

RF Test Data for 2.4G WiFi

(Conducted Measurements)

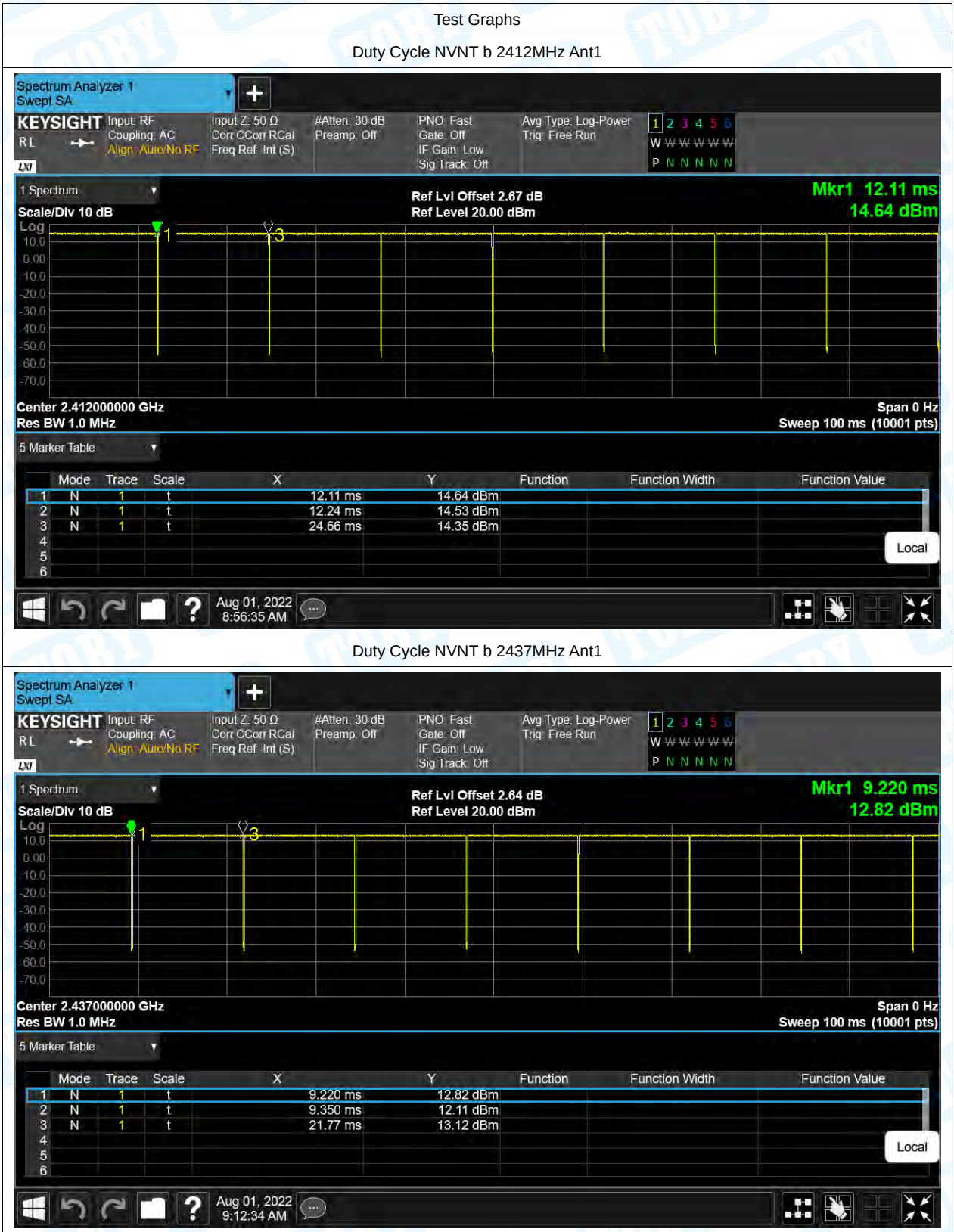
General Description of EUT	
Product Name:	Smart gateway
Test Model:	TYZG1
Sample ID:	202206-0350-1-2#
Environmental Conditions	
Temperature:	25℃
Relative Humidity:	55%
Test Voltage:	DC 5V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TBR-C-202206-0350-1	

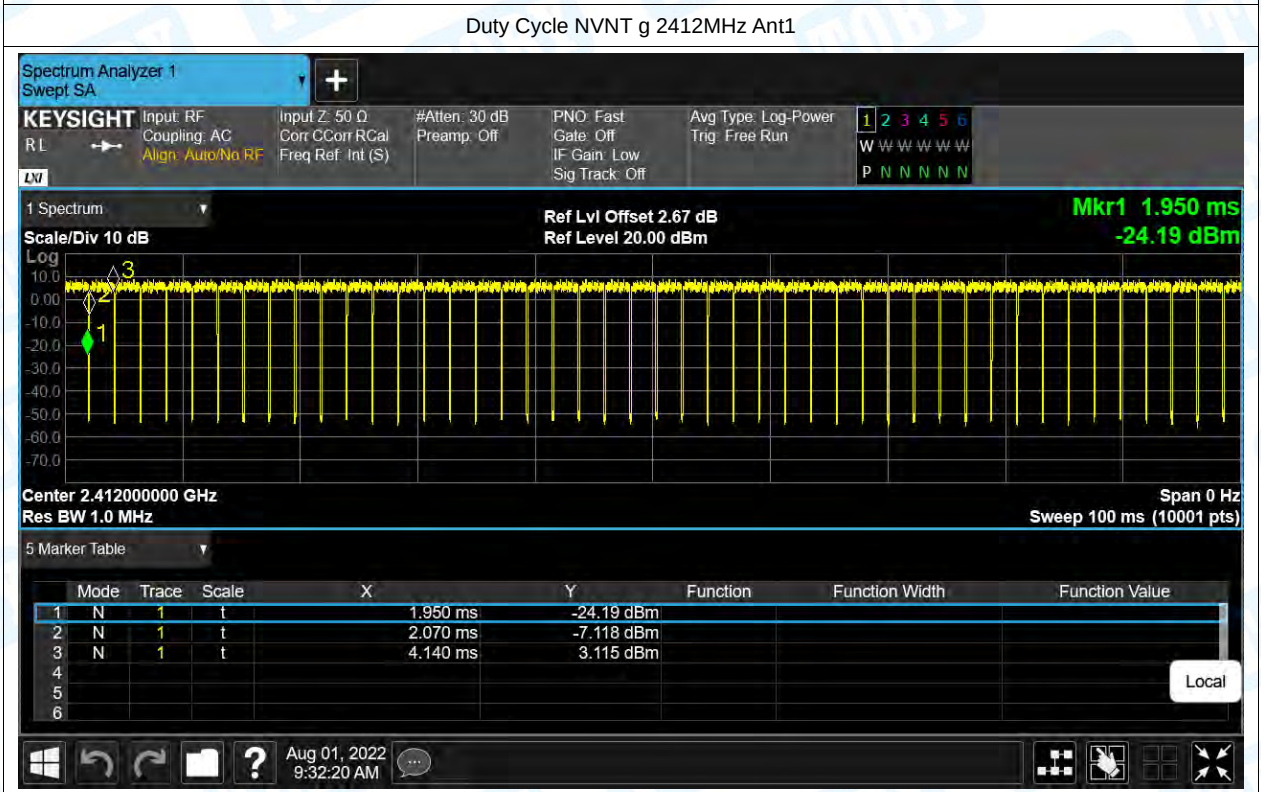
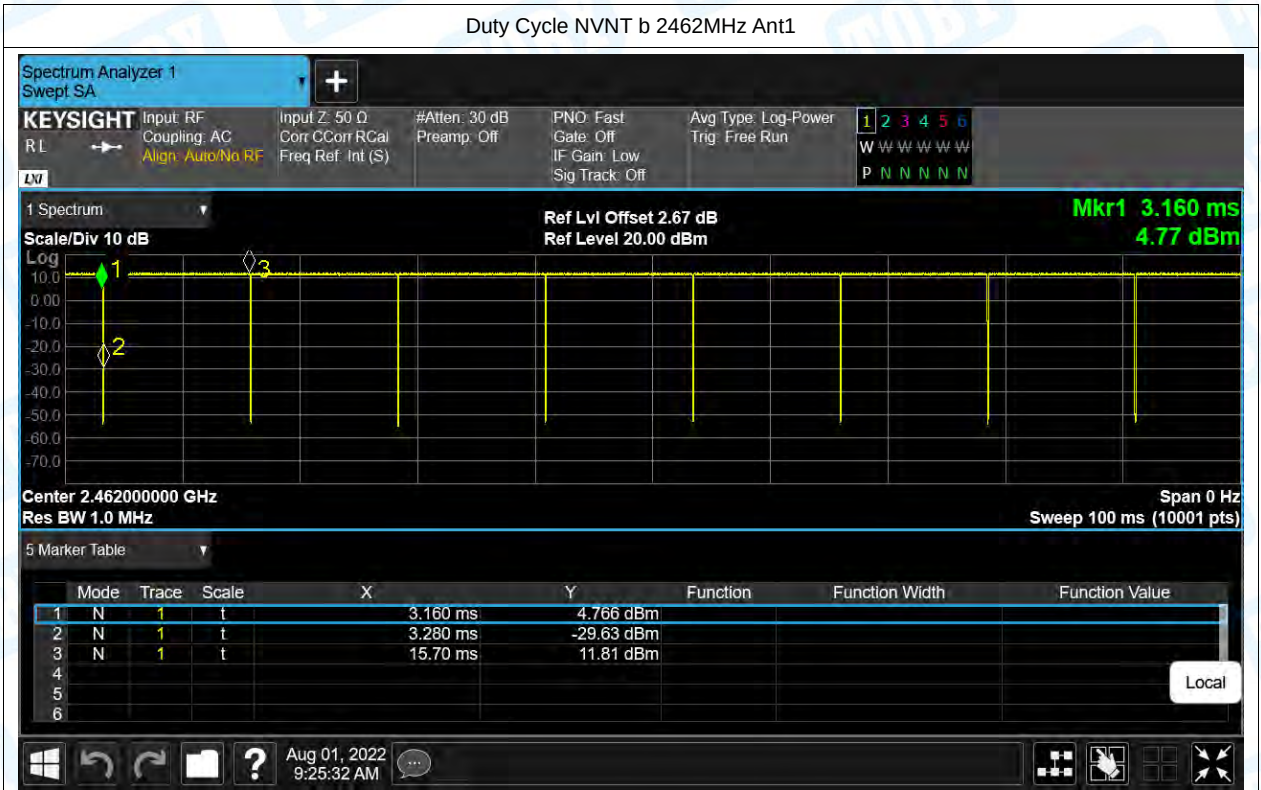
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1. Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.12	0.04	0.08
NVNT	b	2437	Ant1	99.05	0.04	0.08
NVNT	b	2462	Ant1	99.06	0.04	0.08
NVNT	g	2412	Ant1	94.69	0.24	0.48
NVNT	g	2437	Ant1	94.68	0.24	0.48
NVNT	g	2462	Ant1	94.64	0.24	0.49
NVNT	n(HT20)	2412	Ant1	94.12	0.26	0.52
NVNT	n(HT20)	2437	Ant1	94.15	0.26	0.52
NVNT	n(HT20)	2462	Ant1	94.12	0.26	0.52
NVNT	n(HT40)	2422	Ant1	89.02	0.51	1.05
NVNT	n(HT40)	2437	Ant1	88.94	0.51	1.06
NVNT	n(HT40)	2452	Ant1	88.93	0.51	1.05

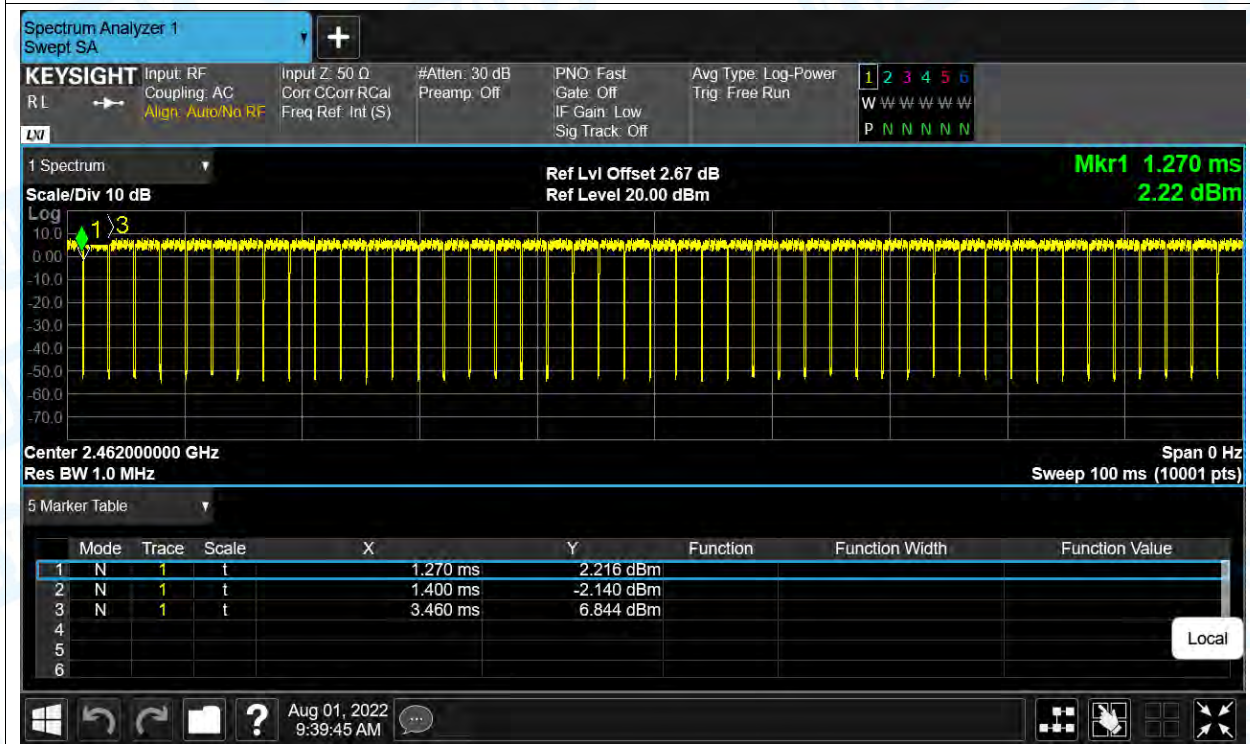


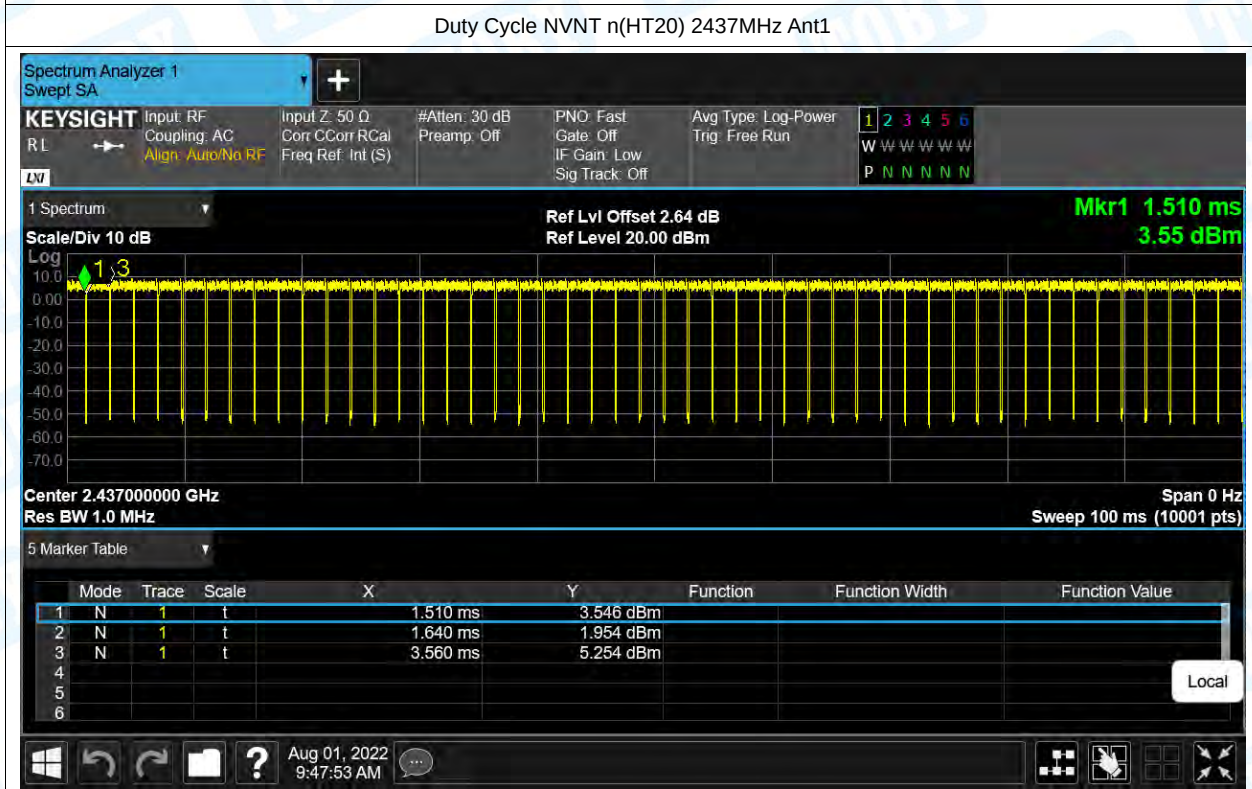
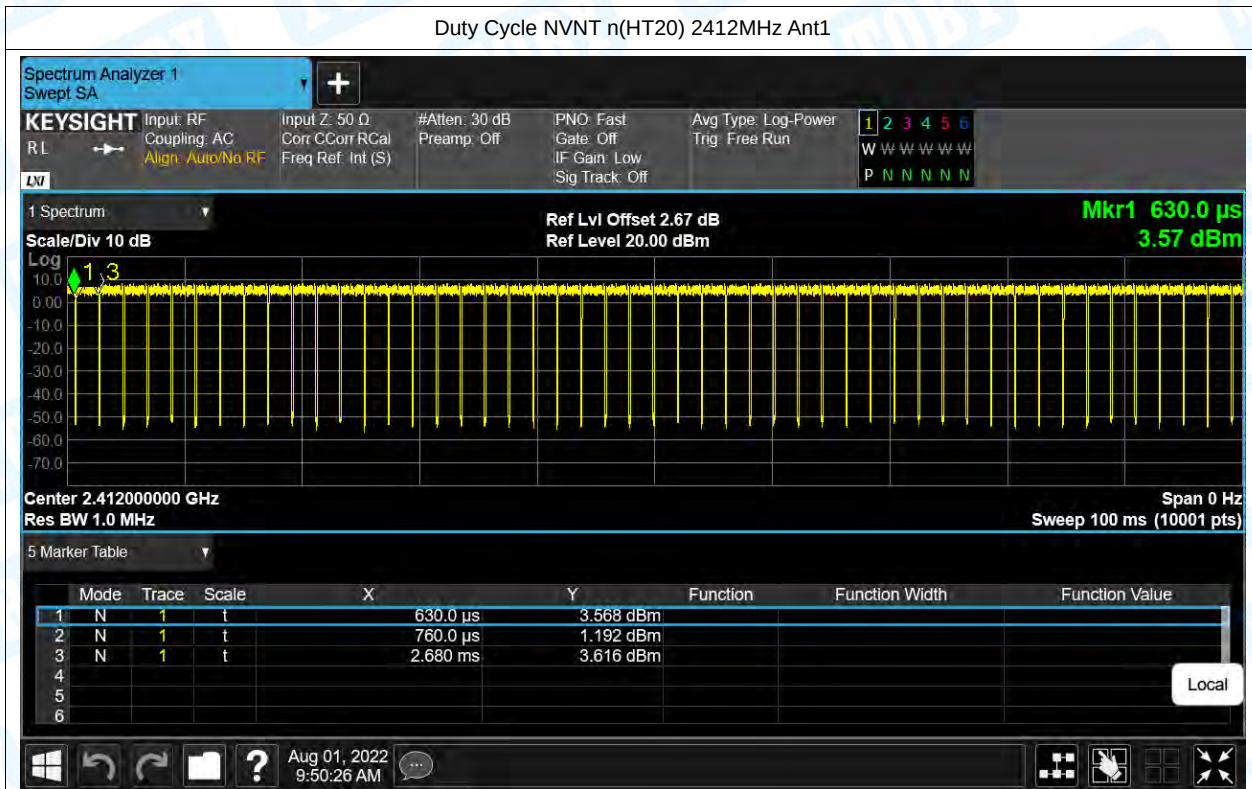


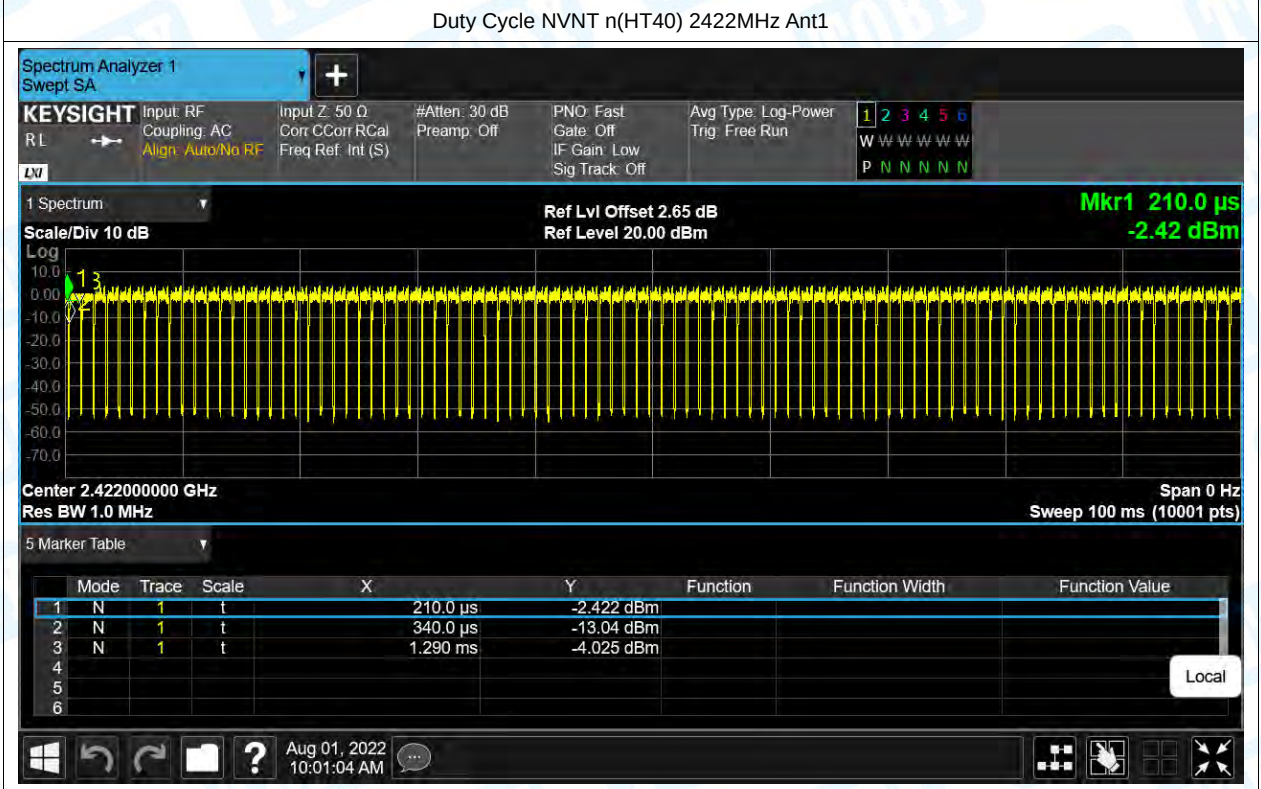
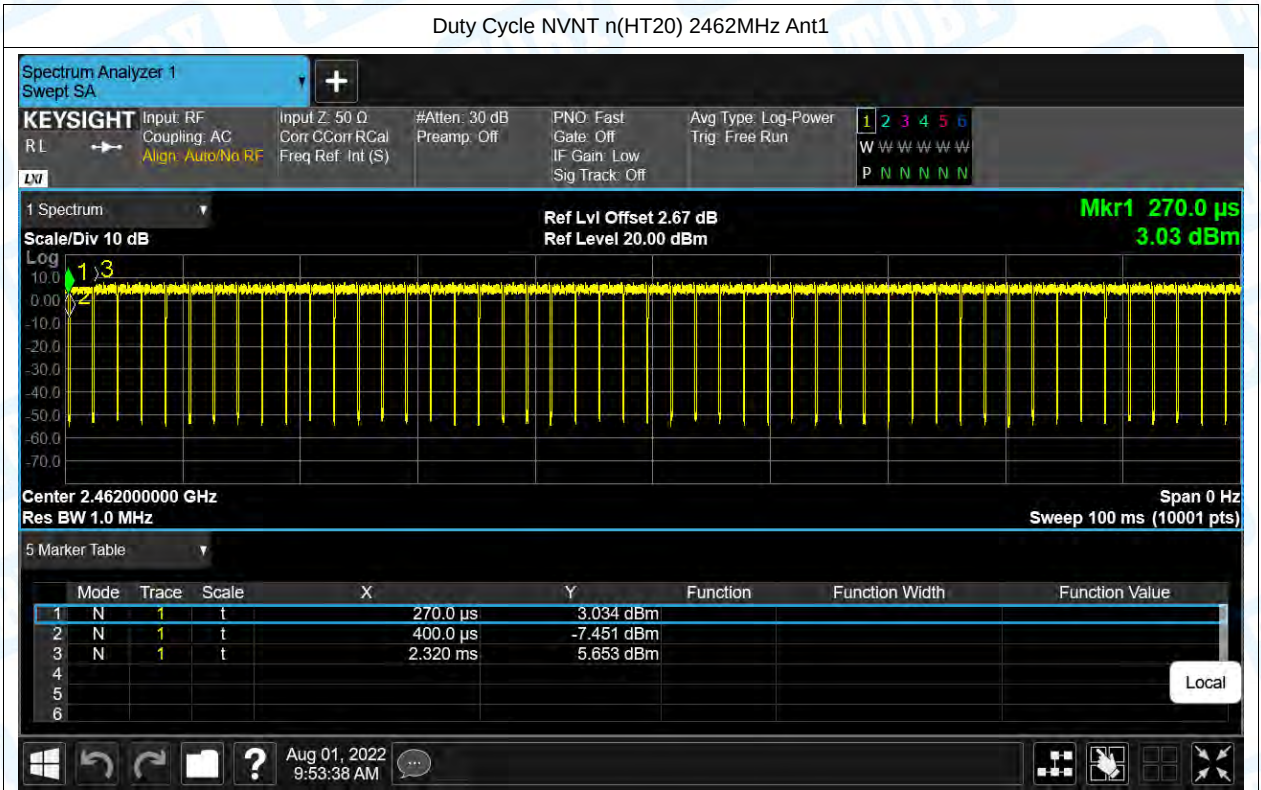
Duty Cycle NVNT g 2437MHz Ant1

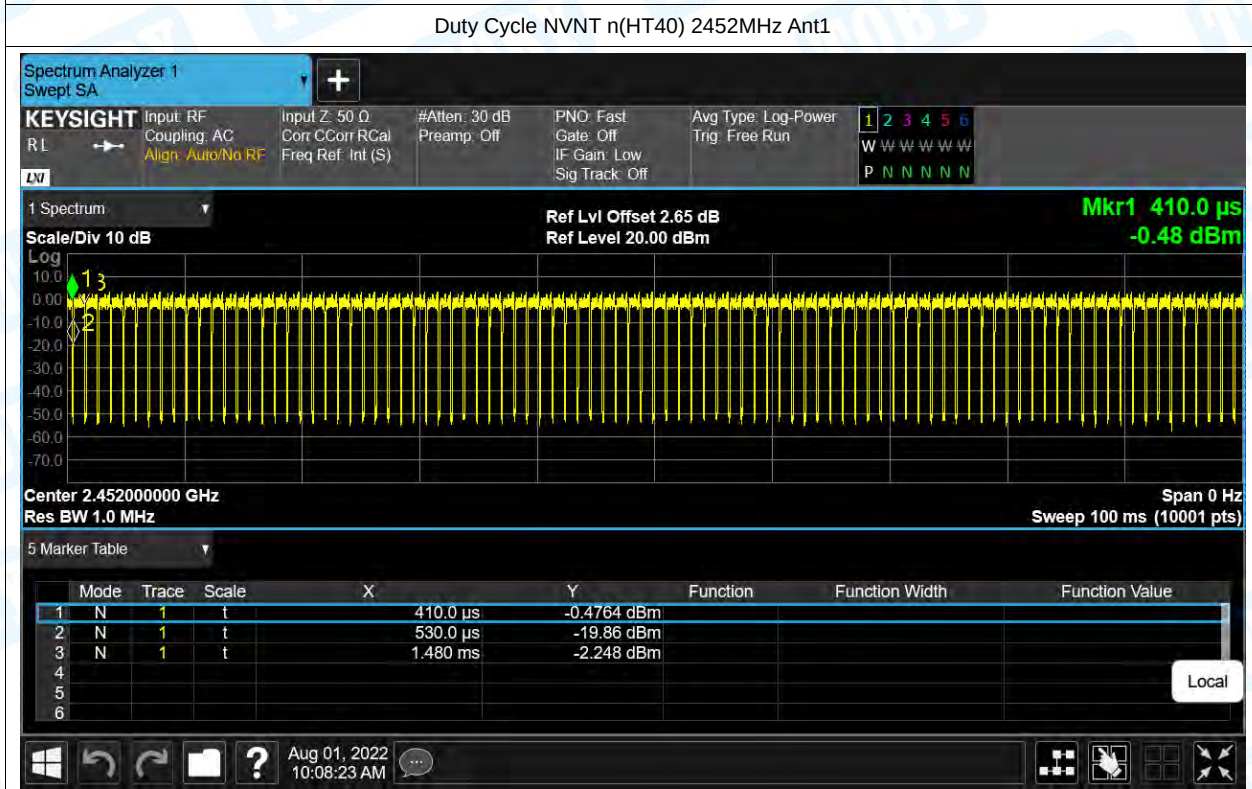
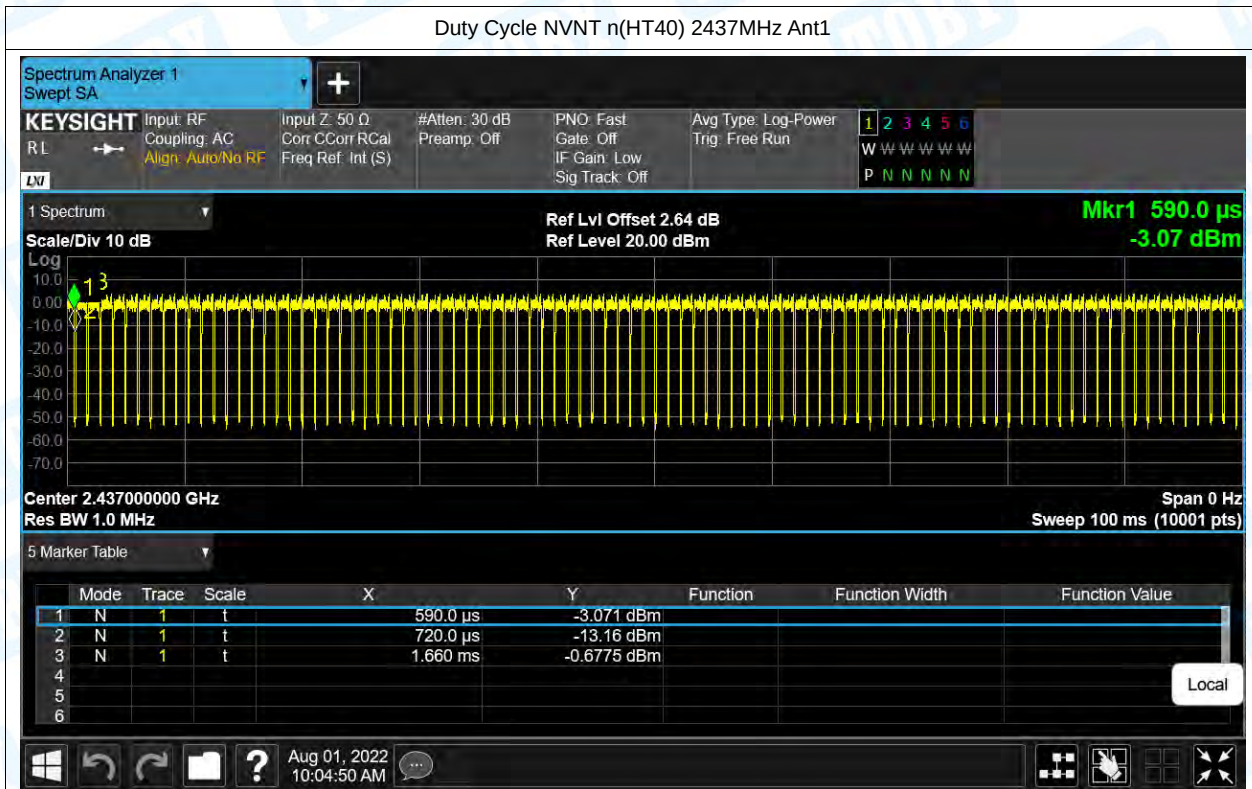


Duty Cycle NVNT g 2462MHz Ant1









2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	18.755	30	Pass
NVNT	b	2437	Ant1	18.76	30	Pass
NVNT	b	2462	Ant1	17.934	30	Pass
NVNT	g	2412	Ant1	17.915	30	Pass
NVNT	g	2437	Ant1	18.474	30	Pass
NVNT	g	2462	Ant1	17.393	30	Pass
NVNT	n(HT20)	2412	Ant1	18.115	30	Pass
NVNT	n(HT20)	2437	Ant1	18.572	30	Pass
NVNT	n(HT20)	2462	Ant1	17.546	30	Pass
NVNT	n(HT40)	2422	Ant1	18.059	30	Pass
NVNT	n(HT40)	2437	Ant1	17.832	30	Pass
NVNT	n(HT40)	2452	Ant1	17.544	30	Pass

3. -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.57	0.5	Pass
NVNT	b	2437	Ant1	9.06	0.5	Pass
NVNT	b	2462	Ant1	8.11	0.5	Pass
NVNT	g	2412	Ant1	16.46	0.5	Pass
NVNT	g	2437	Ant1	16.35	0.5	Pass
NVNT	g	2462	Ant1	16.36	0.5	Pass
NVNT	n(HT20)	2412	Ant1	17.6	0.5	Pass
NVNT	n(HT20)	2437	Ant1	17.58	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.57	0.5	Pass
NVNT	n(HT40)	2422	Ant1	35.07	0.5	Pass
NVNT	n(HT40)	2437	Ant1	35.04	0.5	Pass
NVNT	n(HT40)	2452	Ant1	35.25	0.5	Pass

Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



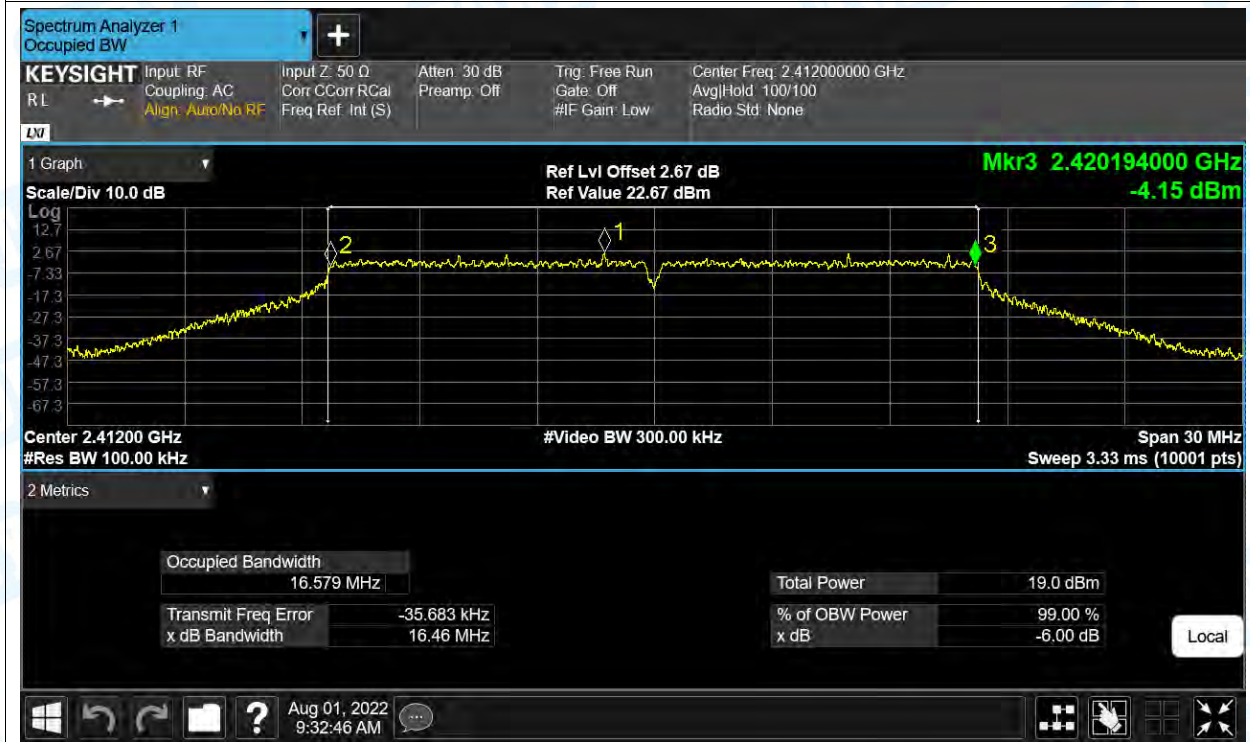
-6dB Bandwidth NVNT b 2437MHz Ant1



-6dB Bandwidth NVNT b 2462MHz Ant1



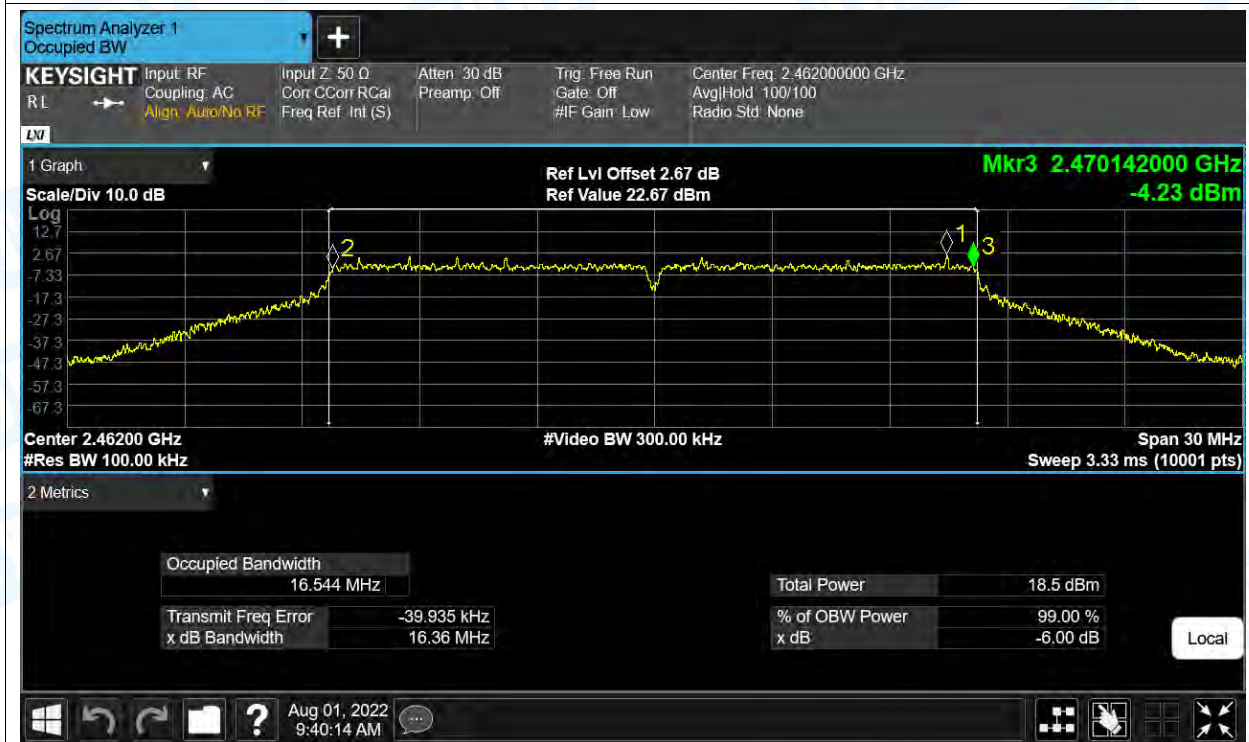
-6dB Bandwidth NVNT g 2412MHz Ant1



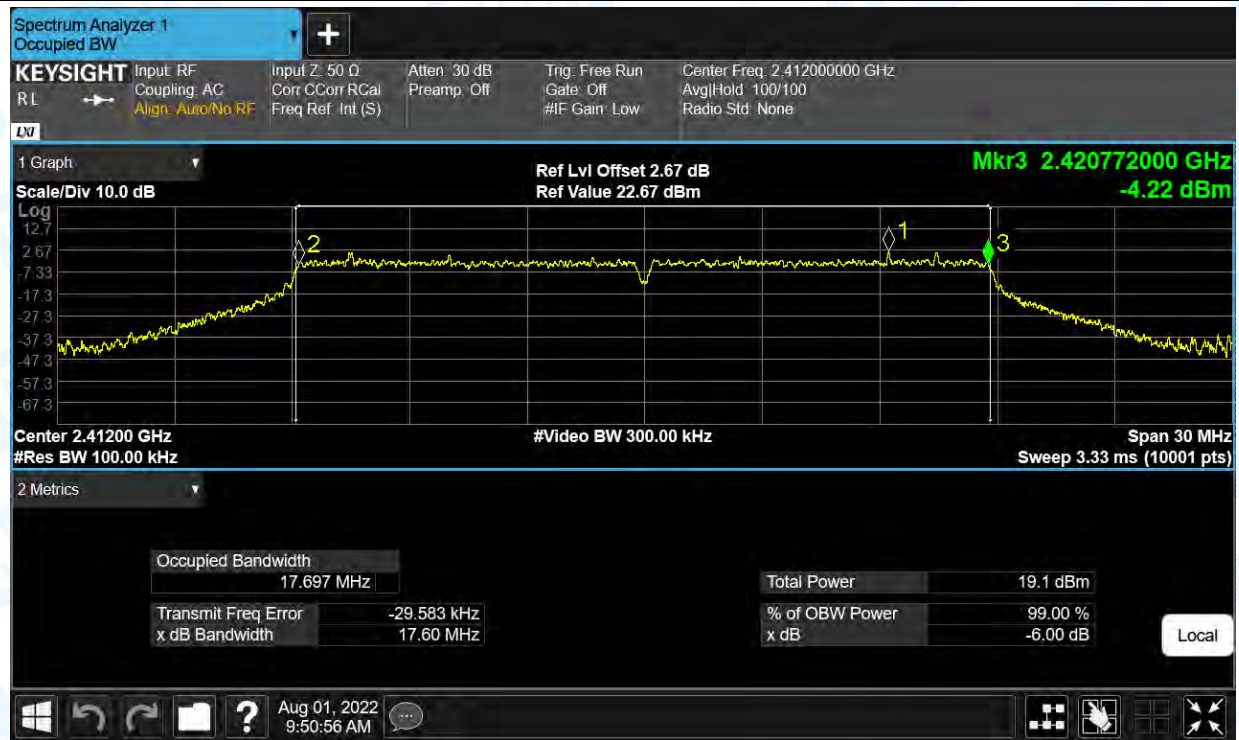
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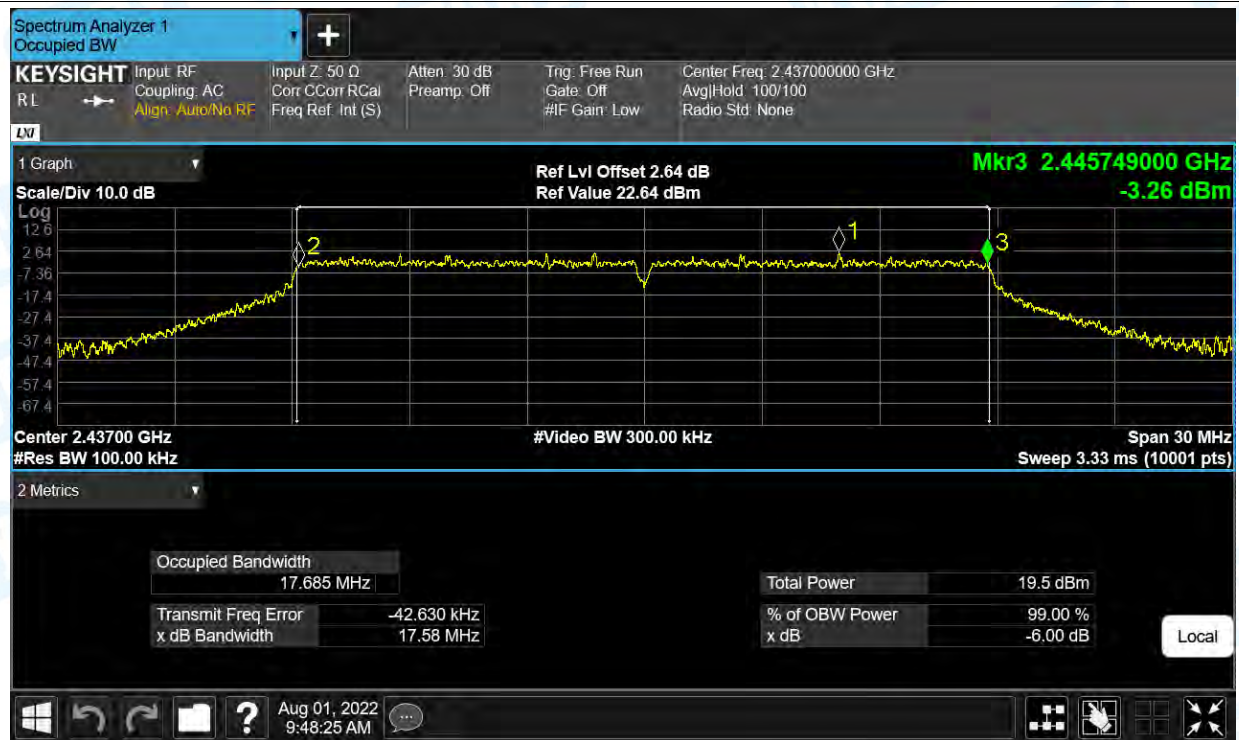
-6dB Bandwidth NVNT g 2462MHz Ant1



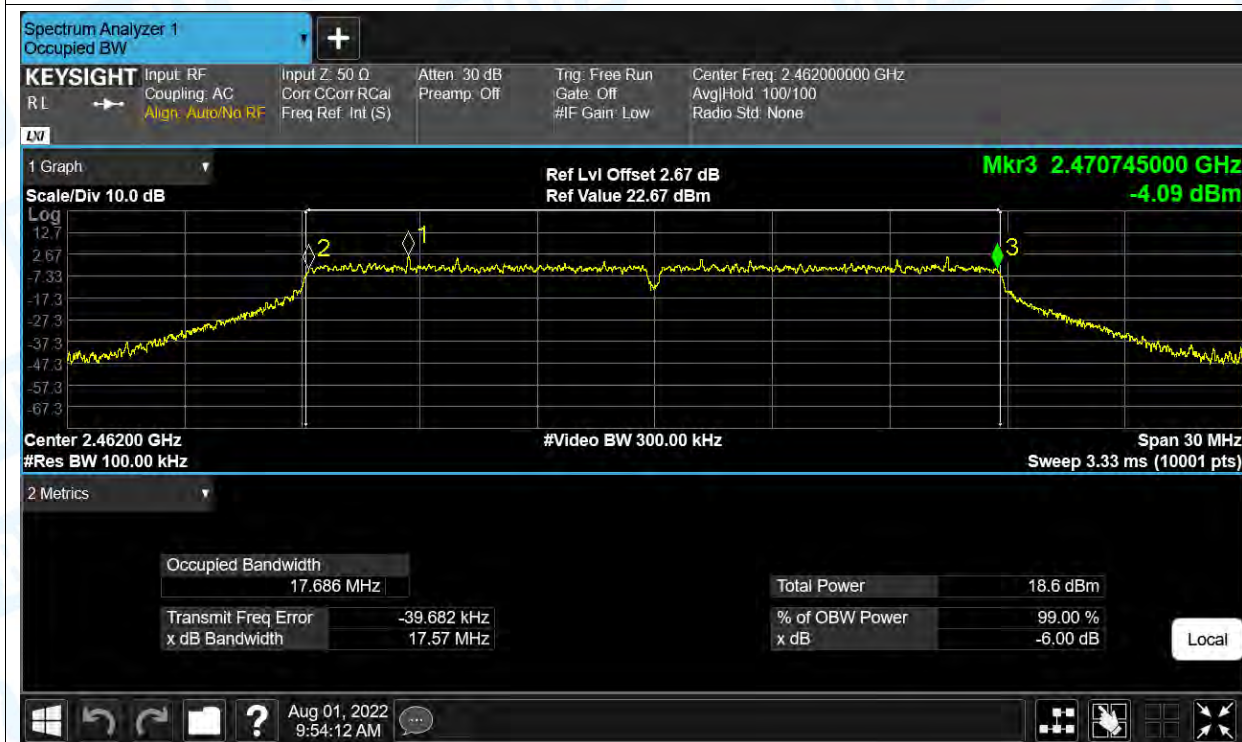
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



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



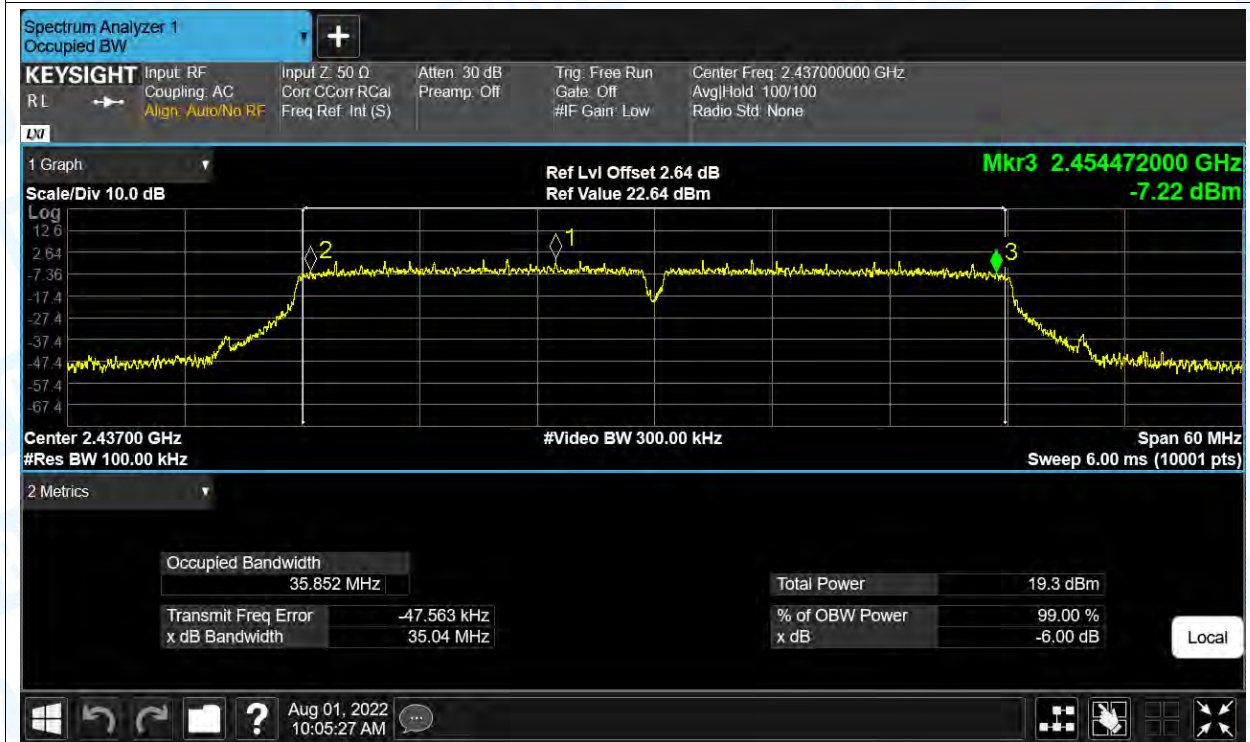
-6dB Bandwidth NVNT n(HT20) 2462MHz Ant1



-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	13.634
NVNT	b	2437	Ant1	13.563
NVNT	b	2462	Ant1	13.557
NVNT	g	2412	Ant1	16.834
NVNT	g	2437	Ant1	16.827
NVNT	g	2462	Ant1	16.798
NVNT	n(HT20)	2412	Ant1	17.87
NVNT	n(HT20)	2437	Ant1	17.799
NVNT	n(HT20)	2462	Ant1	17.852
NVNT	n(HT40)	2422	Ant1	36.005
NVNT	n(HT40)	2437	Ant1	35.953
NVNT	n(HT40)	2452	Ant1	36

Test Graphs

OBW NVNT b 2412MHz Ant1



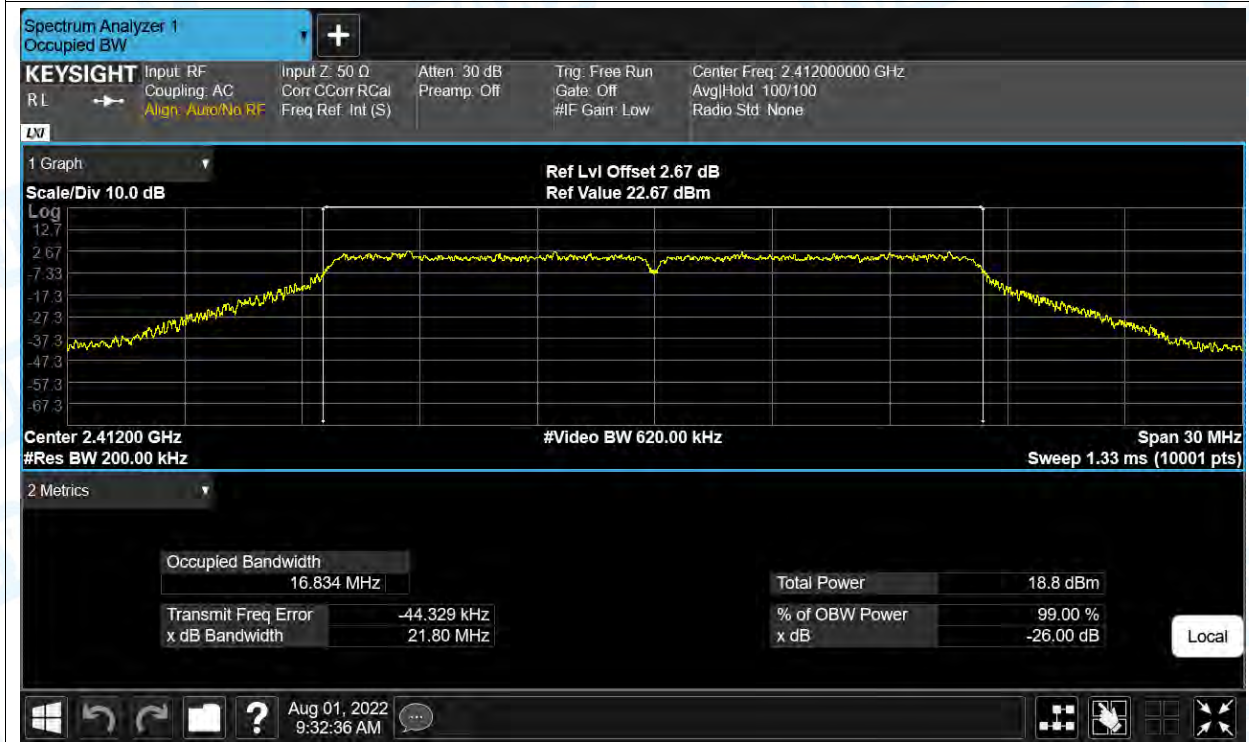
OBW NVNT b 2437MHz Ant1



OBW NVNT b 2462MHz Ant1



OBW NVNT g 2412MHz Ant1



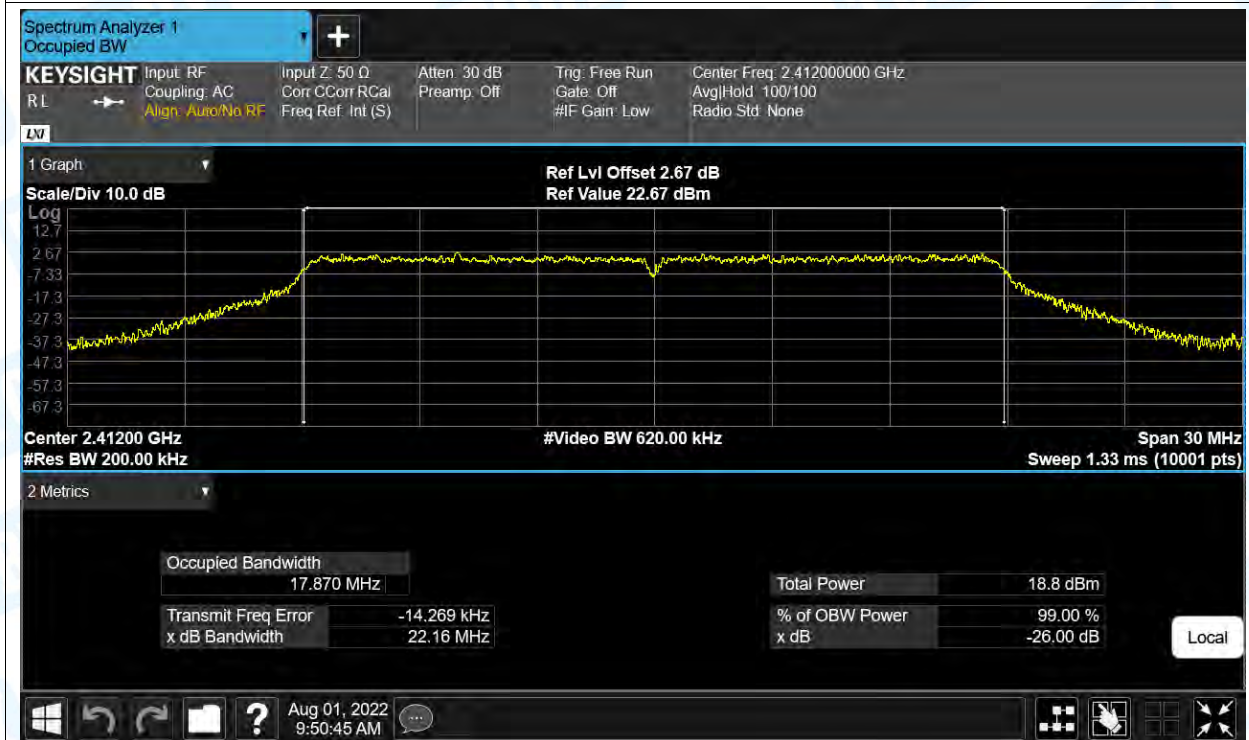
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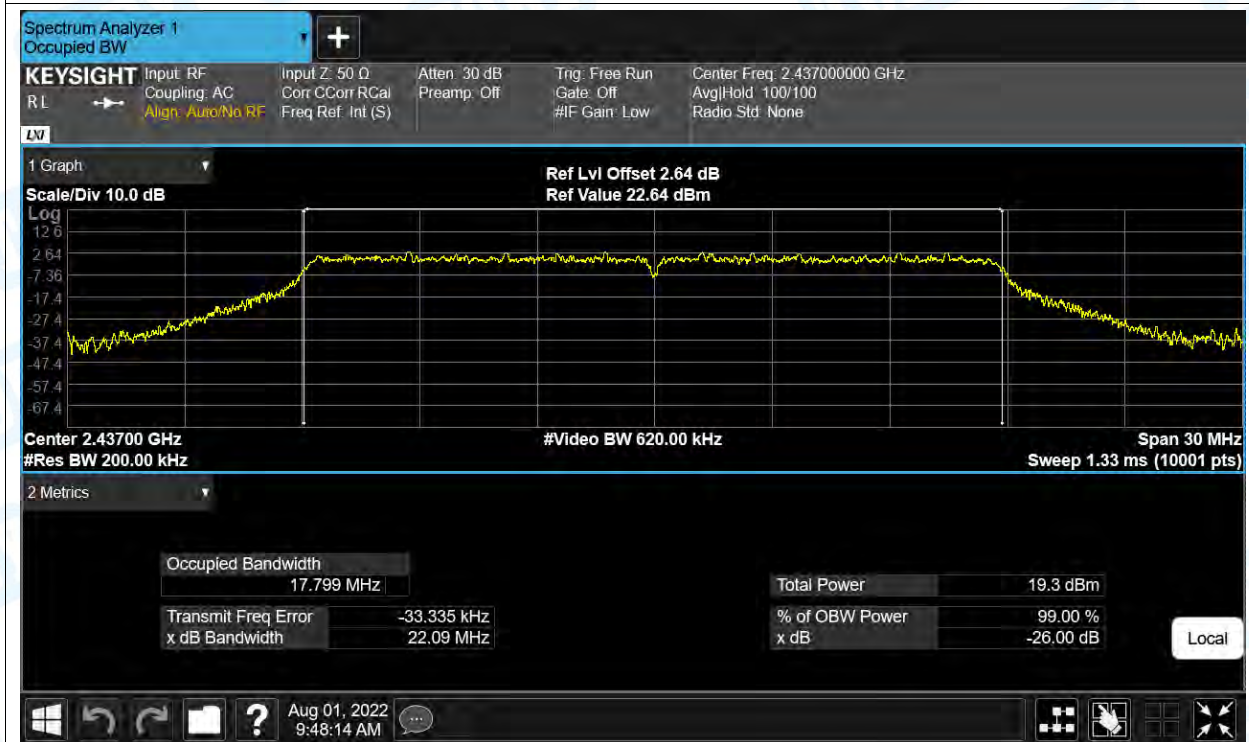
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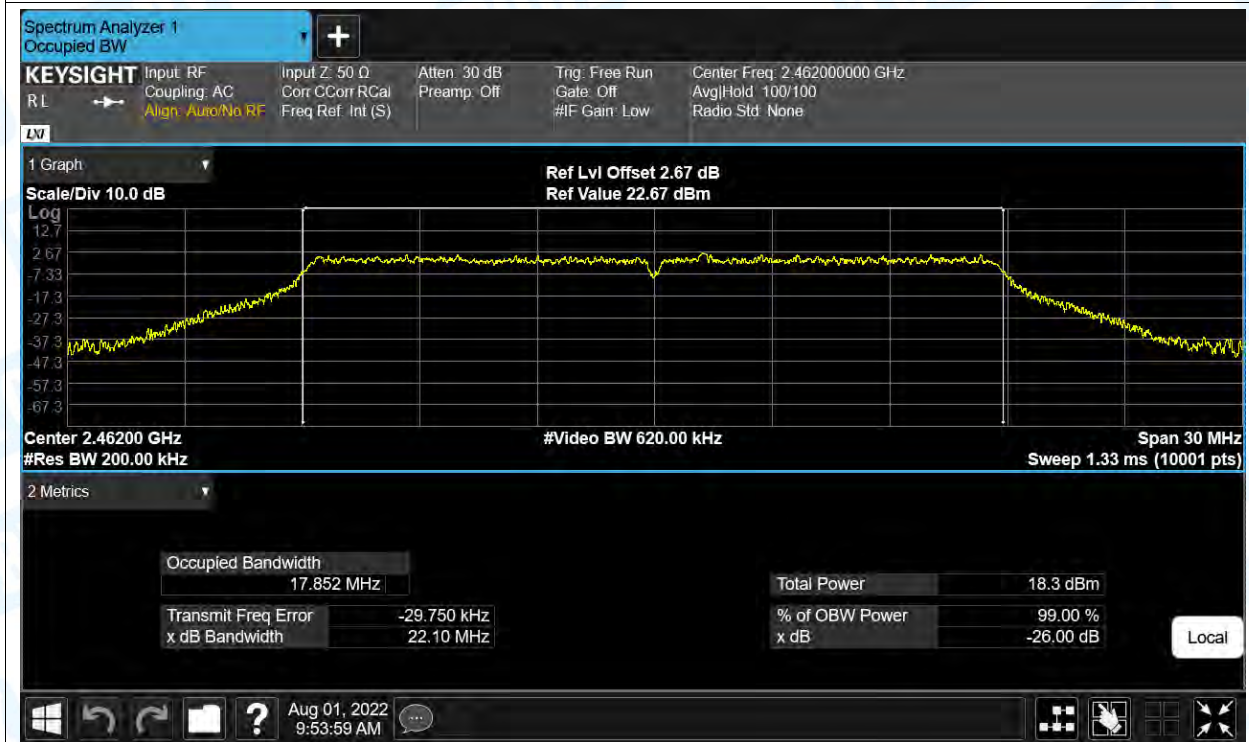
OBW NVNT n(HT20) 2412MHz Ant1



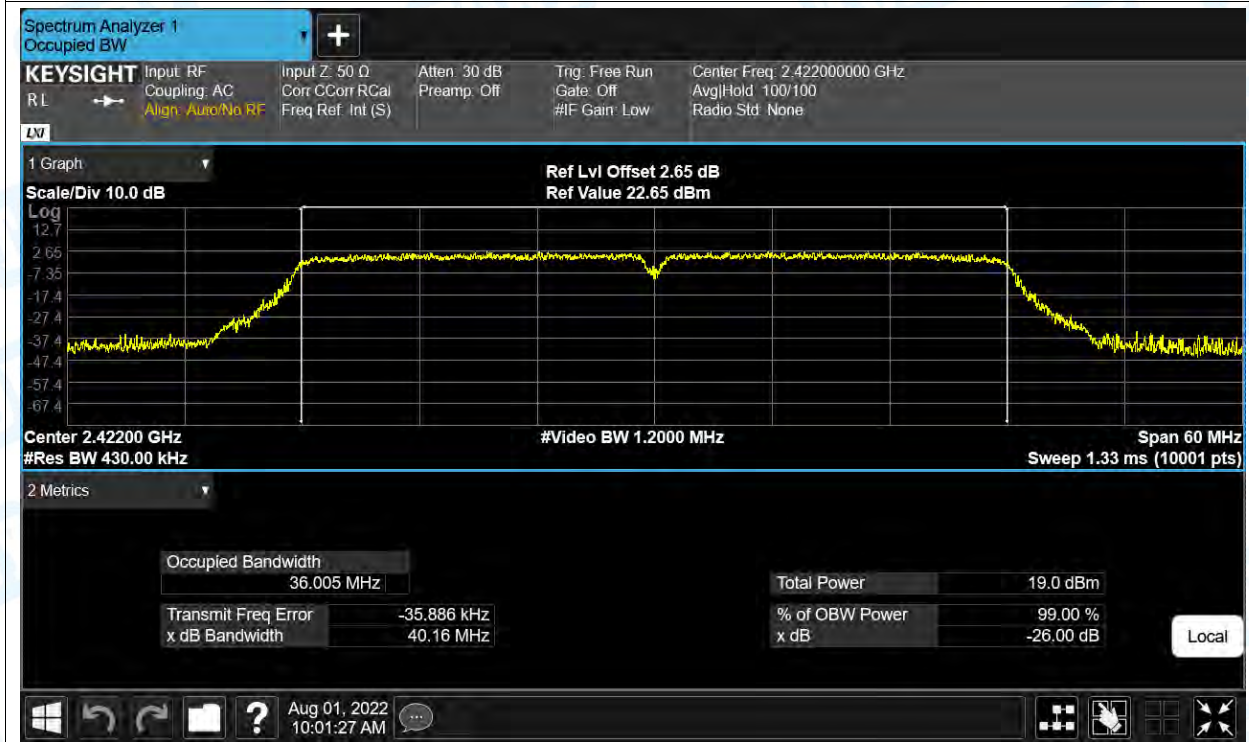
OBW NVNT n(HT20) 2437MHz Ant1



OBW NVNT n(HT20) 2462MHz Ant1



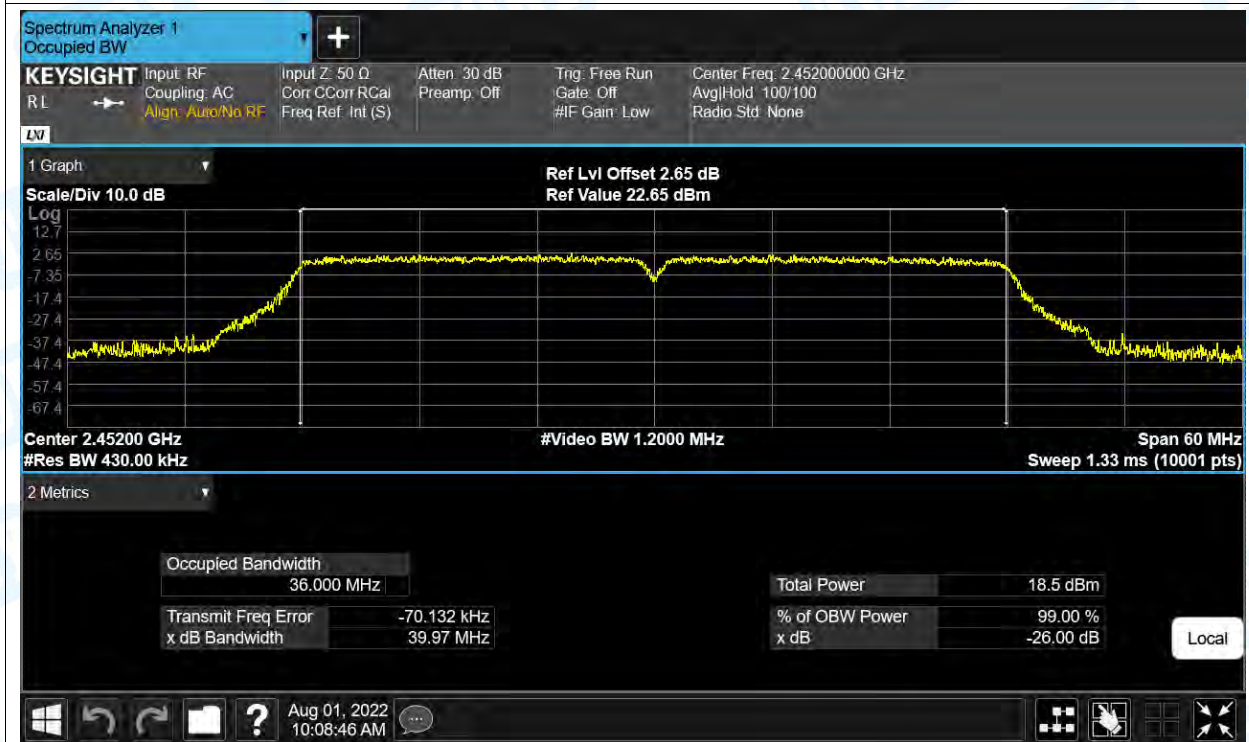
OBW NVNT n(HT40) 2422MHz Ant1



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	1.678	8	Pass
NVNT	b	2437	Ant1	2.049	8	Pass
NVNT	b	2462	Ant1	0.719	8	Pass
NVNT	g	2412	Ant1	-12.462	8	Pass
NVNT	g	2437	Ant1	-13.422	8	Pass
NVNT	g	2462	Ant1	-12.959	8	Pass
NVNT	n(HT20)	2412	Ant1	-14.088	8	Pass
NVNT	n(HT20)	2437	Ant1	-13.513	8	Pass
NVNT	n(HT20)	2462	Ant1	-14.368	8	Pass
NVNT	n(HT40)	2422	Ant1	-15.703	8	Pass
NVNT	n(HT40)	2437	Ant1	-15.927	8	Pass
NVNT	n(HT40)	2452	Ant1	-16.302	8	Pass

Test Graphs

PSD NVNT b 2412MHz Ant1



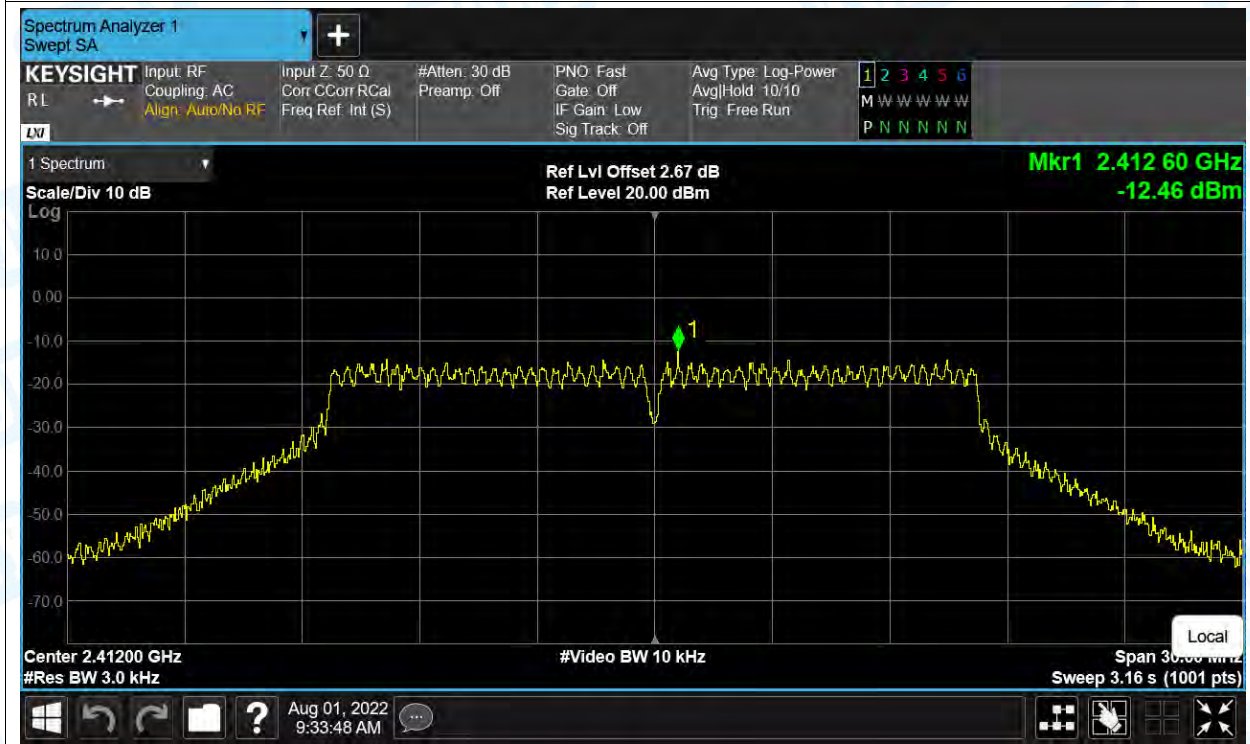
PSD NVNT b 2437MHz Ant1



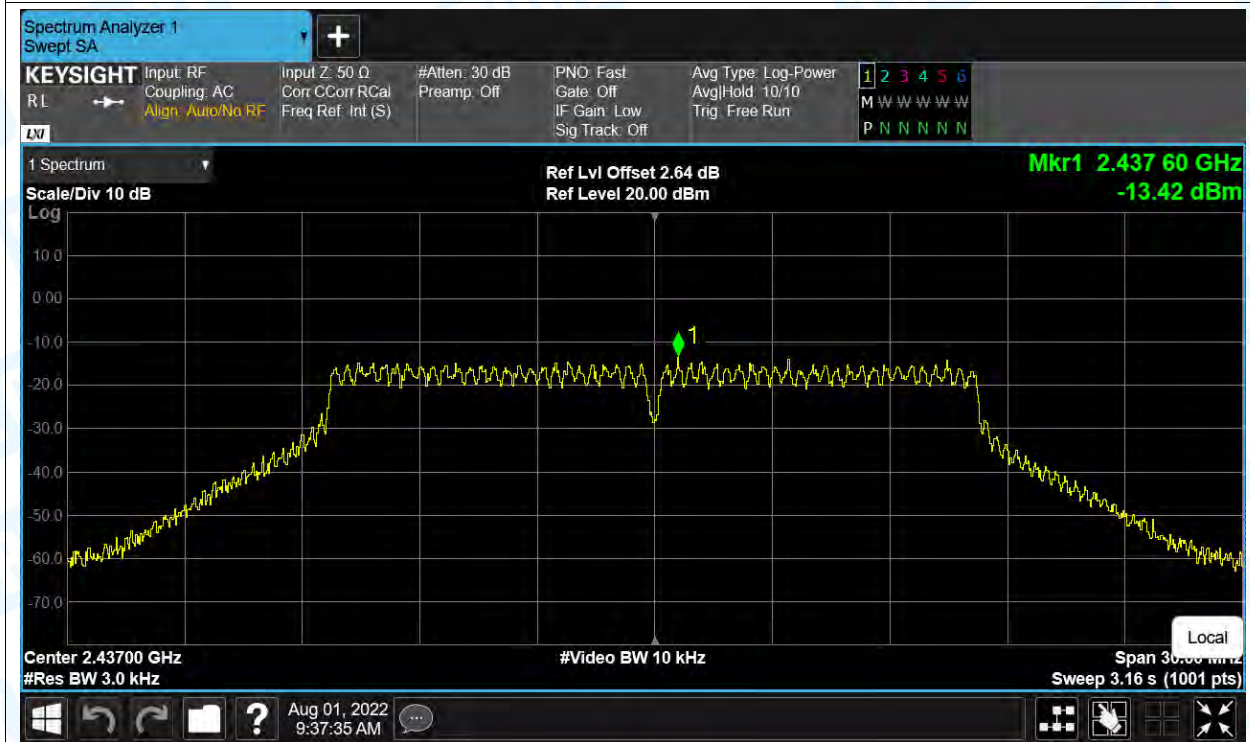
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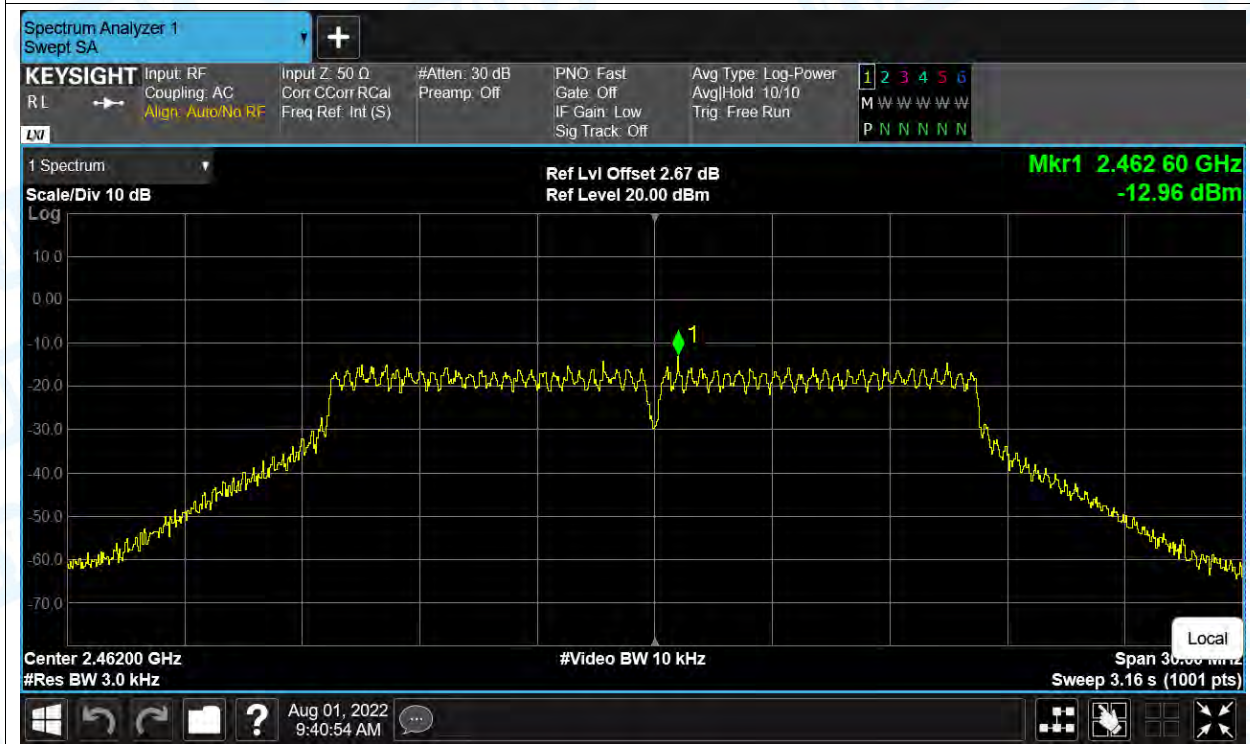
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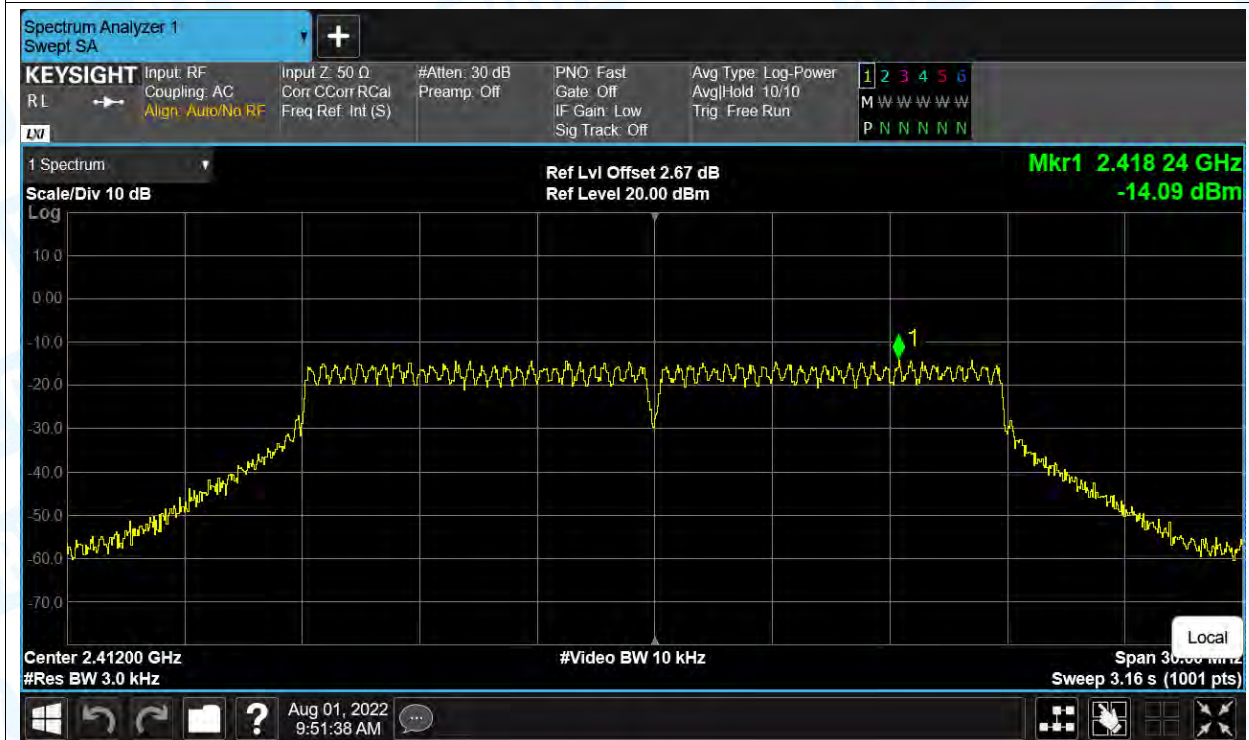
PSD NVNT g 2437MHz Ant1



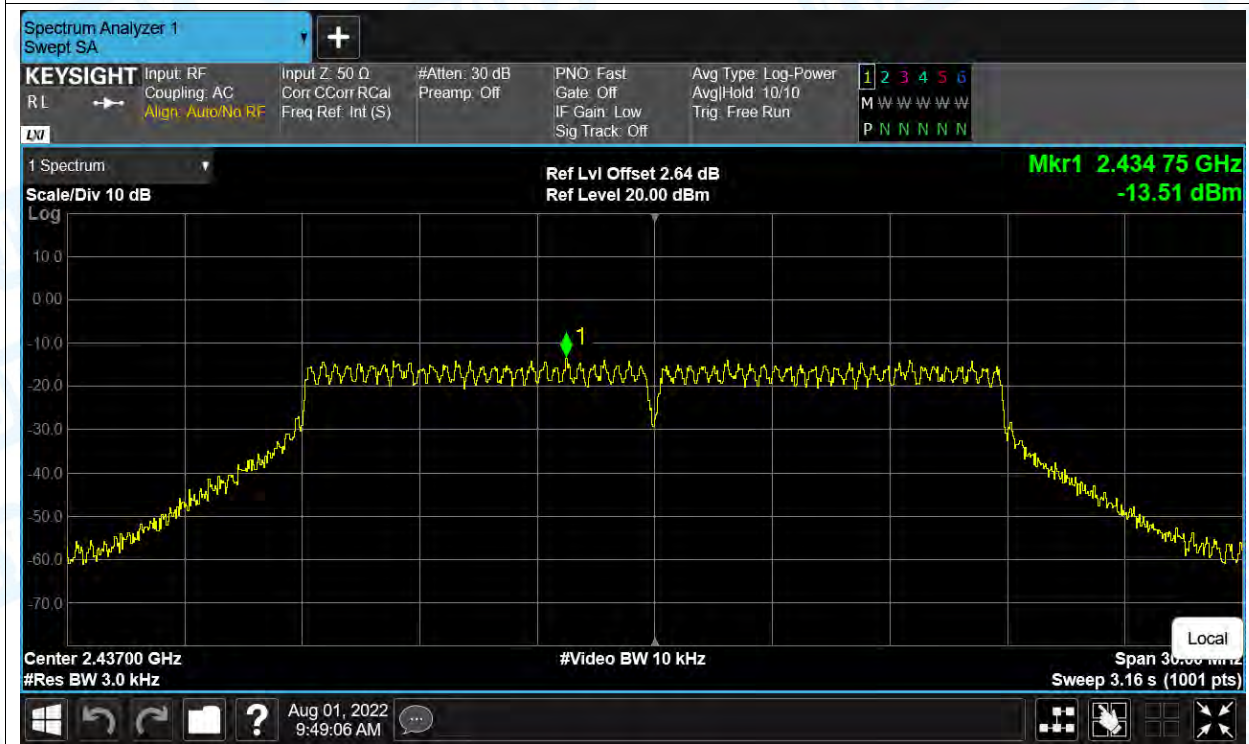
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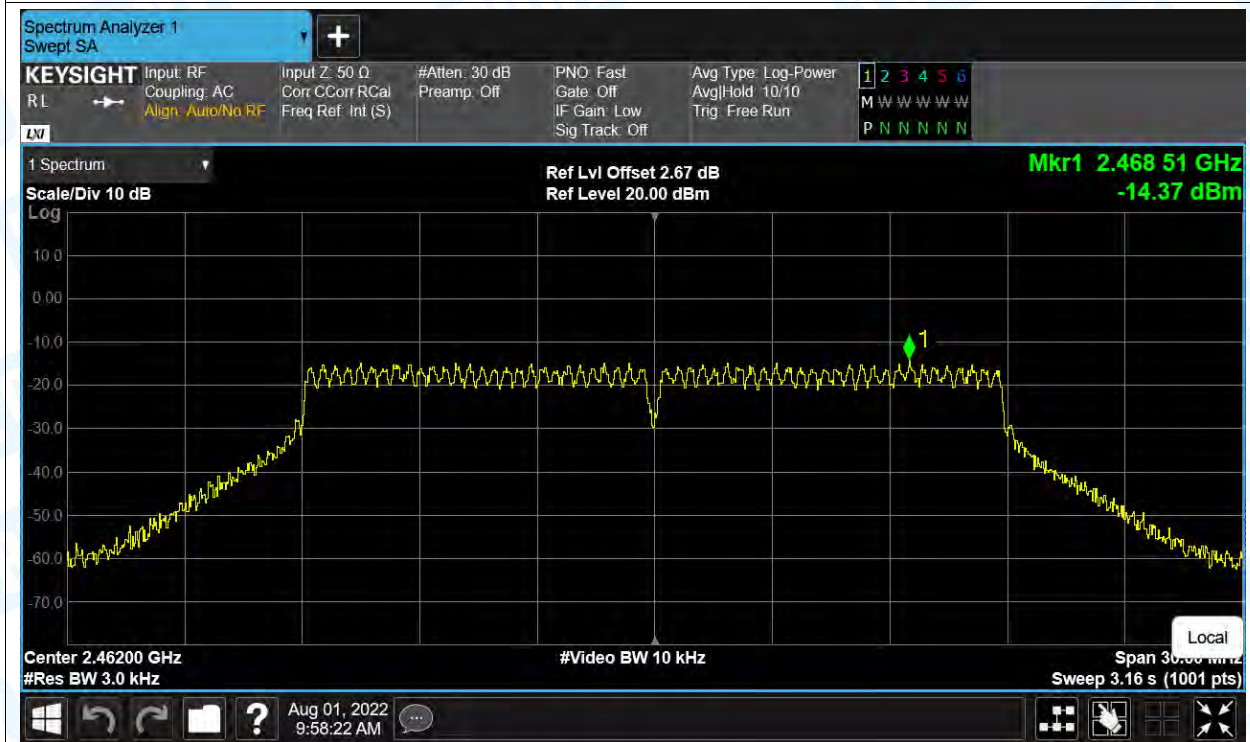
PSD NVNT n(HT20) 2412MHz Ant1



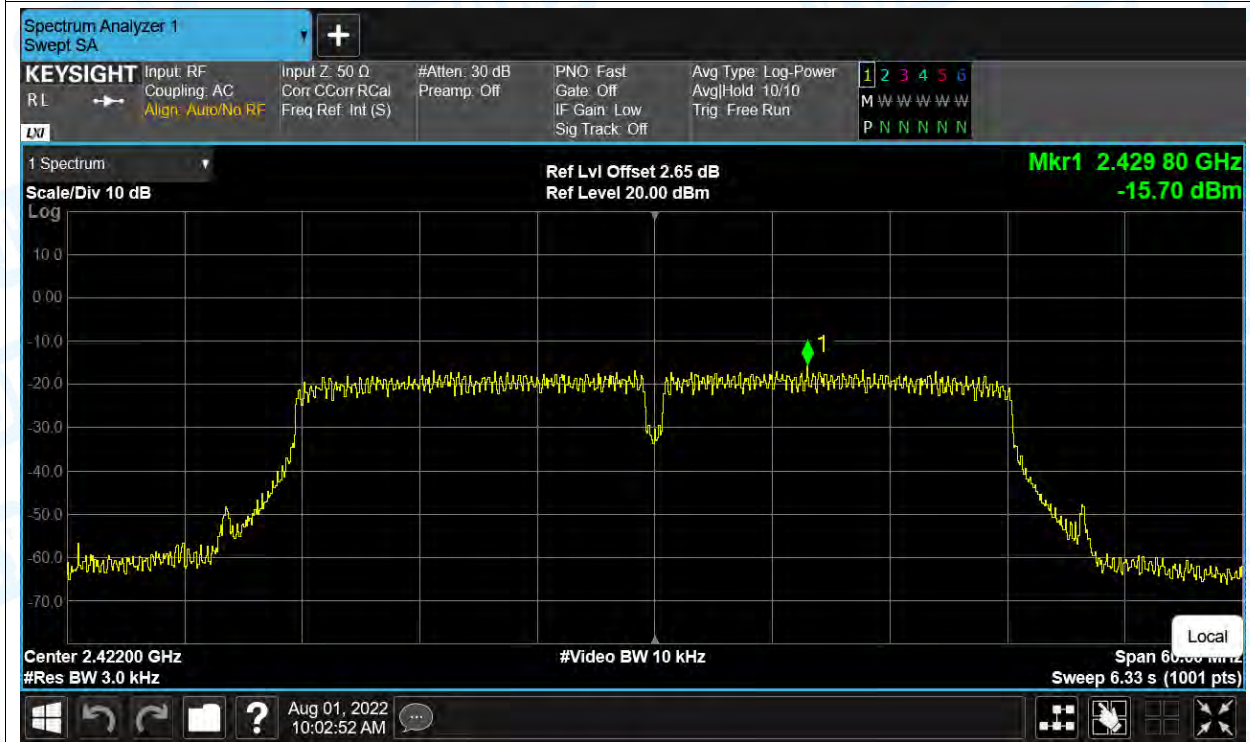
PSD NVNT n(HT20) 2437MHz Ant1

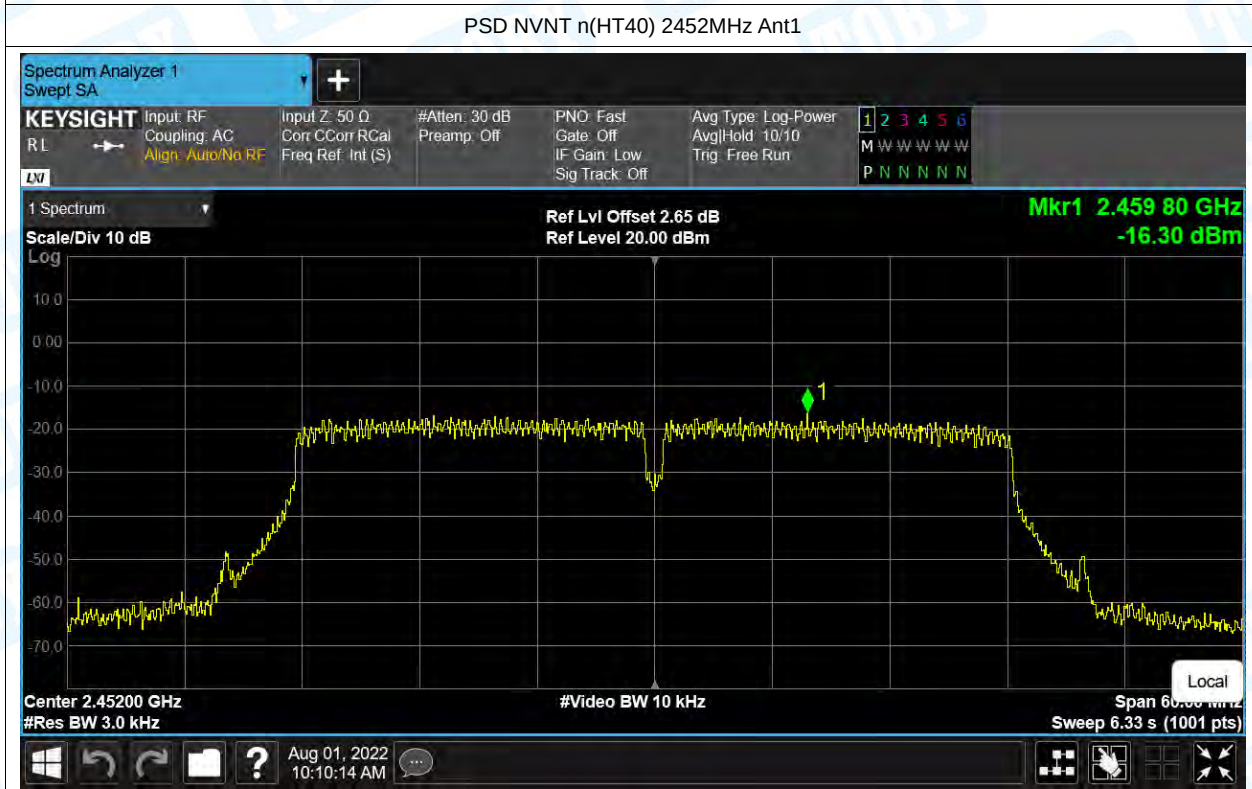
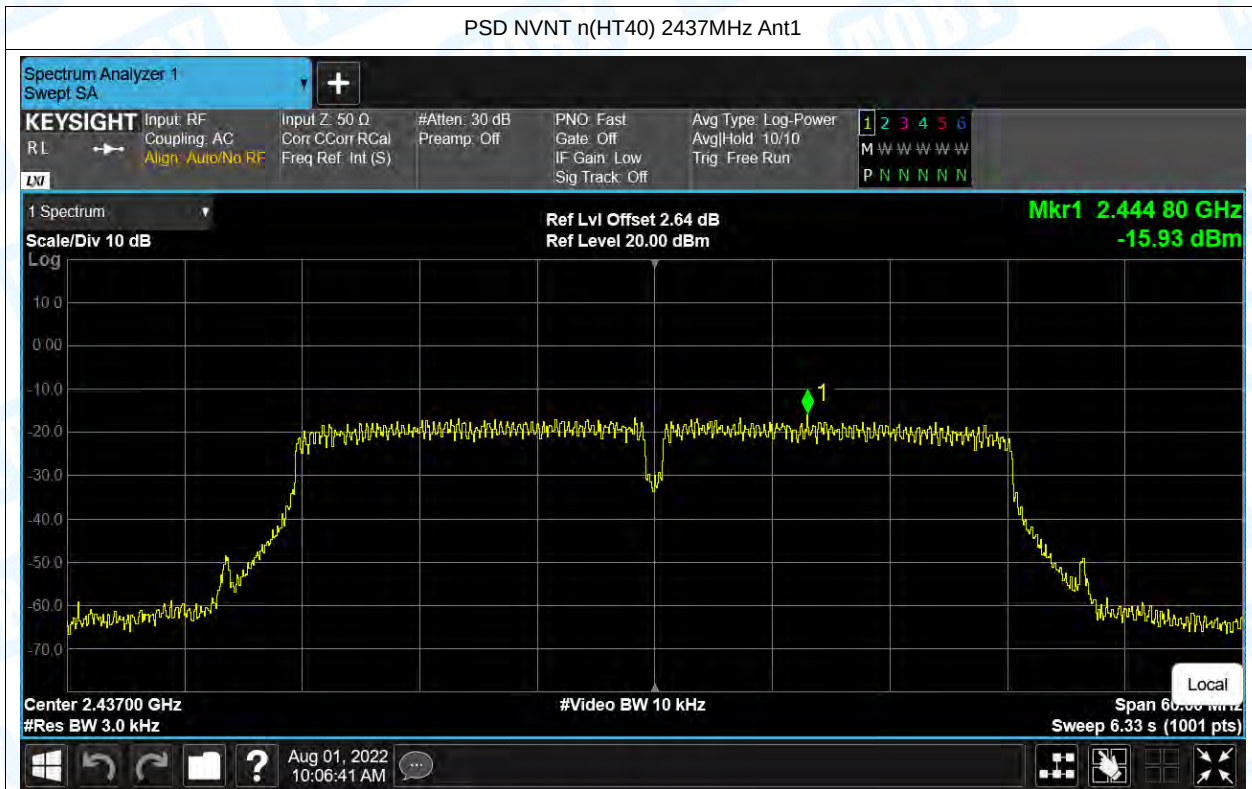


PSD NVNT n(HT20) 2462MHz Ant1



PSD NVNT n(HT40) 2422MHz Ant1





6. Band Edge

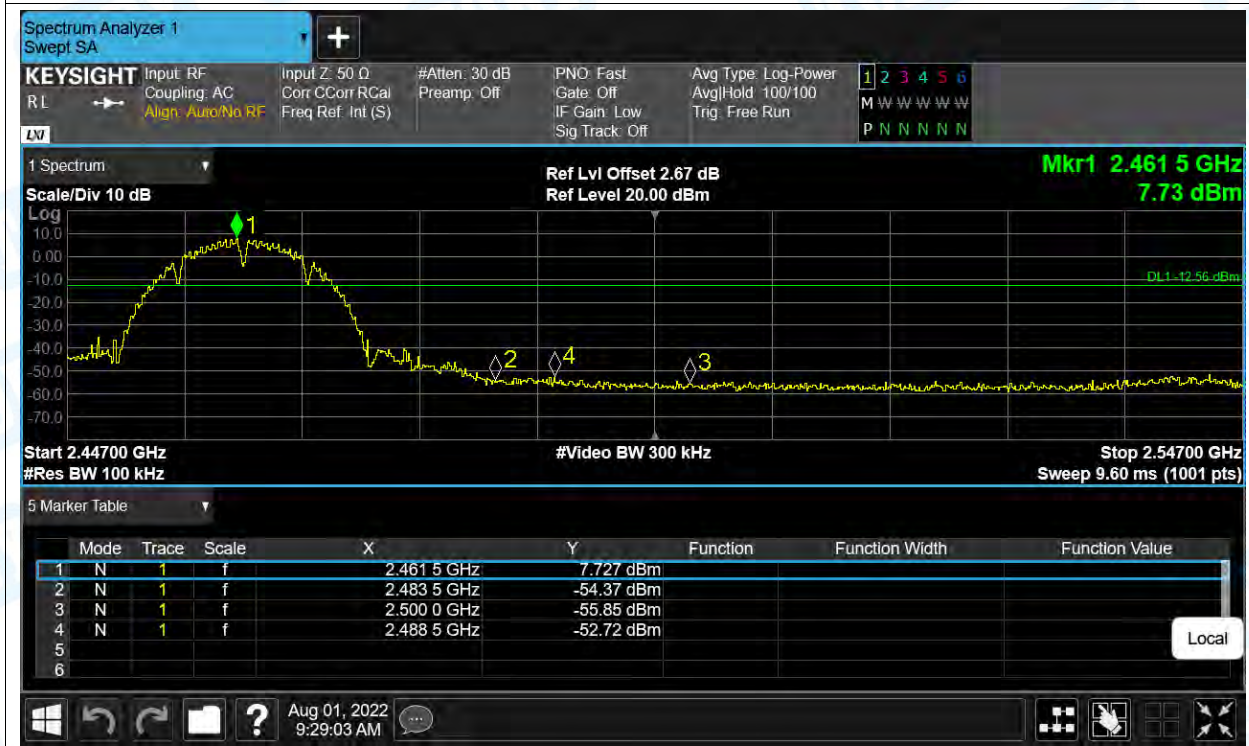
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-59.3	-20	Pass
NVNT	b	2462	Ant1	-60.16	-20	Pass
NVNT	g	2412	Ant1	-49.79	-20	Pass
NVNT	g	2462	Ant1	-53.26	-20	Pass
NVNT	n(HT20)	2412	Ant1	-46.17	-20	Pass
NVNT	n(HT20)	2462	Ant1	-47.7	-20	Pass
NVNT	n(HT40)	2422	Ant1	-45.21	-20	Pass
NVNT	n(HT40)	2452	Ant1	-46.37	-20	Pass

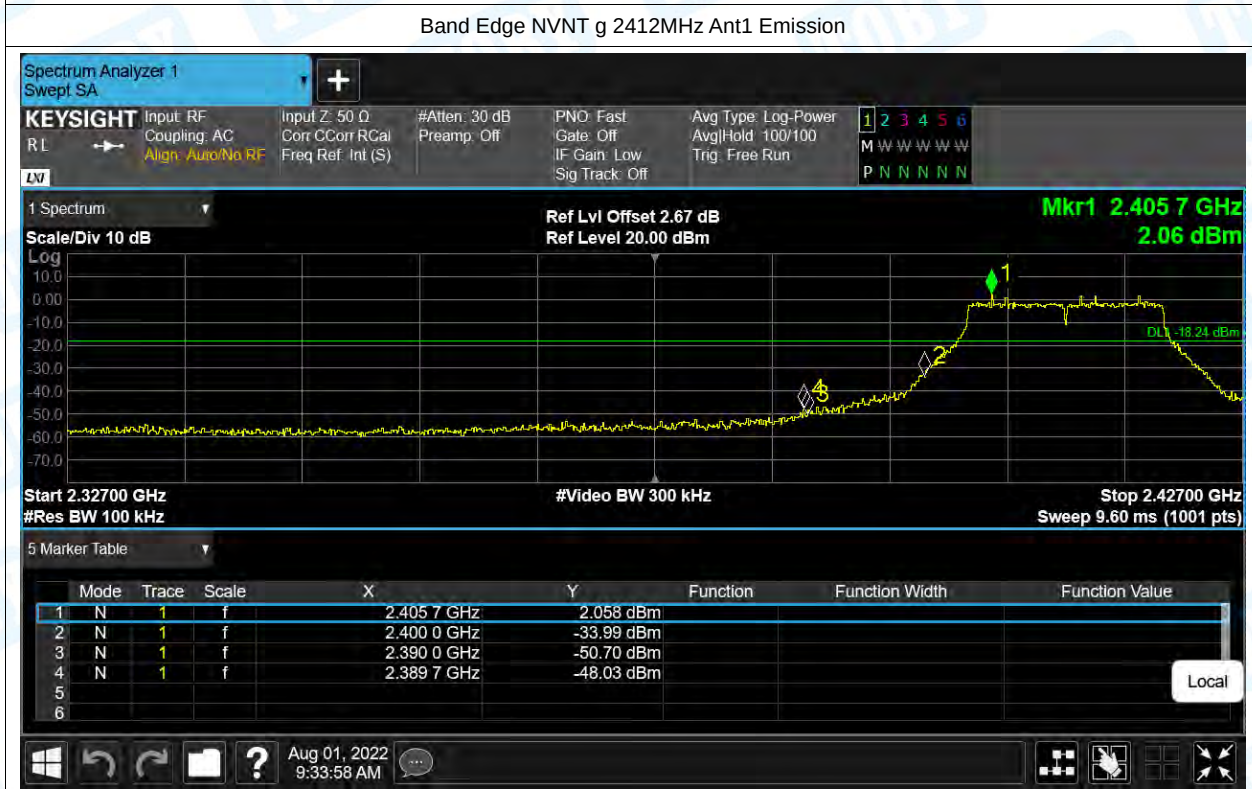


Band Edge NVNT b 2462MHz Ant1 Ref



Band Edge NVNT b 2462MHz Ant1 Emission

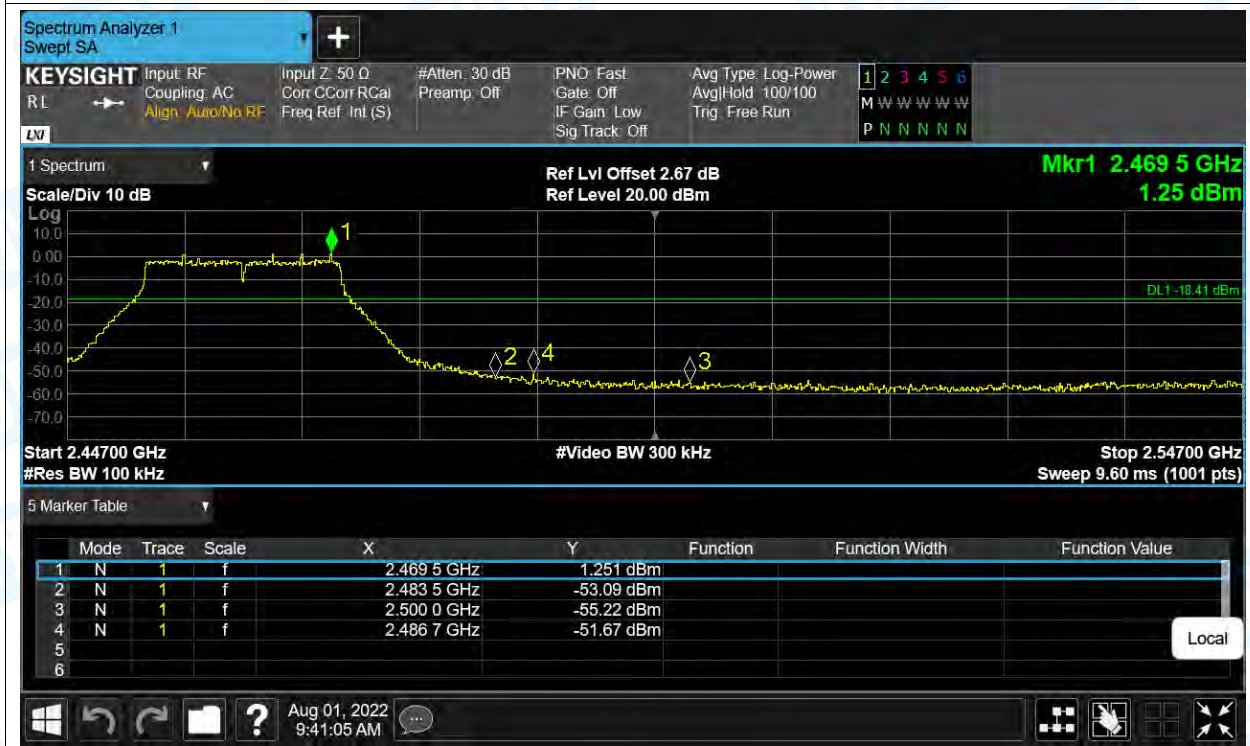


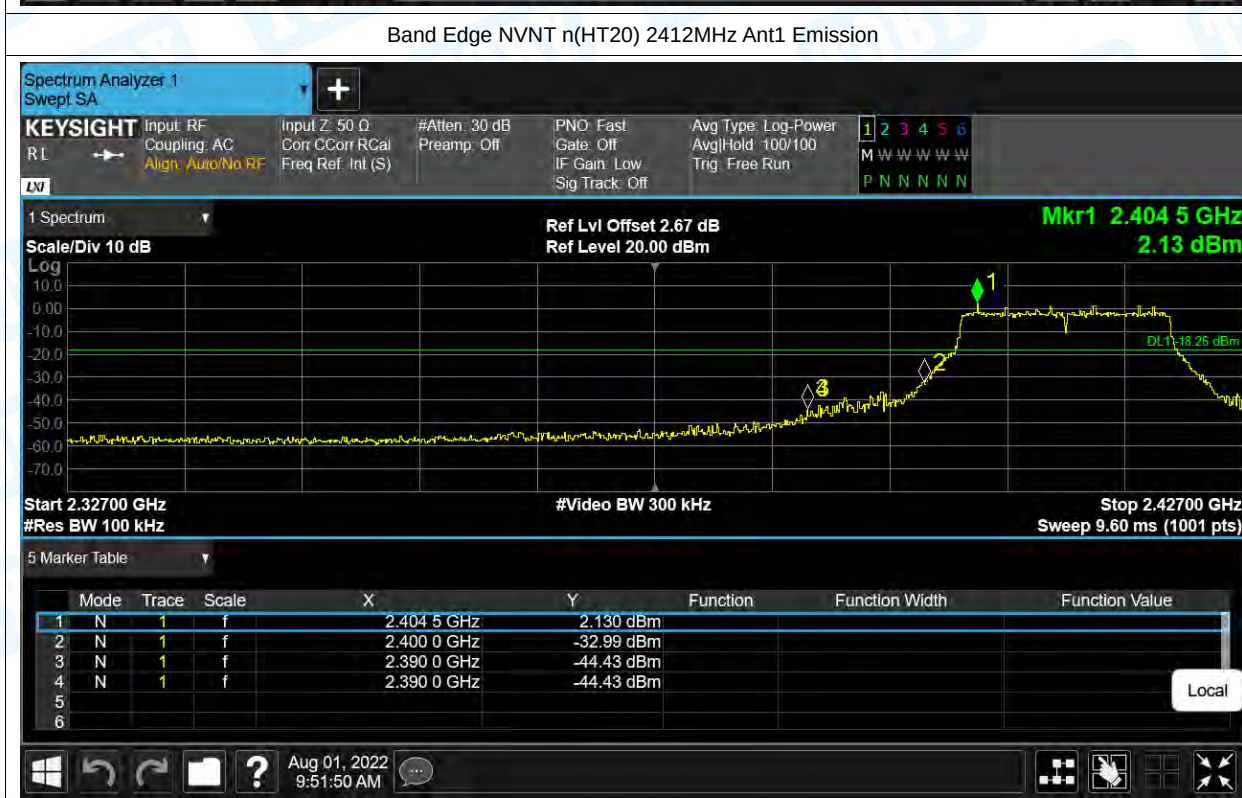
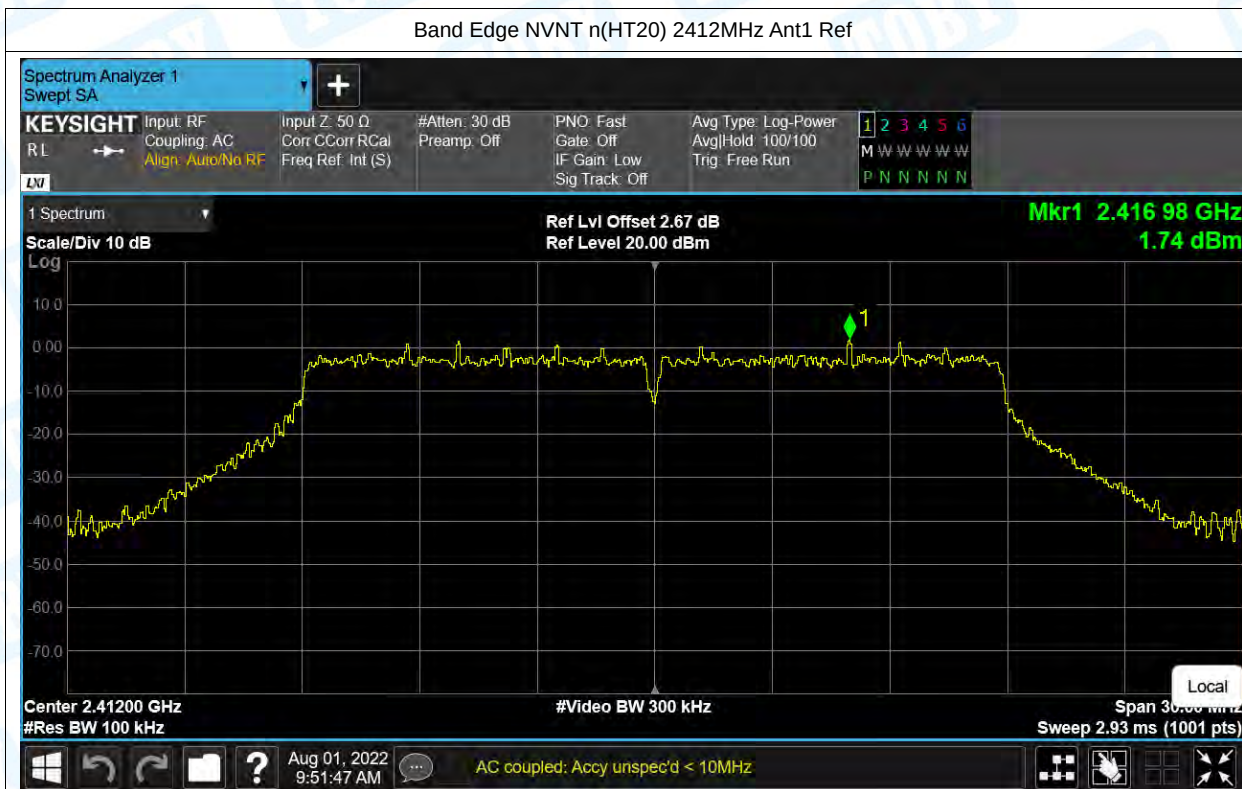


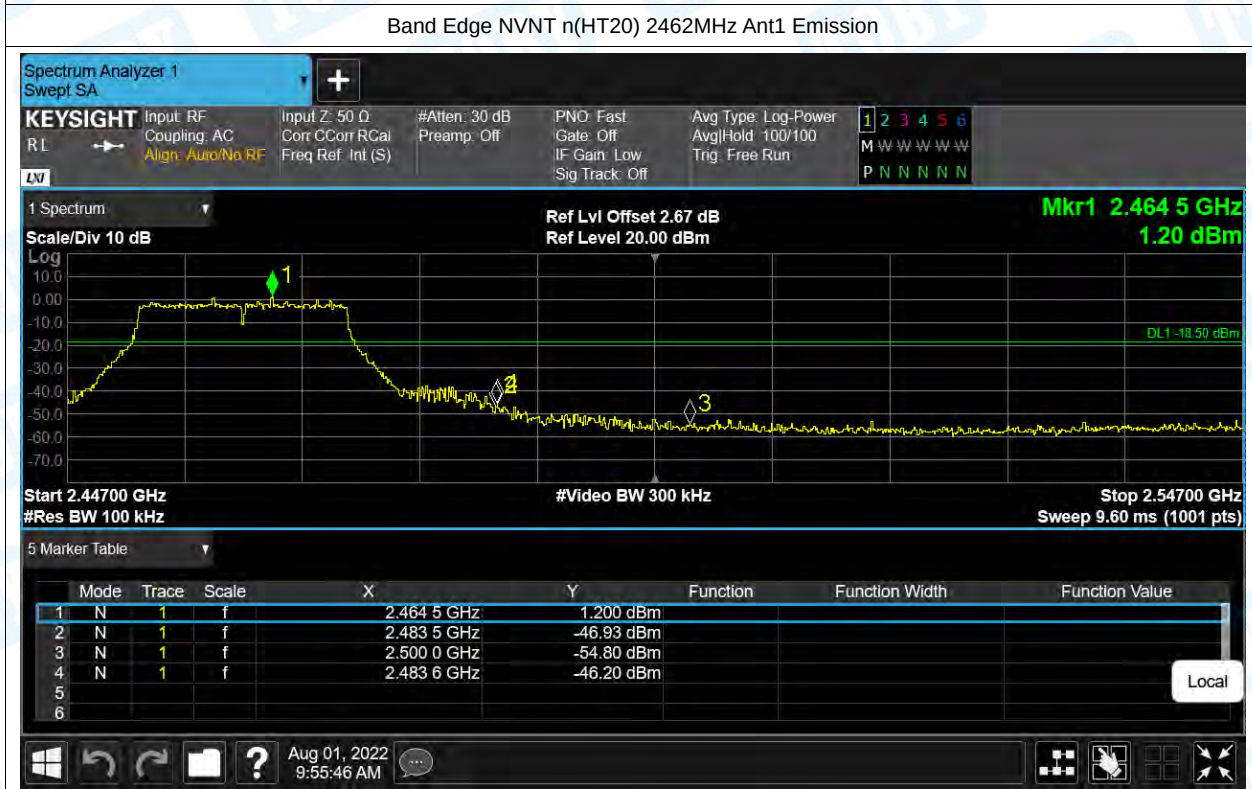
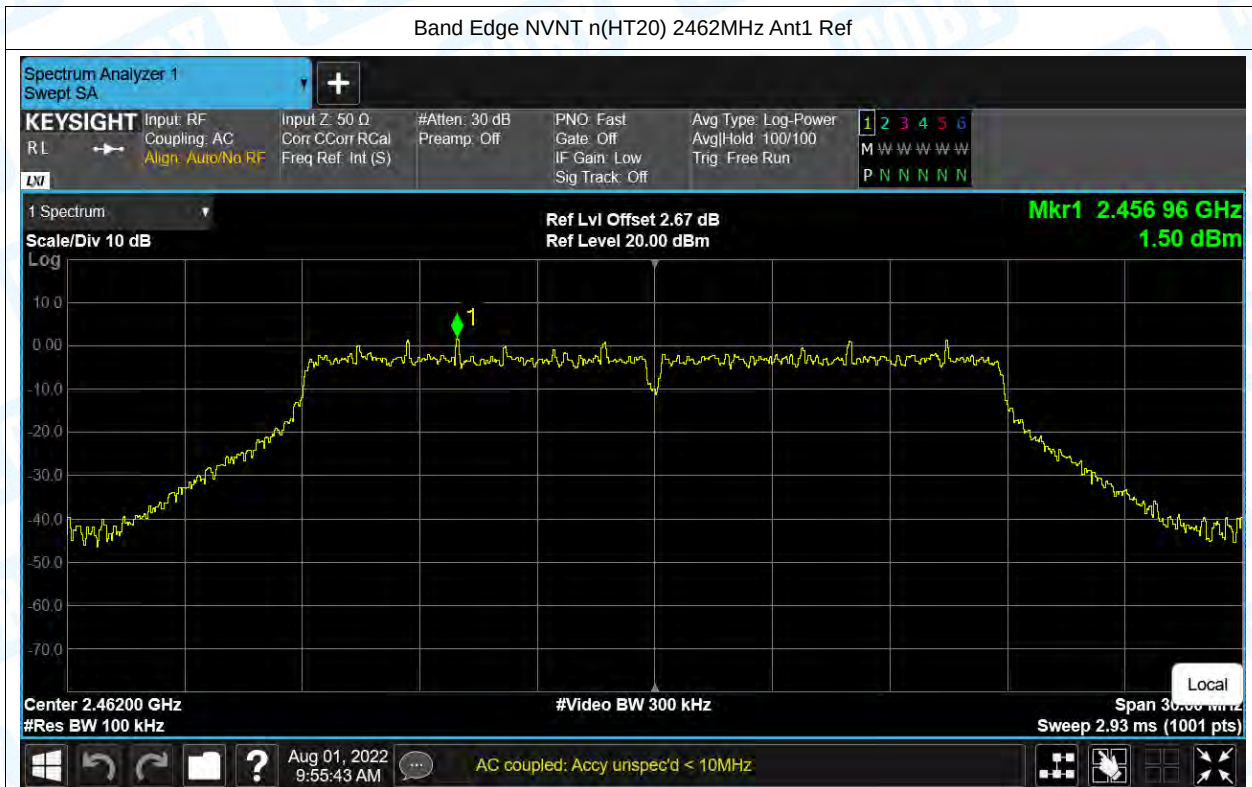
Band Edge NVNT g 2462MHz Ant1 Ref

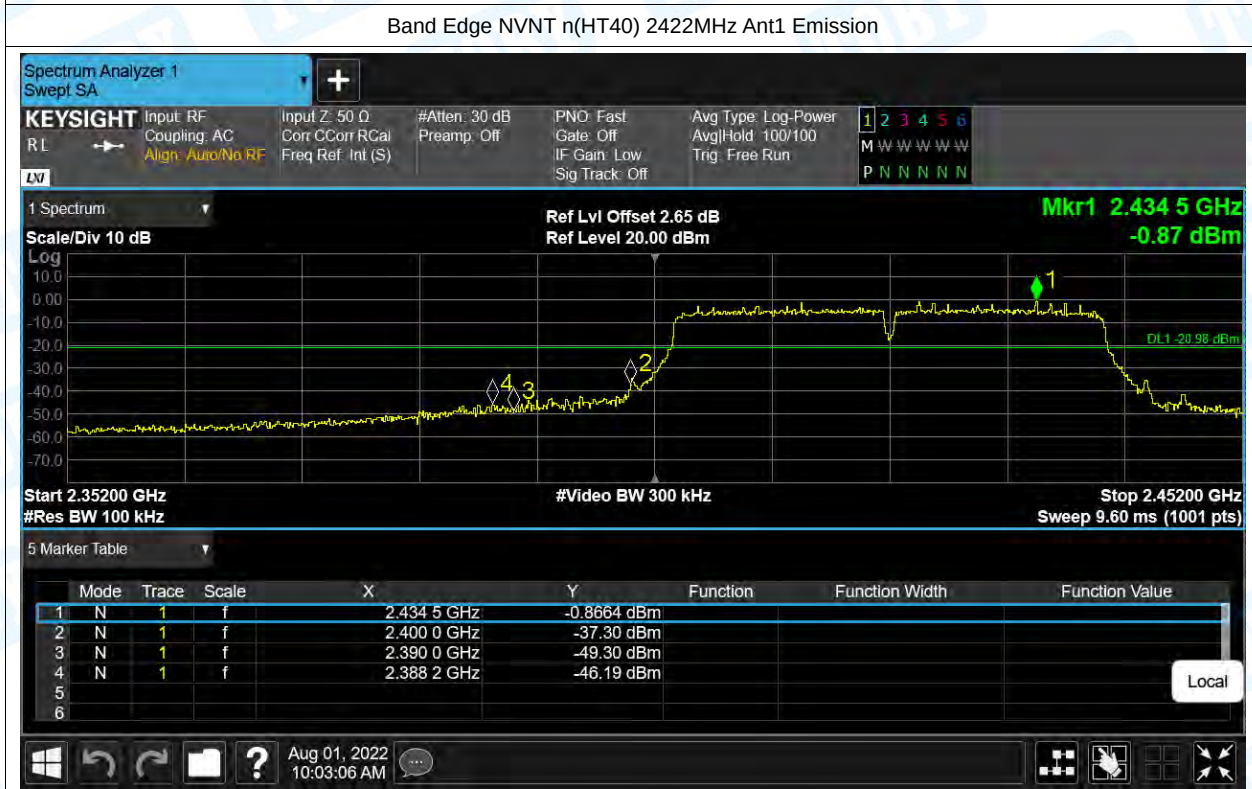
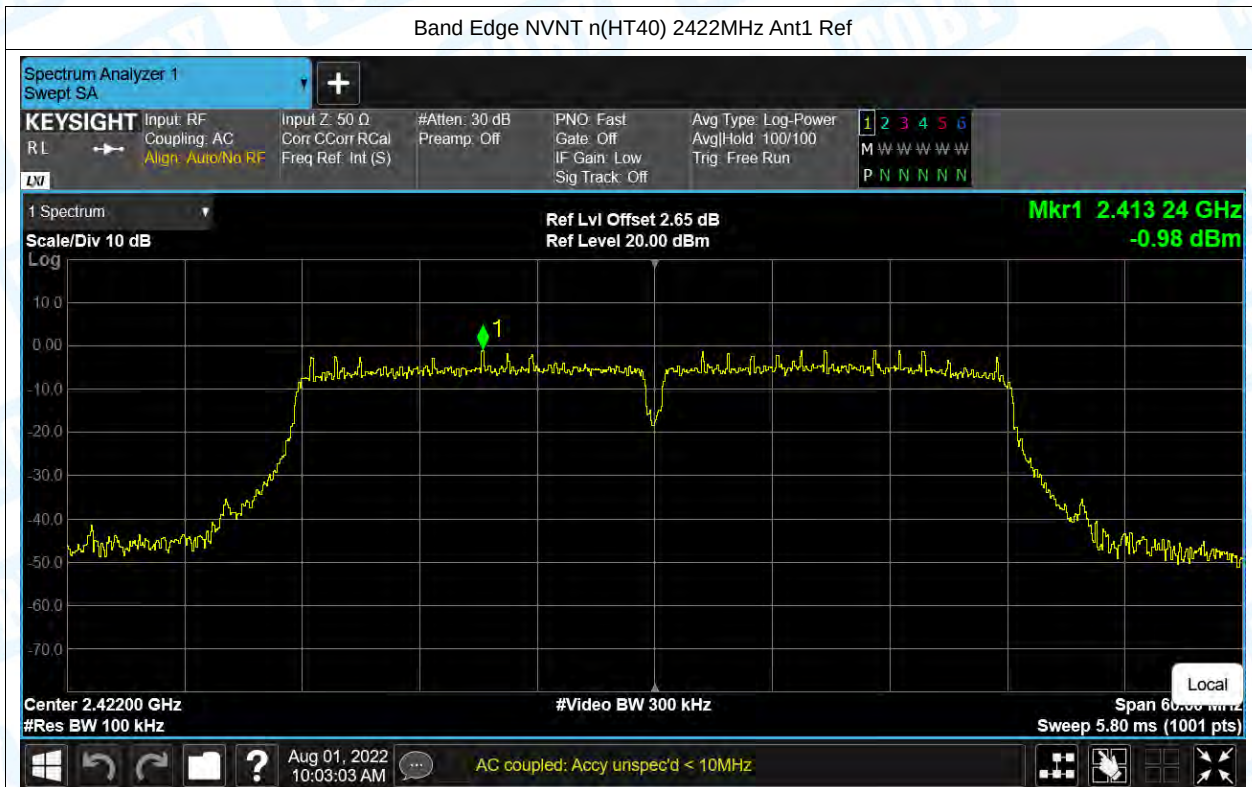


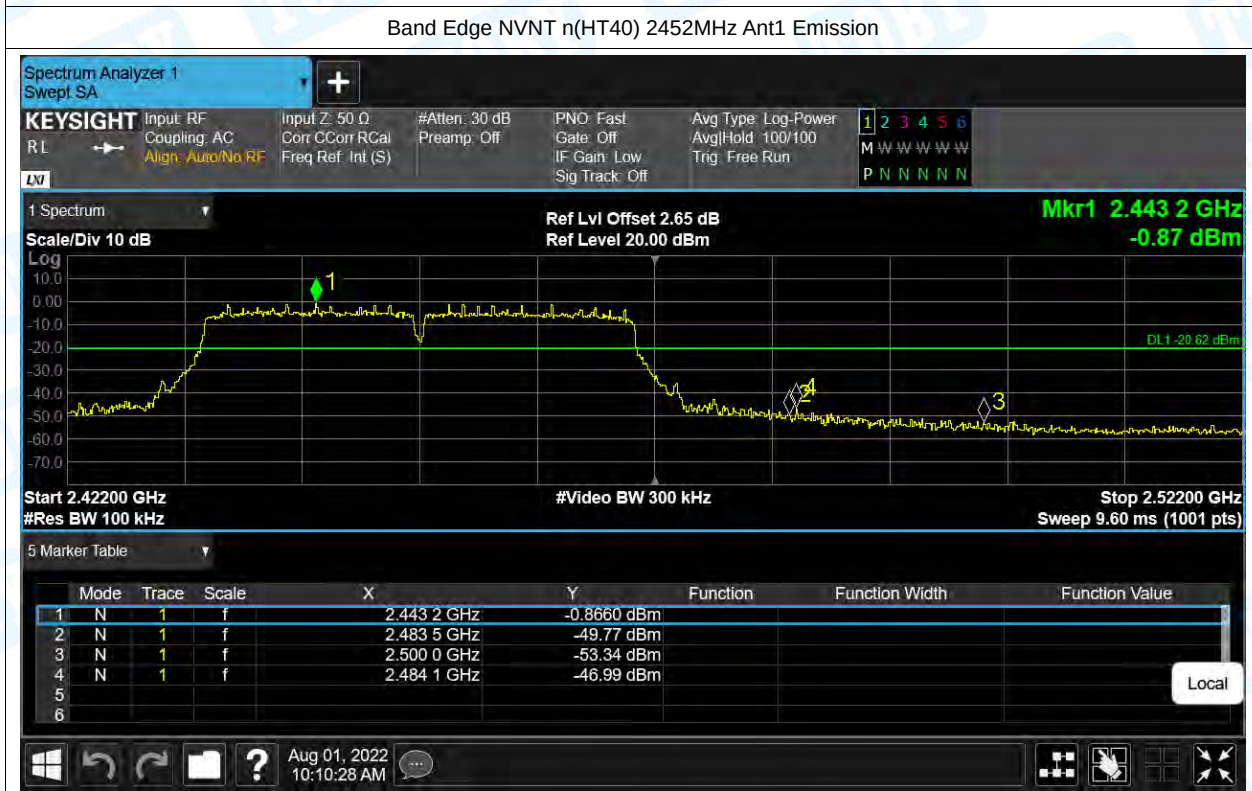
Band Edge NVNT g 2462MHz Ant1 Emission







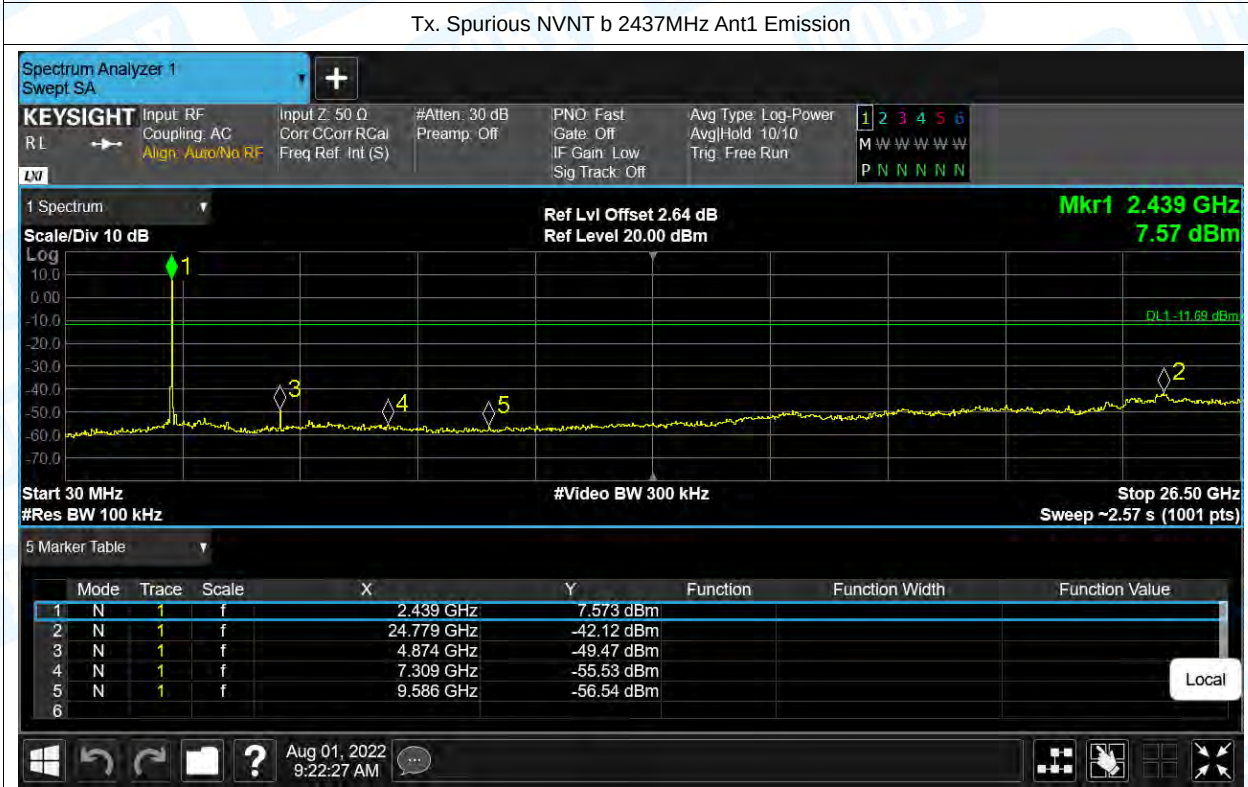
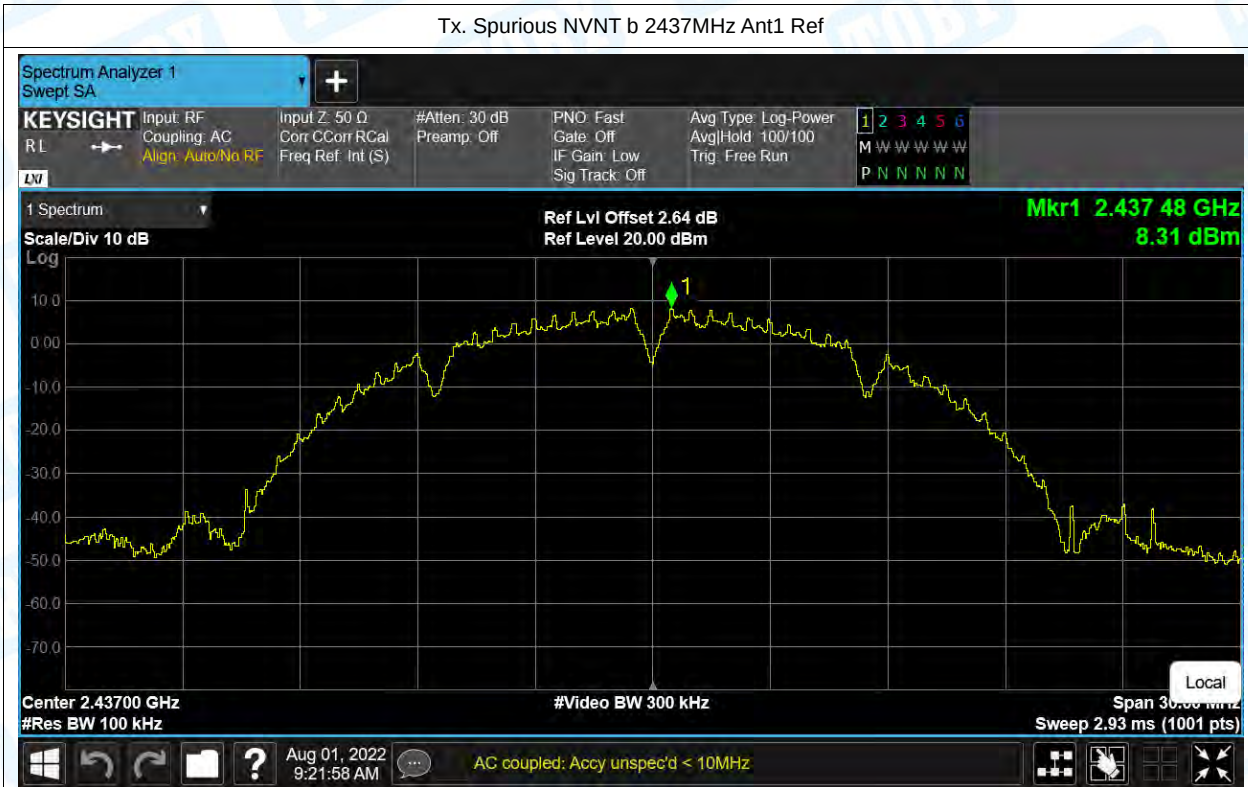




7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-49.27	-20	Pass
NVNT	b	2437	Ant1	-50.43	-20	Pass
NVNT	b	2462	Ant1	-46.58	-20	Pass
NVNT	g	2412	Ant1	-43.19	-20	Pass
NVNT	g	2437	Ant1	-43.53	-20	Pass
NVNT	g	2462	Ant1	-42.49	-20	Pass
NVNT	n(HT20)	2412	Ant1	-44.3	-20	Pass
NVNT	n(HT20)	2437	Ant1	-43.84	-20	Pass
NVNT	n(HT20)	2462	Ant1	-43.14	-20	Pass
NVNT	n(HT40)	2422	Ant1	-40.85	-20	Pass
NVNT	n(HT40)	2437	Ant1	-41.72	-20	Pass
NVNT	n(HT40)	2452	Ant1	-40.74	-20	Pass

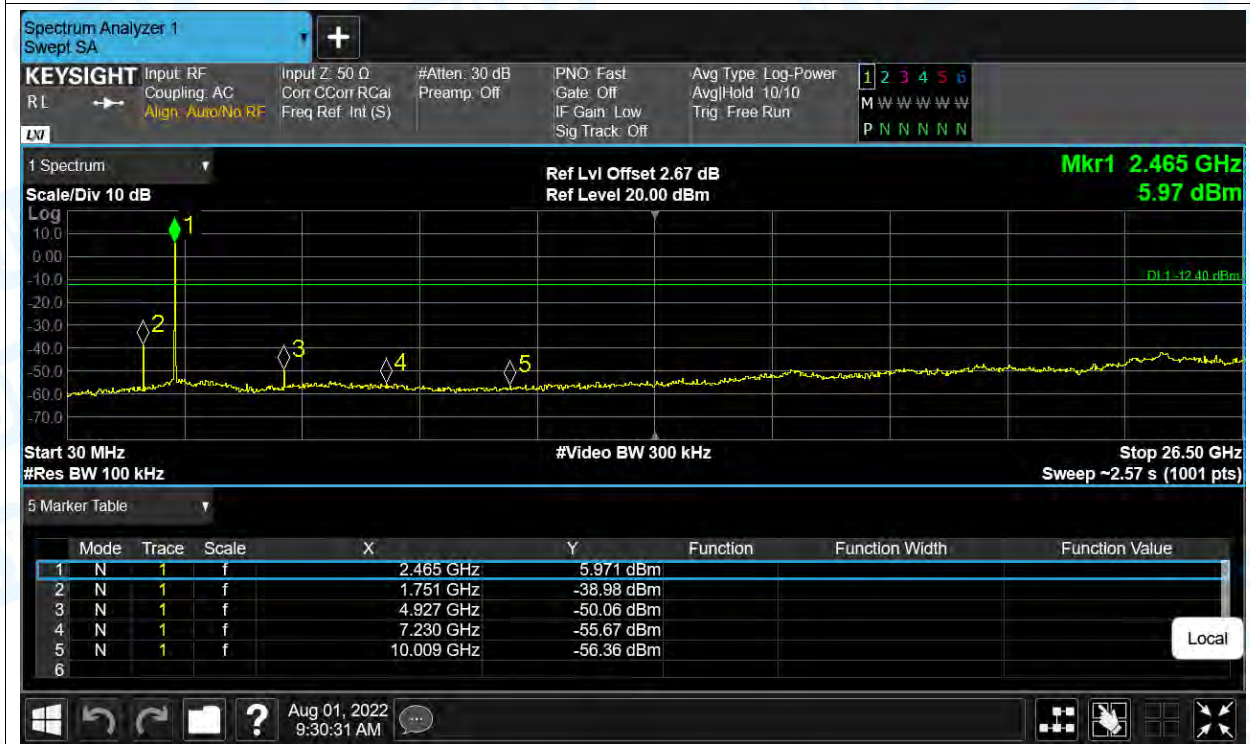


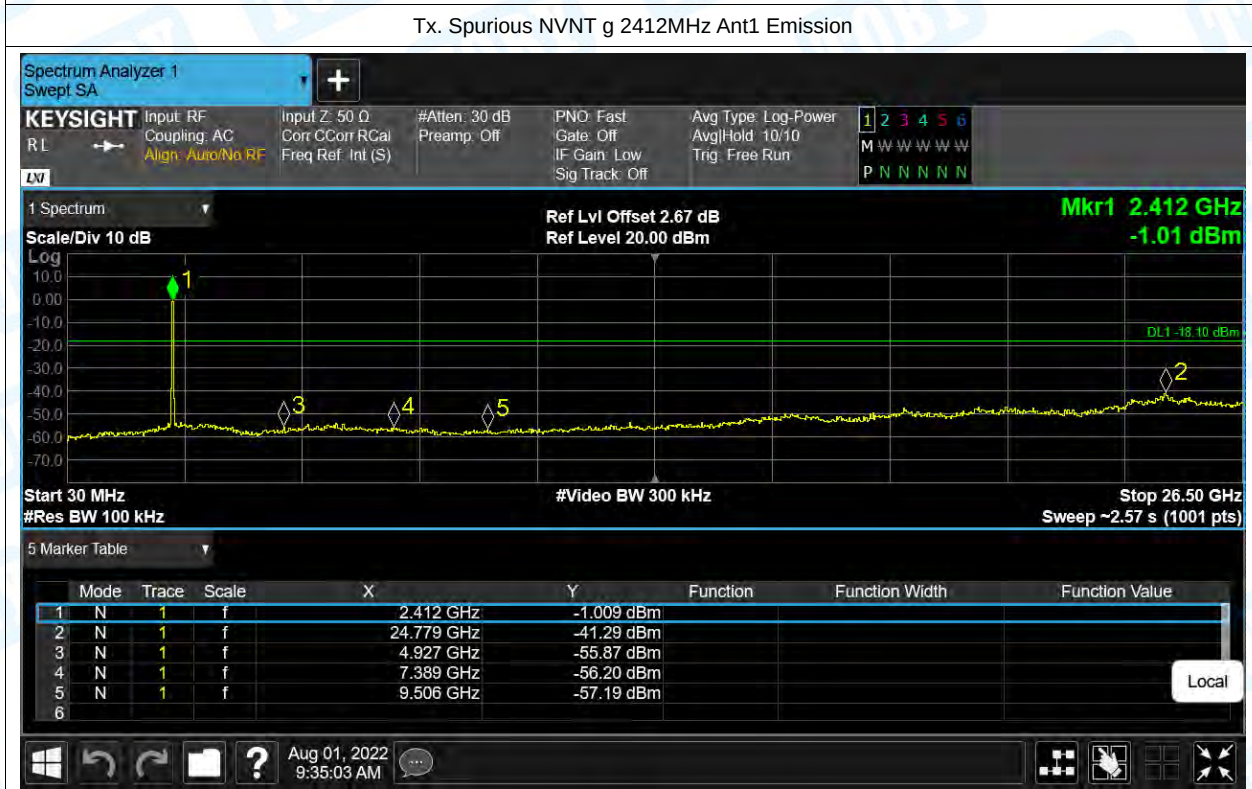
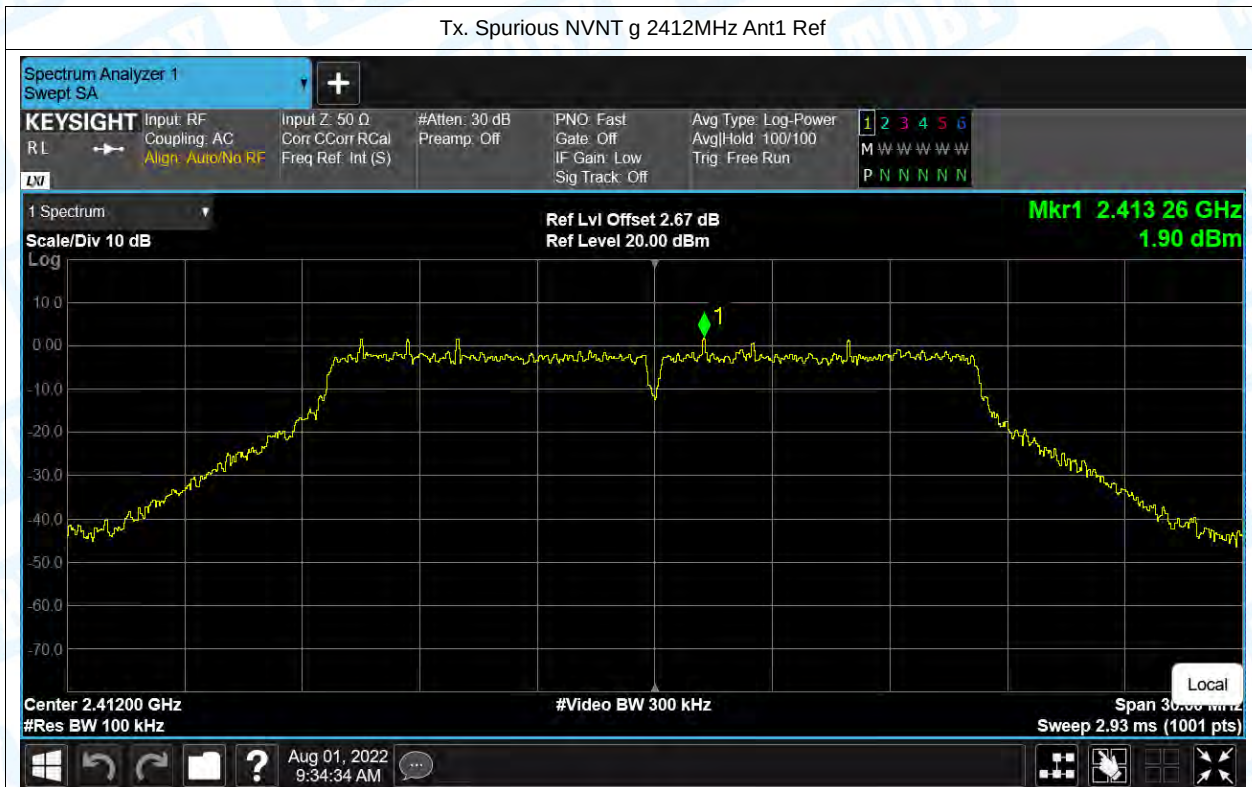


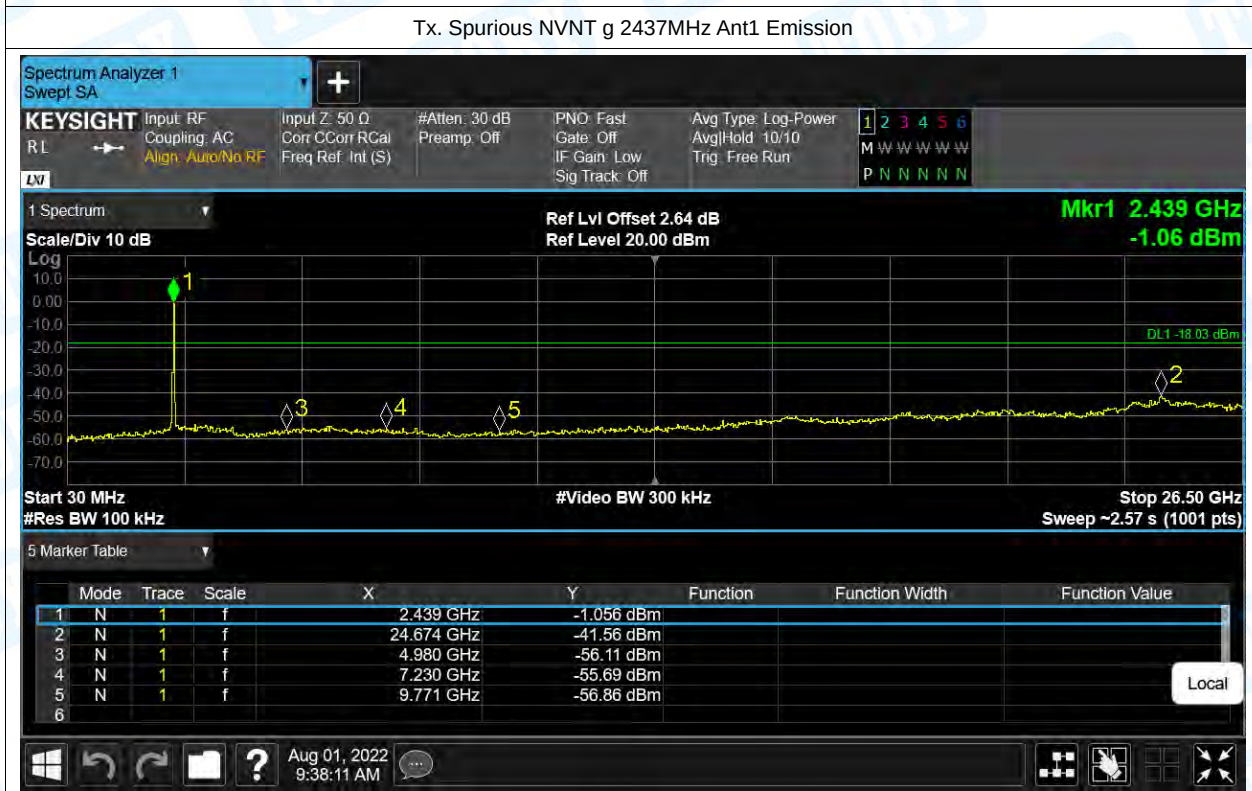
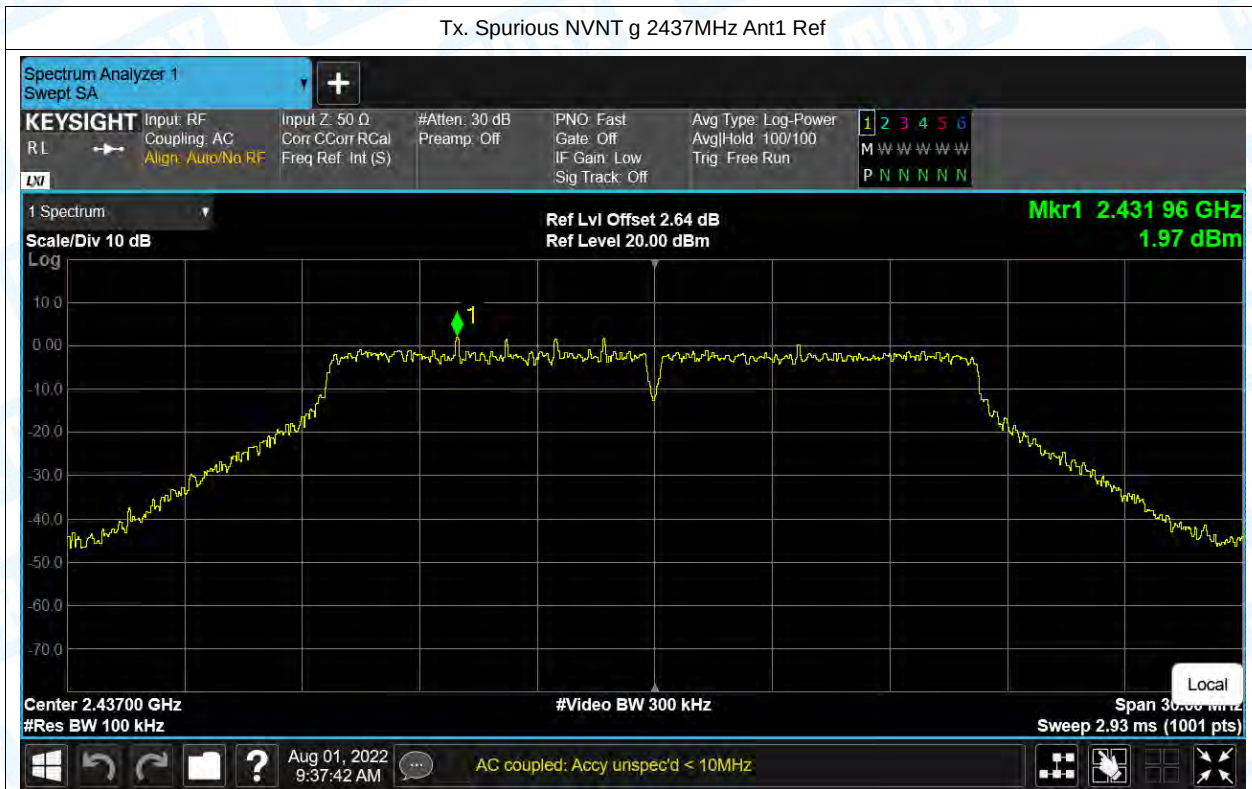
Tx. Spurious NVNT b 2462MHz Ant1 Ref

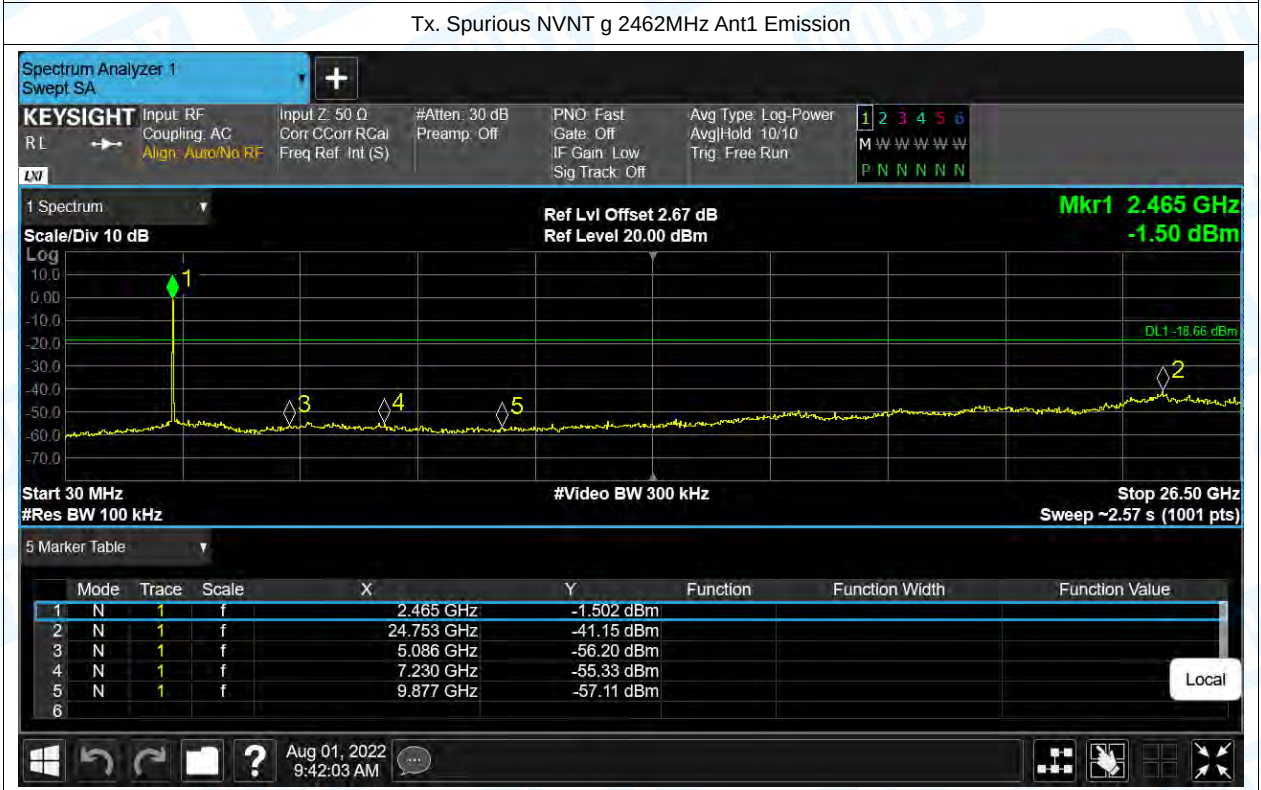
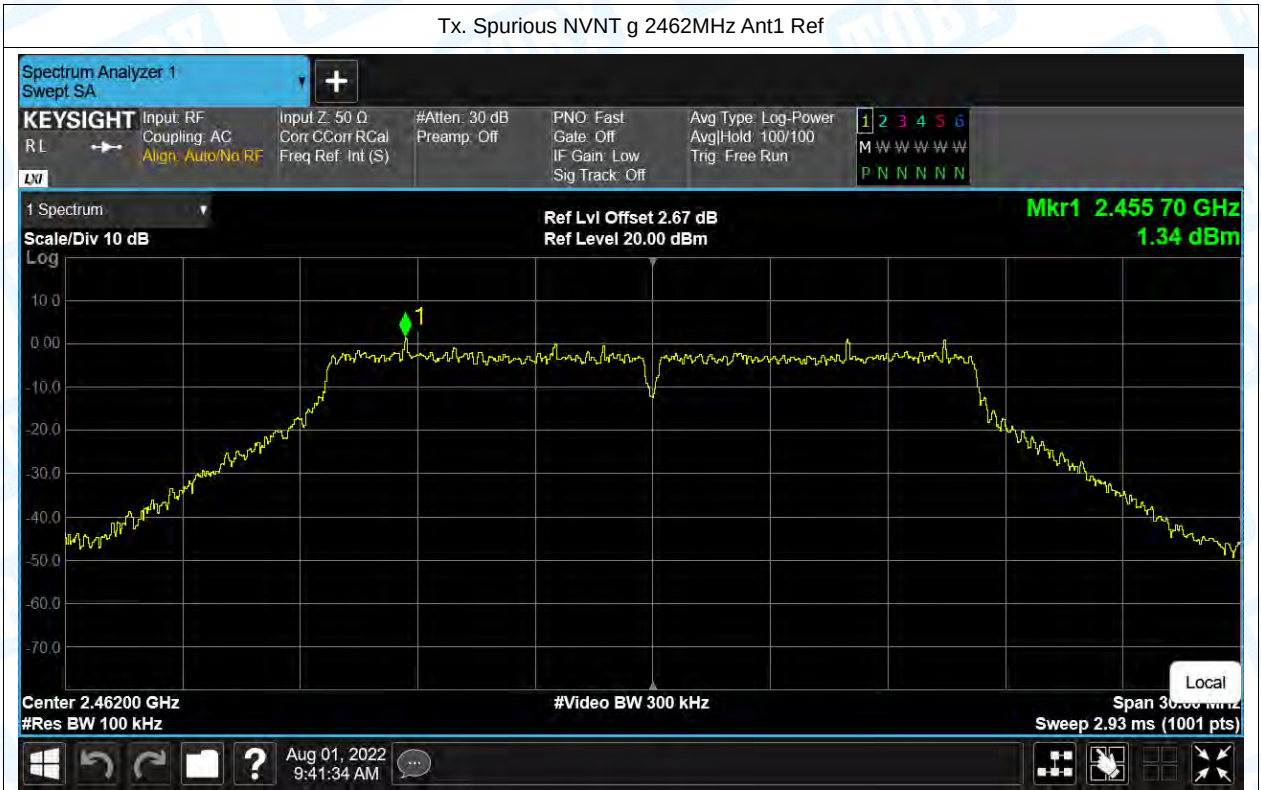


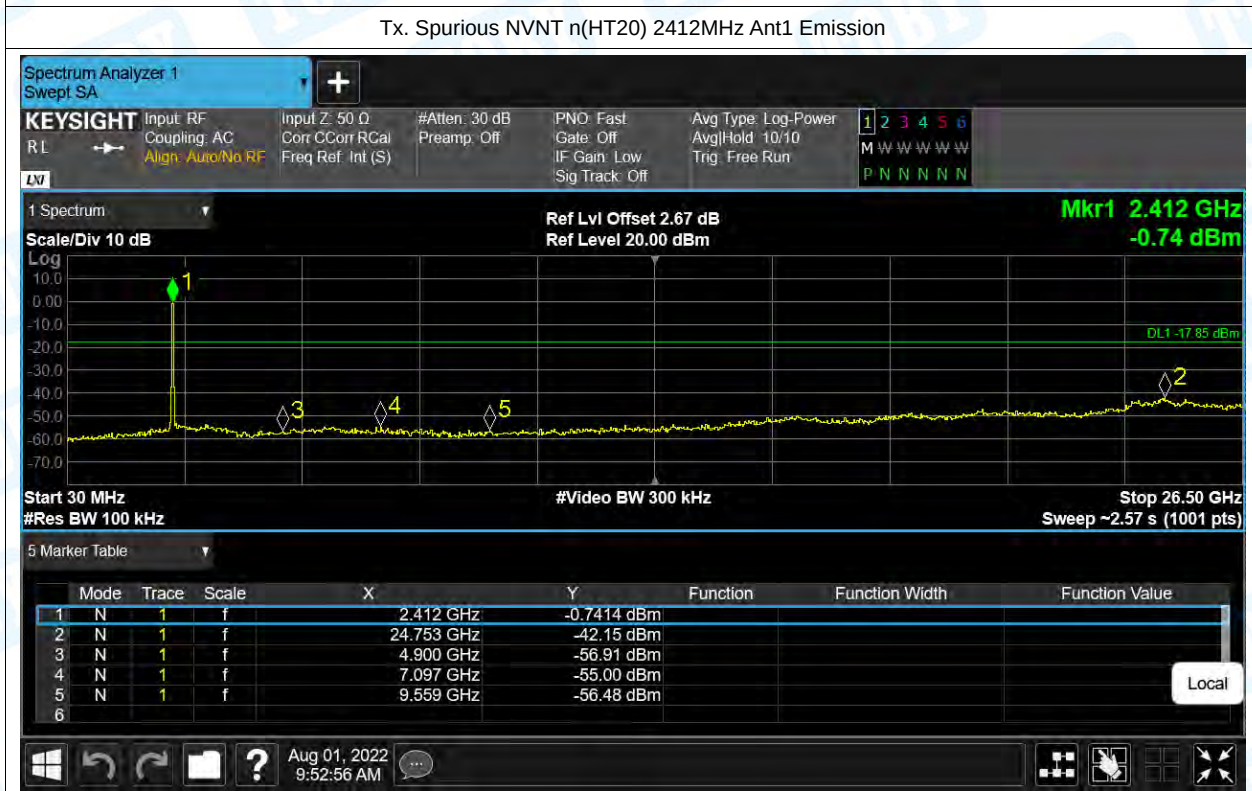
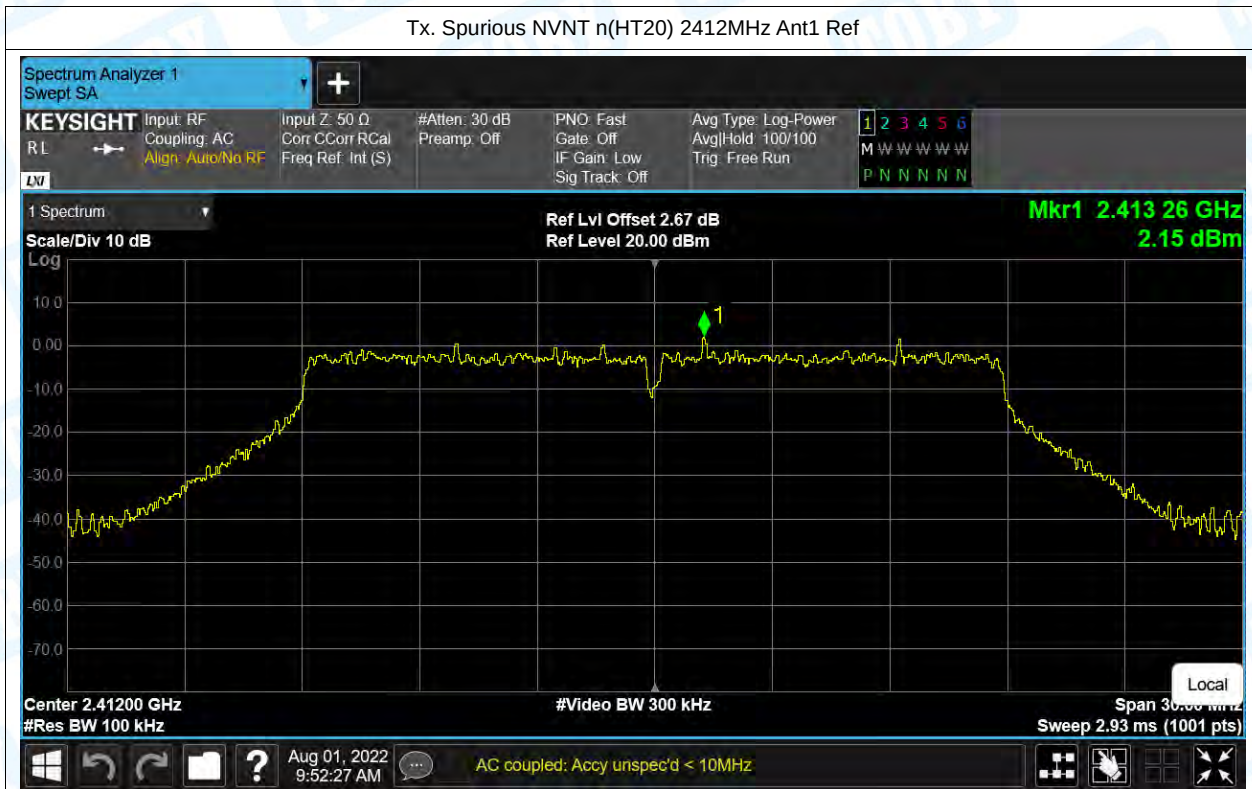
Tx. Spurious NVNT b 2462MHz Ant1 Emission







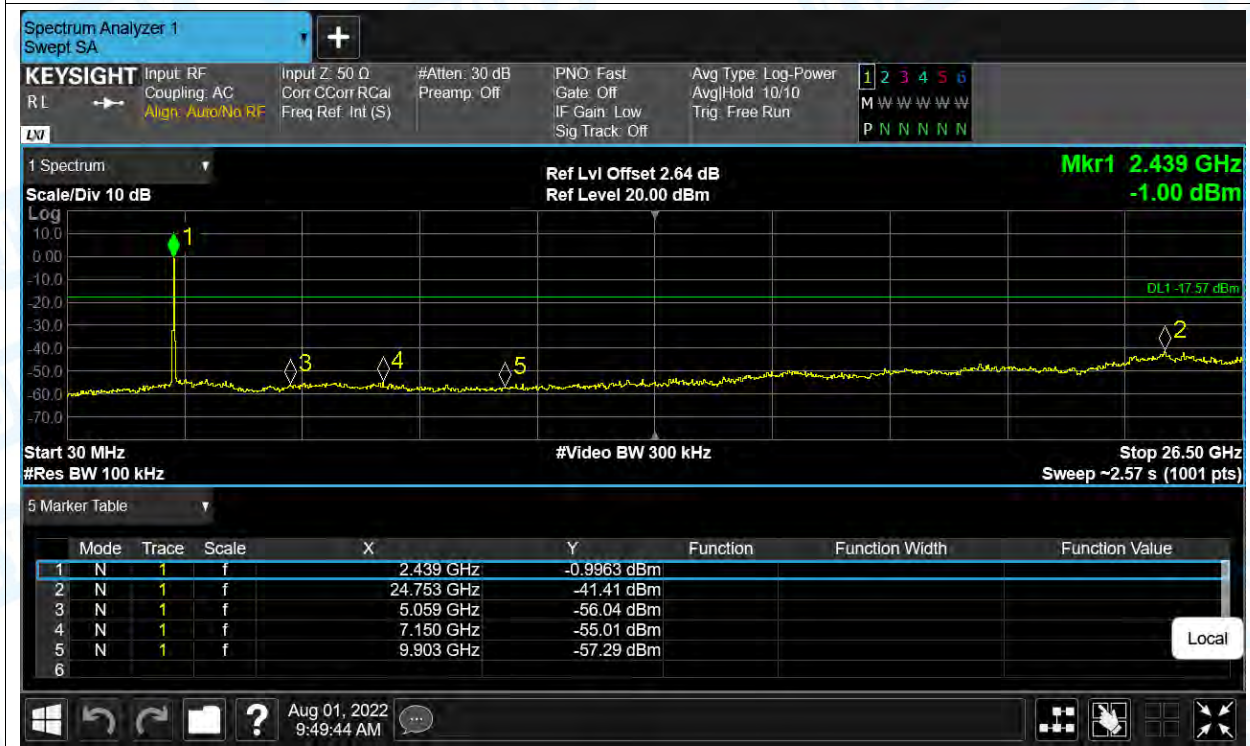




Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



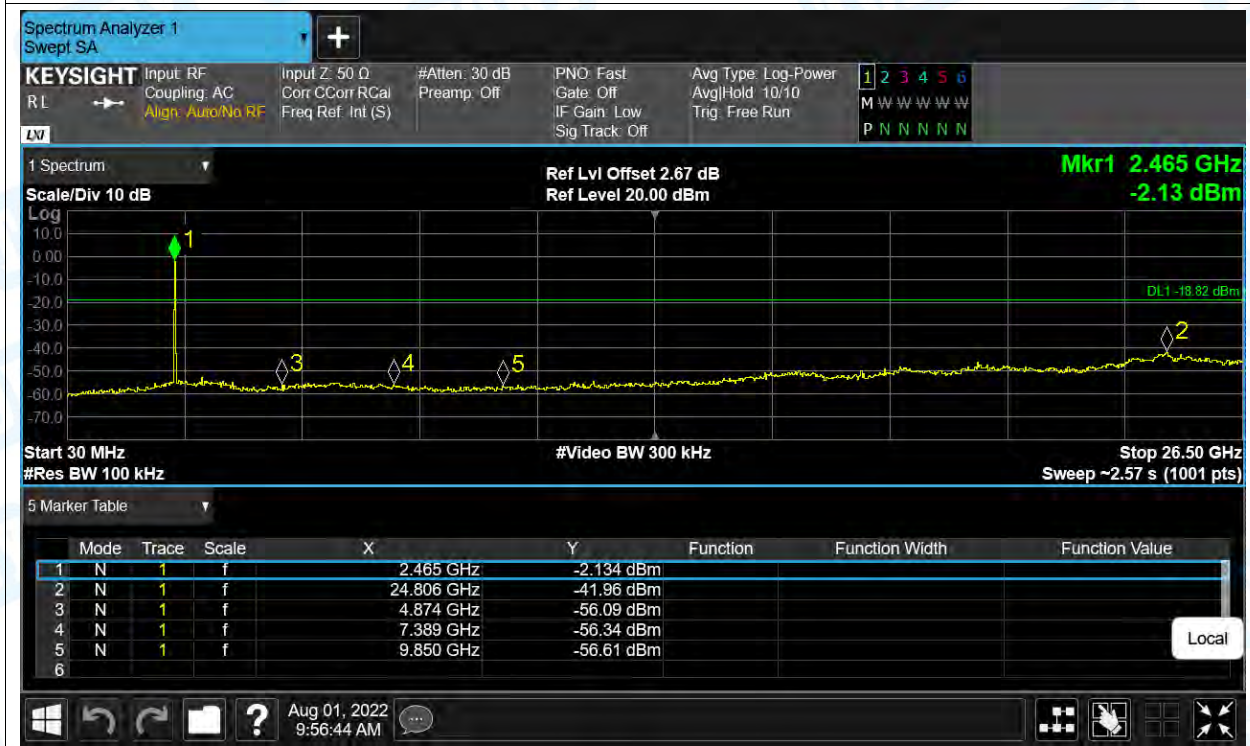
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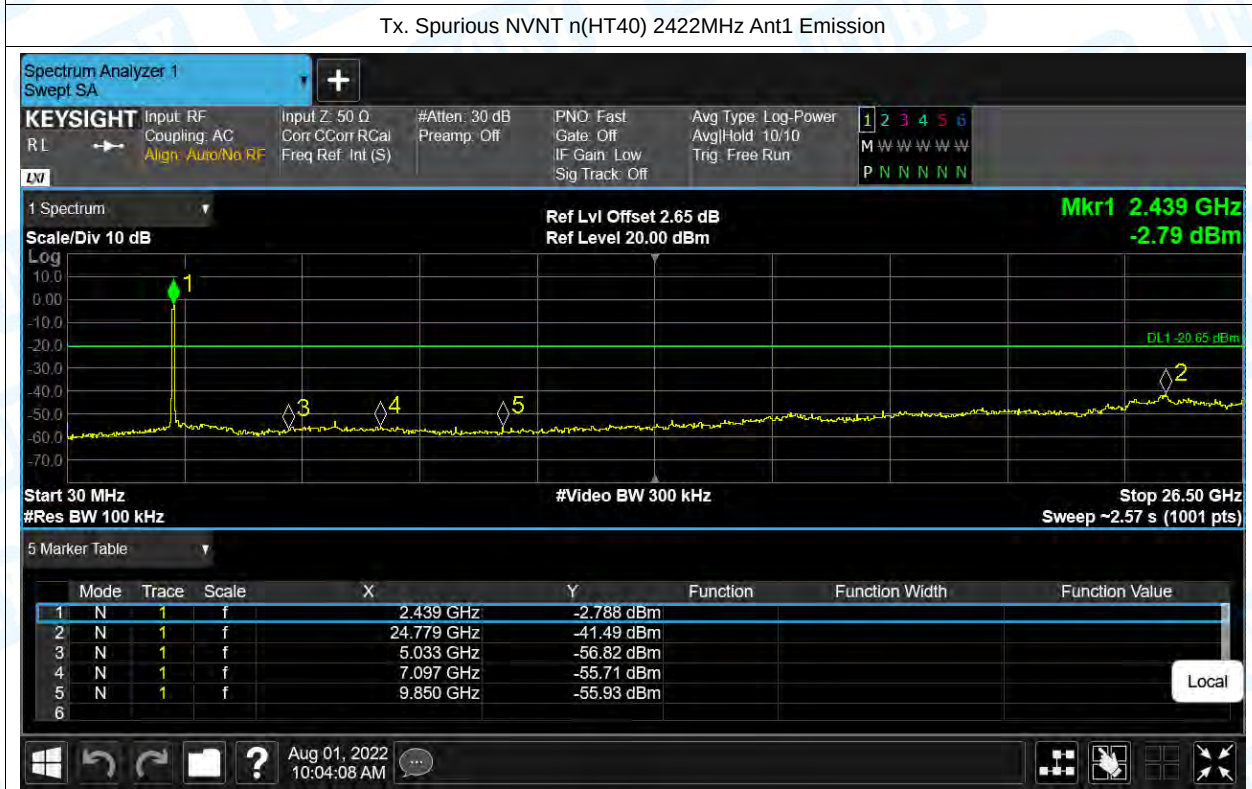
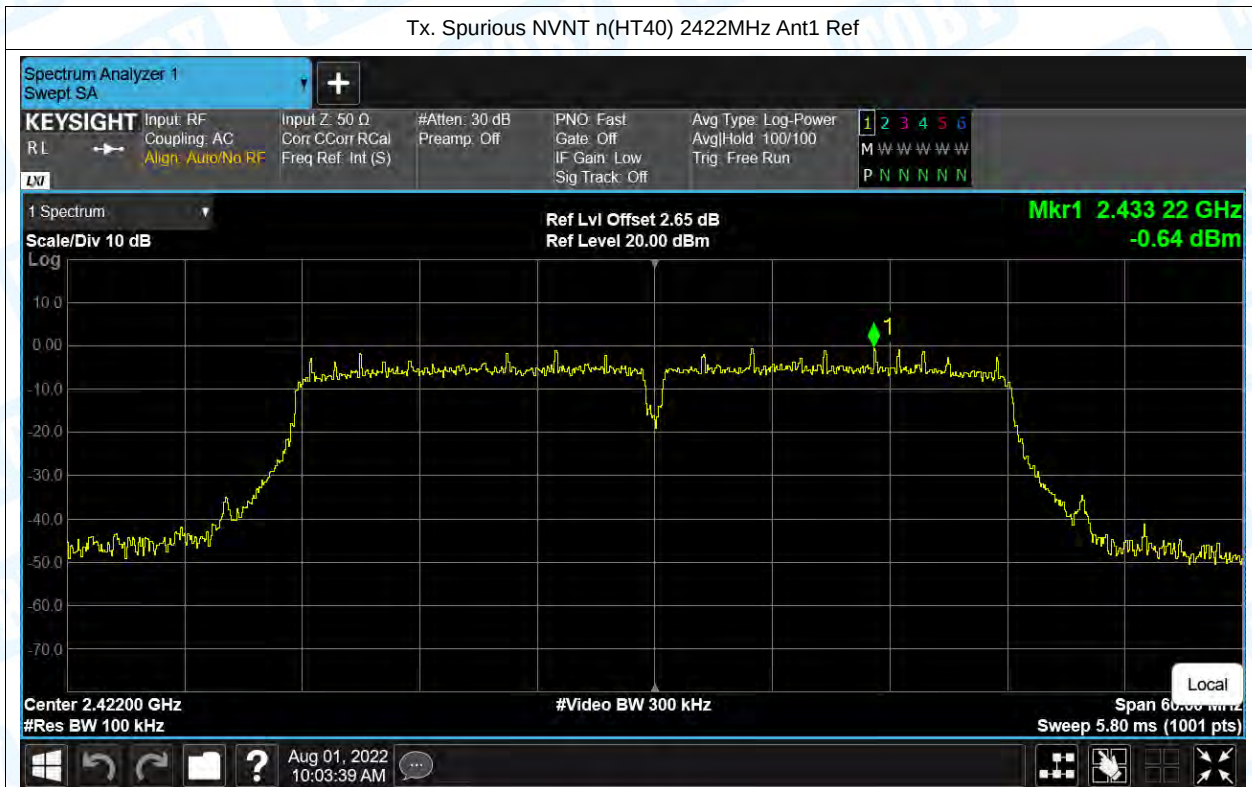


Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref



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

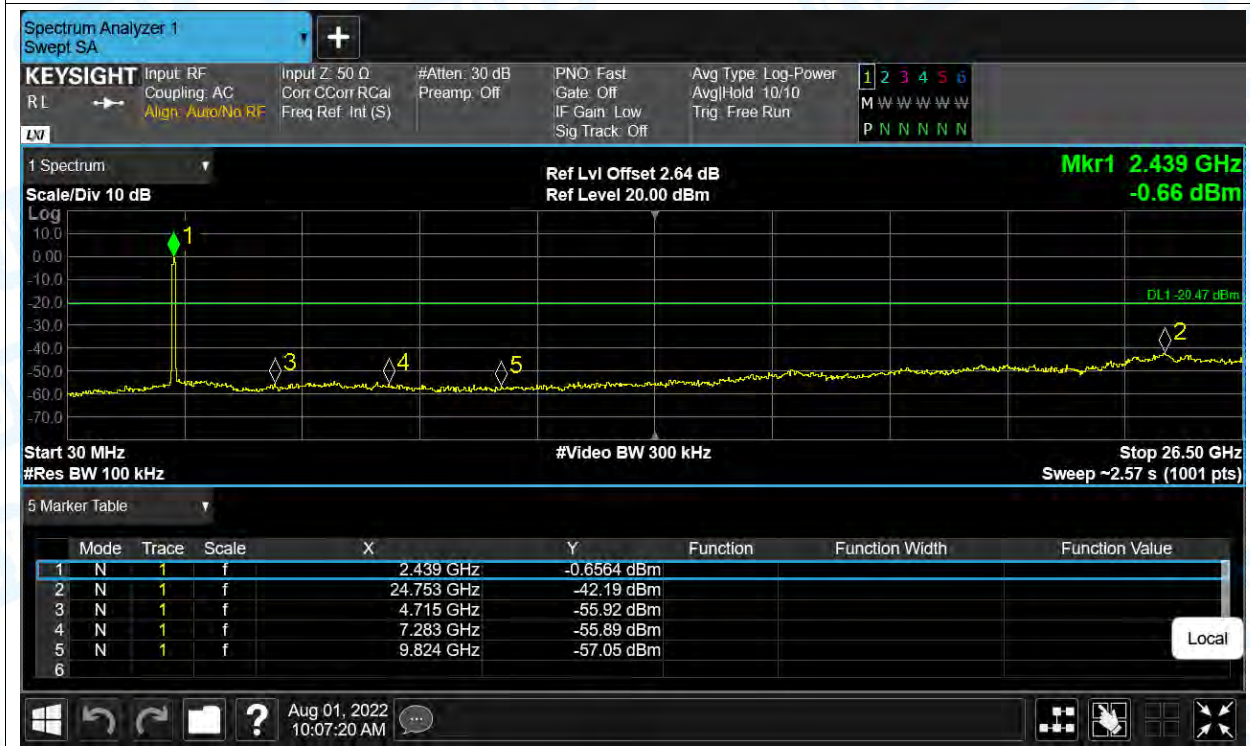




Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Ref



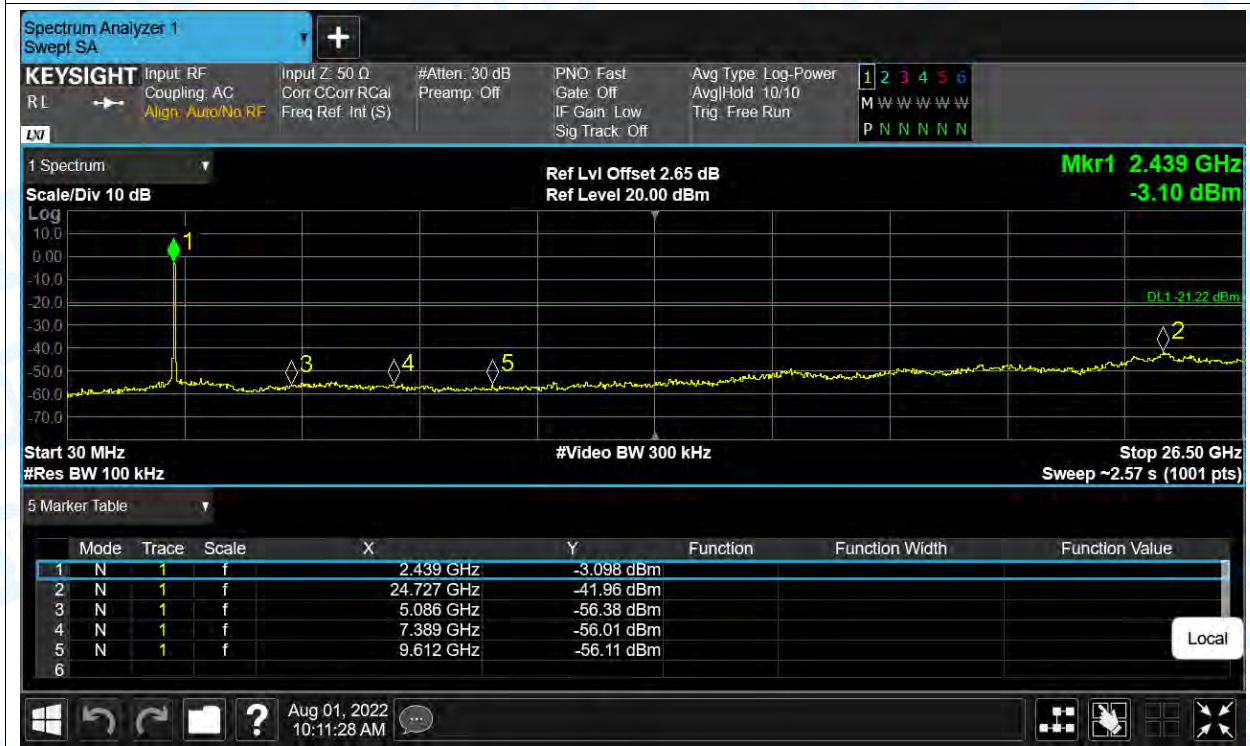
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Emission



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



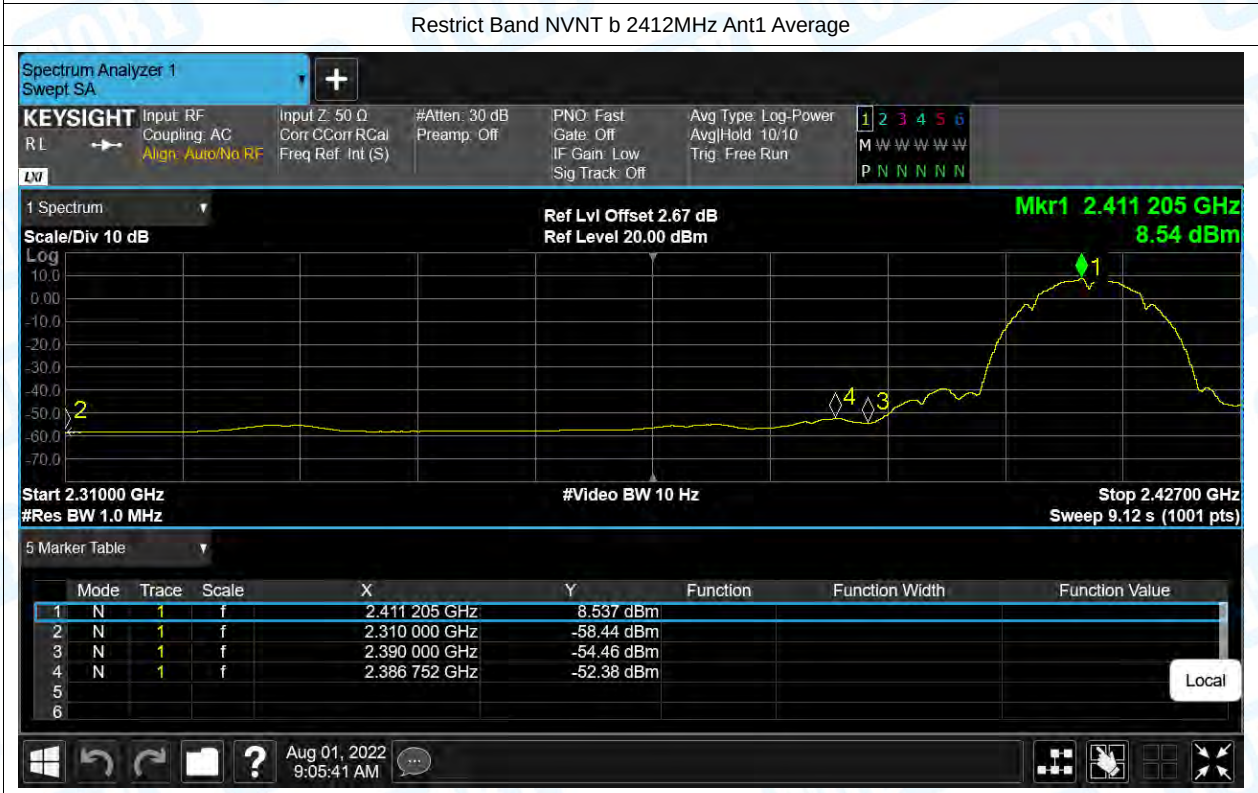
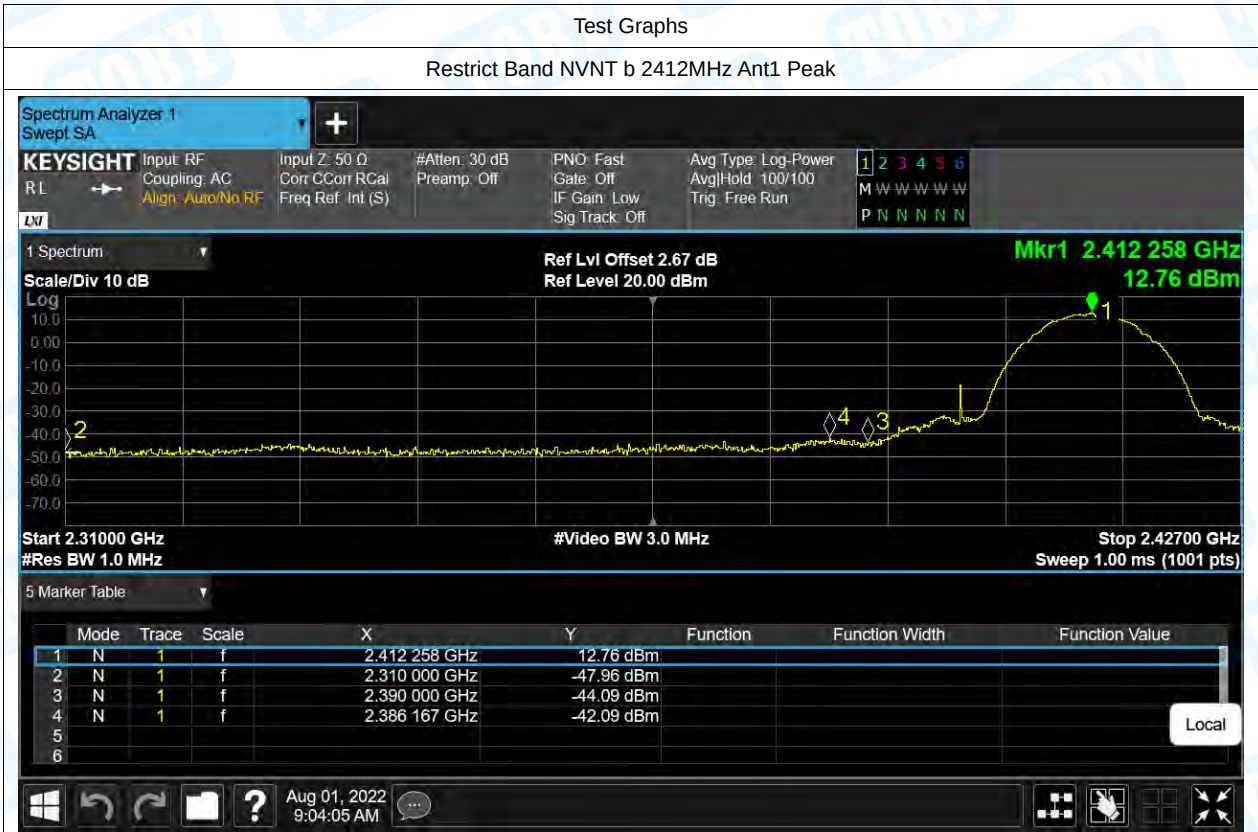
Tx. Spurious NVNT n(HT40) 2452MHz Ant1 Emission



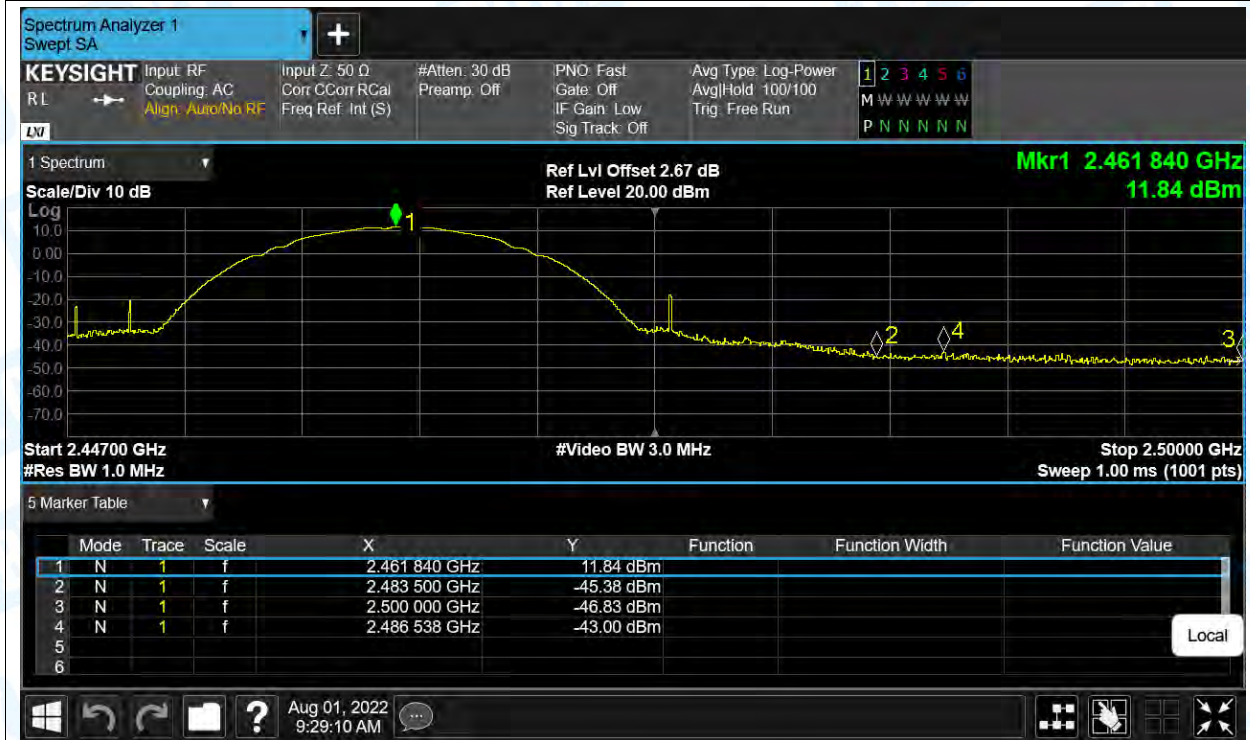
8. Restrict Band

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	-47.96	2	49.3	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-58.44	2	38.82	Average	54	Pass
NVNT	b	2412	Ant1	2386.167	-42.09	2	55.17	Peak	74	Pass
NVNT	b	2412	Ant1	2386.752	-52.38	2	44.88	Average	54	Pass
NVNT	b	2412	Ant1	2390	-44.09	2	53.17	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-54.46	2	42.8	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-45.38	2	51.88	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-55.05	2	42.21	Average	54	Pass
NVNT	b	2462	Ant1	2486.538	-43	2	54.26	Peak	74	Pass
NVNT	b	2462	Ant1	2487.439	-54.75	2	42.51	Average	54	Pass
NVNT	b	2462	Ant1	2500	-46.83	2	50.43	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-56.65	2	40.61	Average	54	Pass
NVNT	g	2412	Ant1	2310	-48.62	2	48.64	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-58.29	2	38.97	Average	54	Pass
NVNT	g	2412	Ant1	2387.922	-36.54	2	60.72	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-50.76	2	46.5	Average	54	Pass
NVNT	g	2412	Ant1	2390	-40.05	2	57.21	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-50.63	2	46.63	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-40.94	2	56.32	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-52.77	2	44.49	Average	54	Pass
NVNT	g	2462	Ant1	2484.365	-39.45	2	57.81	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-52.77	2	44.49	Average	54	Pass
NVNT	g	2462	Ant1	2500	-46.91	2	50.35	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-55.88	2	41.38	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-47.05	2	50.21	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-58.34	2	38.92	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2389.56	-33.07	2	64.19	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2389.911	-49.28	2	47.98	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-31.53	2	65.73	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-49.29	2	47.97	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-35.45	2	61.81	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-51.95	2	45.31	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.888	-30.15	2	67.11	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.517	-51.95	2	45.31	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-46.37	2	50.89	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-55.93	2	41.33	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2310	-48.57	2	48.69	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2310	-58.12	2	39.14	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2386.822	-32.23	2	65.03	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2389.946	-47.97	2	49.29	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2390	-36.27	2	60.99	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2390	-47.72	2	49.54	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-40.95	2	56.31	Peak	74	Pass

NVNT	n(HT40)	2452	Ant1	2483.5	-51.69	2	45.57	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2485.414	-33.27	2	63.99	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2483.698	-51.6	2	45.66	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2500	-45.02	2	52.24	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2500	-54.98	2	42.28	Average	54	Pass



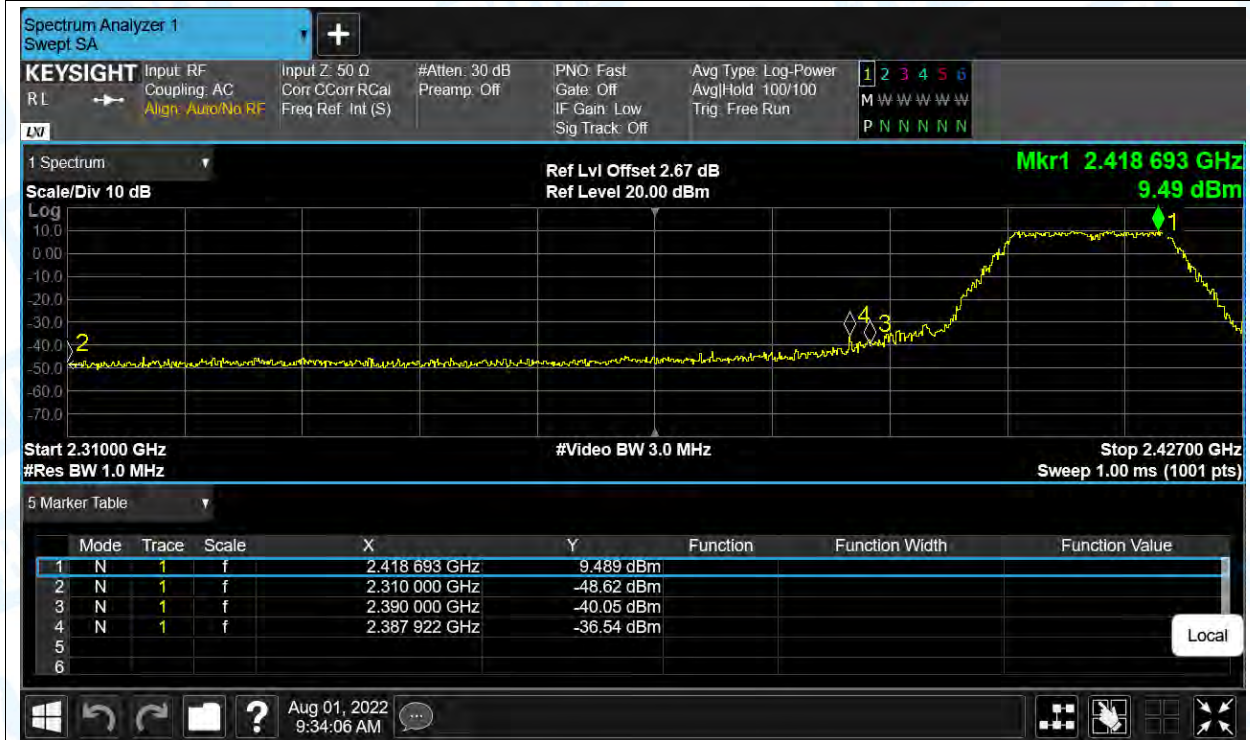
Restrict Band NVNT b 2462MHz Ant1 Peak



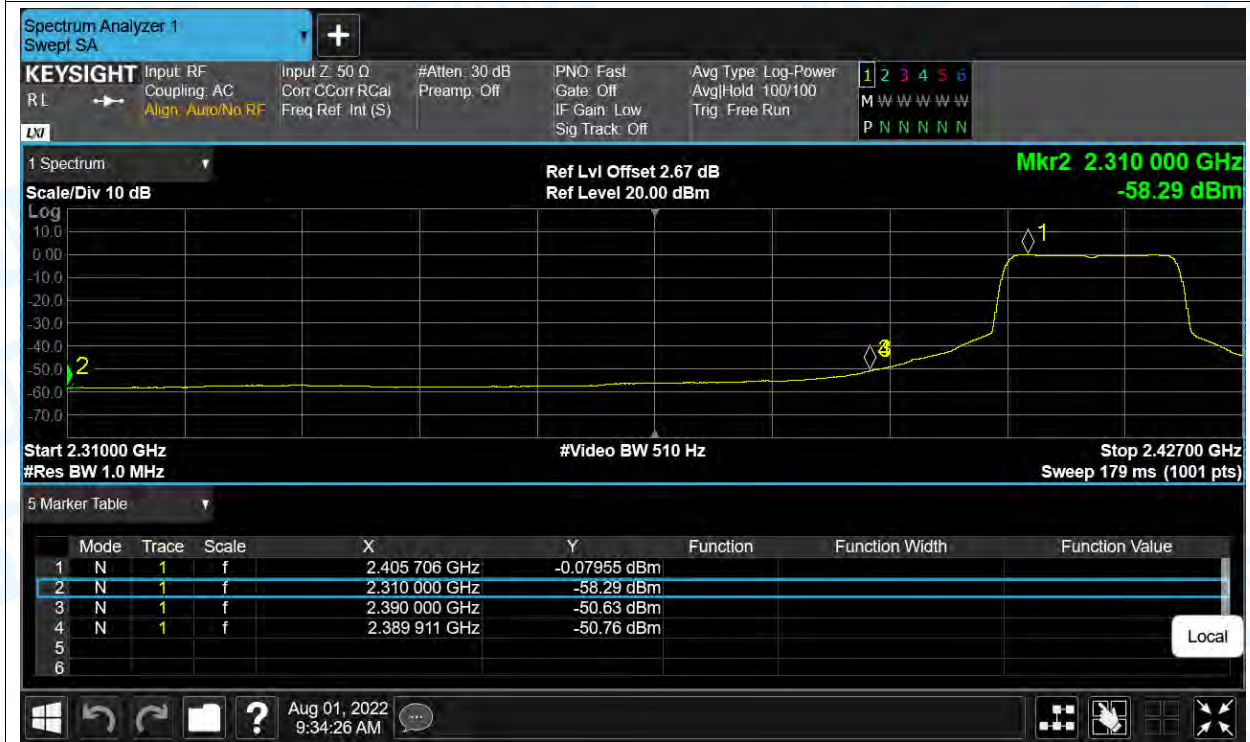
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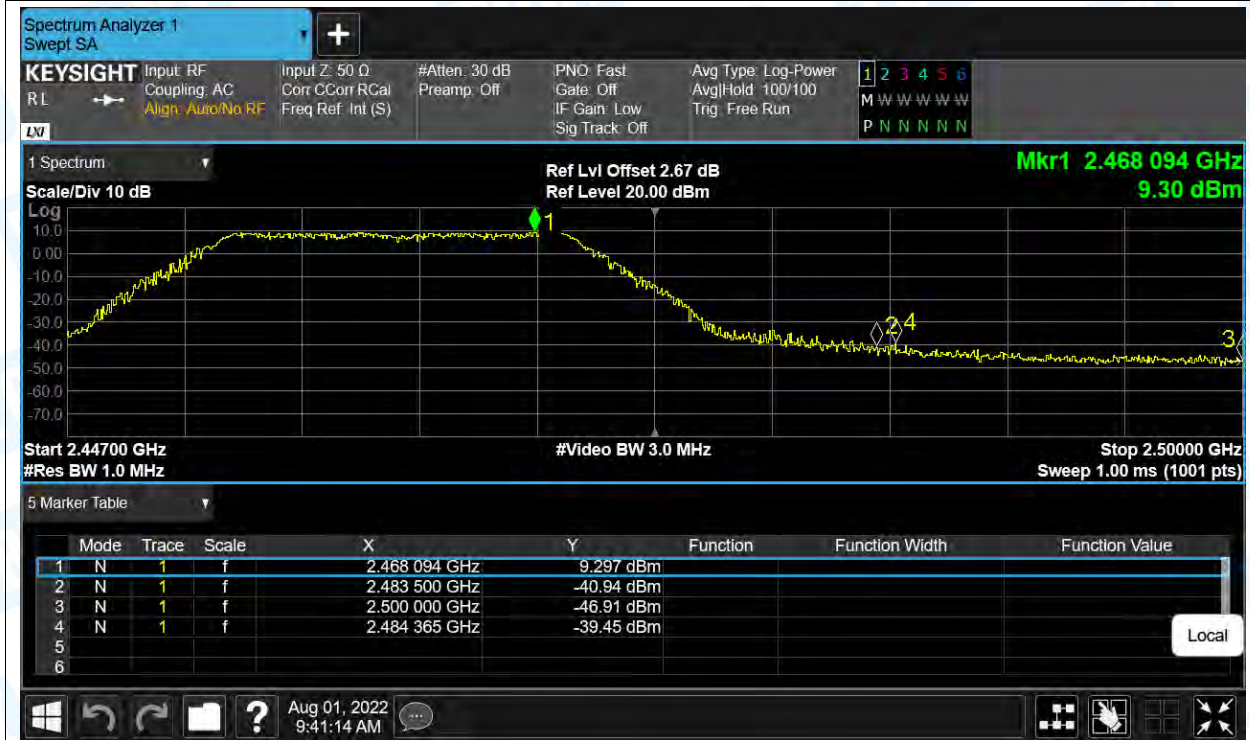
Restrict Band NVNT g 2412MHz Ant1 Peak



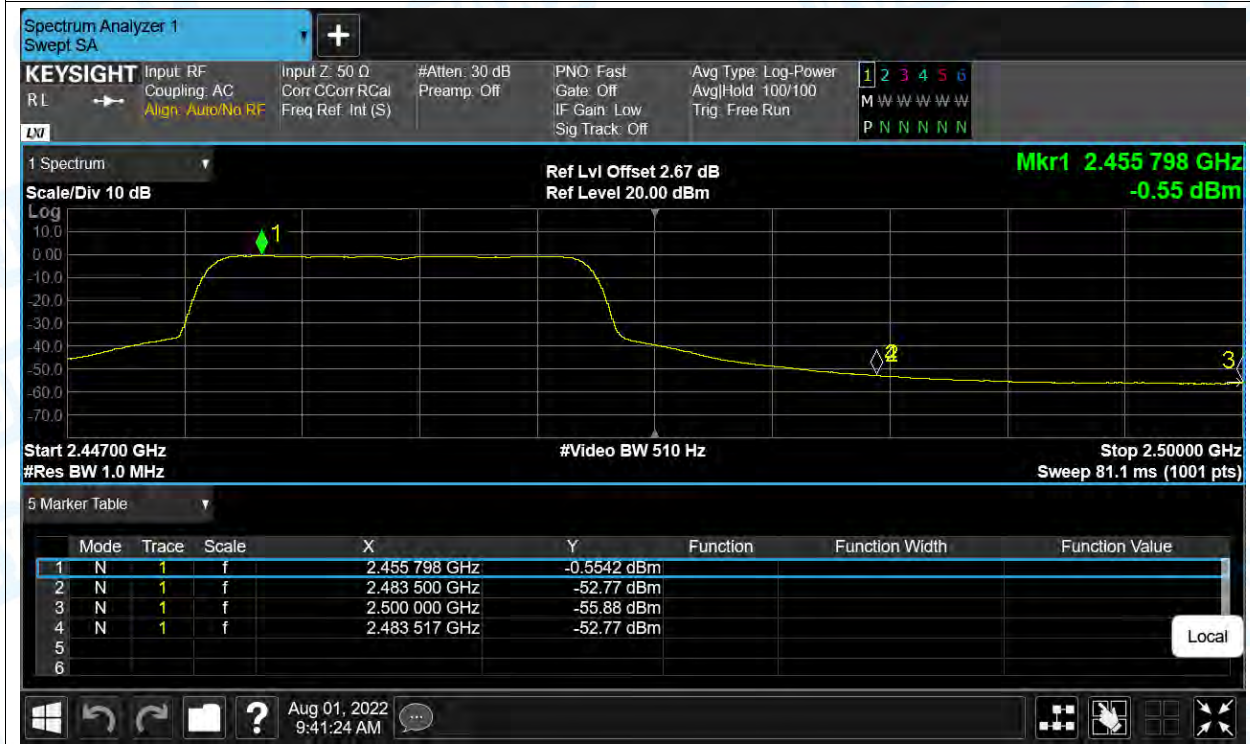
Restrict Band NVNT g 2412MHz Ant1 Average

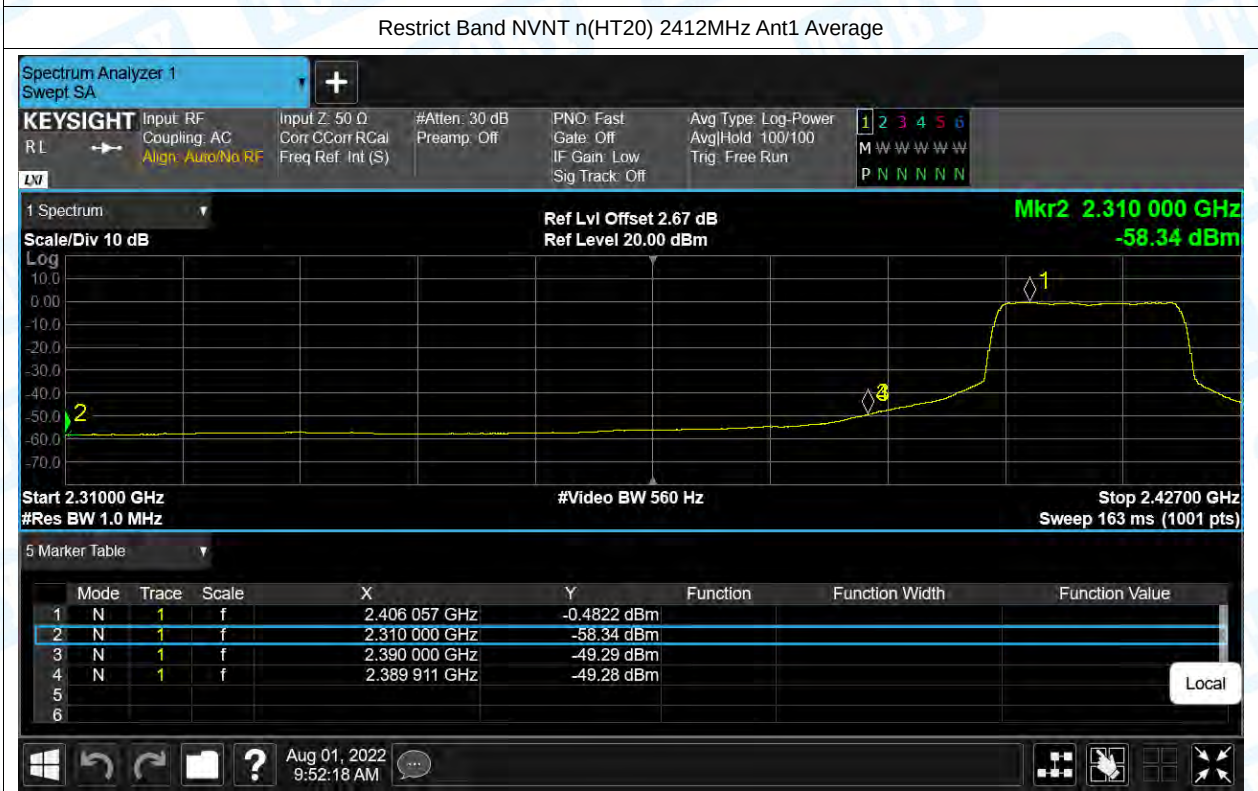
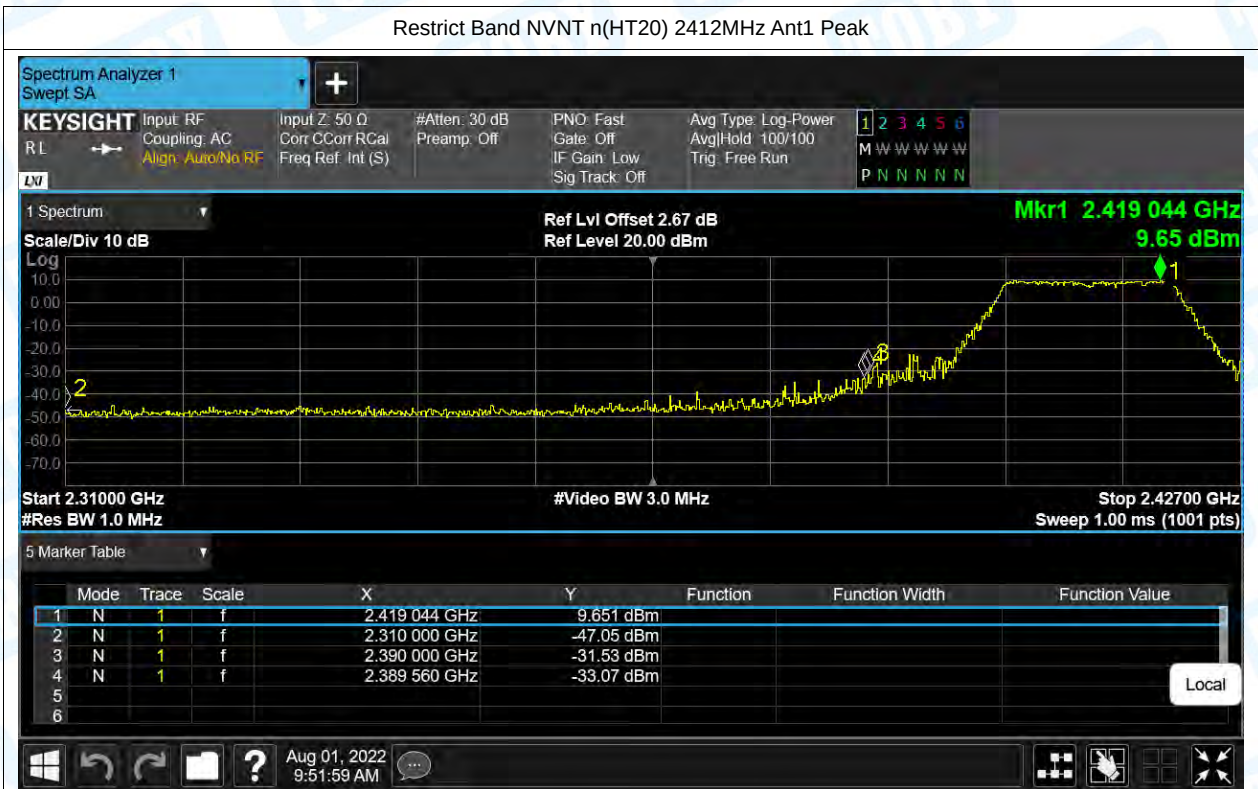


Restrict Band NVNT g 2462MHz Ant1 Peak



Restrict Band NVNT g 2462MHz Ant1 Average





Restrict Band NVNT n(HT20) 2462MHz Ant1 Peak



Restrict Band NVNT n(HT20) 2462MHz Ant1 Average

