

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	FRA-WB01
Sample ID:	HC-C-202606-0467-01-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	52.1%
Test Voltage:	DC 3.87V
Test Engineer:	Kael Li
Note: For a more detailed features description, please refer to the report TBR-C-202606-0467-156 The report only show the worst case data.	

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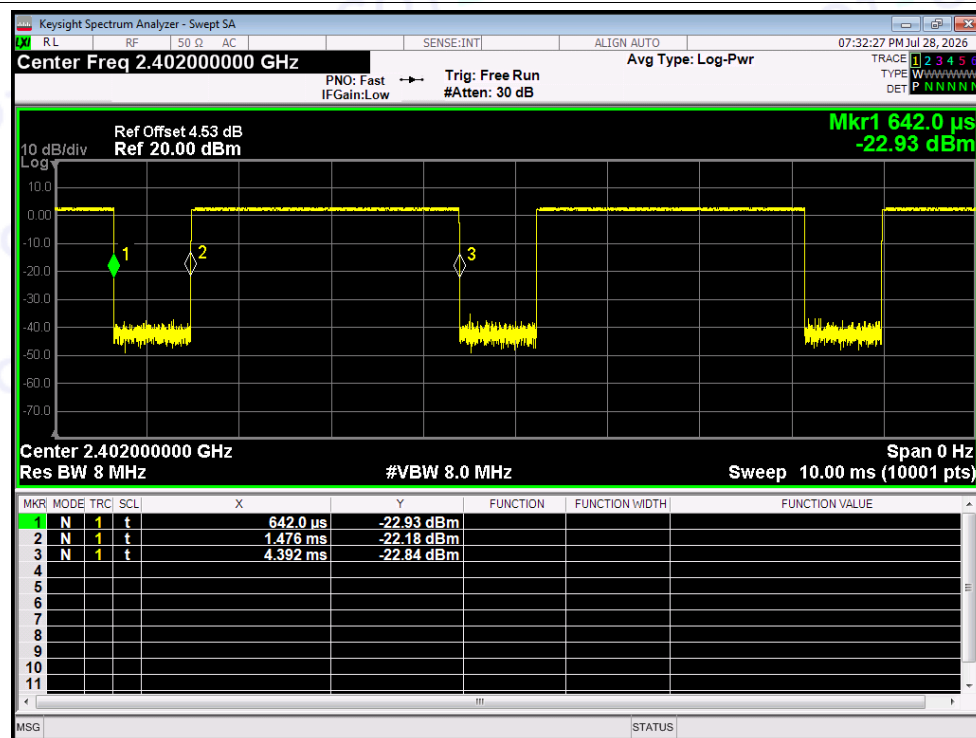
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1. Duty Cycle

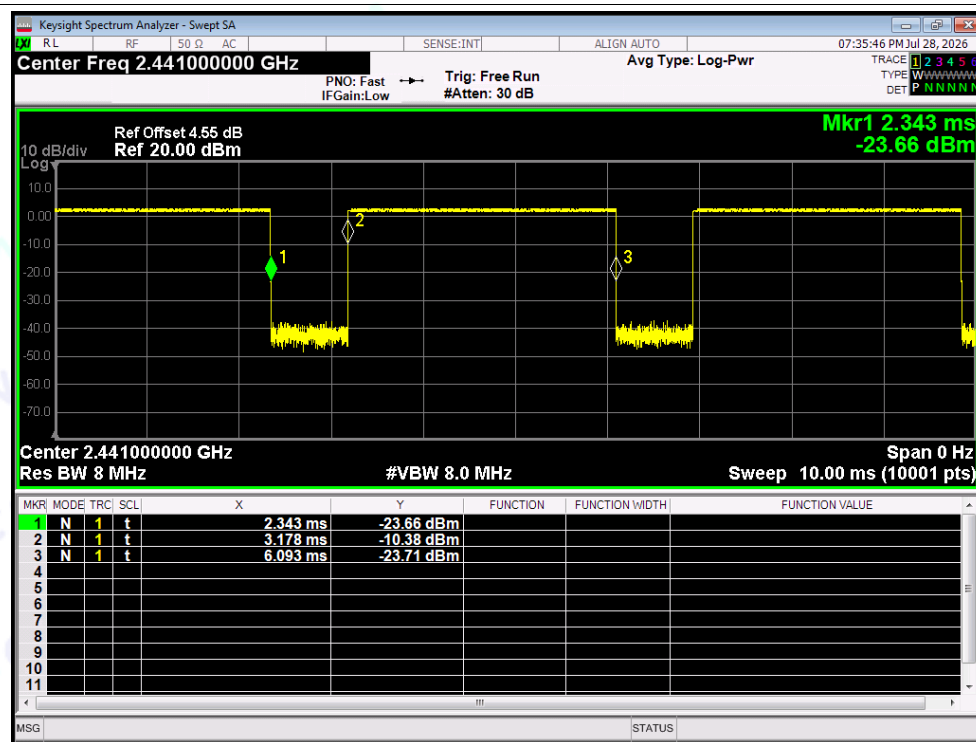
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.76	1.09	0.34
NVNT	1-DH5	2441	Ant1	77.73	1.09	0.34
NVNT	1-DH5	2480	Ant1	77.73	1.09	0.34
NVNT	2-DH5	2402	Ant1	77.92	1.08	0.34
NVNT	2-DH5	2441	Ant1	77.89	1.09	0.34
NVNT	2-DH5	2480	Ant1	77.89	1.09	0.34
NVNT	3-DH5	2402	Ant1	77.92	1.08	0.34
NVNT	3-DH5	2441	Ant1	77.92	1.08	0.34
NVNT	3-DH5	2480	Ant1	77.95	1.08	0.34

Test Graphs

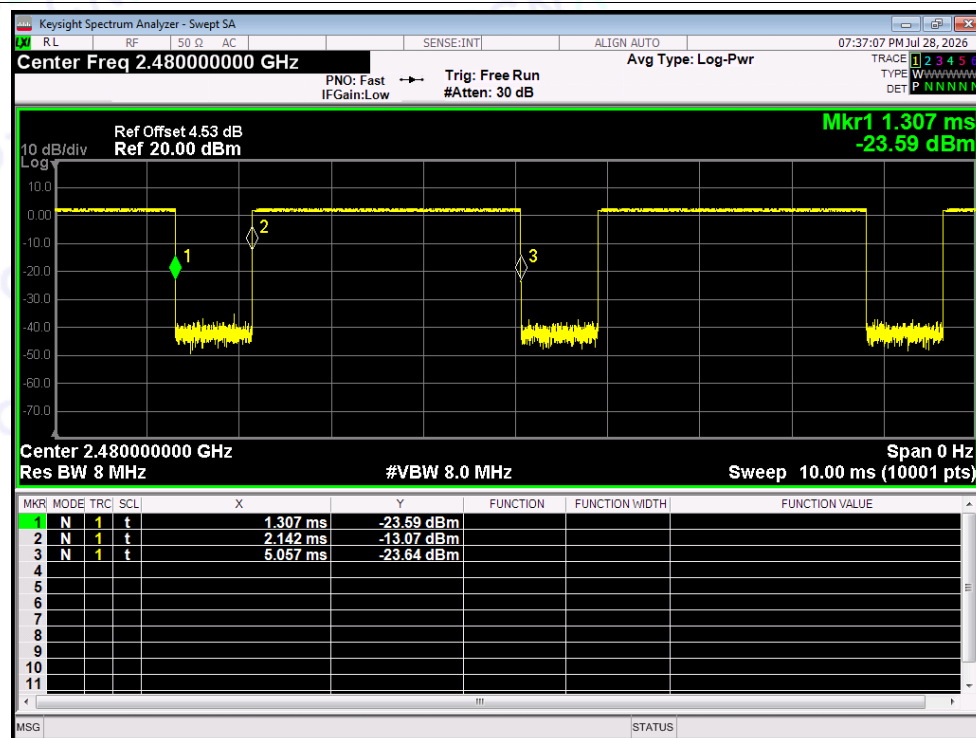
Duty Cycle NVNT 1-DH5 2402MHz Ant1



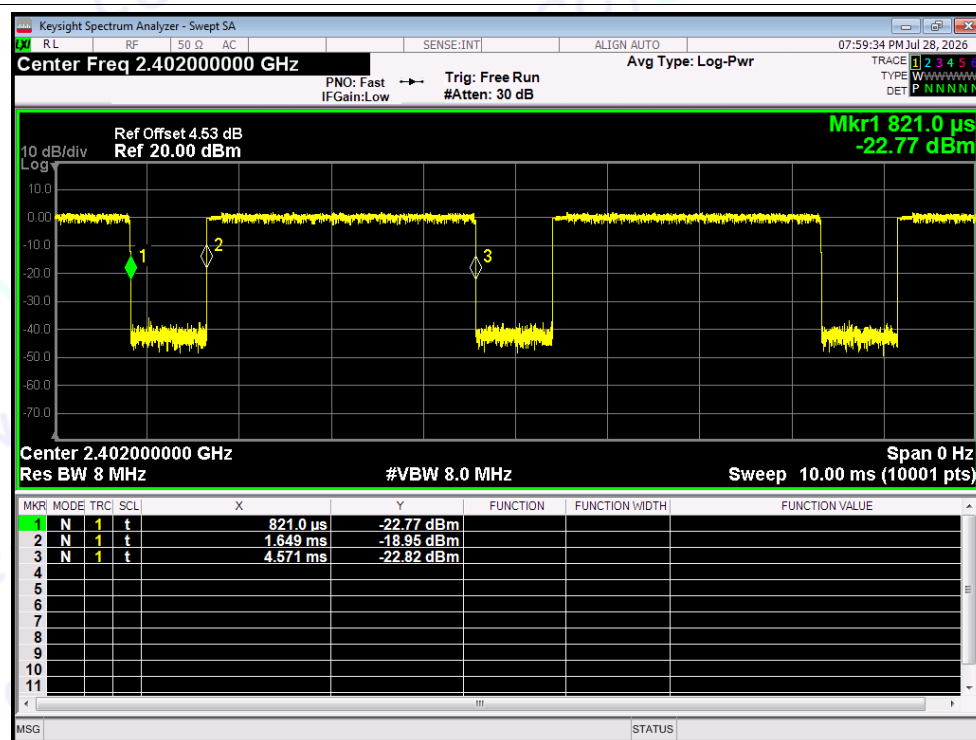
Duty Cycle NVNT 1-DH5 2441MHz Ant1



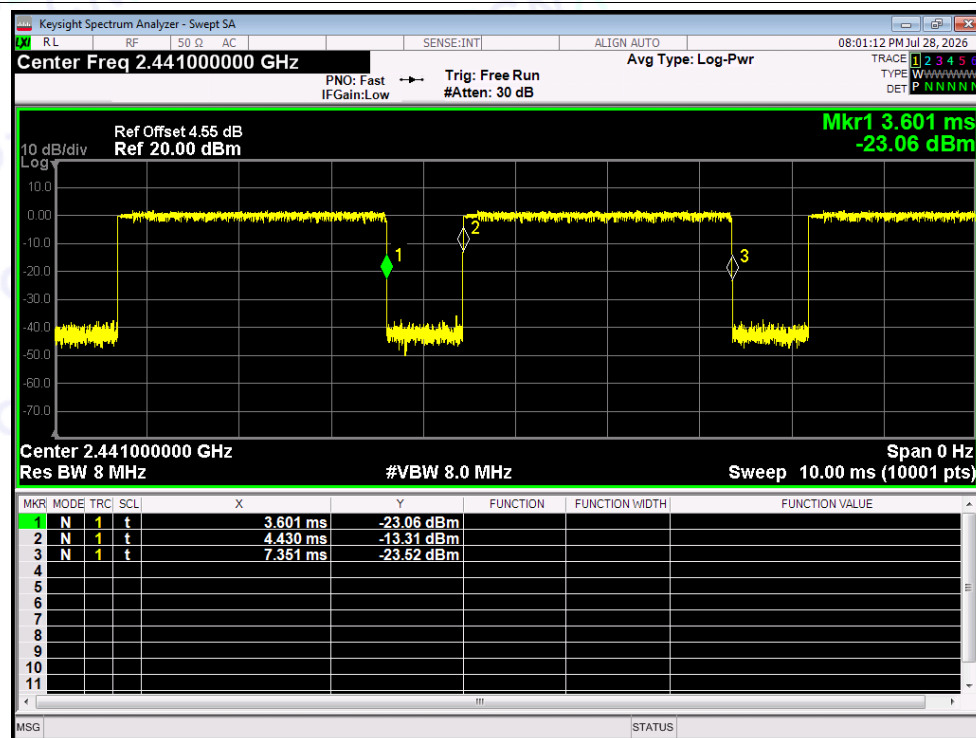
Duty Cycle NVNT 1-DH5 2480MHz Ant1



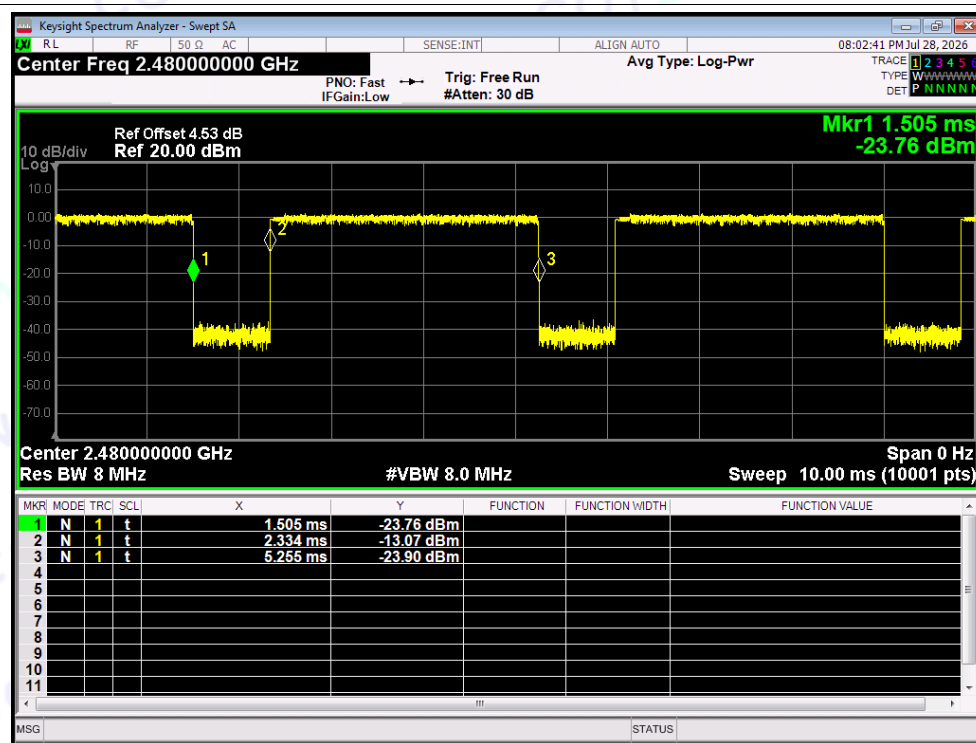
Duty Cycle NVNT 2-DH5 2402MHz Ant1



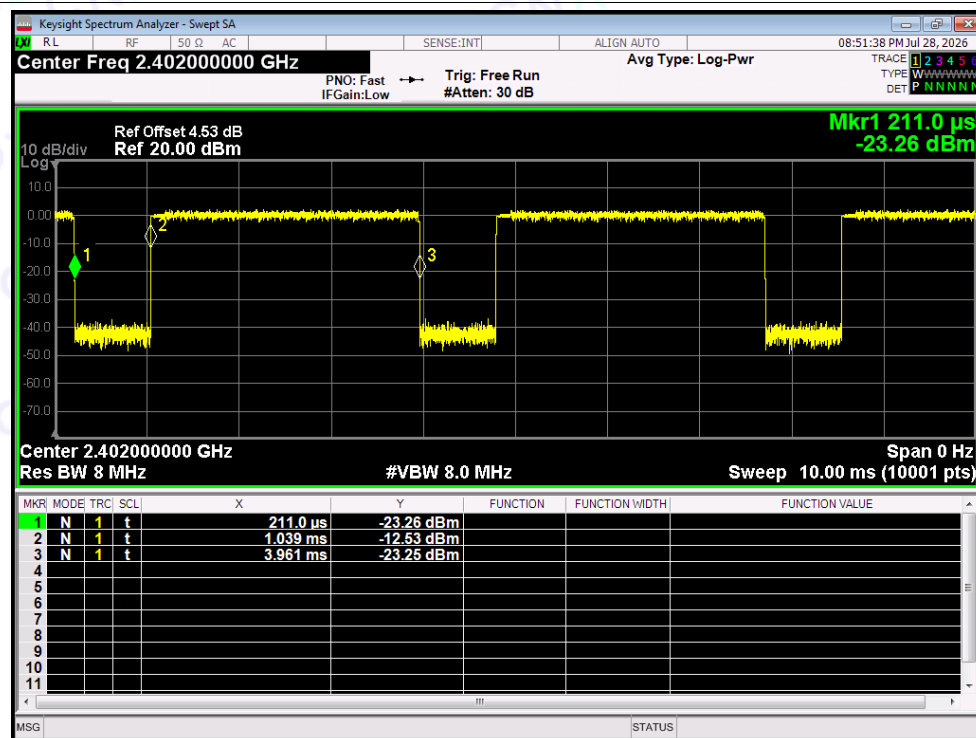
Duty Cycle NVNT 2-DH5 2441MHz Ant1



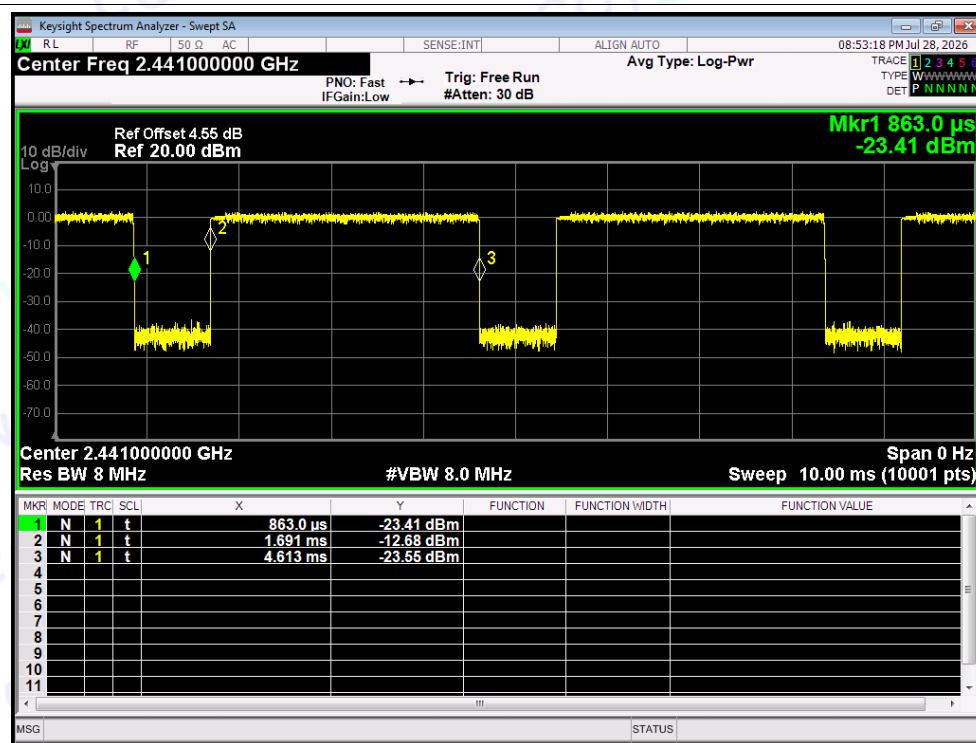
Duty Cycle NVNT 2-DH5 2480MHz Ant1

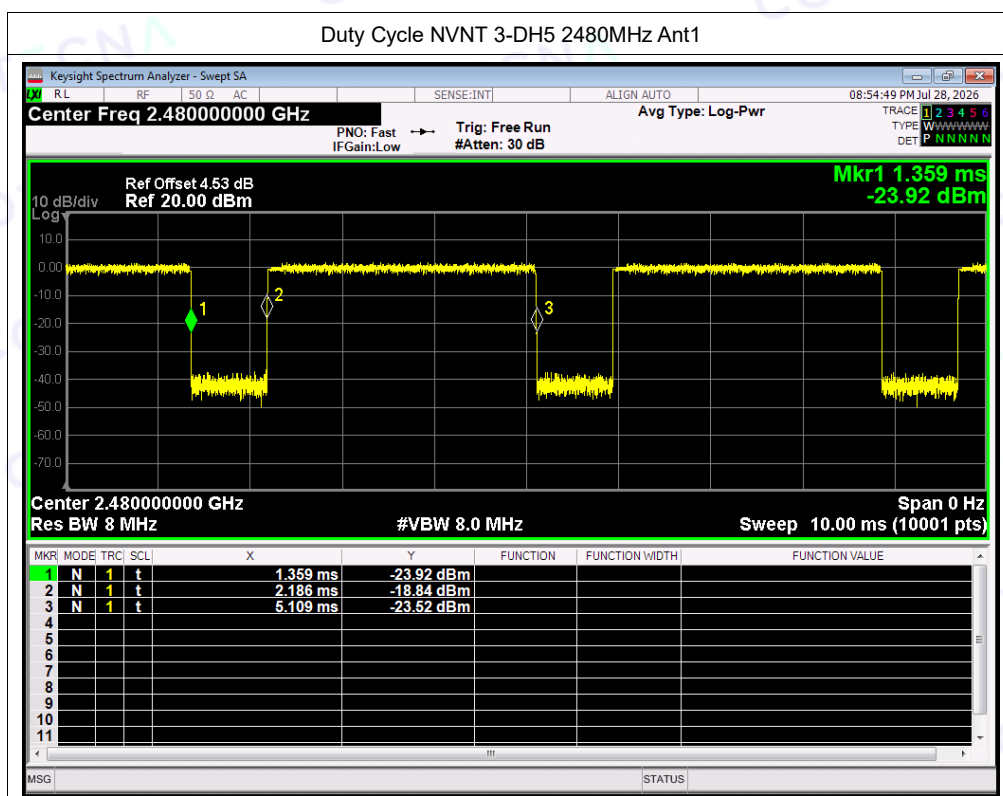


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



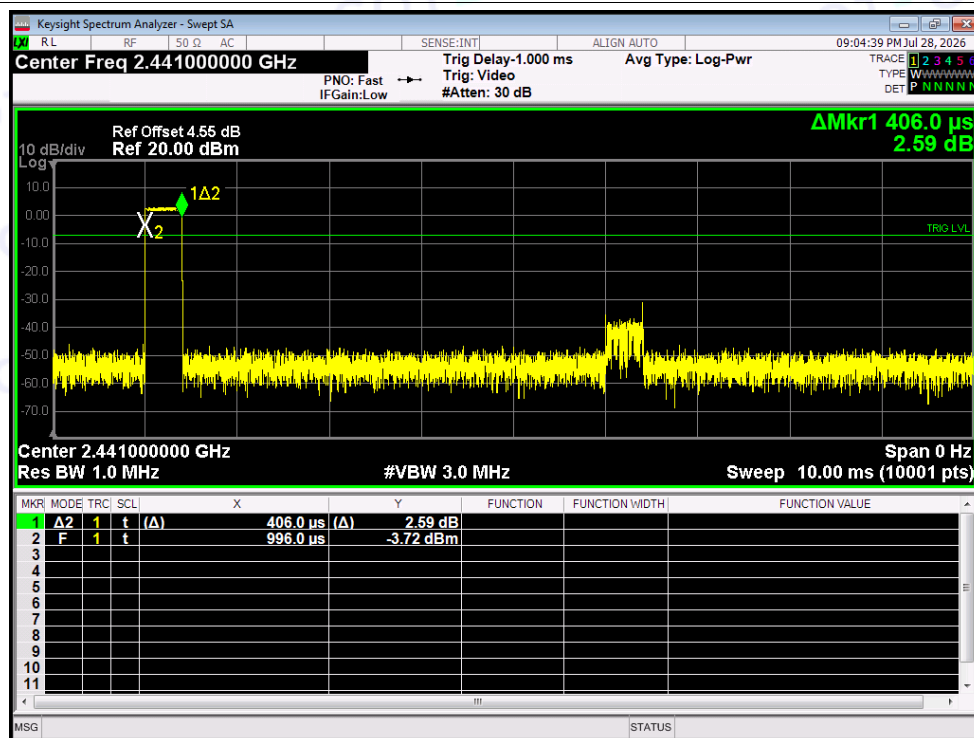


2. Dwell Time

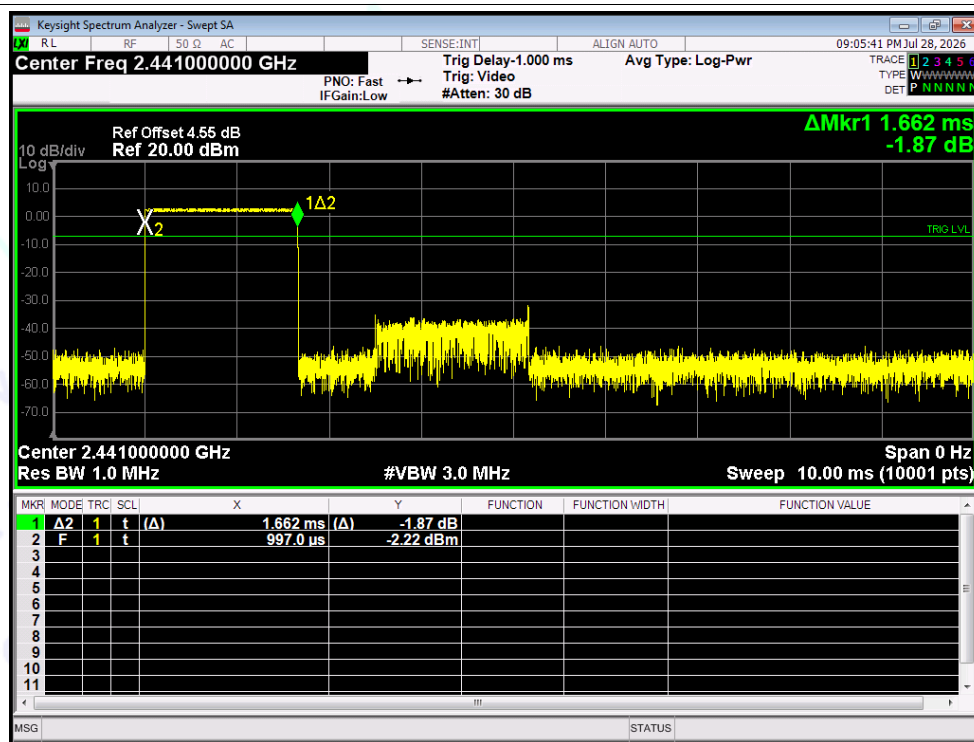
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.406	129.92	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.662	265.92	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.91	310.4	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.416	133.12	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.668	266.88	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.916	311.04	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.415	132.8	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.666	266.56	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.917	311.147	31600	400	Pass

Test Graphs

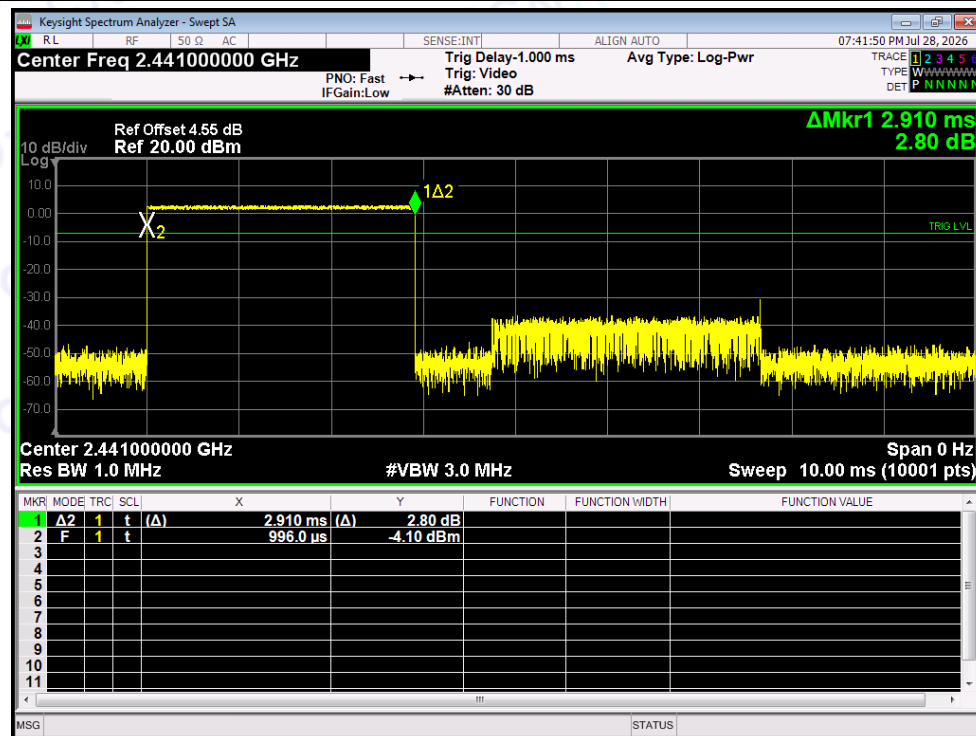
Dwell NVNT 1-DH1 2441MHz Ant1



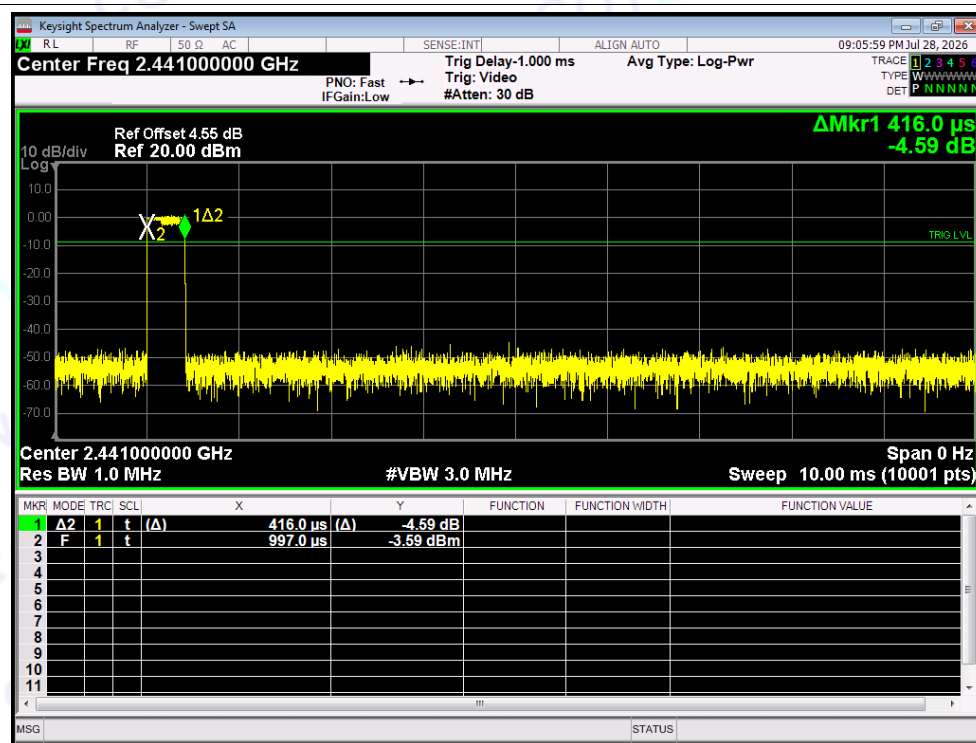
Dwell NVNT 1-DH3 2441MHz Ant1



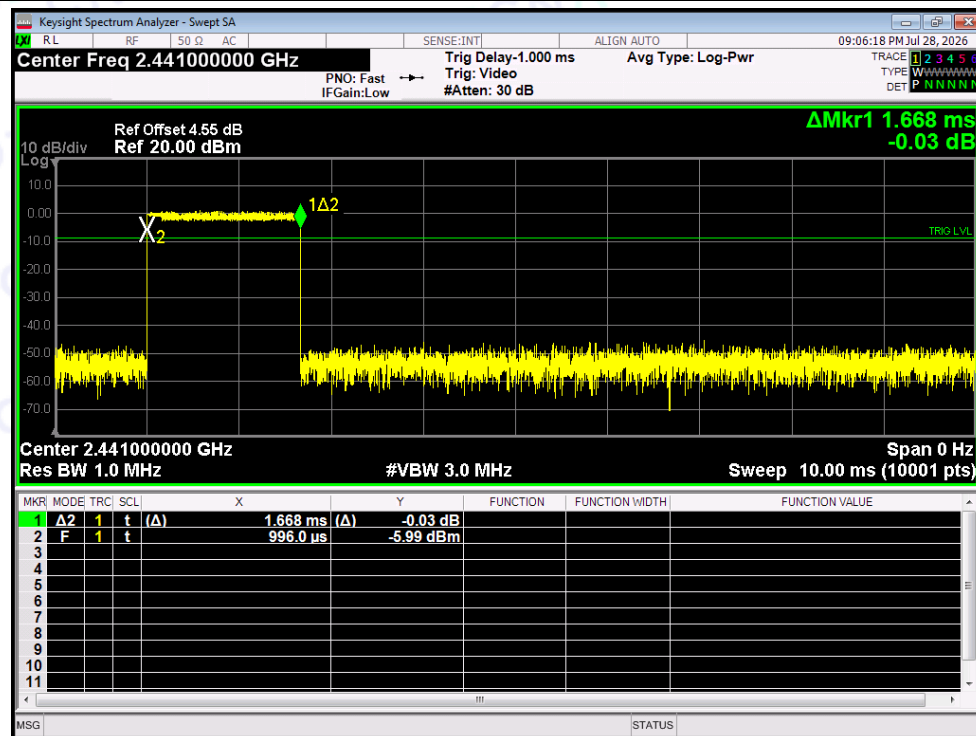
Dwell NVNT 1-DH5 2441MHz Ant1



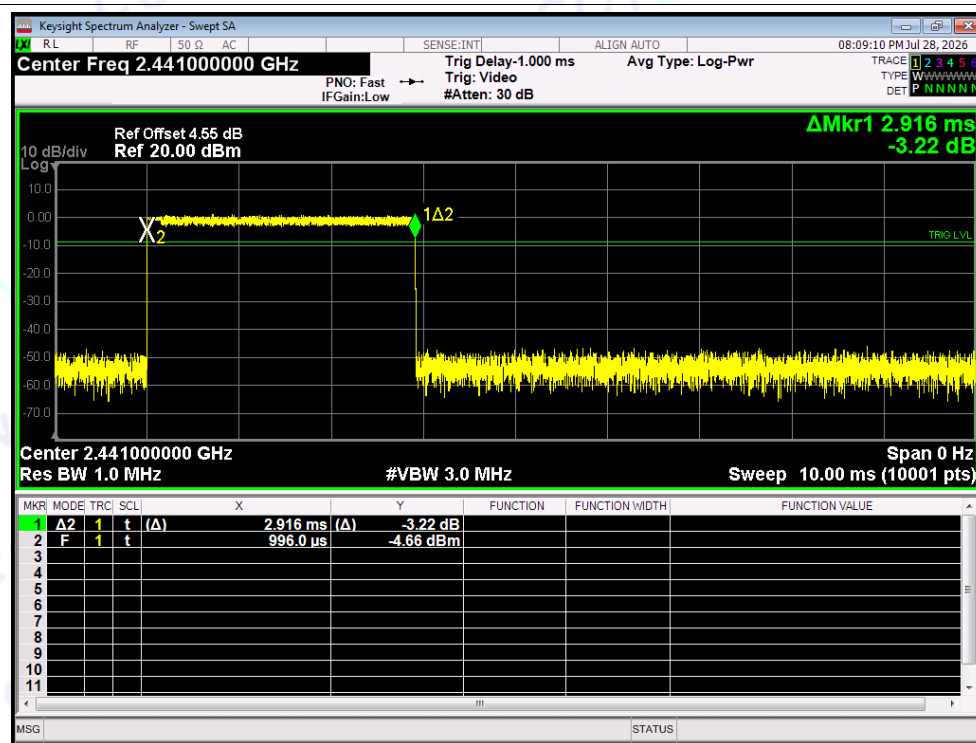
Dwell NVNT 2-DH1 2441MHz Ant1



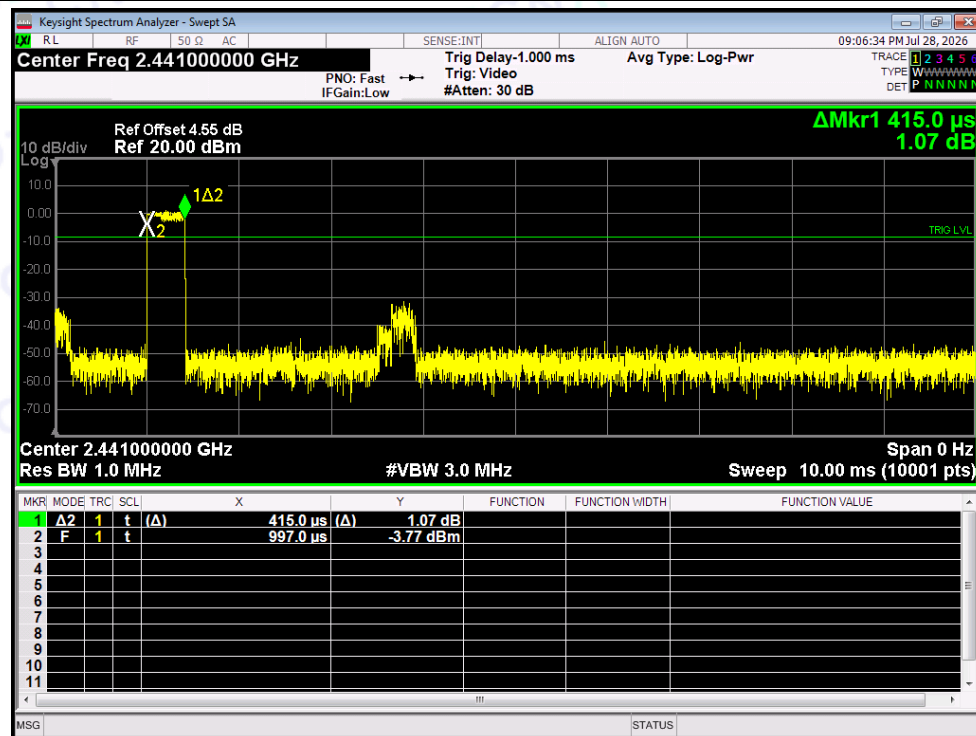
Dwell NVNT 2-DH3 2441MHz Ant1



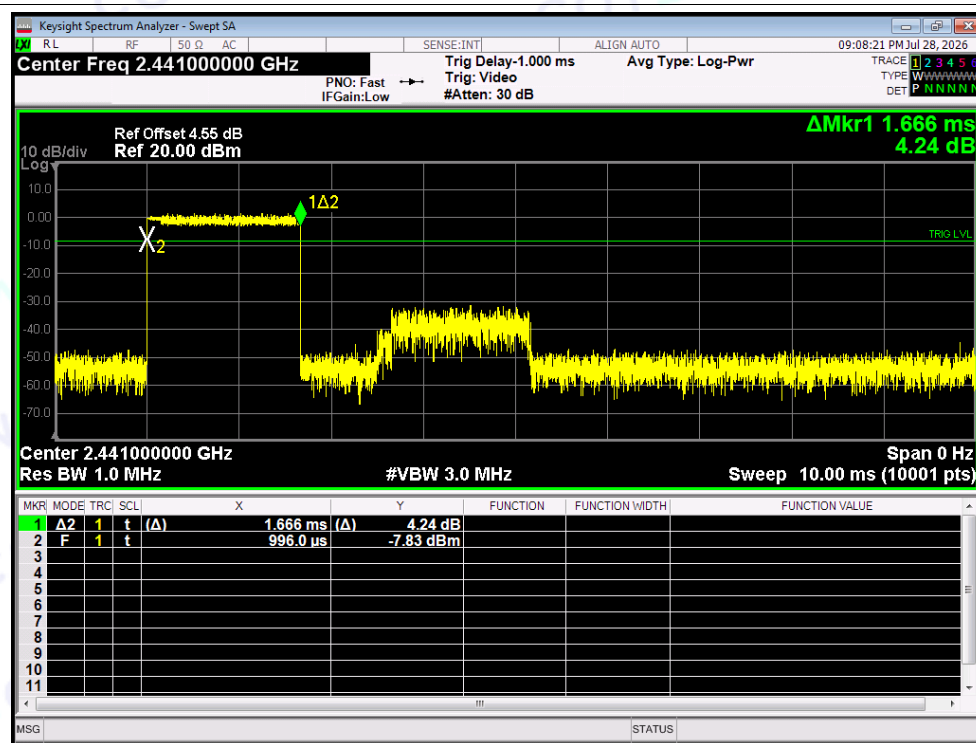
Dwell NVNT 2-DH5 2441MHz Ant1

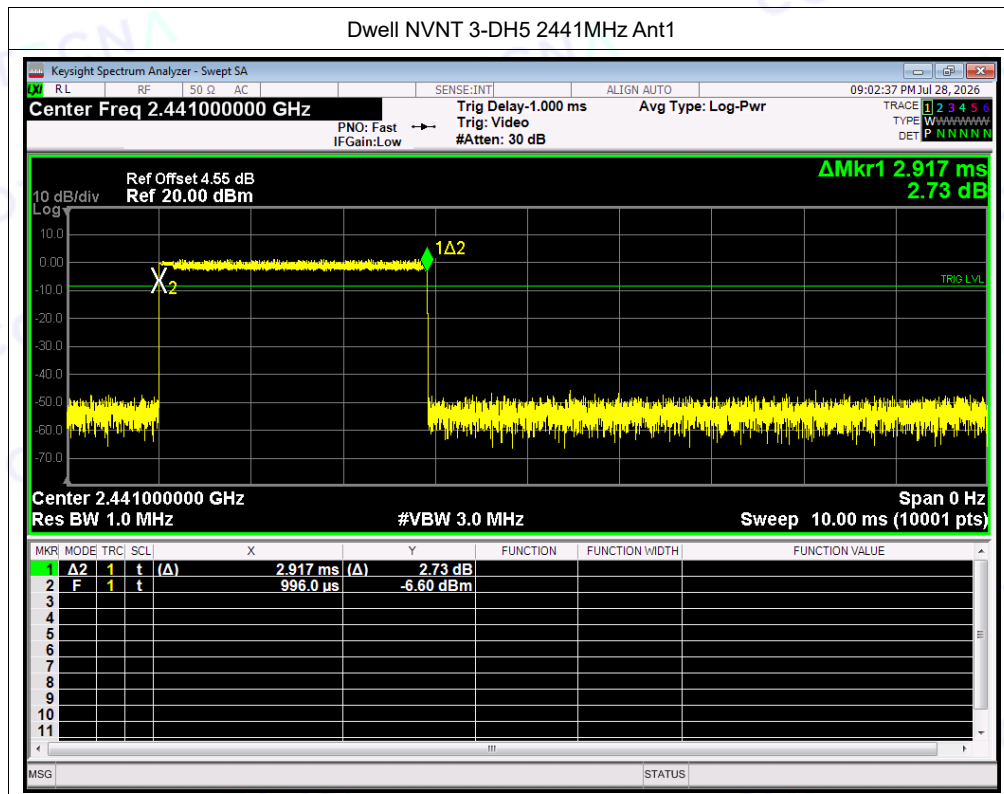


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



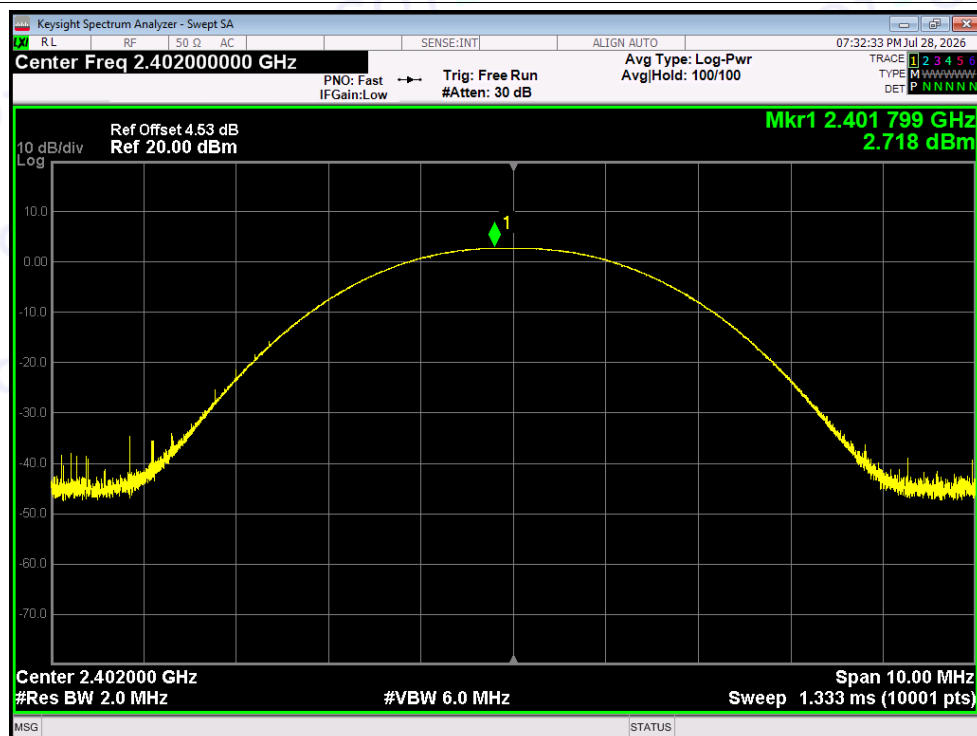


3. Maximum Conducted Output Power

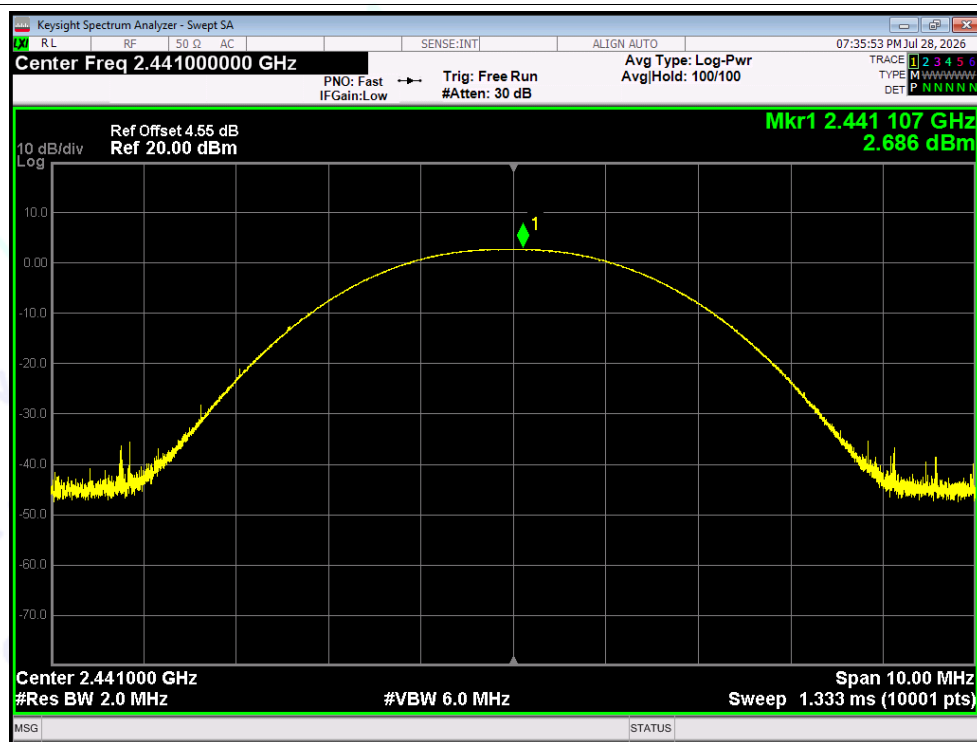
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Gain(dBi)	EIRP Power (dBm)	EIRP Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	2.718	21	-3.57	-0.852	36	Pass
NVNT	1-DH5	2441	Ant1	2.686	21	-3.57	-0.884	36	Pass
NVNT	1-DH5	2480	Ant1	2.317	21	-3.57	-1.253	36	Pass
NVNT	2-DH5	2402	Ant1	1.352	21	-3.57	-2.218	36	Pass
NVNT	2-DH5	2441	Ant1	1.306	21	-3.57	-2.264	36	Pass
NVNT	2-DH5	2480	Ant1	1.029	21	-3.57	-2.541	36	Pass
NVNT	3-DH5	2402	Ant1	1.885	21	-3.57	-1.685	36	Pass
NVNT	3-DH5	2441	Ant1	1.788	21	-3.57	-1.782	36	Pass
NVNT	3-DH5	2480	Ant1	1.452	21	-3.57	-2.118	36	Pass

Test Graphs

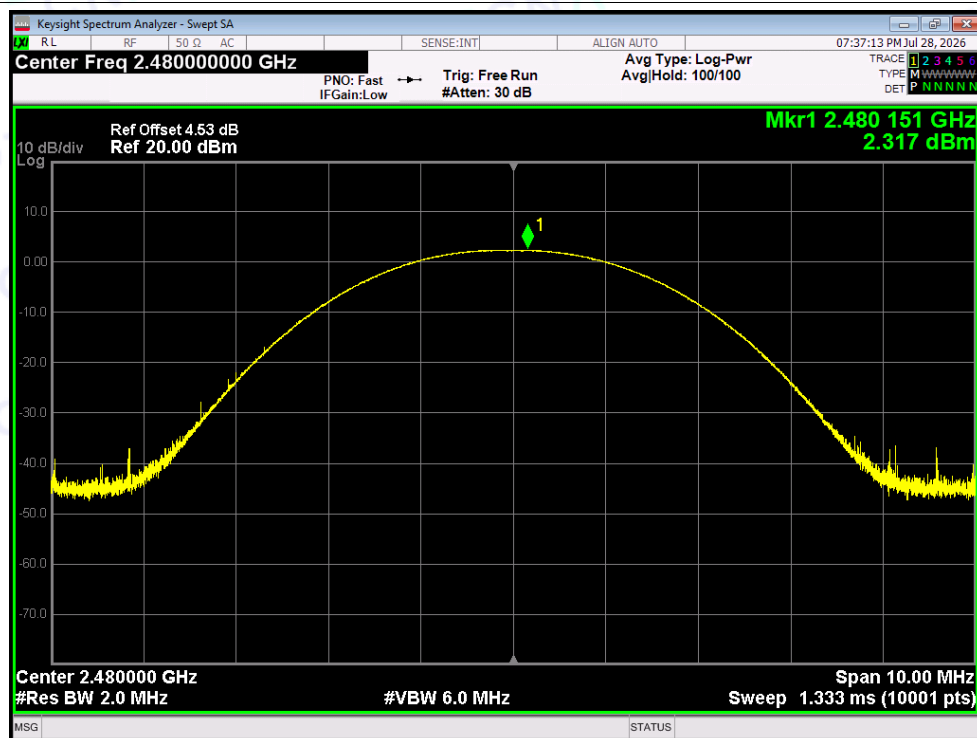
Power NVNT 1-DH5 2402MHz Ant1



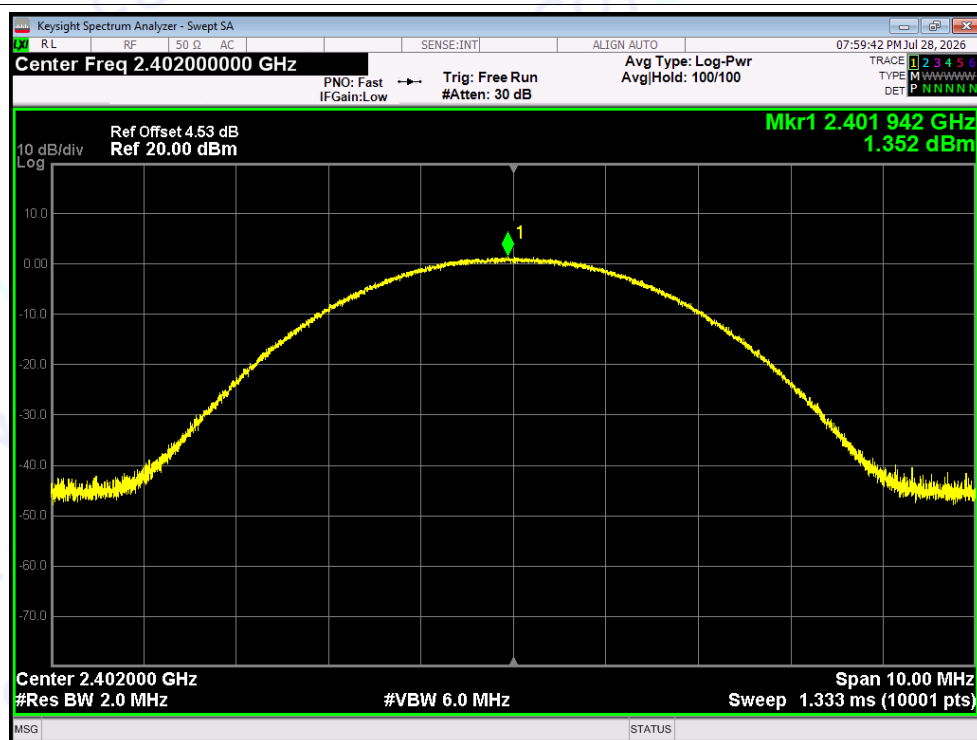
Power NVNT 1-DH5 2441MHz Ant1



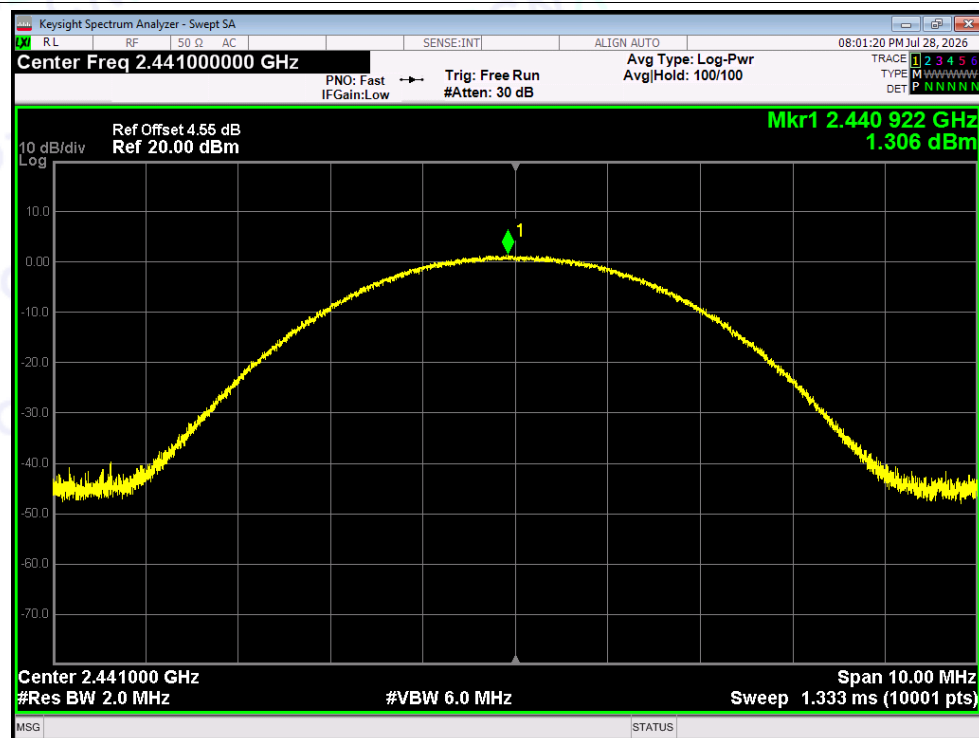
Power NVNT 1-DH5 2480MHz Ant1



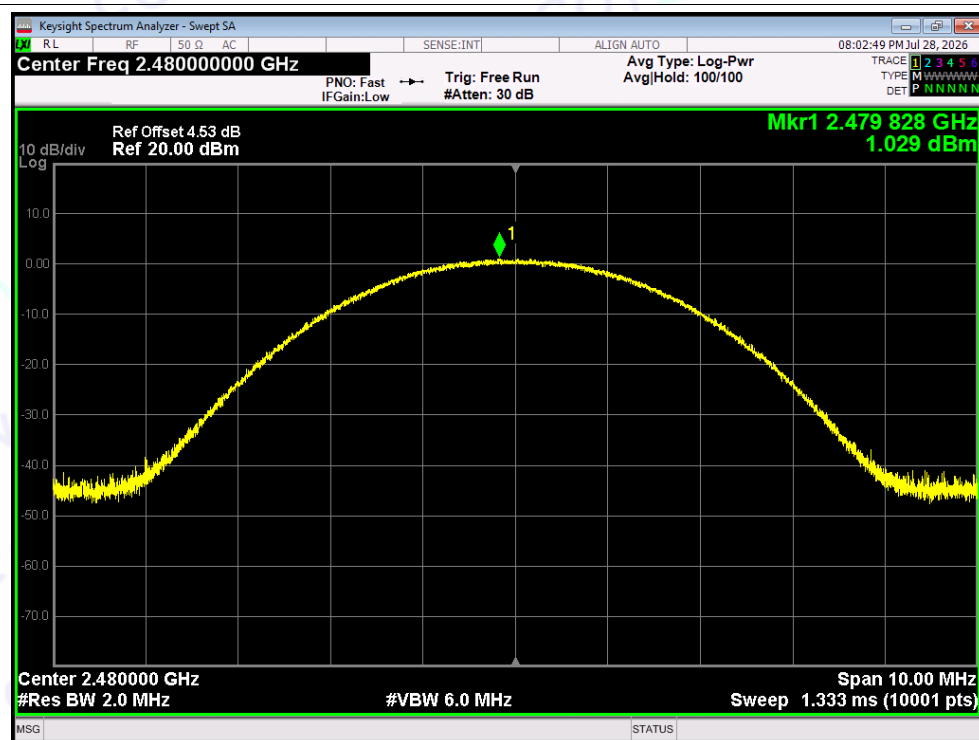
Power NVNT 2-DH5 2402MHz Ant1



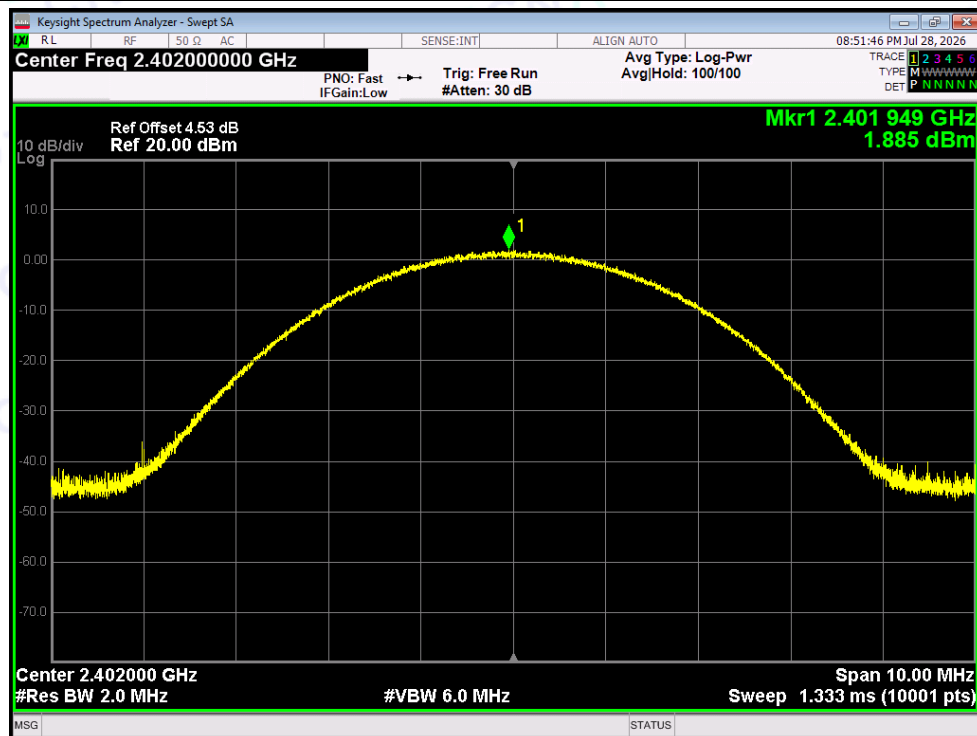
Power NVNT 2-DH5 2441MHz Ant1



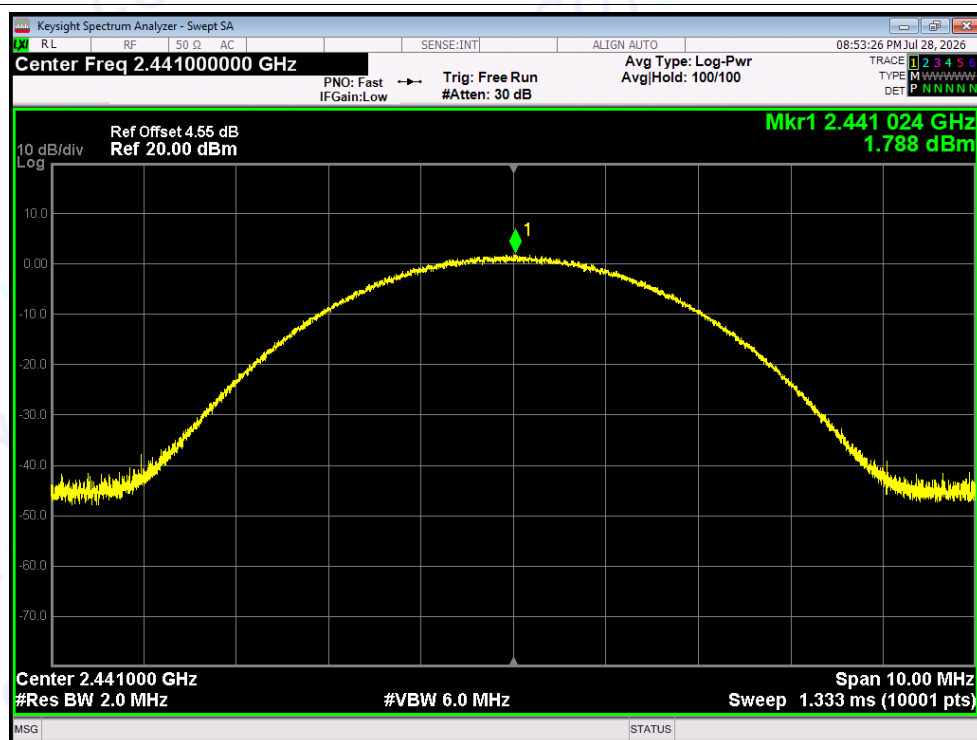
Power NVNT 2-DH5 2480MHz Ant1

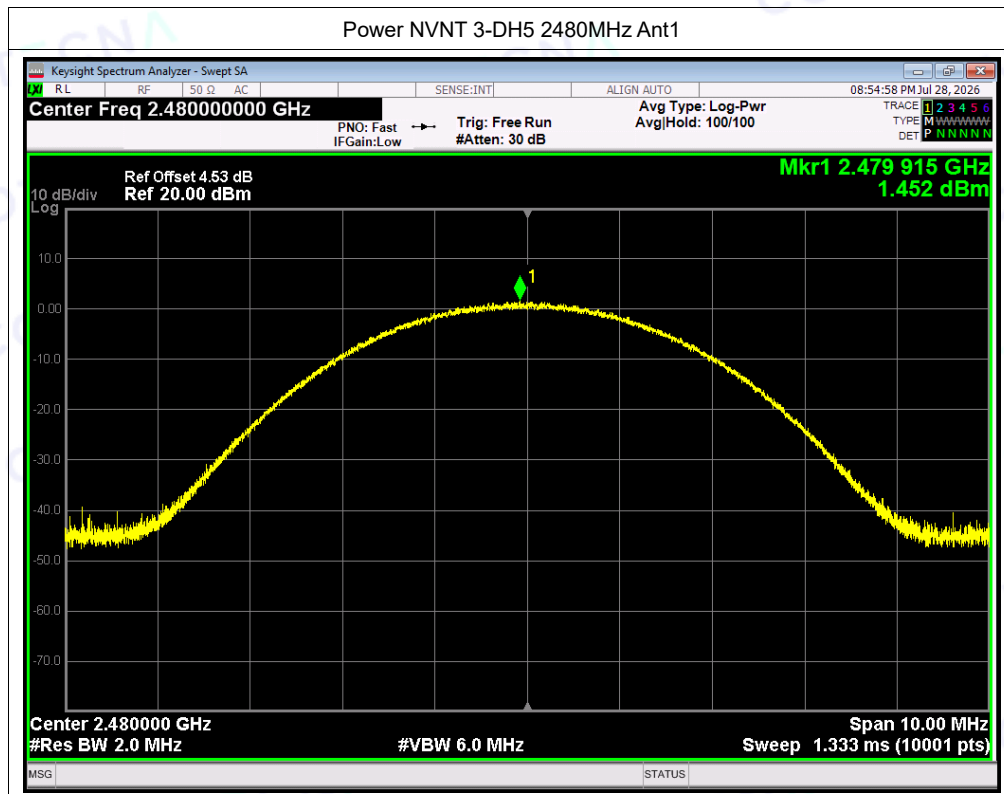


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



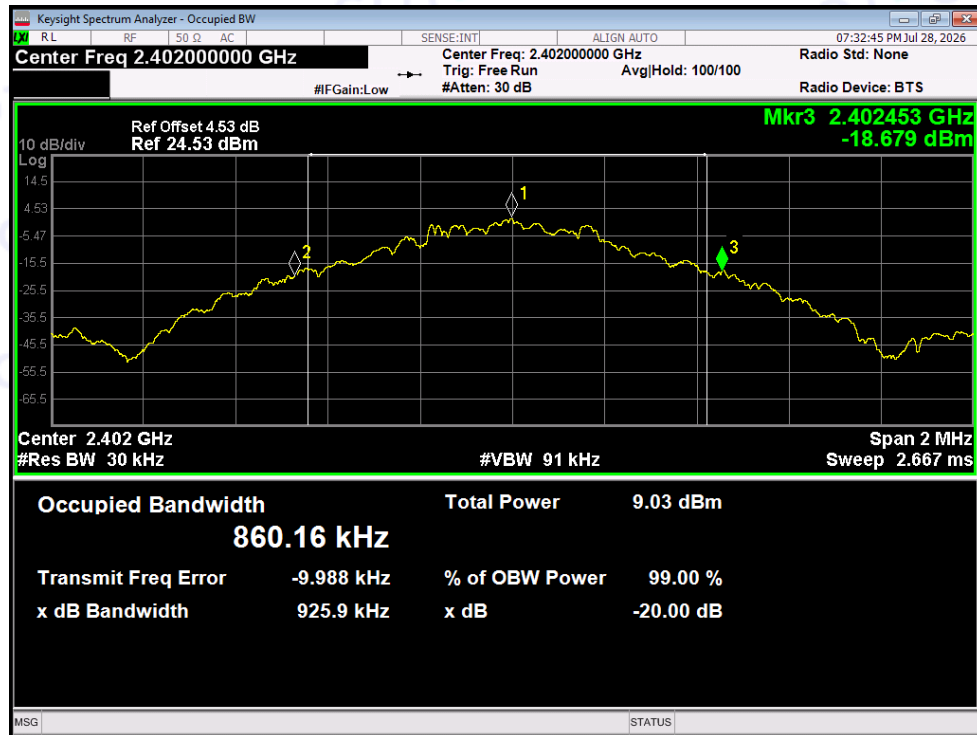


4. -20dB Bandwidth

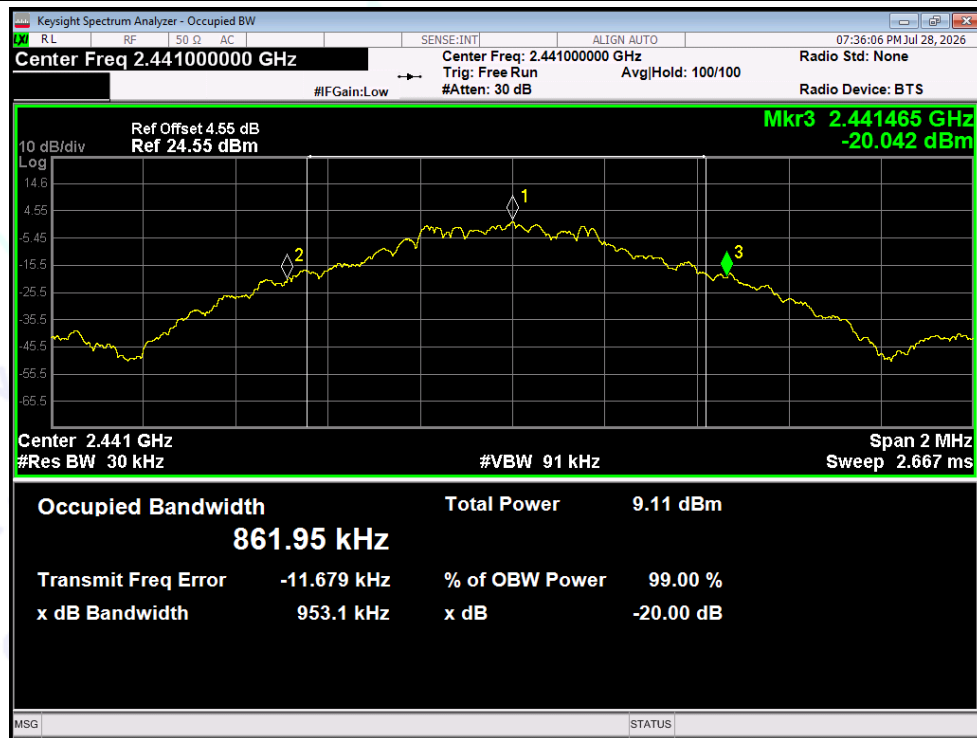
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.93	0	Pass
NVNT	1-DH5	2441	Ant1	0.95	0	Pass
NVNT	1-DH5	2480	Ant1	0.95	0	Pass
NVNT	2-DH5	2402	Ant1	1.27	0	Pass
NVNT	2-DH5	2441	Ant1	1.27	0	Pass
NVNT	2-DH5	2480	Ant1	1.28	0	Pass
NVNT	3-DH5	2402	Ant1	1.27	0	Pass
NVNT	3-DH5	2441	Ant1	1.27	0	Pass
NVNT	3-DH5	2480	Ant1	1.28	0	Pass

Test Graphs

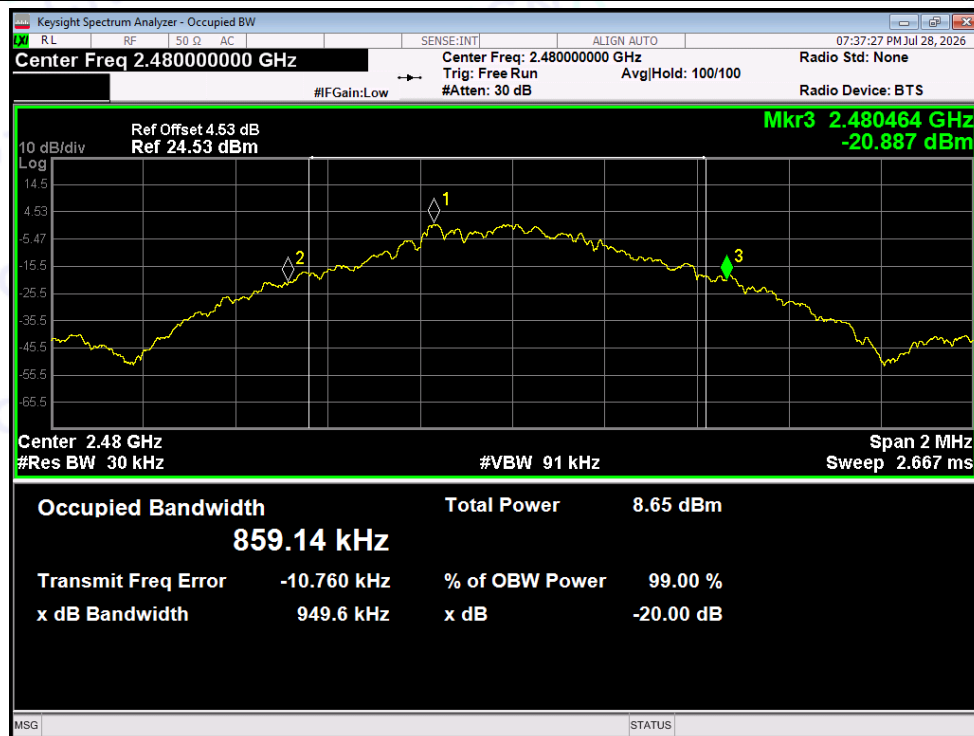
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



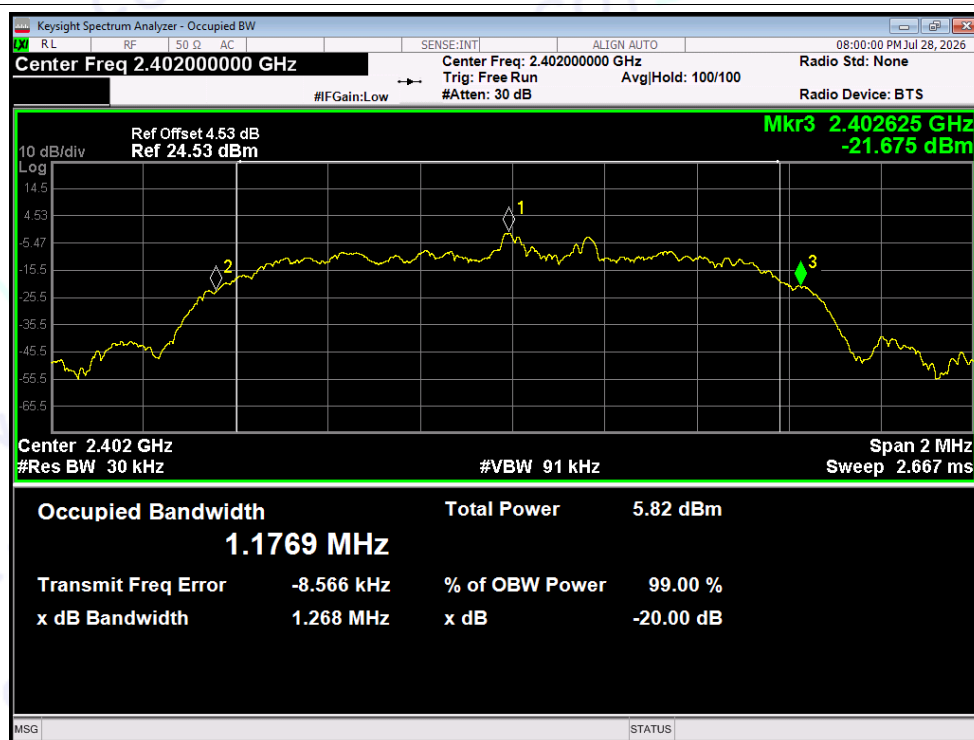
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



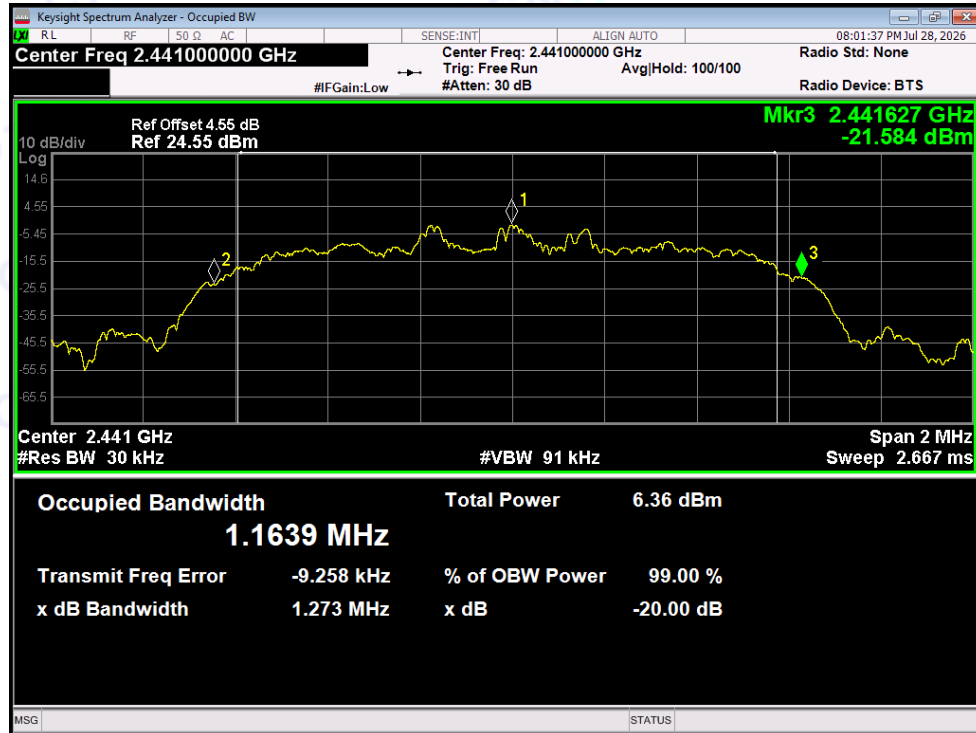
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



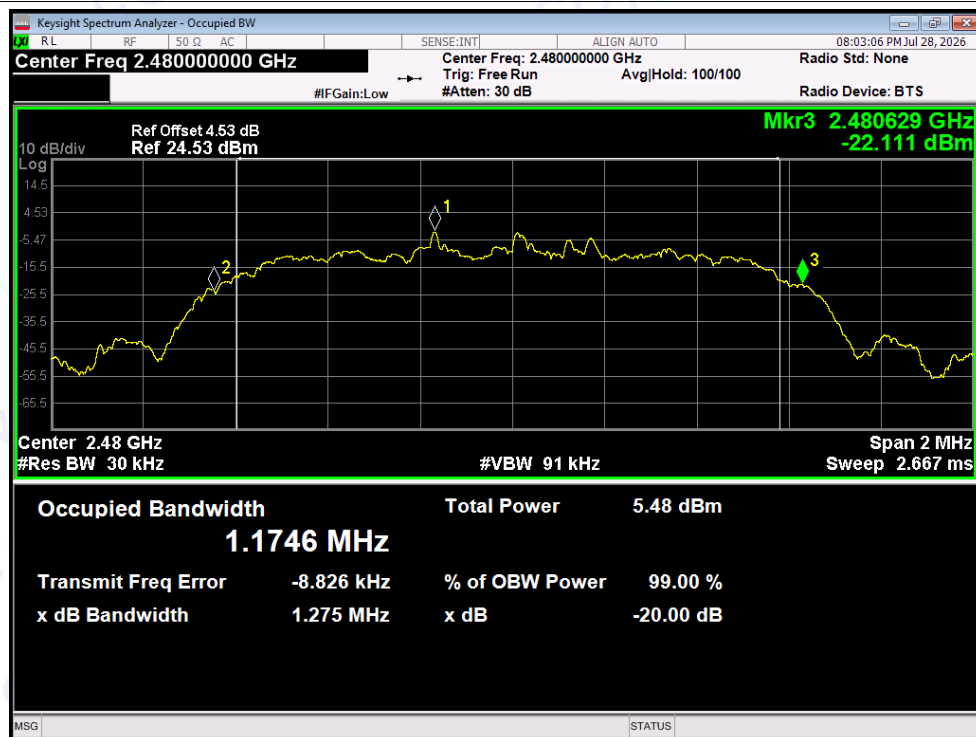
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



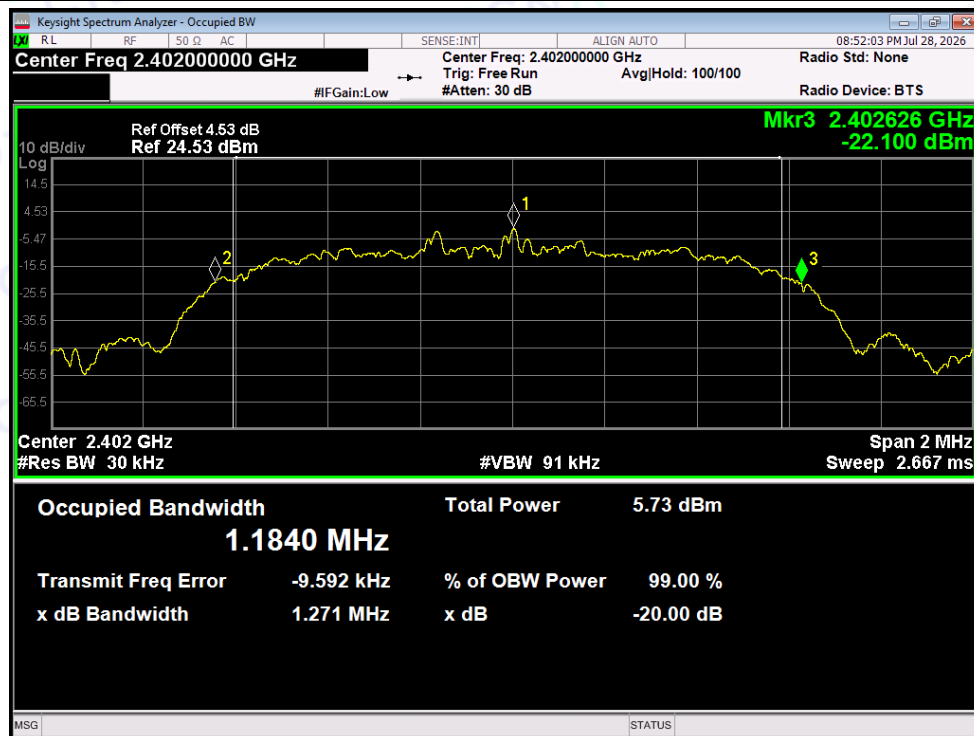
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



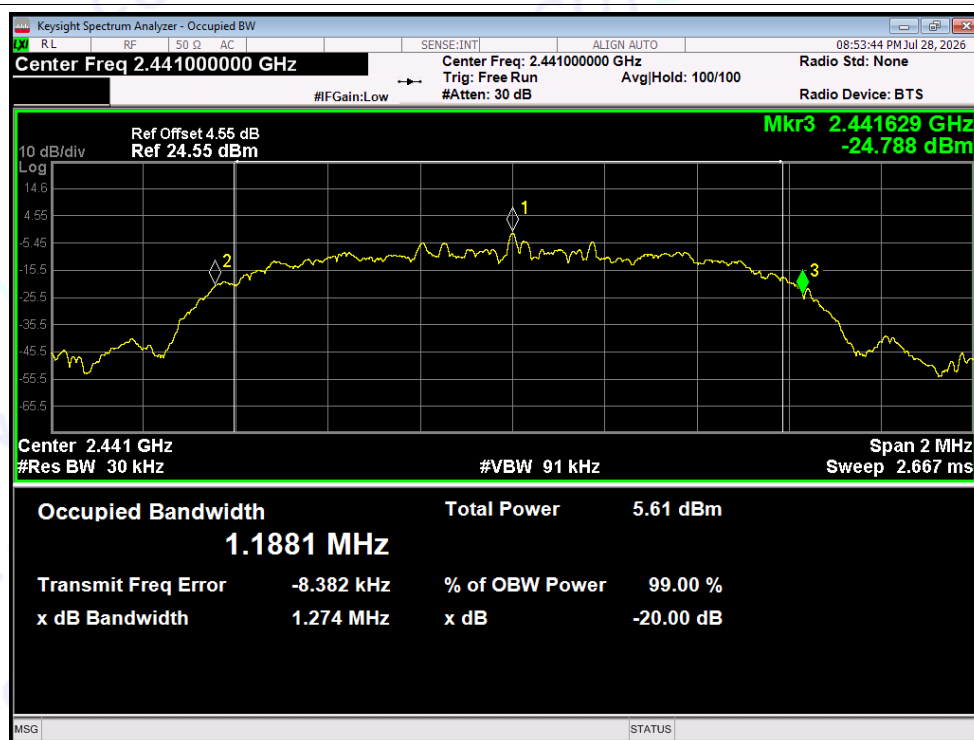
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

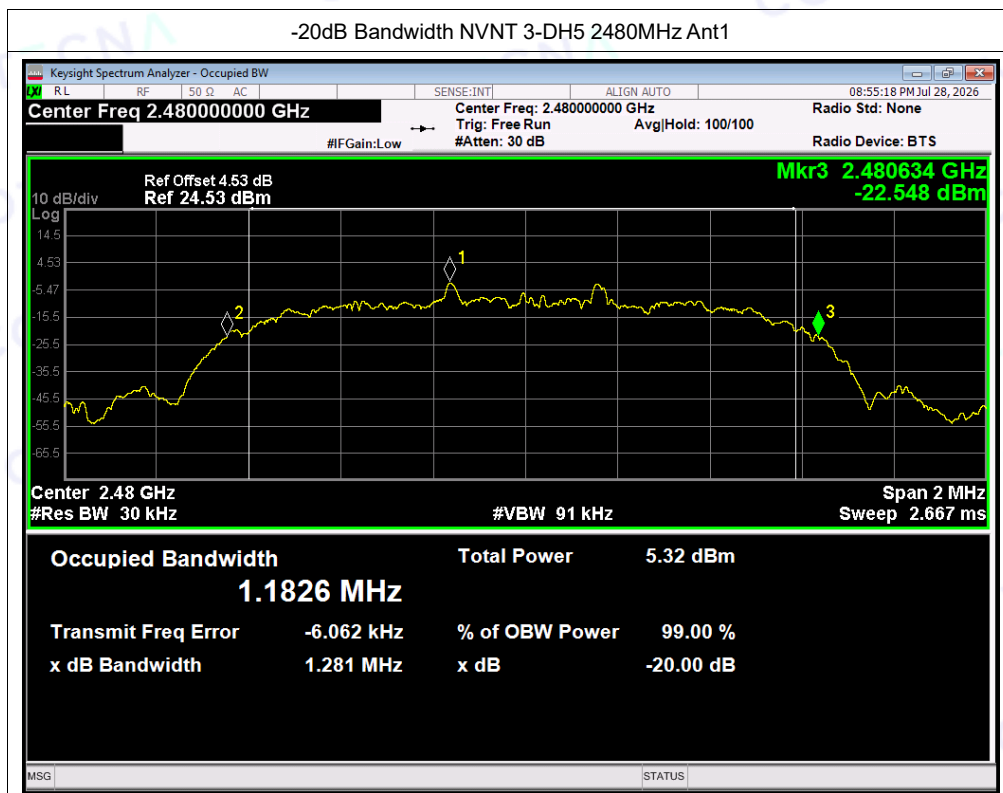


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



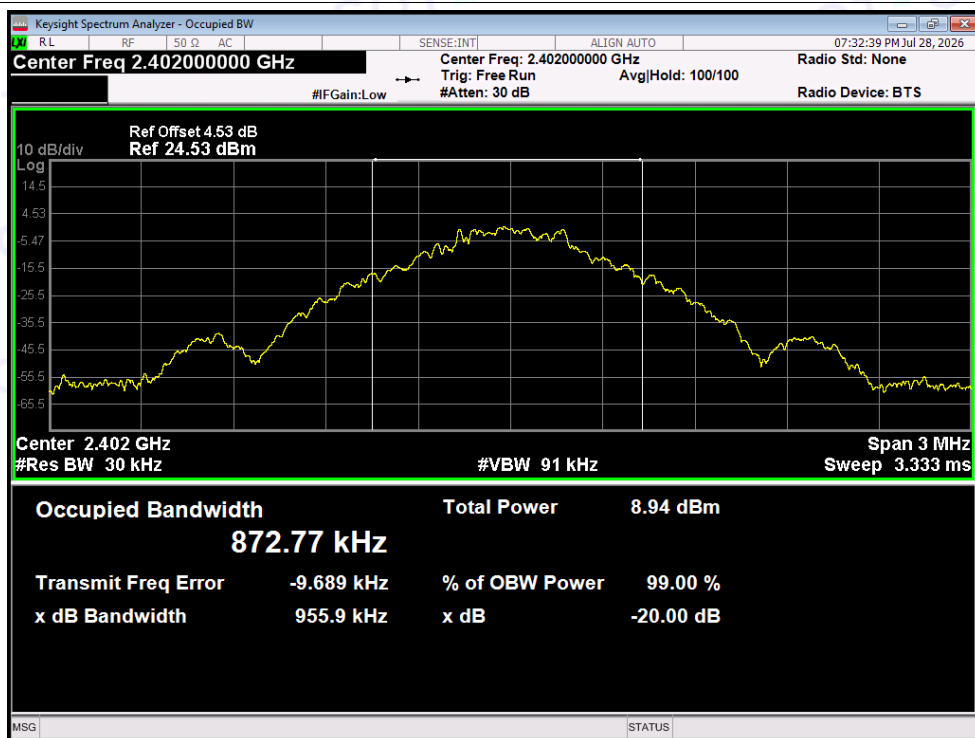


5. Occupied Channel Bandwidth

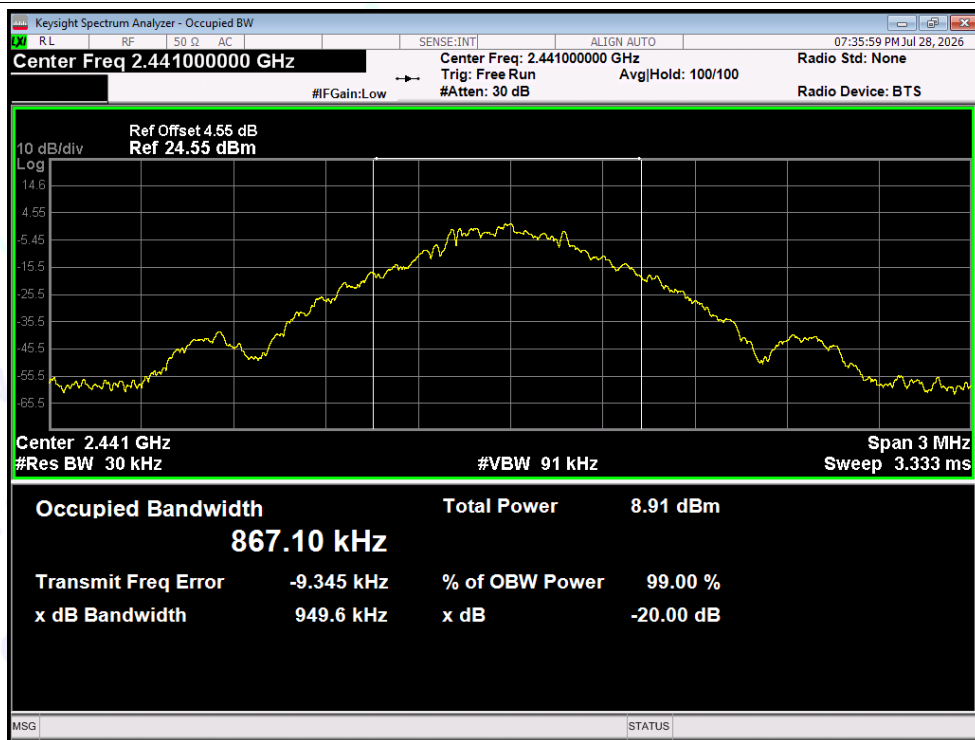
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.873
NVNT	1-DH5	2441	Ant1	0.867
NVNT	1-DH5	2480	Ant1	0.858
NVNT	2-DH5	2402	Ant1	1.175
NVNT	2-DH5	2441	Ant1	1.175
NVNT	2-DH5	2480	Ant1	1.166
NVNT	3-DH5	2402	Ant1	1.174
NVNT	3-DH5	2441	Ant1	1.178
NVNT	3-DH5	2480	Ant1	1.172

Test Graphs

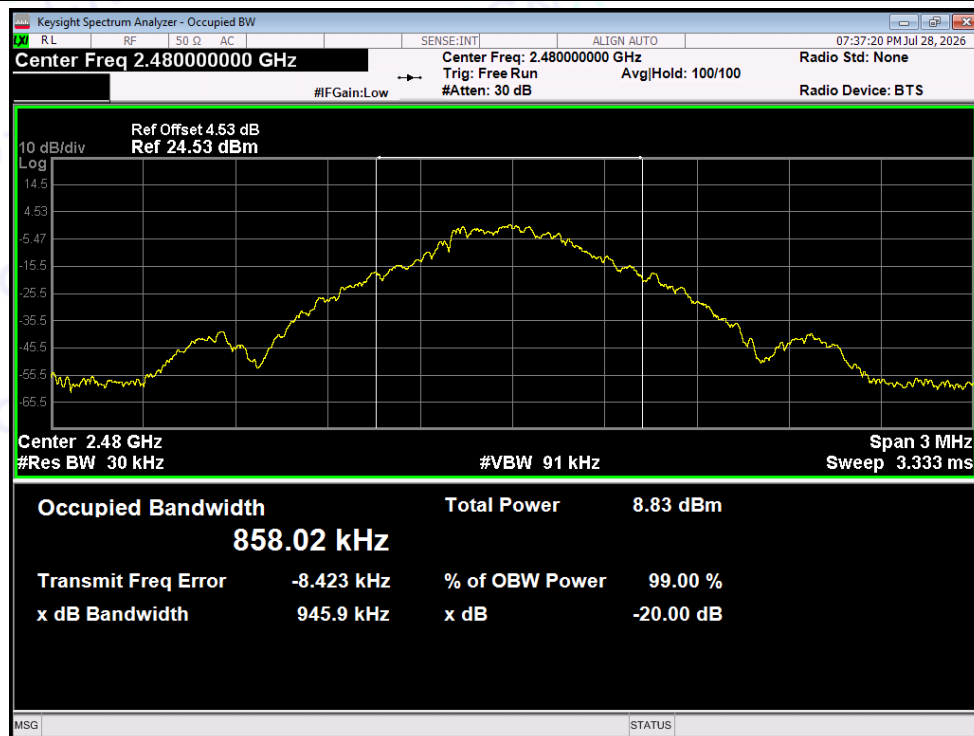
OBW NVNT 1-DH5 2402MHz Ant1



OBW NVNT 1-DH5 2441MHz Ant1



OBW NVNT 1-DH5 2480MHz Ant1



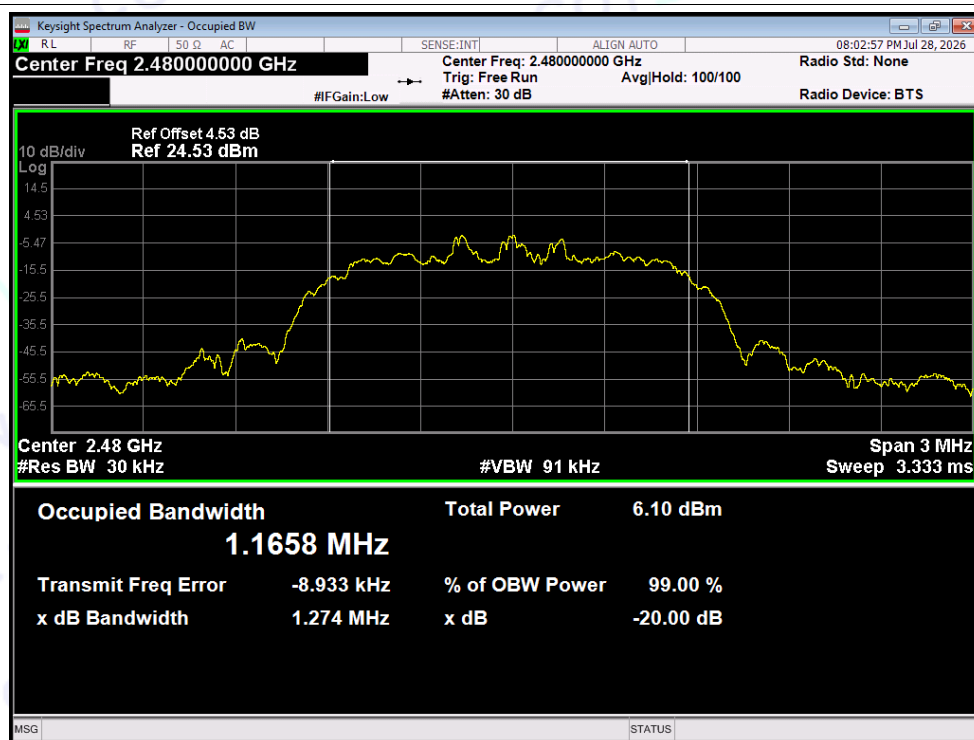
OBW NVNT 2-DH5 2402MHz Ant1



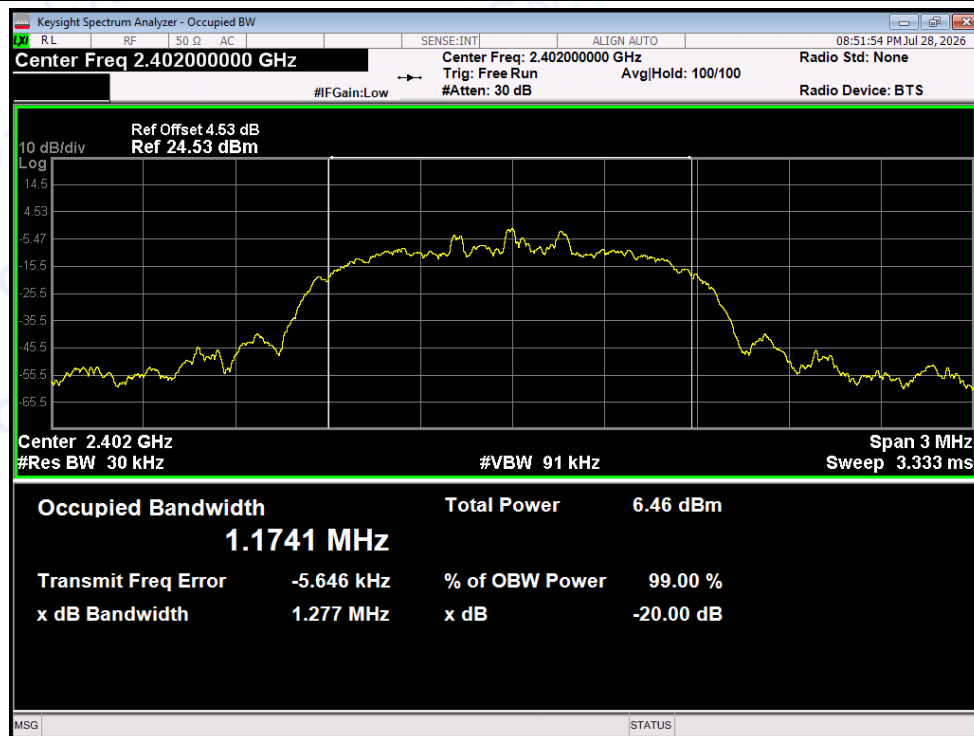
OBW NVNT 2-DH5 2441MHz Ant1



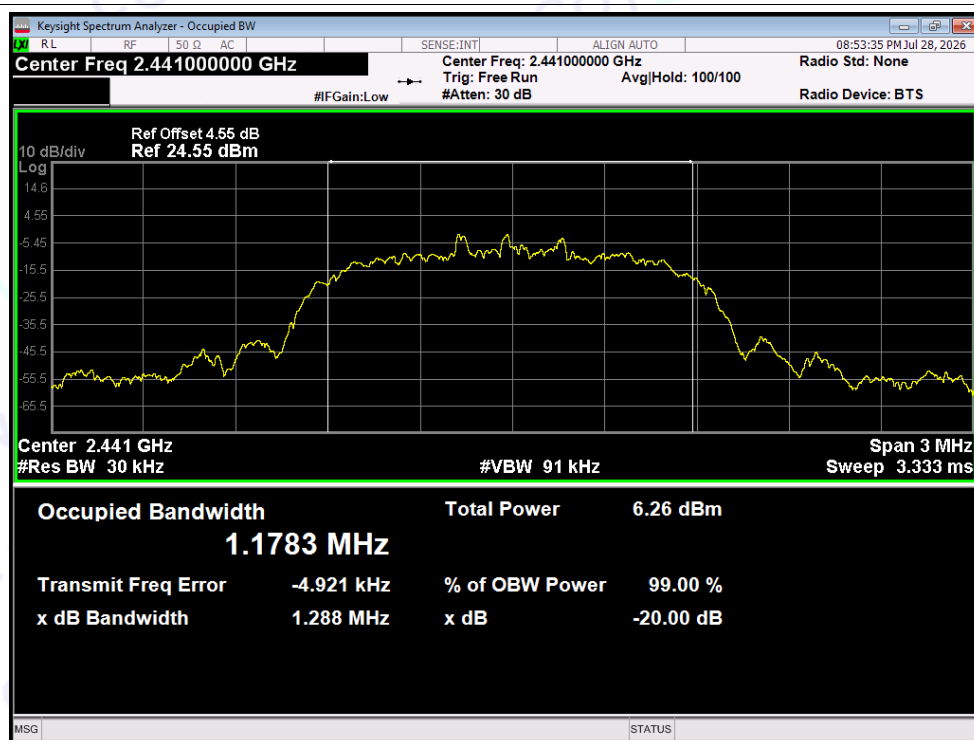
OBW NVNT 2-DH5 2480MHz Ant1

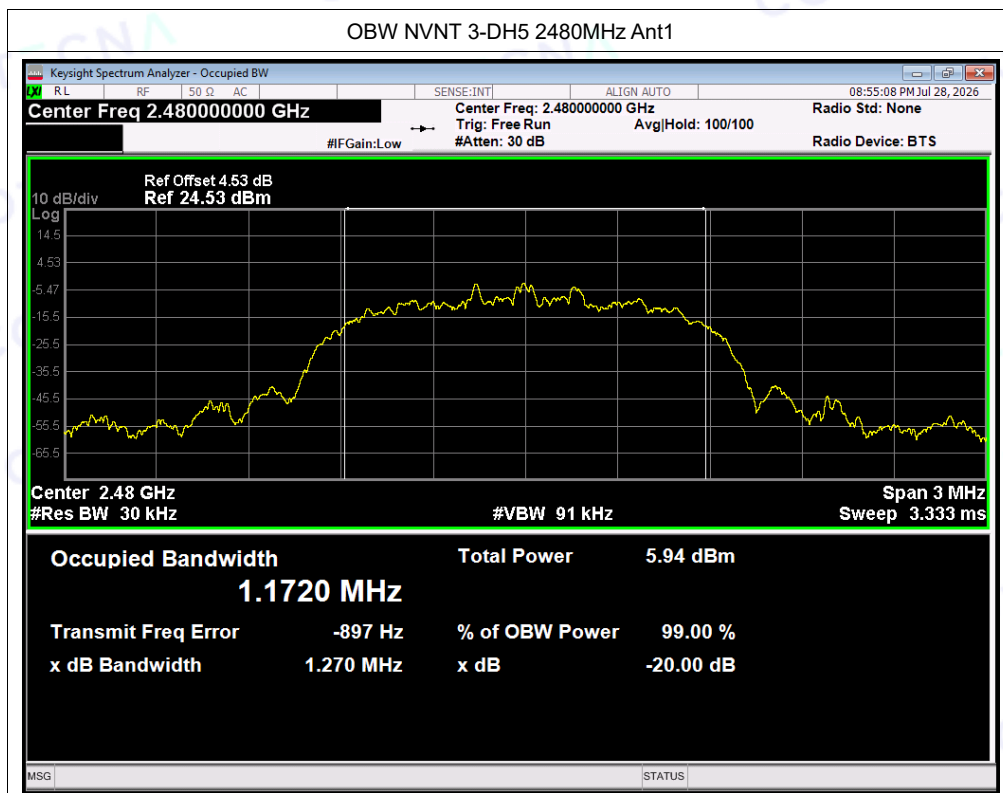


OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



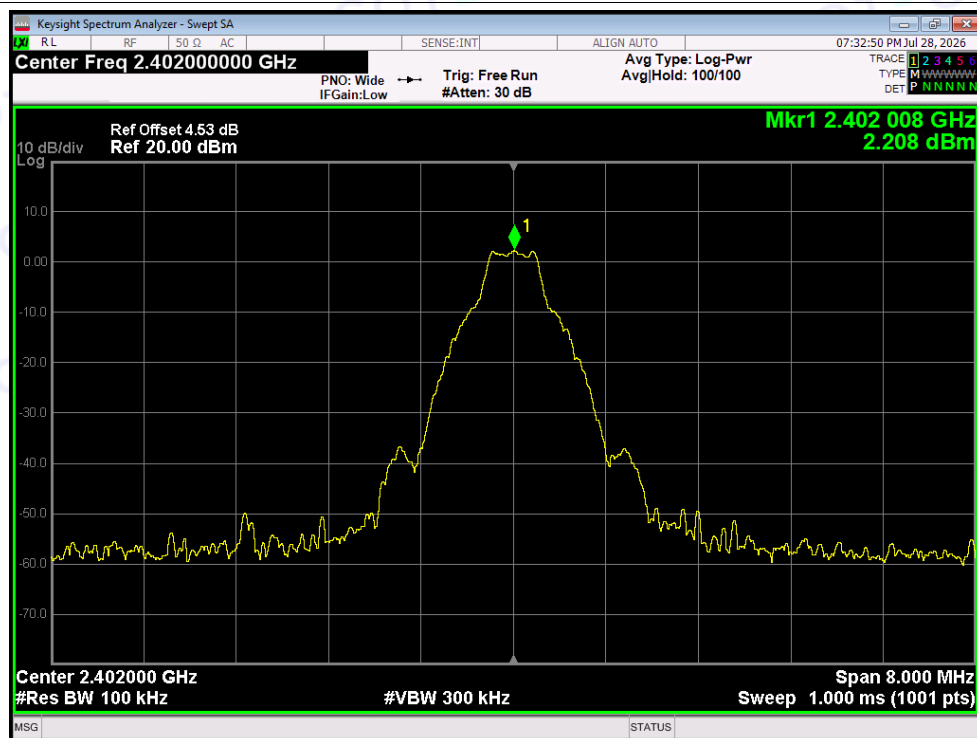


6. Band Edge

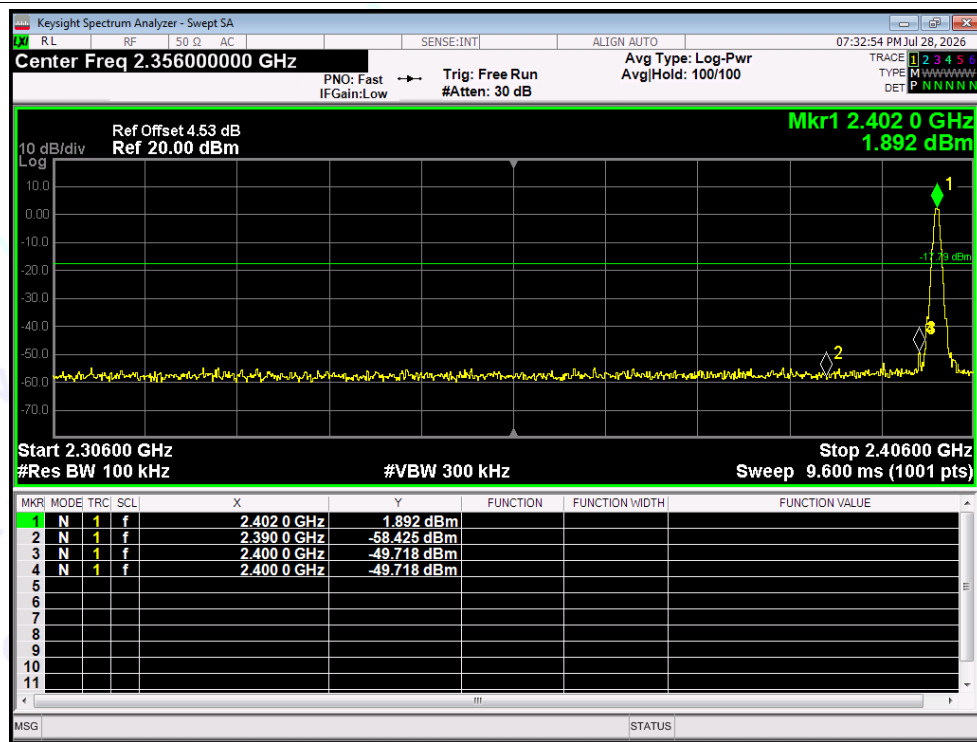
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-51.93	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-55.21	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.67	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-53.75	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-54.41	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-53.87	-20	Pass

Test Graphs

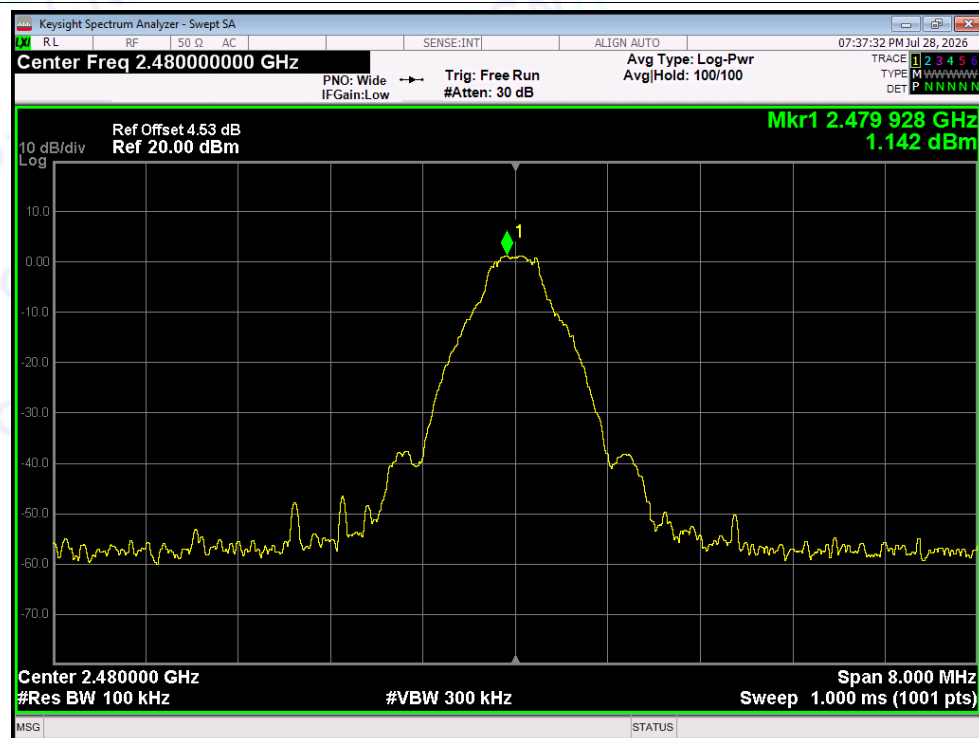
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



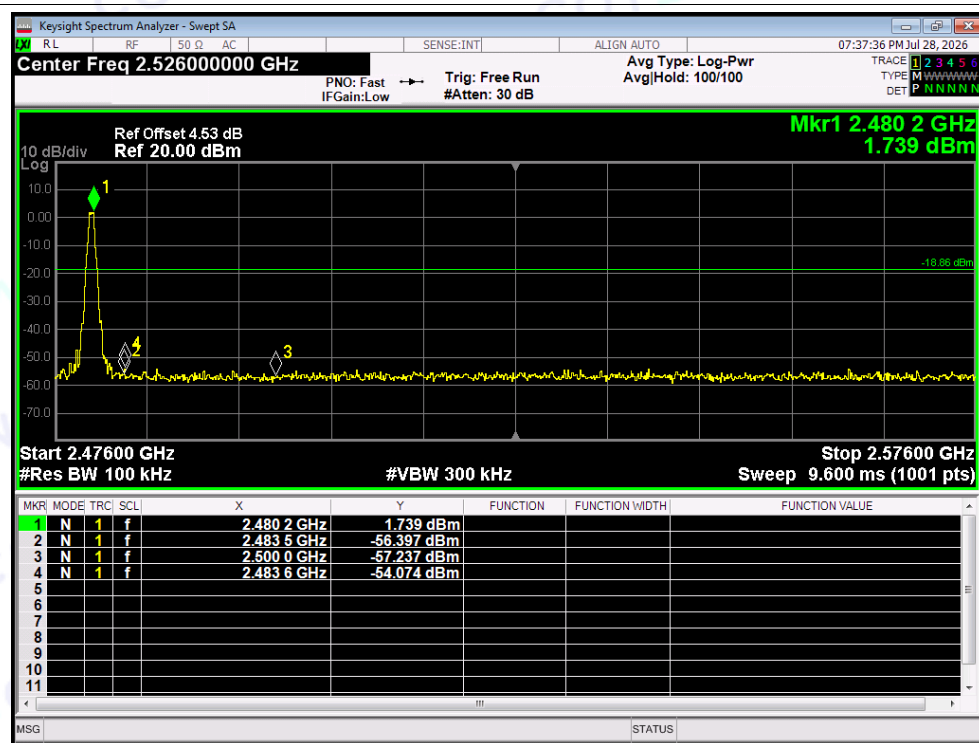
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



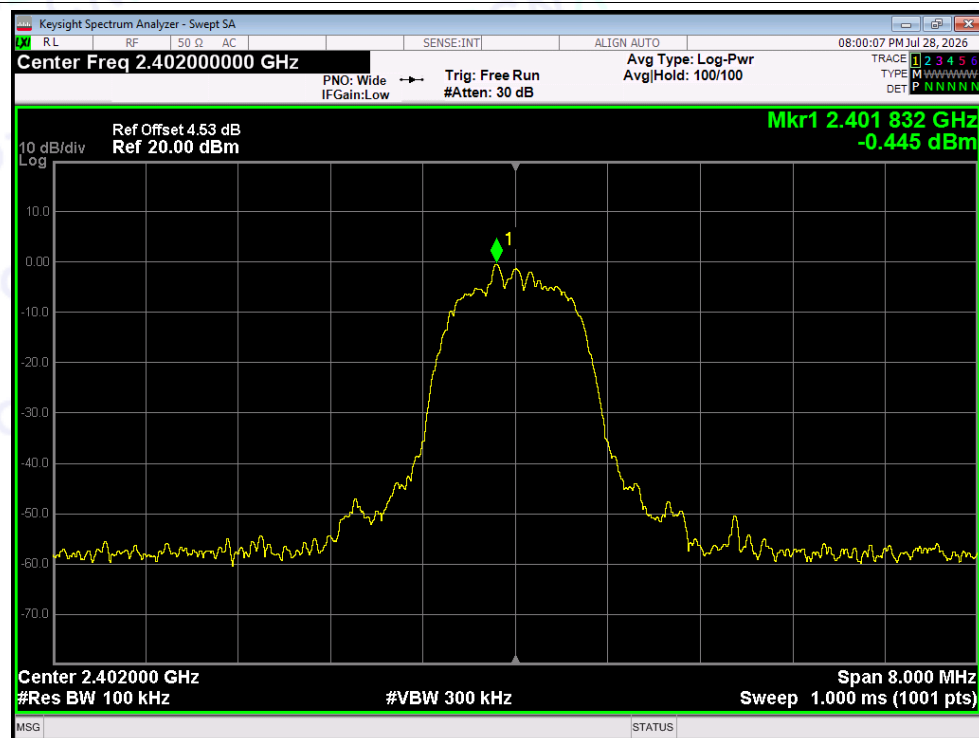
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



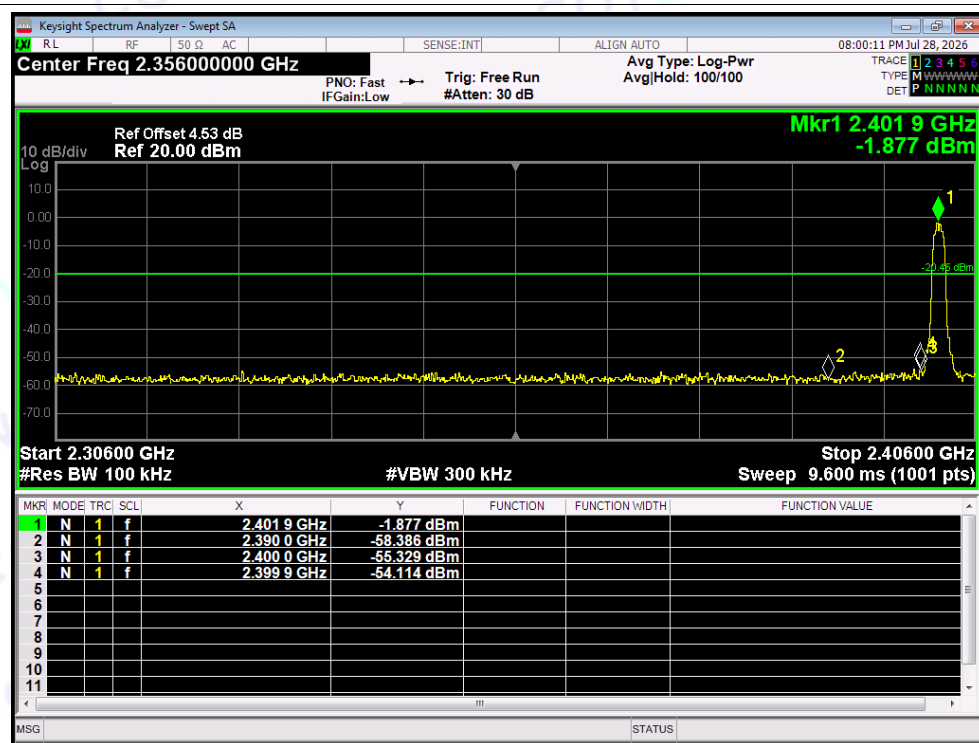
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



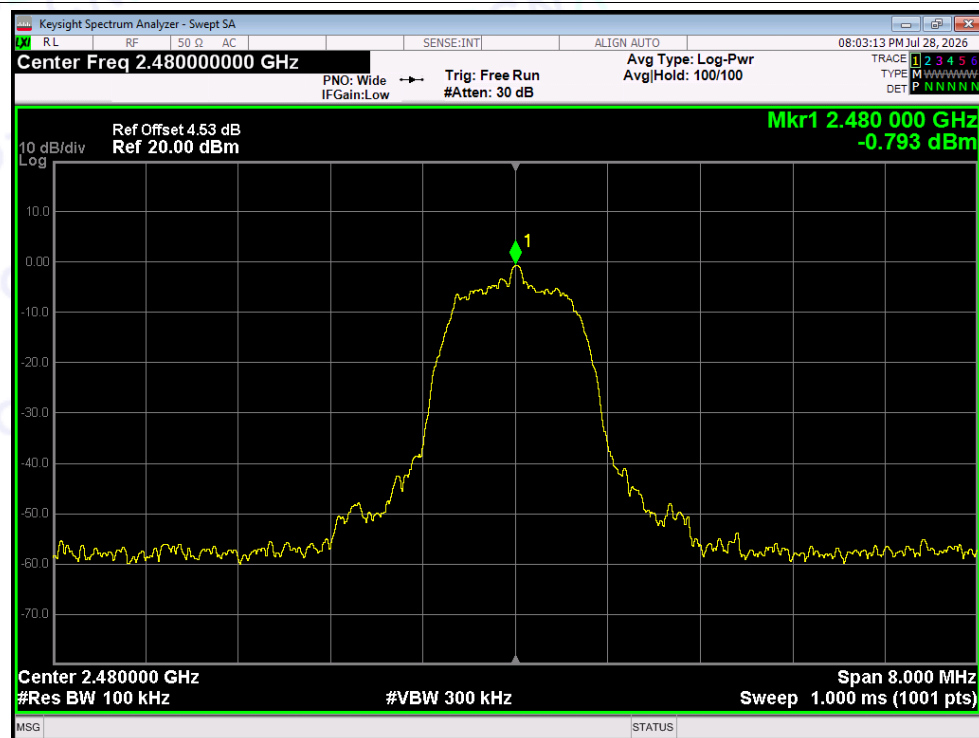
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



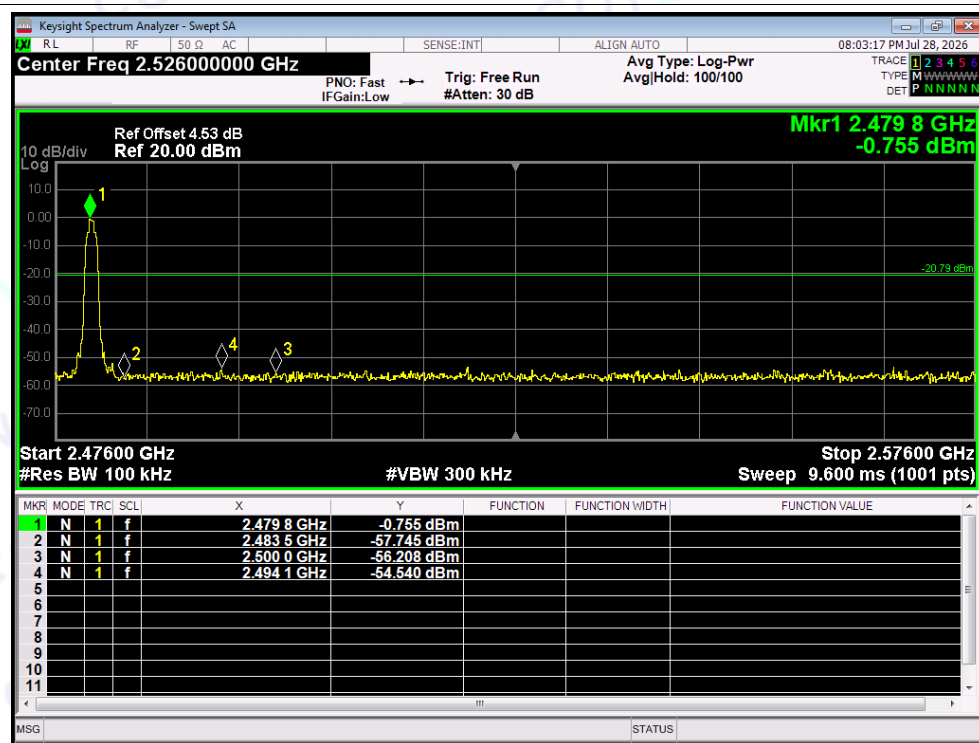
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



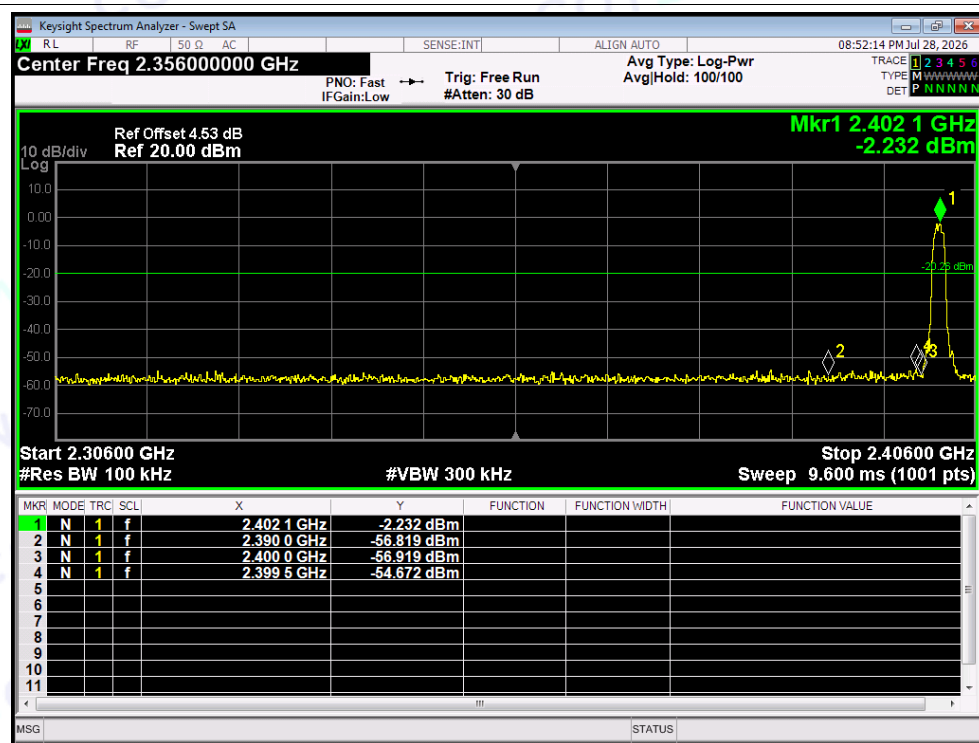
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



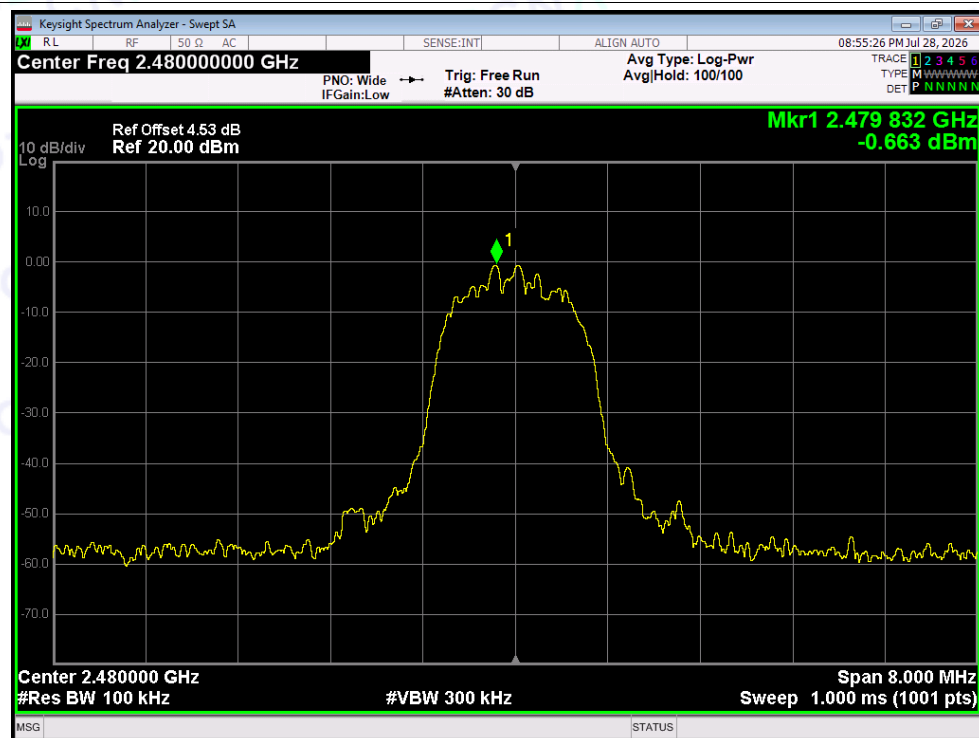
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



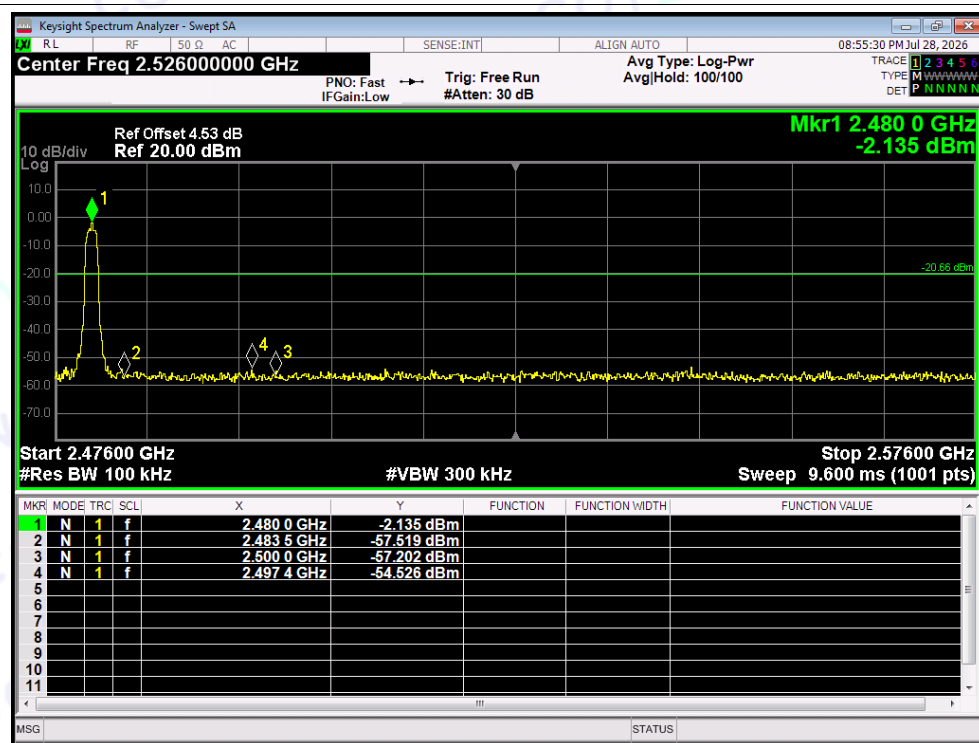
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission

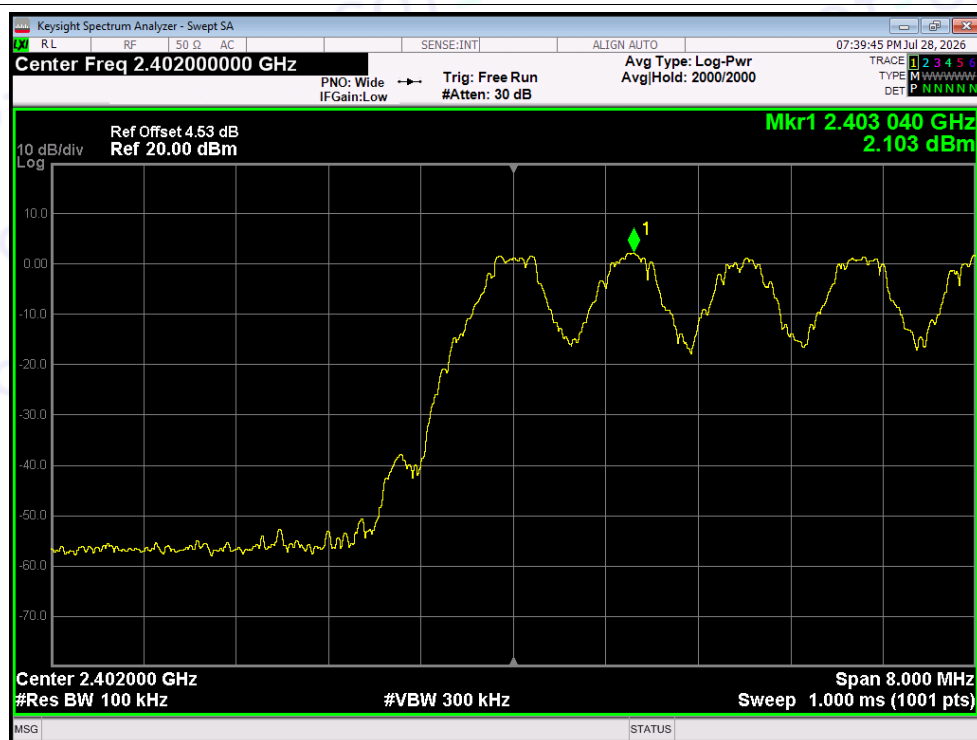


7. Band Edge(Hopping)

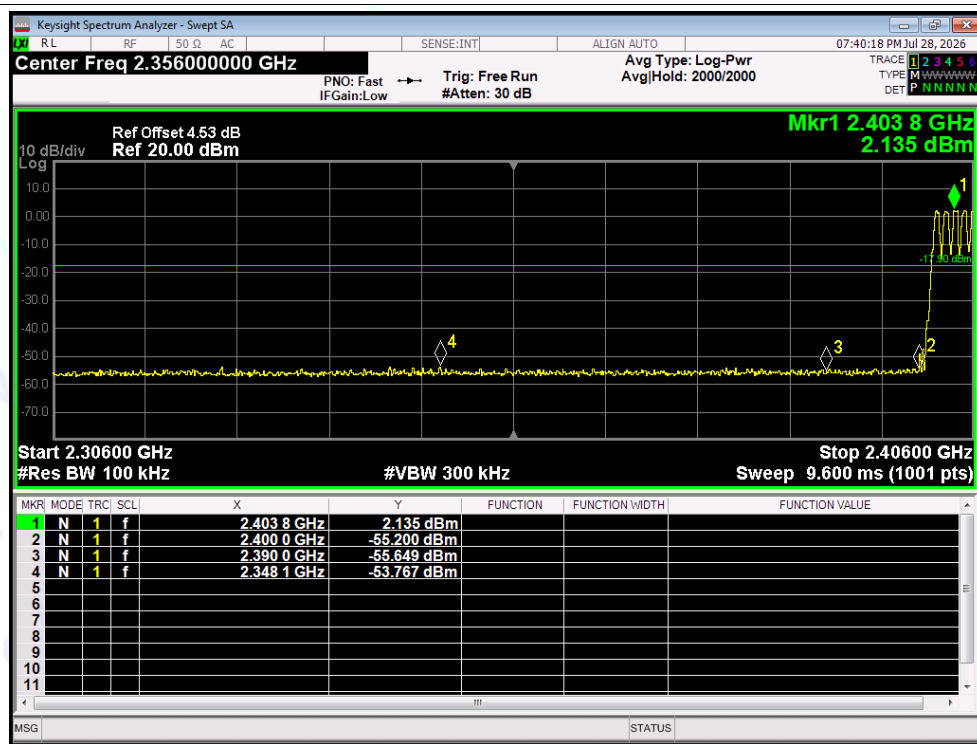
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-55.87	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-55.75	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-52.69	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-52.36	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-53.53	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-52.19	-20	Pass

Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



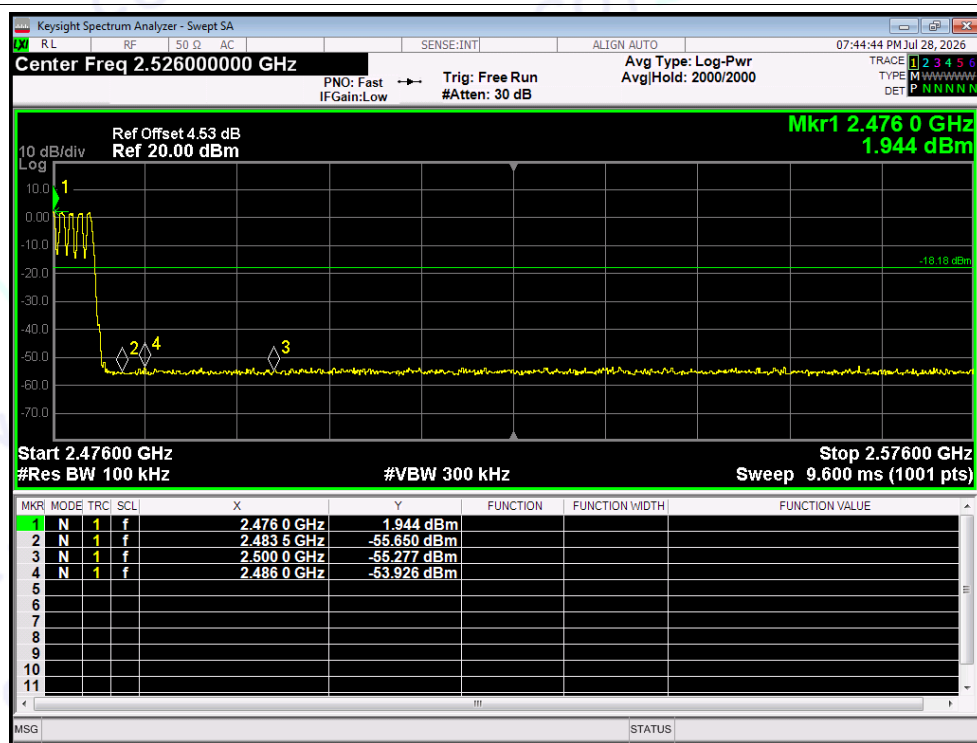
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



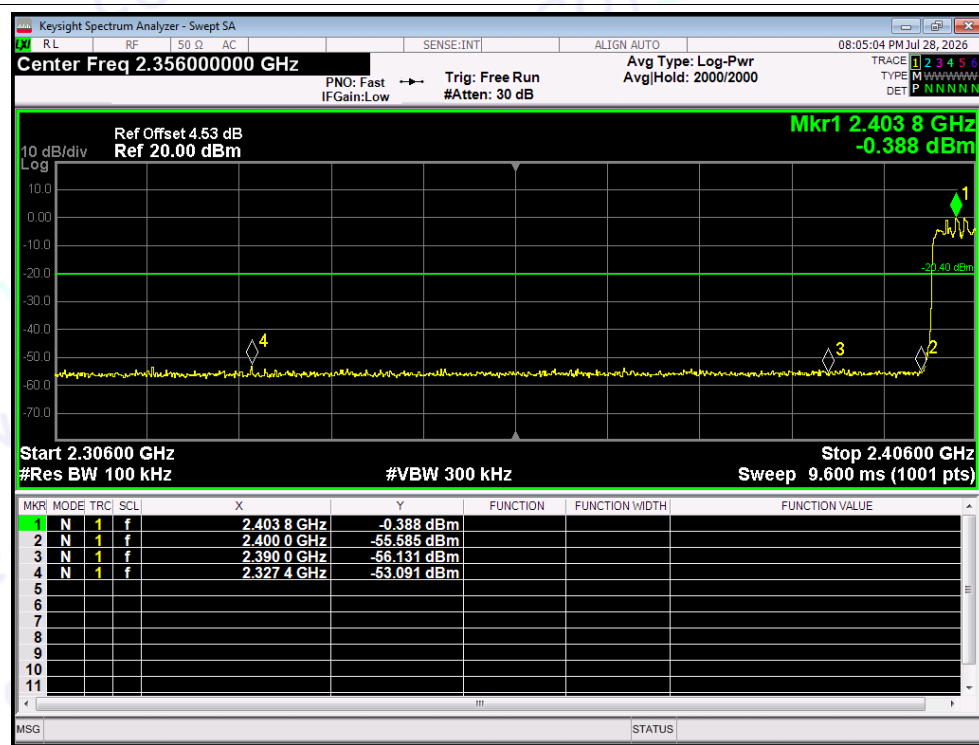
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref



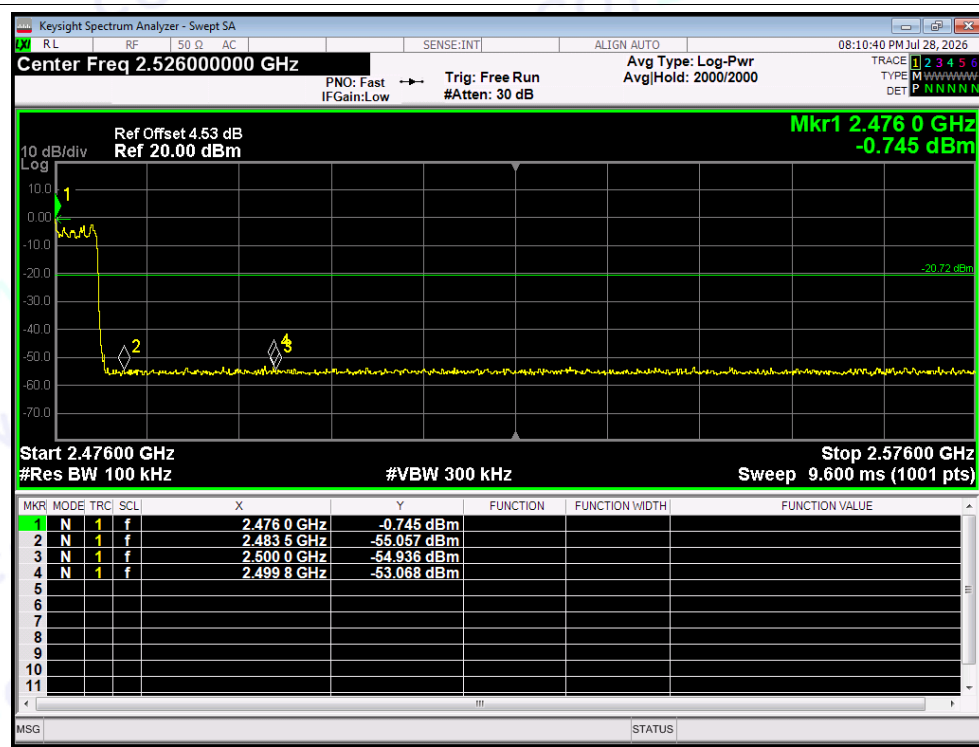
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



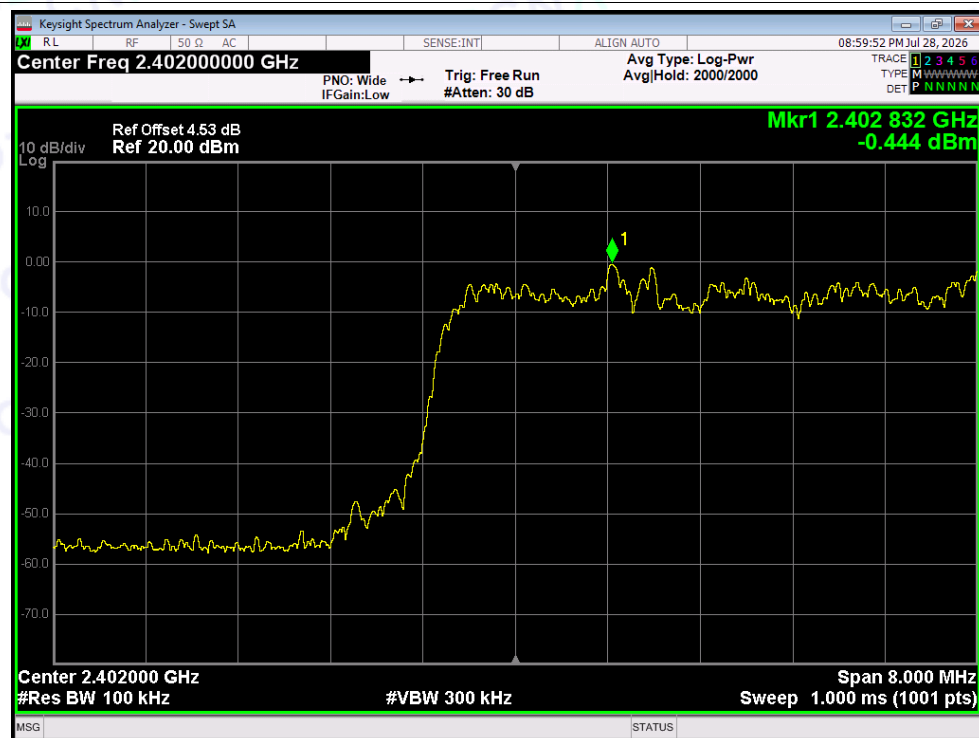
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



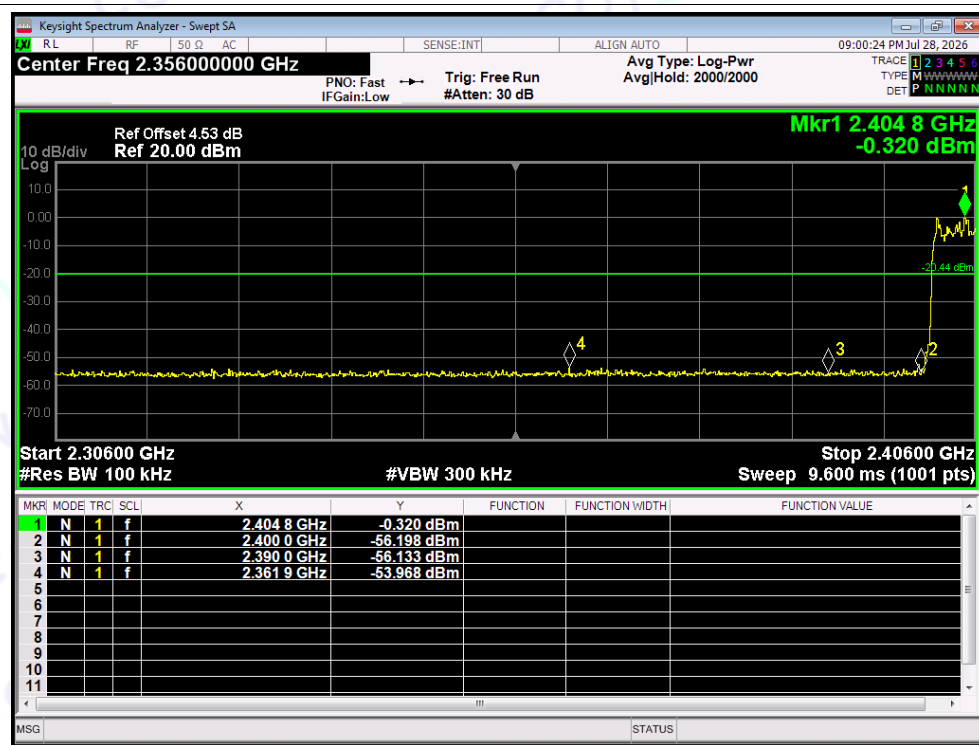
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



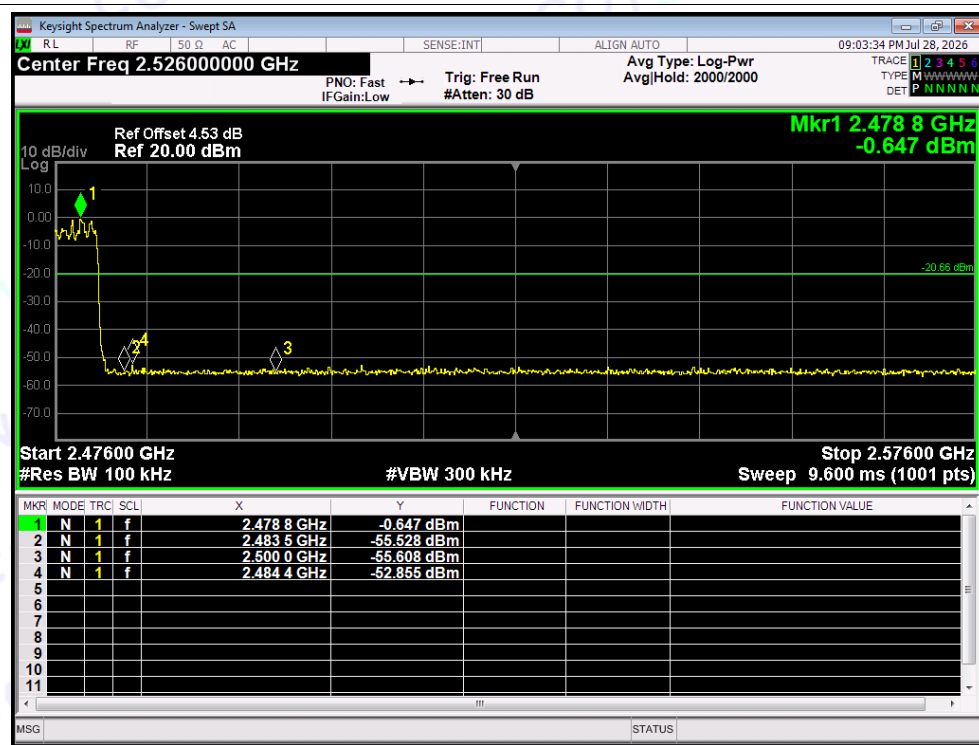
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

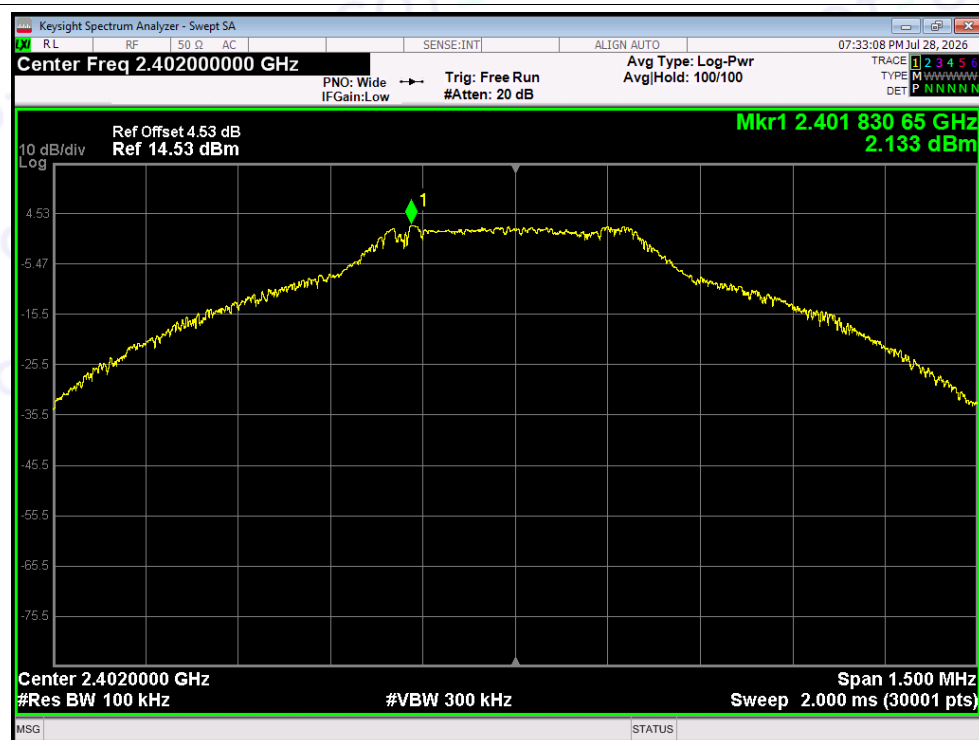


8. Conducted RF Spurious Emission

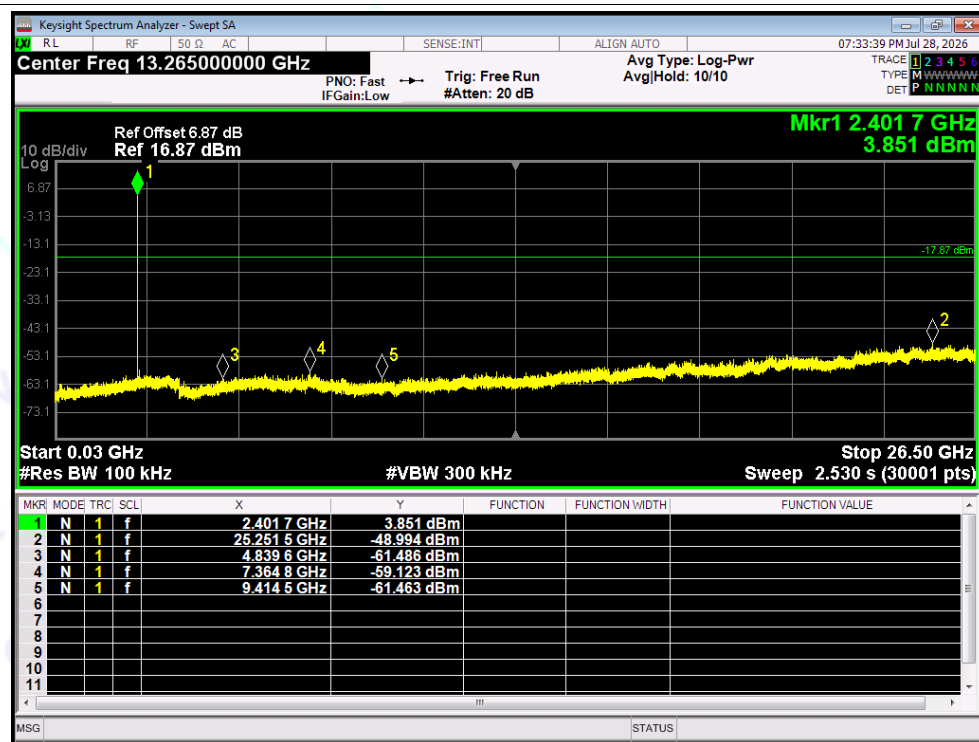
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-51.12	-20	Pass
NVNT	1-DH5	2441	Ant1	-51.3	-20	Pass
NVNT	1-DH5	2480	Ant1	-50.82	-20	Pass
NVNT	2-DH5	2402	Ant1	-48.2	-20	Pass
NVNT	2-DH5	2441	Ant1	-48.89	-20	Pass
NVNT	2-DH5	2480	Ant1	-48.4	-20	Pass
NVNT	3-DH5	2402	Ant1	-48.43	-20	Pass
NVNT	3-DH5	2441	Ant1	-48.95	-20	Pass
NVNT	3-DH5	2480	Ant1	-48.12	-20	Pass

Test Graphs

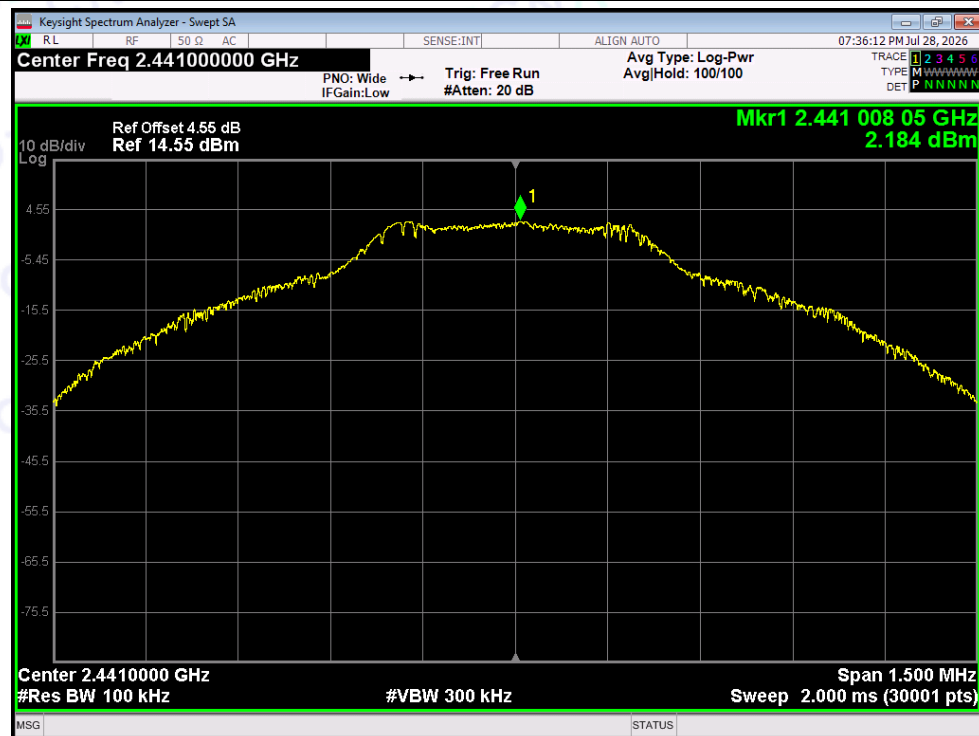
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



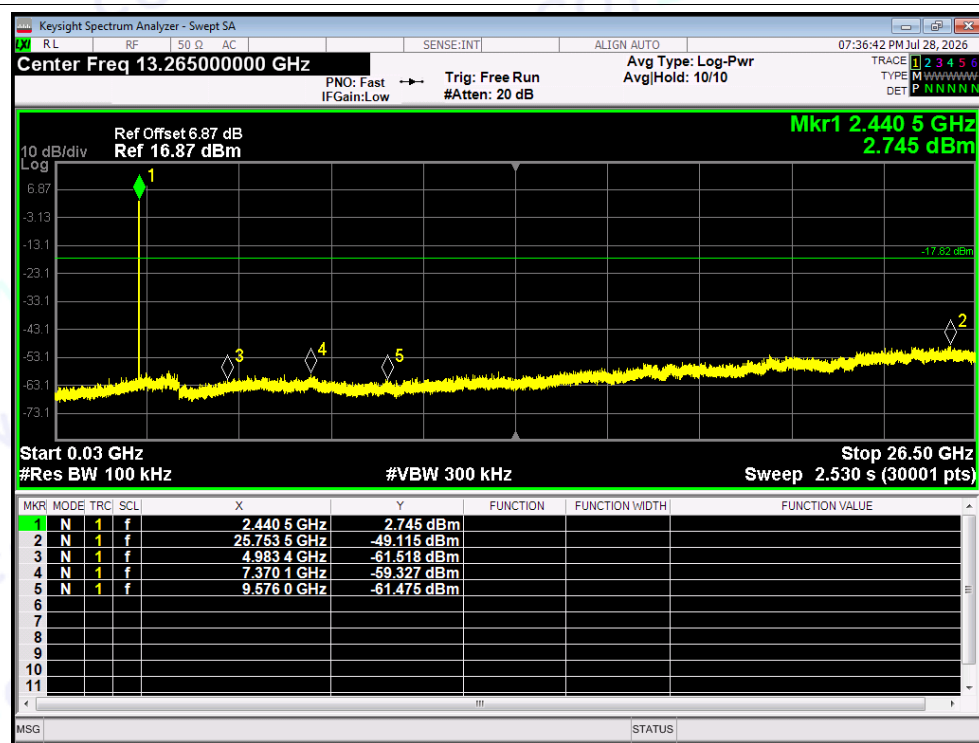
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



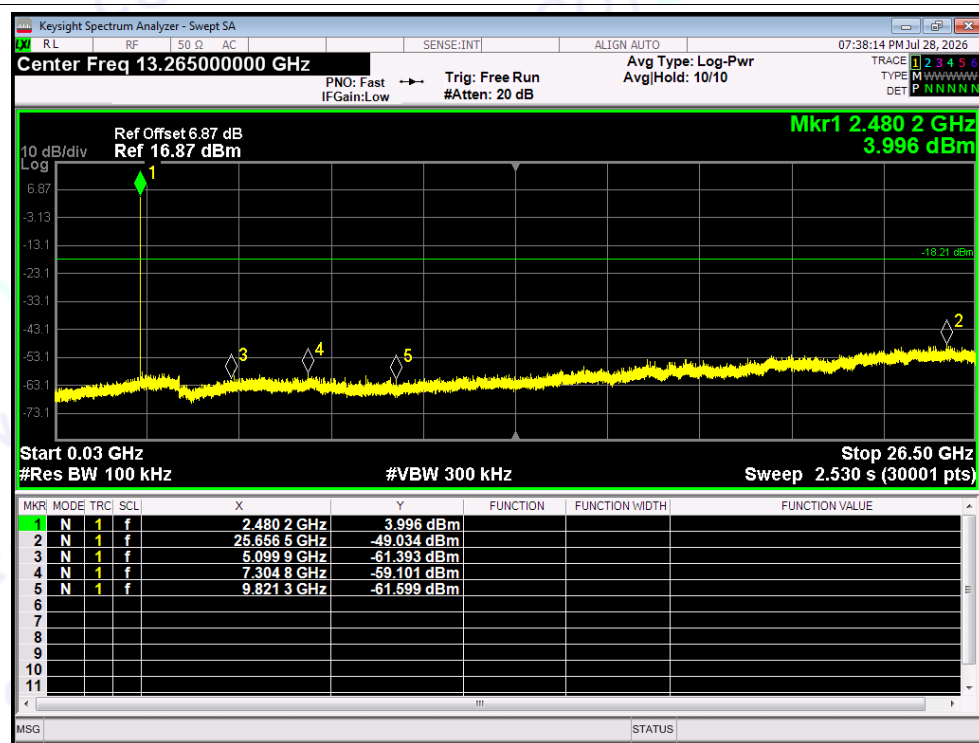
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



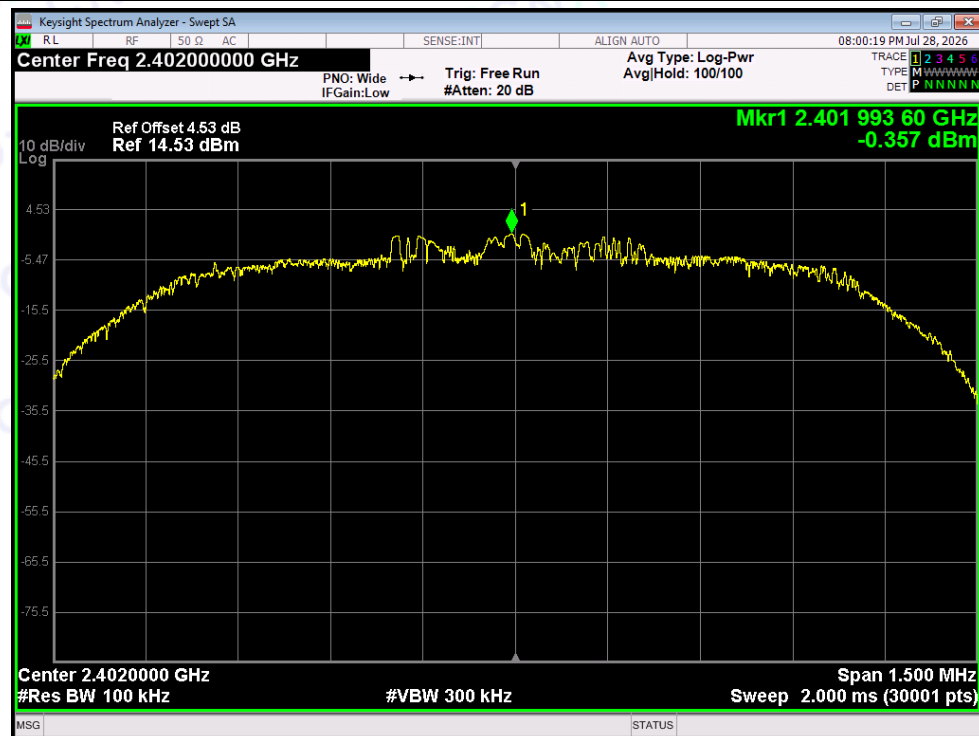
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



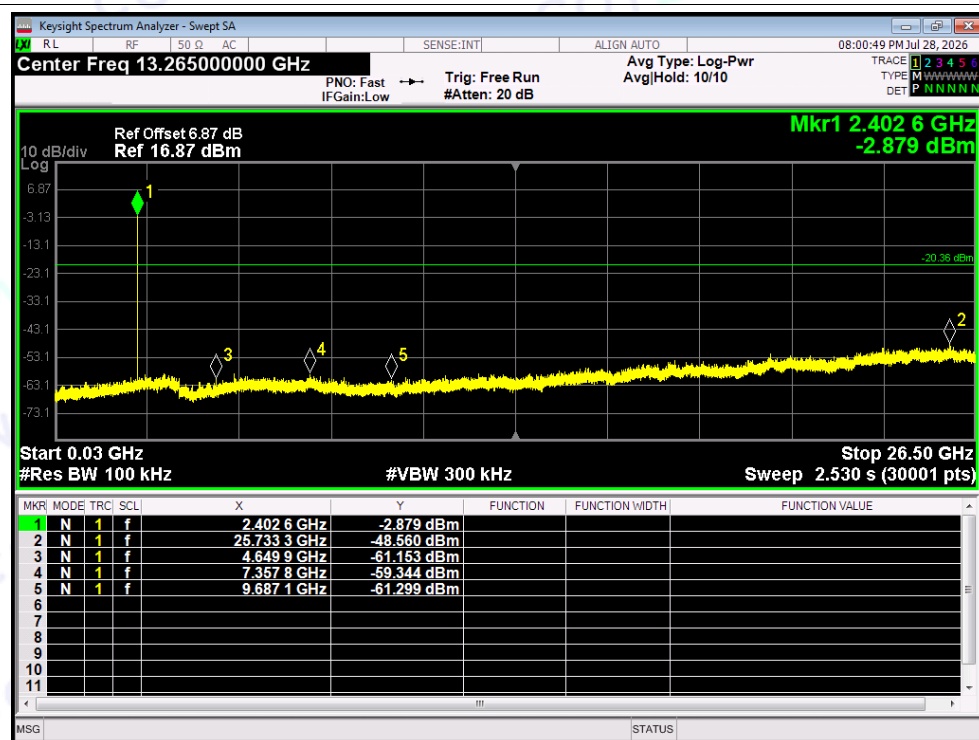
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



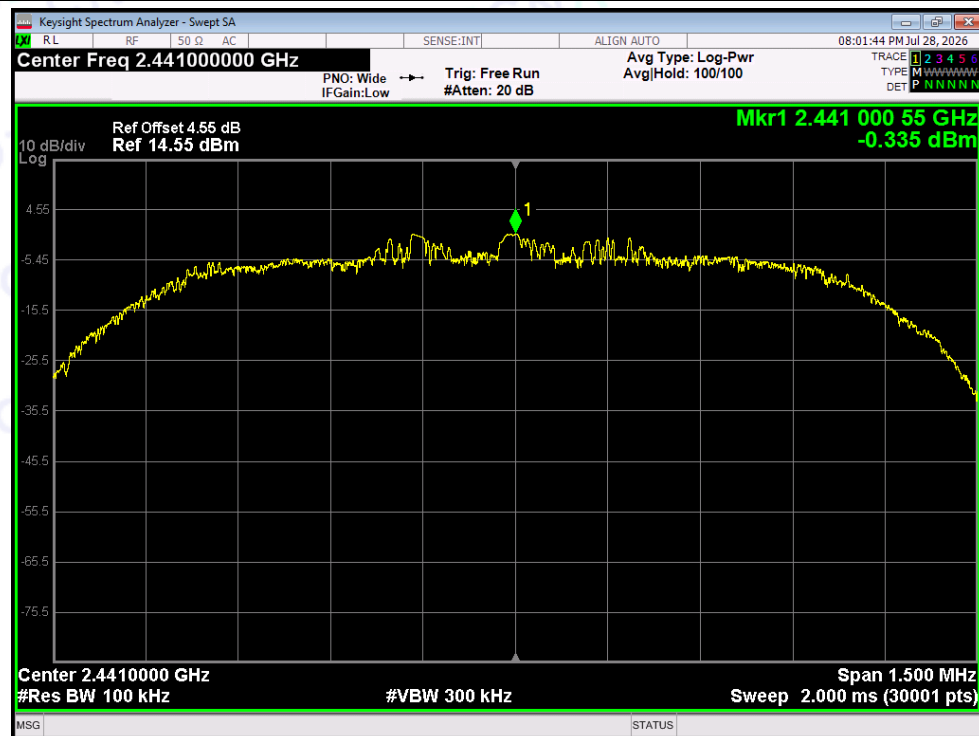
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



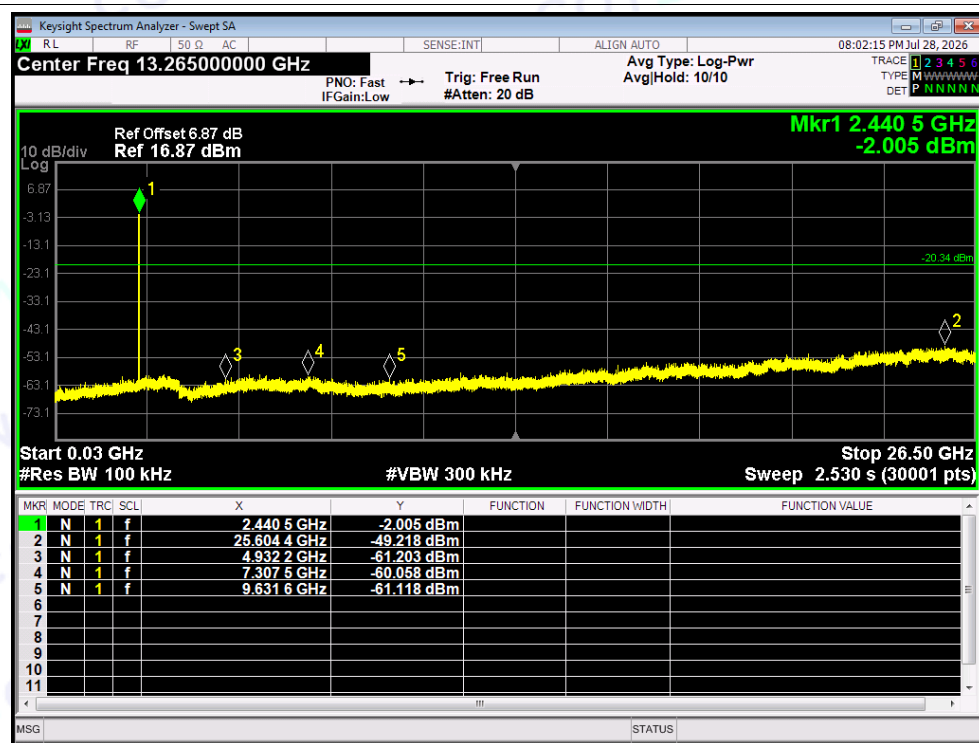
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



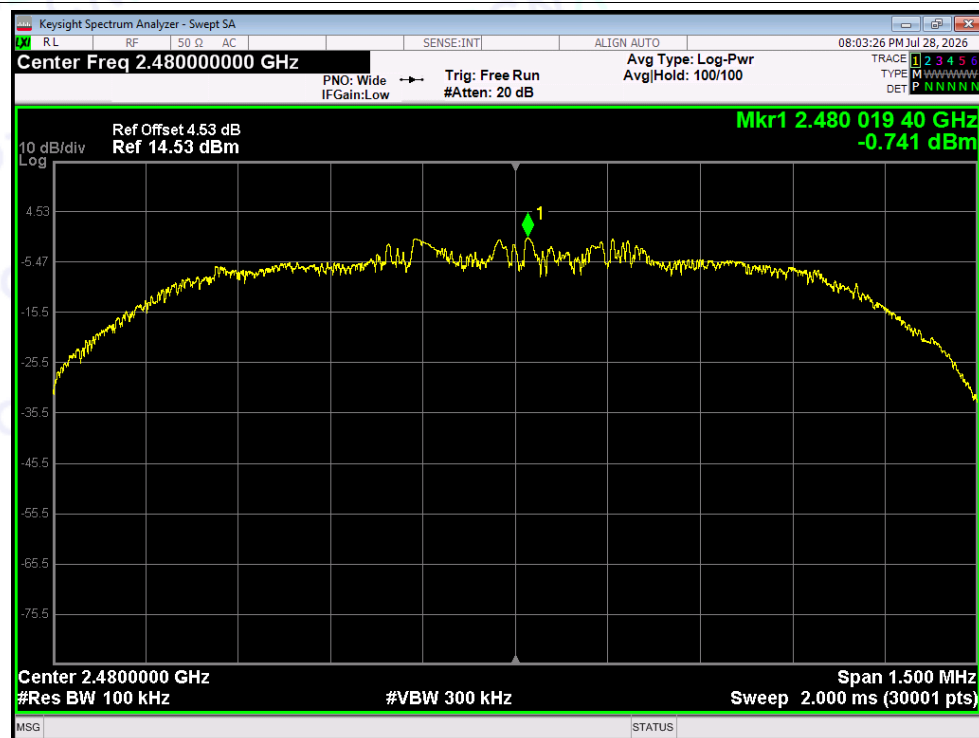
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



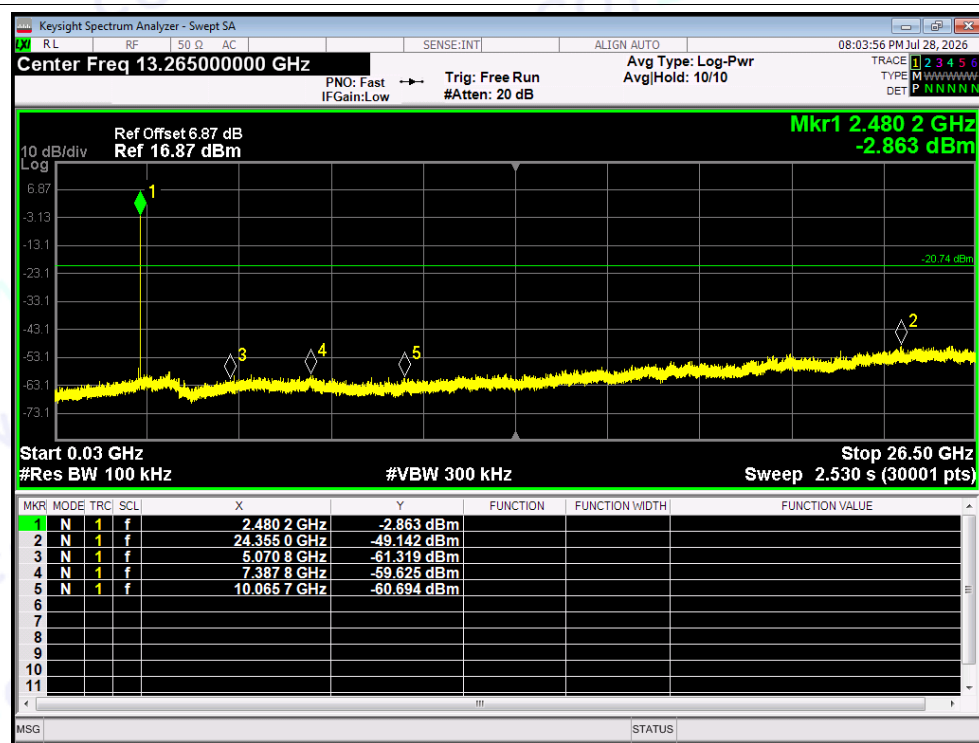
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



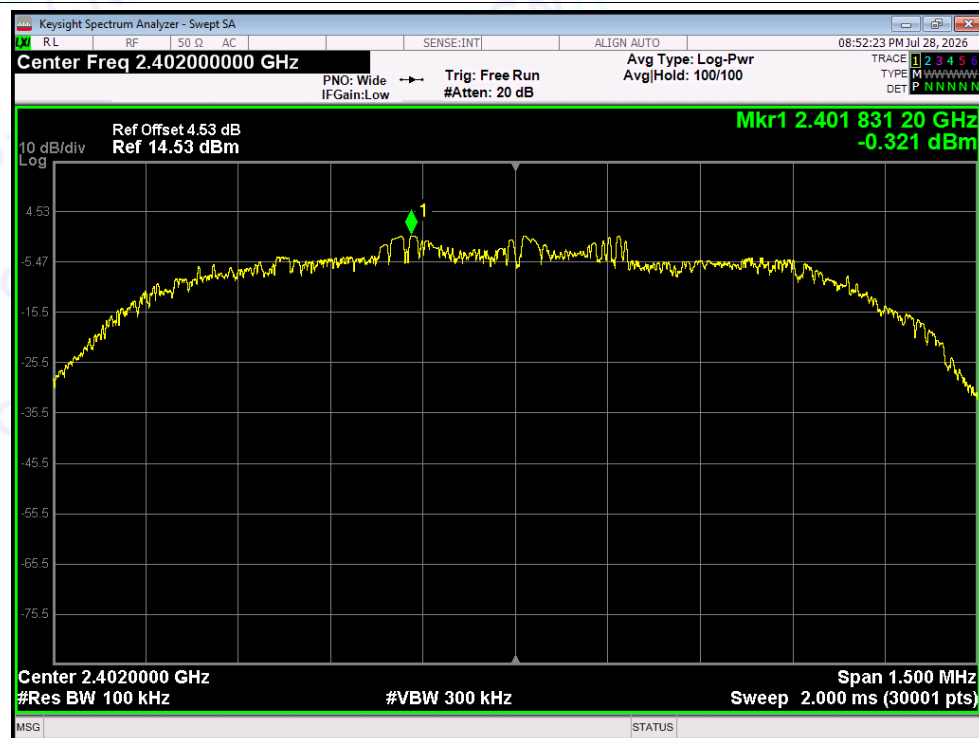
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



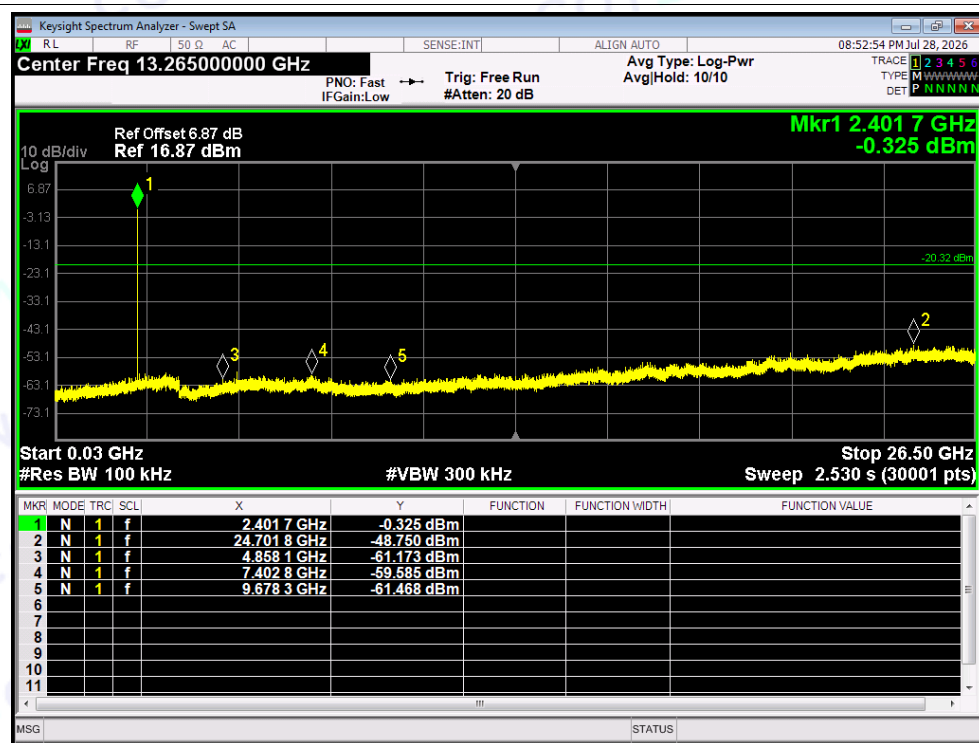
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



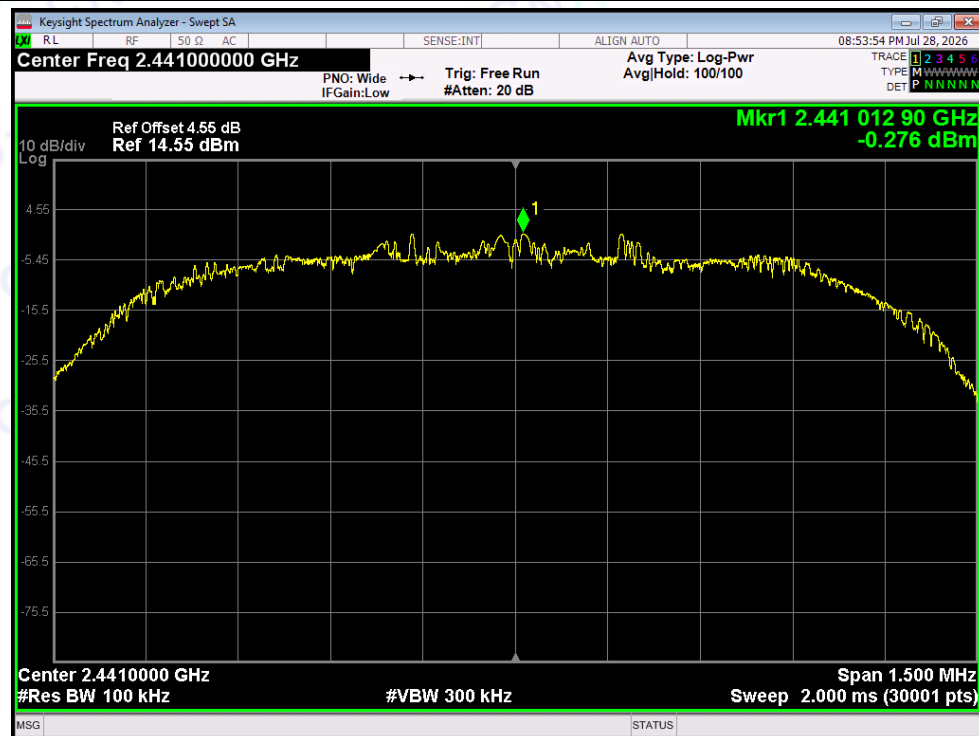
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



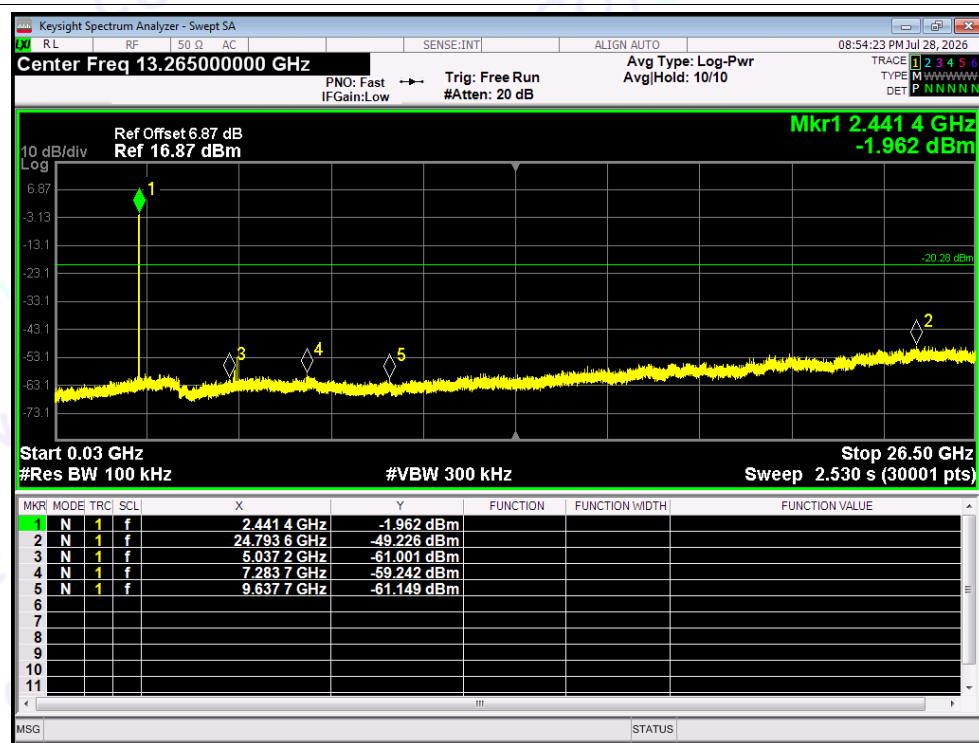
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



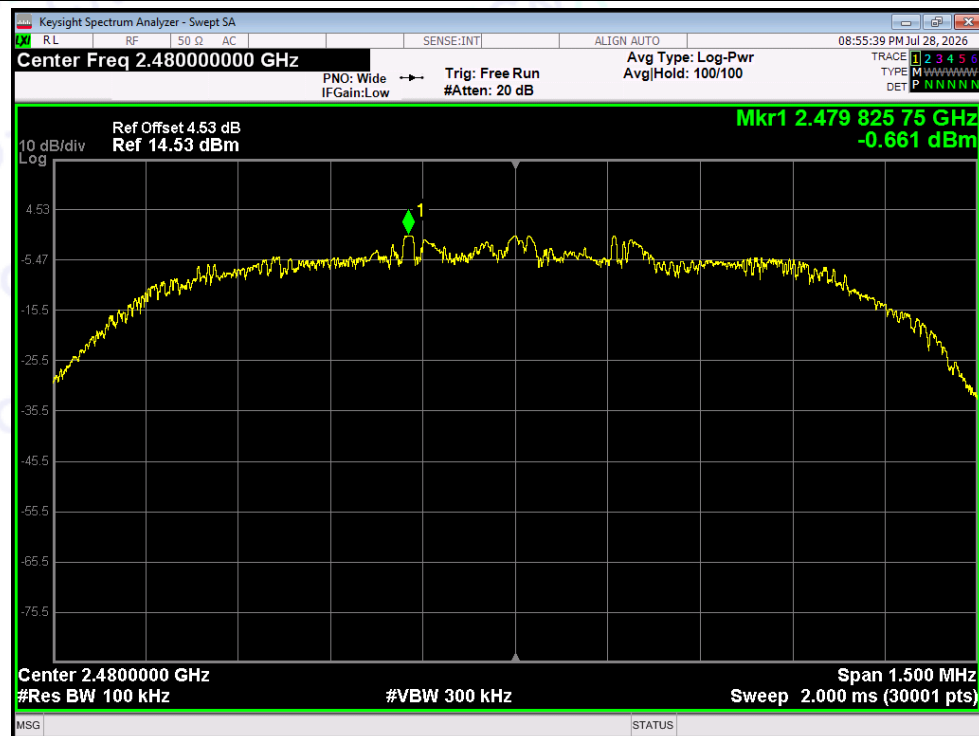
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



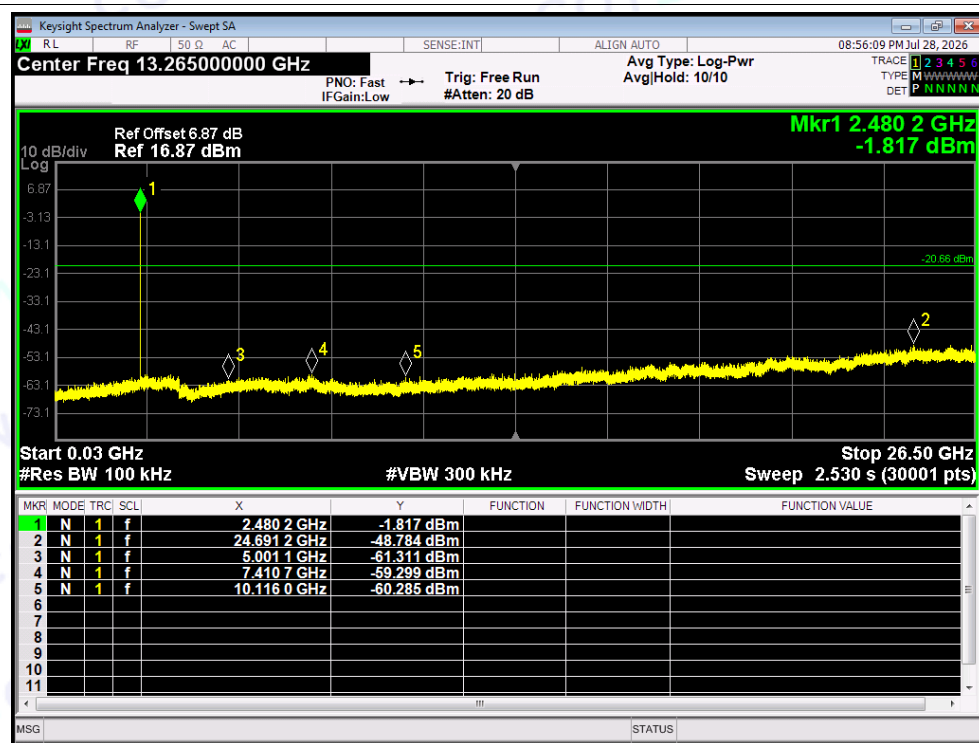
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

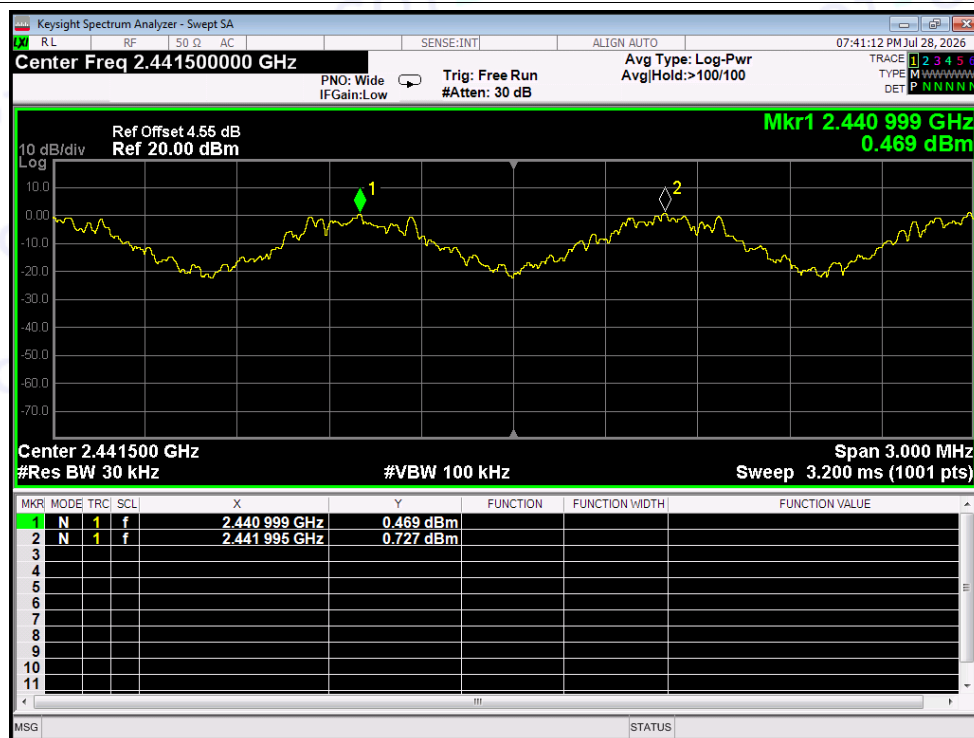


9. Carrier Frequencies Separation

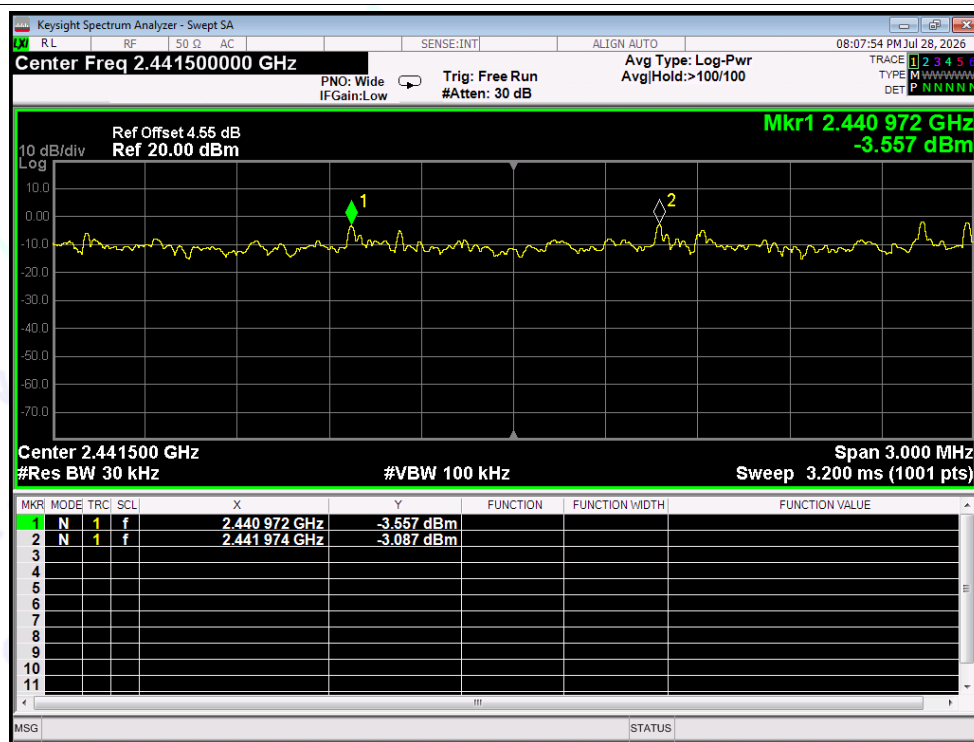
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2440.999	2441.995	0.996	0.633	Pass
NVNT	2-DH5	Ant1	2440.972	2441.974	1.002	0.847	Pass
NVNT	3-DH5	Ant1	2440.99	2441.989	0.999	0.847	Pass

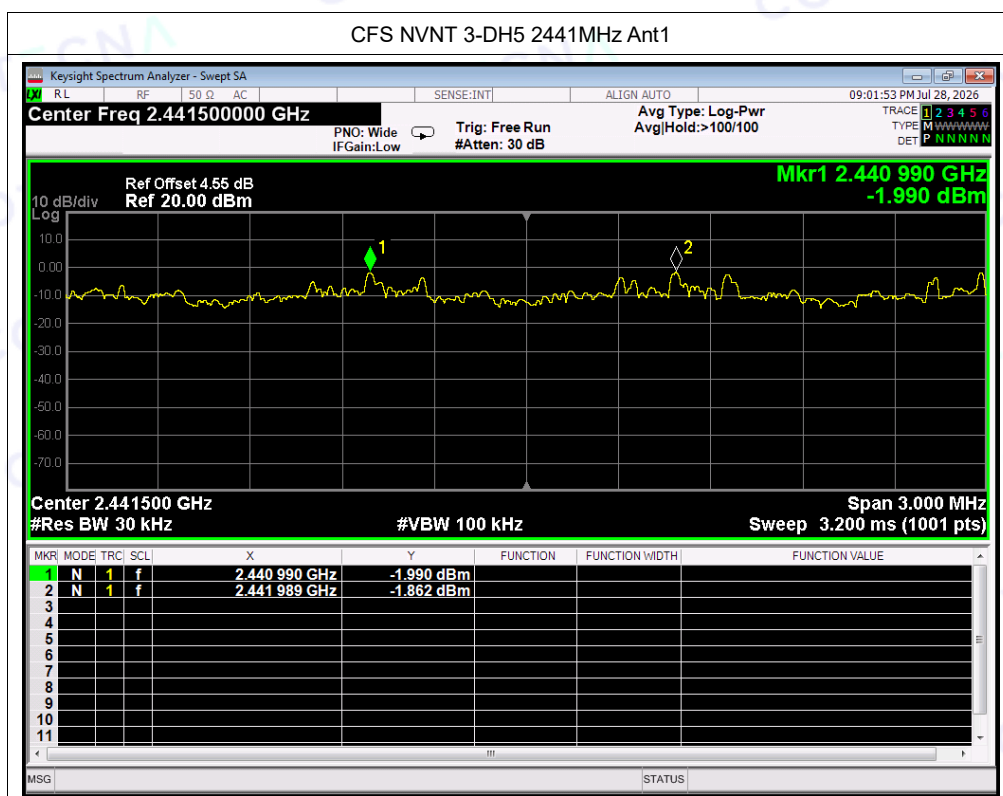
Test Graphs

CFS NVNT 1-DH5 2441MHz Ant1



CFS NVNT 2-DH5 2441MHz Ant1



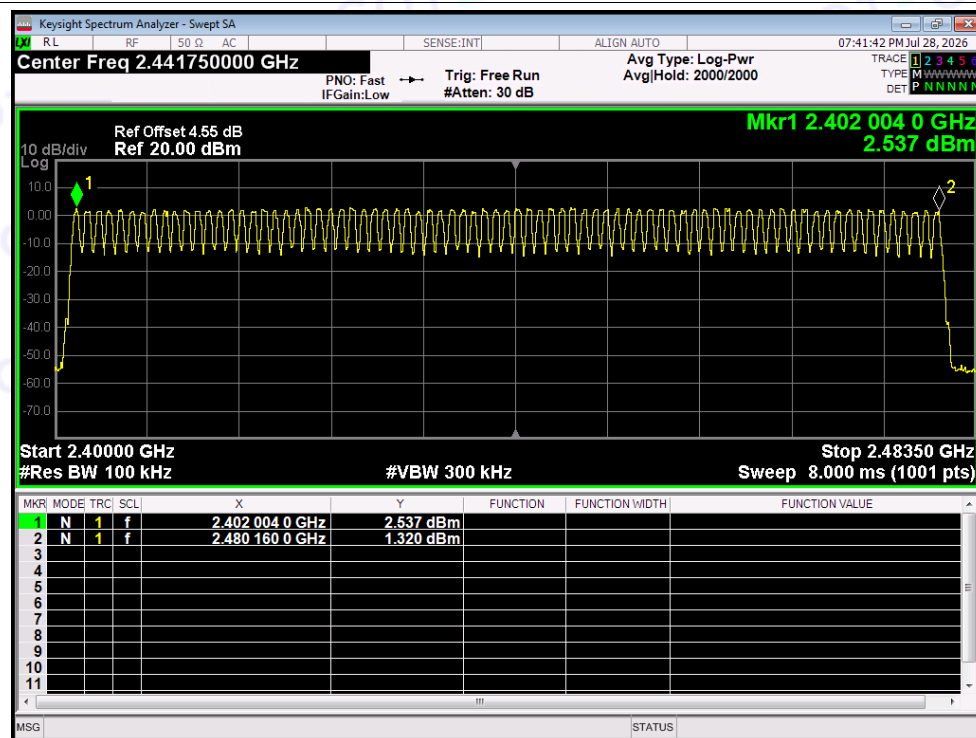


10. Number of Hopping Channel

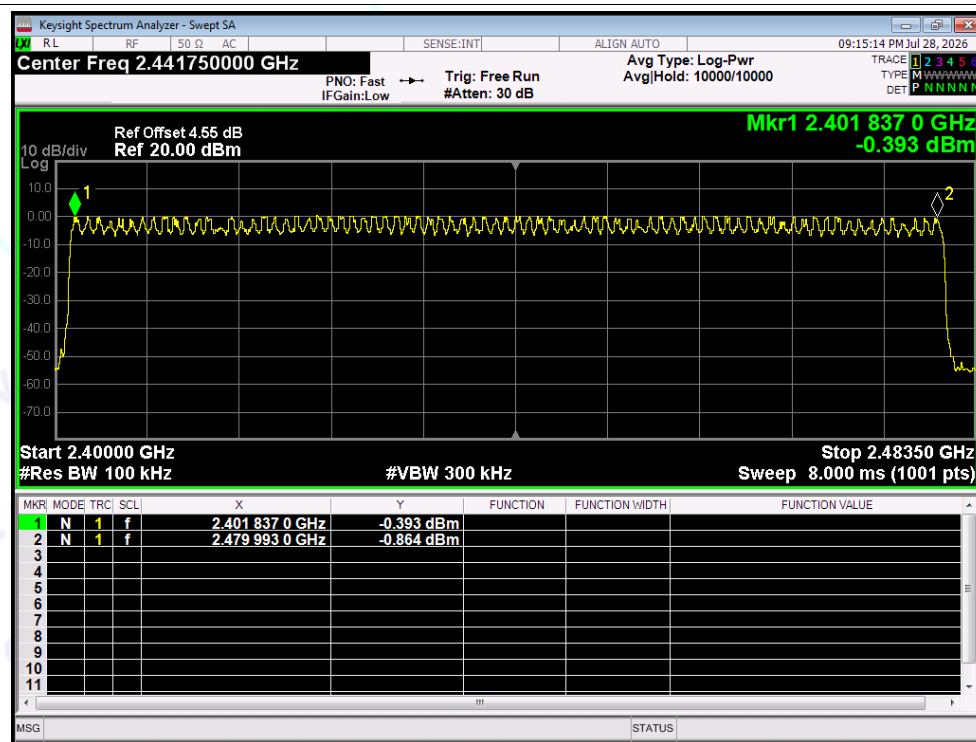
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

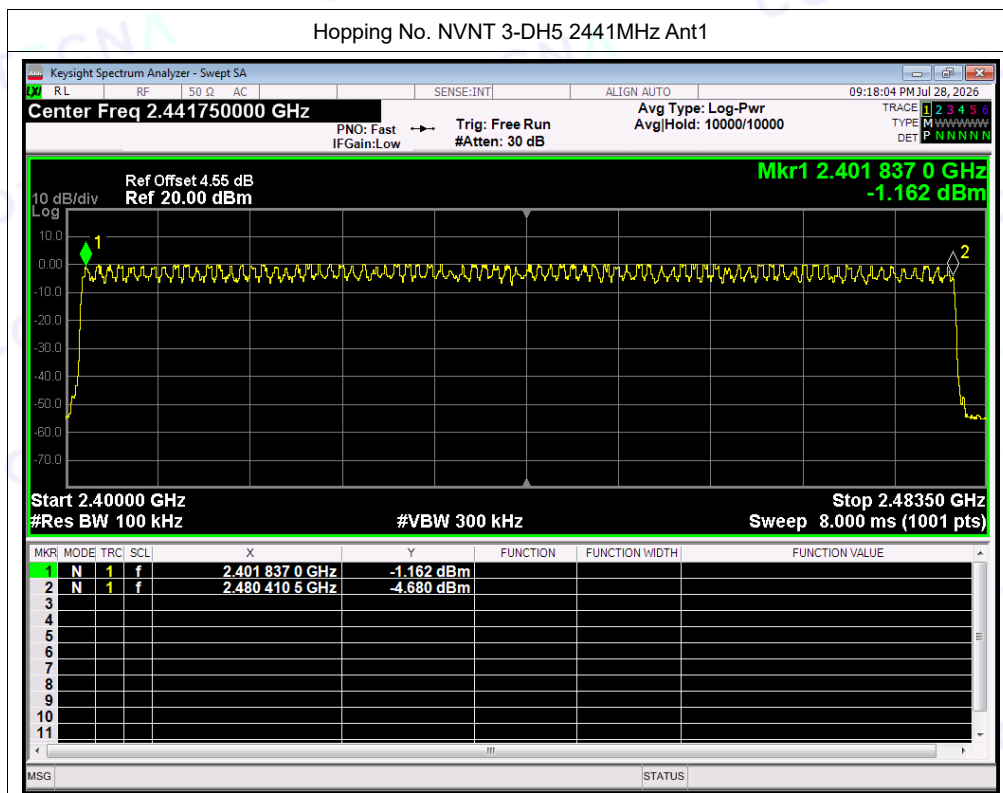
Test Graphs

Hopping No. NVNT 1-DH5 2441MHz Ant1



Hopping No. NVNT 2-DH5 2441MHz Ant1





--- END OF REPORT ---