

RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	White Noise Machine
Test Model:	HFD-W39B
Sample ID:	HC-C-202605-0106-01-01
Environmental Conditions	
Temperature:	24.6℃
Relative Humidity:	48.6%
Test Voltage:	DC 3.7V
Test Engineer:	Kael Li
Note: For a more detailed features description, please refer to the report TBR-C-202605-0106-9 The report only show the worst case data.	

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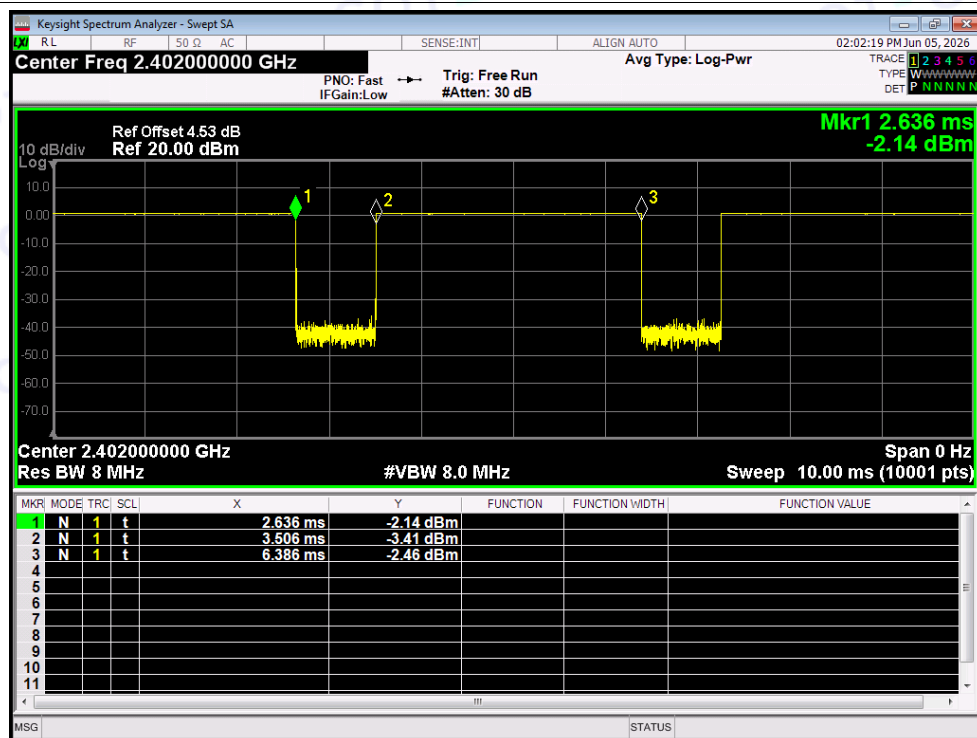
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1. Duty Cycle

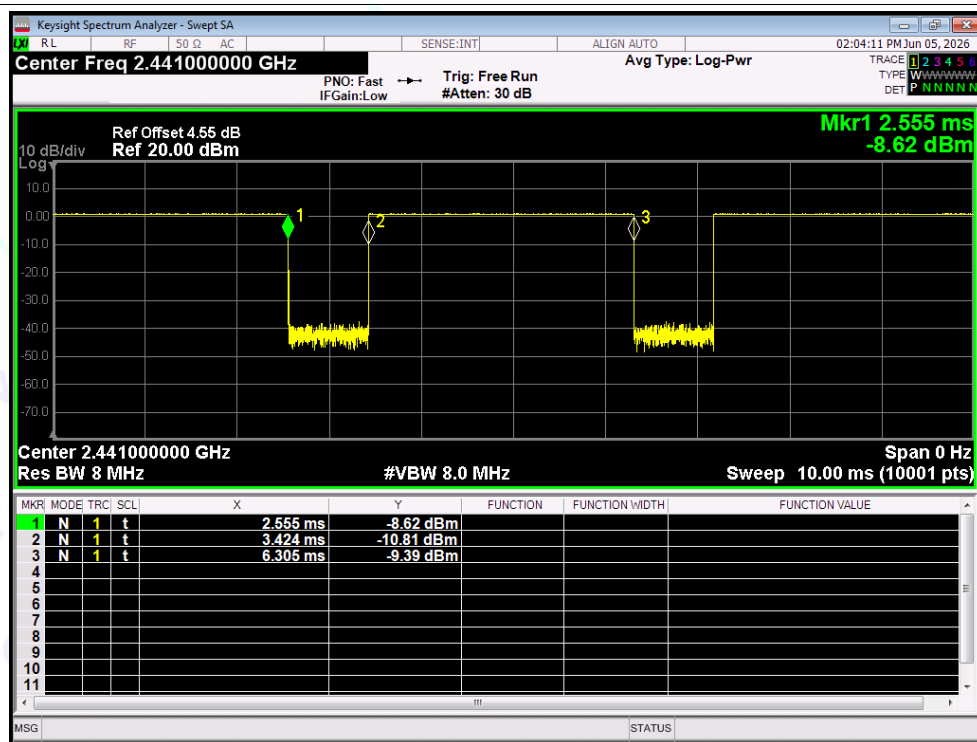
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.8	1.15	0.35
NVNT	1-DH5	2441	Ant1	76.83	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.8	1.15	0.35
NVNT	2-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.96	1.14	0.35
NVNT	3-DH5	2402	Ant1	77.01	1.13	0.35
NVNT	3-DH5	2441	Ant1	77.01	1.13	0.35
NVNT	3-DH5	2480	Ant1	77.01	1.13	0.35

Test Graphs

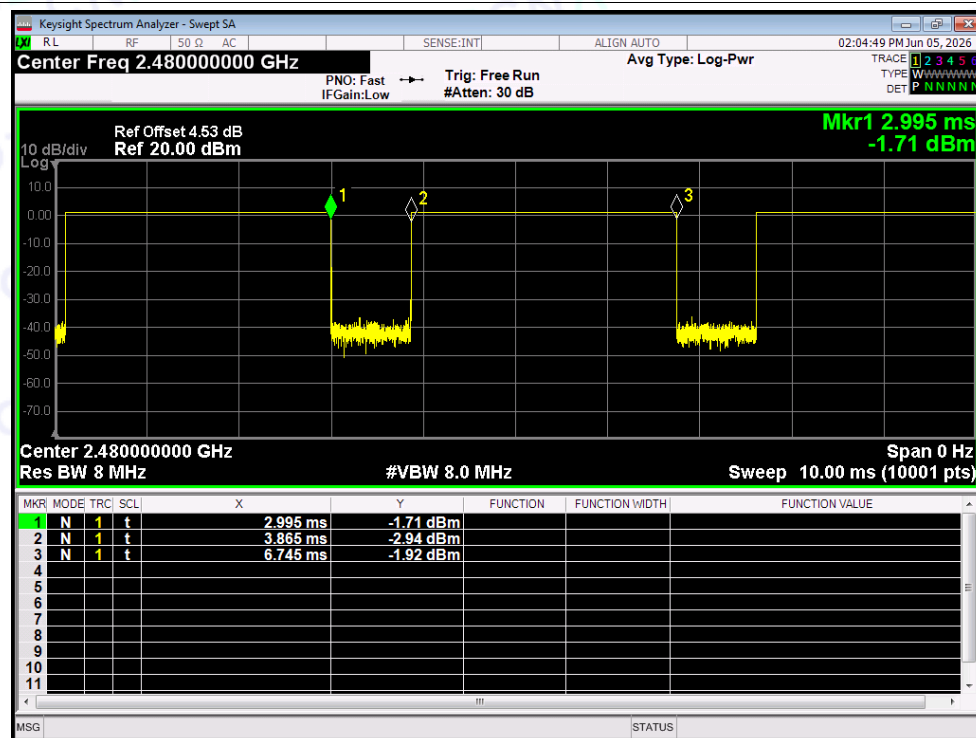
Duty Cycle NVNT 1-DH5 2402MHz Ant1



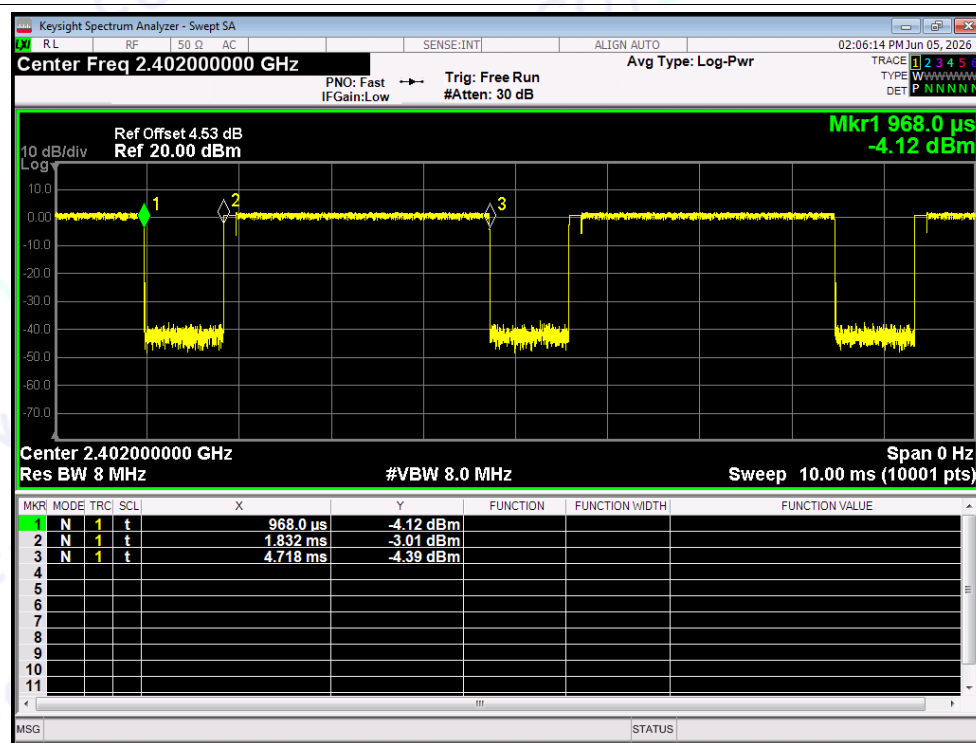
Duty Cycle NVNT 1-DH5 2441MHz Ant1



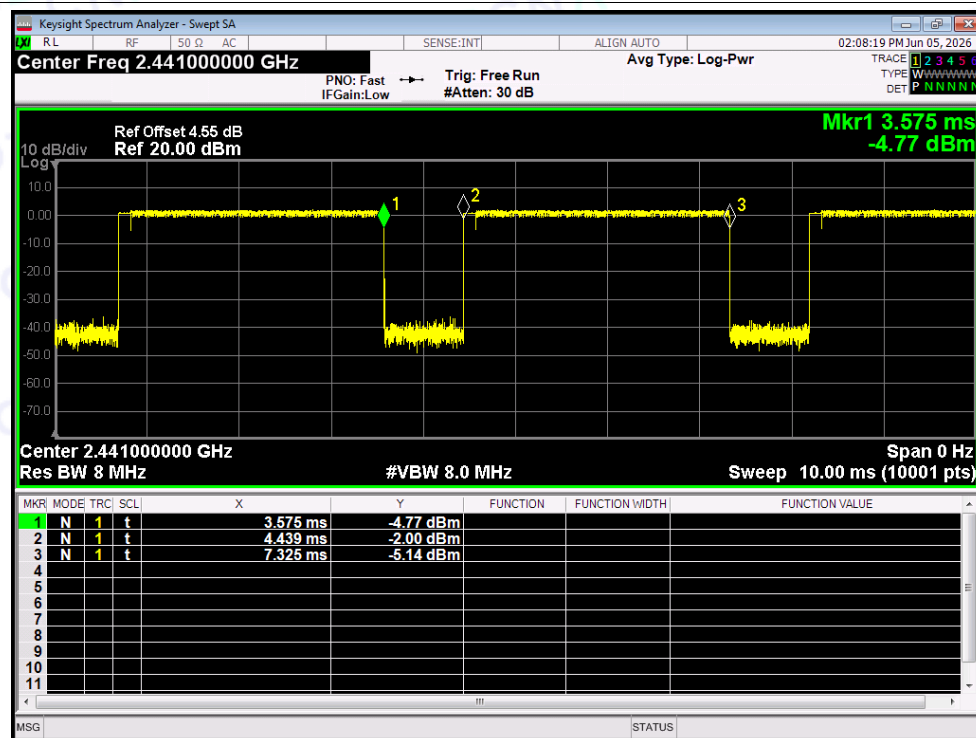
Duty Cycle NVNT 1-DH5 2480MHz Ant1



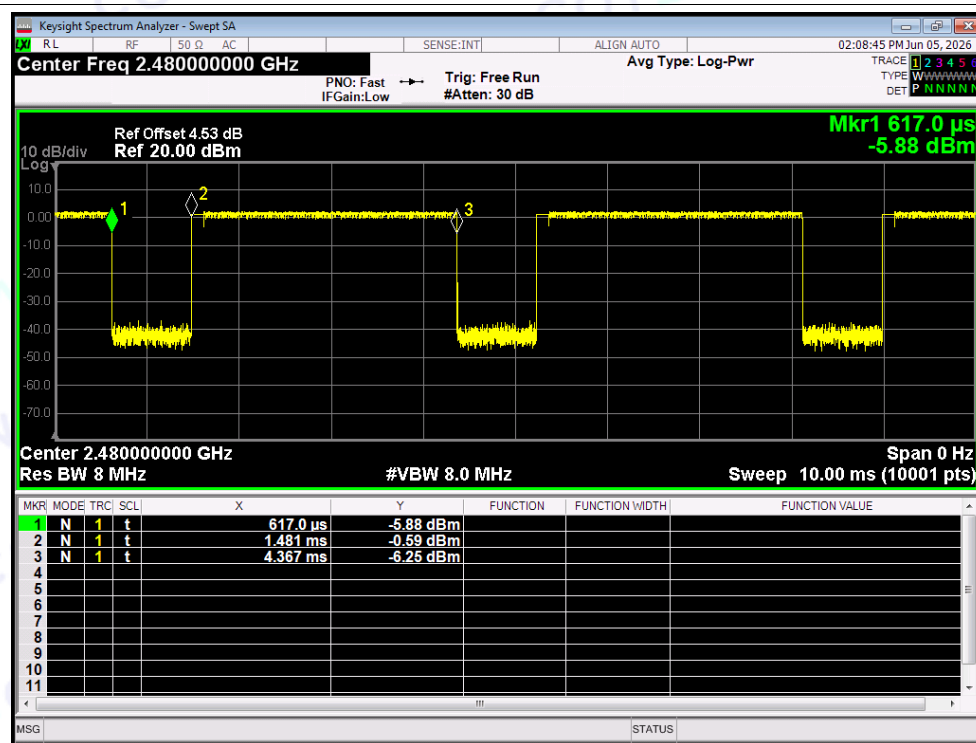
Duty Cycle NVNT 2-DH5 2402MHz Ant1



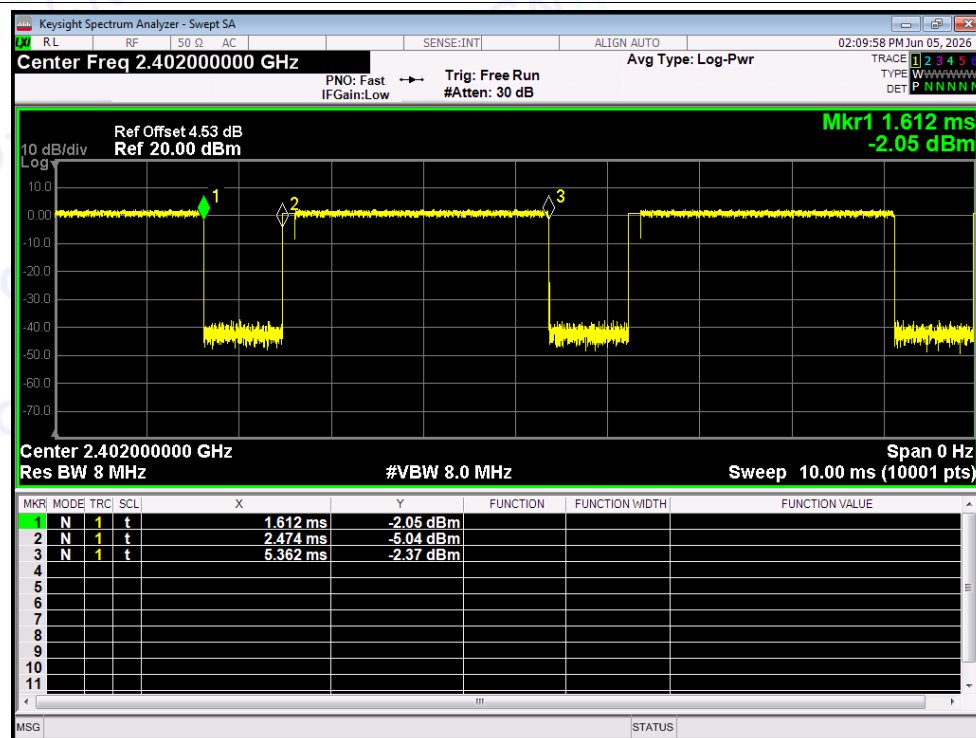
Duty Cycle NVNT 2-DH5 2441MHz Ant1



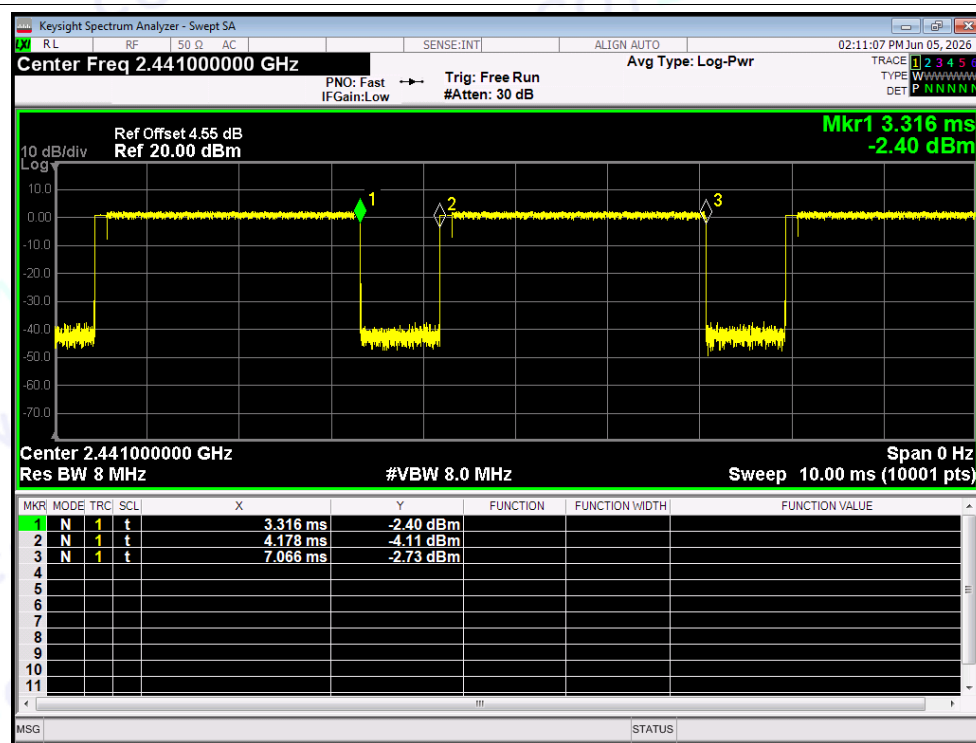
Duty Cycle NVNT 2-DH5 2480MHz Ant1

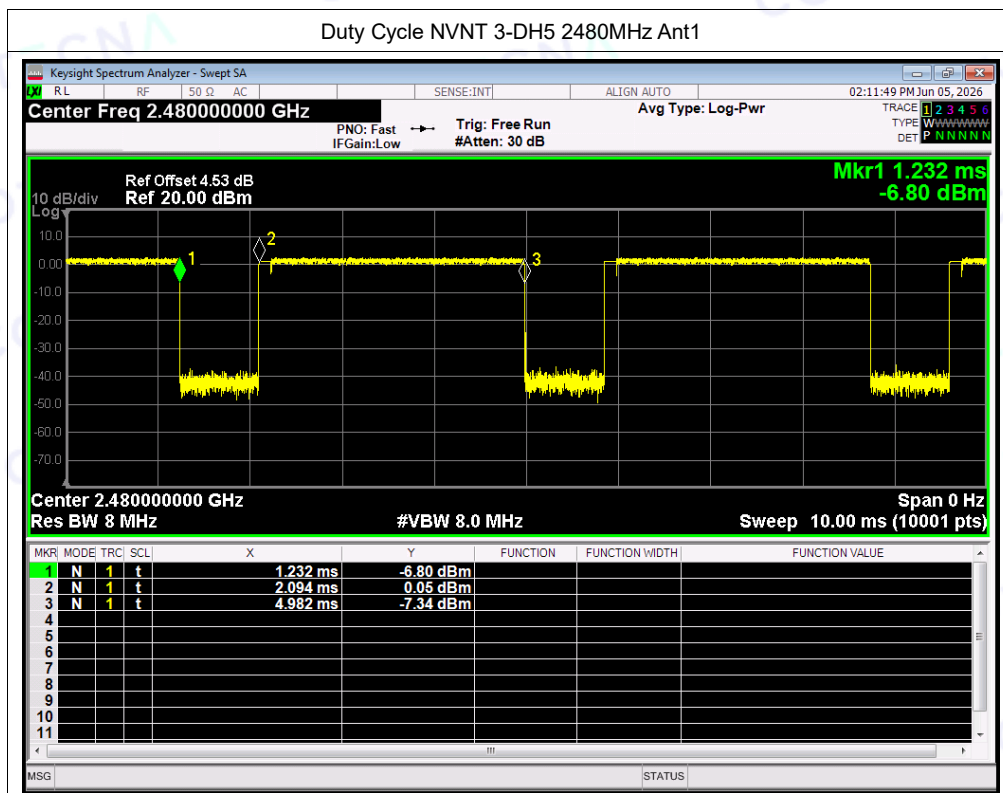


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1



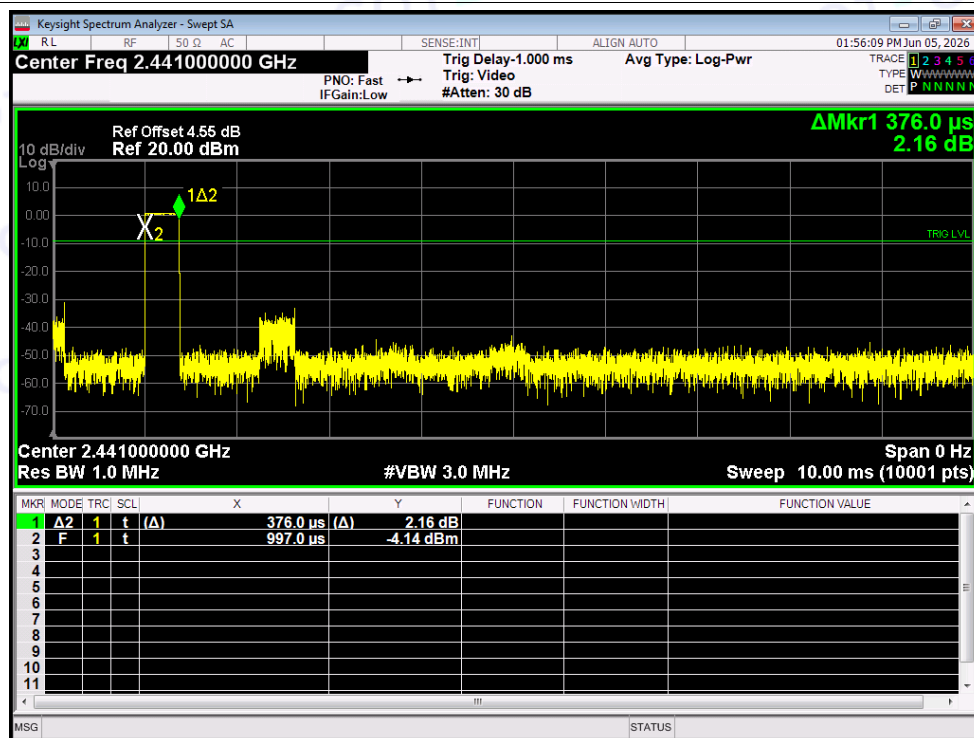


2. Dwell Time

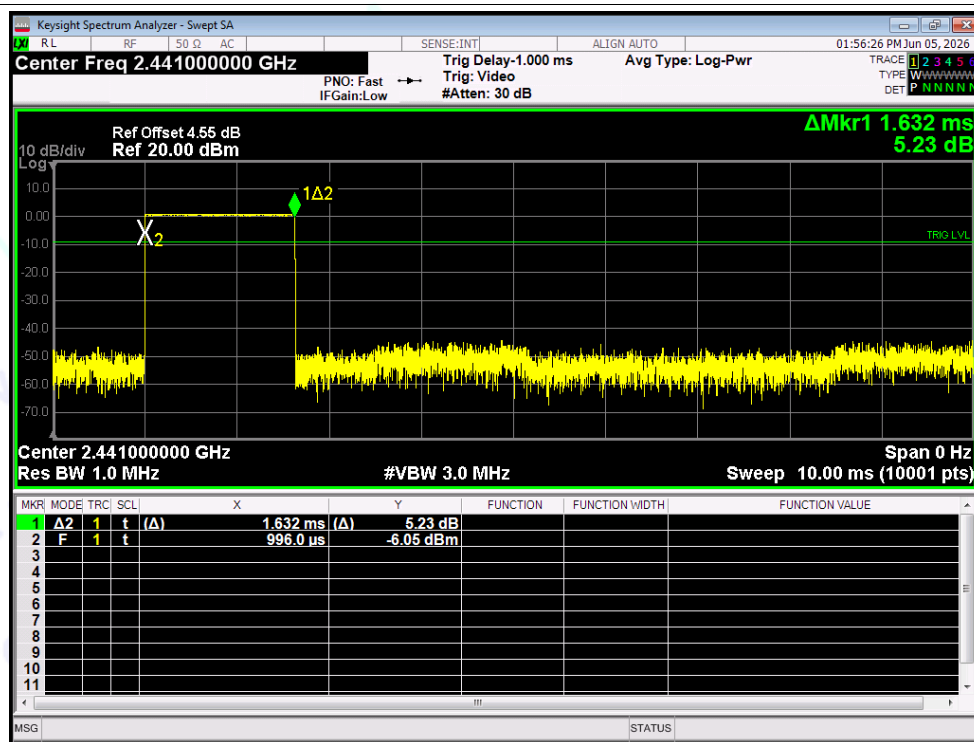
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.376	120.32	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.632	261.12	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.88	307.2	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.385	123.2	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.638	262.08	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.885	307.733	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.387	123.84	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.636	261.76	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.887	307.947	31600	400	Pass

Test Graphs

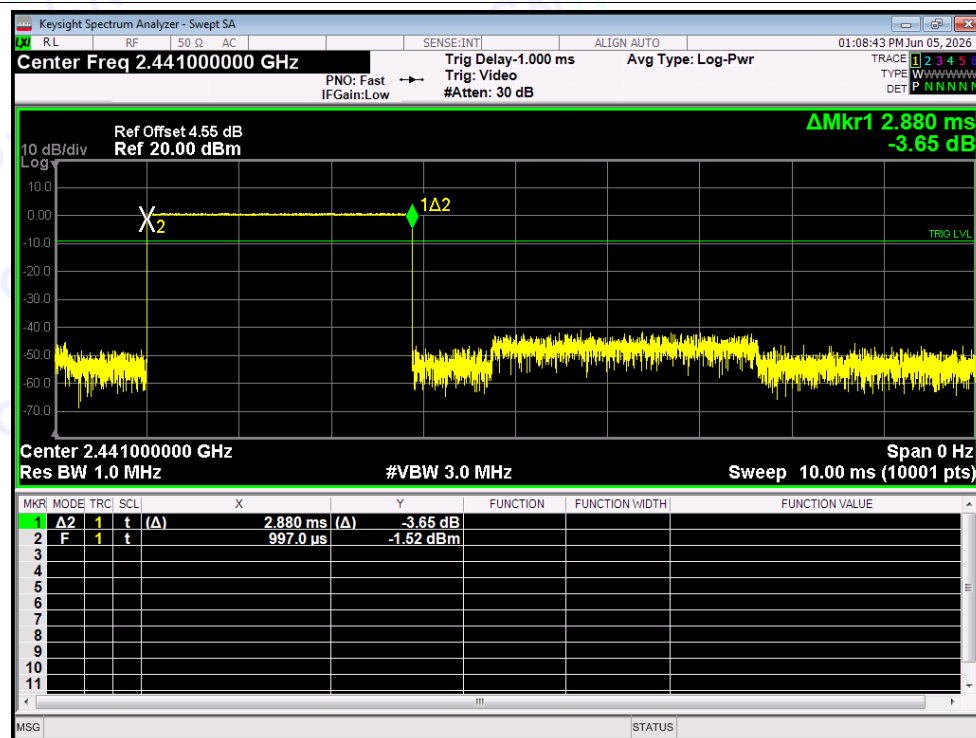
Dwell NVNT 1-DH1 2441MHz Ant1



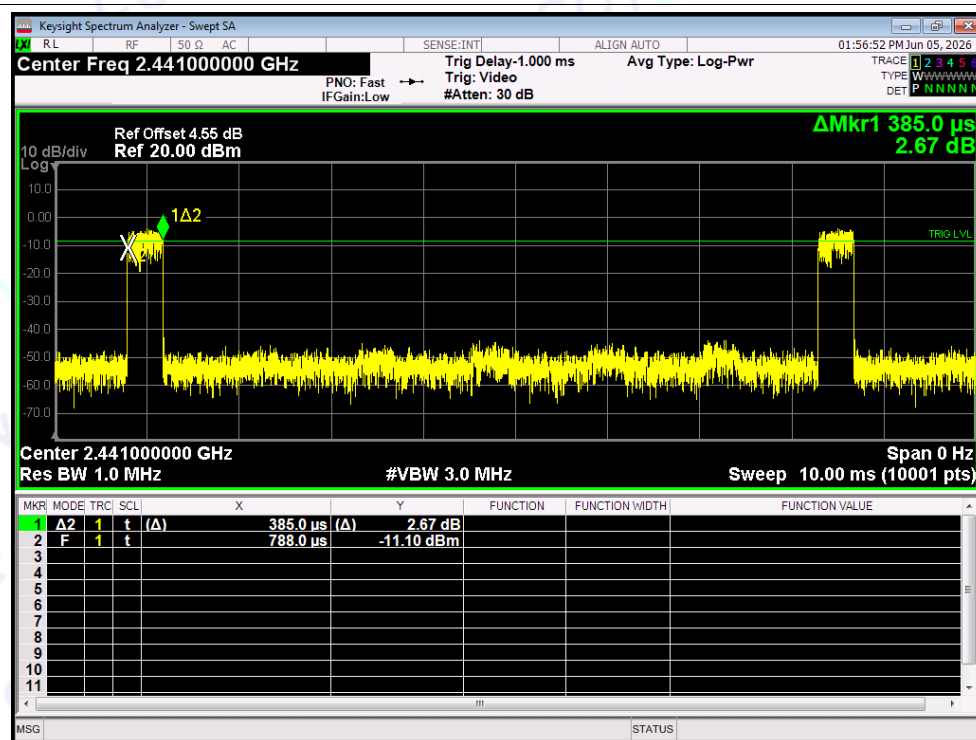
Dwell NVNT 1-DH3 2441MHz Ant1



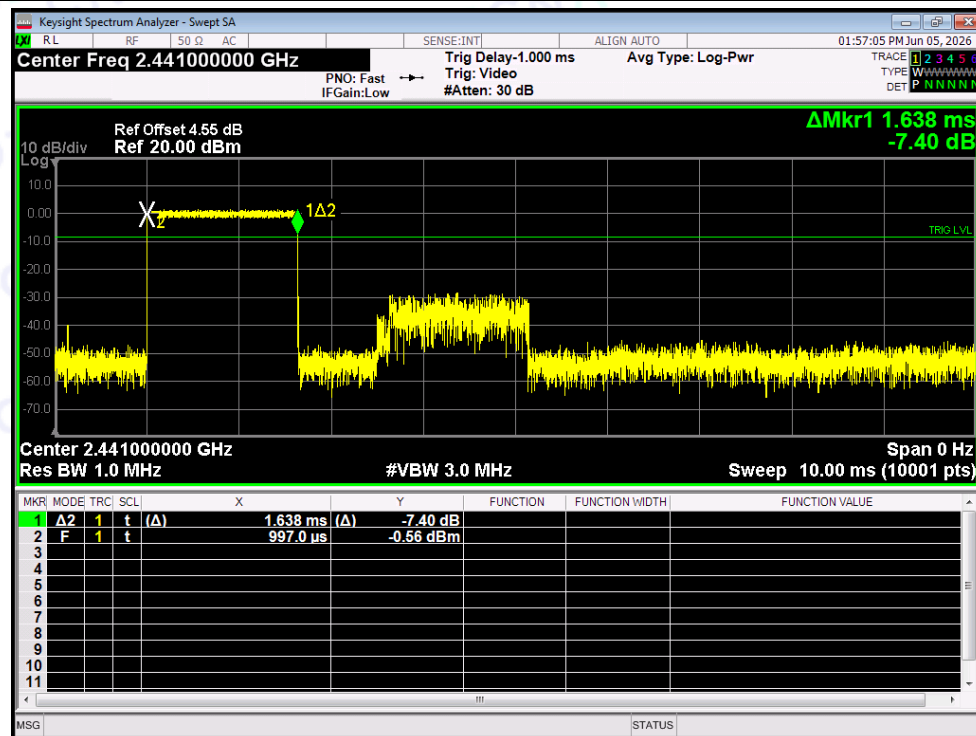
Dwell NVNT 1-DH5 2441MHz Ant1



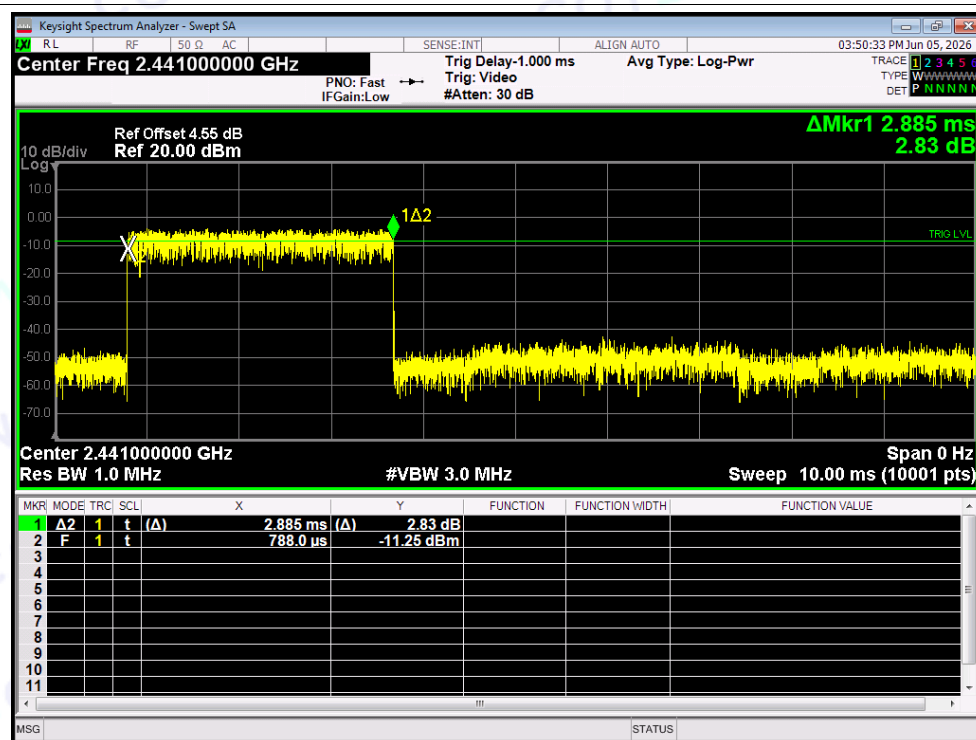
Dwell NVNT 2-DH1 2441MHz Ant1



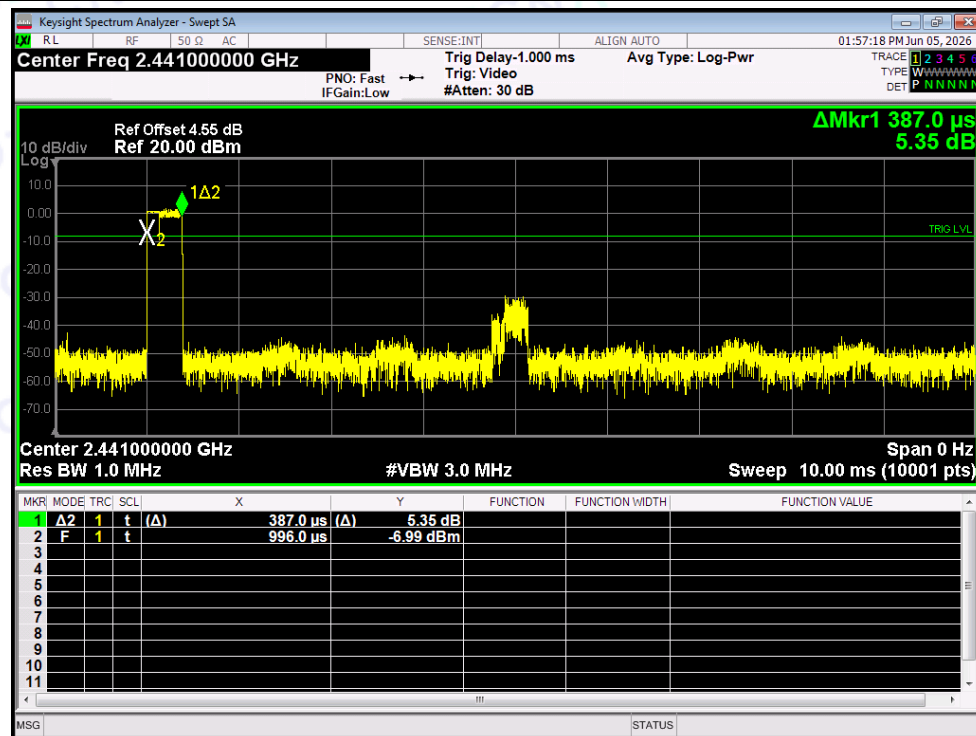
Dwell NVNT 2-DH3 2441MHz Ant1



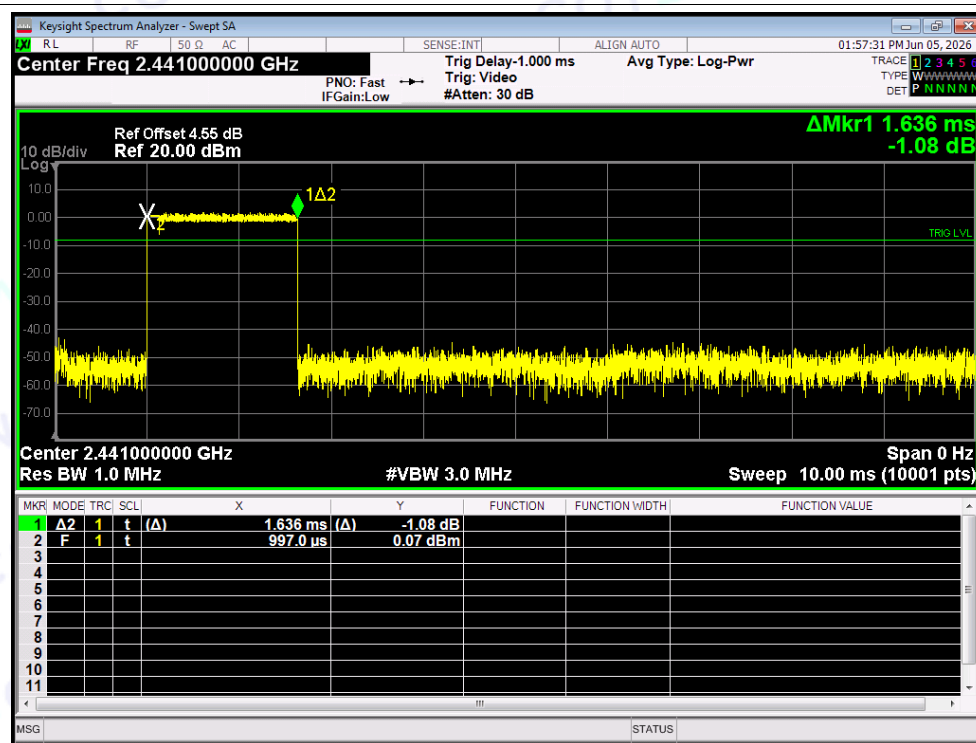
Dwell NVNT 2-DH5 2441MHz Ant1

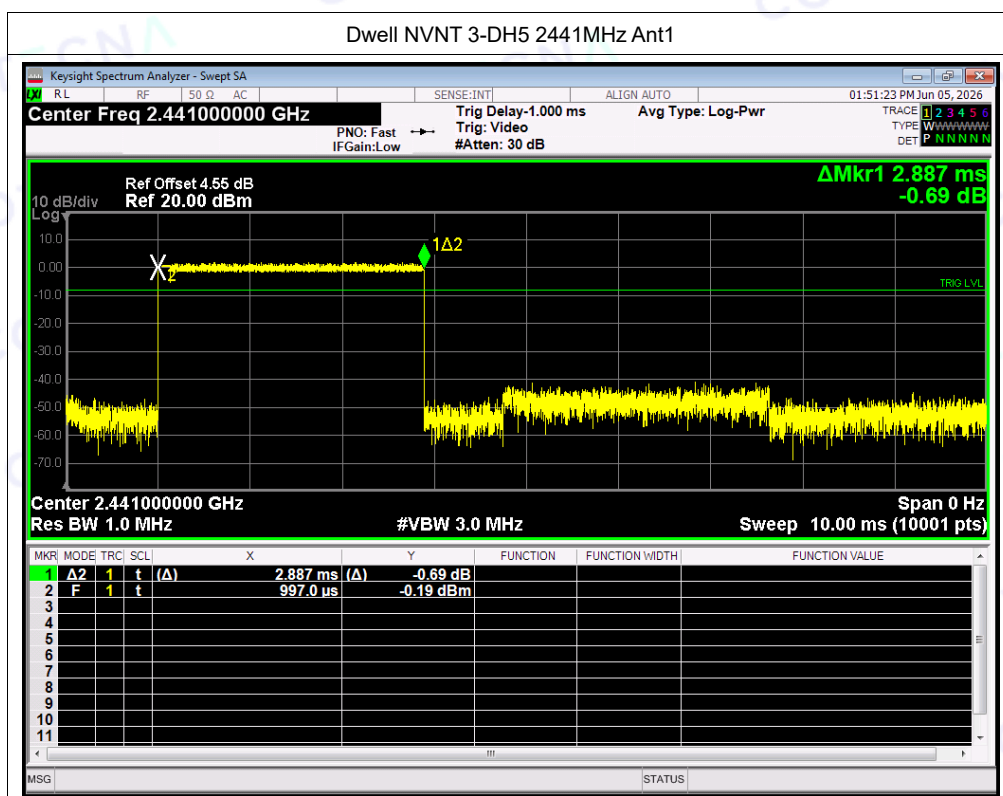


Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



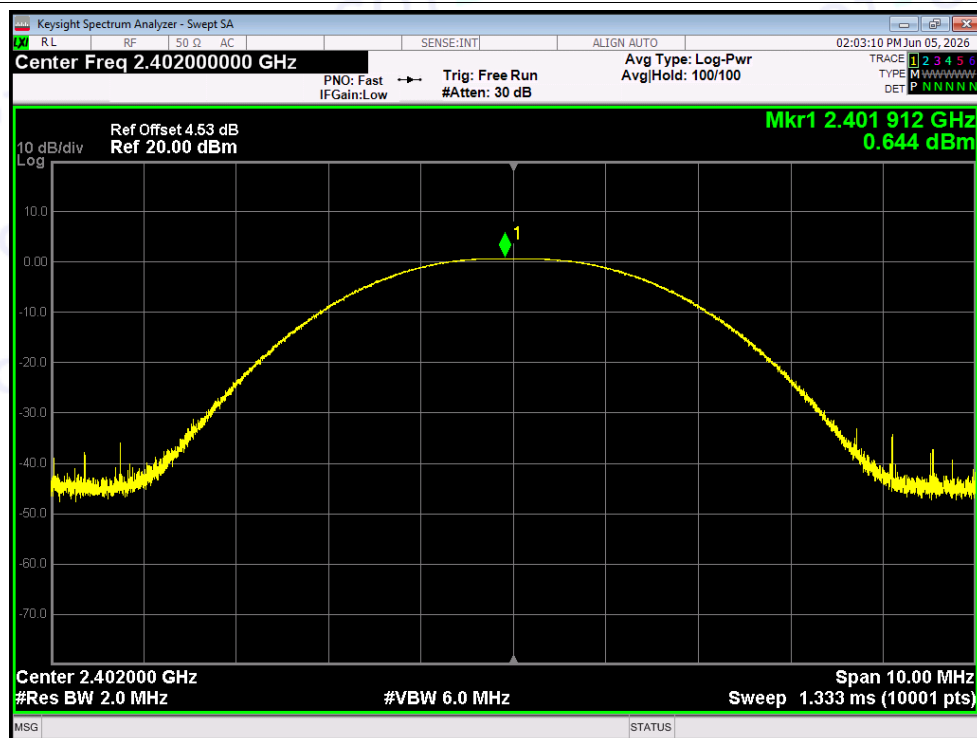


3. Maximum Conducted Output Power

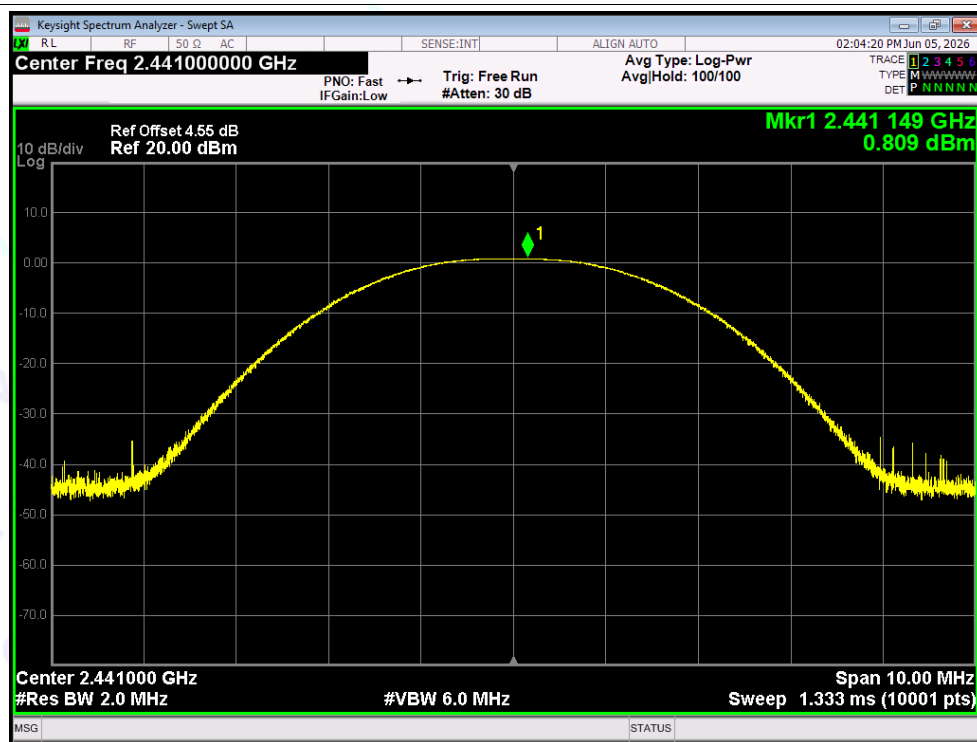
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.644	30	Pass
NVNT	1-DH5	2441	Ant1	0.809	30	Pass
NVNT	1-DH5	2480	Ant1	1.063	30	Pass
NVNT	2-DH5	2402	Ant1	1.516	30	Pass
NVNT	2-DH5	2441	Ant1	1.684	30	Pass
NVNT	2-DH5	2480	Ant1	1.892	30	Pass
NVNT	3-DH5	2402	Ant1	1.947	30	Pass
NVNT	3-DH5	2441	Ant1	2.092	30	Pass
NVNT	3-DH5	2480	Ant1	2.346	30	Pass

Test Graphs

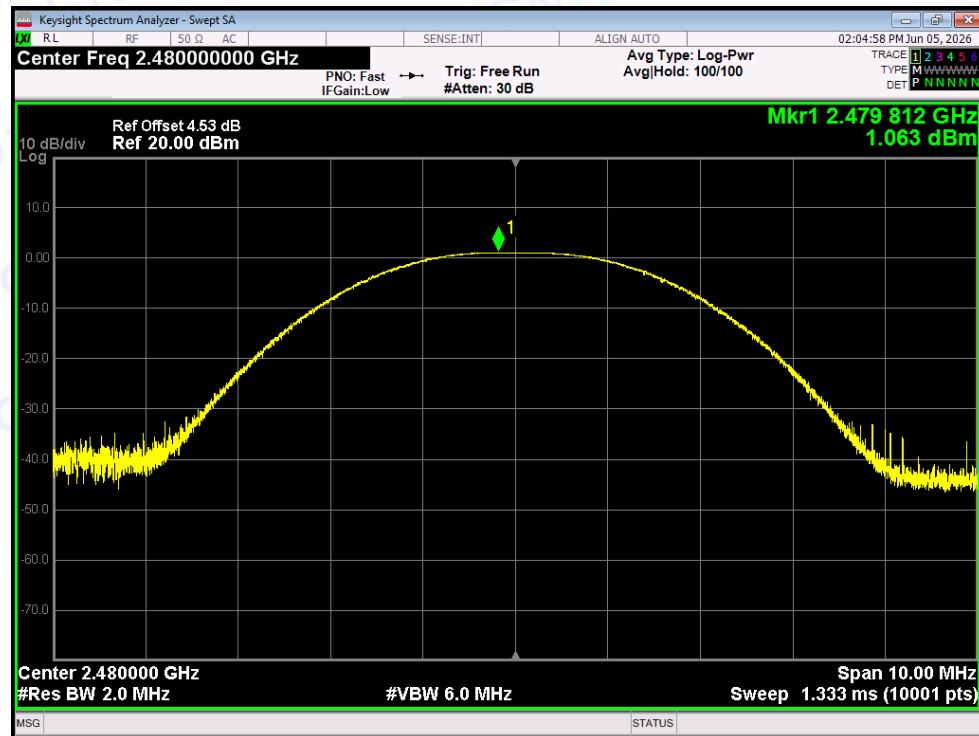
Power NVNT 1-DH5 2402MHz Ant1



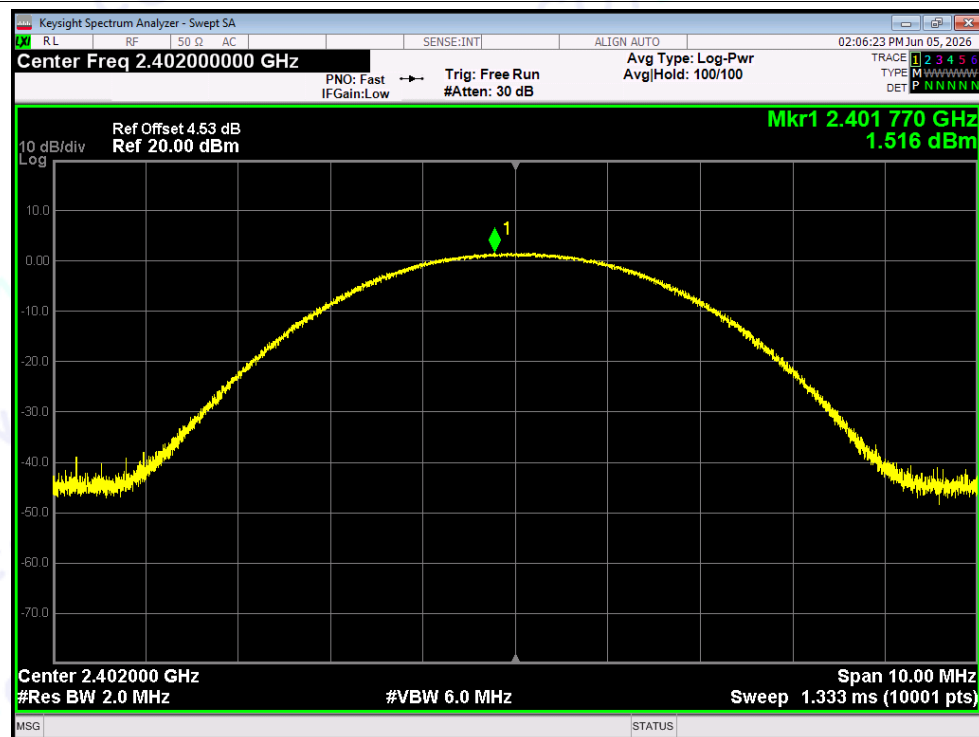
Power NVNT 1-DH5 2441MHz Ant1



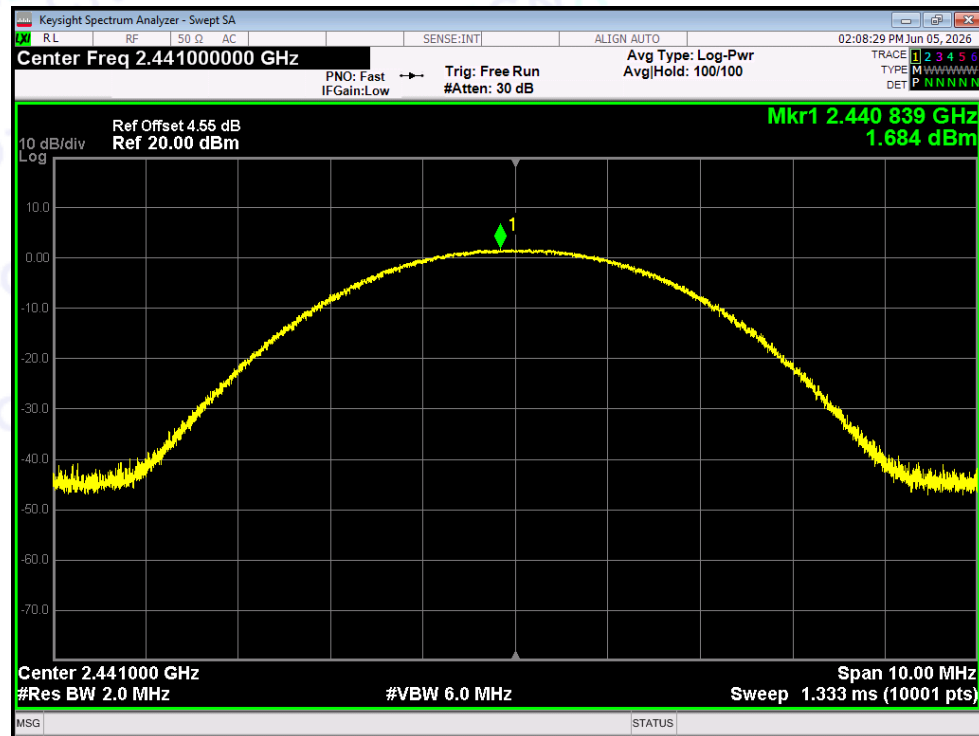
Power NVNT 1-DH5 2480MHz Ant1



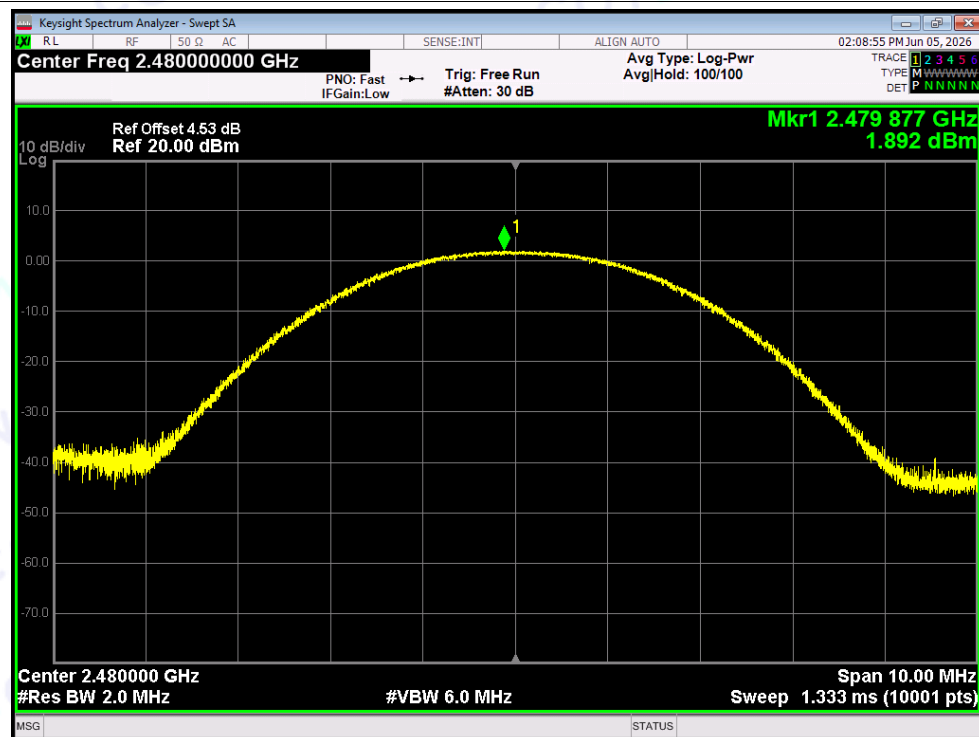
Power NVNT 2-DH5 2402MHz Ant1



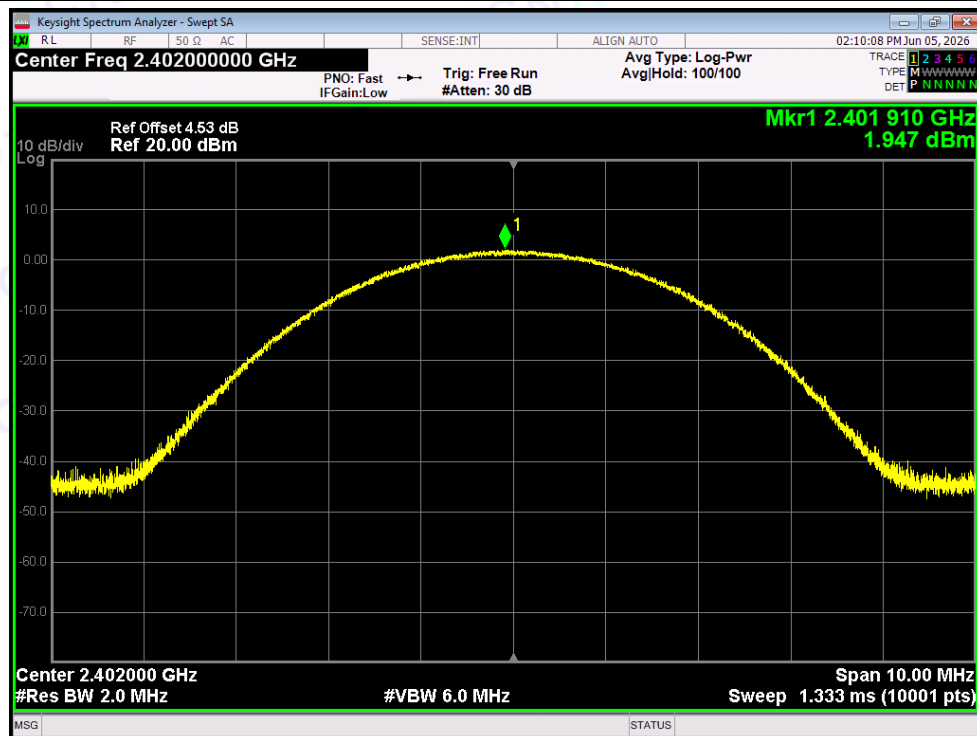
Power NVNT 2-DH5 2441MHz Ant1



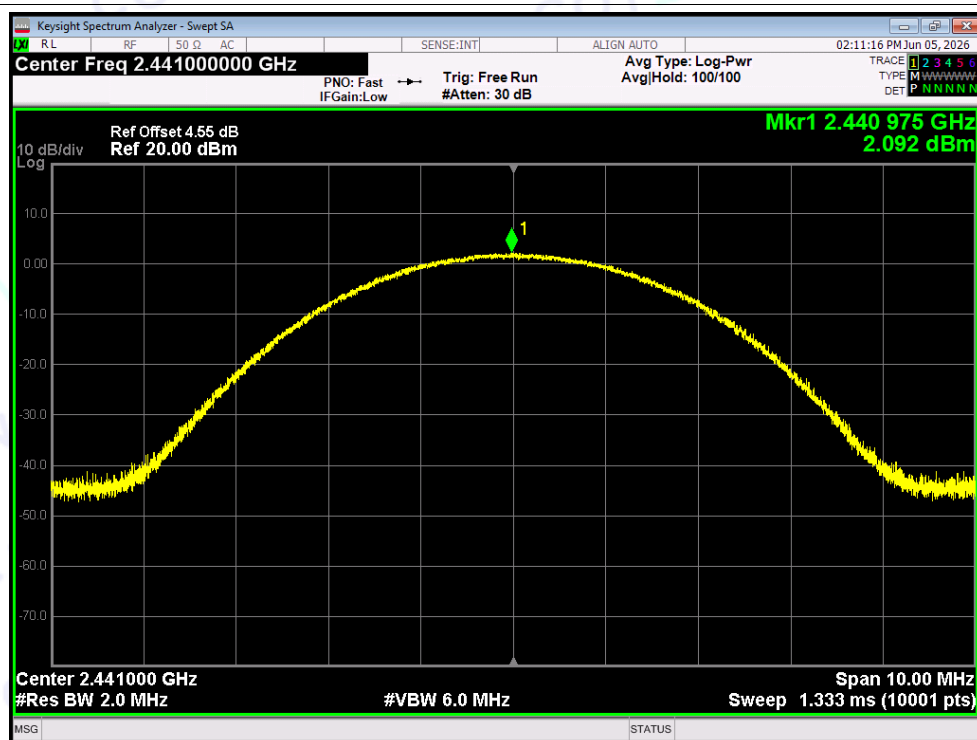
Power NVNT 2-DH5 2480MHz Ant1

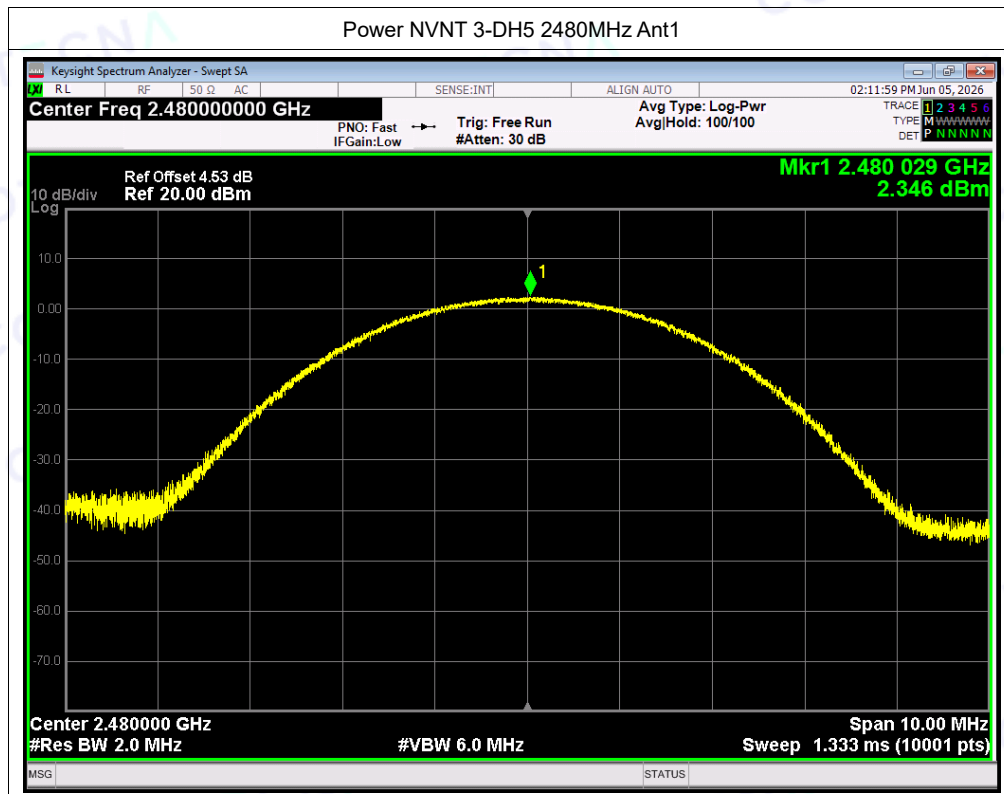


Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



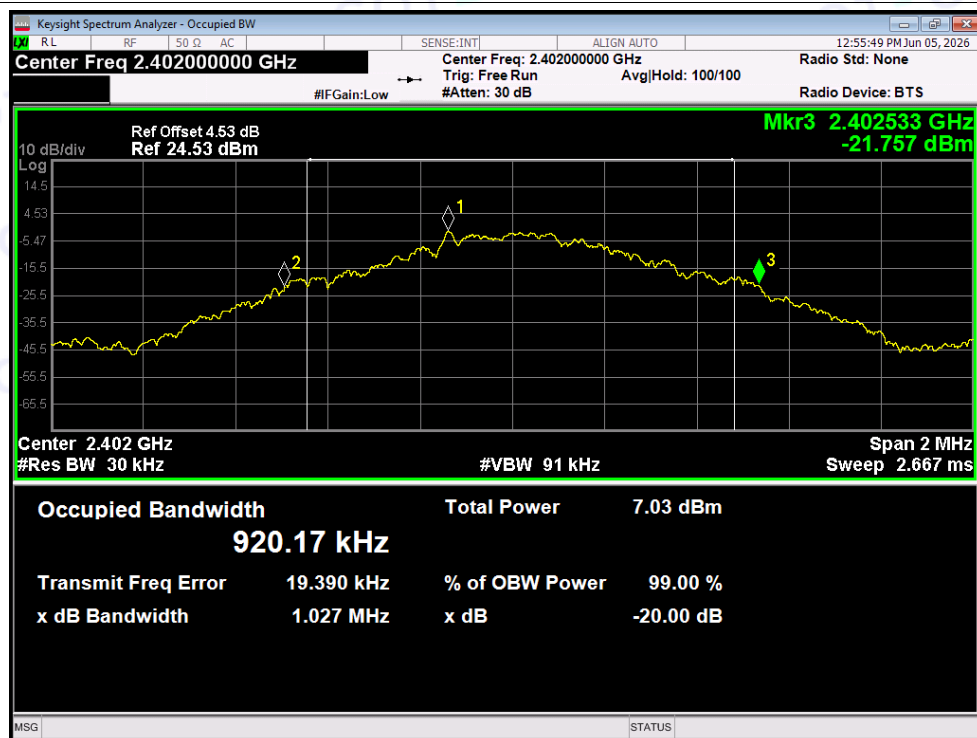


4. -20dB Bandwidth

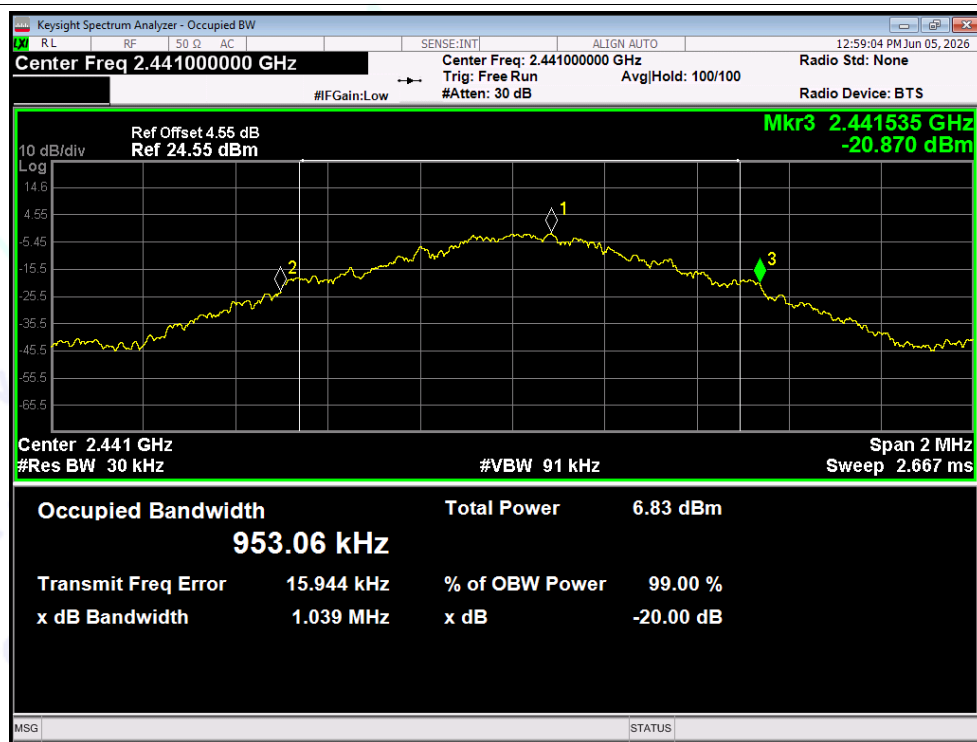
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	1.03	/	Pass
NVNT	1-DH5	2441	Ant1	1.04	/	Pass
NVNT	1-DH5	2480	Ant1	1.04	/	Pass
NVNT	2-DH5	2402	Ant1	1.33	/	Pass
NVNT	2-DH5	2441	Ant1	1.32	/	Pass
NVNT	2-DH5	2480	Ant1	1.33	/	Pass
NVNT	3-DH5	2402	Ant1	1.3	/	Pass
NVNT	3-DH5	2441	Ant1	1.3	/	Pass
NVNT	3-DH5	2480	Ant1	1.28	/	Pass

Test Graphs

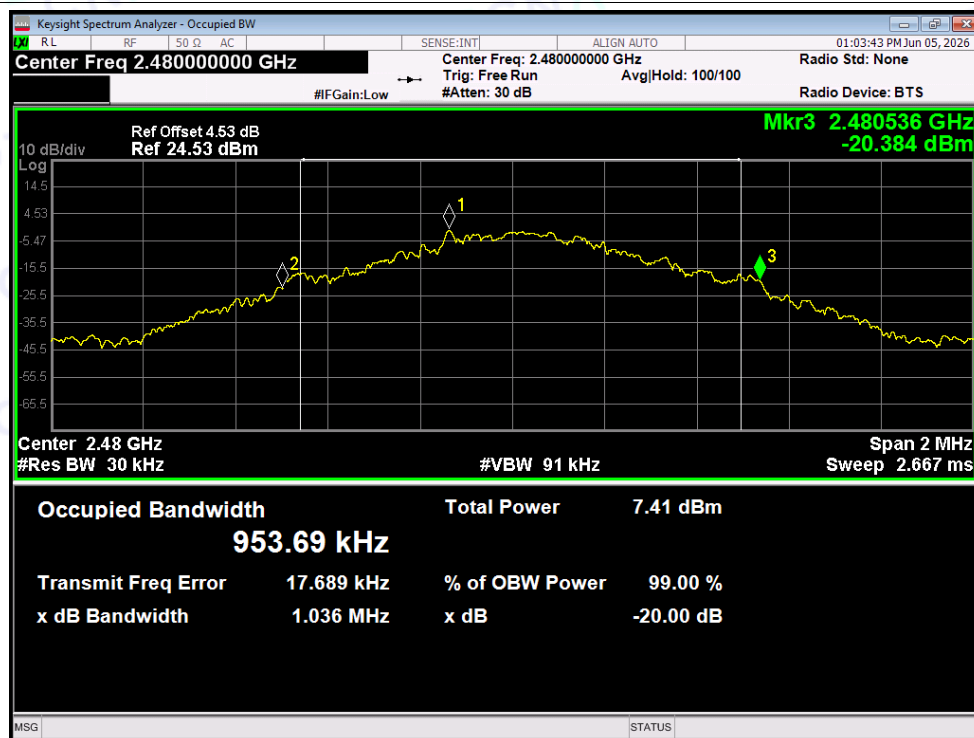
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



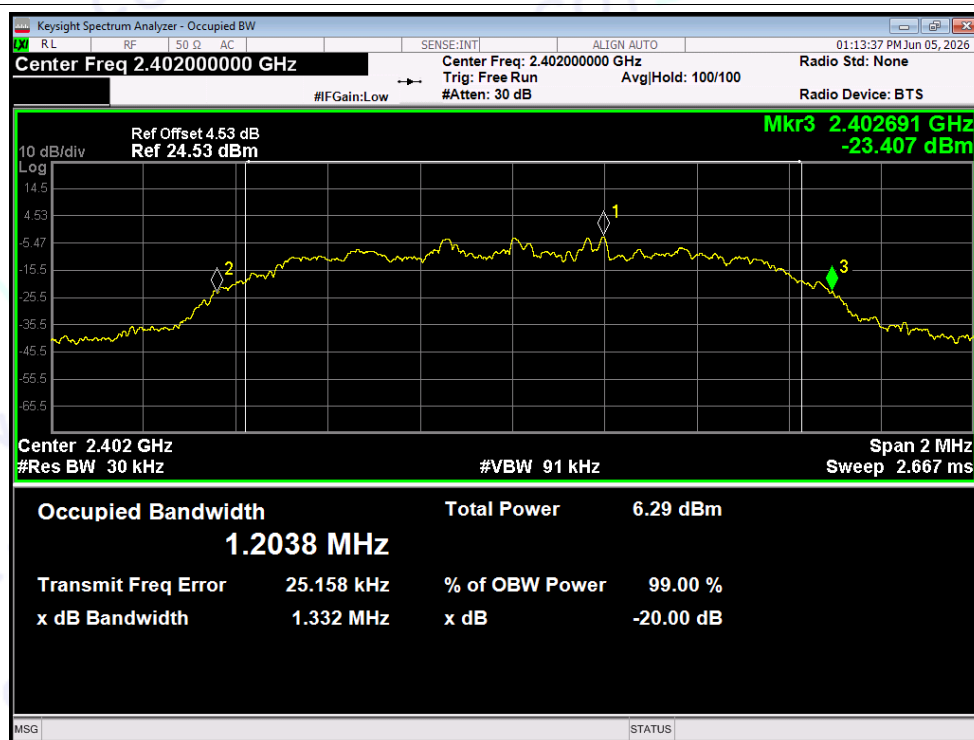
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



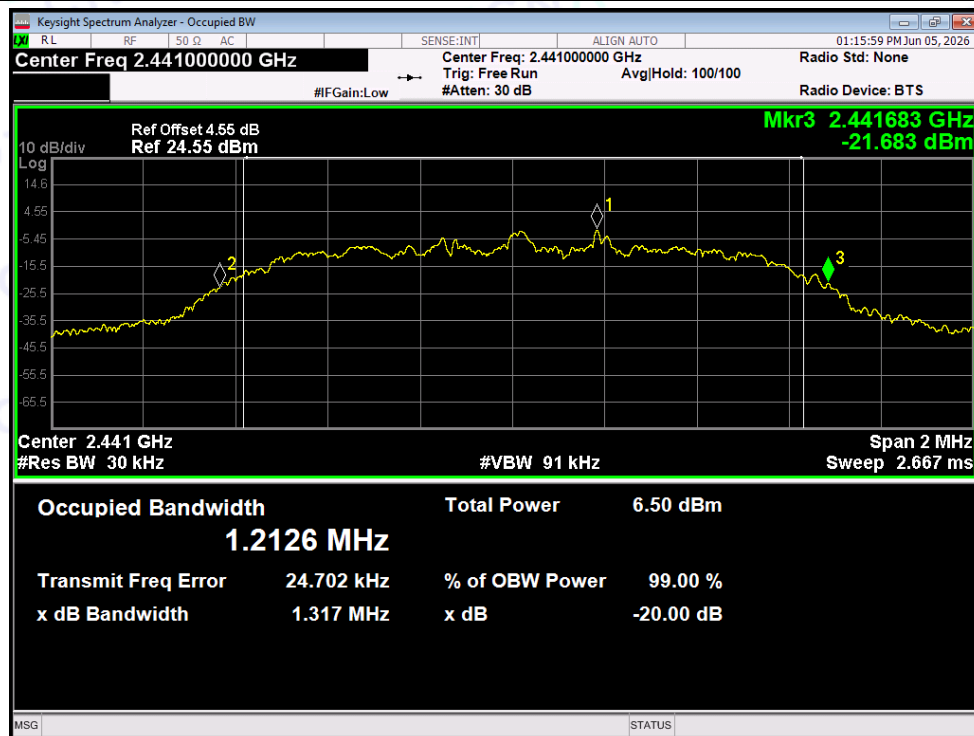
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



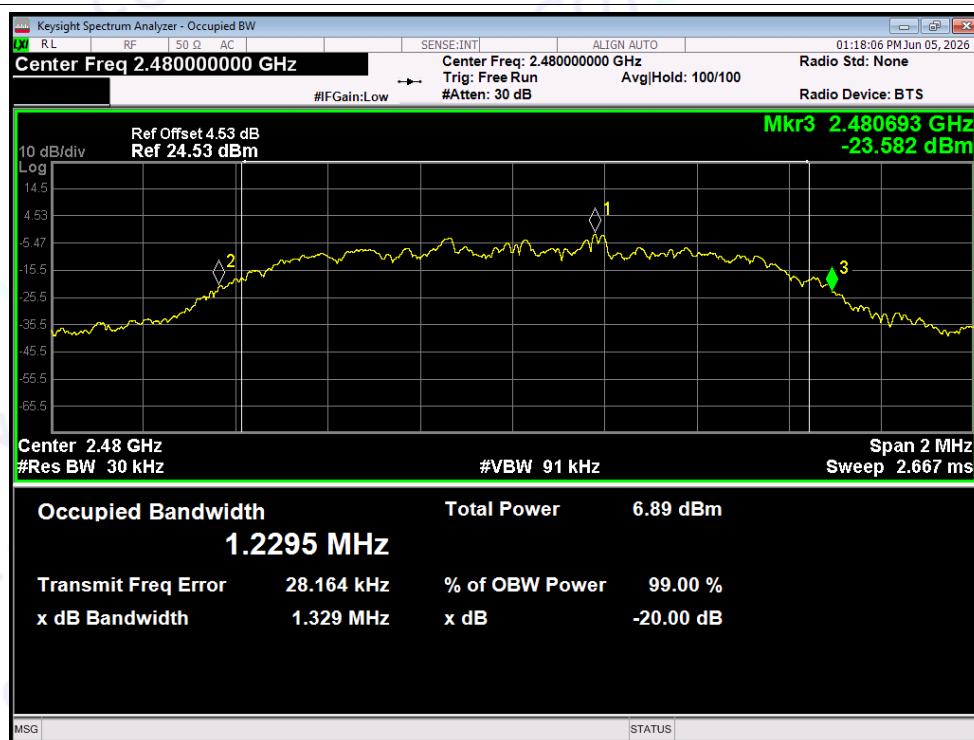
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



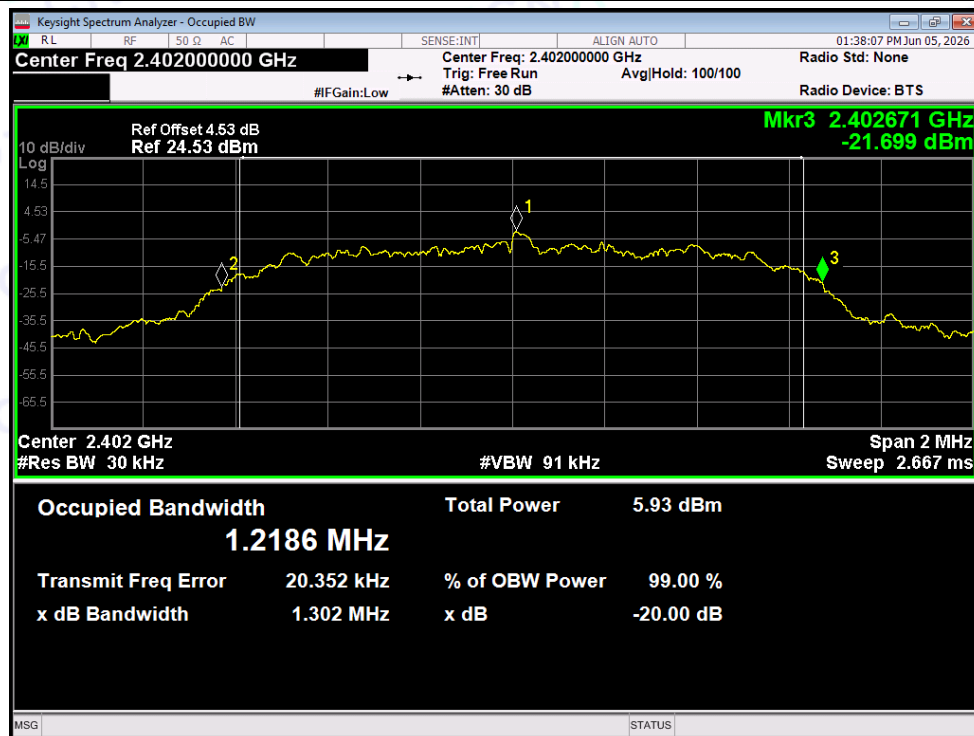
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



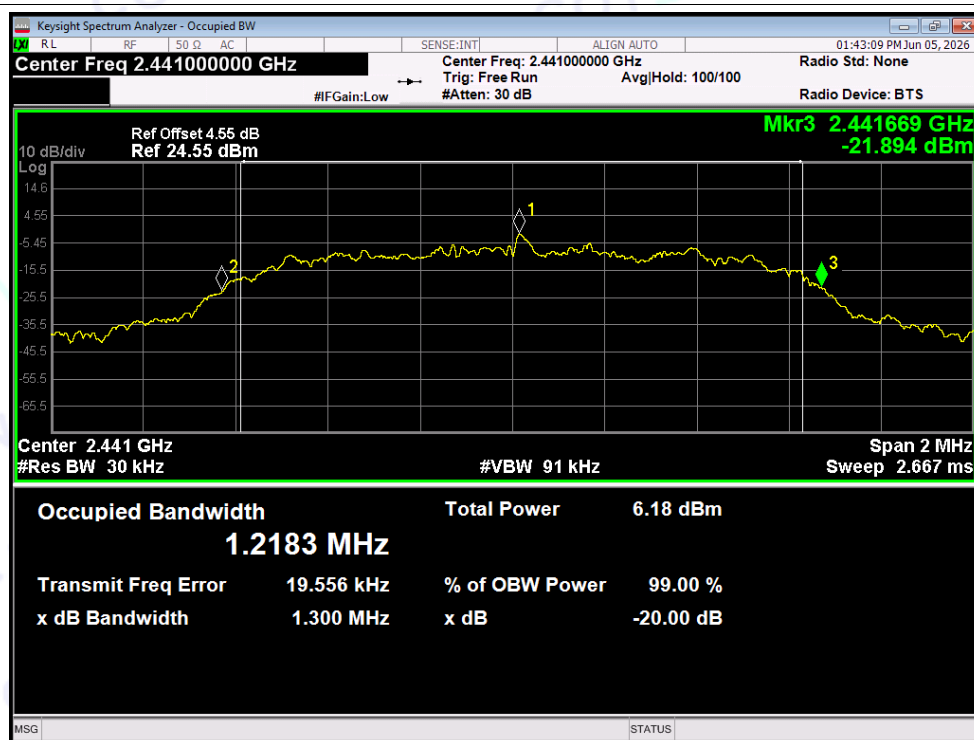
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

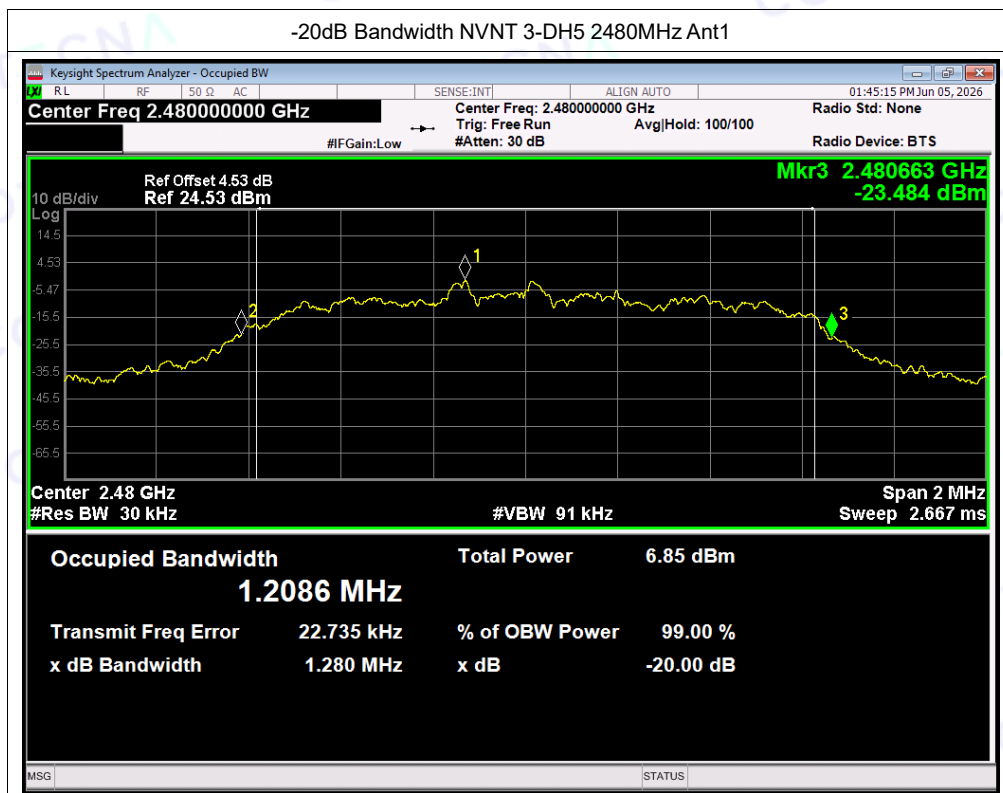


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



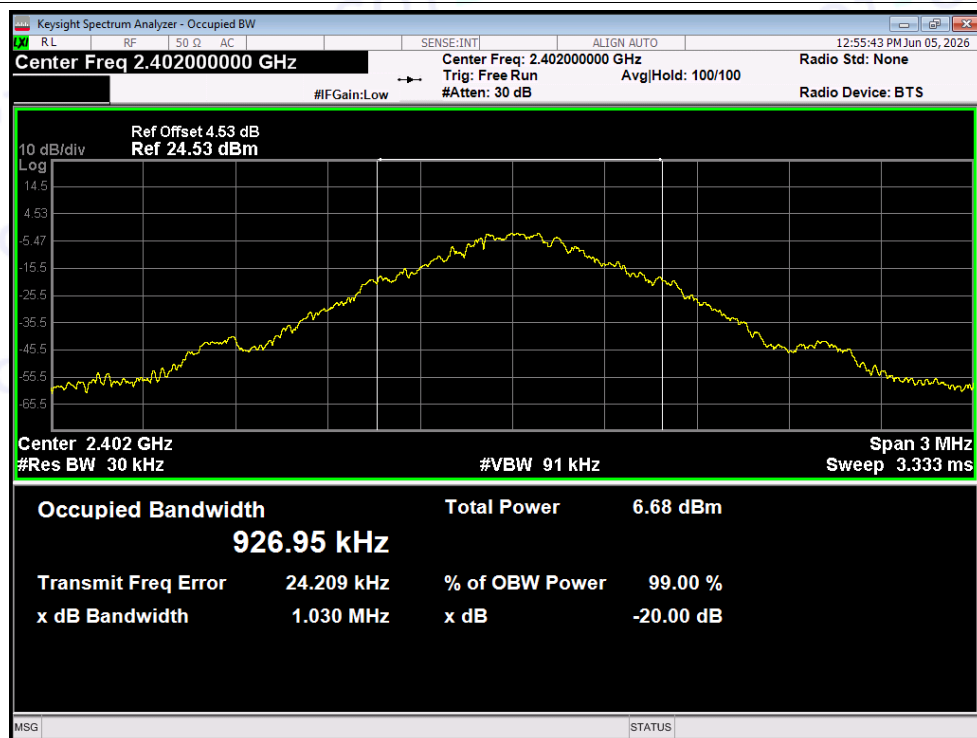


5. Occupied Channel Bandwidth

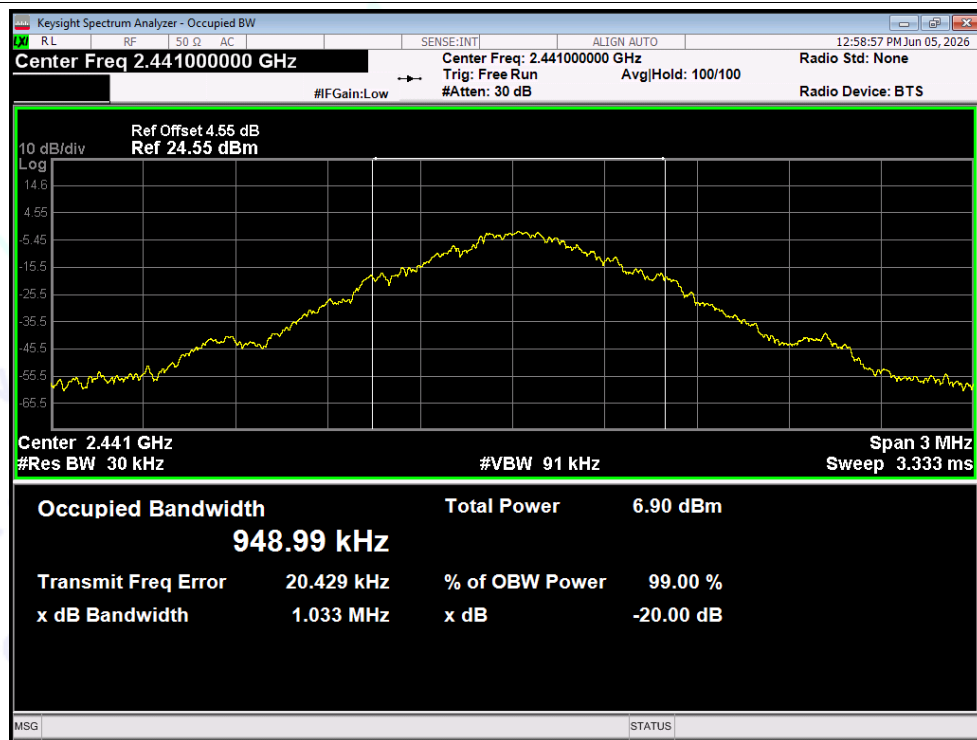
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.927
NVNT	1-DH5	2441	Ant1	0.949
NVNT	1-DH5	2480	Ant1	0.957
NVNT	2-DH5	2402	Ant1	1.218
NVNT	2-DH5	2441	Ant1	1.205
NVNT	2-DH5	2480	Ant1	1.231
NVNT	3-DH5	2402	Ant1	1.206
NVNT	3-DH5	2441	Ant1	1.209
NVNT	3-DH5	2480	Ant1	1.211

Test Graphs

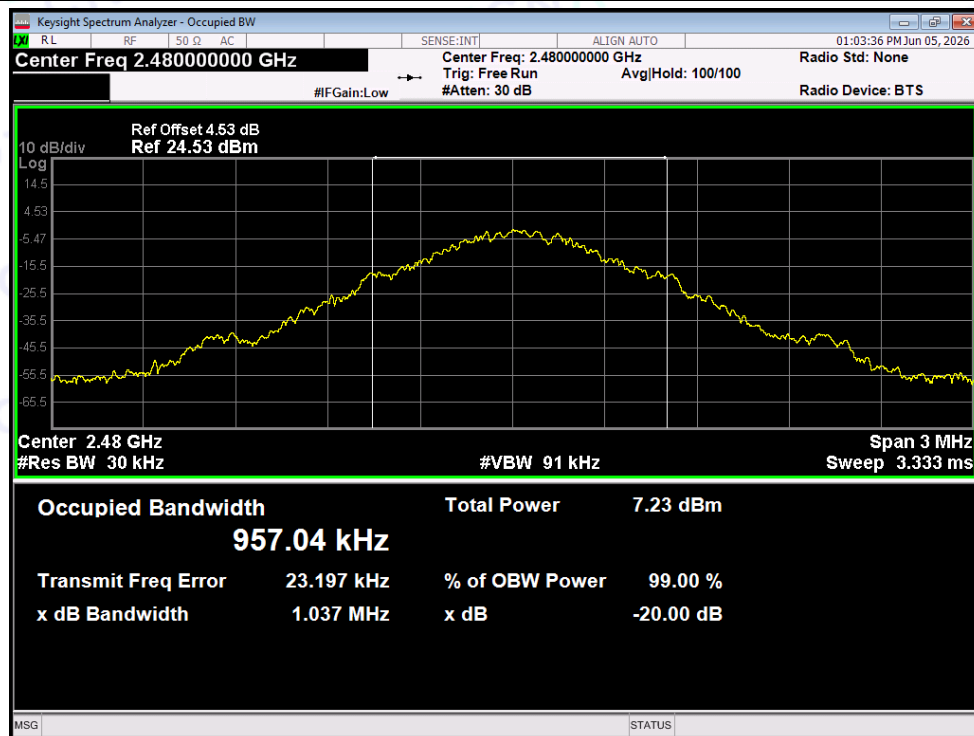
OBW NVNT 1-DH5 2402MHz Ant1



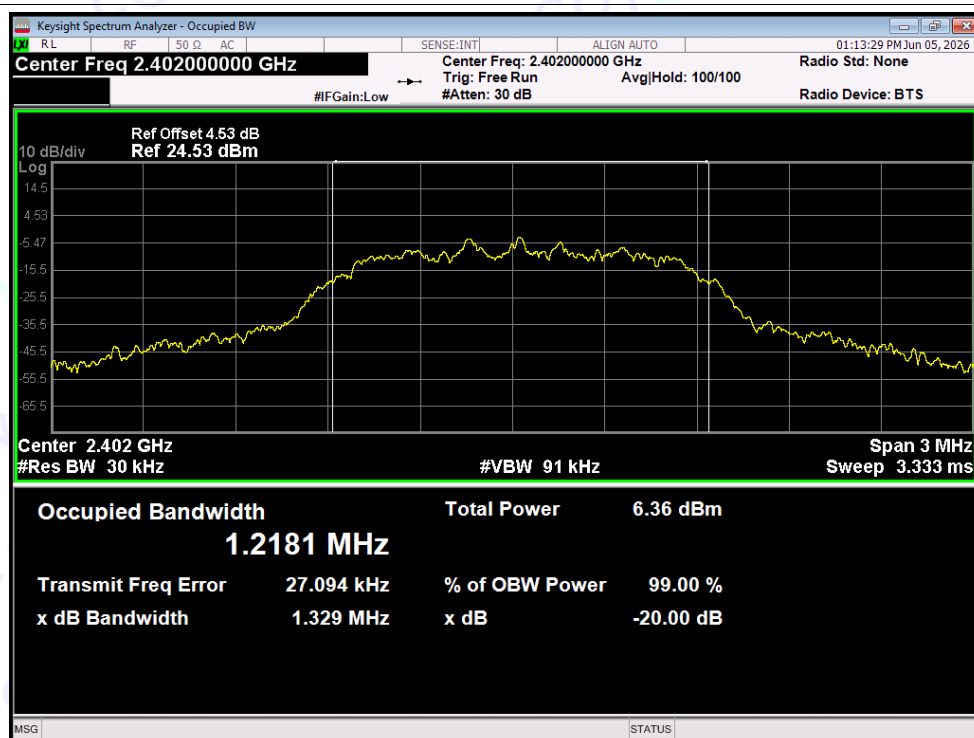
OBW NVNT 1-DH5 2441MHz Ant1



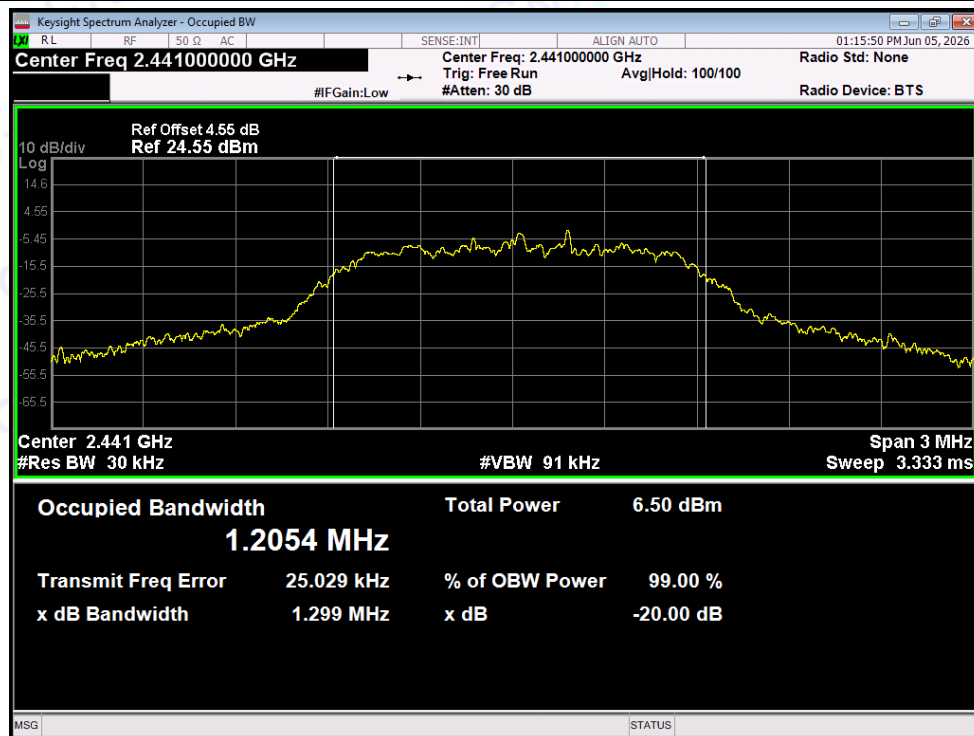
OBW NVNT 1-DH5 2480MHz Ant1



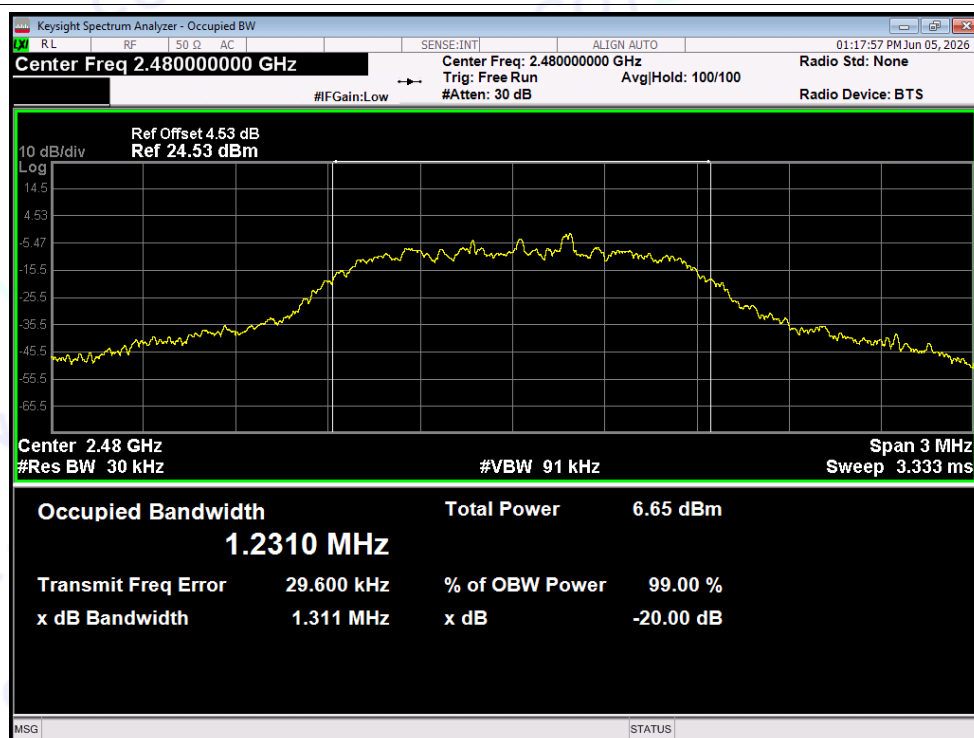
OBW NVNT 2-DH5 2402MHz Ant1



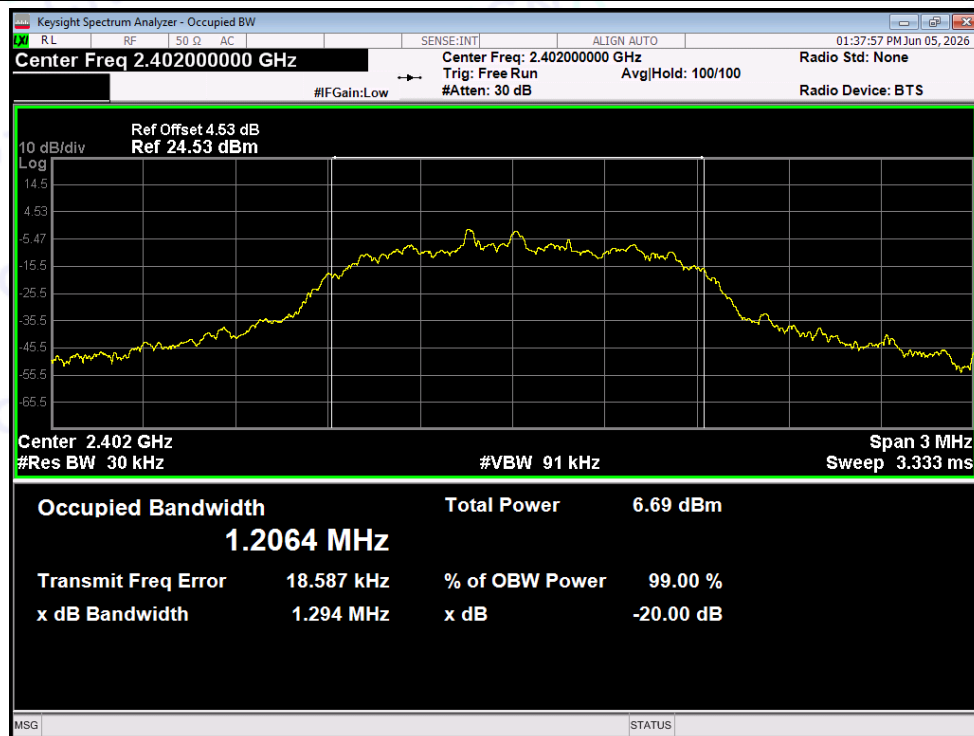
OBW NVNT 2-DH5 2441MHz Ant1



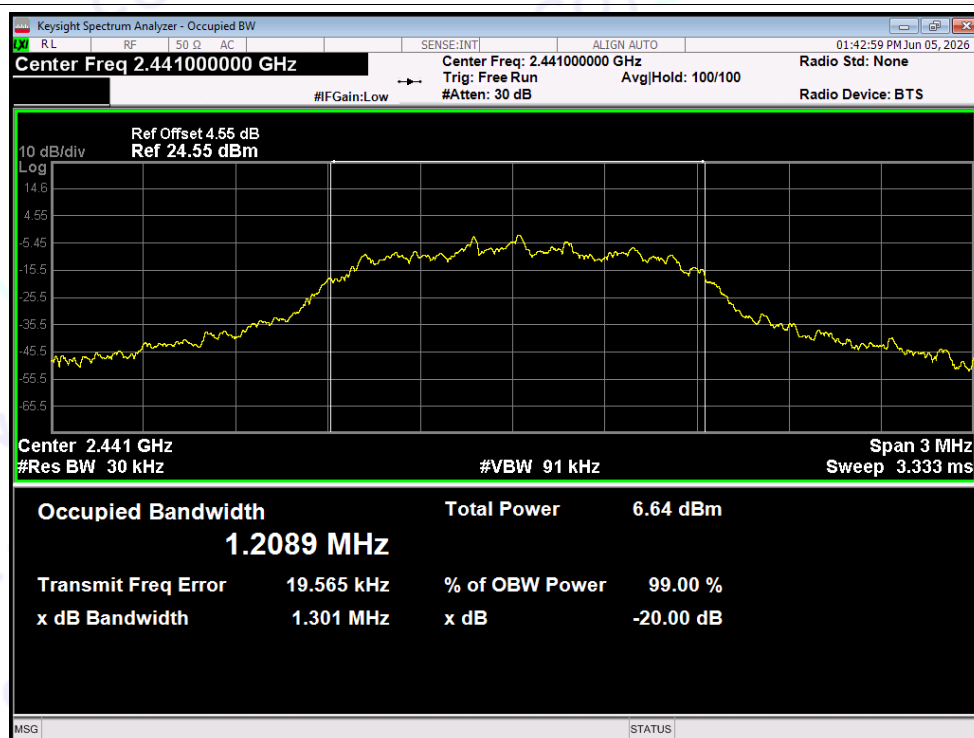
OBW NVNT 2-DH5 2480MHz Ant1

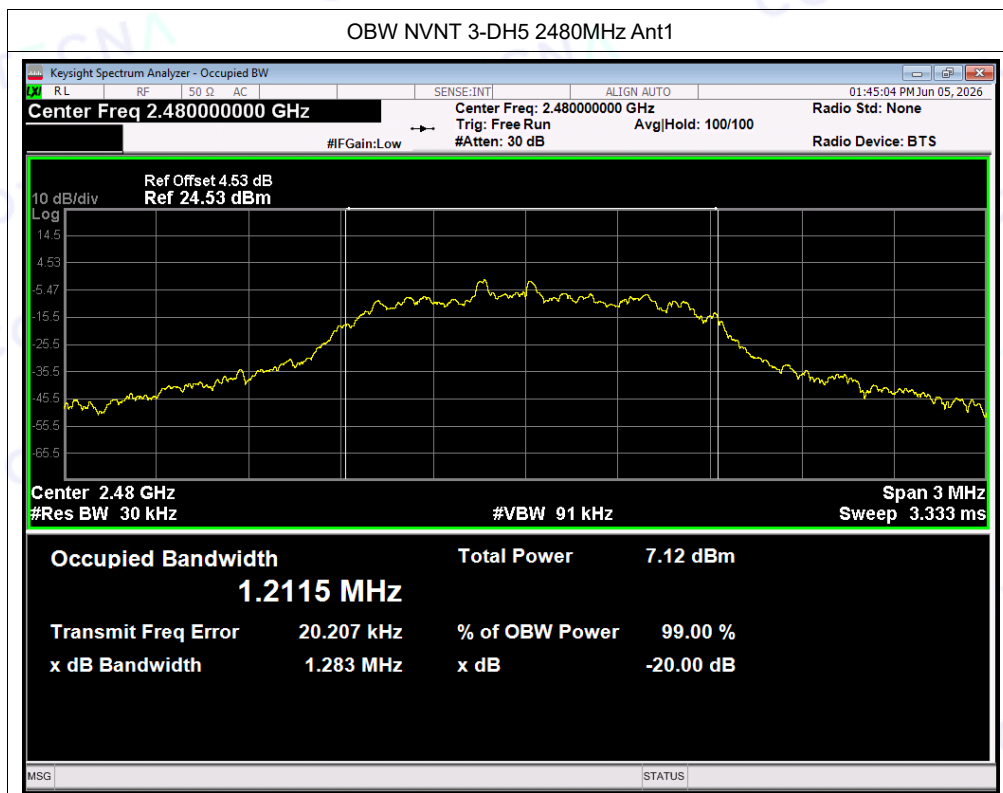


OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



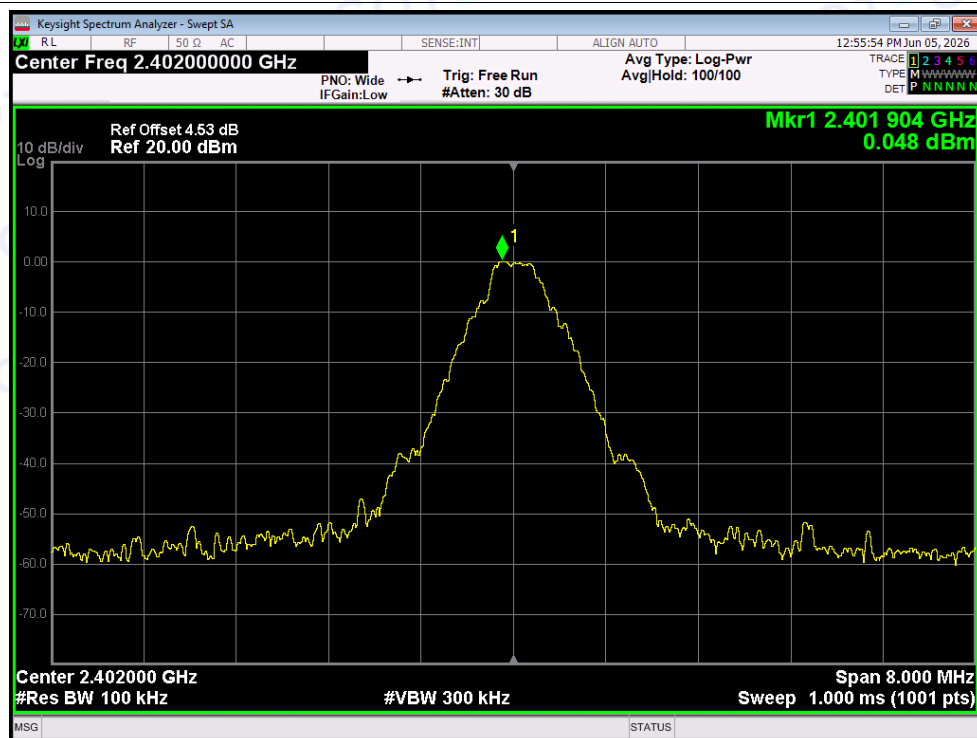


6. Band Edge

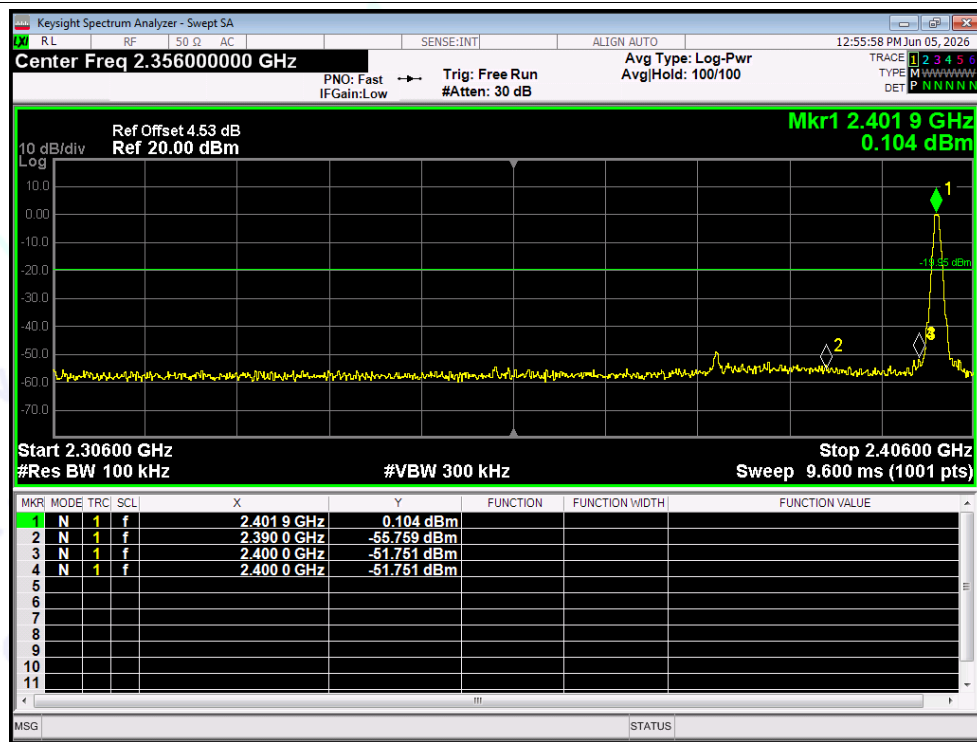
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-51.8	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-52.13	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.41	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-52.88	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-50.86	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-52.26	-20	Pass

Test Graphs

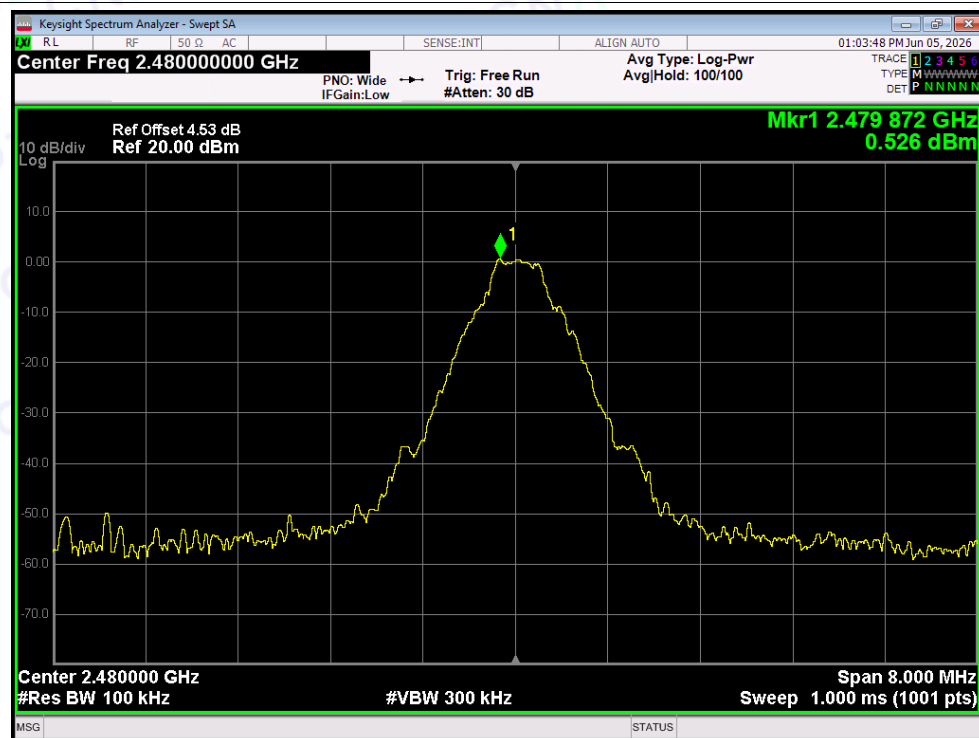
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



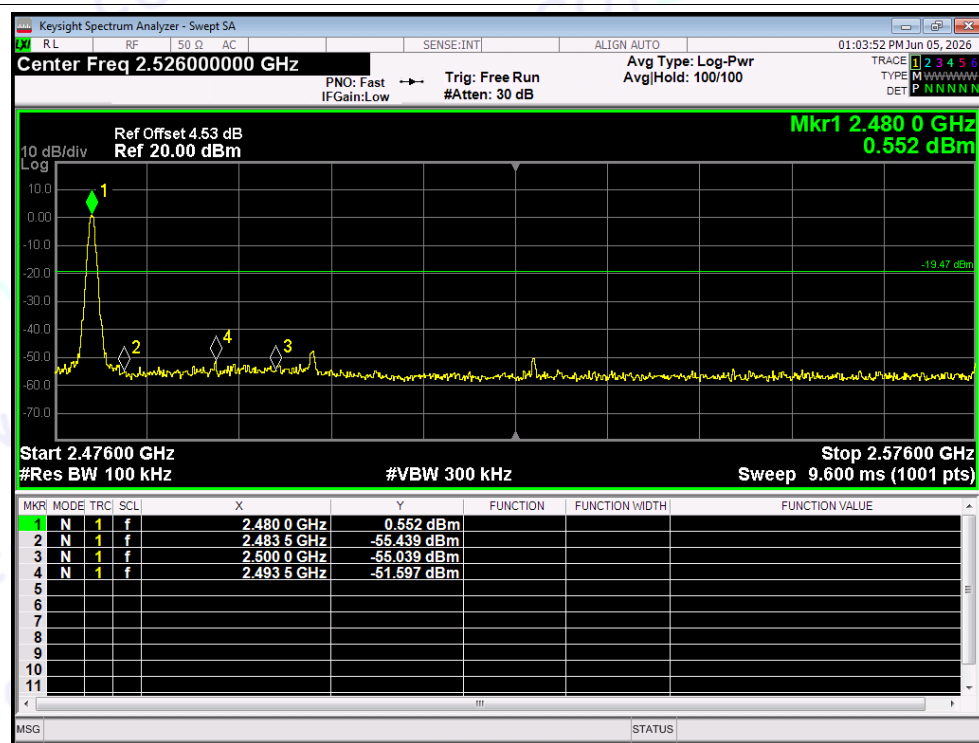
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



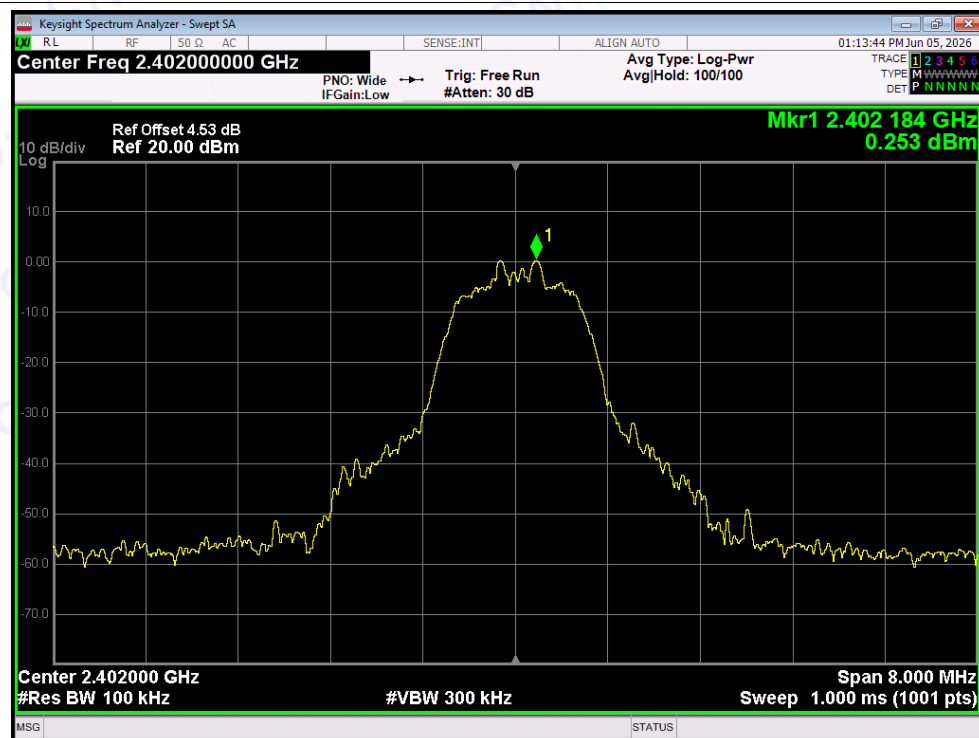
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



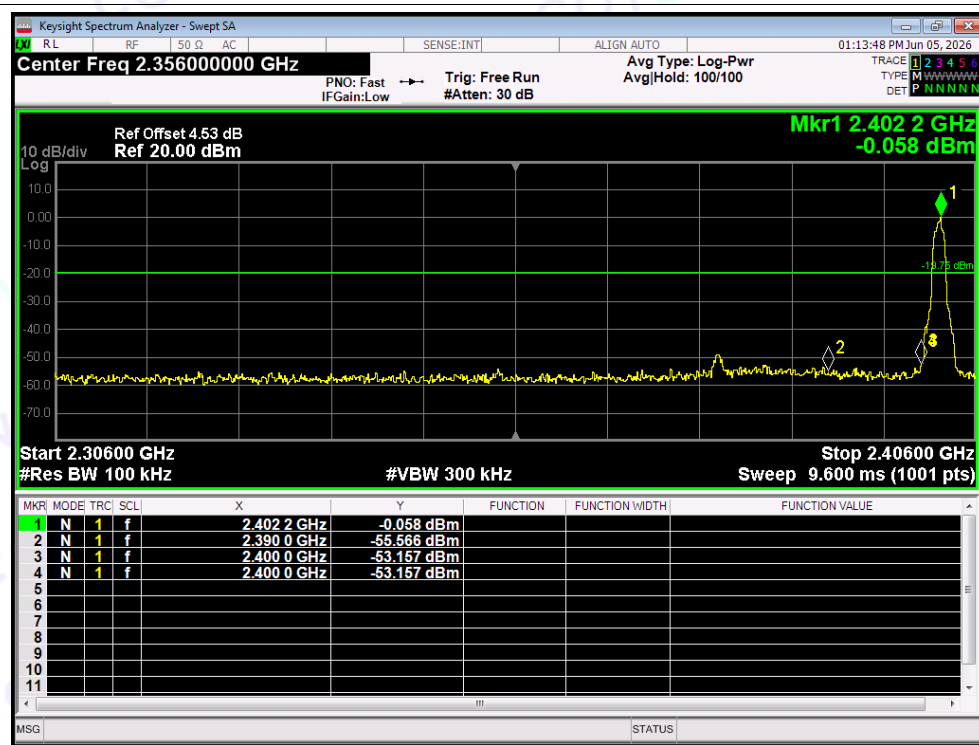
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



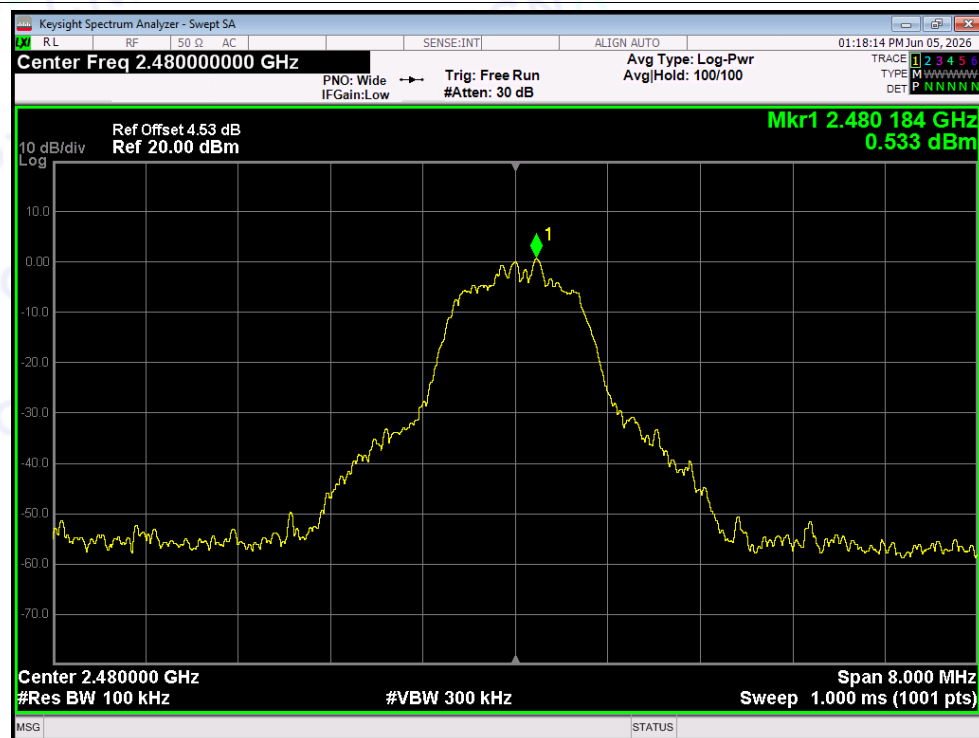
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



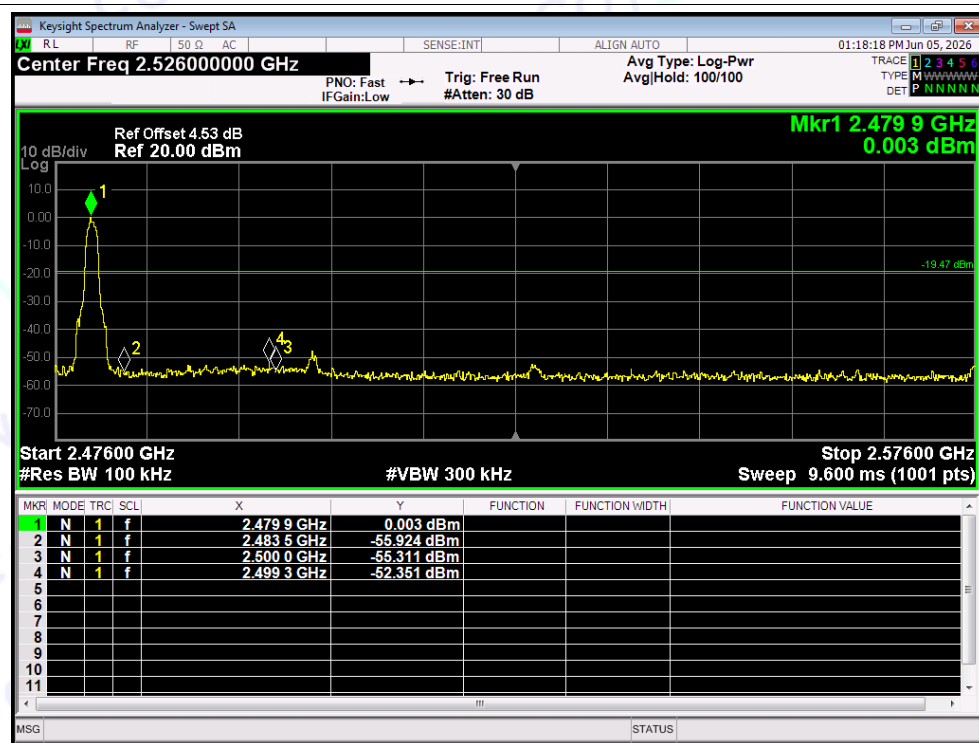
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



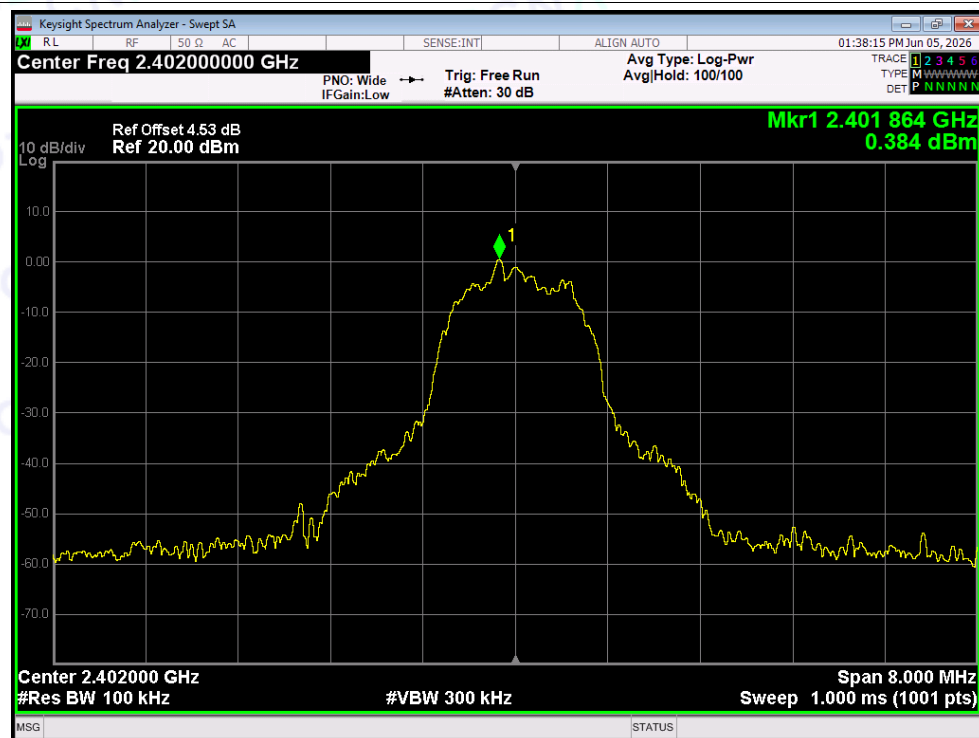
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



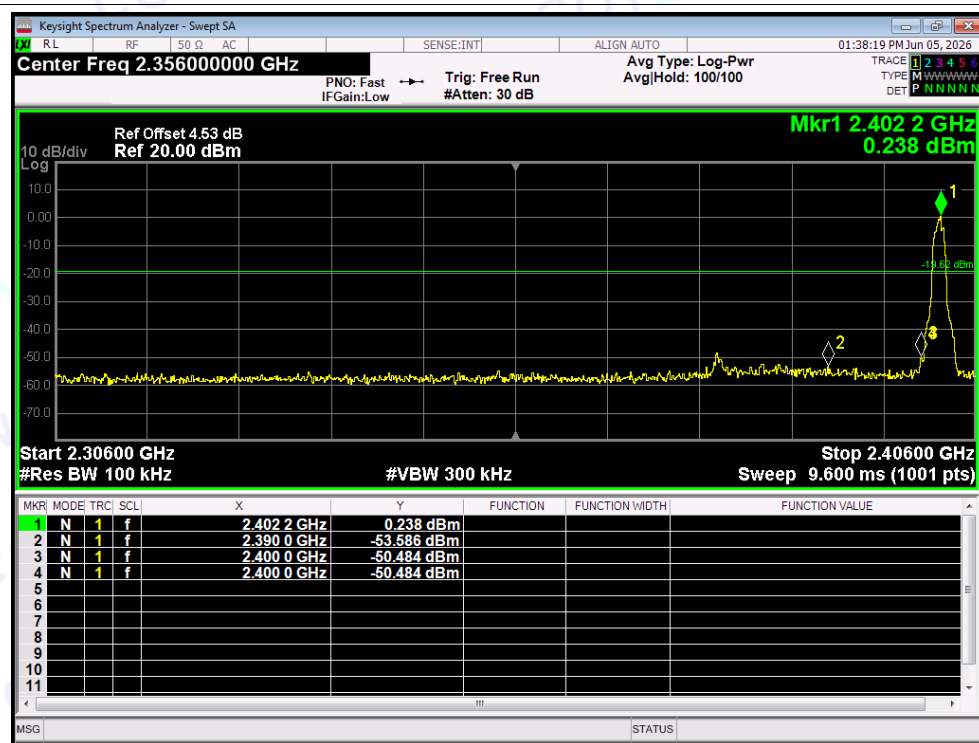
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



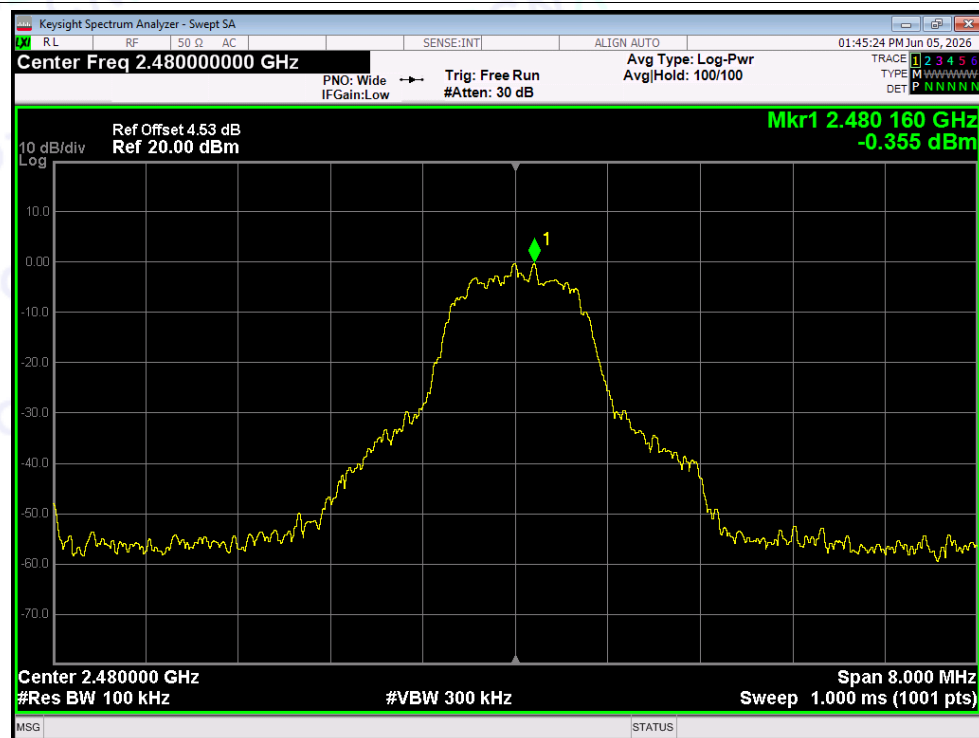
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



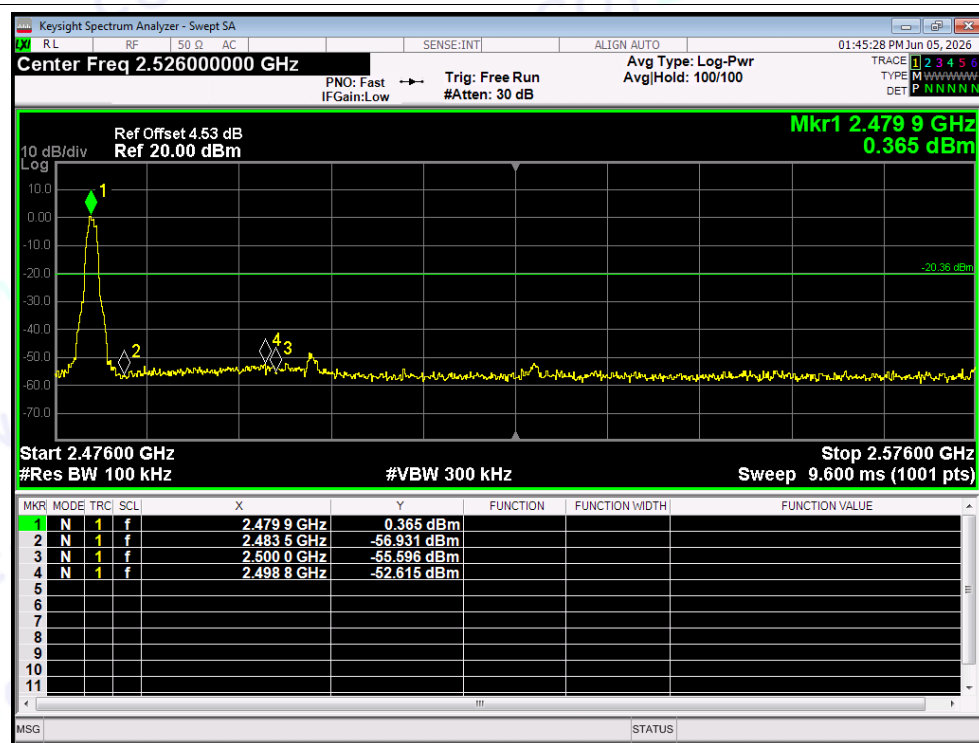
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



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



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

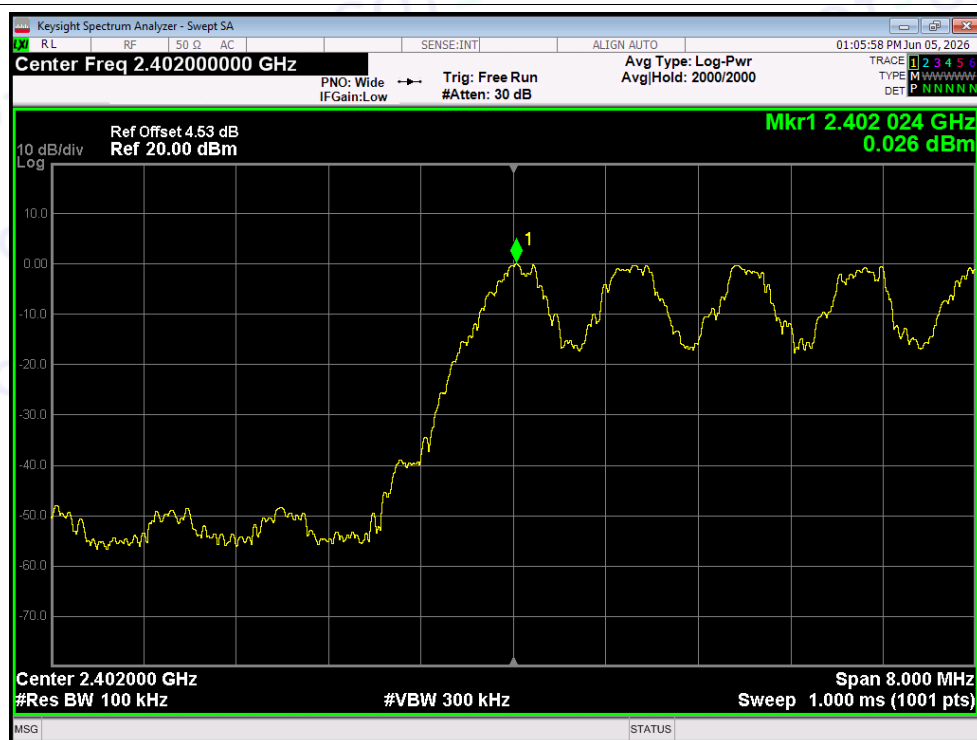


7. Band Edge(Hopping)

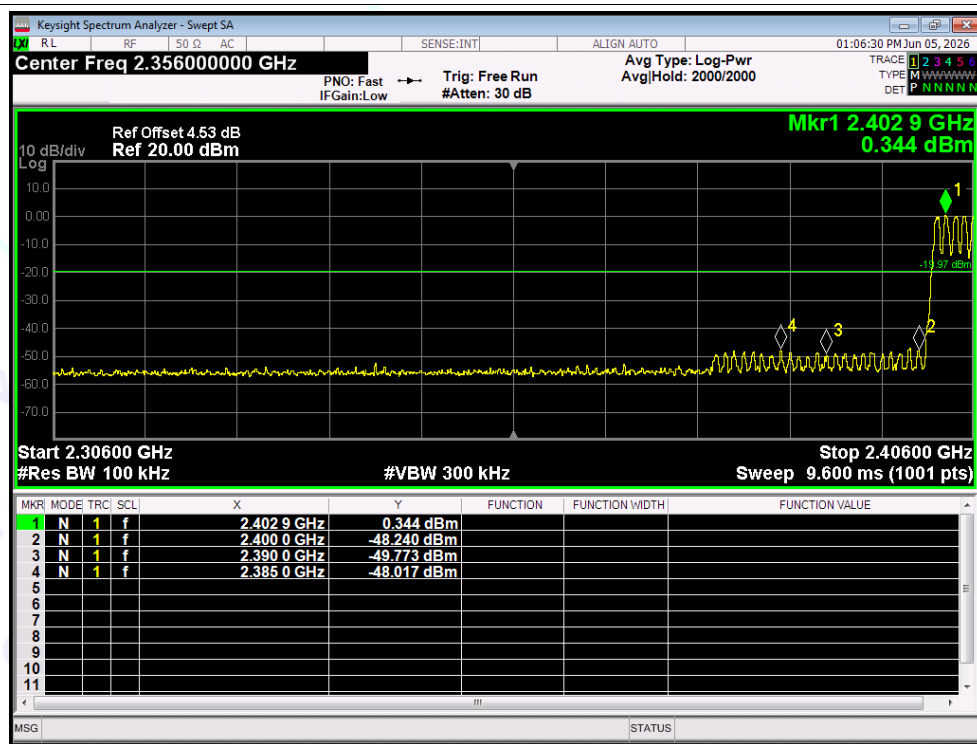
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-48.05	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-47.36	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-48.92	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-47.52	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-48.78	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-46.92	-20	Pass

Test Graphs

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



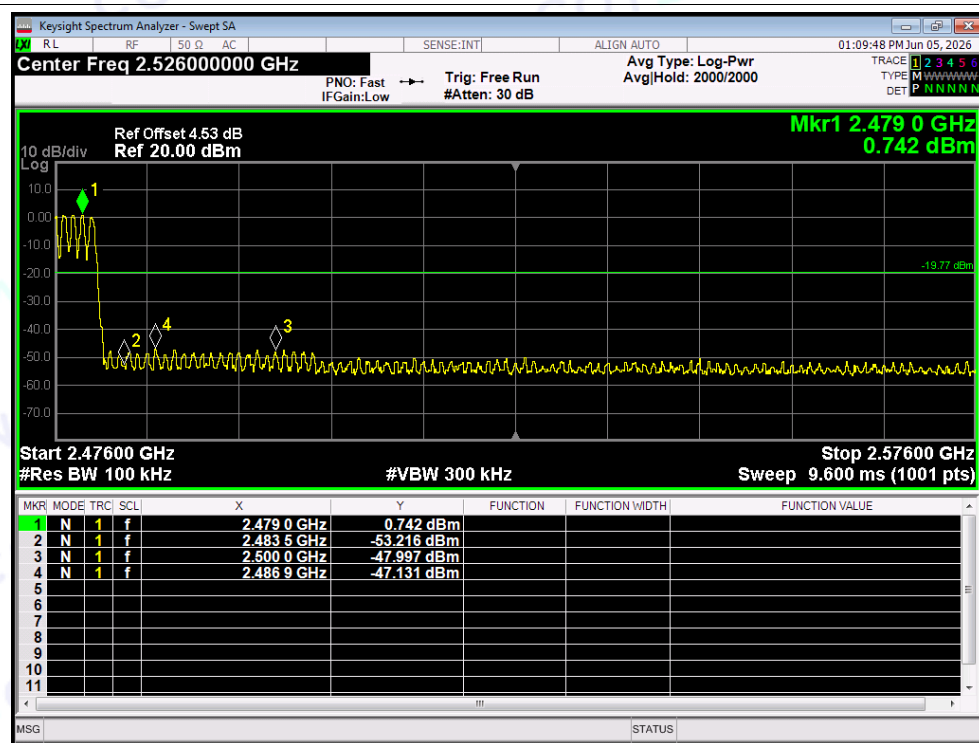
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



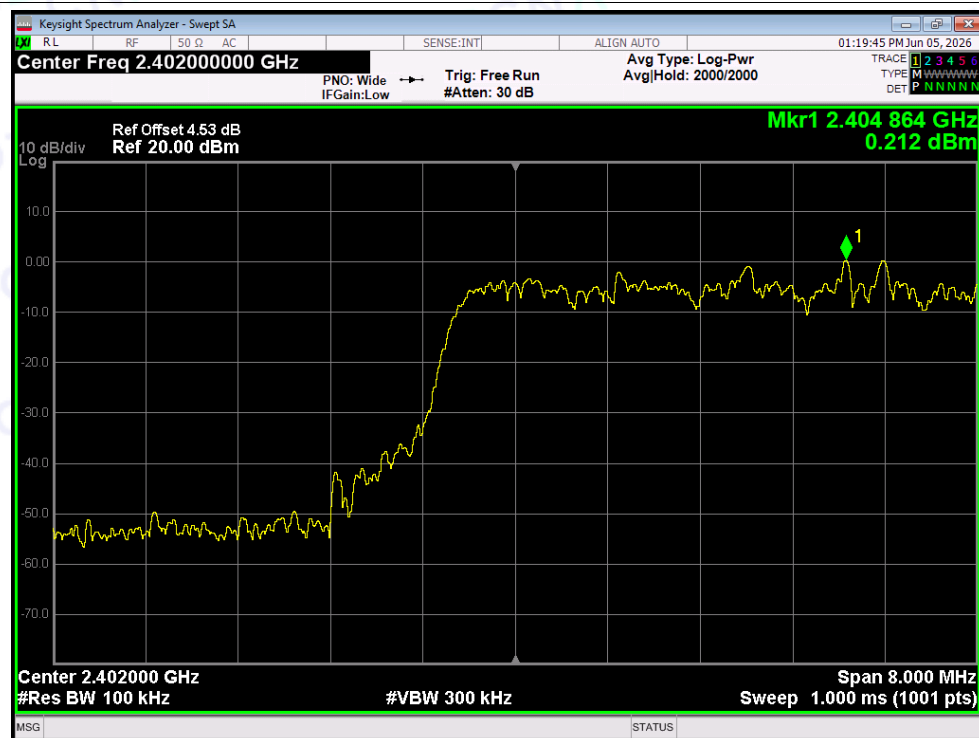
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



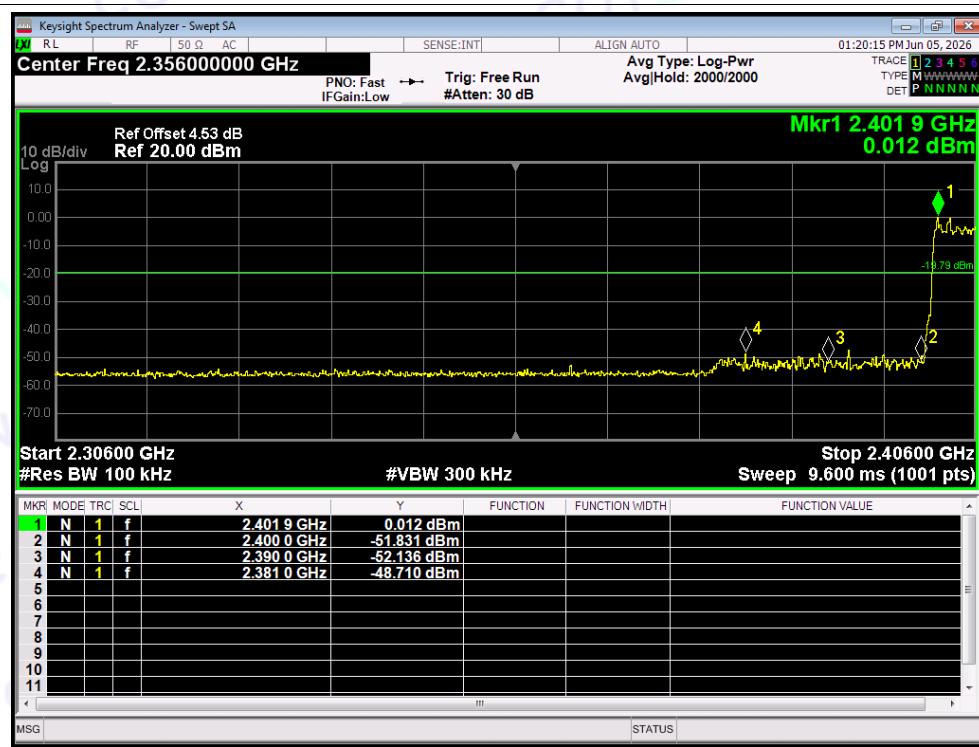
Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission



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



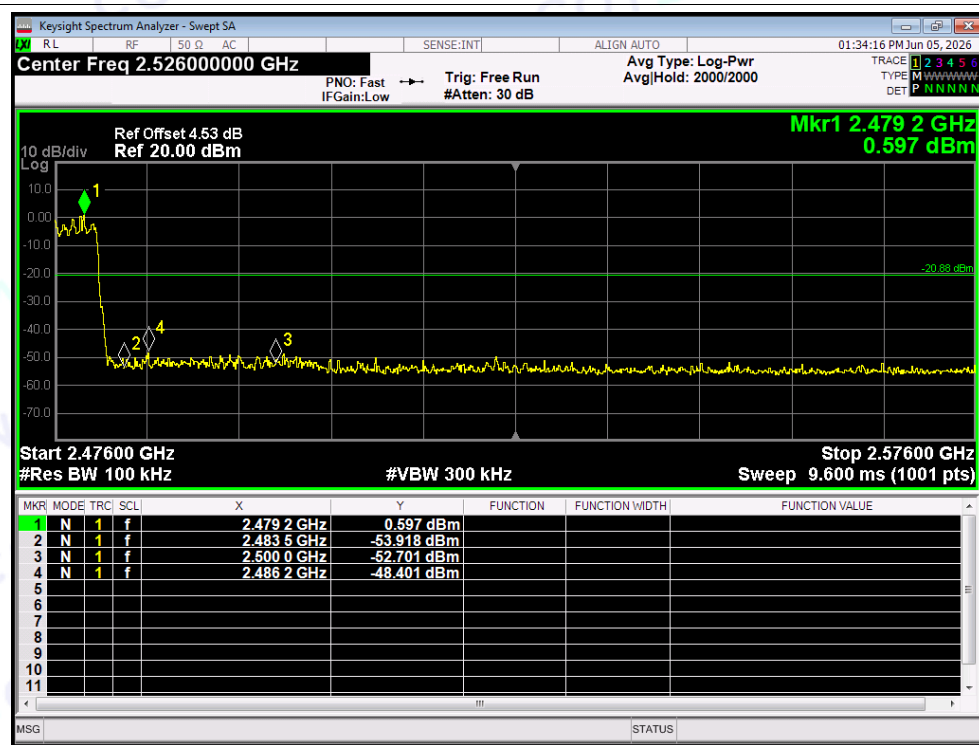
Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission



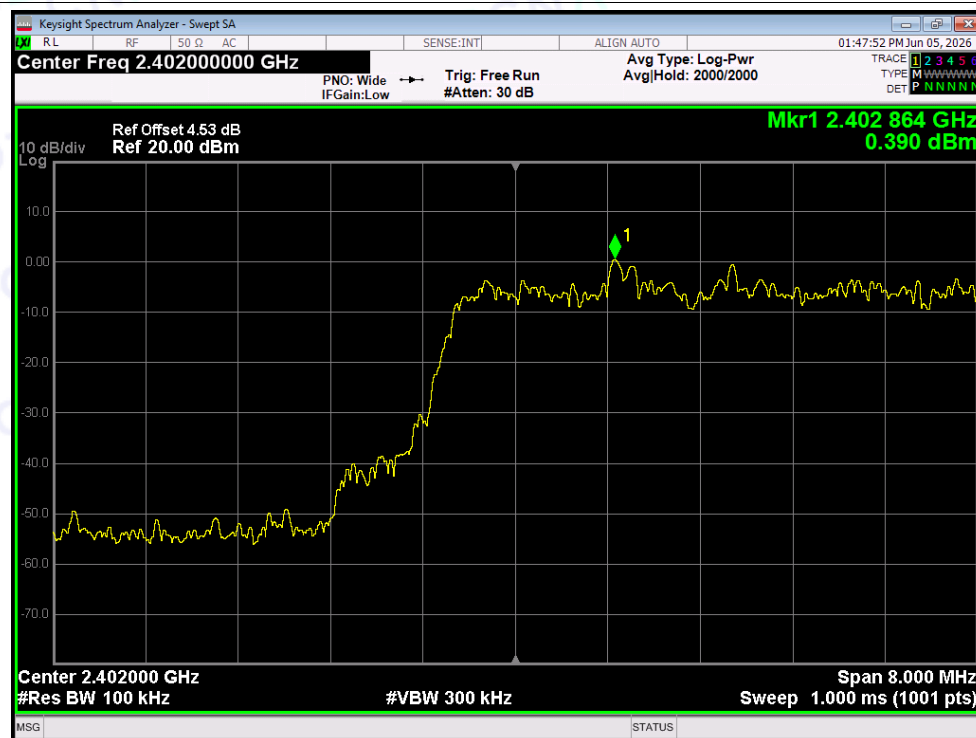
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



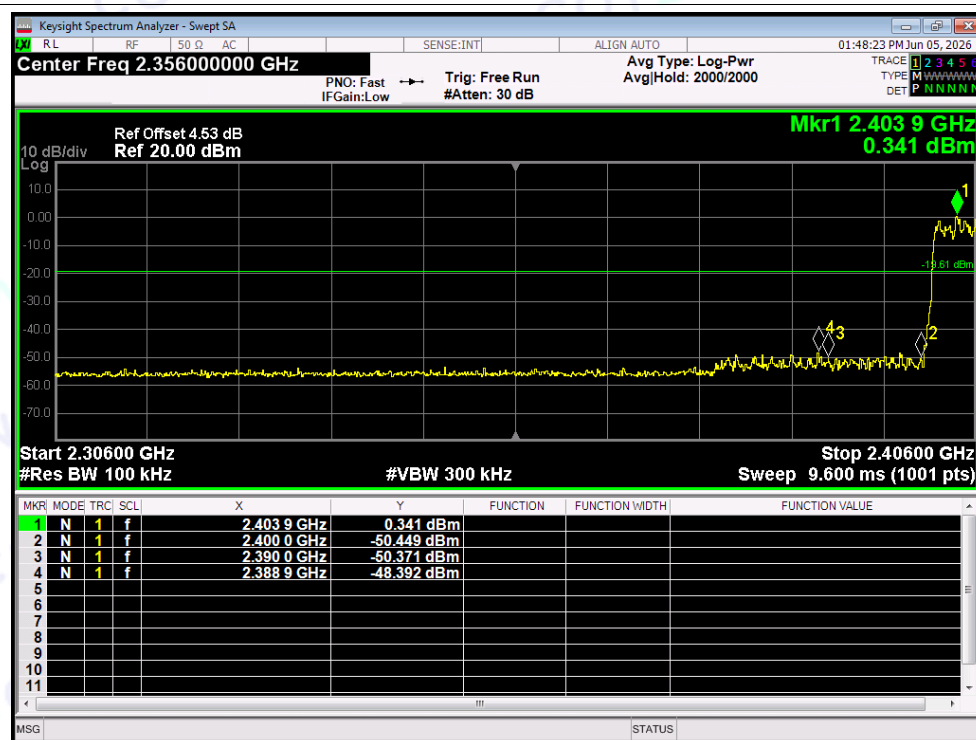
Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



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



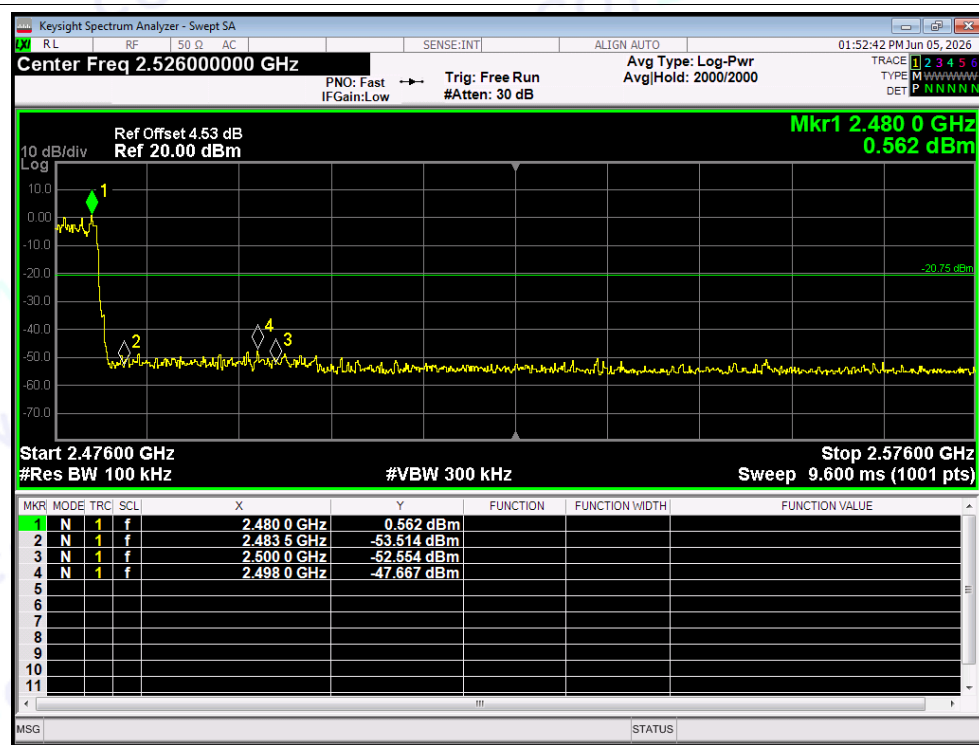
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



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



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

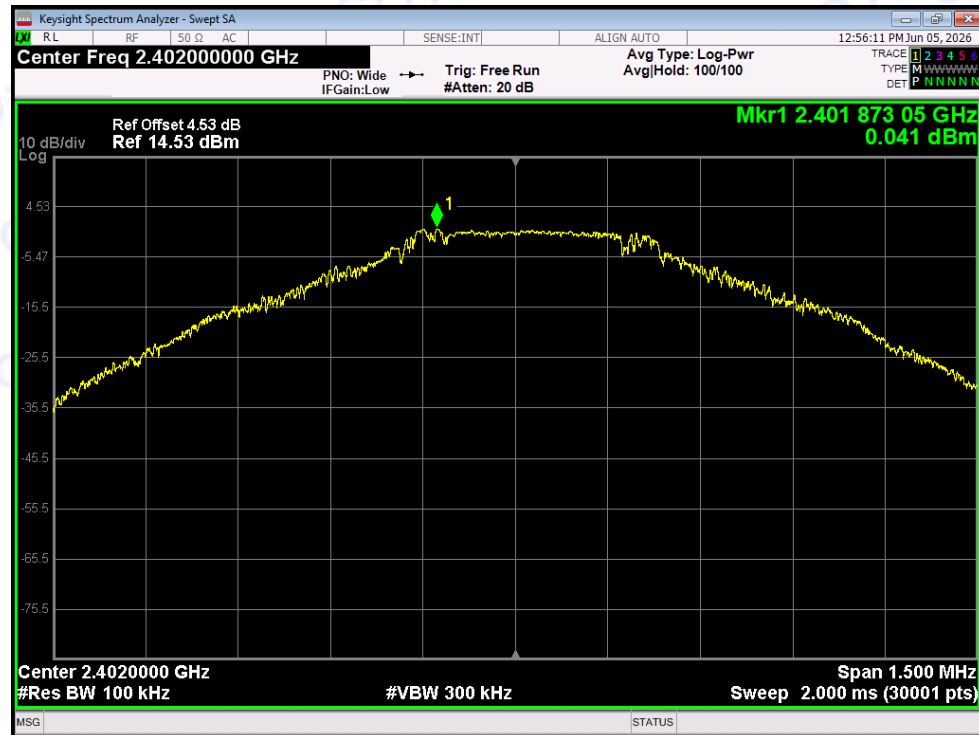


8. Conducted RF Spurious Emission

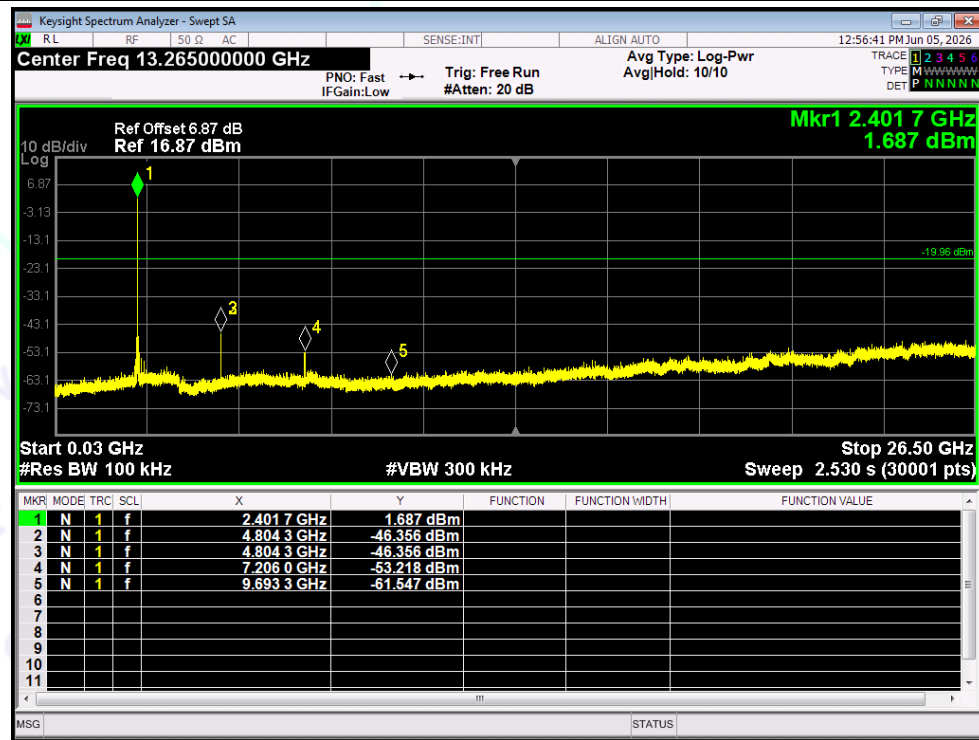
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-46.4	-20	Pass
NVNT	1-DH5	2441	Ant1	-43.78	-20	Pass
NVNT	1-DH5	2480	Ant1	-43.28	-20	Pass
NVNT	2-DH5	2402	Ant1	-46.04	-20	Pass
NVNT	2-DH5	2441	Ant1	-44.99	-20	Pass
NVNT	2-DH5	2480	Ant1	-42.04	-20	Pass
NVNT	3-DH5	2402	Ant1	-47.12	-20	Pass
NVNT	3-DH5	2441	Ant1	-43.56	-20	Pass
NVNT	3-DH5	2480	Ant1	-45.17	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



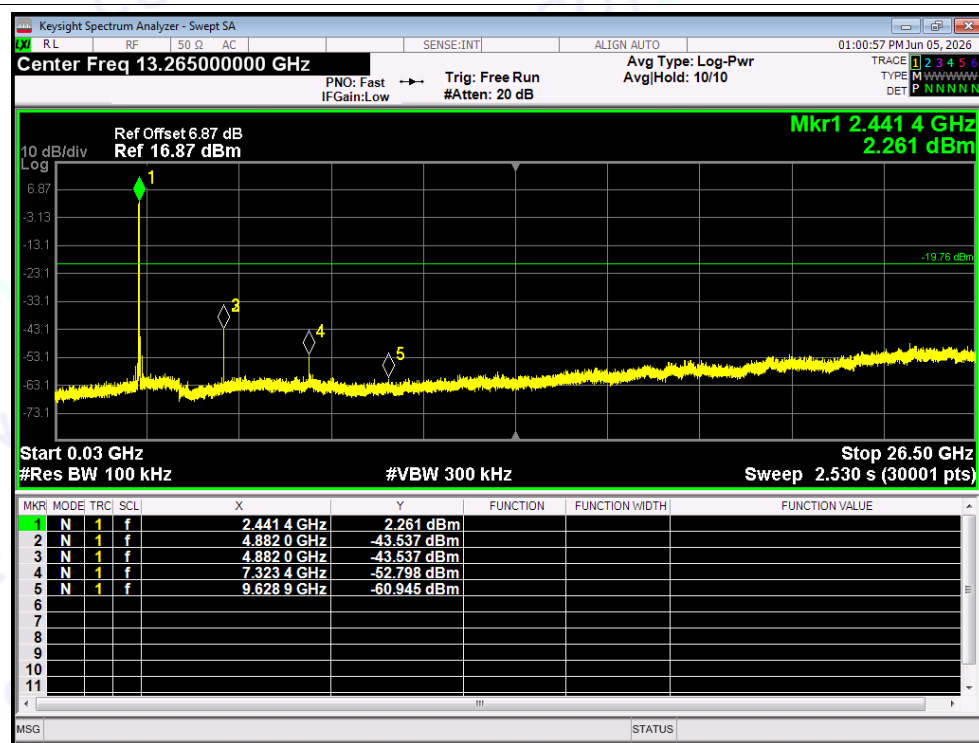
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



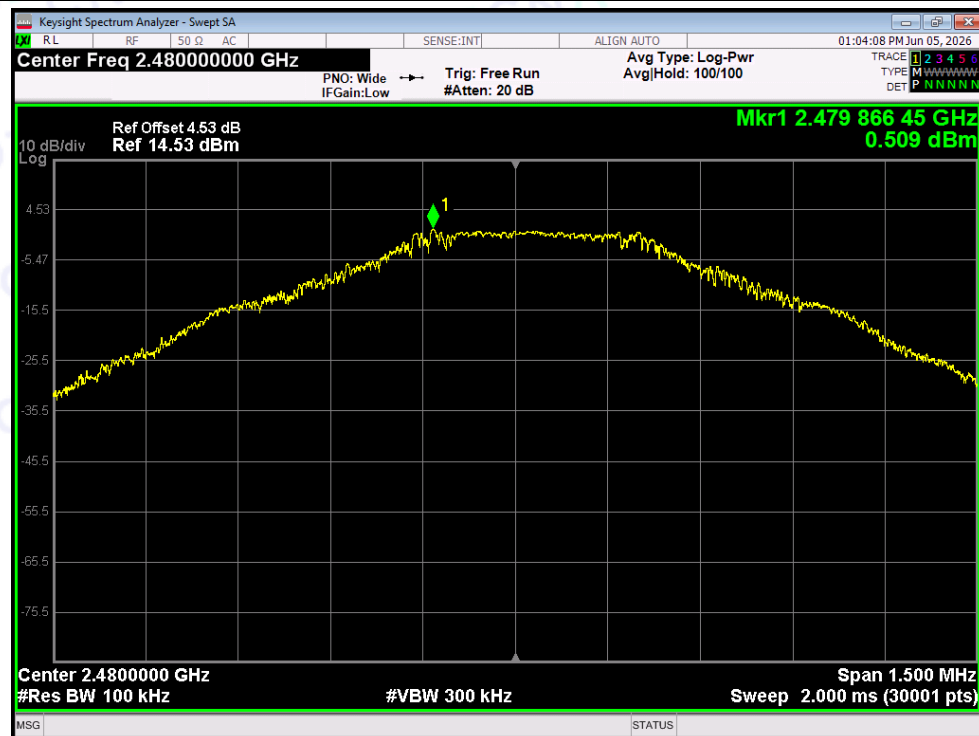
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



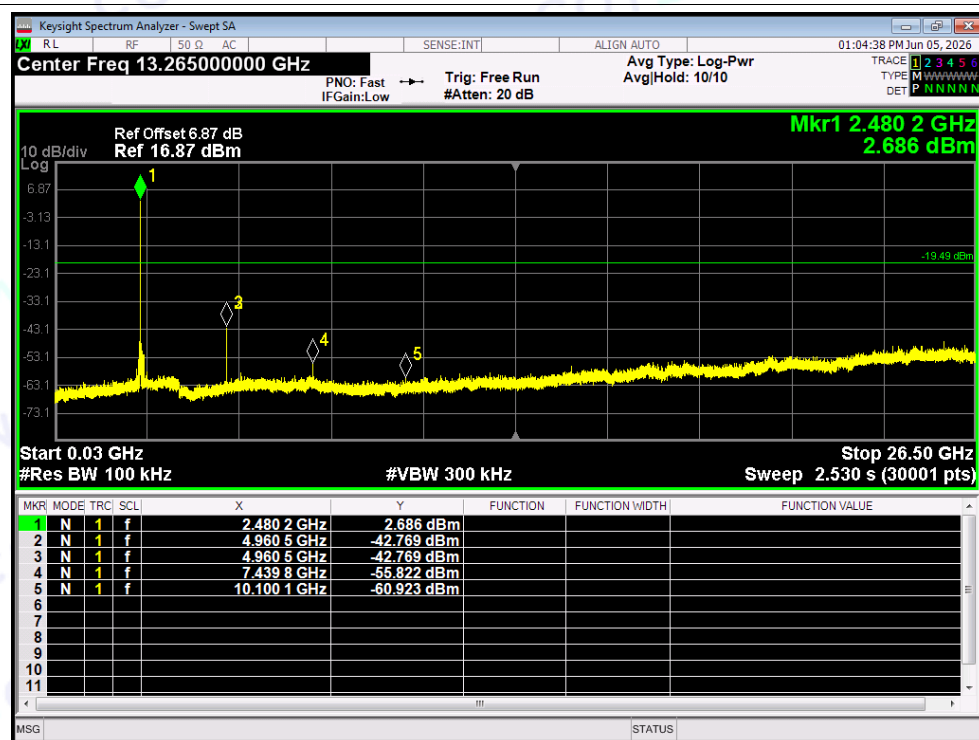
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



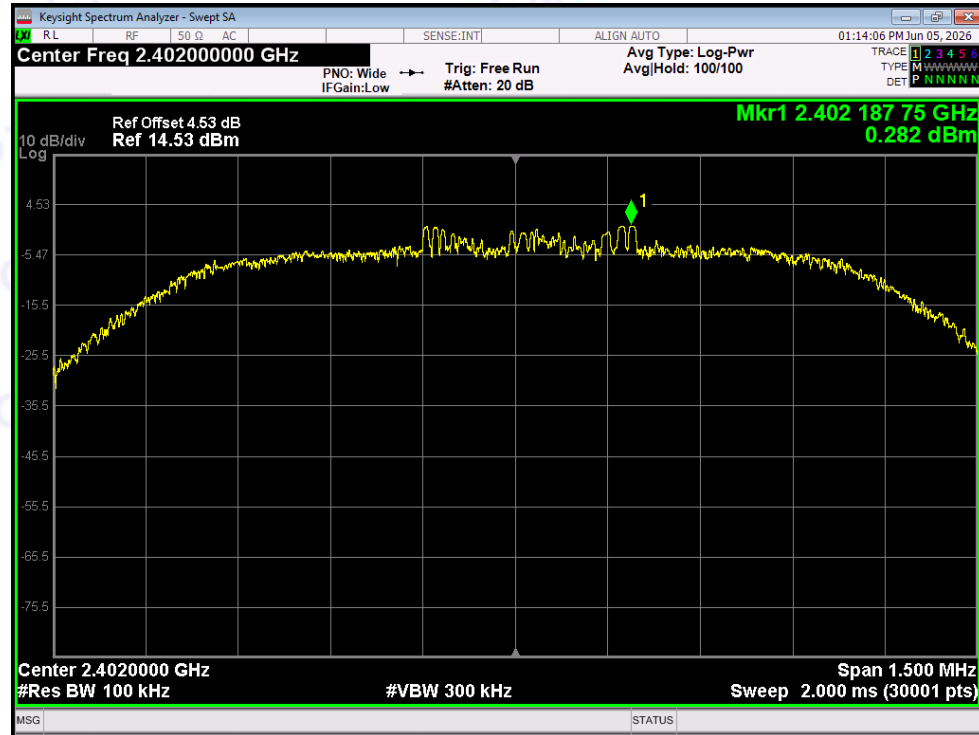
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



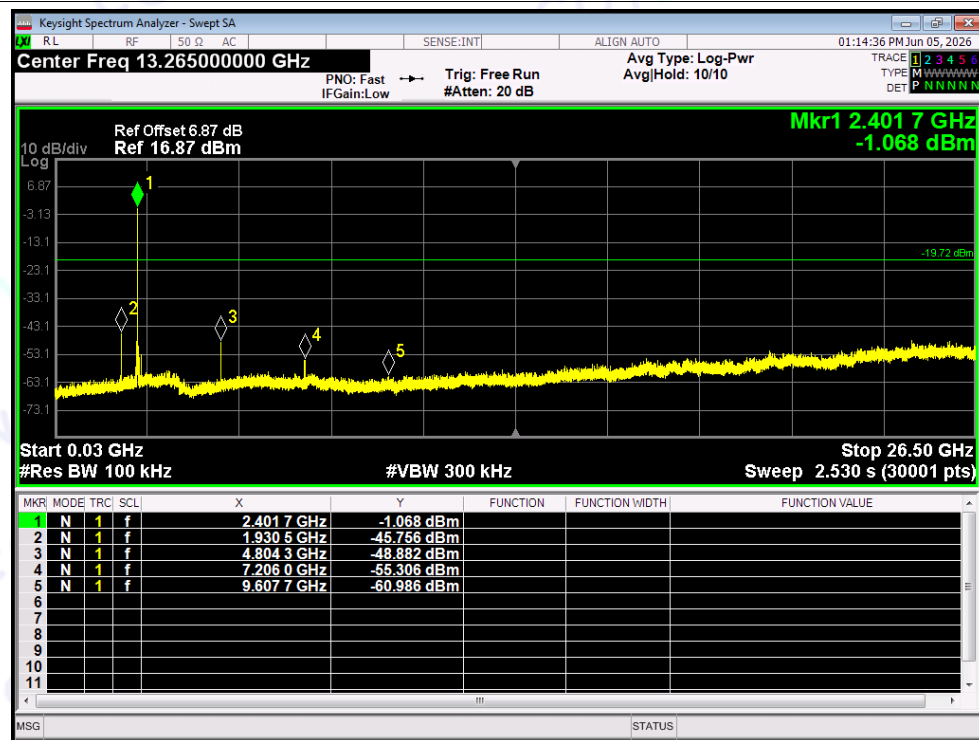
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



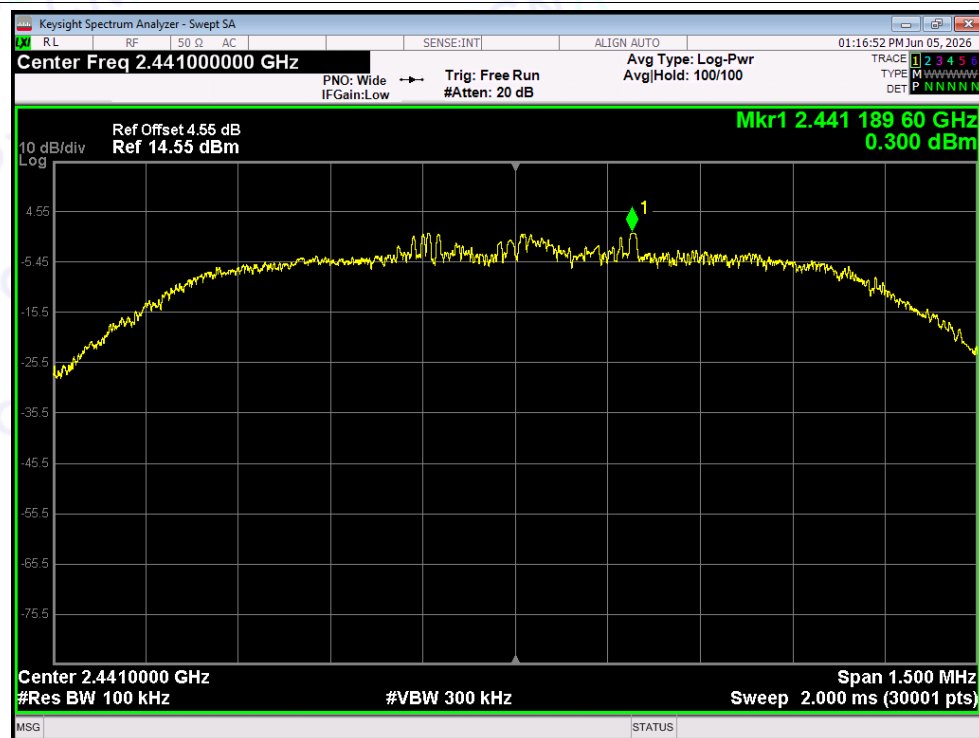
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



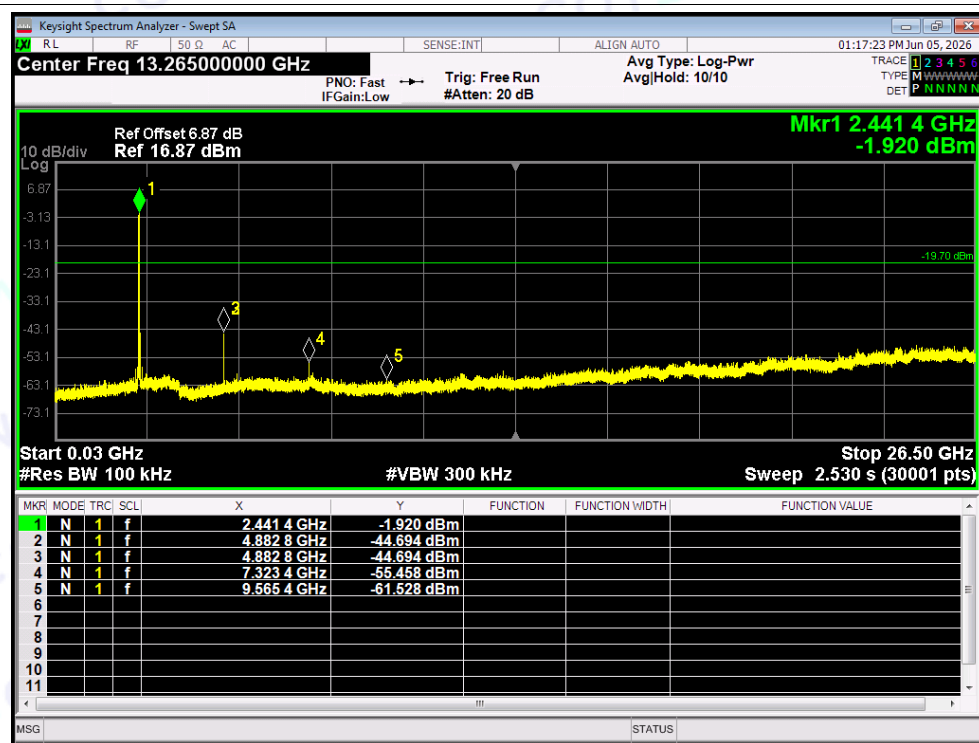
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



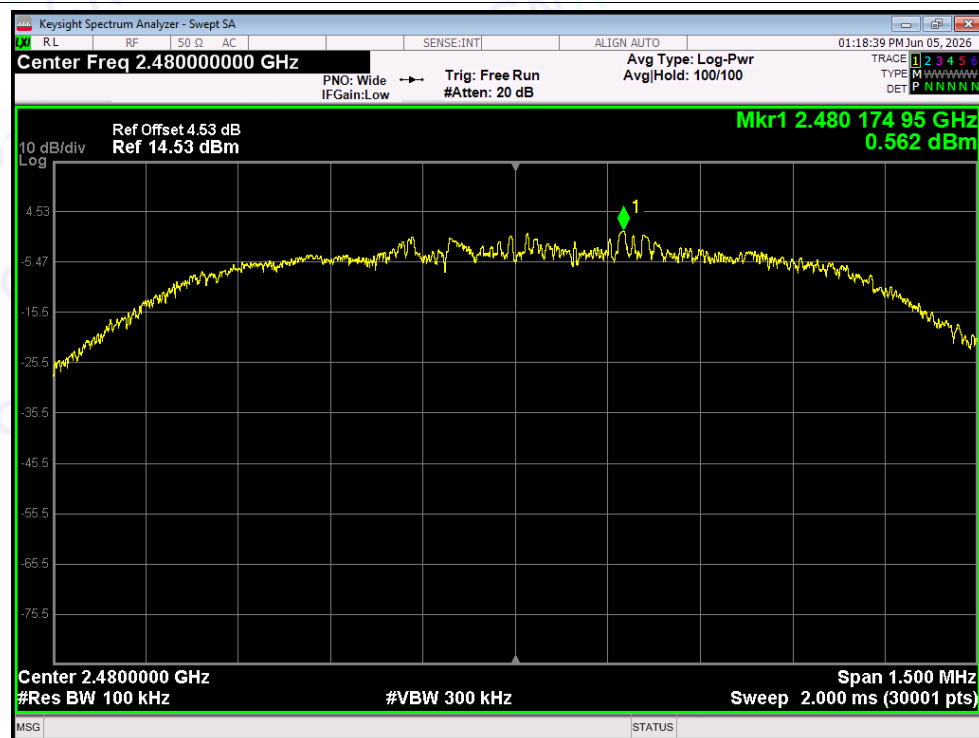
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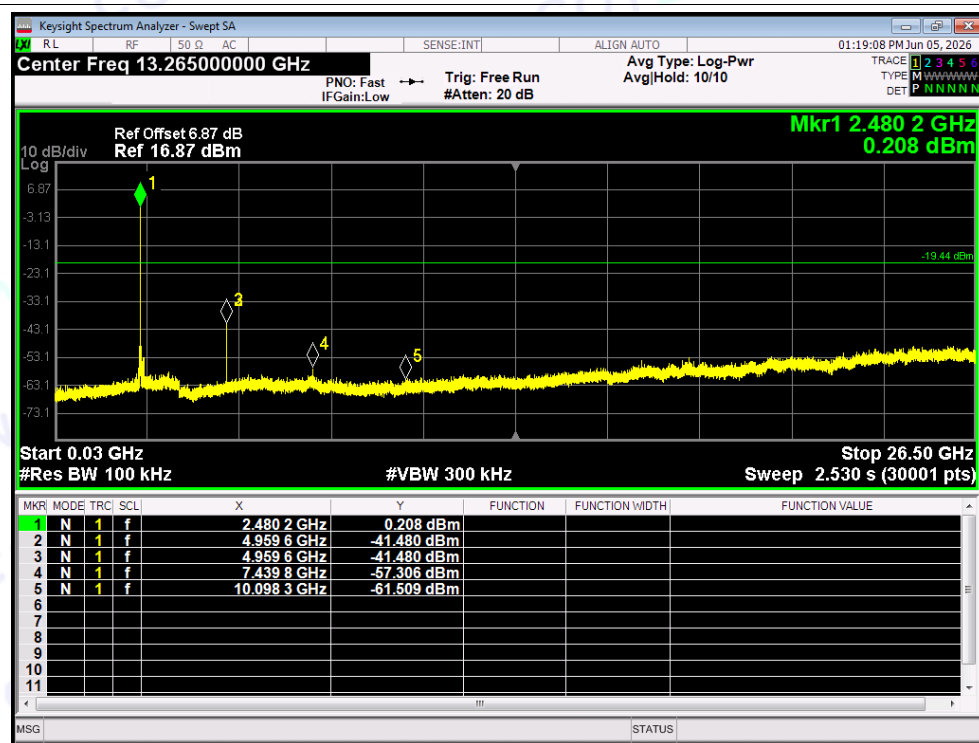
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



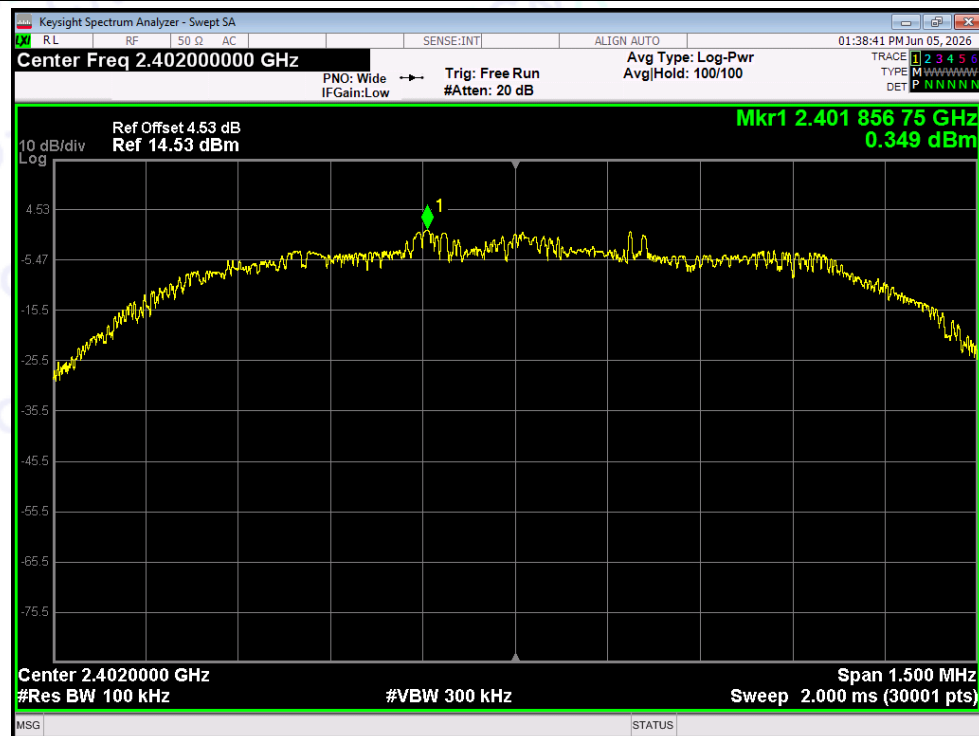
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



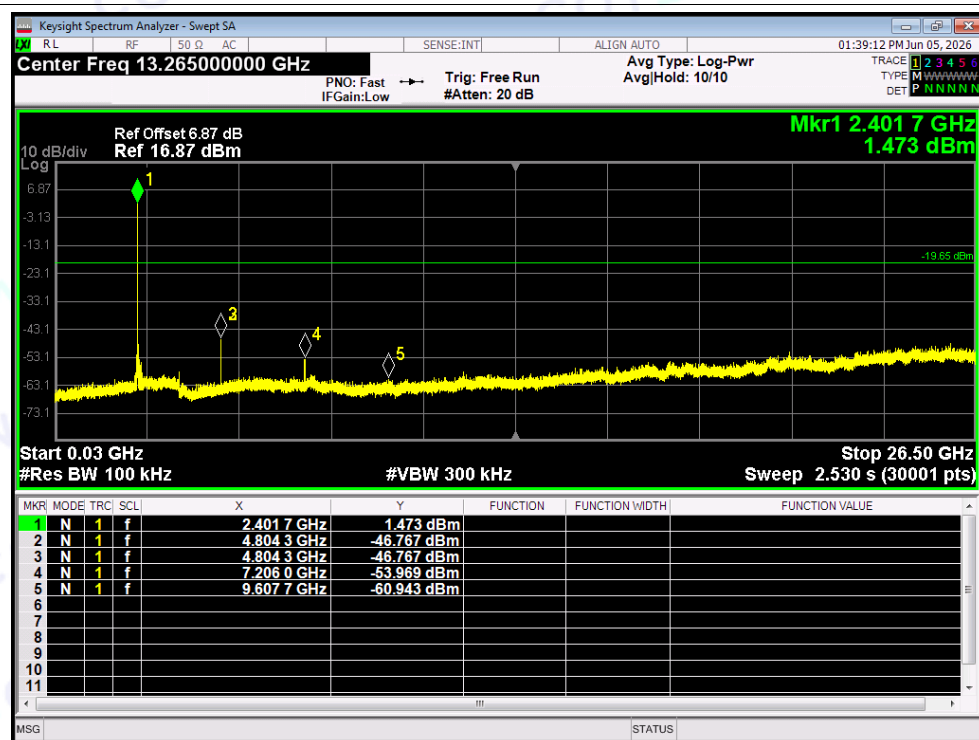
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



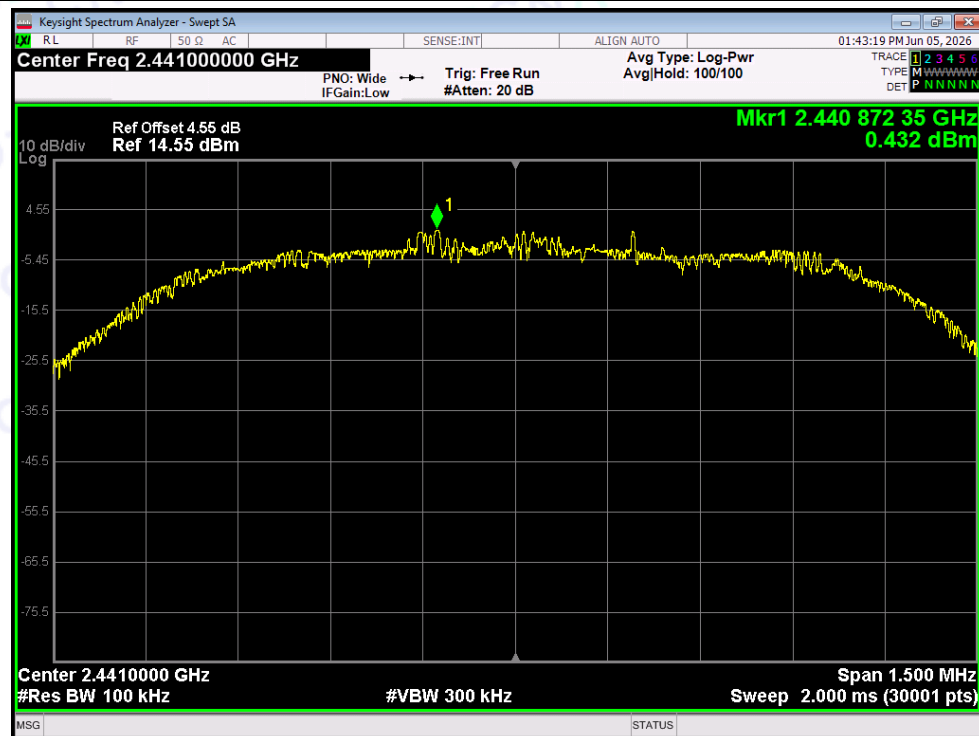
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



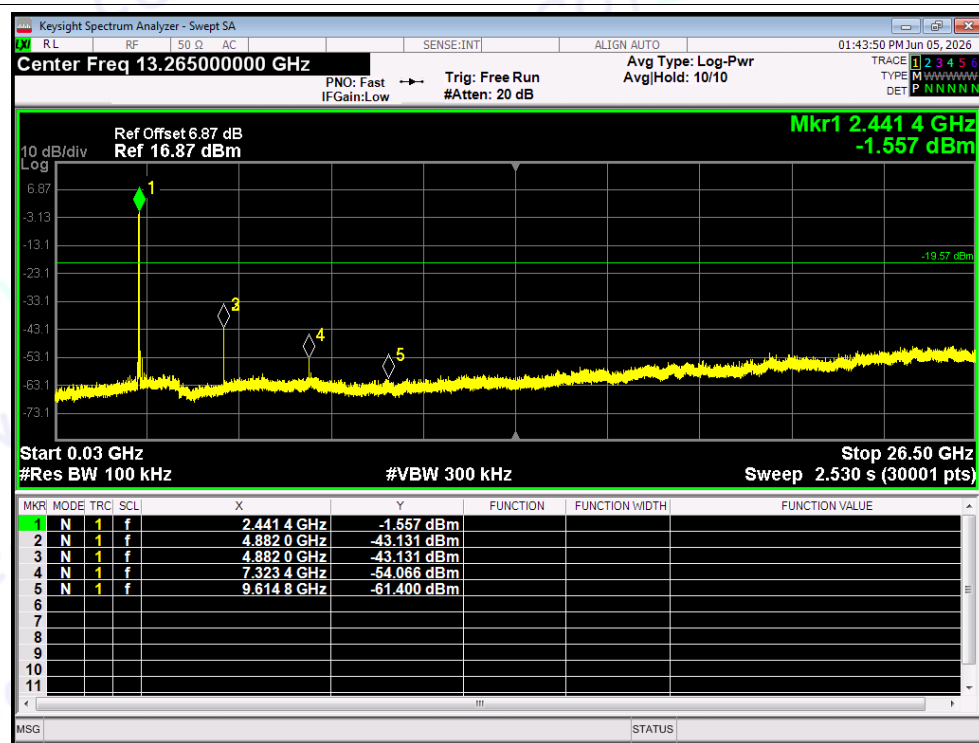
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



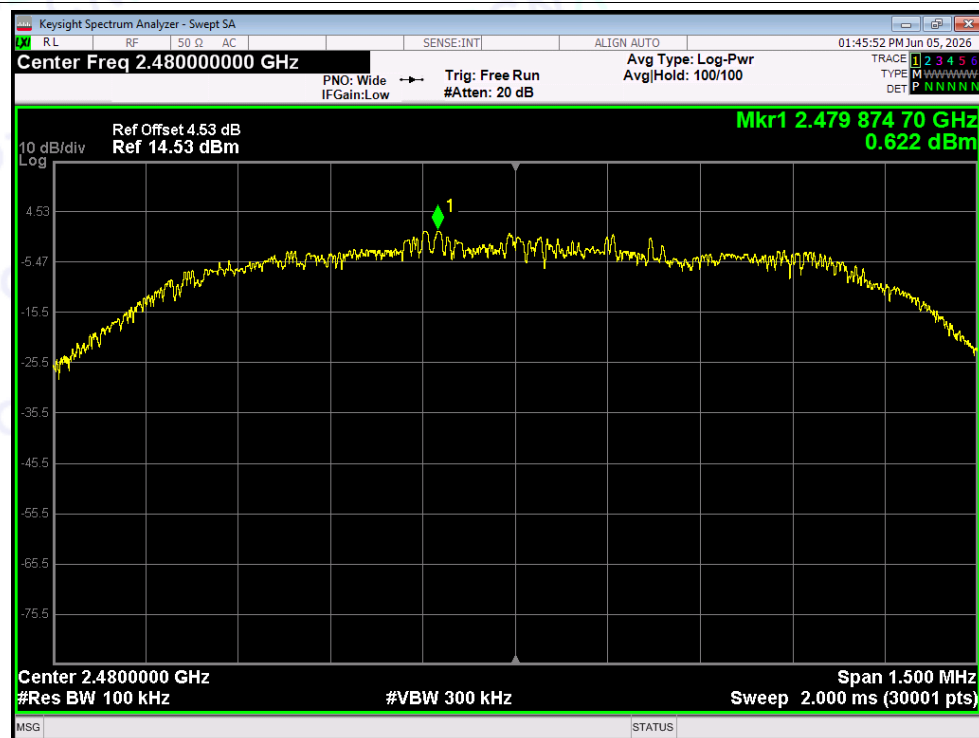
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



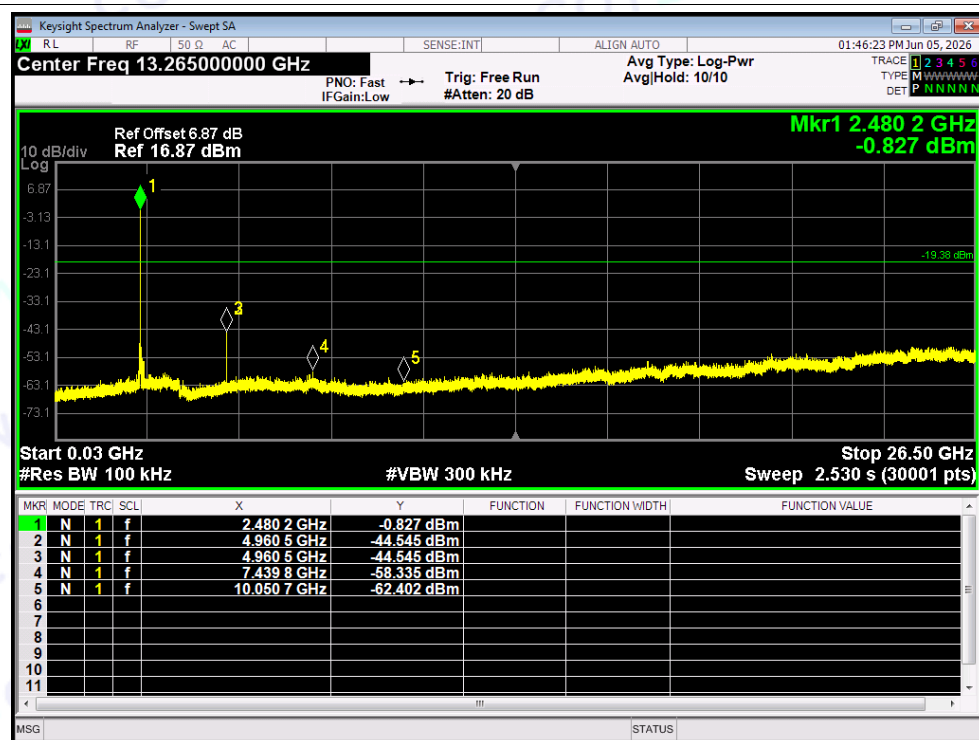
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

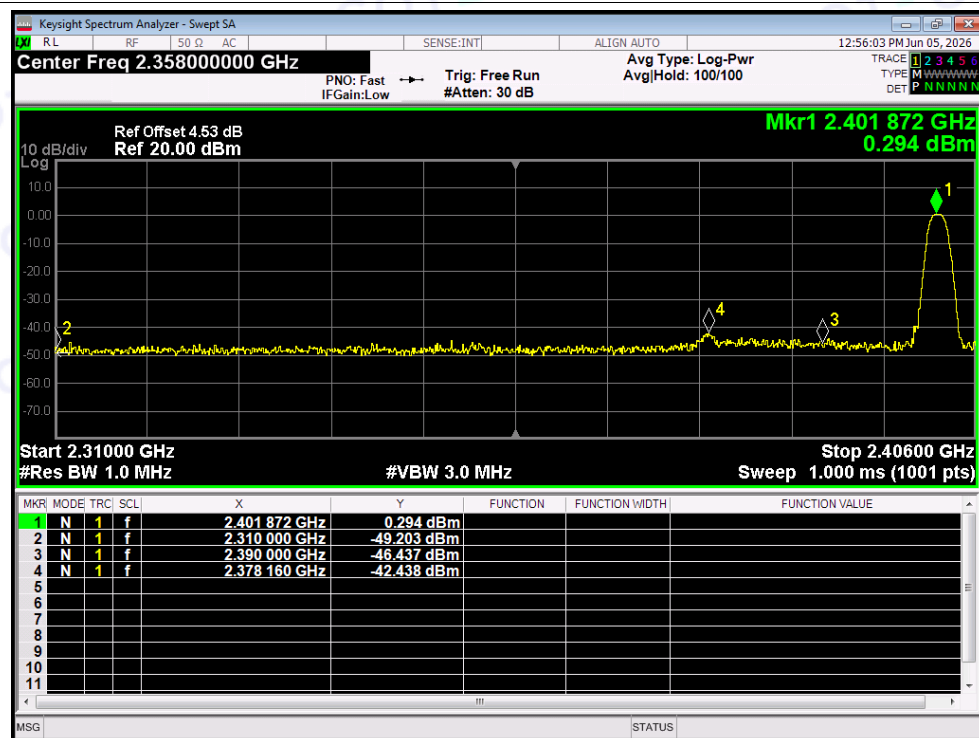


9. Restrict Band

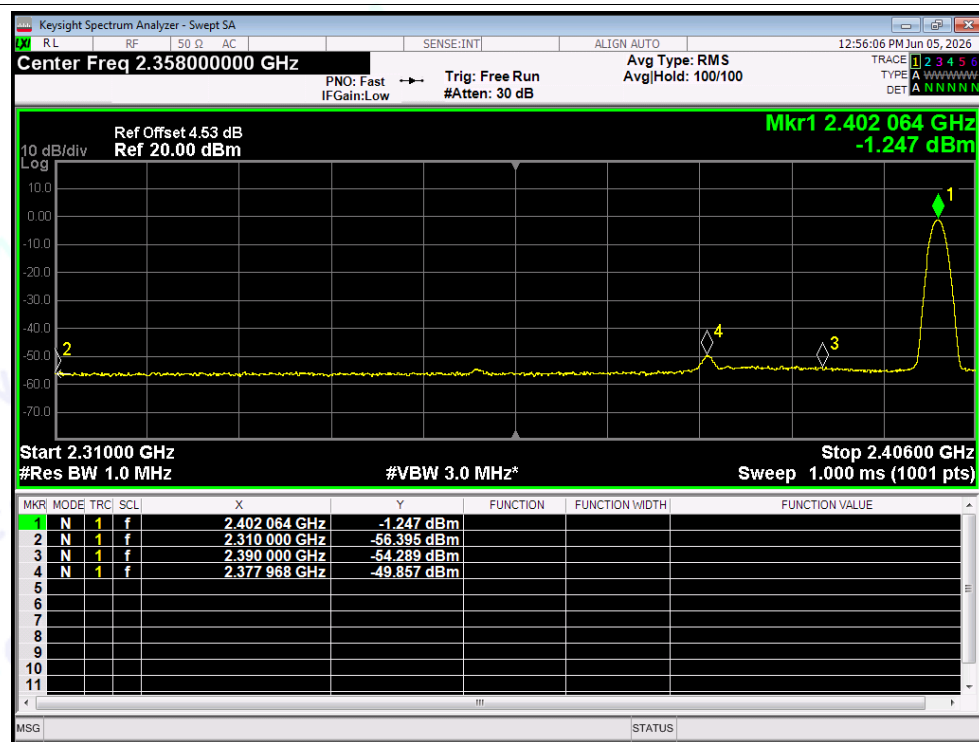
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.2	2	-	48.06	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-56.4	2	1.15	40.86	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2378.16	-42.44	2	-	54.82	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2377.968	-49.86	2	1.15	47.4	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-46.44	2	-	50.82	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-54.29	2	1.15	42.97	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-45.76	2	-	51.5	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-54.48	2	1.15	42.78	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.776	-39.63	2	-	57.63	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2498.536	-52.73	2	1.15	44.53	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-44.47	2	-	52.79	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-53.07	2	1.15	44.19	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-47.16	2	-	50.1	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-56.96	2	1.14	40.3	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2377.872	-41.07	2	-	56.19	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2378.064	-50.64	2	1.14	46.62	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-46.21	2	-	51.05	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-54.31	2	1.14	42.95	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-46.28	2	-	50.98	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-54.24	2	1.14	43.02	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2493.736	-42.18	2	-	55.08	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2499.16	-52.52	2	1.14	44.74	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-44.54	2	-	52.72	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-53.15	2	1.14	44.11	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-49.14	2	-	48.12	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-56.47	2	1.13	40.79	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2384.4	-42.63	2	-	54.63	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2377.968	-50.83	2	1.13	46.43	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-44.88	2	-	52.38	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-54.35	2	1.13	42.91	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-45.6	2	-	51.66	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-54.29	2	1.13	42.97	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2498.776	-42.12	2	-	55.14	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2499.544	-52.53	2	1.13	44.73	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-43.92	2	-	53.34	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-53.32	2	1.13	43.94	Average	54	Pass

Test Graphs

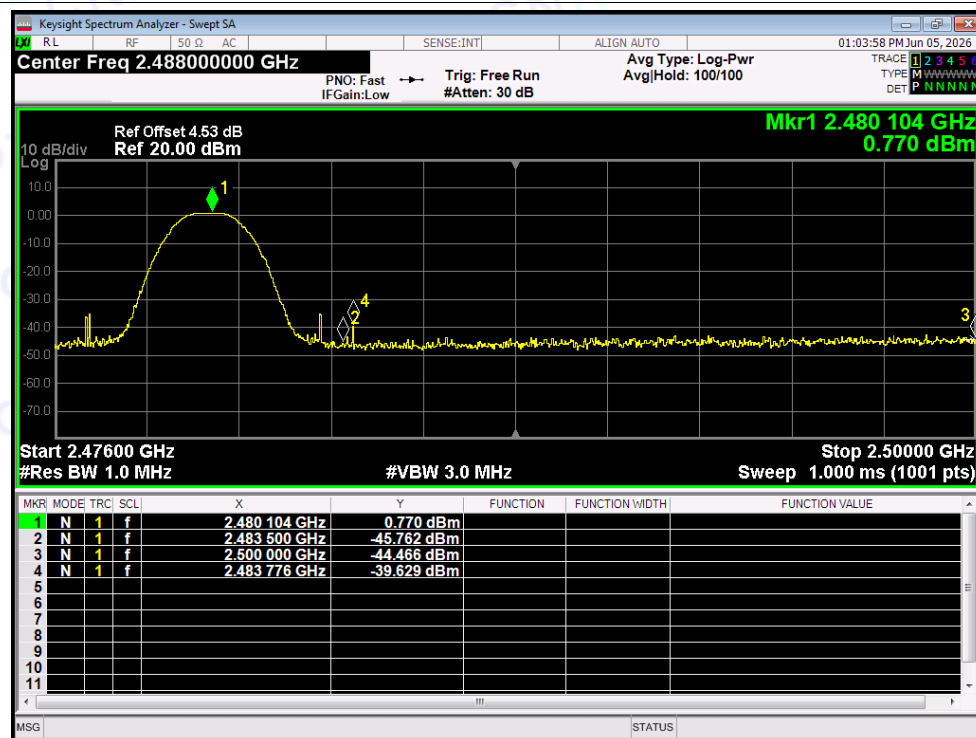
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



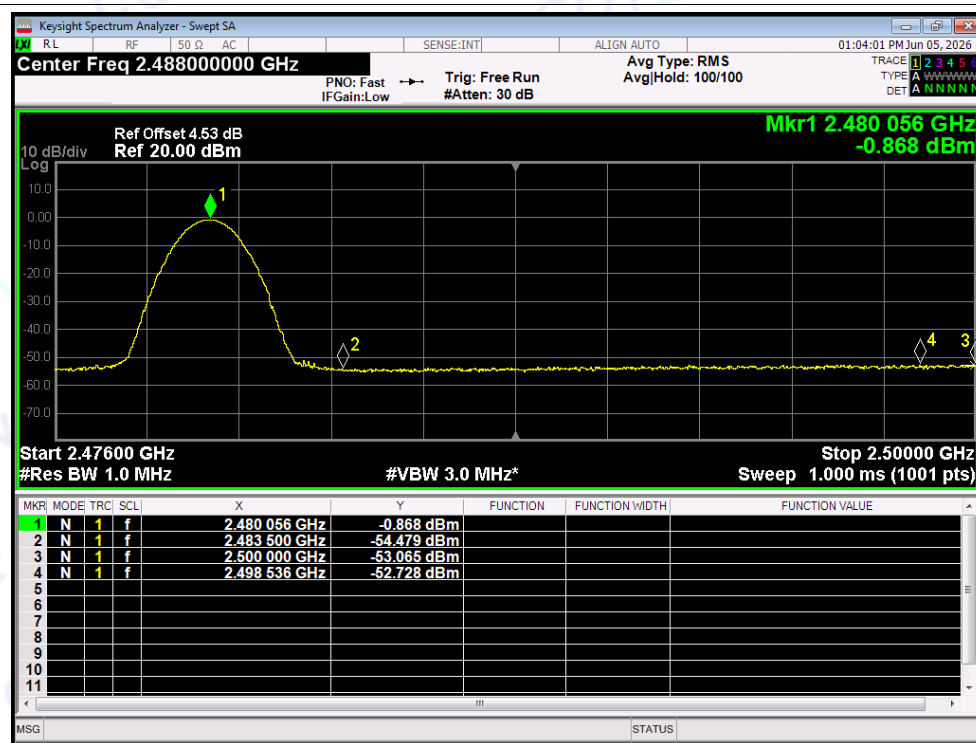
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



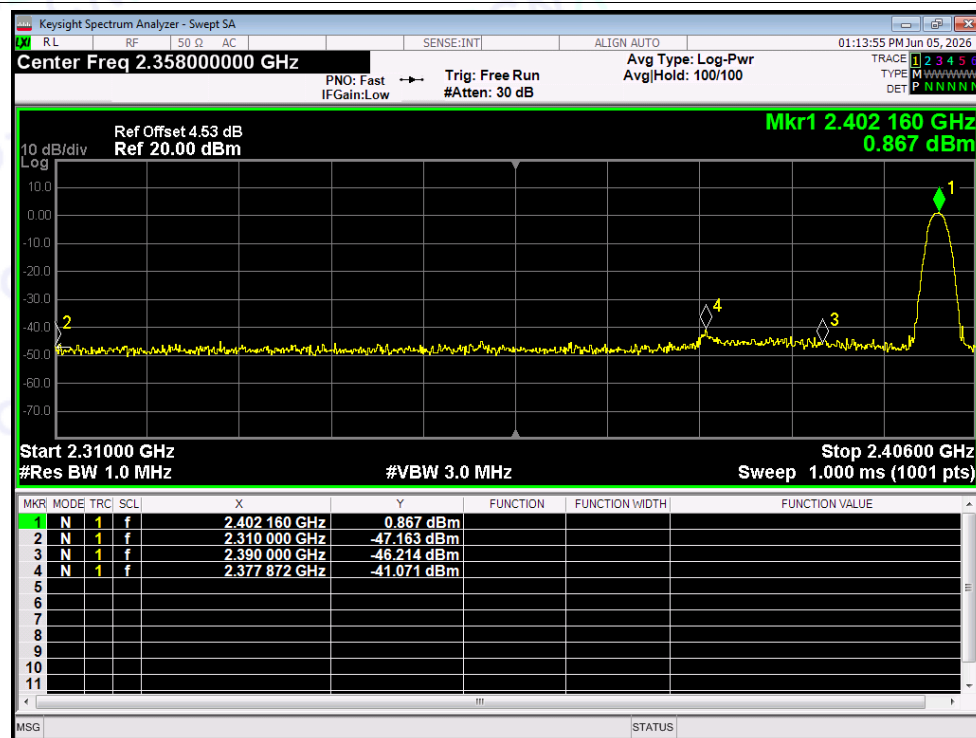
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



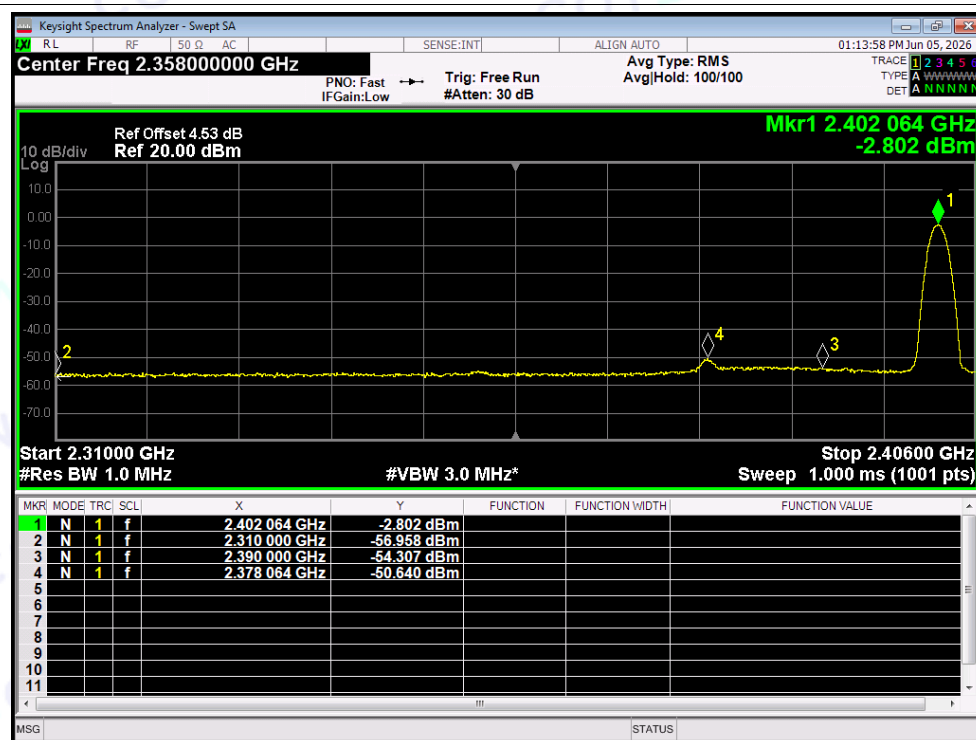
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



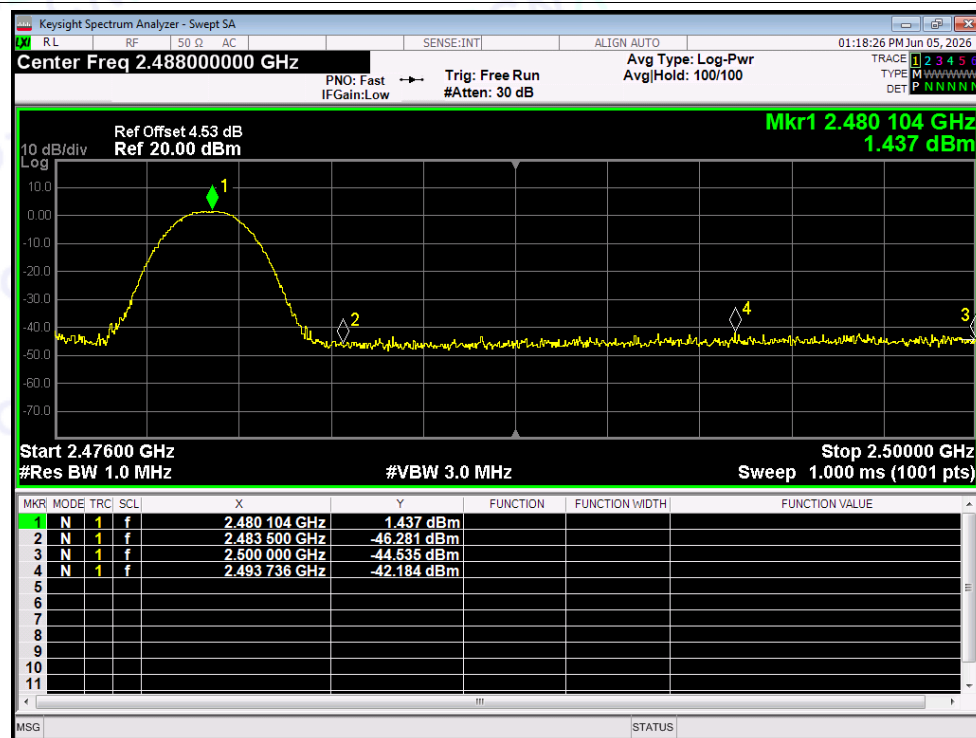
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



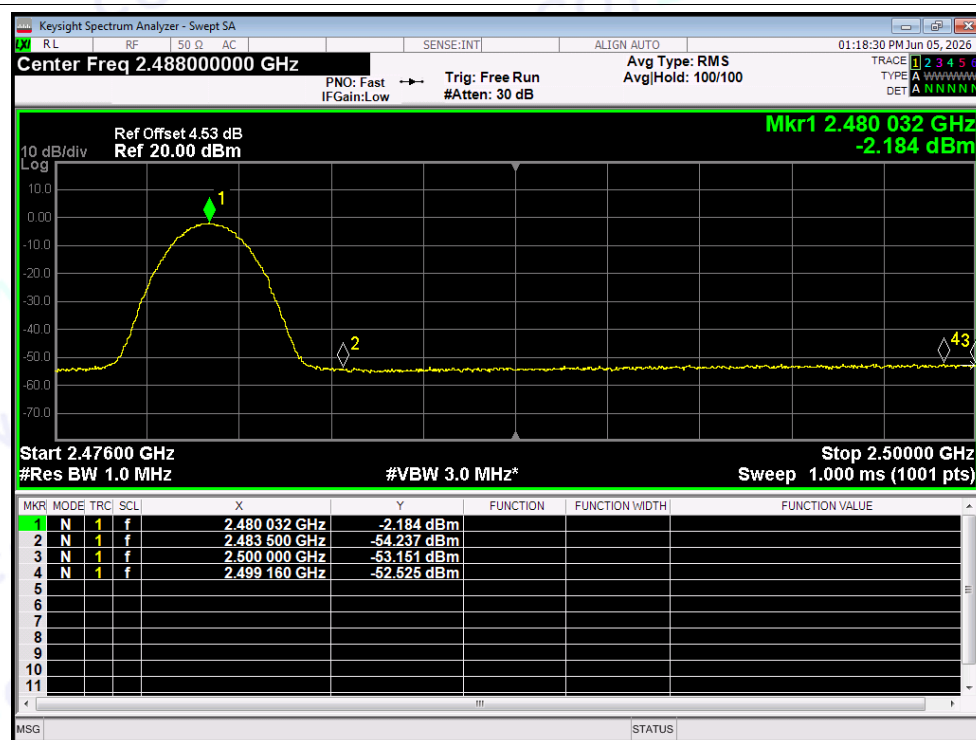
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average



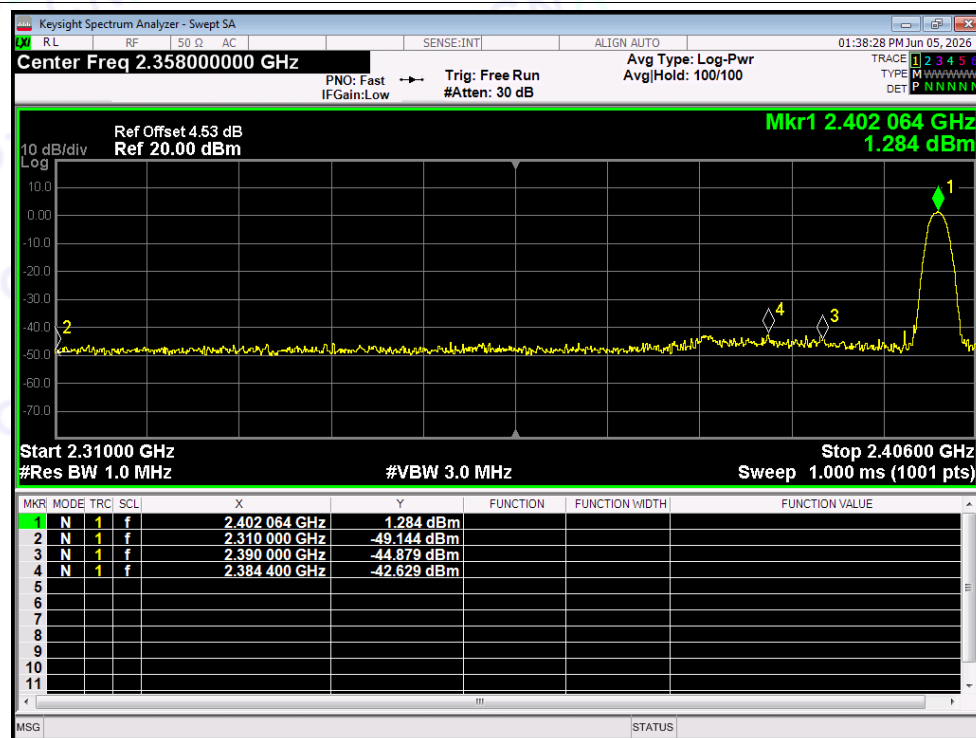
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Peak



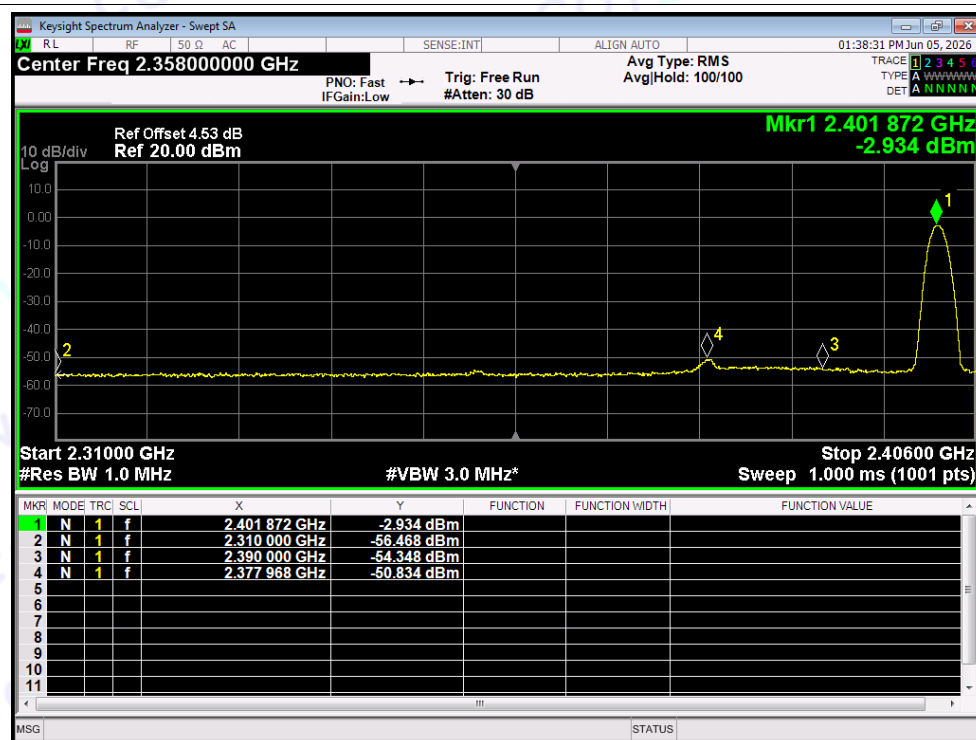
Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average



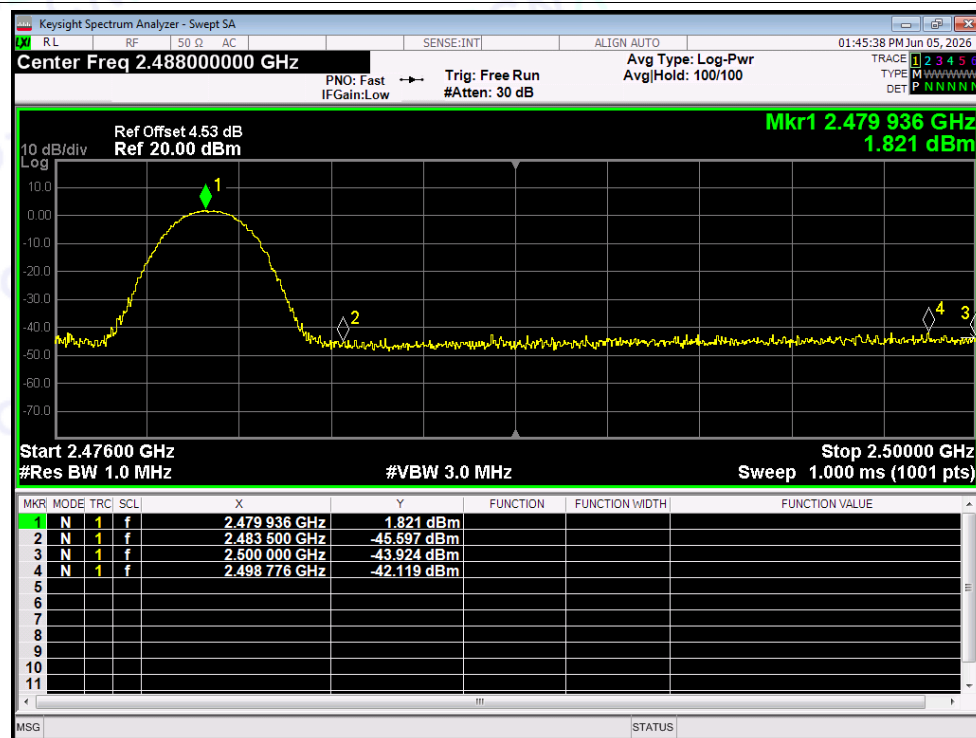
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



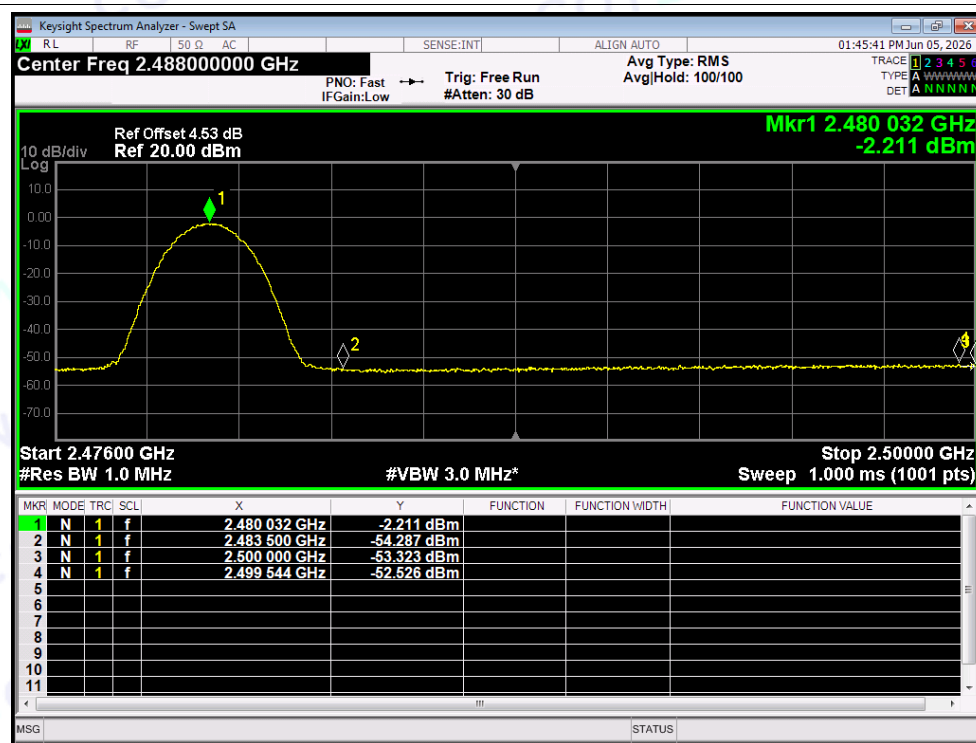
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Average

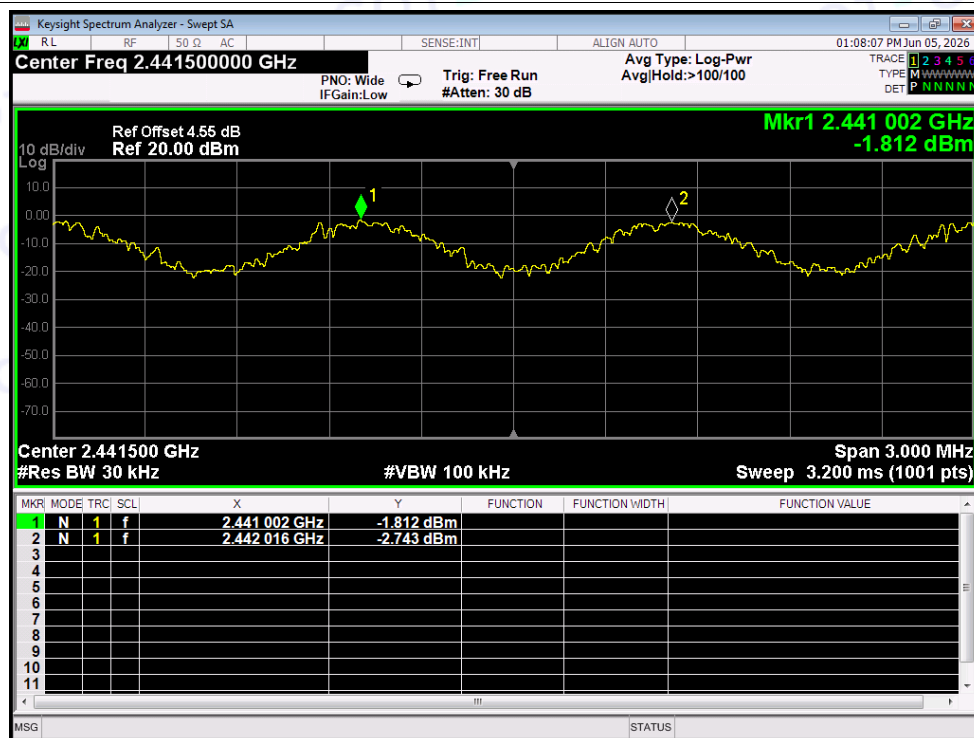


10. Carrier Frequencies Separation

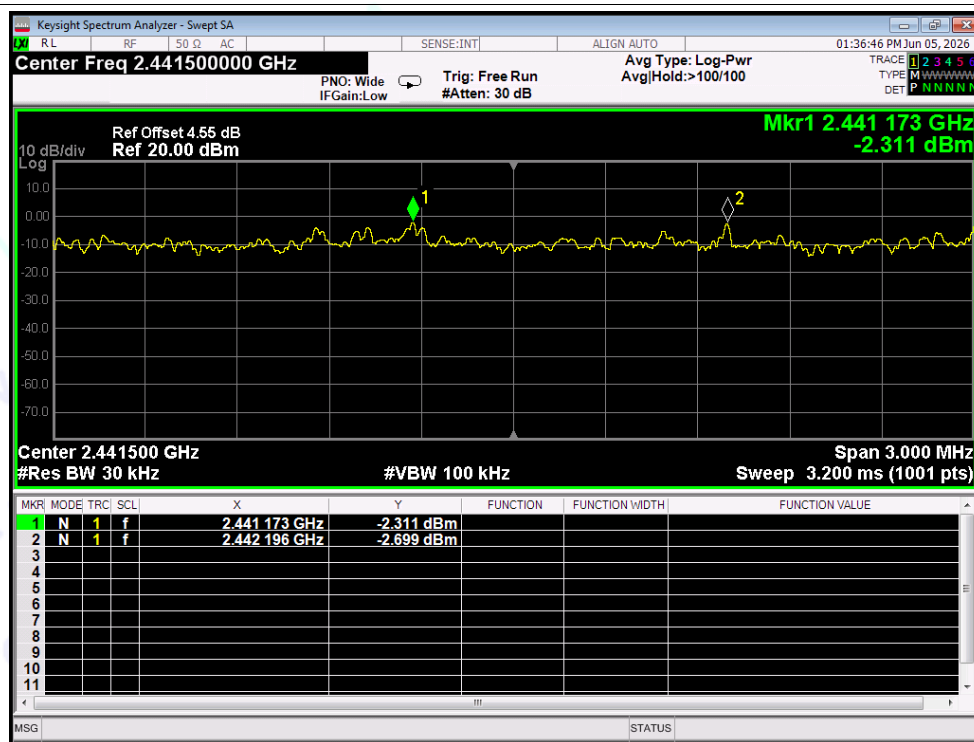
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2441.002	2442.016	1.014	0.693	Pass
NVNT	2-DH5	Ant1	2441.173	2442.196	1.023	0.88	Pass
NVNT	3-DH5	Ant1	2440.861	2441.851	0.99	0.867	Pass

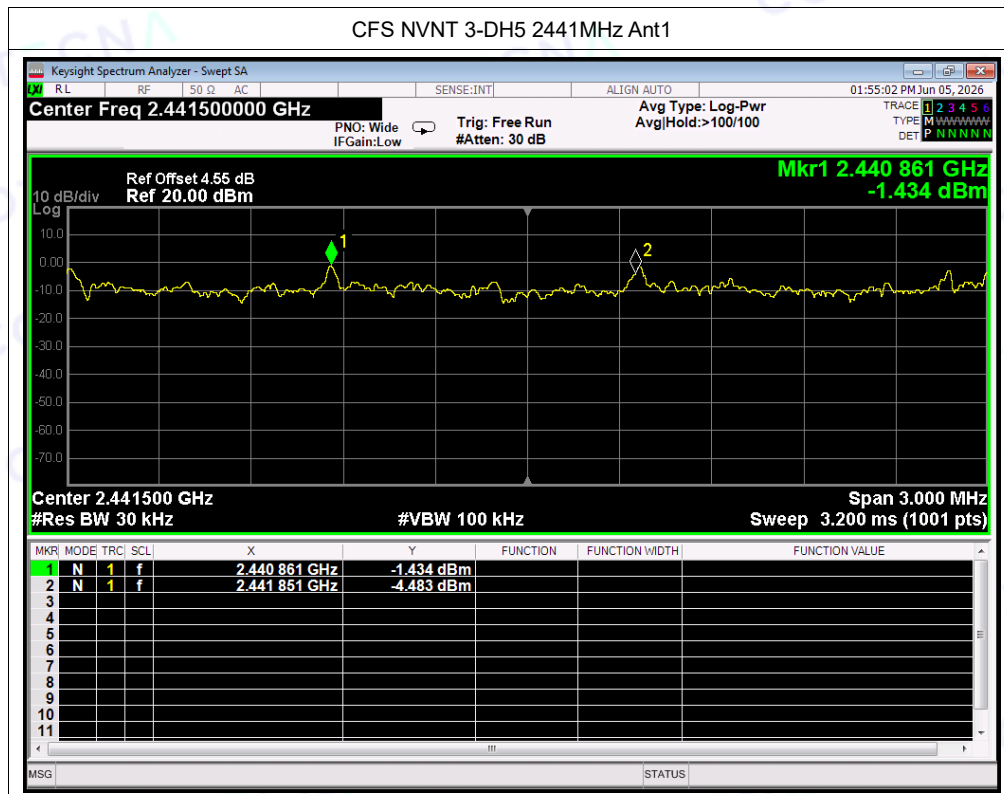
Test Graphs

CFS NVNT 1-DH5 2441MHz Ant1



CFS NVNT 2-DH5 2441MHz Ant1



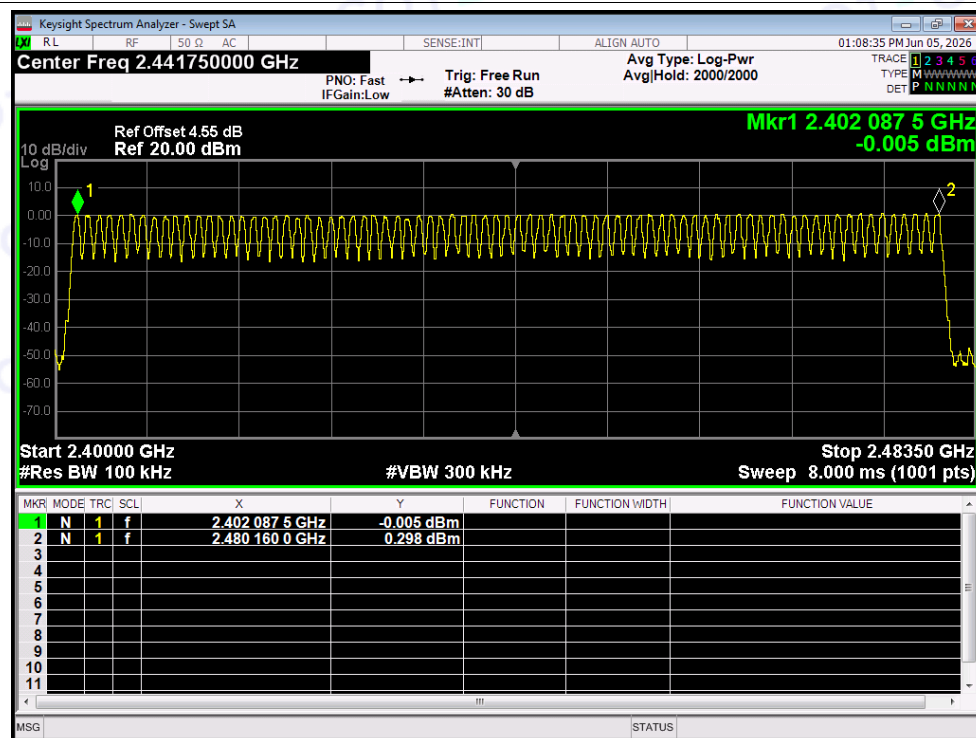


11. Number of Hopping Channel

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

