



Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Intelligent In-Vehicle AI System

Test Model: IVS4G-Q06

Environmental Conditions

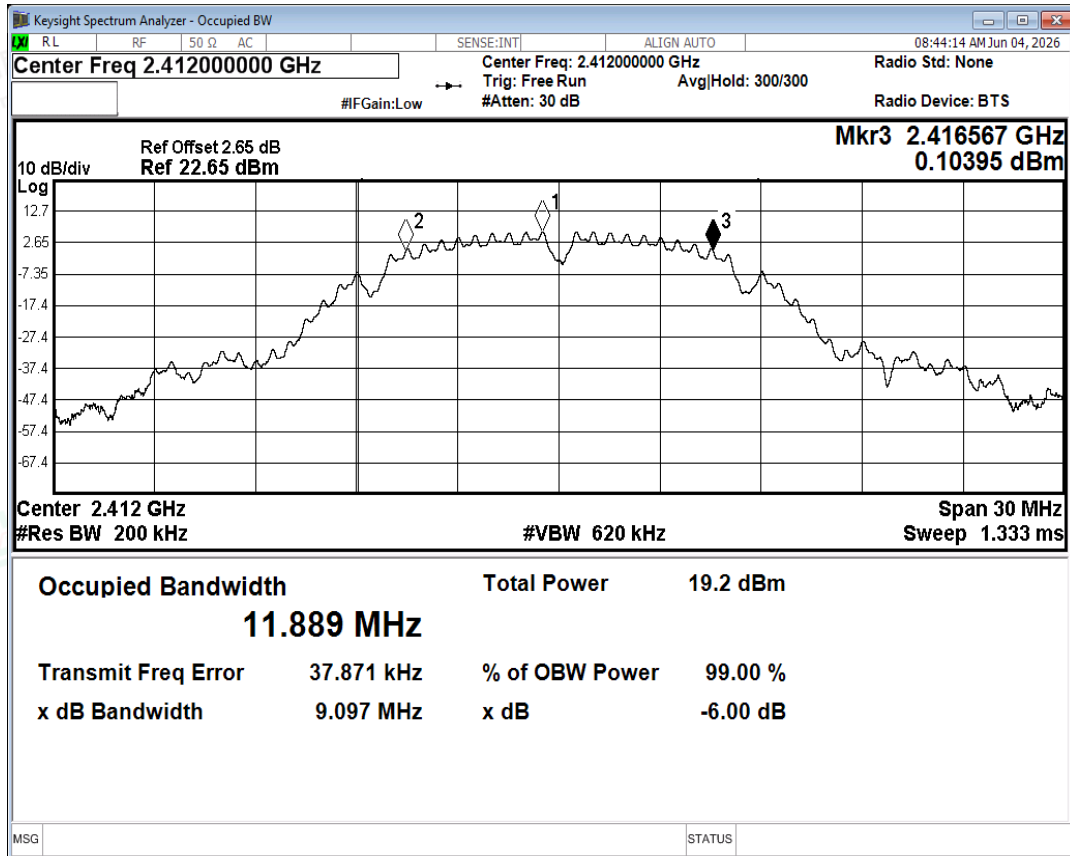
Temperature:	24.6°C
Relative Humidity:	53.9%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry Chu
Supervised by:	Can Kun



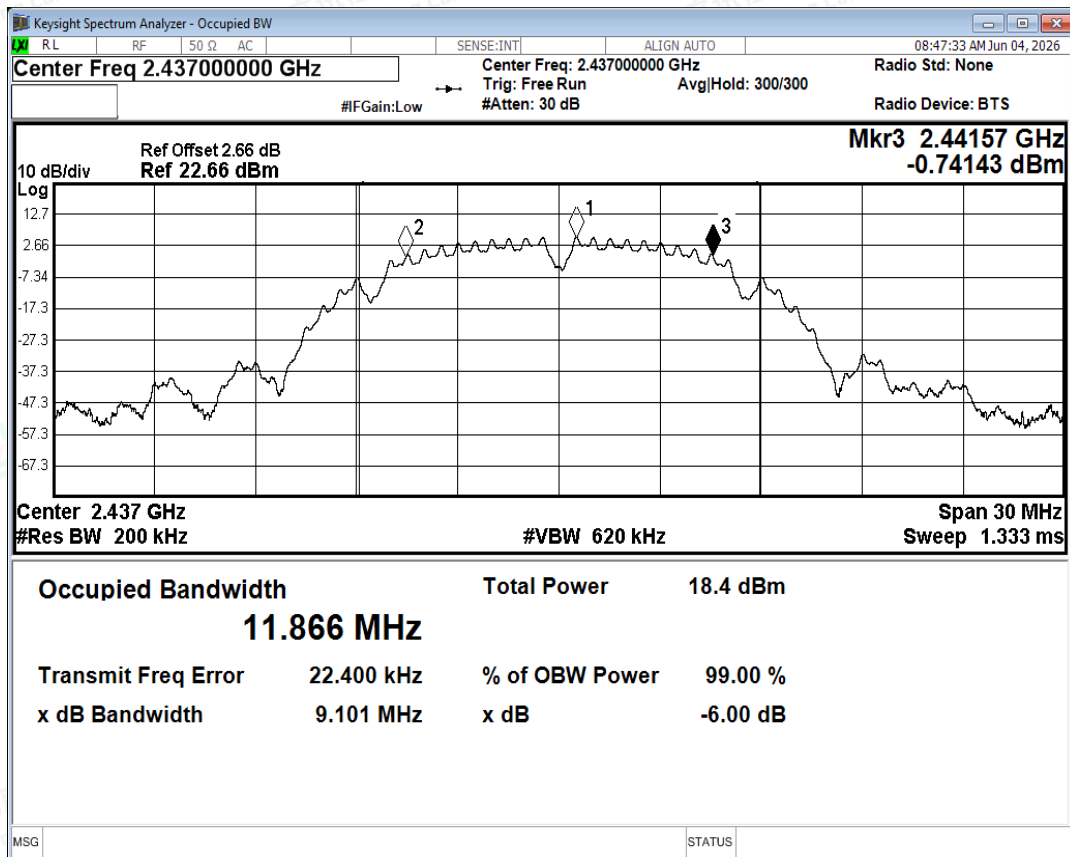
A.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.097	0.5	Pass
NVNT	b	2437	Ant1	9.101	0.5	Pass
NVNT	b	2462	Ant1	9.113	0.5	Pass
NVNT	g	2412	Ant1	16.31	0.5	Pass
NVNT	g	2437	Ant1	16.34	0.5	Pass
NVNT	g	2462	Ant1	16.38	0.5	Pass
NVNT	n20	2412	Ant1	17.23	0.5	Pass
NVNT	n20	2437	Ant1	17.23	0.5	Pass
NVNT	n20	2462	Ant1	17.39	0.5	Pass

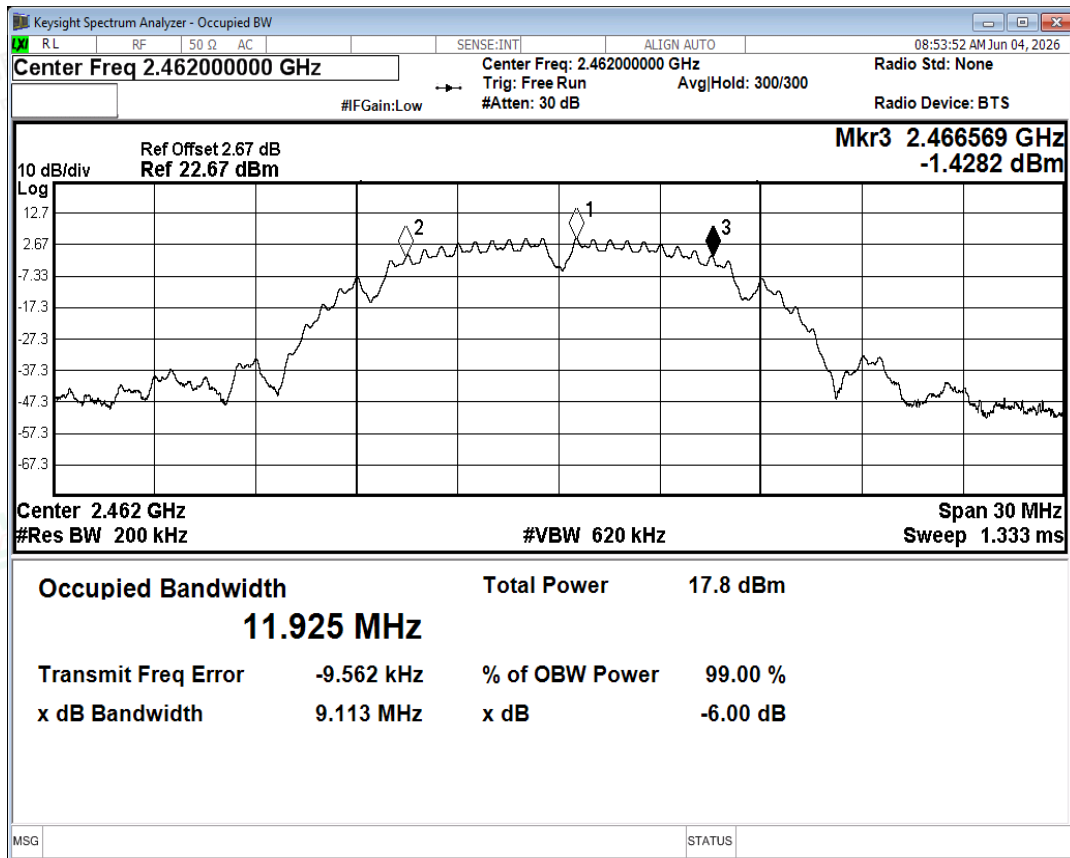
Note :offset=System attenuation +cabal loss



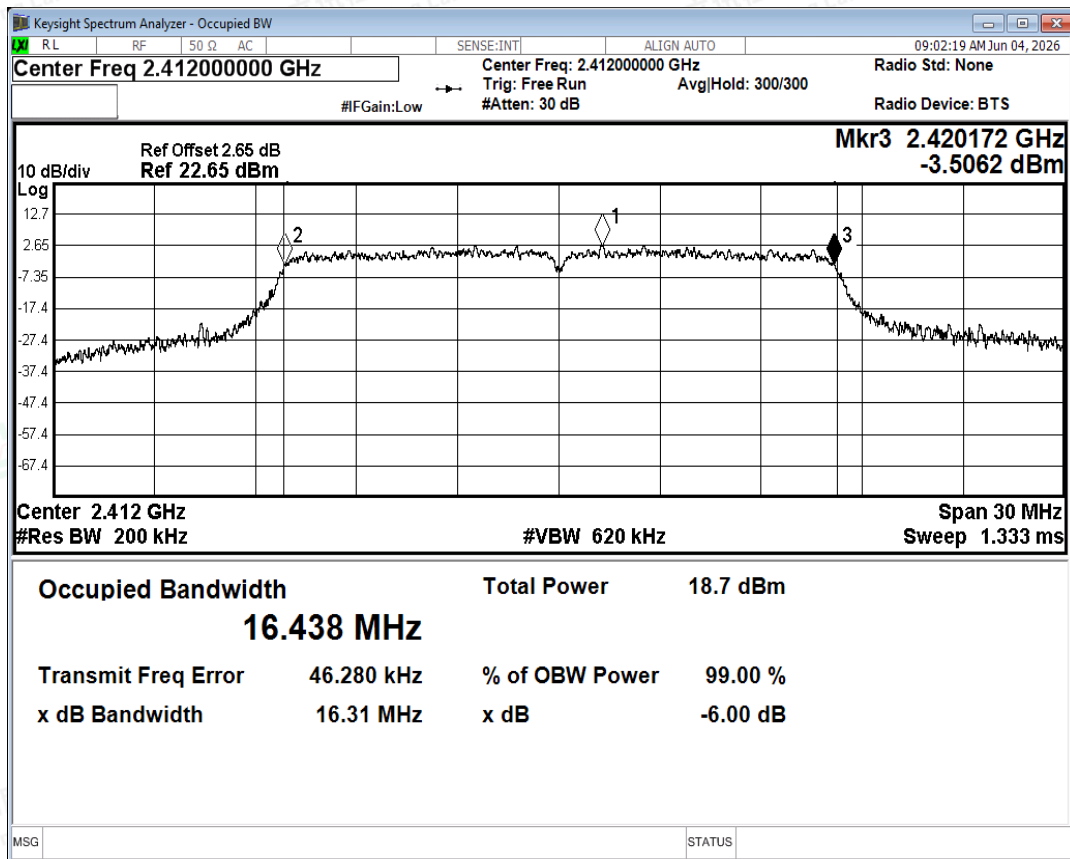
-6dB Bandwidth NVNT b 2412MHz Ant1



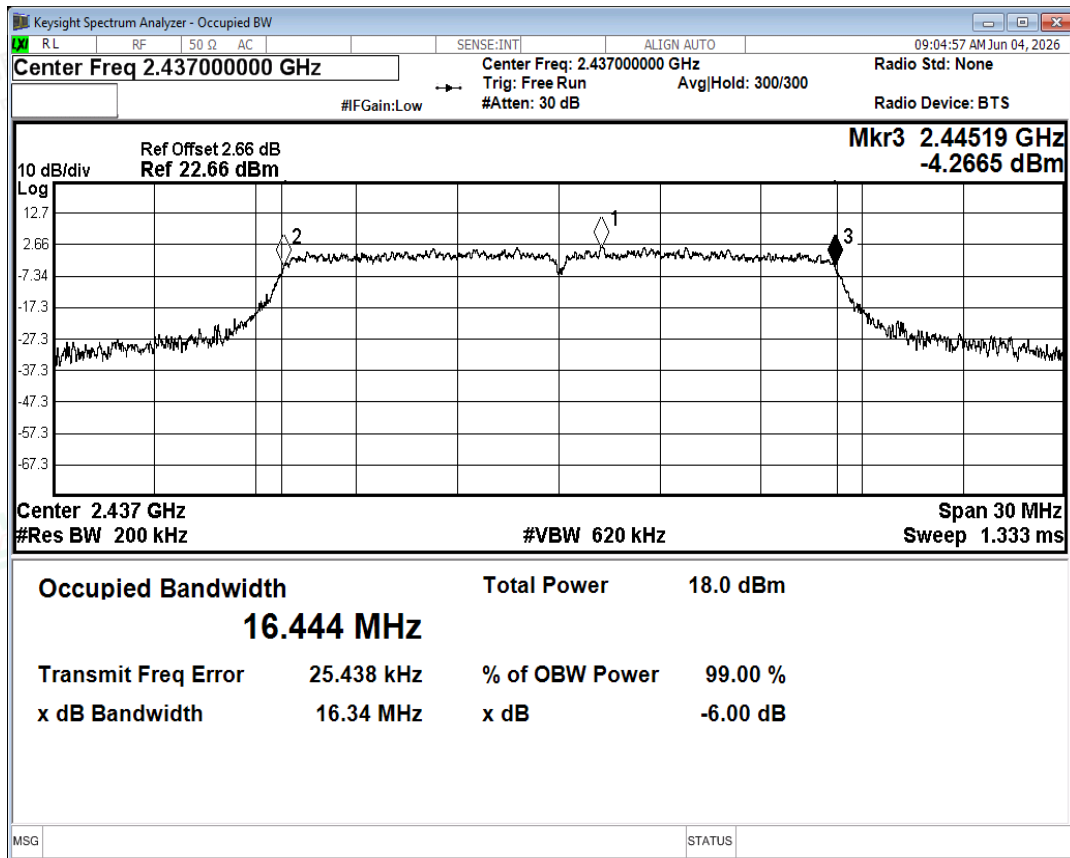
-6dB Bandwidth NVNT b 2437MHz Ant1



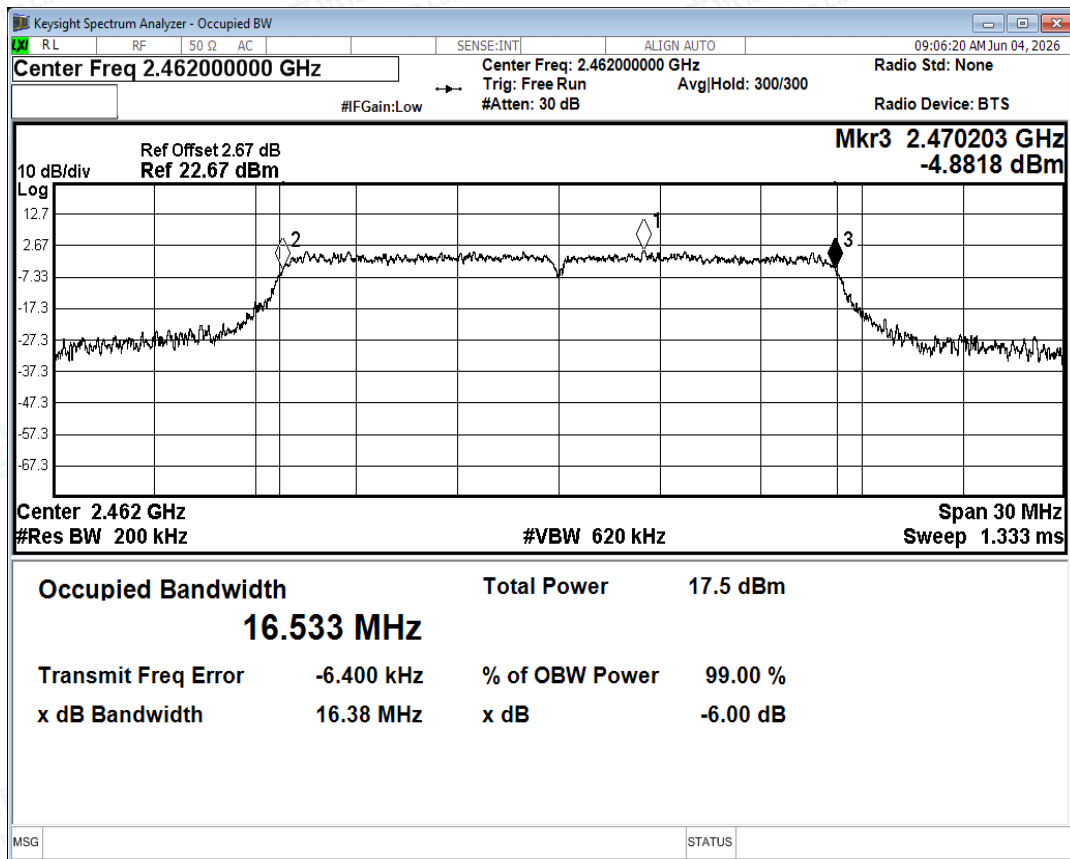
-6dB Bandwidth NVNT b 2462MHz Ant1



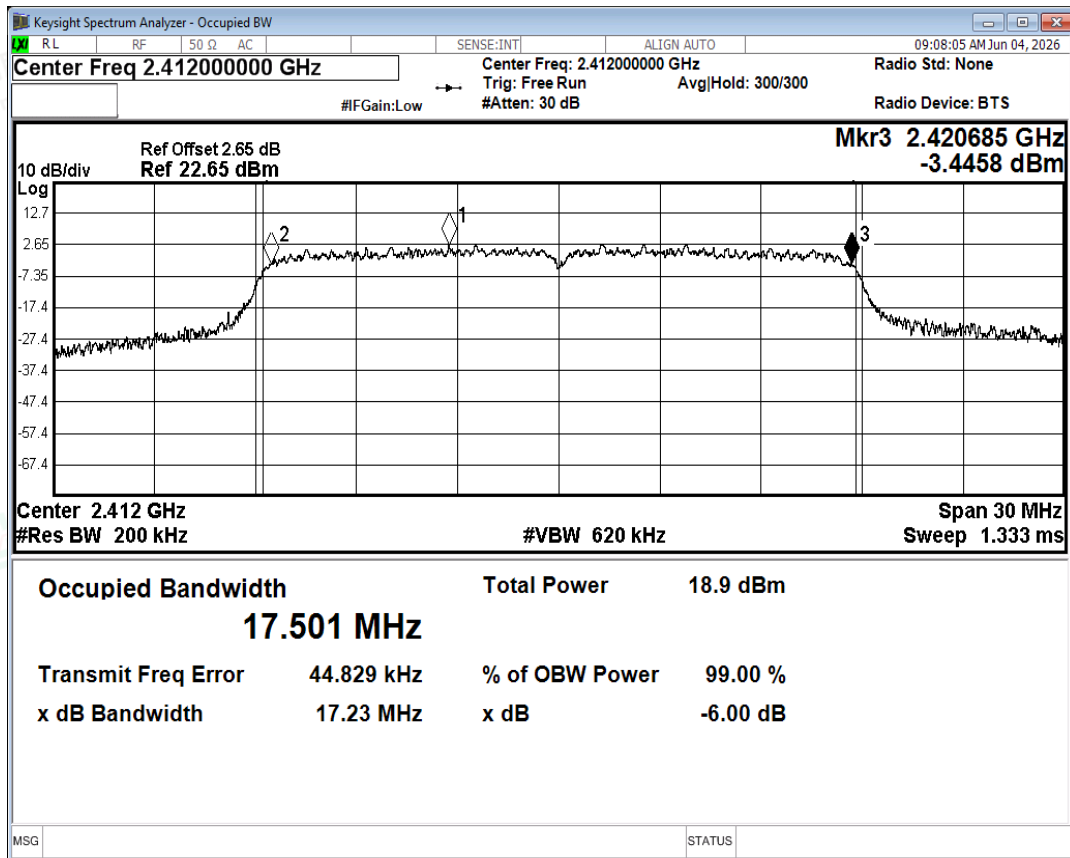
-6dB Bandwidth NVNT g 2412MHz Ant1



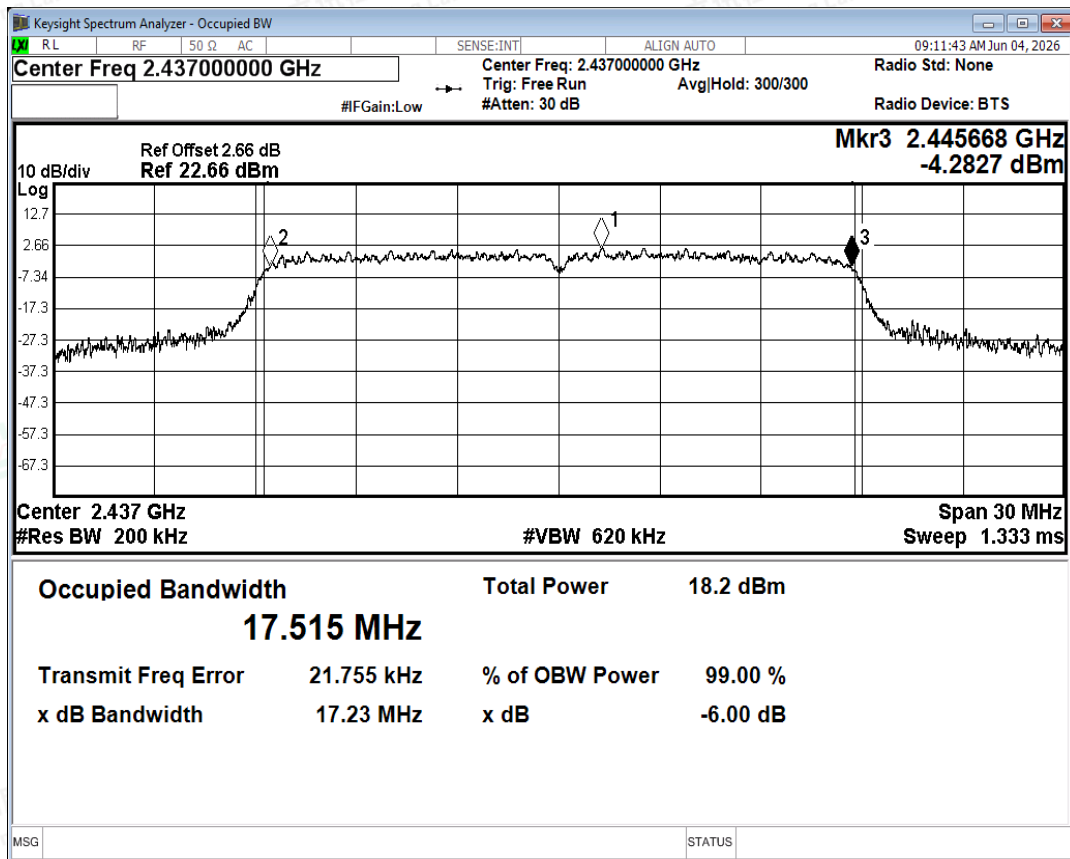
-6dB Bandwidth NVNT g 2437MHz Ant1



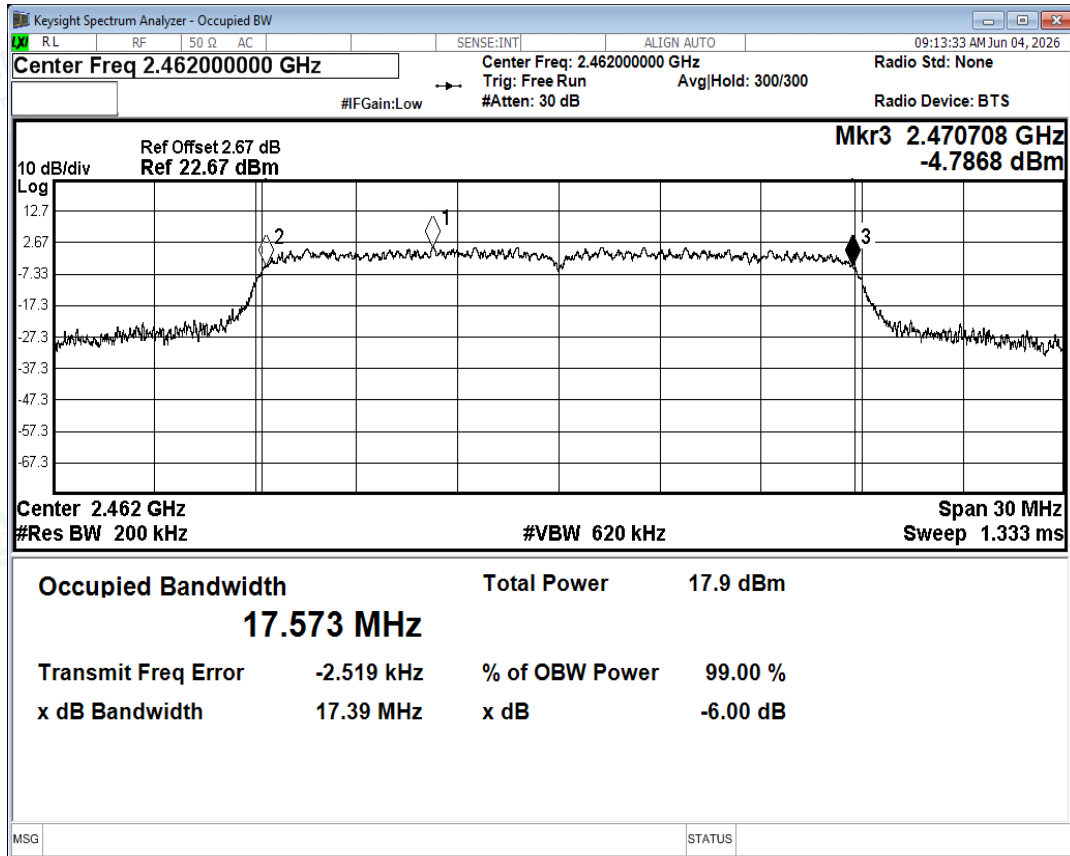
-6dB Bandwidth NVNT g 2462MHz Ant1



-6dB Bandwidth NVNT n20 2412MHz Ant1



-6dB Bandwidth NVNT n20 2437MHz Ant1



-6dB Bandwidth NVNT n20 2462MHz 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	14.27	0.03	14.30	30	Pass
NVNT	b	2437	Ant1	13.46	0.03	13.49	30	Pass
NVNT	b	2462	Ant1	12.85	0.03	12.88	30	Pass
NVNT	g	2412	Ant1	12.24	0.19	12.43	30	Pass
NVNT	g	2437	Ant1	11.66	0.19	11.85	30	Pass
NVNT	g	2462	Ant1	11.24	0.19	11.43	30	Pass
NVNT	n20	2412	Ant1	12.51	0.23	12.74	30	Pass
NVNT	n20	2437	Ant1	11.79	0.23	12.02	30	Pass
NVNT	n20	2462	Ant1	11.45	0.22	11.67	30	Pass

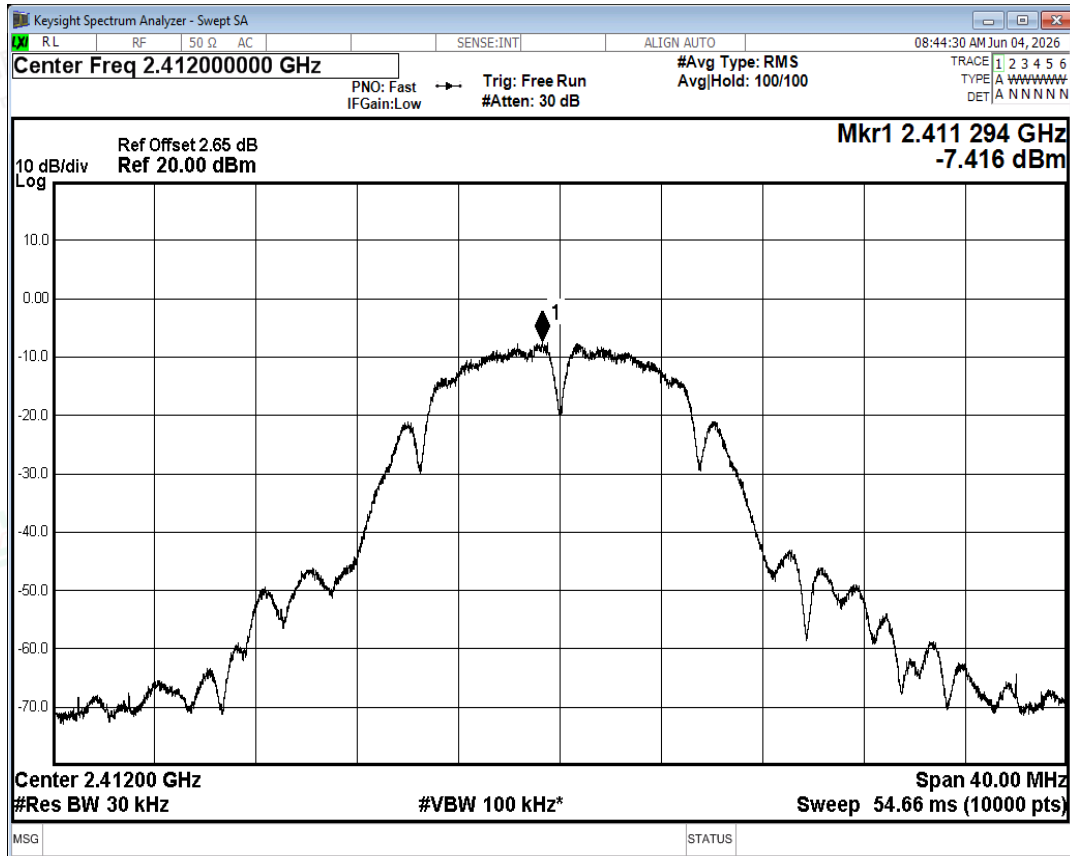
Note: offset=System attenuation +cabel loss



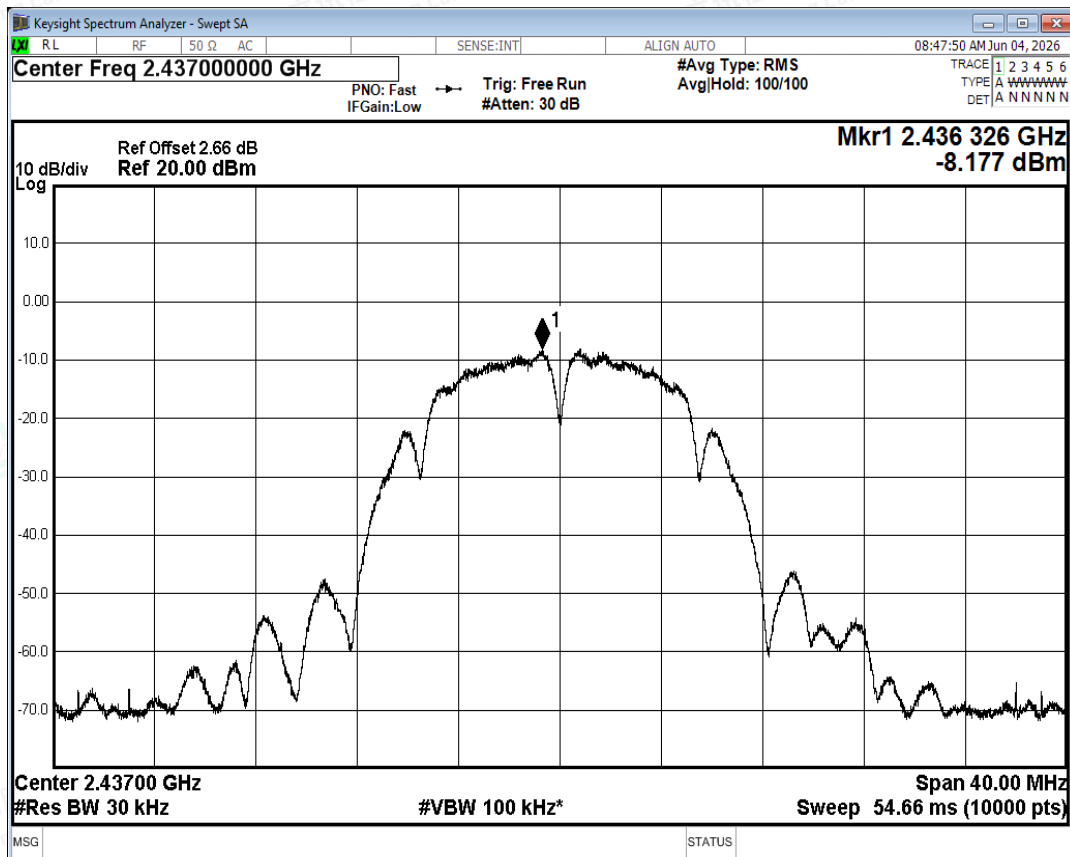
A.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/30kHz)	Duty Factor (dB)	Total PSD (dBm/30kHz)	Limit (dBm/30kHz)	Verdict
NVNT	b	2412	Ant1	-7.42	0.03	-7.39	8	Pass
NVNT	b	2437	Ant1	-8.18	0.03	-8.15	8	Pass
NVNT	b	2462	Ant1	-8.97	0.03	-8.94	8	Pass
NVNT	g	2412	Ant1	-11.82	0.19	-11.63	8	Pass
NVNT	g	2437	Ant1	-12.67	0.19	-12.48	8	Pass
NVNT	g	2462	Ant1	-13.1	0.19	-12.91	8	Pass
NVNT	n20	2412	Ant1	-12.3	0.23	-12.07	8	Pass
NVNT	n20	2437	Ant1	-13.23	0.23	-13.00	8	Pass
NVNT	n20	2462	Ant1	-13.21	0.22	-12.99	8	Pass

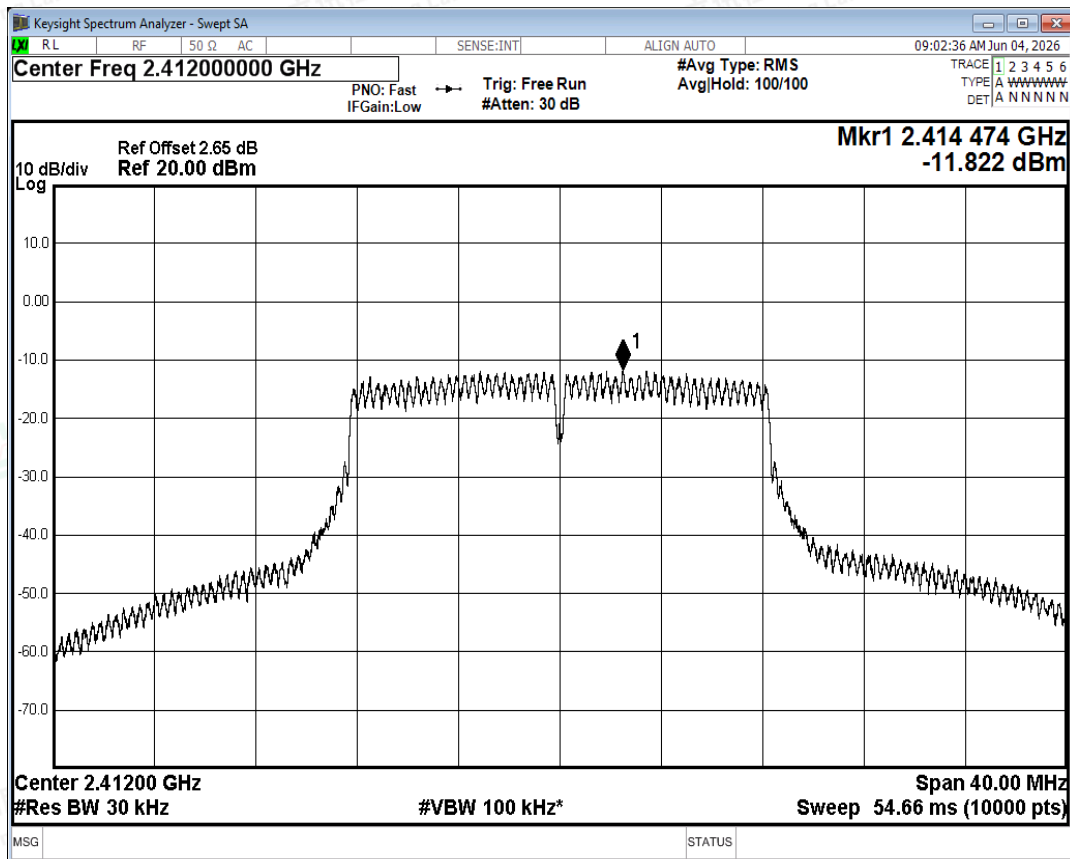
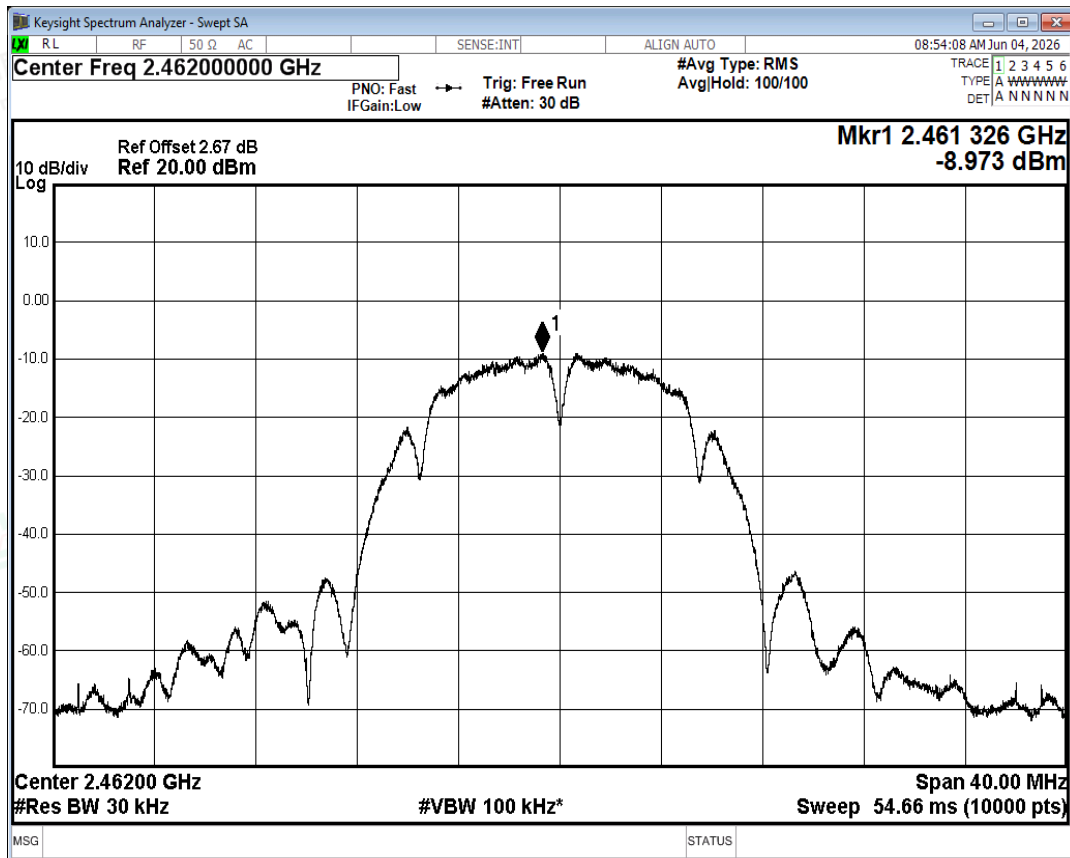
Note: offset=System attenuation +cabal loss

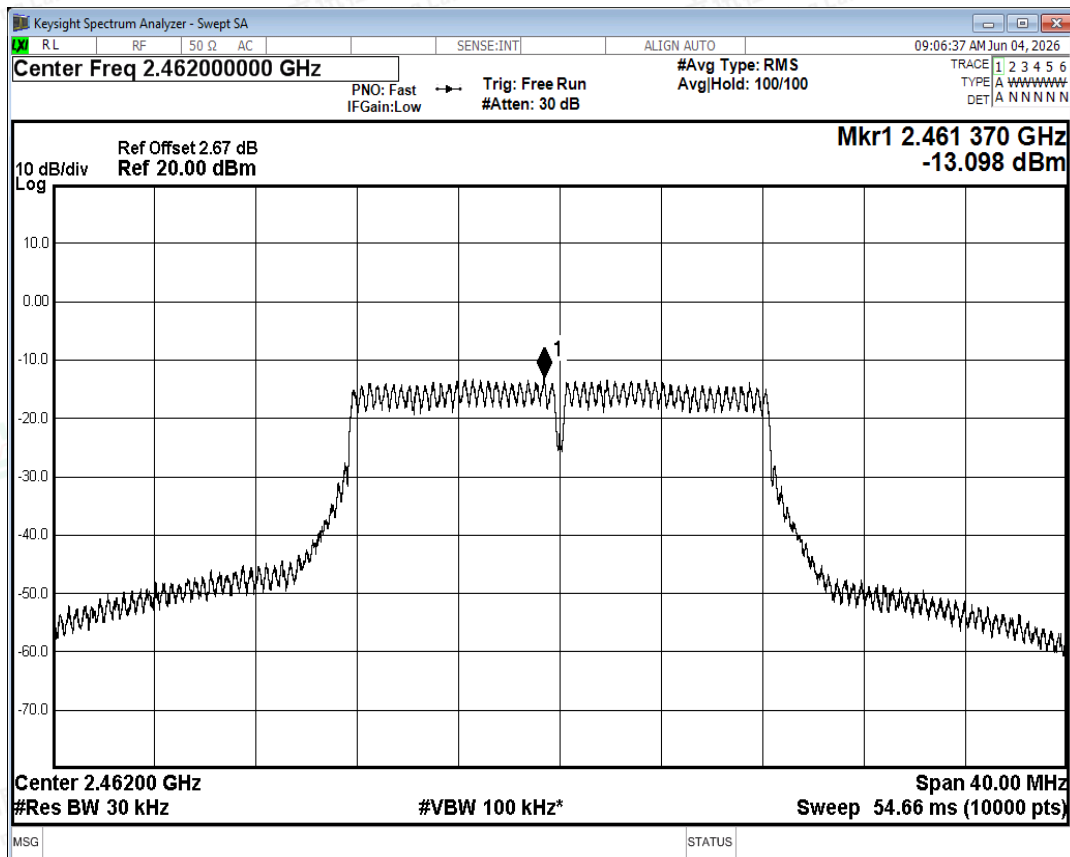
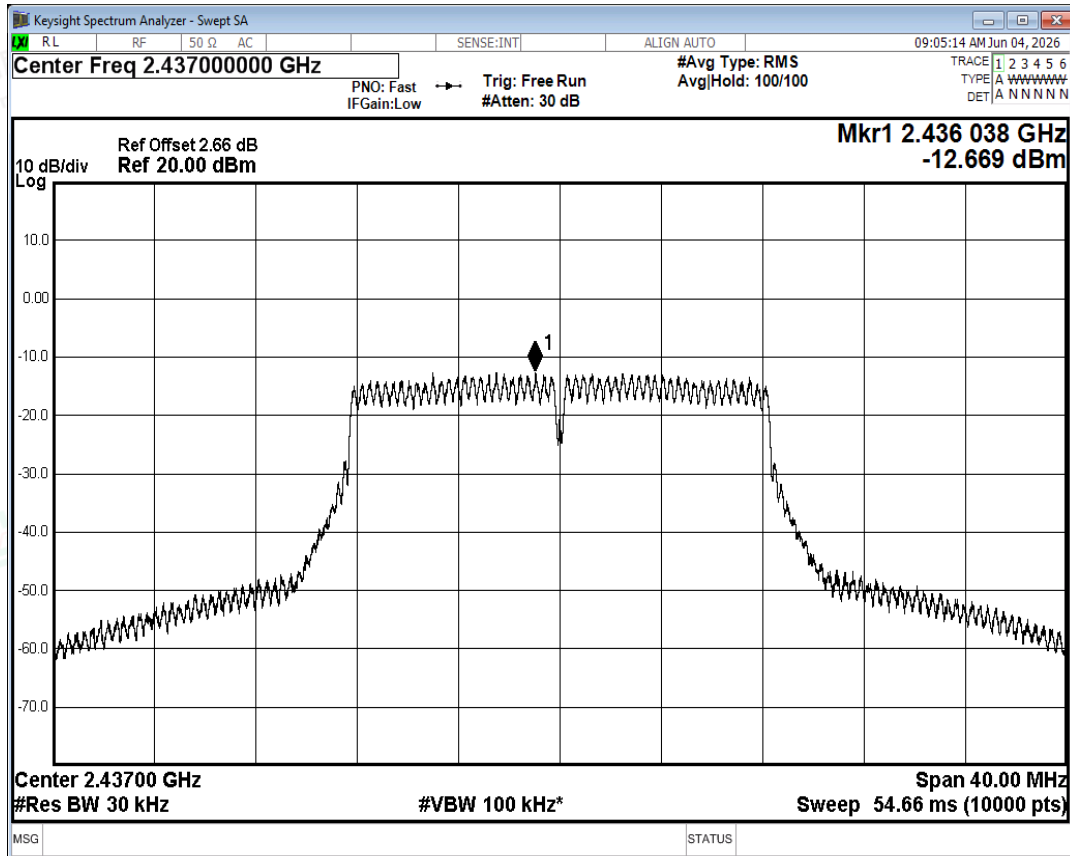


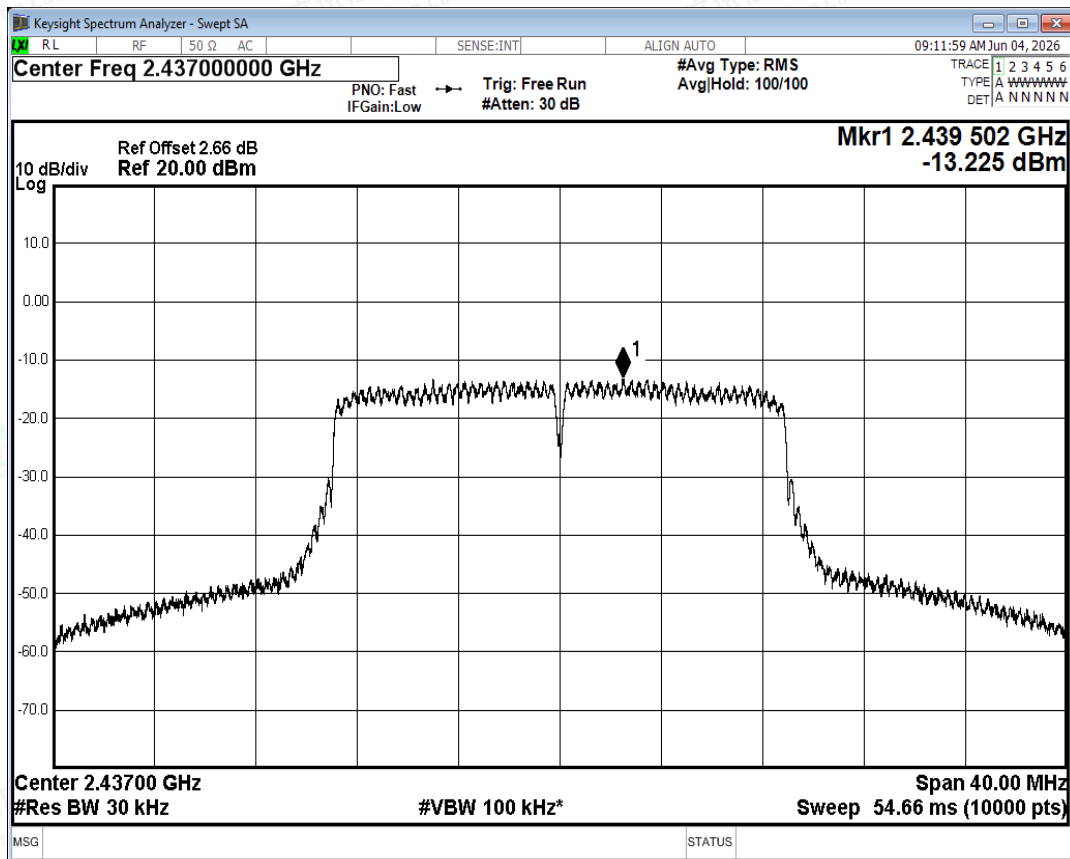
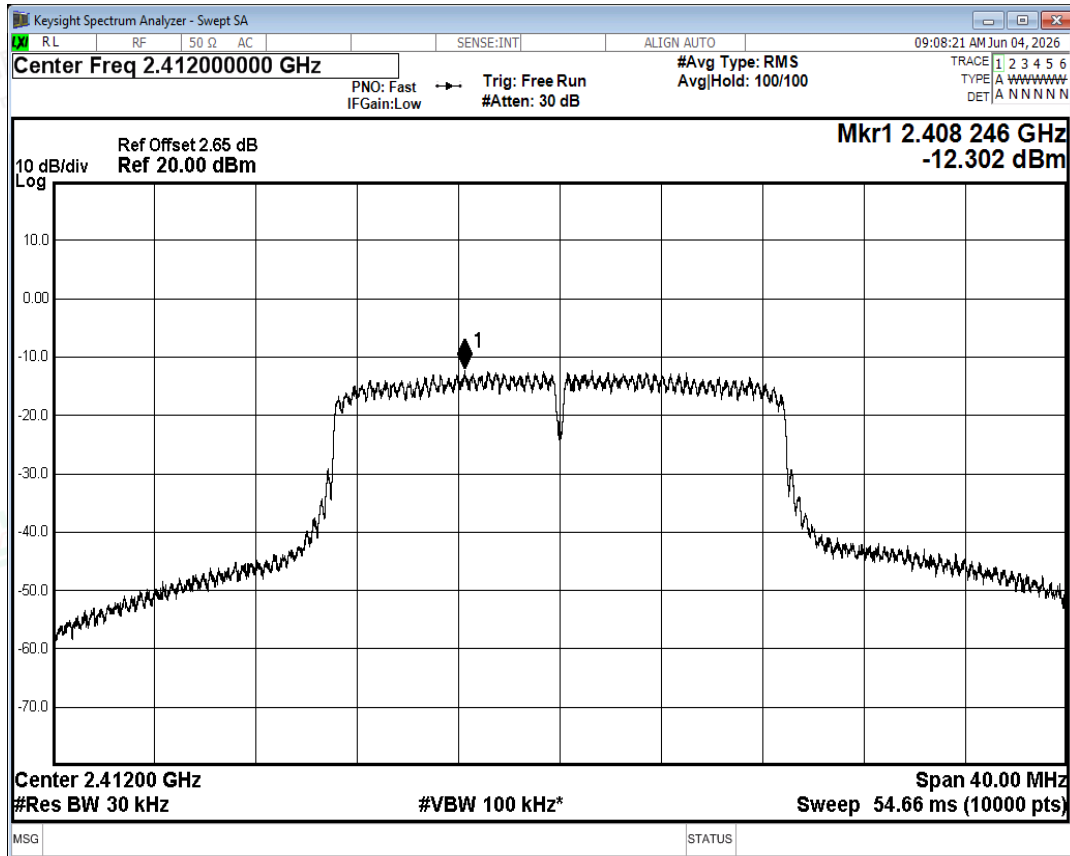
PSD NVNT b 2412MHz Ant1

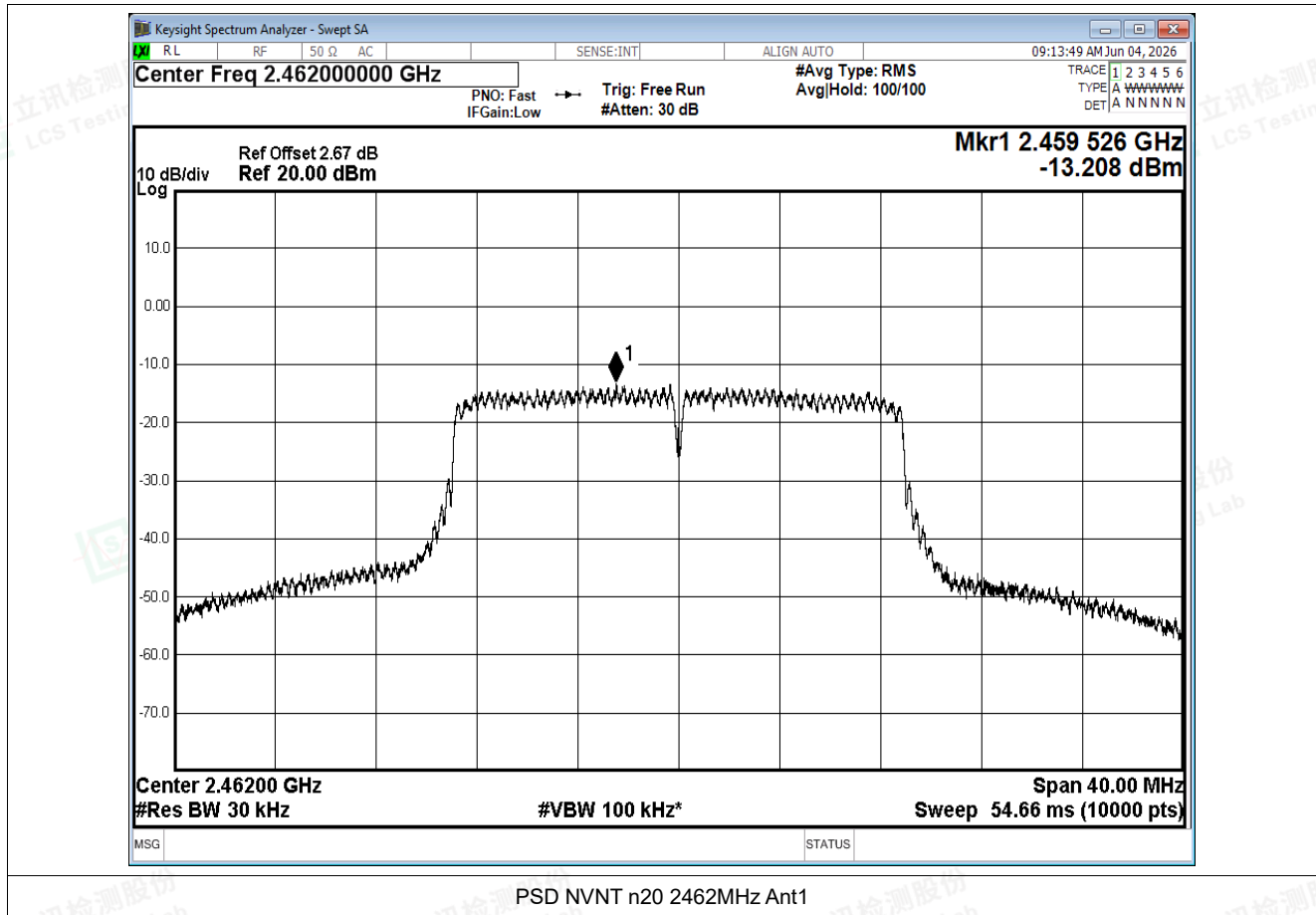


PSD NVNT b 2437MHz Ant1







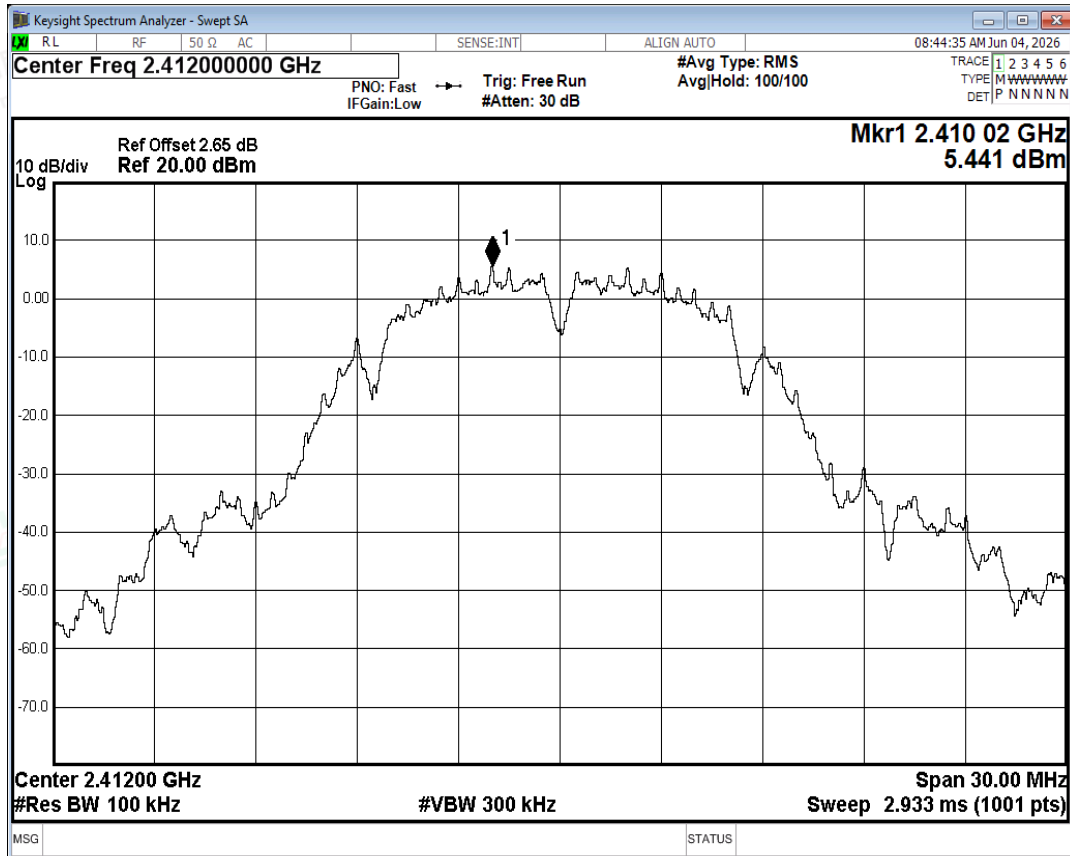




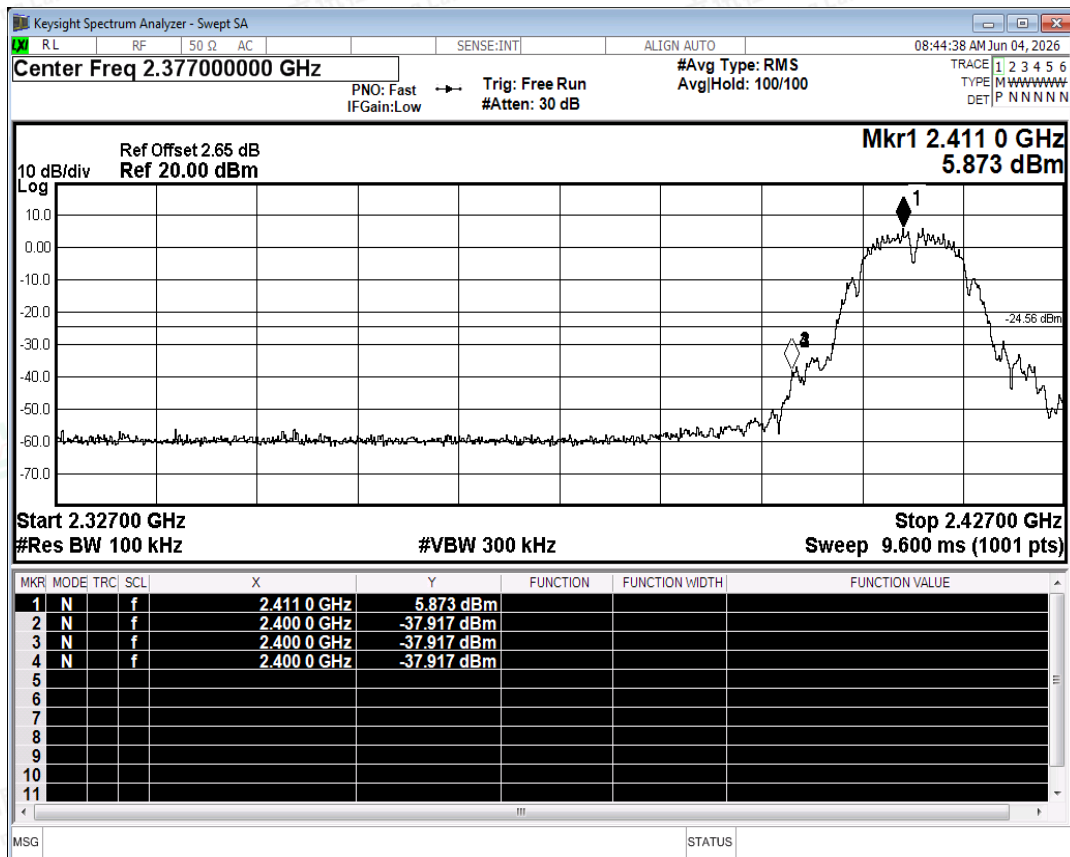
A.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-43.35	-30	Pass
NVNT	b	2462	Ant1	-60.11	-30	Pass
NVNT	g	2412	Ant1	-31.73	-30	Pass
NVNT	g	2462	Ant1	-43.9	-30	Pass
NVNT	n20	2412	Ant1	-32.59	-30	Pass
NVNT	n20	2462	Ant1	-42.1	-30	Pass

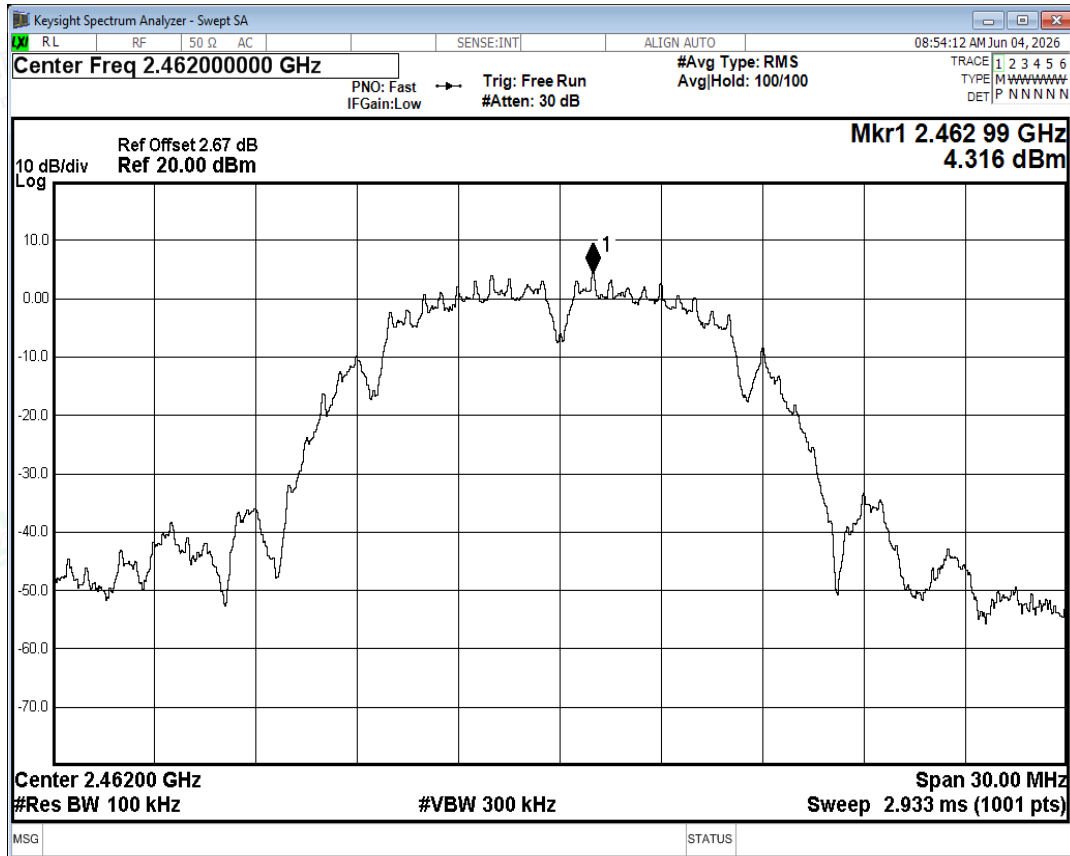
Note: offset=System attenuation +cabel loss



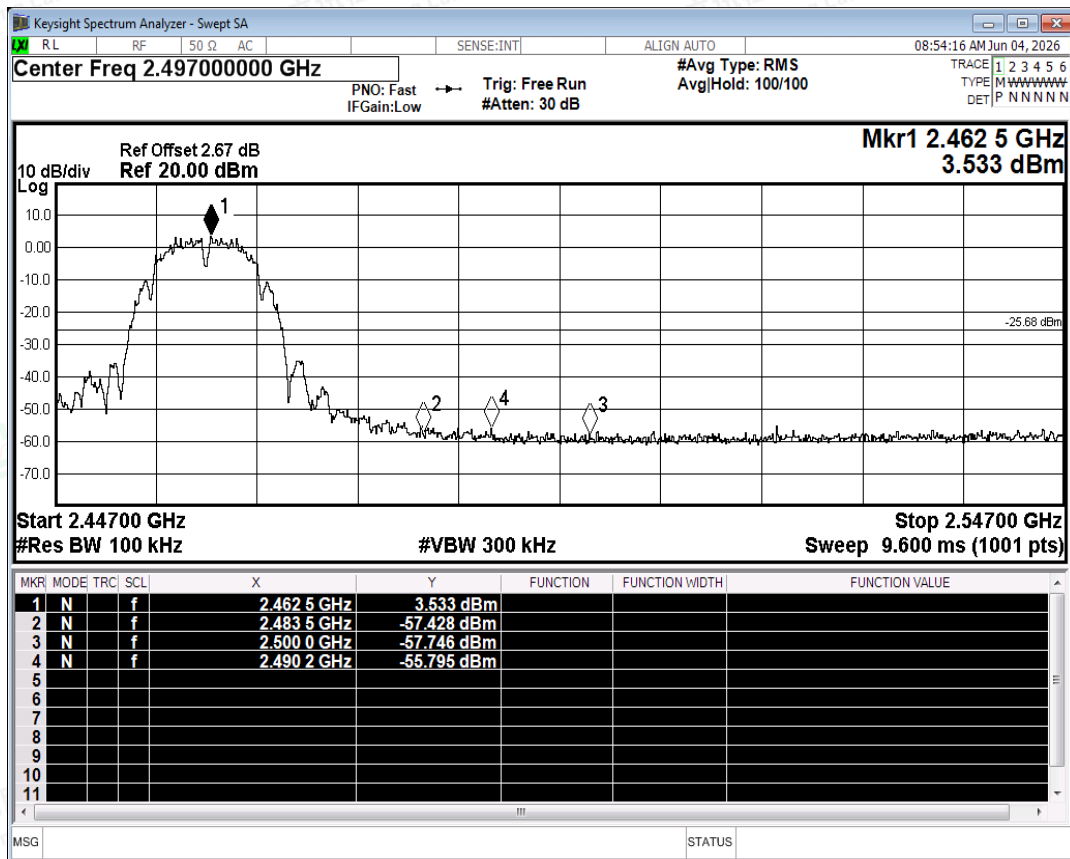
Band Edge NVNT b 2412MHz Ant1 Ref



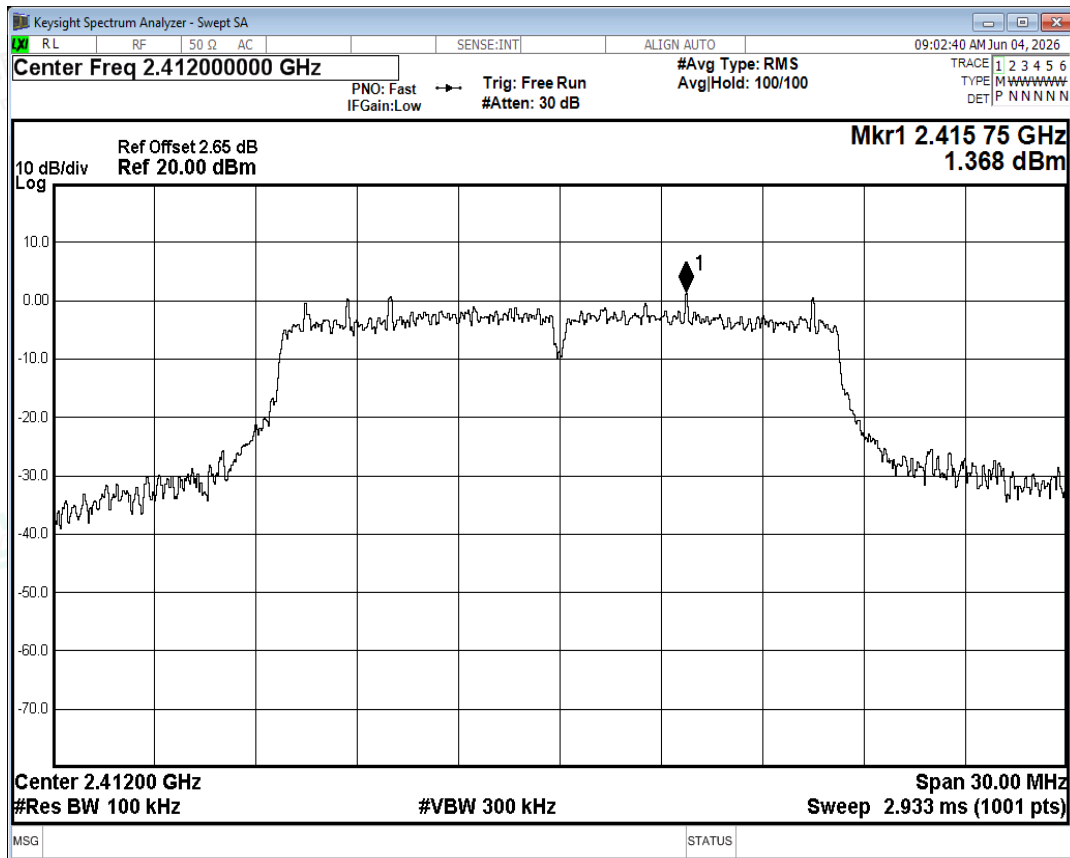
Band Edge NVNT b 2412MHz Ant1 Emission



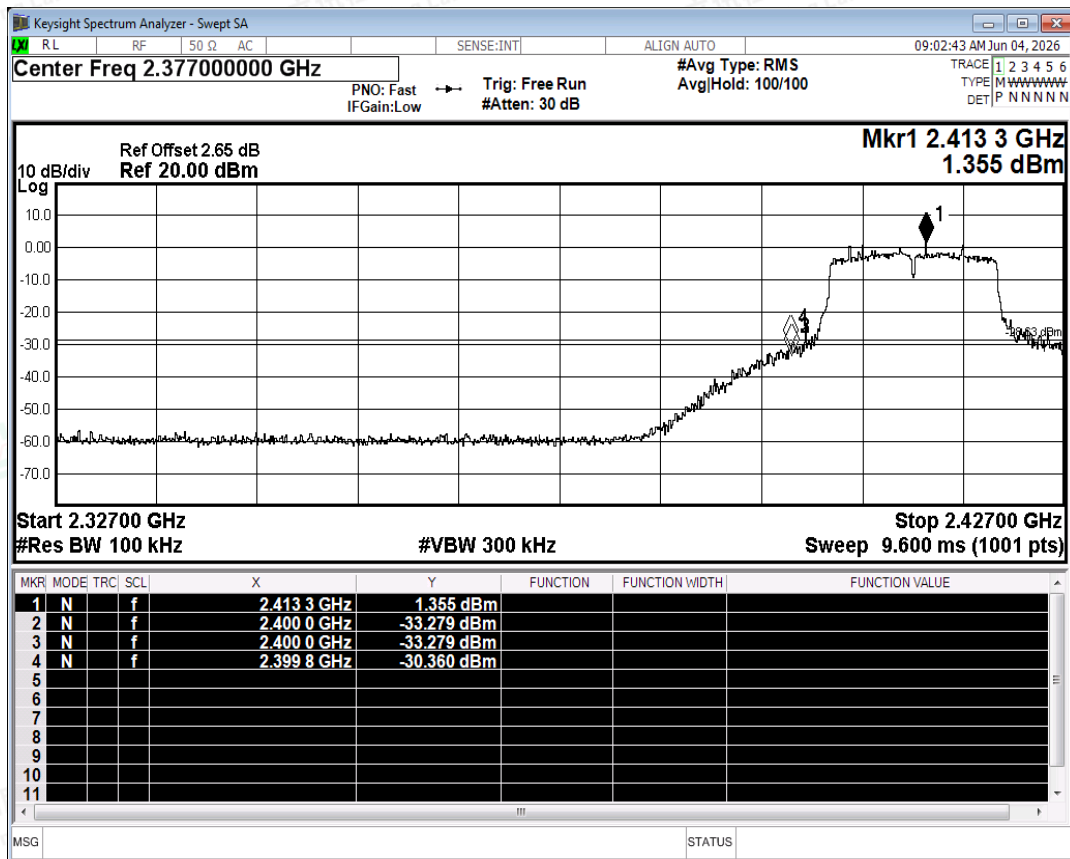
Band Edge NVNT b 2462MHz Ant1 Ref



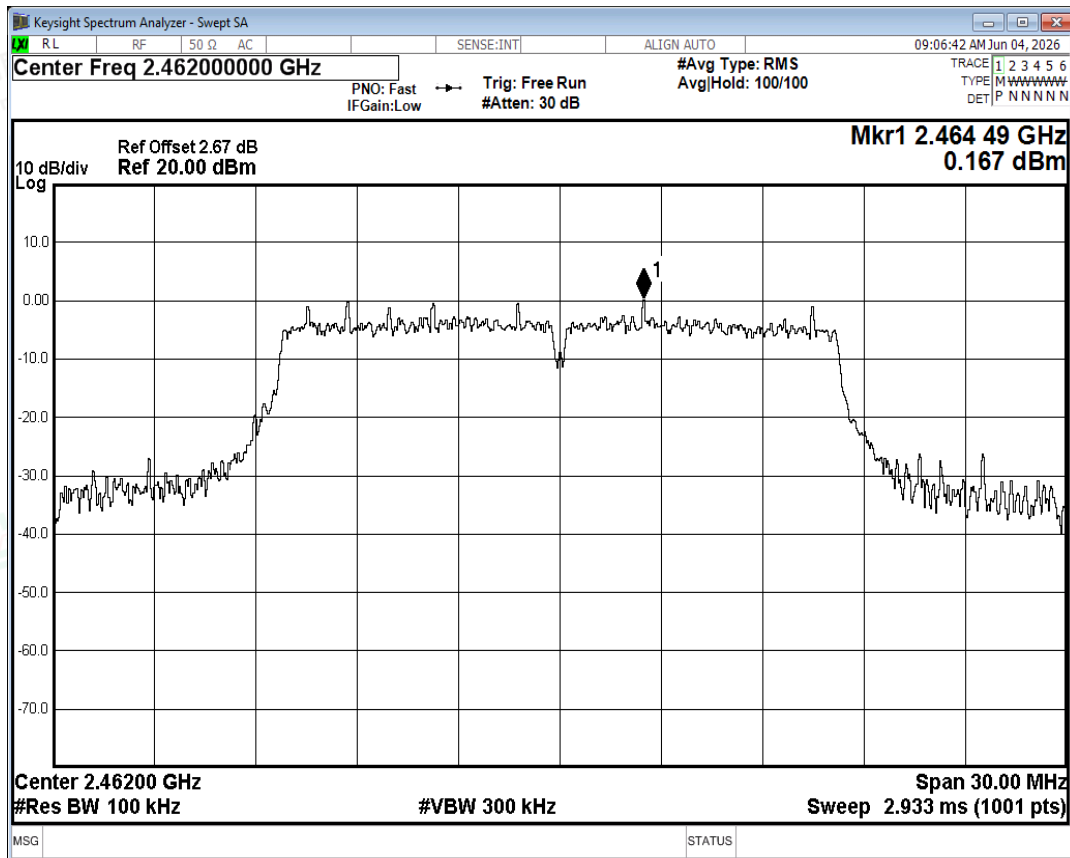
Band Edge NVNT b 2462MHz Ant1 Emission



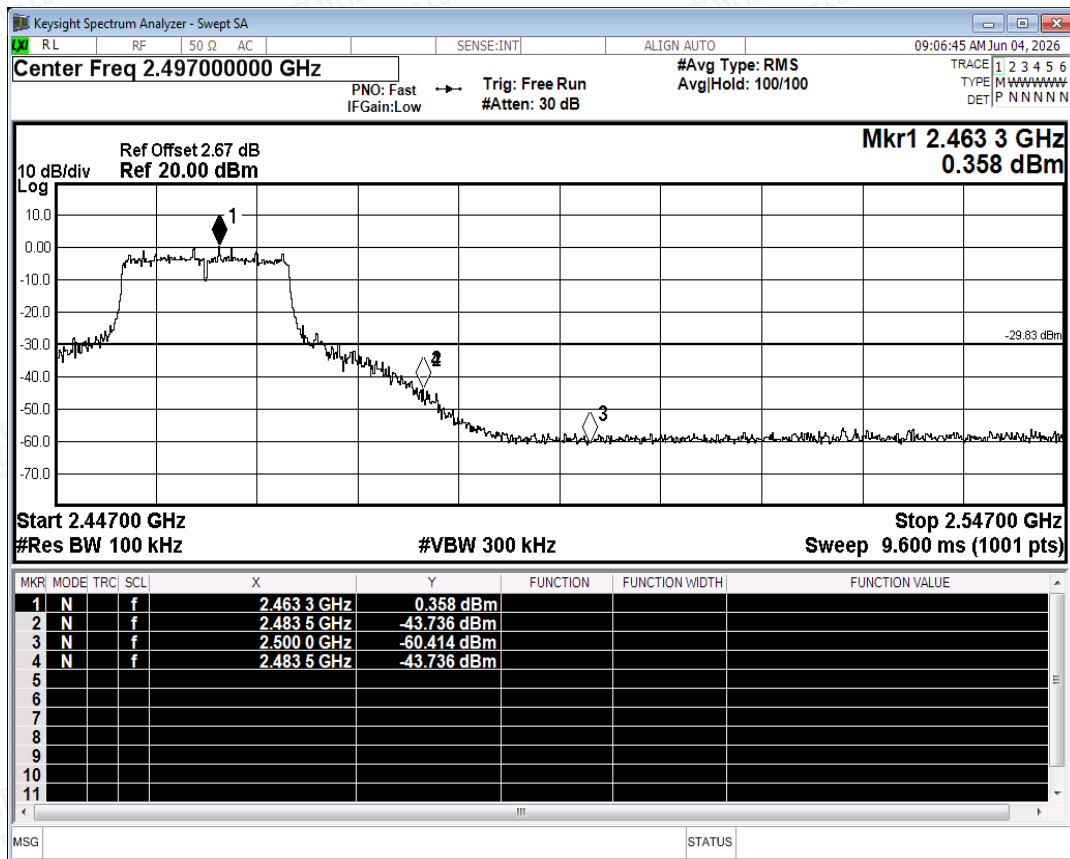
Band Edge NVNT g 2412MHz Ant1 Ref



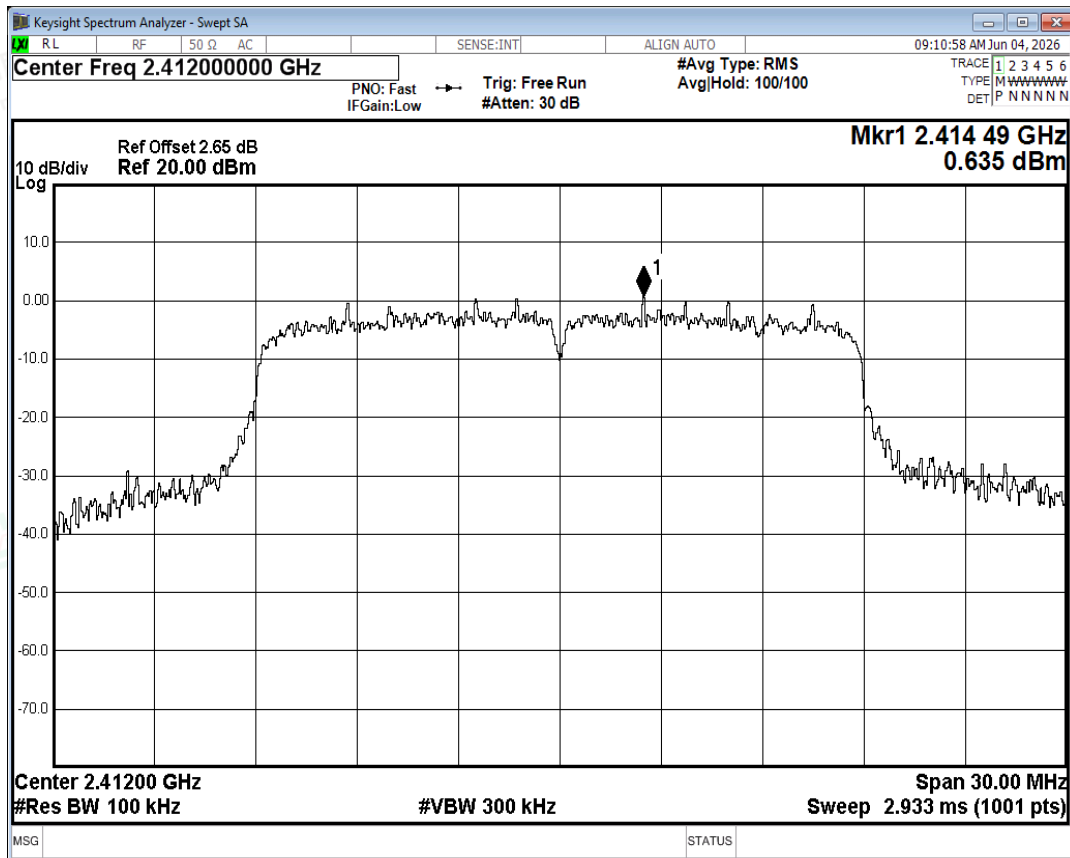
Band Edge NVNT g 2412MHz Ant1 Emission



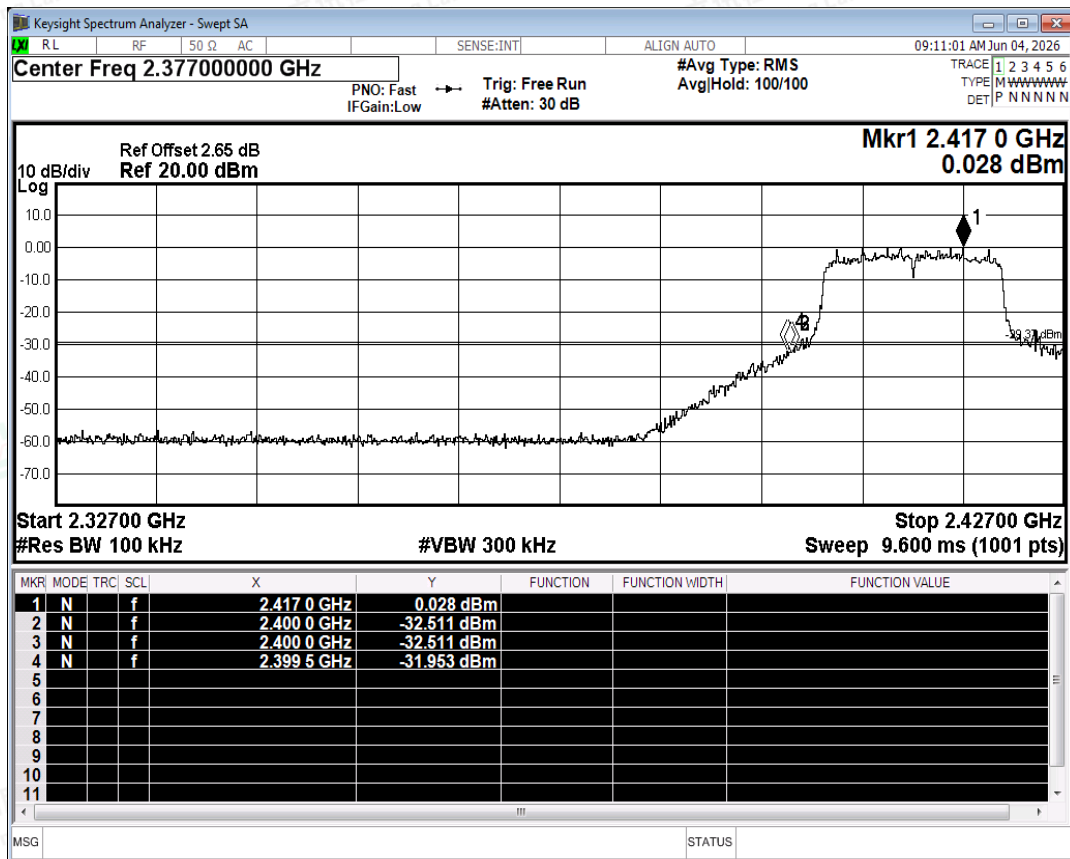
Band Edge NVNT g 2462MHz Ant1 Ref



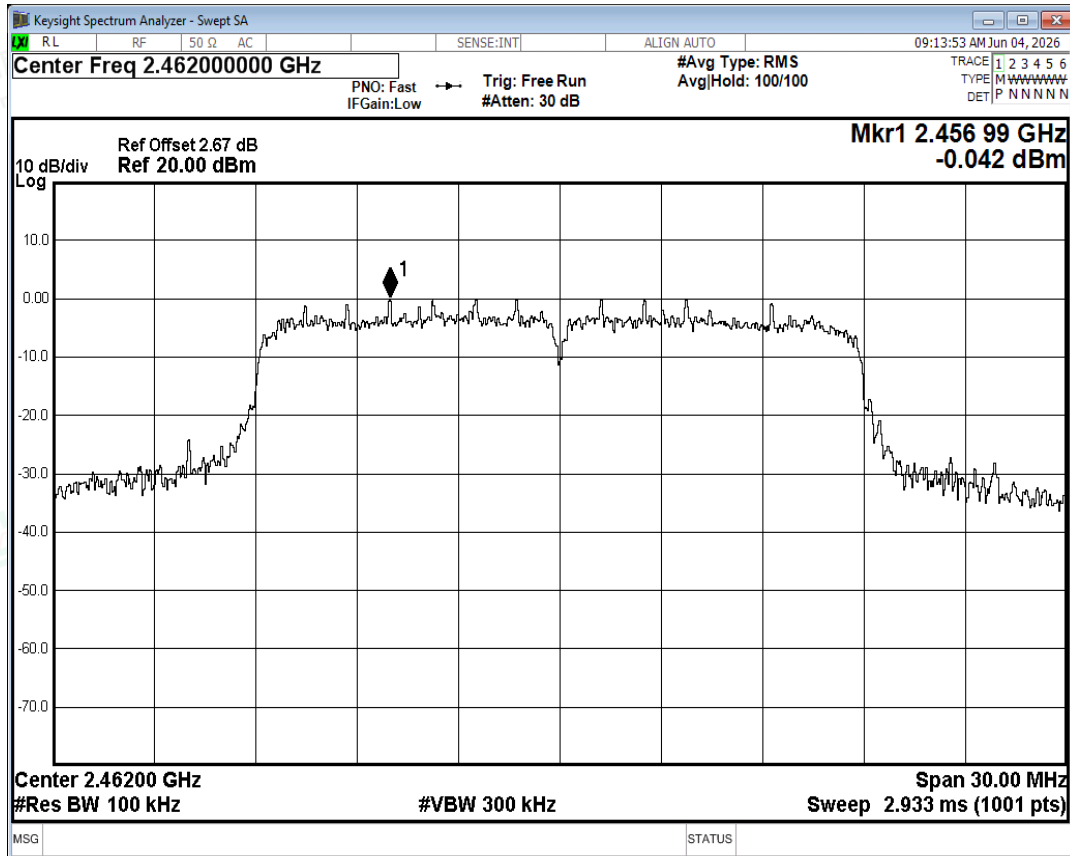
Band Edge NVNT g 2462MHz Ant1 Emission



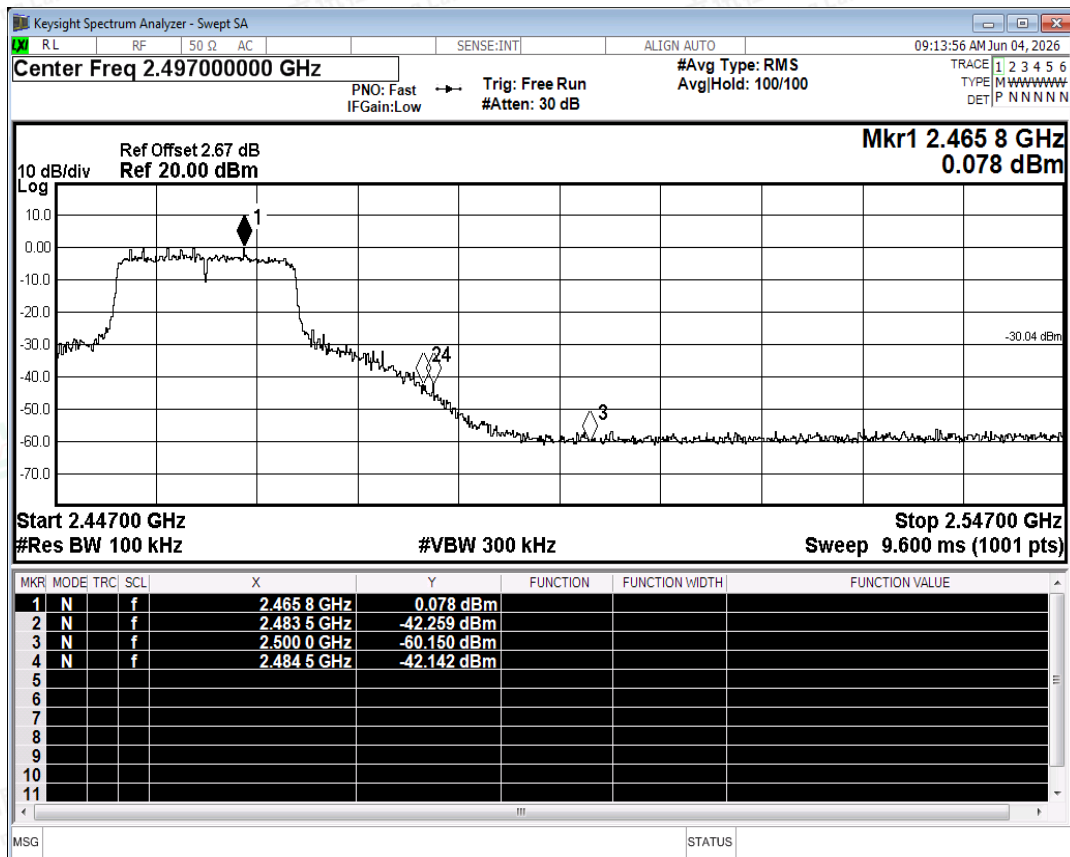
Band Edge NVNT n20 2412MHz Ant1 Ref



Band Edge NVNT n20 2412MHz Ant1 Emission



Band Edge NVNT n20 2462MHz Ant1 Ref



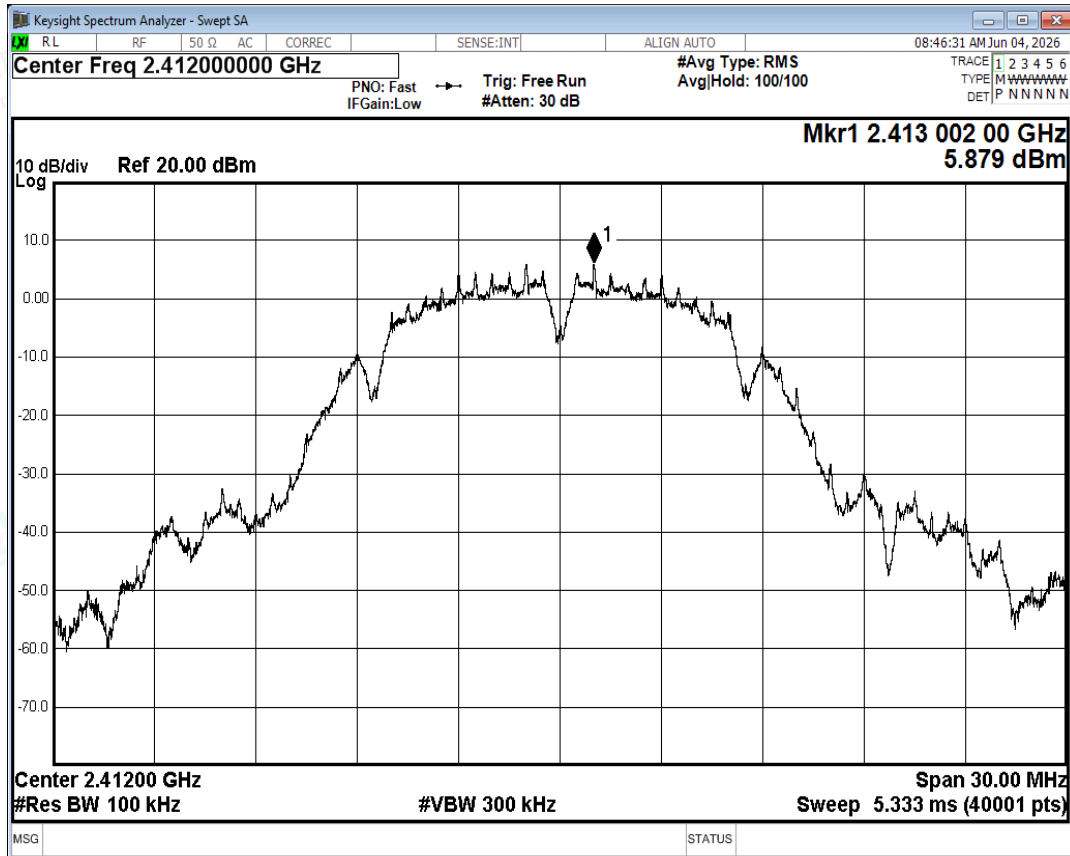
Band Edge NVNT n20 2462MHz Ant1 Emission



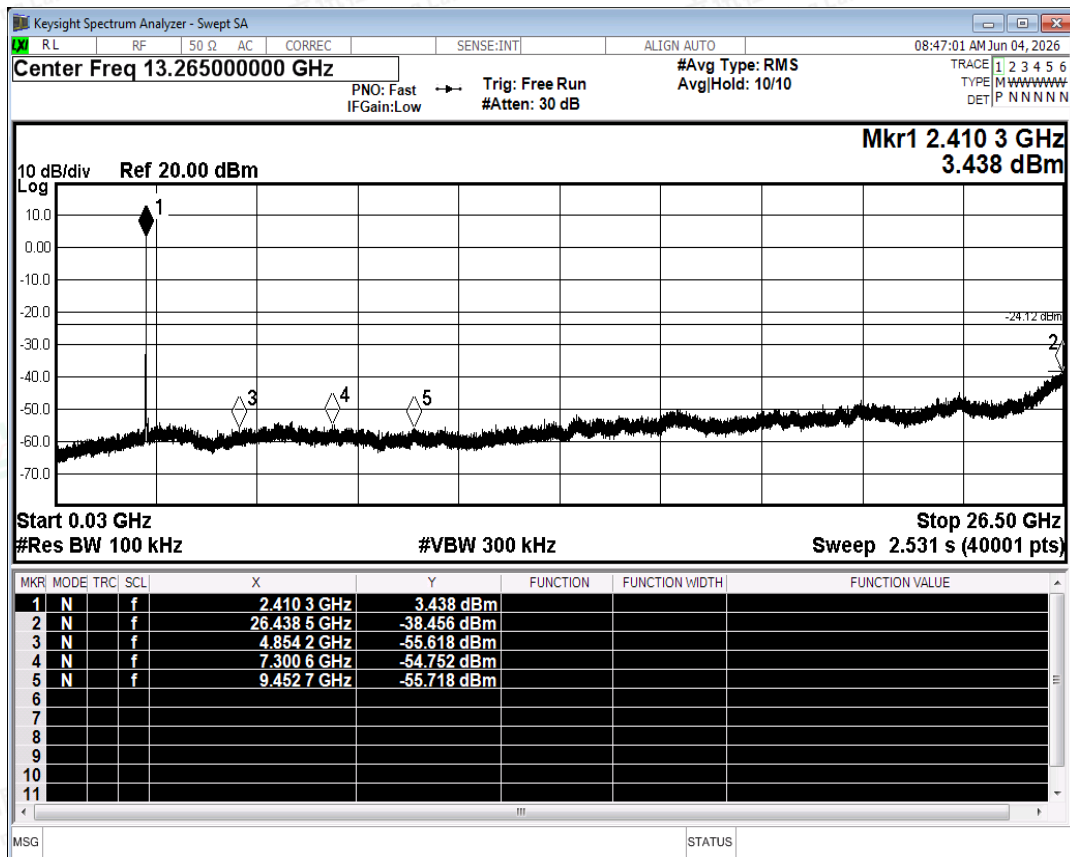
A.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-44.33	-30	Pass
NVNT	b	2437	Ant1	-42.72	-30	Pass
NVNT	b	2462	Ant1	-41.43	-30	Pass
NVNT	g	2412	Ant1	-38.8	-30	Pass
NVNT	g	2437	Ant1	-38.64	-30	Pass
NVNT	g	2462	Ant1	-37.52	-30	Pass
NVNT	n20	2412	Ant1	-39.04	-30	Pass
NVNT	n20	2437	Ant1	-38.1	-30	Pass
NVNT	n20	2462	Ant1	-38.04	-30	Pass

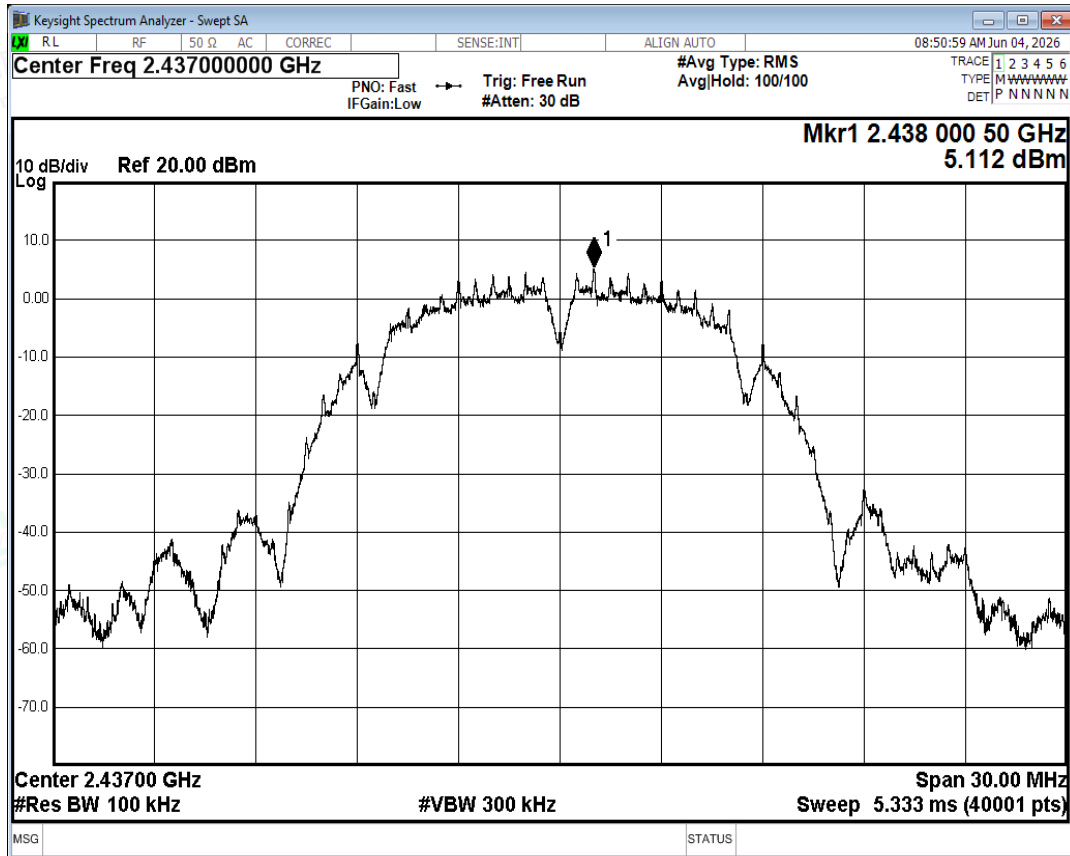
Note: Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the CORREC' of the Spectrum Analyzer during the test.



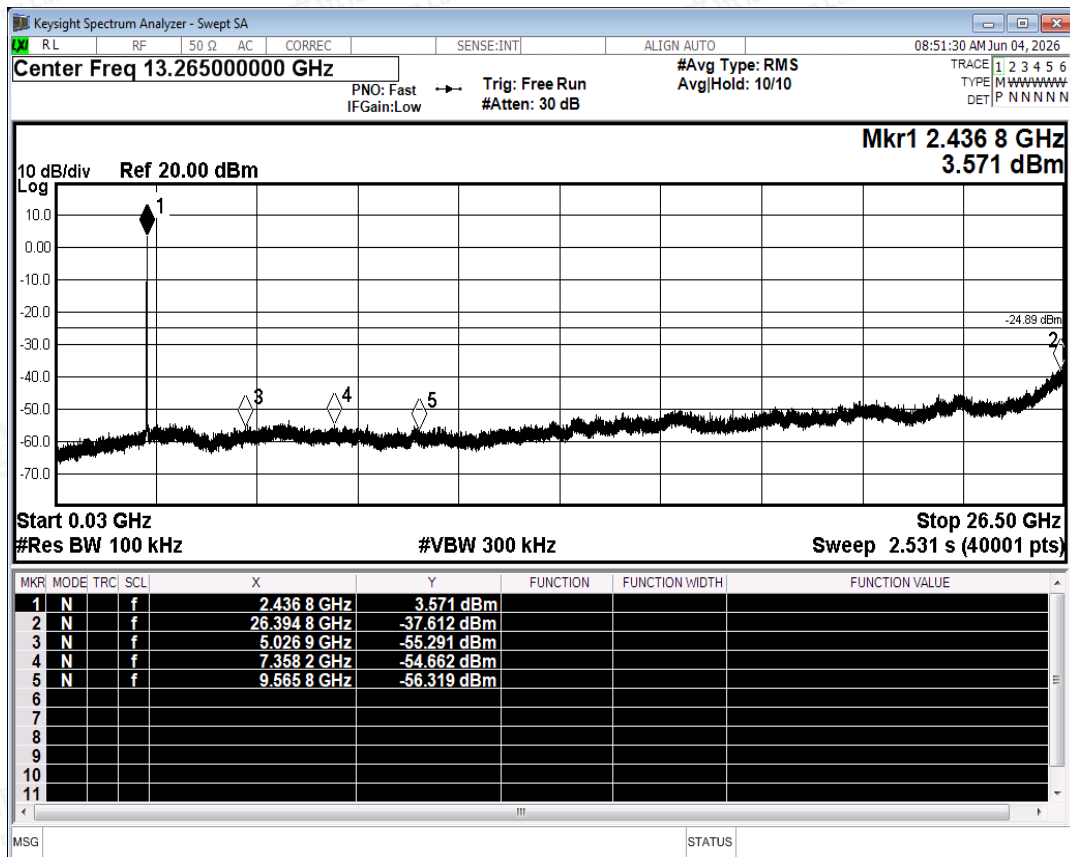
Tx. Spurious NVNT b 2412MHz Ant1 Ref



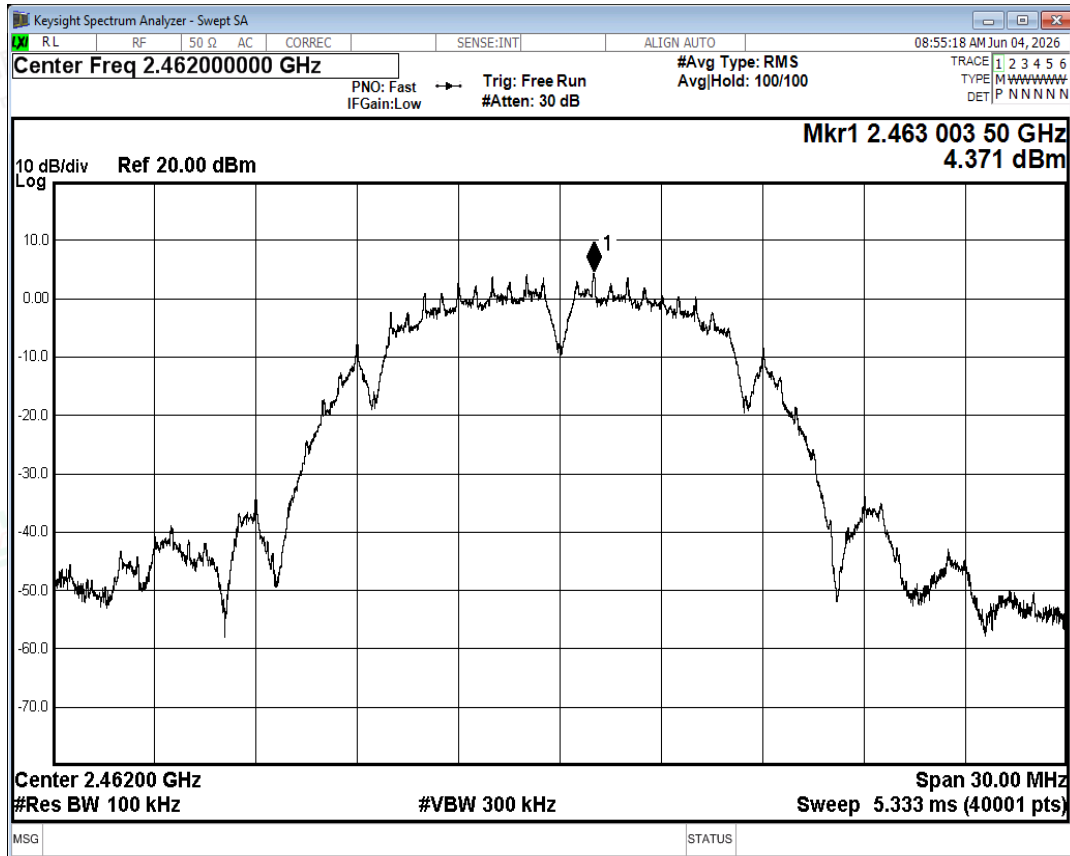
Tx. Spurious NVNT b 2412MHz Ant1 Emission



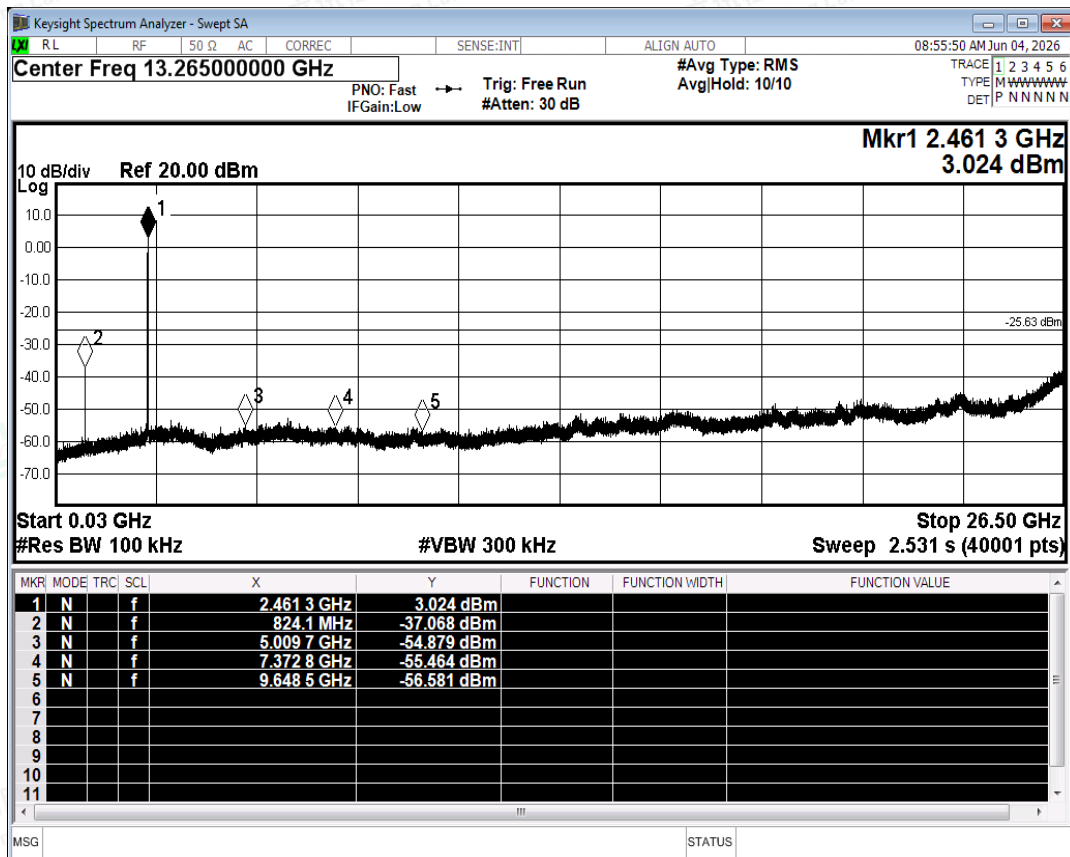
Tx. Spurious NVNT b 2437MHz Ant1 Ref



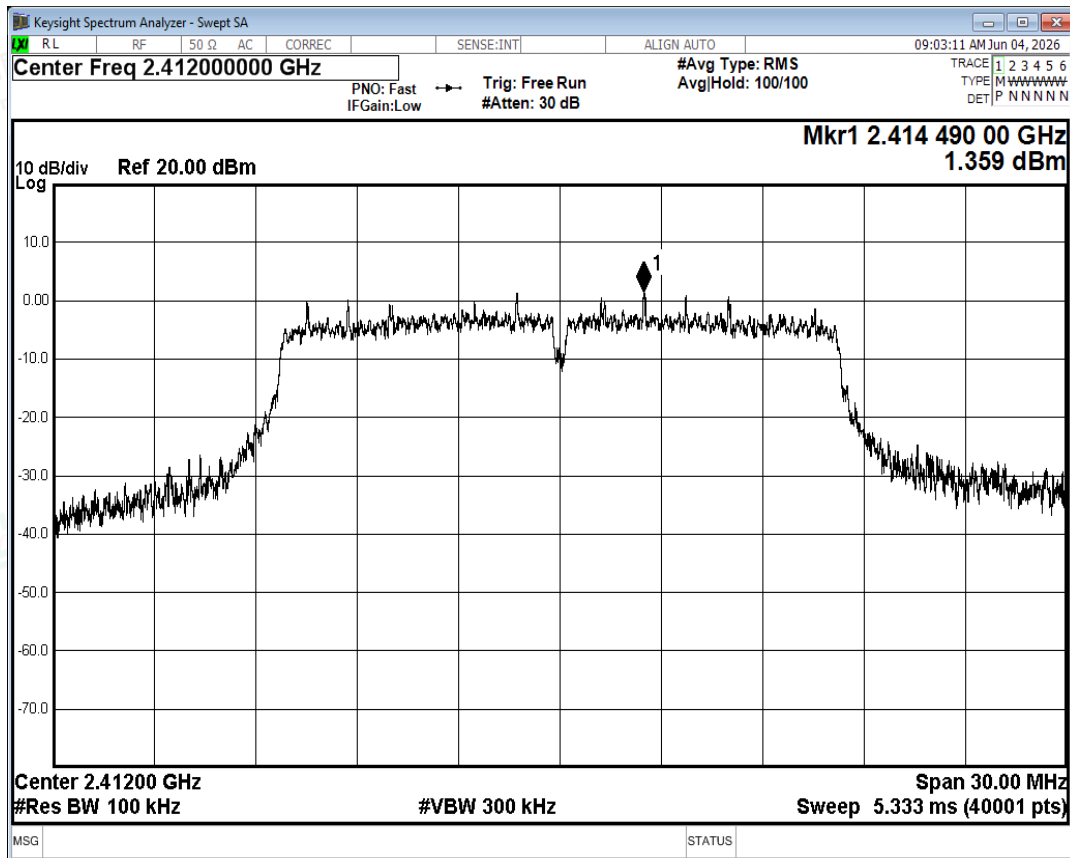
Tx. Spurious NVNT b 2437MHz Ant1 Emission



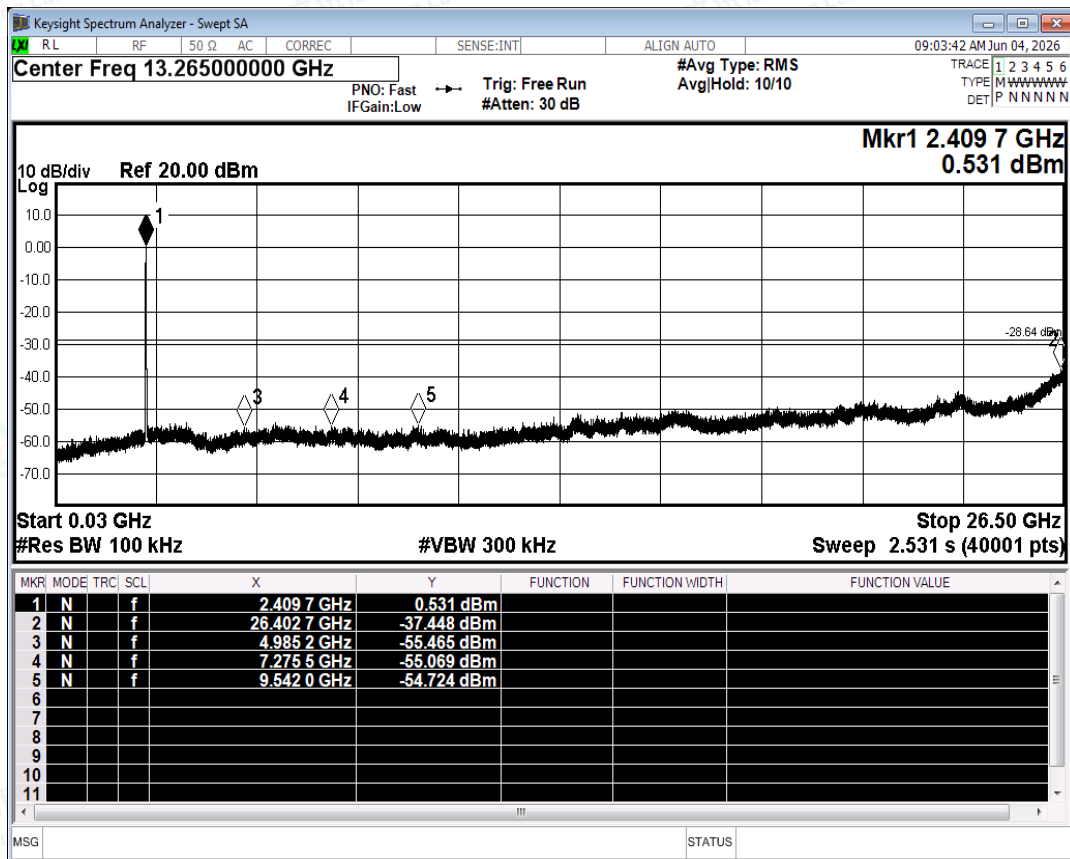
Tx. Spurious NVNT b 2462MHz Ant1 Ref



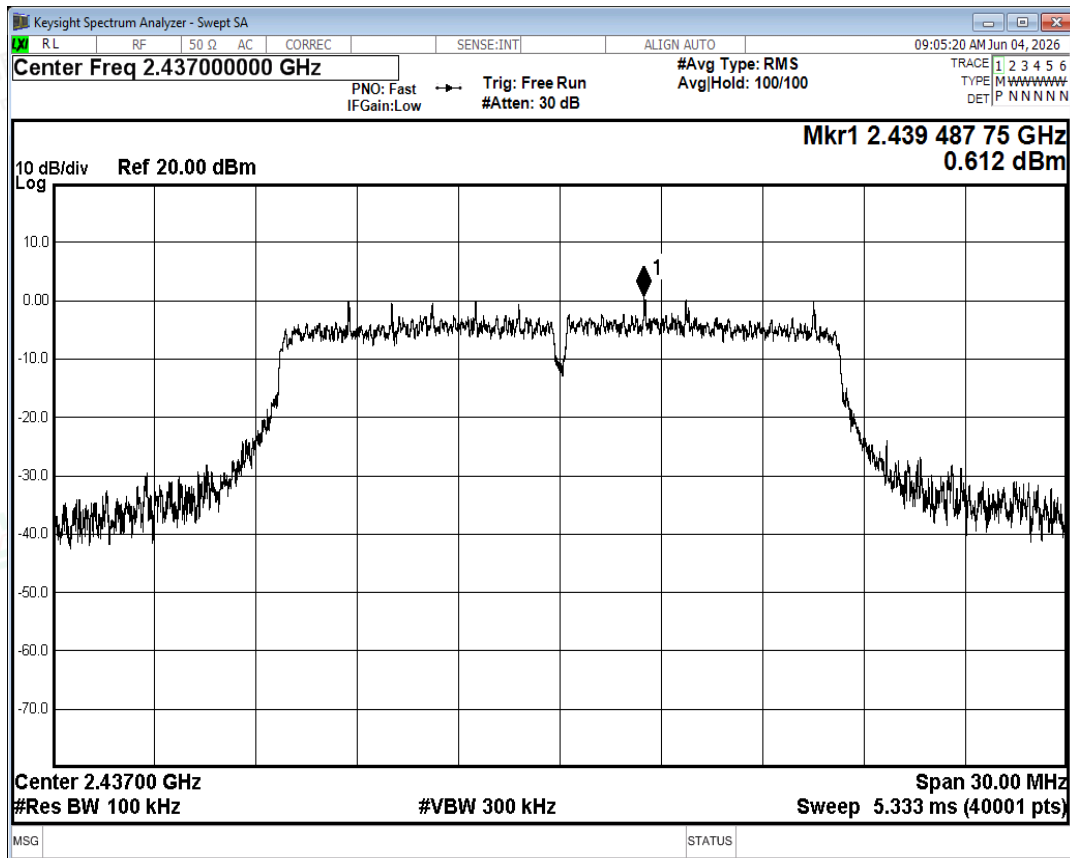
Tx. Spurious NVNT b 2462MHz Ant1 Emission



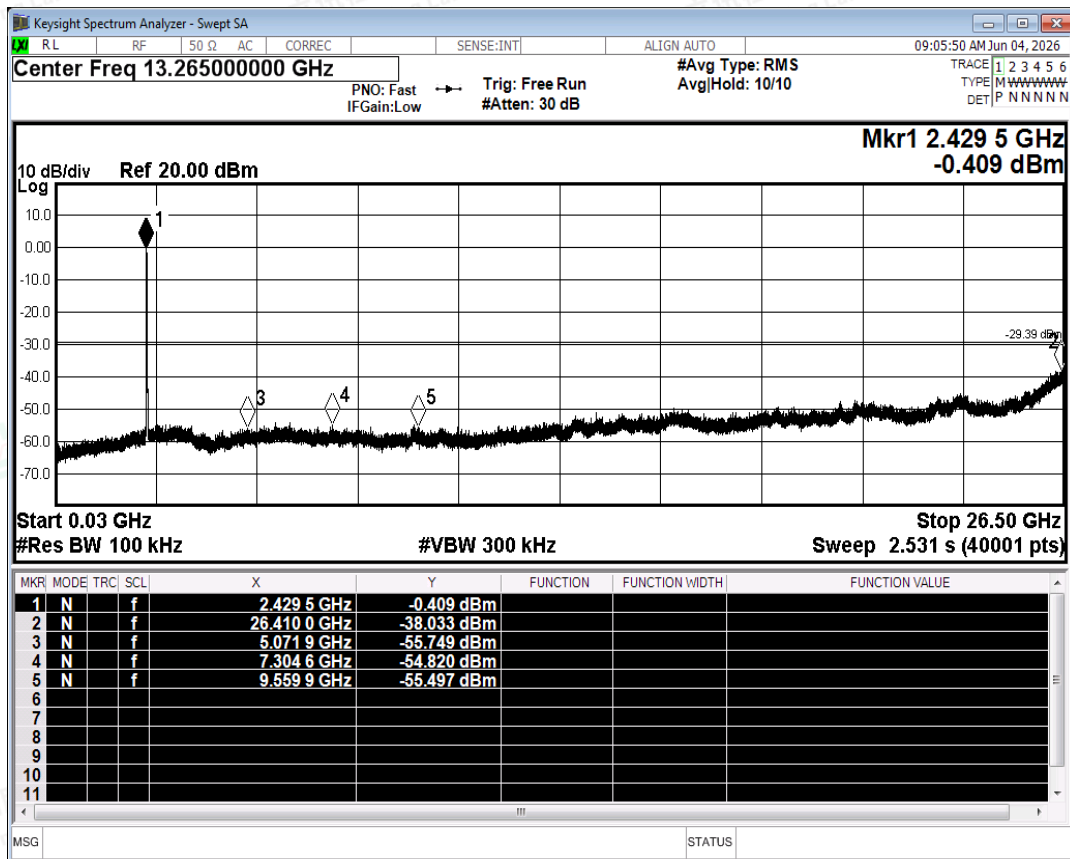
Tx. Spurious NVNT g 2412MHz Ant1 Ref



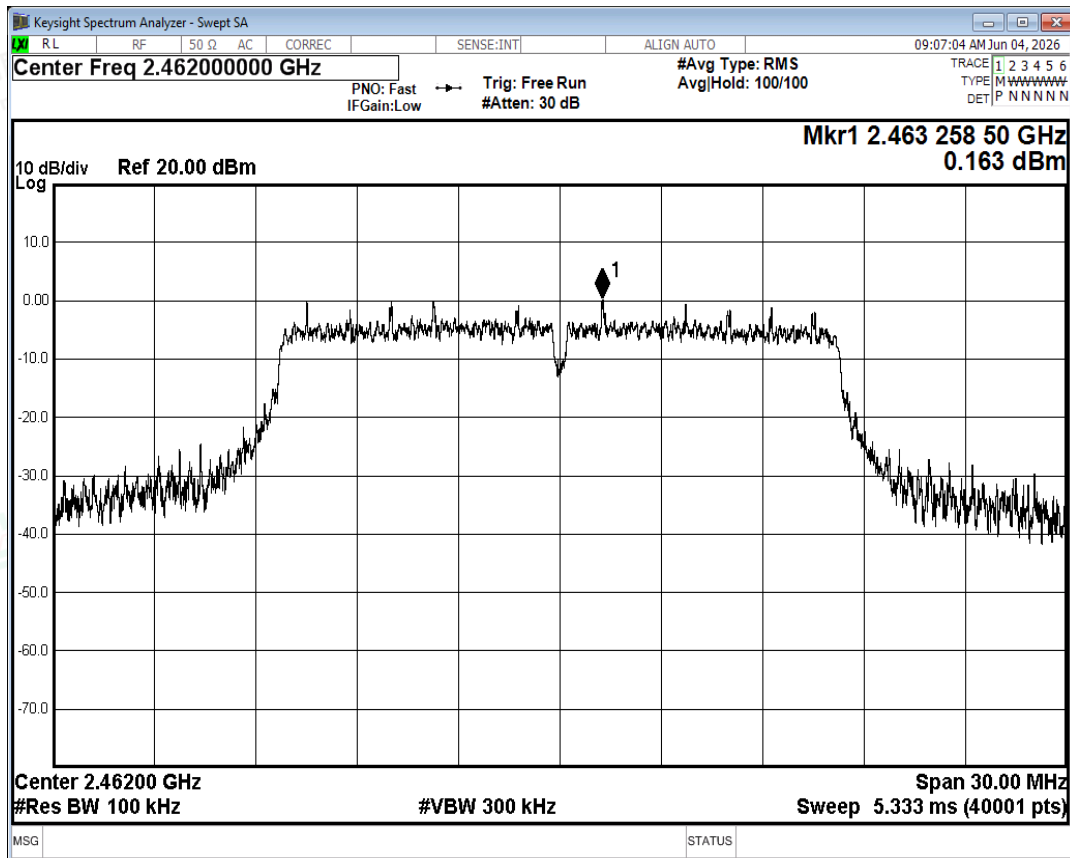
Tx. Spurious NVNT g 2412MHz Ant1 Emission



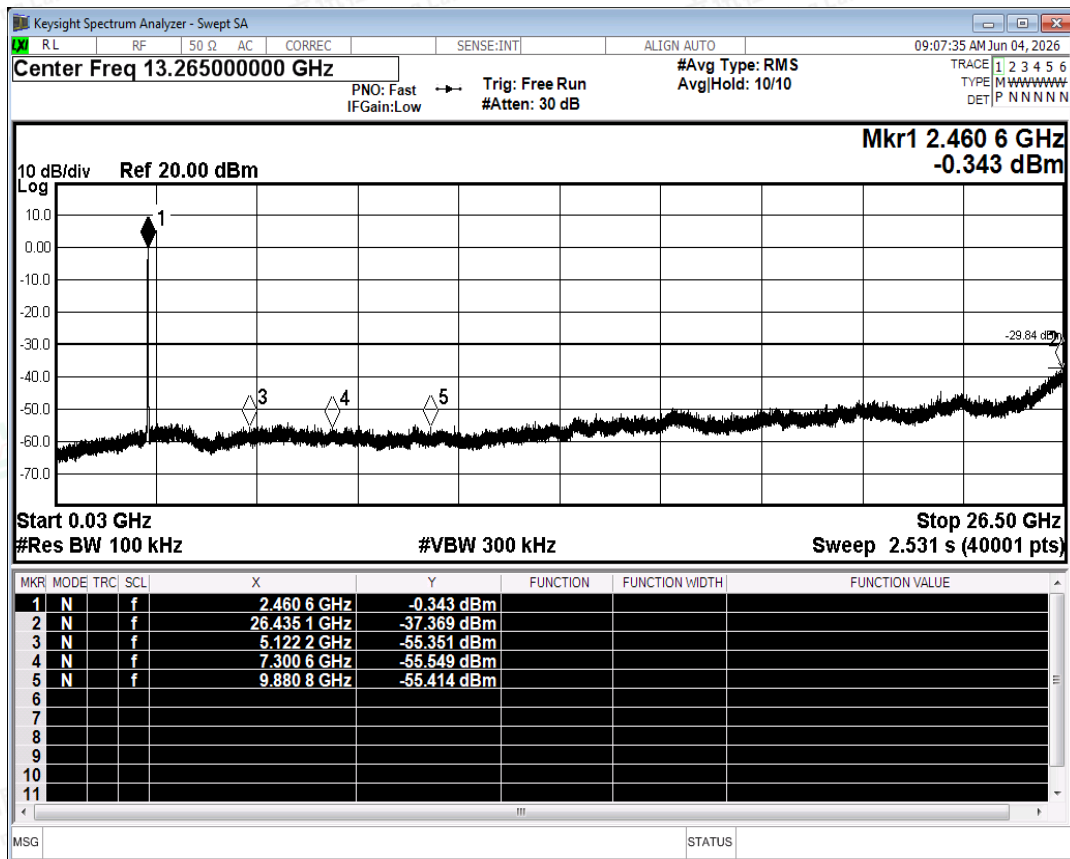
Tx. Spurious NVNT g 2437MHz Ant1 Ref



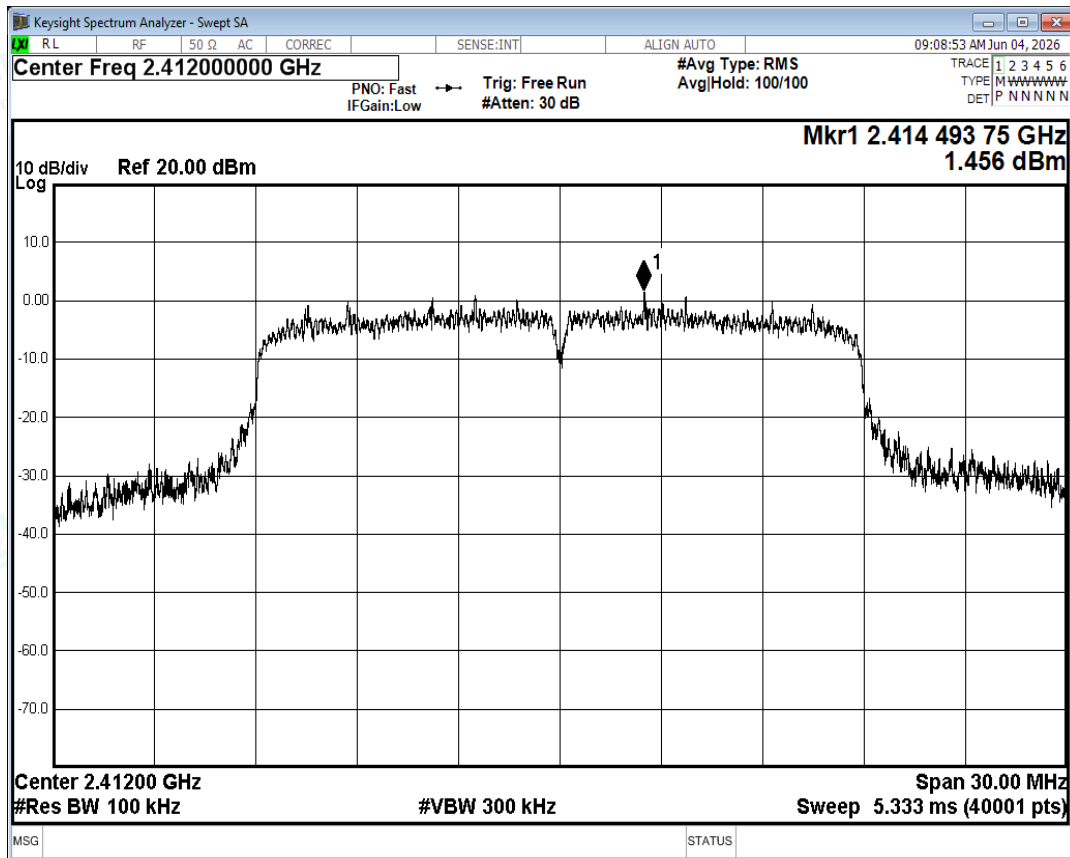
Tx. Spurious NVNT g 2437MHz Ant1 Emission



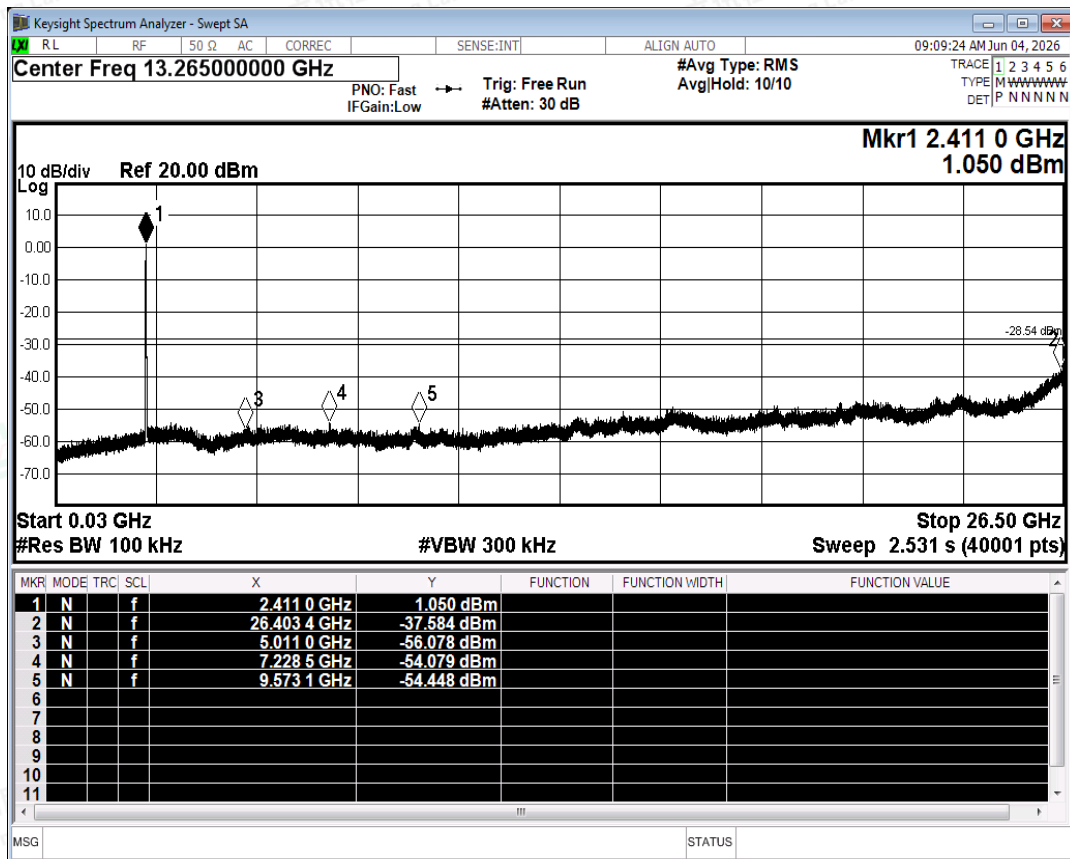
Tx. Spurious NVNT g 2462MHz Ant1 Ref



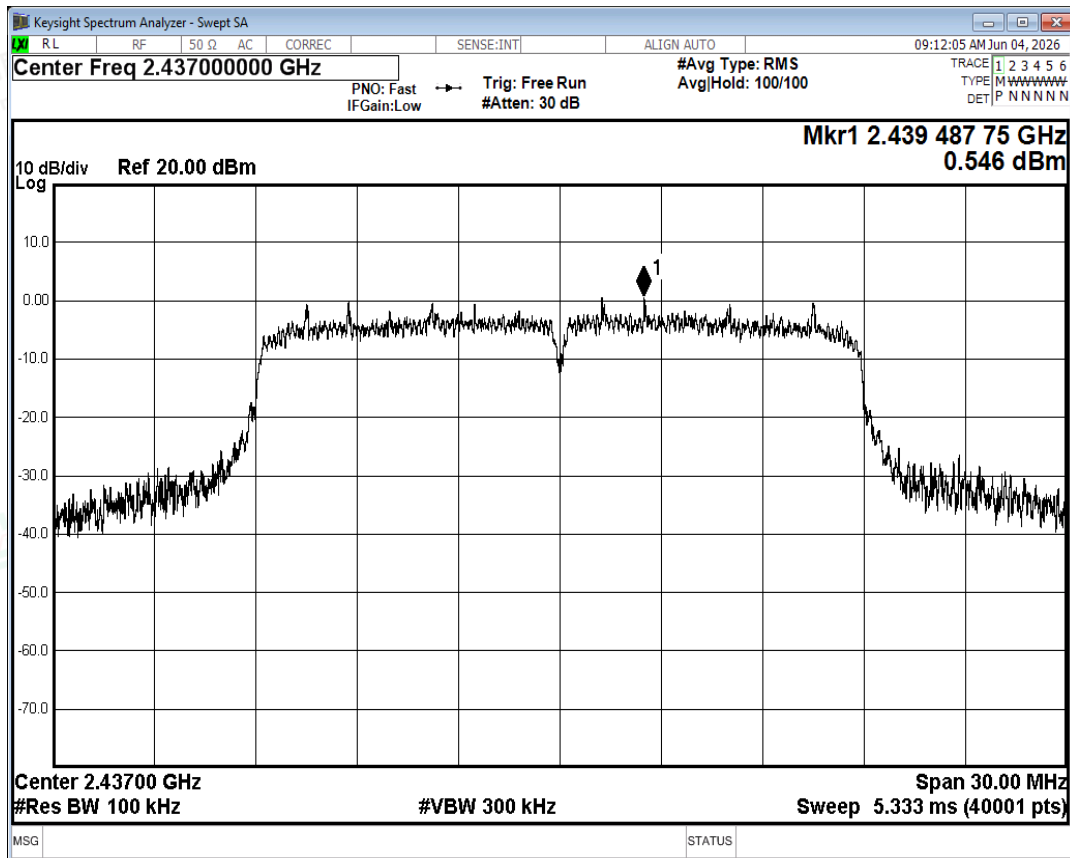
Tx. Spurious NVNT g 2462MHz Ant1 Emission



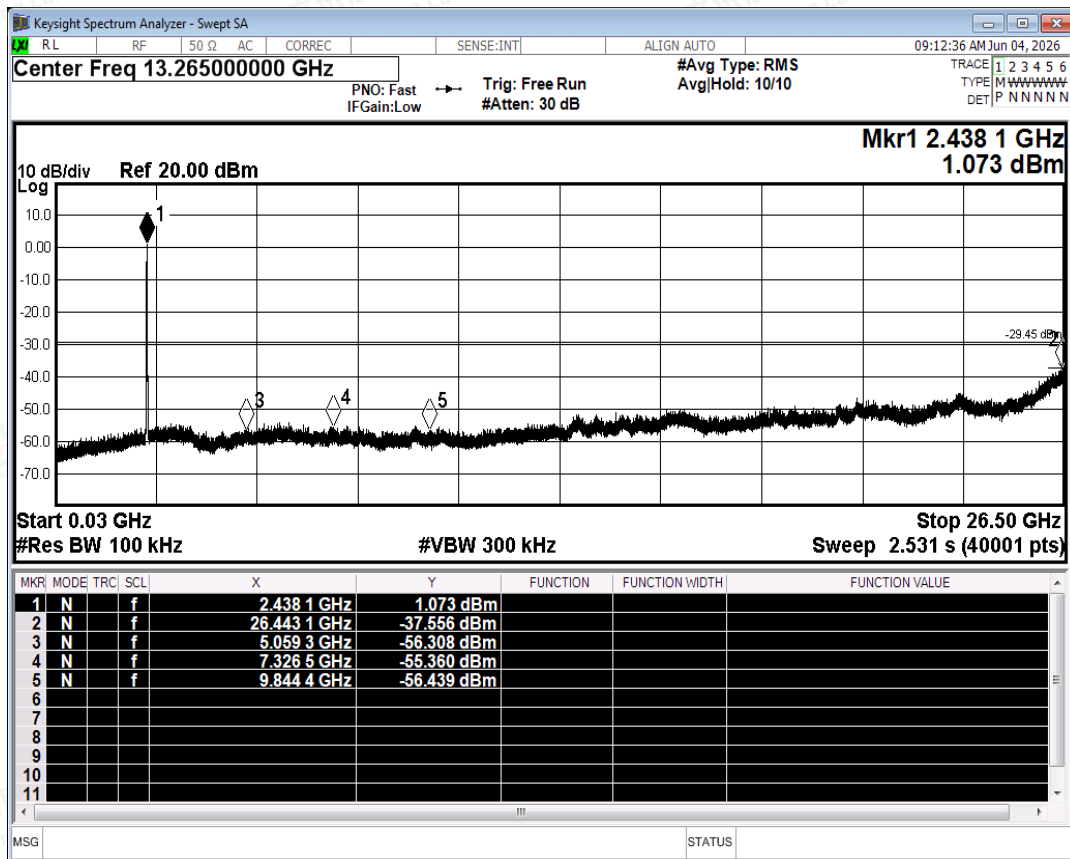
Tx. Spurious NVNT n20 2412MHz Ant1 Ref



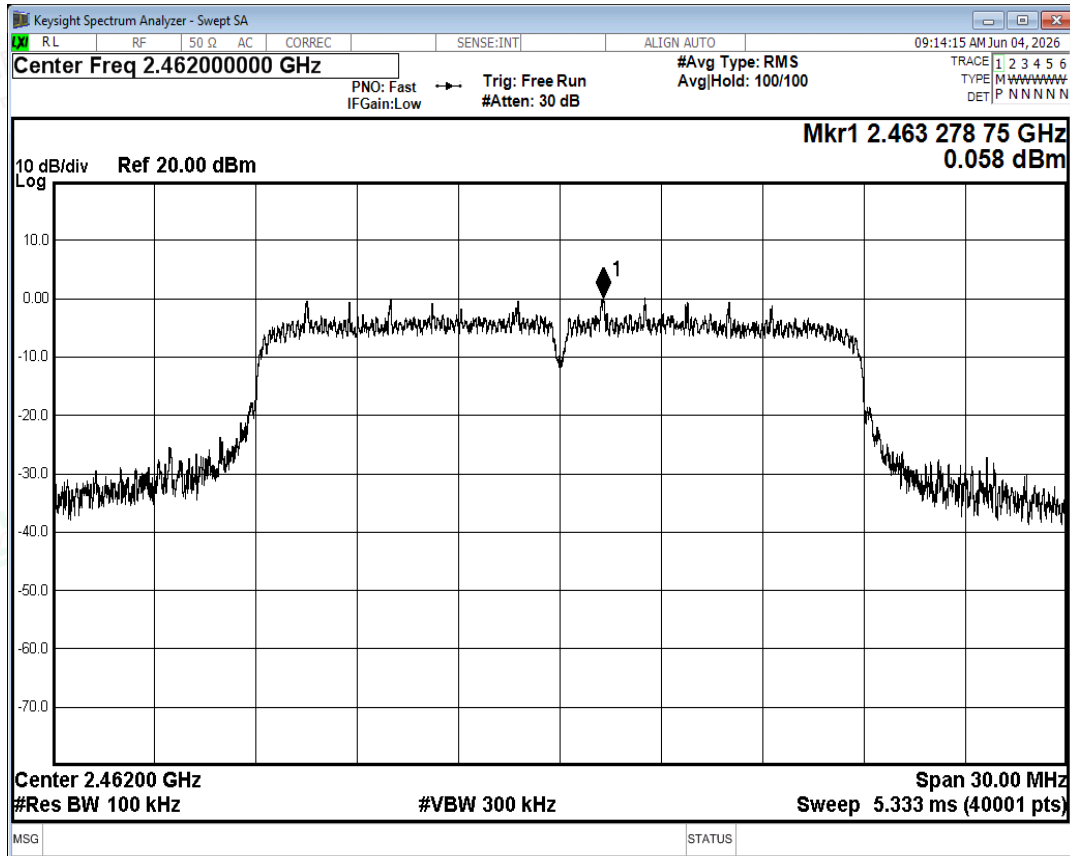
Tx. Spurious NVNT n20 2412MHz Ant1 Emission



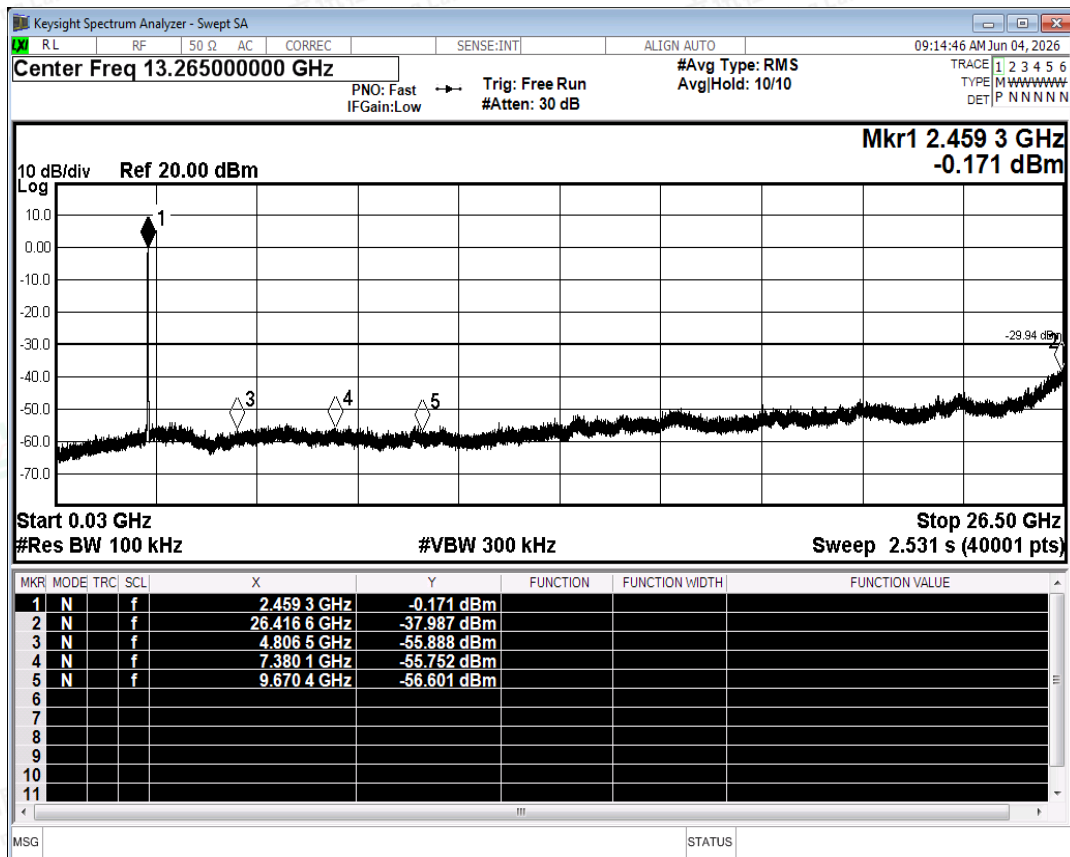
Tx. Spurious NVNT n20 2437MHz Ant1 Ref



Tx. Spurious NVNT n20 2437MHz Ant1 Emission



Tx. Spurious NVNT n20 2462MHz Ant1 Ref



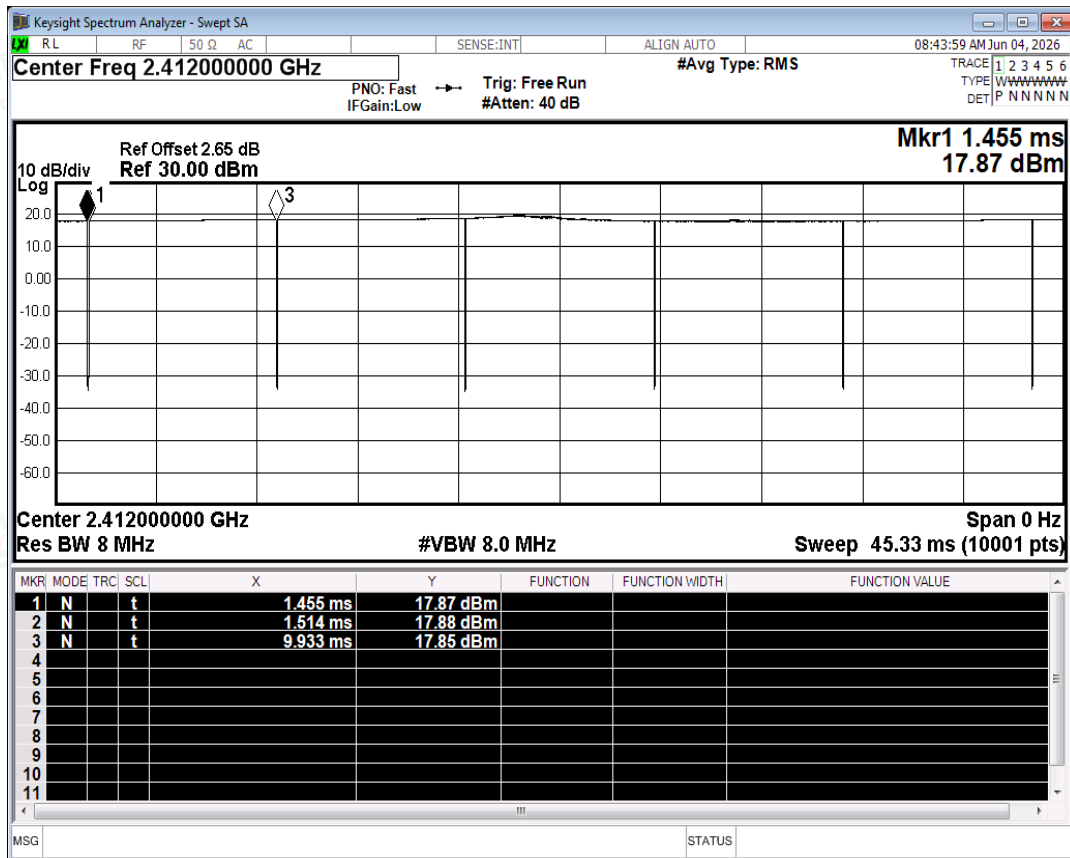
Tx. Spurious NVNT n20 2462MHz Ant1 Emission



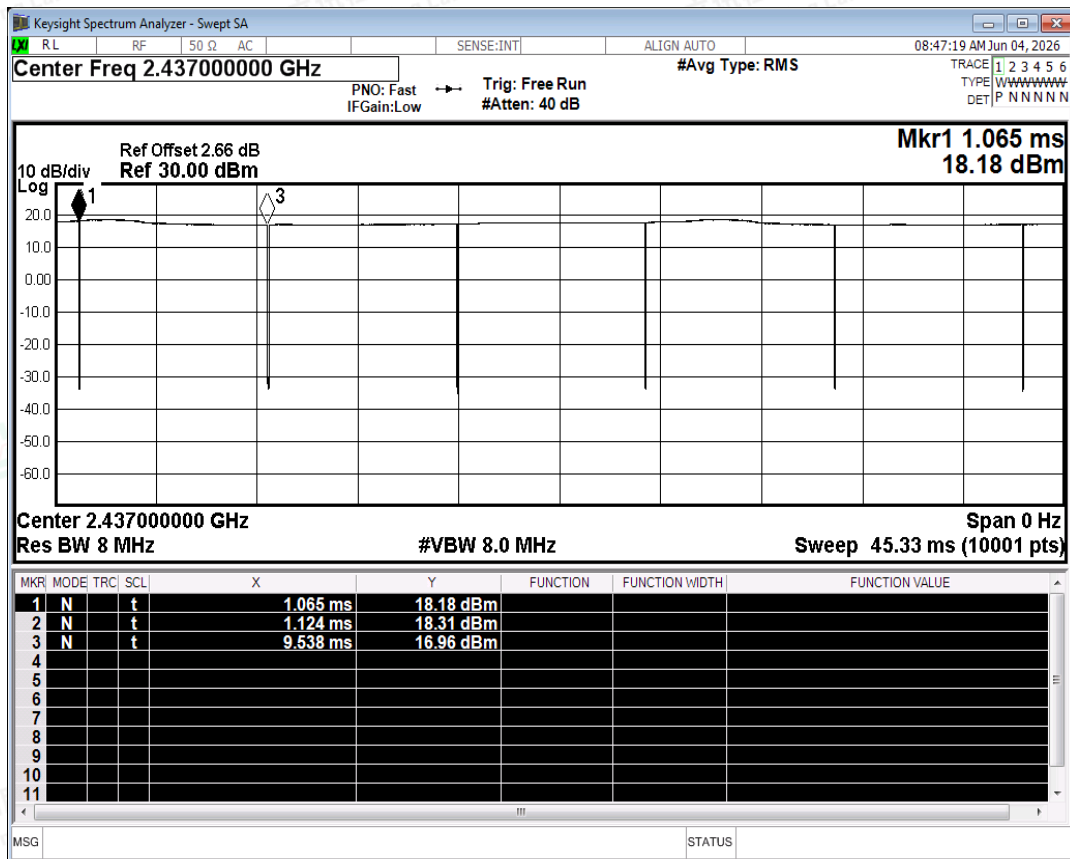
A.6 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.3	0.03	0.12
NVNT	b	2437	Ant1	99.3	0.03	0.12
NVNT	b	2462	Ant1	99.3	0.03	0.12
NVNT	g	2412	Ant1	95.75	0.19	0.72
NVNT	g	2437	Ant1	95.62	0.19	0.72
NVNT	g	2462	Ant1	95.75	0.19	0.72
NVNT	n20	2412	Ant1	94.86	0.23	0.85
NVNT	n20	2437	Ant1	94.86	0.23	0.85
NVNT	n20	2462	Ant1	95.02	0.22	0.85

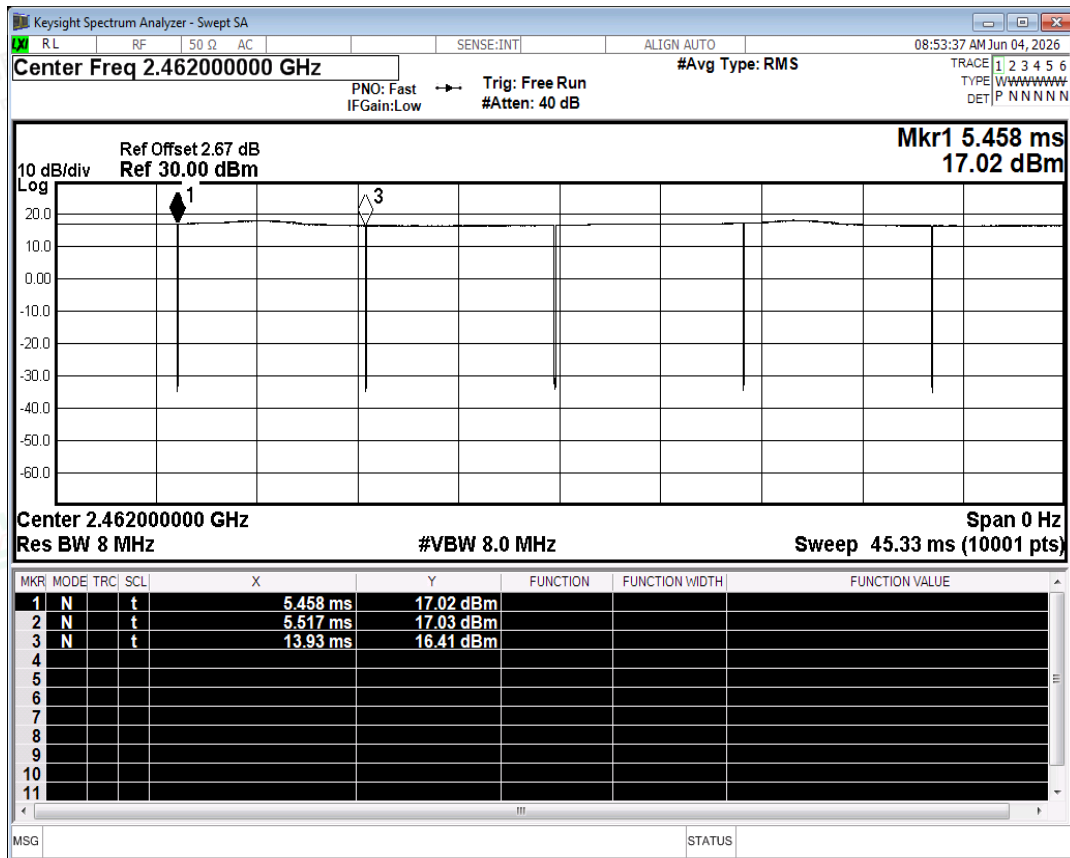
Note: offset=System attenuation +cabal loss



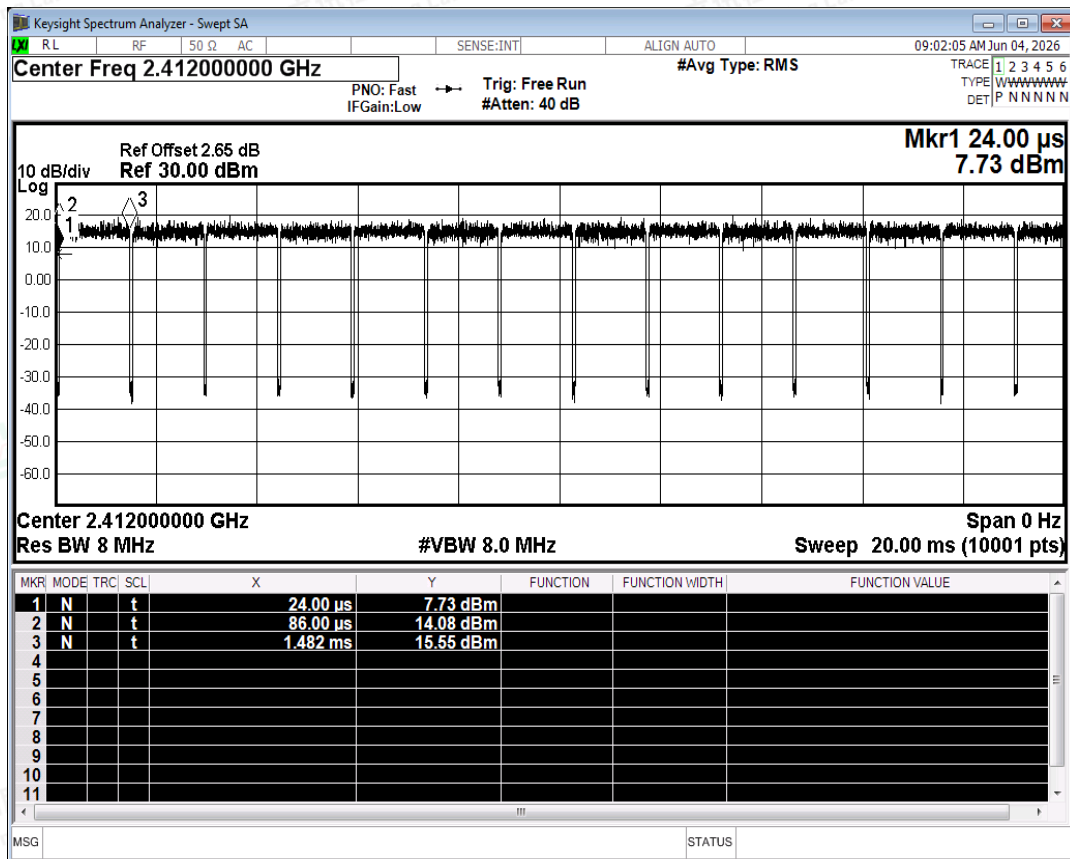
Duty Cycle NVNT b 2412MHz Ant1



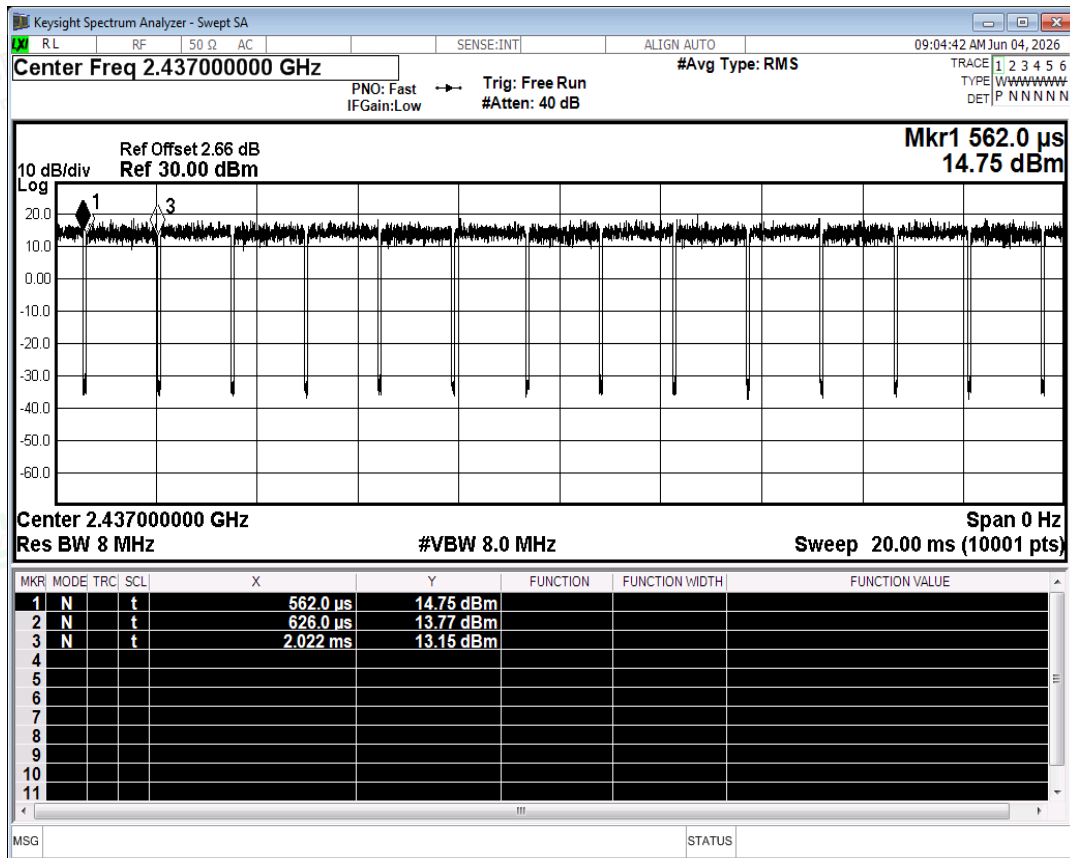
Duty Cycle NVNT b 2437MHz Ant1



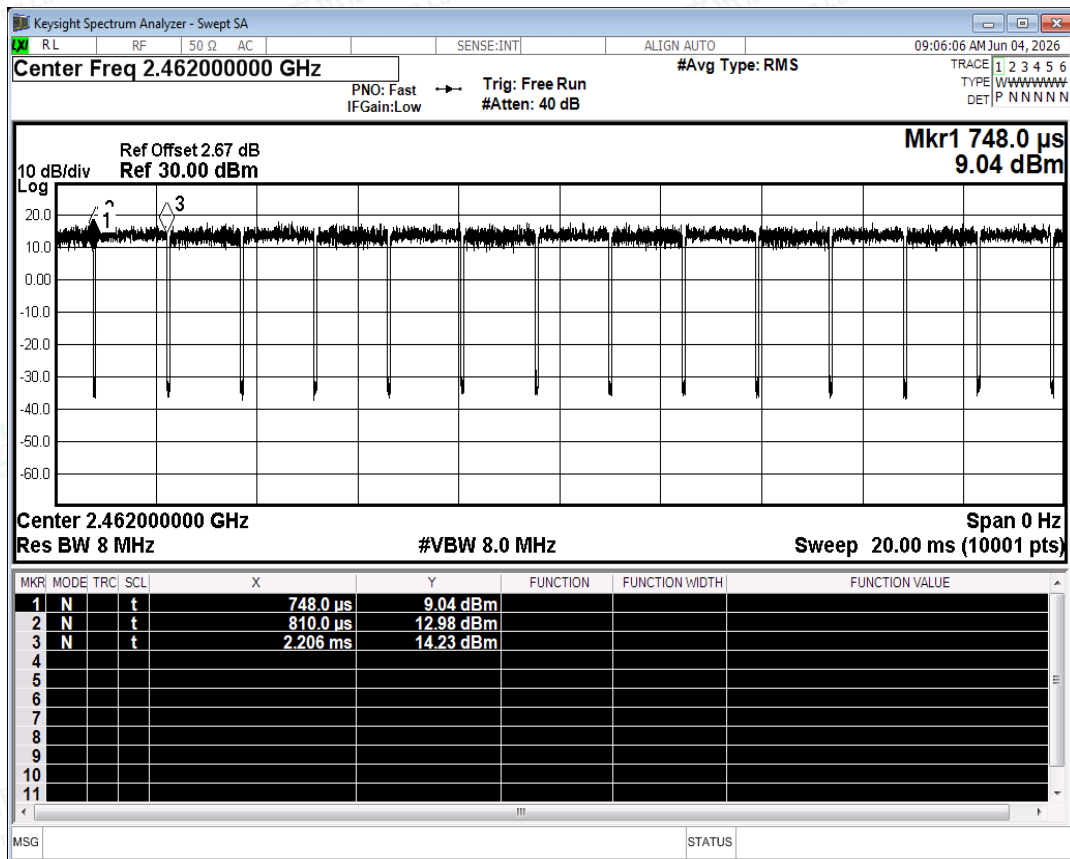
Duty Cycle NVNT b 2462MHz Ant1



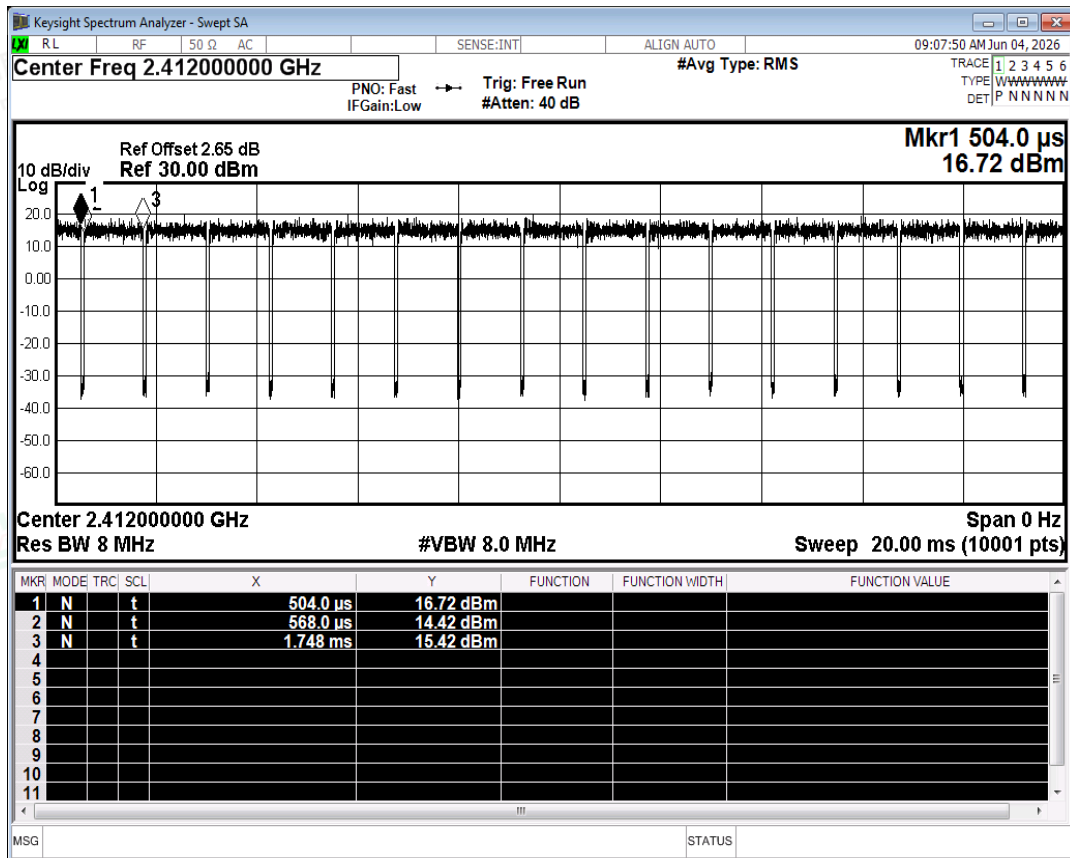
Duty Cycle NVNT g 2412MHz Ant1



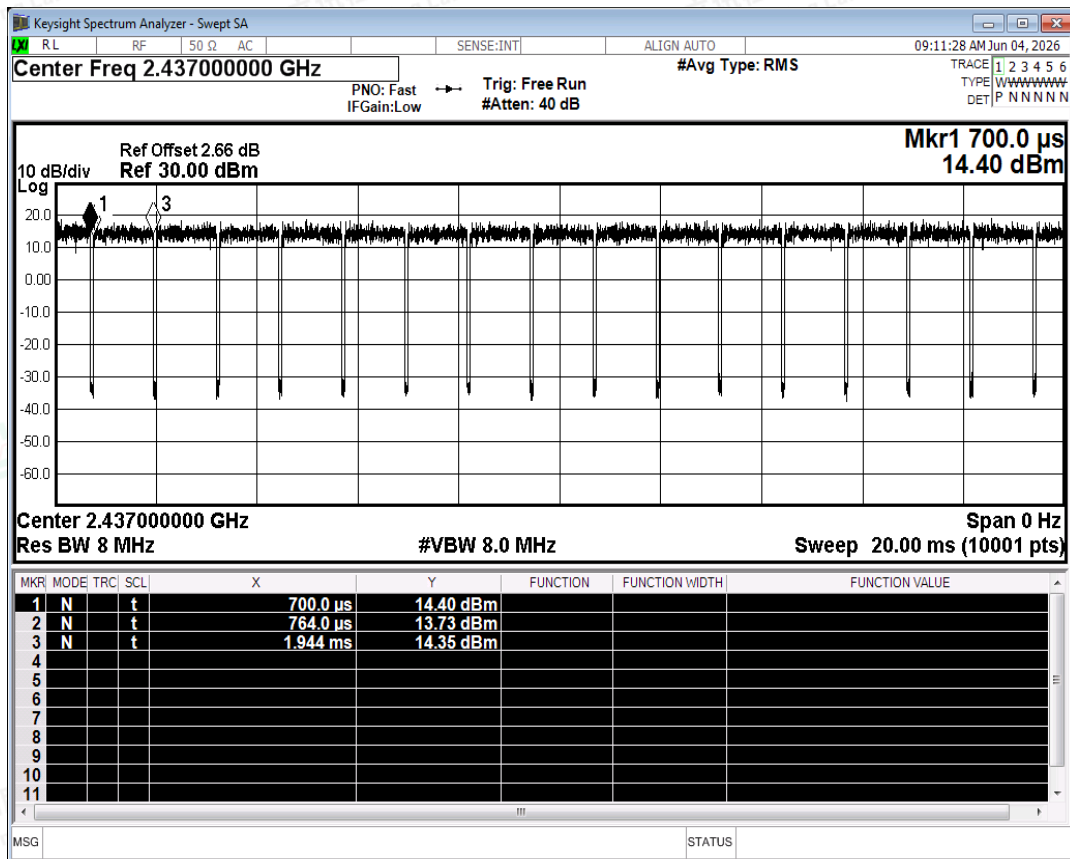
Duty Cycle NVNT g 2437MHz Ant1



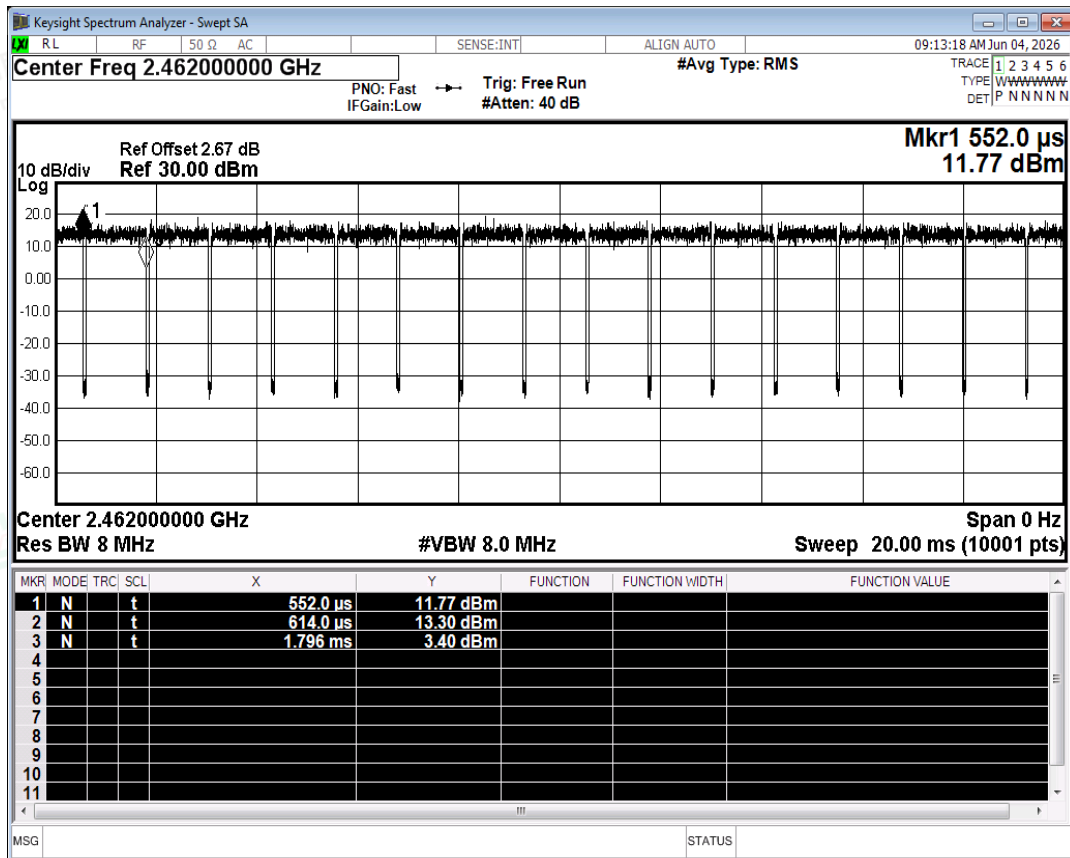
Duty Cycle NVNT g 2462MHz Ant1



Duty Cycle NVNT n20 2412MHz Ant1



Duty Cycle NVNT n20 2437MHz Ant1

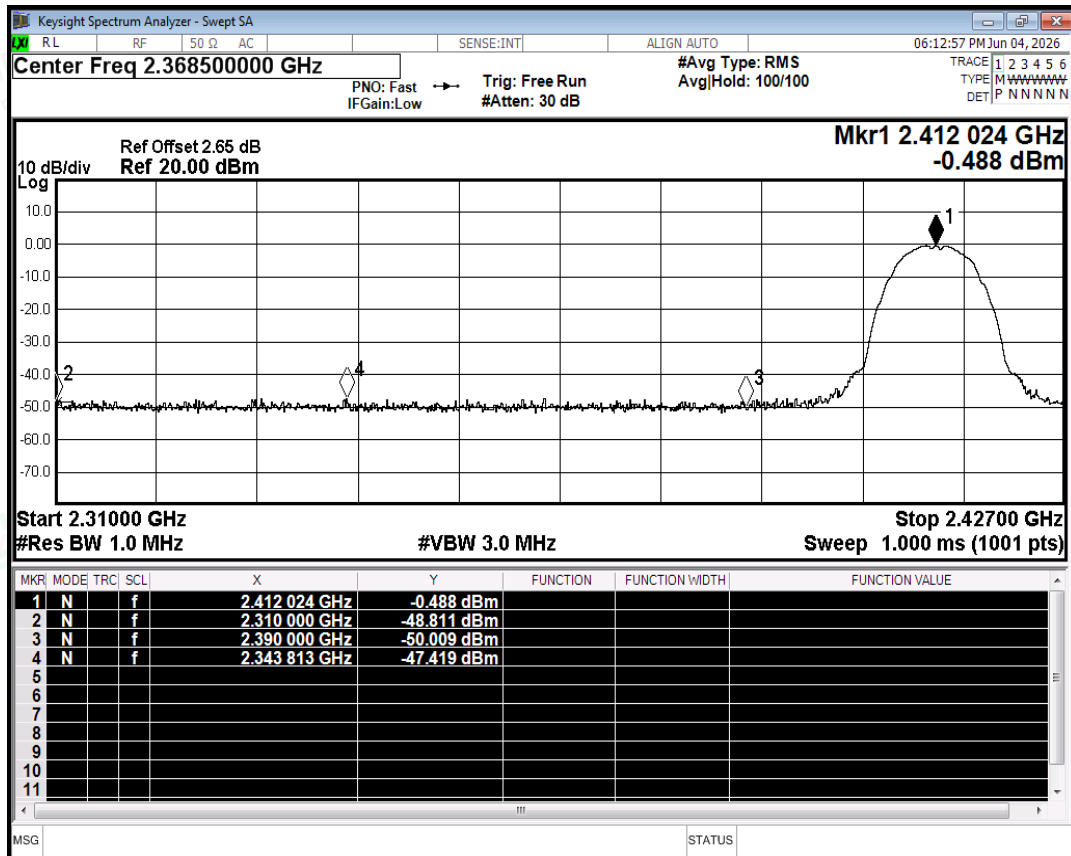


Duty Cycle NVNT n20 2462MHz Ant1

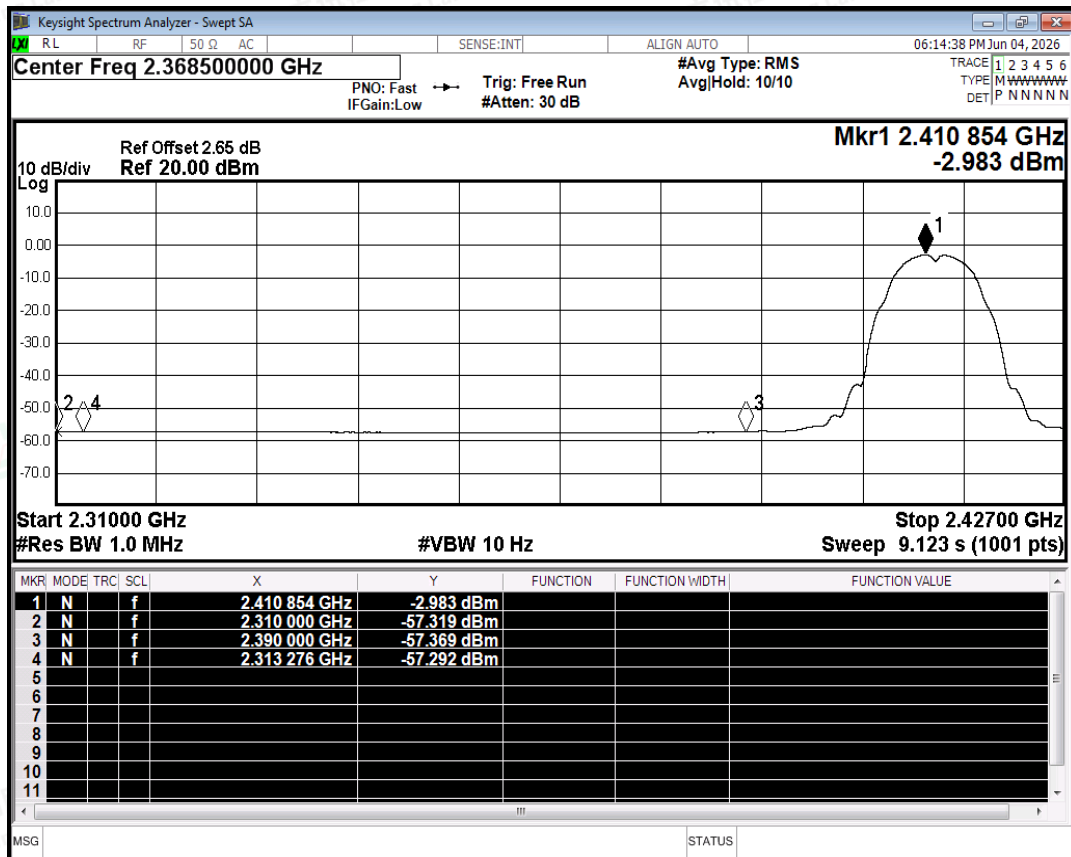


A.7 Restrict Band

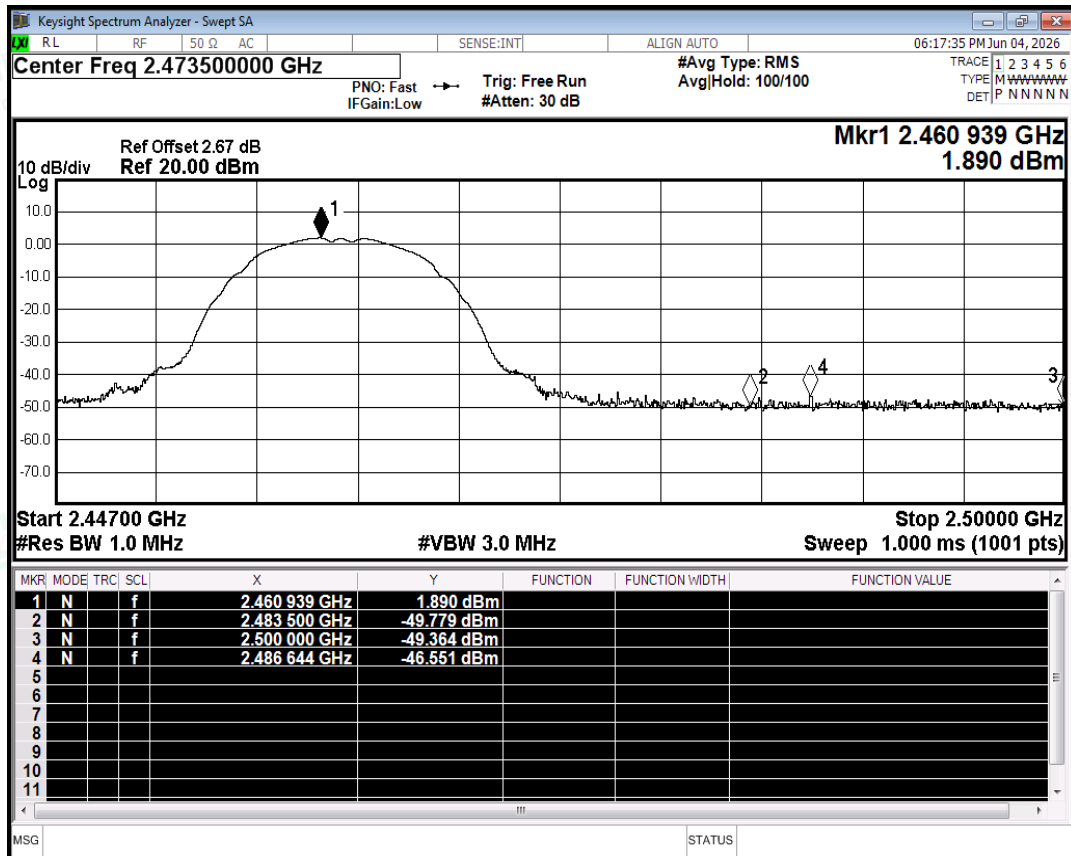
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-48.81	3.04	49.49	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-57.31	3.04	40.99	Average	54	Pass
NVNT	b	2412	Ant1	2343.813	-47.41	3.04	50.89	Peak	74	Pass
NVNT	b	2412	Ant1	2313.276	-57.29	3.04	41.01	Average	54	Pass
NVNT	b	2412	Ant1	2390	-50	3.04	48.3	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-57.36	3.04	40.94	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-49.77	3.04	48.53	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-56.94	3.04	41.36	Average	54	Pass
NVNT	b	2462	Ant1	2486.644	-46.55	3.04	51.75	Peak	74	Pass
NVNT	b	2462	Ant1	2483.517	-56.94	3.04	41.36	Average	54	Pass
NVNT	b	2462	Ant1	2500	-49.36	3.04	48.94	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-57.17	3.04	41.13	Average	54	Pass
NVNT	g	2412	Ant1	2310	-50.74	3.04	47.56	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-56.89	3.04	41.41	Average	54	Pass
NVNT	g	2412	Ant1	2324.157	-47	3.04	51.3	Peak	74	Pass
NVNT	g	2412	Ant1	2311.404	-56.79	3.04	41.51	Average	54	Pass
NVNT	g	2412	Ant1	2390	-49.6	3.04	48.7	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-56.8	3.04	41.5	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-47.18	3.04	51.12	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-55.23	3.04	43.07	Average	54	Pass
NVNT	g	2462	Ant1	2483.835	-41.71	3.04	56.59	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-55.23	3.04	43.07	Average	54	Pass
NVNT	g	2462	Ant1	2500	-49.34	3.04	48.96	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-56.93	3.04	41.37	Average	54	Pass
NVNT	n20	2412	Ant1	2310	-49.93	3.04	48.37	Peak	74	Pass
NVNT	n20	2412	Ant1	2310	-56.93	3.04	41.37	Average	54	Pass
NVNT	n20	2412	Ant1	2387.805	-47.46	3.04	50.84	Peak	74	Pass
NVNT	n20	2412	Ant1	2389.911	-56.36	3.04	41.94	Average	54	Pass
NVNT	n20	2412	Ant1	2390	-45.06	3.04	53.24	Peak	74	Pass
NVNT	n20	2412	Ant1	2390	-56.34	3.04	41.96	Average	54	Pass
NVNT	n20	2462	Ant1	2483.5	-41.22	3.04	57.08	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.5	-54.53	3.04	43.77	Average	54	Pass
NVNT	n20	2462	Ant1	2483.517	-41.22	3.04	57.08	Peak	74	Pass
NVNT	n20	2462	Ant1	2483.623	-53.8	3.04	44.5	Average	54	Pass
NVNT	n20	2462	Ant1	2500	-50.67	3.04	47.63	Peak	74	Pass
NVNT	n20	2462	Ant1	2500	-56.94	3.04	41.36	Average	54	Pass



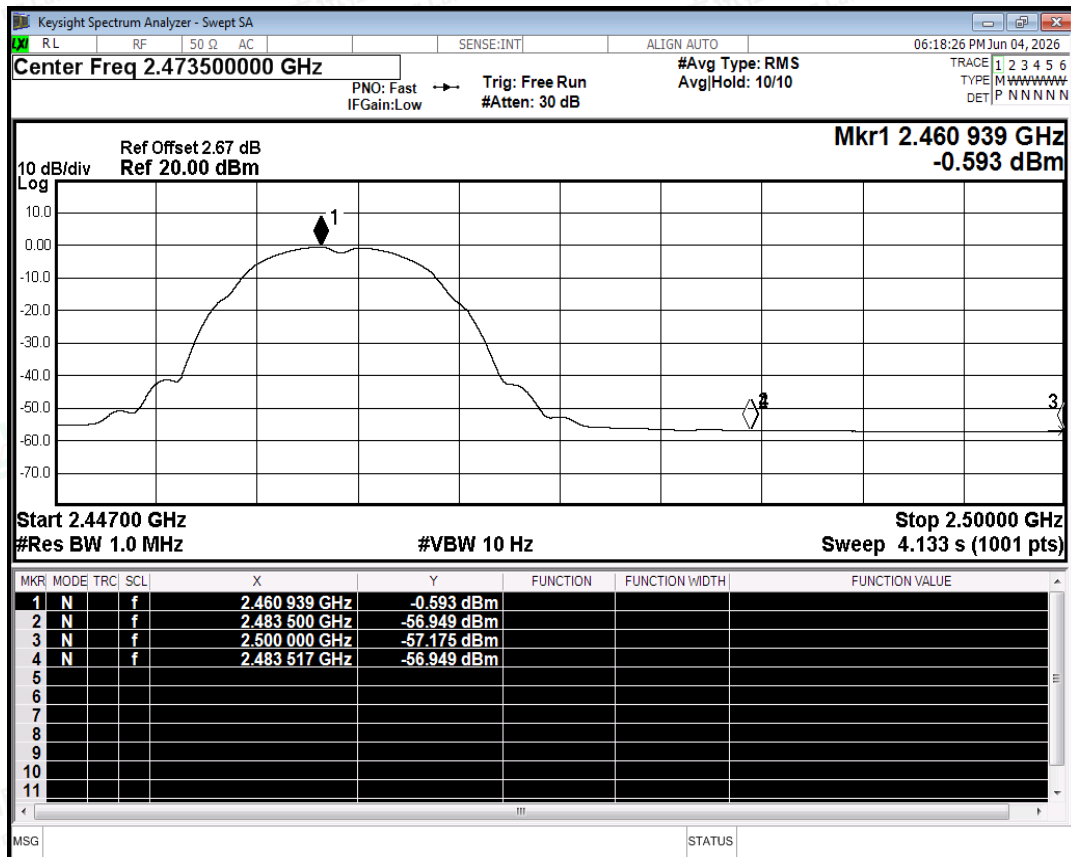
Restrict Band NVNT b 2412MHz Ant1 Peak



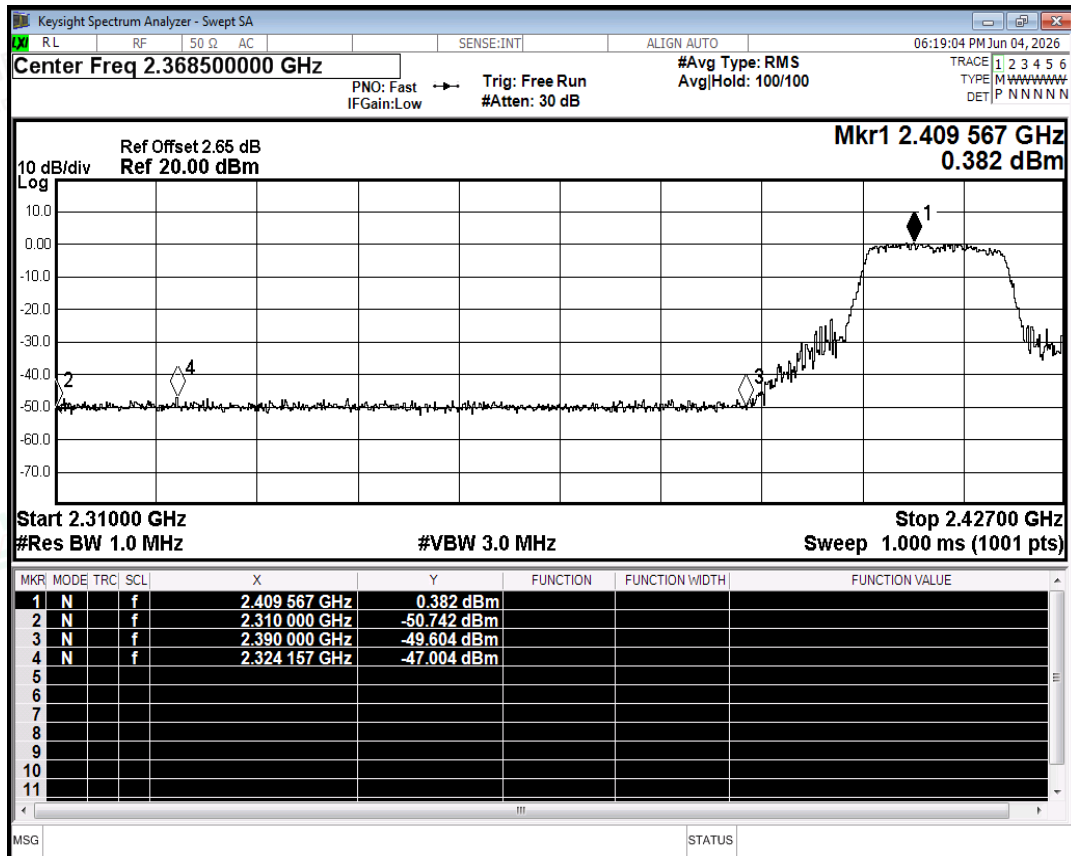
Restrict Band NVNT b 2412MHz Ant1 Average



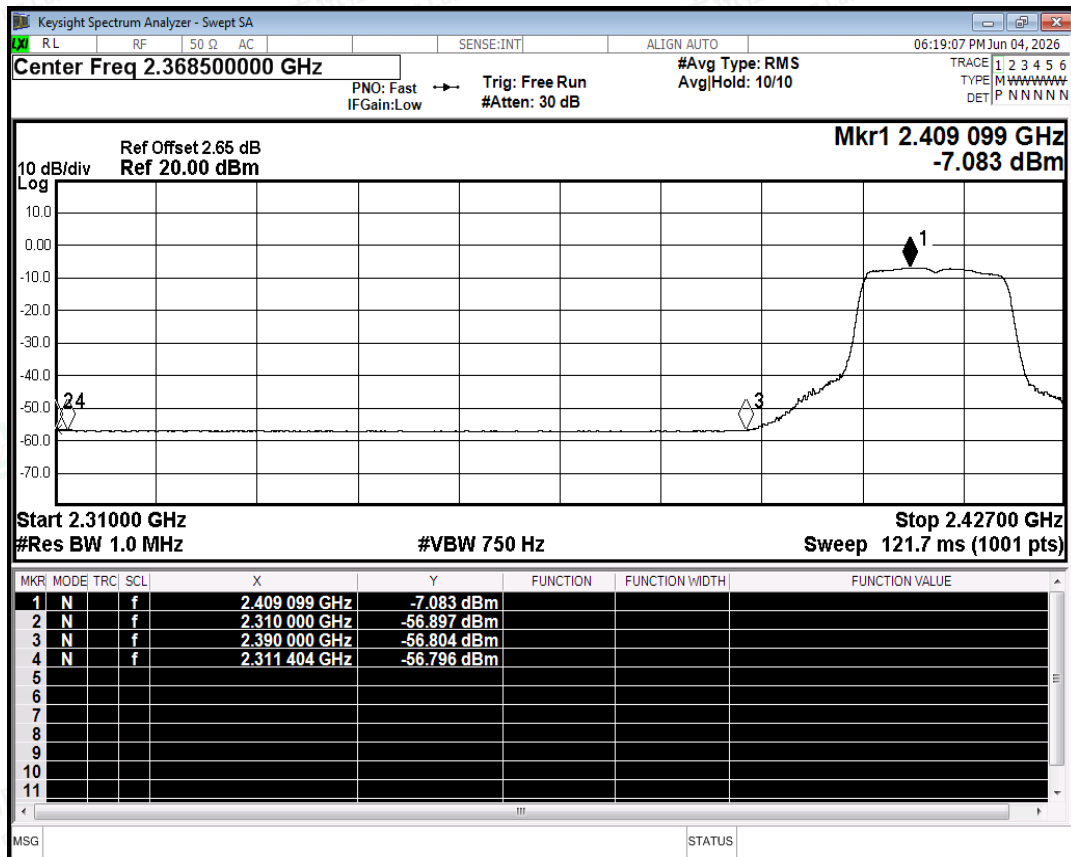
Restrict Band NVNT b 2462MHz Ant1 Peak



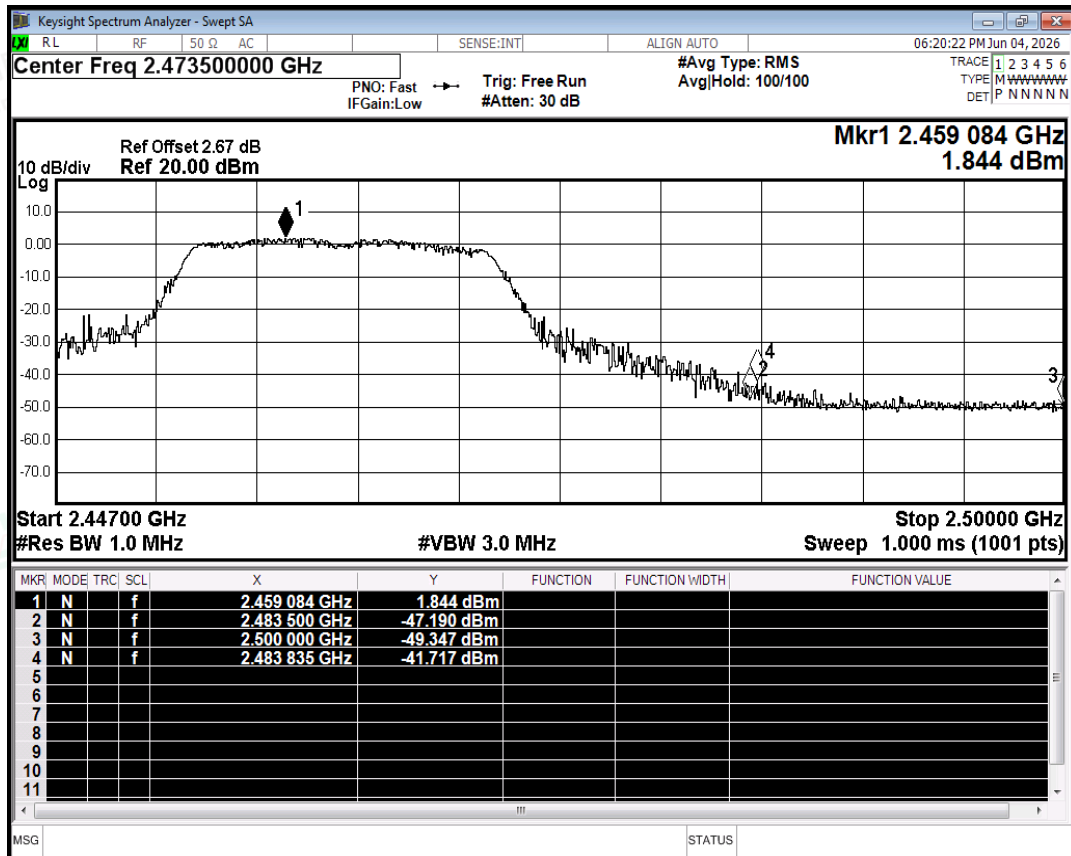
Restrict Band NVNT b 2462MHz Ant1 Average



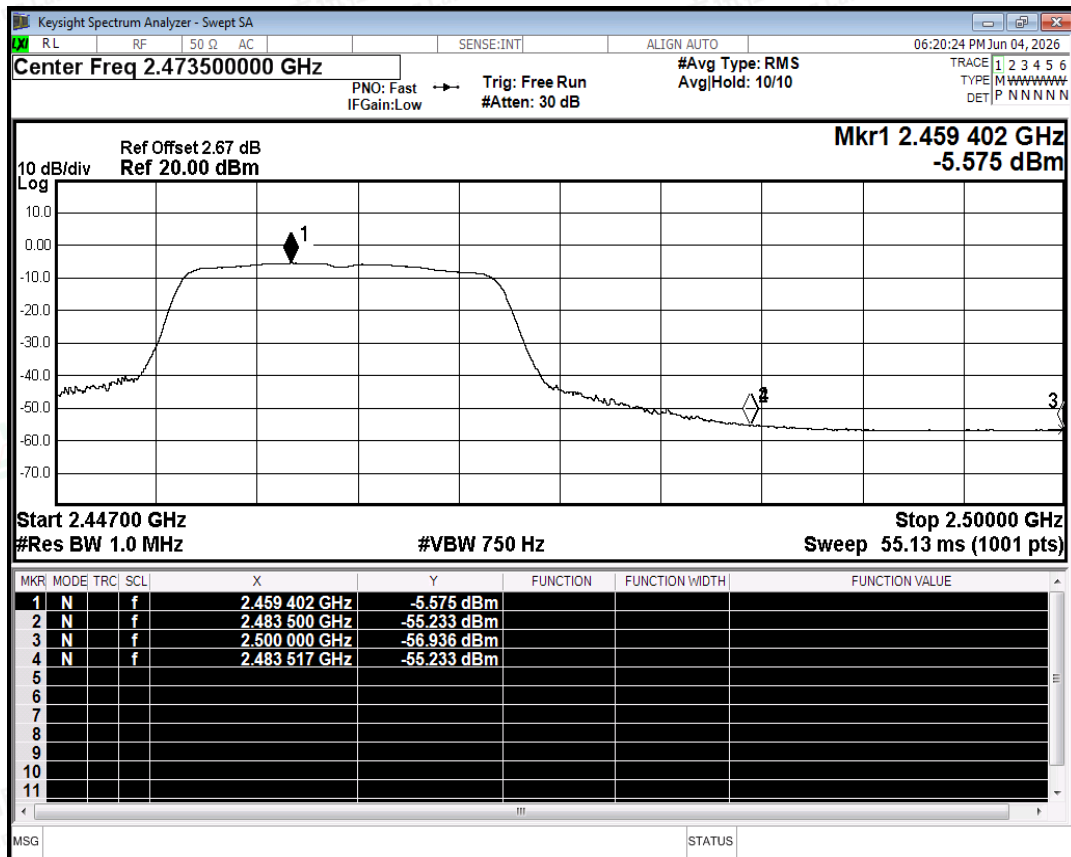
Restrict Band NVNT g 2412MHz Ant1 Peak



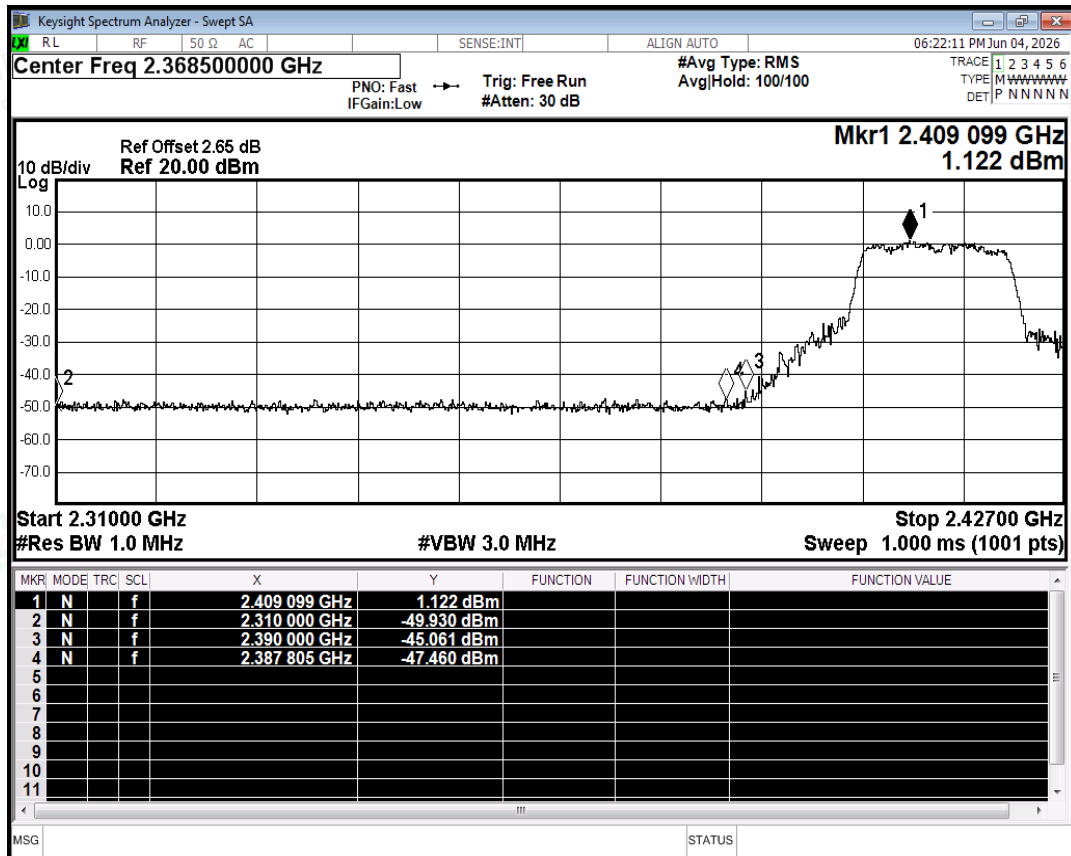
Restrict Band NVNT g 2412MHz Ant1 Average



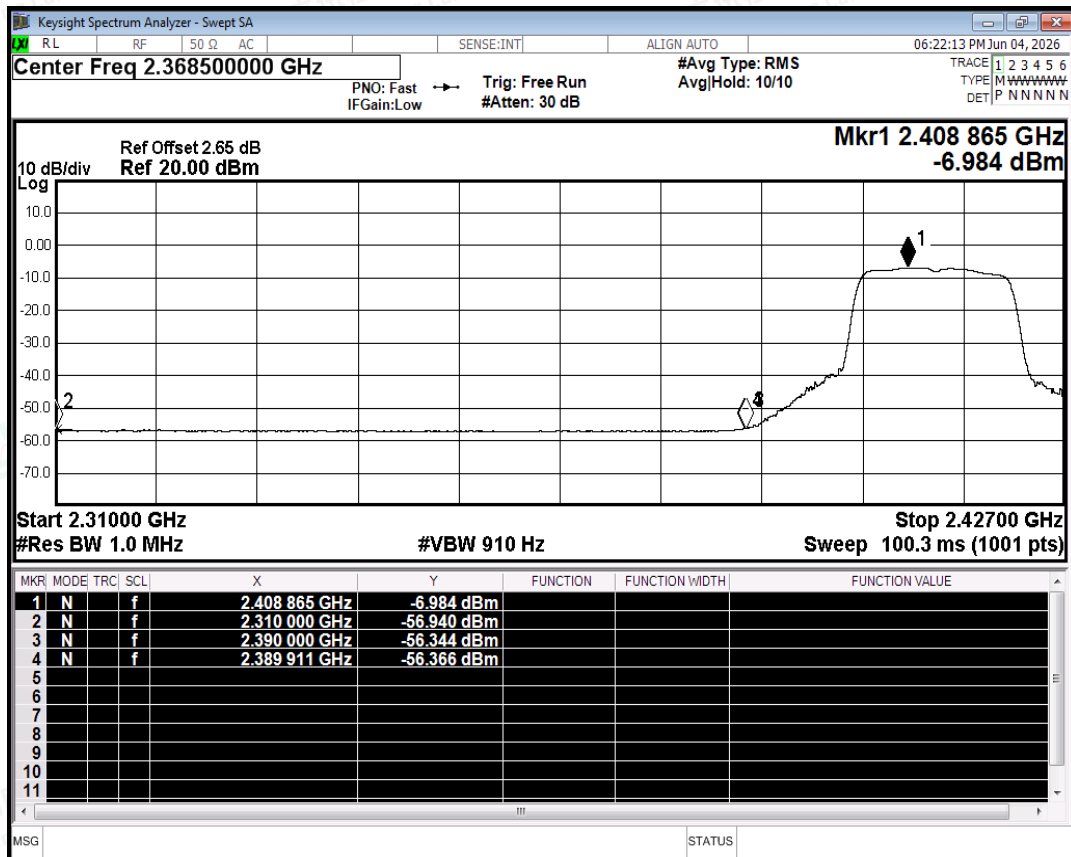
Restrict Band NVNT g 2462MHz Ant1 Peak



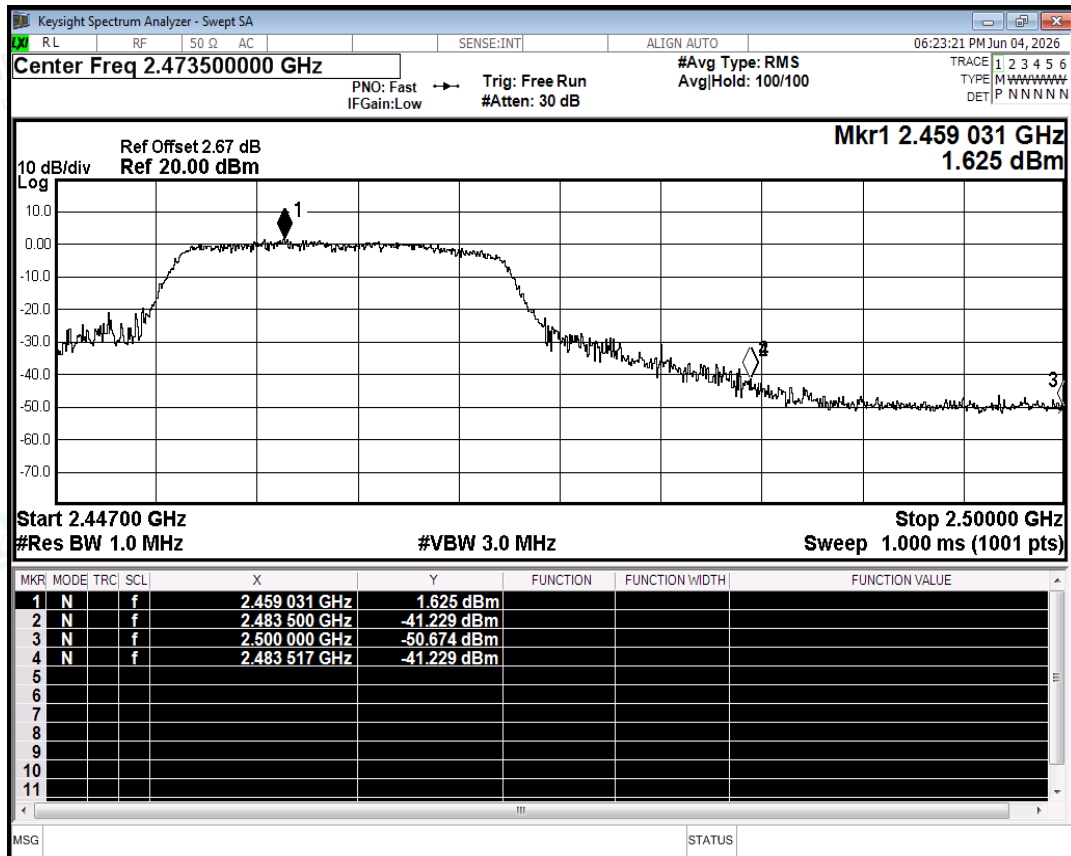
Restrict Band NVNT g 2462MHz Ant1 Average



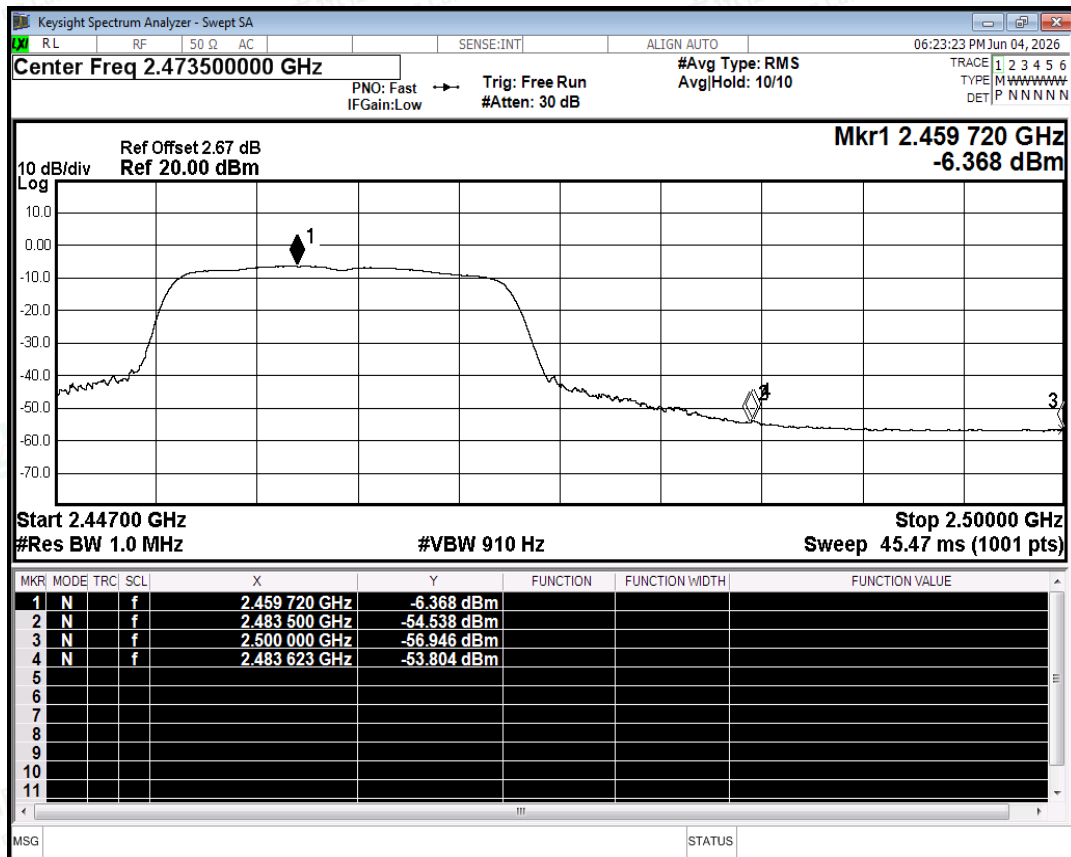
Restrict Band NVNT n20 2412MHz Ant1 Peak



Restrict Band NVNT n20 2412MHz Ant1 Average



Restrict Band NVNT n20 2462MHz Ant1 Peak



Restrict Band NVNT n20 2462MHz Ant1 Average