



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Vehicle Communication Interface

Test Model: ED BOX

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
Supervised by:	Nick Peng



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A.1 -20dB Bandwidth

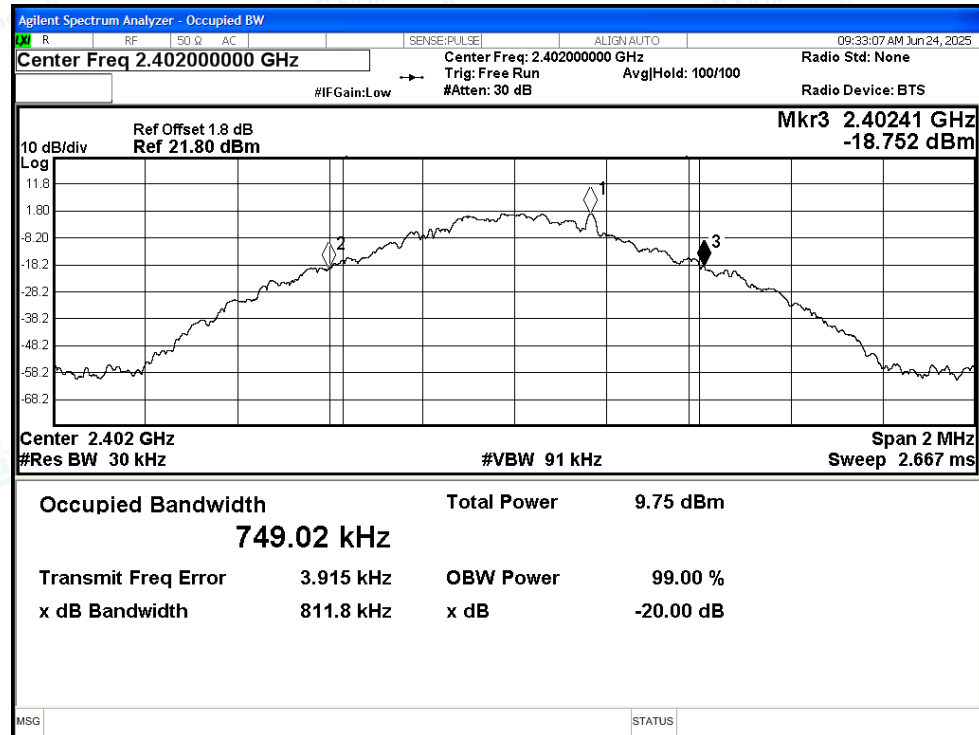
Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.812	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.811	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.853	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.278	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.28	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.27	N/A	Pass



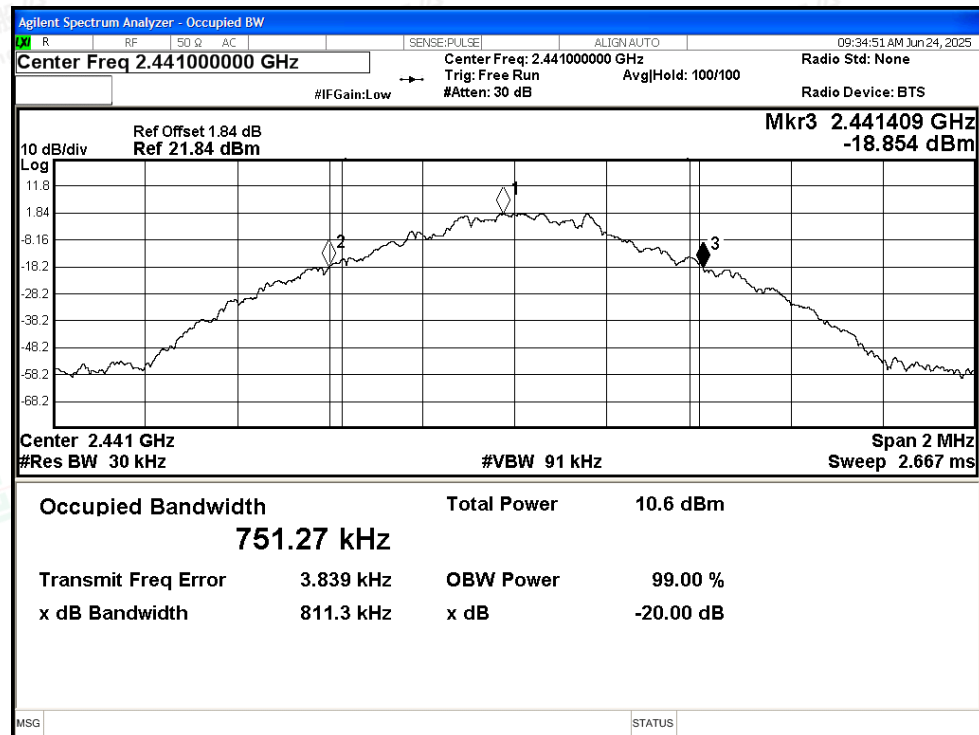


Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



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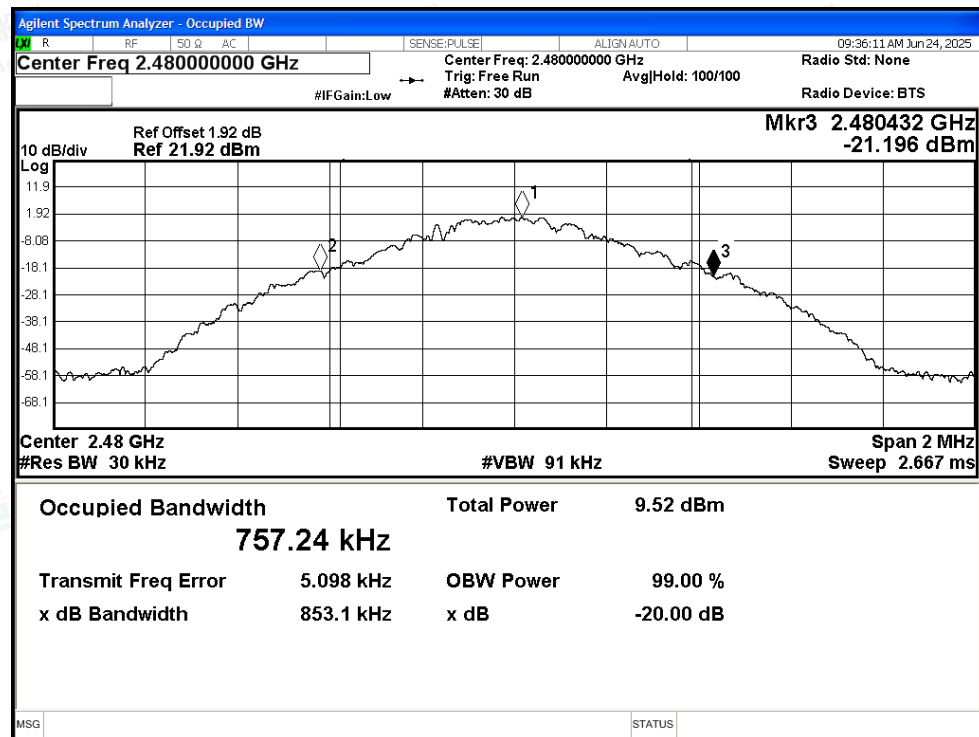
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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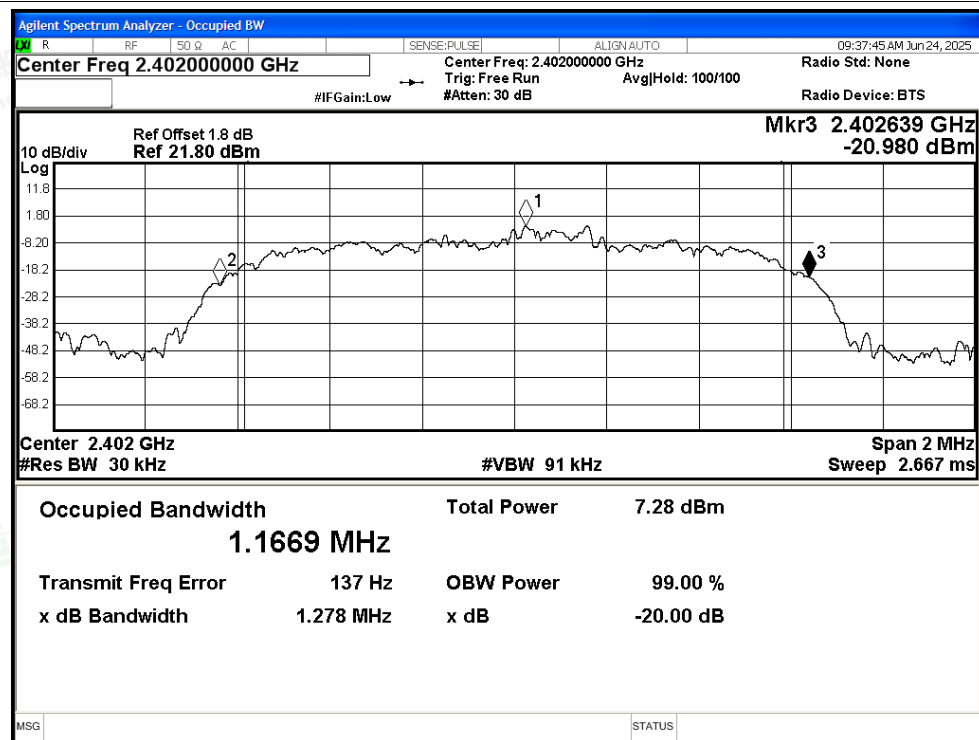
Scan code to check authenticity



-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



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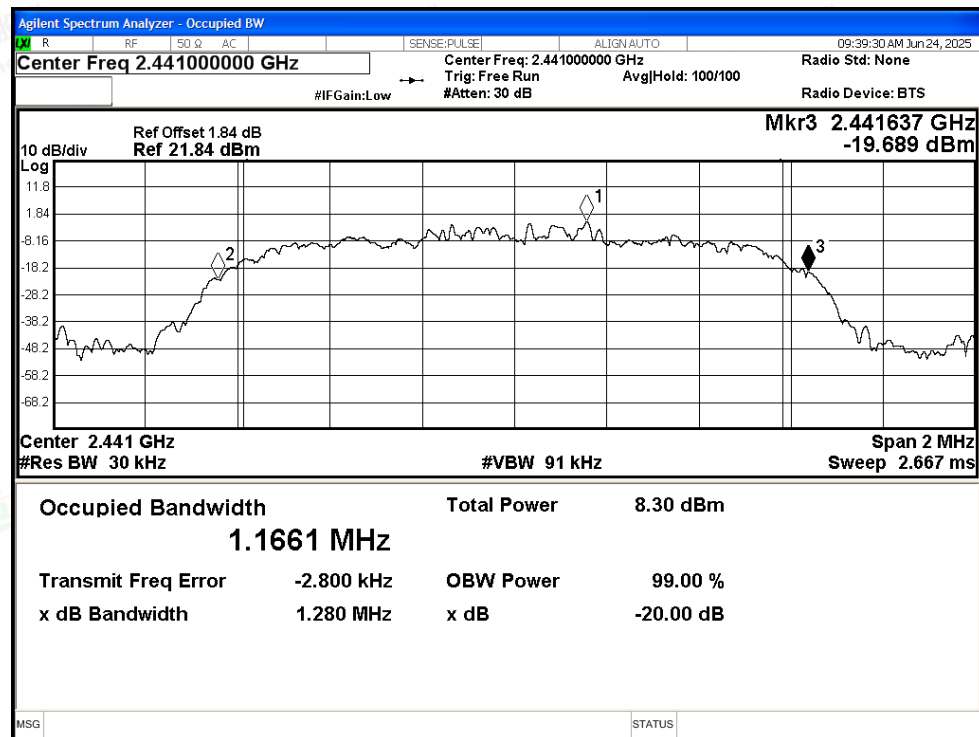
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

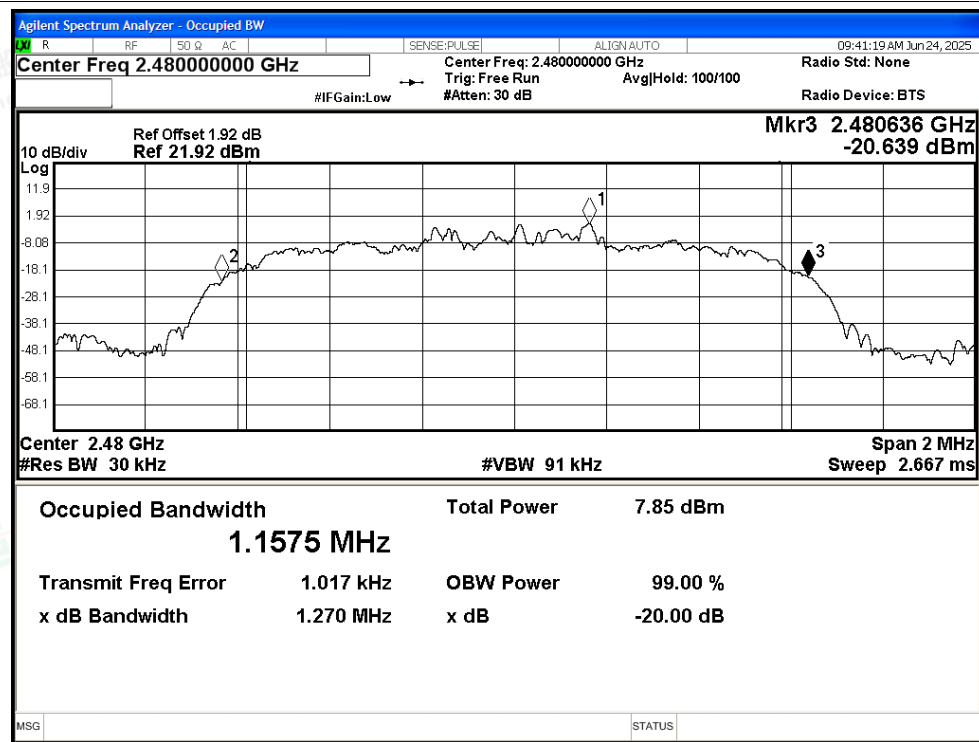
Scan code to check authenticity



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

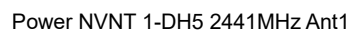




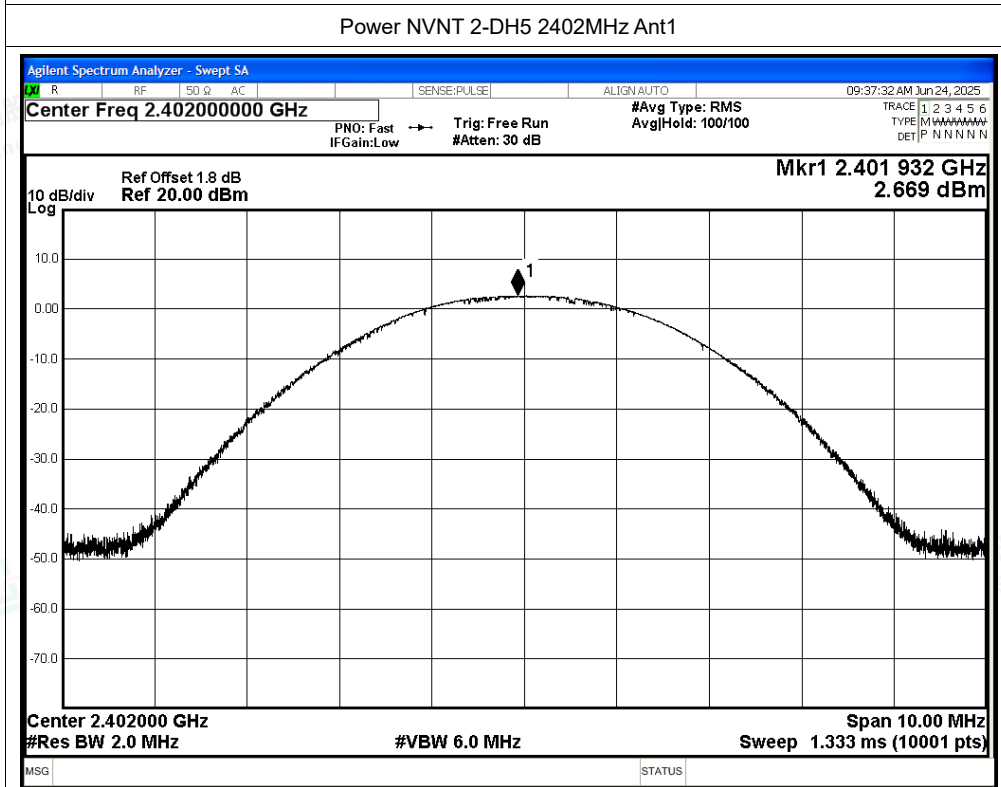
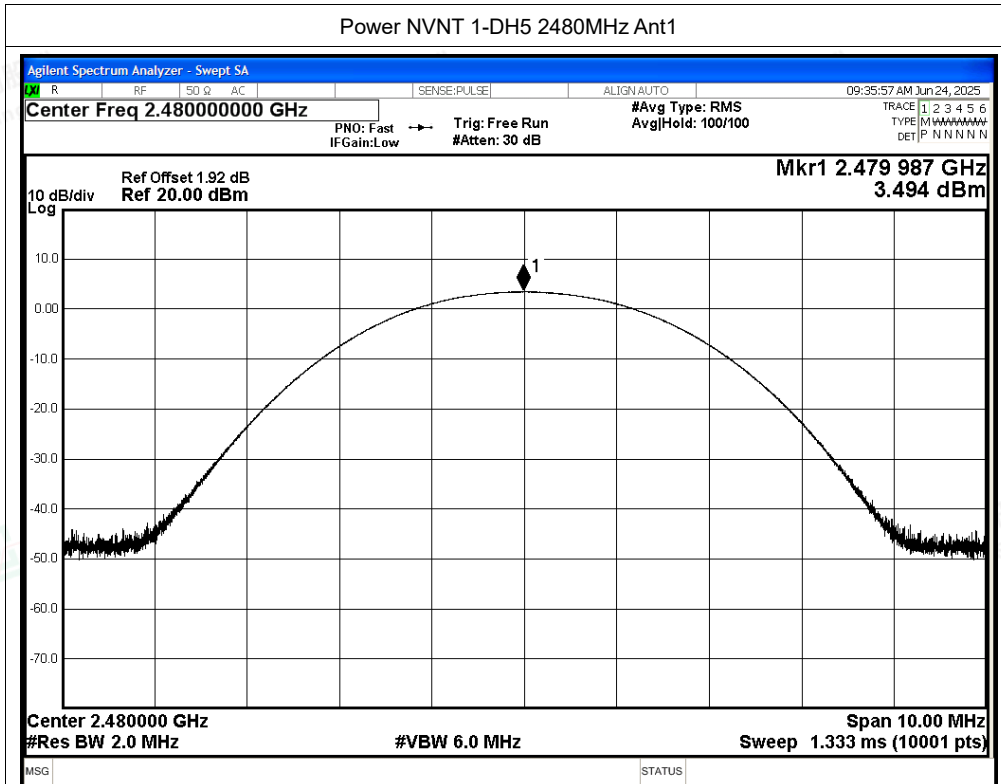
A.2 Maximum Peak Conducted Output Power

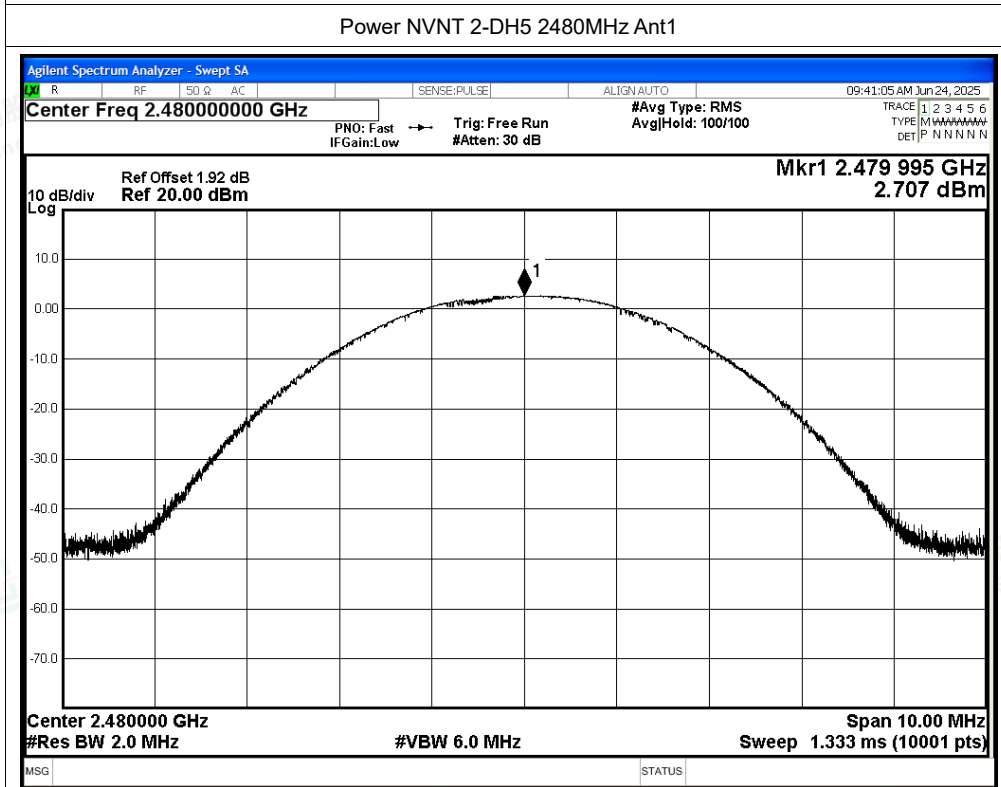
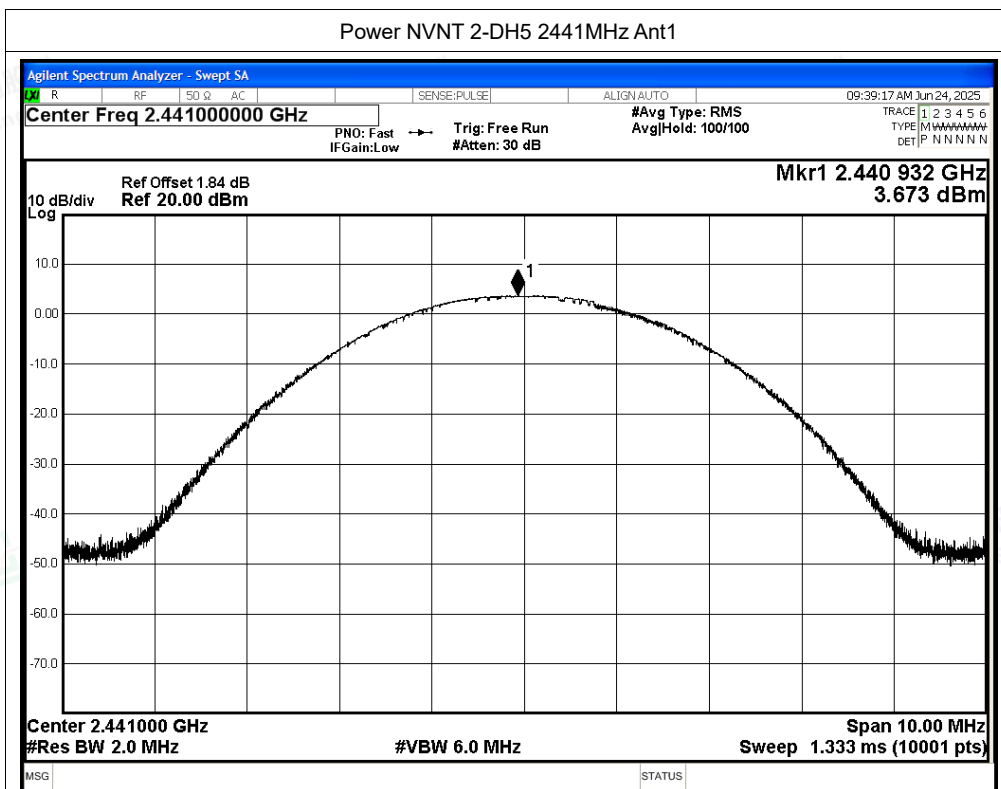
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	3.49	21	Pass
NVNT	1-DH5	2441	Ant1	4.4	21	Pass
NVNT	1-DH5	2480	Ant1	3.49	21	Pass
NVNT	2-DH5	2402	Ant1	2.67	21	Pass
NVNT	2-DH5	2441	Ant1	3.67	21	Pass
NVNT	2-DH5	2480	Ant1	2.71	21	Pass





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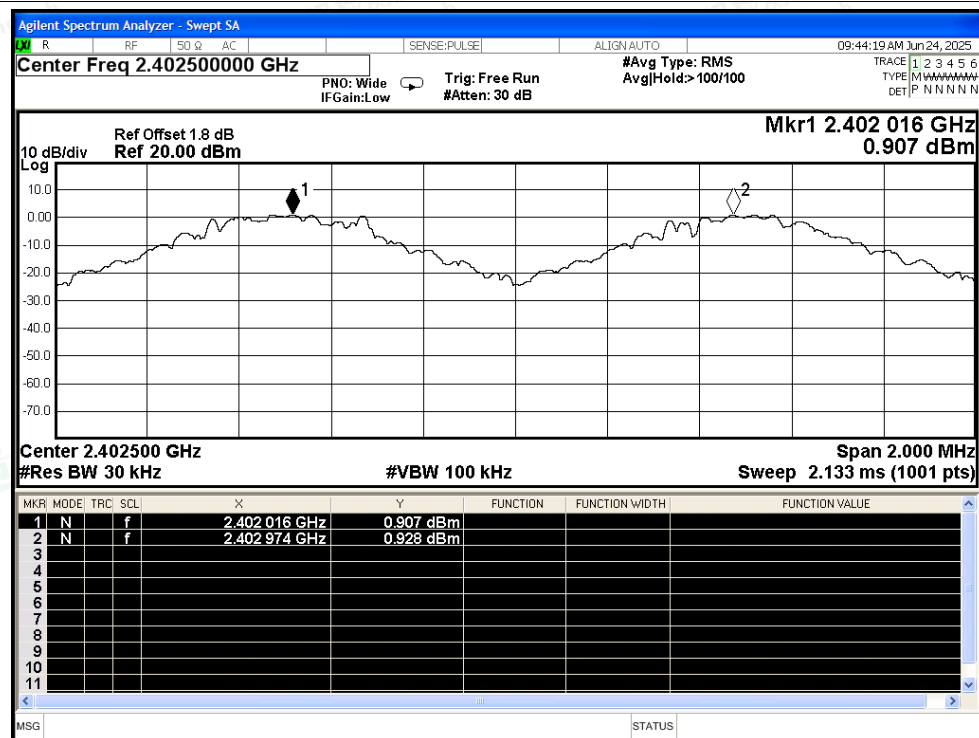
A.3 Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.016	2402.974	0.958	0.569	Pass
NVNT	2-DH5	Ant1	2402.016	2403.014	0.998	0.853	Pass

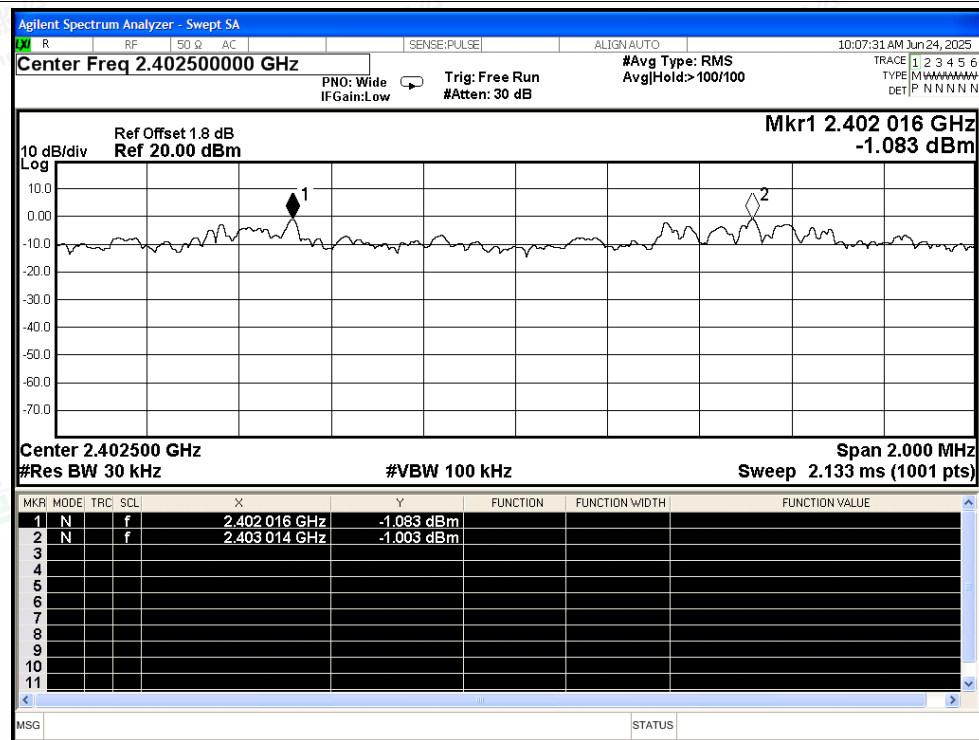


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2402MHz Ant1



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A.4 Dwell Time

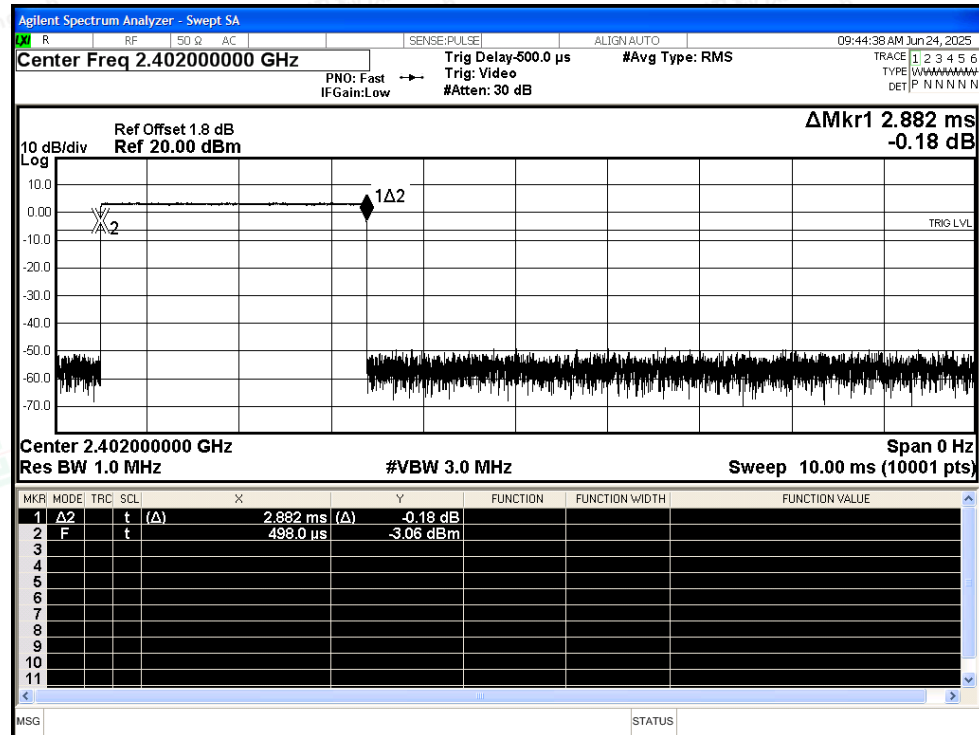
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.882	305.492	106	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.88	319.68	111	31600	400	Pass



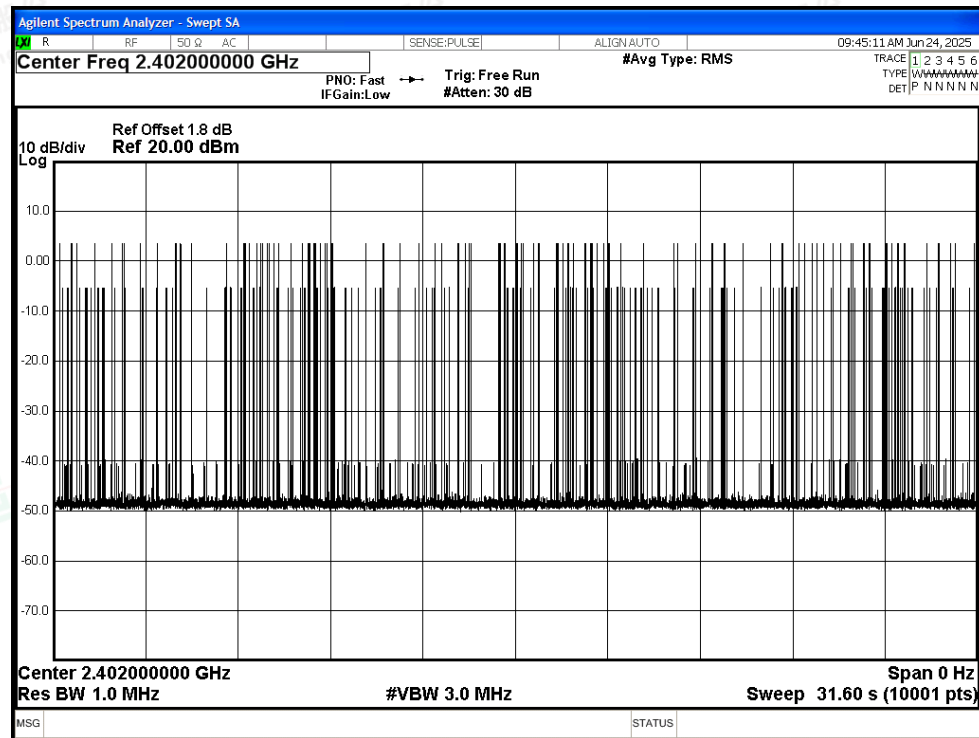


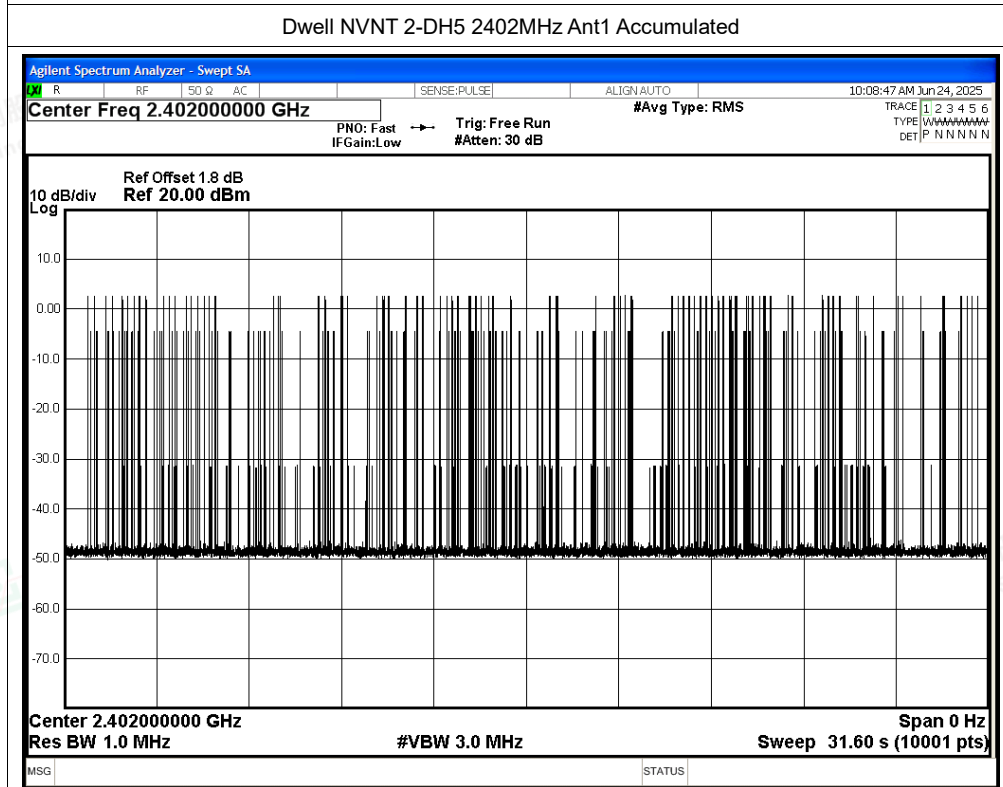
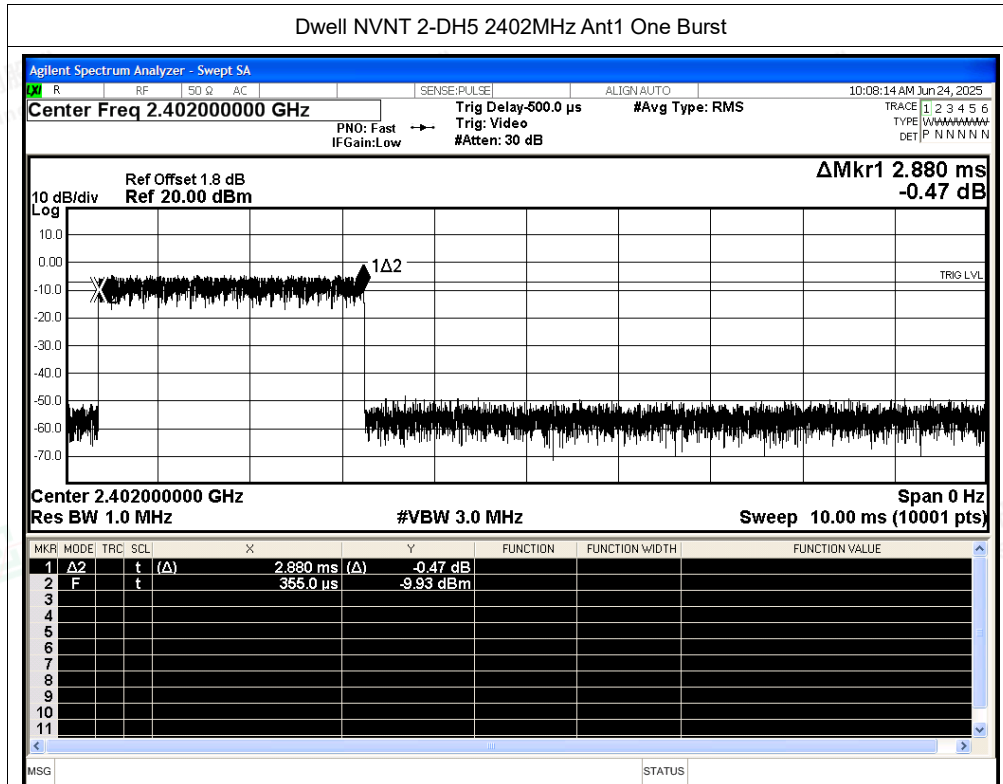
Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated







A.5 Number of Hopping Channel

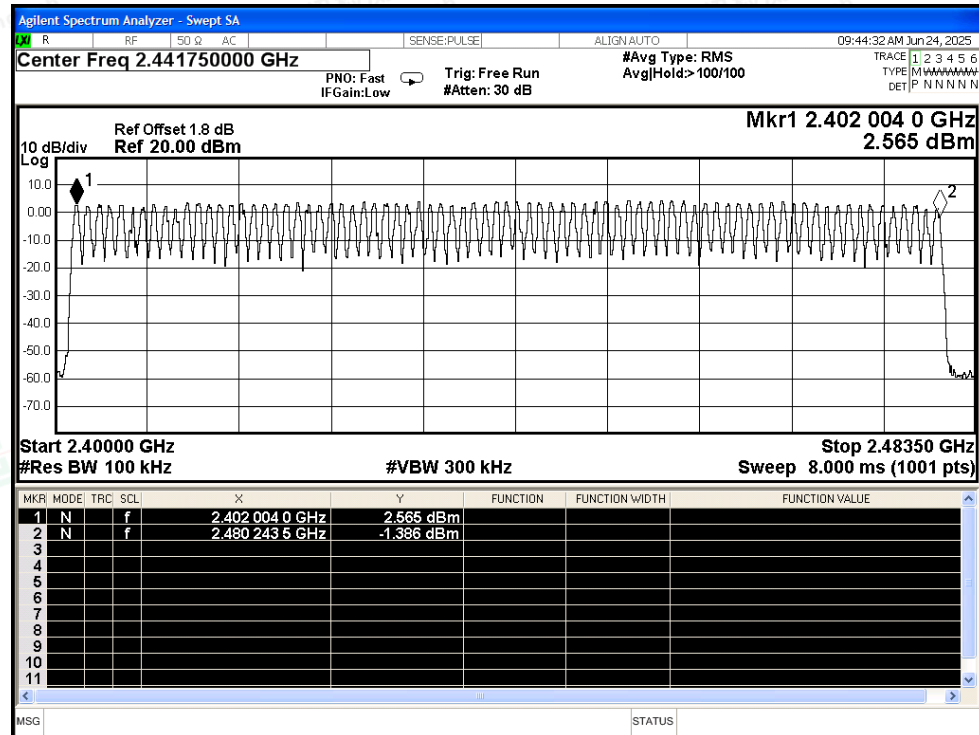
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass



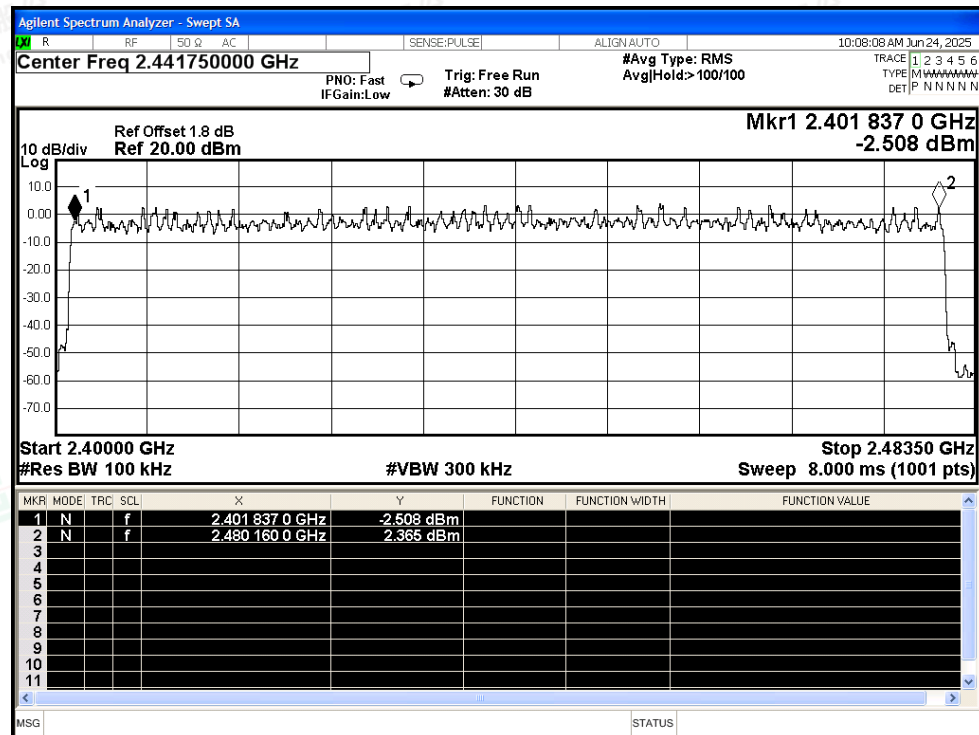


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1





A.6 Band Edge

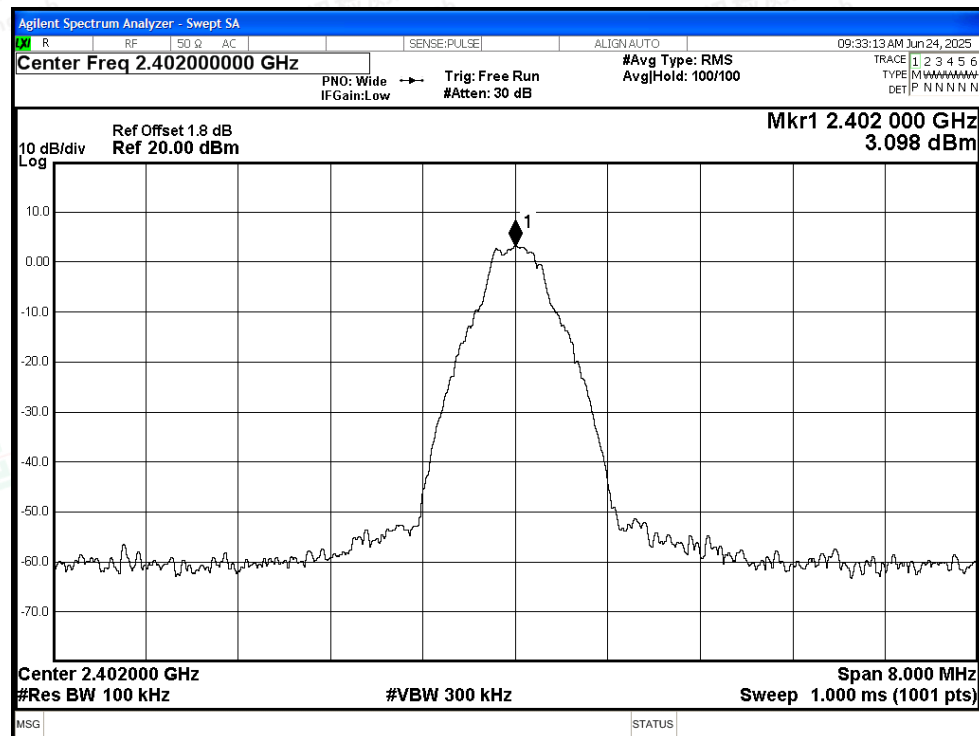
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-59.68	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-60.66	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-58.02	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-59.31	-20	Pass



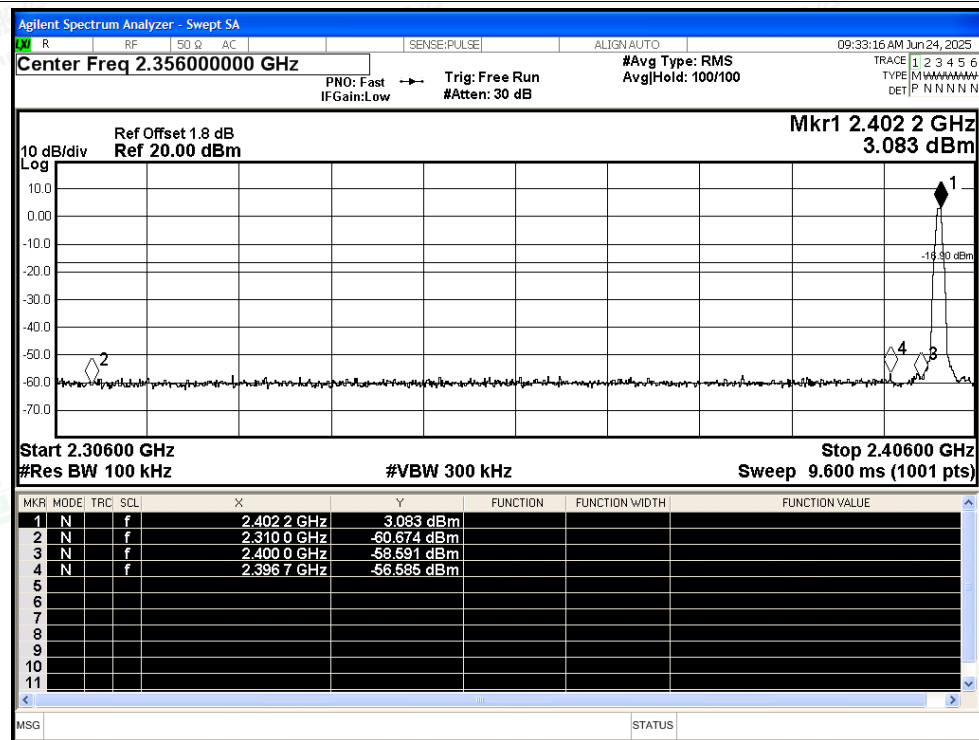


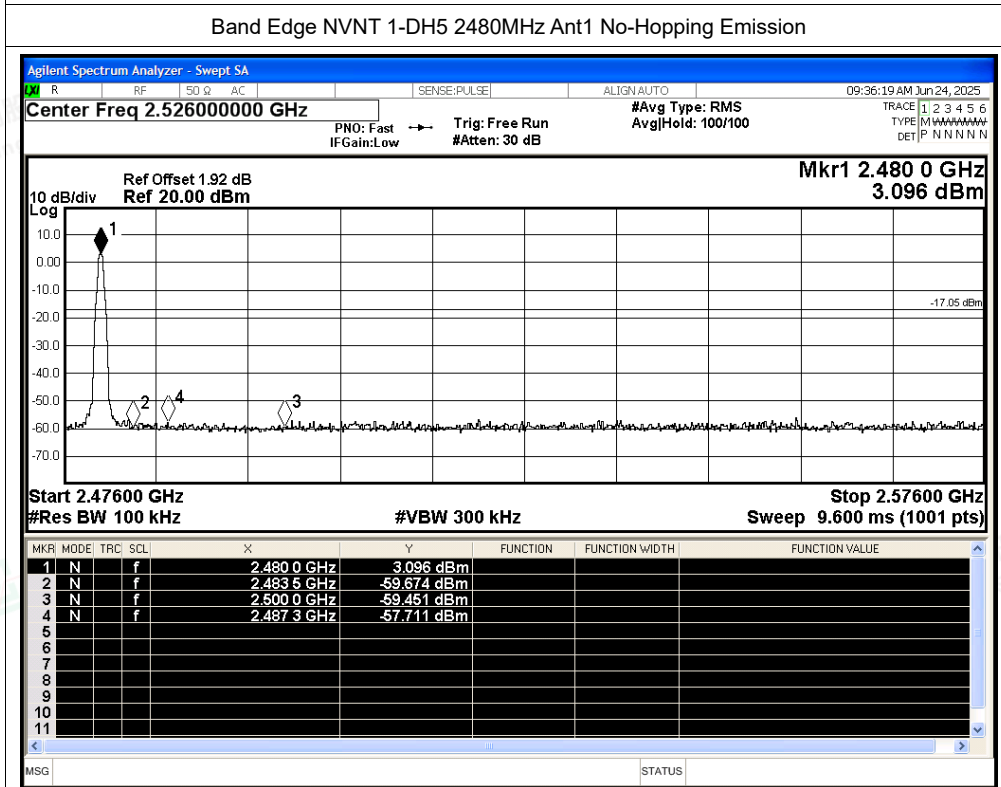
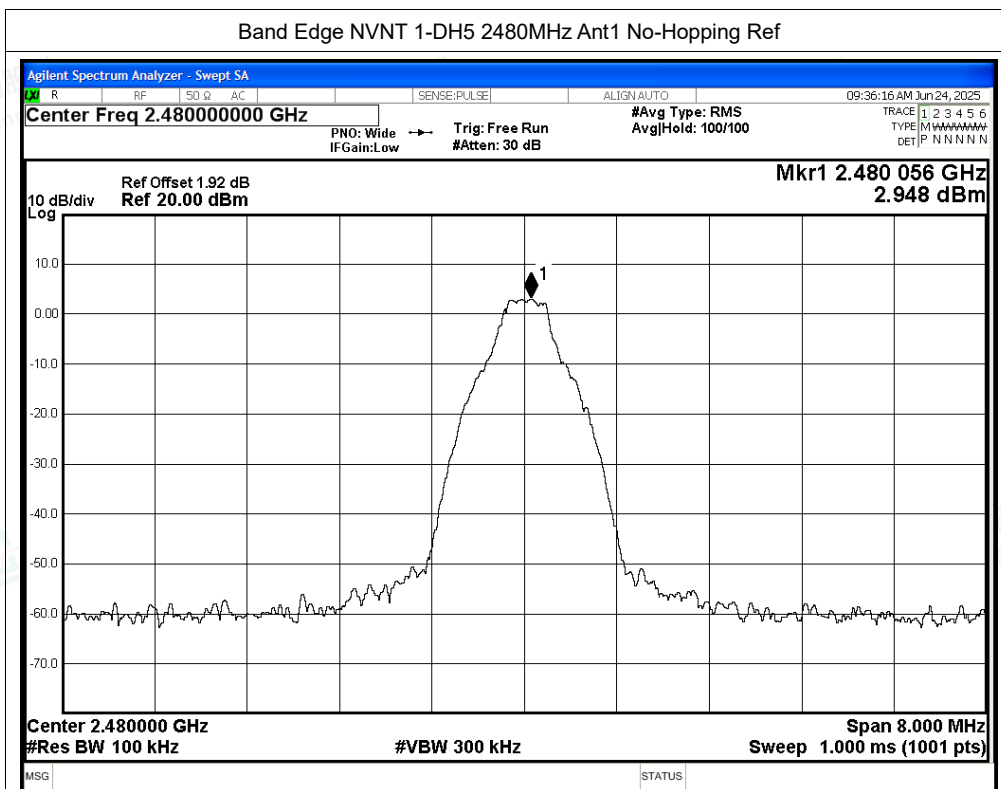
Test Graphs

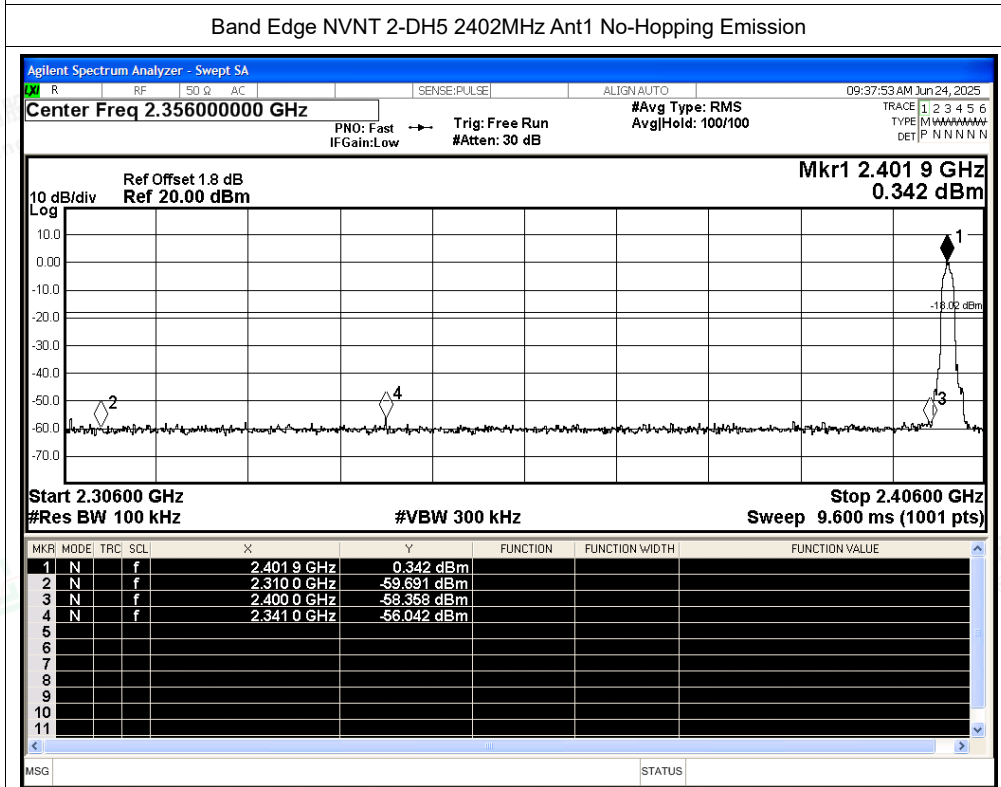
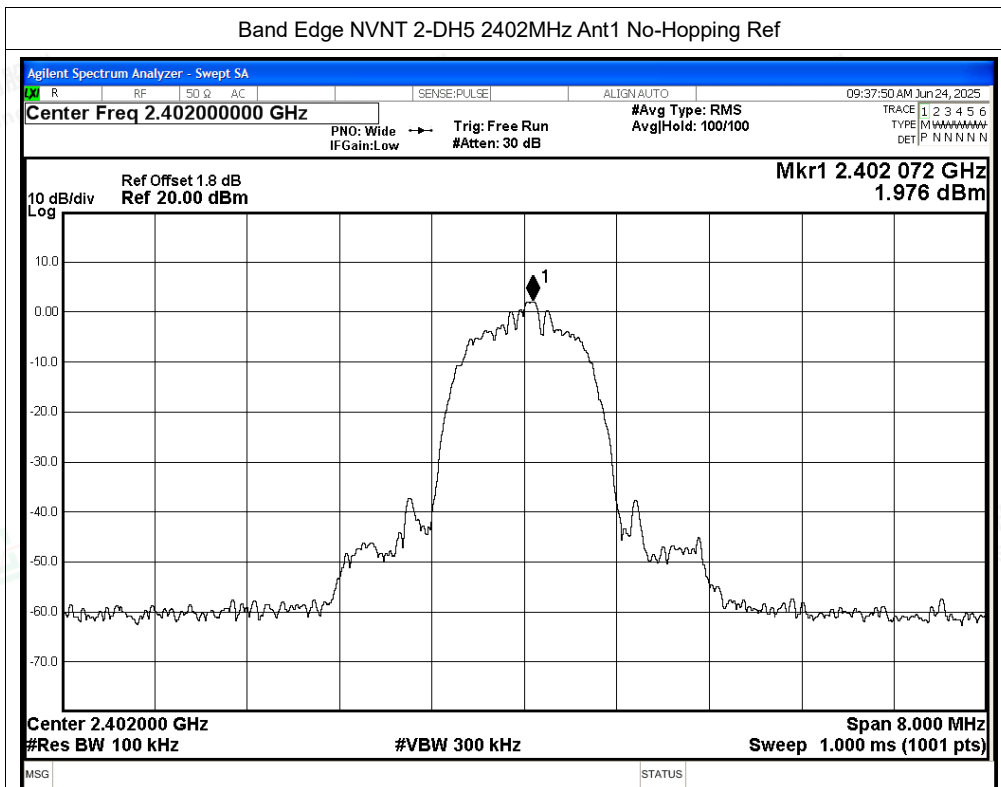
Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref

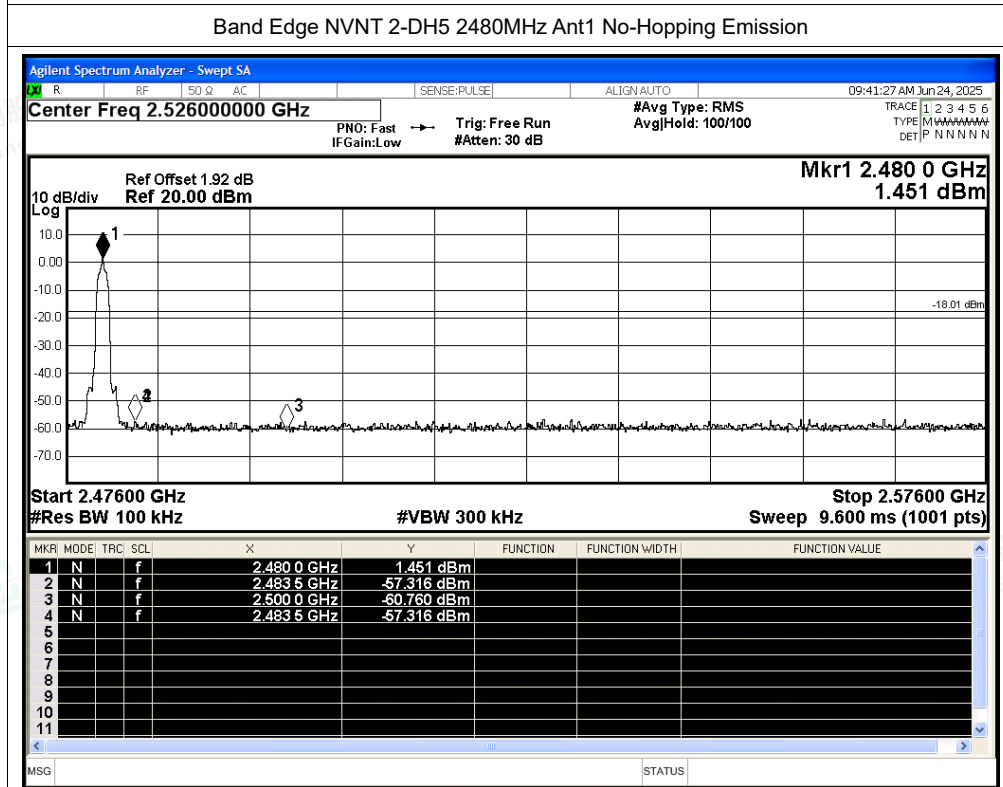
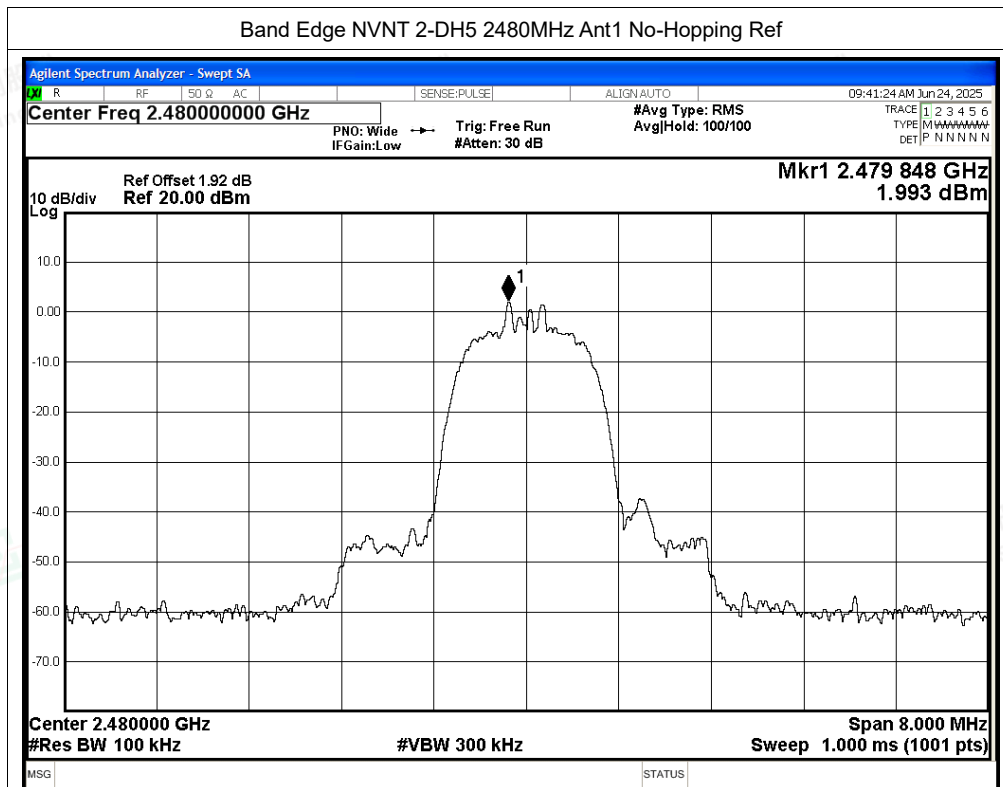


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission











(Hopping)

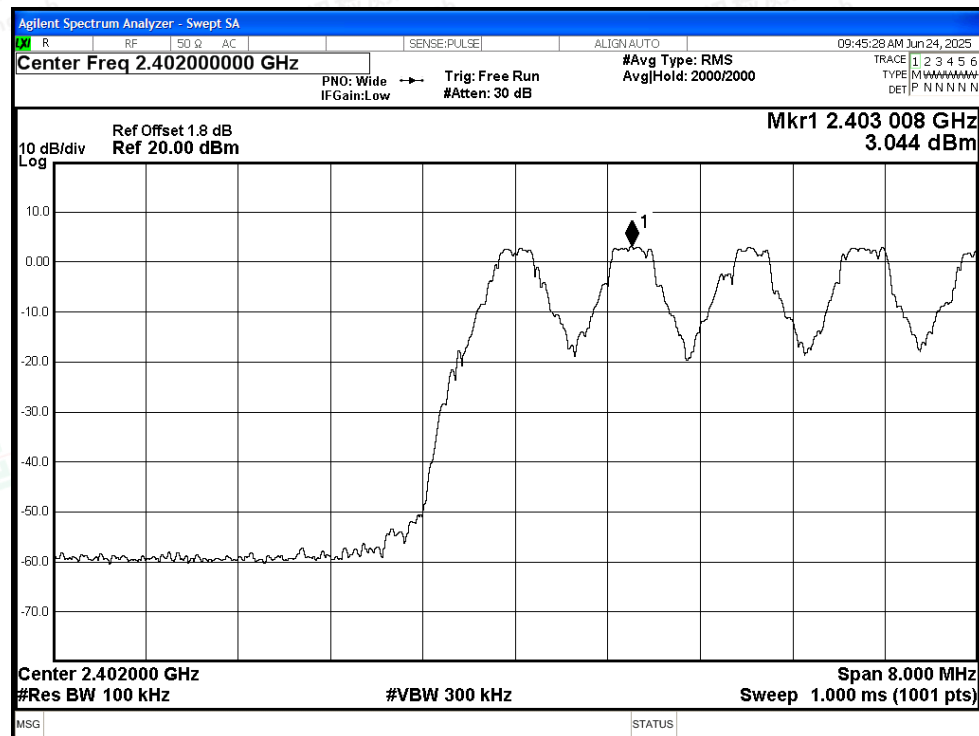
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-59.64	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-58.78	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-56.97	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-56.46	-20	Pass



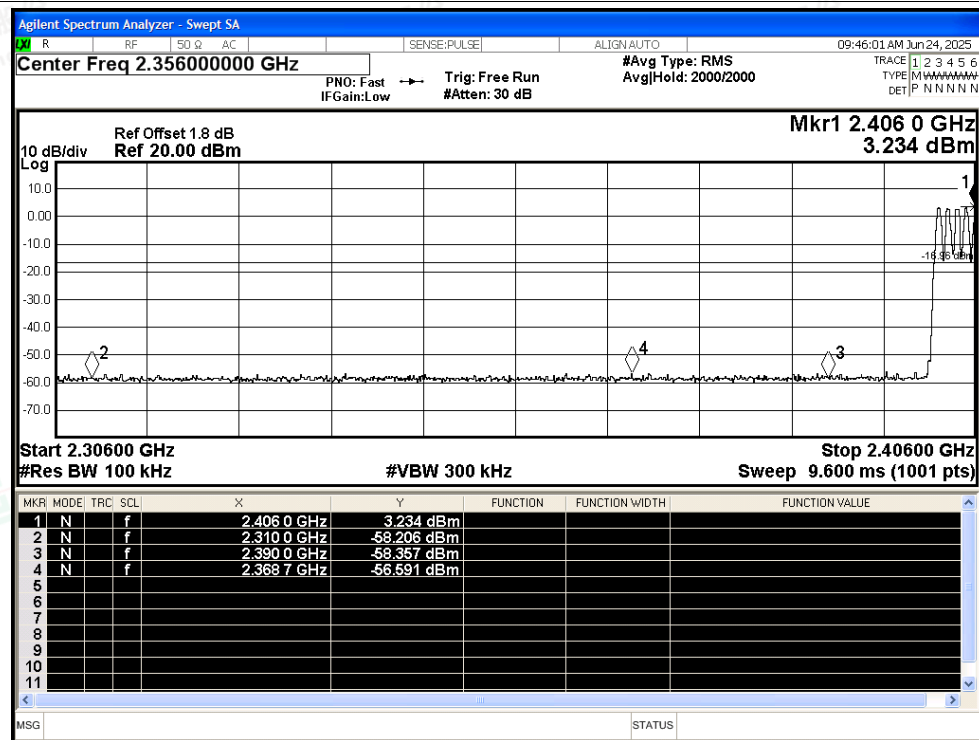


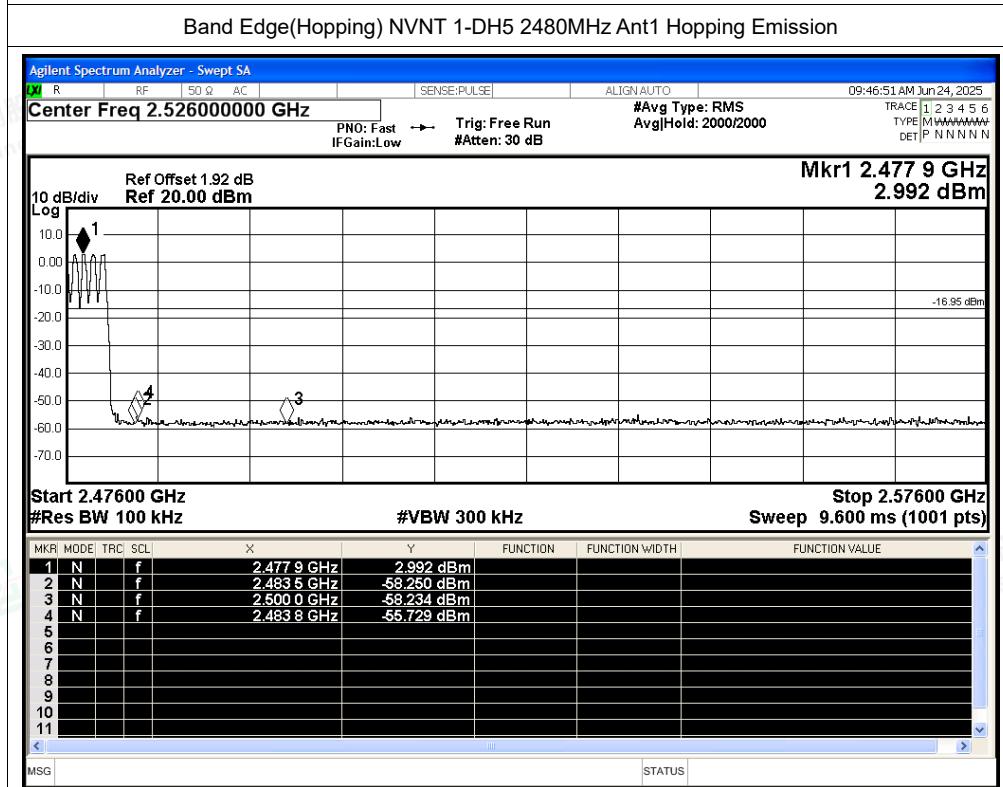
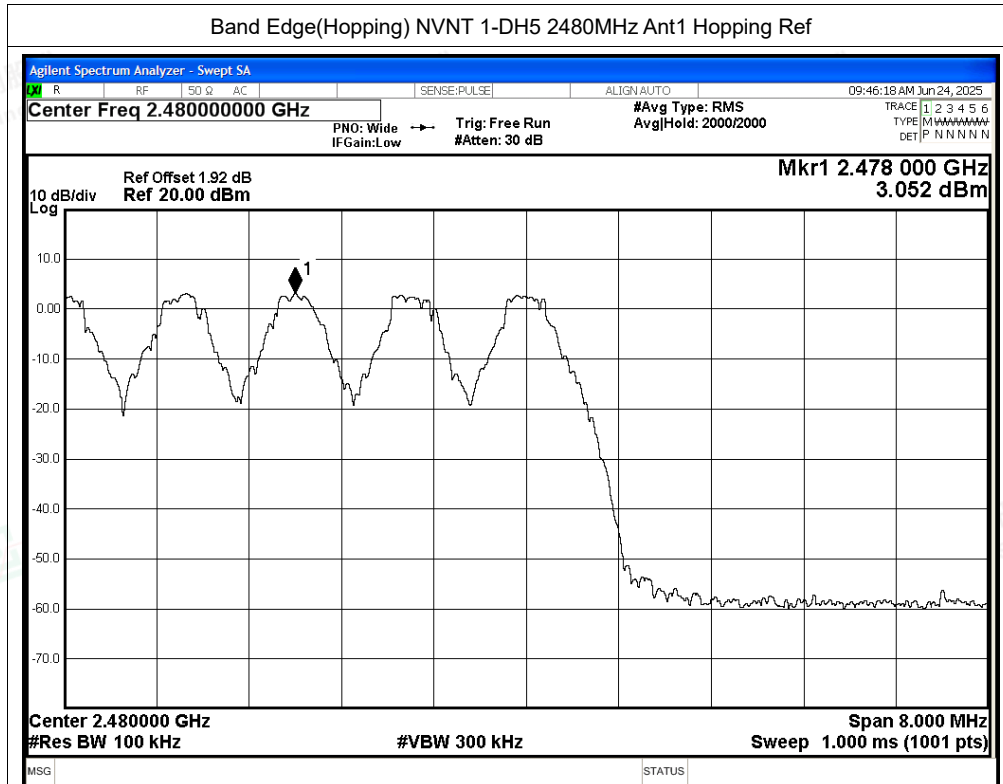
Test Graphs

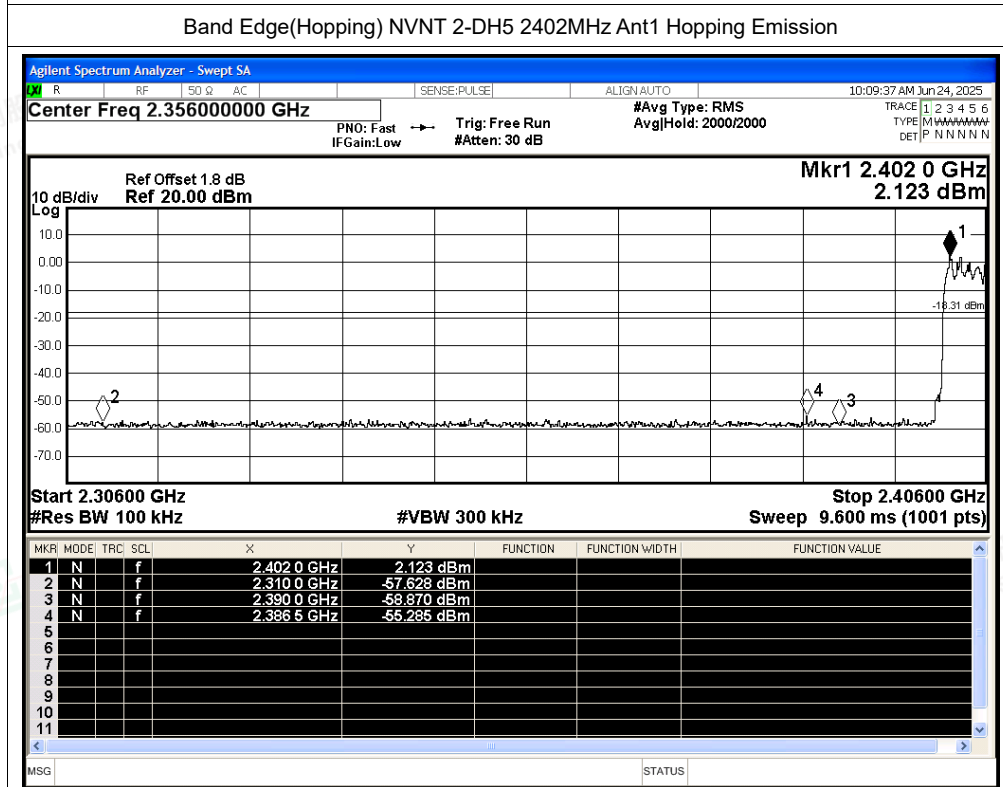
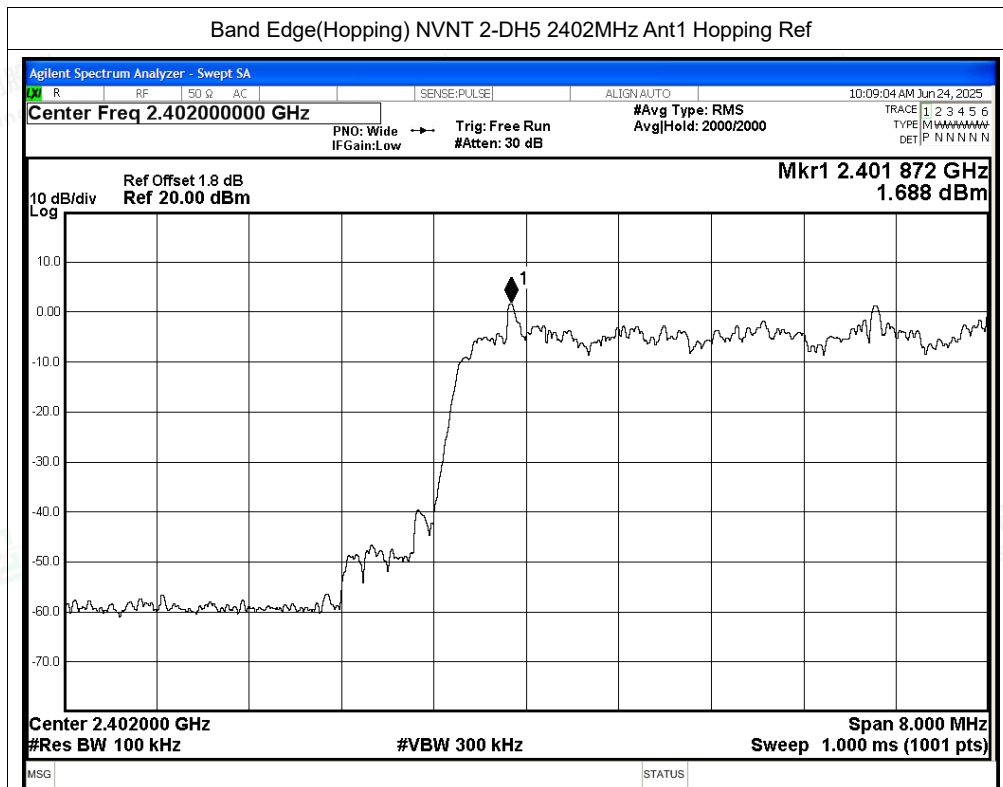
Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref

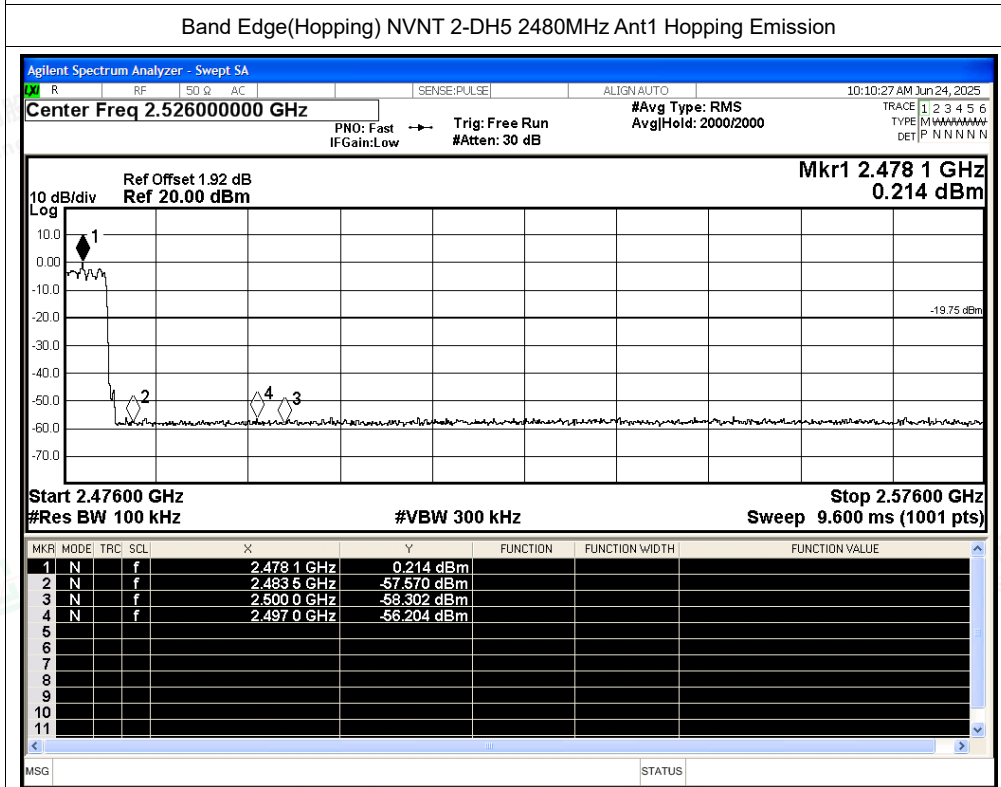
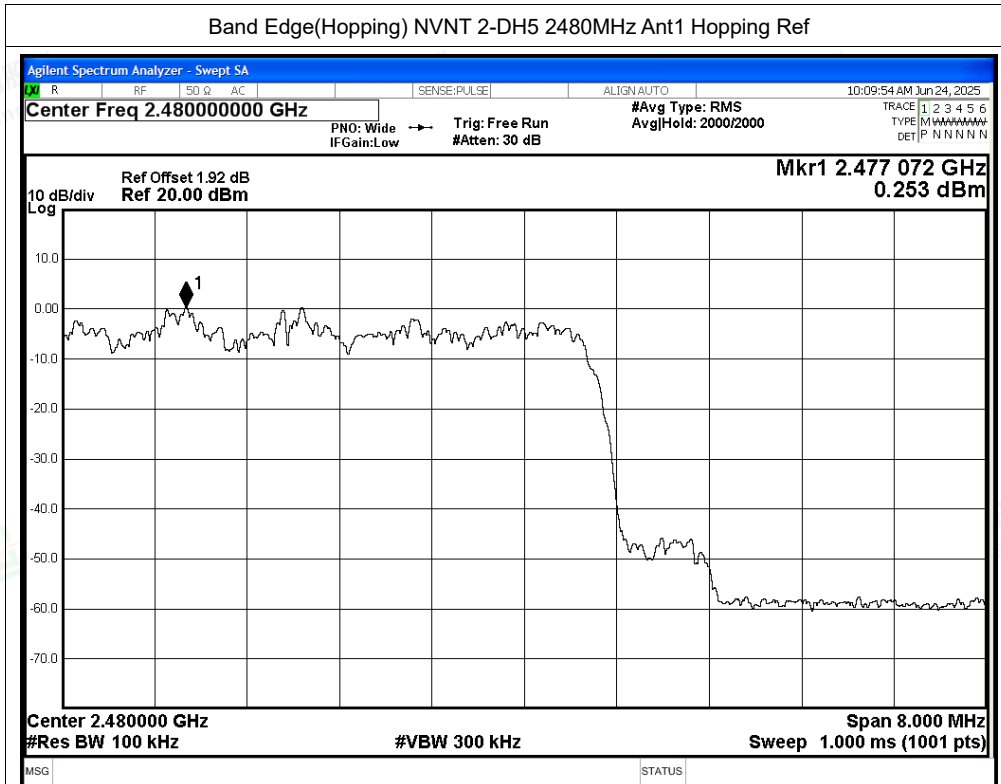


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission











A.7 Conducted RF Spurious Emission

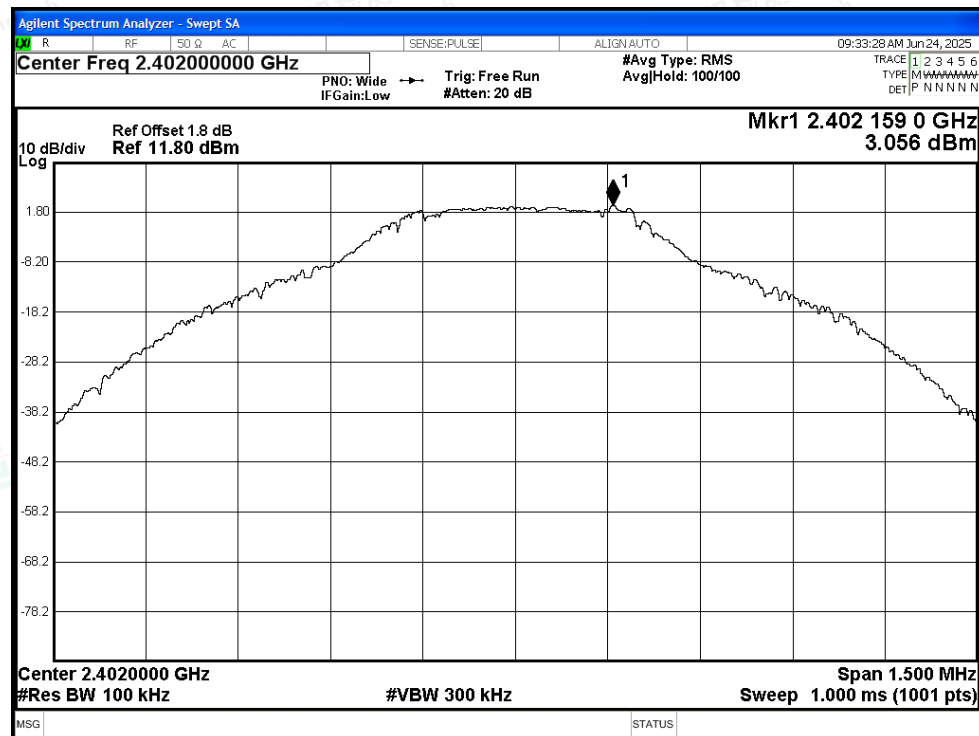
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-57.61	-20	Pass
NVNT	1-DH5	2441	Ant1	-59.92	-20	Pass
NVNT	1-DH5	2480	Ant1	-58.84	-20	Pass
NVNT	2-DH5	2402	Ant1	-57.77	-20	Pass
NVNT	2-DH5	2441	Ant1	-57.34	-20	Pass
NVNT	2-DH5	2480	Ant1	-56.96	-20	Pass



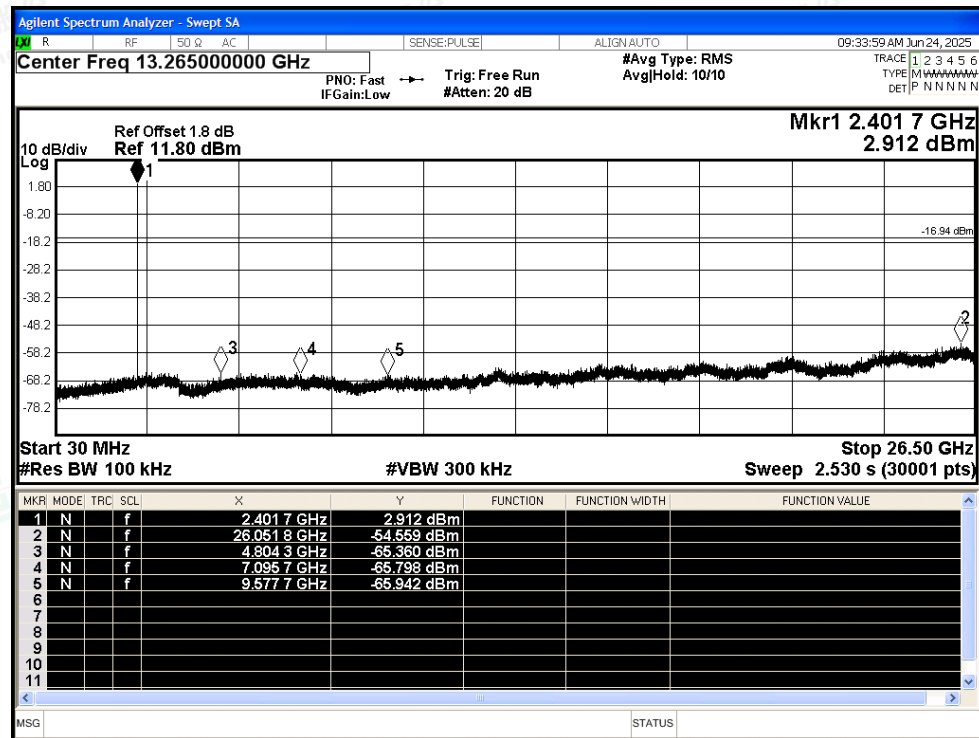


Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

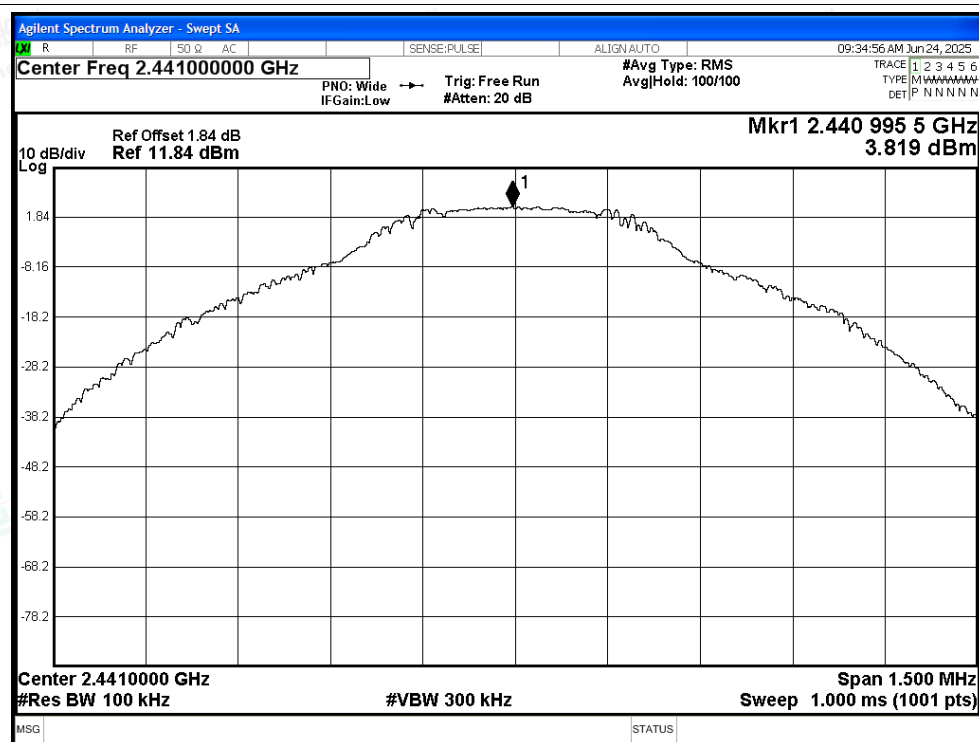


Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission

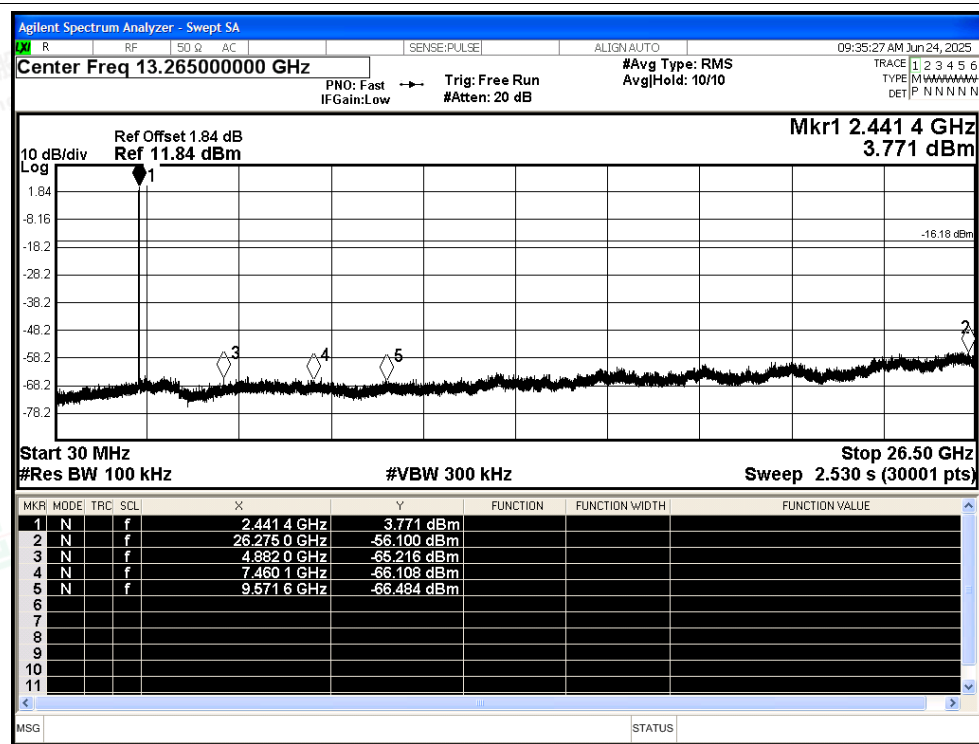




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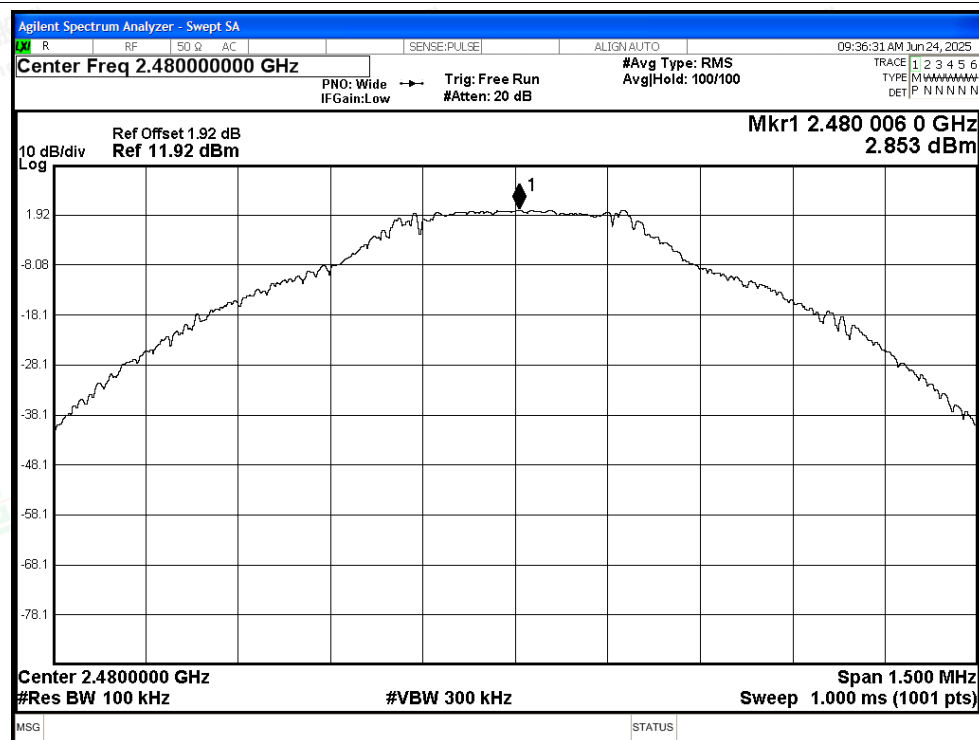


Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

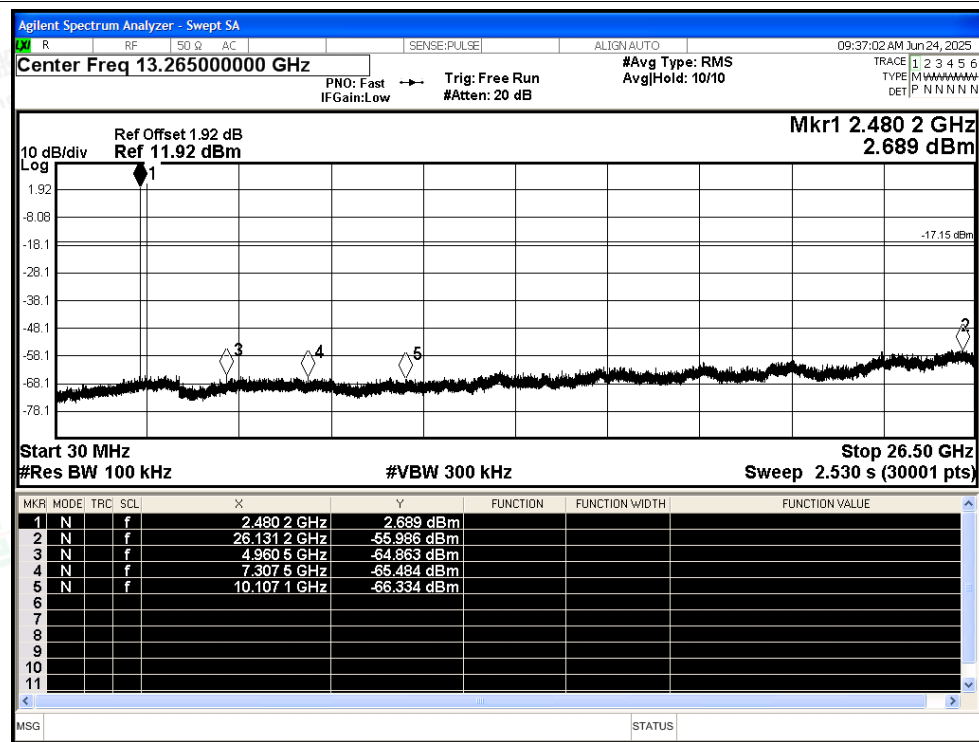




Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref

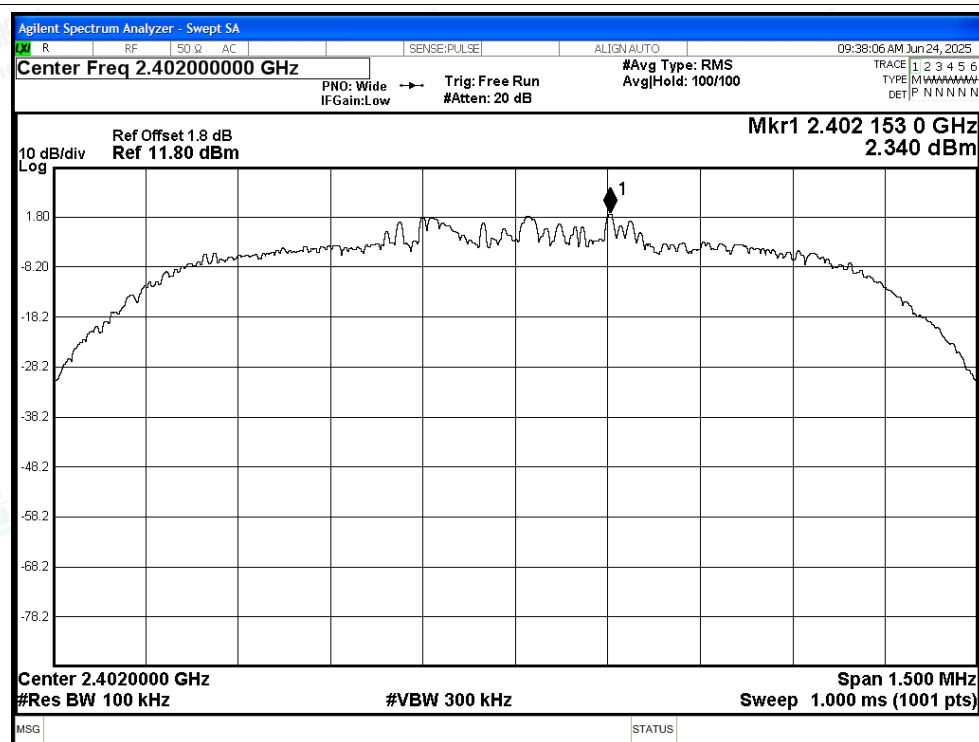


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

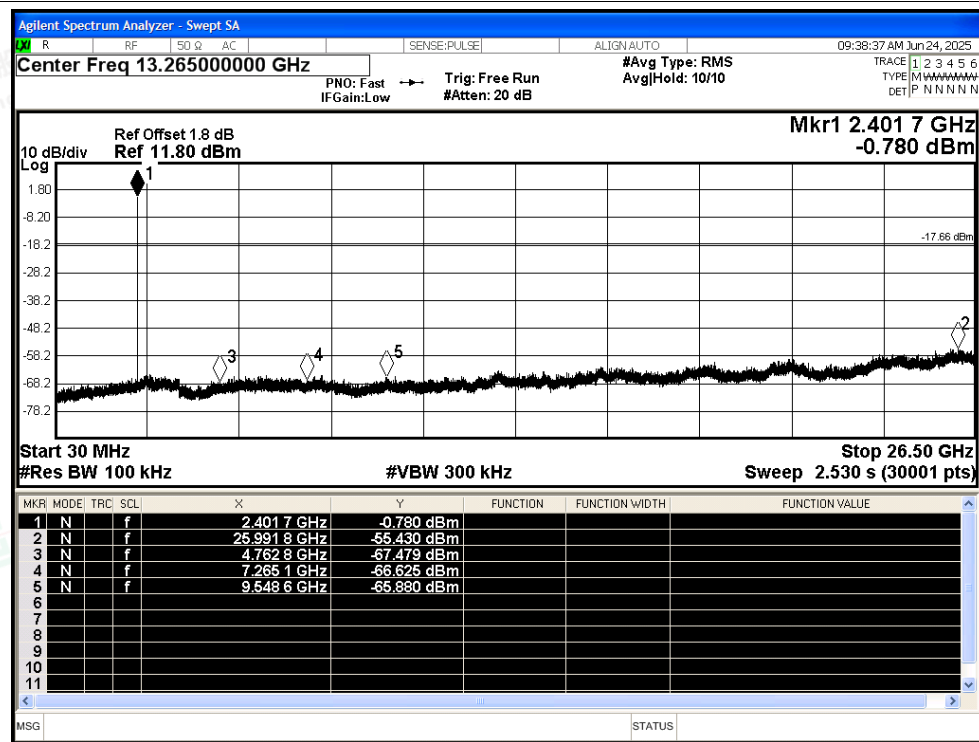




Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref

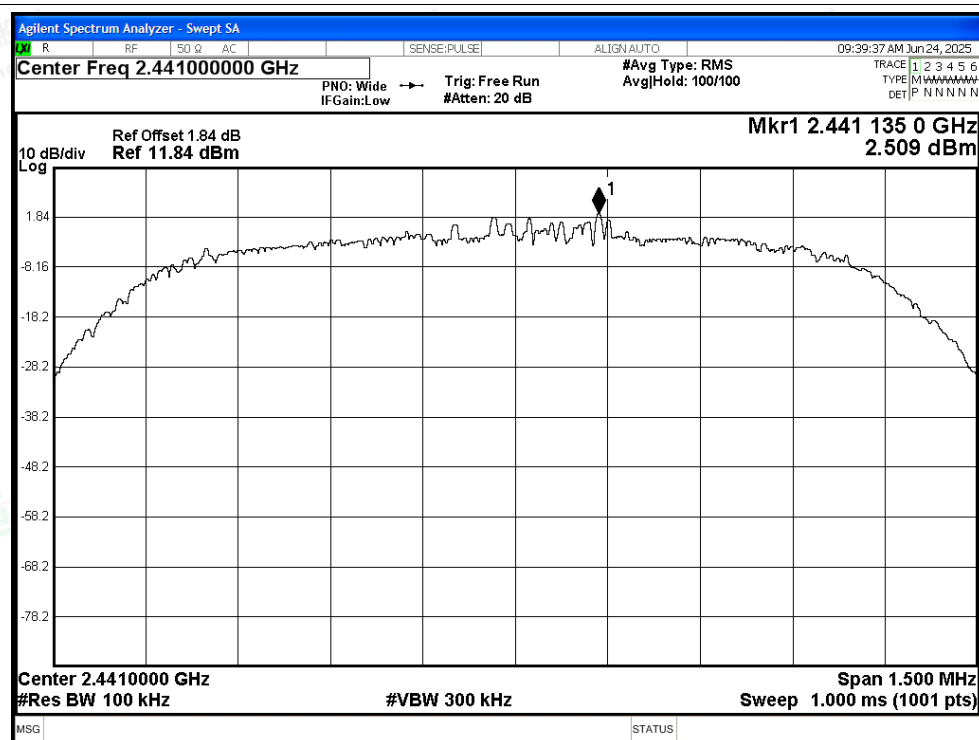


Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission

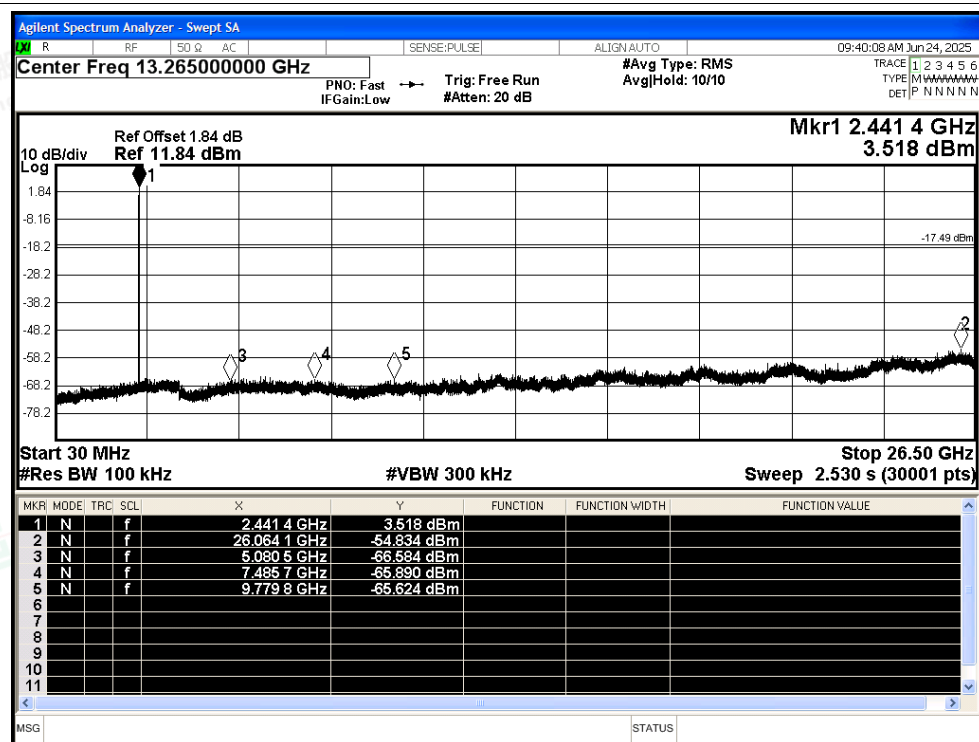




Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref

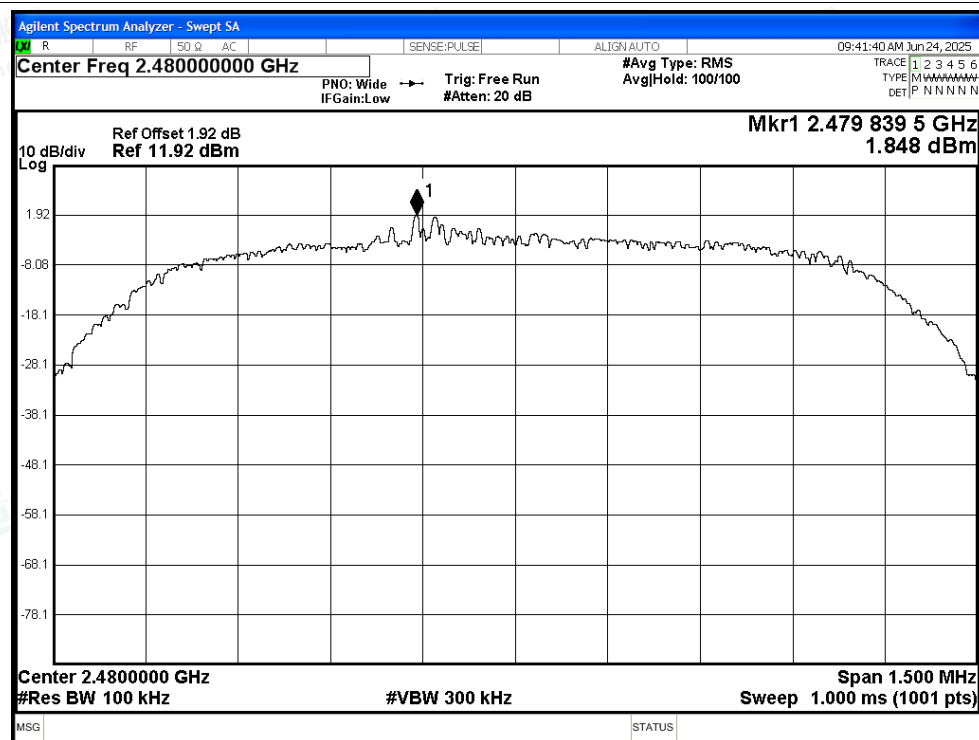


Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission

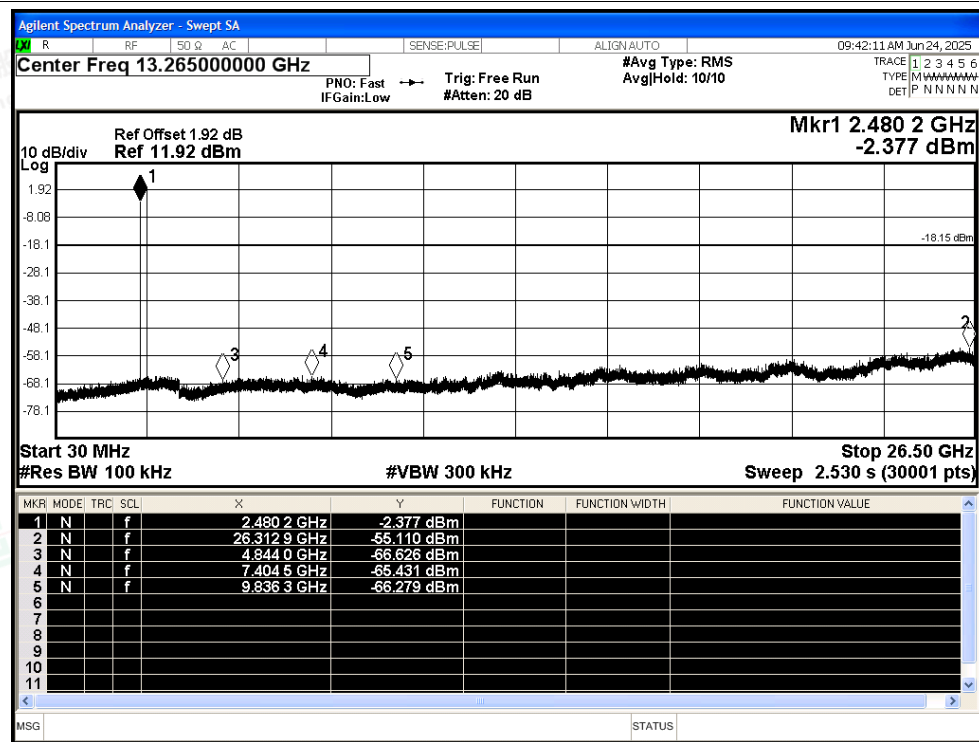




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission





A.8 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	1-DH5	2402	Ant1	76.88	1.14	0.35
NVNT	1-DH5	2441	Ant1	76.91	1.14	0.35
NVNT	1-DH5	2480	Ant1	76.88	1.14	0.35
NVNT	2-DH5	2402	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2441	Ant1	76.96	1.14	0.35
NVNT	2-DH5	2480	Ant1	76.96	1.14	0.35

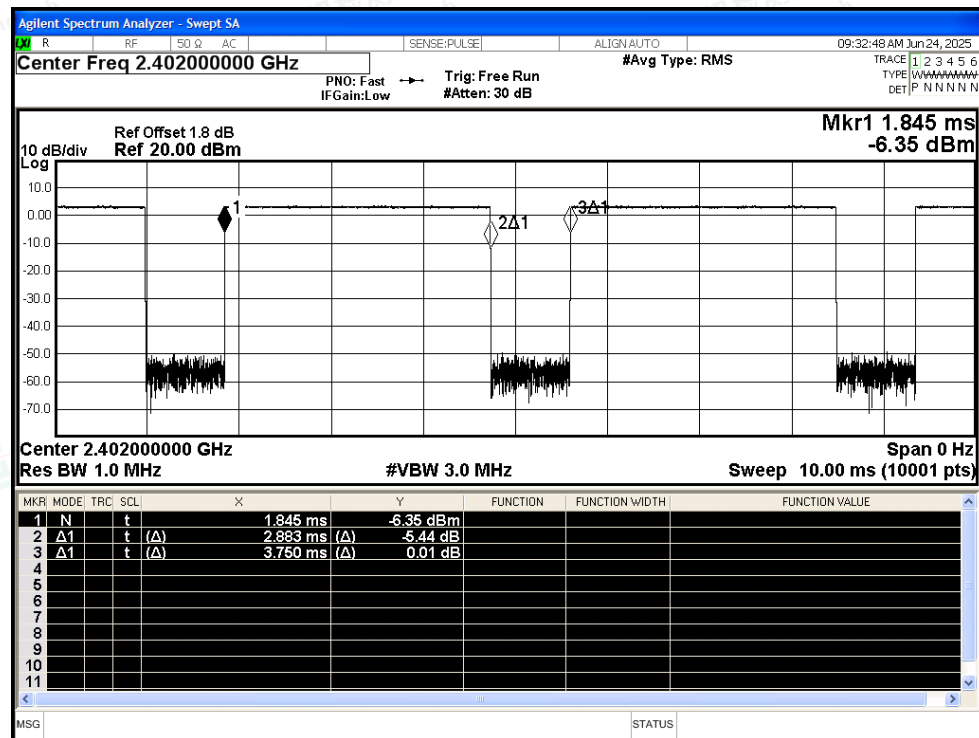


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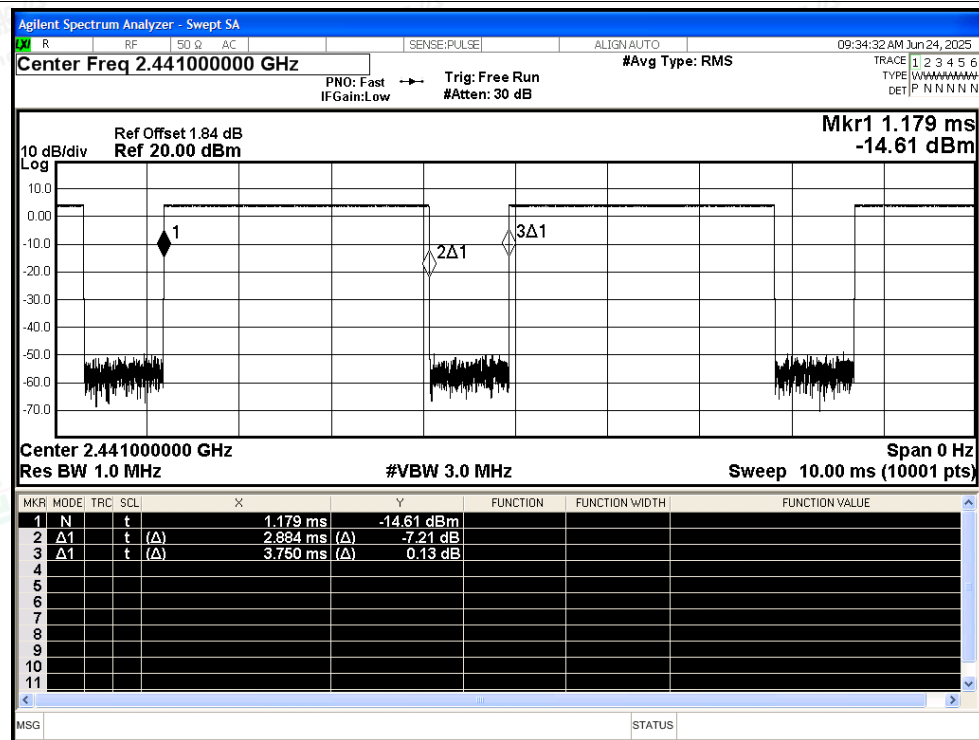


Test Graphs

Duty Cycle NVNT 1-DH5 2402MHz Ant1

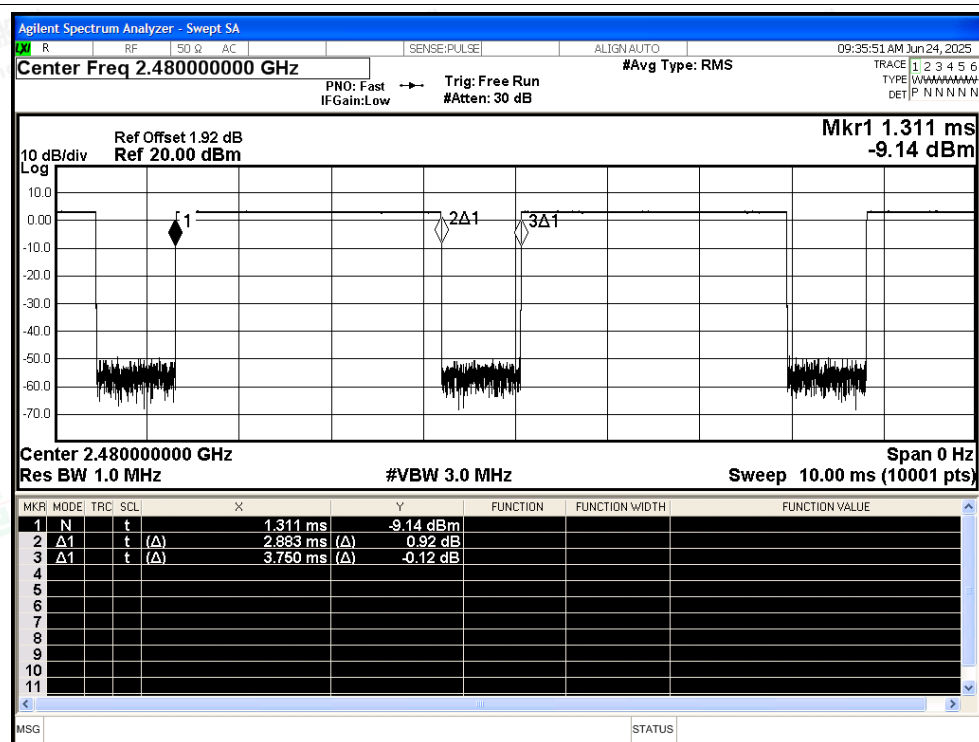


Duty Cycle NVNT 1-DH5 2441MHz Ant1

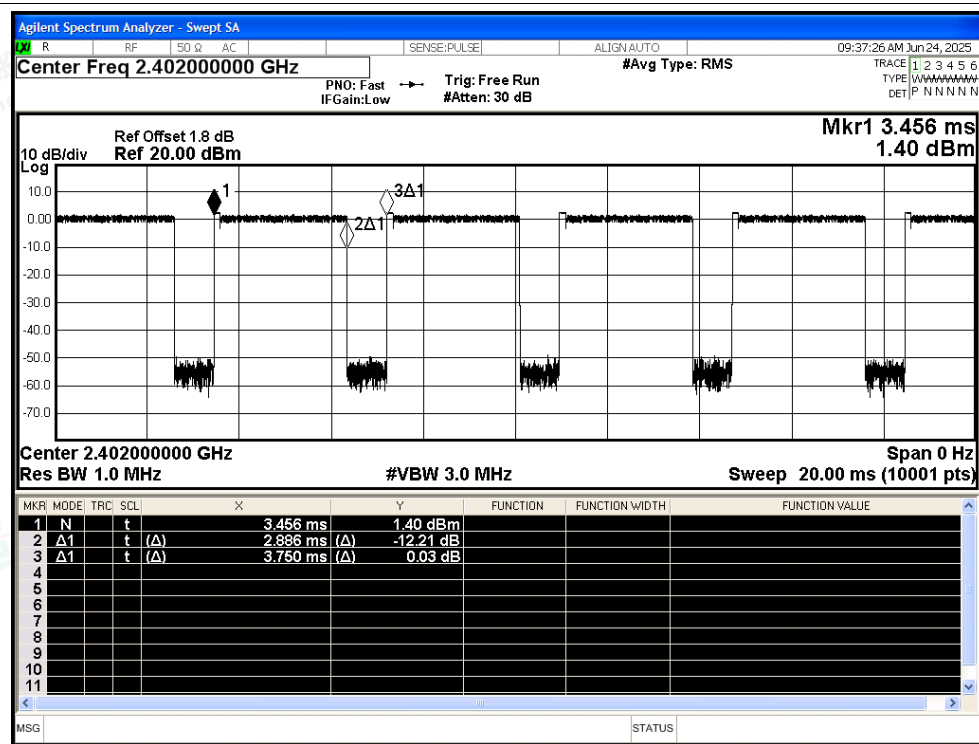




Duty Cycle NVNT 1-DH5 2480MHz Ant1

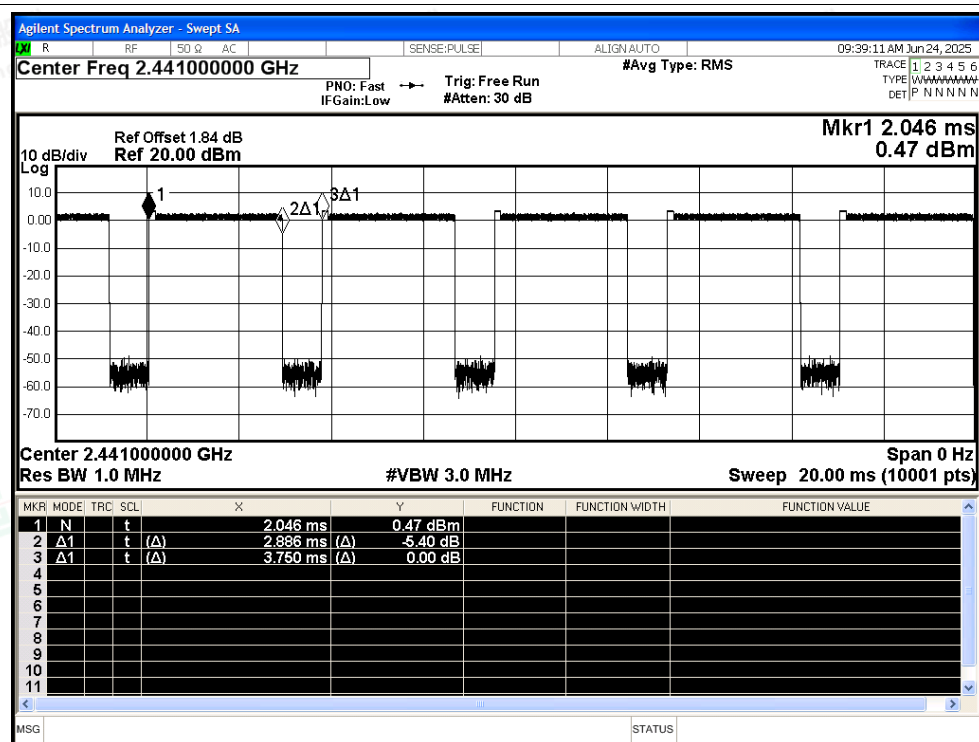


Duty Cycle NVNT 2-DH5 2402MHz Ant1

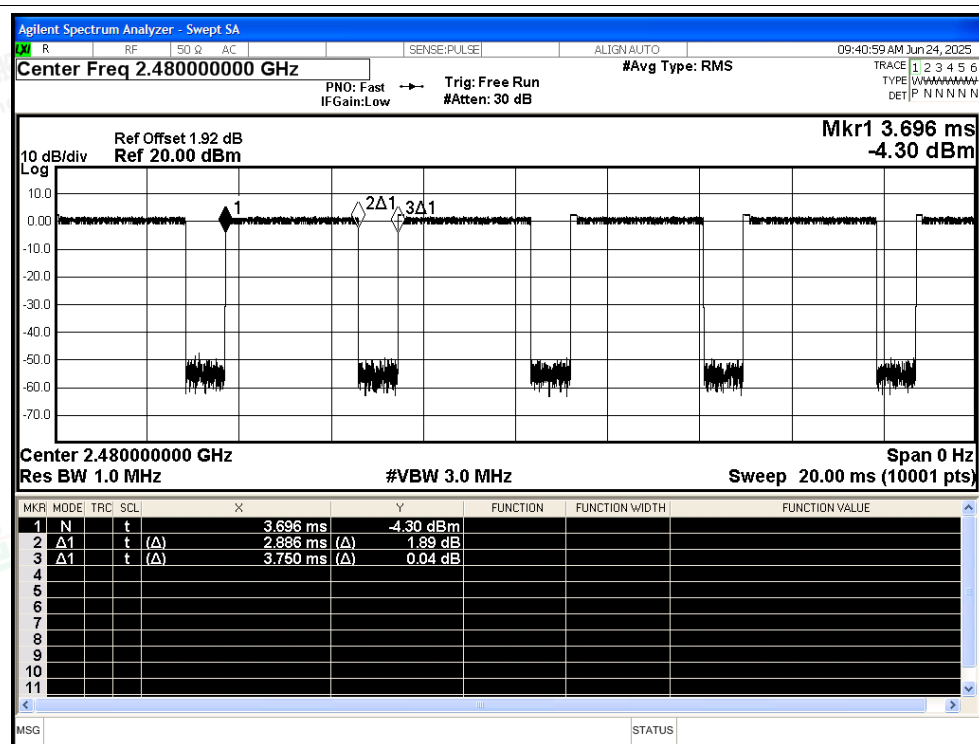




Duty Cycle NVNT 2-DH5 2441MHz Ant1



Duty Cycle NVNT 2-DH5 2480MHz Ant1



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A.9 Restrict Band

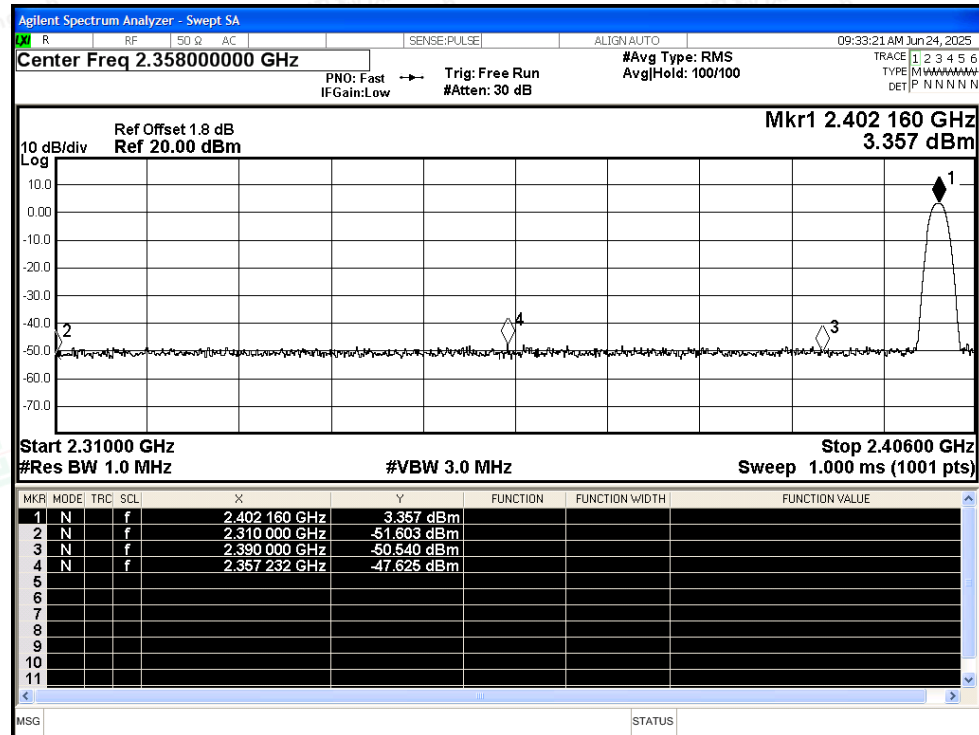
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-51.6	3.06	-	46.72	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-59.04	3.06	1.14	40.42	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2357.232	-47.63	3.06	-	50.69	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2372.592	-57.95	3.06	1.14	41.51	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-50.54	3.06	-	47.78	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-58.13	3.06	1.14	41.33	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.44	3.06	-	47.88	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-57.85	3.06	1.14	41.61	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.304	-46.71	3.06	-	51.61	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2484.328	-57.31	3.06	1.14	42.15	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.53	3.06	-	47.79	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-58.19	3.06	1.14	41.27	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.91	3.06	-	47.41	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-58.44	3.06	1.14	41.02	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2335.152	-47.42	3.06	-	50.90	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2368.944	-58	3.06	1.14	41.46	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-49.72	3.06	-	48.60	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-58.72	3.06	1.14	40.74	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.42	3.06	-	48.90	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-57.02	3.06	1.14	42.44	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.848	-47.44	3.06	-	50.88	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-57.02	3.06	1.14	42.44	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-50.7	3.06	-	47.62	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-58.18	3.06	1.14	41.28	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

