RF Test Data for Bluetooth (Conducted Measurements)

General Description of EUT	
Product Name:	Smart Watch
Test Model:	KW281M
Sample ID:	HC-C-202506-0054-01-2#
Environmental Conditions	
Temperature:	23.9℃
Relative Humidity:	48%
Test Voltage:	DC 5V
Test Engineer:	Gold Zhang
Note: For a more detailed features description, please refer to the report TBR-C-202506-0054-11 The report only show the worst case data.	

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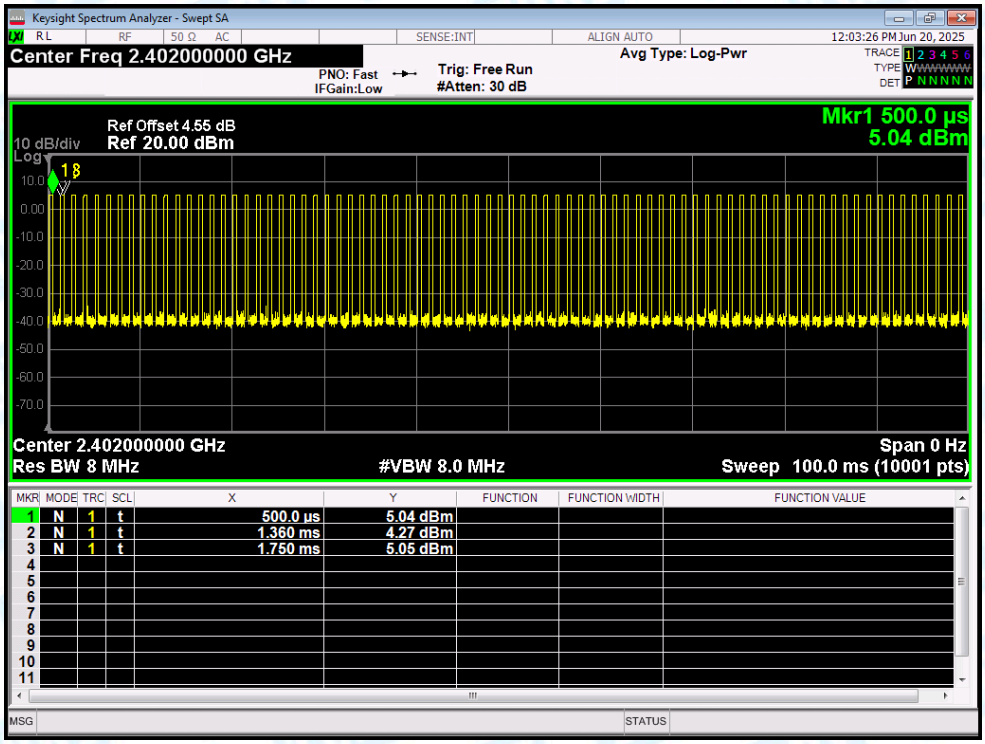
1. Duty Cycle

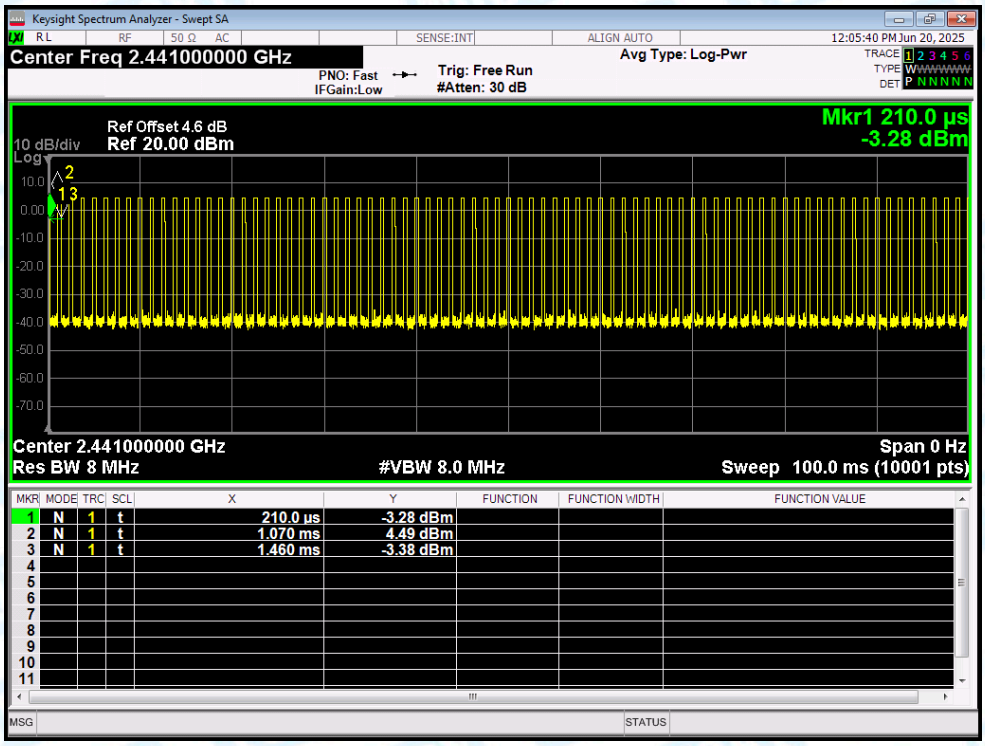
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	1-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2441	Ant1	31.2	5.06	2.56
NVNT	2-DH1	2480	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2402	Ant1	31.2	5.06	2.56
NVNT	3-DH1	2441	Ant1	32	4.95	2.5
NVNT	3-DH1	2480	Ant1	31.75	4.98	2.5

Test Graphs

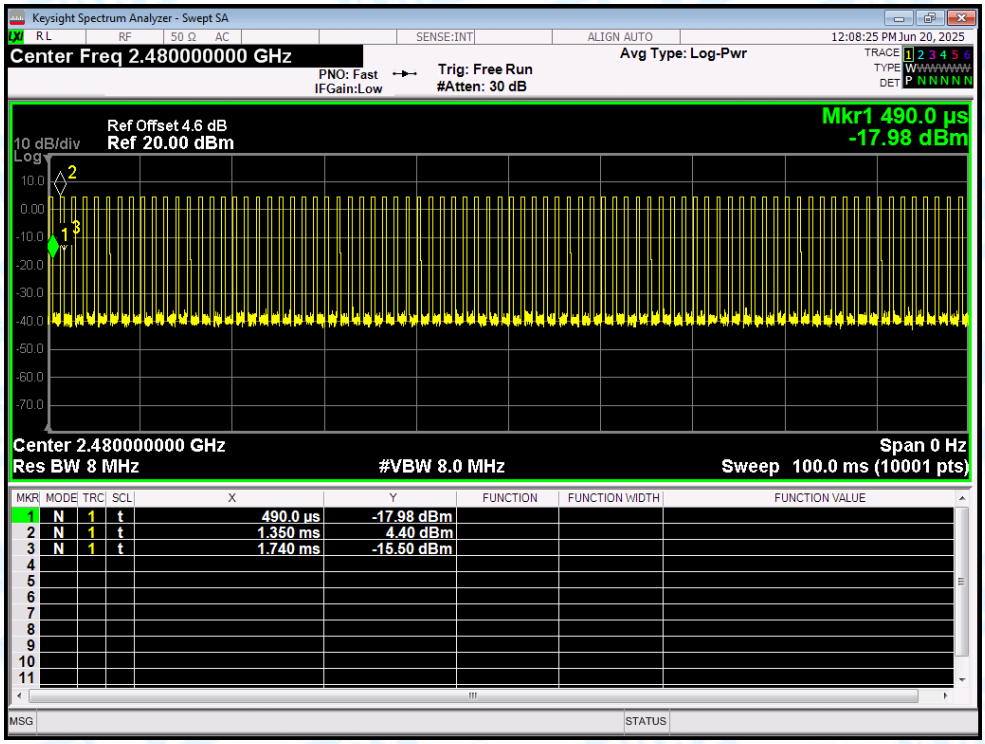
Duty Cycle NVNT 1-DH1 2402MHz Ant1



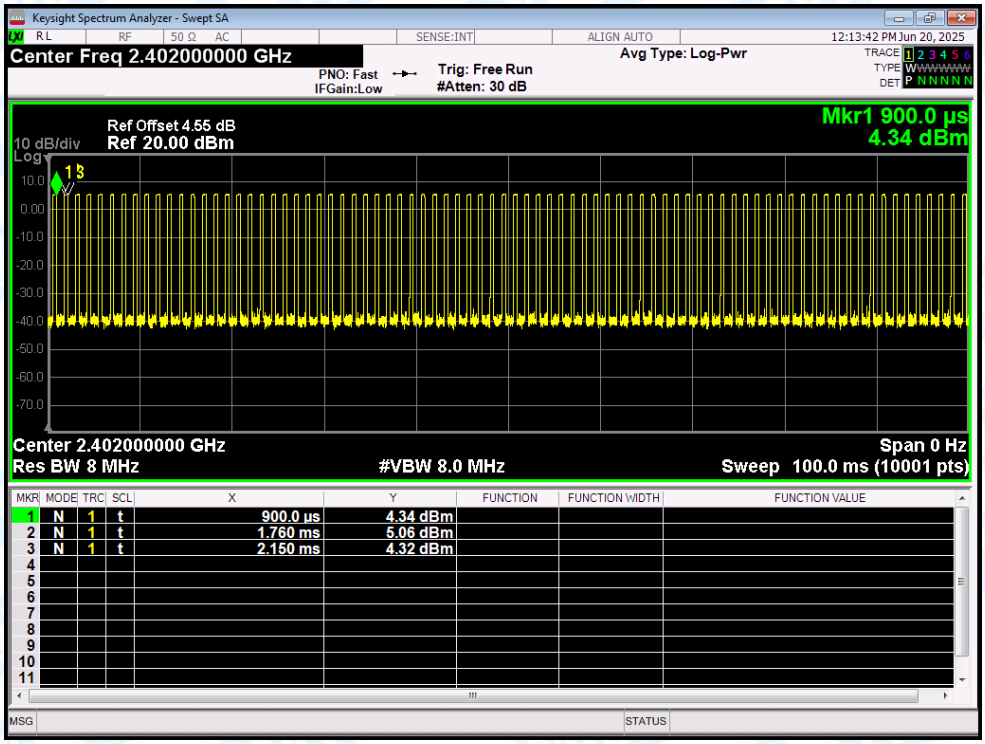
Duty Cycle NVNT 1-DH1 2441MHz Ant1



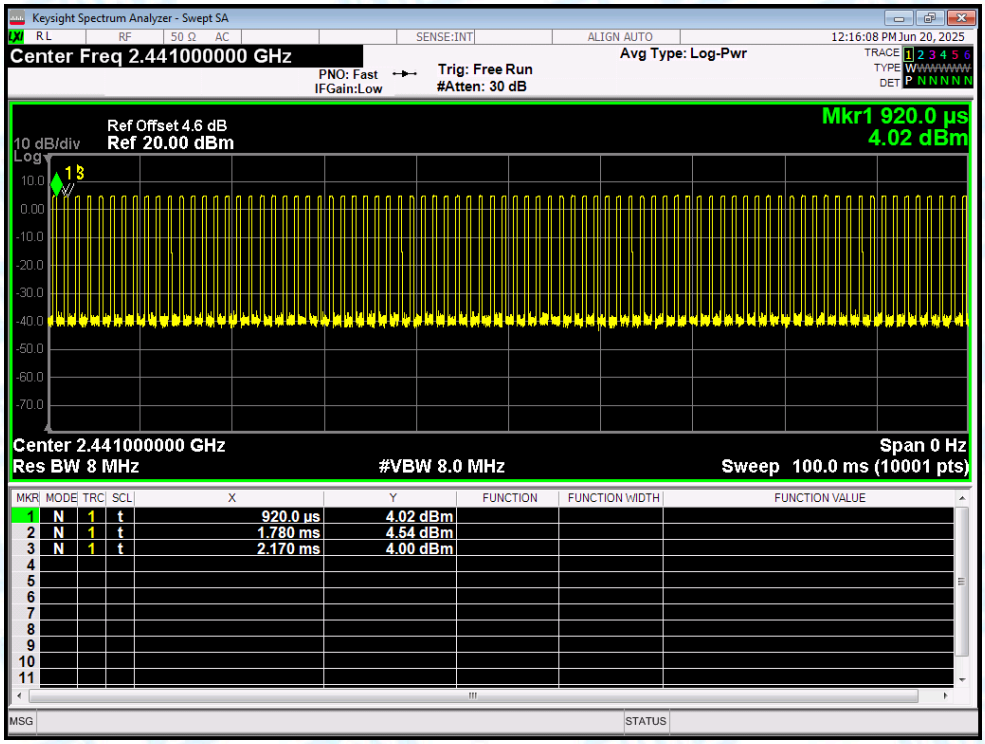
Duty Cycle NVNT 1-DH1 2480MHz Ant1



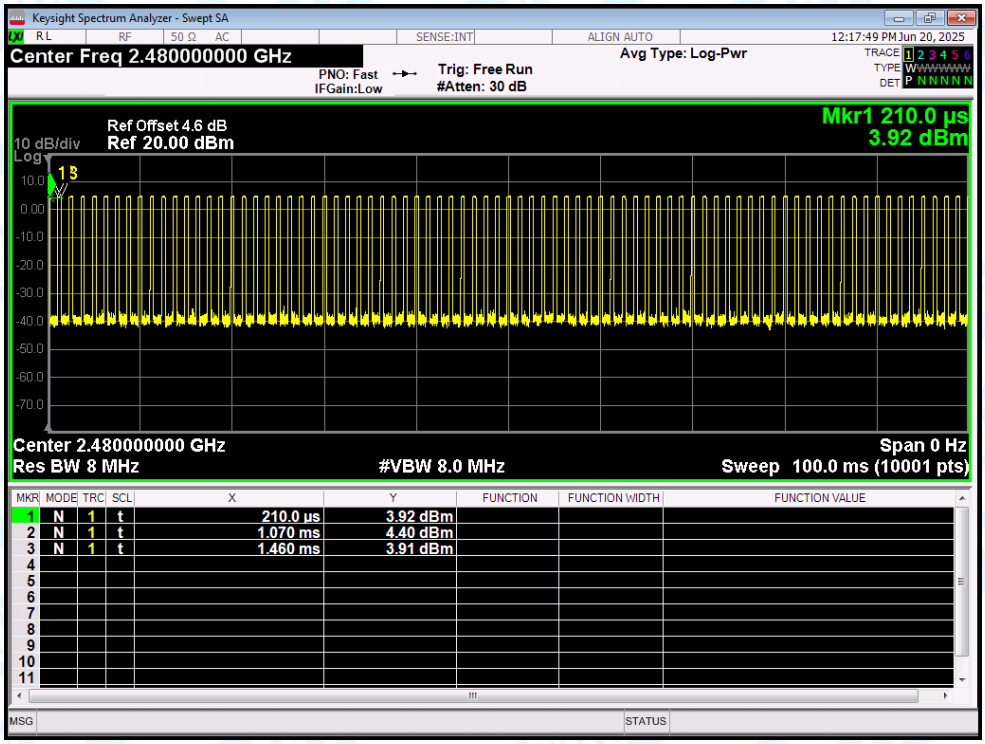
Duty Cycle NVNT 2-DH1 2402MHz Ant1



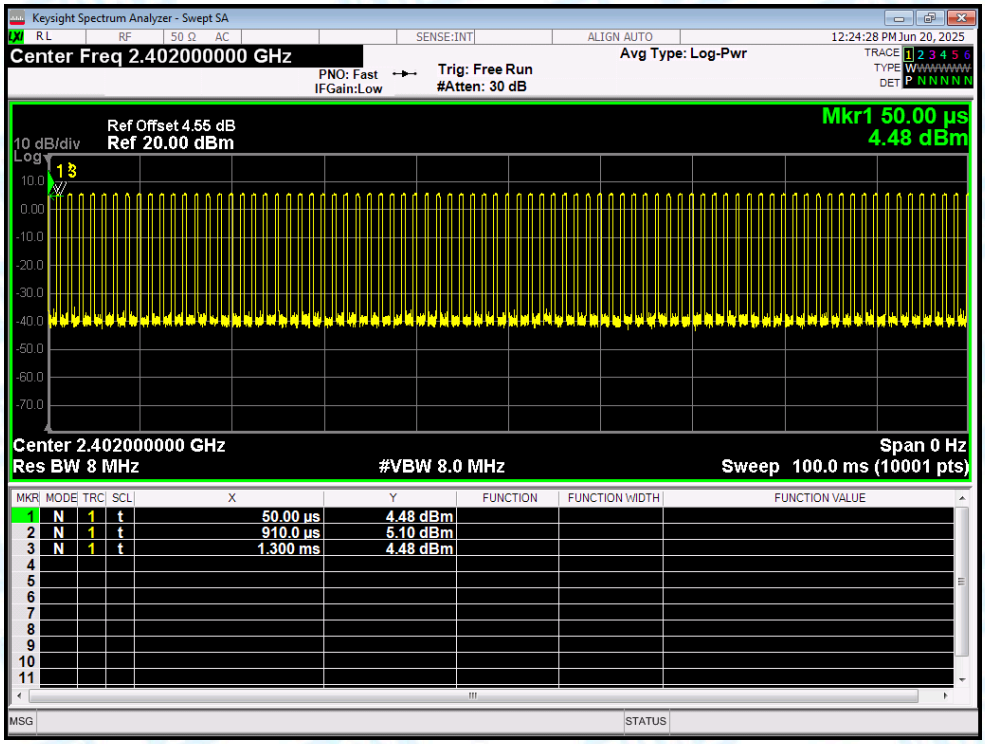
Duty Cycle NVNT 2-DH1 2441MHz Ant1



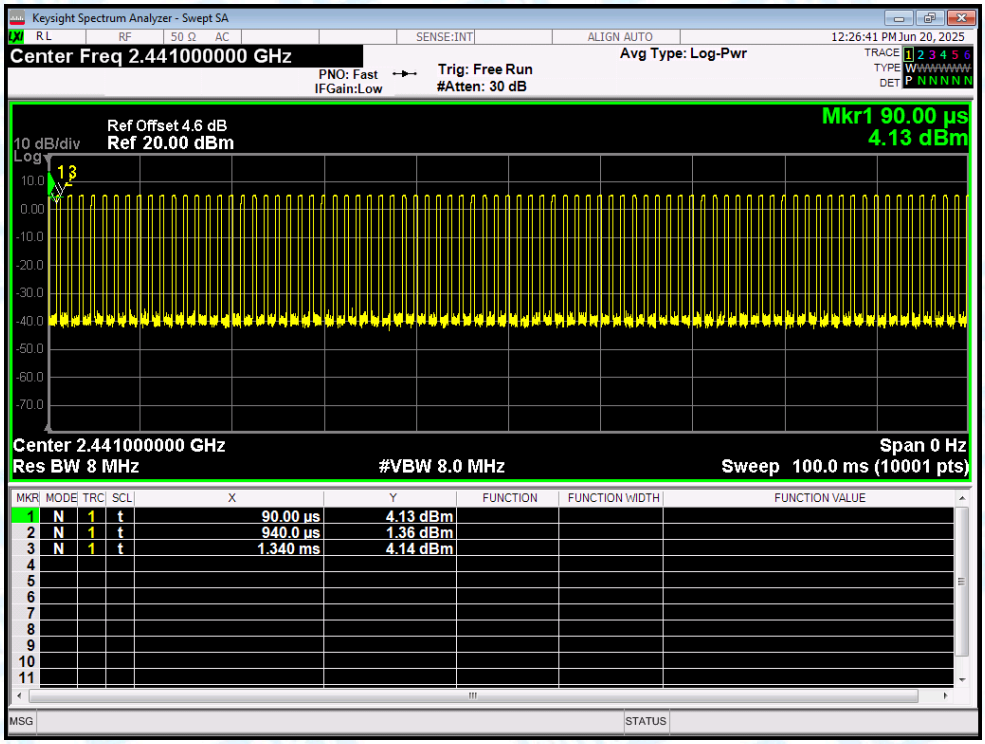
Duty Cycle NVNT 2-DH1 2480MHz Ant1



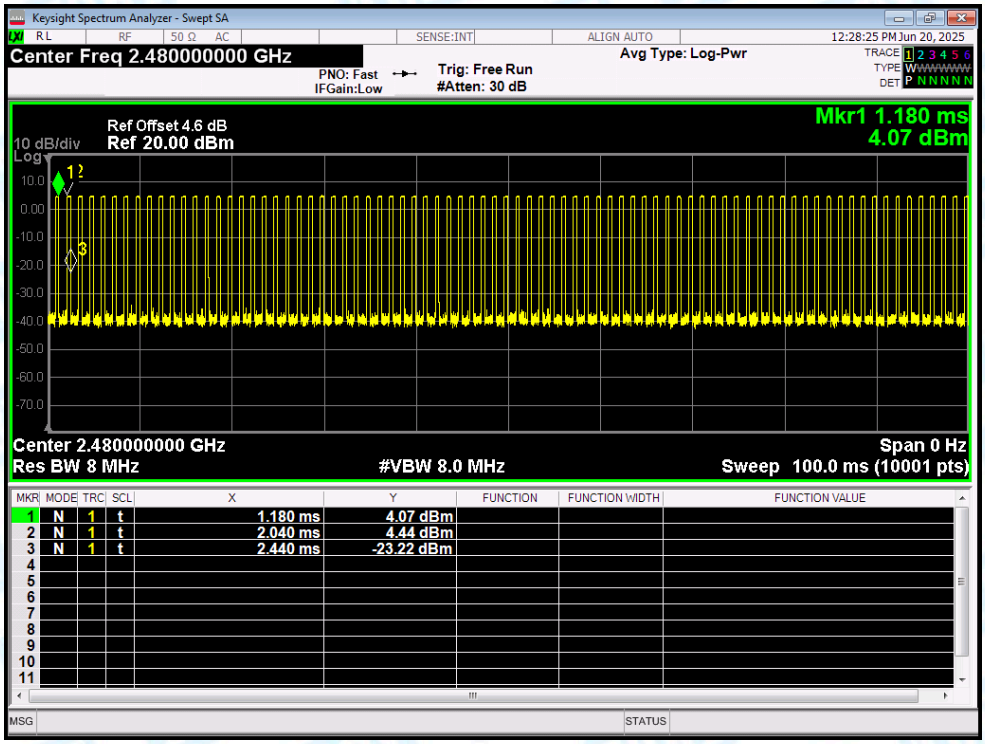
Duty Cycle NVNT 3-DH1 2402MHz Ant1



Duty Cycle NVNT 3-DH1 2441MHz Ant1



Duty Cycle NVNT 3-DH1 2480MHz Ant1

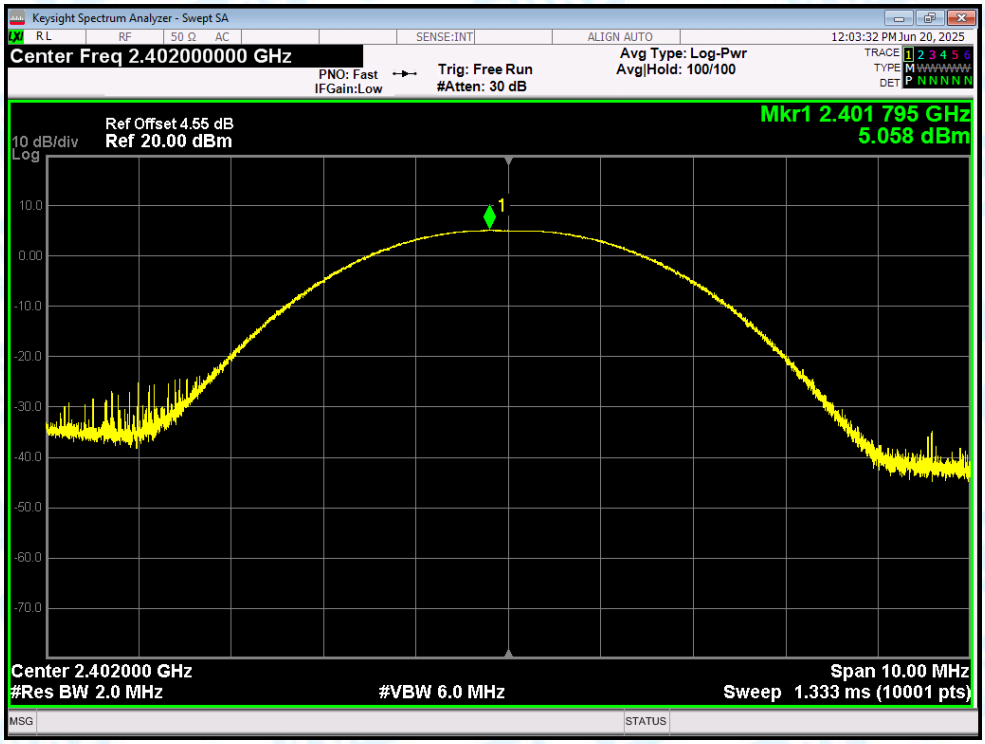


2. Maximum Conducted Output Power

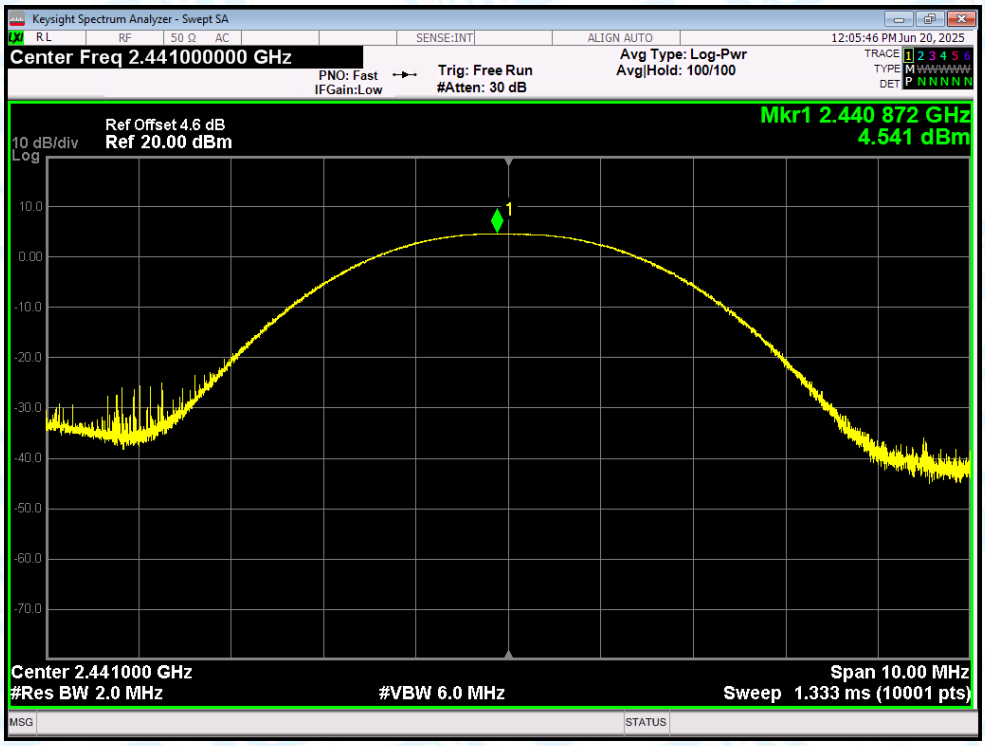
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	5.058	21	Pass
NVNT	1-DH1	2441	Ant1	4.541	21	Pass
NVNT	1-DH1	2480	Ant1	4.417	21	Pass
NVNT	1-DH3	2441	Ant1	4.621	21	Pass
NVNT	1-DH5	2441	Ant1	4.609	21	Pass
NVNT	2-DH1	2402	Ant1	5.38	21	Pass
NVNT	2-DH1	2441	Ant1	4.824	21	Pass
NVNT	2-DH1	2480	Ant1	4.663	21	Pass
NVNT	2-DH3	2441	Ant1	4.9	21	Pass
NVNT	2-DH5	2441	Ant1	4.882	21	Pass
NVNT	3-DH1	2402	Ant1	5.612	21	Pass
NVNT	3-DH1	2441	Ant1	5.031	21	Pass
NVNT	3-DH1	2480	Ant1	4.86	21	Pass
NVNT	3-DH3	2441	Ant1	4.989	21	Pass
NVNT	3-DH5	2441	Ant1	4.997	21	Pass

Test Graphs

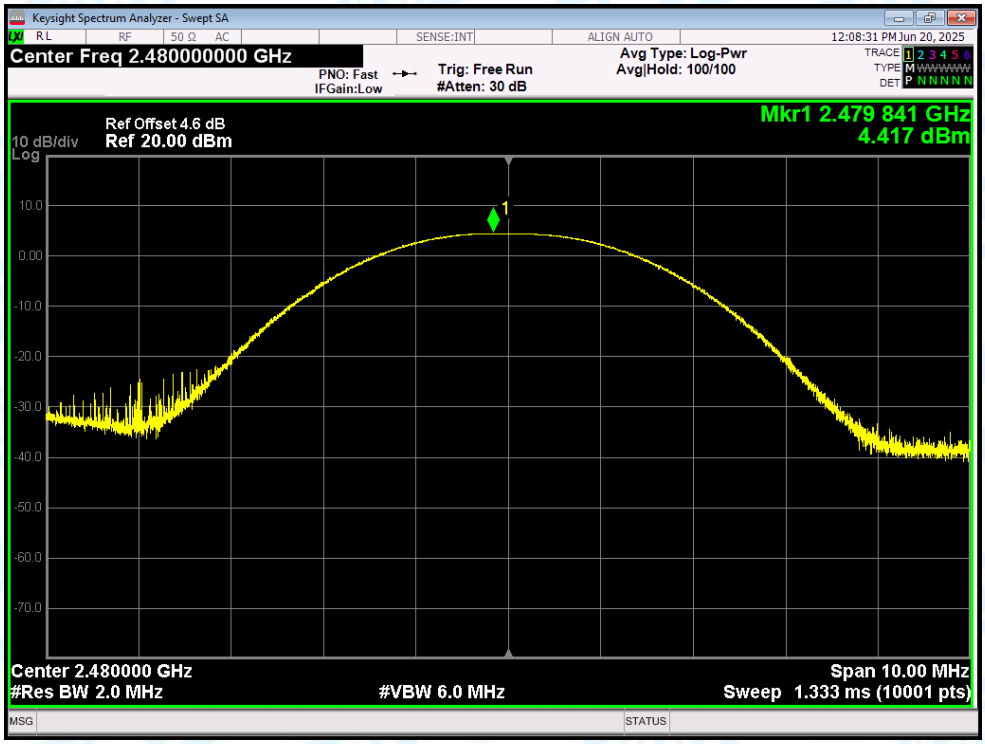
Power NVNT 1-DH1 2402MHz Ant1



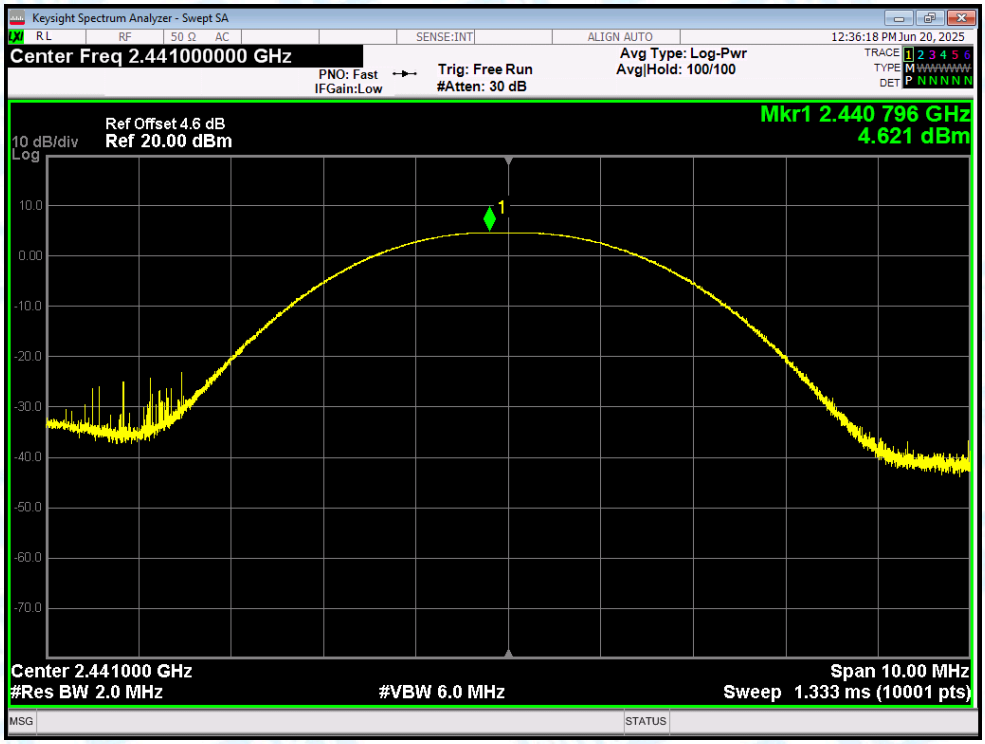
Power NVNT 1-DH1 2441MHz Ant1



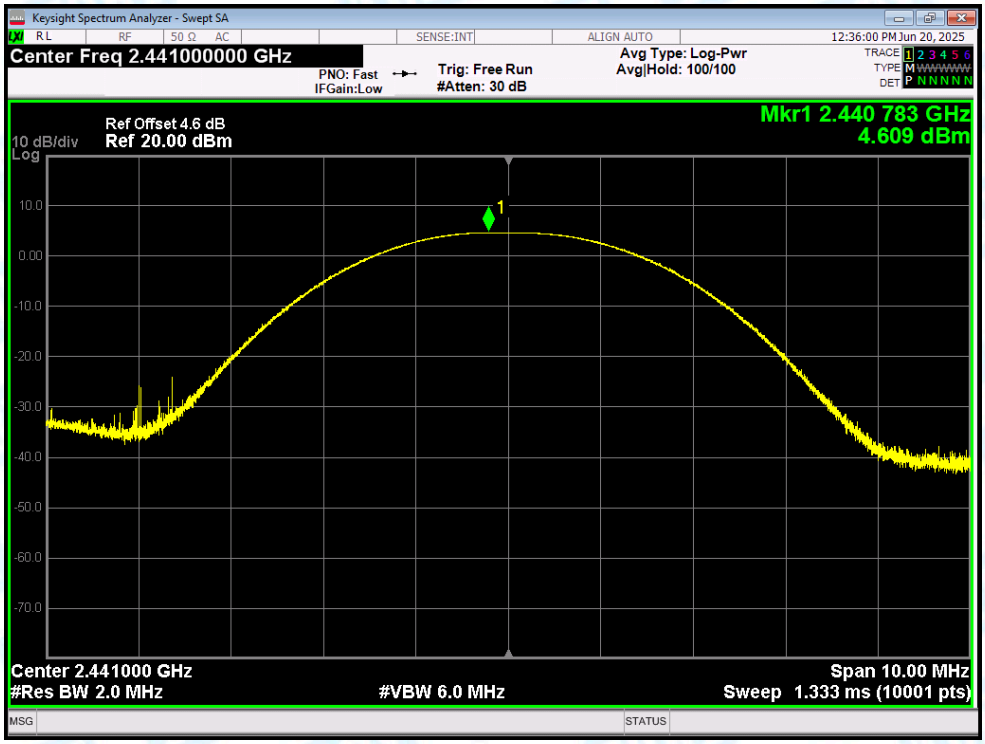
Power NVNT 1-DH1 2480MHz Ant1



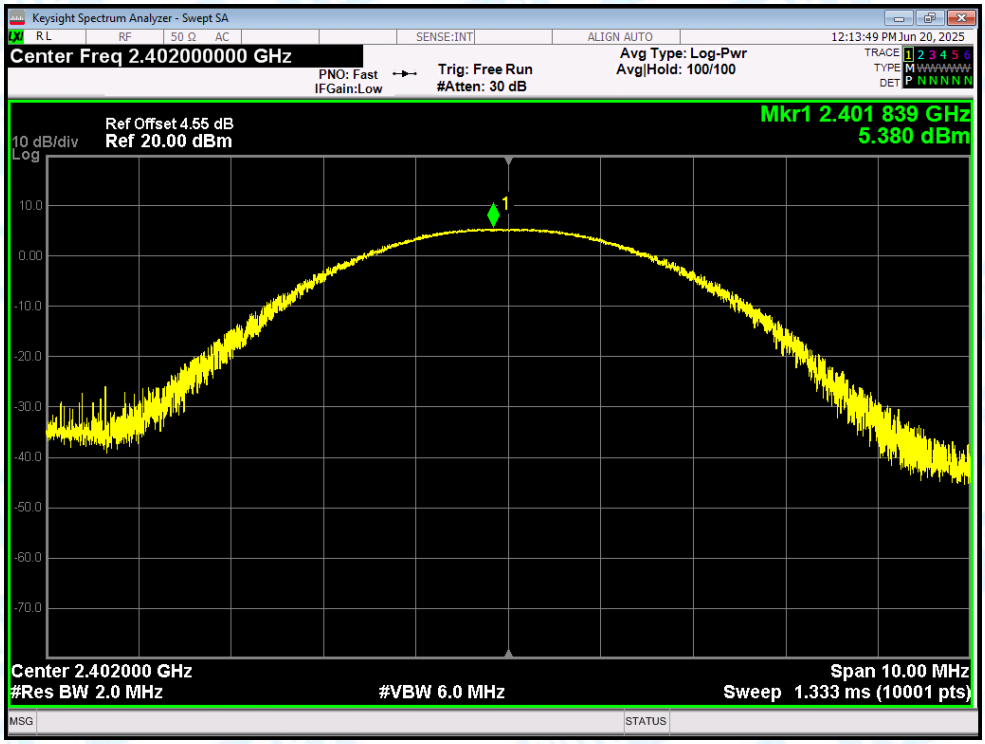
Power NVNT 1-DH3 2441MHz Ant1



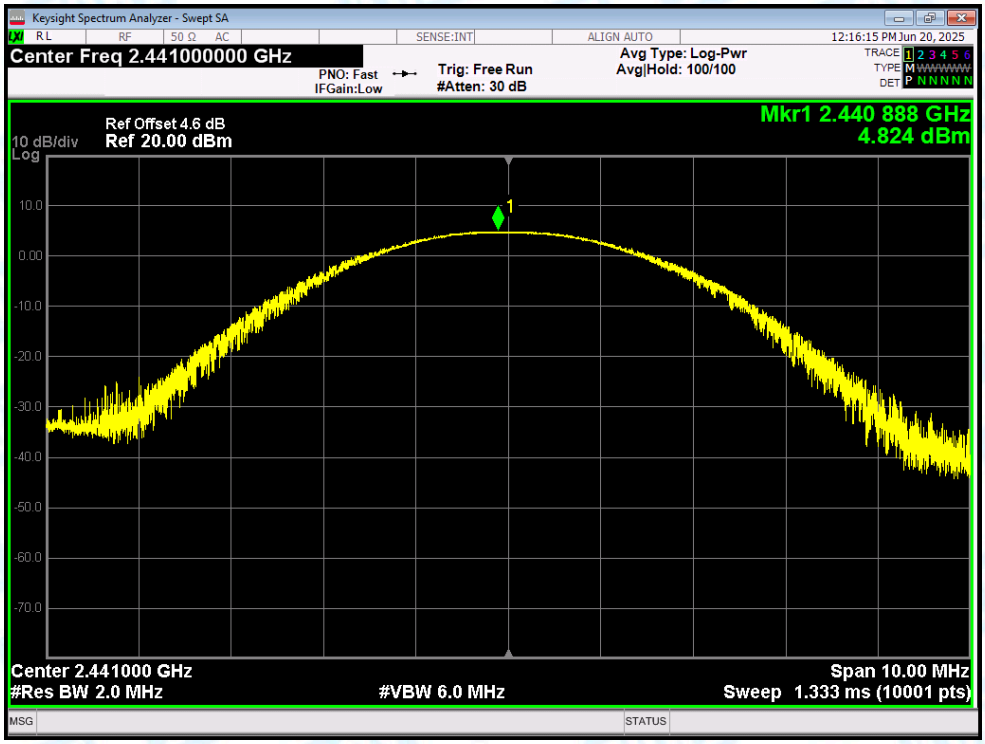
Power NVNT 1-DH5 2441MHz Ant1



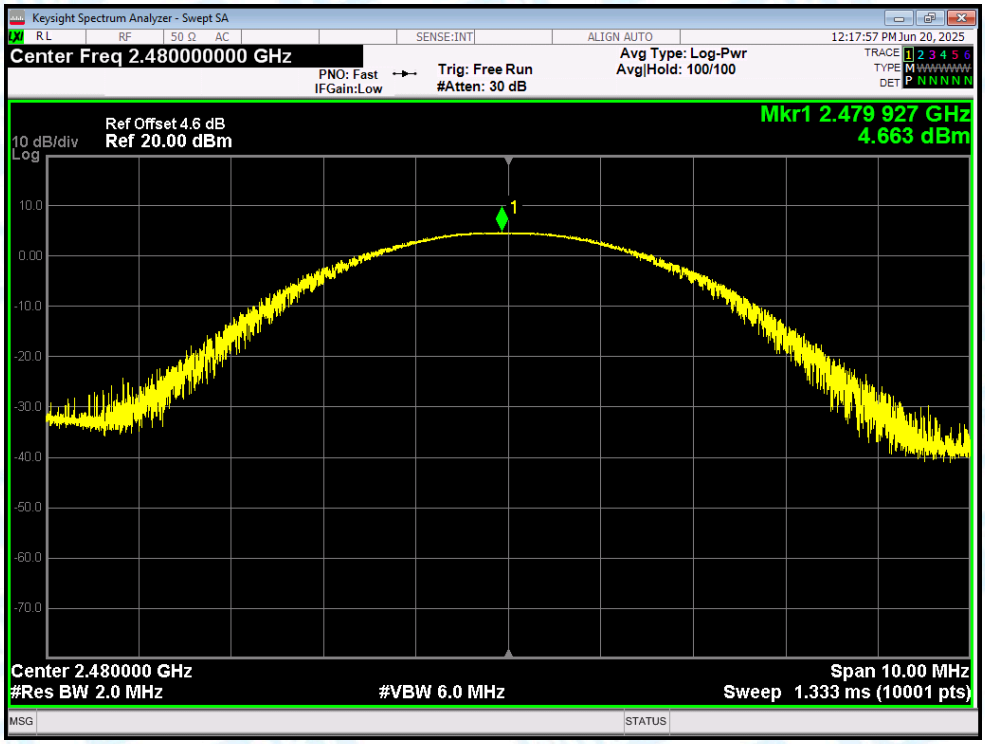
Power NVNT 2-DH1 2402MHz Ant1



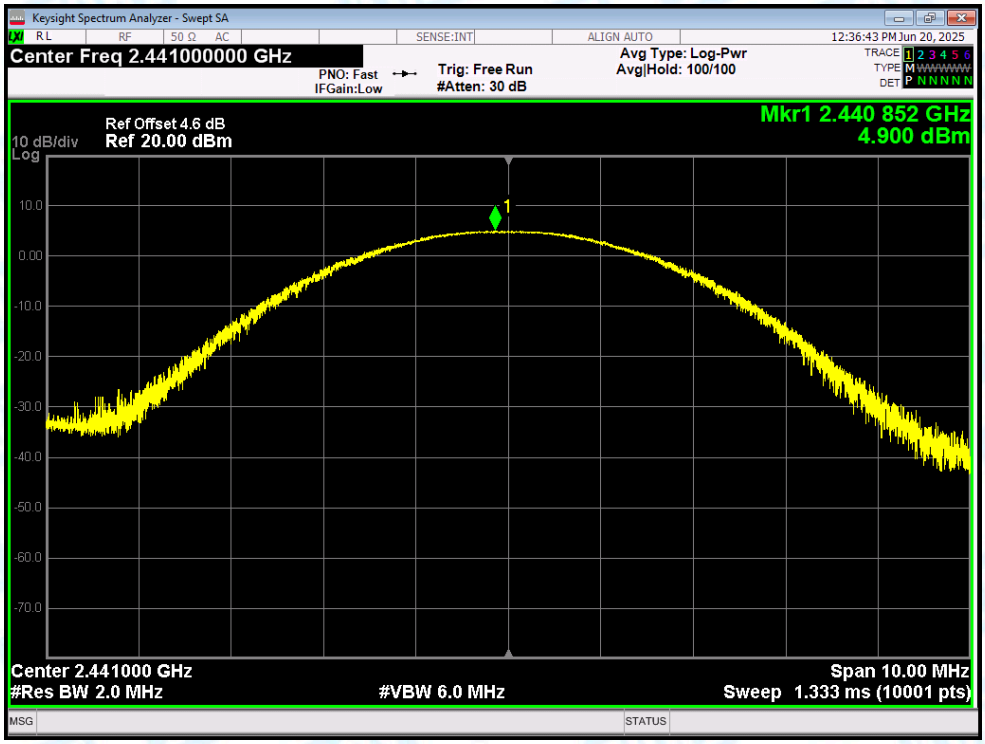
Power NVNT 2-DH1 2441MHz Ant1



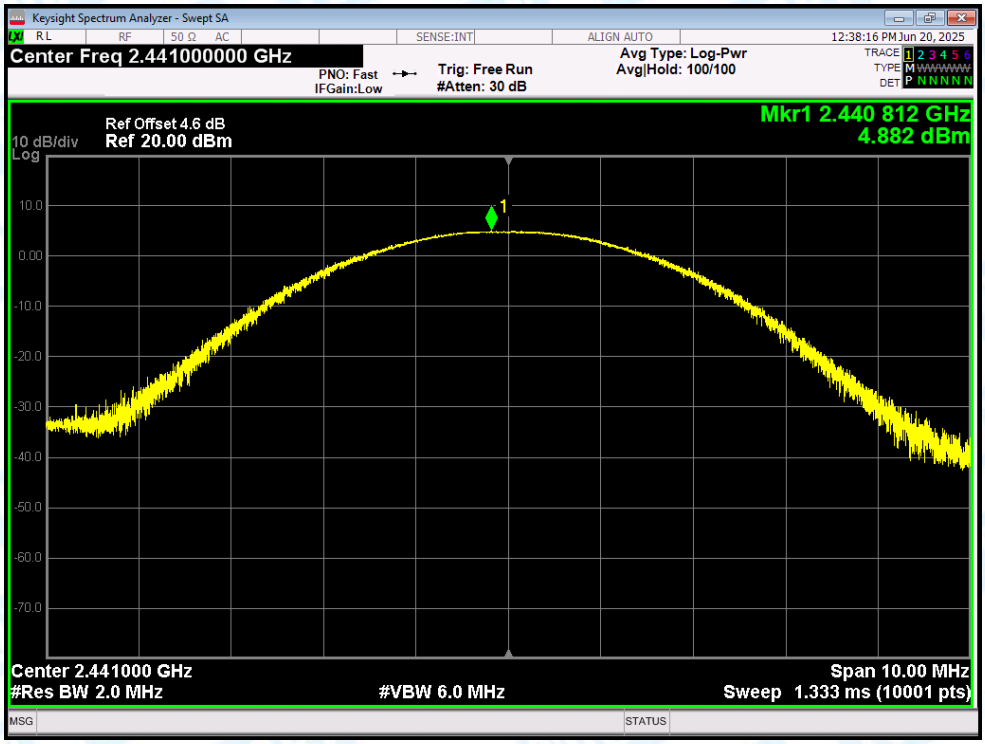
Power NVNT 2-DH1 2480MHz Ant1



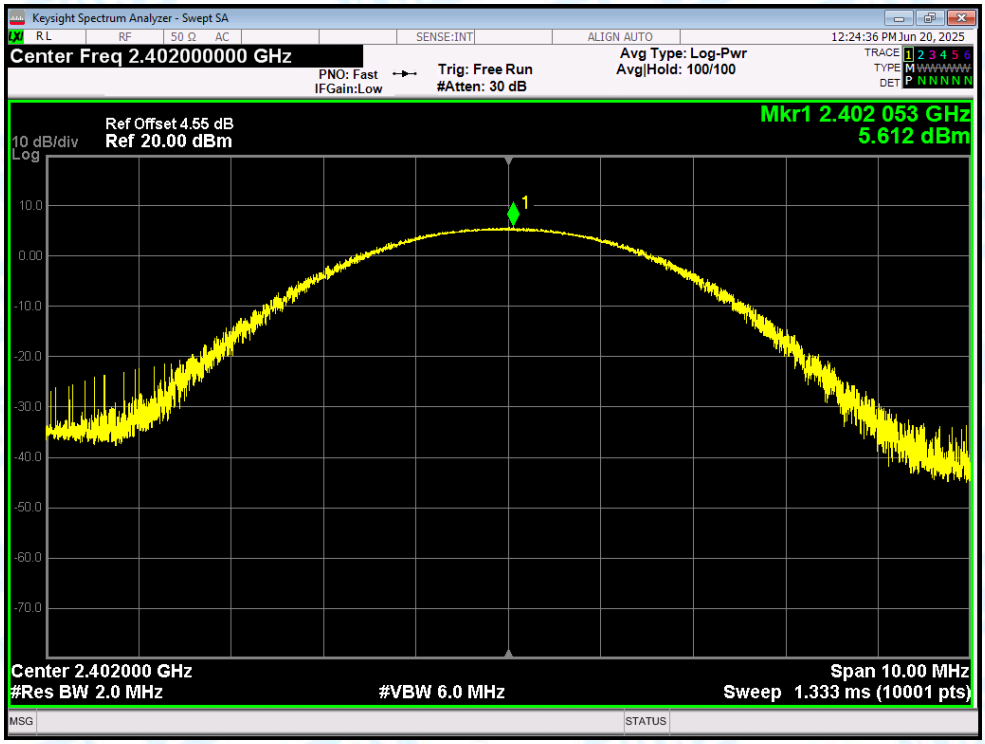
Power NVNT 2-DH3 2441MHz Ant1



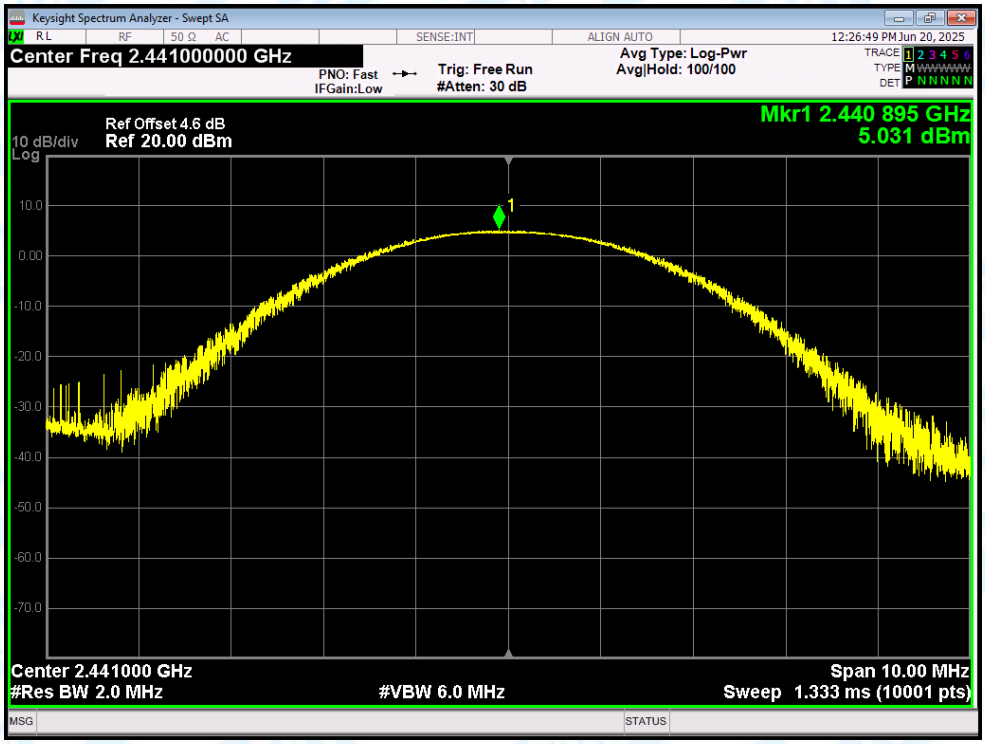
Power NVNT 2-DH5 2441MHz Ant1



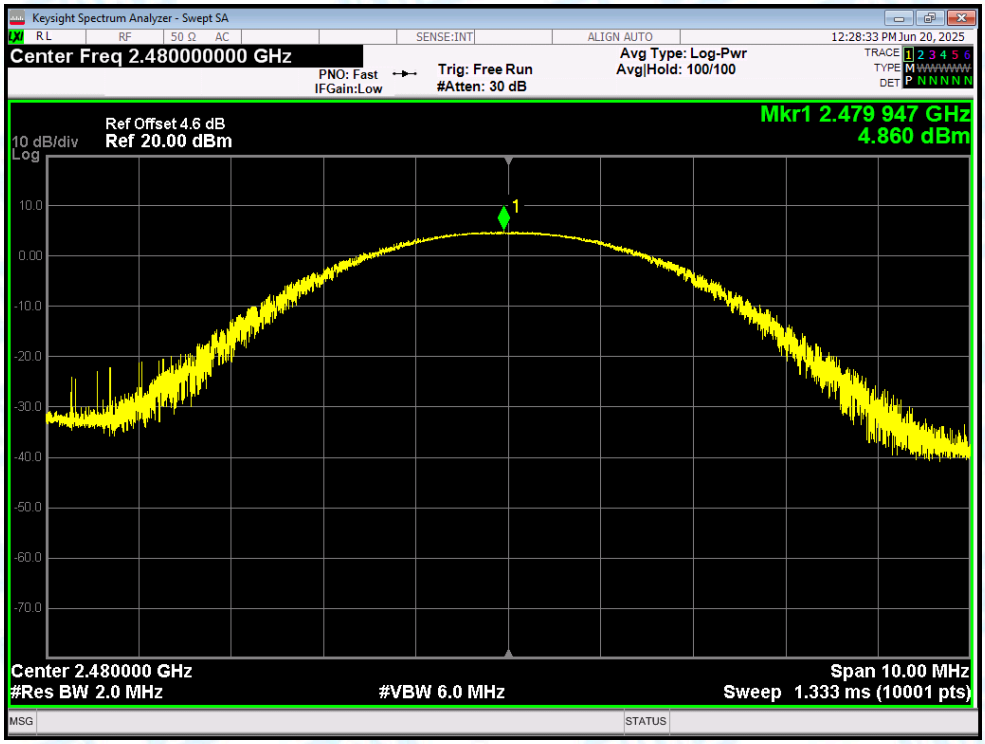
Power NVNT 3-DH1 2402MHz Ant1



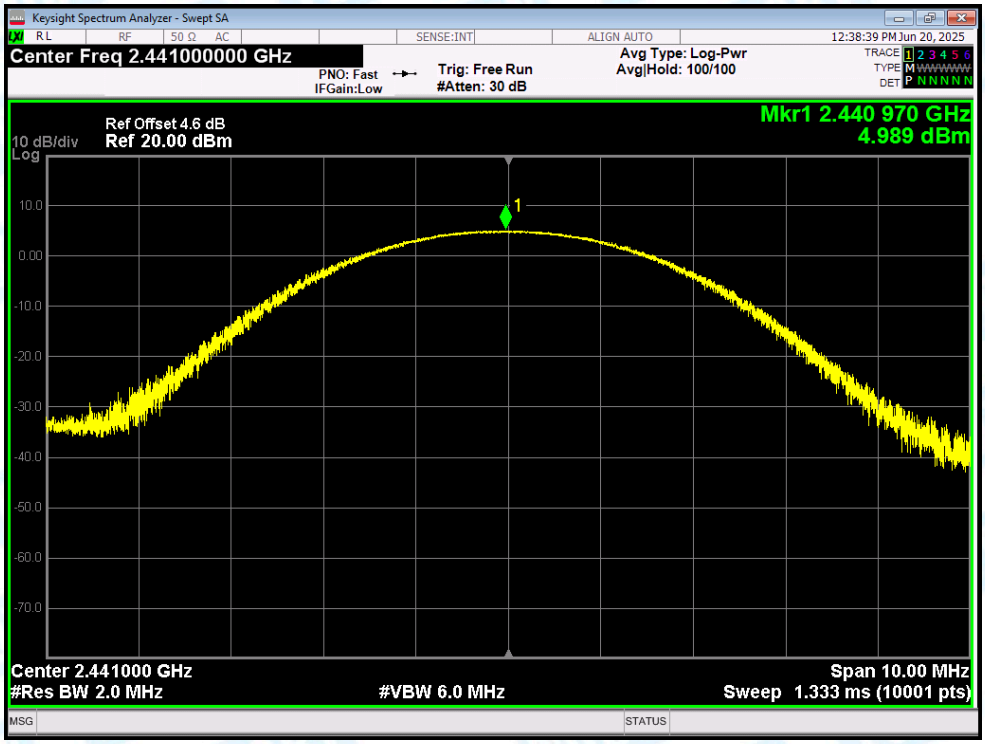
Power NVNT 3-DH1 2441MHz Ant1



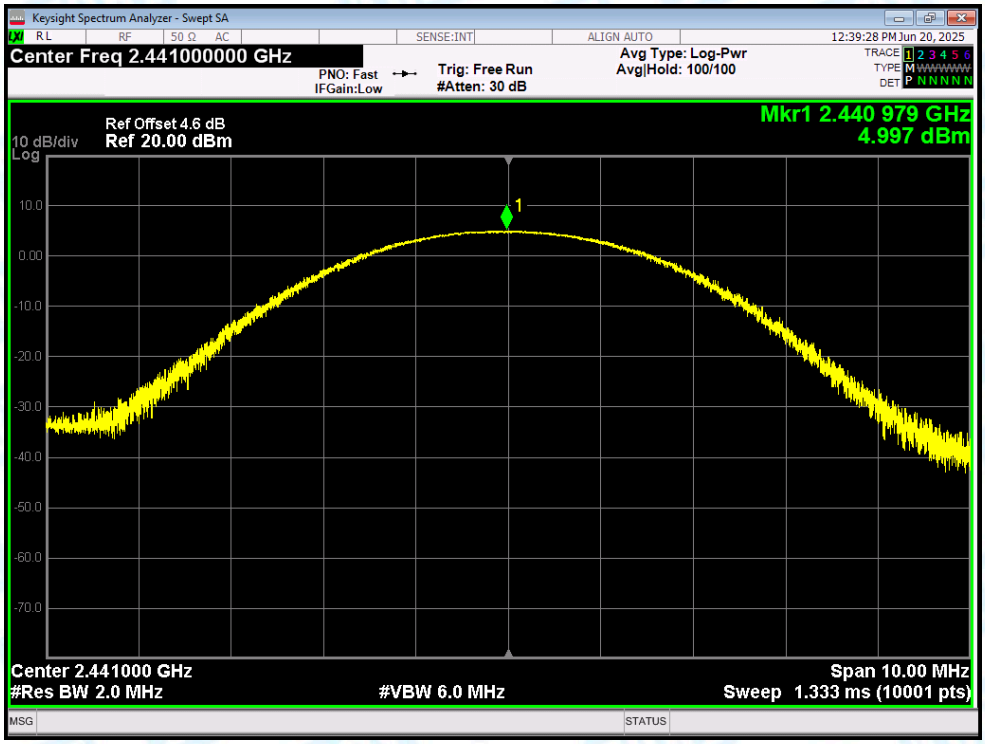
Power NVNT 3-DH1 2480MHz Ant1



Power NVNT 3-DH3 2441MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1

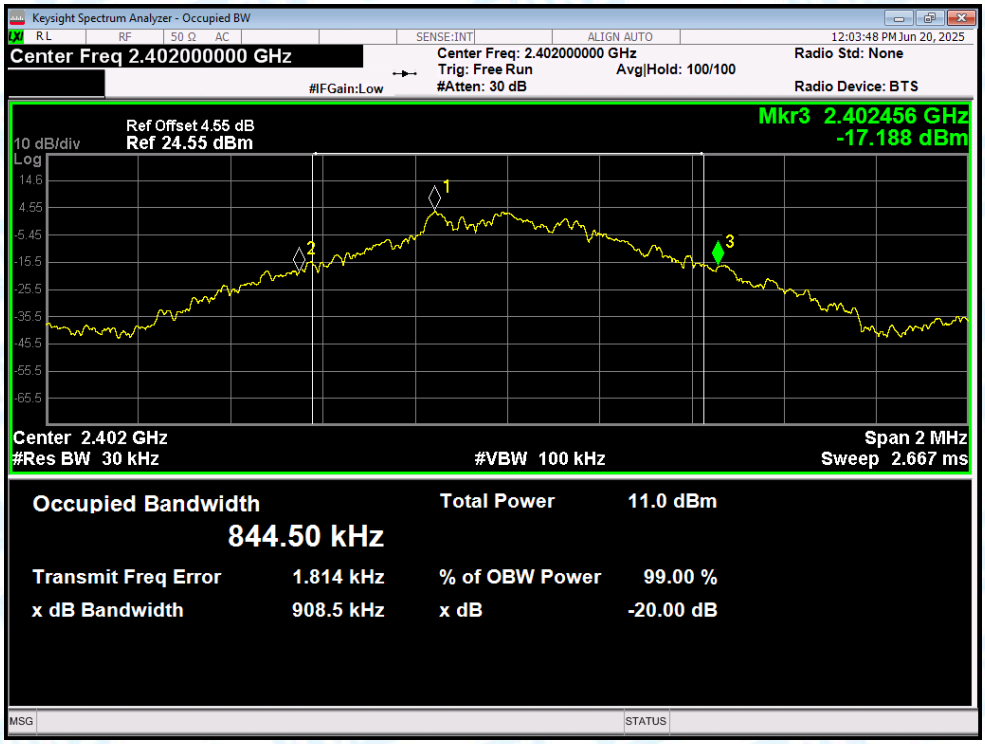


3. -20dB Bandwidth

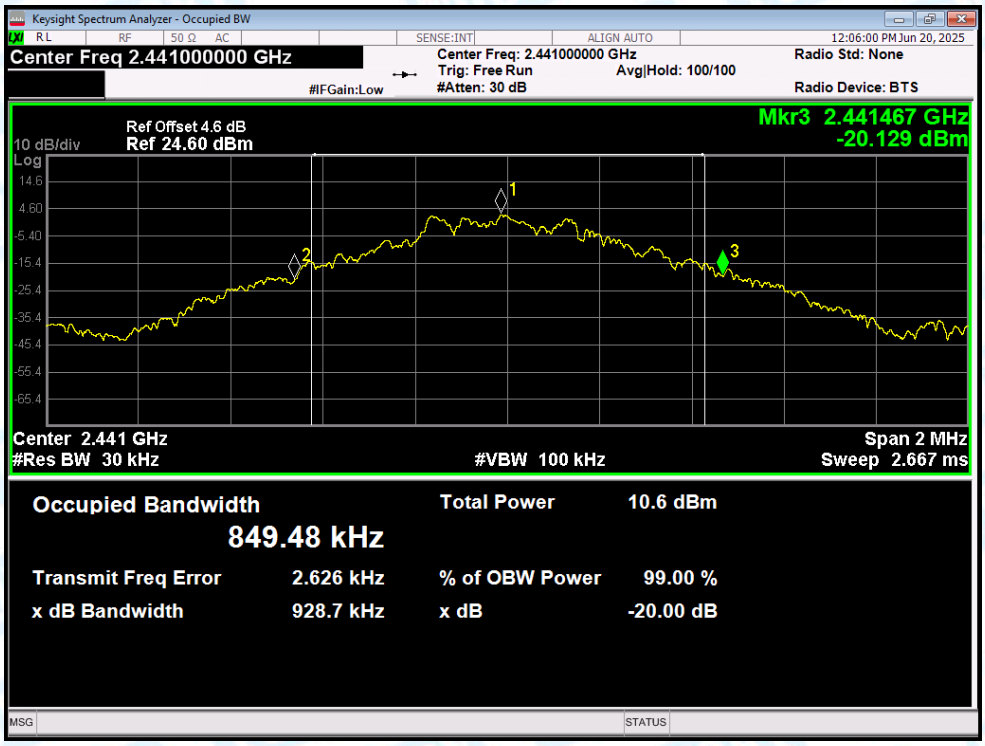
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	Ant1	0.91	0	Pass
NVNT	1-DH1	2441	Ant1	0.93	0	Pass
NVNT	1-DH1	2480	Ant1	0.93	0	Pass
NVNT	2-DH1	2402	Ant1	1.27	0	Pass
NVNT	2-DH1	2441	Ant1	1.27	0	Pass
NVNT	2-DH1	2480	Ant1	1.26	0	Pass
NVNT	3-DH1	2402	Ant1	1.21	0	Pass
NVNT	3-DH1	2441	Ant1	1.24	0	Pass
NVNT	3-DH1	2480	Ant1	1.25	0	Pass

Test Graphs

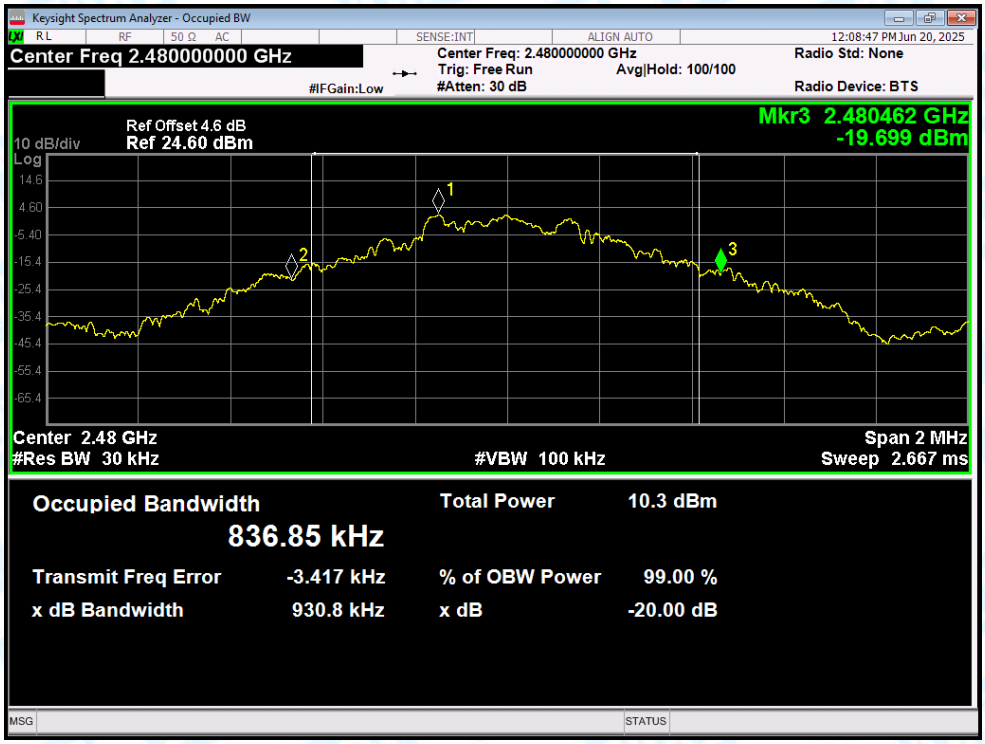
-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



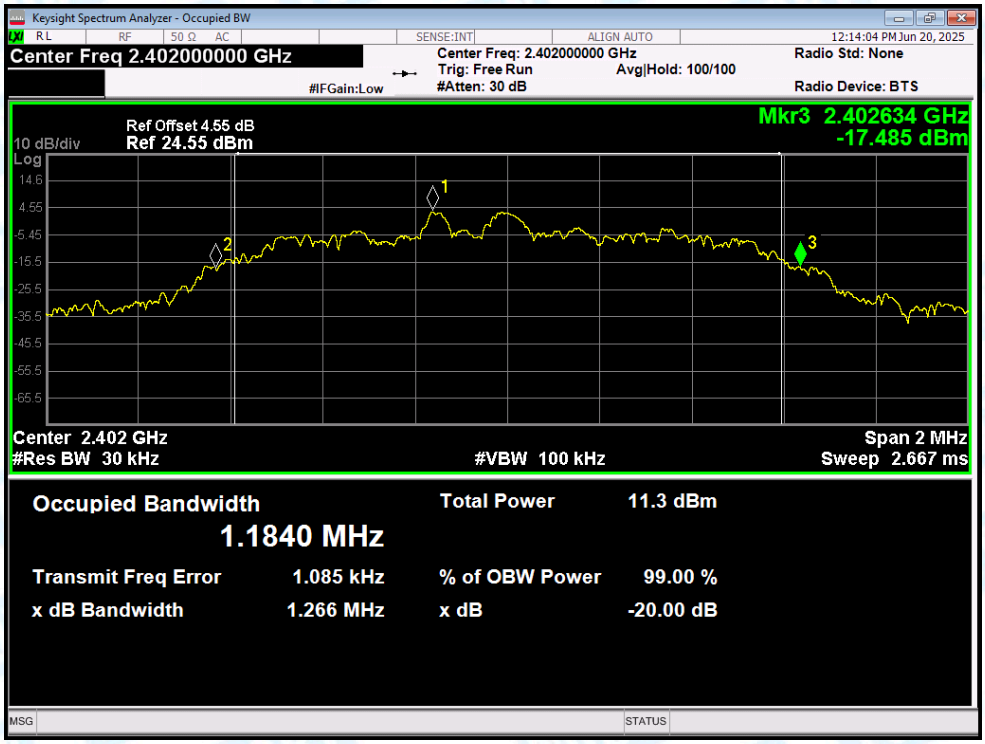
-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



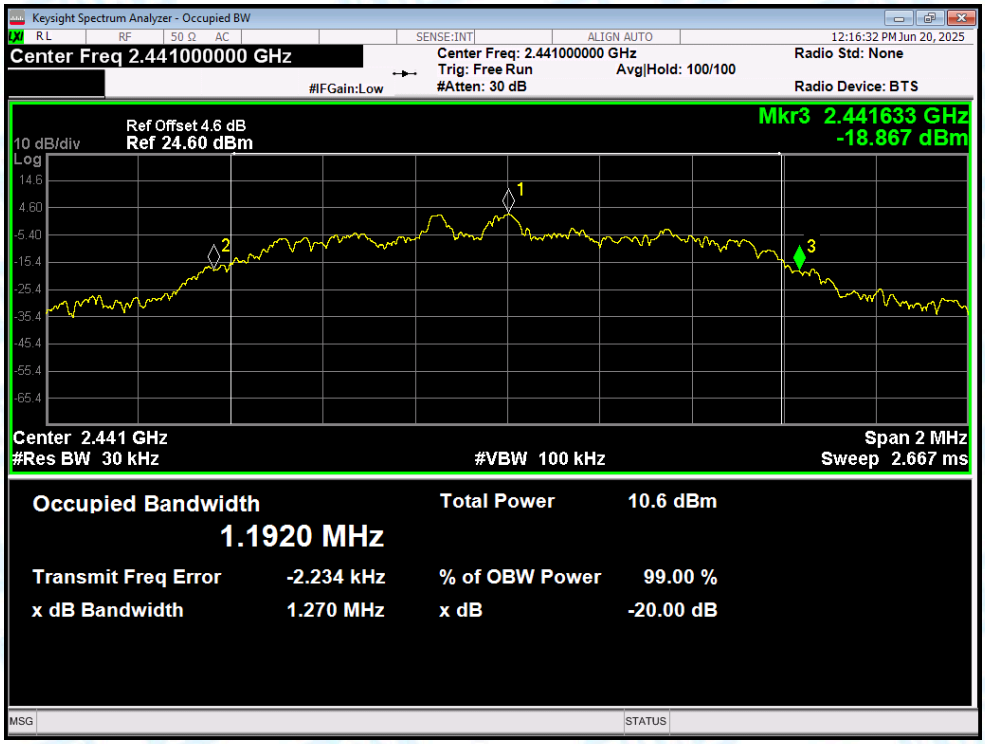
-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



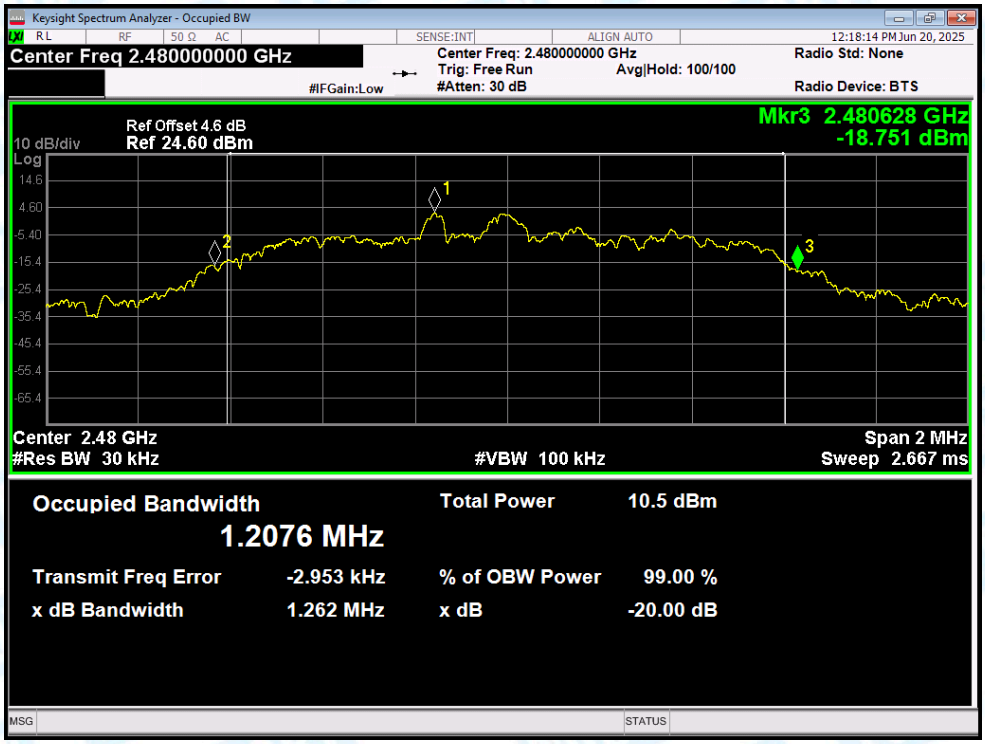
-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



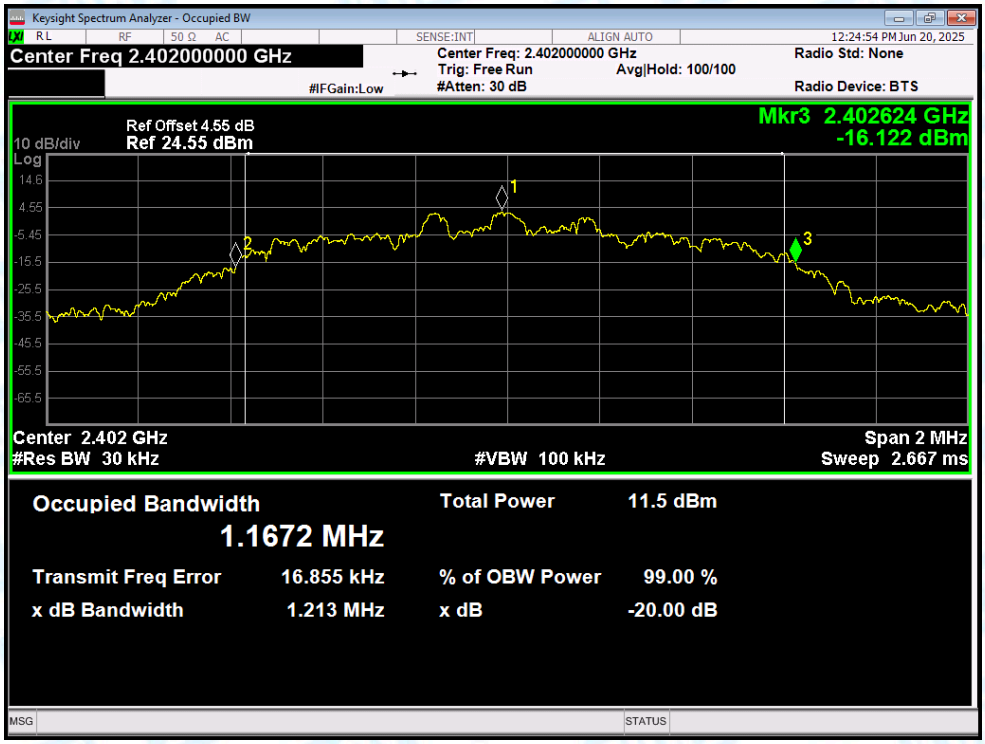
-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



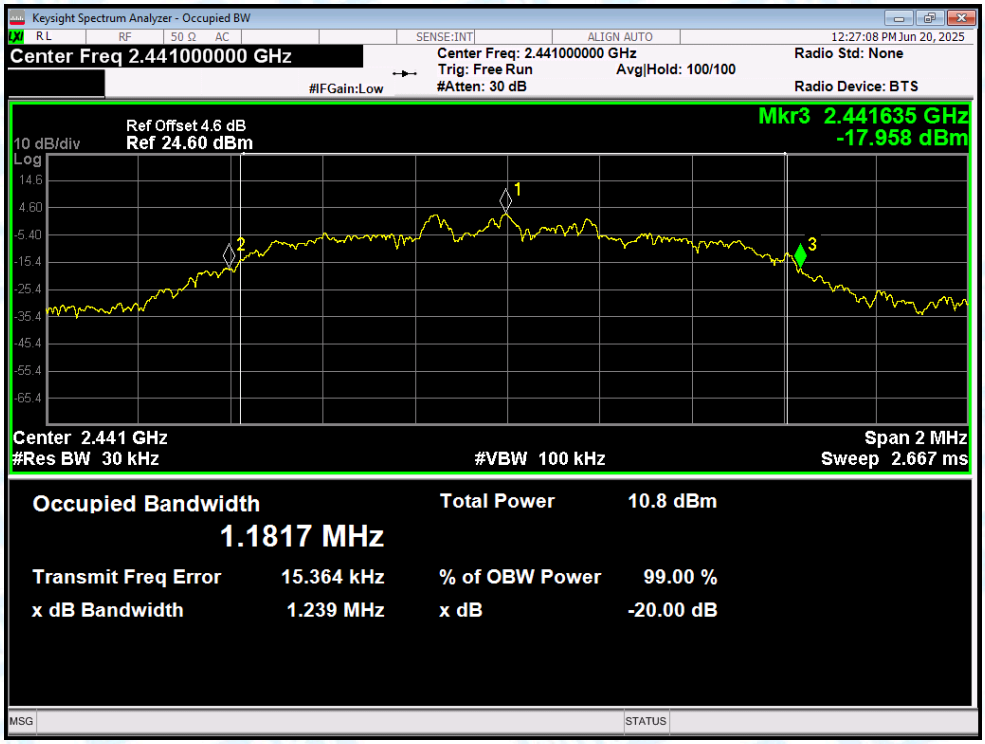
-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1



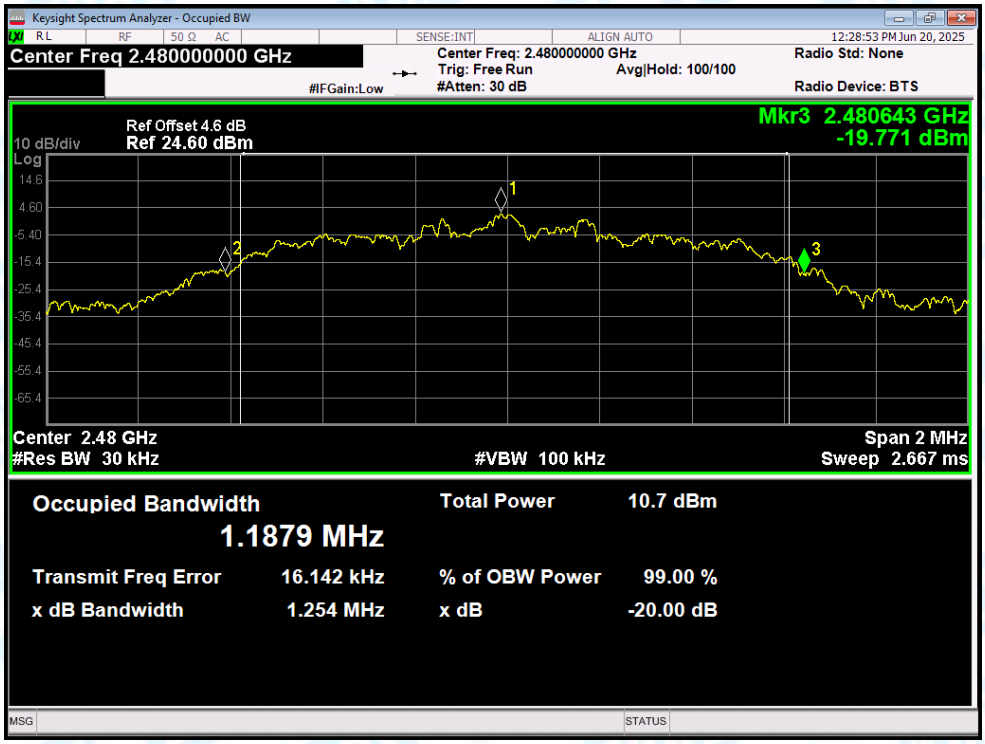
-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

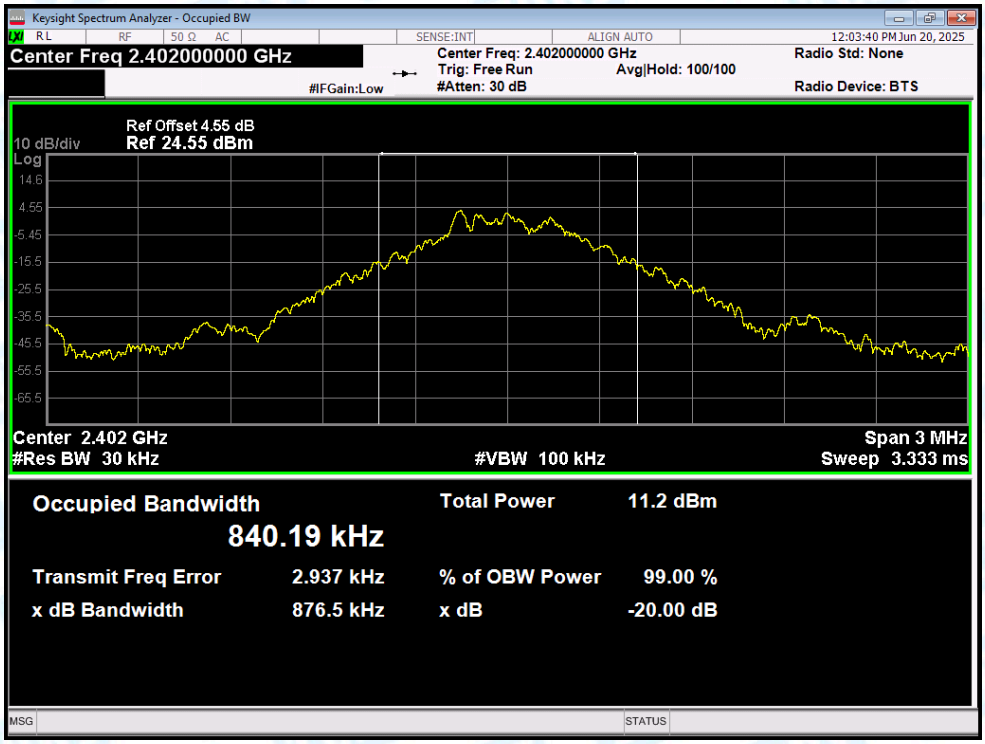


4. Occupied Channel Bandwidth

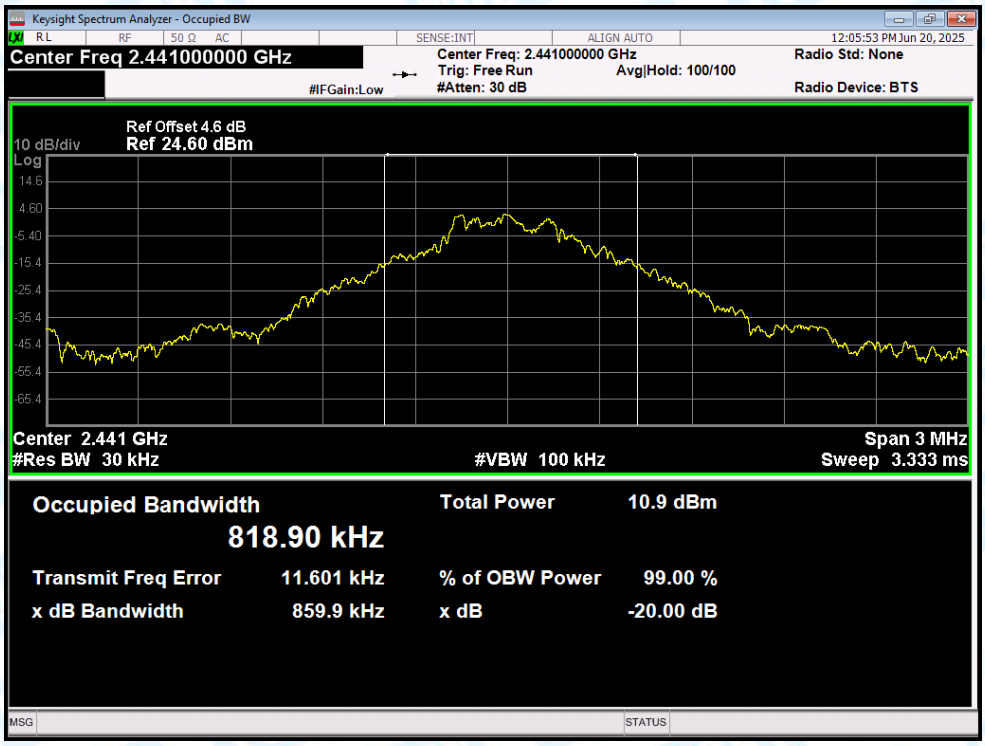
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.84
NVNT	1-DH1	2441	Ant1	0.819
NVNT	1-DH1	2480	Ant1	0.846
NVNT	2-DH1	2402	Ant1	1.196
NVNT	2-DH1	2441	Ant1	1.24
NVNT	2-DH1	2480	Ant1	1.269
NVNT	3-DH1	2402	Ant1	1.182
NVNT	3-DH1	2441	Ant1	1.223
NVNT	3-DH1	2480	Ant1	1.25

Test Graphs

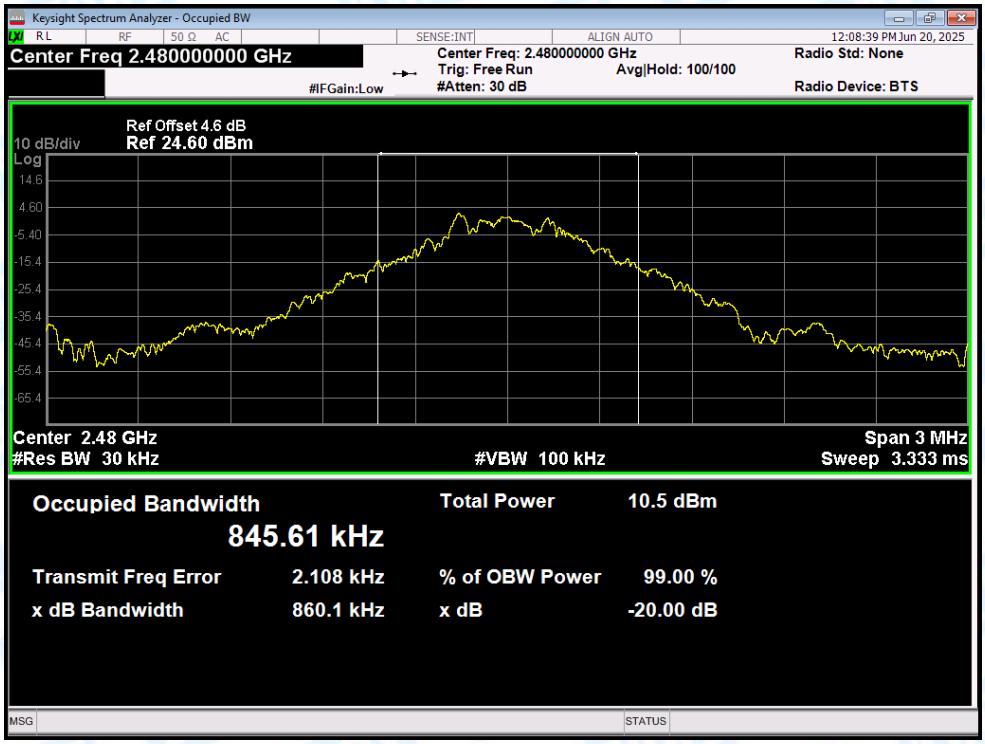
OBW NVNT 1-DH1 2402MHz Ant1



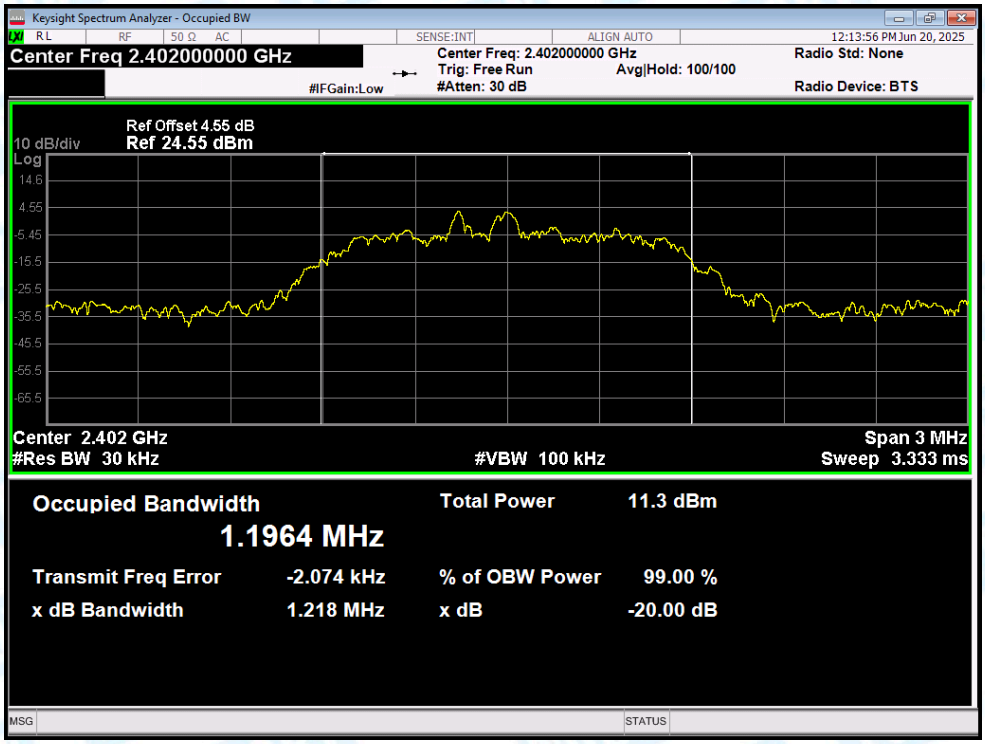
OBW NVNT 1-DH1 2441MHz Ant1



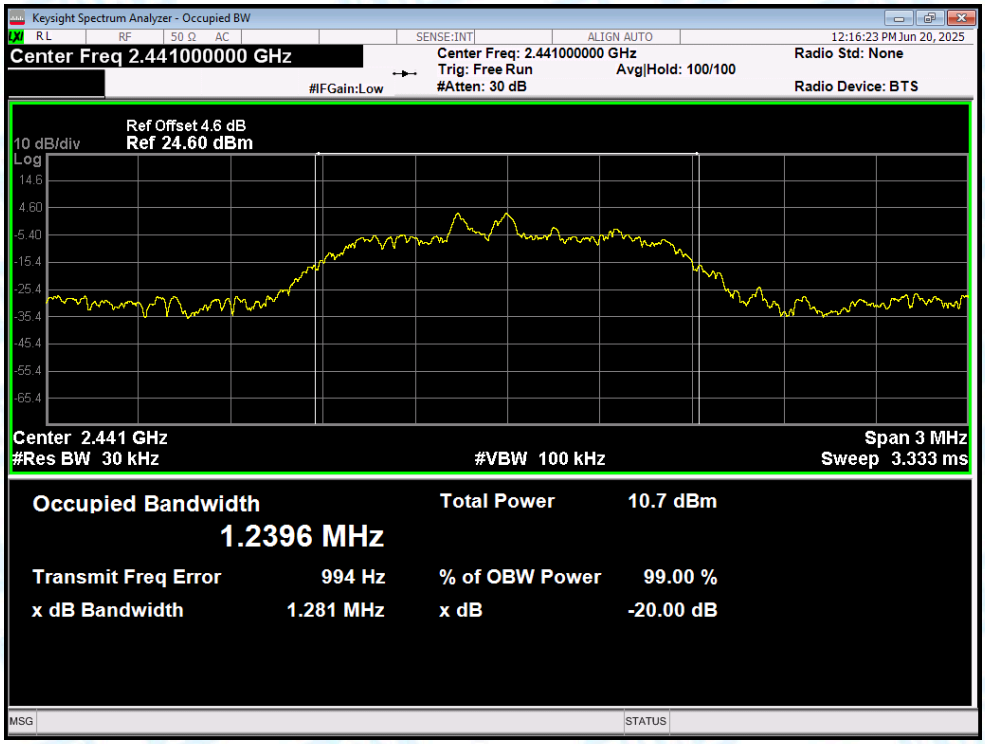
OBW NVNT 1-DH1 2480MHz Ant1



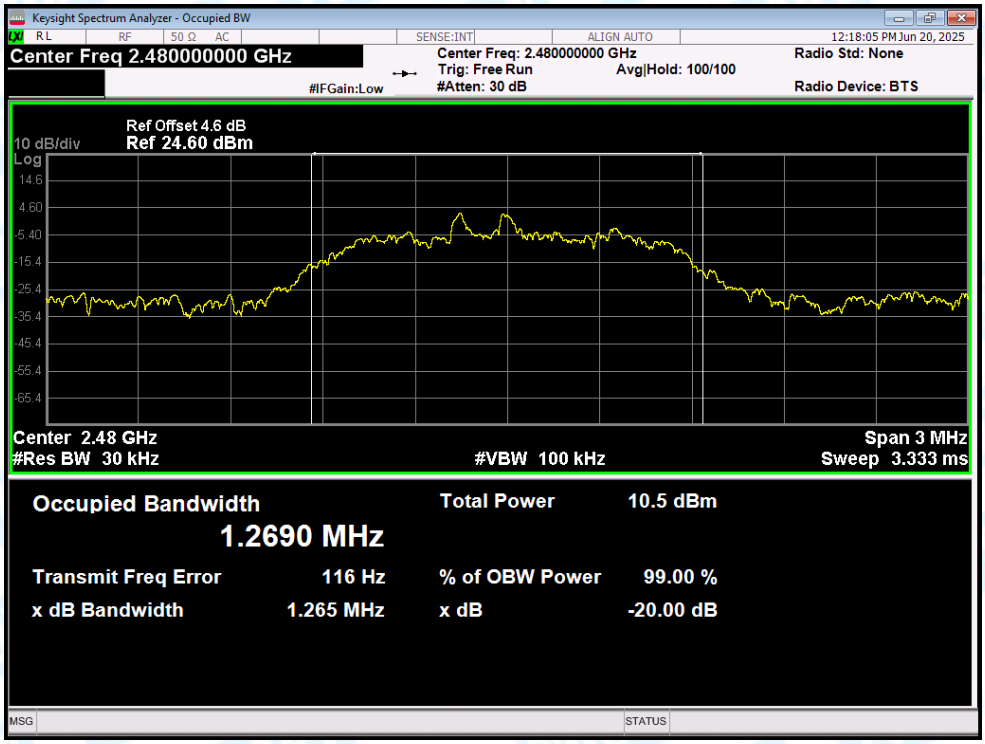
OBW NVNT 2-DH1 2402MHz Ant1



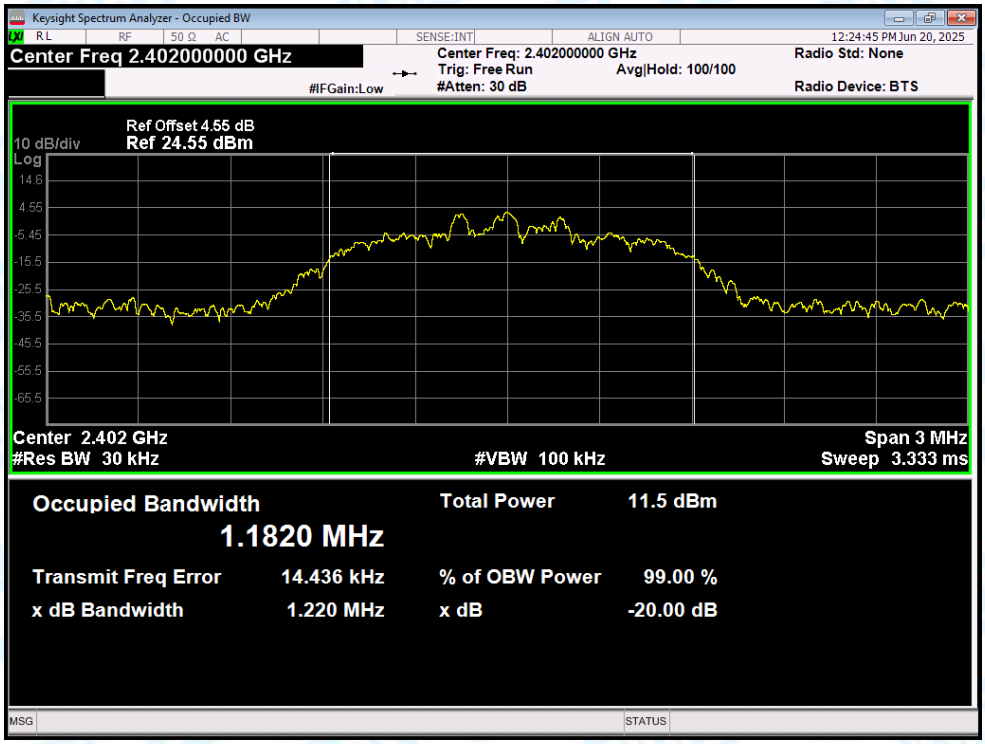
OBW NVNT 2-DH1 2441MHz Ant1



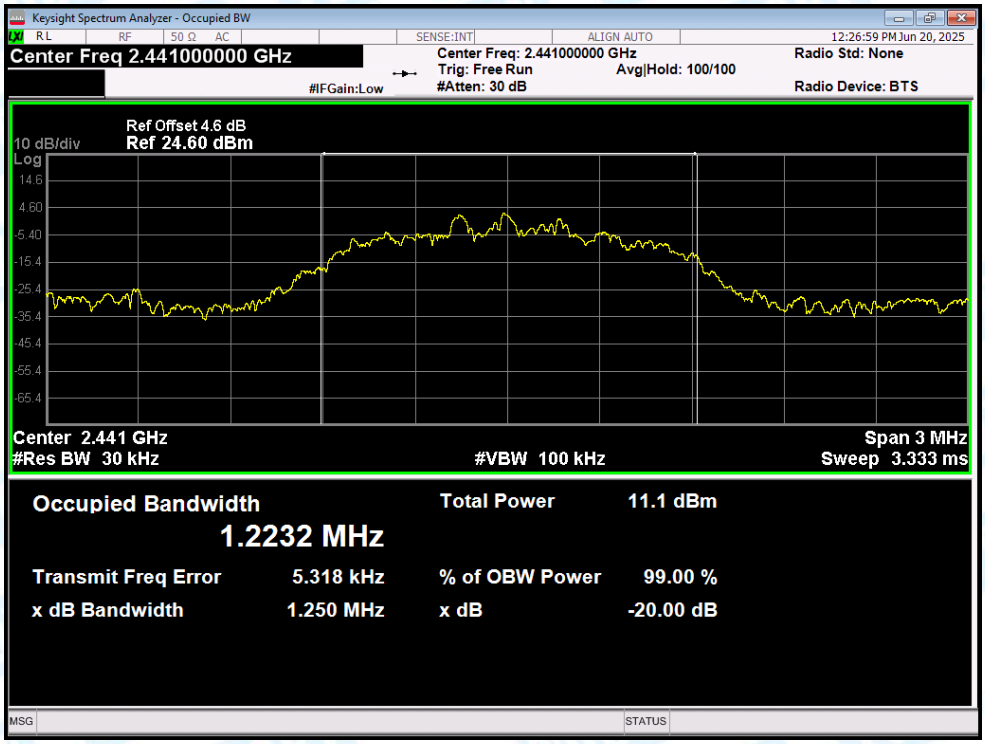
OBW NVNT 2-DH1 2480MHz Ant1



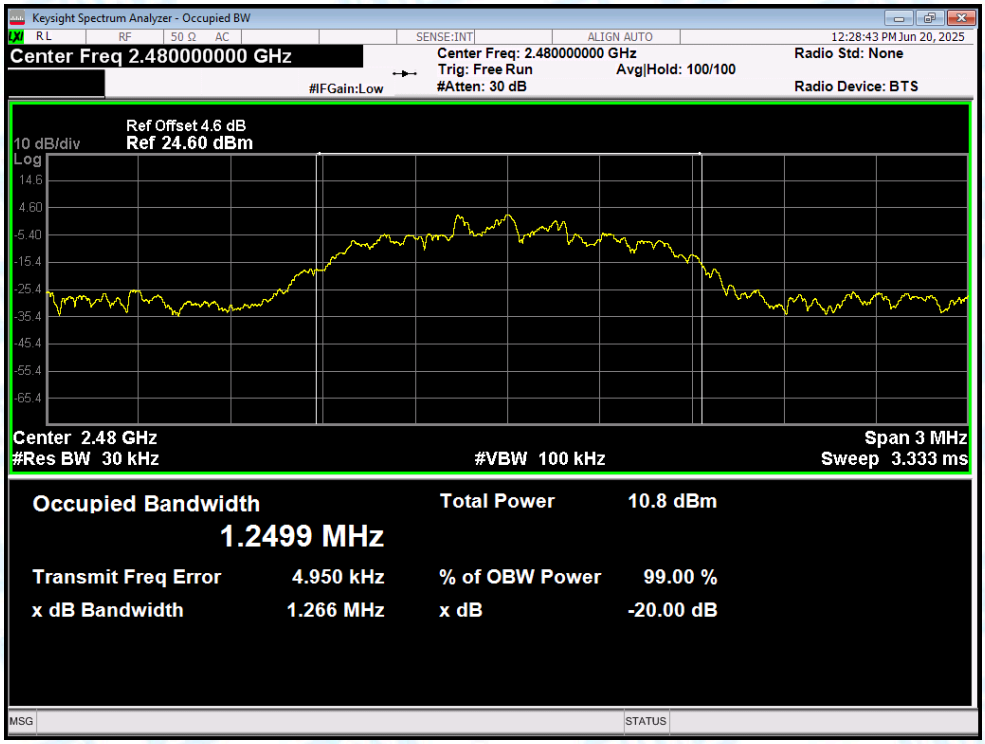
OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1



OBW NVNT 3-DH1 2480MHz Ant1

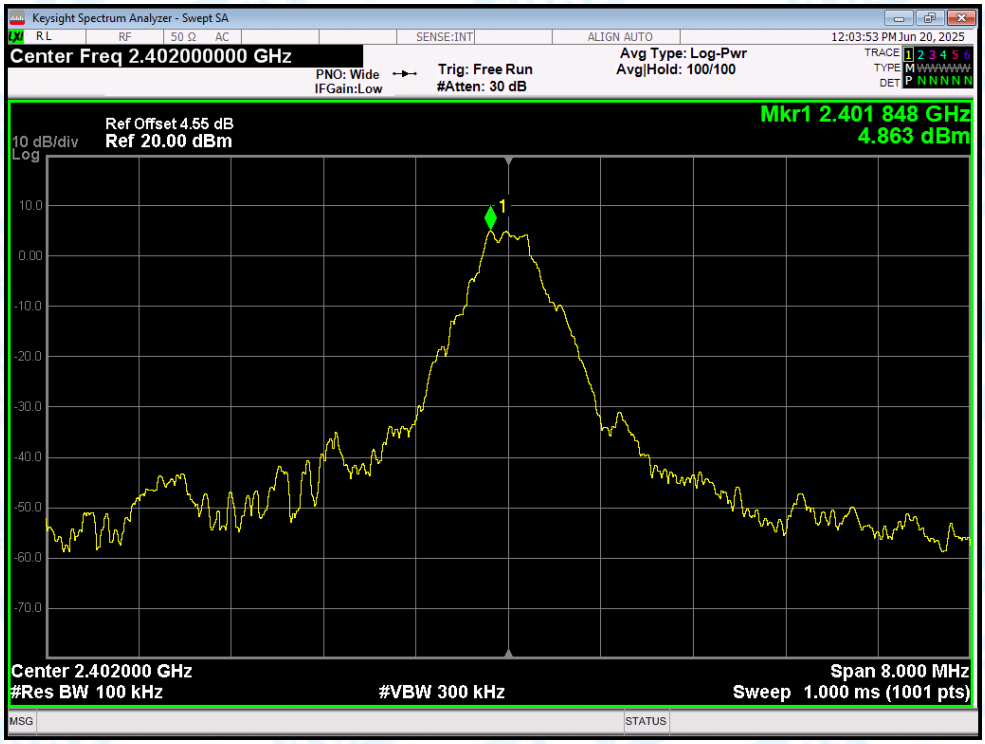


5. Band Edge

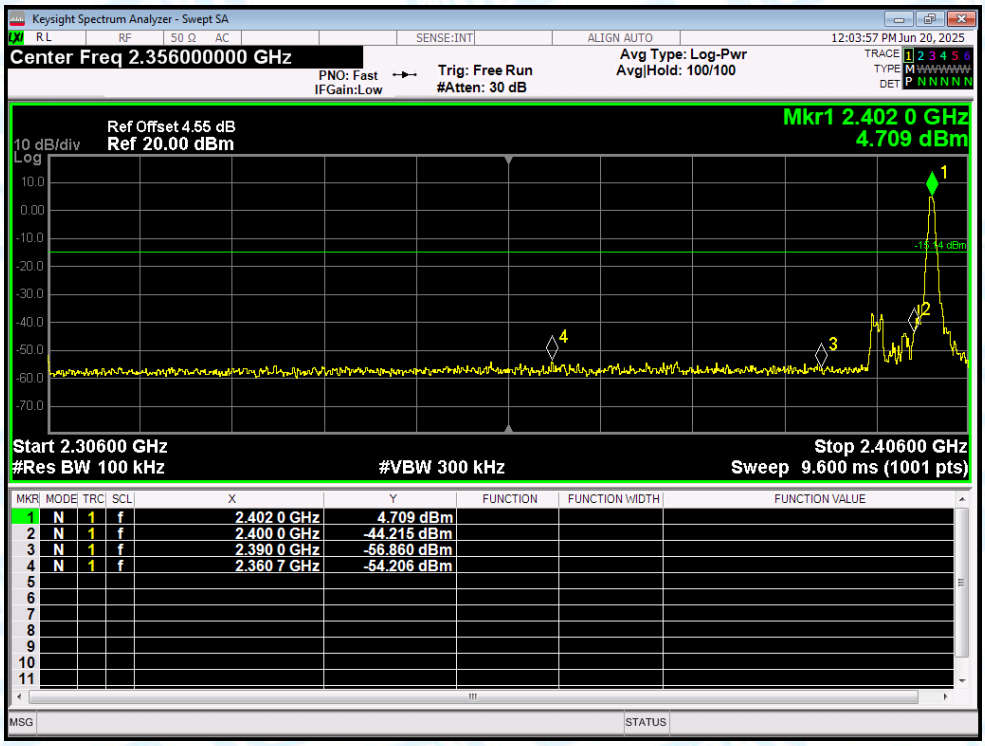
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	-59.07	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-48.22	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-58.41	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-47.65	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-58.7	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-47.95	-20	Pass

Test Graphs

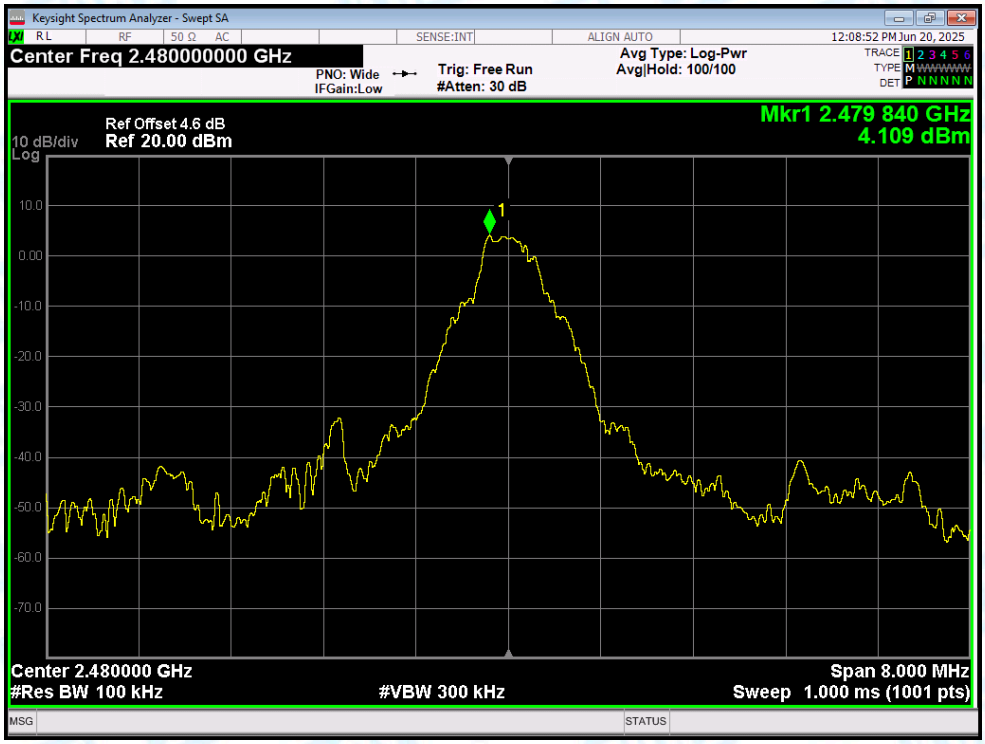
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



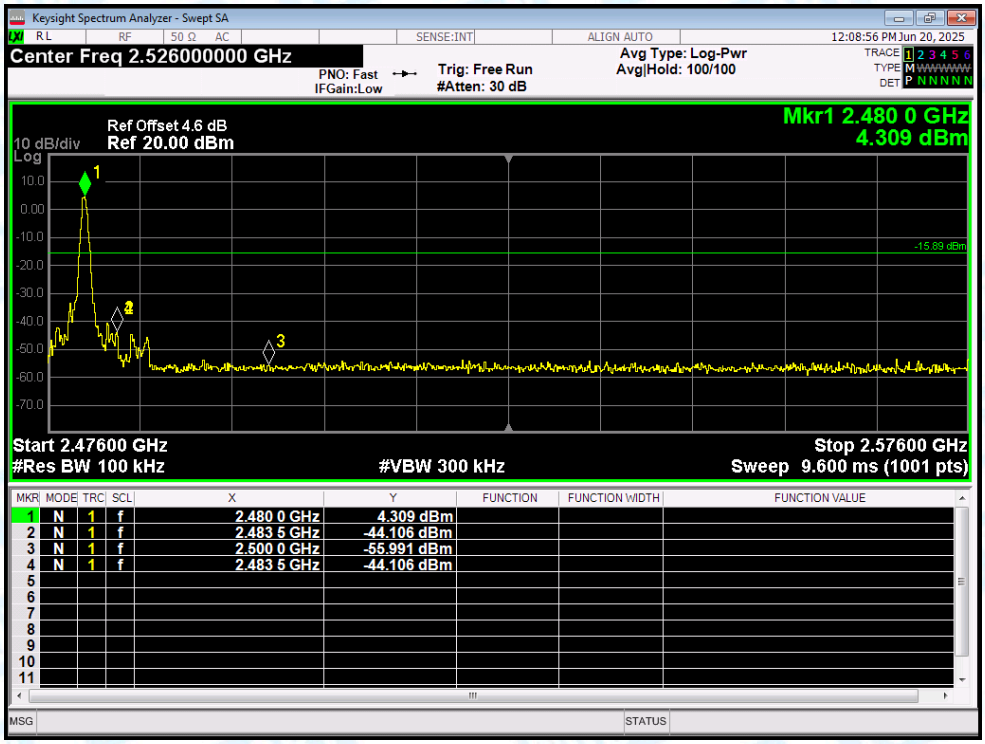
Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

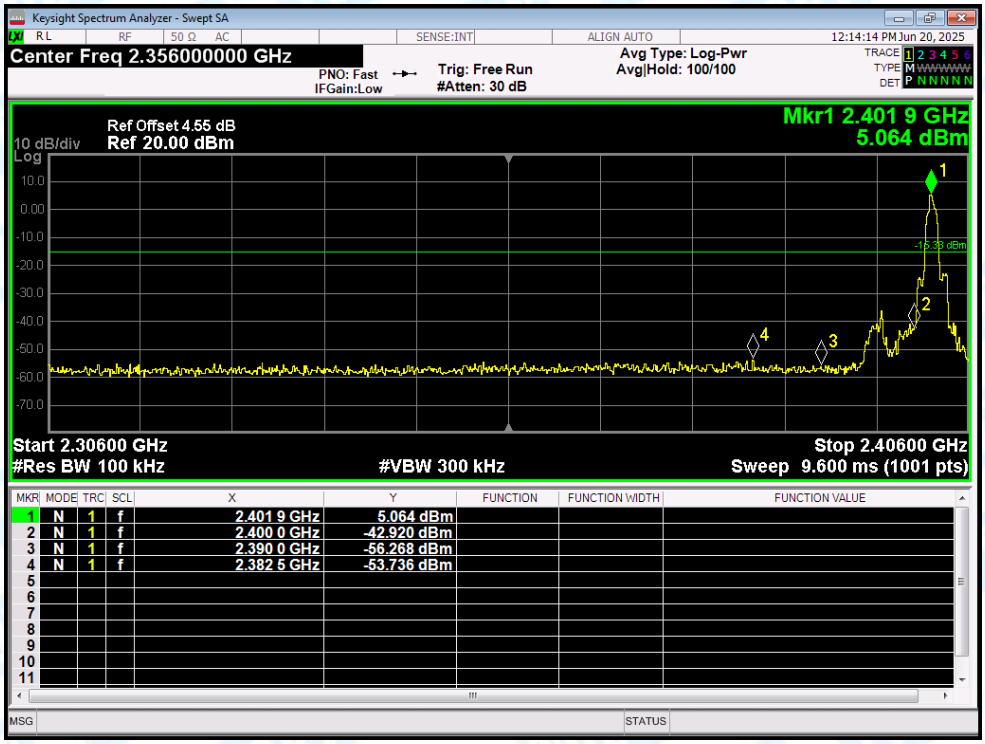


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



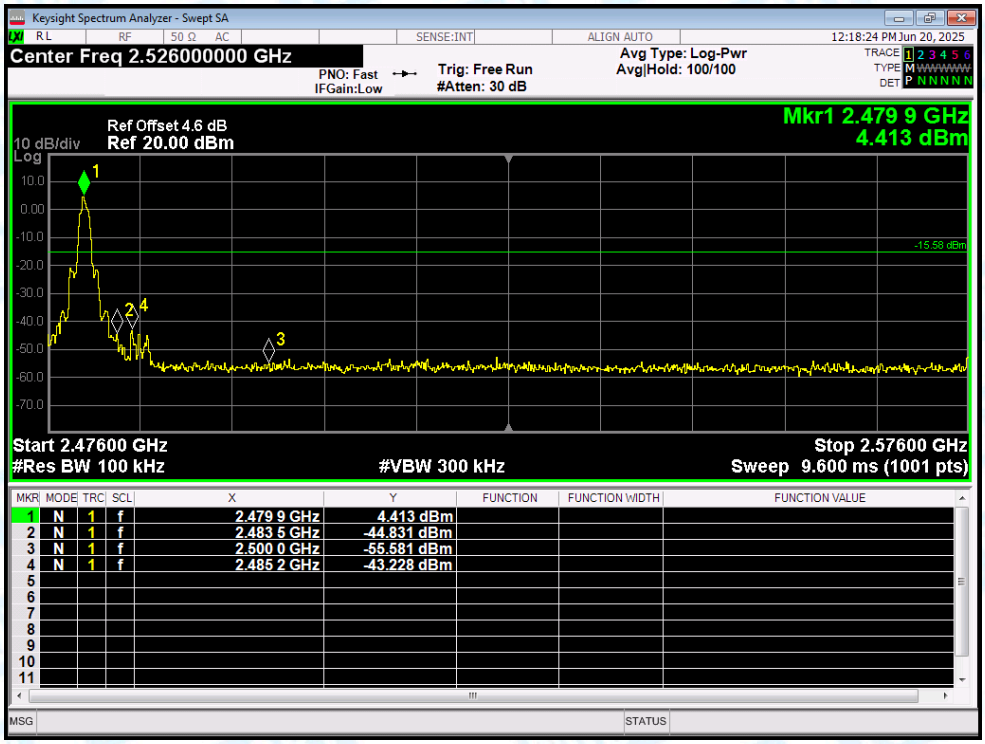
Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref

Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



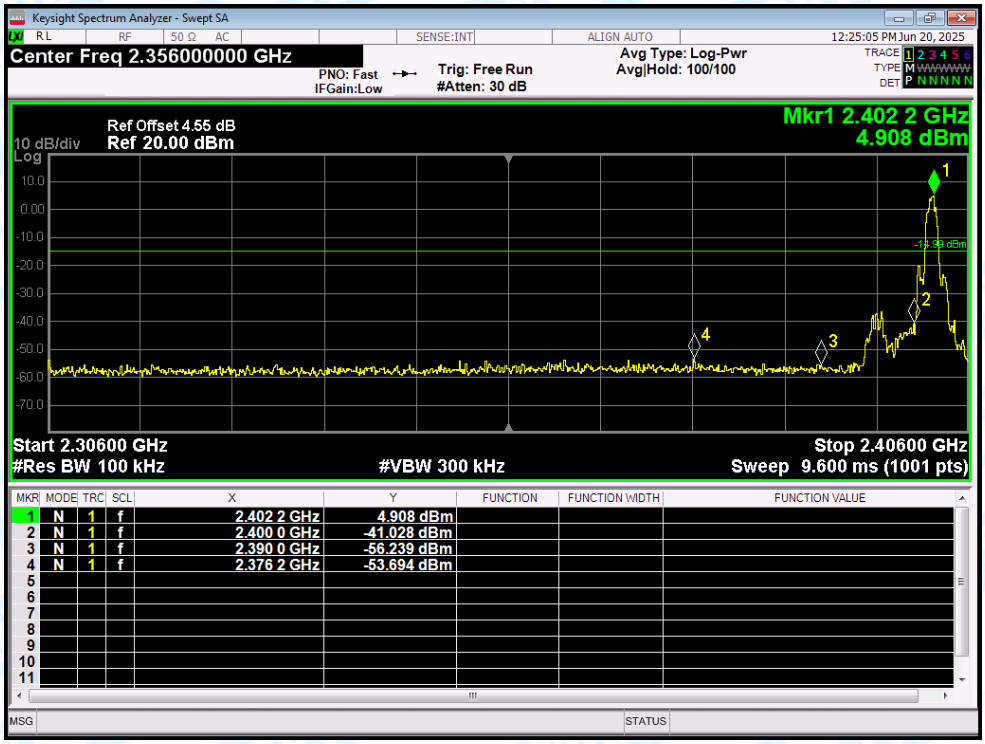
Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref

Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



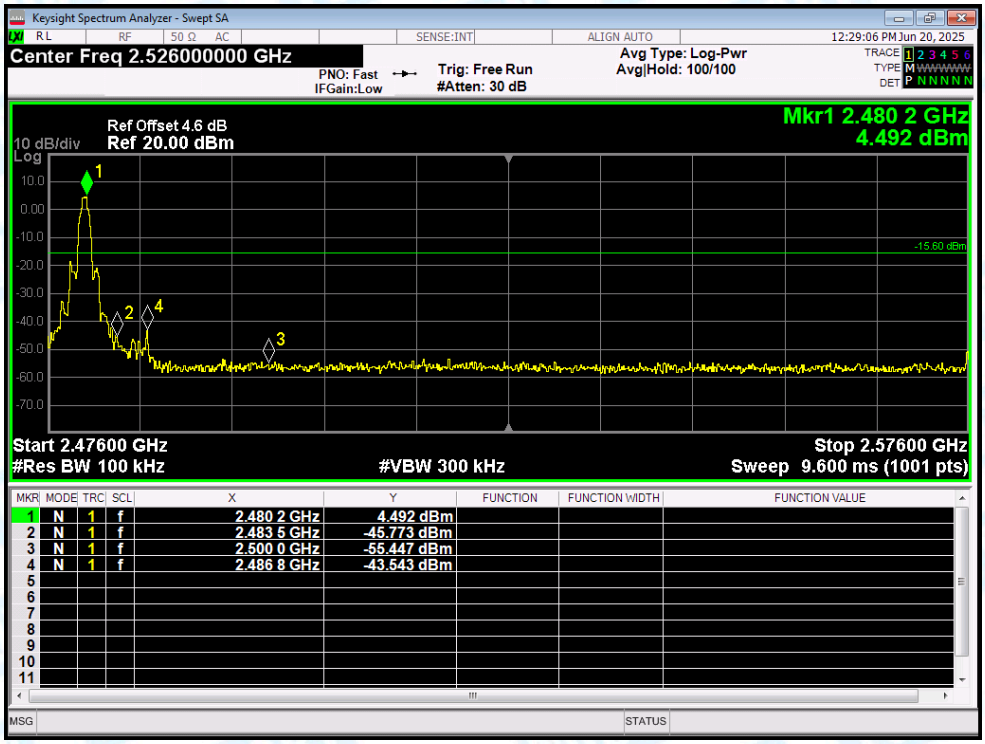
Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref

Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref

Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission

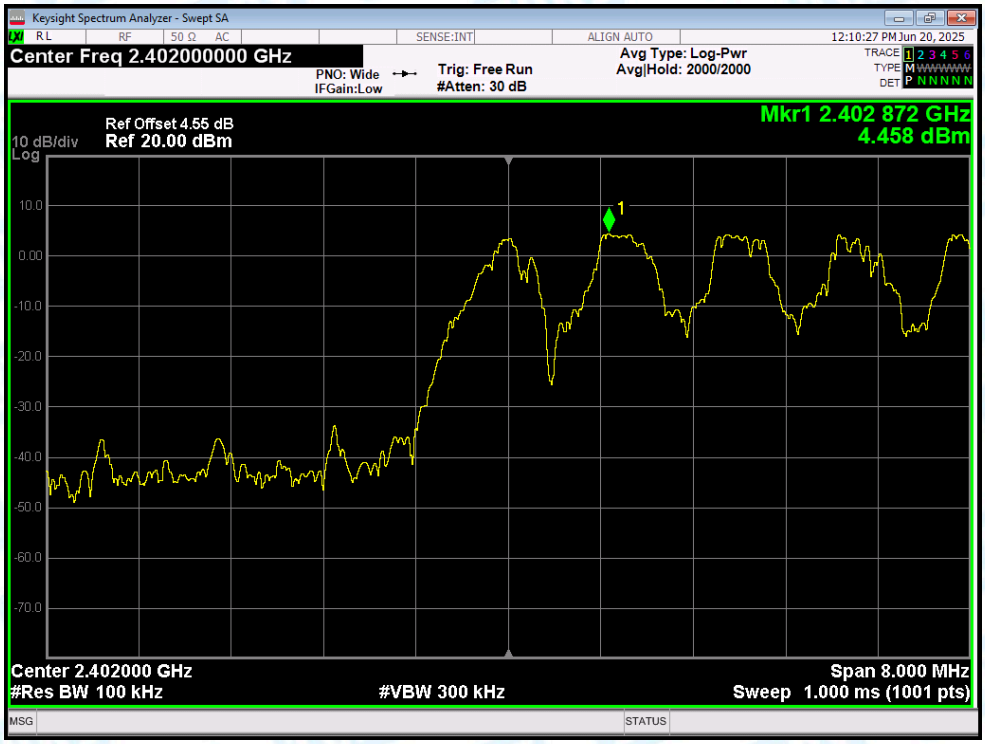


6. Band Edge(Hopping)

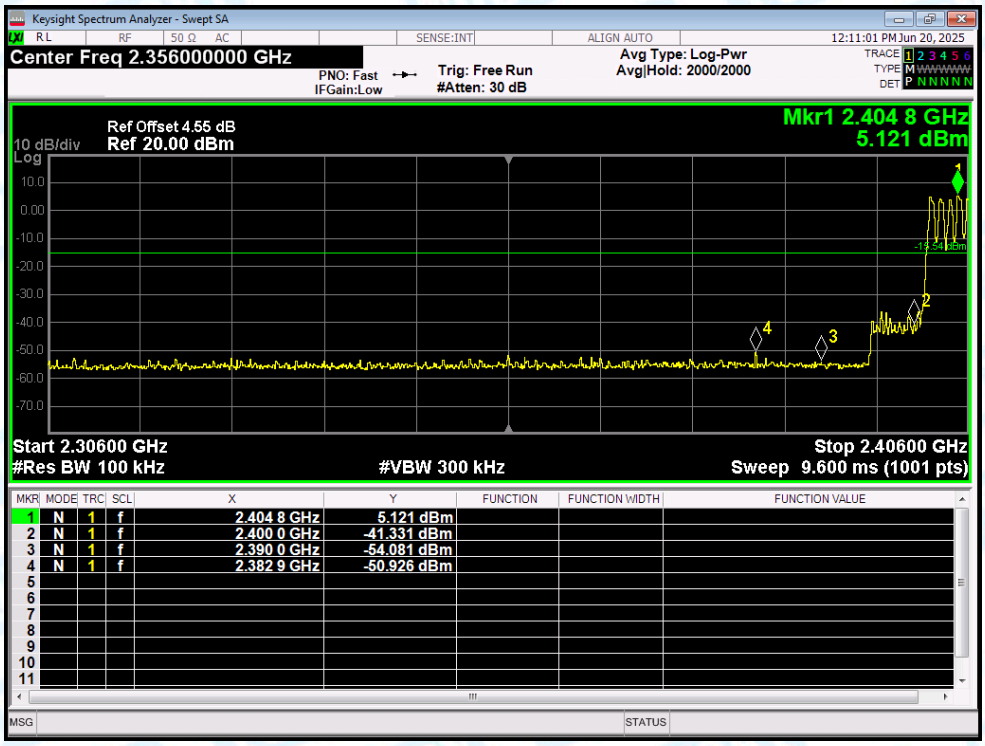
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	Hopping	-55.39	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-46.71	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-56.51	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-48.94	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-56.87	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-47.45	-20	Pass

Test Graphs

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

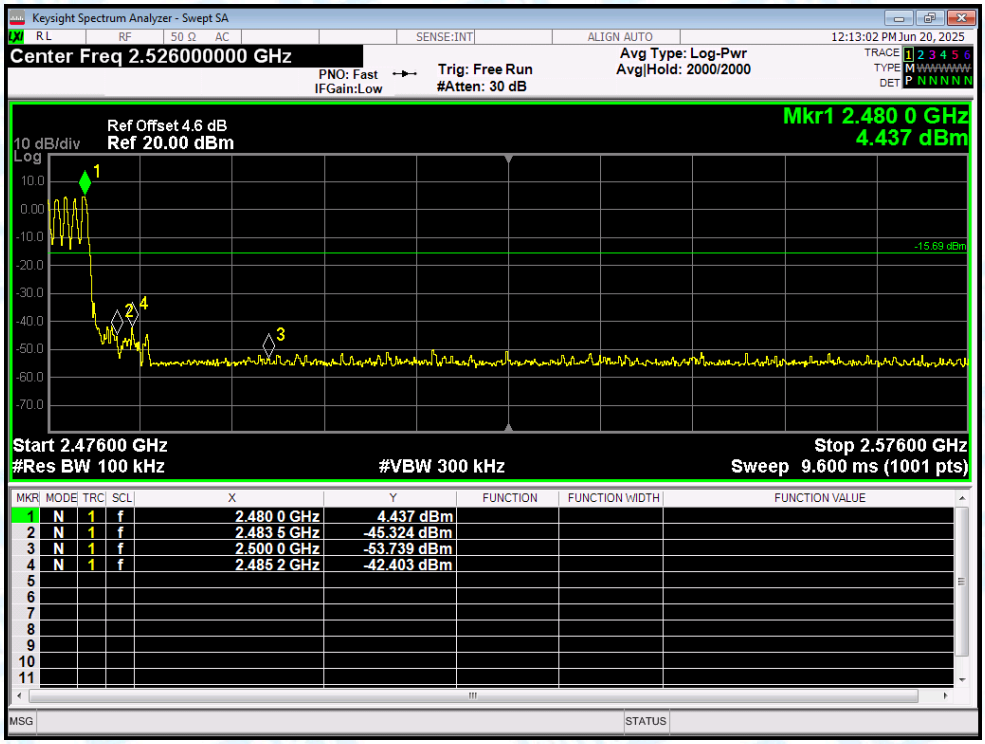


Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



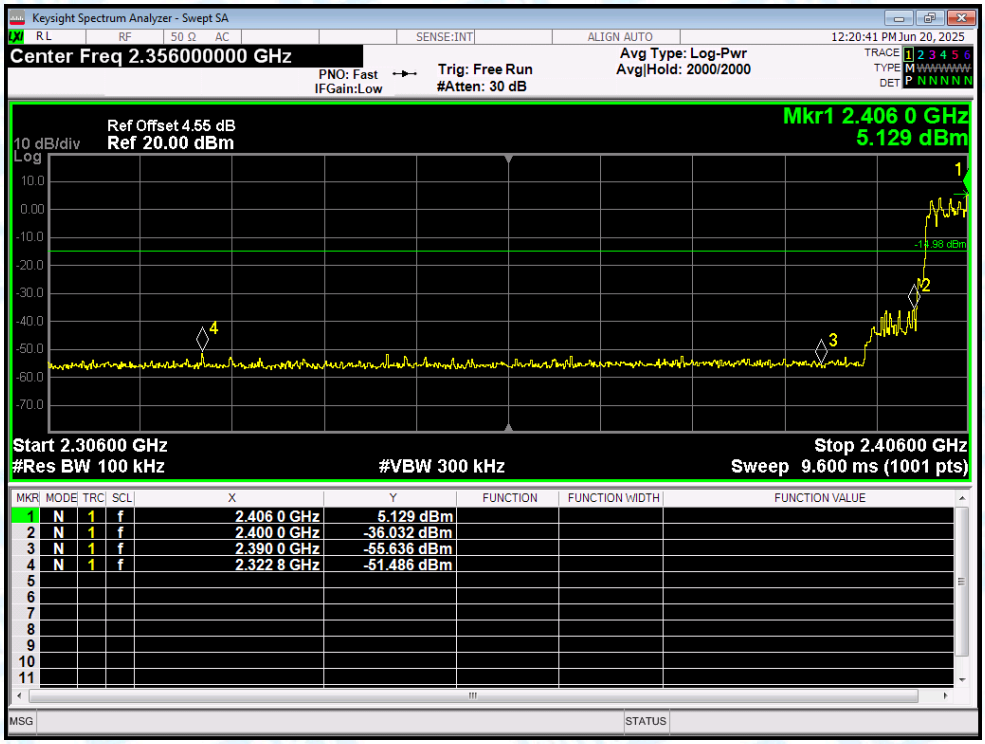
Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission



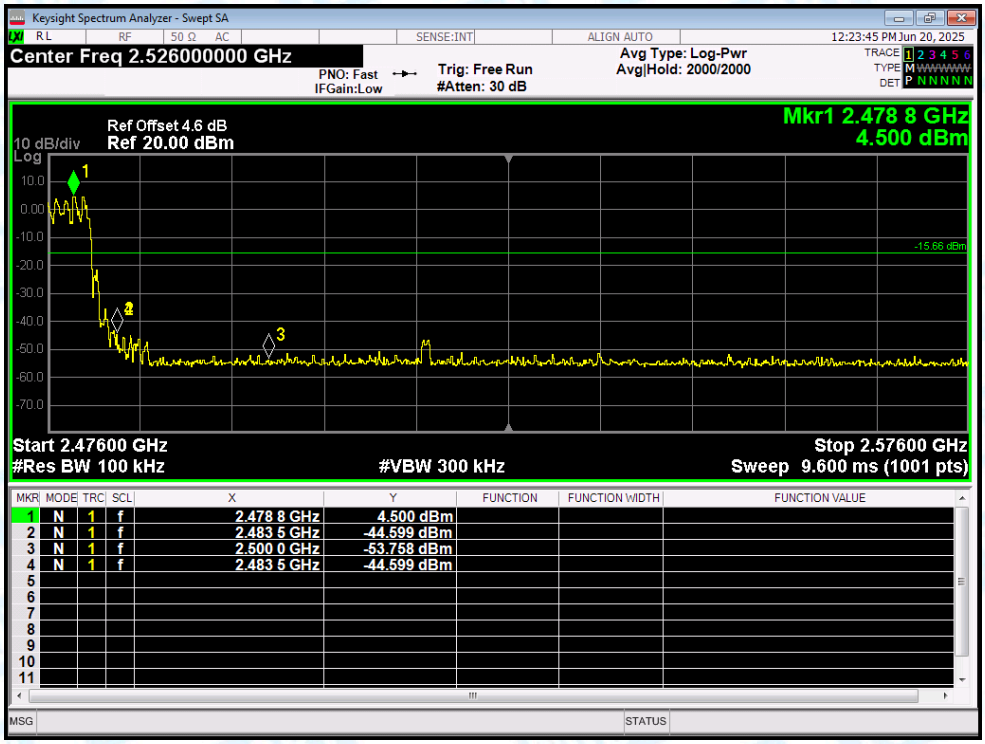
Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission

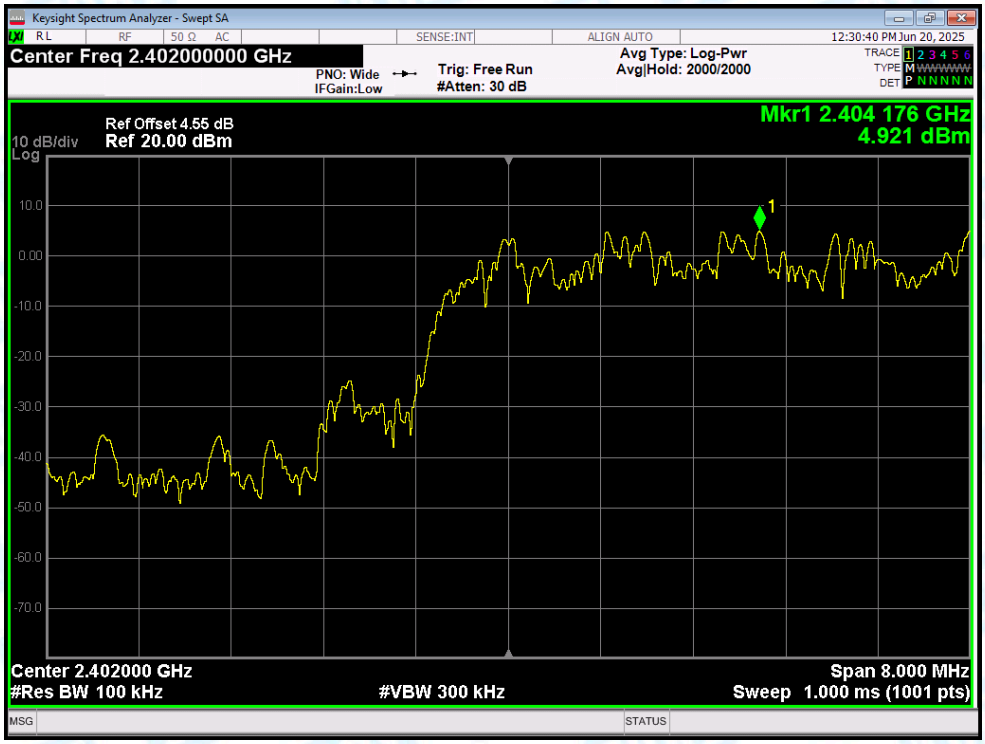


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

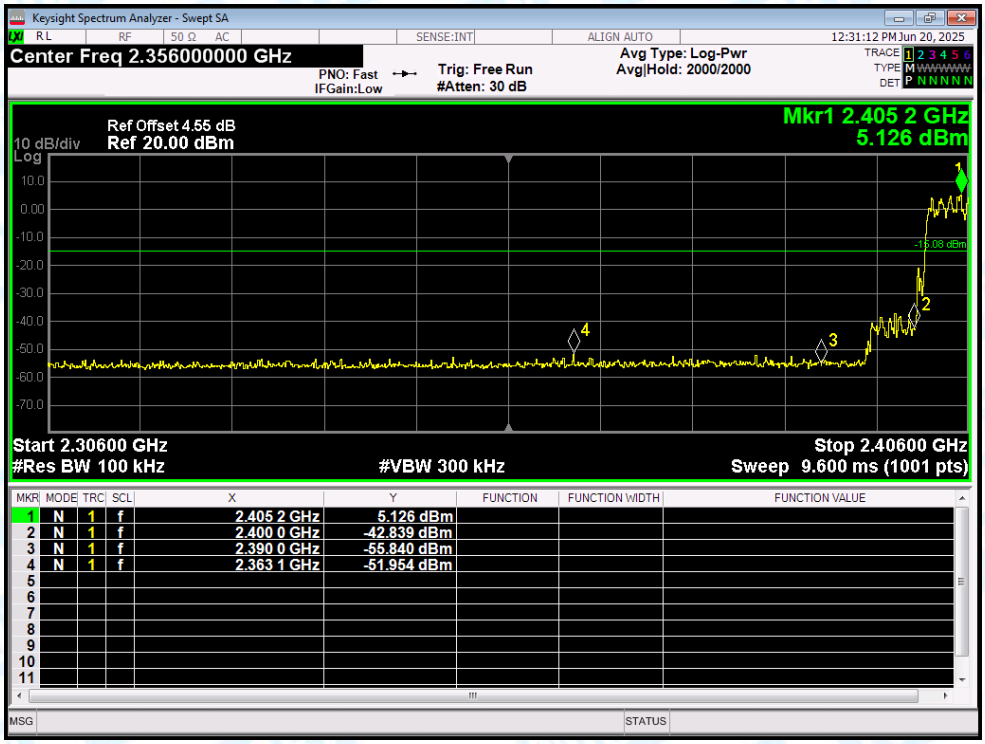
Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref

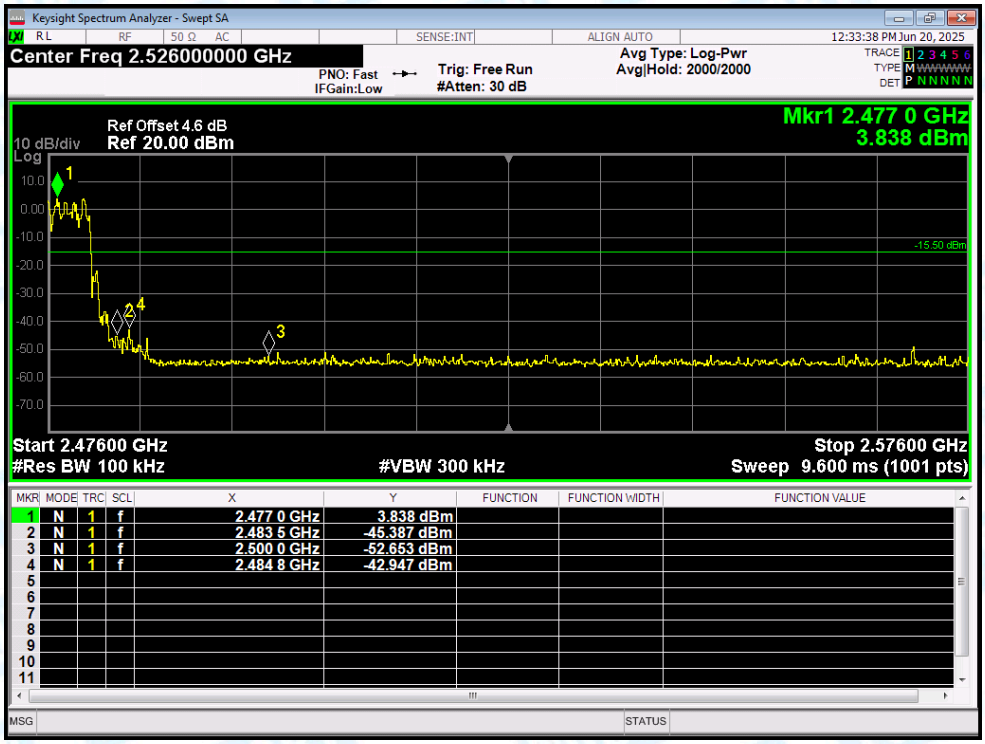


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission

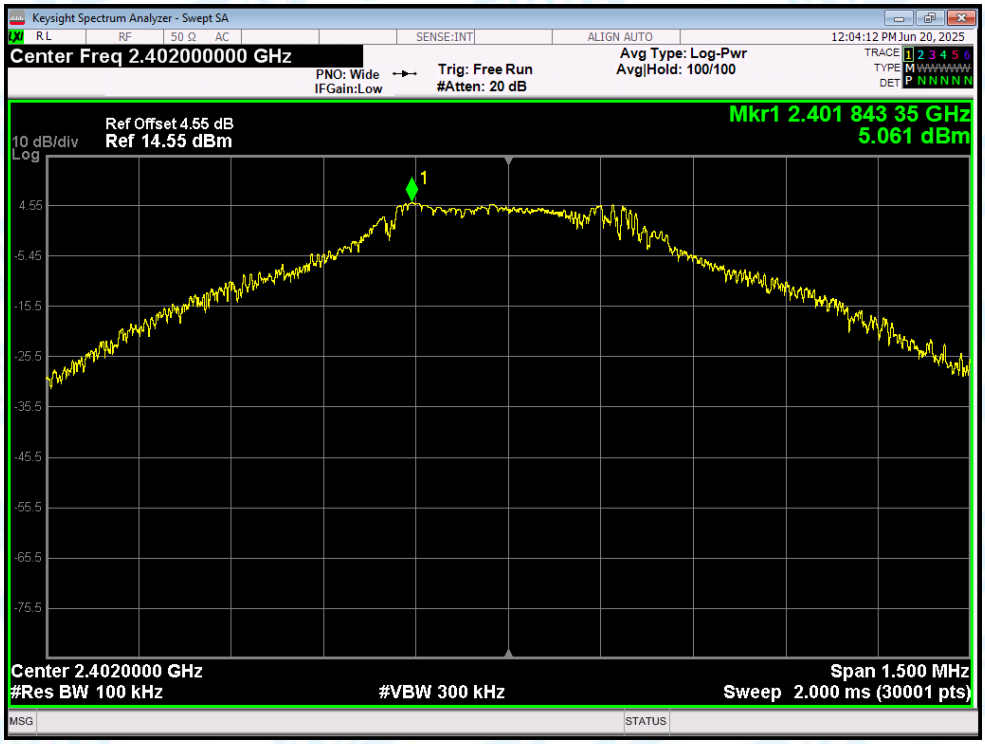


7. Conducted RF Spurious Emission

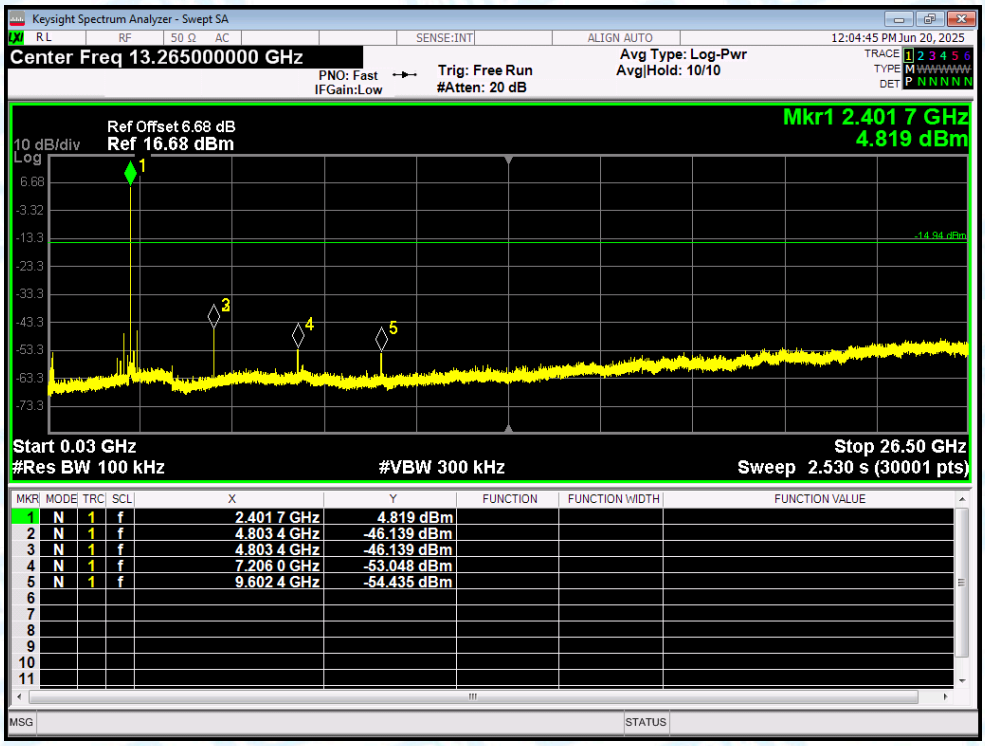
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-51.2	-20	Pass
NVNT	1-DH1	2441	Ant1	-48.89	-20	Pass
NVNT	1-DH1	2480	Ant1	-46.65	-20	Pass
NVNT	2-DH1	2402	Ant1	-49.01	-20	Pass
NVNT	2-DH1	2441	Ant1	-49.92	-20	Pass
NVNT	2-DH1	2480	Ant1	-48.74	-20	Pass
NVNT	3-DH1	2402	Ant1	-48.33	-20	Pass
NVNT	3-DH1	2441	Ant1	-47.76	-20	Pass
NVNT	3-DH1	2480	Ant1	-49.23	-20	Pass

Test Graphs

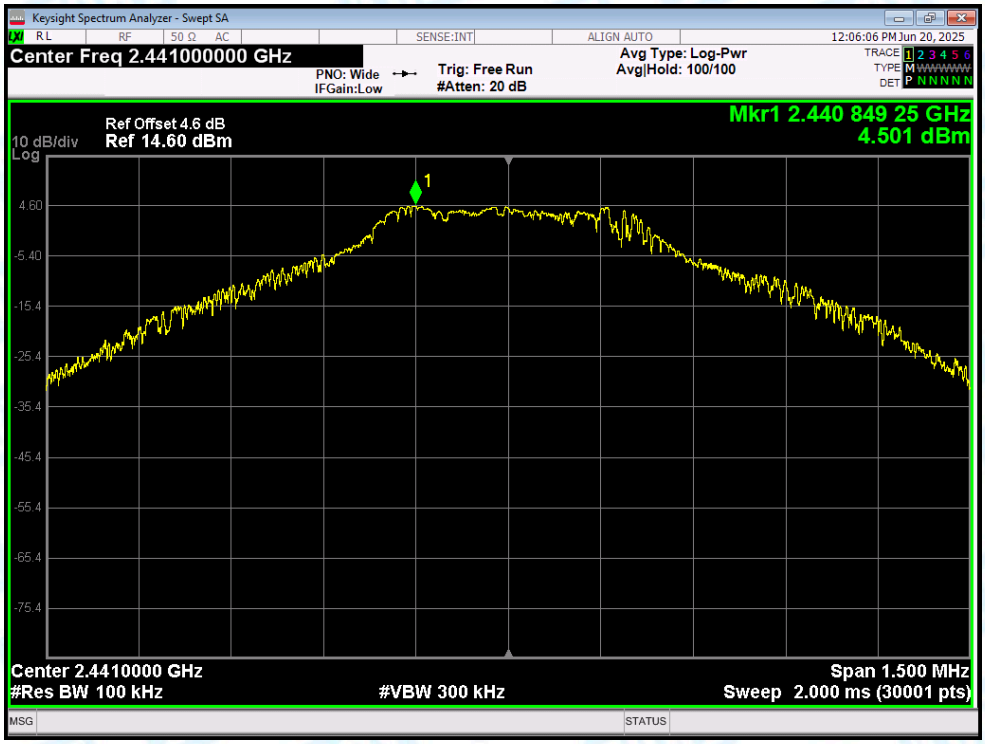
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



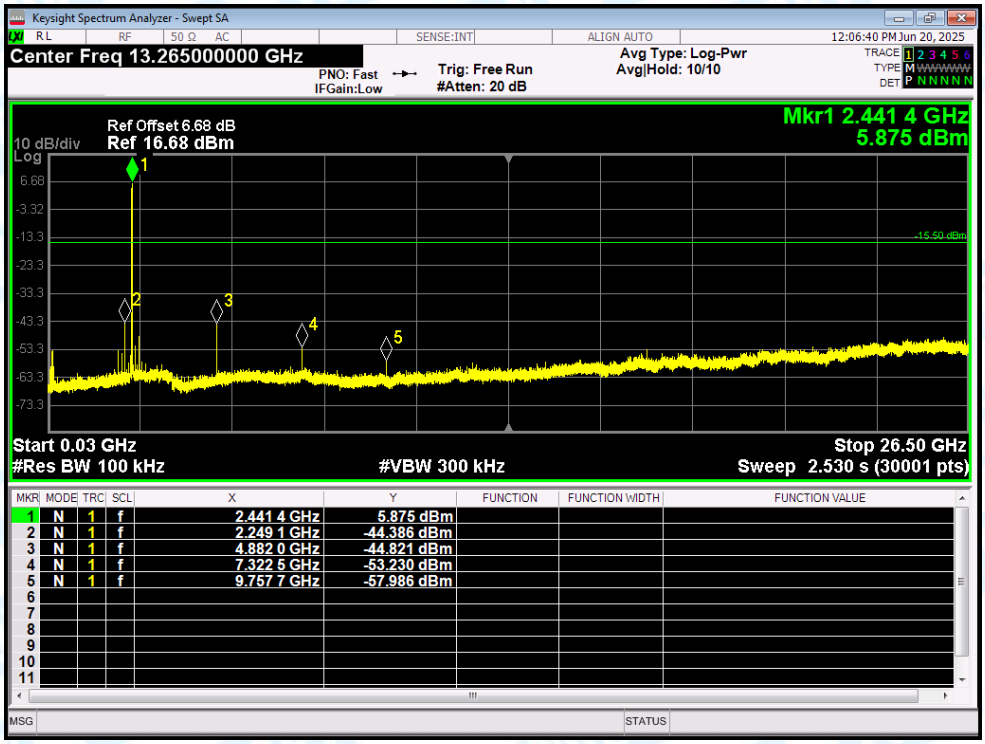
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



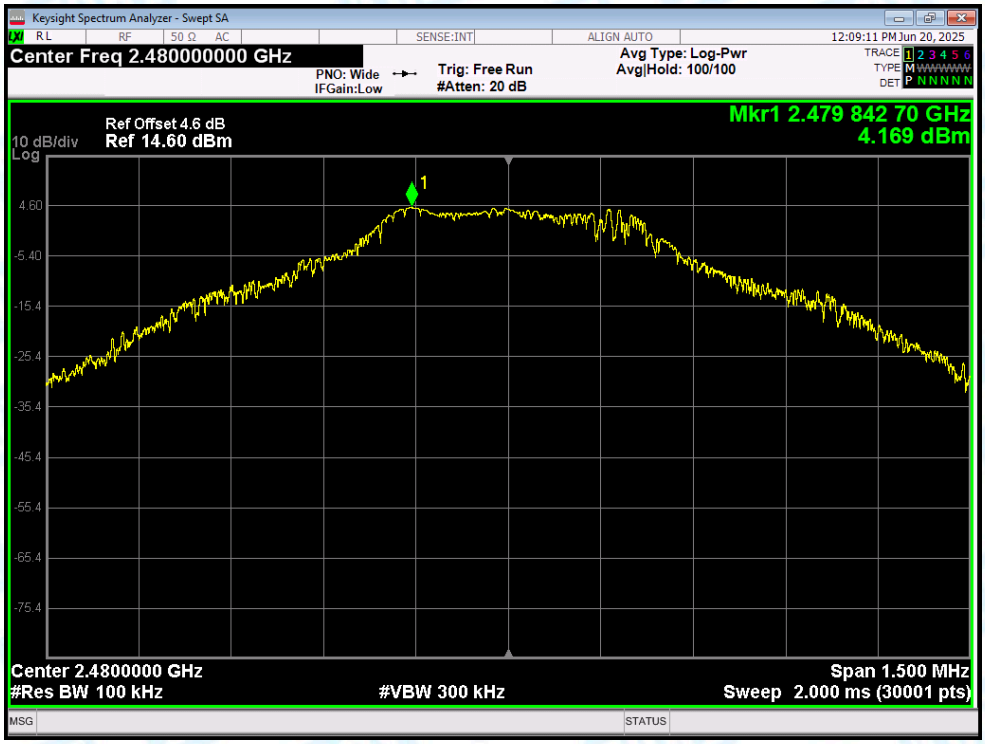
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



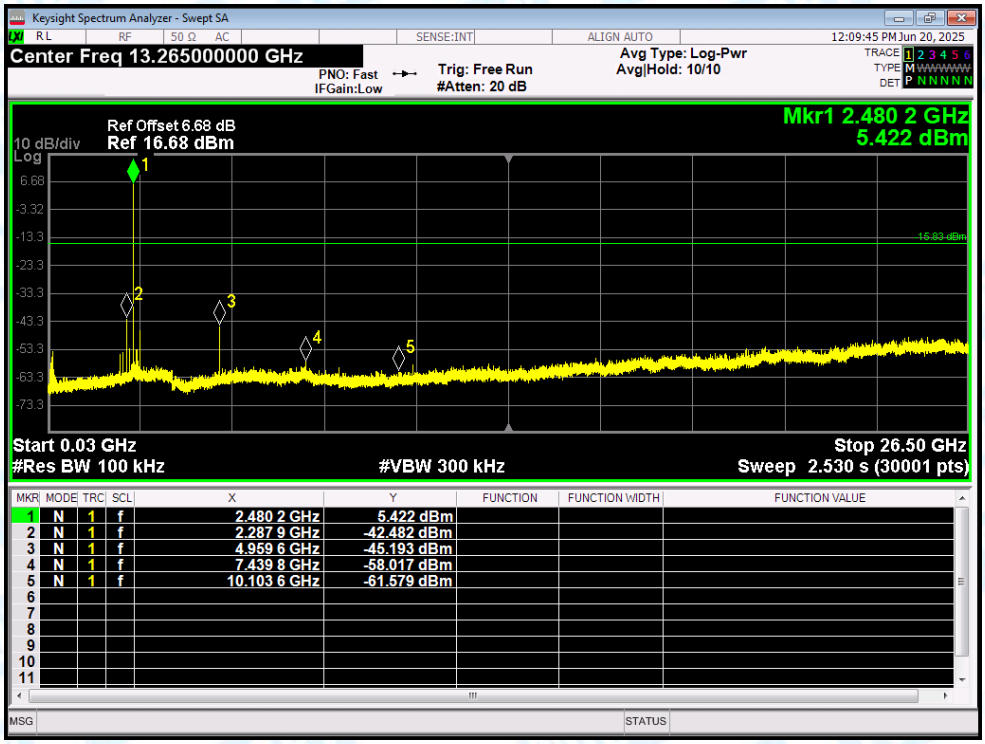
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



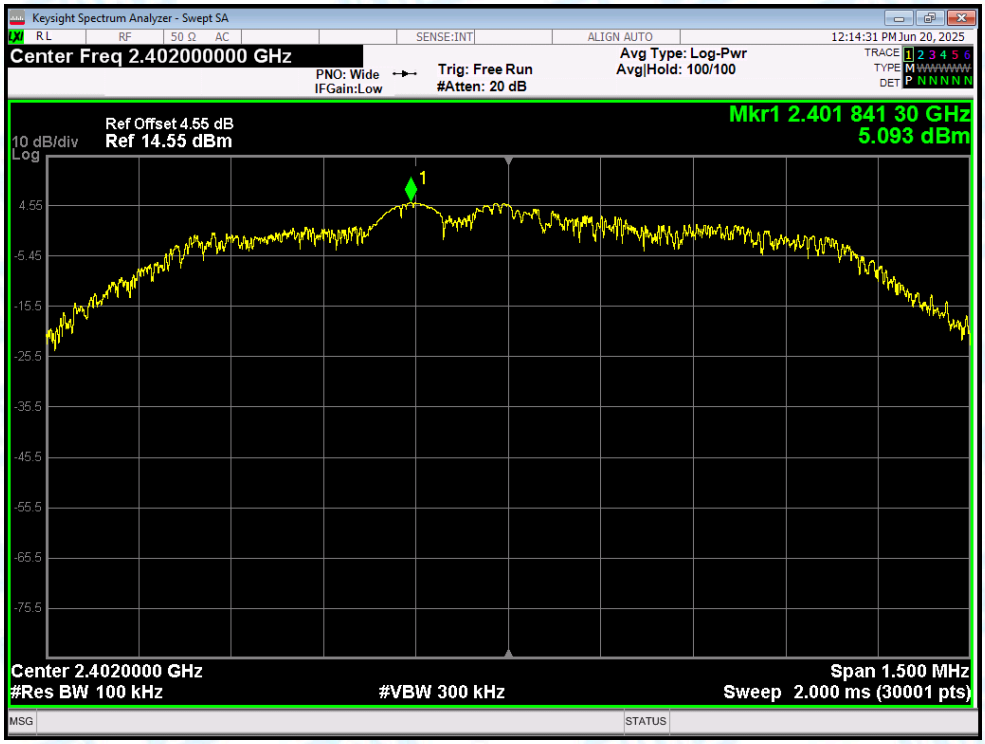
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



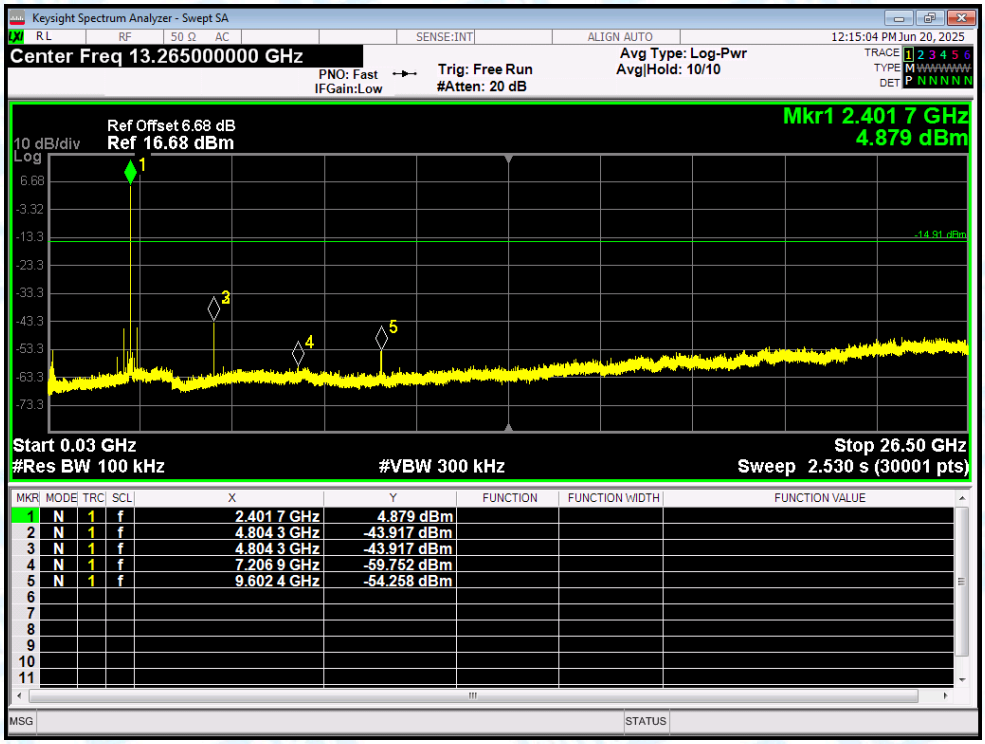
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



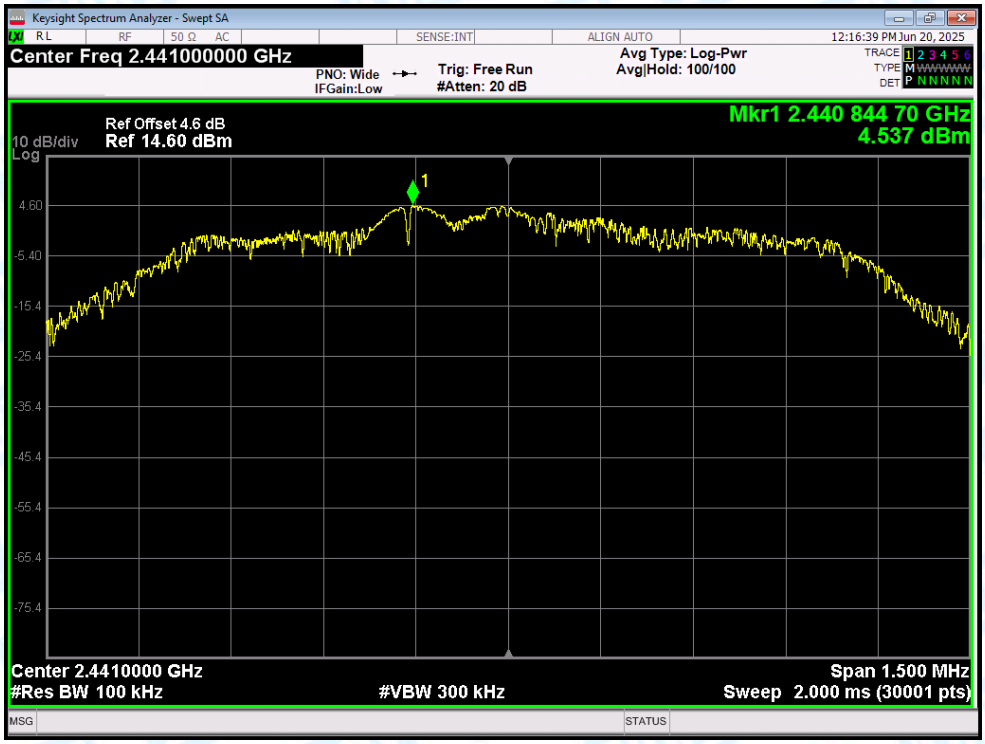
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



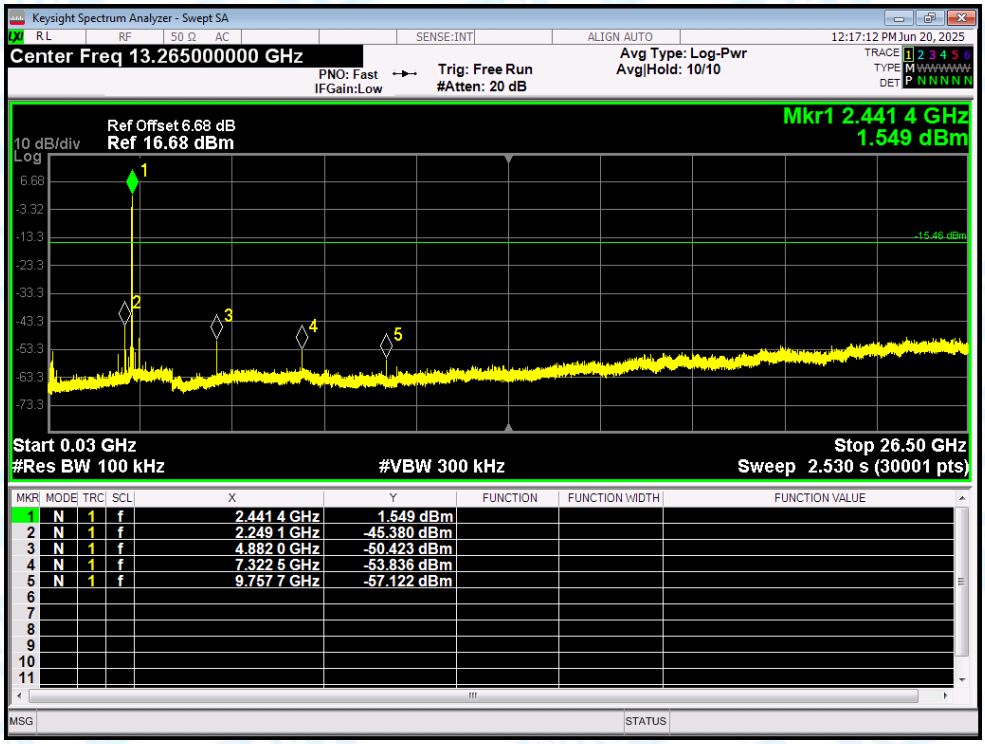
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



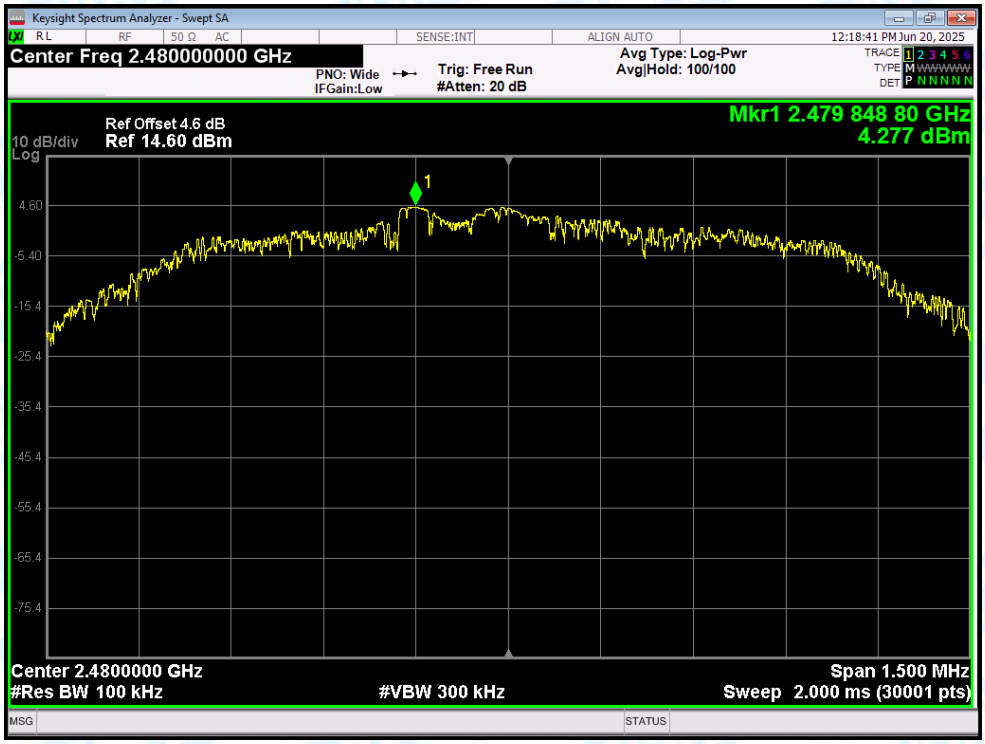
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



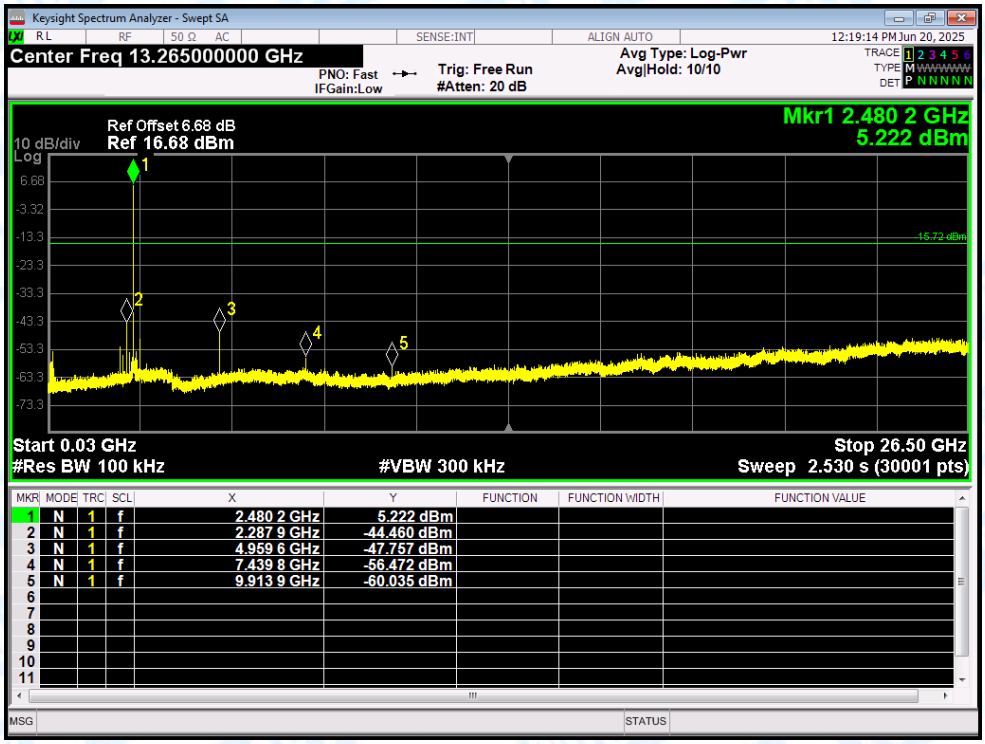
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



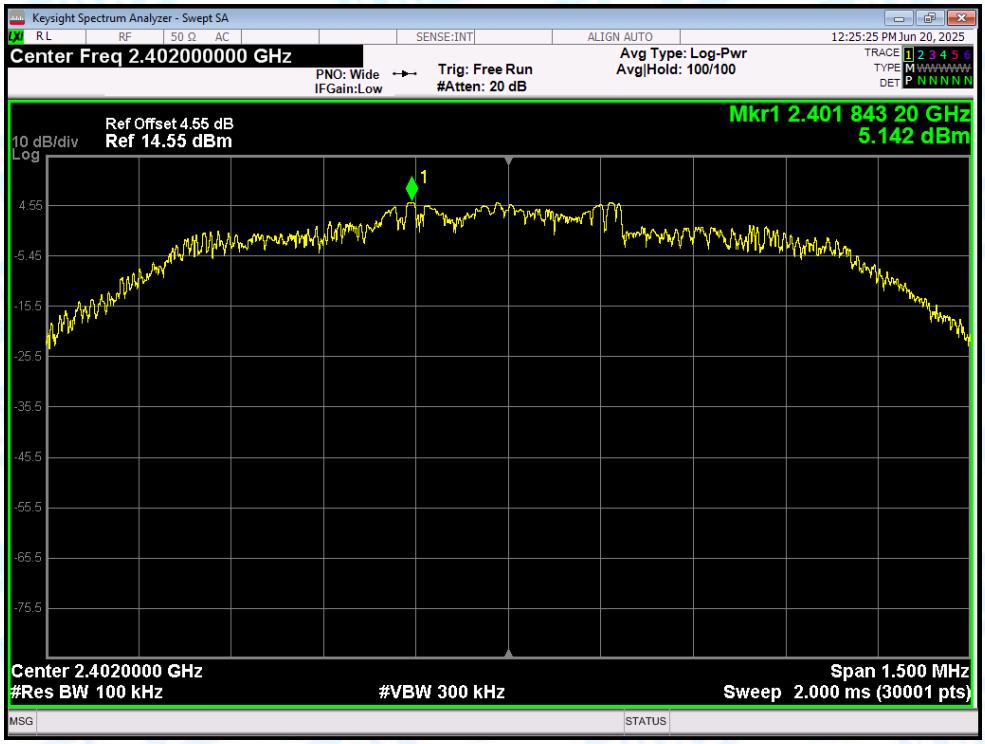
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



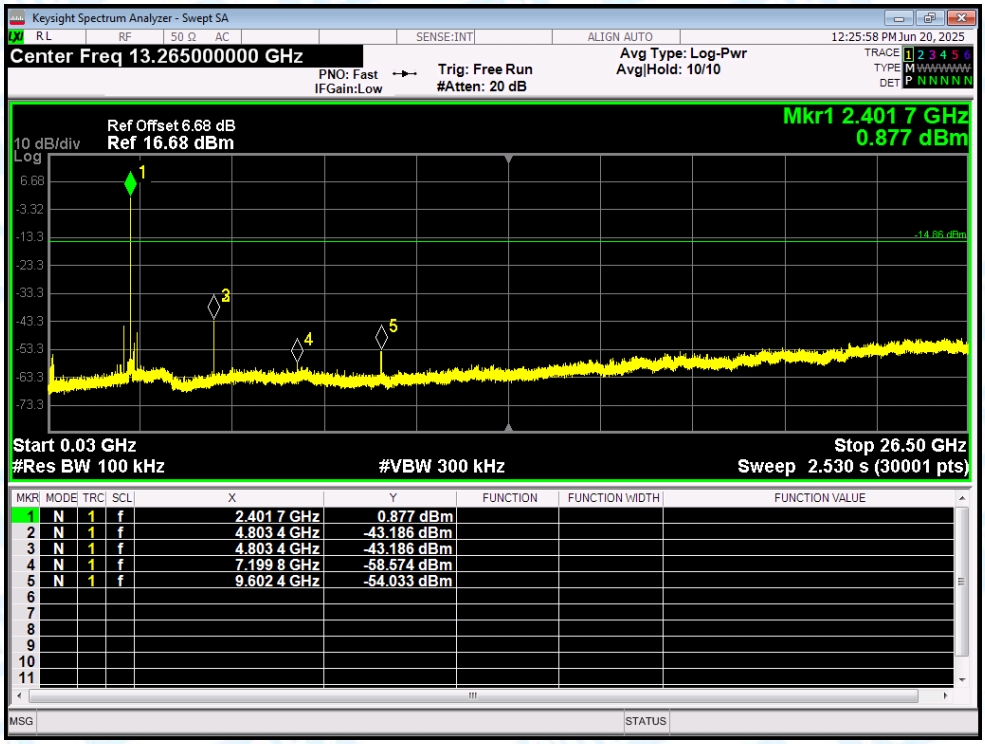
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



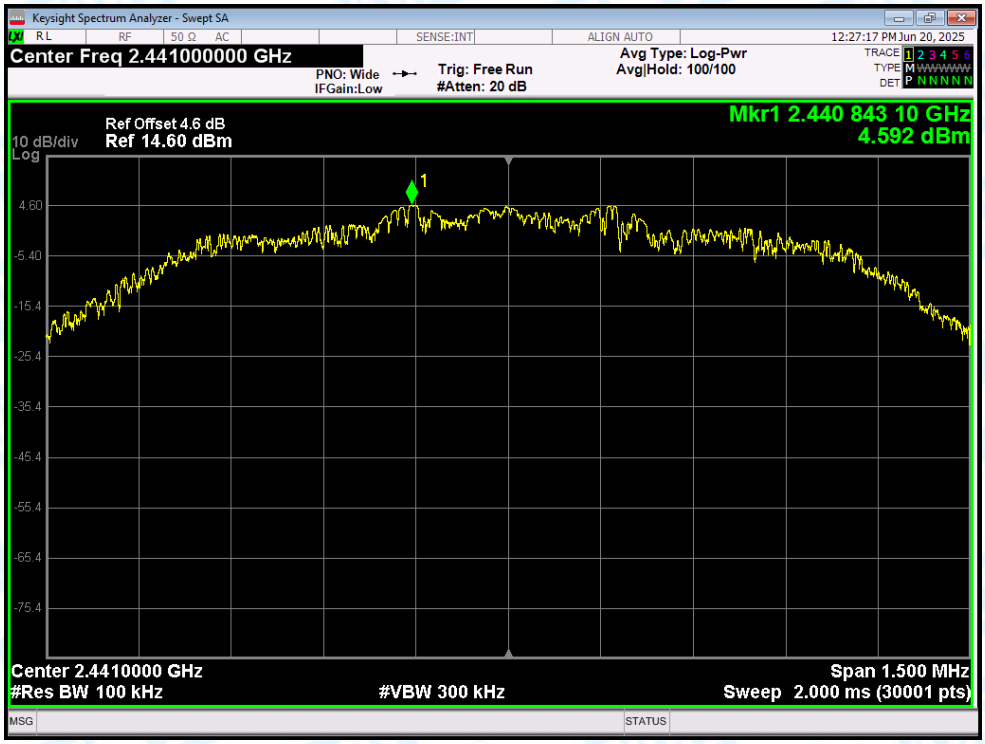
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



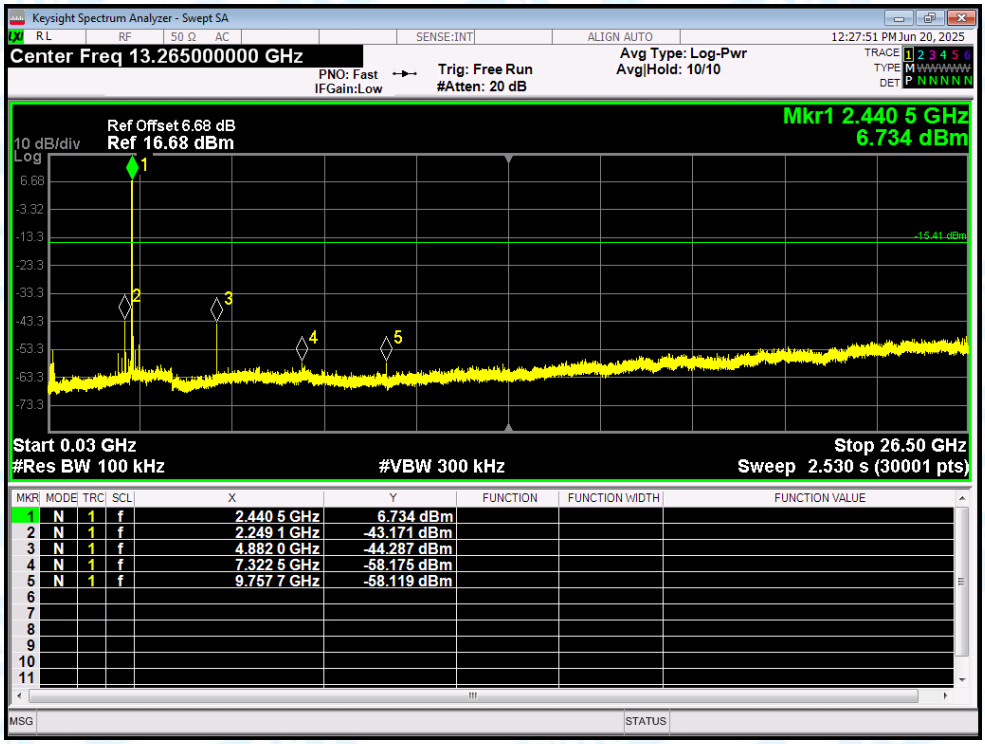
Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



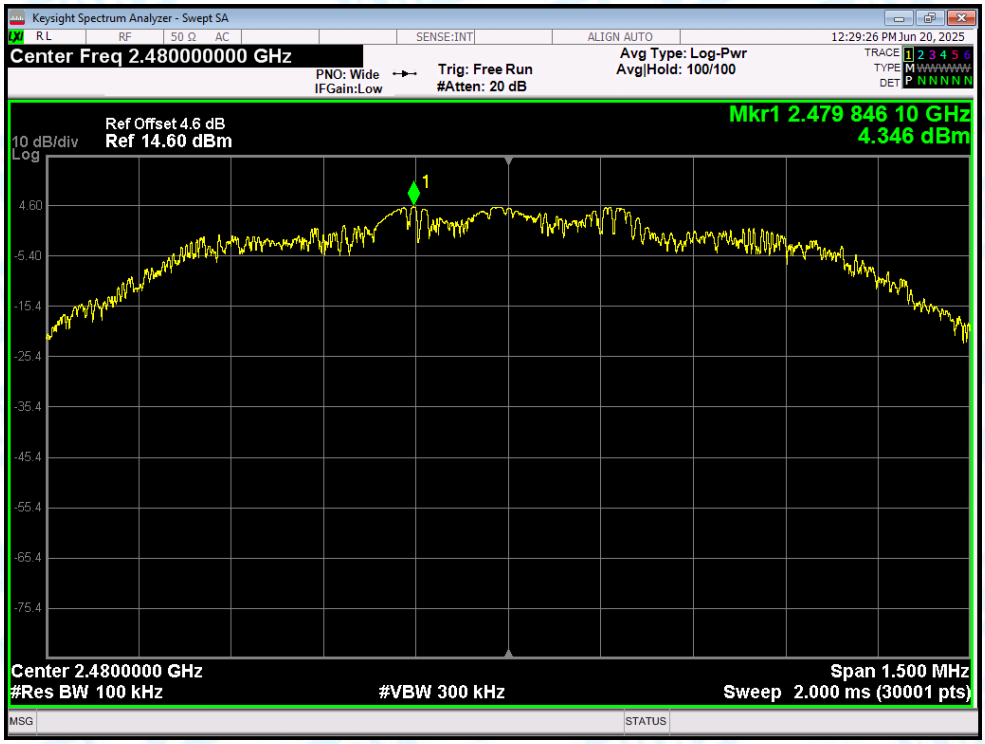
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



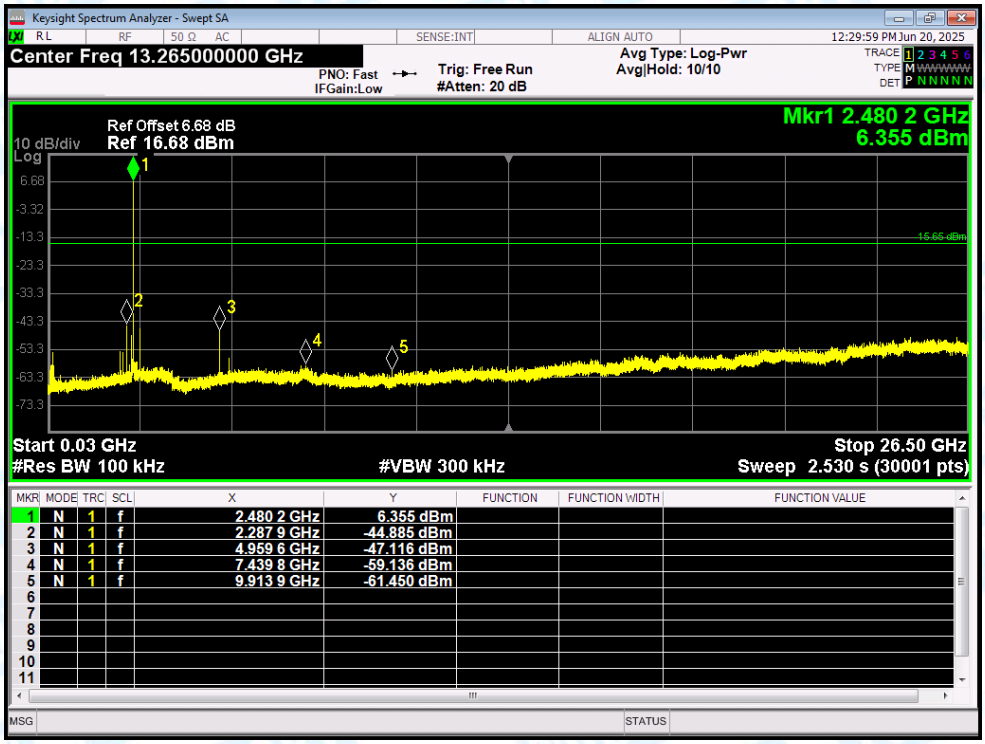
Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

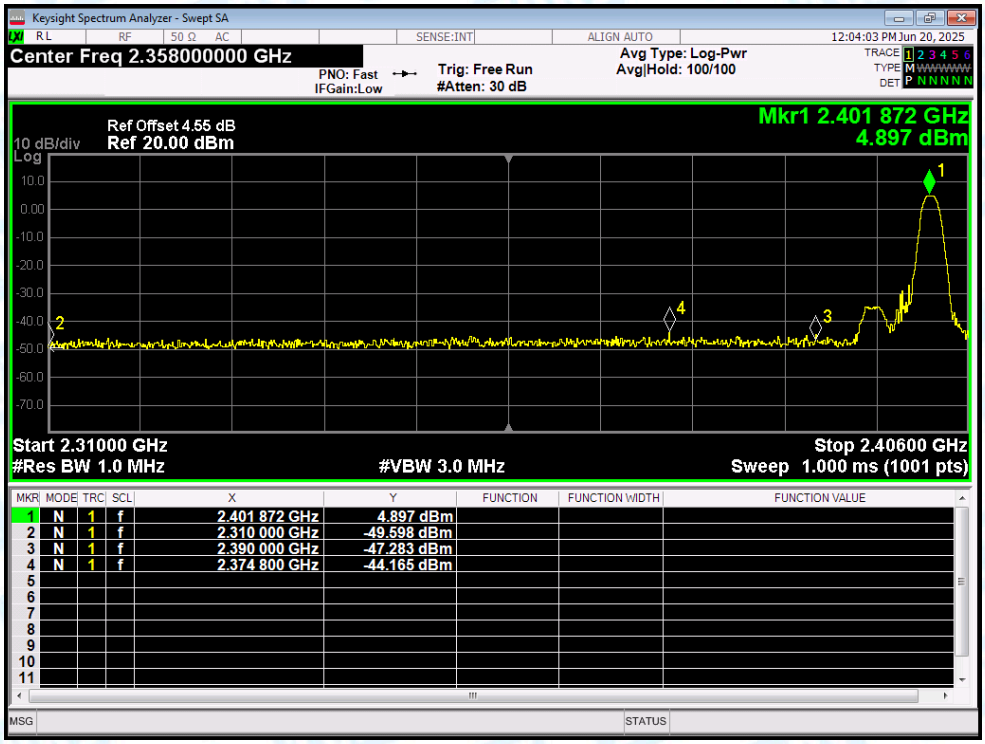


8. Restrict Band

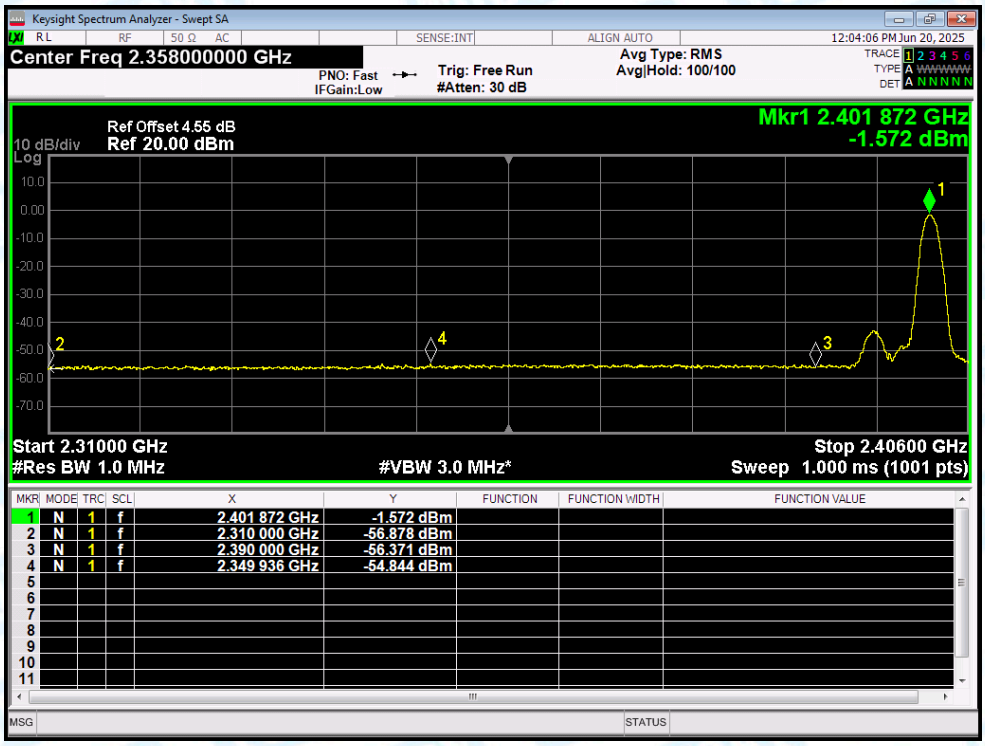
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-49.6	2	-	47.66	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2310	-56.88	2	5.06	45.44	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2374.8	-44.17	2	-	53.09	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2349.936	-54.84	2	5.06	47.48	Average	54	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-47.28	2	-	49.98	Peak	74	Pass
NVNT	1-DH1	2402	Ant1	No-Hopping	2390	-56.37	2	5.06	45.95	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-38.12	2	-	59.14	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.5	-48.53	2	5.06	53.79	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.512	-38.12	2	-	59.14	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2483.536	-48.48	2	5.06	53.84	Average	54	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-46.75	2	-	50.51	Peak	74	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	2500	-54.85	2	5.06	47.47	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-48.46	2	-	48.8	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2310	-56.42	2	5.06	45.9	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2375.376	-44.83	2	-	52.43	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2371.152	-54.91	2	5.06	47.41	Average	54	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-46.73	2	-	50.53	Peak	74	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	2390	-55.54	2	5.06	46.78	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-36.26	2	-	61	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.5	-49.29	2	5.06	53.03	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.608	-35.58	2	-	61.68	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2483.536	-49.16	2	5.06	53.16	Average	54	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-47.08	2	-	50.18	Peak	74	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	2500	-55.32	2	5.06	47	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-48.05	2	-	49.21	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2310	-56.26	2	5.06	46.06	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2384.208	-44.09	2	-	53.17	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2361.84	-54.8	2	5.06	47.52	Average	54	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-48.65	2	-	48.61	Peak	74	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	2390	-55.63	2	5.06	46.69	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-38.22	2	-	59.04	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.5	-48.65	2	4.98	53.59	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2484.4	-36.68	2	-	60.58	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2483.56	-48.62	2	4.98	53.62	Average	54	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-46.87	2	-	50.39	Peak	74	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	2500	-55.33	2	4.98	46.91	Average	54	Pass

Test Graphs

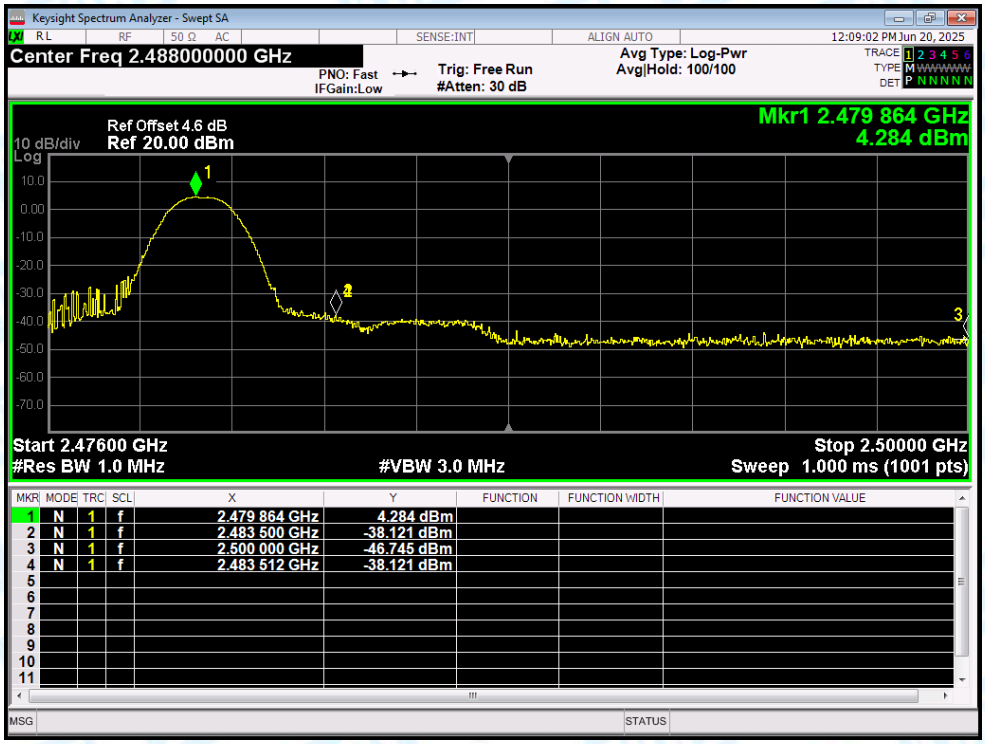
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Peak



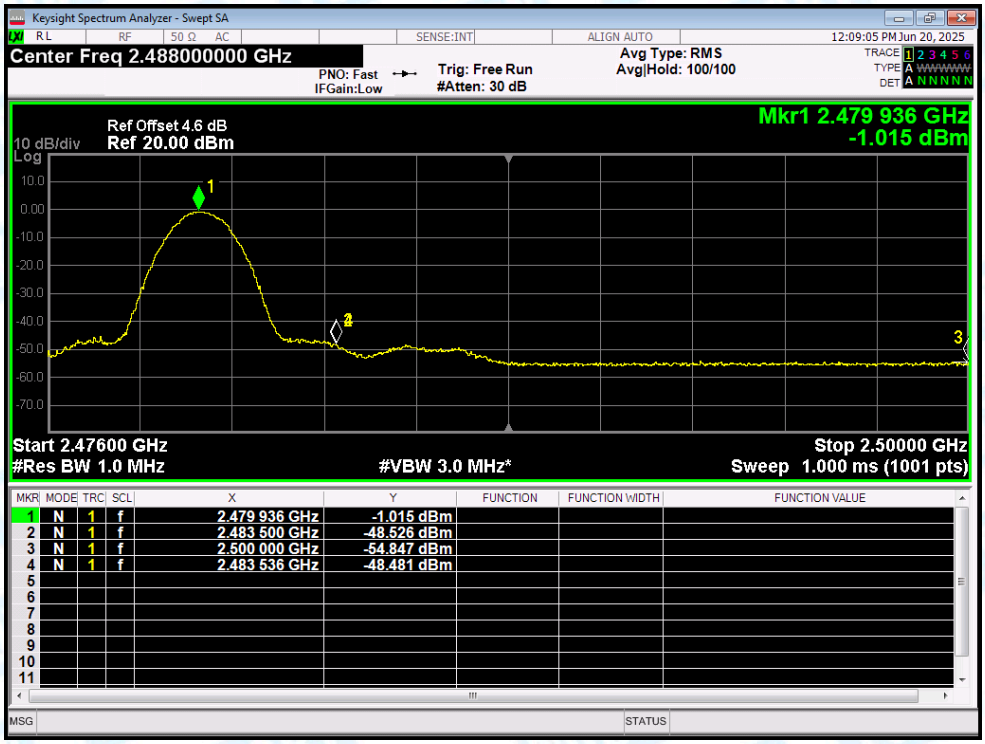
Restrict Band NVNT 1-DH1 2402MHz Ant1 No-Hopping Average



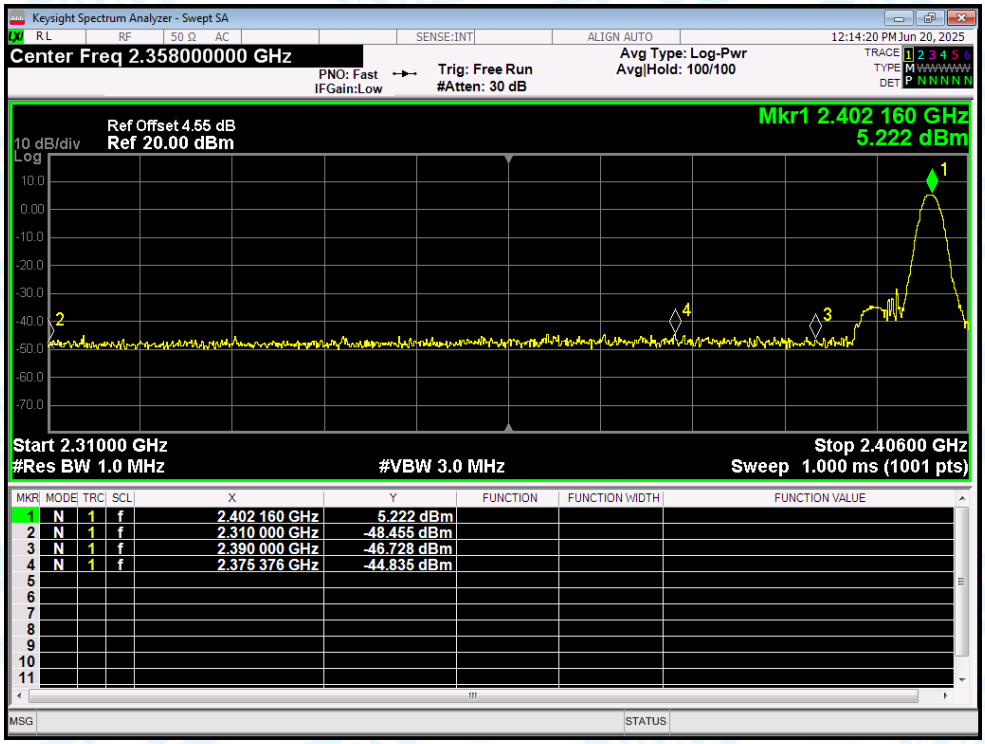
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Peak



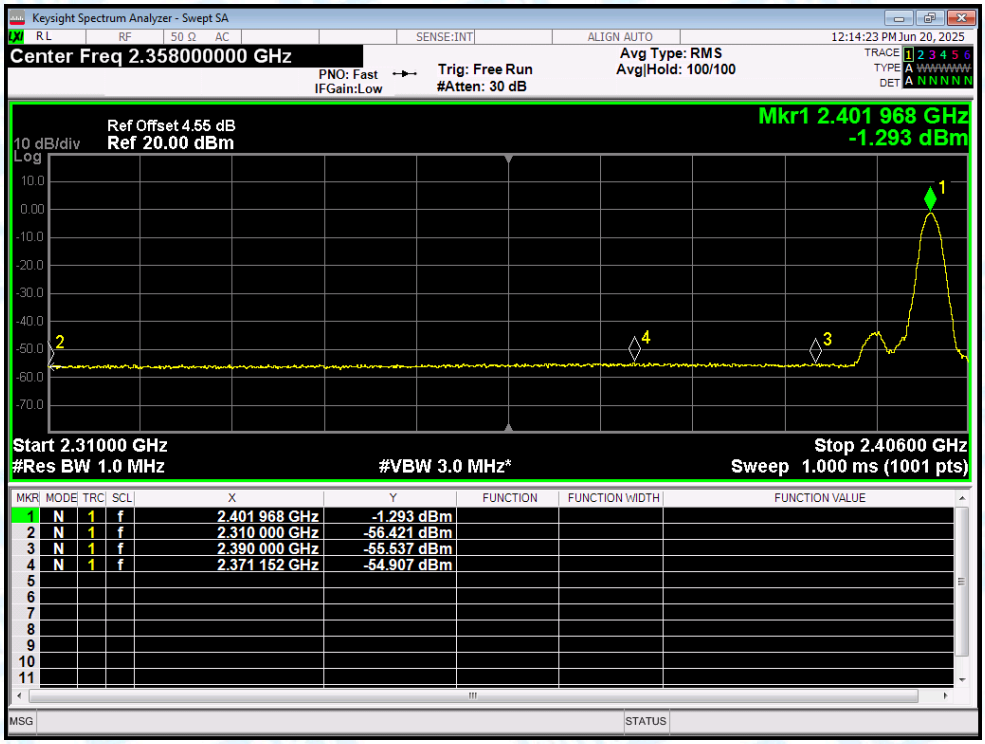
Restrict Band NVNT 1-DH1 2480MHz Ant1 No-Hopping Average



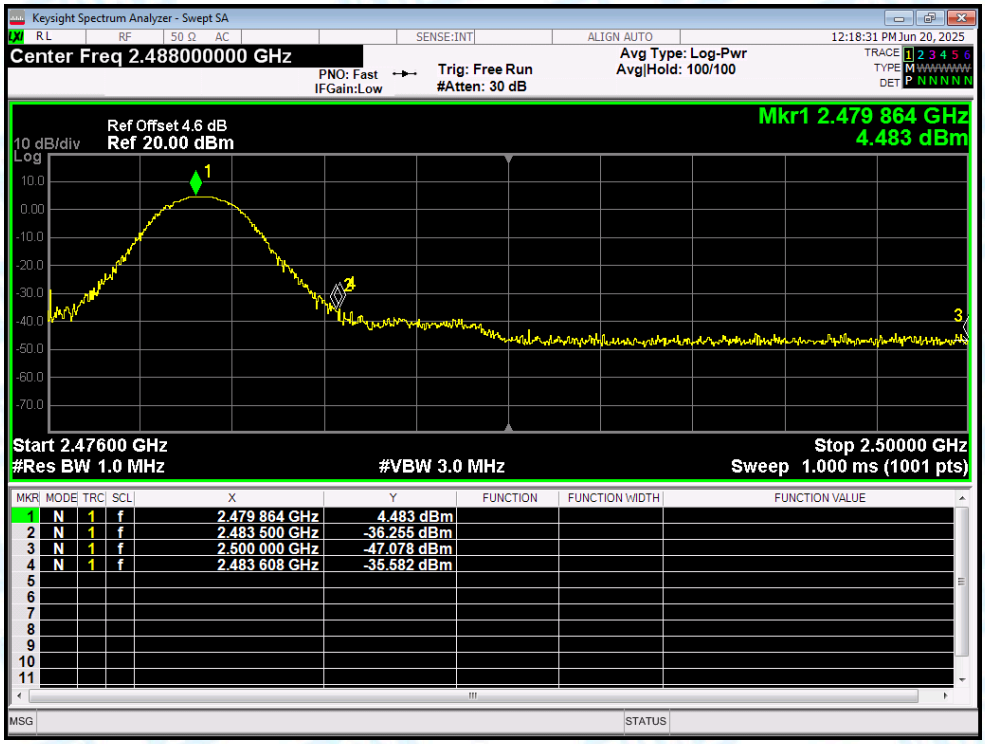
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Peak



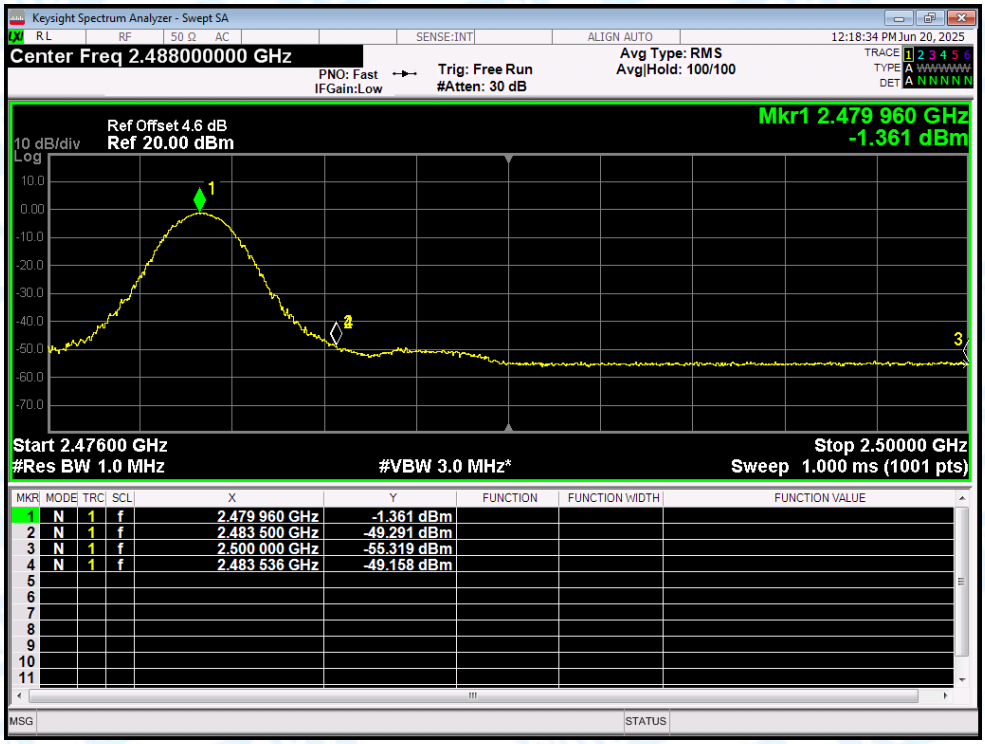
Restrict Band NVNT 2-DH1 2402MHz Ant1 No-Hopping Average



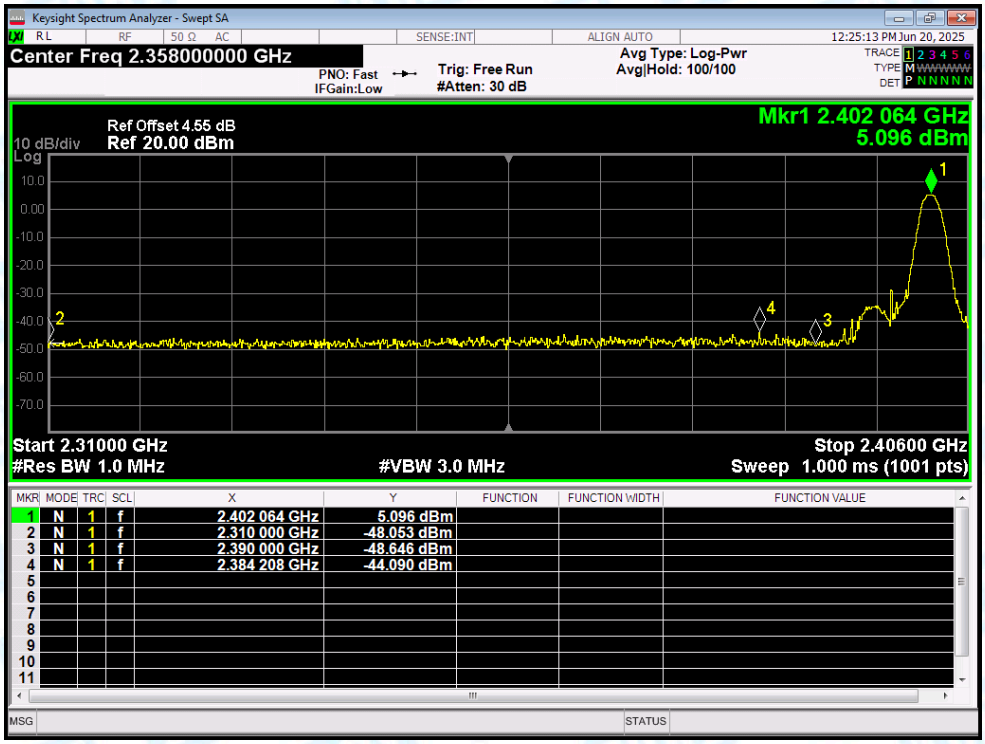
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Peak



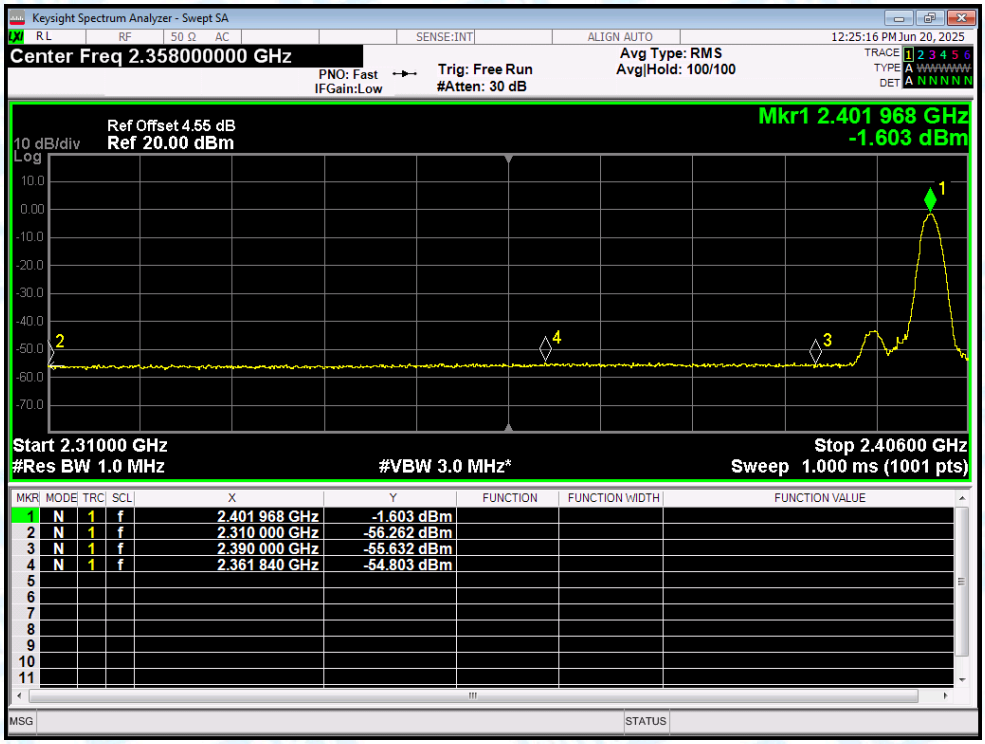
Restrict Band NVNT 2-DH1 2480MHz Ant1 No-Hopping Average



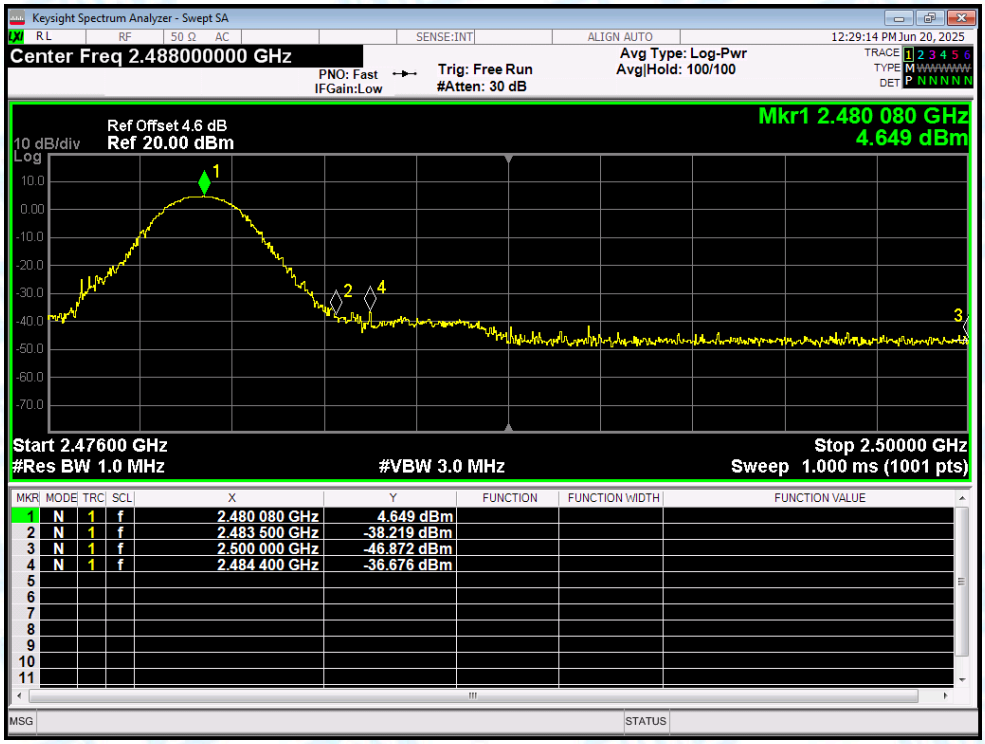
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Peak



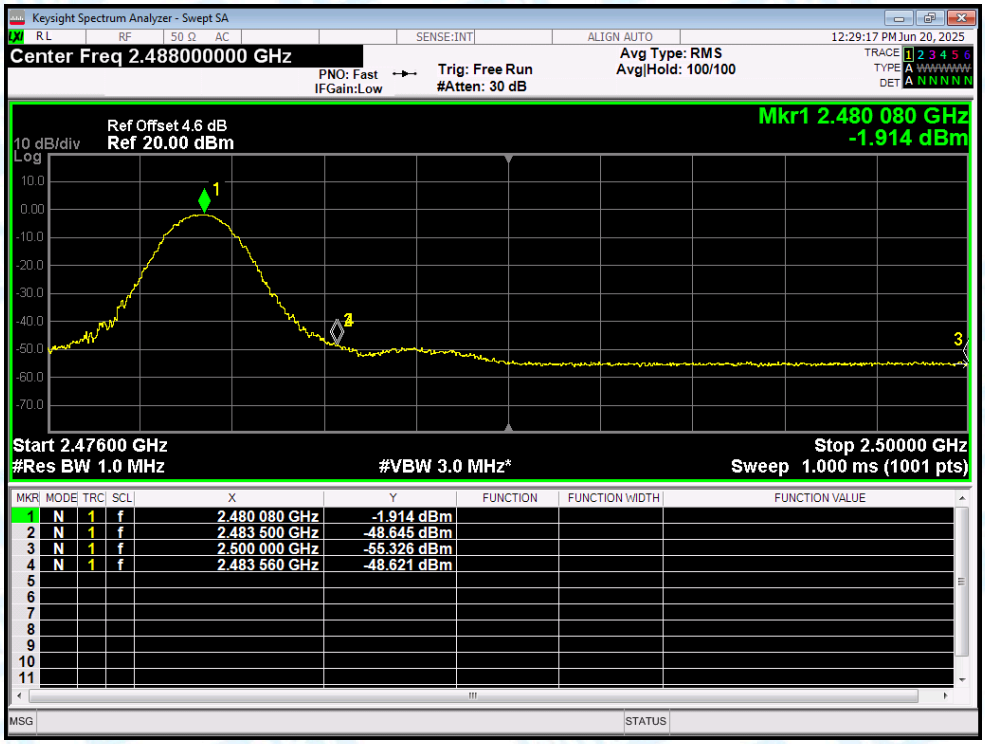
Restrict Band NVNT 3-DH1 2402MHz Ant1 No-Hopping Average



Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Peak



Restrict Band NVNT 3-DH1 2480MHz Ant1 No-Hopping Average

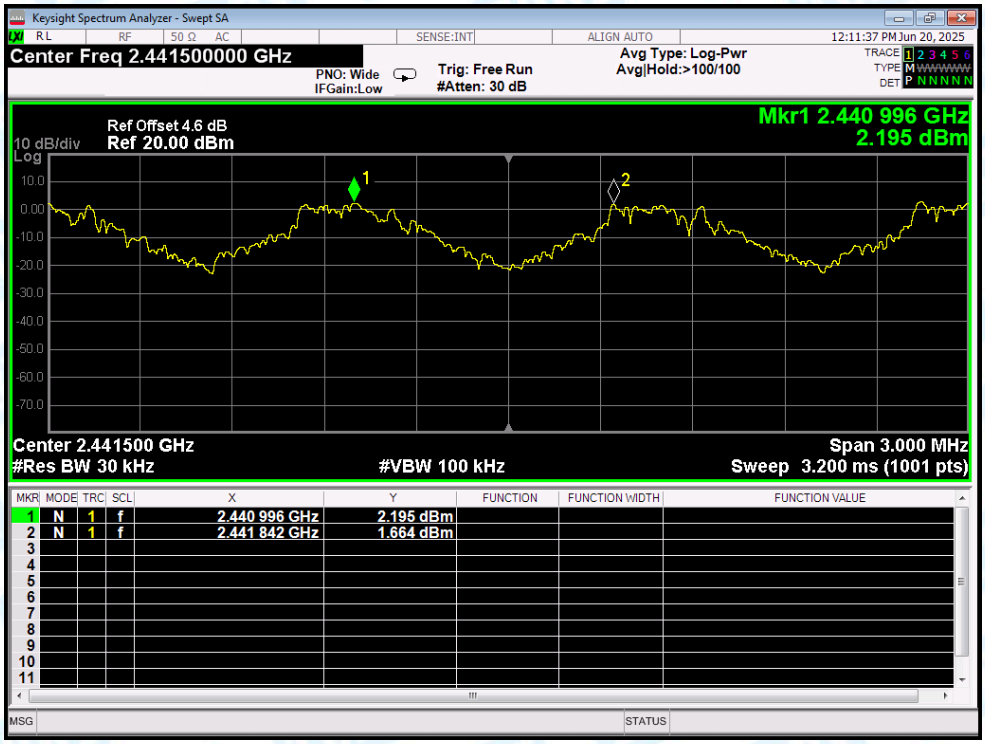


9. Carrier Frequencies Separation

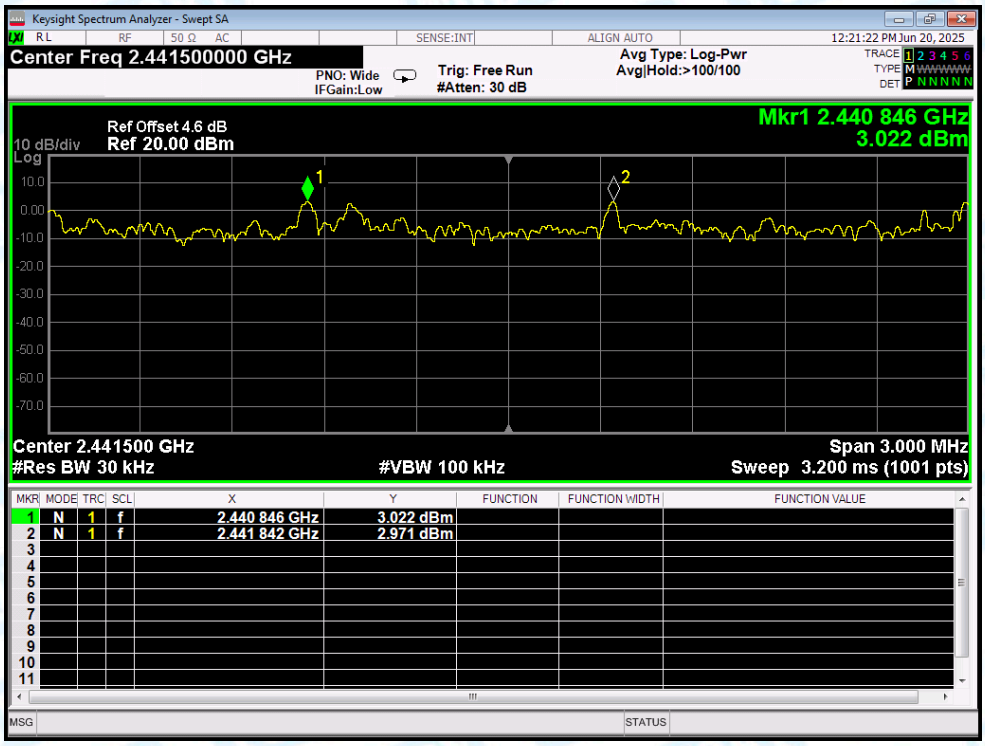
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	Ant1	2440.996	2441.842	0.846	0.62	Pass
NVNT	2-DH1	Ant1	2440.846	2441.842	0.996	0.847	Pass
NVNT	3-DH1	Ant1	2440.996	2441.995	0.999	0.827	Pass

Test Graphs

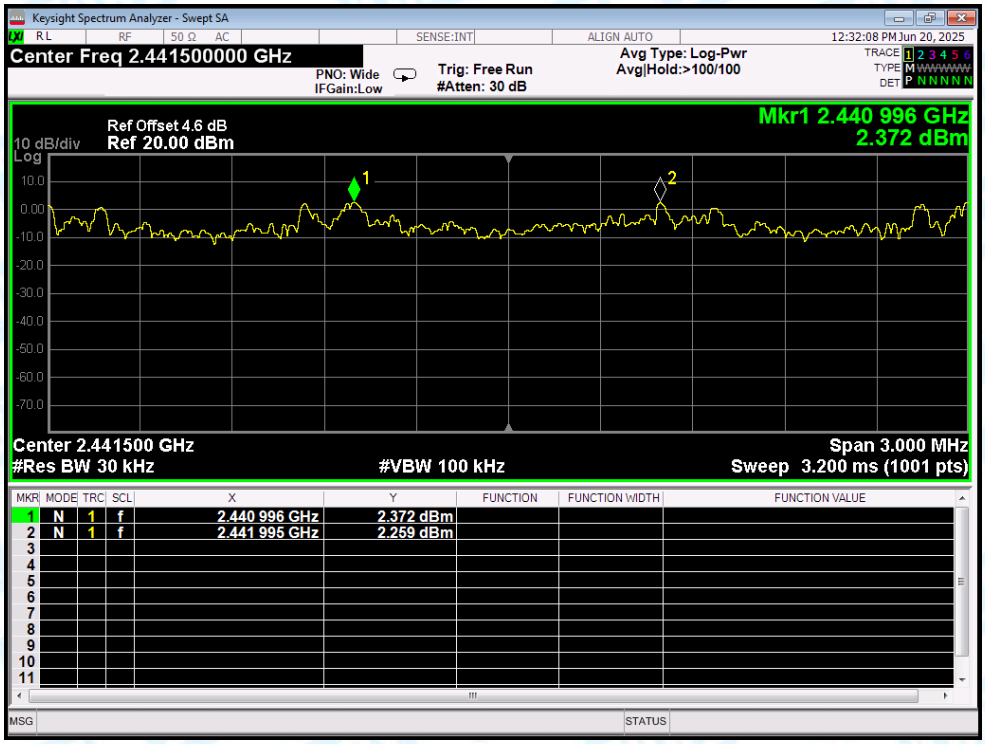
CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1



CFS NVNT 3-DH1 2441MHz Ant1

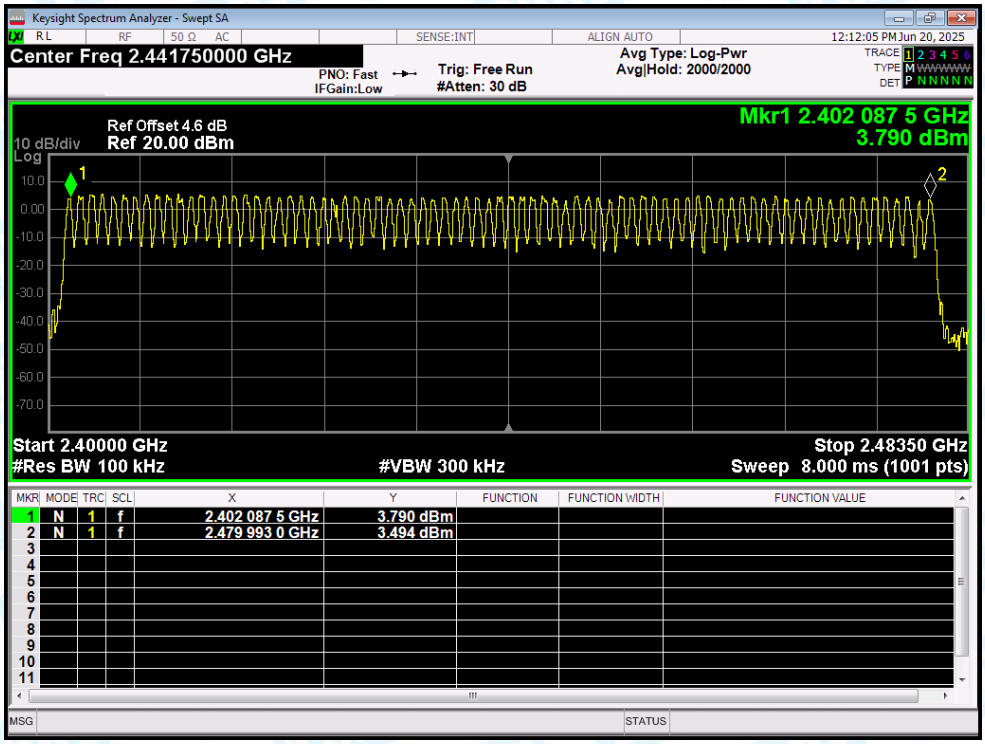


10. Number of Hopping Channel

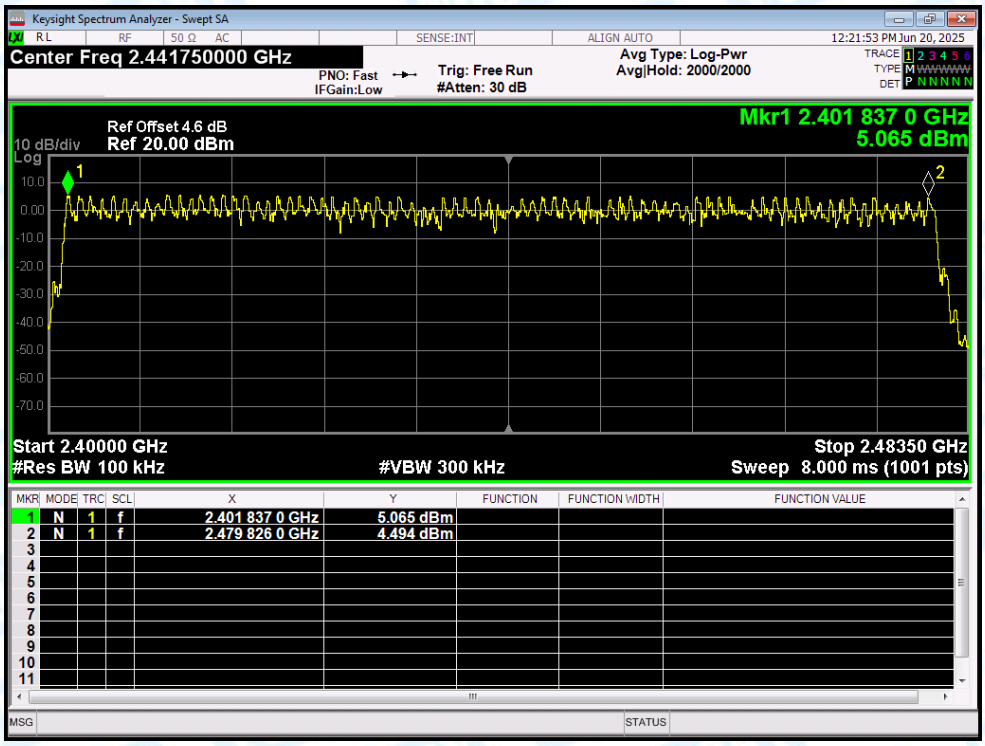
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Test Graphs

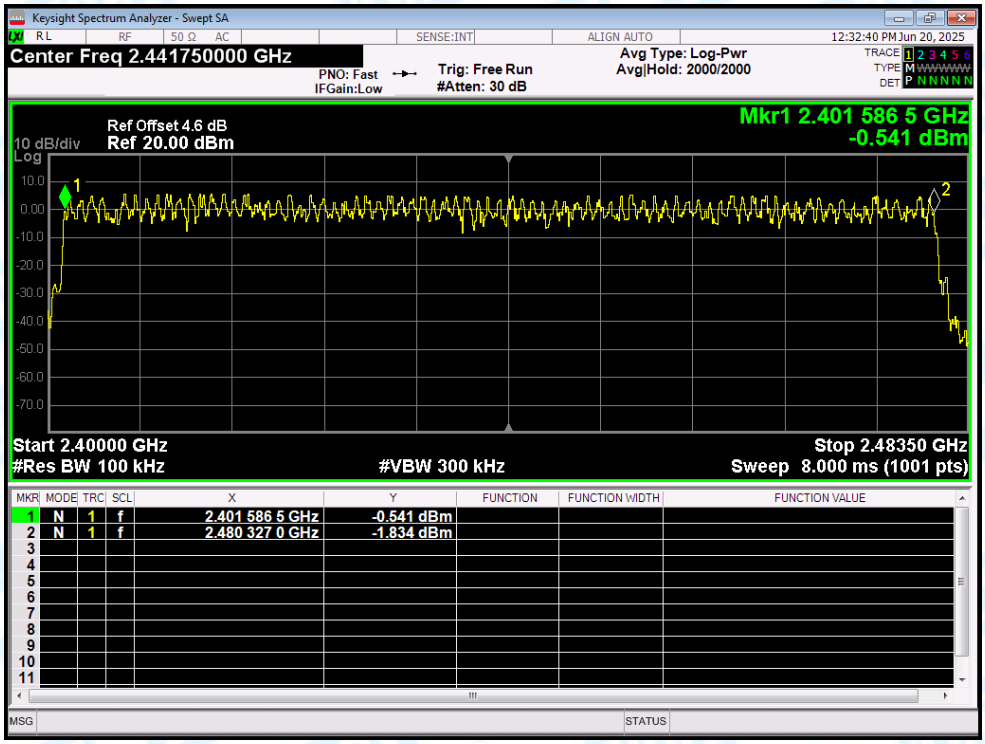
Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



Hopping No. NVNT 3-DH1 2441MHz Ant1

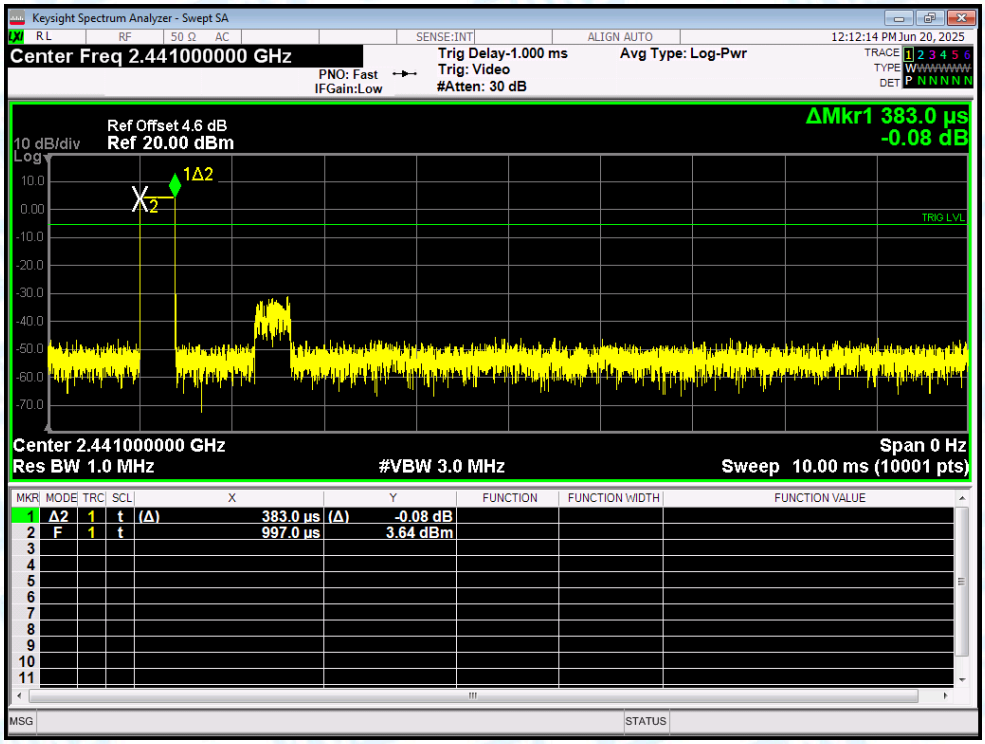


11. Dwell Time

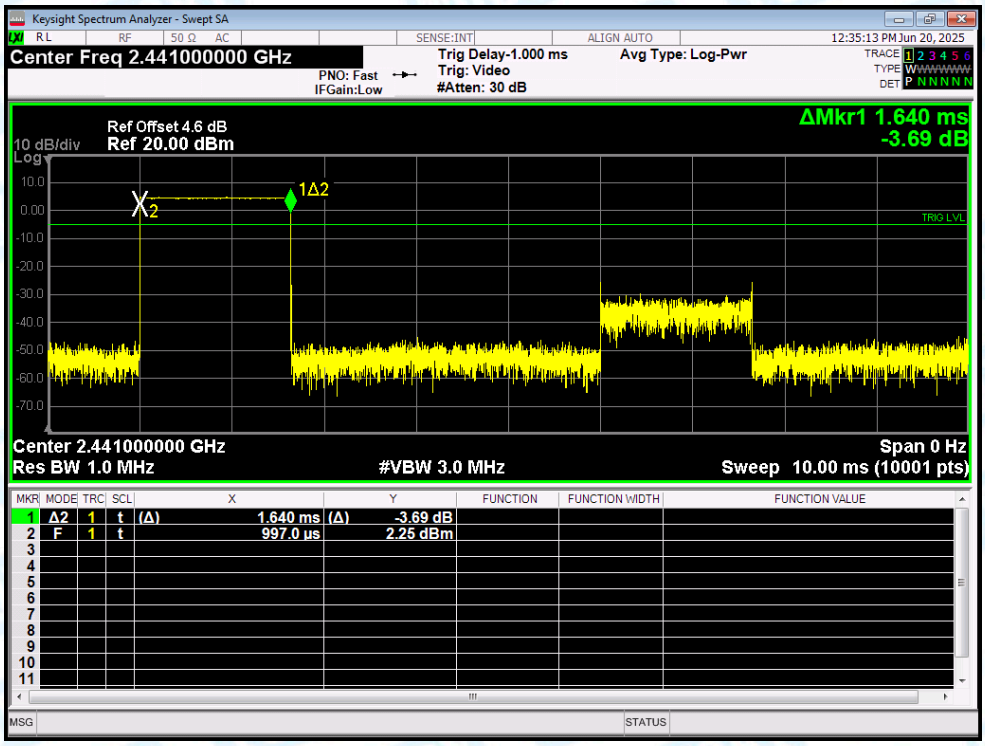
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	Ant1	0.383	122.56	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.64	262.4	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.888	308.053	31600	400	Pass
NVNT	2-DH1	2441	Ant1	0.386	123.52	31600	400	Pass
NVNT	2-DH3	2441	Ant1	1.645	263.2	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	308.48	31600	400	Pass
NVNT	3-DH1	2441	Ant1	0.393	125.76	31600	400	Pass
NVNT	3-DH3	2441	Ant1	1.644	263.04	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.895	308.8	31600	400	Pass

Test Graphs

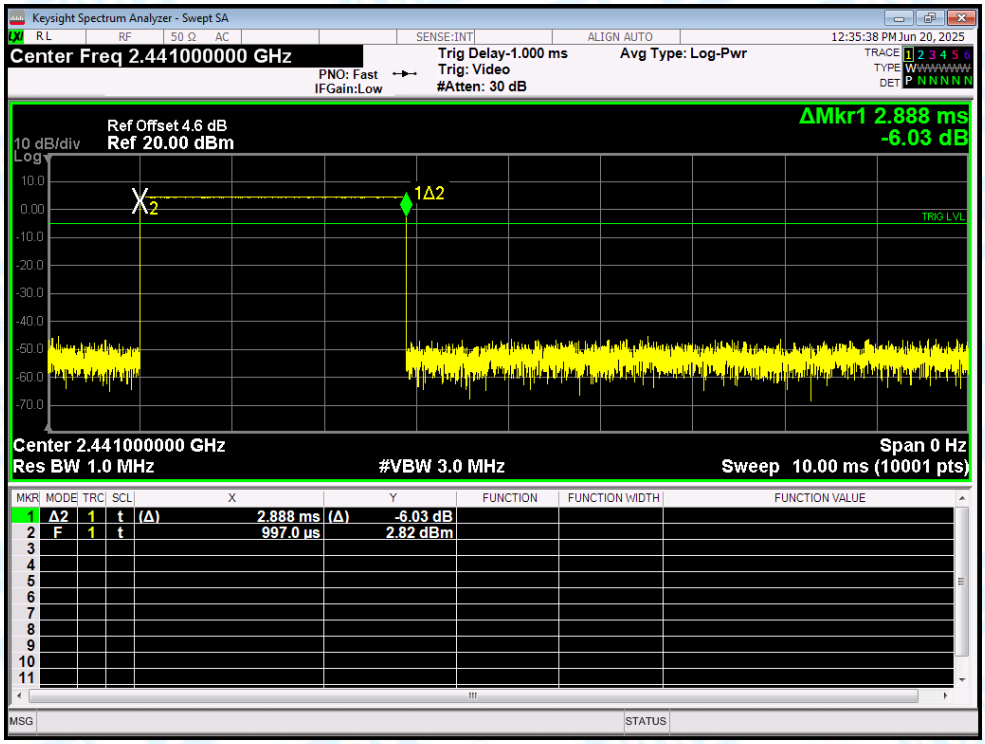
Dwell NVNT 1-DH1 2441MHz Ant1



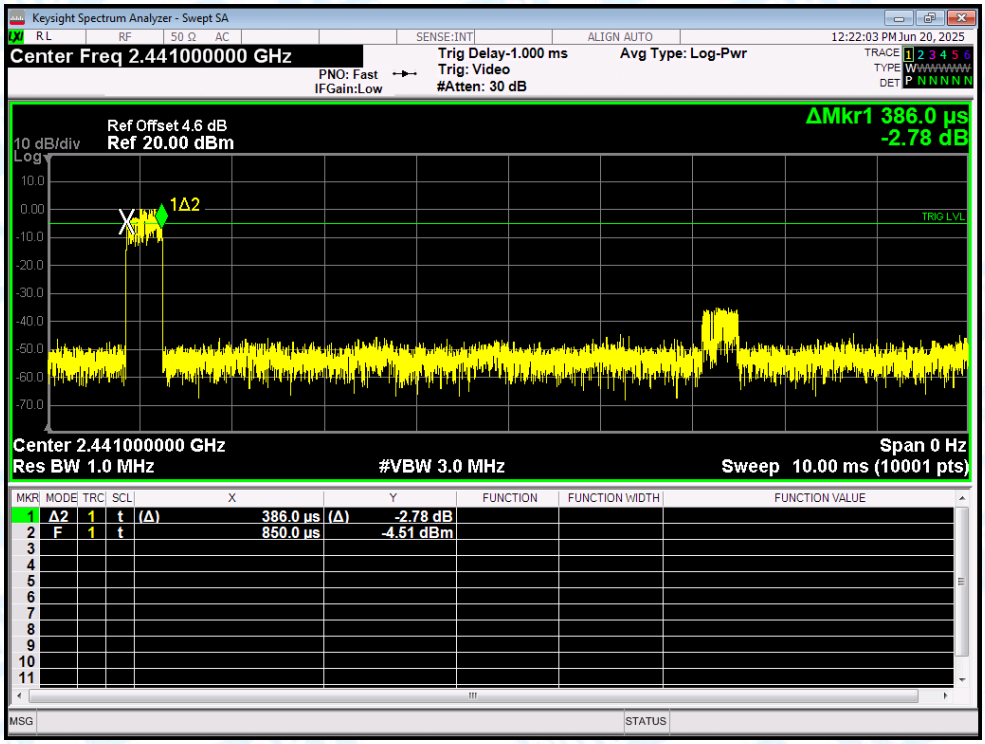
Dwell NVNT 1-DH3 2441MHz Ant1



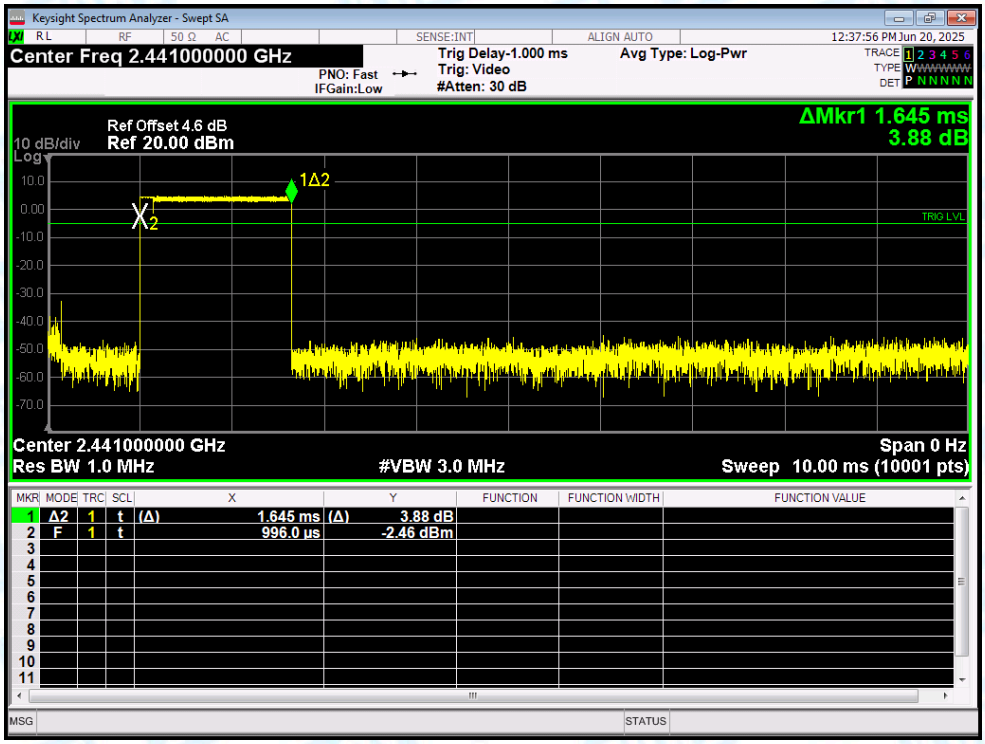
Dwell NVNT 1-DH5 2441MHz Ant1



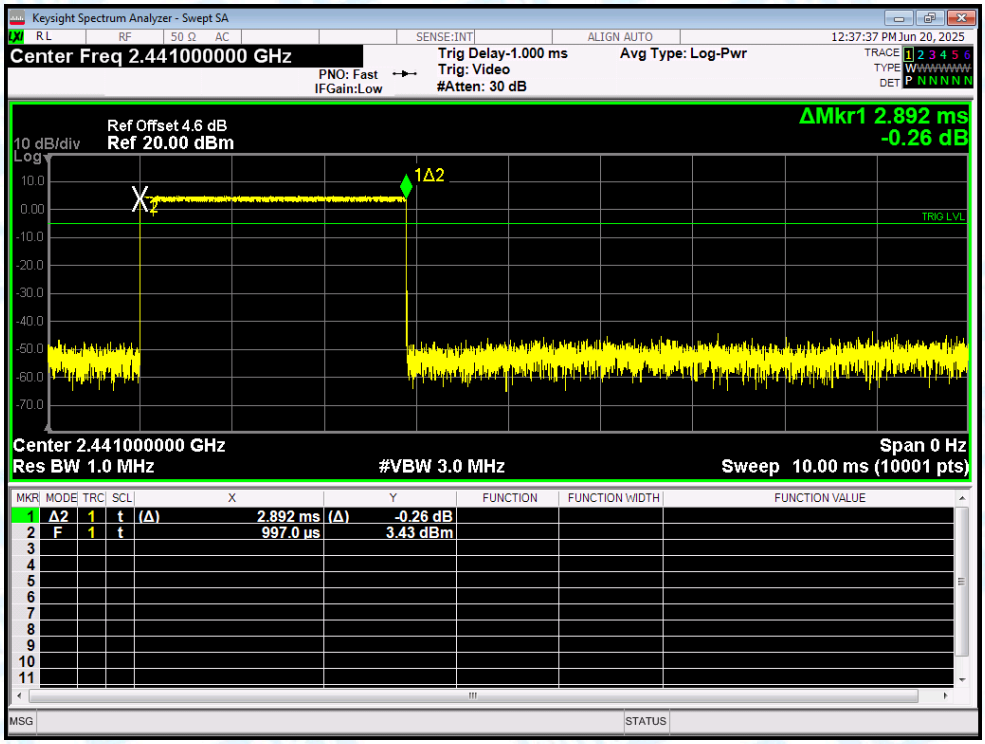
Dwell NVNT 2-DH1 2441MHz Ant1



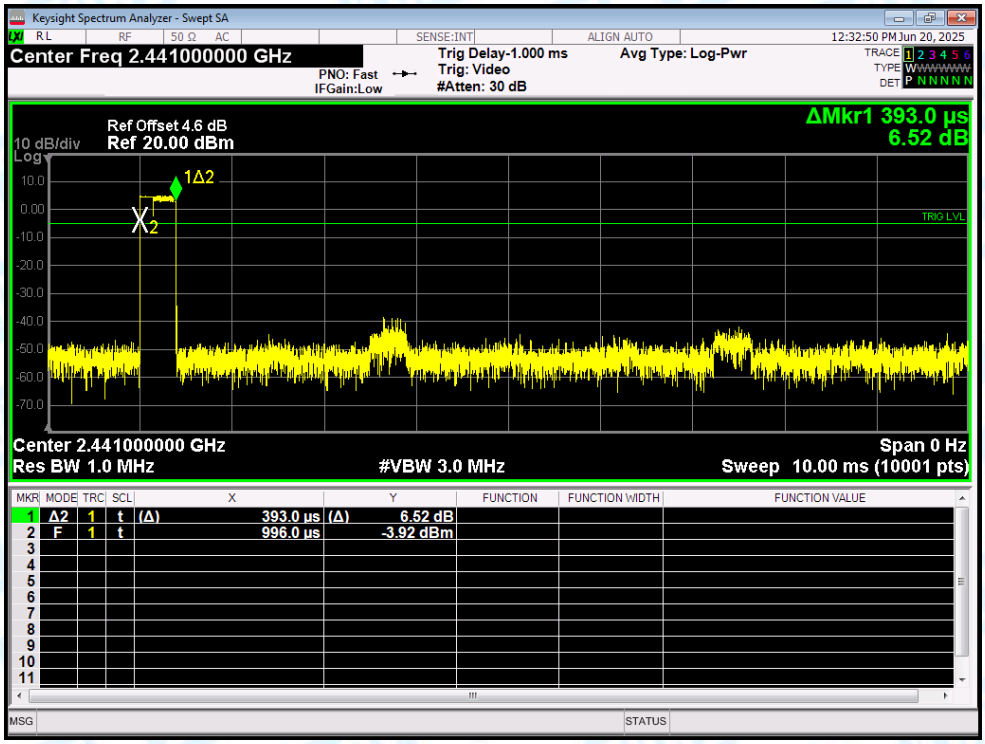
Dwell NVNT 2-DH3 2441MHz Ant1



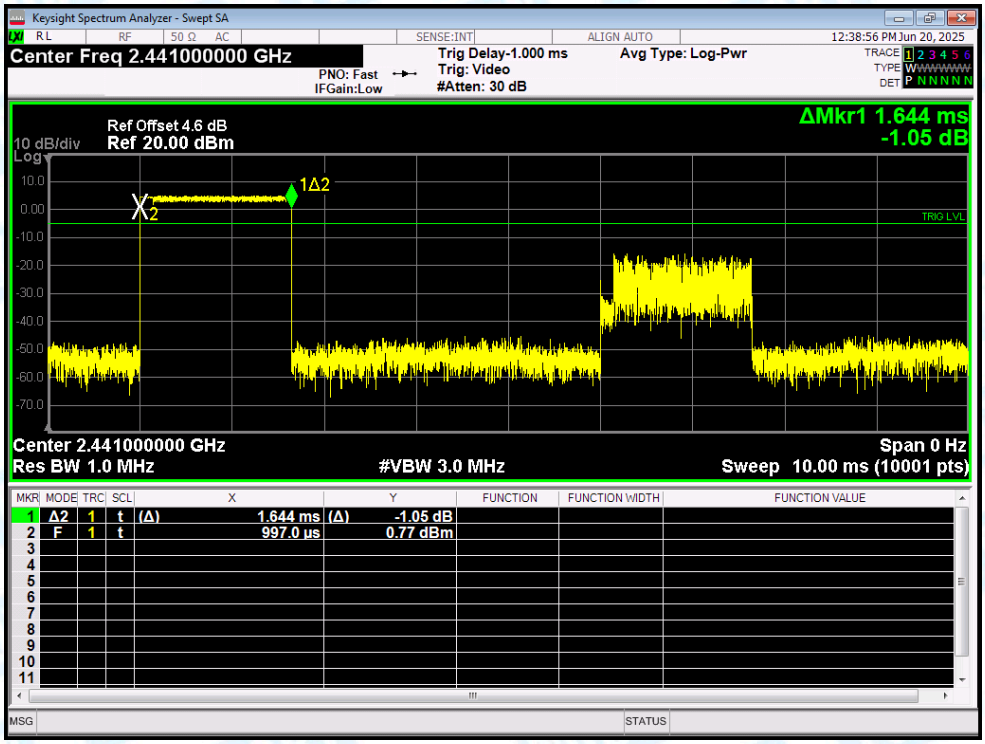
Dwell NVNT 2-DH5 2441MHz Ant1



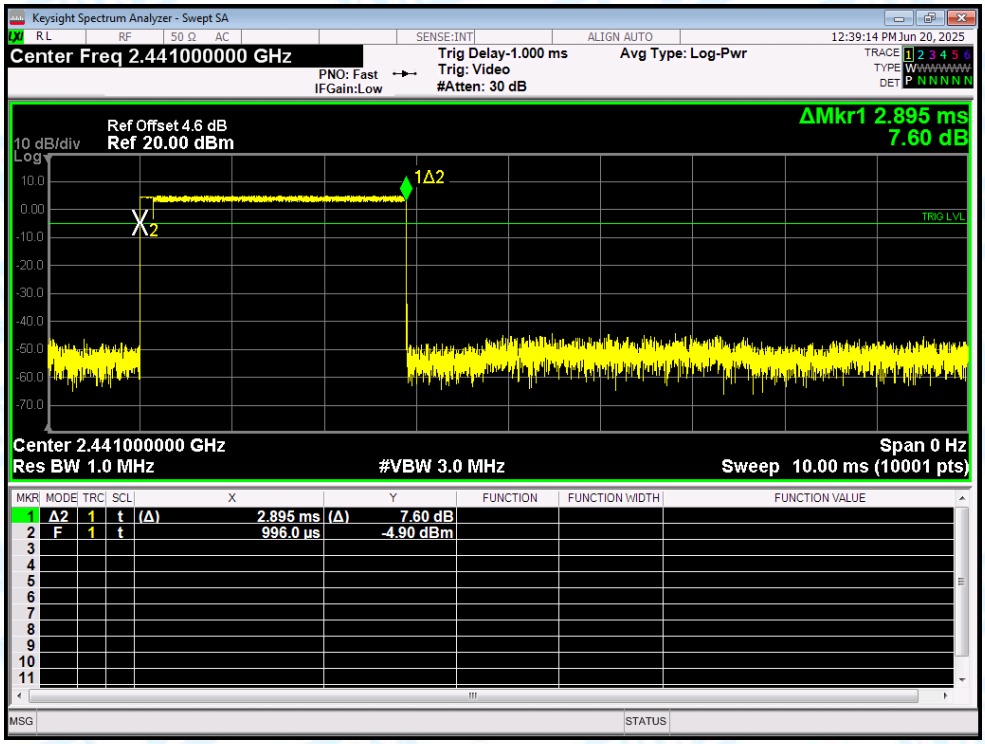
Dwell NVNT 3-DH1 2441MHz Ant1



Dwell NVNT 3-DH3 2441MHz Ant1



Dwell NVNT 3-DH5 2441MHz Ant1



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