



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: PROFESSIONAL SPEAKER

Test Model: MPD1020XB

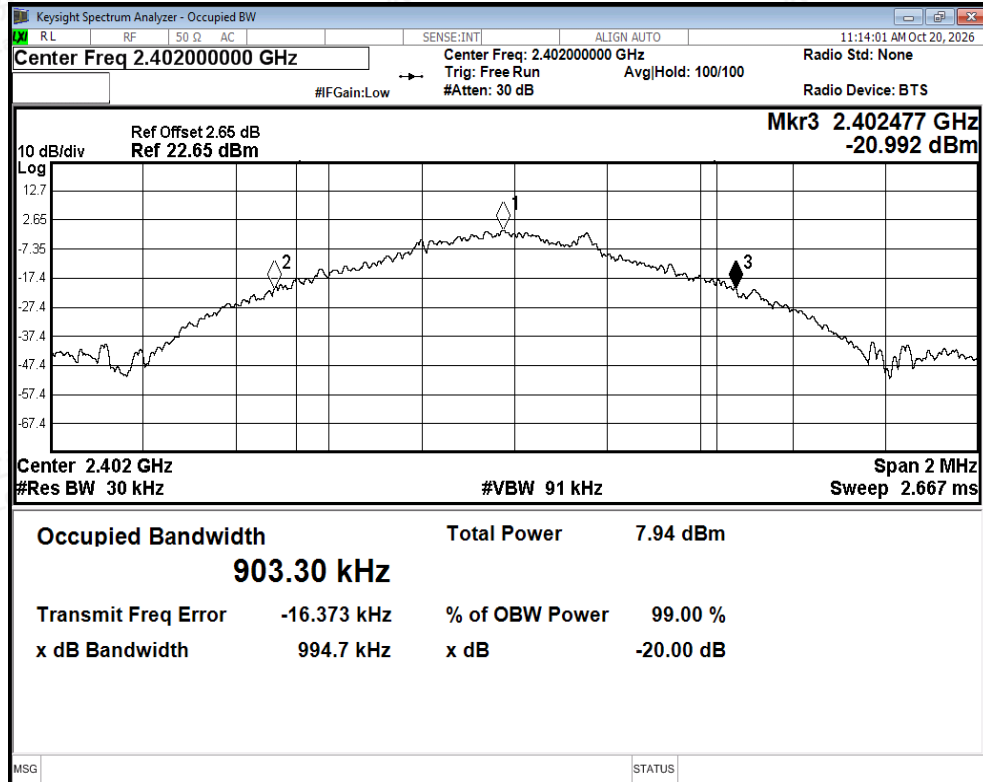
Environmental Conditions

Temperature:	24.2°C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry Chu
Supervised by:	Can Kun

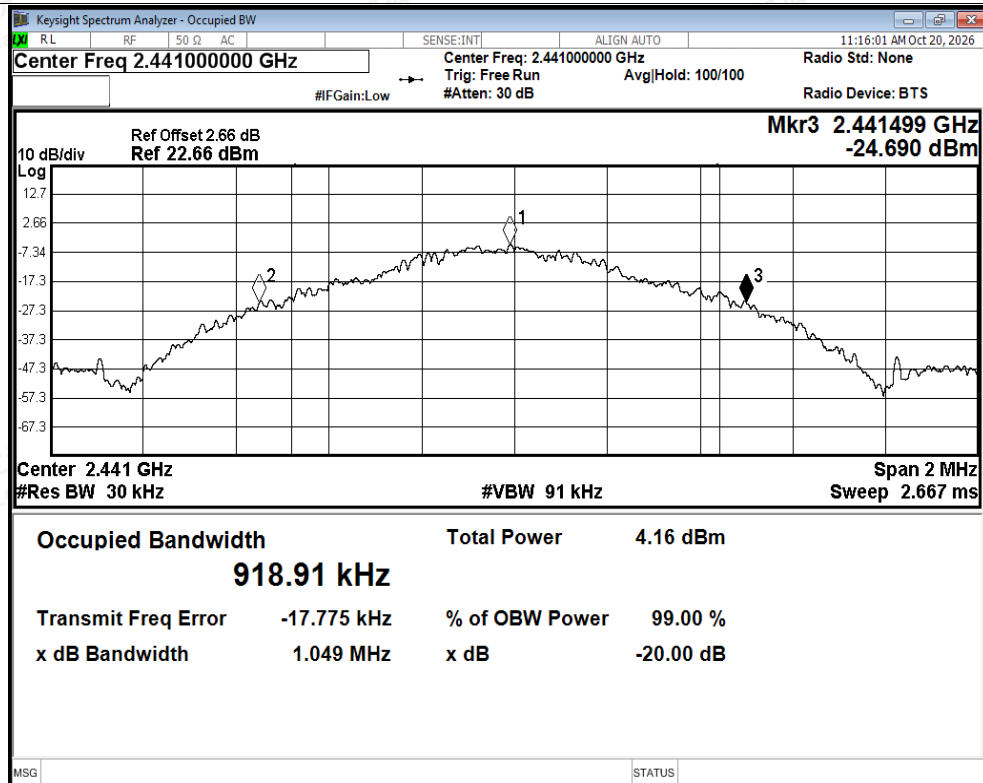


A.1 -20dB Bandwidth

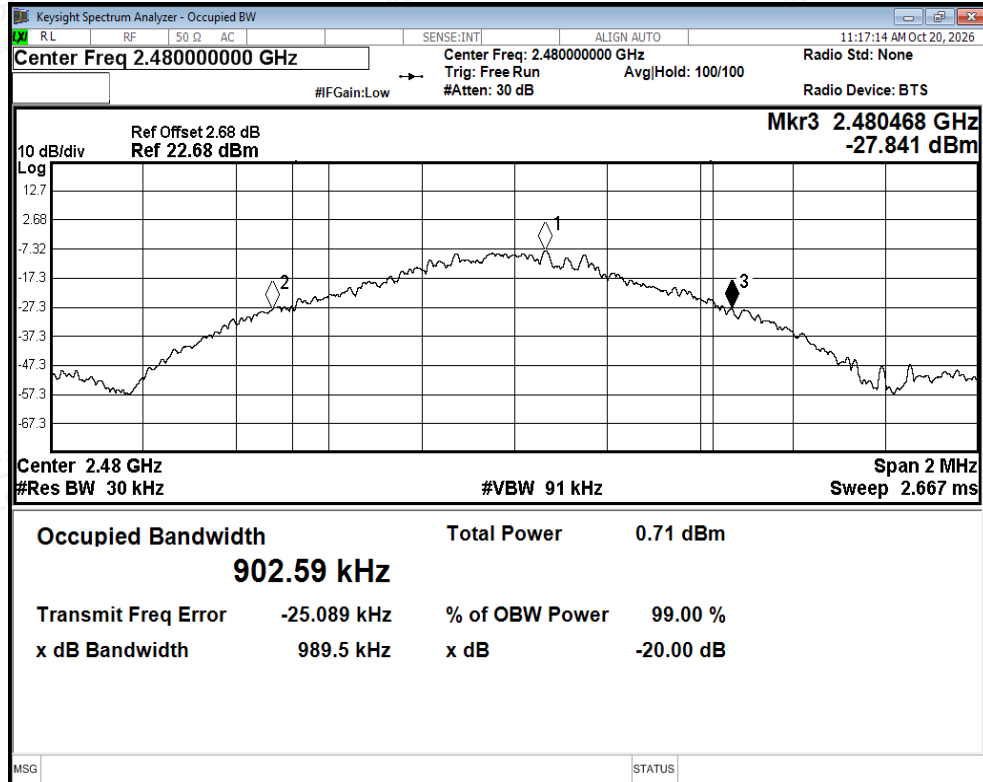
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.9947	---	Pass
NVNT	1-DH5	2441	Ant1	1.049	---	Pass
NVNT	1-DH5	2480	Ant1	0.9895	---	Pass
NVNT	2-DH5	2402	Ant1	1.288	---	Pass
NVNT	2-DH5	2441	Ant1	1.254	---	Pass
NVNT	2-DH5	2480	Ant1	1.296	---	Pass
NVNT	3-DH5	2402	Ant1	1.282	---	Pass
NVNT	3-DH5	2441	Ant1	1.281	---	Pass
NVNT	3-DH5	2480	Ant1	1.288	---	Pass



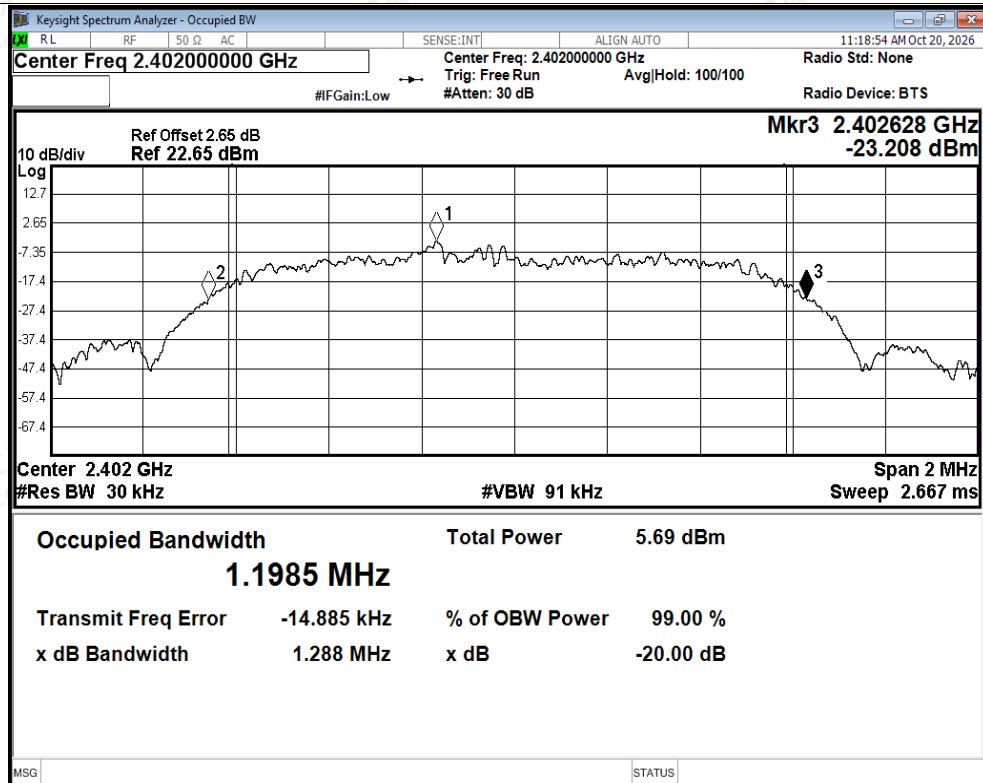
-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



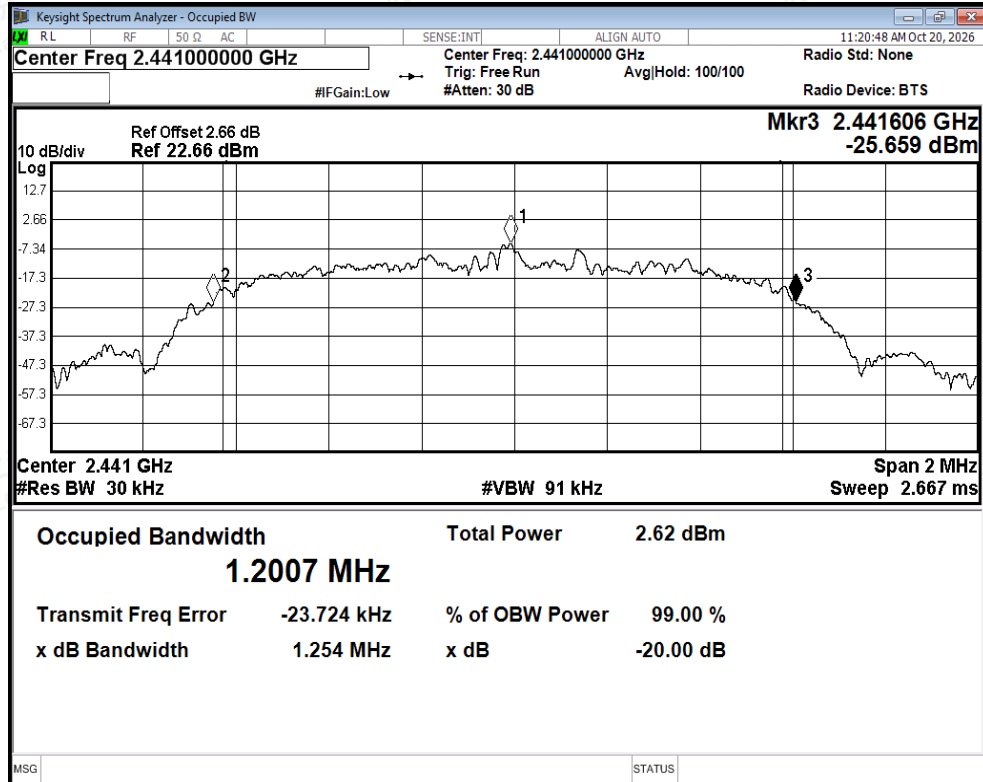
-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



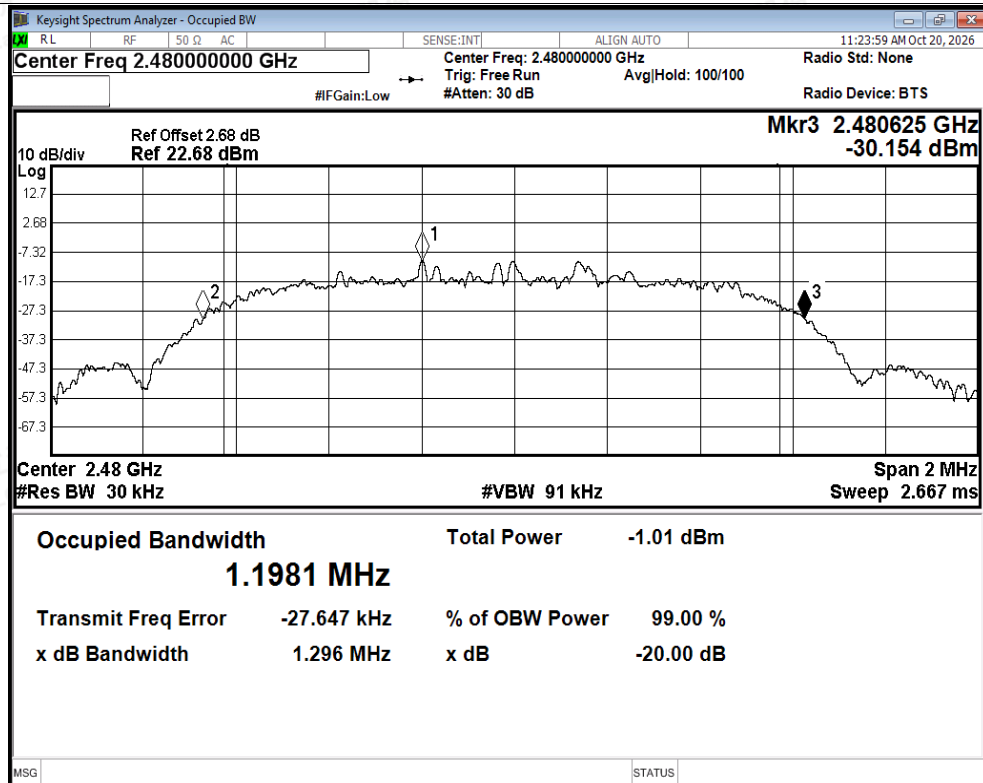
-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



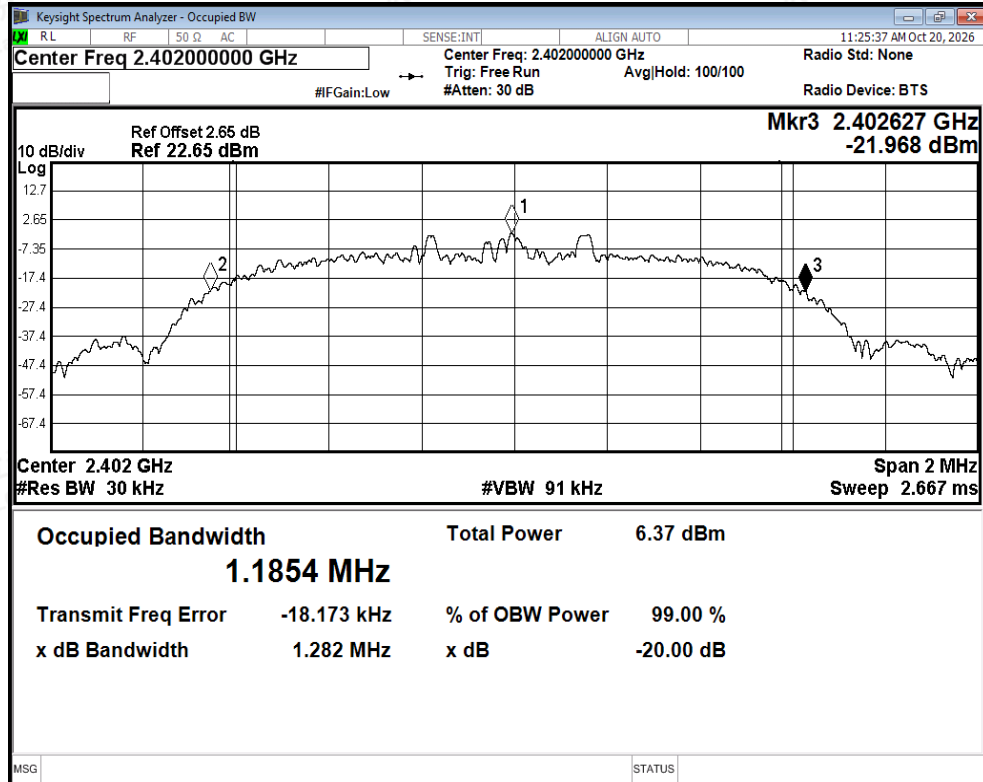
-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



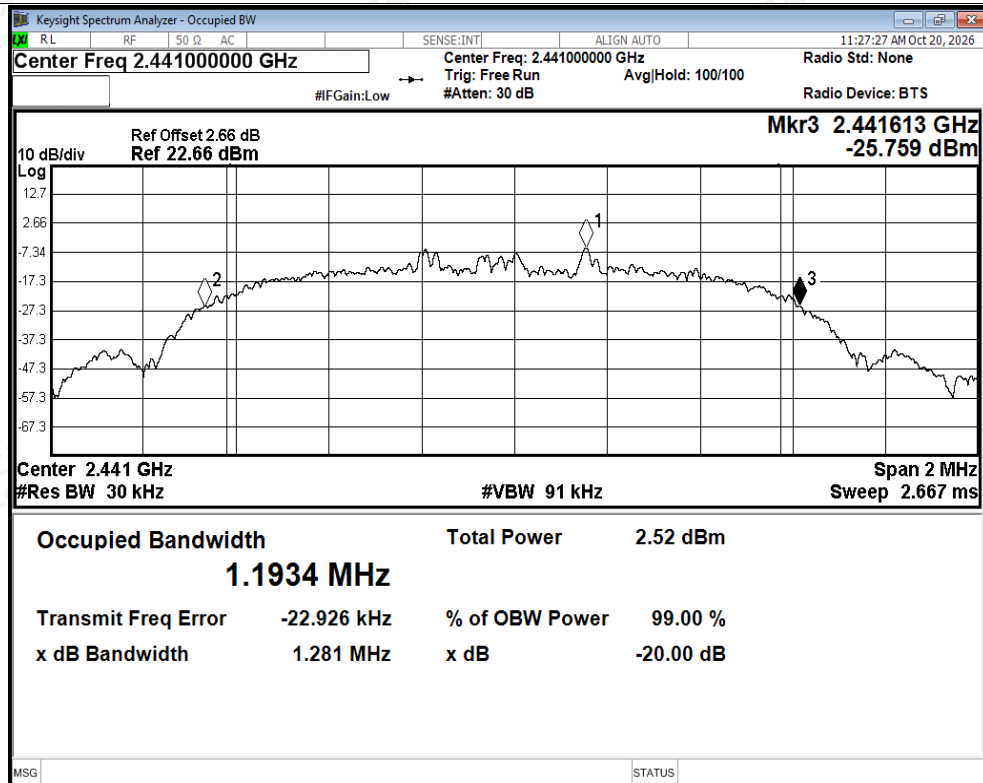
-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



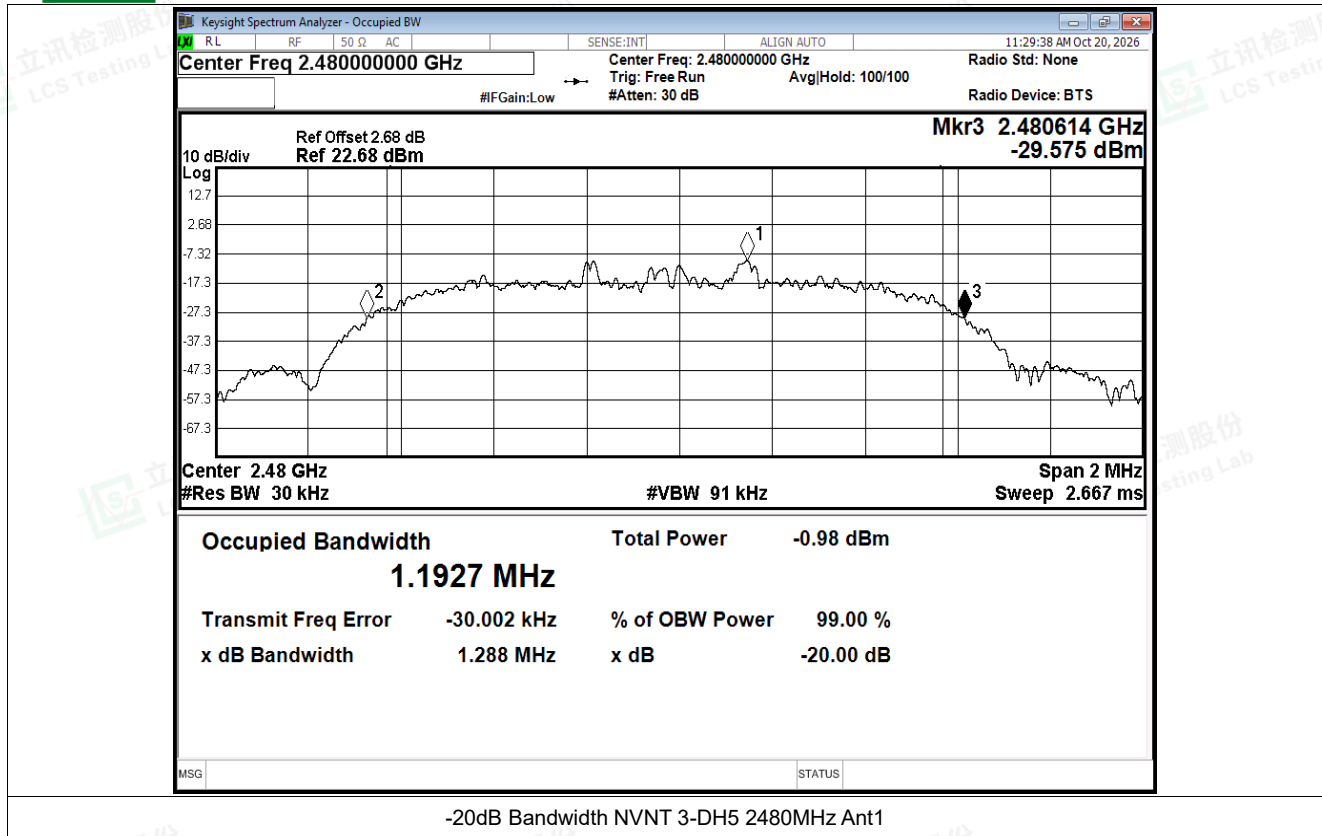
-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



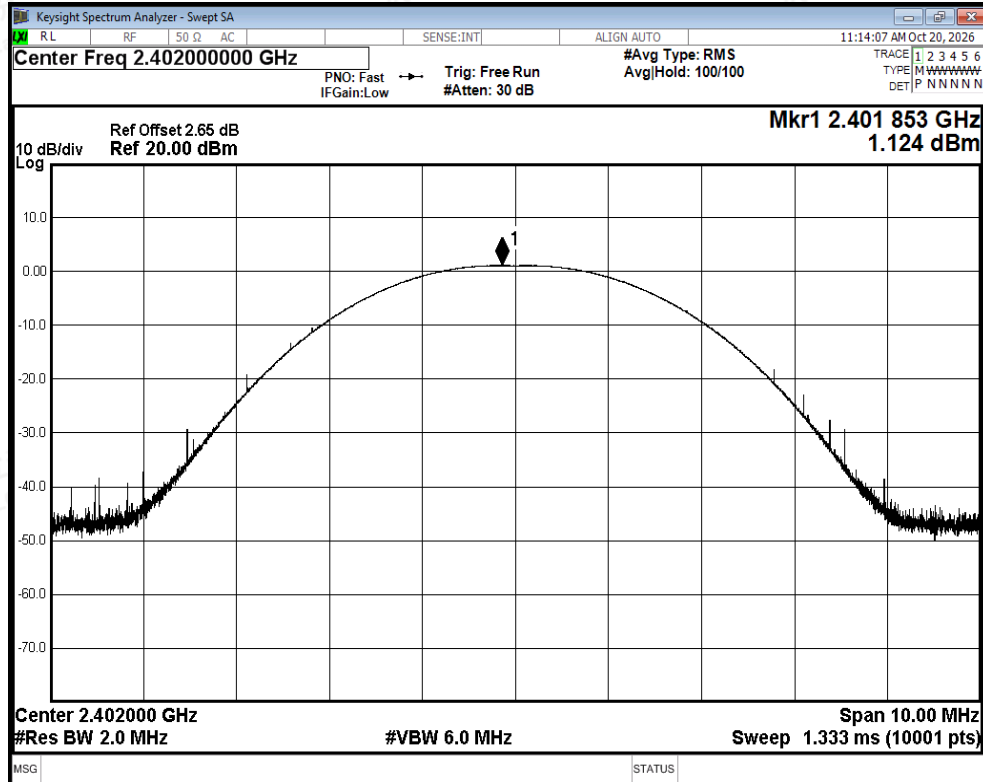
-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



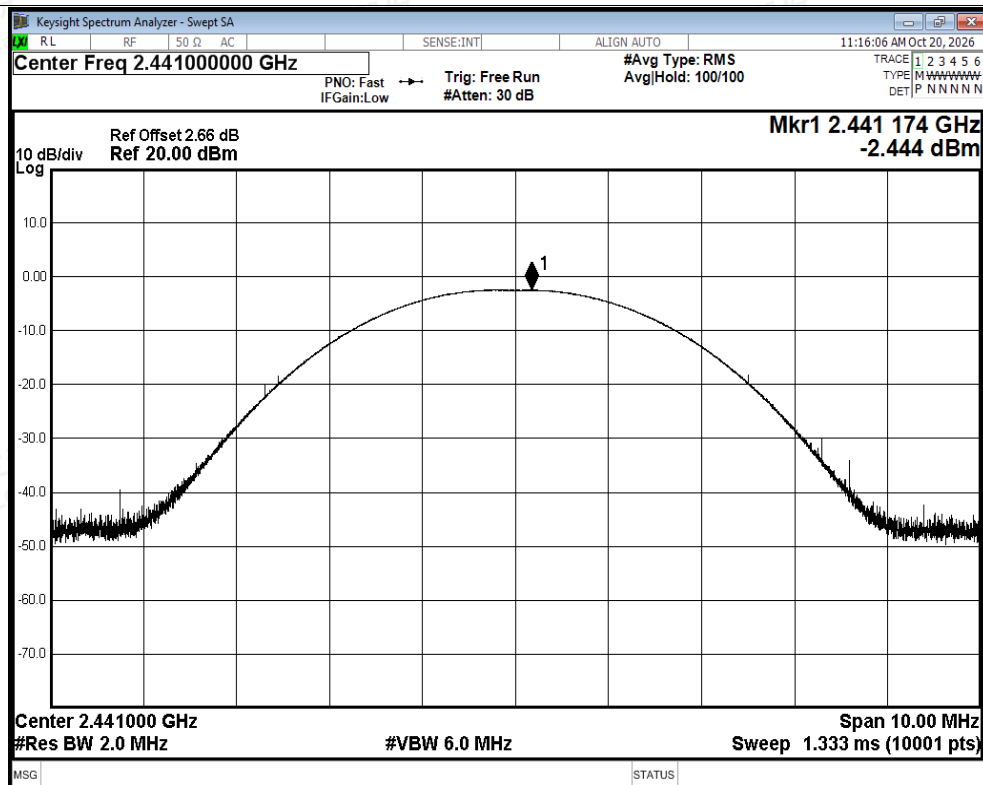


A.2 Maximum Peak Conducted Output Power

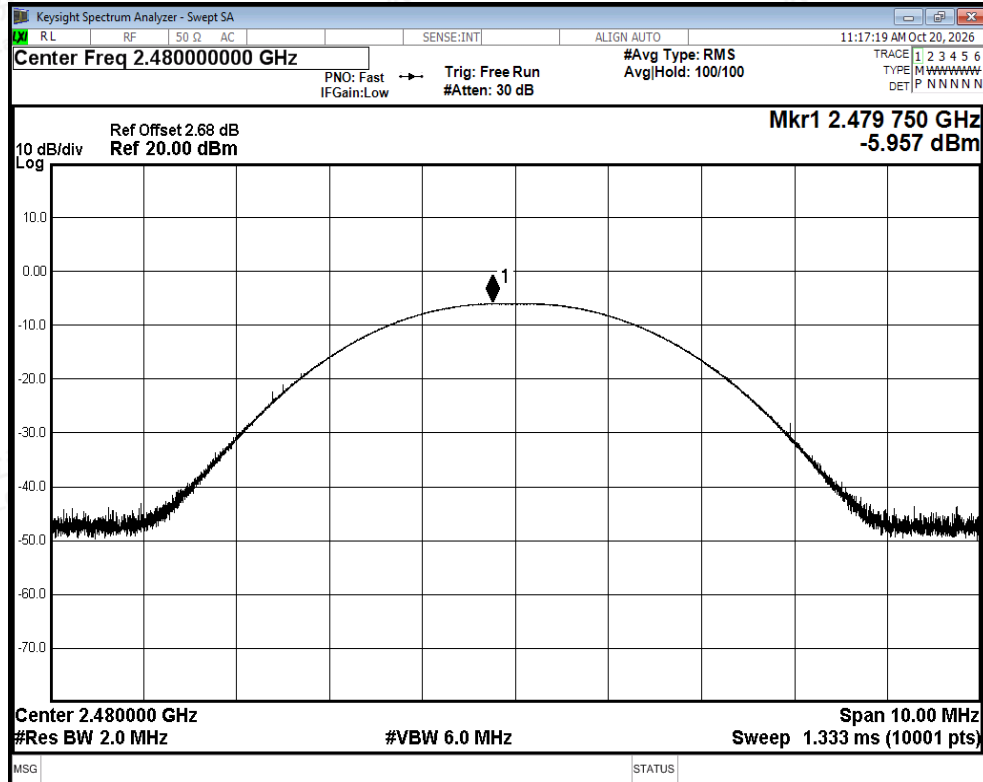
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit Conducted(dBm)	Verdict
NVNT	1-DH5	2402	Ant1	1.12	30	Pass
NVNT	1-DH5	2441	Ant1	-2.44	30	Pass
NVNT	1-DH5	2480	Ant1	-5.96	30	Pass
NVNT	2-DH5	2402	Ant1	1.1	30	Pass
NVNT	2-DH5	2441	Ant1	-2.48	30	Pass
NVNT	2-DH5	2480	Ant1	-6	30	Pass
NVNT	3-DH5	2402	Ant1	1.03	30	Pass
NVNT	3-DH5	2441	Ant1	0.16	30	Pass
NVNT	3-DH5	2480	Ant1	-6.02	30	Pass



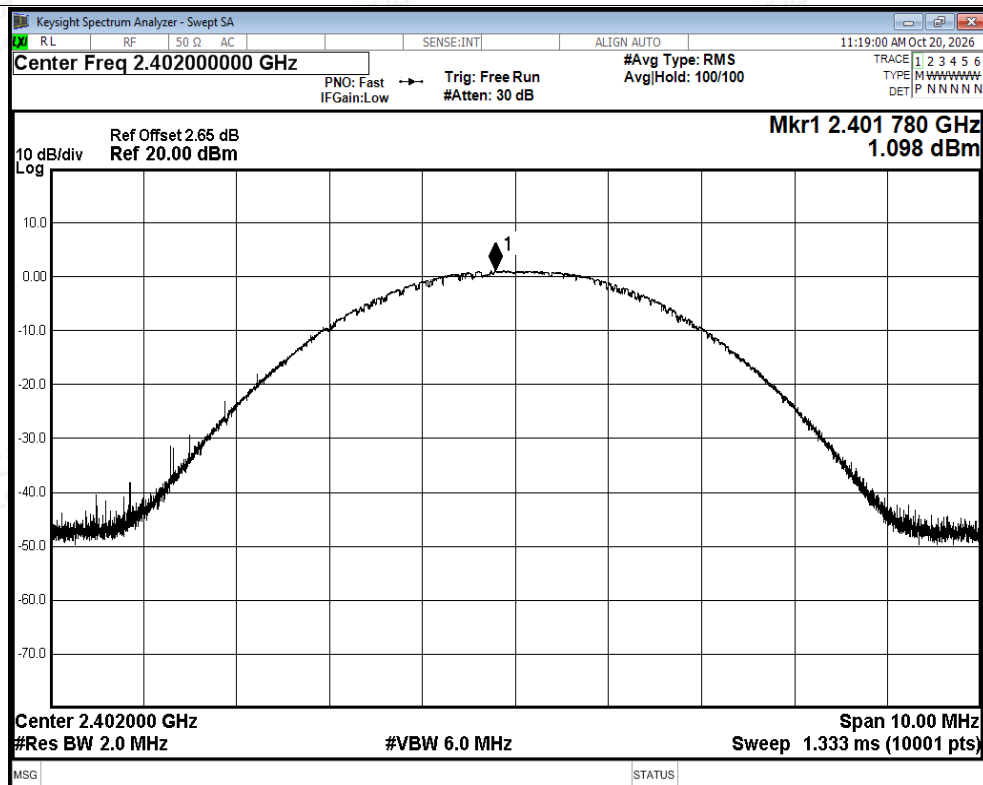
Peak Power NVNT 1-DH5 2402MHz Ant1



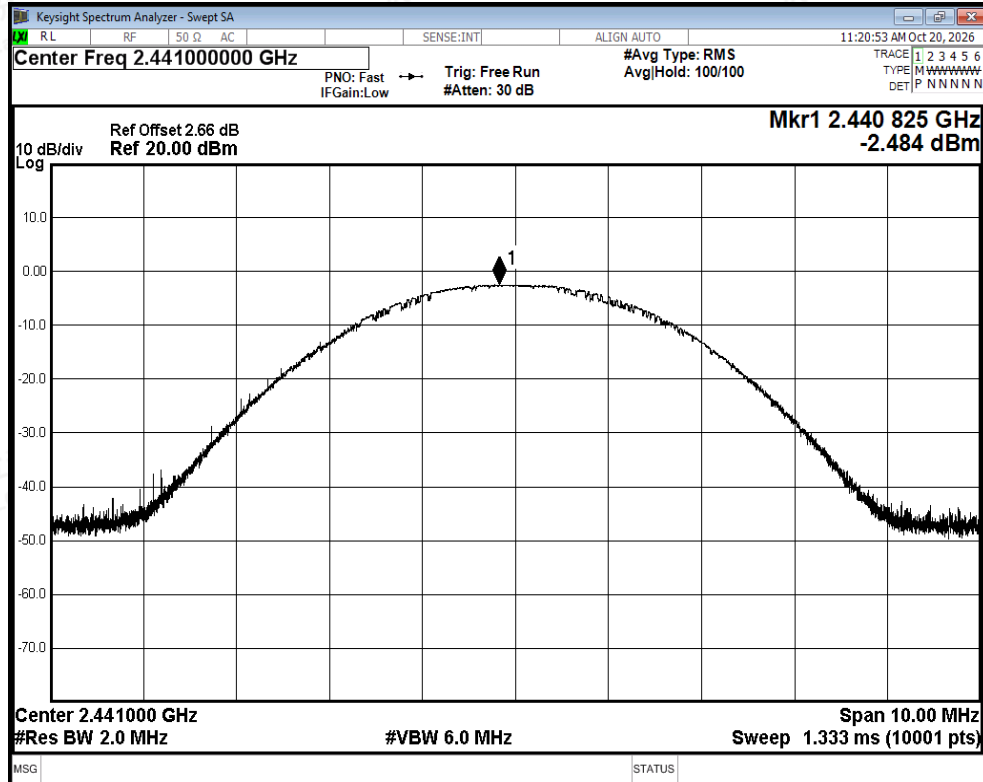
Peak Power NVNT 1-DH5 2441MHz Ant1



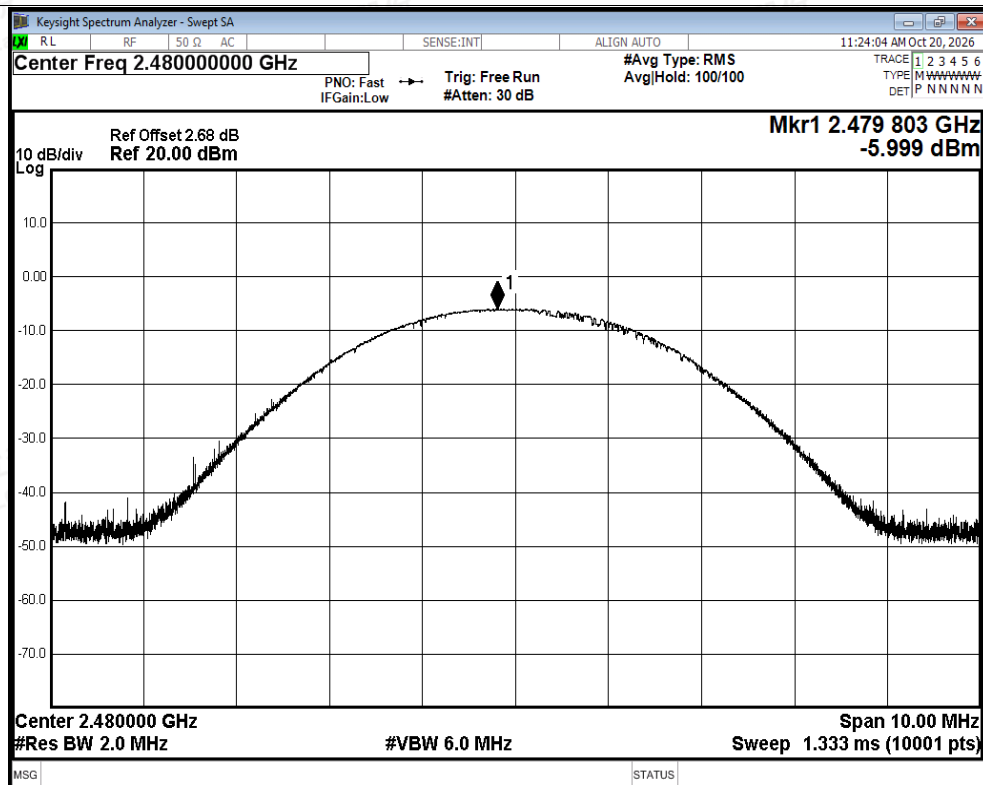
Peak Power NVNT 1-DH5 2480MHz Ant1



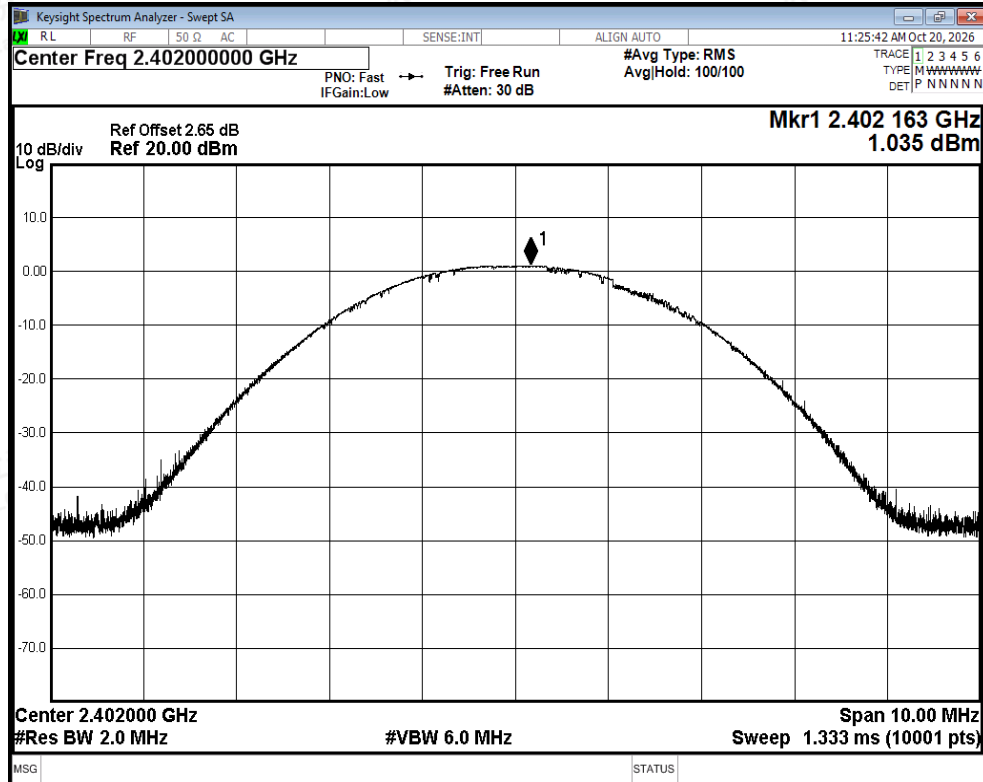
Peak Power NVNT 2-DH5 2402MHz Ant1



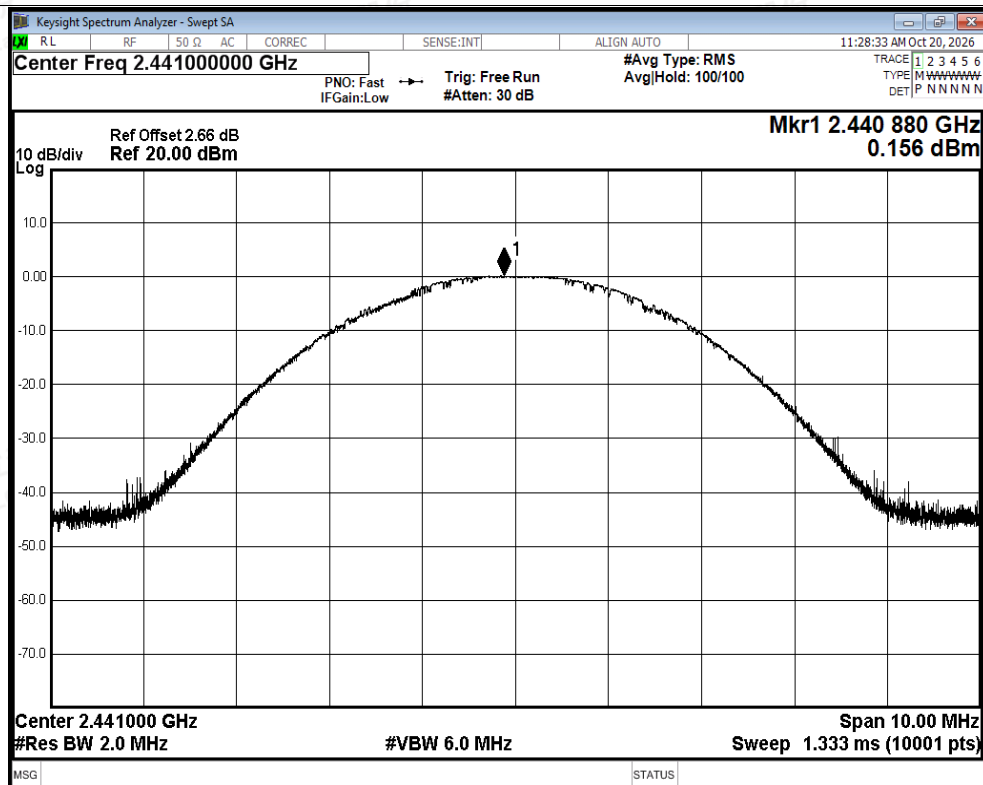
Peak Power NVNT 2-DH5 2441MHz Ant1



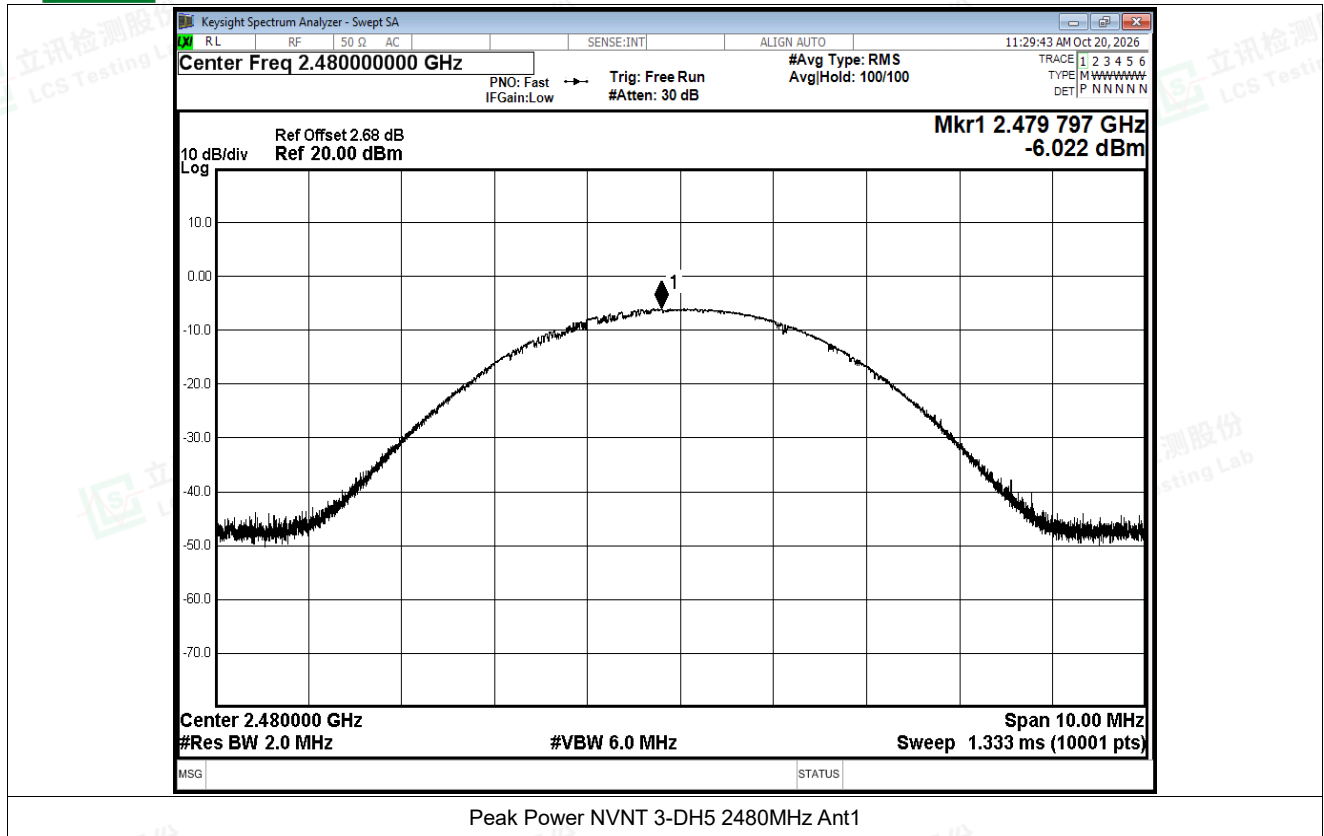
Peak Power NVNT 2-DH5 2480MHz Ant1



Peak Power NVNT 3-DH5 2402MHz Ant1



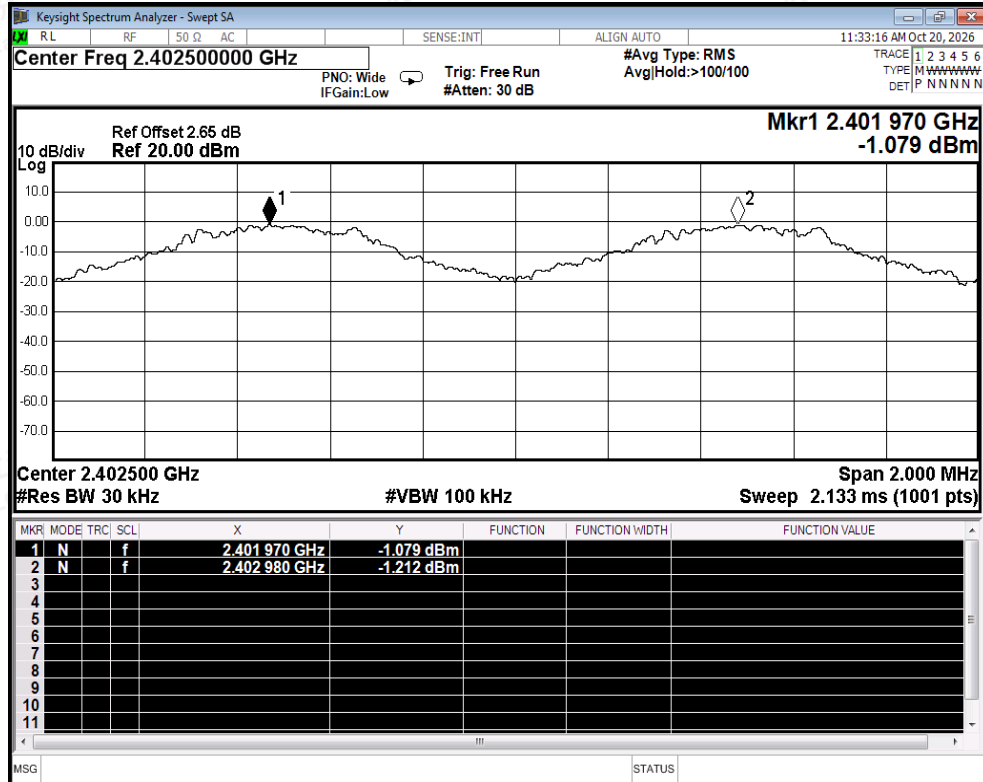
Peak Power NVNT 3-DH5 2441MHz Ant1



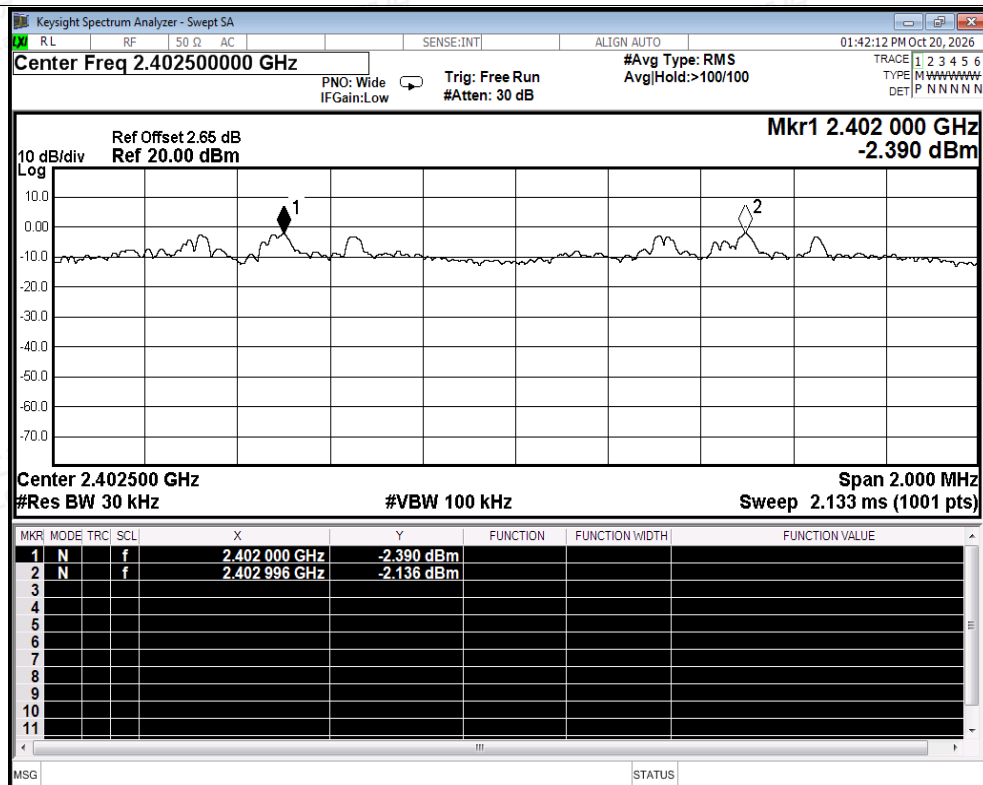


A.3 Carrier Frequencies Separation

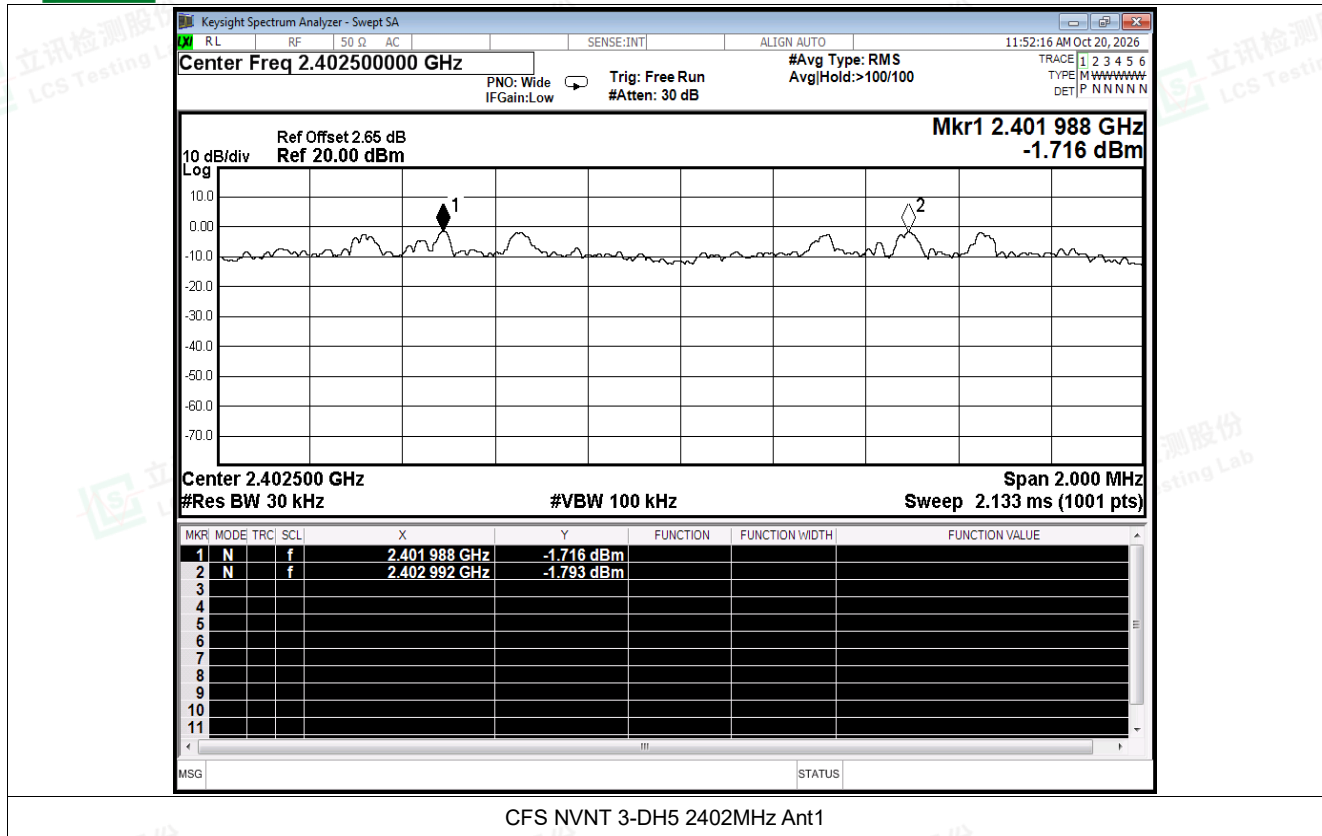
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2401.97	2402.98	1.01	0.699	Pass
NVNT	2-DH5	Ant1	2402	2402.996	0.996	0.864	Pass
NVNT	3-DH5	Ant1	2401.988	2402.992	1.004	0.859	Pass



CFS NVNT 1-DH5 2402MHz Ant1



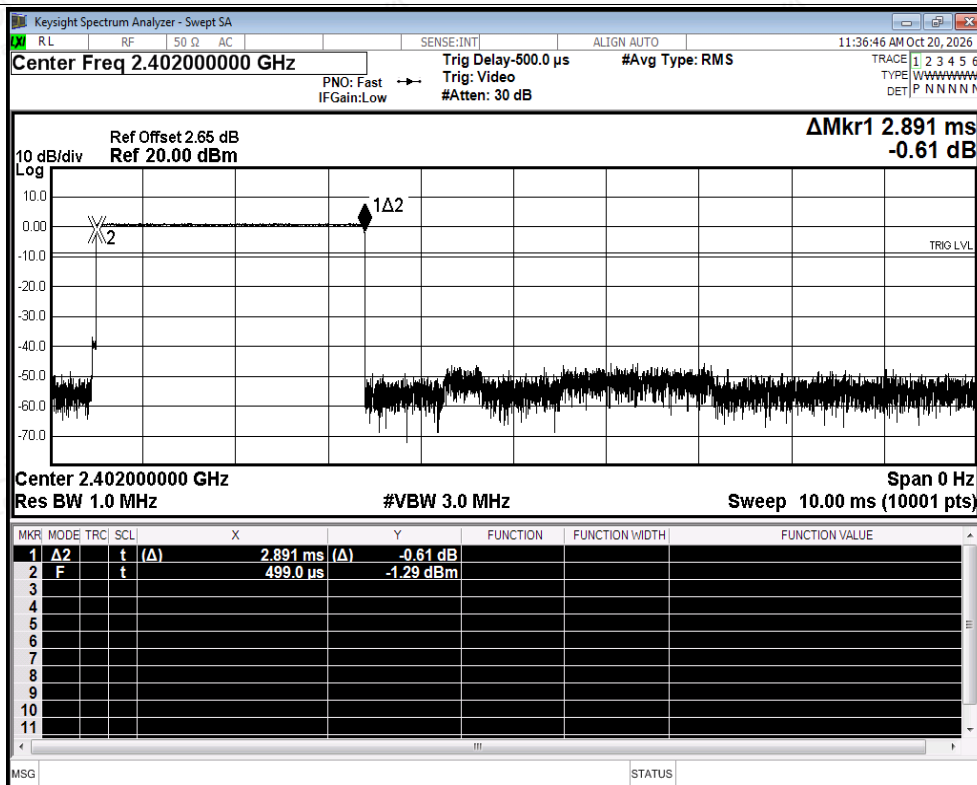
CFS NVNT 2-DH5 2402MHz Ant1



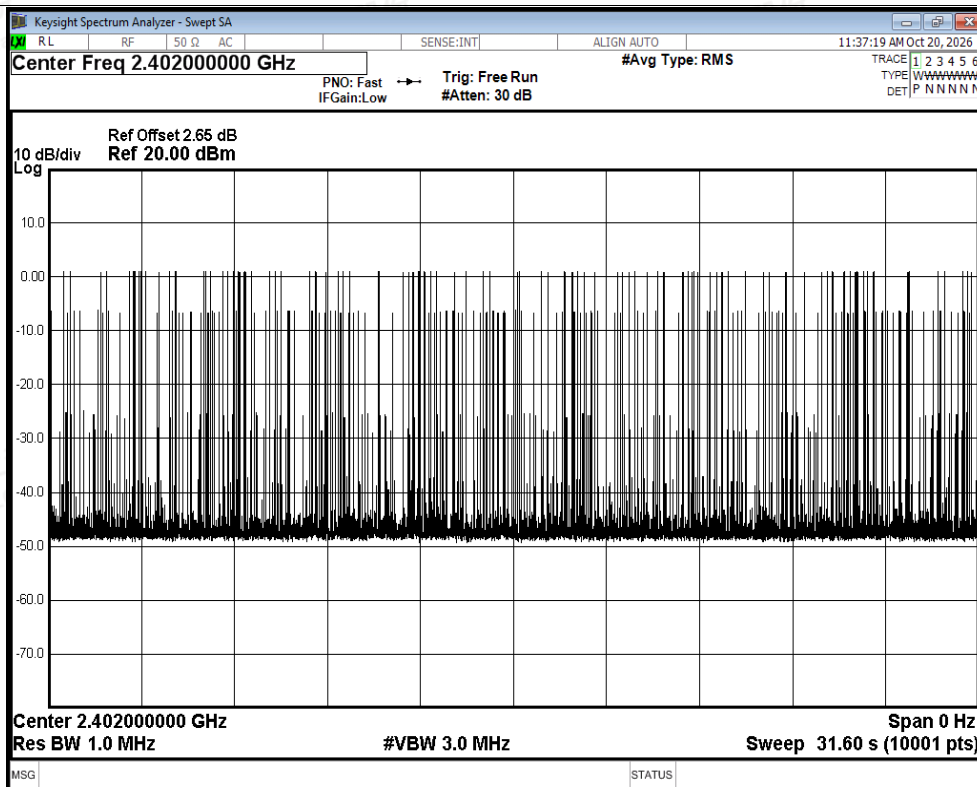


A.4 Dwell Time

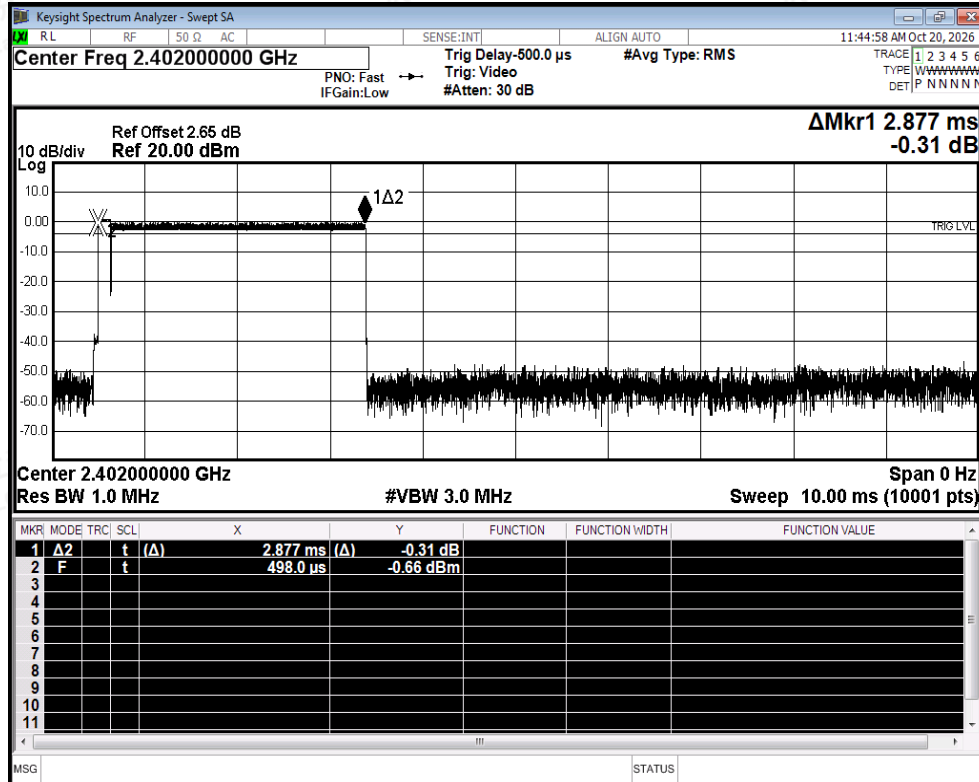
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.891	286.209	99	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.877	299.208	104	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.886	331.89	115	31600	400	Pass



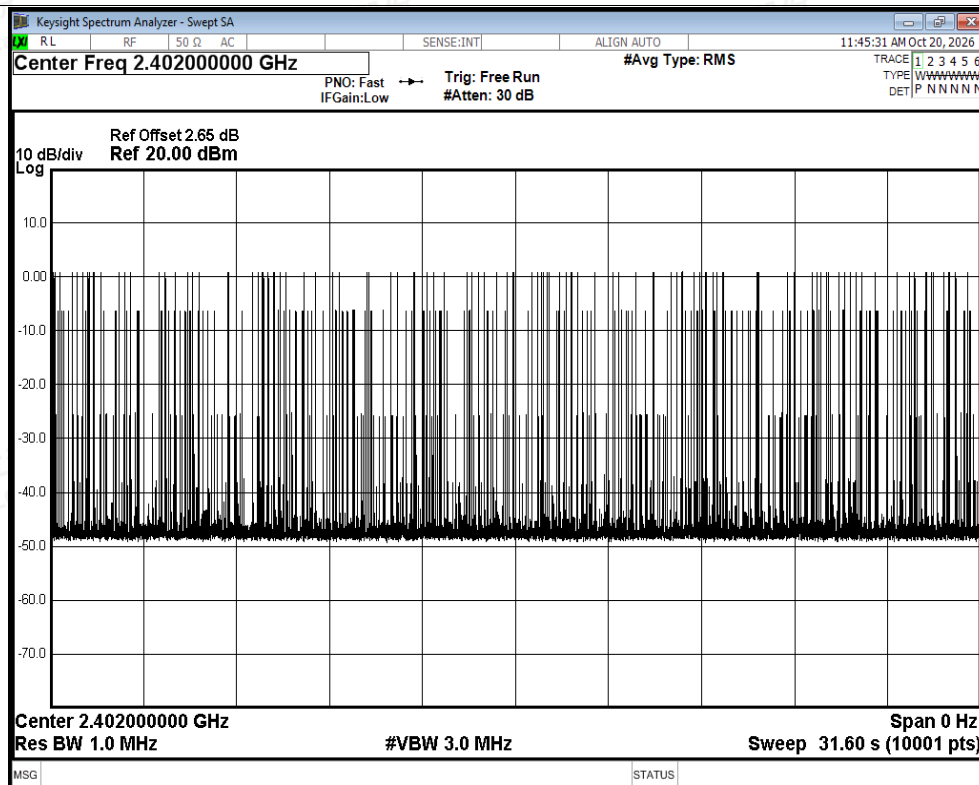
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



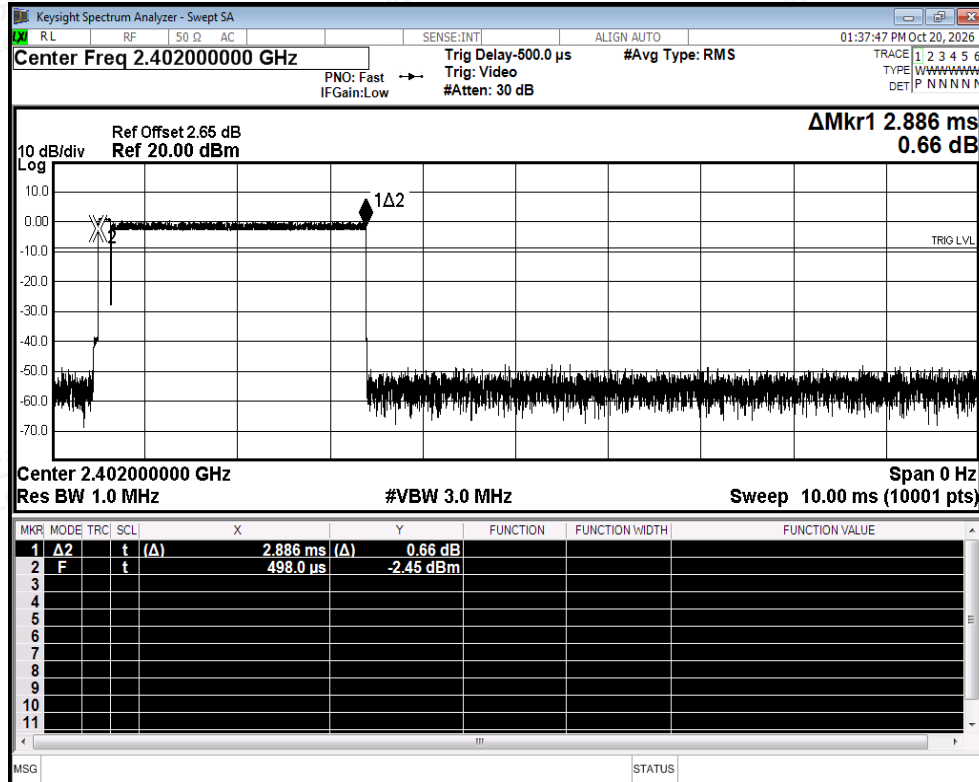
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



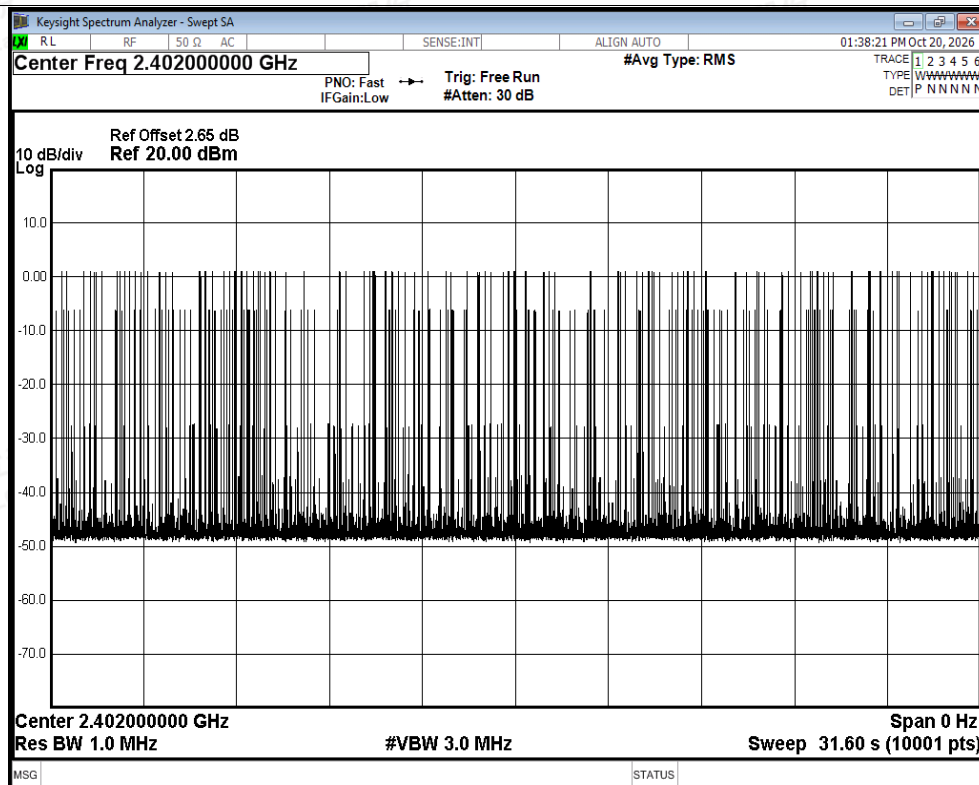
Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2402MHz Ant1 One Burst

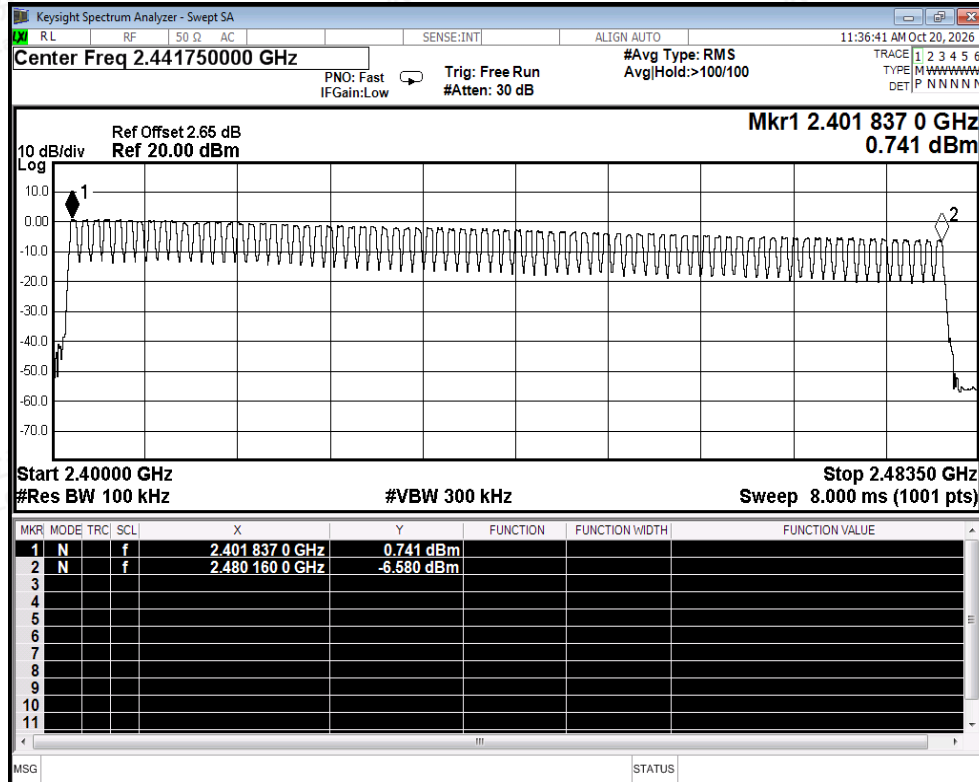


Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated

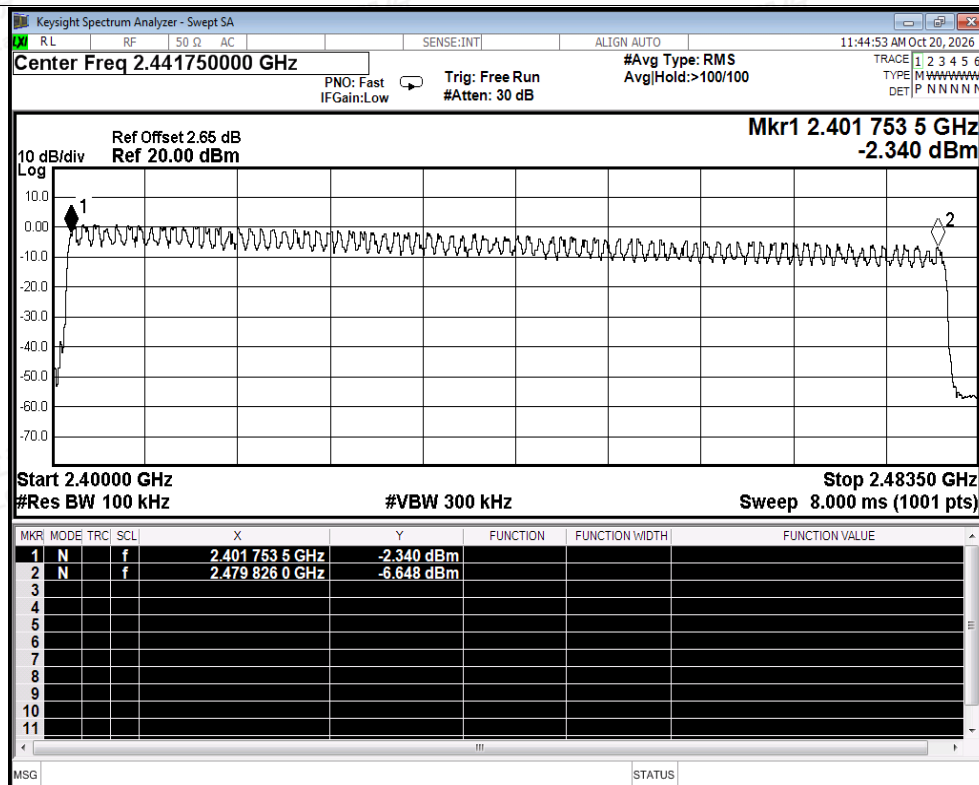


A.5 Number of Hopping Channel

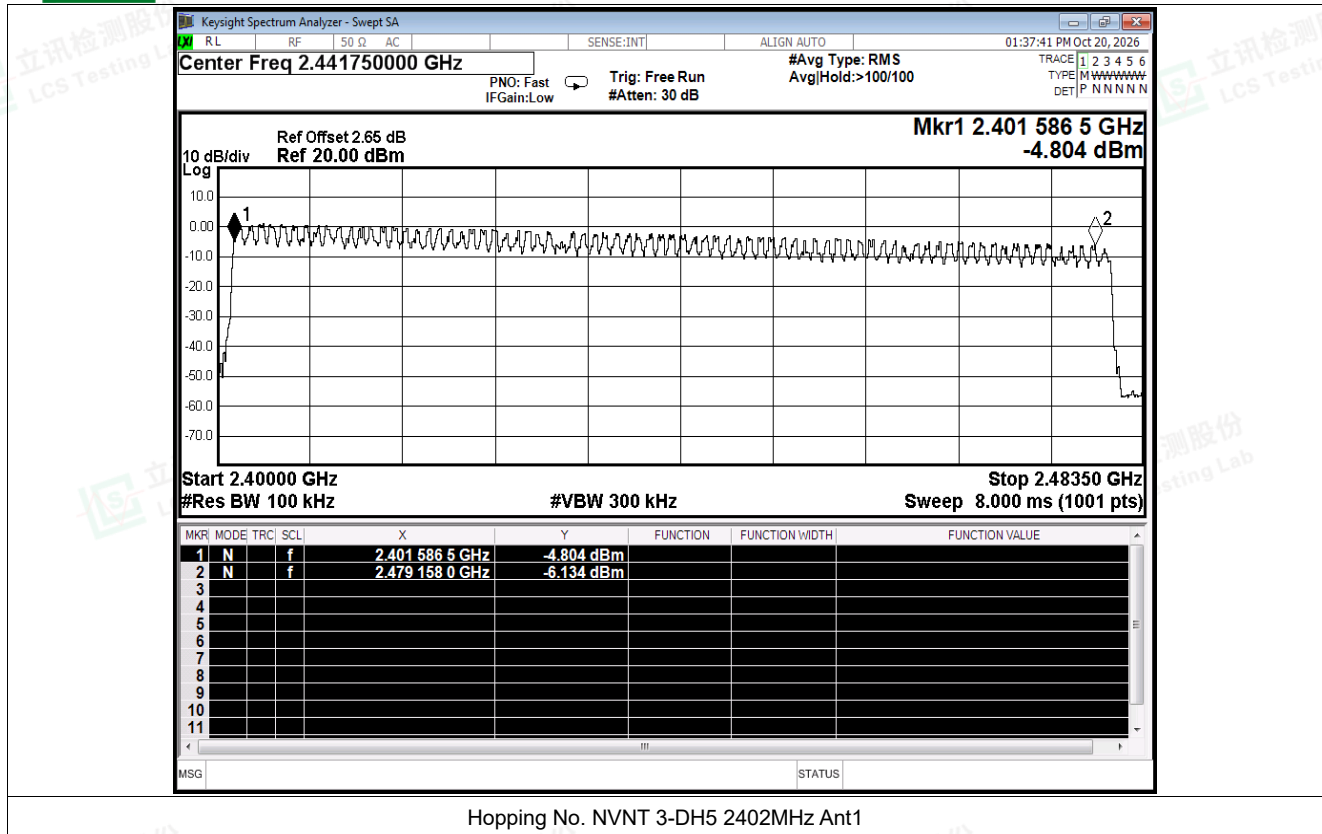
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass



Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Shenzhen LCS Compliance Testing Laboratory Ltd.

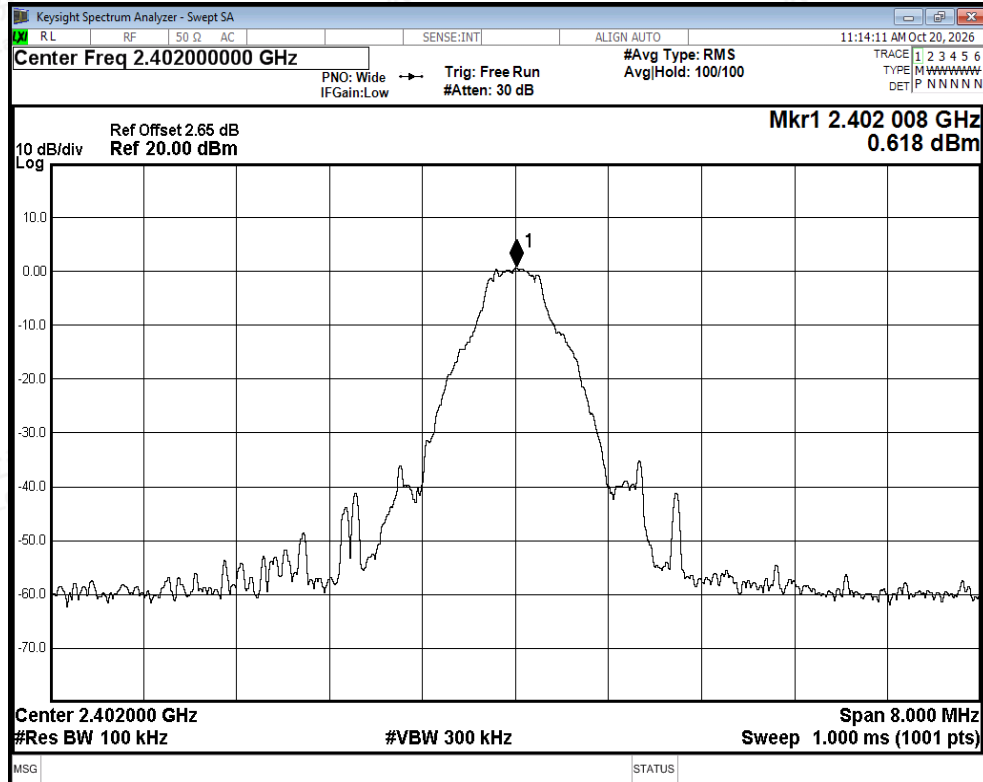
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China.

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

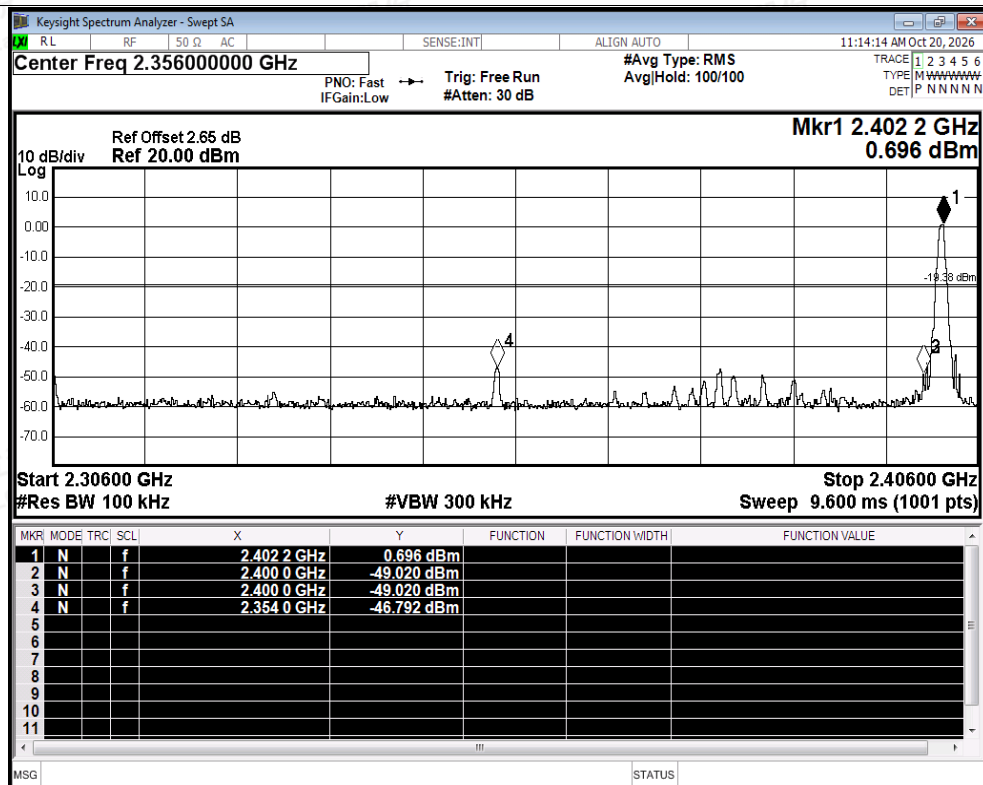


A.6 Band Edge

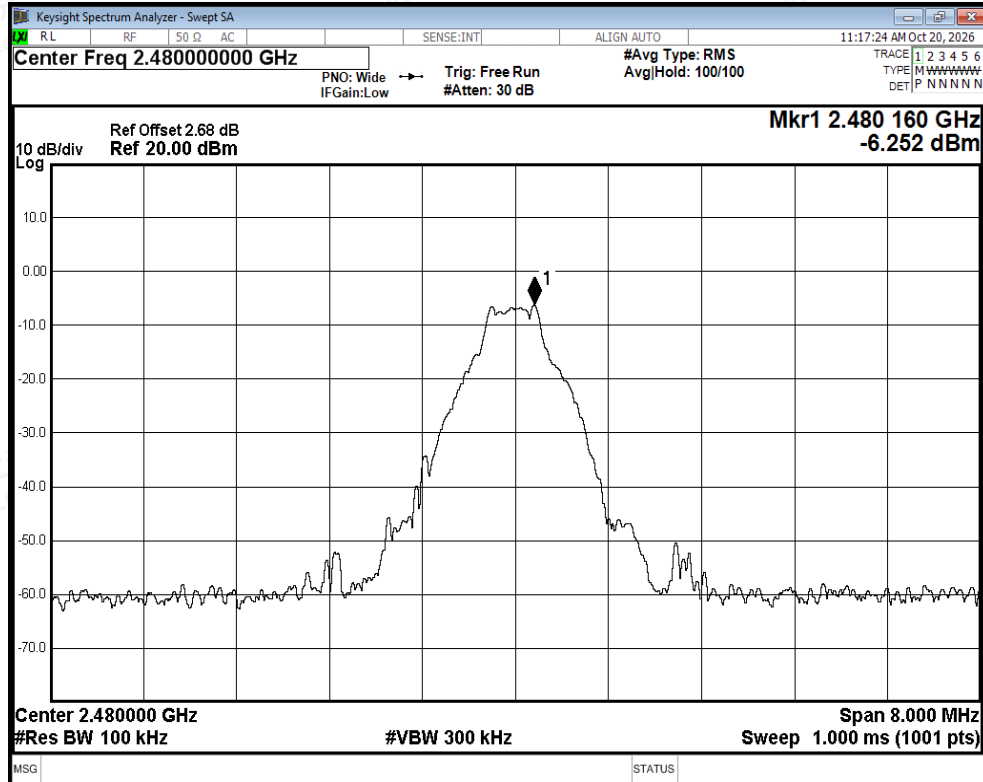
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-47.41	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-49.5	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-45.11	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-47.7	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-46.72	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-47.02	-20	Pass



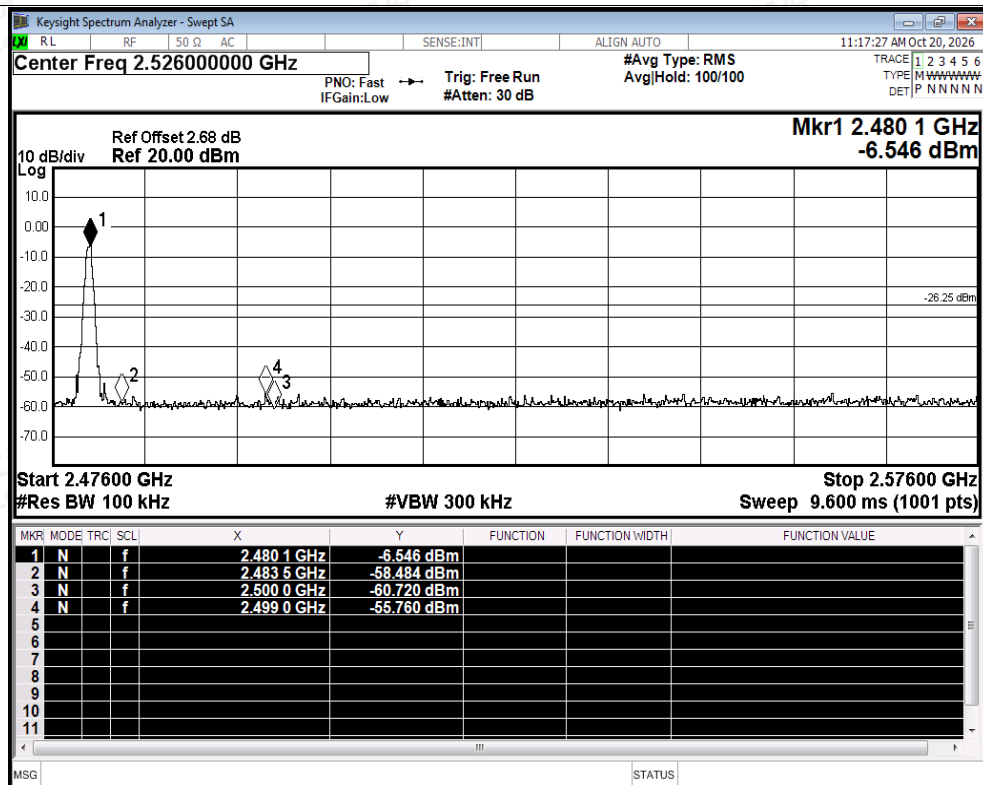
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref



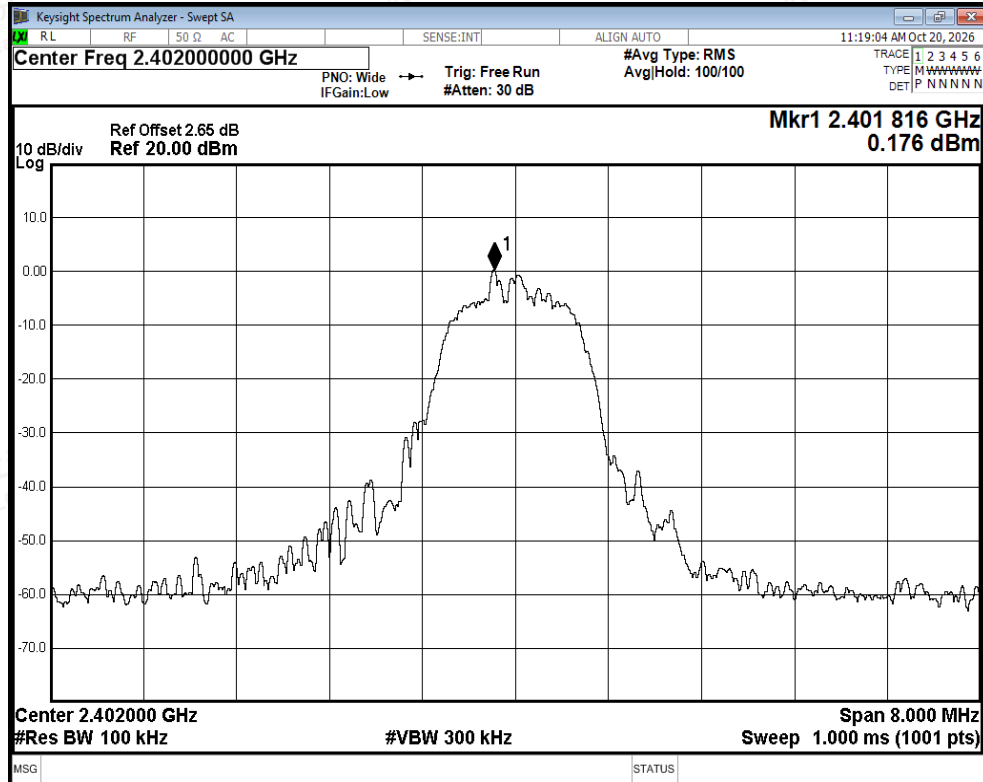
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission



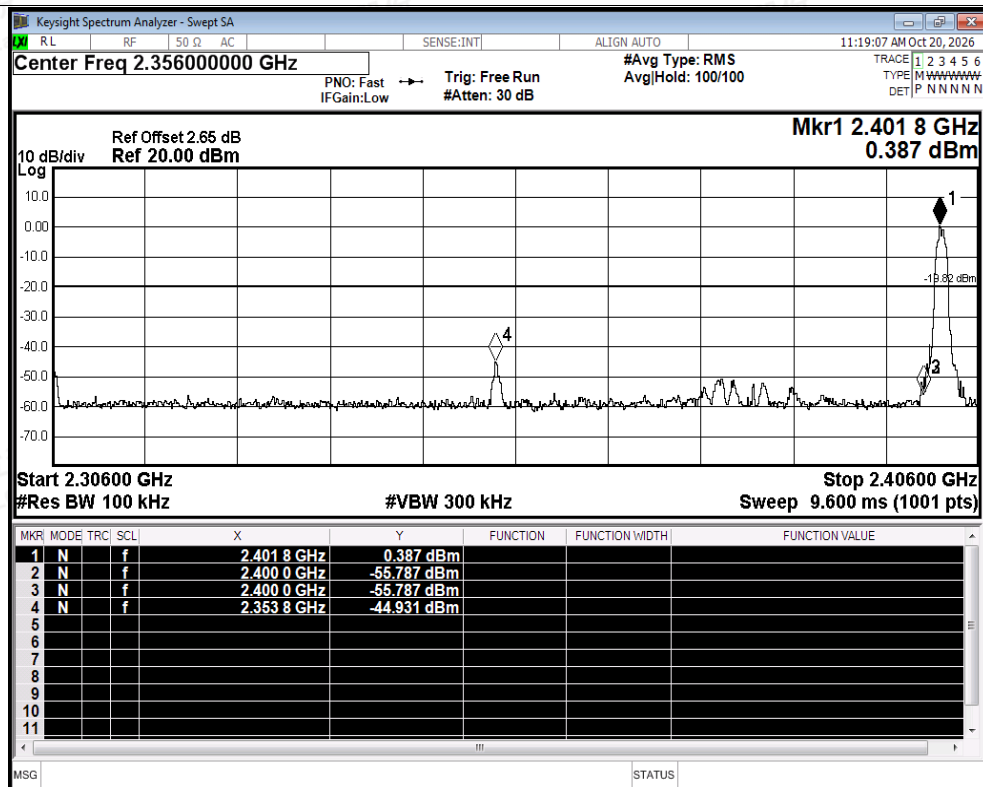
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref



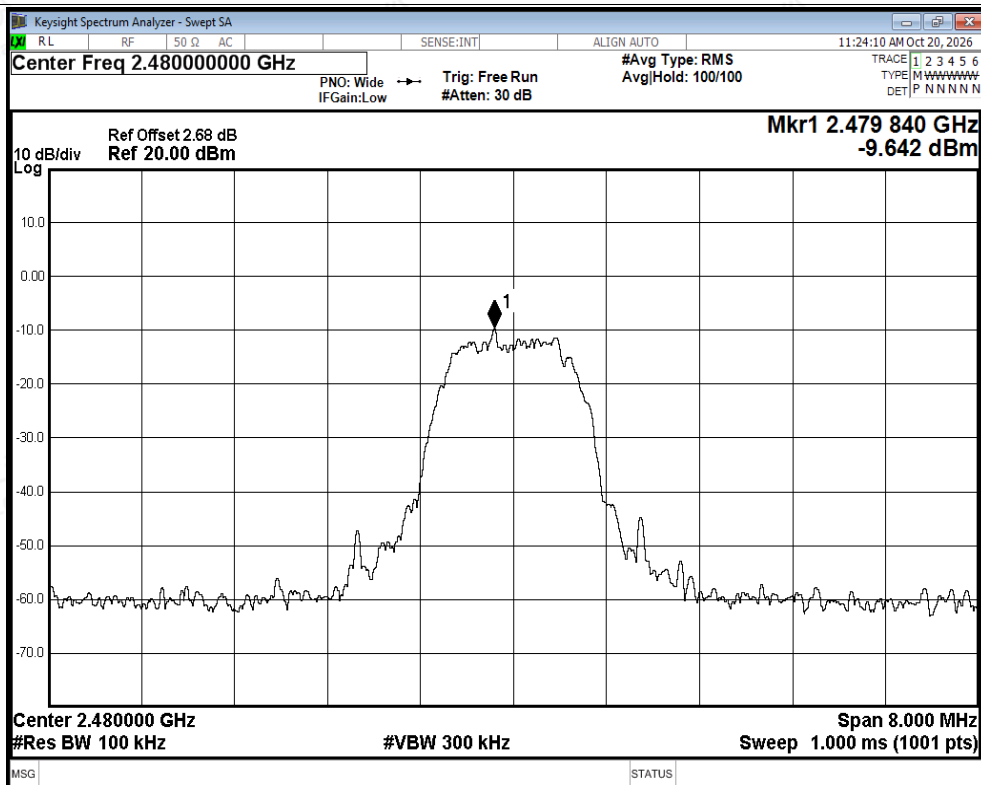
Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission



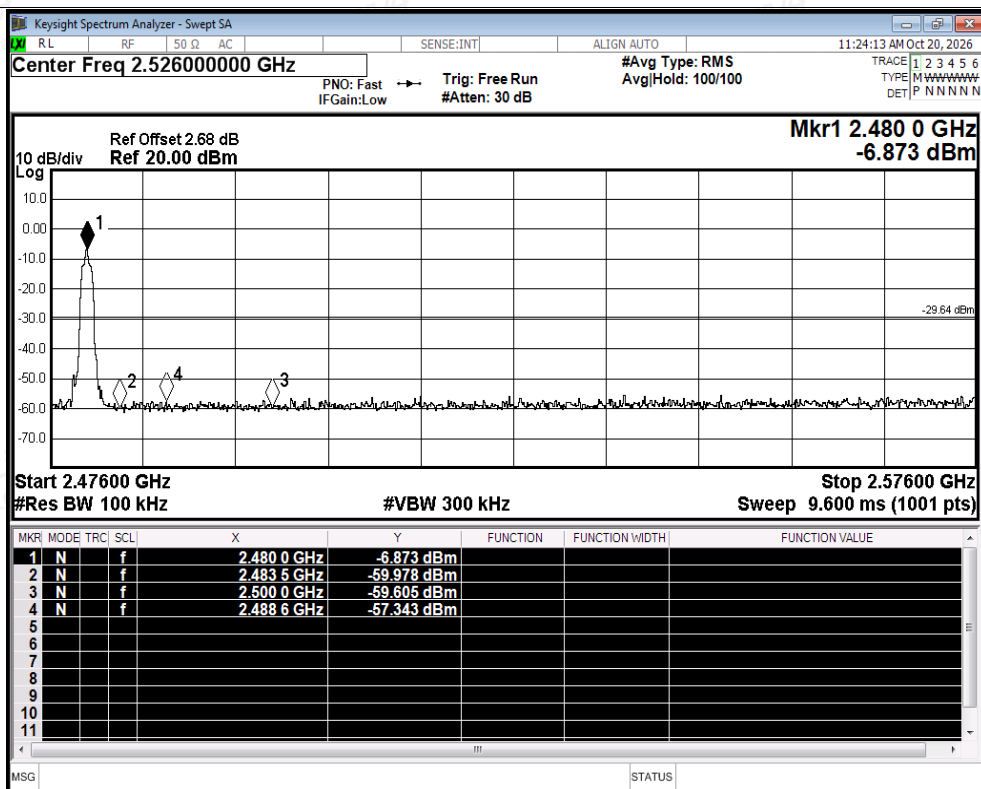
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref



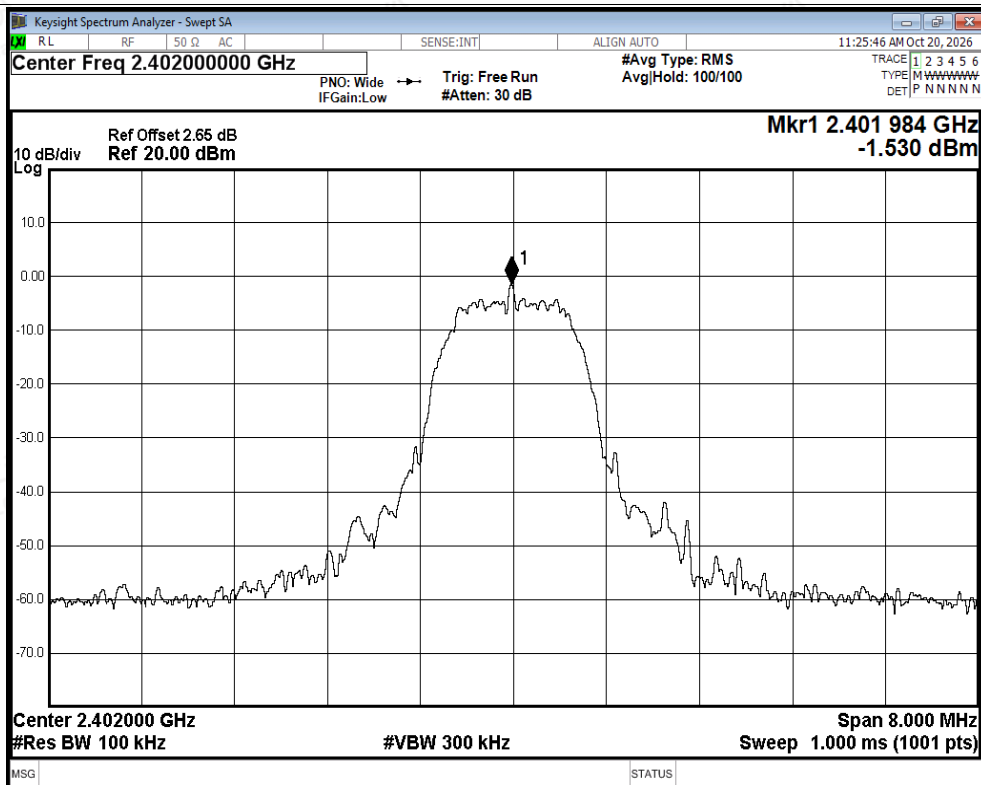
Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission



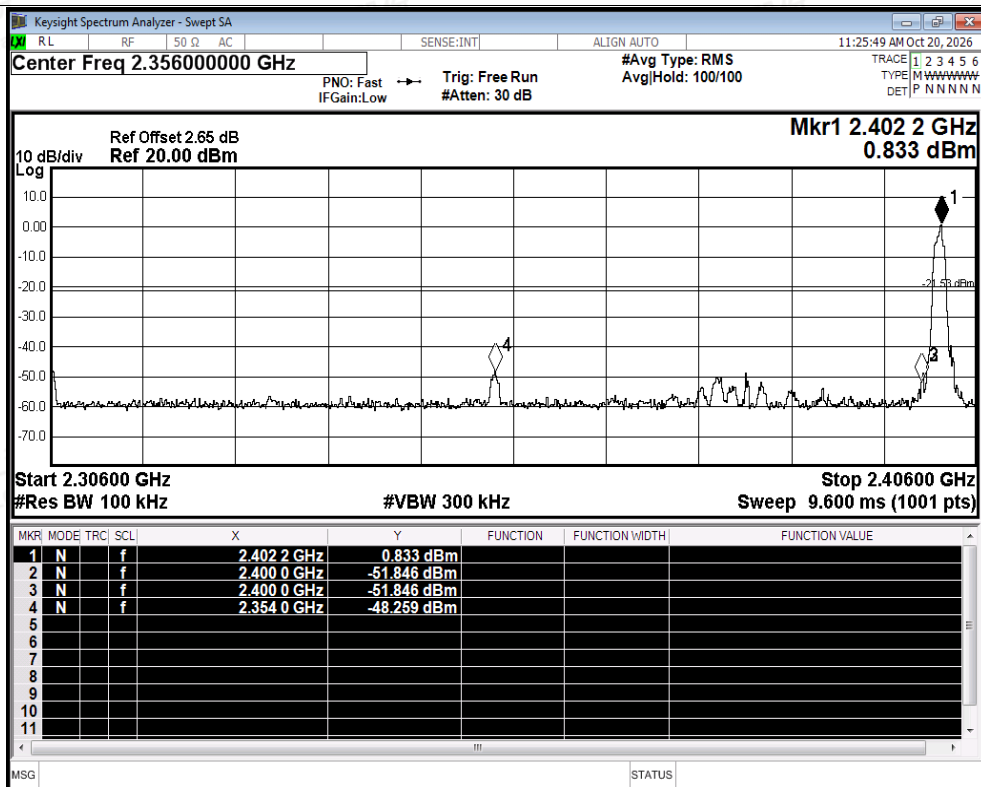
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



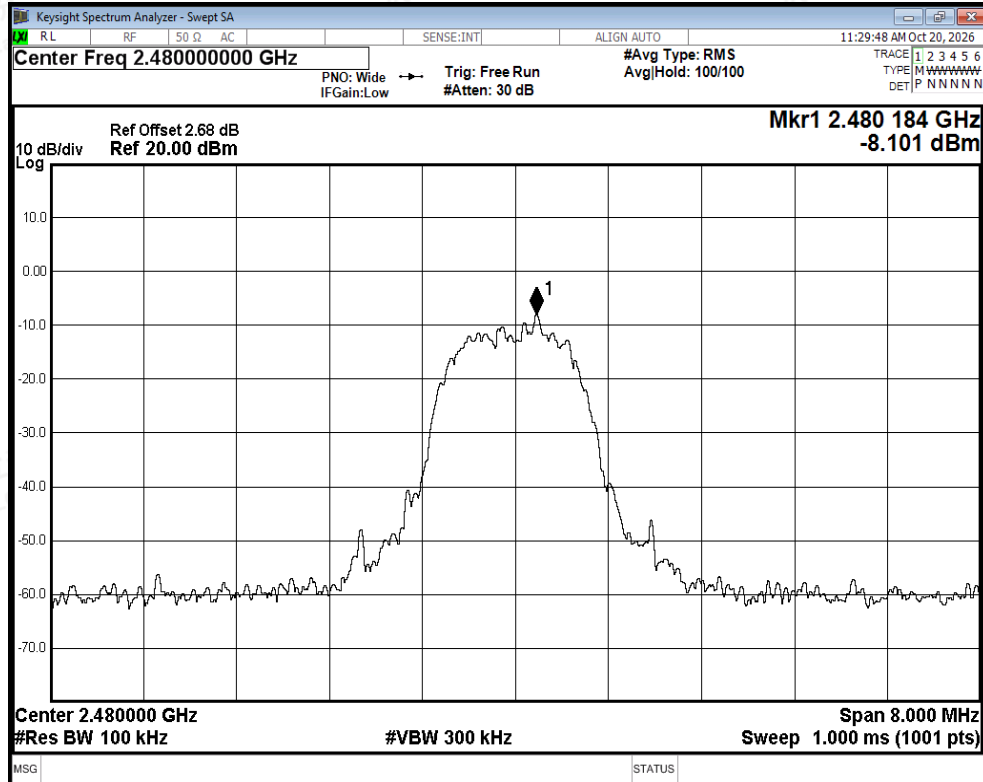
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



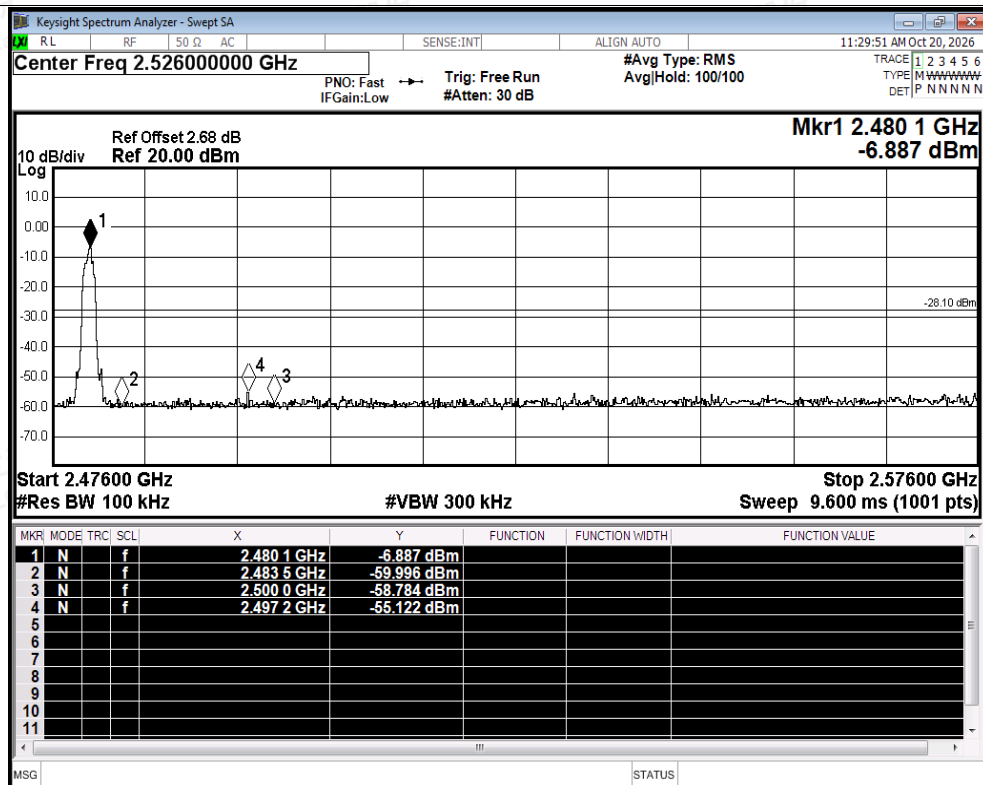
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



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



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

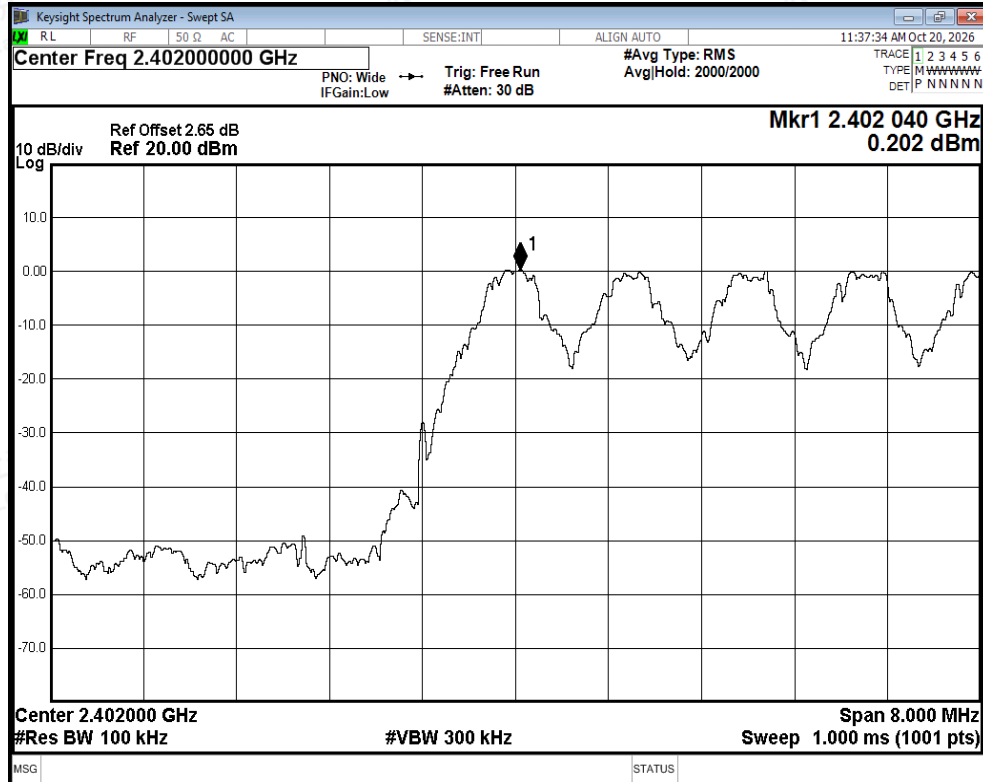


Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission

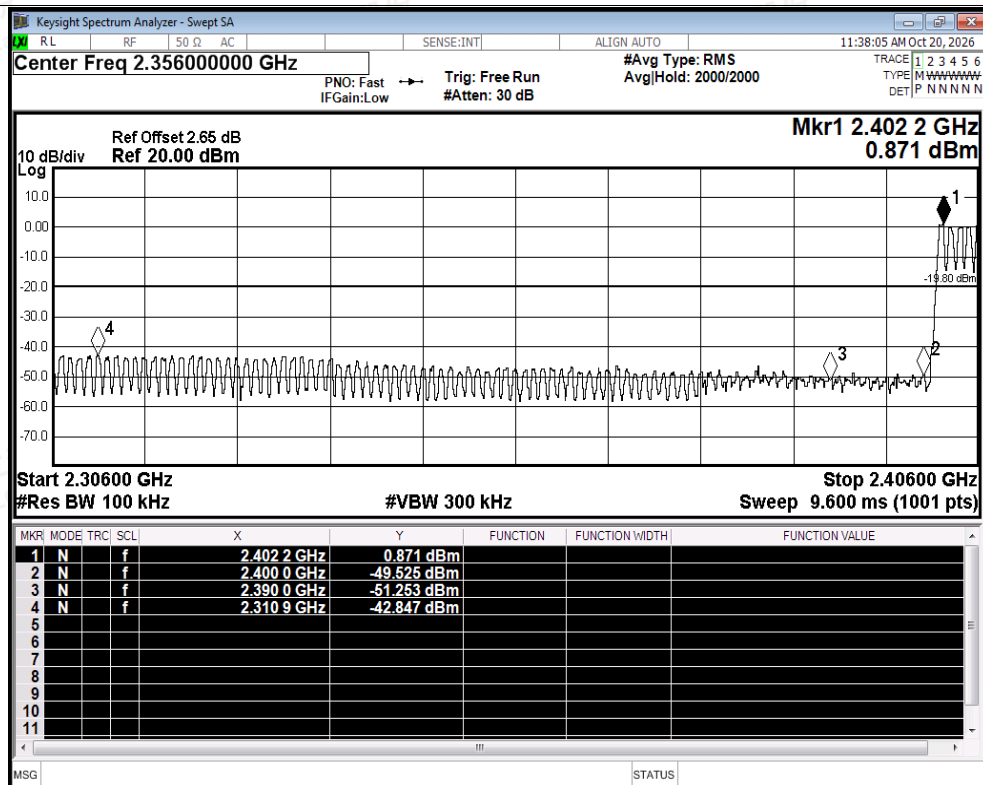


(Hopping)

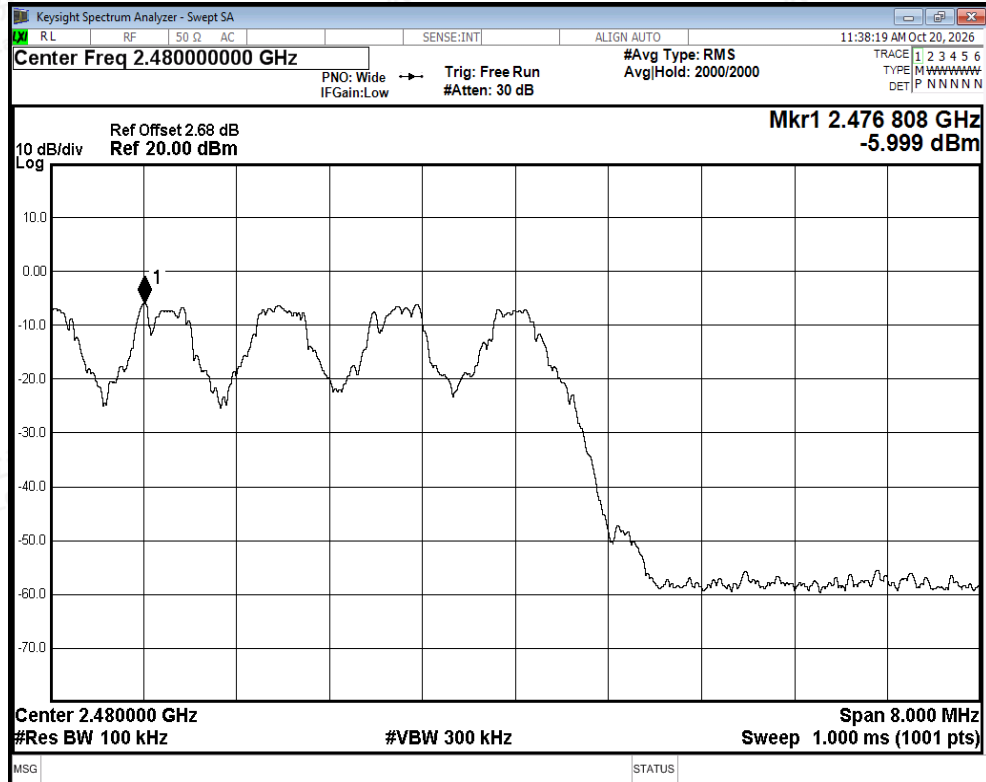
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-43.04	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-44.37	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-43.32	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-47.06	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-42.71	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-45.28	-20	Pass



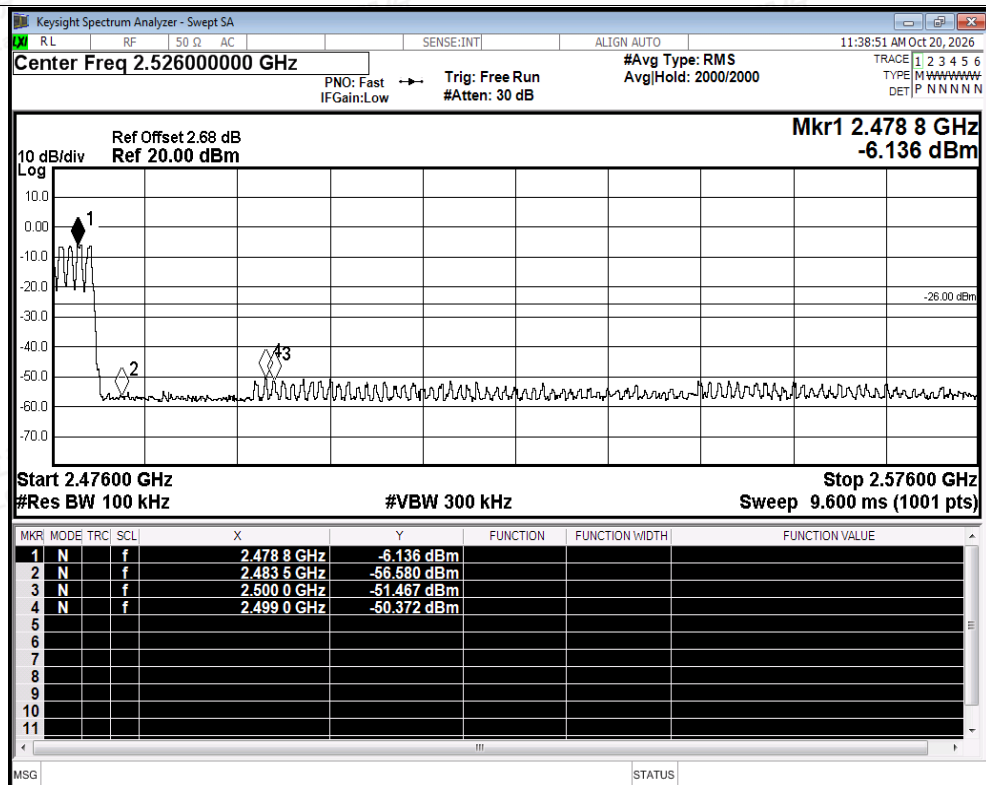
Band Edge (Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref



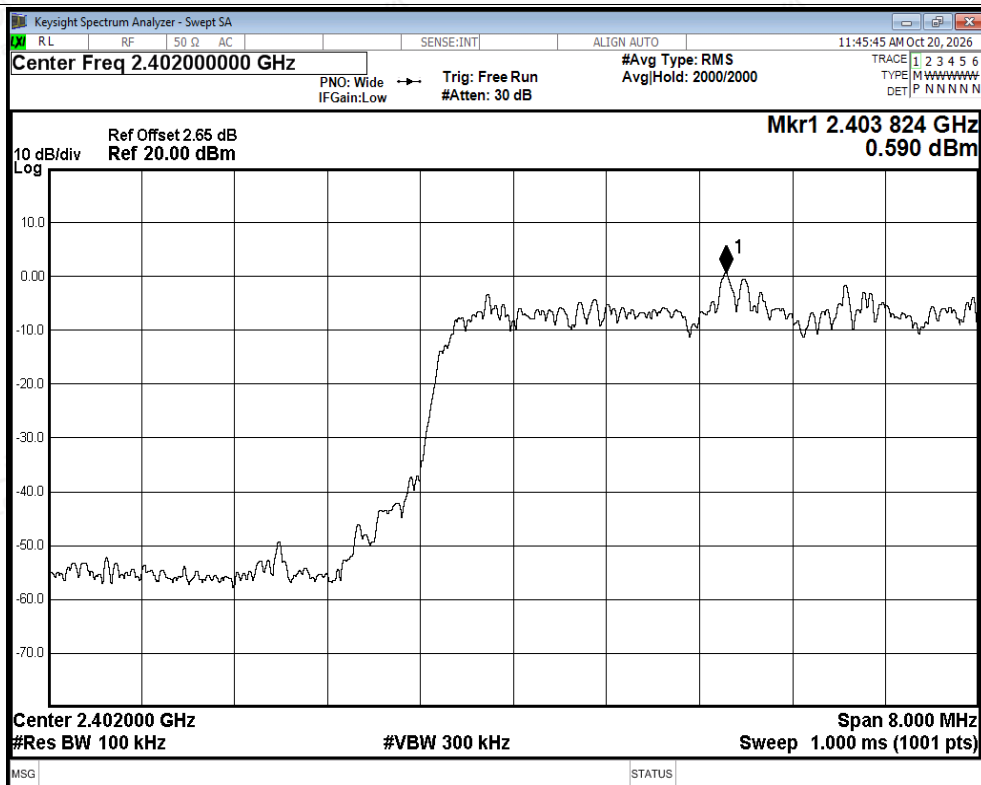
Band Edge (Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



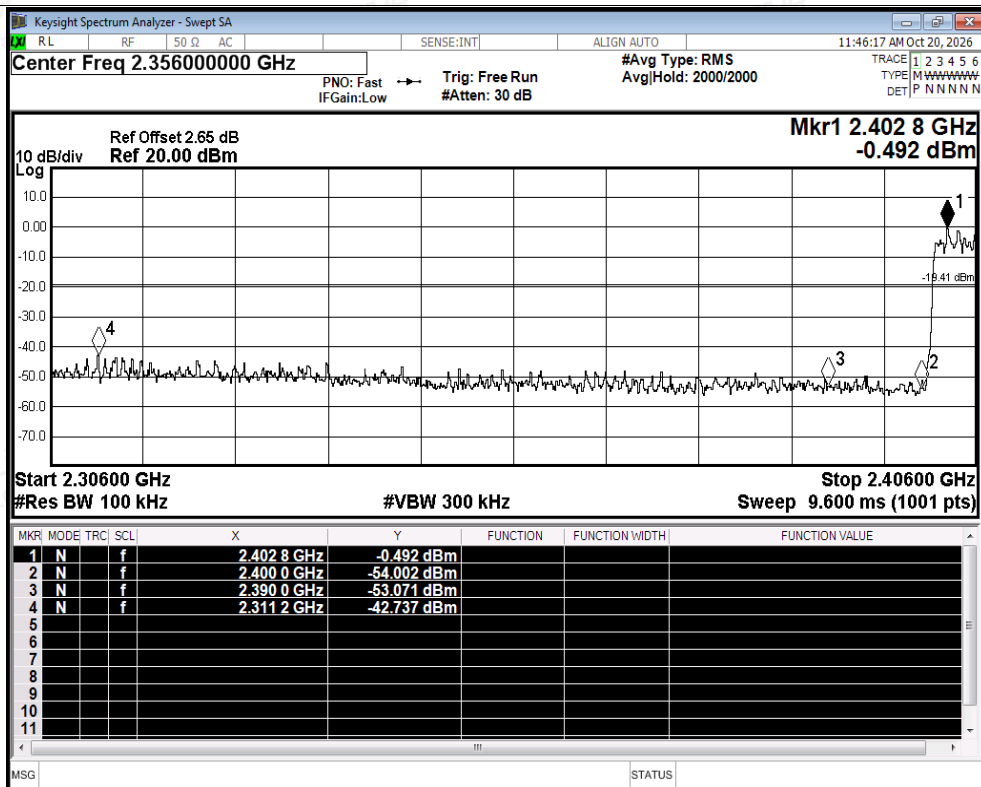
Band Edge (Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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



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

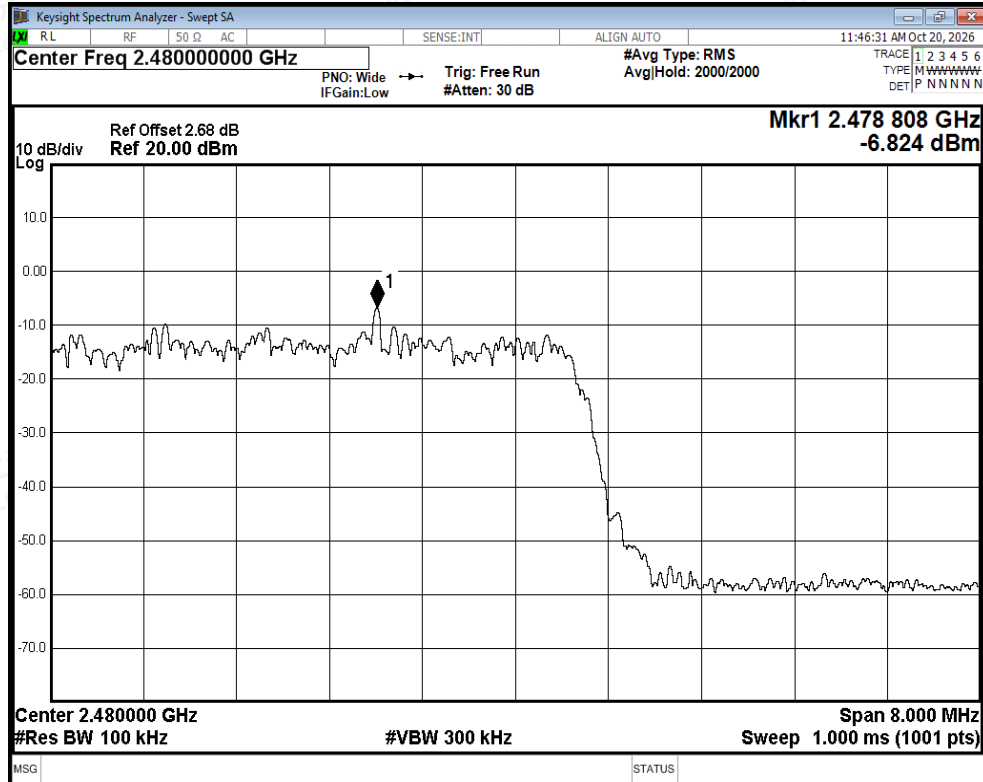


Band Edge (Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

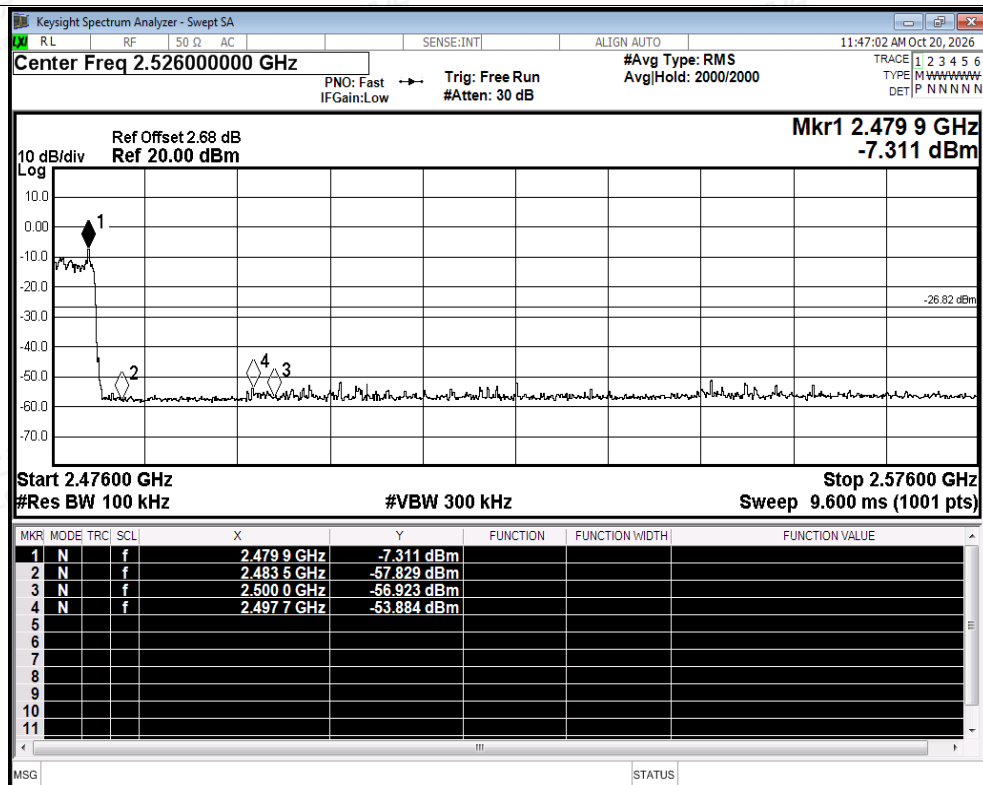
Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China.

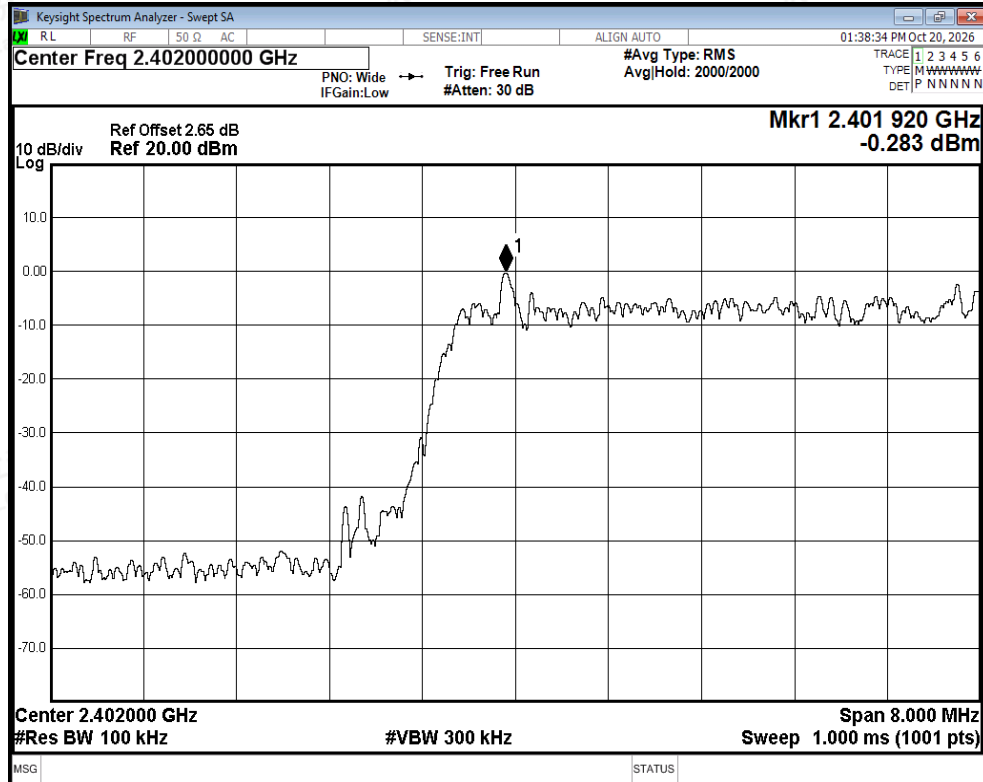
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com



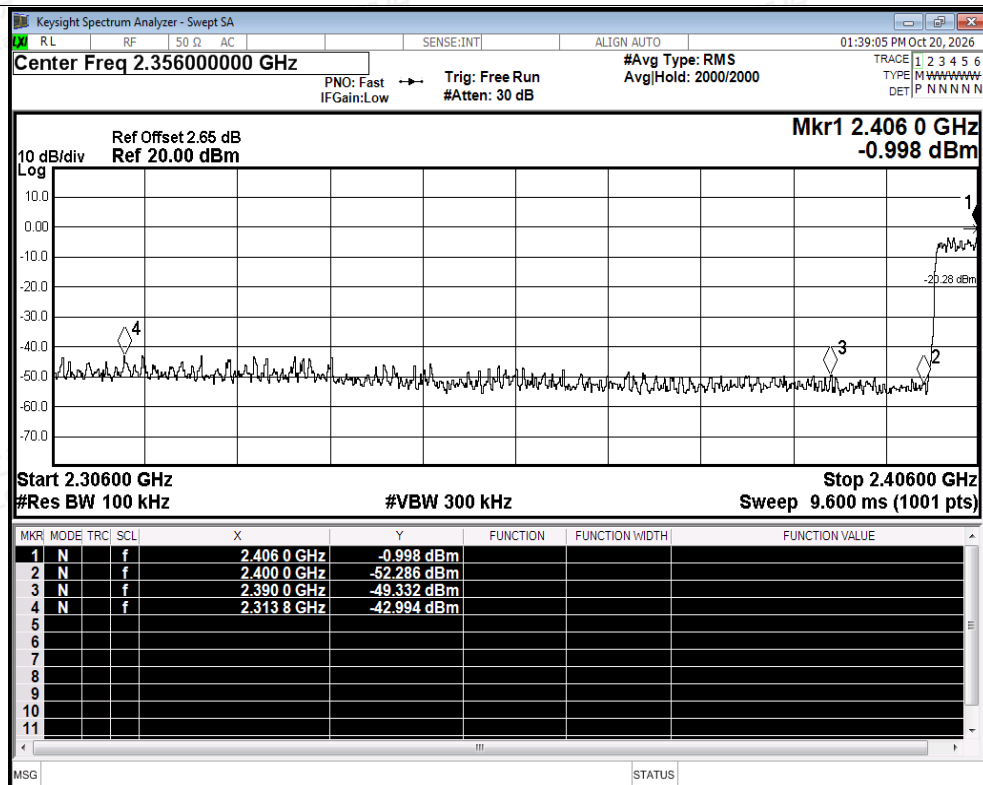
Band Edge (Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



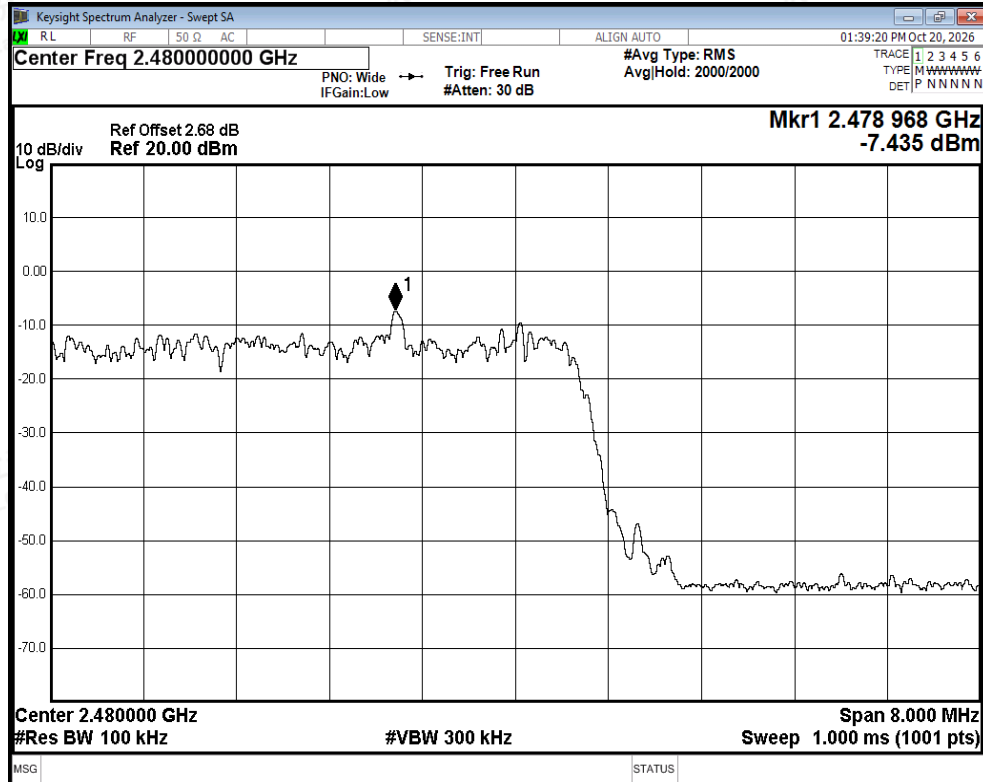
Band Edge (Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission



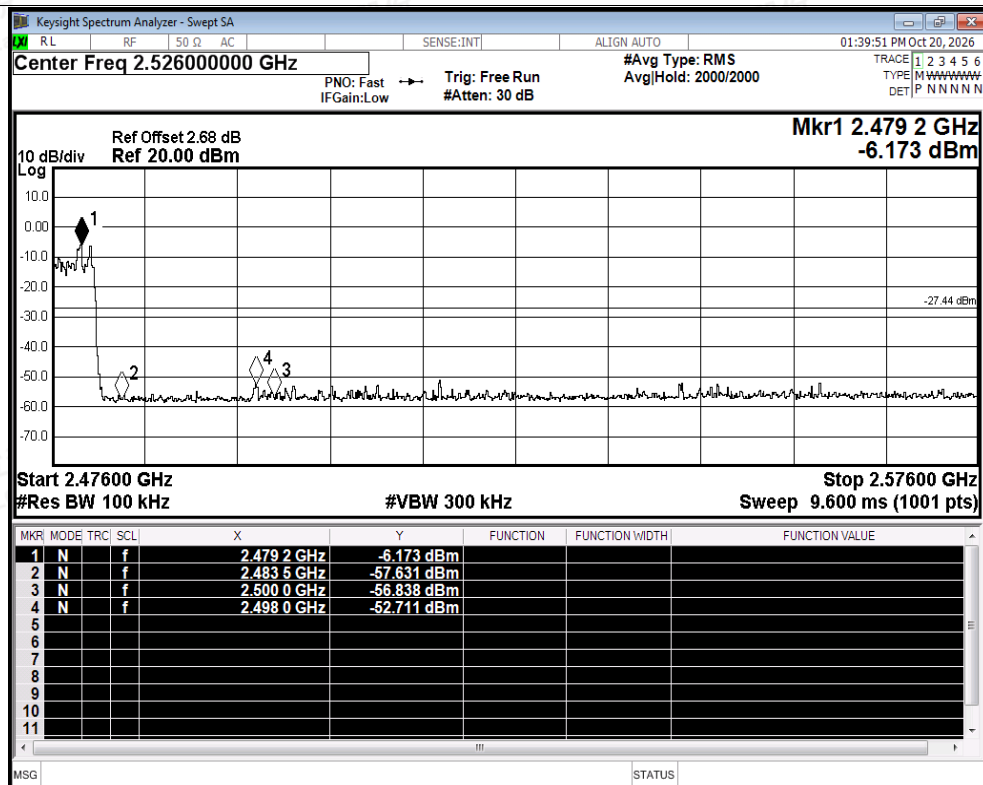
Band Edge (Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



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



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

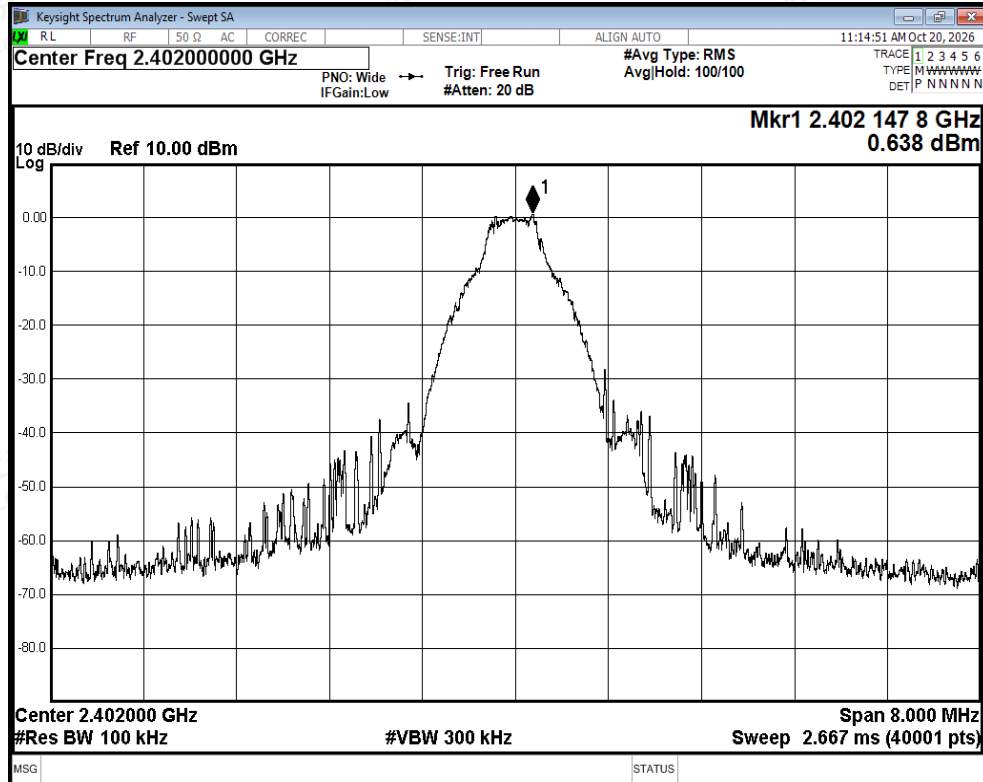


Band Edge (Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

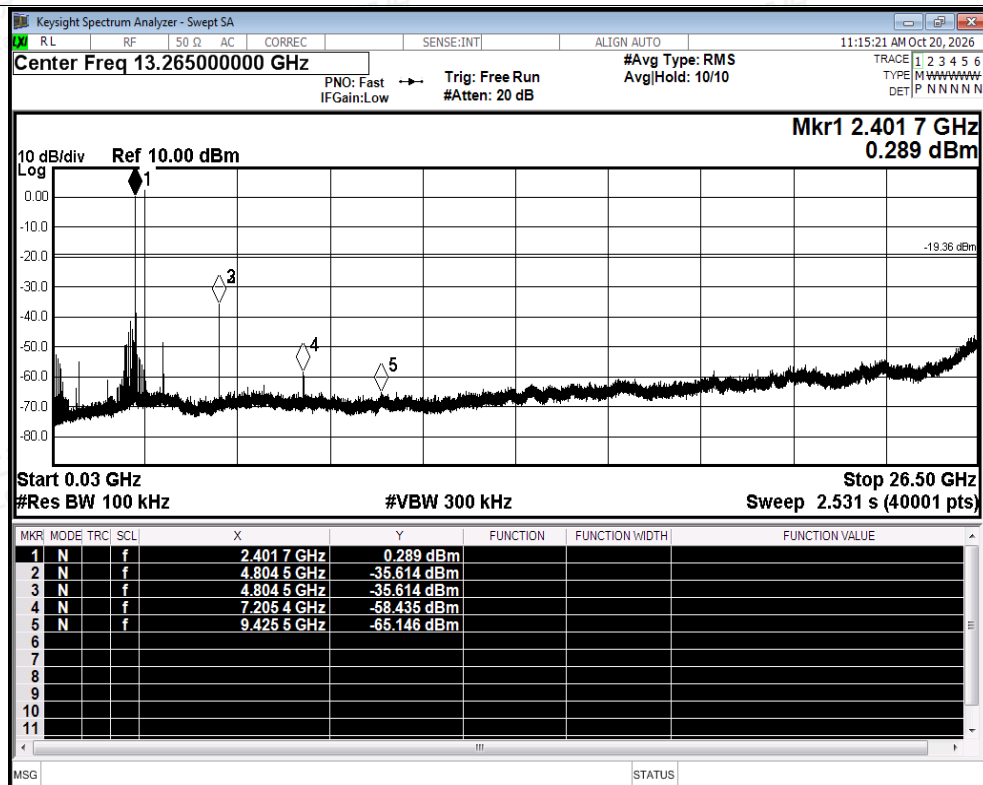


A.7 Conducted RF Spurious Emission

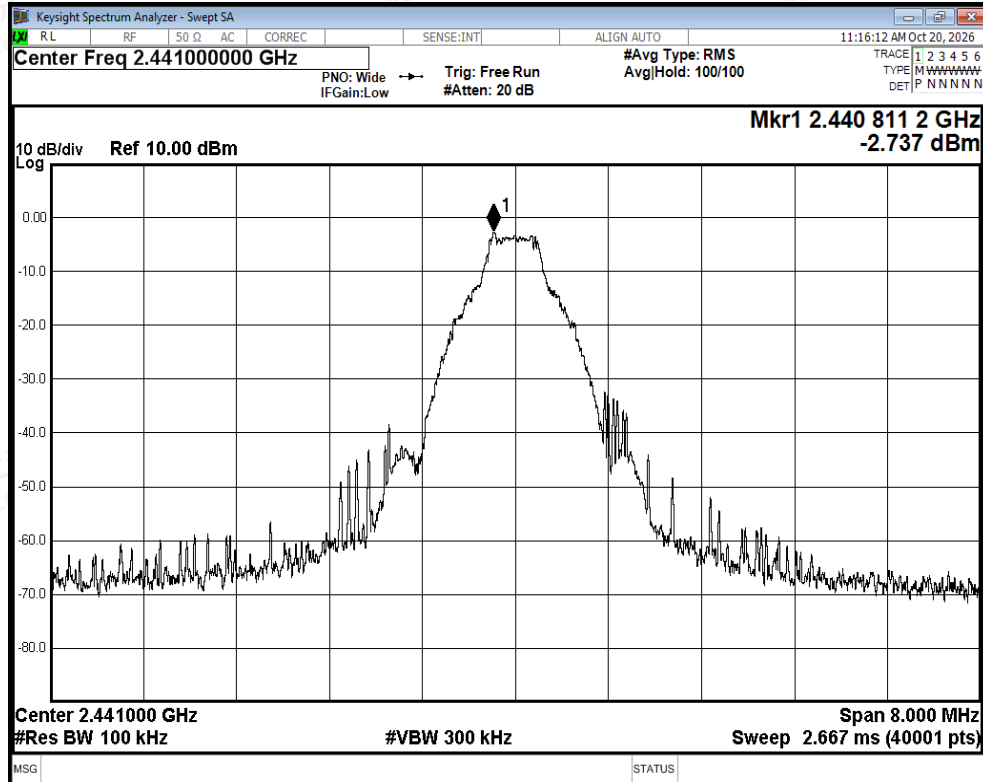
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-36.25	-20	Pass
NVNT	1-DH5	2441	Ant1	-38.4	-20	Pass
NVNT	1-DH5	2480	Ant1	-38.12	-20	Pass
NVNT	2-DH5	2402	Ant1	-38.97	-20	Pass
NVNT	2-DH5	2441	Ant1	-37.27	-20	Pass
NVNT	2-DH5	2480	Ant1	-40.1	-20	Pass
NVNT	3-DH5	2402	Ant1	-31.18	-20	Pass
NVNT	3-DH5	2441	Ant1	-41.76	-20	Pass
NVNT	3-DH5	2480	Ant1	-38.07	-20	Pass



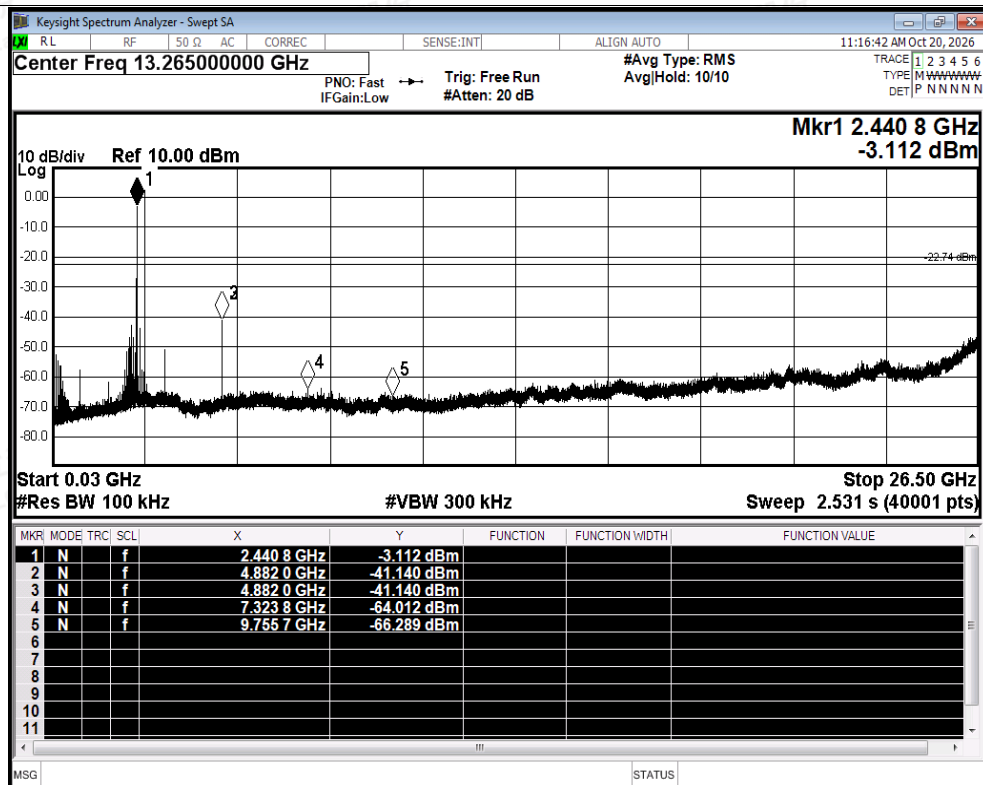
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



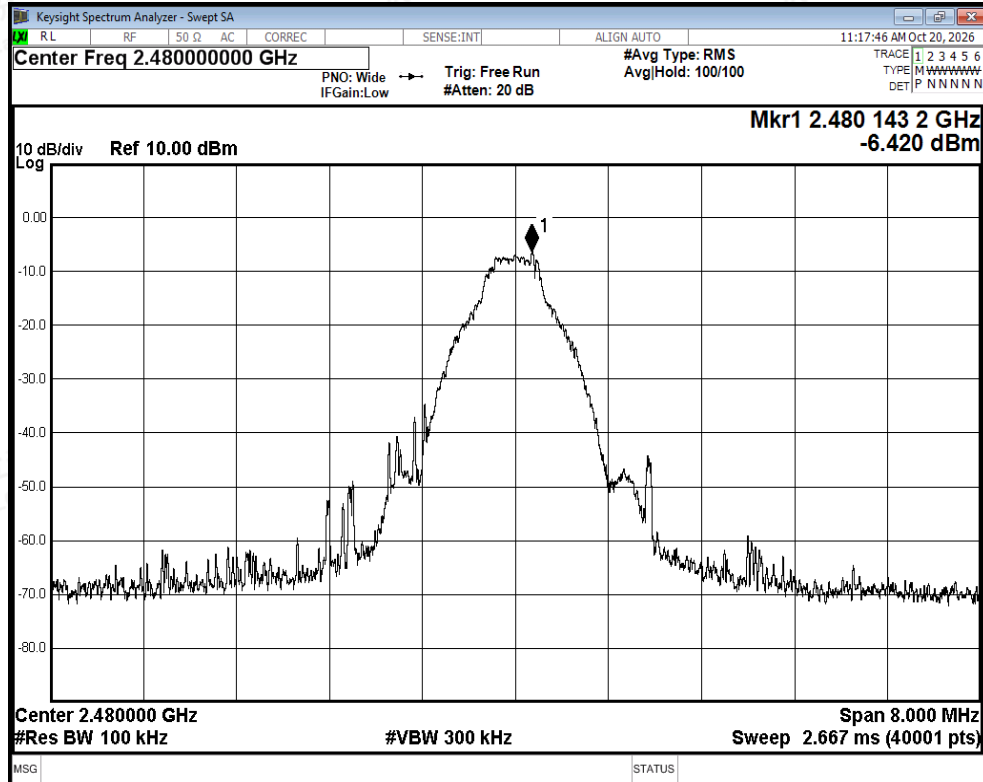
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



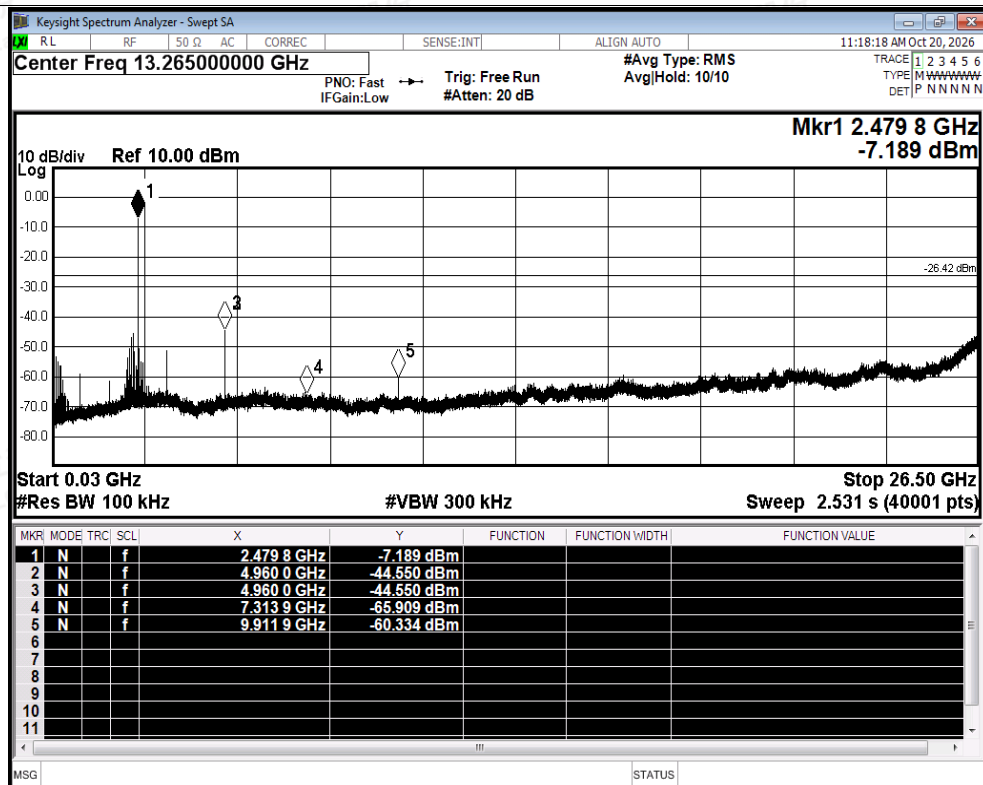
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



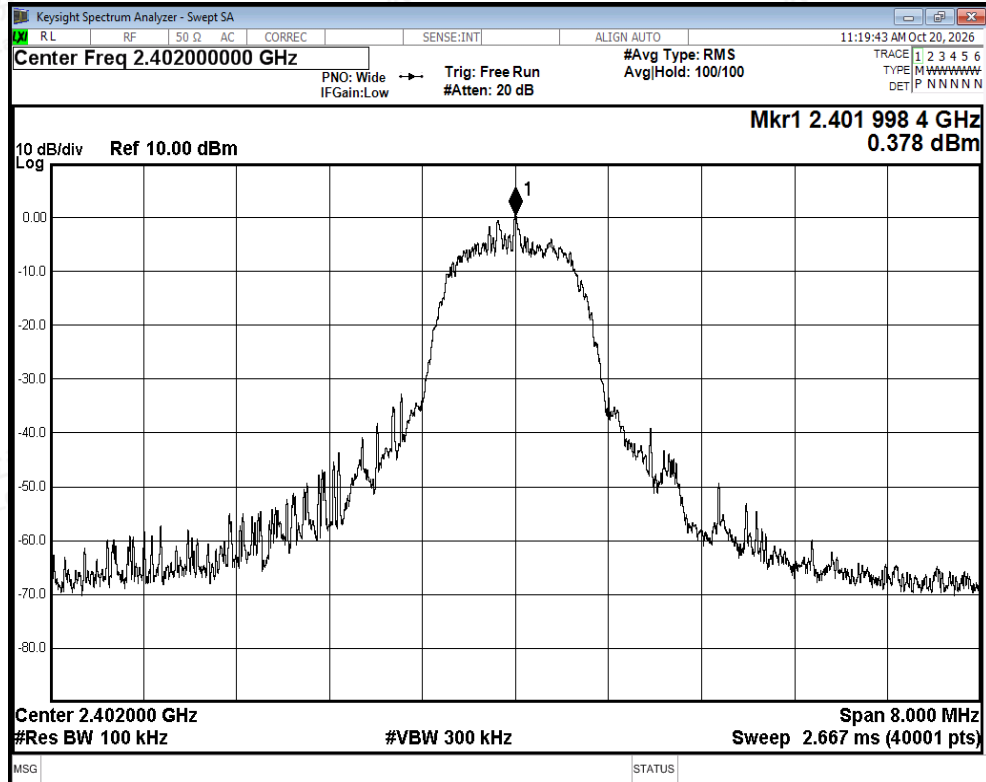
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



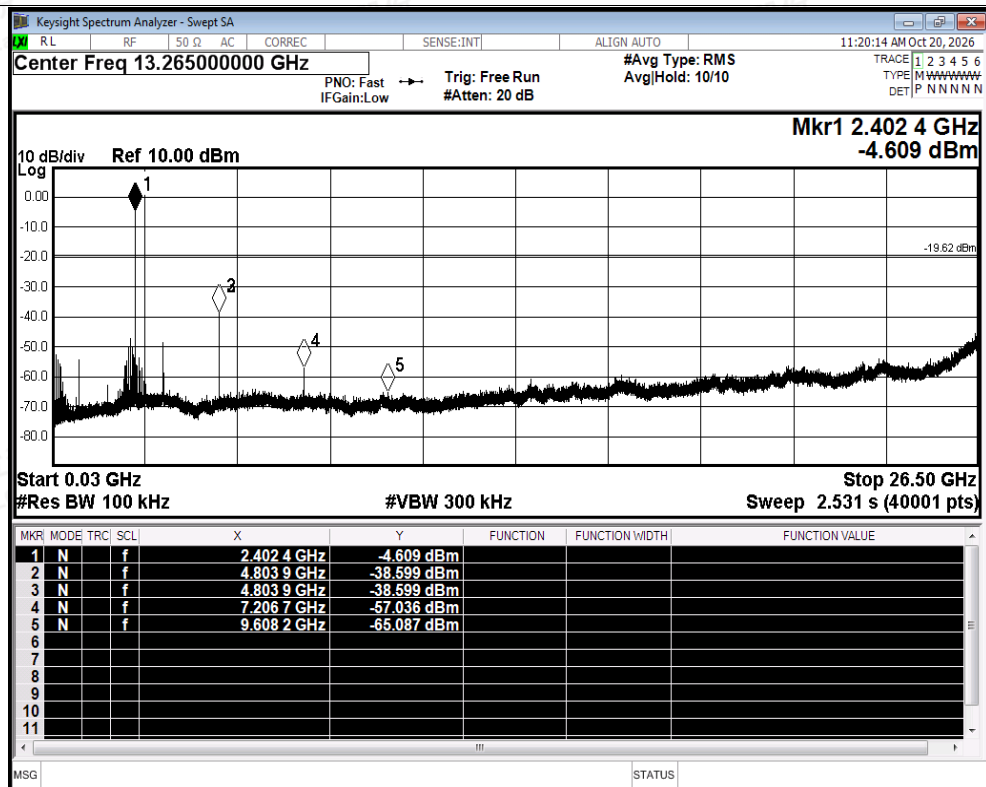
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



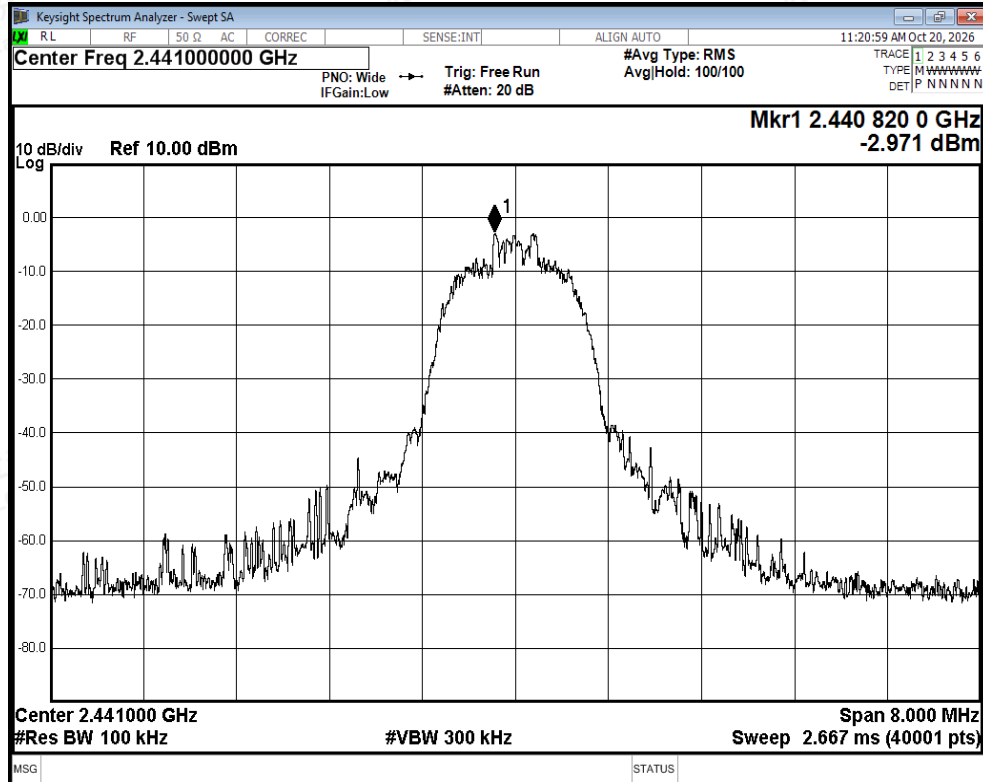
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



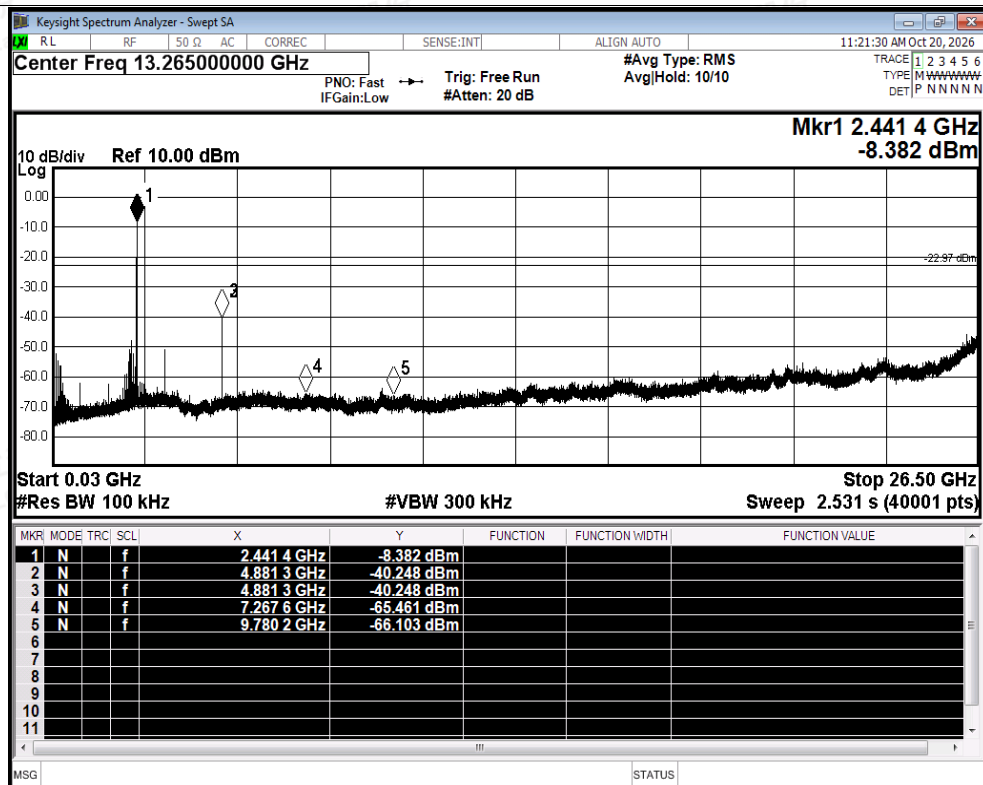
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



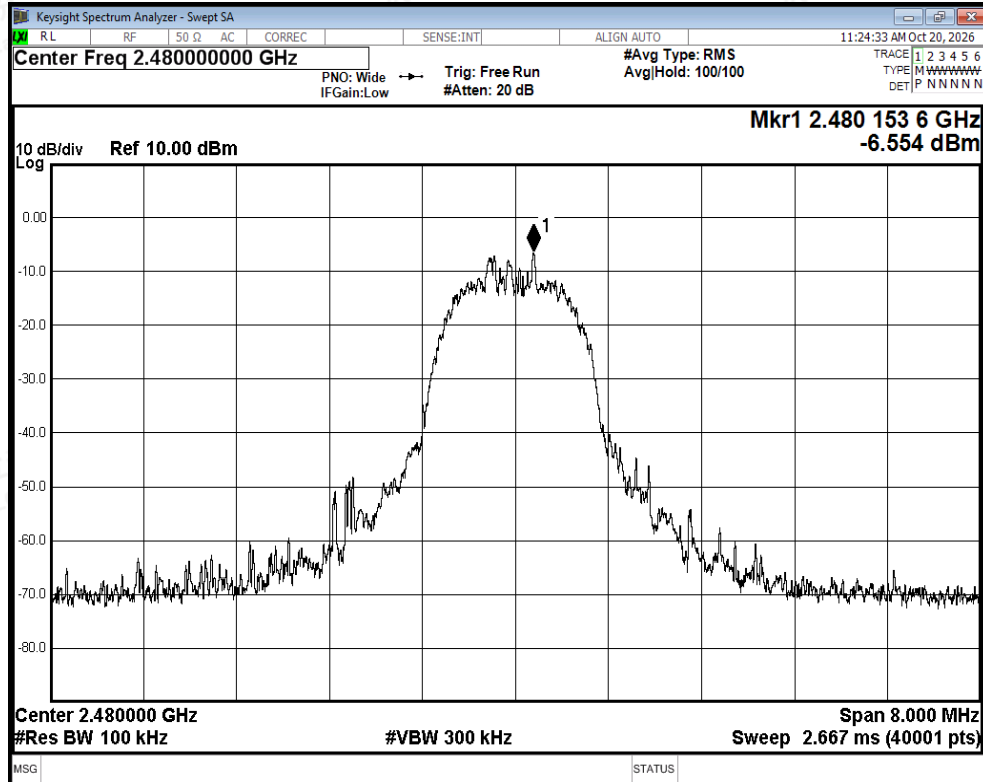
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



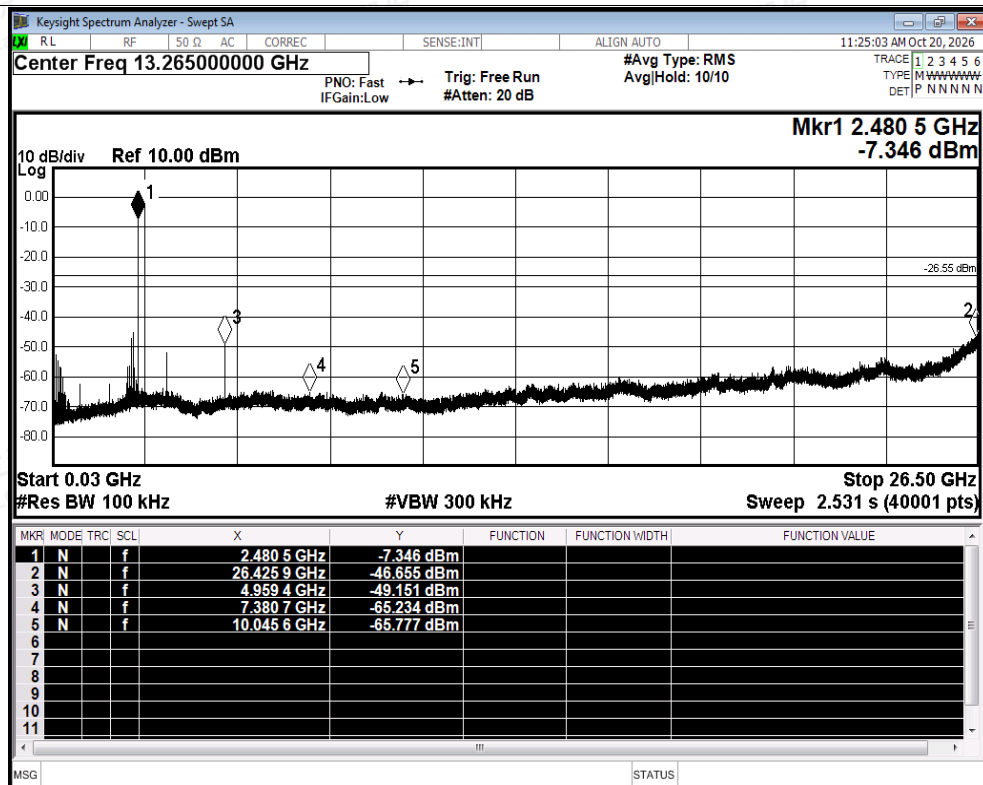
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



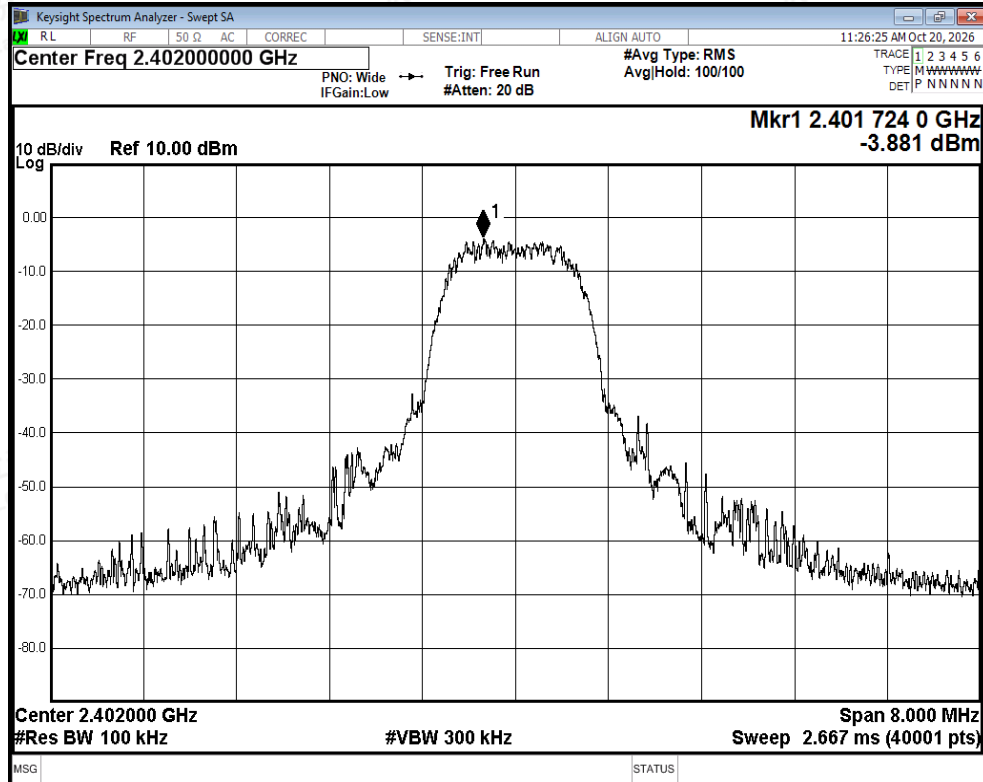
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



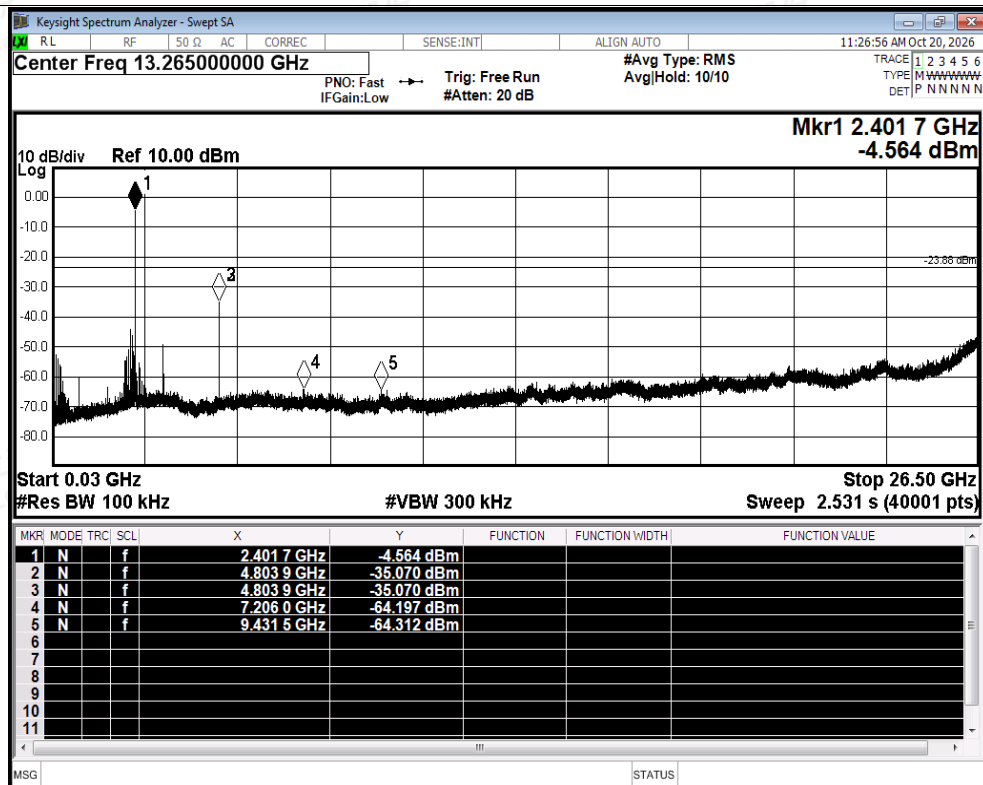
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



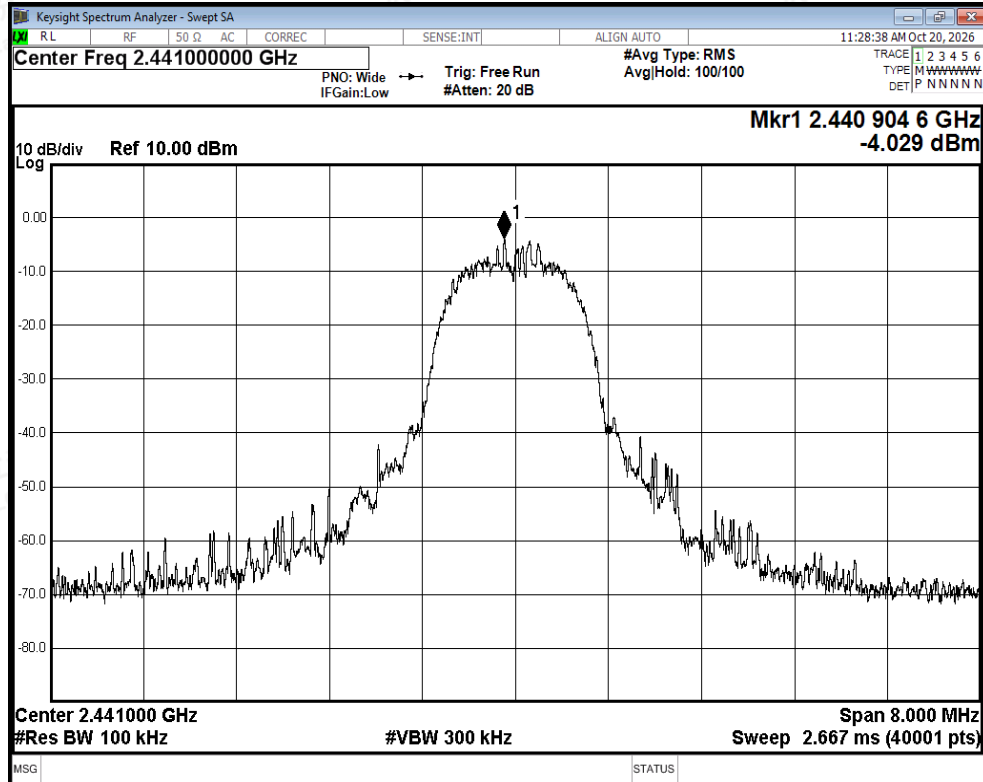
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



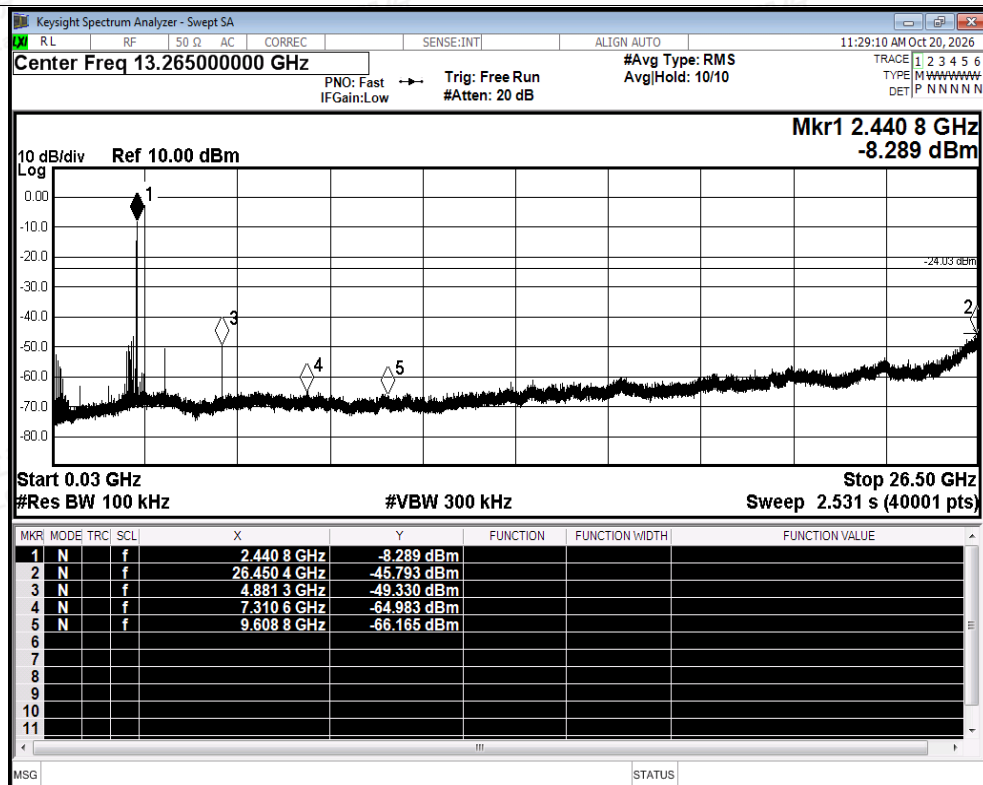
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



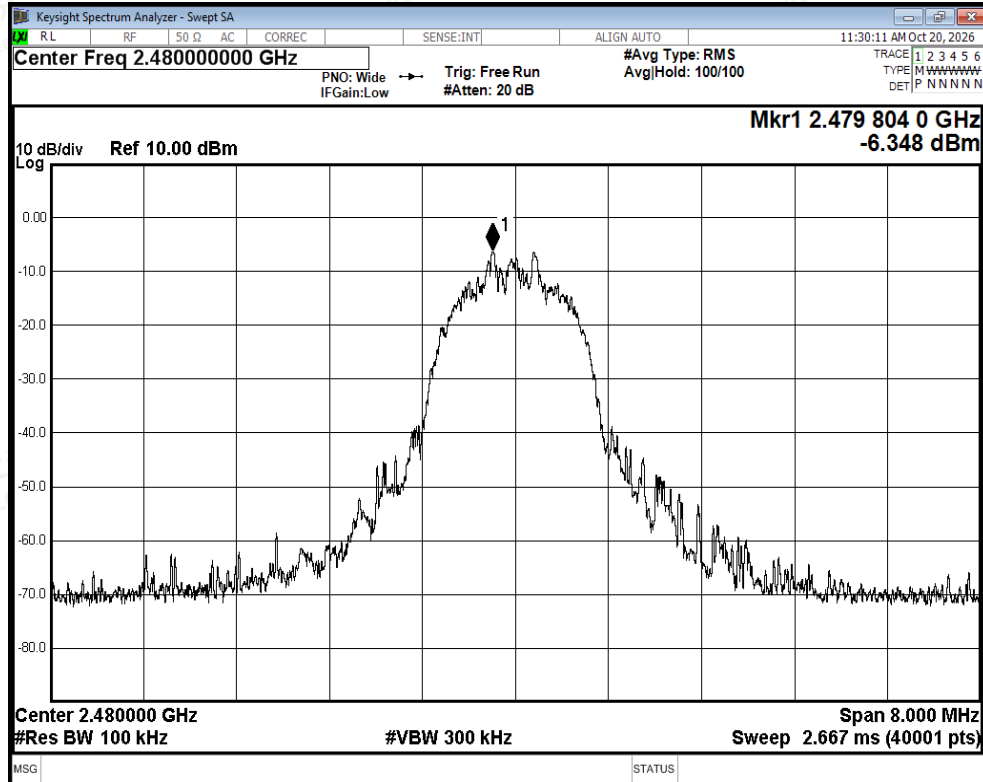
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



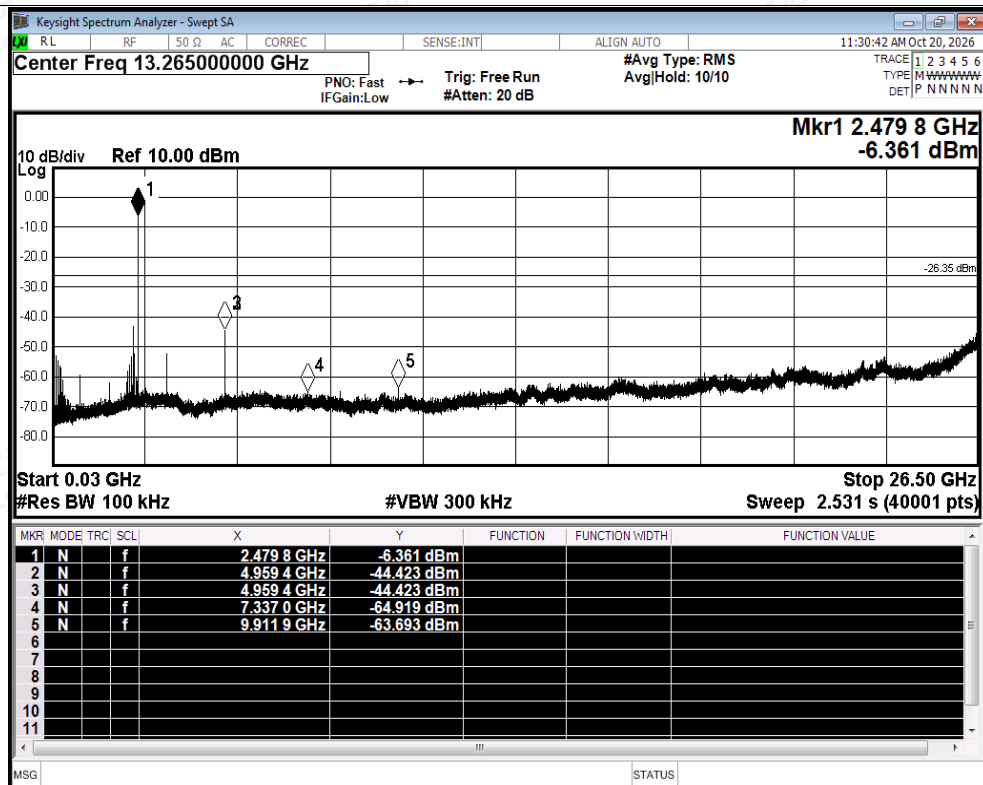
Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref

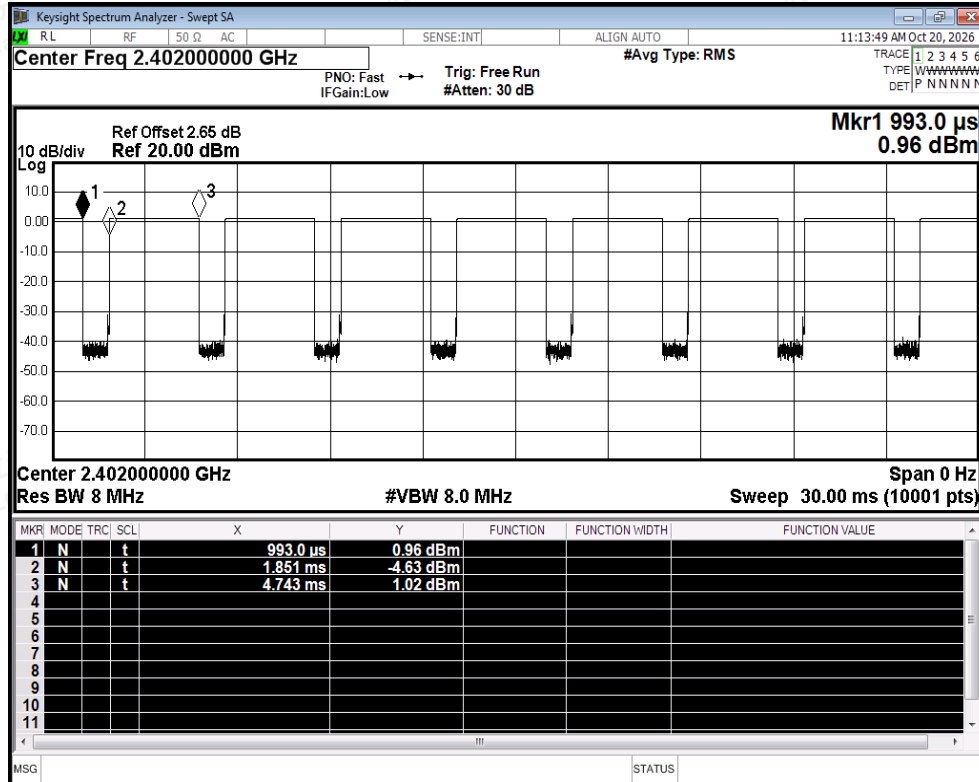


Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

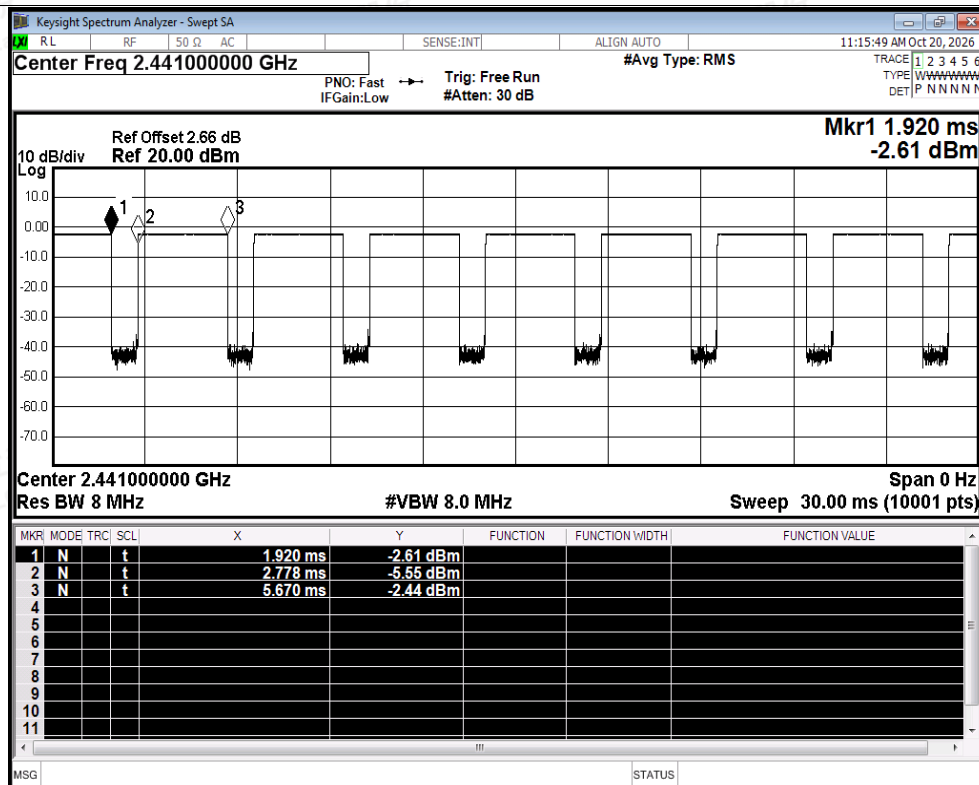


A.8 Duty Cycle

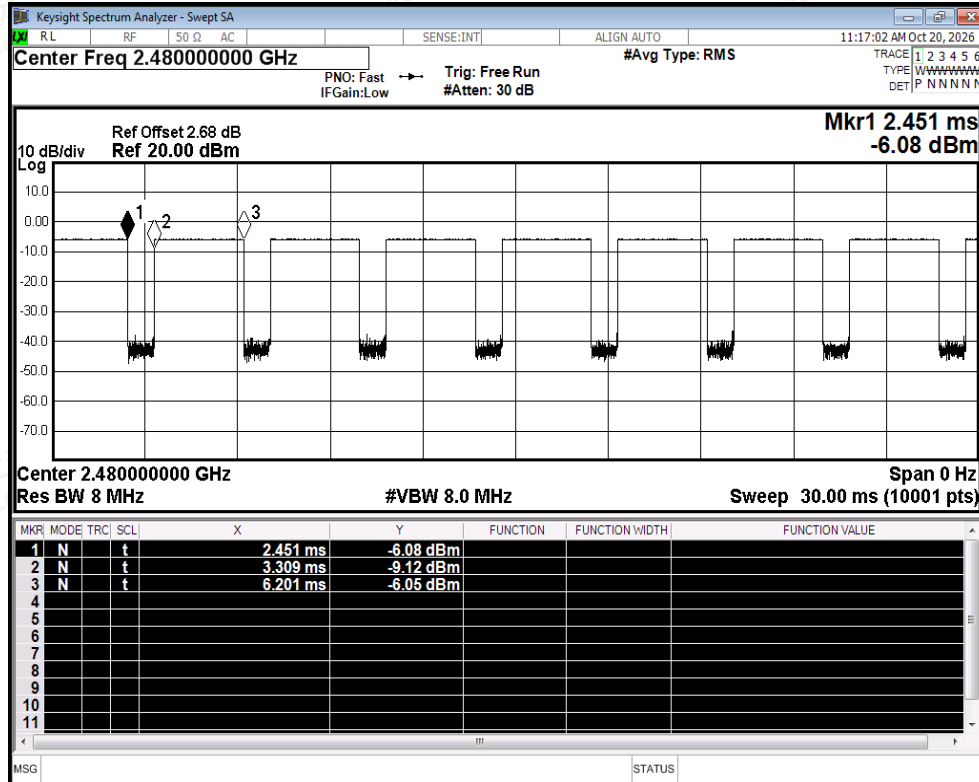
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	77.12	1.13	0.35
NVNT	1-DH5	2441	Ant1	77.12	1.13	0.35
NVNT	1-DH5	2480	Ant1	77.12	1.13	0.35
NVNT	2-DH5	2402	Ant1	77.04	1.13	0.35
NVNT	2-DH5	2441	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.88	1.14	0.35
NVNT	3-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	3-DH5	2441	Ant1	77.04	1.13	0.35
NVNT	3-DH5	2480	Ant1	76.96	1.14	0.35



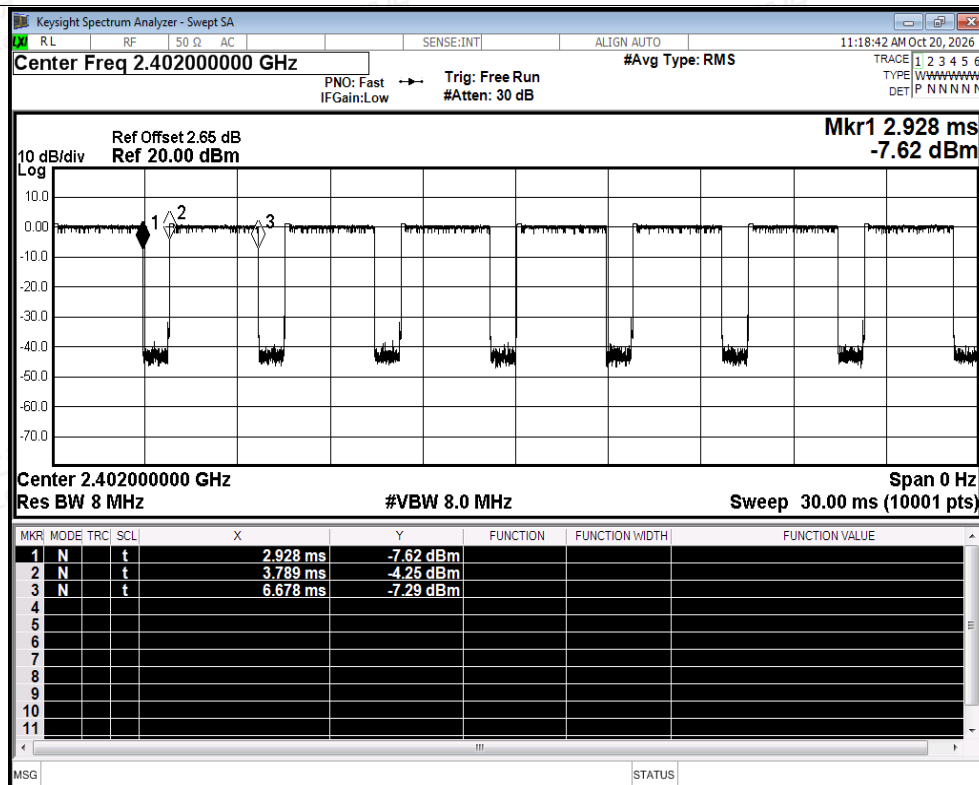
Duty Cycle NVNT 1-DH5 2402MHz Ant1



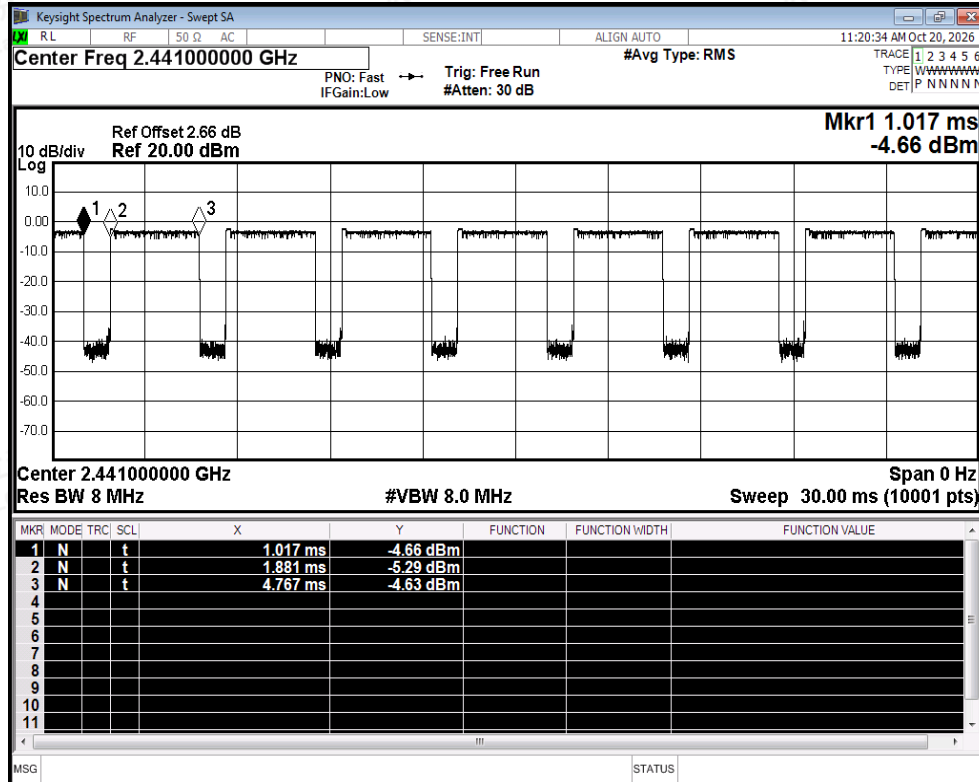
Duty Cycle NVNT 1-DH5 2441MHz Ant1



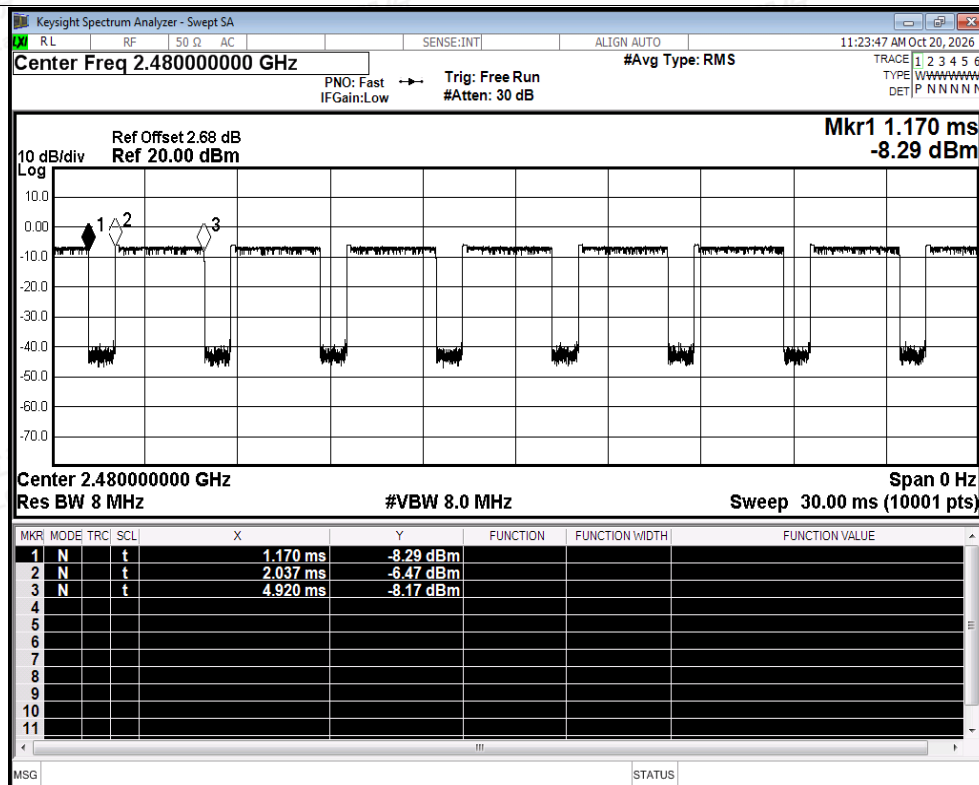
Duty Cycle NVNT 1-DH5 2480MHz Ant1



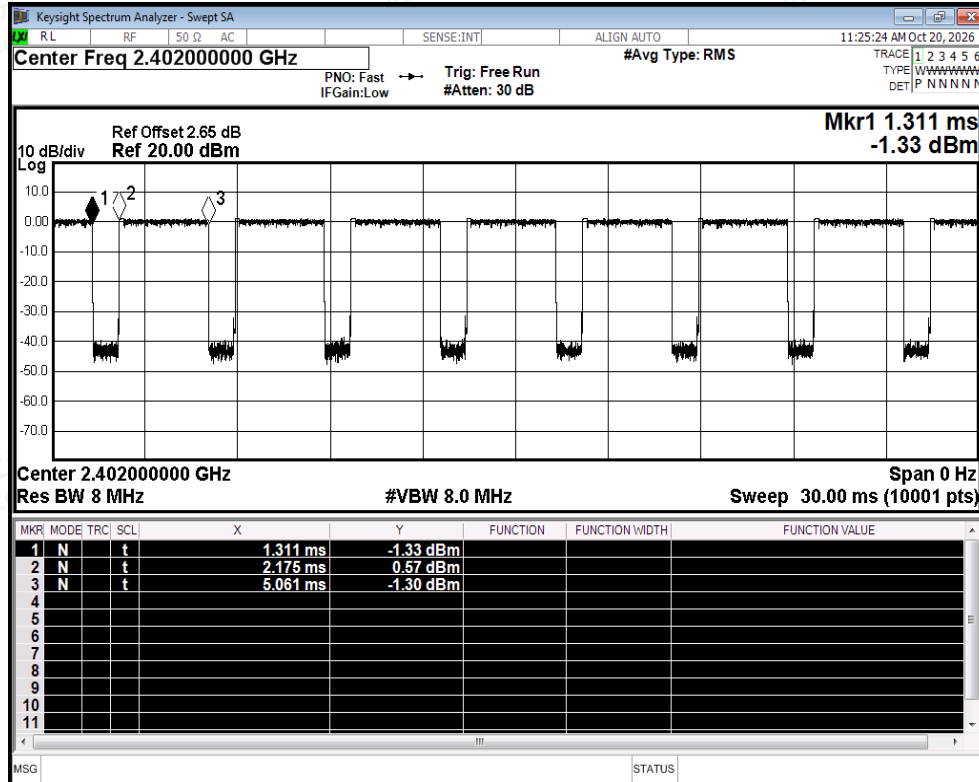
Duty Cycle NVNT 2-DH5 2402MHz Ant1



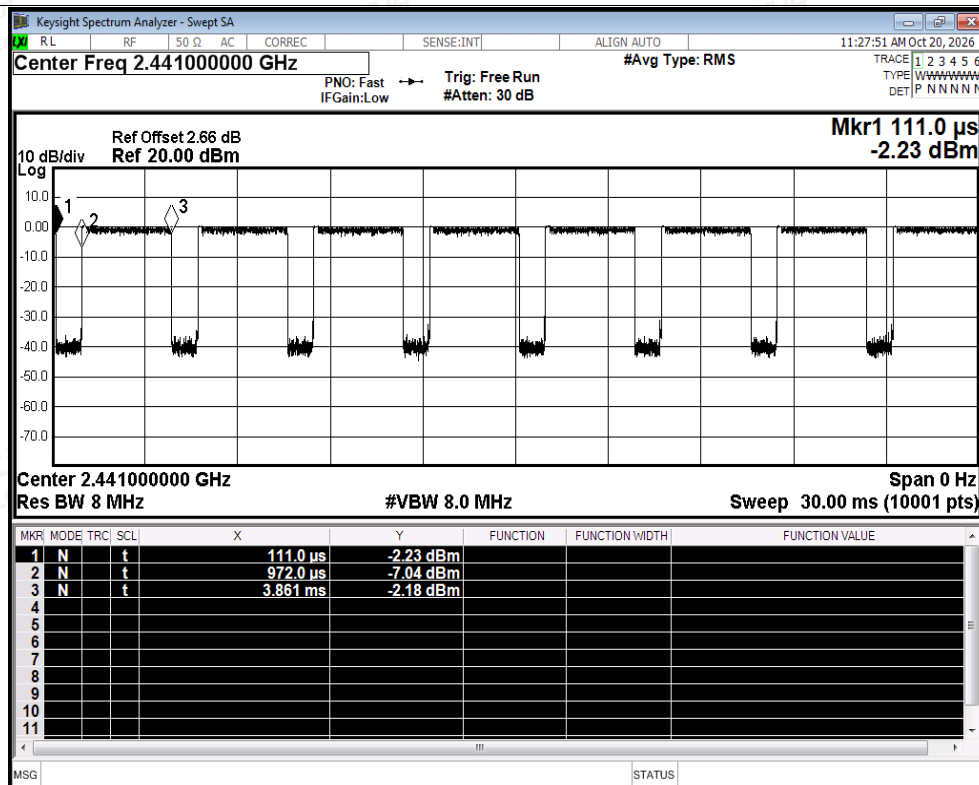
Duty Cycle NVNT 2-DH5 2441MHz Ant1



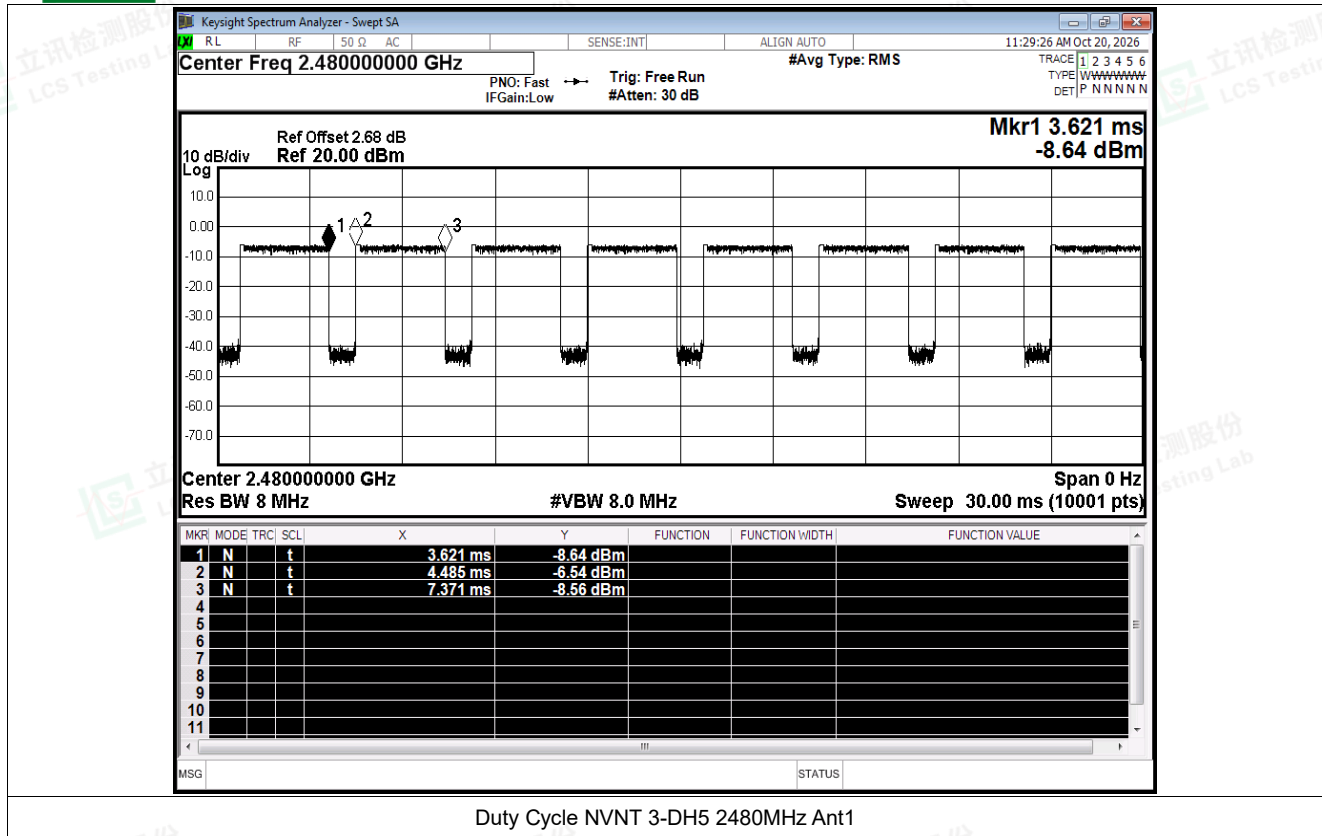
Duty Cycle NVNT 2-DH5 2480MHz Ant1



Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1





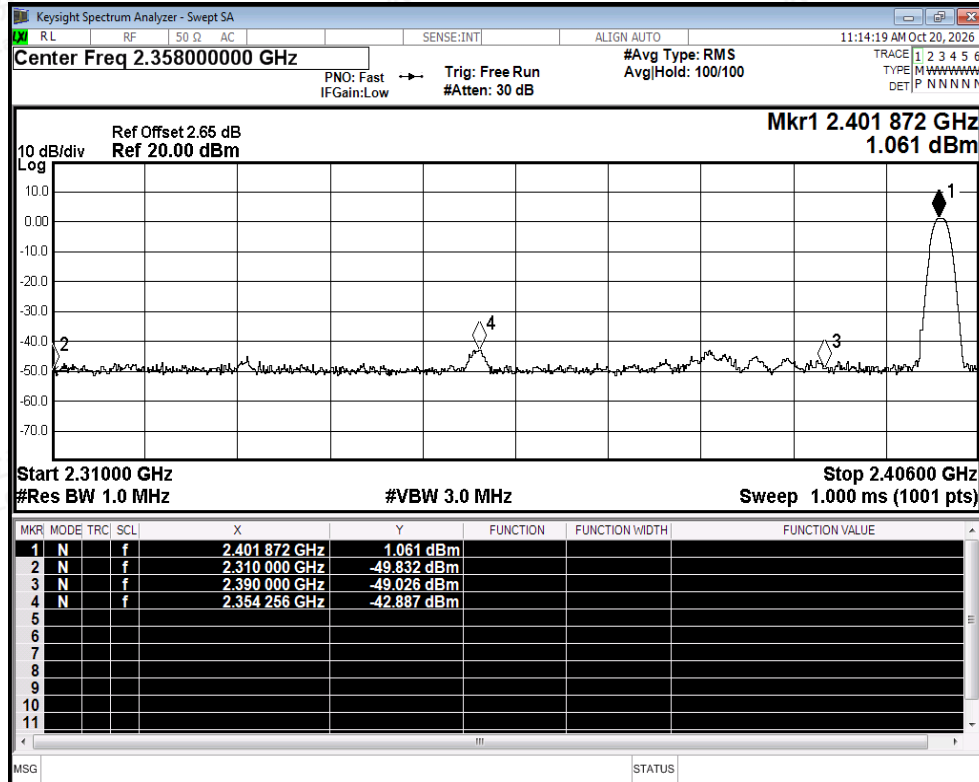
A.9 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-49.83	3.38	48.81	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-56.95	3.38	41.69	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2354.256	-42.88	3.38	55.76	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2353.968	-45.6	3.38	53.04	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-49.23	3.38	49.41	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-52.95	3.38	45.69	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.53	3.38	48.11	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-56.59	3.38	42.05	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2499.28	-46.8	3.38	51.84	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2499.256	-56.13	3.38	42.51	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-49.63	3.38	49.01	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-56.75	3.38	41.89	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-48.34	3.38	50.3	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-56.99	3.38	41.65	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2354.16	-43.36	3.38	55.28	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2354.064	-48.74	3.38	49.9	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-48.76	3.38	49.88	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-54.71	3.38	43.93	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.04	3.38	49.6	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-56.63	3.38	42.01	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2488.888	-46.59	3.38	52.05	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2497.696	-56.44	3.38	42.2	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-48.98	3.38	49.66	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-56.84	3.38	41.8	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-49.72	3.38	48.92	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-56.95	3.38	41.69	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2354.352	-43.58	3.38	55.06	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2354.064	-48.65	3.38	49.99	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-48.25	3.38	50.39	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-54.87	3.38	43.77	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-51.11	3.38	47.53	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-56.76	3.38	41.88	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2499.976	-46.68	3.38	51.96	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2499.064	-56.49	3.38	42.15	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.53	3.38	49.11	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-56.9	3.38	41.74	Average	54	Pass

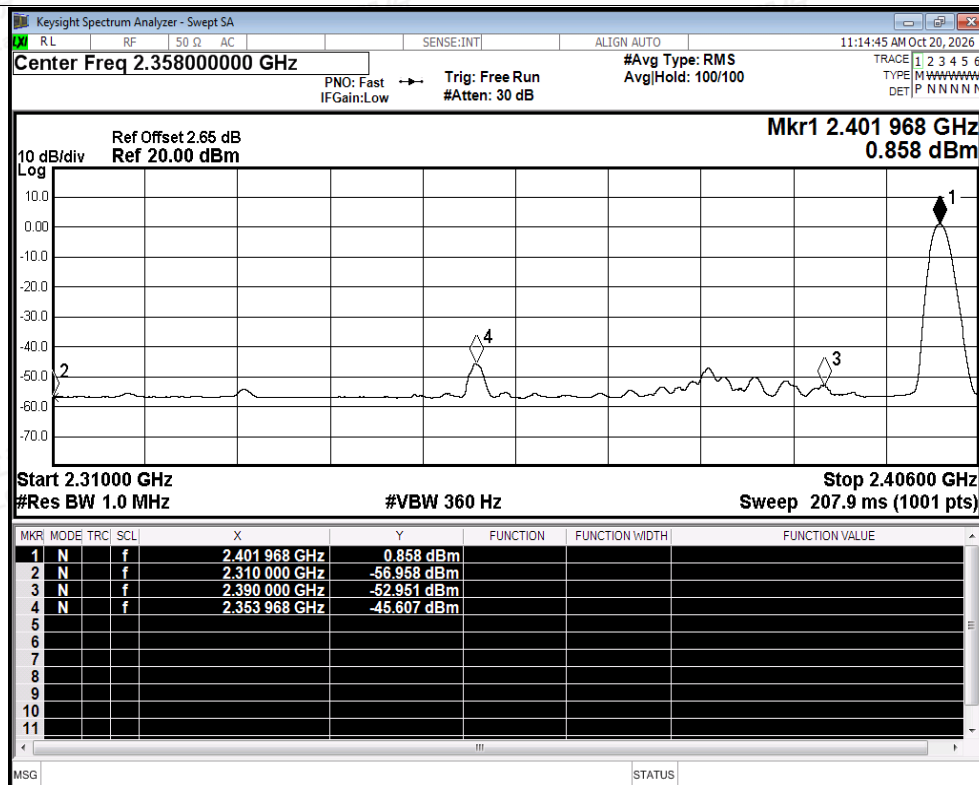
Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China.

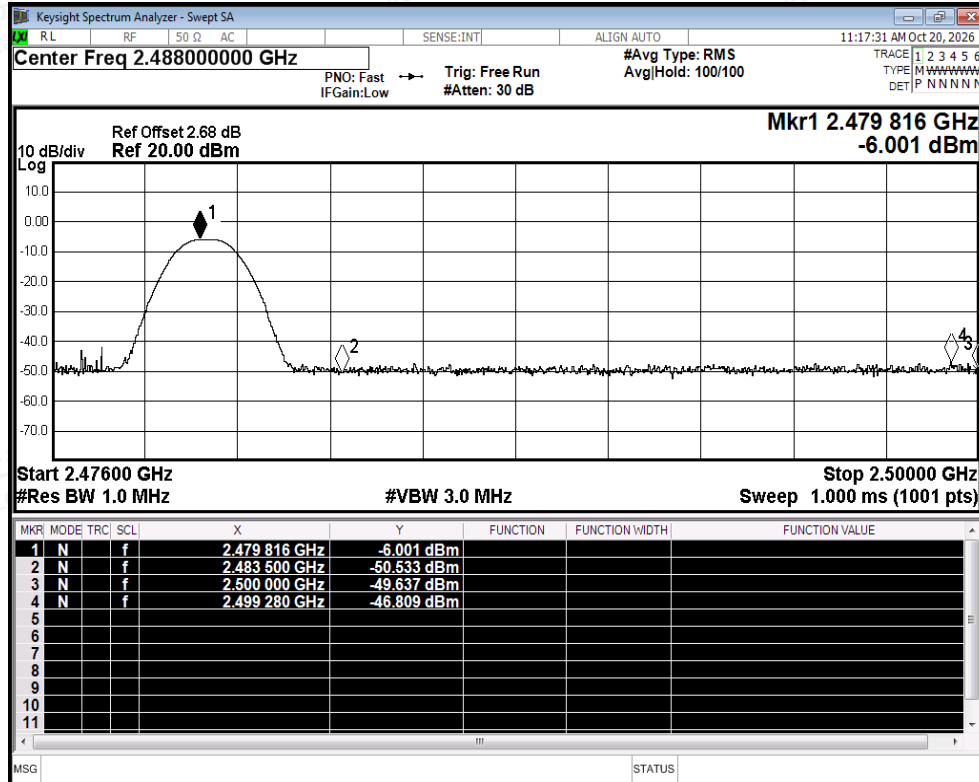
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com



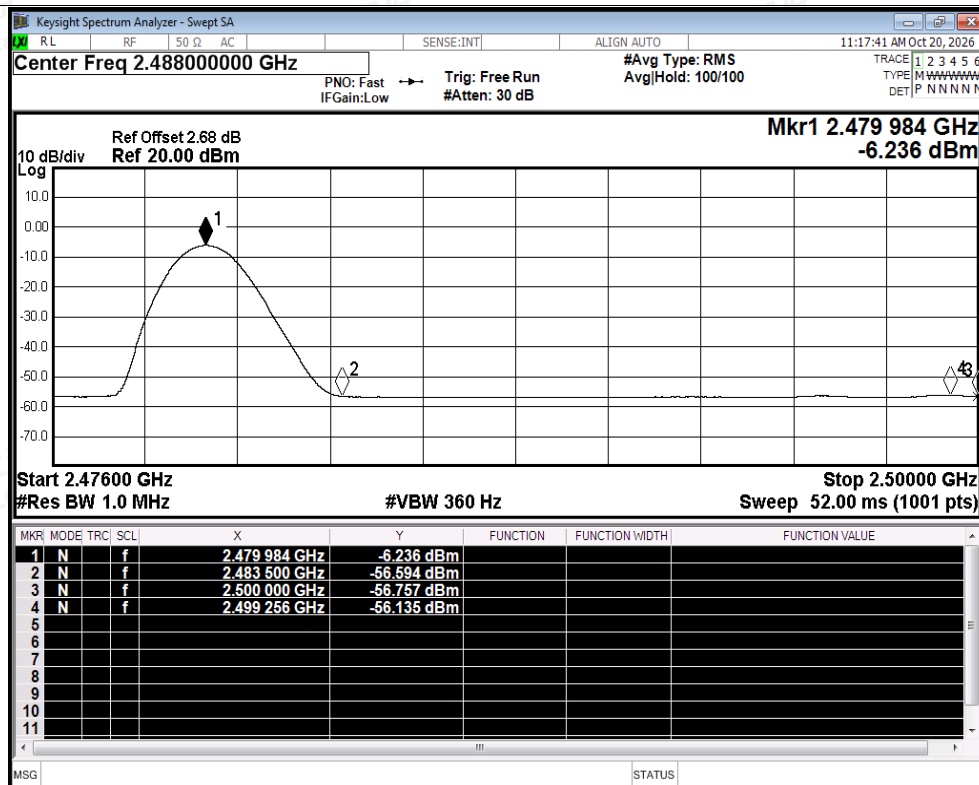
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Peak



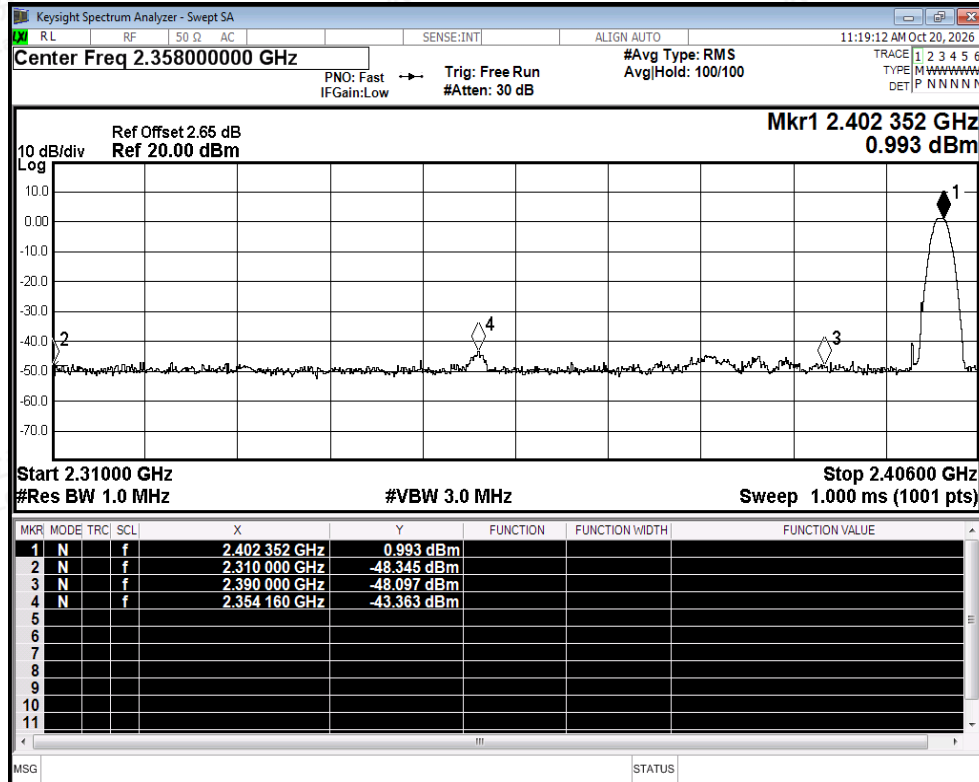
Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average



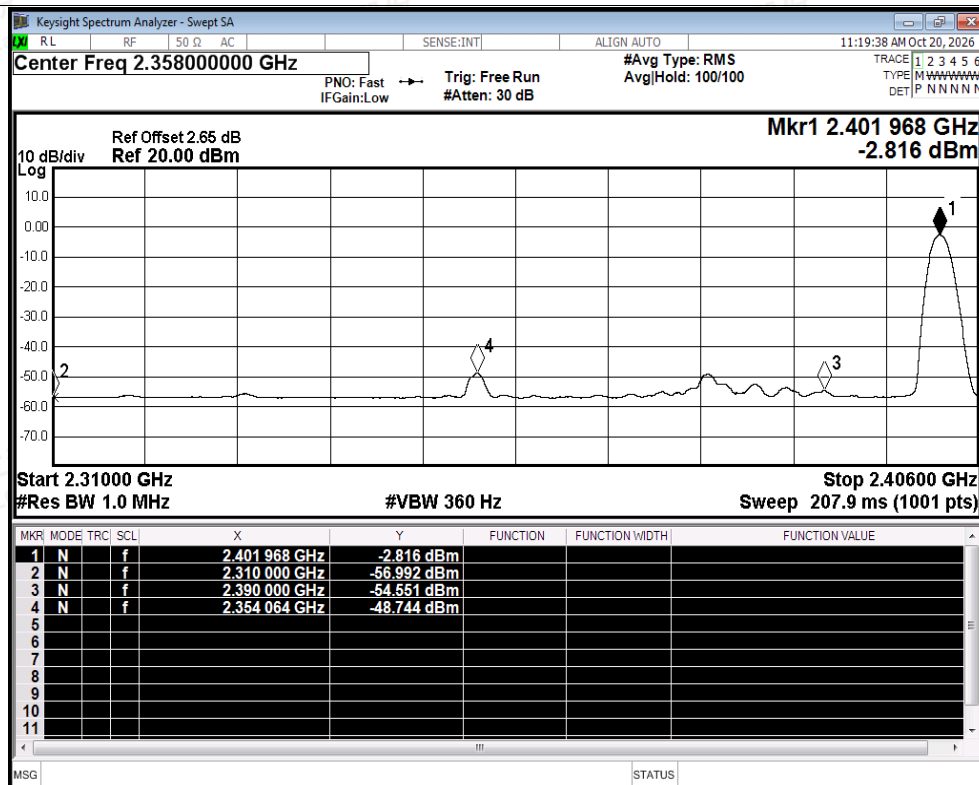
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak



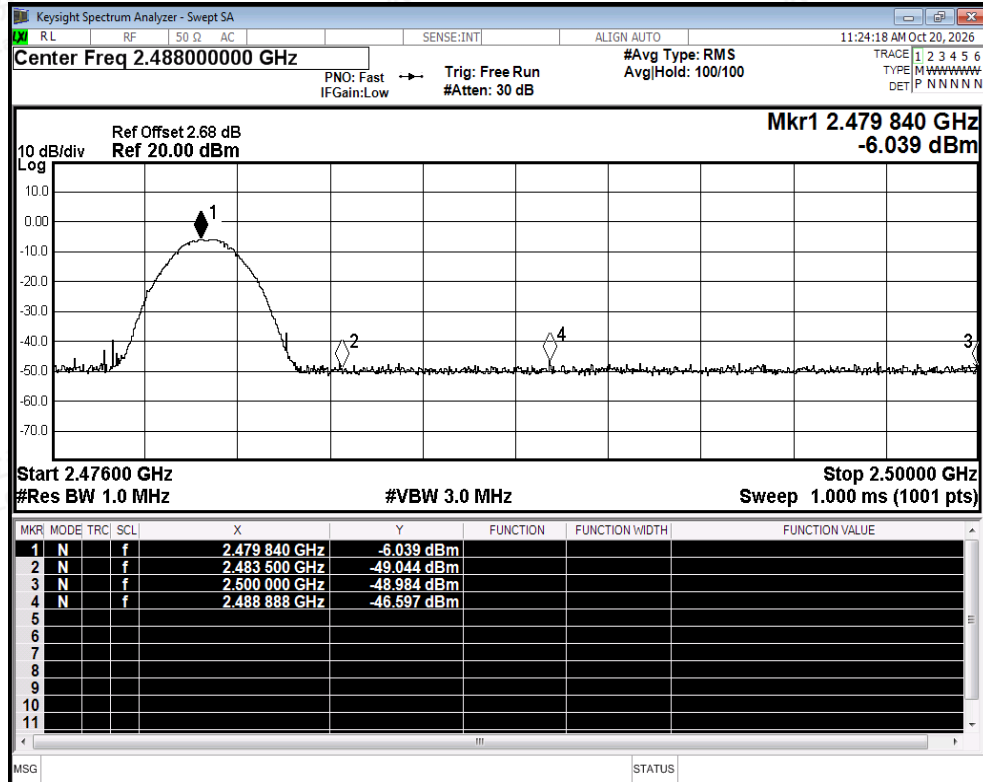
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



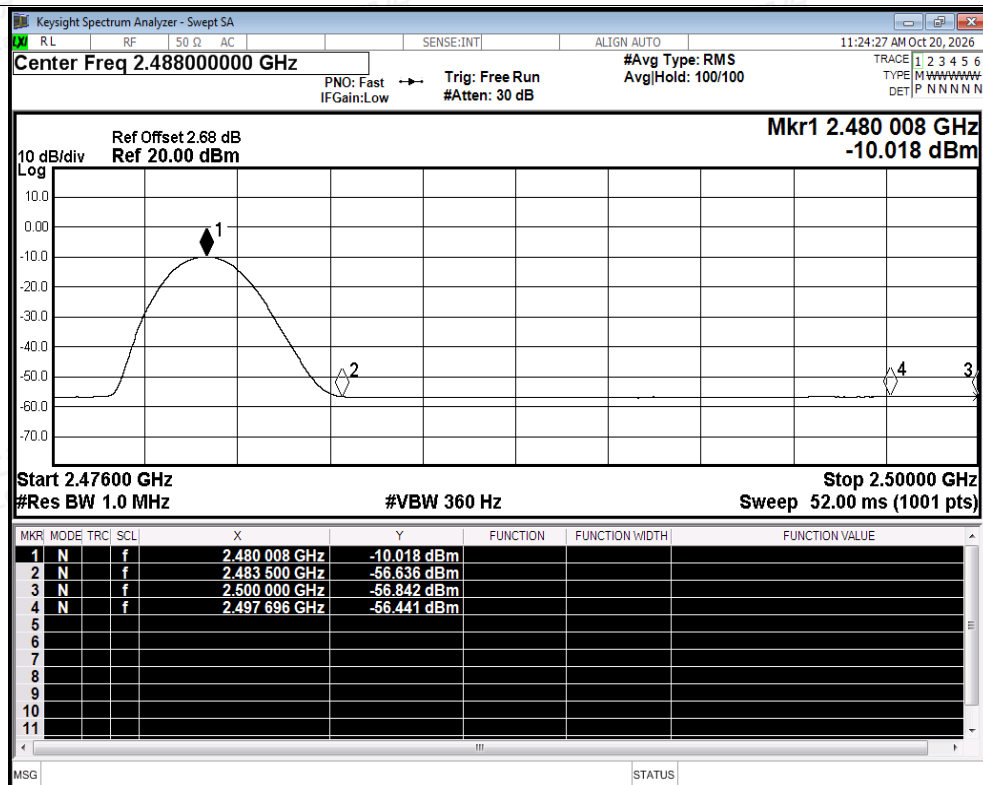
Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak



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



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

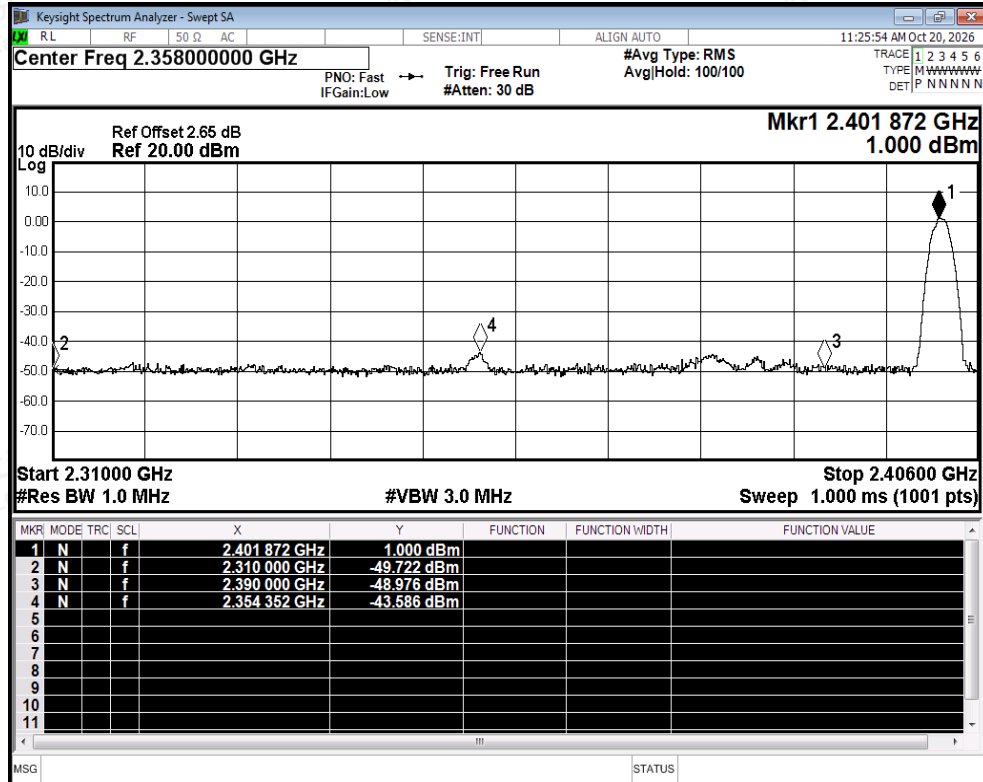


Restrict Band NVNT 2-DH5 2480MHz Ant1 No-Hopping Average

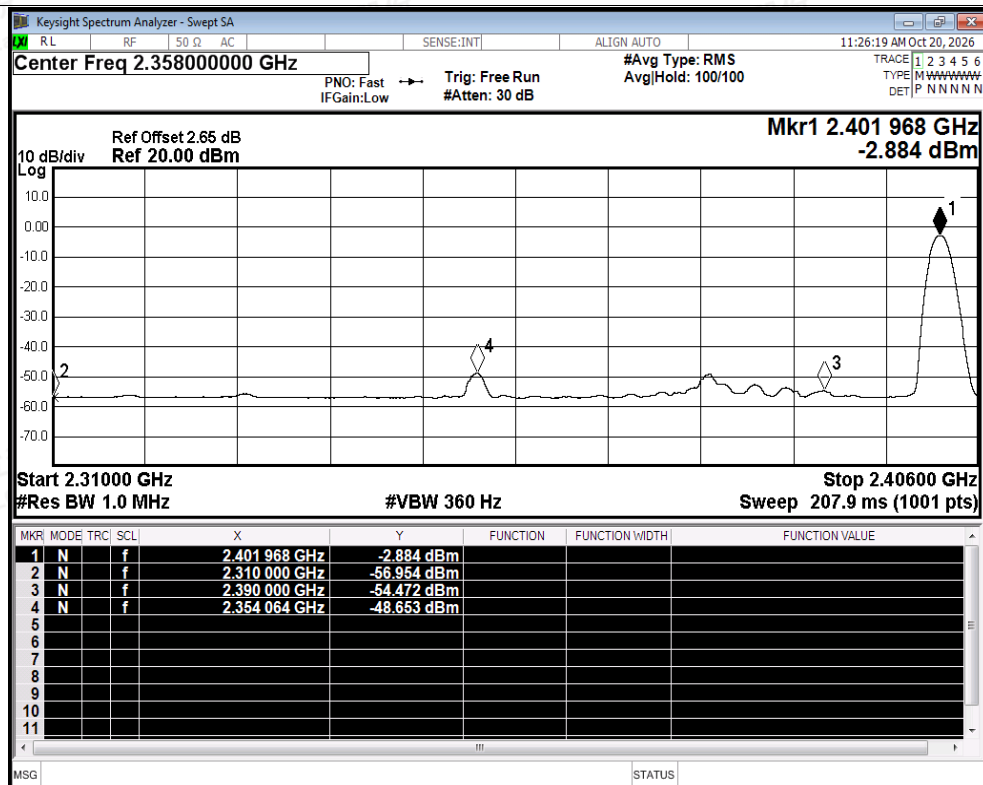
Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China.

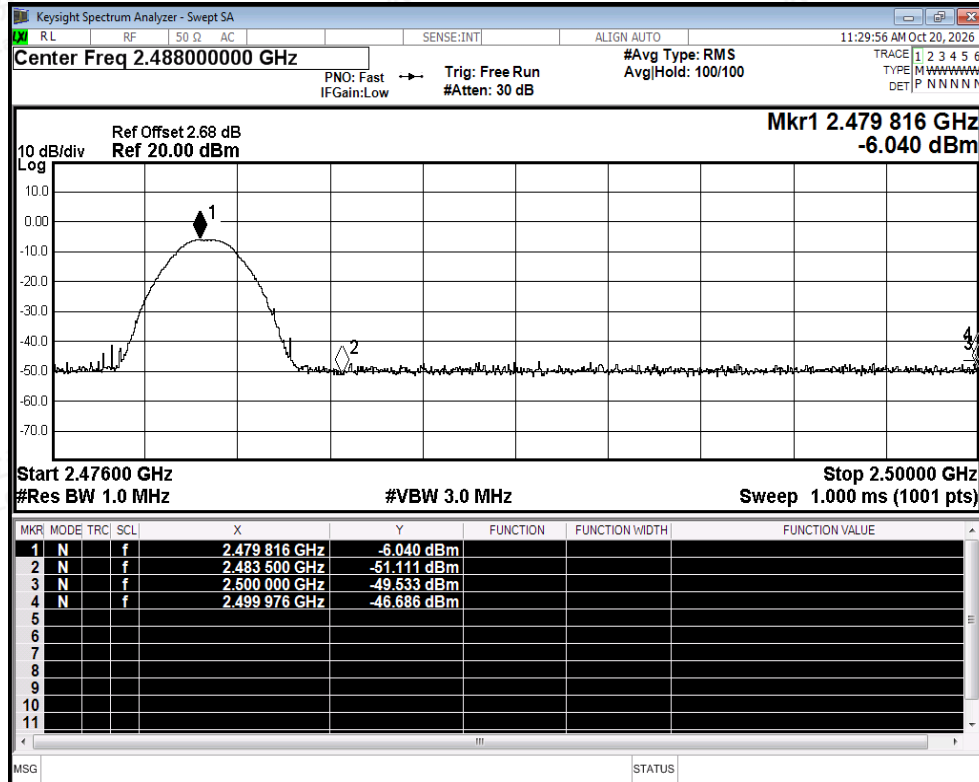
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com



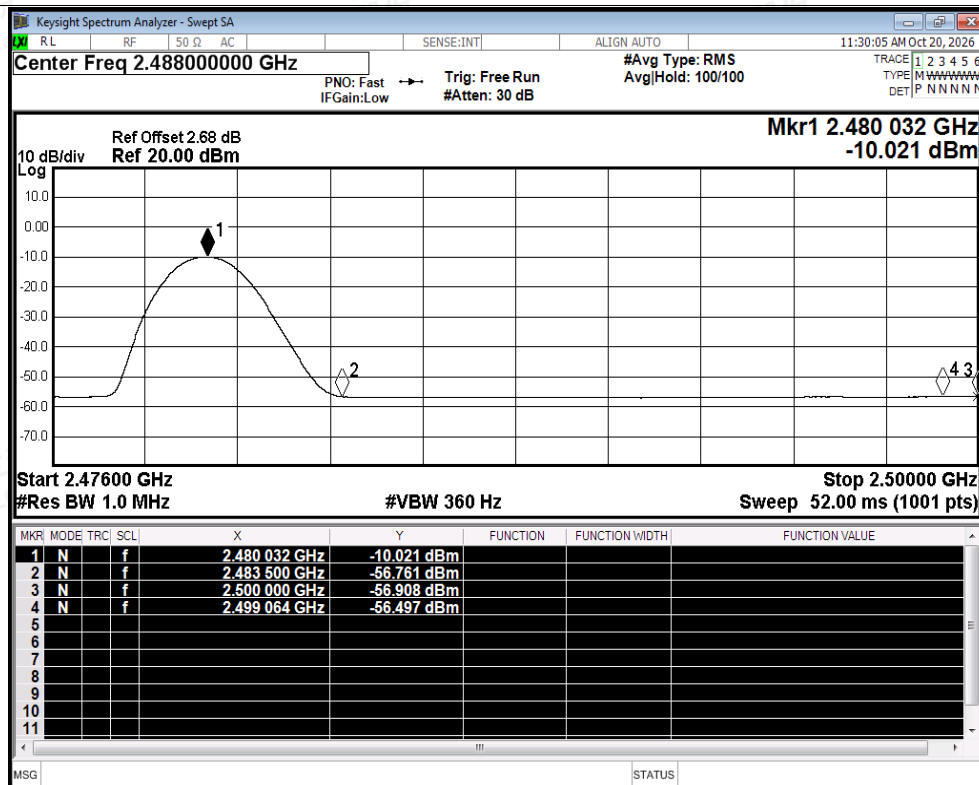
Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak



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