

RF Test Data for 2.4G WiFi (Conducted Measurements)

General Description of EUT	
Product Name:	Intelligent watering machine
Test Model:	WIFI-1
Sample ID:	202203-0087-1-02
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 5V
Test Engineer:	Huangjianping
Note: For a more detailed features description, please refer to the report TBR-C-202203-0087-1	

Contents

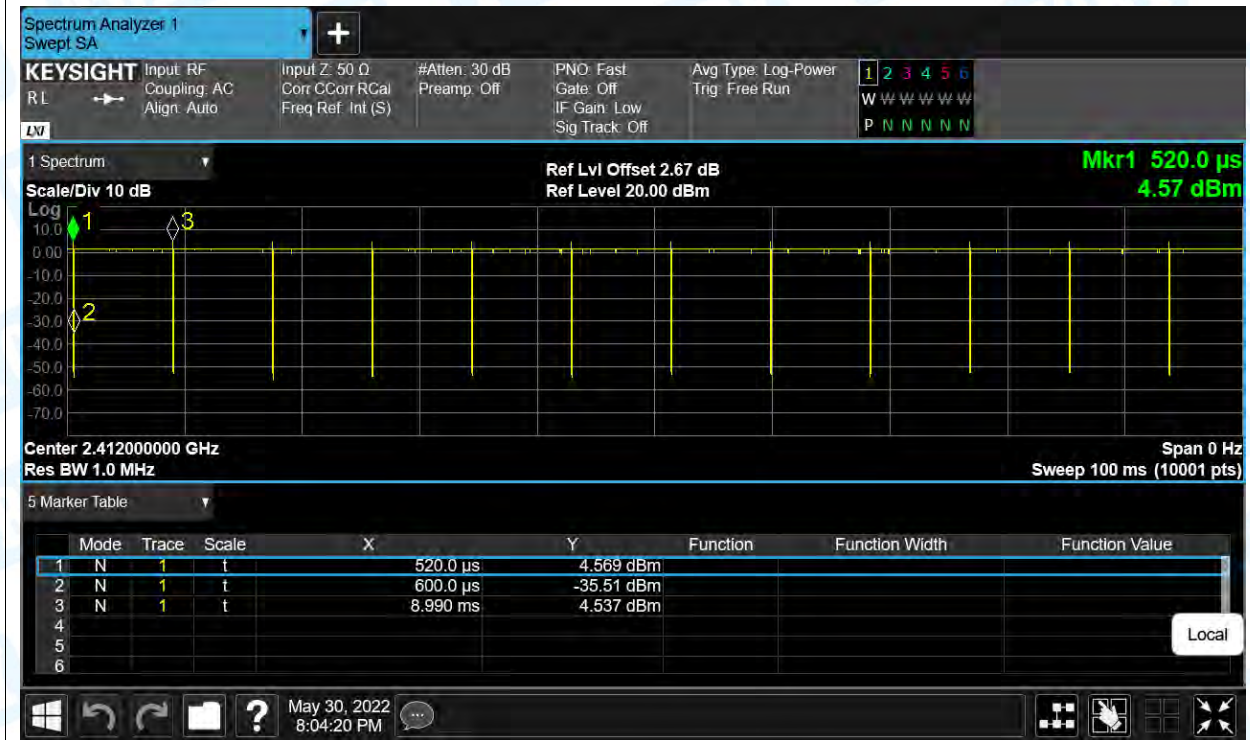
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1.Duty Cycle

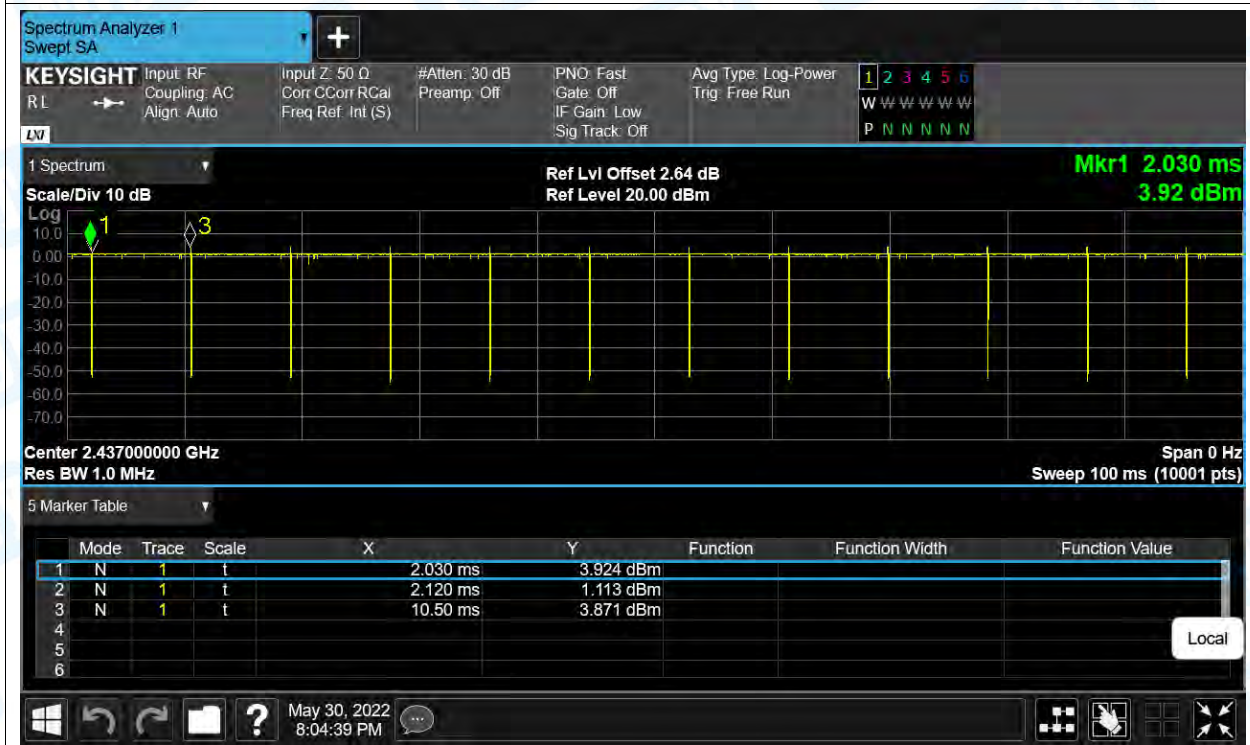
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.1	0.04	0.12
NVNT	b	2437	Ant1	99.1	0.04	0.12
NVNT	b	2462	Ant1	99.09	0.04	0.12
NVNT	g	2412	Ant1	99.05	0.04	0.72
NVNT	g	2437	Ant1	99.68	0.01	0.72
NVNT	g	2462	Ant1	99.67	0.01	0.72
NVNT	n(HT20)	2412	Ant1	99.72	0.01	0.25
NVNT	n(HT20)	2437	Ant1	99.7	0.01	0.25
NVNT	n(HT20)	2462	Ant1	99.72	0.01	0.25
NVNT	n(HT40)	2422	Ant1	100	0	0.01
NVNT	n(HT40)	2437	Ant1	100	0	0.01
NVNT	n(HT40)	2452	Ant1	100	0	0.01

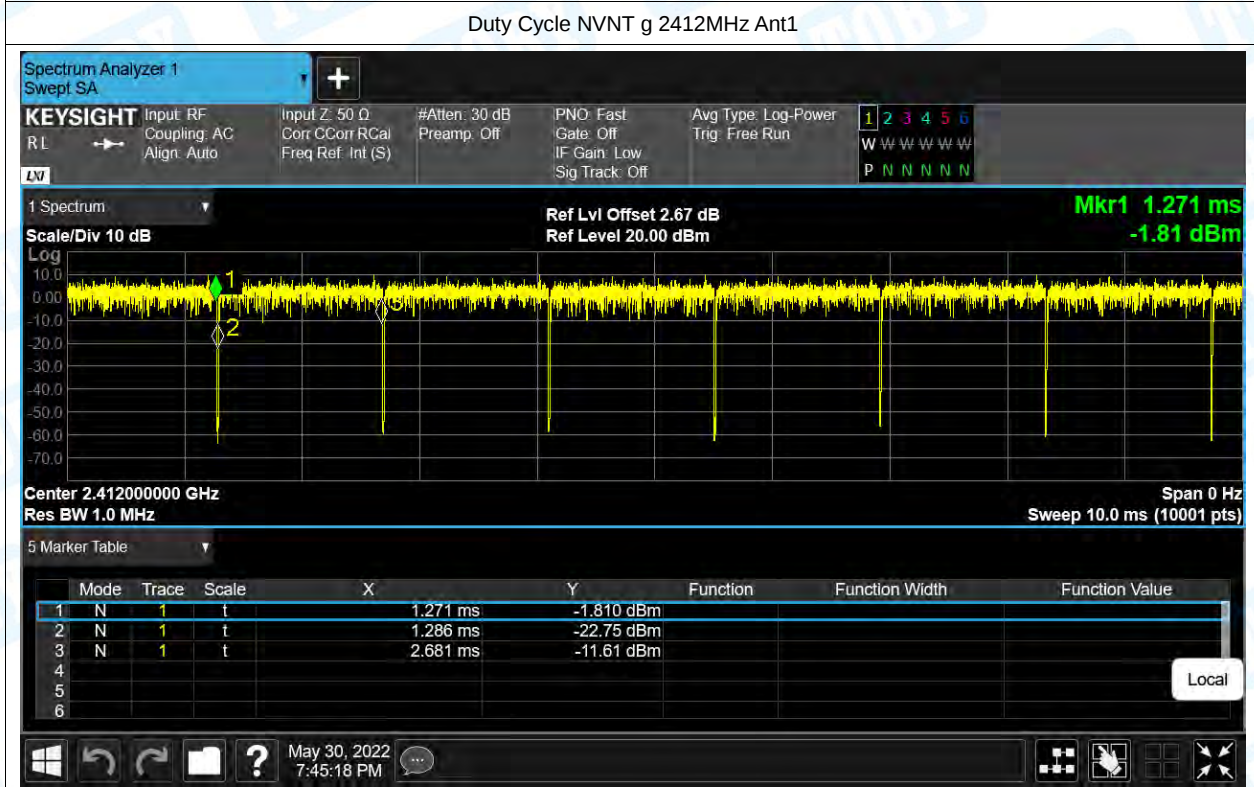
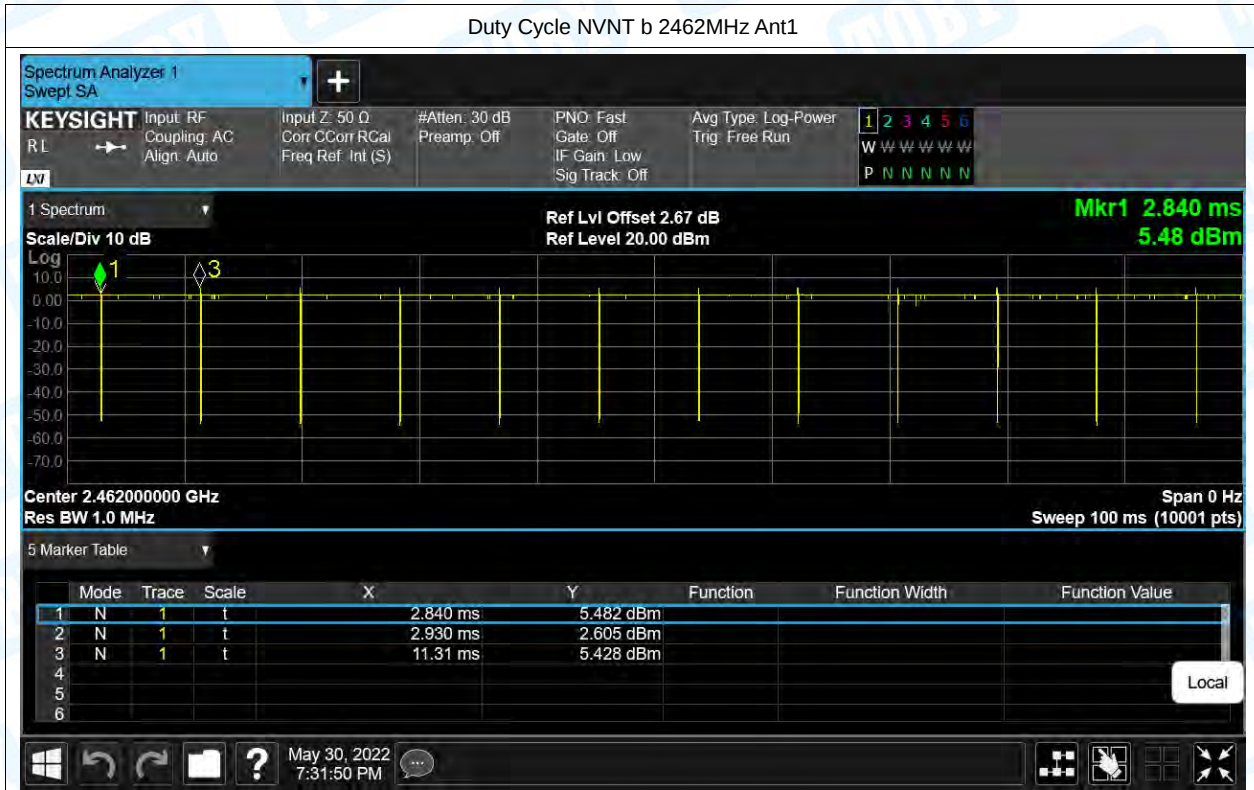
Test Graphs

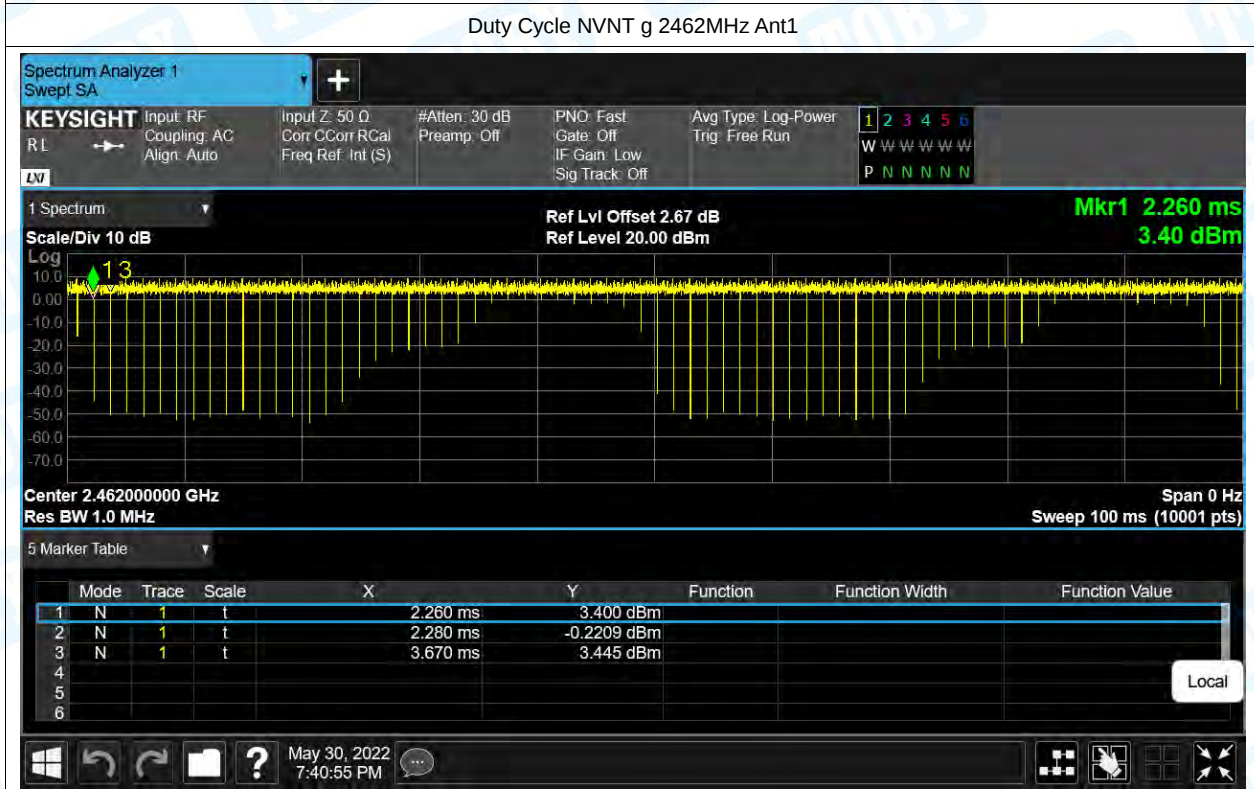
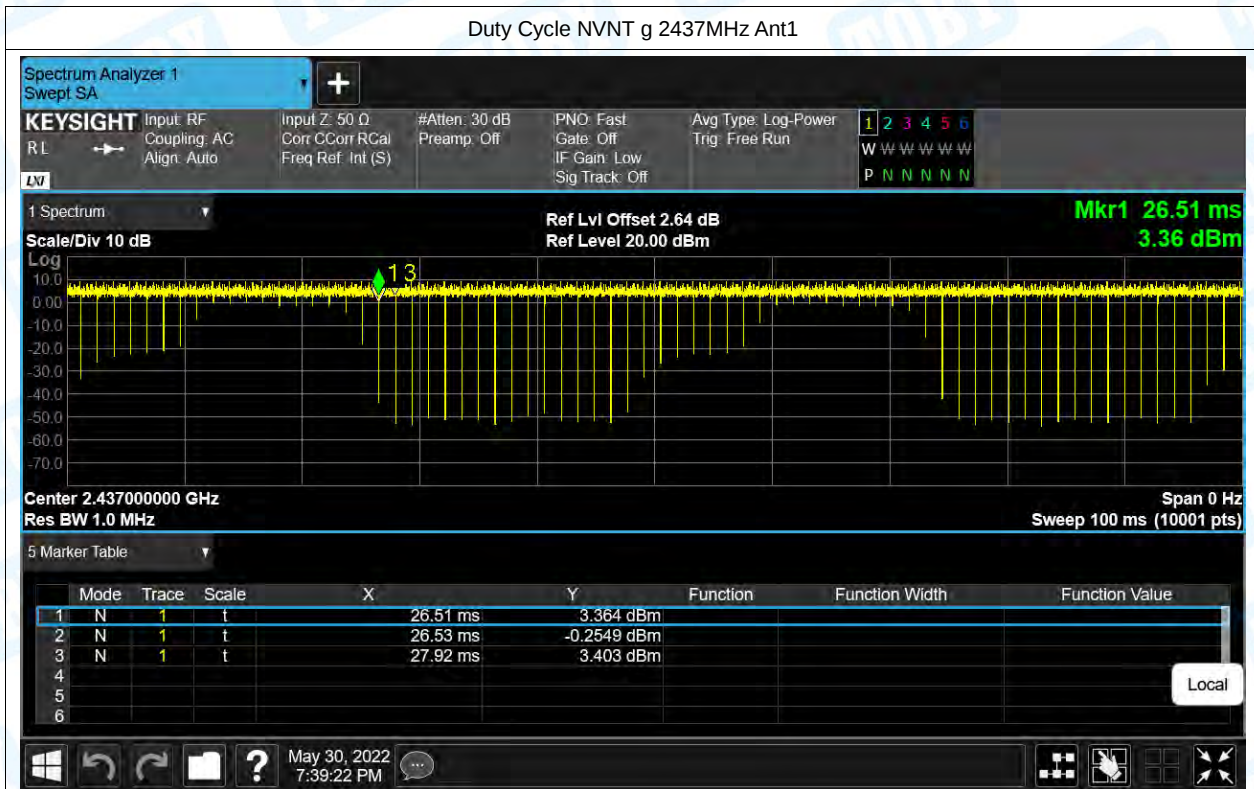
Duty Cycle NVNT b 2412MHz Ant1



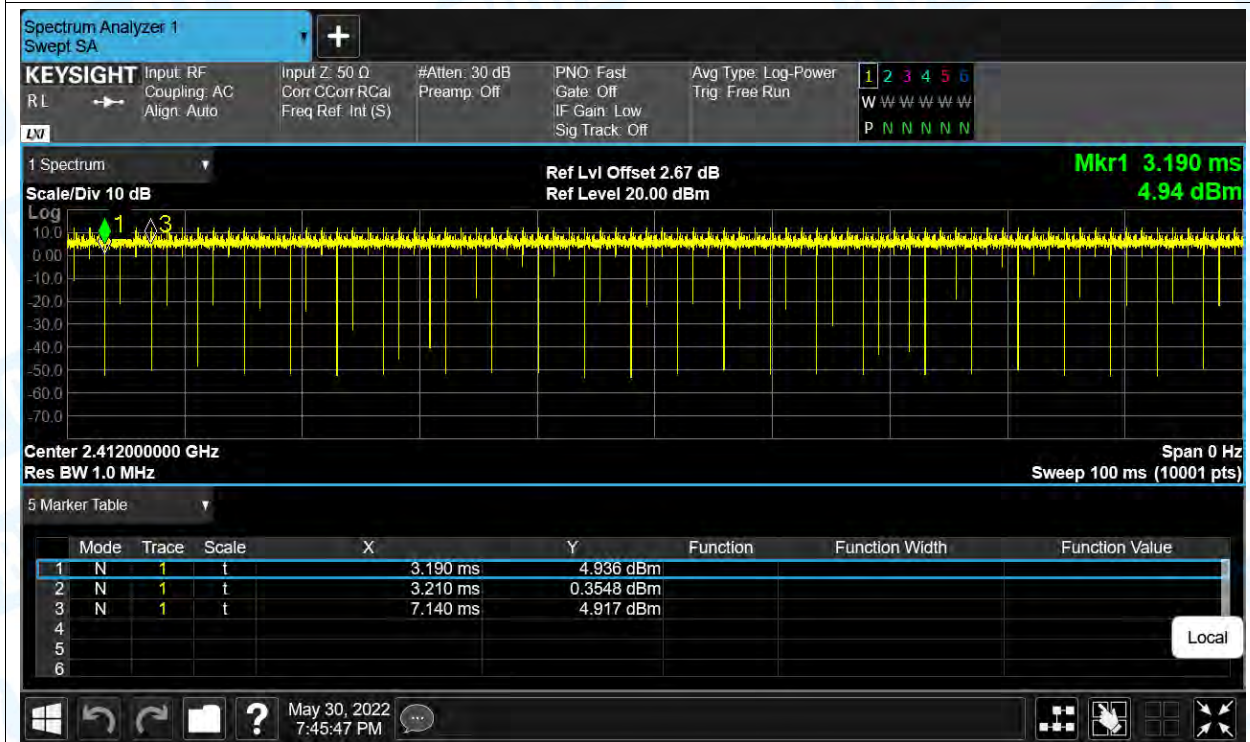
Duty Cycle NVNT b 2437MHz Ant1



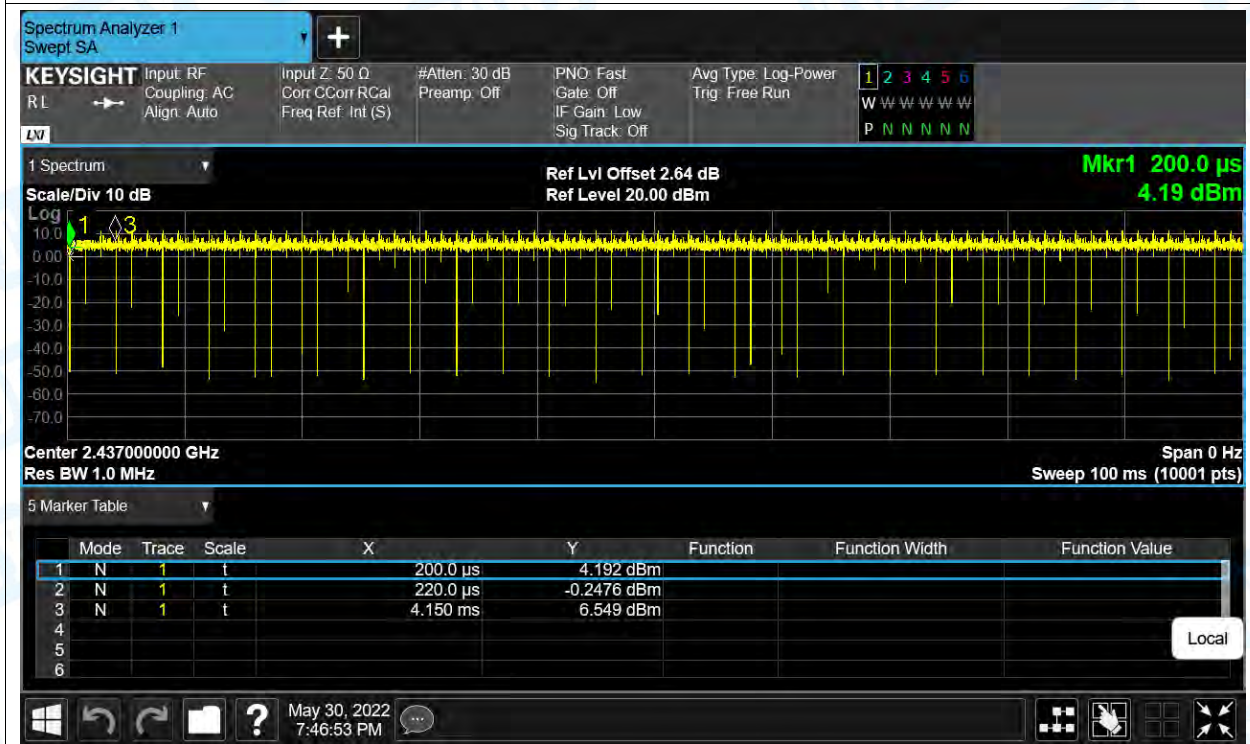


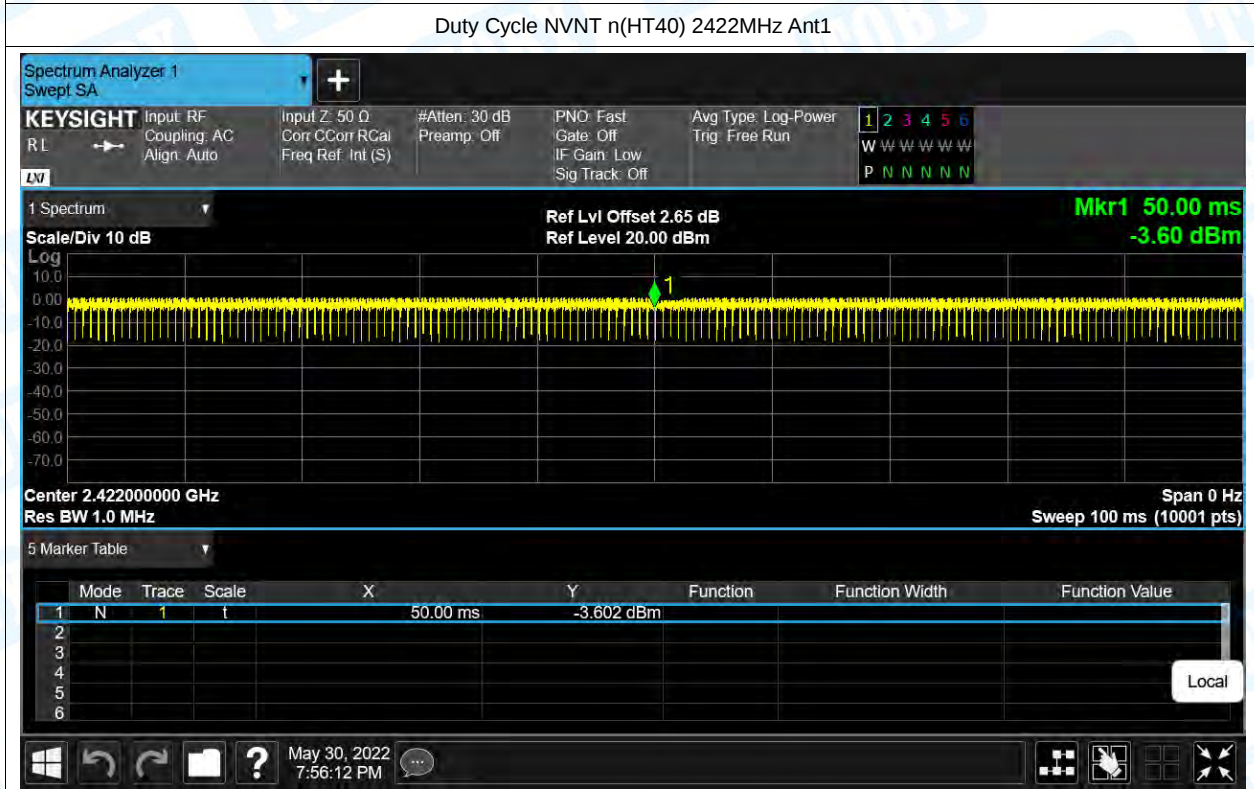
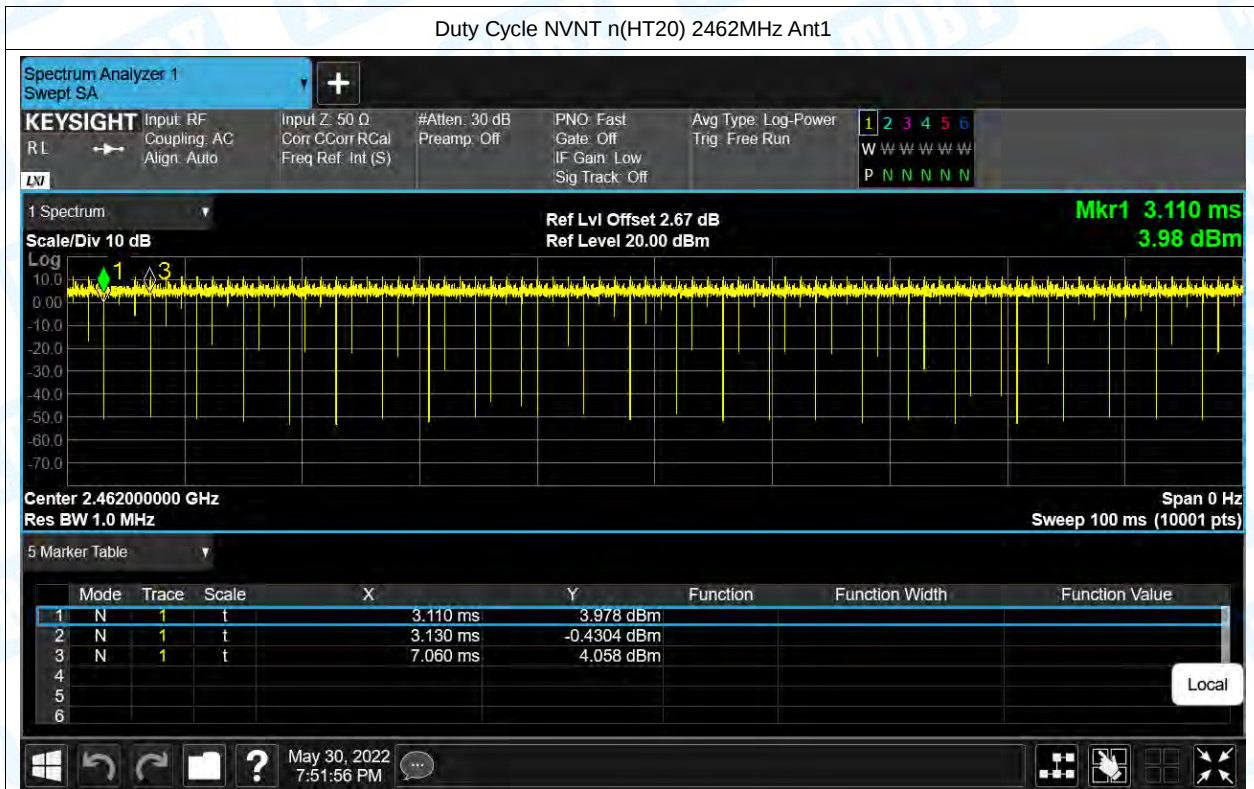


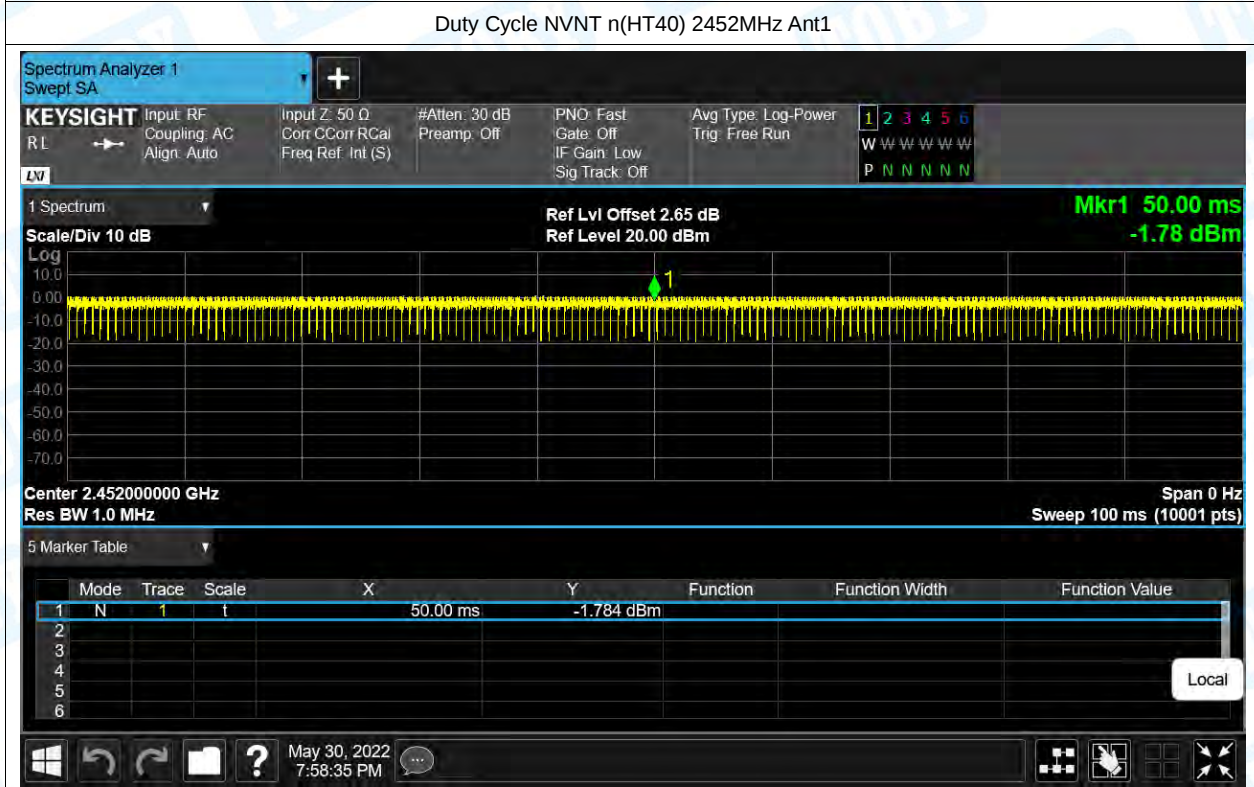
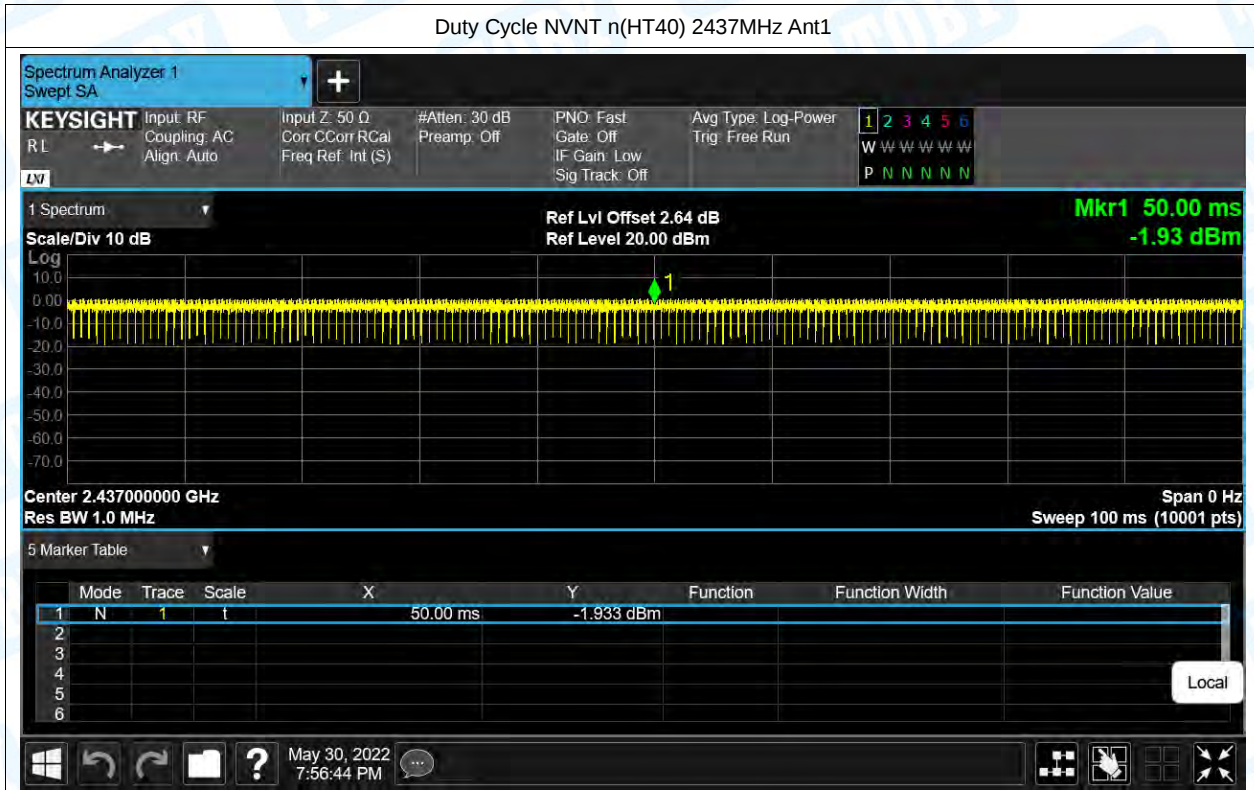
Duty Cycle NVNT n(HT20) 2412MHz Ant1



Duty Cycle NVNT n(HT20) 2437MHz Ant1







2.Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	16.443	30	Pass
NVNT	b	2437	Ant1	9.192	30	Pass
NVNT	b	2462	Ant1	16.911	30	Pass
NVNT	g	2412	Ant1	16.069	30	Pass
NVNT	g	2437	Ant1	15.902	30	Pass
NVNT	g	2462	Ant1	15.802	30	Pass
NVNT	n(HT20)	2412	Ant1	16.784	30	Pass
NVNT	n(HT20)	2437	Ant1	15.808	30	Pass
NVNT	n(HT20)	2462	Ant1	15.593	30	Pass
NVNT	n(HT40)	2422	Ant1	15.932	30	Pass
NVNT	n(HT40)	2437	Ant1	15.698	30	Pass
NVNT	n(HT40)	2452	Ant1	15.56	30	Pass

3.-6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	10.3	0.5	Pass
NVNT	b	2437	Ant1	10.6	0.5	Pass
NVNT	b	2462	Ant1	12.02	0.5	Pass
NVNT	g	2412	Ant1	16.8	0.5	Pass
NVNT	g	2437	Ant1	15.08	0.5	Pass
NVNT	g	2462	Ant1	15.26	0.5	Pass
NVNT	n(HT20)	2412	Ant1	16.95	0.5	Pass
NVNT	n(HT20)	2437	Ant1	15.02	0.5	Pass
NVNT	n(HT20)	2462	Ant1	11.24	0.5	Pass
NVNT	n(HT40)	2422	Ant1	29.22	0.5	Pass
NVNT	n(HT40)	2437	Ant1	33.77	0.5	Pass
NVNT	n(HT40)	2452	Ant1	32.49	0.5	Pass

Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



-6dB Bandwidth NVNT b 2437MHz Ant1



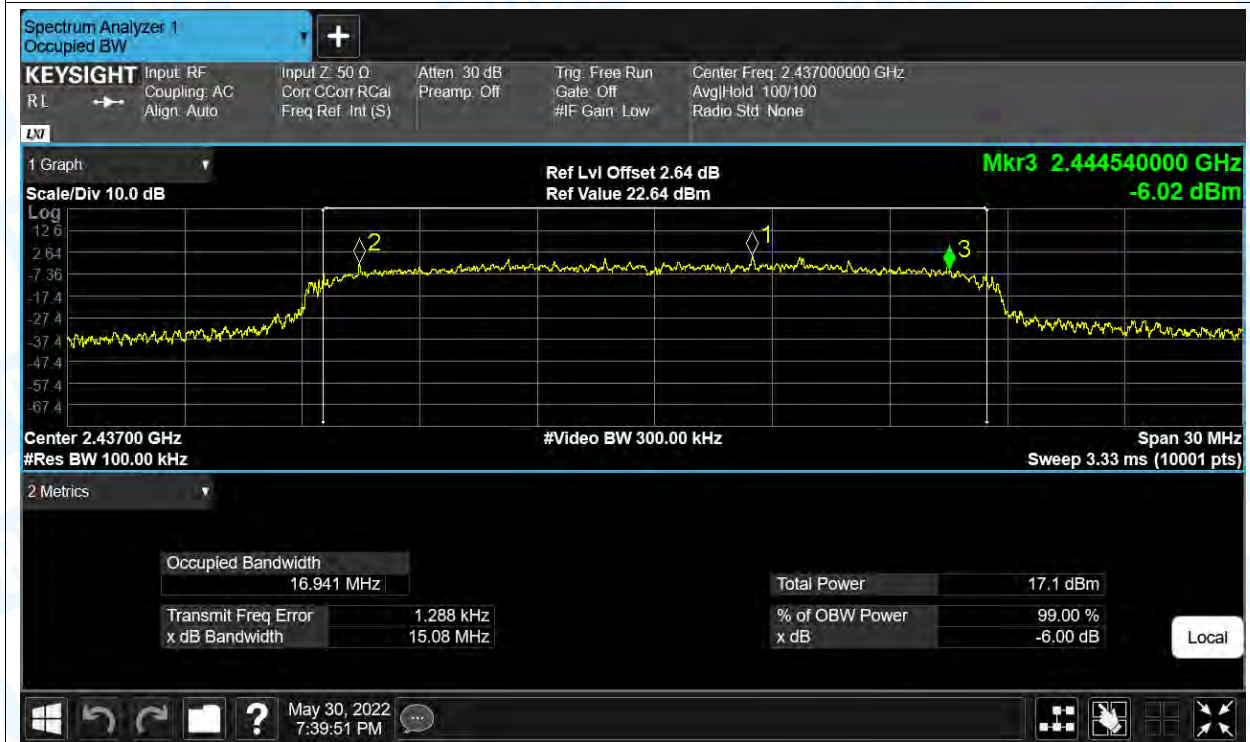
-6dB Bandwidth NVNT b 2462MHz Ant1



-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	15.107
NVNT	b	2437	Ant1	14.994
NVNT	b	2462	Ant1	14.982
NVNT	g	2412	Ant1	17.222
NVNT	g	2437	Ant1	17.044
NVNT	g	2462	Ant1	16.994
NVNT	n(HT20)	2412	Ant1	18.283
NVNT	n(HT20)	2437	Ant1	18.133
NVNT	n(HT20)	2462	Ant1	18.094
NVNT	n(HT40)	2422	Ant1	36.057
NVNT	n(HT40)	2437	Ant1	35.627
NVNT	n(HT40)	2452	Ant1	35.588

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	-16.902	8	Pass
NVNT	b	2437	Ant1	-17.005	8	Pass
NVNT	b	2462	Ant1	-16.41	8	Pass
NVNT	g	2412	Ant1	-18.042	8	Pass
NVNT	g	2437	Ant1	-13.683	8	Pass
NVNT	g	2462	Ant1	-14.084	8	Pass
NVNT	n(HT20)	2412	Ant1	-13.624	8	Pass
NVNT	n(HT20)	2437	Ant1	-14.244	8	Pass
NVNT	n(HT20)	2462	Ant1	-14.043	8	Pass
NVNT	n(HT40)	2422	Ant1	-17.869	8	Pass
NVNT	n(HT40)	2437	Ant1	-18.568	8	Pass
NVNT	n(HT40)	2452	Ant1	-17.425	8	Pass

Test Graphs

PSD NVNT b 2412MHz Ant1



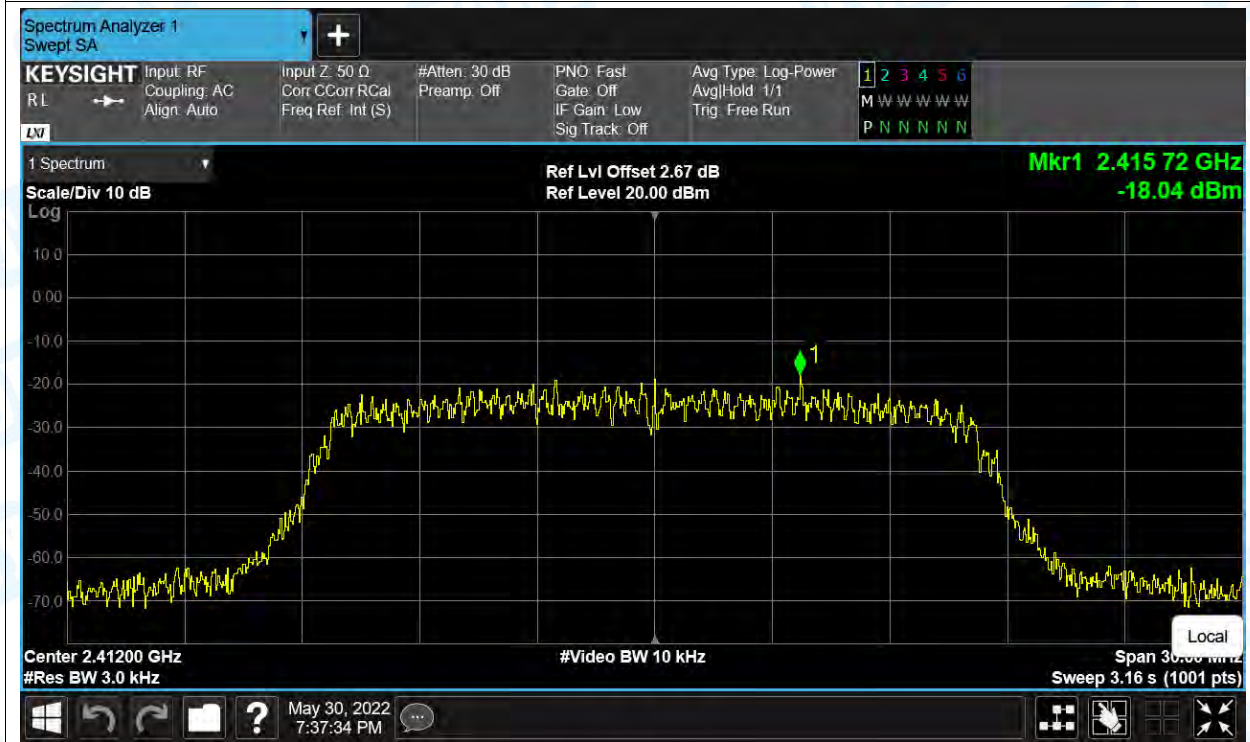
PSD NVNT b 2437MHz Ant1



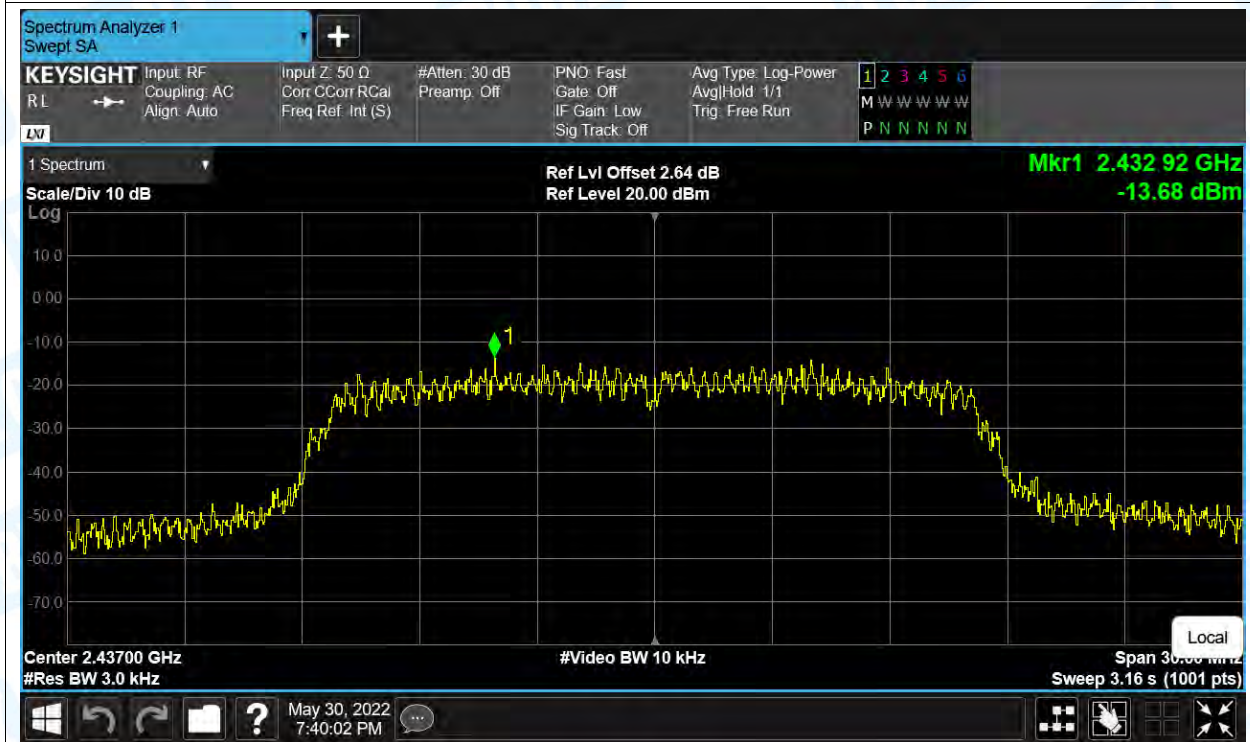
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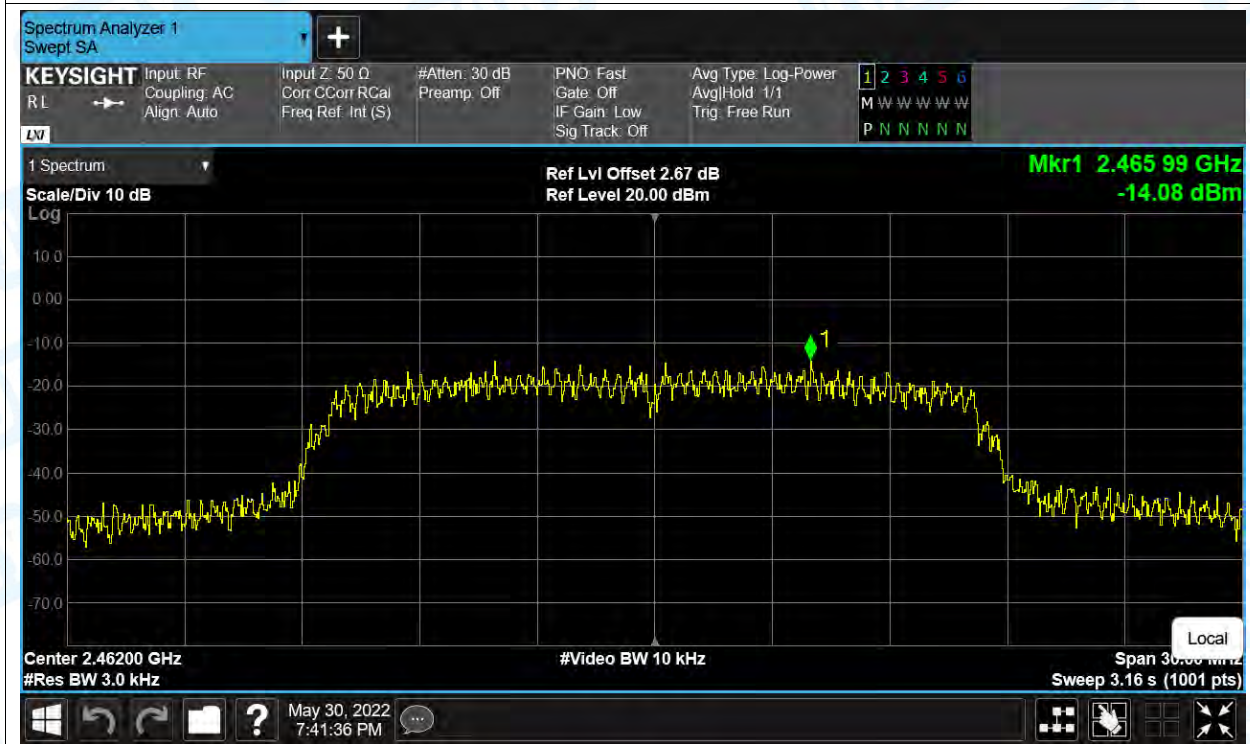
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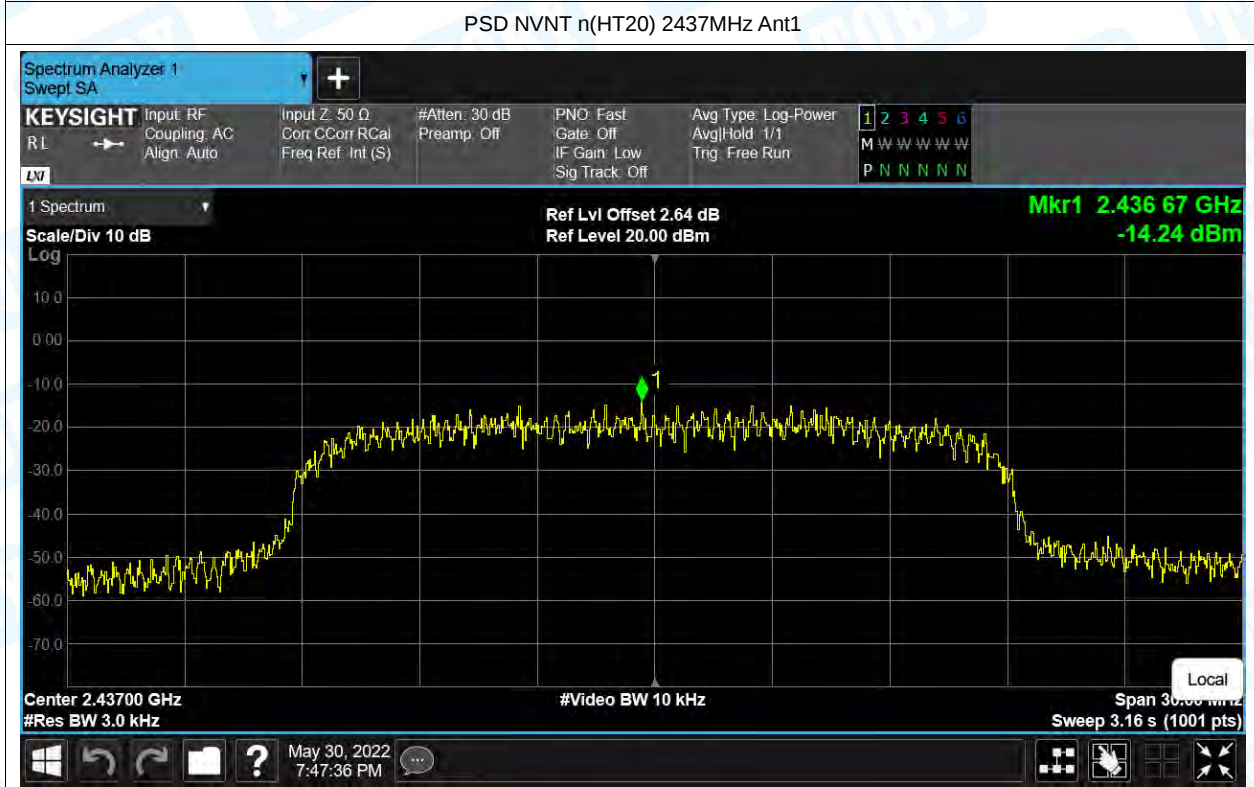
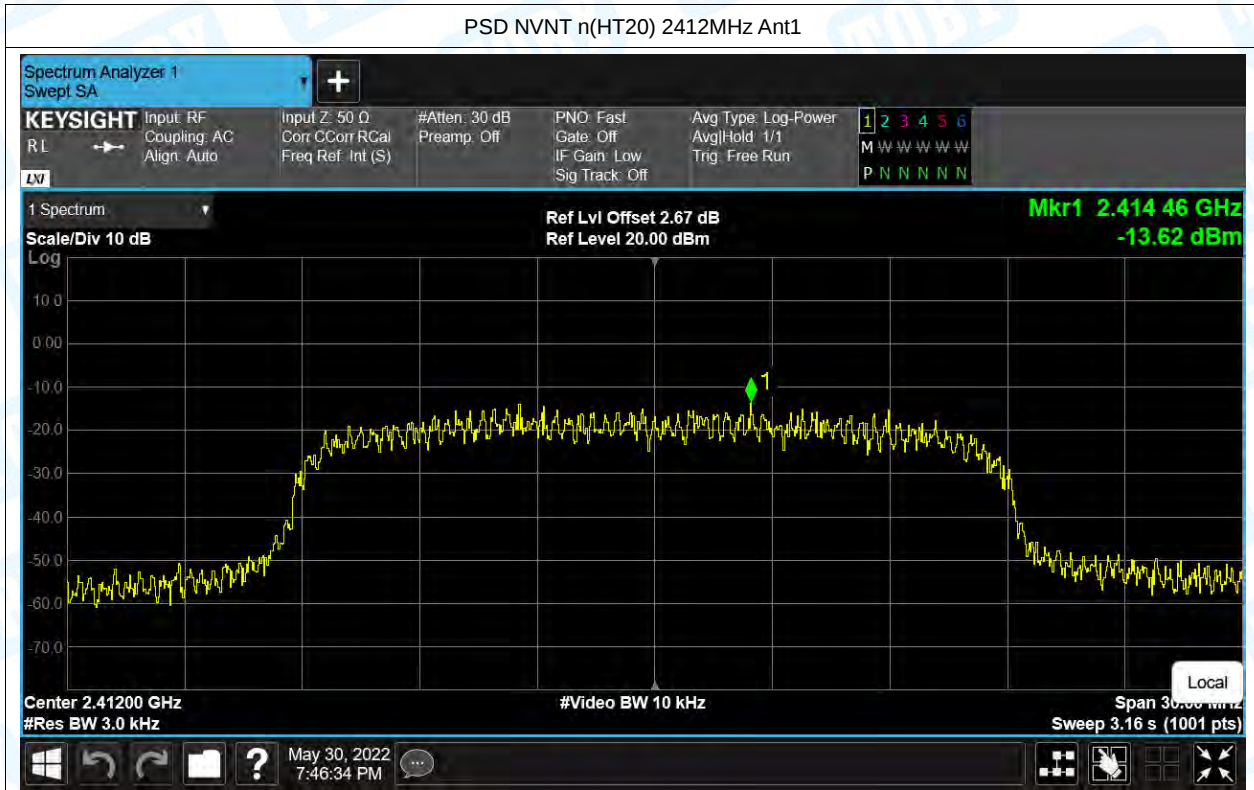


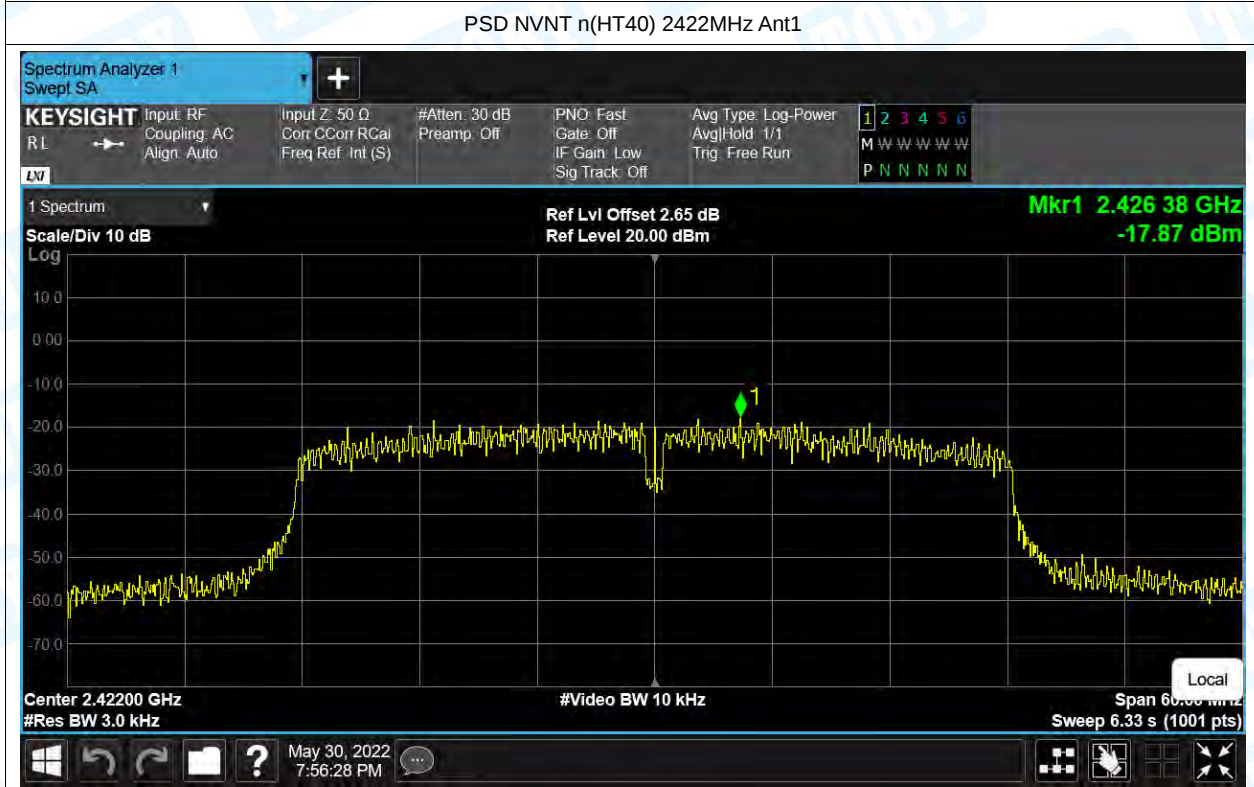
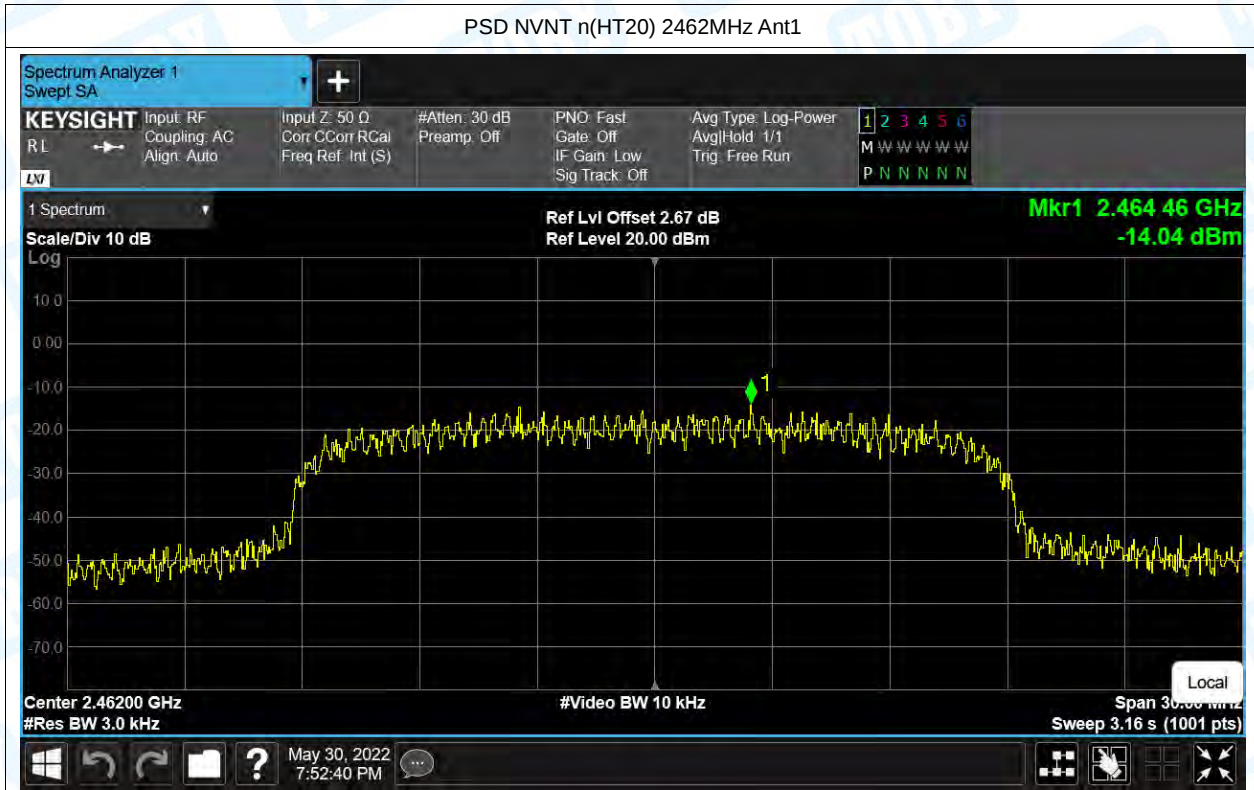
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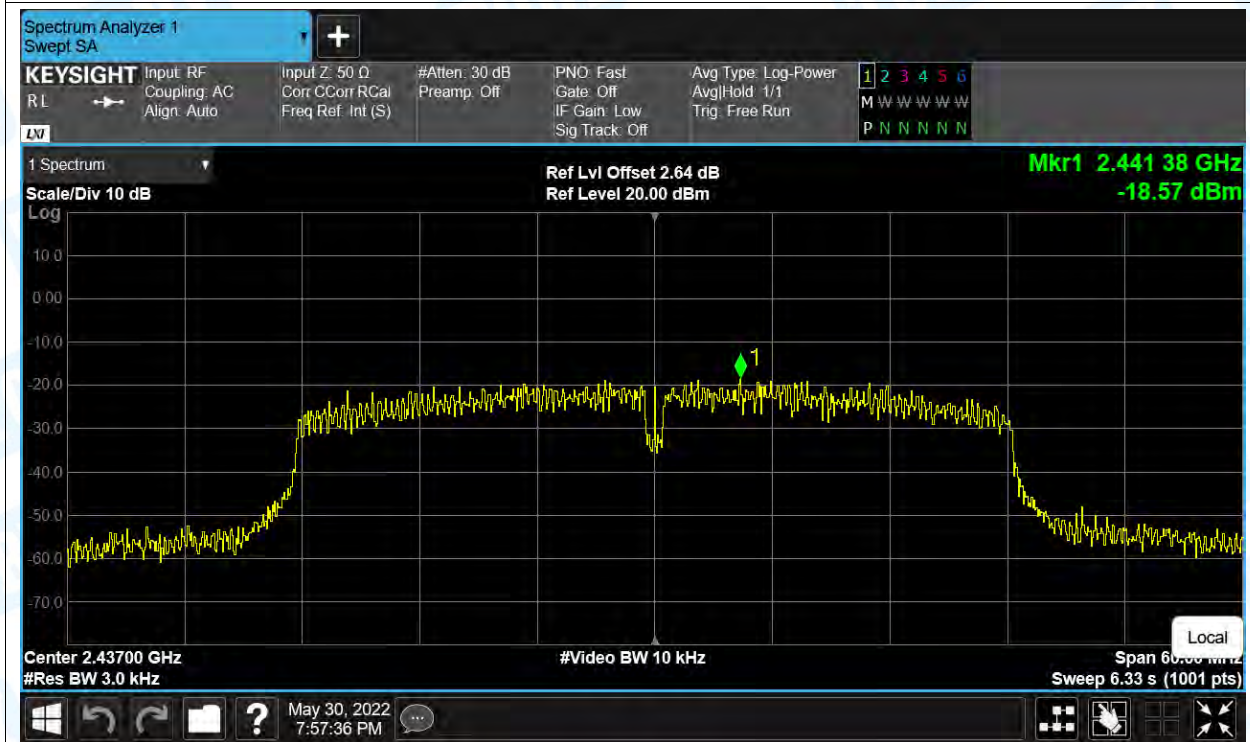
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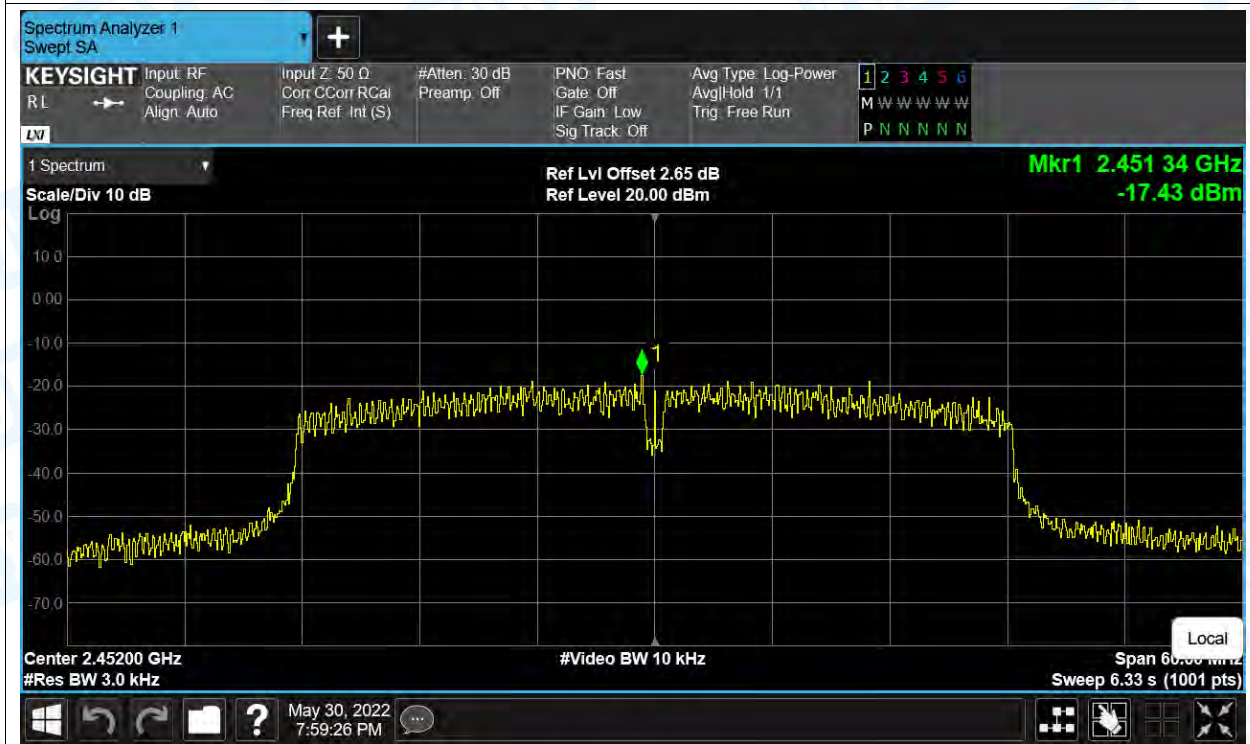




PSD NVNT n(HT40) 2437MHz Ant1



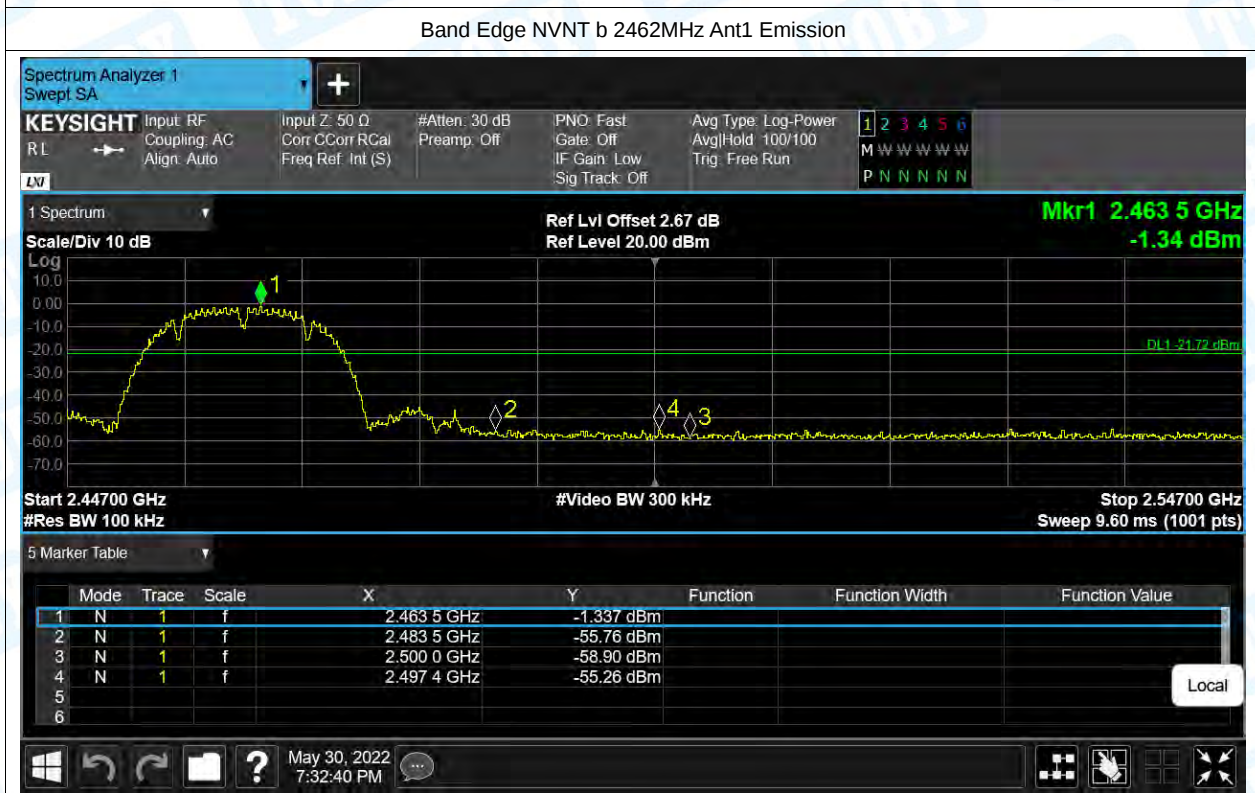
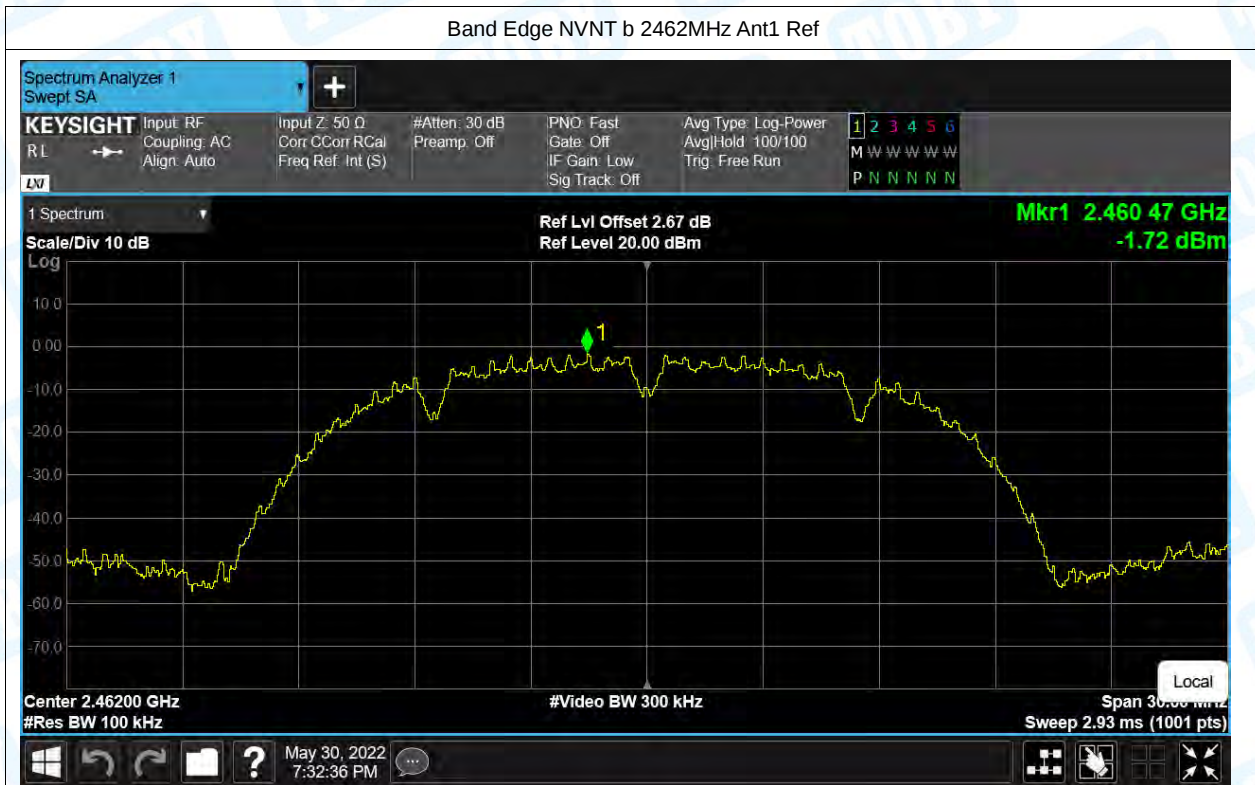
PSD NVNT n(HT40) 2452MHz Ant1



6.Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-54.99	-20	Pass
NVNT	b	2462	Ant1	-53.54	-20	Pass
NVNT	g	2412	Ant1	-42.12	-20	Pass
NVNT	g	2462	Ant1	-40.64	-20	Pass
NVNT	n(HT20)	2412	Ant1	-38.68	-20	Pass
NVNT	n(HT20)	2462	Ant1	-40.6	-20	Pass
NVNT	n(HT40)	2422	Ant1	-30.65	-20	Pass
NVNT	n(HT40)	2452	Ant1	-30.74	-20	Pass



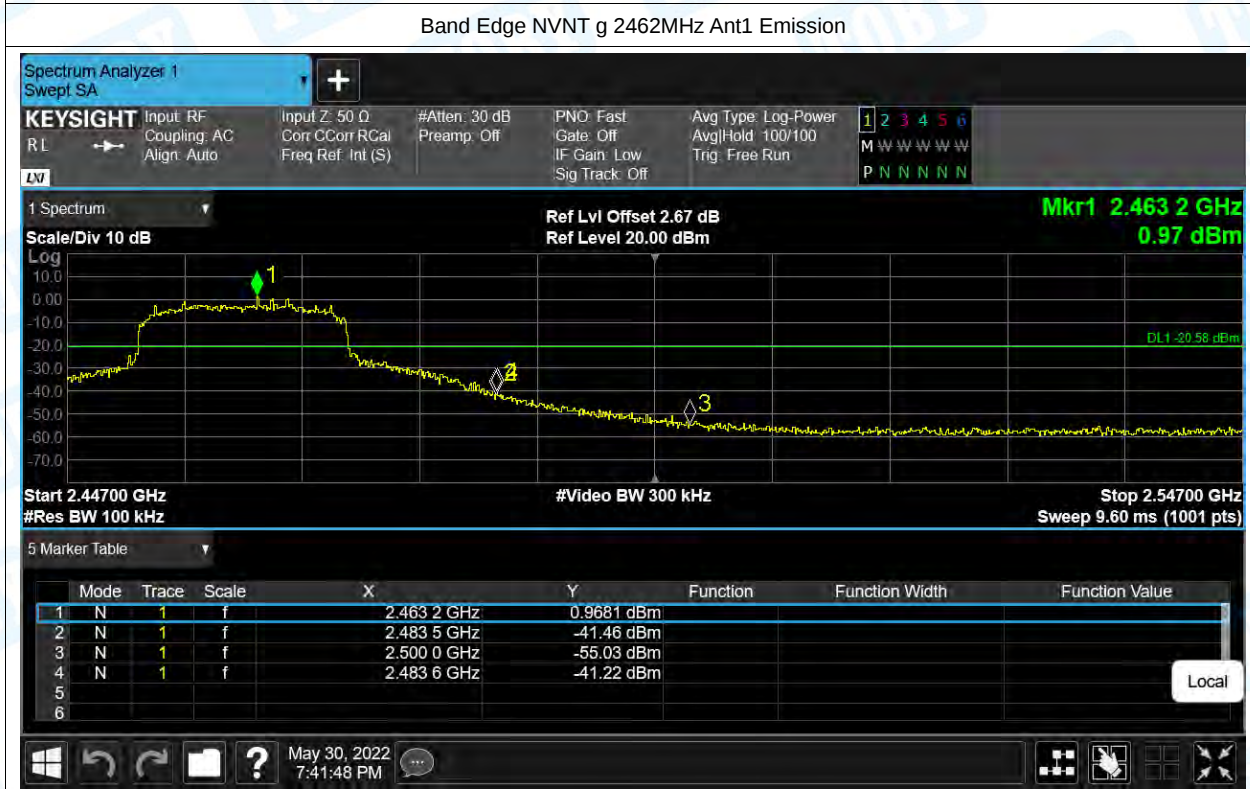
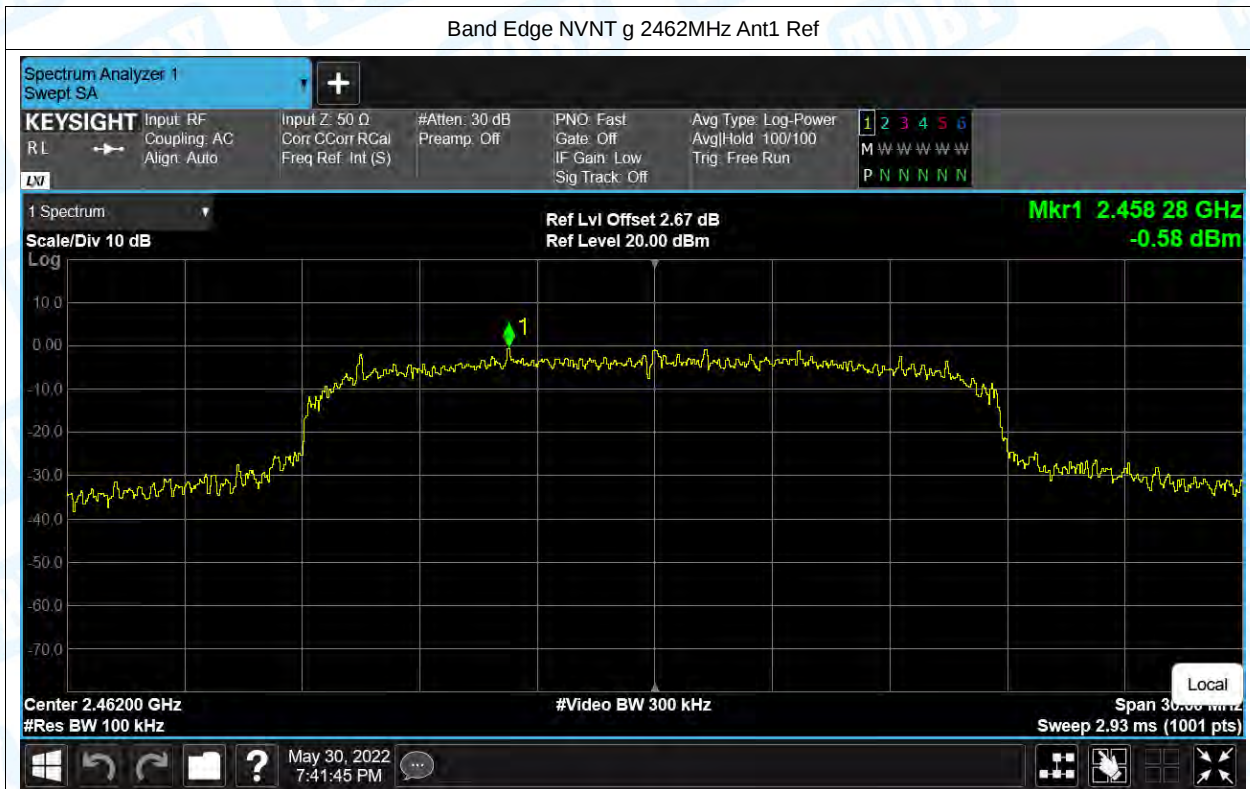


Band Edge NVNT g 2412MHz Ant1 Ref



Band Edge NVNT g 2412MHz Ant1 Emission



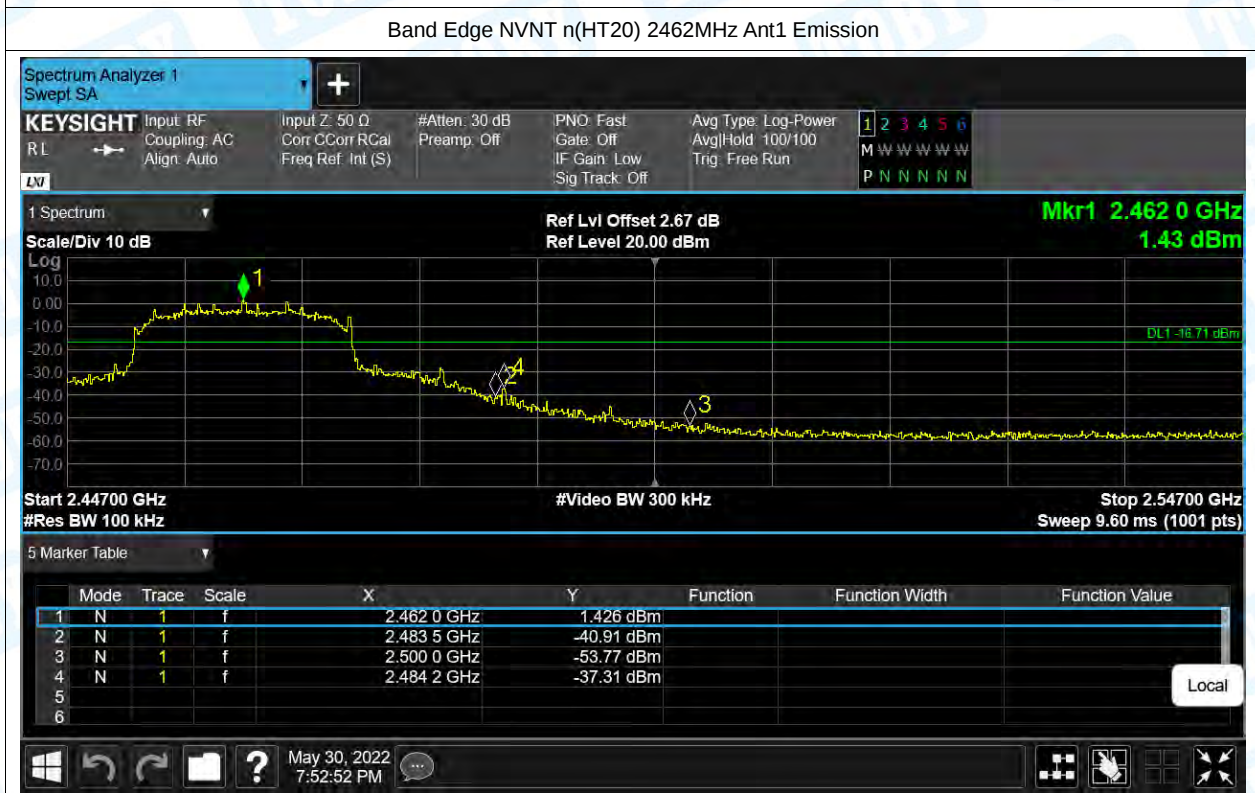
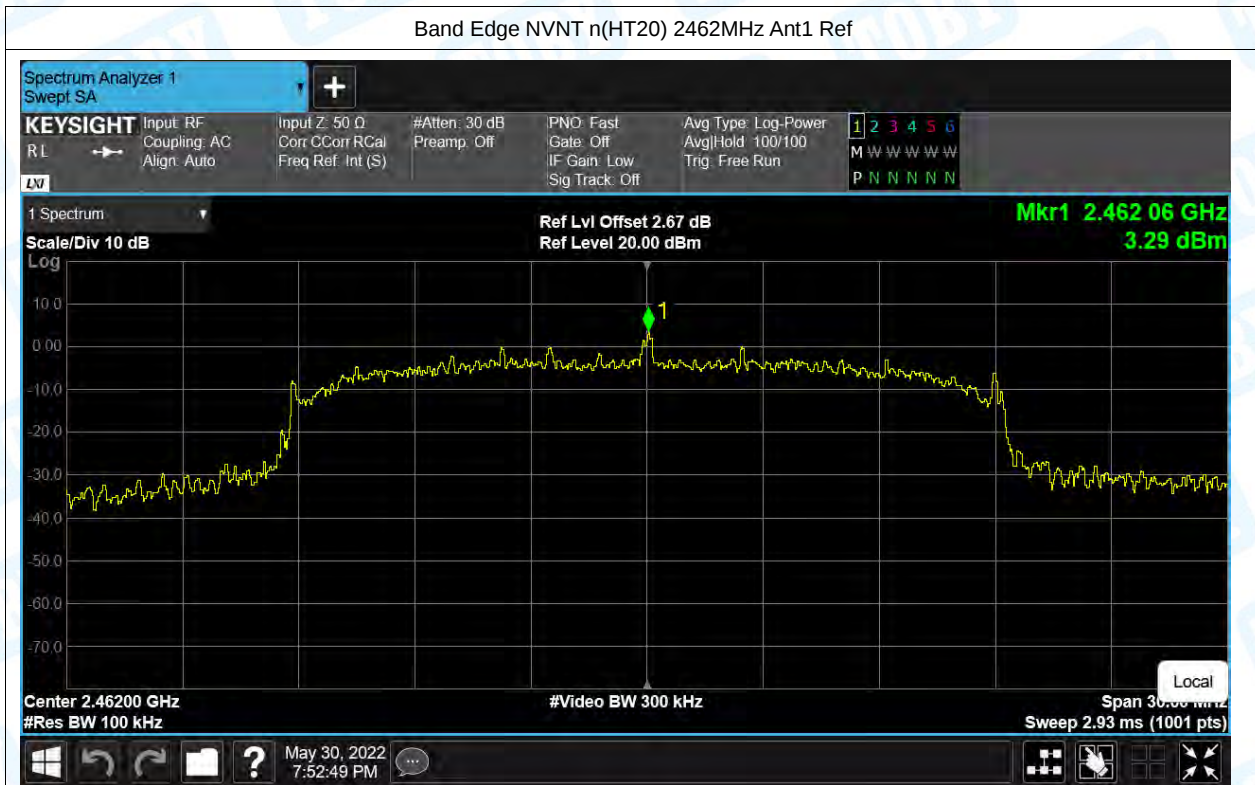


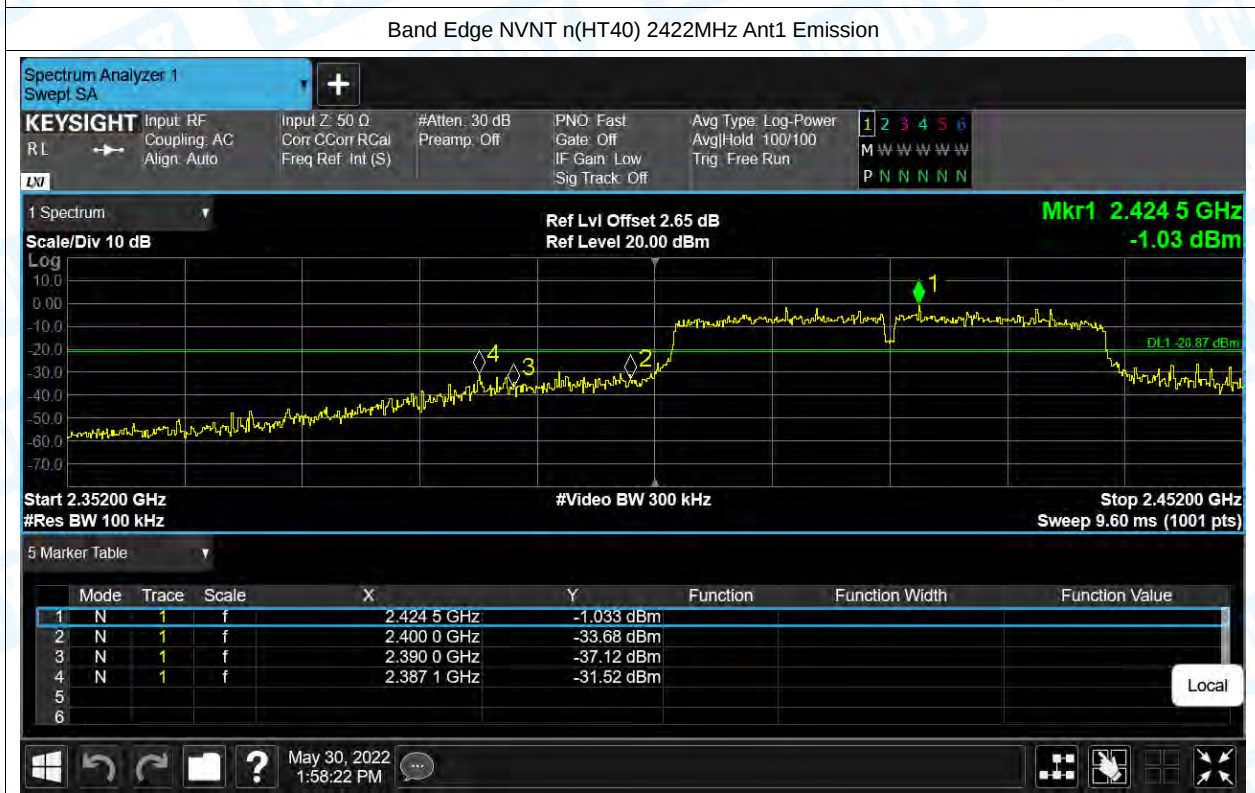
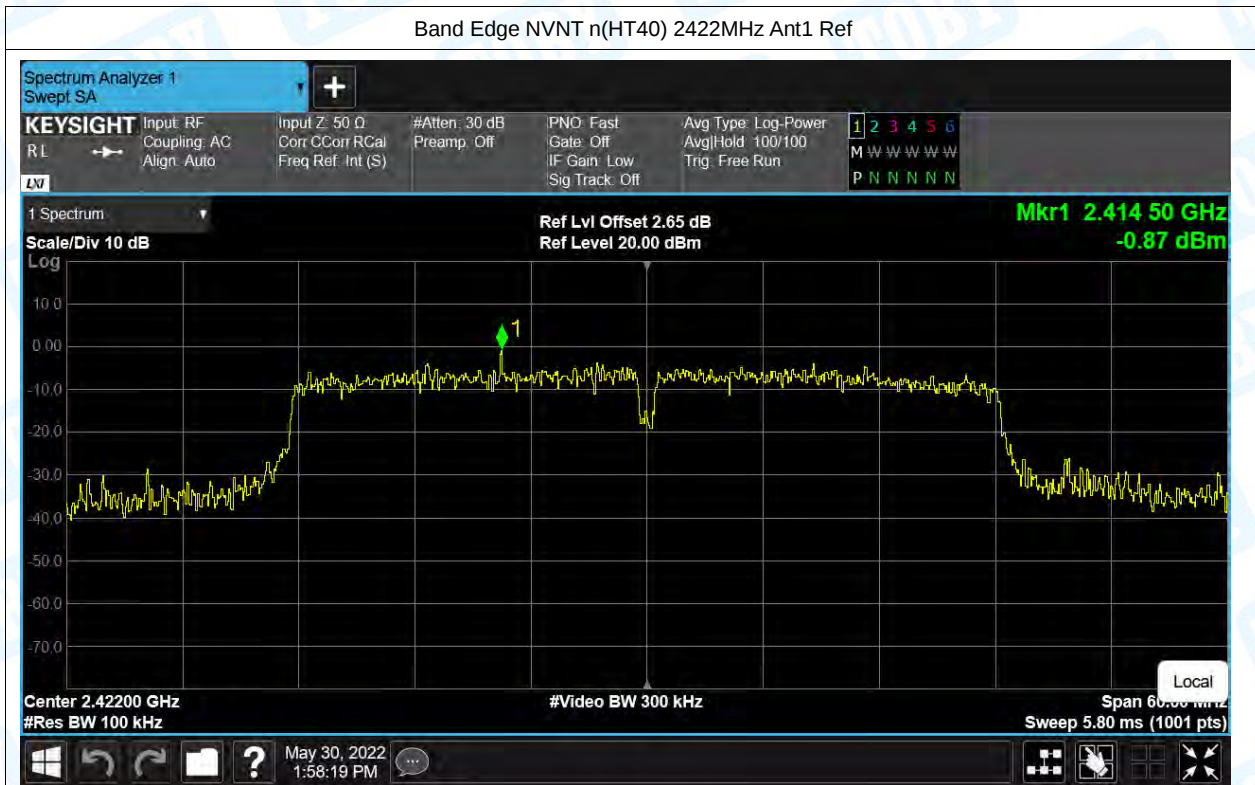
Band Edge NVNT n(HT20) 2412MHz Ant1 Ref



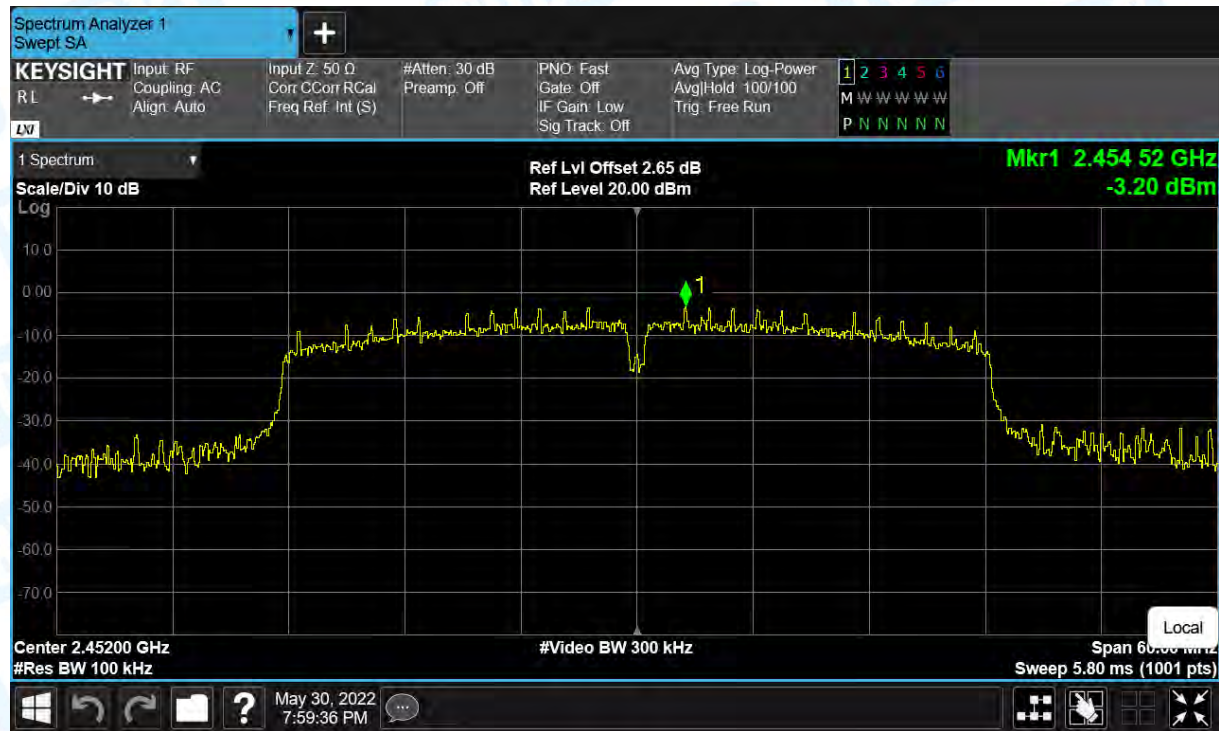
Band Edge NVNT n(HT20) 2412MHz Ant1 Emission







Band Edge NVNT n(HT40) 2452MHz Ant1 Ref



Band Edge NVNT n(HT40) 2452MHz Ant1 Emission



7. Conducted RF Spurious Emission

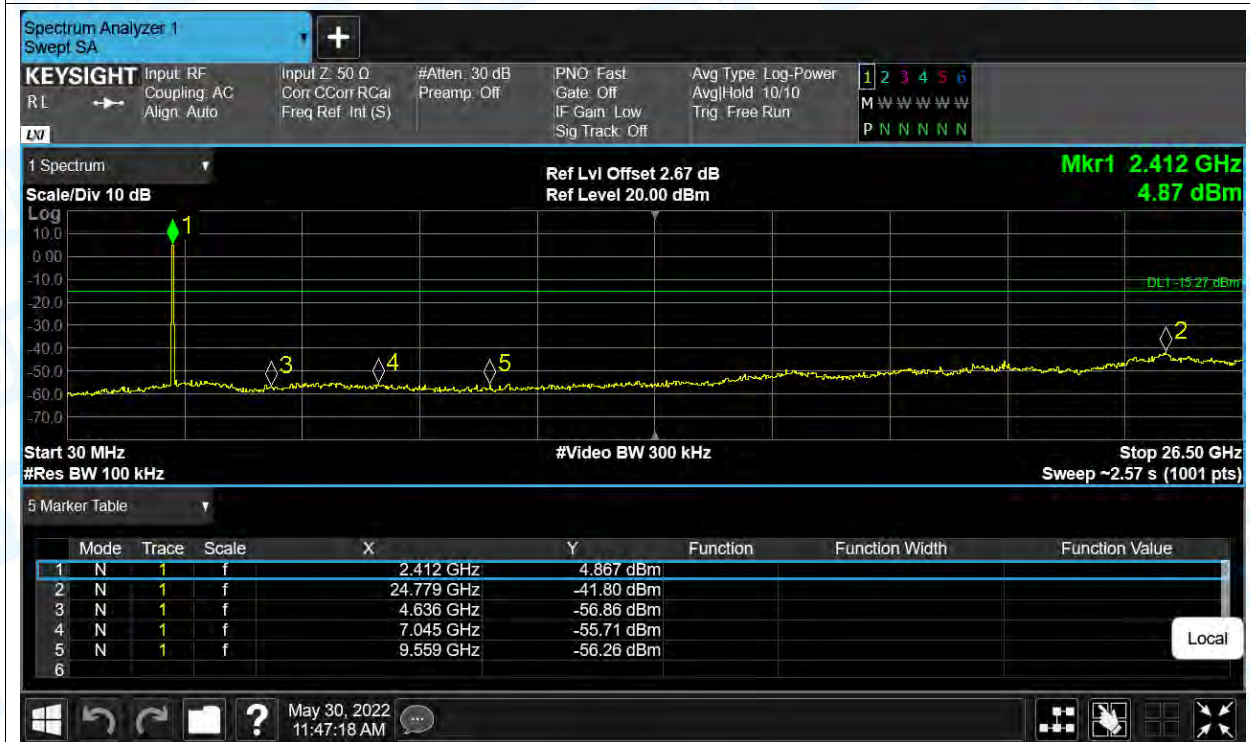
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-46.53	-20	Pass
NVNT	b	2437	Ant1	-39.46	-20	Pass
NVNT	b	2462	Ant1	-41.25	-20	Pass
NVNT	g	2412	Ant1	-42.22	-20	Pass
NVNT	g	2437	Ant1	-43.69	-20	Pass
NVNT	g	2462	Ant1	-42.45	-20	Pass
NVNT	n(HT20)	2412	Ant1	-44.96	-20	Pass
NVNT	n(HT20)	2437	Ant1	-43.84	-20	Pass
NVNT	n(HT20)	2462	Ant1	-42.57	-20	Pass
NVNT	n(HT40)	2422	Ant1	-40.22	-20	Pass
NVNT	n(HT40)	2437	Ant1	-39.51	-20	Pass
NVNT	n(HT40)	2452	Ant1	-38.79	-20	Pass

Test Graphs

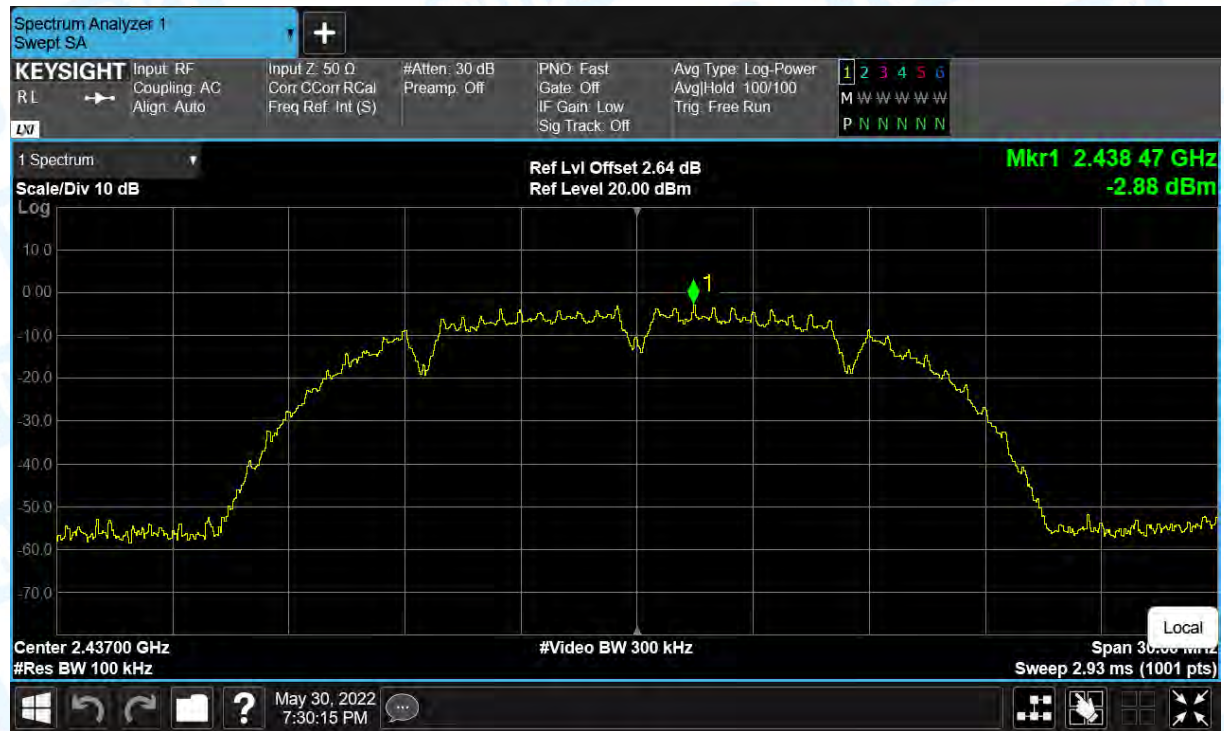
Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission



Tx. Spurious NVNT b 2437MHz Ant1 Ref



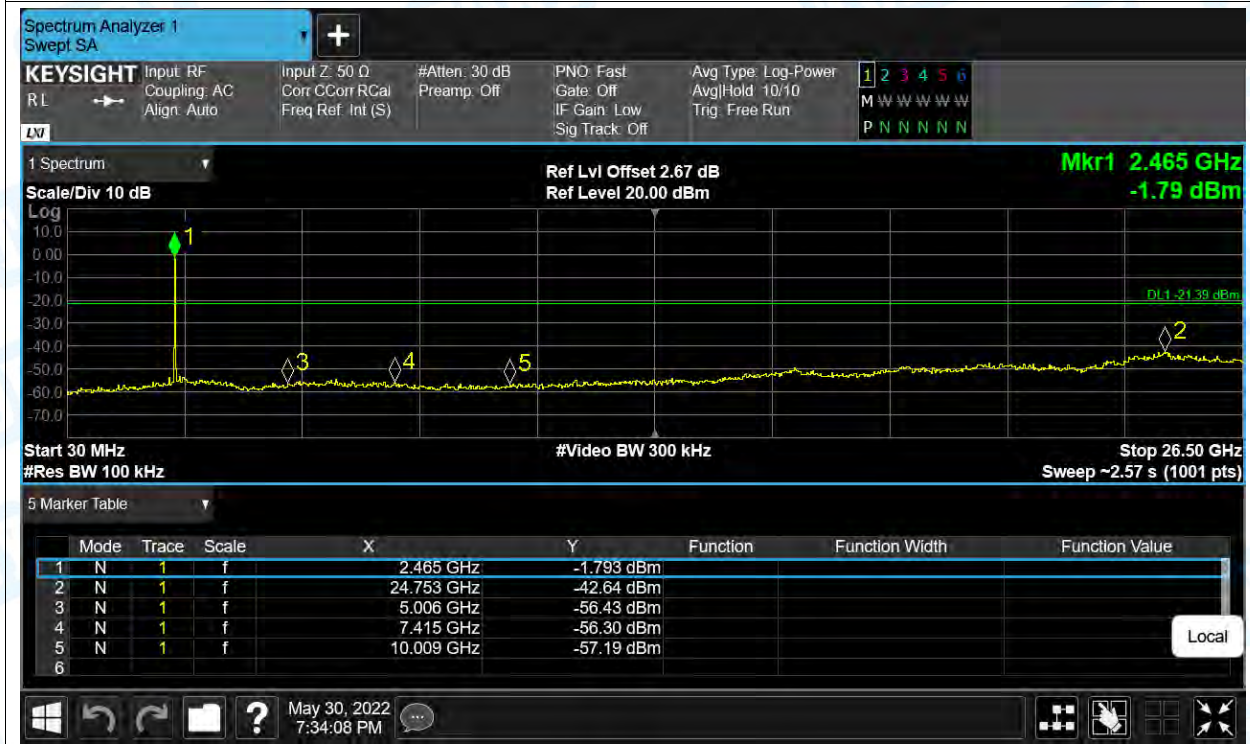
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Tx. Spurious NVNT b 2462MHz Ant1 Ref



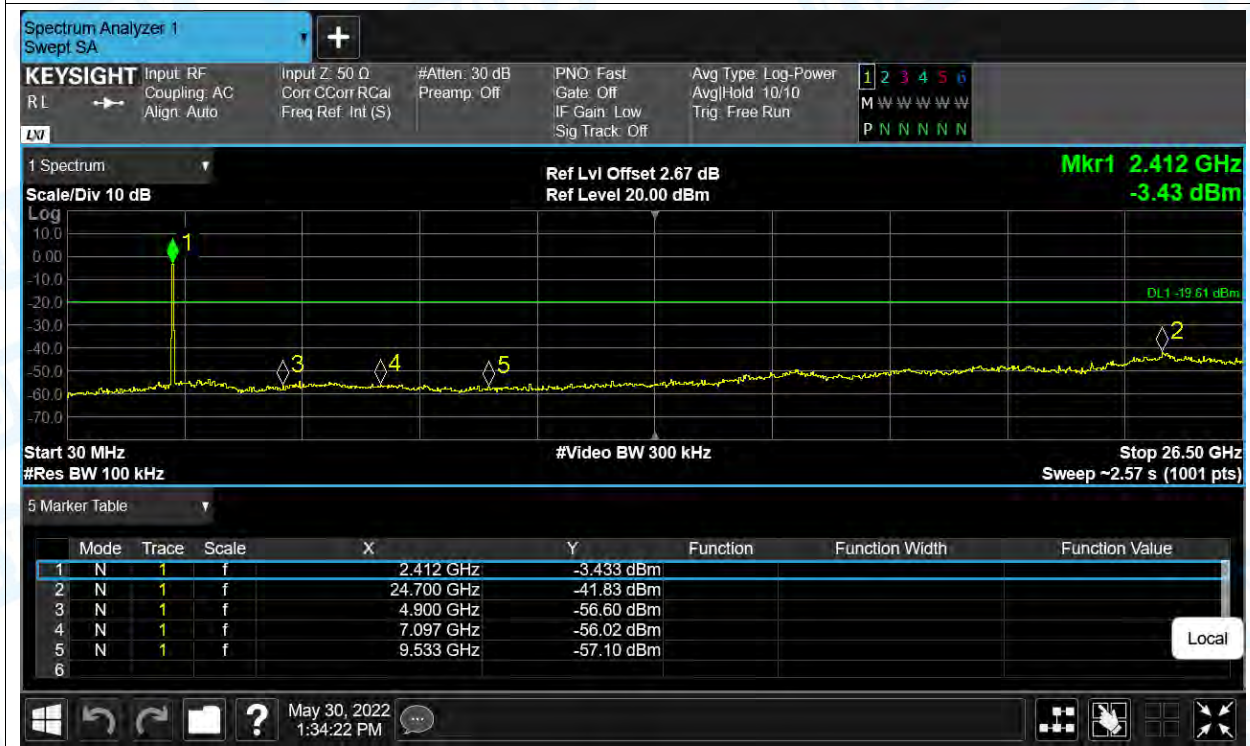
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Tx. Spurious NVNT g 2412MHz Ant1 Ref



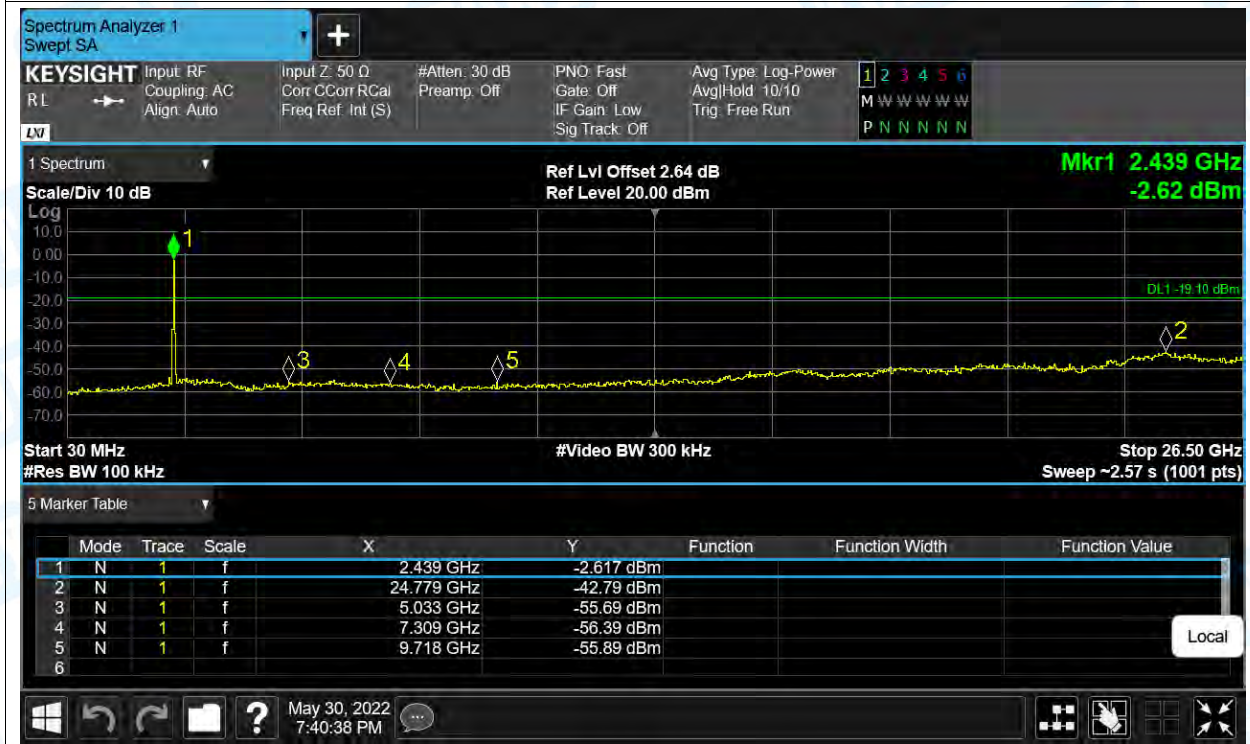
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Tx. Spurious NVNT g 2437MHz Ant1 Ref



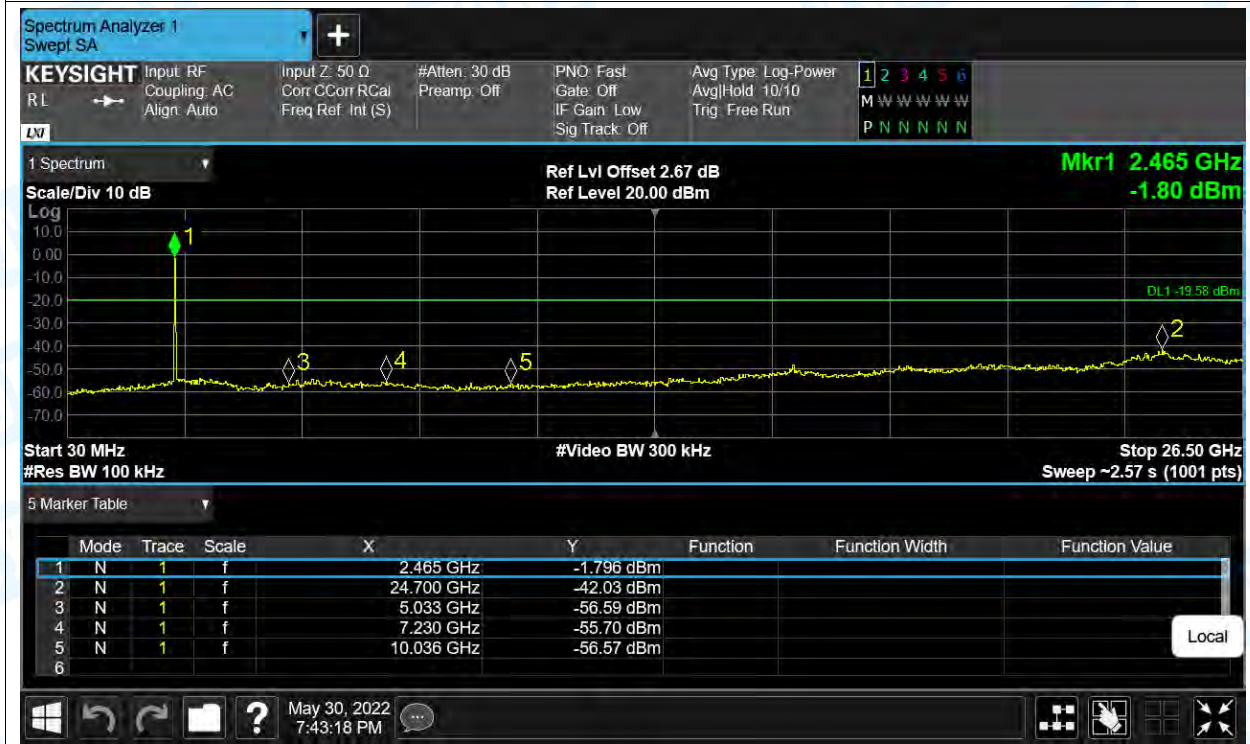
Tx. Spurious NVNT g 2437MHz Ant1 Emission



Tx. Spurious NVNT g 2462MHz Ant1 Ref



Tx. Spurious NVNT g 2462MHz Ant1 Emission



Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Ref



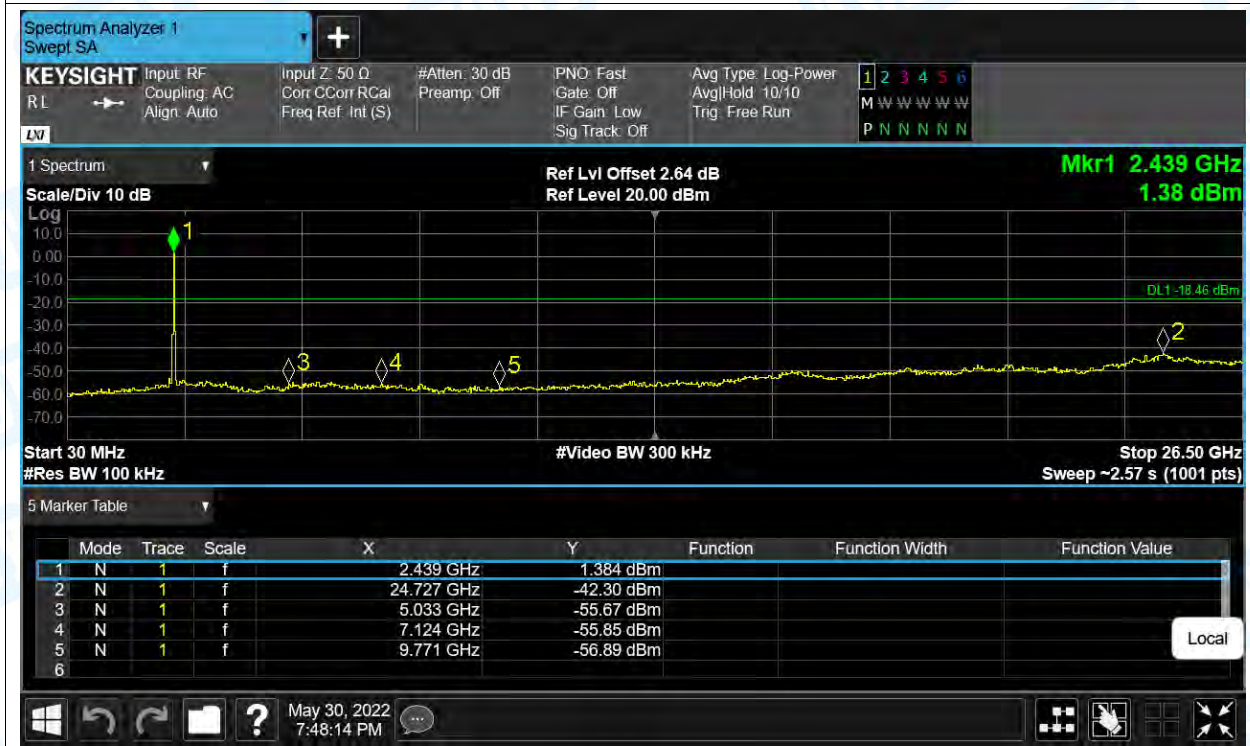
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Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



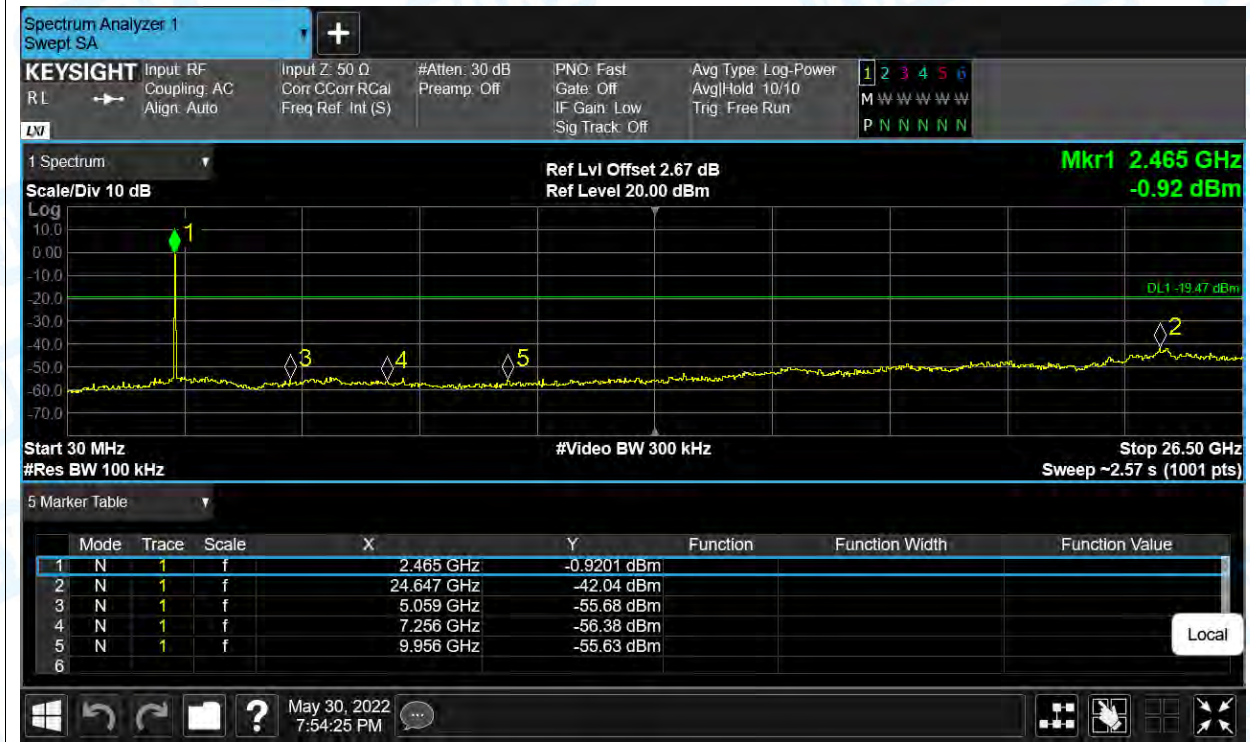
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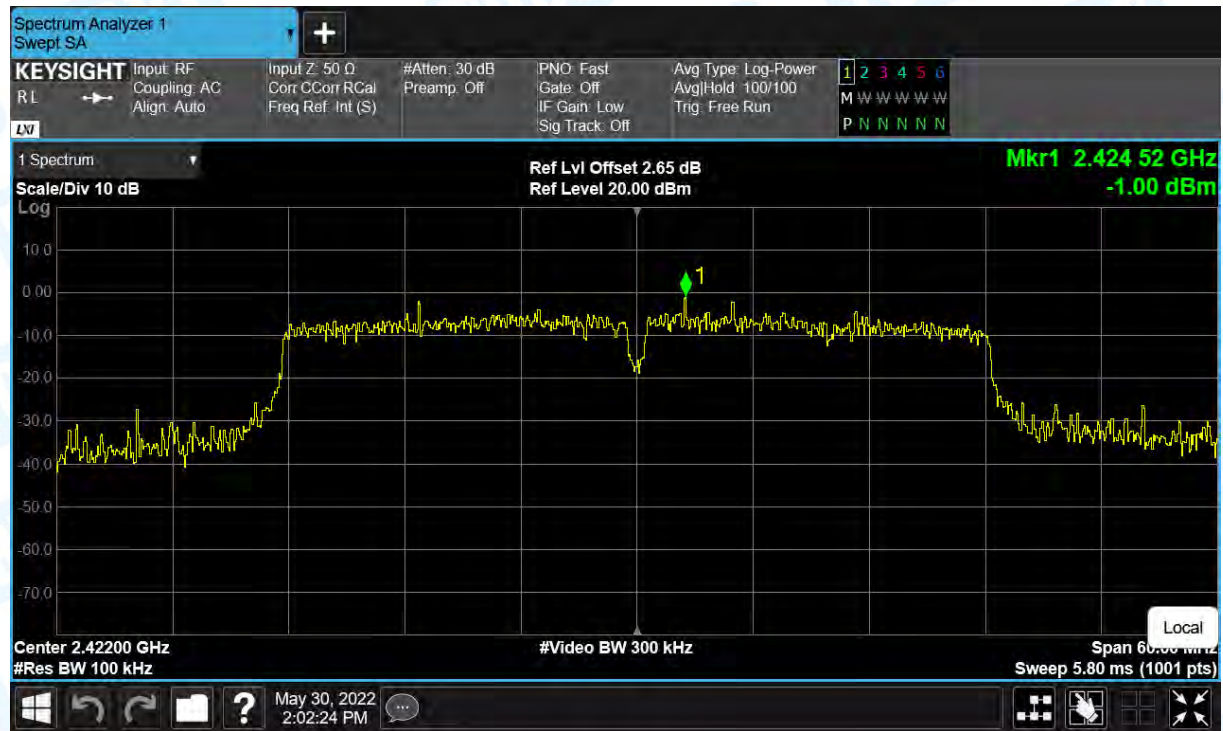
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref



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



Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Ref



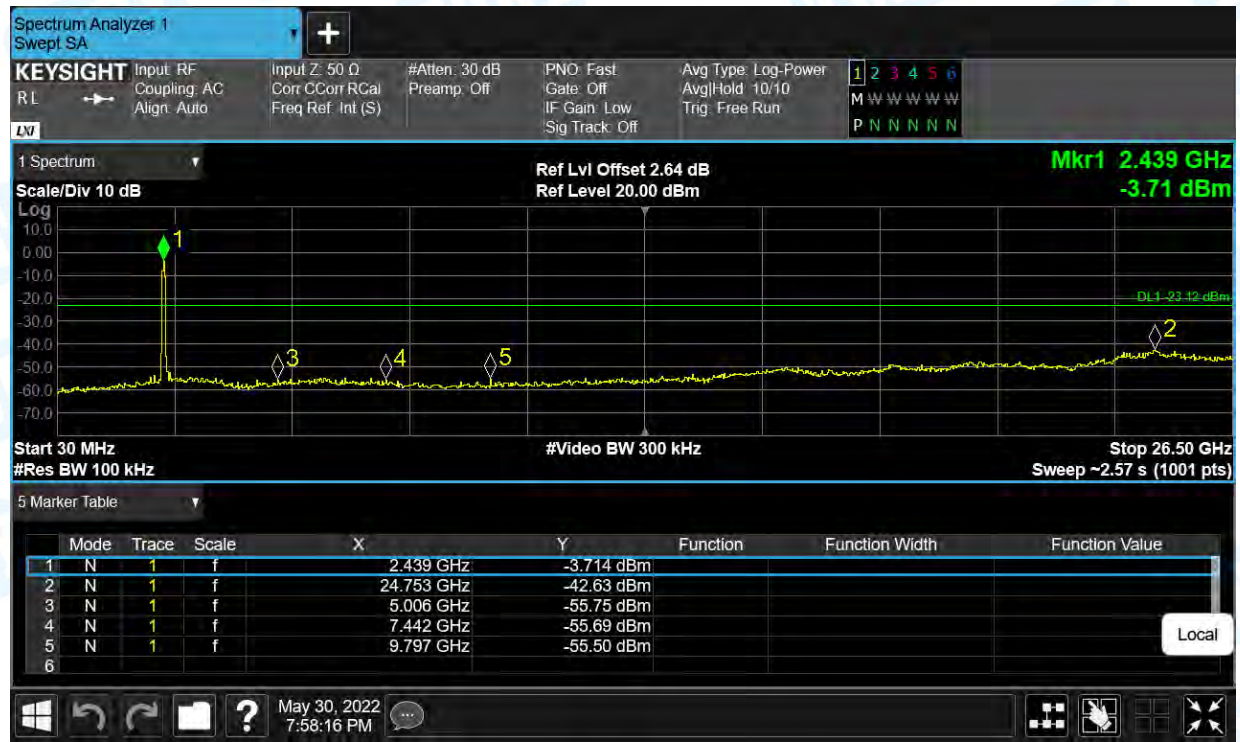
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Emission



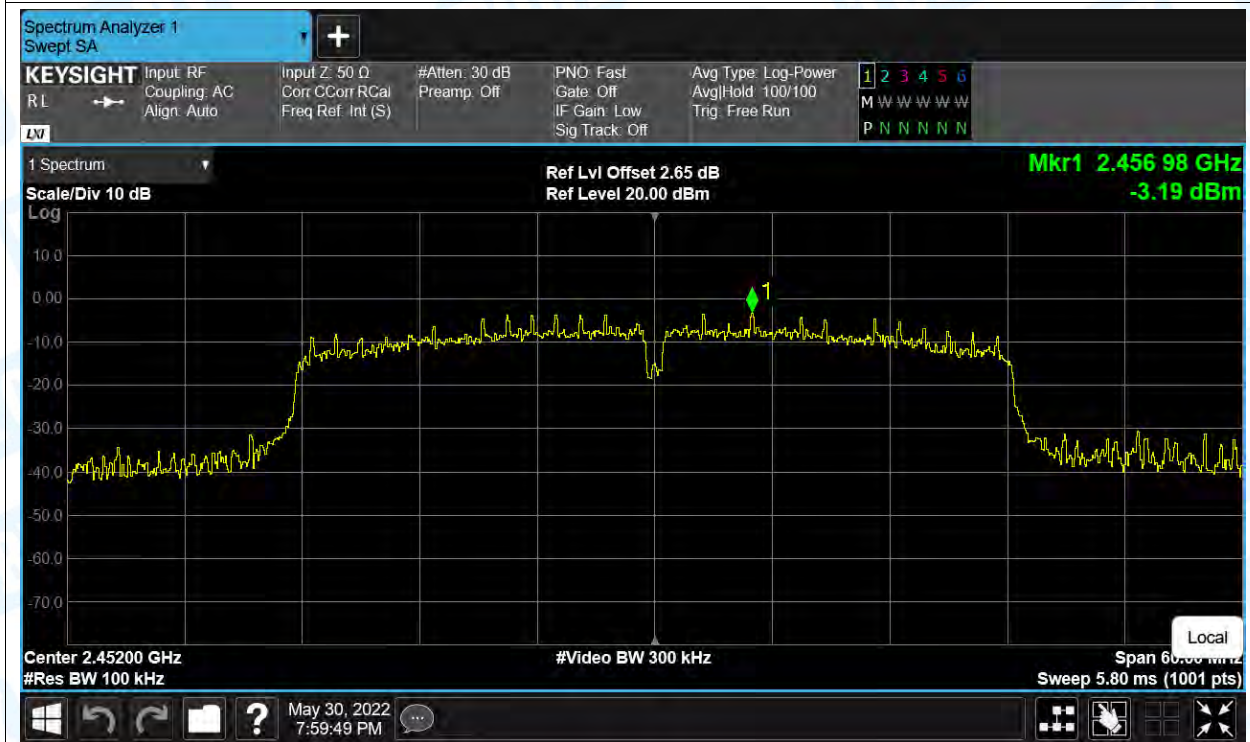
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Ref



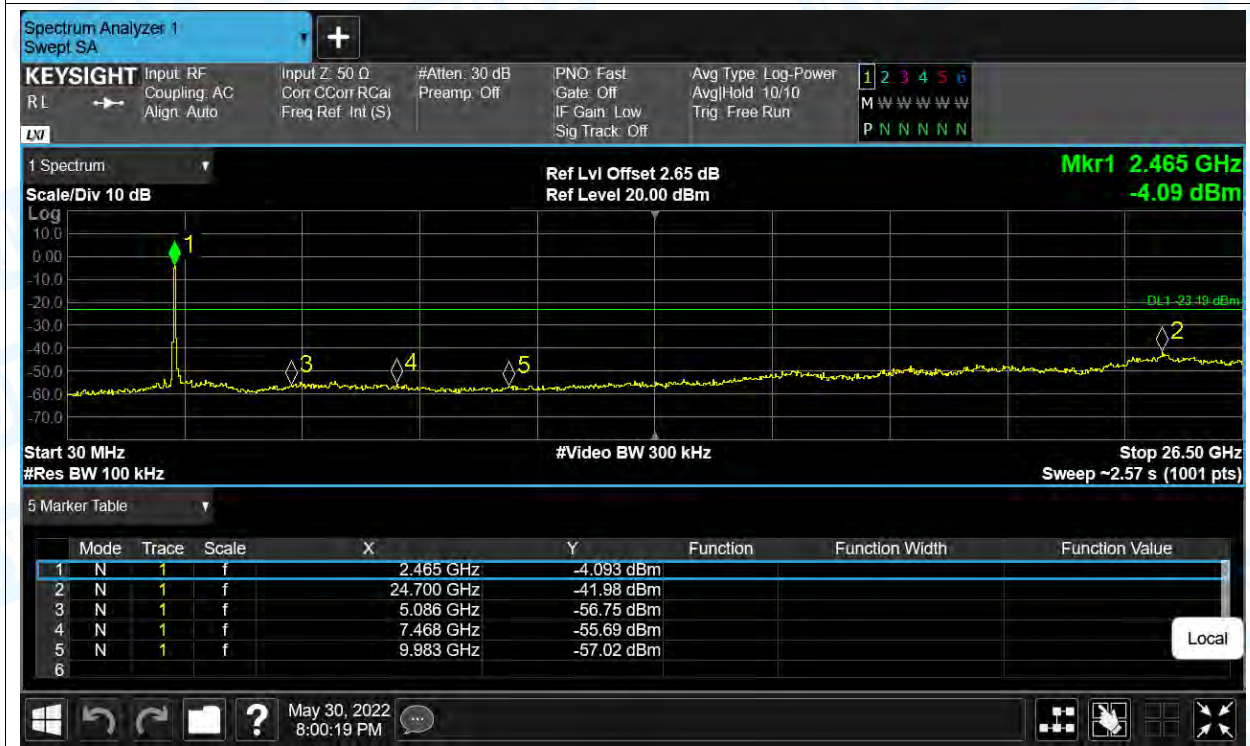
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Tx. Spurious NVNT n(HT40) 2452MHz Ant1 Ref



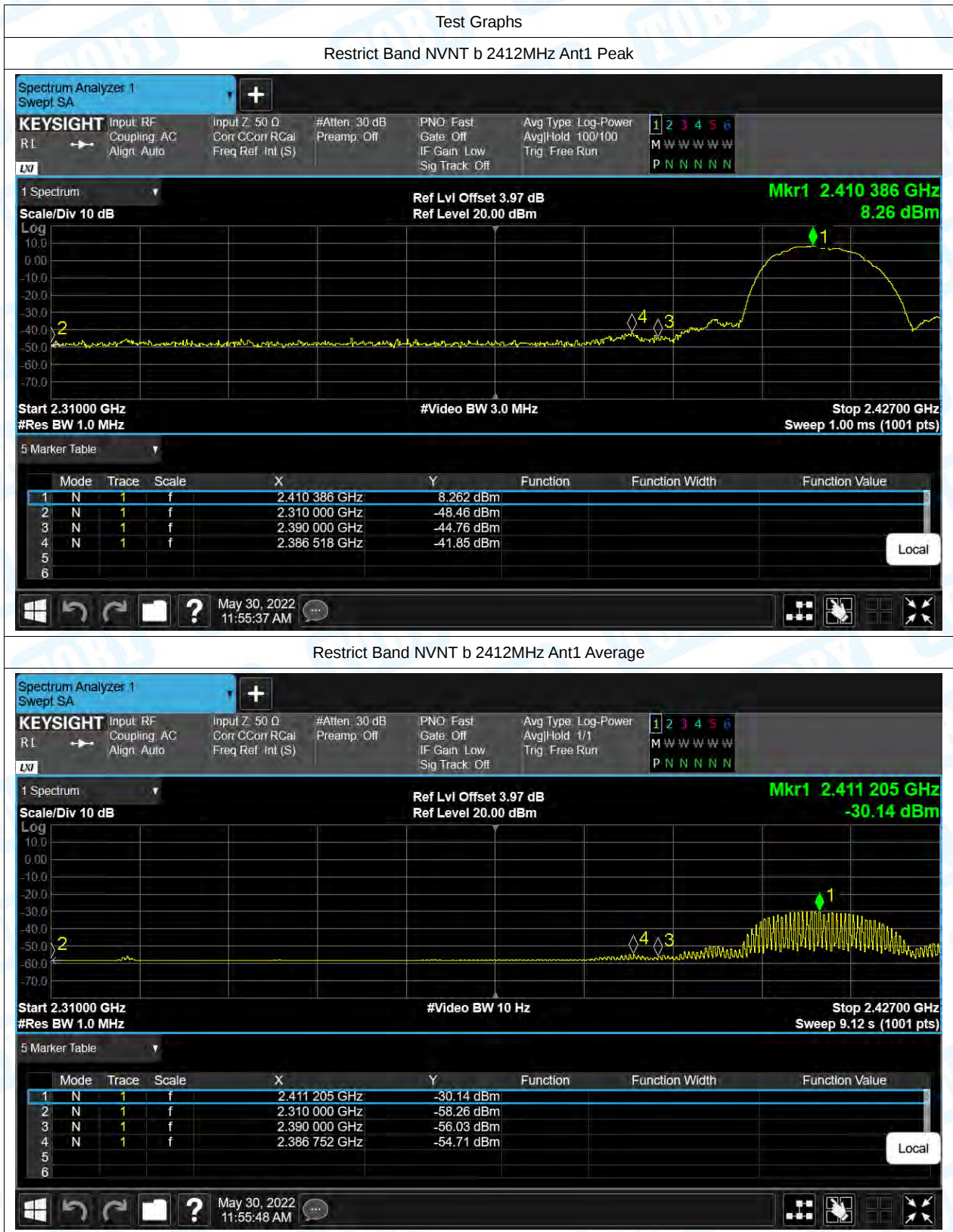
Tx. Spurious NVNT n(HT40) 2452MHz Ant1 Emission



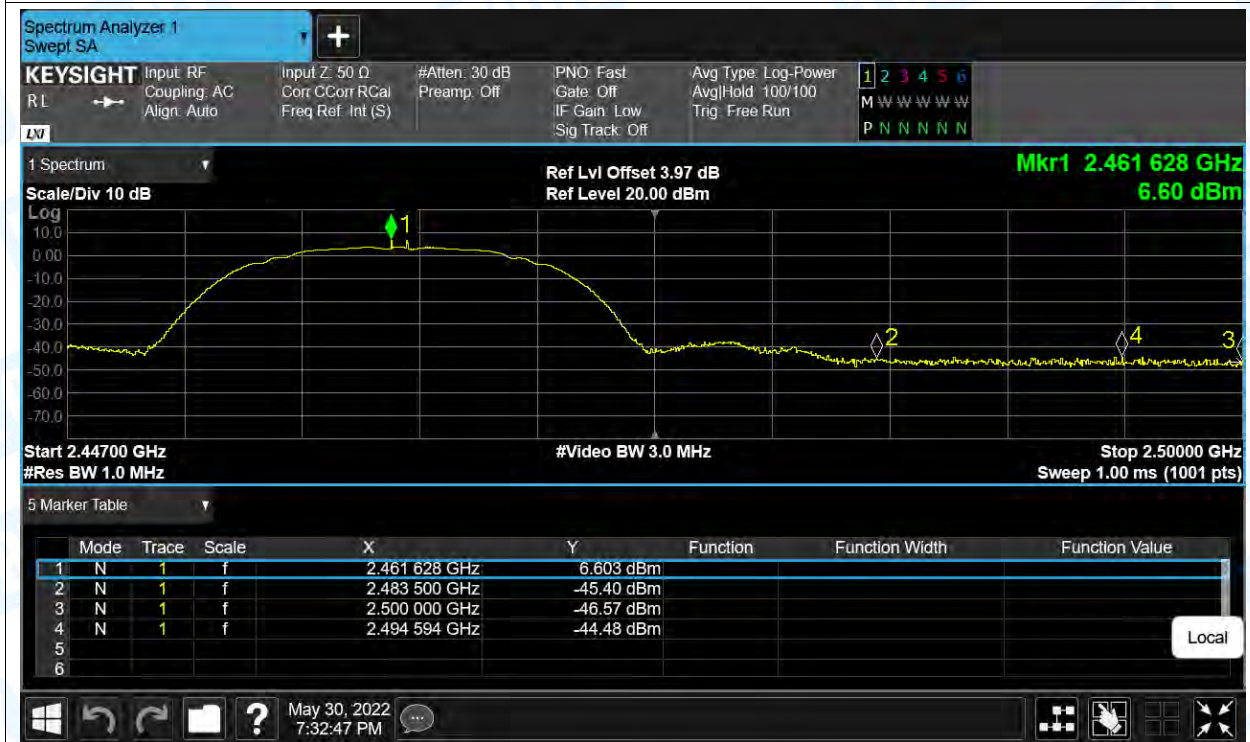
8.Restrict Band

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	-48.46	2	48.8	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-58.26	2	39	Average	54	Pass
NVNT	b	2412	Ant1	2386.518	-41.85	2	55.41	Peak	74	Pass
NVNT	b	2412	Ant1	2386.752	-54.71	2	42.55	Average	54	Pass
NVNT	b	2412	Ant1	2390	-44.76	2	52.5	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-56.03	2	41.23	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-45.4	2	51.86	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-55.79	2	41.47	Average	54	Pass
NVNT	b	2462	Ant1	2494.594	-44.48	2	52.78	Peak	74	Pass
NVNT	b	2462	Ant1	2483.517	-55.79	2	41.47	Average	54	Pass
NVNT	b	2462	Ant1	2500	-46.57	2	50.69	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-57.1	2	40.16	Average	54	Pass
NVNT	g	2412	Ant1	2310	-48.31	2	48.95	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-58.23	2	39.03	Average	54	Pass
NVNT	g	2412	Ant1	2389.443	-29.13	2	68.13	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-56.13	2	41.13	Average	54	Pass
NVNT	g	2412	Ant1	2390	-30.69	2	66.57	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-56.09	2	41.17	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-44.97	2	52.29	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-55.88	2	41.38	Average	54	Pass
NVNT	g	2462	Ant1	2487.227	-43.84	2	53.42	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-55.88	2	41.38	Average	54	Pass
NVNT	g	2462	Ant1	2500	-47.18	2	50.08	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-56.92	2	40.34	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-49.5	2	47.76	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-58.25	2	39.01	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2385.348	-31.22	2	66.04	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2389.911	-57.06	2	40.2	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-37.97	2	59.29	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-57.13	2	40.13	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-45.35	2	51.91	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-55.69	2	41.57	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2486.061	-42.74	2	54.52	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.517	-55.69	2	41.57	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-47.29	2	49.97	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-56.91	2	40.35	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2310	-48.22	2	49.04	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2310	-58.3	2	38.96	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2386.396	-25.54	2	71.72	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2389.804	-56.87	2	40.39	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2390	-41.32	2	55.94	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2390	-56.89	2	40.37	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-41.36	2	55.9	Peak	74	Pass

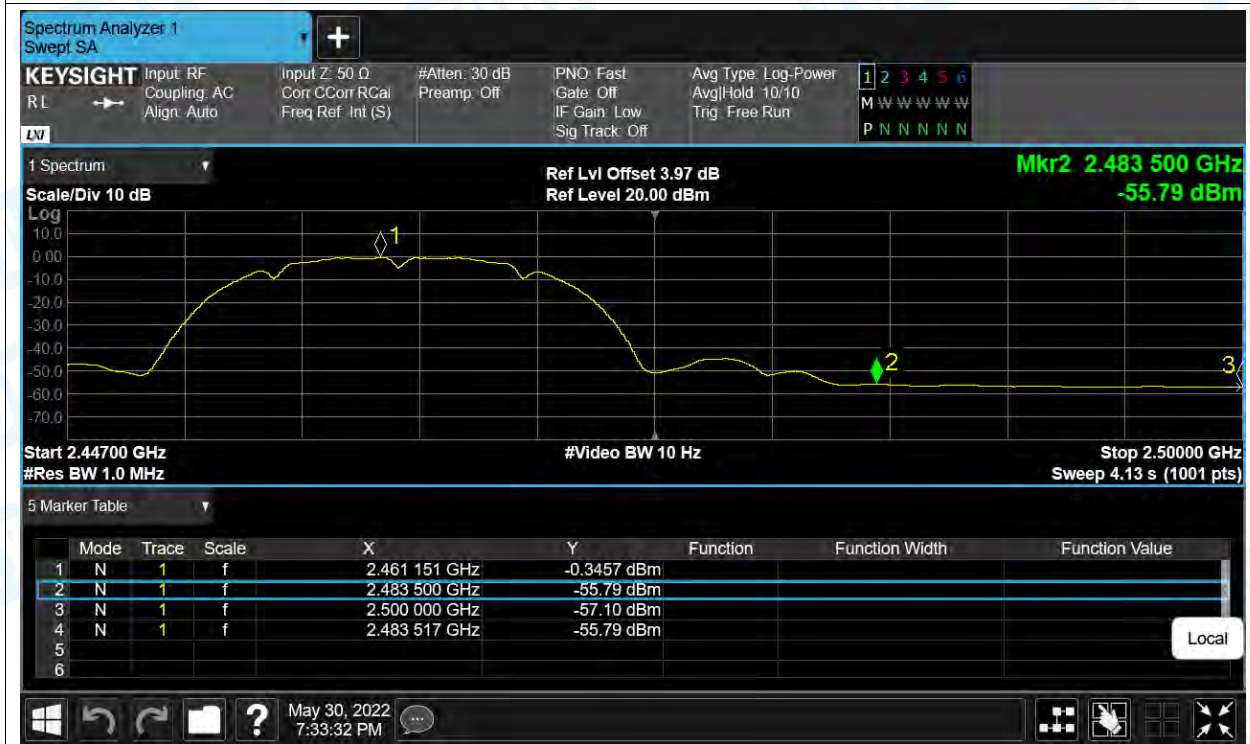
NVNT	n(HT40)	2452	Ant1	2483.5	-54.6	2	42.66	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.542	-41.36	2	55.9	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2483.62	-54.59	2	42.67	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2500	-46.88	2	50.38	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2500	-57	2	40.26	Average	54	Pass



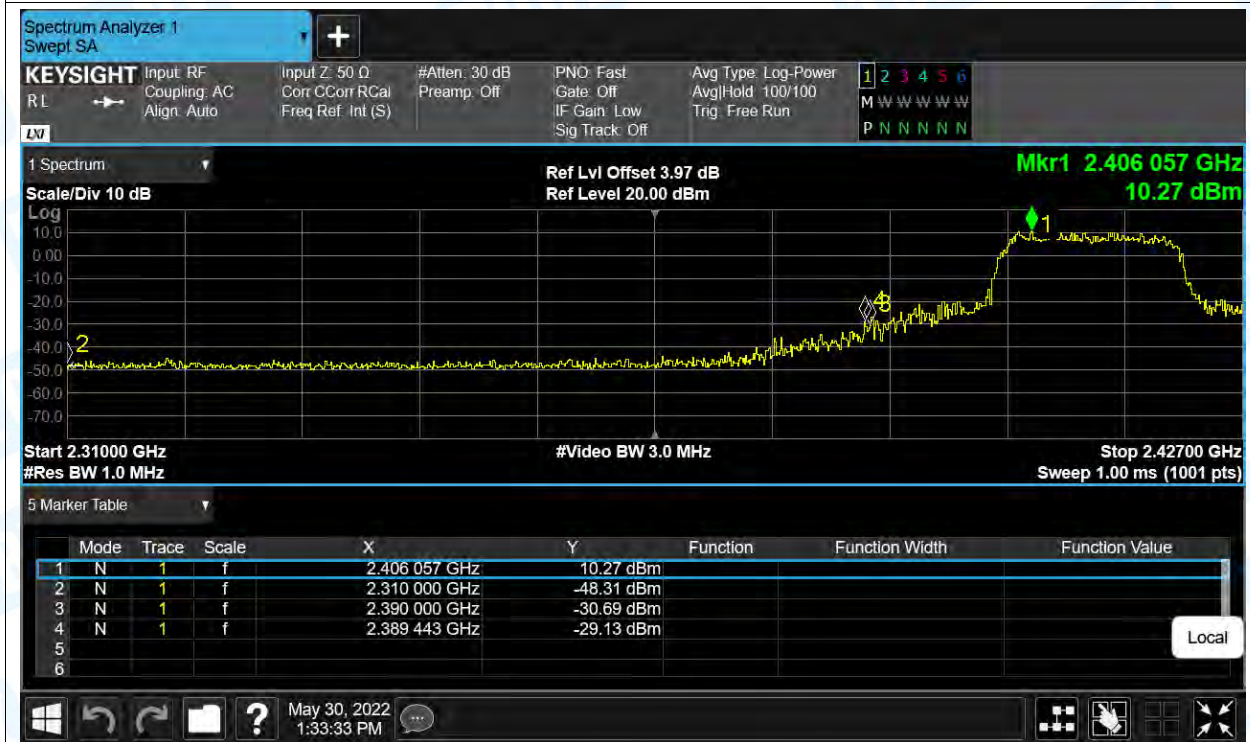
Restrict Band NVNT b 2462MHz Ant1 Peak



Restrict Band NVNT b 2462MHz Ant1 Average

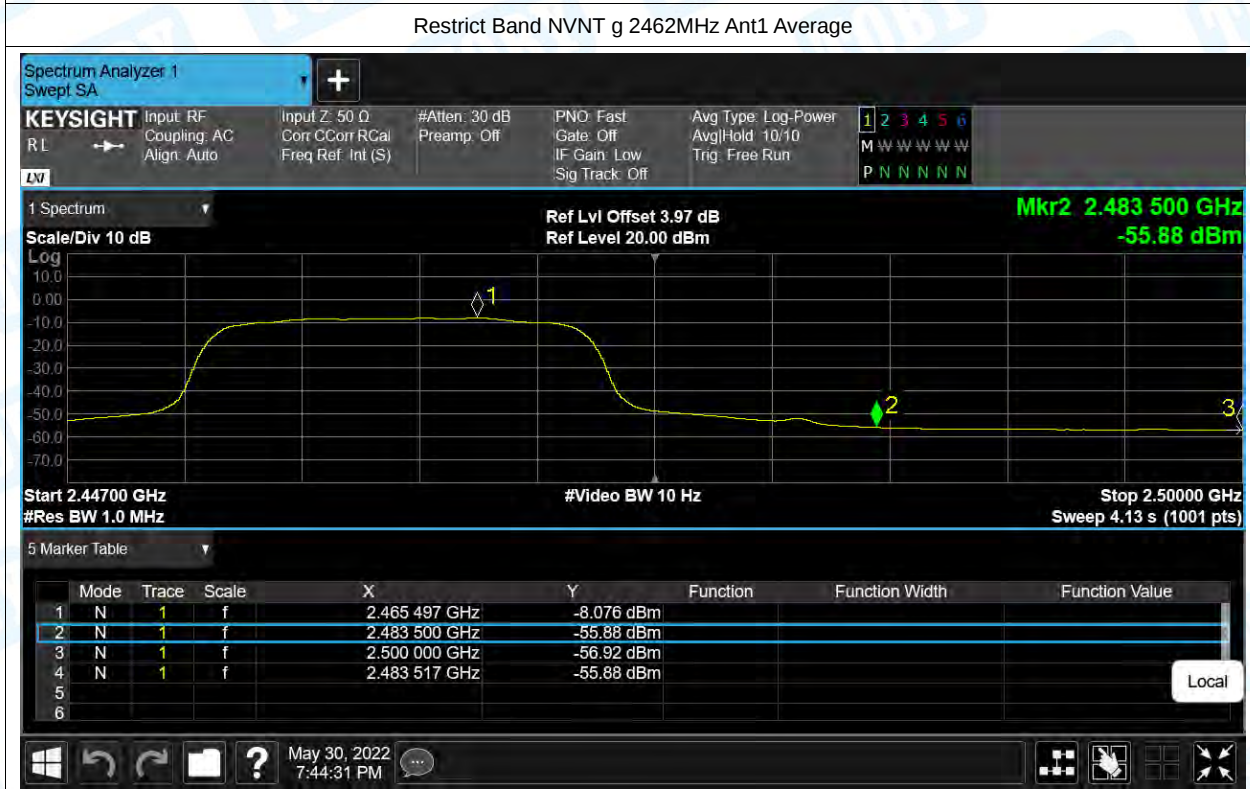
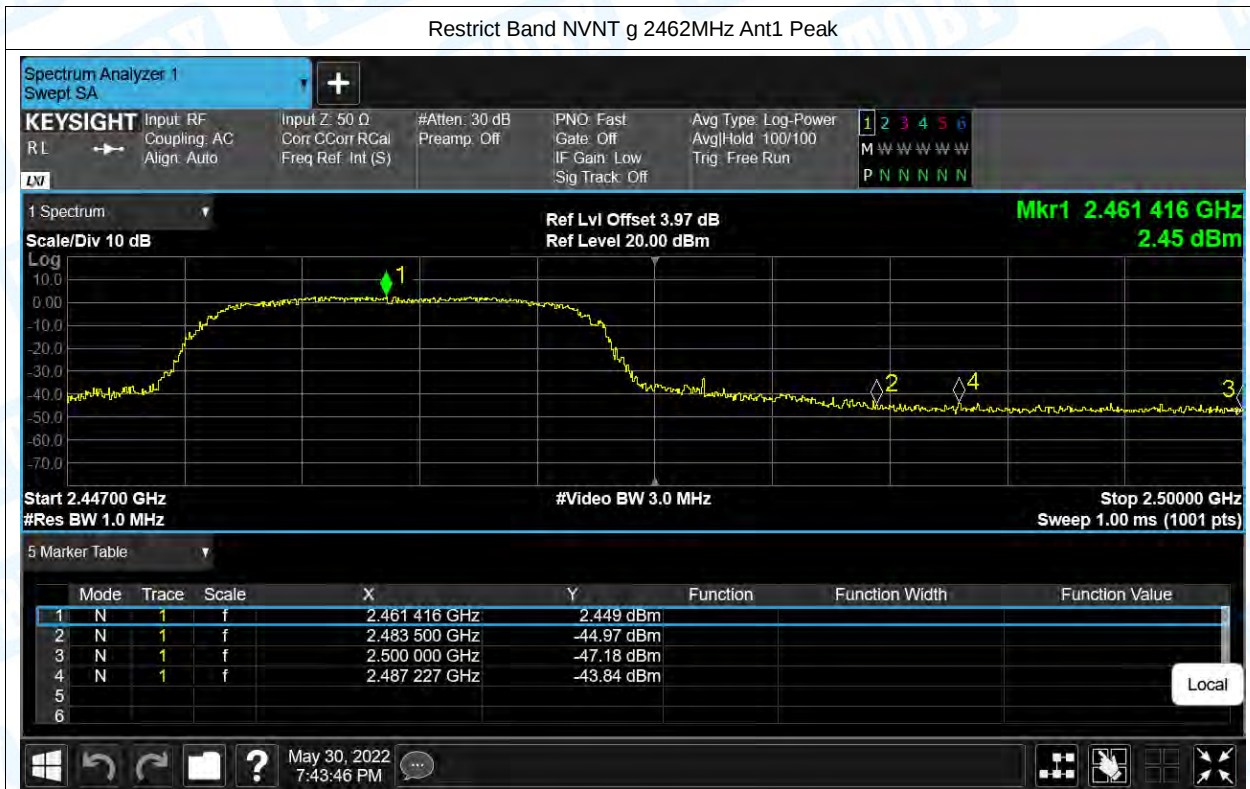


Restrict Band NVNT g 2412MHz Ant1 Peak

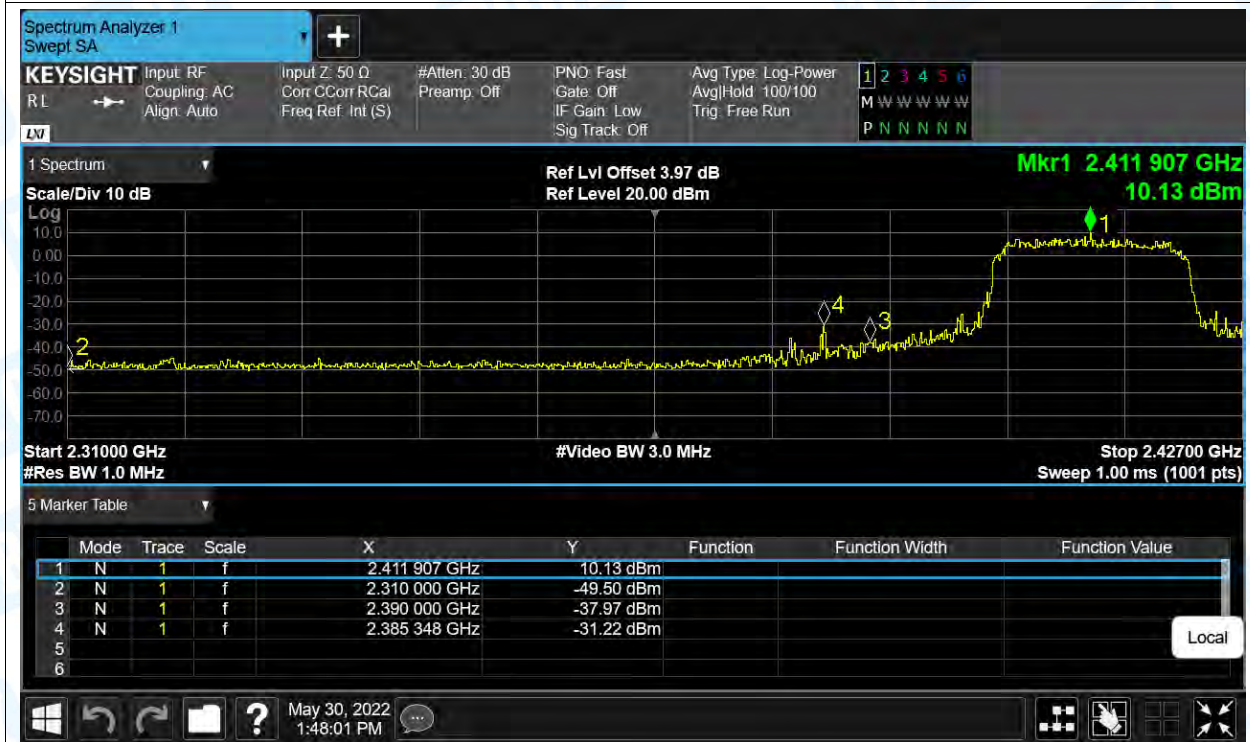


Restrict Band NVNT g 2412MHz Ant1 Average





Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak



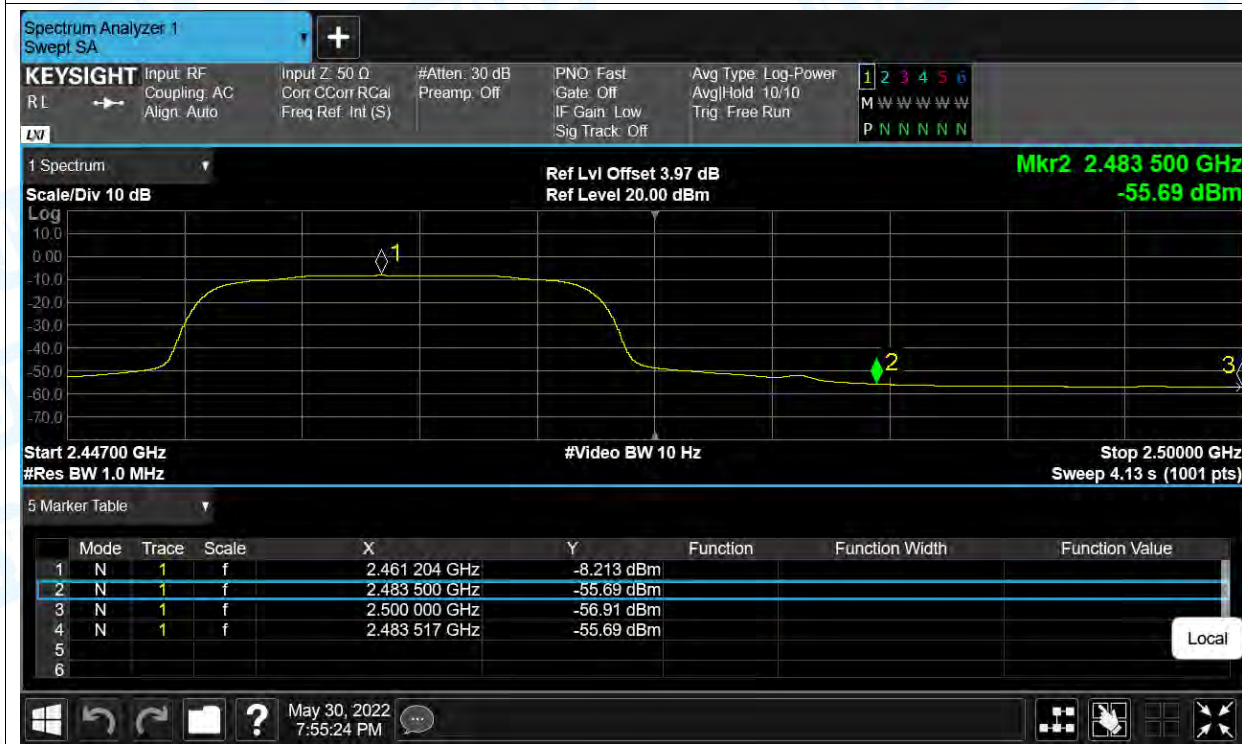
Restrict Band NVNT n(HT20) 2412MHz Ant1 Average



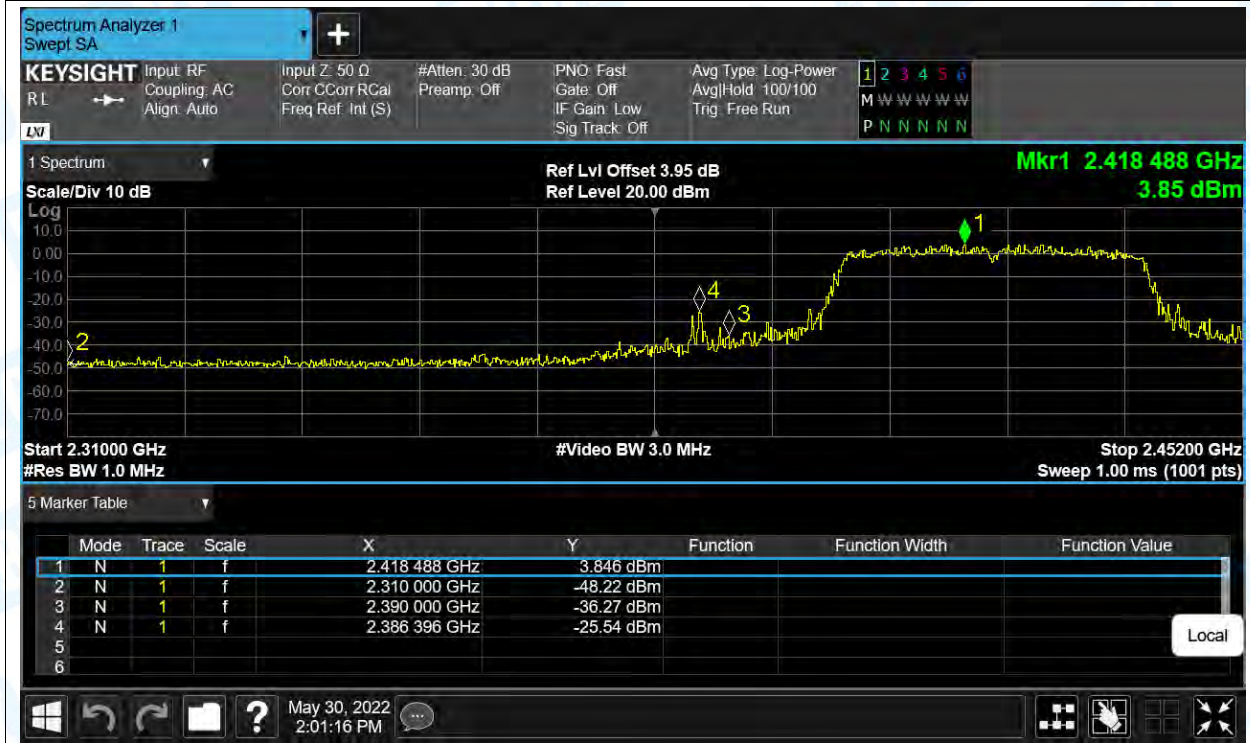
Restrict Band NVNT n(HT20) 2462MHz Ant1 Peak



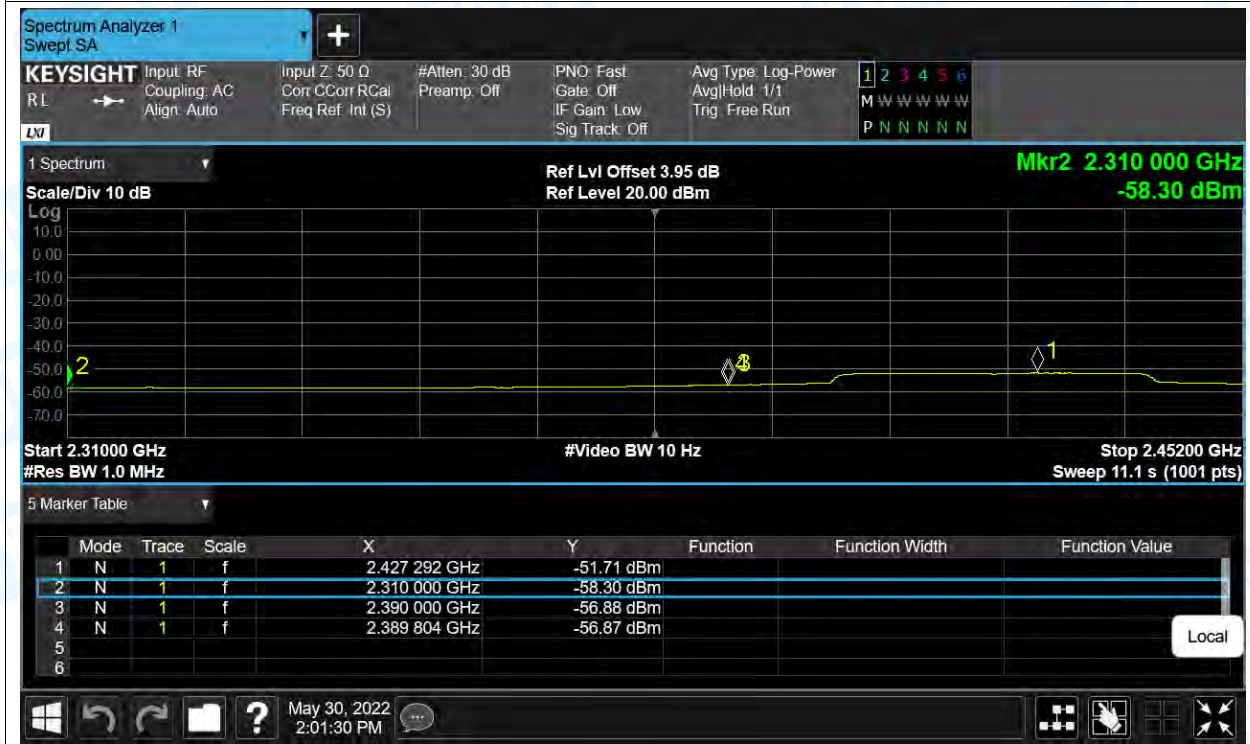
Restrict Band NVNT n(HT20) 2462MHz Ant1 Average



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

