

RF Test Data for 2.4G WiFi

(Conducted Measurements)

General Description of EUT	
Product Name:	Smart Feeder AI
Test Model:	AI-B20
Sample ID:	RW-C-202202-0042-4-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	Adapter(BI12T-050200-IU) Input: 100-240V 50/60Hz 0.5A Output: 5V2A 10.0W
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202202-0042-4	

1. Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	81.51	0.89	1.41
NVNT	b	2437	Ant1	76.87	1.14	1.41
NVNT	b	2462	Ant1	86.23	0.64	1.41
NVNT	g	2412	Ant1	53.41	2.72	9.09
NVNT	g	2437	Ant1	49.79	3.03	9.09
NVNT	g	2462	Ant1	53.61	2.71	9.09
NVNT	n(HT20)	2412	Ant1	54.85	2.61	8.33
NVNT	n(HT20)	2437	Ant1	51.88	2.85	8.33
NVNT	n(HT20)	2462	Ant1	55.67	2.54	8.33
NVNT	n(HT40)	2422	Ant1	42.64	3.7	12.5
NVNT	n(HT40)	2437	Ant1	12.15	9.15	14.29
NVNT	n(HT40)	2452	Ant1	13.88	8.58	14.29

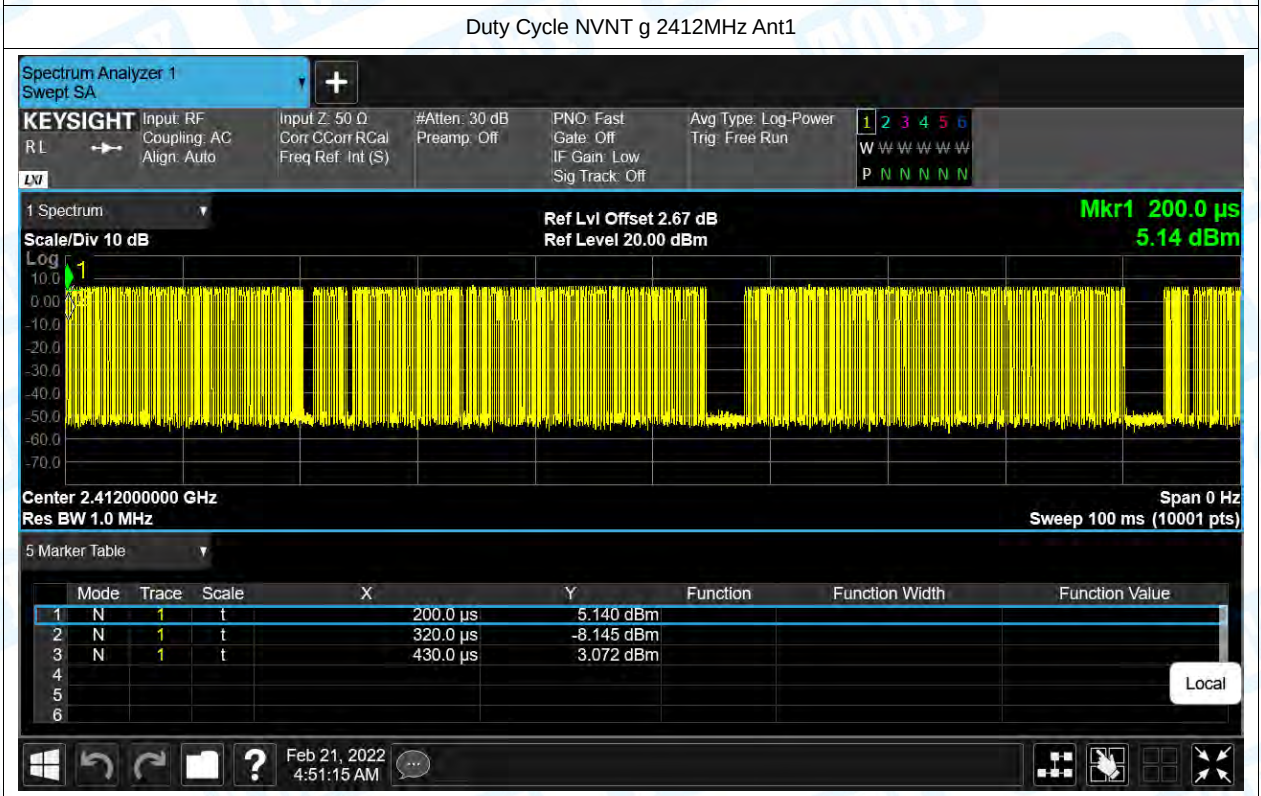
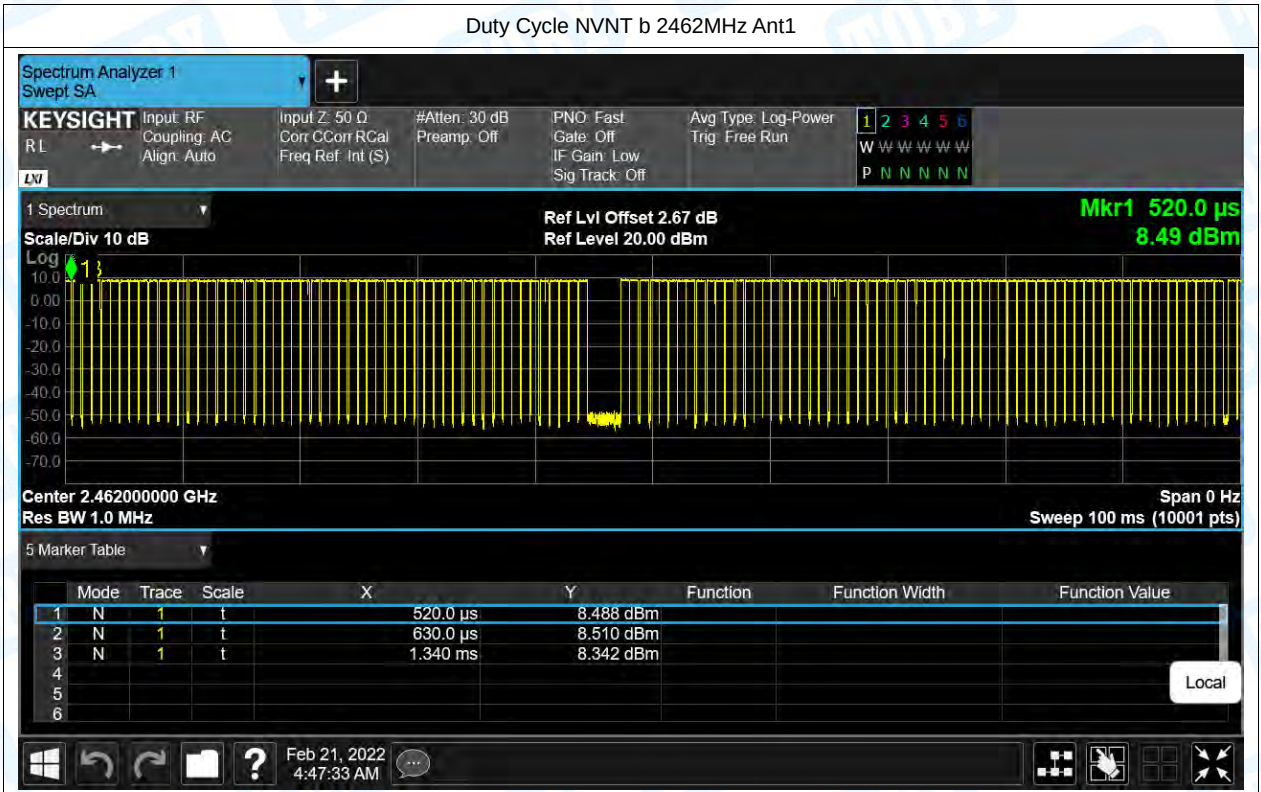
Test Graphs

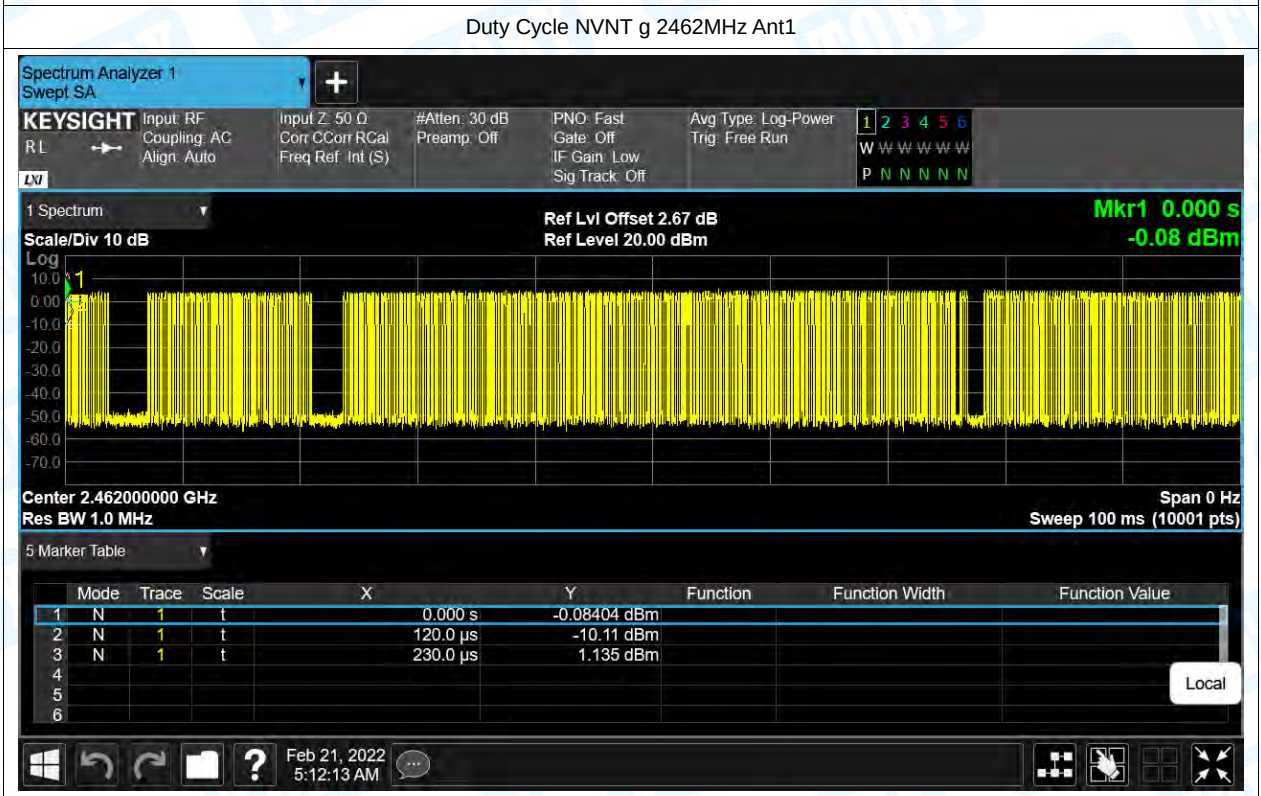
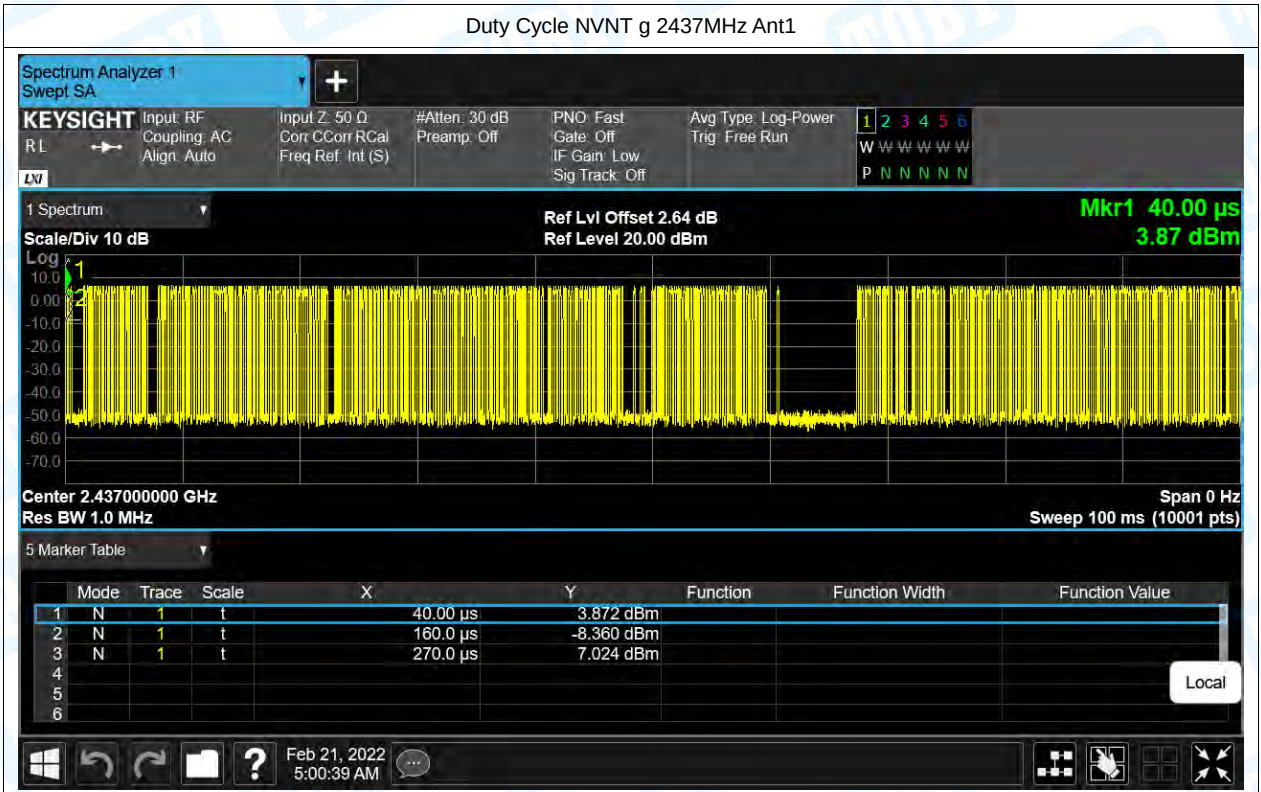
Duty Cycle NVNT b 2412MHz Ant1



Duty Cycle NVNT b 2437MHz Ant1





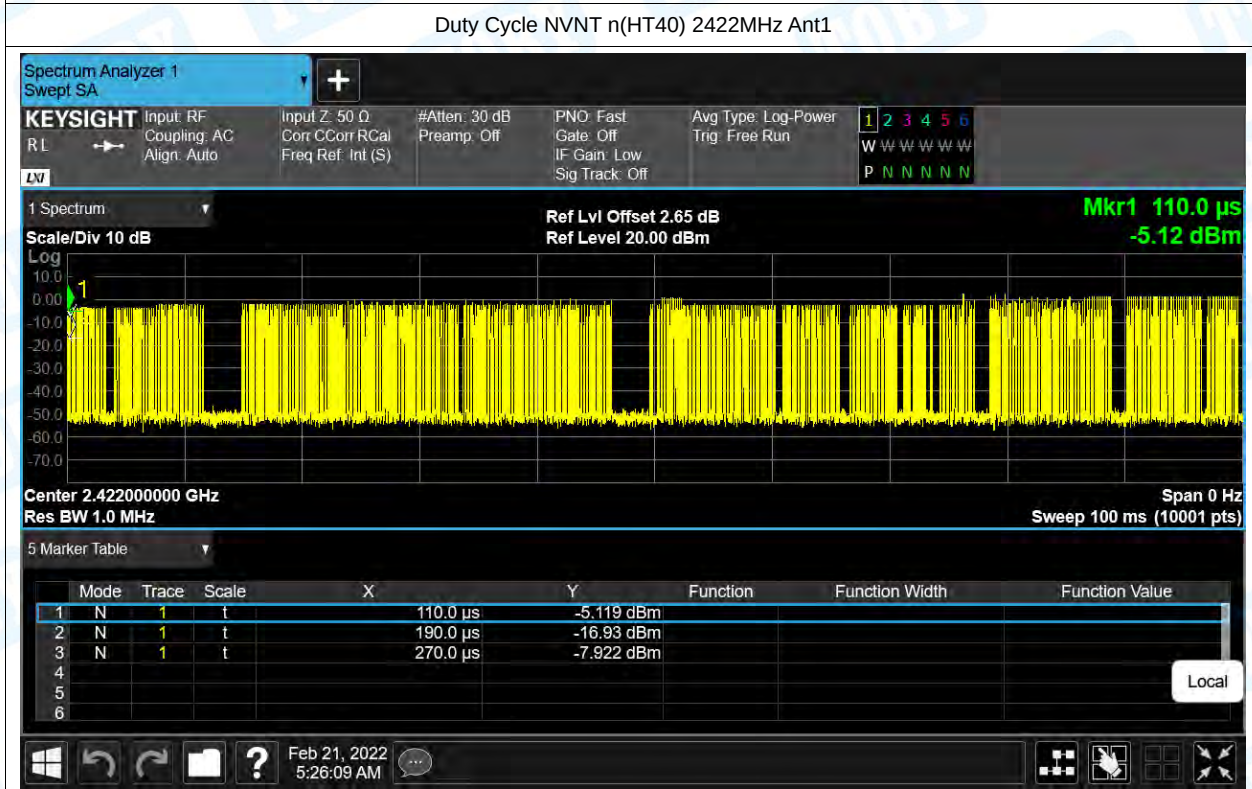
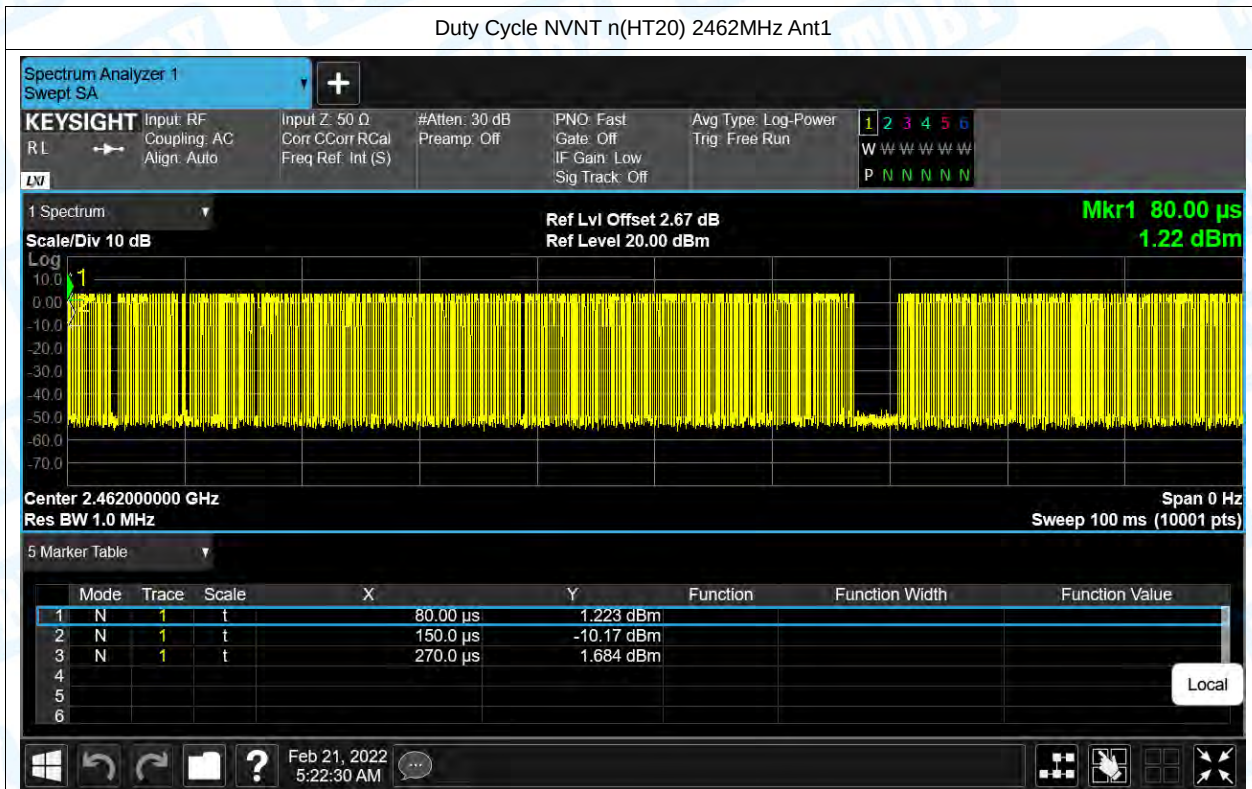


Duty Cycle NVNT n(HT20) 2412MHz Ant1



Duty Cycle NVNT n(HT20) 2437MHz Ant1





Duty Cycle NVNT n(HT40) 2437MHz Ant1



Duty Cycle NVNT n(HT40) 2452MHz Ant1



2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	16.687	30	Pass
NVNT	b	2437	Ant1	16.588	30	Pass
NVNT	b	2462	Ant1	16.115	30	Pass
NVNT	g	2412	Ant1	14.729	30	Pass
NVNT	g	2437	Ant1	14.163	30	Pass
NVNT	g	2462	Ant1	13.812	30	Pass
NVNT	n(HT20)	2412	Ant1	14.882	30	Pass
NVNT	n(HT20)	2437	Ant1	14.304	30	Pass
NVNT	n(HT20)	2462	Ant1	13.833	30	Pass
NVNT	n(HT40)	2422	Ant1	13.679	30	Pass
NVNT	n(HT40)	2437	Ant1	8.173	30	Pass
NVNT	n(HT40)	2452	Ant1	9.038	30	Pass

3. -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.02	0.5	Pass
NVNT	b	2437	Ant1	8.02	0.5	Pass
NVNT	b	2462	Ant1	8.07	0.5	Pass
NVNT	g	2412	Ant1	15.73	0.5	Pass
NVNT	g	2437	Ant1	16.29	0.5	Pass
NVNT	g	2462	Ant1	16.33	0.5	Pass
NVNT	n(HT20)	2412	Ant1	16.08	0.5	Pass
NVNT	n(HT20)	2437	Ant1	17.02	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.06	0.5	Pass
NVNT	n(HT40)	2422	Ant1	35.47	0.5	Pass
NVNT	n(HT40)	2437	Ant1	34.94	0.5	Pass
NVNT	n(HT40)	2452	Ant1	35.42	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



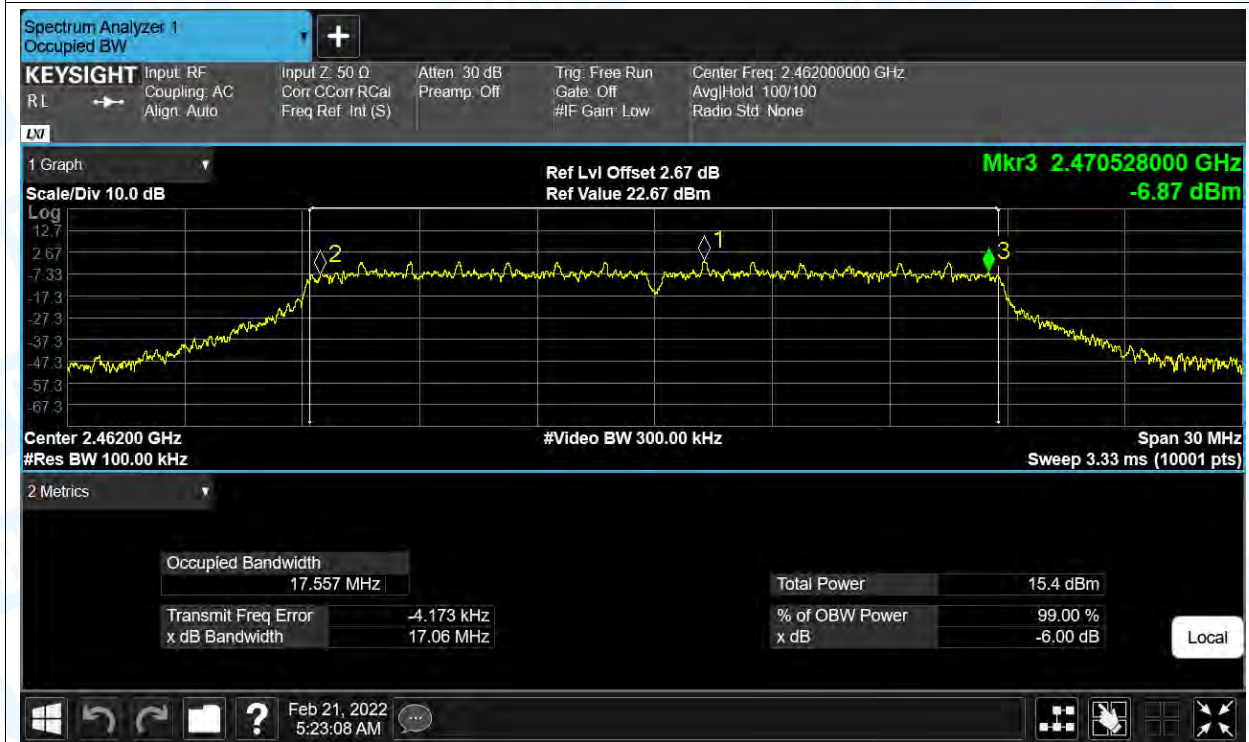
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



-6dB Bandwidth NVNT n(HT20) 2462MHz Ant1



-6dB Bandwidth NVNT n(HT40) 2422MHz Ant1



-6dB Bandwidth NVNT n(HT40) 2437MHz Ant1



-6dB Bandwidth NVNT n(HT40) 2452MHz Ant1



4. Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	13.346
NVNT	b	2437	Ant1	13.255
NVNT	b	2462	Ant1	13.236
NVNT	g	2412	Ant1	16.514
NVNT	g	2437	Ant1	16.458
NVNT	g	2462	Ant1	16.518
NVNT	n(HT20)	2412	Ant1	17.622
NVNT	n(HT20)	2437	Ant1	17.588
NVNT	n(HT20)	2462	Ant1	17.57
NVNT	n(HT40)	2422	Ant1	36.105
NVNT	n(HT40)	2437	Ant1	36.111
NVNT	n(HT40)	2452	Ant1	36.04

Test Graphs

OBW NVNT b 2412MHz Ant1



OBW NVNT b 2437MHz Ant1



OBW NVNT b 2462MHz Ant1



OBW NVNT g 2412MHz Ant1



OBW NVNT g 2437MHz Ant1



OBW NVNT g 2462MHz Ant1



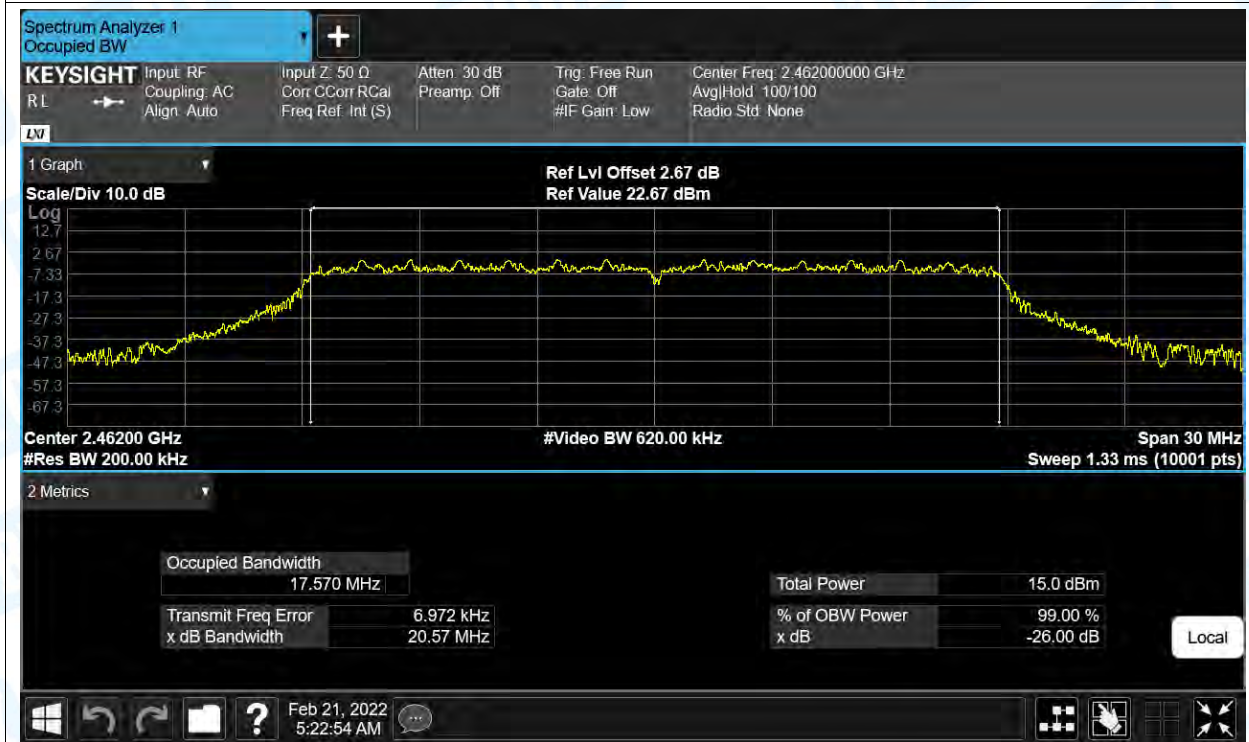
OBW NVNT n(HT20) 2412MHz Ant1



OBW NVNT n(HT20) 2437MHz Ant1



OBW NVNT n(HT20) 2462MHz Ant1



OBW NVNT n(HT40) 2422MHz Ant1



OBW NVNT n(HT40) 2437MHz Ant1



OBW NVNT n(HT40) 2452MHz Ant1



5. Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	-8.536	8	Pass
NVNT	b	2437	Ant1	-8.729	8	Pass
NVNT	b	2462	Ant1	-9.715	8	Pass
NVNT	g	2412	Ant1	-15.119	8	Pass
NVNT	g	2437	Ant1	-15.36	8	Pass
NVNT	g	2462	Ant1	-15.694	8	Pass
NVNT	n(HT20)	2412	Ant1	-14.097	8	Pass
NVNT	n(HT20)	2437	Ant1	-13.562	8	Pass
NVNT	n(HT20)	2462	Ant1	-15.353	8	Pass
NVNT	n(HT40)	2422	Ant1	-18.491	8	Pass
NVNT	n(HT40)	2437	Ant1	-20.826	8	Pass
NVNT	n(HT40)	2452	Ant1	-18.33	8	Pass

Test Graphs

PSD NVNT b 2412MHz Ant1



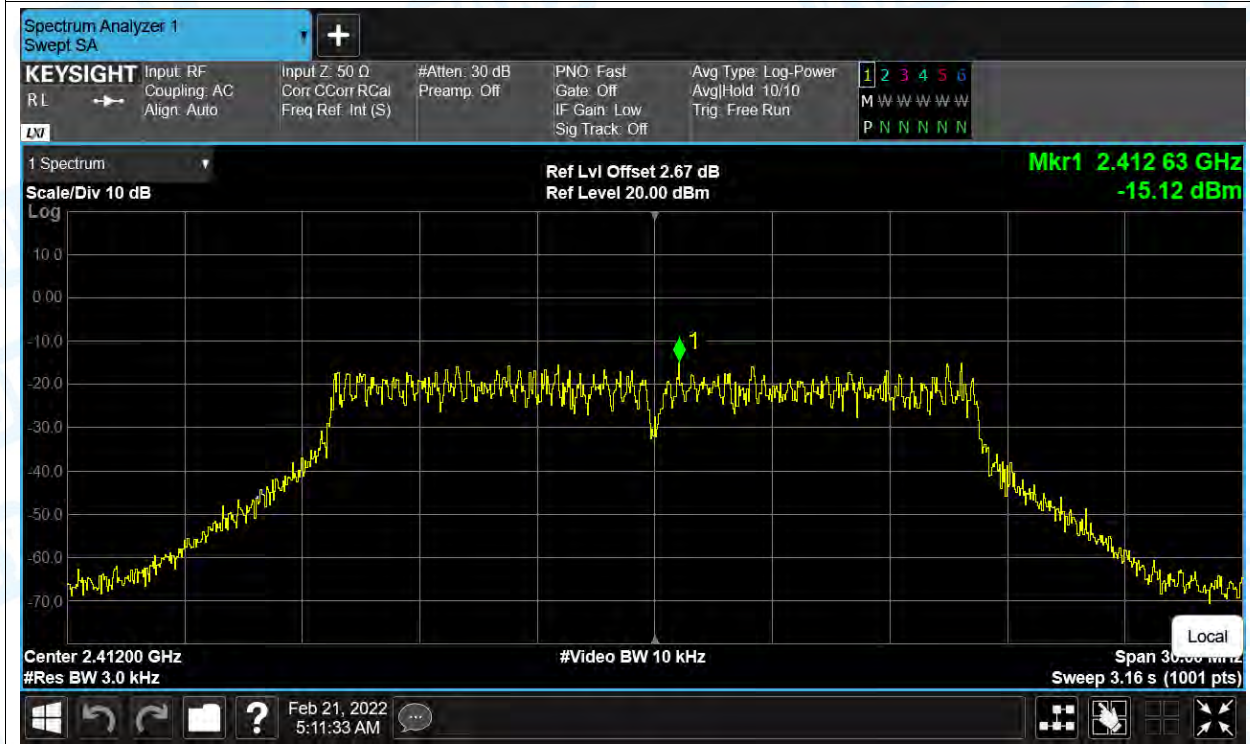
PSD NVNT b 2437MHz Ant1



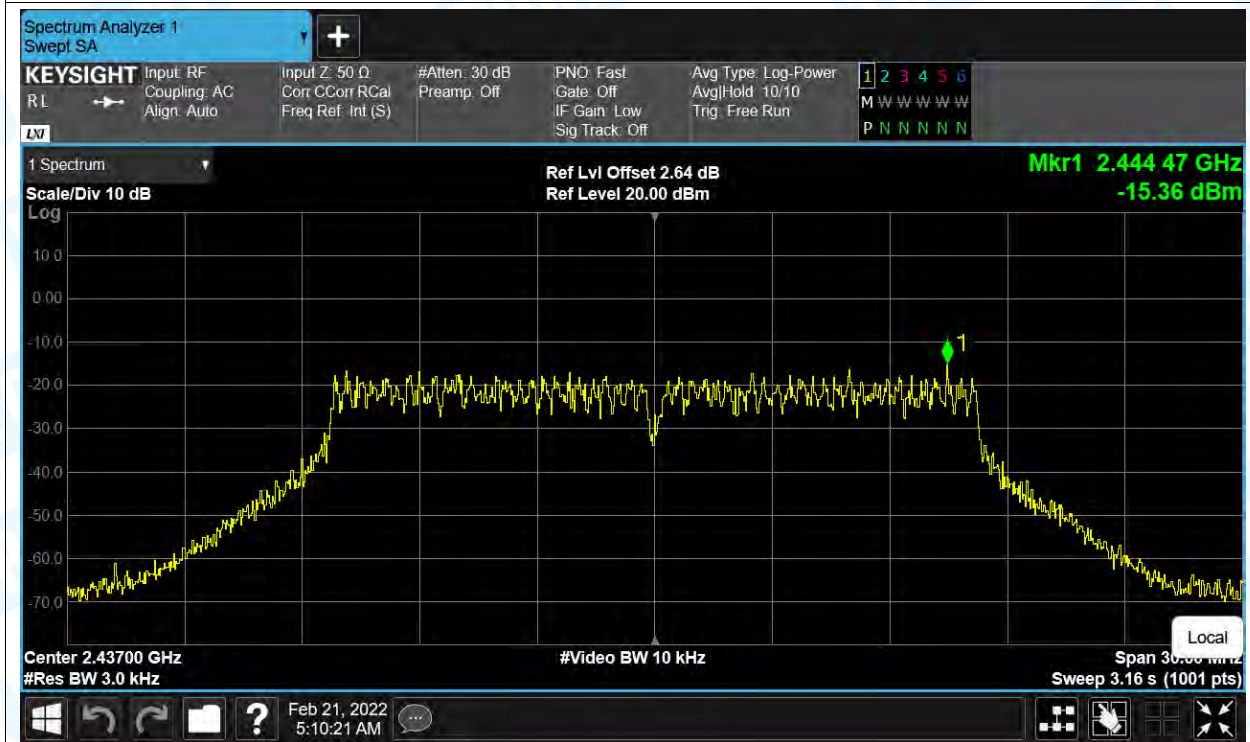
PSD NVNT b 2462MHz Ant1



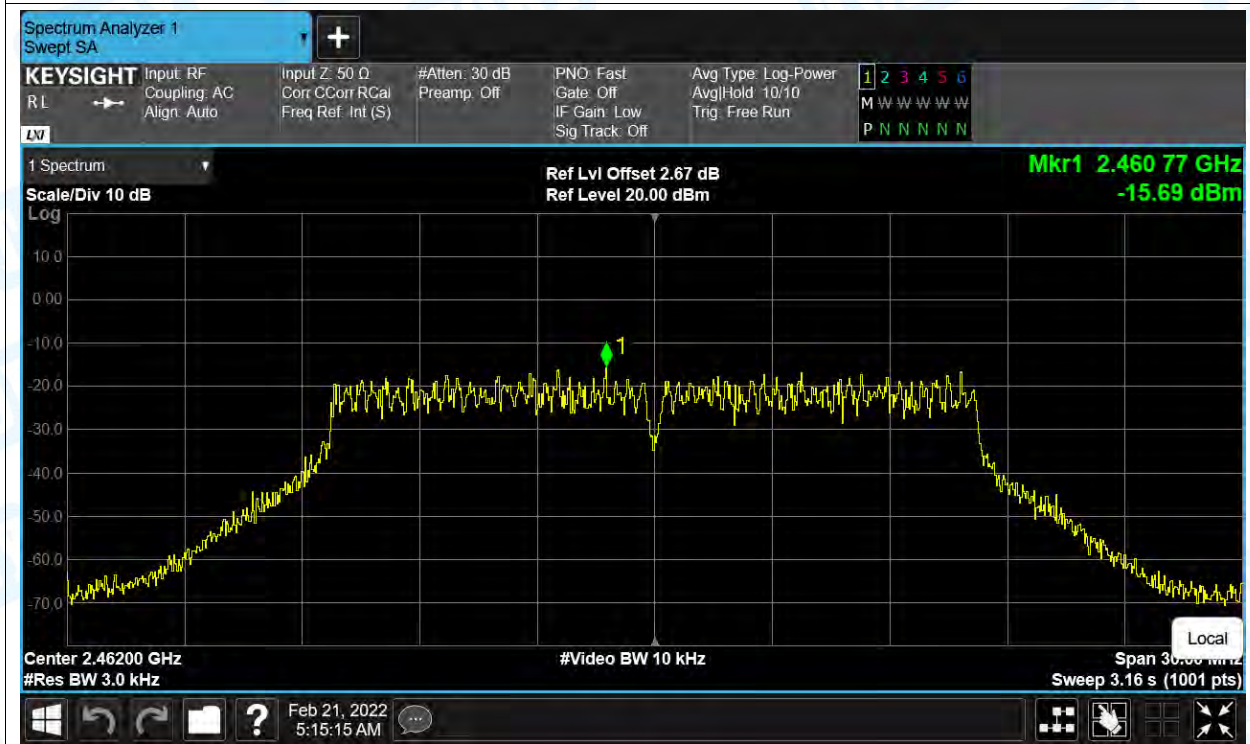
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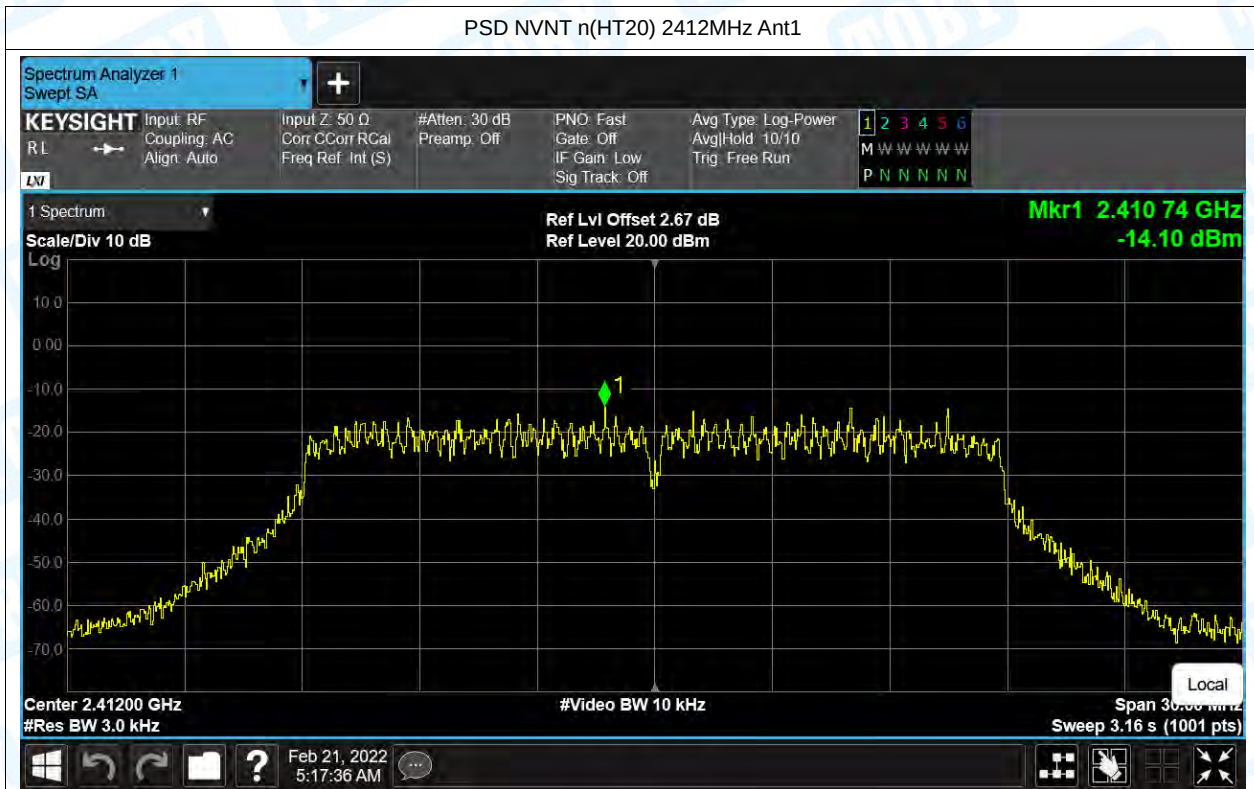


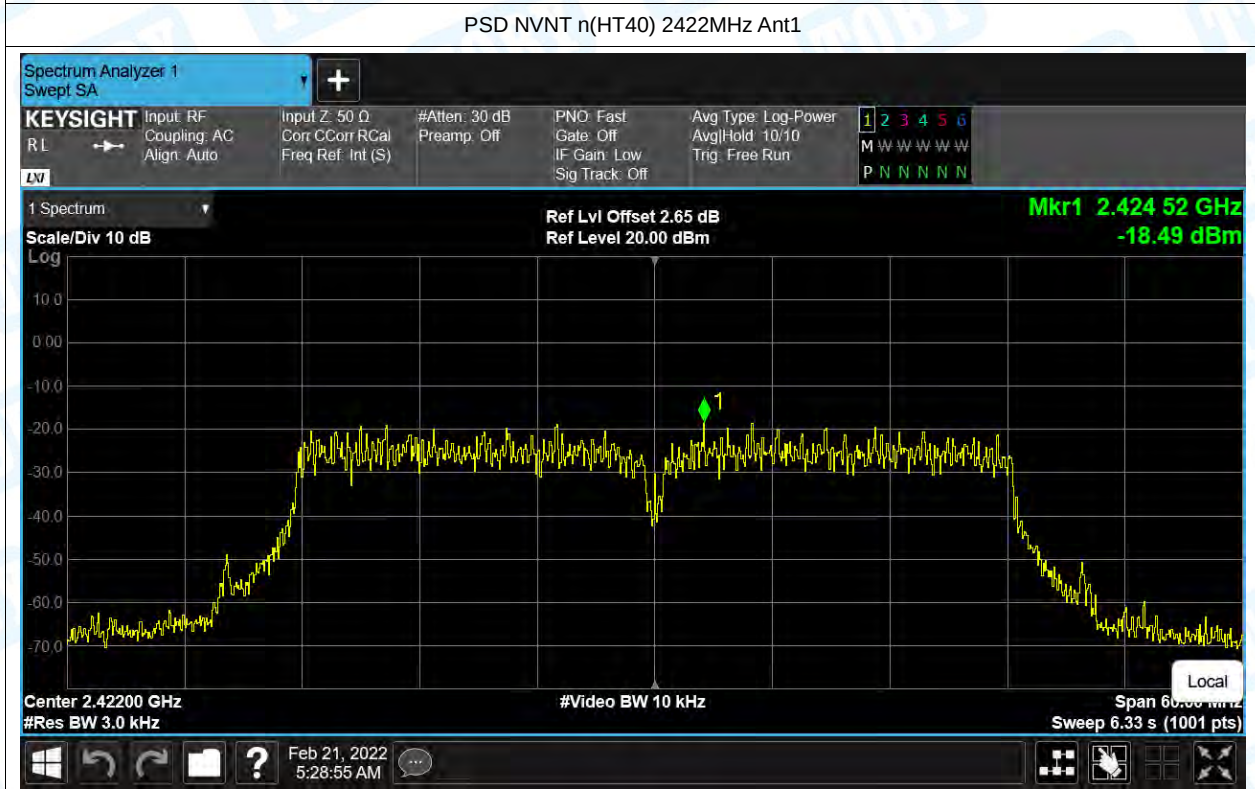
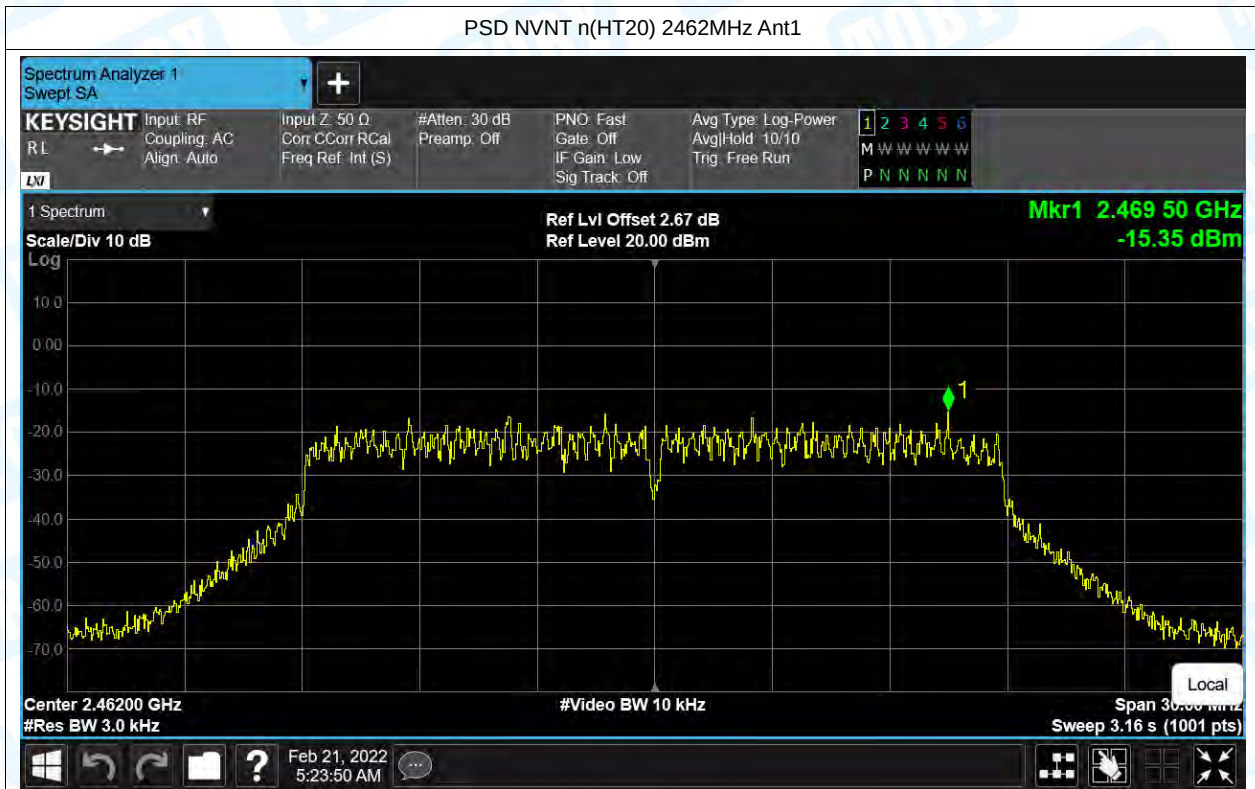
PSD NVNT g 2437MHz Ant1



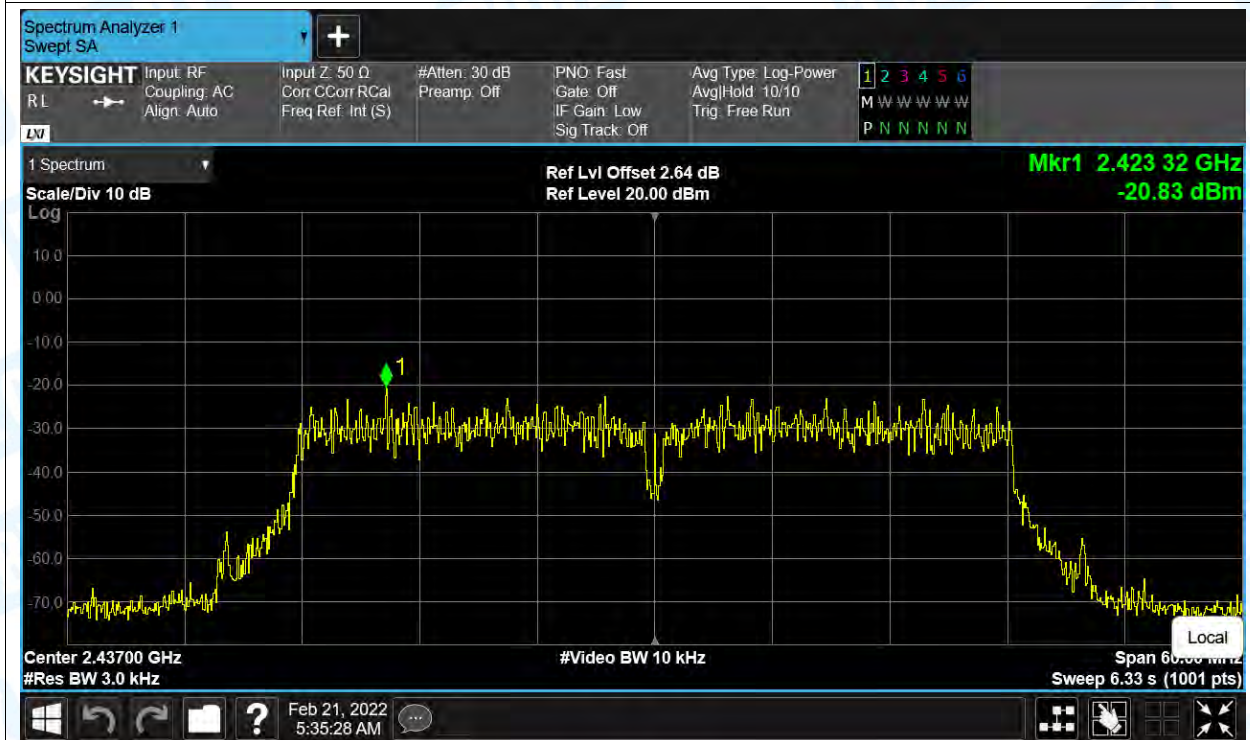
PSD NVNT g 2462MHz Ant1







PSD NVNT n(HT40) 2437MHz Ant1



PSD NVNT n(HT40) 2452MHz Ant1



6. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-58.37	-20	Pass
NVNT	b	2462	Ant1	-60.05	-20	Pass
NVNT	g	2412	Ant1	-49.22	-20	Pass
NVNT	g	2462	Ant1	-53.44	-20	Pass
NVNT	n(HT20)	2412	Ant1	-51.59	-20	Pass
NVNT	n(HT20)	2462	Ant1	-52.16	-20	Pass
NVNT	n(HT40)	2422	Ant1	-45.73	-20	Pass
NVNT	n(HT40)	2452	Ant1	-44.02	-20	Pass



Band Edge NVNT b 2462MHz Ant1 Ref



Band Edge NVNT b 2462MHz Ant1 Emission

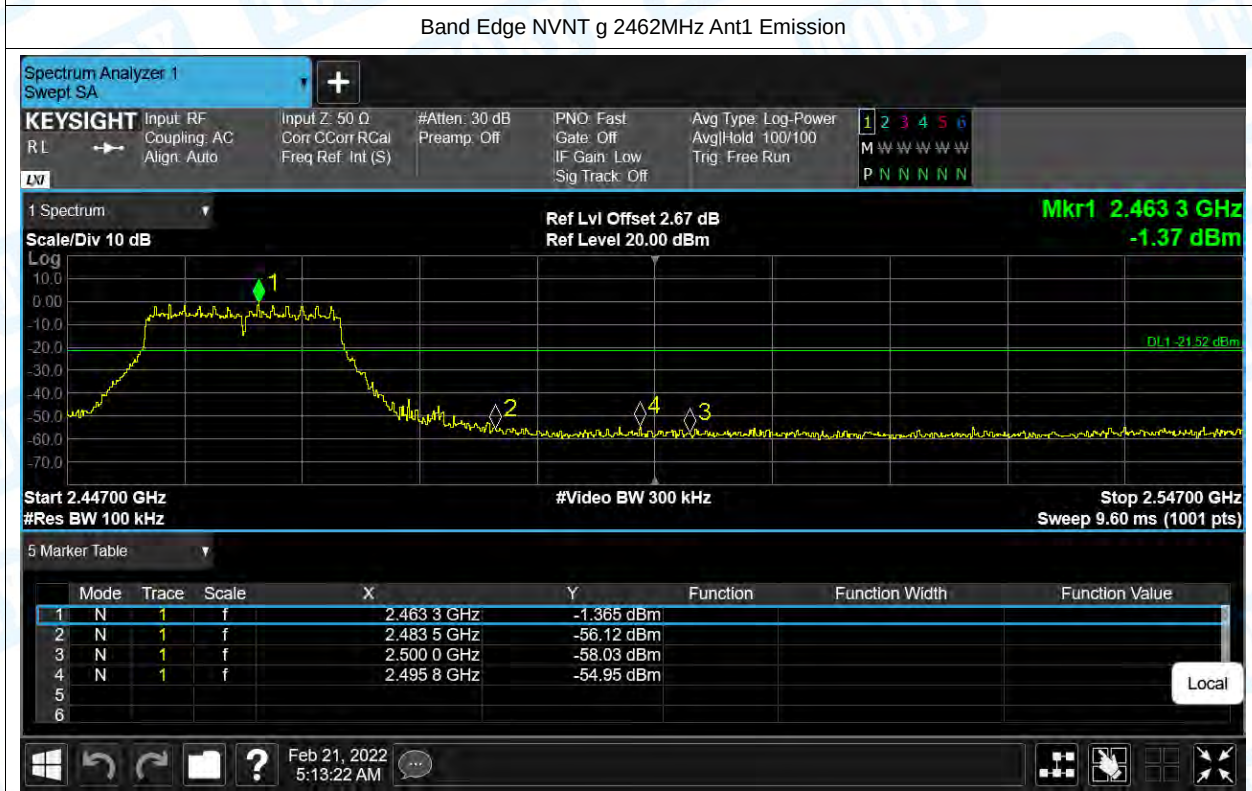
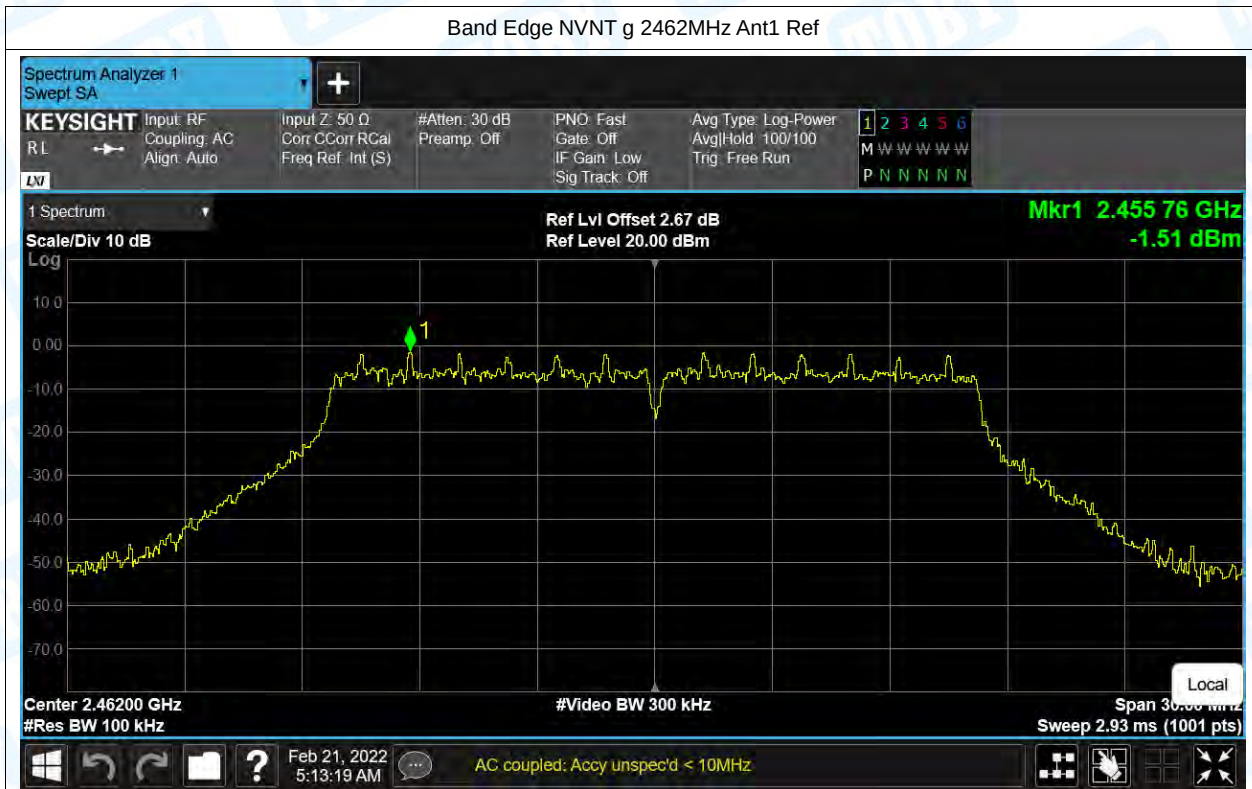


Band Edge NVNT g 2412MHz Ant1 Ref



Band Edge NVNT g 2412MHz Ant1 Emission

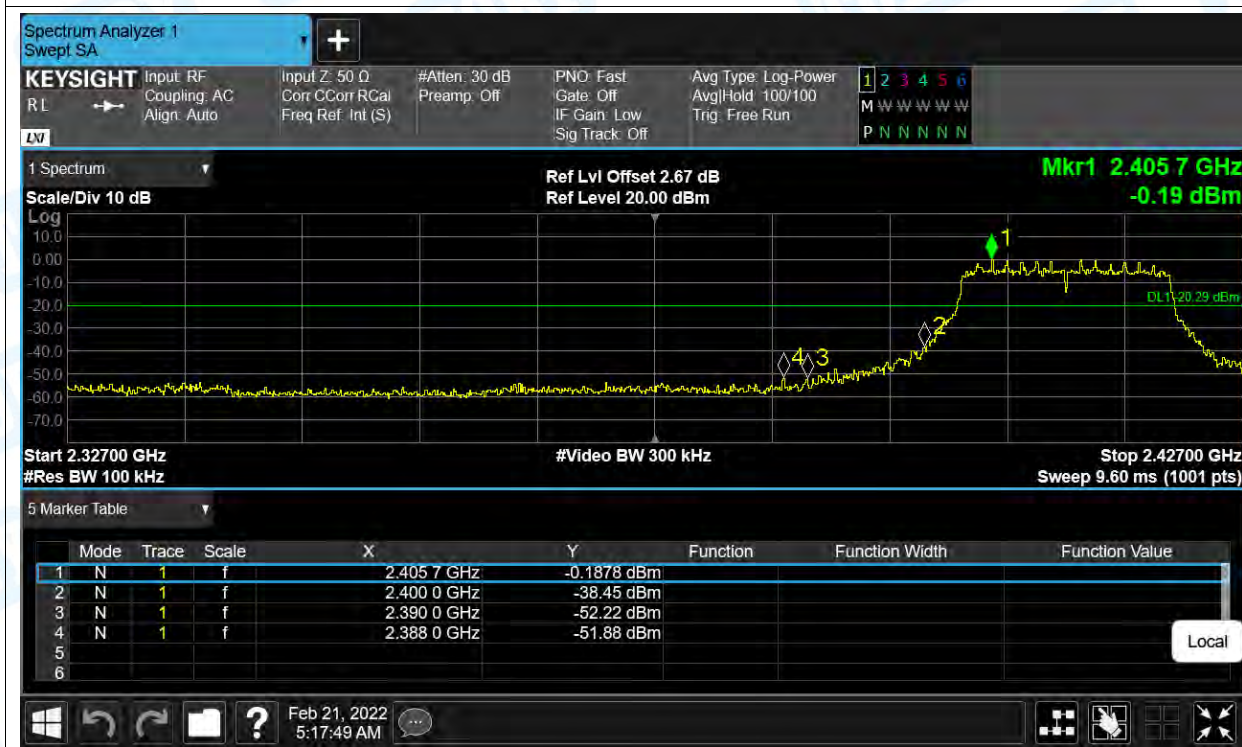


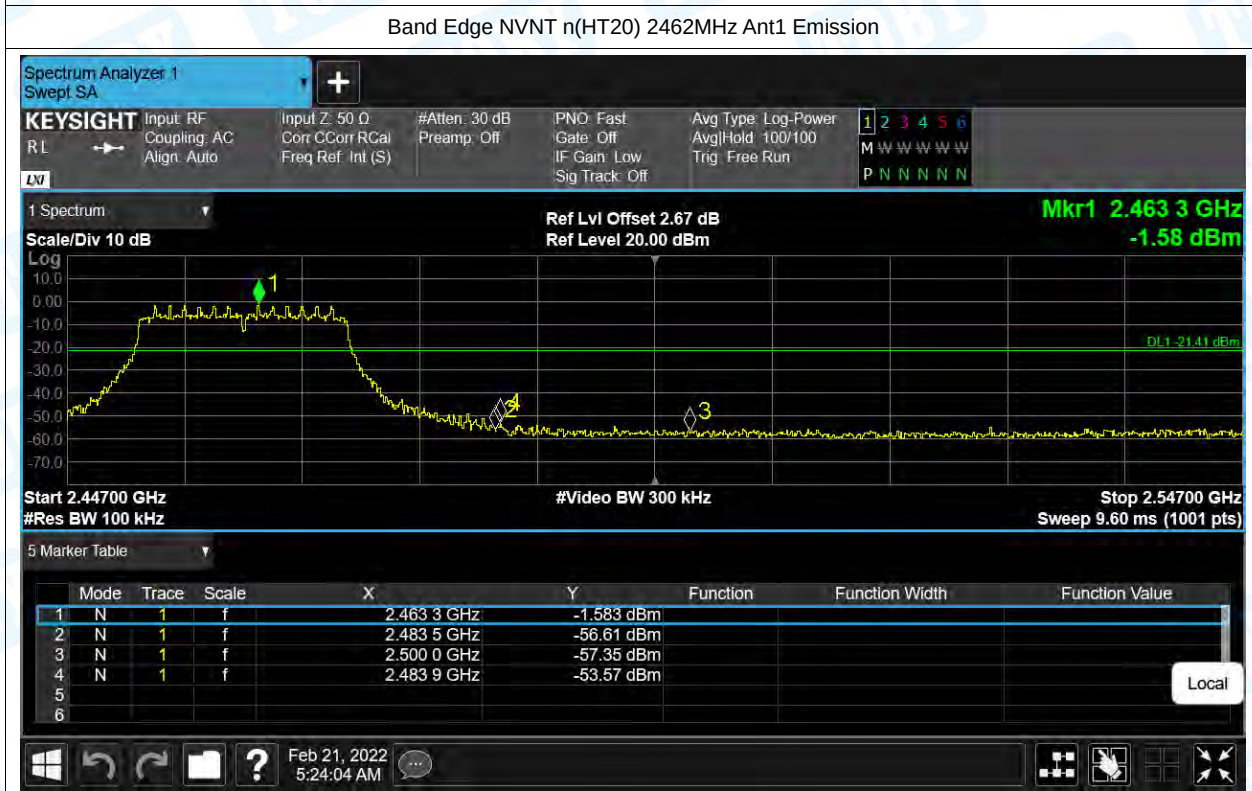
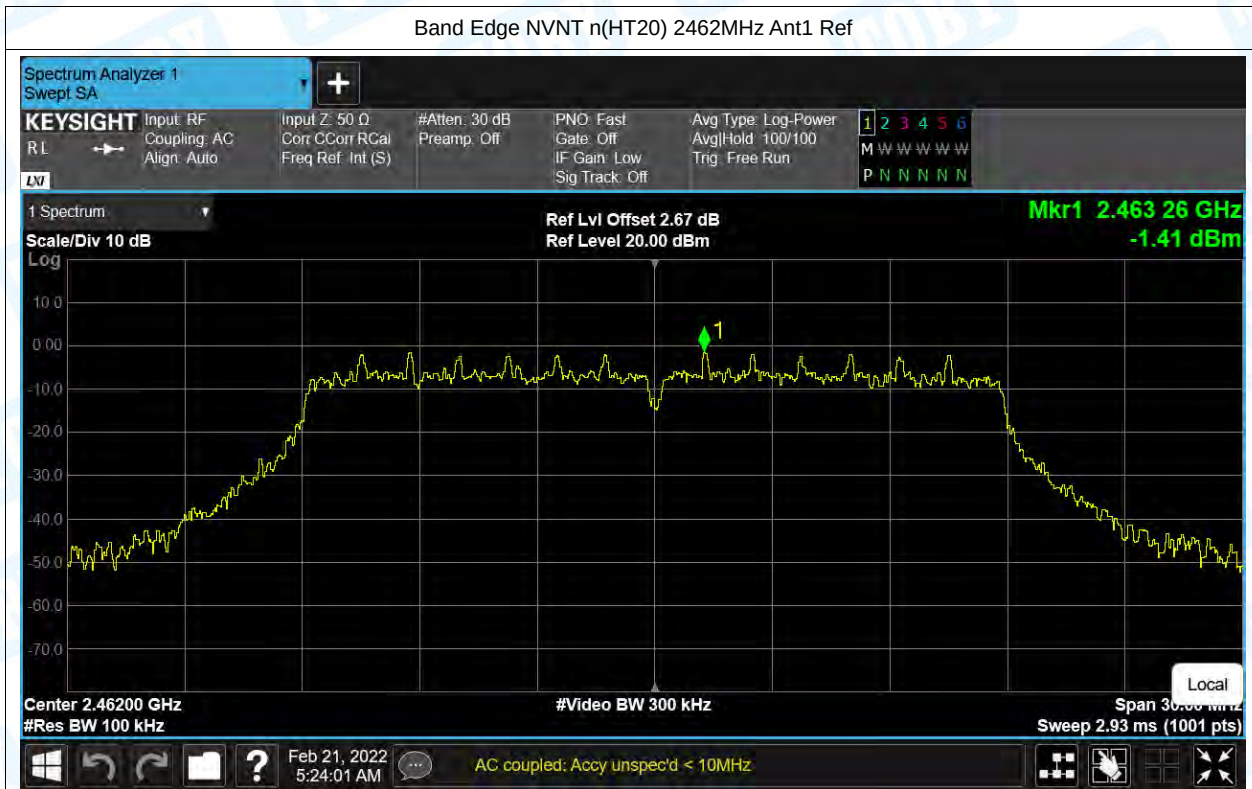


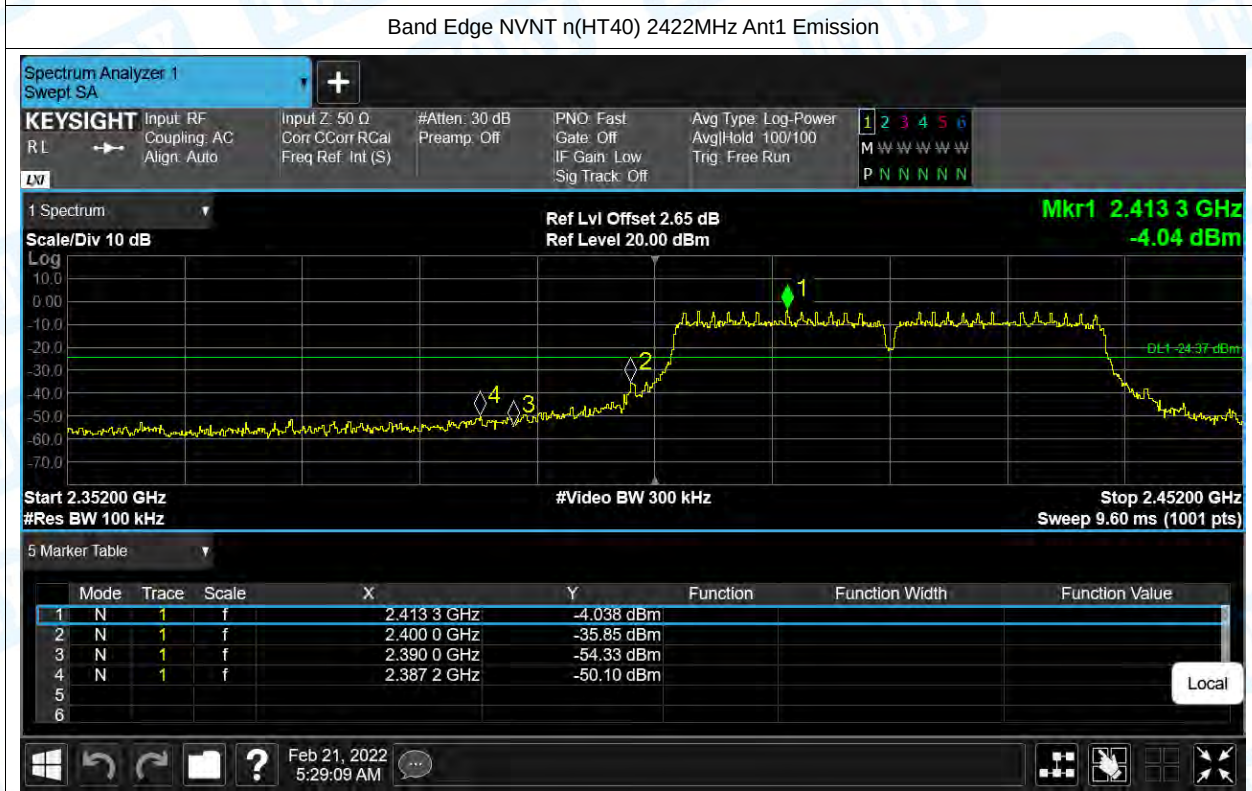
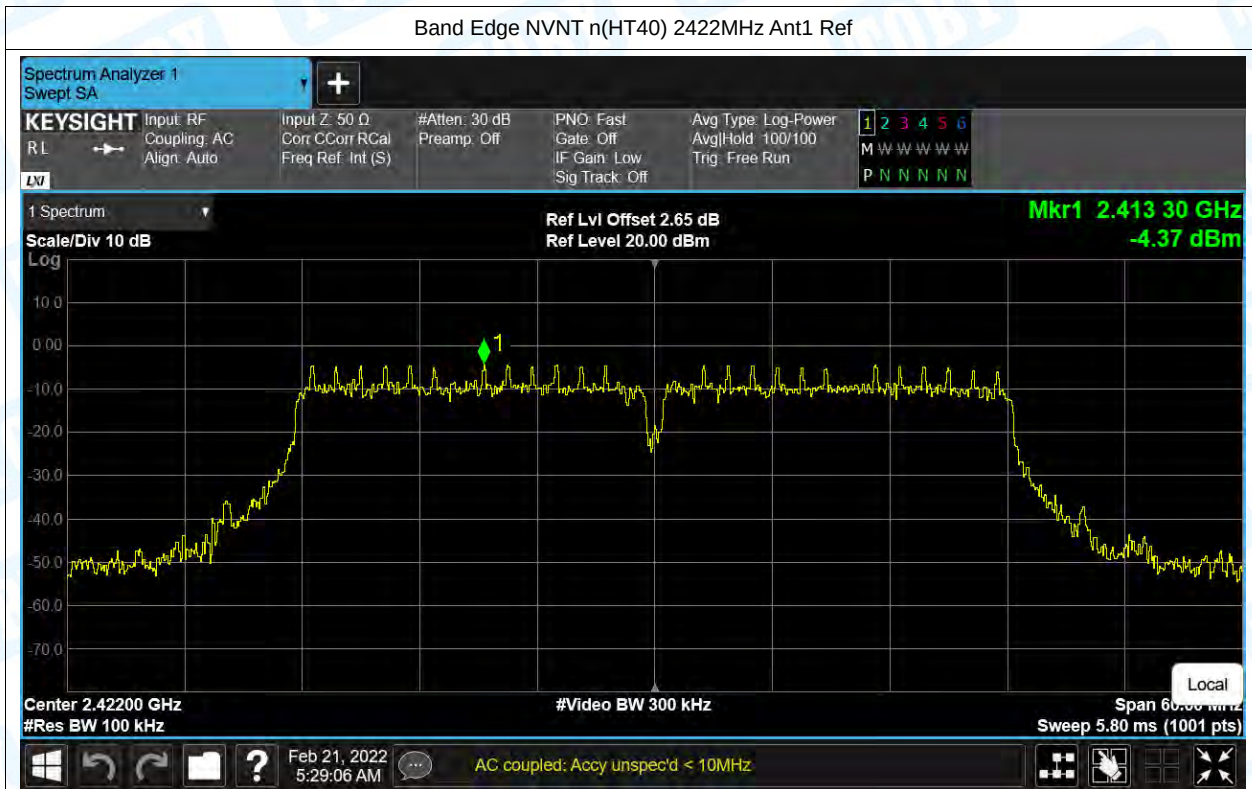
Band Edge NVNT n(HT20) 2412MHz Ant1 Ref

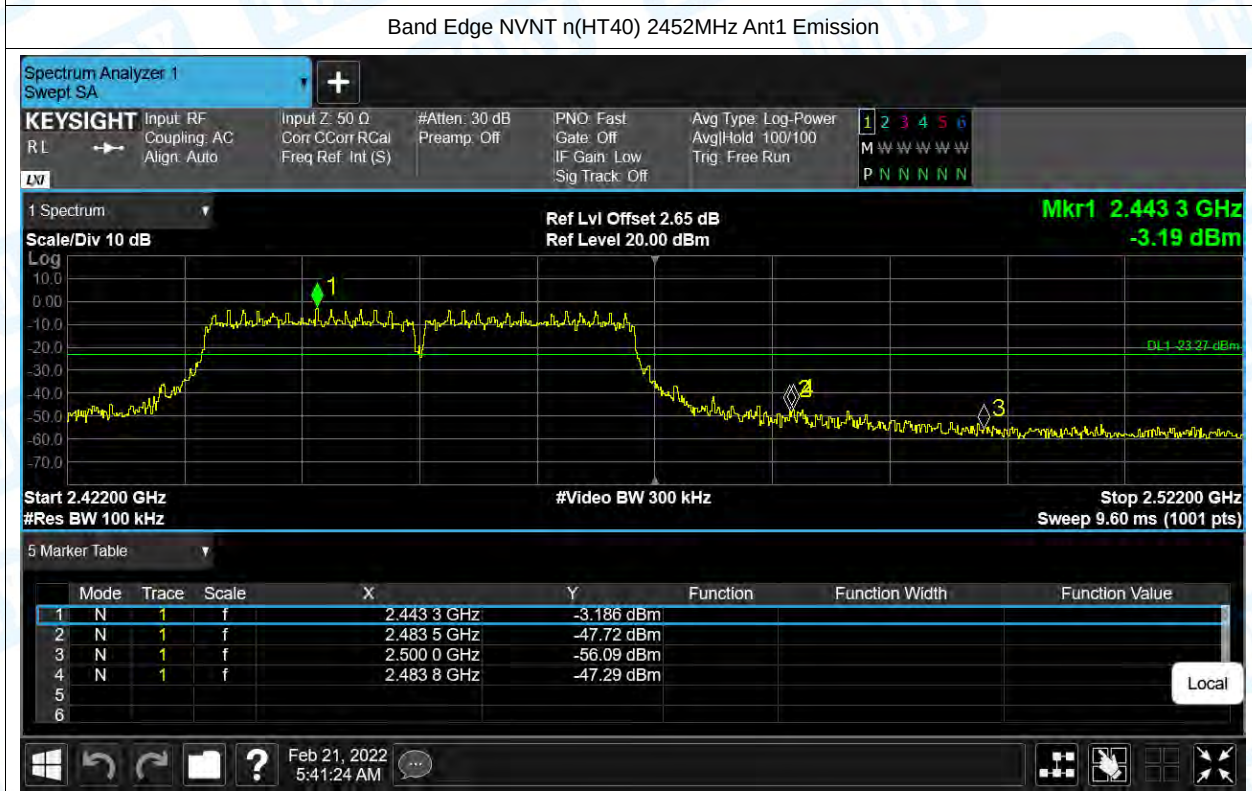
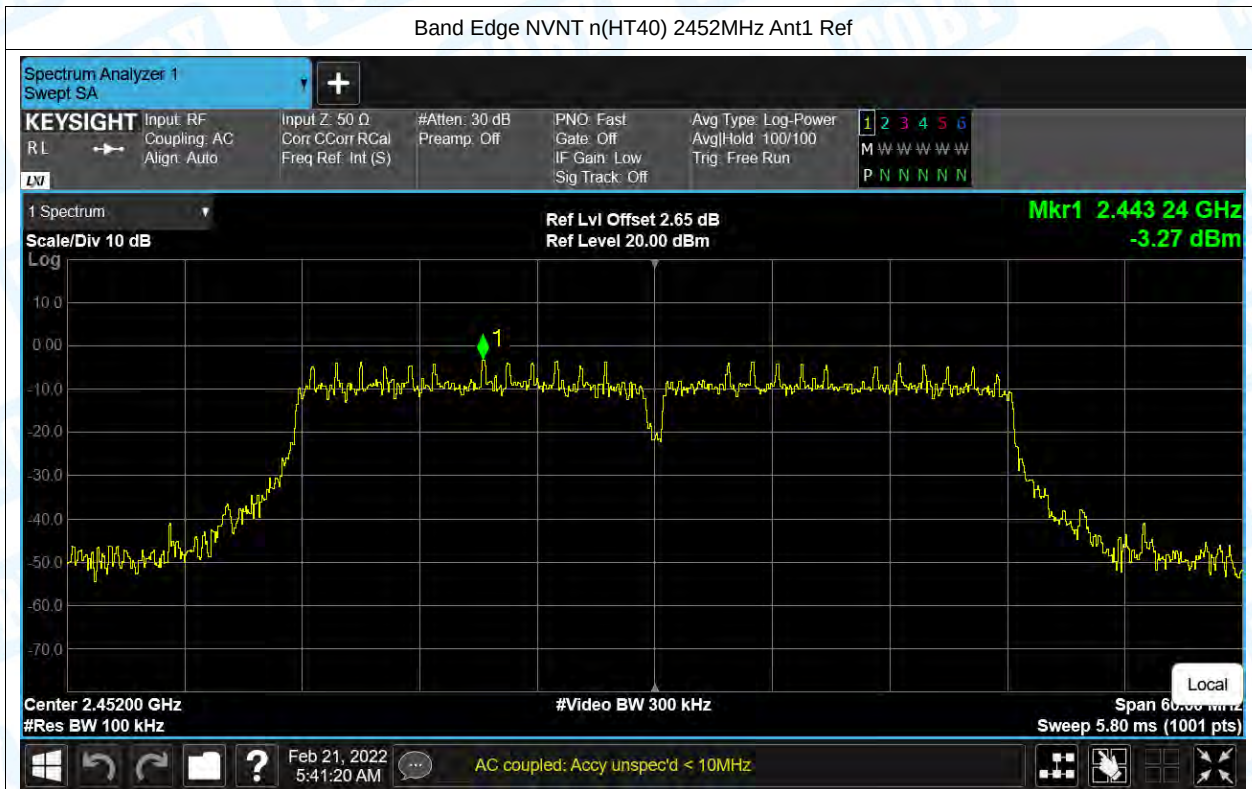


Band Edge NVNT n(HT20) 2412MHz Ant1 Emission









7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-34.63	-20	Pass
NVNT	b	2437	Ant1	-33.4	-20	Pass
NVNT	b	2462	Ant1	-33	-20	Pass
NVNT	g	2412	Ant1	-36.77	-20	Pass
NVNT	g	2437	Ant1	-37.22	-20	Pass
NVNT	g	2462	Ant1	-39.89	-20	Pass
NVNT	n(HT20)	2412	Ant1	-38.44	-20	Pass
NVNT	n(HT20)	2437	Ant1	-39.11	-20	Pass
NVNT	n(HT20)	2462	Ant1	-40.76	-20	Pass
NVNT	n(HT40)	2422	Ant1	-37.76	-20	Pass
NVNT	n(HT40)	2437	Ant1	-37.72	-20	Pass
NVNT	n(HT40)	2452	Ant1	-35.65	-20	Pass

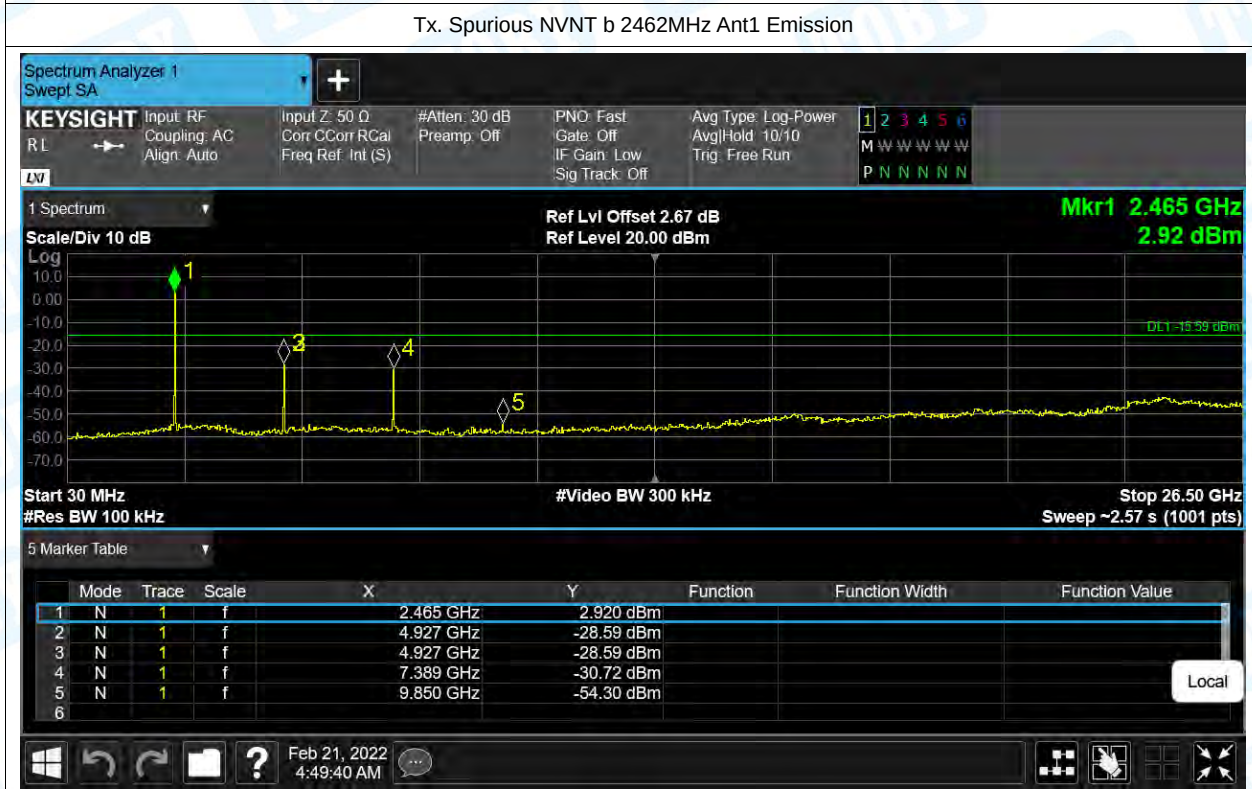
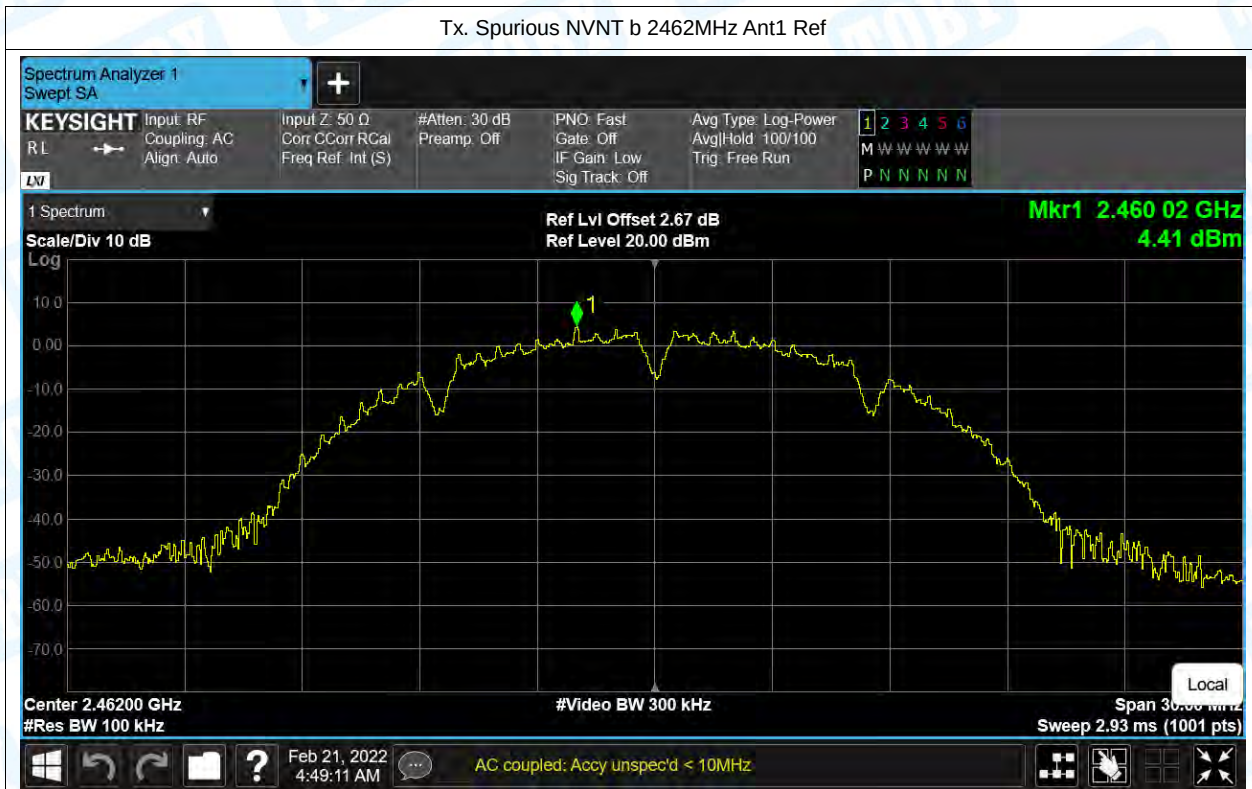


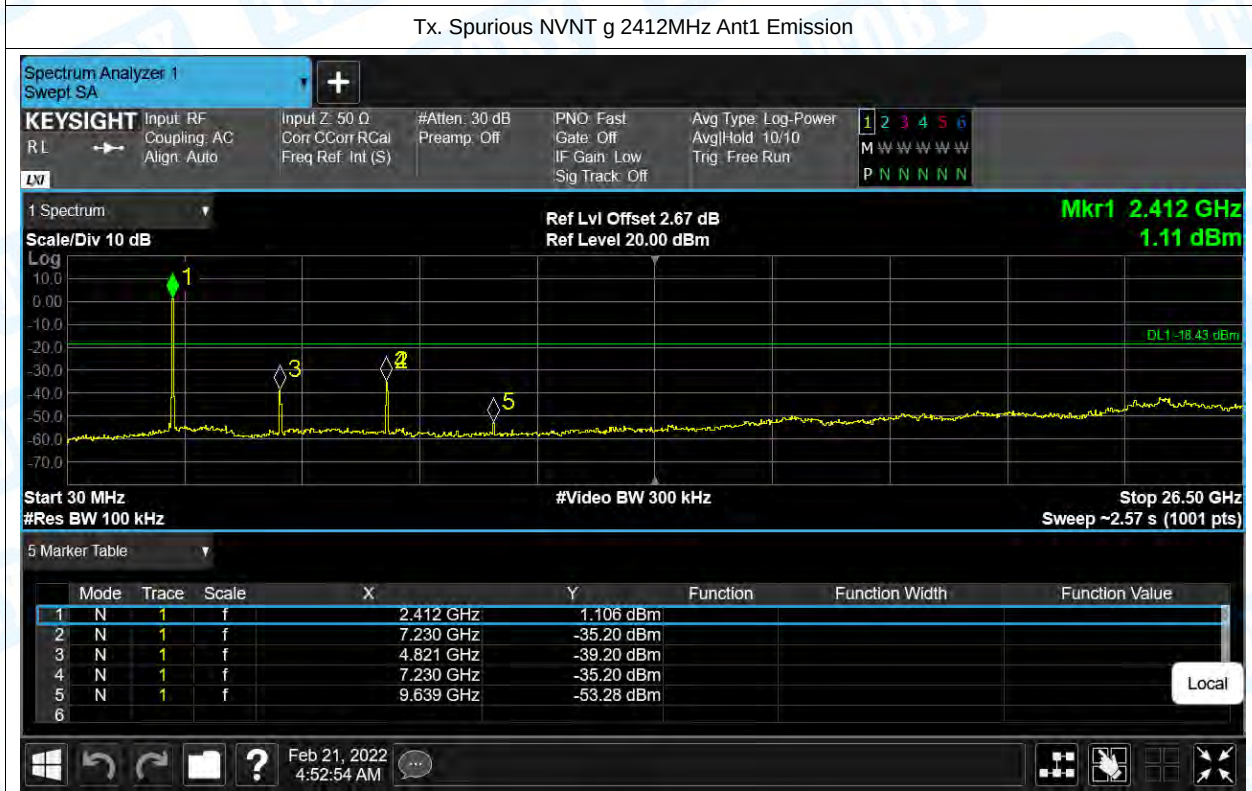
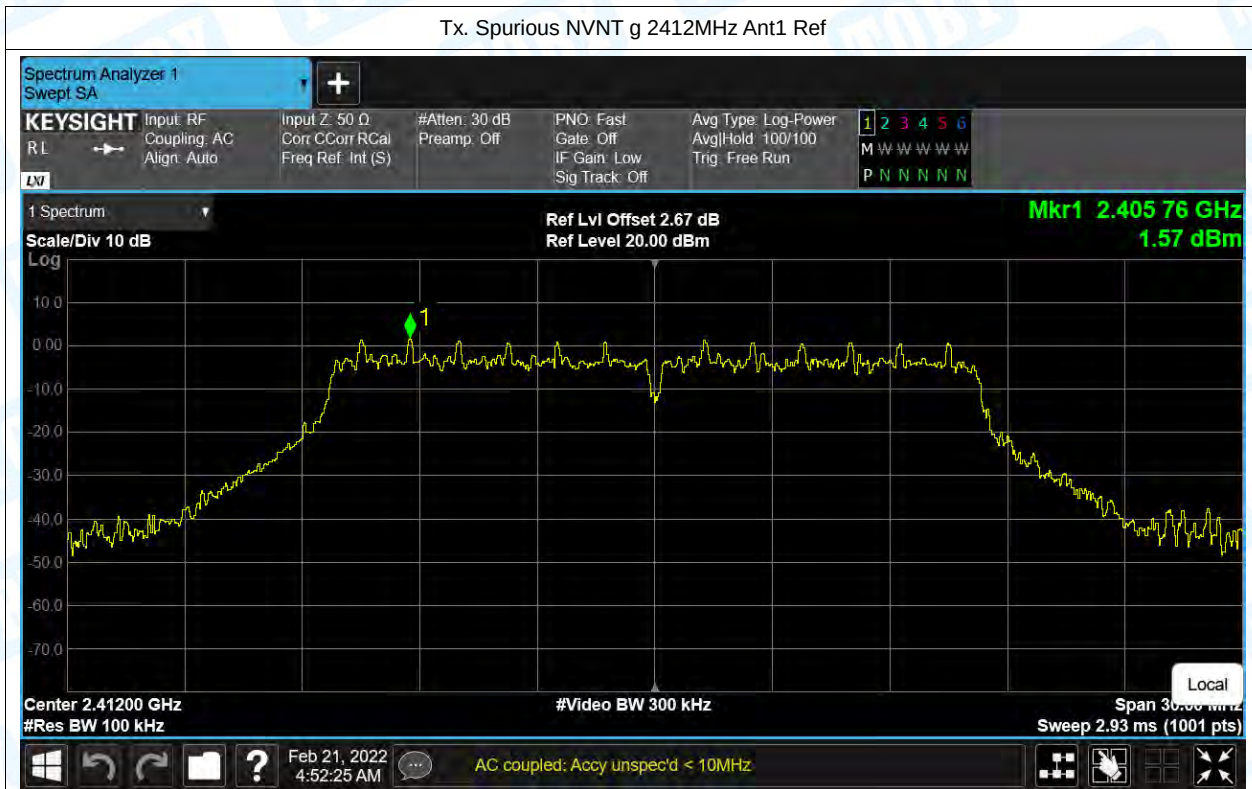
Tx. Spurious NVNT b 2437MHz Ant1 Ref

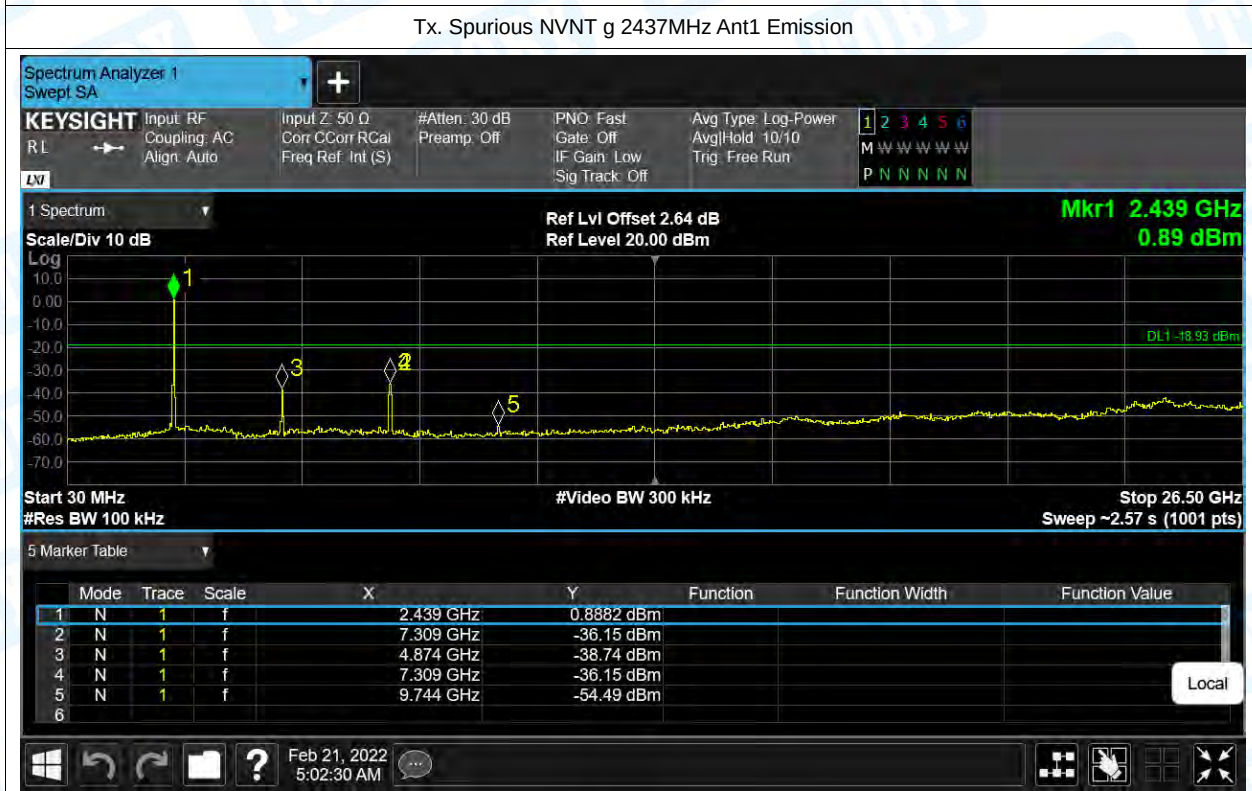
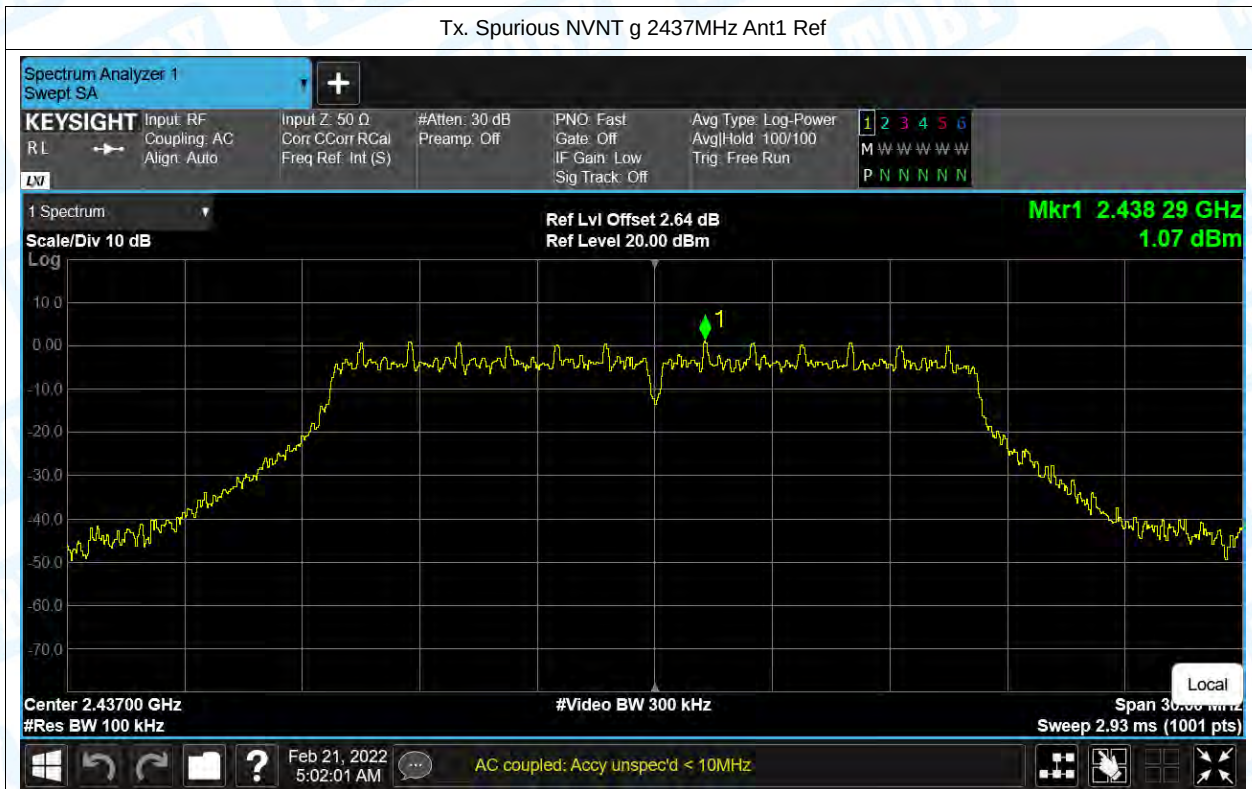


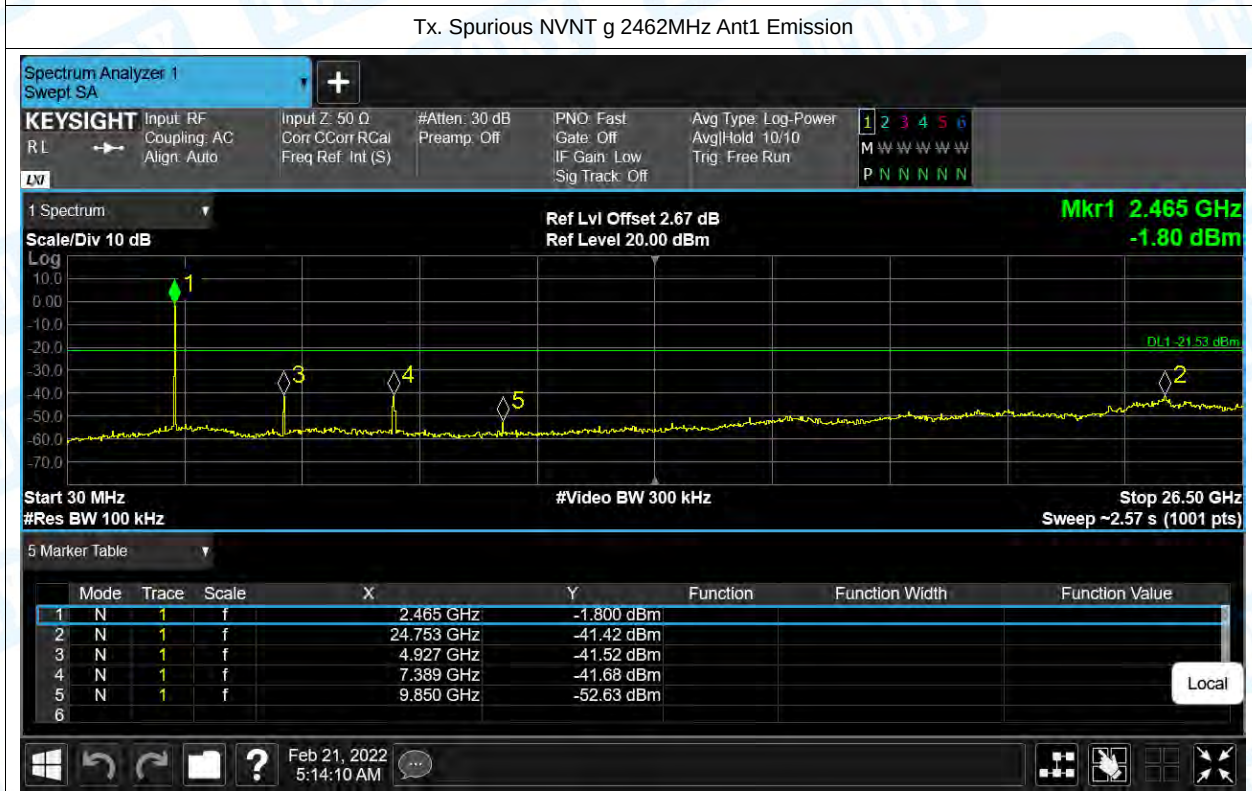
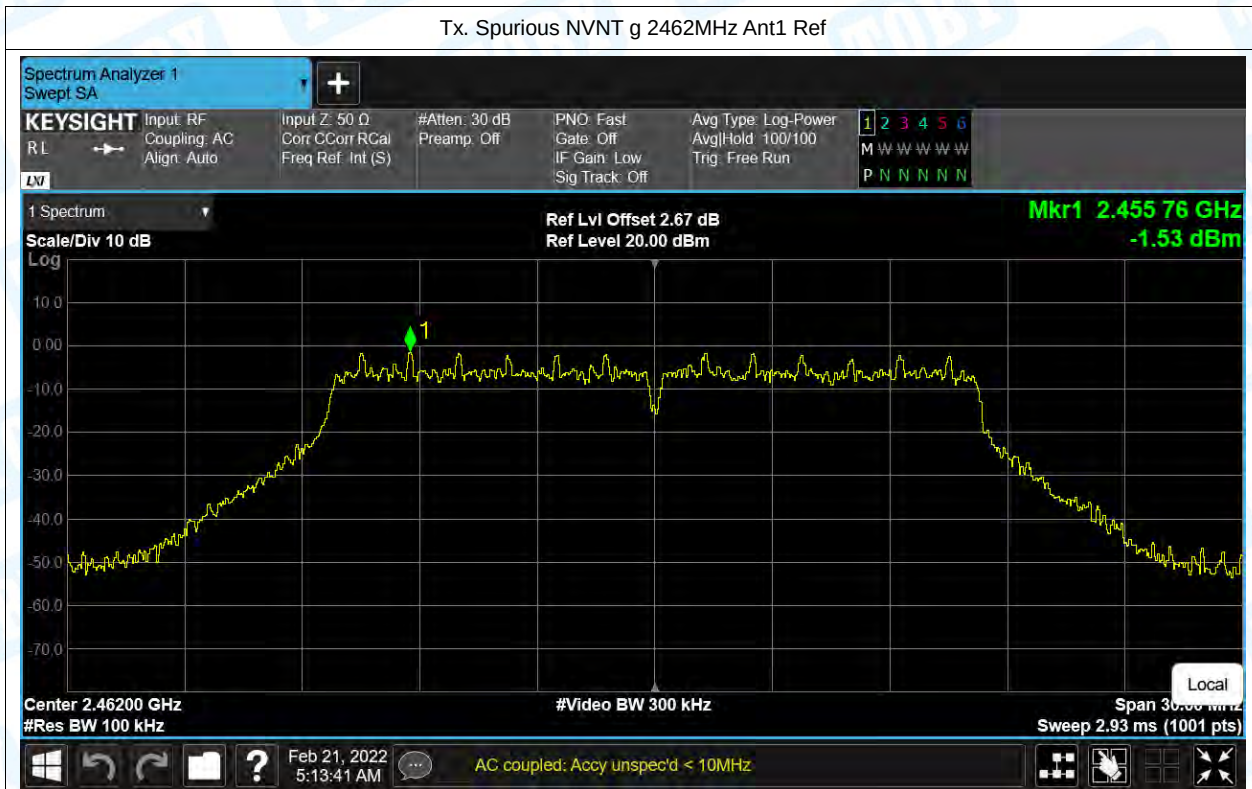
Tx. Spurious NVNT b 2437MHz Ant1 Emission

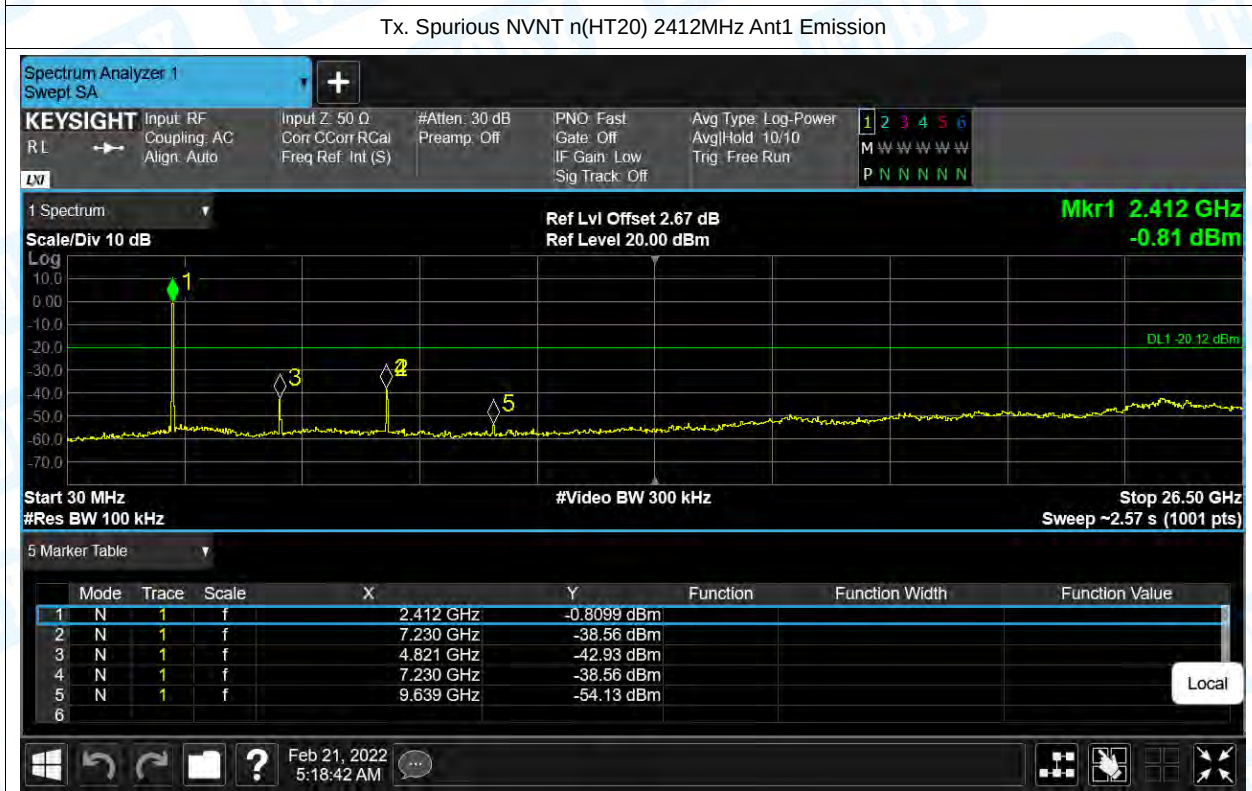
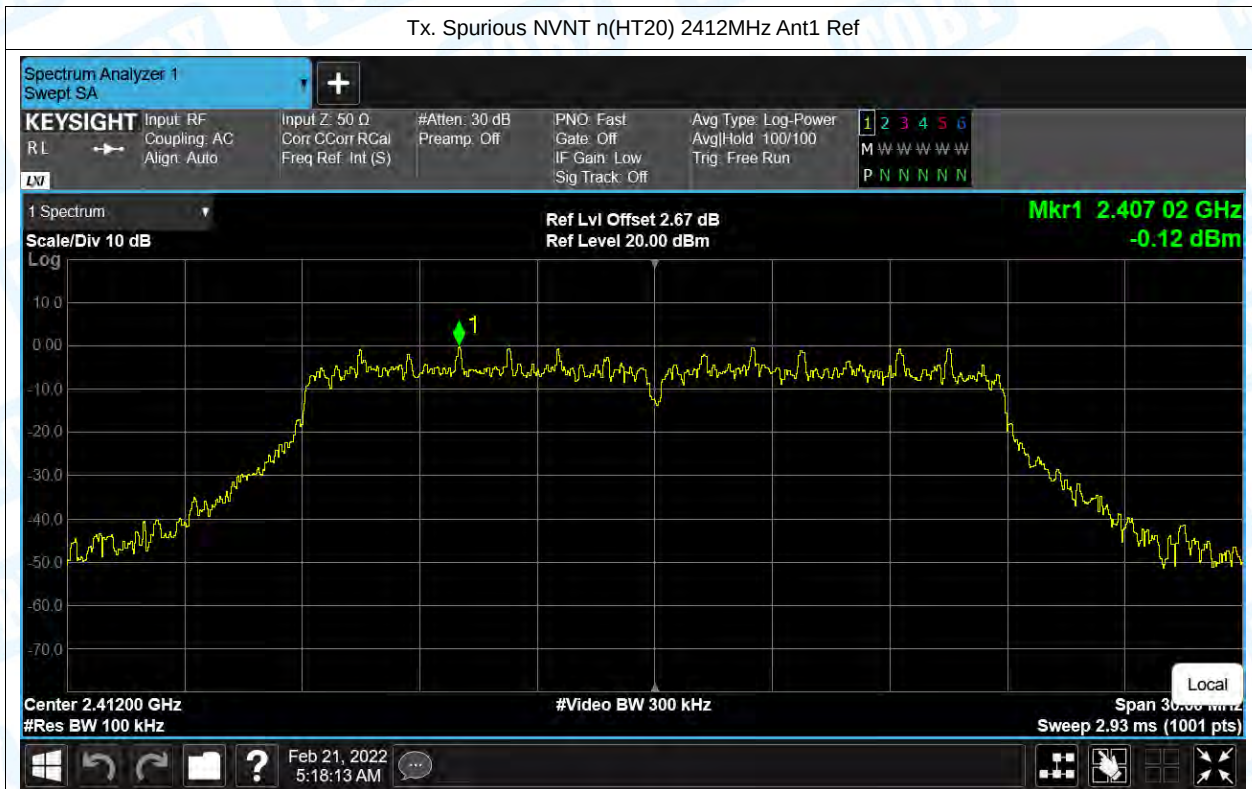




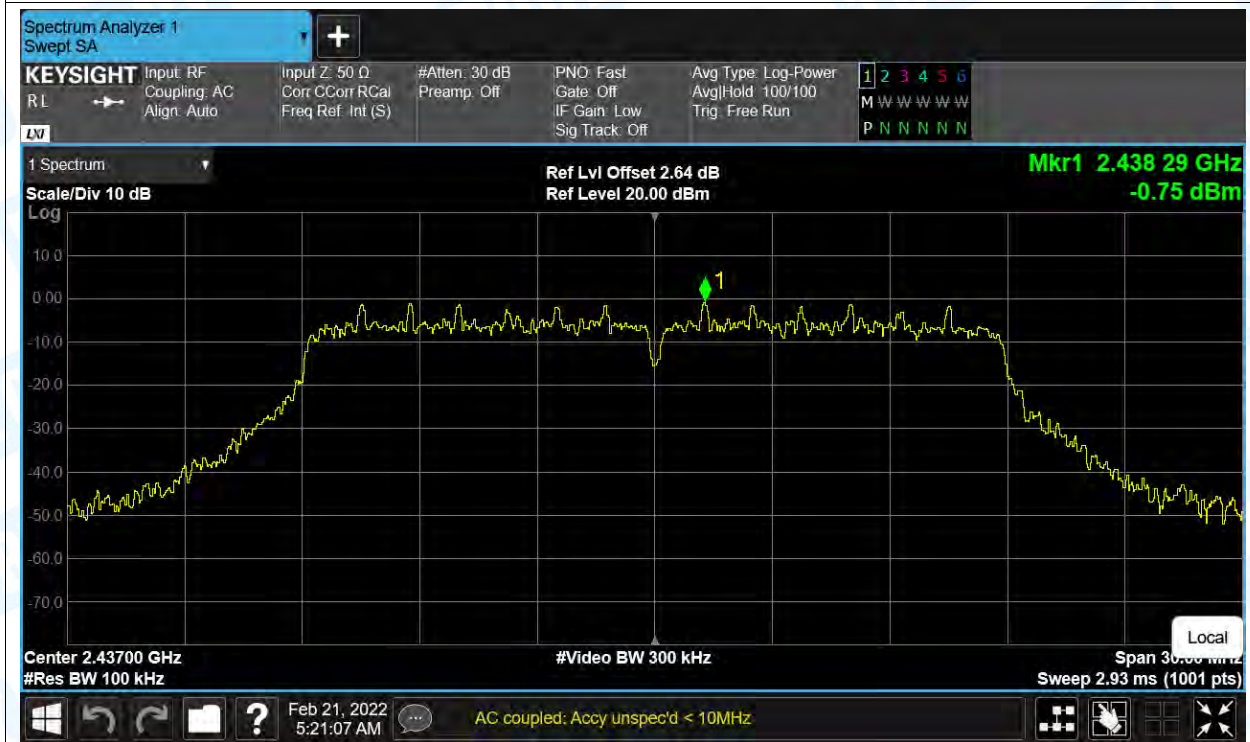




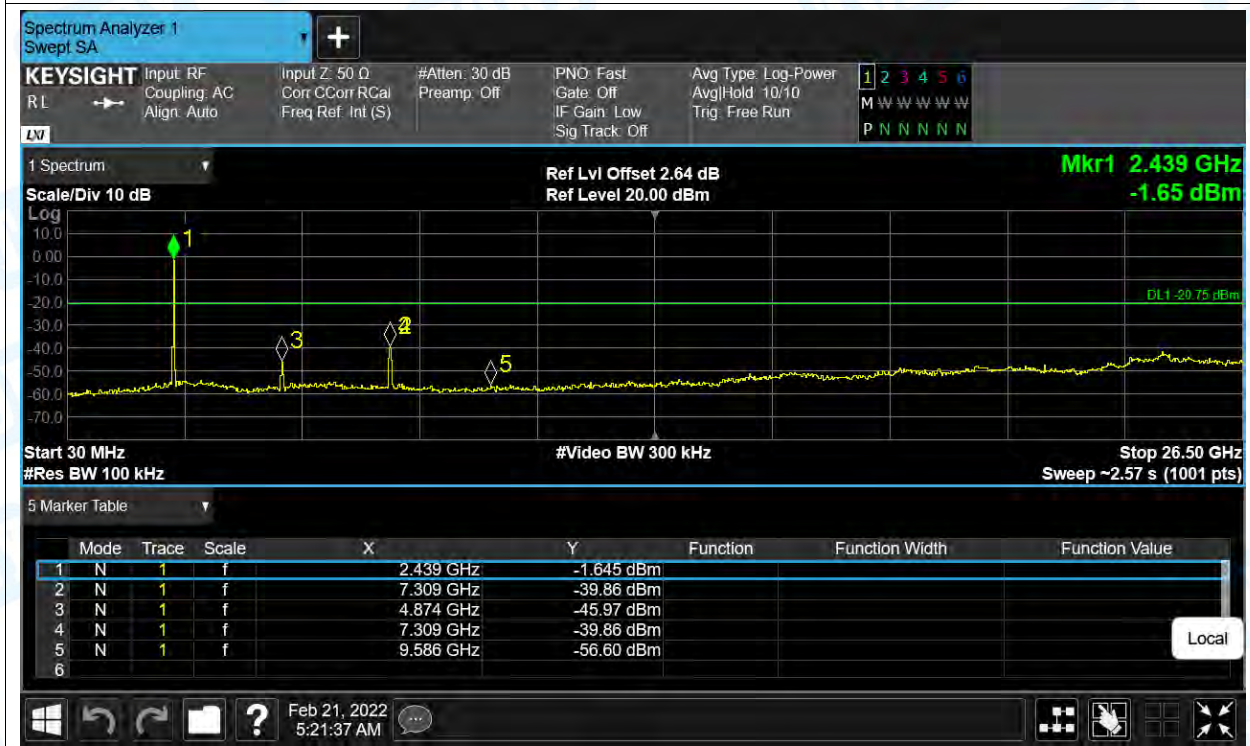




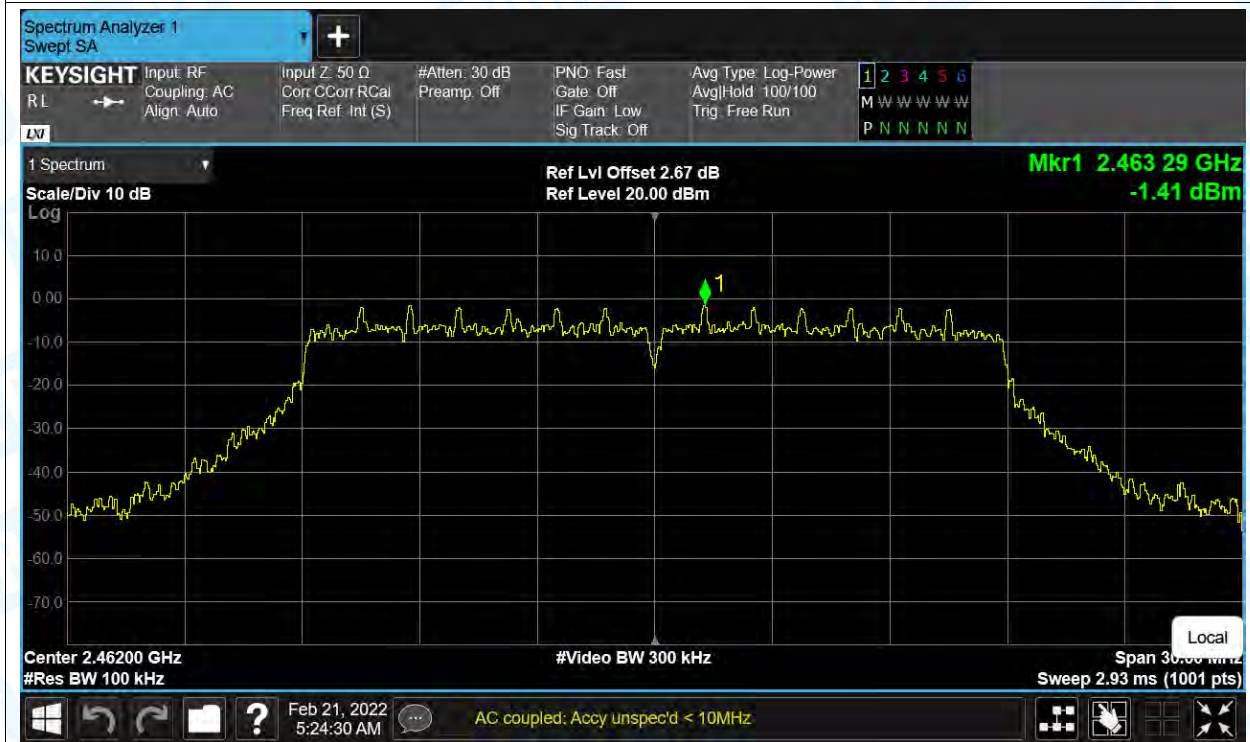
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



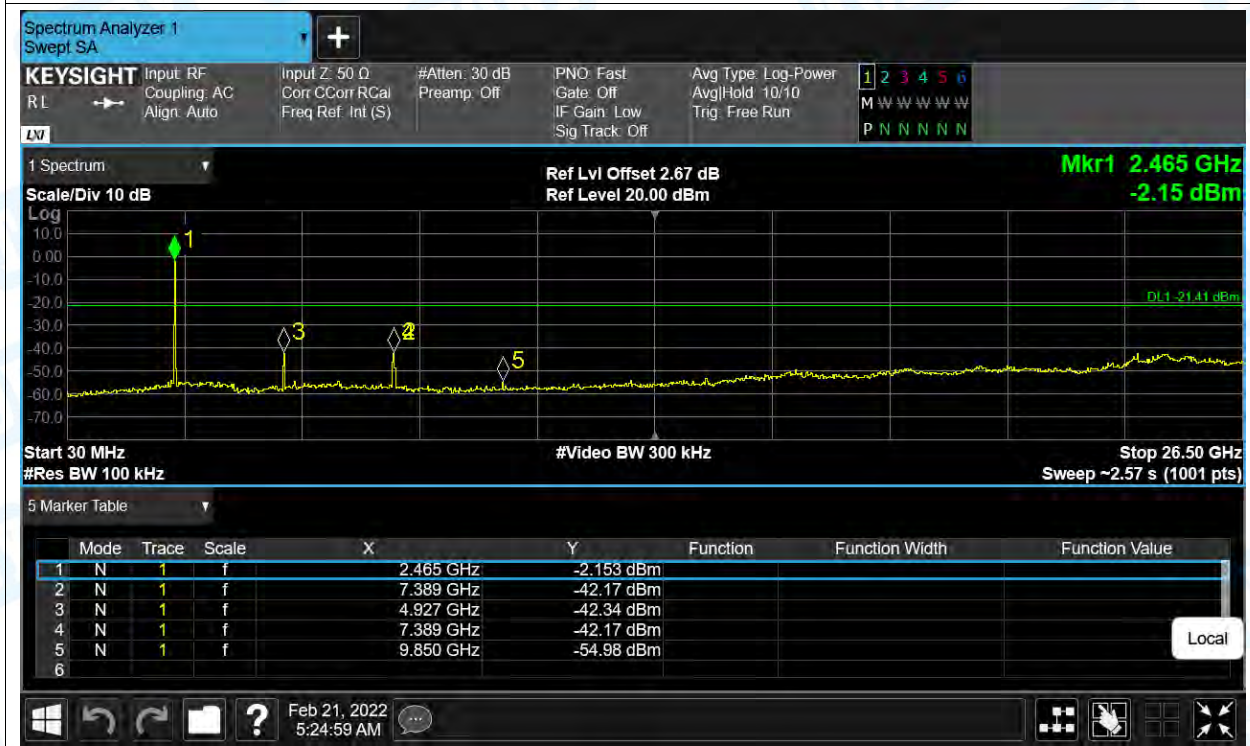
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Emission

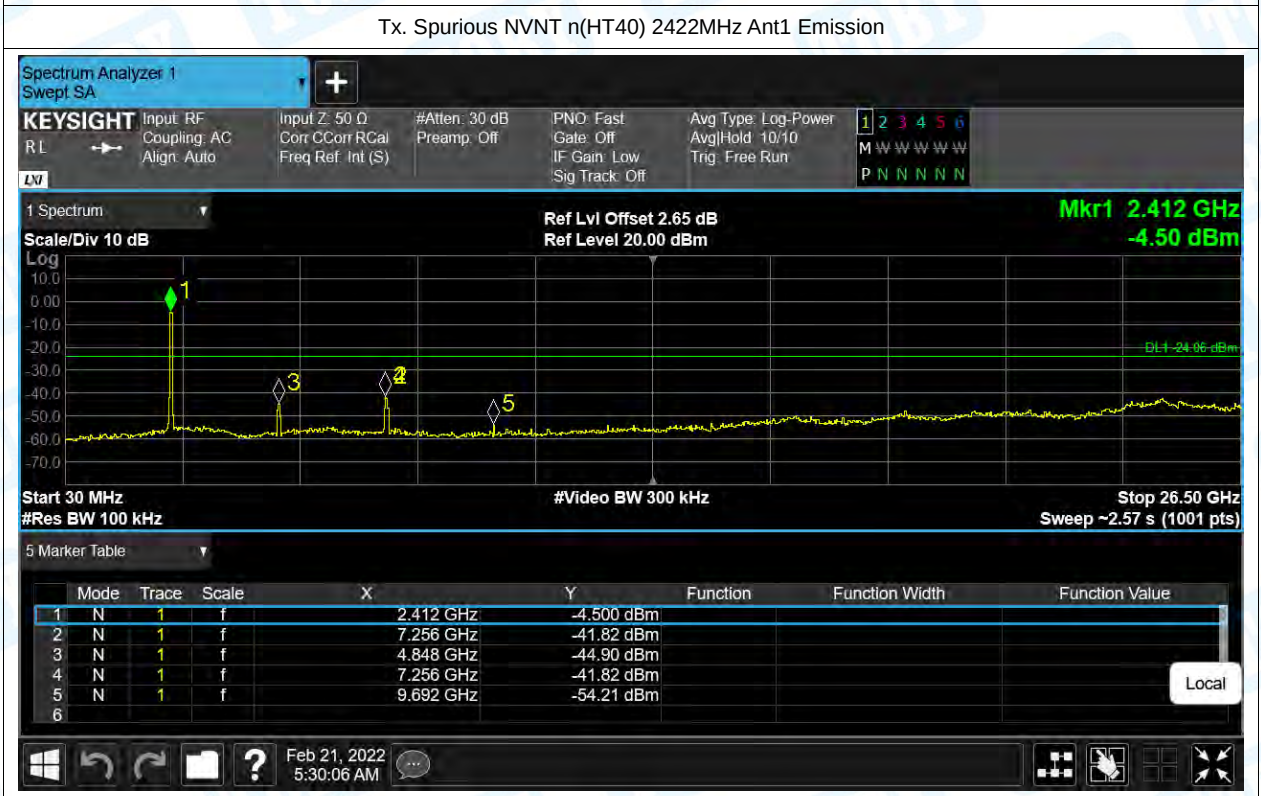
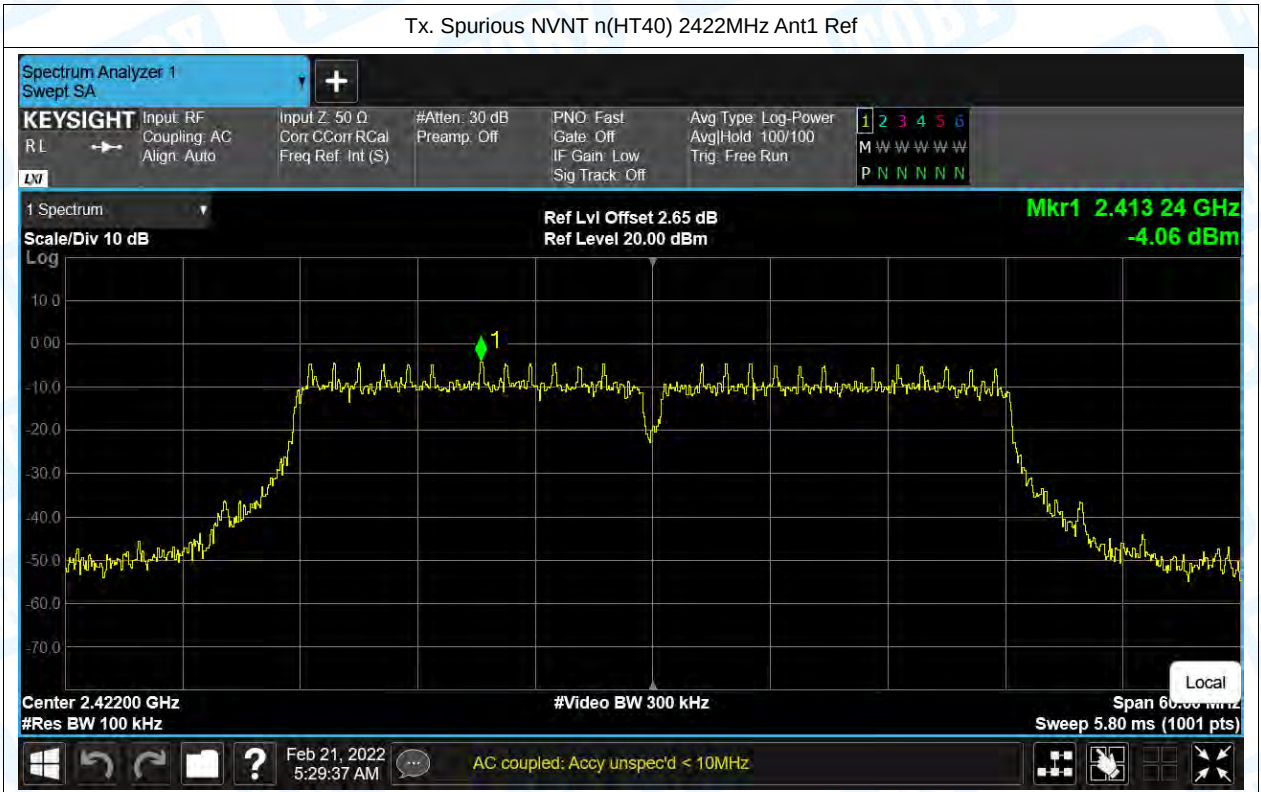


Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref

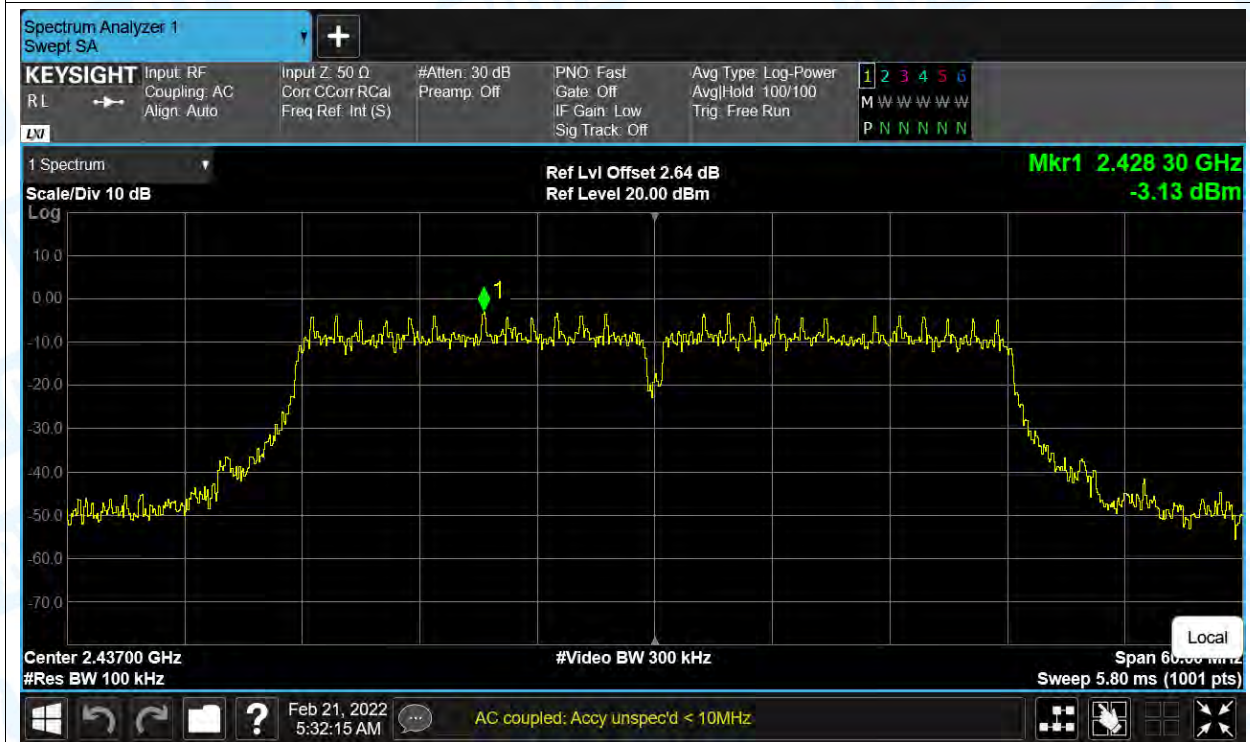


Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Emission

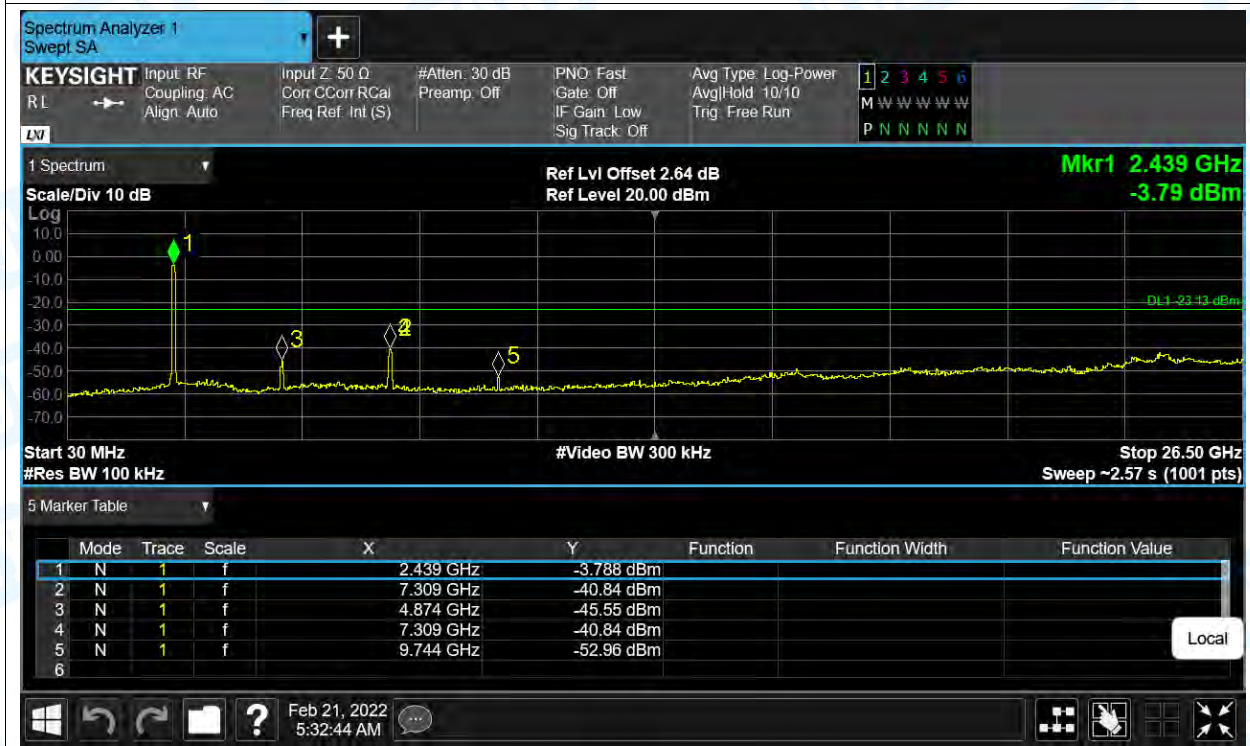


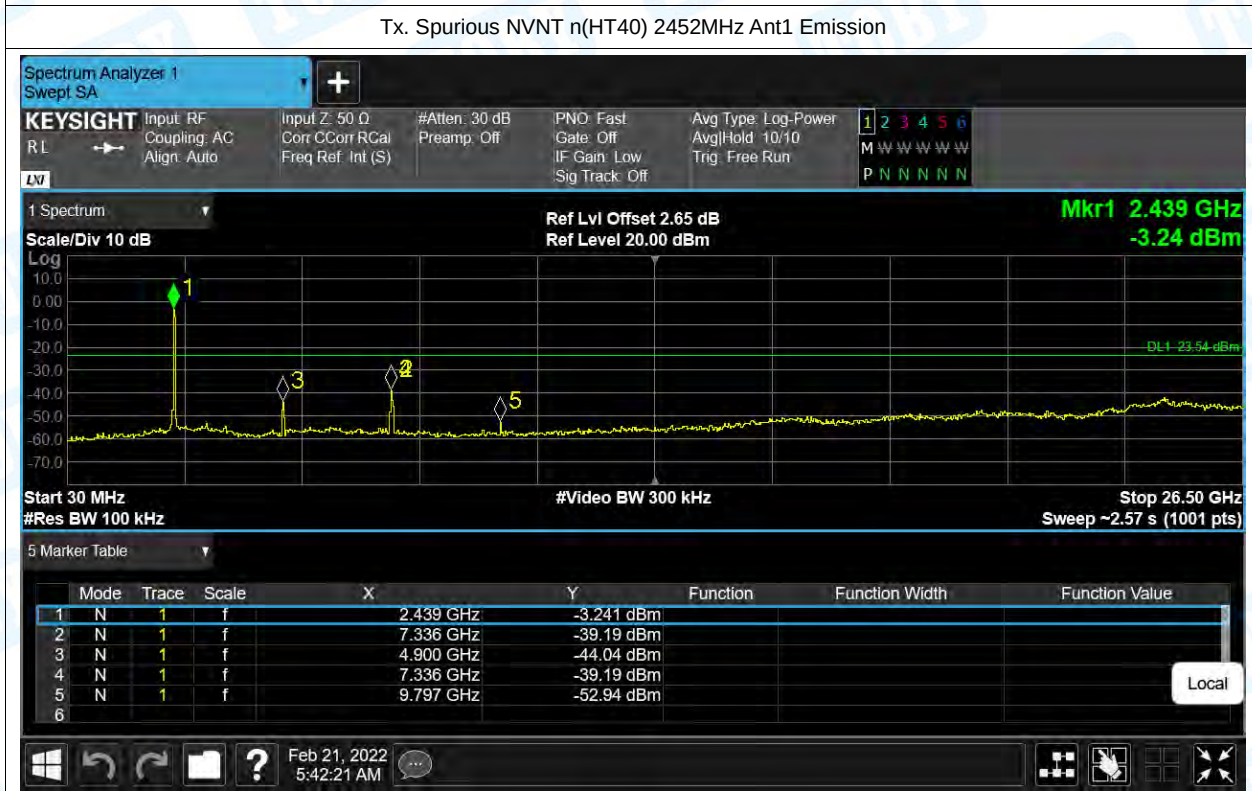
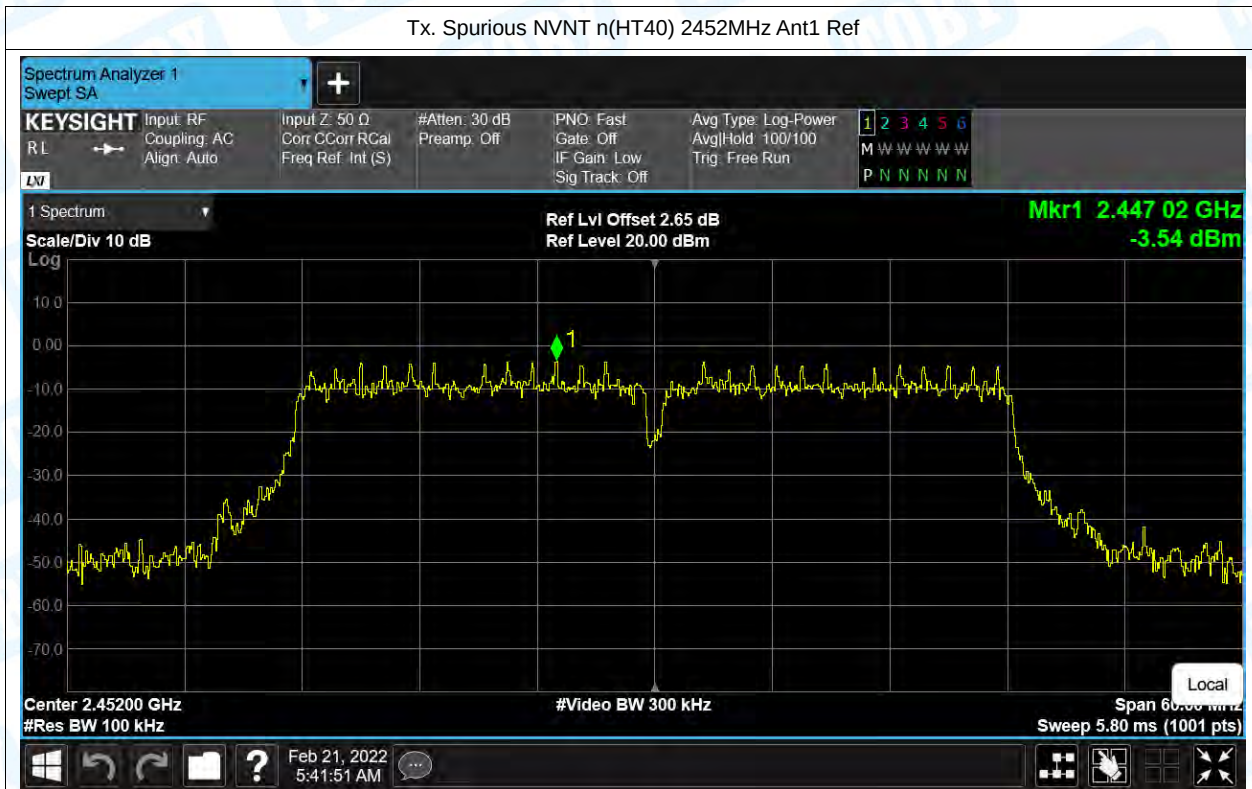


Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Ref



Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Emission





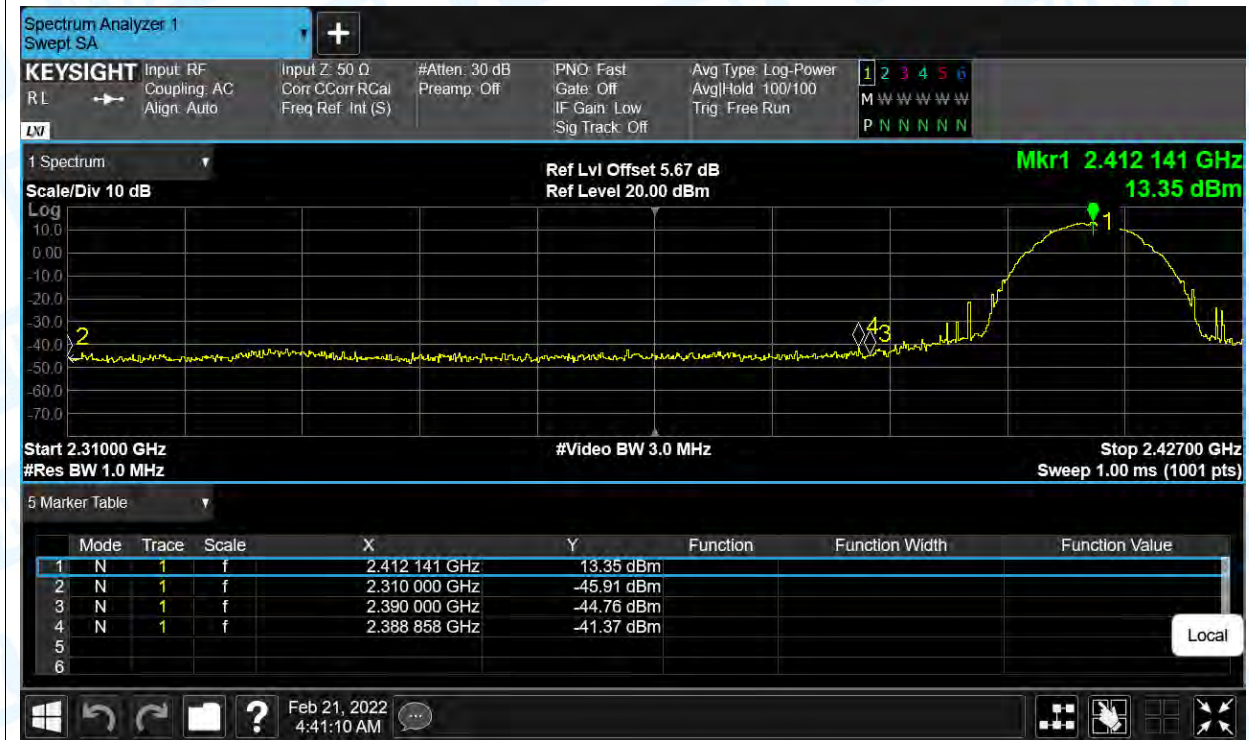
8. Restrict Band

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	-45.91	3	52.35	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-54.85	3	43.41	Average	54	Pass
NVNT	b	2412	Ant1	2388.858	-41.37	3	56.89	Peak	74	Pass
NVNT	b	2412	Ant1	2330.943	-51.45	3	46.81	Average	54	Pass
NVNT	b	2412	Ant1	2390	-44.76	3	53.5	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-53.06	3	45.2	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-43.92	3	54.34	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-53.91	3	44.35	Average	54	Pass
NVNT	b	2462	Ant1	2485.478	-42.54	3	55.72	Peak	74	Pass
NVNT	b	2462	Ant1	2483.782	-53.82	3	44.44	Average	54	Pass
NVNT	b	2462	Ant1	2500	-44.66	3	53.6	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-54.28	3	43.98	Average	54	Pass
NVNT	g	2412	Ant1	2310	-46.49	3	51.77	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-54.24	3	44.02	Average	54	Pass
NVNT	g	2412	Ant1	2389.56	-33.58	3	64.68	Peak	74	Pass
NVNT	g	2412	Ant1	2389.794	-47.85	3	50.41	Average	54	Pass
NVNT	g	2412	Ant1	2390	-40.69	3	57.57	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-48.05	3	50.21	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-42.54	3	55.72	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-51.4	3	46.86	Average	54	Pass
NVNT	g	2462	Ant1	2489.824	-37.72	3	60.54	Peak	74	Pass
NVNT	g	2462	Ant1	2483.782	-51.13	3	47.13	Average	54	Pass
NVNT	g	2462	Ant1	2500	-43.64	3	54.62	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-53.44	3	44.82	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-45.22	3	53.04	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-53.55	3	44.71	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2389.56	-38.12	3	60.14	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2339.718	-50.07	3	48.19	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-39.66	3	58.6	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-50.33	3	47.93	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-42.82	3	55.44	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-50.96	3	47.3	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2489.983	-36.3	3	61.96	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.517	-50.96	3	47.3	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-45.72	3	52.54	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-52.65	3	45.61	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2310	-46.37	3	51.89	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2310	-54.14	3	44.12	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2386.112	-33.04	3	65.22	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2389.662	-46.3	3	51.96	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2390	-39.88	3	58.38	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2390	-46.57	3	51.69	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-33.23	3	65.03	Peak	74	Pass

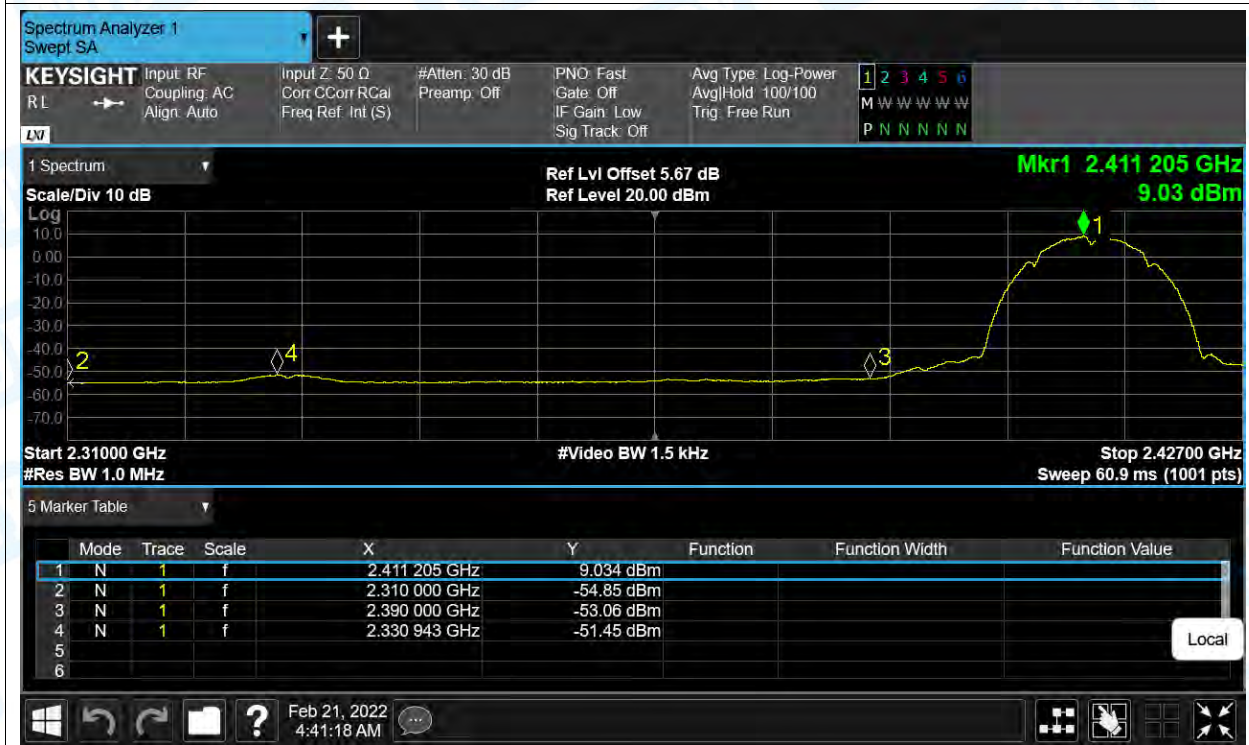
NVNT	n(HT40)	2452	Ant1	2483.5	-45.21	3	53.05	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2484.79	-31.75	3	66.51	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2484.01	-44.79	3	53.47	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2500	-45.04	3	53.22	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2500	-51.31	3	46.95	Average	54	Pass

Test Graphs

Restrict Band NVNT b 2412MHz Ant1 Peak



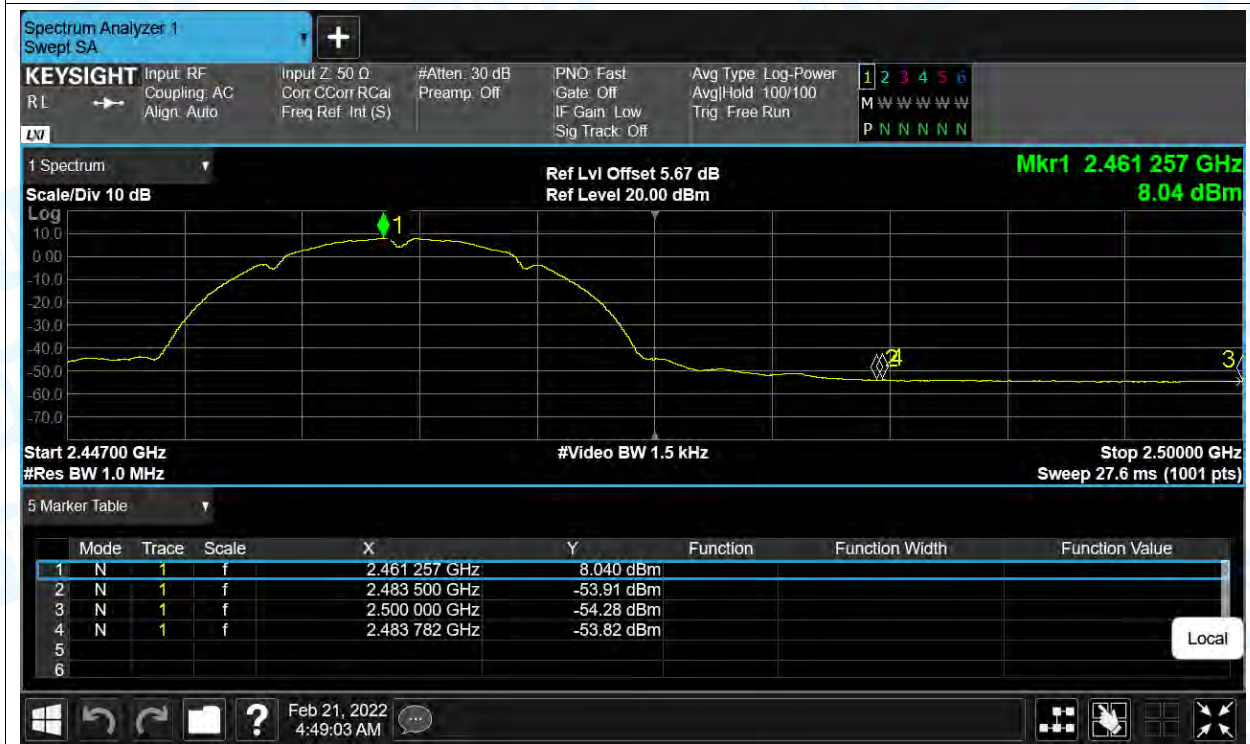
Restrict Band NVNT b 2412MHz Ant1 Average



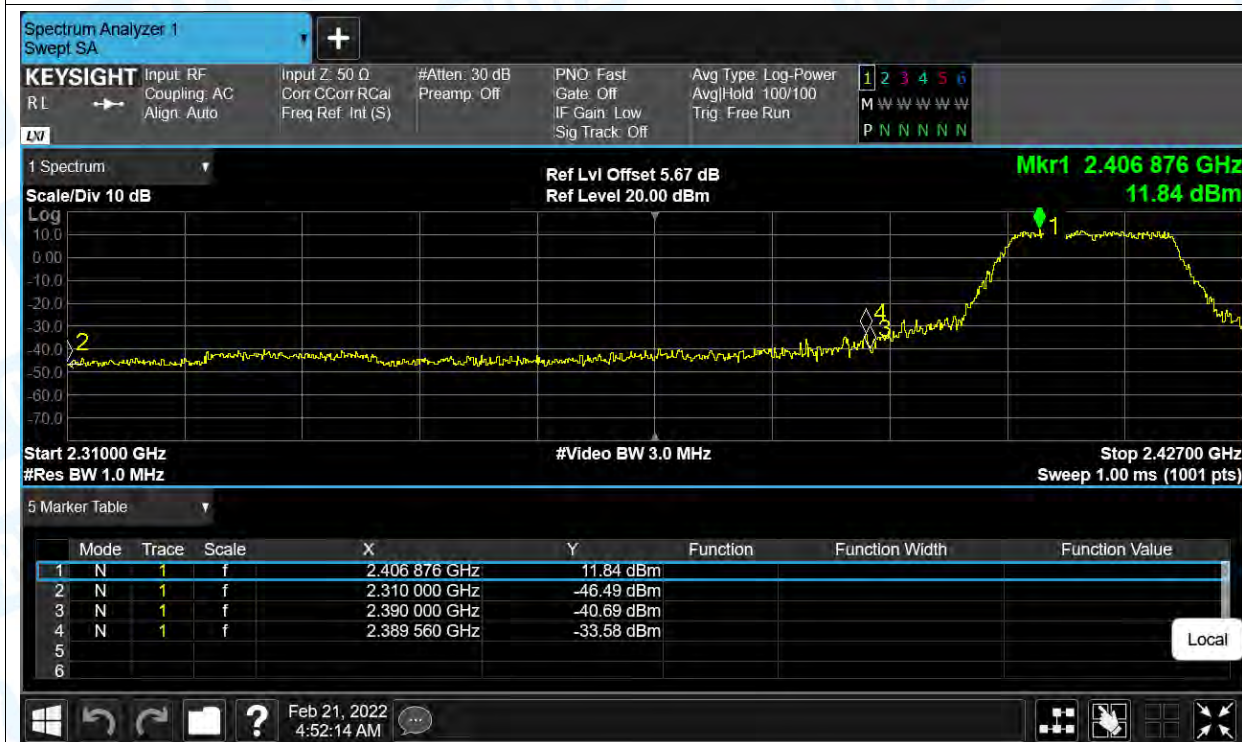
Restrict Band NVNT b 2462MHz Ant1 Peak



Restrict Band NVNT b 2462MHz Ant1 Average



Restrict Band NVNT g 2412MHz Ant1 Peak



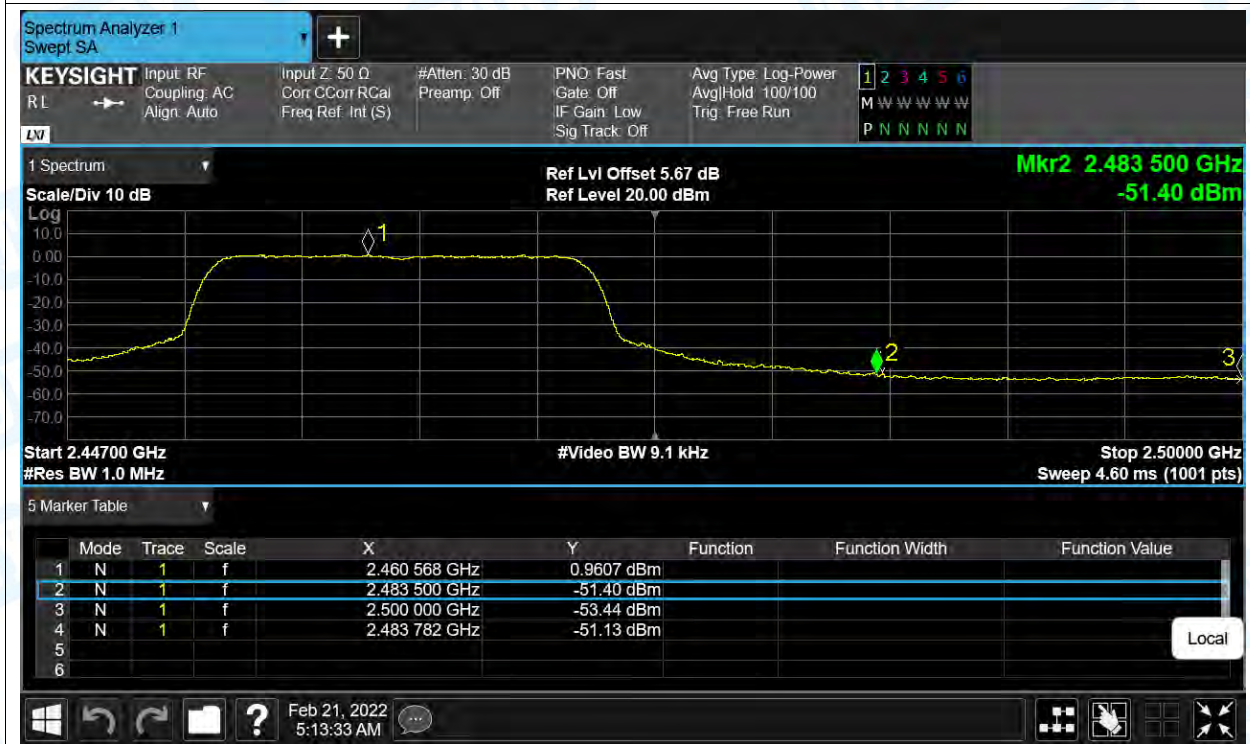
Restrict Band NVNT g 2412MHz Ant1 Average



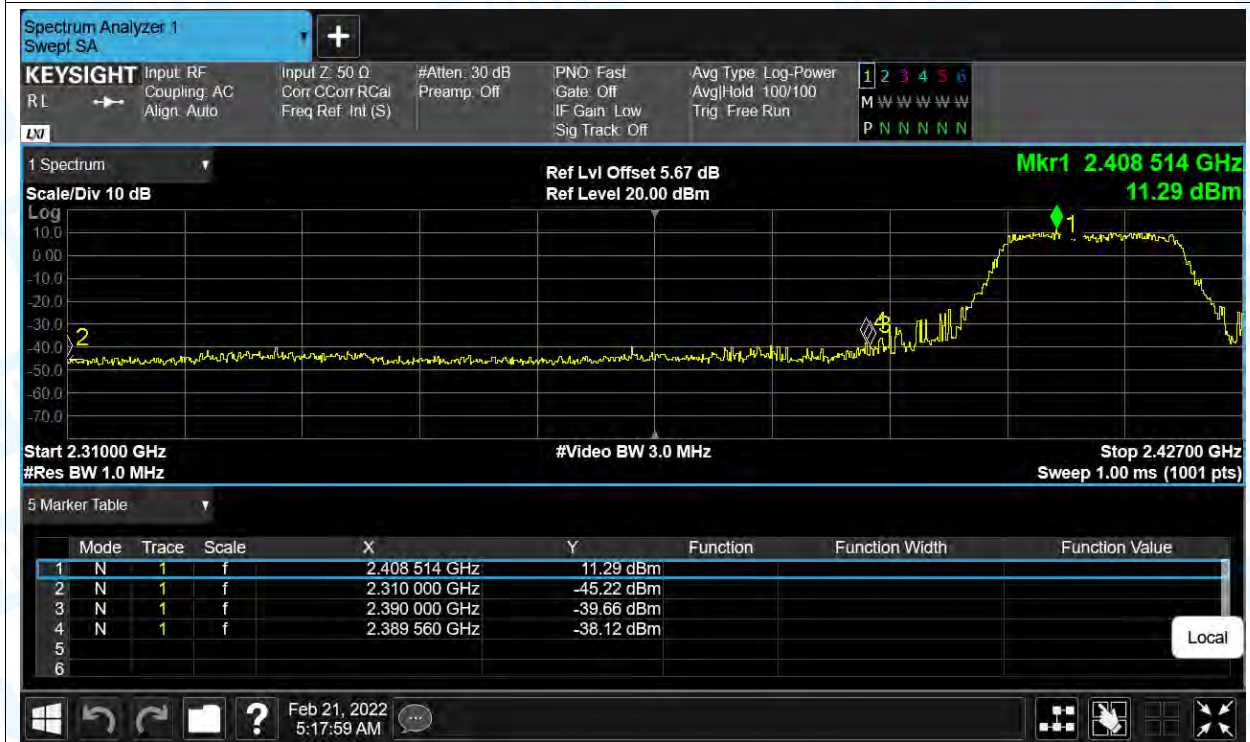
Restrict Band NVNT g 2462MHz Ant1 Peak



Restrict Band NVNT g 2462MHz Ant1 Average



Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak



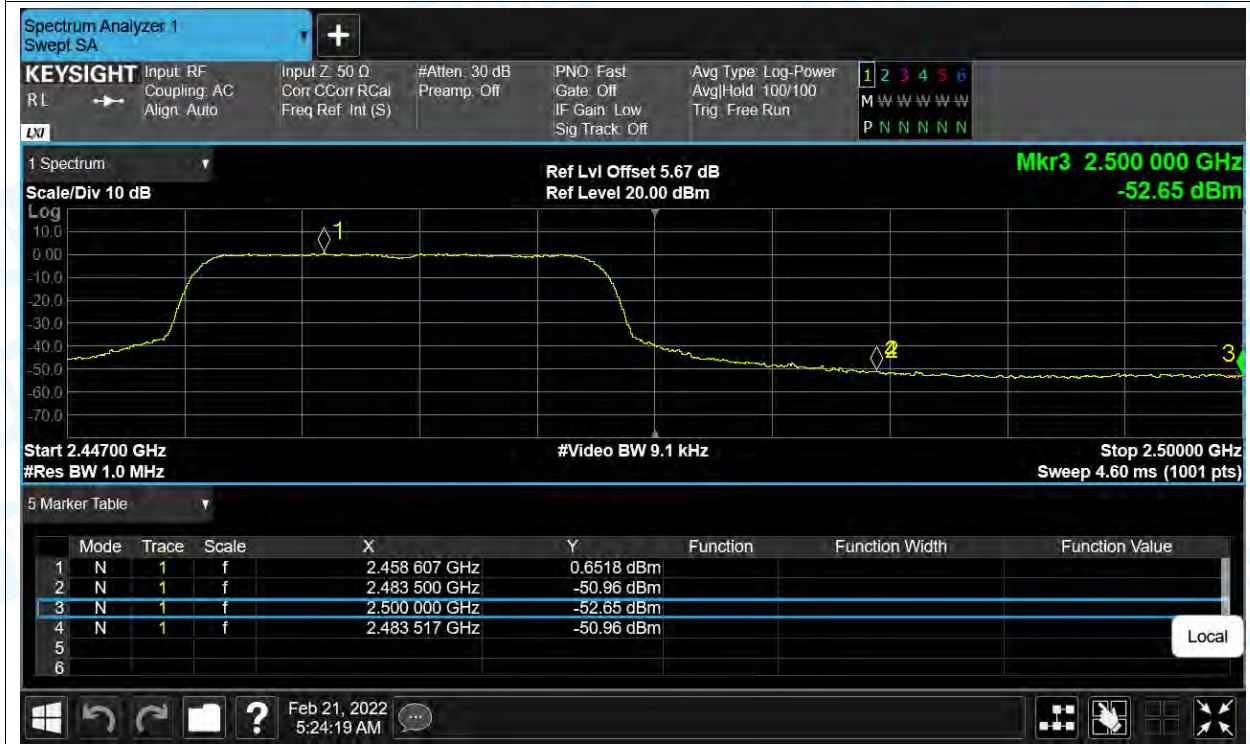
Restrict Band NVNT n(HT20) 2412MHz Ant1 Average



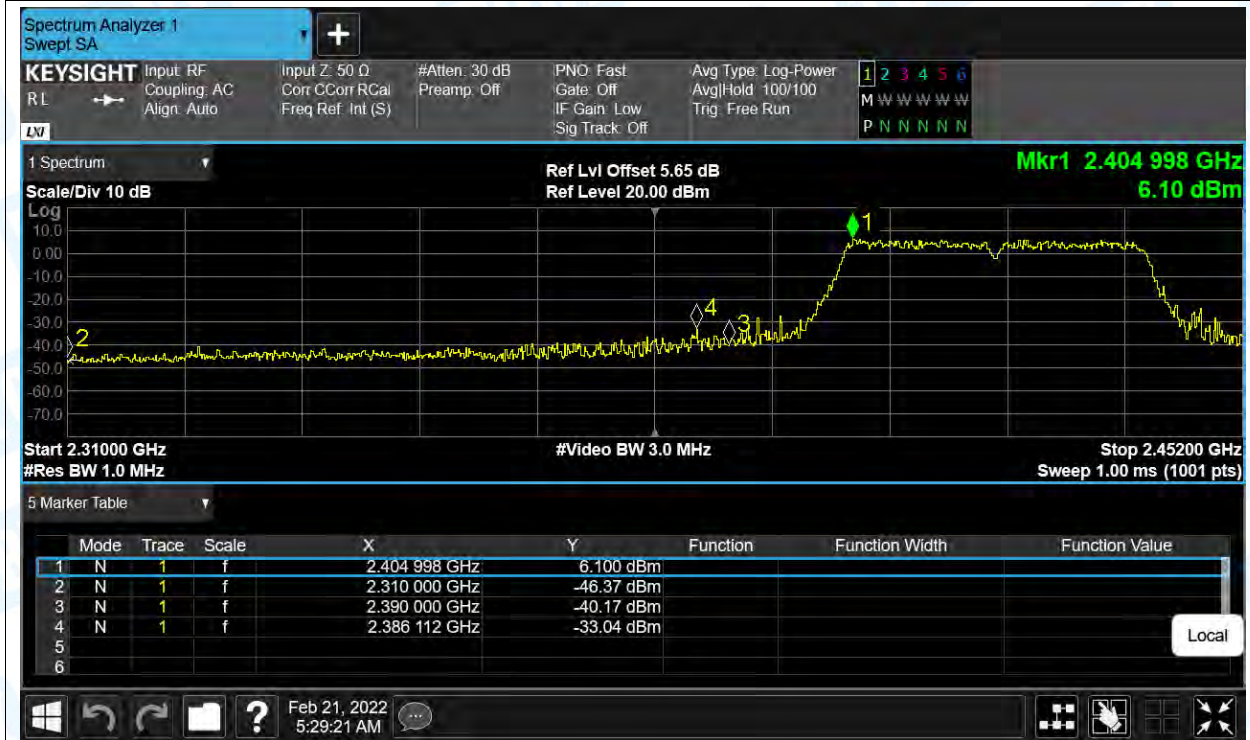
Restrict Band NVNT n(HT20) 2462MHz Ant1 Peak



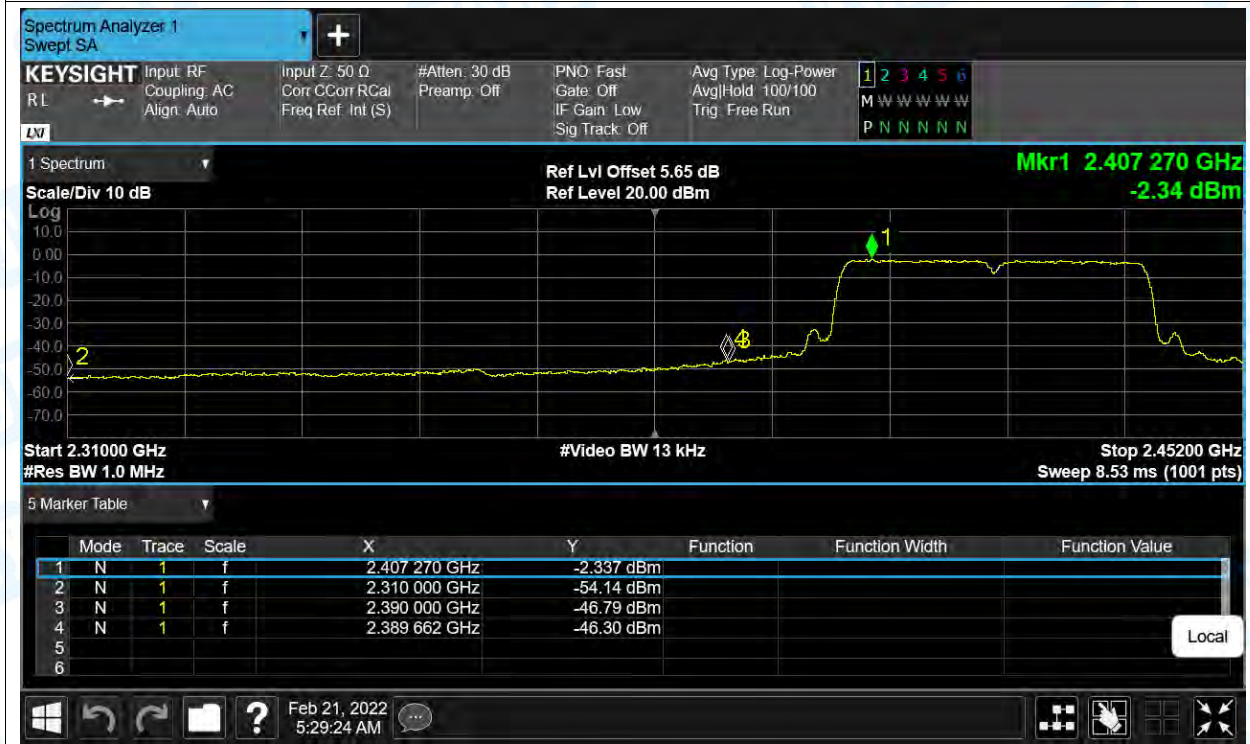
Restrict Band NVNT n(HT20) 2462MHz Ant1 Average



Restrict Band NVNT n(HT40) 2422MHz Ant1 Peak



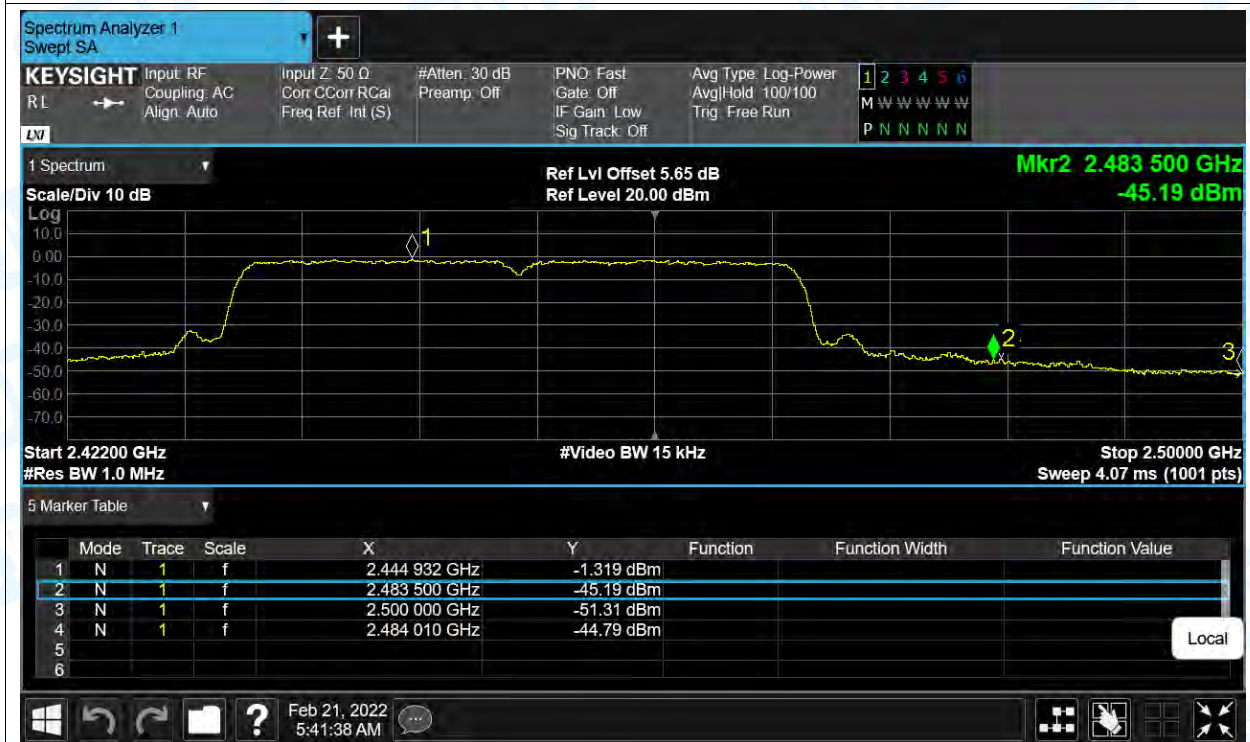
Restrict Band NVNT n(HT40) 2422MHz Ant1 Average



Restrict Band NVNT n(HT40) 2452MHz Ant1 Peak



Restrict Band NVNT n(HT40) 2452MHz Ant1 Average



-----End of the report-----