

RF Test Data for 2.4G WiFi (Conducted Measurements)

General Description of EUT	
Product Name:	Auto Water Turn-Off System
Test Model:	AWNASWST3U
Sample ID:	HC-C-202511-0064-01-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	52.3%
Test Voltage:	DC 3V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202511-0064-11 The report only show the worst case data.	

Contents

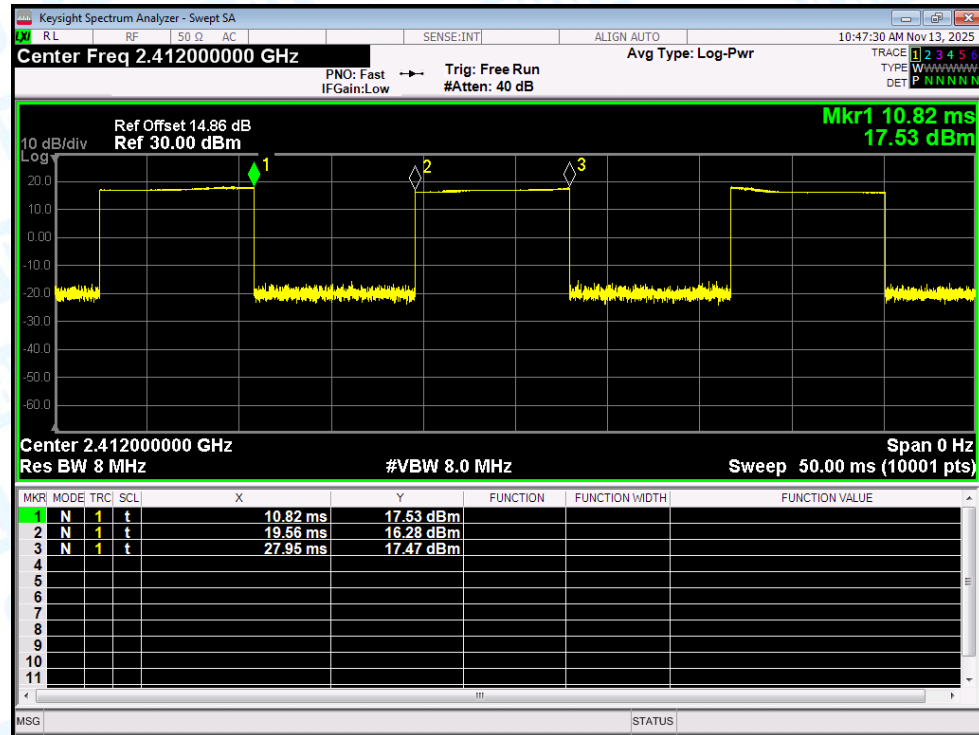
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1. Duty Cycle

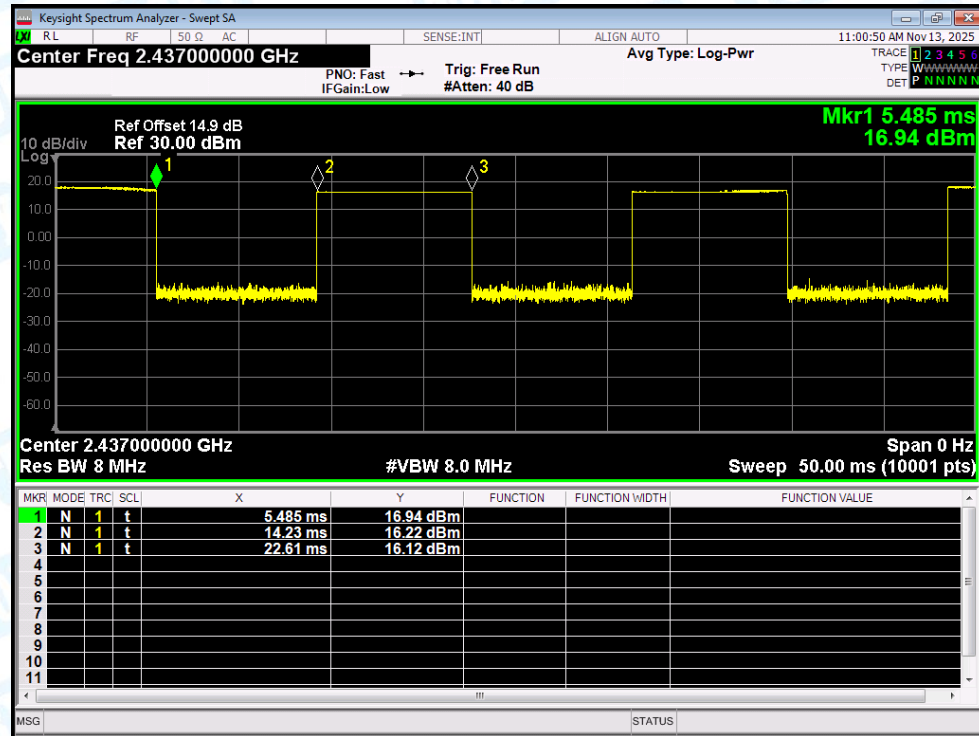
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	48.96	3.1	0.12
NVNT	b	2437	Ant1	48.96	3.1	0.12
NVNT	b	2462	Ant1	48.98	3.1	0.12
NVNT	g	2412	Ant1	13.76	8.61	0.72
NVNT	g	2437	Ant1	13.76	8.61	0.72
NVNT	g	2462	Ant1	13.76	8.61	0.72
NVNT	n(HT20)	2412	Ant1	12.99	8.86	0.77
NVNT	n(HT20)	2437	Ant1	12.95	8.88	0.77
NVNT	n(HT20)	2462	Ant1	12.95	8.88	0.77
NVNT	n(HT40)	2422	Ant1	9.94	10.03	1.54
NVNT	n(HT40)	2437	Ant1	9.94	10.03	1.54
NVNT	n(HT40)	2452	Ant1	10.02	9.99	1.53

Test Graphs

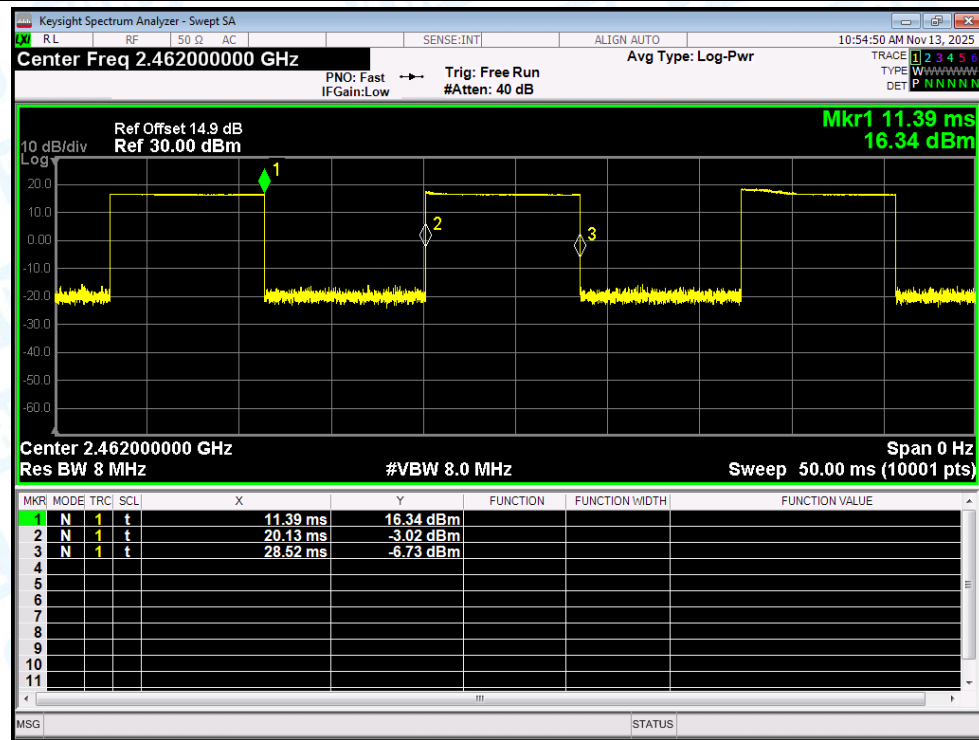
Duty Cycle NVNT b 2412MHz Ant1



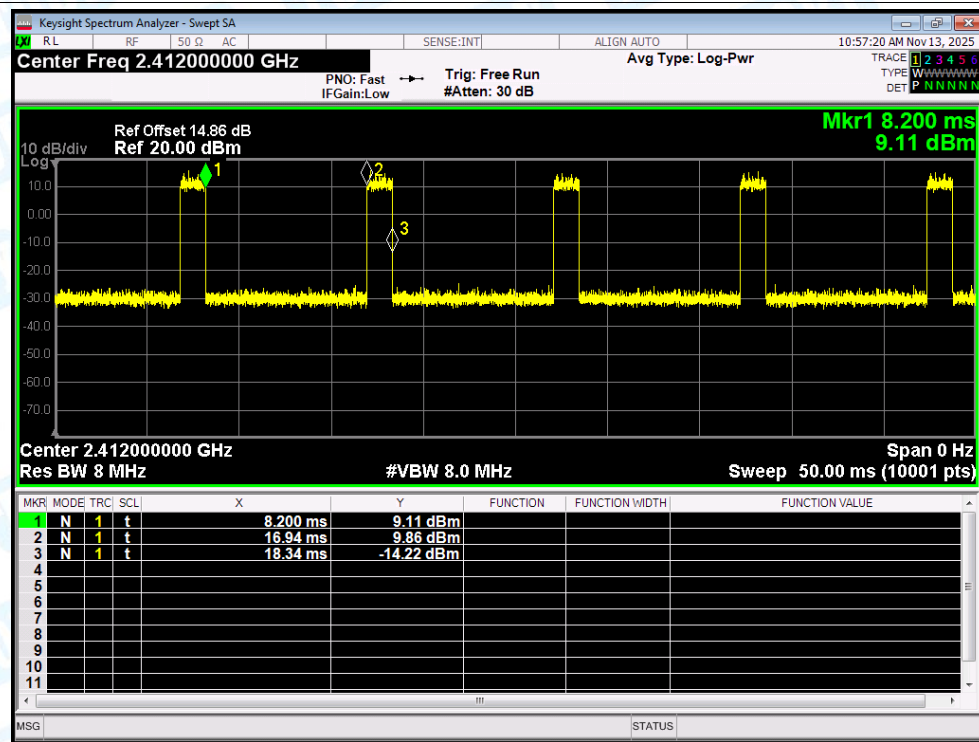
Duty Cycle NVNT b 2437MHz Ant1



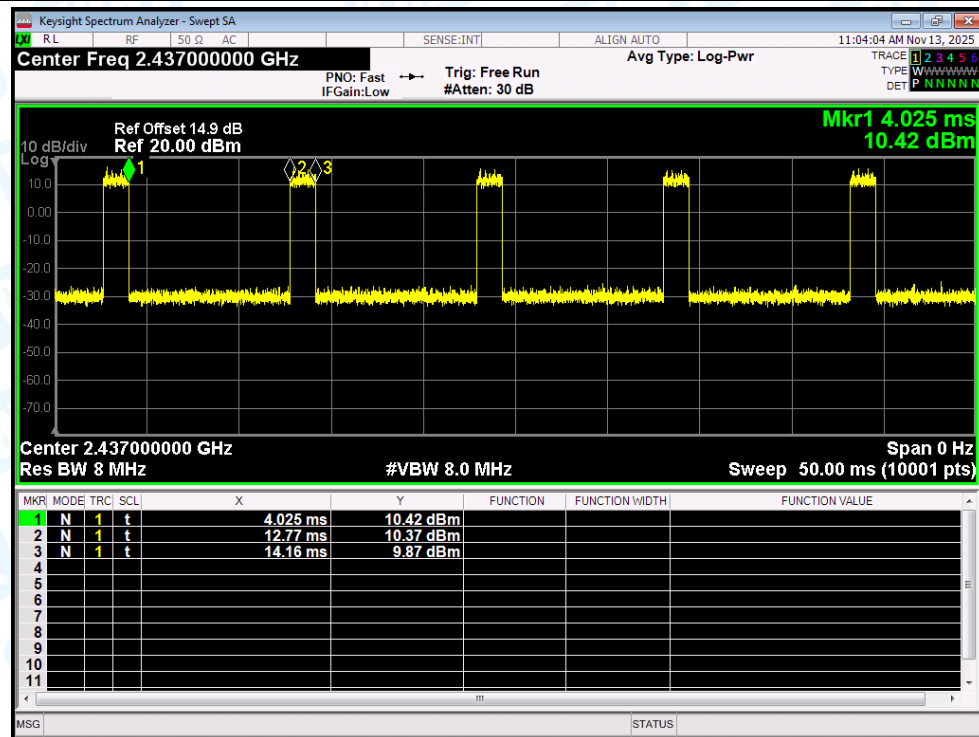
Duty Cycle NVNT b 2462MHz Ant1



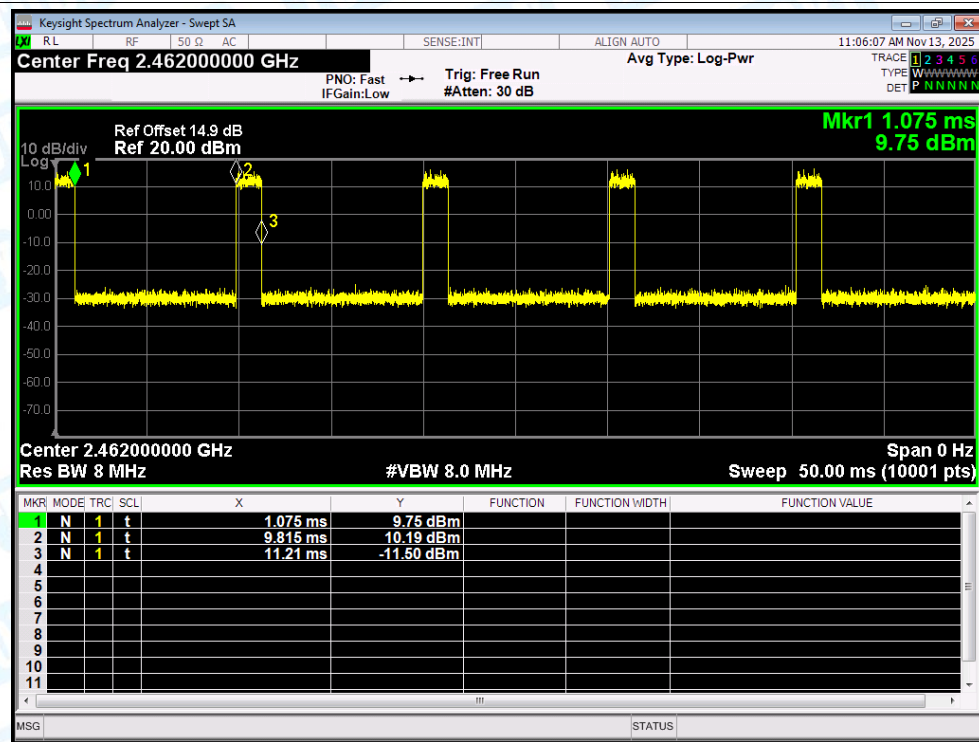
Duty Cycle NVNT g 2412MHz Ant1



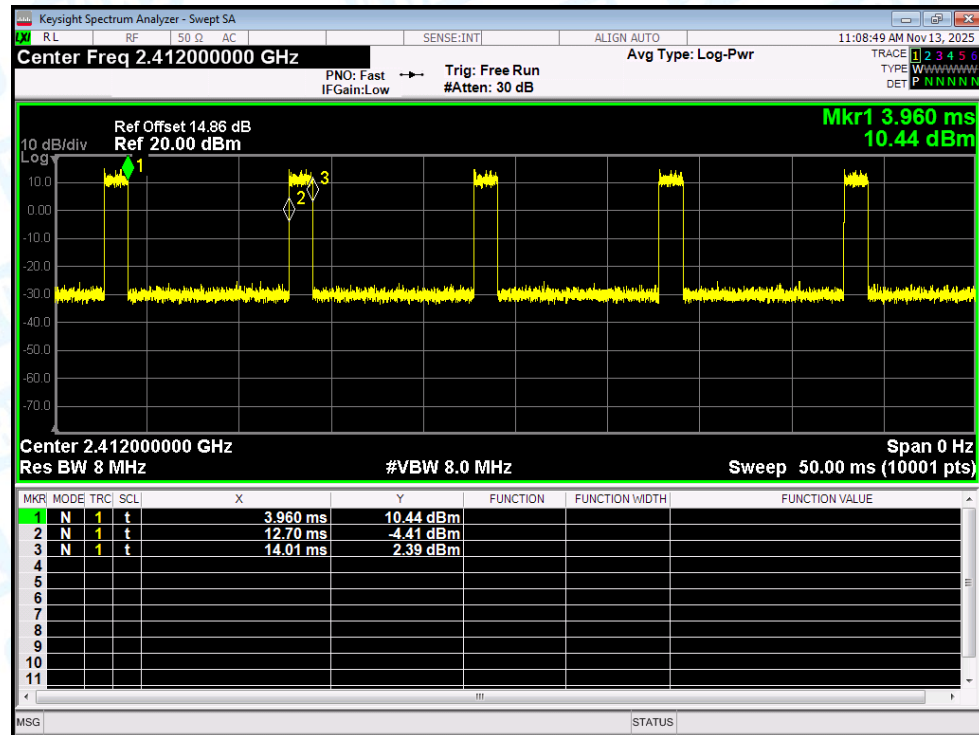
Duty Cycle NVNT g 2437MHz Ant1



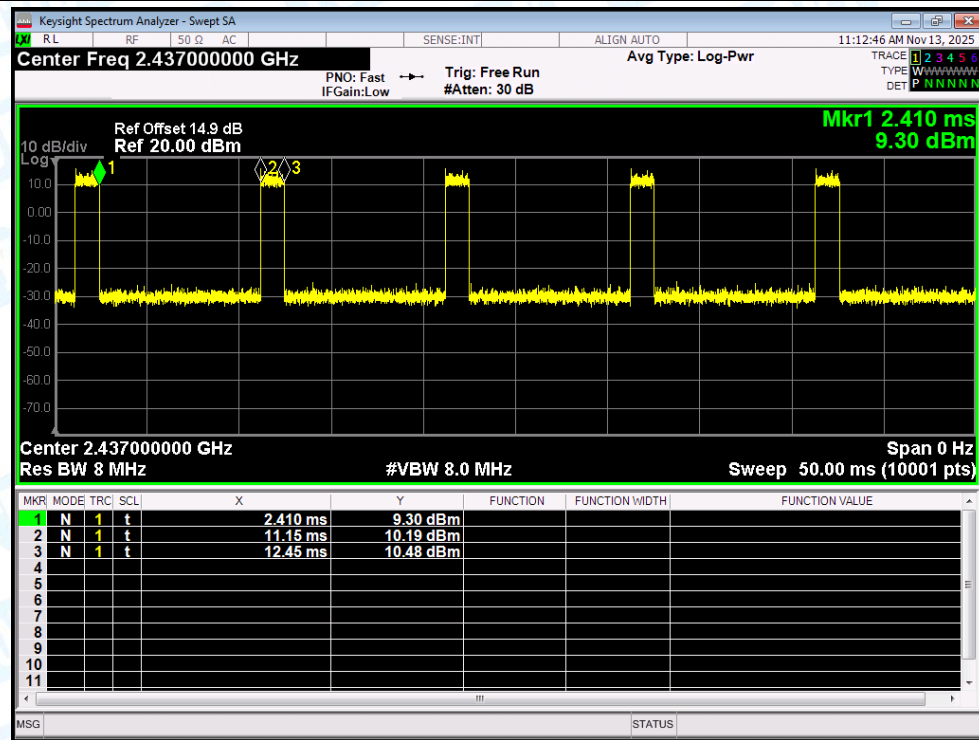
Duty Cycle NVNT g 2462MHz Ant1



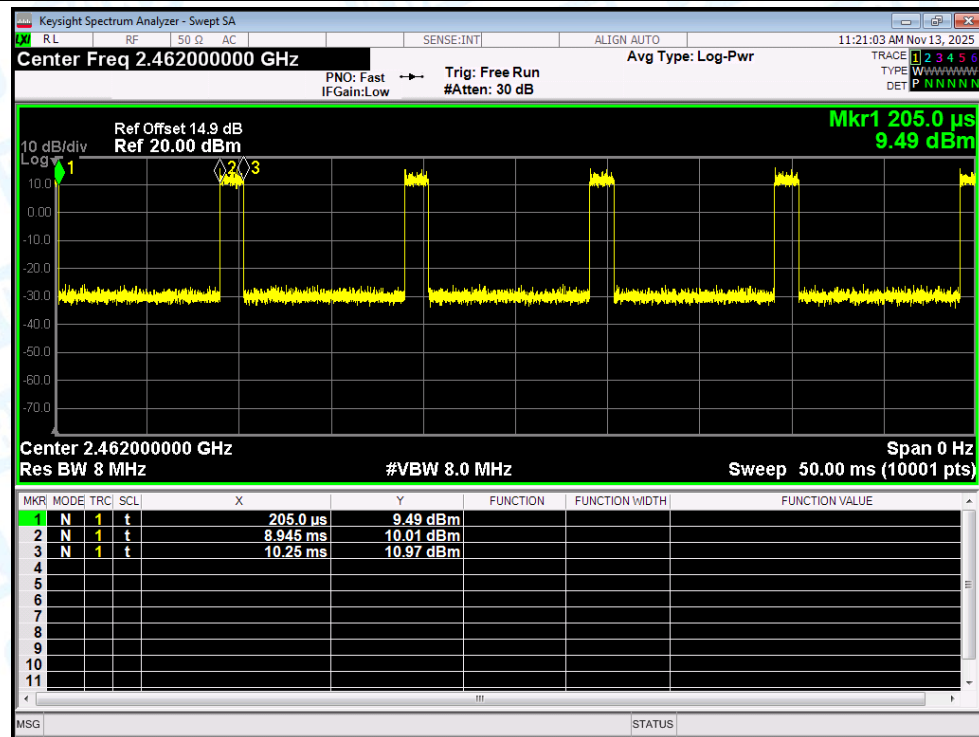
Duty Cycle NVNT n(HT20) 2412MHz Ant1



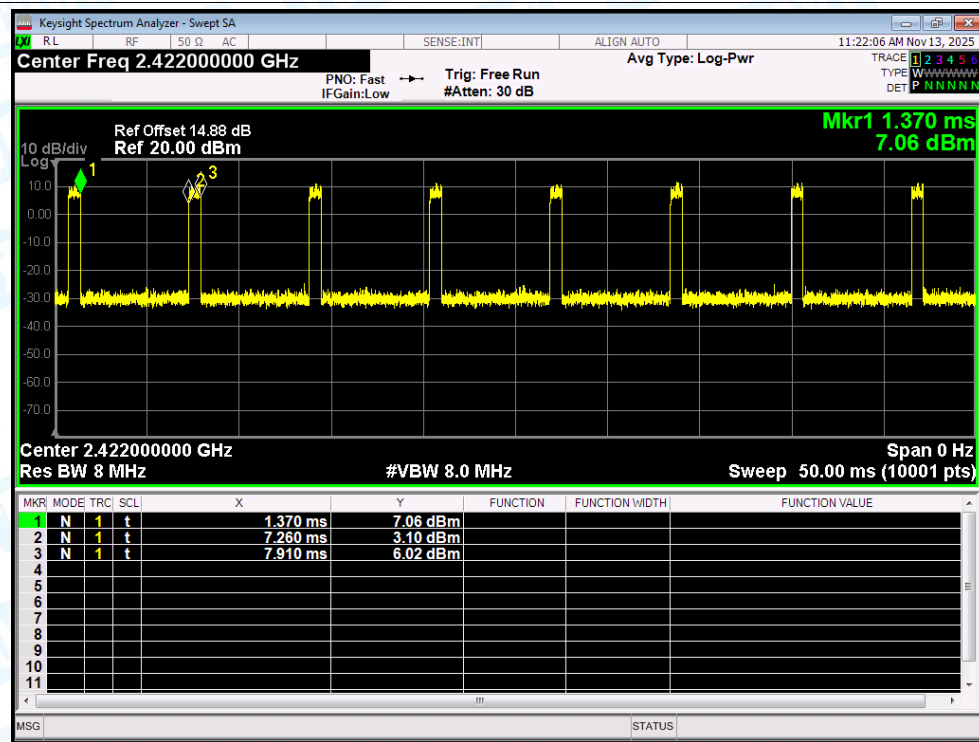
Duty Cycle NVNT n(HT20) 2437MHz Ant1



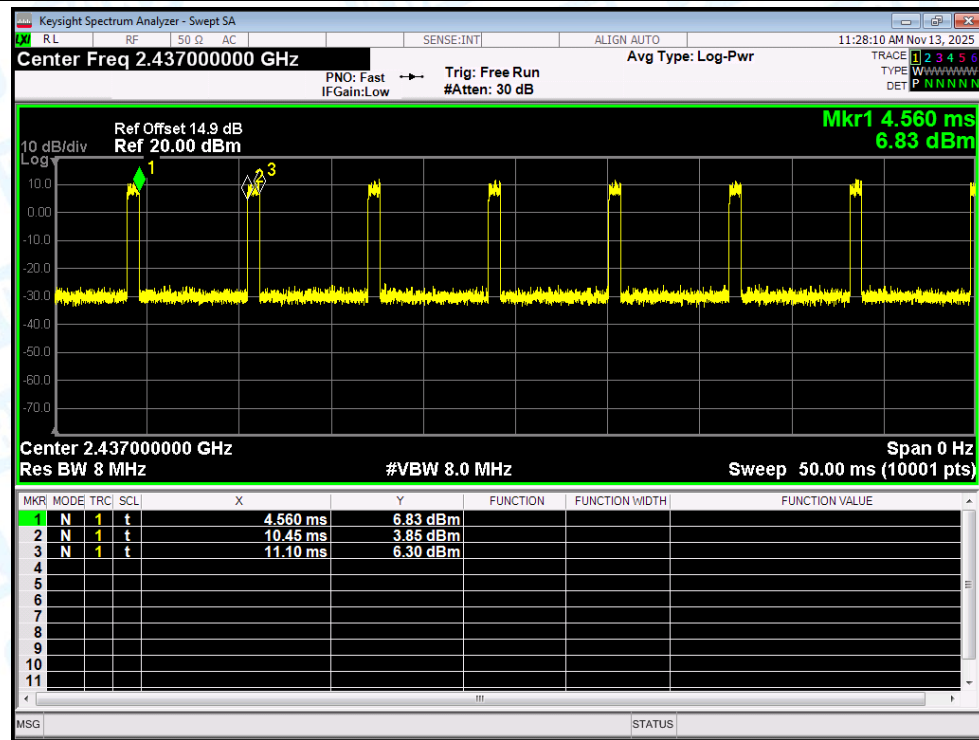
Duty Cycle NVNT n(HT20) 2462MHz Ant1



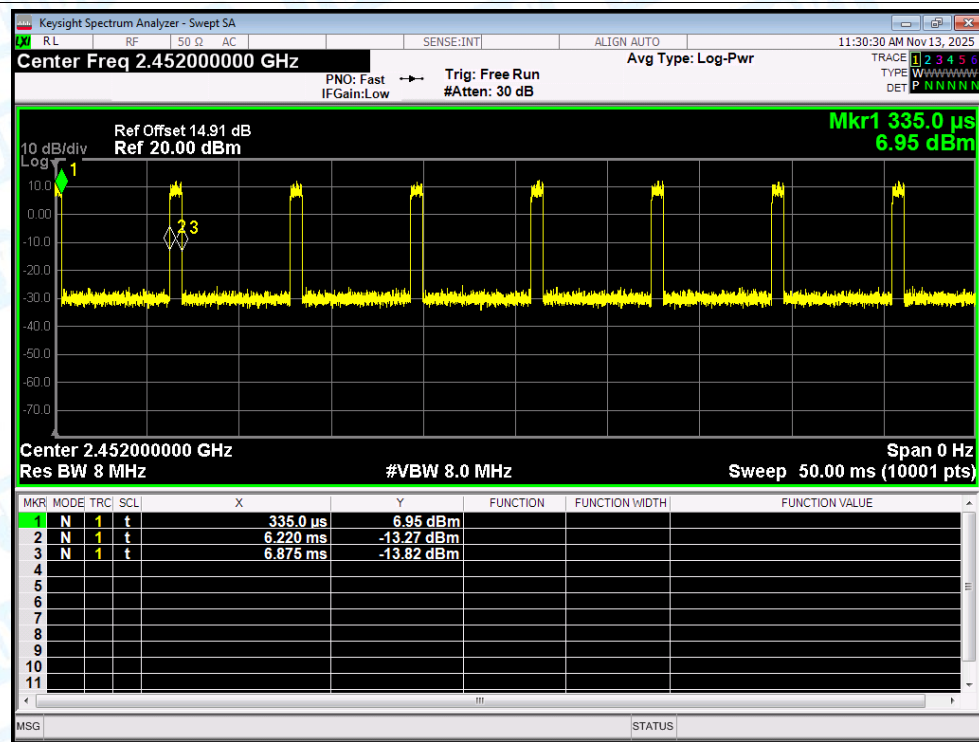
Duty Cycle NVNT n(HT40) 2422MHz Ant1



Duty Cycle NVNT n(HT40) 2437MHz Ant1



Duty Cycle NVNT n(HT40) 2452MHz Ant1



2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	15.08	30	Pass
NVNT	b	2437	Ant1	15.42	30	Pass
NVNT	b	2462	Ant1	15.66	30	Pass
NVNT	g	2412	Ant1	15.34	30	Pass
NVNT	g	2437	Ant1	15.84	30	Pass
NVNT	g	2462	Ant1	16.07	30	Pass
NVNT	n(HT20)	2412	Ant1	15.58	30	Pass
NVNT	n(HT20)	2437	Ant1	16.02	30	Pass
NVNT	n(HT20)	2462	Ant1	16.2	30	Pass
NVNT	n(HT40)	2422	Ant1	16.51	30	Pass
NVNT	n(HT40)	2437	Ant1	16.86	30	Pass
NVNT	n(HT40)	2452	Ant1	17.01	30	Pass

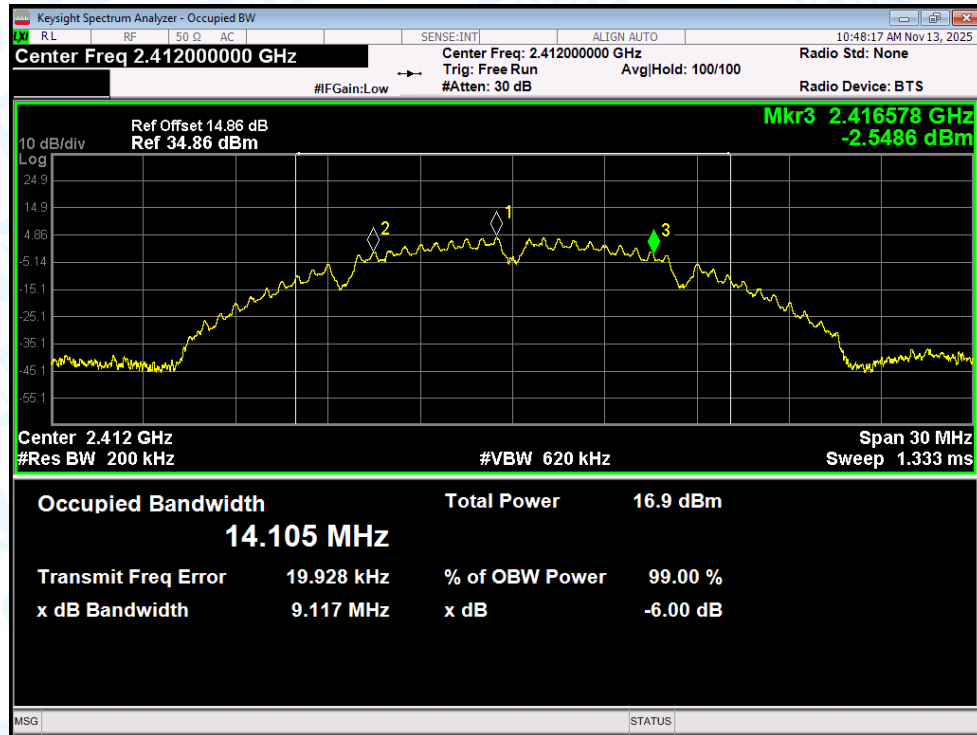
Note: The duty factor has been compensated in the chart.

3. -6dB Bandwidth

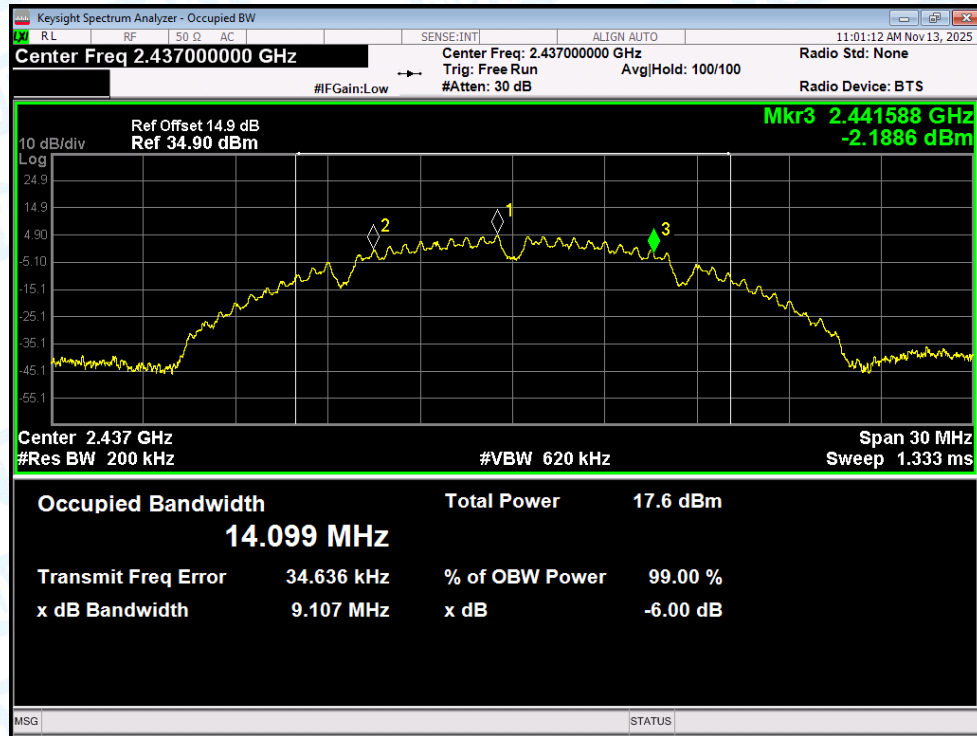
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.12	0.5	Pass
NVNT	b	2437	Ant1	9.11	0.5	Pass
NVNT	b	2462	Ant1	9.11	0.5	Pass
NVNT	g	2412	Ant1	16.2	0.5	Pass
NVNT	g	2437	Ant1	16.23	0.5	Pass
NVNT	g	2462	Ant1	16.19	0.5	Pass
NVNT	n(HT20)	2412	Ant1	17.52	0.5	Pass
NVNT	n(HT20)	2437	Ant1	16.38	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.03	0.5	Pass
NVNT	n(HT40)	2422	Ant1	34.23	0.5	Pass
NVNT	n(HT40)	2437	Ant1	34.15	0.5	Pass
NVNT	n(HT40)	2452	Ant1	34.33	0.5	Pass

Test Graphs

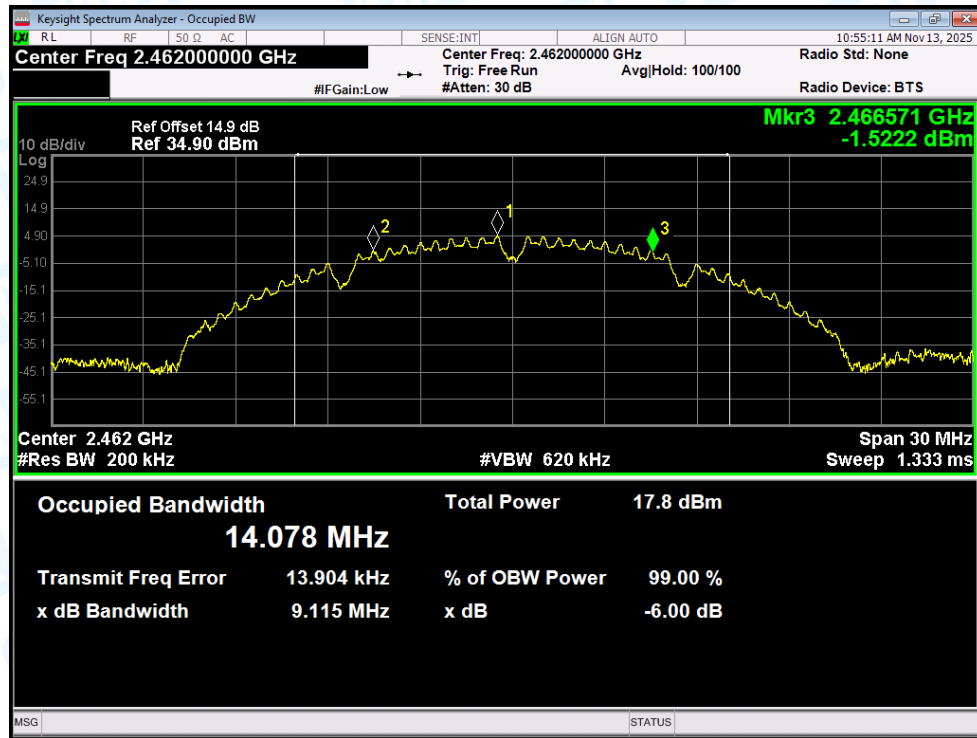
-6dB Bandwidth NVNT b 2412MHz Ant1



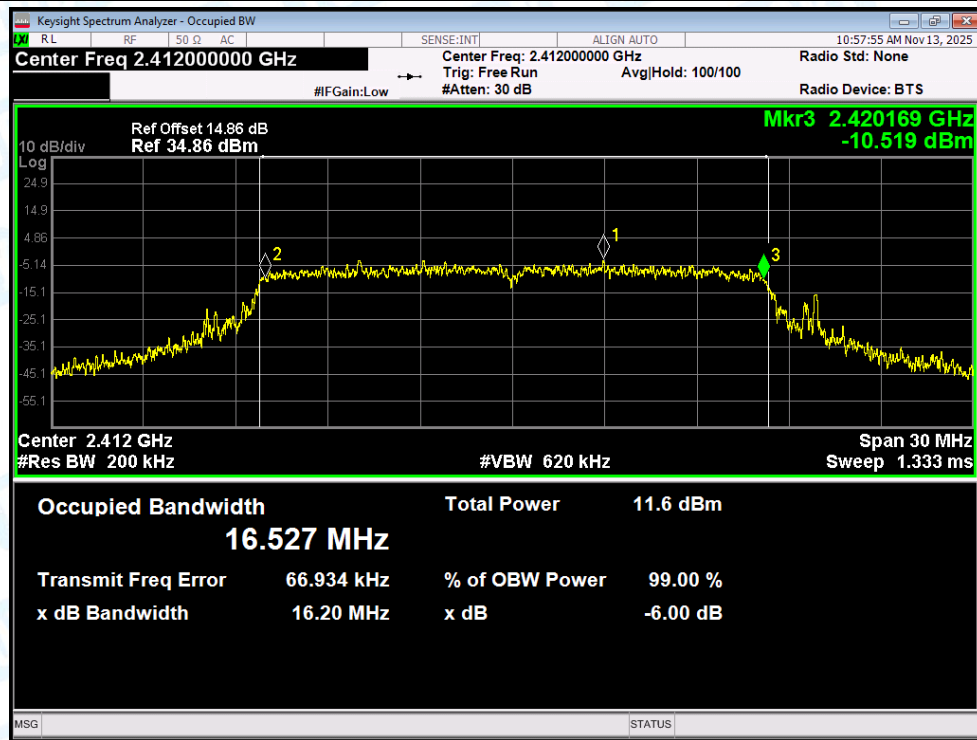
-6dB Bandwidth NVNT b 2437MHz Ant1

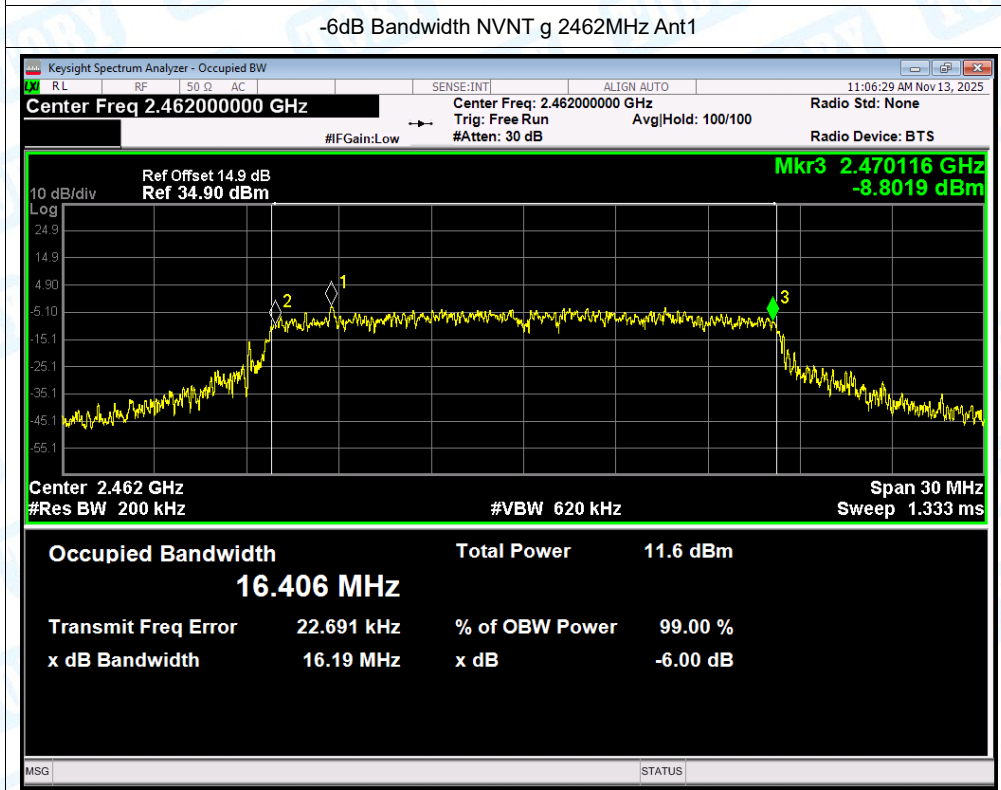
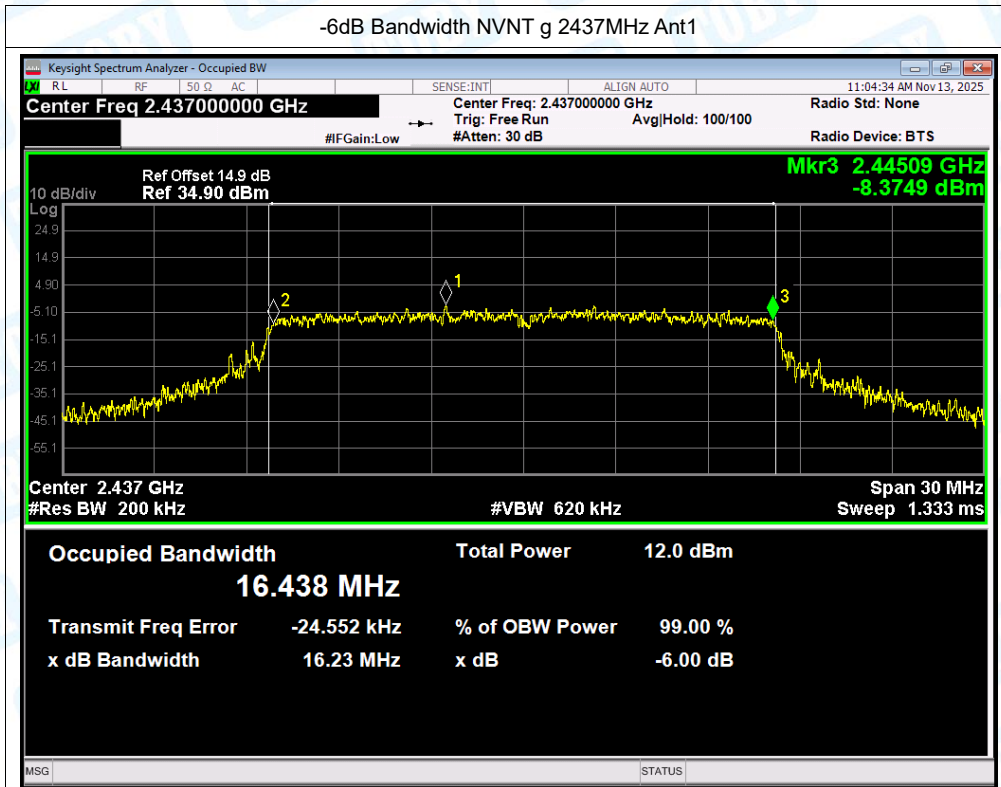


-6dB Bandwidth NVNT b 2462MHz Ant1

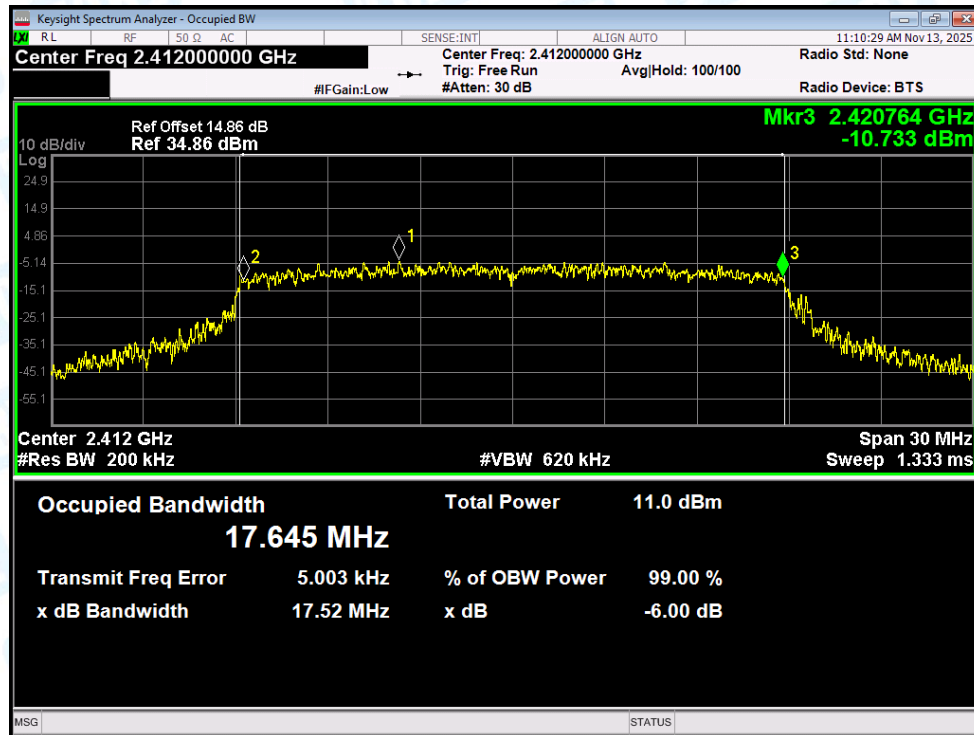


-6dB Bandwidth NVNT g 2412MHz Ant1

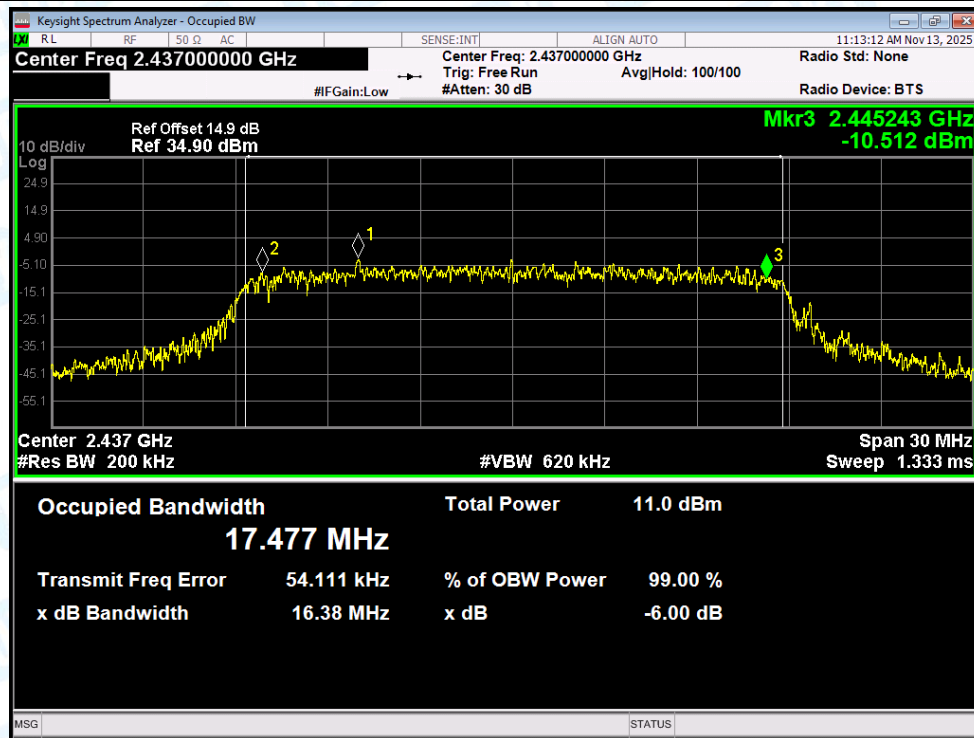




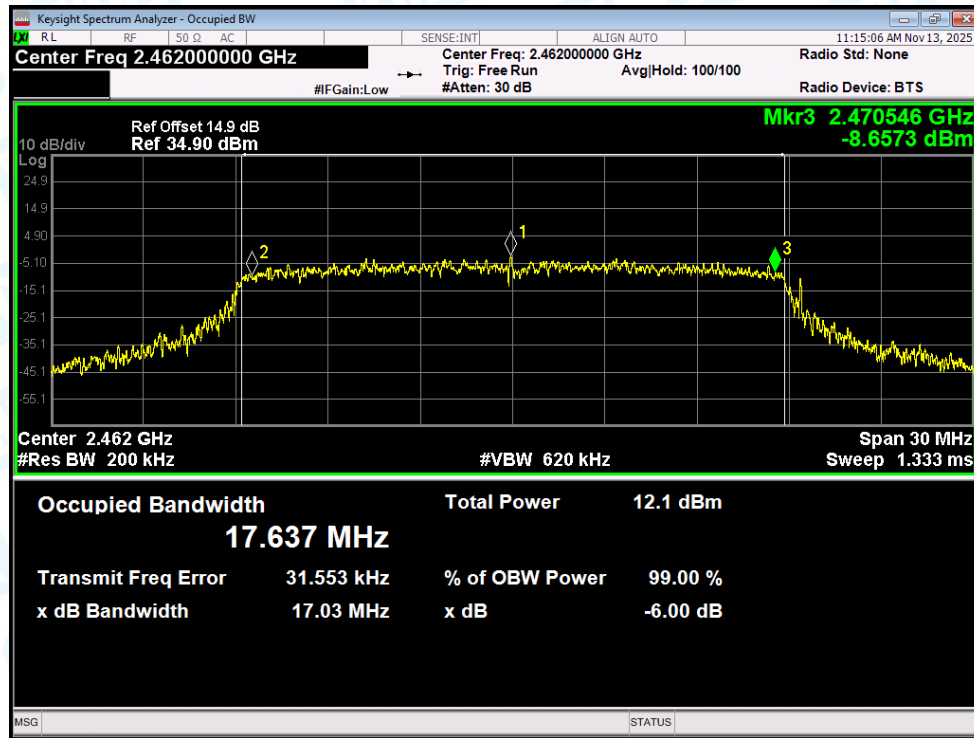
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



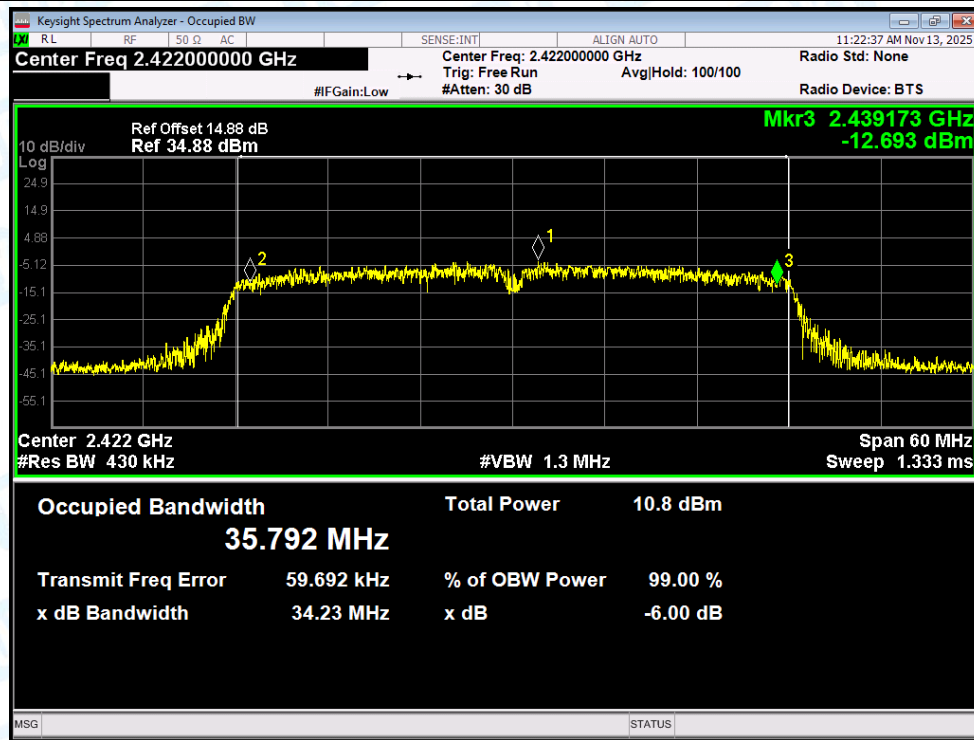
-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



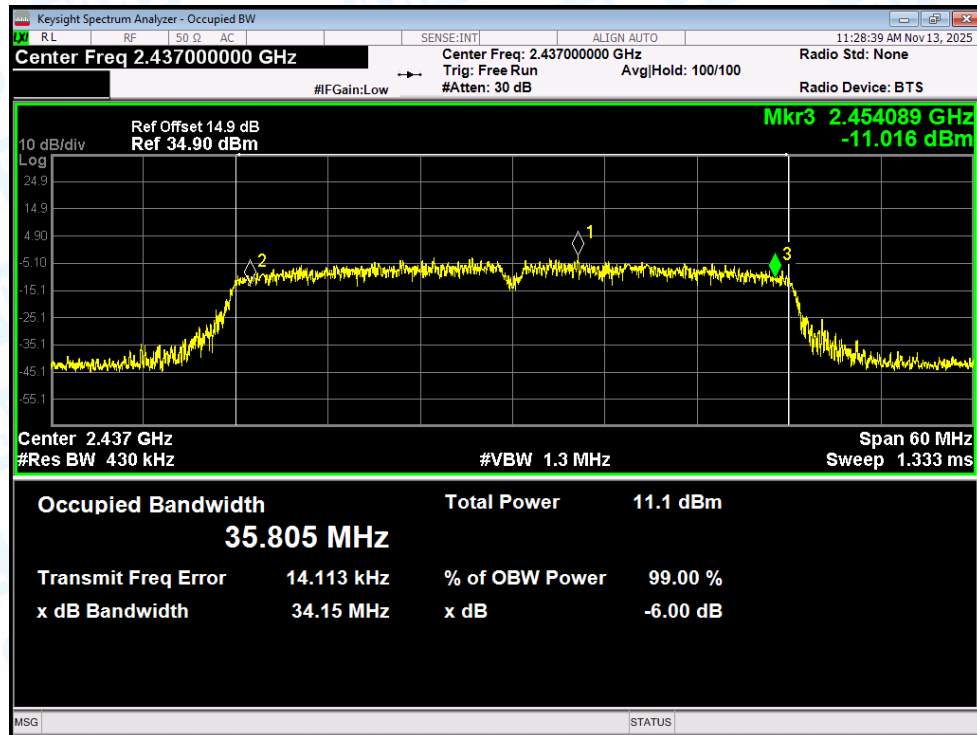
-6dB Bandwidth NVNT n(HT20) 2462MHz Ant1



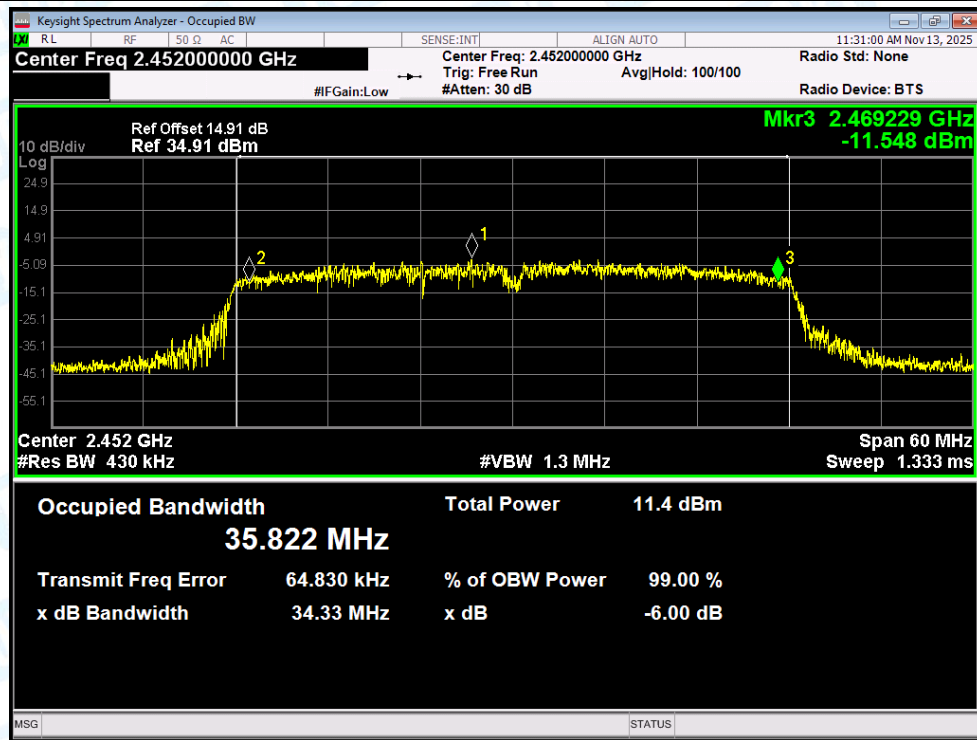
-6dB Bandwidth NVNT n(HT40) 2422MHz Ant1



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



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

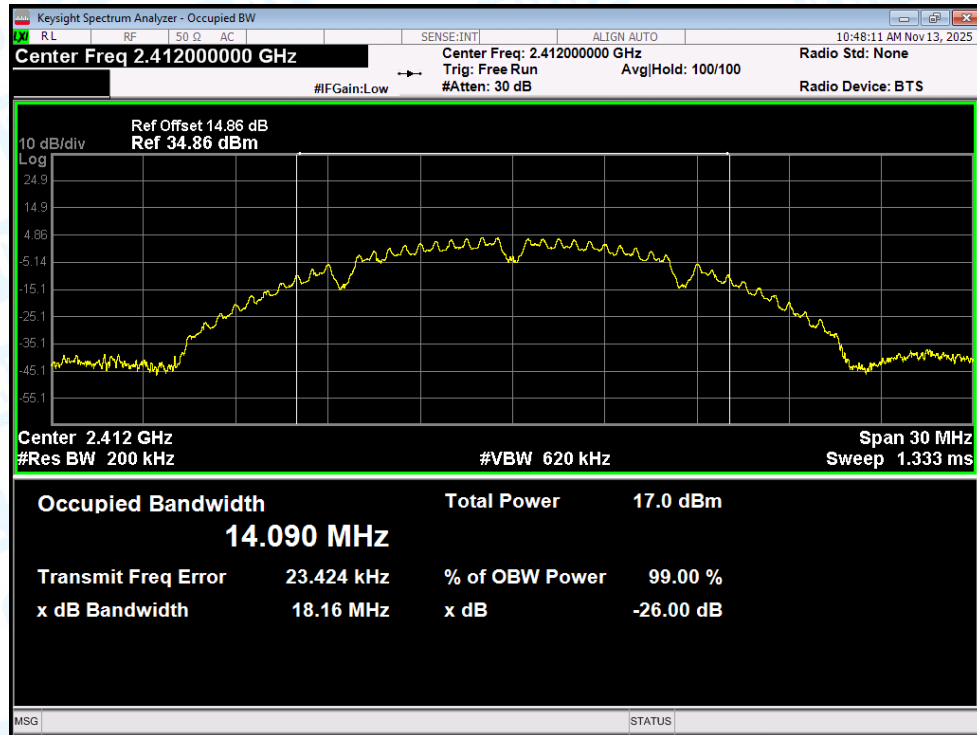


4. Occupied Channel Bandwidth

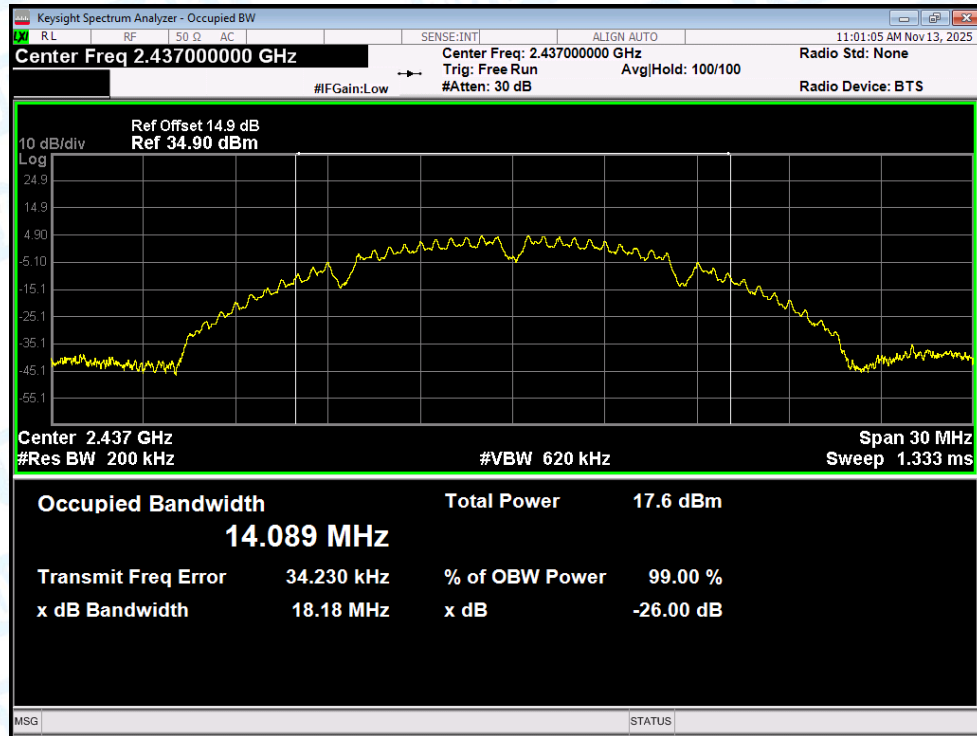
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	14.09
NVNT	b	2437	Ant1	14.089
NVNT	b	2462	Ant1	14.08
NVNT	g	2412	Ant1	16.499
NVNT	g	2437	Ant1	16.666
NVNT	g	2462	Ant1	16.458
NVNT	n(HT20)	2412	Ant1	17.712
NVNT	n(HT20)	2437	Ant1	17.76
NVNT	n(HT20)	2462	Ant1	17.664
NVNT	n(HT40)	2422	Ant1	35.783
NVNT	n(HT40)	2437	Ant1	35.735
NVNT	n(HT40)	2452	Ant1	35.679

Test Graphs

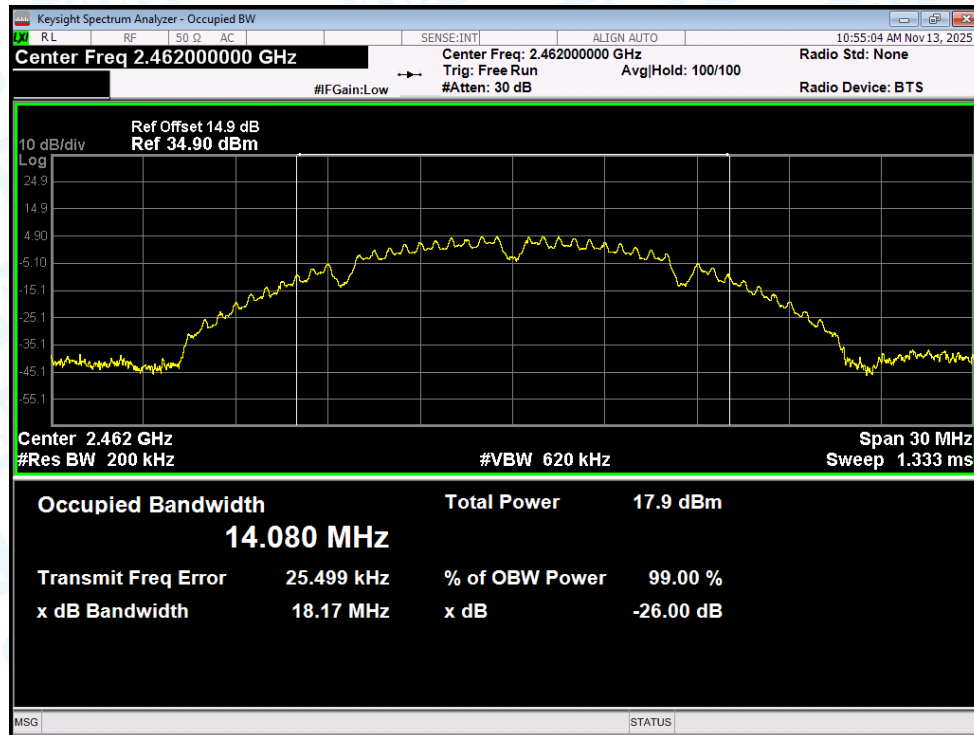
OBW NVNT b 2412MHz Ant1



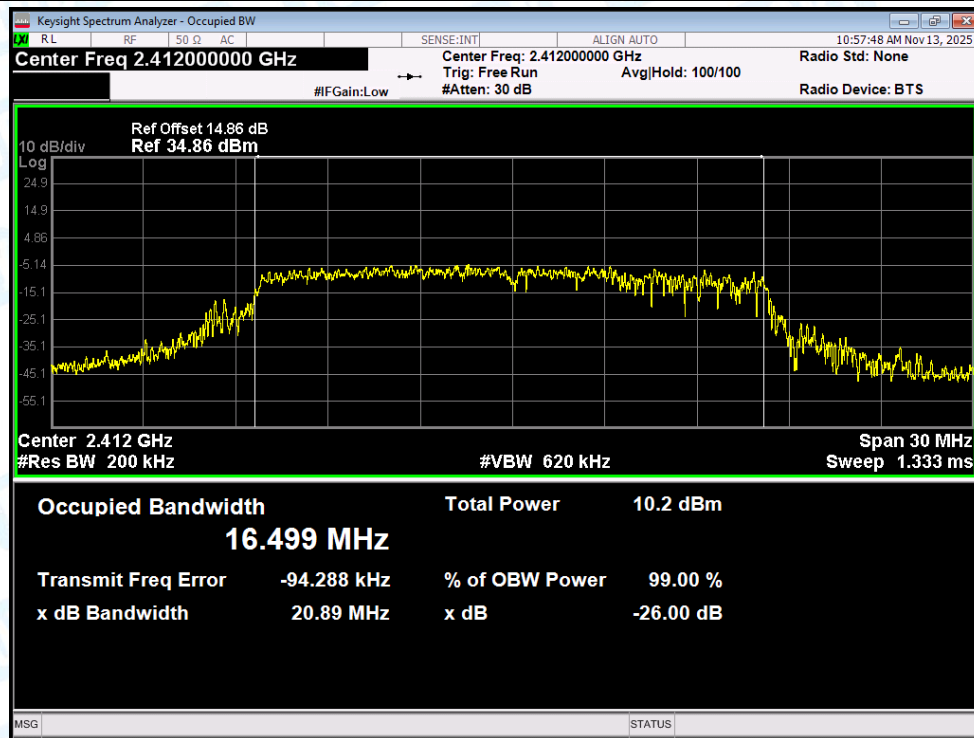
OBW NVNT b 2437MHz Ant1

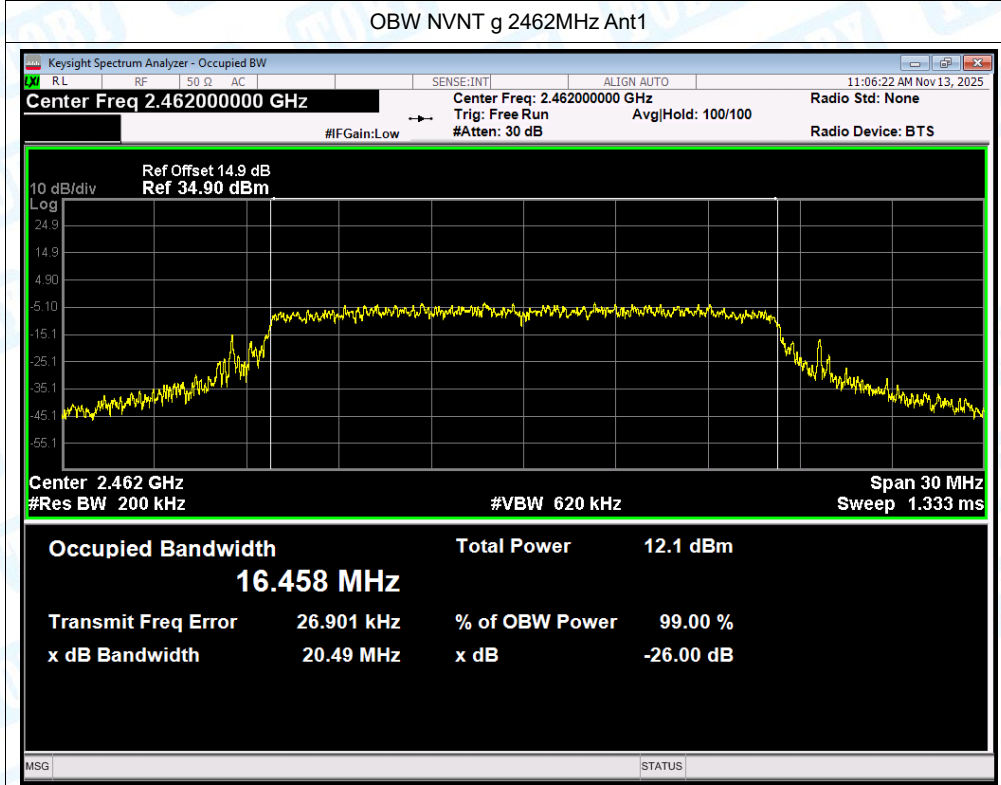
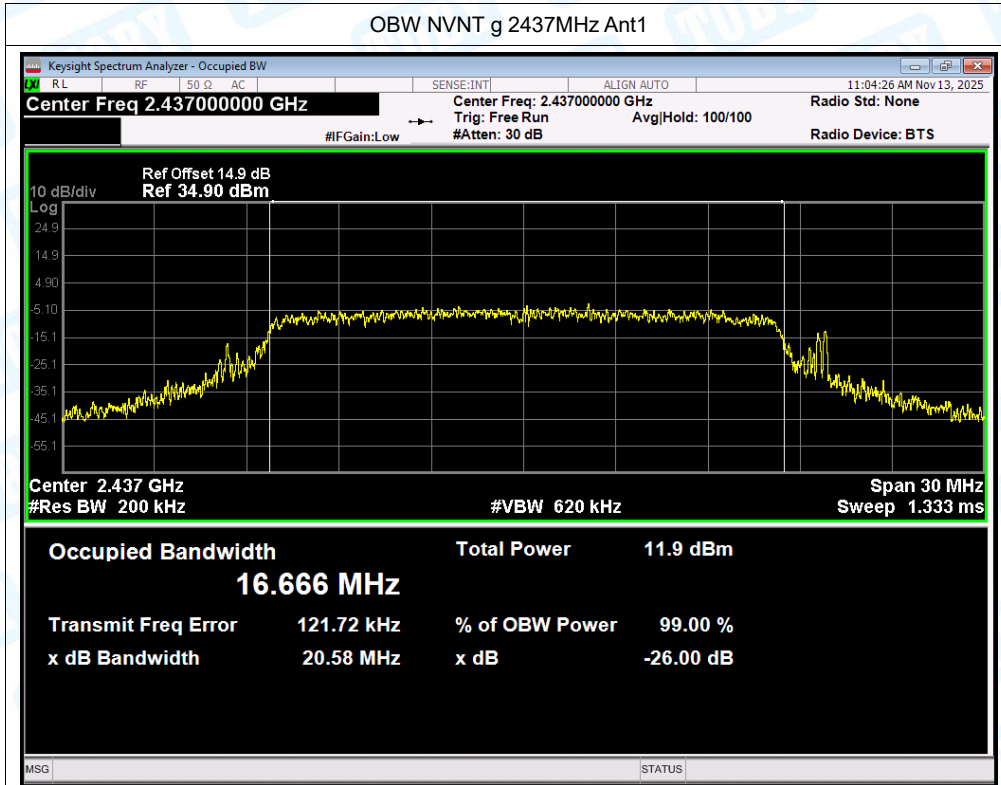


OBW NVNT b 2462MHz Ant1

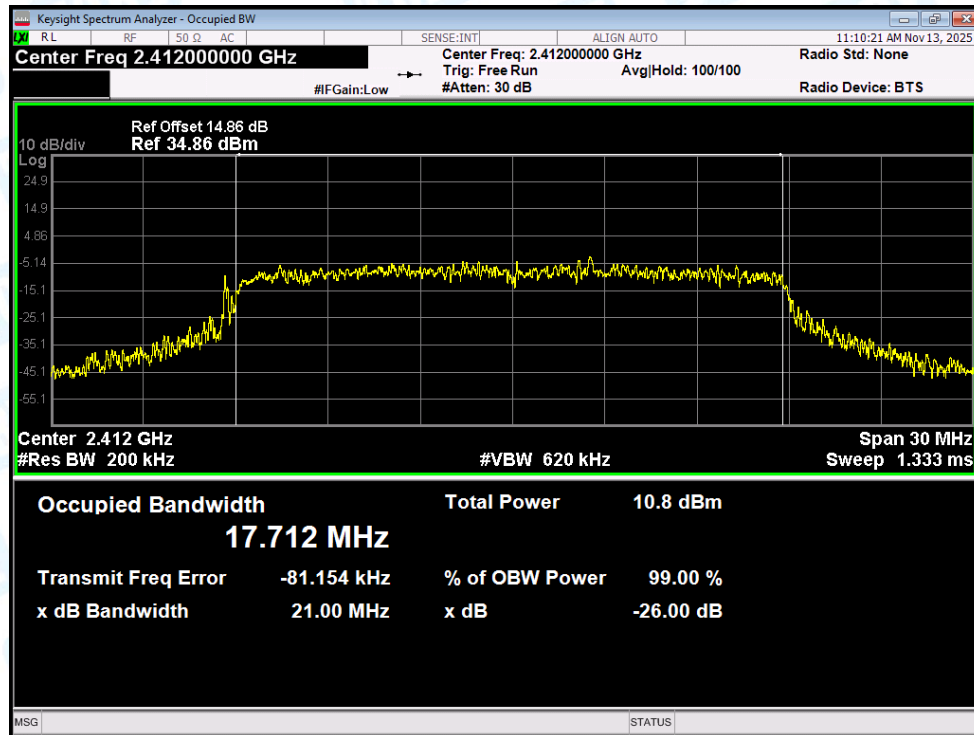


OBW NVNT g 2412MHz Ant1

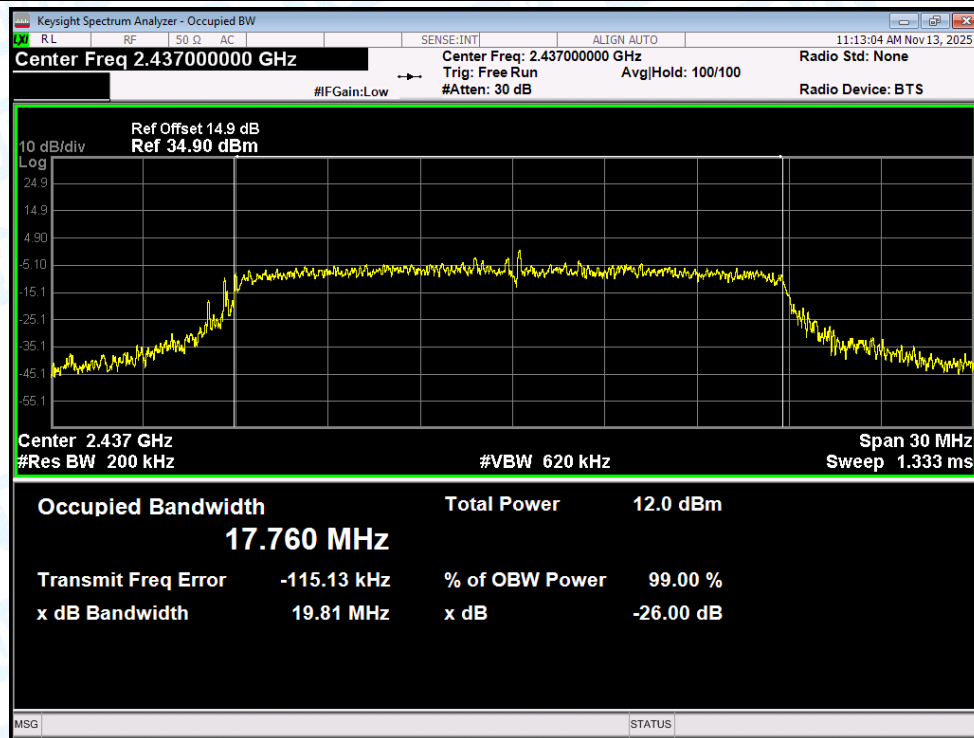




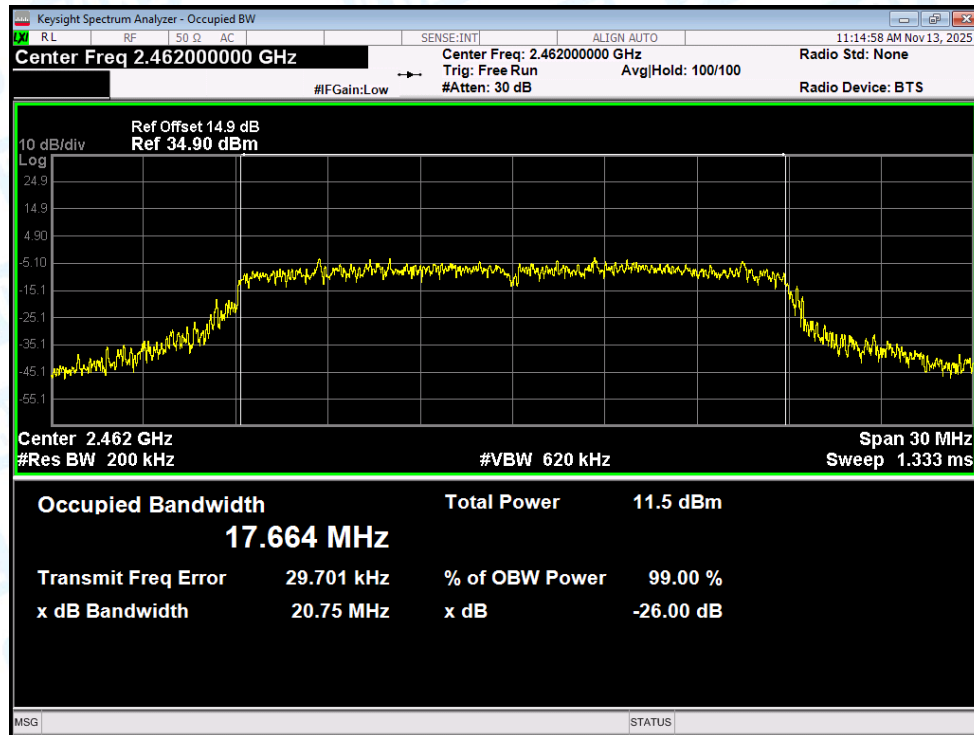
OBW NVNT n(HT20) 2412MHz Ant1



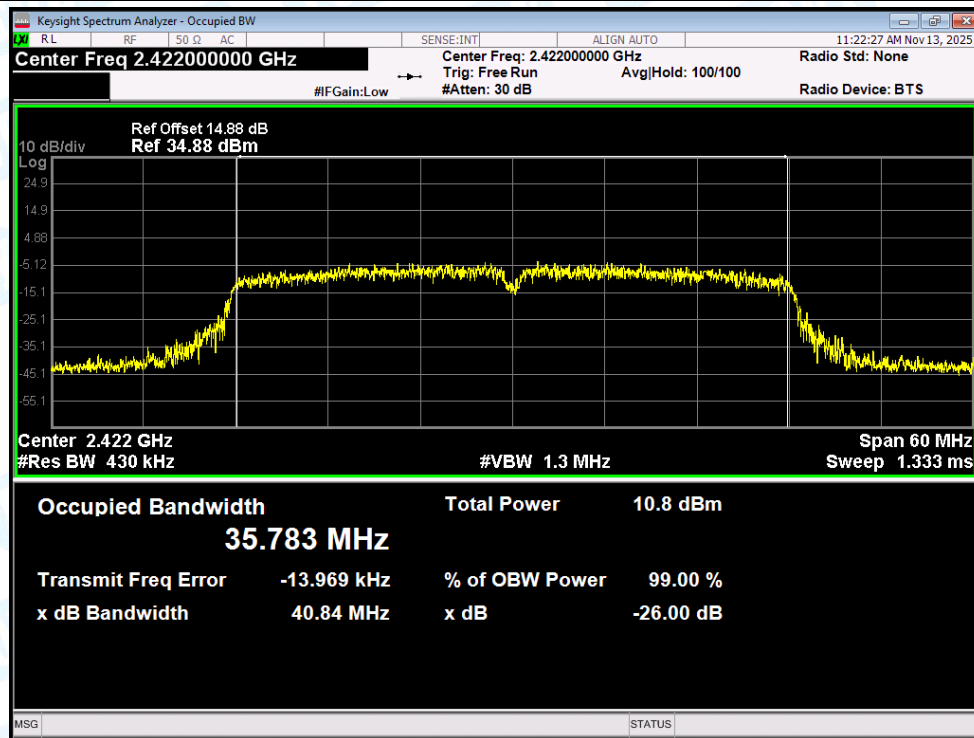
OBW NVNT n(HT20) 2437MHz Ant1



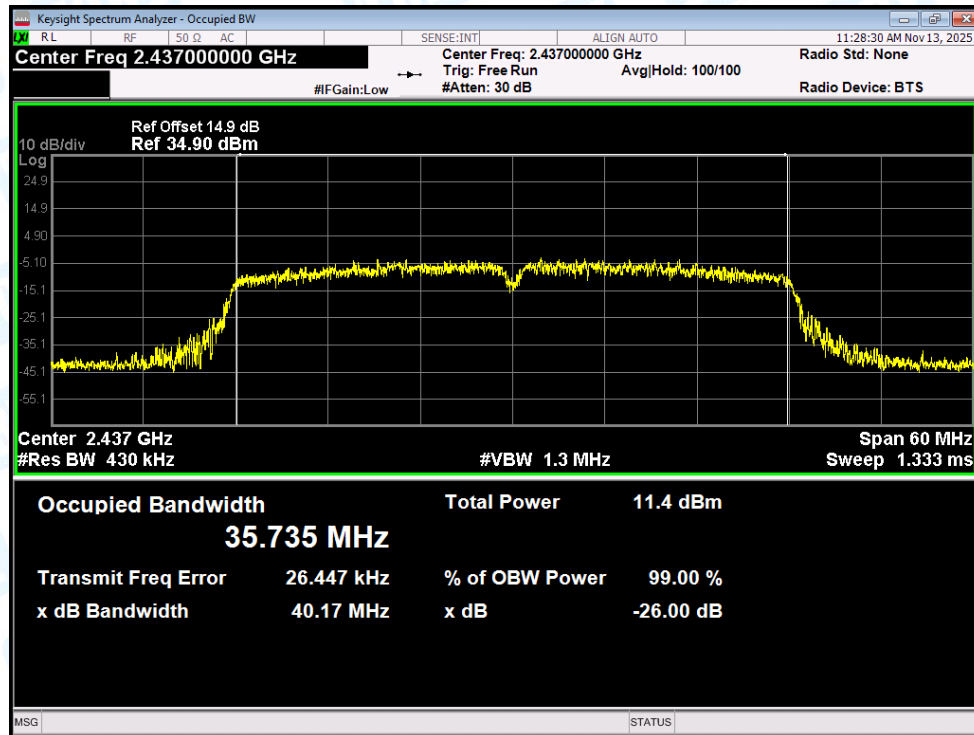
OBW NVNT n(HT20) 2462MHz Ant1



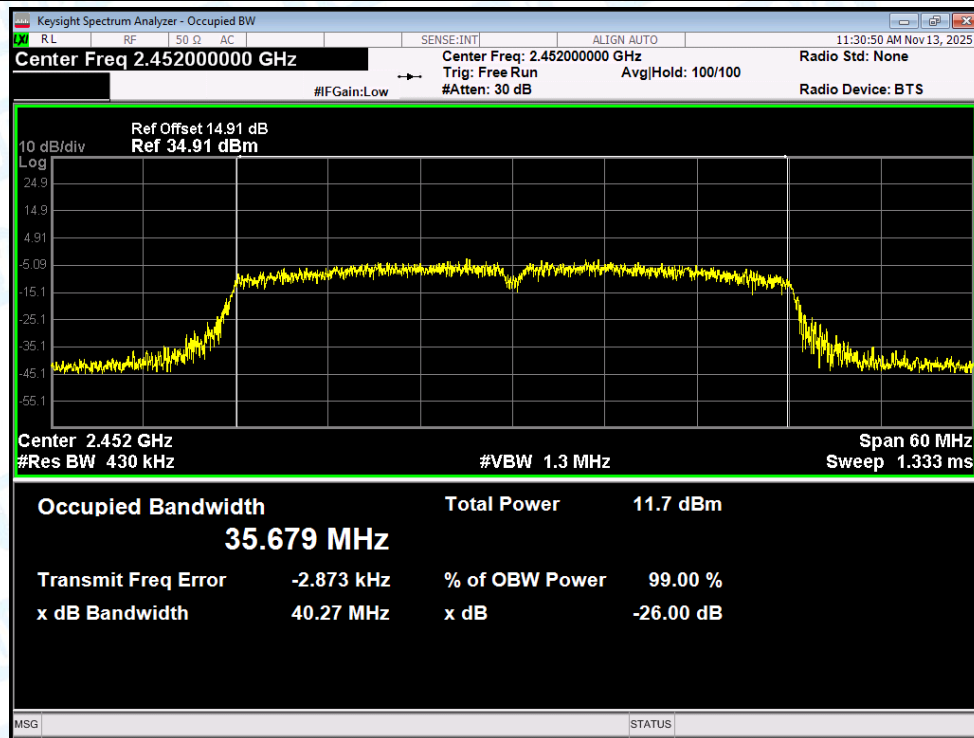
OBW NVNT n(HT40) 2422MHz Ant1



OBW NVNT n(HT40) 2437MHz Ant1



OBW NVNT n(HT40) 2452MHz Ant1

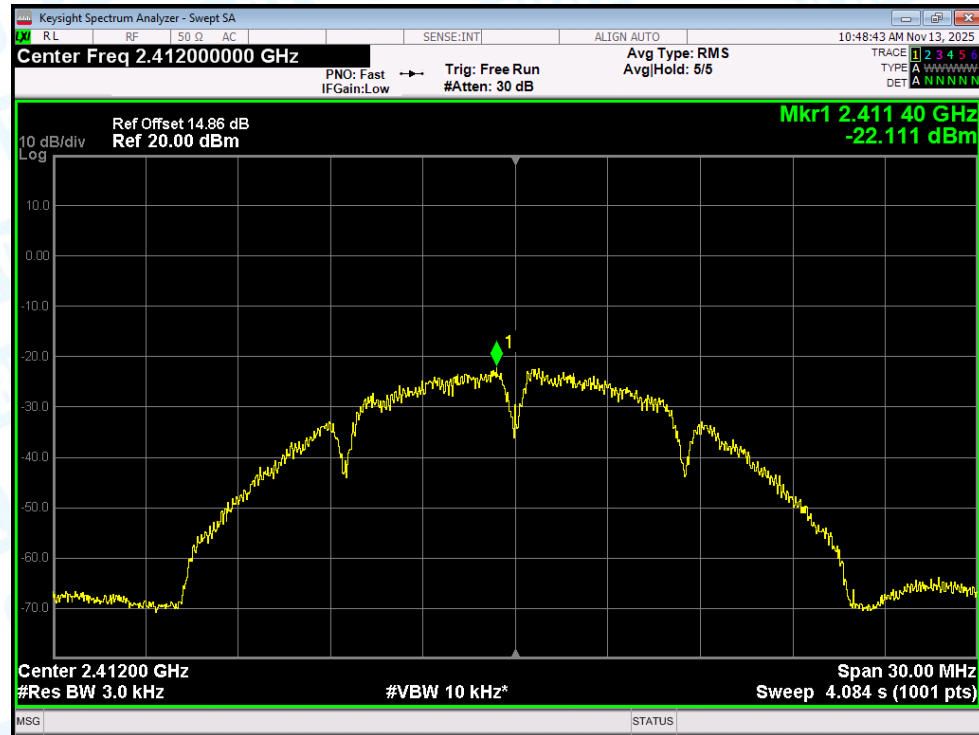


5. Maximum Power Spectral Density Level

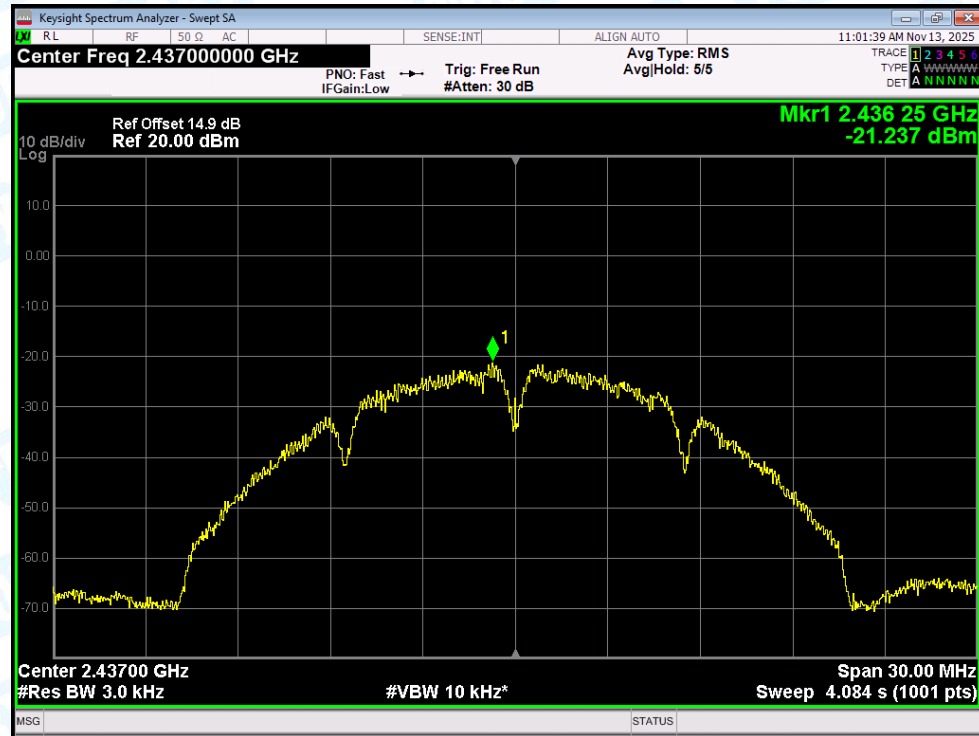
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	-22.111	8	Pass
NVNT	b	2437	Ant1	-21.237	8	Pass
NVNT	b	2462	Ant1	-21.629	8	Pass
NVNT	g	2412	Ant1	-33.391	8	Pass
NVNT	g	2437	Ant1	-32.057	8	Pass
NVNT	g	2462	Ant1	-32.131	8	Pass
NVNT	n(HT20)	2412	Ant1	-33.203	8	Pass
NVNT	n(HT20)	2437	Ant1	-30.686	8	Pass
NVNT	n(HT20)	2462	Ant1	-29.797	8	Pass
NVNT	n(HT40)	2422	Ant1	-39.039	8	Pass
NVNT	n(HT40)	2437	Ant1	-37.993	8	Pass
NVNT	n(HT40)	2452	Ant1	-37.196	8	Pass

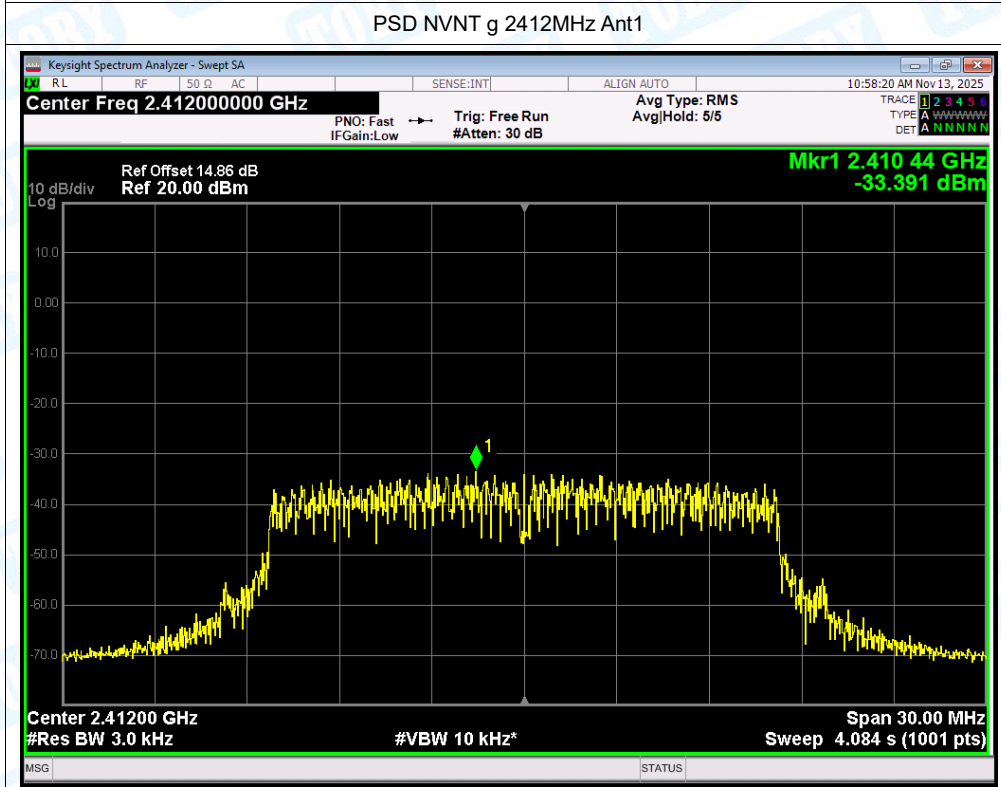
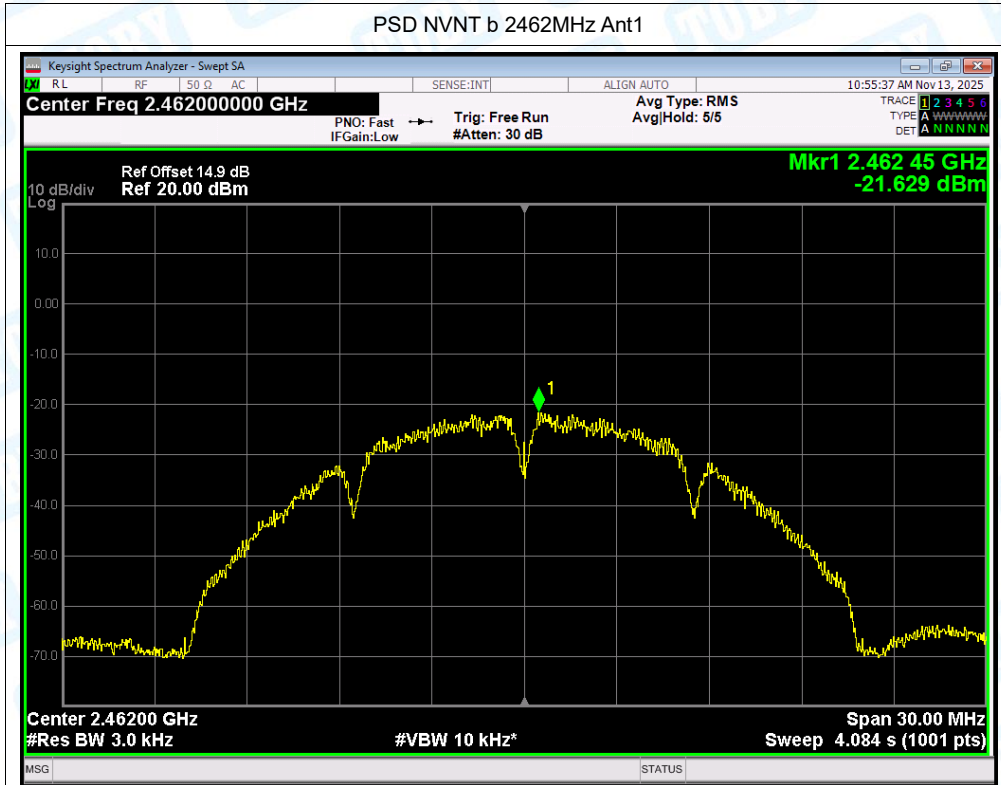
Test Graphs

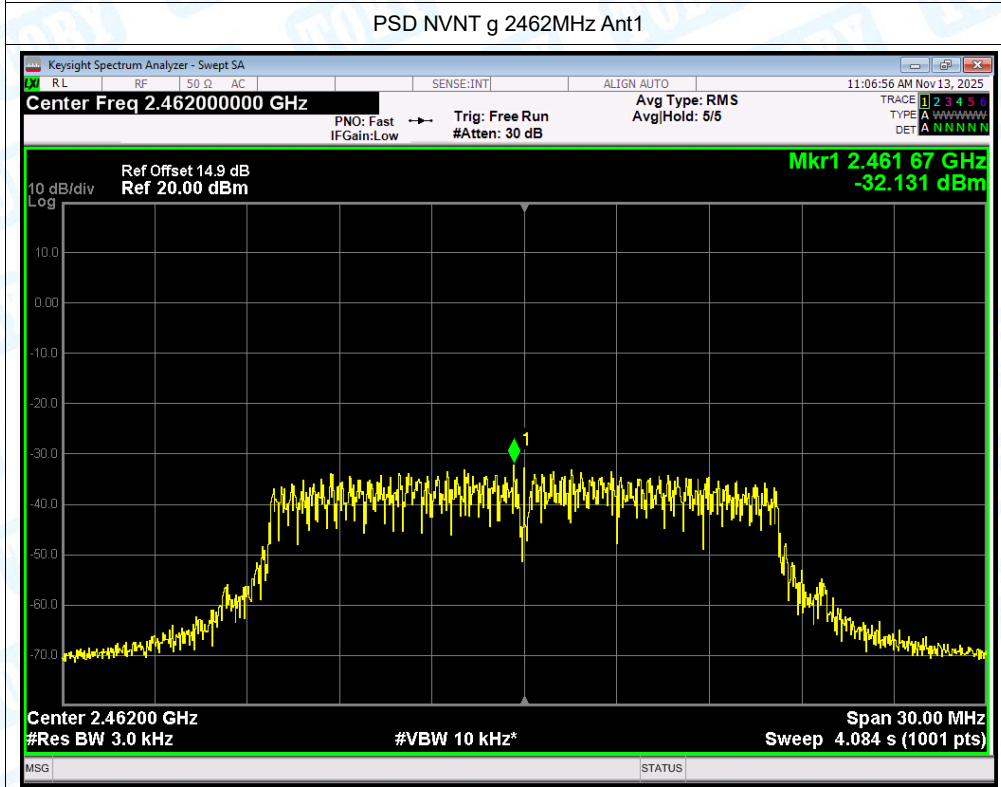
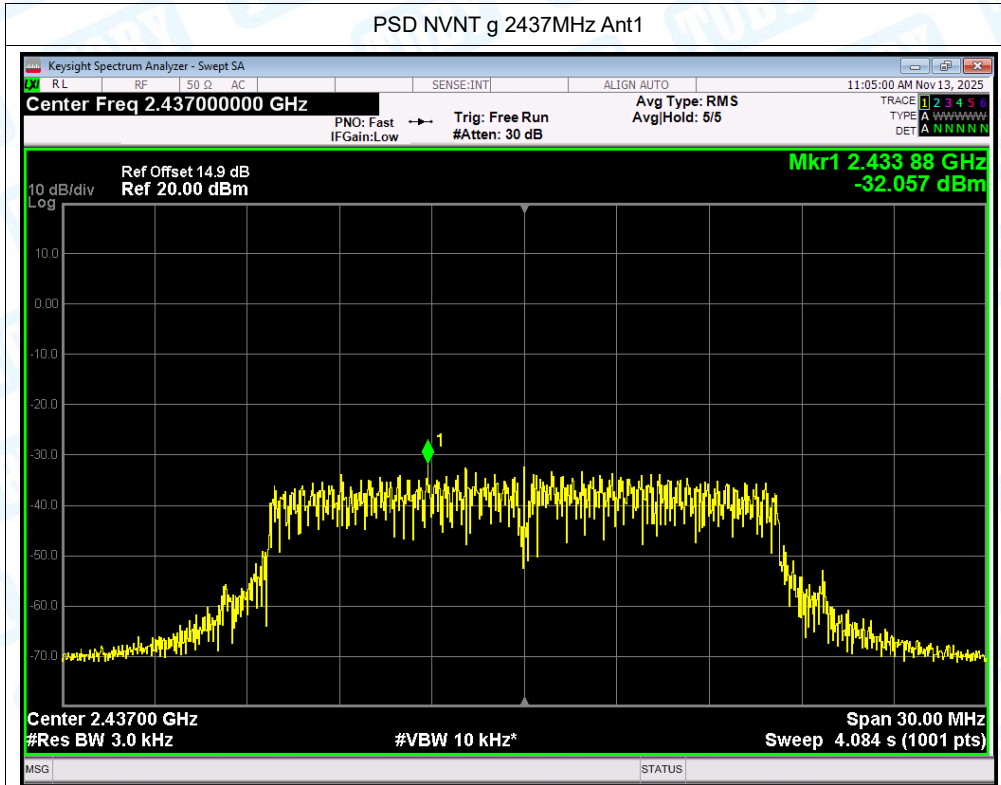
PSD NVNT b 2412MHz Ant1

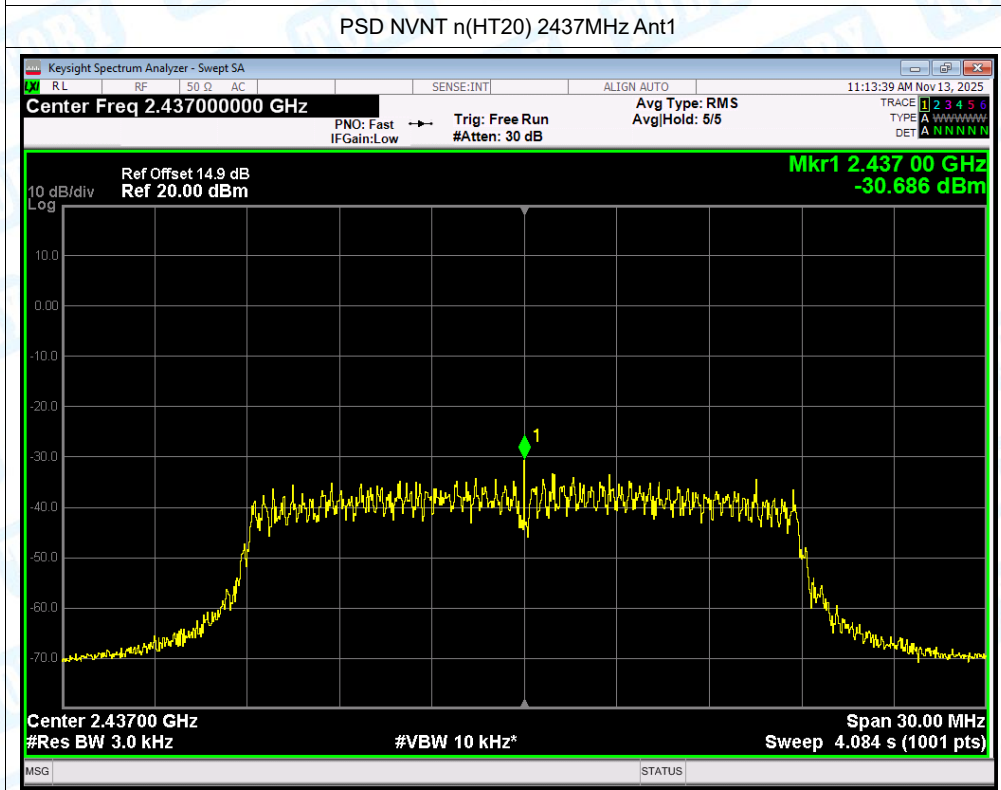
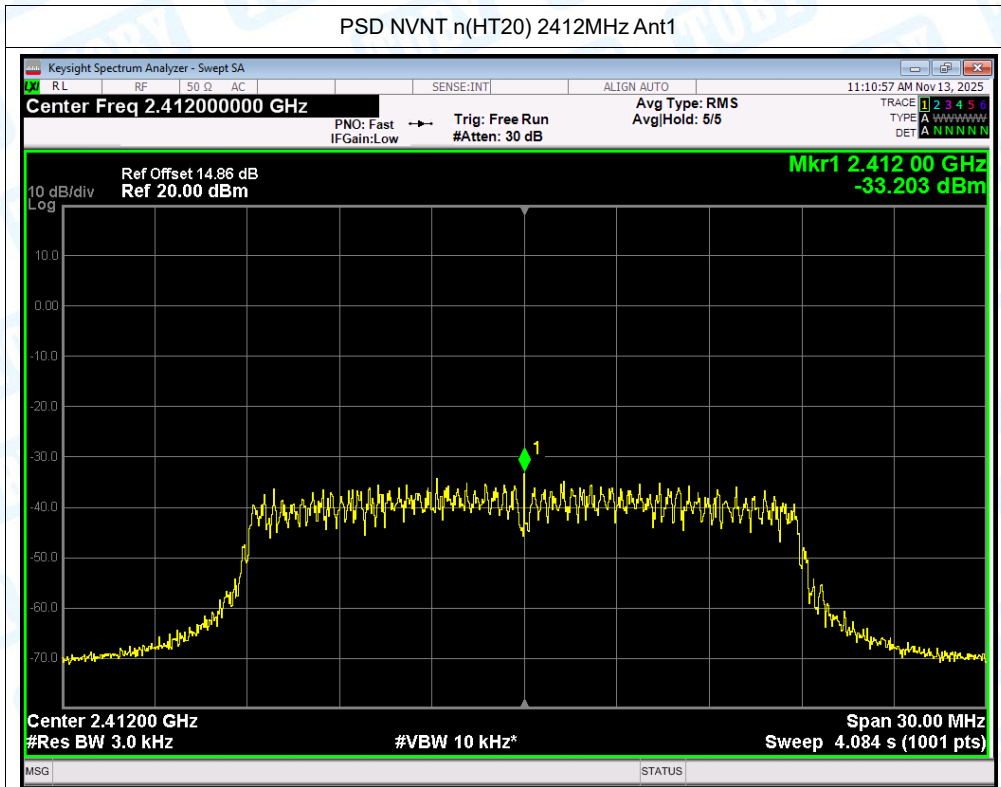


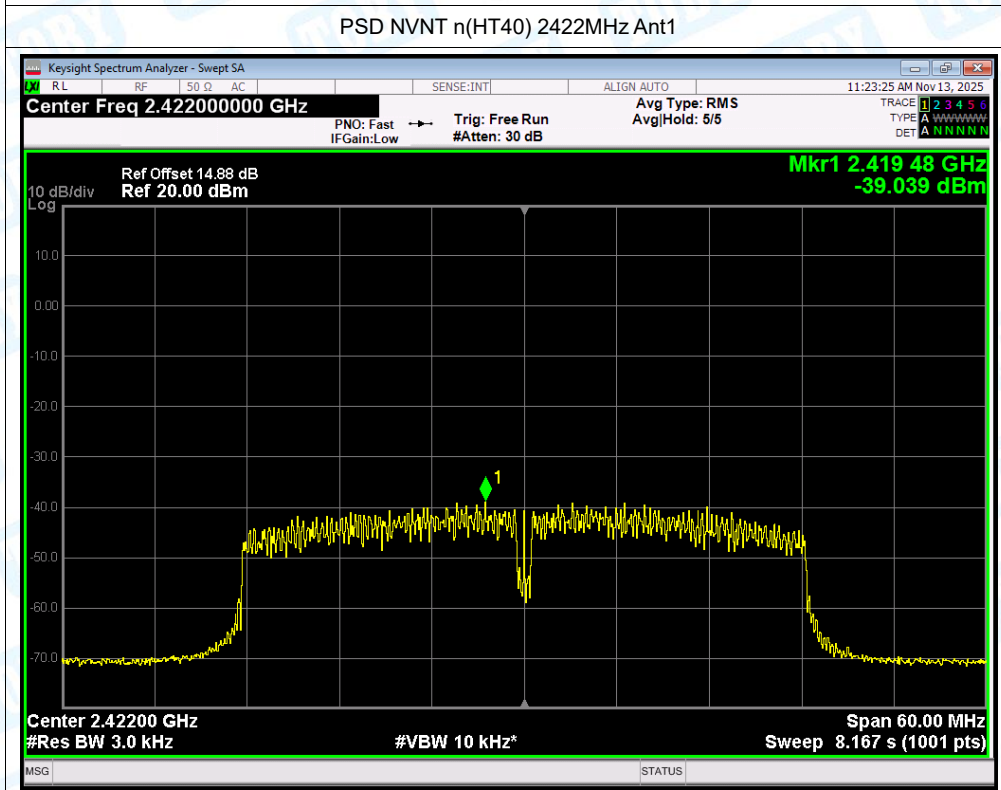
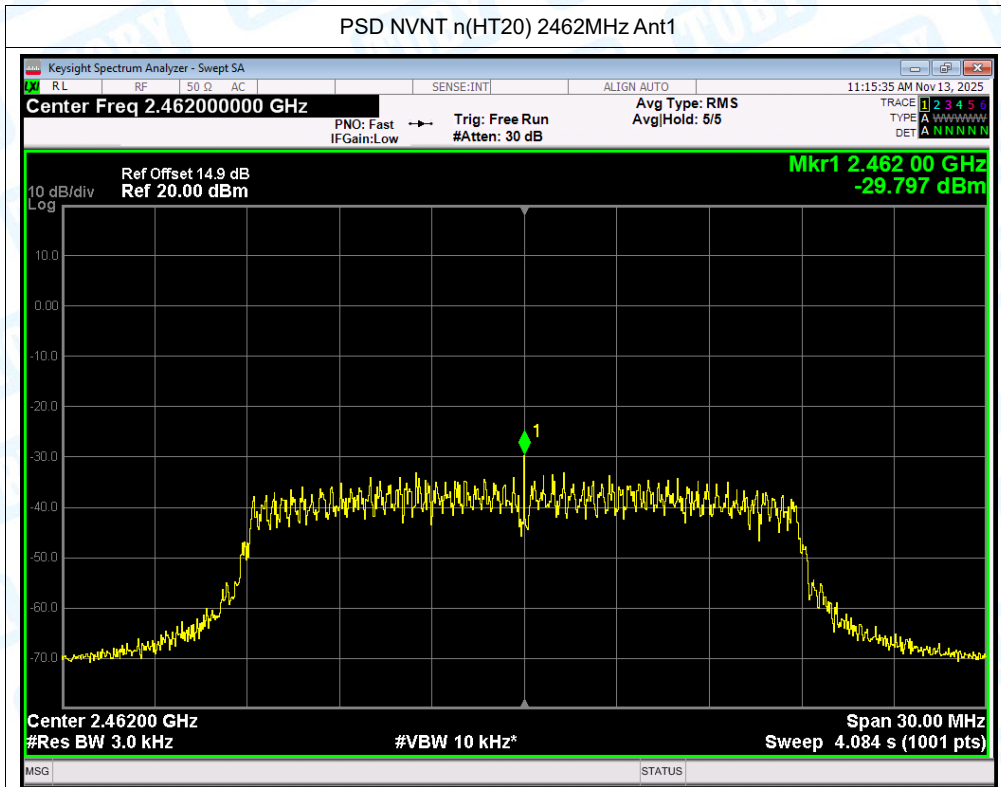
PSD NVNT b 2437MHz Ant1

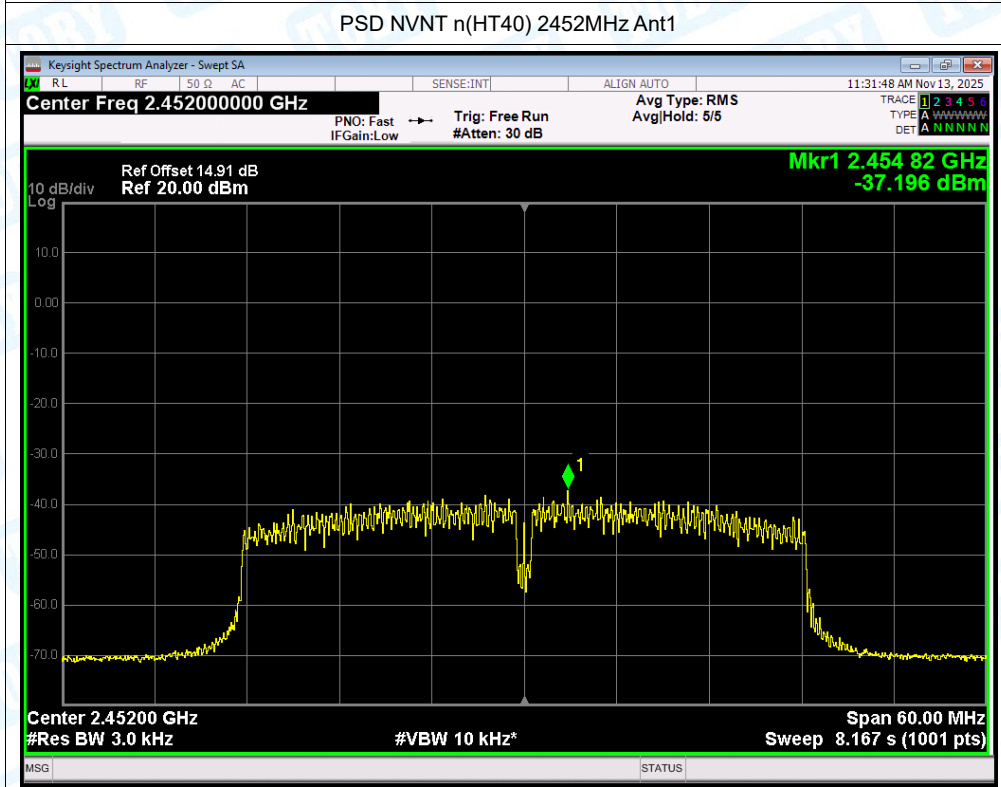
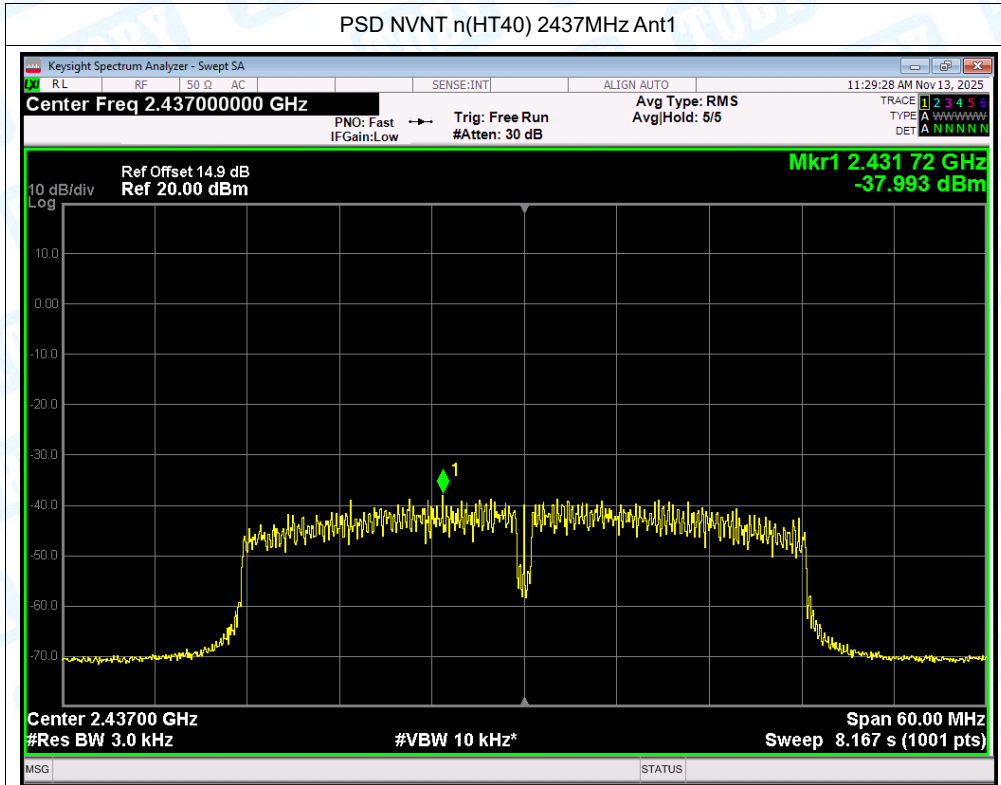










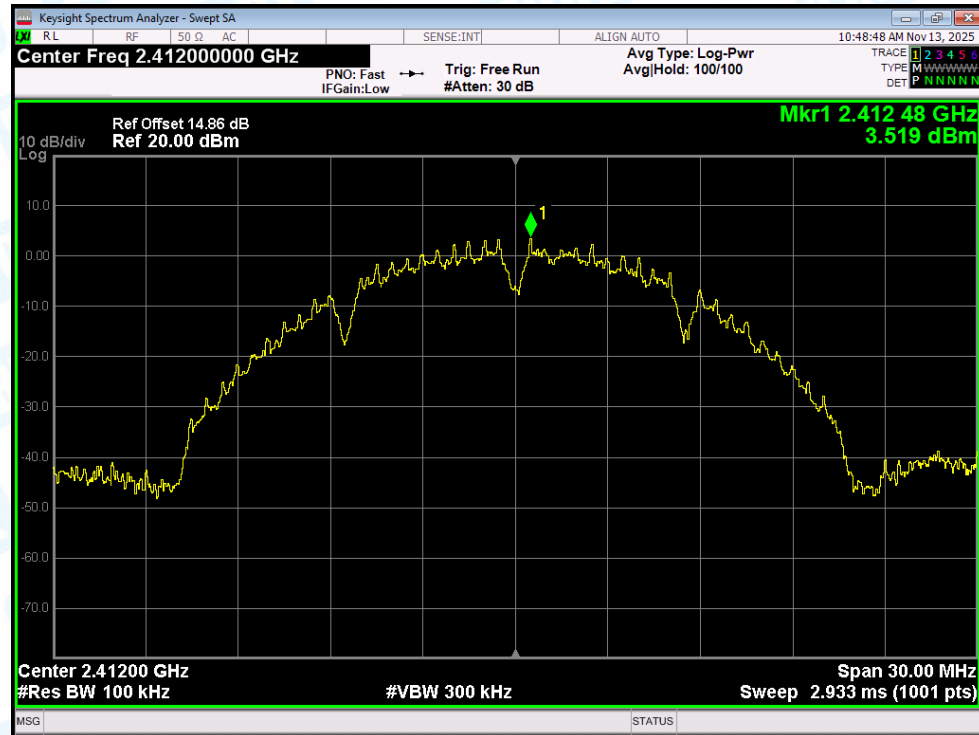


6. Band Edge

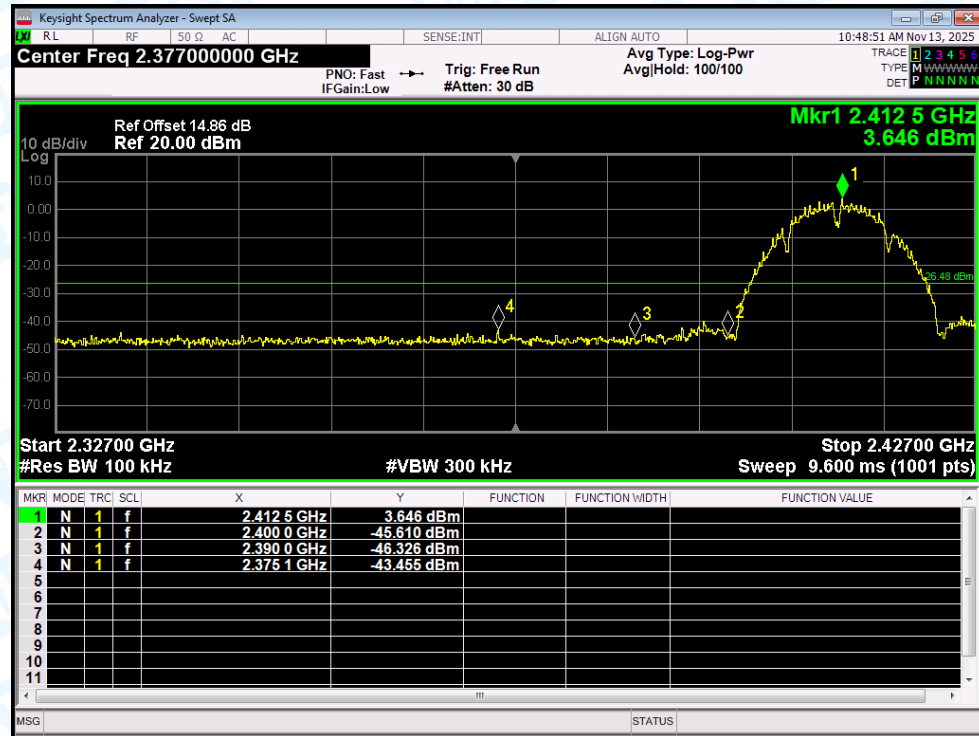
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-46.98	-30	Pass
NVNT	b	2462	Ant1	-48.27	-30	Pass
NVNT	g	2412	Ant1	-37.17	-30	Pass
NVNT	g	2462	Ant1	-37.24	-30	Pass
NVNT	n(HT20)	2412	Ant1	-37.66	-30	Pass
NVNT	n(HT20)	2462	Ant1	-39.86	-30	Pass
NVNT	n(HT40)	2422	Ant1	-35.83	-30	Pass
NVNT	n(HT40)	2452	Ant1	-37.32	-30	Pass

Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref



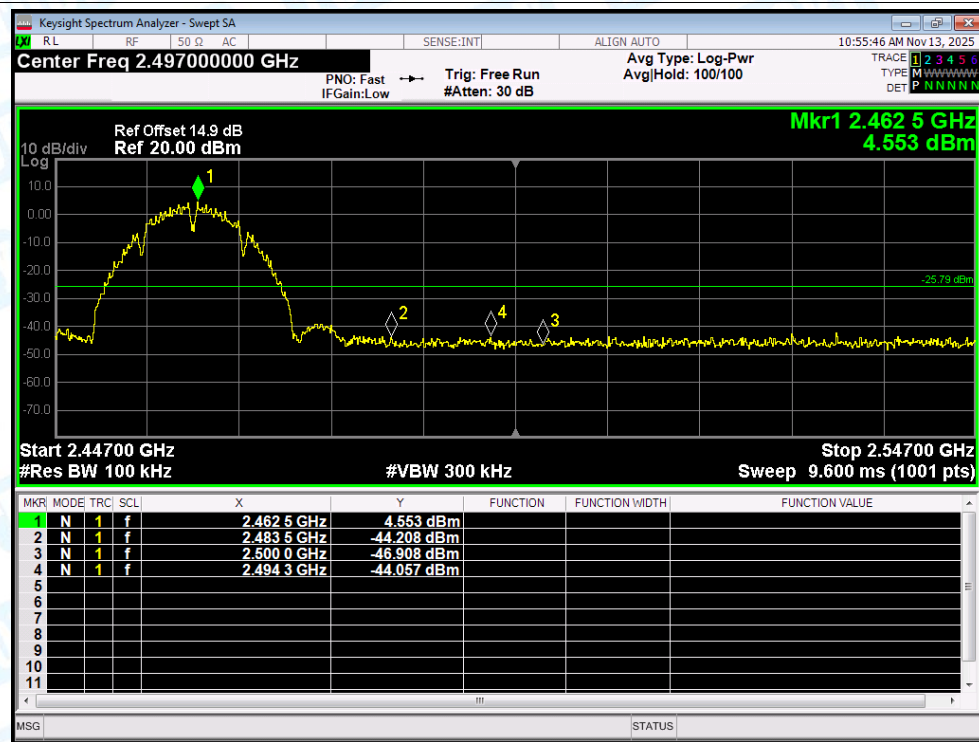
Band Edge NVNT b 2412MHz Ant1 Emission



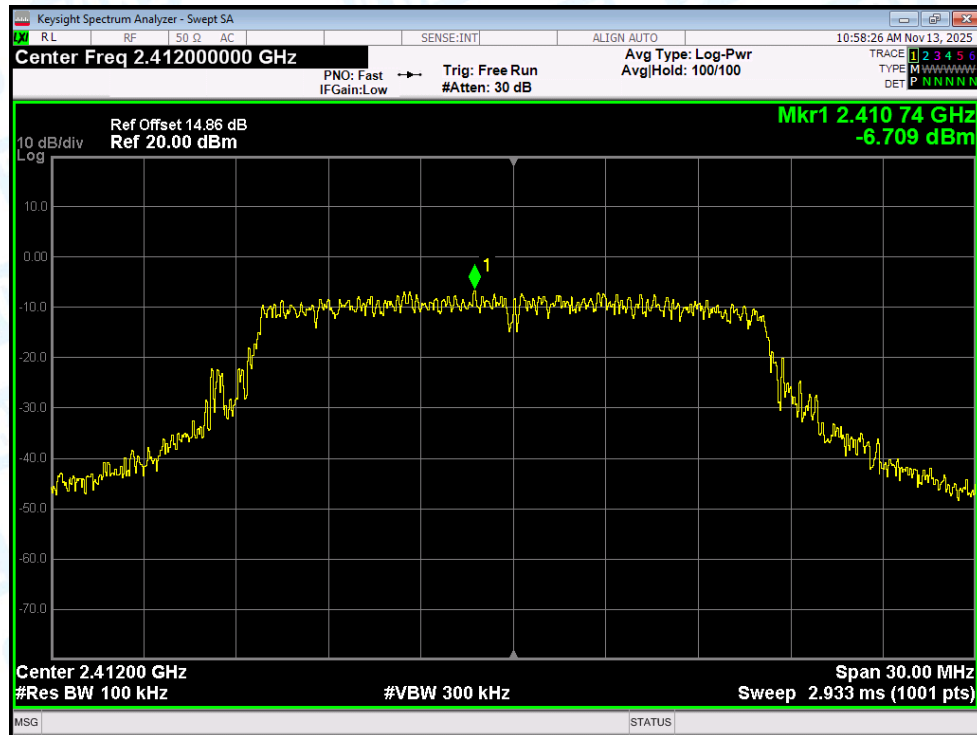
Band Edge NVNT b 2462MHz Ant1 Ref



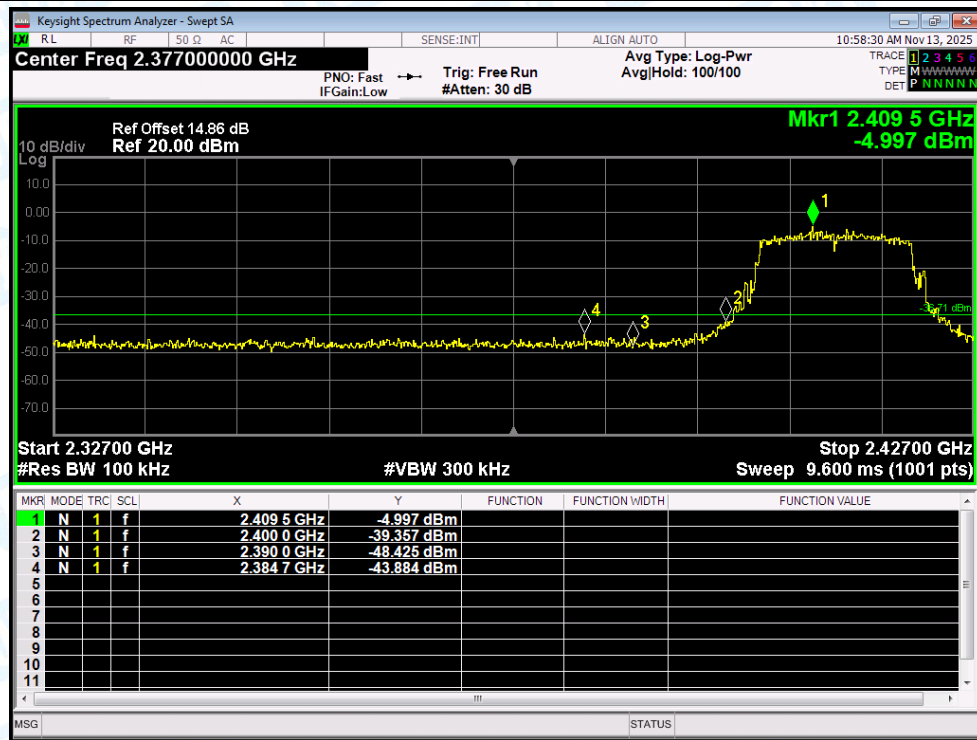
Band Edge NVNT b 2462MHz Ant1 Emission



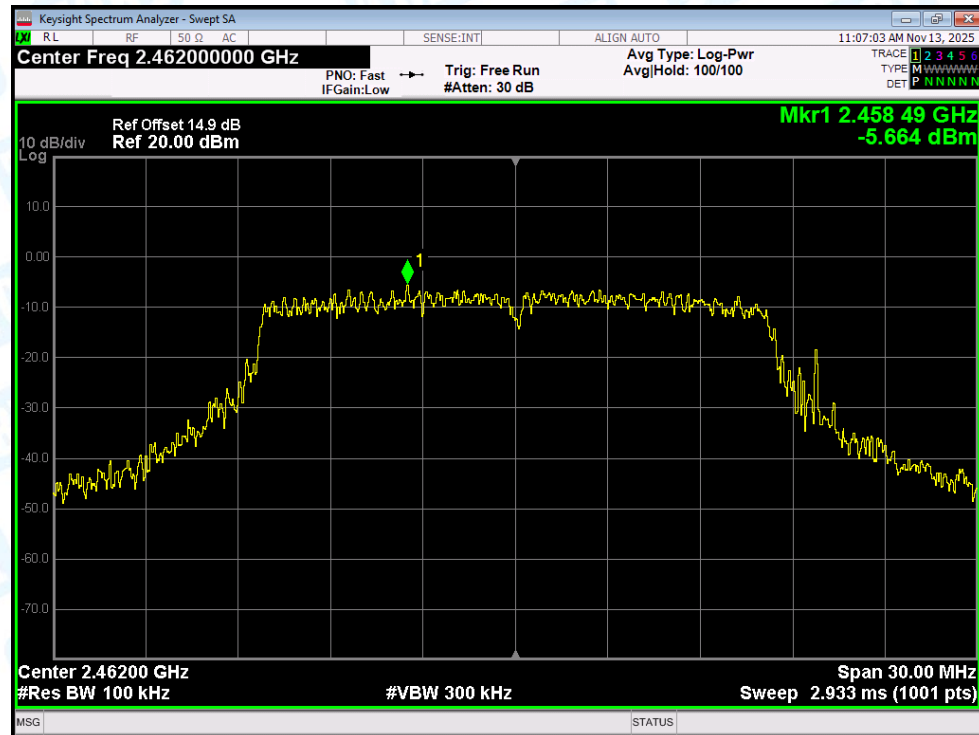
Band Edge NVNT g 2412MHz Ant1 Ref



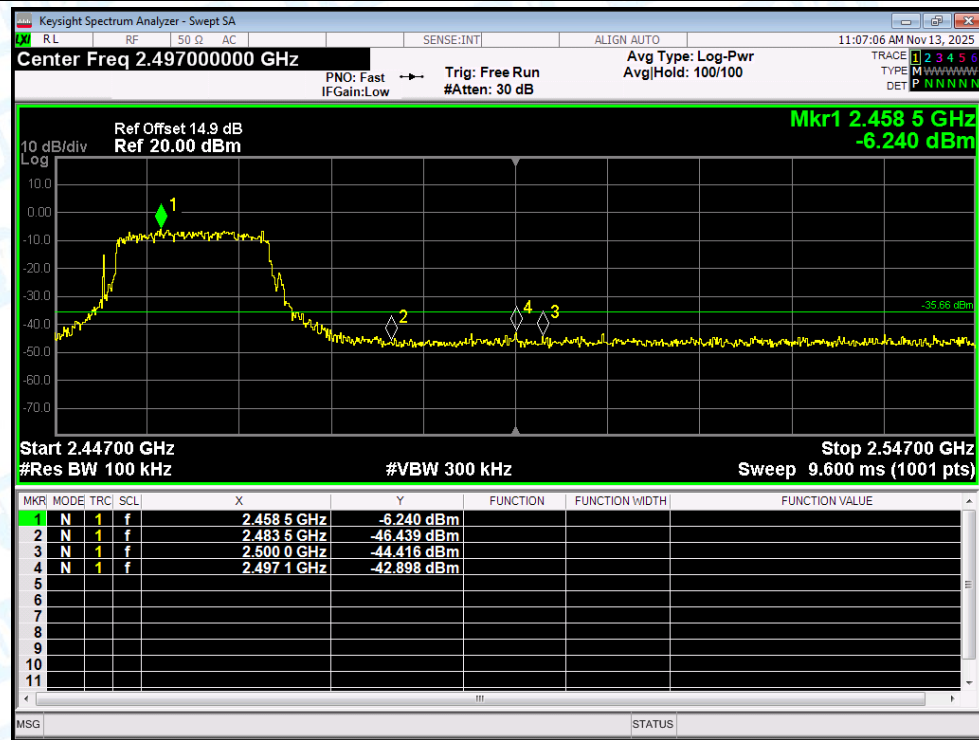
Band Edge NVNT g 2412MHz Ant1 Emission



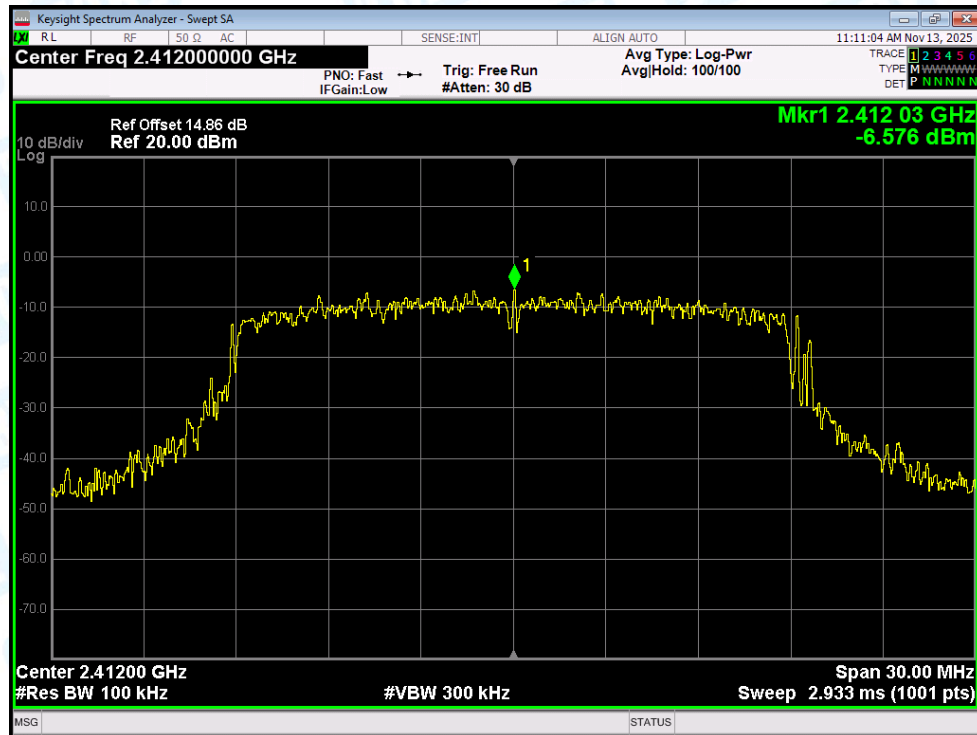
Band Edge NVNT g 2462MHz Ant1 Ref



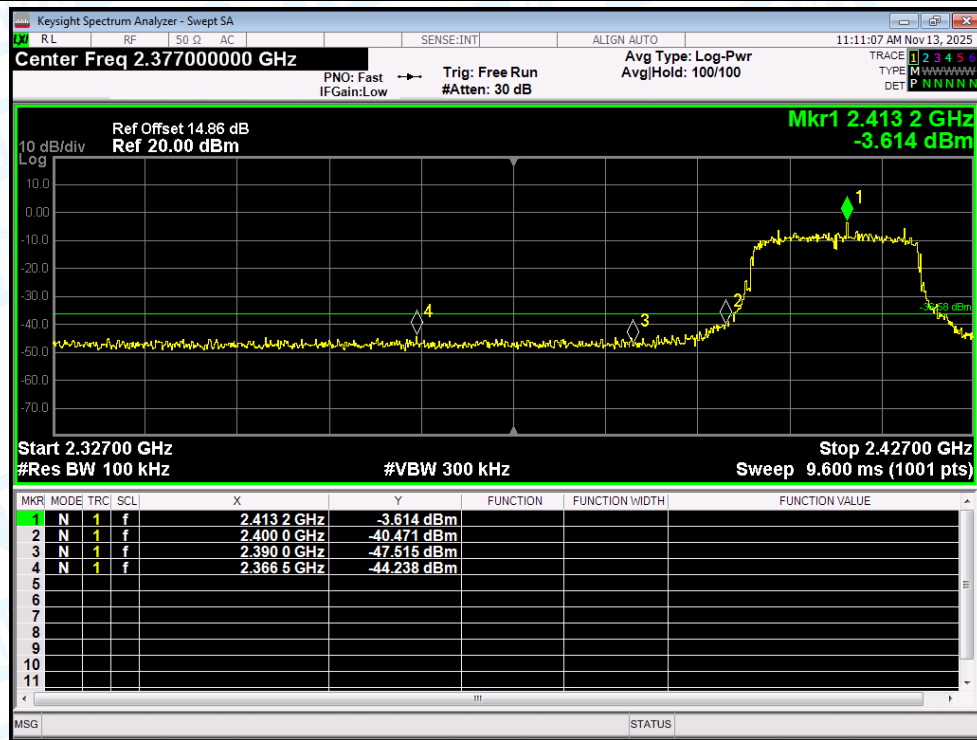
Band Edge NVNT g 2462MHz Ant1 Emission



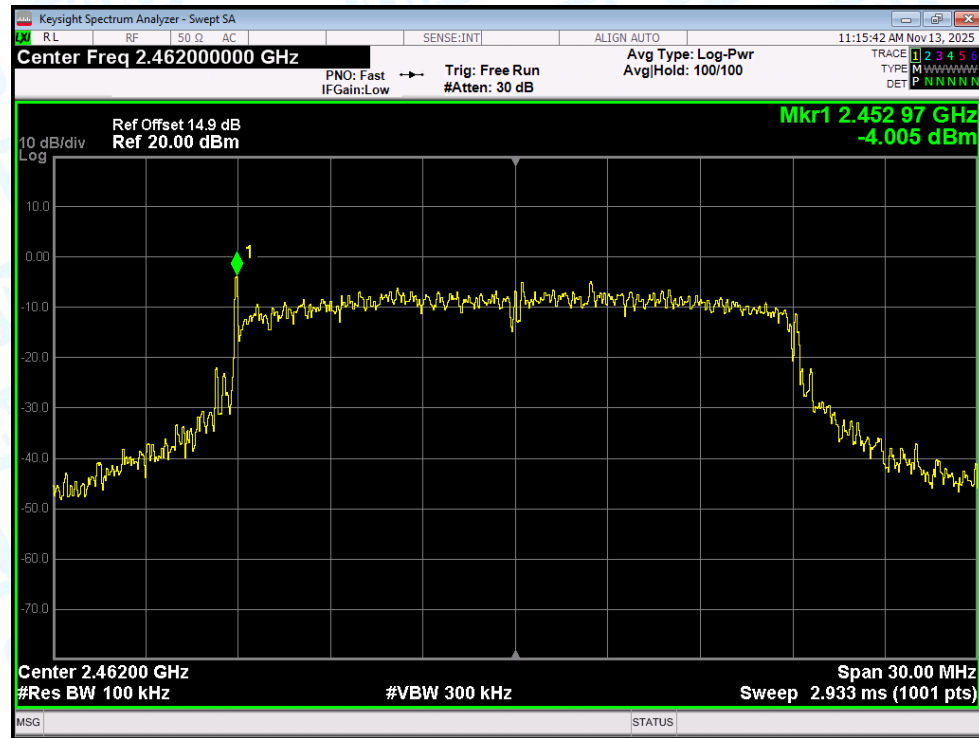
Band Edge NVNT n(HT20) 2412MHz Ant1 Ref



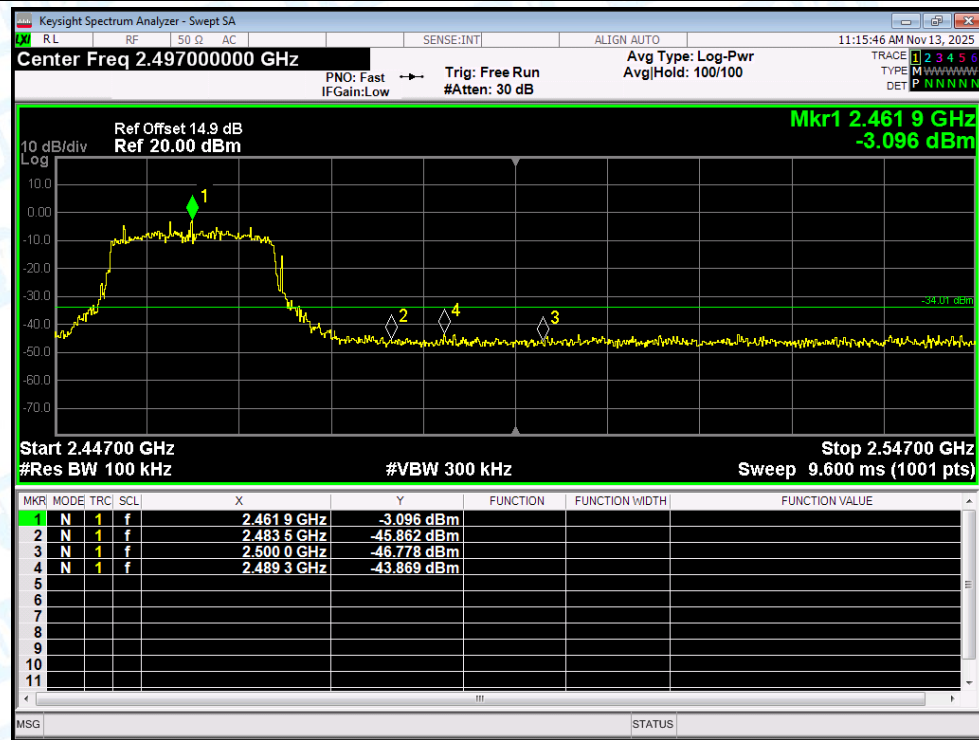
Band Edge NVNT n(HT20) 2412MHz Ant1 Emission



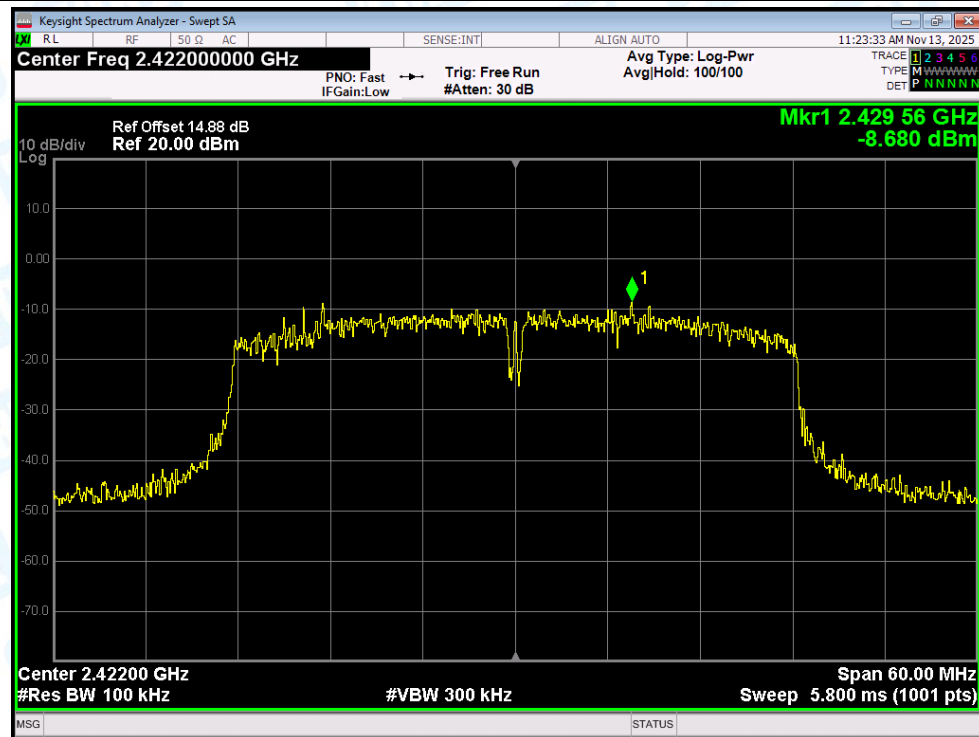
Band Edge NVNT n(HT20) 2462MHz Ant1 Ref



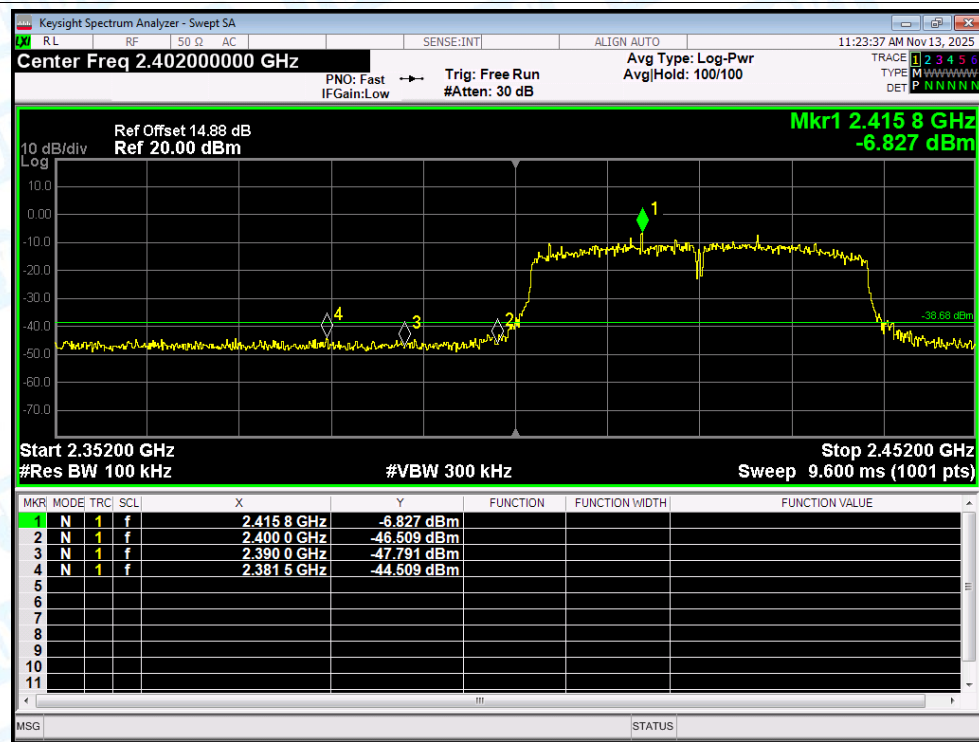
Band Edge NVNT n(HT20) 2462MHz Ant1 Emission



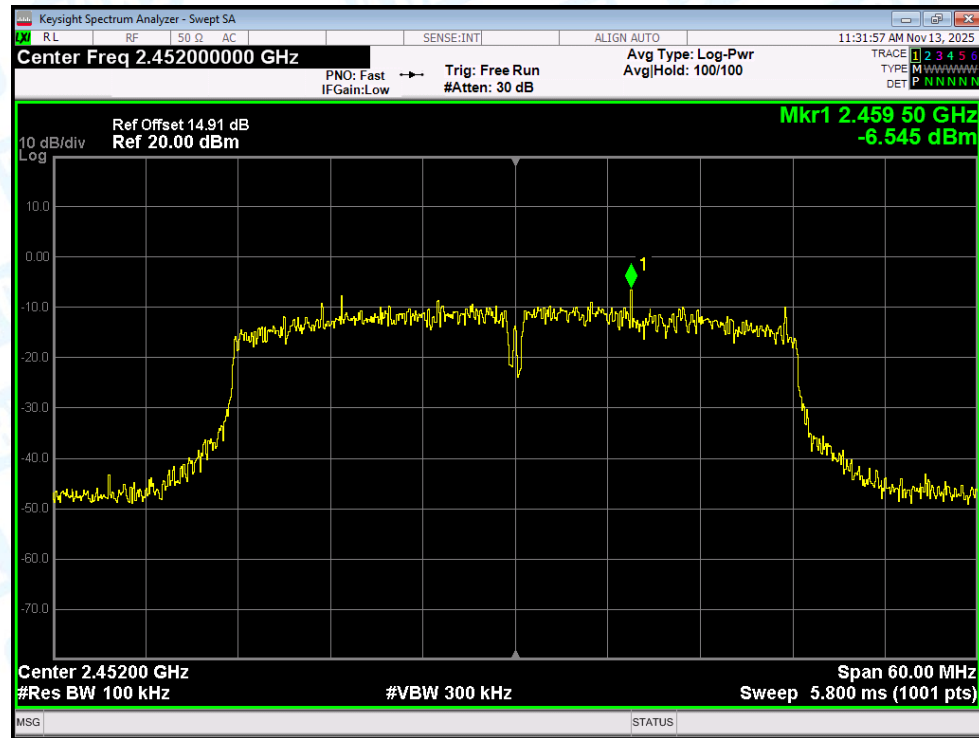
Band Edge NVNT n(HT40) 2422MHz Ant1 Ref



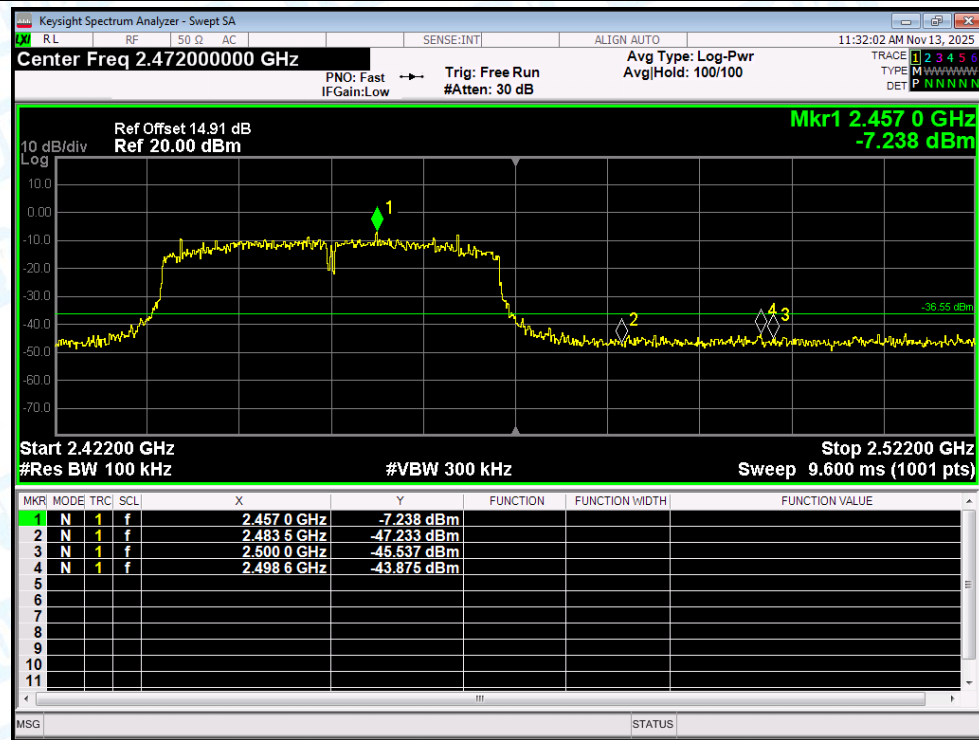
Band Edge NVNT n(HT40) 2422MHz Ant1 Emission



Band Edge NVNT n(HT40) 2452MHz Ant1 Ref



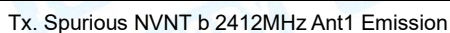
Band Edge NVNT n(HT40) 2452MHz Ant1 Emission



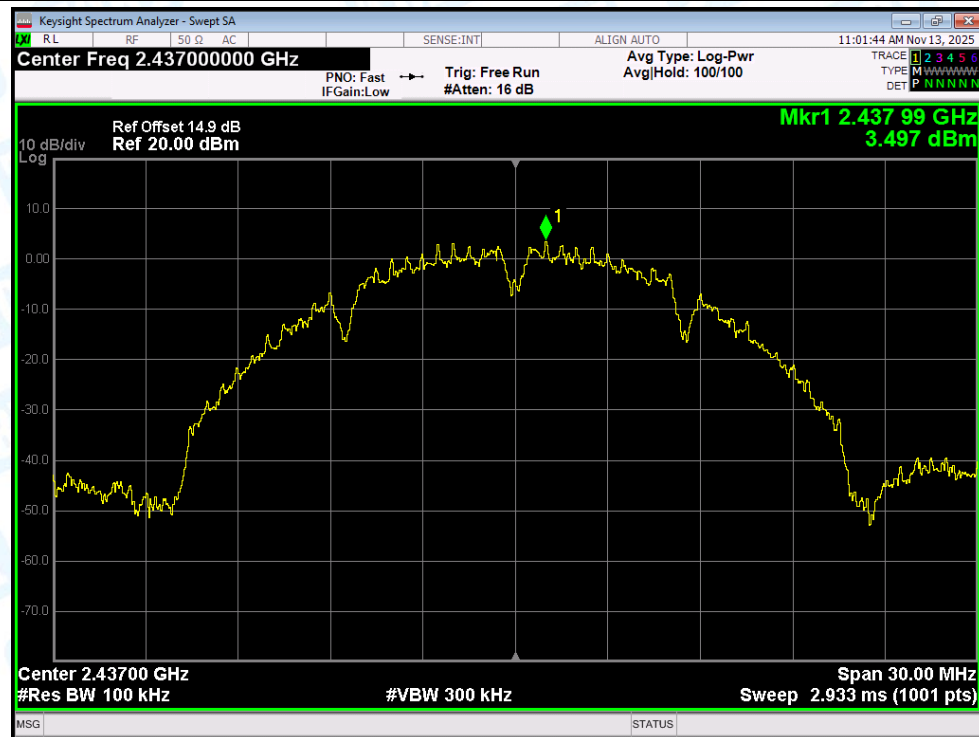
7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-42.08	-30	Pass
NVNT	b	2437	Ant1	-43.99	-30	Pass
NVNT	b	2462	Ant1	-43.63	-30	Pass
NVNT	g	2412	Ant1	-33.67	-30	Pass
NVNT	g	2437	Ant1	-34.82	-30	Pass
NVNT	g	2462	Ant1	-37.33	-30	Pass
NVNT	n(HT20)	2412	Ant1	-32.71	-30	Pass
NVNT	n(HT20)	2437	Ant1	-35.03	-30	Pass
NVNT	n(HT20)	2462	Ant1	-40.03	-30	Pass
NVNT	n(HT40)	2422	Ant1	-32.68	-30	Pass
NVNT	n(HT40)	2437	Ant1	-36.01	-30	Pass
NVNT	n(HT40)	2452	Ant1	-31.37	-30	Pass

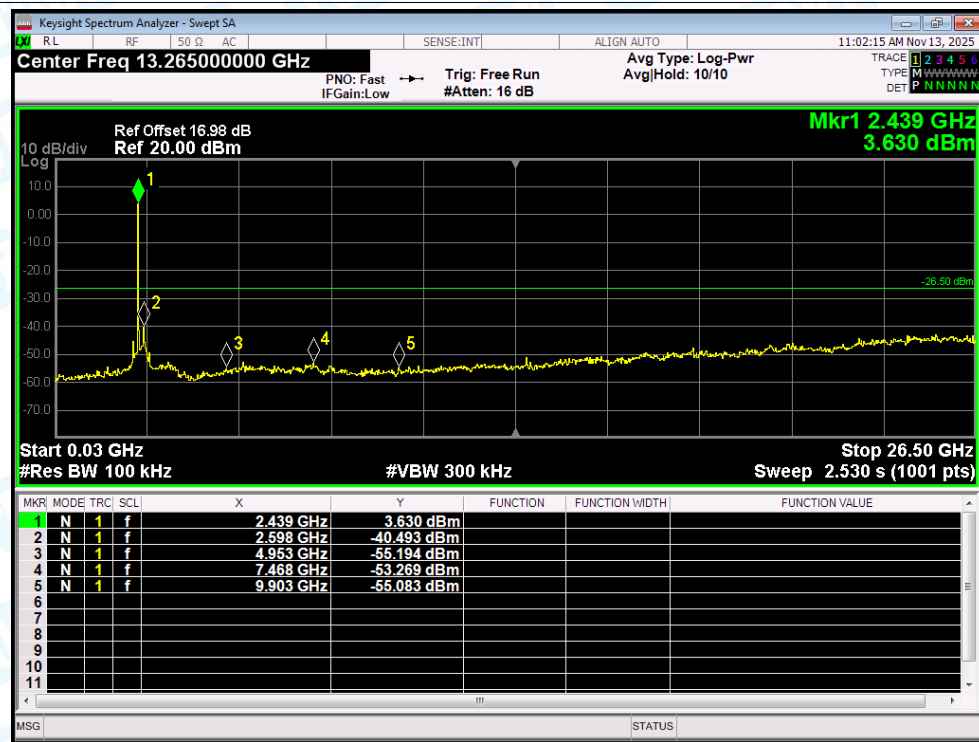
Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2437MHz Ant1 Ref



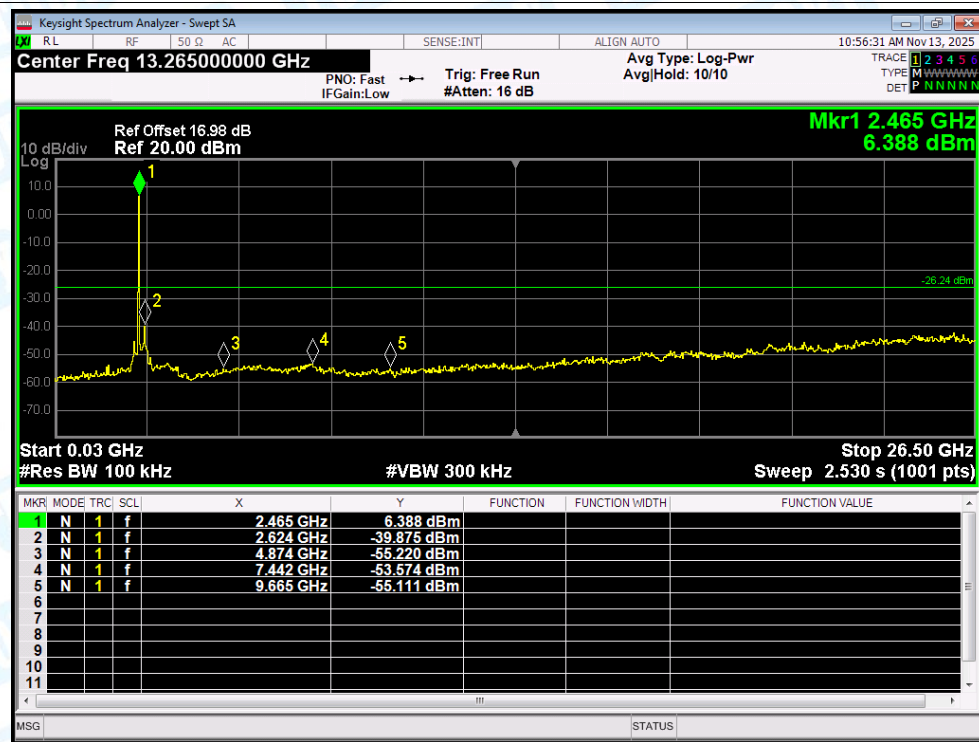
Tx. Spurious NVNT b 2437MHz Ant1 Emission



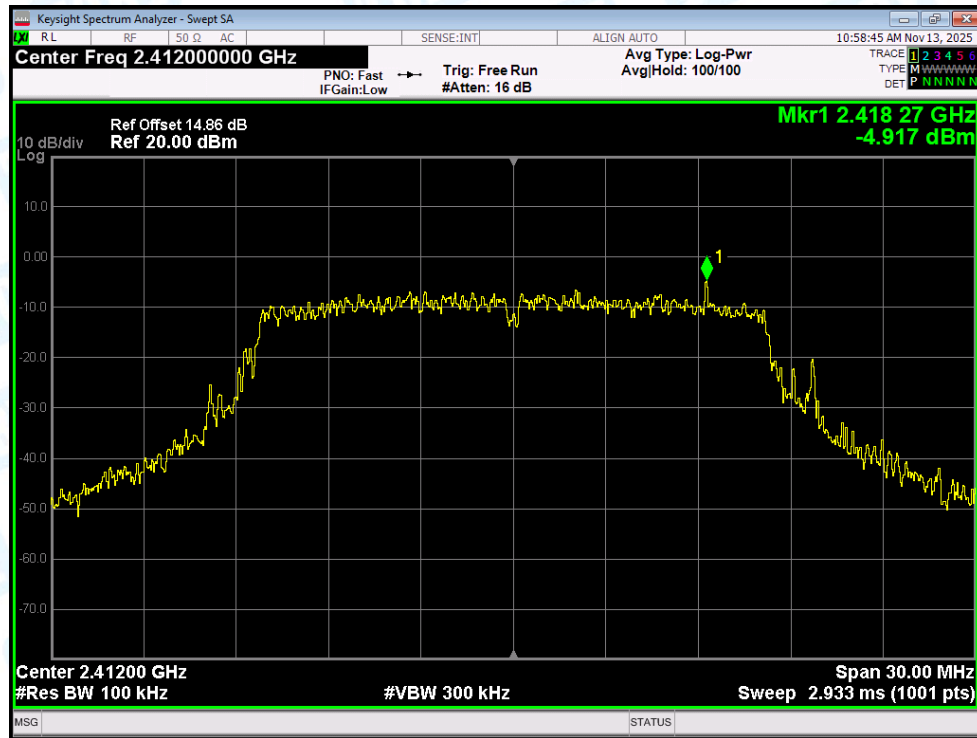
Tx. Spurious NVNT b 2462MHz Ant1 Ref



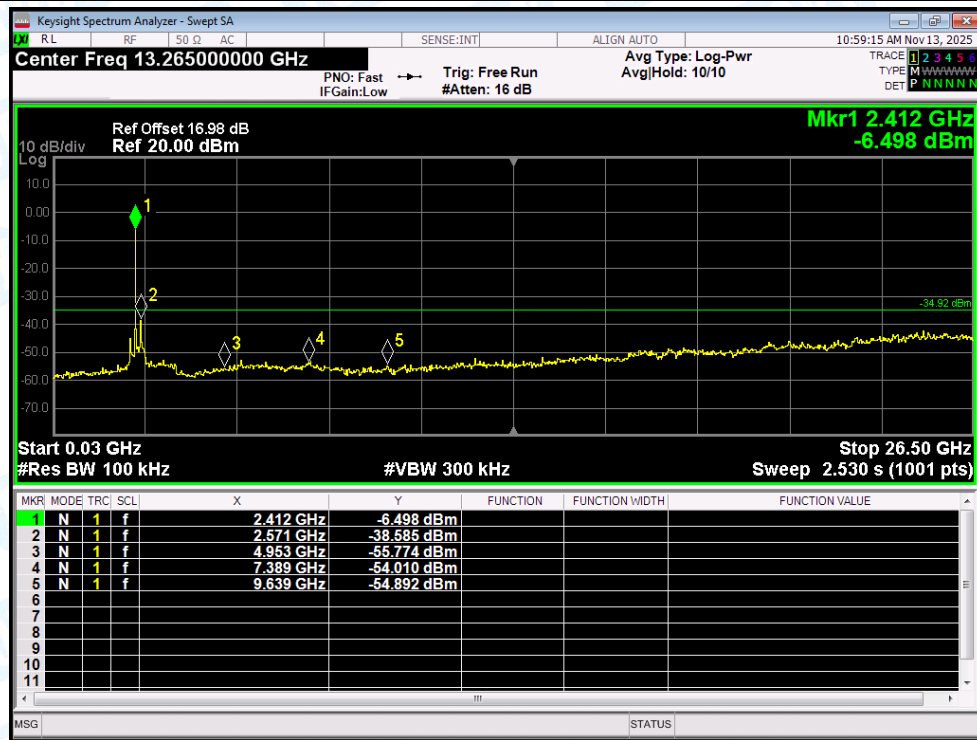
Tx. Spurious NVNT b 2462MHz Ant1 Emission



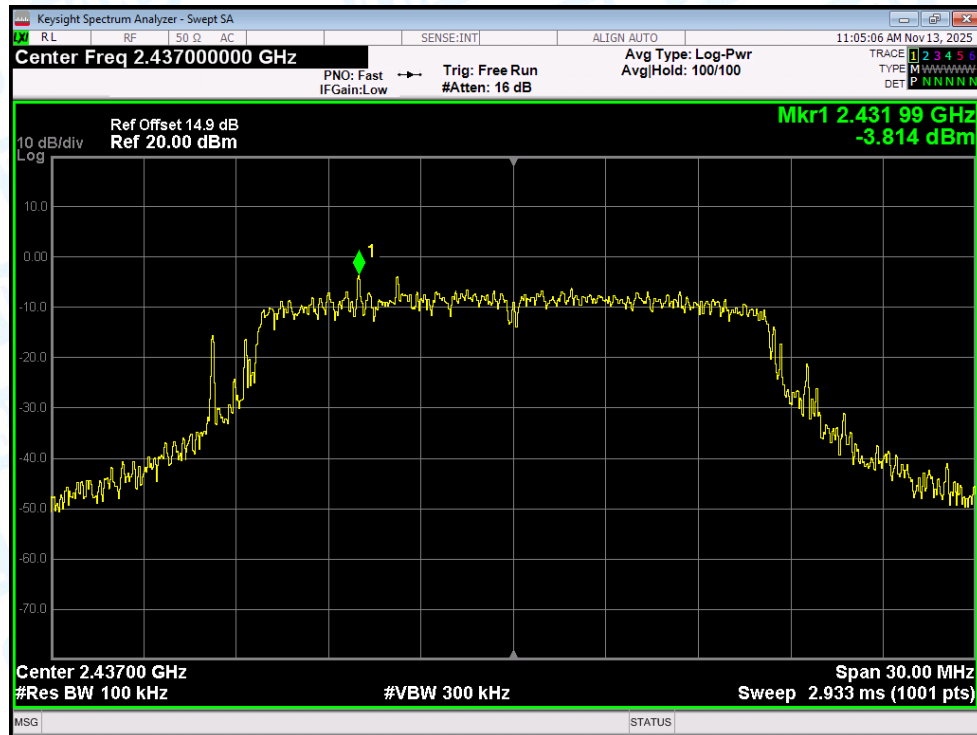
Tx. Spurious NVNT g 2412MHz Ant1 Ref



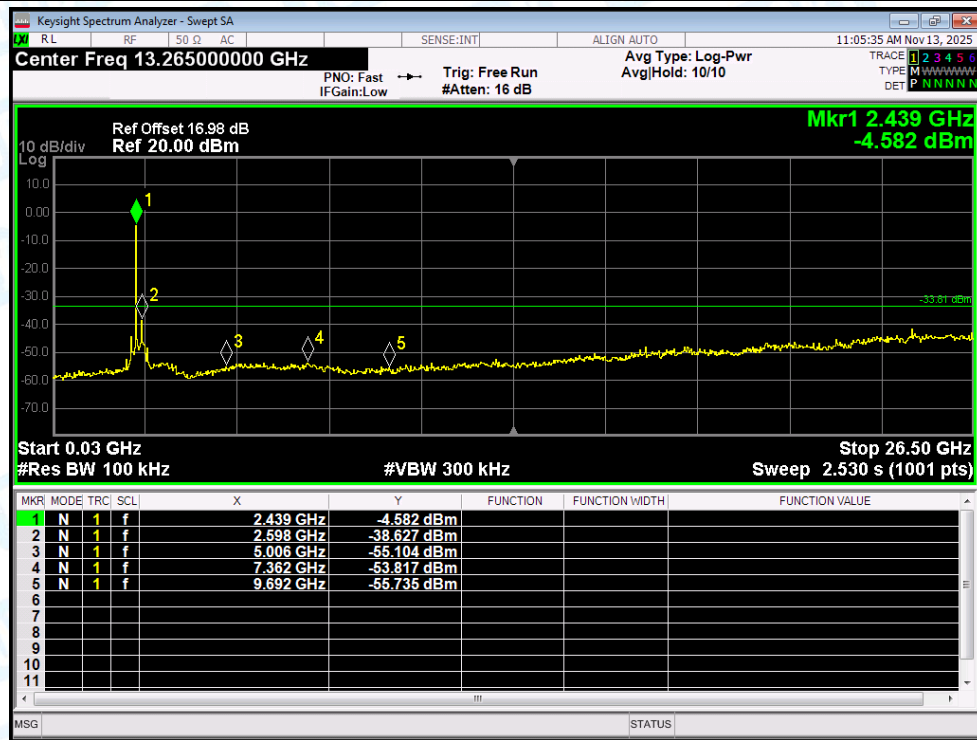
Tx. Spurious NVNT g 2412MHz Ant1 Emission



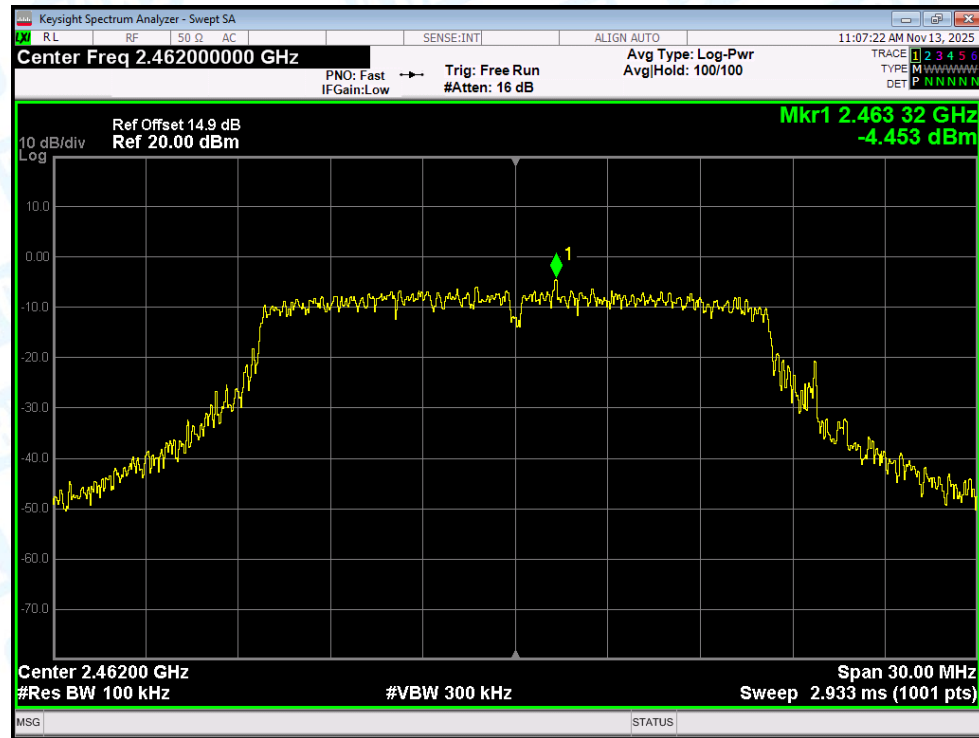
Tx. Spurious NVNT g 2437MHz Ant1 Ref



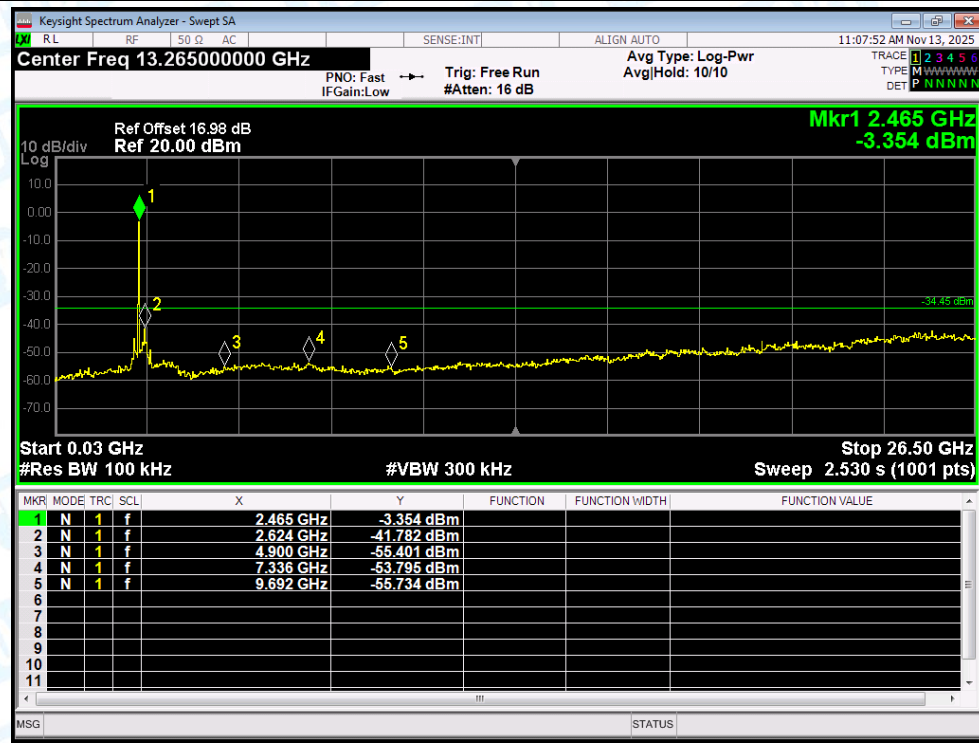
Tx. Spurious NVNT g 2437MHz Ant1 Emission



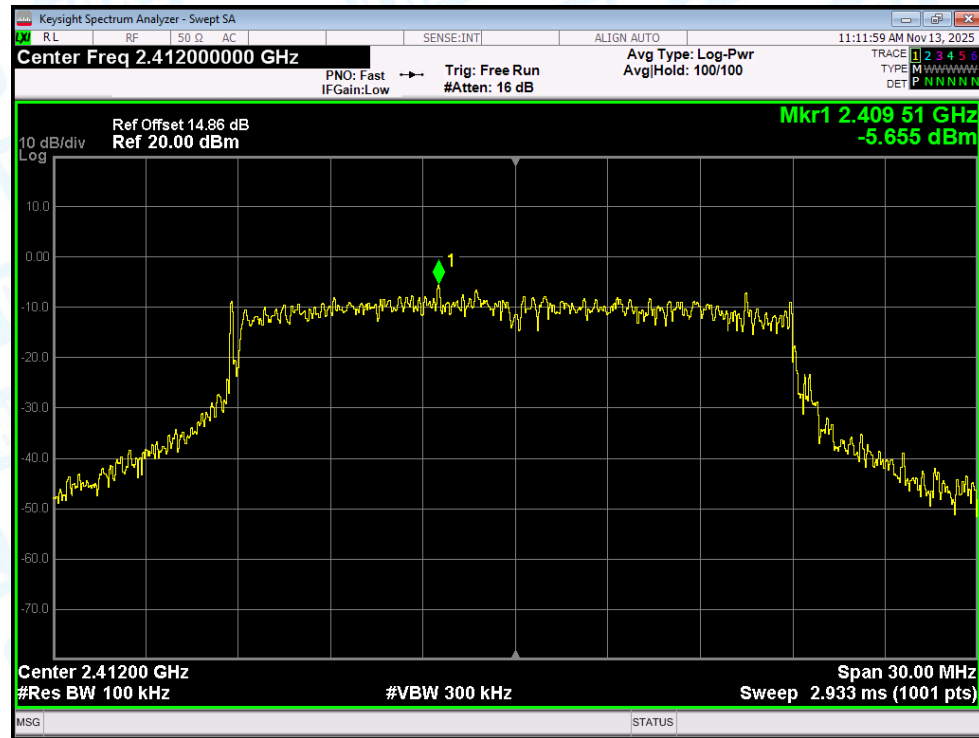
Tx. Spurious NVNT g 2462MHz Ant1 Ref



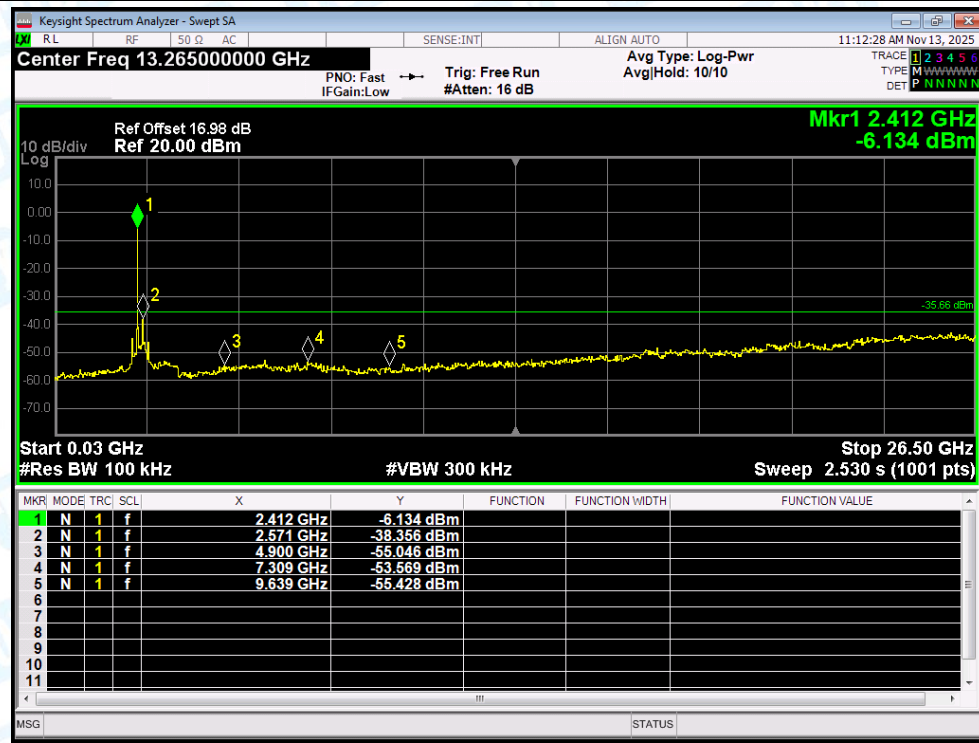
Tx. Spurious NVNT g 2462MHz Ant1 Emission



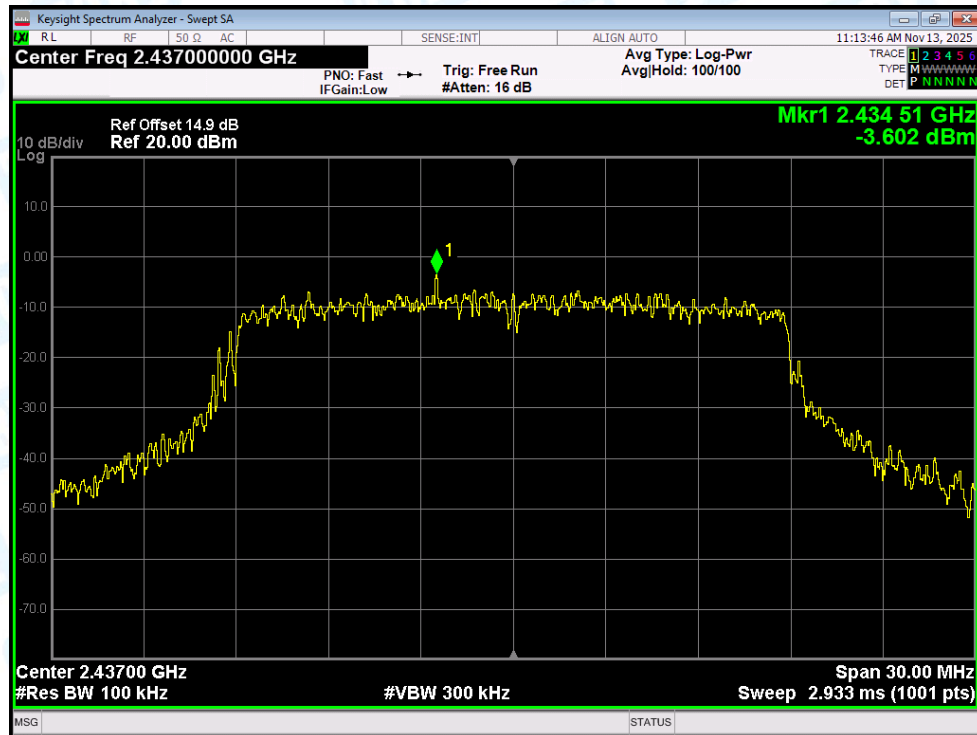
Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Ref



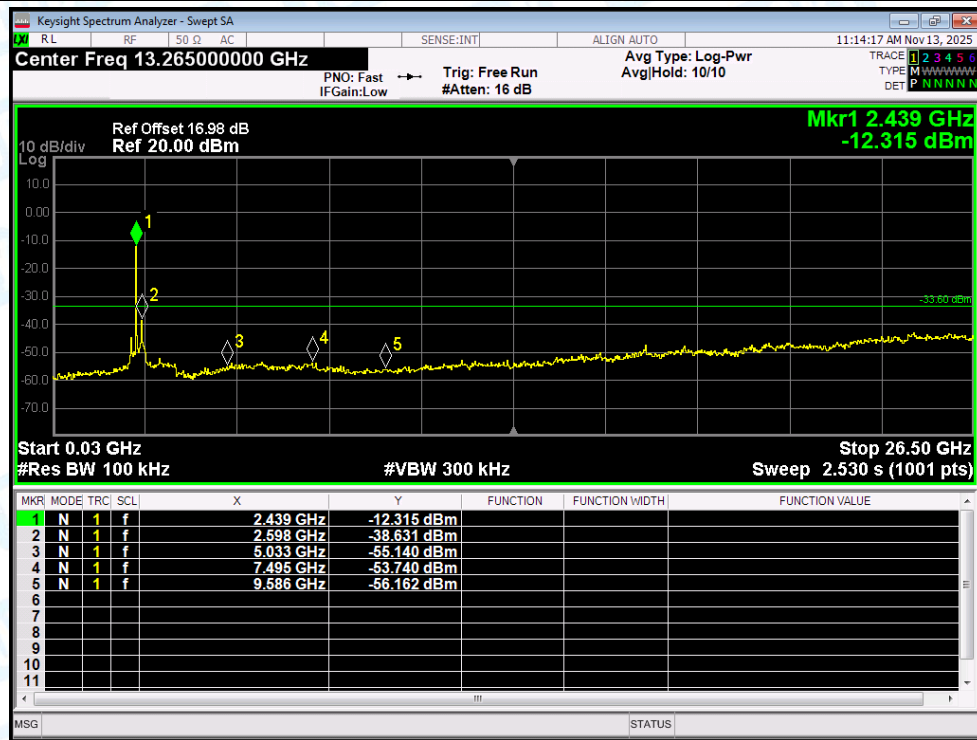
Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Emission



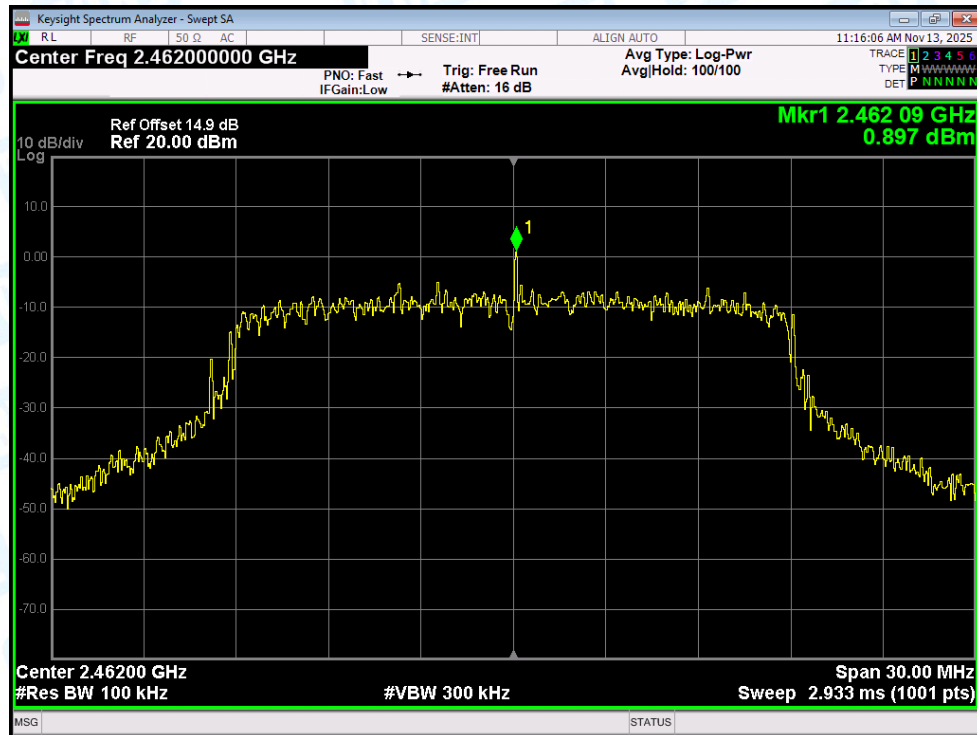
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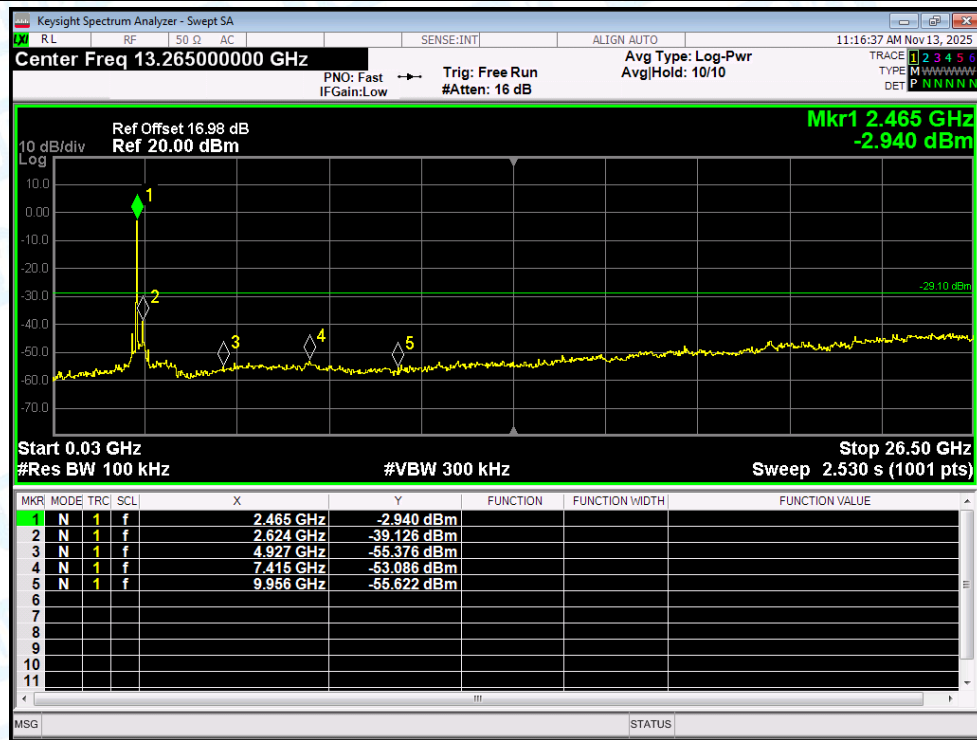
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Emission



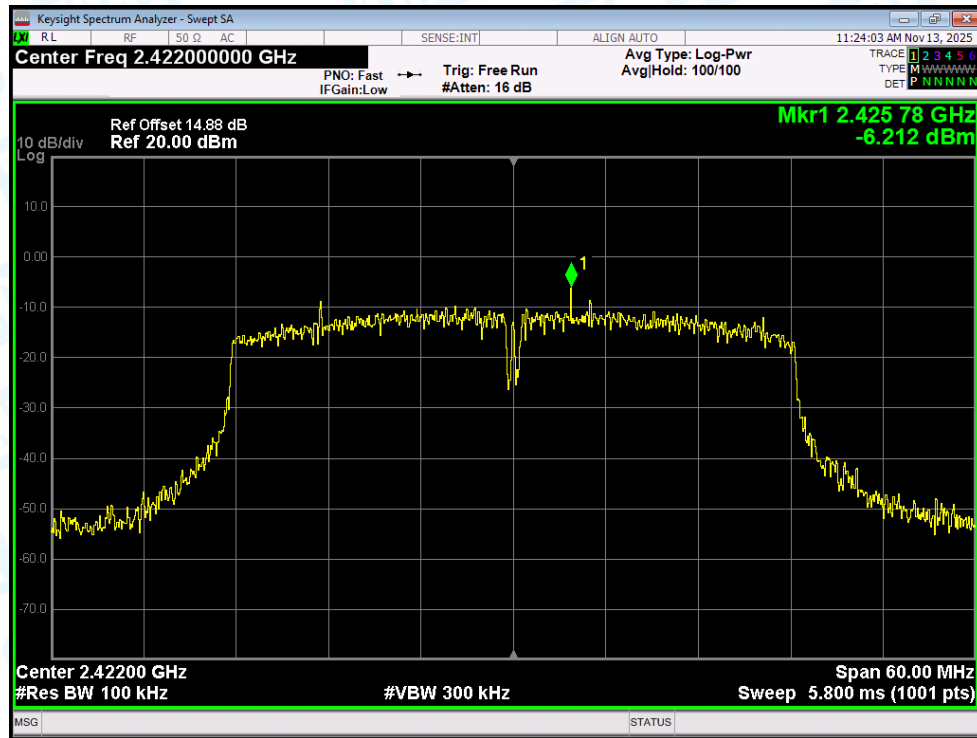
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref



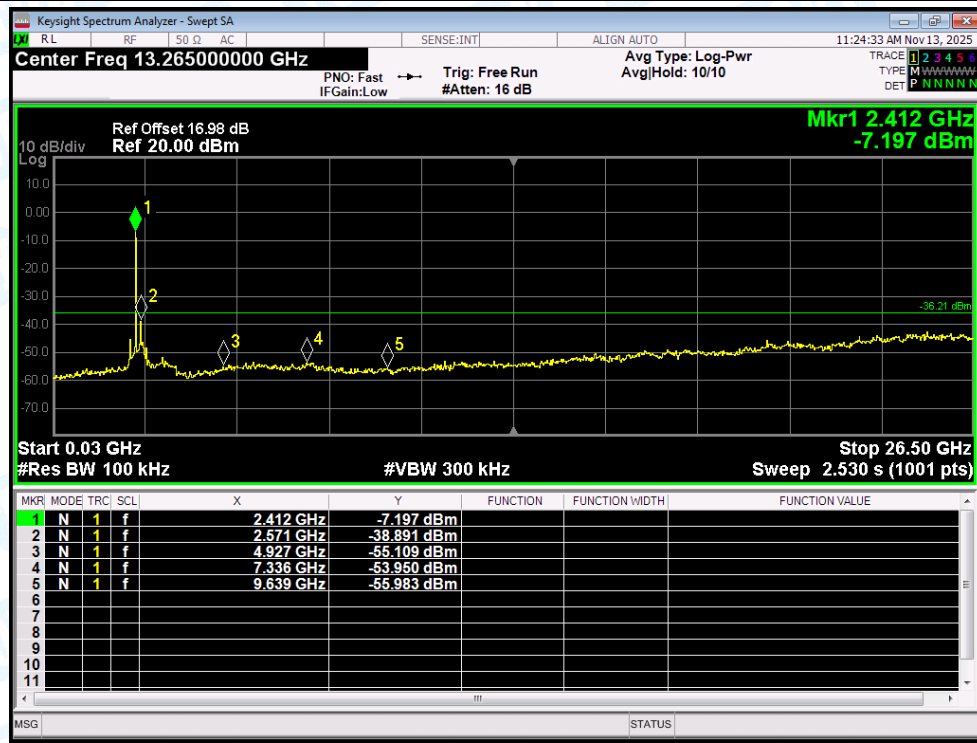
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Emission



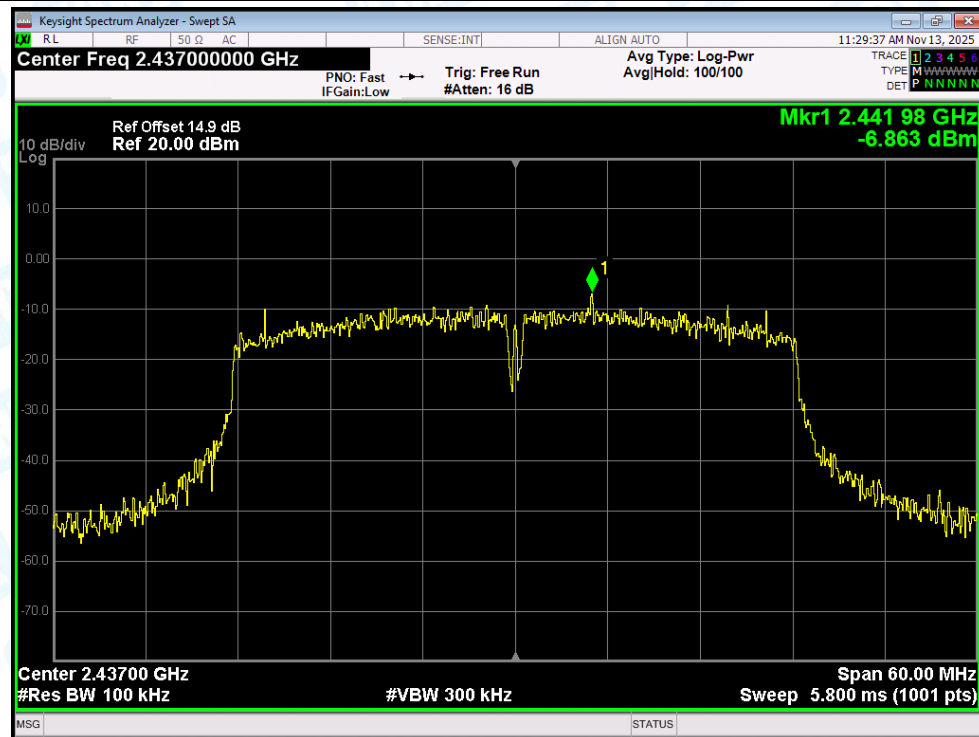
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Ref



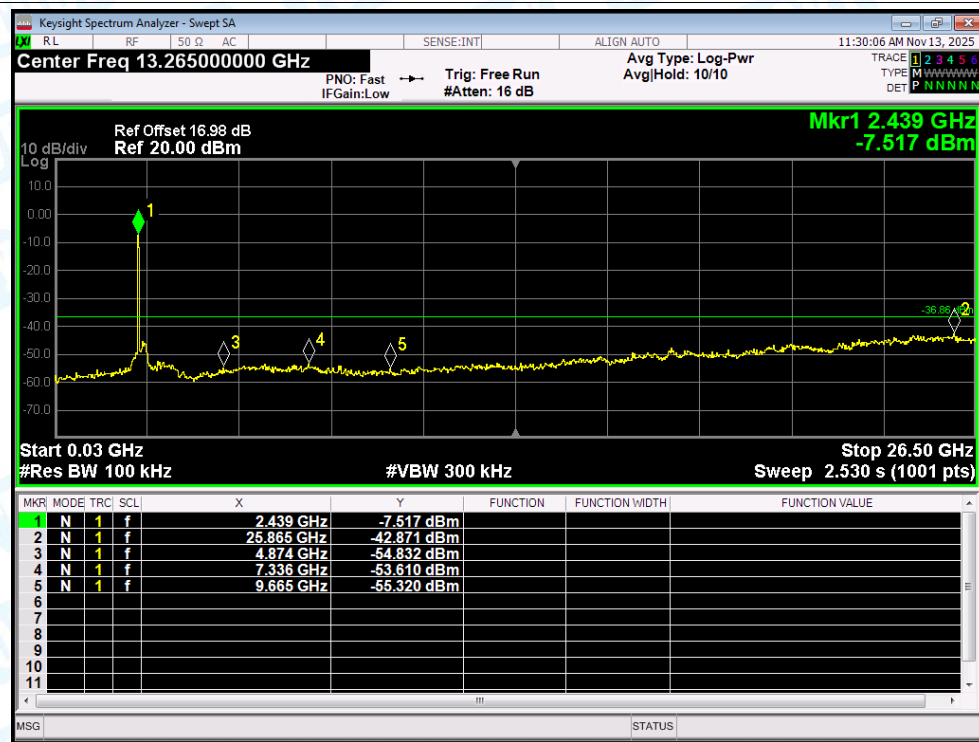
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Emission



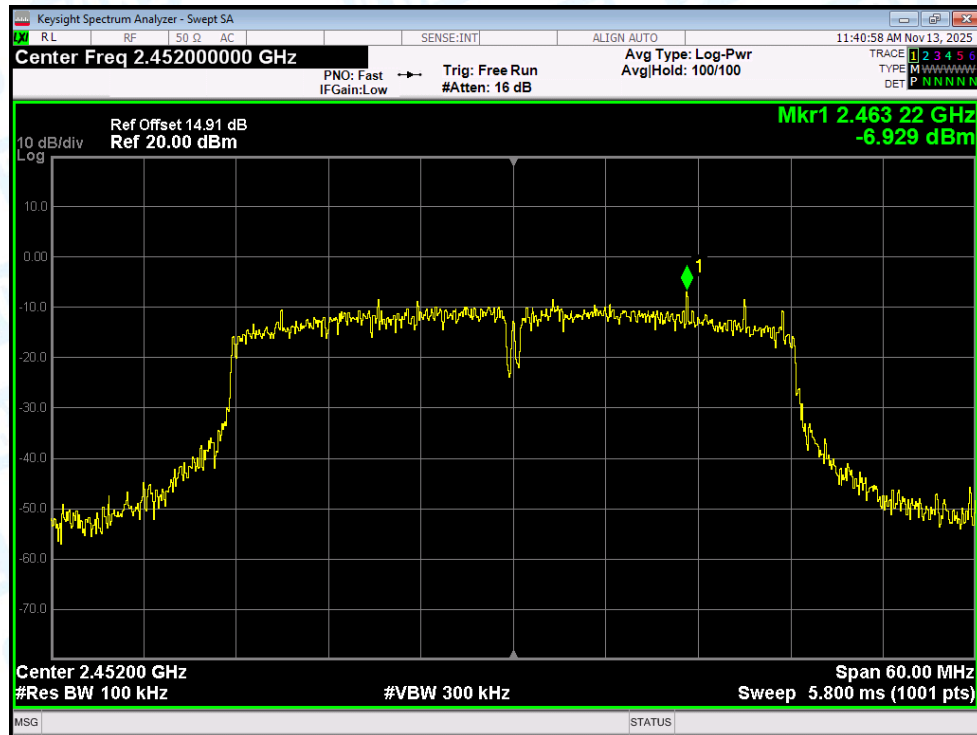
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Ref



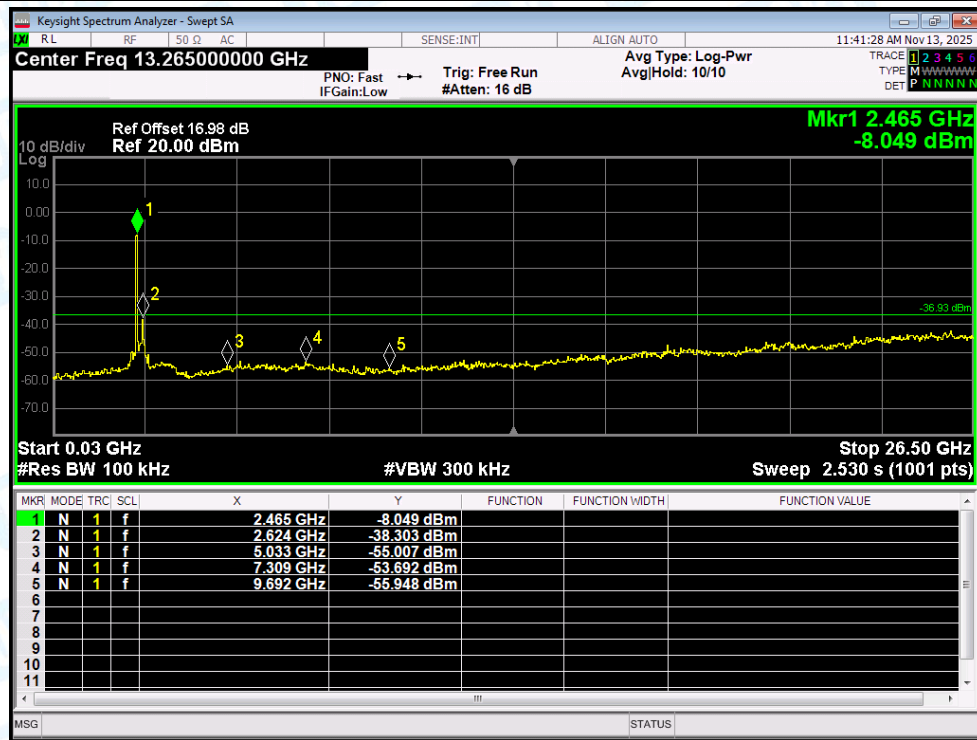
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Emission



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



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



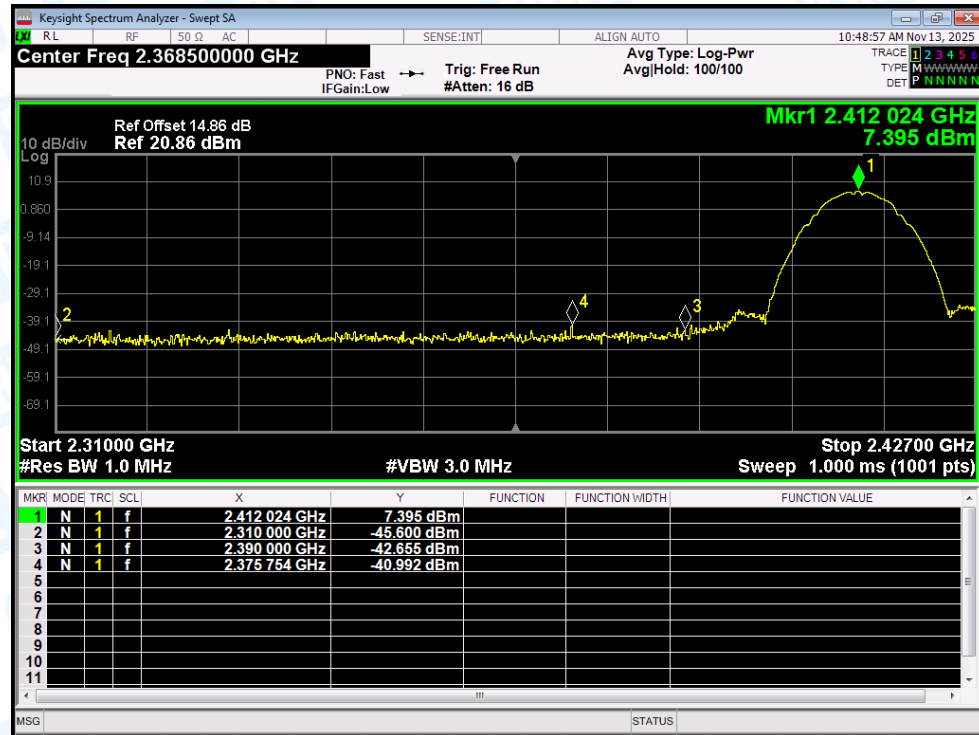
8. Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-45.6	2	-	51.66	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-55.44	2	3.1	44.92	Average	54	Pass
NVNT	b	2412	Ant1	2375.754	-40.99	2	-	56.27	Peak	74	Pass
NVNT	b	2412	Ant1	2388.156	-53.29	2	3.1	47.07	Average	54	Pass
NVNT	b	2412	Ant1	2390	-42.66	2	-	54.6	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-53.79	2	3.1	46.57	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-41.76	2	-	55.5	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-52.71	2	3.1	47.65	Average	54	Pass
NVNT	b	2462	Ant1	2490.672	-40.87	2	-	56.39	Peak	74	Pass
NVNT	b	2462	Ant1	2486.856	-51.95	2	3.1	48.41	Average	54	Pass
NVNT	b	2462	Ant1	2500	-43.88	2	-	53.38	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-53.23	2	3.1	47.13	Average	54	Pass
NVNT	g	2412	Ant1	2310	-45.27	2	-	51.99	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-57.94	2	8.61	47.93	Average	54	Pass
NVNT	g	2412	Ant1	2339.367	-41.57	2	-	55.69	Peak	74	Pass
NVNT	g	2412	Ant1	2325.444	-56.38	2	8.61	49.49	Average	54	Pass
NVNT	g	2412	Ant1	2390	-44.88	2	-	52.38	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-57.03	2	8.61	48.84	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-44.22	2	-	53.04	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-55.49	2	8.61	50.38	Average	54	Pass
NVNT	g	2462	Ant1	2485.584	-41.03	2	-	56.23	Peak	74	Pass
NVNT	g	2462	Ant1	2485.584	-54.96	2	8.61	50.91	Average	54	Pass
NVNT	g	2462	Ant1	2500	-44.1	2	-	53.16	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-56.65	2	8.61	49.22	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-47.33	2	-	49.93	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-59.05	2	8.86	47.07	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2361.831	-41.92	2	-	55.34	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2384.646	-55.66	2	8.86	50.46	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-44.31	2	-	52.95	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-56.36	2	8.86	49.76	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-42	2	-	55.26	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-56.99	2	8.88	49.15	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2484.312	-39.74	2	-	57.52	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2484.683	-54.52	2	8.88	51.62	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-45.69	2	-	51.57	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-56.31	2	8.88	49.83	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2310	-46.23	2	-	51.03	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2310	-57.86	2	10.03	49.43	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2389.662	-41.71	2	-	55.55	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2386.396	-55.75	2	10.03	51.54	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2390	-43.63	2	-	53.63	Peak	74	Pass

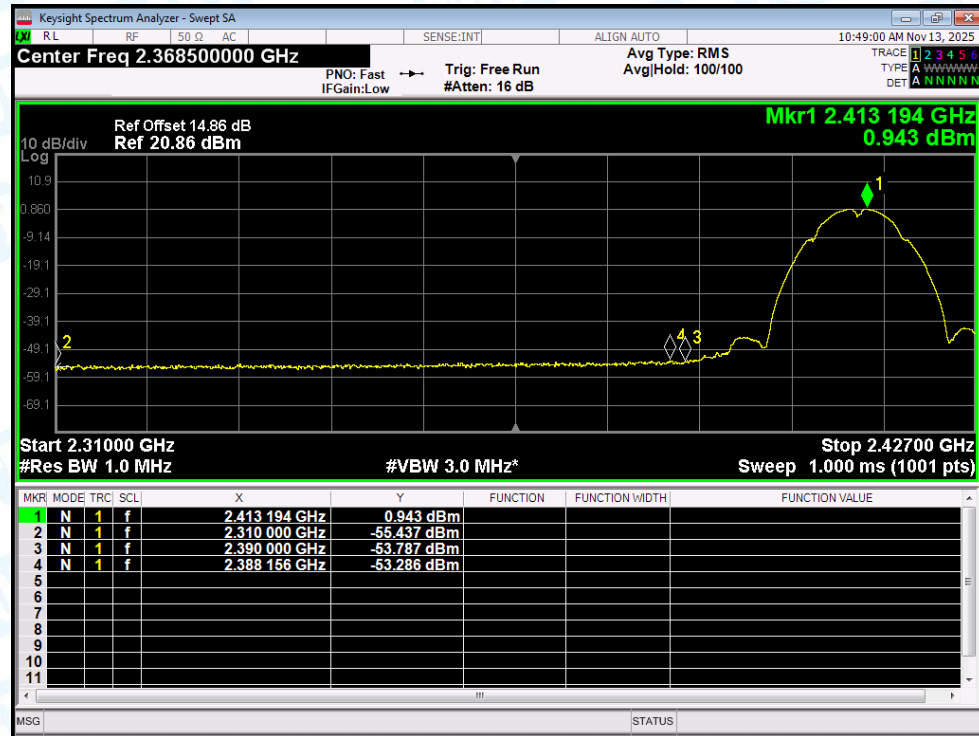
NVNT	n(HT40)	2422	Ant1	2390	-56.43	2	10.03	50.86	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-41.73	2	-	55.53	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-55.16	2	9.99	52.09	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.776	-38.31	2	-	58.95	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2483.854	-53.7	2	9.99	53.55	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2500	-43.46	2	-	53.8	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2500	-56.61	2	9.99	50.64	Average	54	Pass

Test Graphs

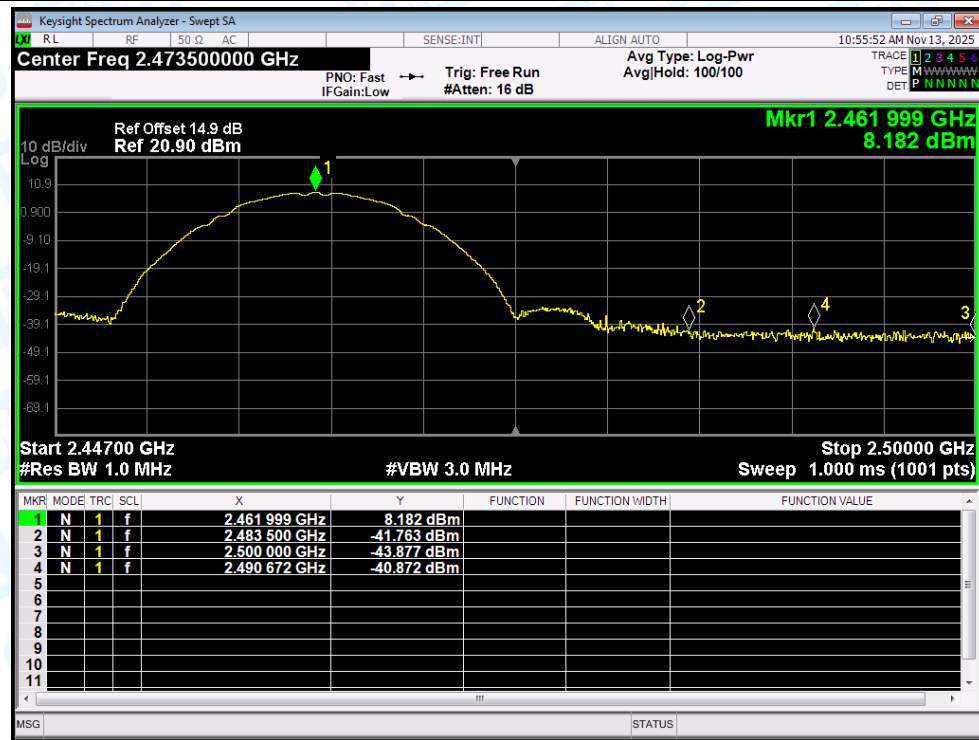
Restrict Band NVNT b 2412MHz Ant1 Peak



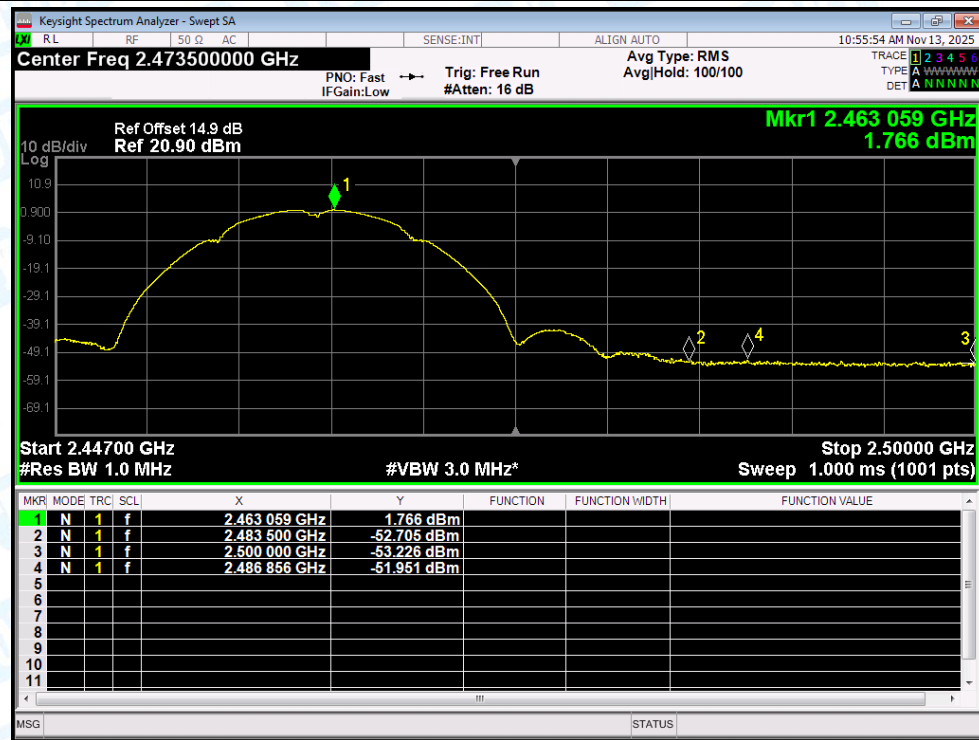
Restrict Band NVNT b 2412MHz Ant1 Average



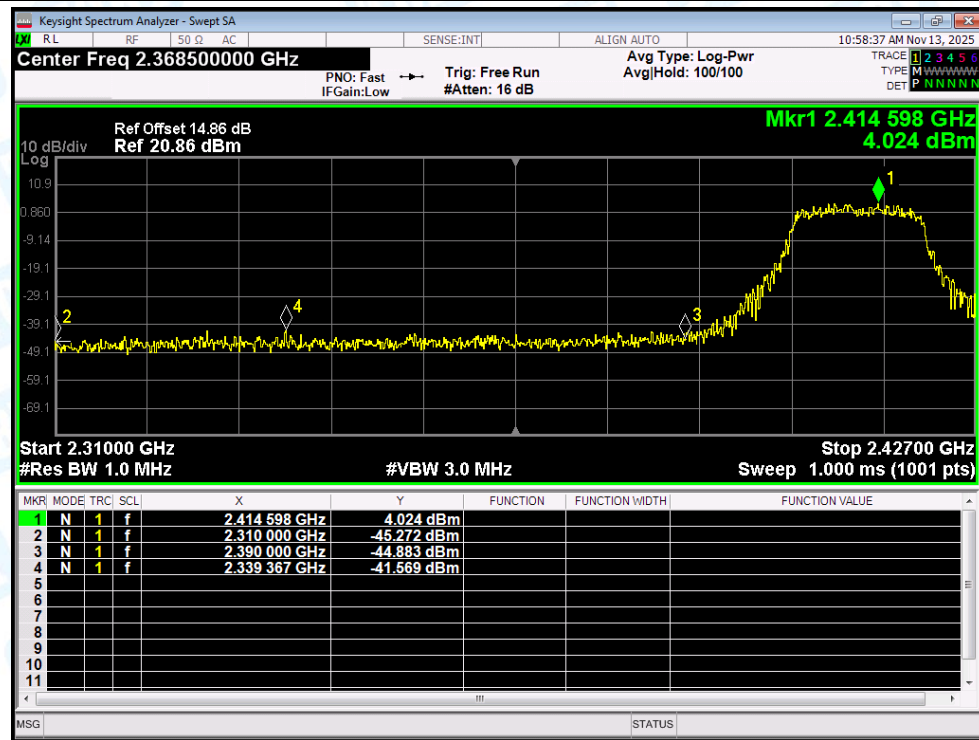
Restrict Band NVNT b 2462MHz Ant1 Peak



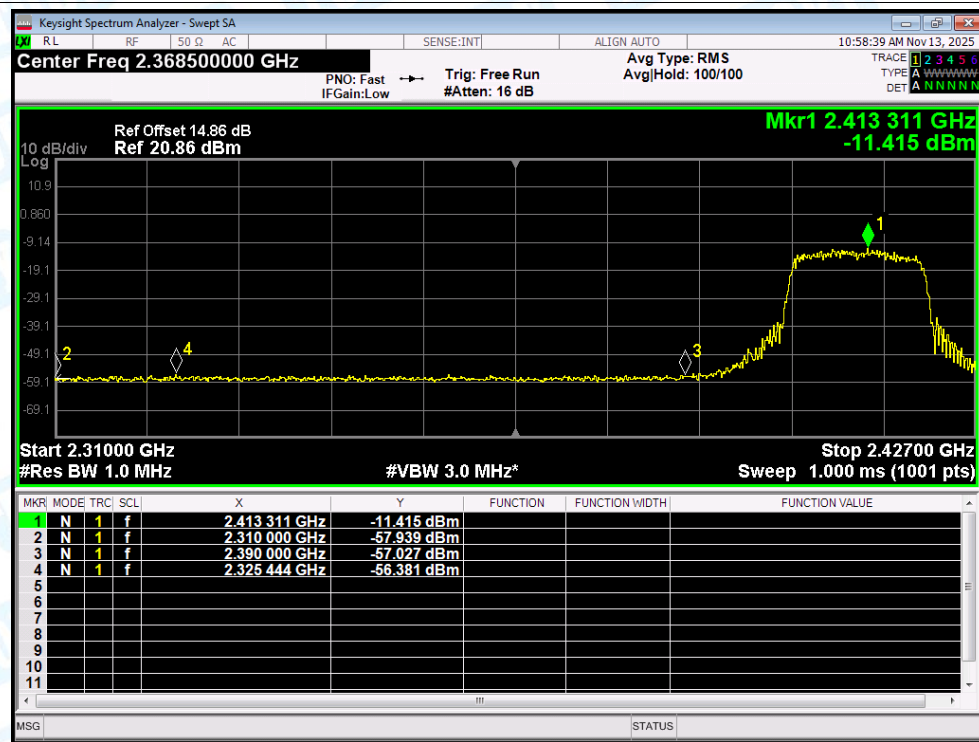
Restrict Band NVNT b 2462MHz Ant1 Average



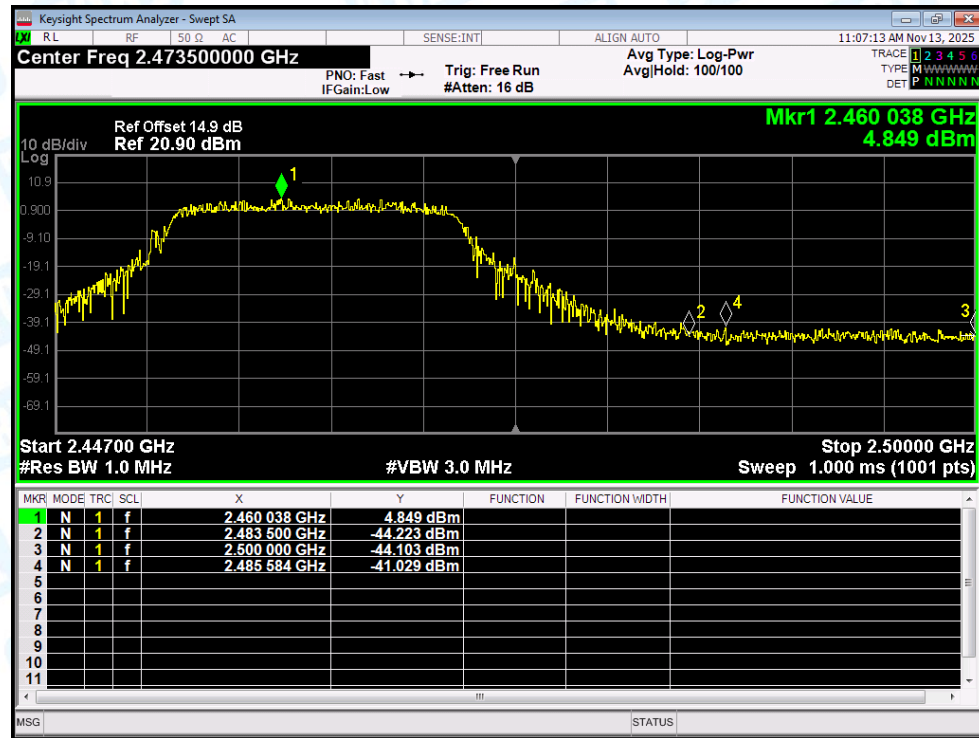
Restrict Band NVNT g 2412MHz Ant1 Peak



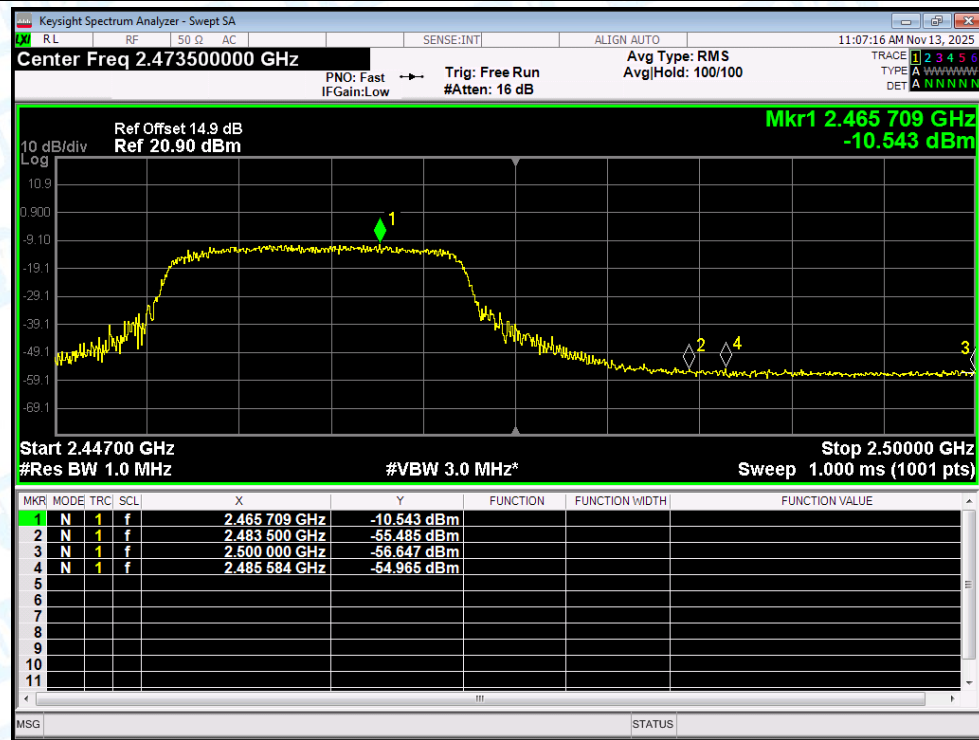
Restrict Band NVNT g 2412MHz Ant1 Average



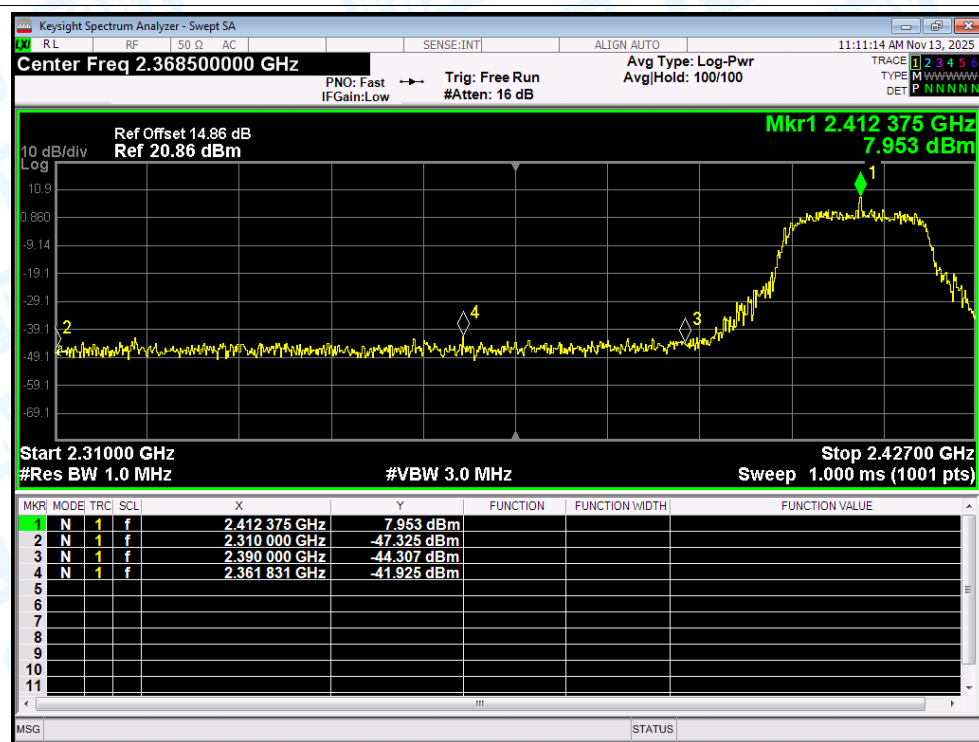
Restrict Band NVNT g 2462MHz Ant1 Peak



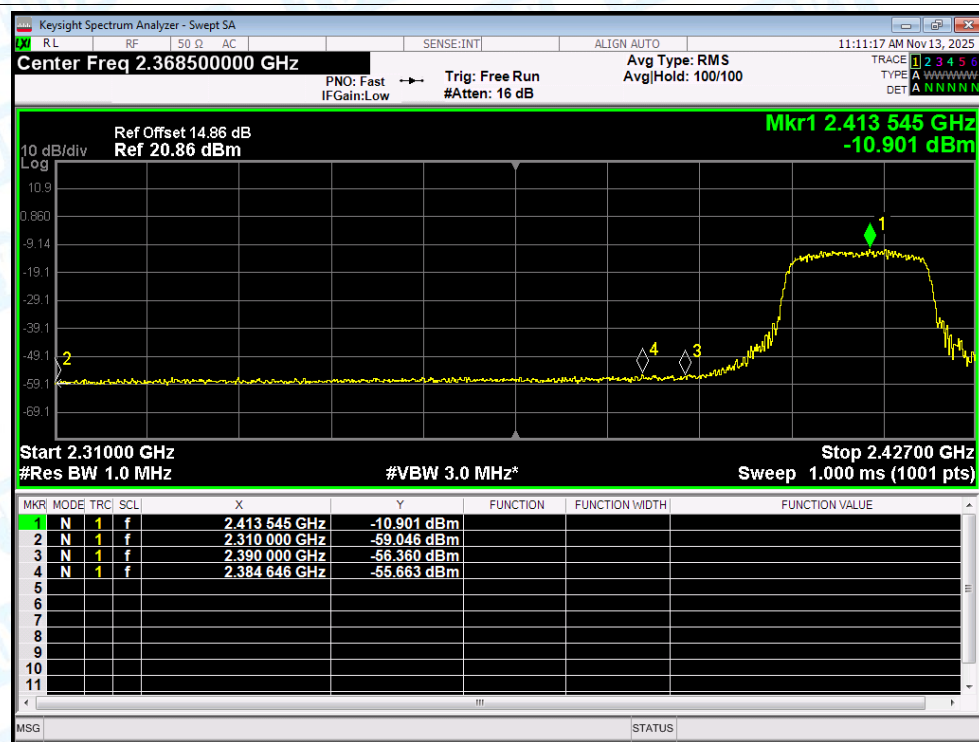
Restrict Band NVNT g 2462MHz Ant1 Average

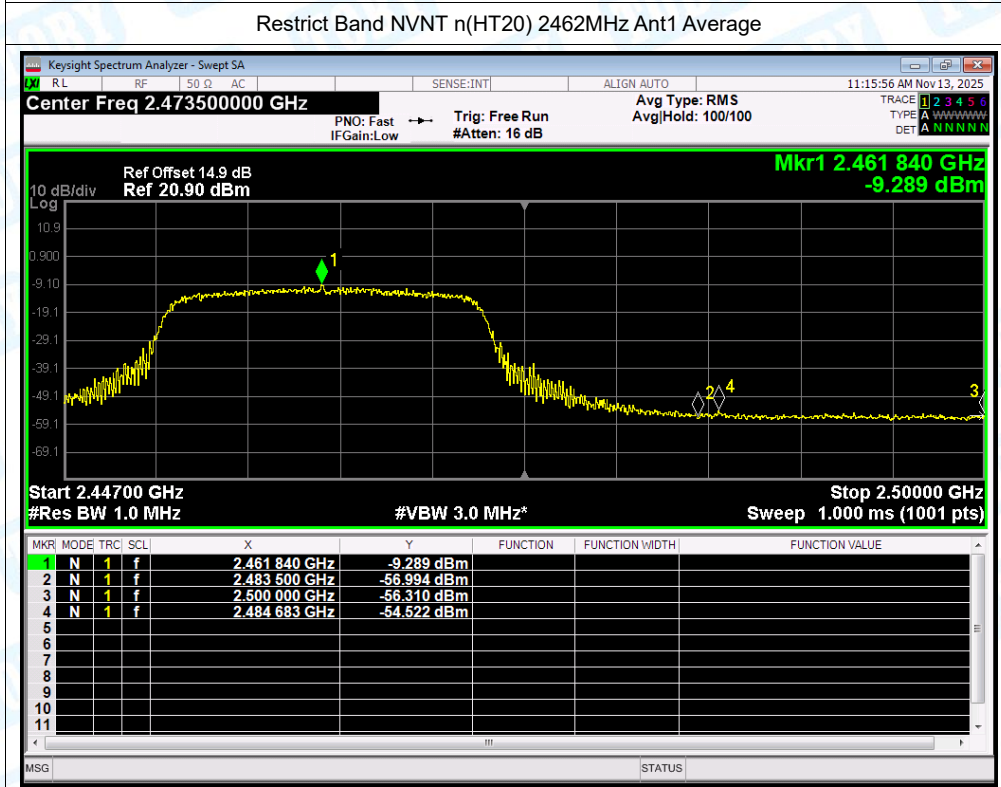
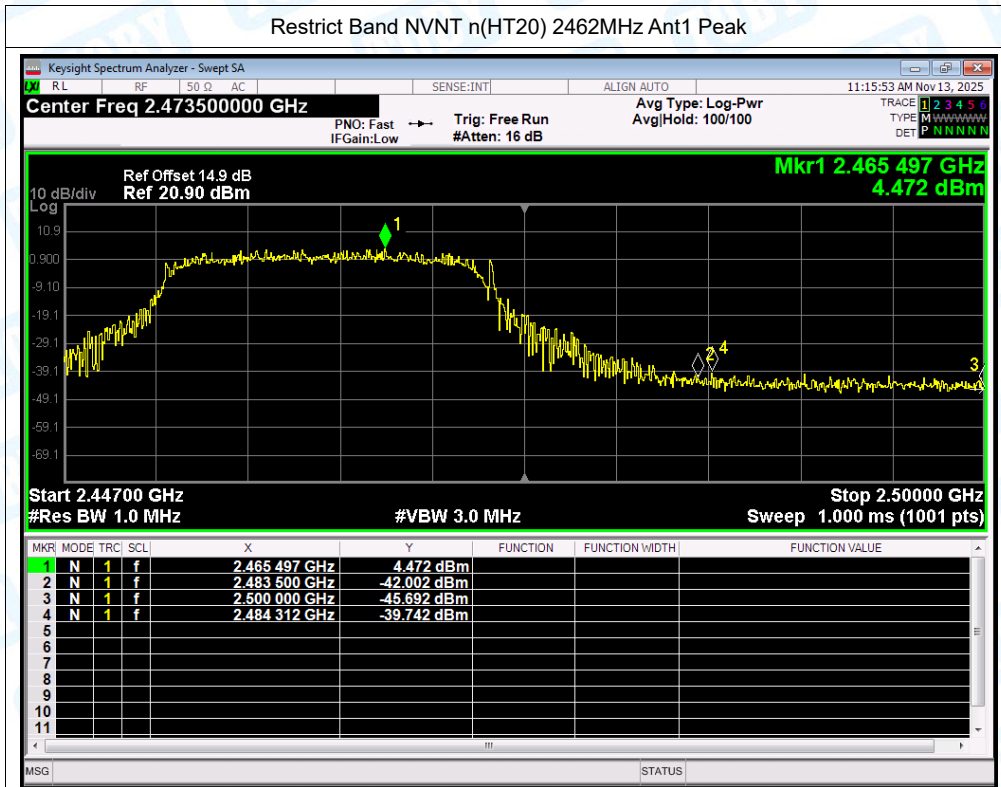


Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak

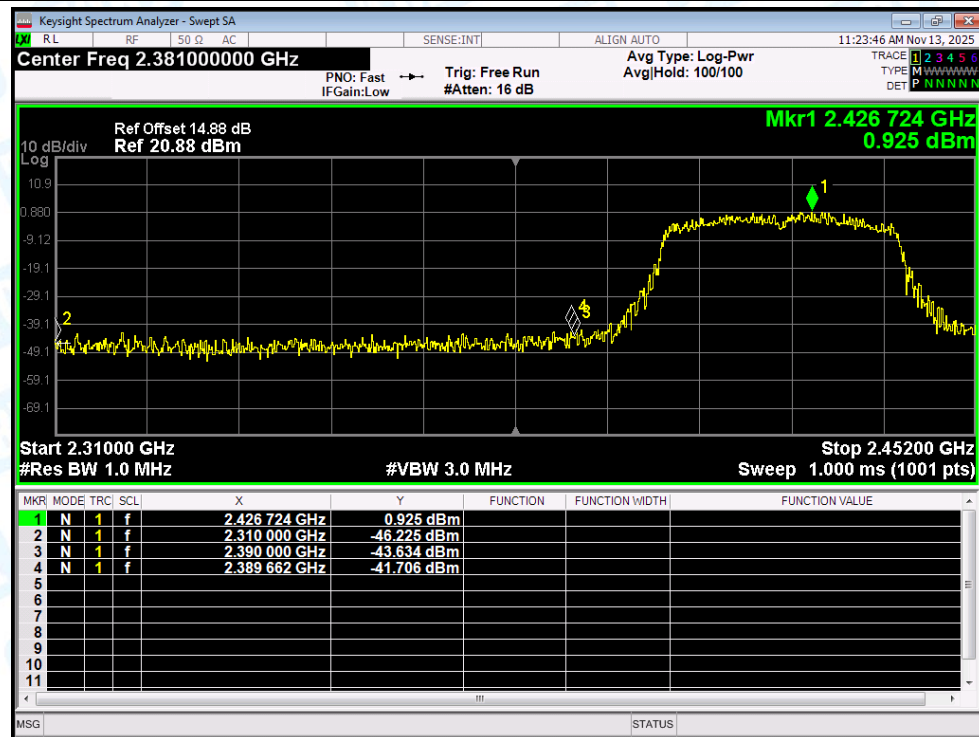


Restrict Band NVNT n(HT20) 2412MHz Ant1 Average

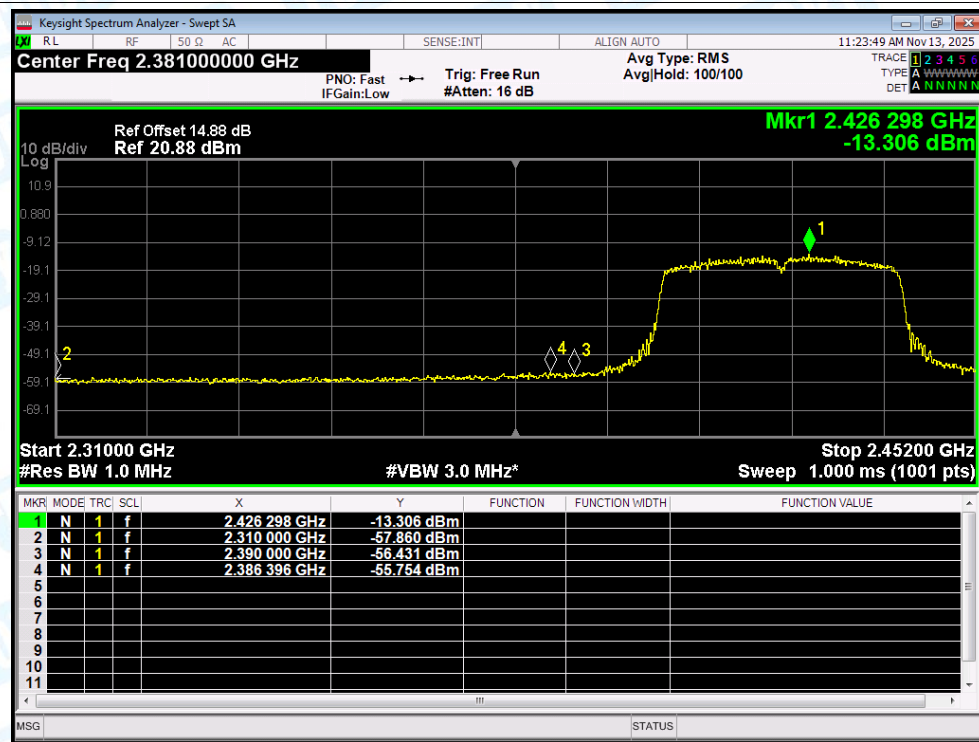


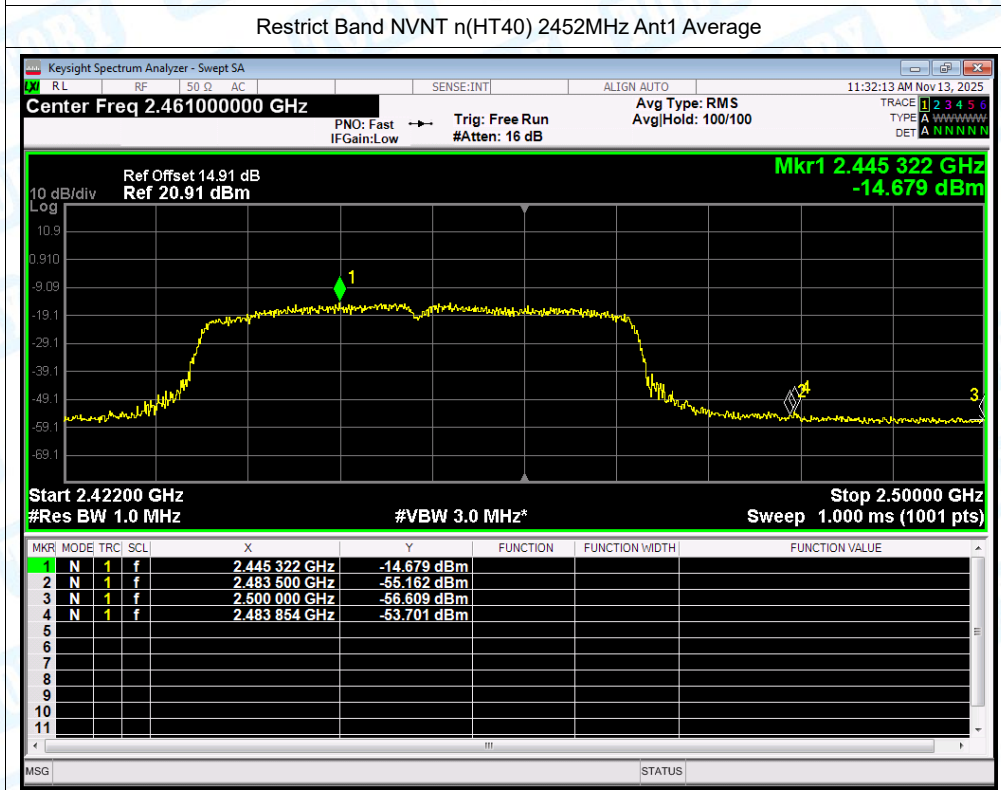
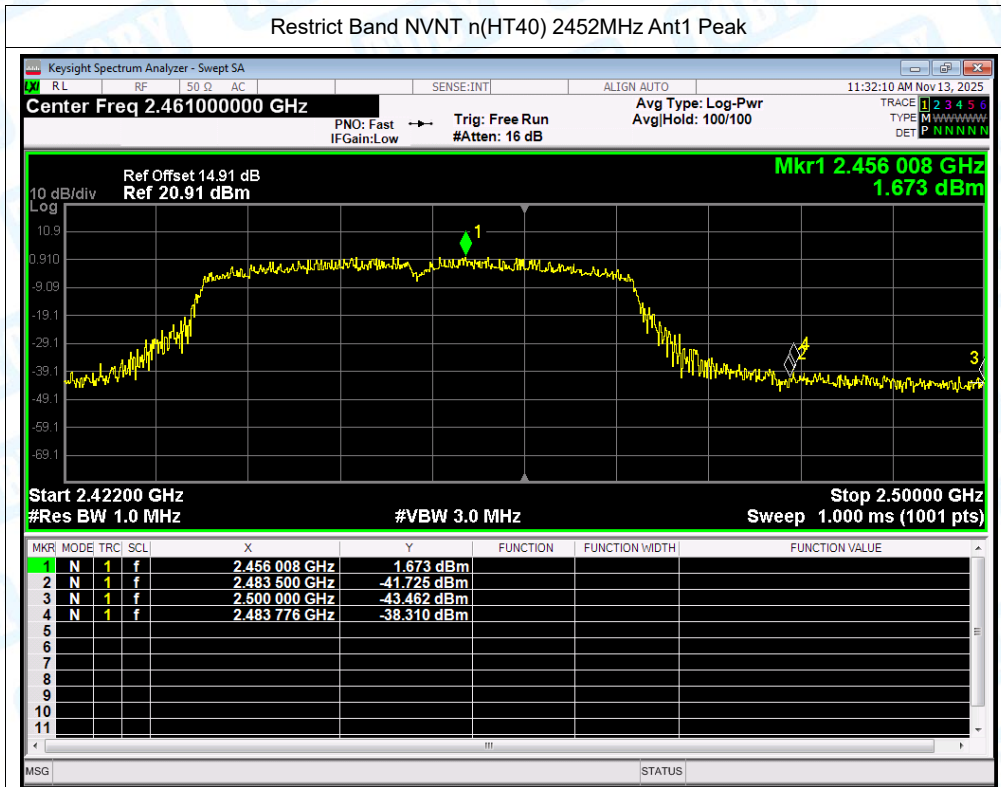


Restrict Band NVNT n(HT40) 2422MHz Ant1 Peak



Restrict Band NVNT n(HT40) 2422MHz Ant1 Average





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