



Appendix A for BT Test Data

Product Name: 天面投影プロジェクター

Test Model: BW-PP01

Environmental Conditions

Temperature:	23.4°C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Jerry Chu
Supervised by:	Can Kun





A.1 Frequency_Error

Test Result

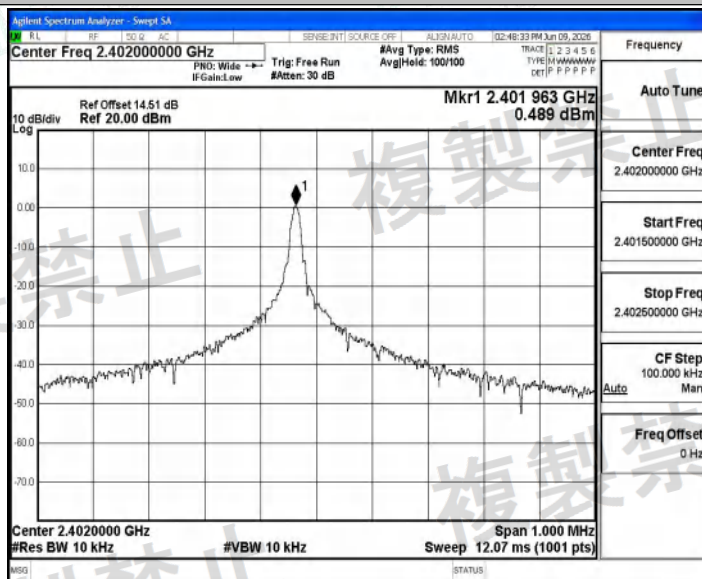
TestCondition	TestMode	Antenna	Frequency [MHz]	Test Frequency [MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency_Error	Ant1	2402	2401.963	-15.40383	±50	PASS
			2441	2440.962	-15.56739	±50	PASS
			2480	2479.962	-15.32258	±50	PASS



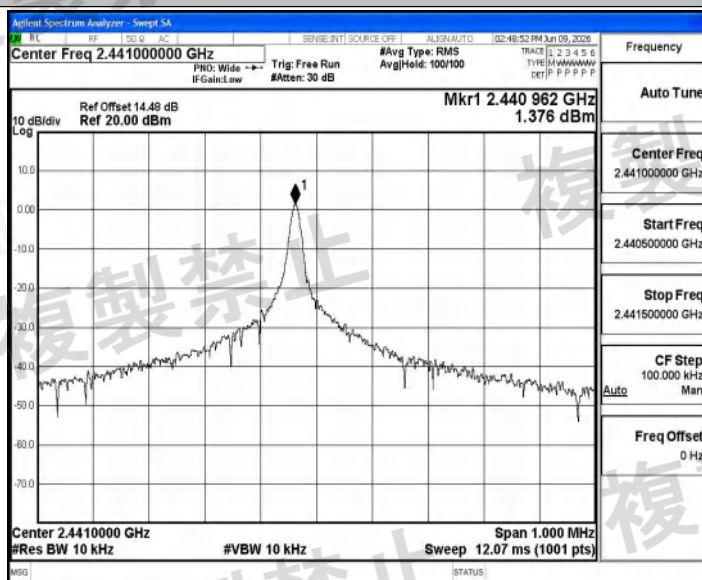


Test Graphs

NTNV_Ant1_2402

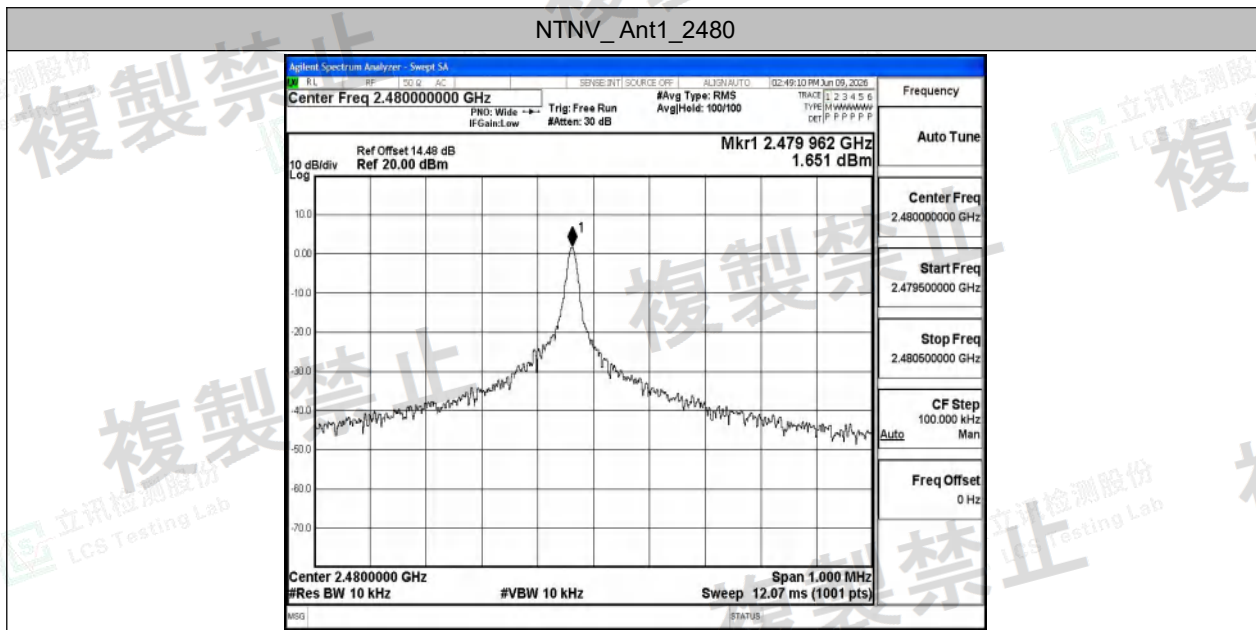


NTNV_Ant1_2441





NTNV_Ant1_2480



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A.2 Antenna Power & EIRP

Test Result

Test Voltage				Normal Voltage			
Mode	Declared power	Total Power	Total Power	Power	Limit	Tolerance	Limit
	(mW/MHz)	(dBm)	(mW)	(mW/MHz)	(mW/MHz)	/	/
Hopping-Tx (1Mbps)	1.0	17.77	59.84	0.838	3	-16.20	+20%
Hopping-Tx (2Mbps)	1.0	17.83	60.67	0.849	3	-15.10	+20%
Hopping-Tx (3Mbps)	1.0	17.95	62.37	0.872	3	-12.80	+20%
Conclusion: PASS							

1. Measure the total power by the Power Meter in a state of hopping mode.
2. Calculate the mean power per 1MHz by dividing the reading level by spread bandwidth.
Output power Density (mW/MHz) = Total power (mW) / spread bandwidth(MHz)
Spread Bandwidth (DH5) = 71.385MHz, Spread Bandwidth (2DH5) = 71.448MHz,
Spread Bandwidth (3DH5) = 71.536MHz

EIRP								
Test Condition	TestMode	Antenna	Result (mW/MHz)	Result (dBm/MHz)	Antenna Gain(dBi)	EIRP (dBm/MHz)	Limit (dBm/MHz)	Verdict
NTNV	Hopping-Tx (1Mbps)	Ant1	0.838	-0.77	3.06	2.29	≤6.91	PASS
NTNV	Hopping-Tx (2Mbps)	Ant1	0.849	-0.71	3.06	2.35	≤6.91	PASS
NTNV	Hopping-Tx (3Mbps)	Ant1	0.872	-0.59	3.06	2.47	≤6.91	PASS





A.3 Occupied Bandwidth

Test Result

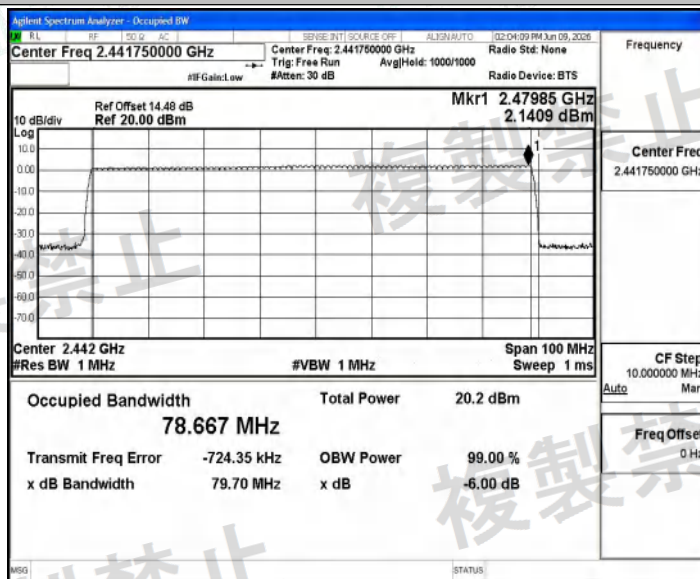
TestCondition	TestMode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	78.667	≤83.5	PASS
	2DH5	Ant1	Hop	78.758	≤83.5	PASS
	3DH5	Ant1	Hop	78.757	≤83.5	PASS



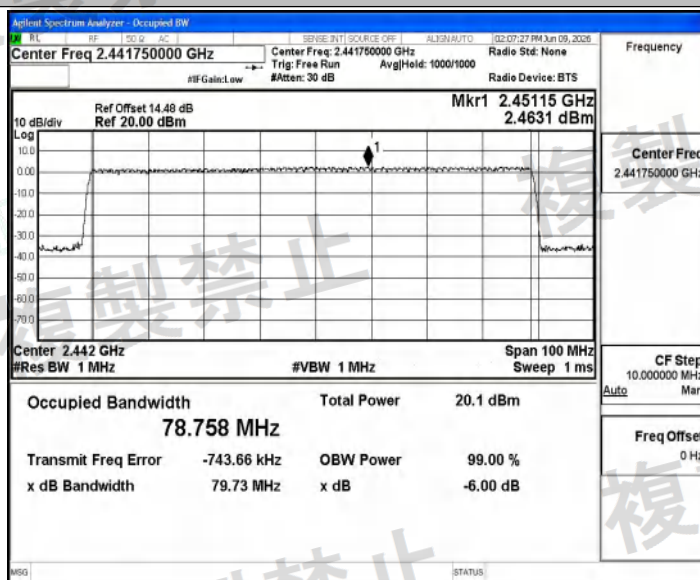


Test Graphs

NTNV_DH5_Ant1_Hop

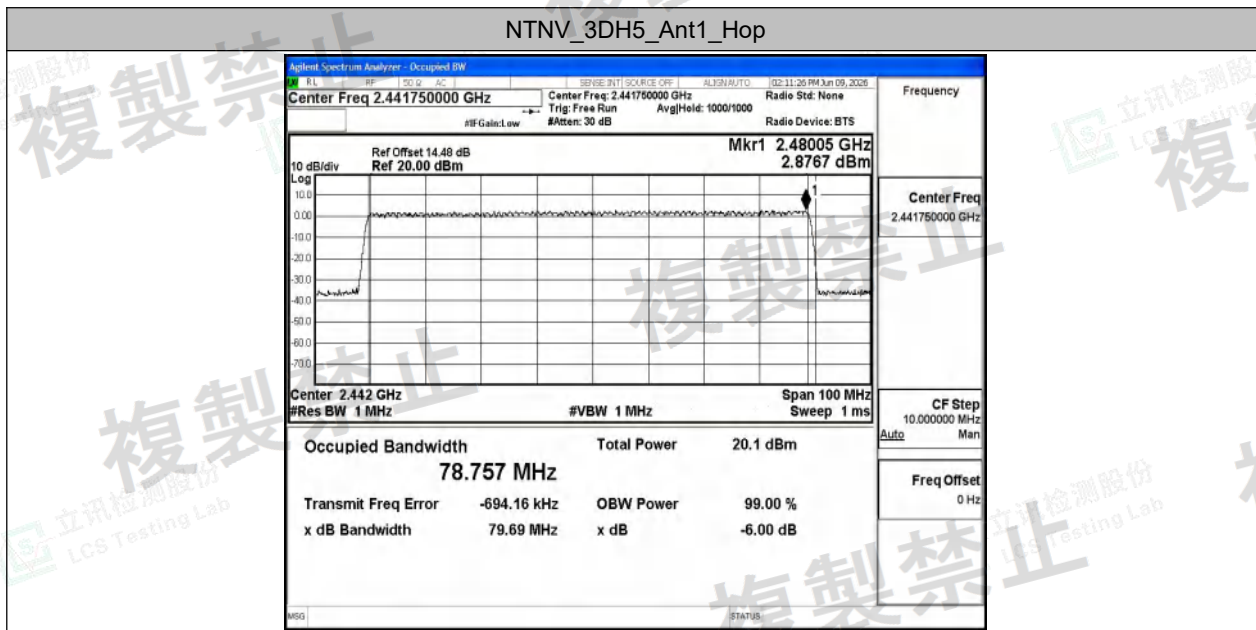


NTNV_2DH5_Ant1_Hop





NTNV_3DH5_Ant1_Hop





A.4 Spread Bandwidth

Test Result

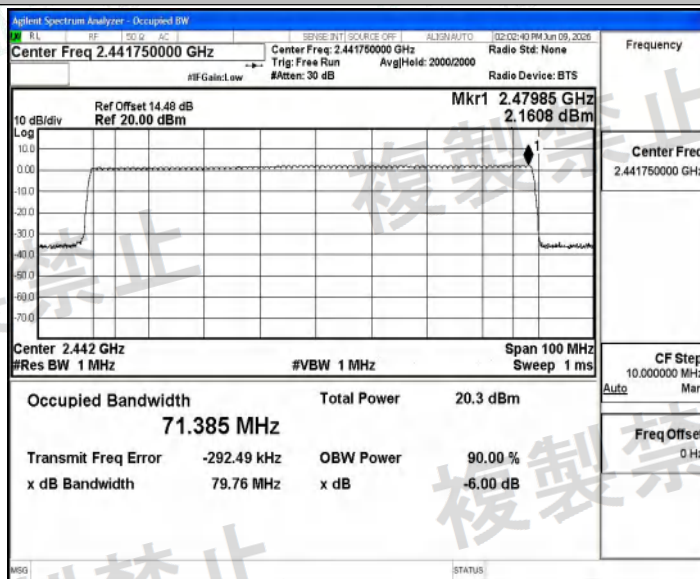
TestCondition	TestMode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	71.385	---	PASS
	2DH5	Ant1	Hop	71.448	---	PASS
	3DH5	Ant1	Hop	71.536	---	PASS



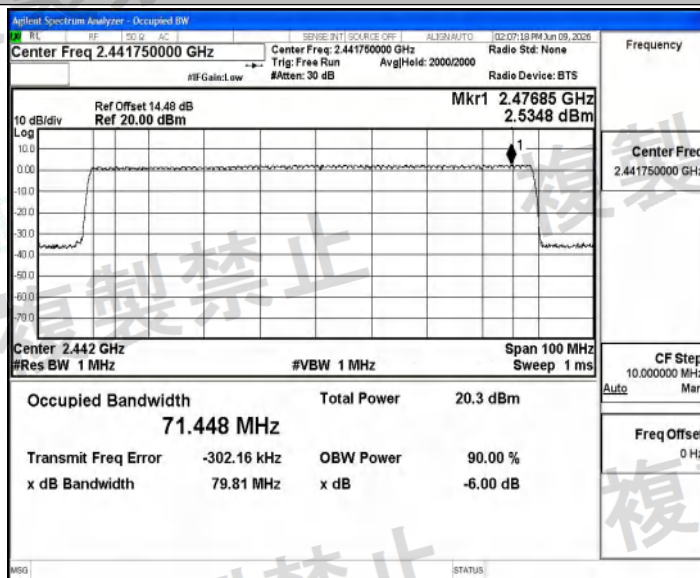


Test Graphs

NTNV_DH5_Ant1_Hop

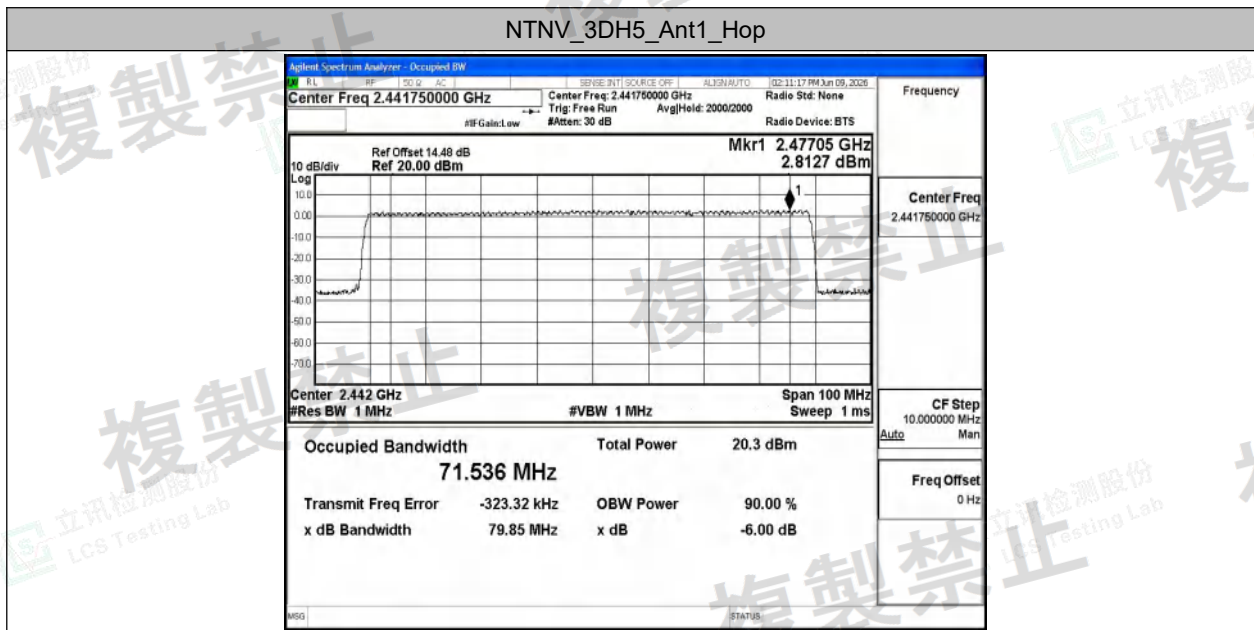


NTNV_2DH5_Ant1_Hop





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	-37.26	≤-26	0.18793	≤2.5	PASS
				1000~2387	-48.44	≤-26	0.01432	≤2.5	PASS
				2387~2400	-35.58	≤-16	0.27669	≤25	PASS
				2483.5~2496.5	-43.39	≤-16	0.04581	≤25	PASS
				2496.5~13000	-42.77	≤-26	0.05284	≤2.5	PASS
			2441	30~1000	-36.44	≤-26	0.22699	≤2.5	PASS
				1000~2387	-50.48	≤-26	0.00895	≤2.5	PASS
				2387~2400	-43.29	≤-16	0.04688	≤25	PASS
				2483.5~2496.5	-42.83	≤-16	0.05212	≤25	PASS
				2496.5~13000	-41.70	≤-26	0.06761	≤2.5	PASS
		2480	2480	30~1000	-36.88	≤-26	0.20512	≤2.5	PASS
				1000~2387	-49.44	≤-26	0.01138	≤2.5	PASS
				2387~2400	-43.48	≤-16	0.04487	≤25	PASS
				2483.5~2496.5	-42.34	≤-16	0.05834	≤25	PASS
				2496.5~13000	-42.20	≤-26	0.06026	≤2.5	PASS
	2DH5	Ant1	2402	30~1000	-35.88	≤-26	0.25823	≤2.5	PASS
				1000~2387	-48.65	≤-26	0.01365	≤2.5	PASS
				2387~2400	-33.01	≤-16	0.50003	≤25	PASS
				2483.5~2496.5	-43.28	≤-16	0.04699	≤25	PASS
				2496.5~13000	-43.06	≤-26	0.04943	≤2.5	PASS
			2441	30~1000	-36.04	≤-26	0.24889	≤2.5	PASS
				1000~2387	-51.33	≤-26	0.00736	≤2.5	PASS
				2387~2400	-43.20	≤-16	0.04786	≤25	PASS
				2483.5~2496.5	-43.26	≤-16	0.04721	≤25	PASS
				2496.5~13000	-41.57	≤-26	0.06966	≤2.5	PASS
		2480	2480	30~1000	-36.65	≤-26	0.21627	≤2.5	PASS
				1000~2387	-50.82	≤-26	0.00828	≤2.5	PASS
				2387~2400	-43.50	≤-16	0.04467	≤25	PASS
				2483.5~2496.5	-42.68	≤-16	0.05395	≤25	PASS
				2496.5~13000	-41.91	≤-26	0.06442	≤2.5	PASS
	3DH5	Ant1	2402	30~1000	-35.90	≤-26	0.25704	≤2.5	PASS
				1000~2387	-47.29	≤-26	0.01866	≤2.5	PASS
				2387~2400	-33.27	≤-16	0.47098	≤25	PASS
				2483.5~2496.5	-43.18	≤-16	0.04808	≤25	PASS
				2496.5~13000	-43.02	≤-26	0.04989	≤2.5	PASS



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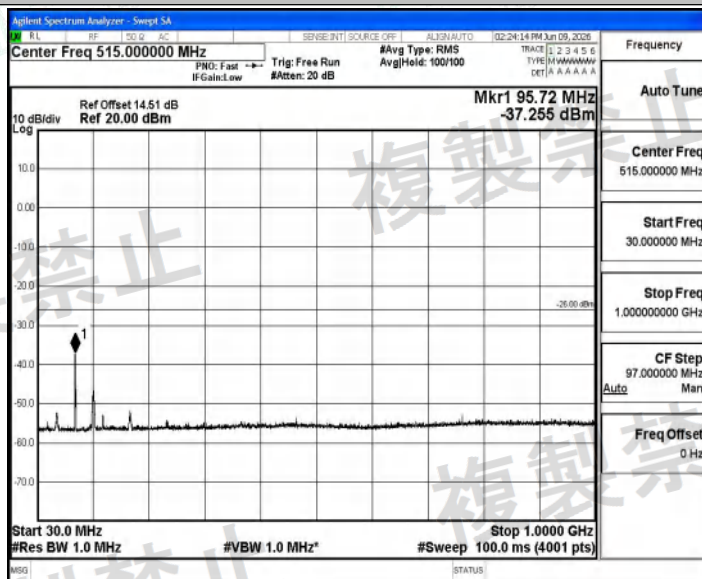
		2441	30~1000	-38.59	≤-26	0.13836	≤2.5	PASS
			1000~2387	-46.64	≤-26	0.02168	≤2.5	PASS
			2387~2400	-43.26	≤-16	0.04721	≤25	PASS
			2483.5~2496.5	-43.27	≤-16	0.04710	≤25	PASS
			2496.5~13000	-41.24	≤-26	0.07516	≤2.5	PASS
		2480	30~1000	-36.00	≤-26	0.25119	≤2.5	PASS
			1000~2387	-45.47	≤-26	0.02838	≤2.5	PASS
			2387~2400	-43.41	≤-16	0.04560	≤25	PASS
			2483.5~2496.5	-42.40	≤-16	0.05754	≤25	PASS
			2496.5~13000	-41.72	≤-26	0.06730	≤2.5	PASS



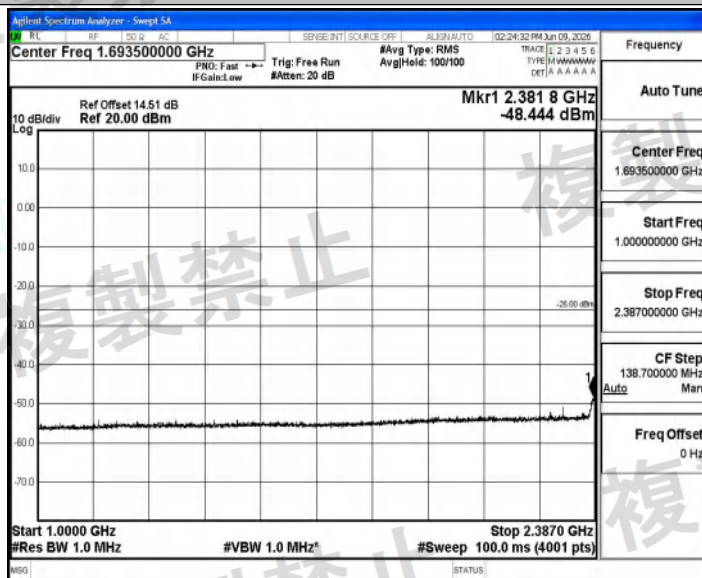


Test Graphs

NTNV_DH5_Ant1_2402_30~1000

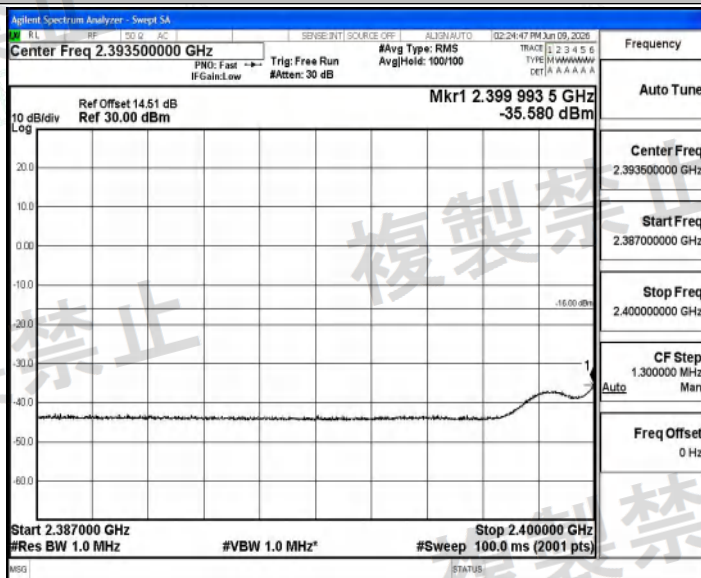


NTNV_DH5_Ant1_2402_1000~2387

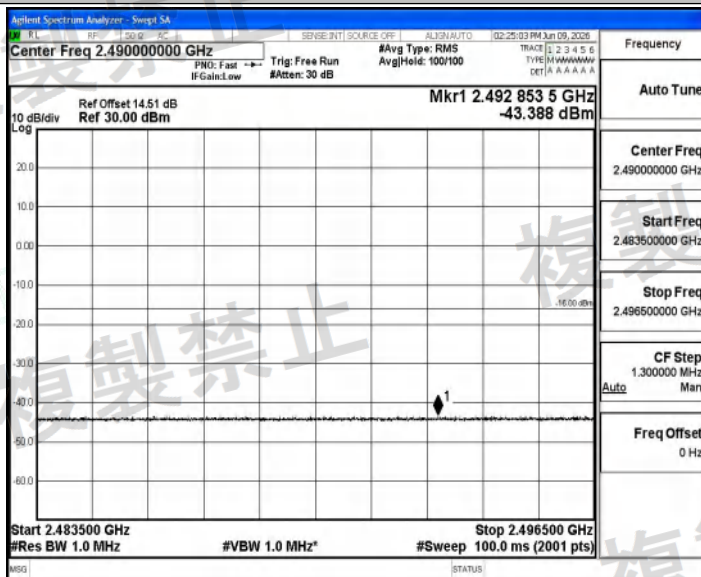




NTNV_DH5_Ant1_2402_2387~2400

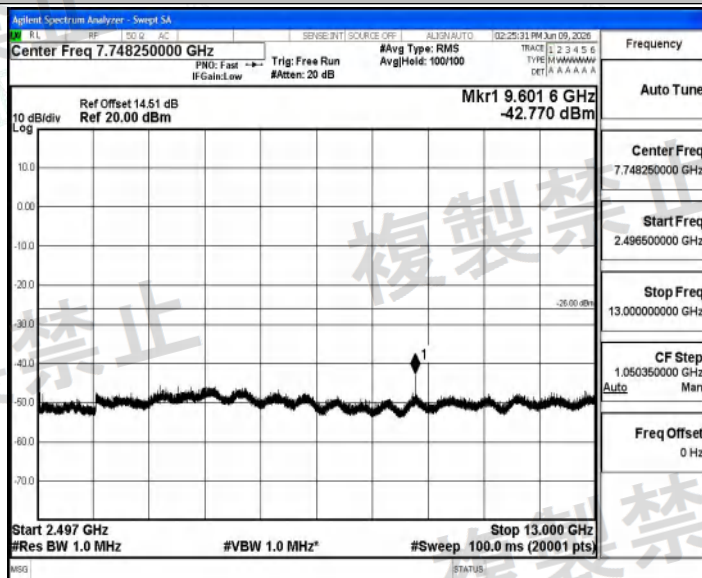


NTNV_DH5_Ant1_2402_2483.5~2496.5

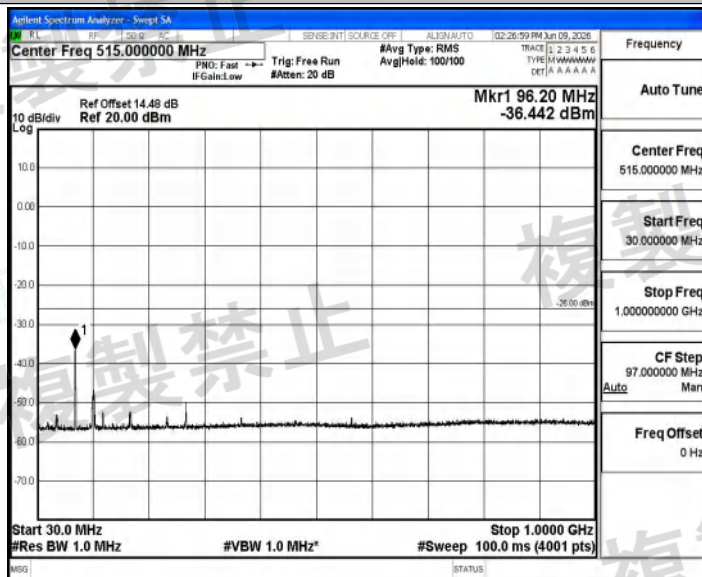




NTNV_DH5_Ant1_2402_2496.5~13000

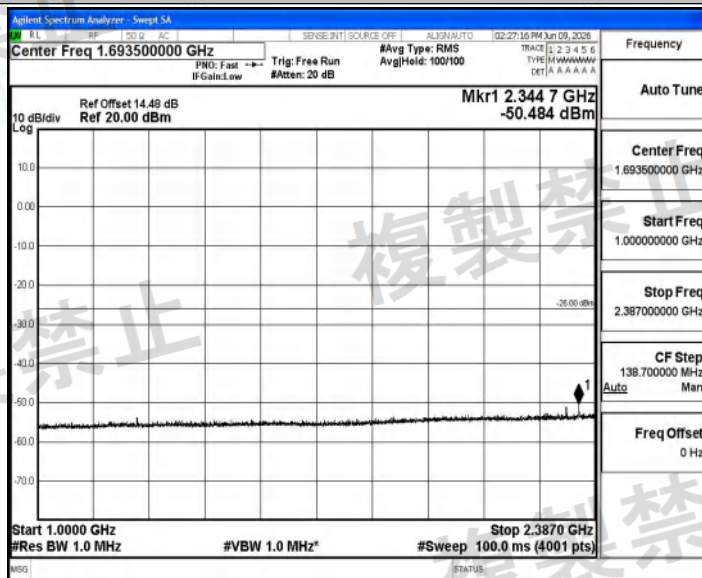


NTNV_DH5_Ant1_2441_30~1000

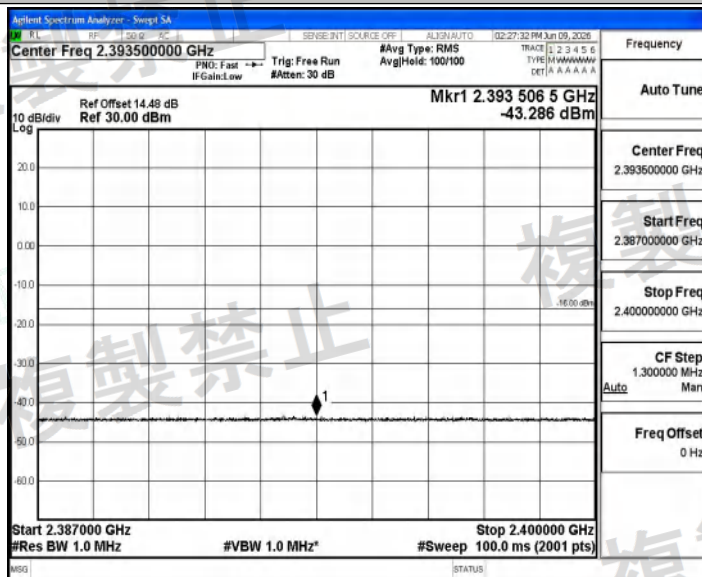




NTNV_DH5_Ant1_2441_1000~2387

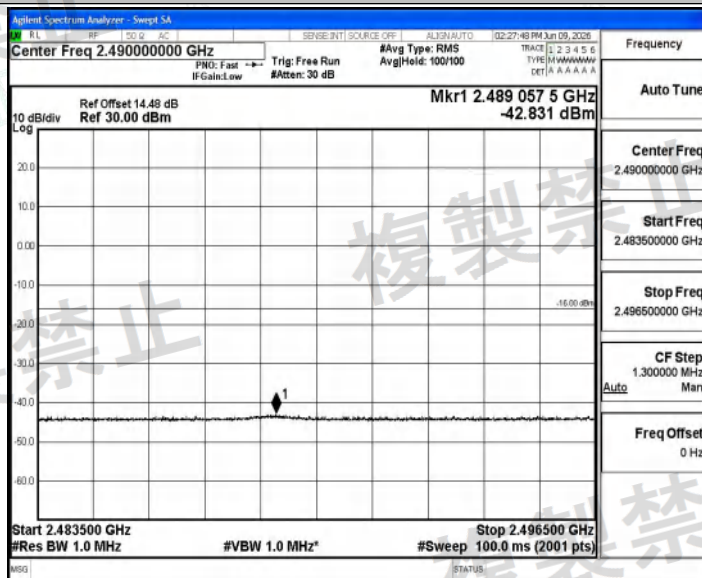


NTNV_DH5_Ant1_2441_2387~2400

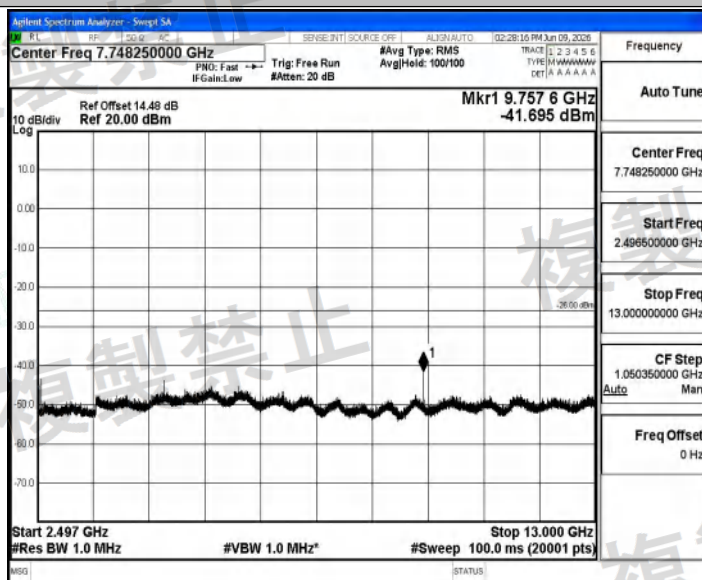




NTNV_DH5_Ant1_2441_2483.5~2496.5

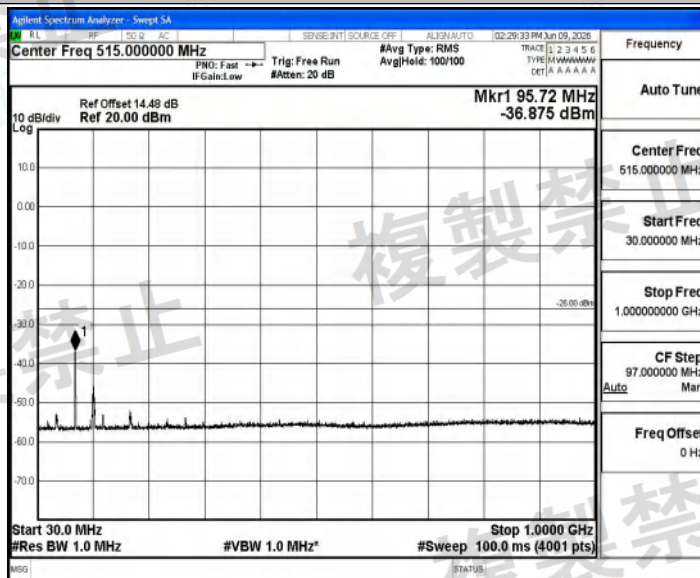


NTNV_DH5_Ant1_2441_2496.5~13000

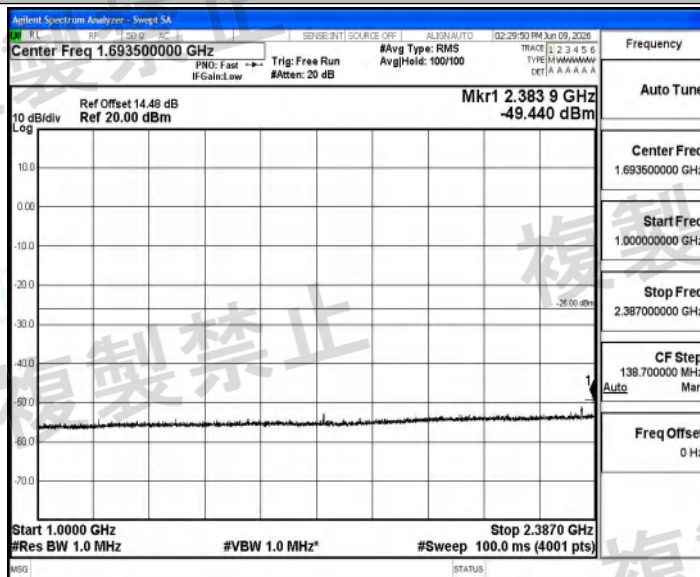




NTNV_DH5_Ant1_2480_30~1000

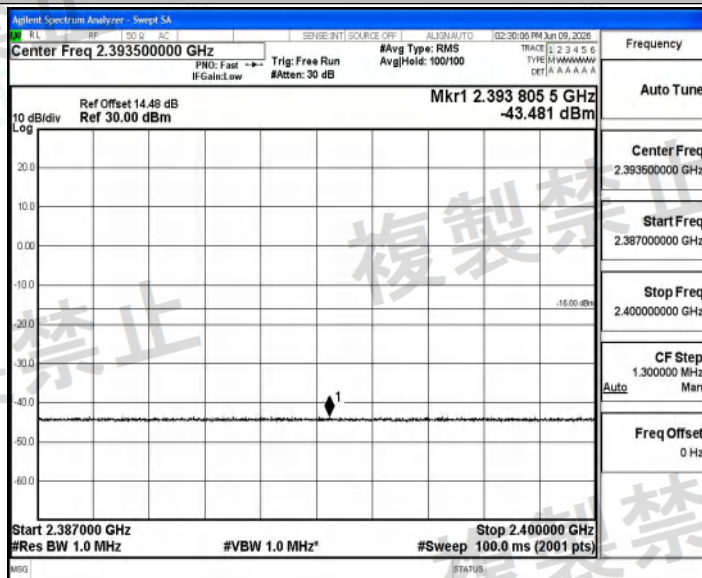


NTNV_DH5_Ant1_2480_1000~2387

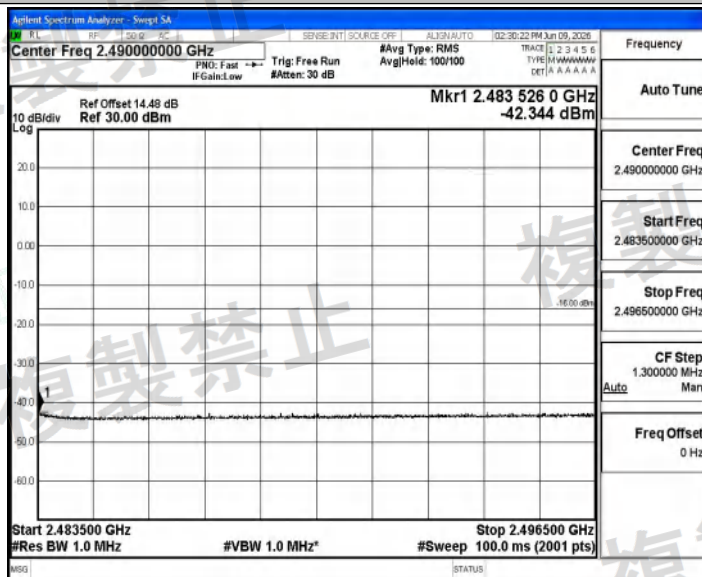




NTNV_DH5_Ant1_2480_2387~2400

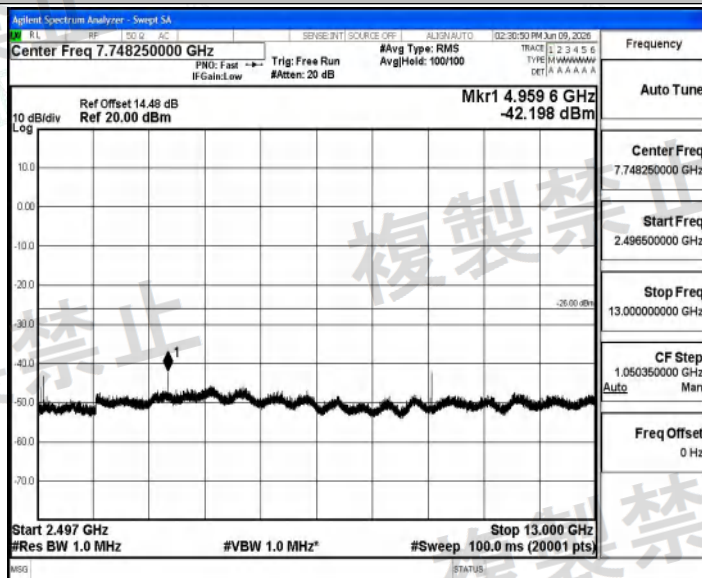


NTNV_DH5_Ant1_2480_2483.5~2496.5

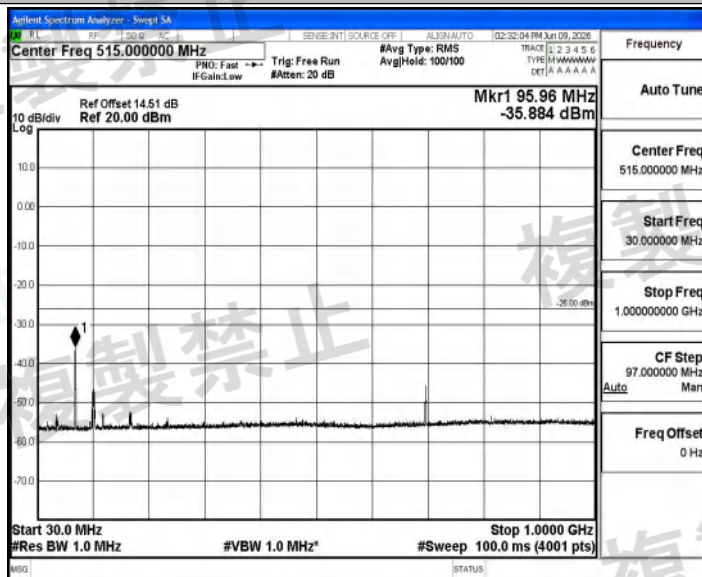




NTNV_DH5_Ant1_2480_2496.5~13000

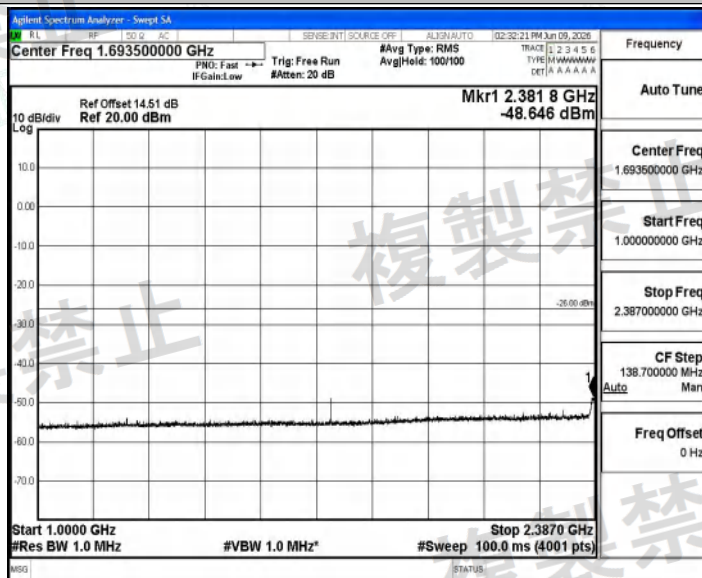


NTNV_2DH5_Ant1_2402_30~1000

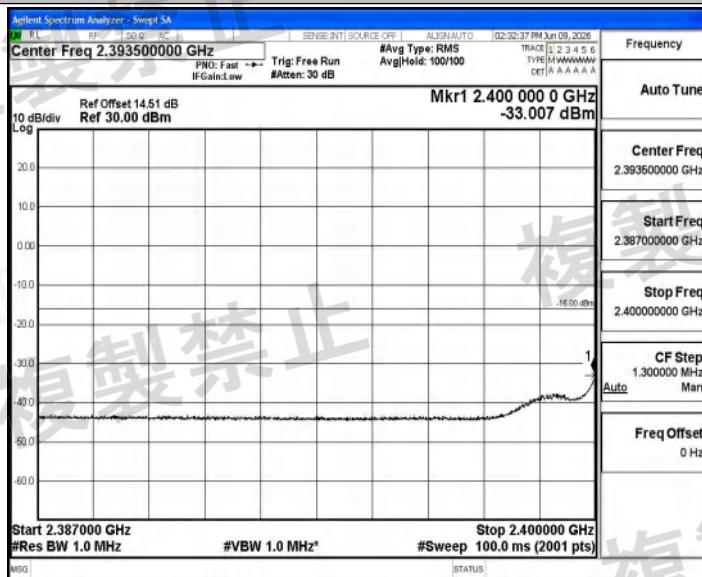




NTNV_2DH5_Ant1_2402_1000~2387

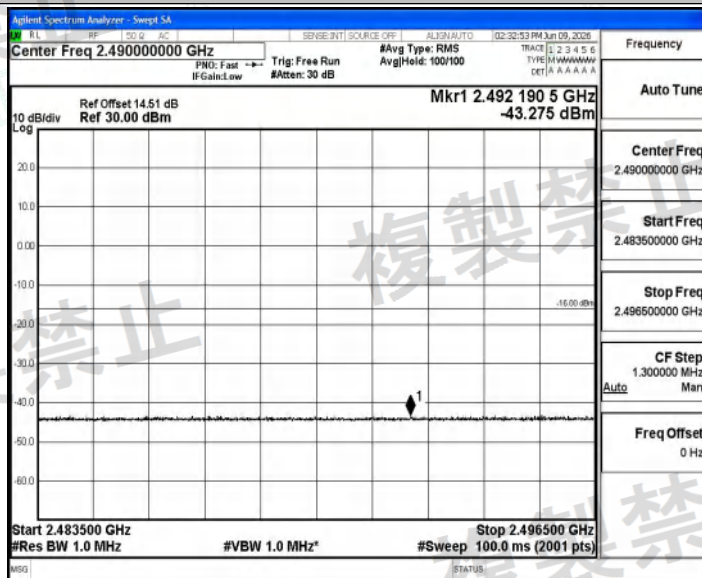


NTNV_2DH5_Ant1_2402_2387~2400

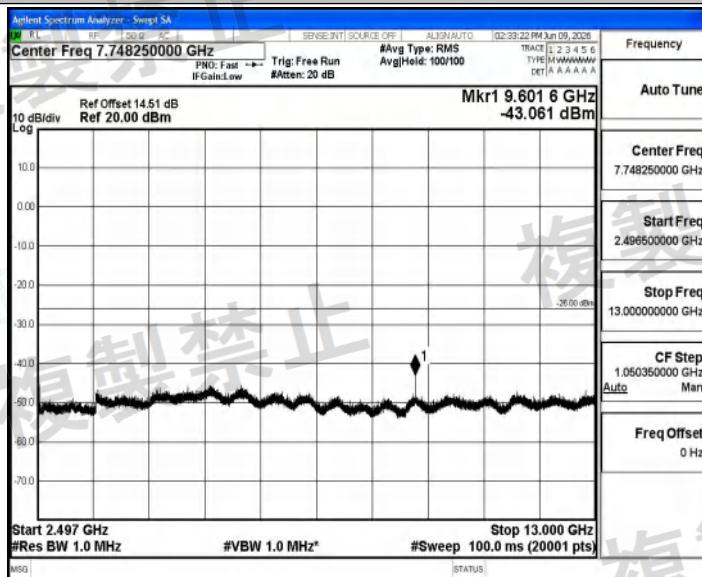




NTNV_2DH5_Ant1_2402_2483.5~2496.5

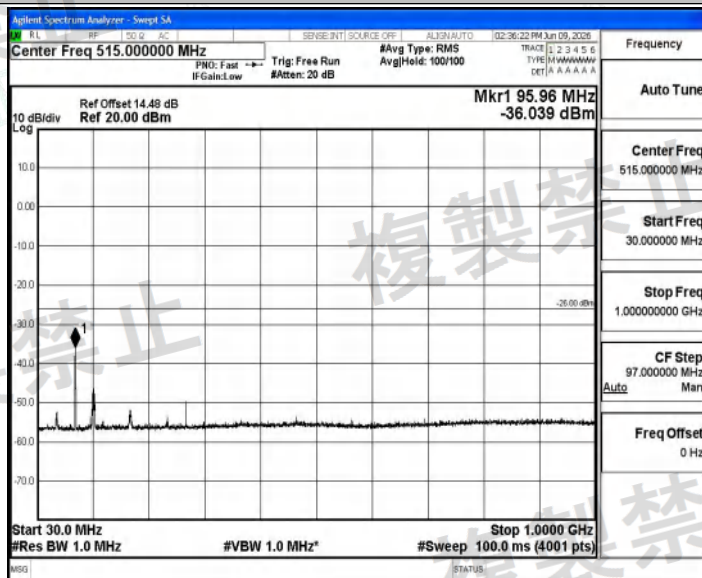


NTNV_2DH5_Ant1_2402_2496.5~13000

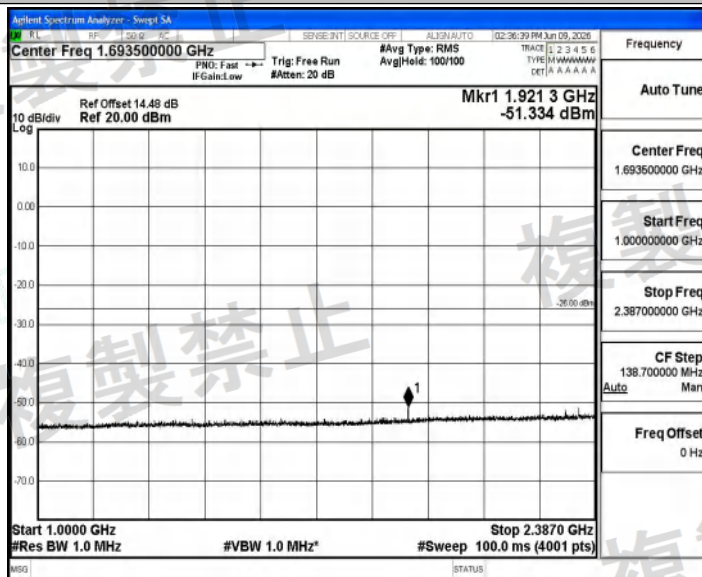




NTNV_2DH5_Ant1_2441_30~1000

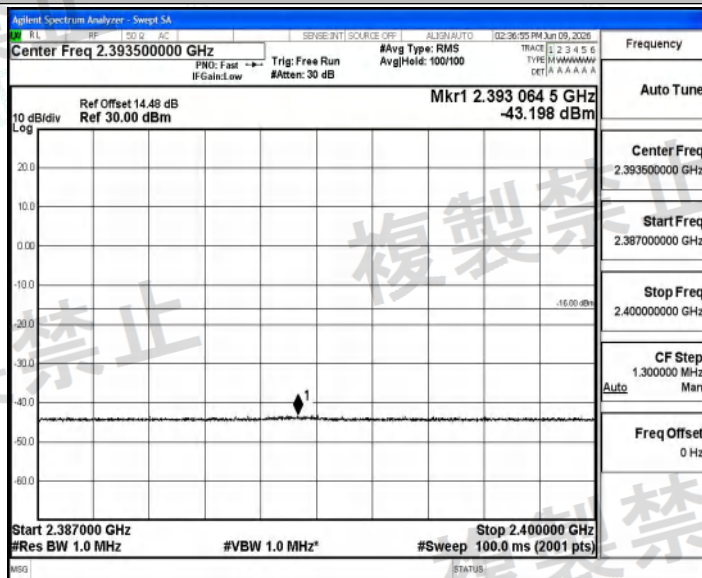


NTNV_2DH5_Ant1_2441_1000~2387

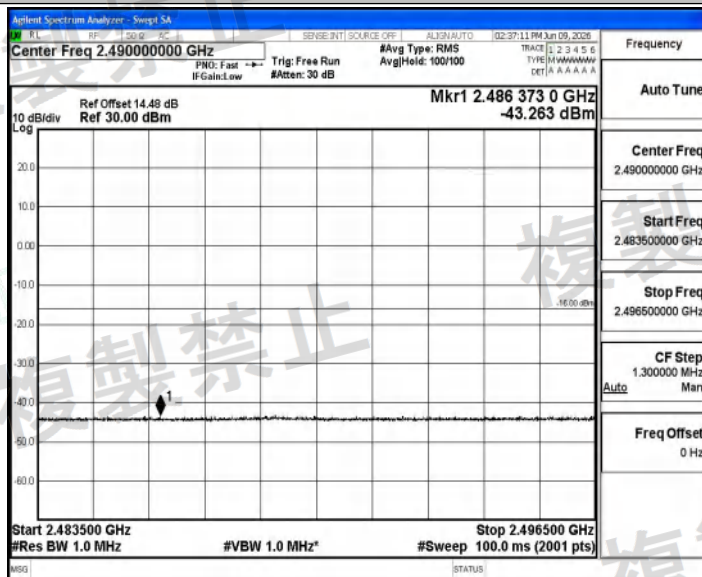




NTNV_2DH5_Ant1_2441_2387~2400

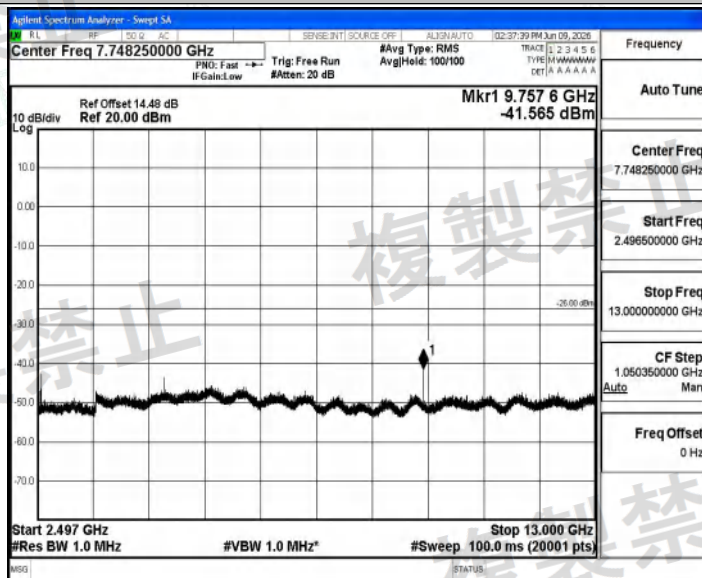


NTNV_2DH5_Ant1_2441_2483.5~2496.5

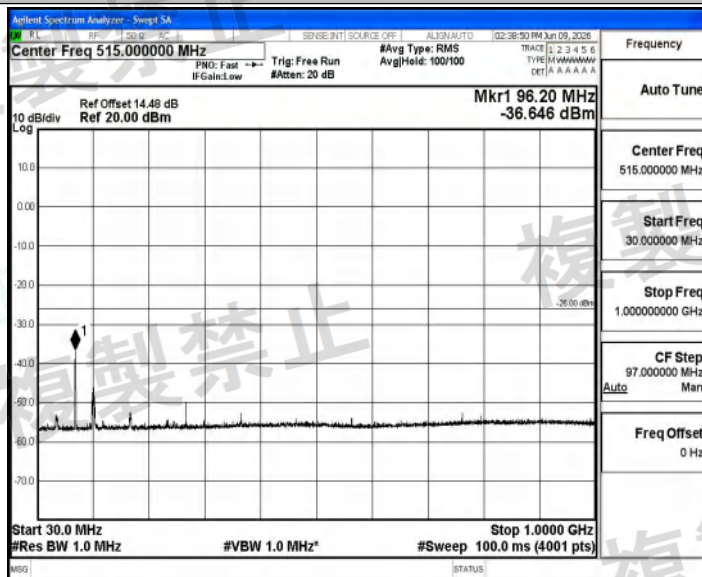




NTNV_2DH5_Ant1_2441_2496.5~13000

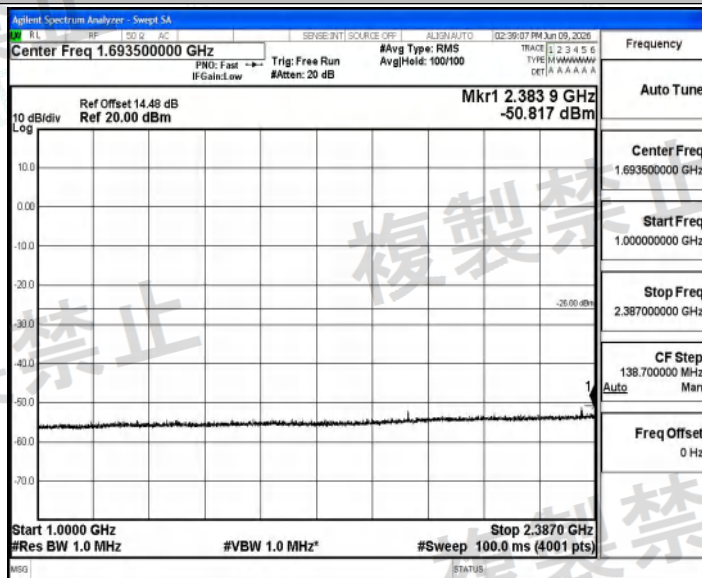


NTNV_2DH5_Ant1_2480_30~1000

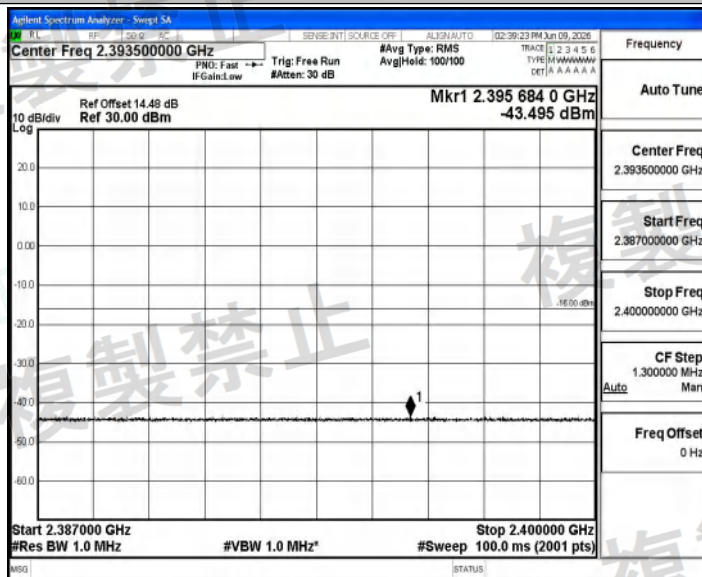




NTNV_2DH5_Ant1_2480_1000~2387

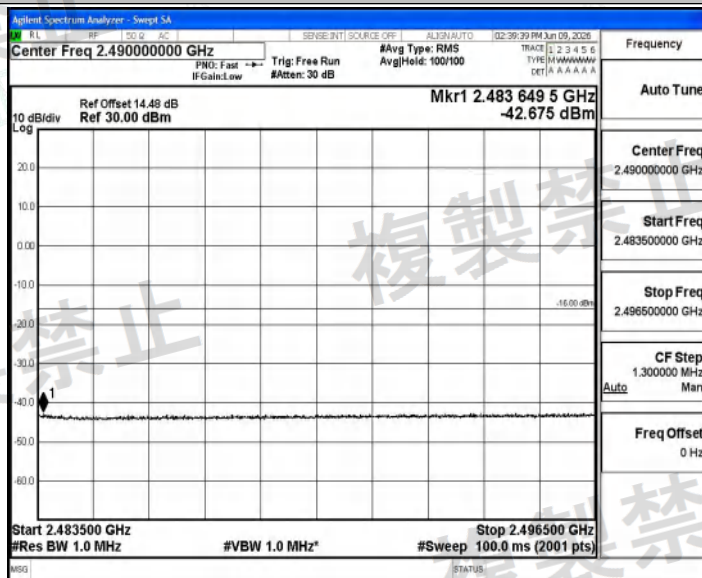


NTNV_2DH5_Ant1_2480_2387~2400

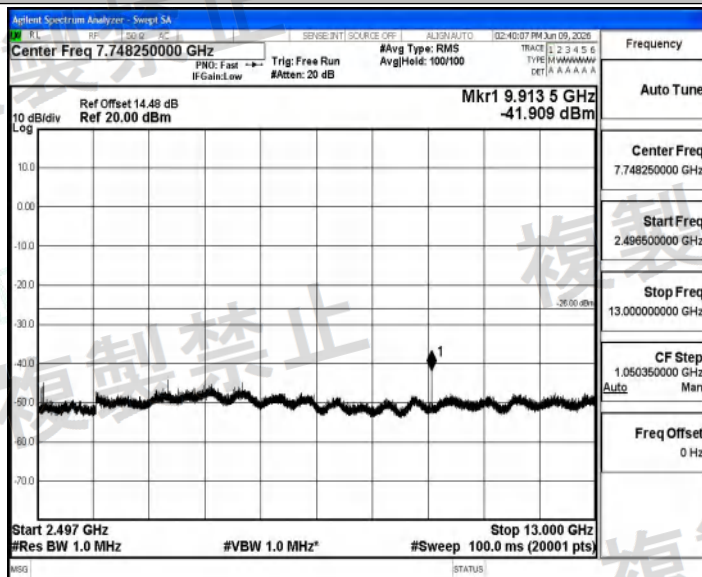




NTNV_2DH5_Ant1_2480_2483.5~2496.5

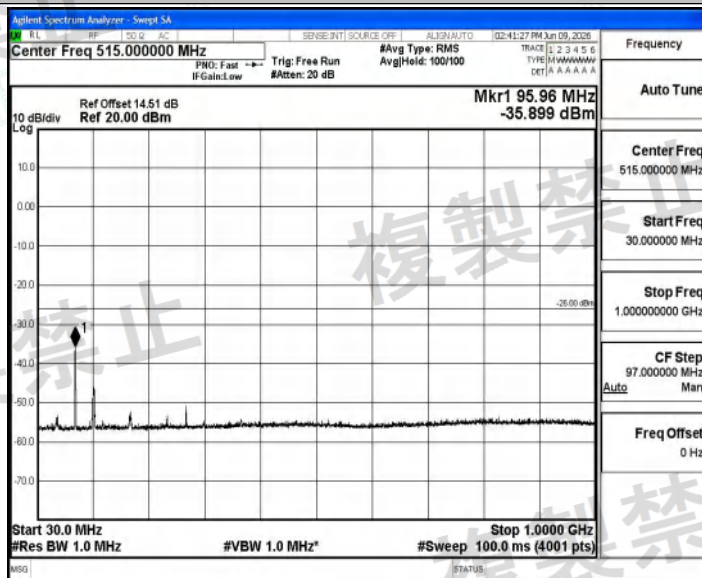


NTNV_2DH5_Ant1_2480_2496.5~13000

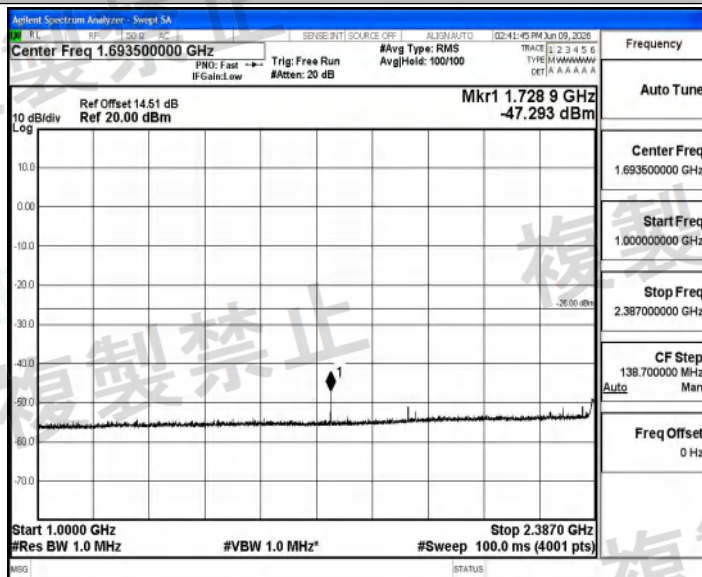




NTNV_3DH5_Ant1_2402_30~1000

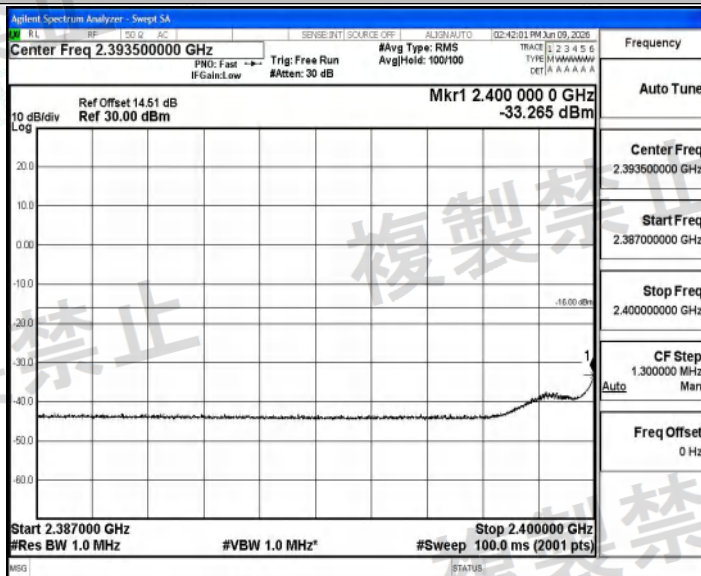


NTNV_3DH5_Ant1_2402_1000~2387

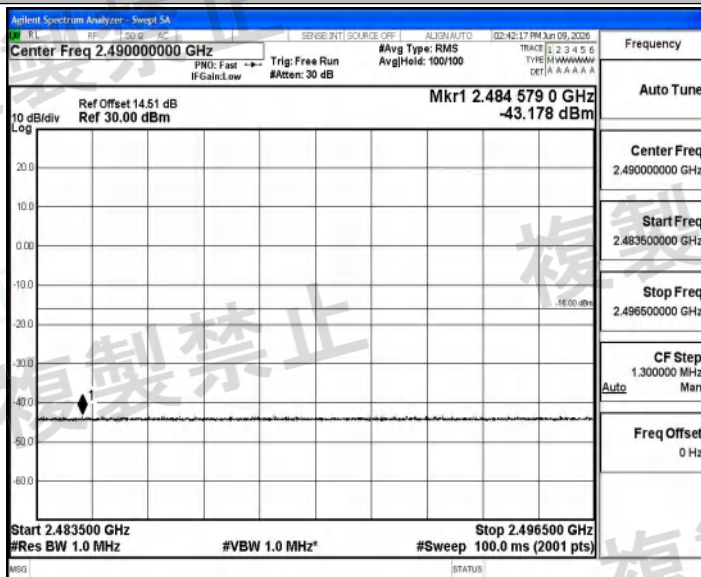




NTNV_3DH5_Ant1_2402_2387~2400

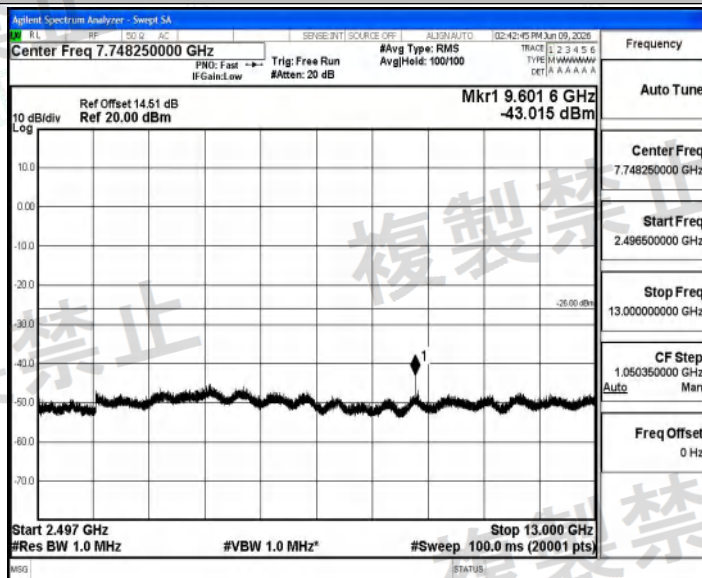


NTNV_3DH5_Ant1_2402_2483.5~2496.5

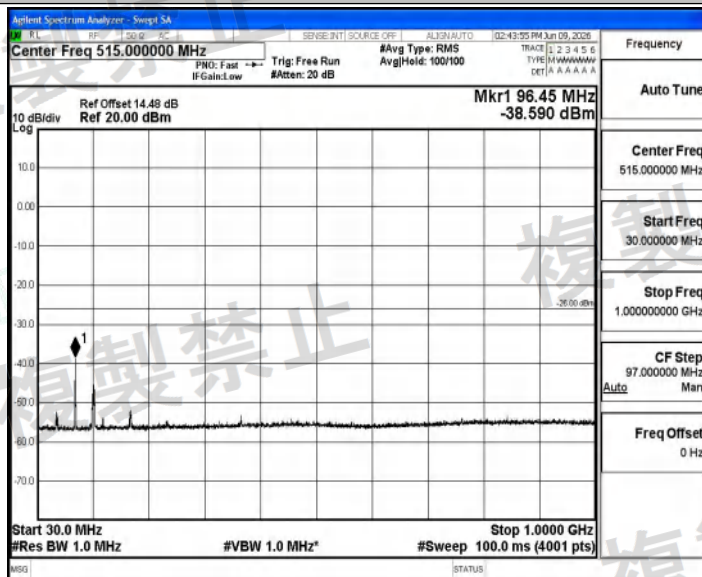




NTNV_3DH5_Ant1_2402_2496.5~13000

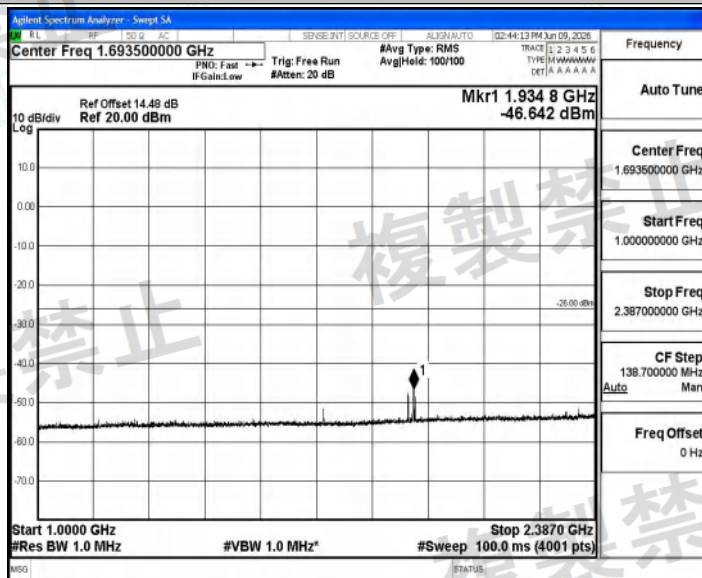


NTNV_3DH5_Ant1_2441_30~1000

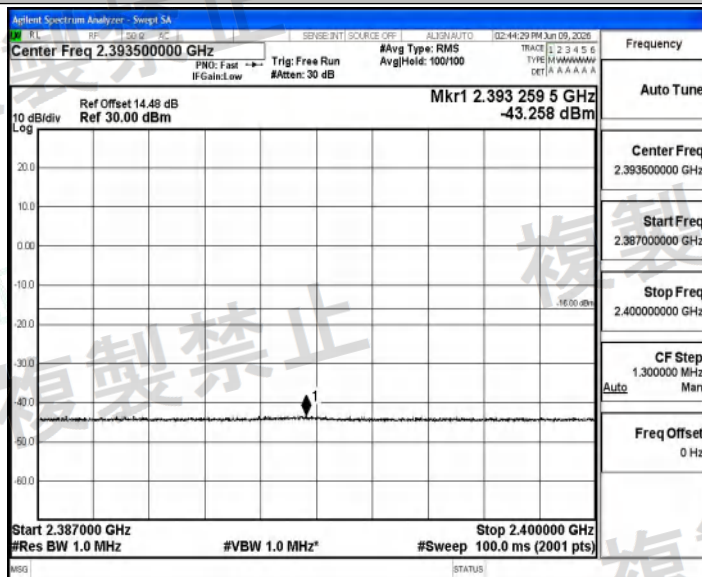




NTNV_3DH5_Ant1_2441_1000~2387

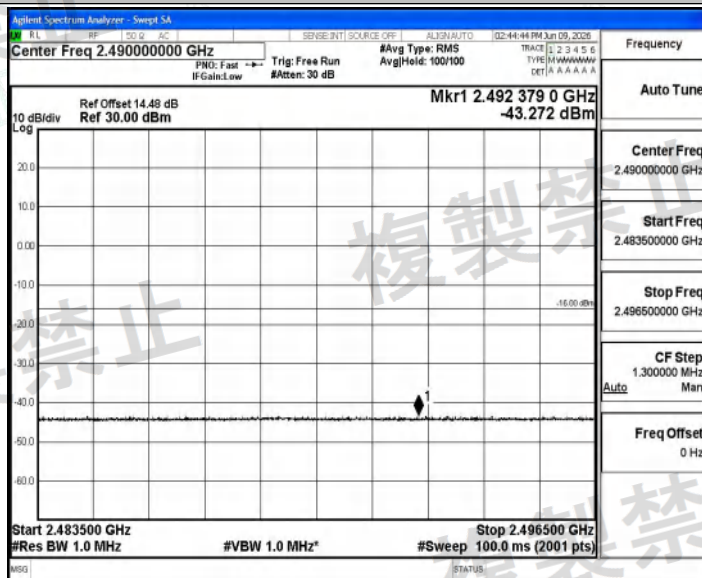


NTNV_3DH5_Ant1_2441_2387~2400

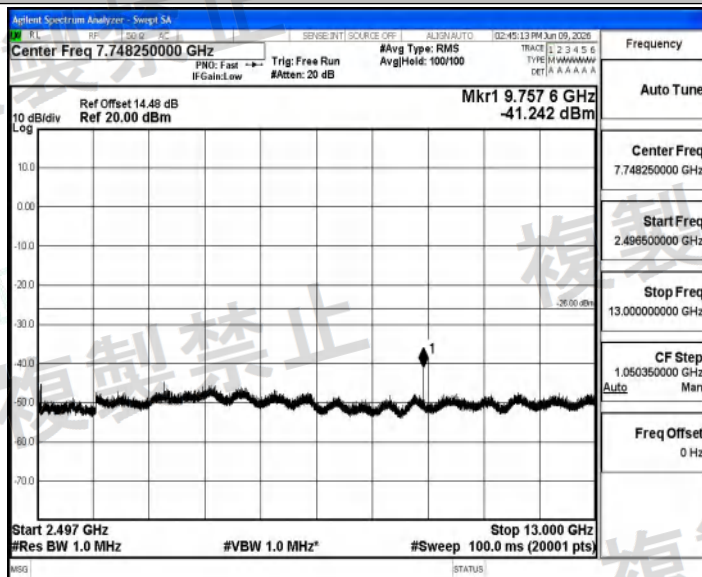




NTNV_3DH5_Ant1_2441_2483.5~2496.5

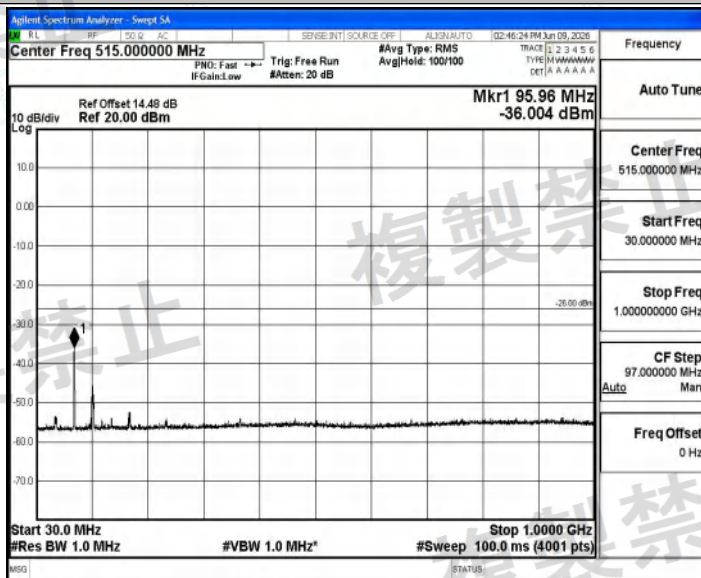


NTNV_3DH5_Ant1_2441_2496.5~13000

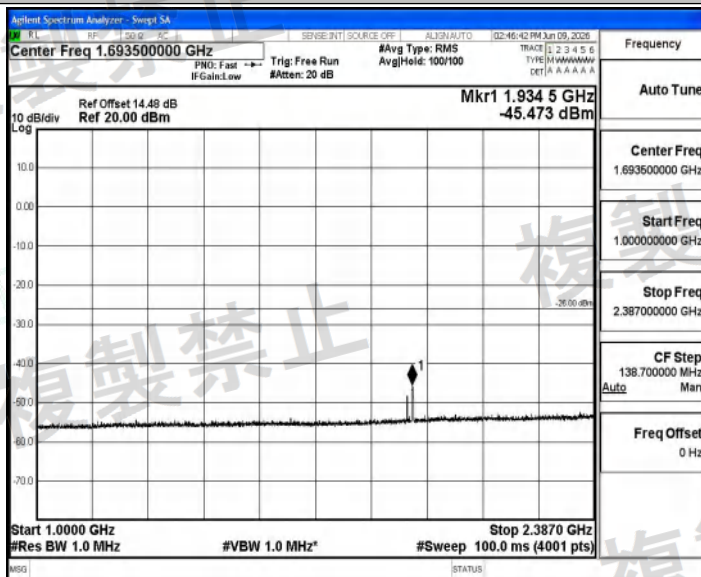




NTNV_3DH5_Ant1_2480_30~1000

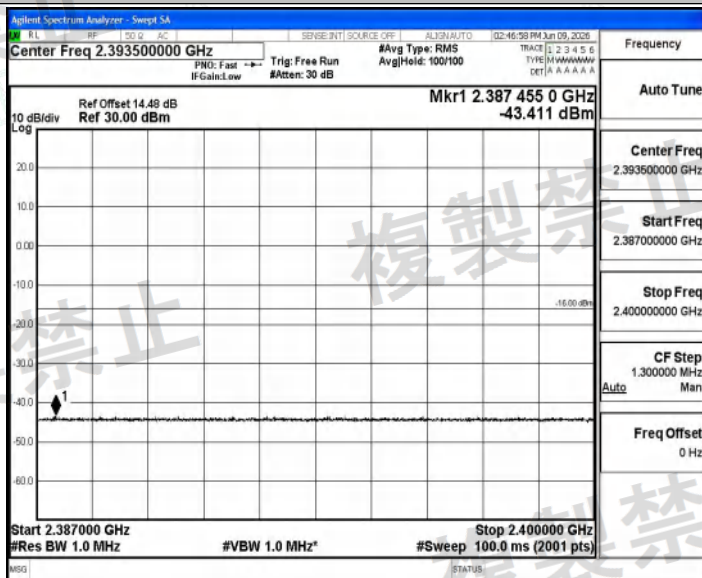


NTNV_3DH5_Ant1_2480_1000~2387

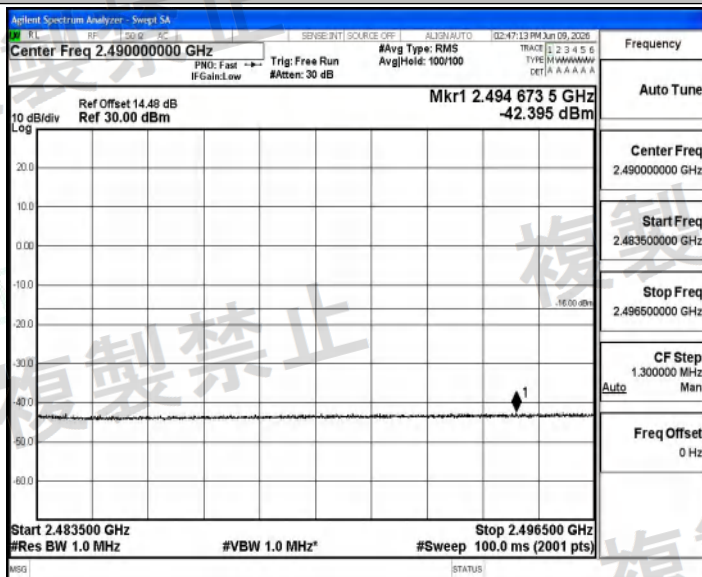


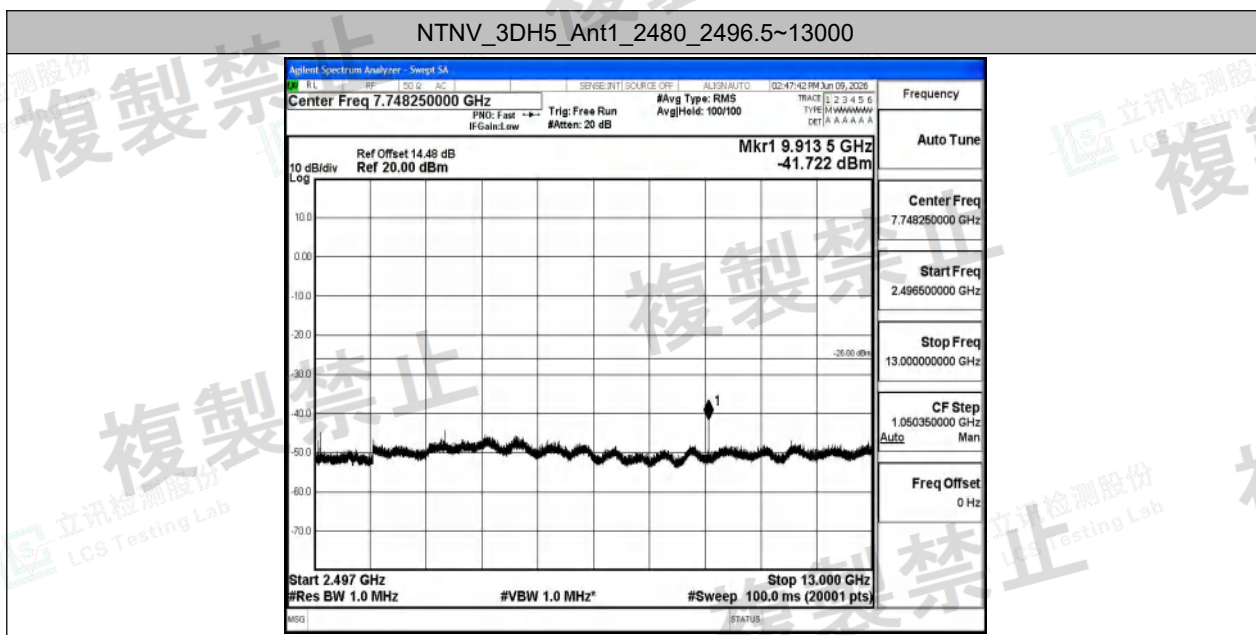


NTNV_3DH5_Ant1_2480_2387~2400



NTNV_3DH5_Ant1_2480_2483.5~2496.5







A.6 Spurious Emission of RX

Test Result

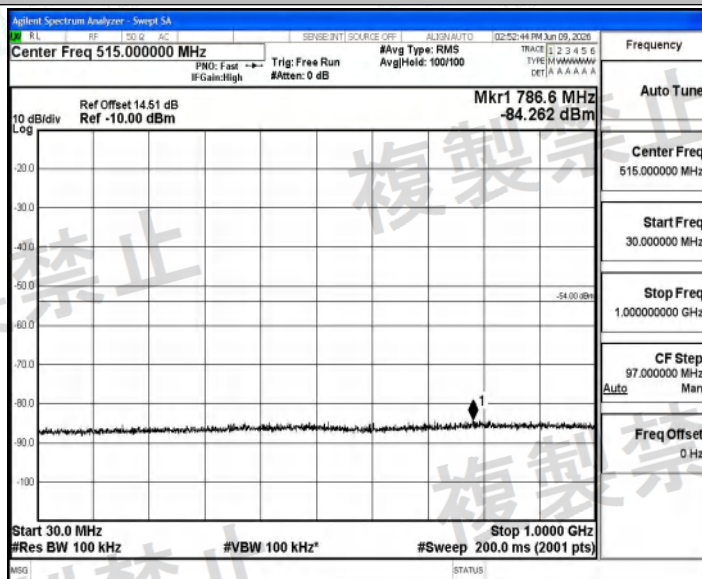
TestCondition	TestMode	Antenna	Frequency [MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-84.26	≤-54	0.00375	≤4	PASS
				1000~12500	-66.48	≤-47	0.22491	≤20	PASS
			2441	30~1000	-84.06	≤-54	0.00393	≤4	PASS
				1000~12500	-67.09	≤-47	0.19543	≤20	PASS
			2480	30~1000	-79.42	≤-54	0.01143	≤4	PASS
				1000~12500	-67.22	≤-47	0.18967	≤20	PASS
	2DH5	Ant1	2402	30~1000	-84.2	≤-54	0.00380	≤4	PASS
				1000~12500	-66.73	≤-47	0.21232	≤20	PASS
			2441	30~1000	-84.3	≤-54	0.00372	≤4	PASS
				1000~12500	-67.01	≤-47	0.19907	≤20	PASS
			2480	30~1000	-84.03	≤-54	0.00395	≤4	PASS
				1000~12500	-66.81	≤-47	0.20845	≤20	PASS
	3DH5	Ant1	2402	30~1000	-80.79	≤-54	0.00834	≤4	PASS
				1000~12500	-66.51	≤-47	0.22336	≤20	PASS
			2441	30~1000	-84.31	≤-54	0.00371	≤4	PASS
				1000~12500	-66.93	≤-47	0.20277	≤20	PASS
			2480	30~1000	-84.32	≤-54	0.00370	≤4	PASS
				1000~12500	-66.57	≤-47	0.22029	≤20	PASS



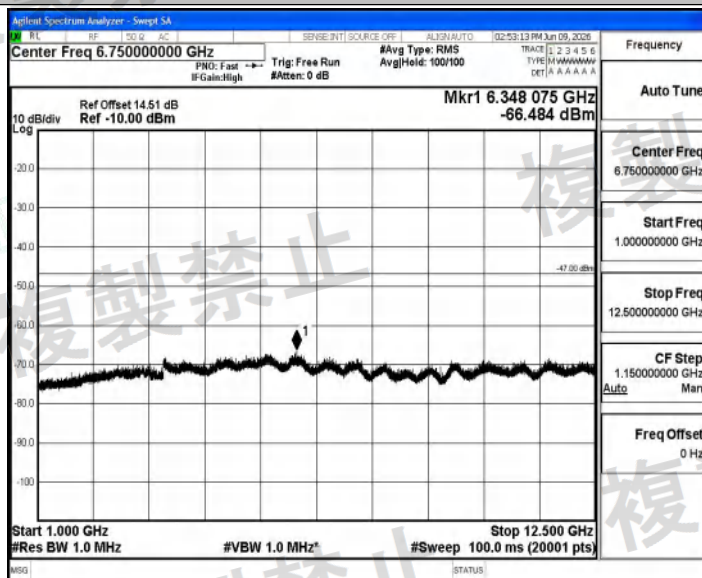


Test Graphs

NTNV_DH5_Ant1_2402_30~1000

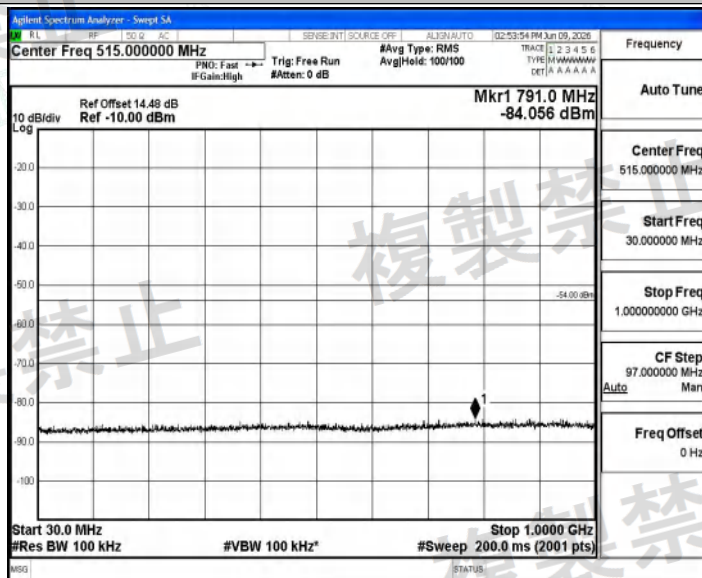


NTNV_DH5_Ant1_2402_1000~12500

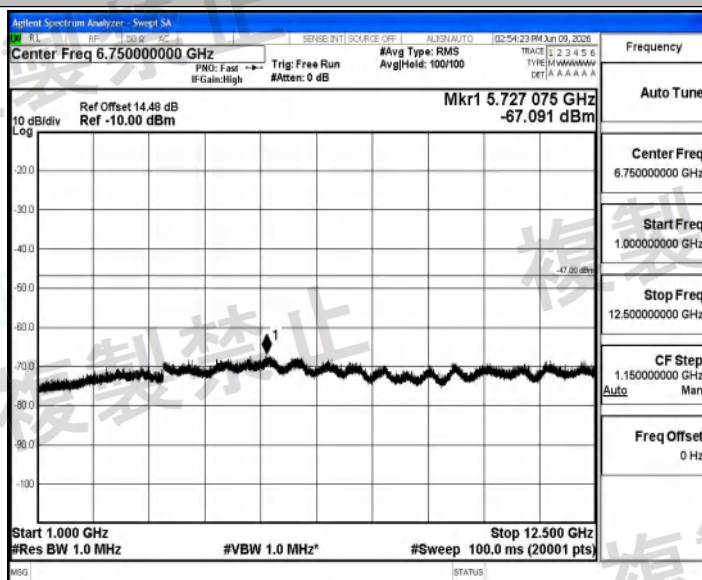




NTNV_DH5_Ant1_2441_30~1000

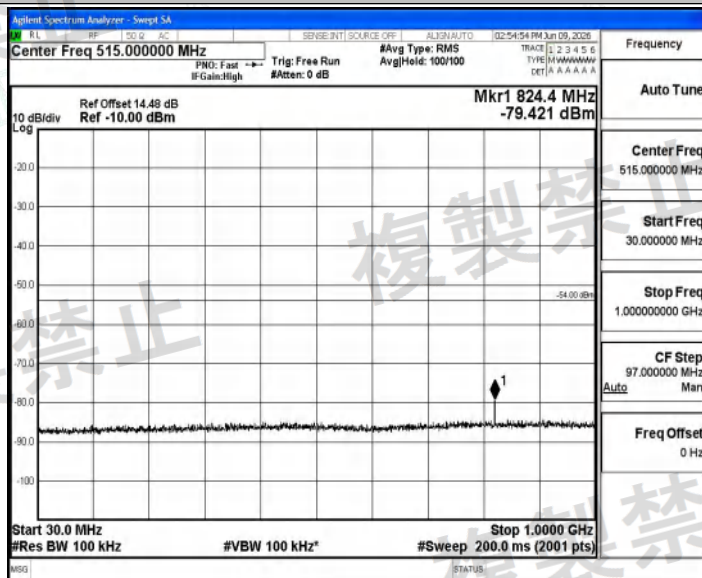


NTNV_DH5_Ant1_2441_1000~12500

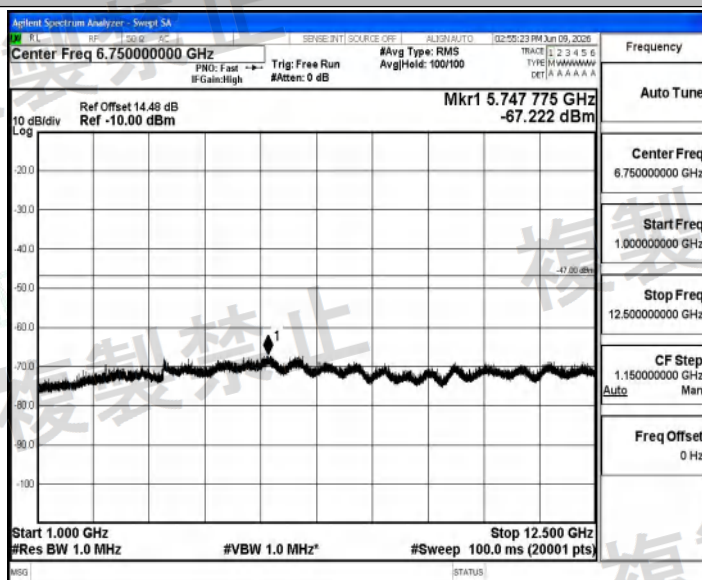




NTNV_DH5_Ant1_2480_30~1000

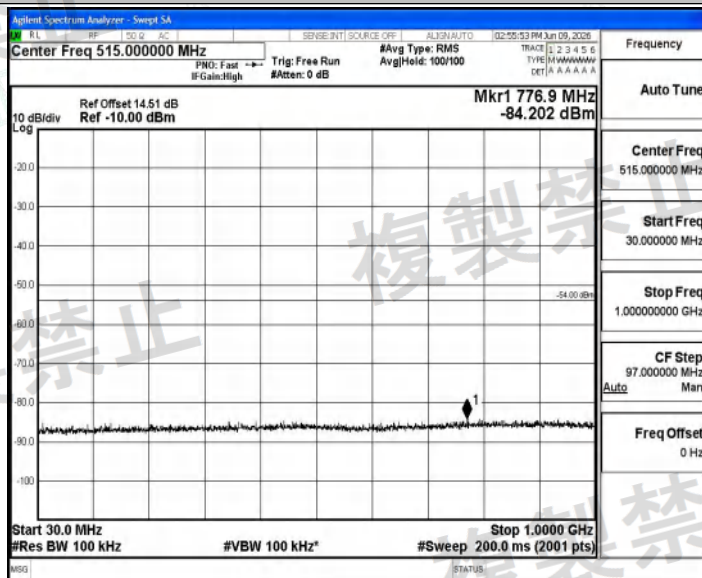


NTNV_DH5_Ant1_2480_1000~12500

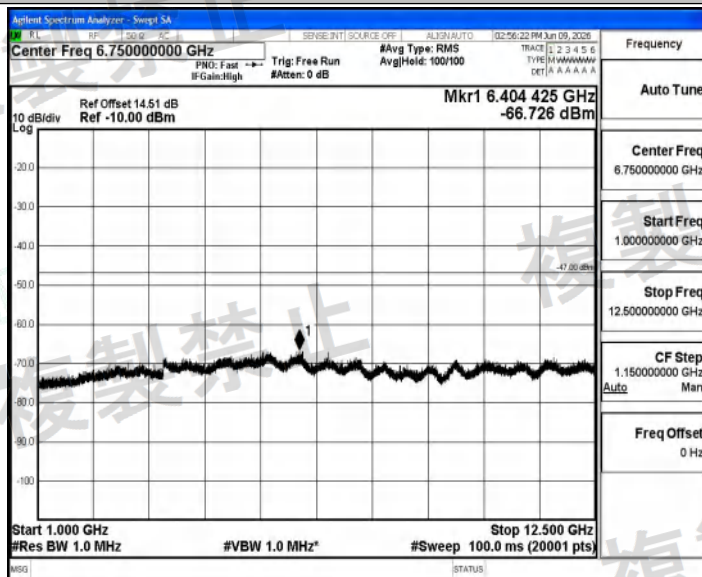




NTNV_2DH5_Ant1_2402_30~1000

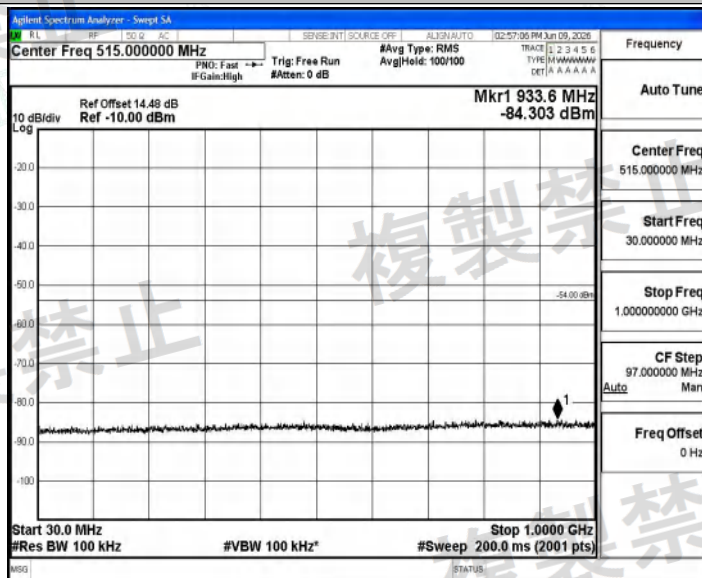


NTNV_2DH5_Ant1_2402_1000~12500

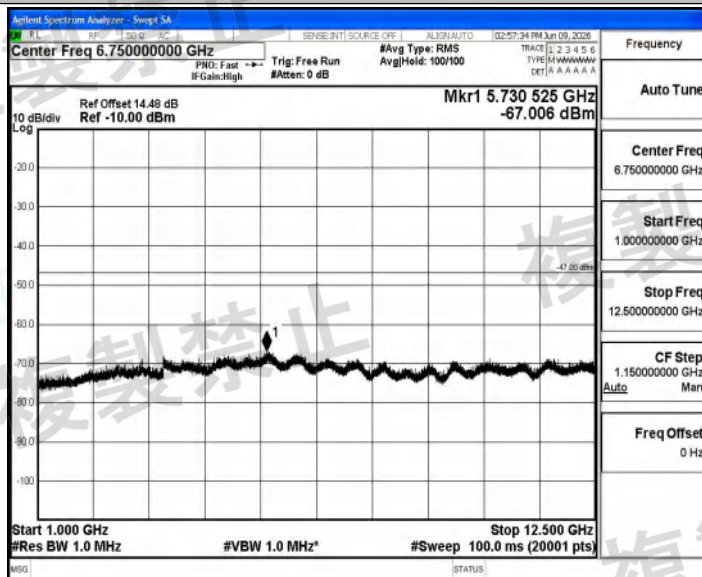




NTNV_2DH5_Ant1_2441_30~1000

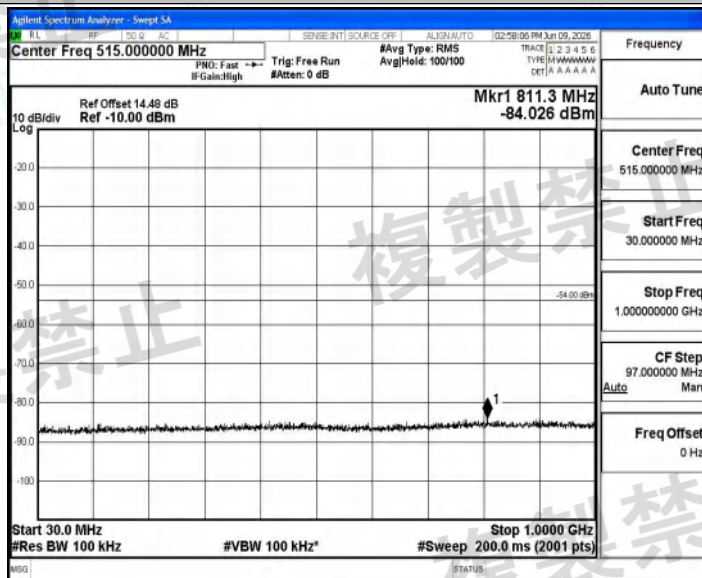


NTNV_2DH5_Ant1_2441_1000~12500

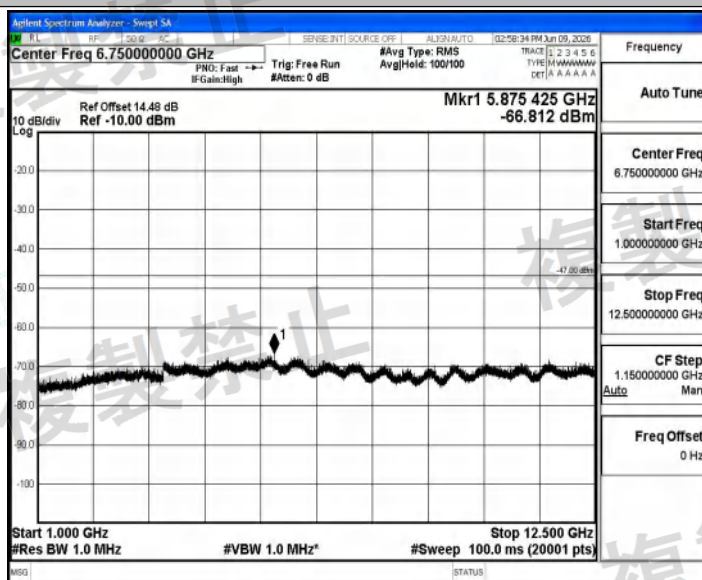




NTNV_2DH5_Ant1_2480_30~1000

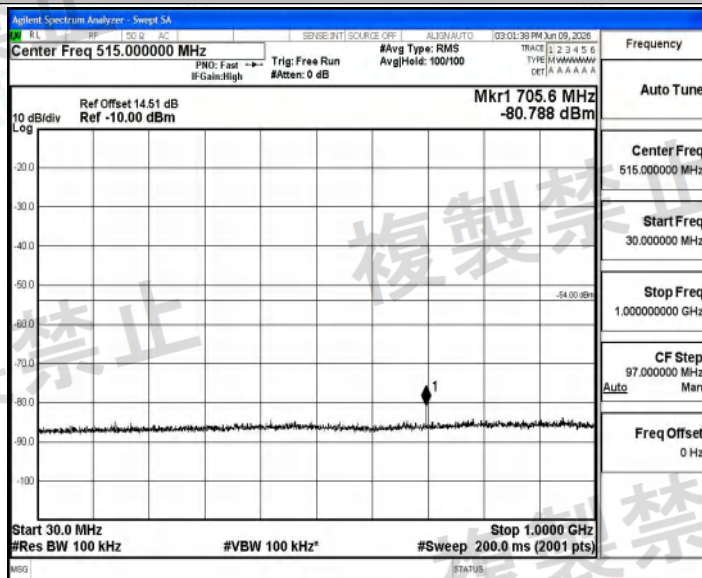


NTNV_2DH5_Ant1_2480_1000~12500

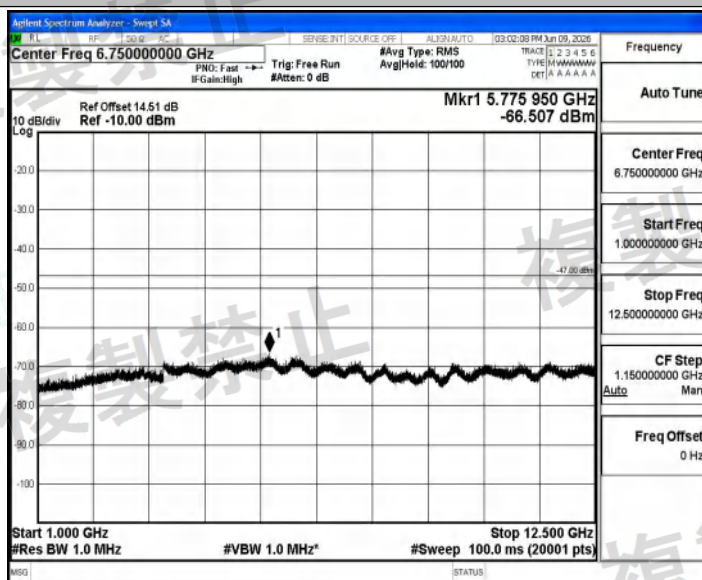




NTNV_3DH5_Ant1_2402_30~1000

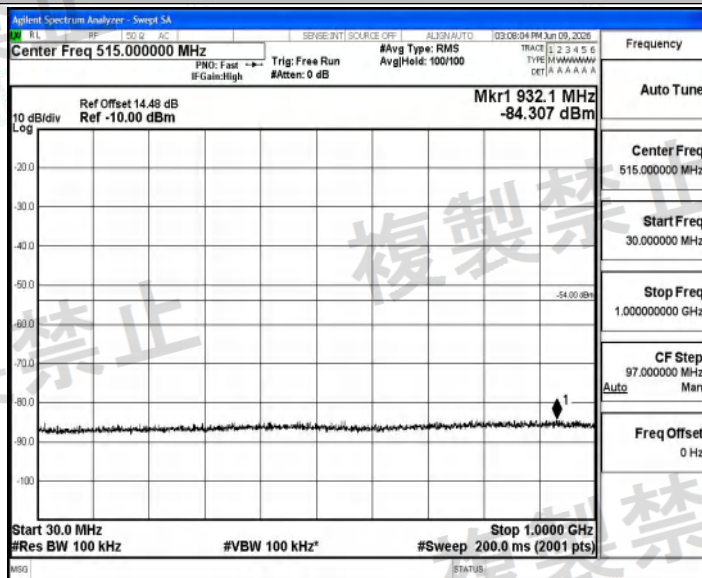


NTNV_3DH5_Ant1_2402_1000~12500

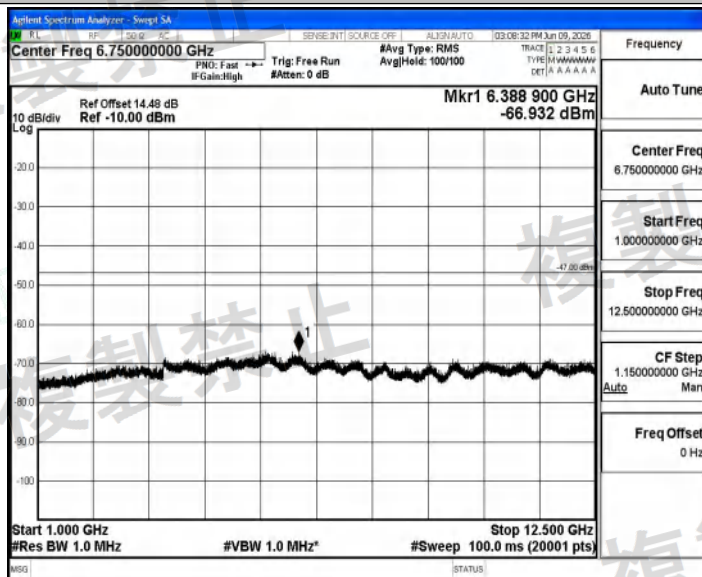




NTNV_3DH5_Ant1_2441_30~1000

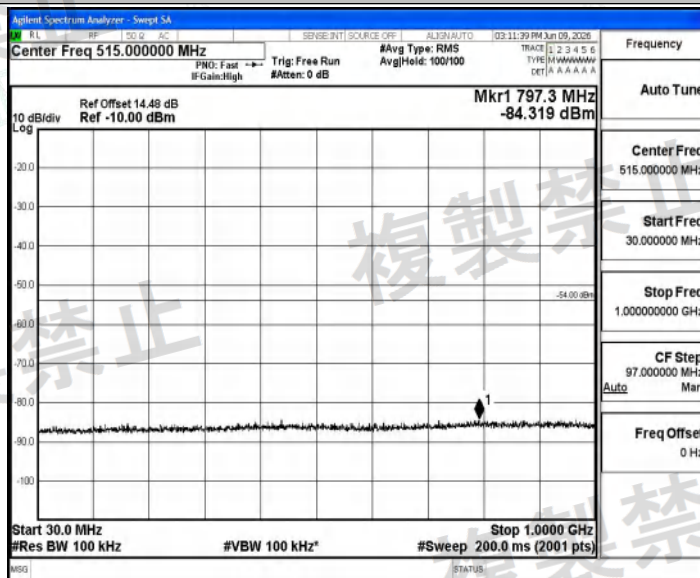


NTNV_3DH5_Ant1_2441_1000~12500

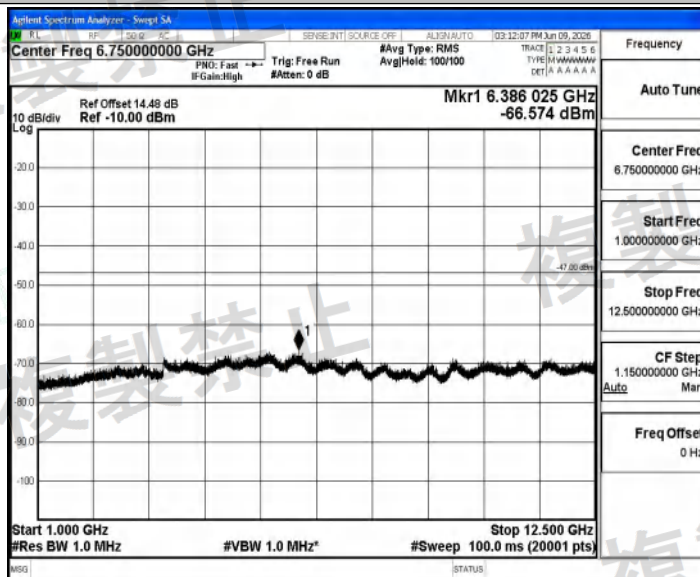




NTNV_3DH5_Ant1_2480_30~1000



NTNV_3DH5_Ant1_2480_1000~12500





A.7 Dwell Time

Test Result

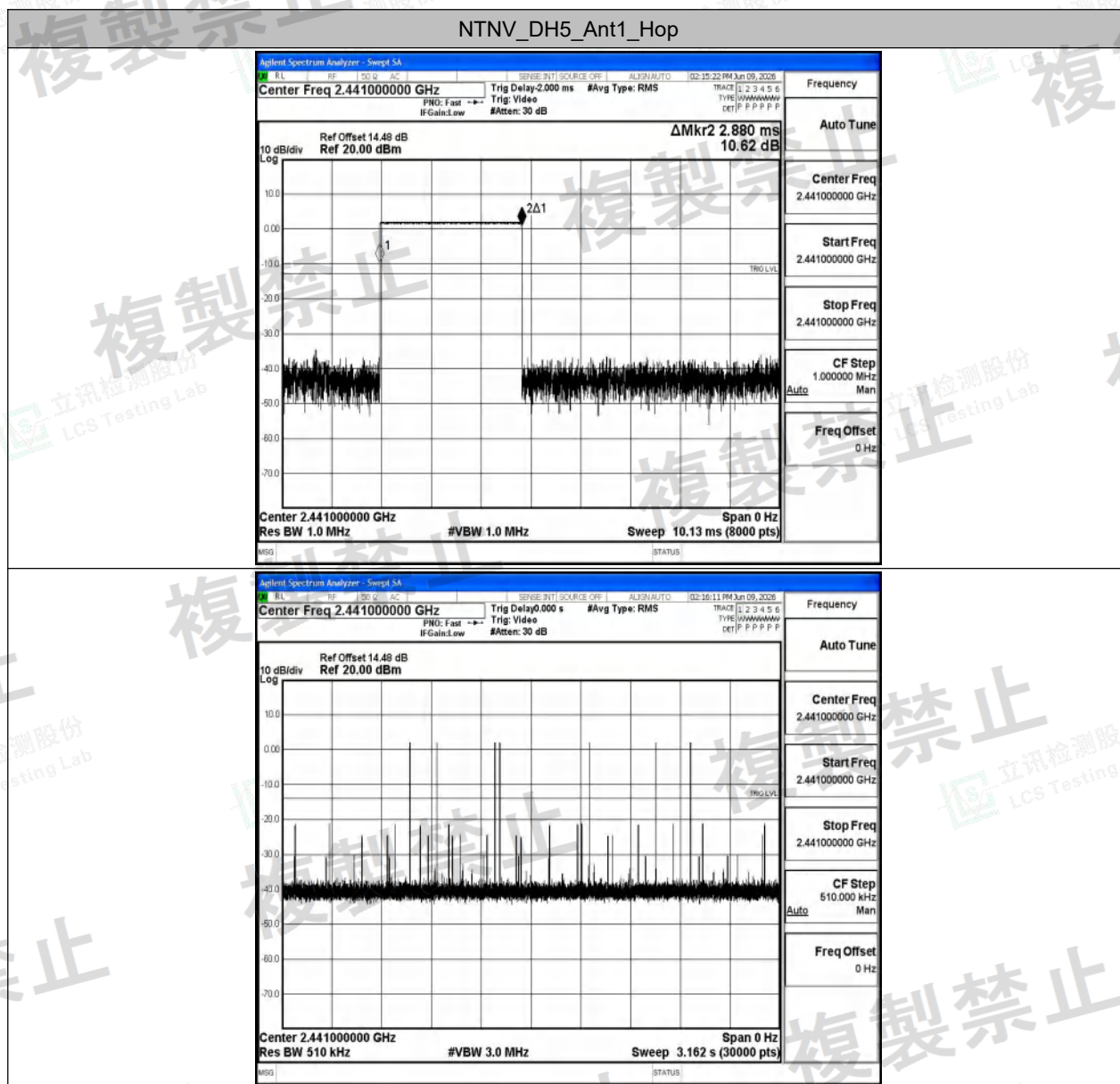
TestCondition	TestMode	Antenna	Frequency [MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit [s]	Verdict
NTNV	DH5	Ant1	Hop	2.88	80	0.23	≤0.4	PASS
	2DH5	Ant1	Hop	2.88	120	0.346	≤0.4	PASS
	3DH5	Ant1	Hop	2.89	90	0.26	≤0.4	PASS

Note: All the modes have been tested and recorded worst mode in the report.



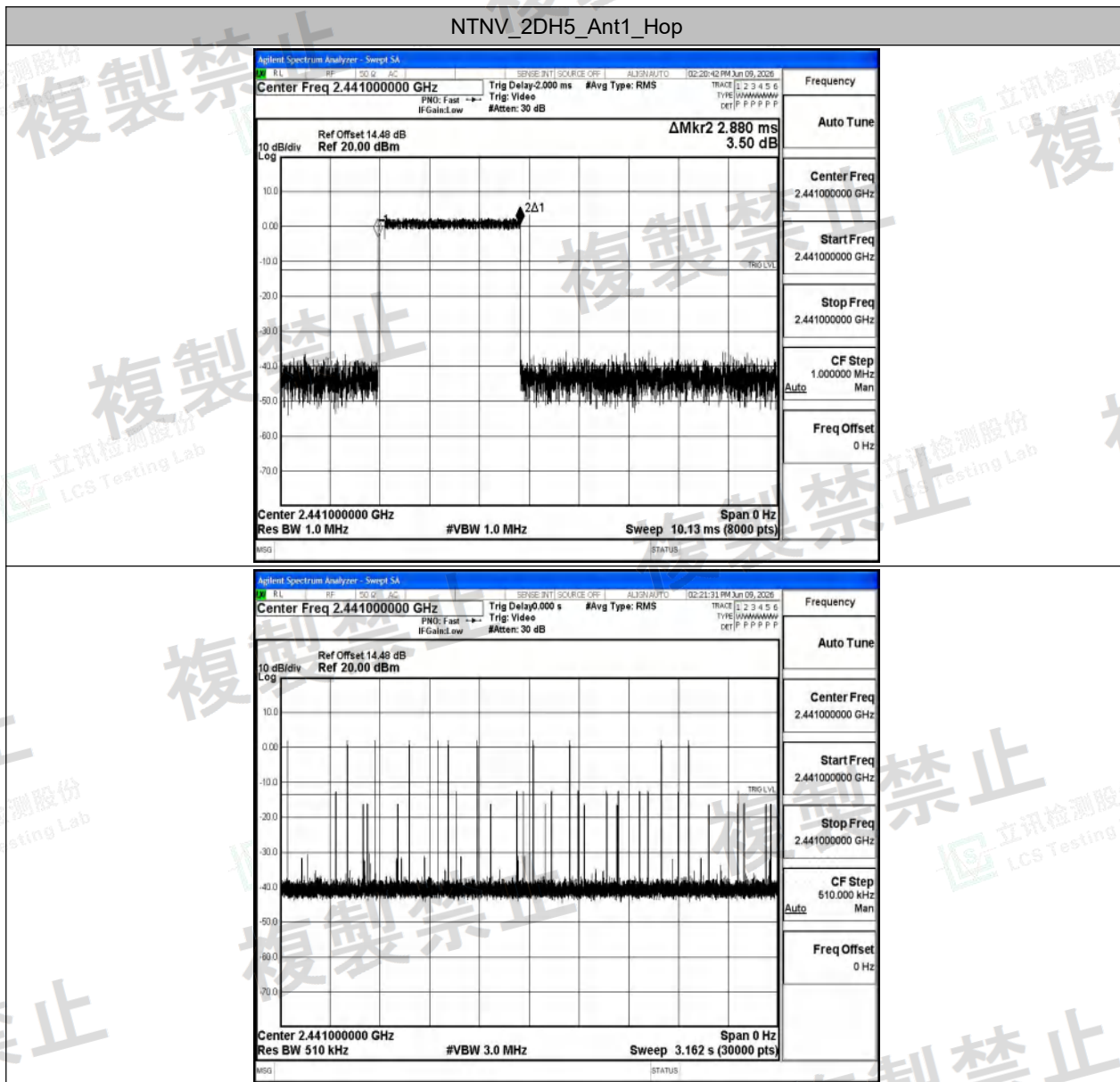


Test Graphs





NTNV_2DH5_Ant1_Hop





NTNV_3DH5_Ant1_Hop

