



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth keyboard

Test Model: HT-KB333

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Joker Hu
Supervised by:	Ling Zhu





A.1 -20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.966	N/A	Pass
NVNT	1-DH5	2441	Ant1	0.975	N/A	Pass
NVNT	1-DH5	2480	Ant1	0.957	N/A	Pass
NVNT	2-DH5	2402	Ant1	1.322	N/A	Pass
NVNT	2-DH5	2441	Ant1	1.284	N/A	Pass
NVNT	2-DH5	2480	Ant1	1.281	N/A	Pass
NVNT	3-DH5	2402	Ant1	1.3	N/A	Pass
NVNT	3-DH5	2441	Ant1	1.274	N/A	Pass
NVNT	3-DH5	2480	Ant1	1.304	N/A	Pass



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Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1

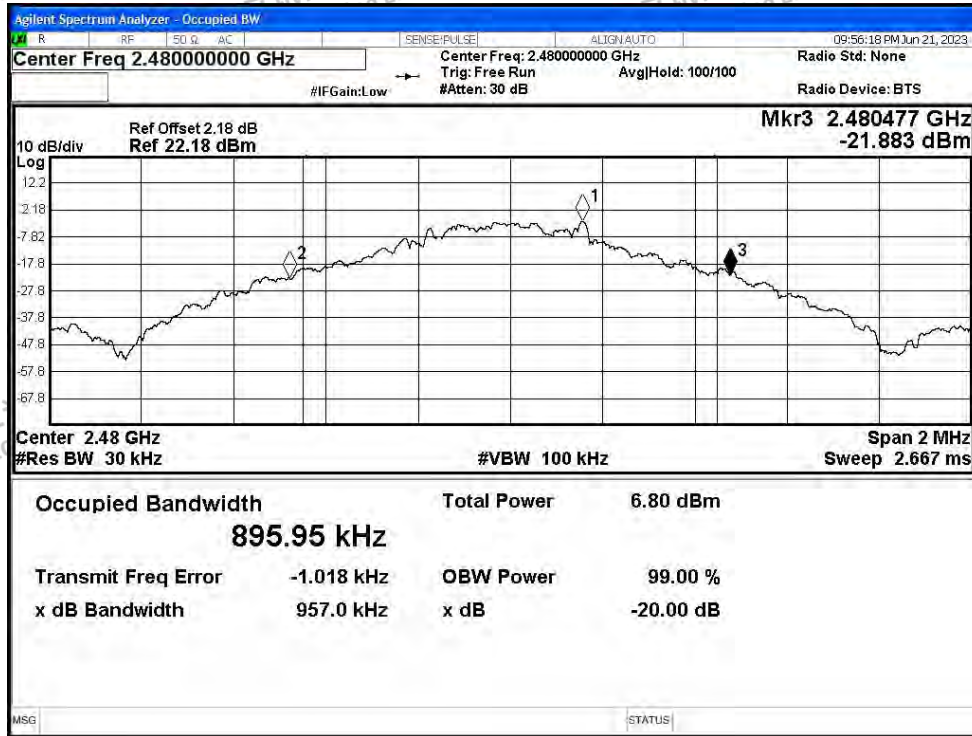


-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1

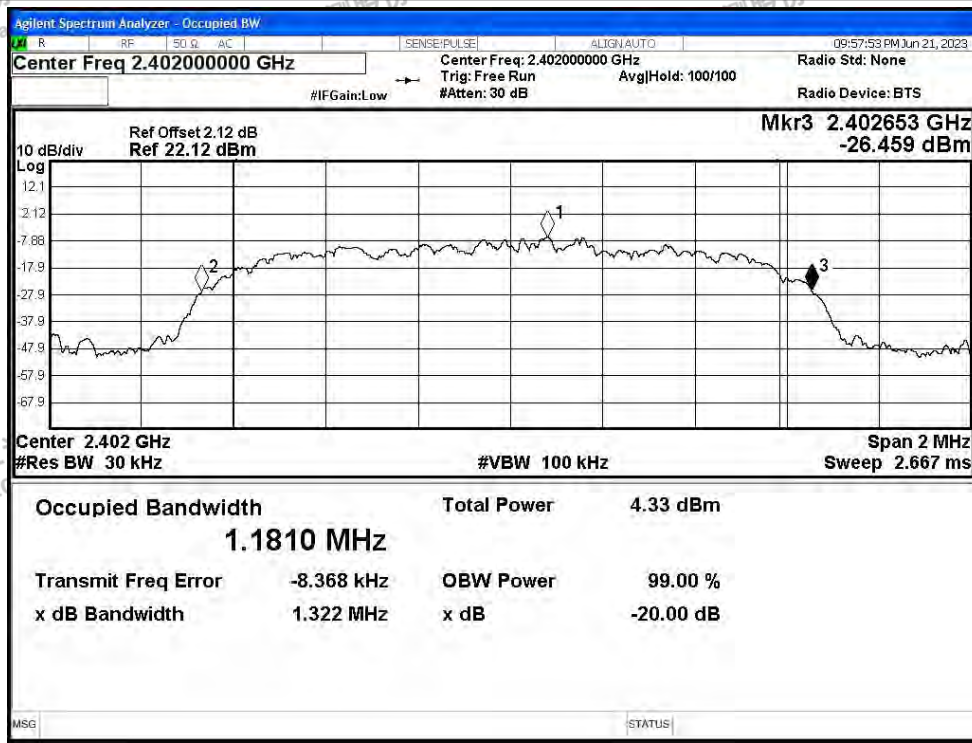




-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1

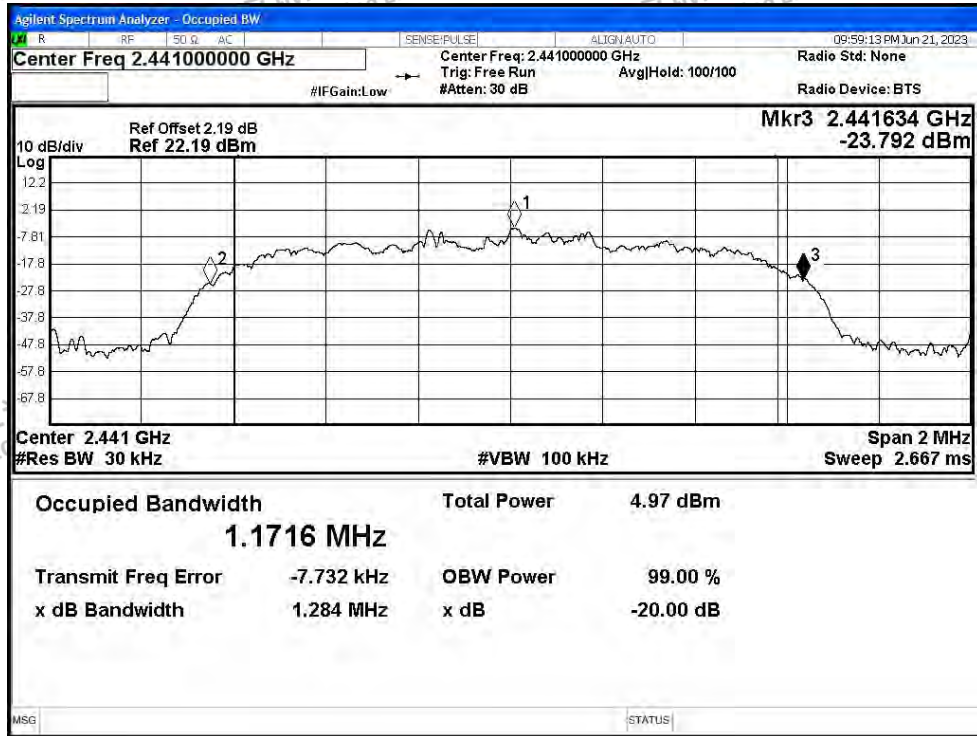


-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1

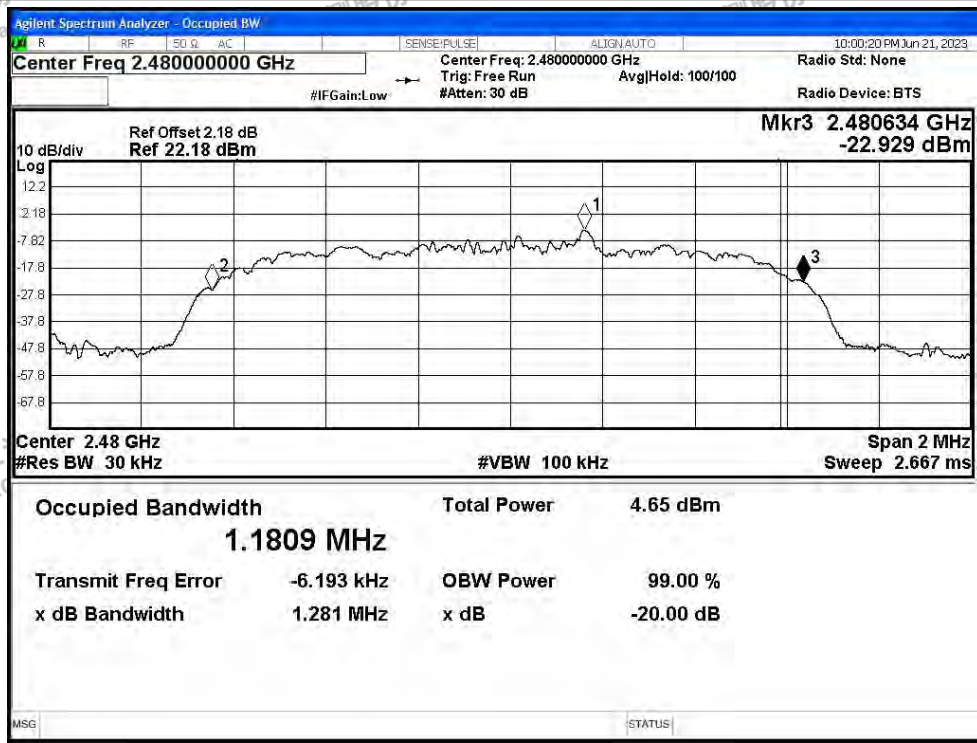




-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1

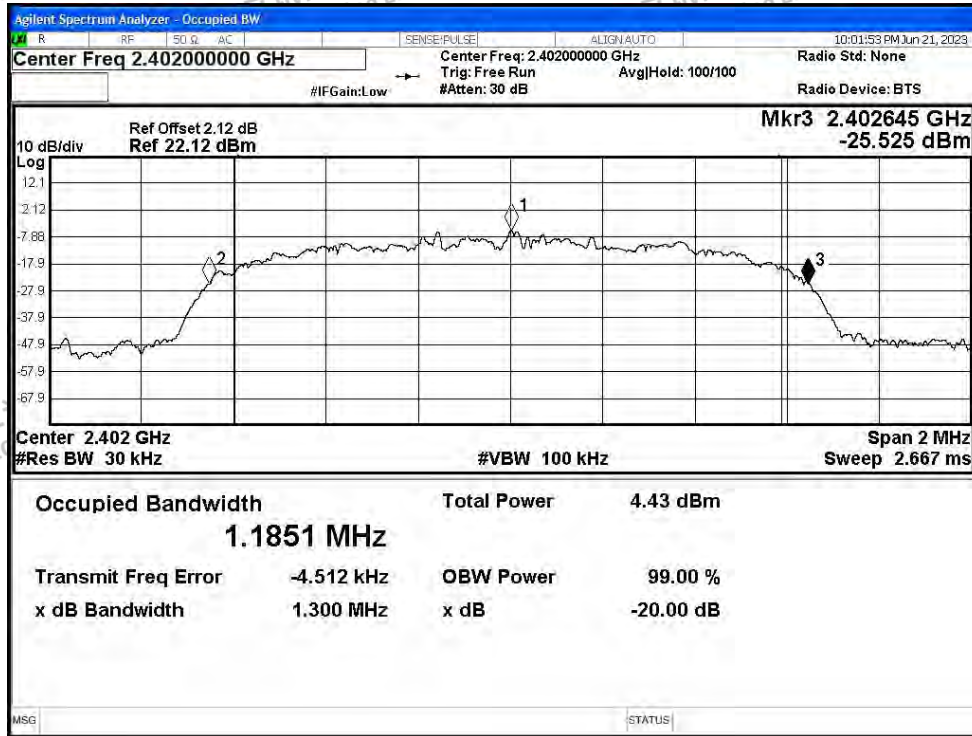


-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1

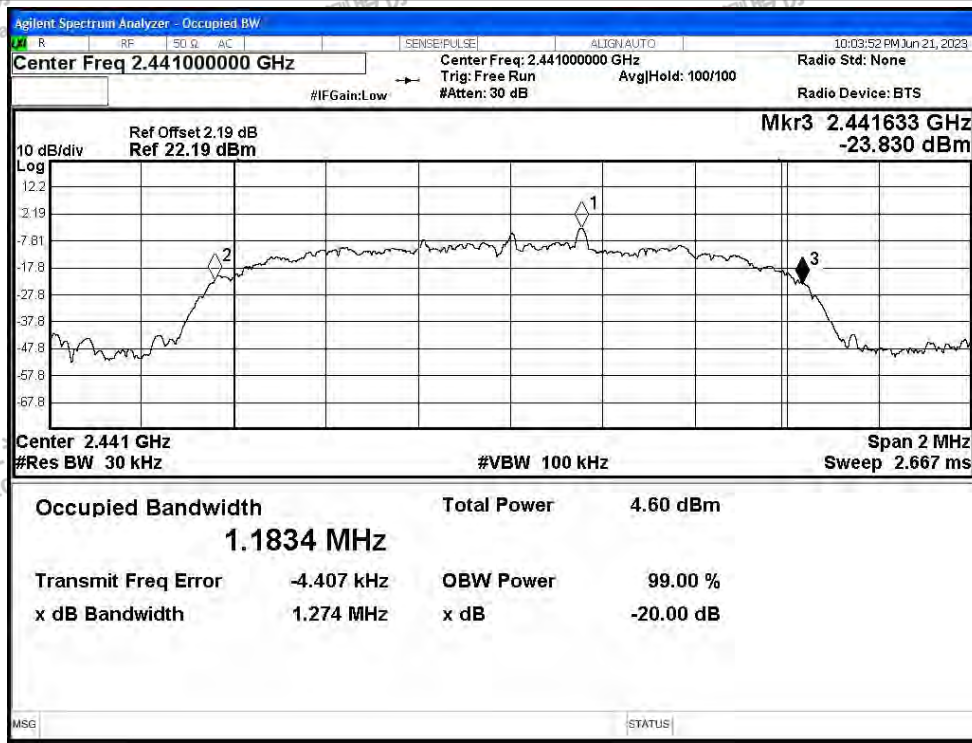




-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1

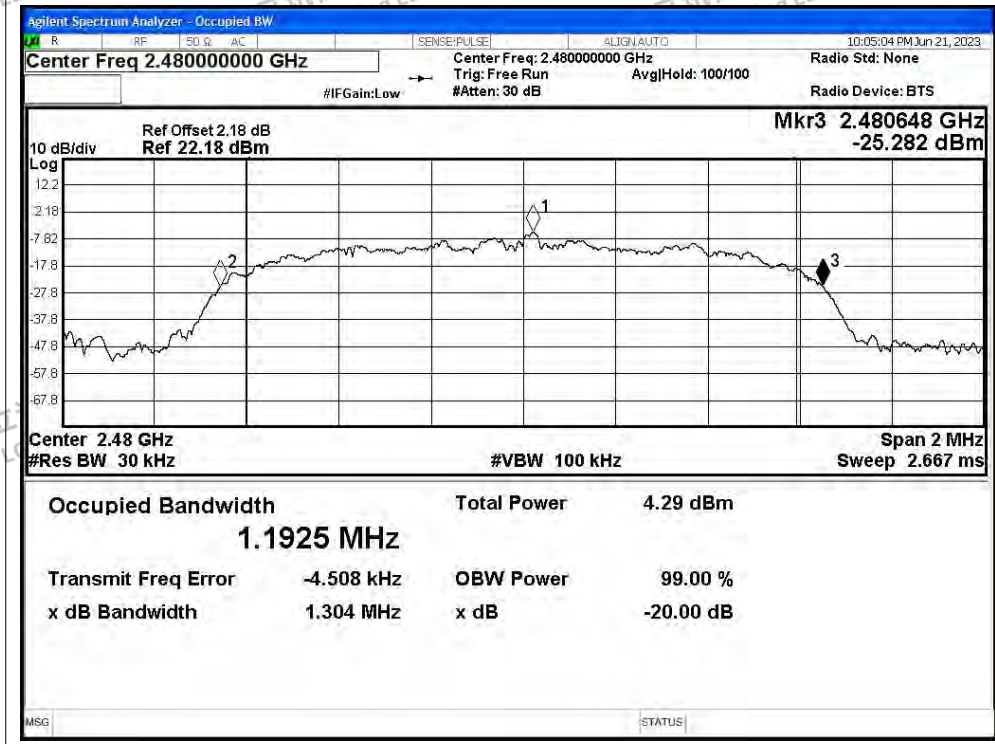


-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1





-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1





A.2 Maximum Conducted Output Power

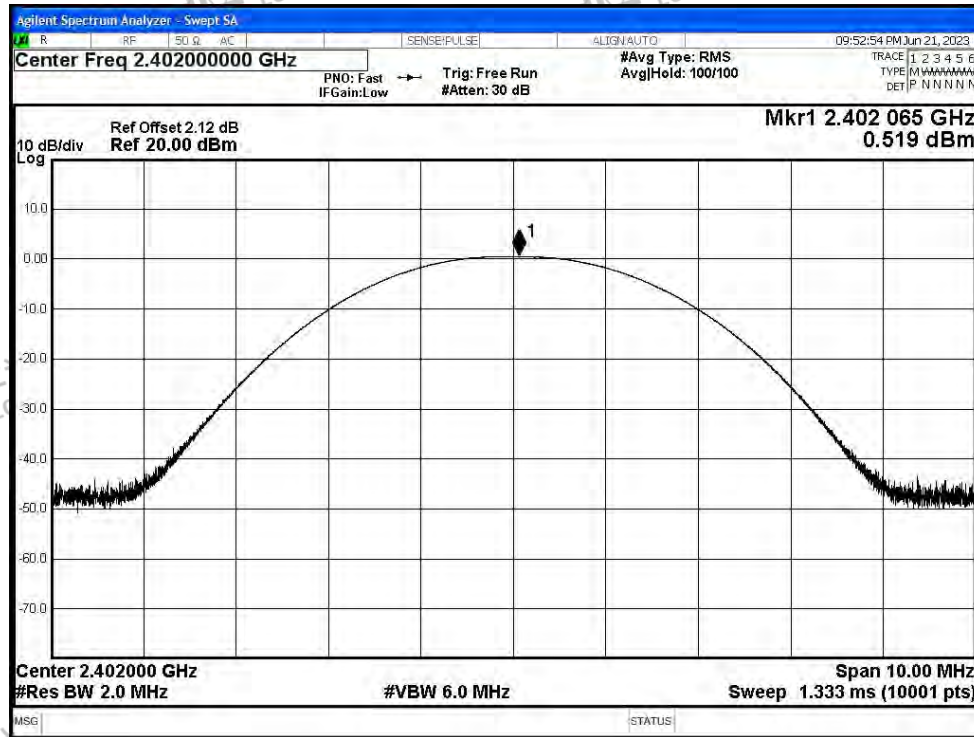
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	0.52	21	Pass
NVNT	1-DH5	2441	Ant1	0.77	21	Pass
NVNT	1-DH5	2480	Ant1	0.4	21	Pass
NVNT	2-DH5	2402	Ant1	-0.01	21	Pass
NVNT	2-DH5	2441	Ant1	0.19	21	Pass
NVNT	2-DH5	2480	Ant1	0.22	21	Pass
NVNT	3-DH5	2402	Ant1	0.14	21	Pass
NVNT	3-DH5	2441	Ant1	0.33	21	Pass
NVNT	3-DH5	2480	Ant1	0.36	21	Pass



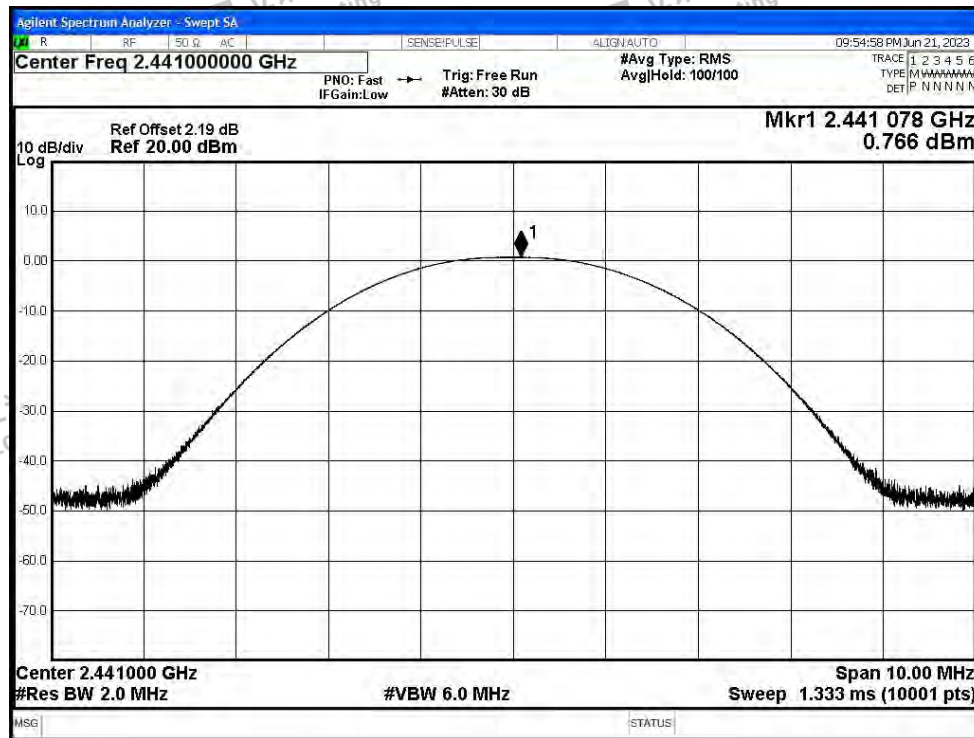


Test Graphs

Power NVNT 1-DH5 2402MHz Ant1

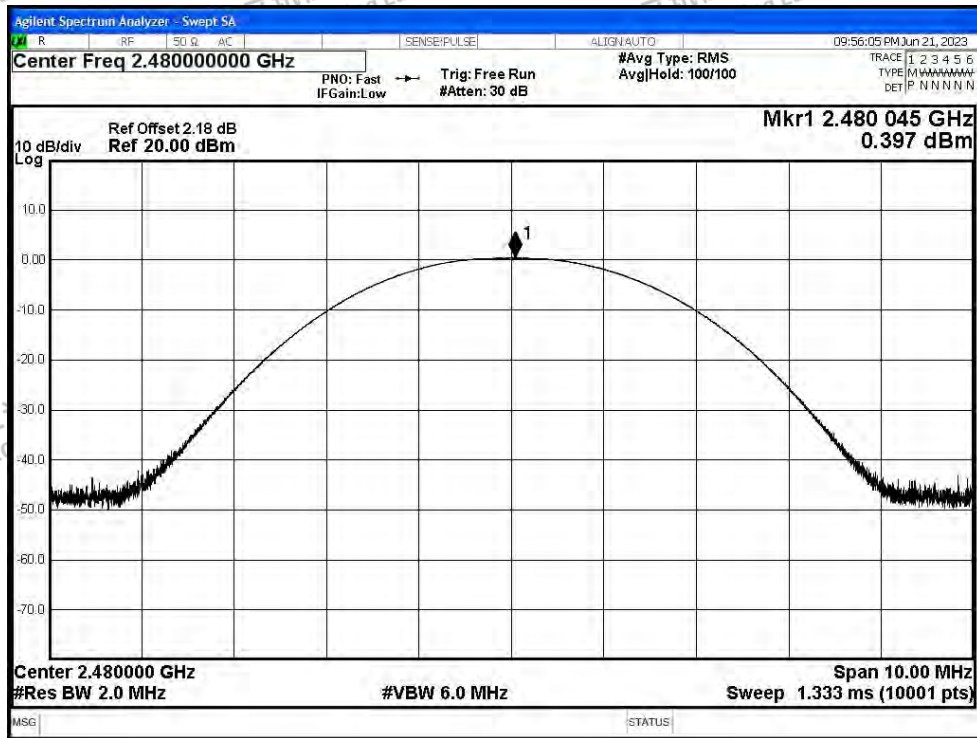


Power NVNT 1-DH5 2441MHz Ant1

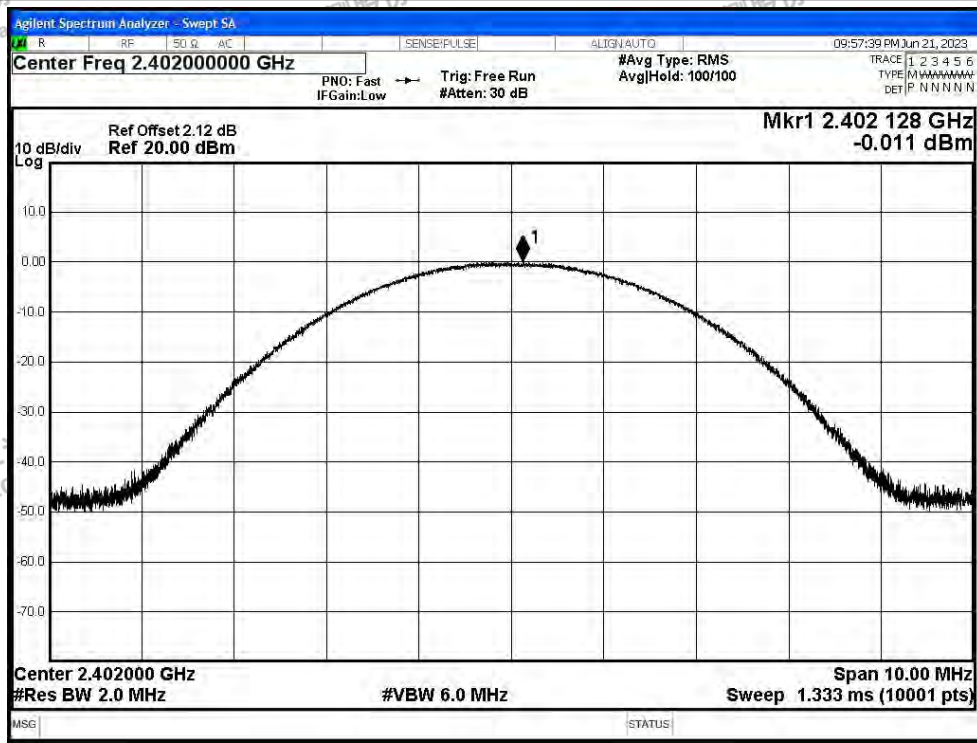




Power NVNT 1-DH5 2480MHz Ant1

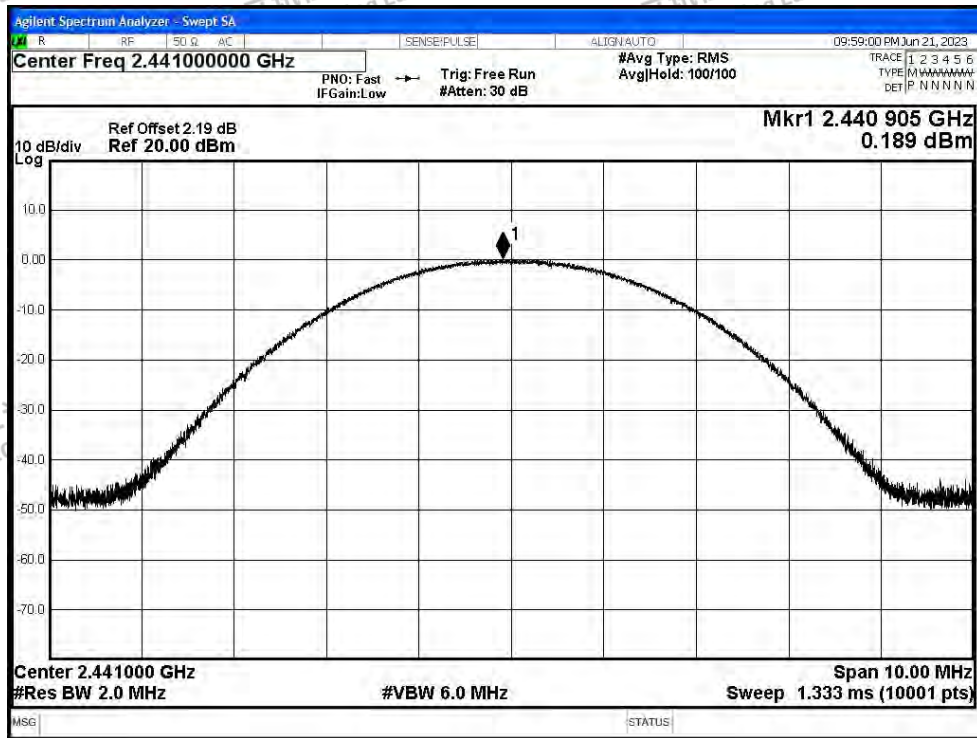


Power NVNT 2-DH5 2402MHz Ant1

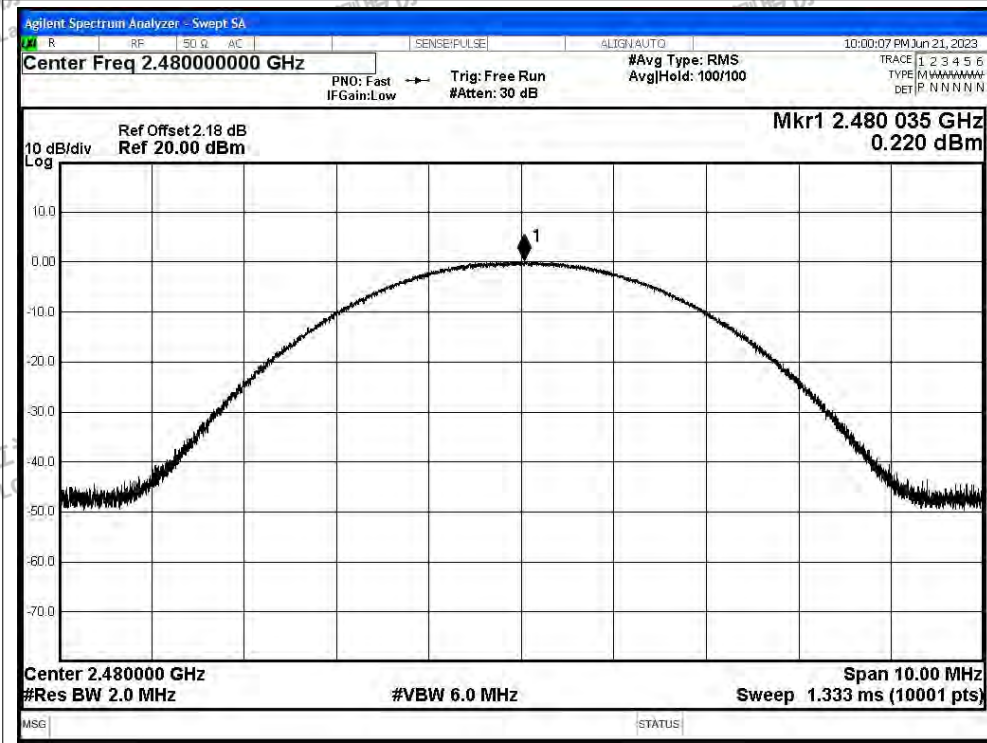




Power NVNT 2-DH5 2441MHz Ant1

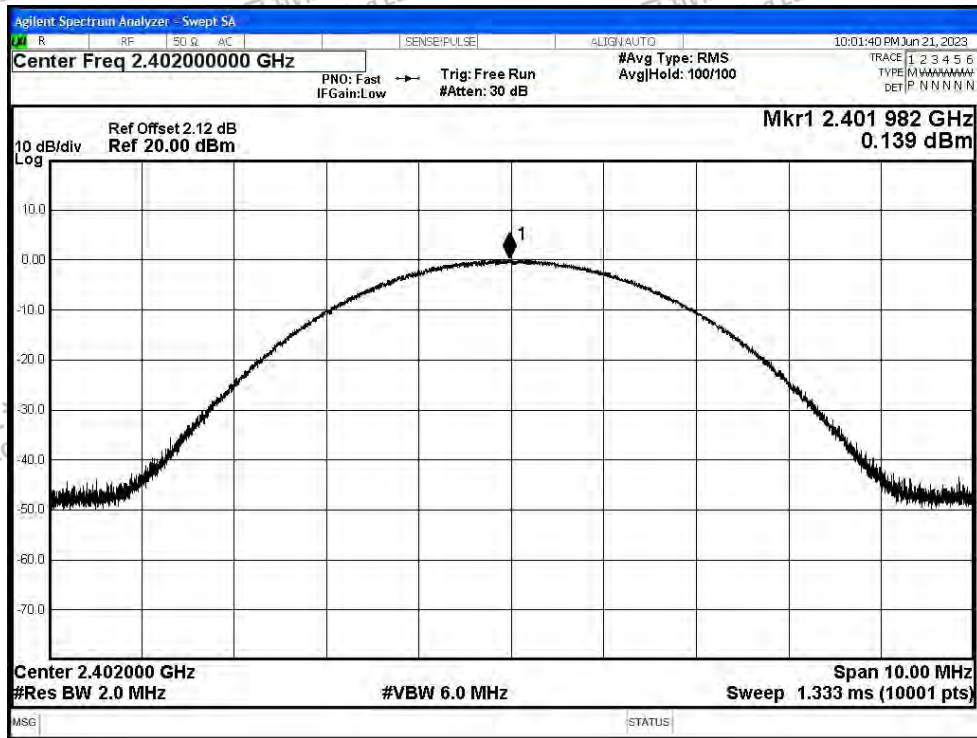


Power NVNT 2-DH5 2480MHz Ant1

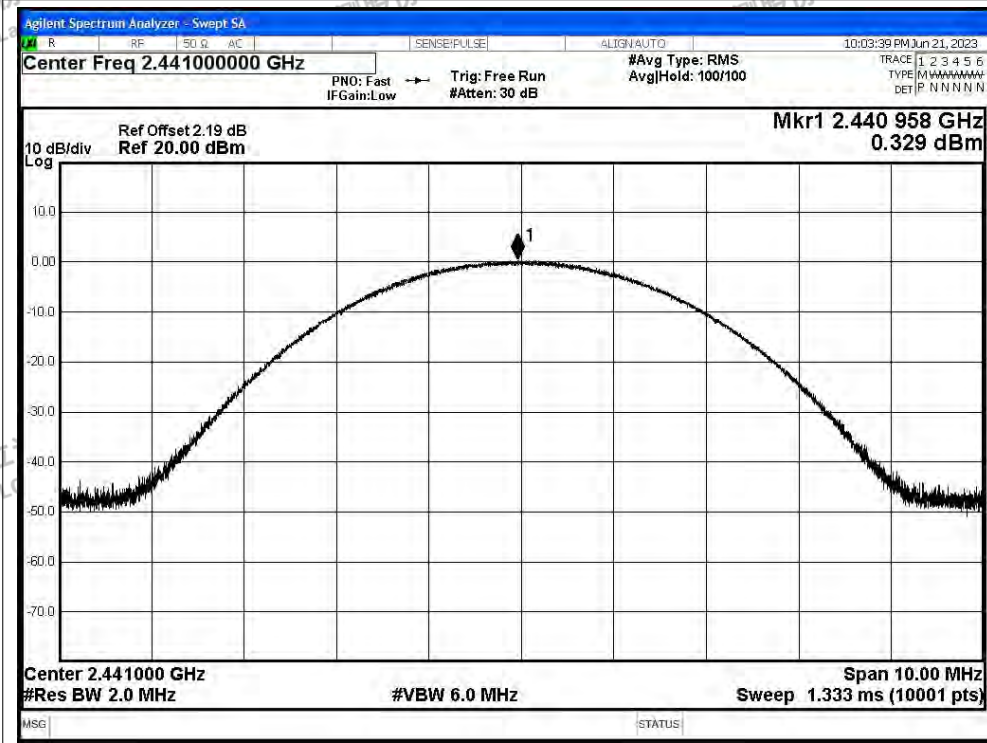




Power NVNT 3-DH5 2402MHz Ant1

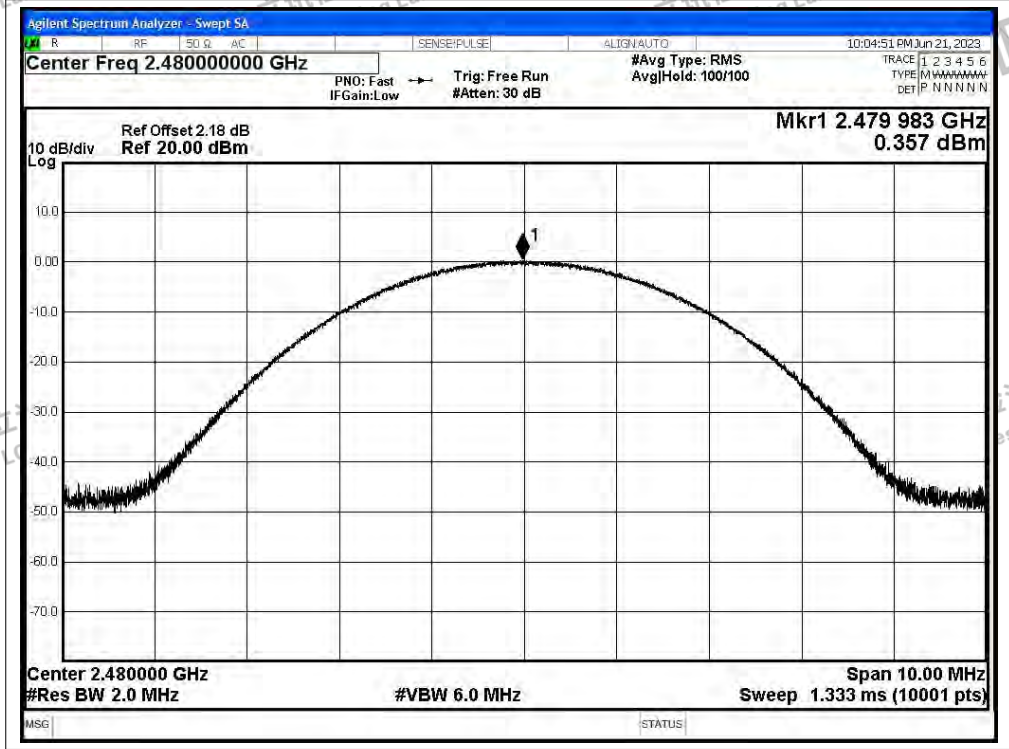


Power NVNT 3-DH5 2441MHz Ant1





Power NVNT 3-DH5 2480MHz Ant1



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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	2402.16	2403.006	0.846	0.650	Pass
NVNT	2-DH5	Ant1	2402.156	2403.15	0.994	0.881	Pass
NVNT	3-DH5	Ant1	2402.012	2403.16	1.148	0.869	Pass

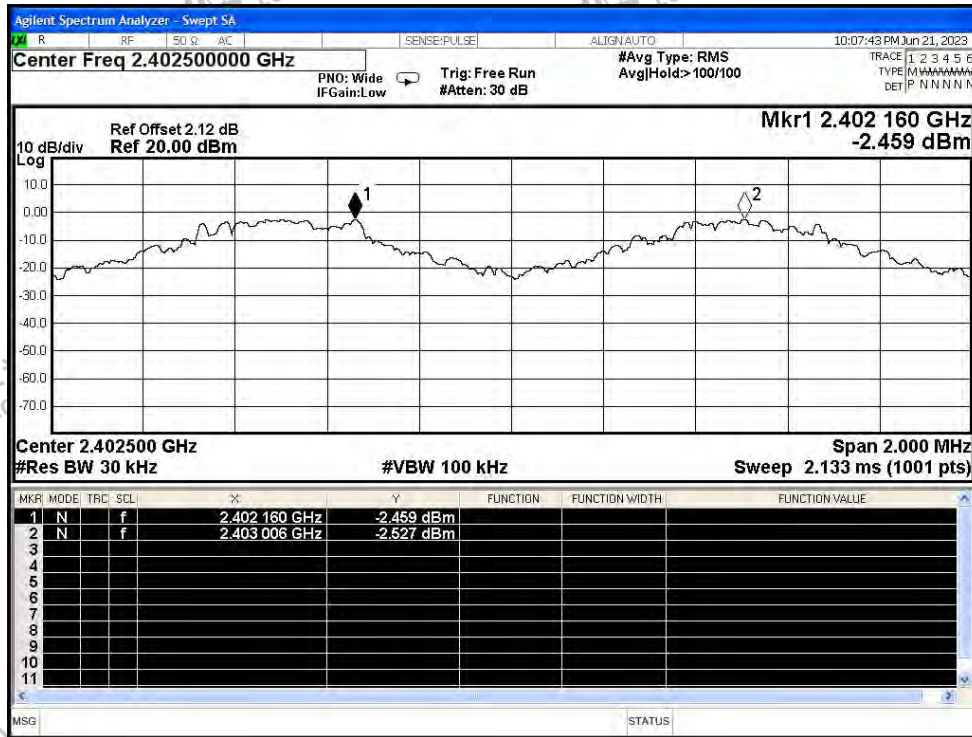


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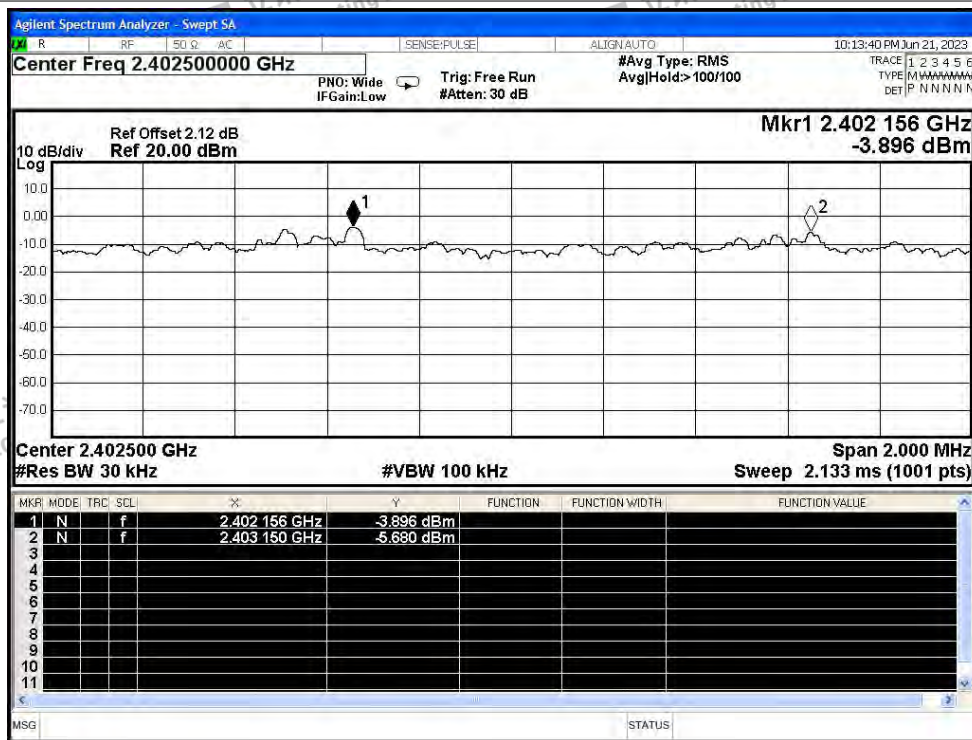


Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1

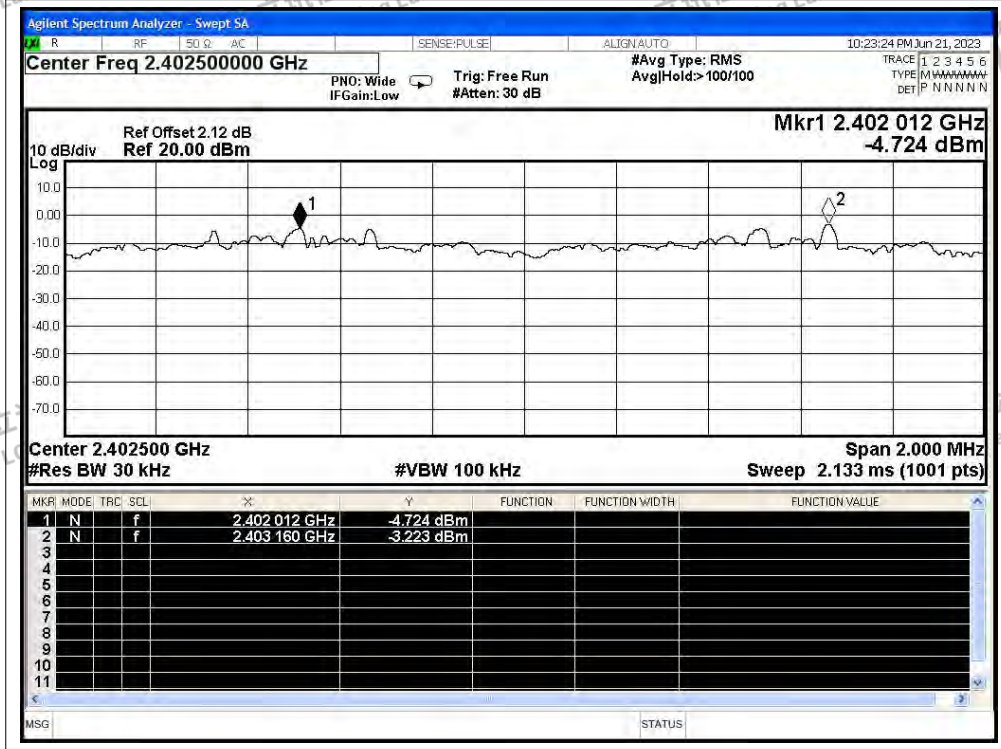


CFS NVNT 2-DH5 2402MHz Ant1





CFS NVNT 3-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	314.138	109	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.885	294.27	102	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.887	303.135	105	31600	400	Pass

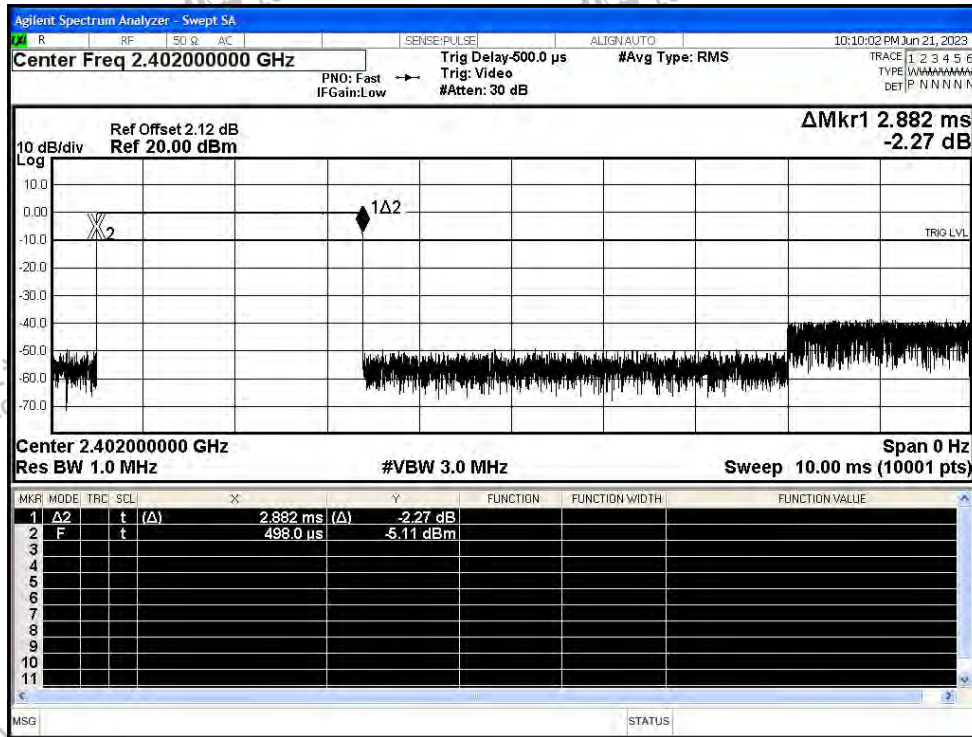


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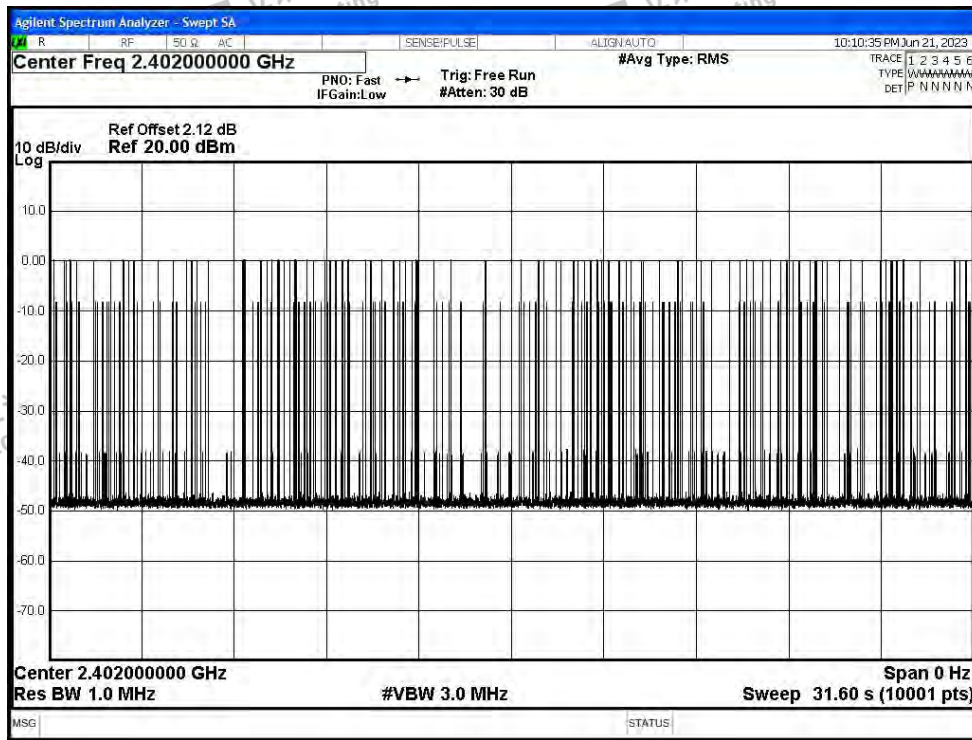


Test Graphs

Dwell NVNT 1-DH5 2402MHz Ant1 One Burst

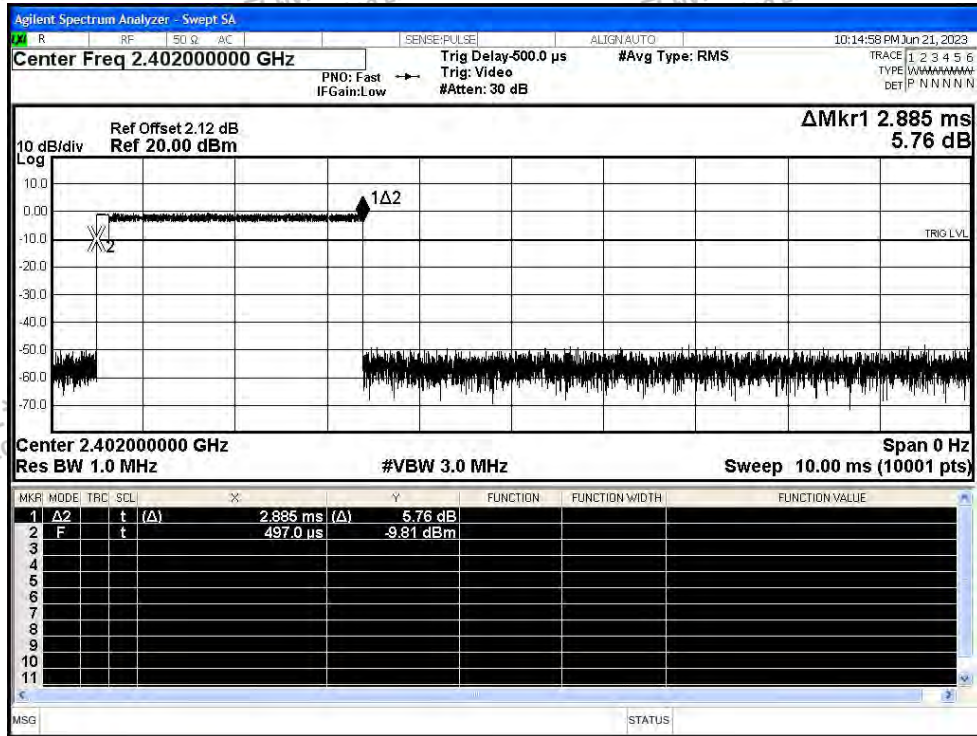


Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated

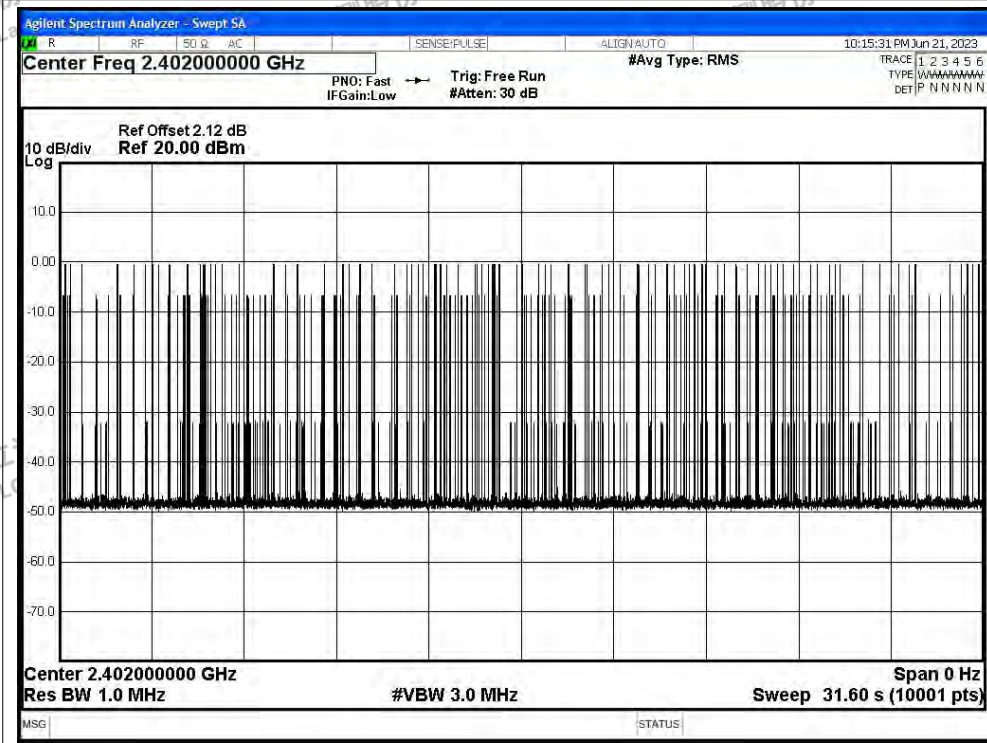




Dwell NVNT 2-DH5 2402MHz Ant1 One Burst

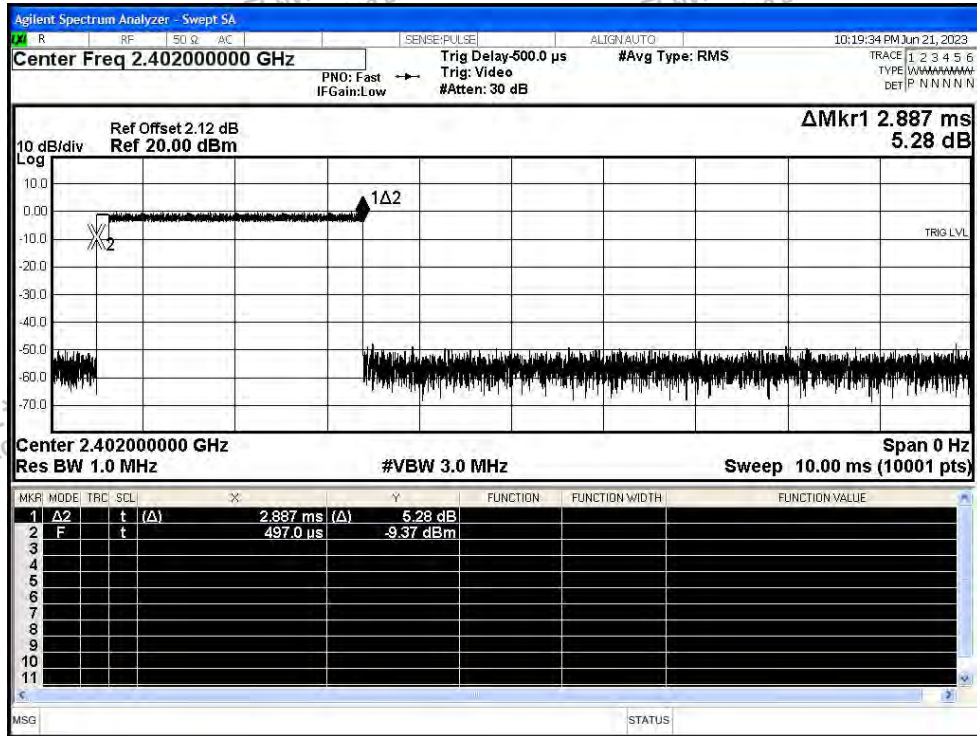


Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated

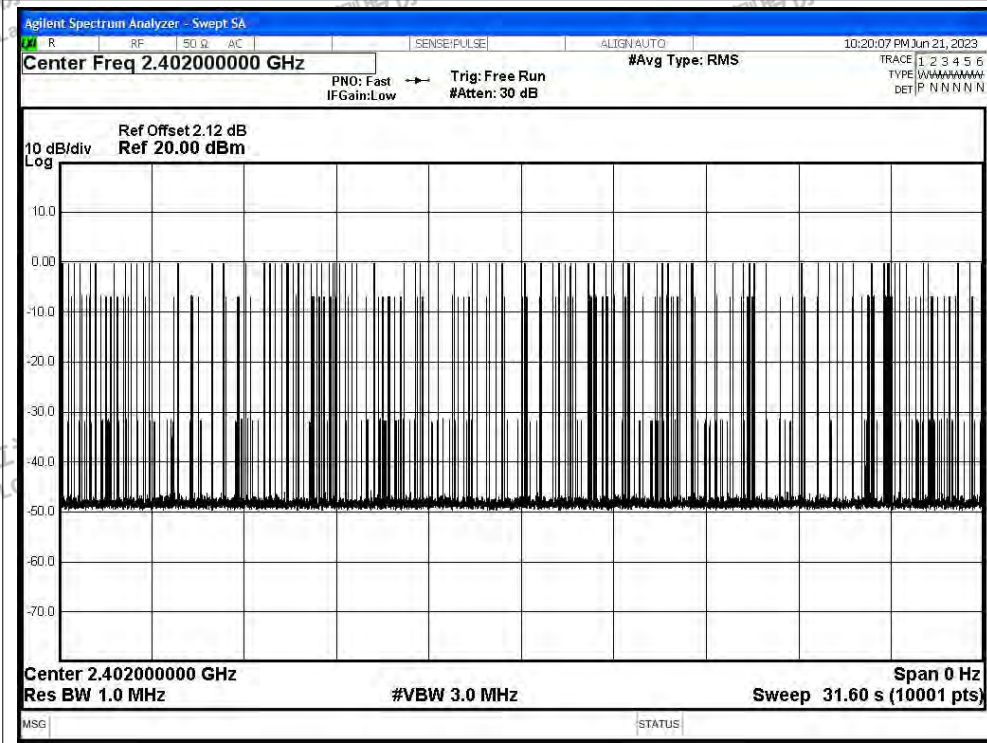




Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



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

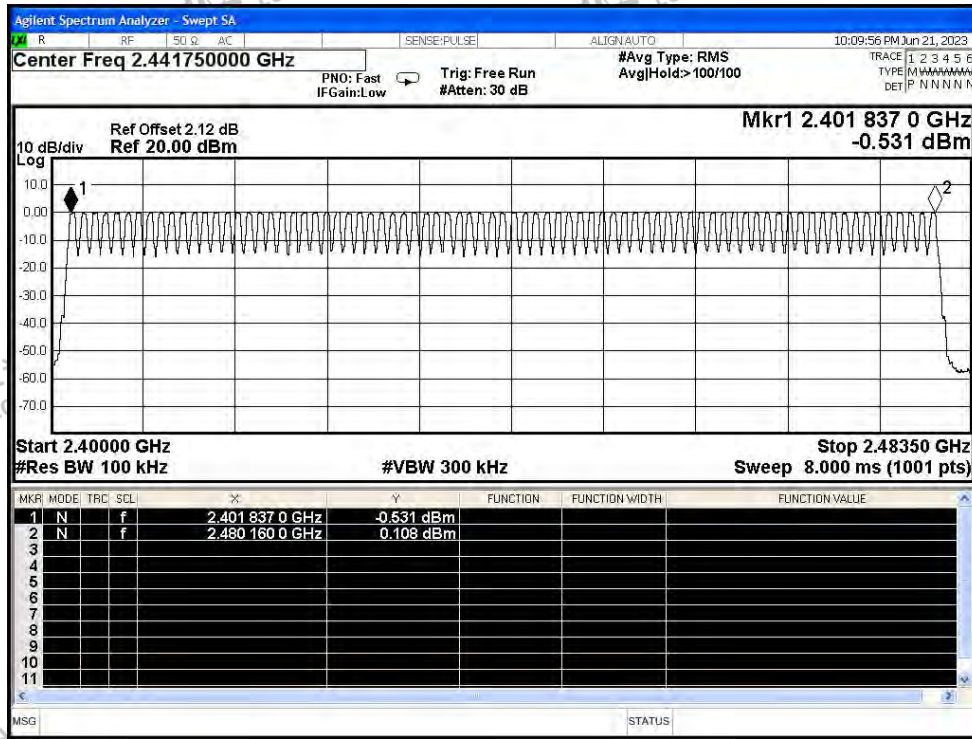


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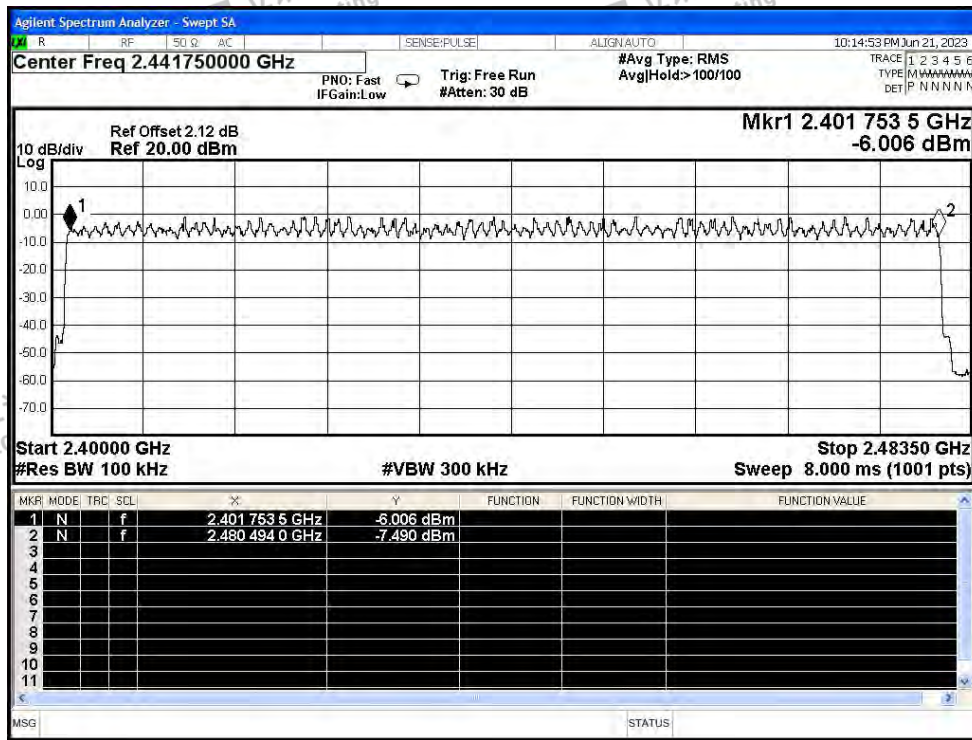


Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1

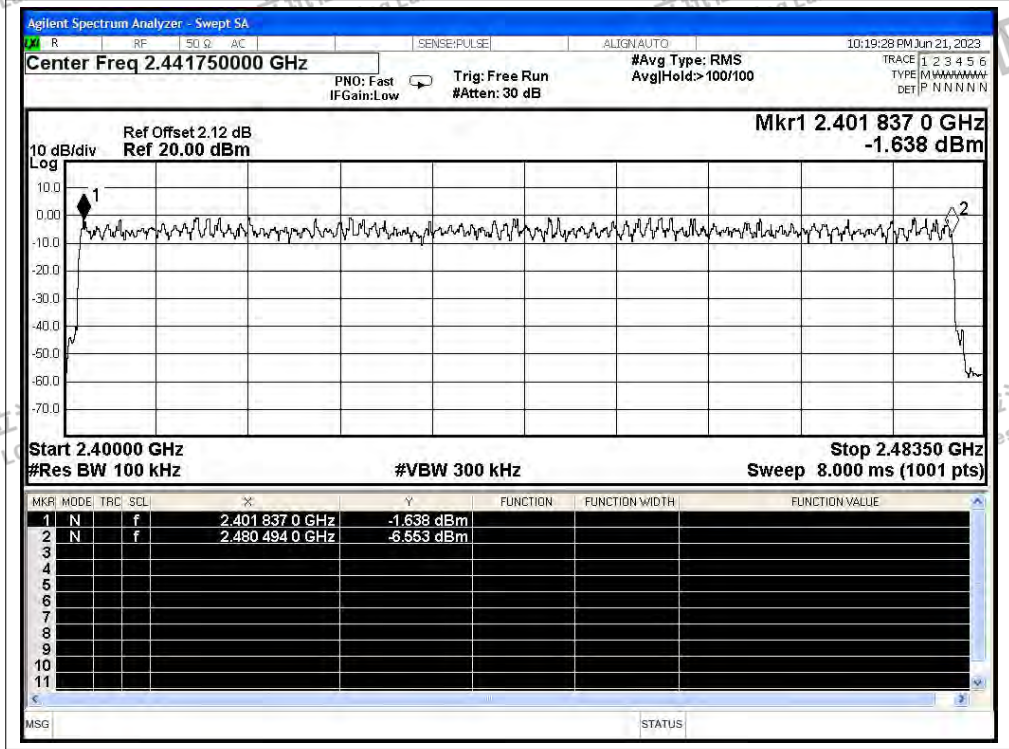


Hopping No. NVNT 2-DH5 2402MHz Ant1





Hopping No. NVNT 3-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	-56.47	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-57.29	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-53.76	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-54.81	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-54.18	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-55.73	-20	Pass

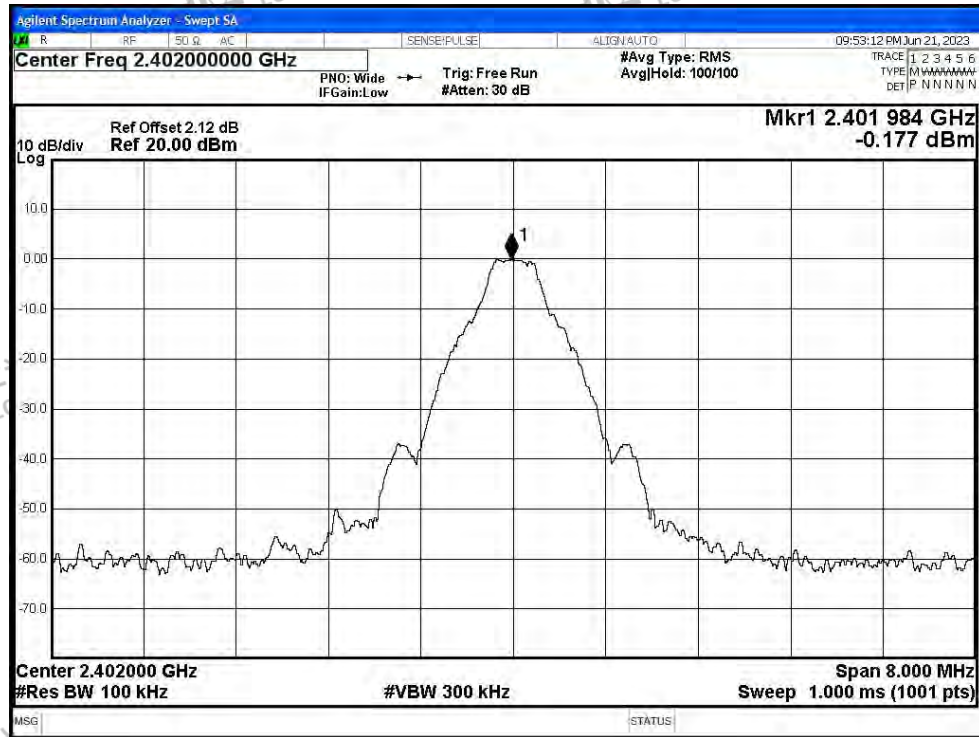


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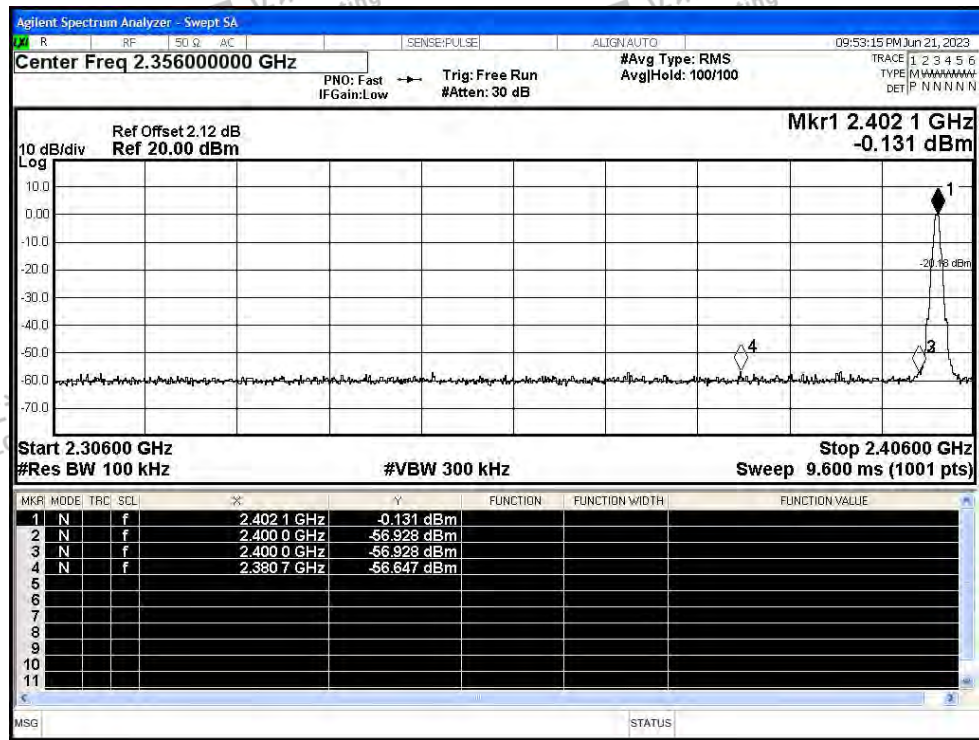


Test Graphs

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

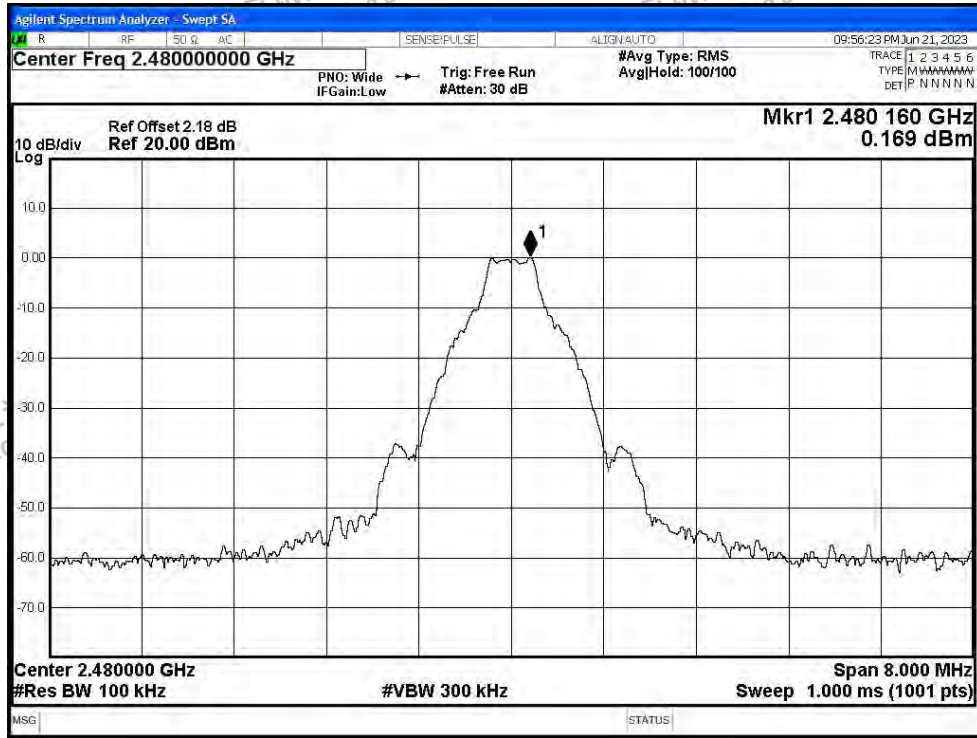


Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission

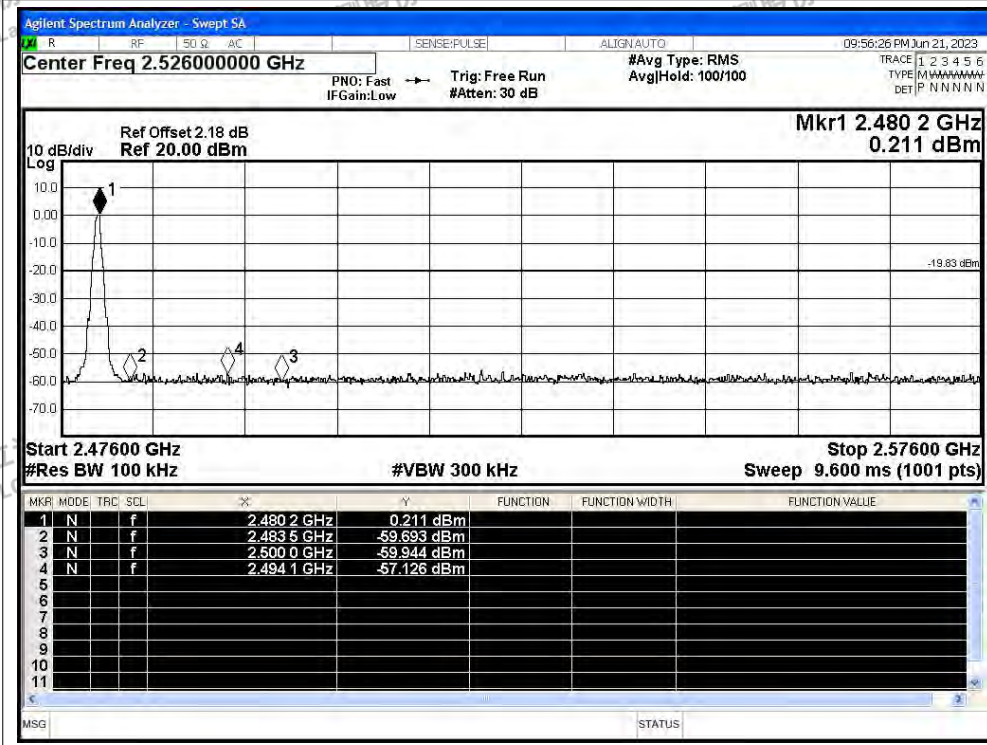




Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref

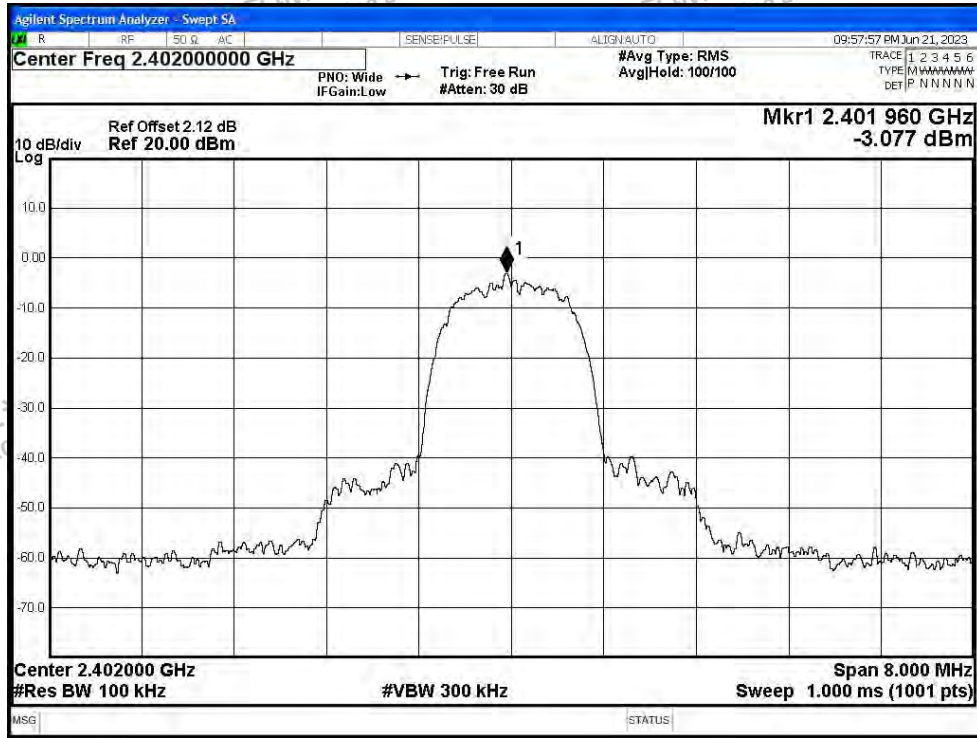


Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Emission

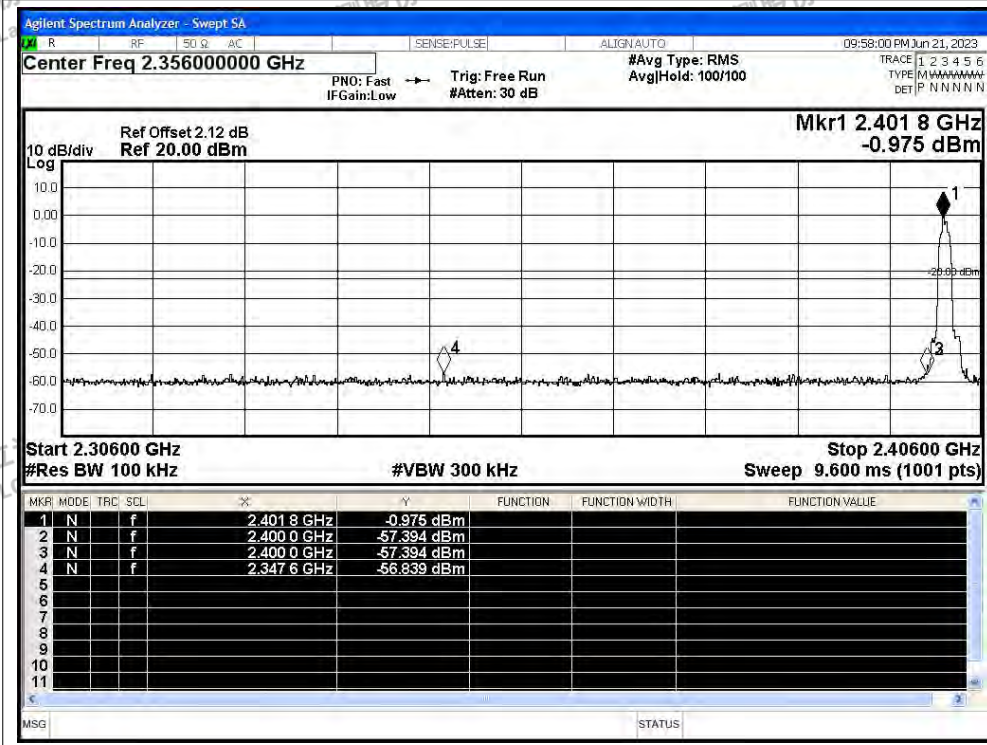




Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref

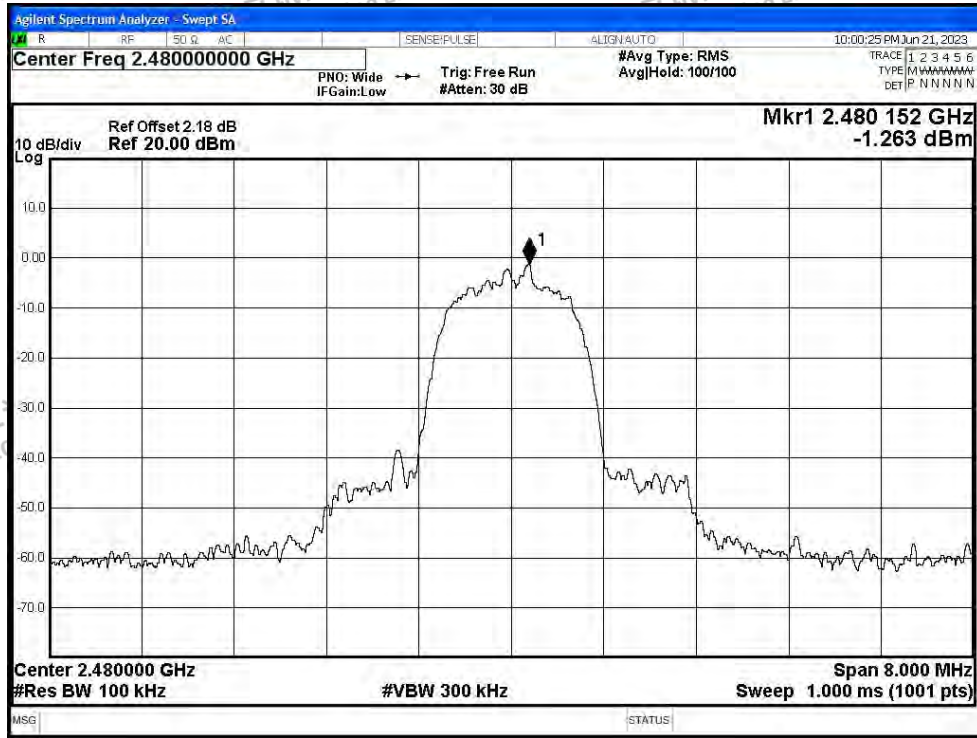


Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

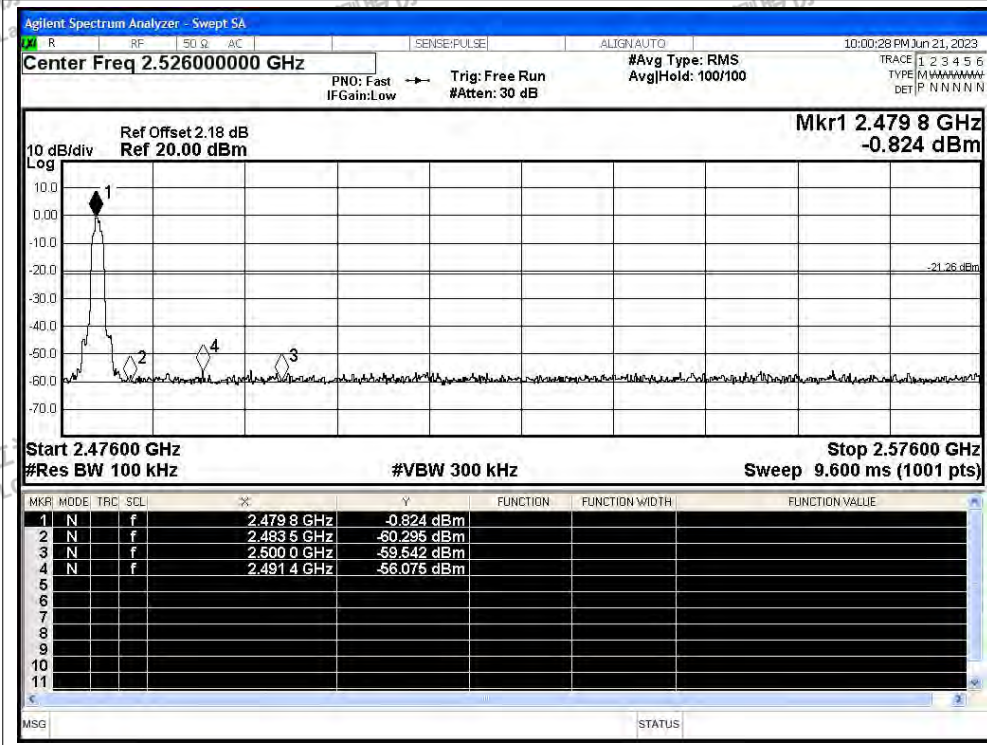




Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref

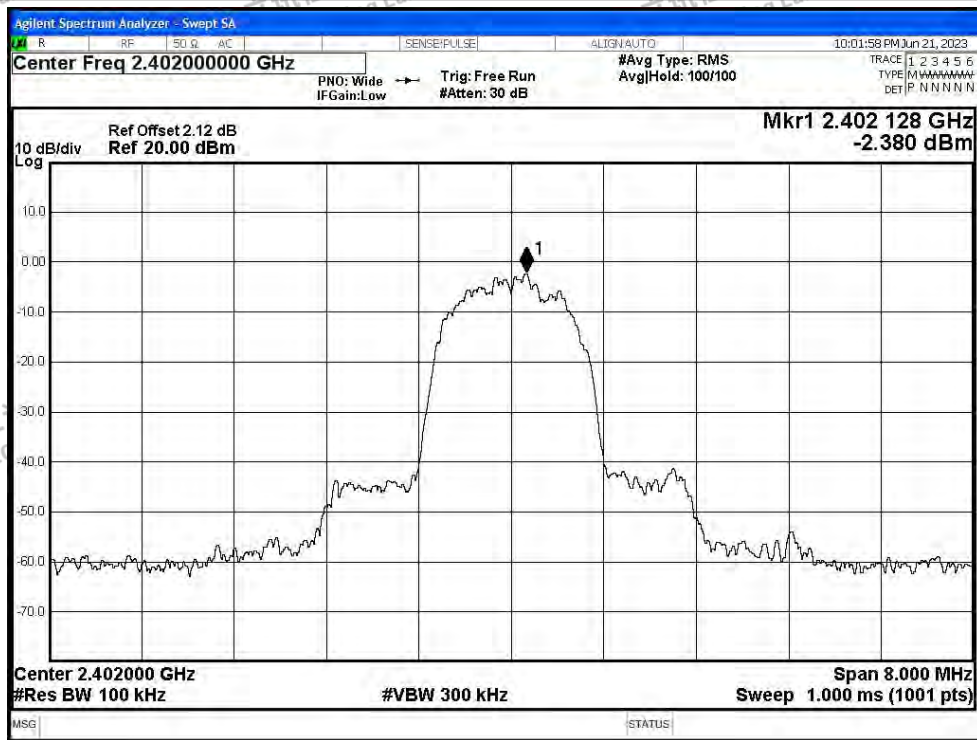


Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission

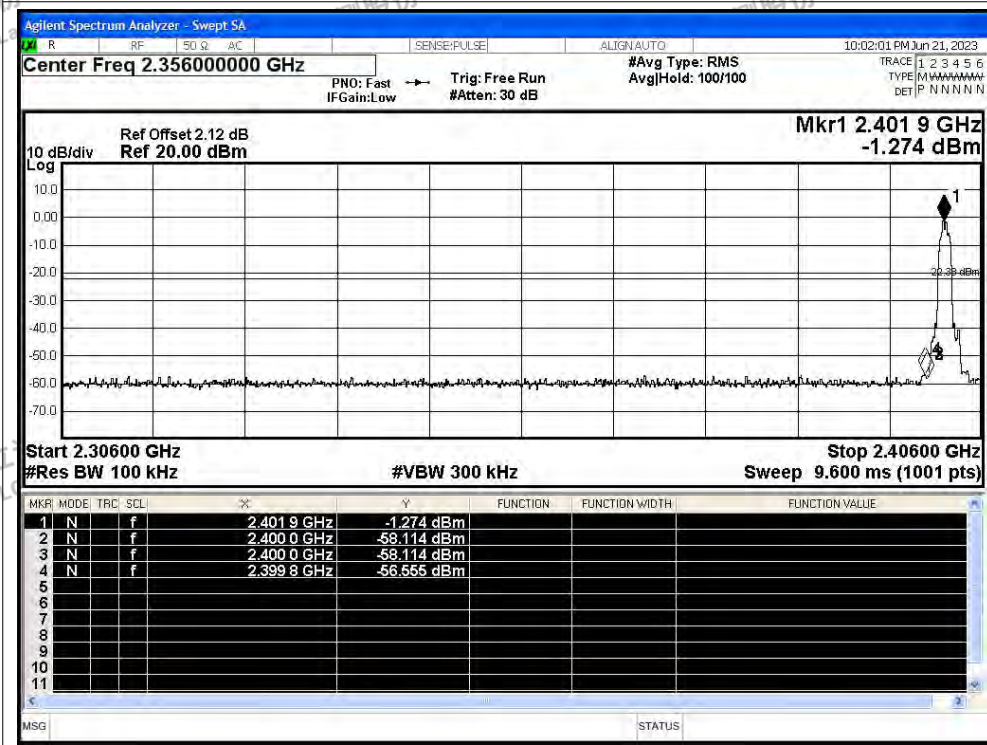




Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref

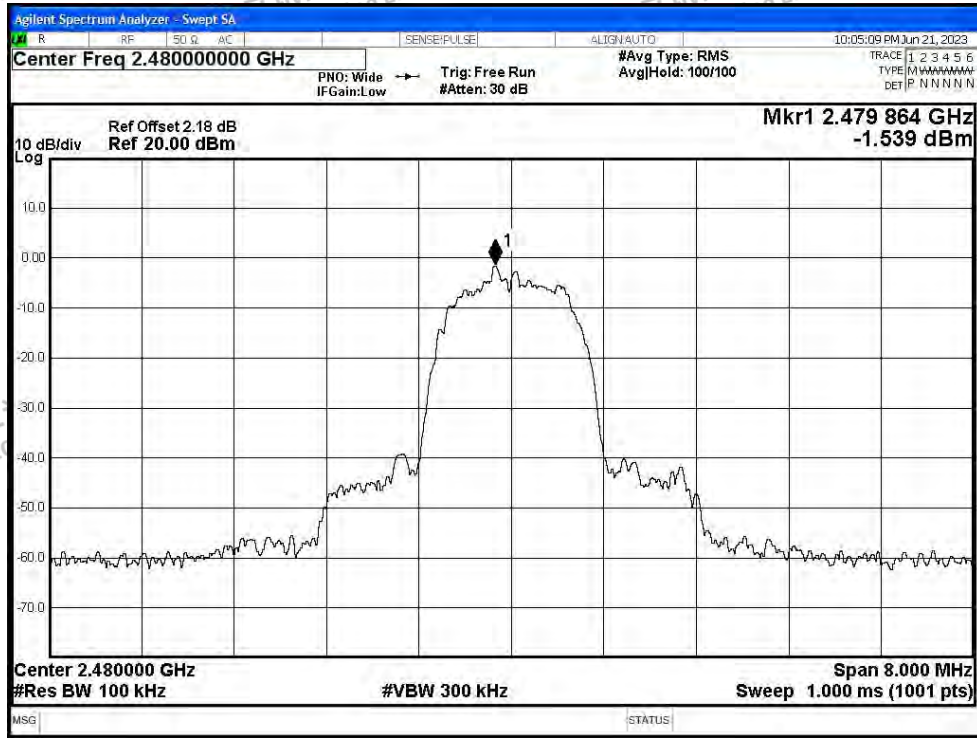


Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission

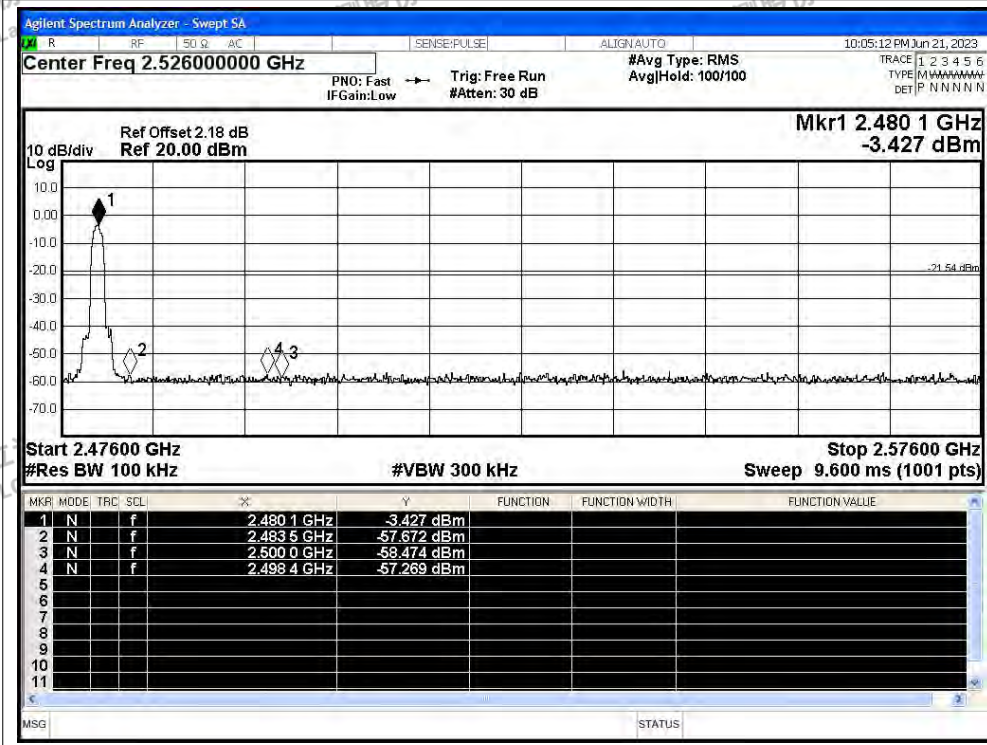




Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



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	-55.7	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-55.92	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-55.2	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-55.04	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-55.19	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-53.46	-20	Pass

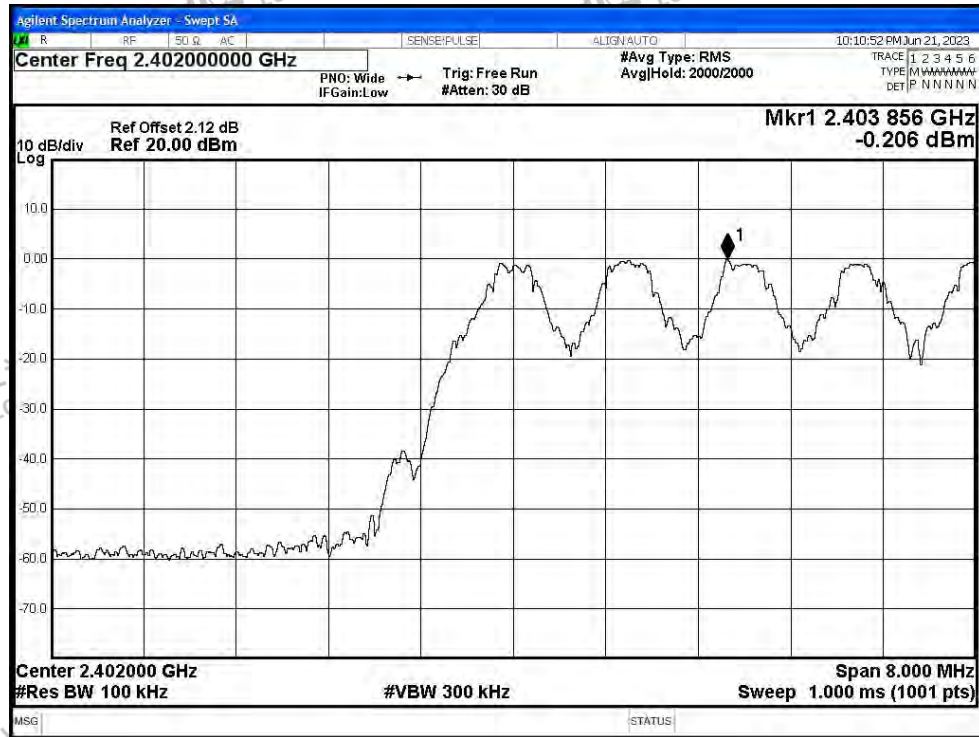


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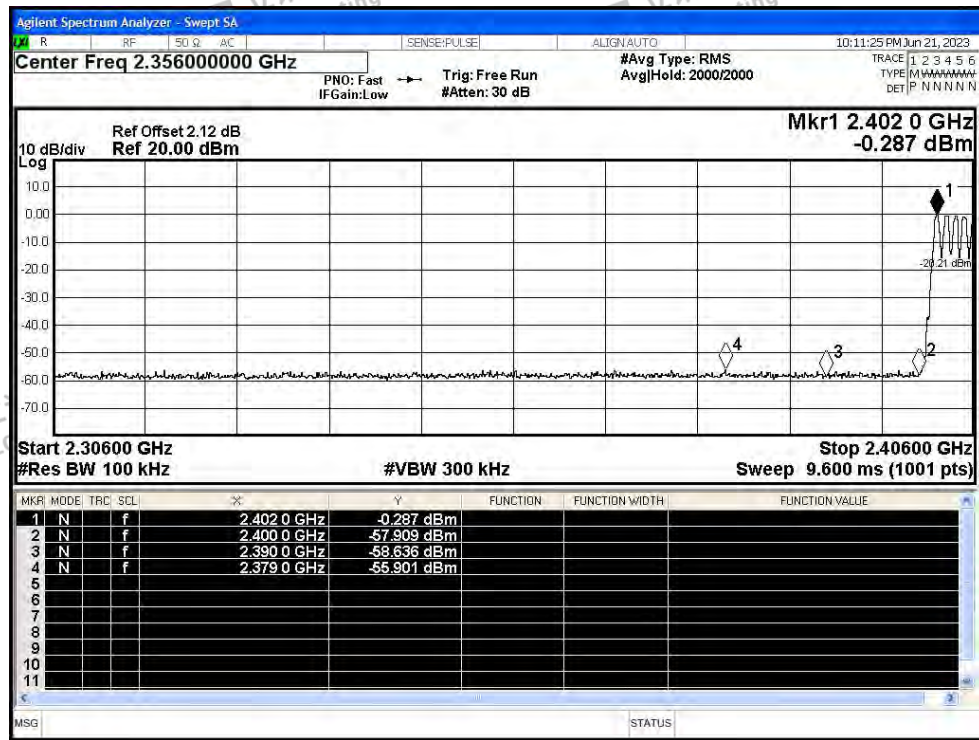


Test Graphs

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

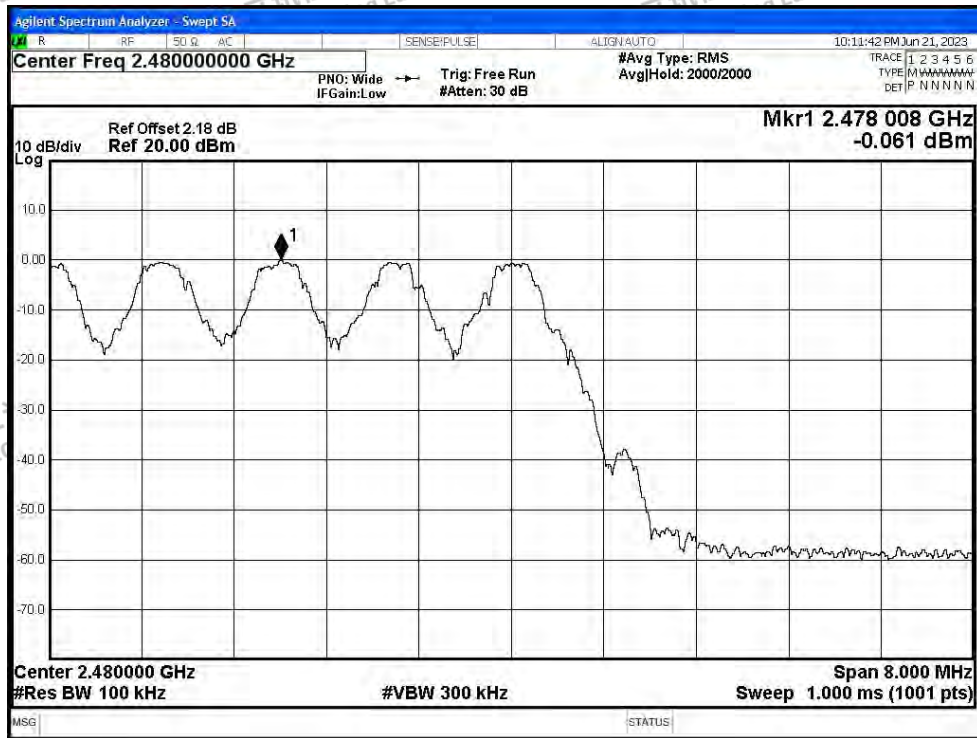


Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission

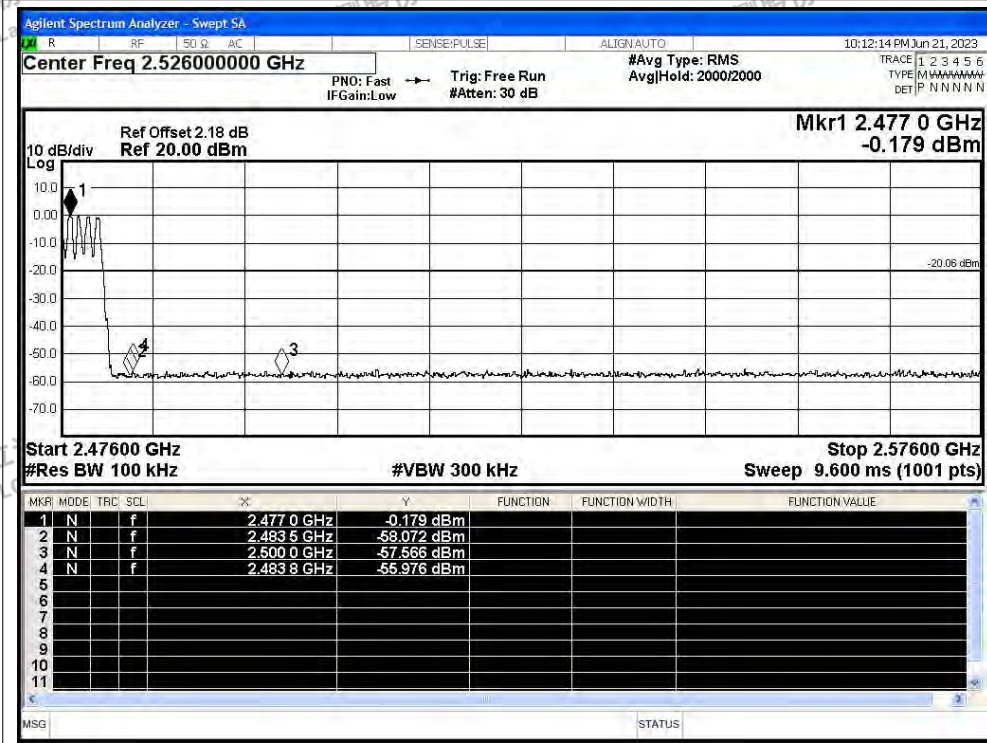




Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Ref



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

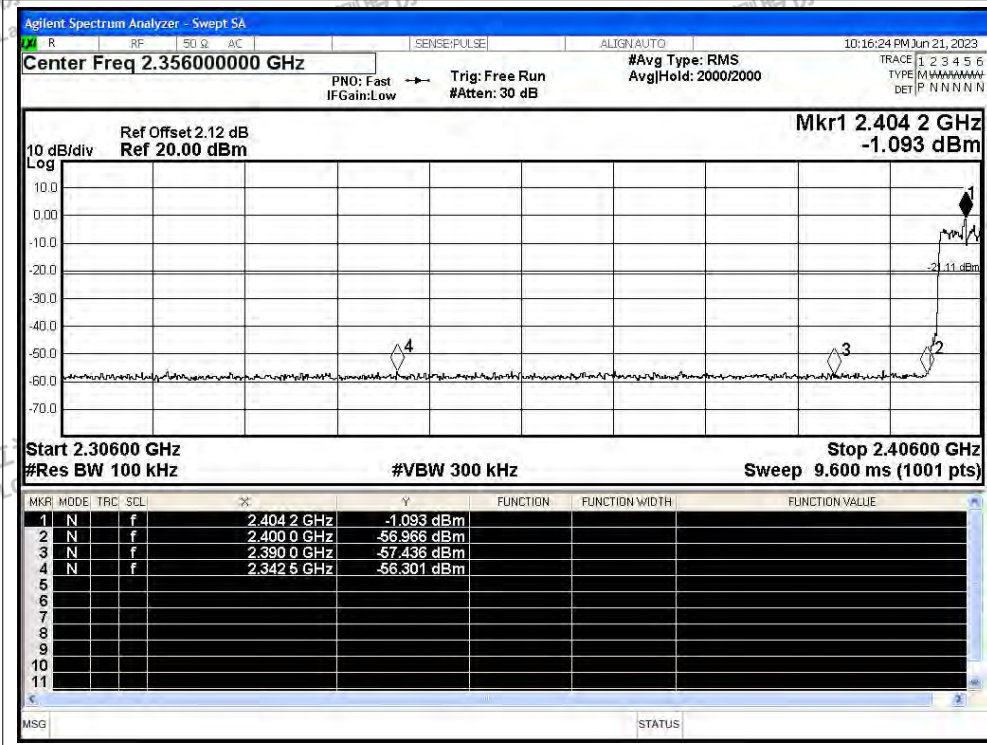




Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

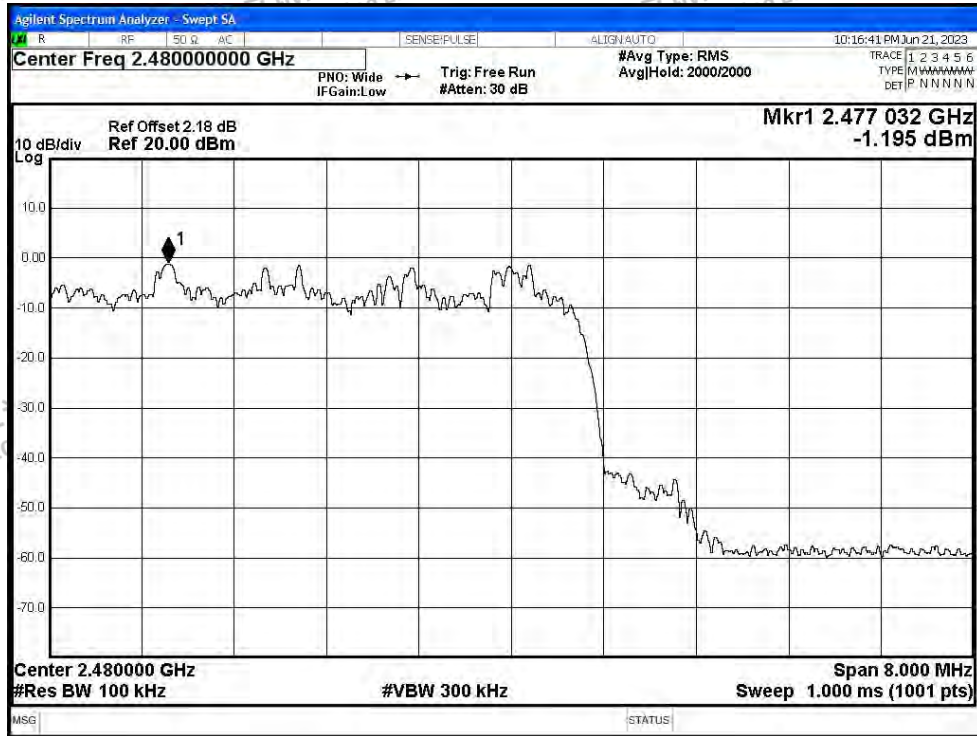


Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission

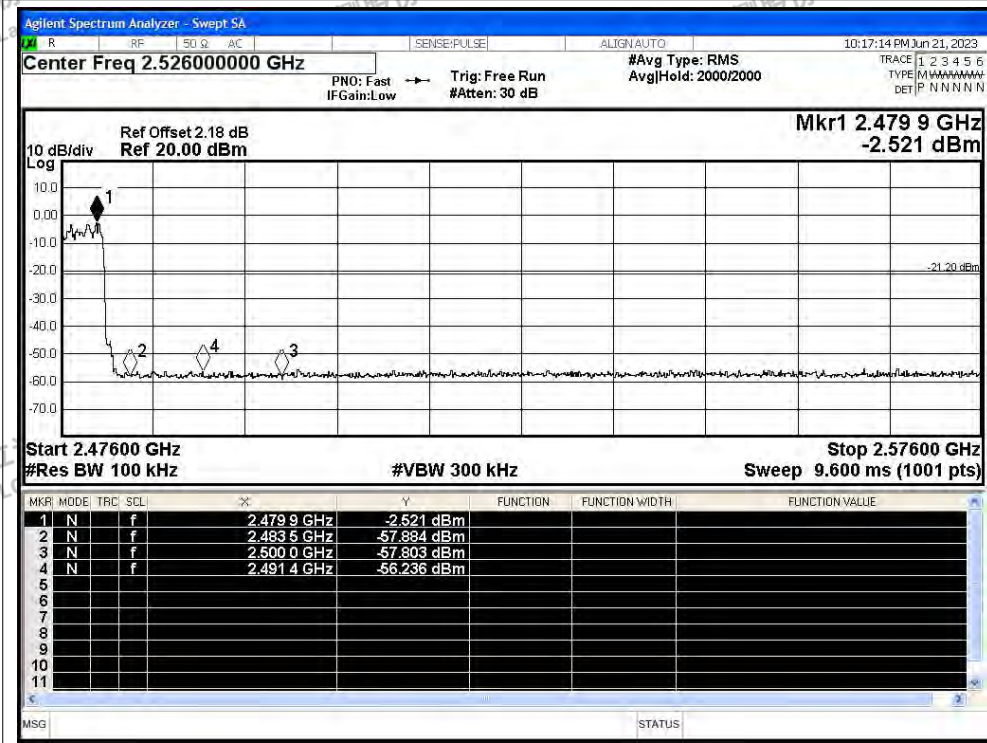




Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Ref



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

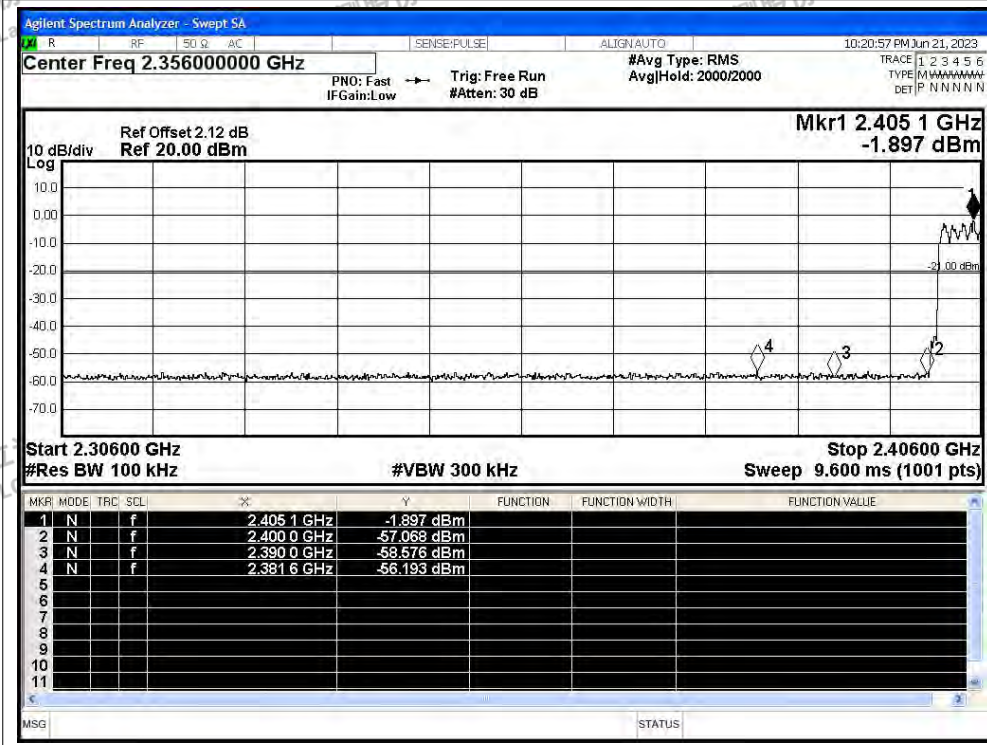




Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



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

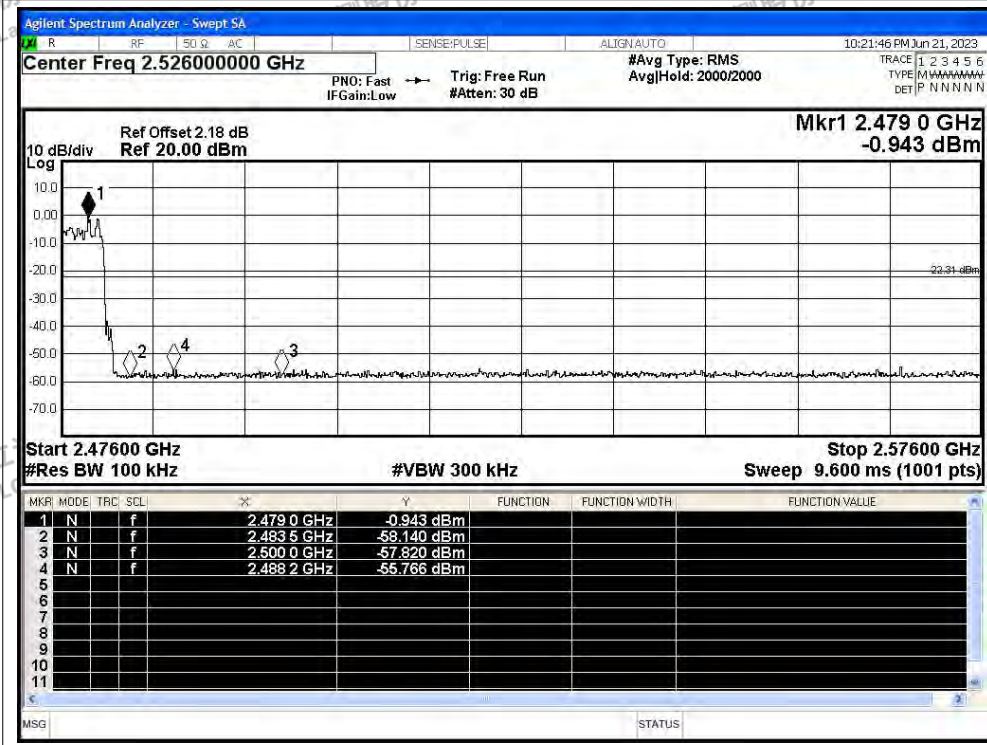




Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref



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





A.7 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-55.49	-20	Pass
NVNT	1-DH5	2441	Ant1	-54.95	-20	Pass
NVNT	1-DH5	2480	Ant1	-49.95	-20	Pass
NVNT	2-DH5	2402	Ant1	-53.91	-20	Pass
NVNT	2-DH5	2441	Ant1	-53.27	-20	Pass
NVNT	2-DH5	2480	Ant1	-52.58	-20	Pass
NVNT	3-DH5	2402	Ant1	-37.82	-20	Pass
NVNT	3-DH5	2441	Ant1	-52.1	-20	Pass
NVNT	3-DH5	2480	Ant1	-54.64	-20	Pass

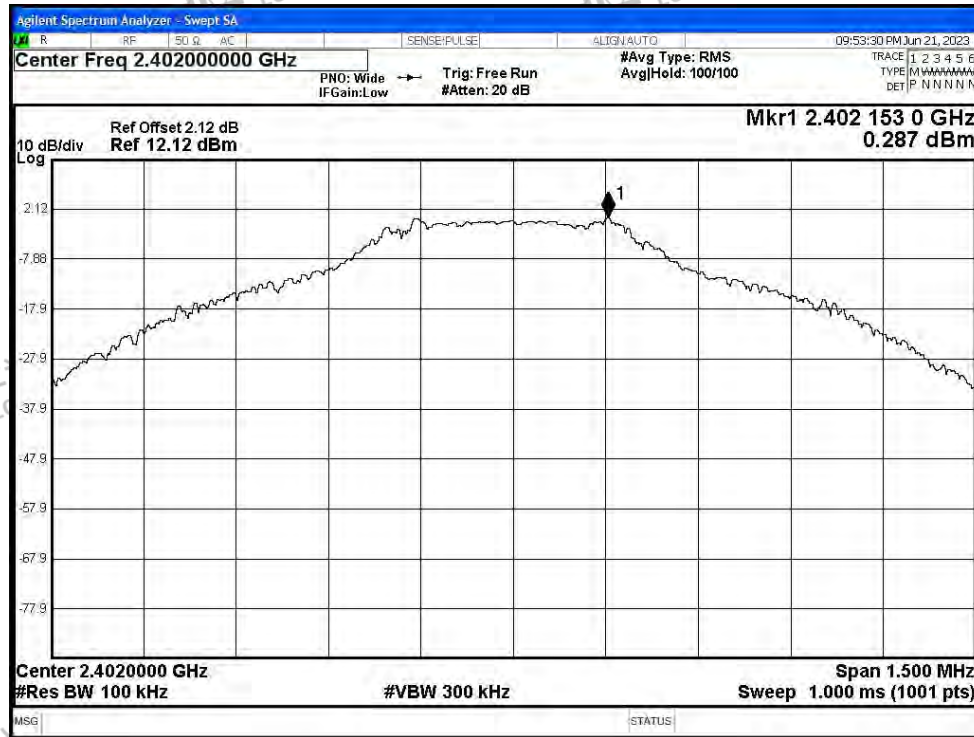


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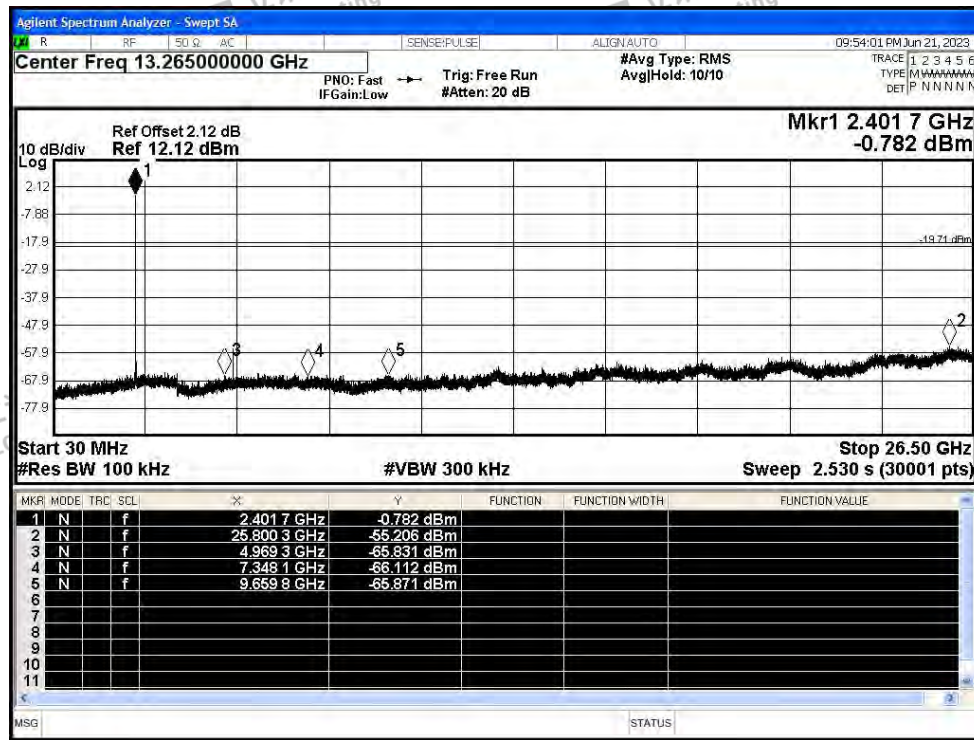


Test Graphs

Tx, Spurious NVNT 1-DH5 2402MHz Ant1 Ref



Tx, Spurious NVNT 1-DH5 2402MHz Ant1 Emission

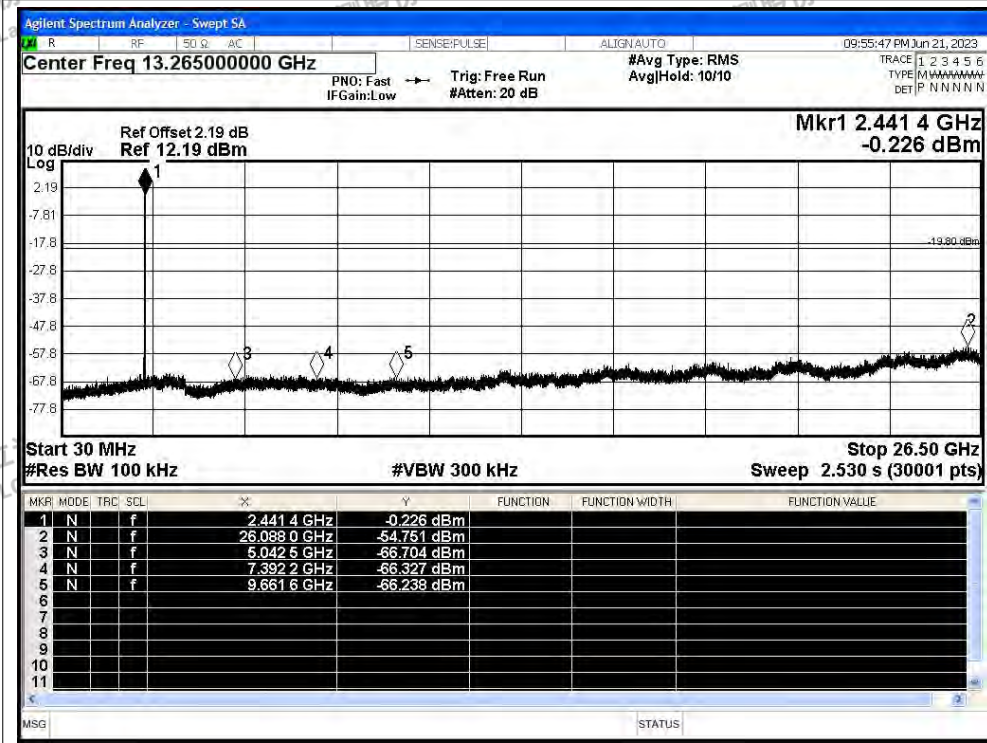




Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission

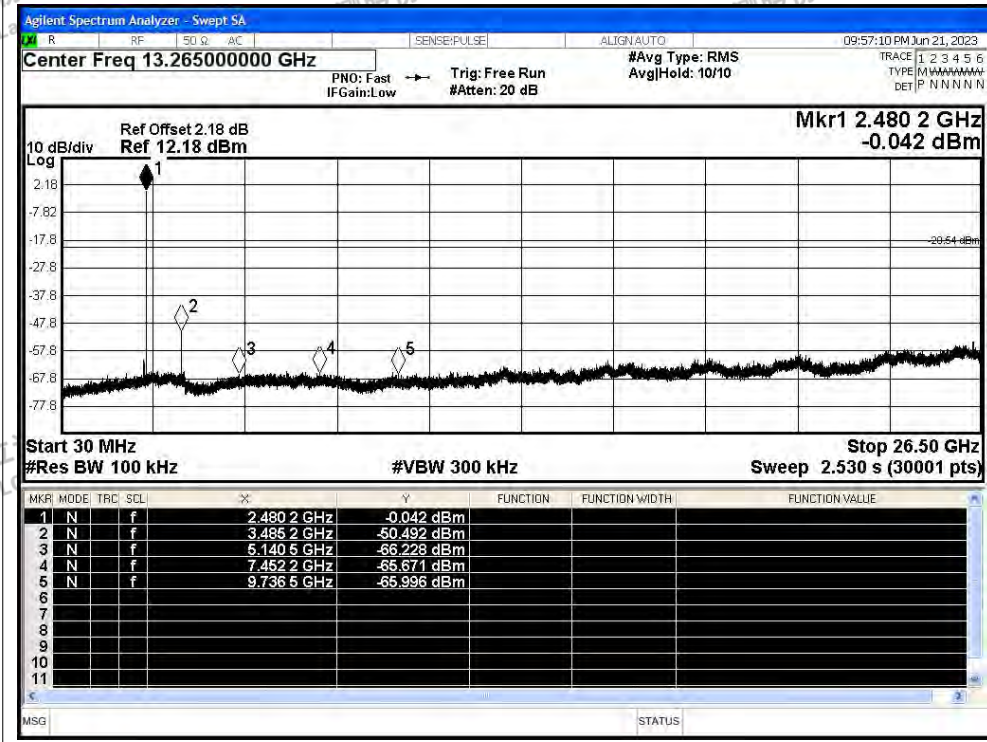




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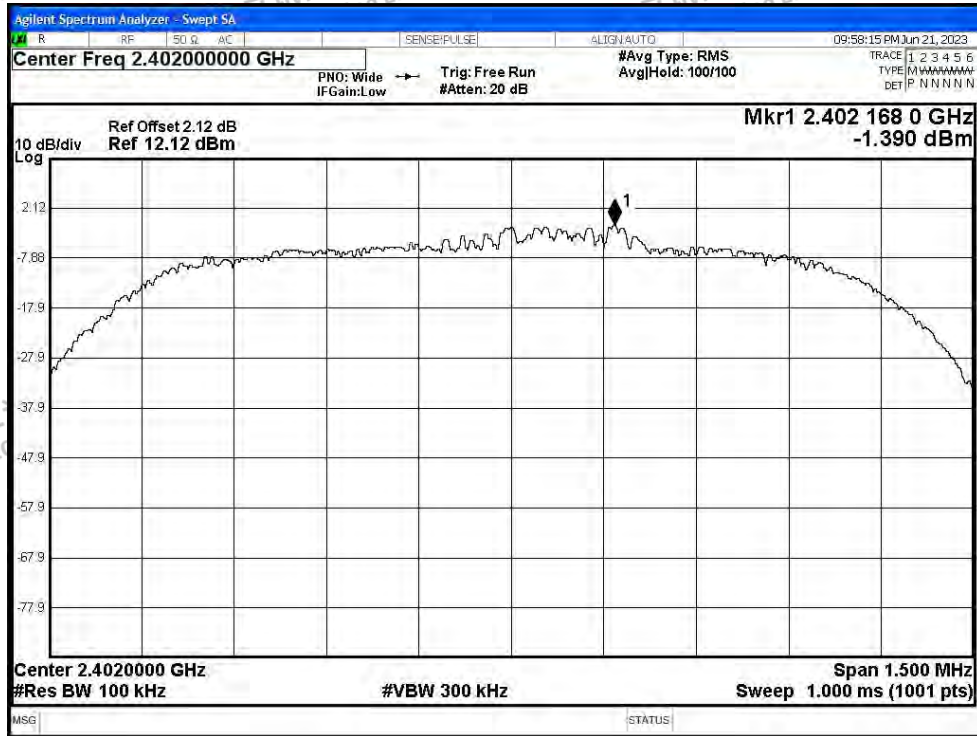


Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission

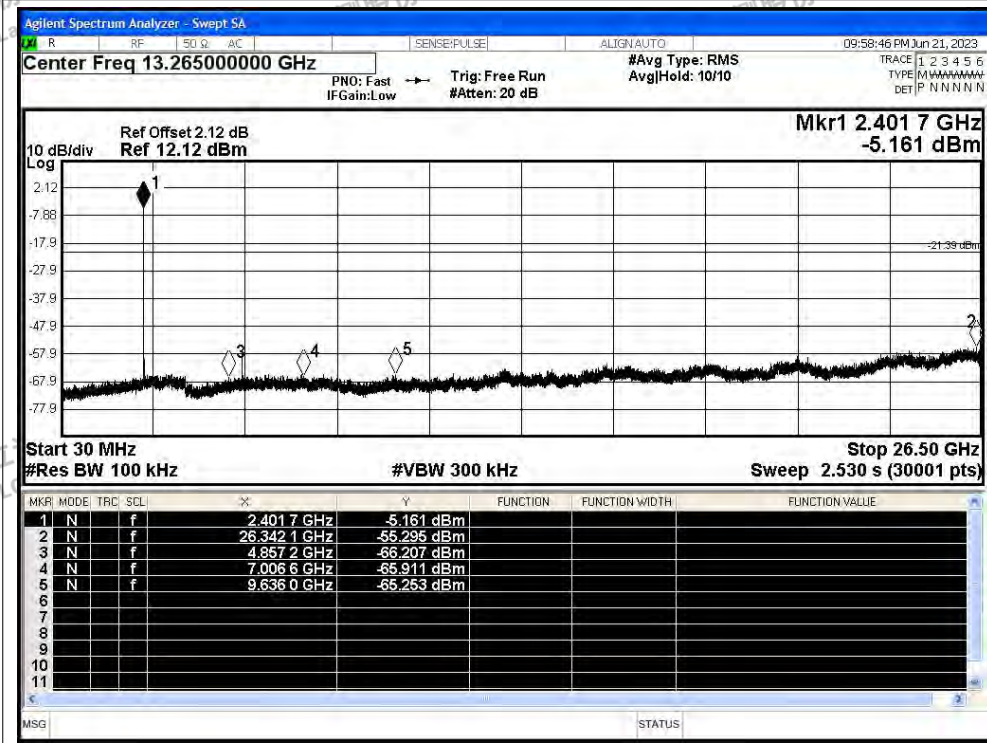




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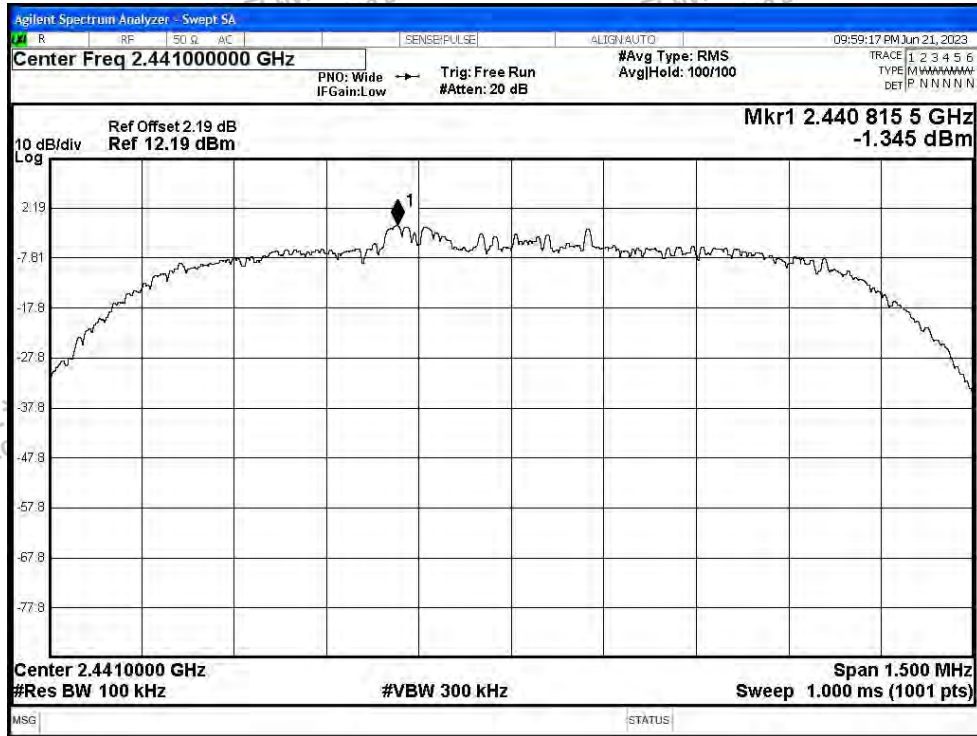


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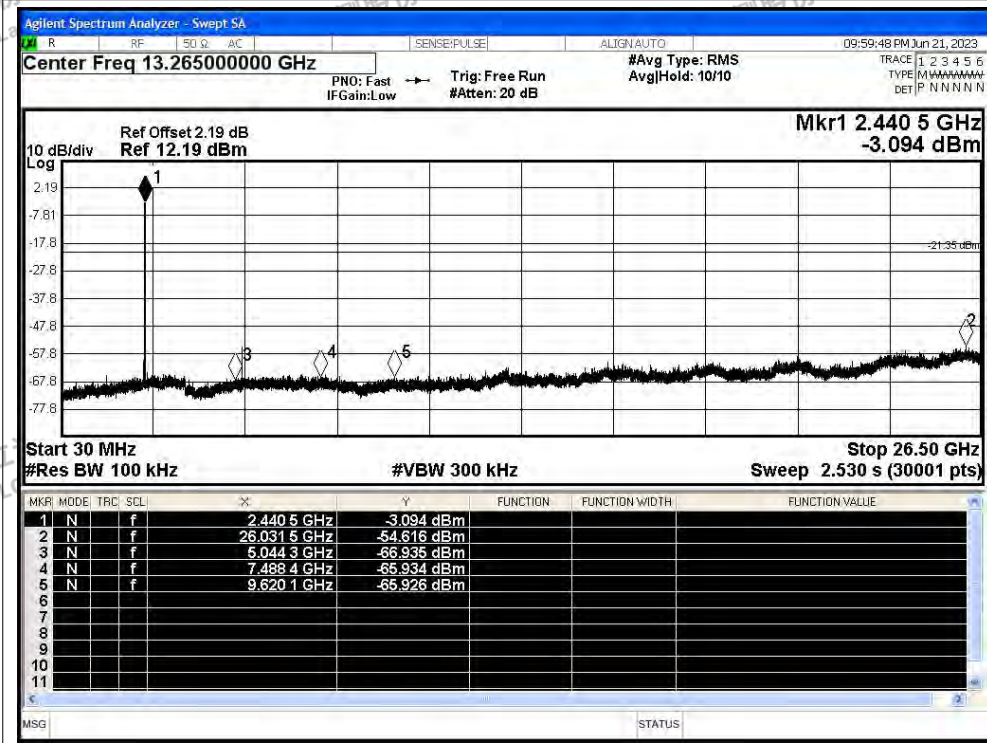




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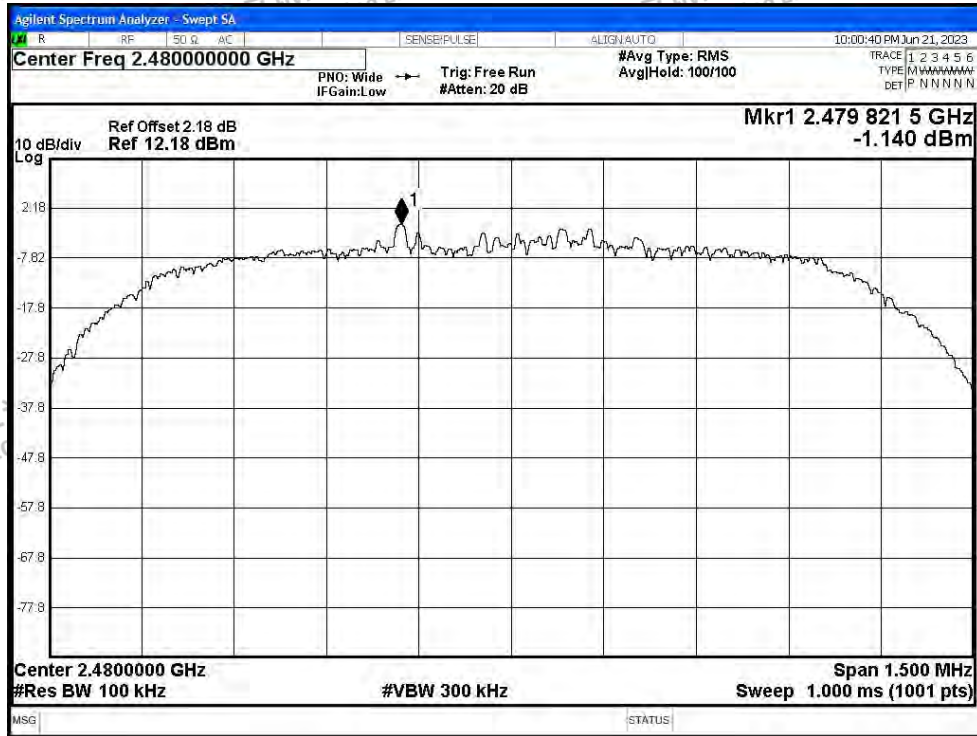


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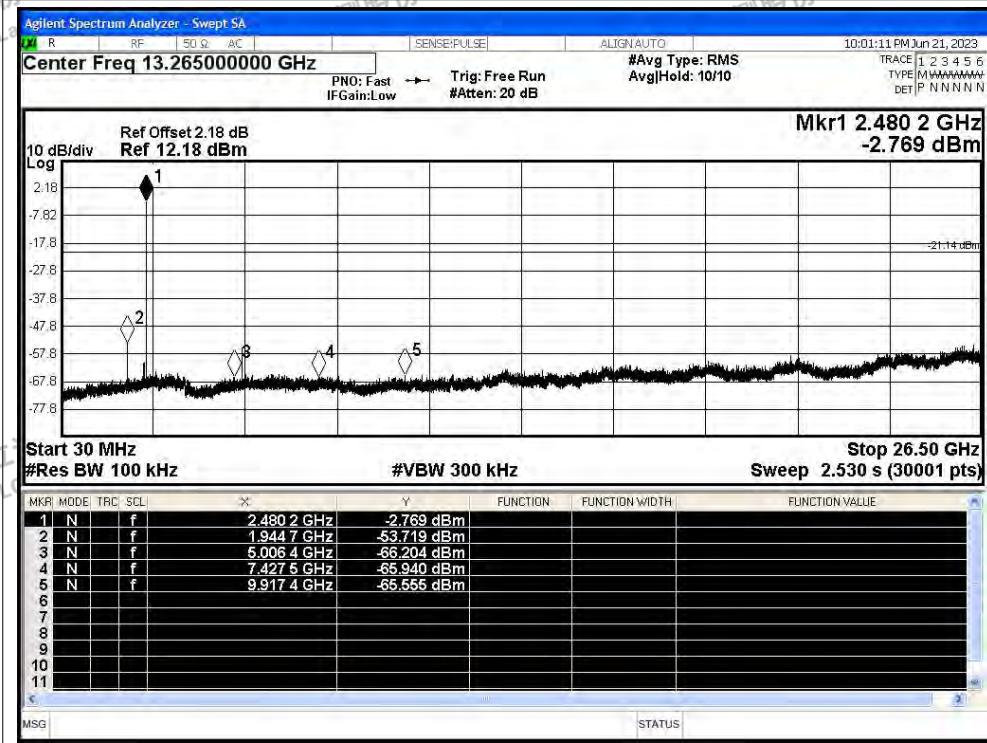




Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission

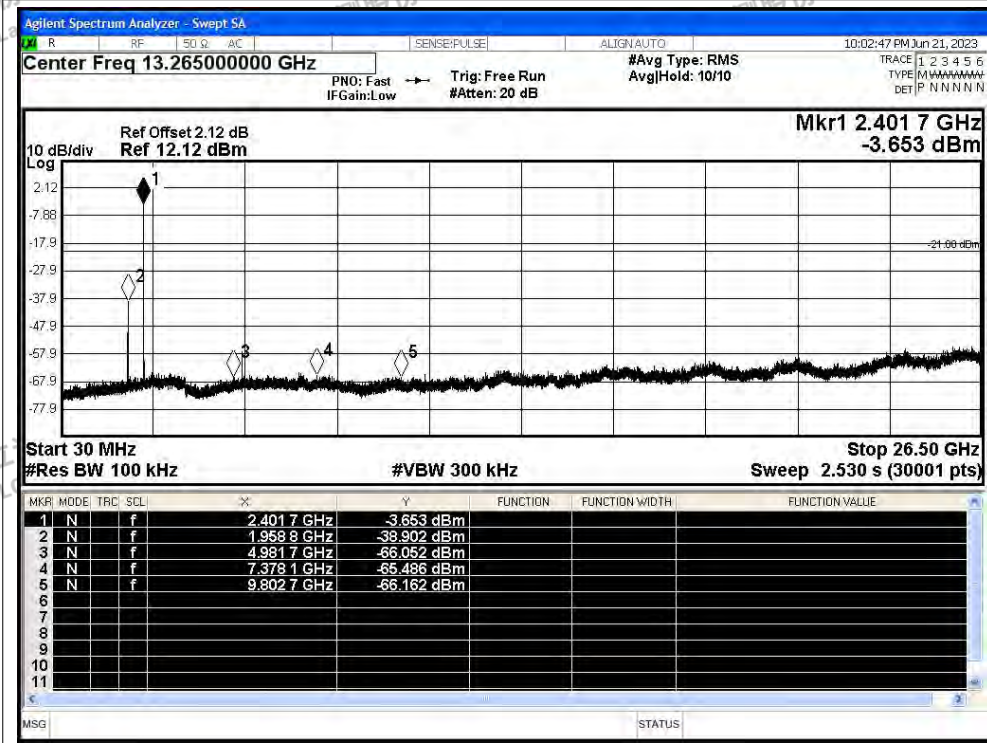




Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



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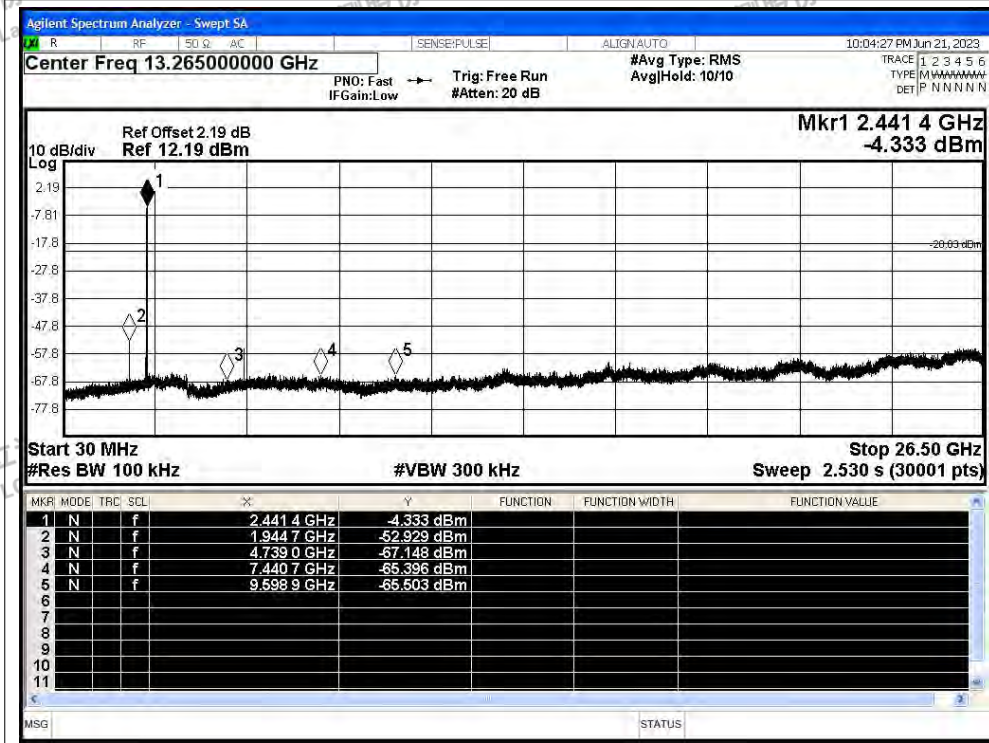




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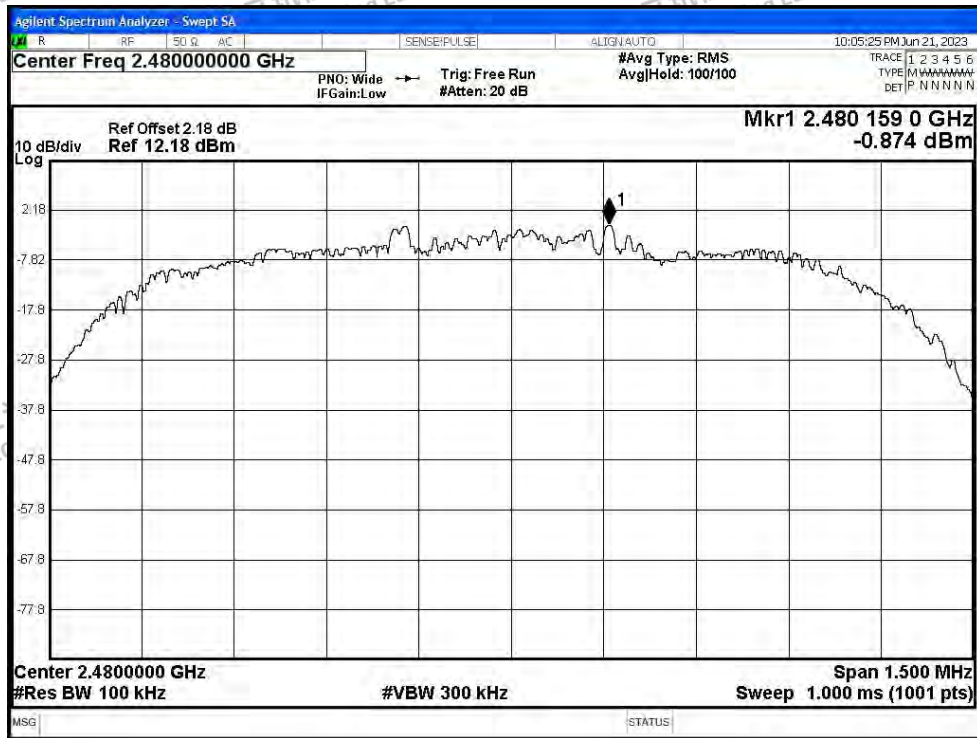


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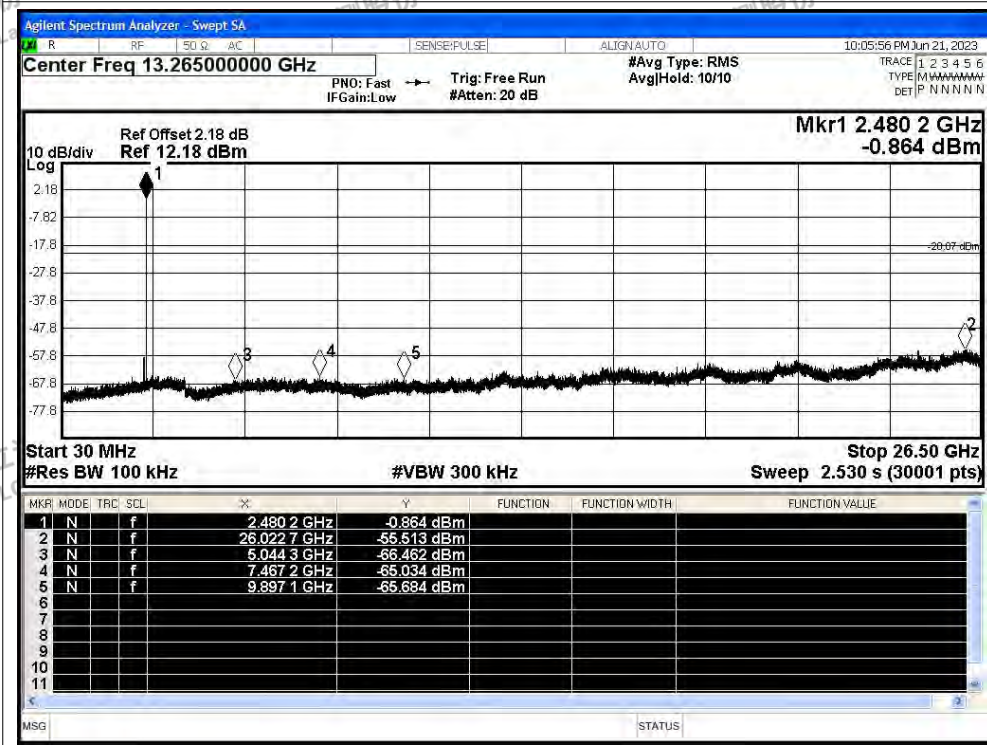




Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission





A.8 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	-51.1	3.12	47.28	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2310	-57.89	3.12	40.49	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2321.904	-47.75	3.12	50.63	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2386.32	-57.43	3.12	40.95	Average	54	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-51.04	3.12	47.34	Peak	74	Pass
NVNT	1-DH5	2402	Ant1	No-Hopping	2390	-57.54	3.12	40.84	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-50.53	3.12	47.85	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.5	-55.72	3.12	42.66	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2496.592	-47.19	3.12	51.19	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2483.512	-55.72	3.12	42.66	Average	54	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-50.2	3.12	48.18	Peak	74	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	2500	-57.2	3.12	41.18	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-50.27	3.12	48.11	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2310	-57.93	3.12	40.45	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2355.504	-47.16	3.12	51.22	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2386.608	-57.36	3.12	41.02	Average	54	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-48.51	3.12	49.87	Peak	74	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	2390	-57.38	3.12	41.00	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-49.29	3.12	49.09	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.5	-55.57	3.12	42.81	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2498.704	-46.94	3.12	51.44	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2483.512	-55.57	3.12	42.81	Average	54	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-49.39	3.12	48.99	Peak	74	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	2500	-57.29	3.12	41.09	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-50.54	3.12	47.84	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2310	-57.9	3.12	40.48	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2320.848	-46.95	3.12	51.43	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2381.424	-57.4	3.12	40.98	Average	54	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-49.89	3.12	48.49	Peak	74	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	2390	-57.49	3.12	40.89	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-50.69	3.12	47.69	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.5	-55.68	3.12	42.70	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2487.328	-47.03	3.12	51.35	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2483.512	-55.68	3.12	42.70	Average	54	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-49.89	3.12	48.49	Peak	74	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	2500	-57.23	3.12	41.15	Average	54	Pass

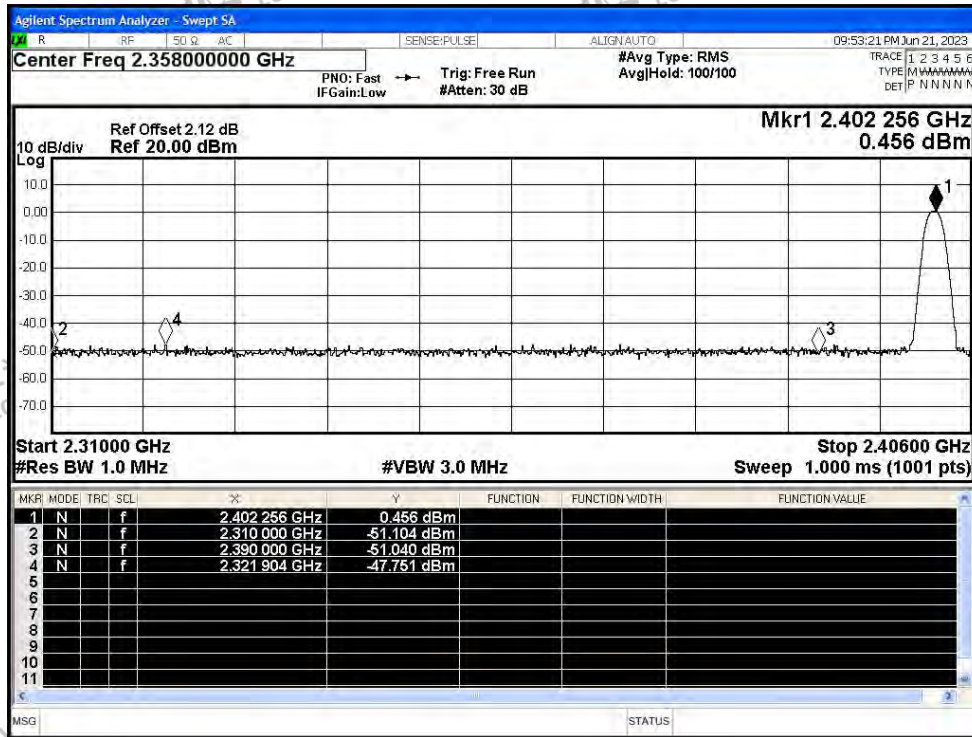


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 Scan code to check authenticity

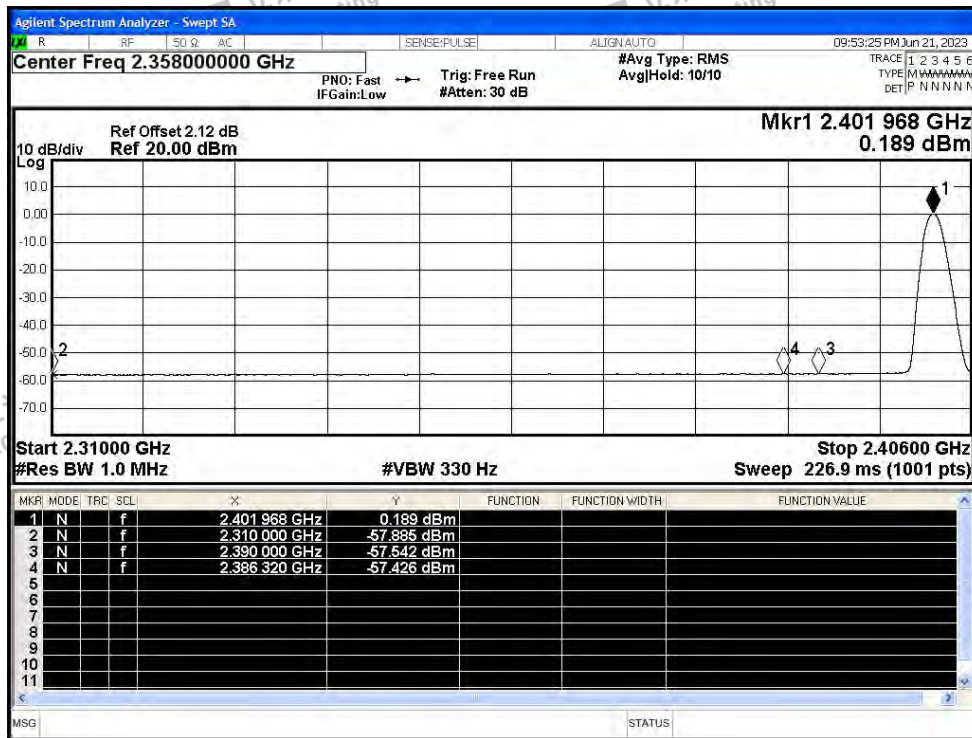


Test Graphs

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

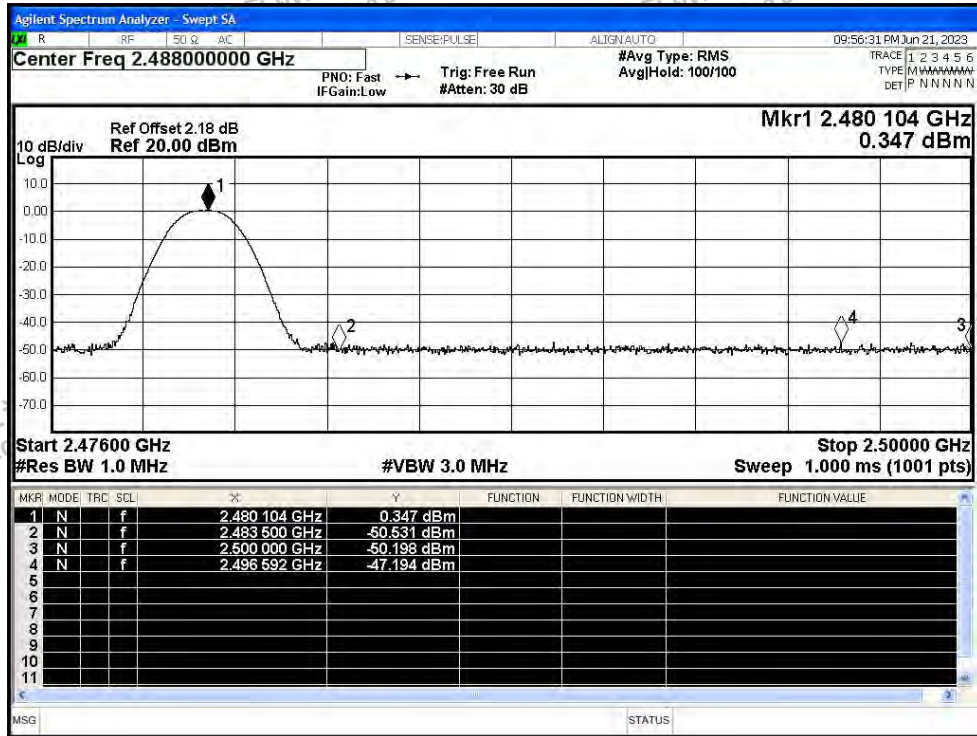


Restrict Band NVNT 1-DH5 2402MHz Ant1 No-Hopping Average

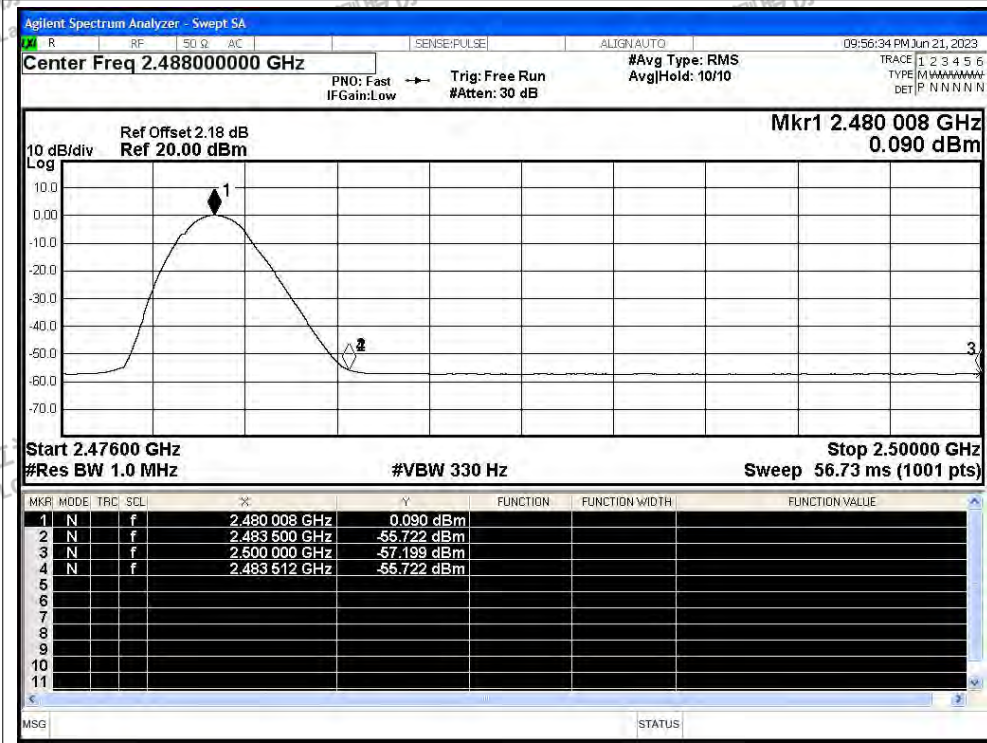




Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Peak

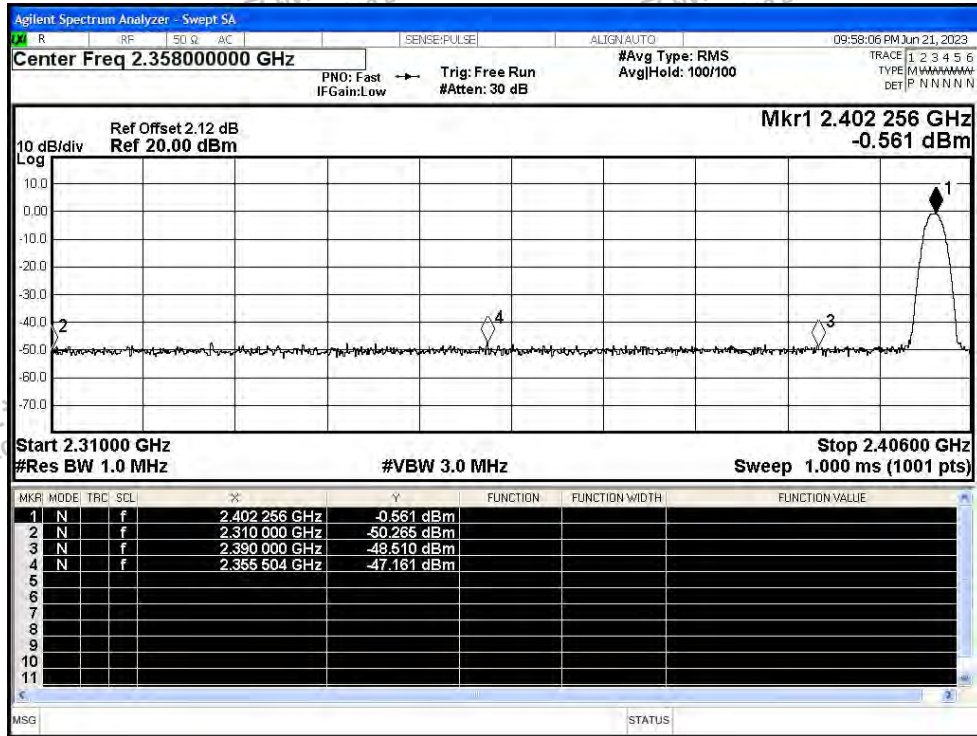


Restrict Band NVNT 1-DH5 2480MHz Ant1 No-Hopping Average

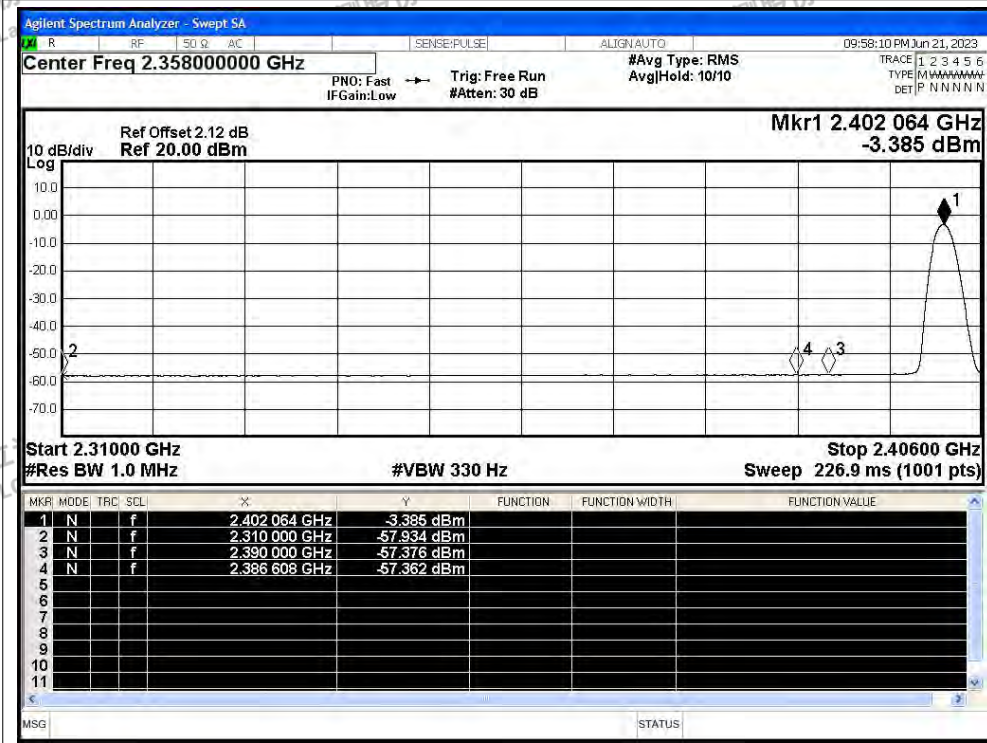




Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Peak

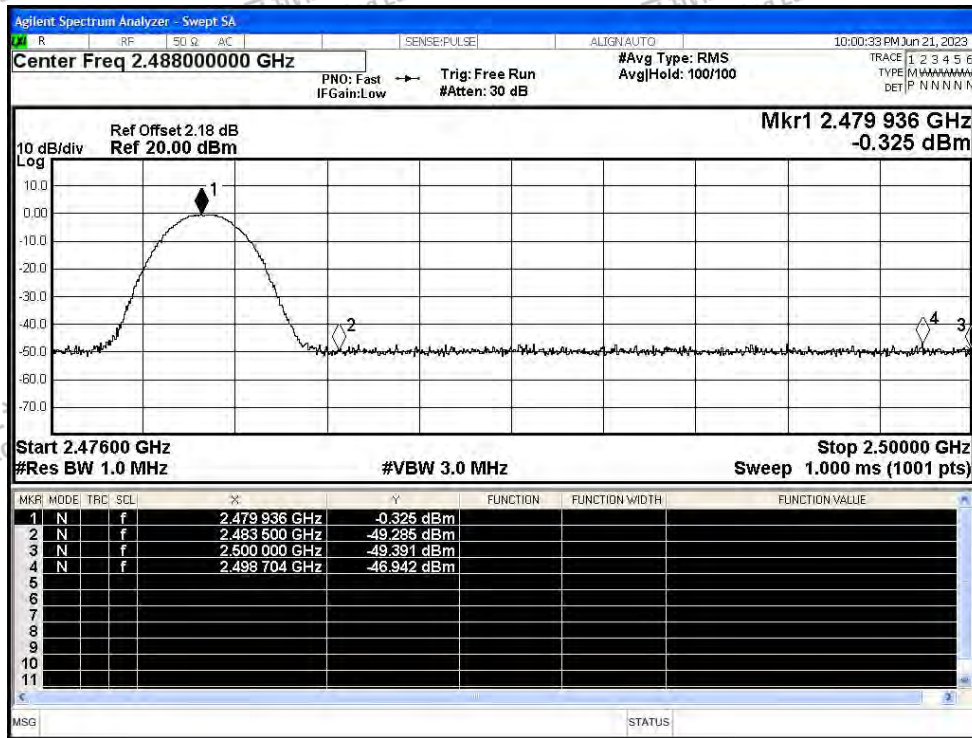


Restrict Band NVNT 2-DH5 2402MHz Ant1 No-Hopping Average

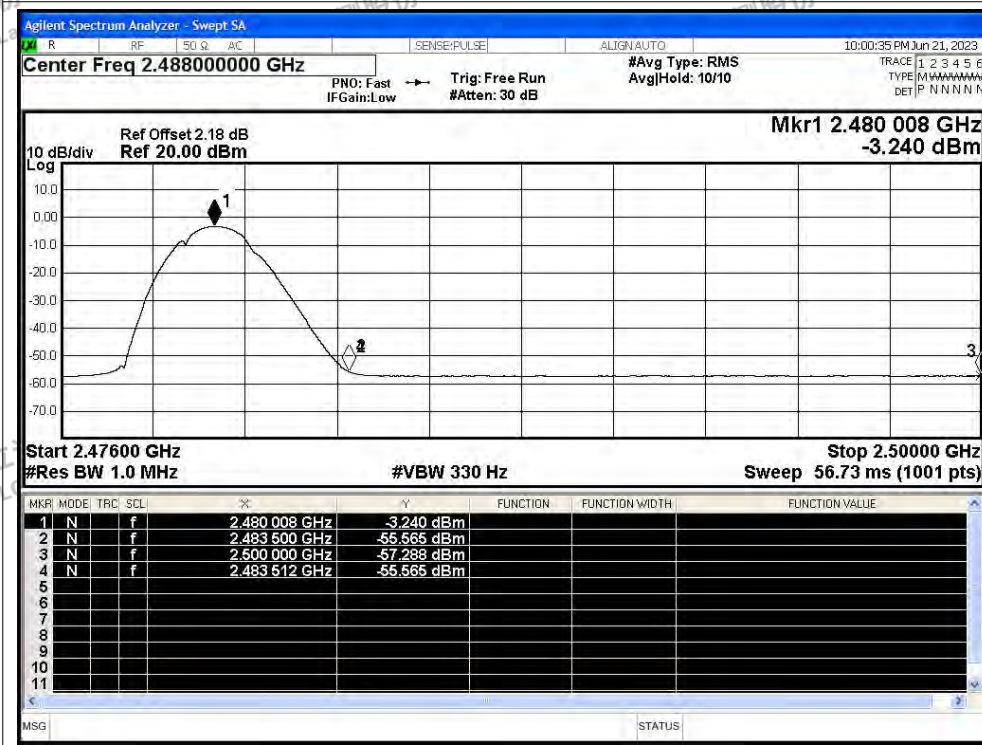




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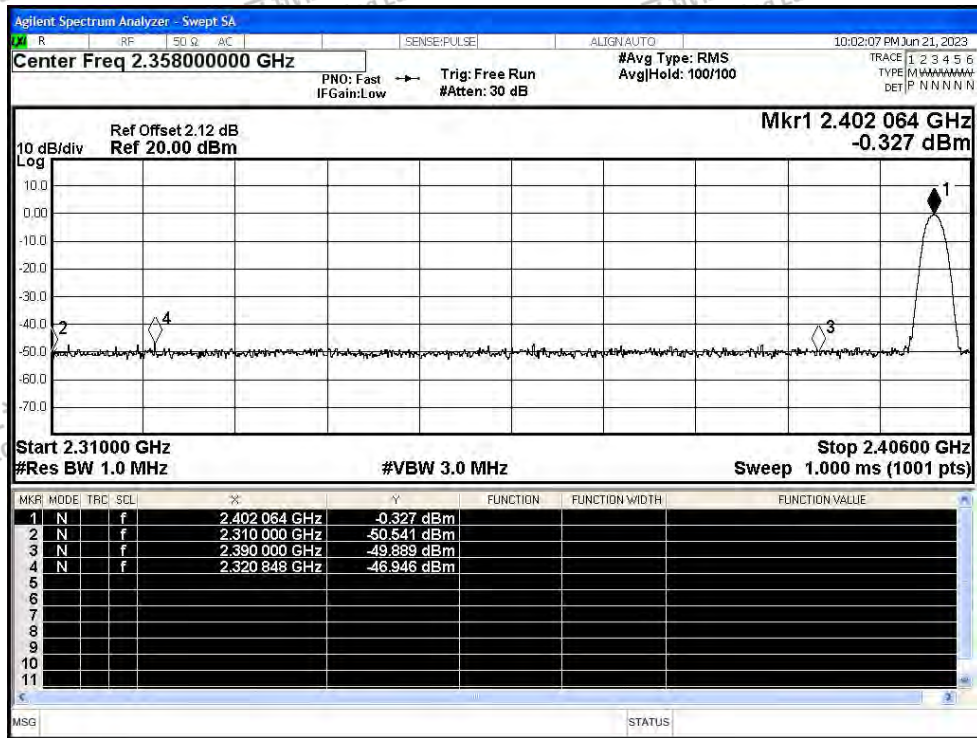


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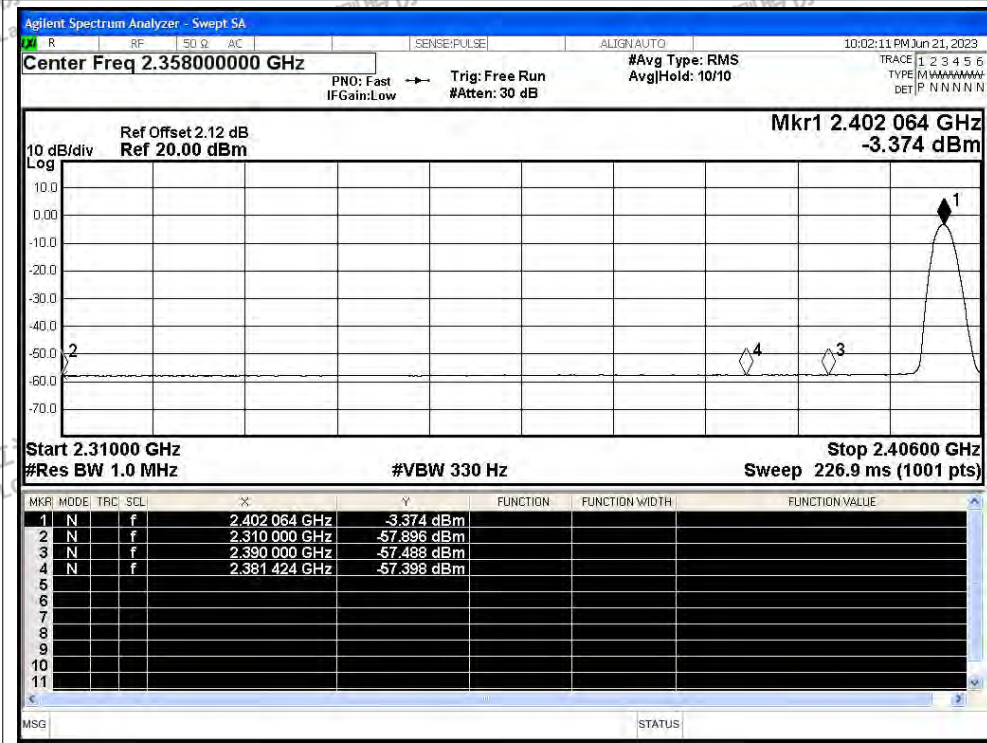




Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Peak

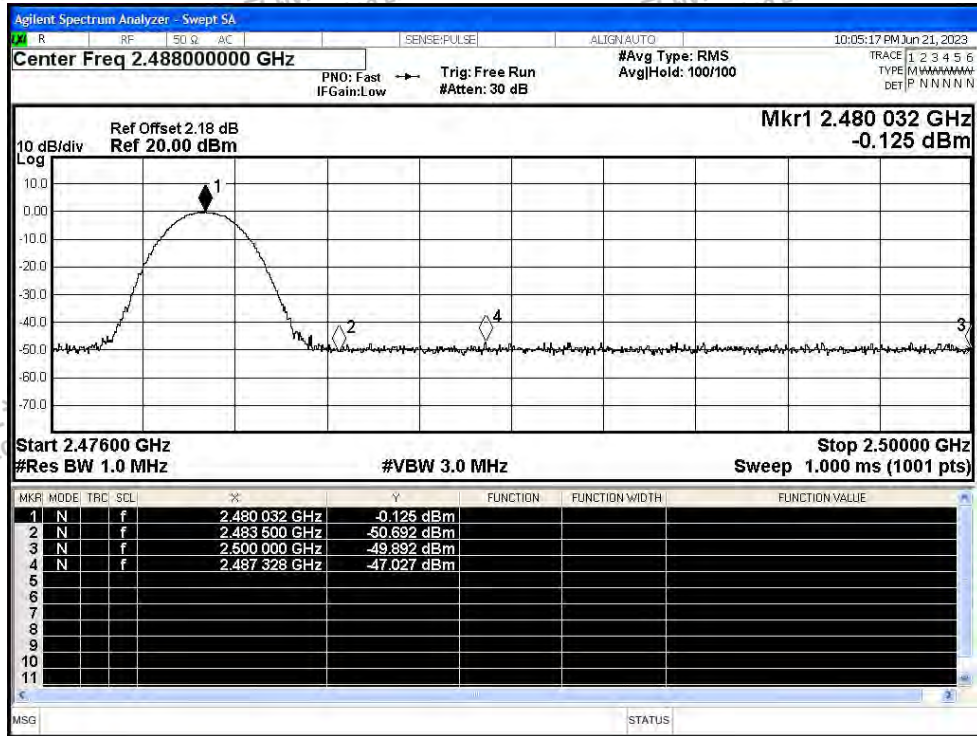


Restrict Band NVNT 3-DH5 2402MHz Ant1 No-Hopping Average





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



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

