

RF Test Data for 2.4G WiFi (Conducted Measurements)

General Description of EUT	
Product Name:	Smart PTZ Camera
Test Model:	X50
Sample ID:	RW-C-202209-0141-9-2#
Environmental Conditions	
Temperature:	25°C
Relative Humidity:	55%
Test Voltage:	DC 12V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202209-0141-17	

Contents

1. Duty Cycle.....	3
2. Maximum Conducted Output Power.....	10
3. -6dB Bandwidth.....	11
4. Occupied Channel Bandwidth.....	18
5. Maximum Power Spectral Density Level.....	25
6. Band Edge.....	32
7. Conducted RF Spurious Emission.....	41
8. Restrict Band.....	54

1. Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.68	0.01	0.08
NVNT	b	2437	Ant1	98.89	0.05	0.08
NVNT	b	2462	Ant1	99.12	0.04	0.08
NVNT	g	2412	Ant1	97.63	0.1	0.49
NVNT	g	2437	Ant1	94.06	0.27	0.49
NVNT	g	2462	Ant1	98.57	0.06	0.48
NVNT	n(HT20)	2412	Ant1	96	0.18	0.52
NVNT	n(HT20)	2437	Ant1	96.97	0.13	0.52
NVNT	n(HT20)	2462	Ant1	95.54	0.2	0.52
NVNT	n(HT40)	2422	Ant1	93.14	0.31	1.05
NVNT	n(HT40)	2437	Ant1	86.36	0.64	1.05
NVNT	n(HT40)	2452	Ant1	85.59	0.68	1.05

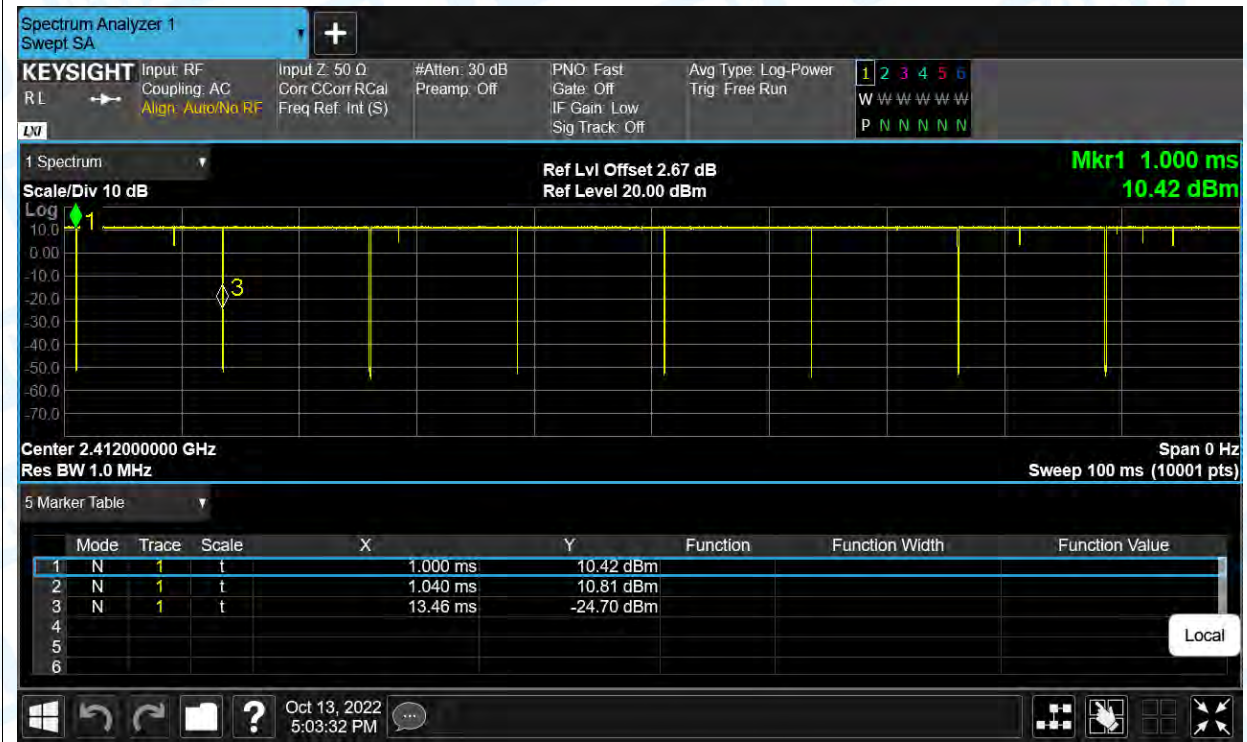
Note: $Duty\ Cycle(\%) = \frac{ON(ms)}{ON(ms)+OFF(ms)}$

$ON(ms) = Maker3 - Maker2$

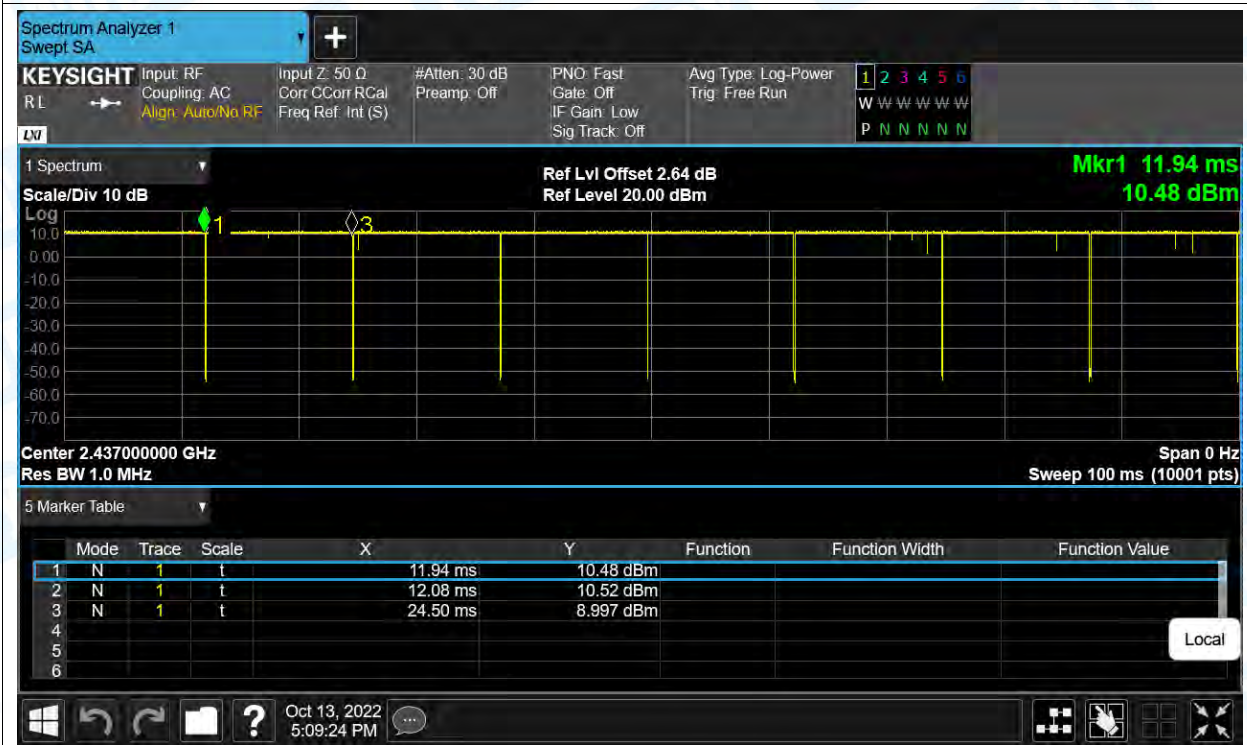
$(ON(ms)+OFF(ms)) = Maker3 - Maker1$

Test Graphs

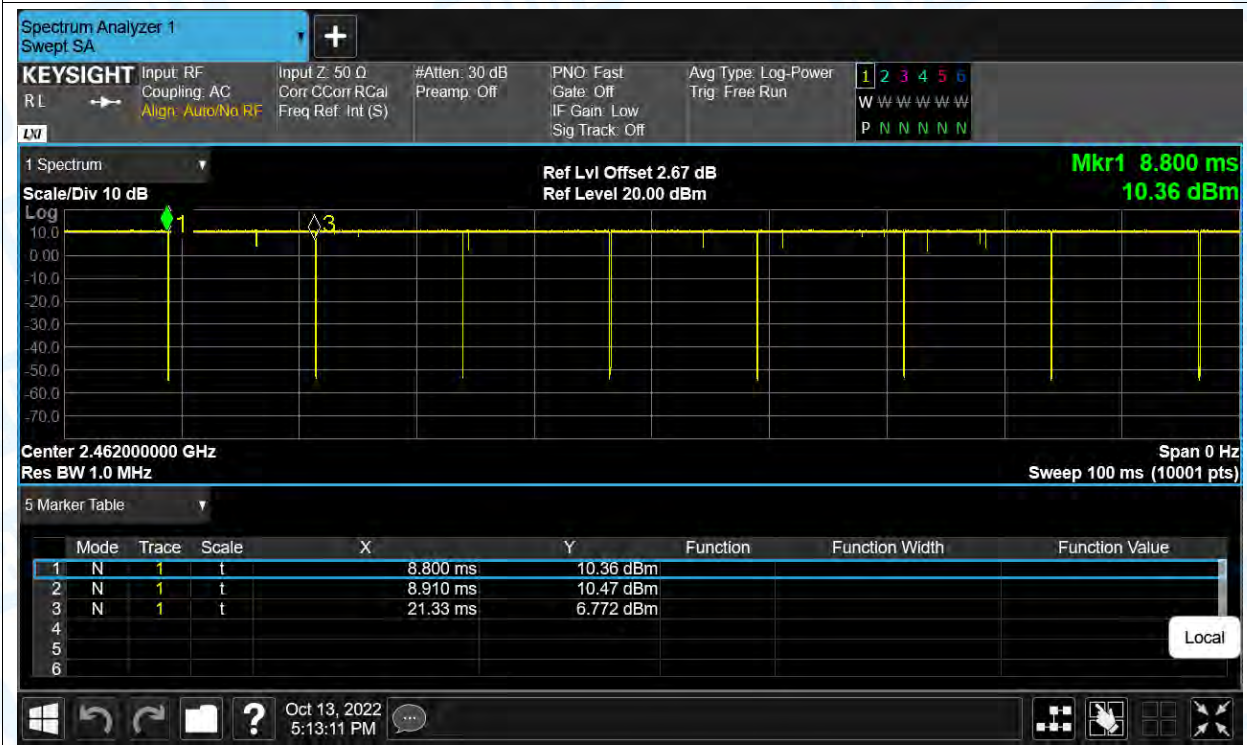
Duty Cycle NVNT b 2412MHz Ant1



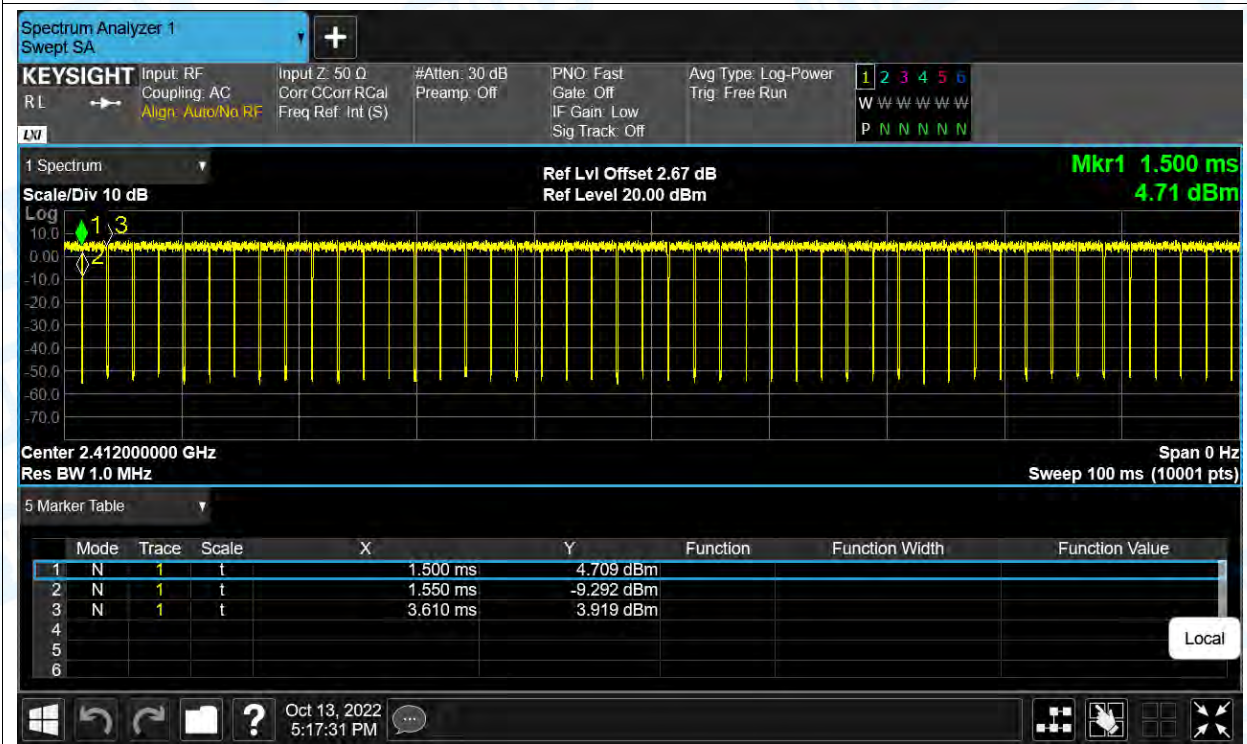
Duty Cycle NVNT b 2437MHz Ant1



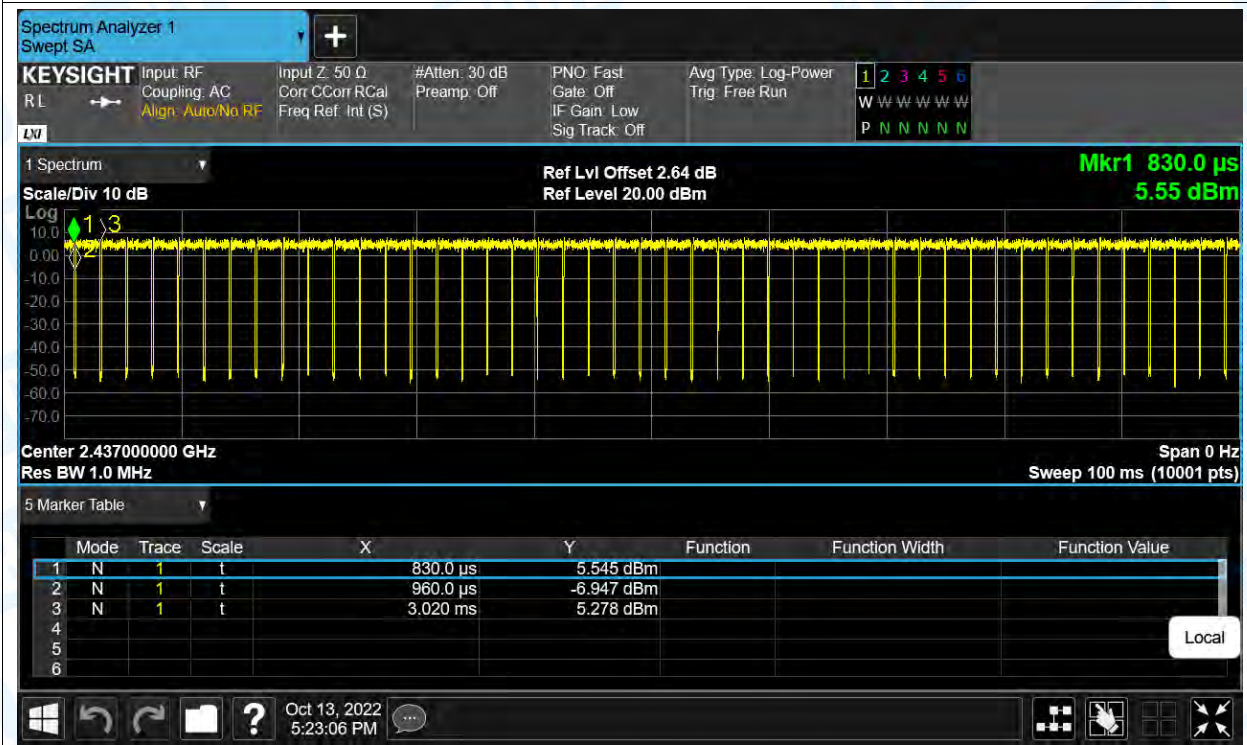
Duty Cycle NVNT b 2462MHz Ant1



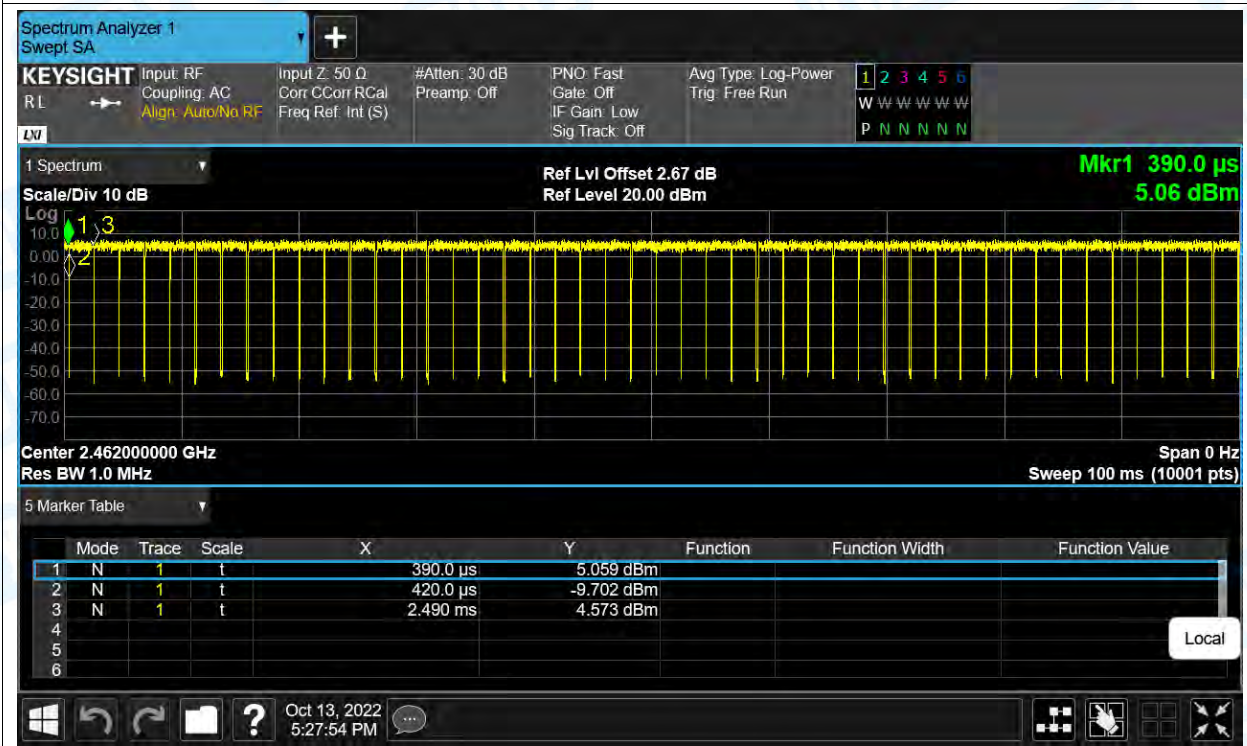
Duty Cycle NVNT g 2412MHz Ant1



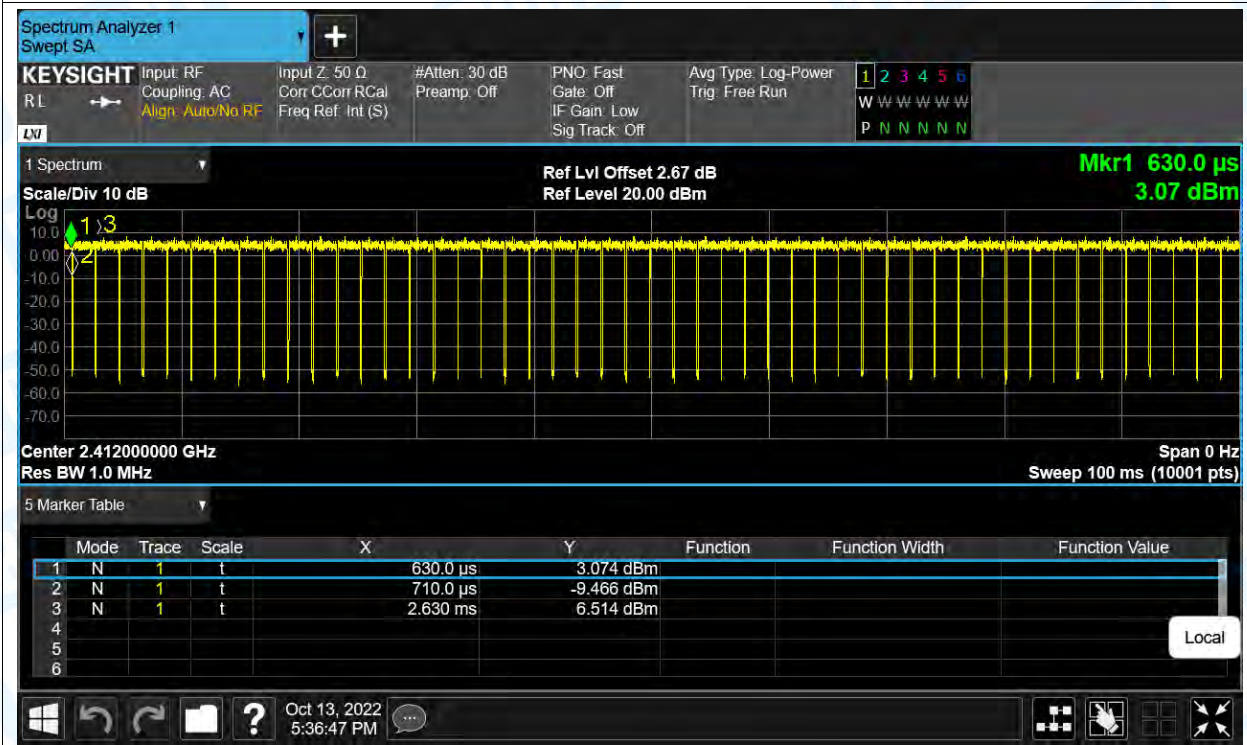
Duty Cycle NVNT g 2437MHz Ant1



Duty Cycle NVNT g 2462MHz Ant1



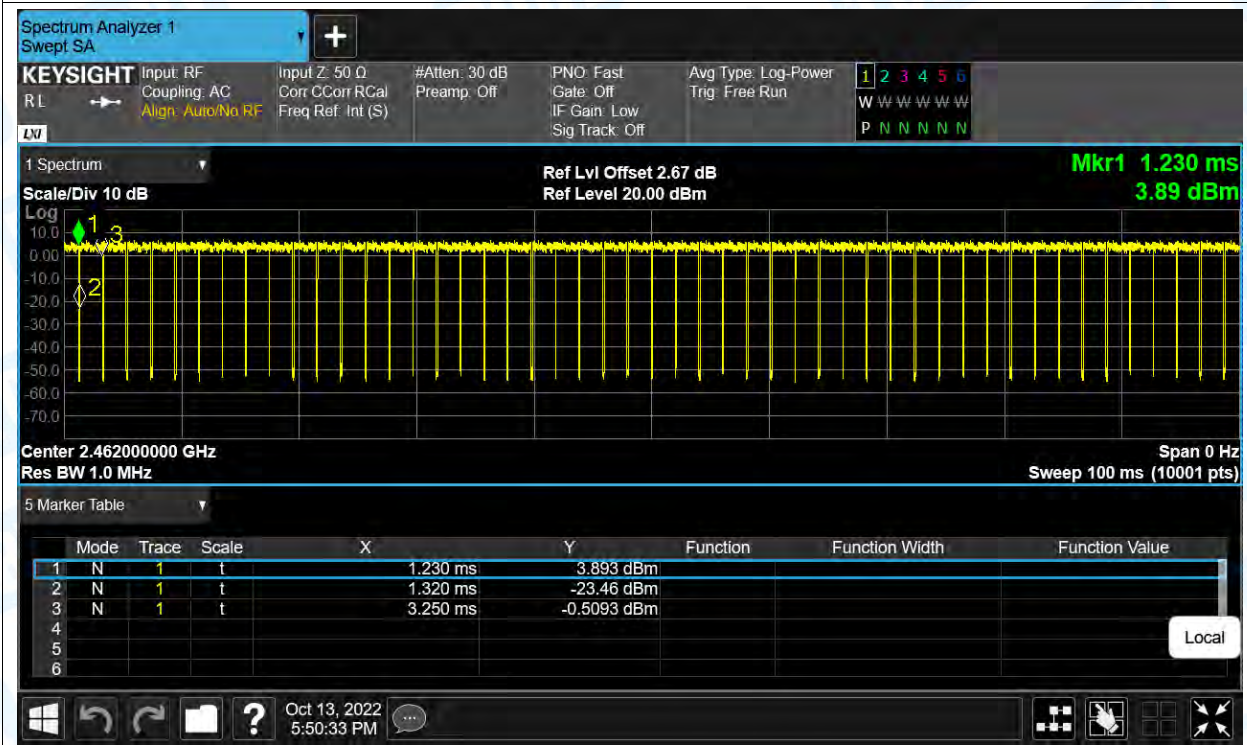
Duty Cycle NVNT n(HT20) 2412MHz Ant1



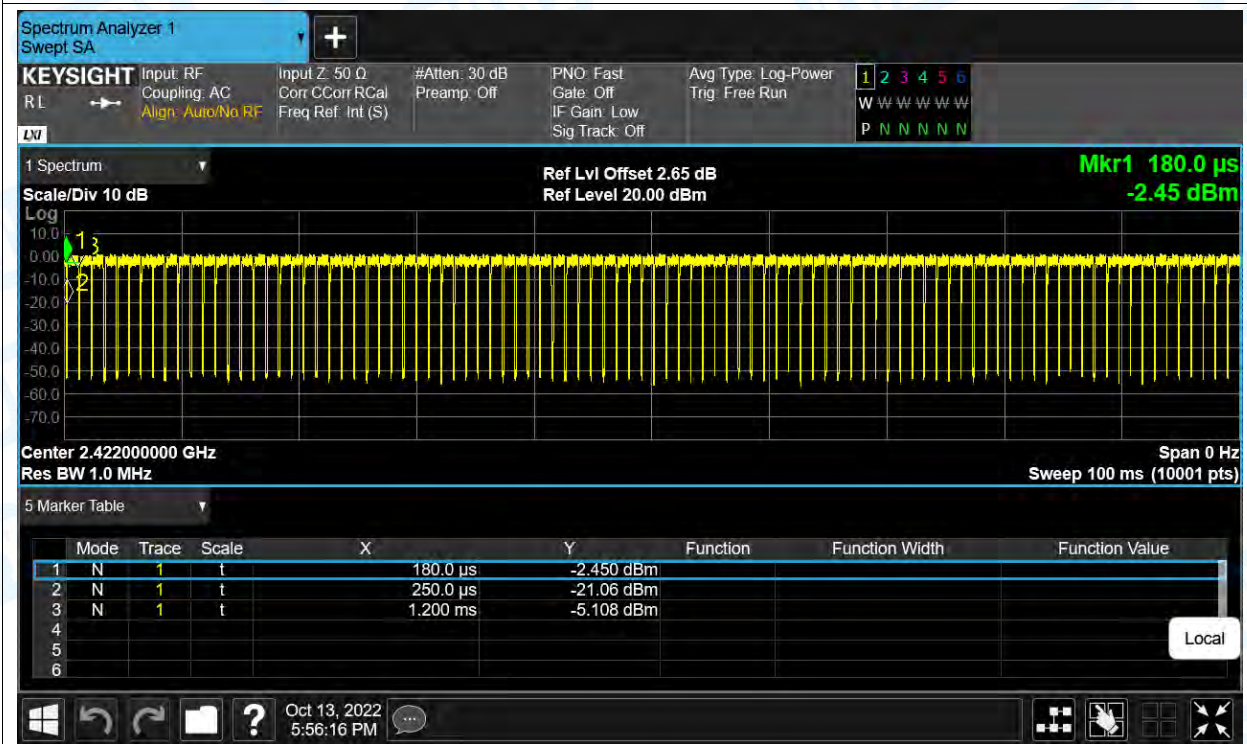
Duty Cycle NVNT n(HT20) 2437MHz Ant1



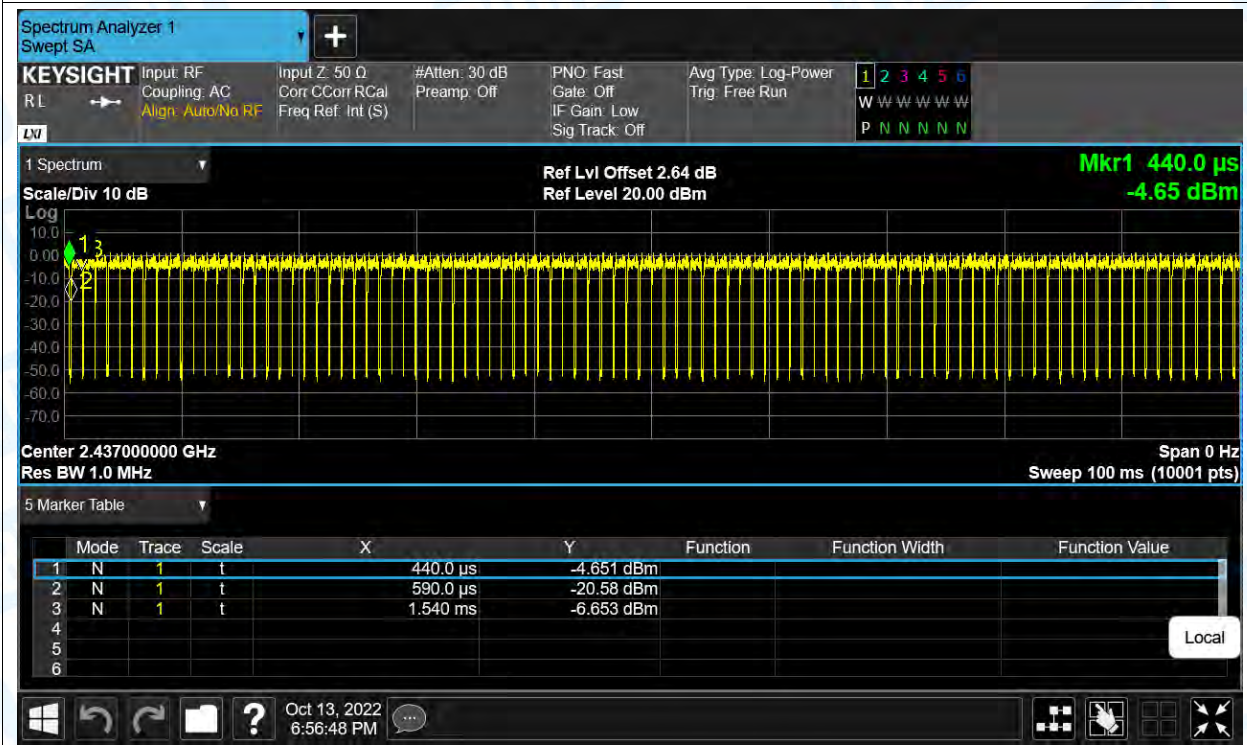
Duty Cycle NVNT n(HT20) 2462MHz Ant1



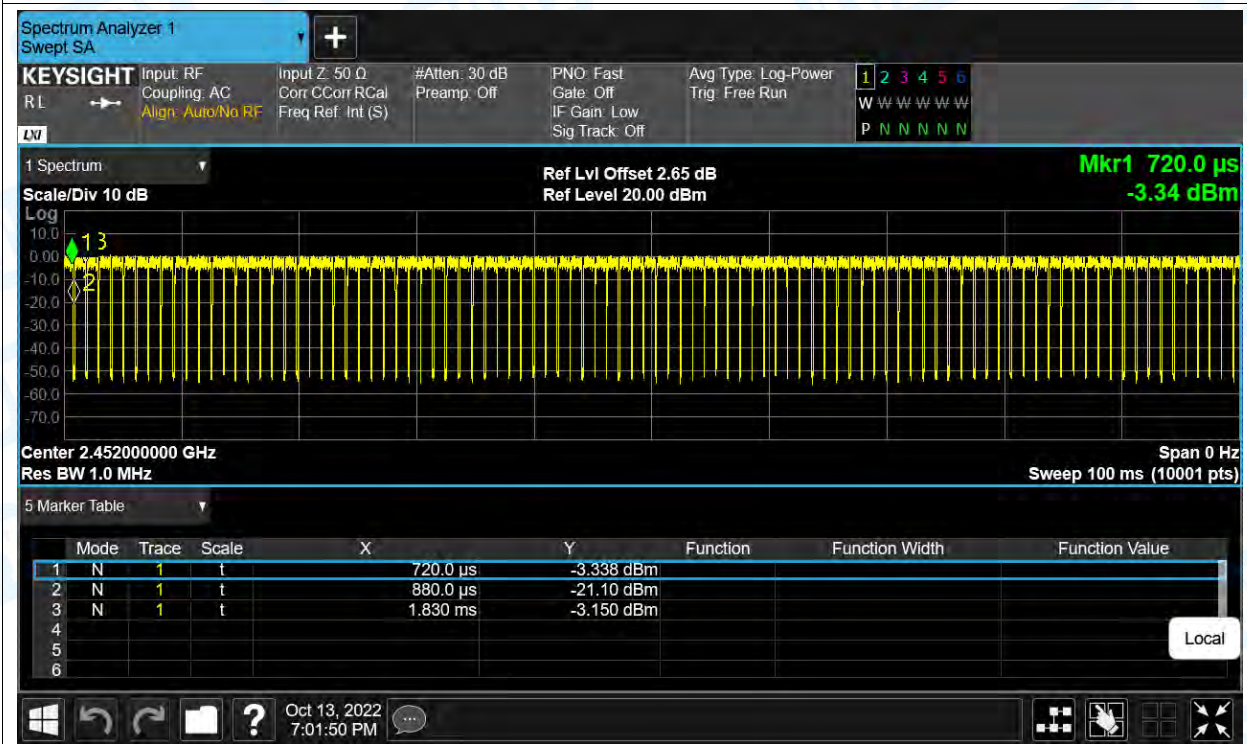
Duty Cycle NVNT n(HT40) 2422MHz Ant1



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	17.23	30	Pass
NVNT	b	2437	Ant1	16.87	30	Pass
NVNT	b	2462	Ant1	16.88	30	Pass
NVNT	g	2412	Ant1	16.57	30	Pass
NVNT	g	2437	Ant1	16.78	30	Pass
NVNT	g	2462	Ant1	16.64	30	Pass
NVNT	n(HT20)	2412	Ant1	16.76	30	Pass
NVNT	n(HT20)	2437	Ant1	16.50	30	Pass
NVNT	n(HT20)	2462	Ant1	16.12	30	Pass
NVNT	n(HT40)	2422	Ant1	16.97	30	Pass
NVNT	n(HT40)	2437	Ant1	15.42	30	Pass
NVNT	n(HT40)	2452	Ant1	16.01	30	Pass

3. -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.55	0.5	Pass
NVNT	b	2437	Ant1	8.55	0.5	Pass
NVNT	b	2462	Ant1	8.01	0.5	Pass
NVNT	g	2412	Ant1	16.34	0.5	Pass
NVNT	g	2437	Ant1	16.36	0.5	Pass
NVNT	g	2462	Ant1	16.35	0.5	Pass
NVNT	n(HT20)	2412	Ant1	17.29	0.5	Pass
NVNT	n(HT20)	2437	Ant1	17.55	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.55	0.5	Pass
NVNT	n(HT40)	2422	Ant1	36.05	0.5	Pass
NVNT	n(HT40)	2437	Ant1	35.95	0.5	Pass
NVNT	n(HT40)	2452	Ant1	35.72	0.5	Pass

Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



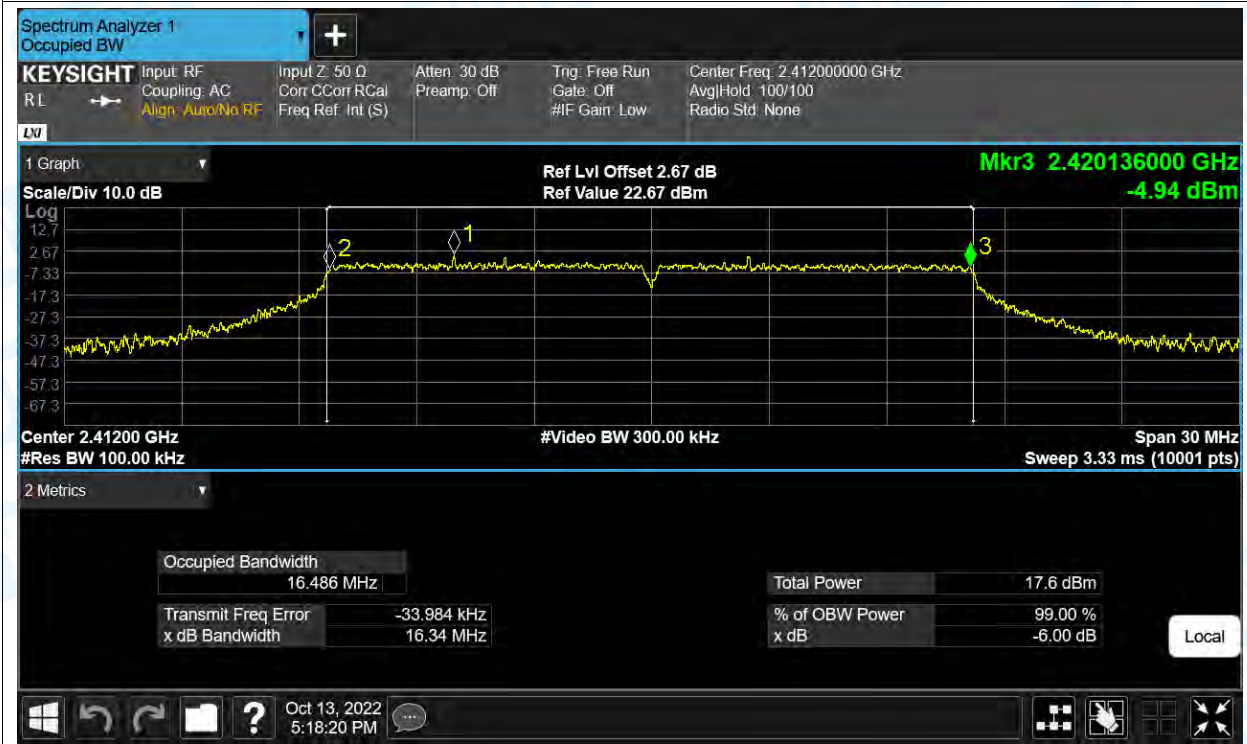
-6dB Bandwidth NVNT b 2437MHz Ant1



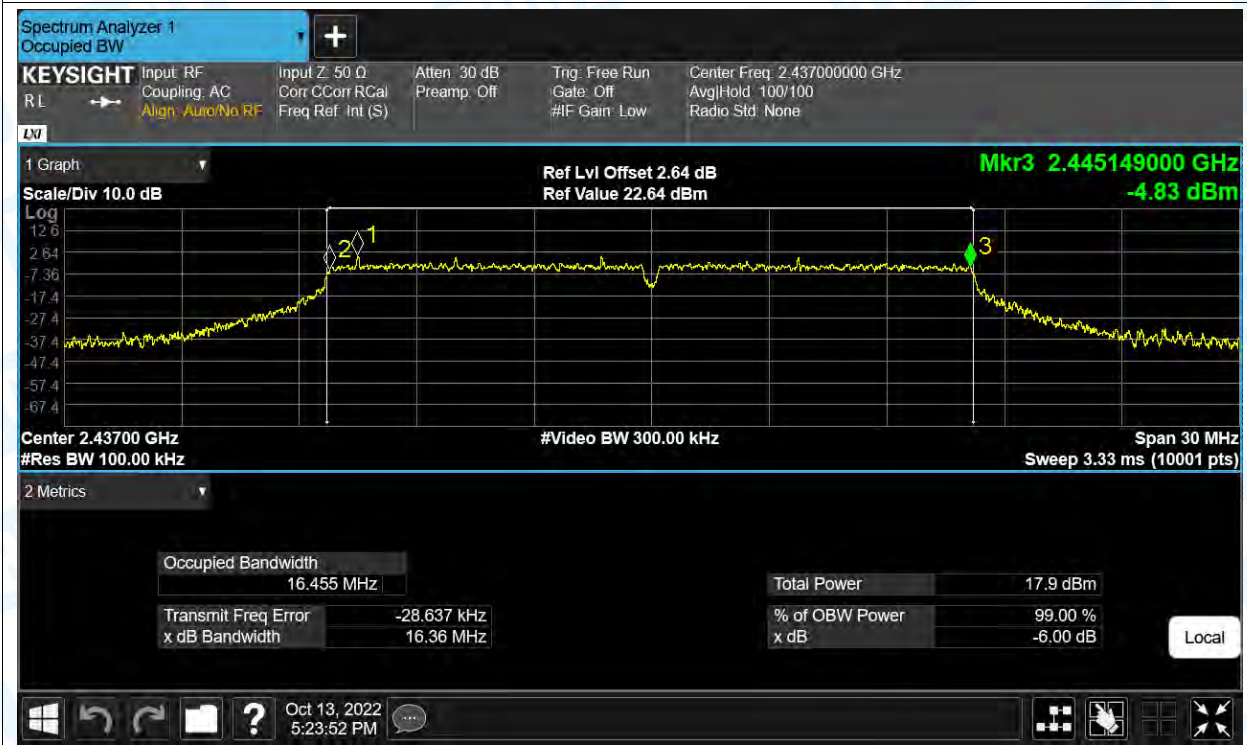
-6dB Bandwidth NVNT b 2462MHz Ant1



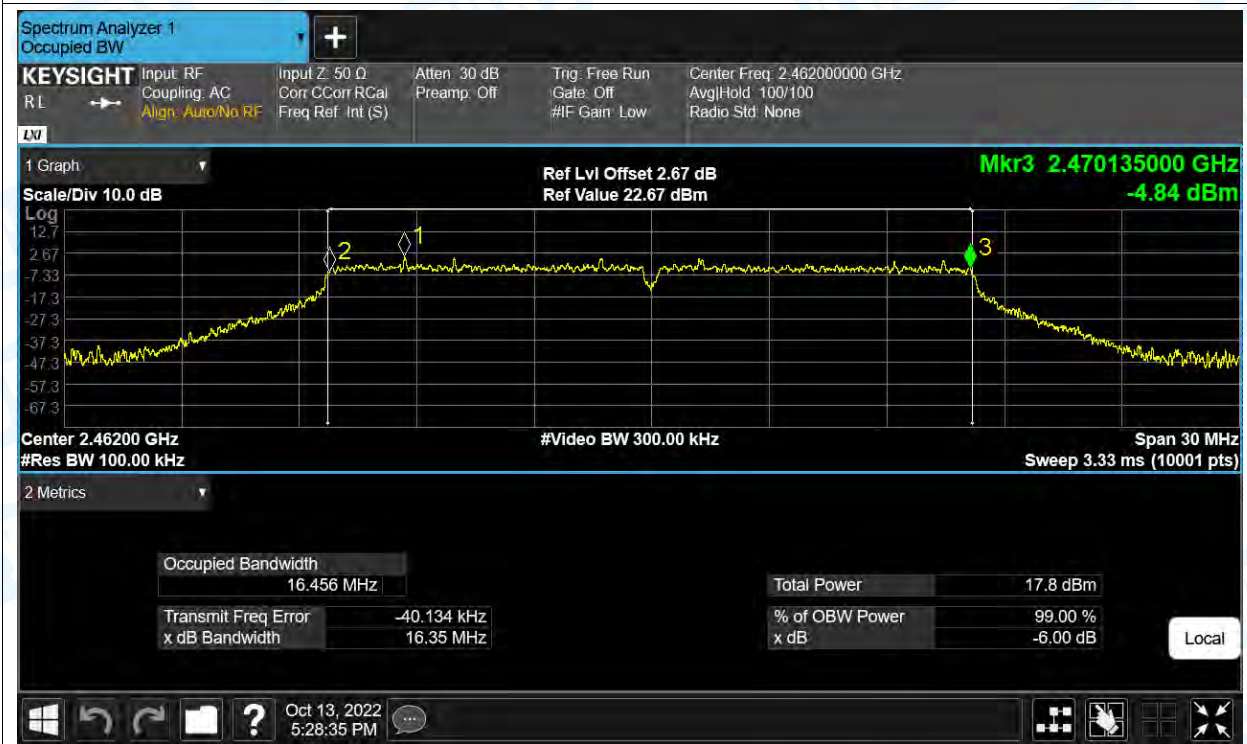
-6dB Bandwidth NVNT g 2412MHz Ant1



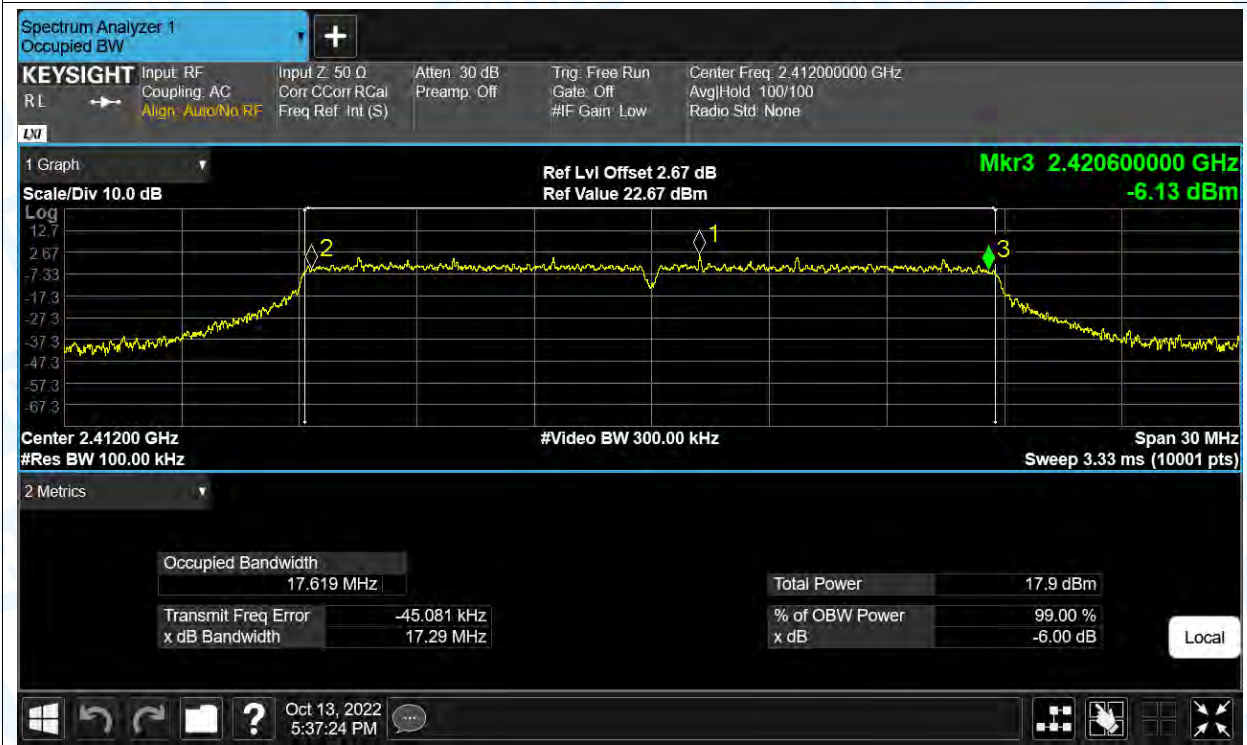
-6dB Bandwidth NVNT g 2437MHz Ant1



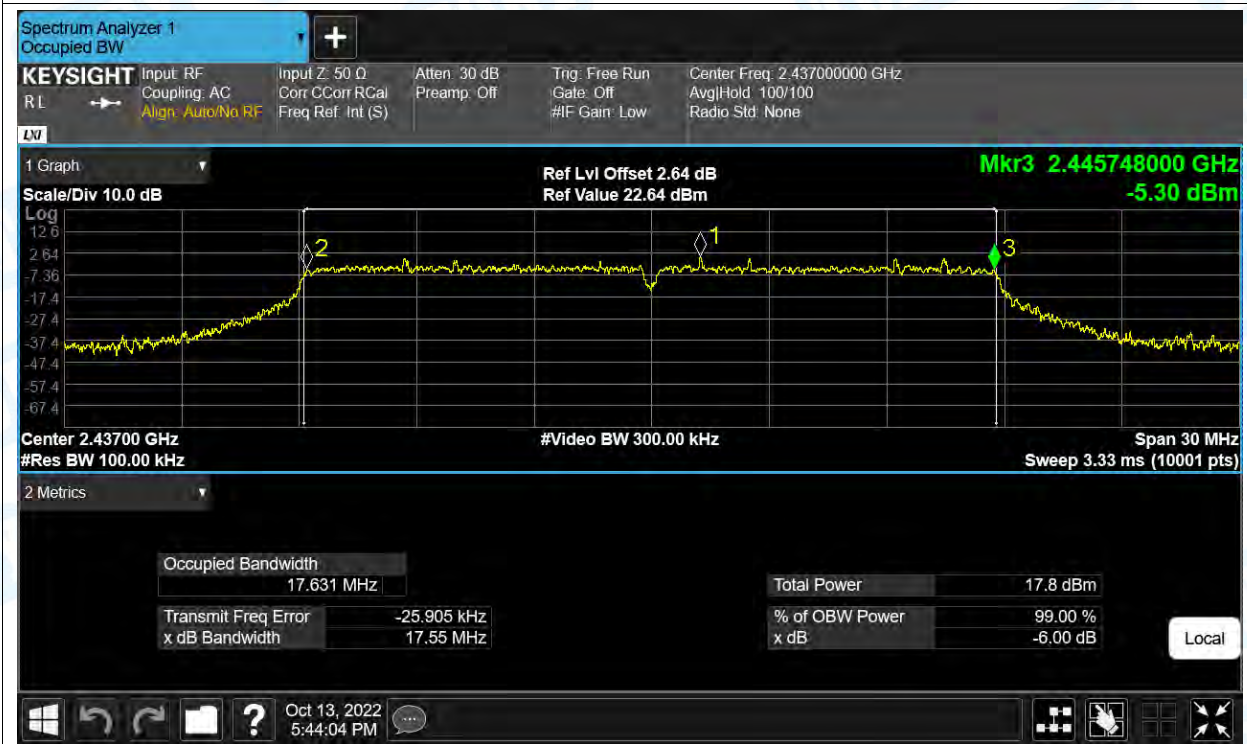
-6dB Bandwidth NVNT g 2462MHz Ant1



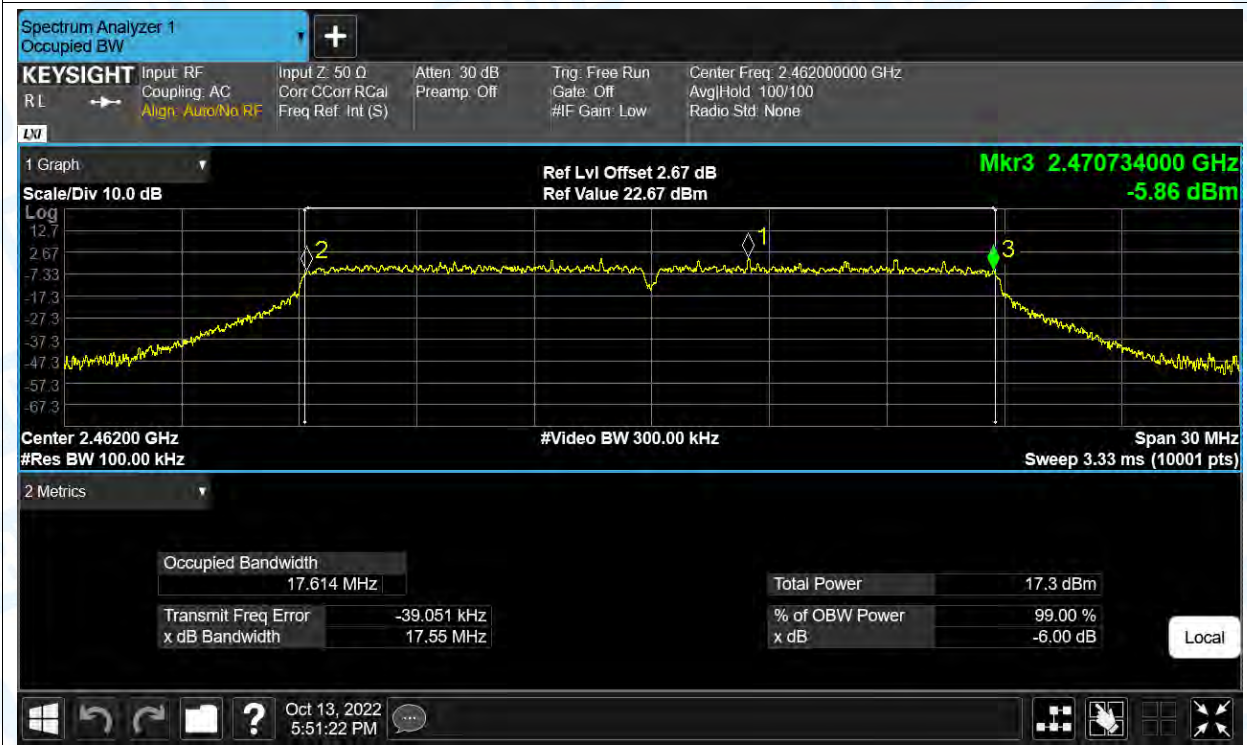
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



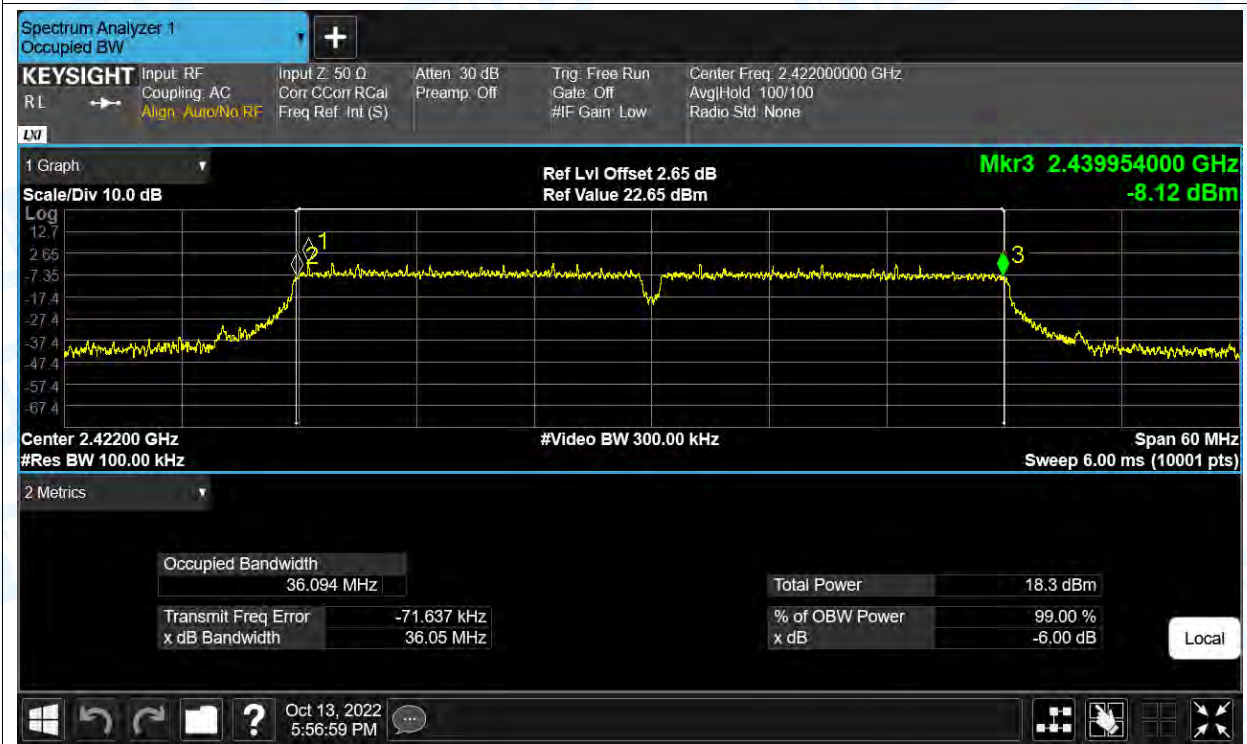
-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



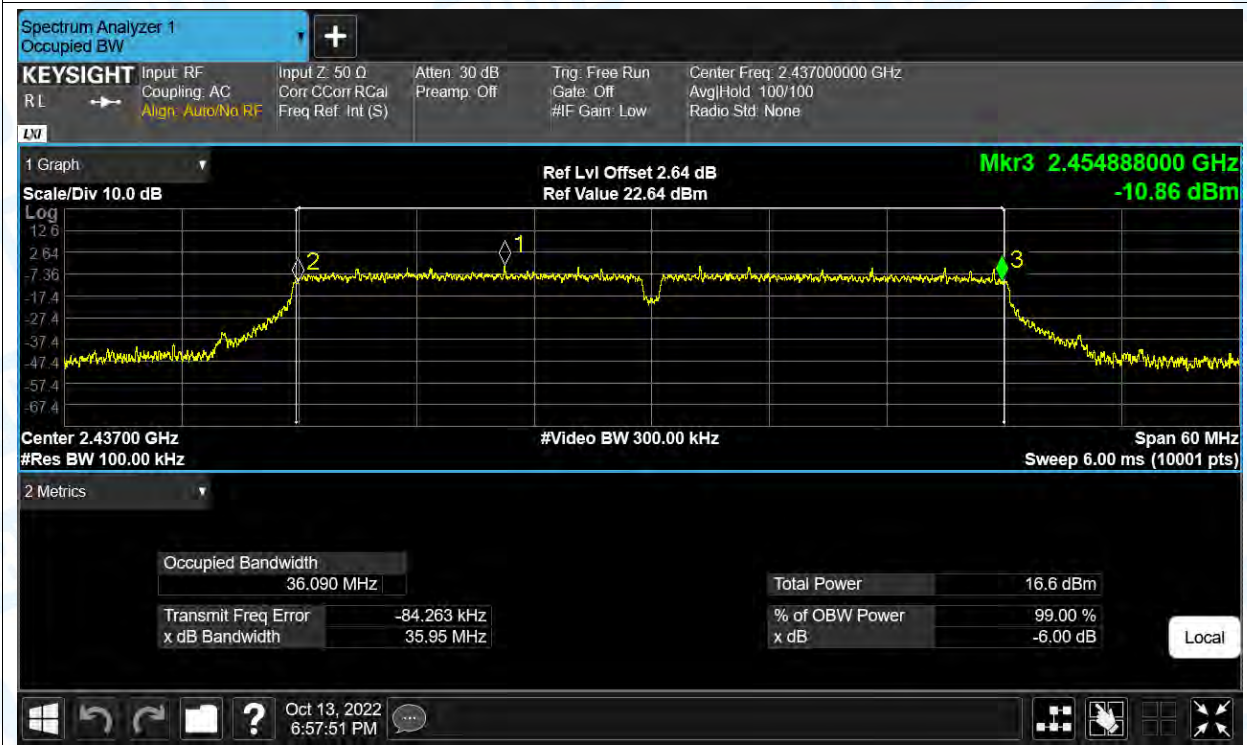
-6dB Bandwidth NVNT n(HT20) 2462MHz Ant1



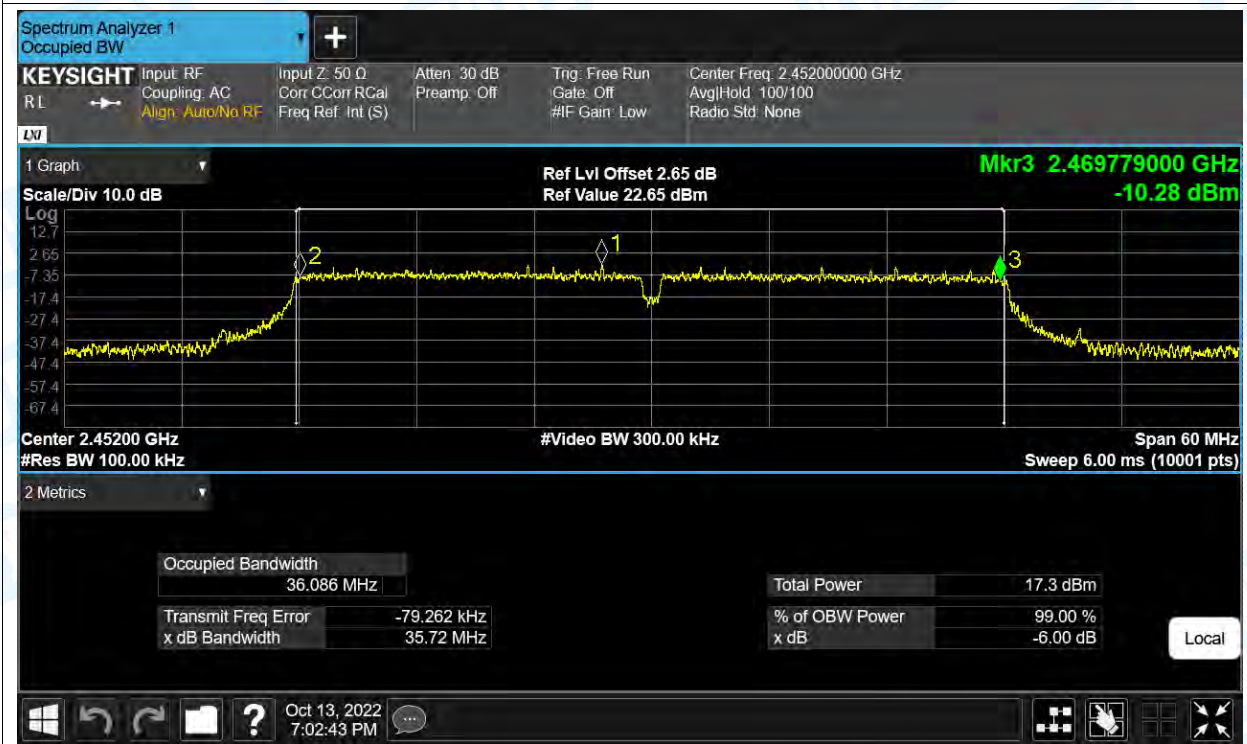
-6dB Bandwidth NVNT n(HT40) 2422MHz Ant1



-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	13.424
NVNT	b	2437	Ant1	13.475
NVNT	b	2462	Ant1	13.561
NVNT	g	2412	Ant1	16.607
NVNT	g	2437	Ant1	16.62
NVNT	g	2462	Ant1	16.582
NVNT	n(HT20)	2412	Ant1	17.711
NVNT	n(HT20)	2437	Ant1	17.69
NVNT	n(HT20)	2462	Ant1	17.667
NVNT	n(HT40)	2422	Ant1	36.235
NVNT	n(HT40)	2437	Ant1	36.205
NVNT	n(HT40)	2452	Ant1	36.204

Test Graphs

OBW NVNT b 2412MHz Ant1



OBW NVNT b 2437MHz Ant1



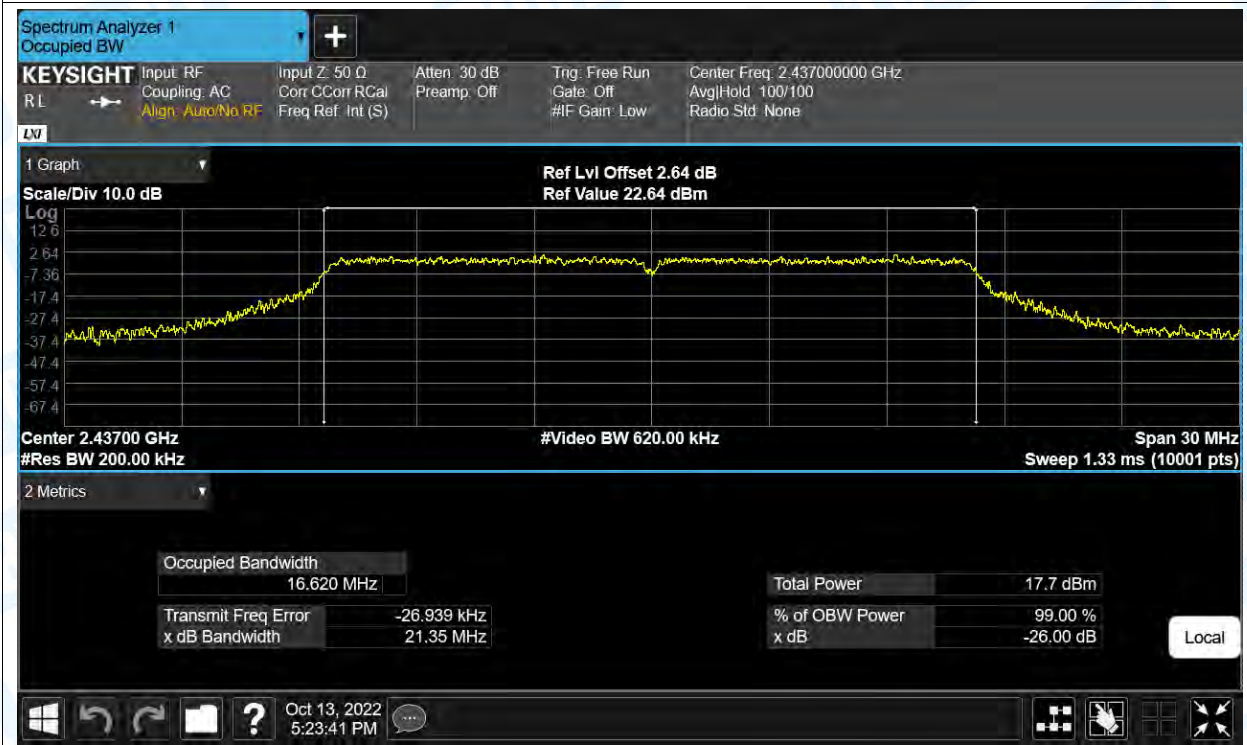
OBW NVNT b 2462MHz Ant1



OBW NVNT g 2412MHz Ant1



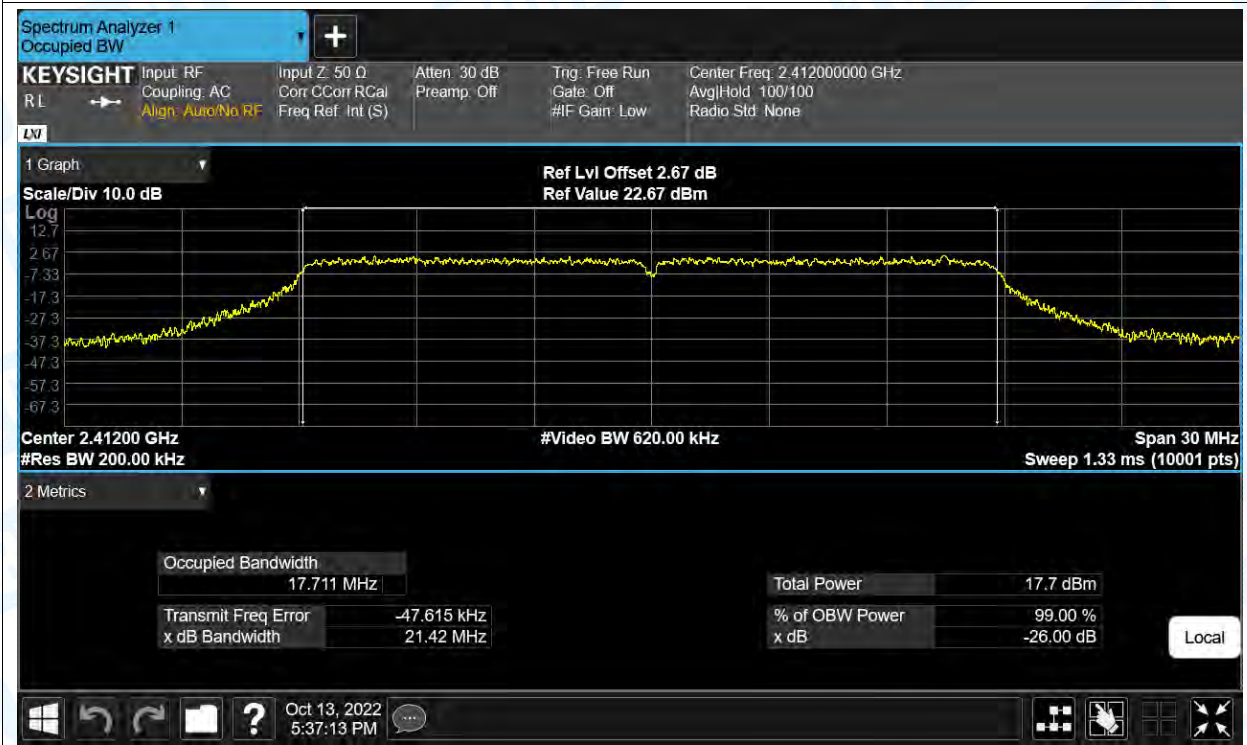
OBW NVNT g 2437MHz Ant1



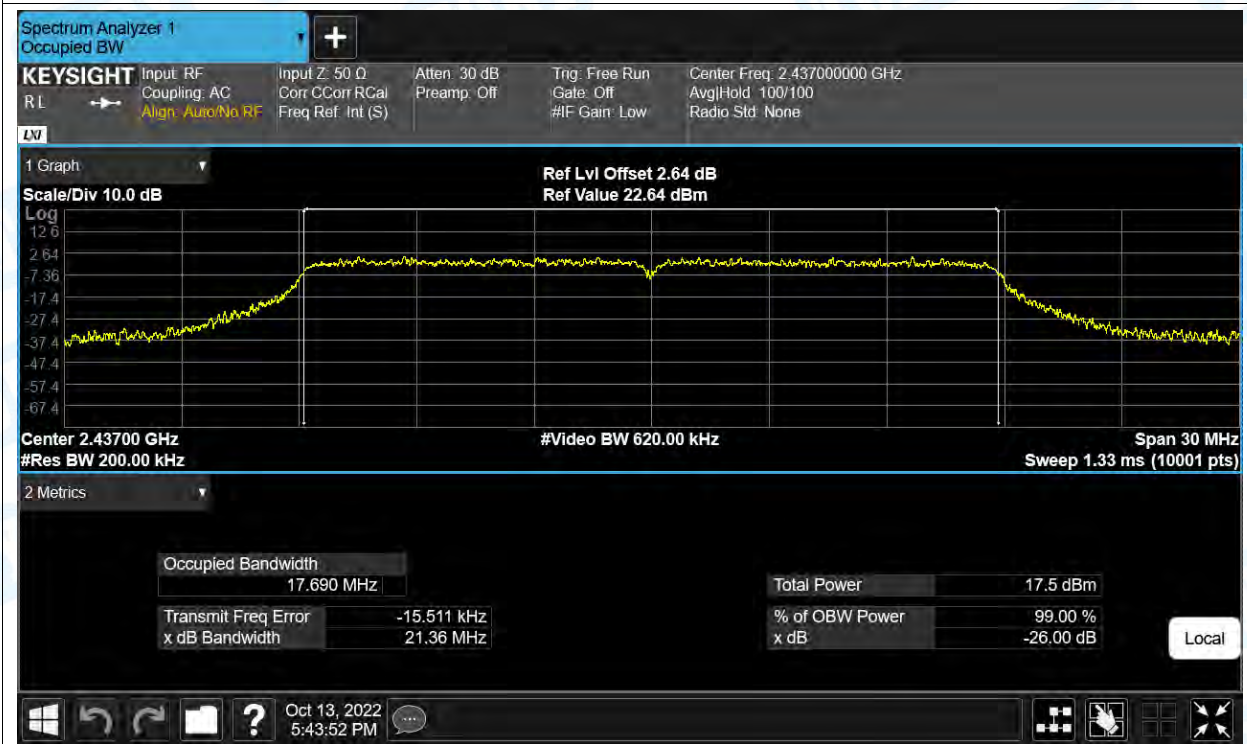
OBW NVNT g 2462MHz Ant1



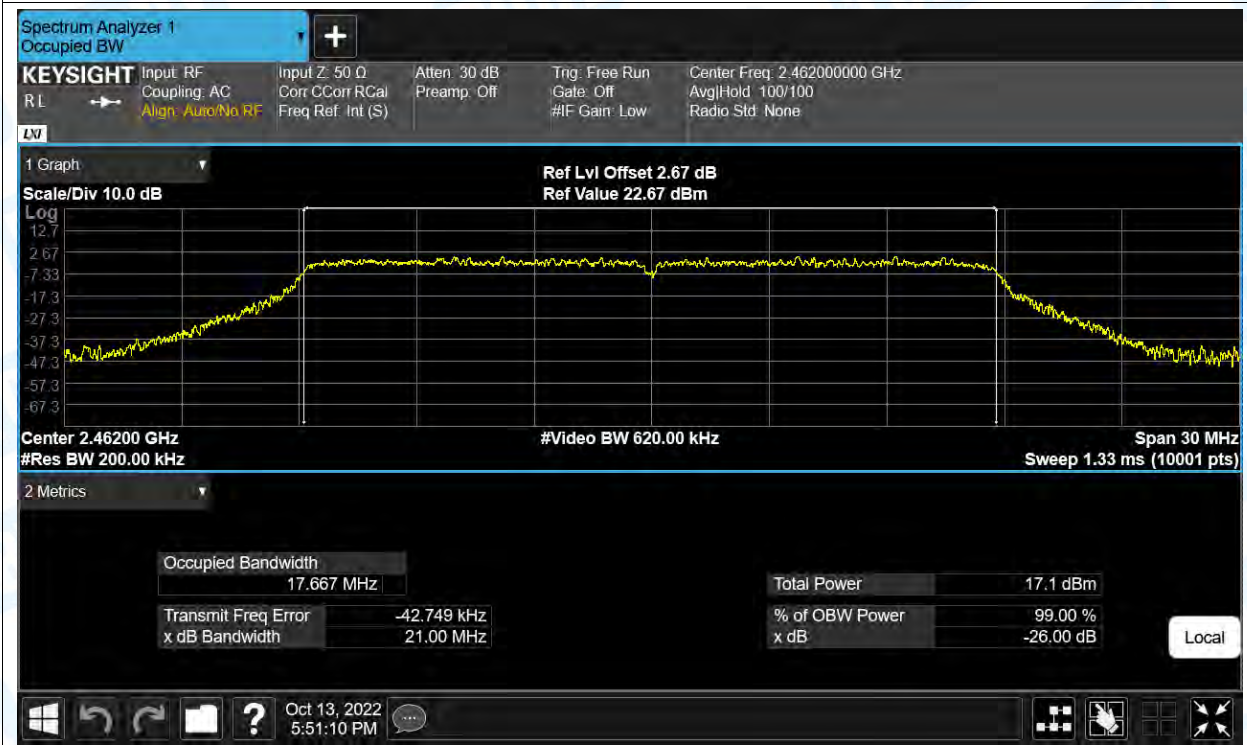
OBW NVNT n(HT20) 2412MHz Ant1



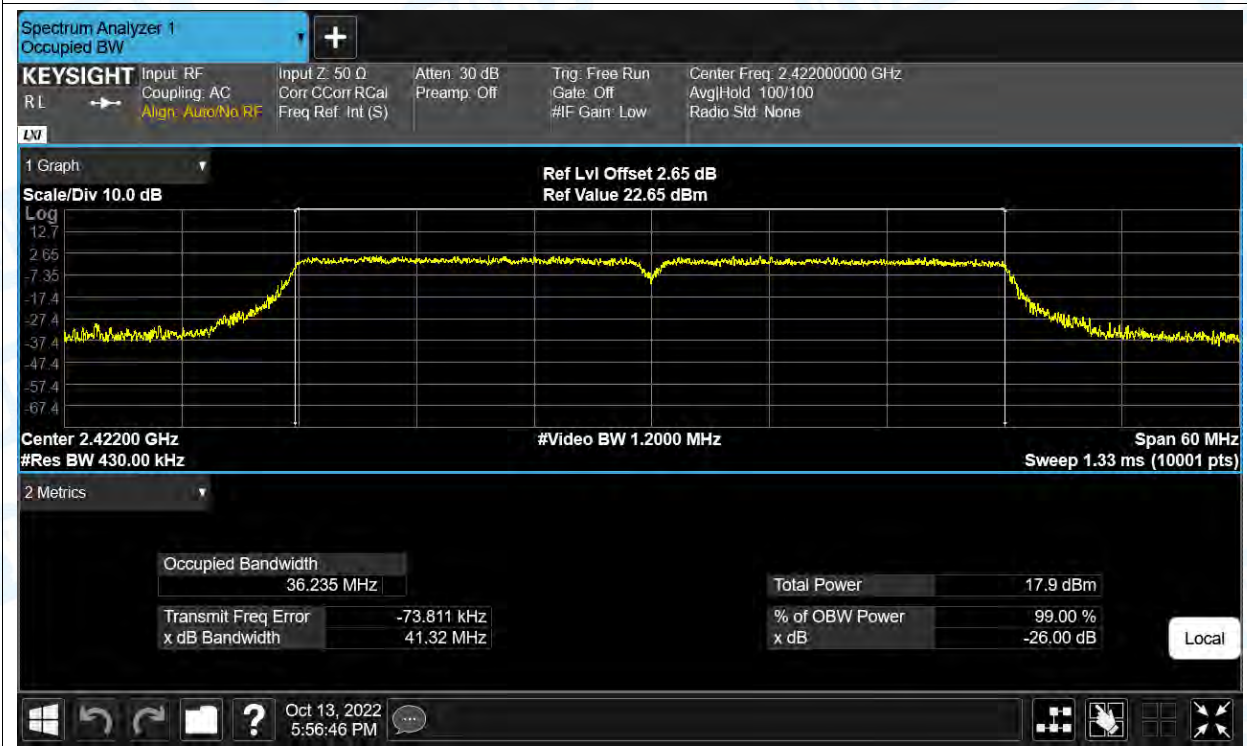
OBW NVNT n(HT20) 2437MHz Ant1



OBW NVNT n(HT20) 2462MHz Ant1



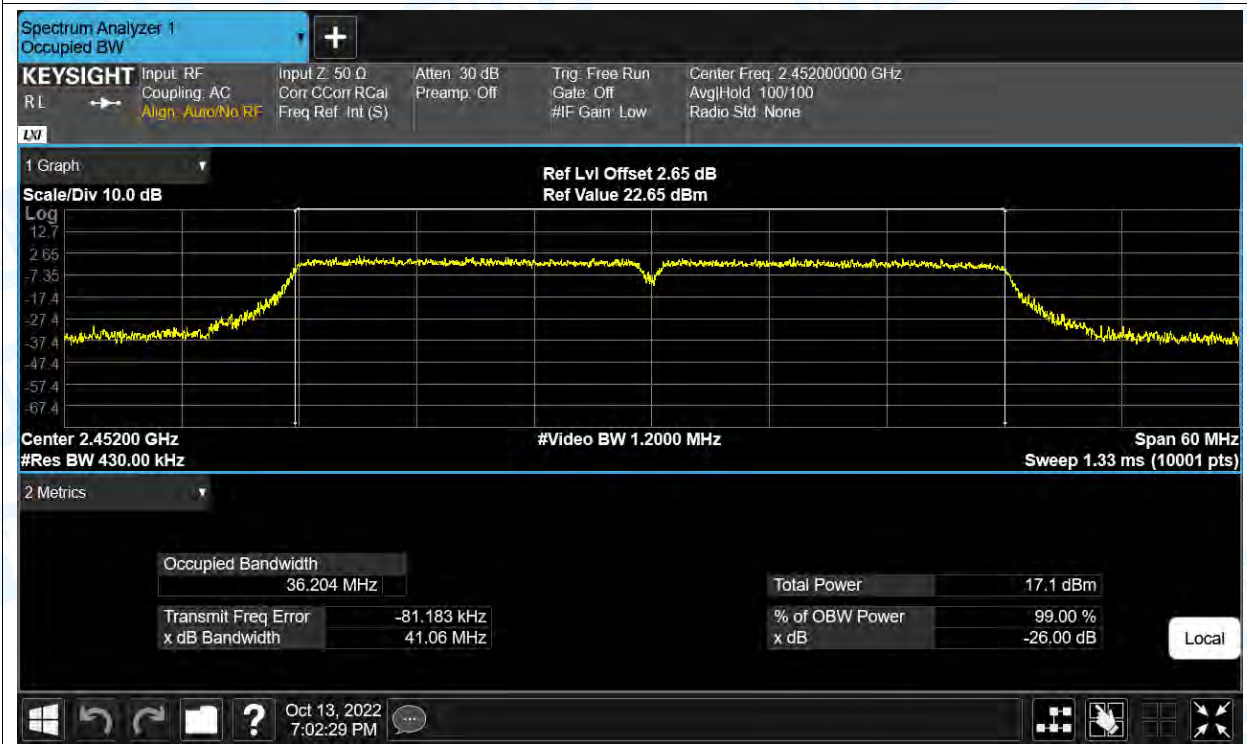
OBW NVNT n(HT40) 2422MHz Ant1



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/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-6.323	8	Pass
NVNT	b	2437	Ant1	-7.268	8	Pass
NVNT	b	2462	Ant1	-7.177	8	Pass
NVNT	g	2412	Ant1	-13.212	8	Pass
NVNT	g	2437	Ant1	-13.221	8	Pass
NVNT	g	2462	Ant1	-13.032	8	Pass
NVNT	n(HT20)	2412	Ant1	-13.396	8	Pass
NVNT	n(HT20)	2437	Ant1	-13.348	8	Pass
NVNT	n(HT20)	2462	Ant1	-13.096	8	Pass
NVNT	n(HT40)	2422	Ant1	-15.969	8	Pass
NVNT	n(HT40)	2437	Ant1	-17.008	8	Pass
NVNT	n(HT40)	2452	Ant1	-16.592	8	Pass

Test Graphs

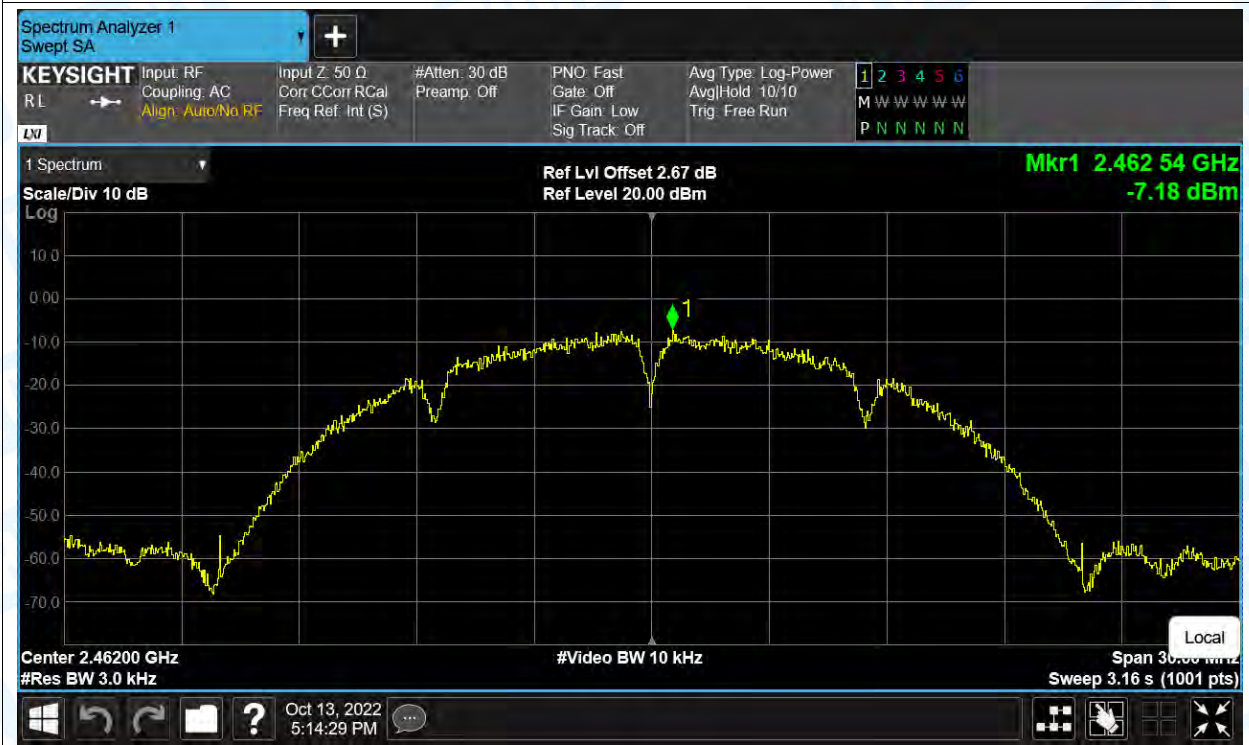
PSD NVNT b 2412MHz Ant1



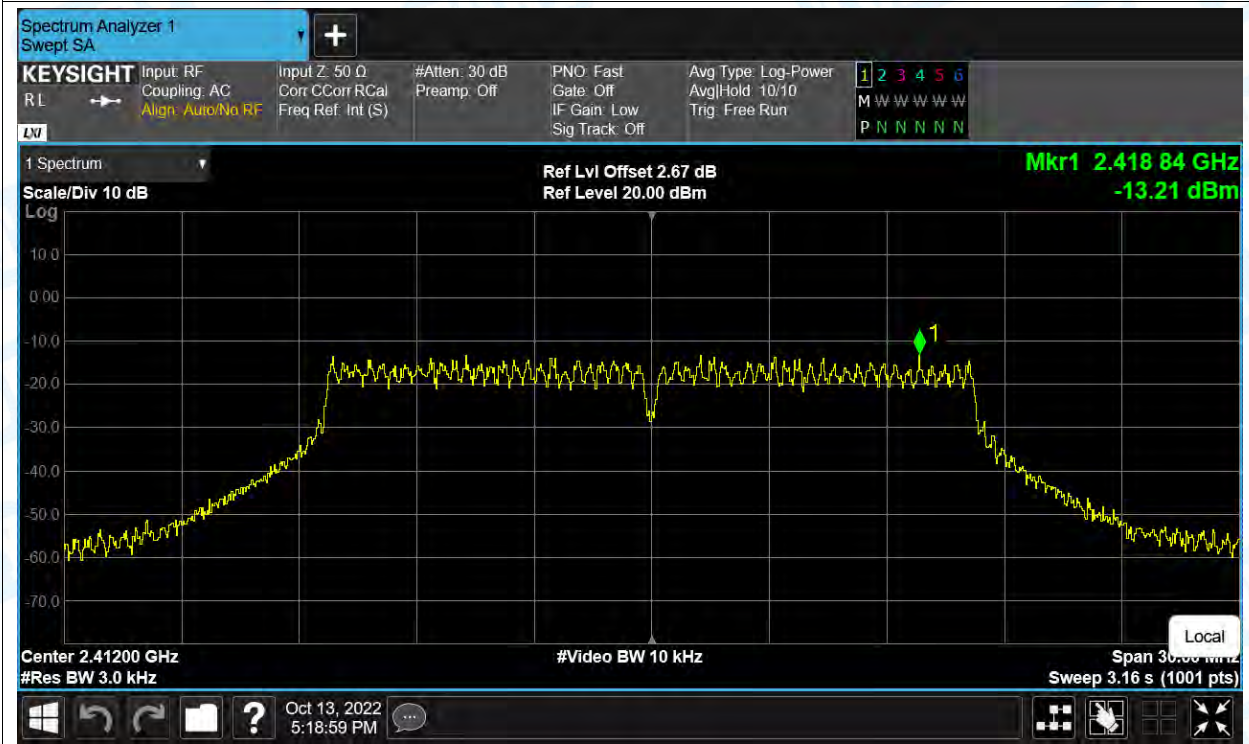
PSD NVNT b 2437MHz Ant1



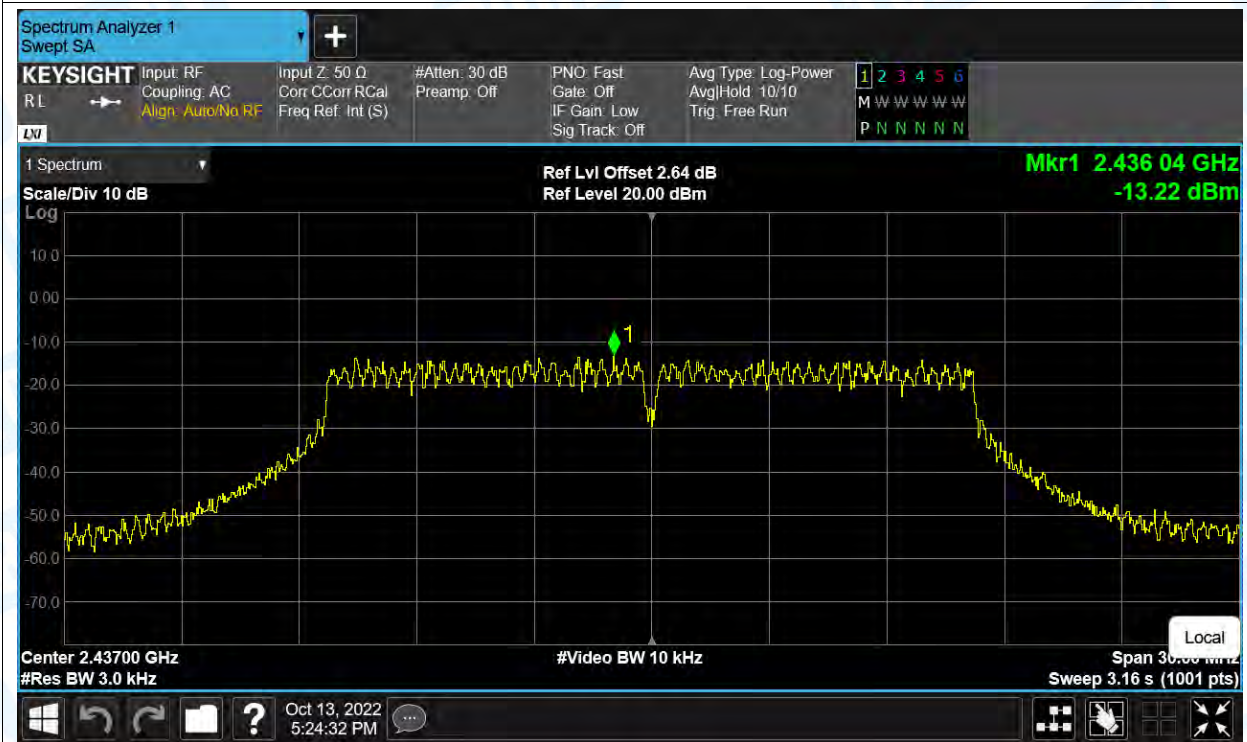
PSD NVNT b 2462MHz Ant1



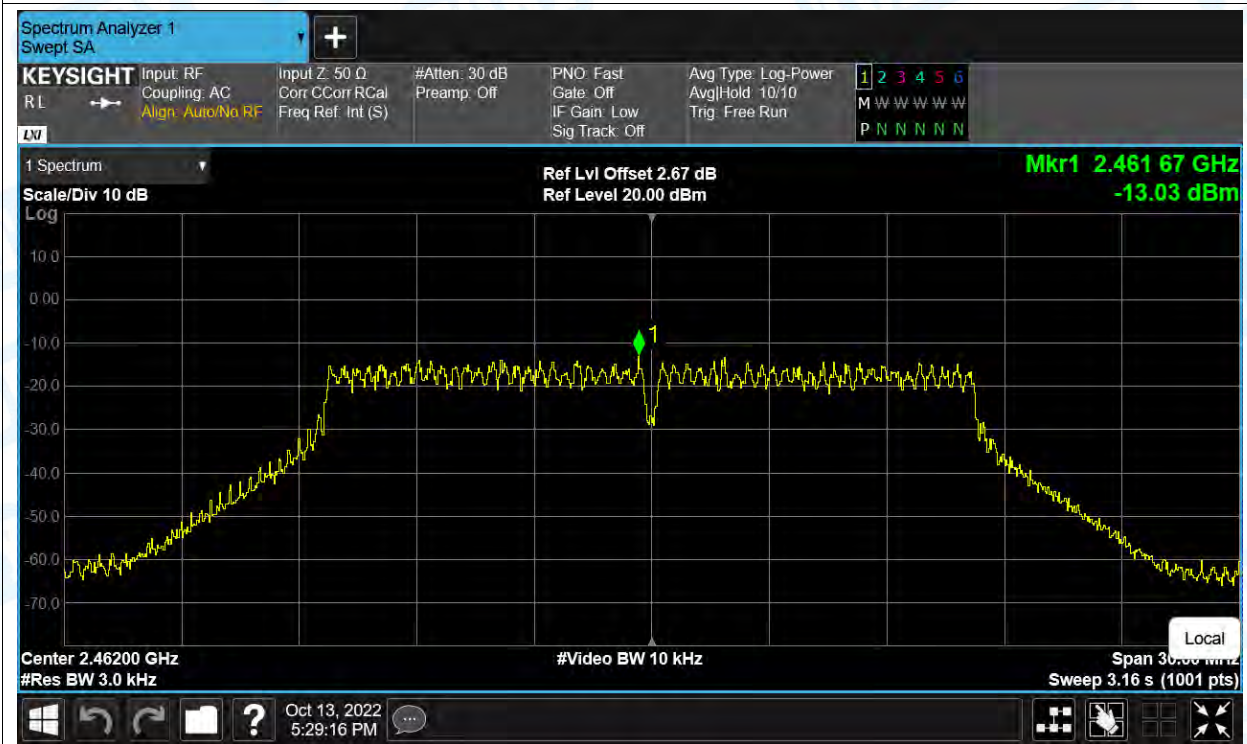
PSD NVNT g 2412MHz Ant1

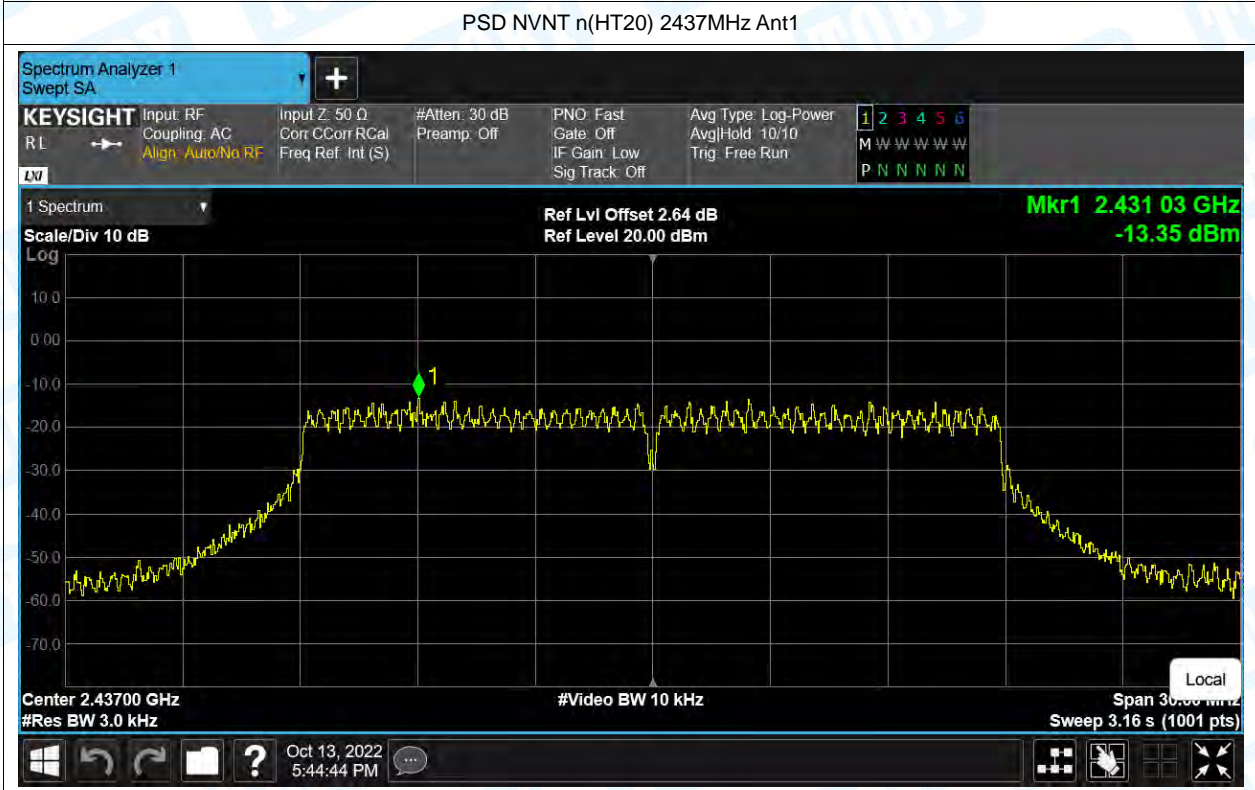
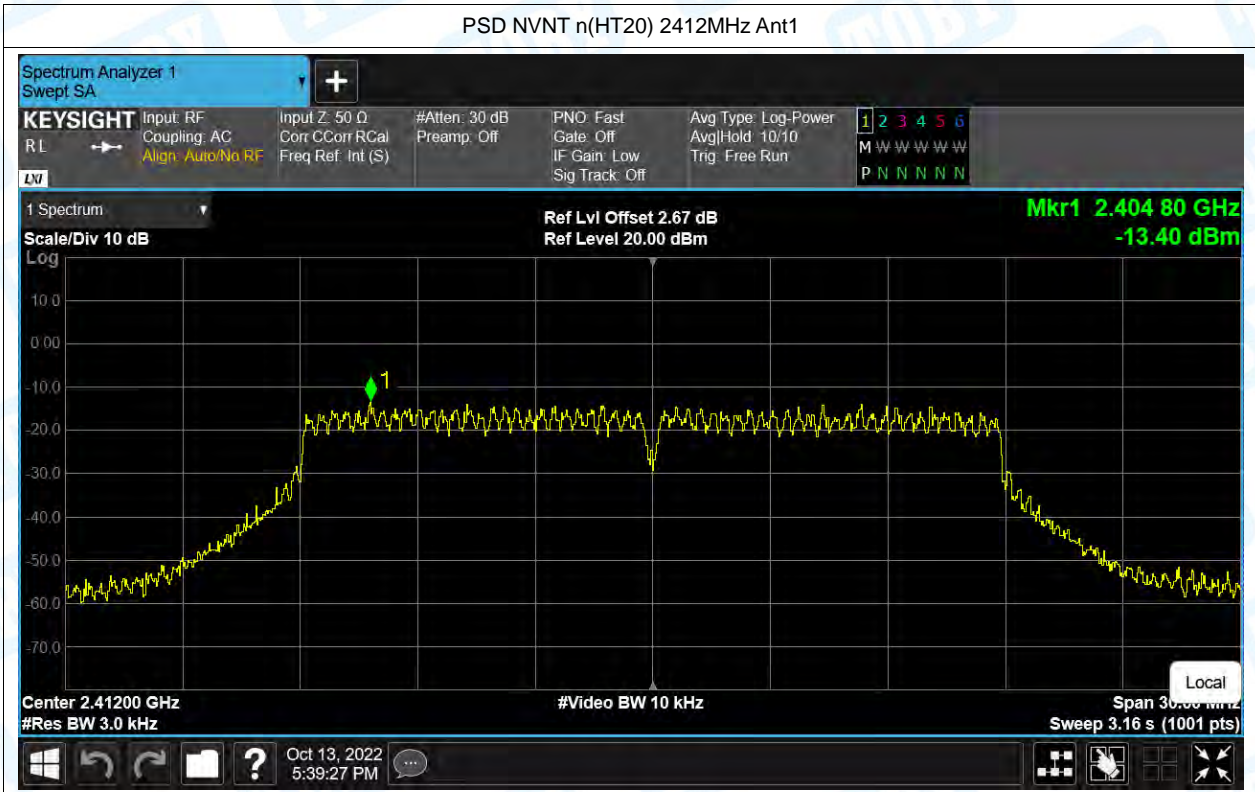


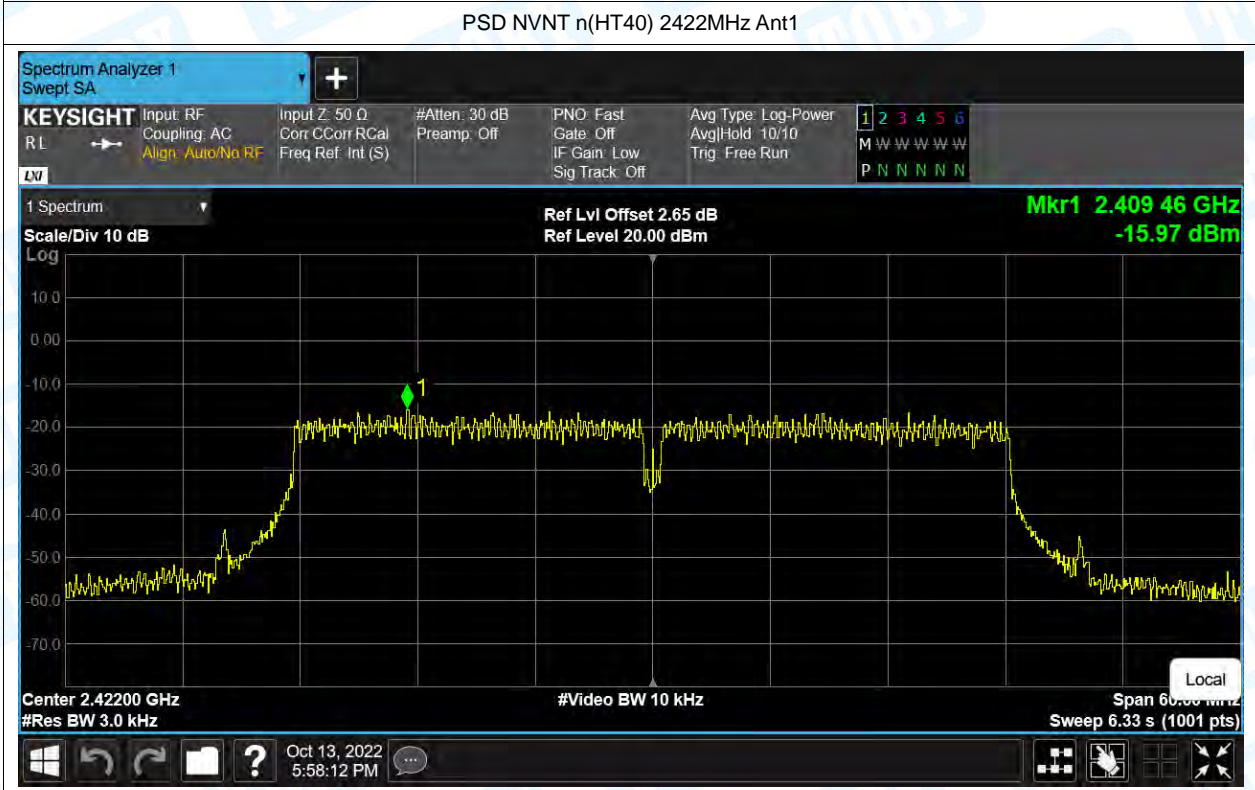
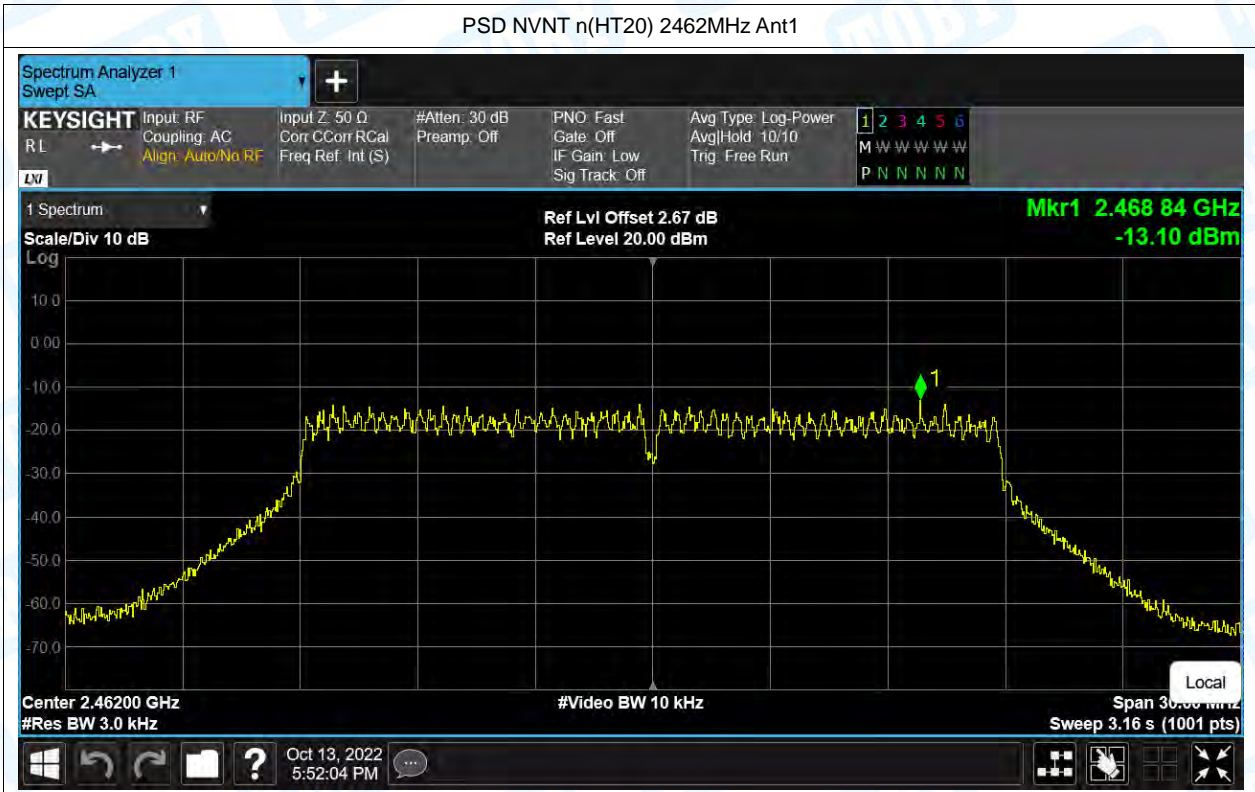
PSD NVNT g 2437MHz Ant1

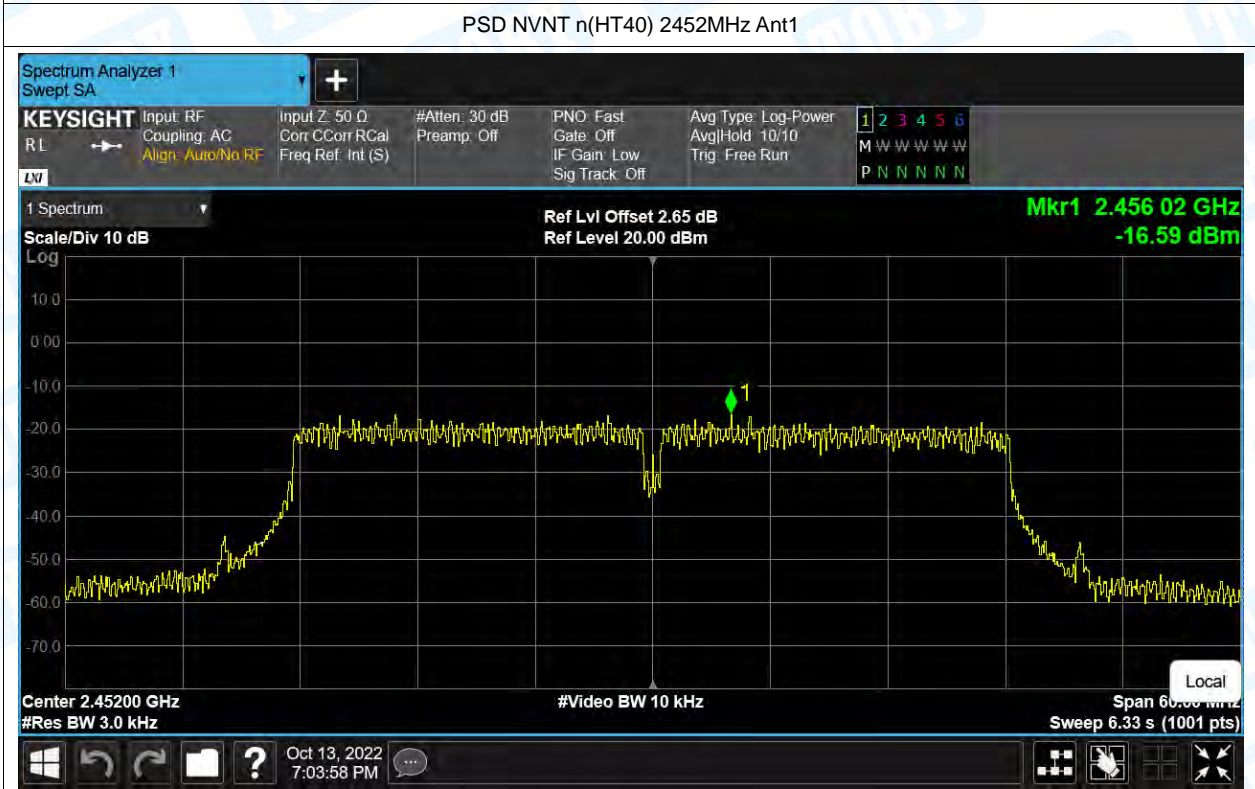
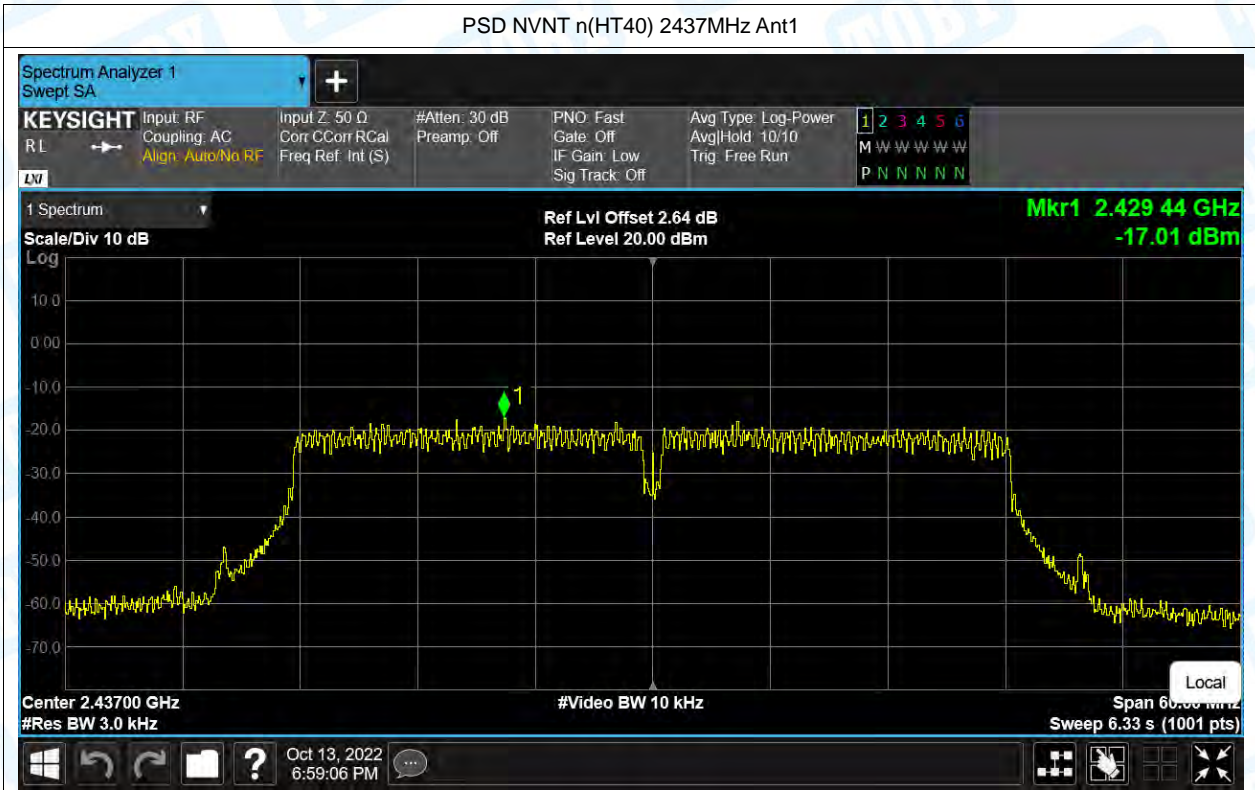


PSD NVNT g 2462MHz Ant1









6. Band Edge

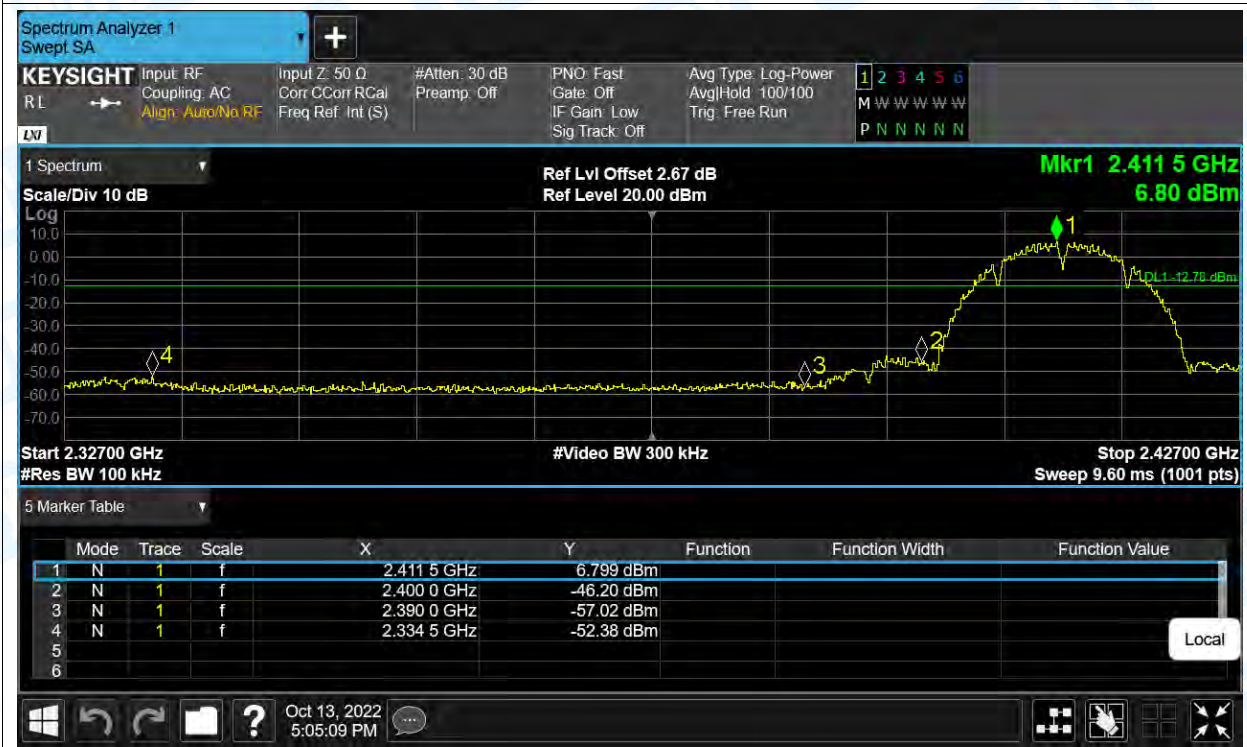
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-59.6	-20	Pass
NVNT	b	2462	Ant1	-61.29	-20	Pass
NVNT	g	2412	Ant1	-47.4	-20	Pass
NVNT	g	2462	Ant1	-49.77	-20	Pass
NVNT	n(HT20)	2412	Ant1	-47.26	-20	Pass
NVNT	n(HT20)	2462	Ant1	-50.85	-20	Pass
NVNT	n(HT40)	2422	Ant1	-37.27	-20	Pass
NVNT	n(HT40)	2452	Ant1	-38.64	-20	Pass

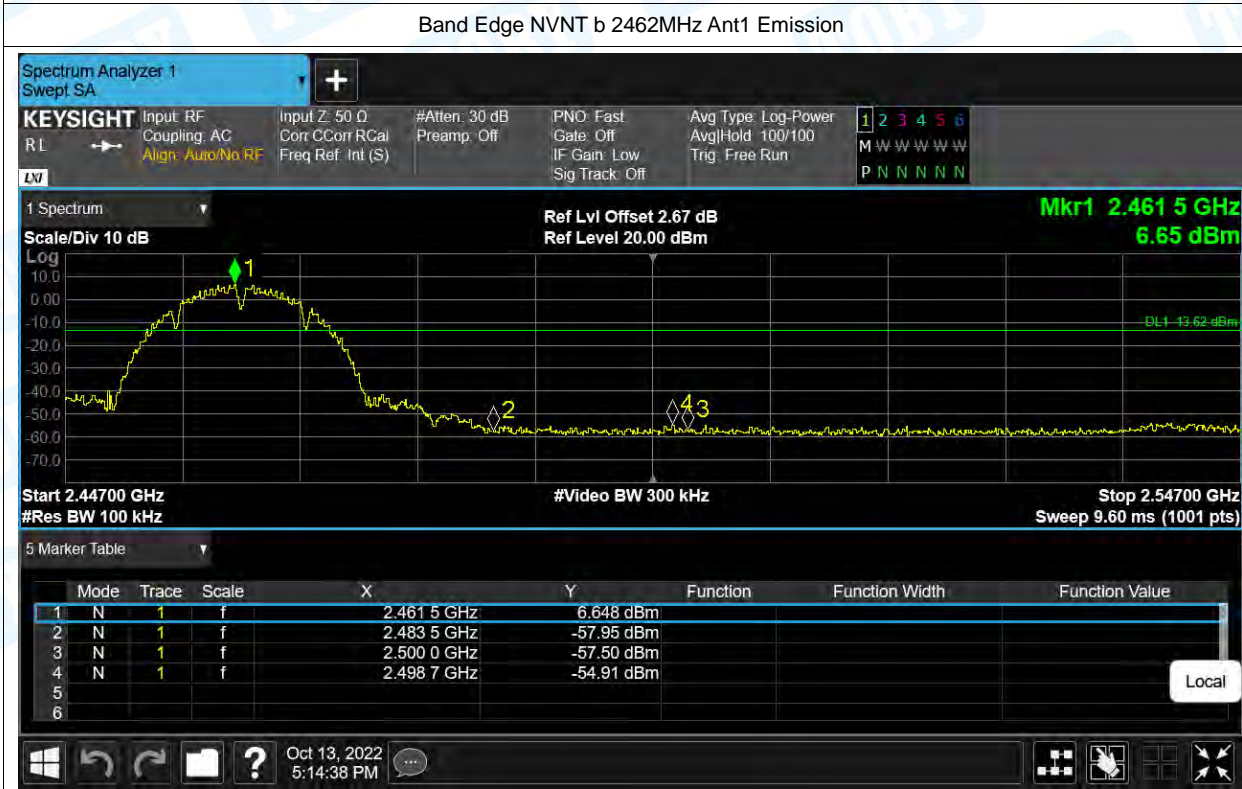
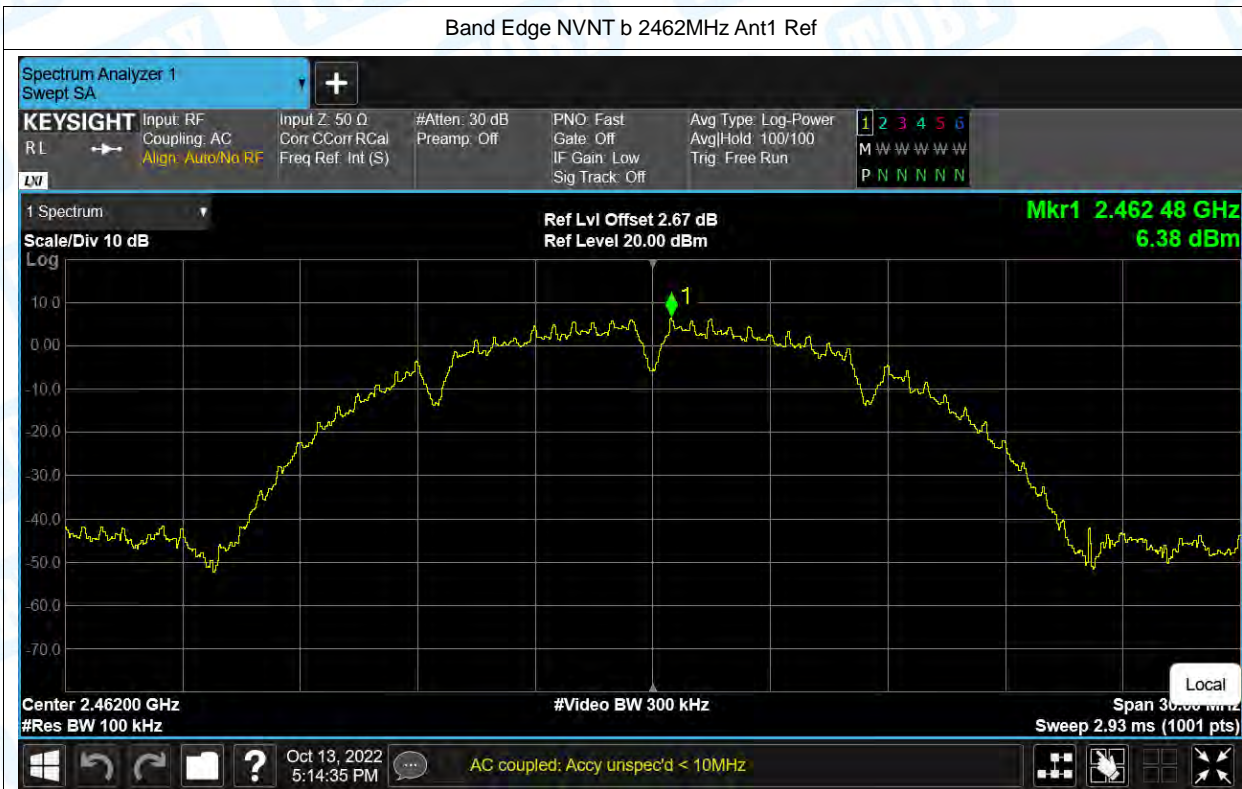
Test Graphs

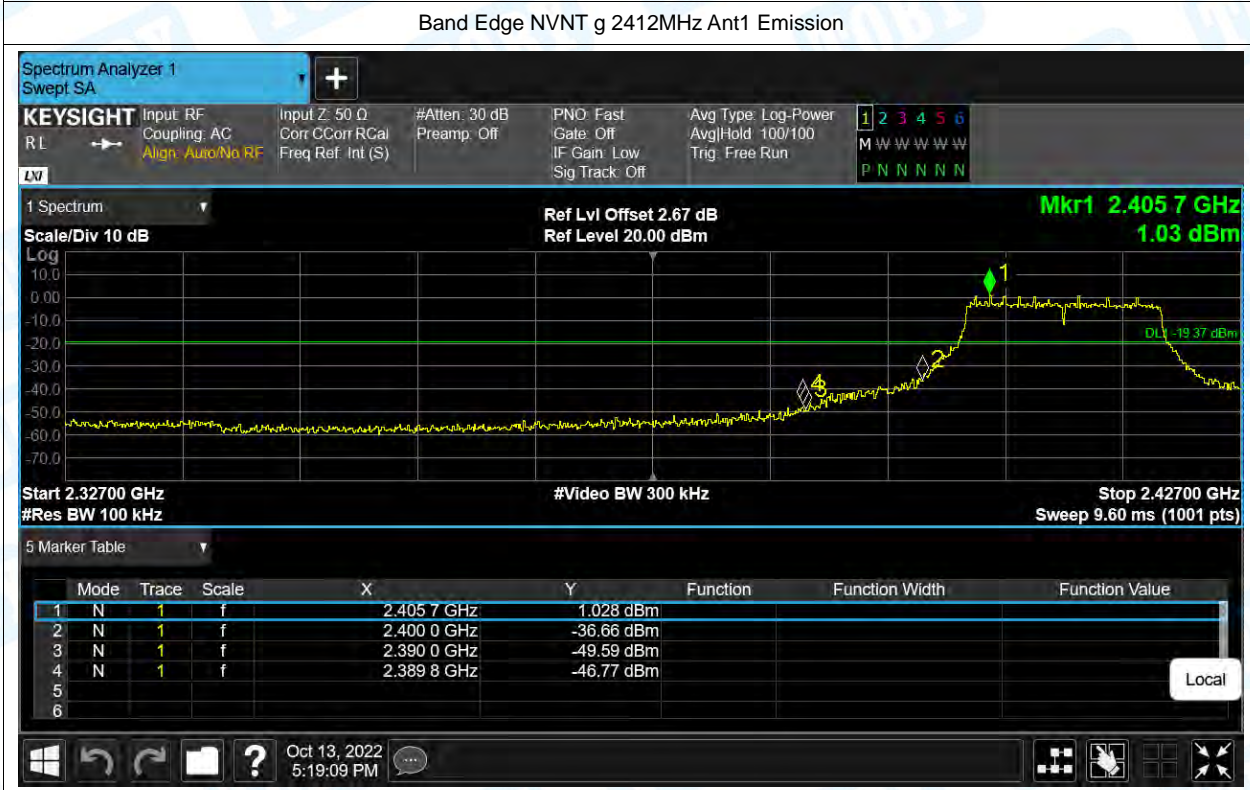
Band Edge NVNT b 2412MHz Ant1 Ref



Band Edge NVNT b 2412MHz Ant1 Emission







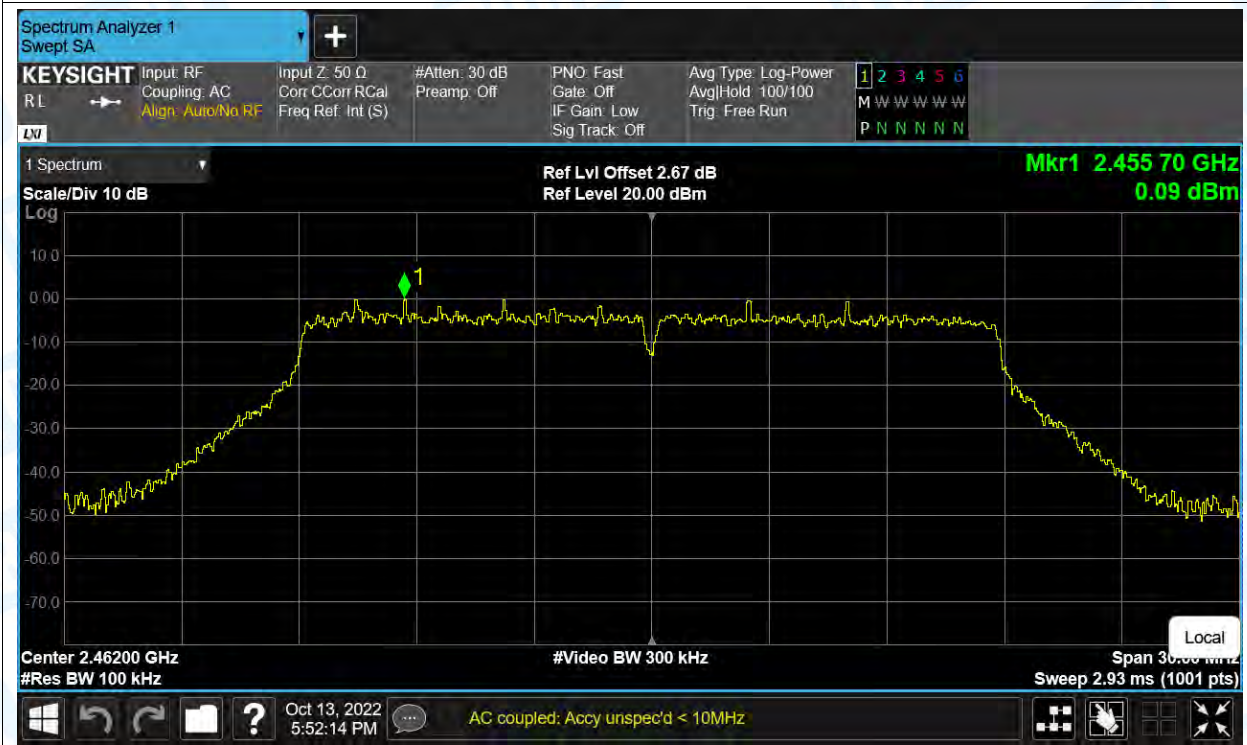
Band Edge NVNT g 2462MHz Ant1 Ref



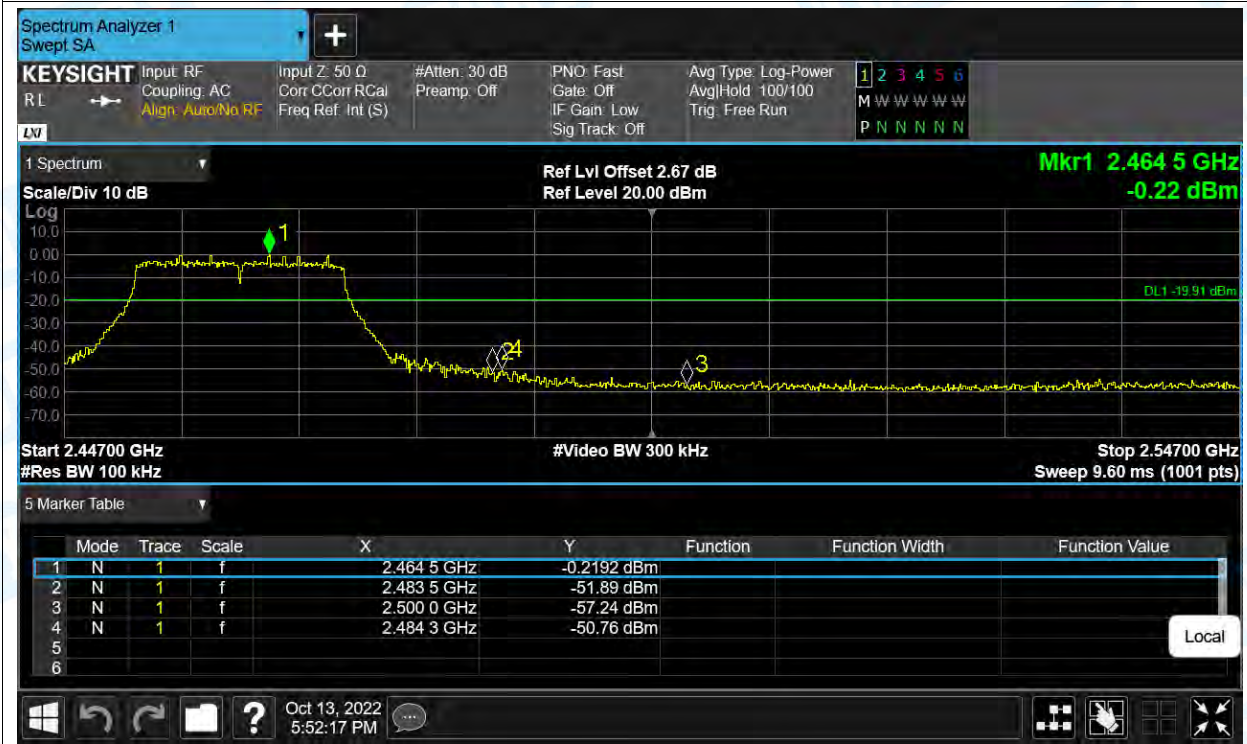
Band Edge NVNT g 2462MHz Ant1 Emission

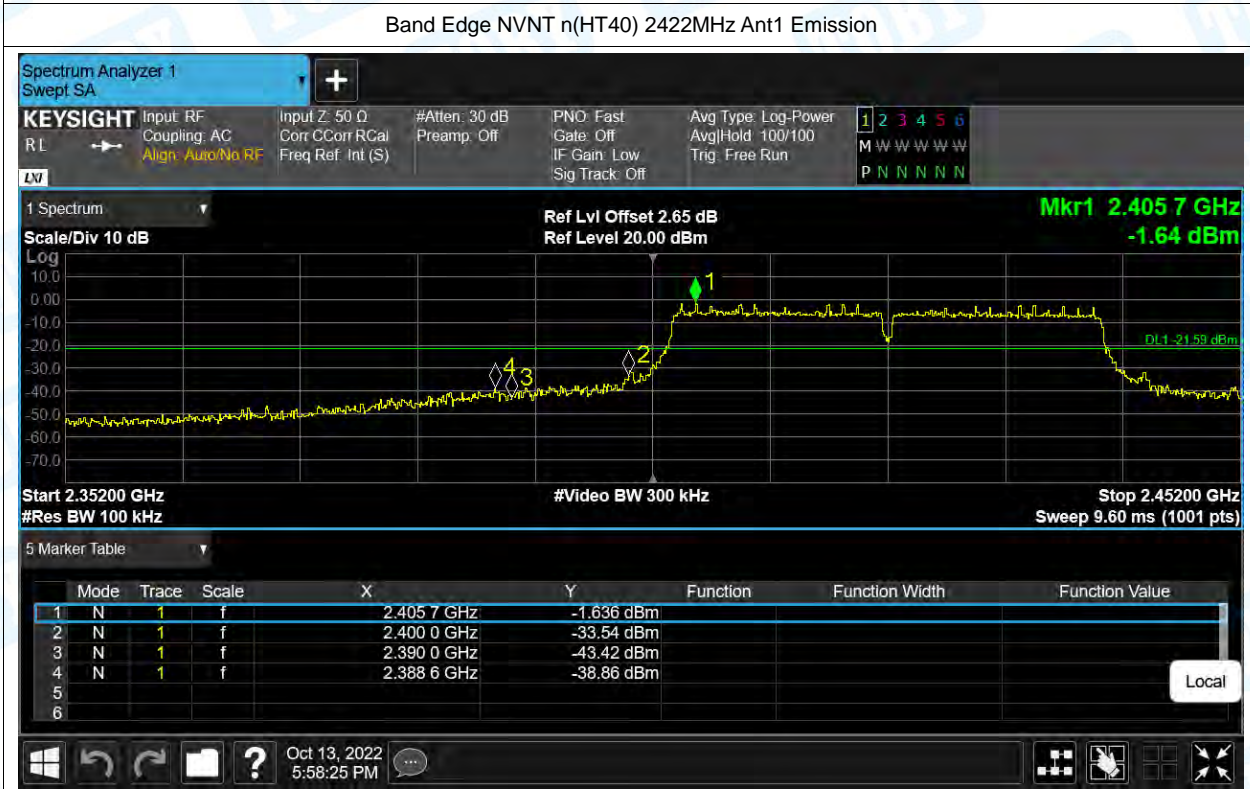
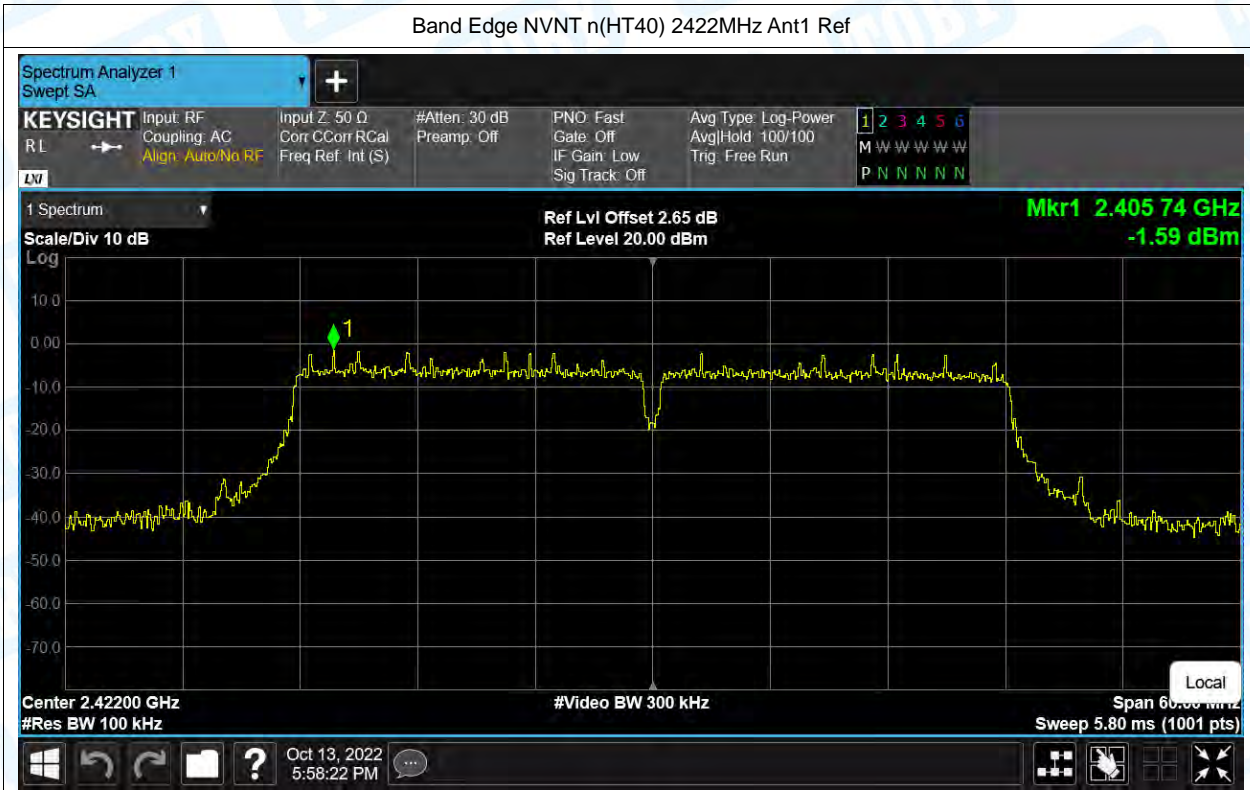


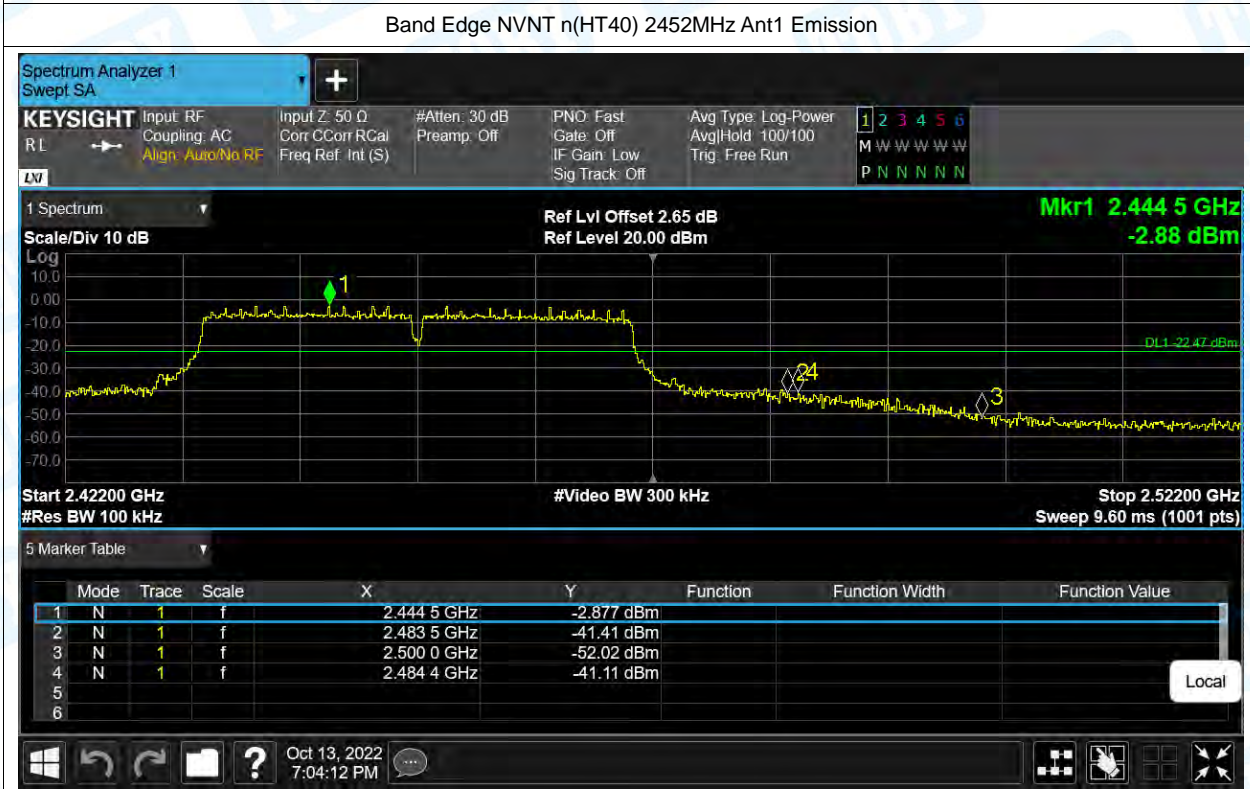
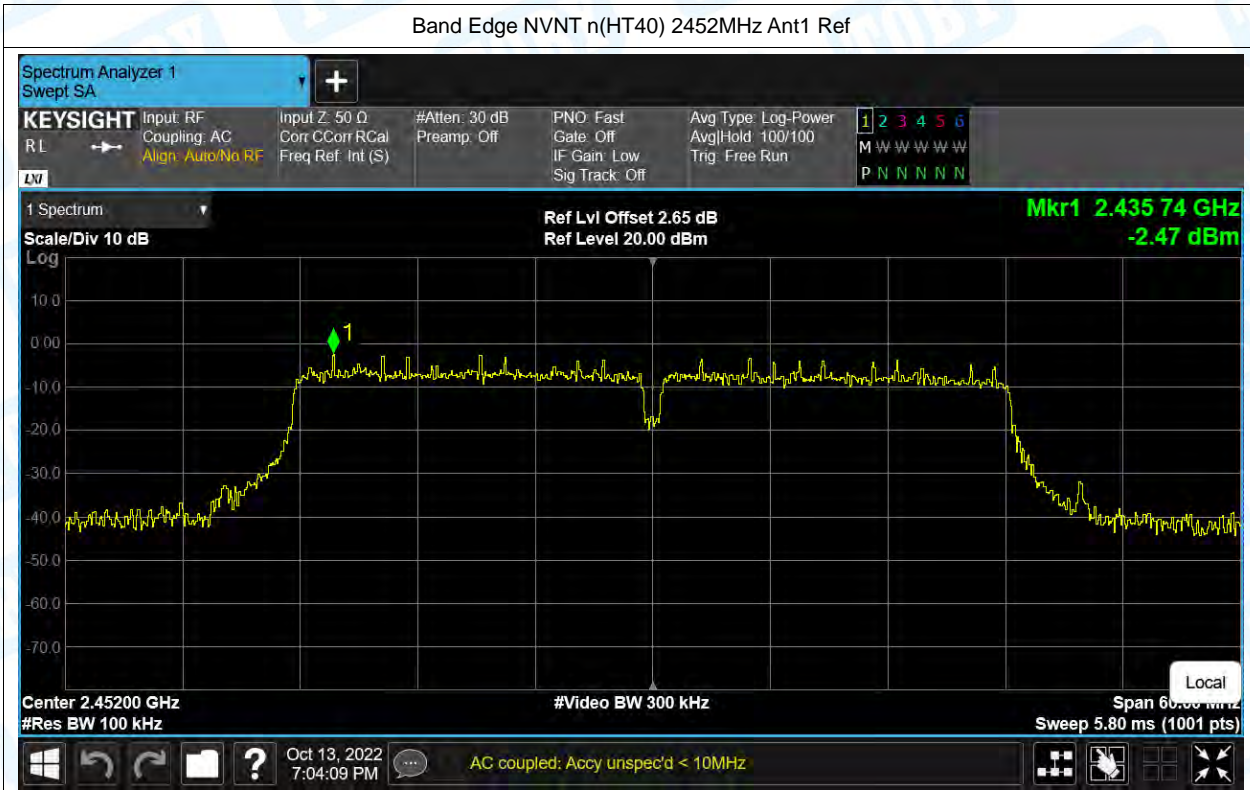
Band Edge NVNT n(HT20) 2462MHz Ant1 Ref



Band Edge NVNT n(HT20) 2462MHz Ant1 Emission







7. Conducted RF Spurious Emission

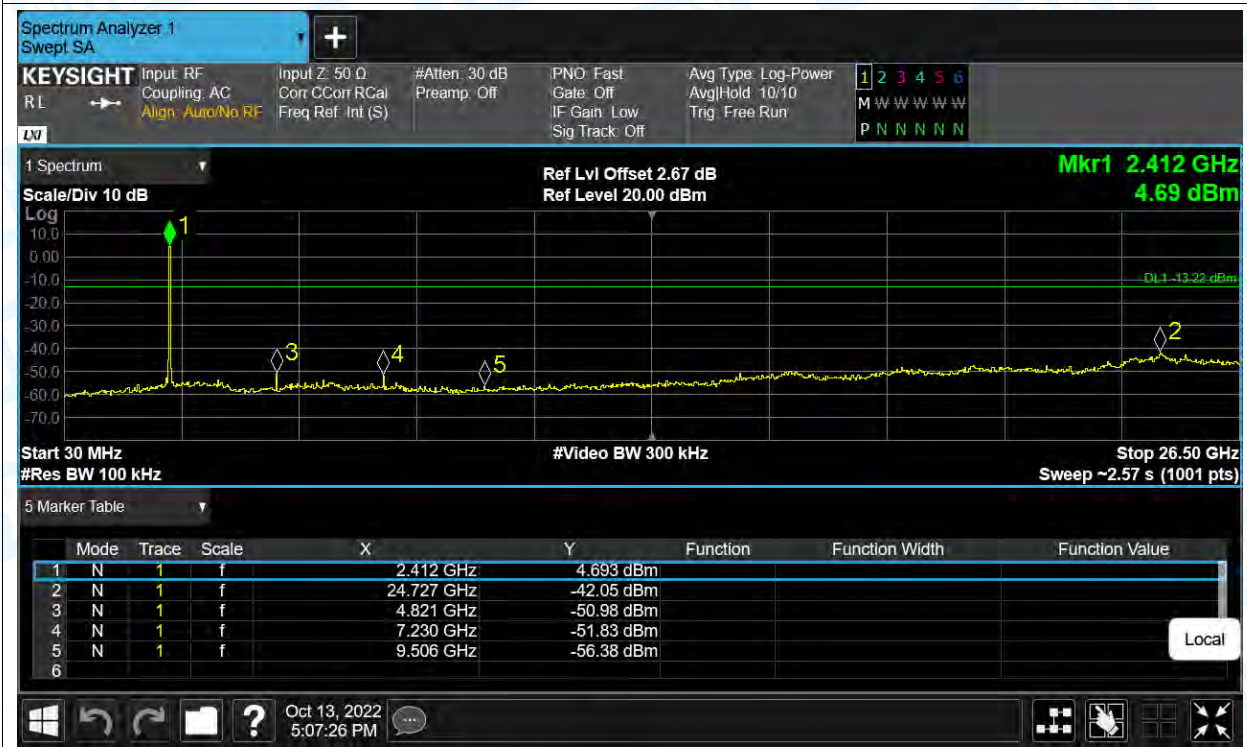
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-48.83	-20	Pass
NVNT	b	2437	Ant1	-48.82	-20	Pass
NVNT	b	2462	Ant1	-49.41	-20	Pass
NVNT	g	2412	Ant1	-42.17	-20	Pass
NVNT	g	2437	Ant1	-42.79	-20	Pass
NVNT	g	2462	Ant1	-41.64	-20	Pass
NVNT	n(HT20)	2412	Ant1	-41.1	-20	Pass
NVNT	n(HT20)	2437	Ant1	-41.92	-20	Pass
NVNT	n(HT20)	2462	Ant1	-41.83	-20	Pass
NVNT	n(HT40)	2422	Ant1	-40.3	-20	Pass
NVNT	n(HT40)	2437	Ant1	-38.79	-20	Pass
NVNT	n(HT40)	2452	Ant1	-39.45	-20	Pass

Test Graphs

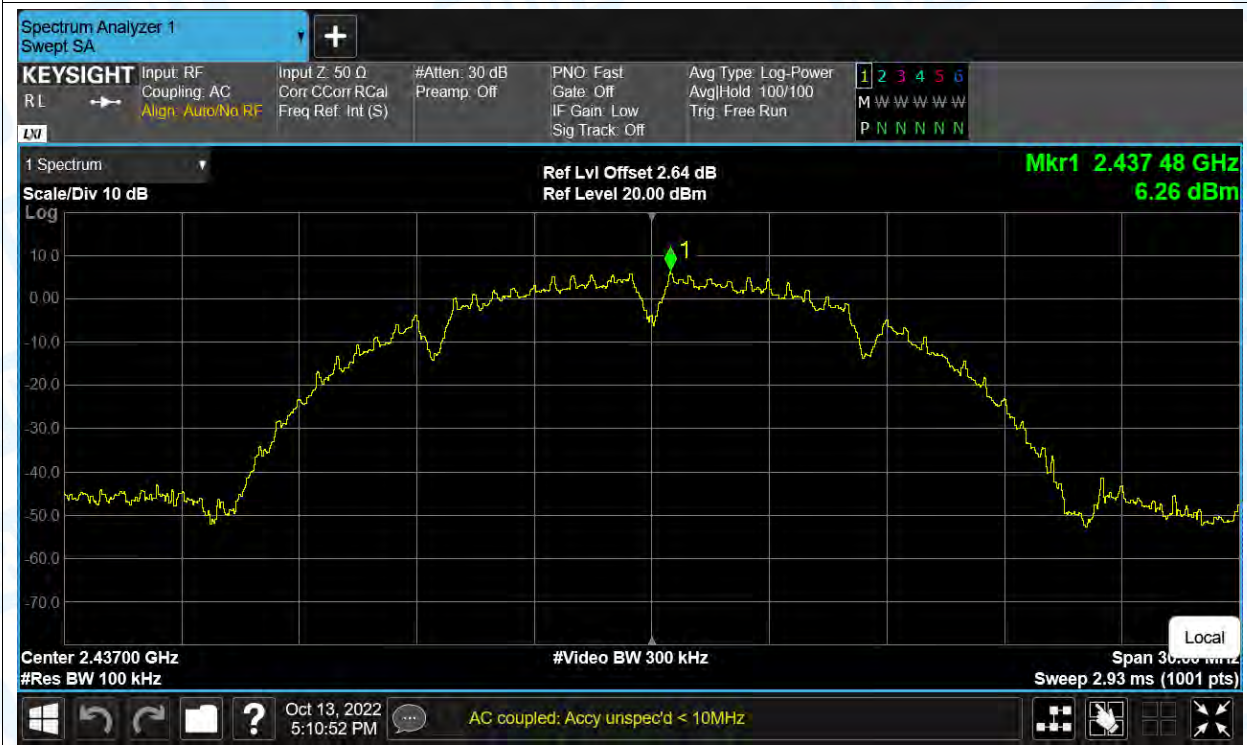
Tx. Spurious NVNT b 2412MHz Ant1 Ref



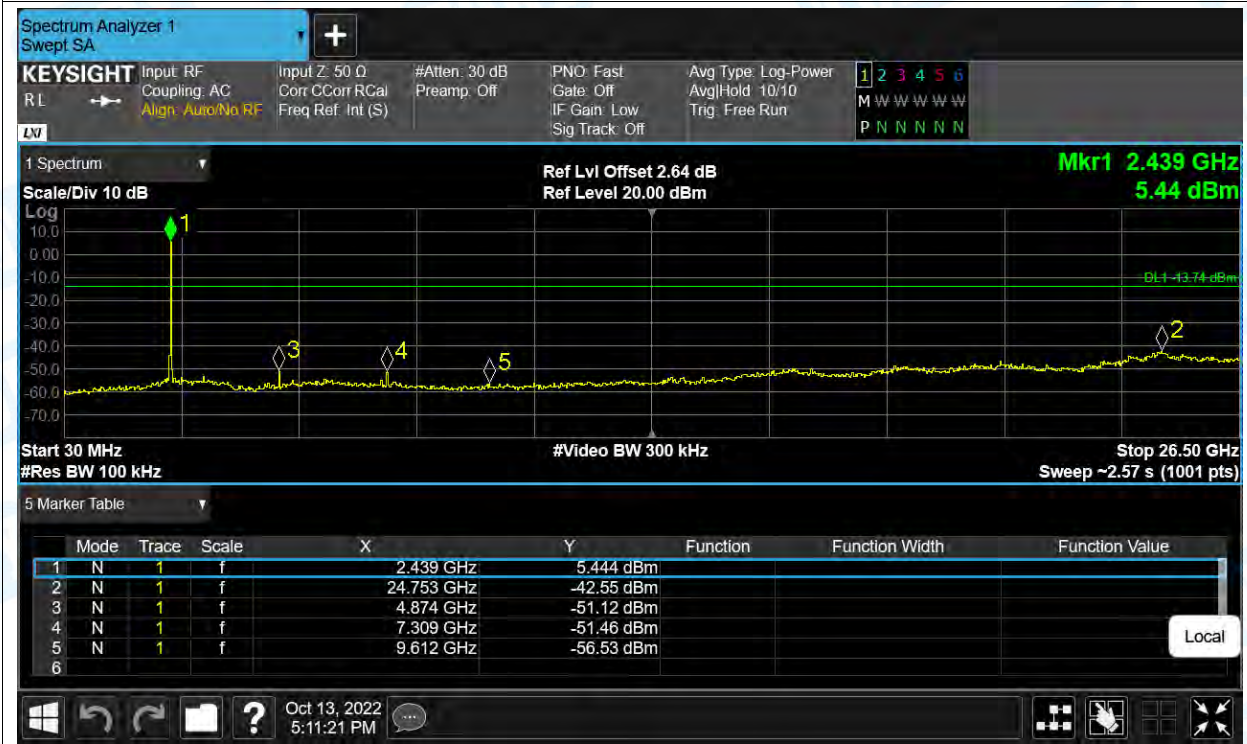
Tx. Spurious NVNT b 2412MHz Ant1 Emission



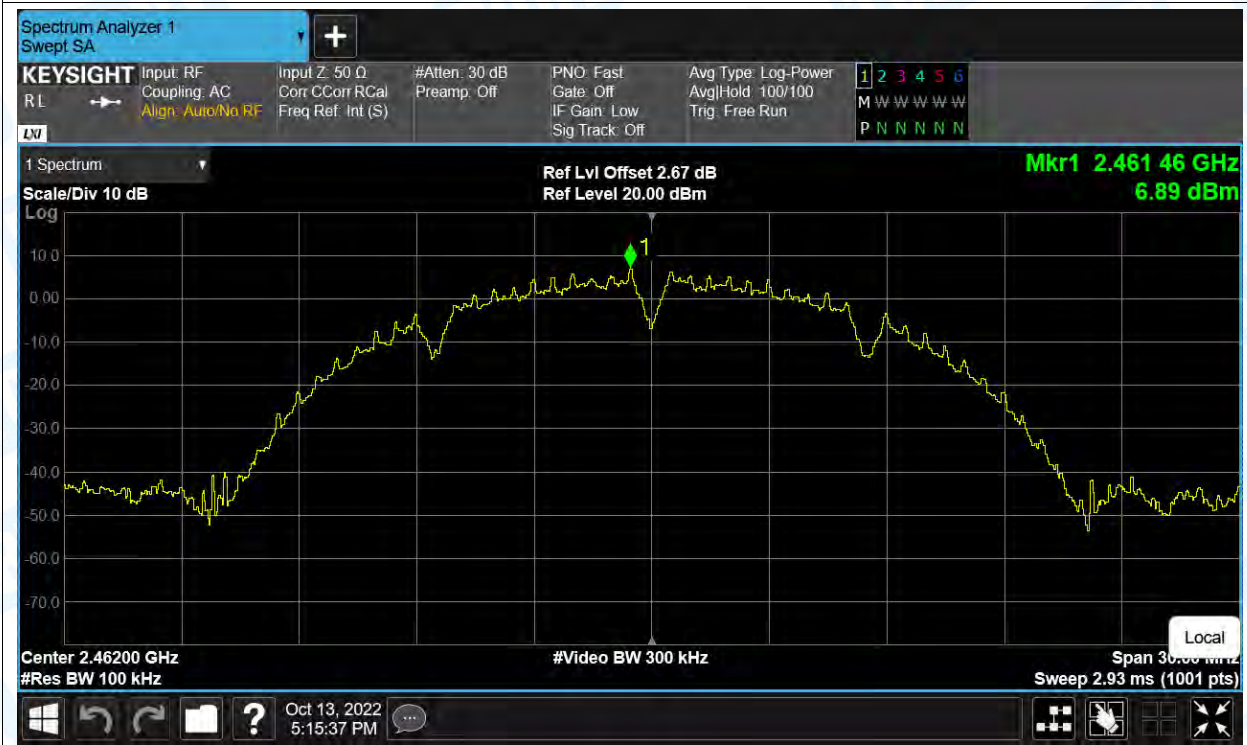
Tx. Spurious NVNT b 2437MHz Ant1 Ref



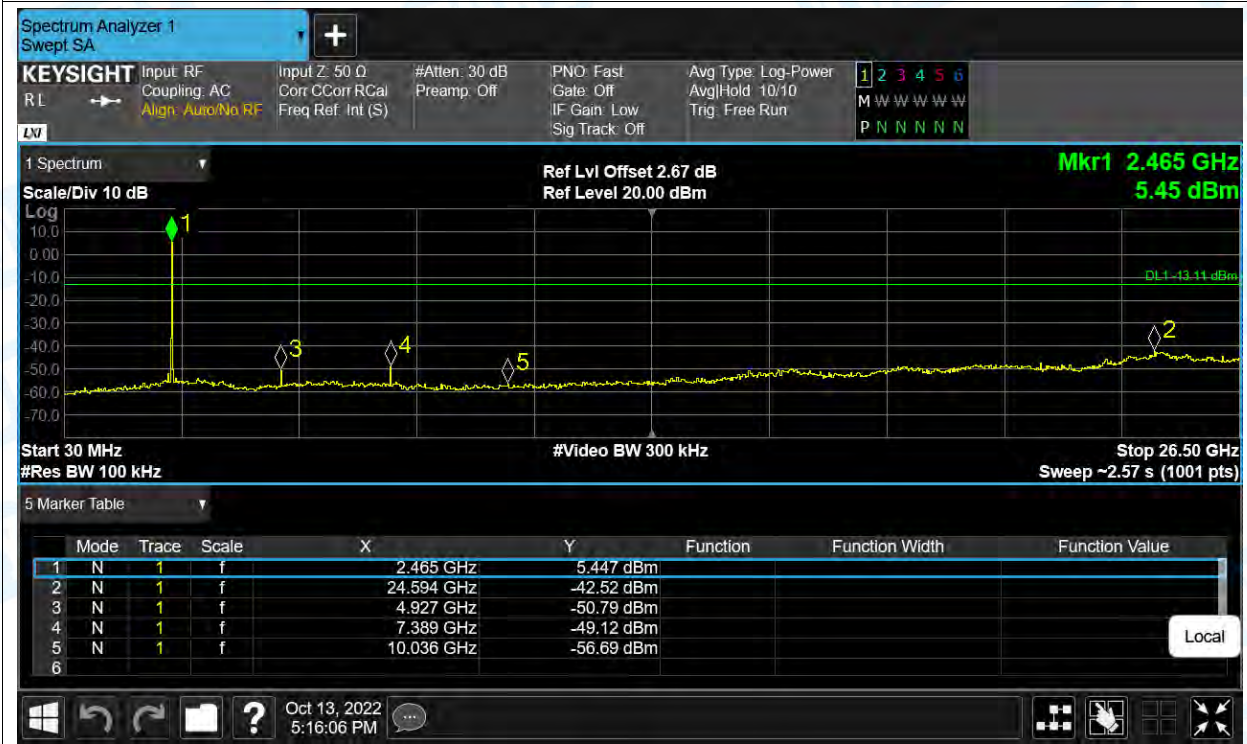
Tx. Spurious NVNT b 2437MHz Ant1 Emission



Tx. Spurious NVNT b 2462MHz Ant1 Ref



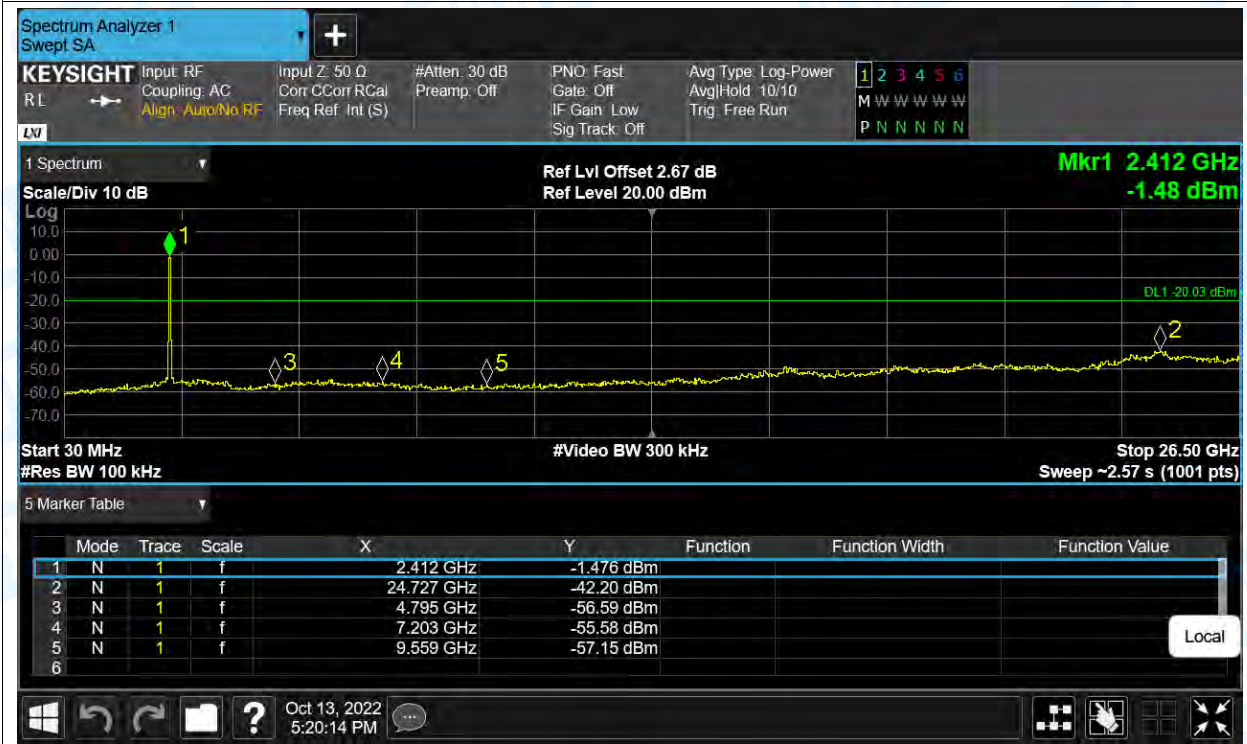
Tx. Spurious NVNT b 2462MHz Ant1 Emission



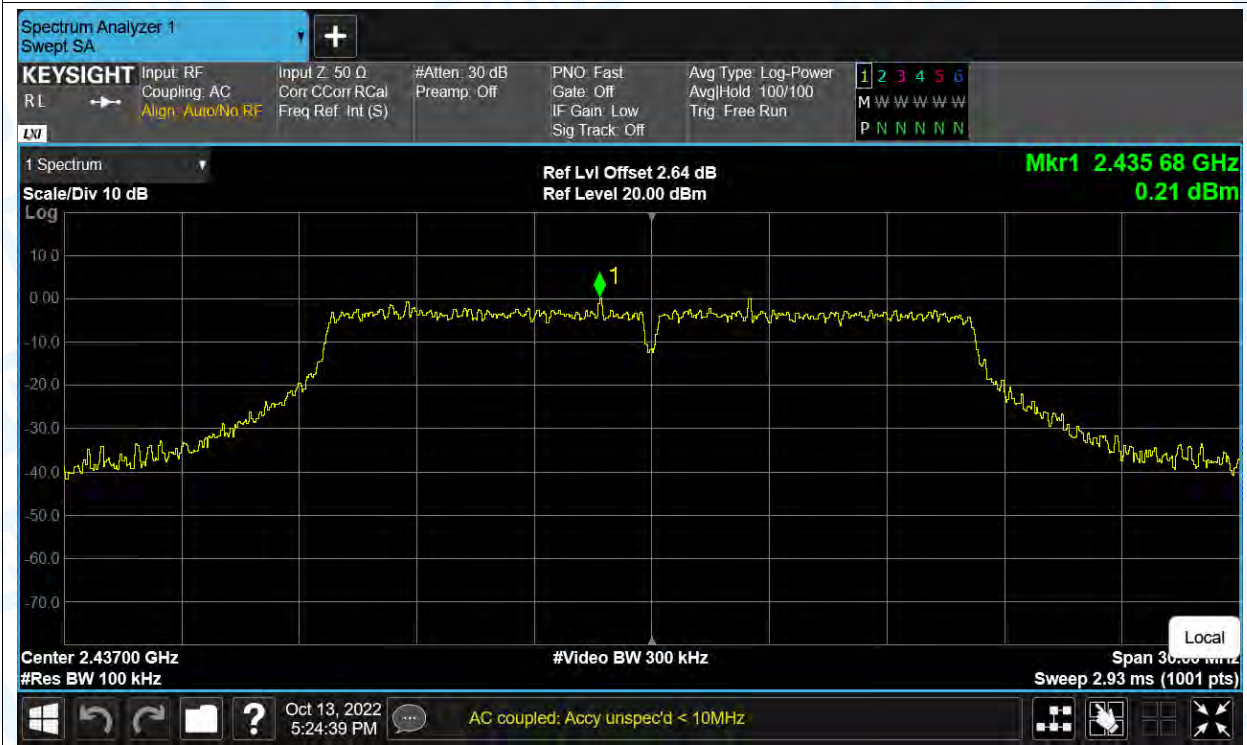
Tx. Spurious NVNT g 2412MHz Ant1 Ref



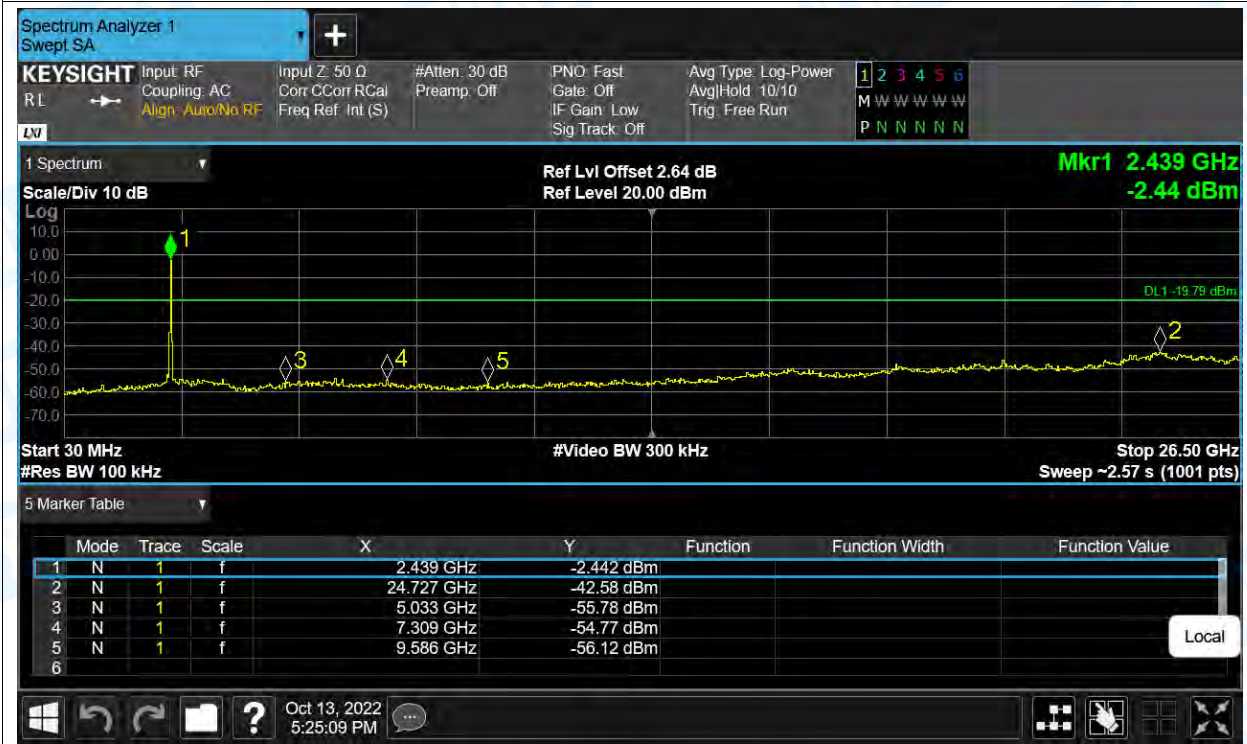
Tx. Spurious NVNT g 2412MHz Ant1 Emission



Tx. Spurious NVNT g 2437MHz Ant1 Ref



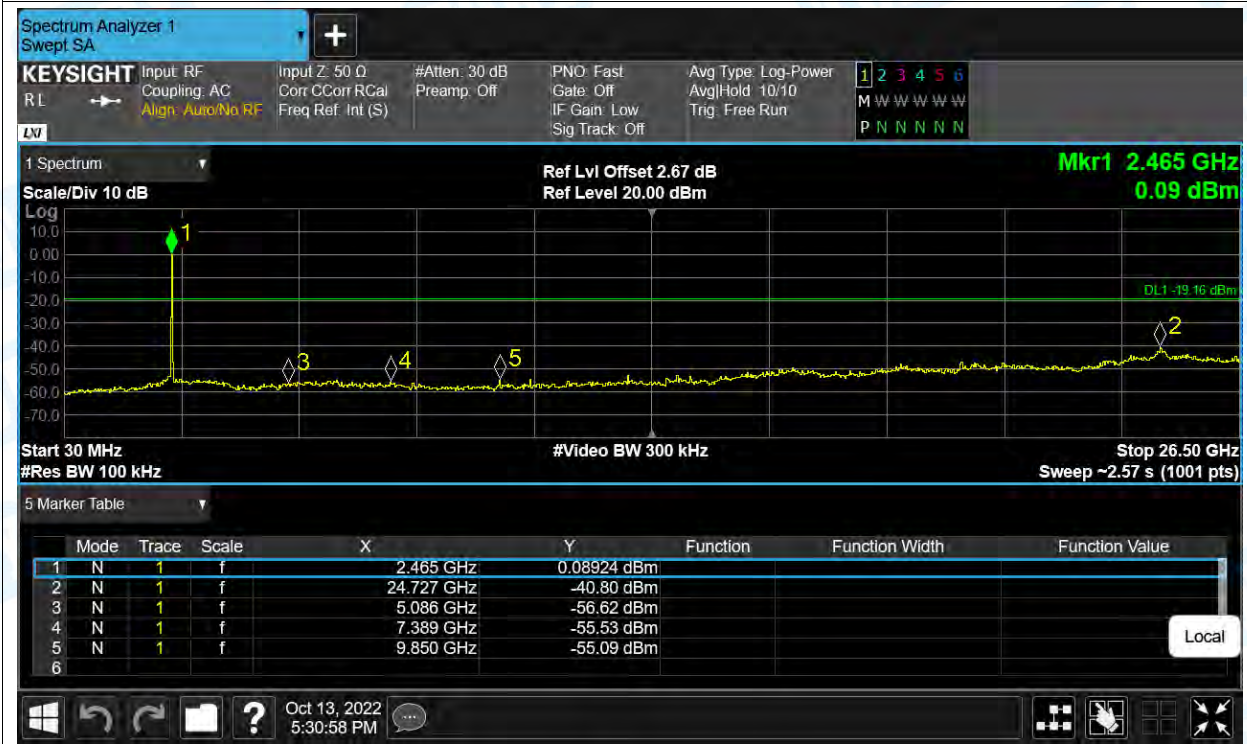
Tx. Spurious NVNT g 2437MHz Ant1 Emission



Tx. Spurious NVNT g 2462MHz Ant1 Ref



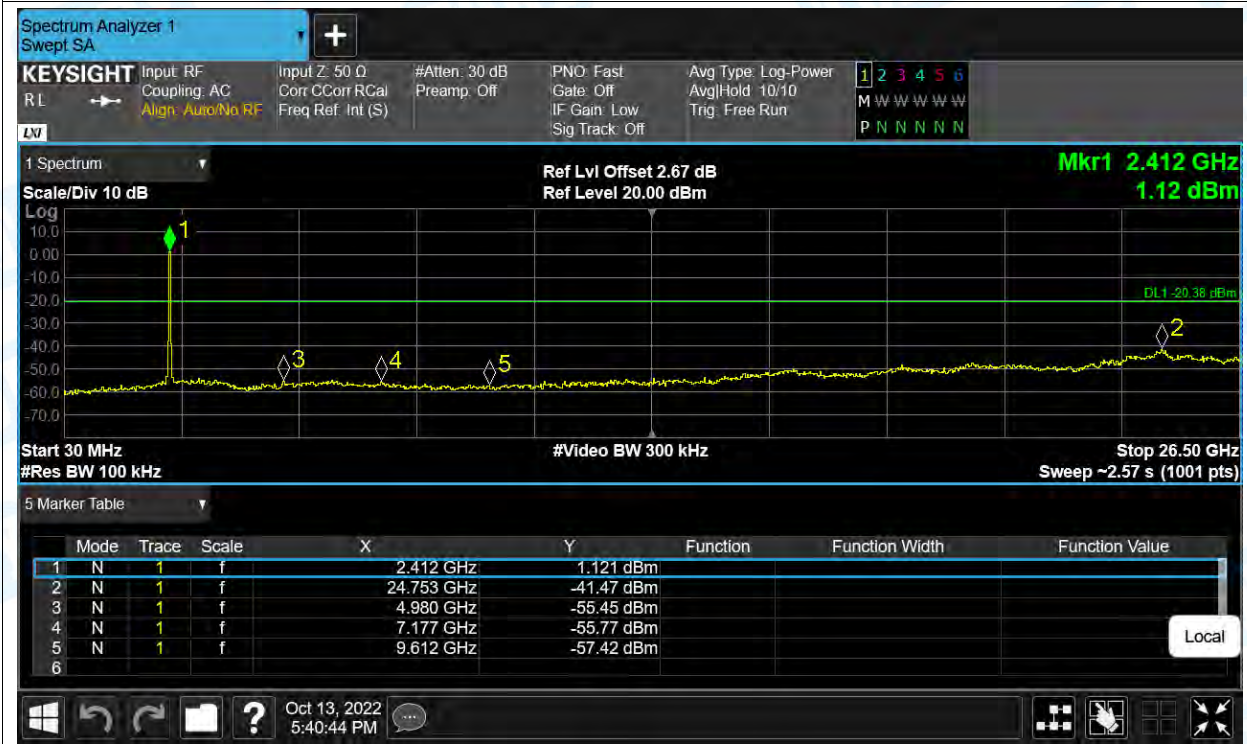
Tx. Spurious NVNT g 2462MHz Ant1 Emission



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



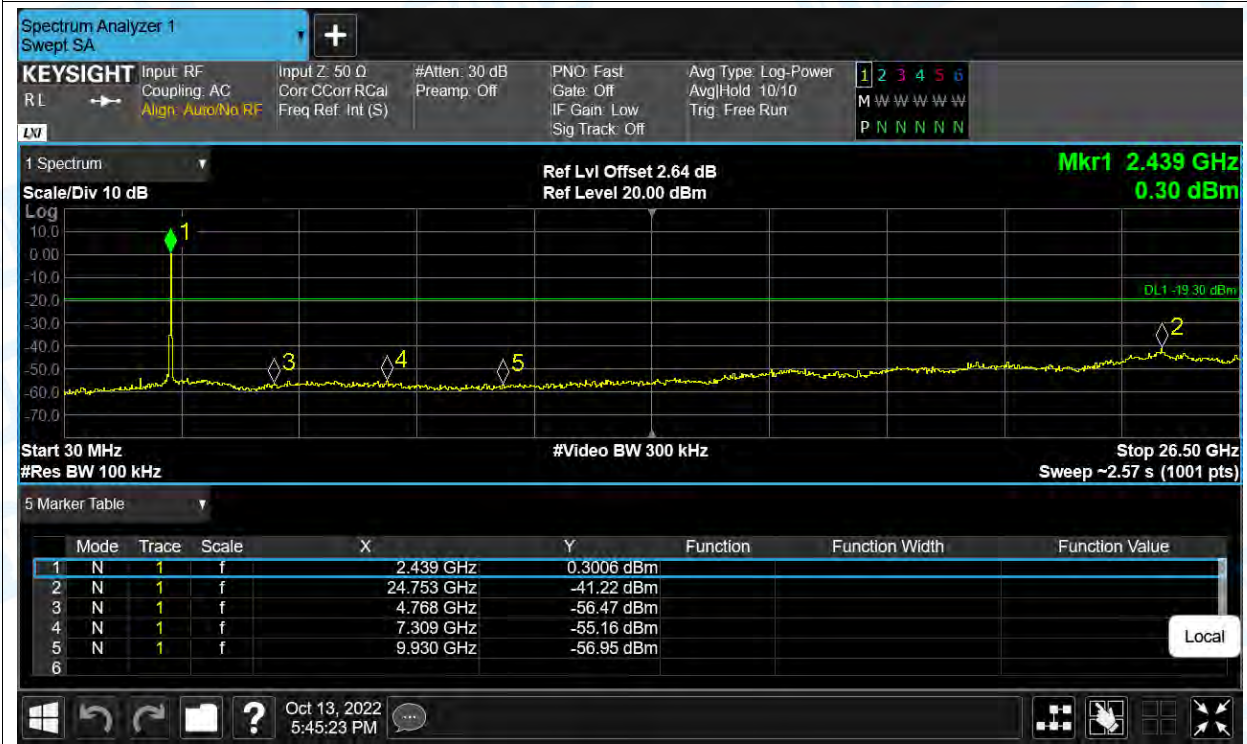
Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Emission



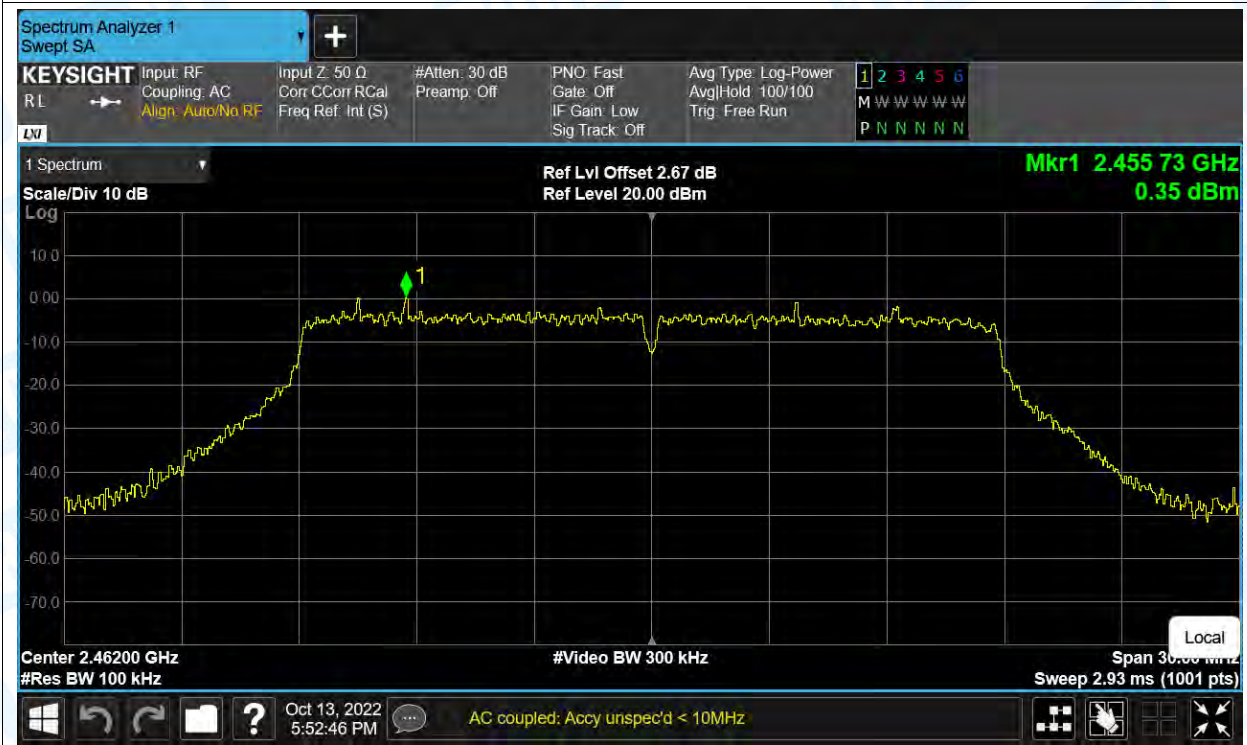
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



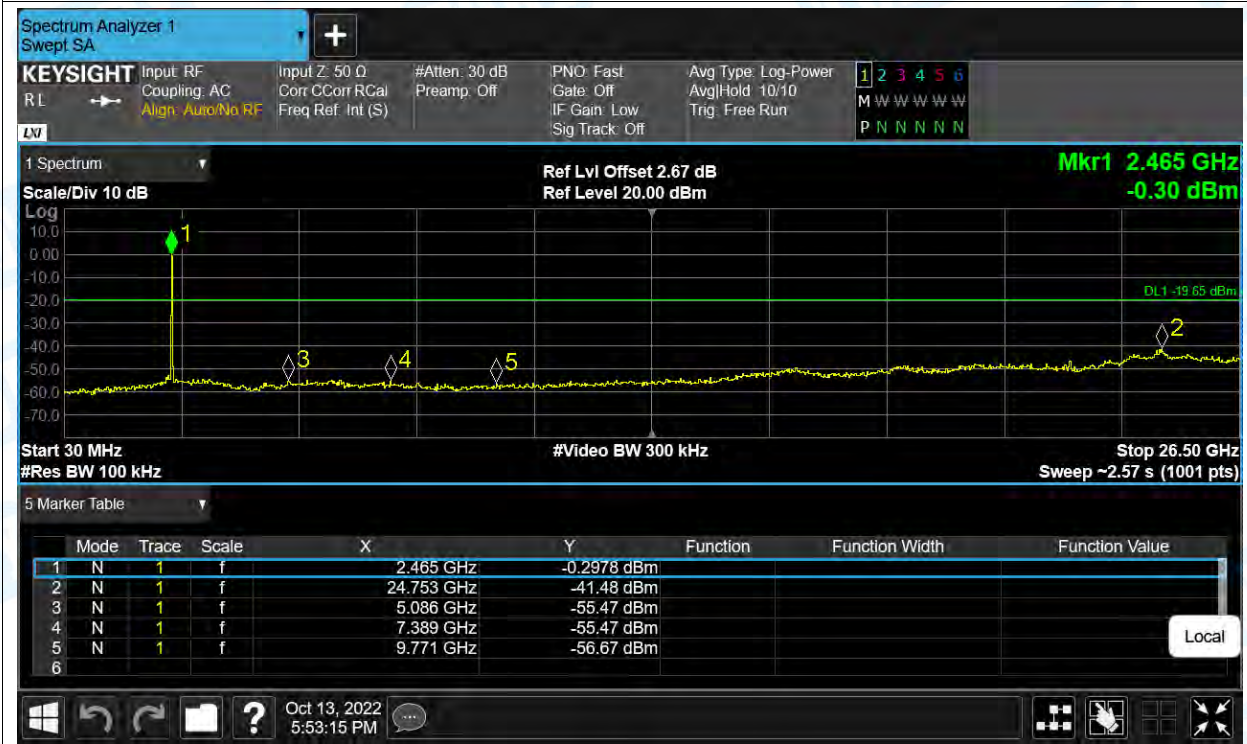
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Emission



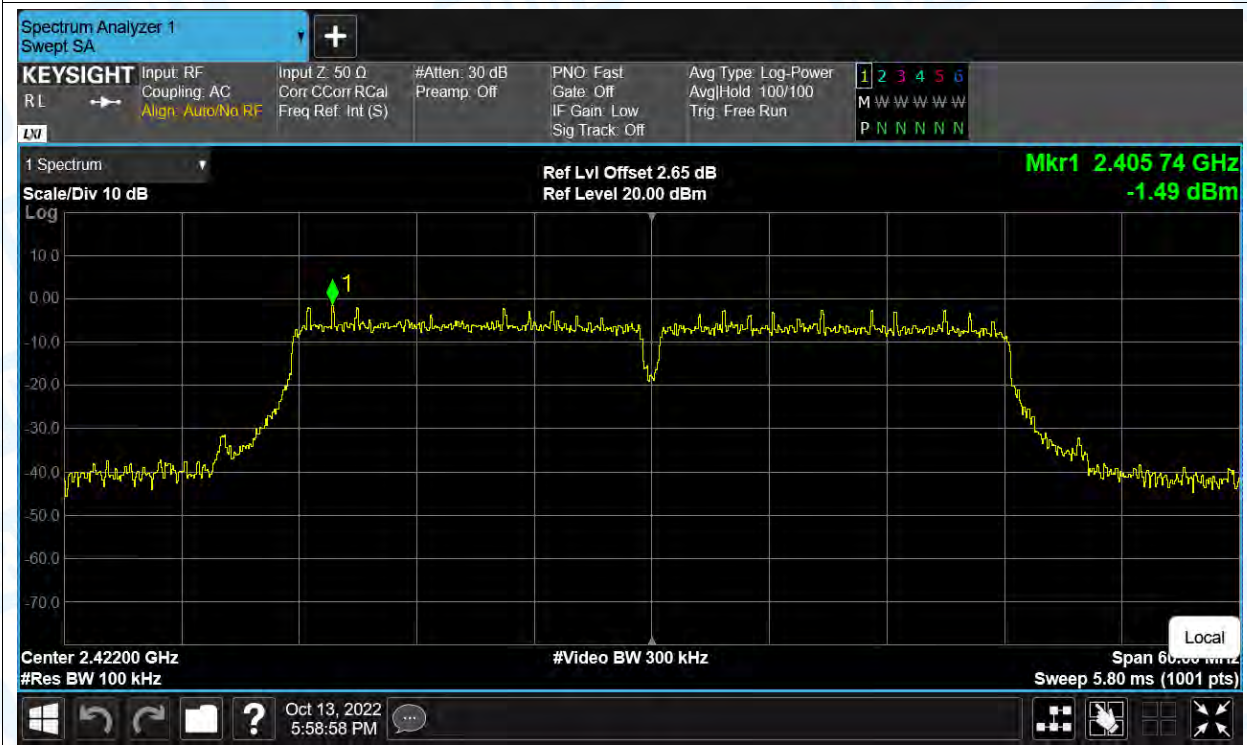
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref



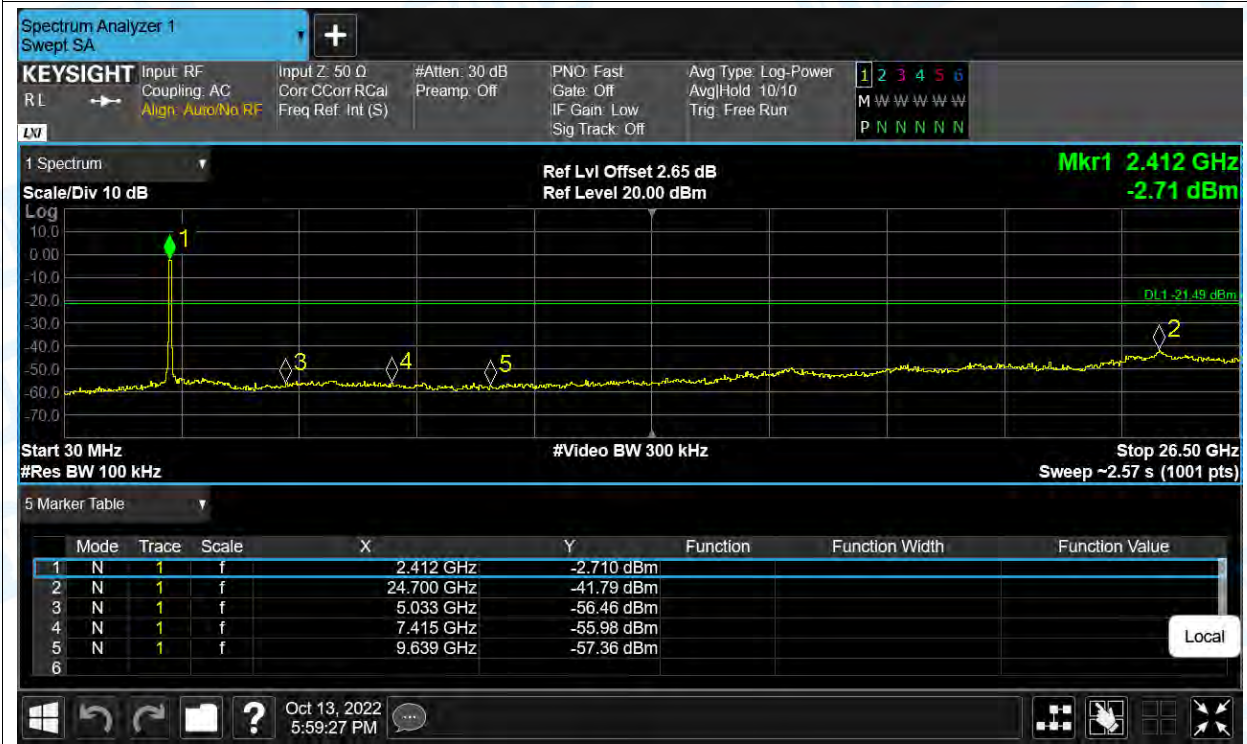
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Emission



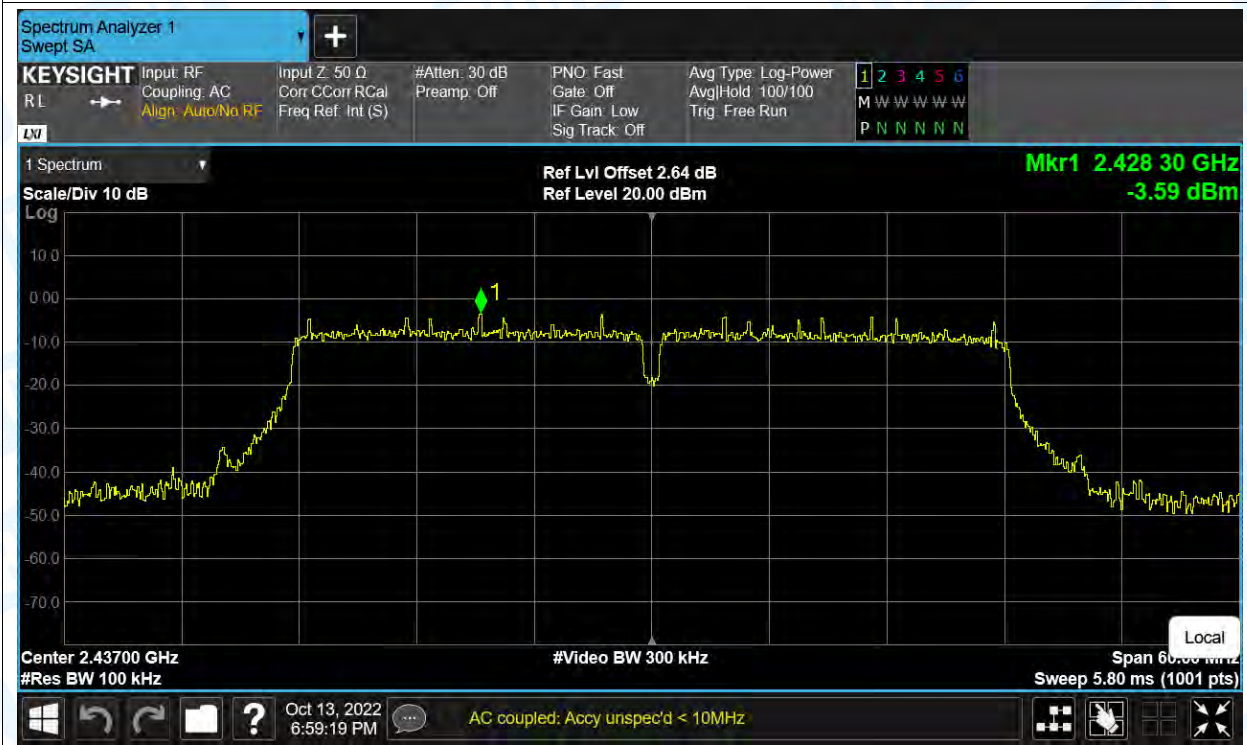
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Ref



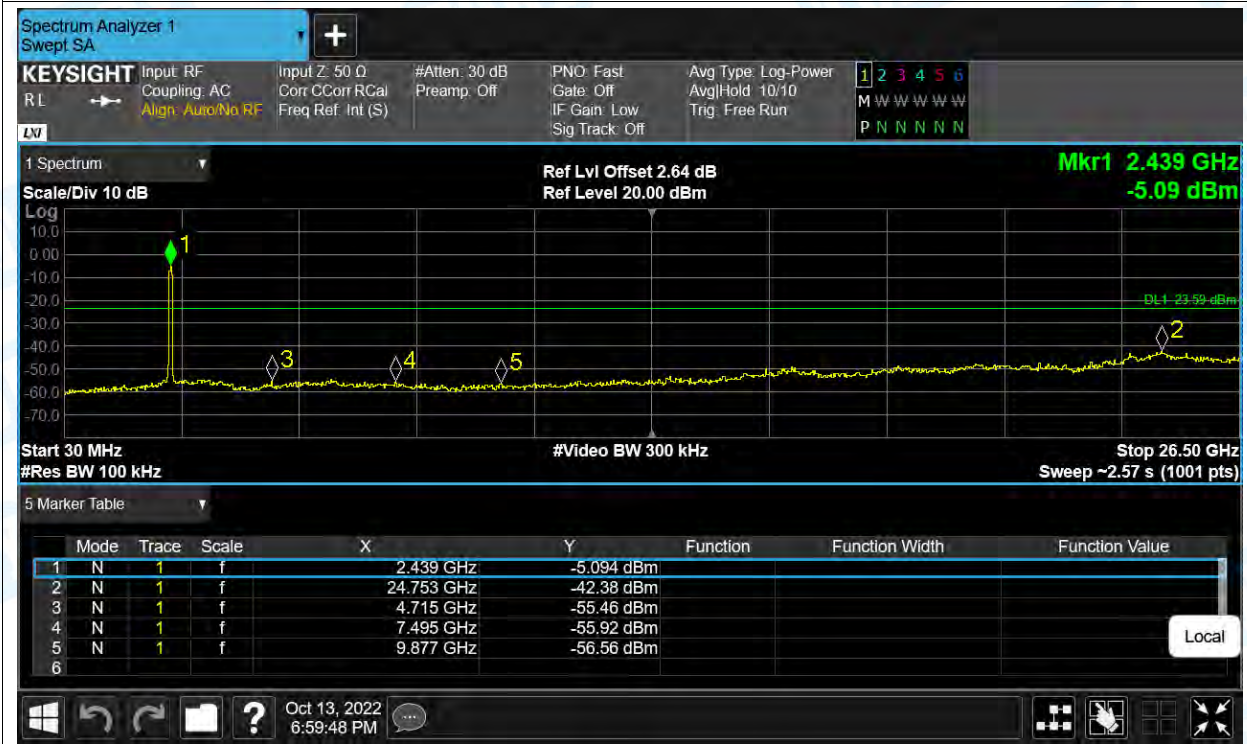
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Emission



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



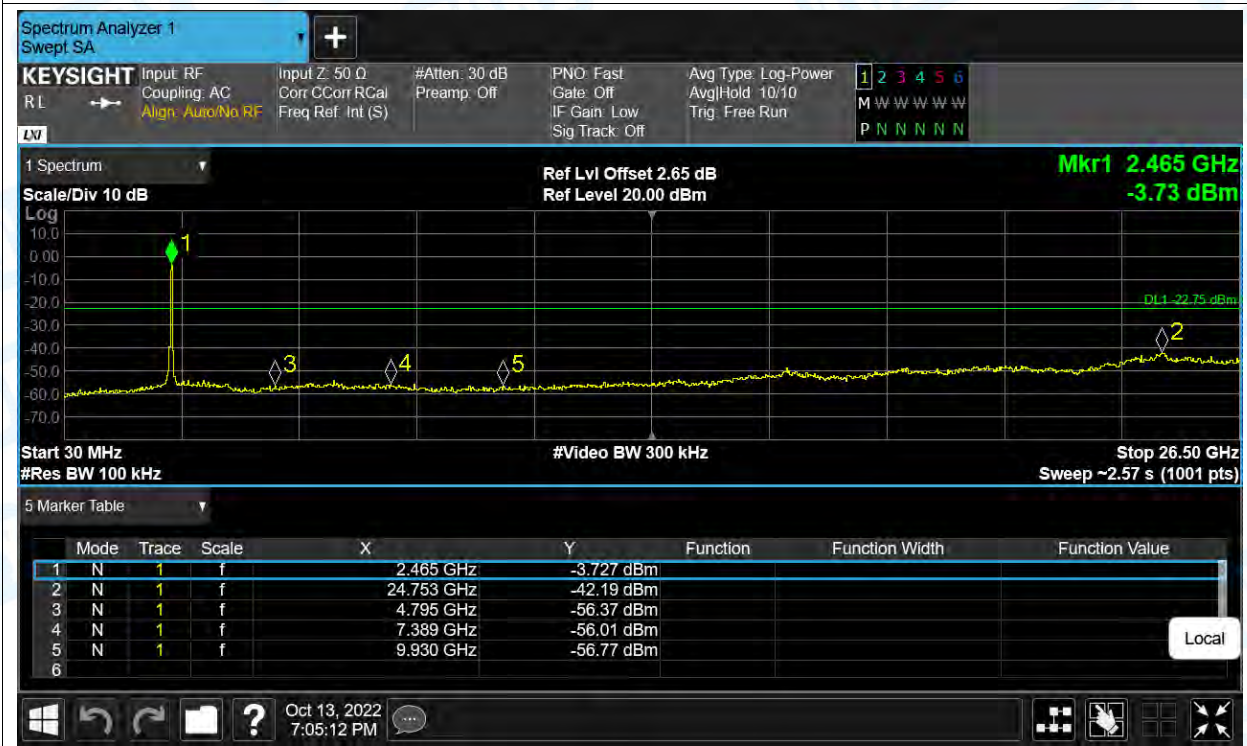
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Emission



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



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



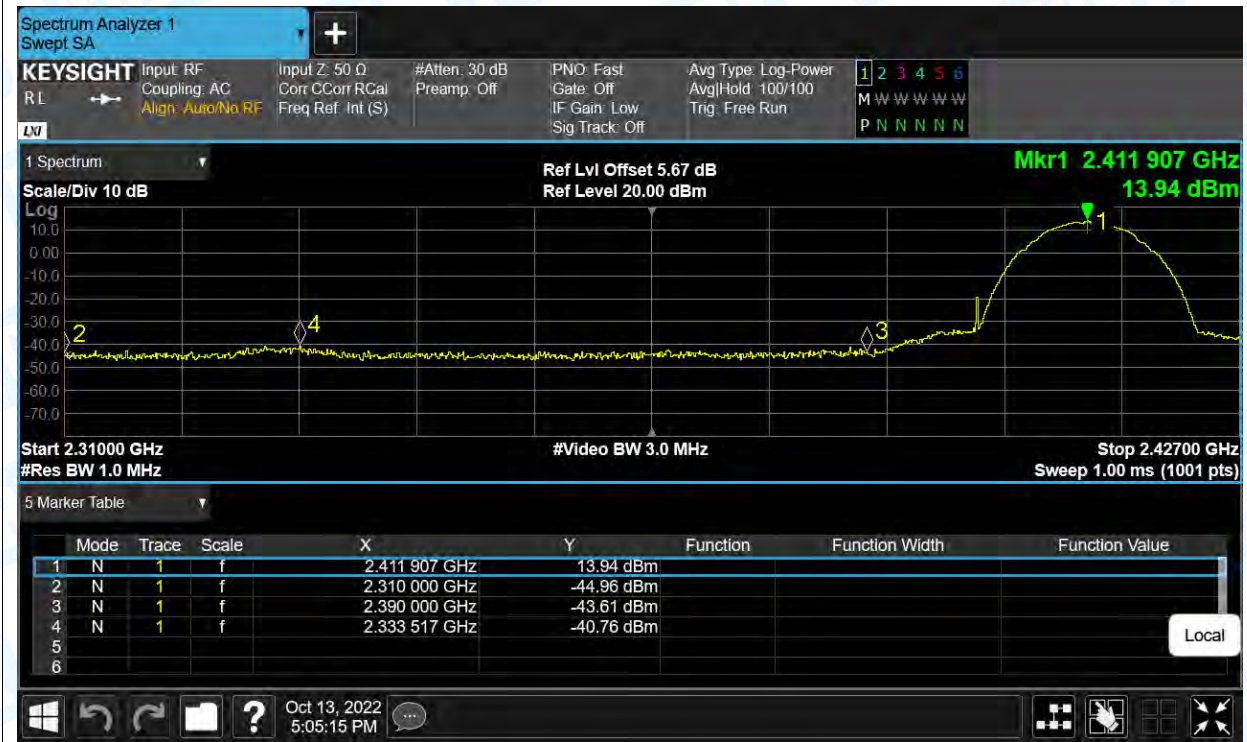
8. Restrict Band

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	-44.96	3	53.3	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-55.24	3	43.02	Average	54	Pass
NVNT	b	2412	Ant1	2333.517	-40.76	3	57.5	Peak	74	Pass
NVNT	b	2412	Ant1	2331.06	-51.09	3	47.17	Average	54	Pass
NVNT	b	2412	Ant1	2390	-43.61	3	54.65	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-53.94	3	44.32	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-43.64	3	54.62	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-54.58	3	43.68	Average	54	Pass
NVNT	b	2462	Ant1	2487.81	-42.23	3	56.03	Peak	74	Pass
NVNT	b	2462	Ant1	2484.683	-54.37	3	43.89	Average	54	Pass
NVNT	b	2462	Ant1	2500	-43.76	3	54.5	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-54.96	3	43.3	Average	54	Pass
NVNT	g	2412	Ant1	2310	-44.36	3	53.9	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-55.05	3	43.21	Average	54	Pass
NVNT	g	2412	Ant1	2389.911	-33.33	3	64.93	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-48.55	3	49.71	Average	54	Pass
NVNT	g	2412	Ant1	2390	-35.08	3	63.18	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-48.51	3	49.75	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-36.04	3	62.22	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-52.52	3	45.74	Average	54	Pass
NVNT	g	2462	Ant1	2484.259	-31.56	3	66.7	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-52.52	3	45.74	Average	54	Pass
NVNT	g	2462	Ant1	2500	-42.35	3	55.91	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-54.85	3	43.41	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-45.49	3	52.77	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-55.05	3	43.21	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2389.326	-28.31	3	69.95	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2389.911	-47.03	3	51.23	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-30.63	3	67.63	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-46.79	3	51.47	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-36.51	3	61.75	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-52.34	3	45.92	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2484.418	-33.07	3	65.19	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.623	-52.18	3	46.08	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-43.87	3	54.39	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-54.39	3	43.87	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2310	-45.06	3	53.2	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2310	-55.06	3	43.2	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2389.662	-30.93	3	67.33	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2389.804	-46.75	3	51.51	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2390	-32.29	3	65.97	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2390	-46.6	3	51.66	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-37.13	3	61.13	Peak	74	Pass

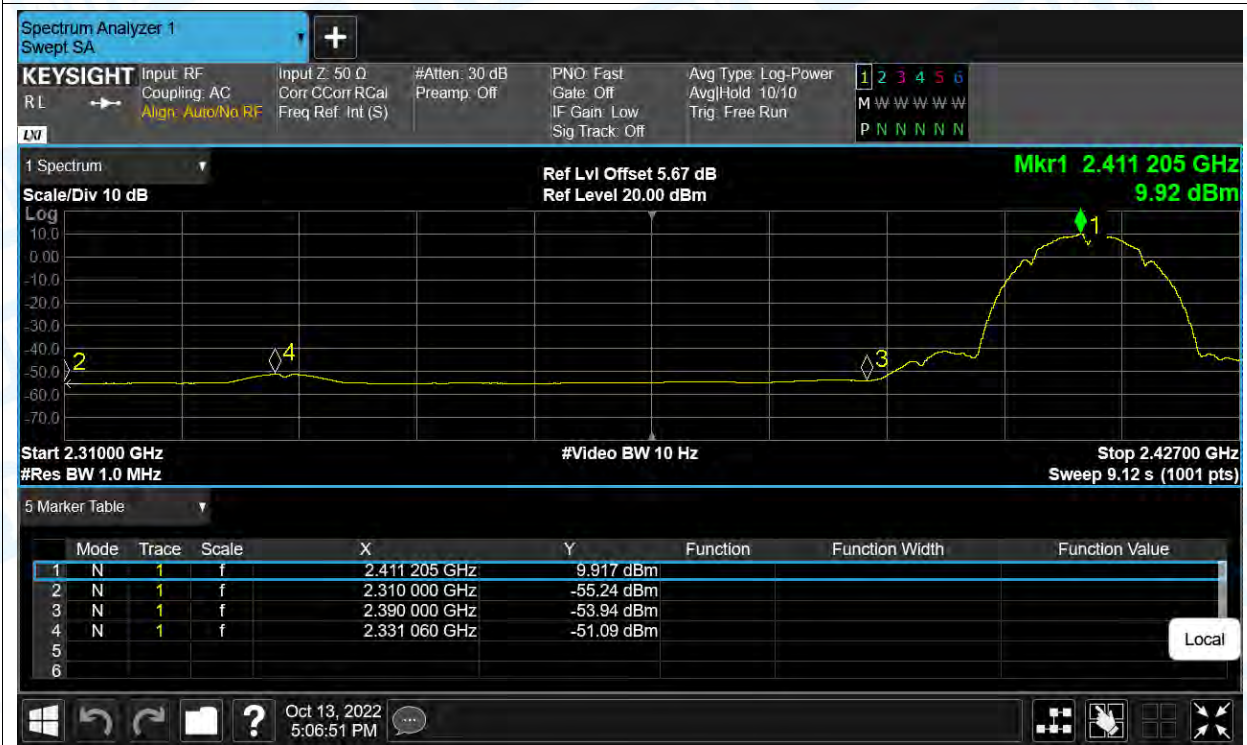
NVNT	n(HT40)	2452	Ant1	2483.5	-49.99	3	48.27	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.932	-32.55	3	65.71	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2483.776	-49.92	3	48.34	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2500	-42.45	3	55.81	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2500	-54.22	3	44.04	Average	54	Pass

Test Graphs

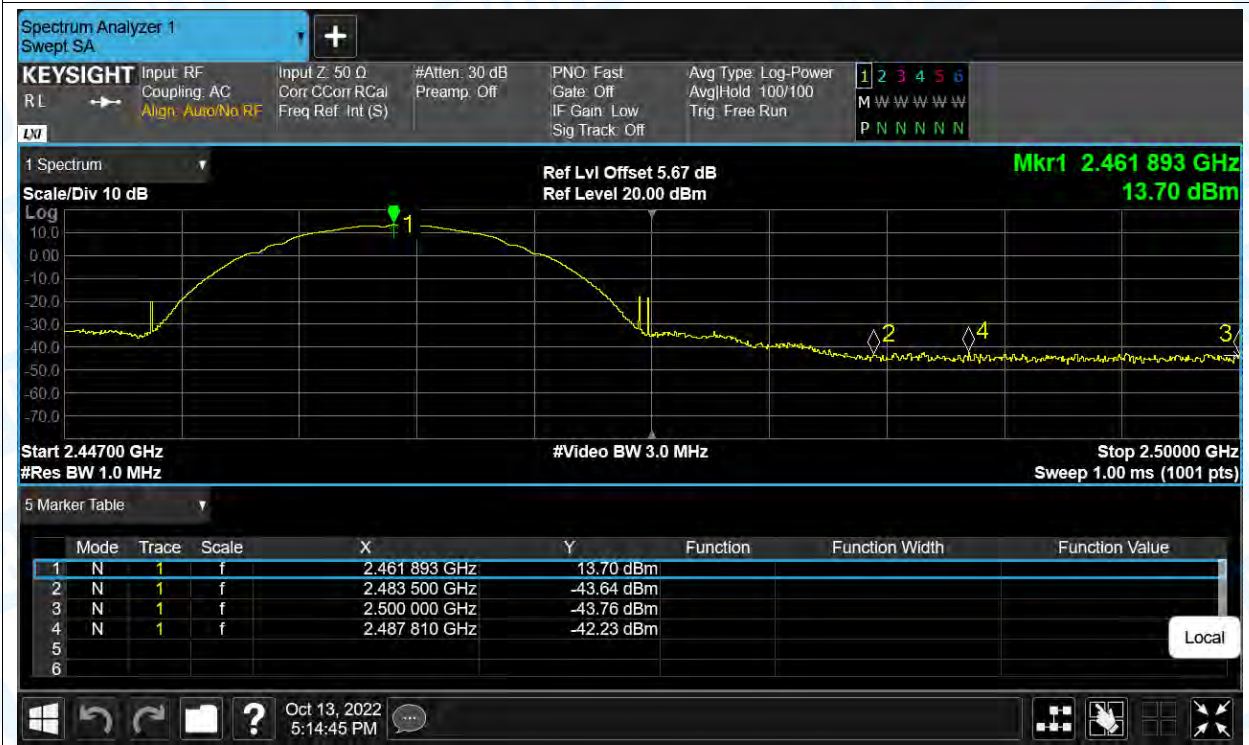
Restrict Band NVNT b 2412MHz Ant1 Peak



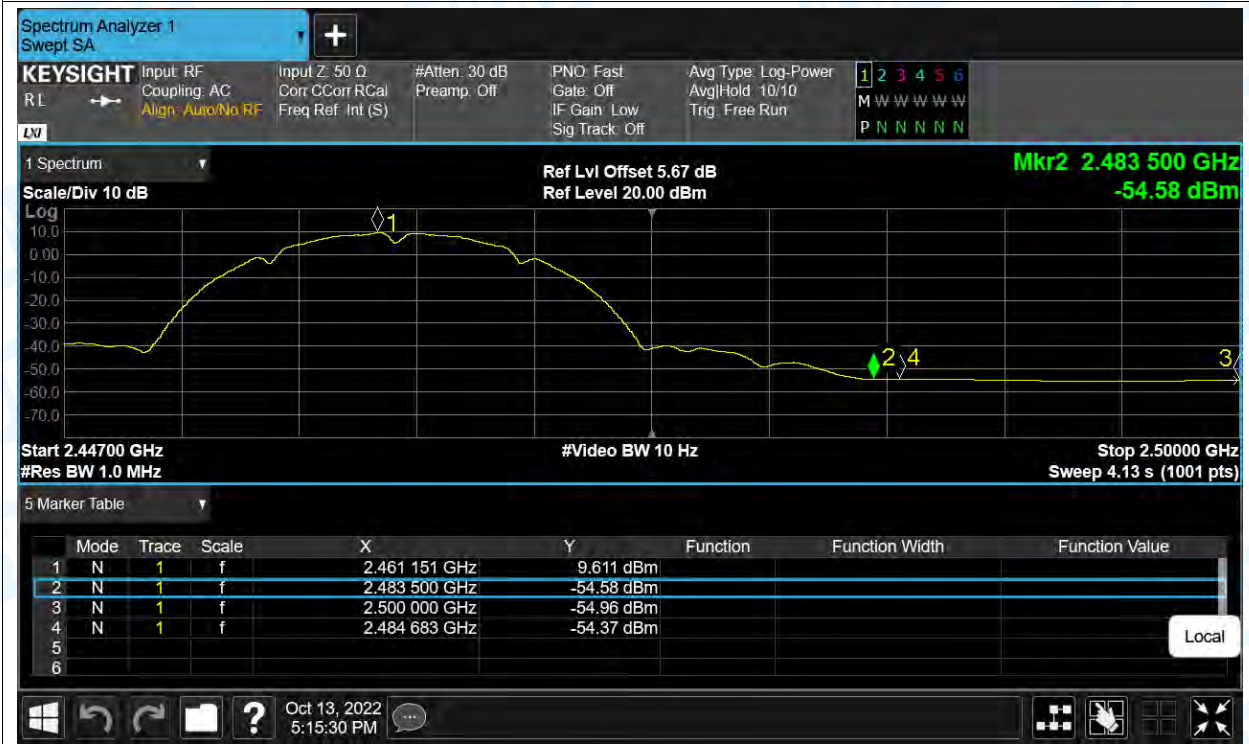
Restrict Band NVNT b 2412MHz Ant1 Average



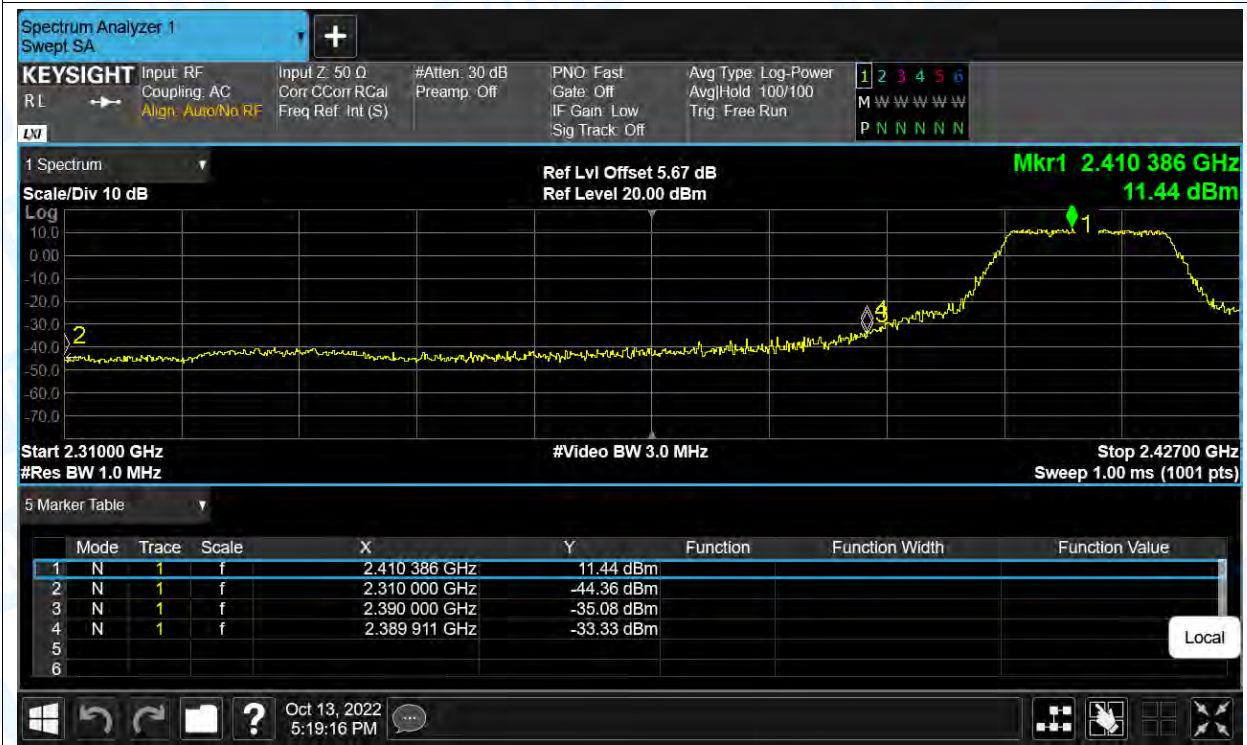
Restrict Band NVNT b 2462MHz Ant1 Peak



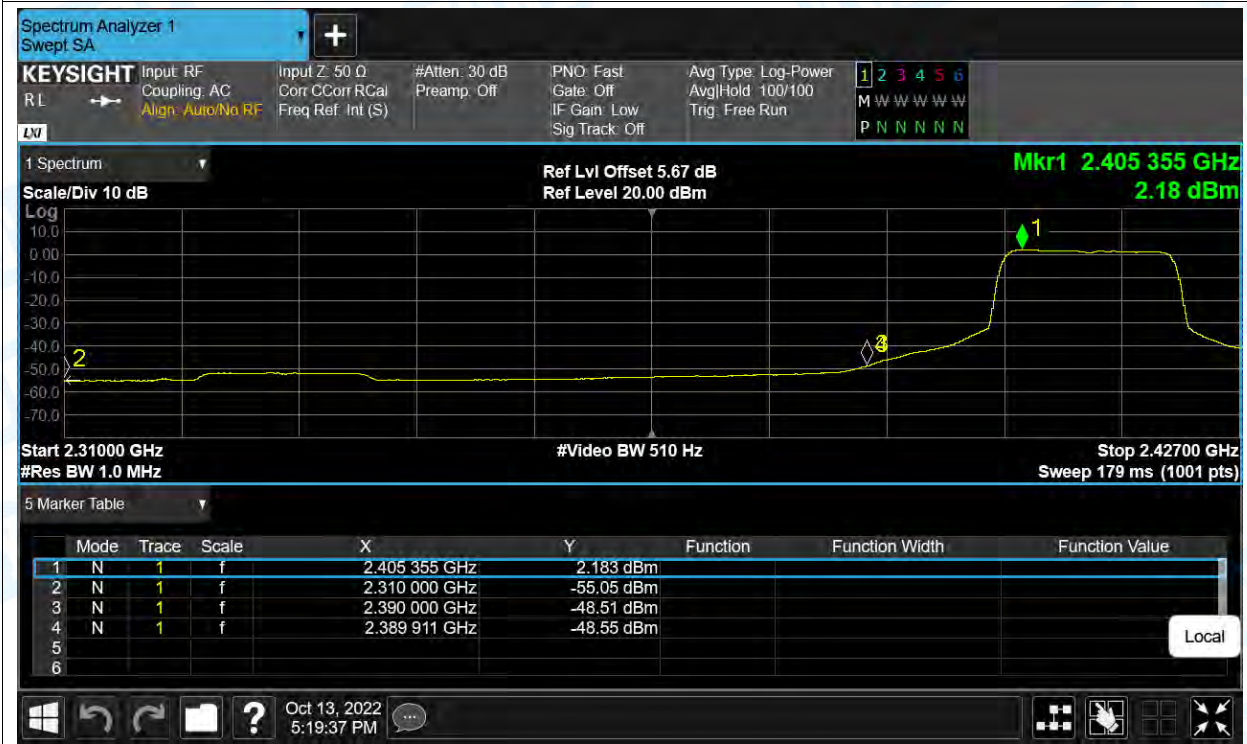
Restrict Band NVNT b 2462MHz Ant1 Average



Restrict Band NVNT g 2412MHz Ant1 Peak



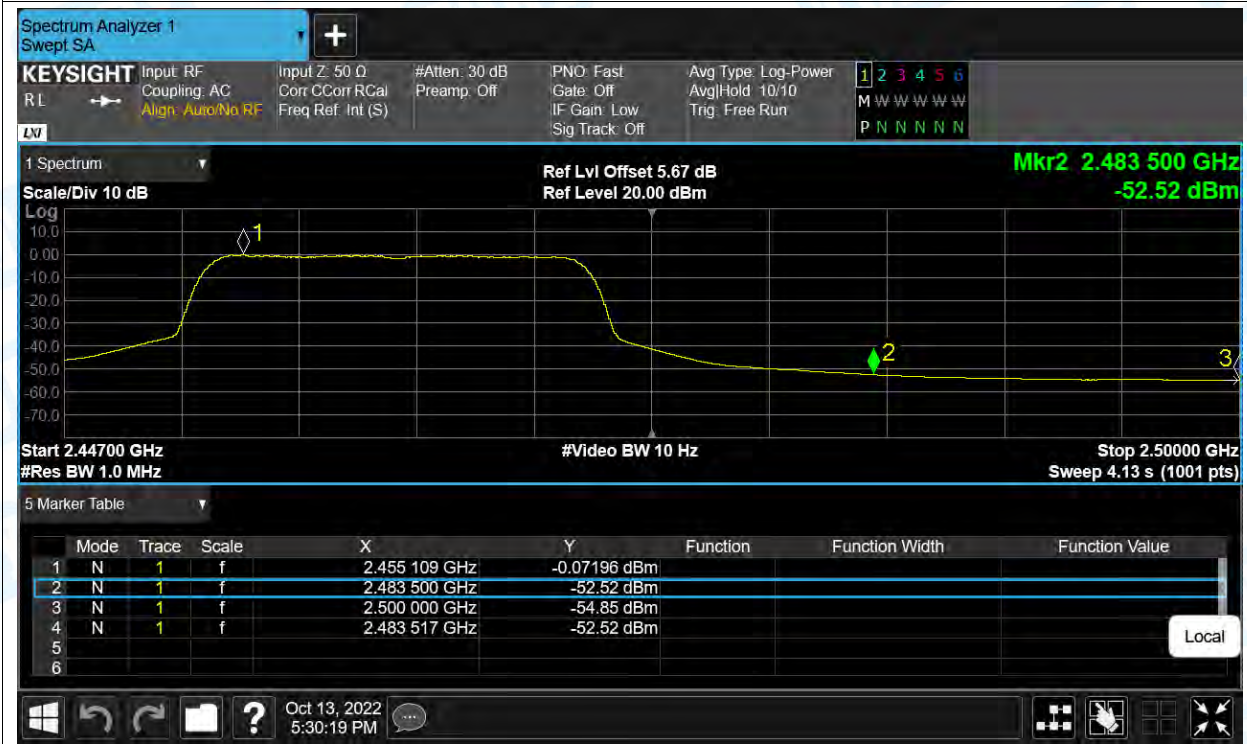
Restrict Band NVNT g 2412MHz Ant1 Average



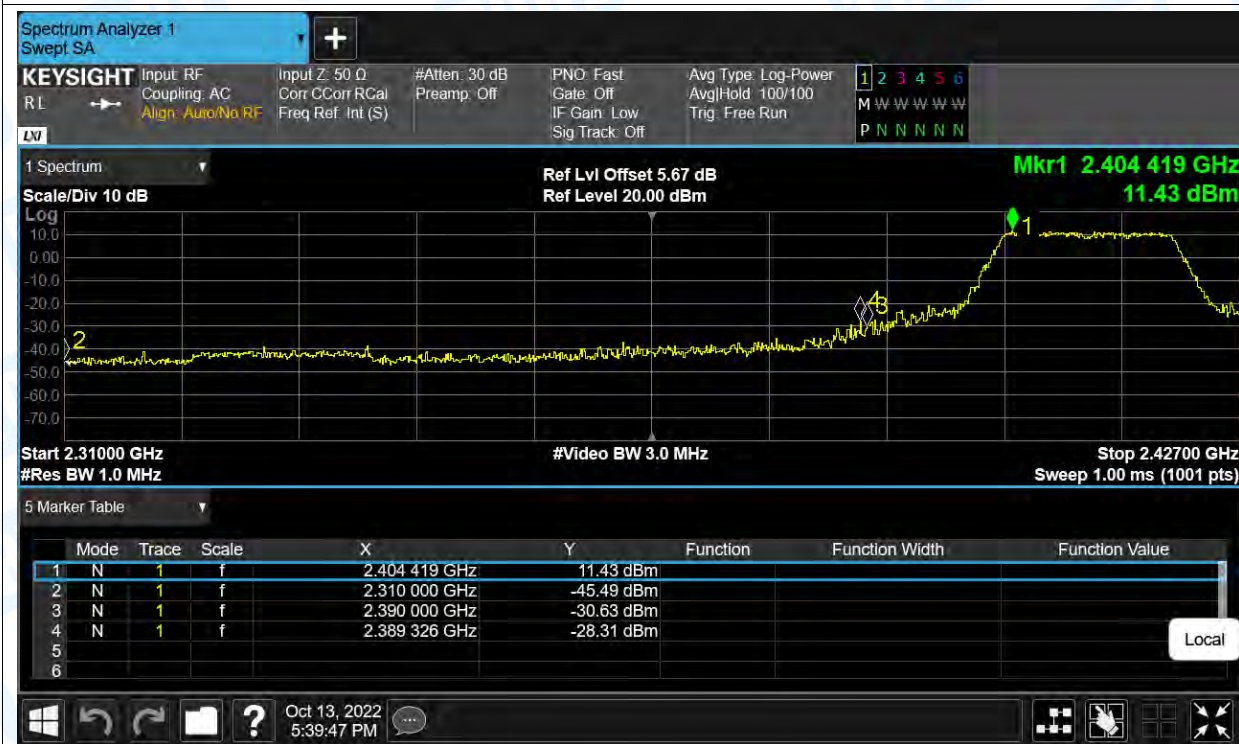
Restrict Band NVNT g 2462MHz Ant1 Peak



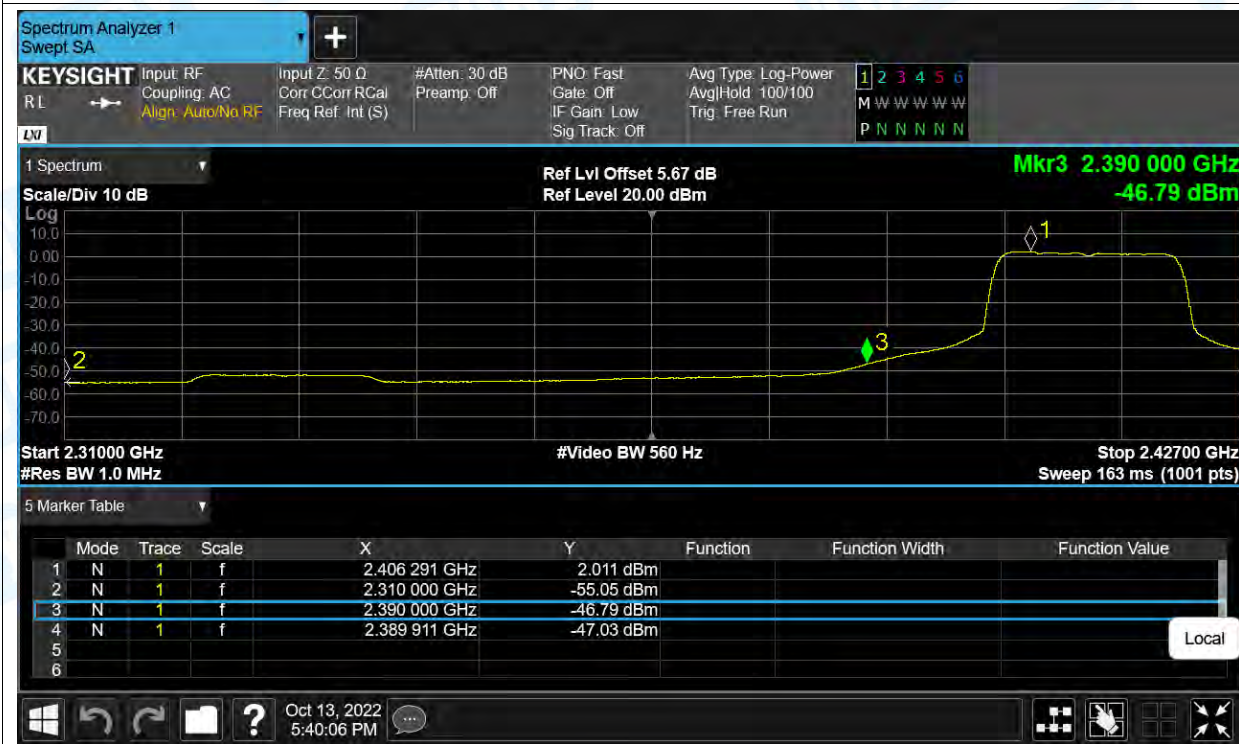
Restrict Band NVNT g 2462MHz Ant1 Average



Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak



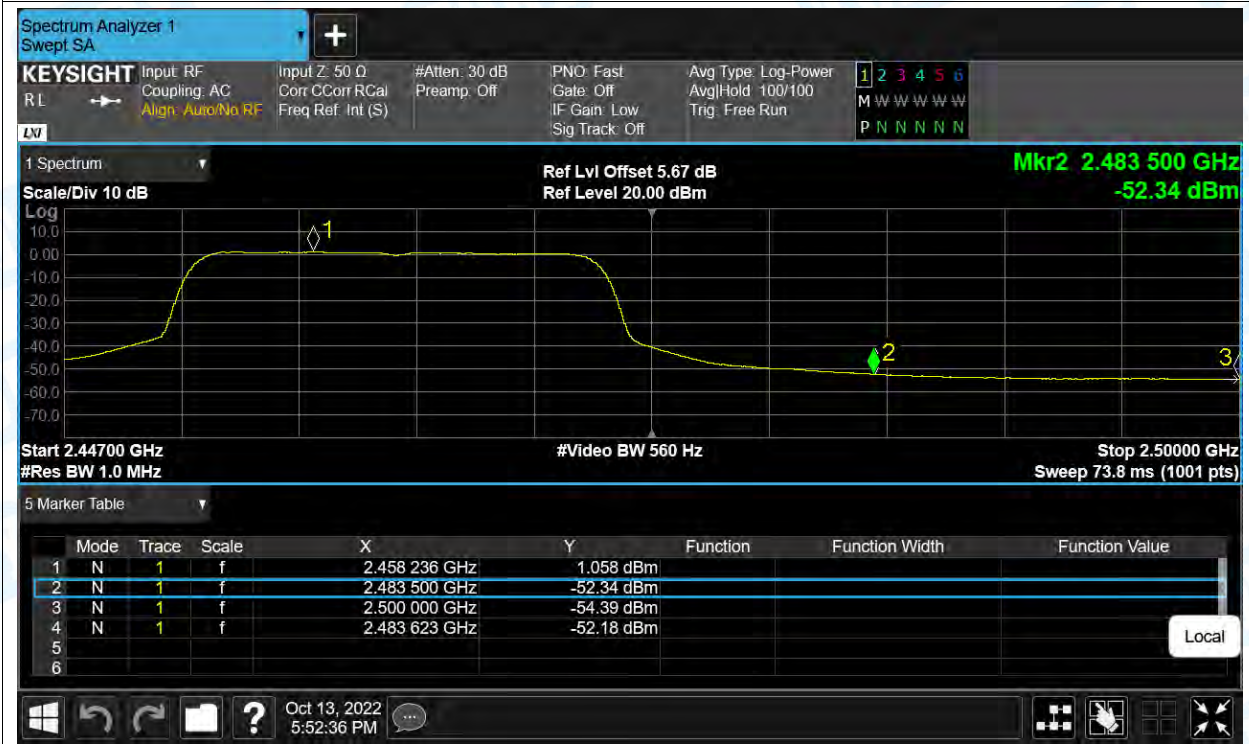
Restrict Band NVNT n(HT20) 2412MHz Ant1 Average



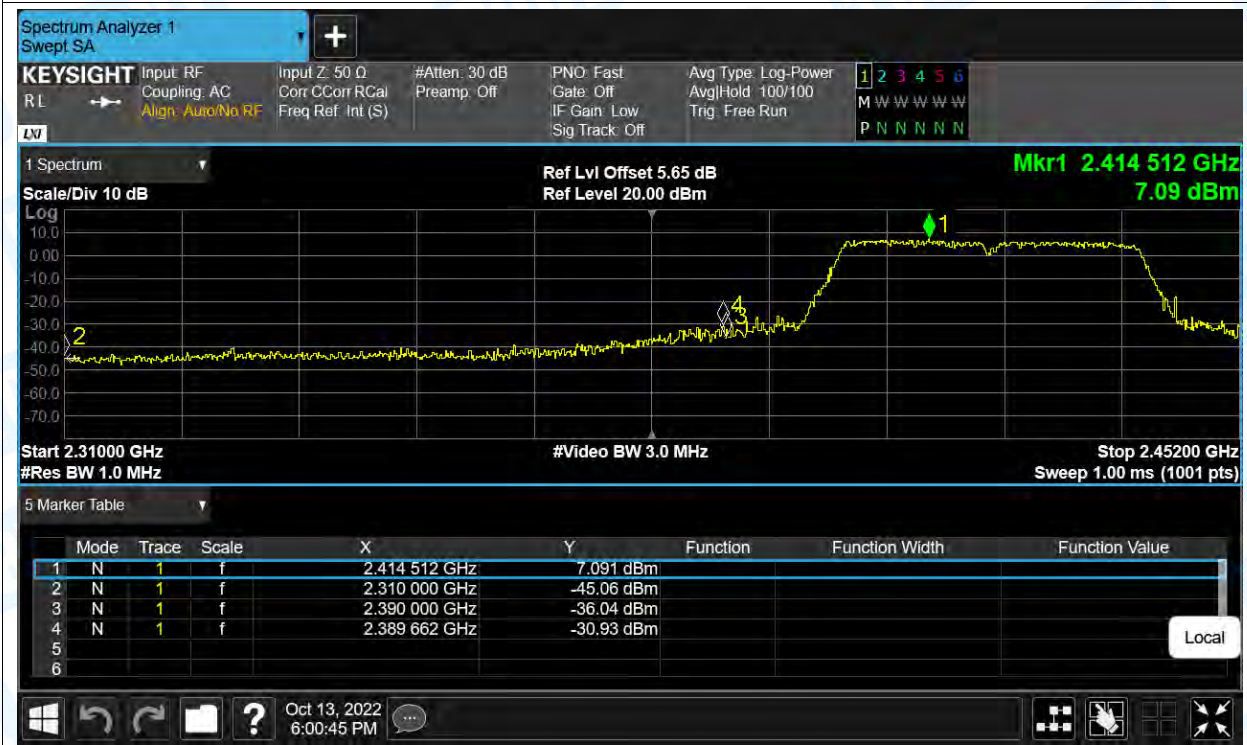
Restrict Band NVNT n(HT20) 2462MHz Ant1 Peak



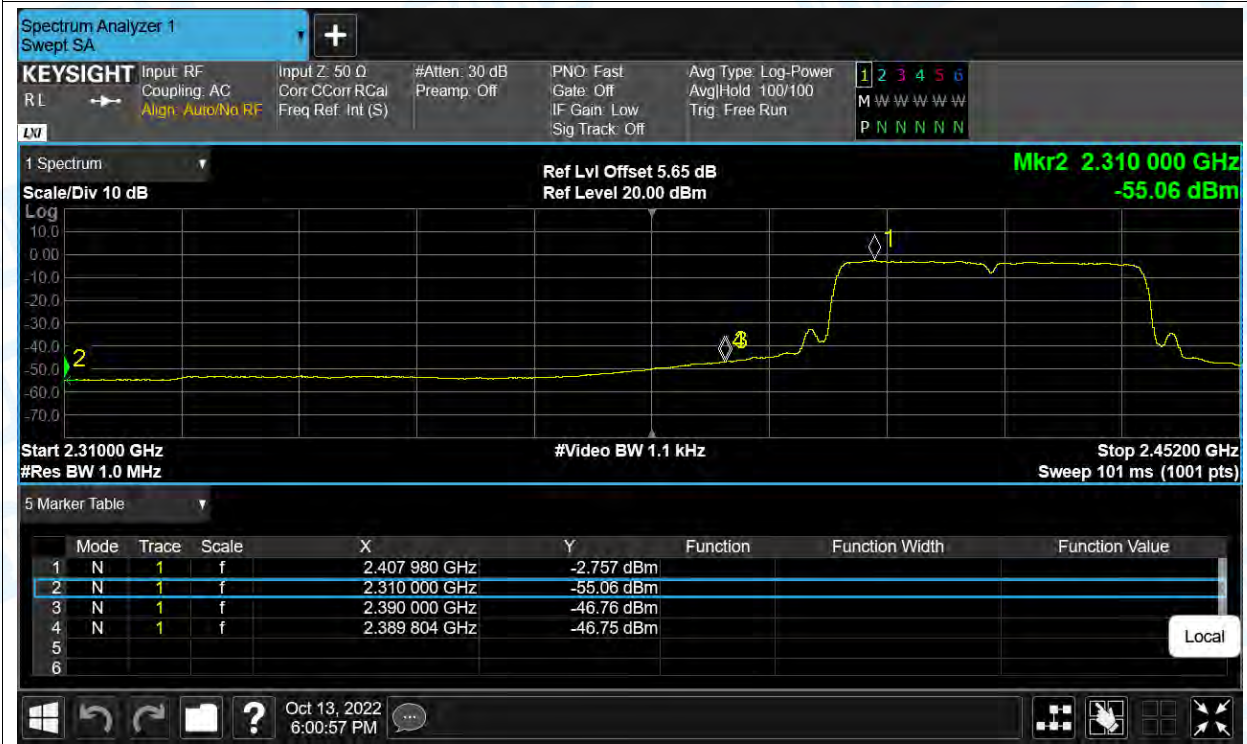
Restrict Band NVNT n(HT20) 2462MHz Ant1 Average



Restrict Band NVNT n(HT40) 2422MHz Ant1 Peak



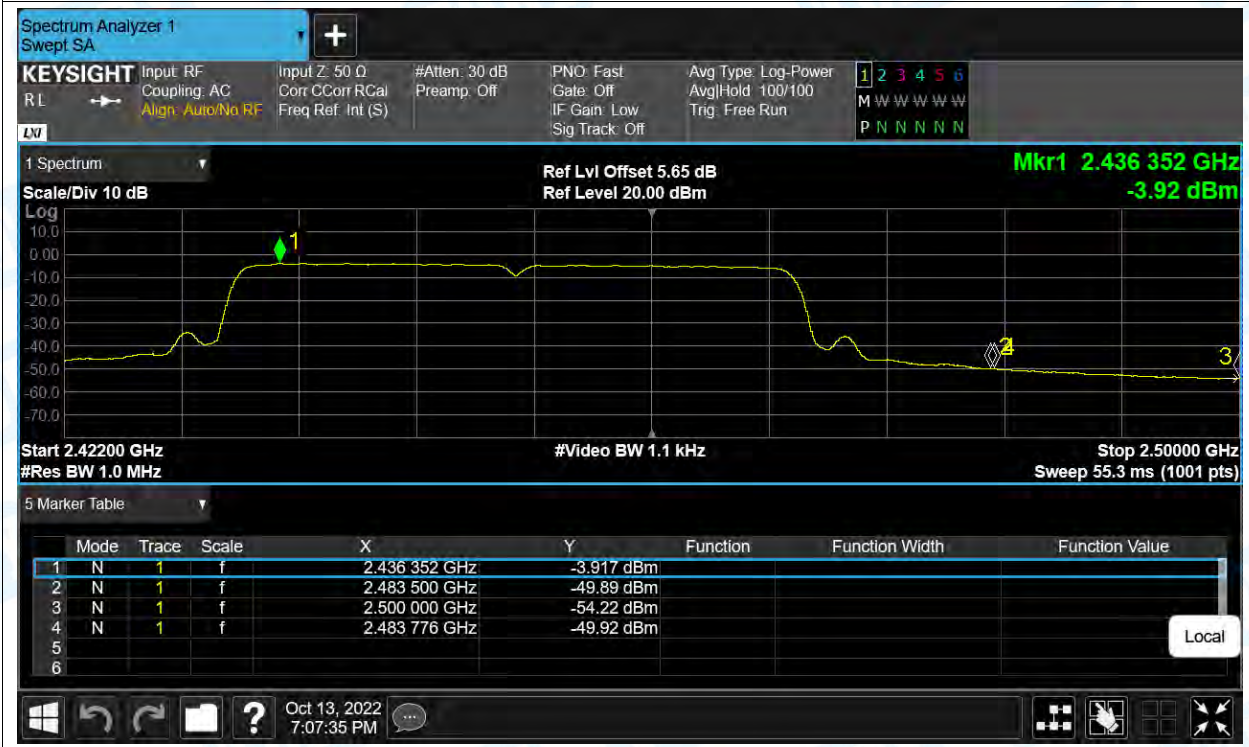
Restrict Band NVNT n(HT40) 2422MHz Ant1 Average



Restrict Band NVNT n(HT40) 2452MHz Ant1 Peak



Restrict Band NVNT n(HT40) 2452MHz Ant1 Average



-----END OF THE REPORT-----