

# RF Test Data for 2.4G WiFi (Conducted Measurements)

General Description of EUT	
<b>Product Name:</b>	Wireless Aggregator
<b>Test Model:</b>	HRI-3632
<b>Sample ID:</b>	HC-C-202406-0198-01-03-2#
Environmental Conditions	
<b>Temperature:</b>	23.8°C
<b>Relative Humidity:</b>	48%
<b>Test Voltage:</b>	DC 24V
<b>Test Engineer:</b>	ZKN ZHOU
Note: For a more detailed features description, please refer to the report TBR-C-202406-0198-3 The report only show the worst case data.	

## Contents

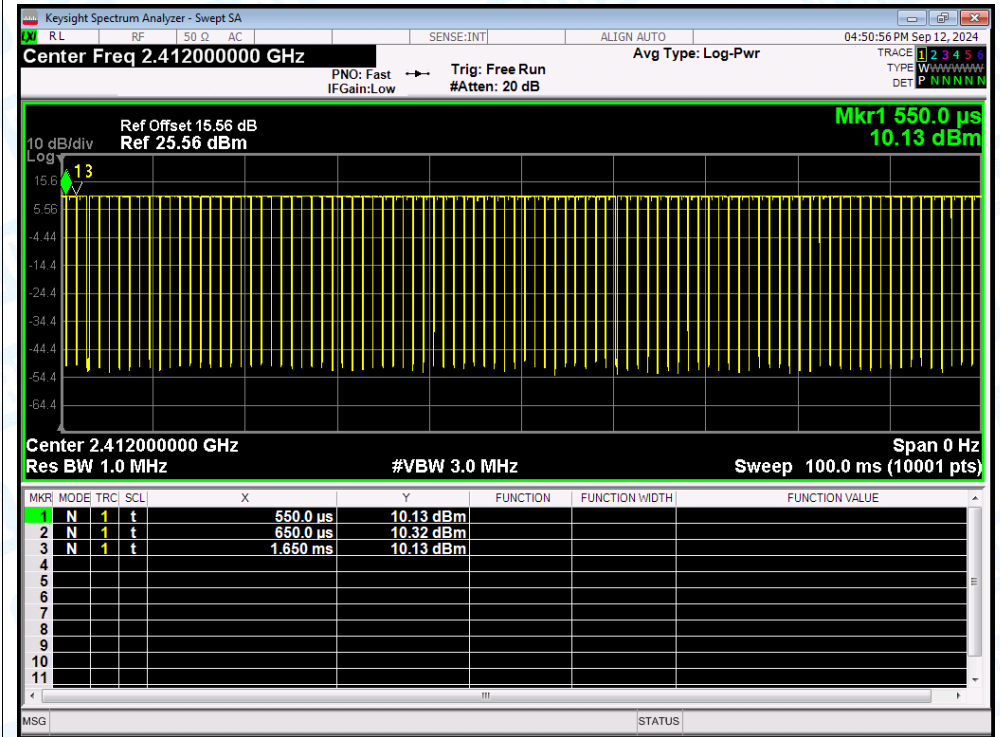
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## 1. Duty Cycle

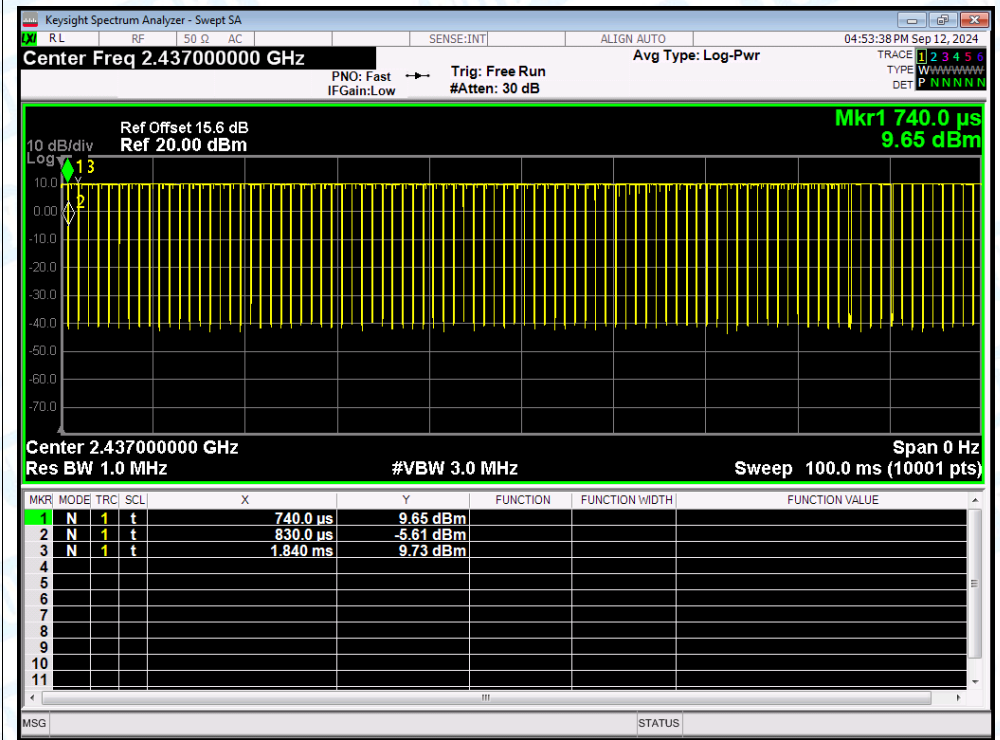
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	90.91	0.41	1
NVNT	b	2437	Ant1	91.82	0.37	0.99
NVNT	b	2462	Ant1	91.82	0.37	0.99
NVNT	g	2412	Ant1	91.04	0.41	1.64
NVNT	g	2437	Ant1	92.42	0.34	1.64
NVNT	g	2462	Ant1	92.54	0.34	1.61
NVNT	n(HT20)	2412	Ant1	92.54	0.34	1.61
NVNT	n(HT20)	2437	Ant1	92.42	0.34	1.64
NVNT	n(HT20)	2462	Ant1	91.04	0.41	1.64
NVNT	n(HT40)	2422	Ant1	98.8	0.05	0.4
NVNT	n(HT40)	2437	Ant1	98.8	0.05	0.4
NVNT	n(HT40)	2452	Ant1	99.2	0.03	0.4

Test Graphs

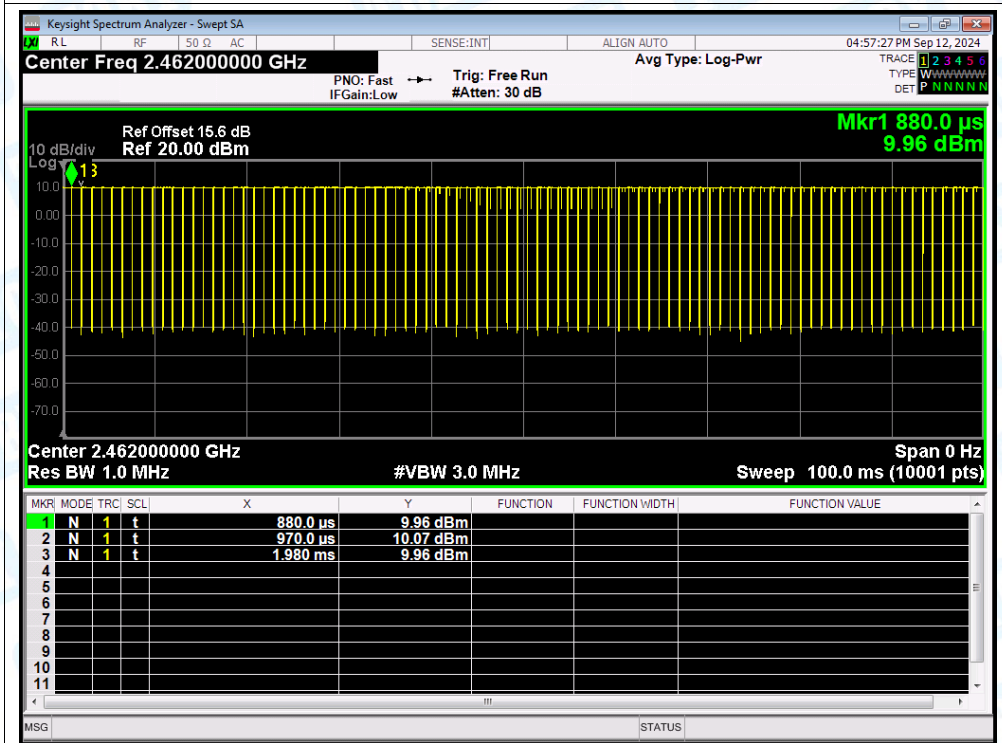
Duty Cycle NVNT b 2412MHz Ant1



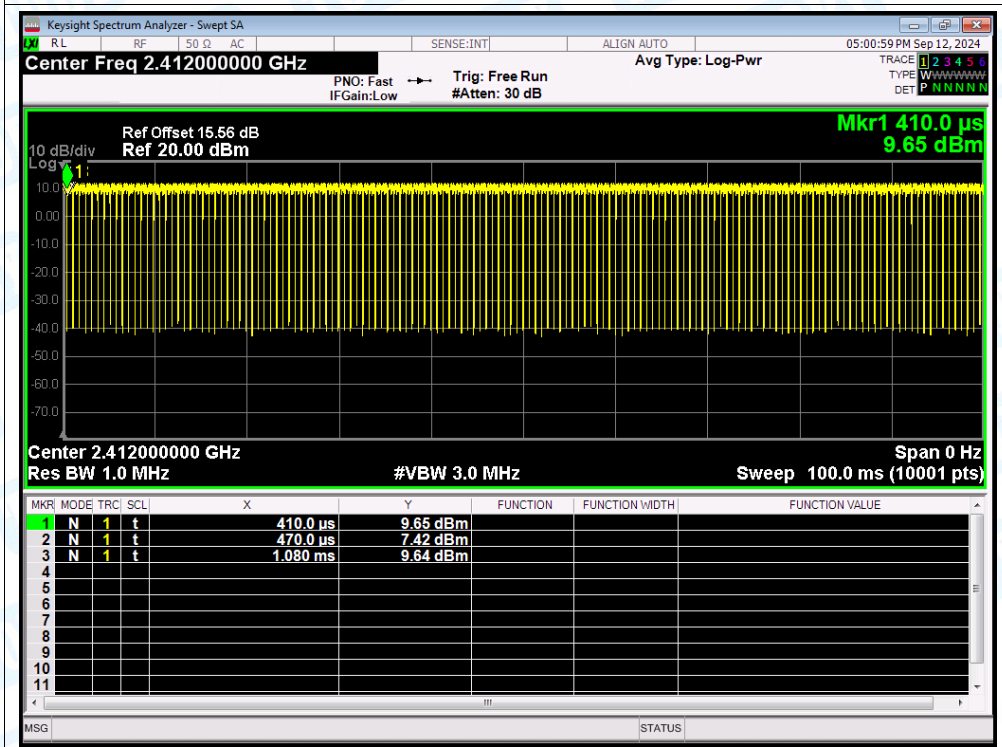
Duty Cycle NVNT b 2437MHz Ant1



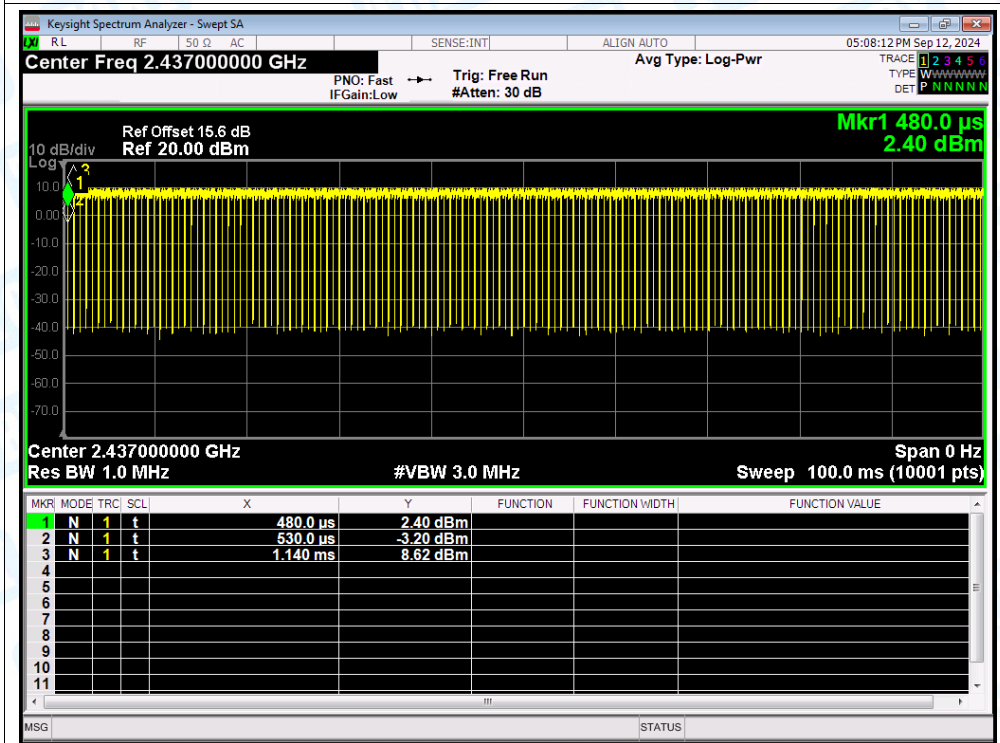
Duty Cycle NVNT b 2462MHz Ant1



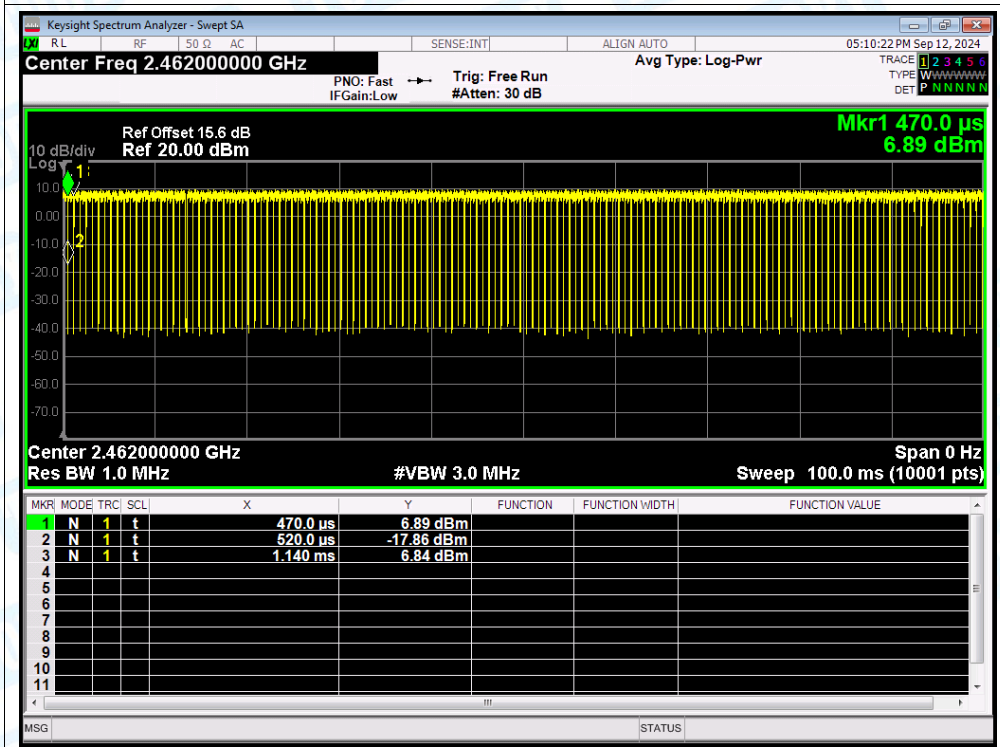
Duty Cycle NVNT g 2412MHz Ant1

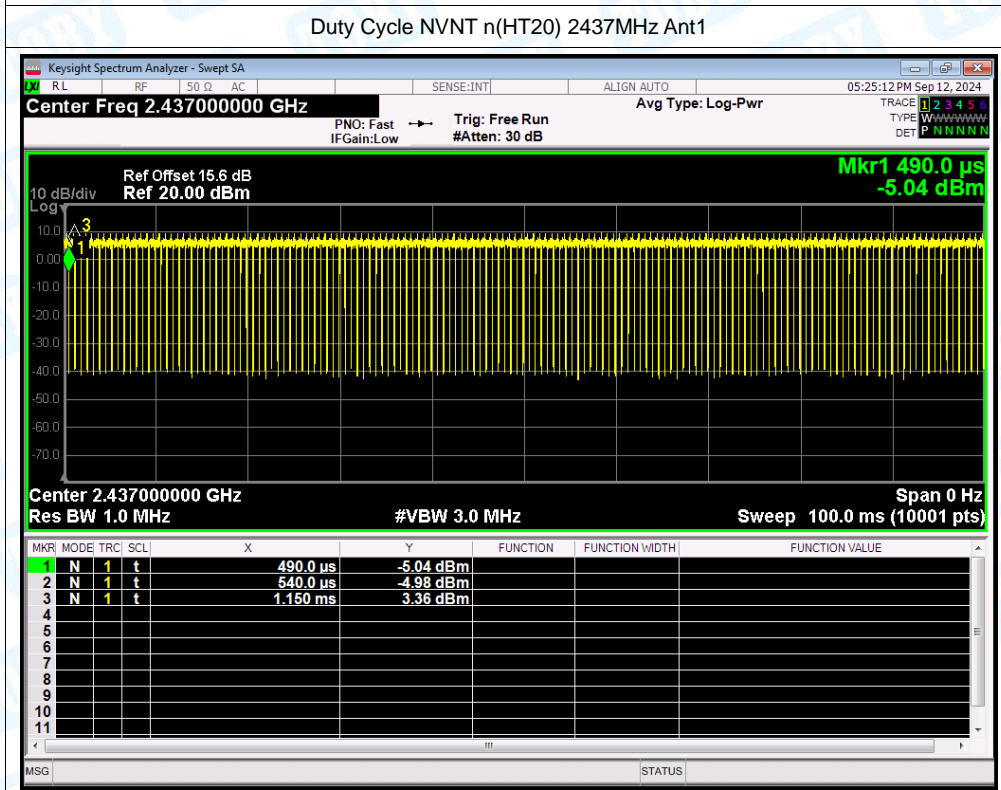
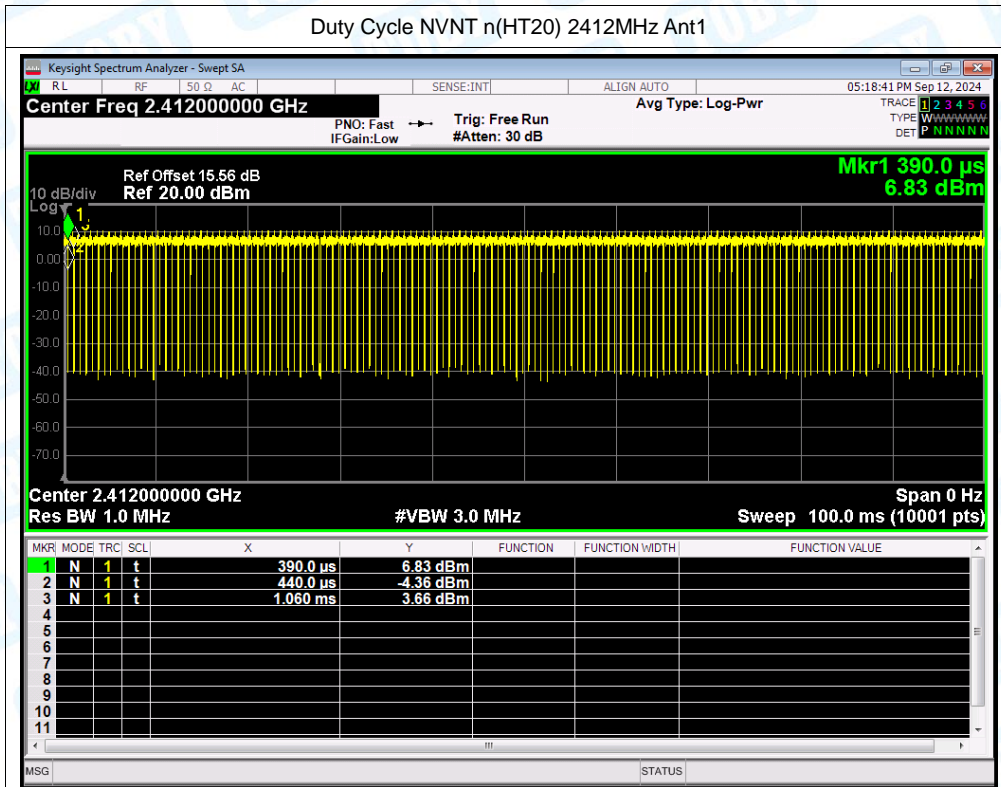


Duty Cycle NVNT g 2437MHz Ant1

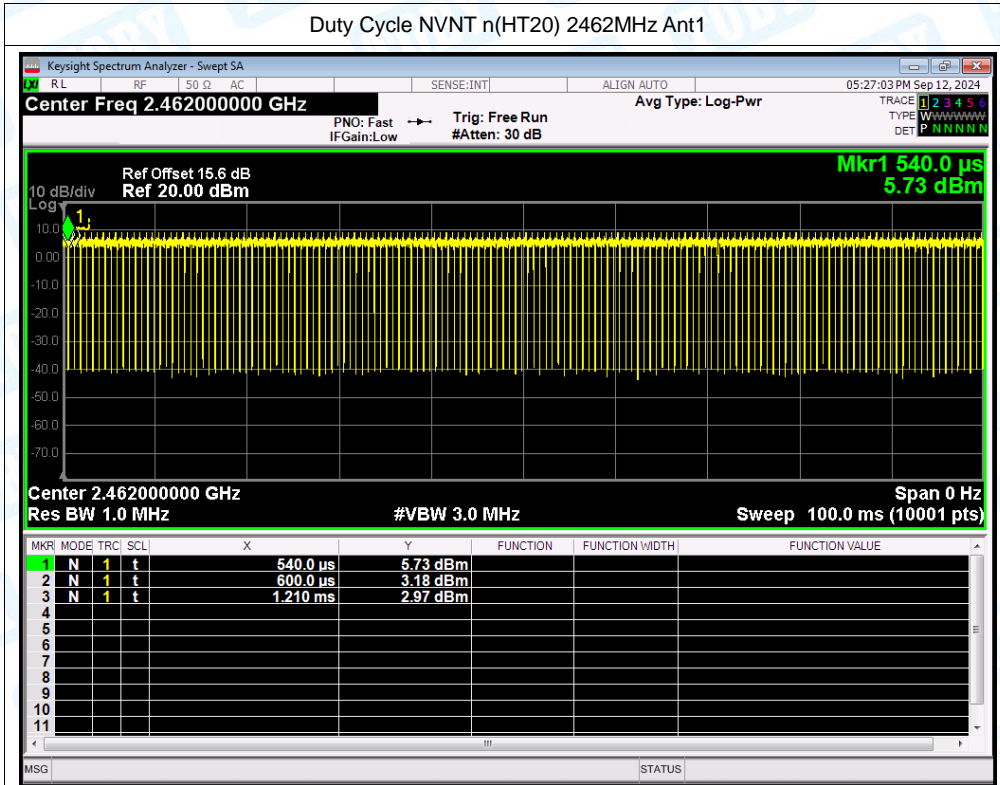


Duty Cycle NVNT g 2462MHz Ant1

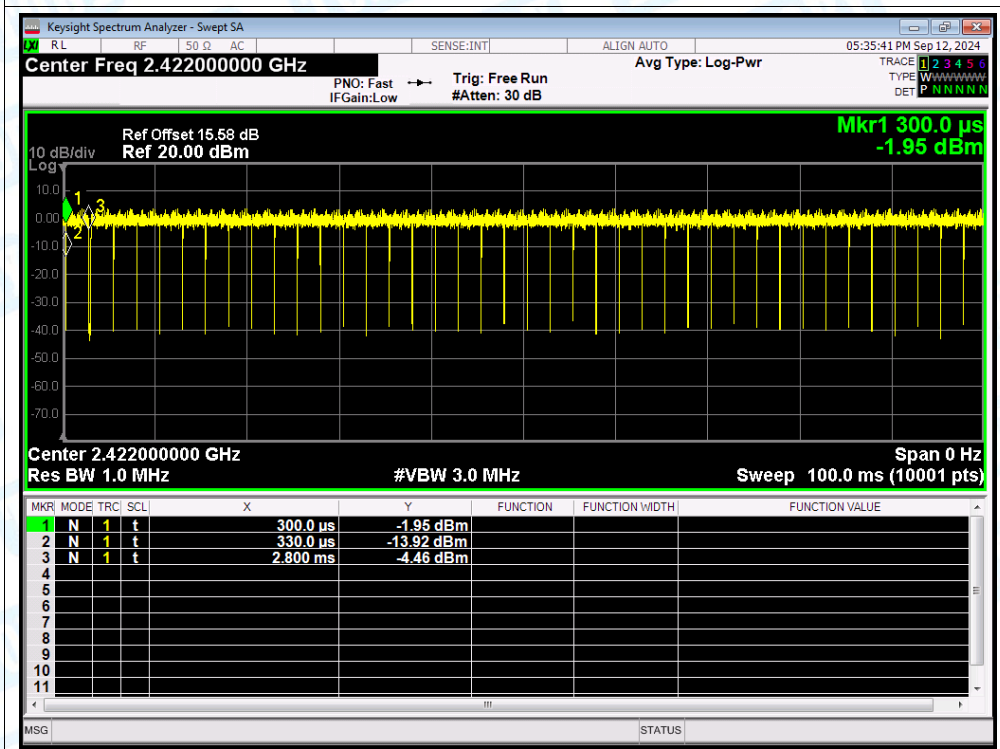




Duty Cycle NVNT n(HT20) 2462MHz Ant1

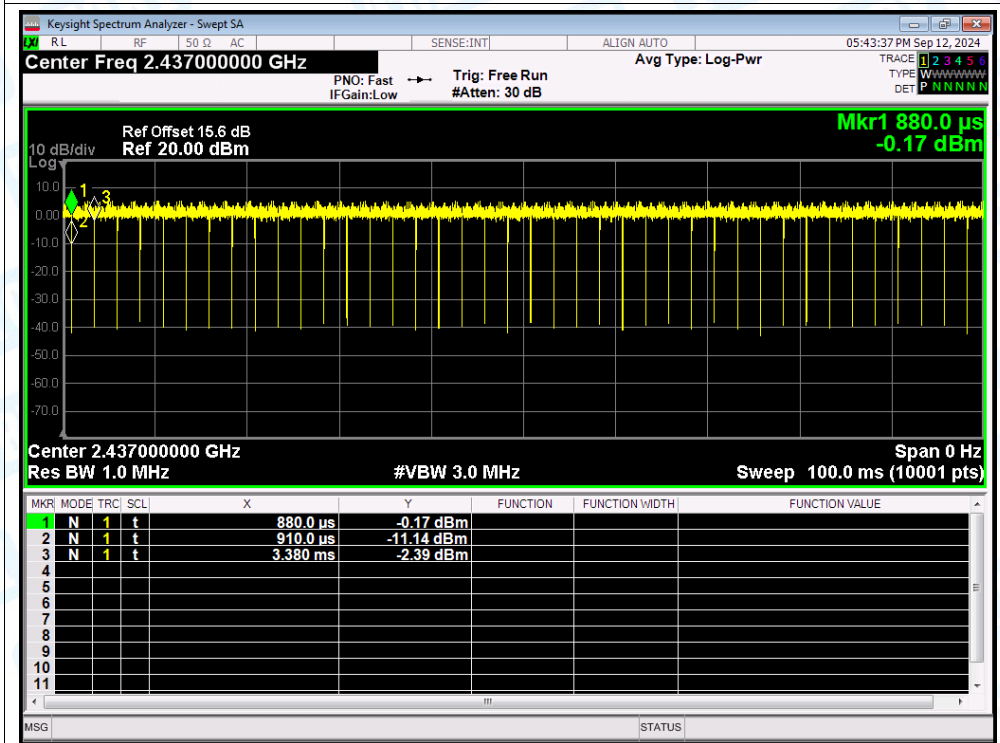


Duty Cycle NVNT n(HT40) 2422MHz Ant1

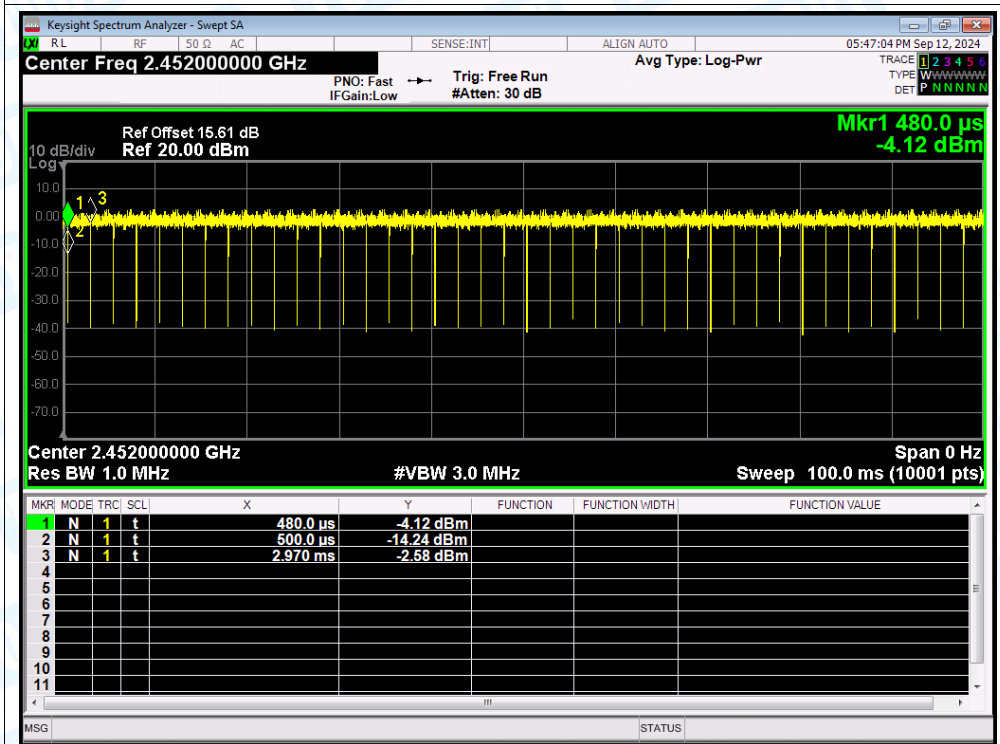




Duty Cycle NVNT n(HT40) 2437MHz Ant1



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	15.10	30	Pass
NVNT	b	2437	Ant1	14.69	30	Pass
NVNT	b	2462	Ant1	14.50	30	Pass
NVNT	g	2412	Ant1	14.81	30	Pass
NVNT	g	2437	Ant1	14.58	30	Pass
NVNT	g	2462	Ant1	13.07	30	Pass
NVNT	n(HT20)	2412	Ant1	13.04	30	Pass
NVNT	n(HT20)	2437	Ant1	12.91	30	Pass
NVNT	n(HT20)	2462	Ant1	12.23	30	Pass
NVNT	n(HT40)	2422	Ant1	11.33	30	Pass
NVNT	n(HT40)	2437	Ant1	12.72	30	Pass
NVNT	n(HT40)	2452	Ant1	10.24	30	Pass

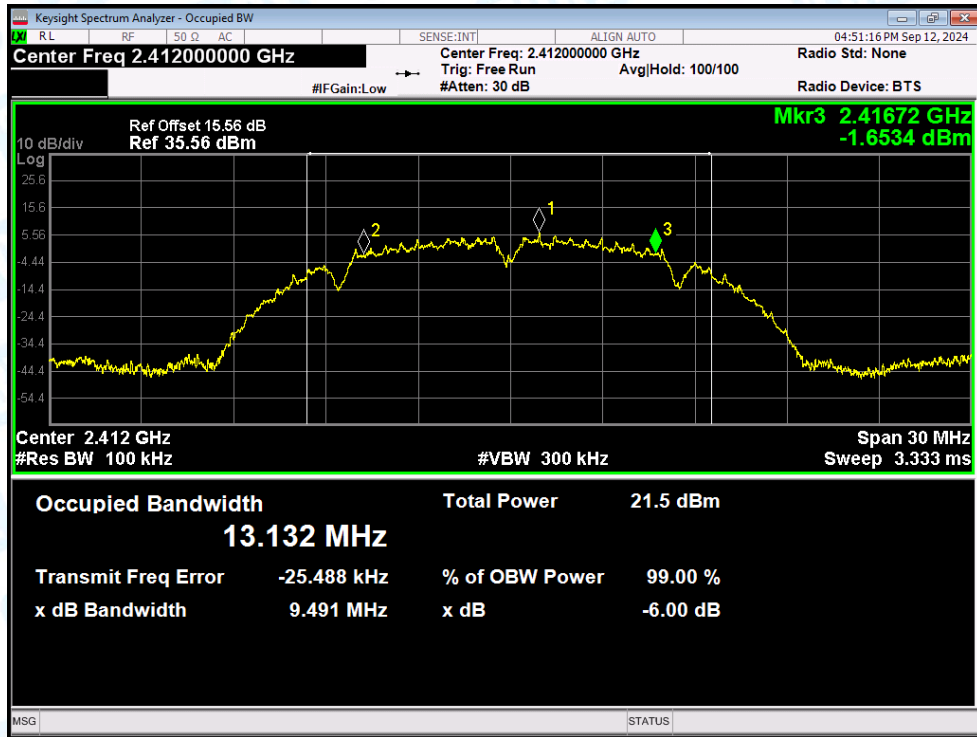
Note: The Duty Cycle Factor is compensated in the graph.

### 3. -6dB Bandwidth

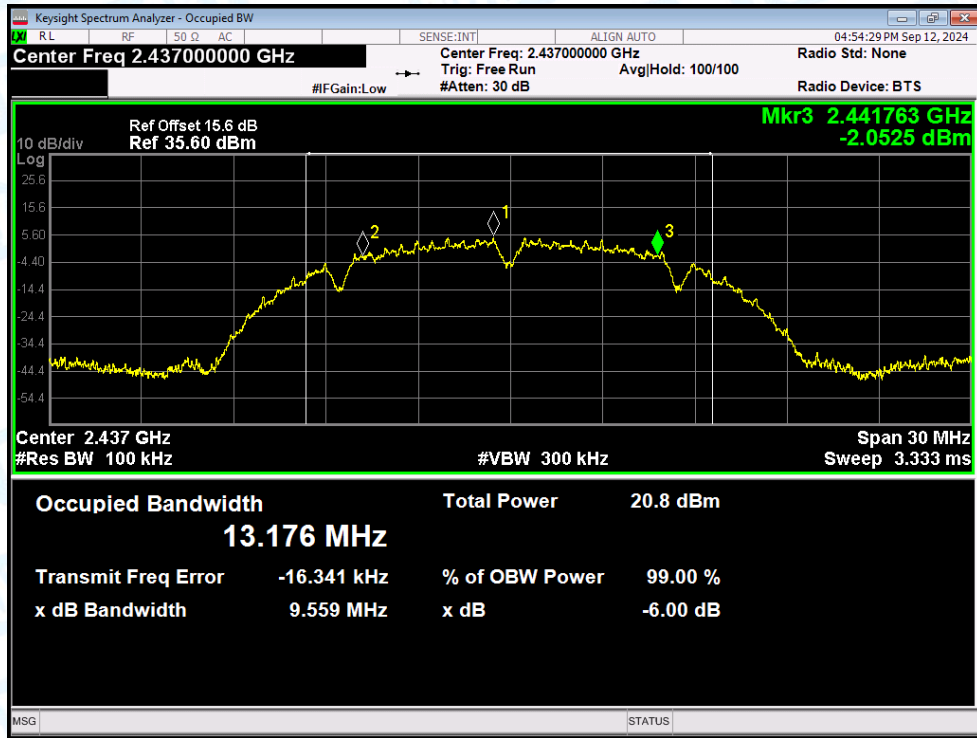
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.49	0.5	Pass
NVNT	b	2437	Ant1	9.56	0.5	Pass
NVNT	b	2462	Ant1	9.56	0.5	Pass
NVNT	g	2412	Ant1	16.32	0.5	Pass
NVNT	g	2437	Ant1	16.06	0.5	Pass
NVNT	g	2462	Ant1	15.91	0.5	Pass
NVNT	n(HT20)	2412	Ant1	17.27	0.5	Pass
NVNT	n(HT20)	2437	Ant1	16.64	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.03	0.5	Pass
NVNT	n(HT40)	2422	Ant1	33.76	0.5	Pass
NVNT	n(HT40)	2437	Ant1	30.36	0.5	Pass
NVNT	n(HT40)	2452	Ant1	35.01	0.5	Pass

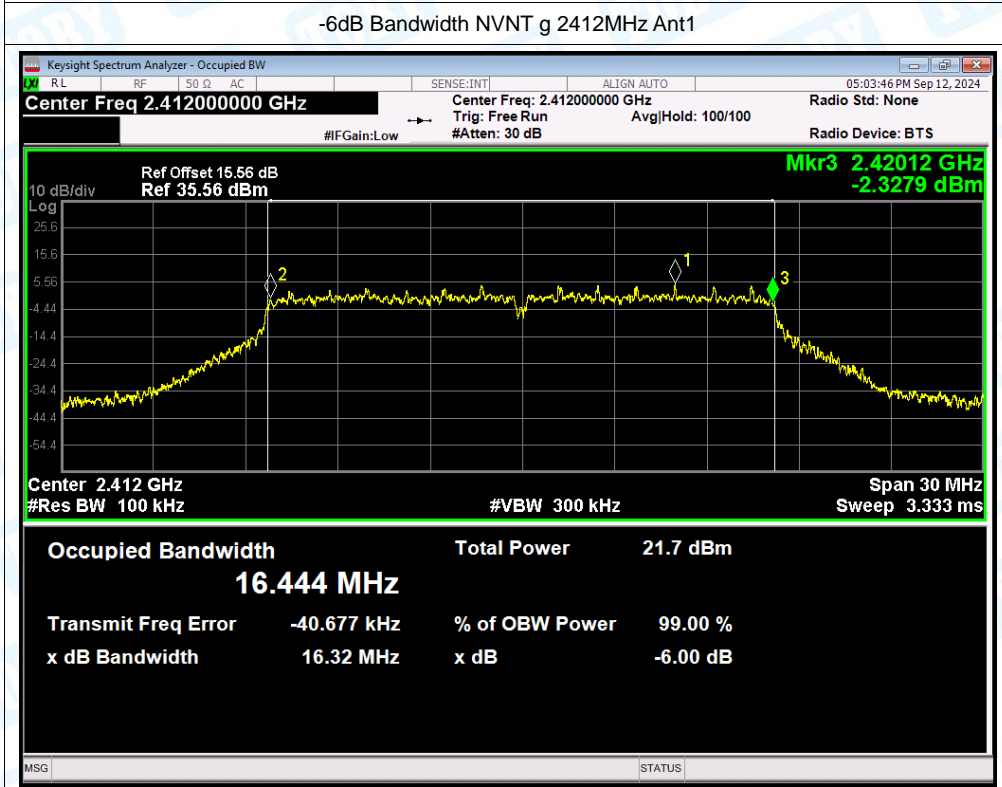
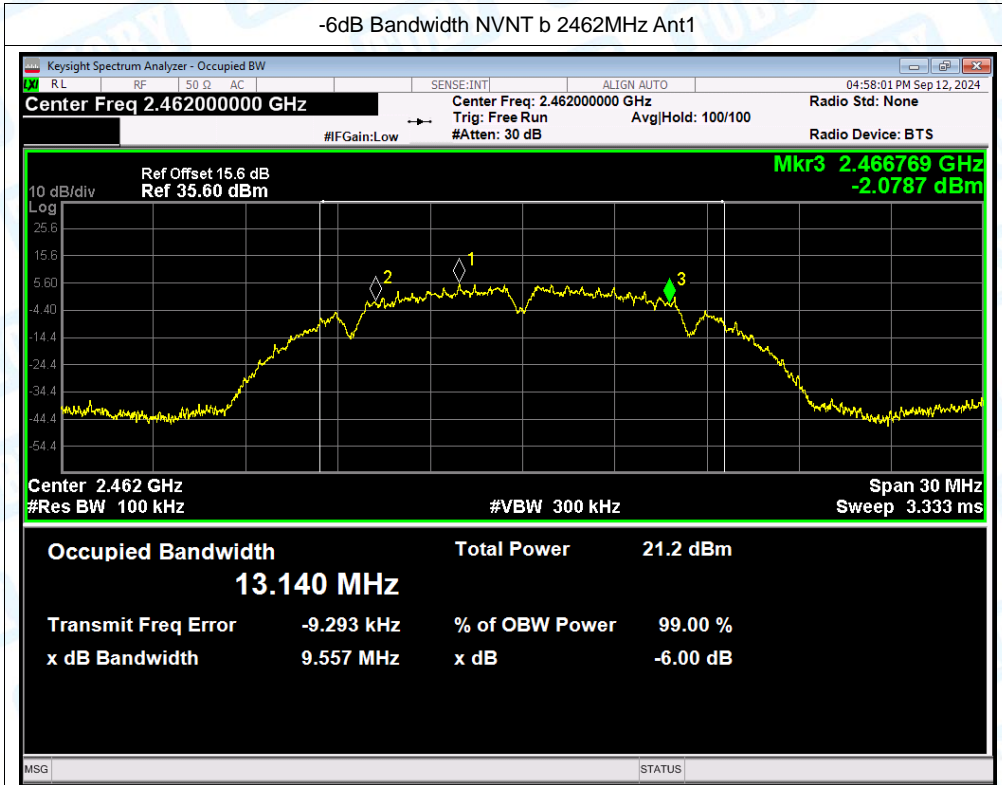
Test Graphs

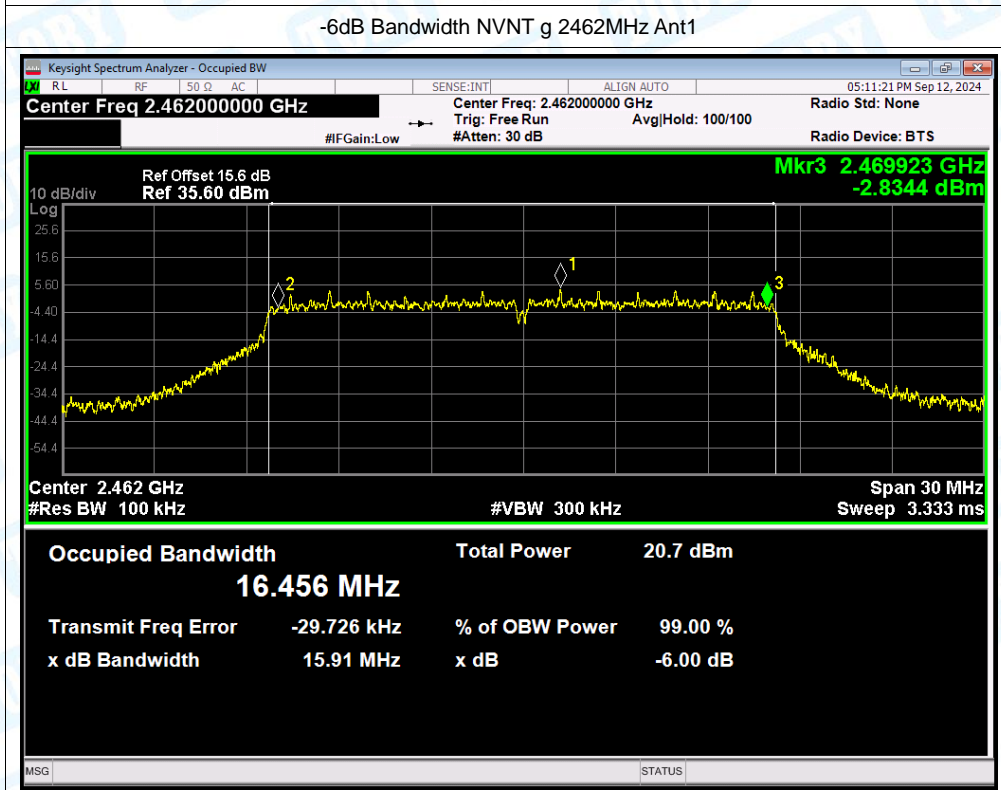
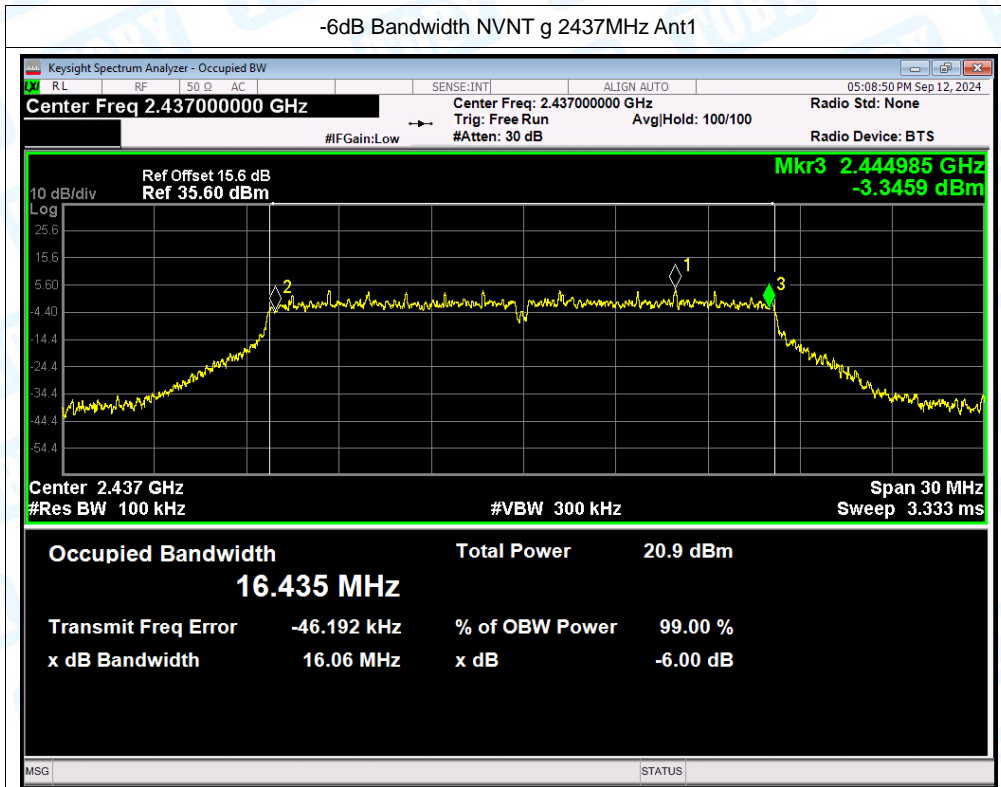
-6dB Bandwidth NVNT b 2412MHz Ant1



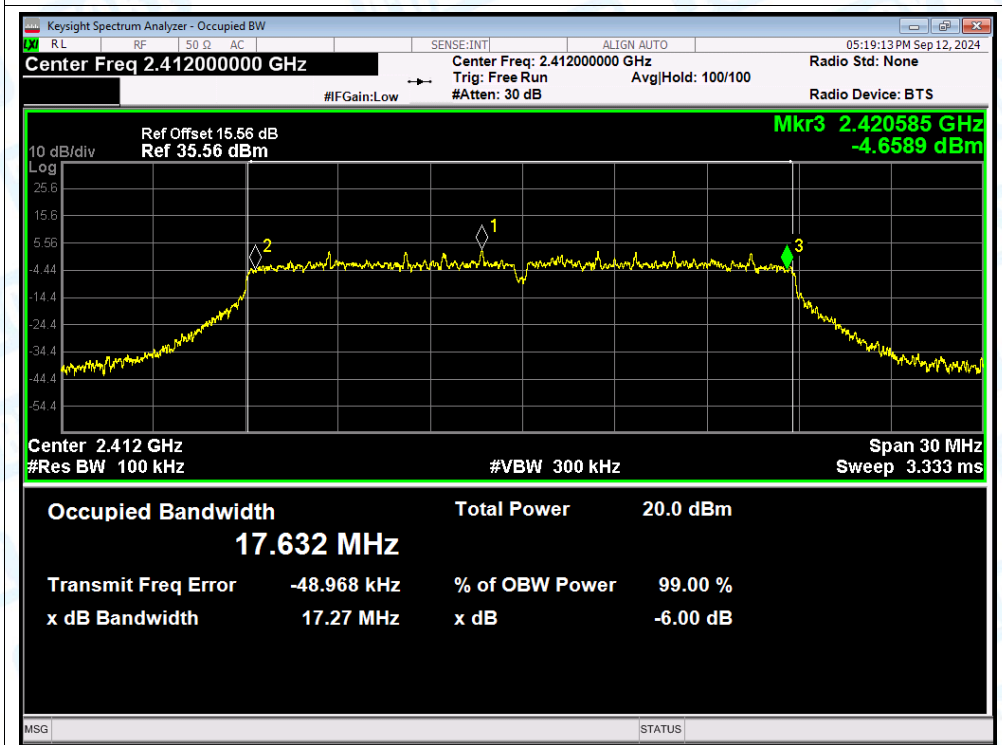
-6dB Bandwidth NVNT b 2437MHz Ant1



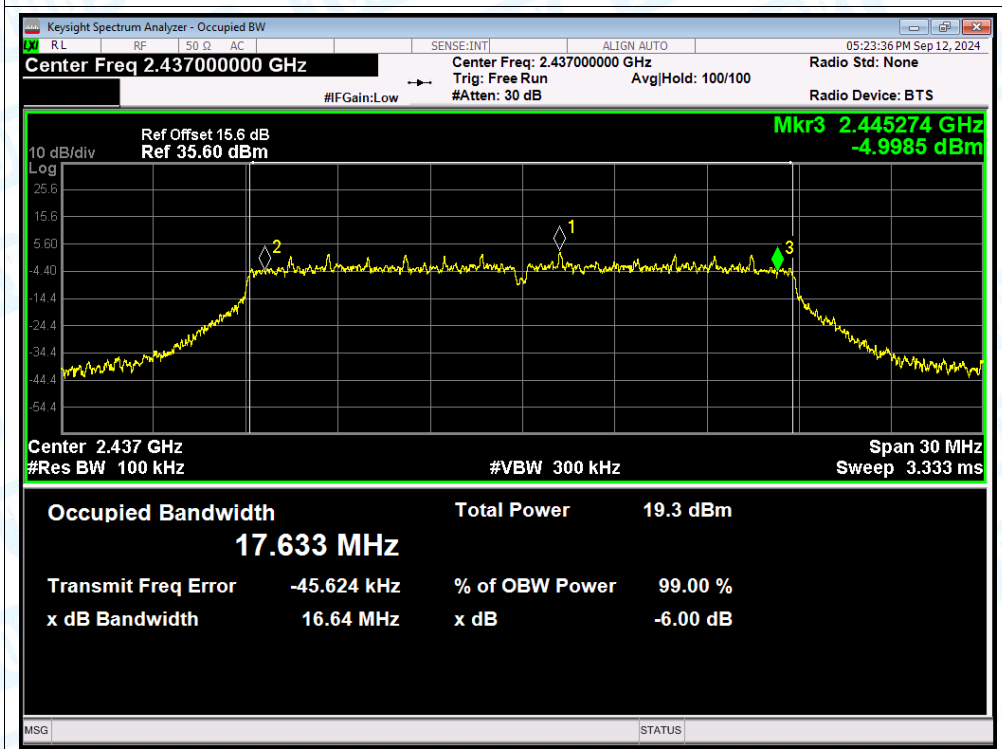




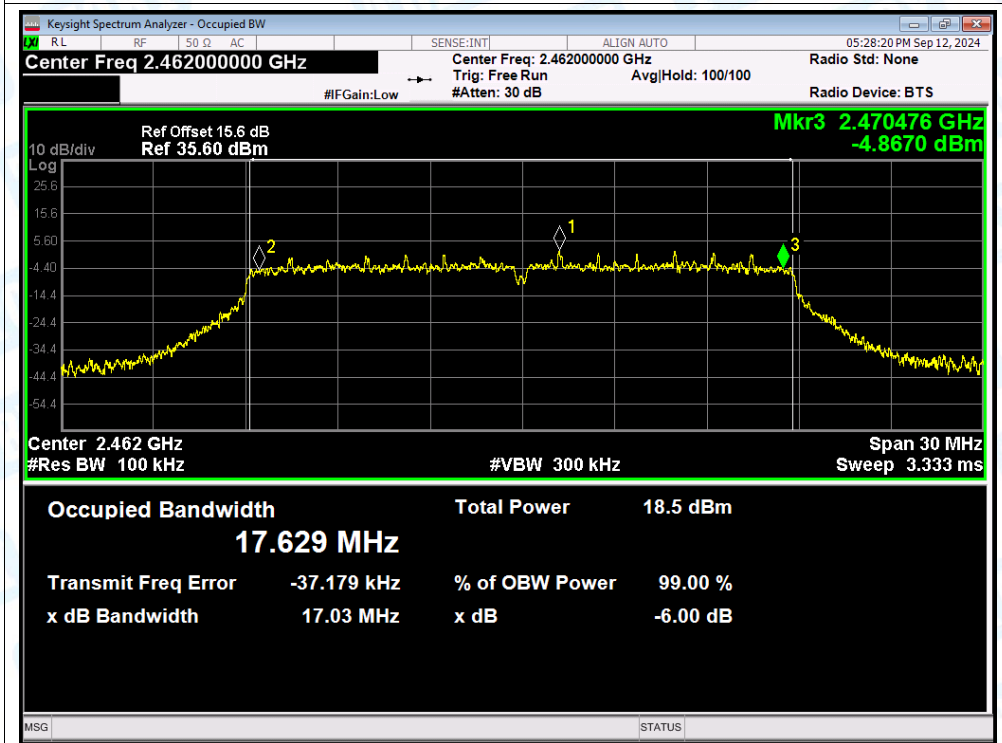
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



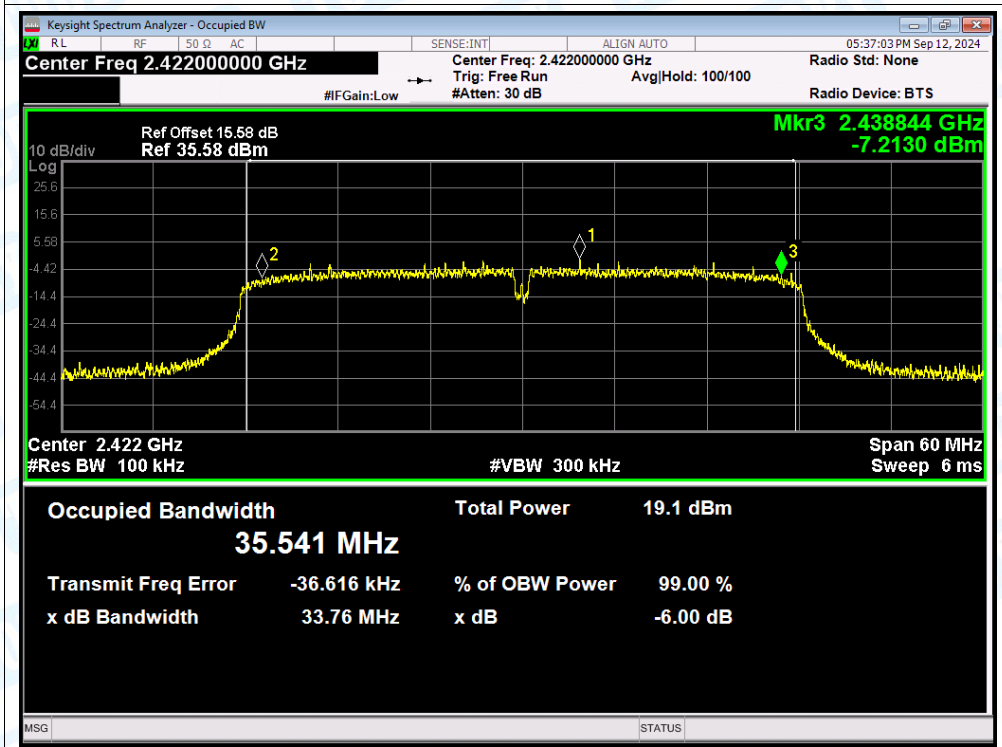
-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



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

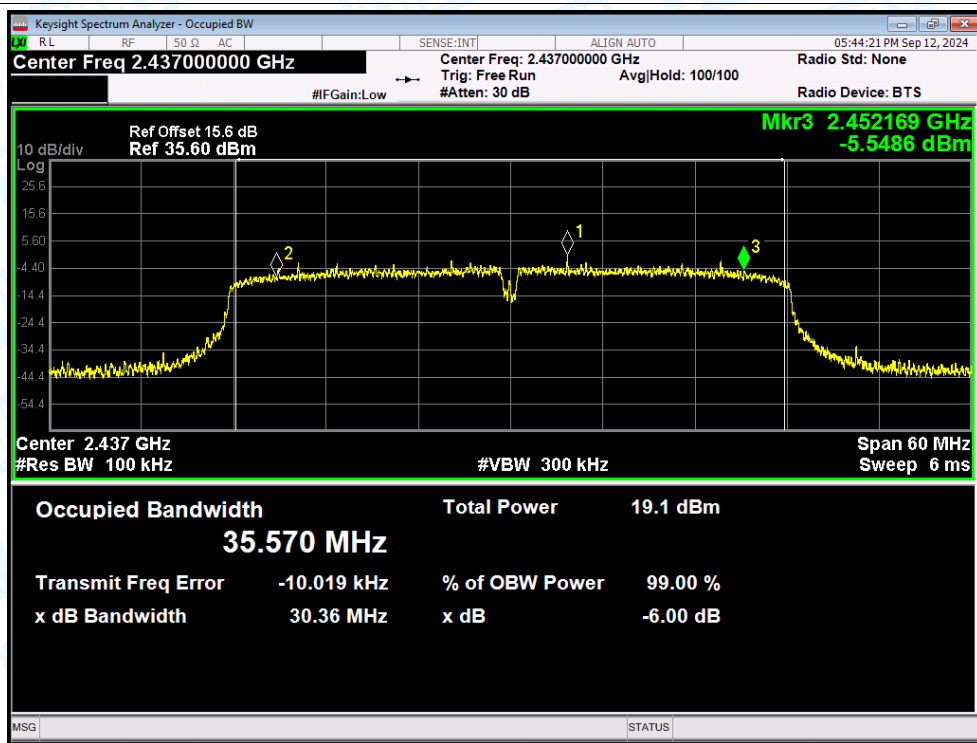


-6dB Bandwidth NVNT n(HT40) 2422MHz Ant1

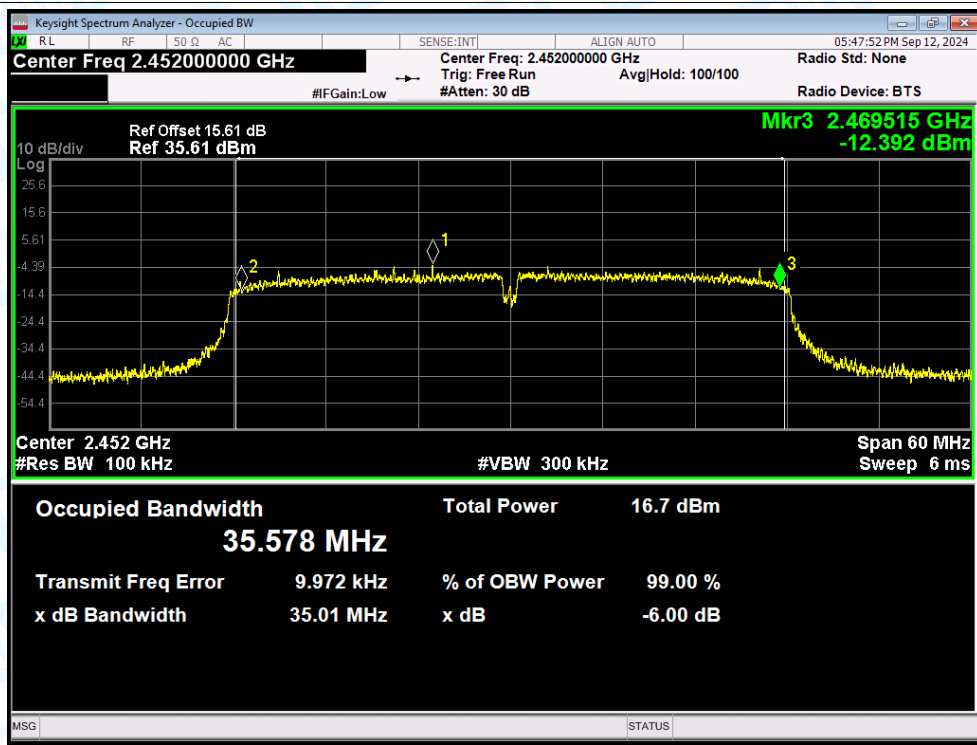




-6dB Bandwidth NVNT n(HT40) 2437MHz Ant1



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

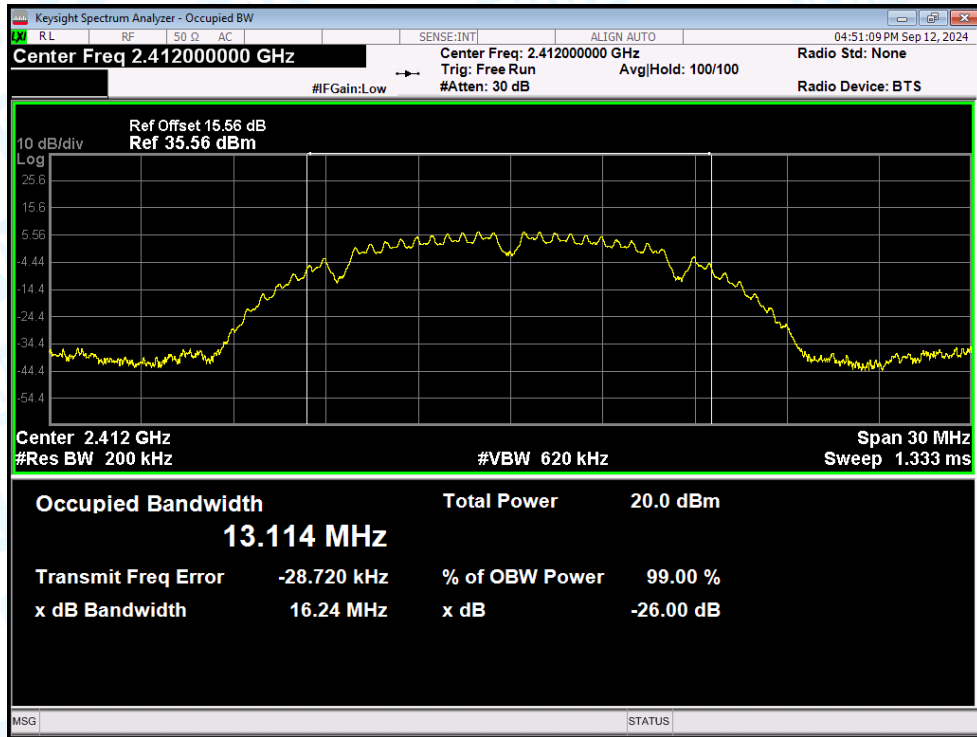


## 4. Occupied Channel Bandwidth

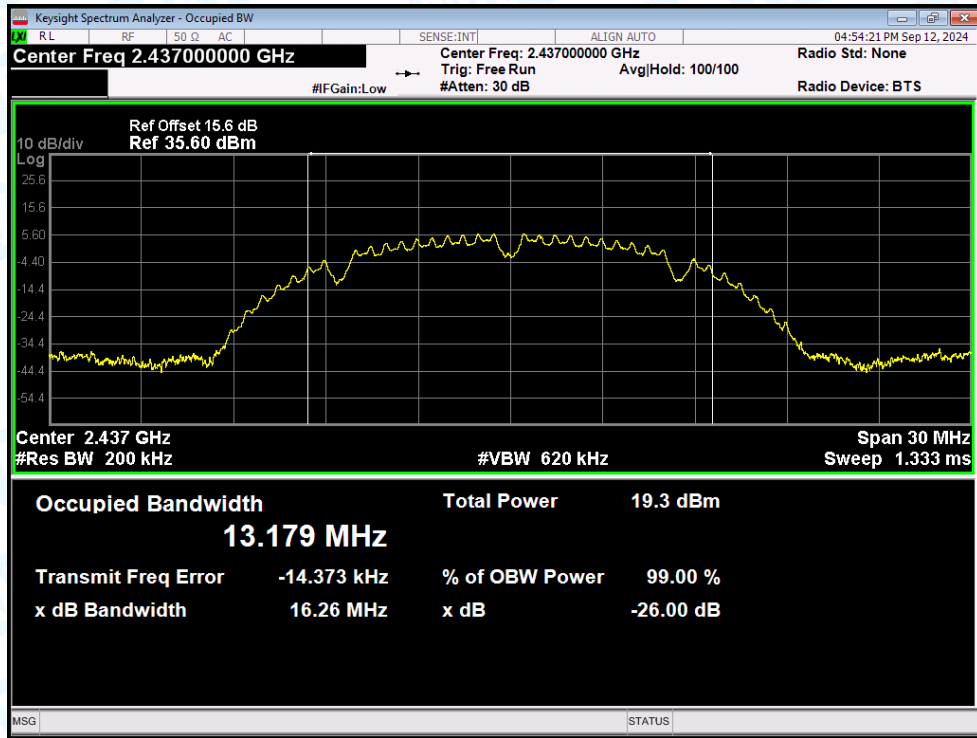
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	13.114
NVNT	b	2437	Ant1	13.179
NVNT	b	2462	Ant1	13.157
NVNT	g	2412	Ant1	16.569
NVNT	g	2437	Ant1	16.608
NVNT	g	2462	Ant1	16.574
NVNT	n(HT20)	2412	Ant1	17.683
NVNT	n(HT20)	2437	Ant1	17.711
NVNT	n(HT20)	2462	Ant1	17.703
NVNT	n(HT40)	2422	Ant1	35.562
NVNT	n(HT40)	2437	Ant1	35.598
NVNT	n(HT40)	2452	Ant1	35.63

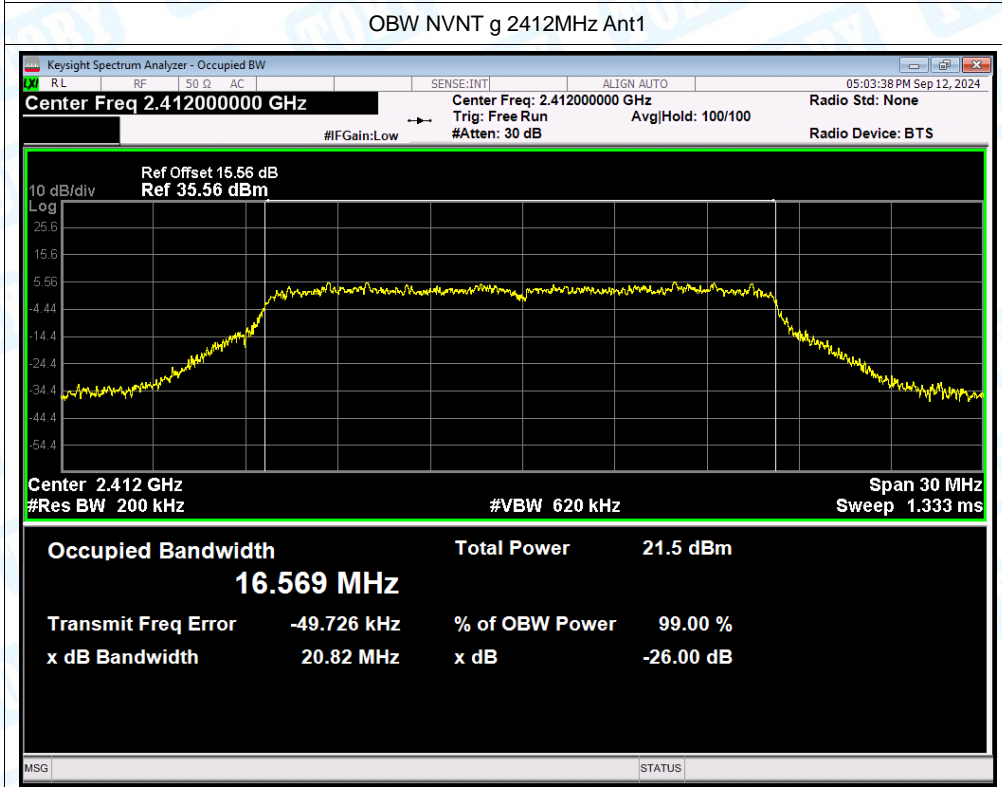
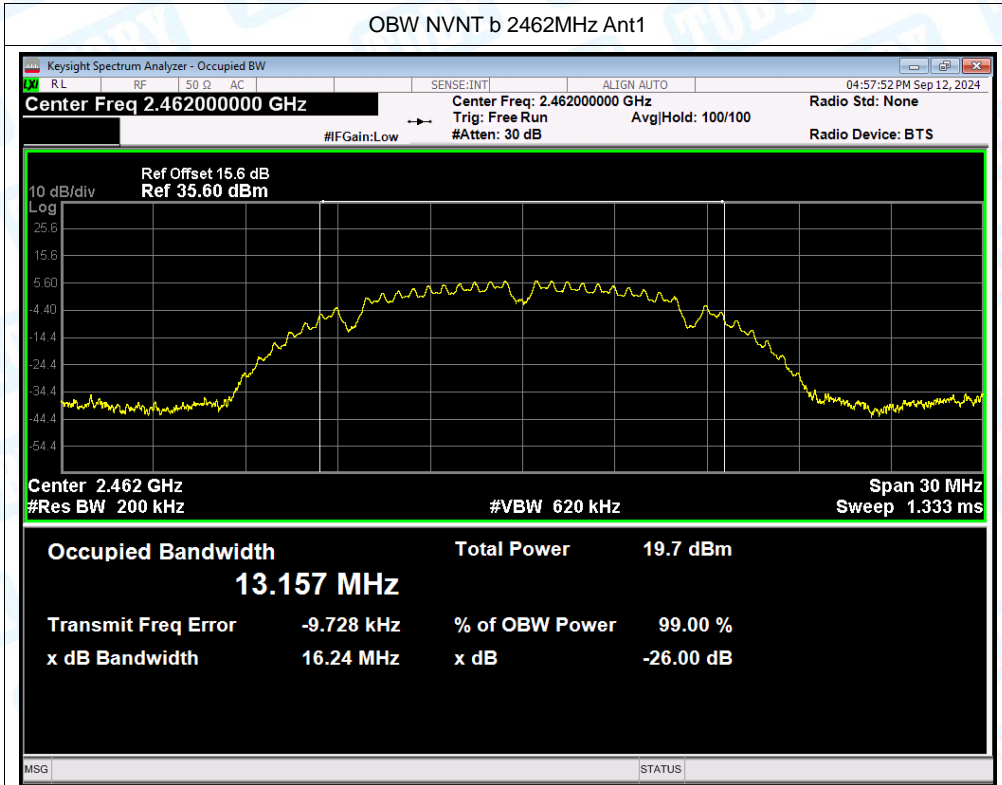
Test Graphs

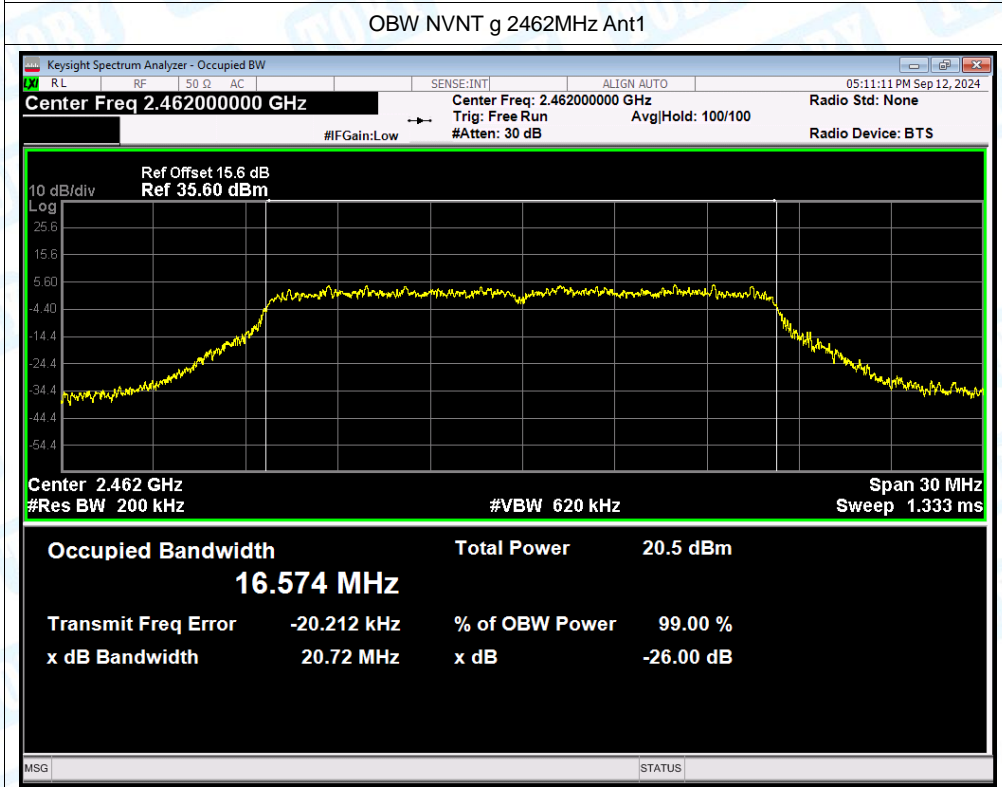
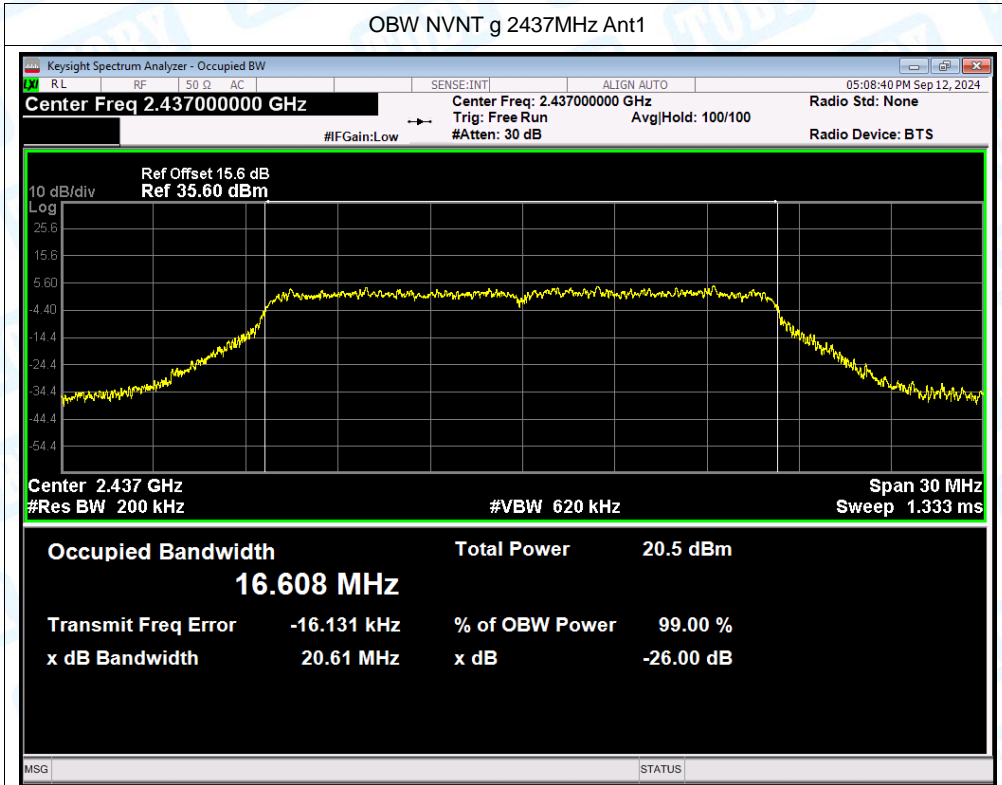
OBW NVNT b 2412MHz Ant1



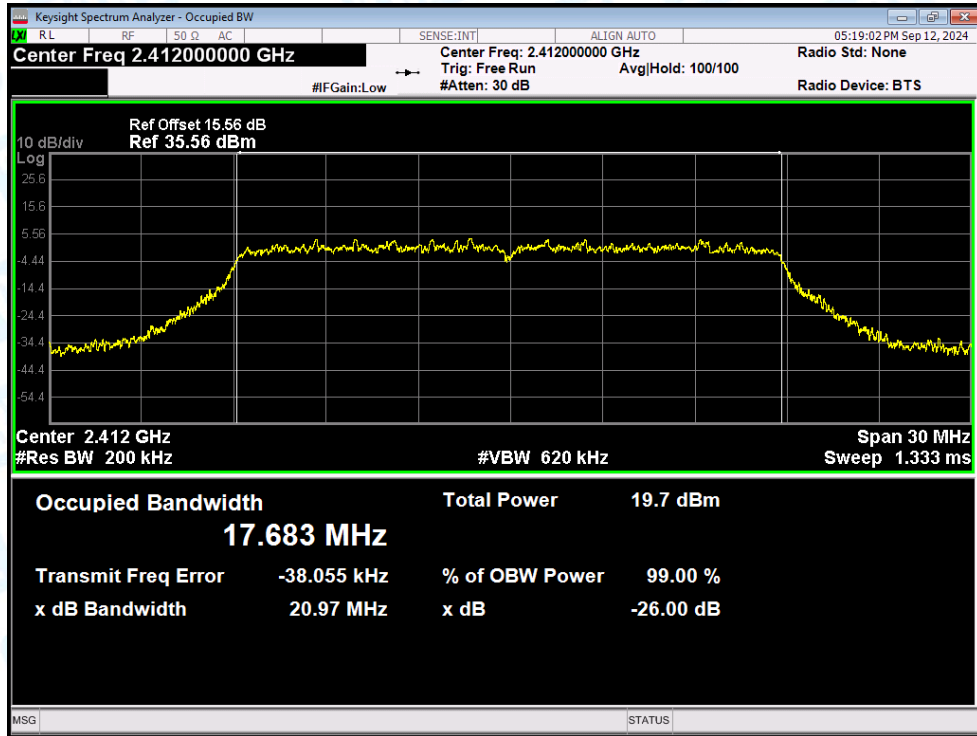
OBW NVNT b 2437MHz Ant1



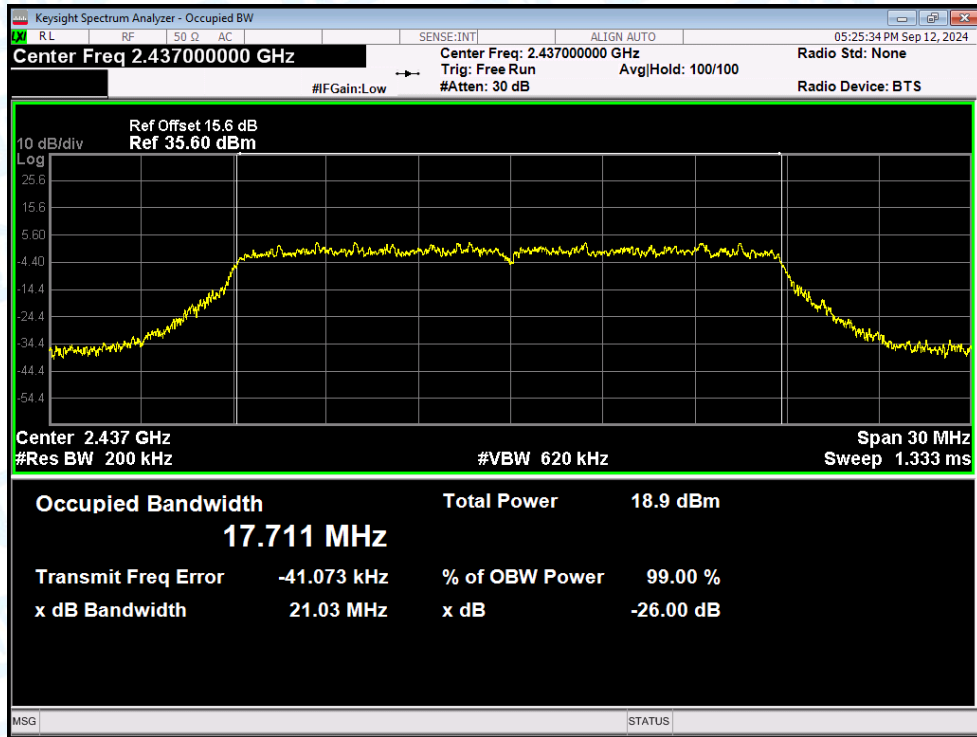


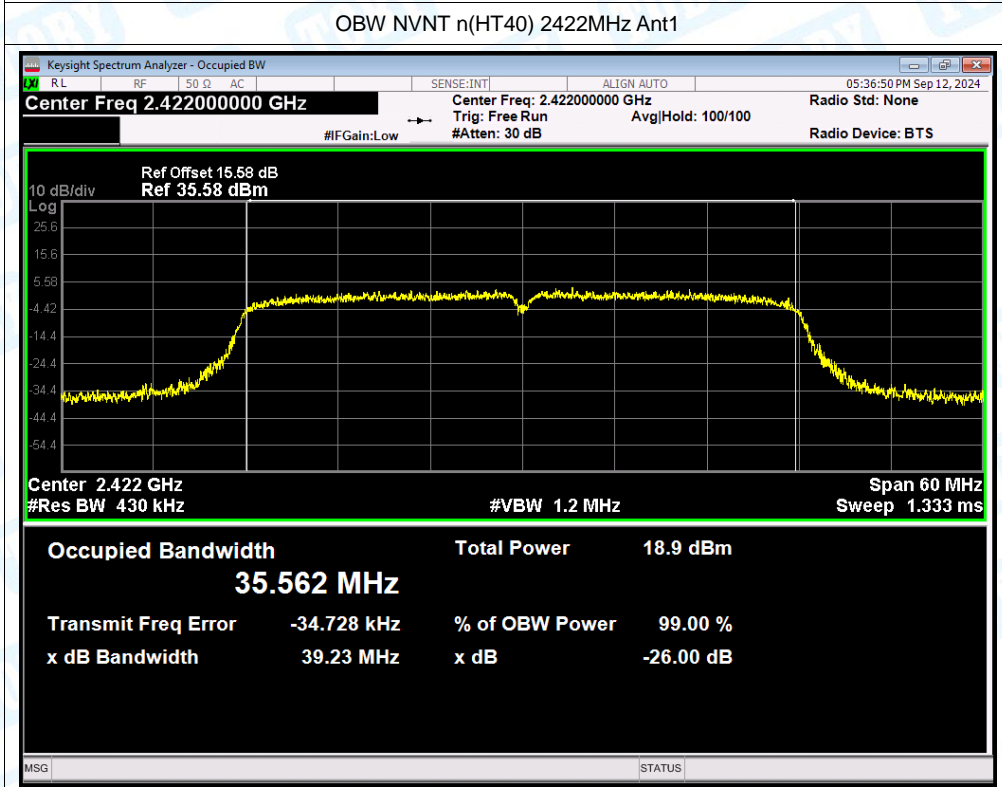
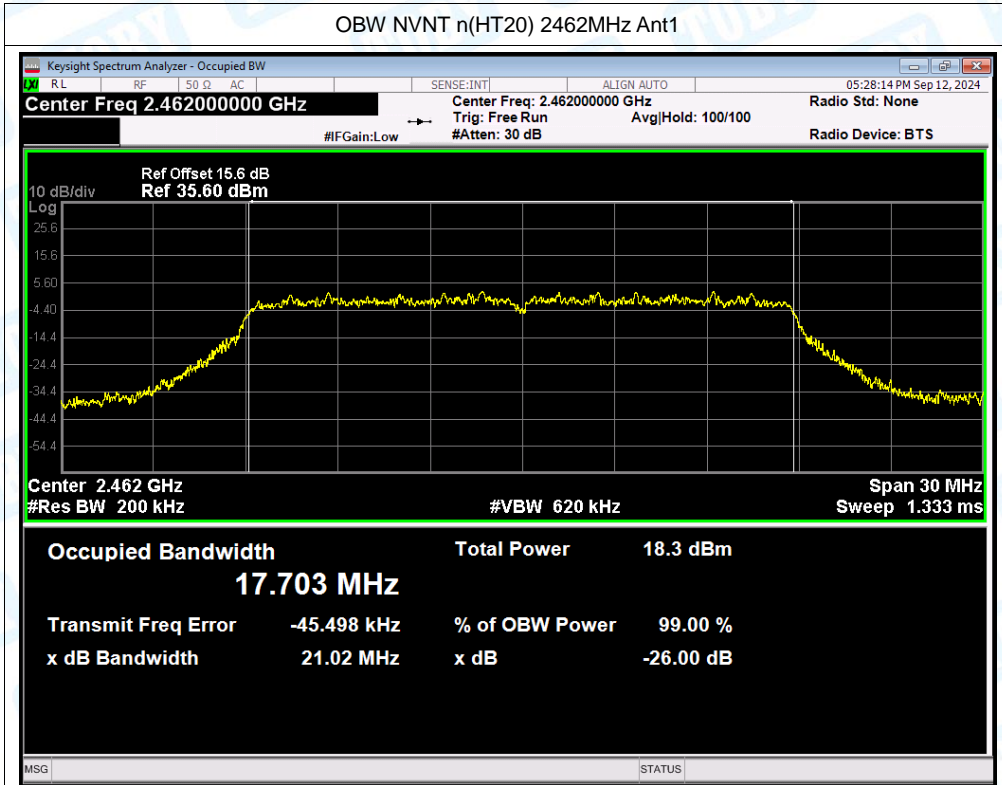


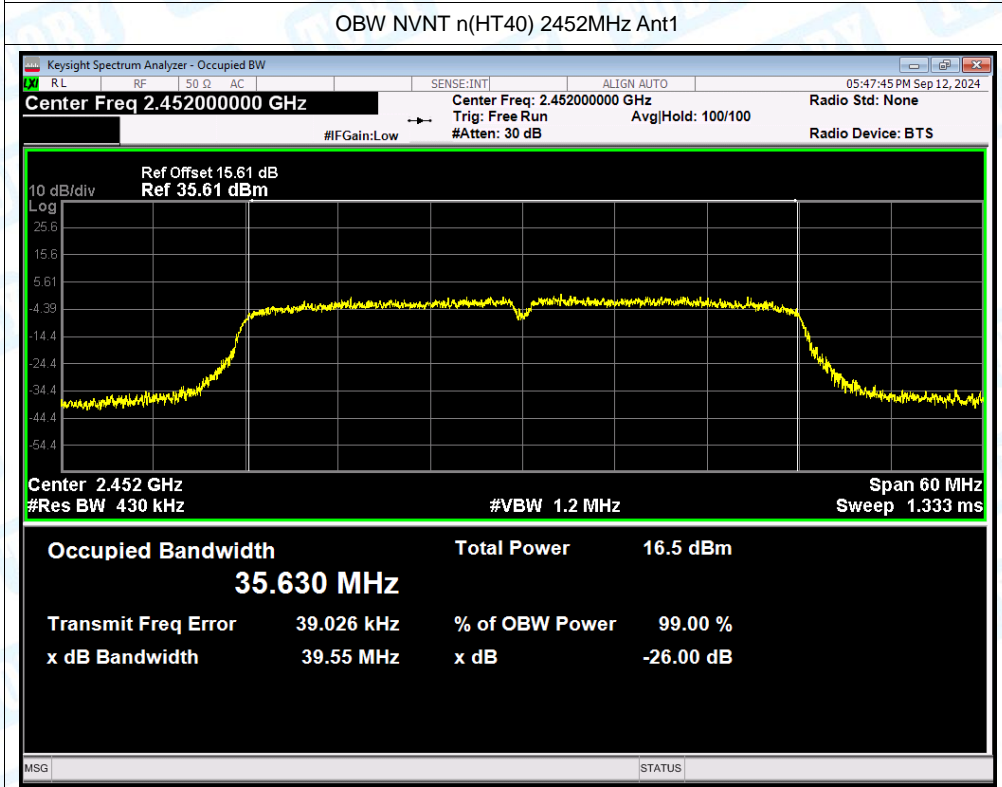
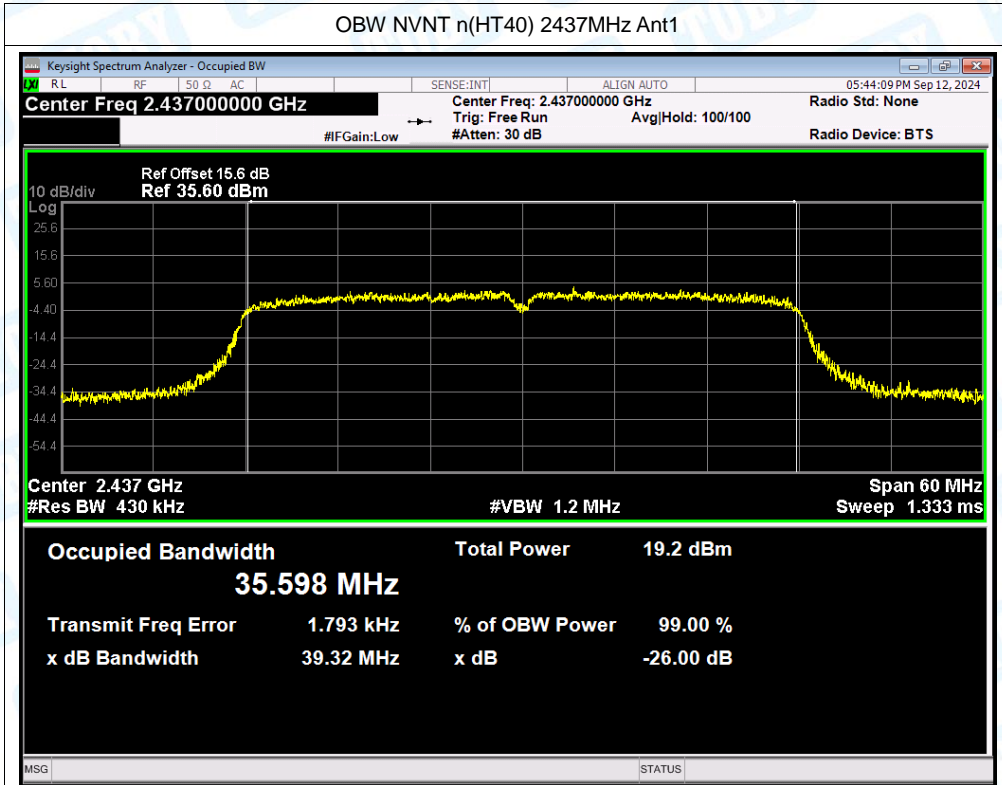
OBV NVNT n(HT20) 2412MHz Ant1



OBV NVNT n(HT20) 2437MHz Ant1









## 5. Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-16.619	8	Pass
NVNT	b	2437	Ant1	-17.191	8	Pass
NVNT	b	2462	Ant1	-17.072	8	Pass
NVNT	g	2412	Ant1	-18.866	8	Pass
NVNT	g	2437	Ant1	-18.756	8	Pass
NVNT	g	2462	Ant1	-20.448	8	Pass
NVNT	n(HT20)	2412	Ant1	-20.661	8	Pass
NVNT	n(HT20)	2437	Ant1	-20.638	8	Pass
NVNT	n(HT20)	2462	Ant1	-21.586	8	Pass
NVNT	n(HT40)	2422	Ant1	-25.302	8	Pass
NVNT	n(HT40)	2437	Ant1	-24.214	8	Pass
NVNT	n(HT40)	2452	Ant1	-26.457	8	Pass

Note: The Duty Cycle Factor is compensated in the graph.

Test Graphs

PSD NVNT b 2412MHz Ant1



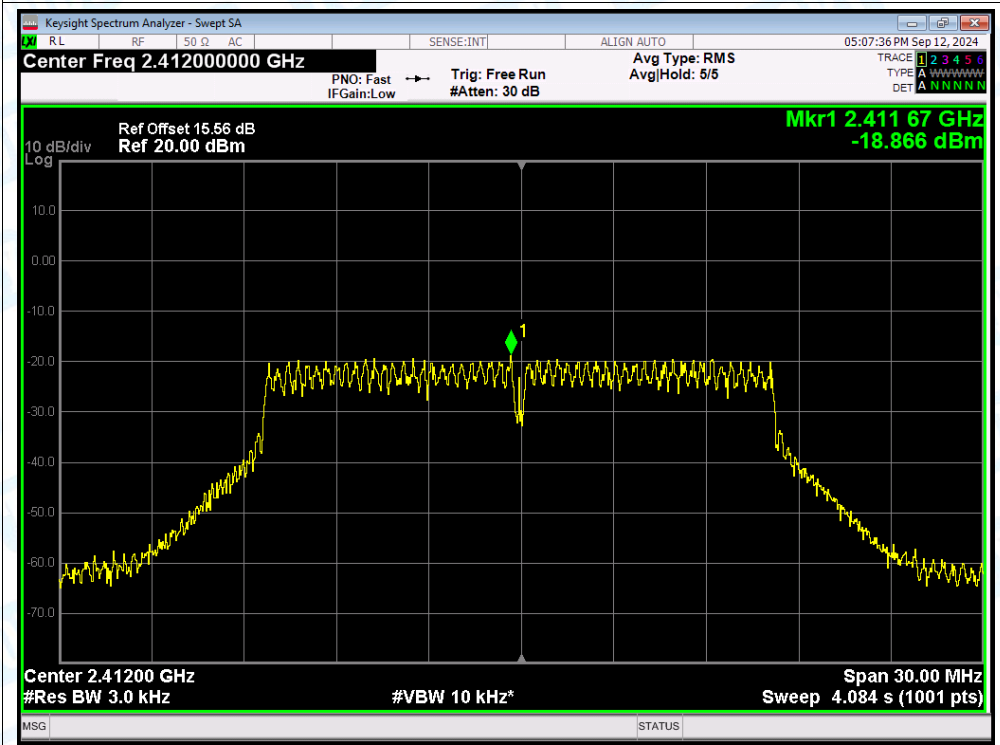
PSD NVNT b 2437MHz Ant1

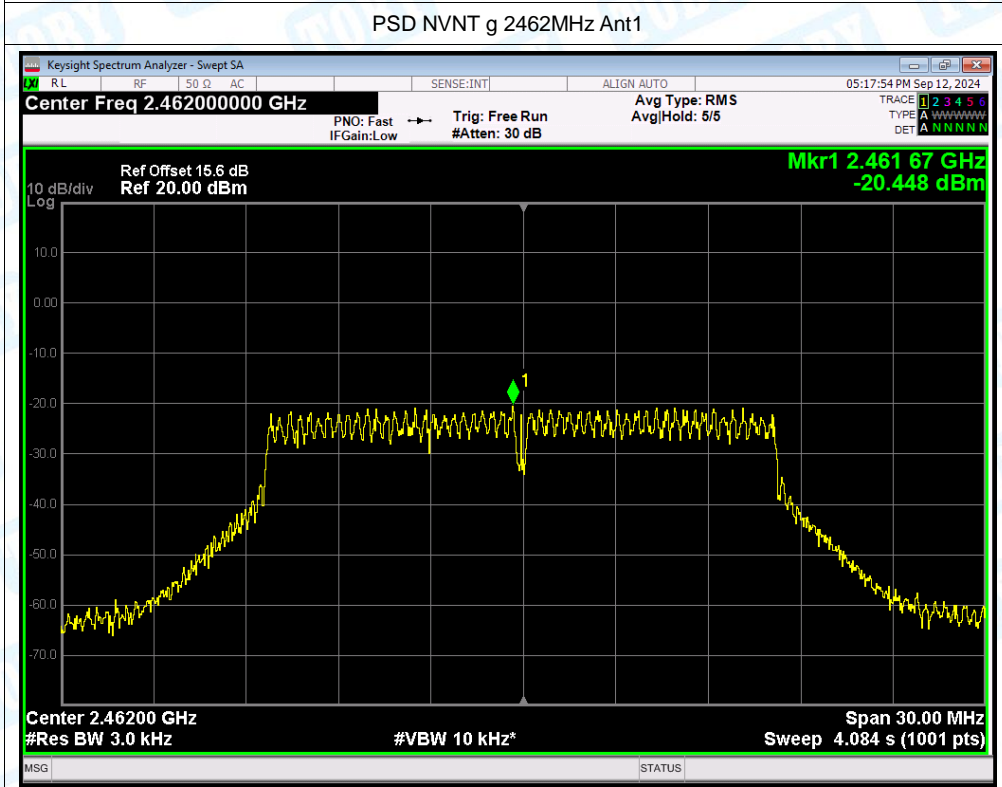
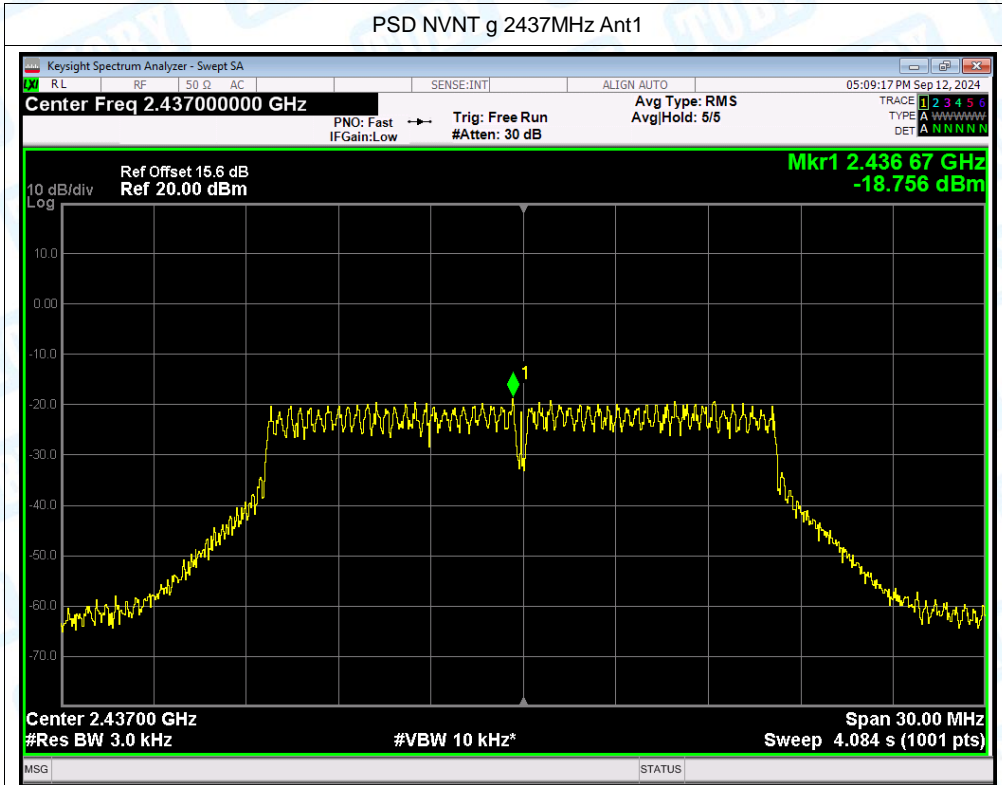


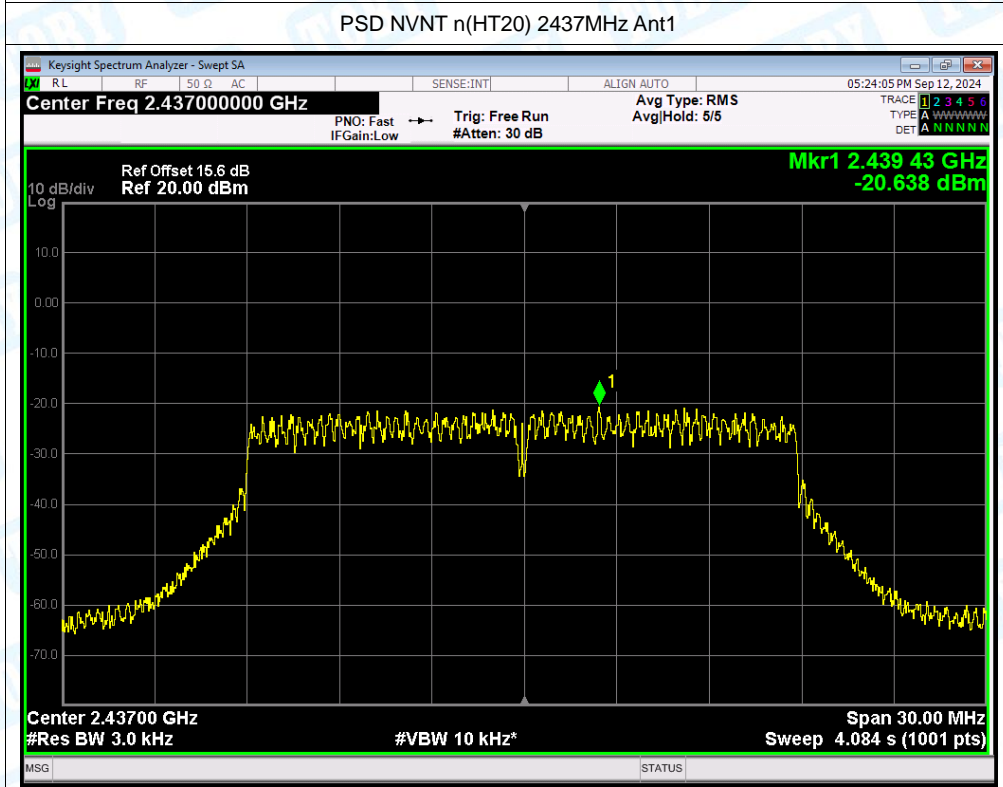
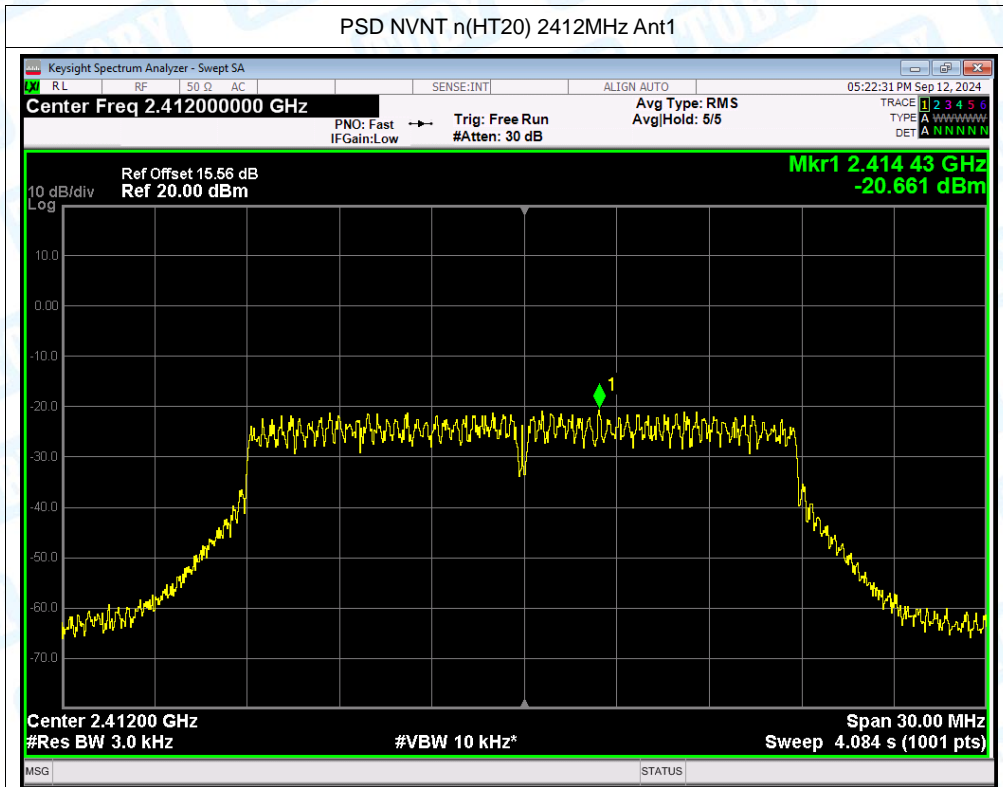
PSD NVNT b 2462MHz Ant1

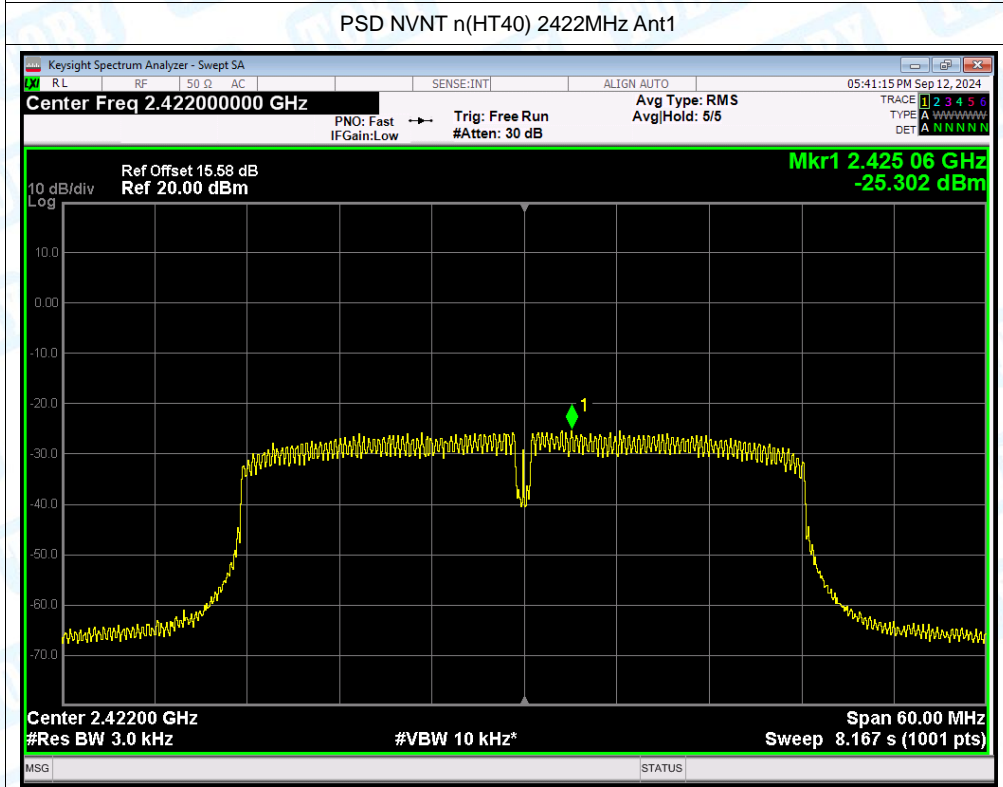
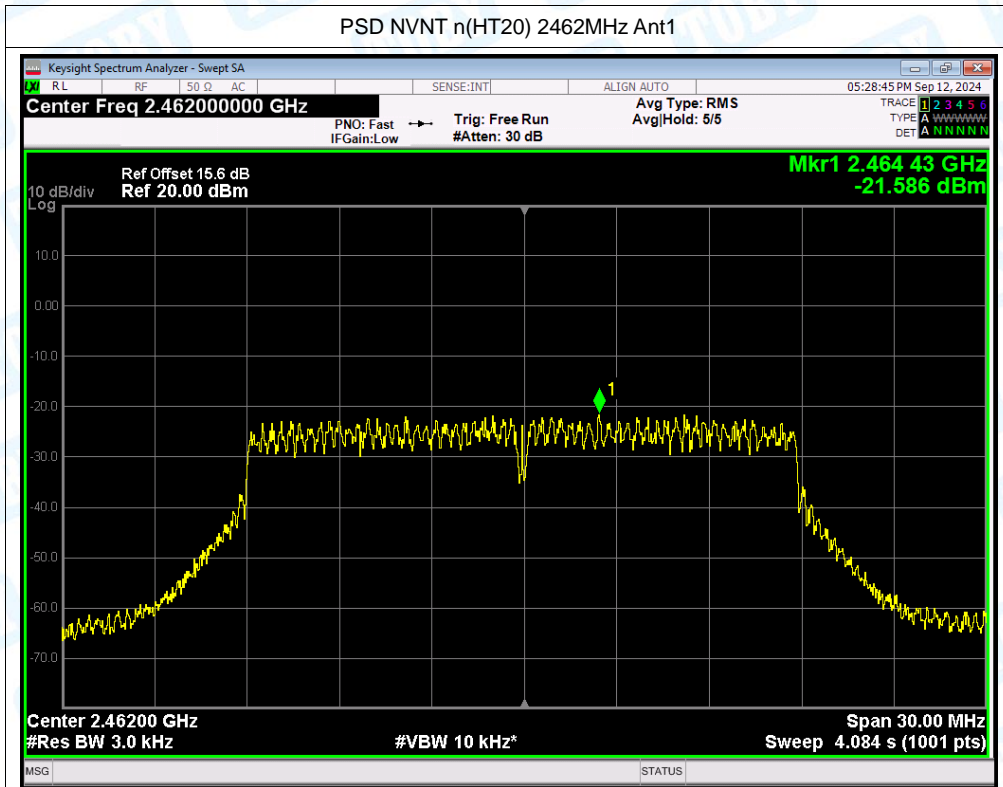


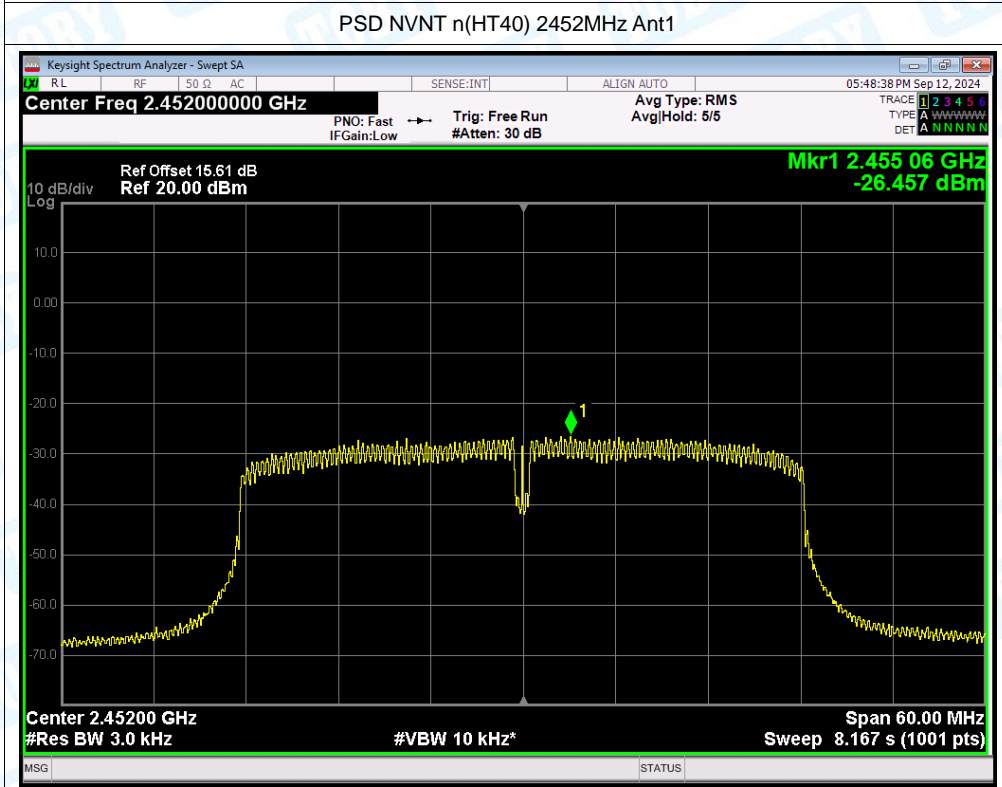
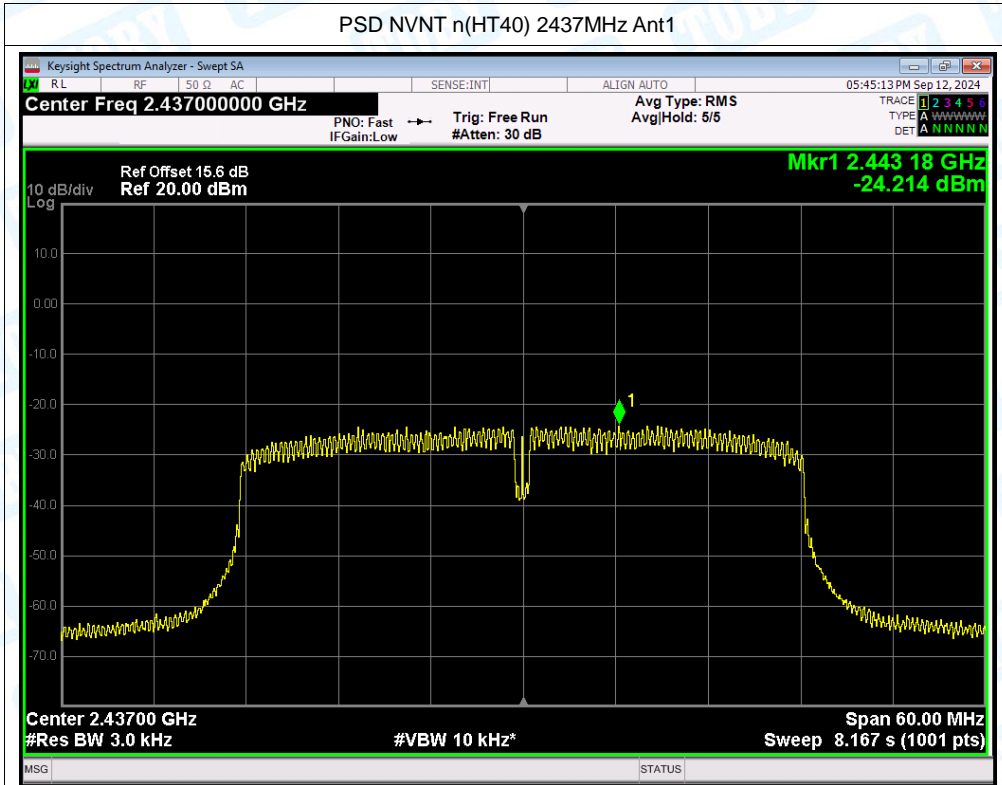
PSD NVNT g 2412MHz Ant1











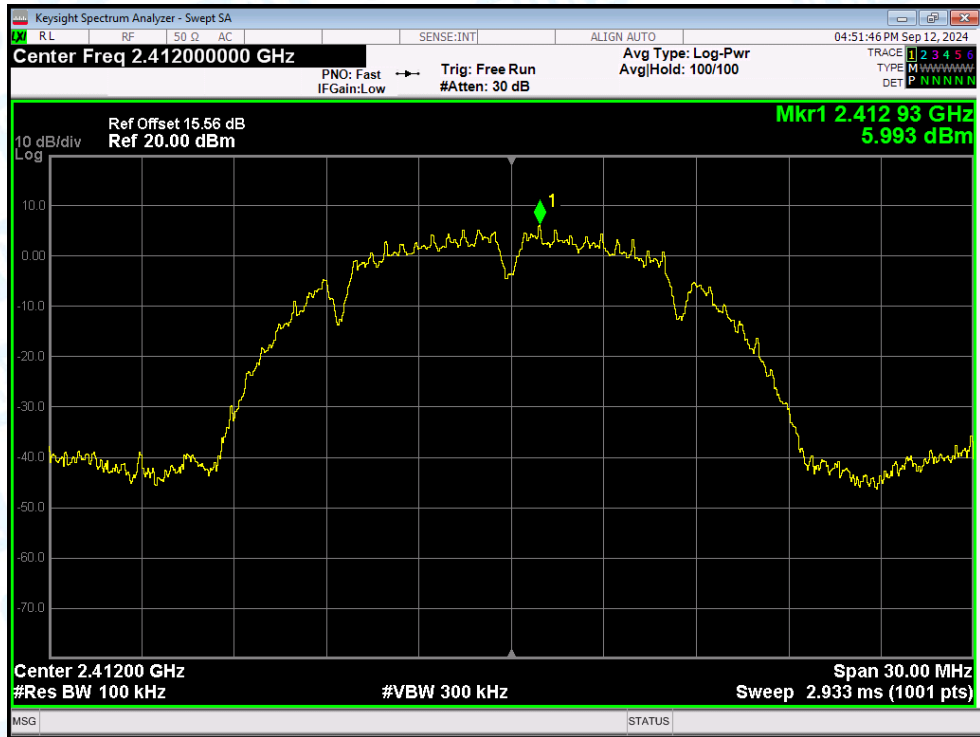
## 6. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-49.66	-30	Pass
NVNT	b	2462	Ant1	-47.58	-30	Pass
NVNT	g	2412	Ant1	-45.77	-30	Pass
NVNT	g	2462	Ant1	-43.54	-30	Pass
NVNT	n(HT20)	2412	Ant1	-44.15	-30	Pass
NVNT	n(HT20)	2462	Ant1	-42.31	-30	Pass
NVNT	n(HT40)	2422	Ant1	-40.55	-30	Pass
NVNT	n(HT40)	2452	Ant1	-35.16	-30	Pass

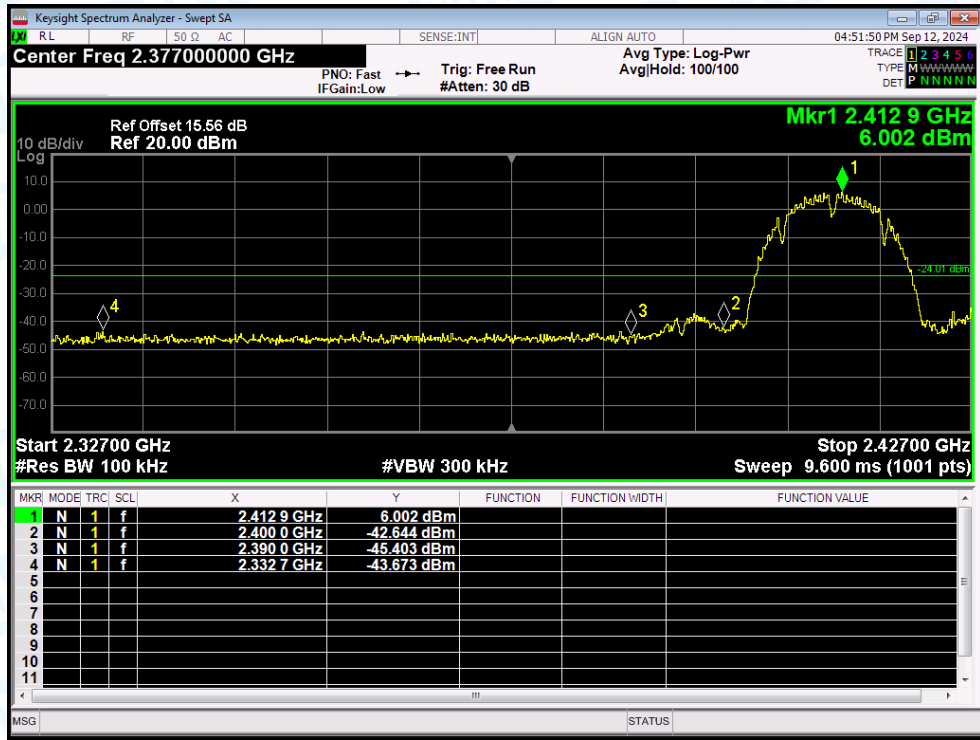


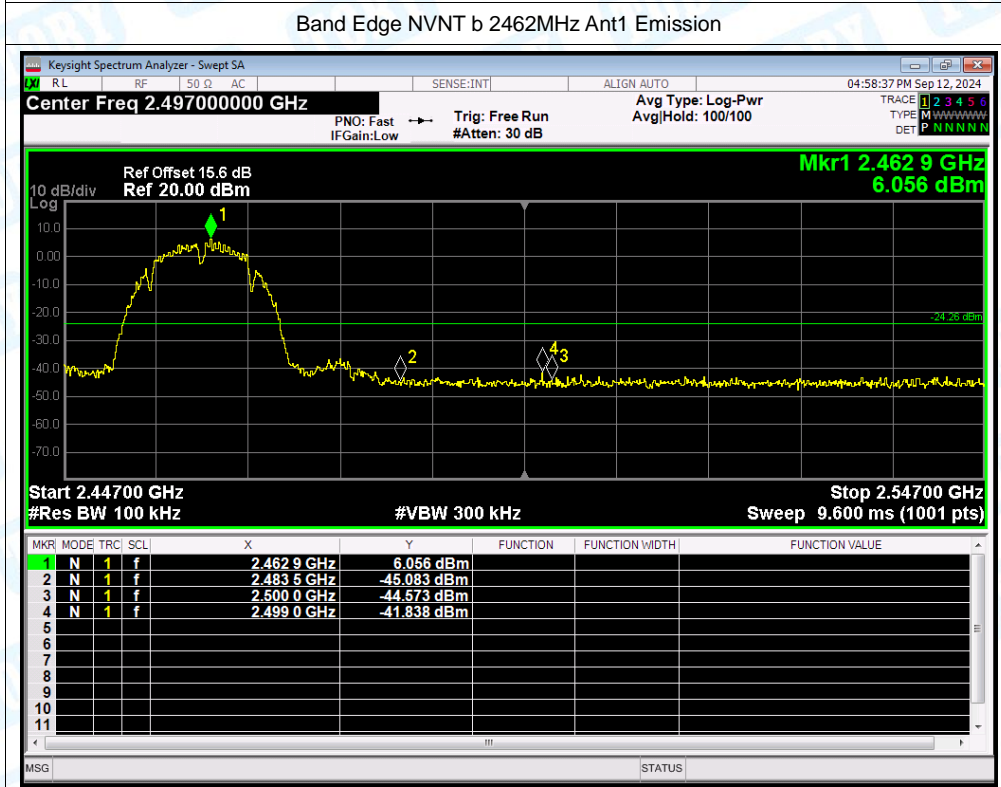
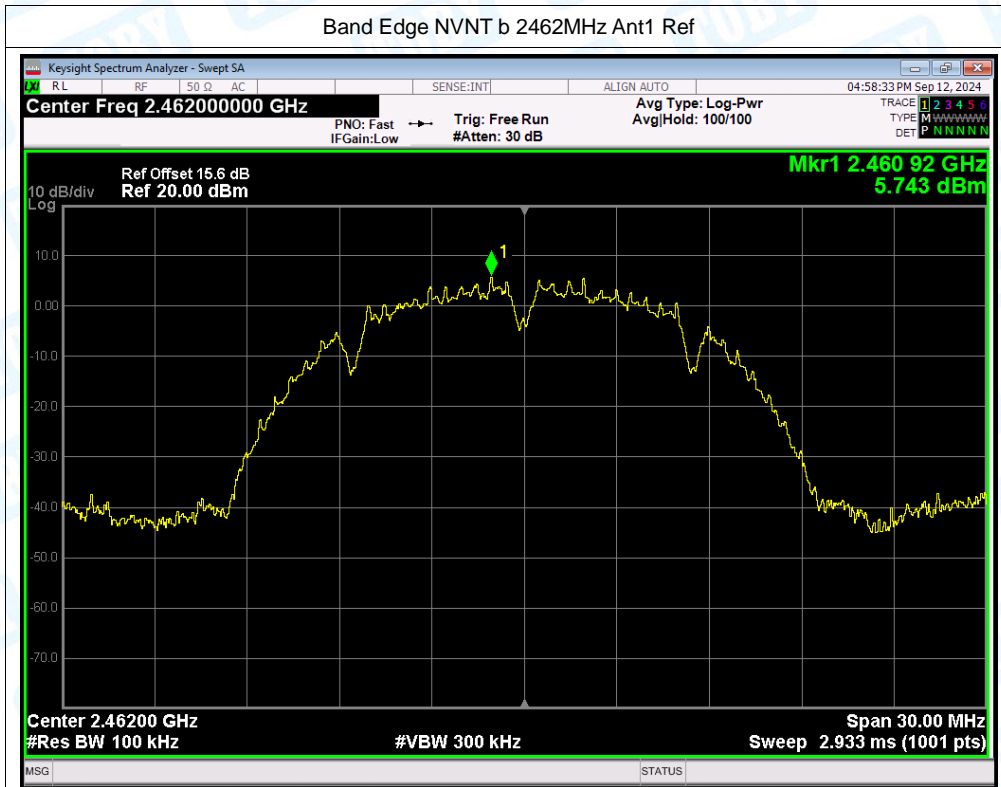
Test Graphs

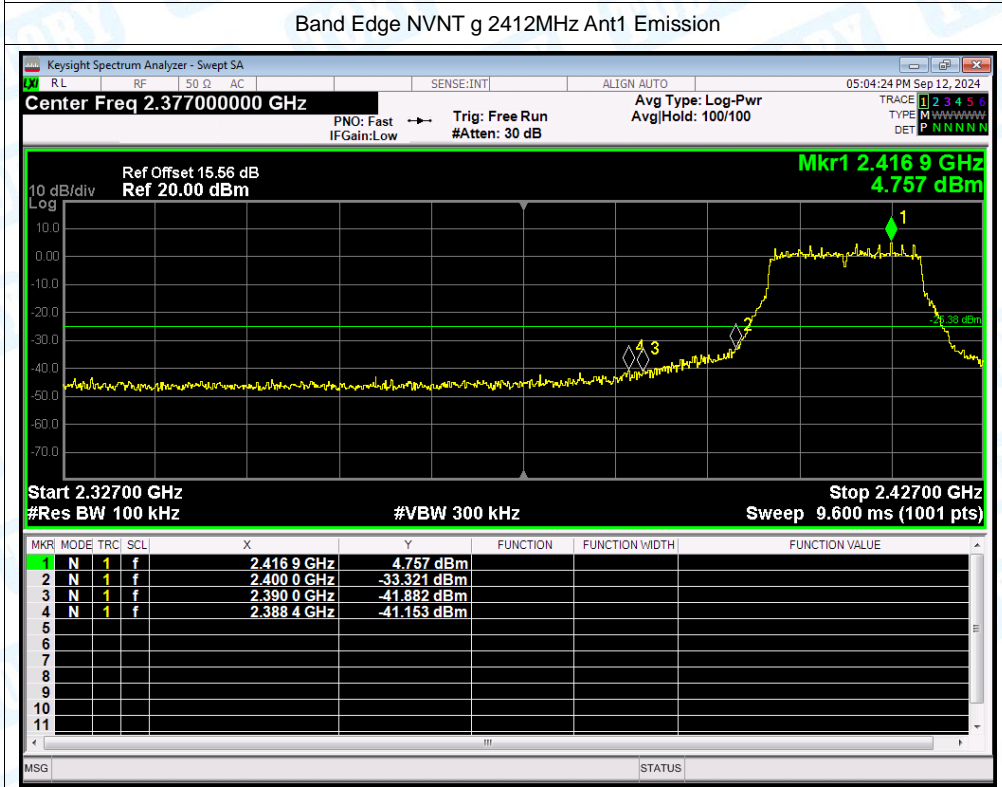
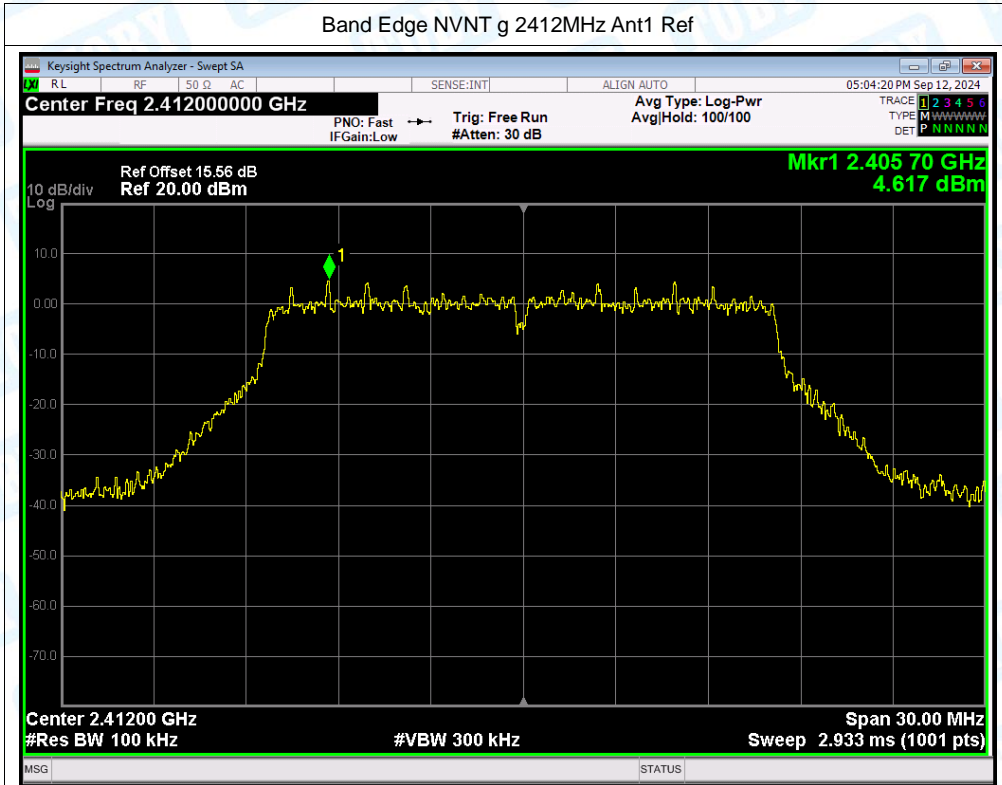
Band Edge NVNT b 2412MHz Ant1 Ref



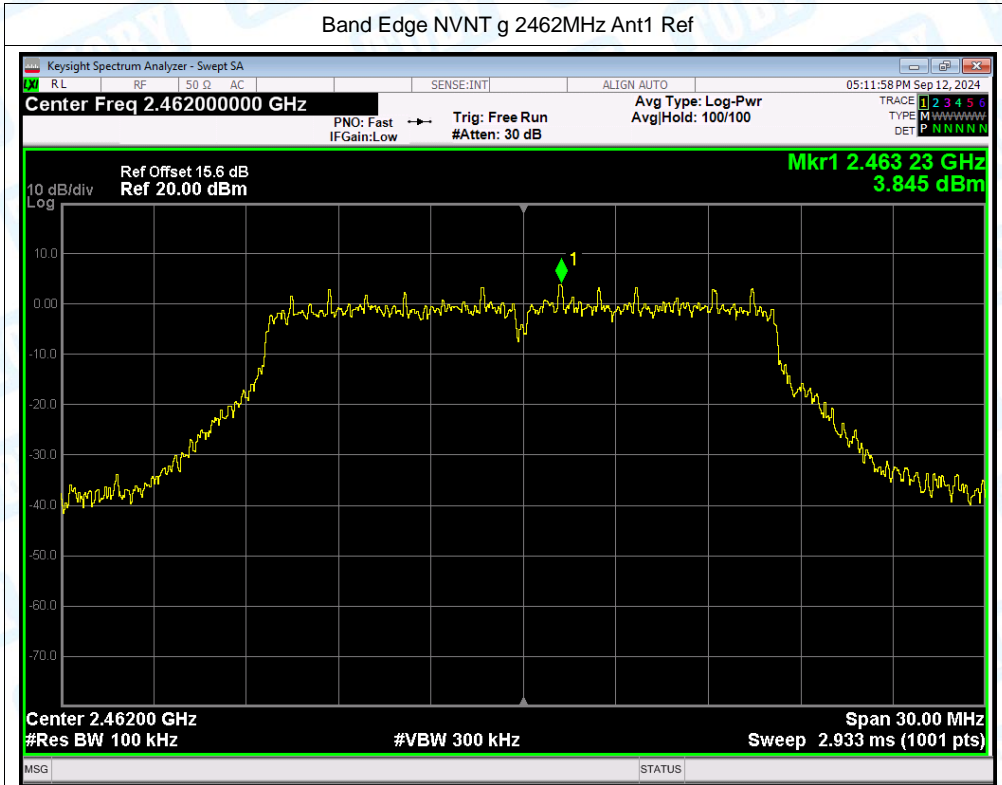
Band Edge NVNT b 2412MHz Ant1 Emission



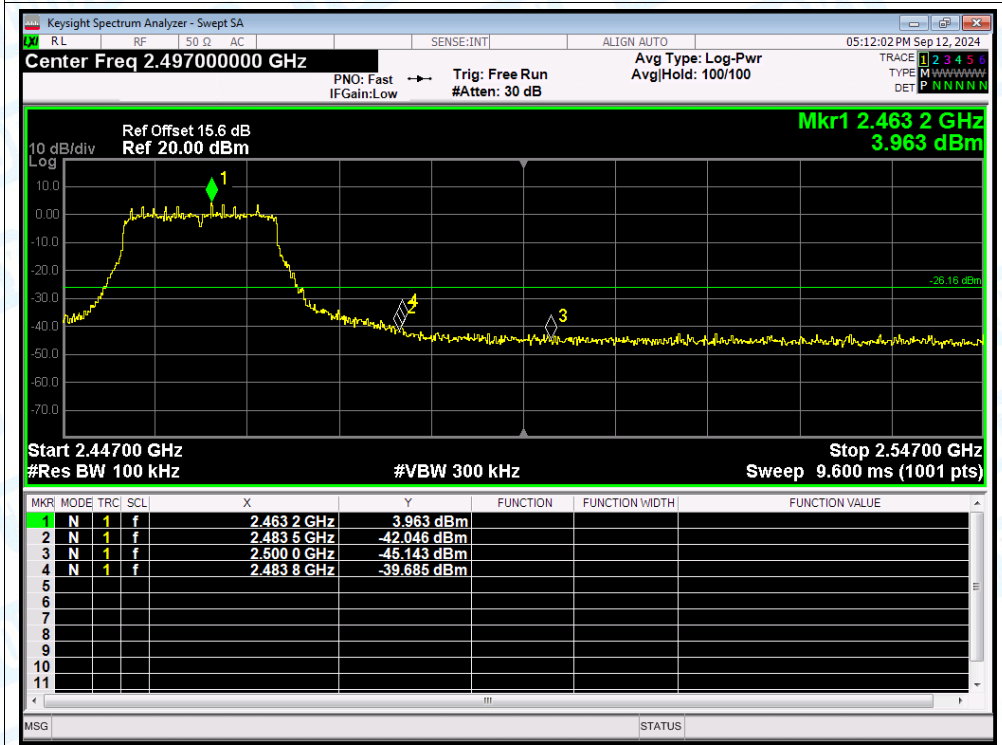




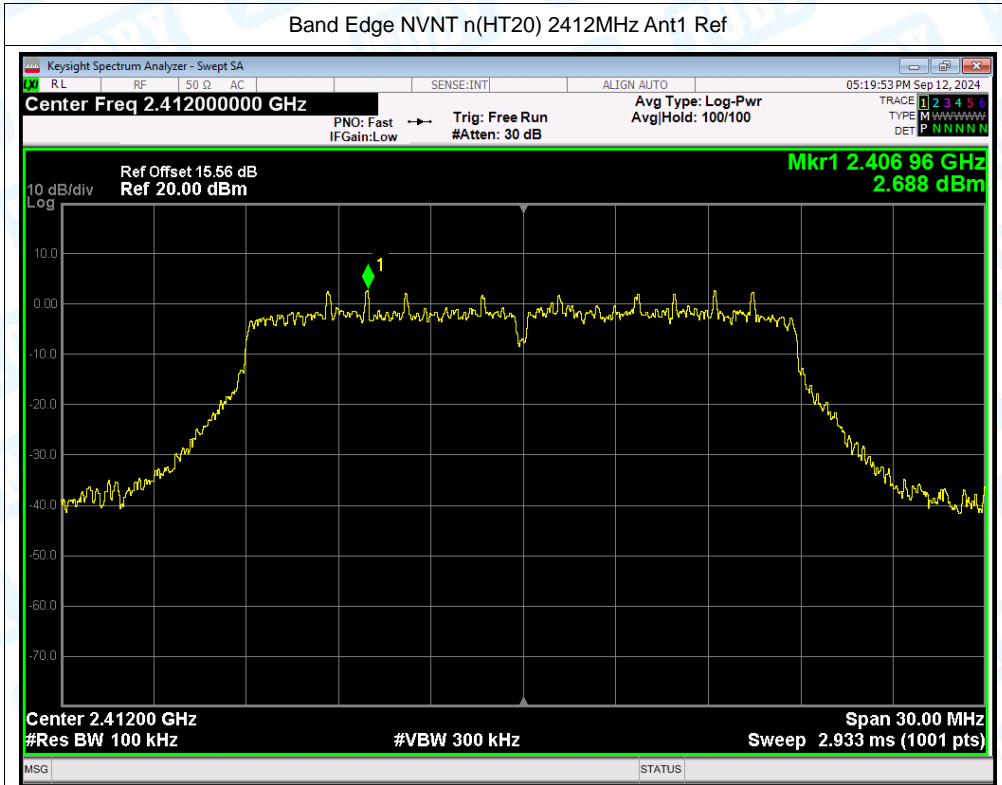
Band Edge NVNT g 2462MHz Ant1 Ref



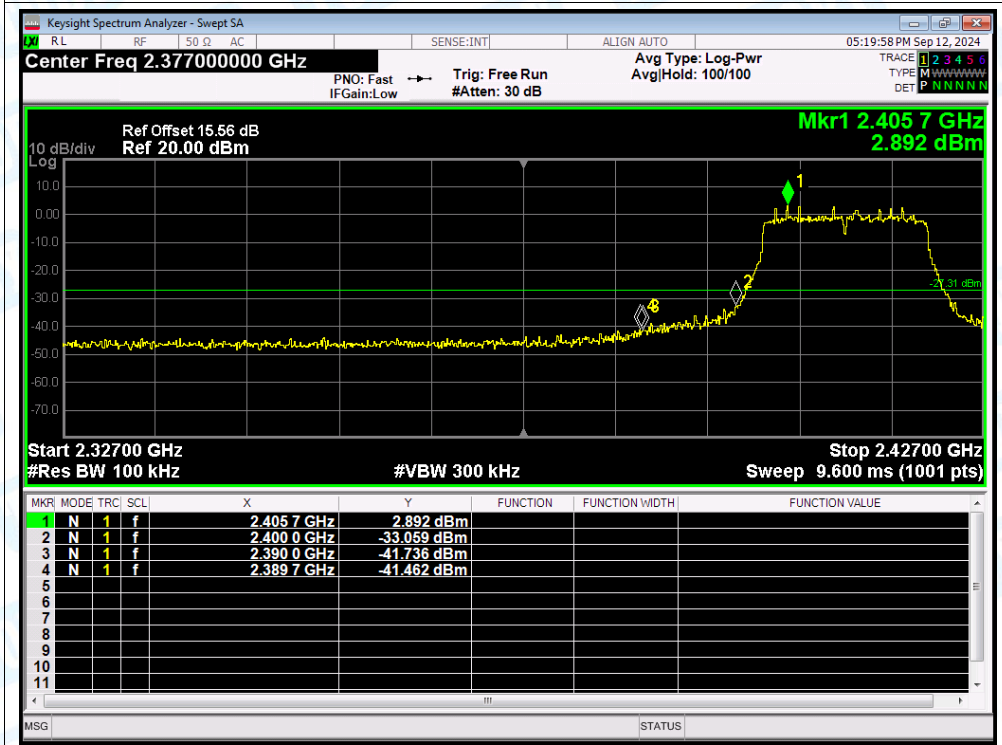
Band Edge NVNT g 2462MHz Ant1 Emission



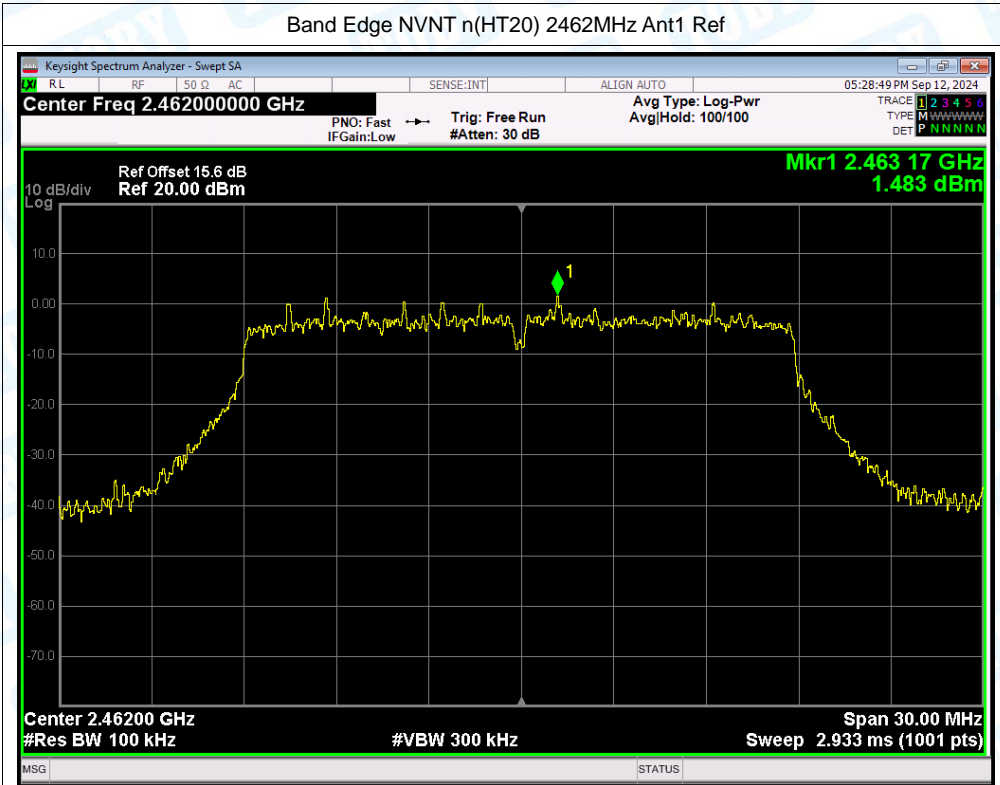
Band Edge NVNT n(HT20) 2412MHz Ant1 Ref



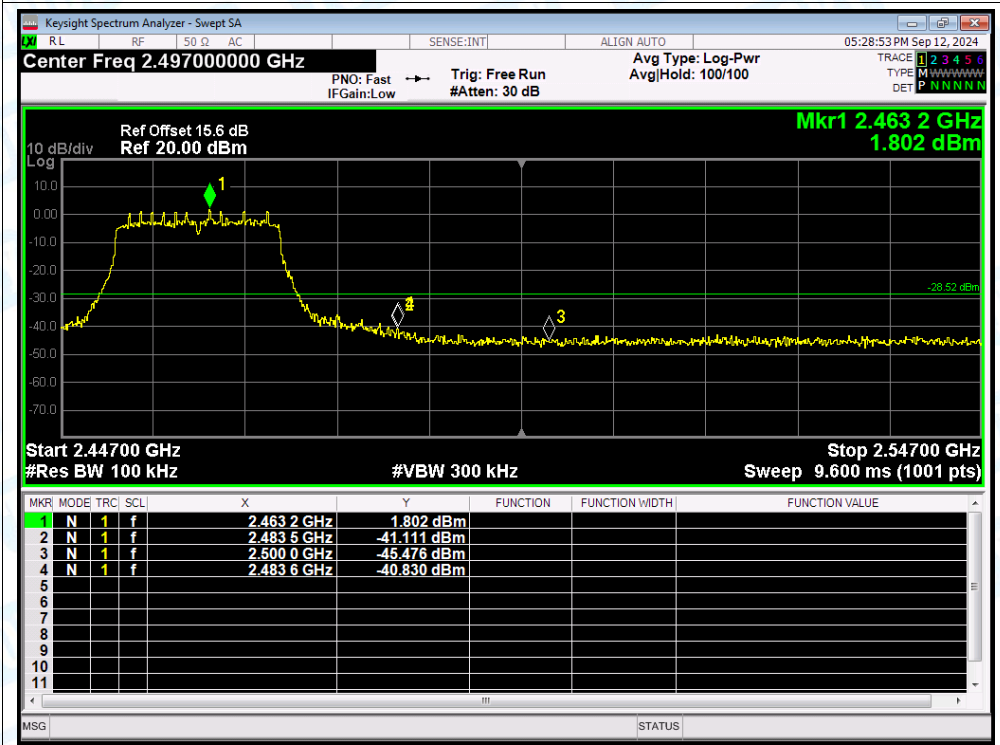
Band Edge NVNT n(HT20) 2412MHz Ant1 Emission

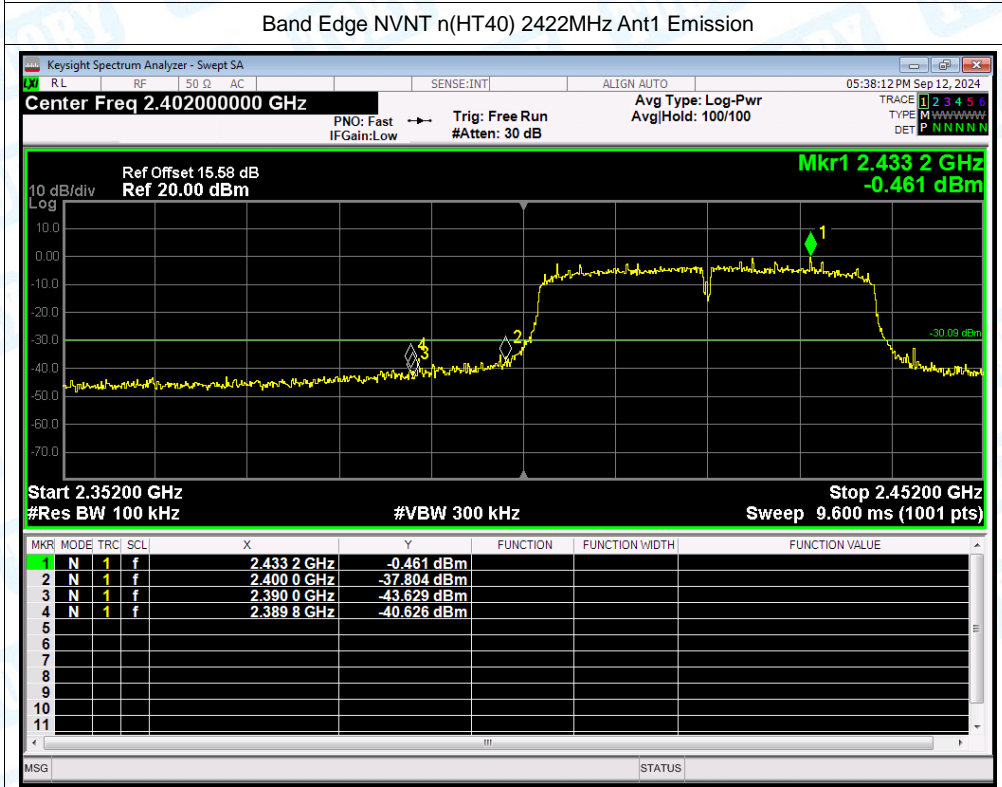
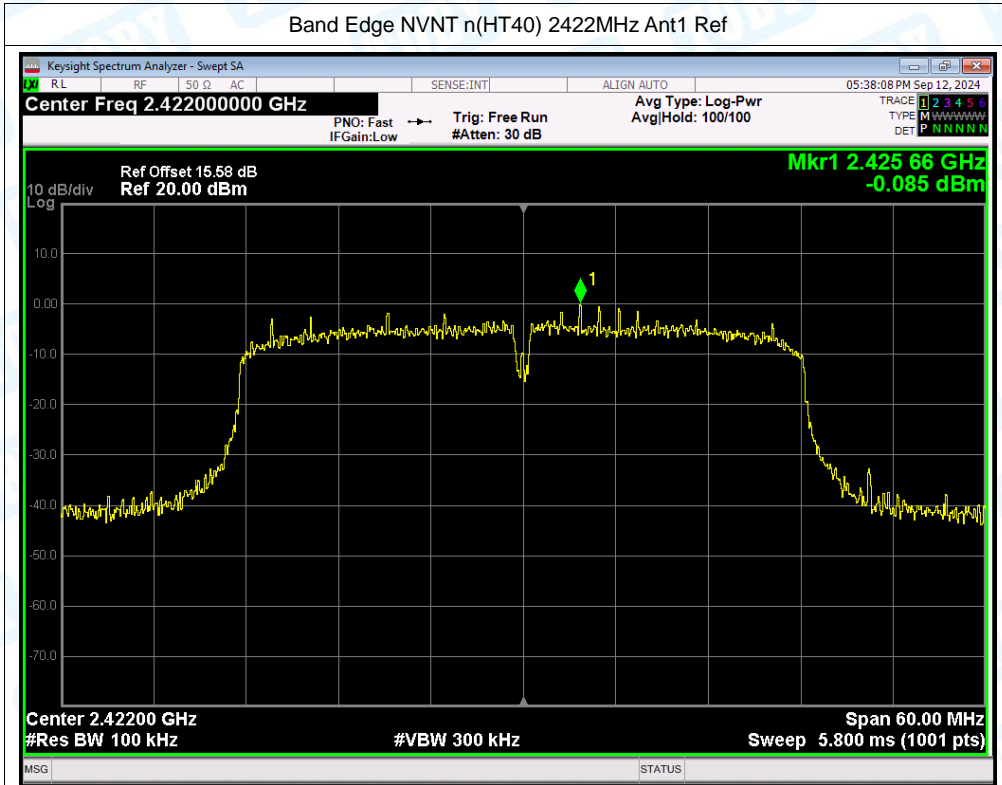


Band Edge NVNT n(HT20) 2462MHz Ant1 Ref

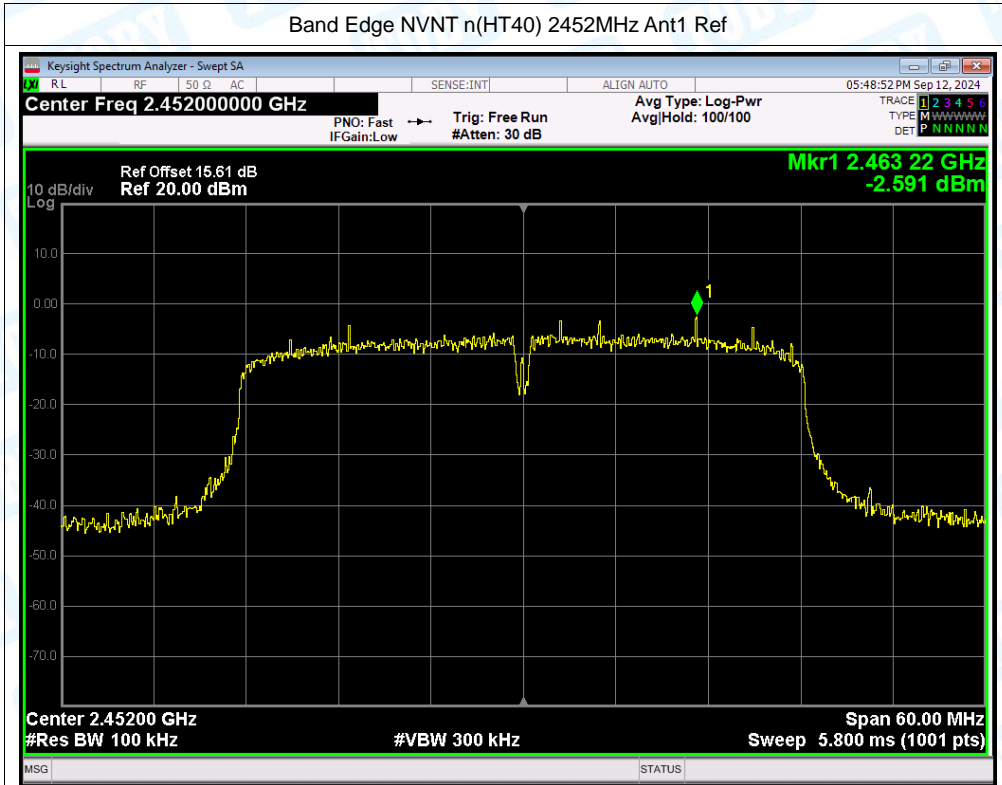


Band Edge NVNT n(HT20) 2462MHz Ant1 Emission

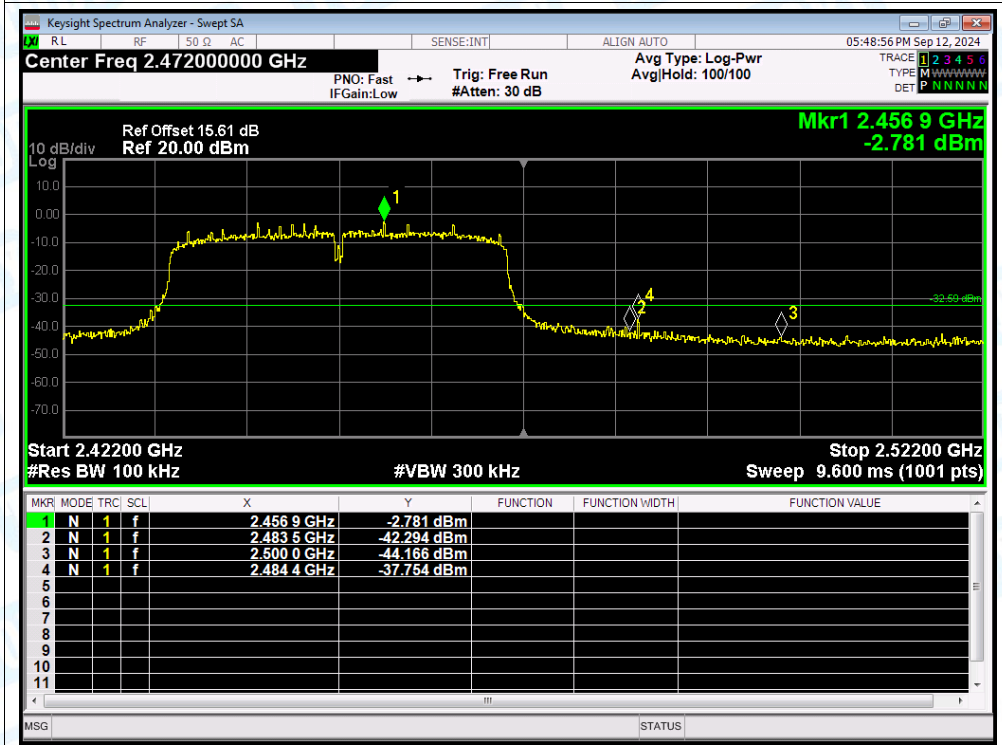




Band Edge NVNT n(HT40) 2452MHz Ant1 Ref



Band Edge NVNT n(HT40) 2452MHz Ant1 Emission



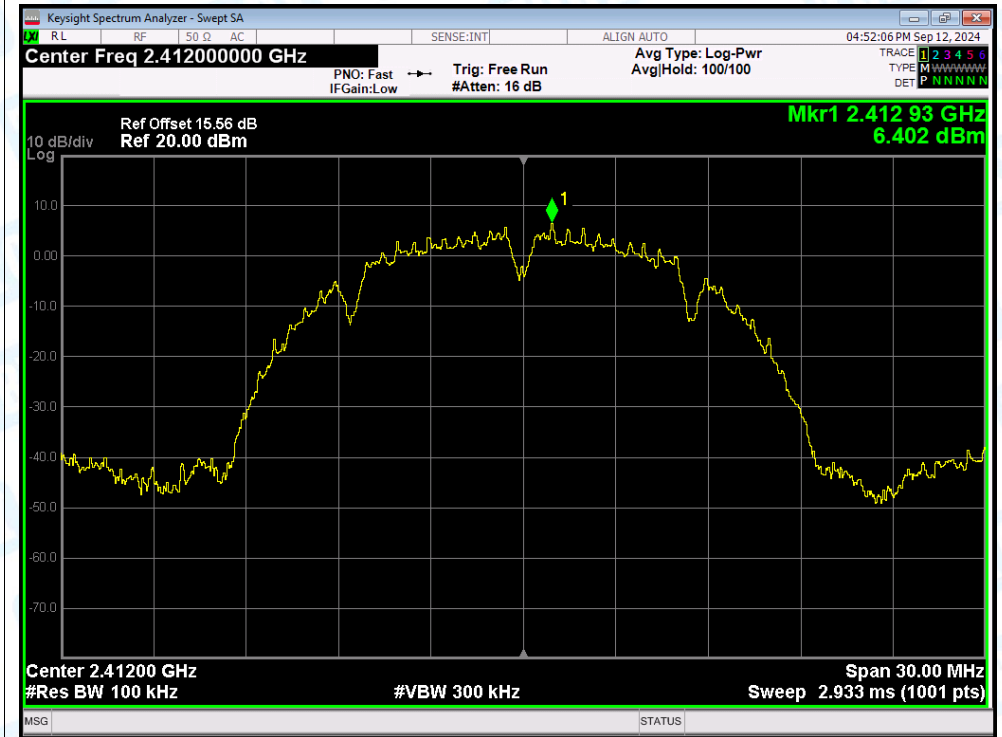


## 7. Conducted RF Spurious Emission

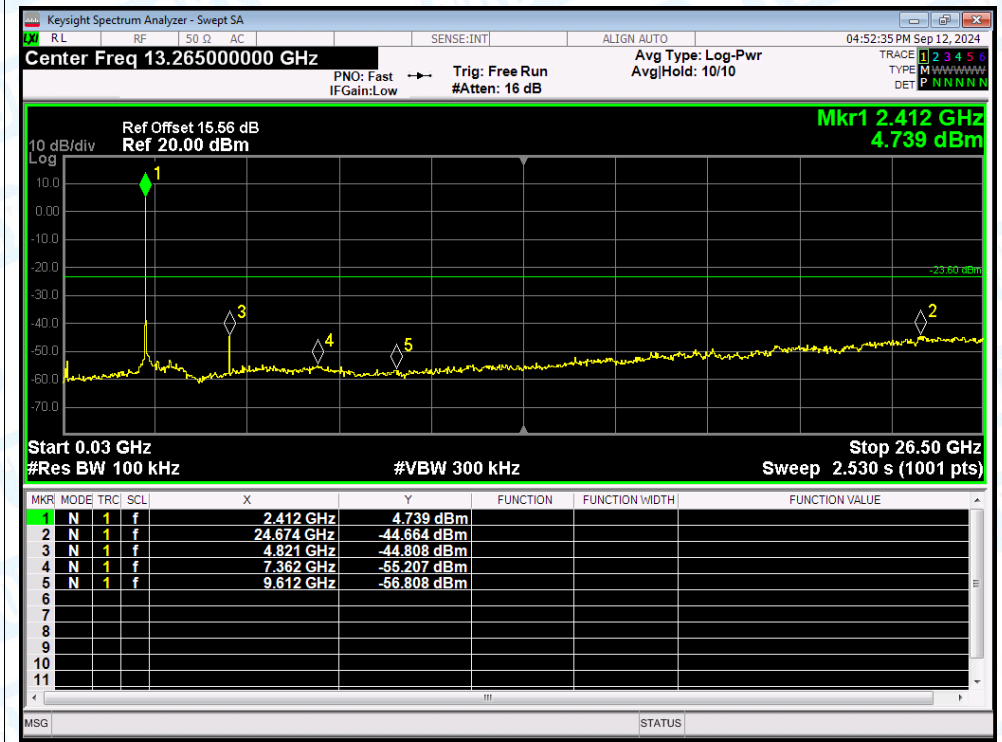
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-51.06	-30	Pass
NVNT	b	2437	Ant1	-49.37	-30	Pass
NVNT	b	2462	Ant1	-49.38	-30	Pass
NVNT	g	2412	Ant1	-50.21	-30	Pass
NVNT	g	2437	Ant1	-48.81	-30	Pass
NVNT	g	2462	Ant1	-47.84	-30	Pass
NVNT	n(HT20)	2412	Ant1	-47.17	-30	Pass
NVNT	n(HT20)	2437	Ant1	-47.13	-30	Pass
NVNT	n(HT20)	2462	Ant1	-45.78	-30	Pass
NVNT	n(HT40)	2422	Ant1	-43.69	-30	Pass
NVNT	n(HT40)	2437	Ant1	-44.31	-30	Pass
NVNT	n(HT40)	2452	Ant1	-42.11	-30	Pass

Test Graphs

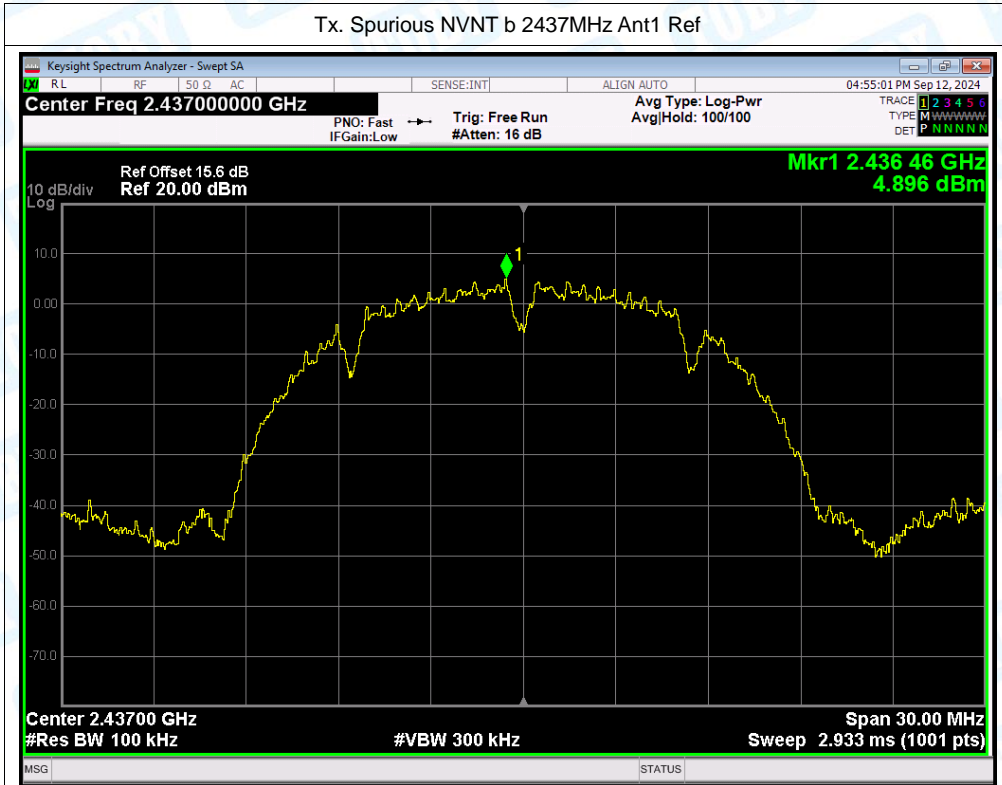
Tx. Spurious NVNT b 2412MHz Ant1 Ref



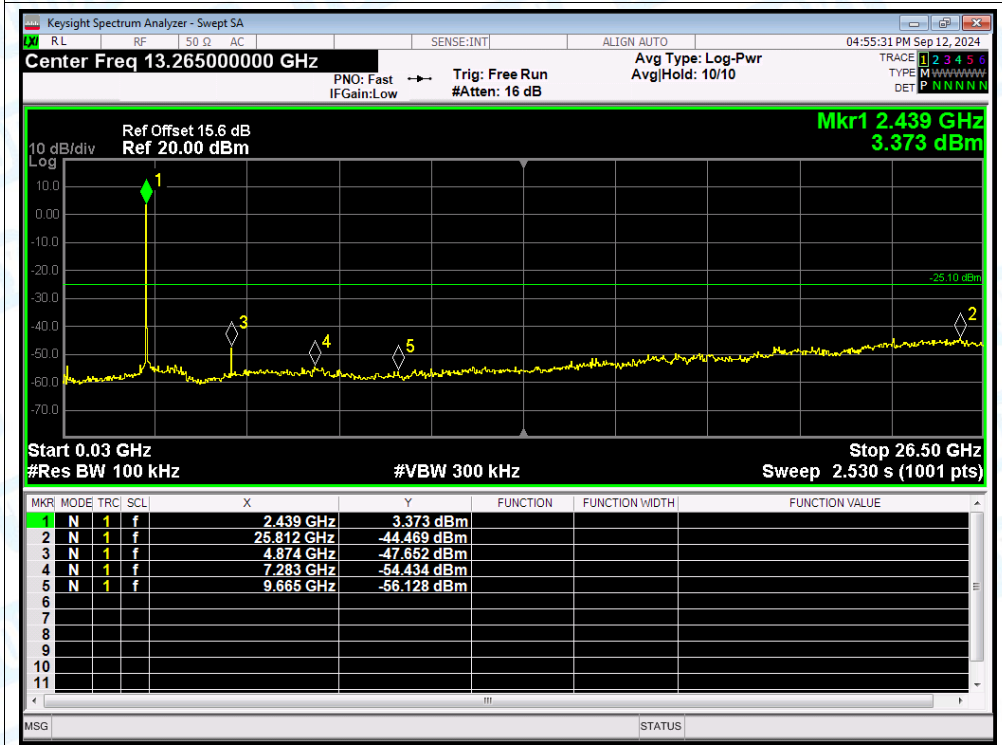
Tx. Spurious NVNT b 2412MHz Ant1 Emission



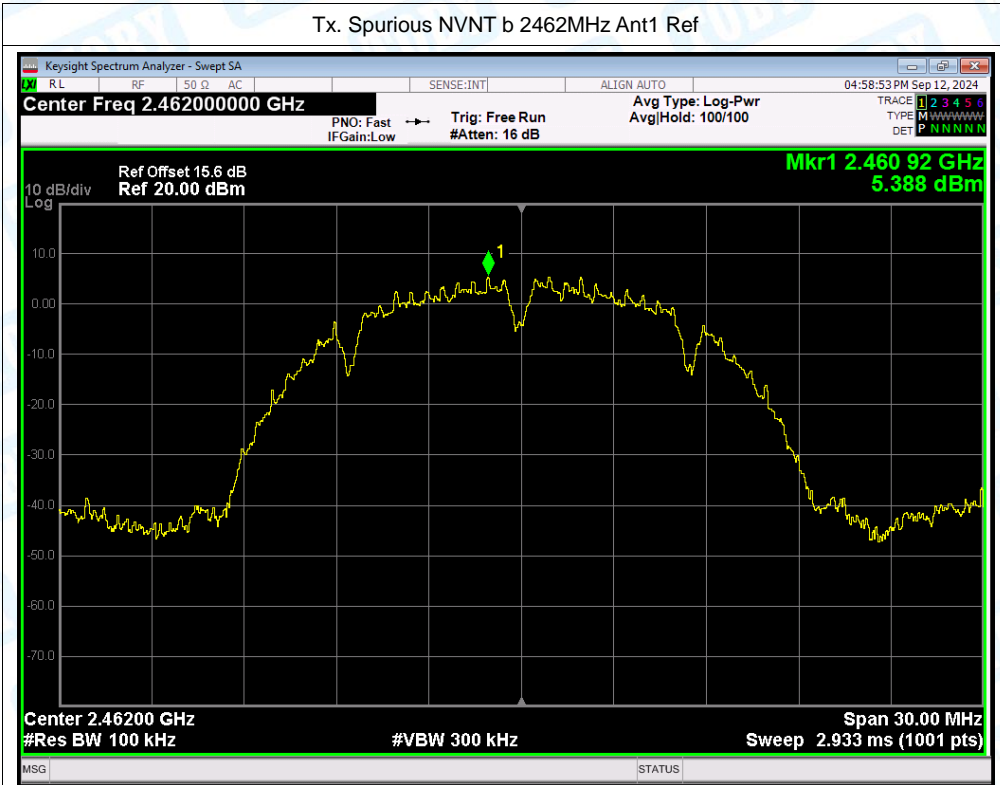
Tx. Spurious NVNT b 2437MHz Ant1 Ref



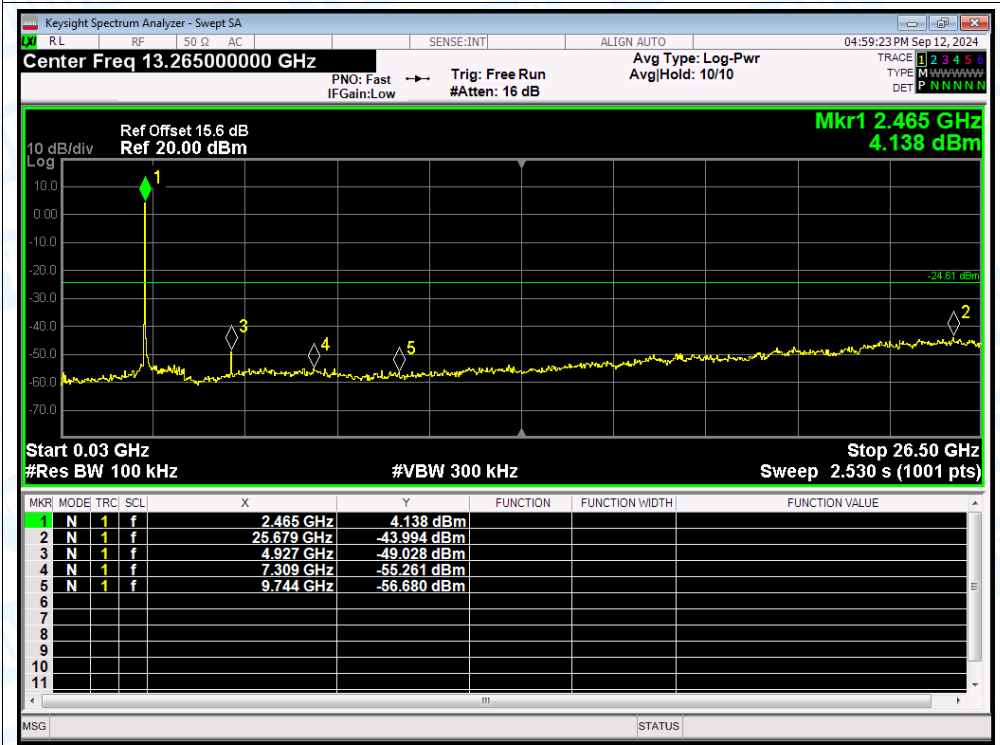
Tx. Spurious NVNT b 2437MHz Ant1 Emission



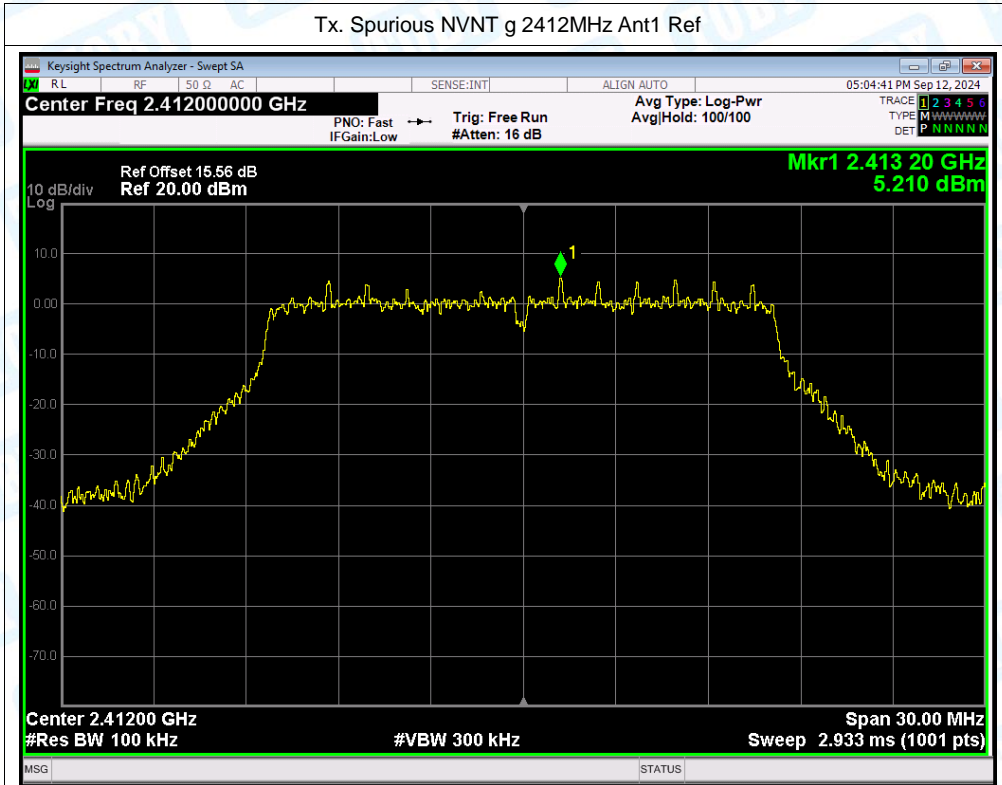
Tx. Spurious NVNT b 2462MHz Ant1 Ref



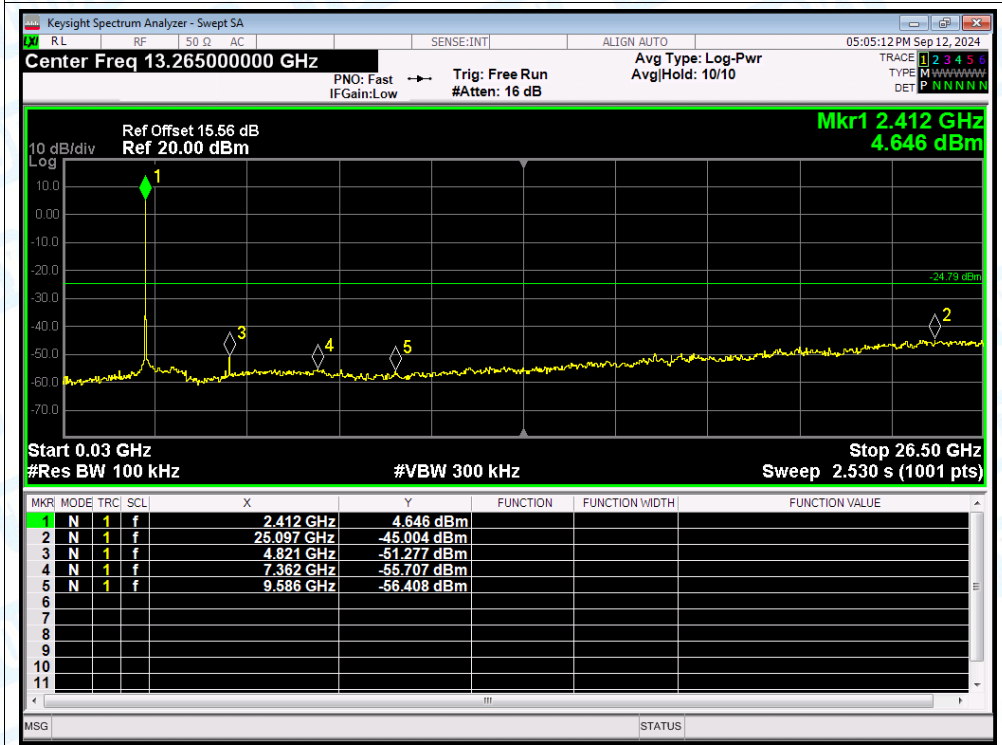
Tx. Spurious NVNT b 2462MHz Ant1 Emission



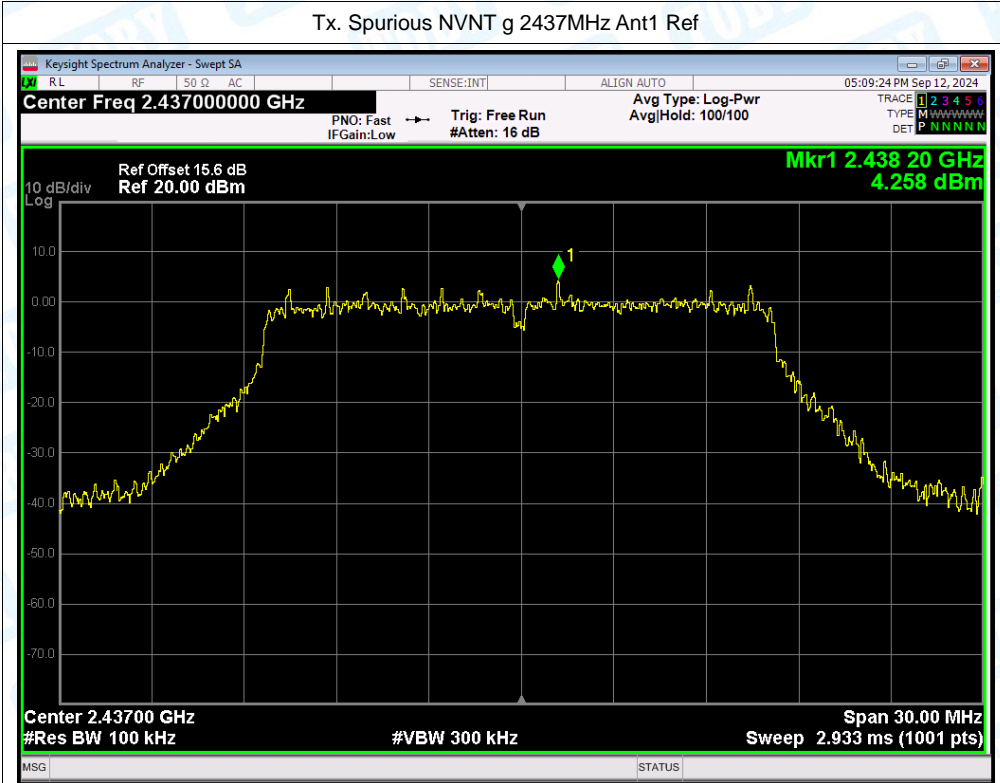
Tx. Spurious NVNT g 2412MHz Ant1 Ref



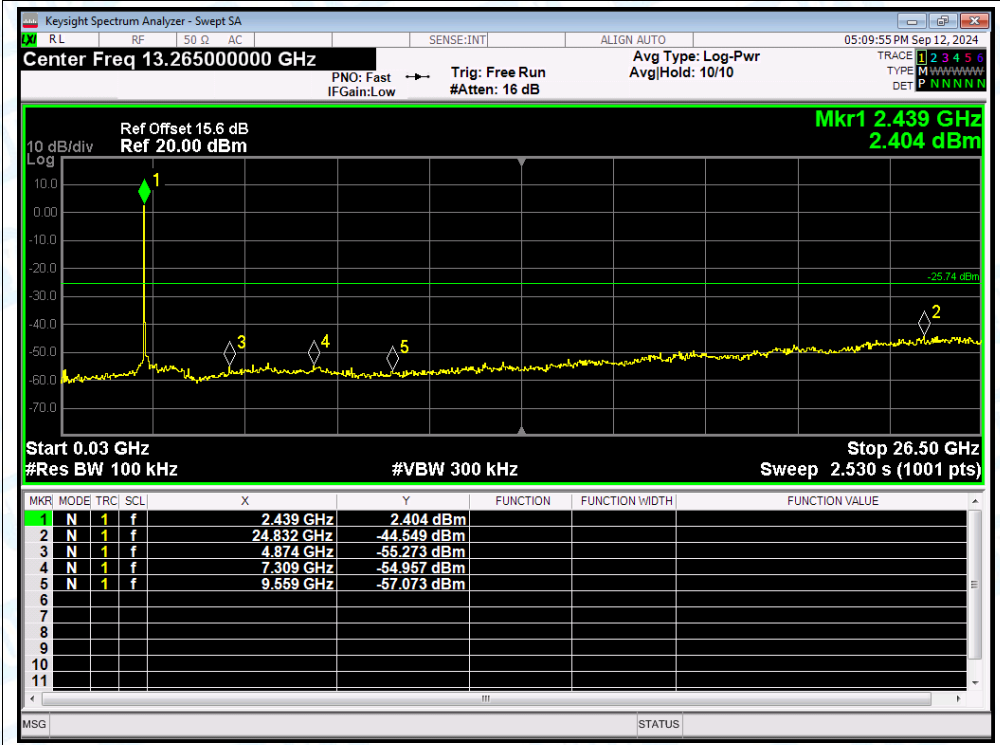
Tx. Spurious NVNT g 2412MHz Ant1 Emission



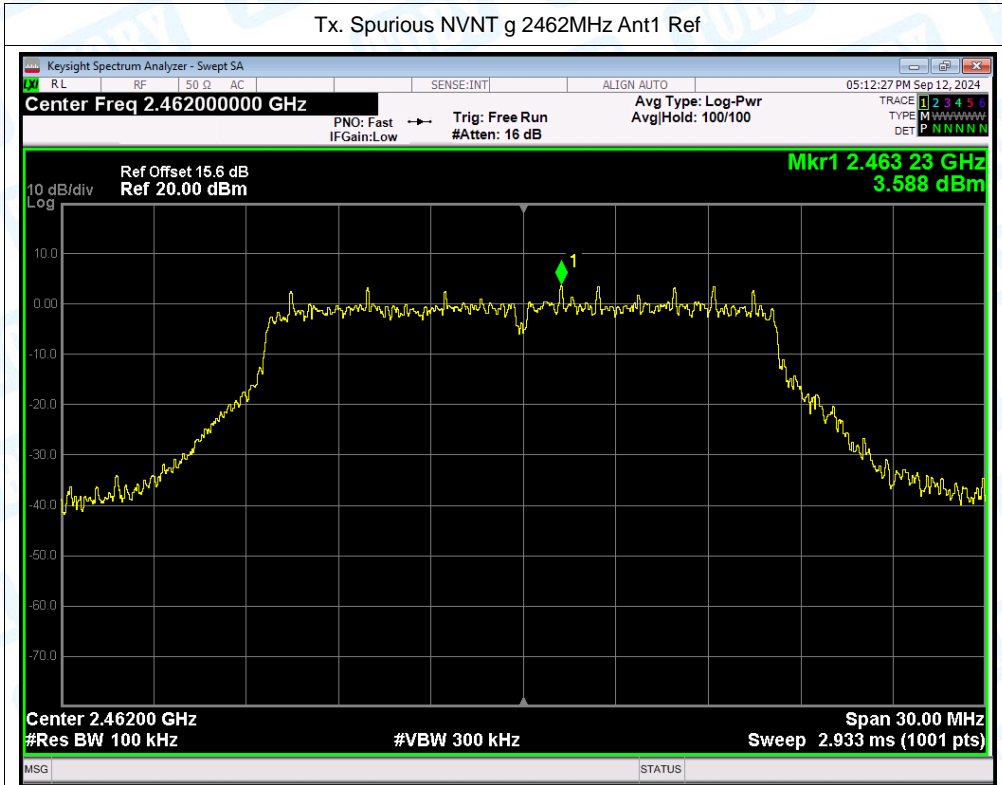
Tx. Spurious NVNT g 2437MHz Ant1 Ref



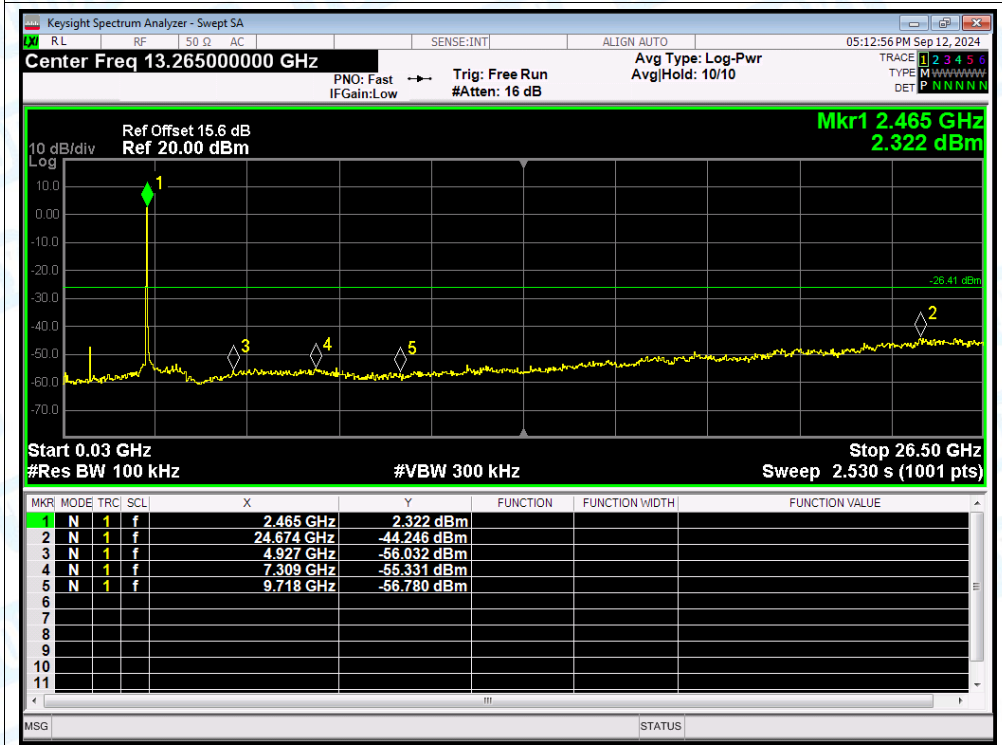
Tx. Spurious NVNT g 2437MHz Ant1 Emission



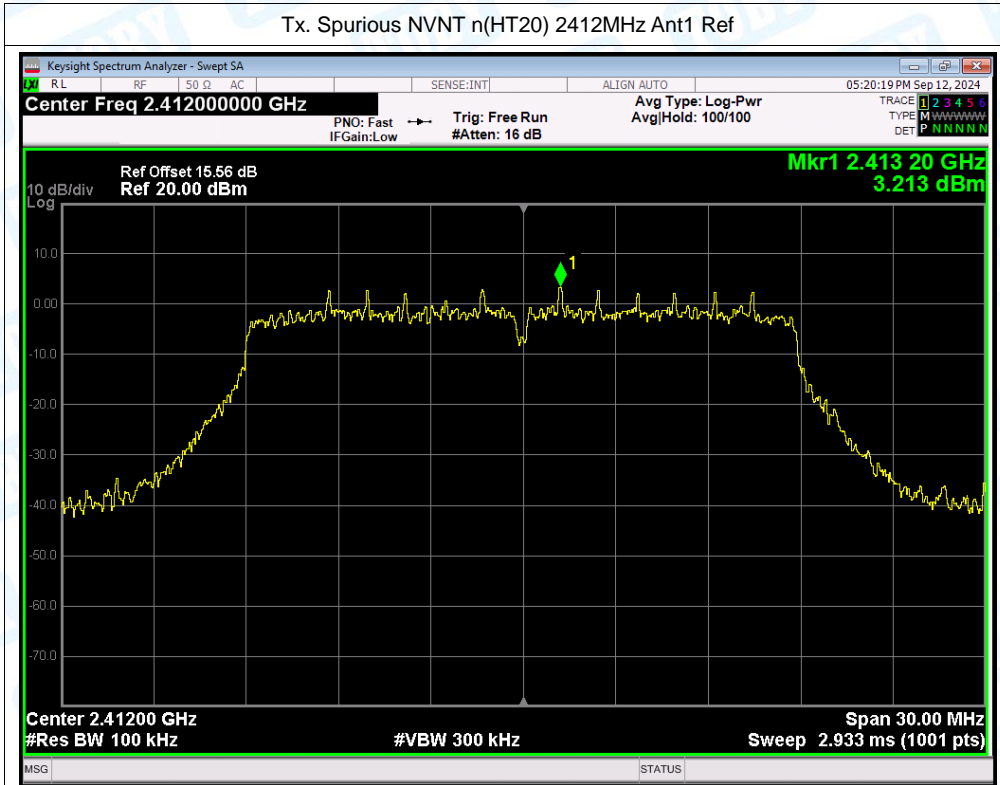
Tx. Spurious NVNT g 2462MHz Ant1 Ref



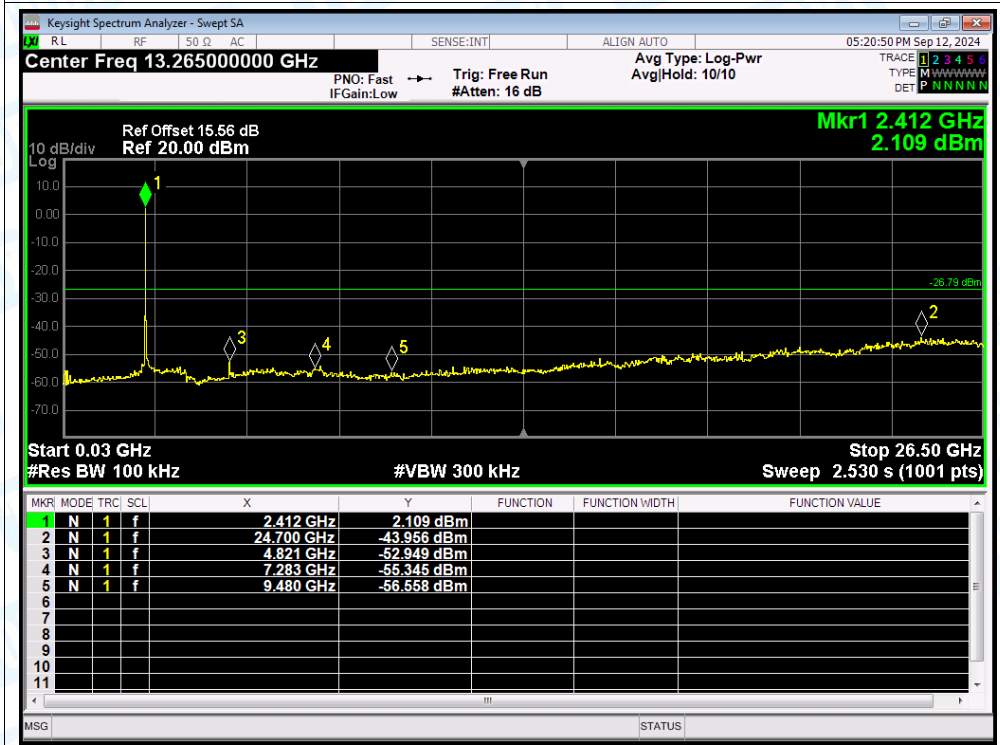
Tx. Spurious NVNT g 2462MHz Ant1 Emission



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

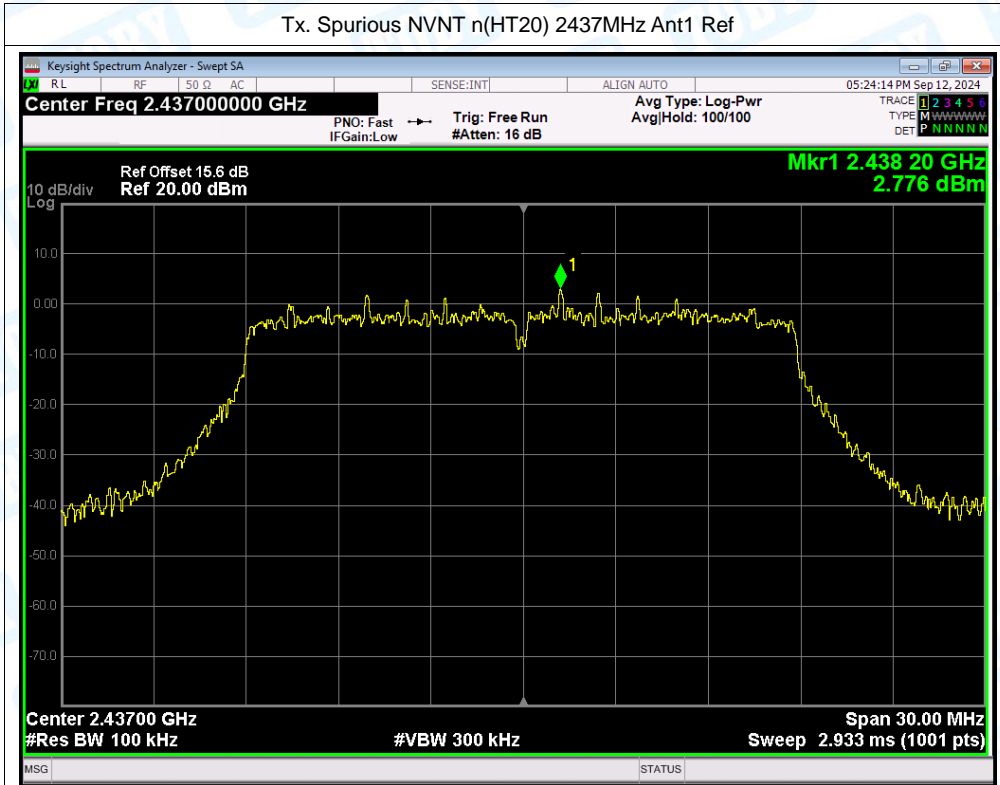


Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Emission

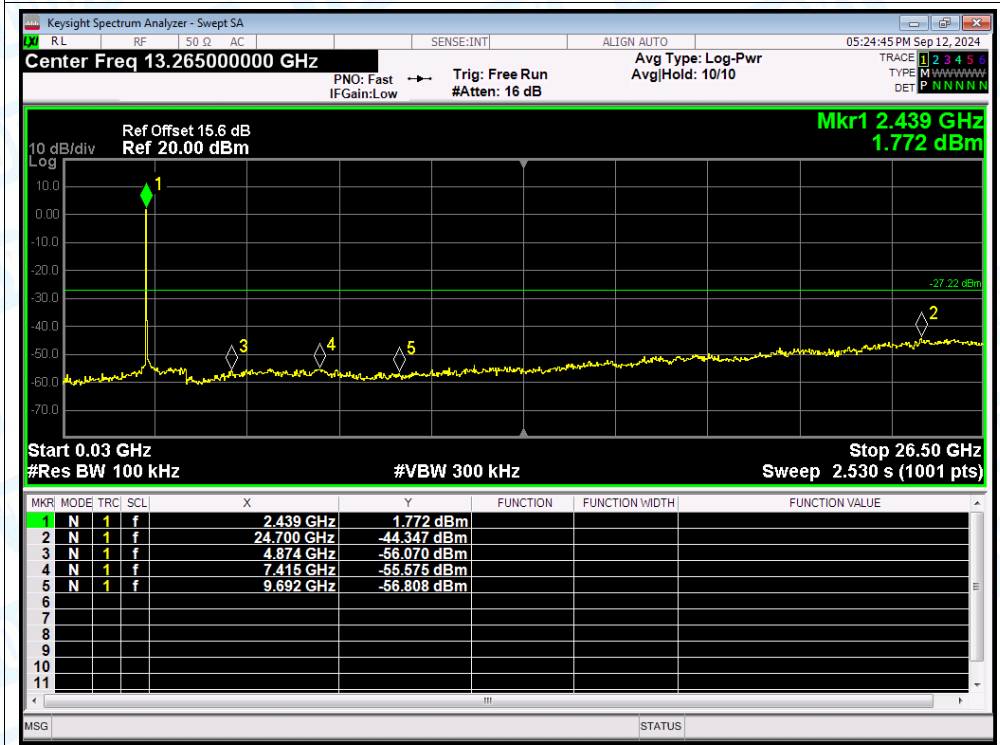




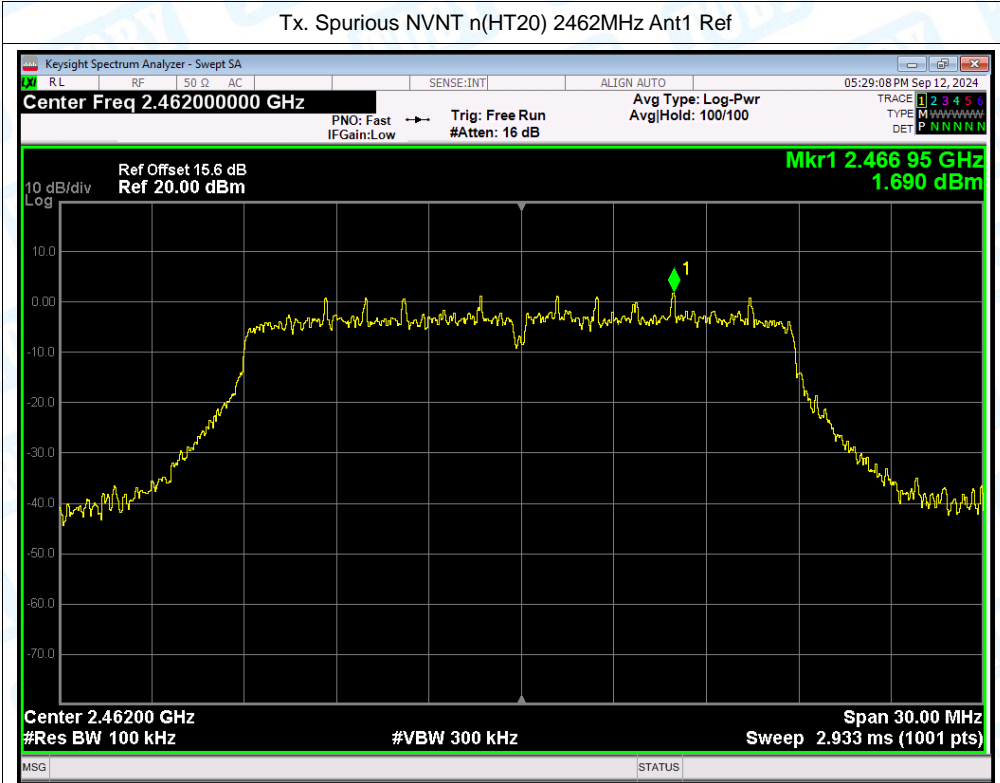
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



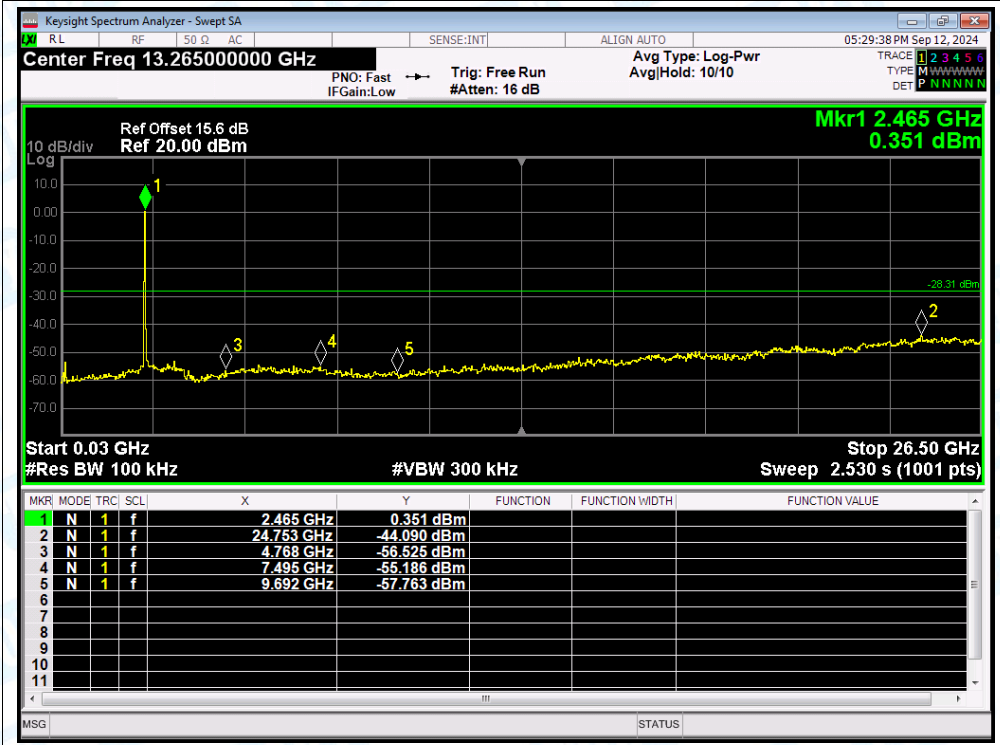
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Emission



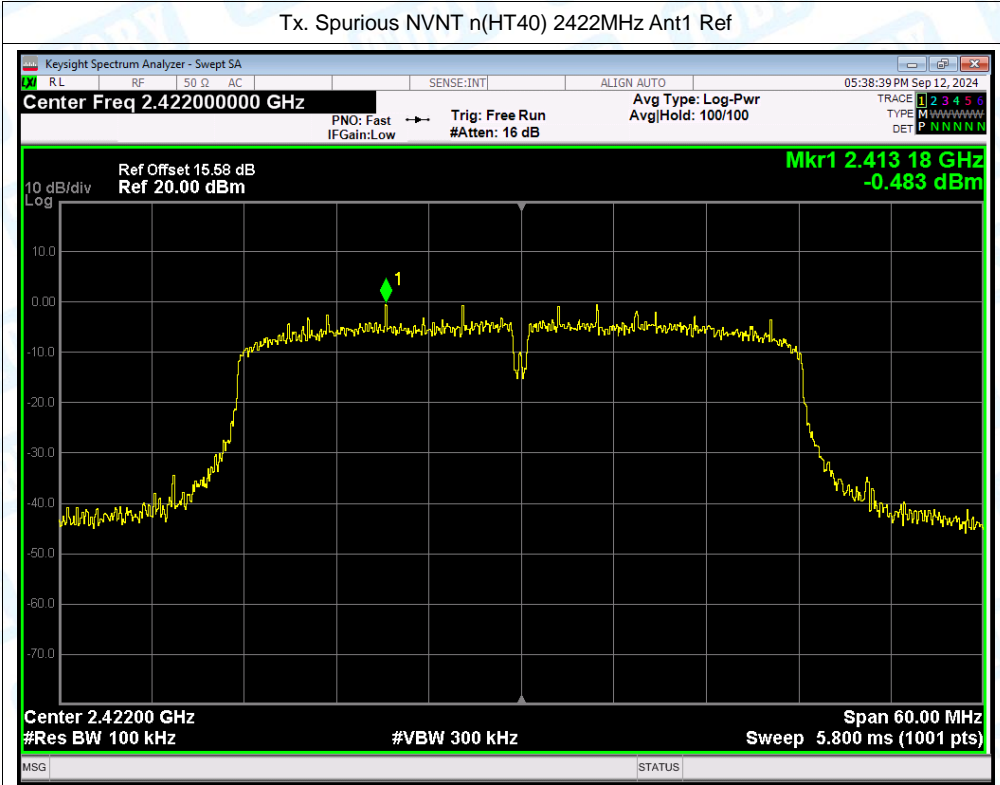
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref



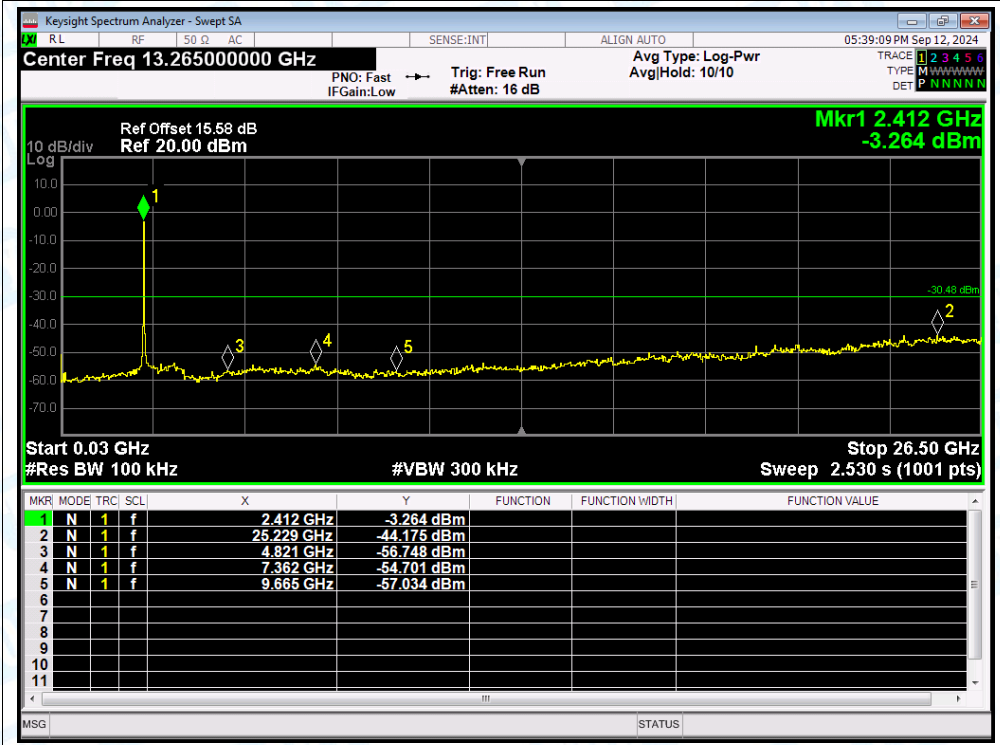
Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Emission



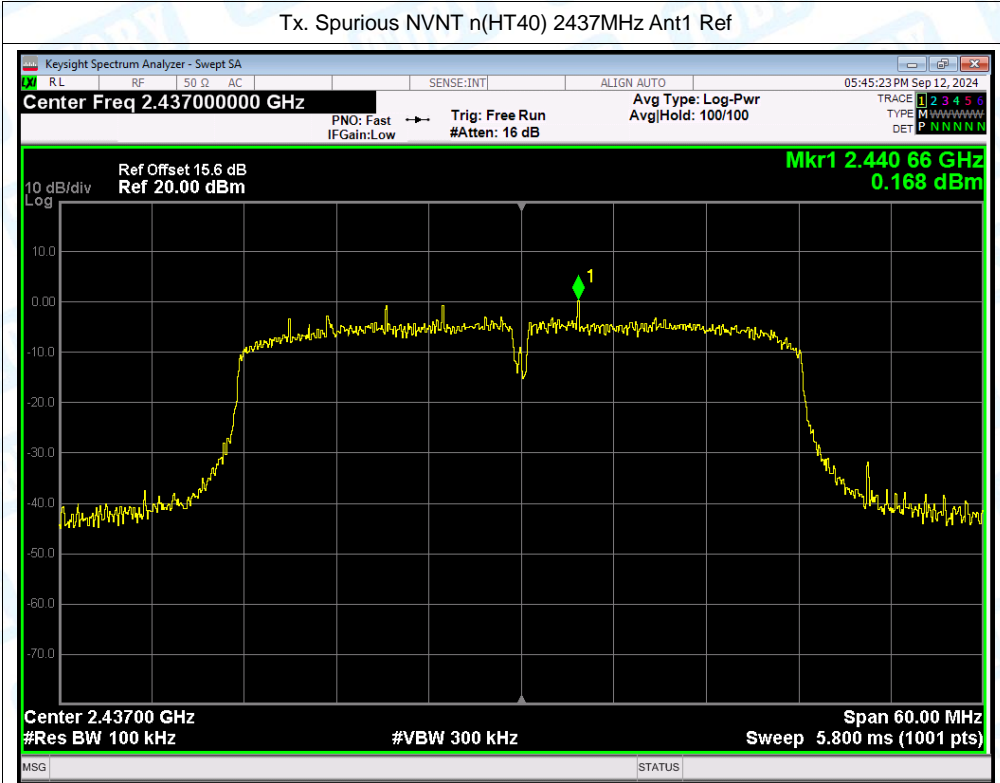
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Ref



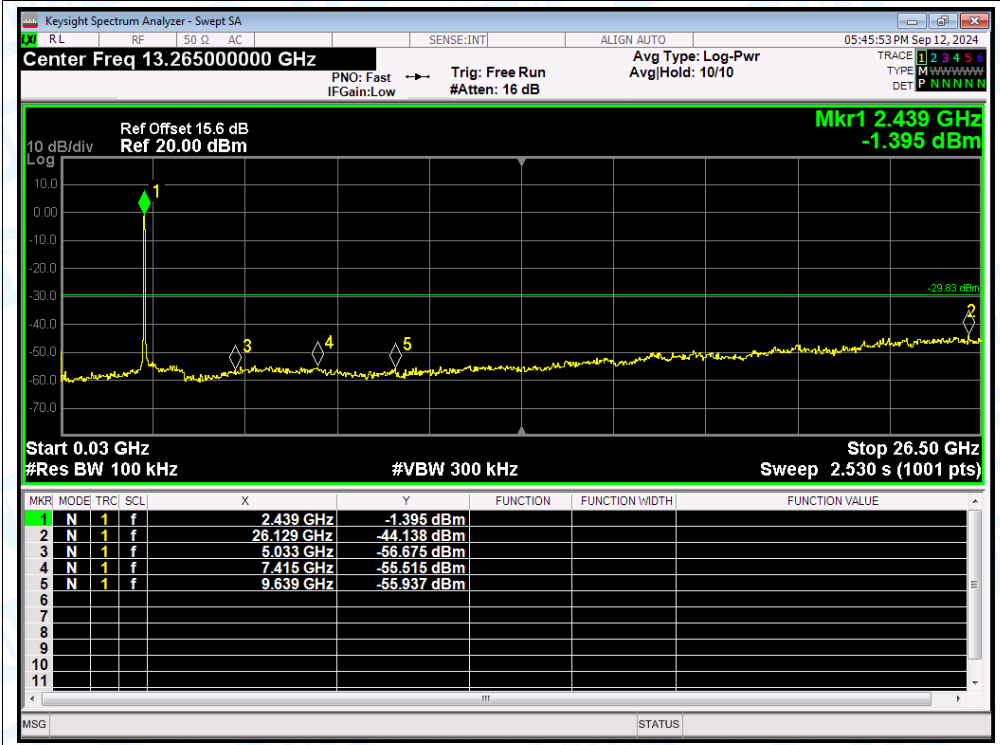
Tx. Spurious NVNT n(HT40) 2422MHz Ant1 Emission



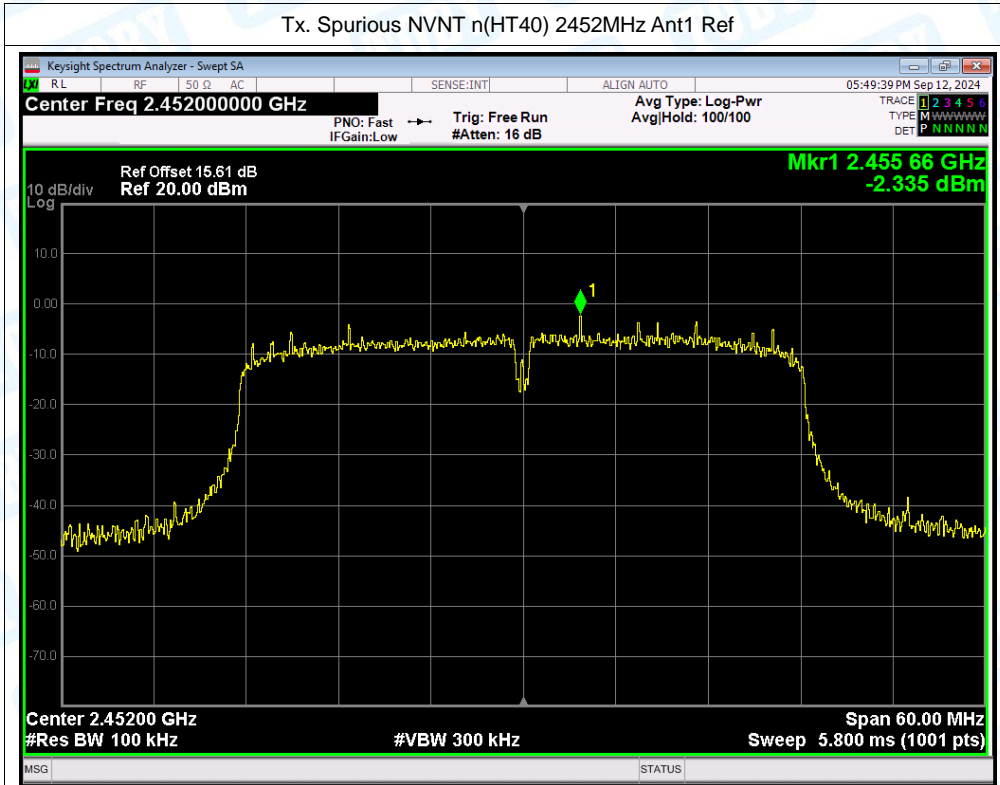
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Ref



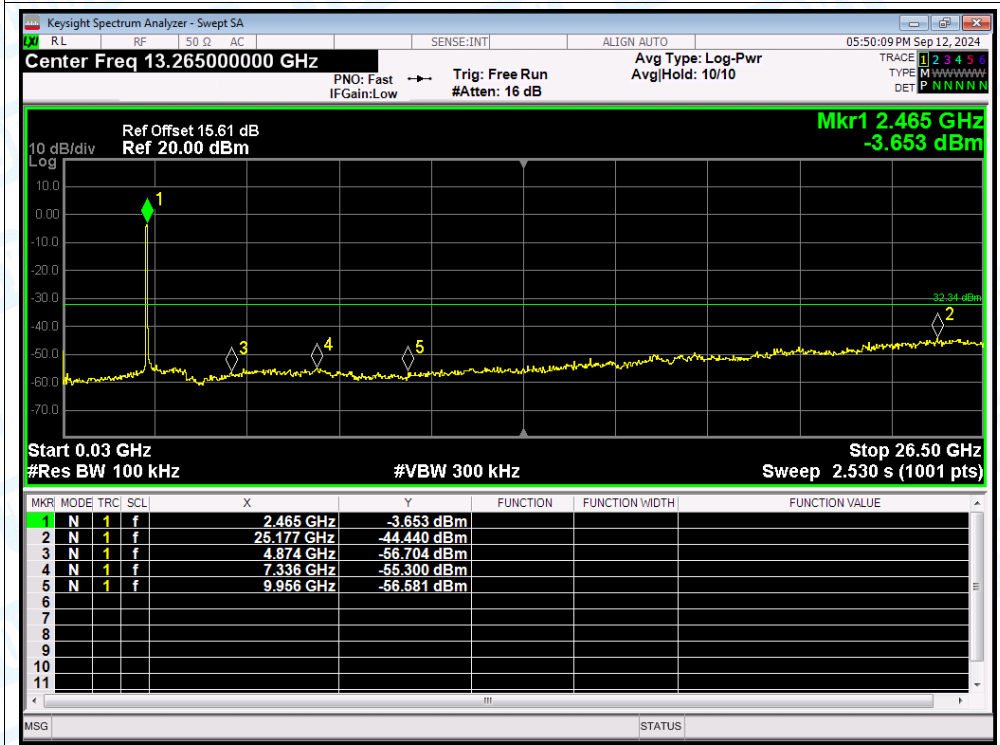
Tx. Spurious NVNT n(HT40) 2437MHz Ant1 Emission



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



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



## 8. Restrict Band

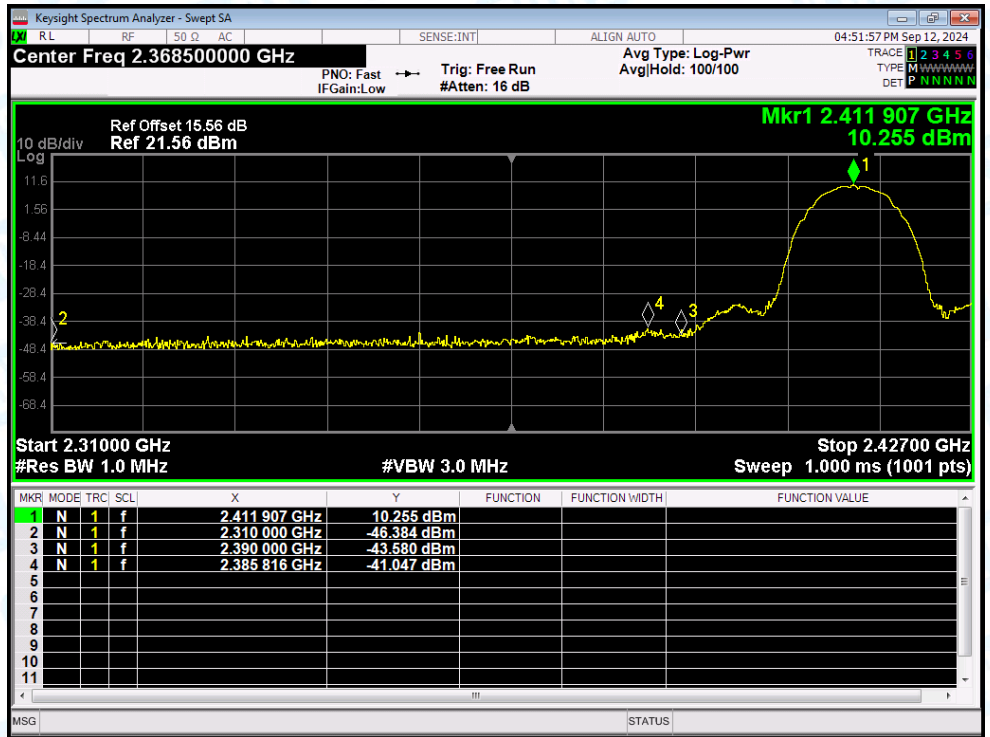
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-46.38	2	-	50.88	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-55.8	2	0.41	41.87	Average	54	Pass
NVNT	b	2412	Ant1	2385.816	-41.05	2	-	56.21	Peak	74	Pass
NVNT	b	2412	Ant1	2386.401	-49.22	2	0.41	48.45	Average	54	Pass
NVNT	b	2412	Ant1	2390	-43.58	2	-	53.68	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-51.11	2	0.41	46.56	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-41.19	2	-	56.07	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-49.4	2	0.37	48.23	Average	54	Pass
NVNT	b	2462	Ant1	2487.969	-39.25	2	-	58.01	Peak	74	Pass
NVNT	b	2462	Ant1	2487.545	-48.57	2	0.37	49.06	Average	54	Pass
NVNT	b	2462	Ant1	2500	-43.54	2	-	53.72	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-51.36	2	0.37	46.27	Average	54	Pass
NVNT	g	2412	Ant1	2310	-46.79	2	-	50.47	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-57.03	2	0.41	40.64	Average	54	Pass
NVNT	g	2412	Ant1	2389.443	-31.7	2	-	65.56	Peak	74	Pass
NVNT	g	2412	Ant1	2389.677	-43.73	2	0.41	53.94	Average	54	Pass
NVNT	g	2412	Ant1	2390	-30.4	2	-	66.86	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-44.56	2	0.41	53.11	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-35.42	2	-	61.84	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-44.04	2	0.34	53.56	Average	54	Pass
NVNT	g	2462	Ant1	2483.623	-32.72	2	-	64.54	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-44.04	2	0.34	53.56	Average	54	Pass
NVNT	g	2462	Ant1	2500	-43.68	2	-	53.58	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-51.93	2	0.34	45.67	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-50.52	2	-	46.74	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-58.4	2	0.34	39.2	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2389.794	-34.08	2	-	63.18	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2389.911	-43.95	2	0.34	53.65	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-34.65	2	-	62.61	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-43.88	2	0.34	53.72	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-33.72	2	-	63.54	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-44.74	2	0.41	52.93	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.57	-30.58	2	-	66.68	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.676	-44.21	2	0.41	53.46	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-44.37	2	-	52.89	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-52.71	2	0.41	44.96	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2310	-49.83	2	-	47.43	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2310	-57.94	2	0.05	39.37	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2389.804	-34.58	2	-	62.68	Peak	74	Pass
NVNT	n(HT40)	2422	Ant1	2389.662	-43.53	2	0.05	53.78	Average	54	Pass
NVNT	n(HT40)	2422	Ant1	2390	-35.27	2	-	61.99	Peak	74	Pass

NVNT	n(HT40)	2422	Ant1	2390	-43.55	2	0.05	53.76	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-35.82	2	-	61.44	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2483.5	-44.3	2	0.03	52.99	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2484.244	-34.66	2	-	62.6	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2484.088	-43.94	2	0.03	53.35	Average	54	Pass
NVNT	n(HT40)	2452	Ant1	2500	-42.87	2	-	54.39	Peak	74	Pass
NVNT	n(HT40)	2452	Ant1	2500	-52.35	2	0.03	44.94	Average	54	Pass

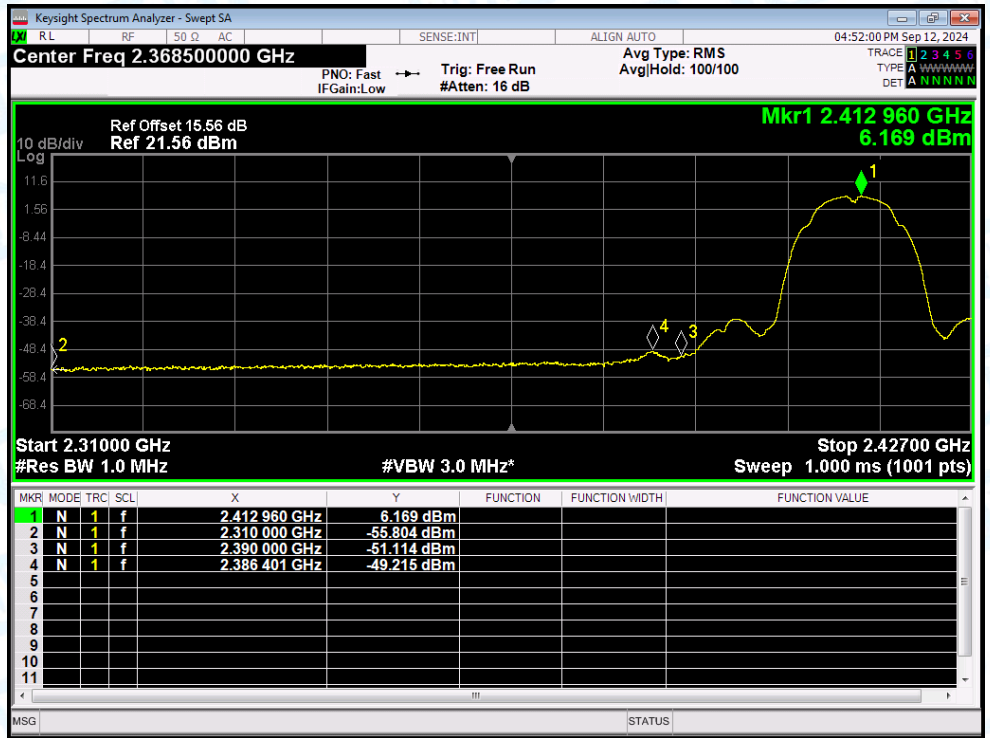
Note: The Duty Cycle Factor is compensated in the graph.

Test Graphs

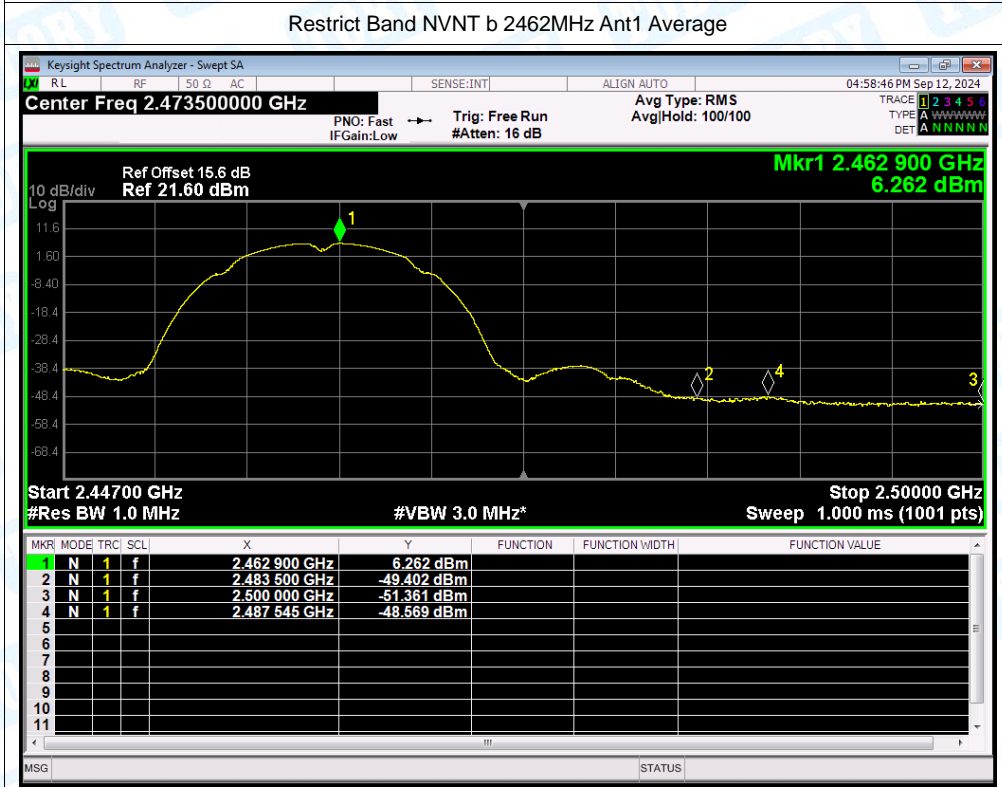
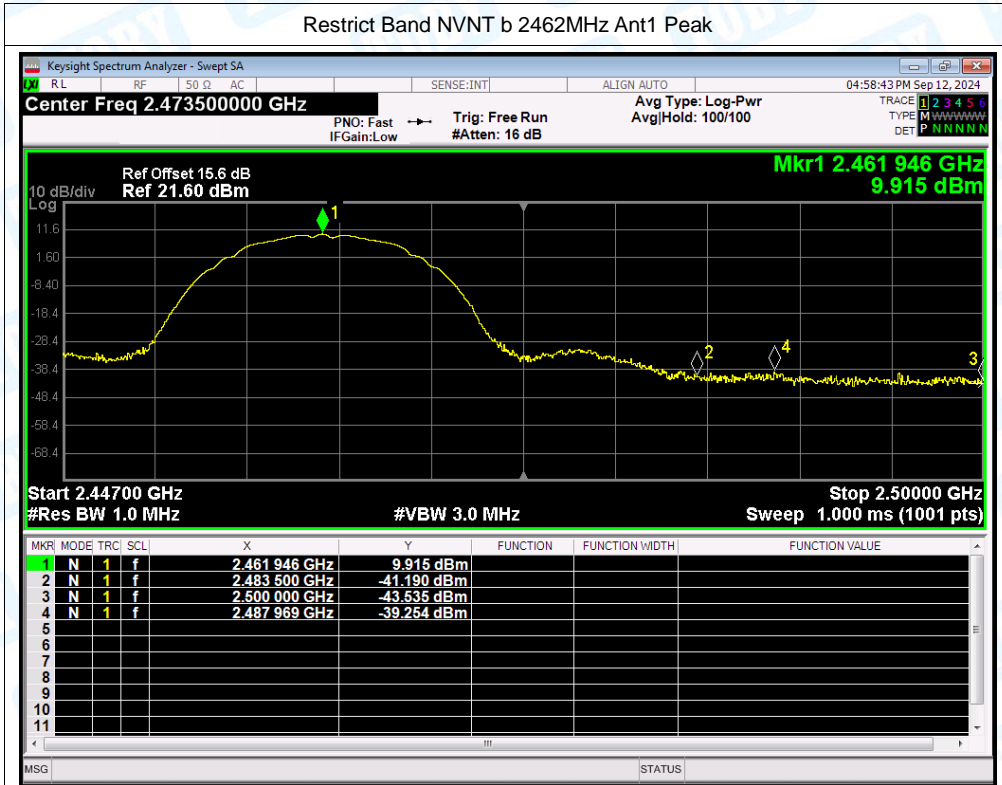
Restrict Band NVNT b 2412MHz Ant1 Peak



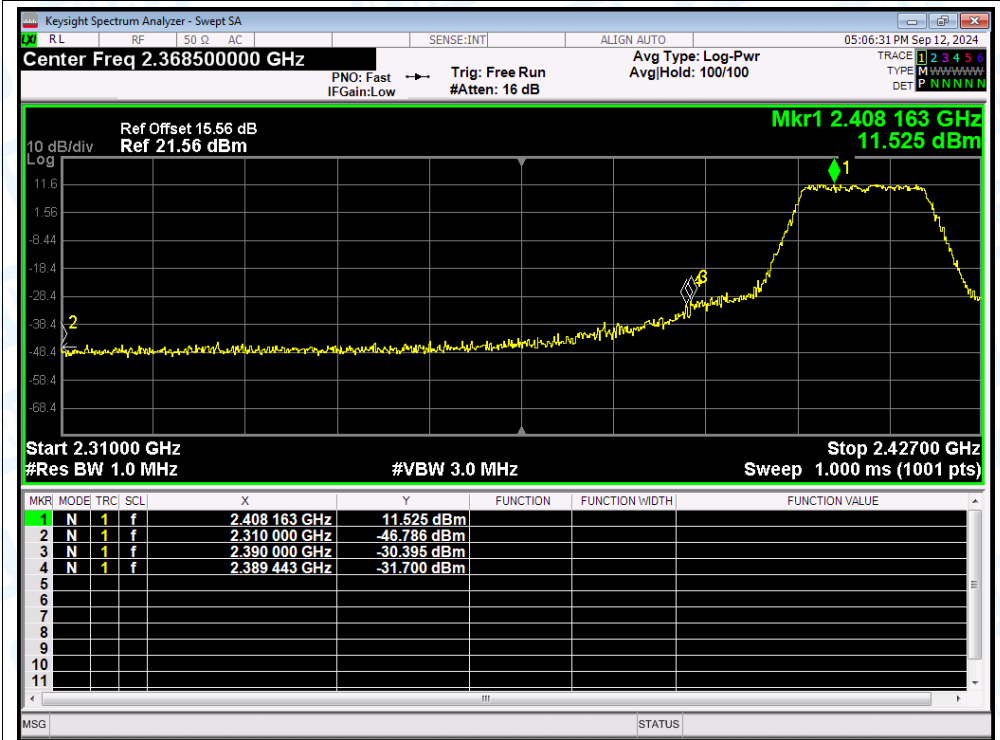
Restrict Band NVNT b 2412MHz Ant1 Average



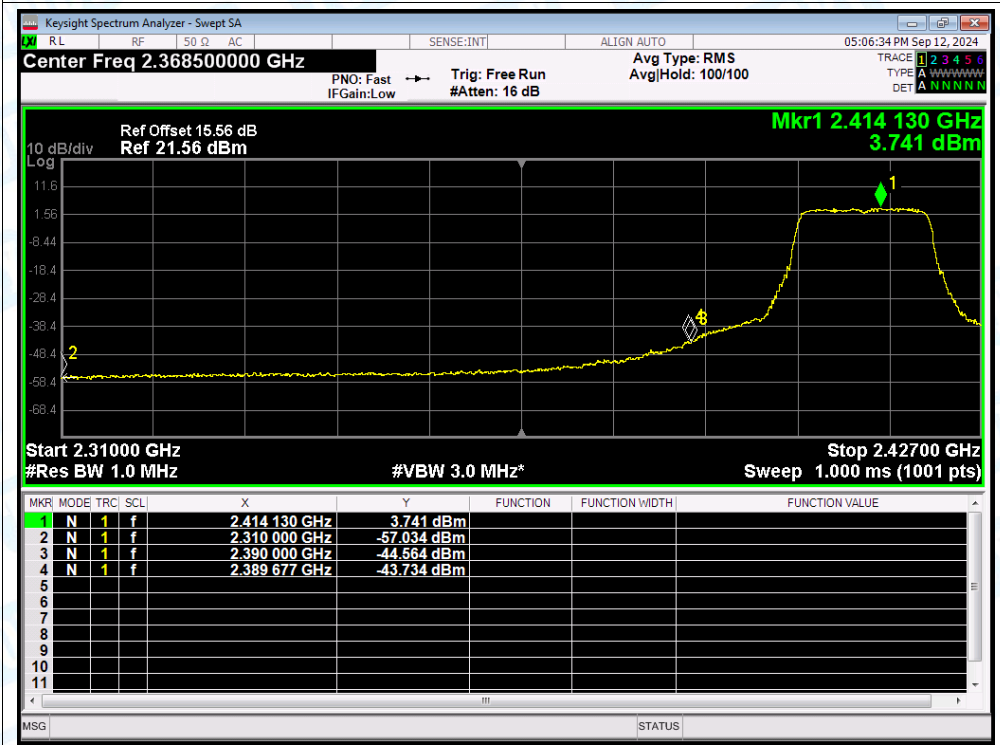




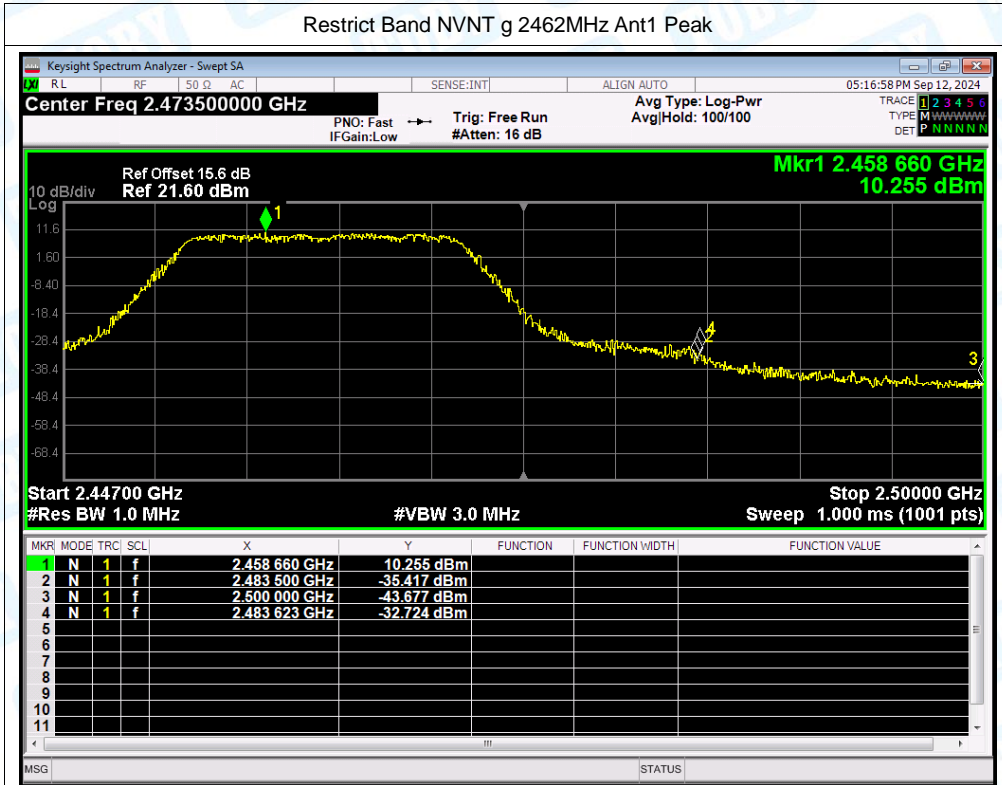
Restrict Band NVNT g 2412MHz Ant1 Peak



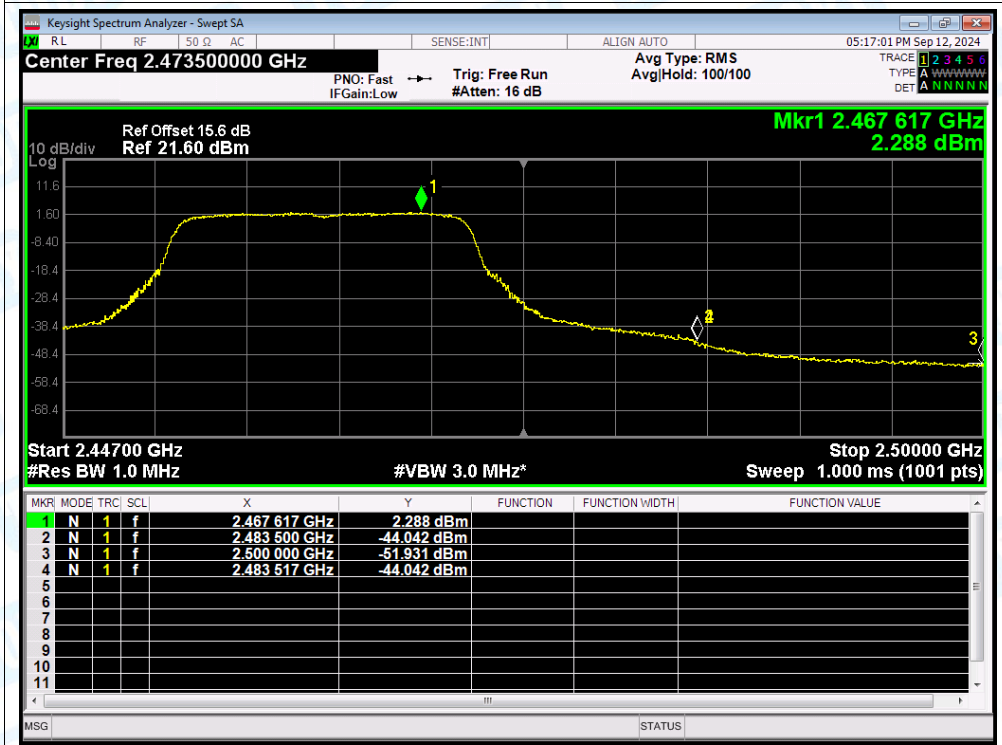
Restrict Band NVNT g 2412MHz Ant1 Average



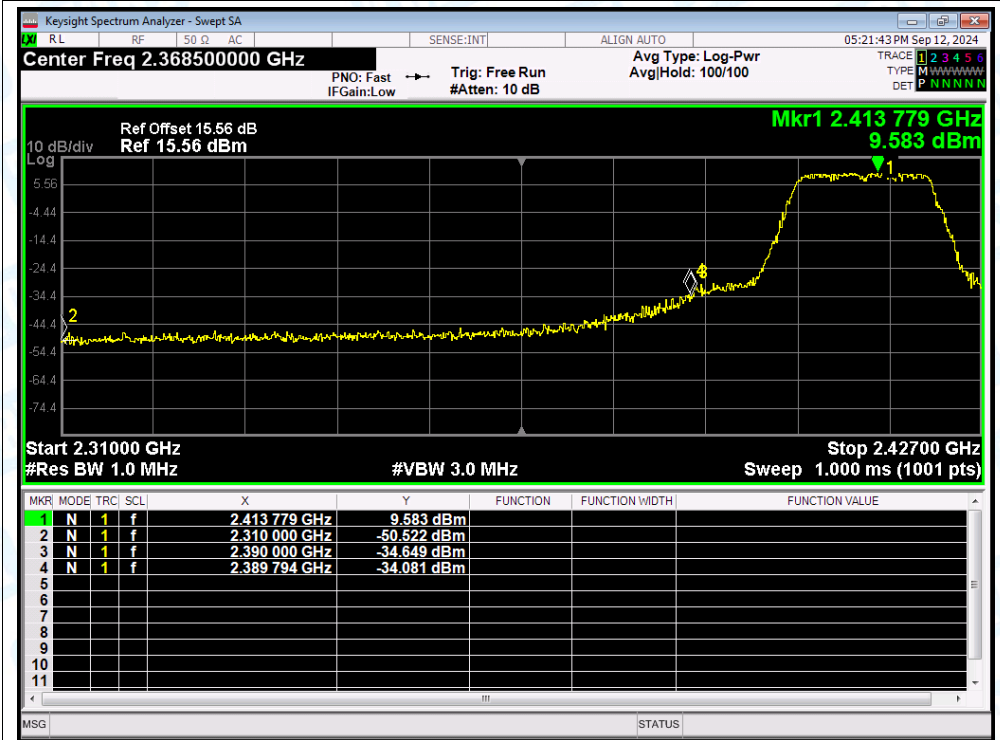
Restrict Band NVNT g 2462MHz Ant1 Peak



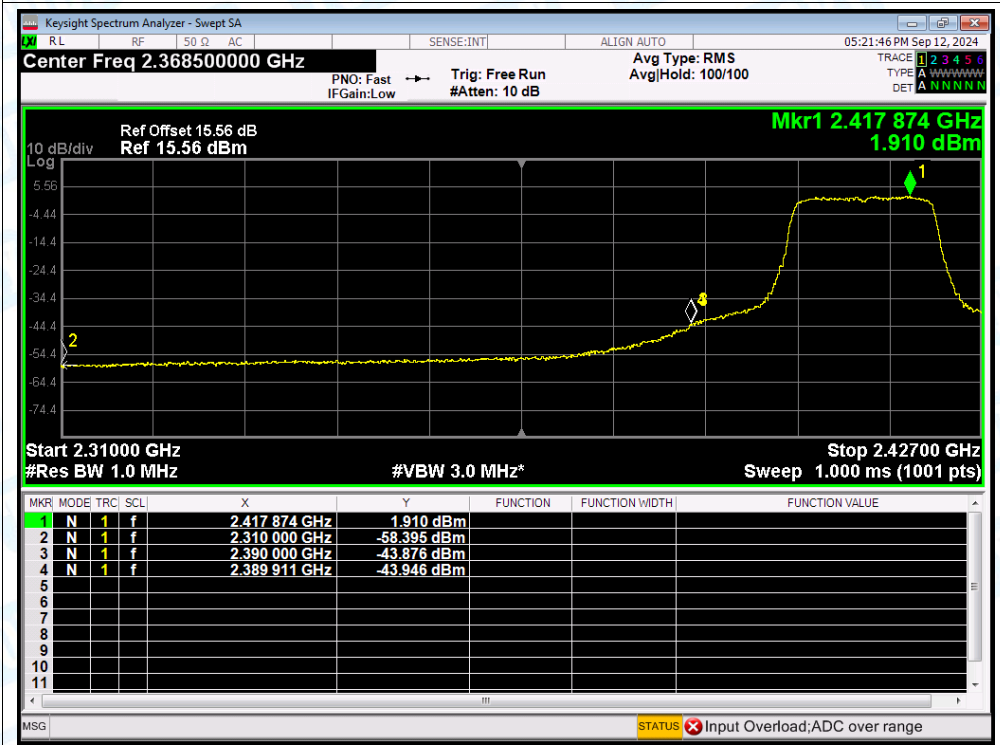
Restrict Band NVNT g 2462MHz Ant1 Average



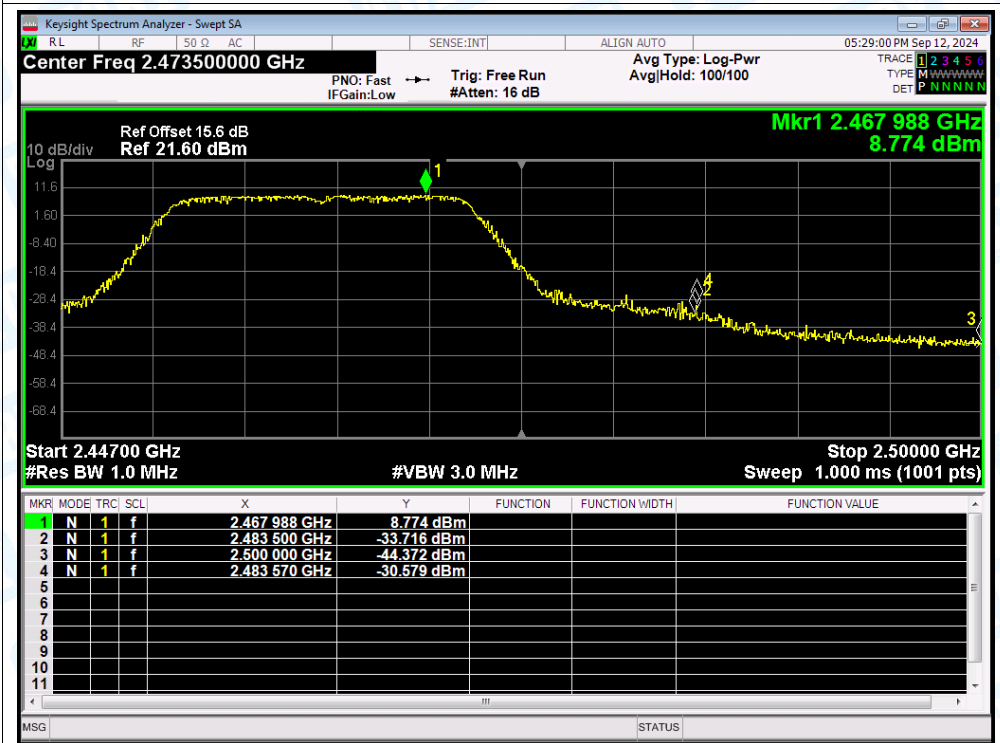
Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak



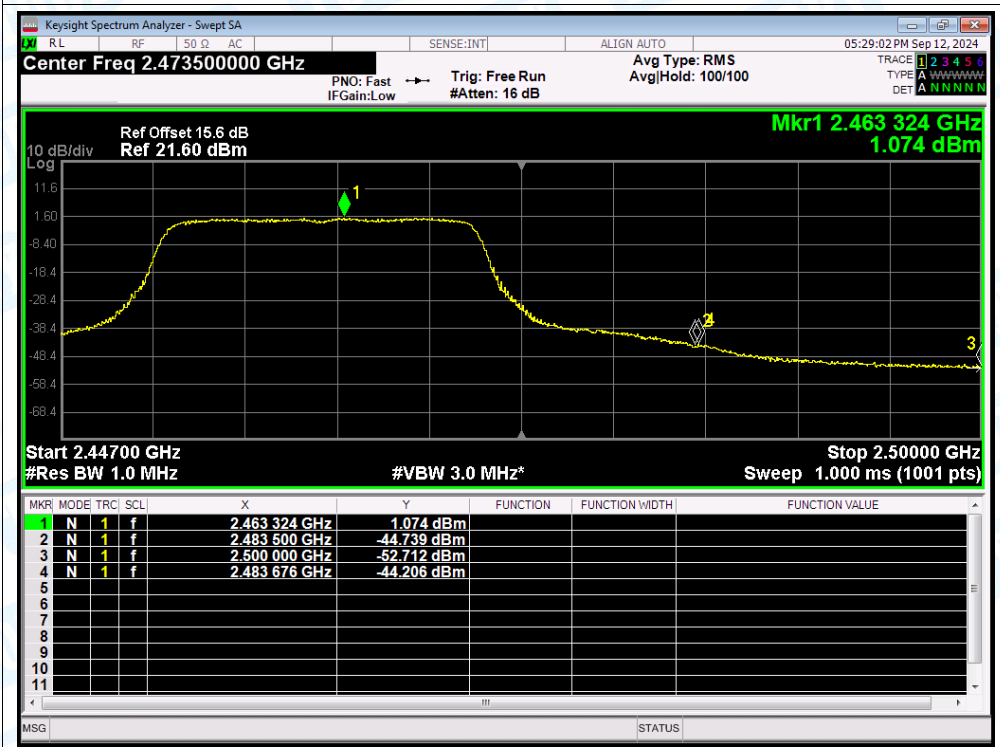
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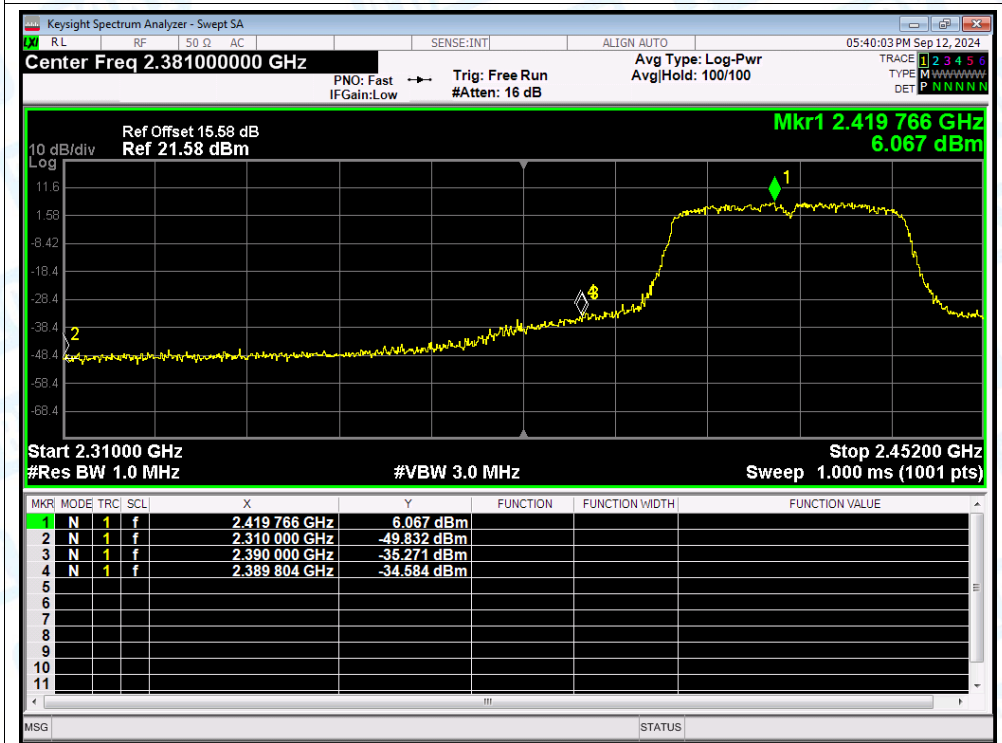
Restrict Band NVNT n(HT20) 2462MHz Ant1 Peak



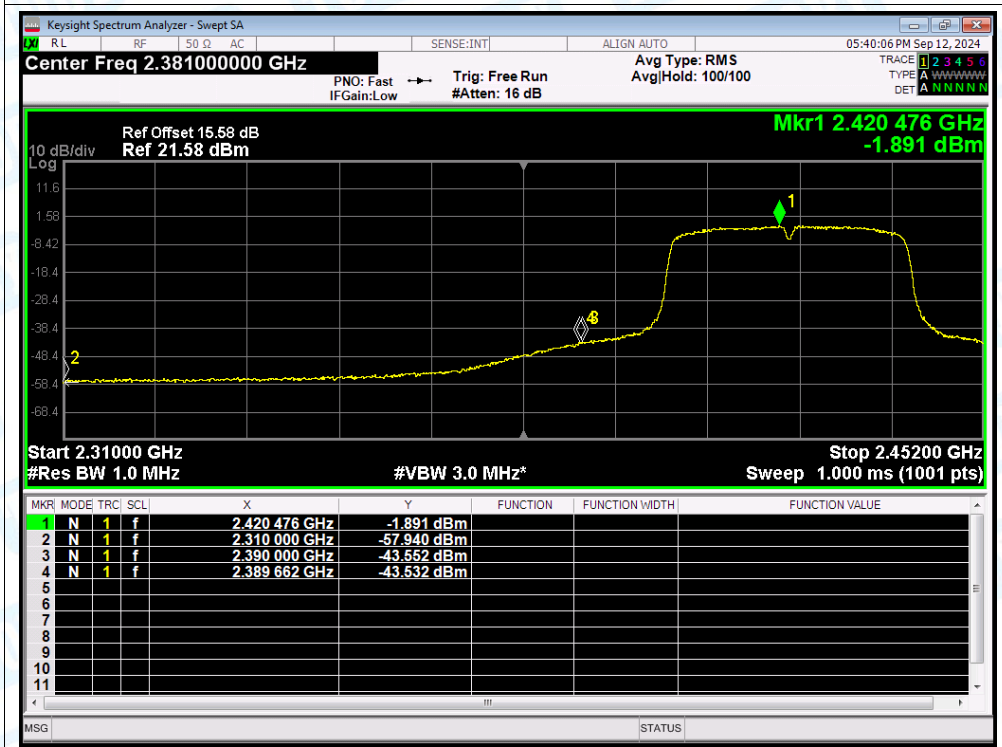
Restrict Band NVNT n(HT20) 2462MHz Ant1 Average

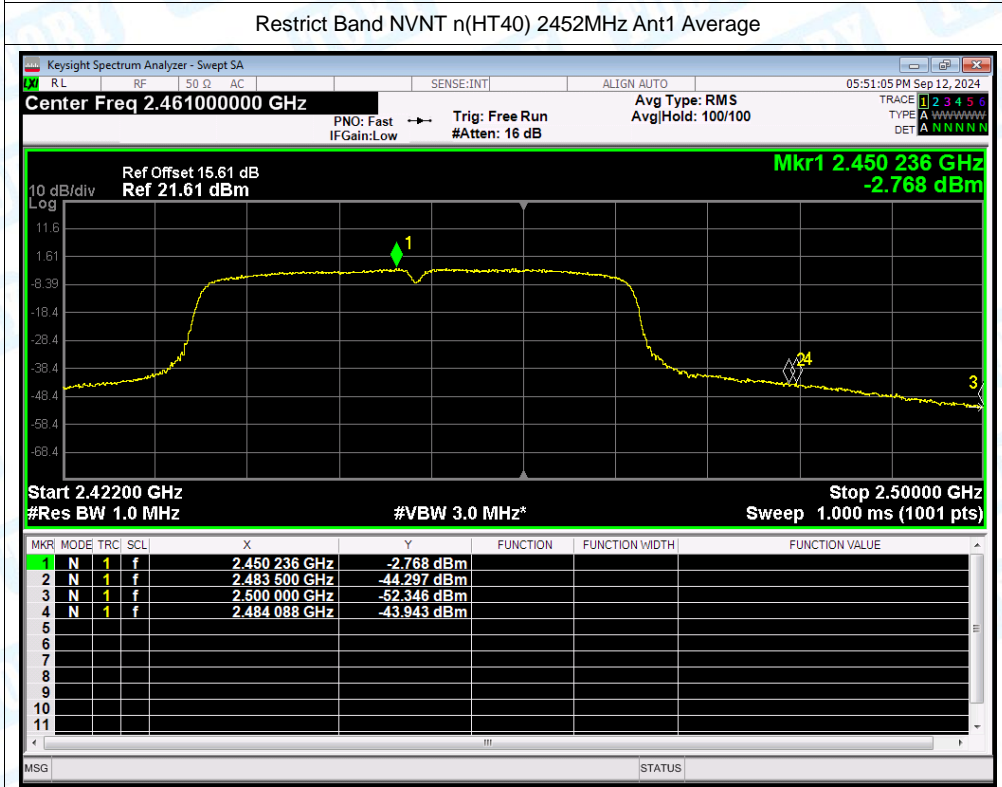
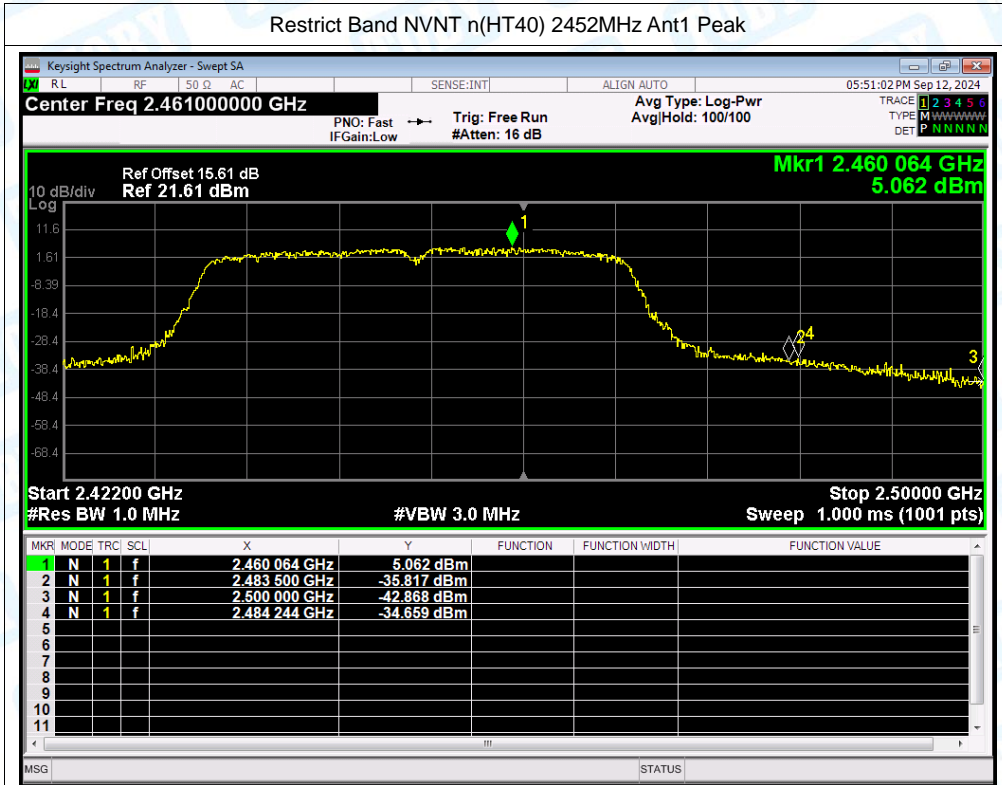


Restrict Band NVNT n(HT40) 2422MHz Ant1 Peak



Restrict Band NVNT n(HT40) 2422MHz Ant1 Average





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