



Appendix A

RF Test Data for BT(Conducted Measurement)

Product Name: Smart Speaker

Test Model: L1

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
Supervised by:	Nick Peng





A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.95	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.943	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.945	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.283	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.337	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.284	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.302	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.296	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.308	N/A	Pass

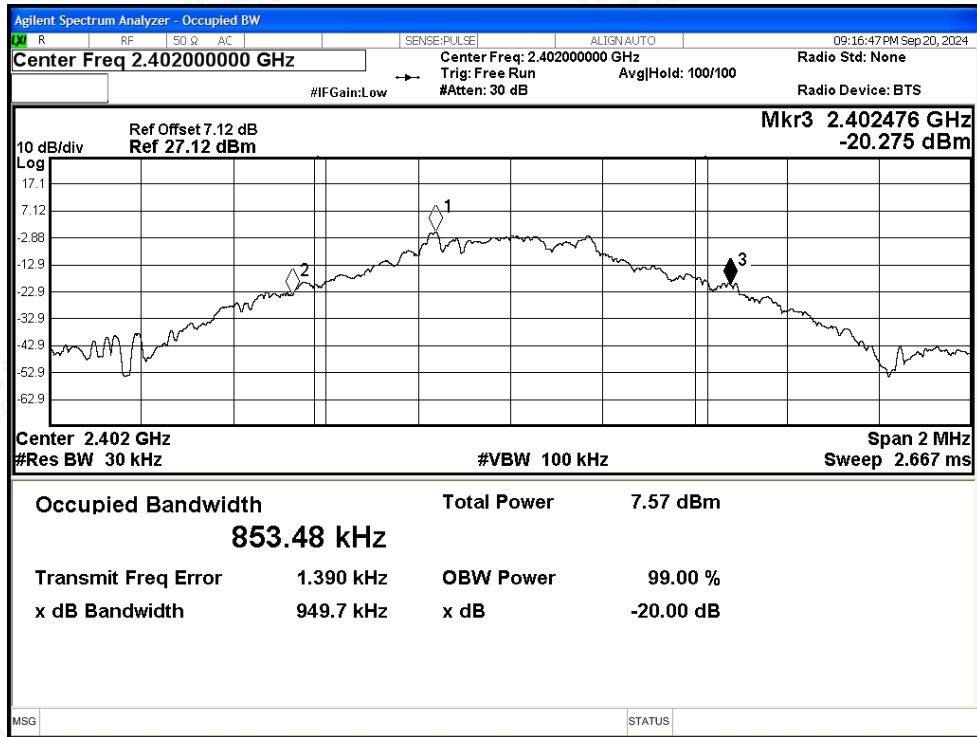


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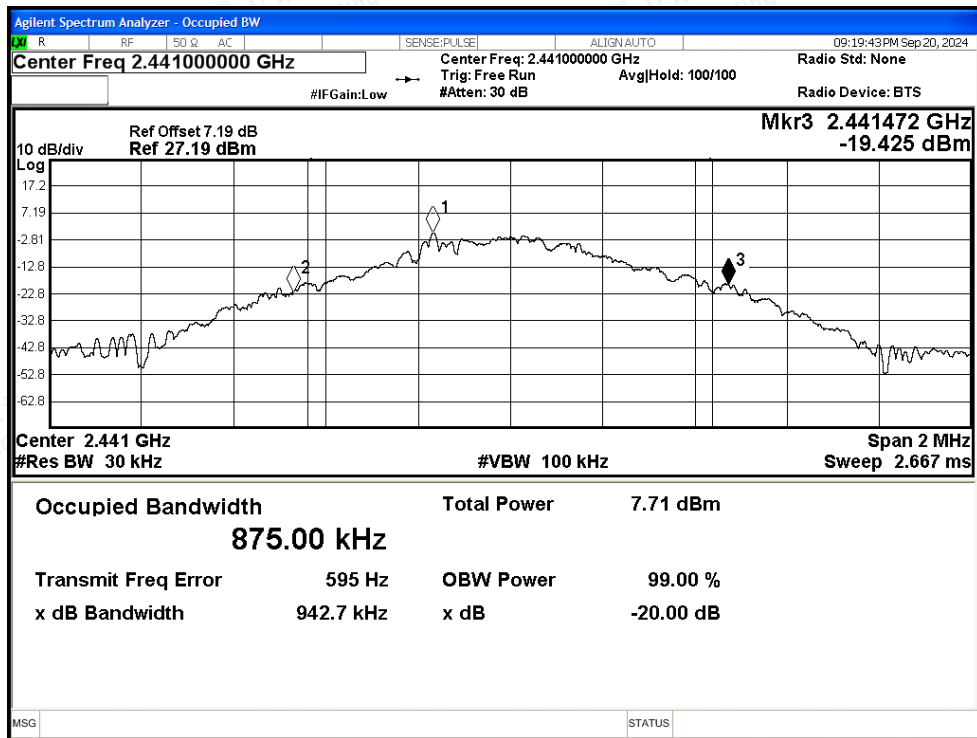


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

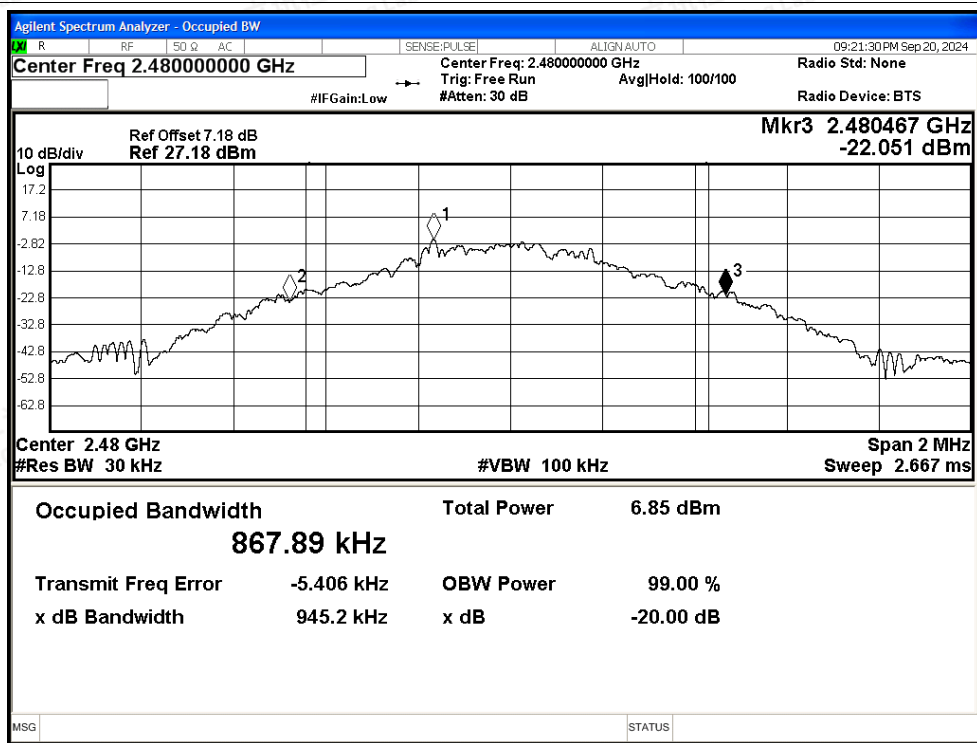


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

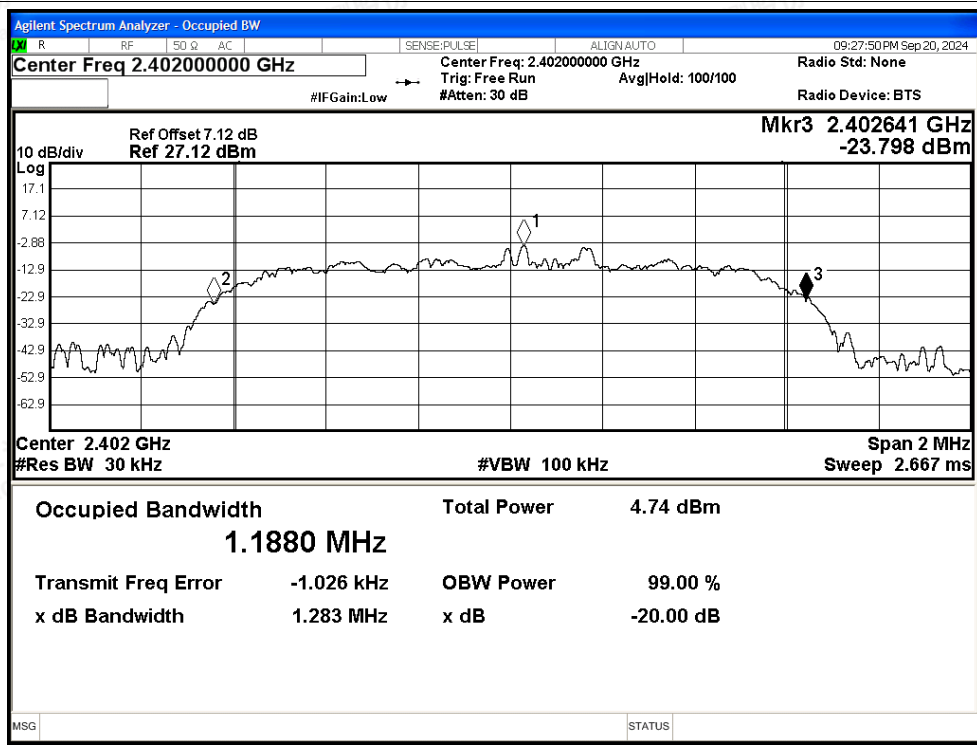




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

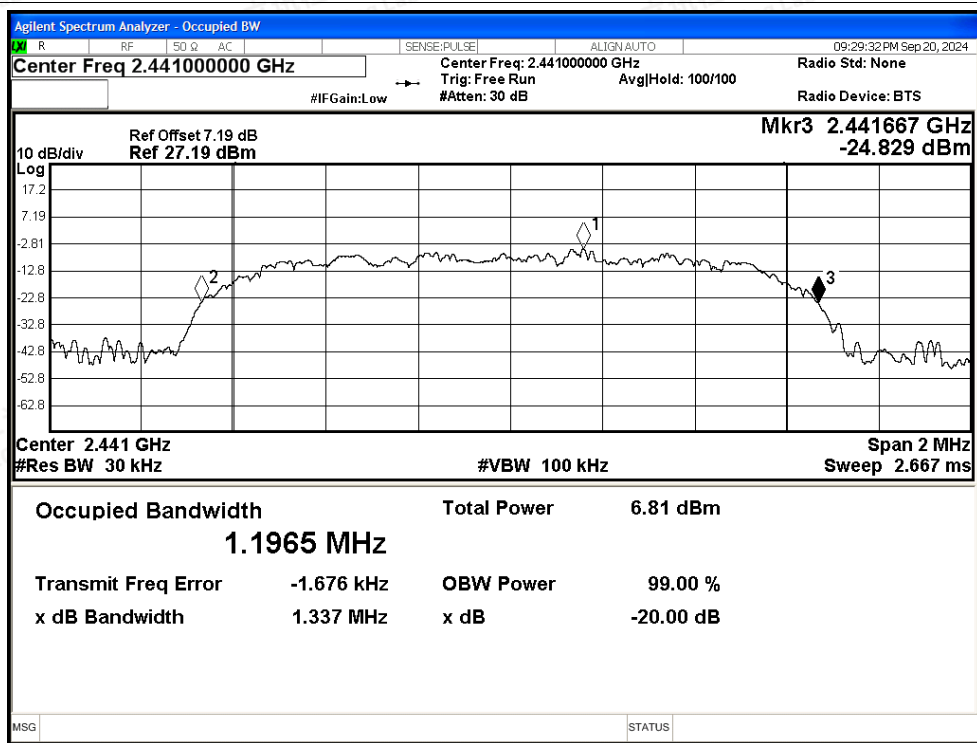


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

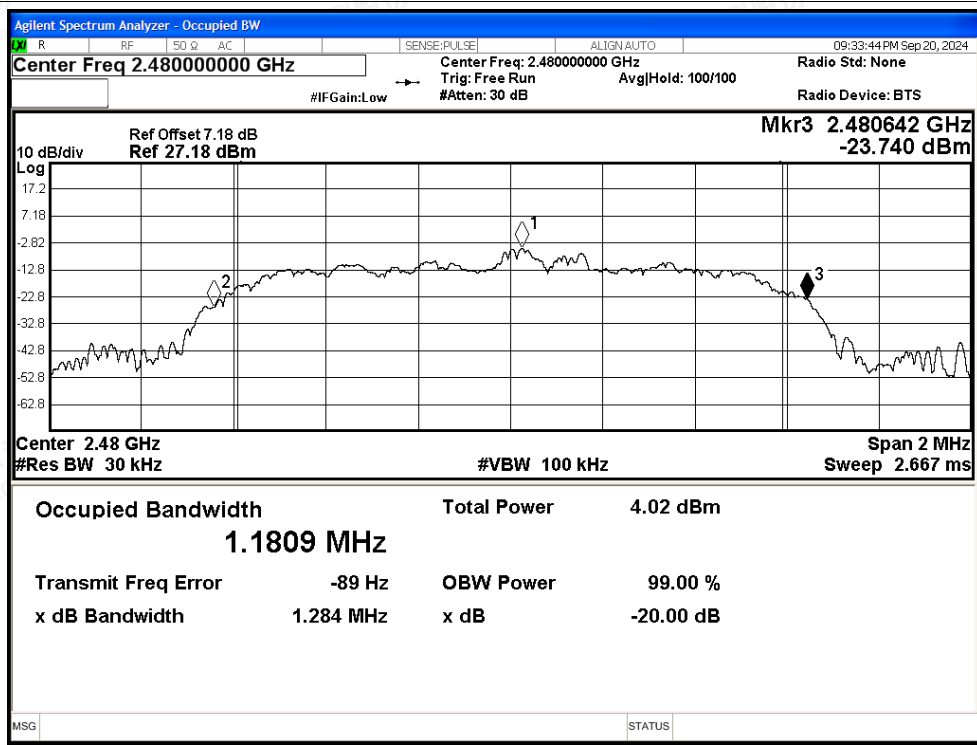




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

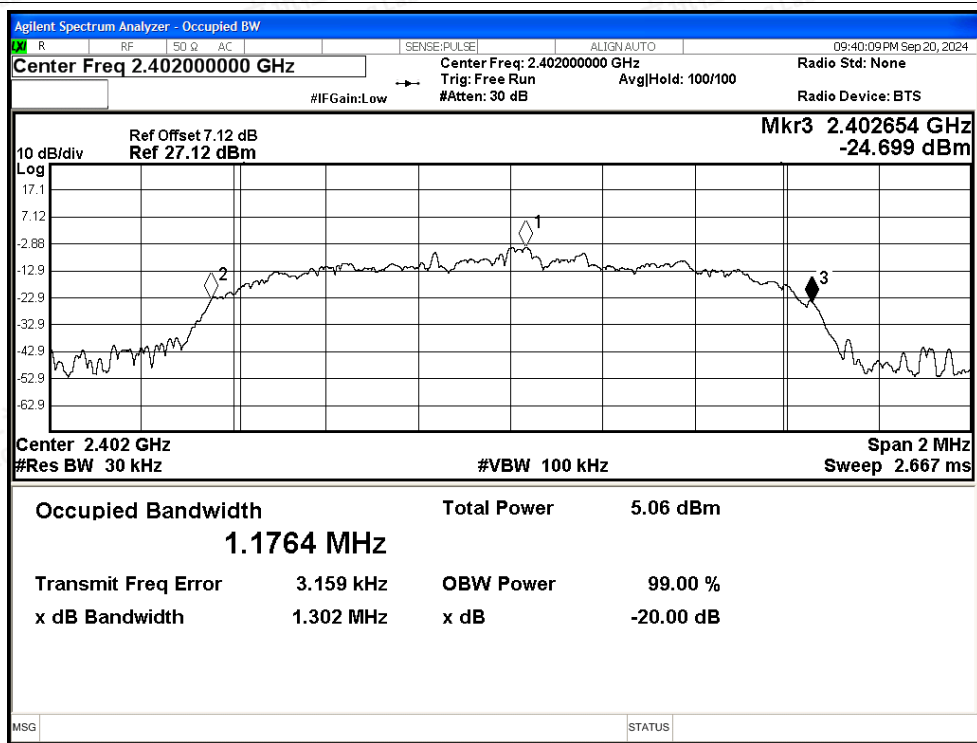


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

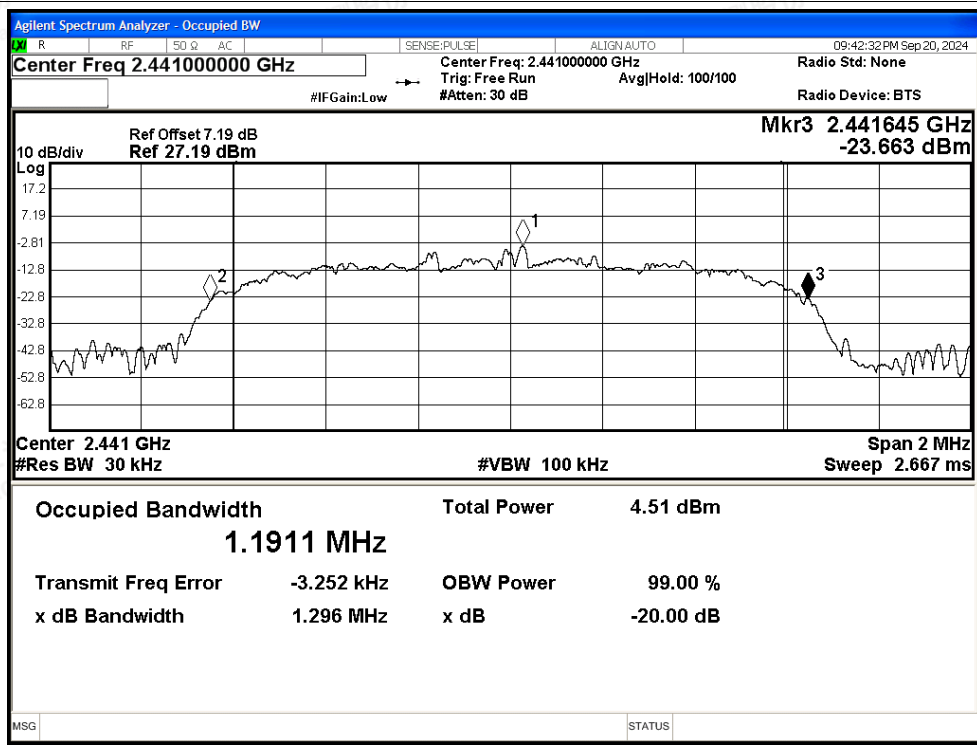


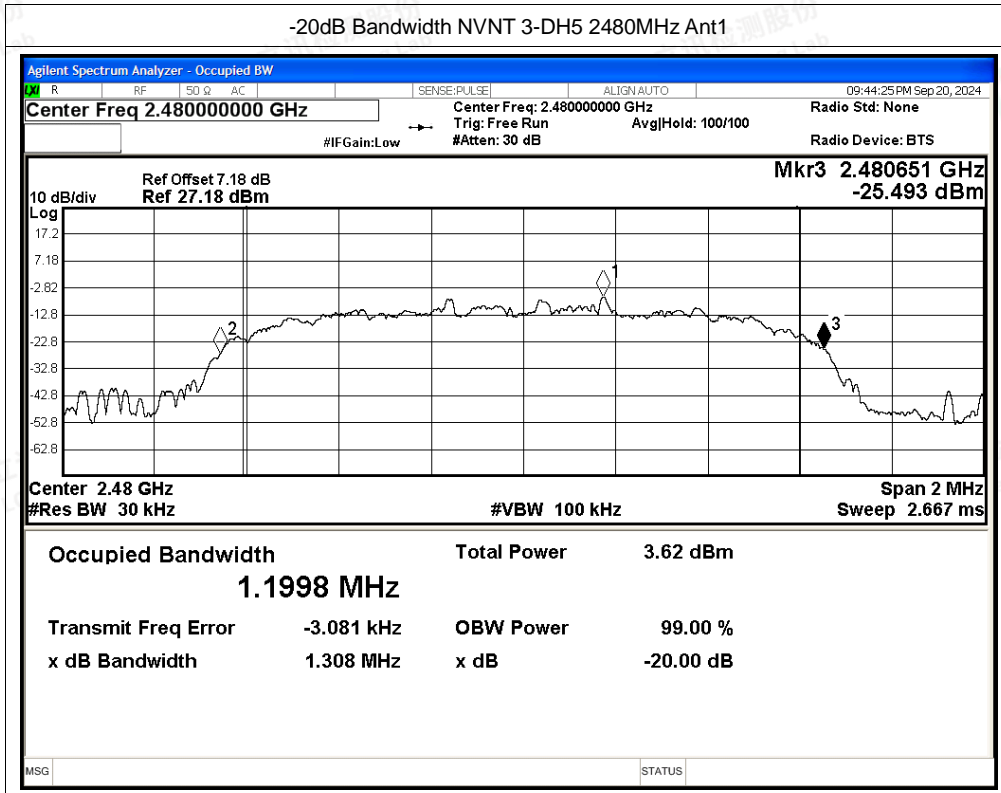


-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1







A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.95	21	Pass
NVNT	1-DH5	2441	Ant1	1.38	21	Pass
NVNT	1-DH5	2480	Ant1	0.22	21	Pass
NVNT	2-DH5	2402	Ant1	0.26	21	Pass
NVNT	2-DH5	2441	Ant1	0.17	21	Pass
NVNT	2-DH5	2480	Ant1	-0.62	21	Pass
NVNT	3-DH5	2402	Ant1	0.73	21	Pass
NVNT	3-DH5	2441	Ant1	0.63	21	Pass
NVNT	3-DH5	2480	Ant1	-0.16	21	Pass

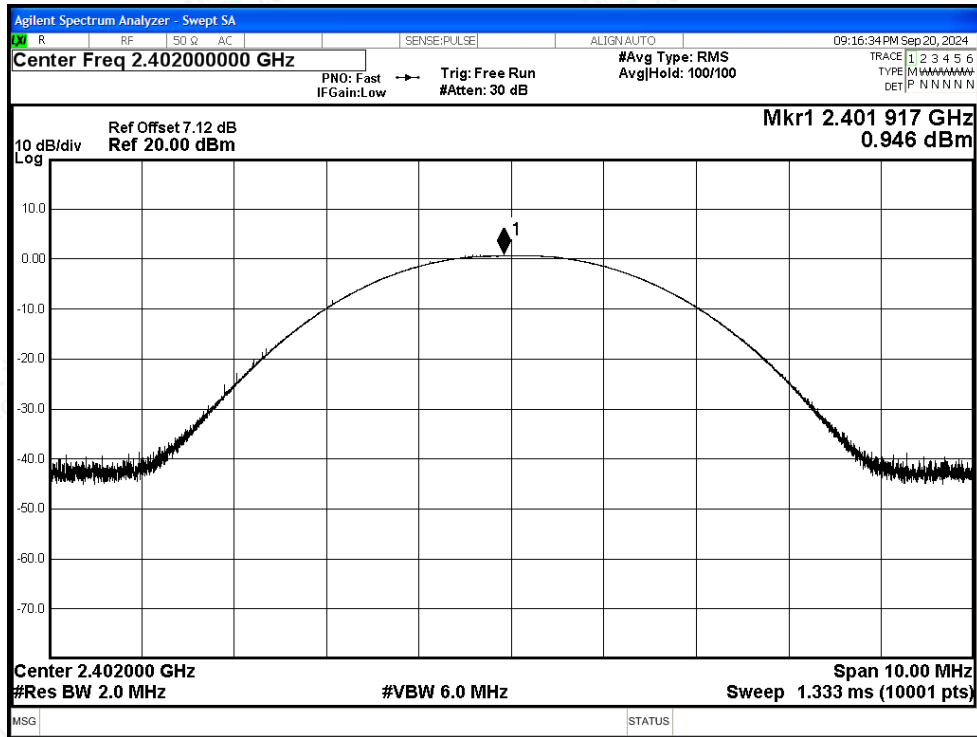


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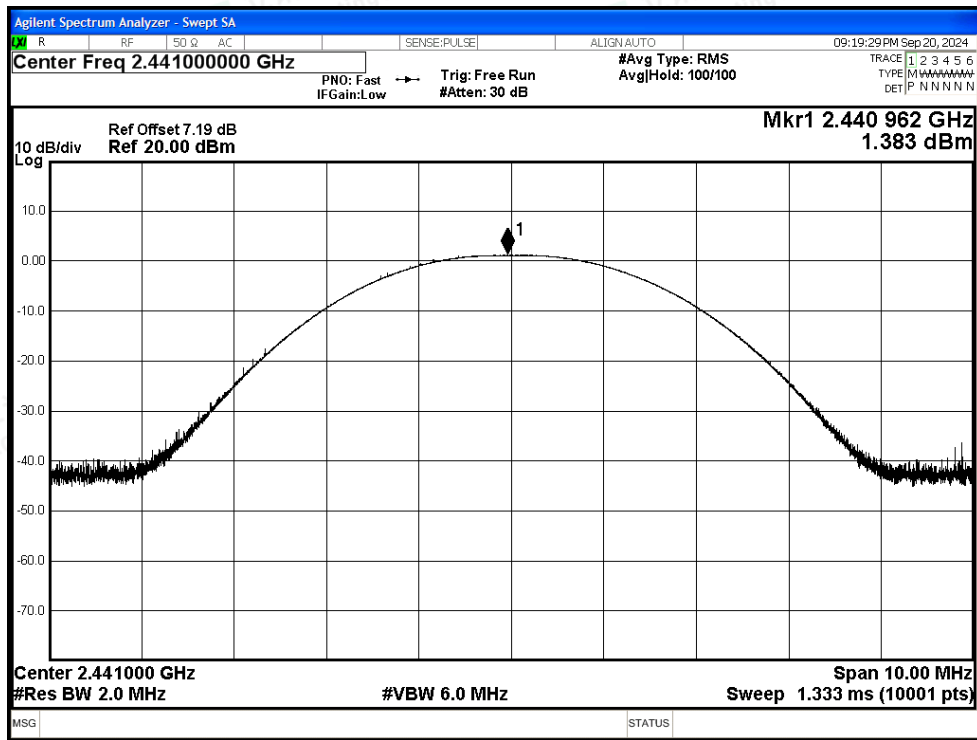


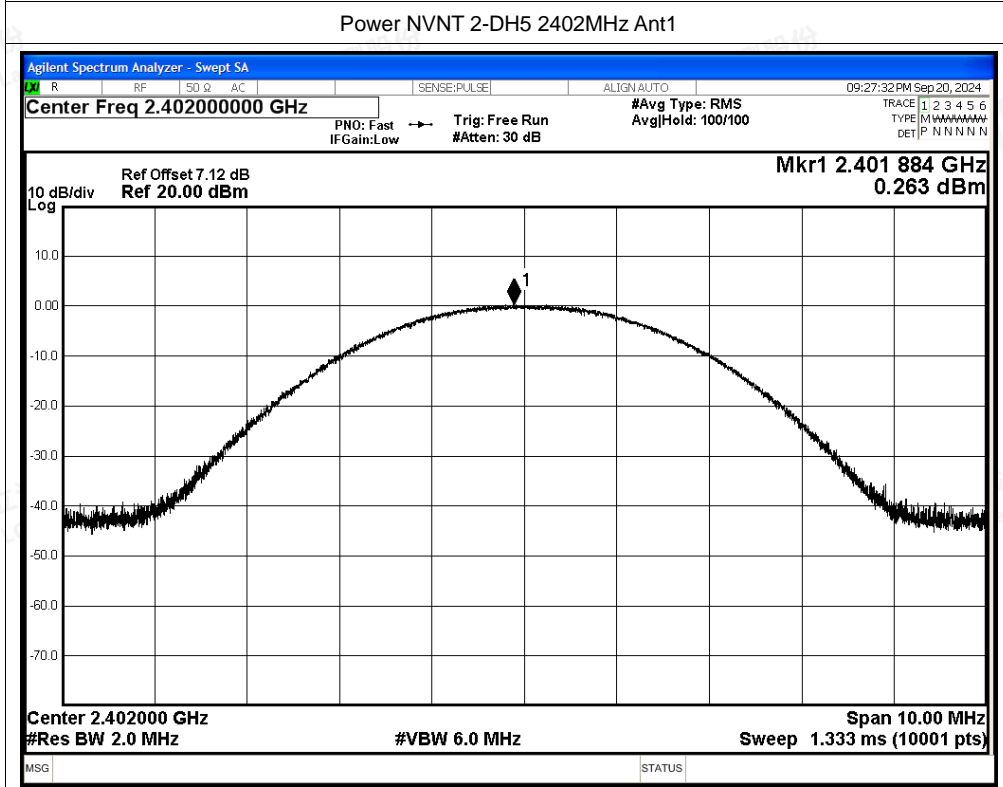
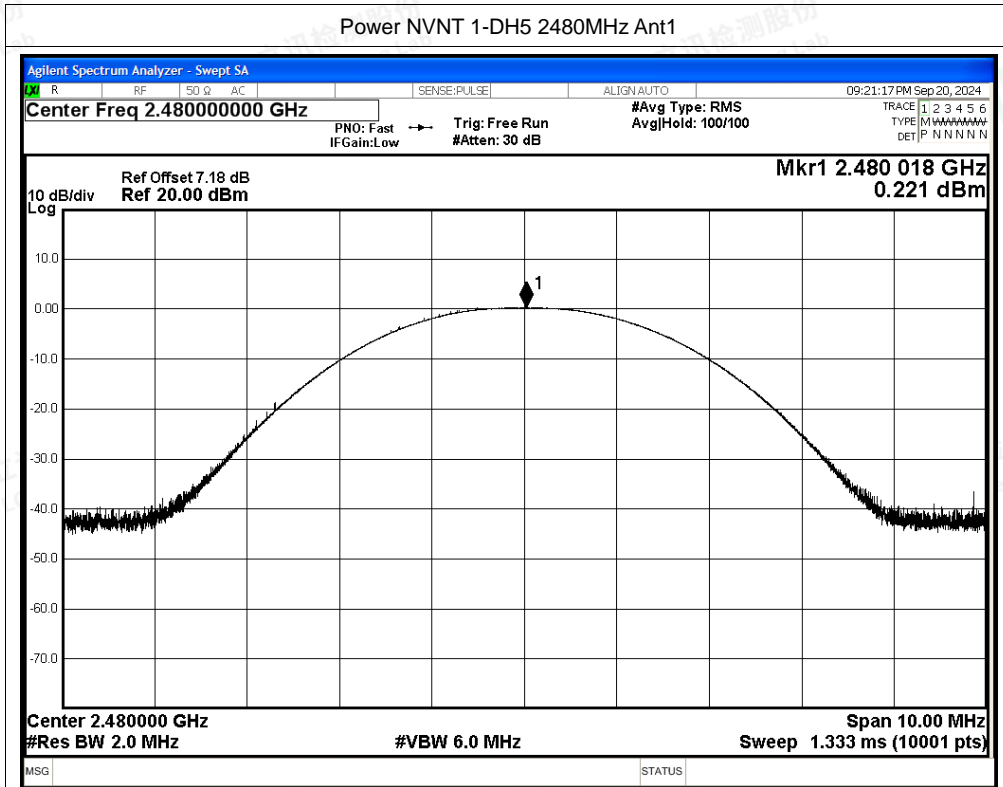
Test Graphs

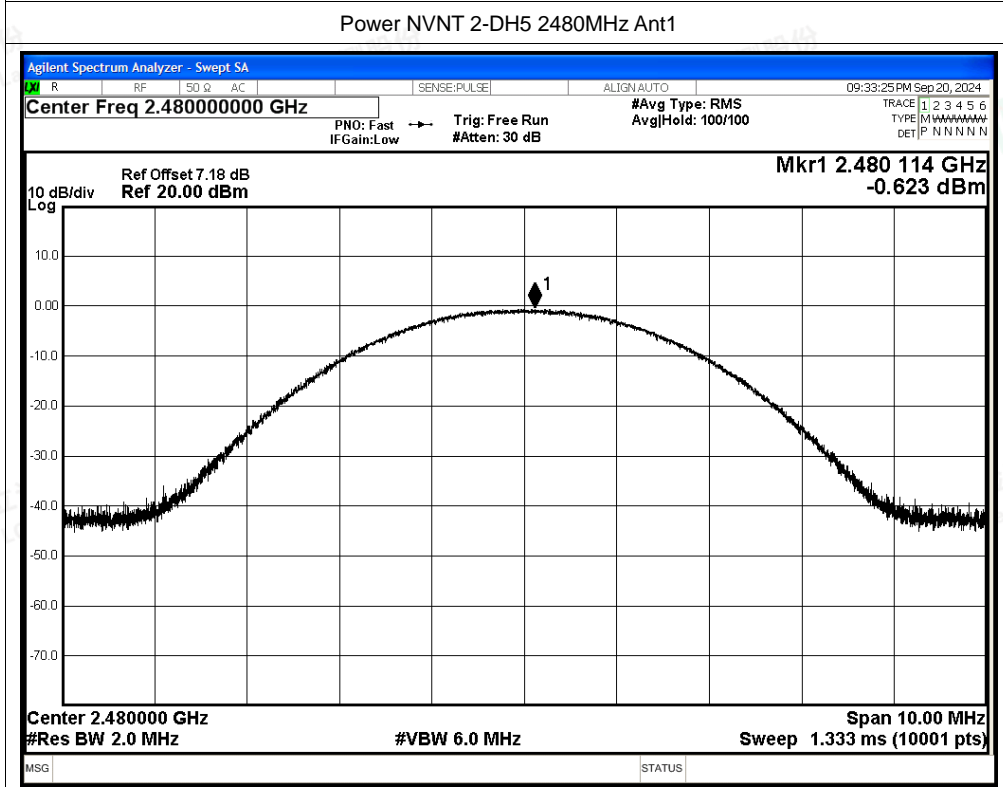
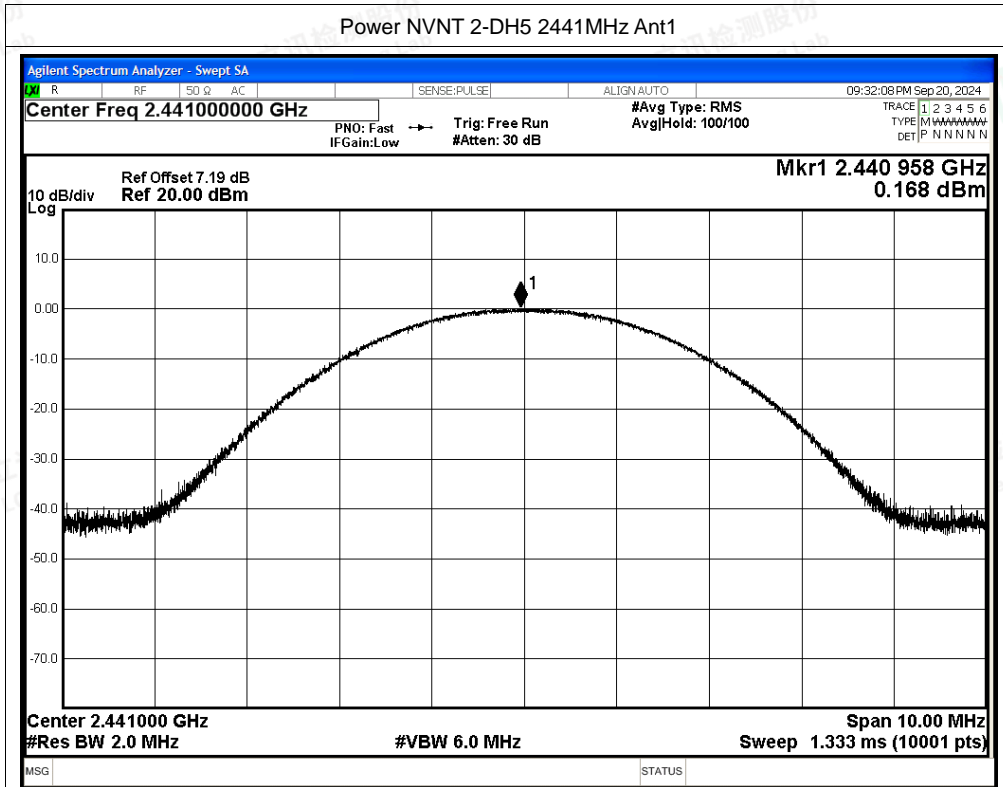
Power NVNT 1-DH5 2402MHz Ant1



Power NVNT 1-DH5 2441MHz Ant1

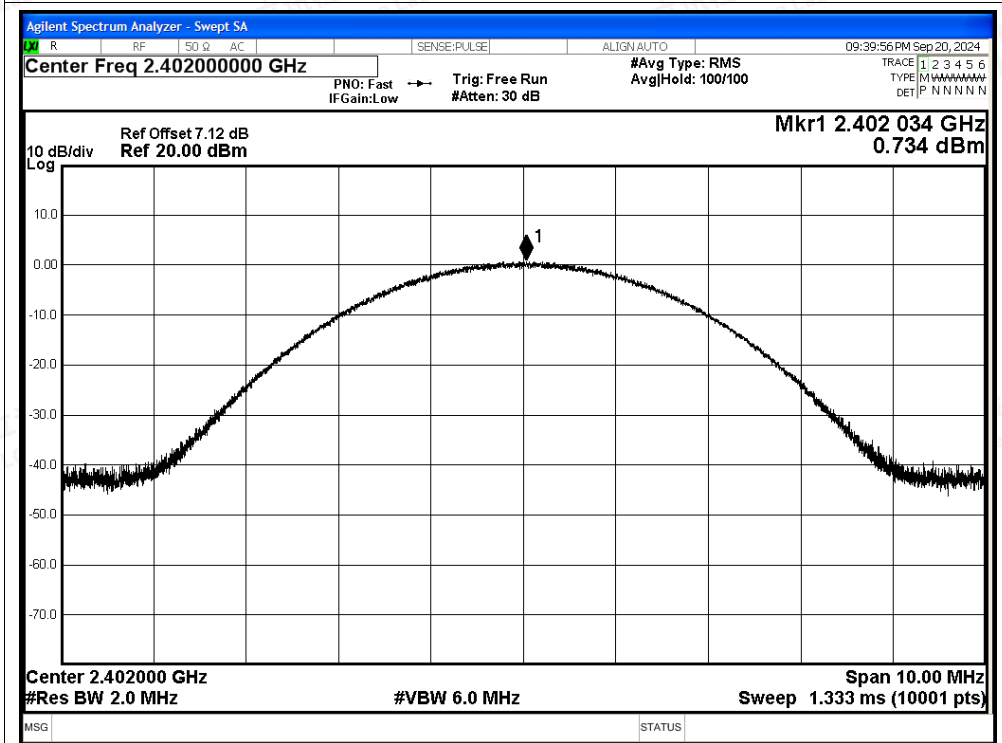




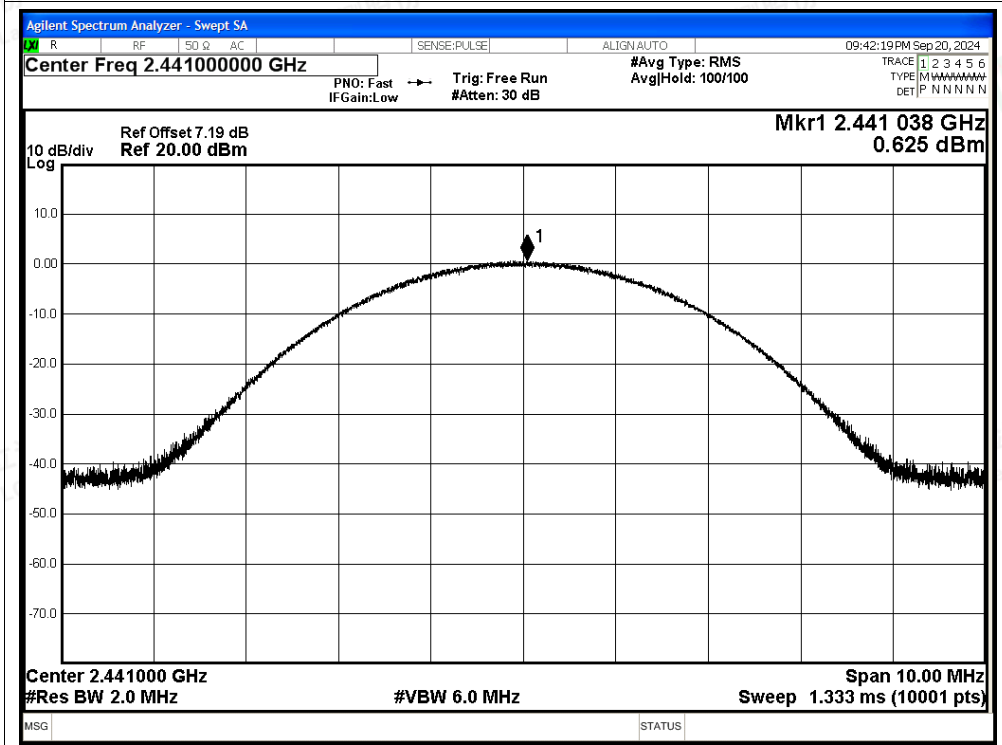


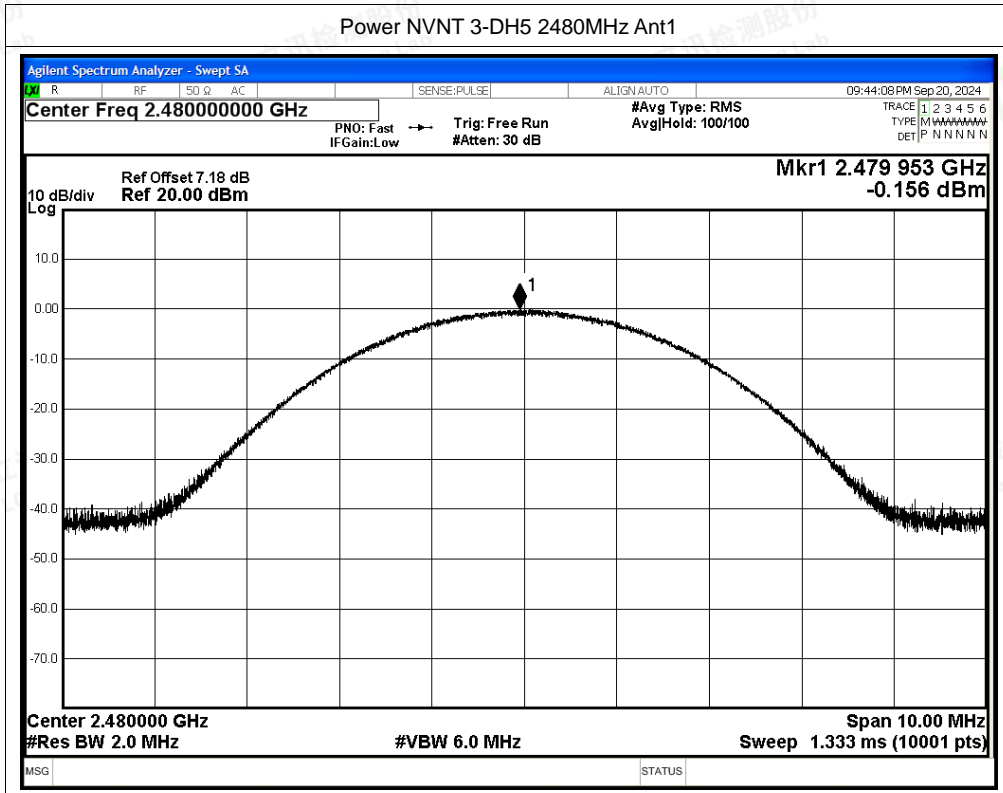


Power NVNT 3-DH5 2402MHz Ant1



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	2401.832	2402.836	1.004	0.633	Pass
NVNT	2-DH5	Ant1	2402.036	2403.014	0.978	0.891	Pass
NVNT	3-DH5	Ant1	2402.026	2403.024	0.998	0.872	Pass

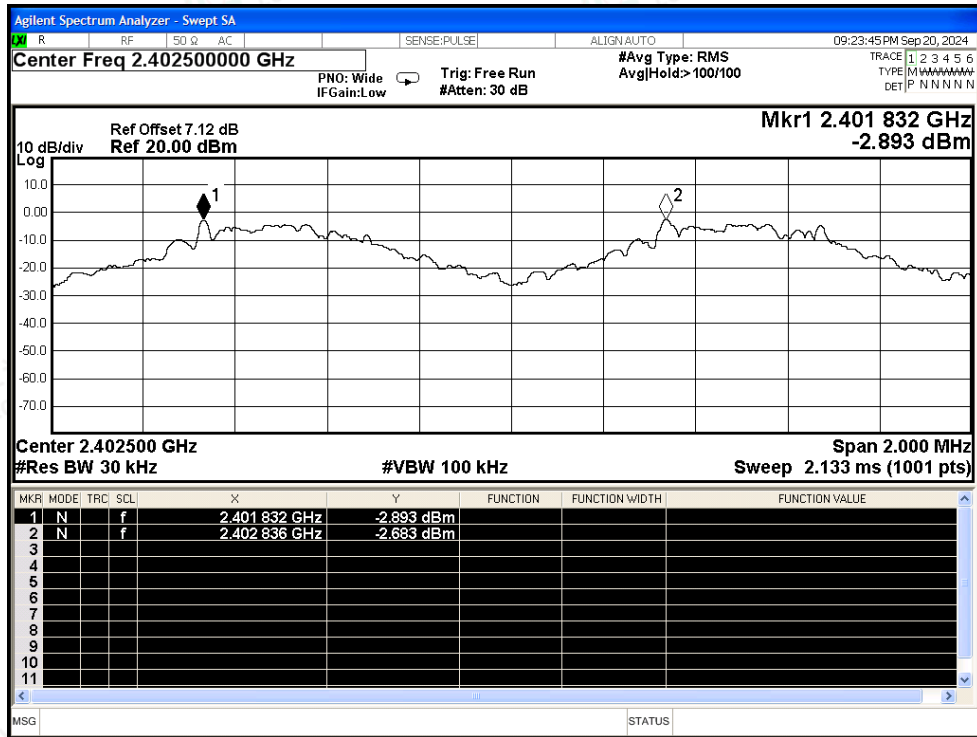


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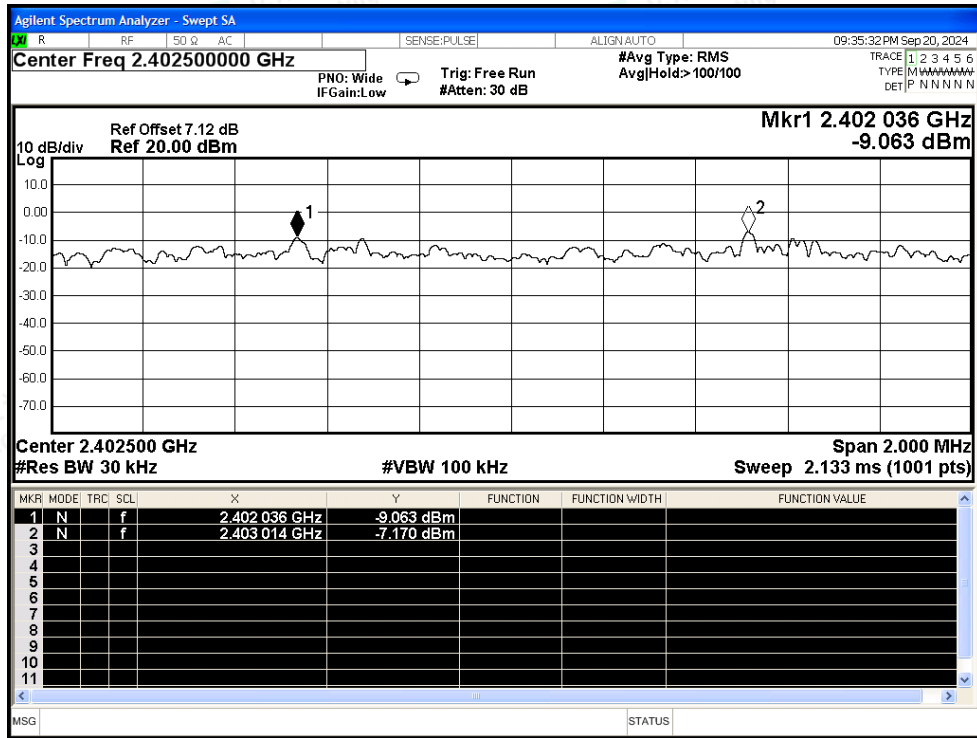


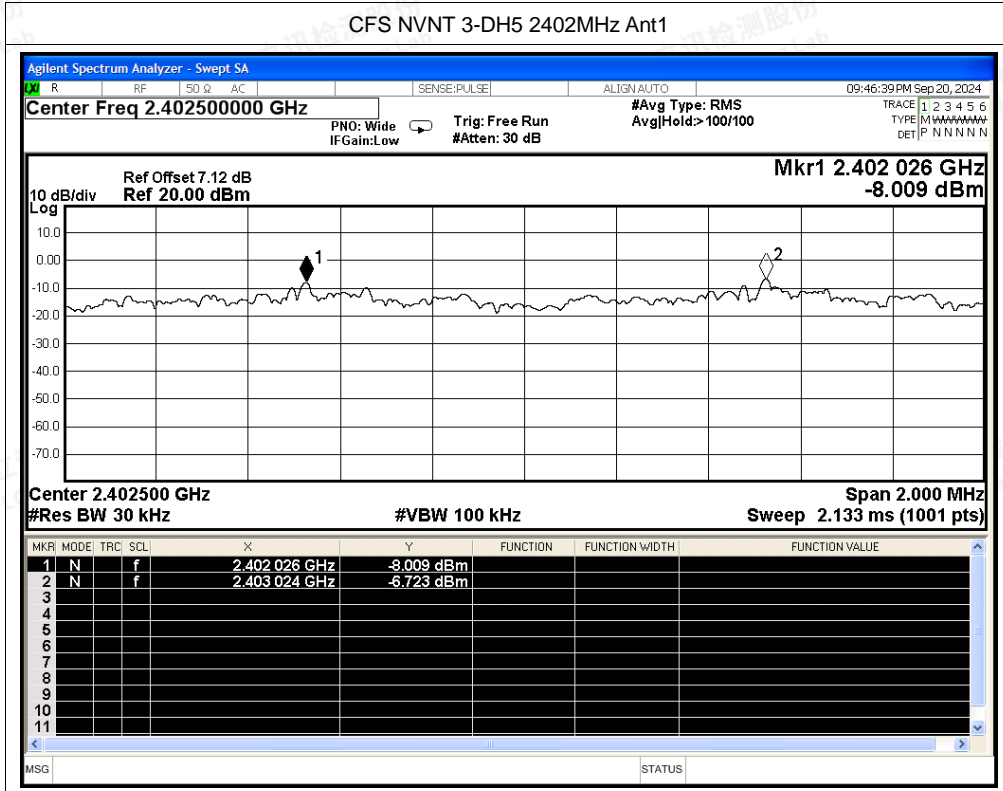
Test Graphs

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	2.909	349.08	120	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.898	304.29	105	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.897	301.288	104	31600	400	Pass

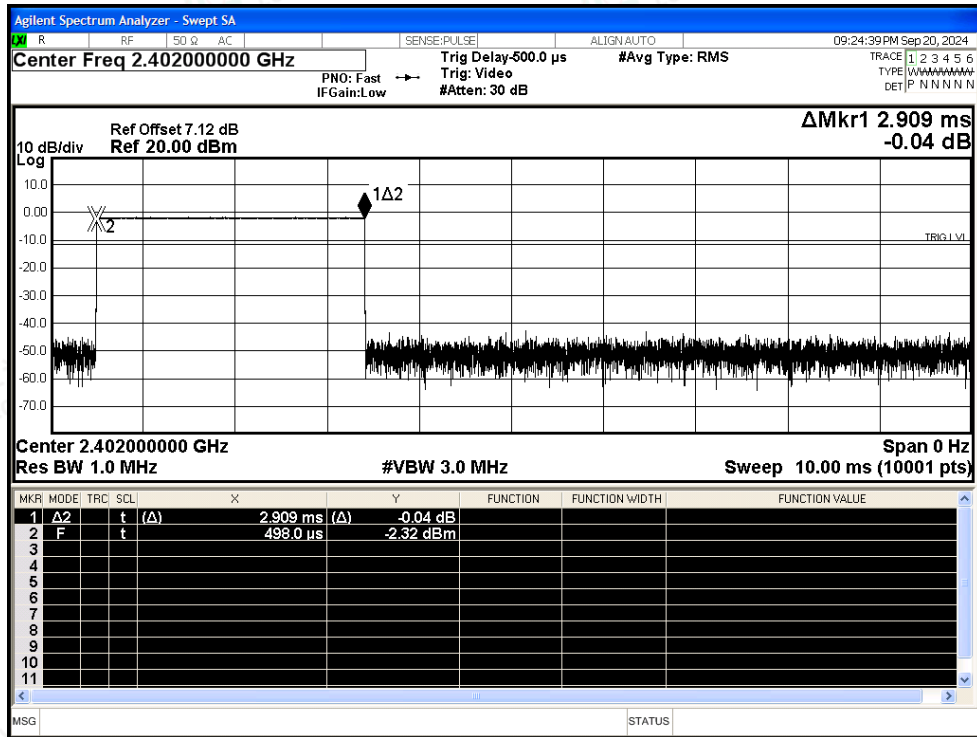


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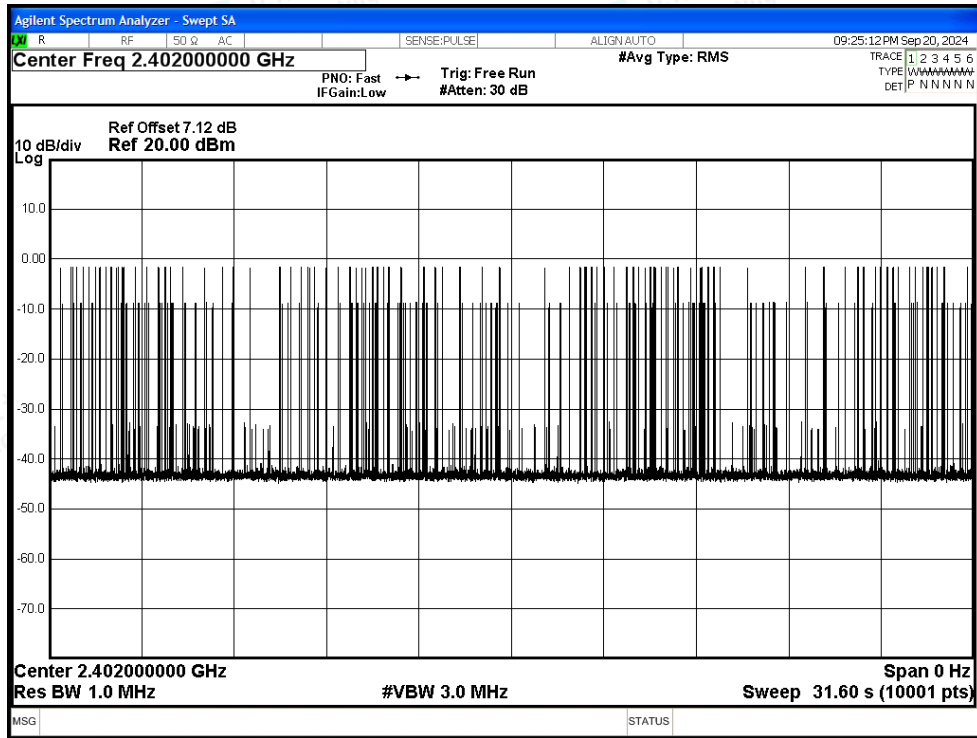


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

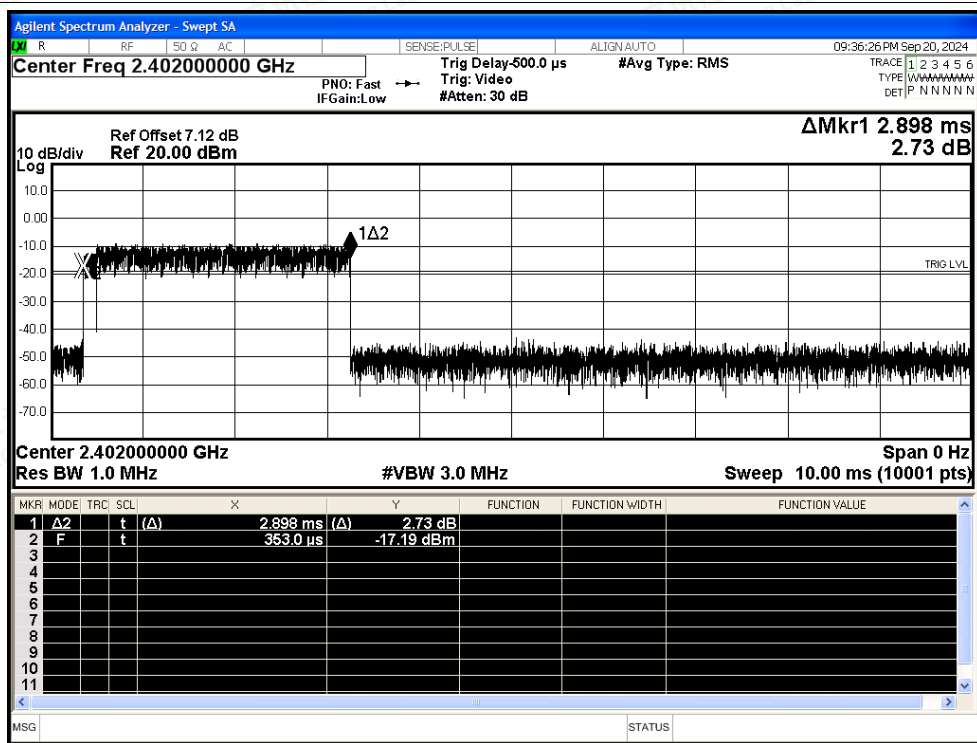


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

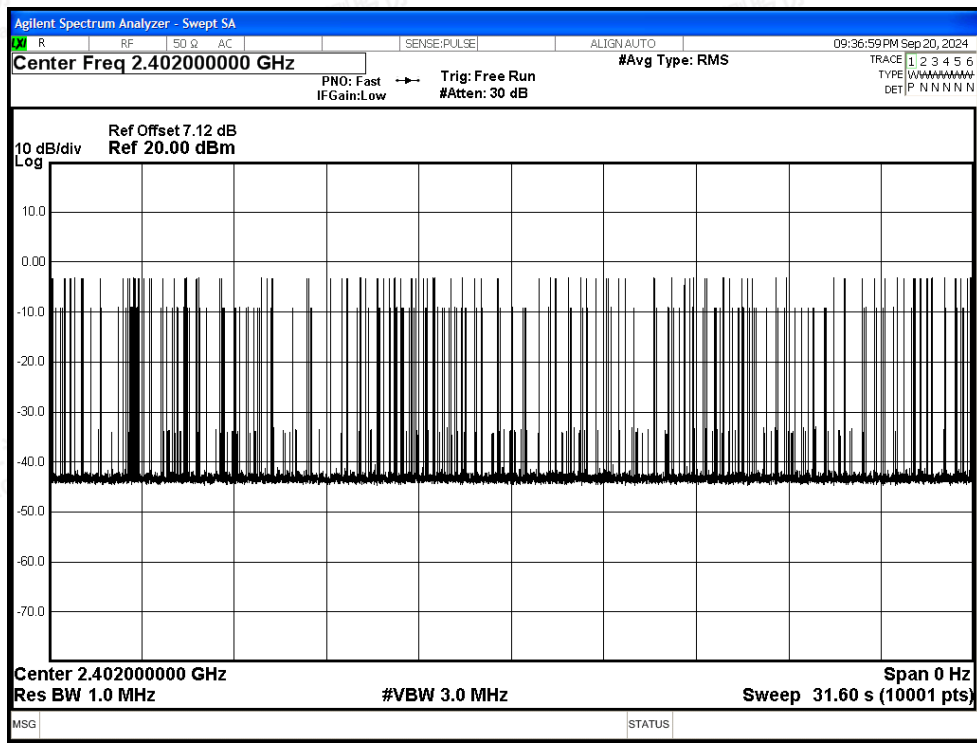




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

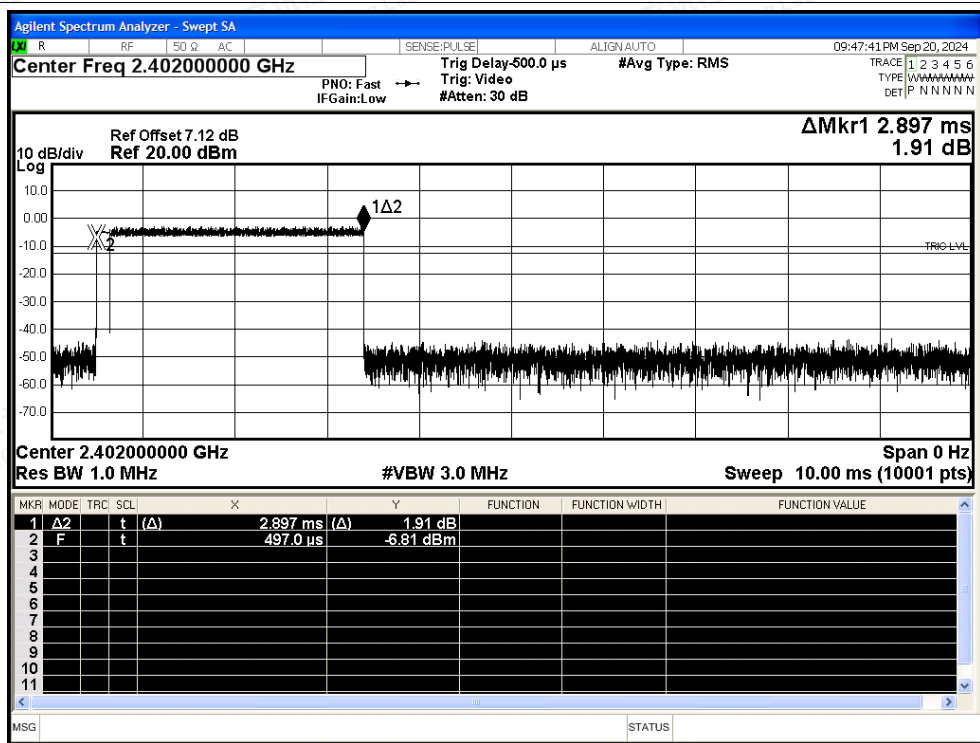


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

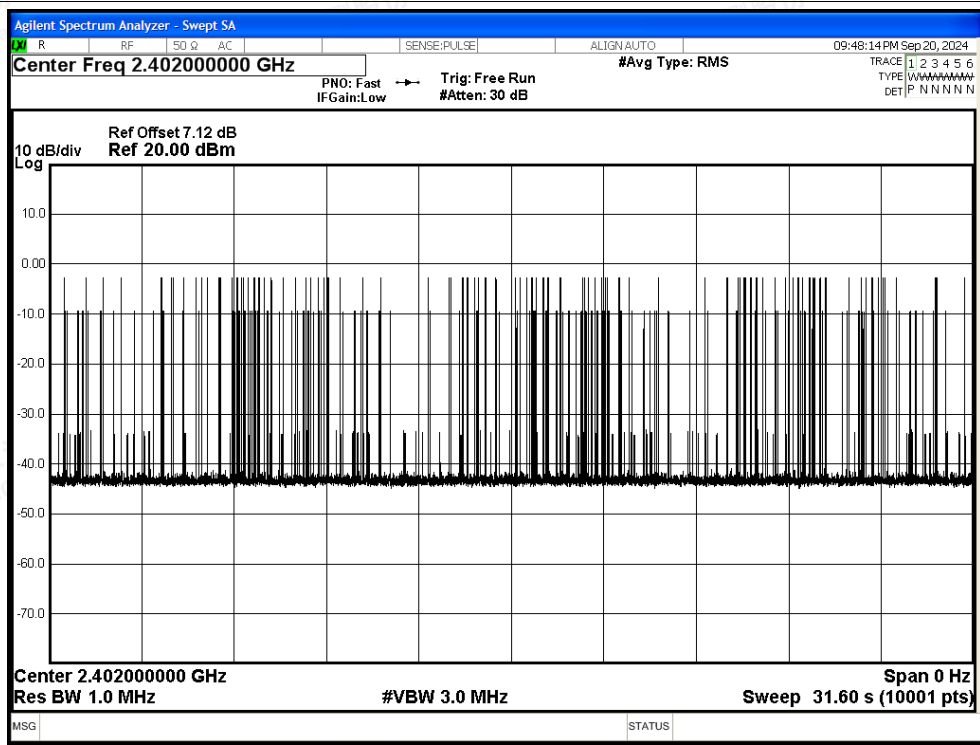




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



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

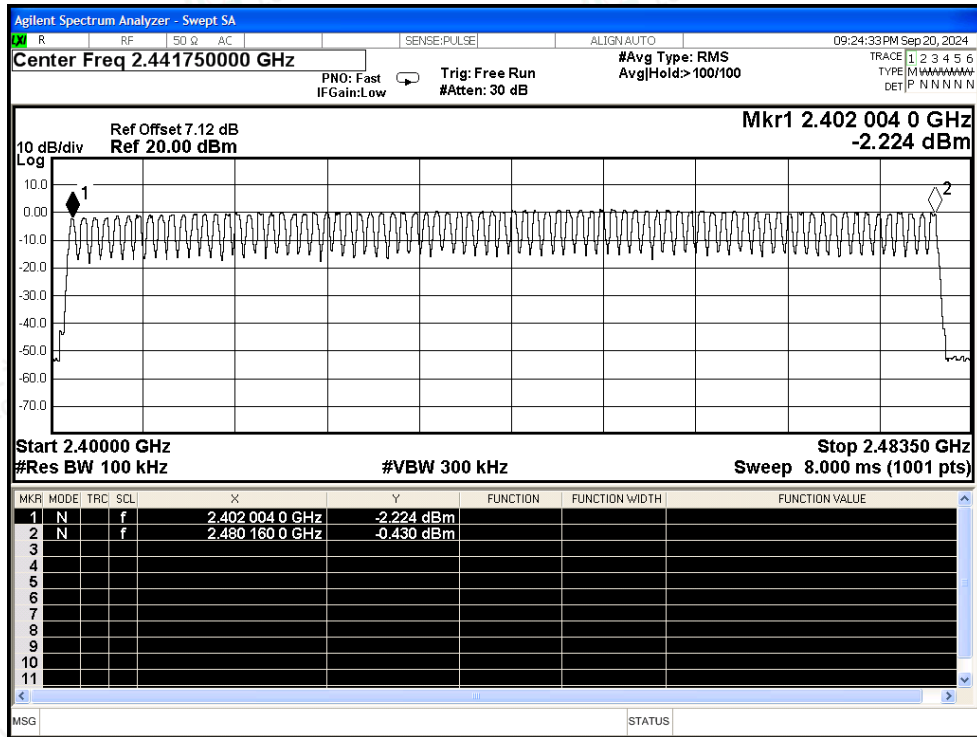


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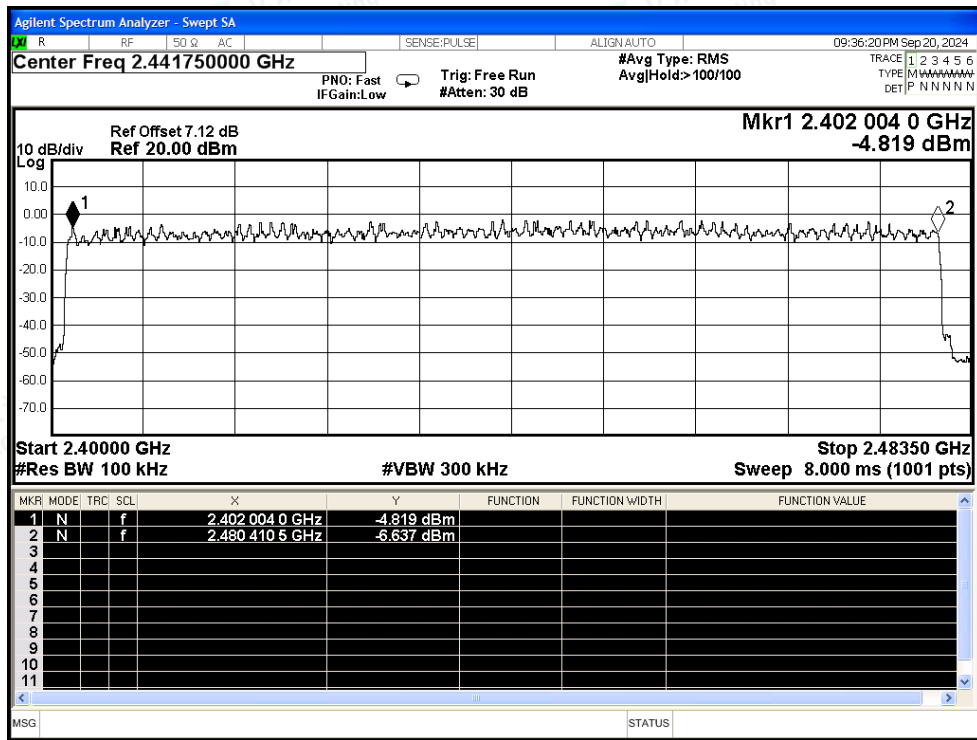


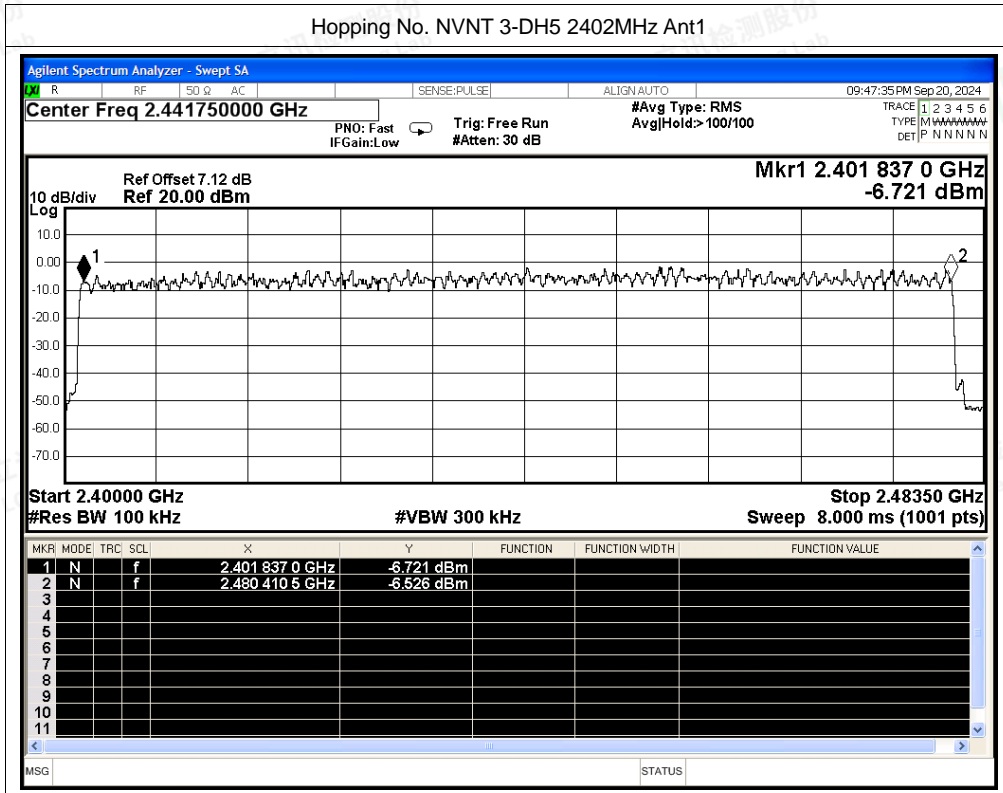
Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1







A.6 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-51.96	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-51.1	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-50.06	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-49.25	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-49.88	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-49.18	-20	Pass

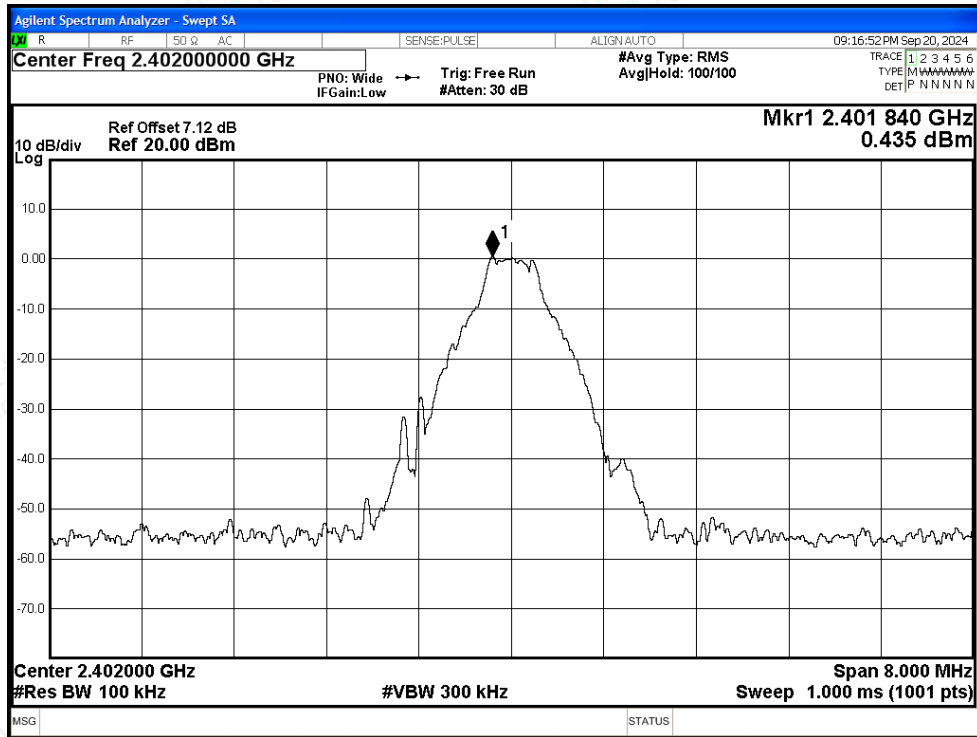


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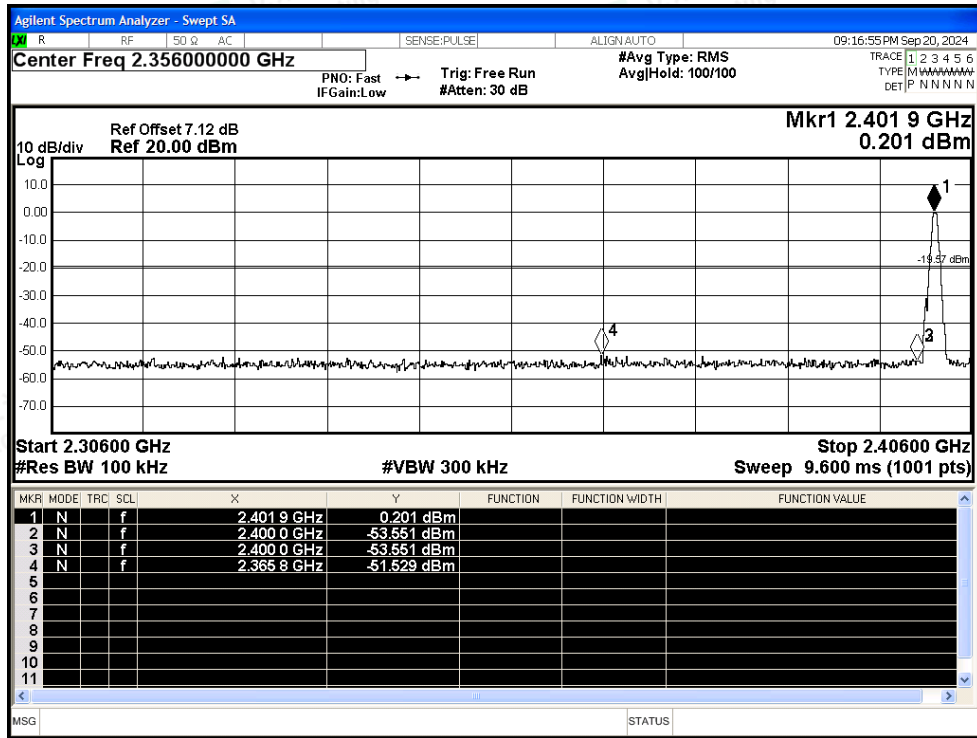


Test Graphs

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

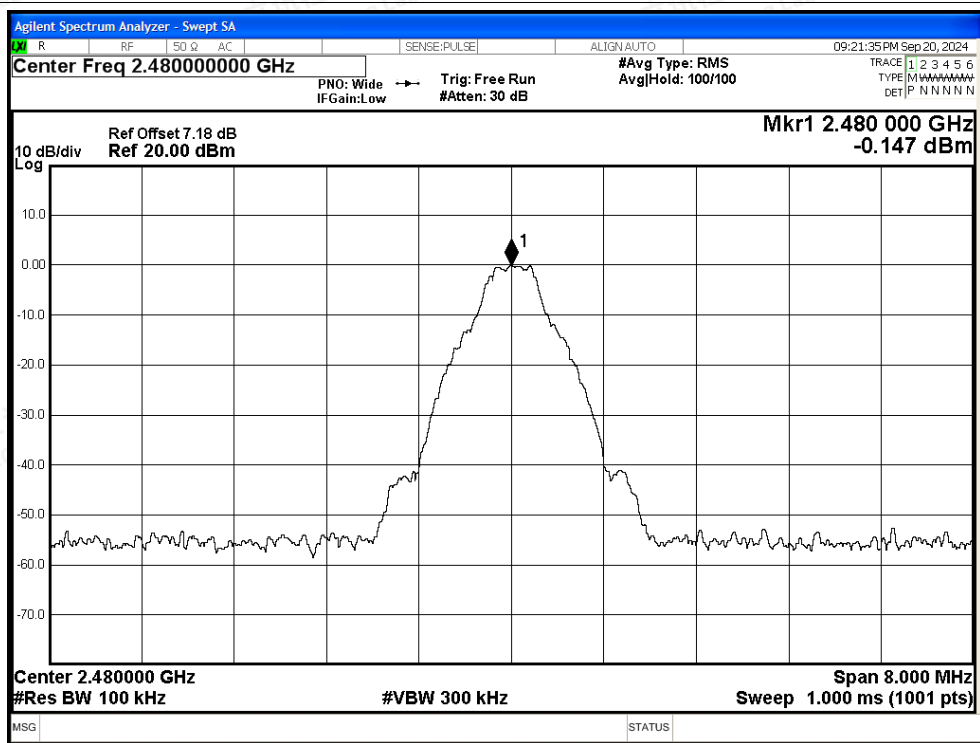


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

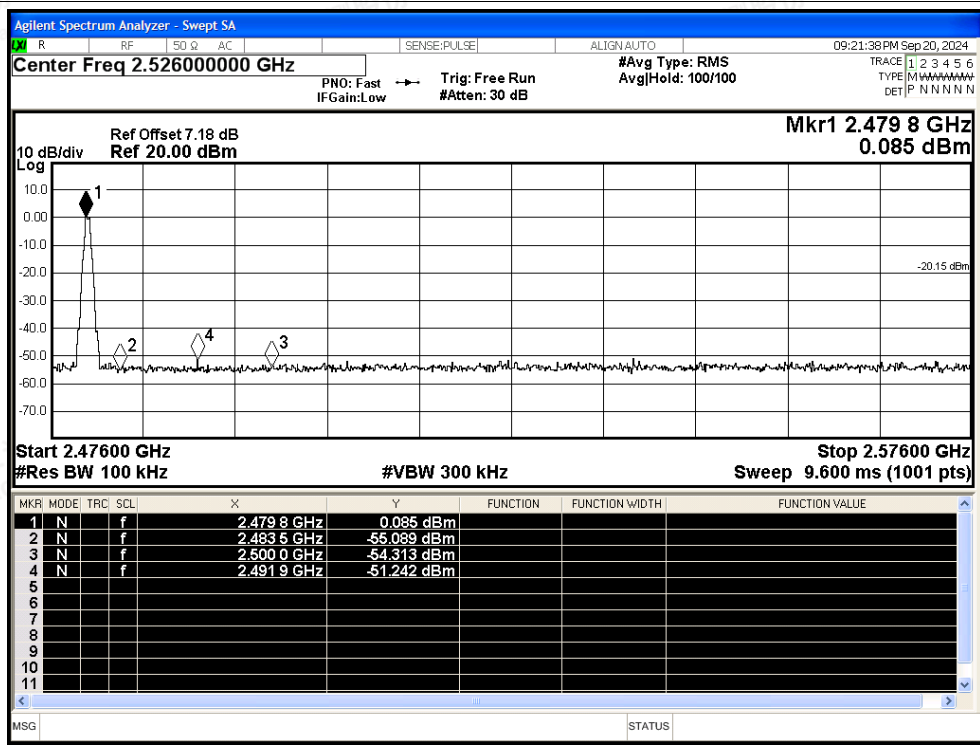




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

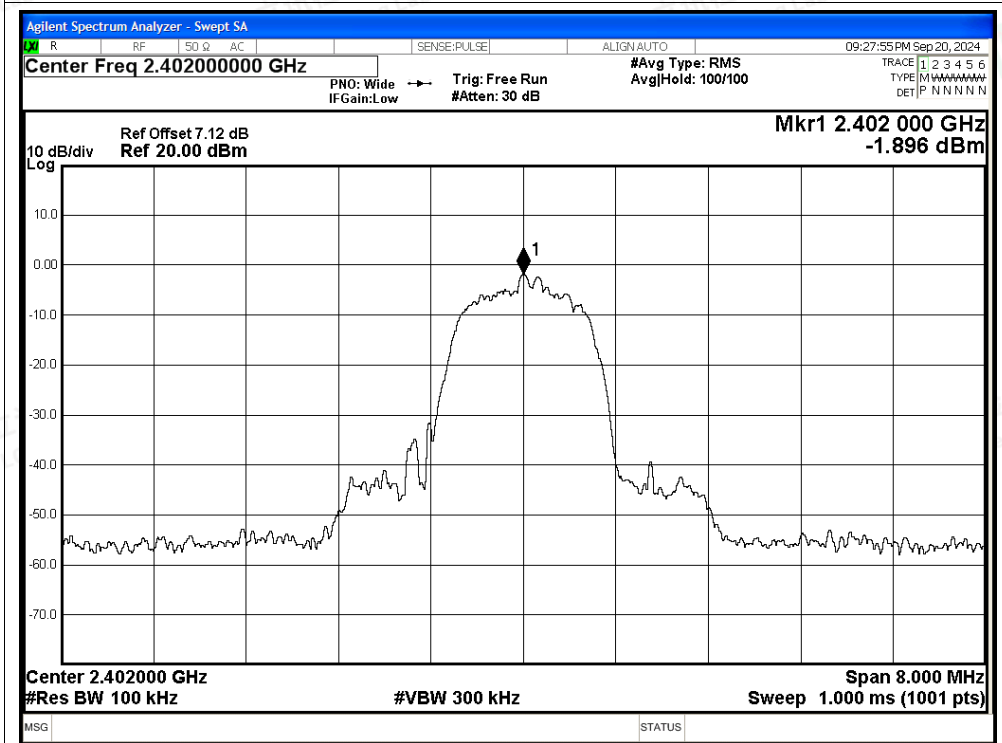


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

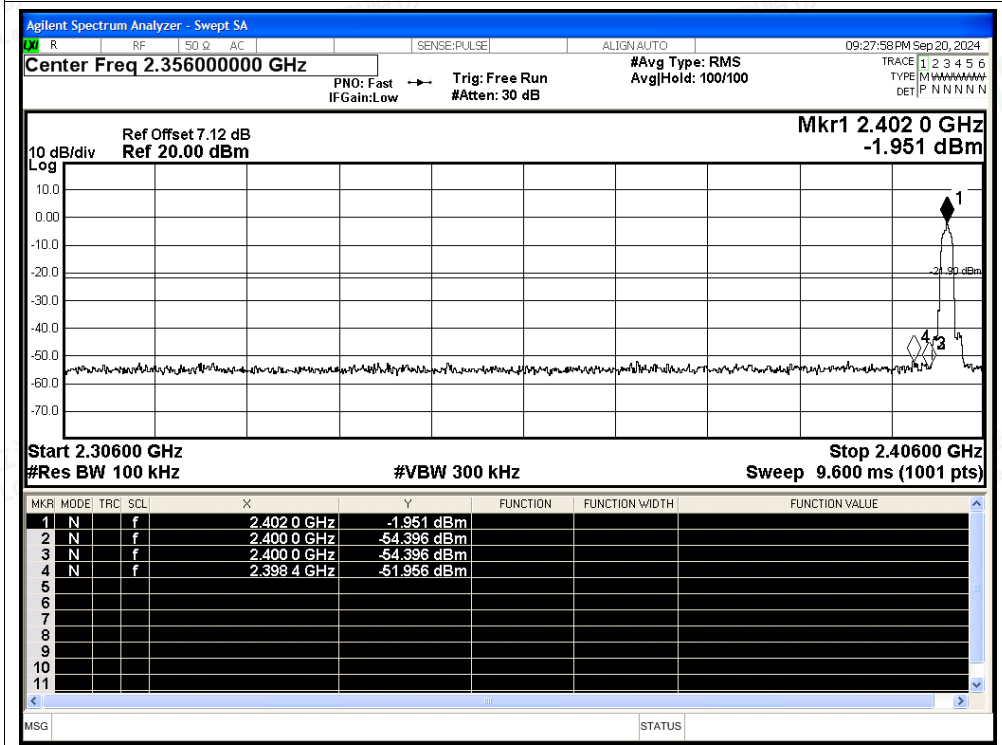




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

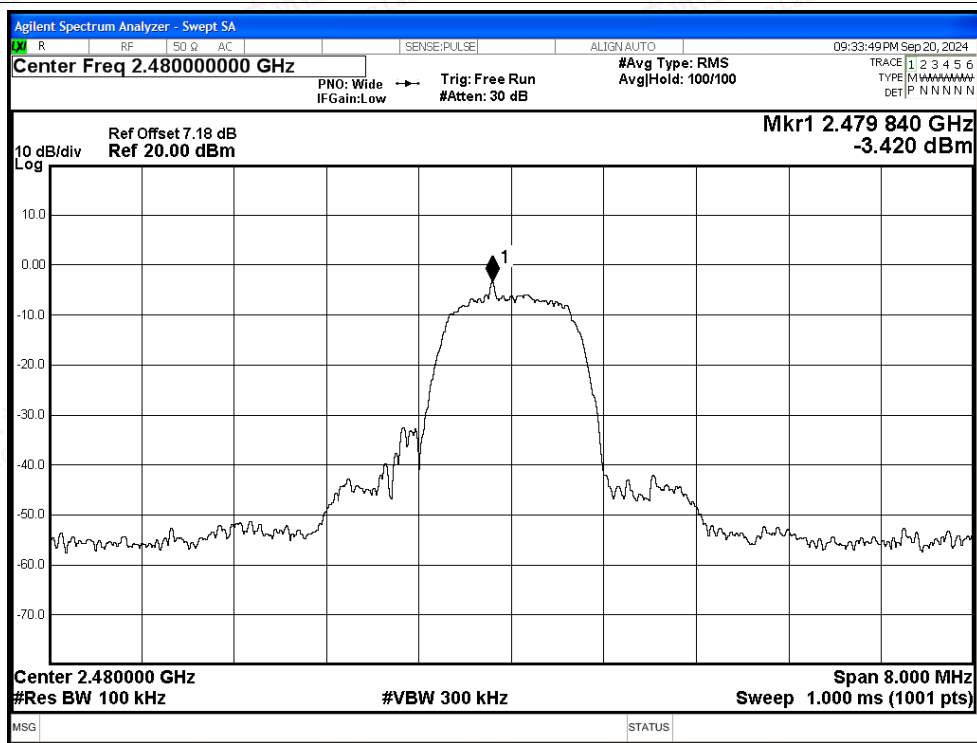


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

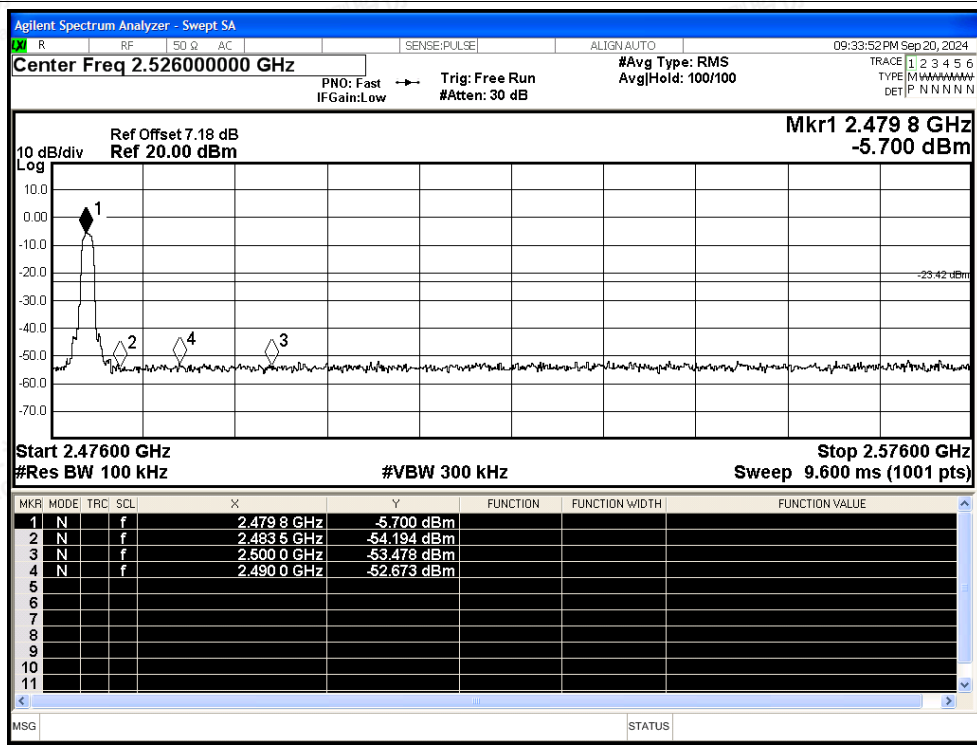




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

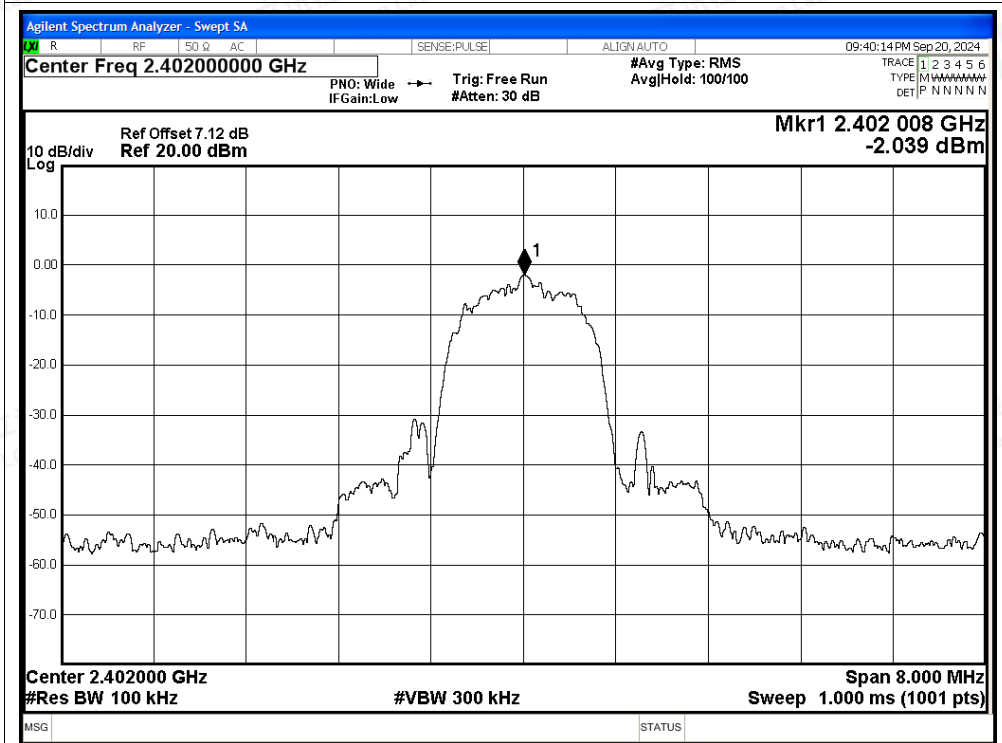


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

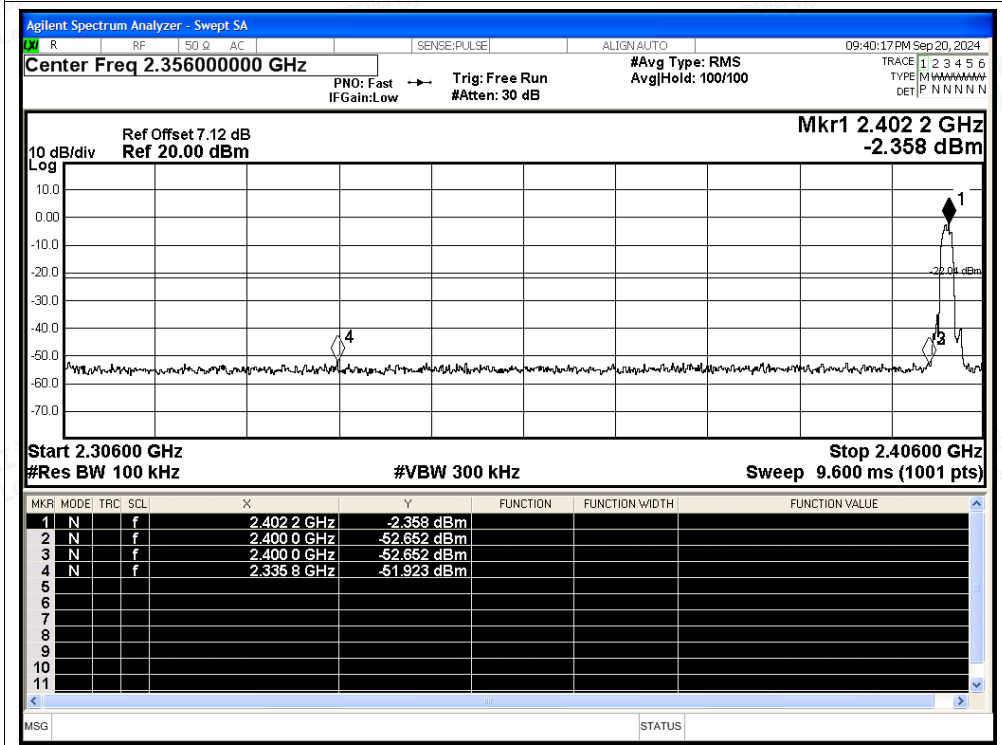




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

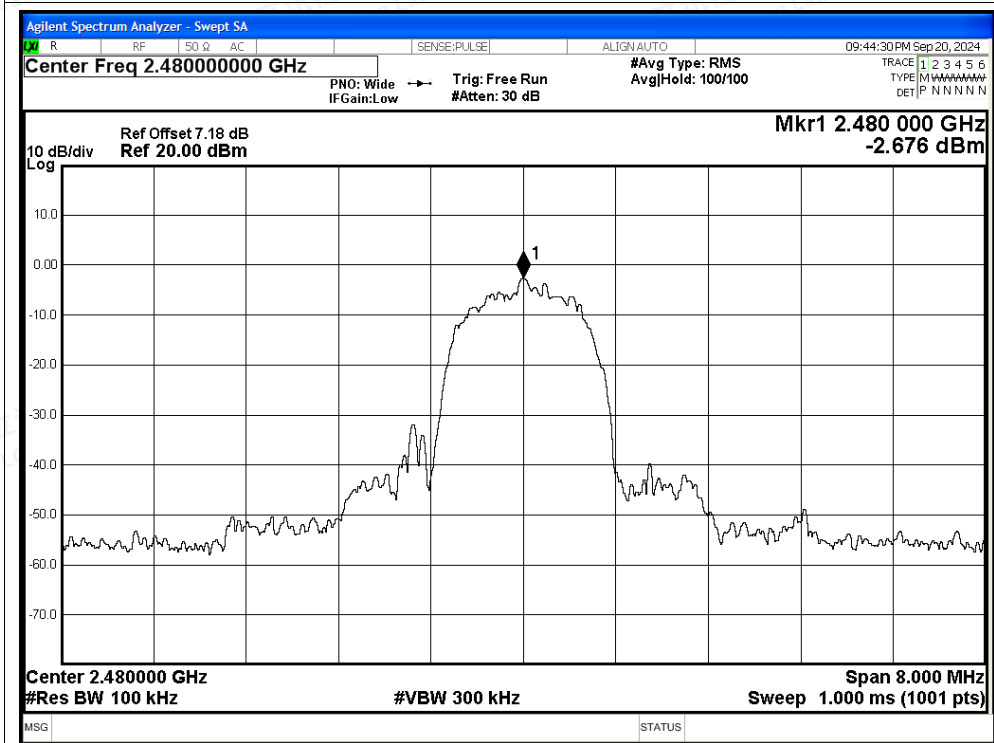


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

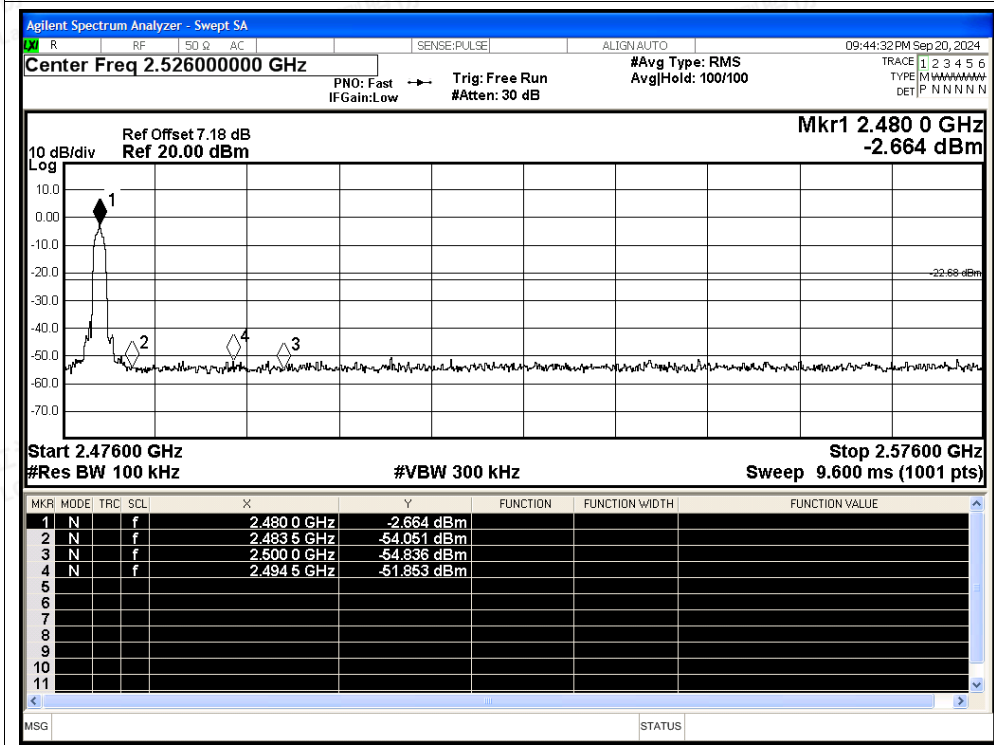




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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





(Hopping)

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-47.95	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-50.53	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-46.18	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-46.64	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-46.17	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-48.86	-20	Pass

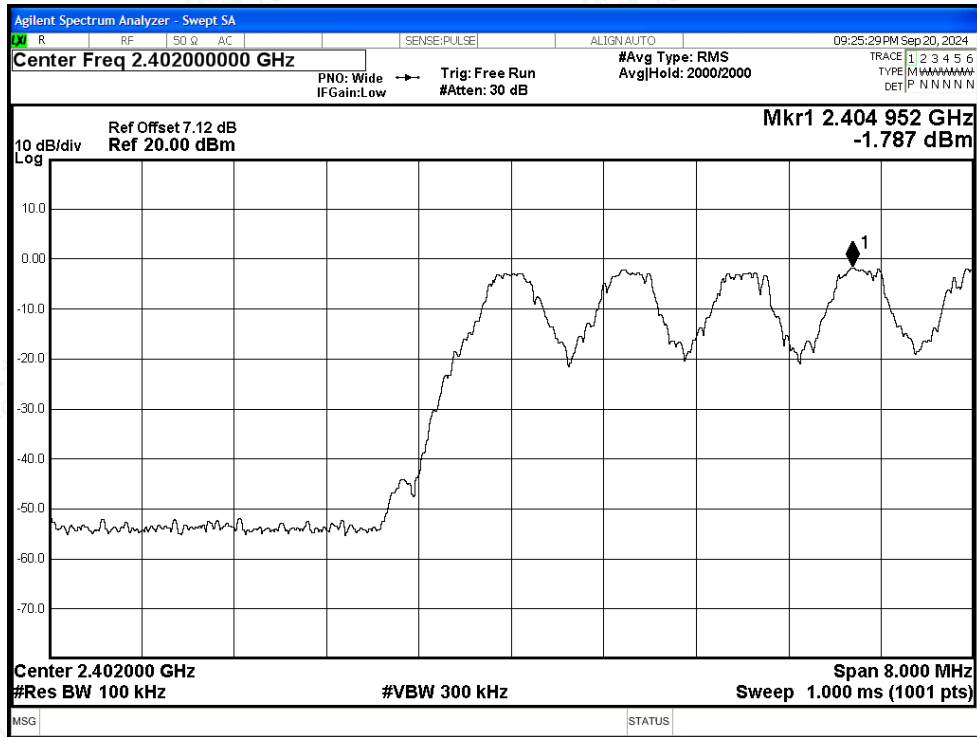


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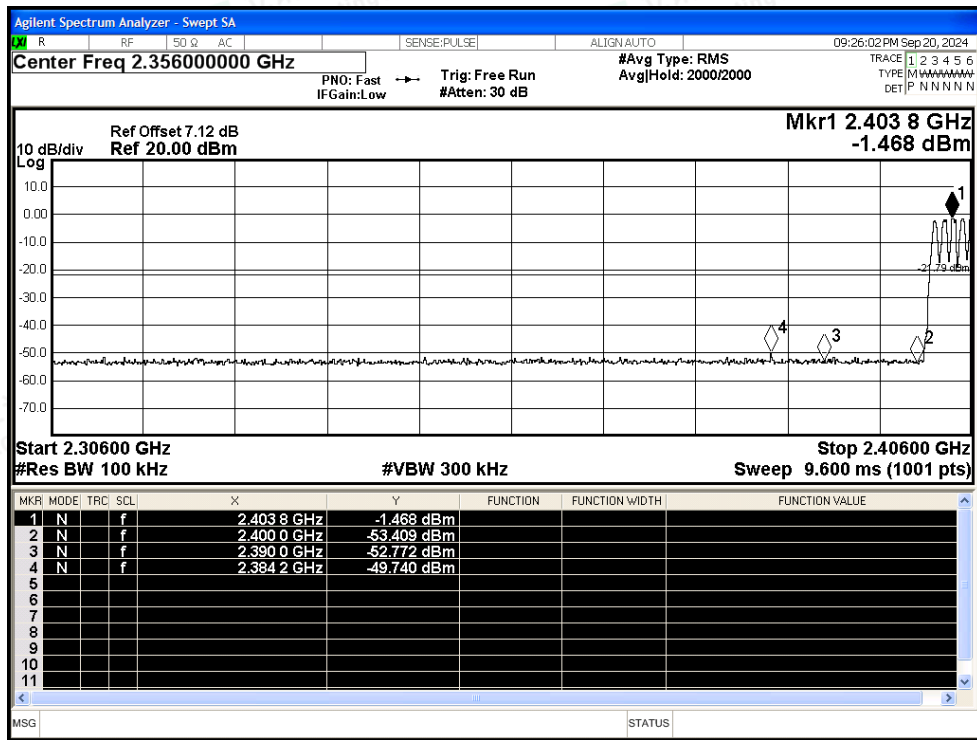


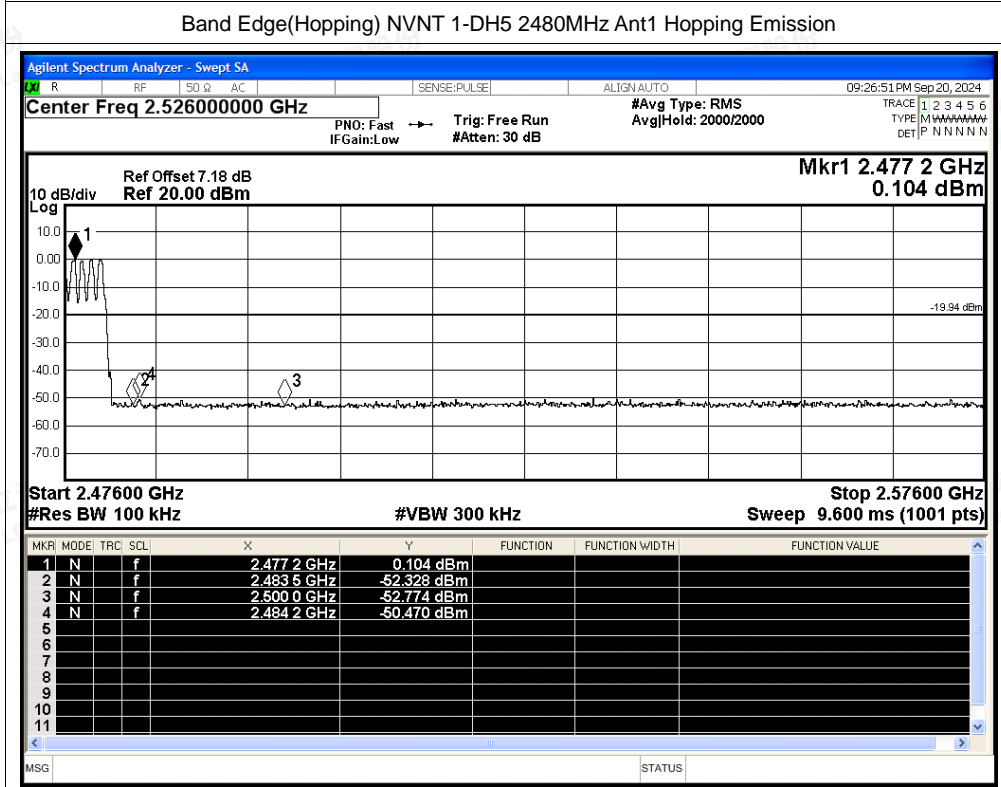
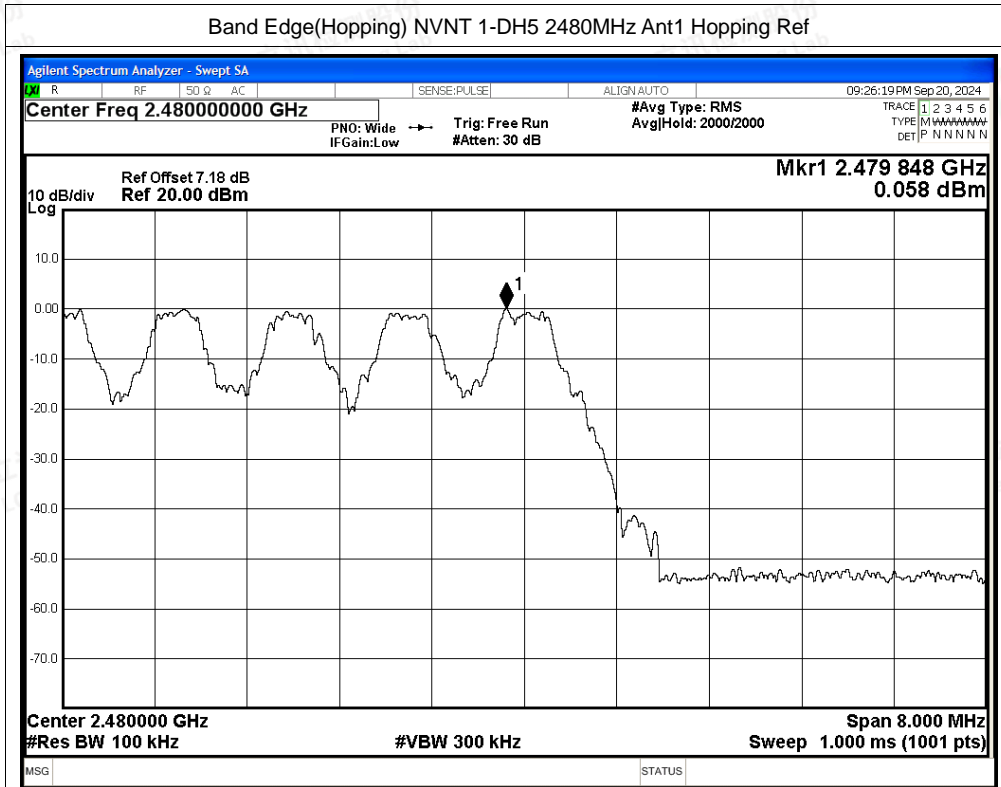
Test Graphs

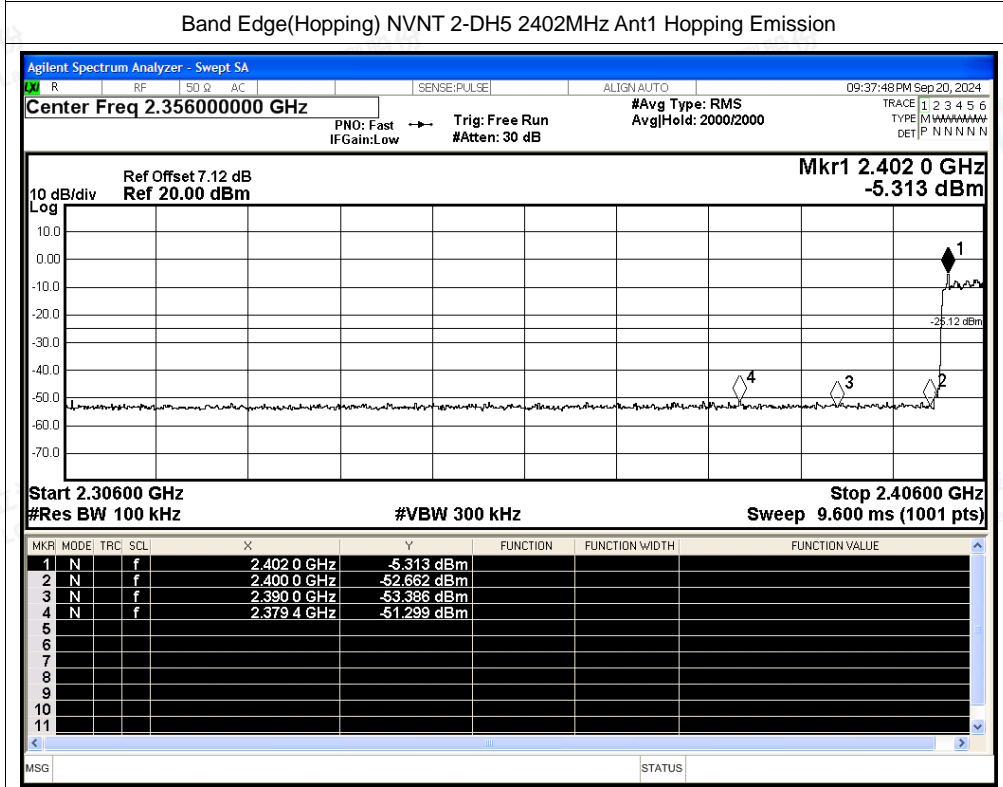
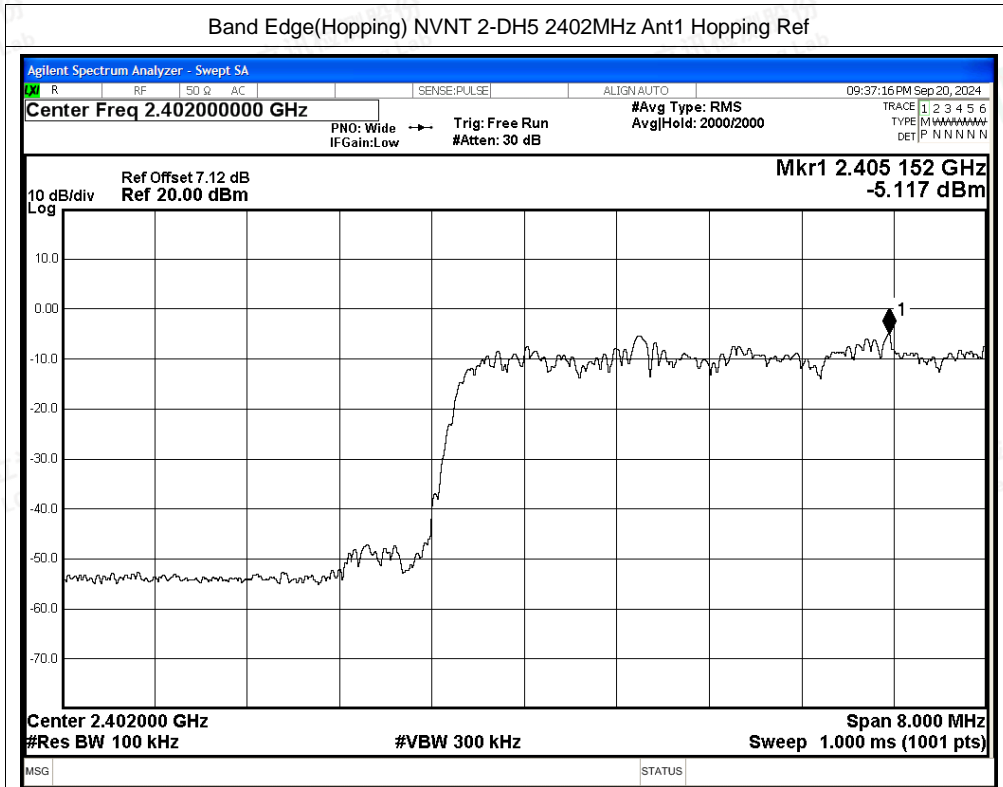
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

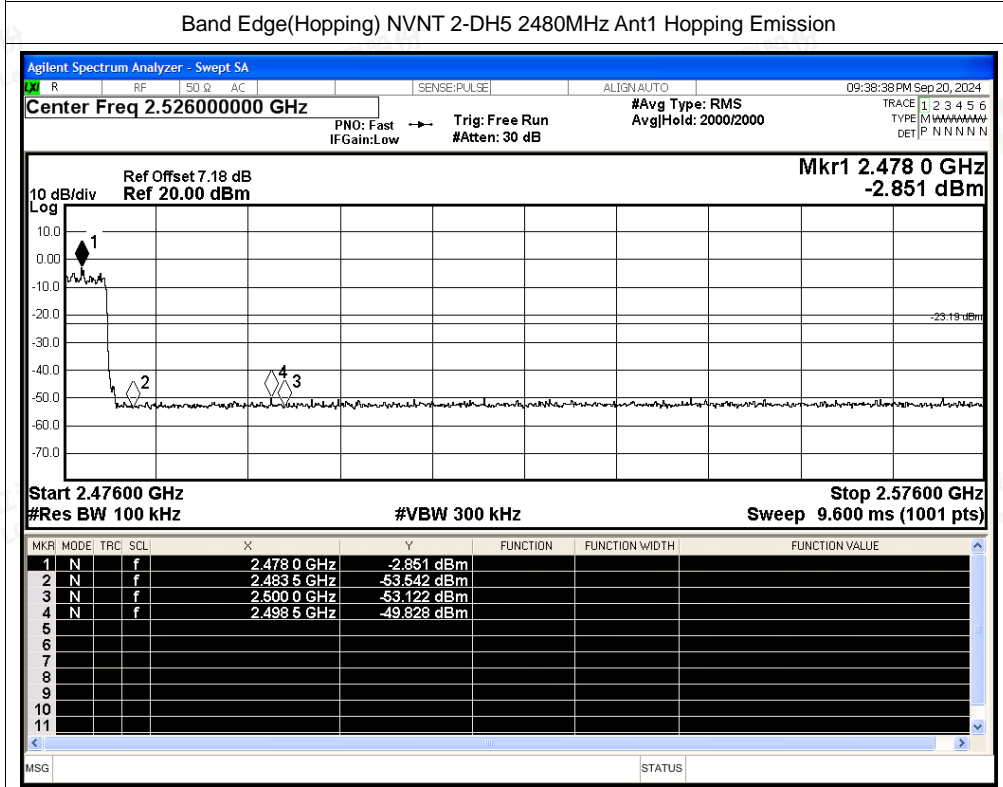
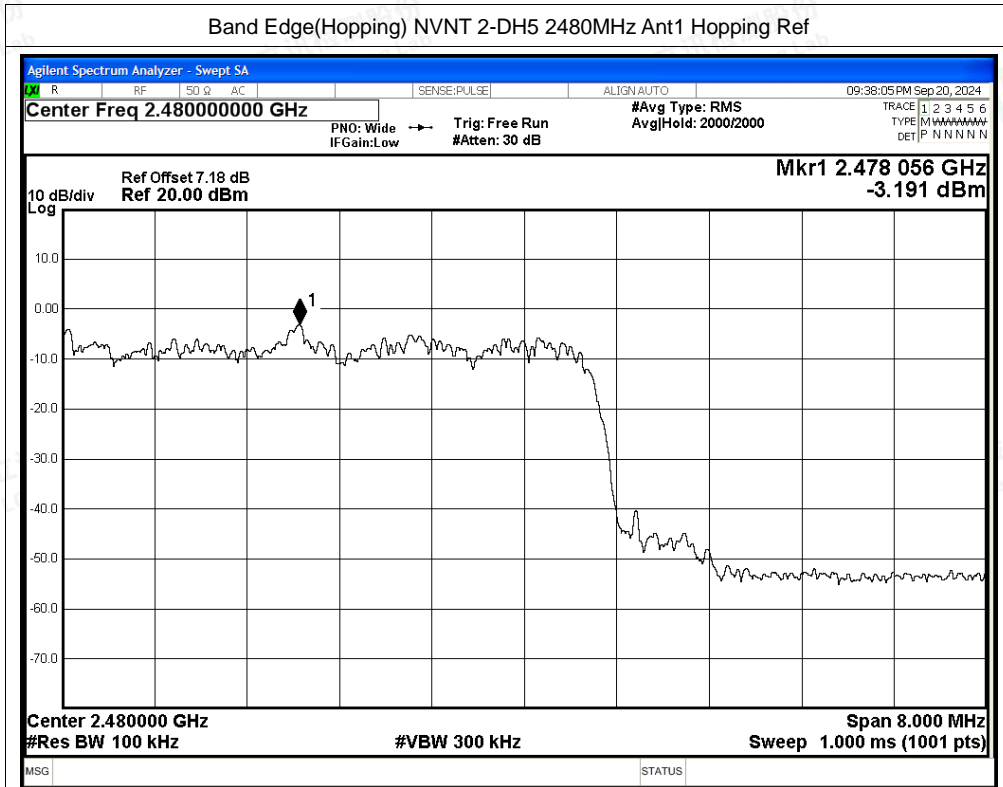


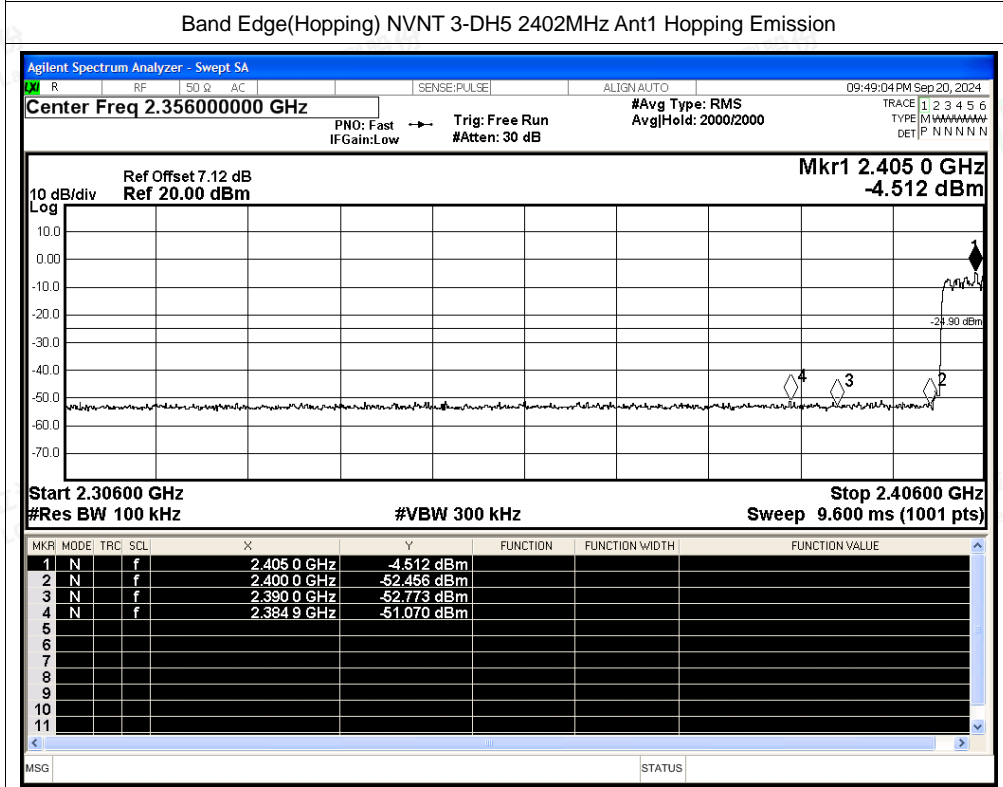
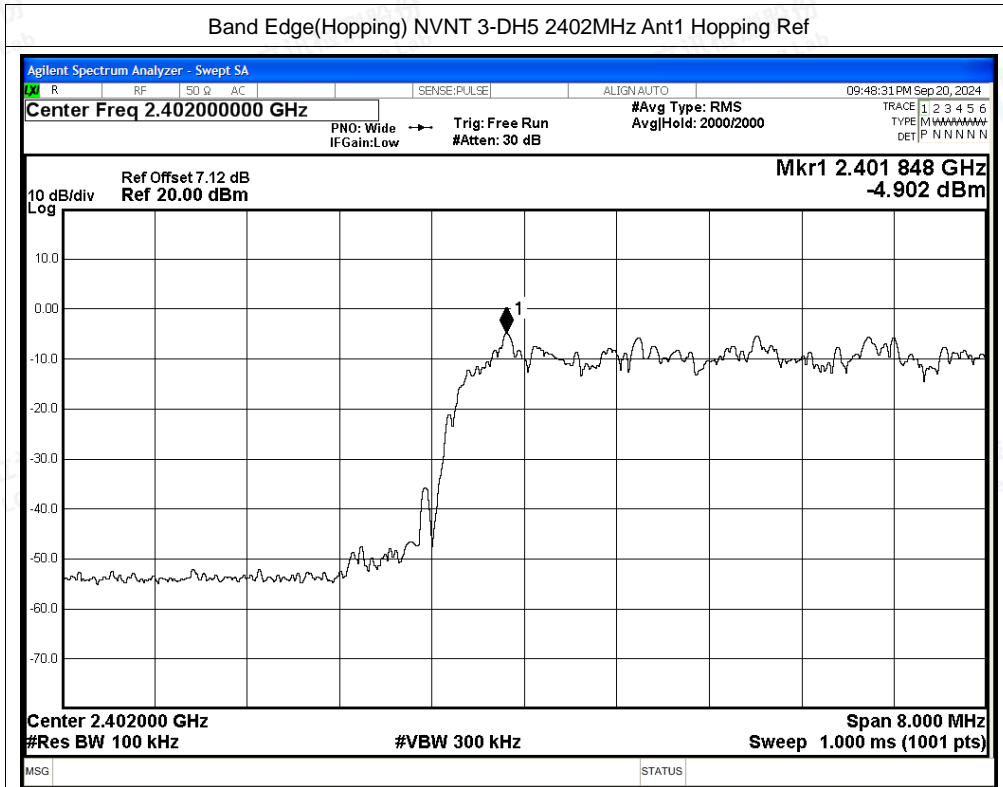
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

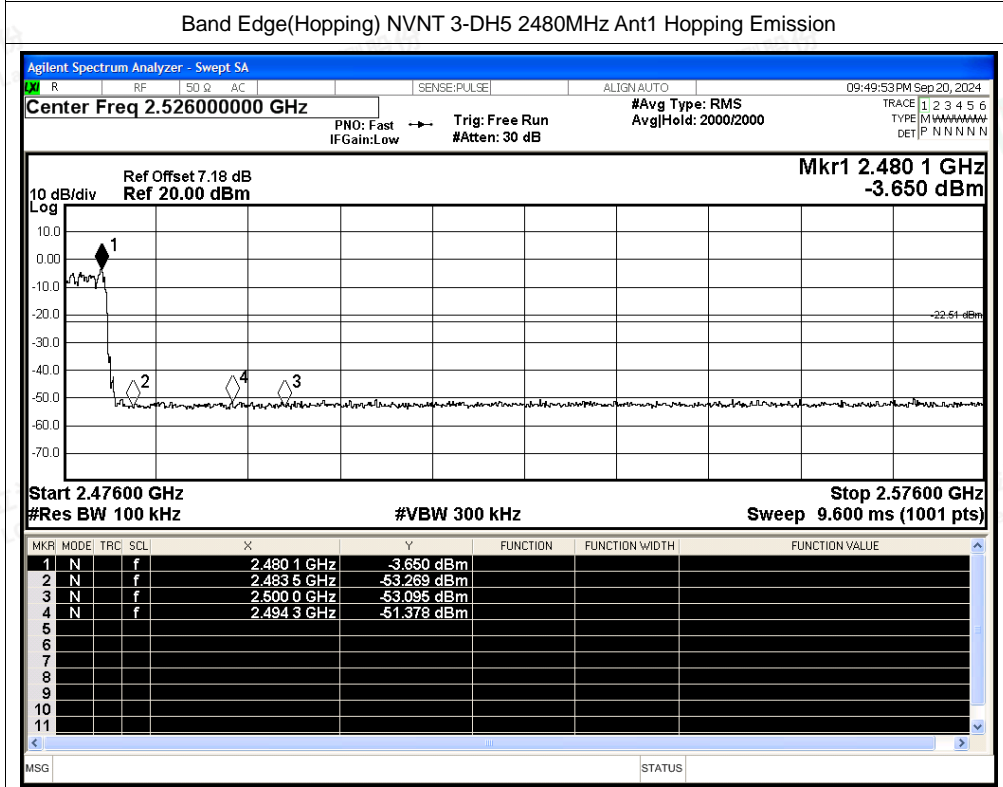
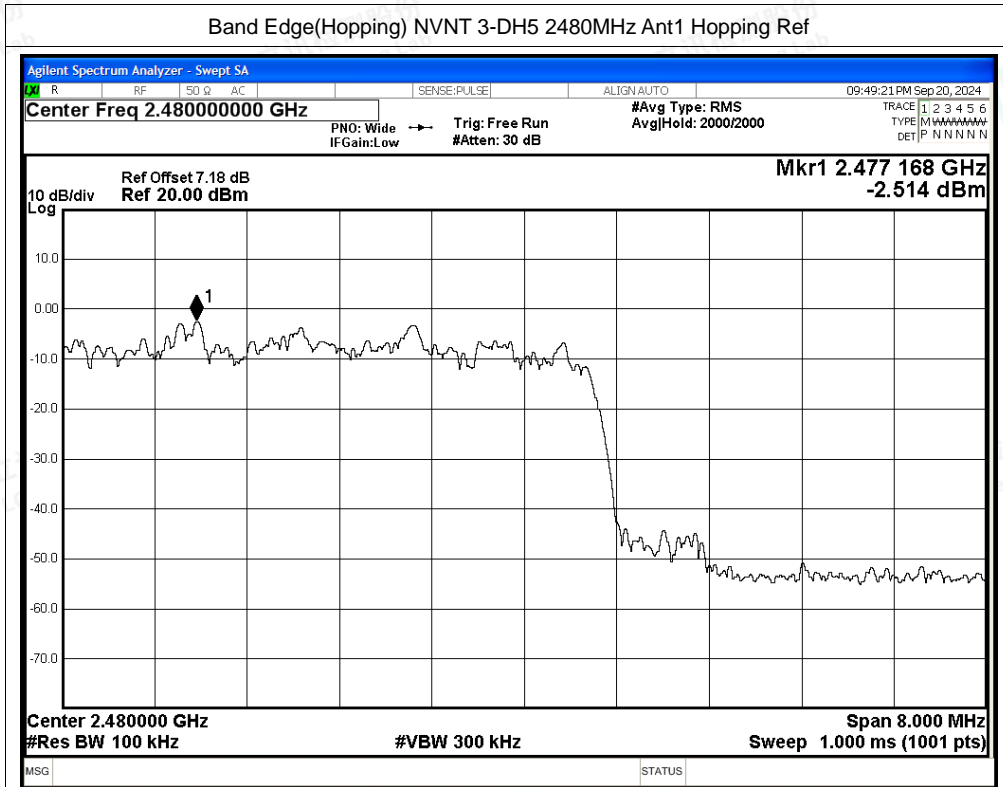














A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-49.96	-20	Pass
NVNT	1-DH5	2441	Ant1	-51.51	-20	Pass
NVNT	1-DH5	2480	Ant1	-50.21	-20	Pass
NVNT	2-DH5	2402	Ant1	-48.95	-20	Pass
NVNT	2-DH5	2441	Ant1	-50.04	-20	Pass
NVNT	2-DH5	2480	Ant1	-47.61	-20	Pass
NVNT	3-DH5	2402	Ant1	-47.91	-20	Pass
NVNT	3-DH5	2441	Ant1	-48.6	-20	Pass
NVNT	3-DH5	2480	Ant1	-47.54	-20	Pass

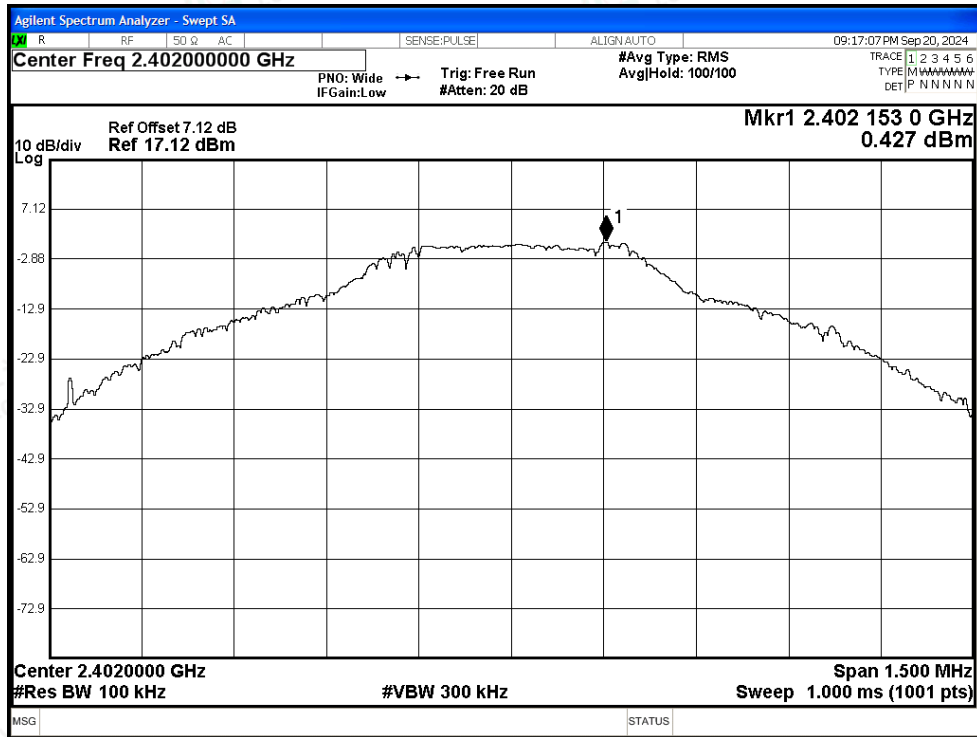


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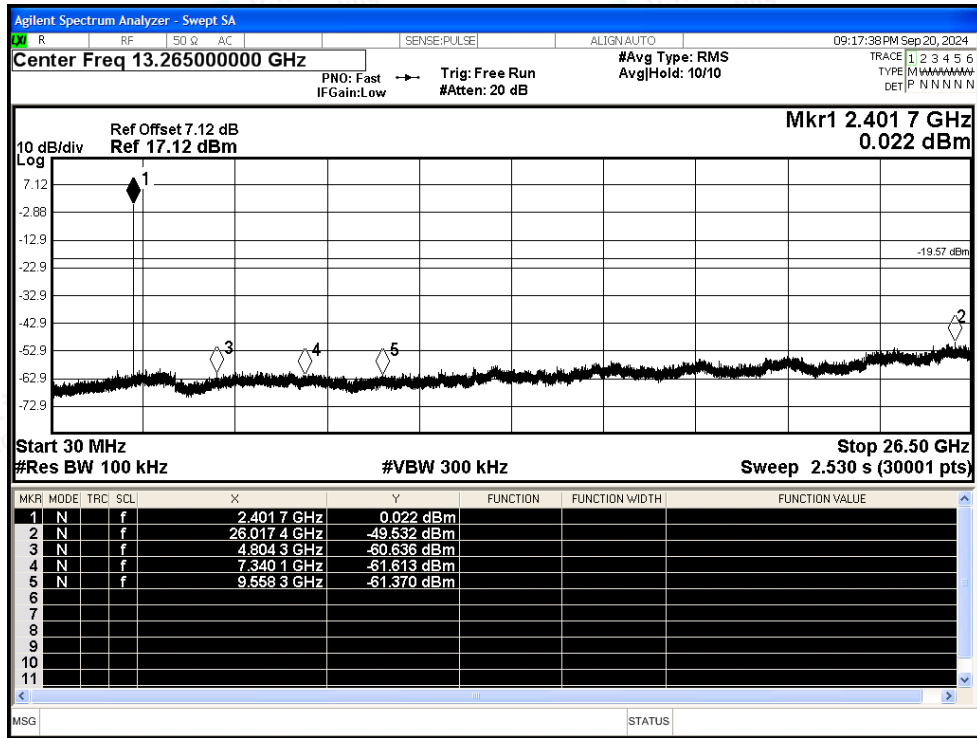


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

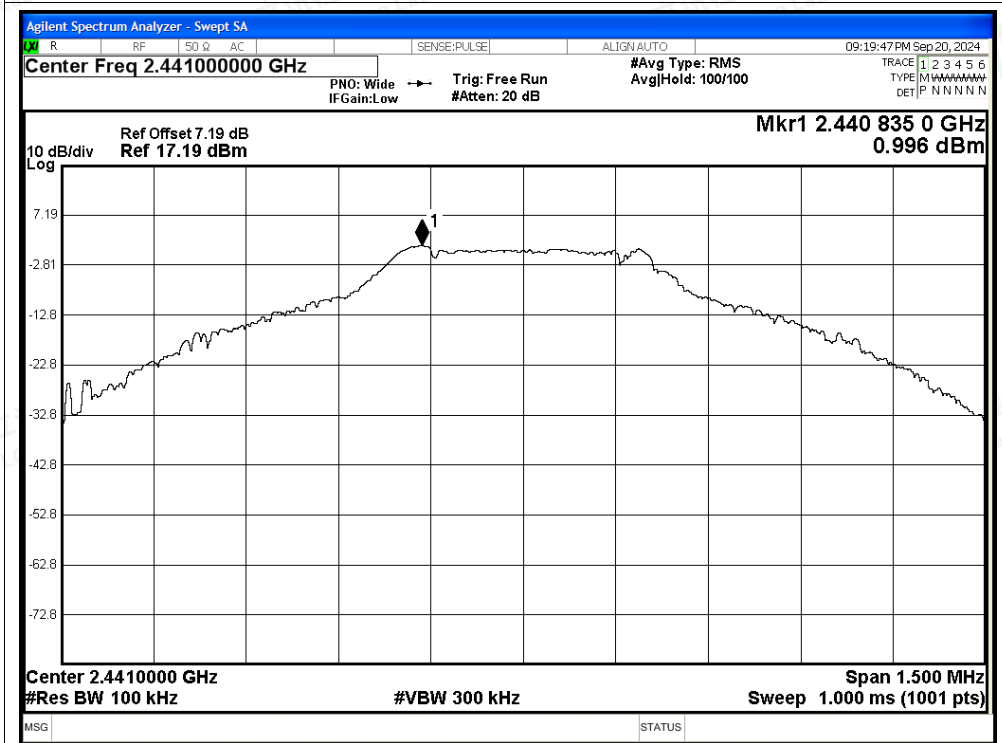


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

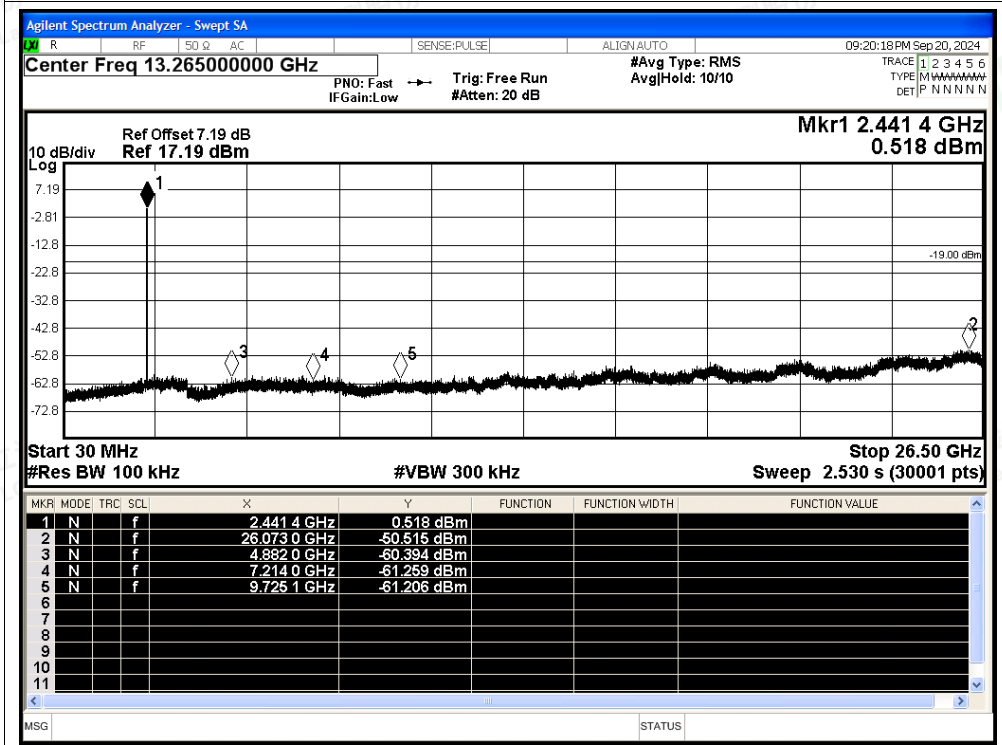




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref

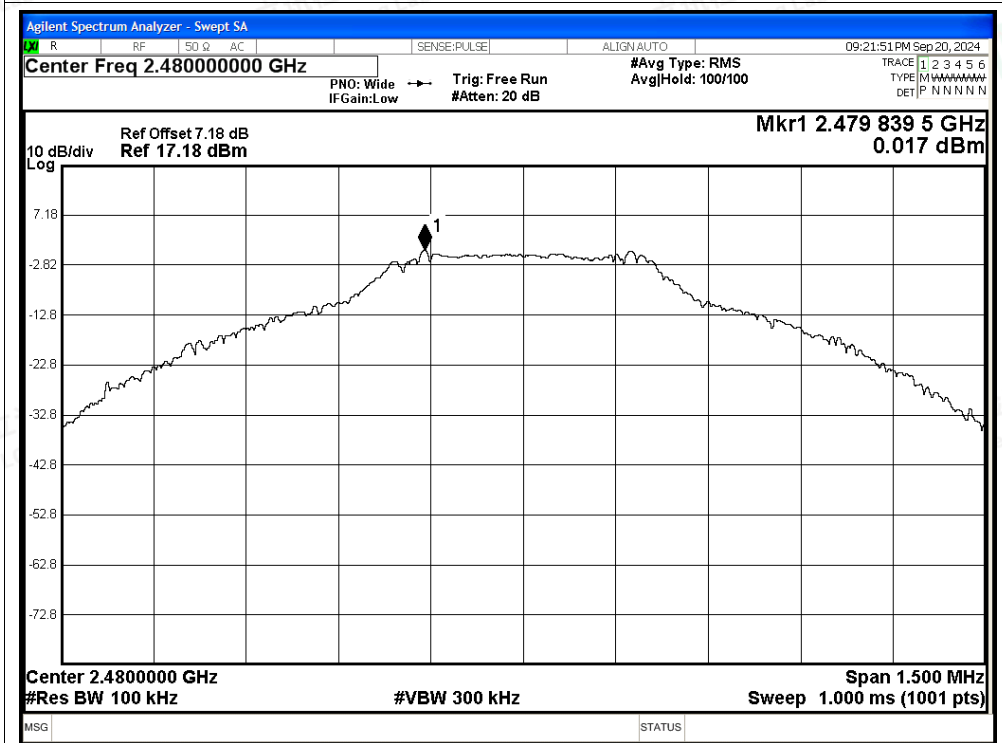


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

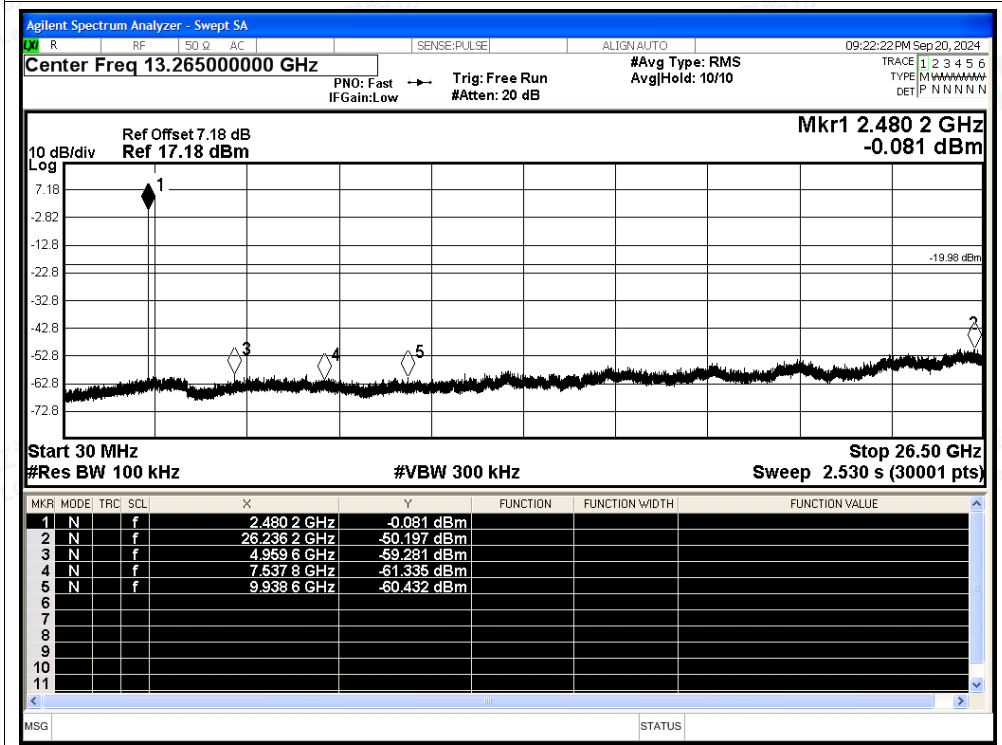




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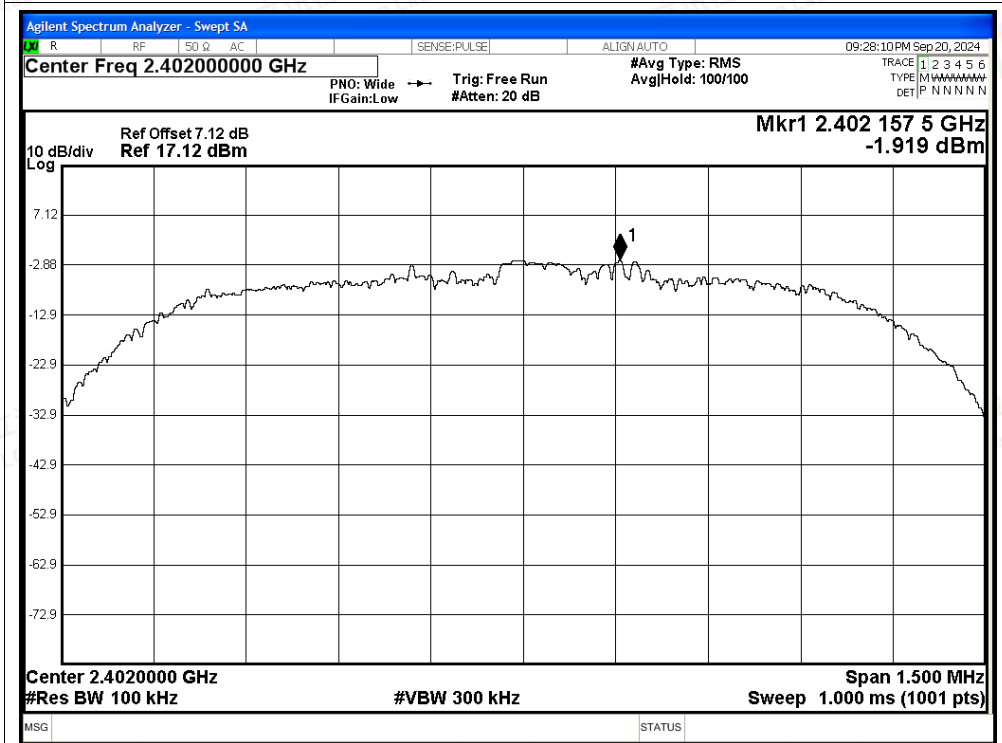


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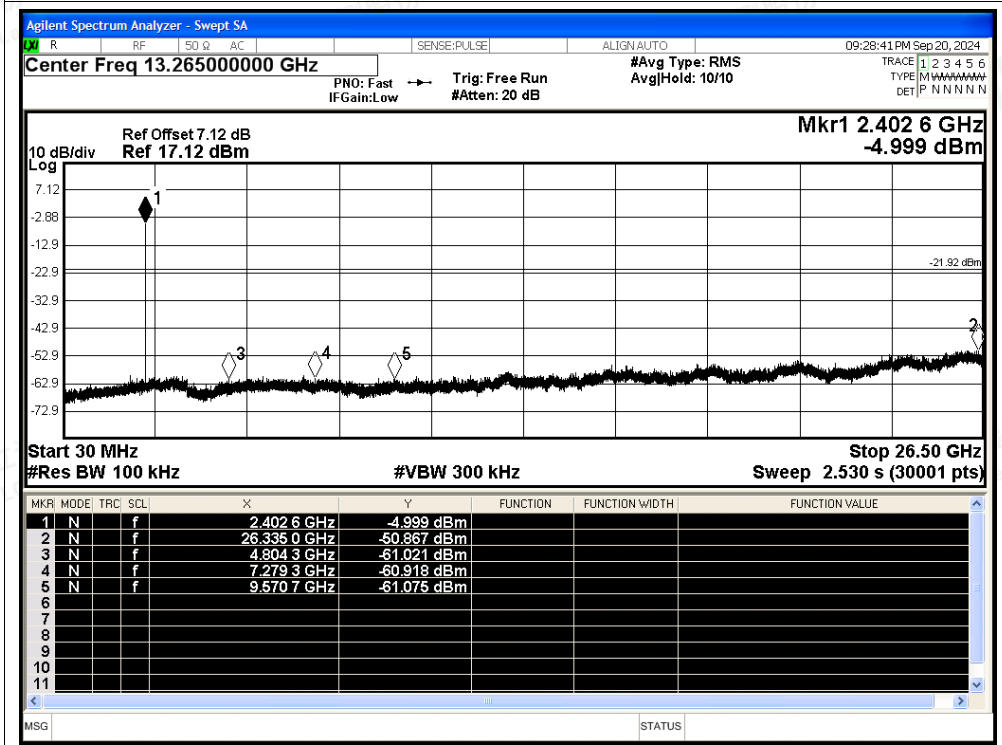




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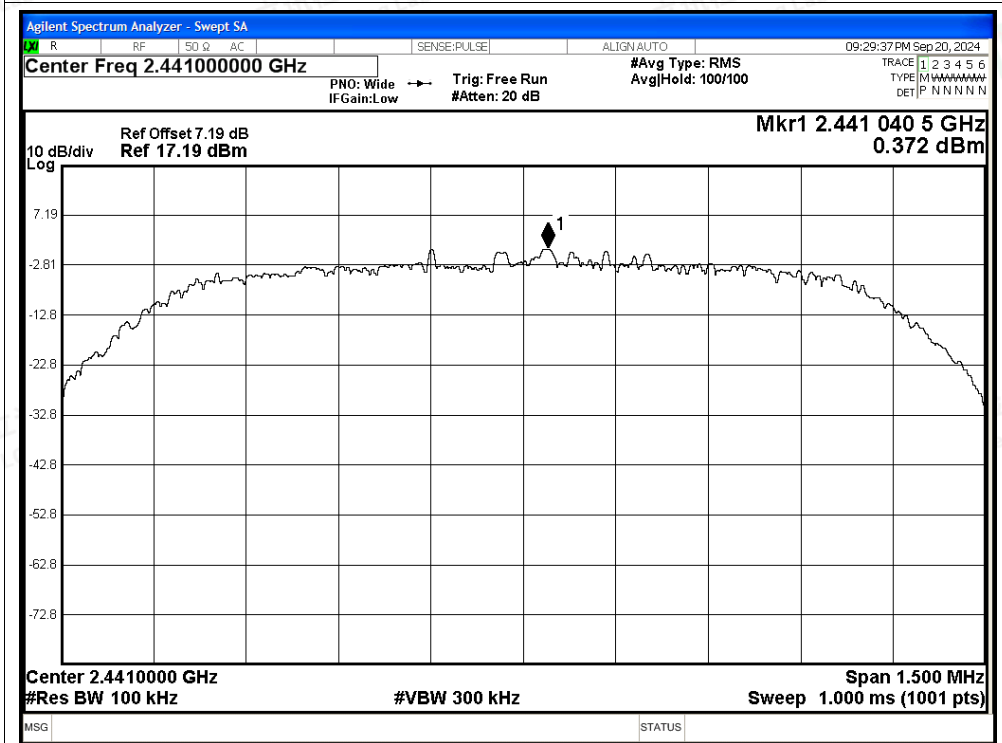


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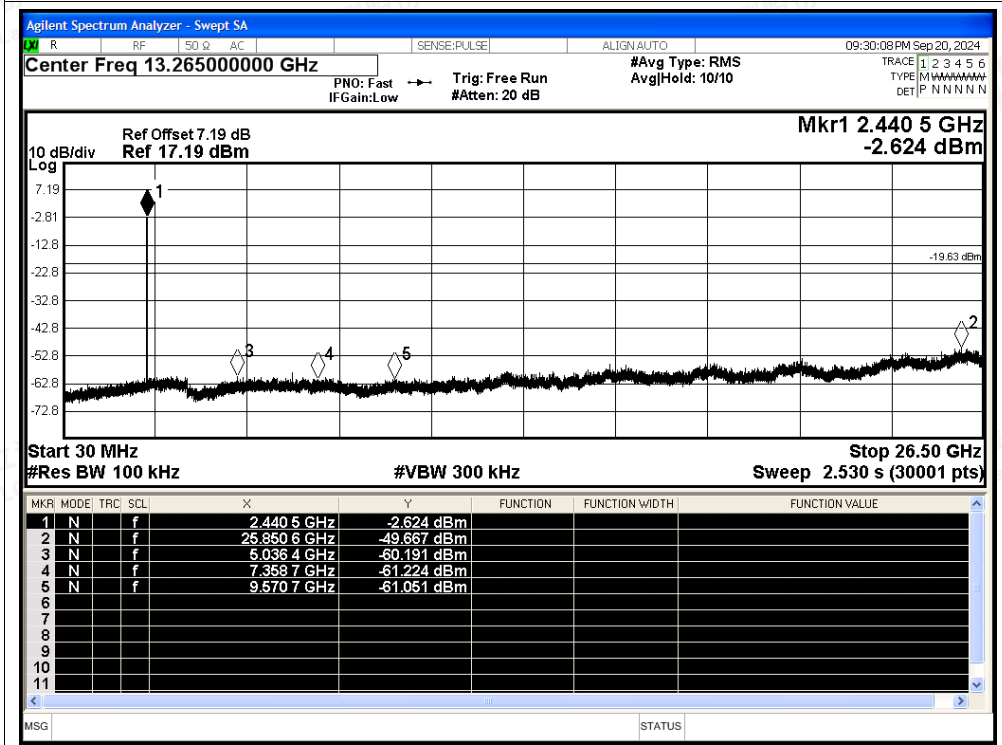




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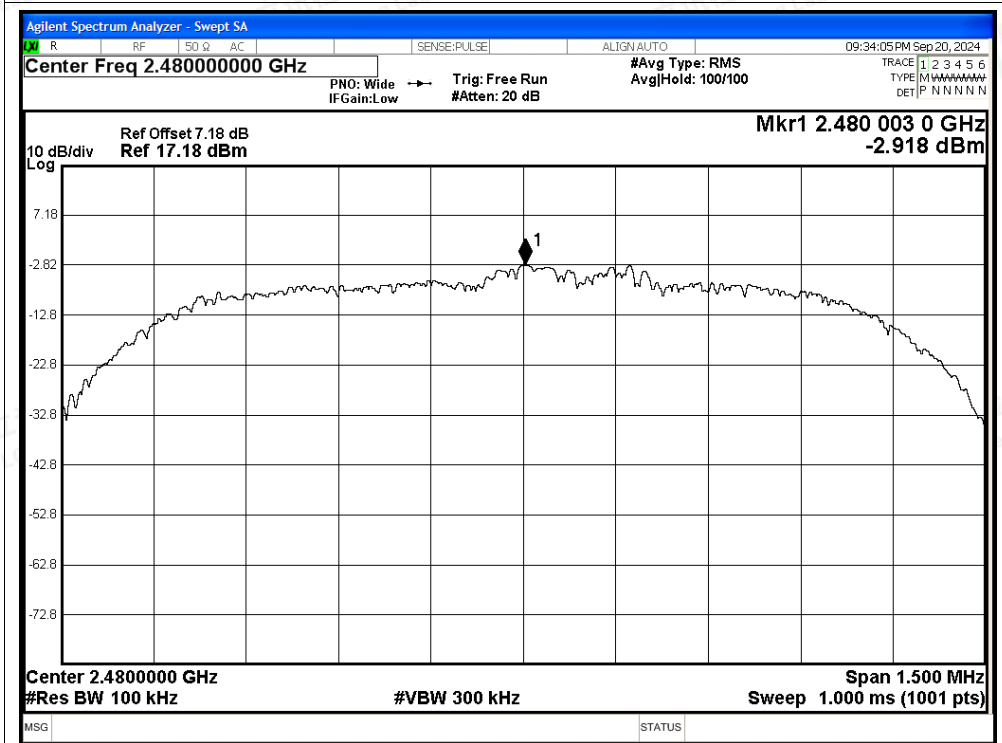


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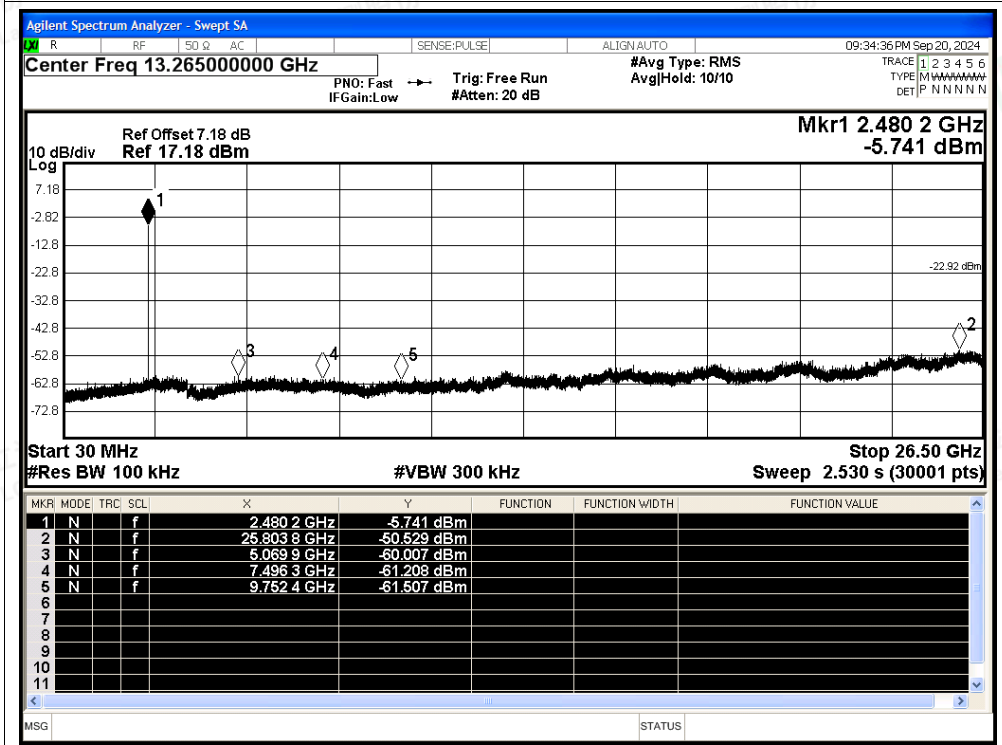




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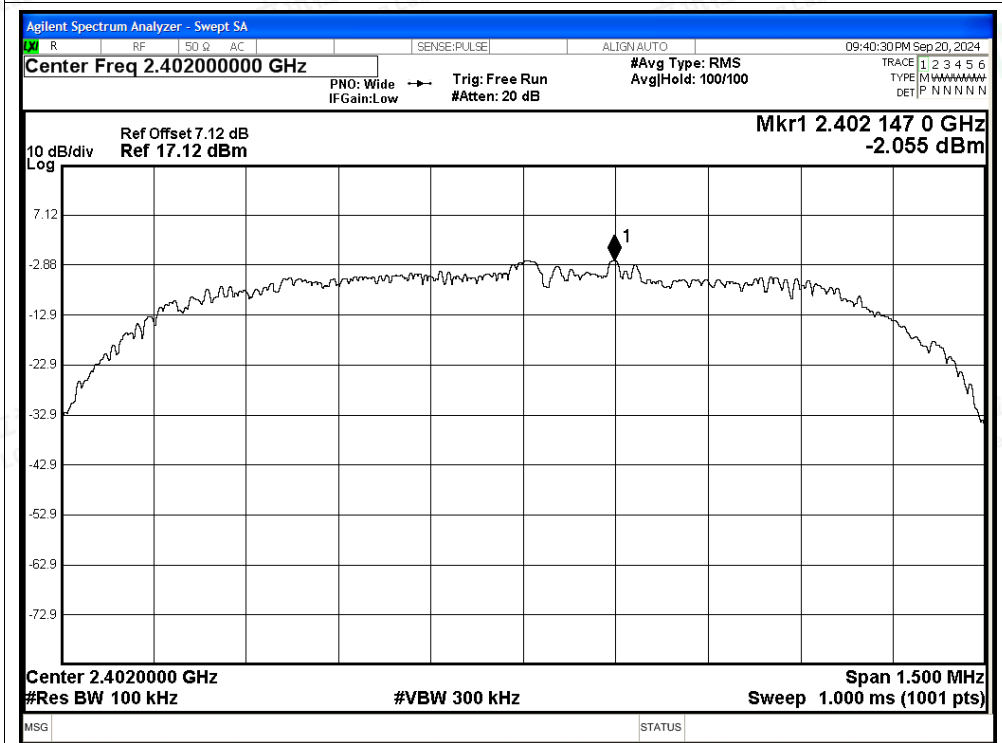


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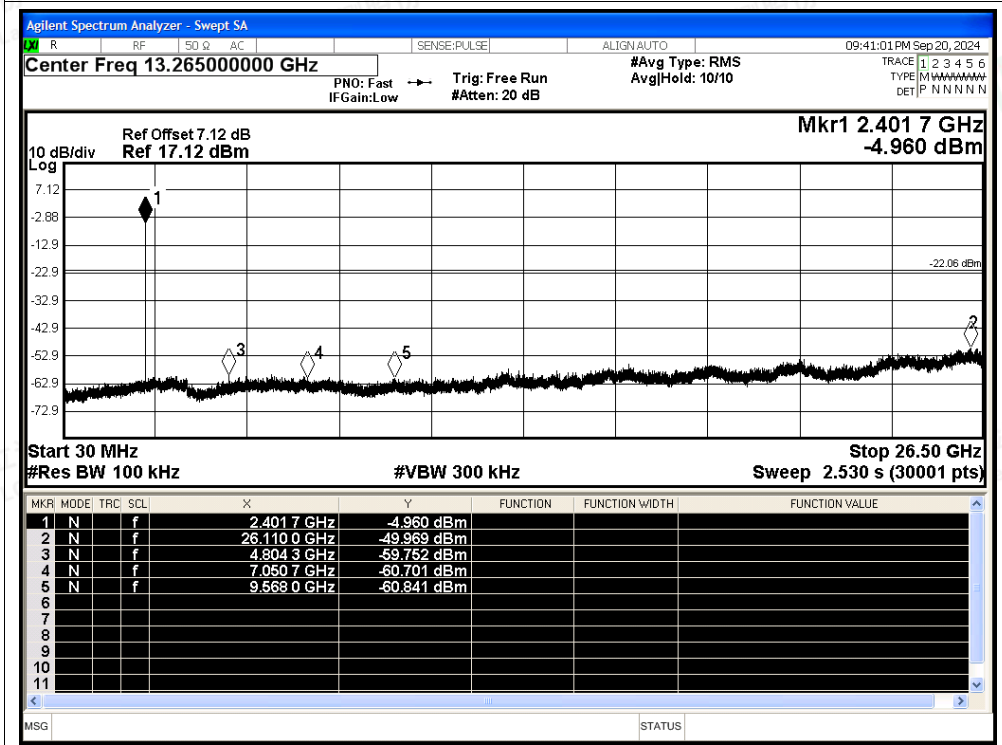




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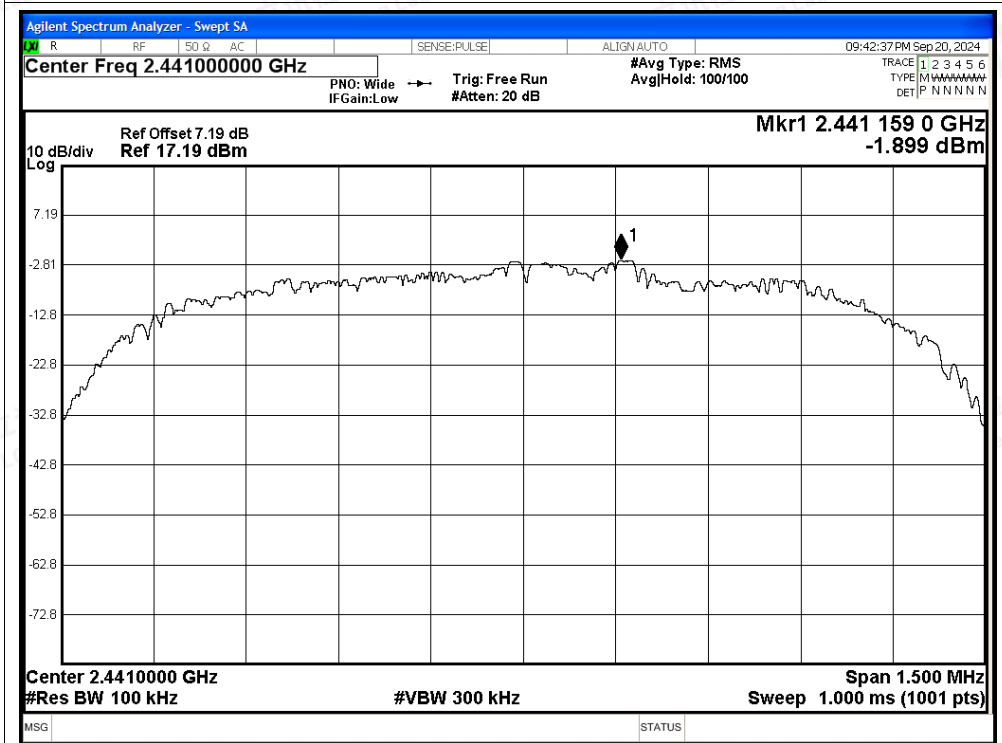


Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission

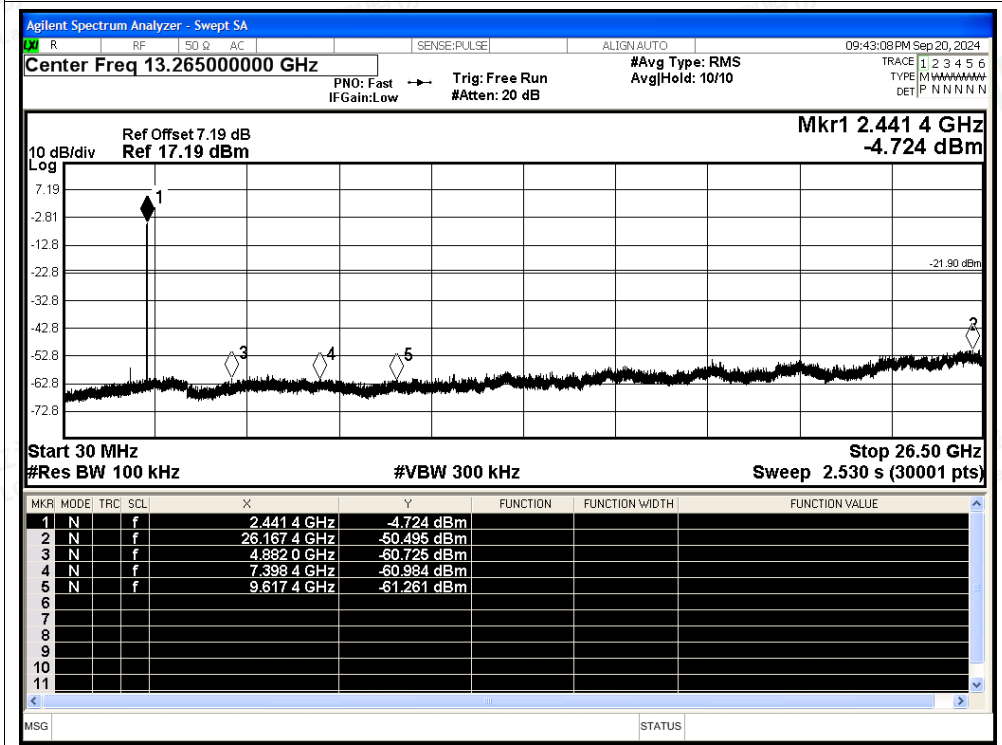




Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref

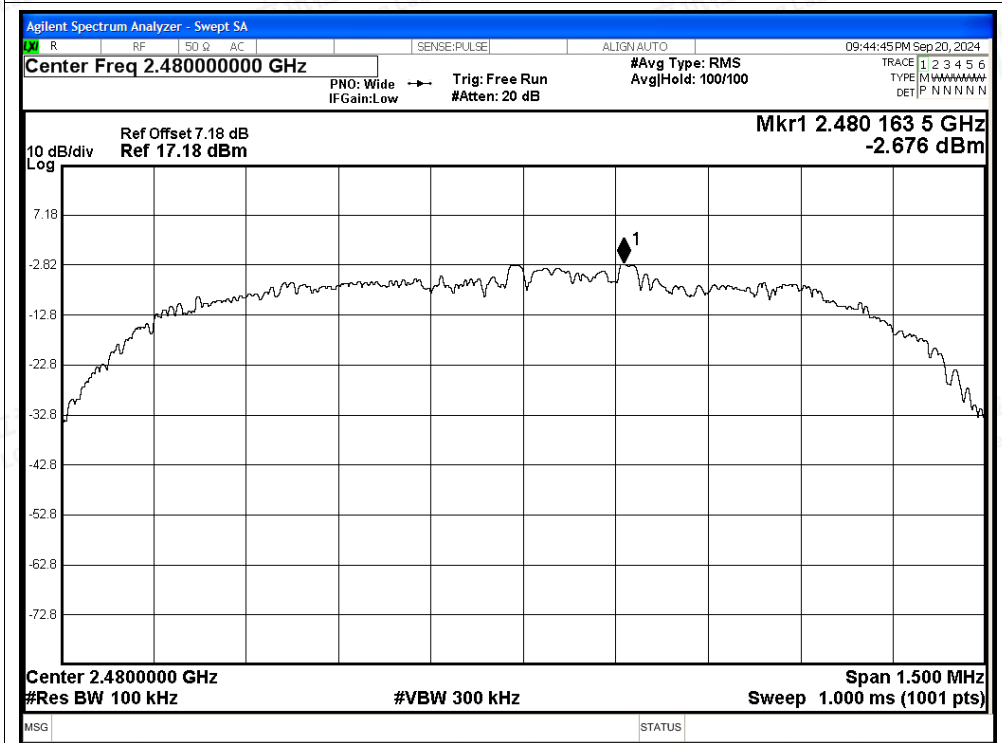


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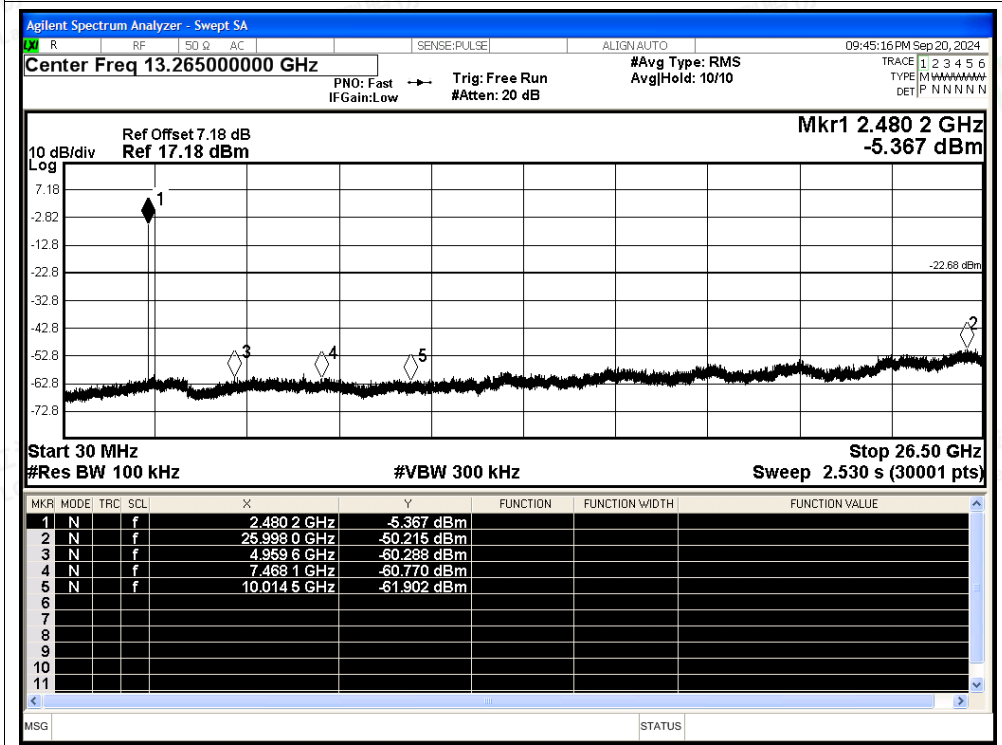




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



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	77.6	1.1	0.34
NVNT	1-DH5	2441	Ant1	77.63	1.1	0.34
NVNT	1-DH5	2480	Ant1	77.63	1.1	0.34
NVNT	2-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	2-DH5	2441	Ant1	77.33	1.12	0.34
NVNT	2-DH5	2480	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2402	Ant1	77.28	1.12	0.35
NVNT	3-DH5	2441	Ant1	77.33	1.12	0.34
NVNT	3-DH5	2480	Ant1	77.28	1.12	0.35

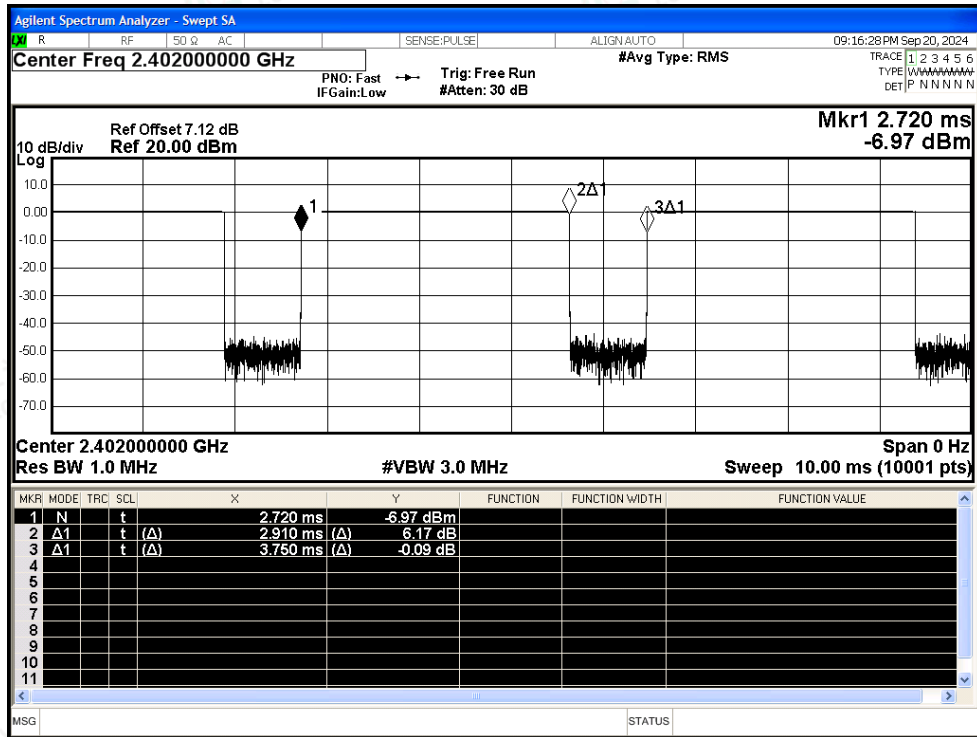


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

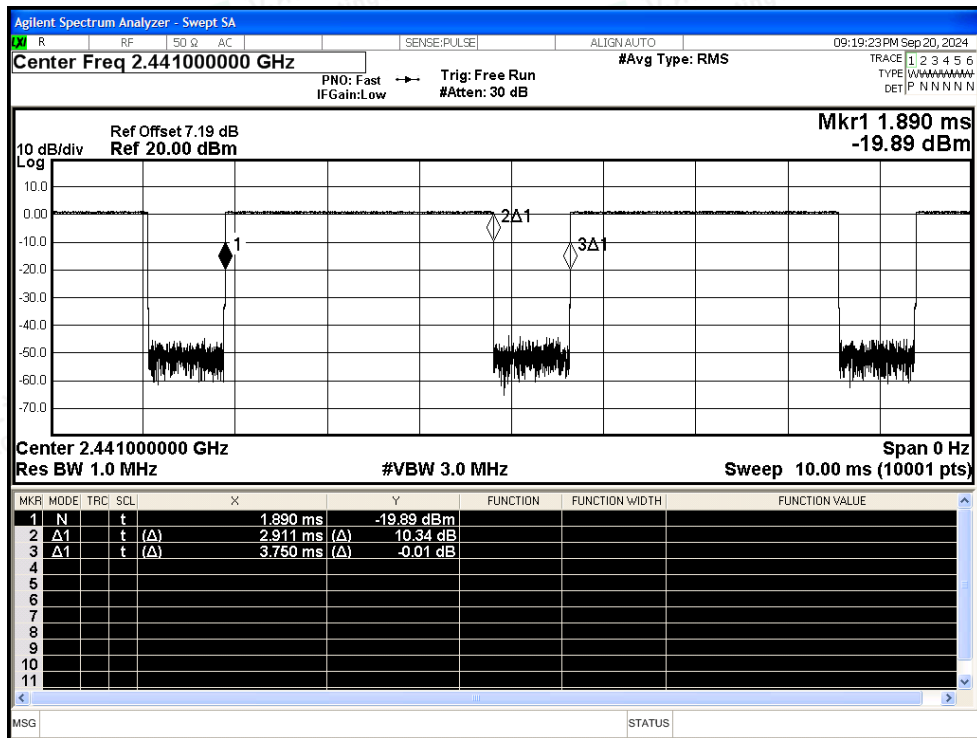


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

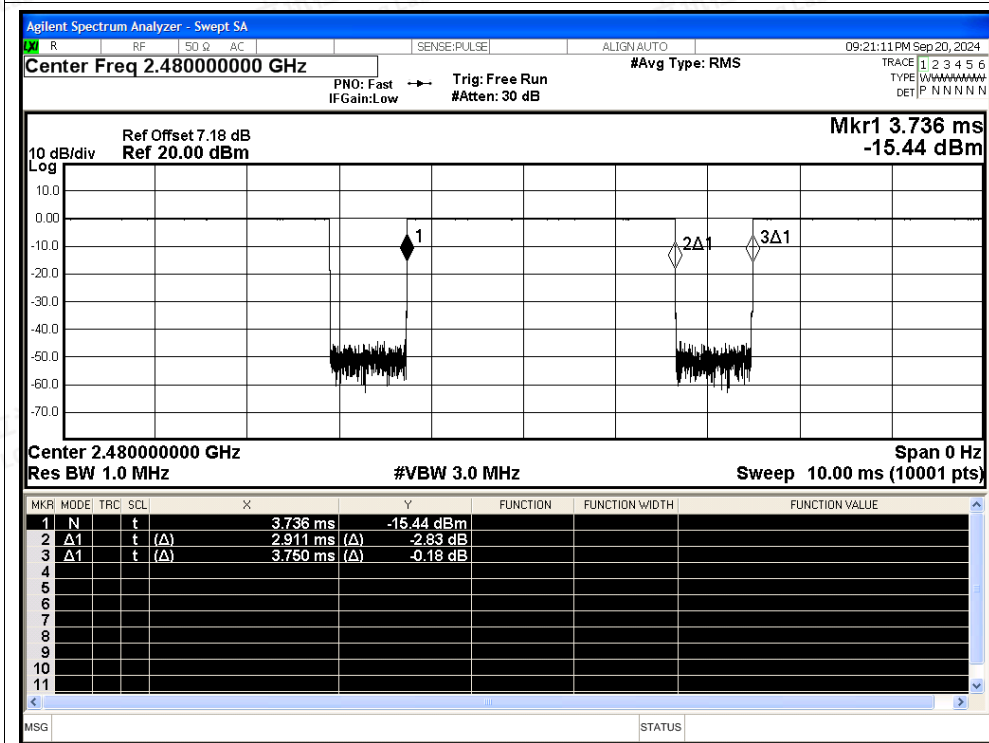


Duty Cycle NVNT 1-DH5 2441MHz Ant1

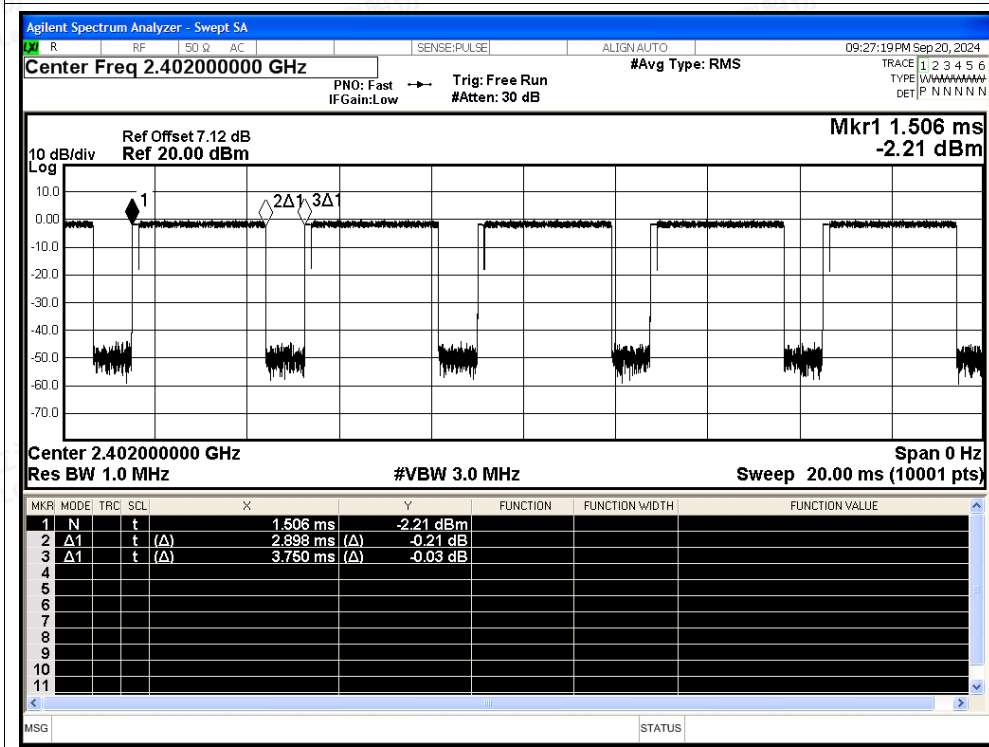




Duty Cycle NVNT 1-DH5 2480MHz Ant1

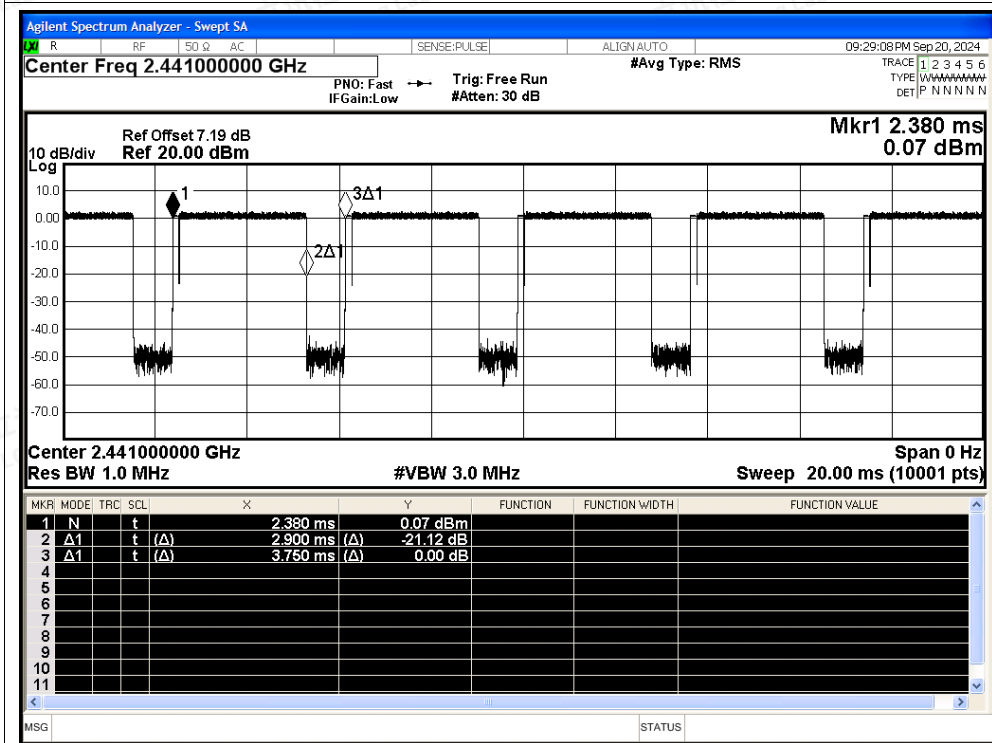


Duty Cycle NVNT 2-DH5 2402MHz Ant1

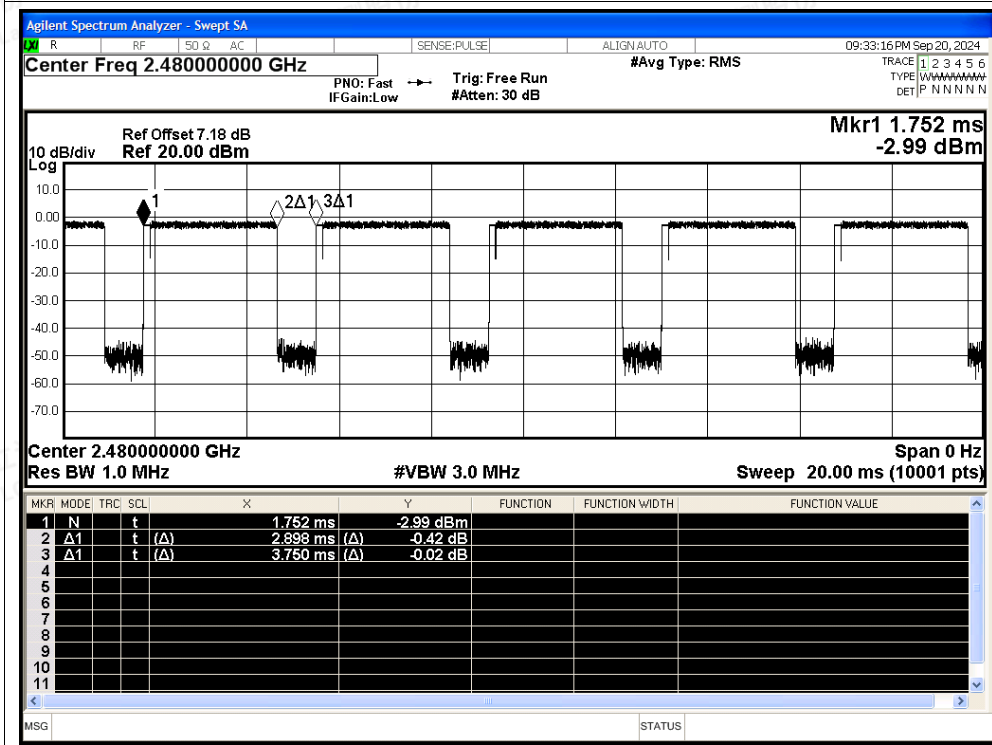




Duty Cycle NVNT 2-DH5 2441MHz Ant1

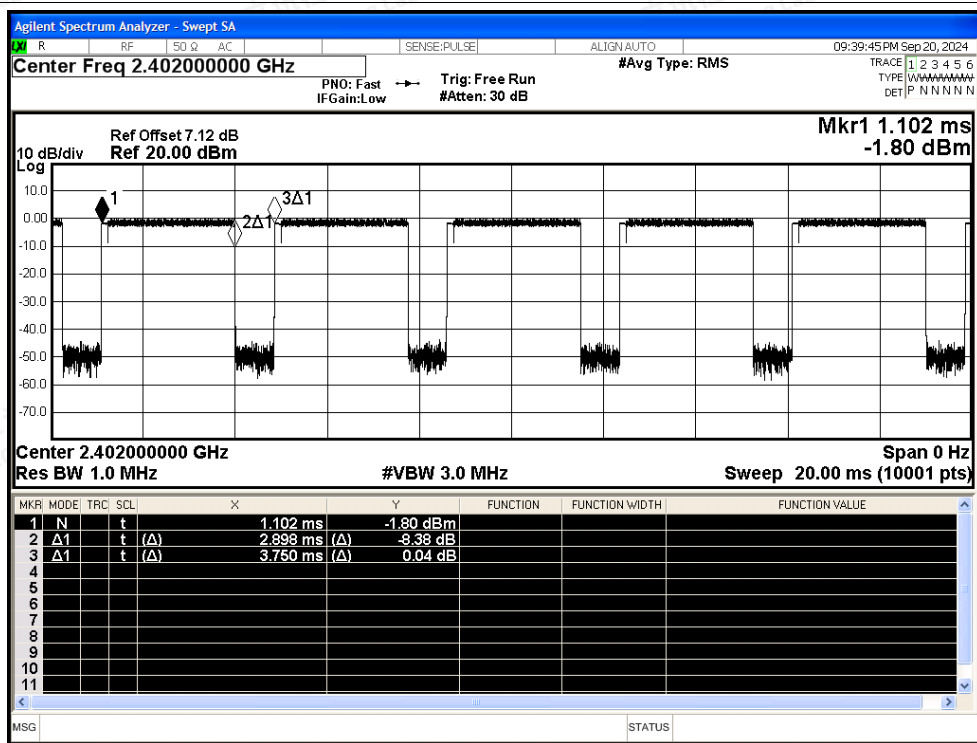


Duty Cycle NVNT 2-DH5 2480MHz Ant1

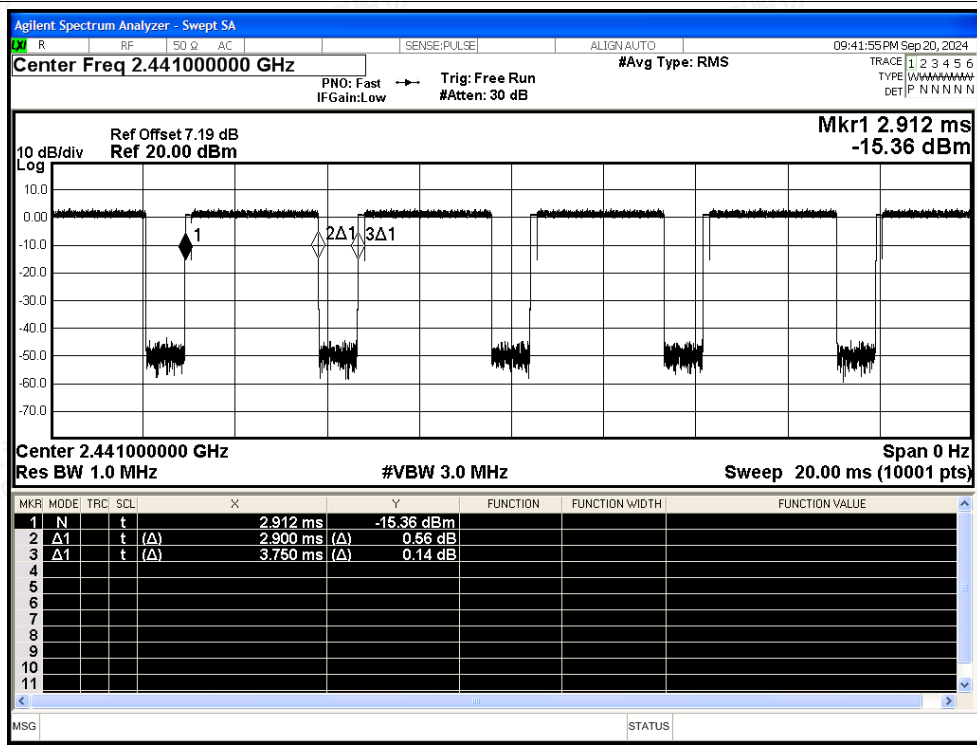


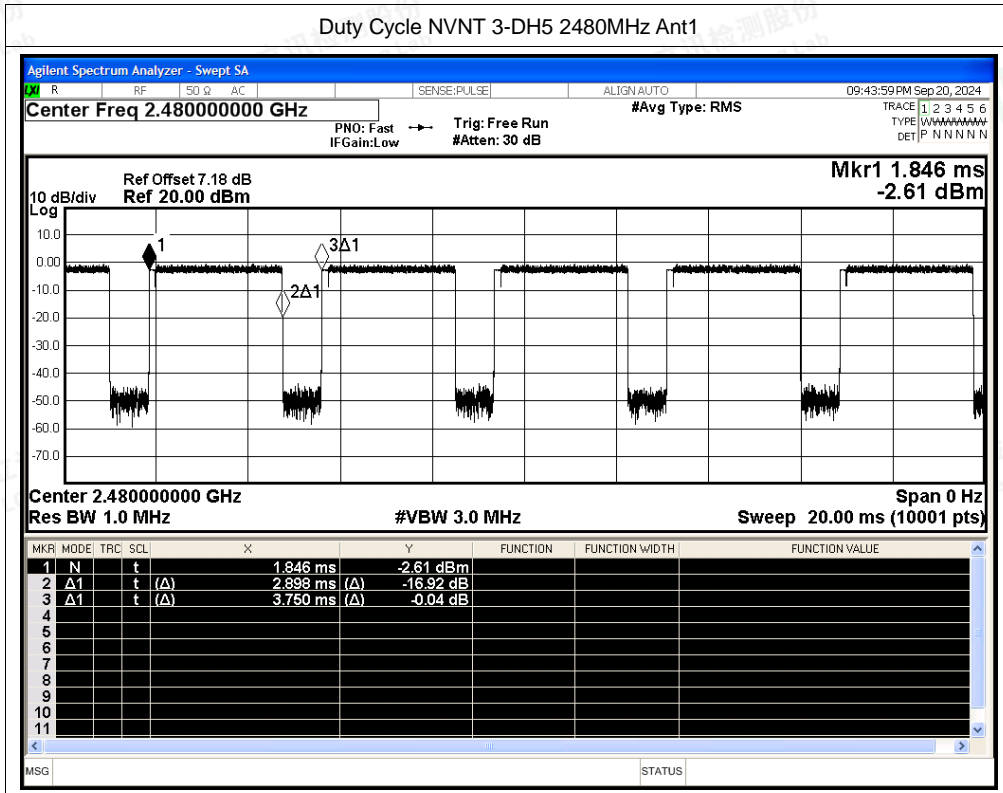


Duty Cycle NVNT 3-DH5 2402MHz Ant1



Duty Cycle NVNT 3-DH5 2441MHz Ant1







A.9 Restrict Band

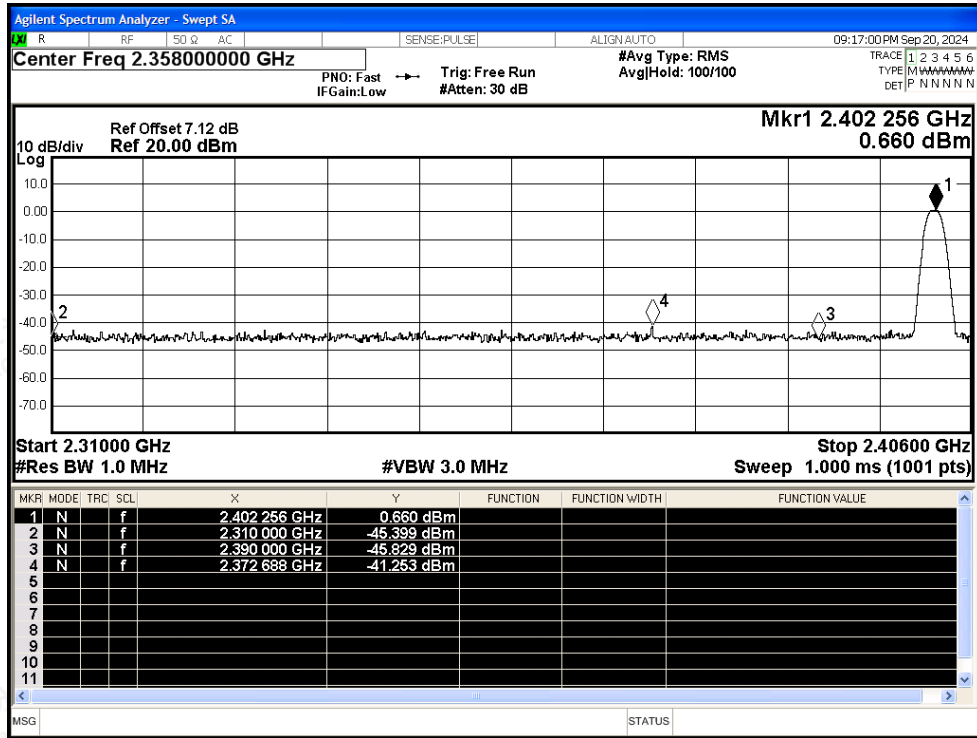
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-45.4	2	-	51.86	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-53.4	2	1.1	44.96	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2372.688	-41.25	2	-	56.01	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2358.288	-52.58	2	1.1	45.78	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-45.83	2	-	51.43	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-53.55	2	1.1	44.81	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-43.88	2	-	53.38	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-52.96	2	1.1	45.40	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2496.184	-41.5	2	-	55.76	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2497.432	-52.09	2	1.1	46.27	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-44.78	2	-	52.48	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-53.27	2	1.1	45.09	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-45.76	2	-	51.50	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-54	2	1.12	44.38	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2378.352	-42.54	2	-	54.72	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2361.072	-52.51	2	1.12	45.87	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-45.21	2	-	52.05	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-53.33	2	1.12	45.05	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-45.74	2	-	51.52	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-53	2	1.12	45.38	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2498.464	-41.48	2	-	55.78	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2495.944	-52.15	2	1.12	46.23	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-44.12	2	-	53.14	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-52.8	2	1.12	45.58	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-46.26	2	-	51.00	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-54.17	2	1.12	44.21	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2326.416	-42.59	2	-	54.67	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2385.84	-52.71	2	1.12	45.67	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-45.85	2	-	51.41	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-53.42	2	1.12	44.96	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-45.99	2	-	51.27	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-53.13	2	1.12	45.25	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2498.416	-40.58	2	-	56.68	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2495.8	-52.08	2	1.12	46.30	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-44.32	2	-	52.94	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-52.95	2	1.12	45.43	Average	54	Pass



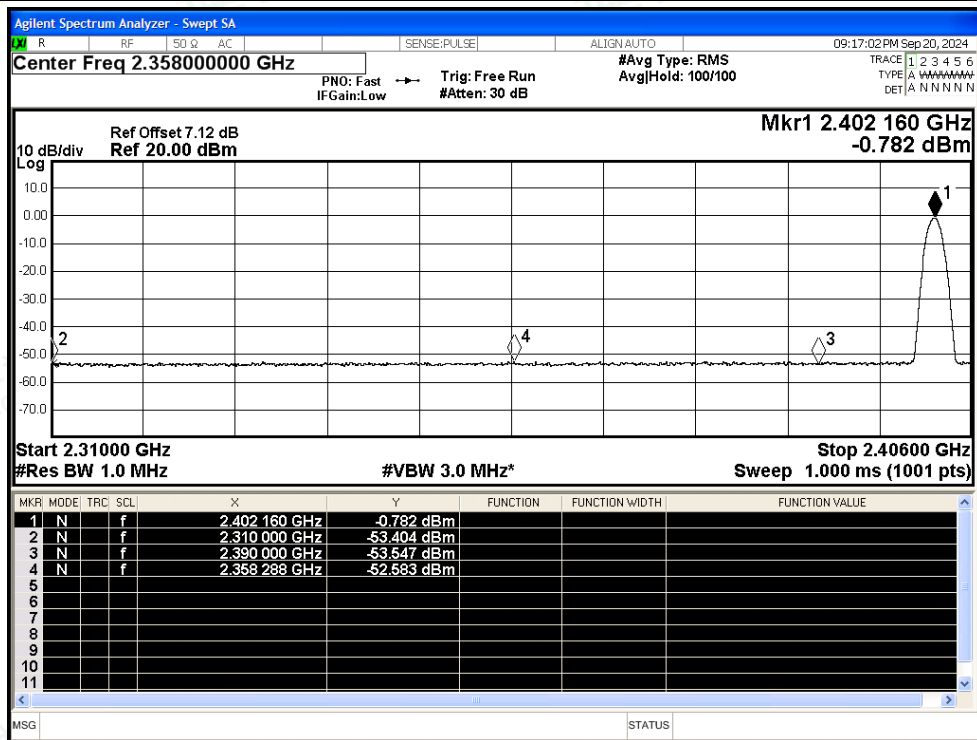


Test Graphs

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

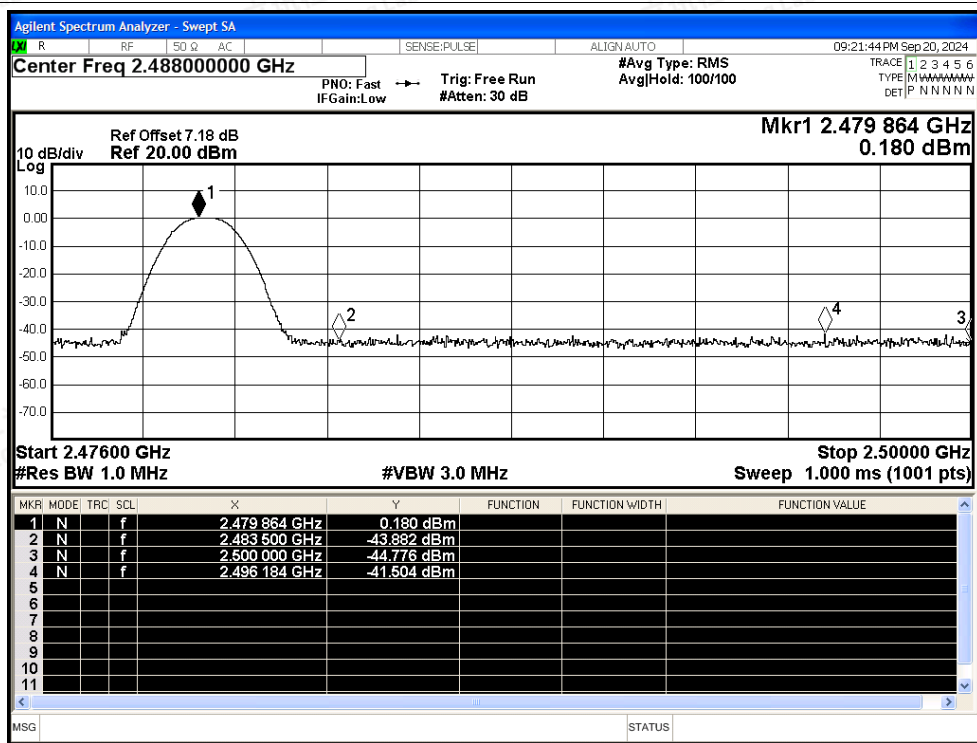


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

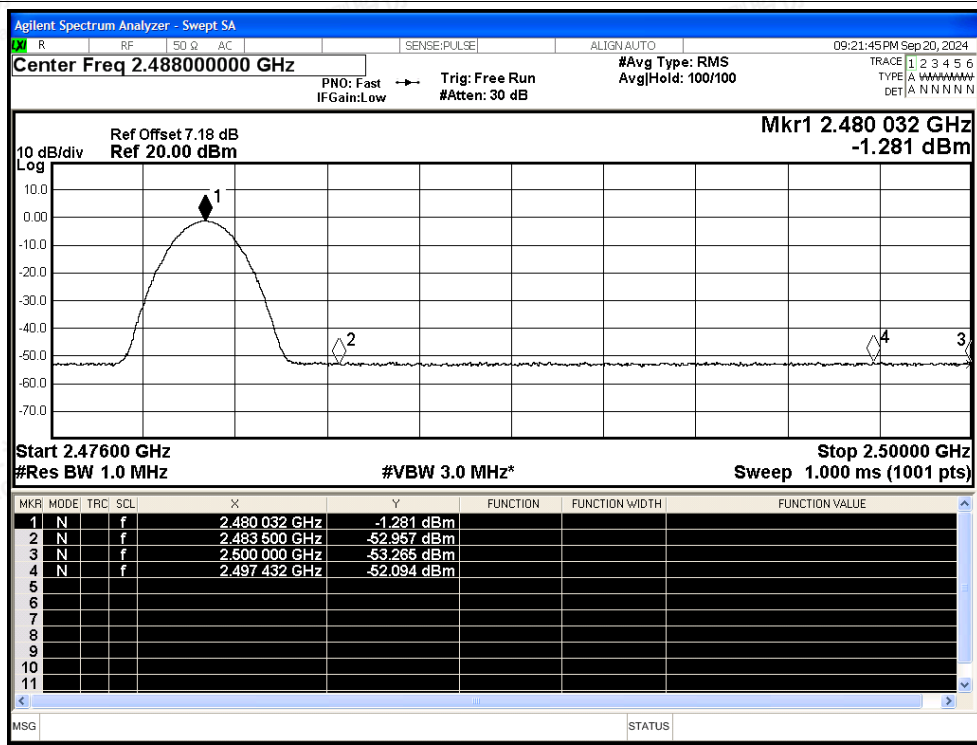


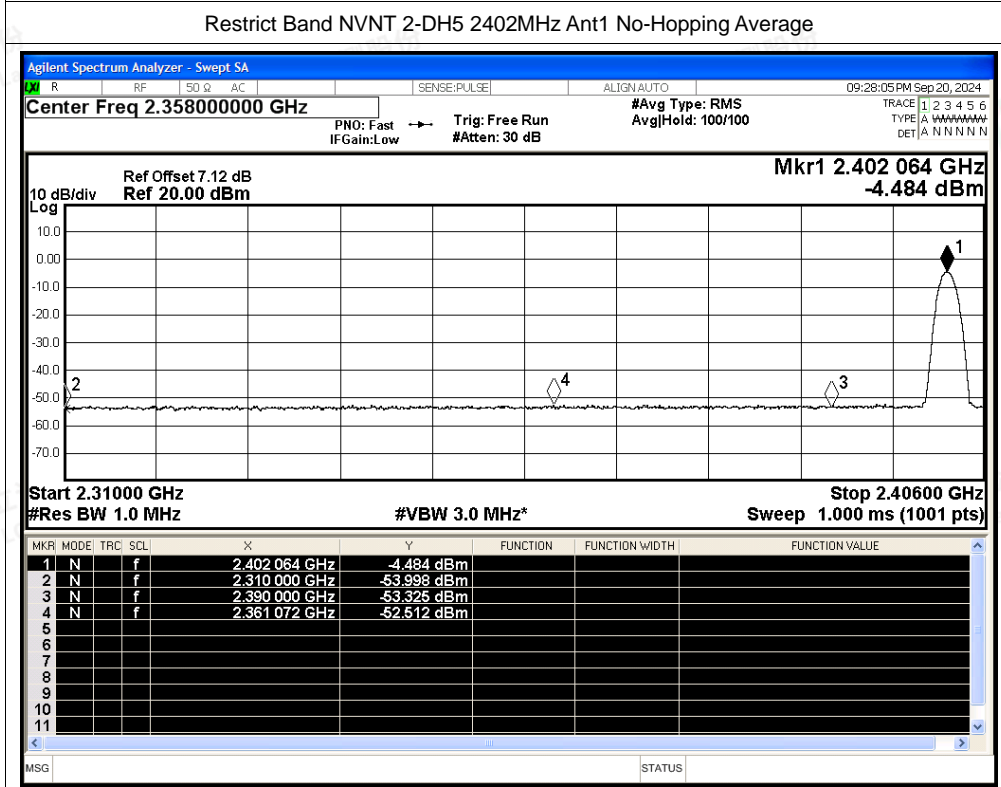
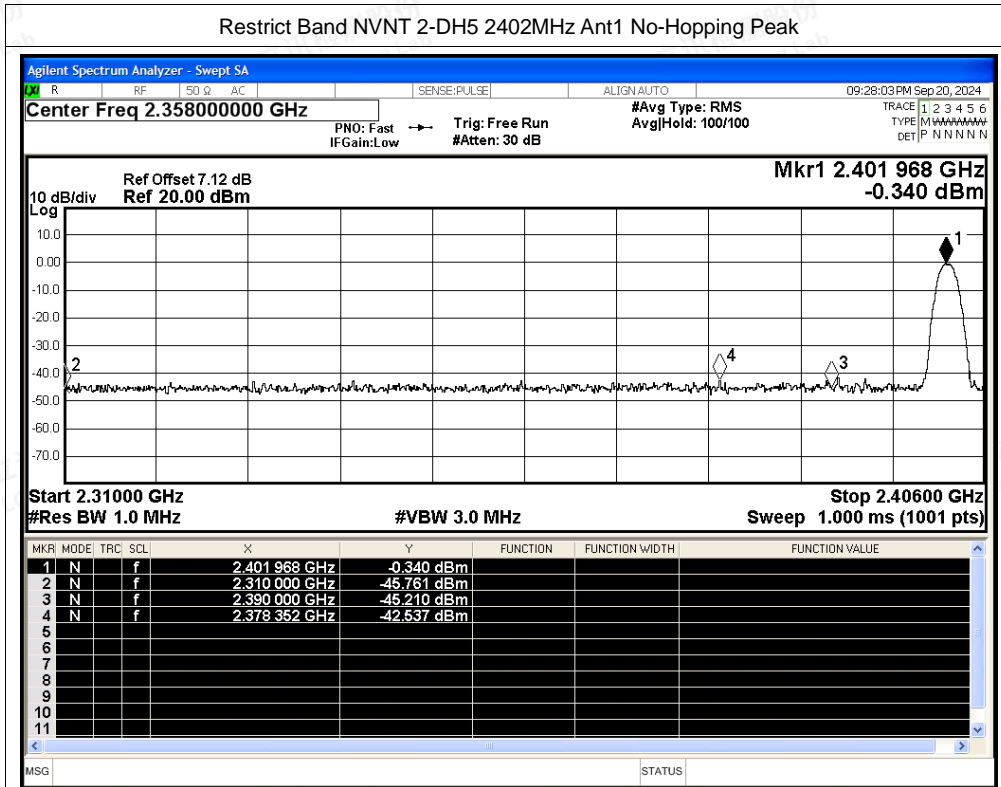


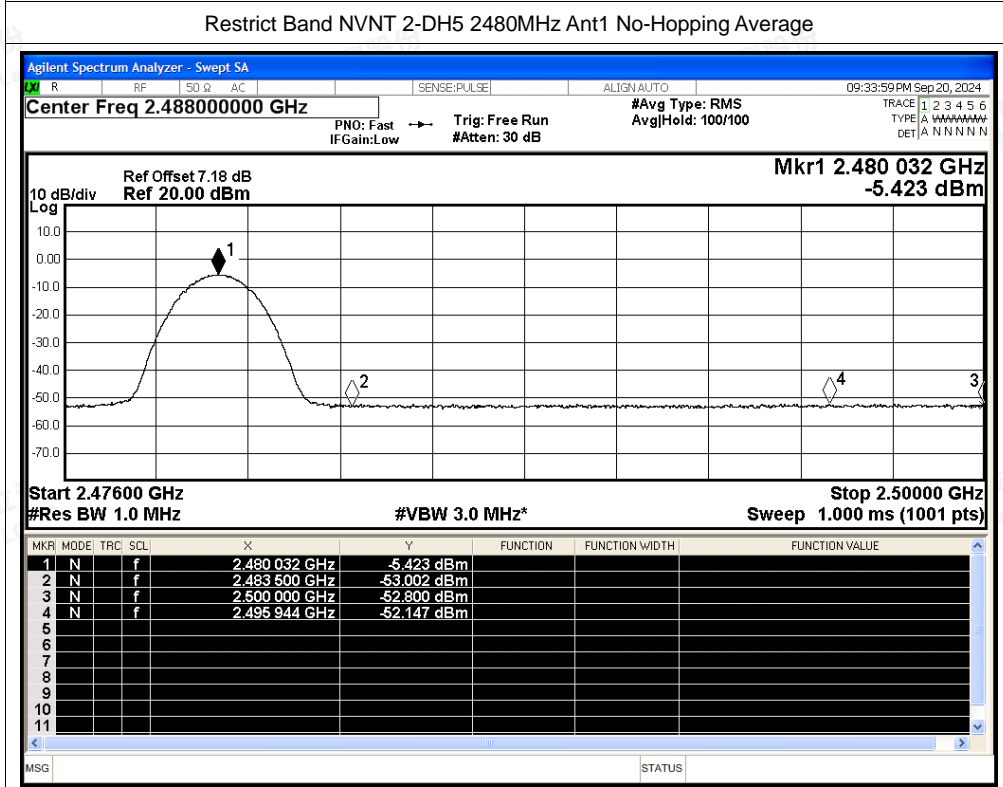
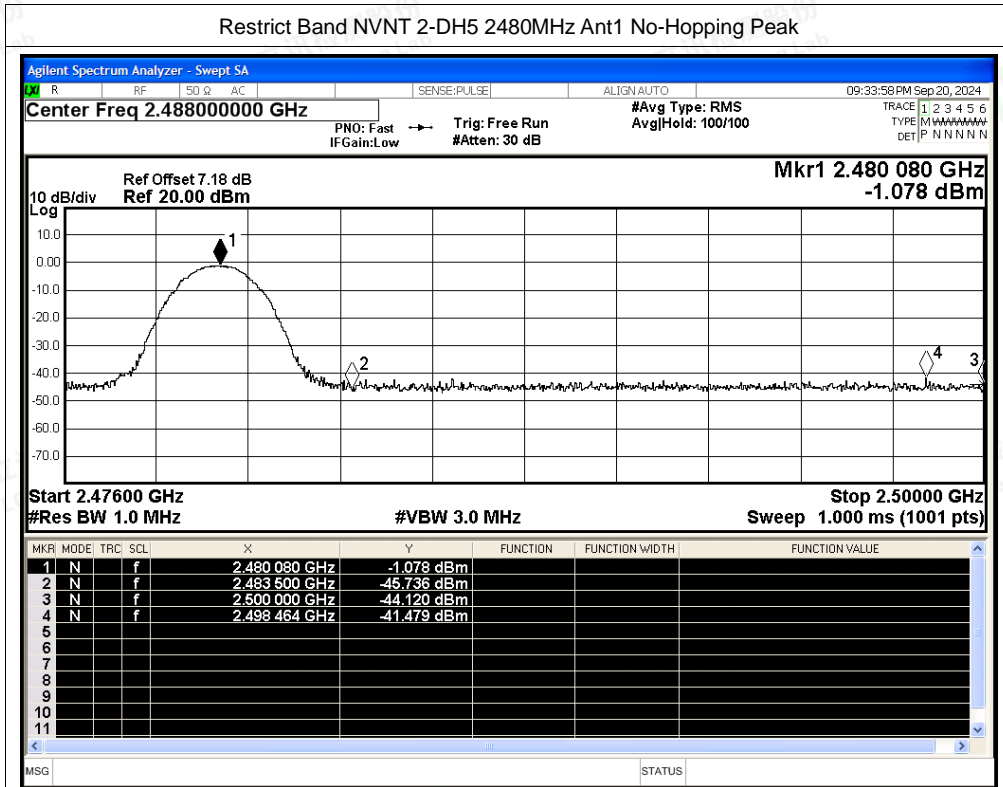
Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

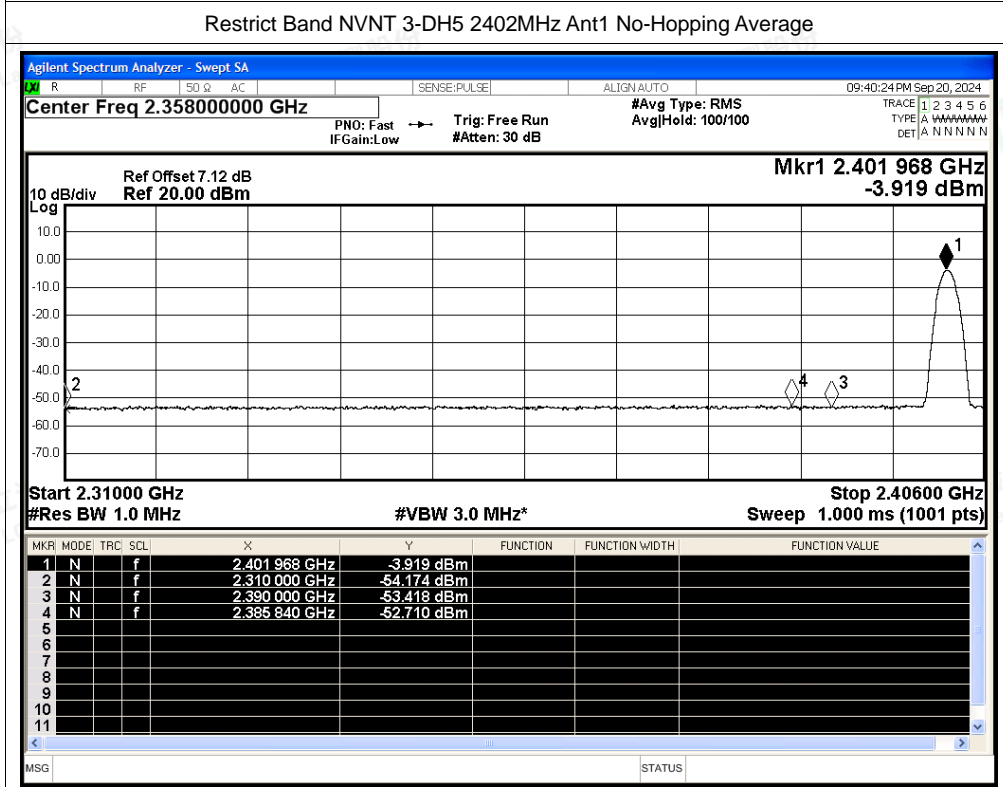
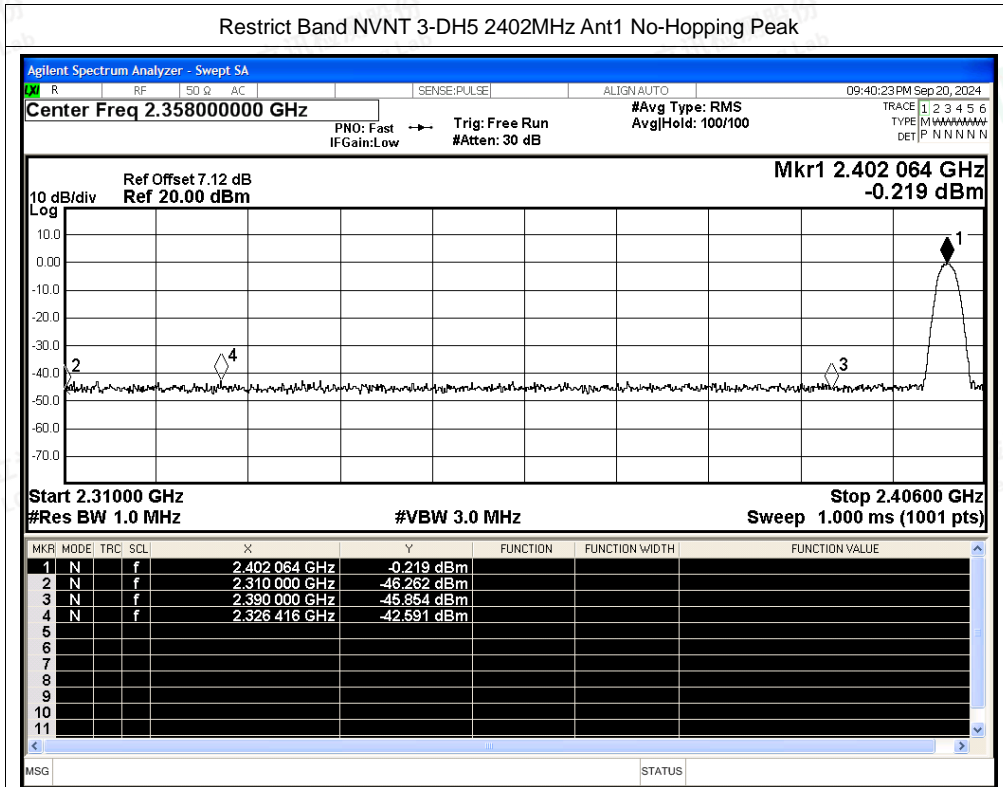


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average



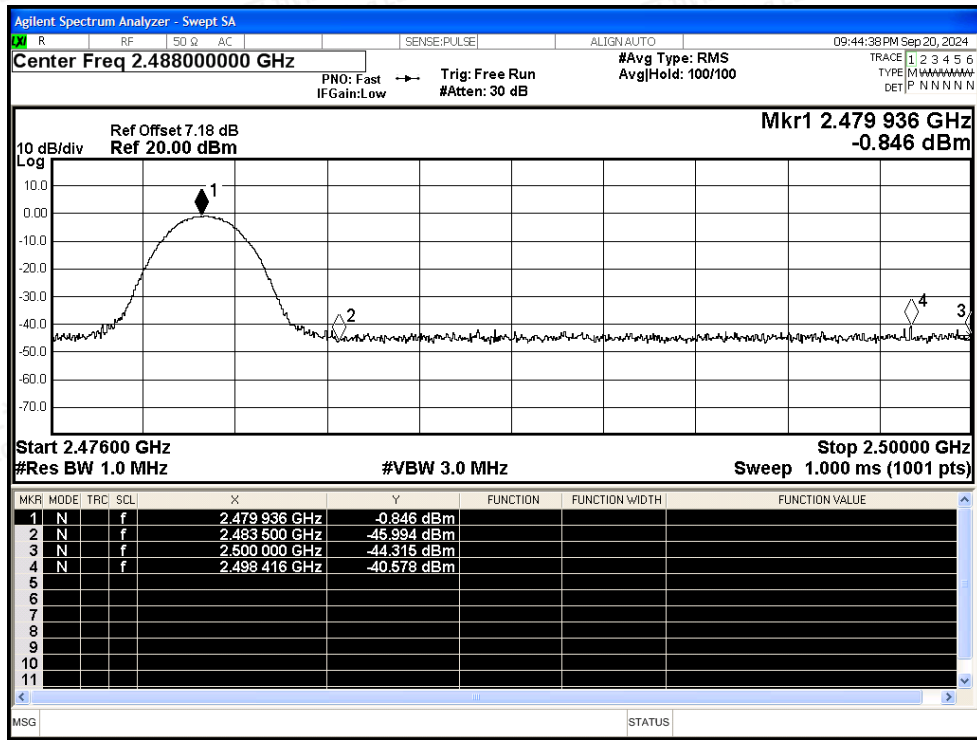








Restrict Band NVNT 3-DH5 2480MHz Ant1 No-Hopping Peak



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

