

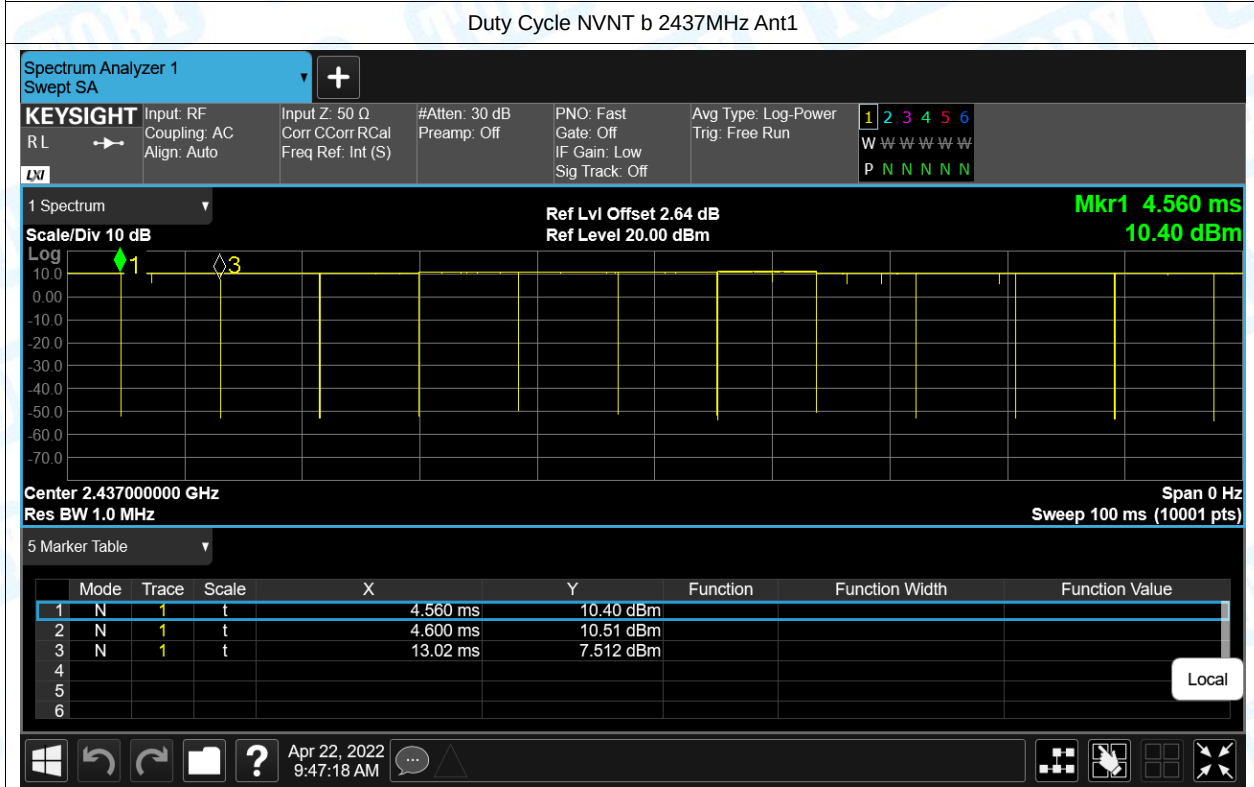
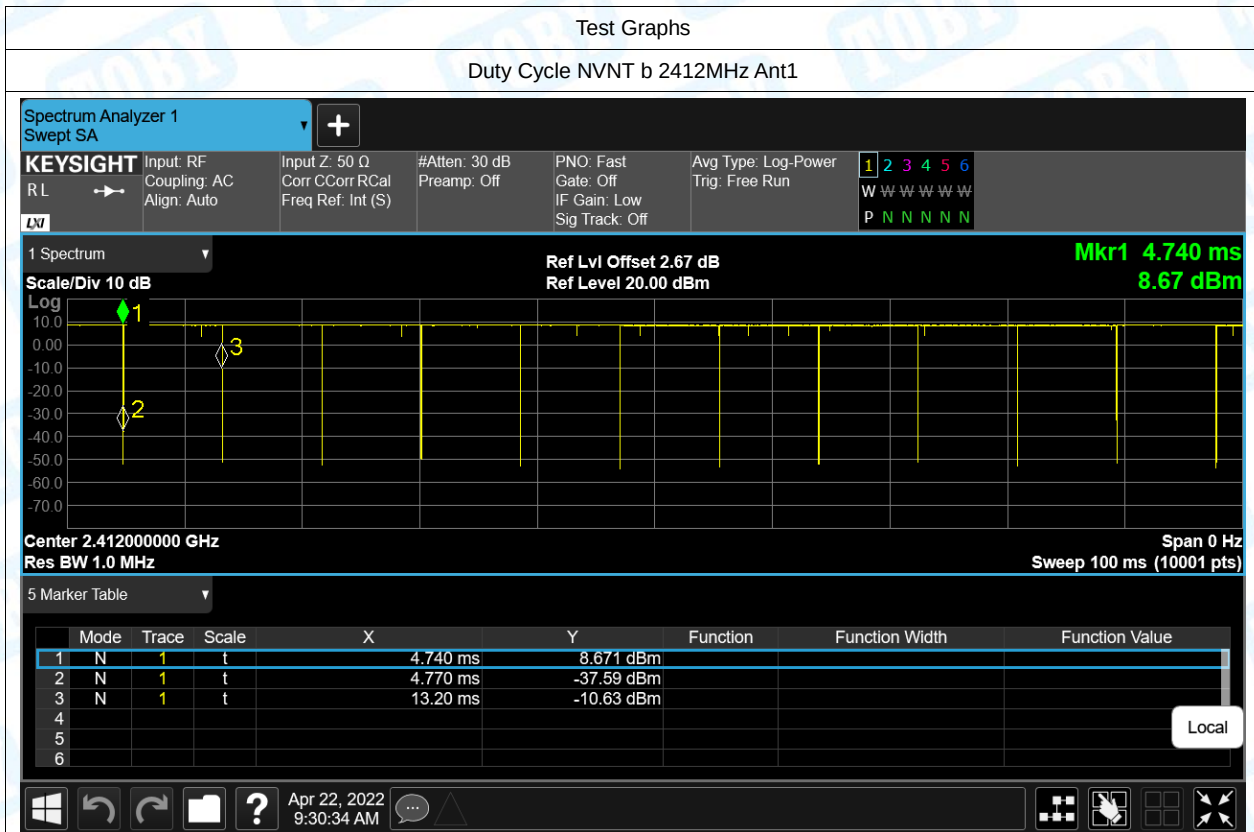
RF Test Data for 2.4G WiFi

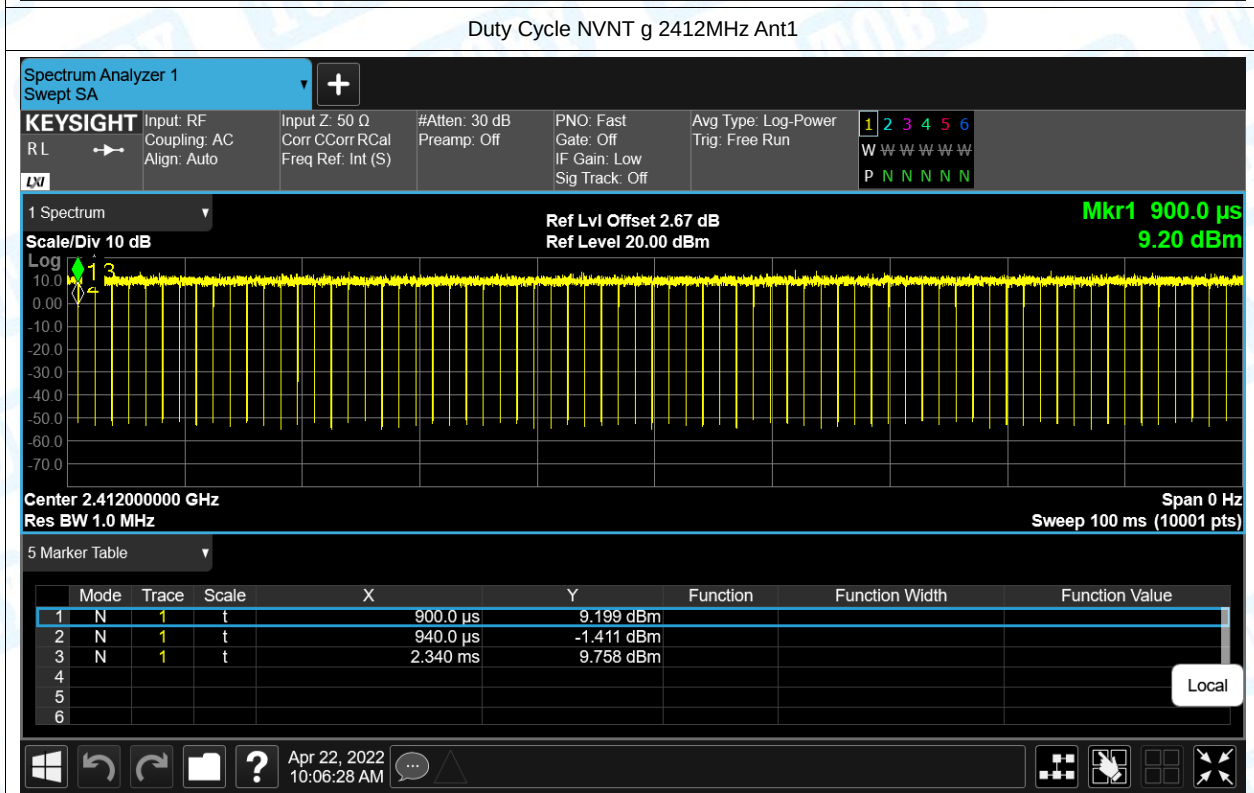
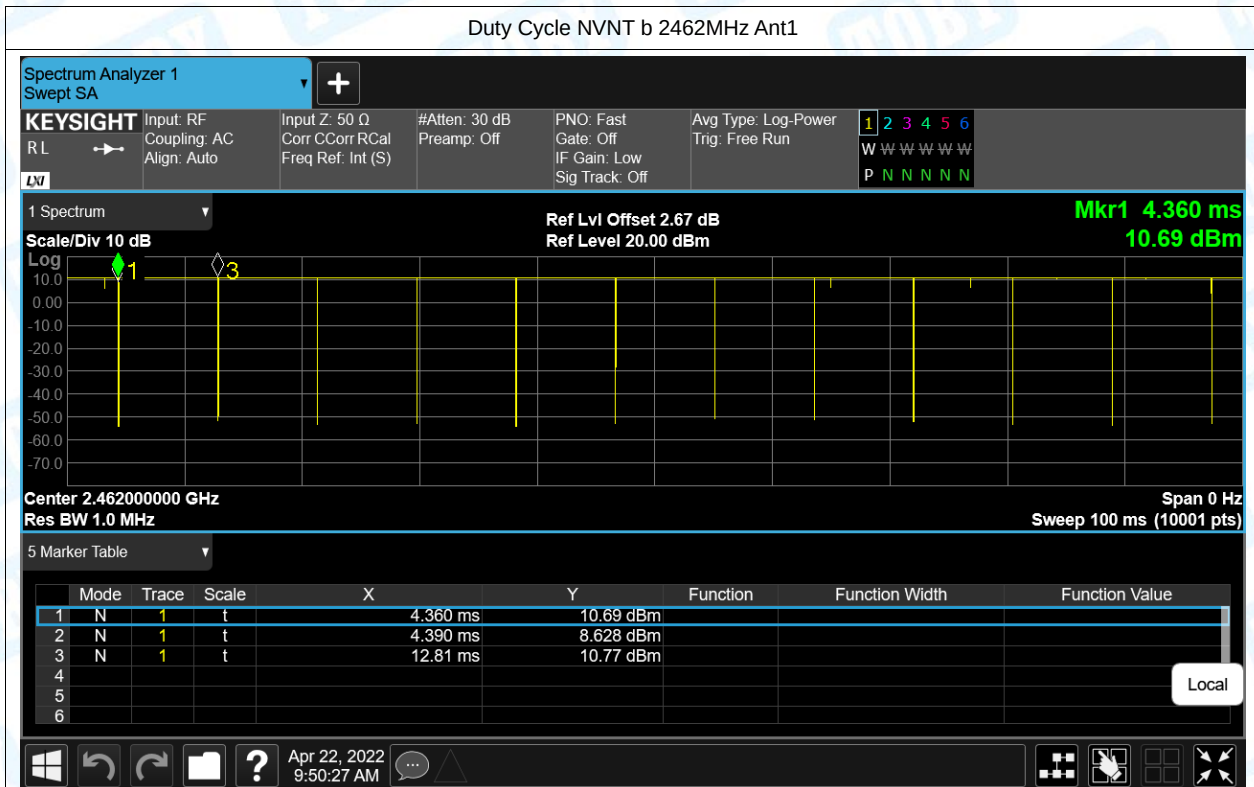
(Conducted Measurements)

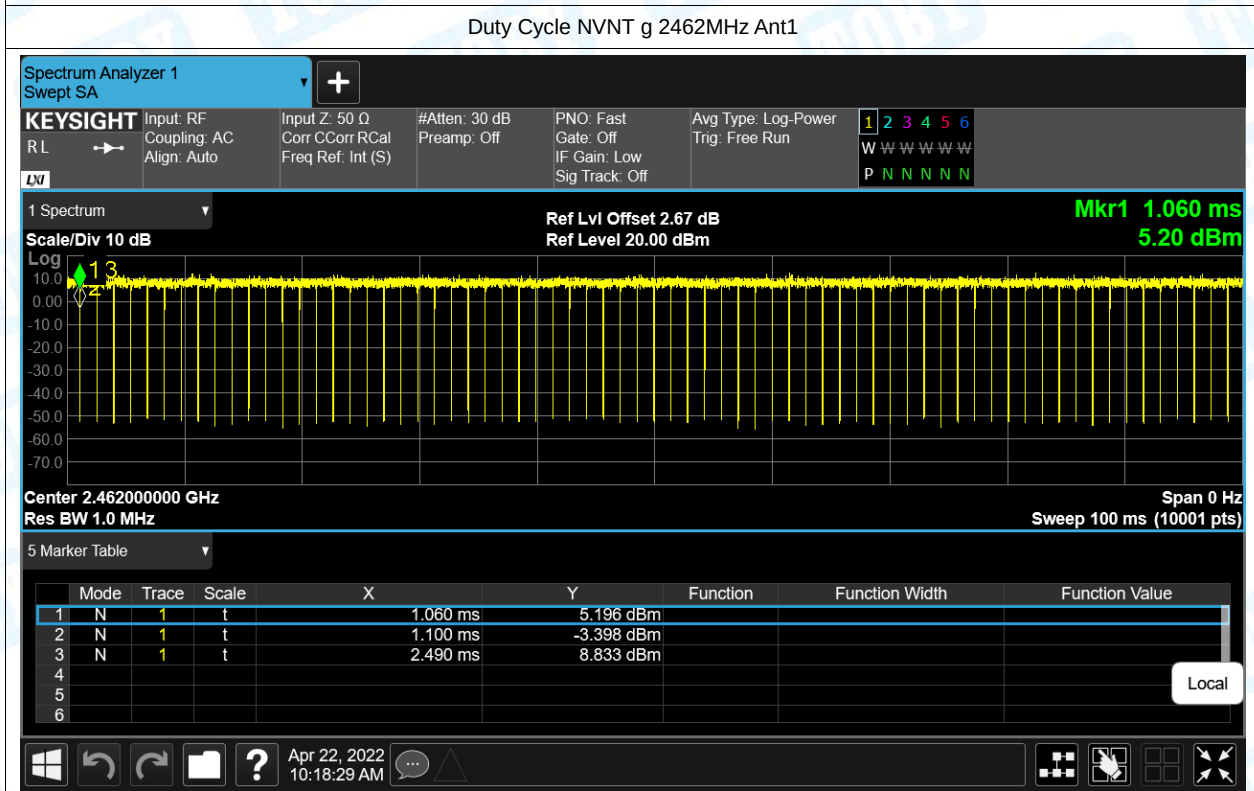
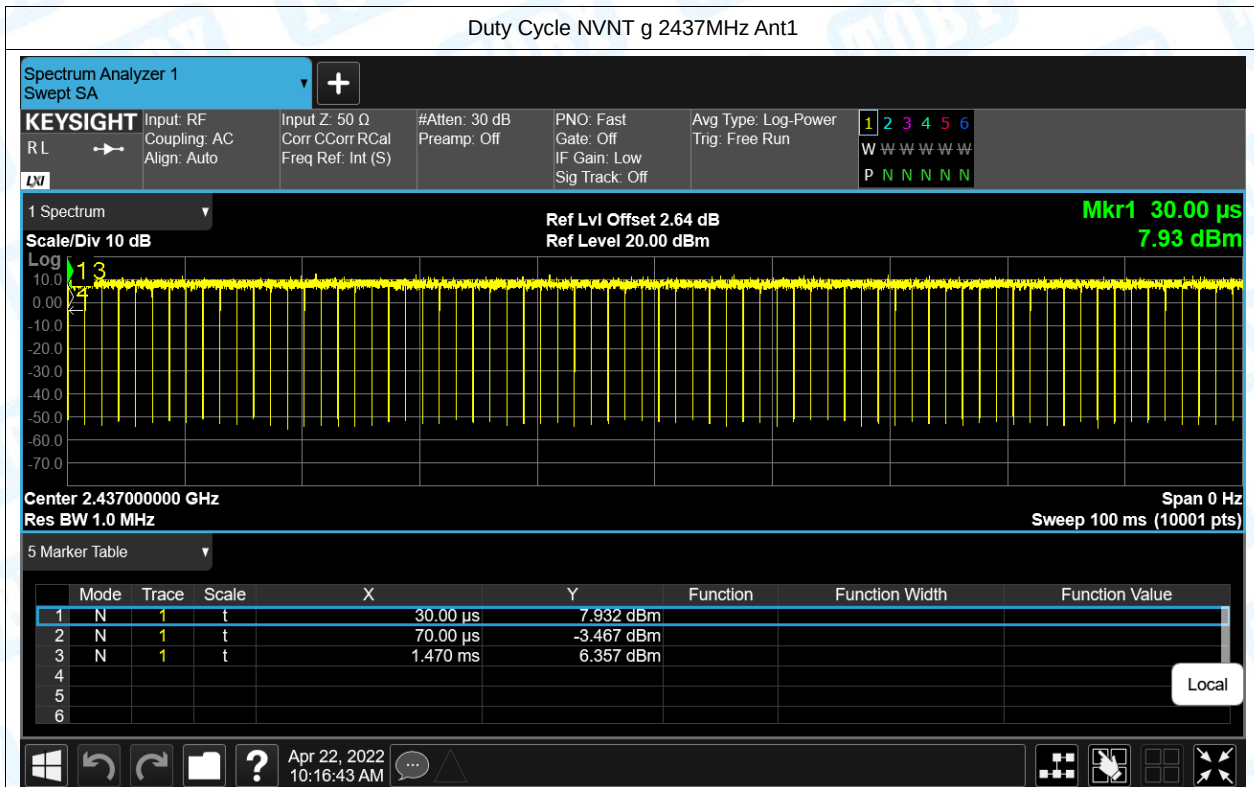
General Description of EUT	
Product Name:	Heltec Indoor Hotspot
Test Model:	HT-M2802
Sample ID:	RW-C-202204-0107-1-2#
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 5V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202204-0107-11	

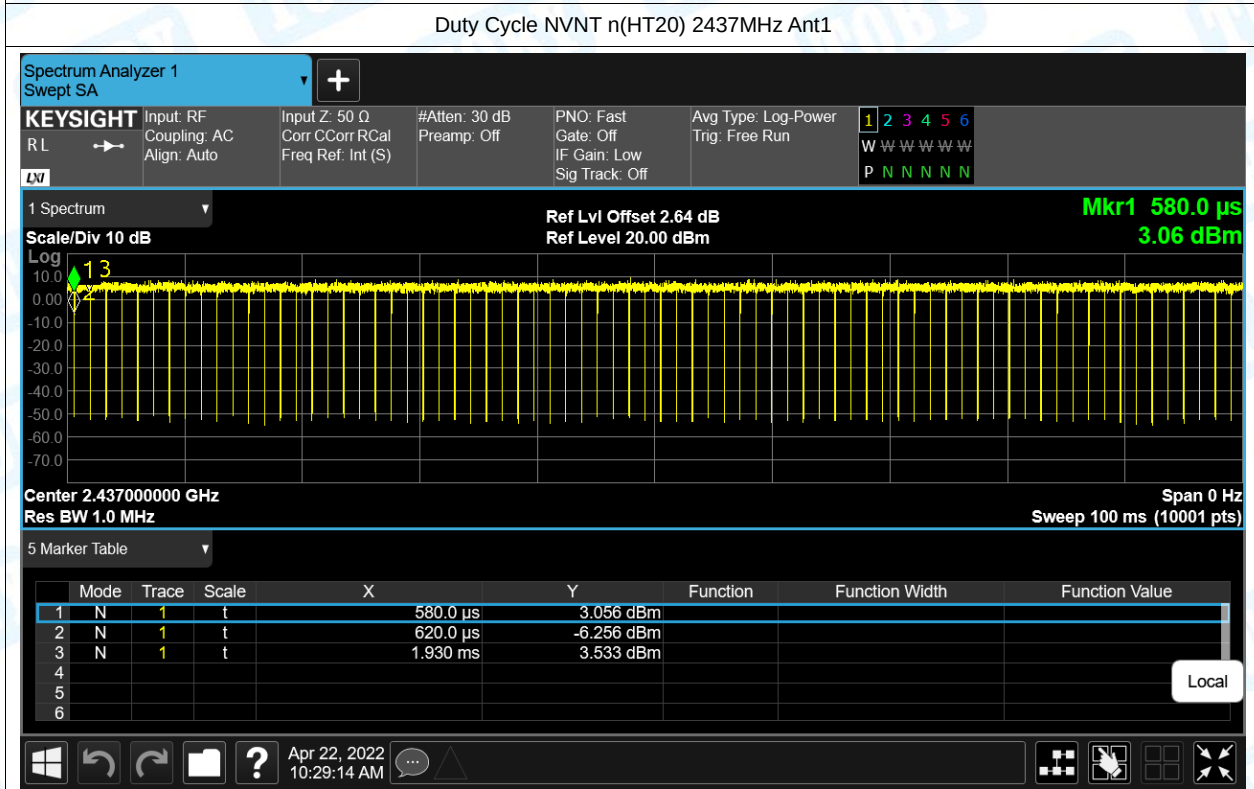
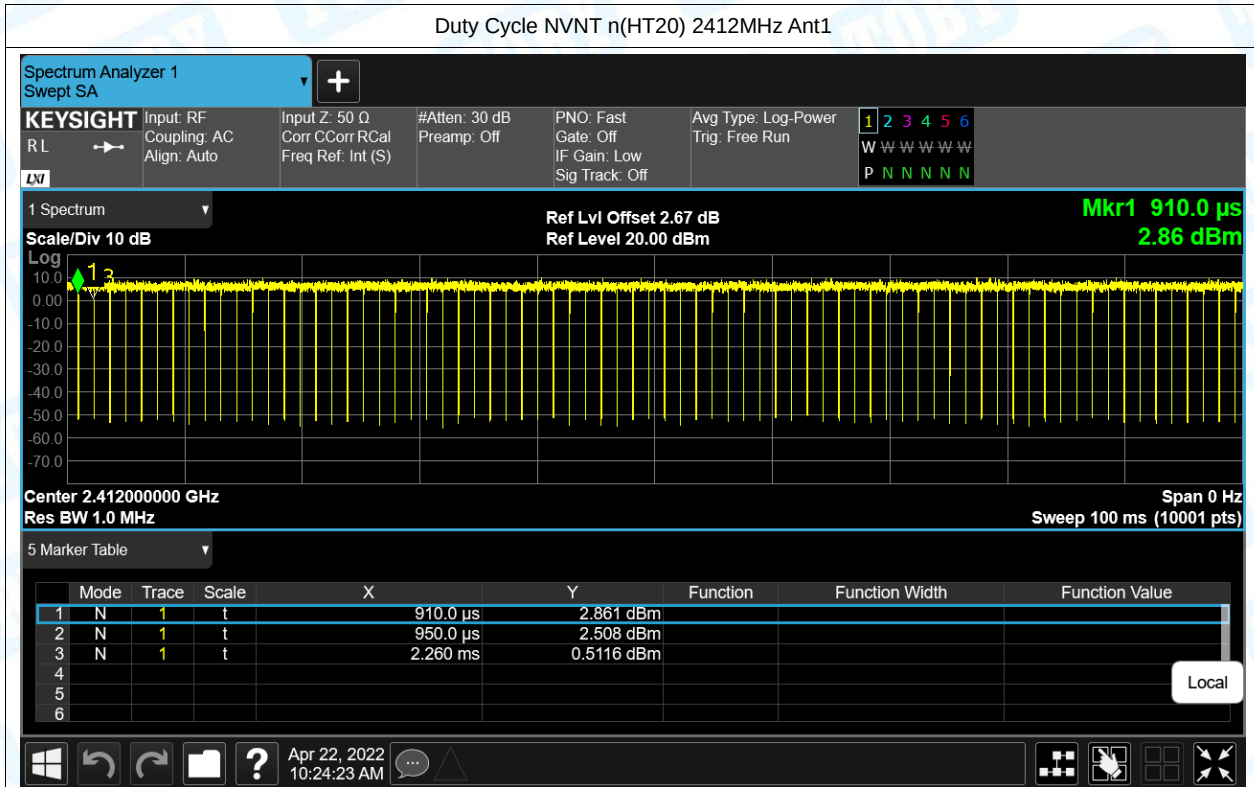
1. Duty Cycle

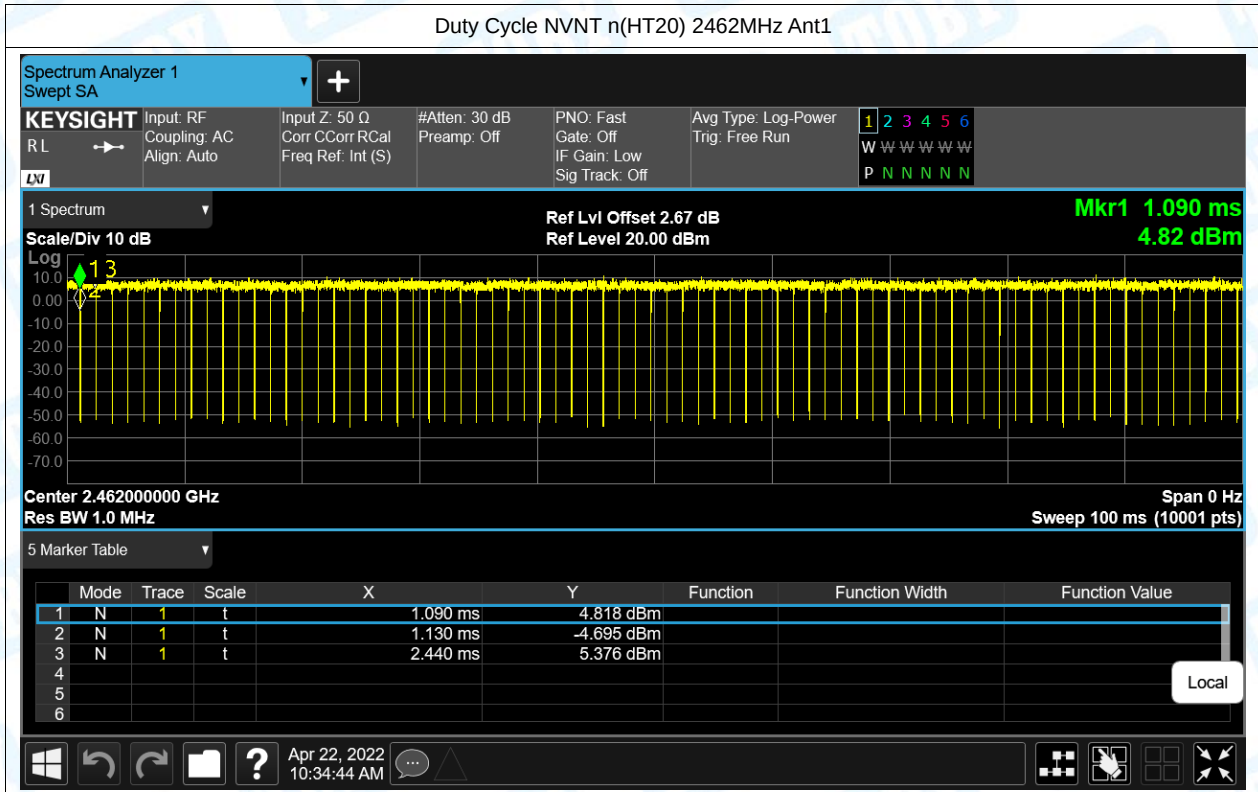
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.74	0.01	0.12
NVNT	b	2437	Ant1	99.74	0.01	0.12
NVNT	b	2462	Ant1	99.74	0.01	0.12
NVNT	g	2412	Ant1	98.03	0.09	0.71
NVNT	g	2437	Ant1	98.01	0.09	0.71
NVNT	g	2462	Ant1	98.03	0.09	0.72
NVNT	n(HT20)	2412	Ant1	97.88	0.09	0.76
NVNT	n(HT20)	2437	Ant1	97.88	0.09	0.76
NVNT	n(HT20)	2462	Ant1	97.87	0.09	0.76











2. Maximum Conducted Output Power

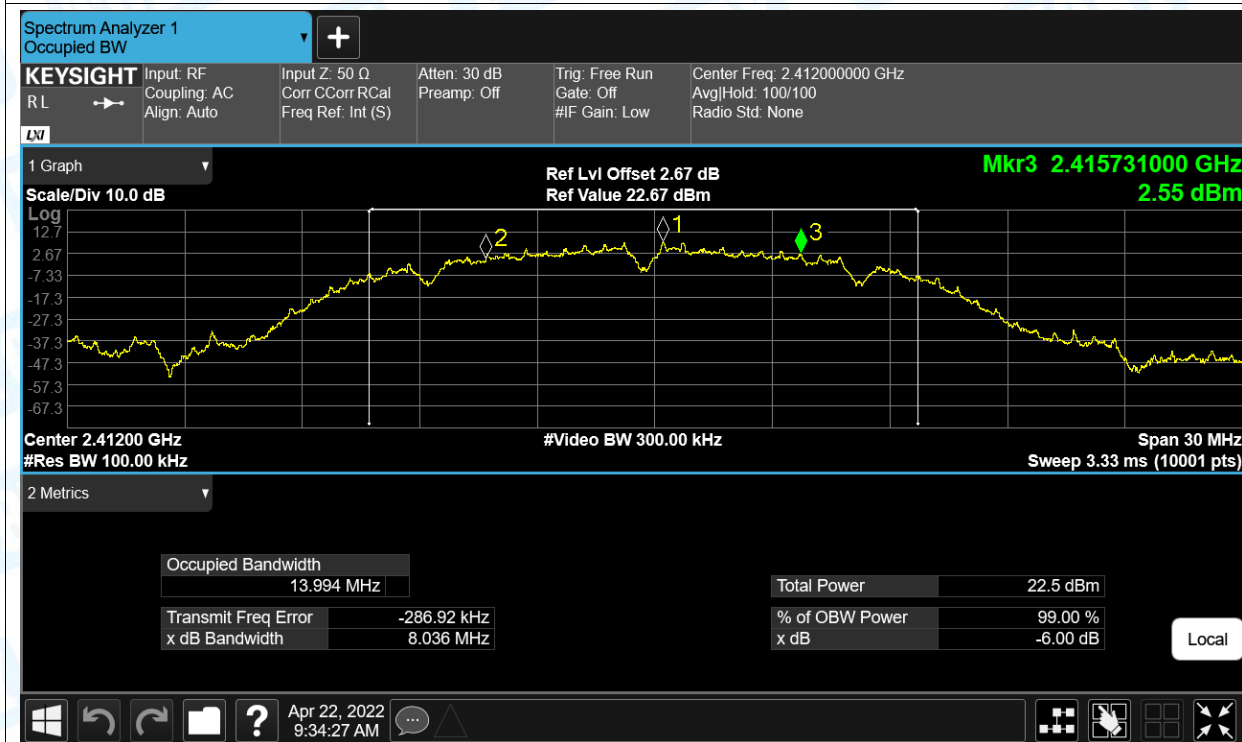
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	17.45	30	Pass
NVNT	b	2437	Ant1	17.79	30	Pass
NVNT	b	2462	Ant1	17.83	30	Pass
NVNT	g	2412	Ant1	18.71	30	Pass
NVNT	g	2437	Ant1	18.93	30	Pass
NVNT	g	2462	Ant1	17.93	30	Pass
NVNT	n(HT20)	2412	Ant1	17.38	30	Pass
NVNT	n(HT20)	2437	Ant1	17.51	30	Pass
NVNT	n(HT20)	2462	Ant1	17.78	30	Pass

3. -6dB Bandwidth

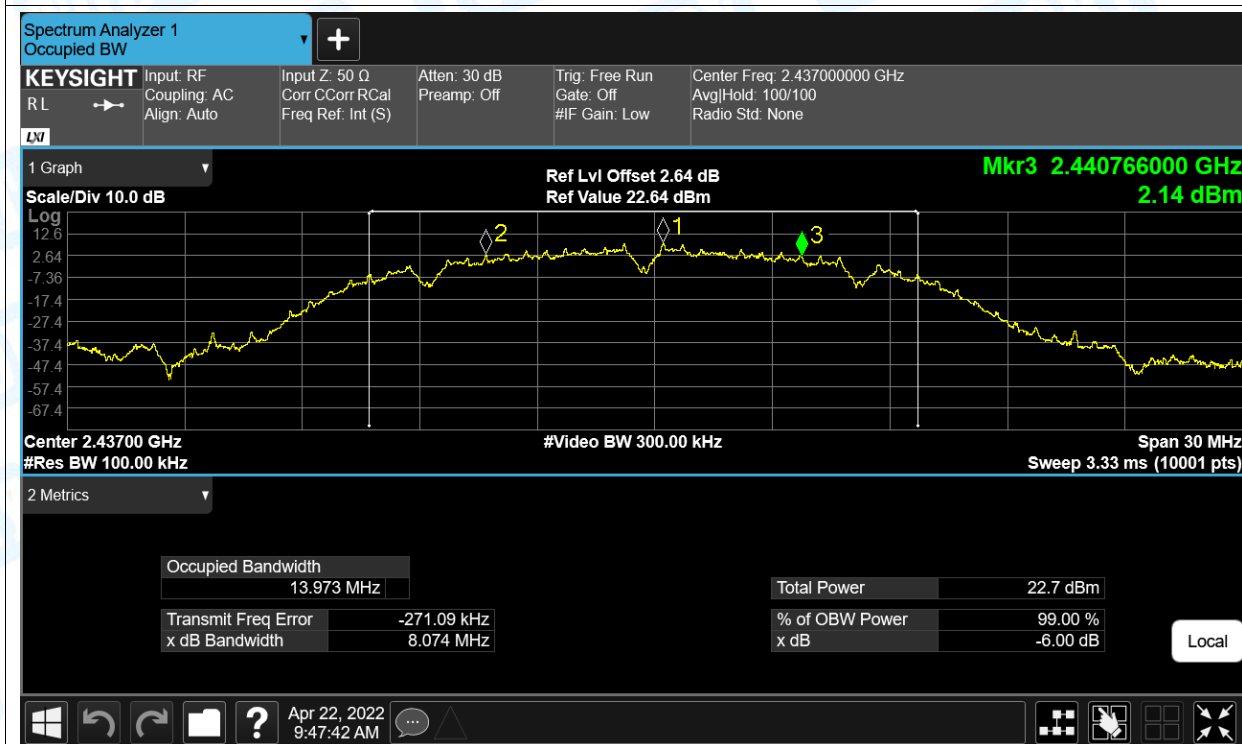
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.04	0.5	Pass
NVNT	b	2437	Ant1	8.07	0.5	Pass
NVNT	b	2462	Ant1	9.05	0.5	Pass
NVNT	g	2412	Ant1	14.41	0.5	Pass
NVNT	g	2437	Ant1	15.41	0.5	Pass
NVNT	g	2462	Ant1	14.03	0.5	Pass
NVNT	n(HT20)	2412	Ant1	15.05	0.5	Pass
NVNT	n(HT20)	2437	Ant1	15.4	0.5	Pass
NVNT	n(HT20)	2462	Ant1	15.05	0.5	Pass

Test Graphs

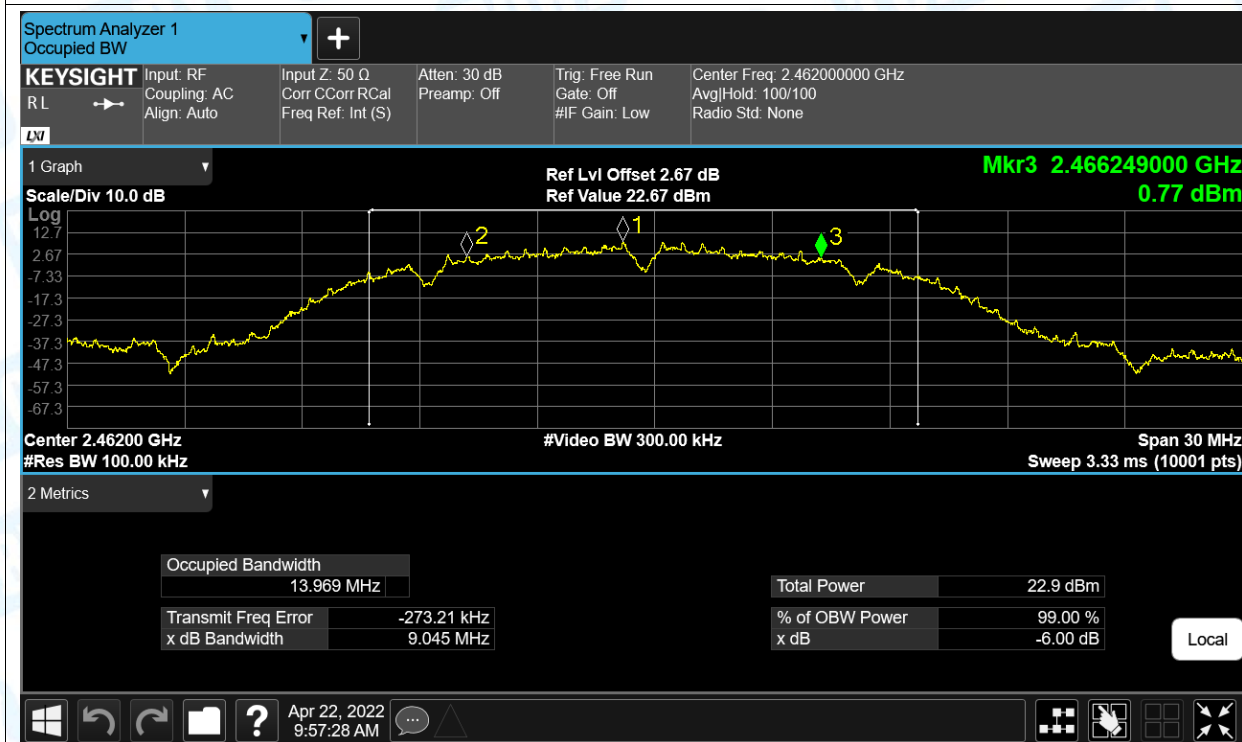
-6dB Bandwidth NVNT b 2412MHz Ant1



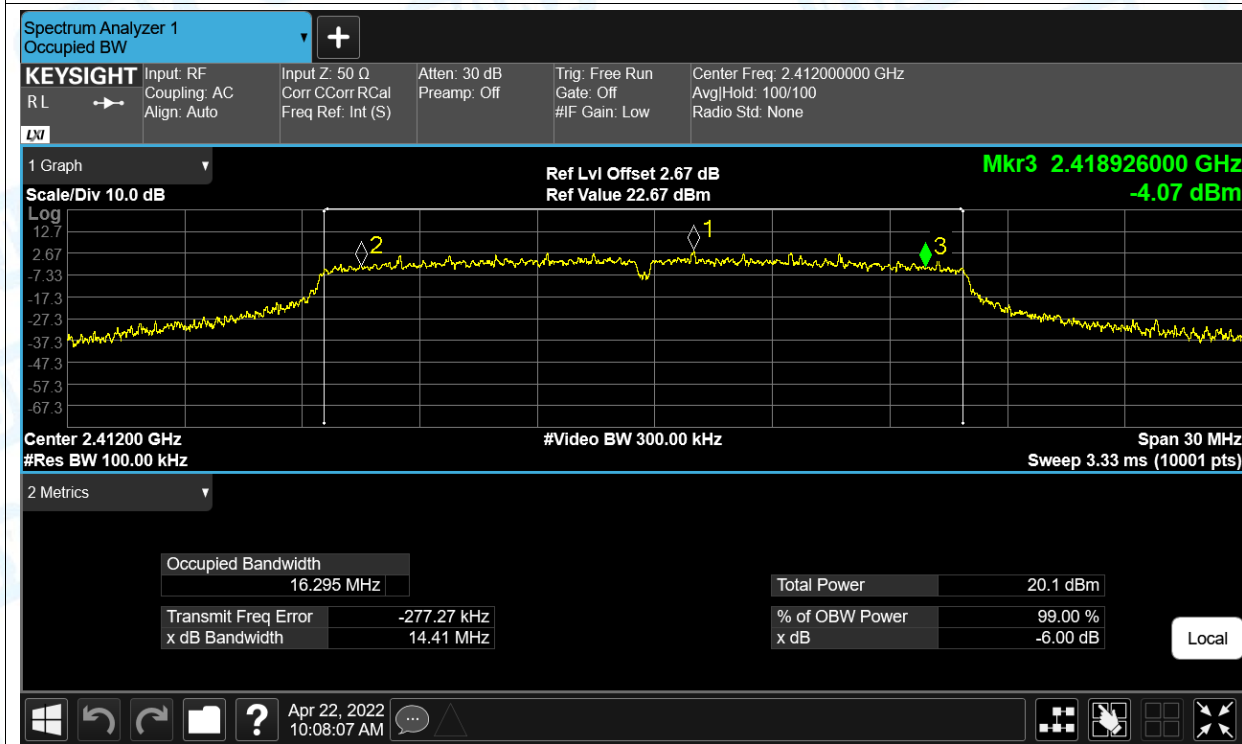
-6dB Bandwidth NVNT b 2437MHz Ant1



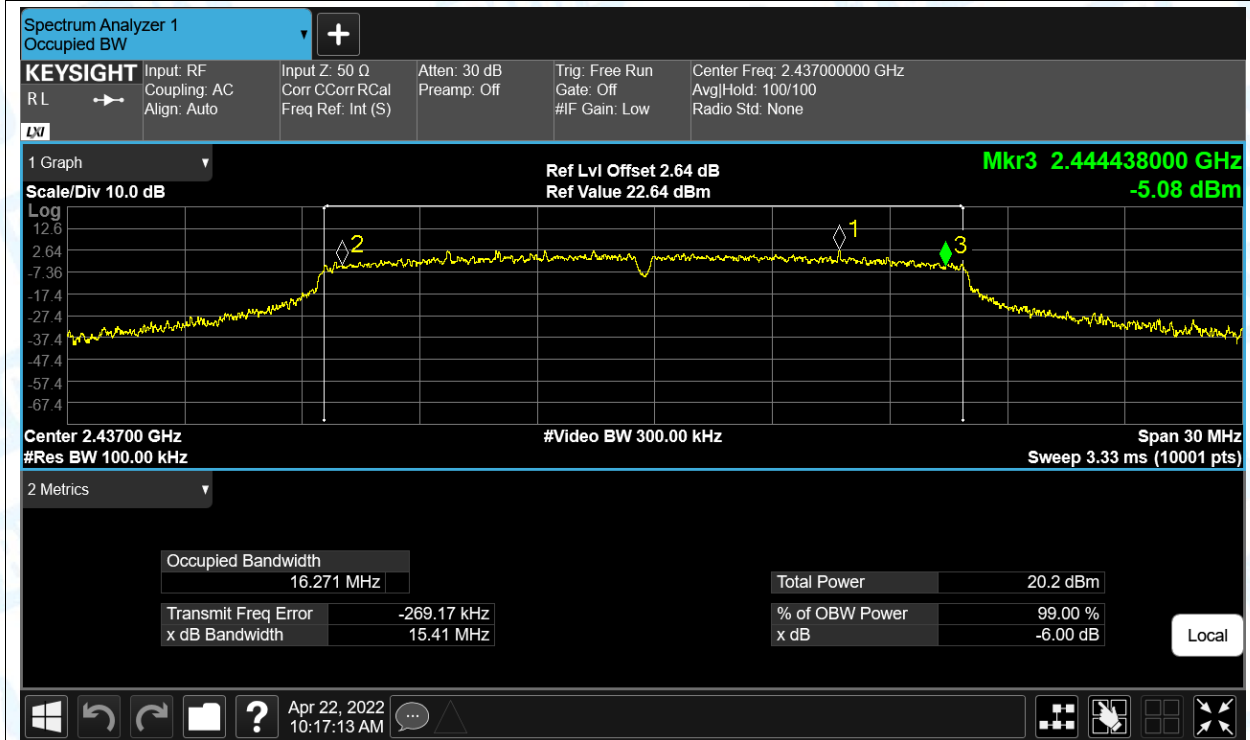
-6dB Bandwidth NVNT b 2462MHz Ant1



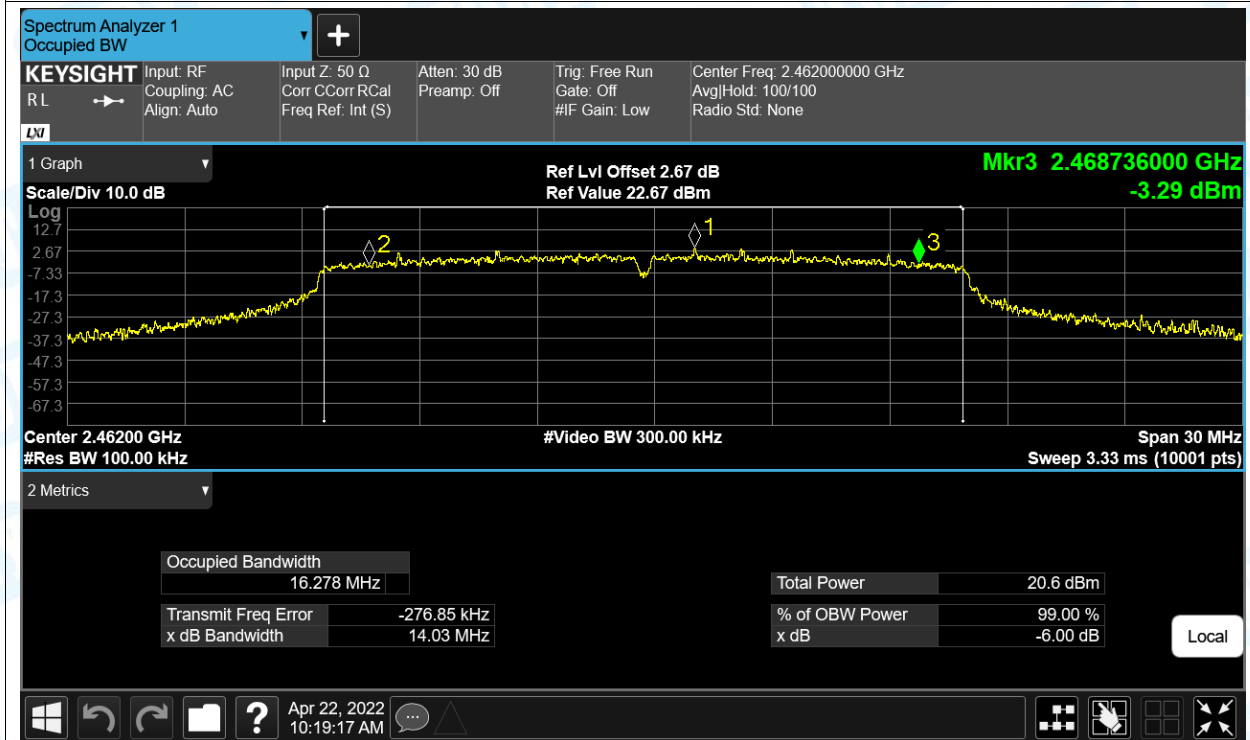
-6dB Bandwidth NVNT g 2412MHz Ant1



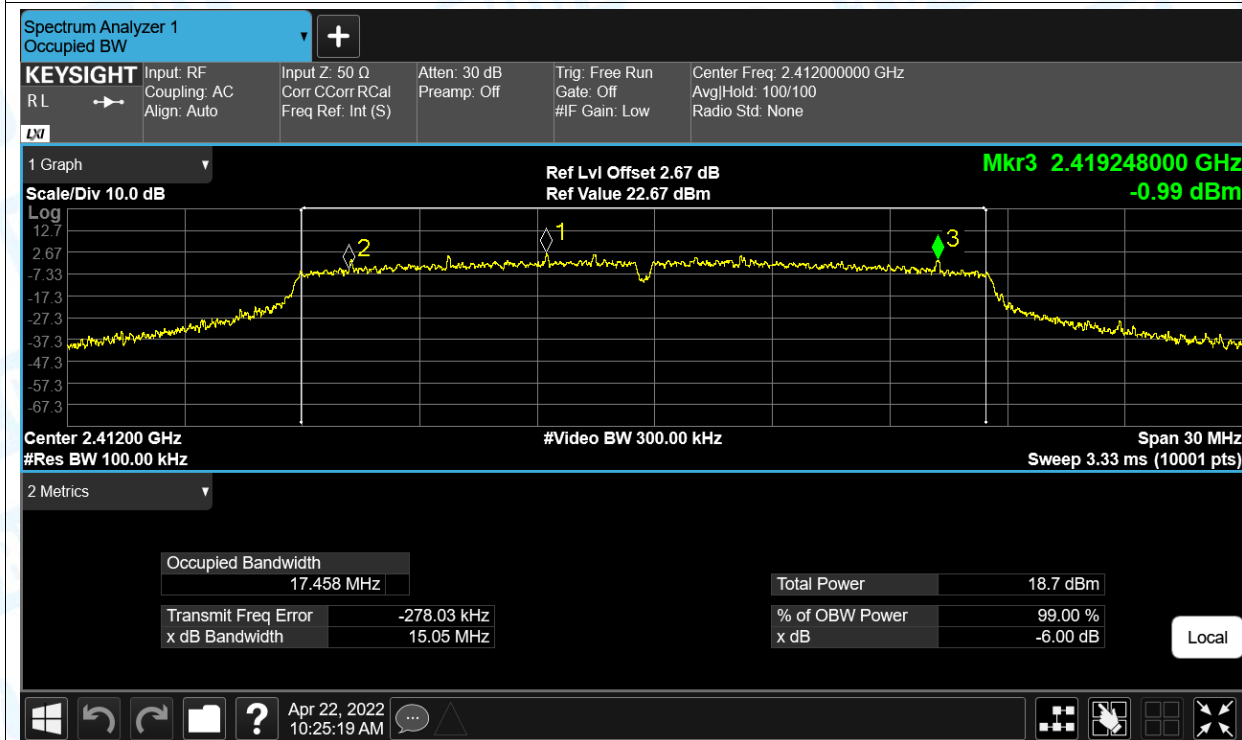
-6dB Bandwidth NVNT g 2437MHz Ant1



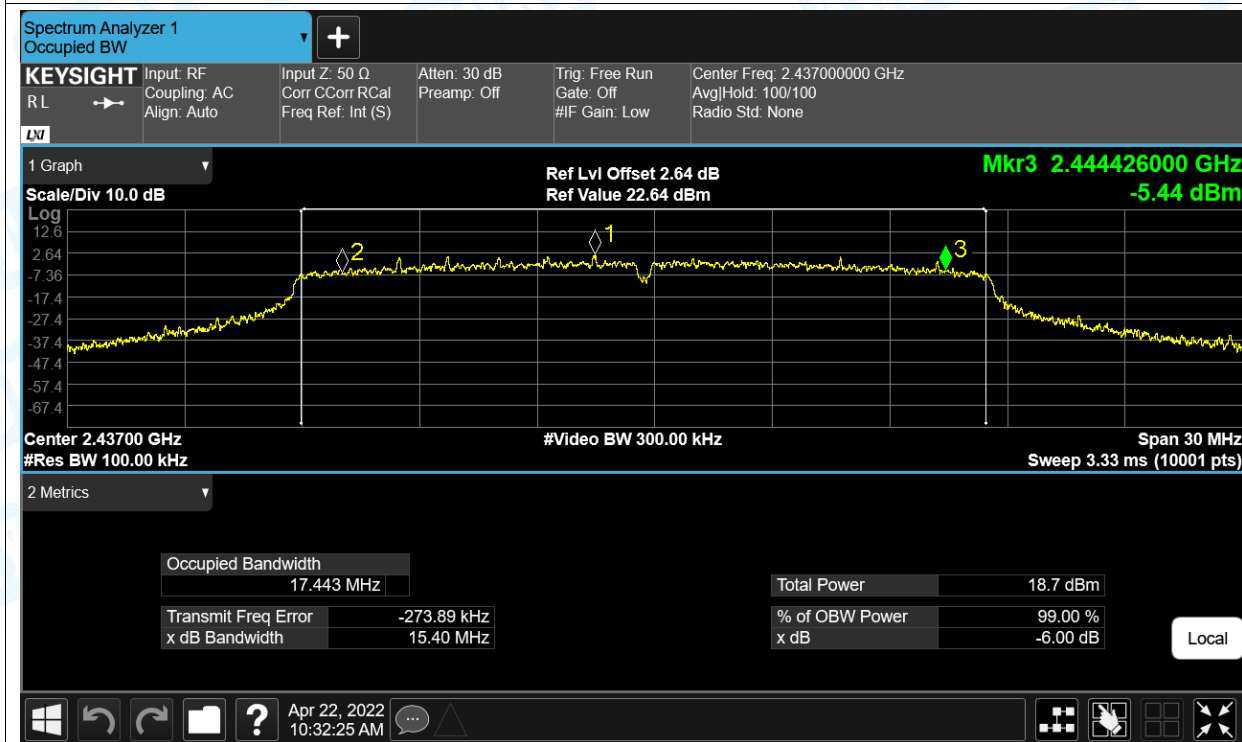
-6dB Bandwidth NVNT g 2462MHz Ant1

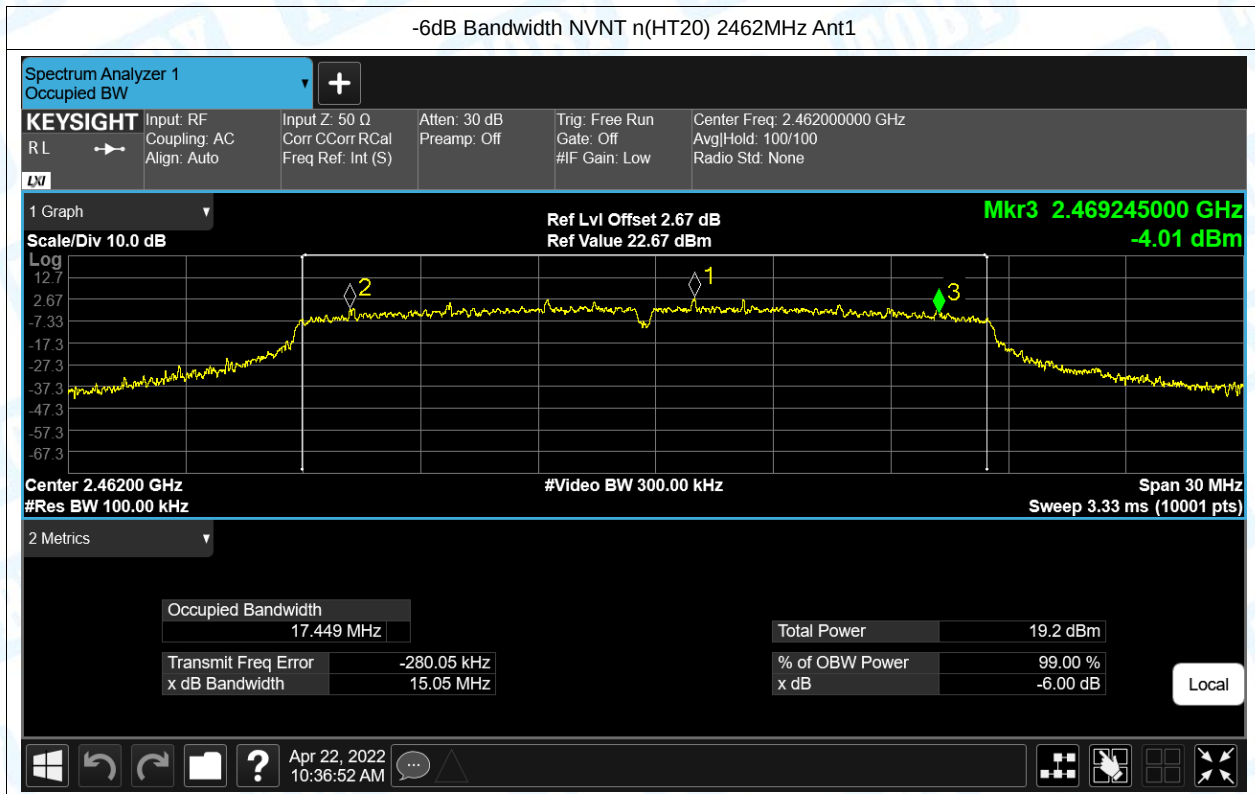


-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



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



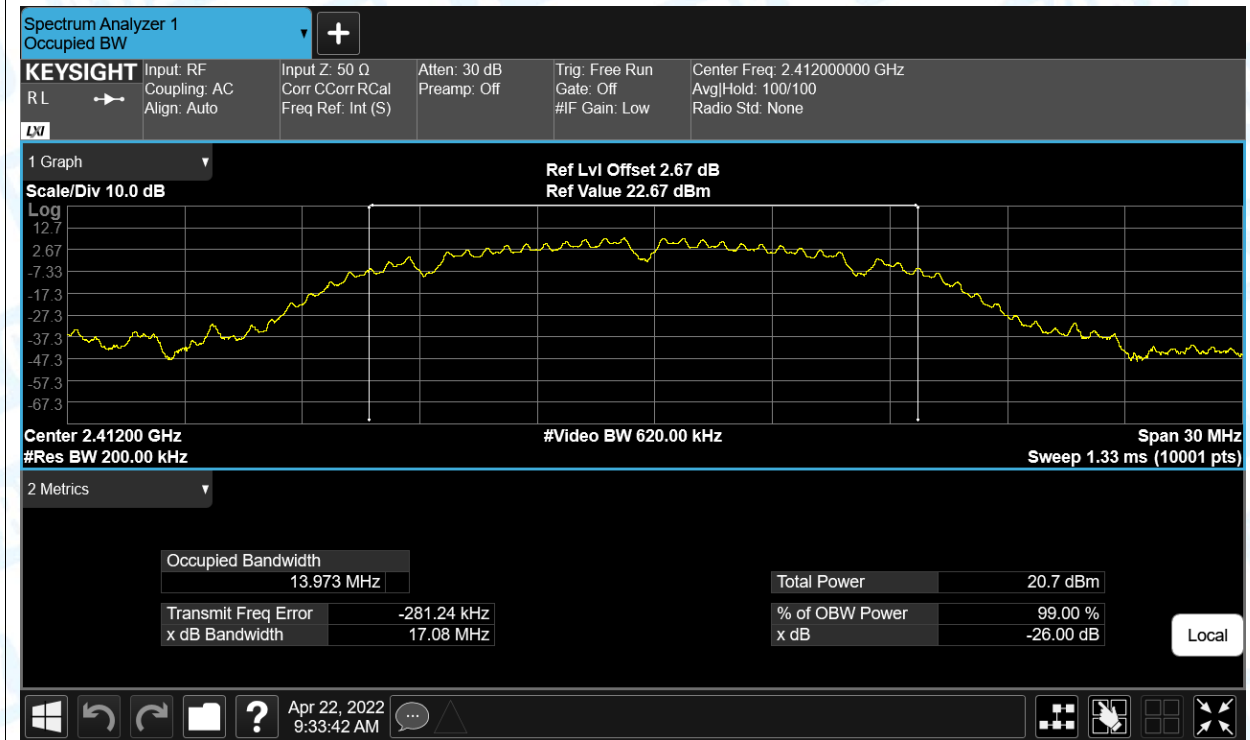


4. Occupied Channel Bandwidth

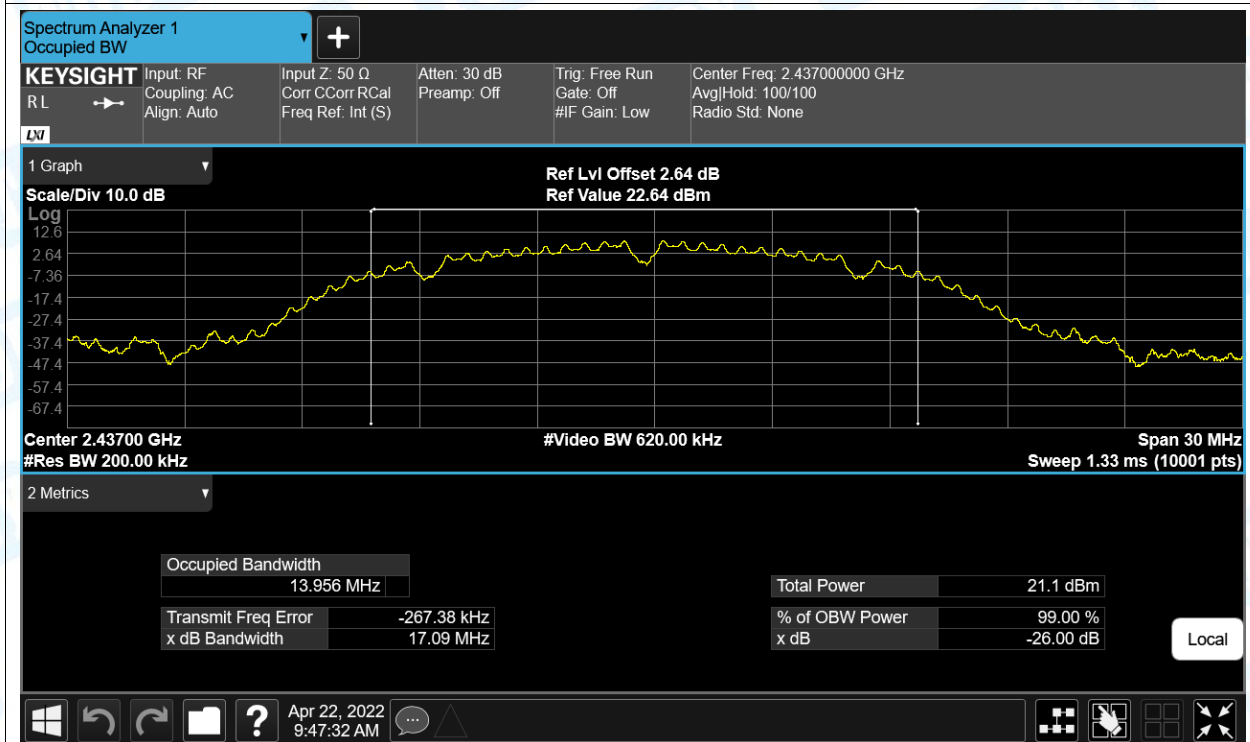
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	13.973
NVNT	b	2437	Ant1	13.956
NVNT	b	2462	Ant1	13.954
NVNT	g	2412	Ant1	16.326
NVNT	g	2437	Ant1	16.29
NVNT	g	2462	Ant1	16.294
NVNT	n(HT20)	2412	Ant1	17.446
NVNT	n(HT20)	2437	Ant1	17.422
NVNT	n(HT20)	2462	Ant1	17.443

Test Graphs

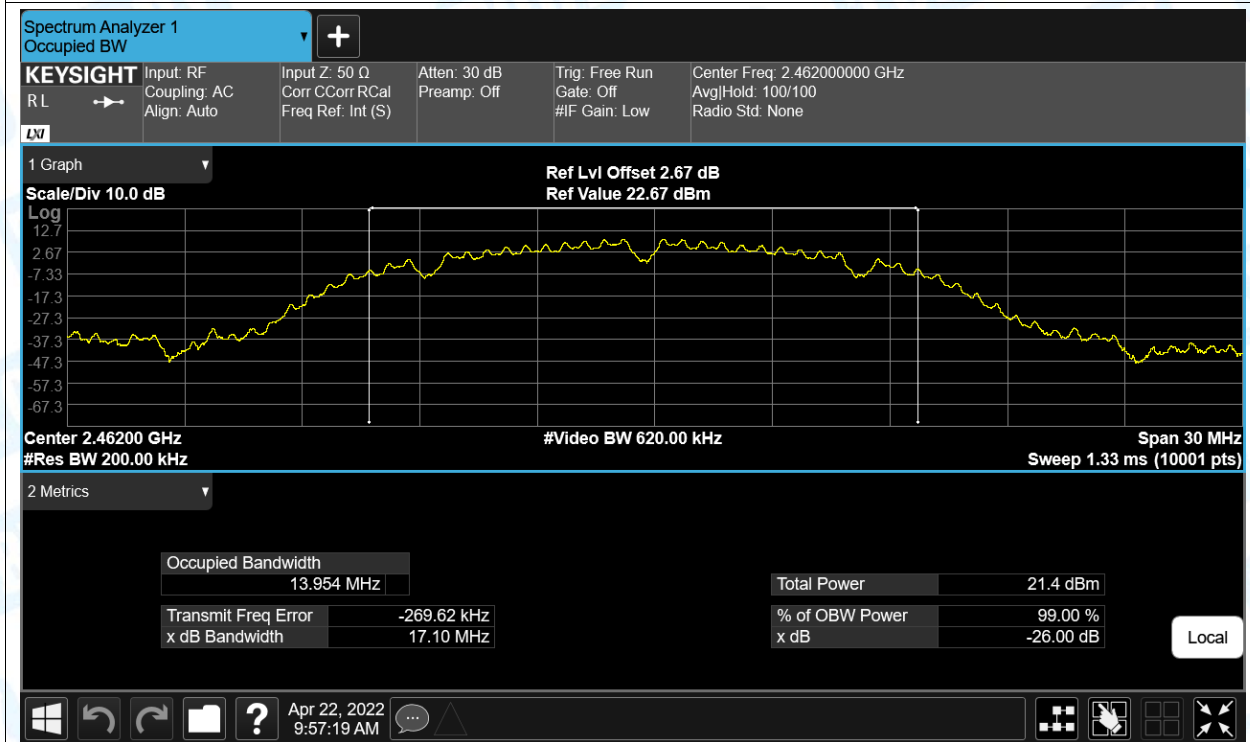
OBW NVNT b 2412MHz Ant1



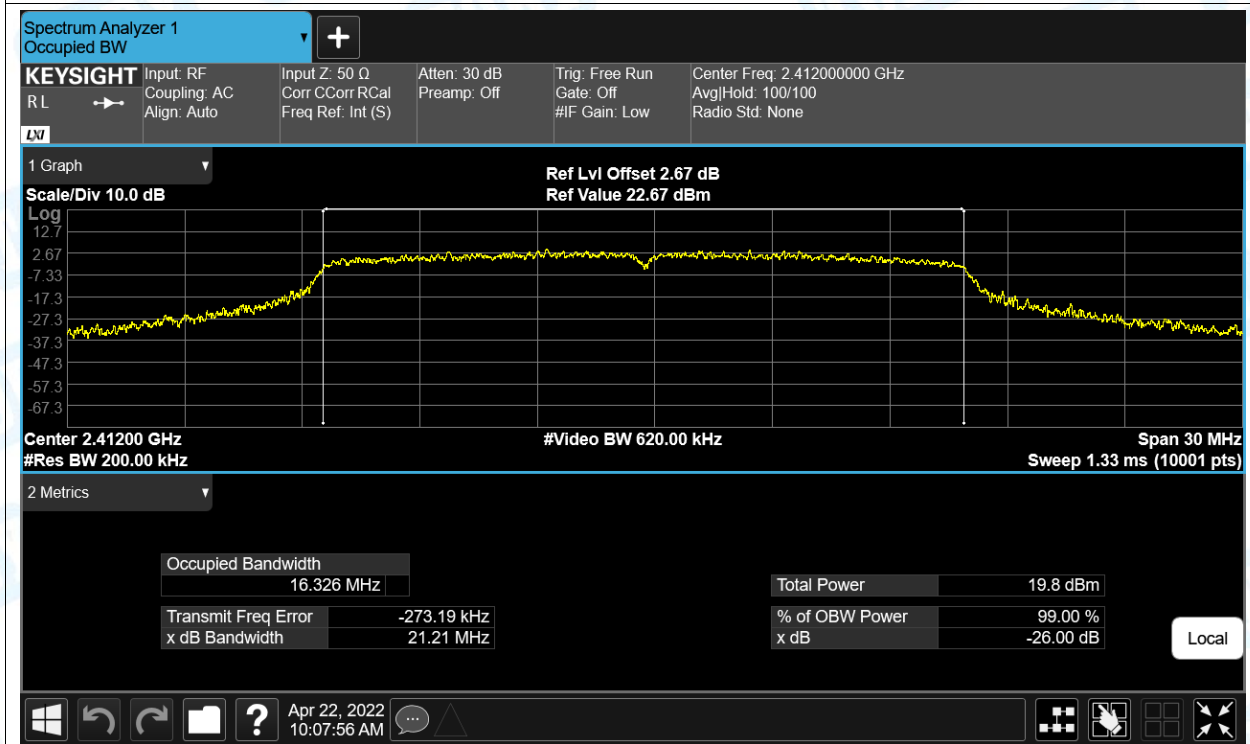
OBW NVNT b 2437MHz Ant1



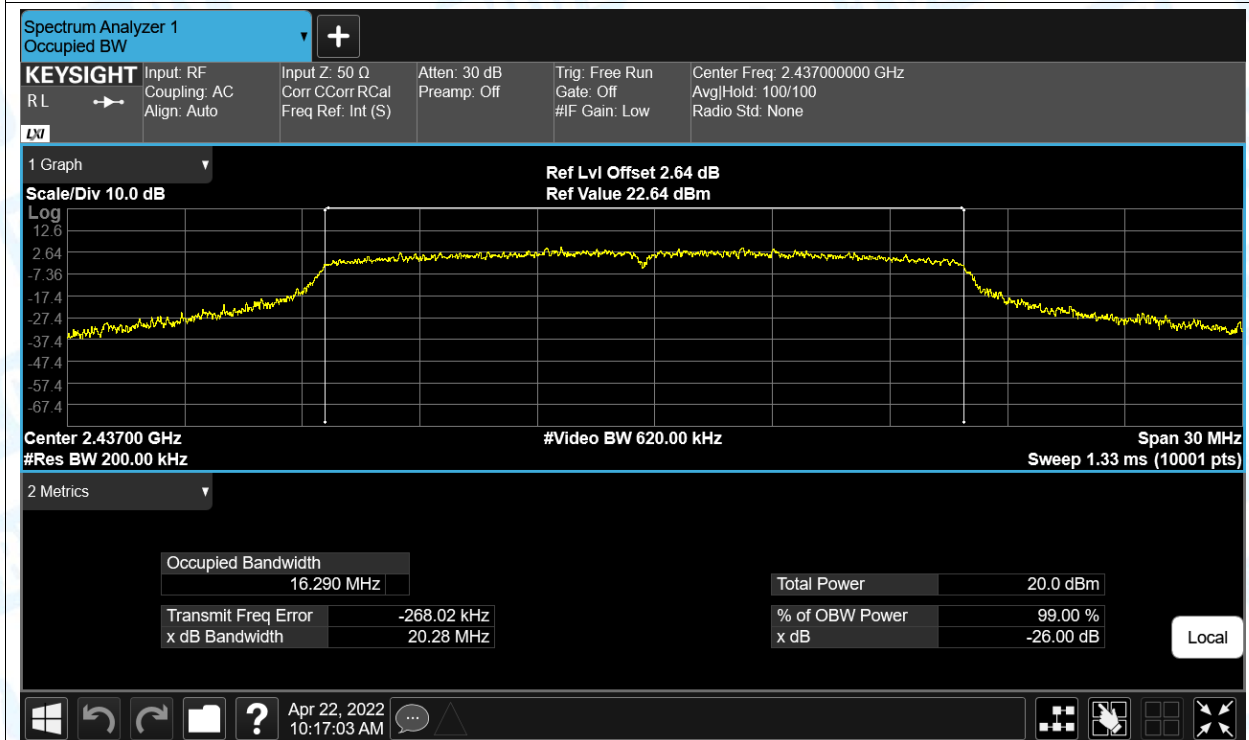
OBW NVNT b 2462MHz Ant1



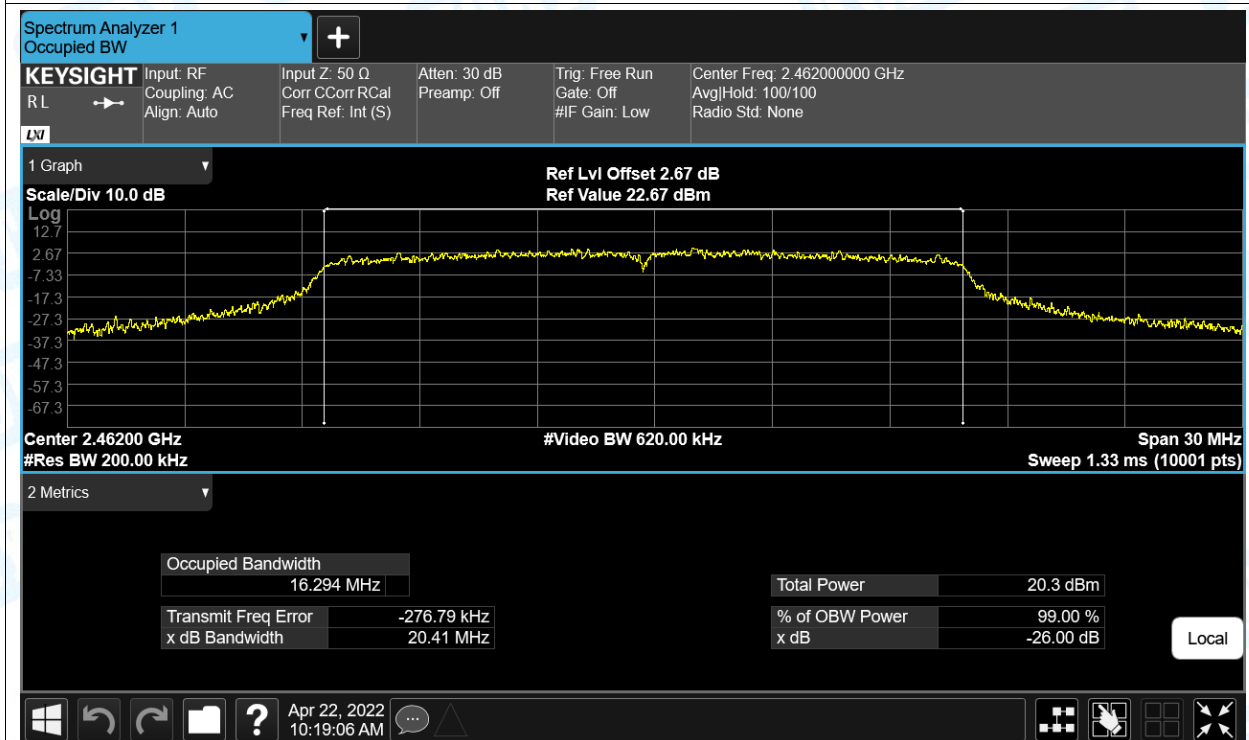
OBW NVNT g 2412MHz Ant1



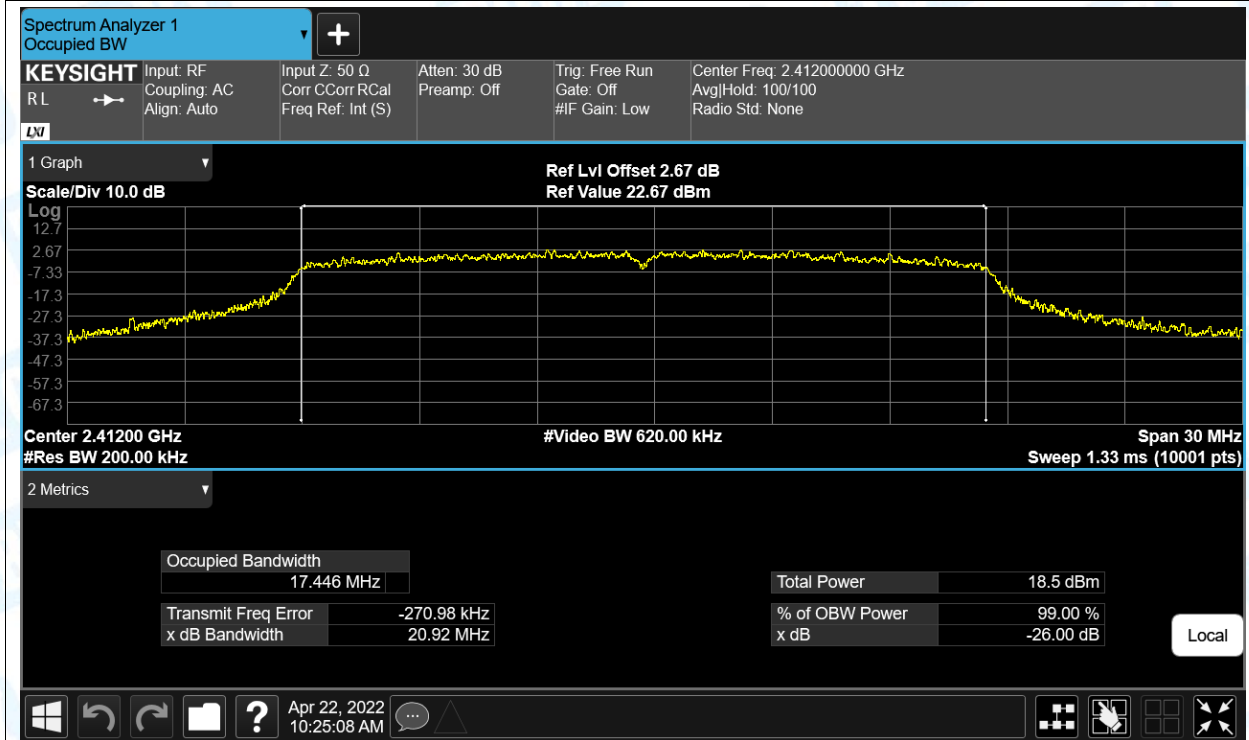
OBW NVNT g 2437MHz Ant1



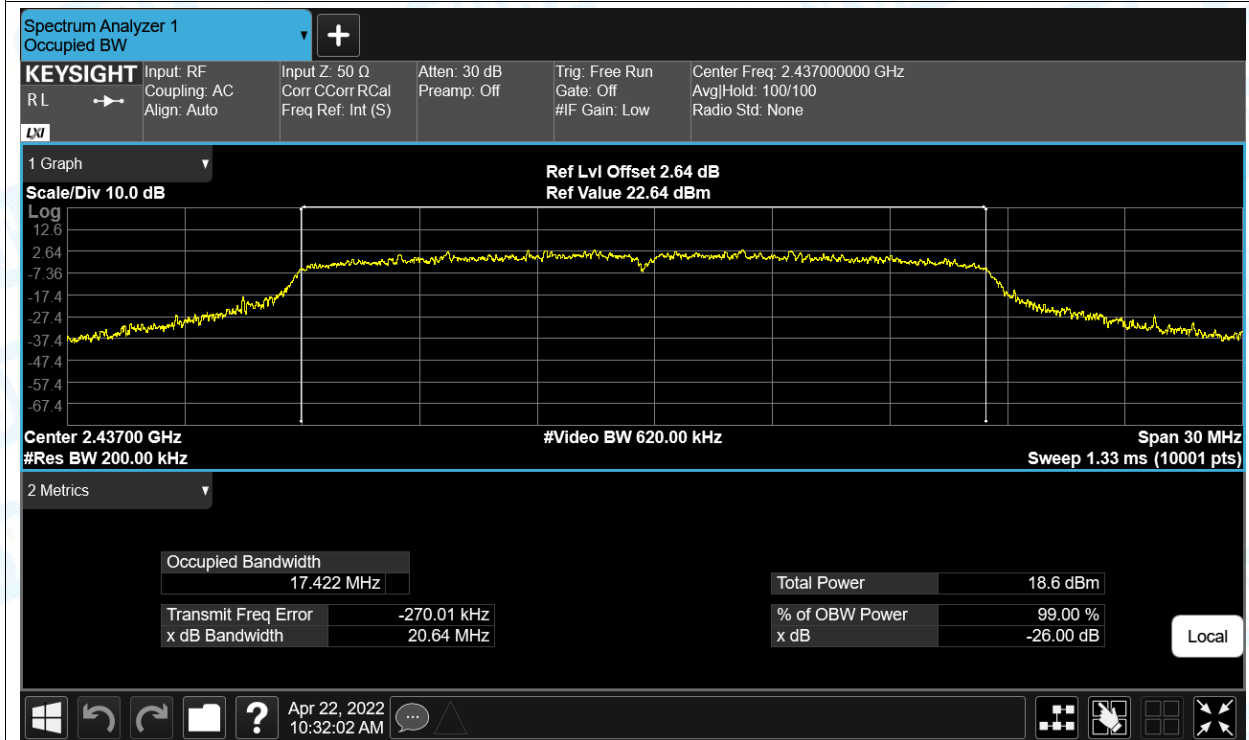
OBW NVNT g 2462MHz Ant1

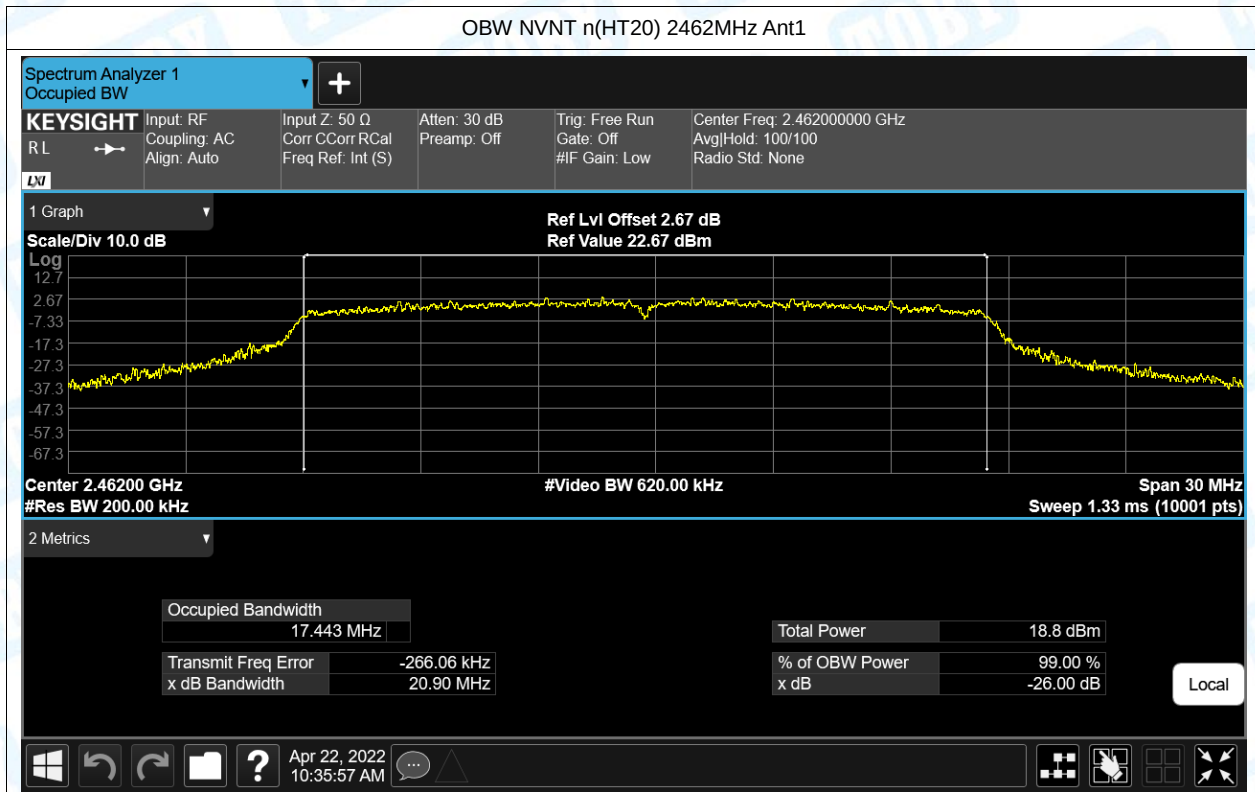


OBW NVNT n(HT20) 2412MHz Ant1



OBW NVNT n(HT20) 2437MHz Ant1



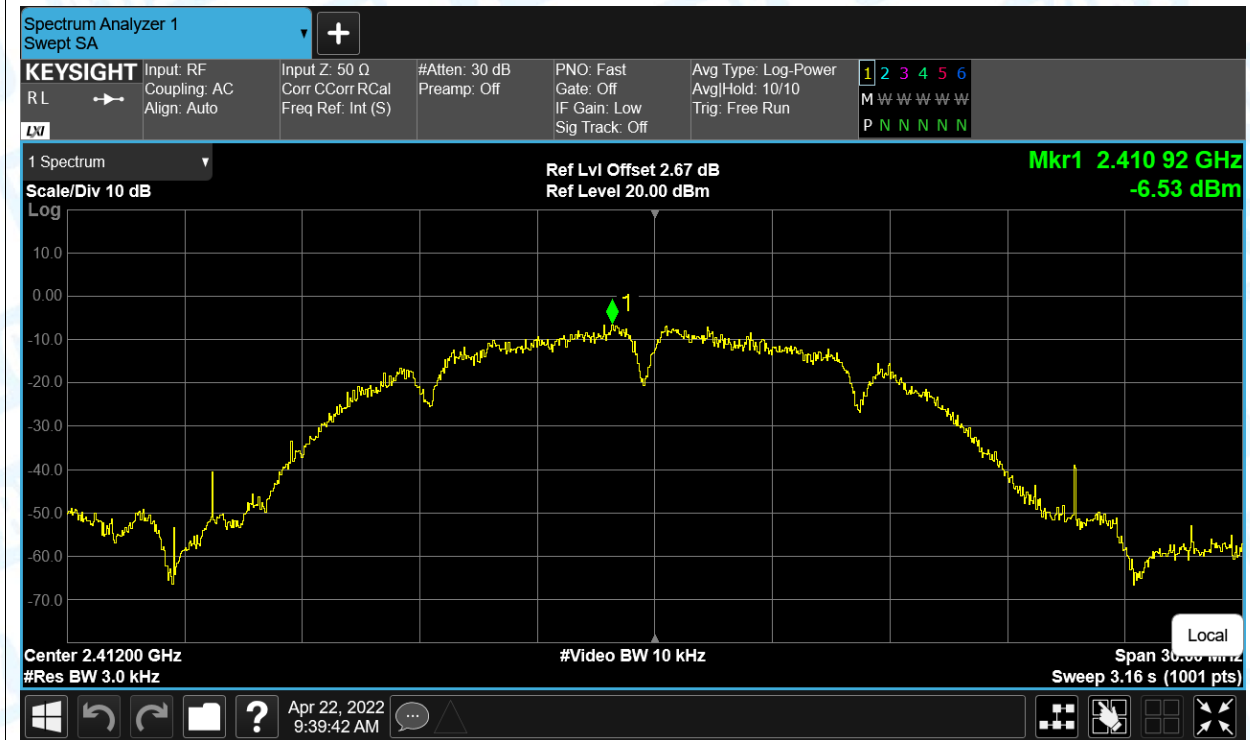


5. Maximum Power Spectral Density Level

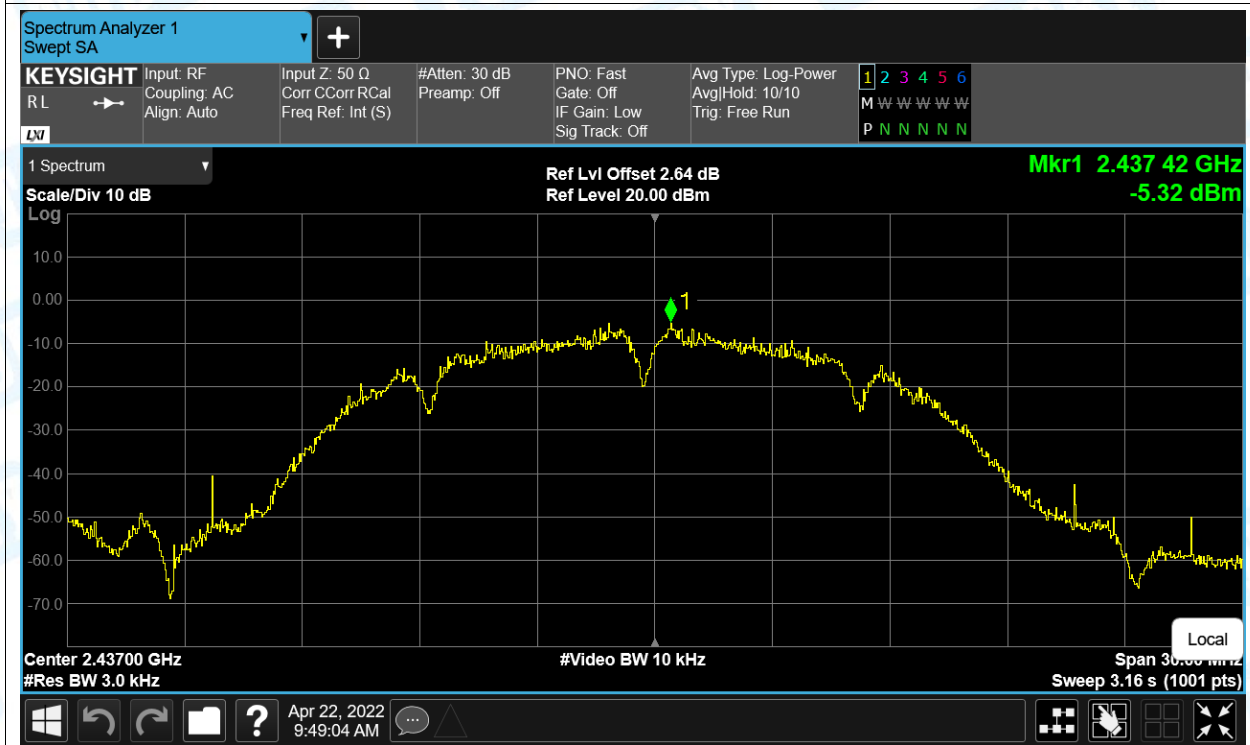
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-6.527	8	Pass
NVNT	b	2437	Ant1	-5.317	8	Pass
NVNT	b	2462	Ant1	-3.794	8	Pass
NVNT	g	2412	Ant1	-10.725	8	Pass
NVNT	g	2437	Ant1	-9.883	8	Pass
NVNT	g	2462	Ant1	-10.136	8	Pass
NVNT	n(HT20)	2412	Ant1	-11.615	8	Pass
NVNT	n(HT20)	2437	Ant1	-11.038	8	Pass
NVNT	n(HT20)	2462	Ant1	-11.176	8	Pass

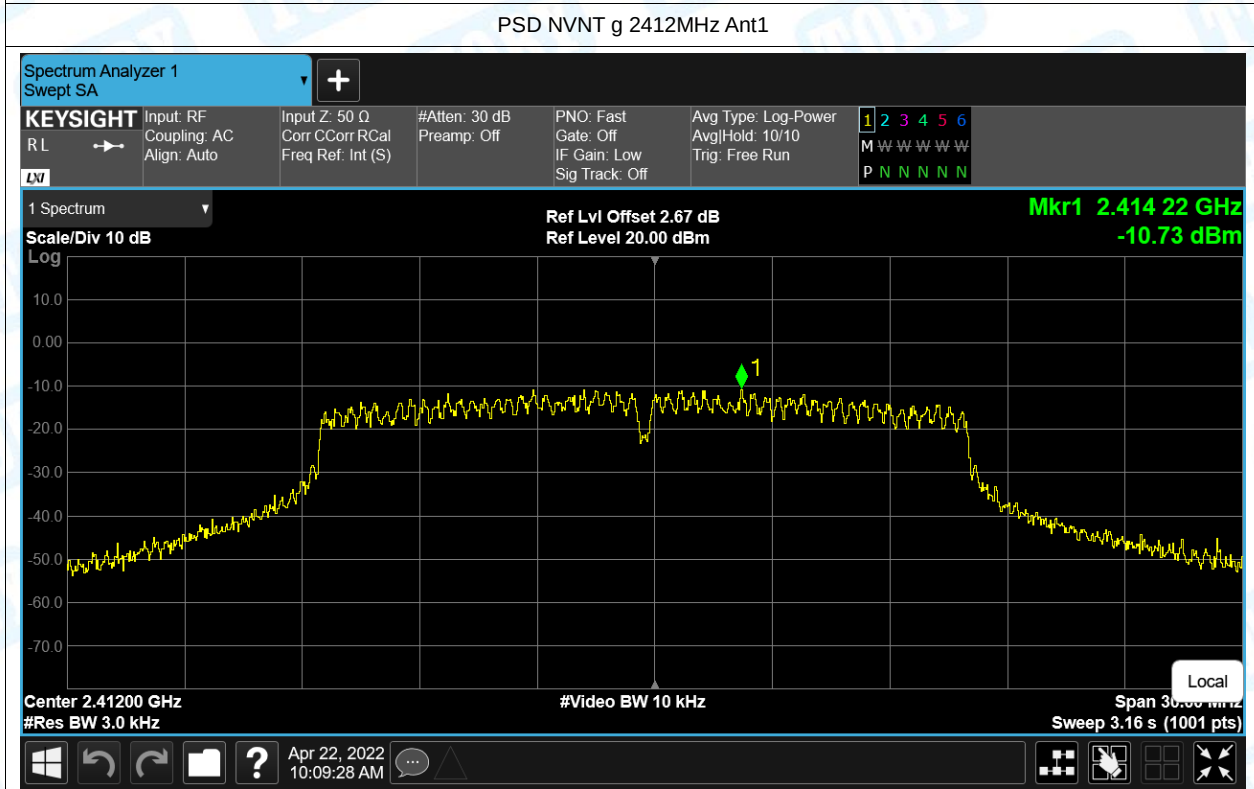
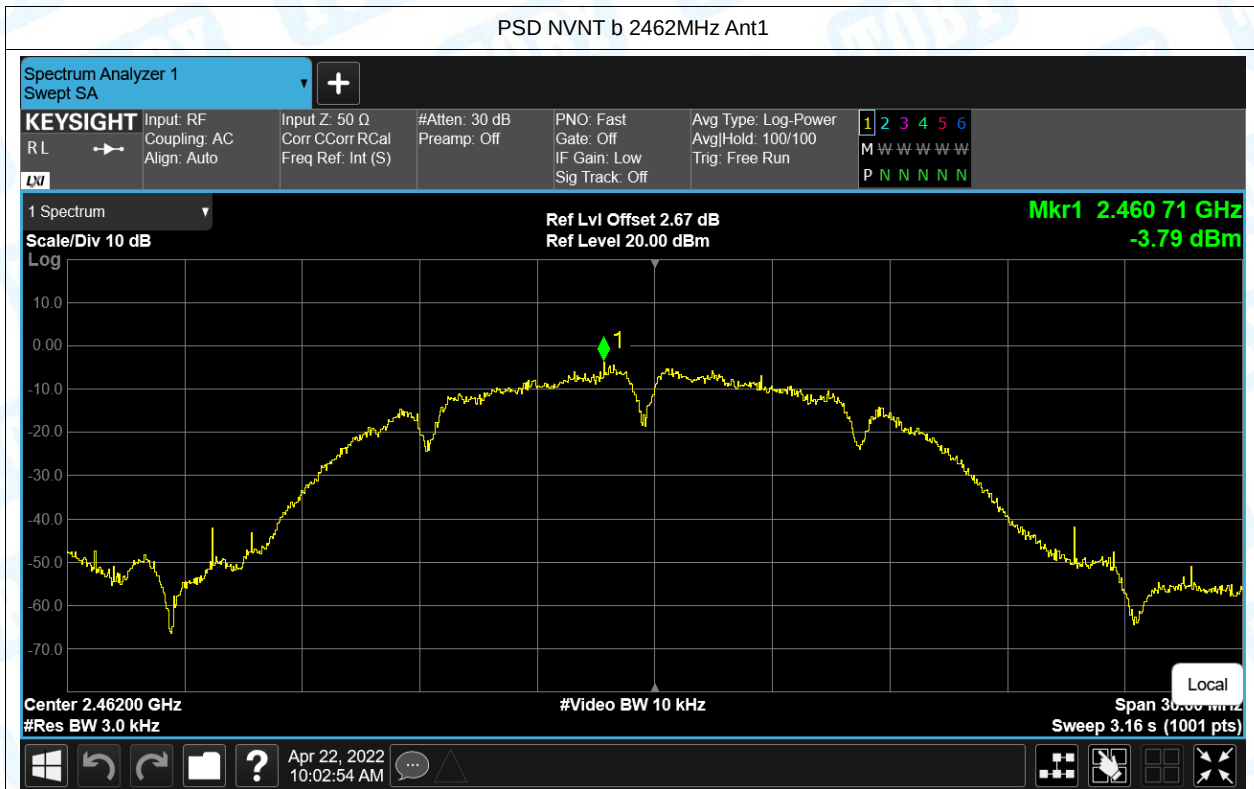
Test Graphs

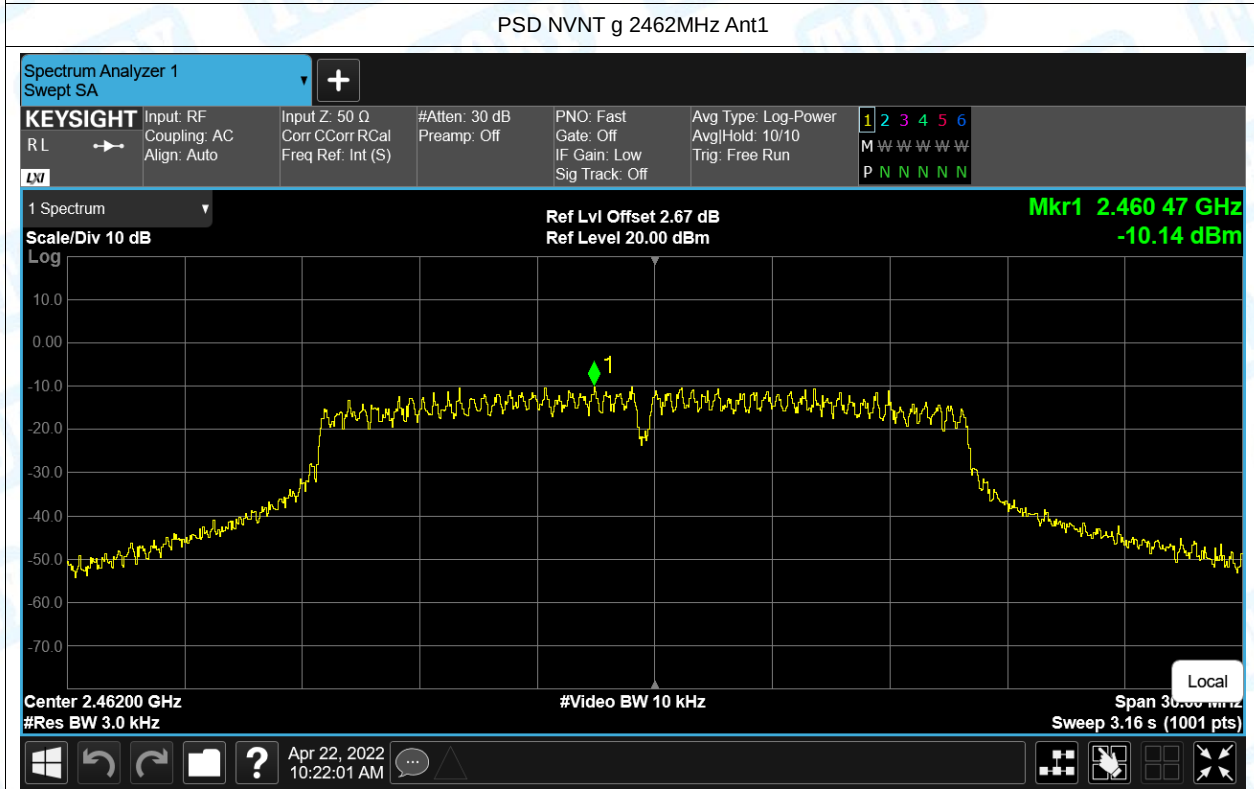
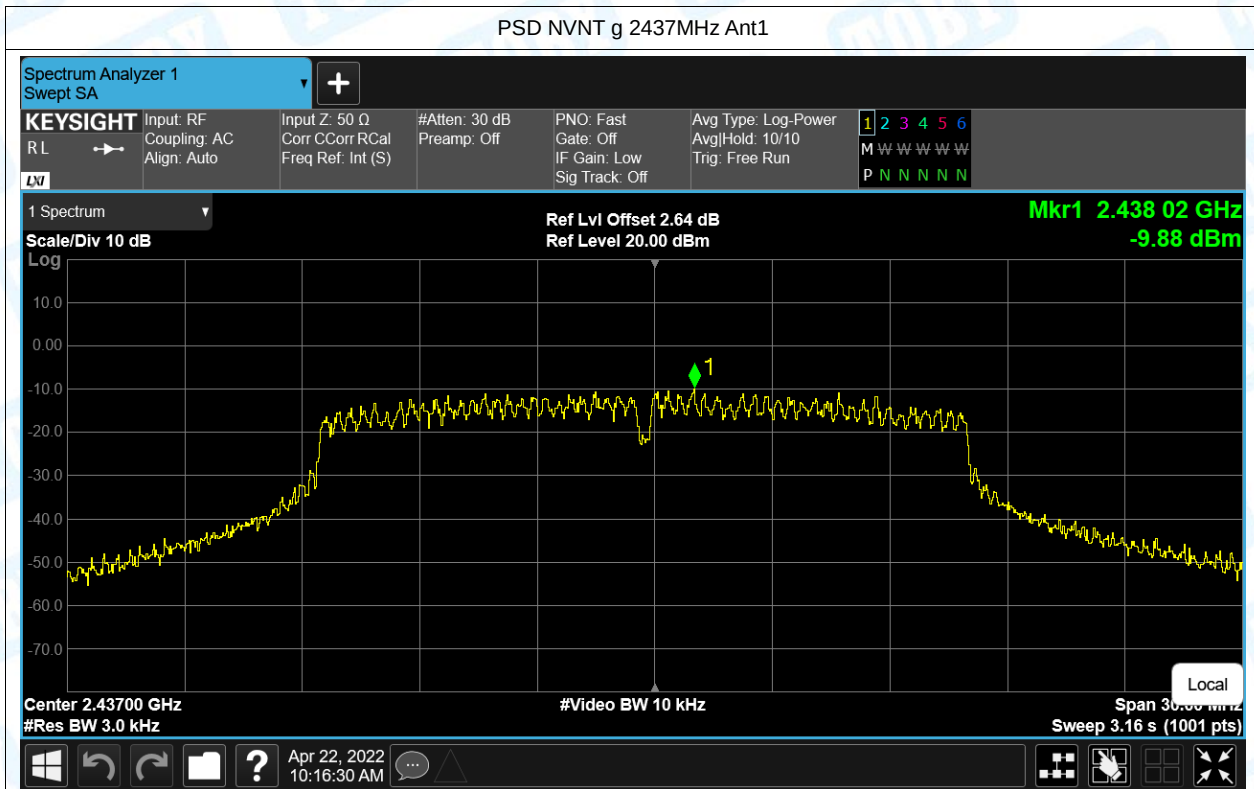
PSD NVNT b 2412MHz Ant1

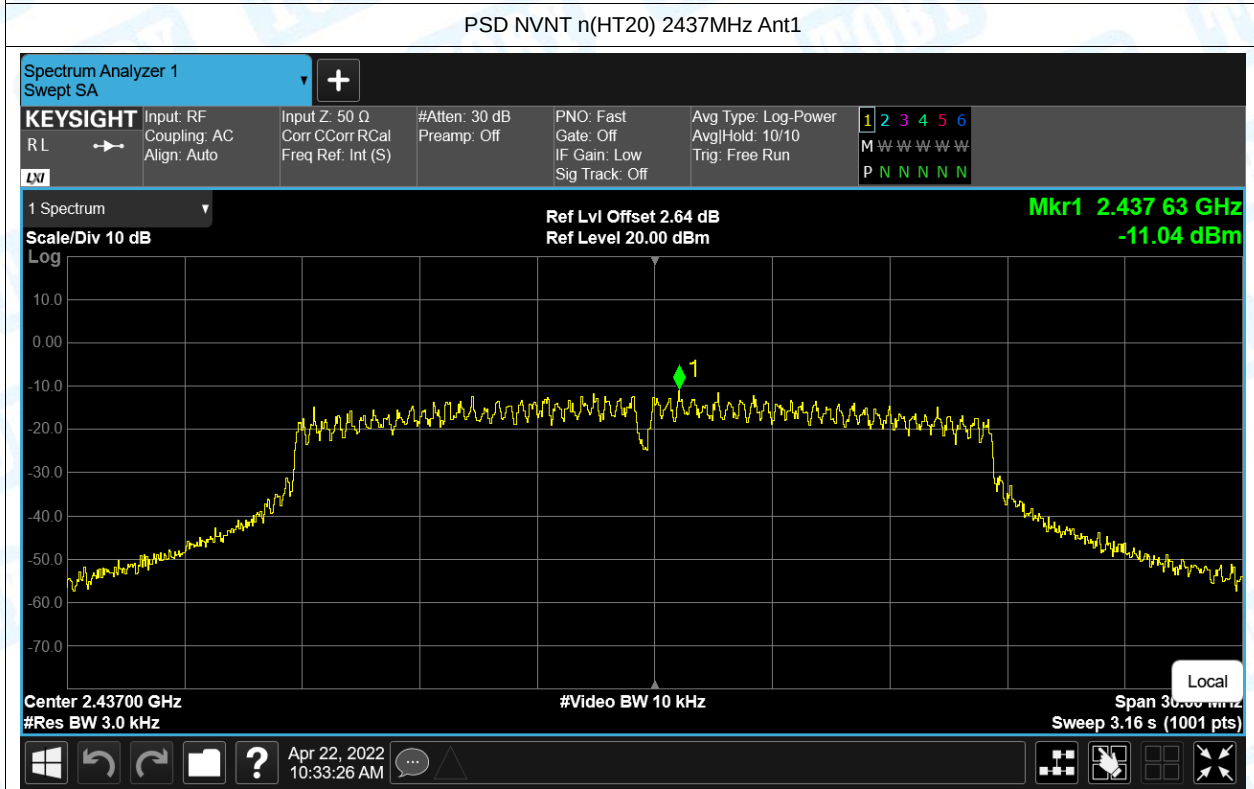
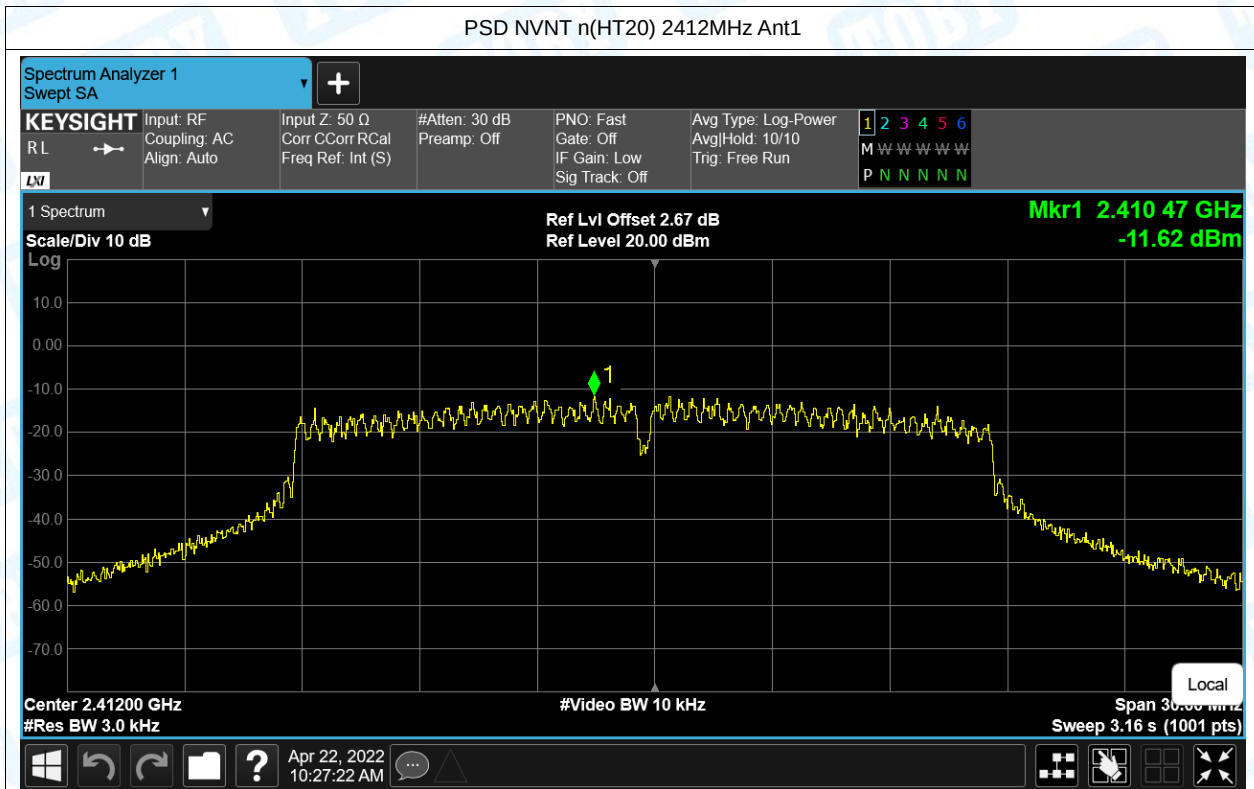


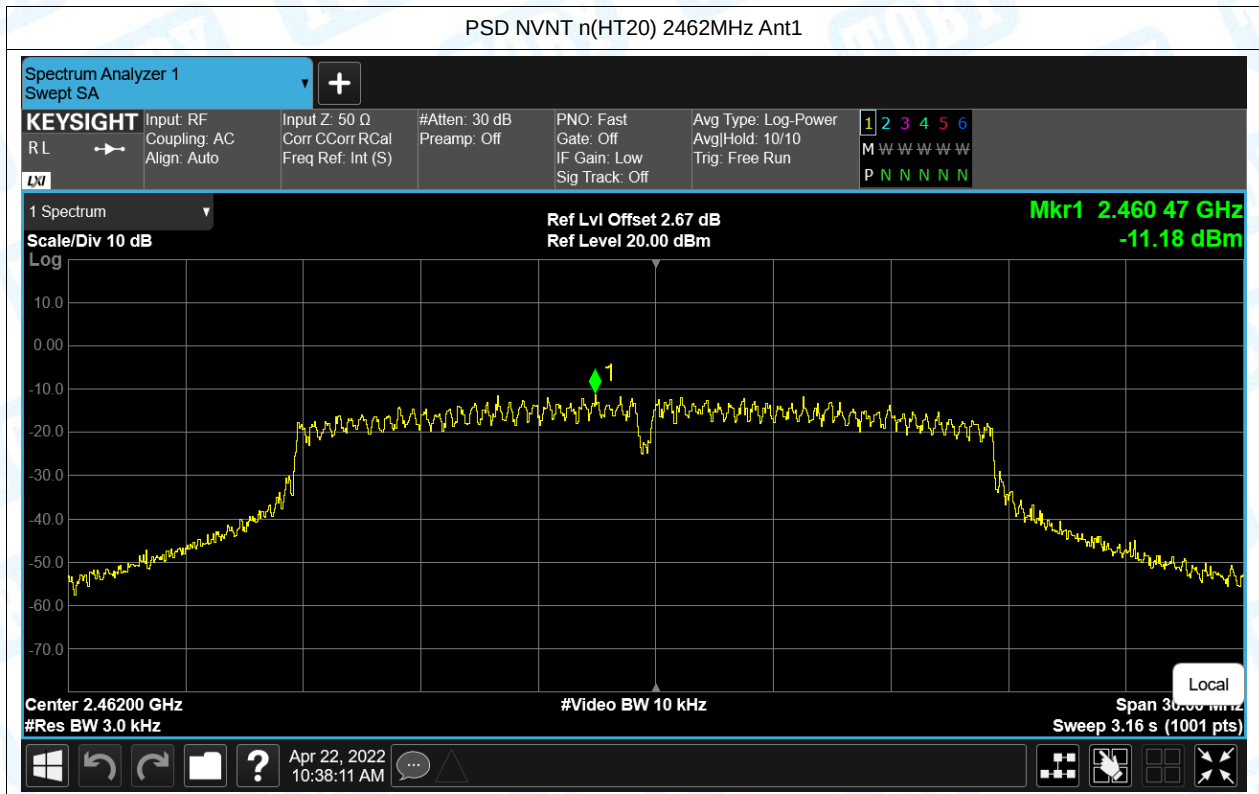
PSD NVNT b 2437MHz Ant1









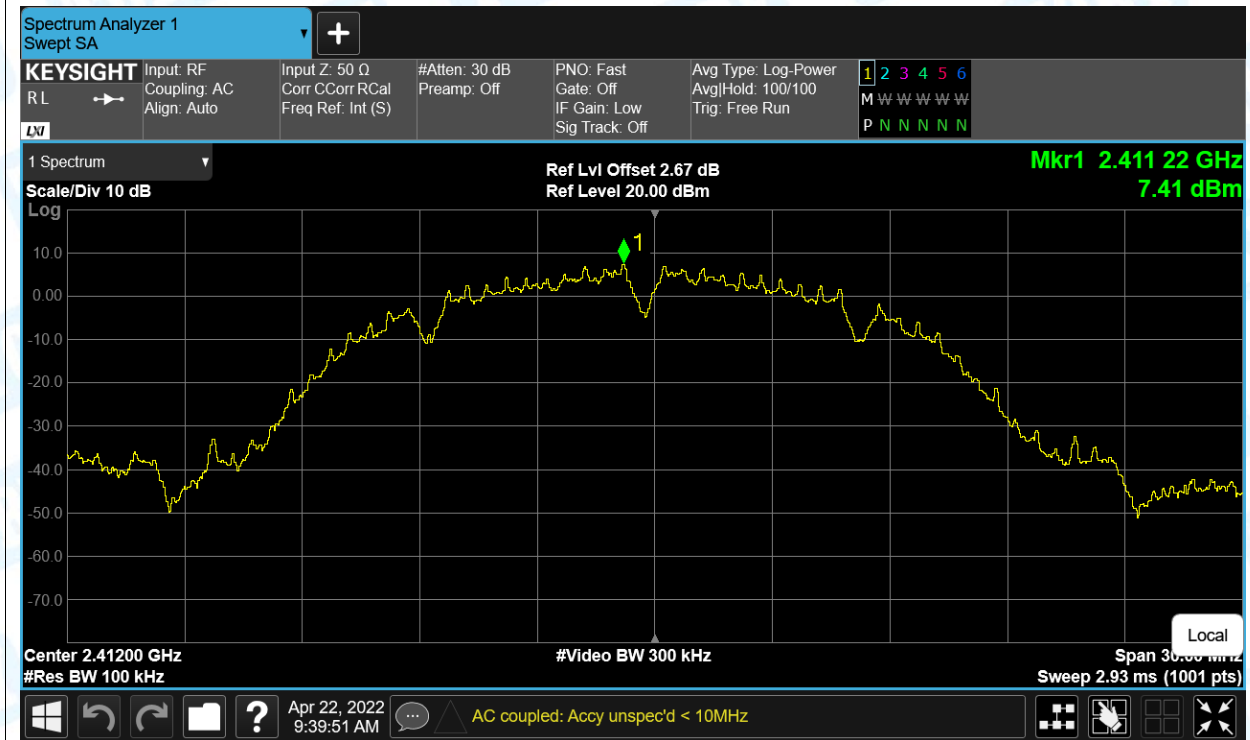


6. Band Edge

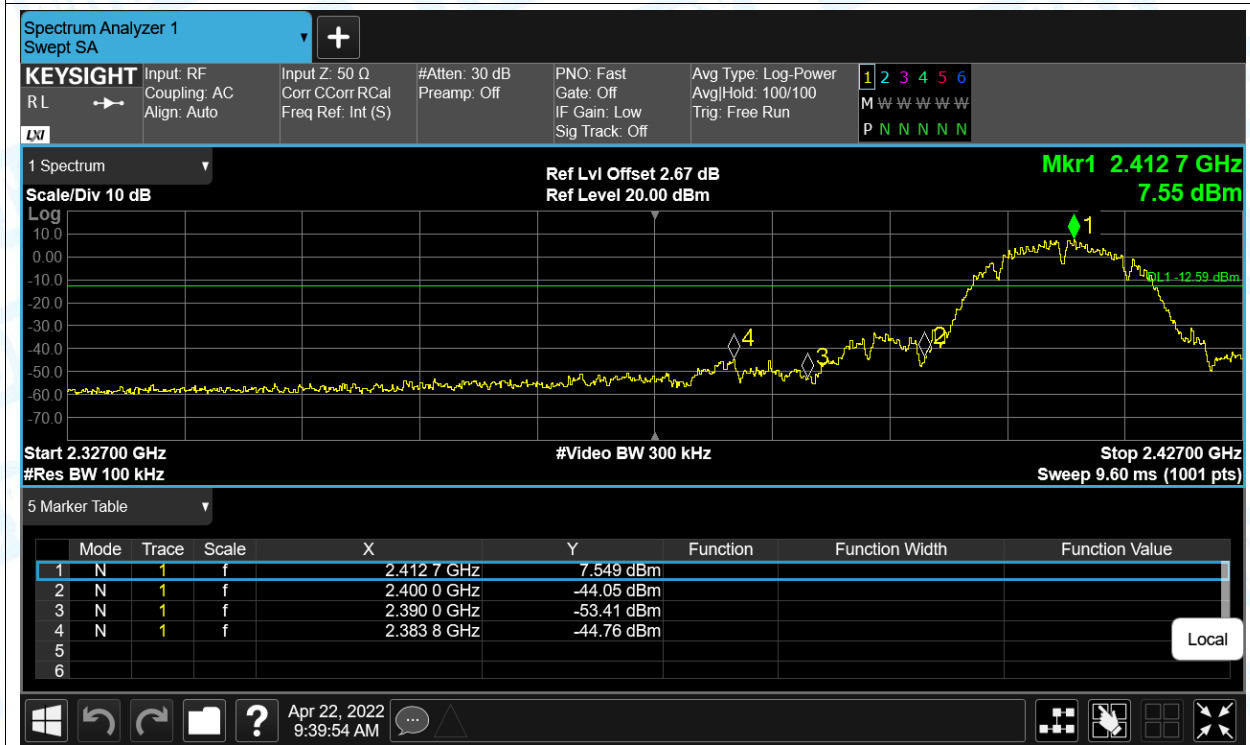
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-52.17	-20	Pass
NVNT	b	2462	Ant1	-55.65	-20	Pass
NVNT	g	2412	Ant1	-48.4	-20	Pass
NVNT	g	2462	Ant1	-46.98	-20	Pass
NVNT	n(HT20)	2412	Ant1	-46.31	-20	Pass
NVNT	n(HT20)	2462	Ant1	-45.87	-20	Pass

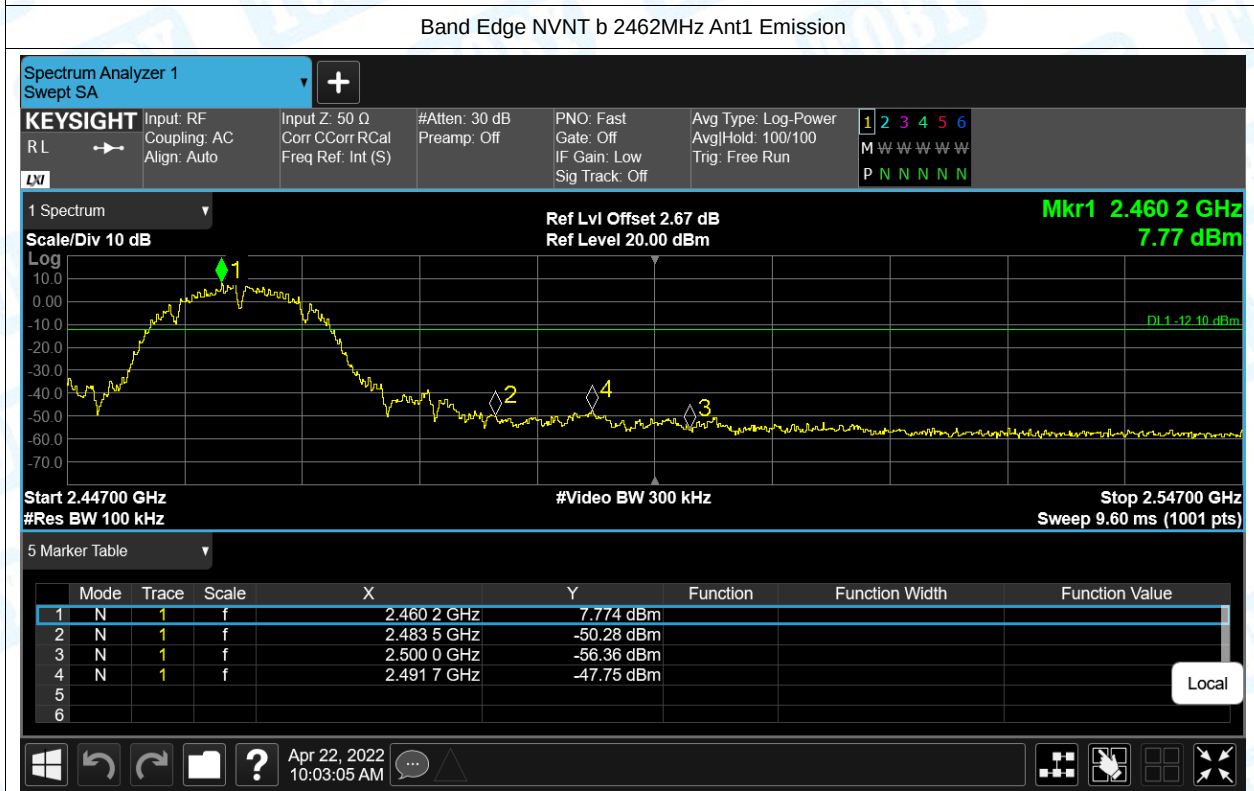
Test Graphs

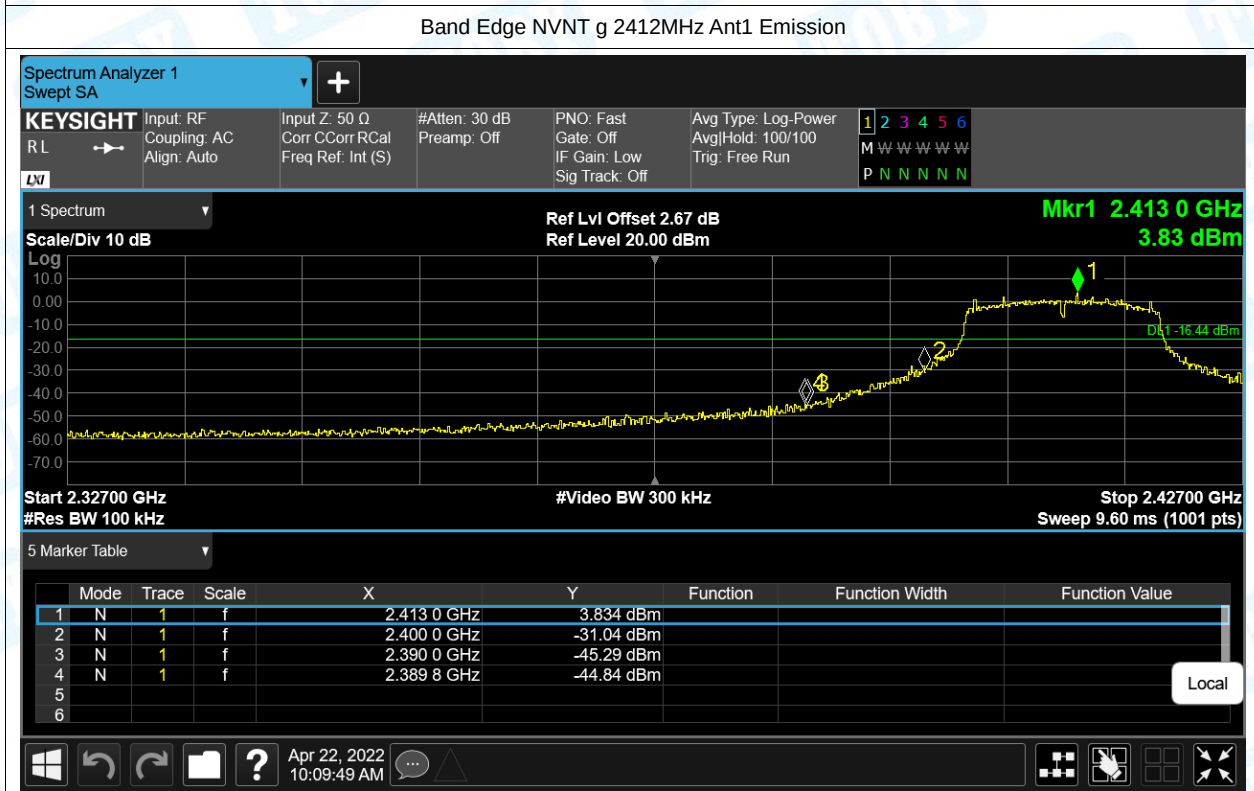
Band Edge NVNT b 2412MHz Ant1 Ref

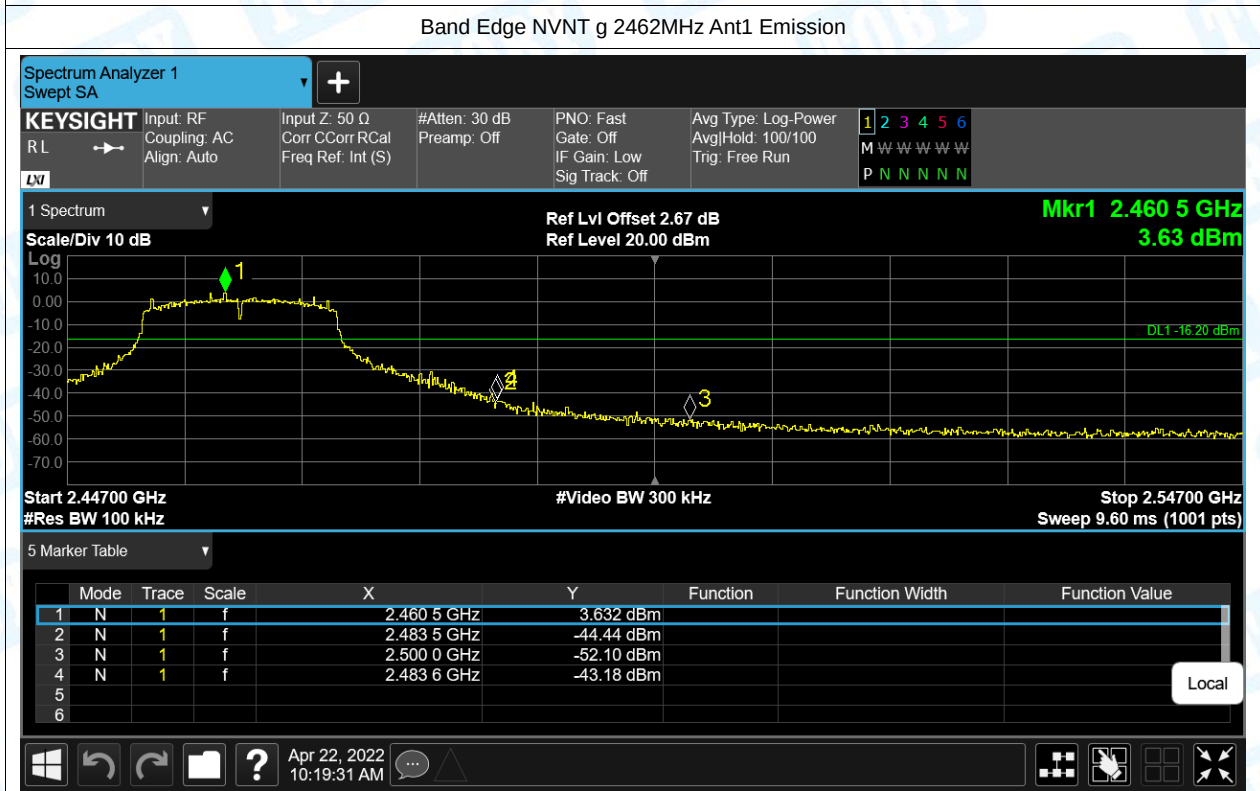


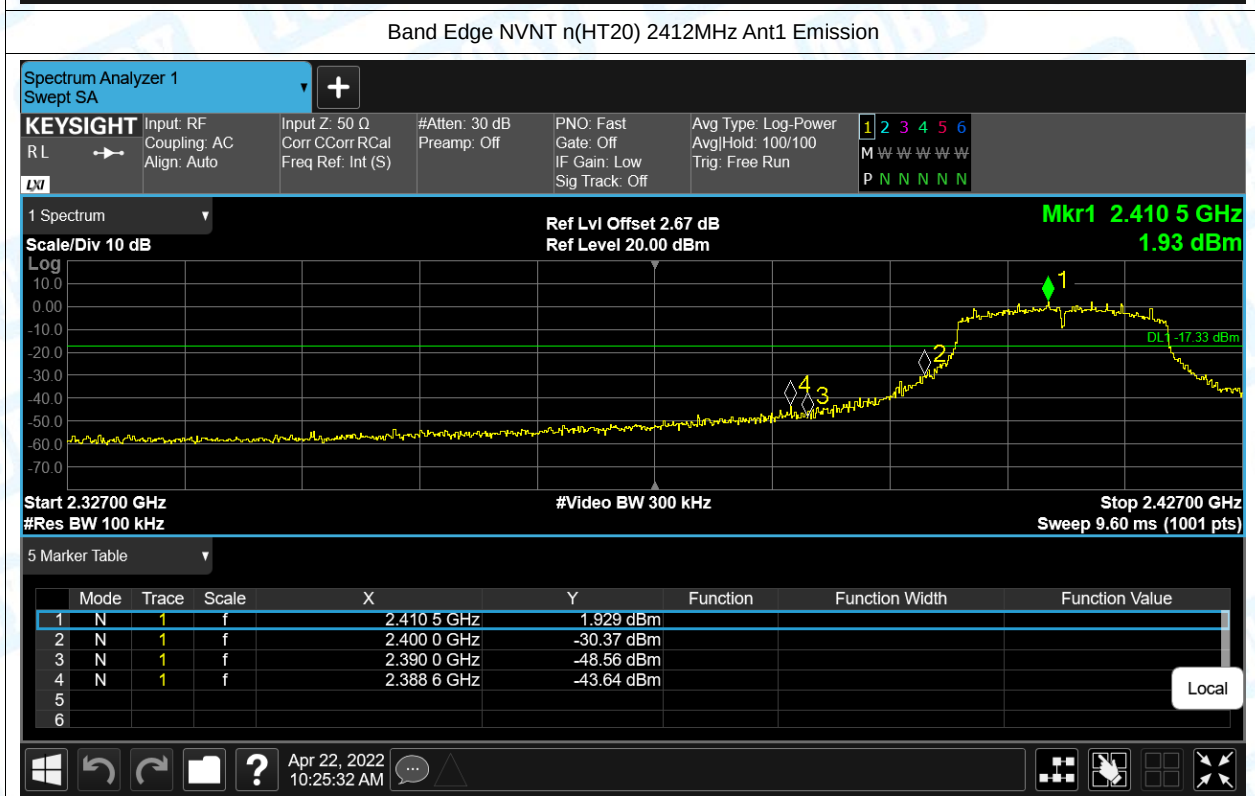
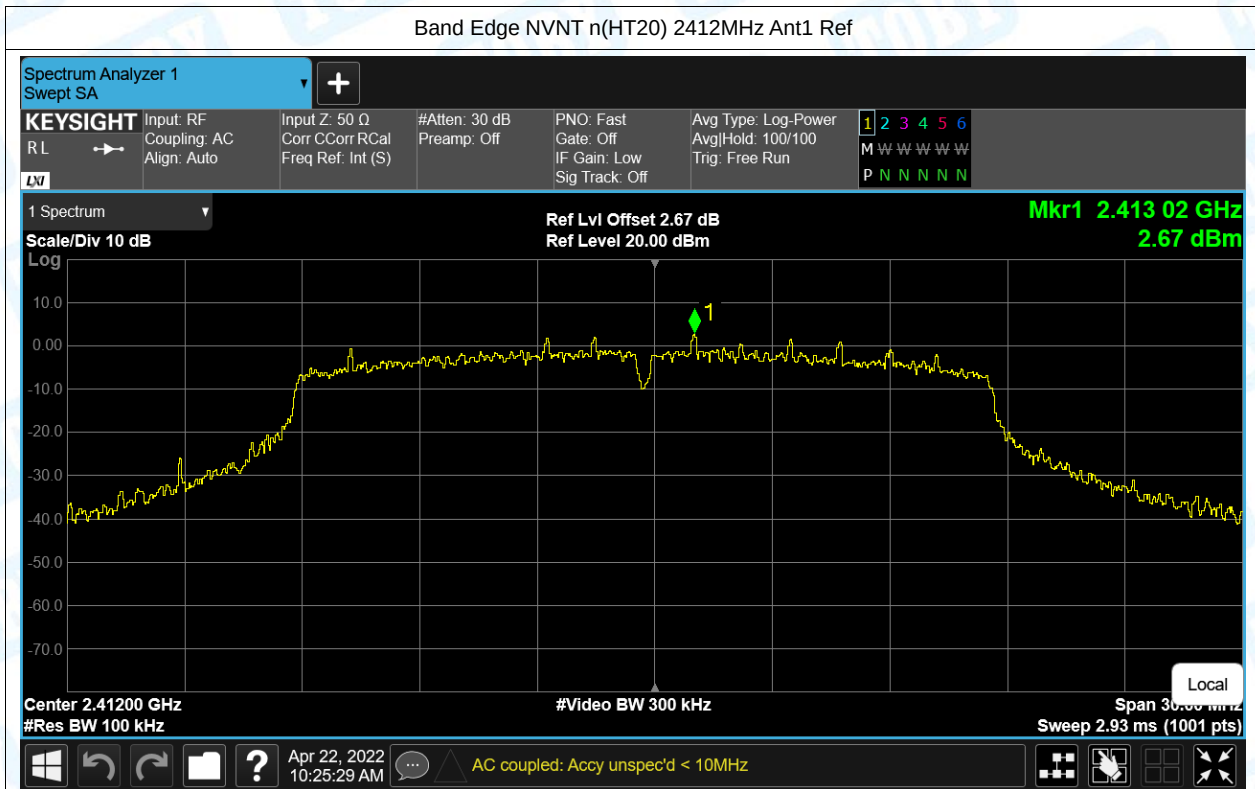
Band Edge NVNT b 2412MHz Ant1 Emission

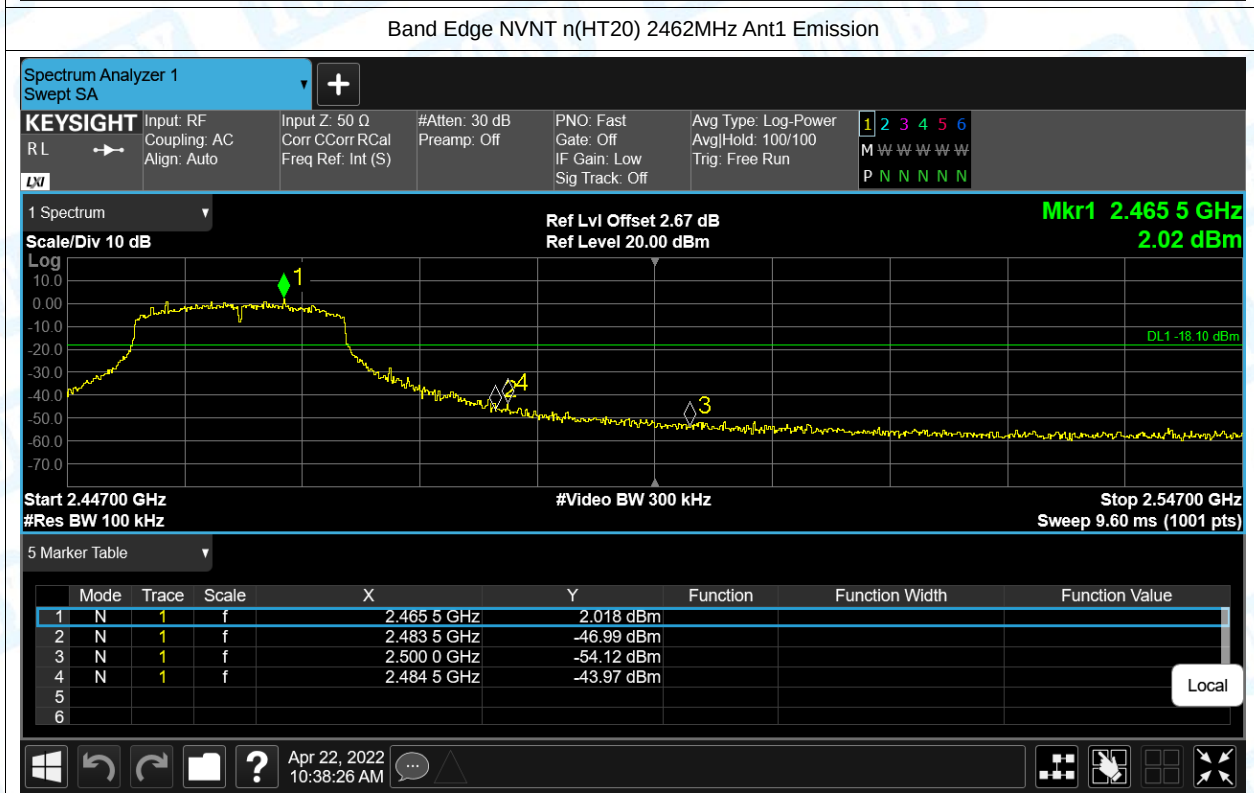
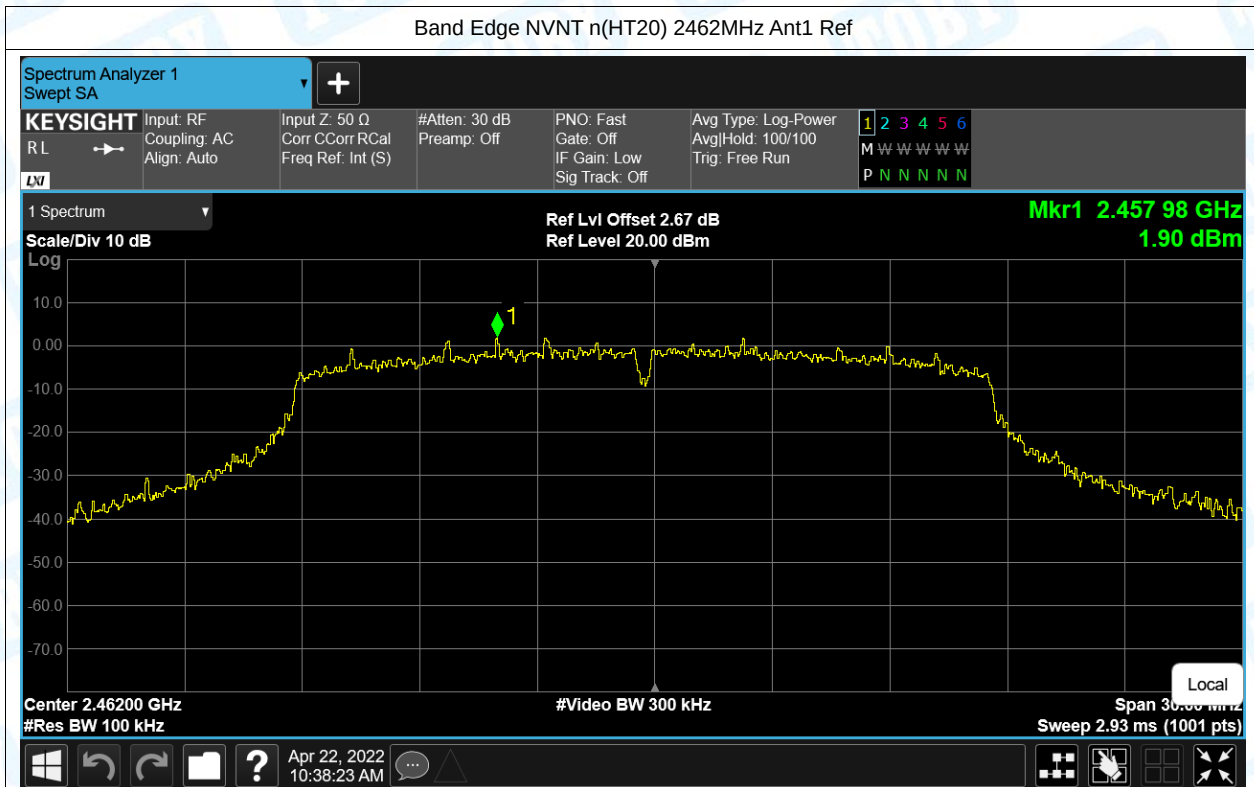










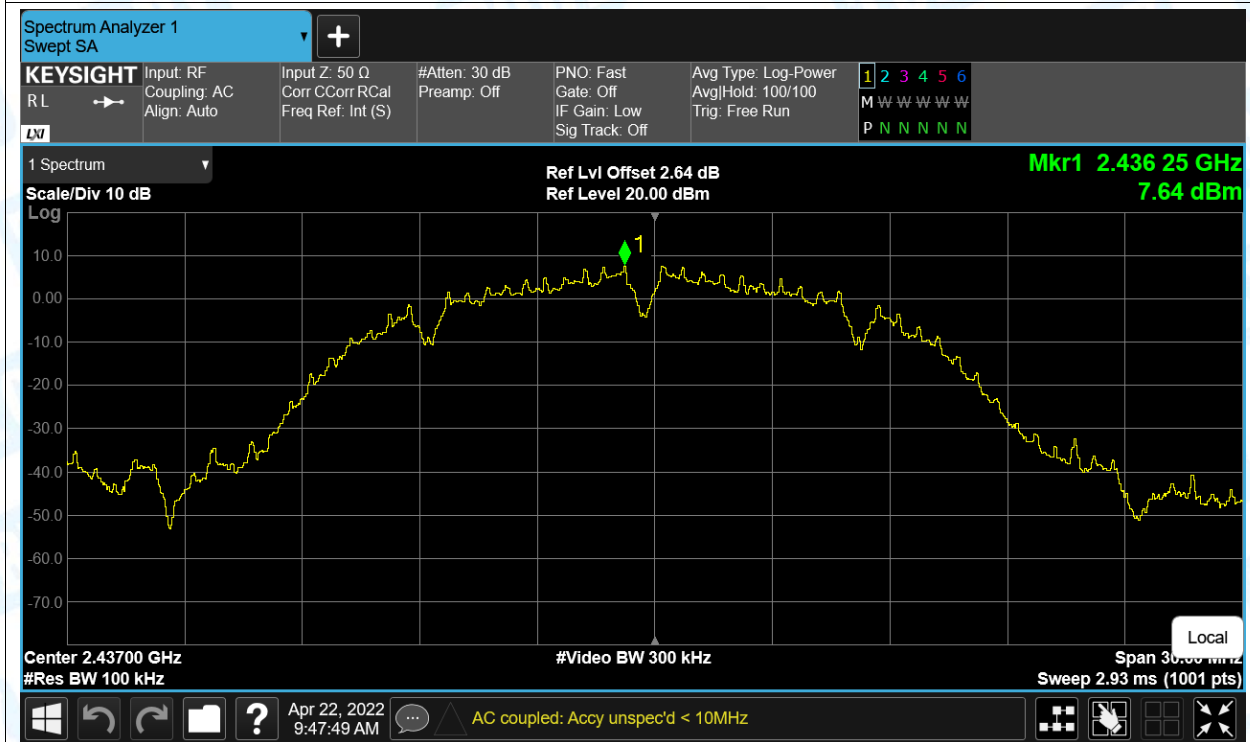


7. Conducted RF Spurious Emission

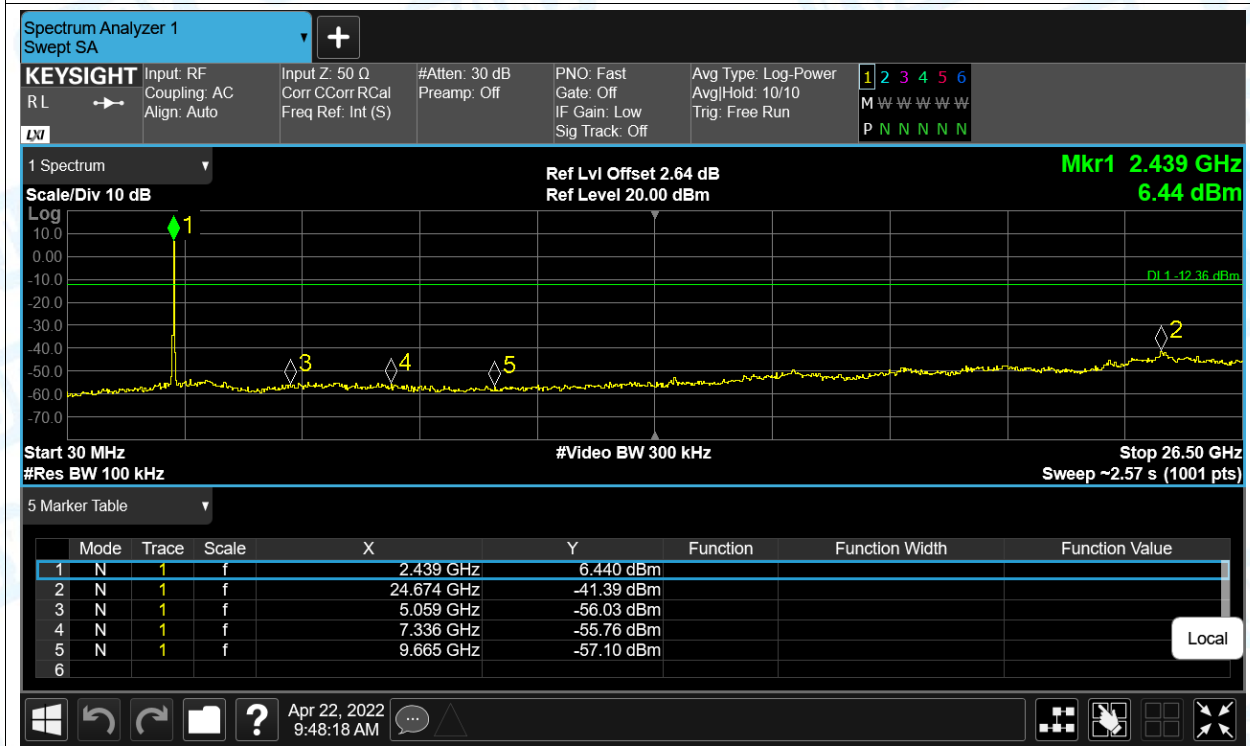
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-50.23	-20	Pass
NVNT	b	2437	Ant1	-49.03	-20	Pass
NVNT	b	2462	Ant1	-50.18	-20	Pass
NVNT	g	2412	Ant1	-44.84	-20	Pass
NVNT	g	2437	Ant1	-45.96	-20	Pass
NVNT	g	2462	Ant1	-45.74	-20	Pass
NVNT	n(HT20)	2412	Ant1	-44.34	-20	Pass
NVNT	n(HT20)	2437	Ant1	-43.54	-20	Pass
NVNT	n(HT20)	2462	Ant1	-45.36	-20	Pass

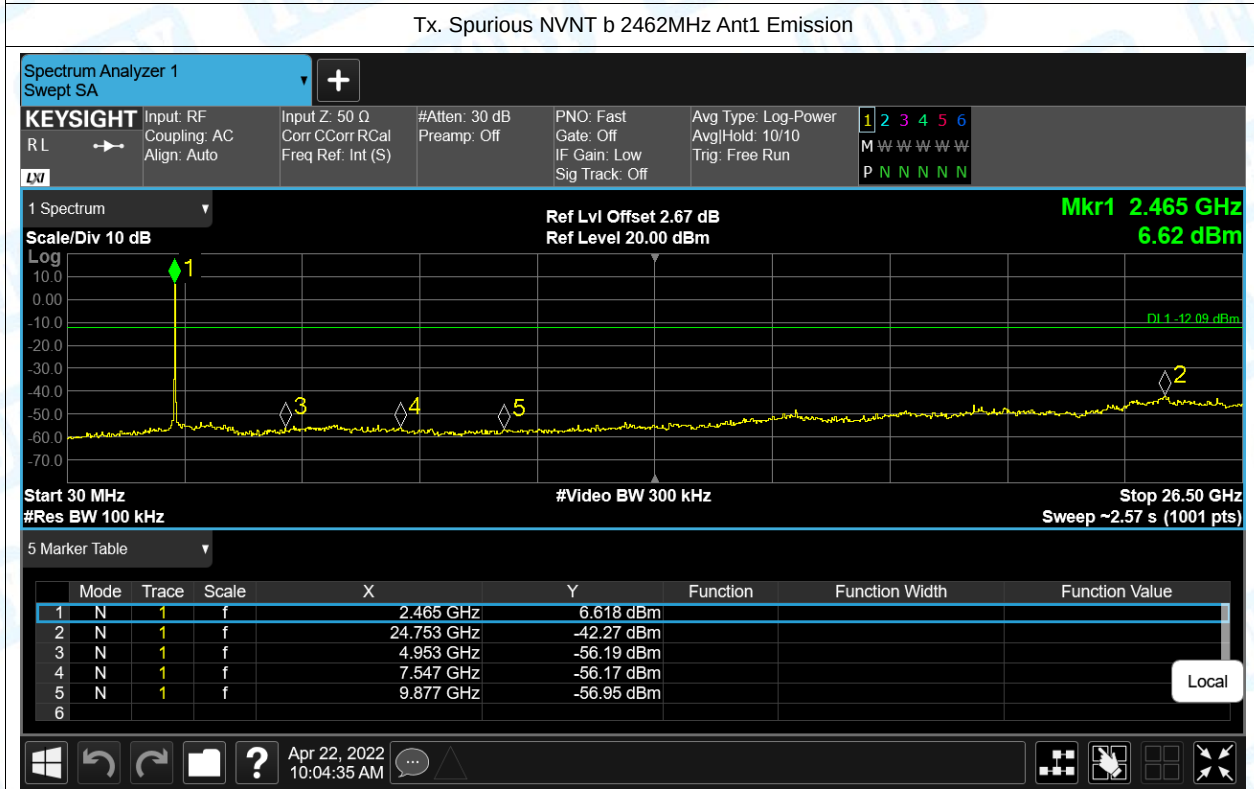
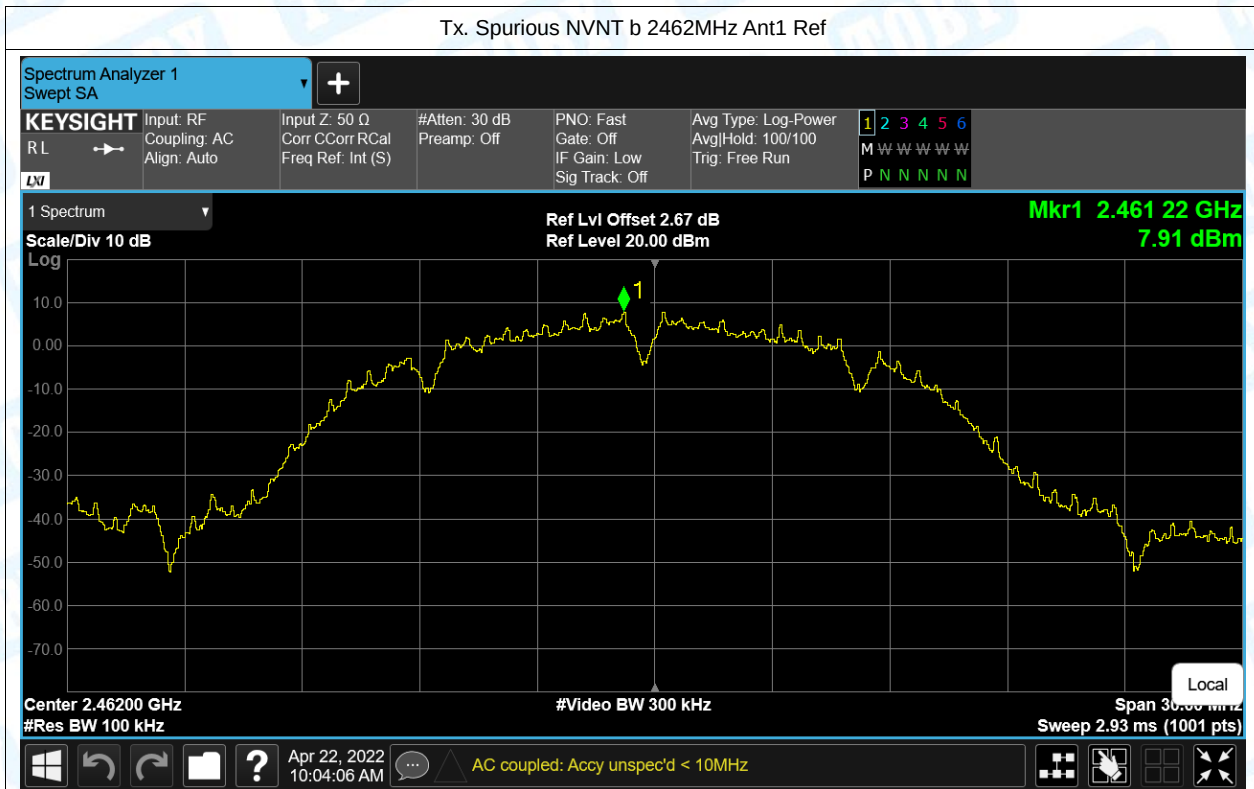


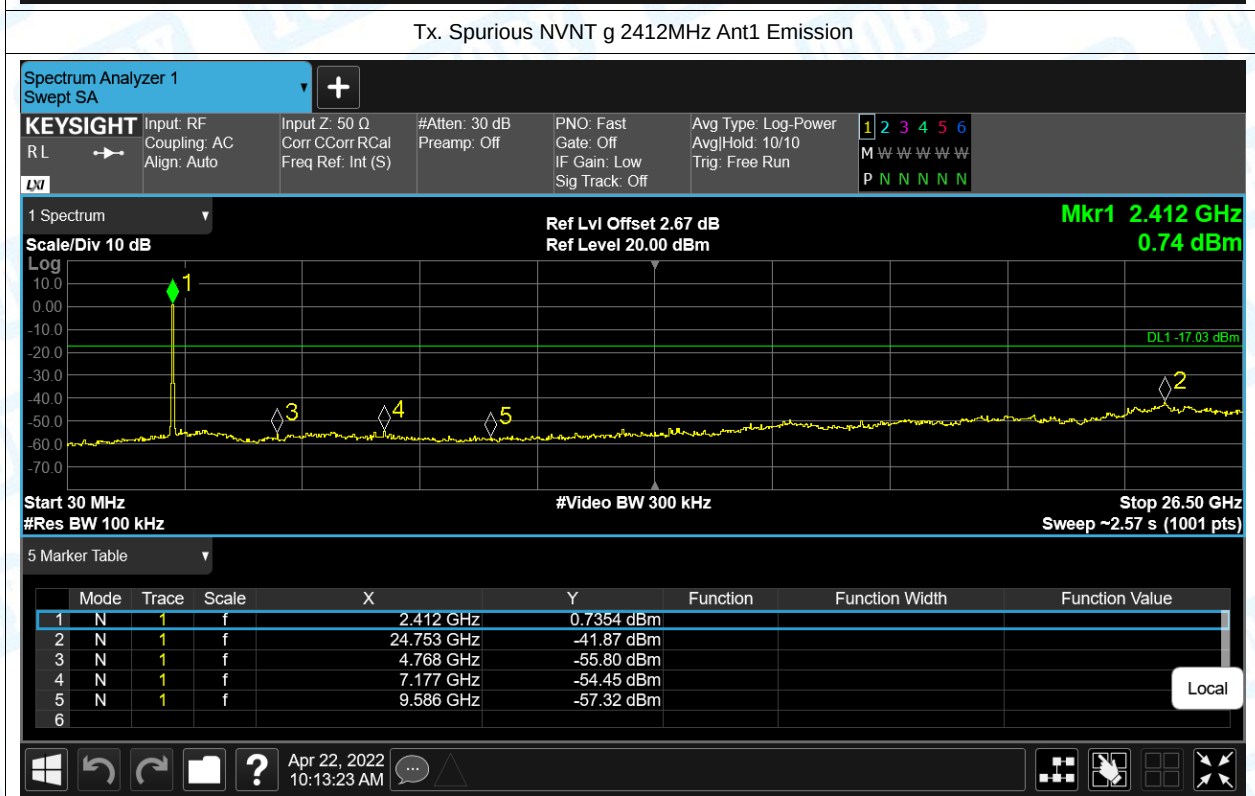
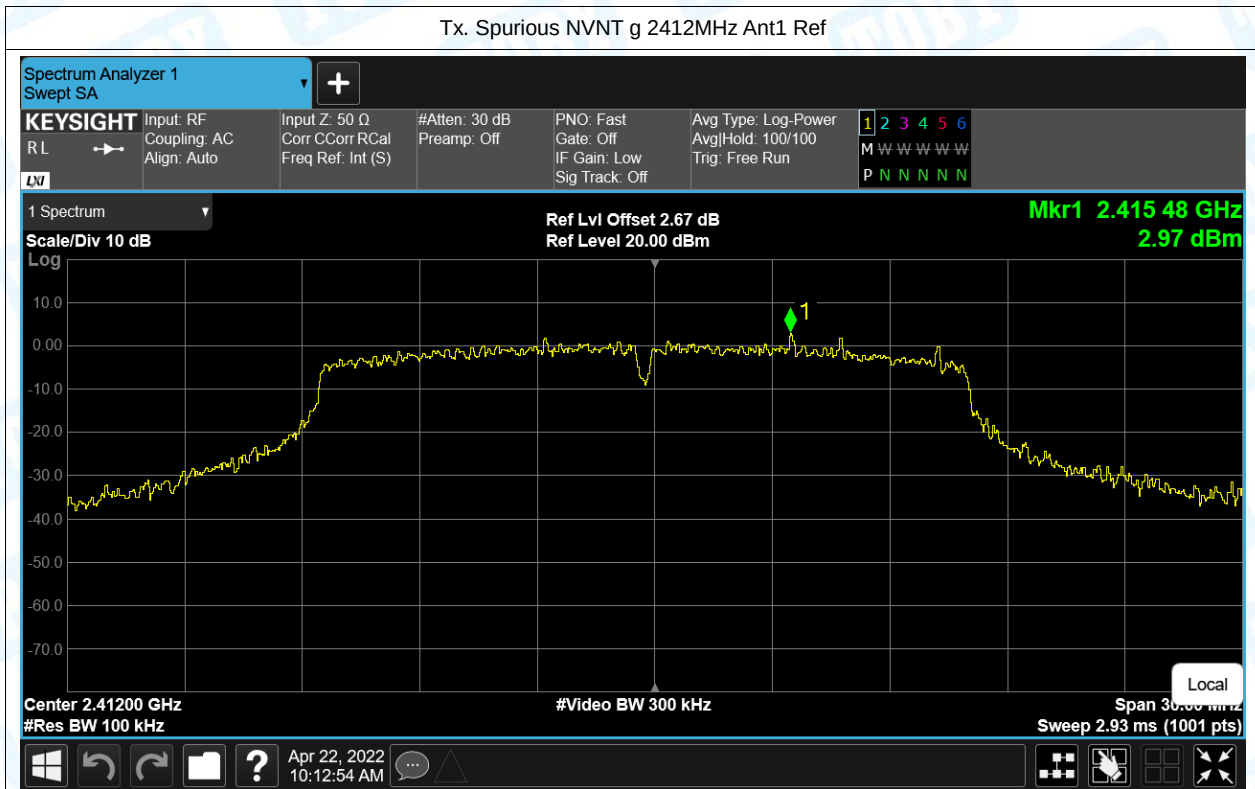
Tx. Spurious NVNT b 2437MHz Ant1 Ref

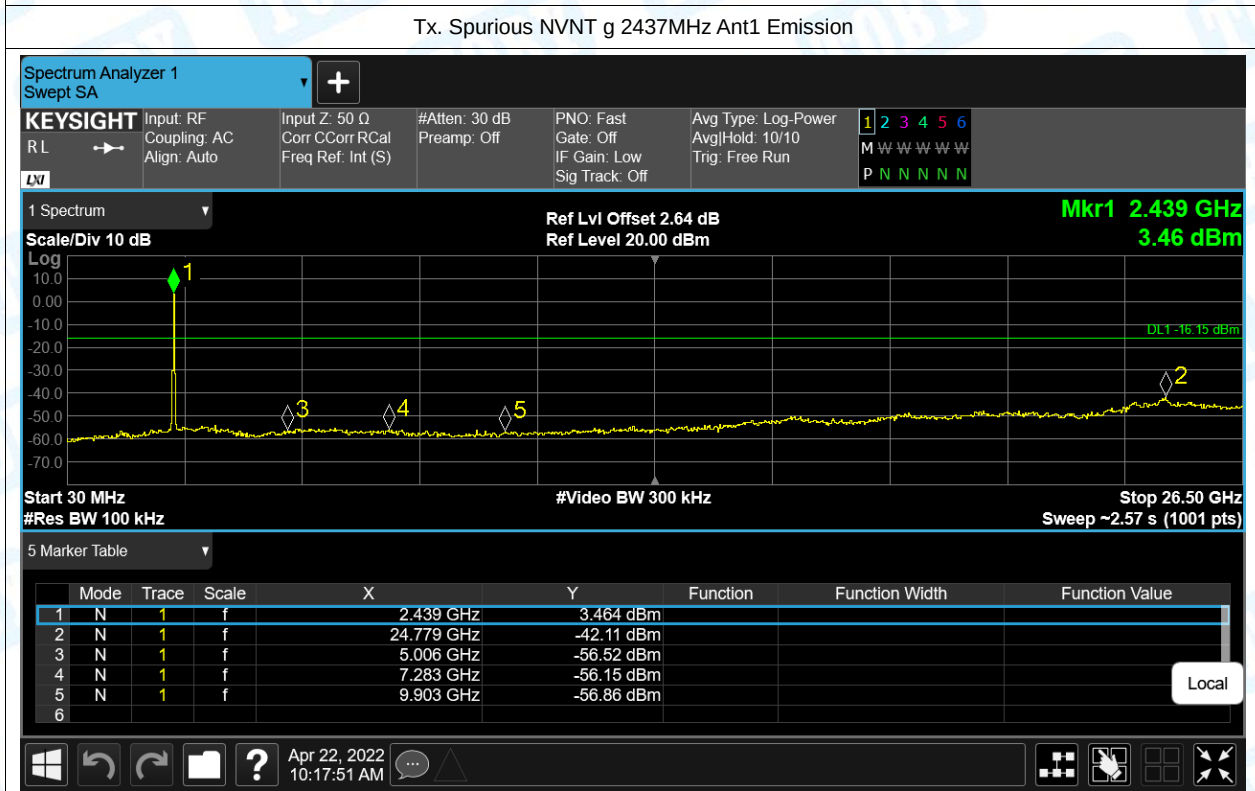
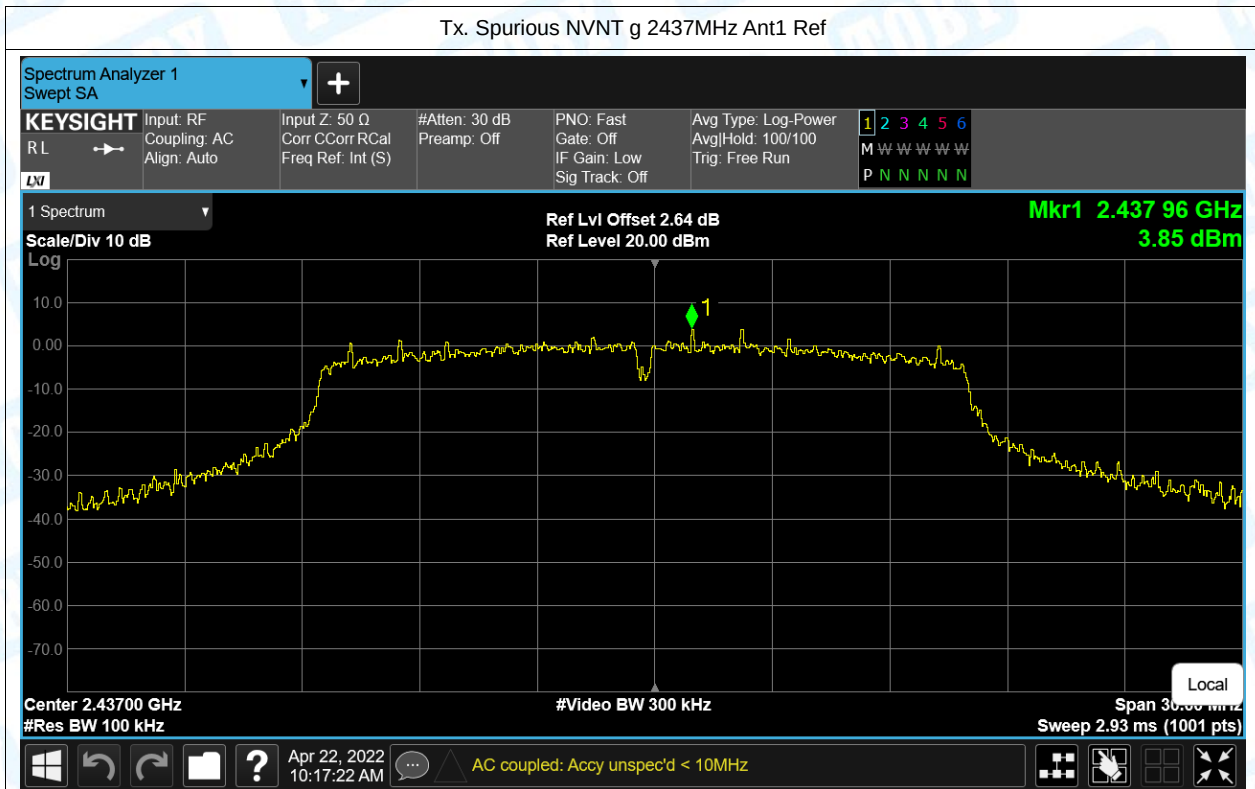


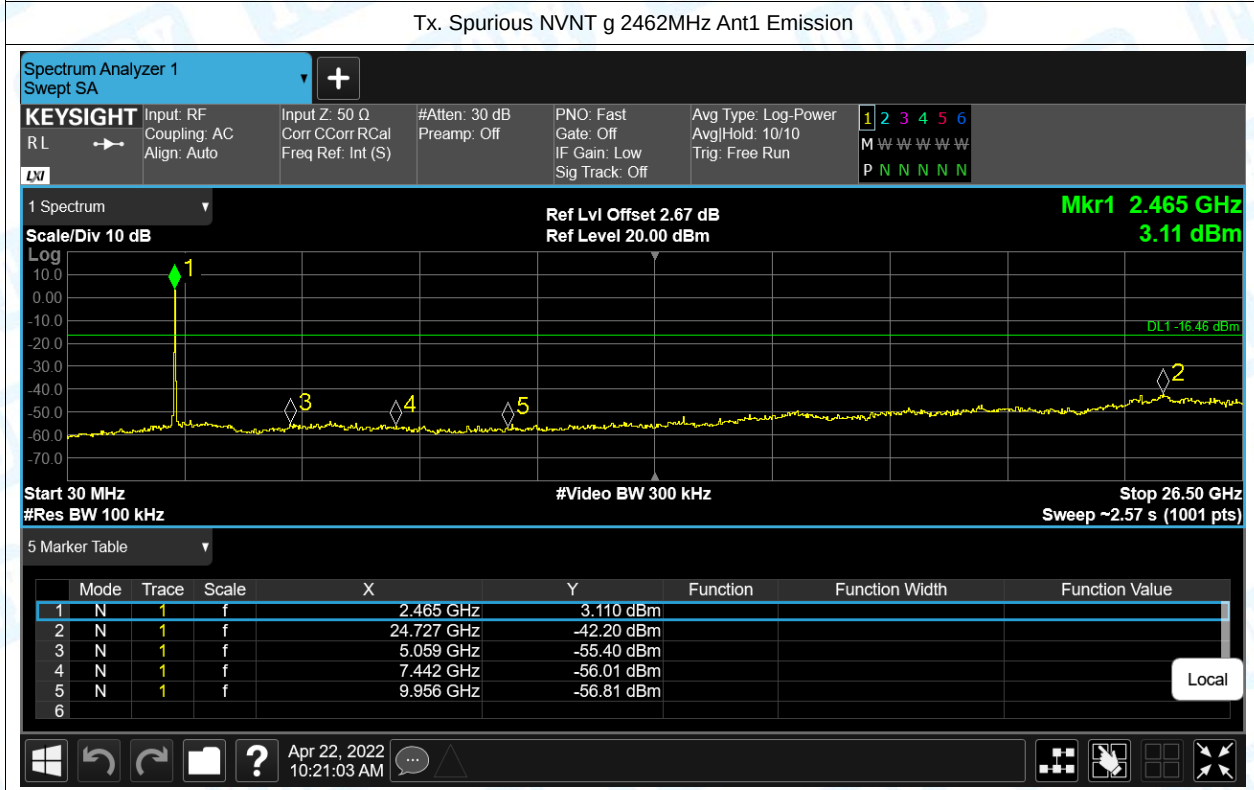
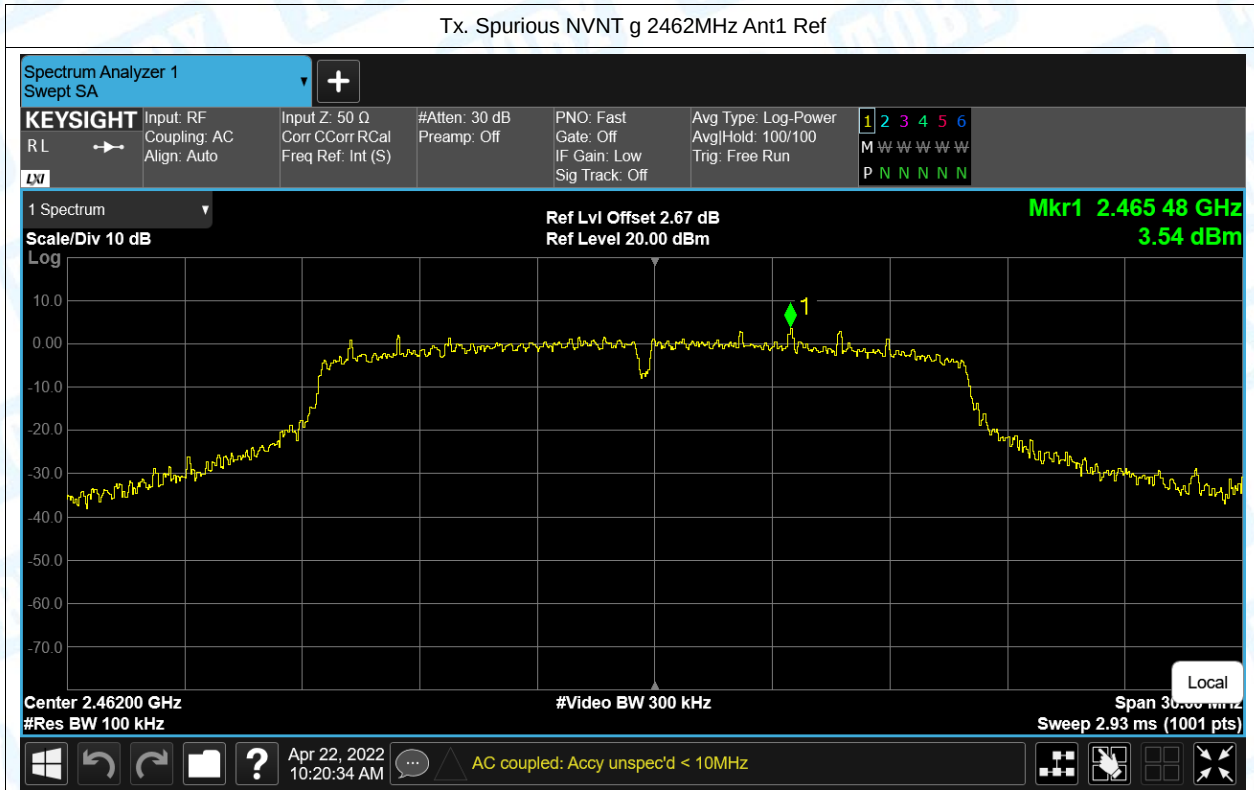
Tx. Spurious NVNT b 2437MHz Ant1 Emission

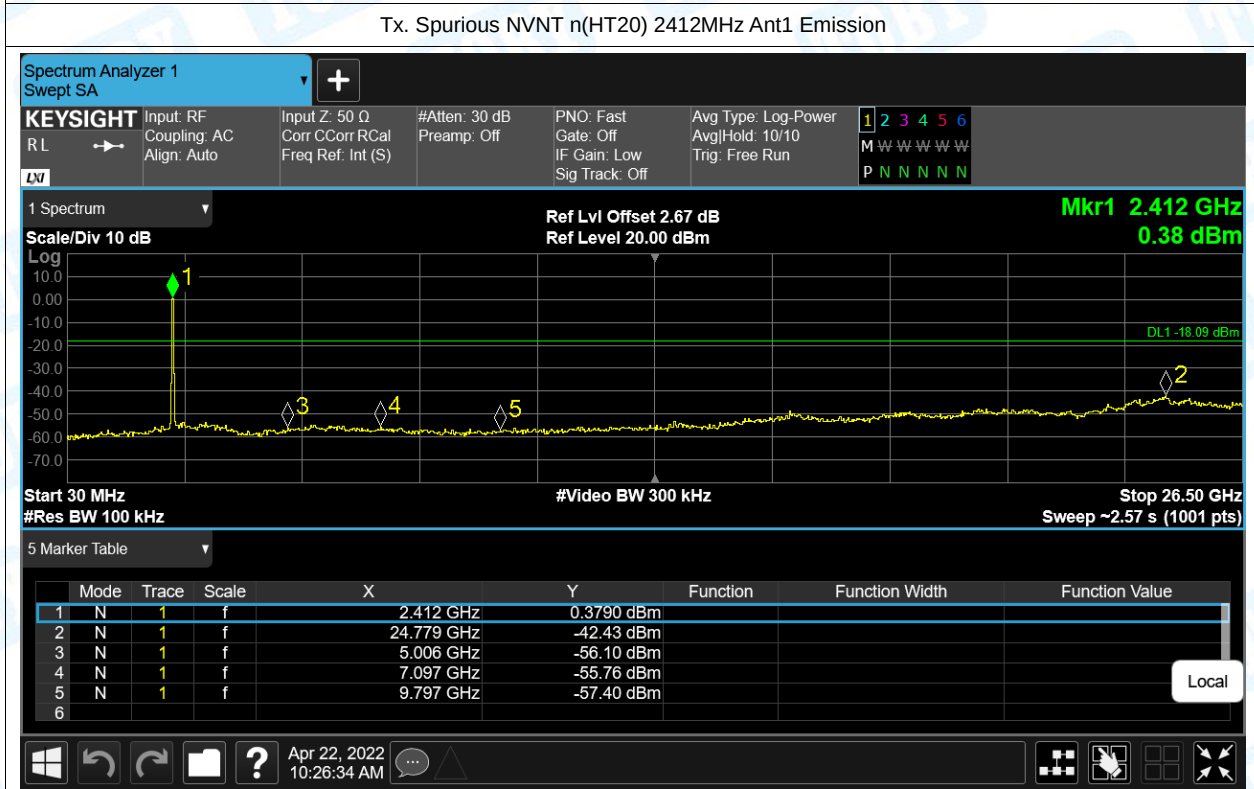
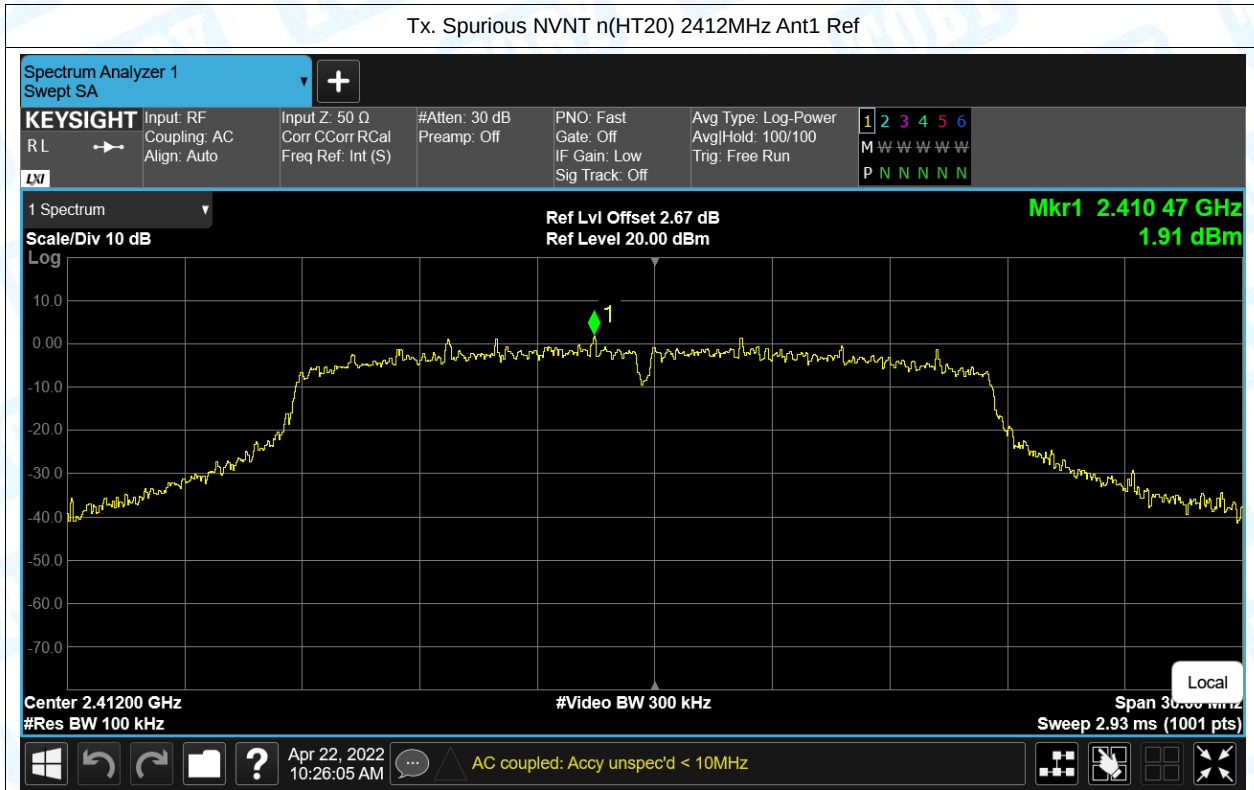


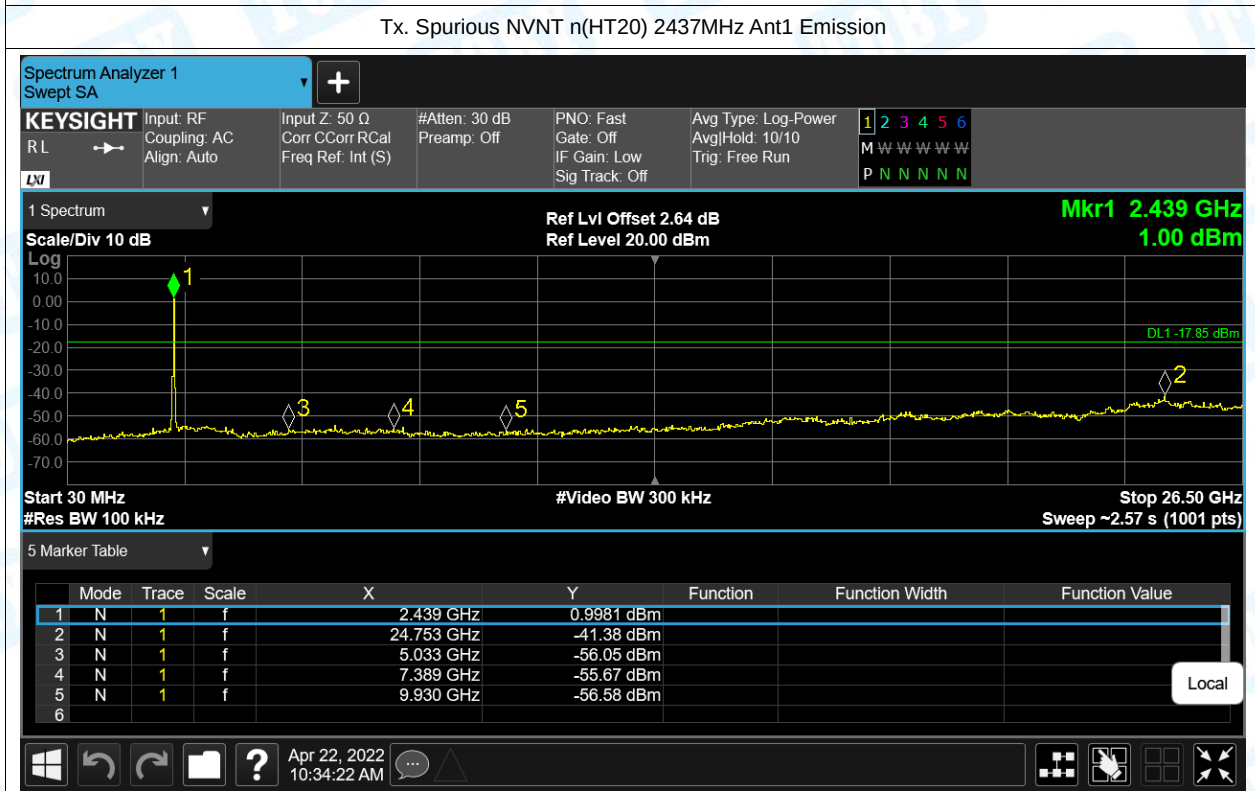
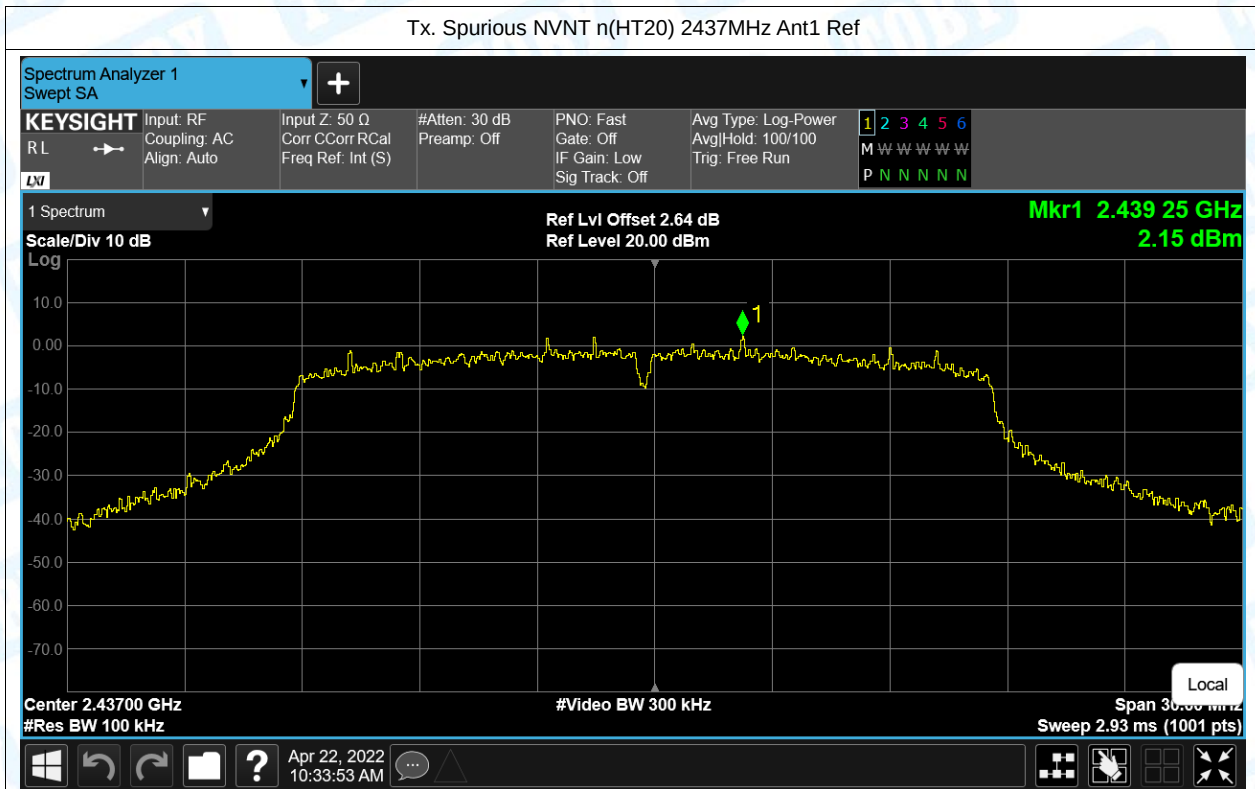


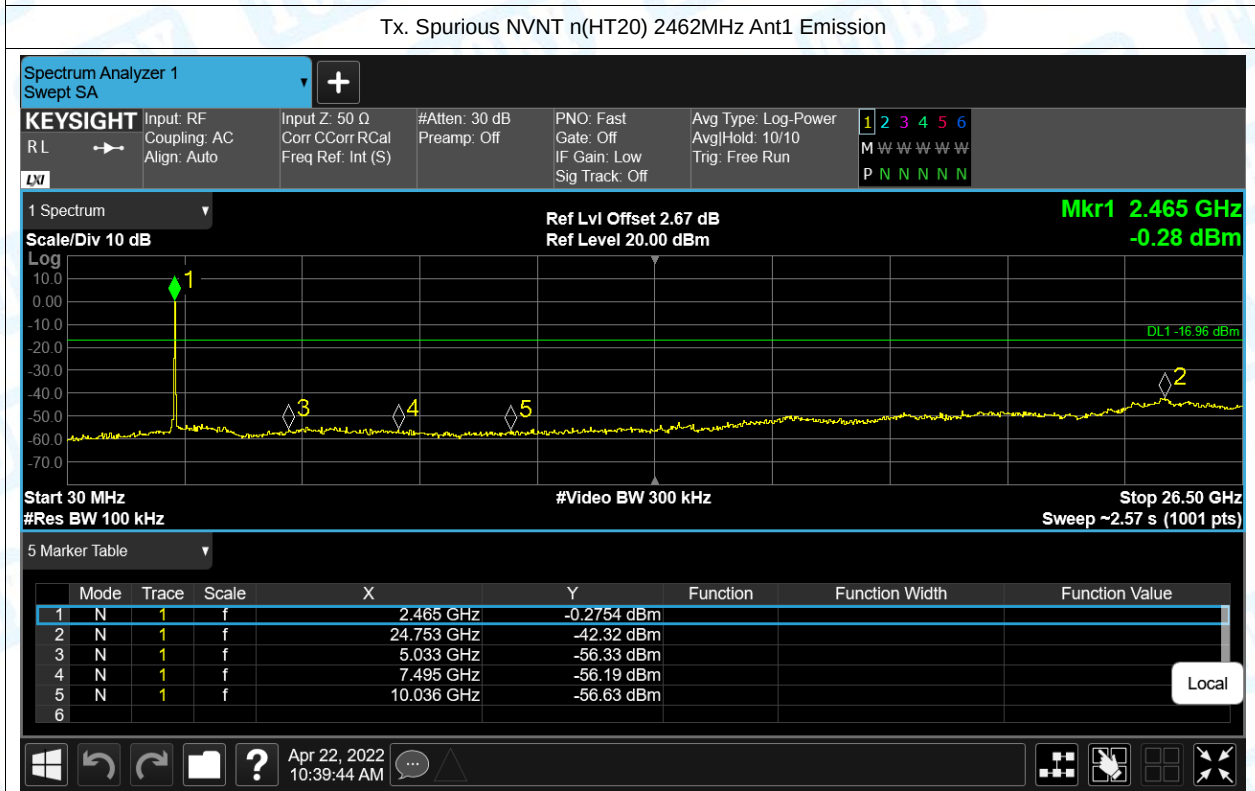
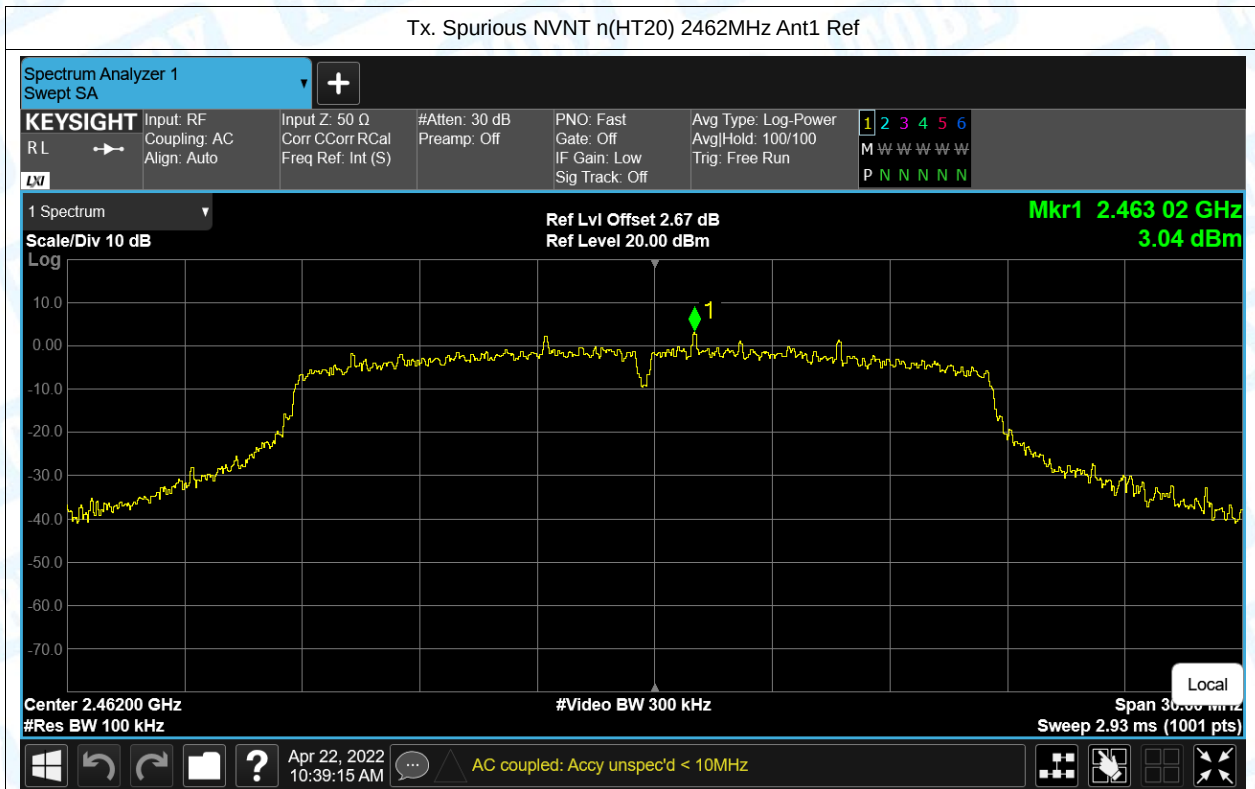






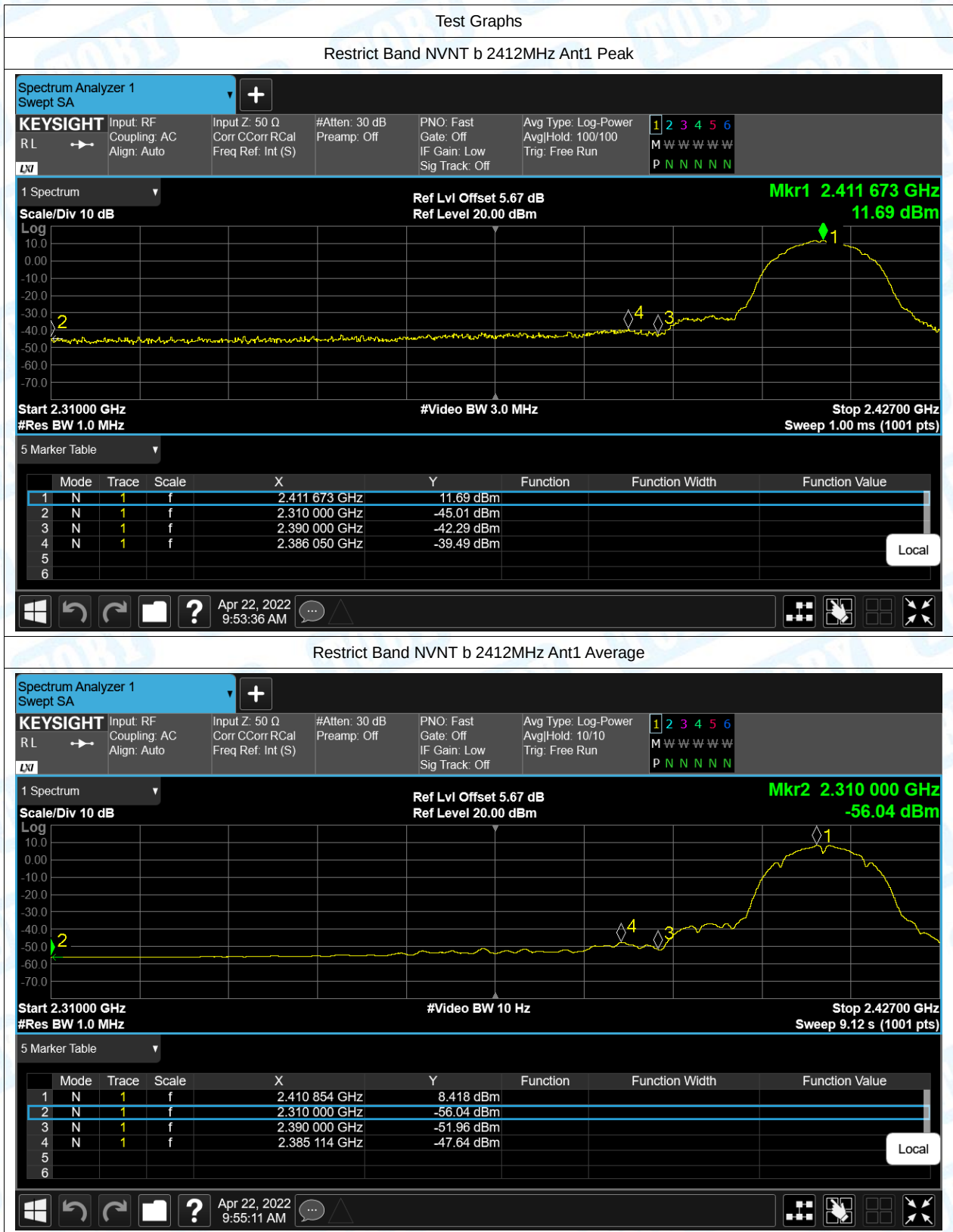


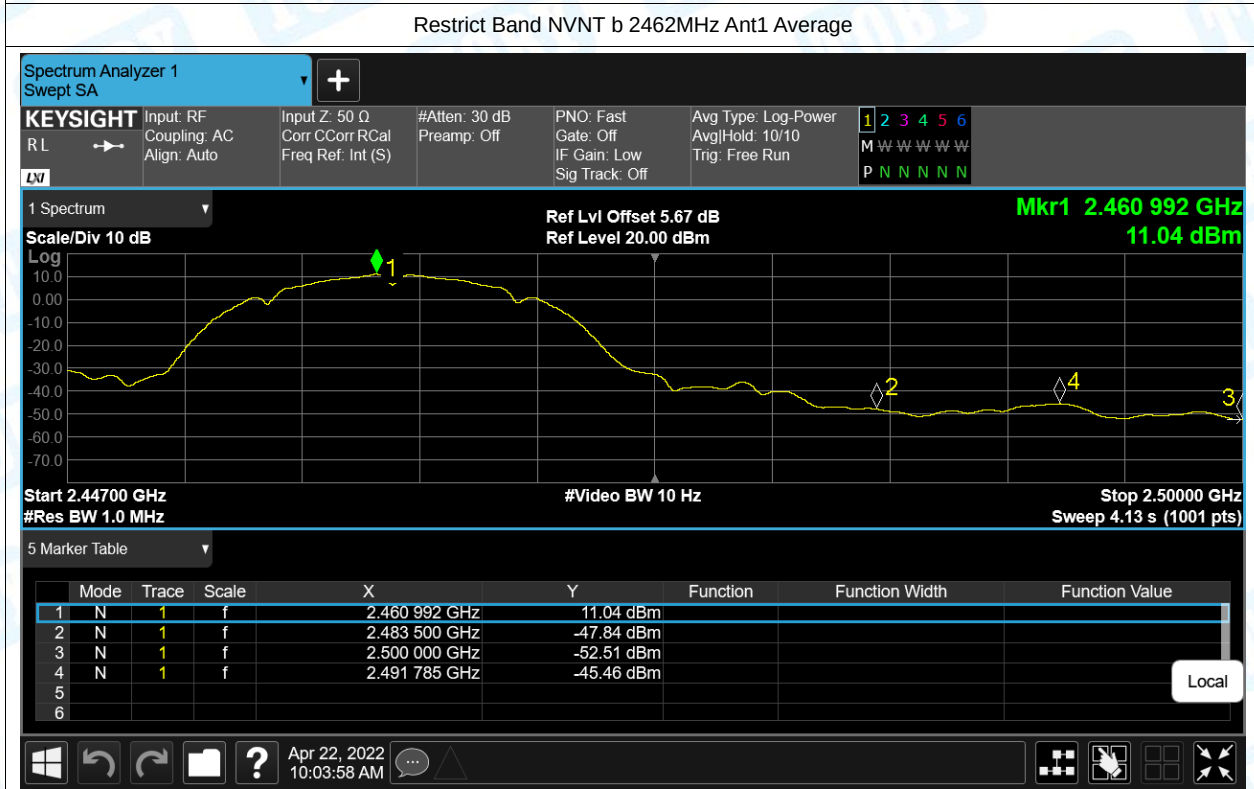
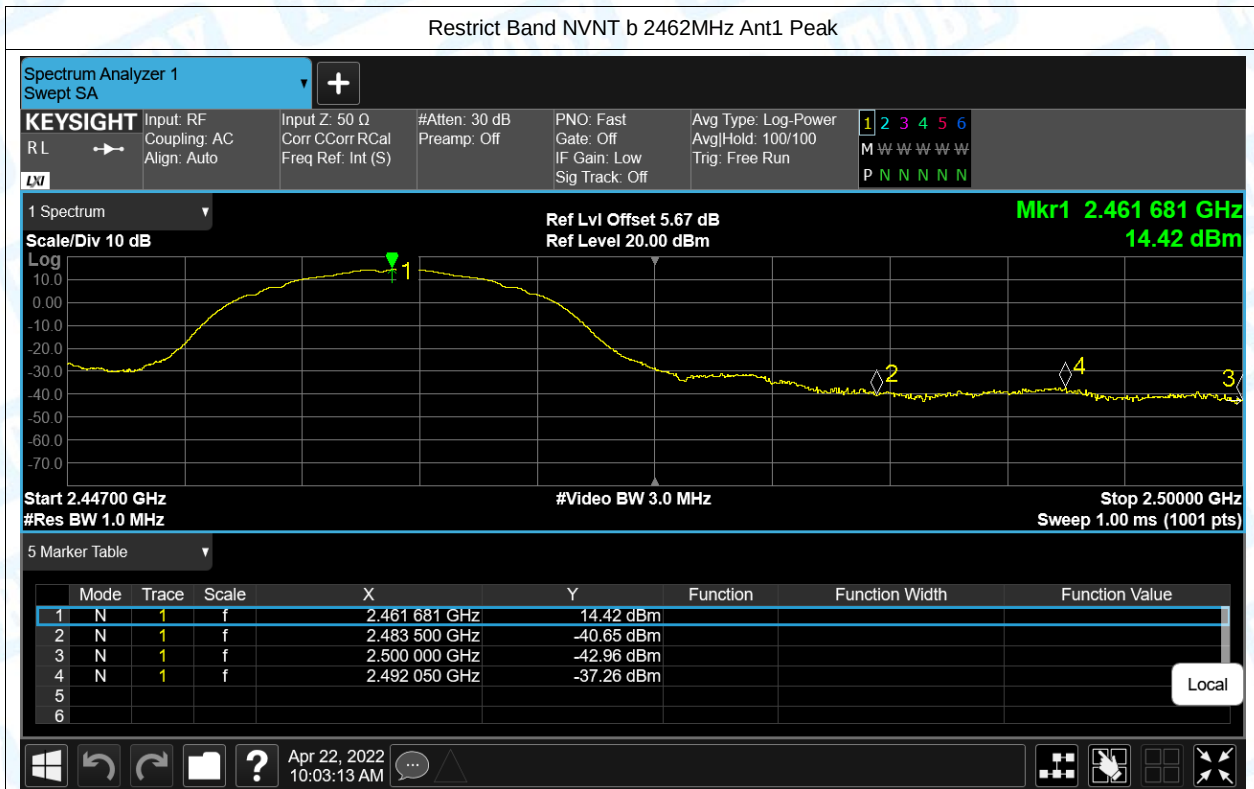


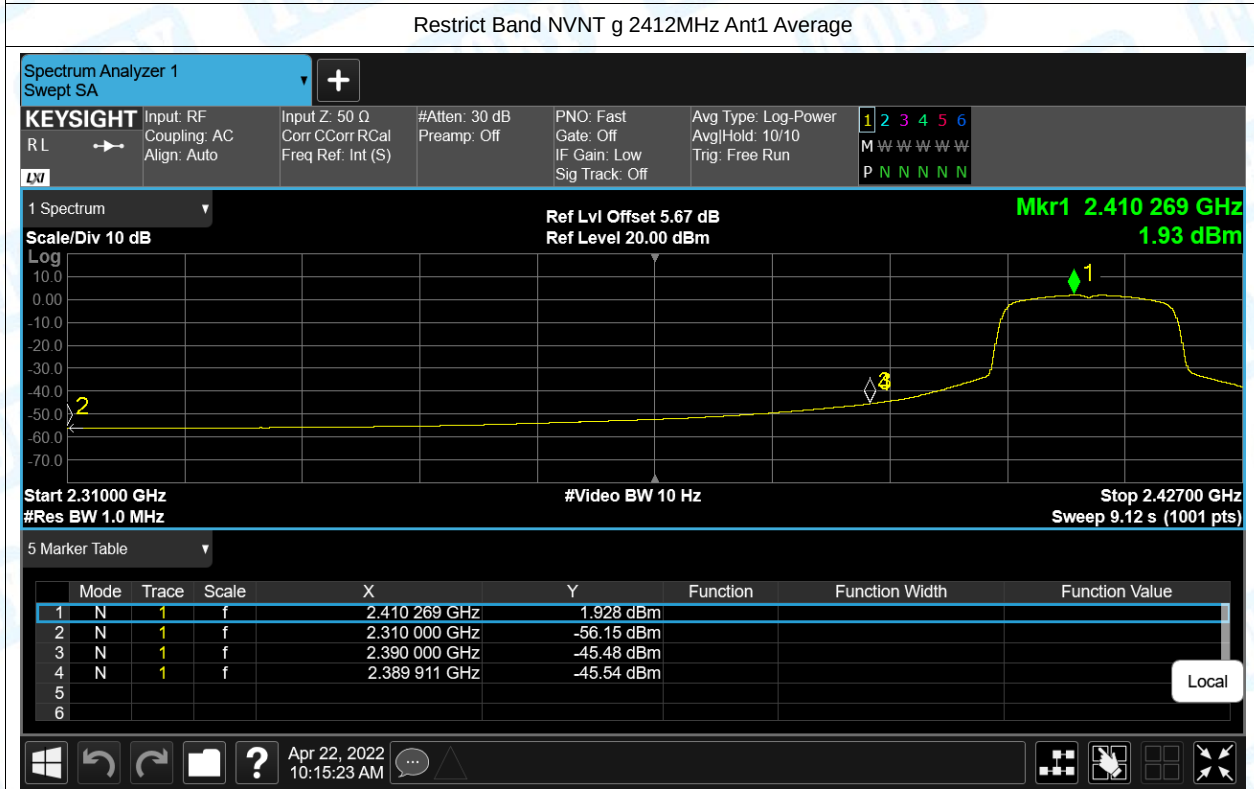
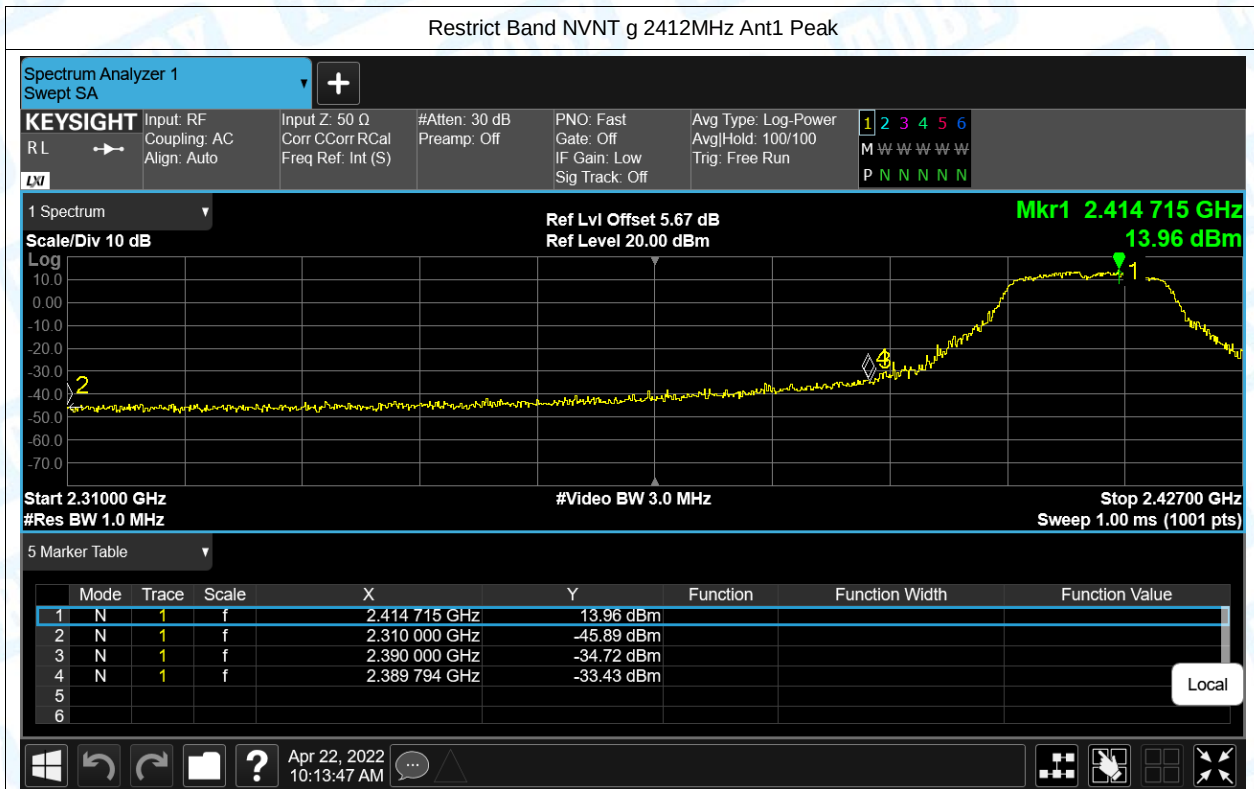


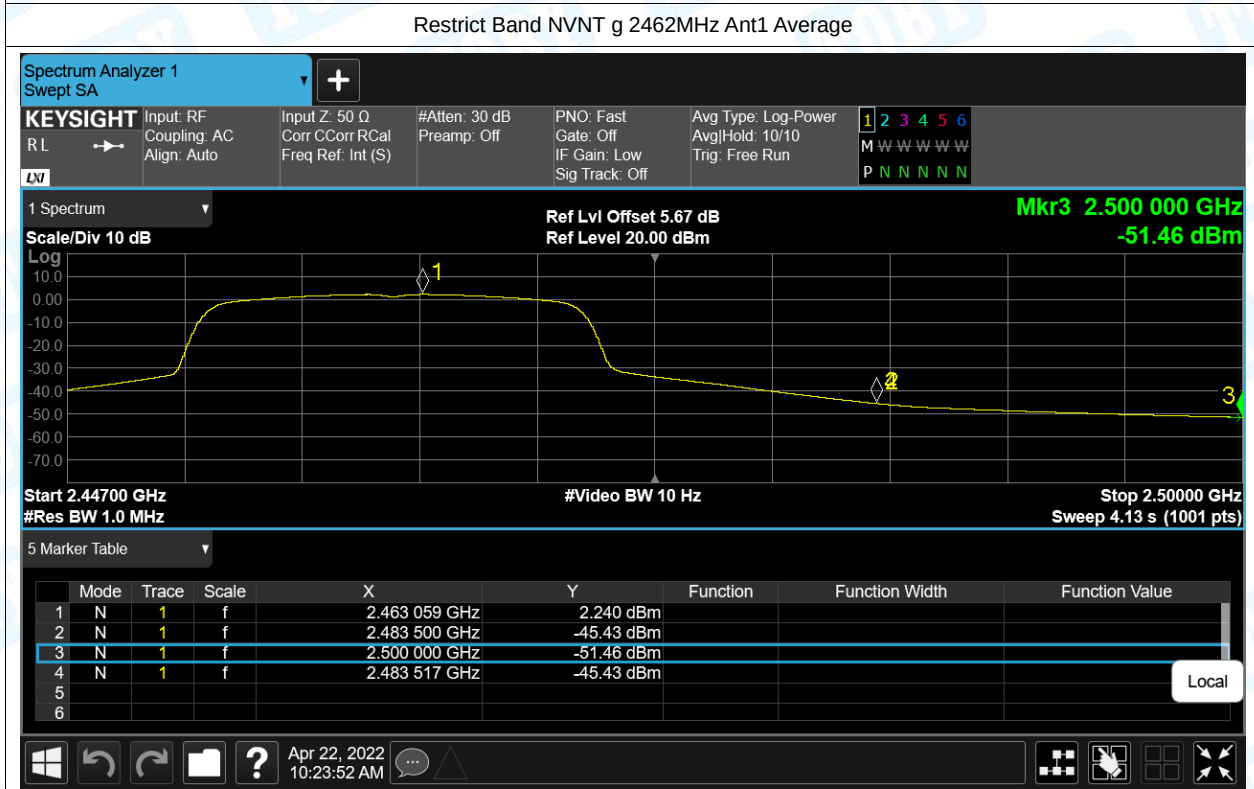
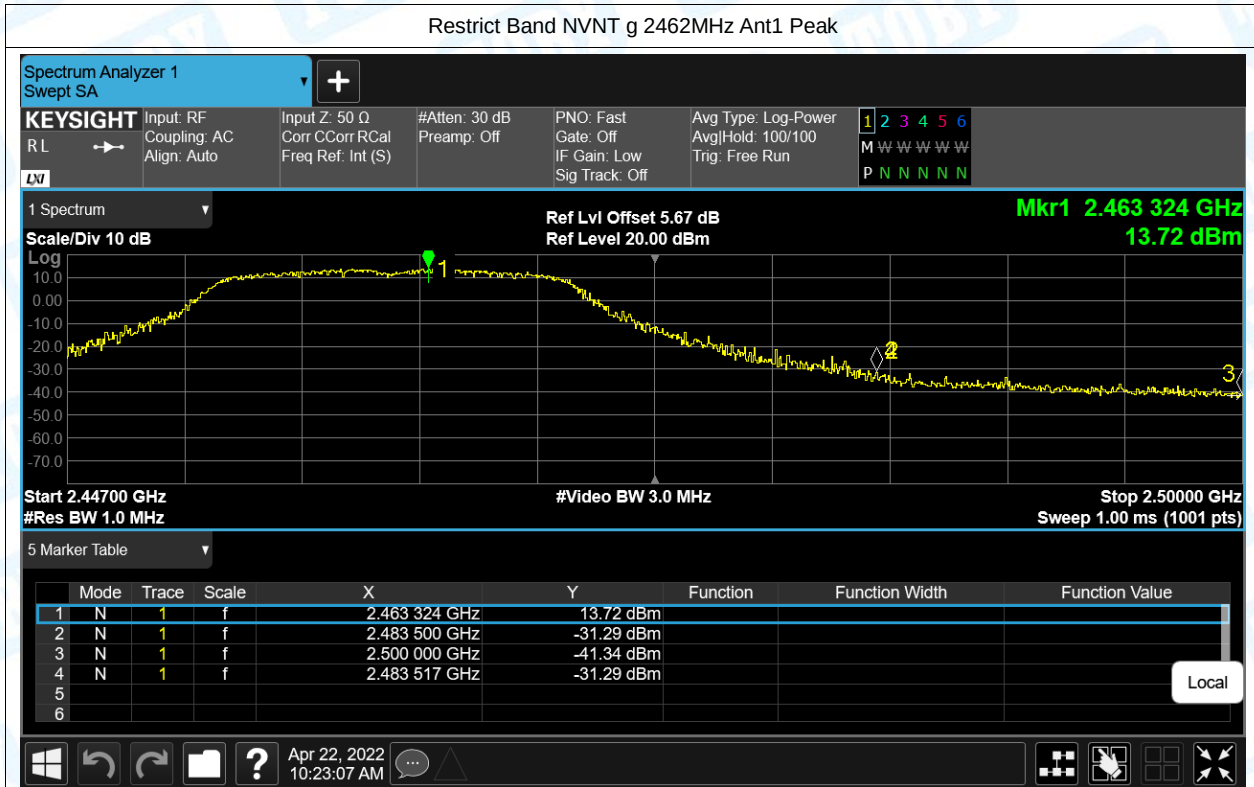
8. Restrict Band

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	-45.01	3	53.25	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-56.04	3	42.22	Average	54	Pass
NVNT	b	2412	Ant1	2386.05	-39.49	3	58.77	Peak	74	Pass
NVNT	b	2412	Ant1	2385.114	-47.64	3	50.62	Average	54	Pass
NVNT	b	2412	Ant1	2390	-42.29	3	55.97	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-51.96	3	46.3	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-40.65	3	57.61	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-47.84	3	50.42	Average	54	Pass
NVNT	b	2462	Ant1	2492.05	-37.26	3	61	Peak	74	Pass
NVNT	b	2462	Ant1	2491.785	-45.46	3	52.8	Average	54	Pass
NVNT	b	2462	Ant1	2500	-42.96	3	55.3	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-52.51	3	45.75	Average	54	Pass
NVNT	g	2412	Ant1	2310	-45.89	3	52.37	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-56.15	3	42.11	Average	54	Pass
NVNT	g	2412	Ant1	2389.794	-33.43	3	64.83	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-45.54	3	52.72	Average	54	Pass
NVNT	g	2412	Ant1	2390	-34.72	3	63.54	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-45.48	3	52.78	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-31.29	3	66.97	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-45.43	3	52.83	Average	54	Pass
NVNT	g	2462	Ant1	2483.517	-31.29	3	66.97	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-45.43	3	52.83	Average	54	Pass
NVNT	g	2462	Ant1	2500	-41.34	3	56.92	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-51.46	3	46.8	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-44.68	3	53.58	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-55.66	3	42.6	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2389.911	-34.37	3	63.89	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2389.794	-45.46	3	52.8	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-34.78	3	63.48	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-45.43	3	52.83	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-34.34	3	63.92	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-45.37	3	52.89	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.623	-31.12	3	67.14	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.517	-45.37	3	52.89	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-42.12	3	56.14	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-51.34	3	46.92	Average	54	Pass

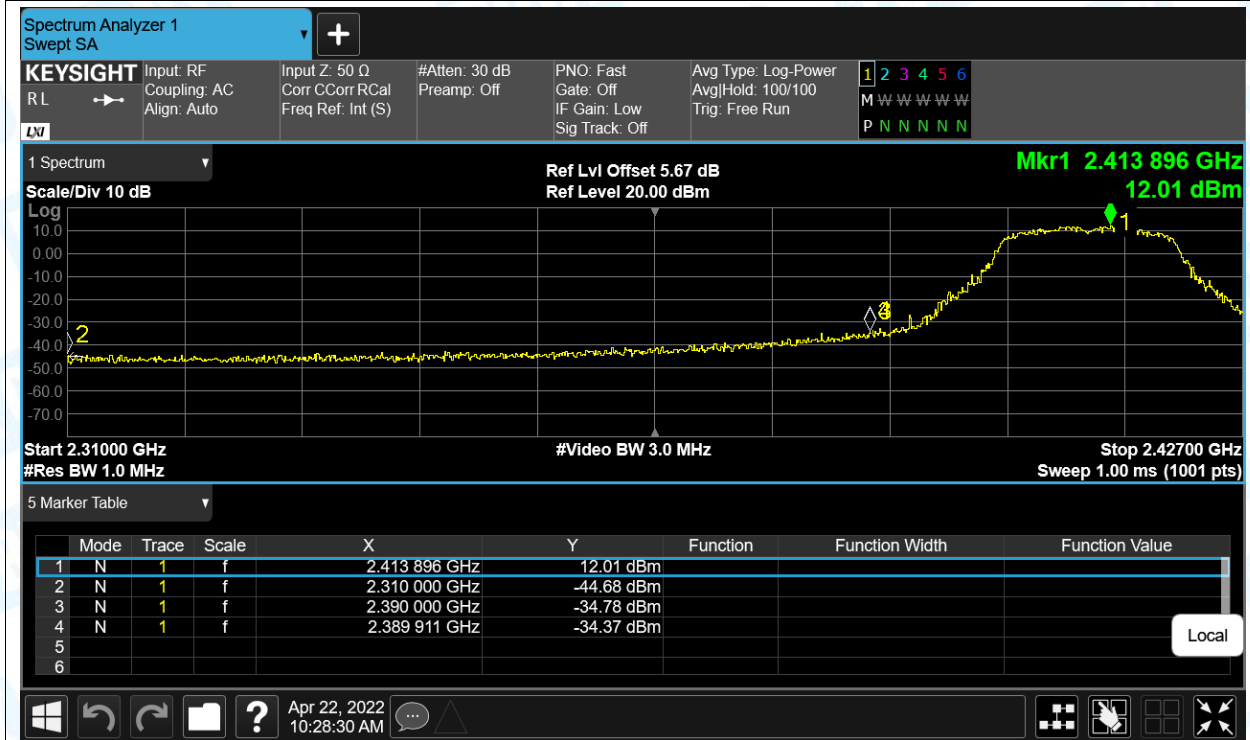




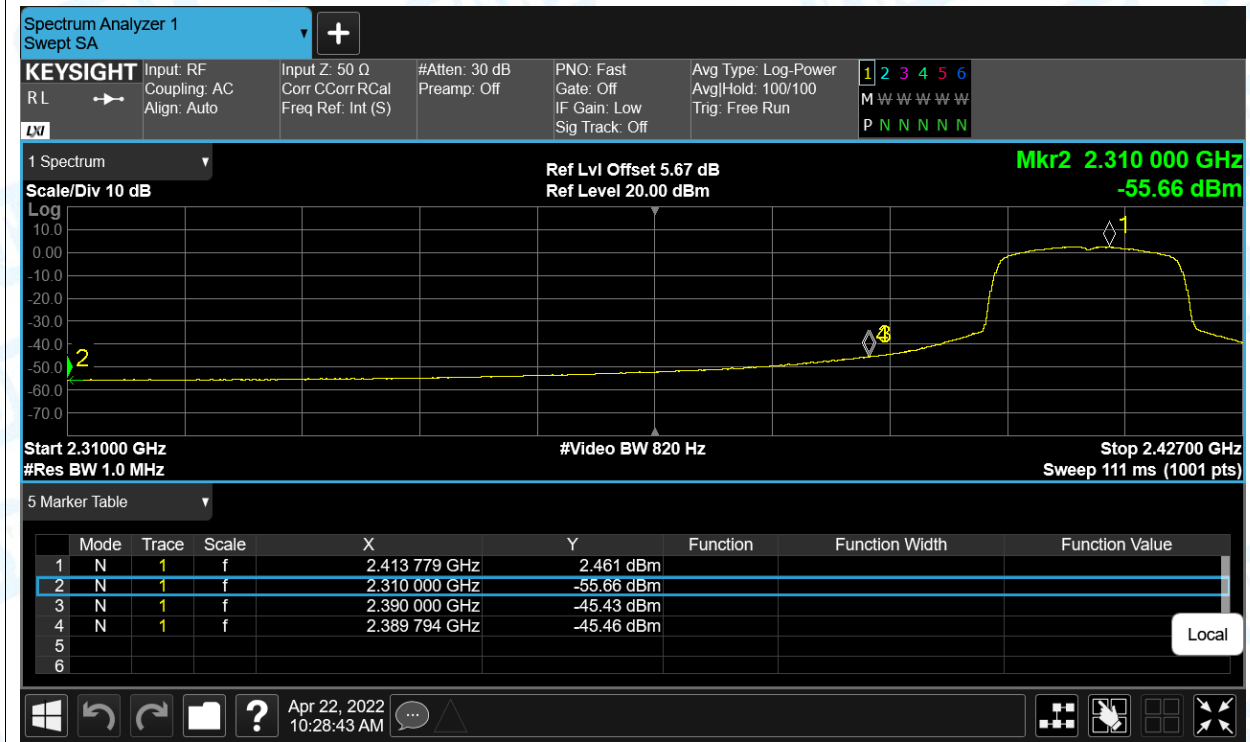


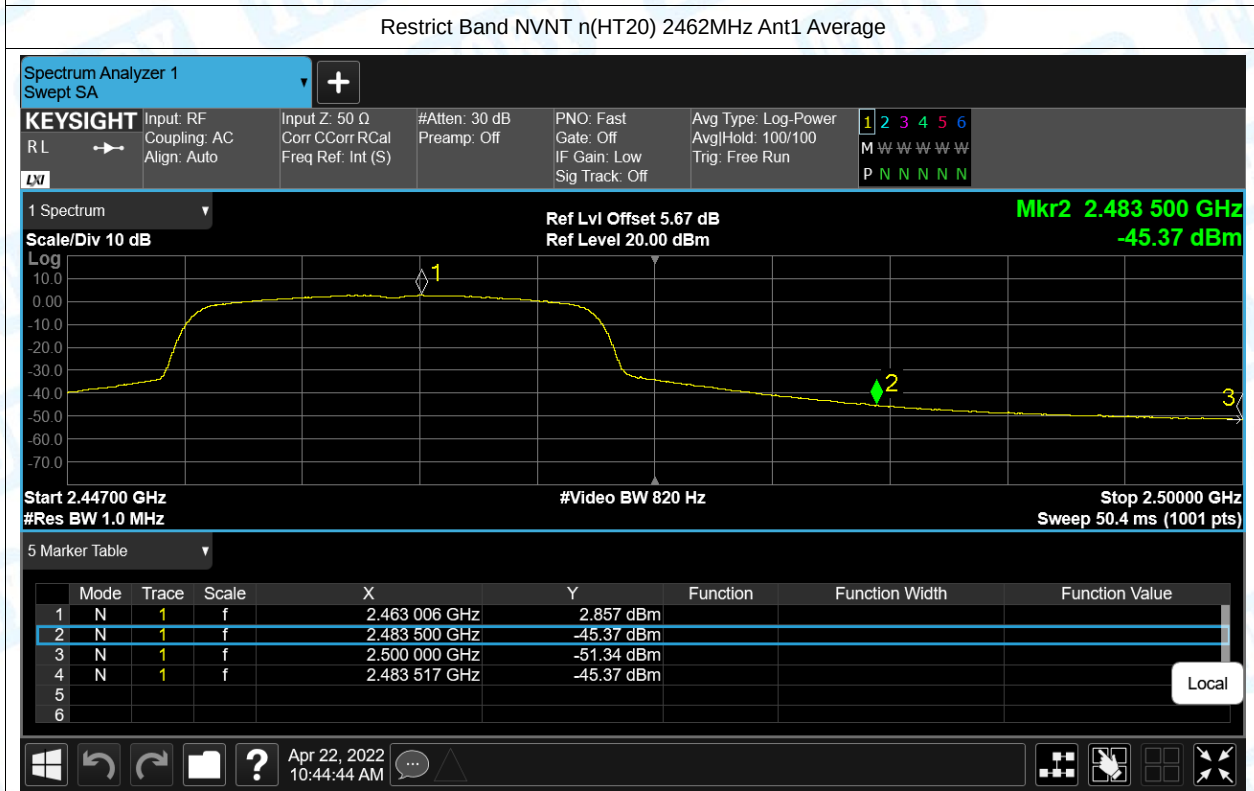
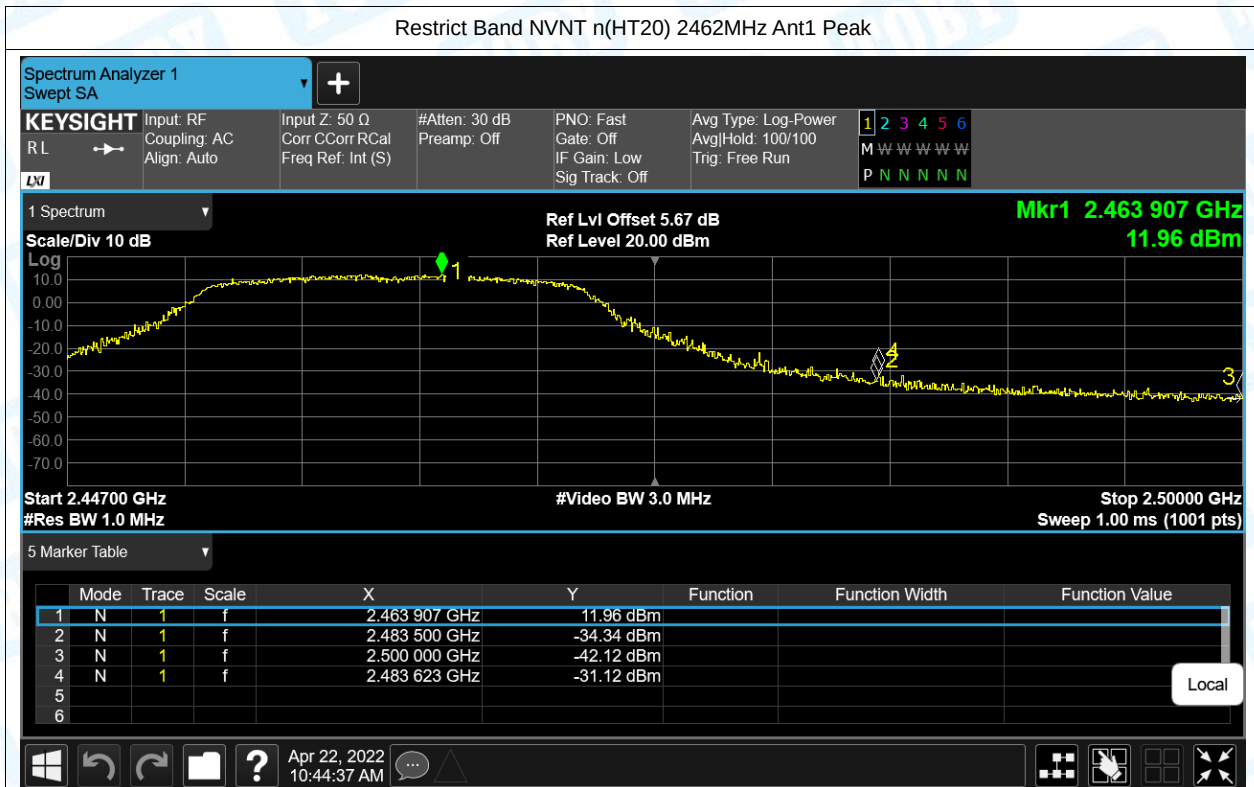


Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak



Restrict Band NVNT n(HT20) 2412MHz Ant1 Average





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