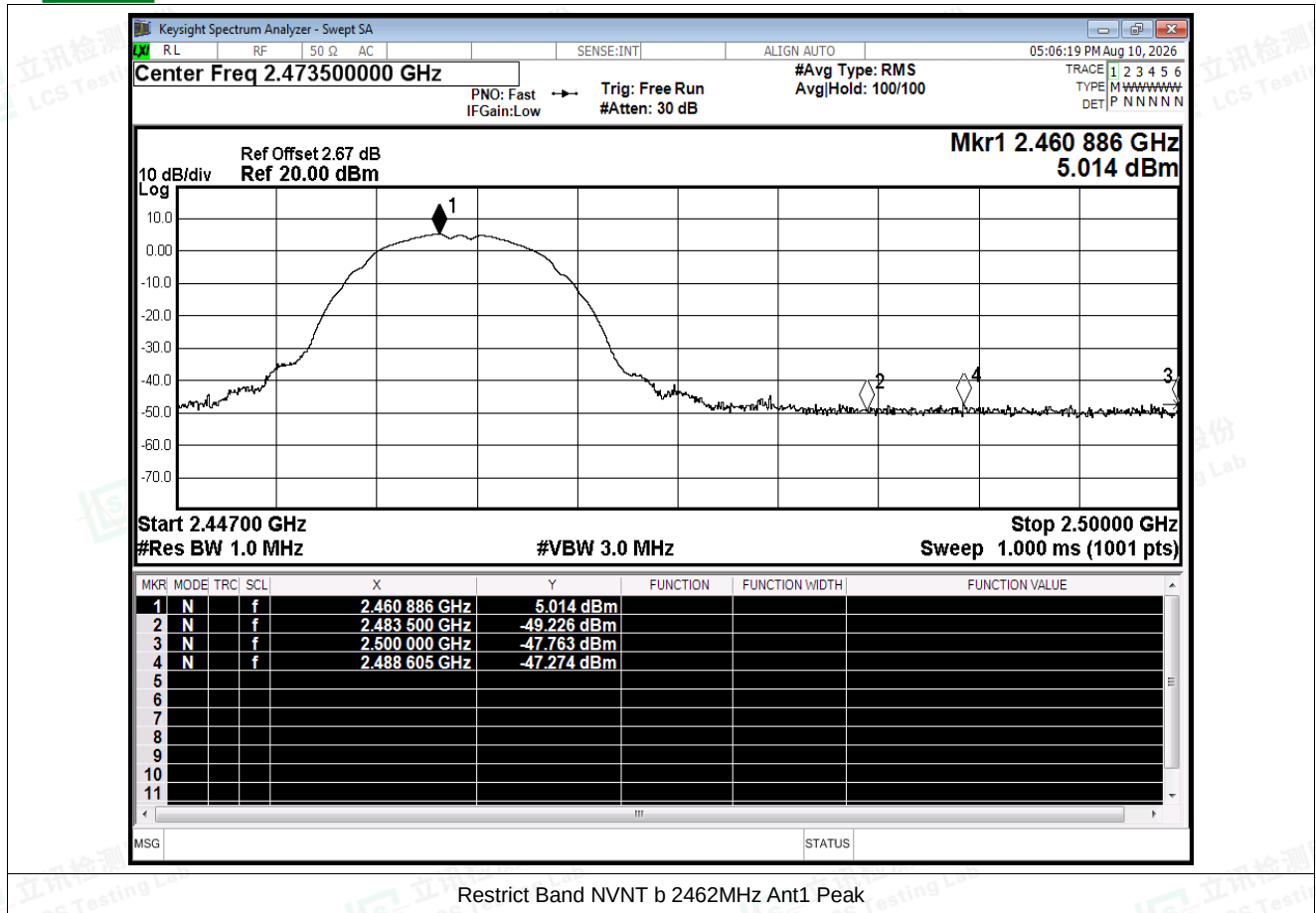
NVNT	n40	2422	Ant1	2370.066	-46.95	3.37	51.68	Peak	74	Pass
NVNT	n40	2422	Ant1	2325.762	-56.45	3.37	42.18	Average	54	Pass
NVNT	n40	2422	Ant1	2390	-48.23	3.37	50.40	Peak	74	Pass
NVNT	n40	2422	Ant1	2390	-56.69	3.37	41.94	Average	54	Pass
NVNT	n40	2452	Ant1	2483.5	-50.4	3.37	48.23	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.5	-56.36	3.37	42.27	Average	54	Pass
NVNT	n40	2452	Ant1	2497.192	-46.95	3.37	51.68	Peak	74	Pass
NVNT	n40	2452	Ant1	2483.932	-56.01	3.37	42.62	Average	54	Pass
NVNT	n40	2452	Ant1	2500	-48.35	3.37	50.28	Peak	74	Pass
NVNT	n40	2452	Ant1	2500	-56.93	3.37	41.70	Average	54	Pass

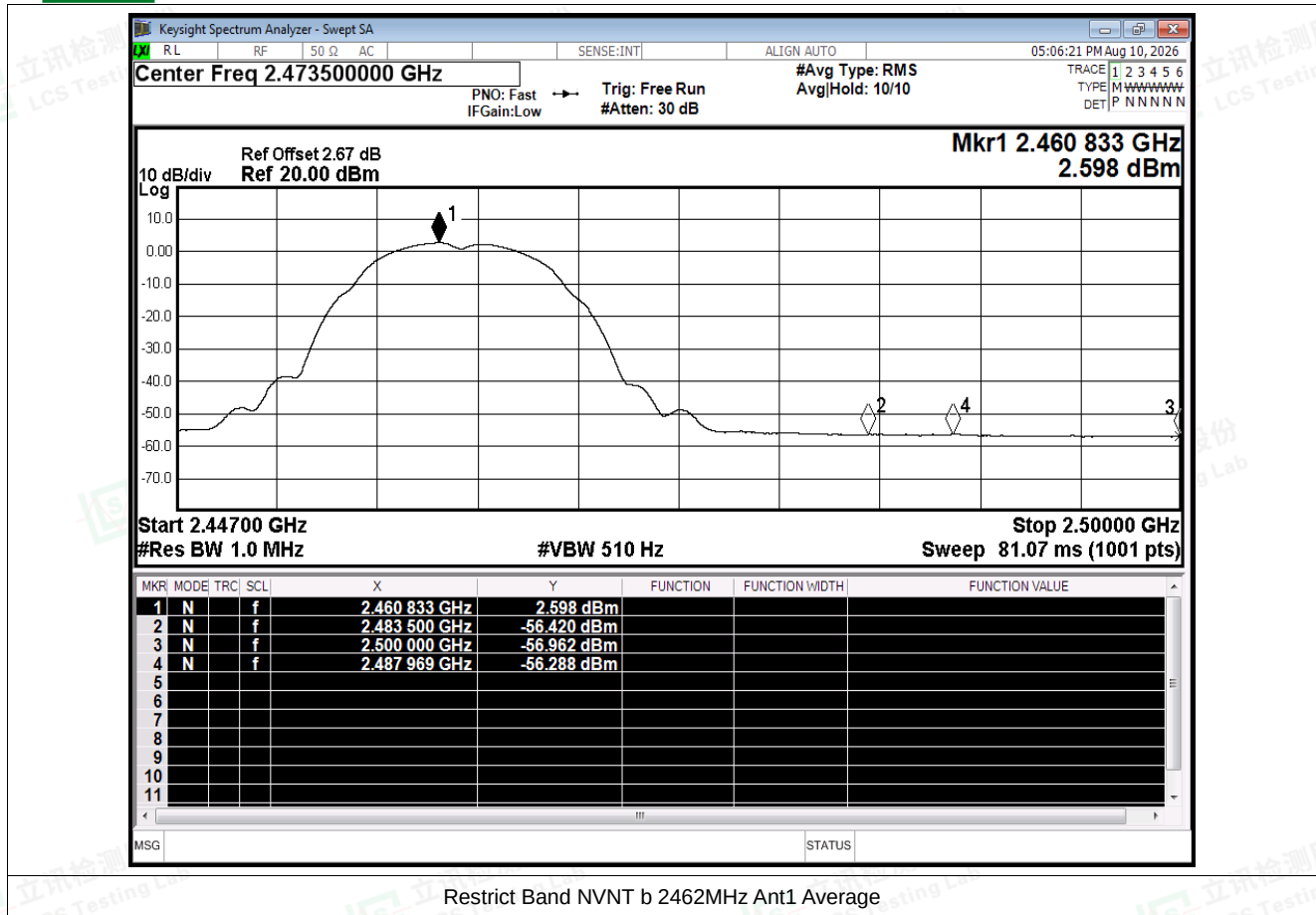


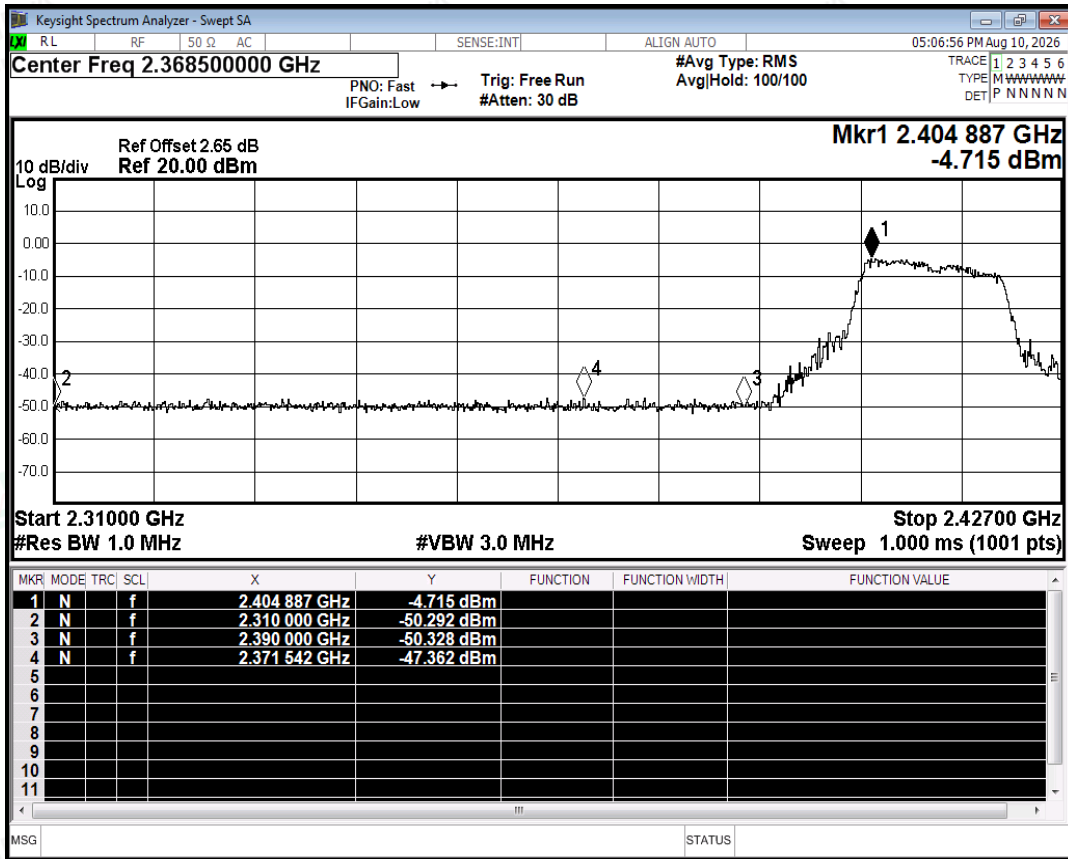
Restrict Band NVNT b 2412MHz Ant1 Peak



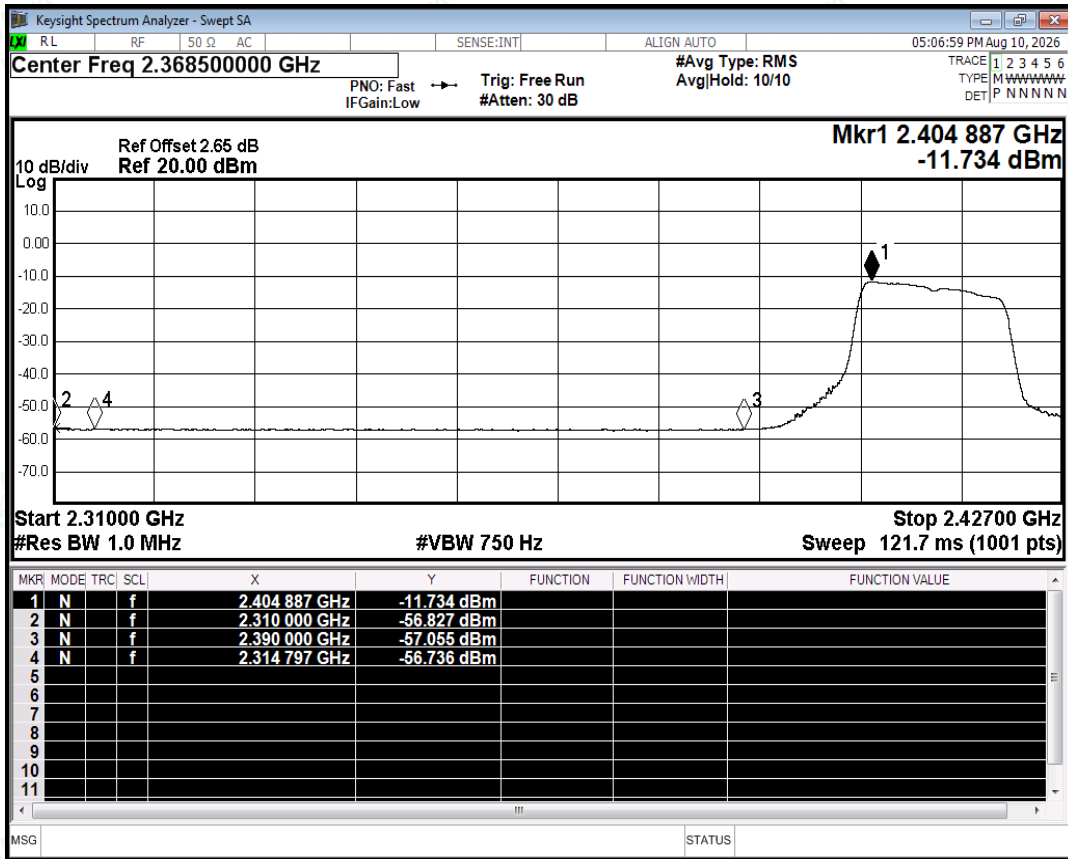
Restrict Band NVNT b 2412MHz Ant1 Average



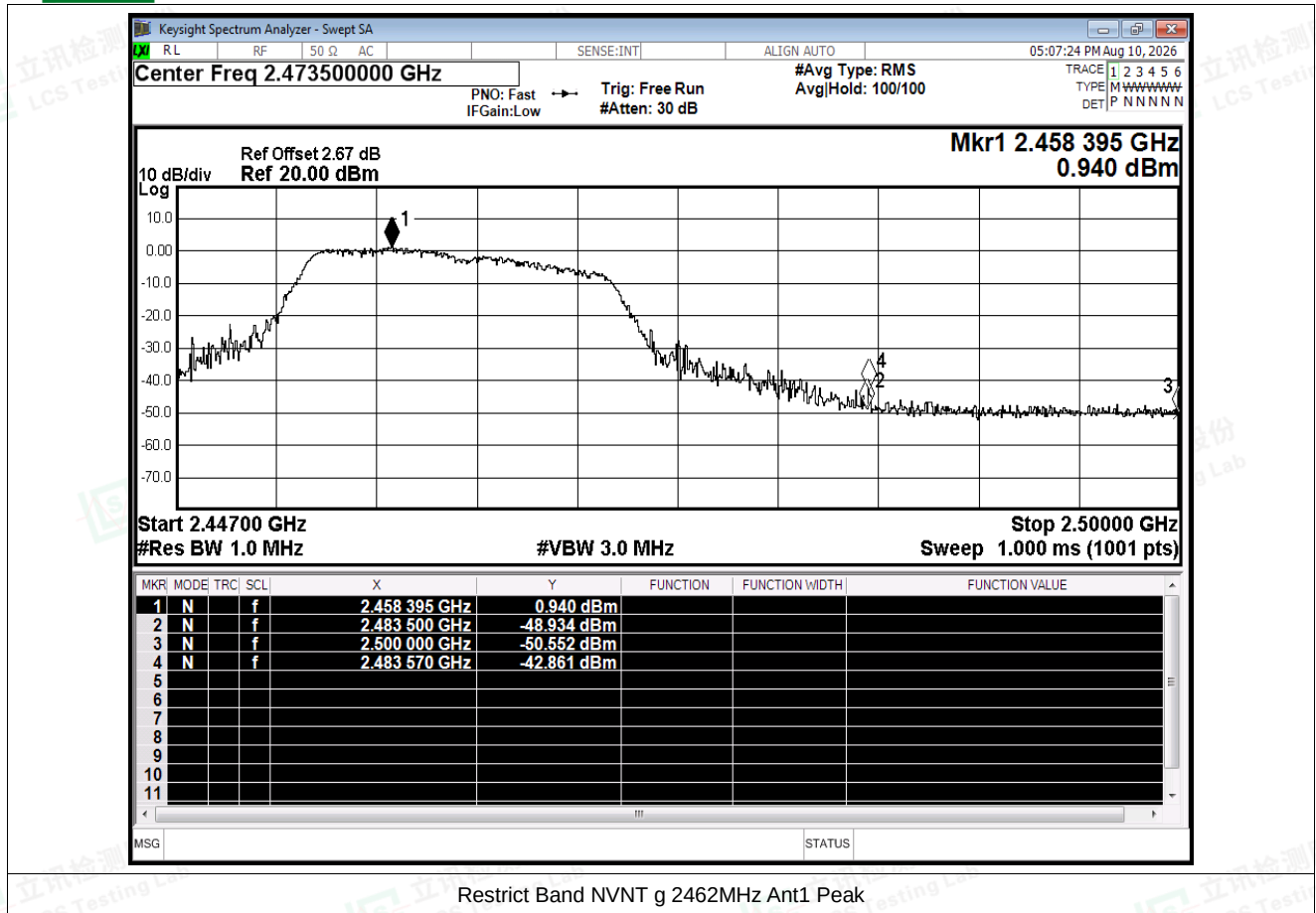


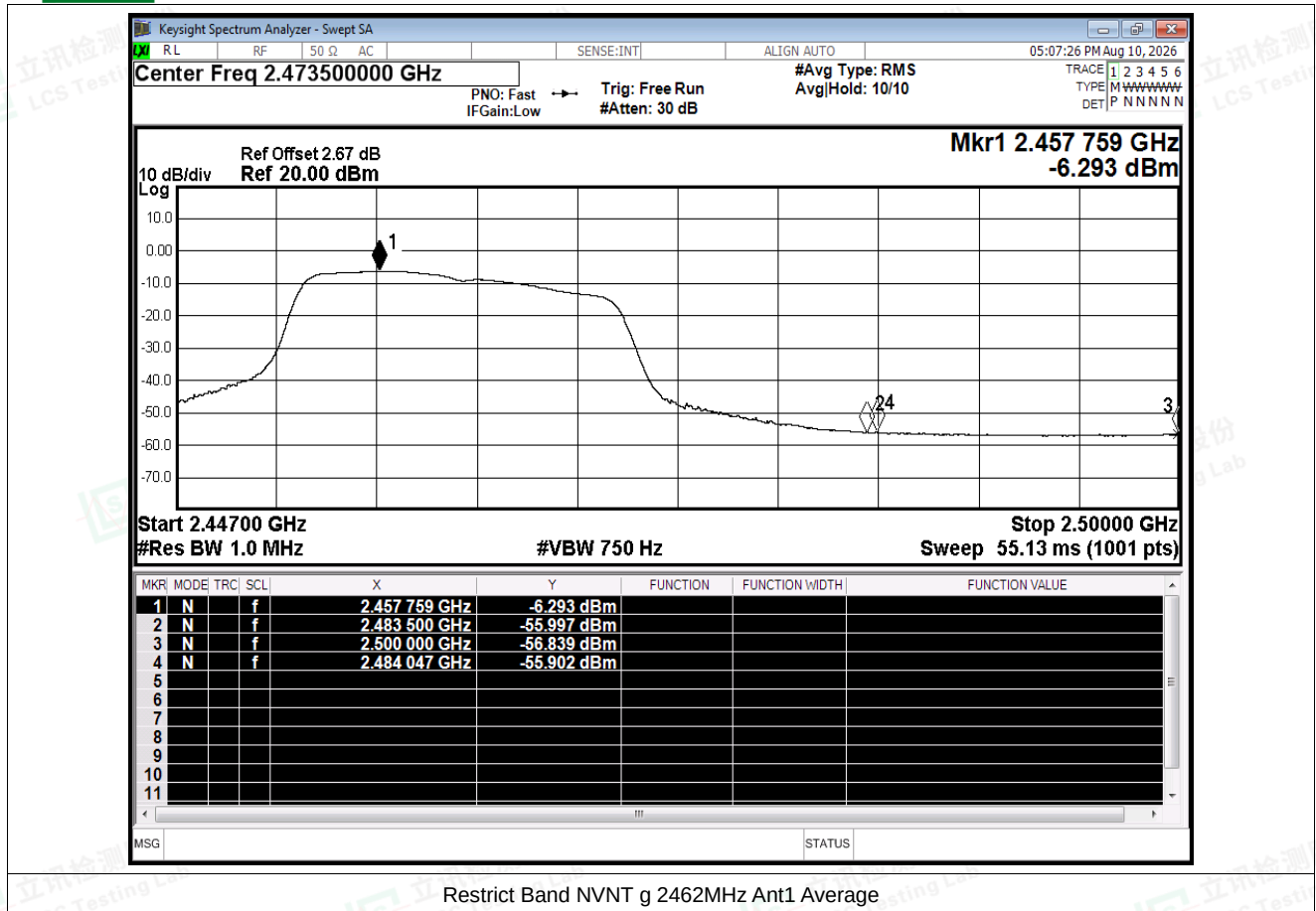


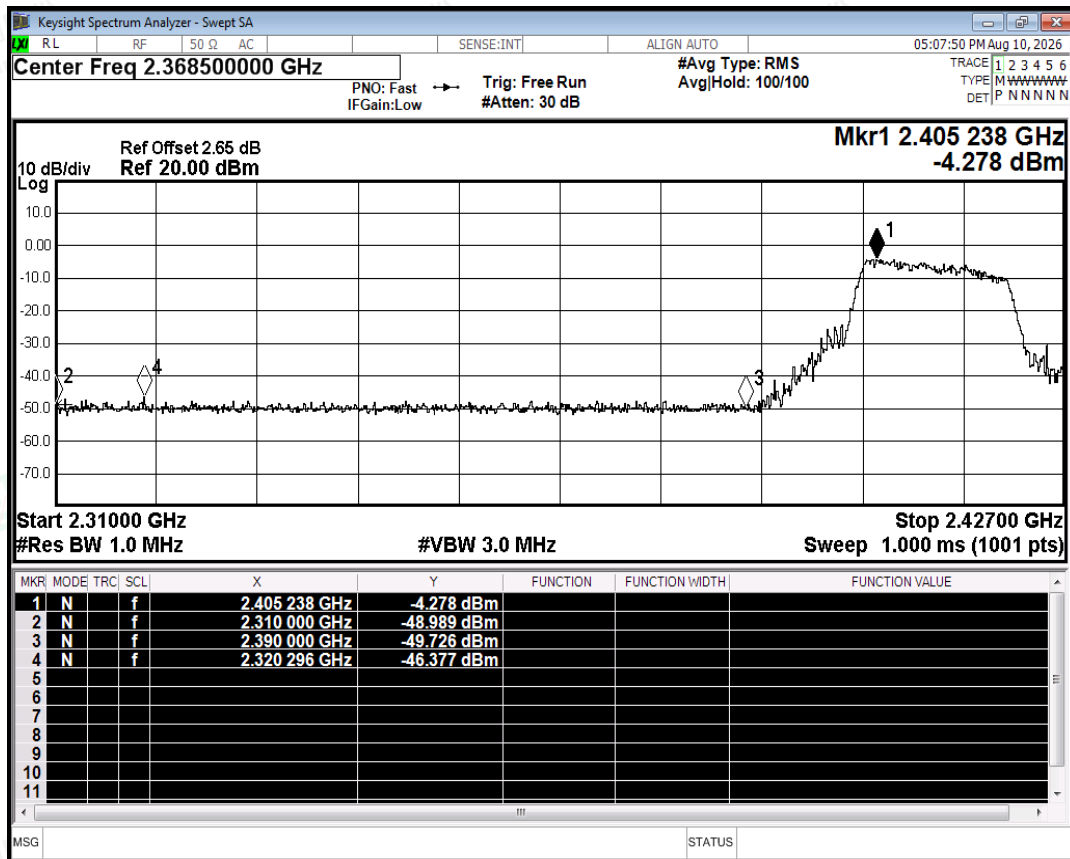
Restrict Band NVNT g 2412MHz Ant1 Peak



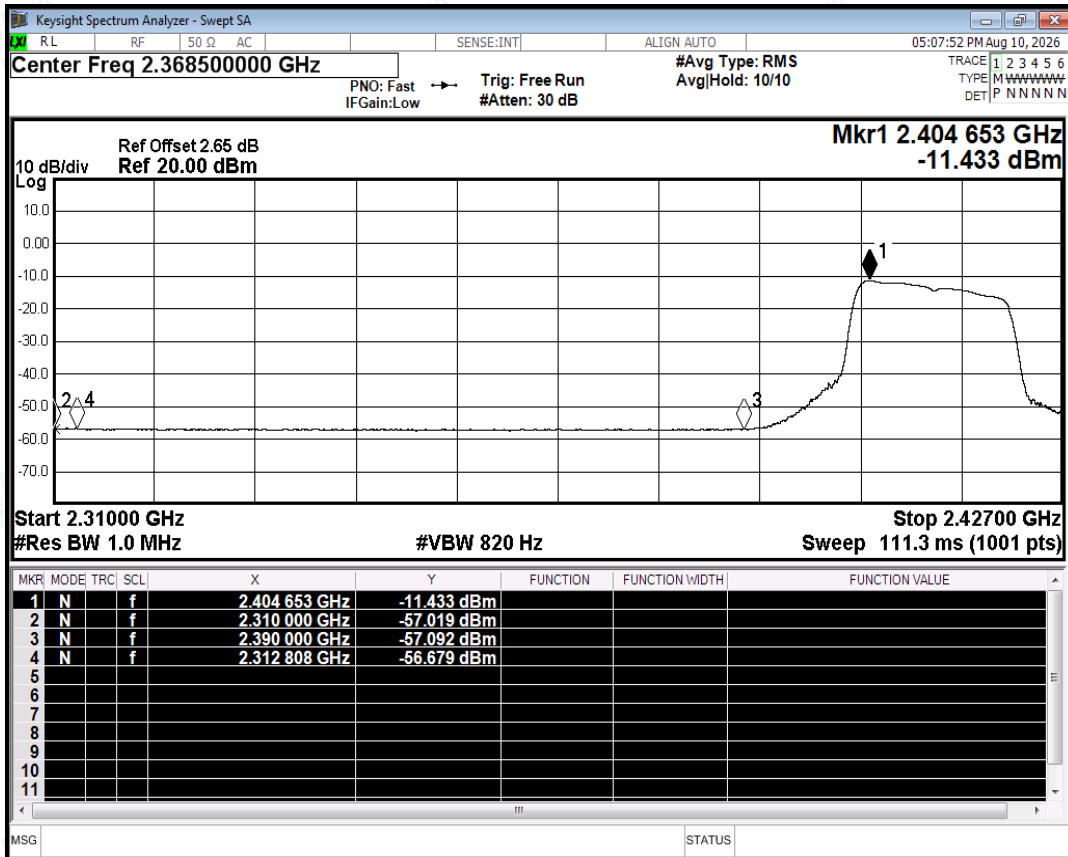
Restrict Band NVNT g 2412MHz Ant1 Average



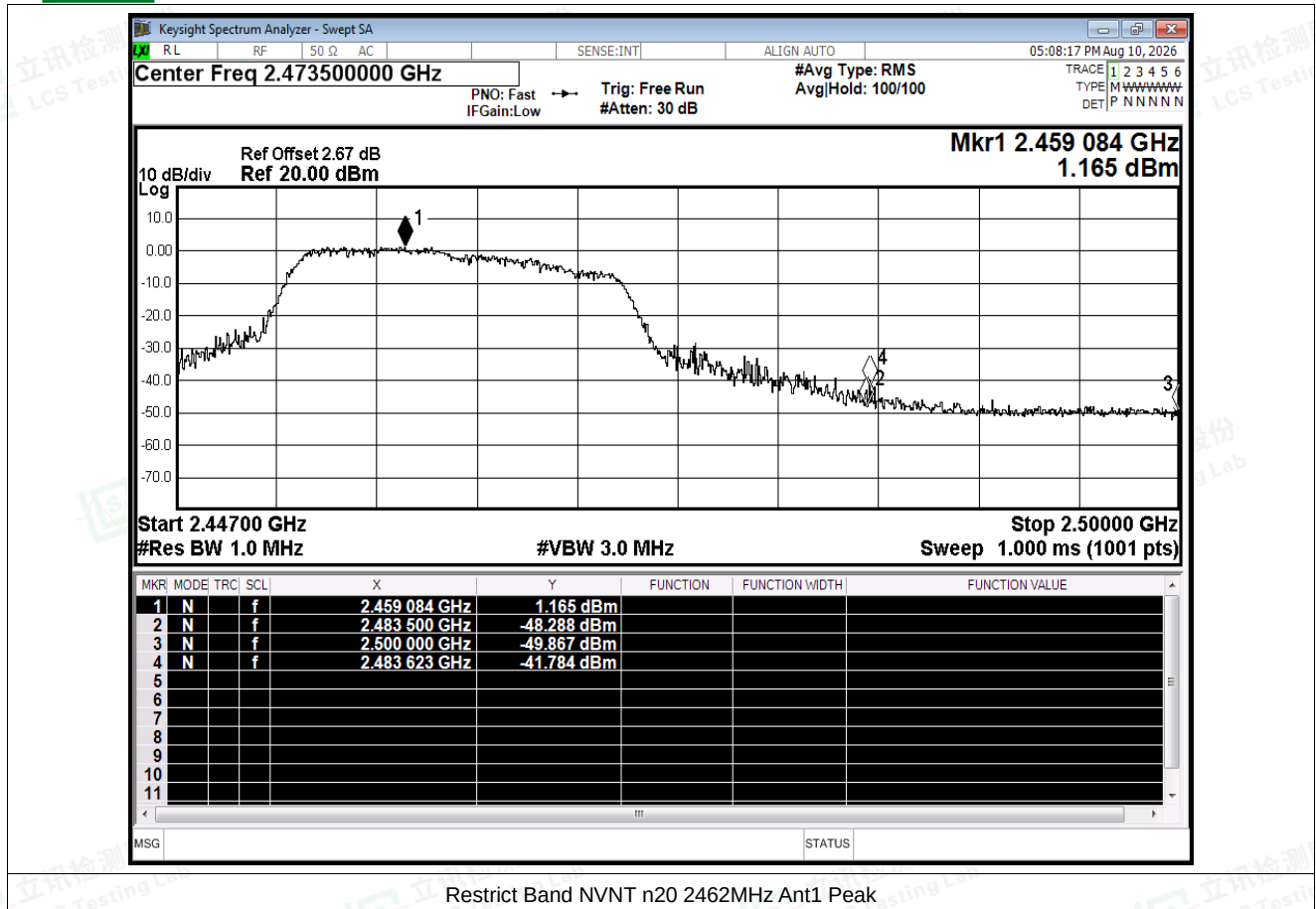


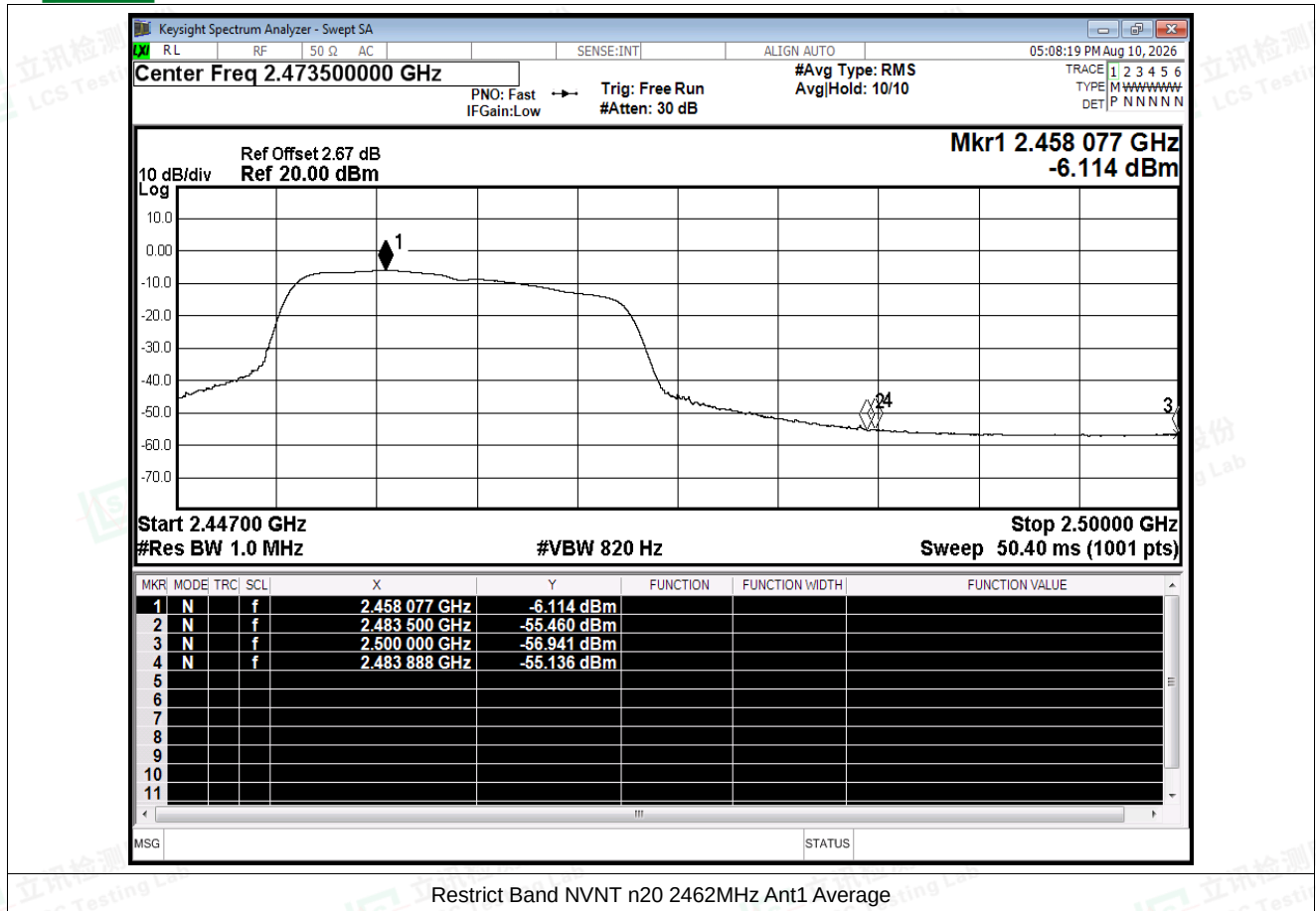


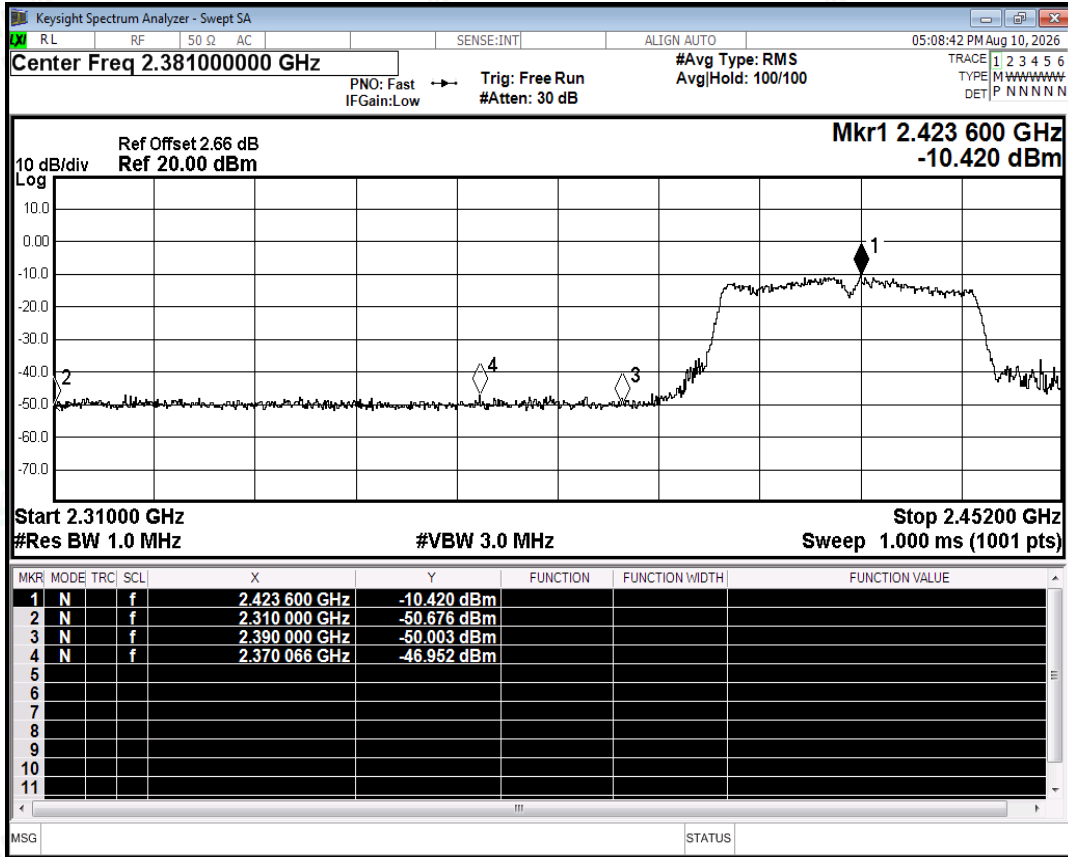
Restrict Band NVNT n20 2412MHz Ant1 Peak



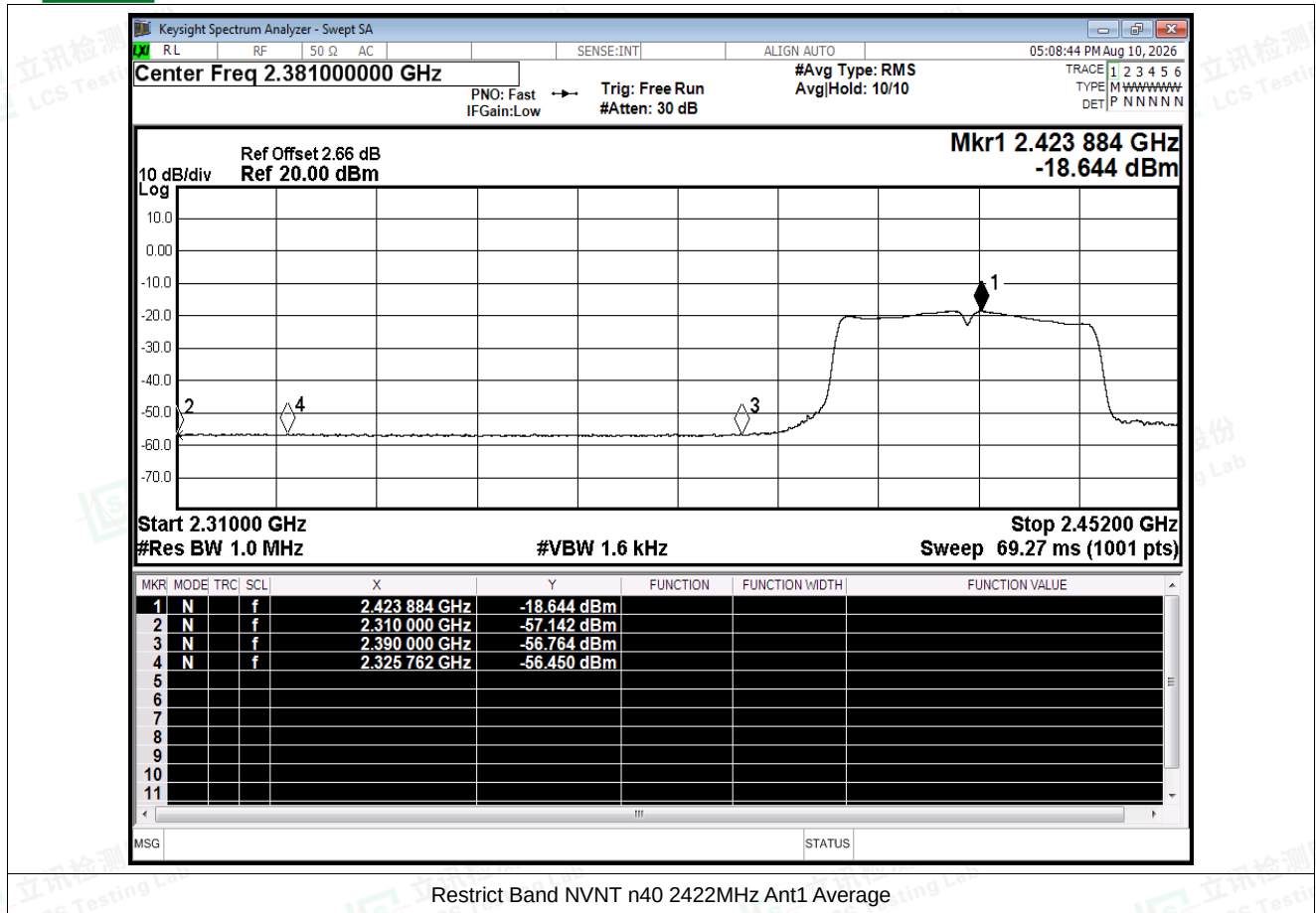
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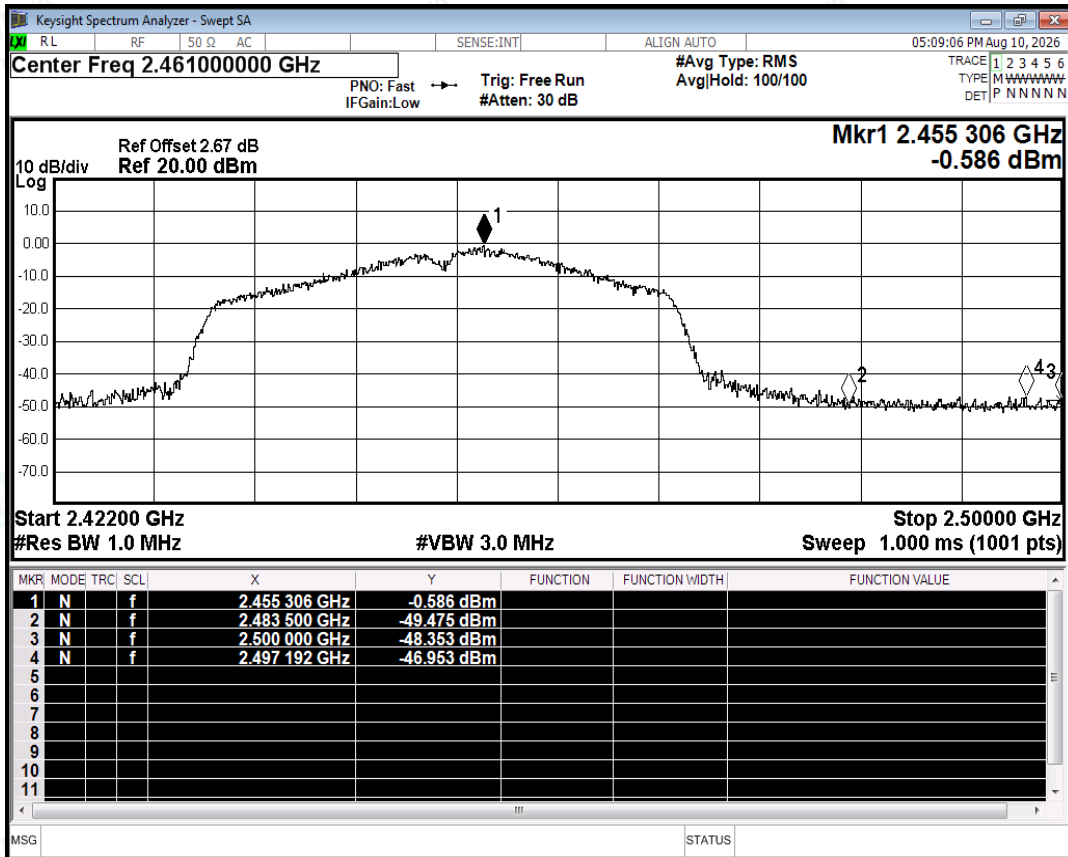




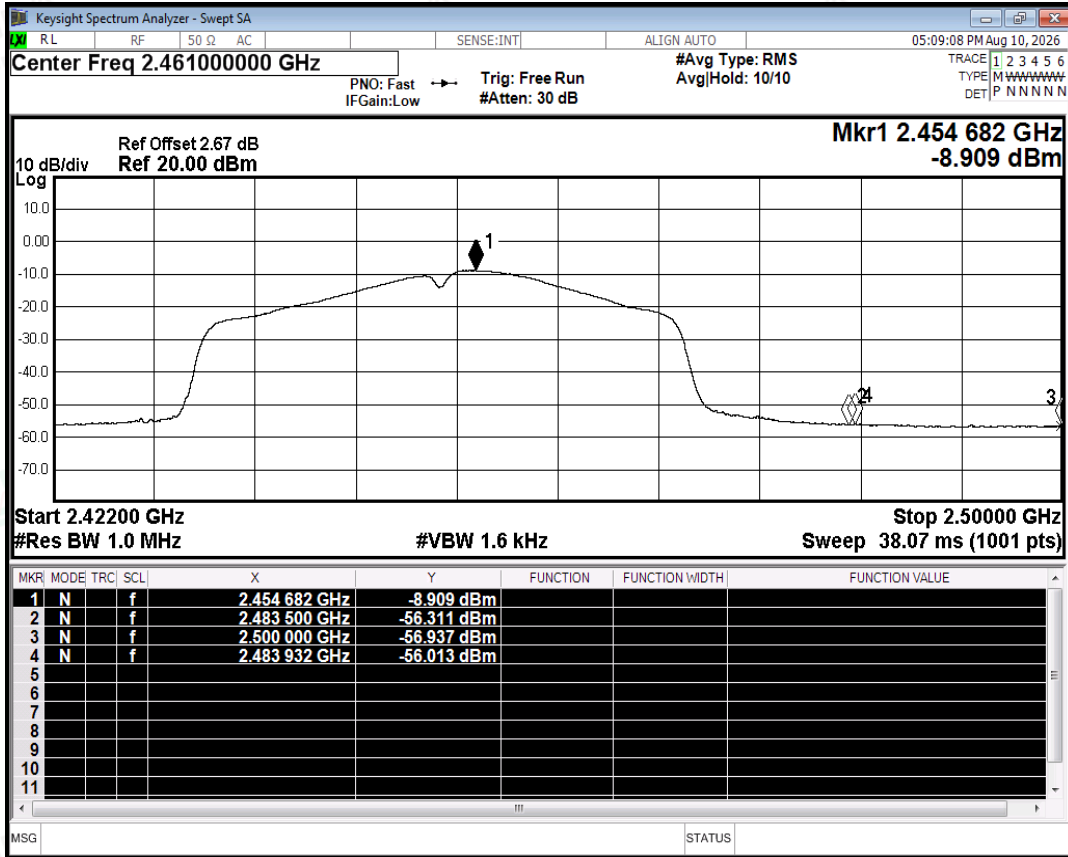


Restrict Band NVNT n40 2422MHz Ant1 Peak





Restrict Band NVNT n40 2452MHz Ant1 Peak



Restrict Band NVNT n40 2452MHz Ant1 Average