

Appendix A for BT Test Data

Product Name: Magnetic Phone Stand Speaker

Test Model: BT-210M

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

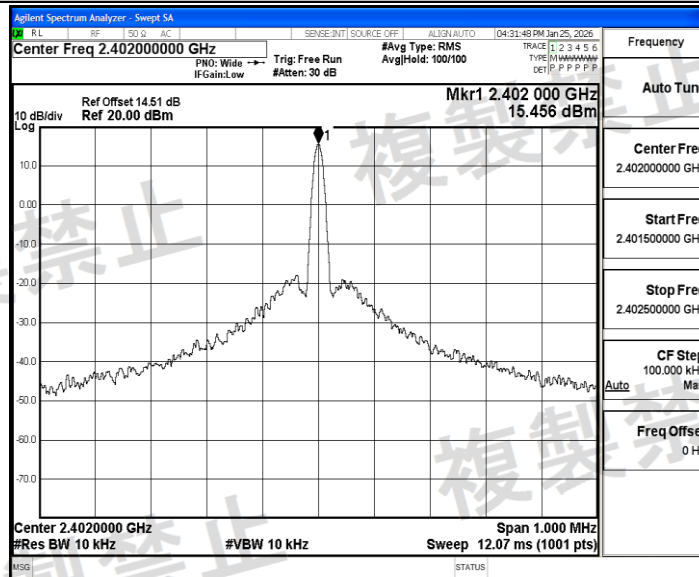
A.1 Frequency Error

Test Result

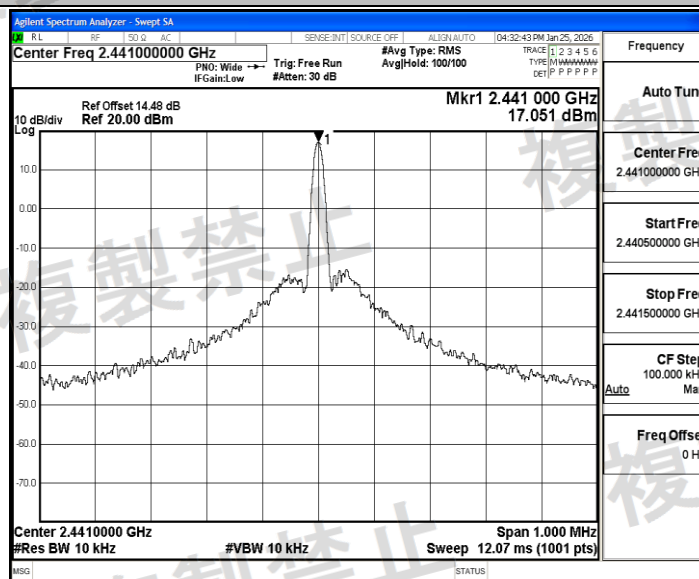
TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2402	0.00000	±50	PASS
			2441	0.00000	±50	PASS
			2480	0.00000	±50	PASS

Test Graphs

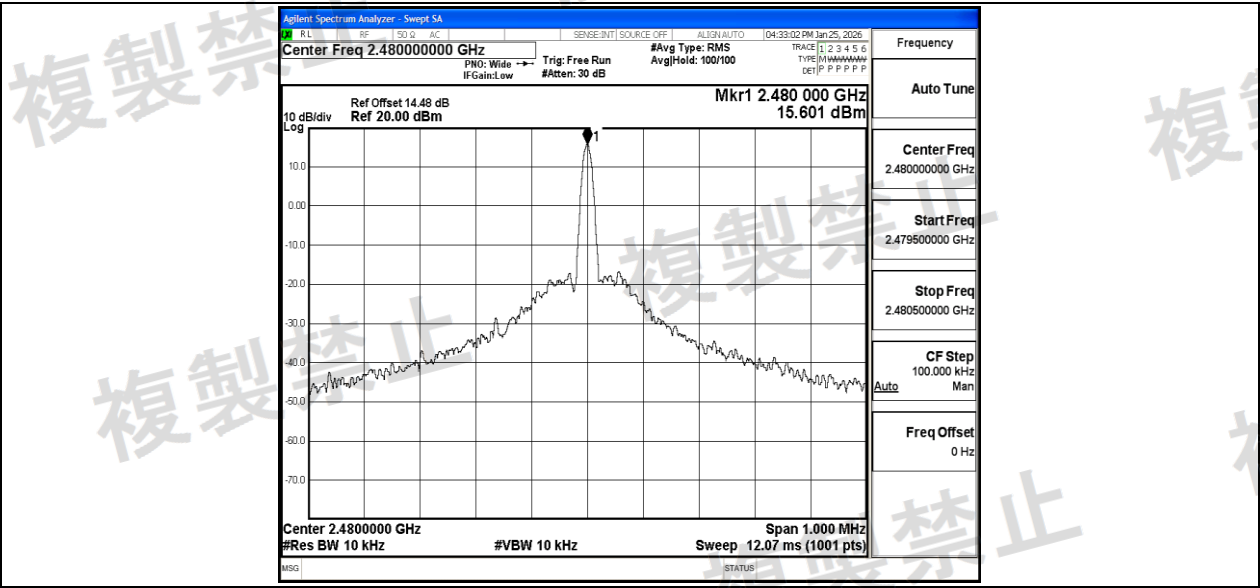
NTNV_Ant1_2402



NTNV_Ant1_2441



NTNV_Ant1_2480



A.2 Antenna Power

Test Result

Test Voltage				Normal Voltage			
Mode	Declared power	Average Result	Average Result	Result	Limit	Tolerance	Limit
	(mW/MHz)	(dBm)	(mW)	(mW/MHz)	(mW/MHz)	/	/
Hopping-Tx (1Mbps)	0.03	1.99	1.581	0.030	3	0.00%	+20%
Hopping-Tx (2Mbps)	0.03	1.67	1.469	0.028	3	-6.67%	+20%
Hopping-Tx (3Mbps)	0.03	1.45	1.396	0.026	3	-13.33%	+20%
Conclusion: PASS							

Result power= Average value / (Duty Cycle * Spreading bandwidth)

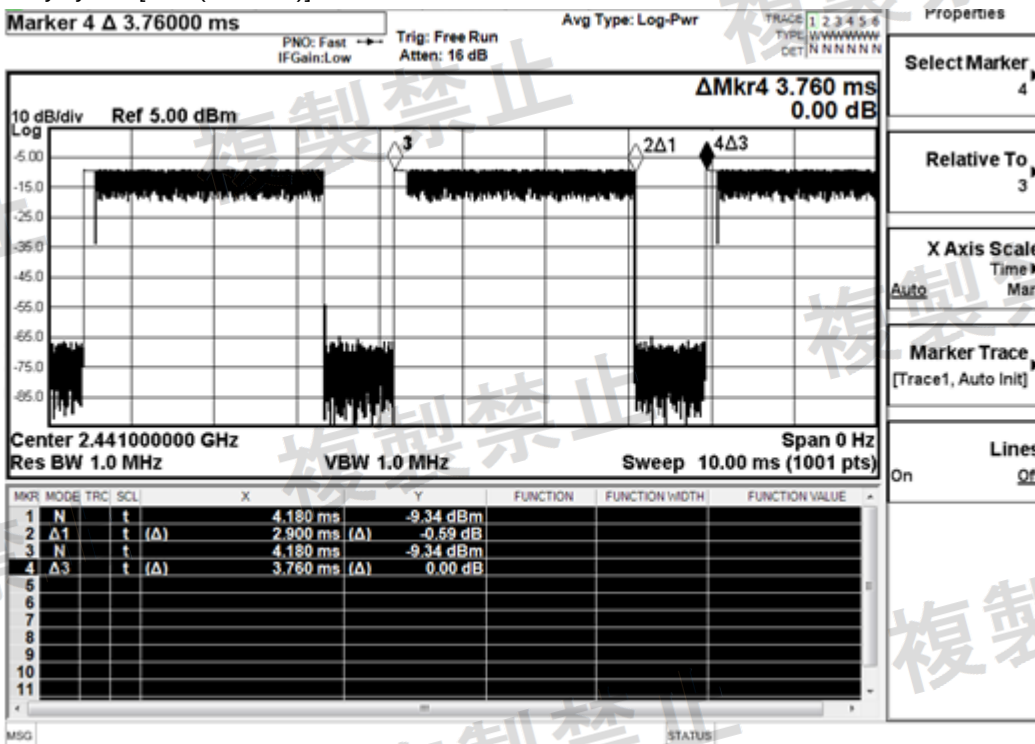
Antenna power Result = Measured Power / Spreading bandwidth

Spread Bandwidth (DH5) = 68.939MHz, Spread Bandwidth (2DH5) = 69.127MHz,

Spread Bandwidth (3DH5) = 68.964MHz

Duty cycle=77.1%

Duty cycle= [Ton/ (Ton+Toff)]*100%=2.900/3.760*100%=77.1%



A.3 Occupied Bandwidth

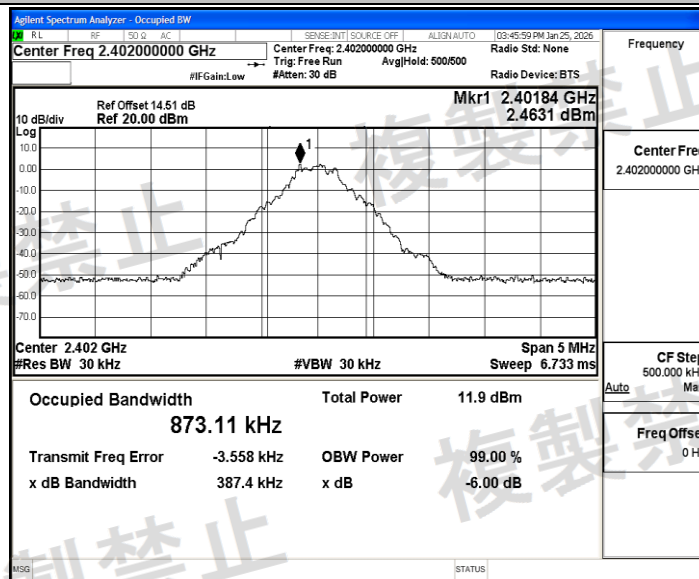
Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	2402	0.873	≤83.5	PASS
			2441	0.858	≤83.5	PASS
			2480	0.856	≤83.5	PASS
	2DH5	Ant1	2402	1.187	≤83.5	PASS
			2441	1.182	≤83.5	PASS
			2480	1.185	≤83.5	PASS
	3DH5	Ant1	2402	1.185	≤83.5	PASS
			2441	1.185	≤83.5	PASS
			2480	1.185	≤83.5	PASS

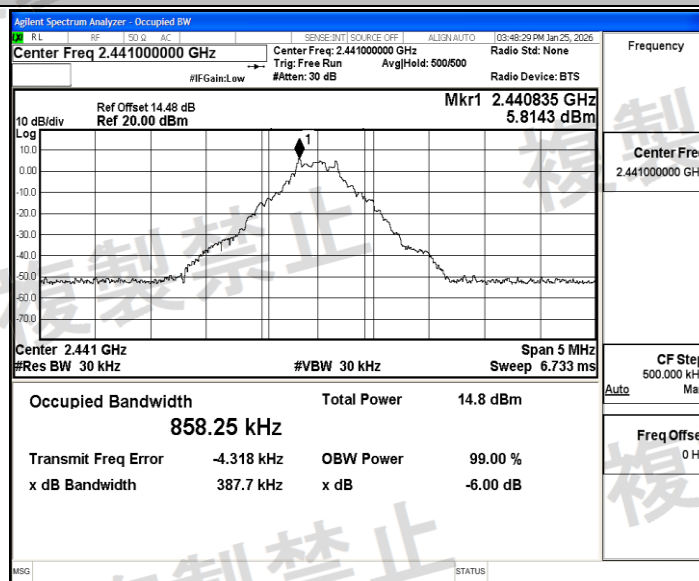
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	78.436	≤83.5	PASS
	2DH5	Ant1	Hop	78.395	≤83.5	PASS
	3DH5	Ant1	Hop	78.517	≤83.5	PASS

Test Graphs

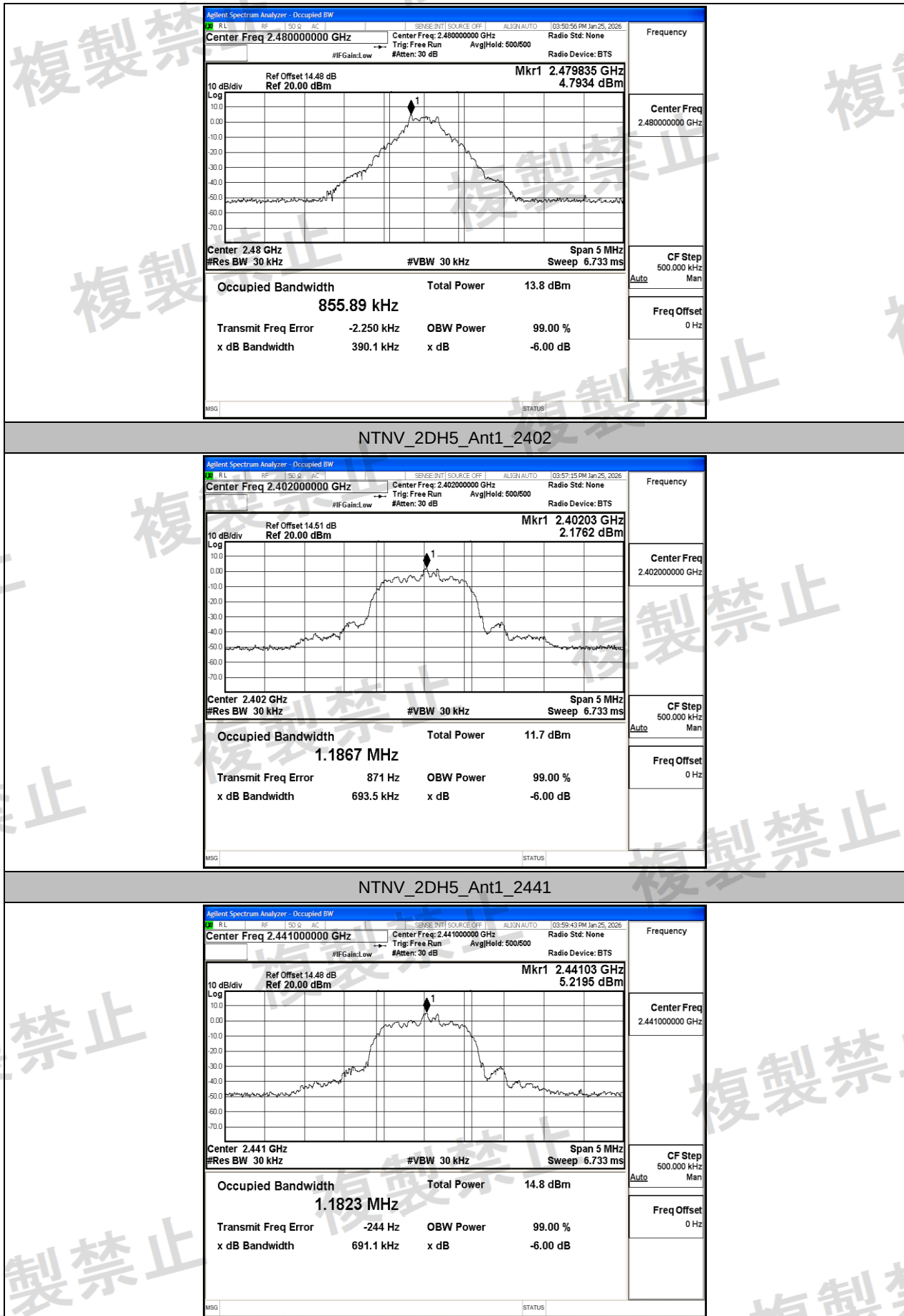
NTNV_DH5_Ant1_2402



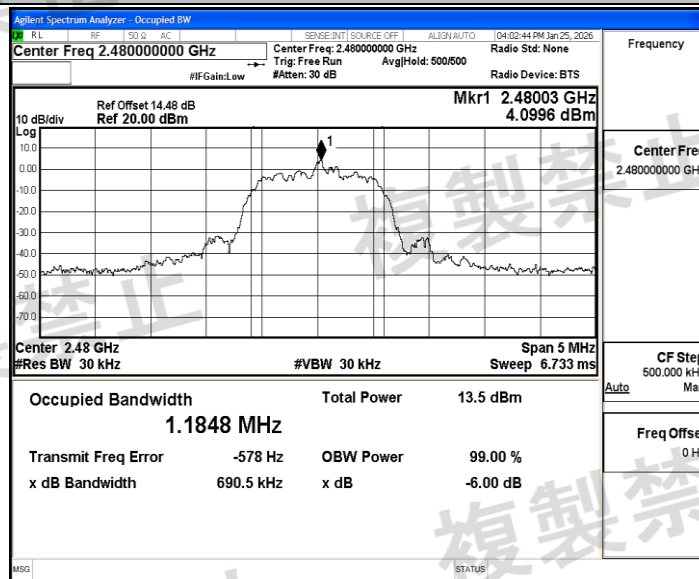
NTNV_DH5_Ant1_2441



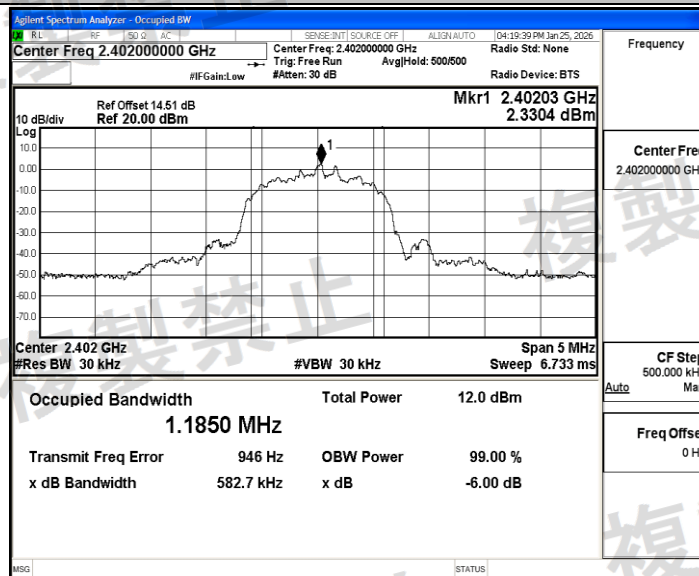
NTNV_DH5_Ant1_2480



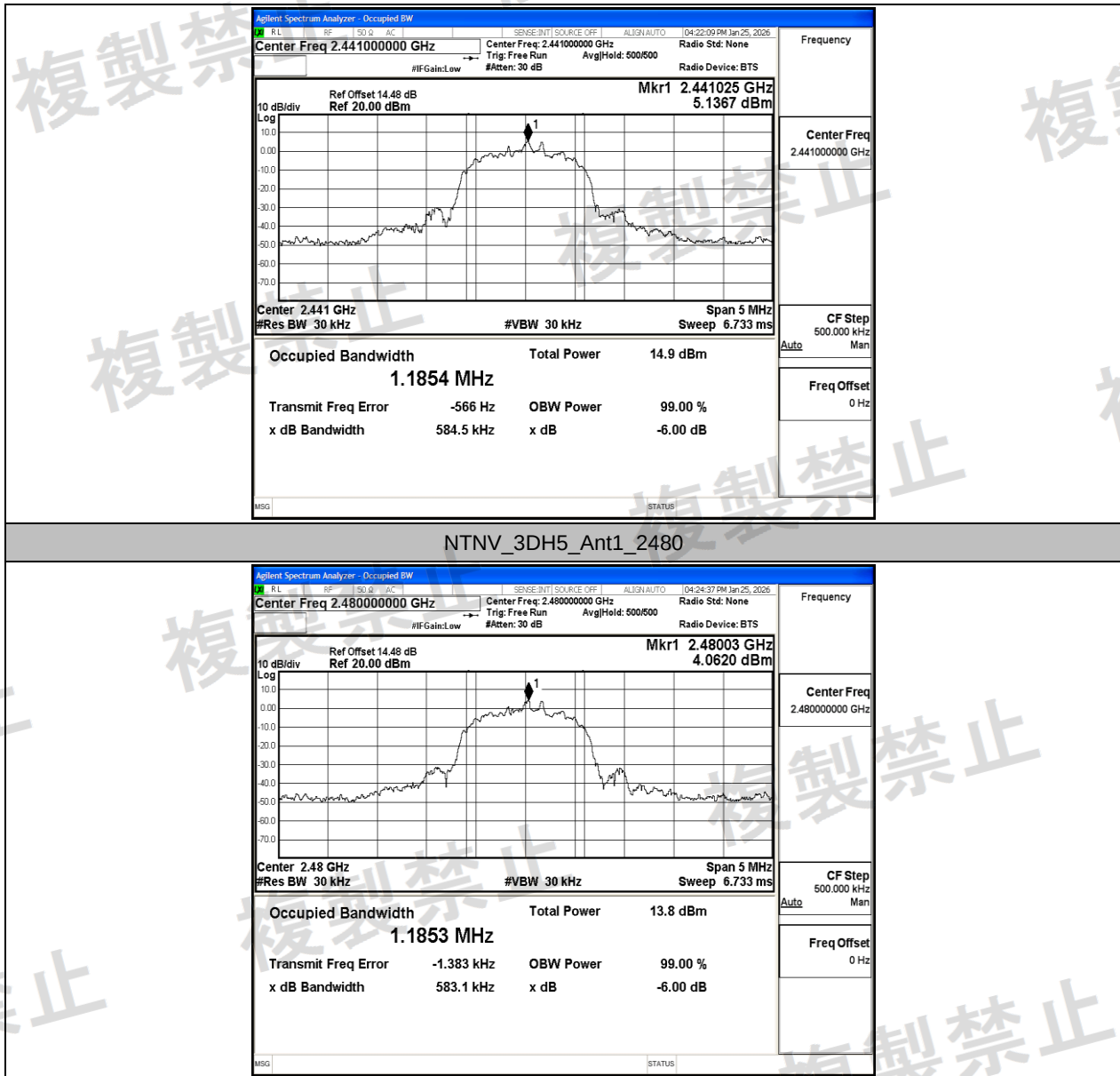
NTNV_2DH5_Ant1_2480



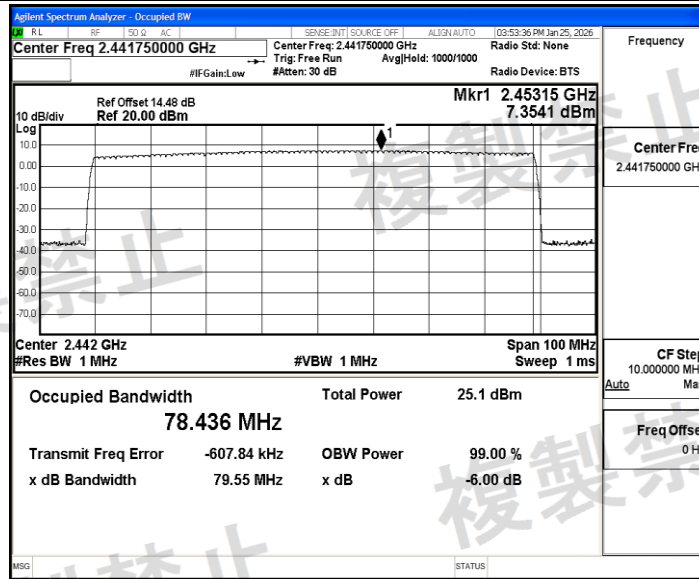
NTNV_3DH5_Ant1_2402



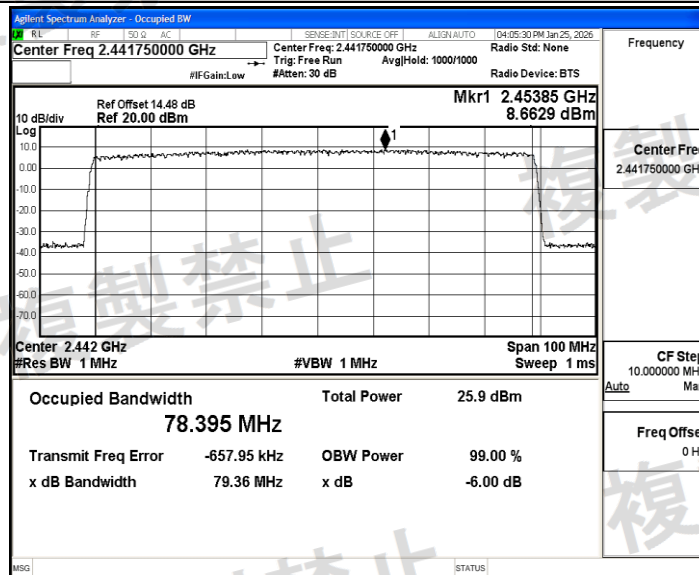
NTNV_3DH5_Ant1_2441



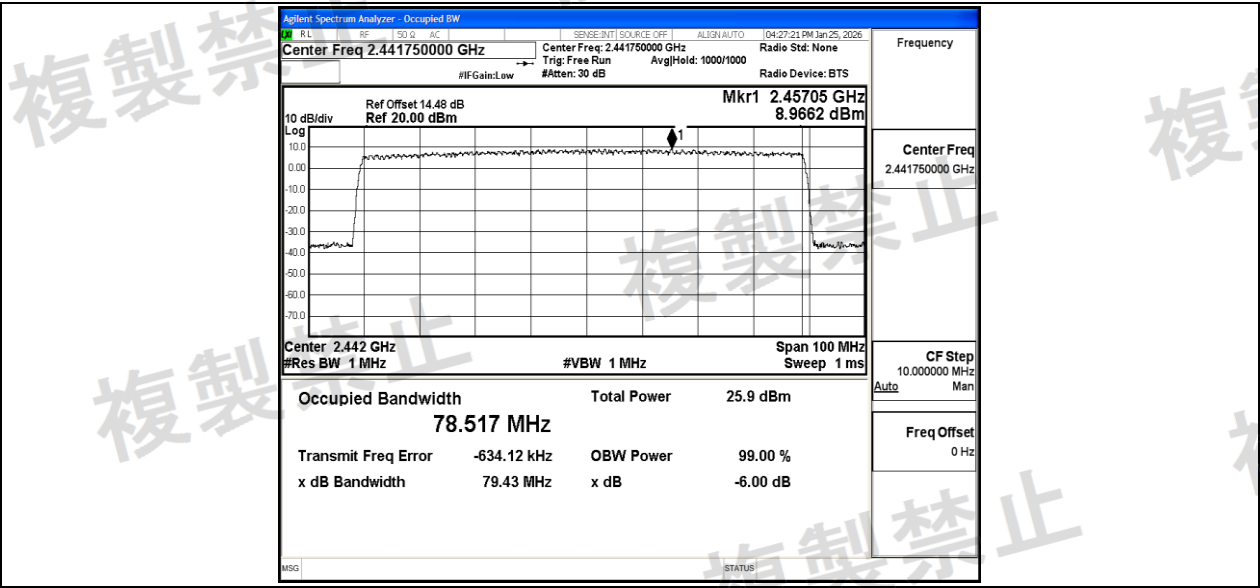
NTNV_DH5_Ant1_Hop



NTNV_2DH5_Ant1_Hop



NTNV_3DH5_Ant1_Hop



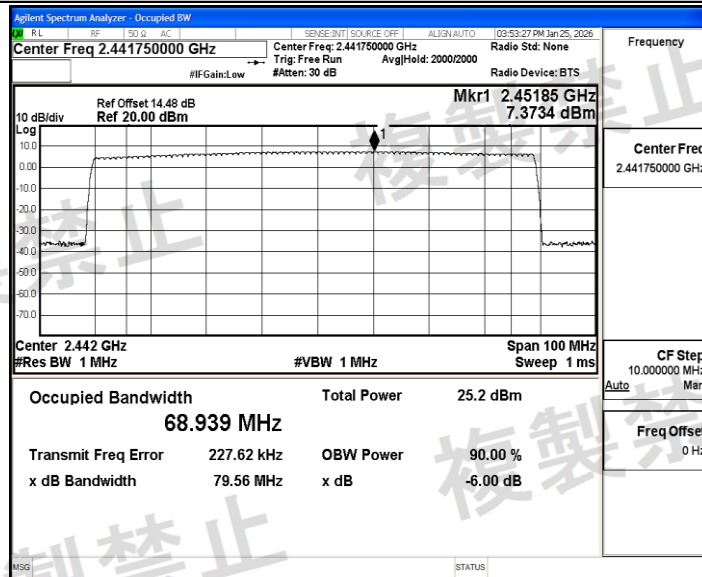
A.4 Spread Bandwidth

Test Result

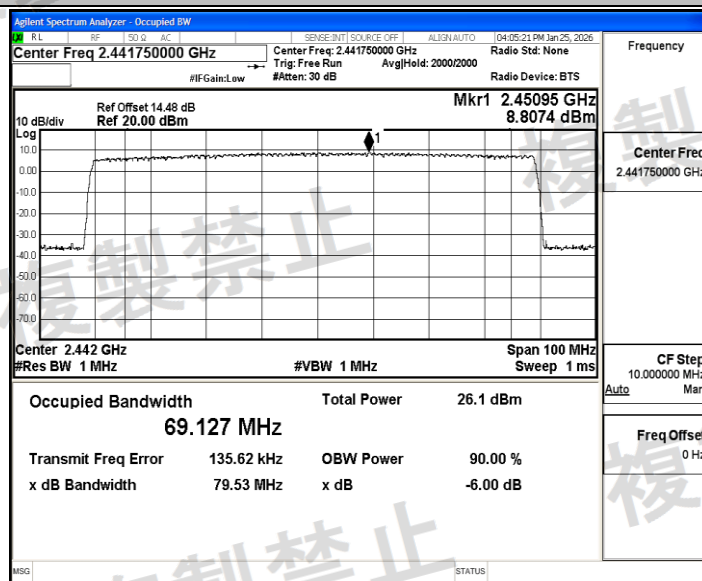
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	68.939	---	PASS
	2DH5	Ant1	Hop	69.127	---	PASS
	3DH5	Ant1	Hop	68.964	---	PASS

Test Graphs

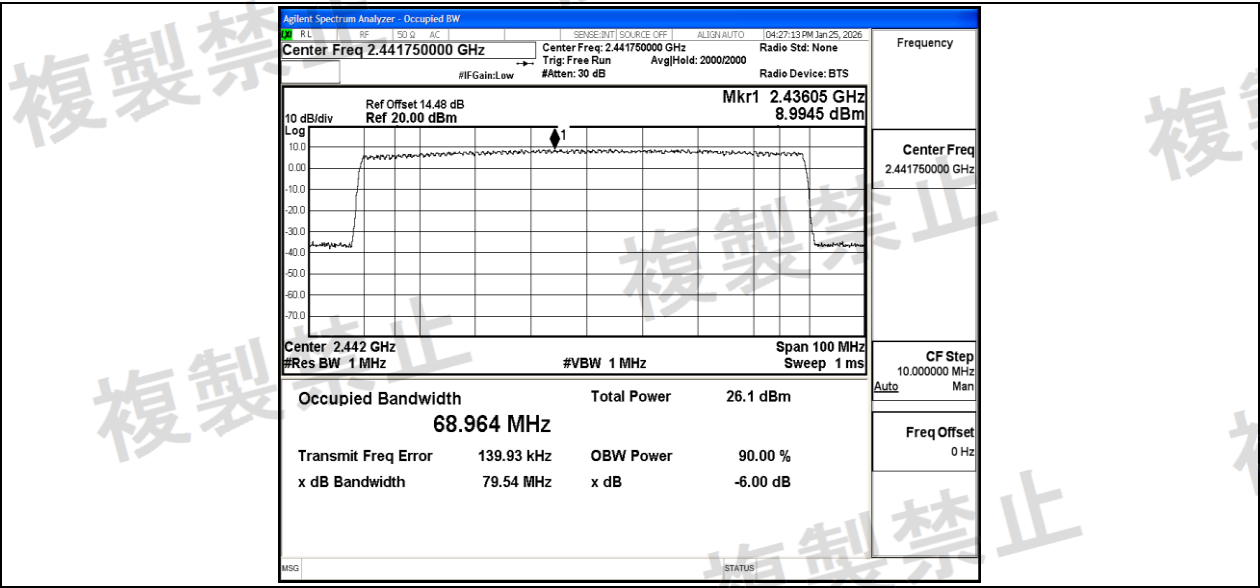
NTNV_DH5_Ant1_Hop



NTNV_2DH5_Ant1_Hop



NTNV_3DH5_Ant1_Hop



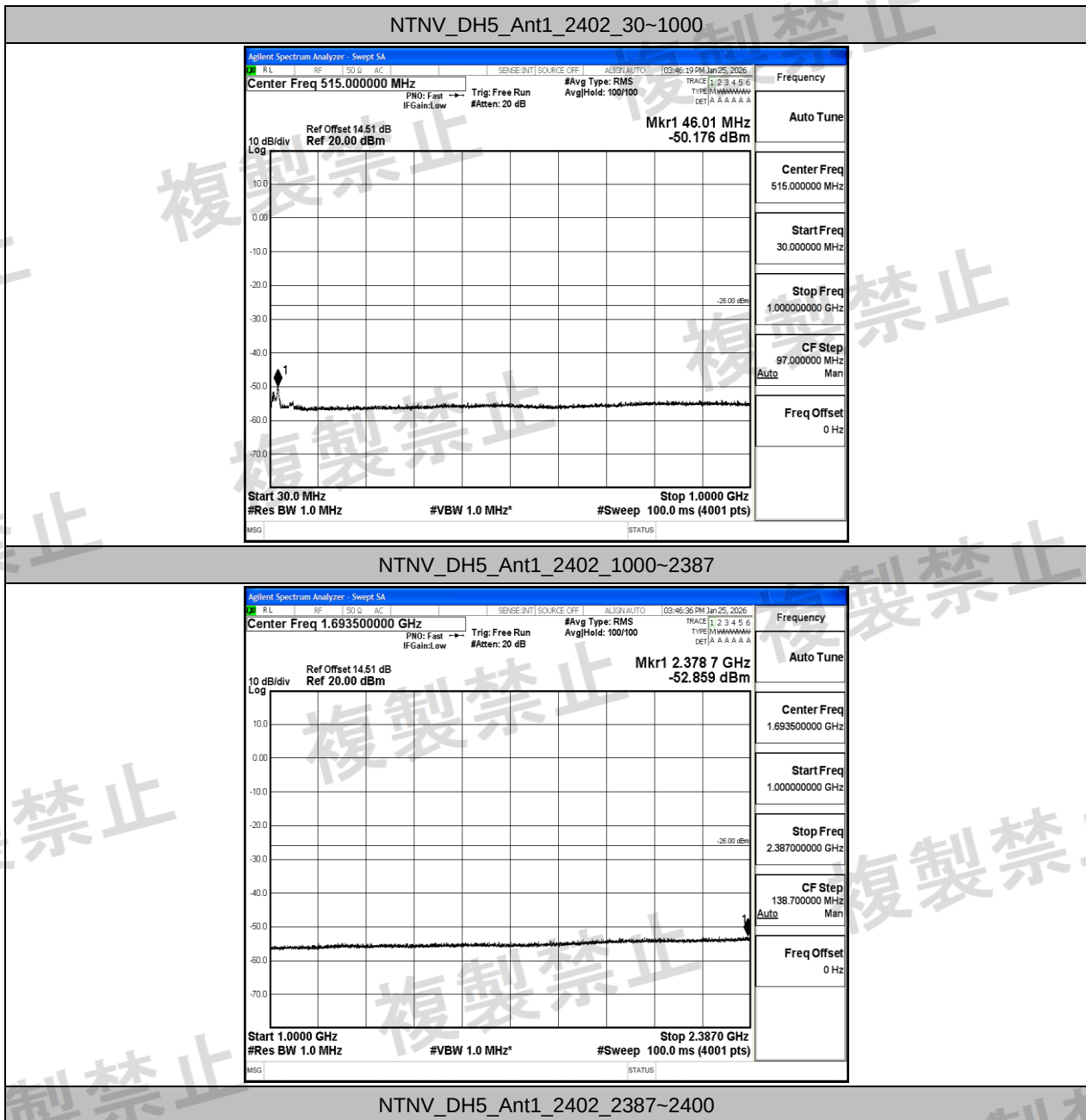
A.5 Spurious Emission of TX

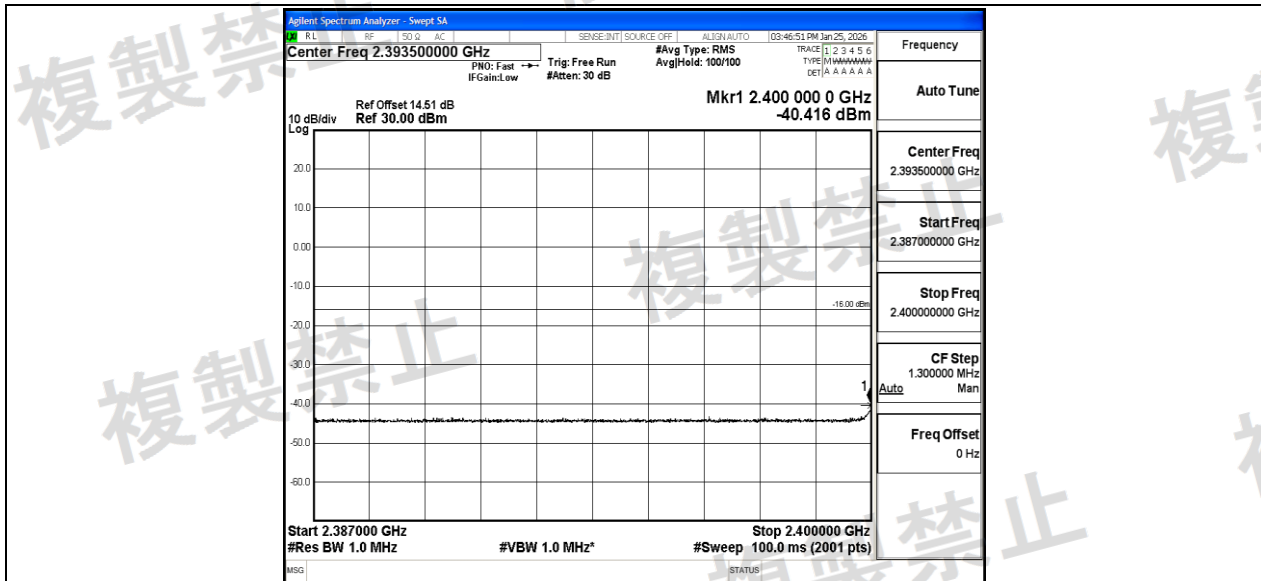
Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-50.18	≤-26	0.00959	≤2.5	PASS
				1000~2387	-52.86	≤-26	0.00518	≤2.5	PASS
				2387~2400	-40.42	≤-16	0.09078	≤25	PASS
				2483.5~2496.5	-43.45	≤-16	0.04519	≤25	PASS
				2496.5~13000	-45.33	≤-26	0.02931	≤2.5	PASS
			2441	30~1000	-48.15	≤-26	0.01531	≤2.5	PASS
				1000~2387	-52.64	≤-26	0.00545	≤2.5	PASS
				2387~2400	-43.29	≤-16	0.04688	≤25	PASS
				2483.5~2496.5	-43.20	≤-16	0.04786	≤25	PASS
				2496.5~13000	-45.08	≤-26	0.03105	≤2.5	PASS
			2480	30~1000	-48.36	≤-26	0.01459	≤2.5	PASS
				1000~2387	-52.43	≤-26	0.00571	≤2.5	PASS
				2387~2400	-43.52	≤-16	0.04446	≤25	PASS
				2483.5~2496.5	-43.35	≤-16	0.04624	≤25	PASS
				2496.5~13000	-45.60	≤-26	0.02754	≤2.5	PASS
	2DH5	Ant1	2402	30~1000	-48.43	≤-26	0.01435	≤2.5	PASS
				1000~2387	-52.94	≤-26	0.00508	≤2.5	PASS
				2387~2400	-32.51	≤-16	0.56105	≤25	PASS
				2483.5~2496.5	-43.31	≤-16	0.04667	≤25	PASS
				2496.5~13000	-45.40	≤-26	0.02884	≤2.5	PASS
			2441	30~1000	-48.83	≤-26	0.01309	≤2.5	PASS
				1000~2387	-52.80	≤-26	0.00525	≤2.5	PASS
				2387~2400	-43.31	≤-16	0.04667	≤25	PASS
				2483.5~2496.5	-43.24	≤-16	0.04742	≤25	PASS
				2496.5~13000	-44.69	≤-26	0.03396	≤2.5	PASS
			2480	30~1000	-48.21	≤-26	0.01510	≤2.5	PASS
				1000~2387	-52.58	≤-26	0.00552	≤2.5	PASS
				2387~2400	-43.56	≤-16	0.04406	≤25	PASS
				2483.5~2496.5	-43.19	≤-16	0.04797	≤25	PASS
				2496.5~13000	-45.99	≤-26	0.02518	≤2.5	PASS
	3DH5	Ant1	2402	30~1000	-49.44	≤-26	0.01138	≤2.5	PASS
				1000~2387	-52.58	≤-26	0.00552	≤2.5	PASS
				2387~2400	-32.89	≤-16	0.51404	≤25	PASS
				2483.5~2496.5	-43.34	≤-16	0.04634	≤25	PASS
				2496.5~13000	-45.11	≤-26	0.03083	≤2.5	PASS
			2441	30~1000	-49.08	≤-26	0.01236	≤2.5	PASS
				1000~2387	-52.72	≤-26	0.00535	≤2.5	PASS

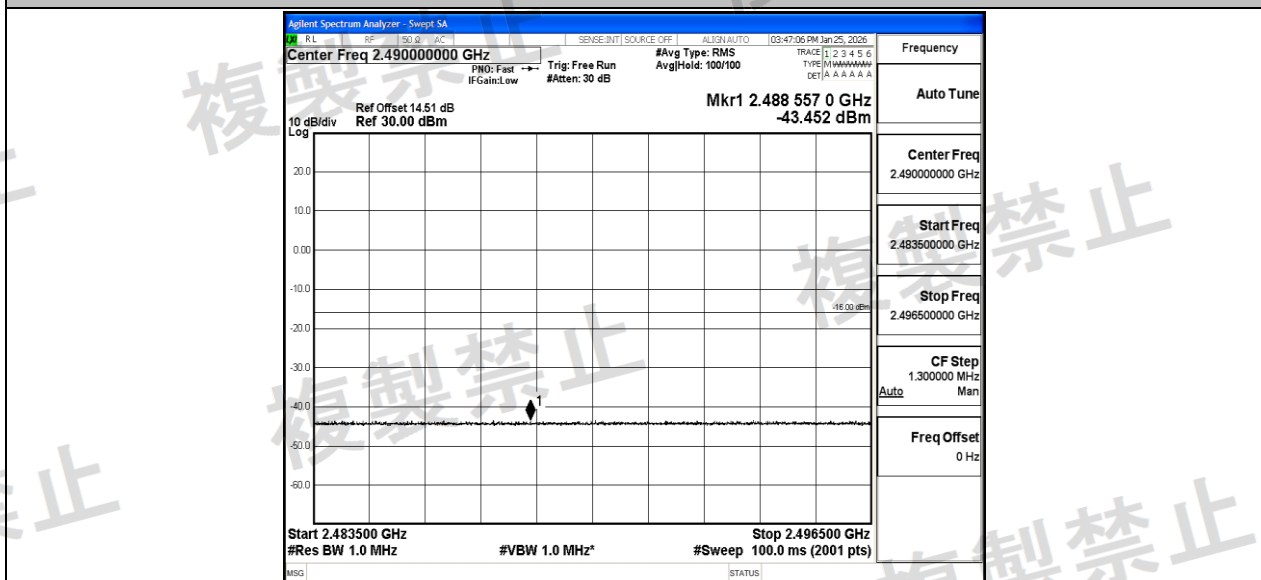
				2387~2400	-43.32	≤-16	0.04656	≤25	PASS
				2483.5~2496.5	-43.39	≤-16	0.04581	≤25	PASS
				2496.5~13000	-45.34	≤-26	0.02924	≤2.5	PASS
			2480	30~1000	-49.14	≤-26	0.01219	≤2.5	PASS
				1000~2387	-52.49	≤-26	0.00564	≤2.5	PASS
				2387~2400	-43.30	≤-16	0.04677	≤25	PASS
				2483.5~2496.5	-42.99	≤-16	0.05023	≤25	PASS
				2496.5~13000	-45.86	≤-26	0.02594	≤2.5	PASS

Test Graphs

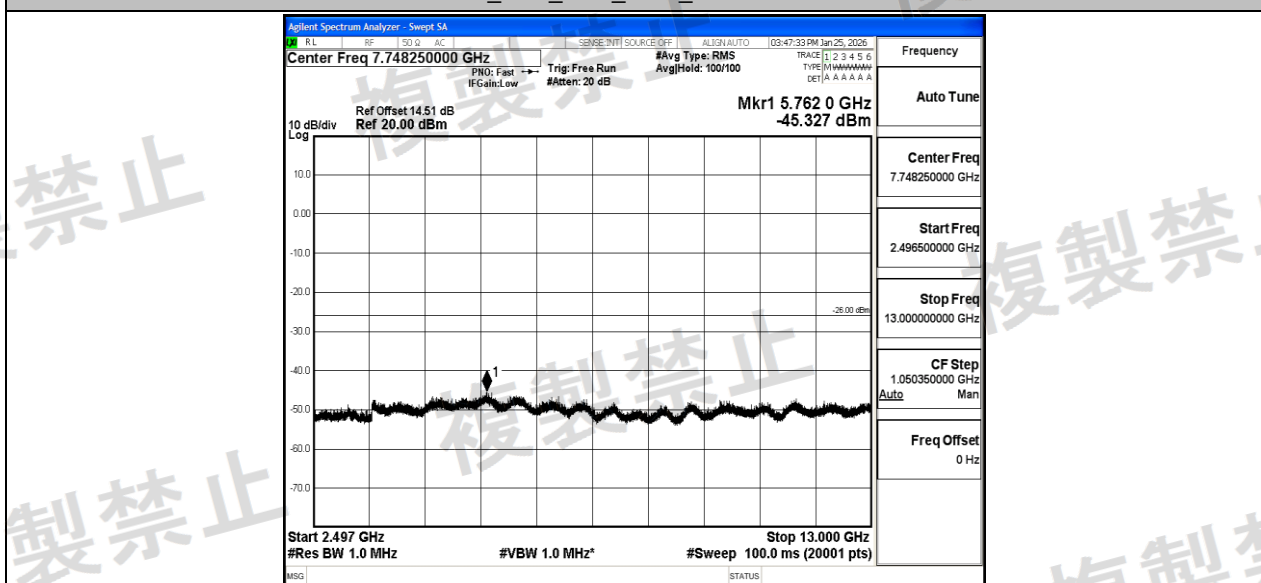




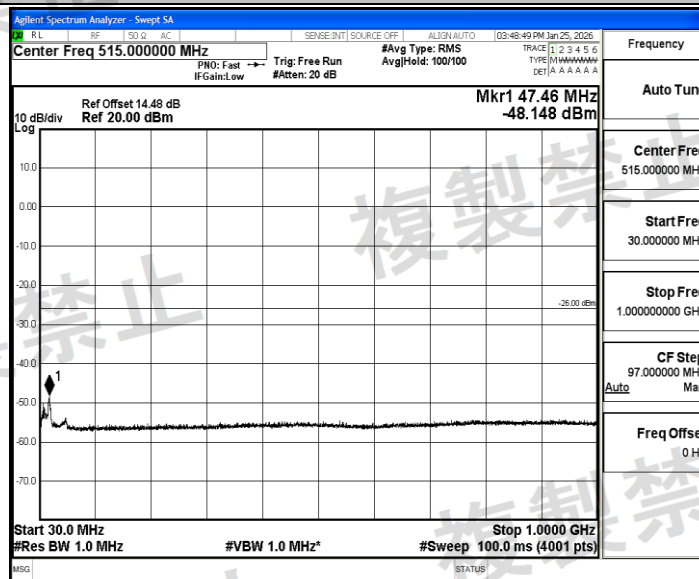
NTNV_DH5_Ant1_2402_2483.5~2496.5



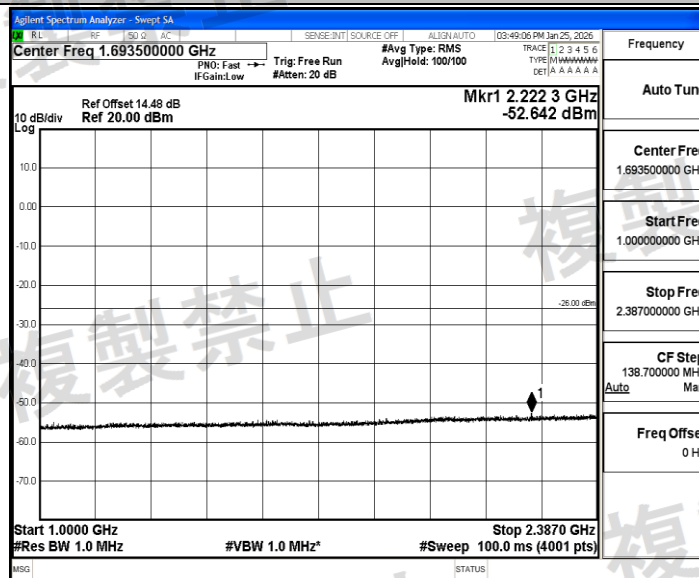
NTNV_DH5_Ant1_2402_2496.5~13000



NTNV_DH5_Ant1_2441_30~1000



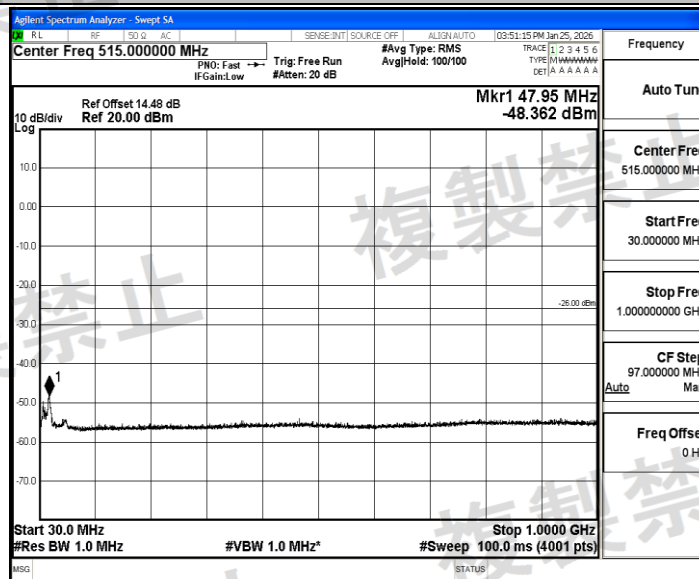
NTNV_DH5_Ant1_2441_1000~2387



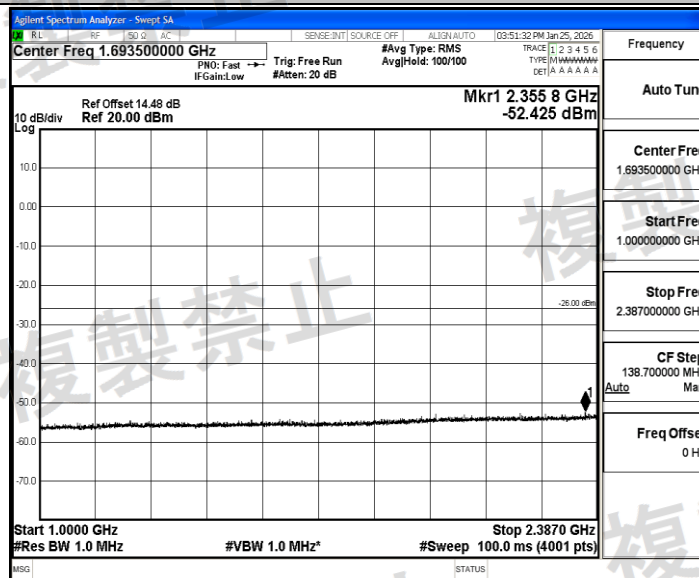
NTNV_DH5_Ant1_2441_2387~2400



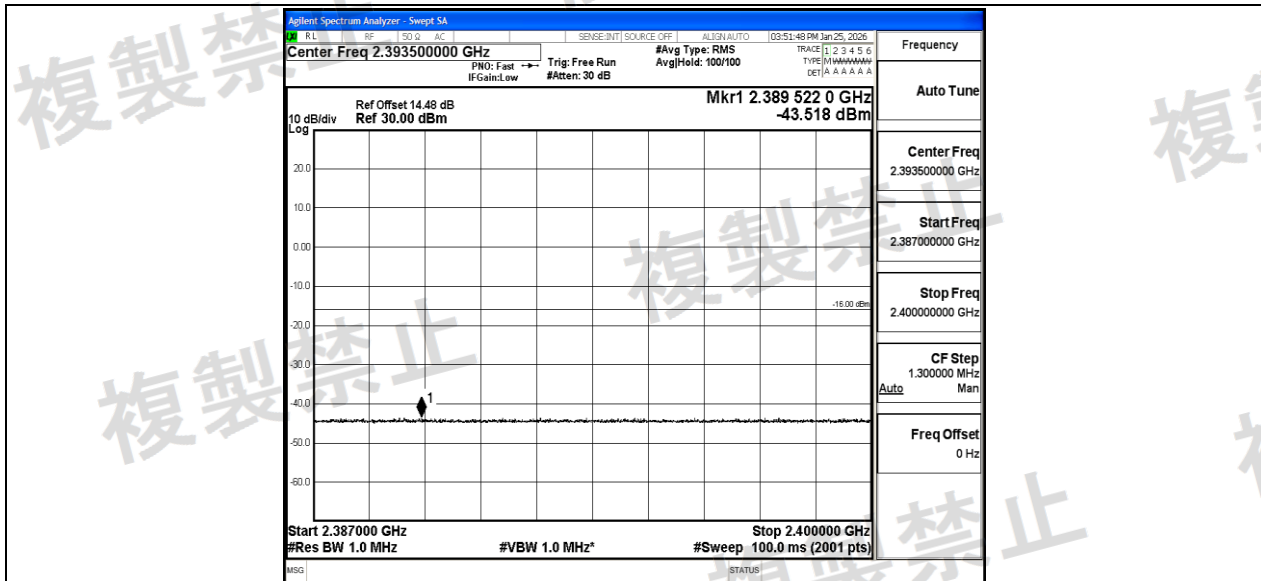
NTNV_DH5_Ant1_2480_30~1000



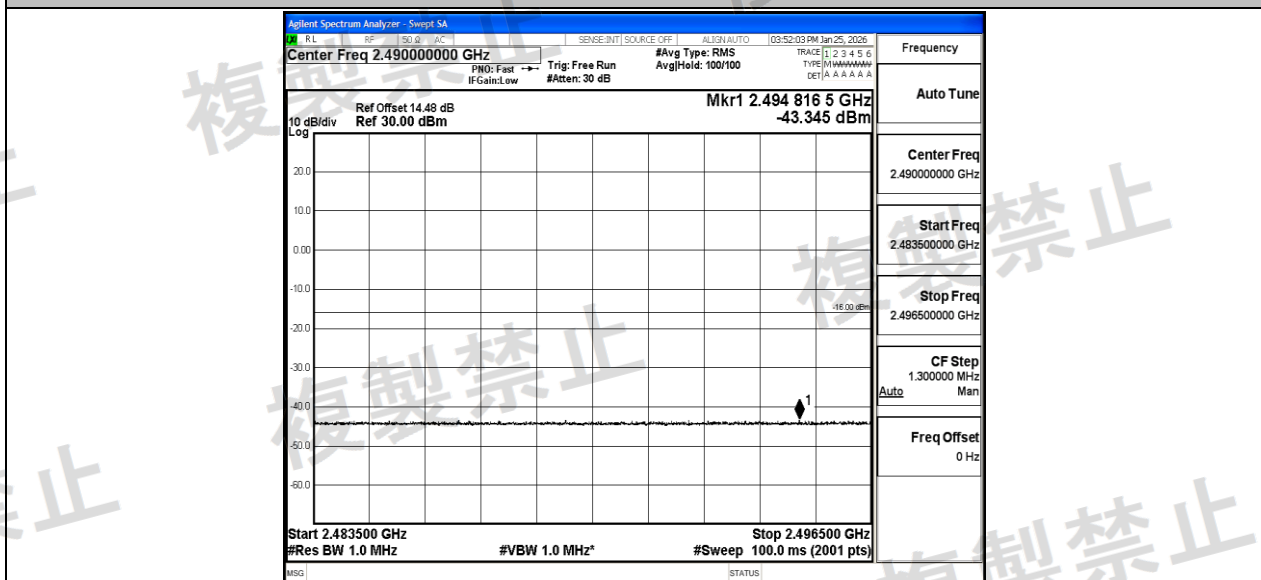
NTNV_DH5_Ant1_2480_1000~2387



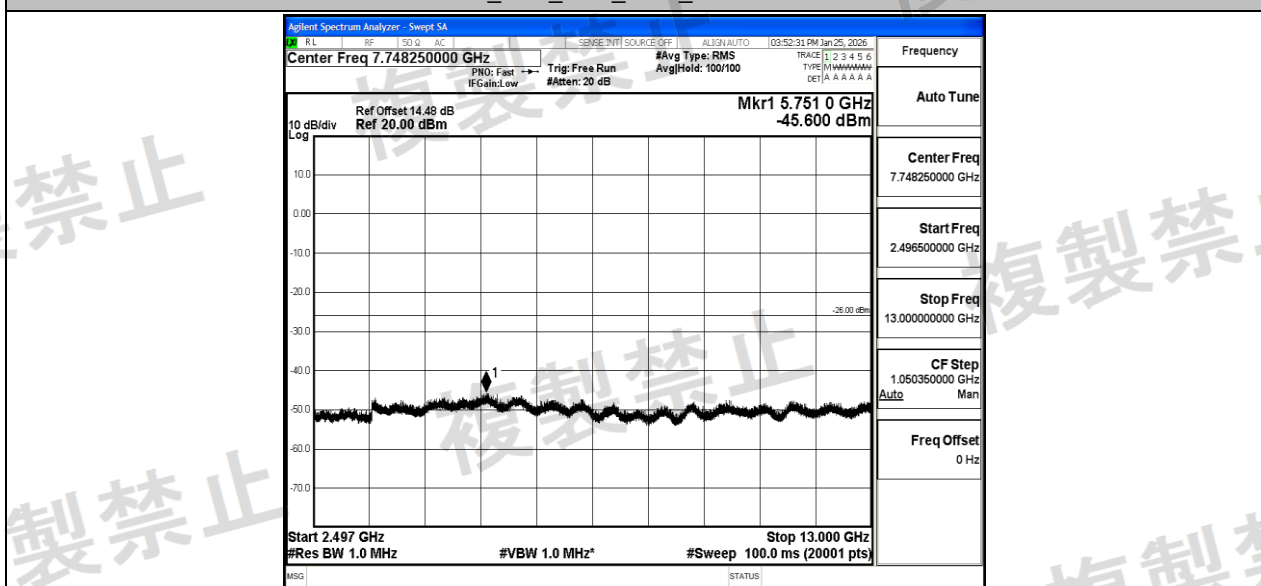
NTNV_DH5_Ant1_2480_2387~2400



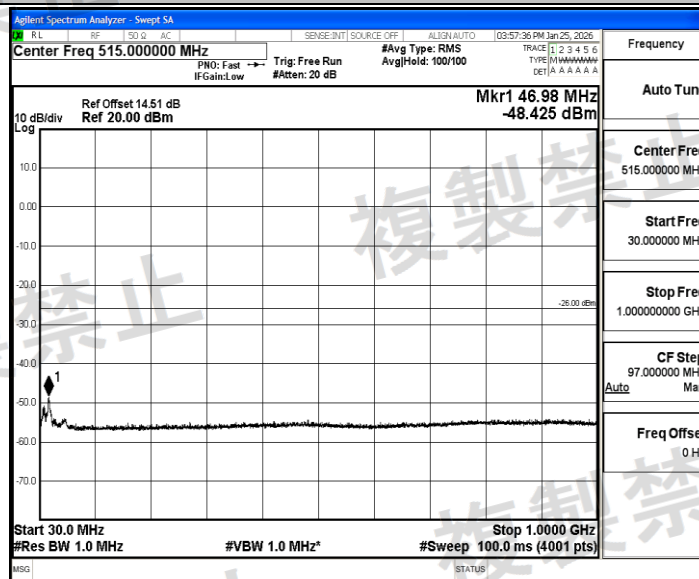
NTNV_DH5_Ant1_2480_2483.5~2496.5



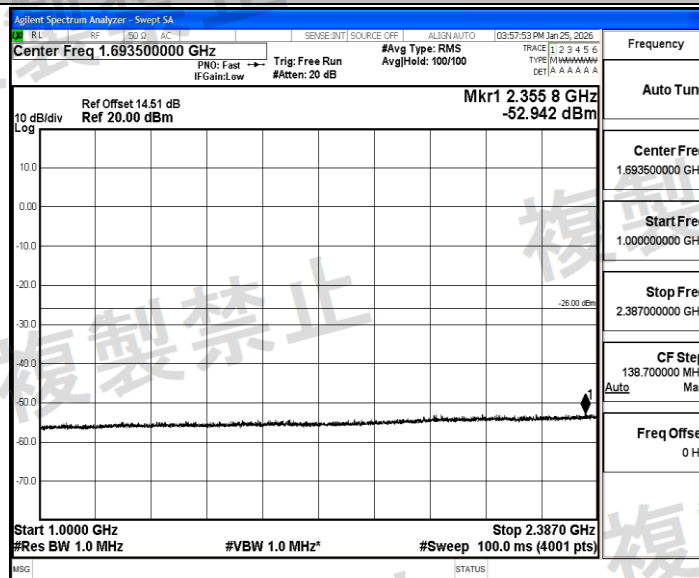
NTNV_DH5_Ant1_2480_2496.5~13000



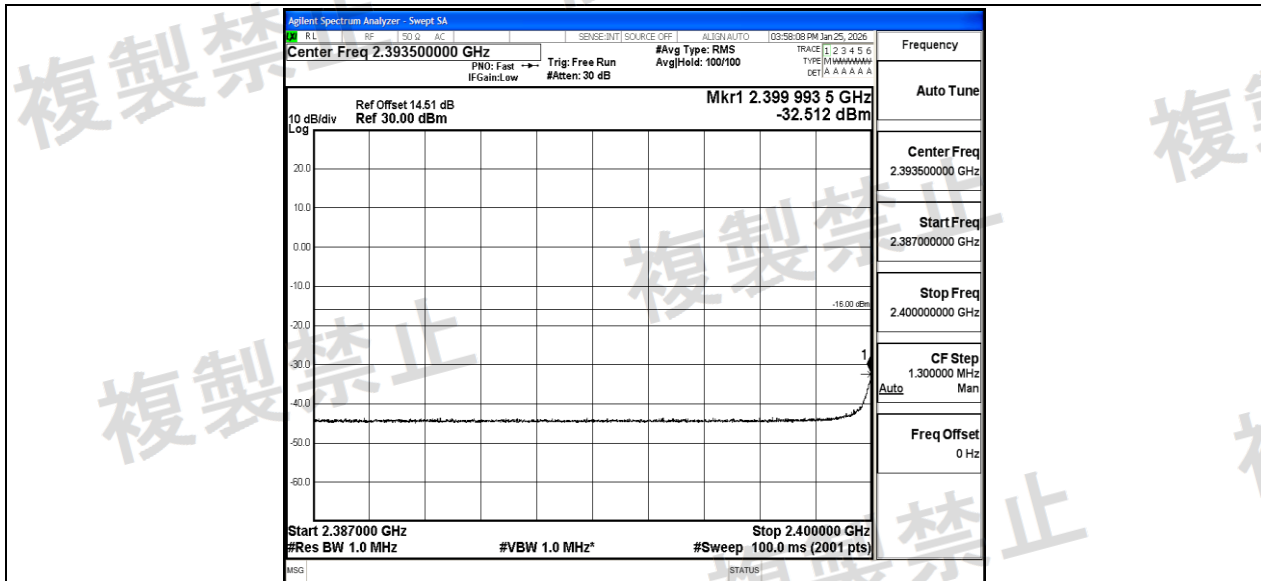
NTNV_2DH5_Ant1_2402_30~1000



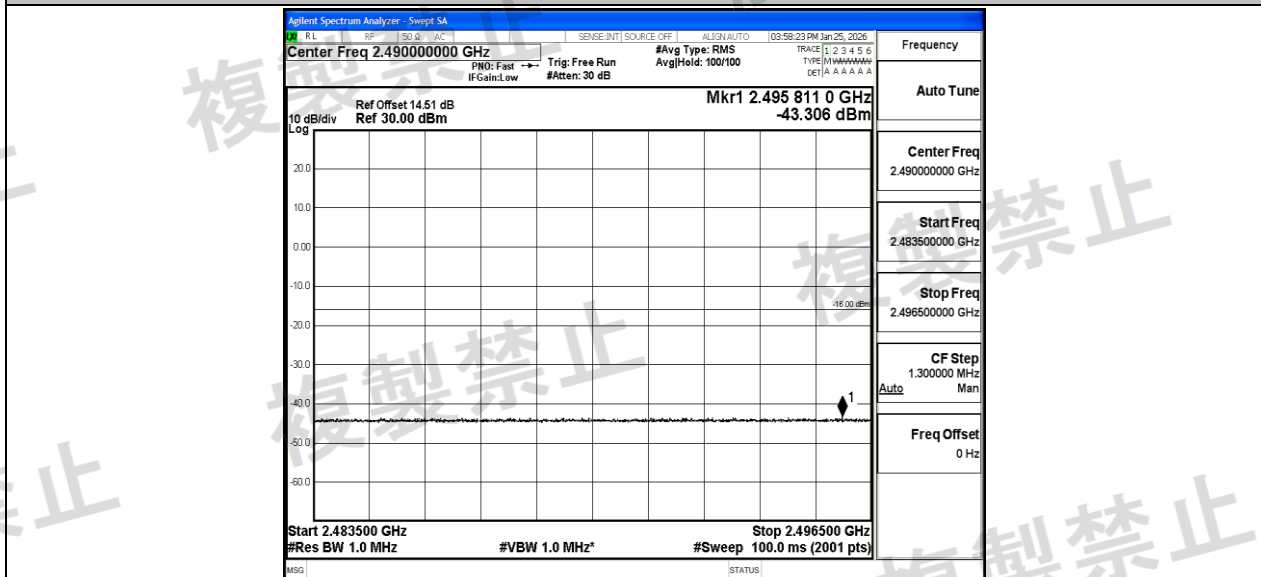
NTNV_2DH5_Ant1_2402_1000~2387



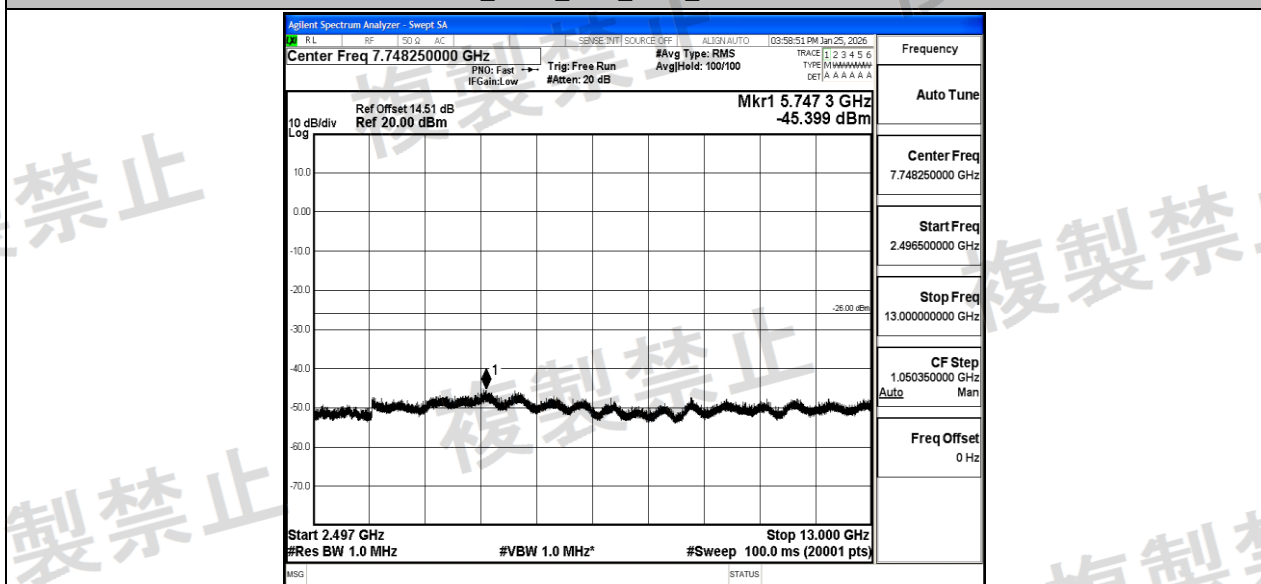
NTNV_2DH5_Ant1_2402_2387~2400

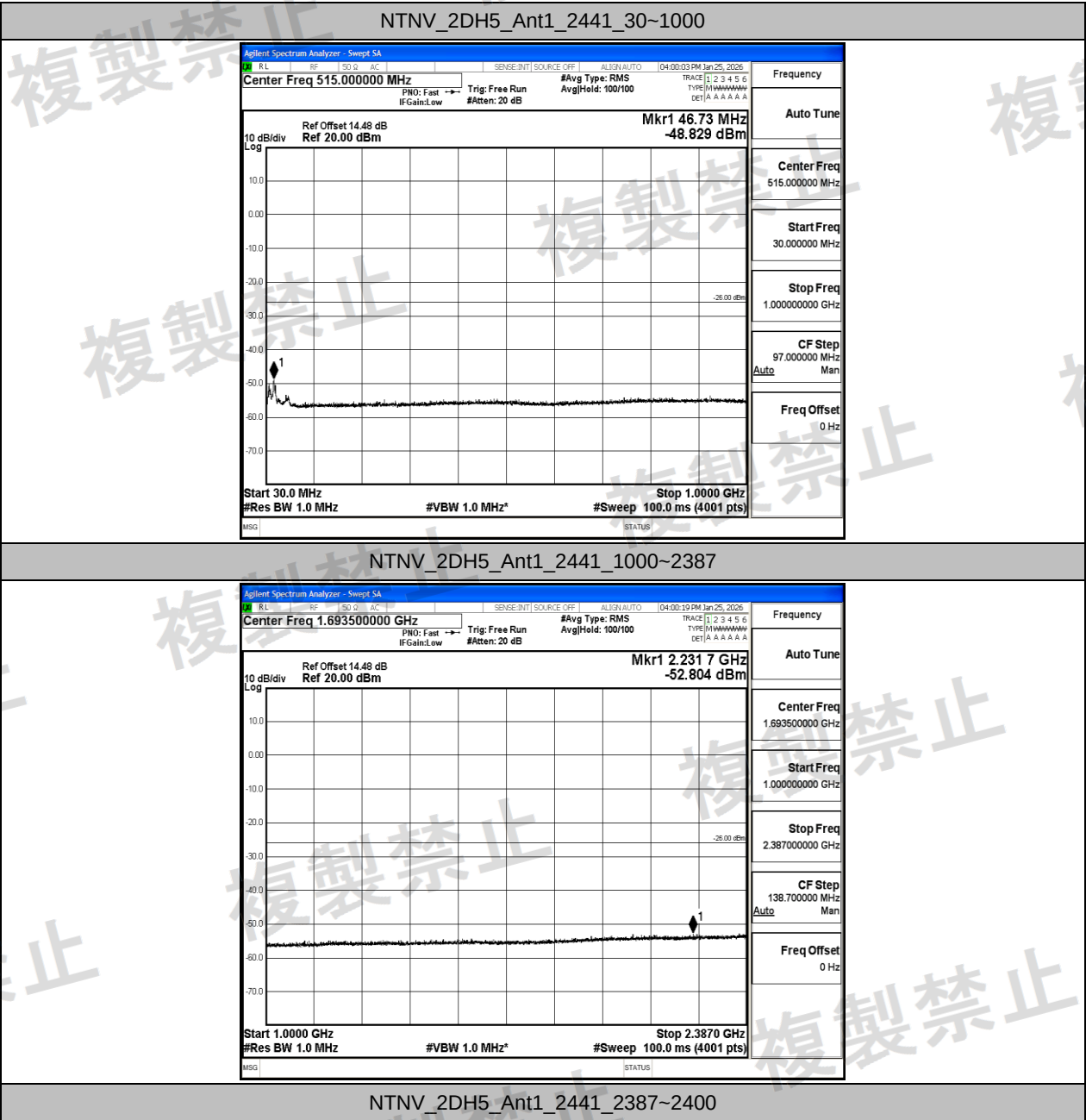


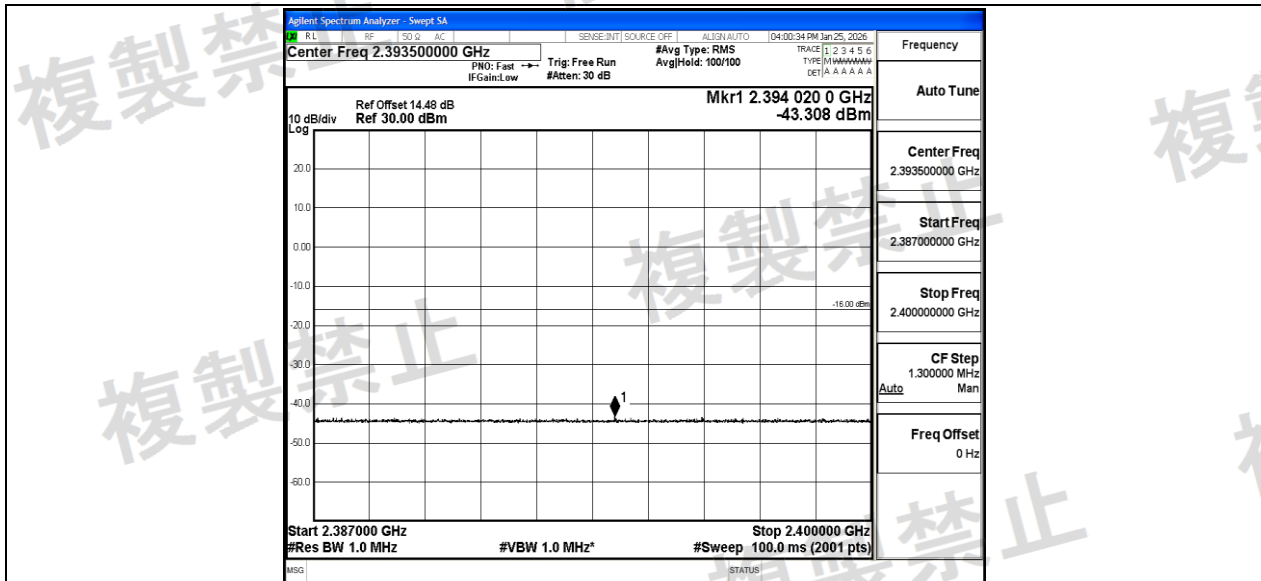
NTNV_2DH5_Ant1_2402_2483.5~2496.5



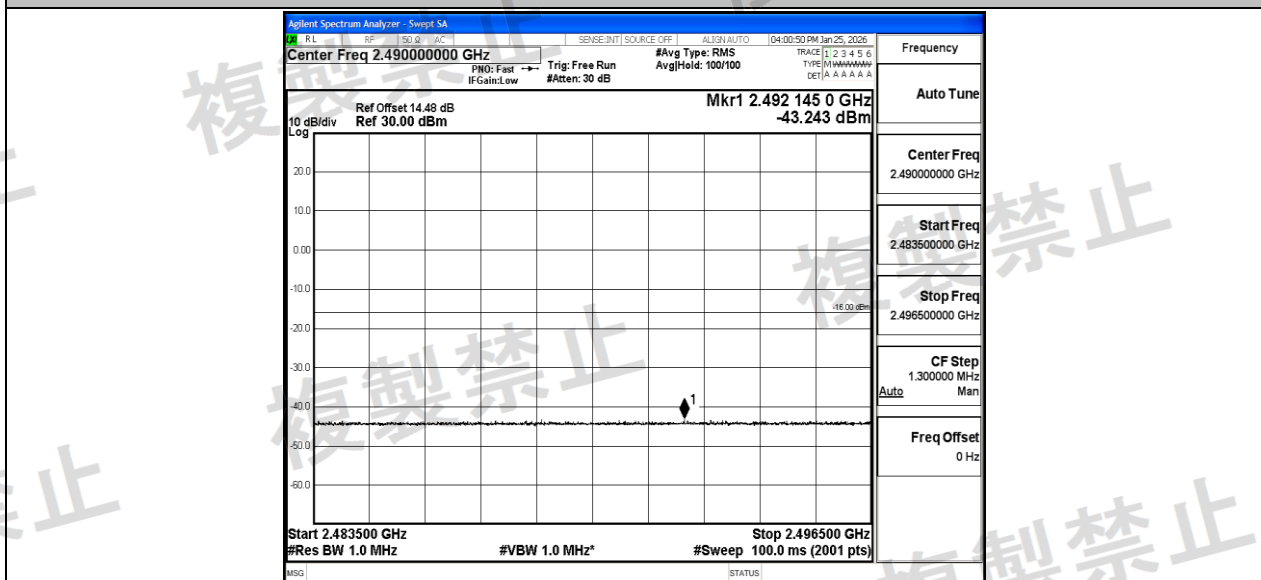
NTNV_2DH5_Ant1_2402_2496.5~13000



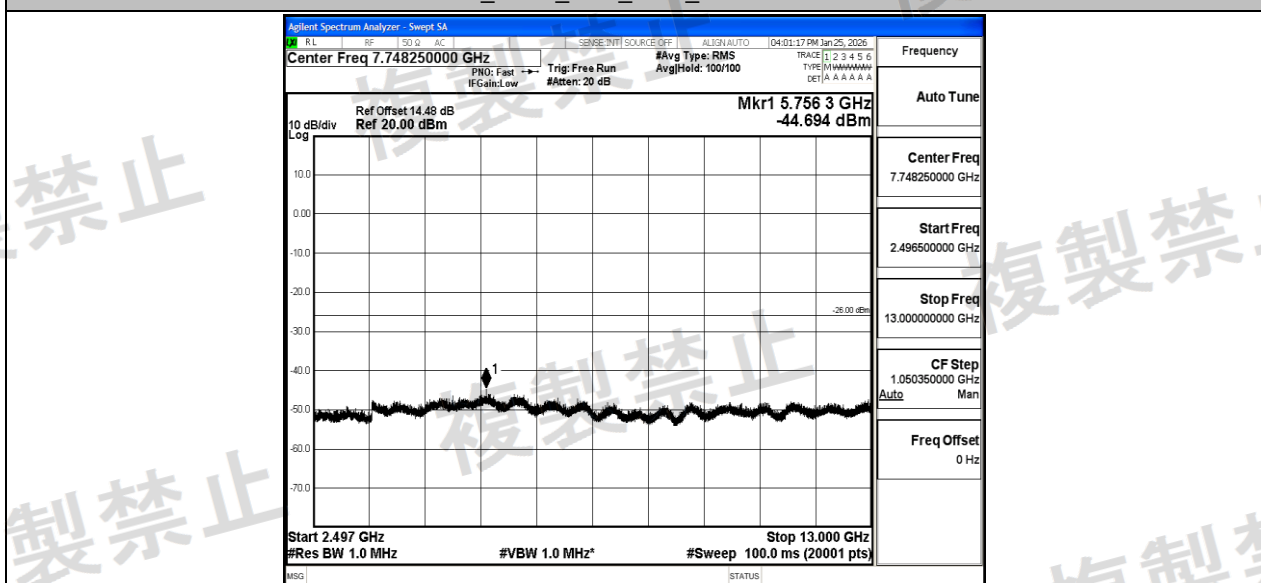




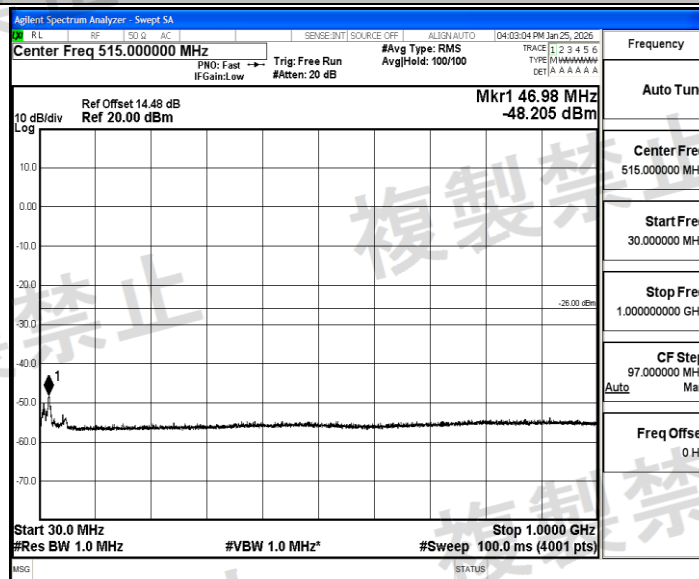
NTNV_2DH5_Ant1_2441_2483.5~2496.5



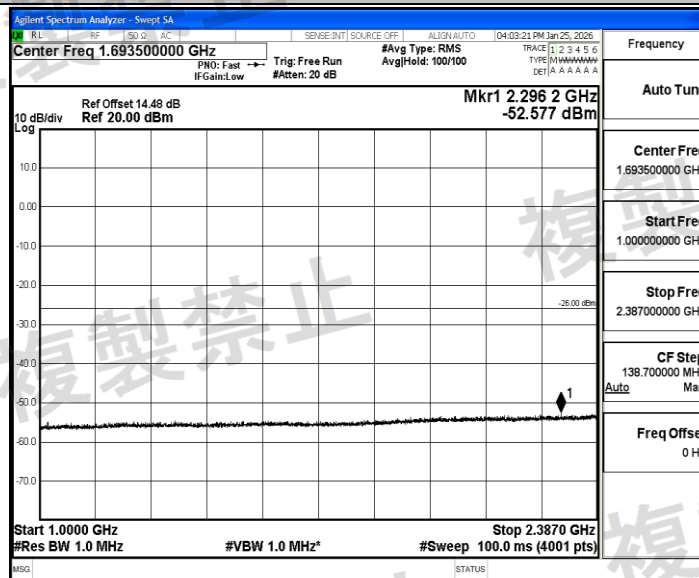
NTNV_2DH5_Ant1_2441_2496.5~13000



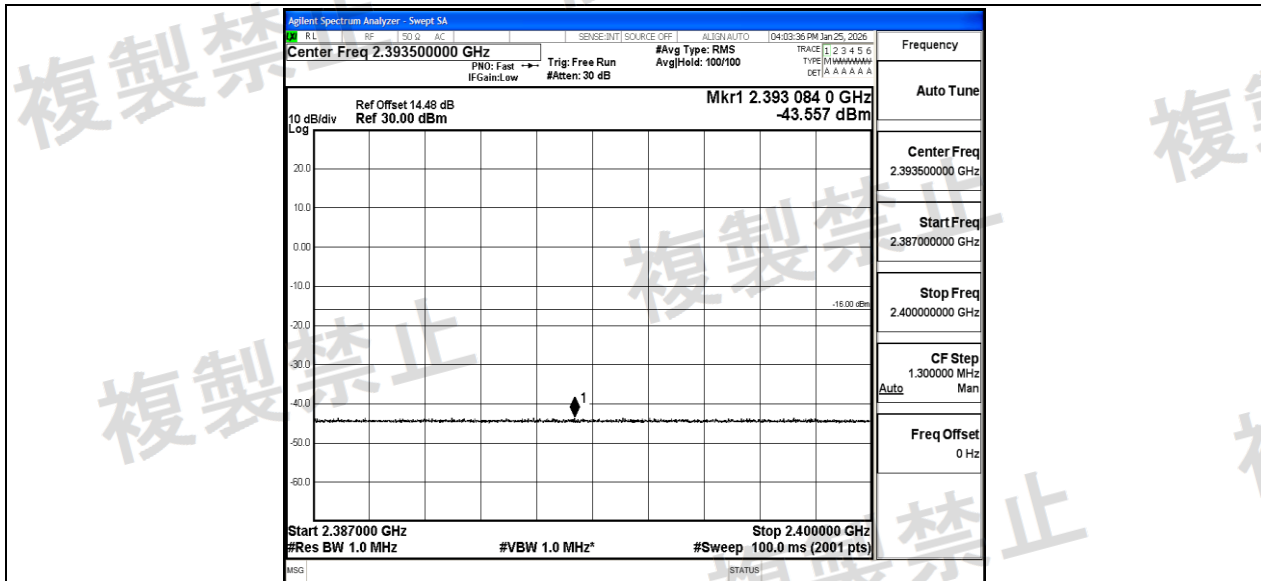
NTNV_2DH5_Ant1_2480_30~1000



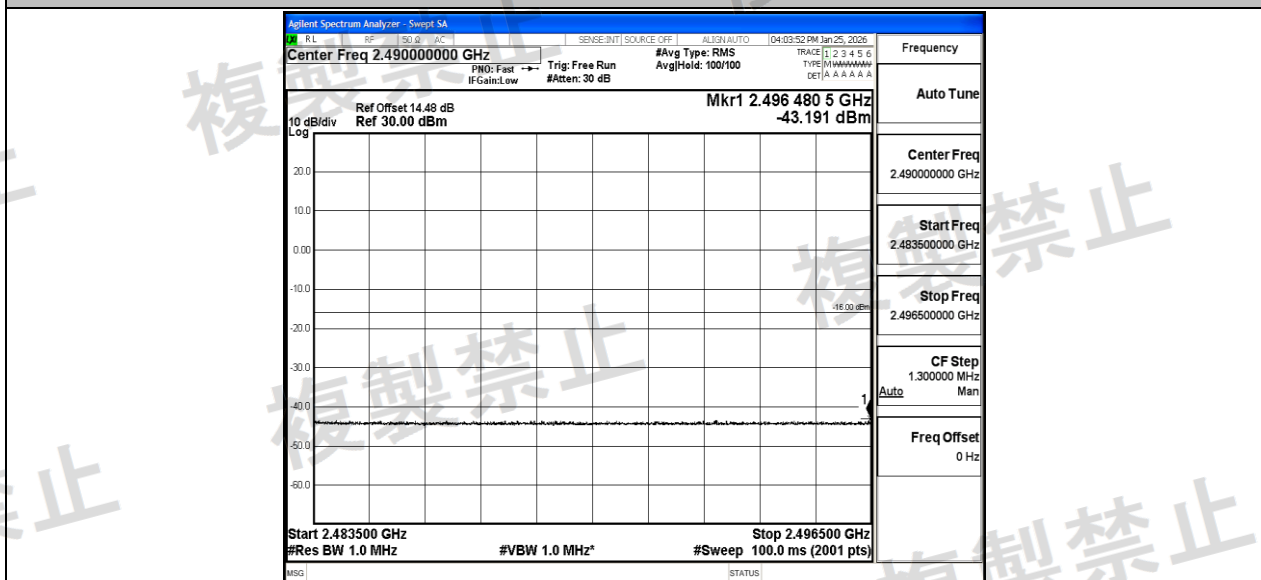
NTNV_2DH5_Ant1_2480_1000~2387



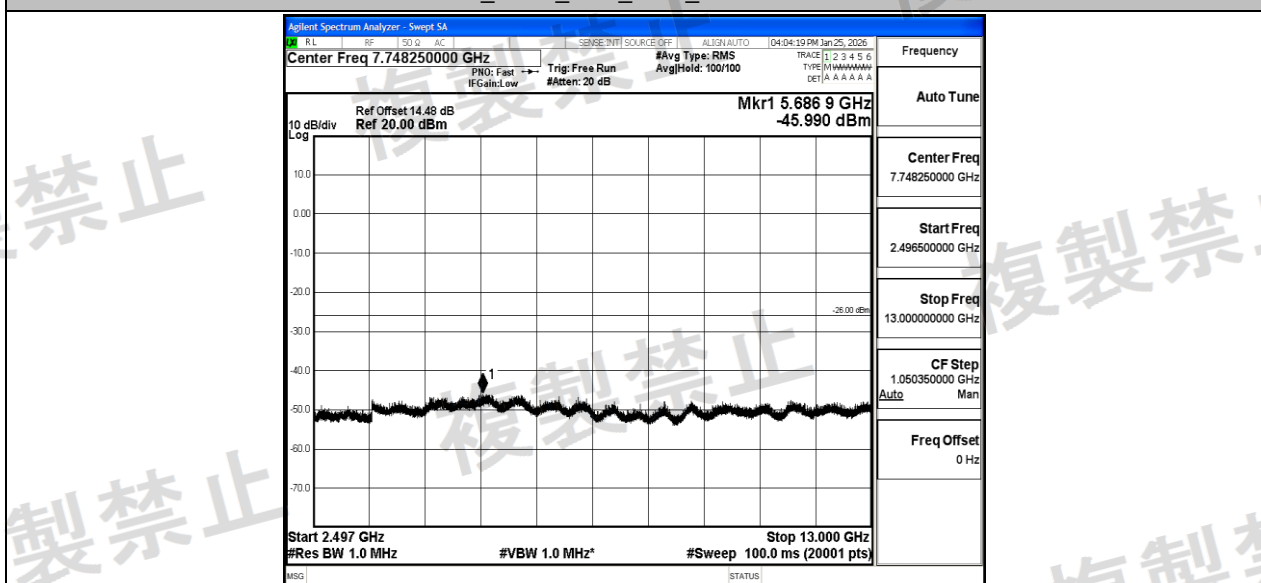
NTNV_2DH5_Ant1_2480_2387~2400



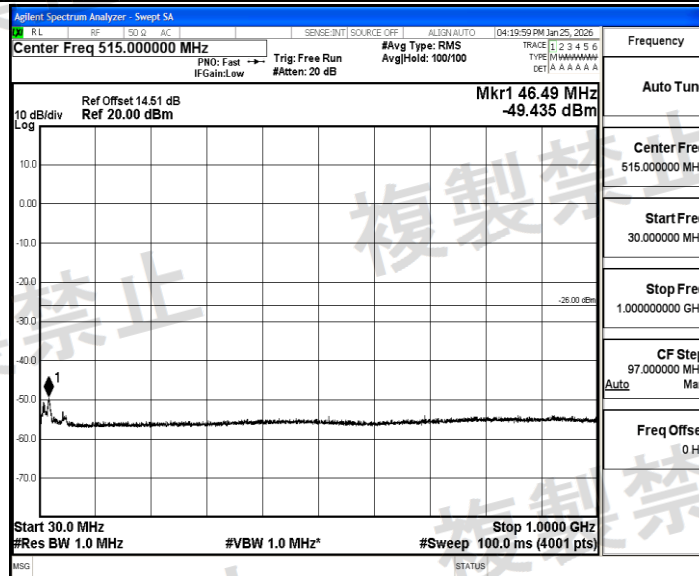
NTNV_2DH5_Ant1_2480_2483.5~2496.5



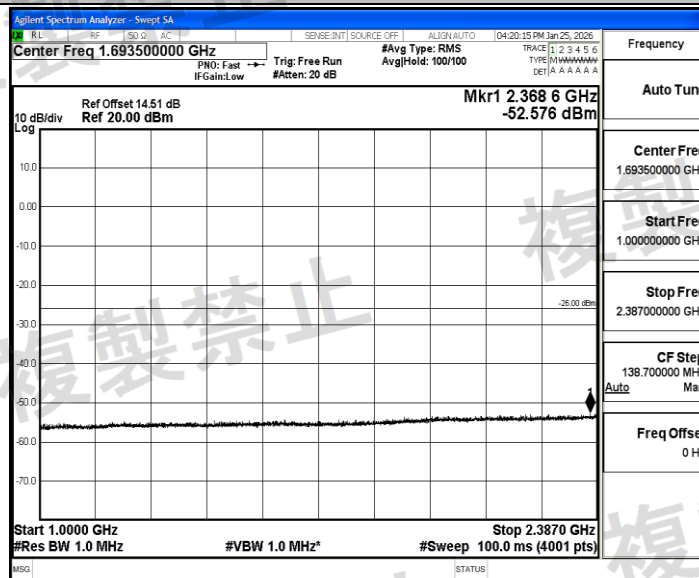
NTNV_2DH5_Ant1_2480_2496.5~13000



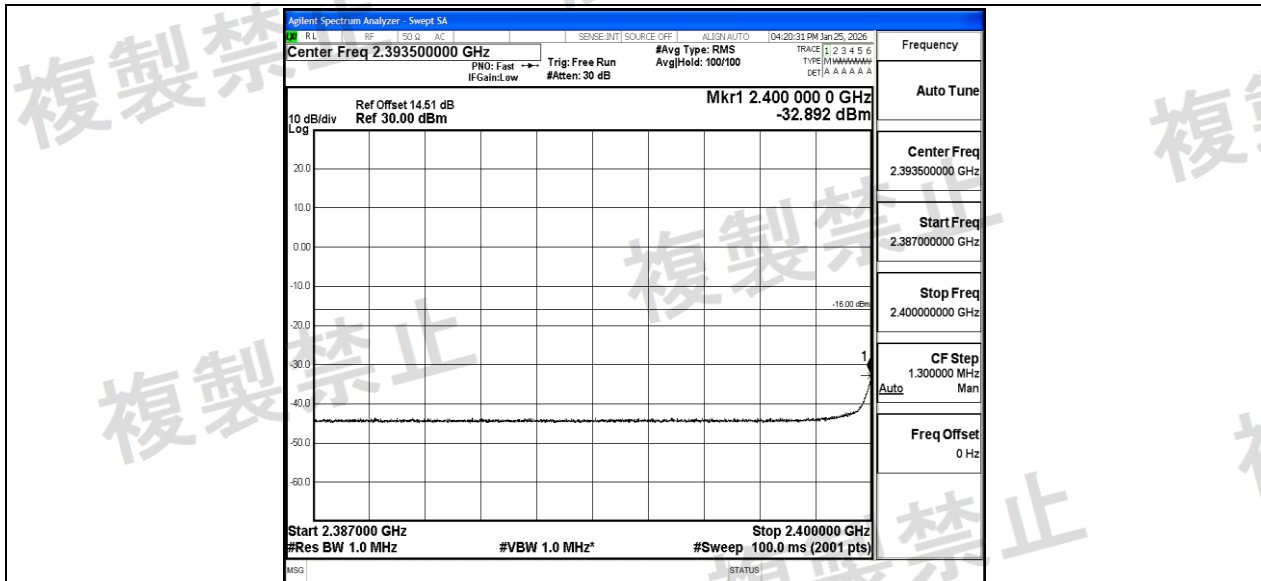
NTNV_3DH5_Ant1_2402_30~1000



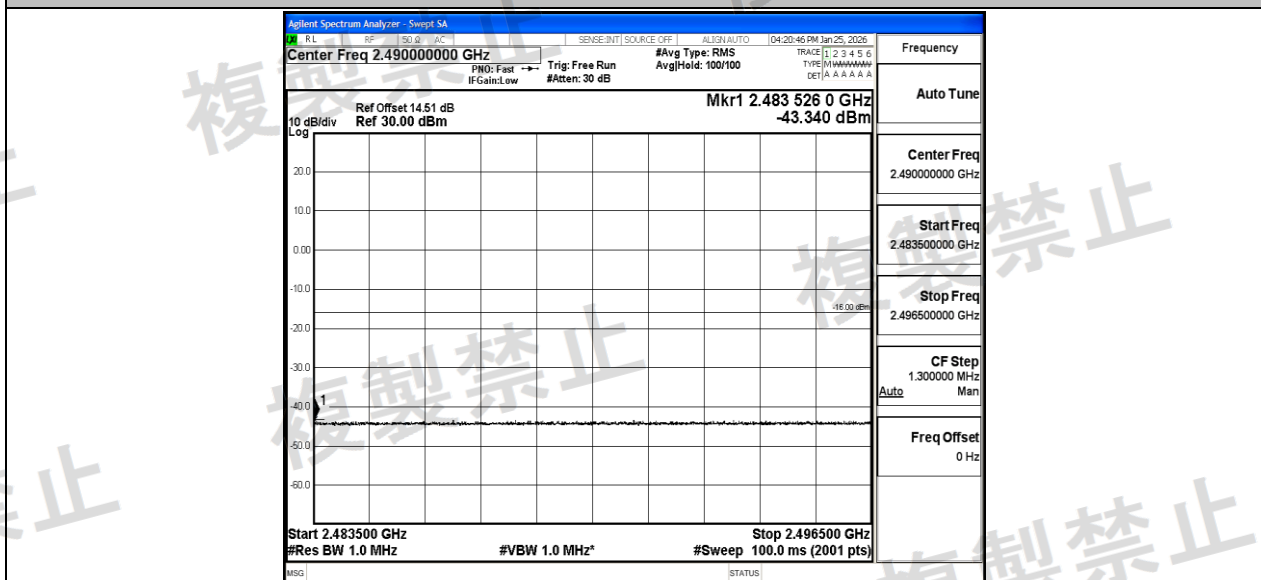
NTNV_3DH5_Ant1_2402_1000~2387



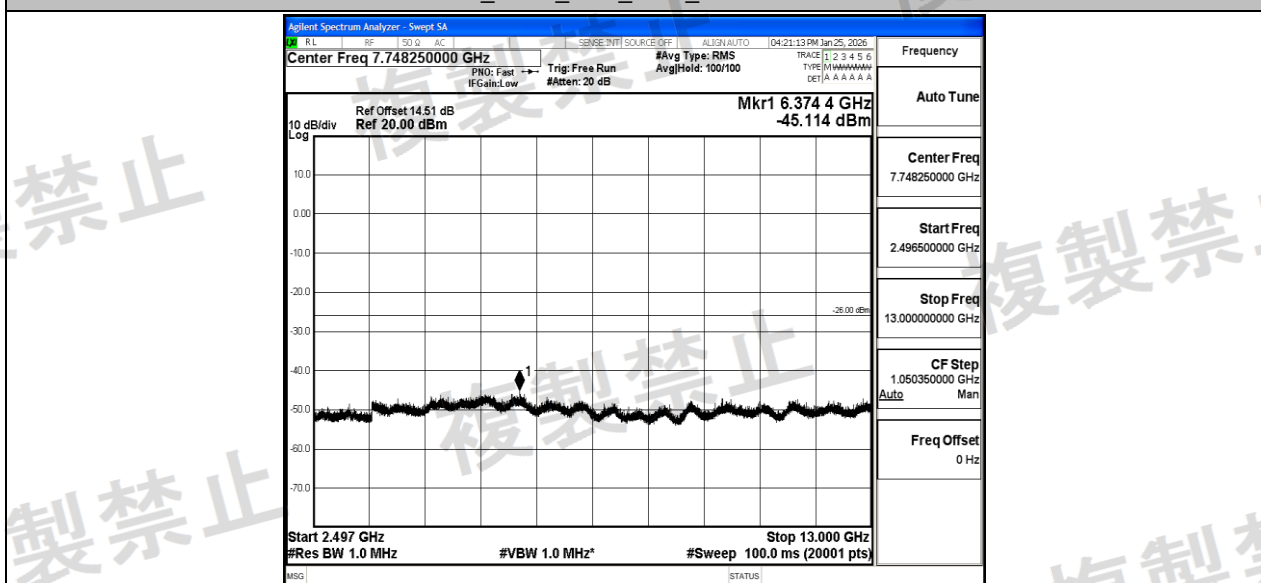
NTNV_3DH5_Ant1_2402_2387~2400



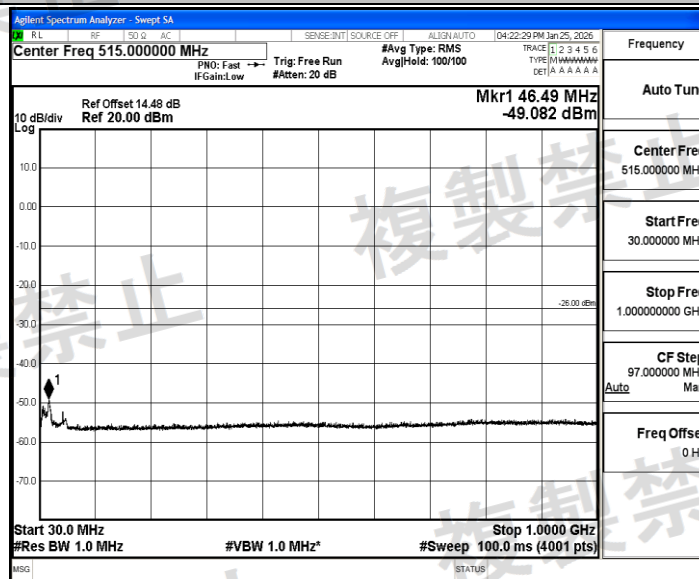
NTNV_3DH5_Ant1_2402_2483.5~2496.5



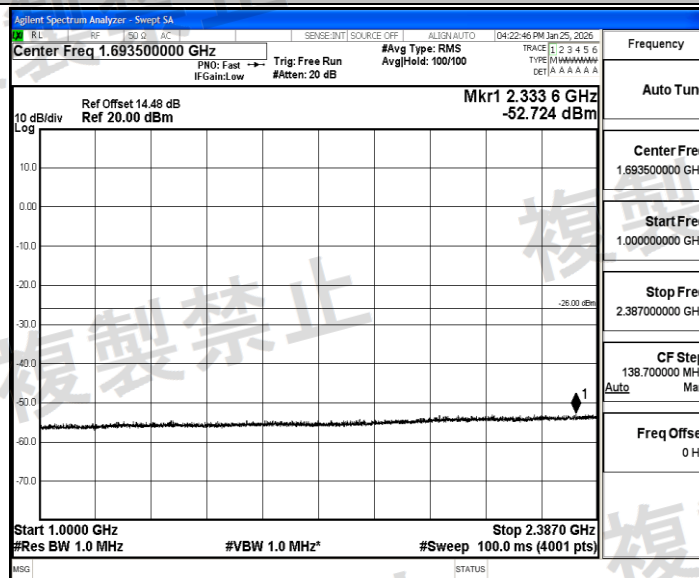
NTNV_3DH5_Ant1_2402_2496.5~13000



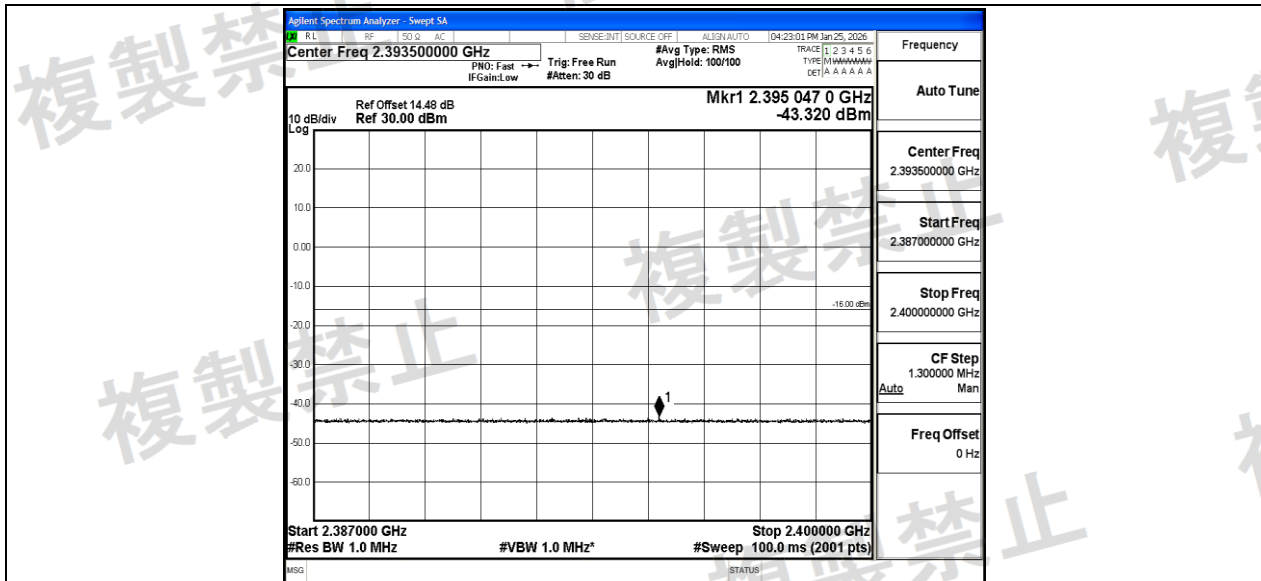
NTNV_3DH5_Ant1_2441_30~1000



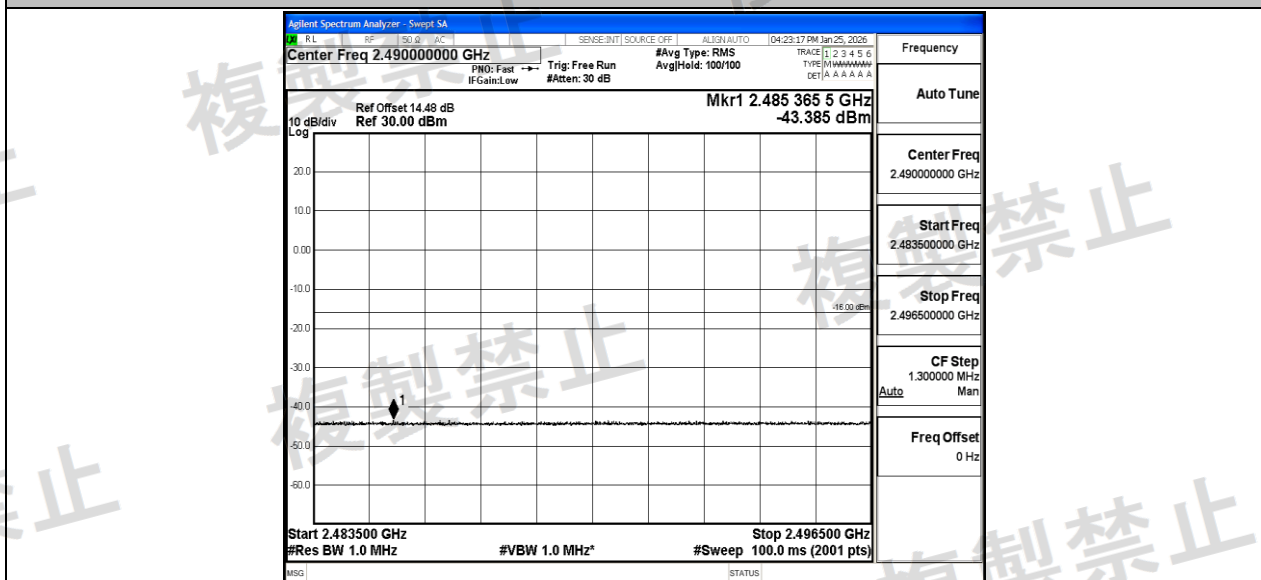
NTNV_3DH5_Ant1_2441_1000~2387



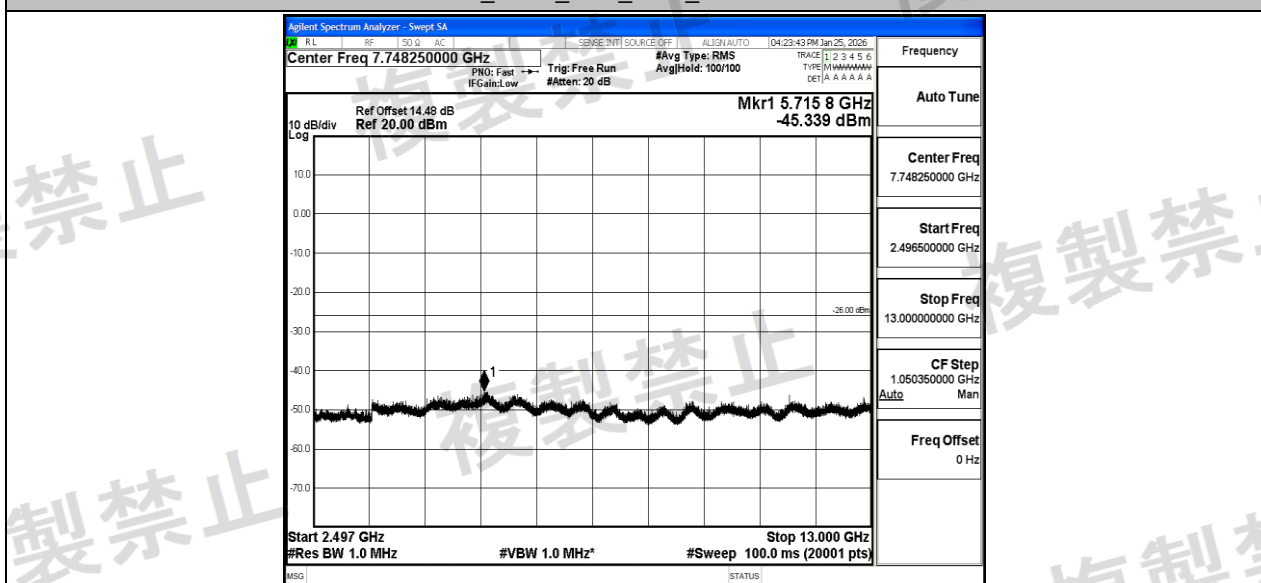
NTNV_3DH5_Ant1_2441_2387~2400



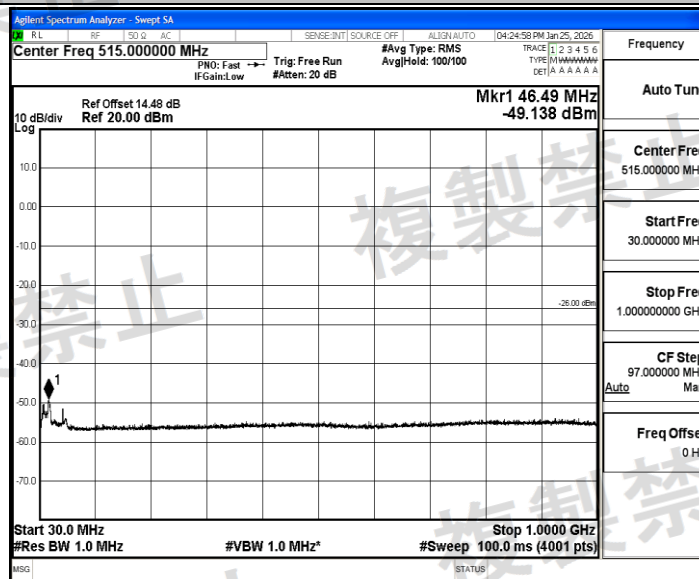
NTNV_3DH5_Ant1_2441_2483.5~2496.5



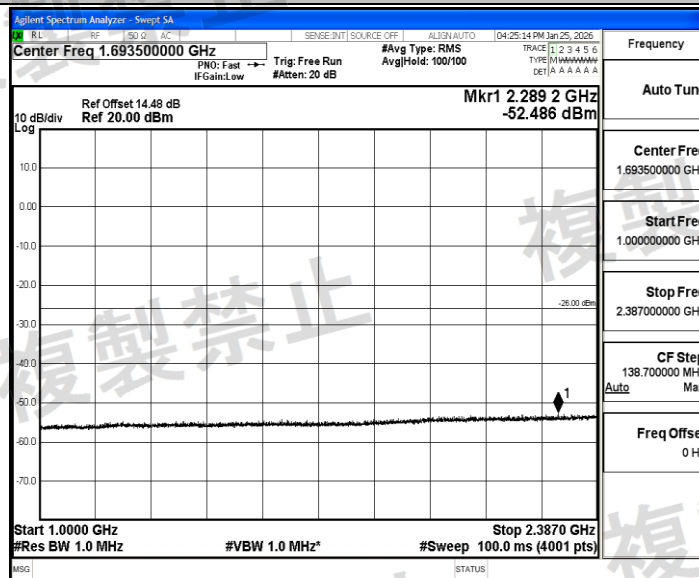
NTNV_3DH5_Ant1_2441_2496.5~13000



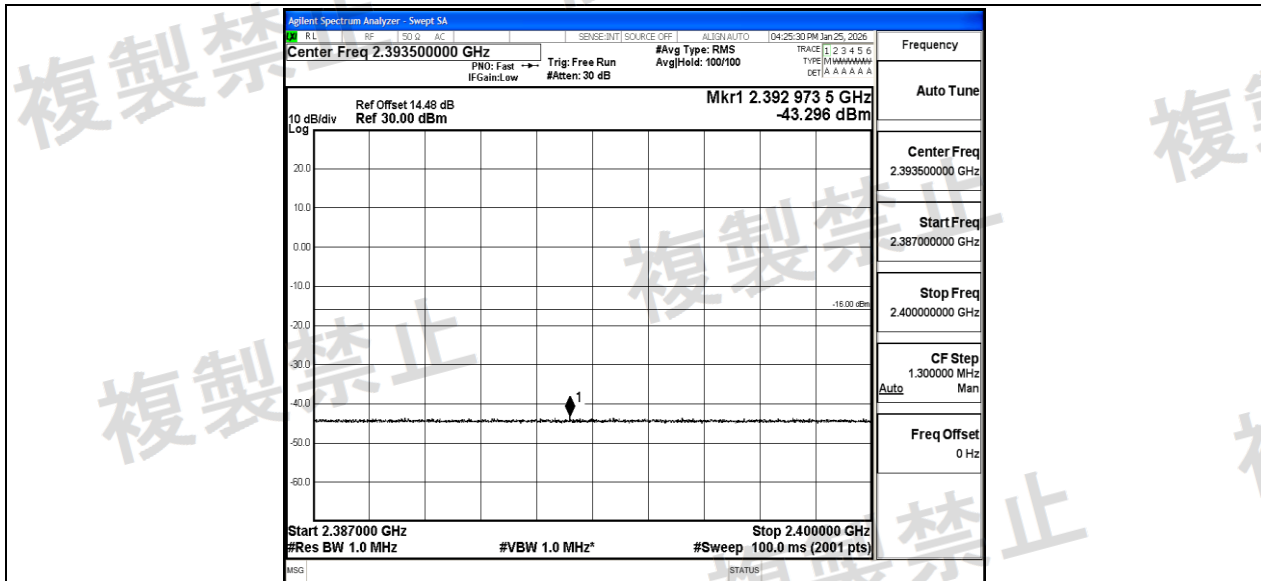
NTNV_3DH5_Ant1_2480_30~1000



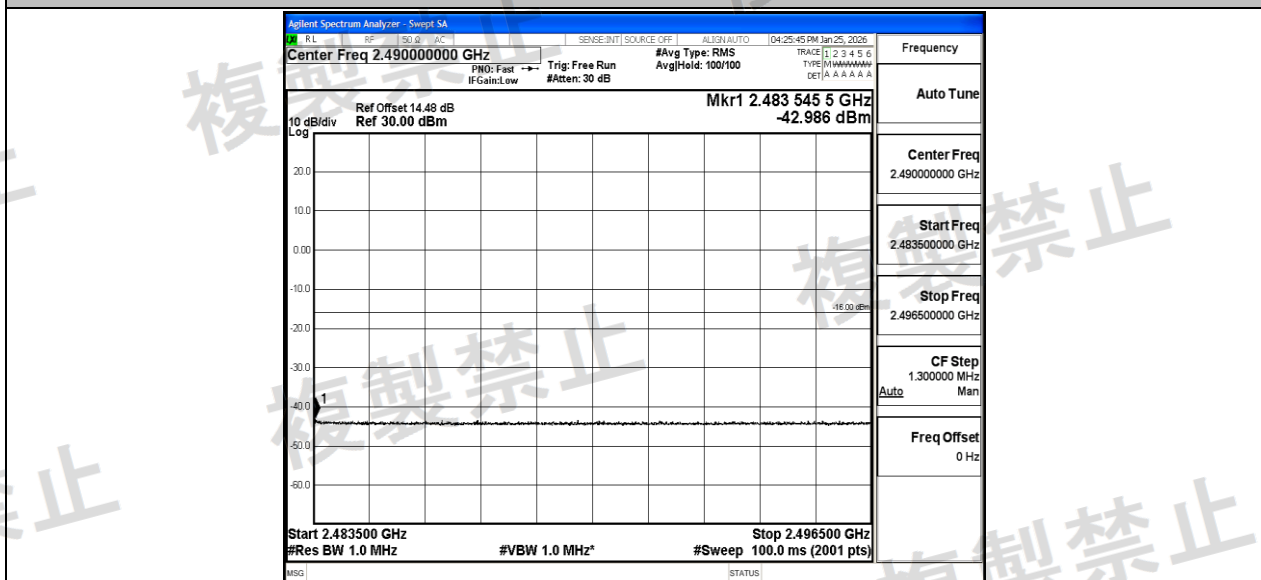
NTNV_3DH5_Ant1_2480_1000~2387



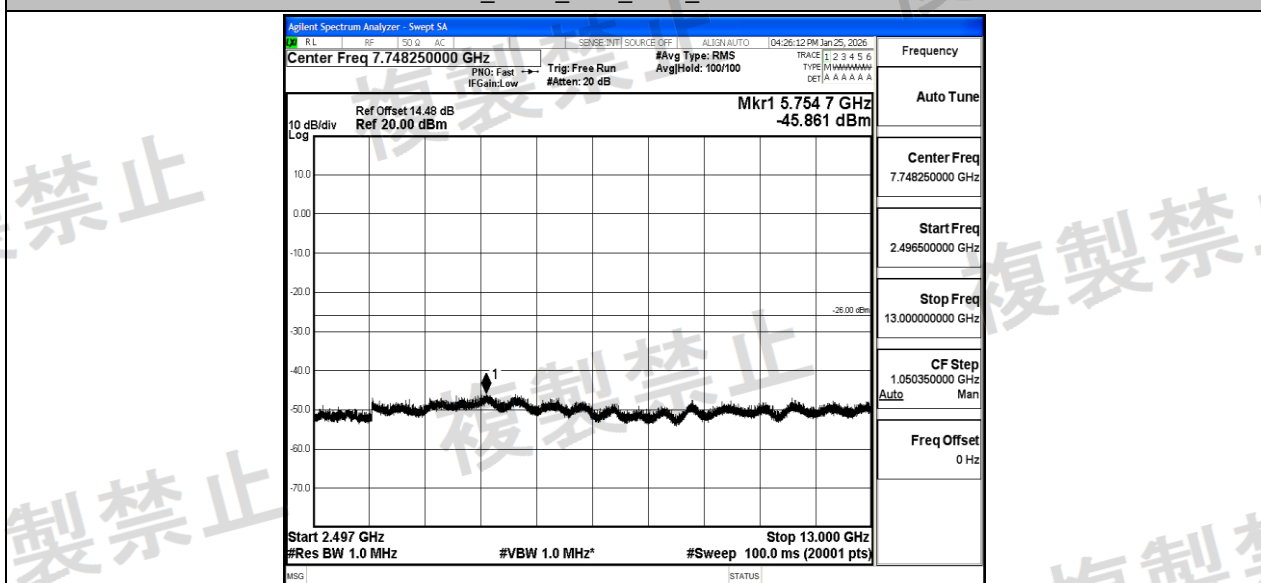
NTNV_3DH5_Ant1_2480_2387~2400



NTNV_3DH5_Ant1_2480_2483.5~2496.5



NTNV_3DH5_Ant1_2480_2496.5~13000



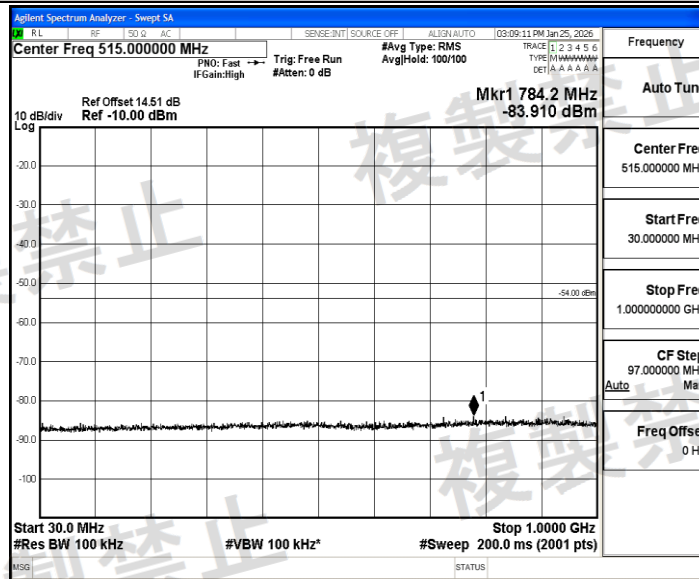
A.6 Spurious Emission of RX

Test Result

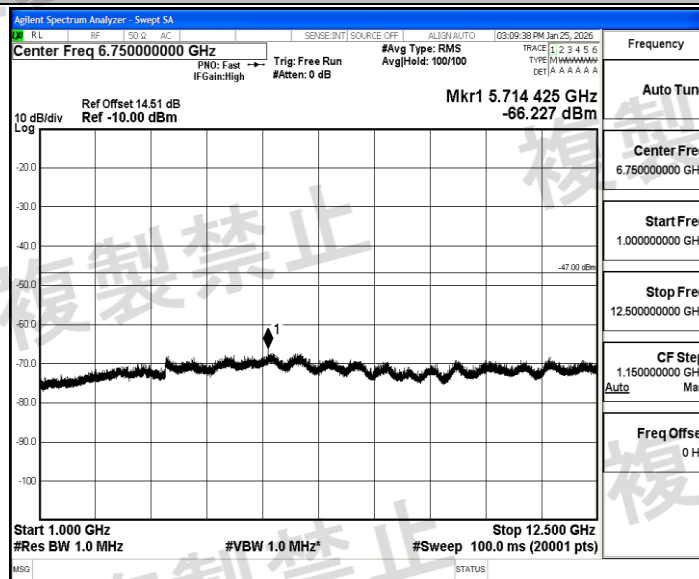
TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-83.91	≤-54	0.00406	≤4	PASS
				1000~12500	-66.23	≤-47	0.23823	≤20	PASS
			2441	30~1000	-84.22	≤-54	0.00378	≤4	PASS
				1000~12500	-66.91	≤-47	0.20370	≤20	PASS
			2480	30~1000	-84.12	≤-54	0.00387	≤4	PASS
				1000~12500	-66.68	≤-47	0.21478	≤20	PASS
	2DH5	Ant1	2402	30~1000	-84.16	≤-54	0.00384	≤4	PASS
				1000~12500	-67.09	≤-47	0.19543	≤20	PASS
			2441	30~1000	-84.23	≤-54	0.00378	≤4	PASS
				1000~12500	-67.08	≤-47	0.19588	≤20	PASS
			2480	30~1000	-84.06	≤-54	0.00393	≤4	PASS
				1000~12500	-66.73	≤-47	0.21232	≤20	PASS
	3DH5	Ant1	2402	30~1000	-84.15	≤-54	0.00385	≤4	PASS
				1000~12500	-67.42	≤-47	0.18113	≤20	PASS
			2441	30~1000	-83.97	≤-54	0.00401	≤4	PASS
				1000~12500	-67.11	≤-47	0.19454	≤20	PASS
			2480	30~1000	-83.93	≤-54	0.00405	≤4	PASS
				1000~12500	-65.96	≤-47	0.25351	≤20	PASS

Test Graphs

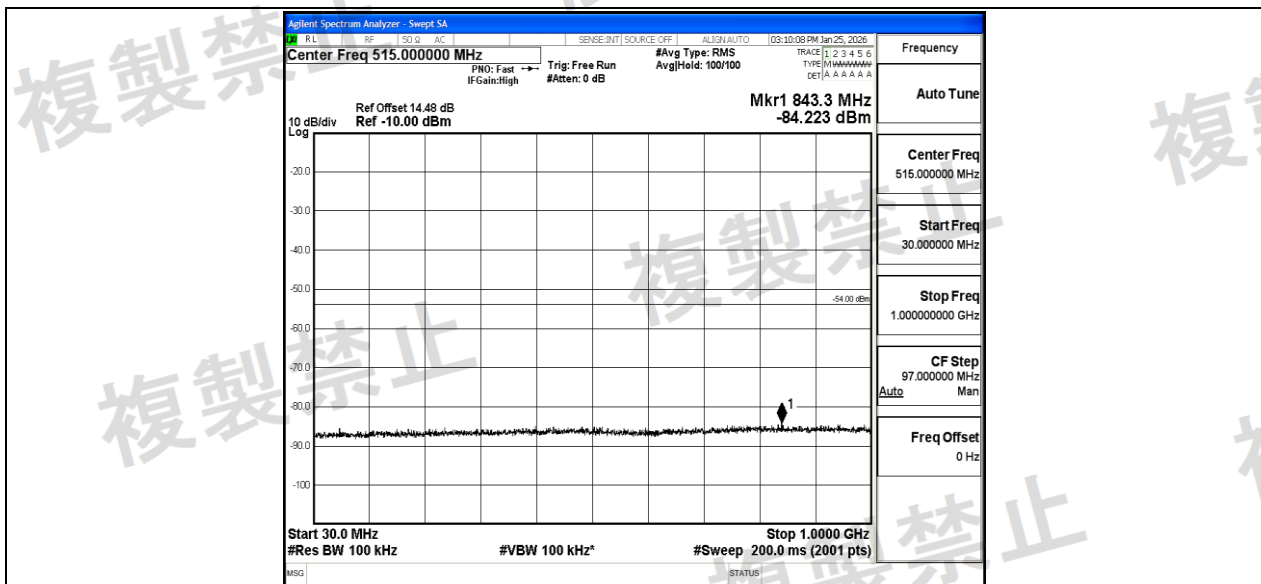
NTNV_DH5_Ant1_2402_30~1000



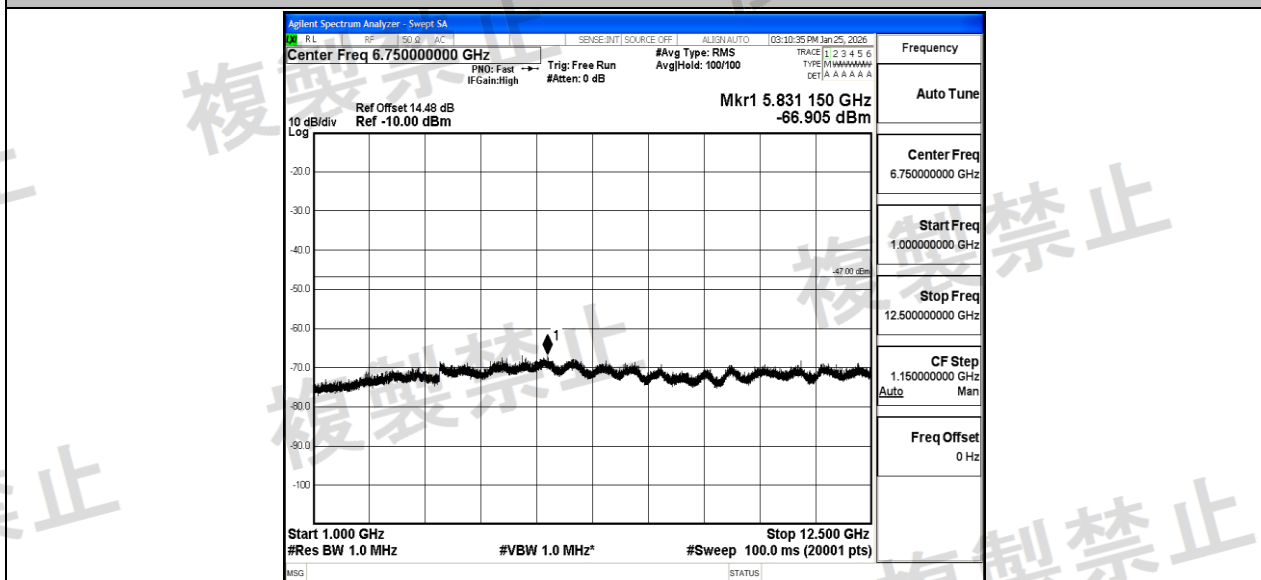
NTNV_DH5_Ant1_2402_1000~12500



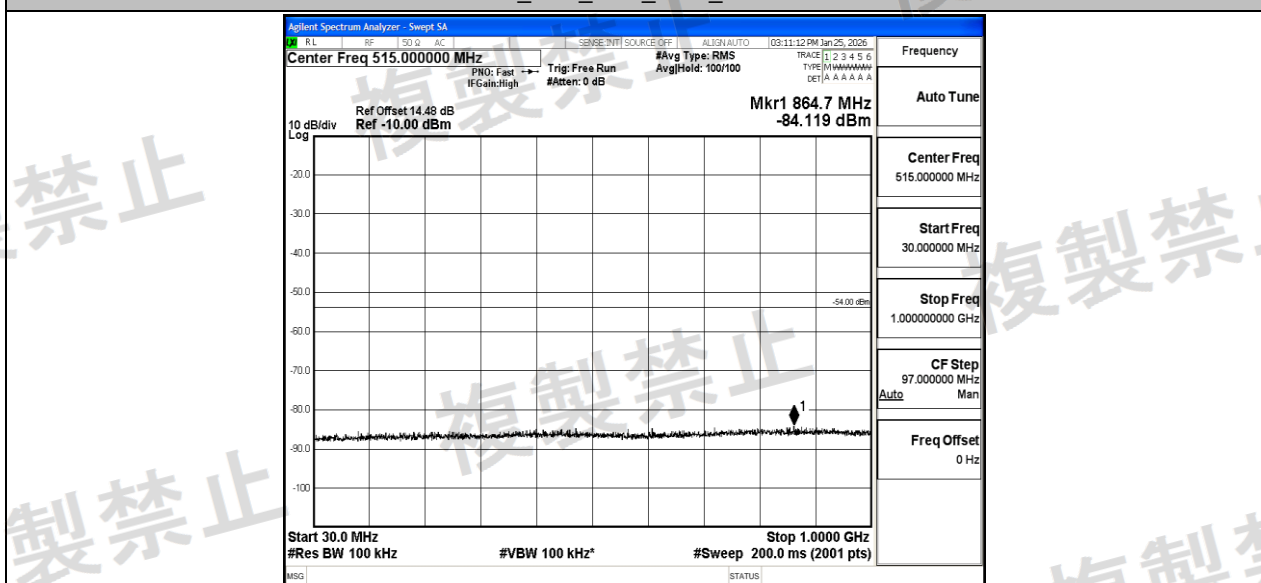
NTNV_DH5_Ant1_2441_30~1000



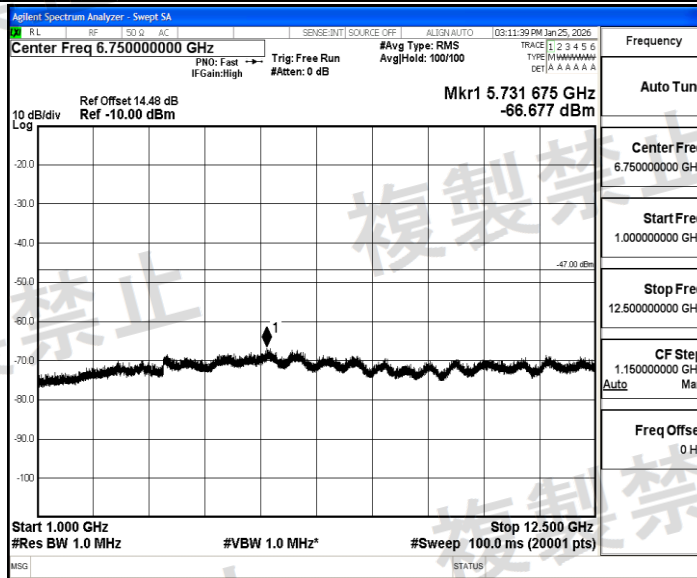
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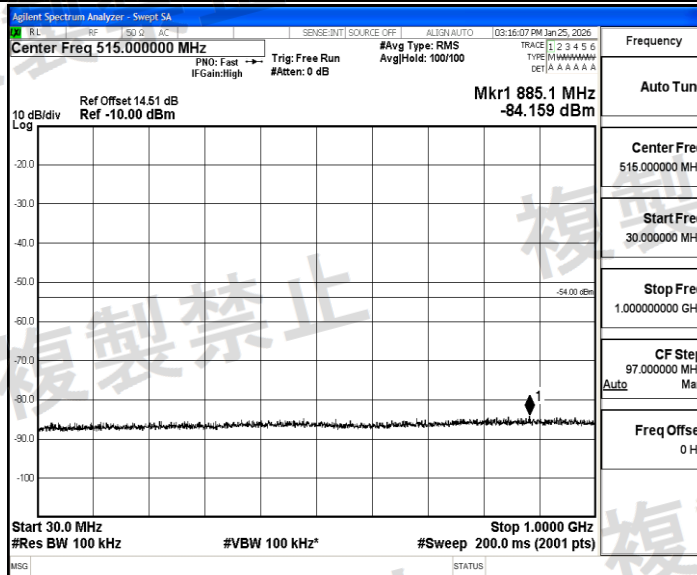
NTNV_DH5_Ant1_2480_30~1000



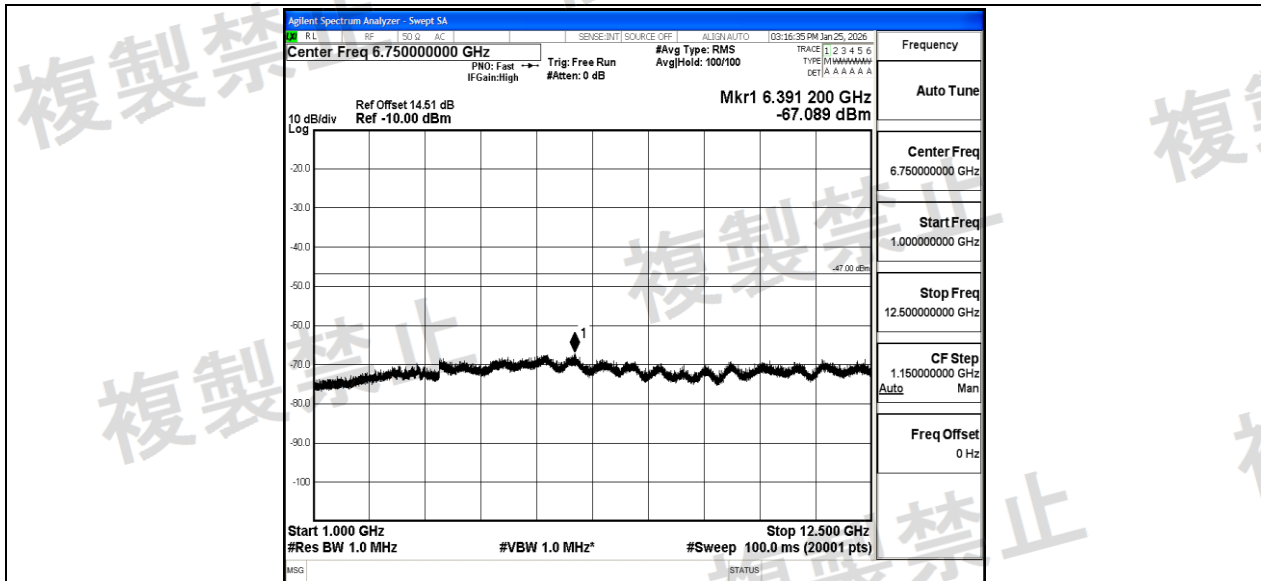
NTNV_DH5_Ant1_2480_1000~12500



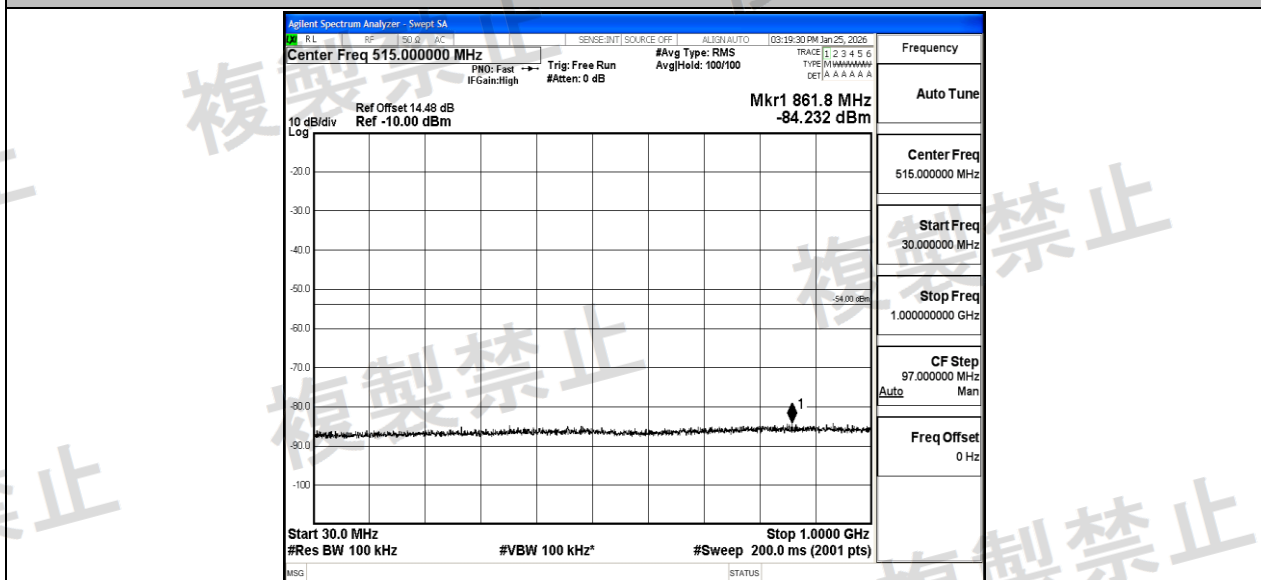
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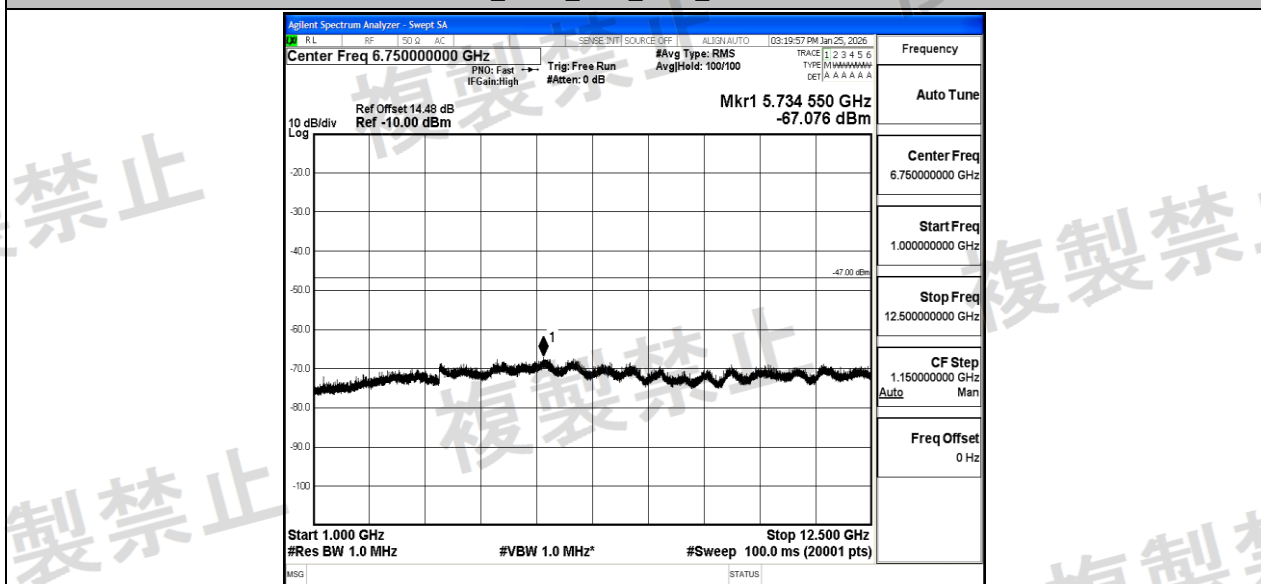
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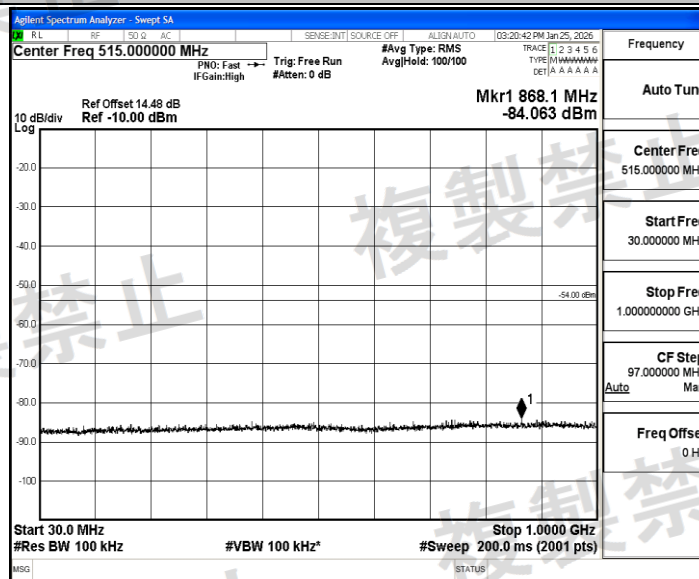
NTNV_2DH5_Ant1_2441_30~1000



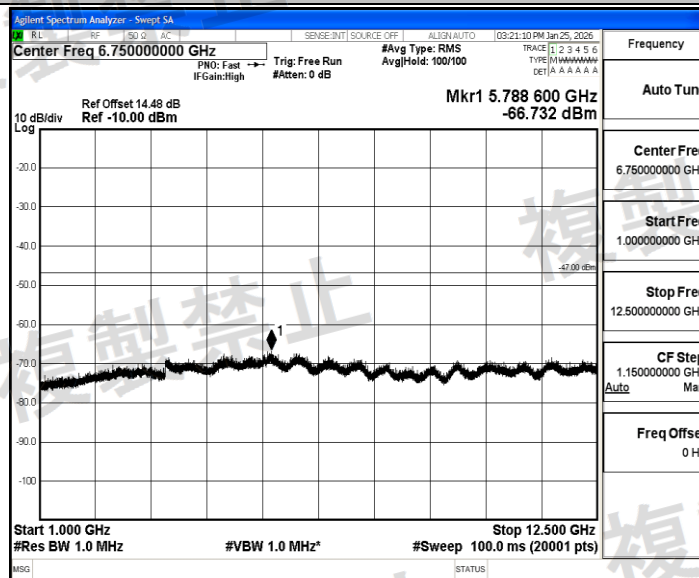
NTNV_2DH5_Ant1_2441_1000~12500



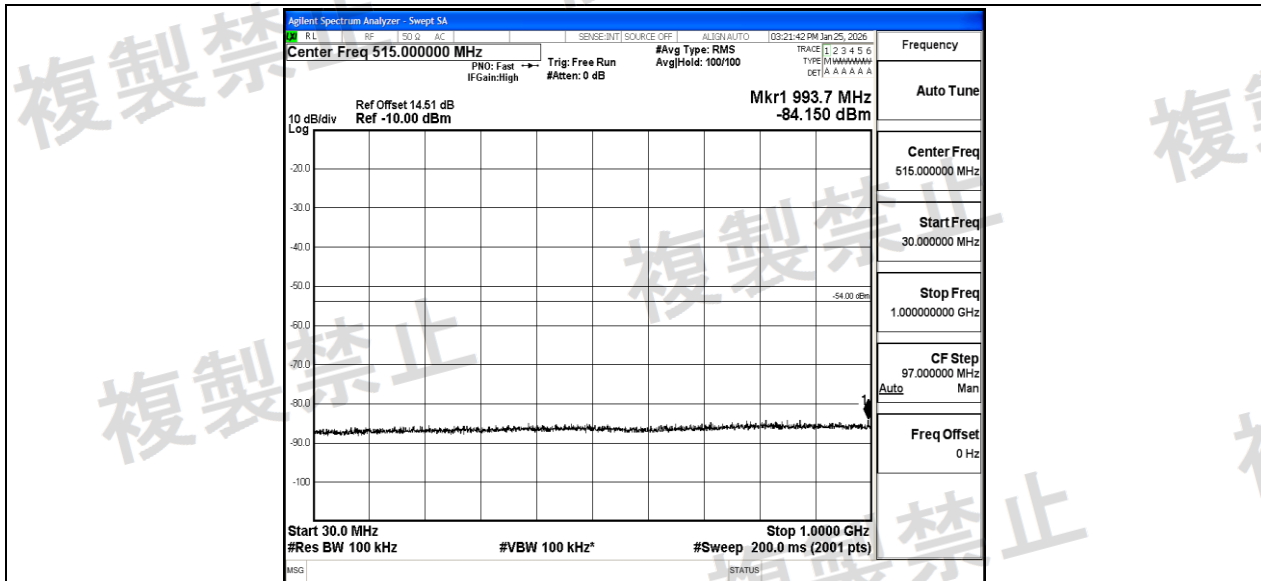
NTNV_2DH5_Ant1_2480_30~1000



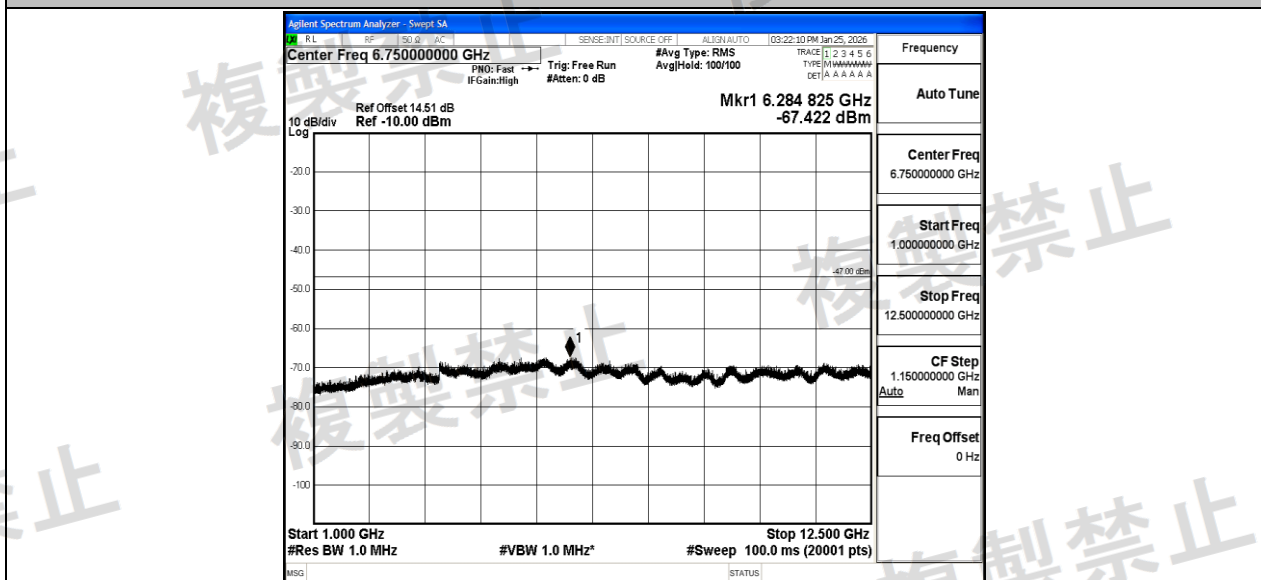
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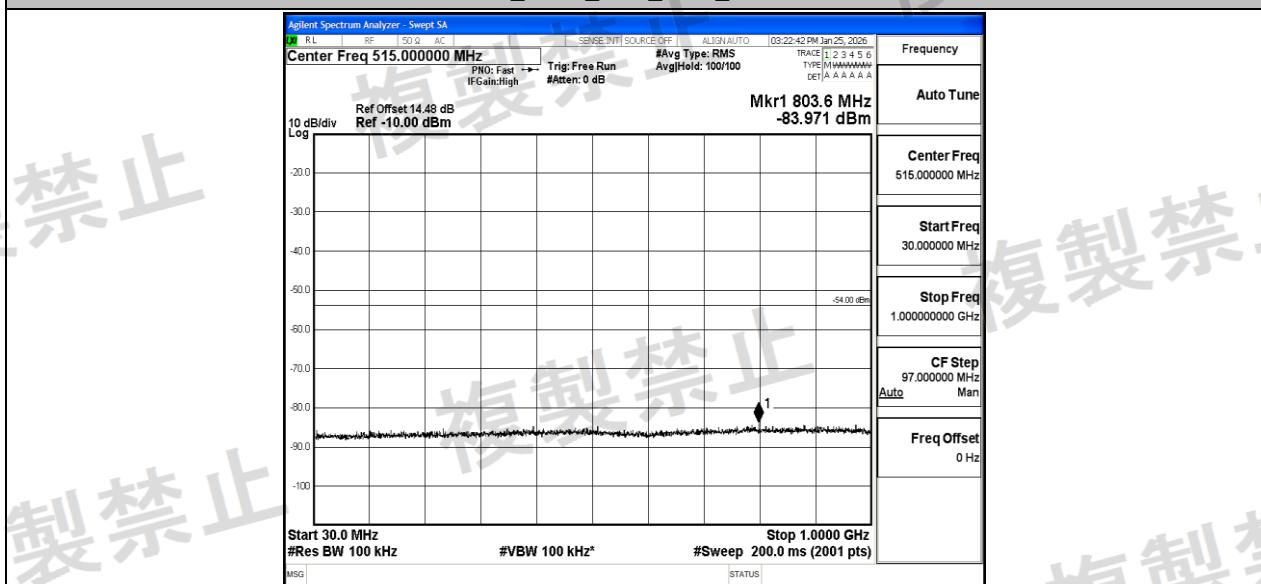
NTNV_3DH5_Ant1_2402_30~1000



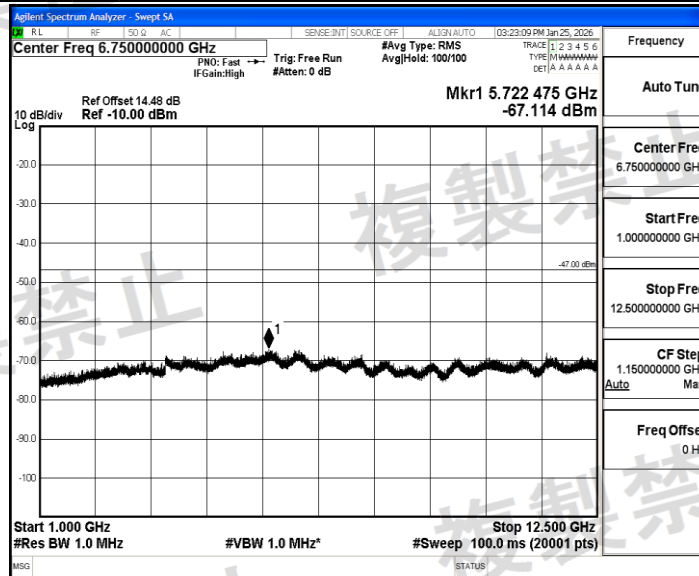
NTNV_3DH5_Ant1_2402_1000~12500



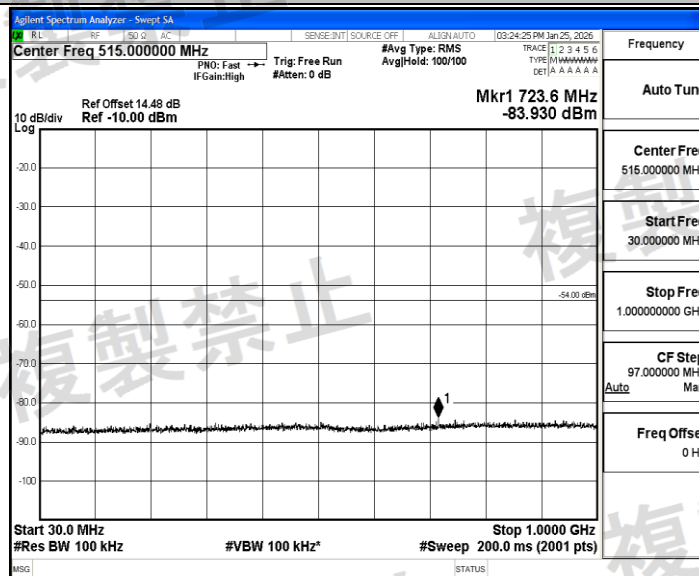
NTNV_3DH5_Ant1_2441_30~1000



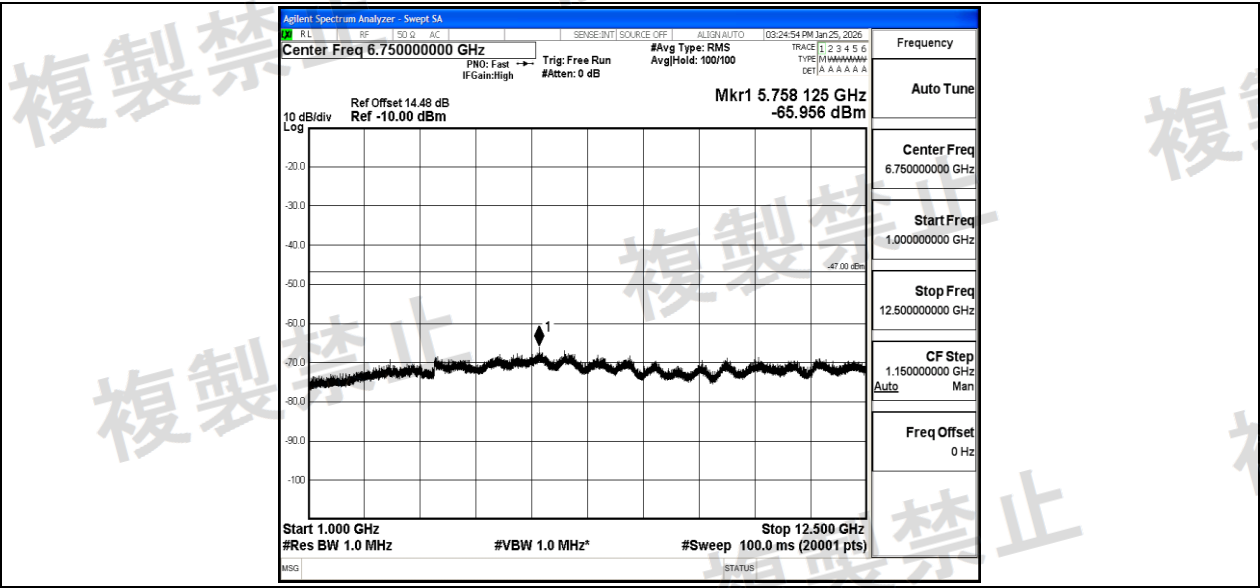
NTNV_3DH5_Ant1_2441_1000~12500



NTNV_3DH5_Ant1_2480_30~1000



NTNV_3DH5_Ant1_2480_1000~12500



A.7 Dwell Time

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit [s]	Verdict
NTNV	DH5	Ant1	Hop	2.91	110	0.32	≤0.4	PASS
	2DH5	Ant1	Hop	2.90	106	0.307	≤0.4	PASS
	3DH5	Ant1	Hop	2.90	130	0.377	≤0.4	PASS

Test Graphs

