



Appendix A for BT Test Data

Product Name: Air conduction Bluetooth headset

Test Model: VEXA (SSW-1120)

Environmental Conditions

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



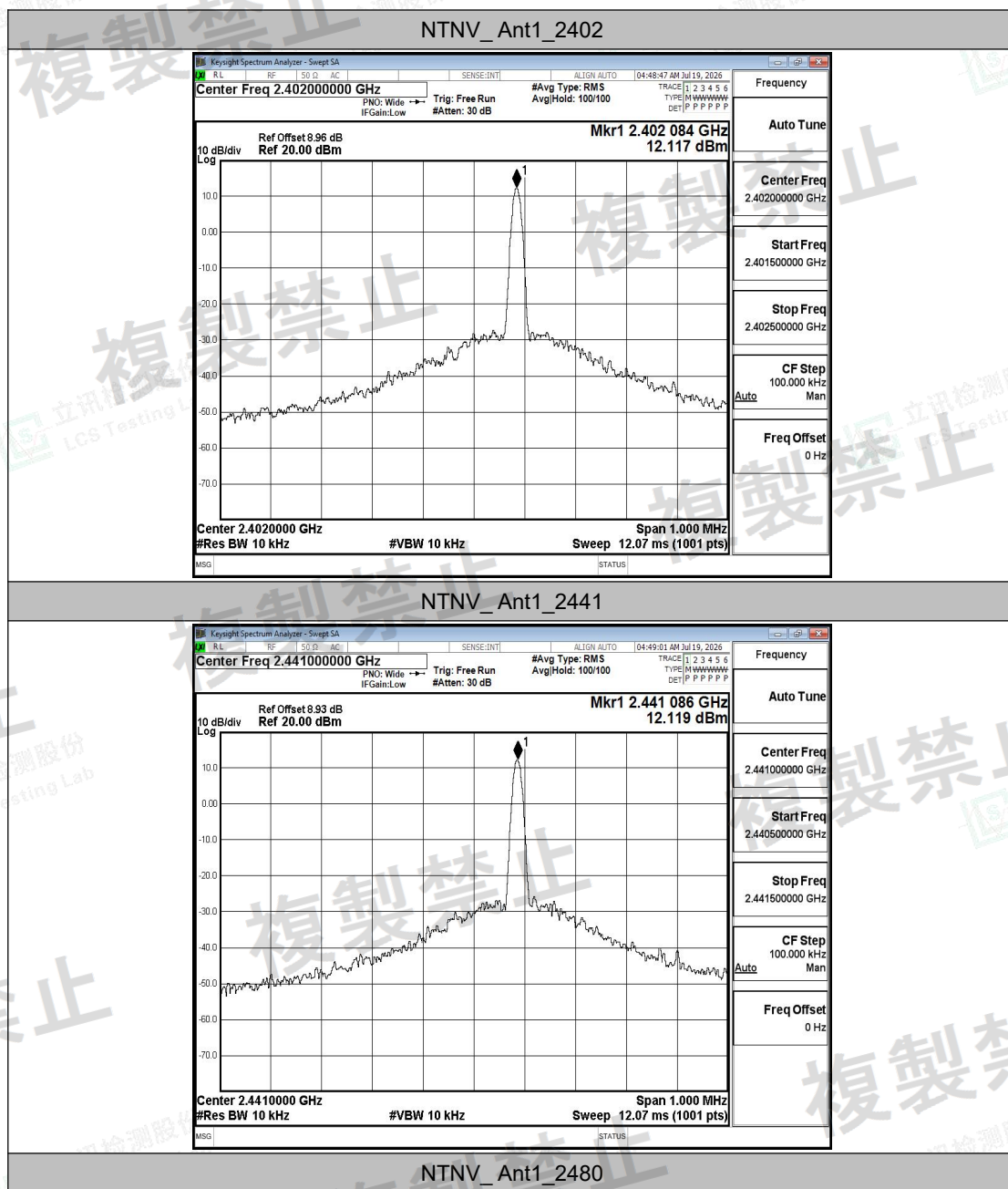
A.1 Frequency_Error

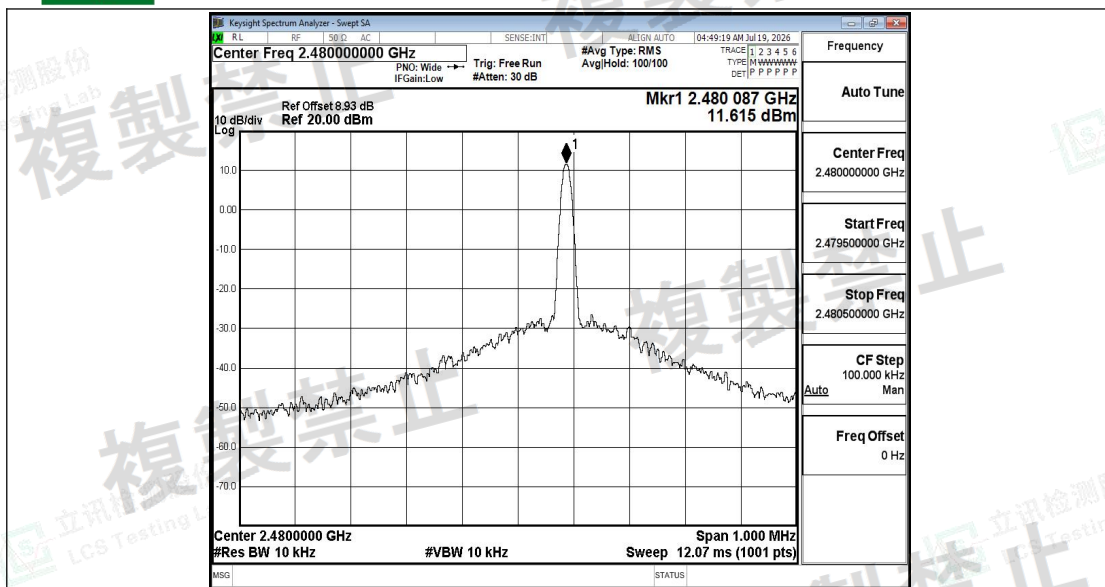
Test Result

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2402	34.97086	±50	PASS
			2441	35.23146	±50	PASS
			2480	35.08065	±50	PASS



Test Graphs





A.2 Antenna Power & EIRP

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)	/	/
Hoping-Tx (1Mbps)	0.03	2.58	1.811	0.033	3	10.00%	+20%
Hoping-Tx (2Mbps)	0.03	2.39	1.734	0.031	3	3.33%	+20%
Hoping-Tx (3Mbps)	0.03	1.25	1.334	0.024	3	-20.00%	+20%

Conclusion: PASS

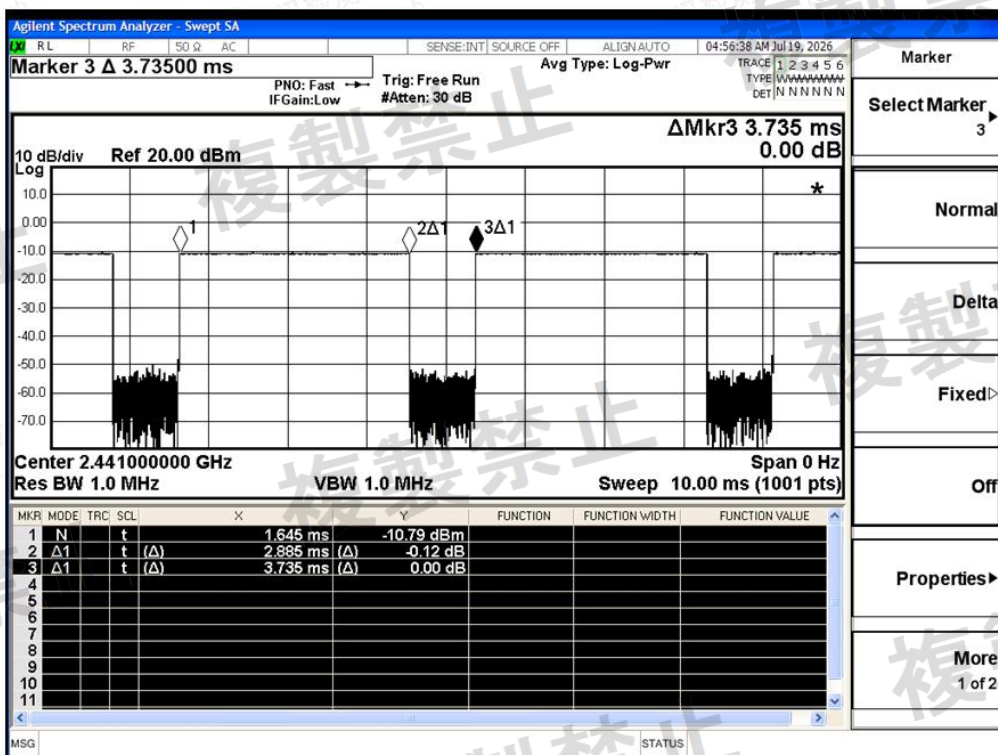
$$\text{Result power} = \text{Average value} / (\text{Duty Cycle} * \text{Spreading bandwidth})$$

Antenna power Result = Measured Power / Spreading bandwidth

Spread Bandwidth (DH5) = 71.447MHz, Spread Bandwidth (2DH5) = 71.625MHz,

Spread Bandwidth (3DH5) = 71.347MHz

Duty cycle=77.2%

$$\text{Duty cycle} = [T_{on} / (T_{on} + T_{off})] * 100\% = 2.885 / 3.735 * 100\% = 77.2\%$$


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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	0.033	-14.81	2.7	-12.11	≤6.91	PASS
NTNV	Hopping-Tx (2Mbps)	Ant1	0.031	-15.09	2.7	-12.39	≤6.91	PASS
NTNV	Hopping-Tx (3Mbps)	Ant1	0.024	-16.20	2.7	-13.50	≤6.91	PASS



A.3 Occupied Bandwidth

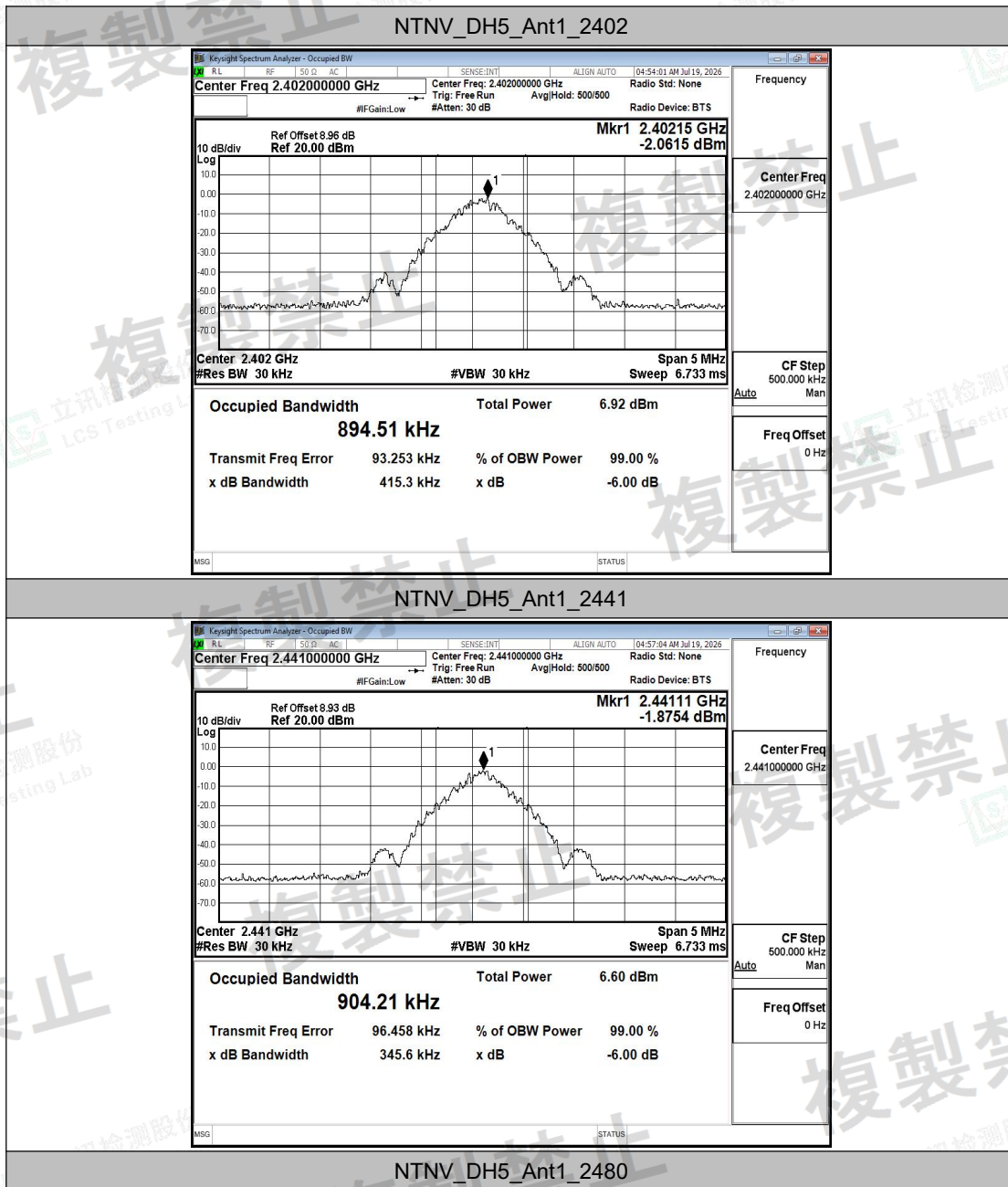
Test Result

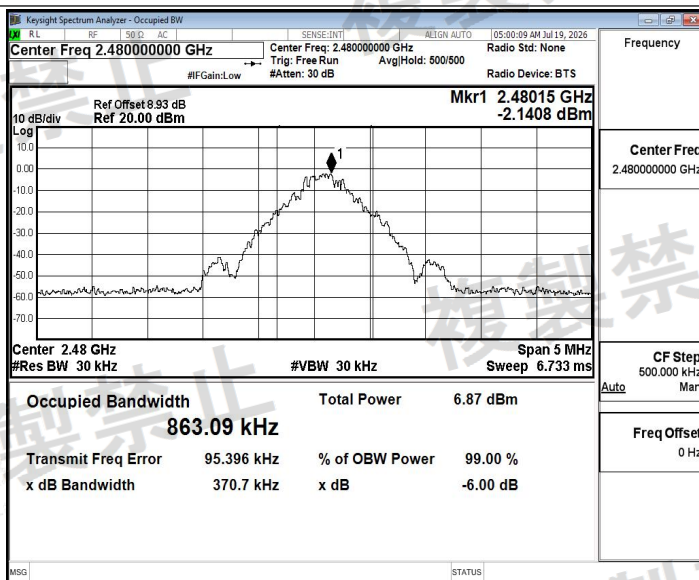
Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	2402	0.895	≤83.5	PASS
			2441	0.904	≤83.5	PASS
			2480	0.863	≤83.5	PASS
	2DH5	Ant1	2402	1.218	≤83.5	PASS
			2441	1.224	≤83.5	PASS
			2480	1.218	≤83.5	PASS
	3DH5	Ant1	2402	1.202	≤83.5	PASS
			2441	1.218	≤83.5	PASS
			2480	1.201	≤83.5	PASS

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	78.707	≤83.5	PASS
	2DH5	Ant1	Hop	78.764	≤83.5	PASS
	3DH5	Ant1	Hop	78.581	≤83.5	PASS

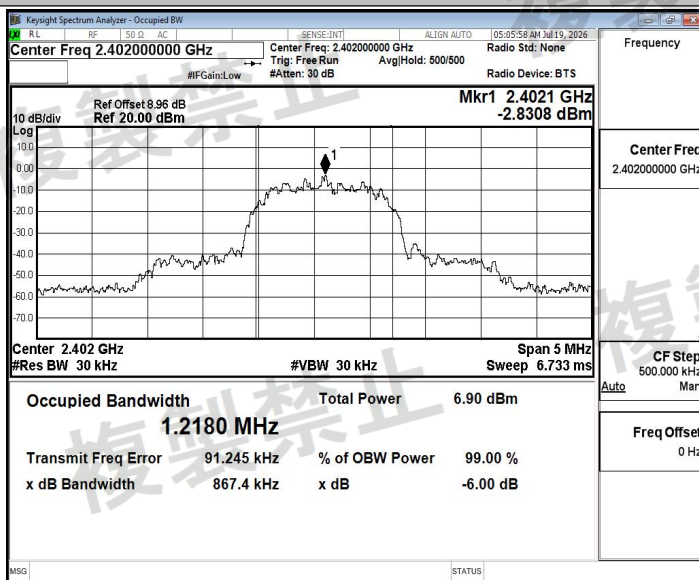


Test Graphs

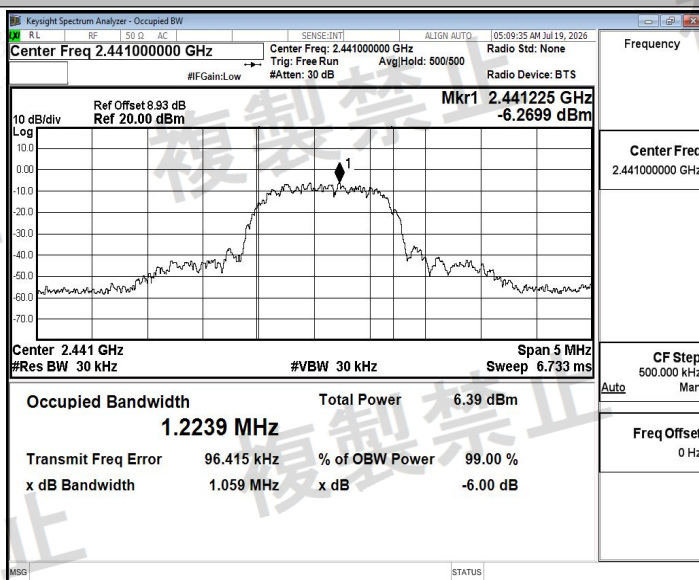




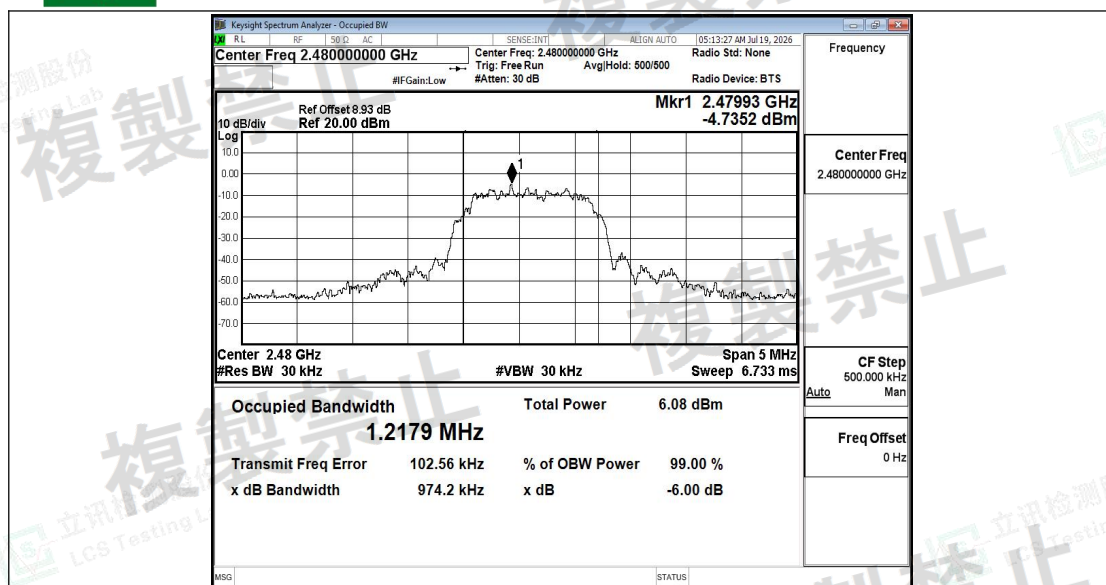
NTNV_2DH5_Ant1_2402



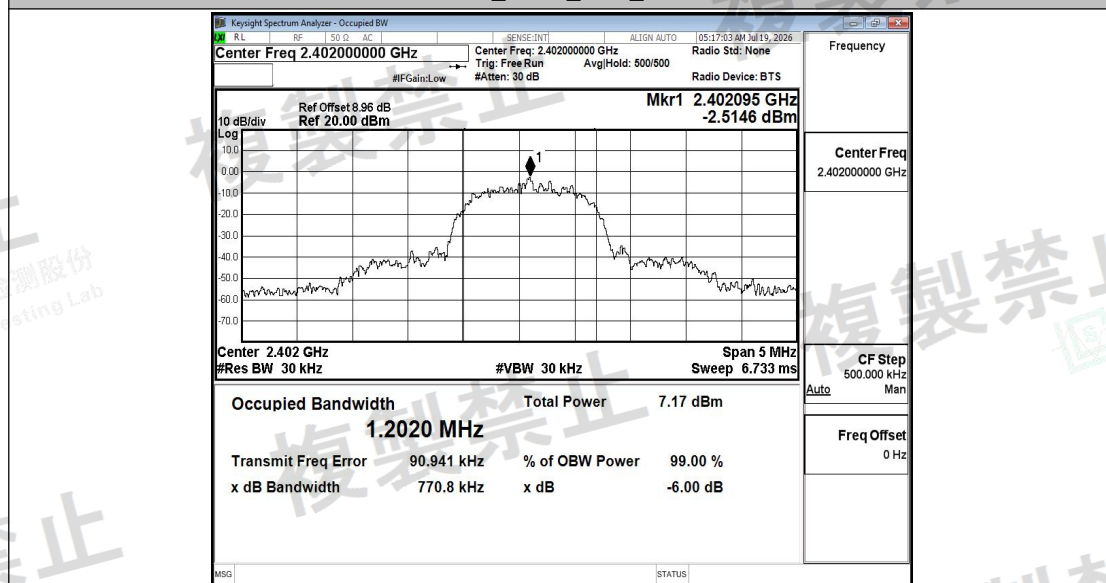
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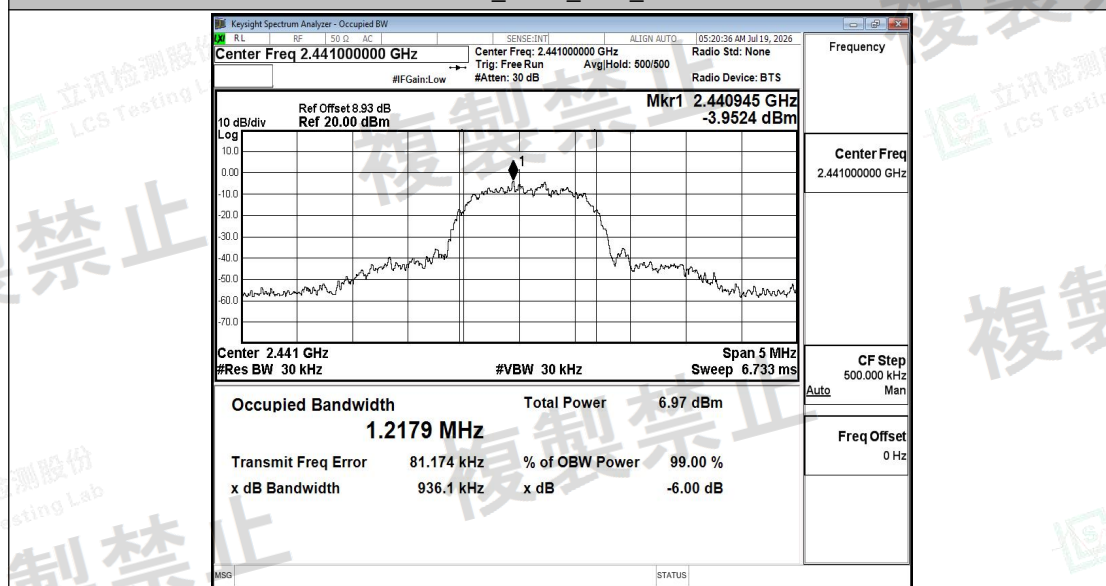
NTNV_2DH5_Ant1_2480



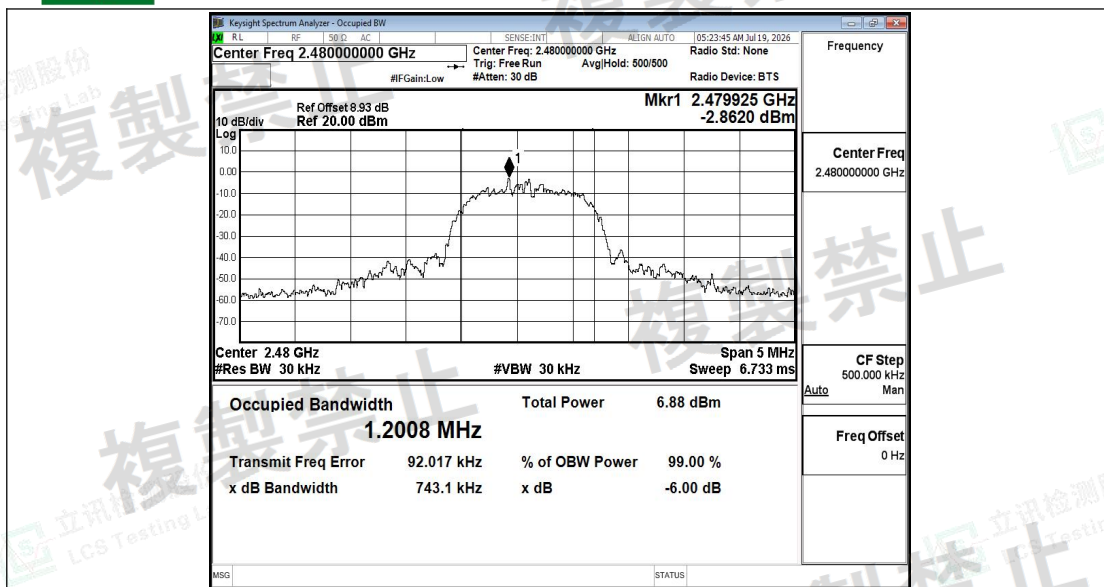
NTNV_3DH5_Ant1_2402



NTNV_3DH5_Ant1_2441

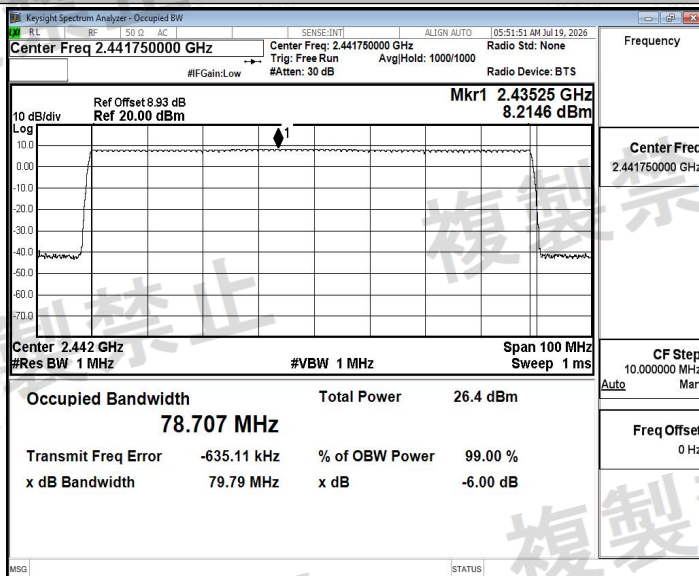


NTNV_3DH5_Ant1_2480

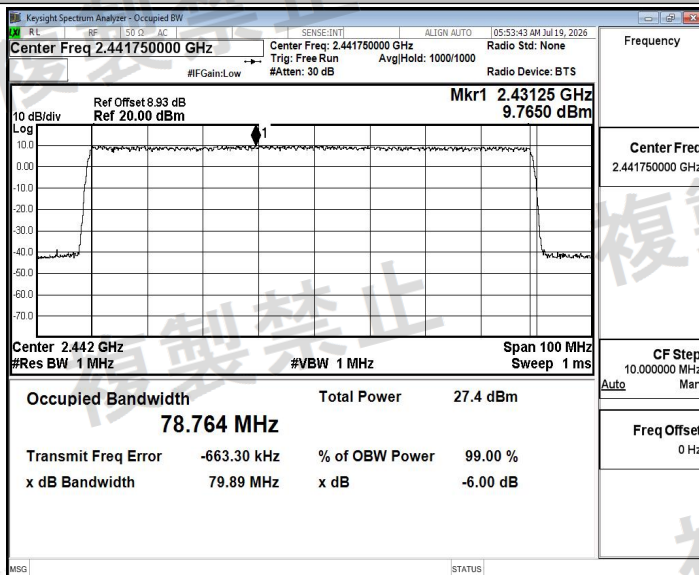




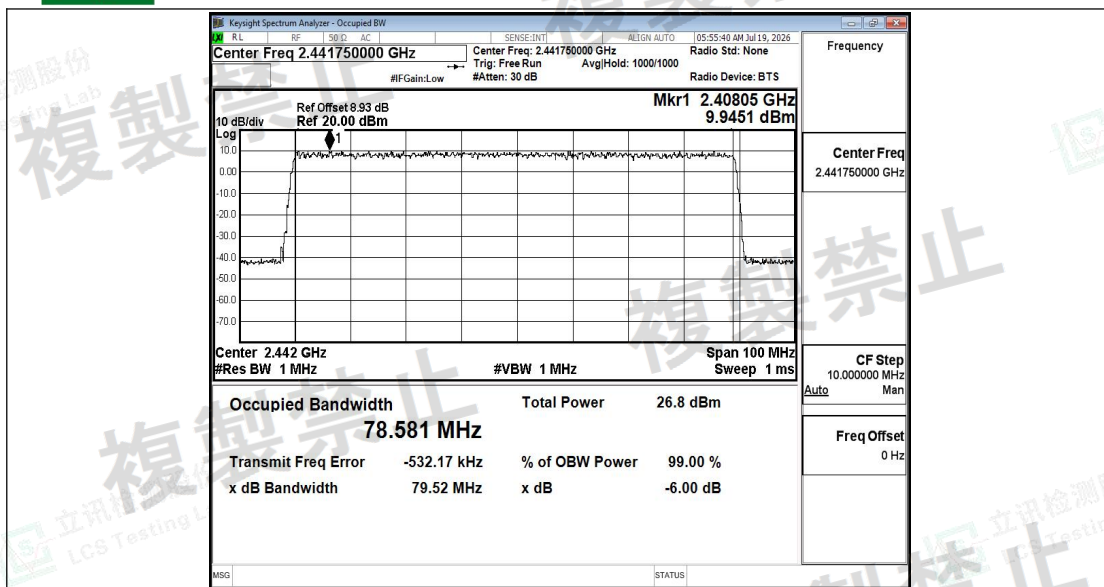
NTNV_DH5_Ant1_Hop



NTNV_2DH5_Ant1_Hop



NTNV_3DH5_Ant1_Hop





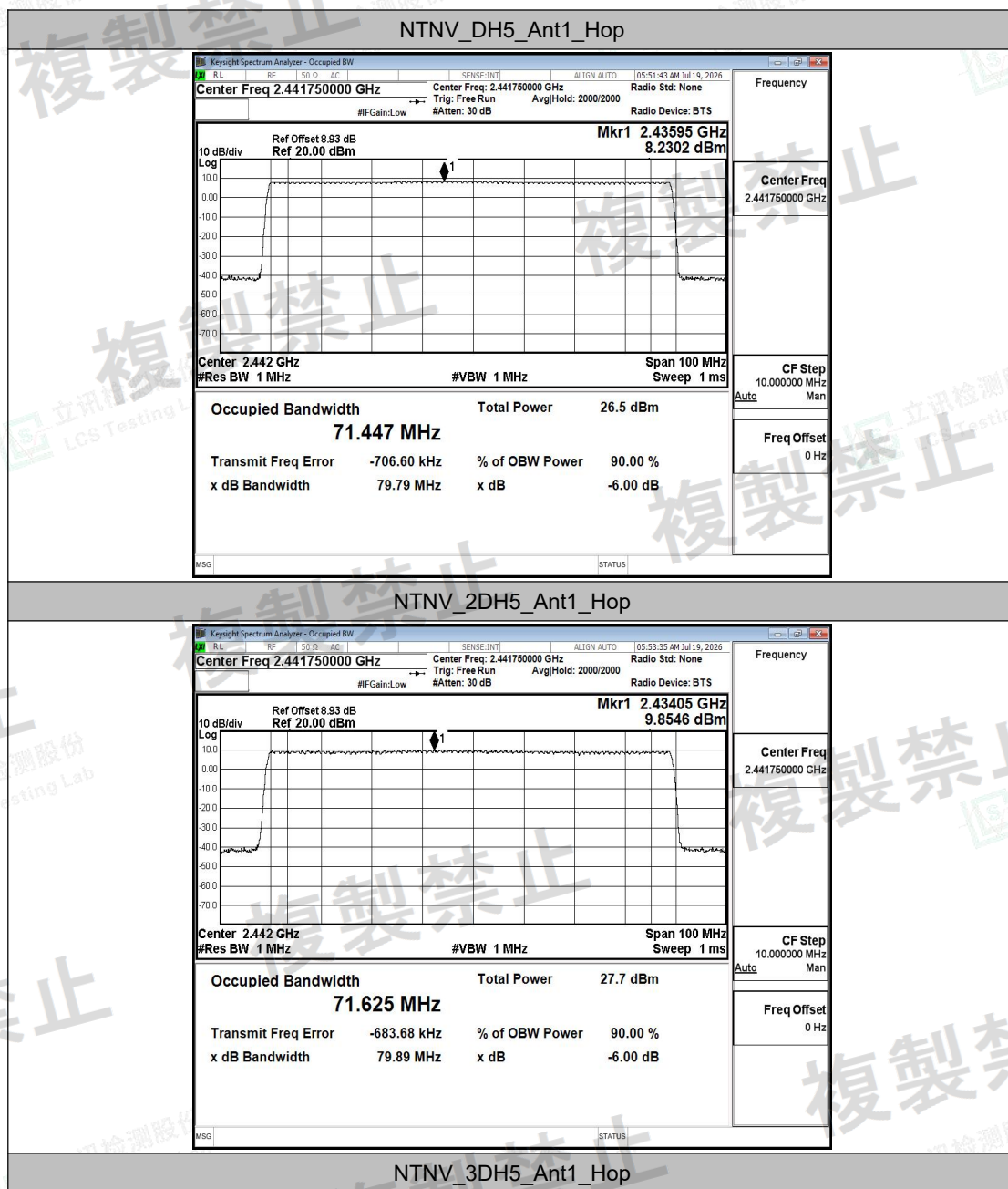
A.4 Spread Bandwidth

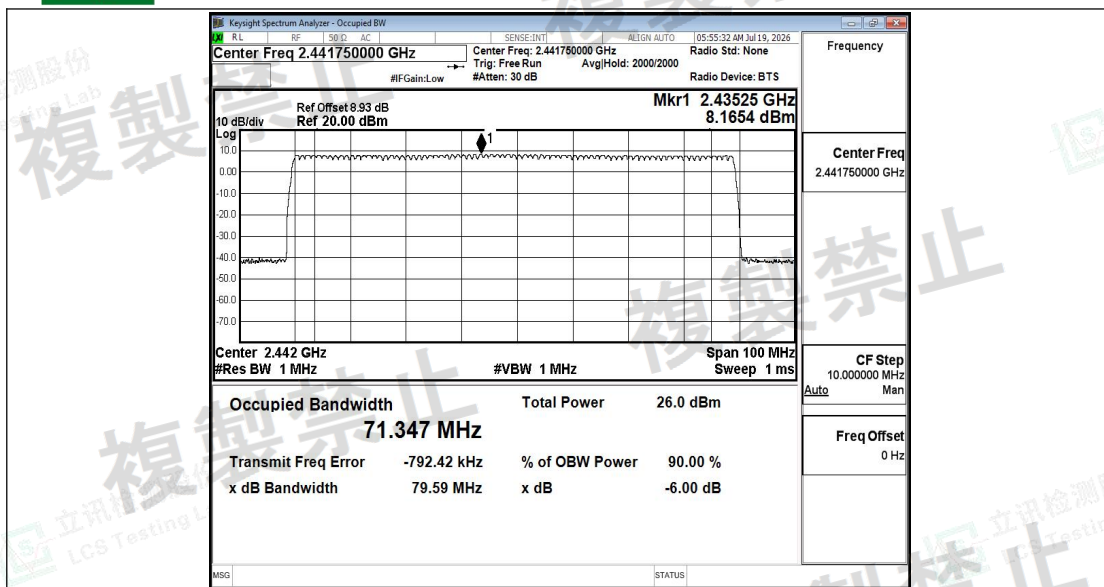
Test Result

Test Condition	Test Mode	Antenna	Frequency[M Hz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	71.447	---	PASS
	2DH5	Ant1	Hop	71.625	---	PASS
	3DH5	Ant1	Hop	71.347	---	PASS



Test Graphs







A.5 Spurious Emission of TX

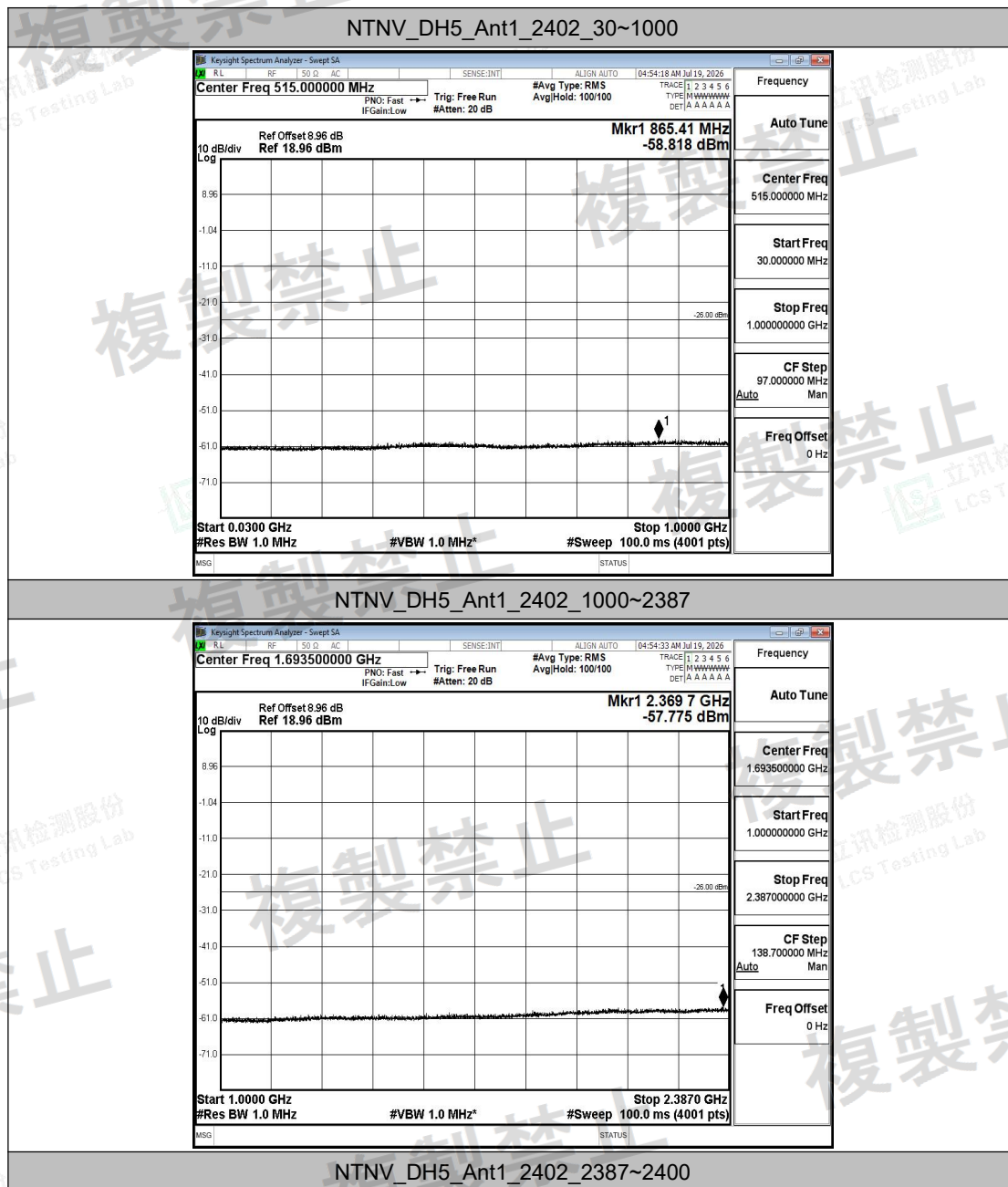
Test Result

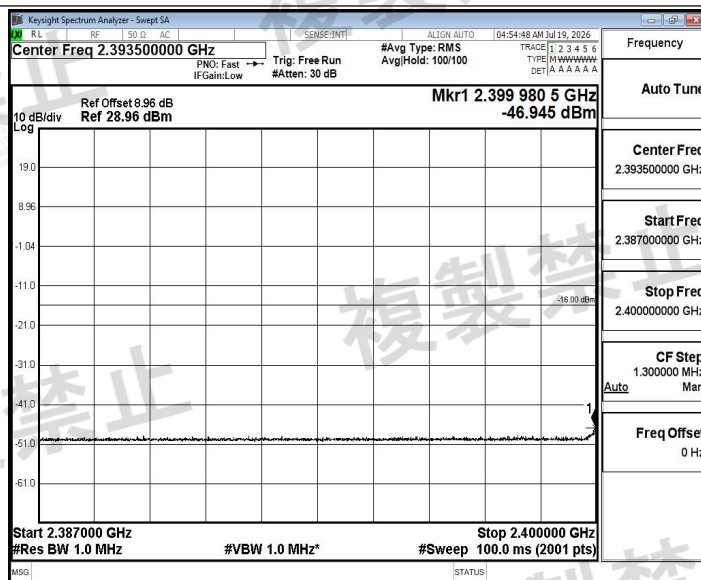
Test Condition	Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-58.82	≤-26	0.00131	≤2.5	PASS
				1000~2387	-57.78	≤-26	0.00167	≤2.5	PASS
				2387~2400	-46.95	≤-16	0.02018	≤25	PASS
				2483.5~2496.5	-48.71	≤-16	0.01346	≤25	PASS
				2496.5~13000	-46.83	≤-26	0.02075	≤2.5	PASS
			2441	30~1000	-58.99	≤-26	0.00126	≤2.5	PASS
				1000~2387	-57.85	≤-26	0.00164	≤2.5	PASS
				2387~2400	-48.70	≤-16	0.01349	≤25	PASS
				2483.5~2496.5	-48.85	≤-16	0.01303	≤25	PASS
				2496.5~13000	-46.95	≤-26	0.02018	≤2.5	PASS
			2480	30~1000	-59.04	≤-26	0.00125	≤2.5	PASS
				1000~2387	-57.68	≤-26	0.00171	≤2.5	PASS
				2387~2400	-48.95	≤-16	0.01274	≤25	PASS
				2483.5~2496.5	-48.89	≤-16	0.01291	≤25	PASS
				2496.5~13000	-51.11	≤-26	0.00774	≤2.5	PASS
	2DH5	Ant1	2402	30~1000	-59.06	≤-26	0.00124	≤2.5	PASS
				1000~2387	-57.80	≤-26	0.00166	≤2.5	PASS
				2387~2400	-38.14	≤-16	0.15346	≤25	PASS
				2483.5~2496.5	-48.73	≤-16	0.01340	≤25	PASS
				2496.5~13000	-49.78	≤-26	0.01052	≤2.5	PASS
			2441	30~1000	-58.95	≤-26	0.00127	≤2.5	PASS
				1000~2387	-57.65	≤-26	0.00172	≤2.5	PASS
				2387~2400	-48.83	≤-16	0.01309	≤25	PASS
				2483.5~2496.5	-48.83	≤-16	0.01309	≤25	PASS
				2496.5~13000	-51.56	≤-26	0.00698	≤2.5	PASS
			2480	30~1000	-58.96	≤-26	0.00127	≤2.5	PASS
				1000~2387	-57.58	≤-26	0.00175	≤2.5	PASS
				2387~2400	-49.16	≤-16	0.01213	≤25	PASS
				2483.5~2496.5	-48.68	≤-16	0.01355	≤25	PASS
				2496.5~13000	-47.10	≤-26	0.01950	≤2.5	PASS
	3DH5	Ant1	2402	30~1000	-59.17	≤-26	0.00121	≤2.5	PASS
				1000~2387	-57.55	≤-26	0.00176	≤2.5	PASS
				2387~2400	-38.12	≤-16	0.15417	≤25	PASS
				2483.5~2496.5	-48.71	≤-16	0.01346	≤25	PASS
				2496.5~13000	-46.89	≤-26	0.02046	≤2.5	PASS
			2441	30~1000	-58.89	≤-26	0.00129	≤2.5	PASS
				1000~2387	-57.63	≤-26	0.00173	≤2.5	PASS
				2387~2400	-49.05	≤-16	0.01245	≤25	PASS



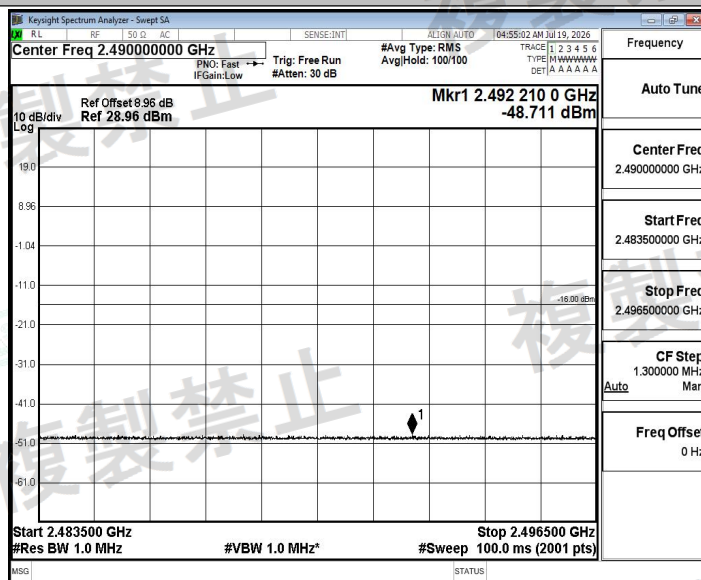
		2480	2483.5~2496.5	-48.86	≤-16	0.01300	≤25	PASS
			2496.5~13000	-52.05	≤-26	0.00624	≤2.5	PASS
			30~1000	-59.11	≤-26	0.00123	≤2.5	PASS
			1000~2387	-57.81	≤-26	0.00166	≤2.5	PASS
			2387~2400	-48.91	≤-16	0.01285	≤25	PASS
			2483.5~2496.5	-48.58	≤-16	0.01387	≤25	PASS
			2496.5~13000	-52.51	≤-26	0.00561	≤2.5	PASS

Test Graphs

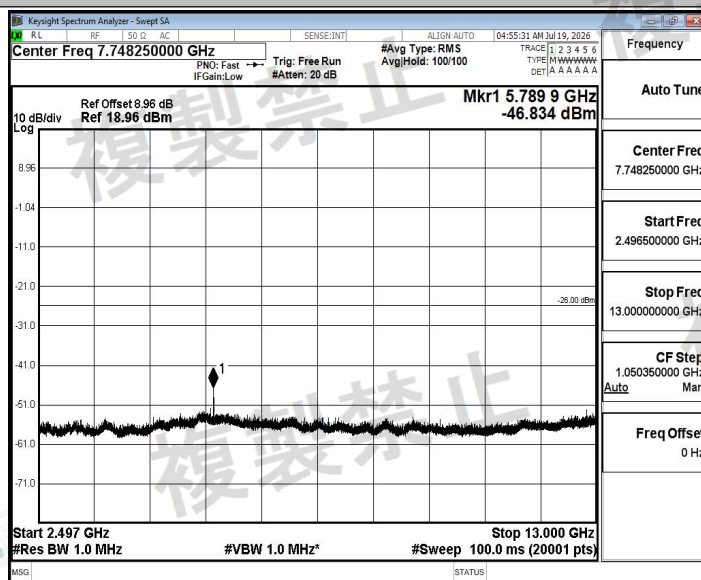




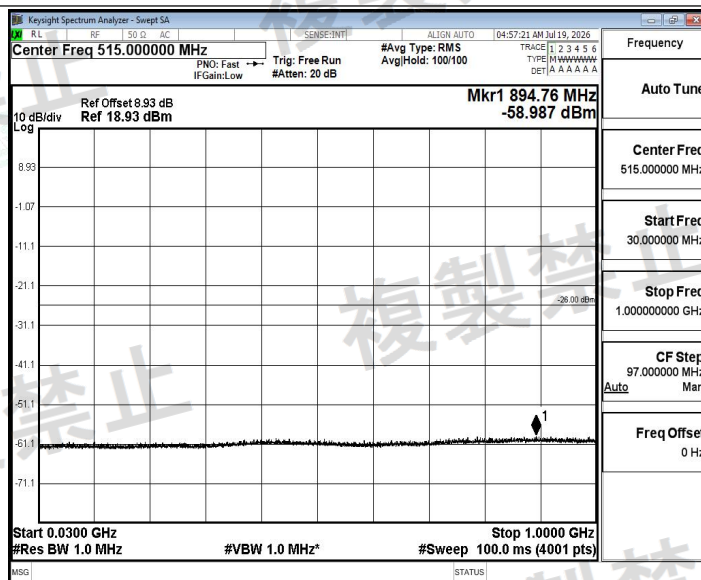
NTNV_DH5_Ant1_2402_2483.5~2496.5



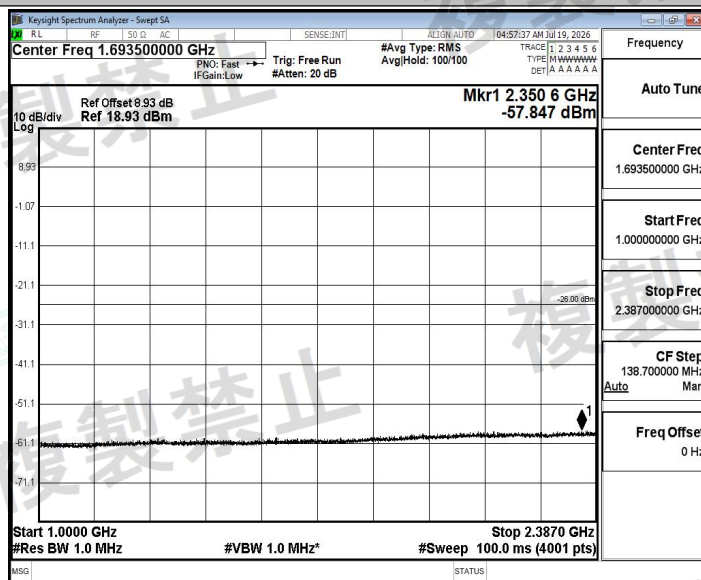
NTNV_DH5_Ant1_2402_2496.5~13000



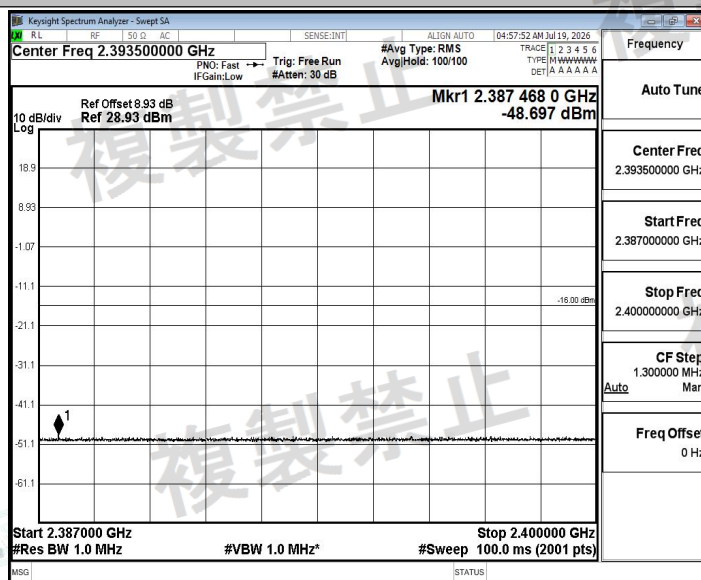
NTNV_DH5_Ant1_2441_30~1000



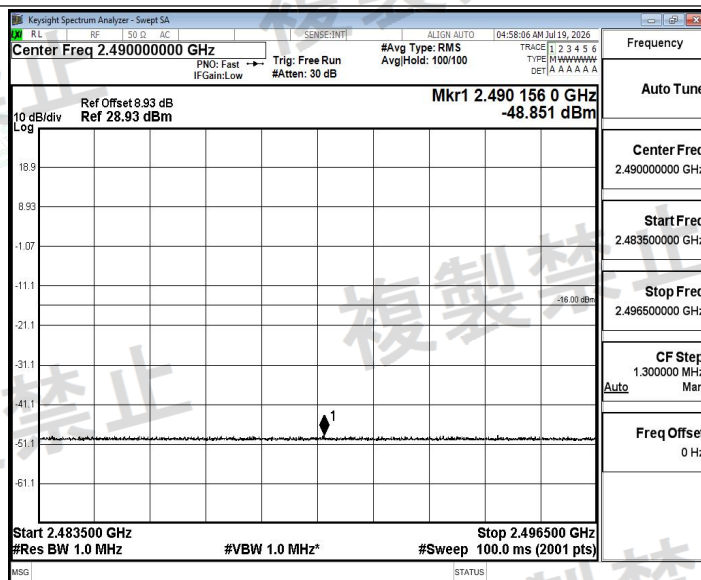
NTNV_DH5_Ant1_2441_1000~2387



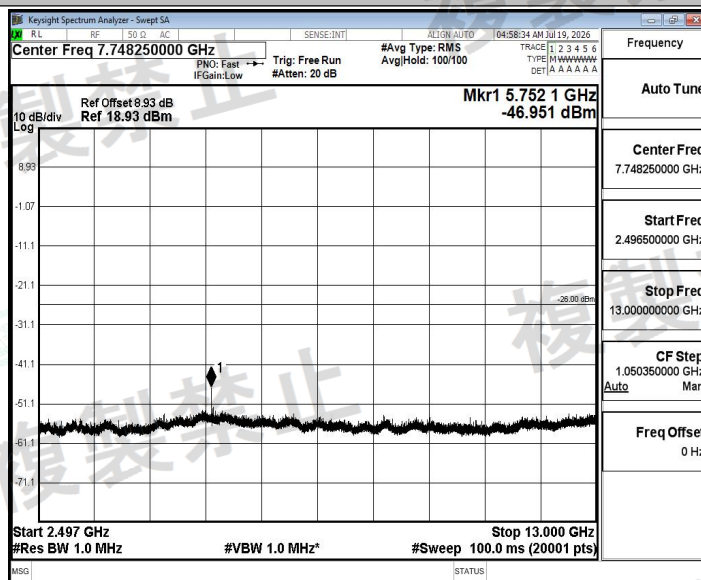
NTNV_DH5_Ant1_2441_2387~2400



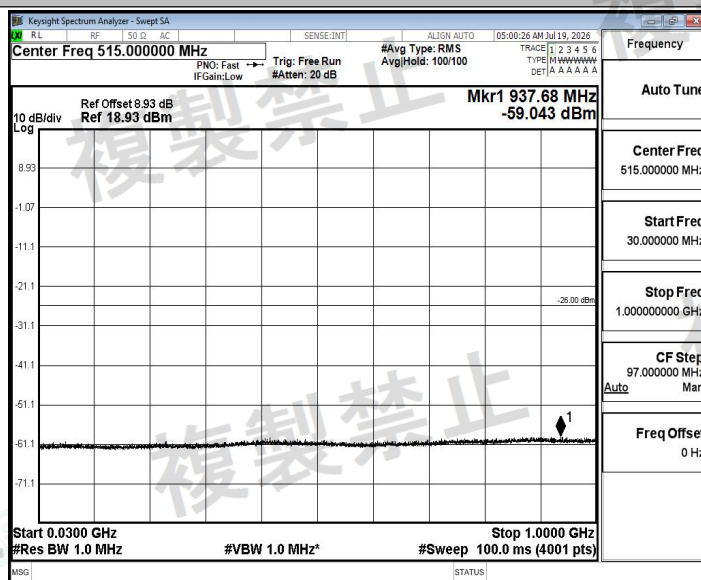
NTNV_DH5_Ant1_2441_2483.5~2496.5



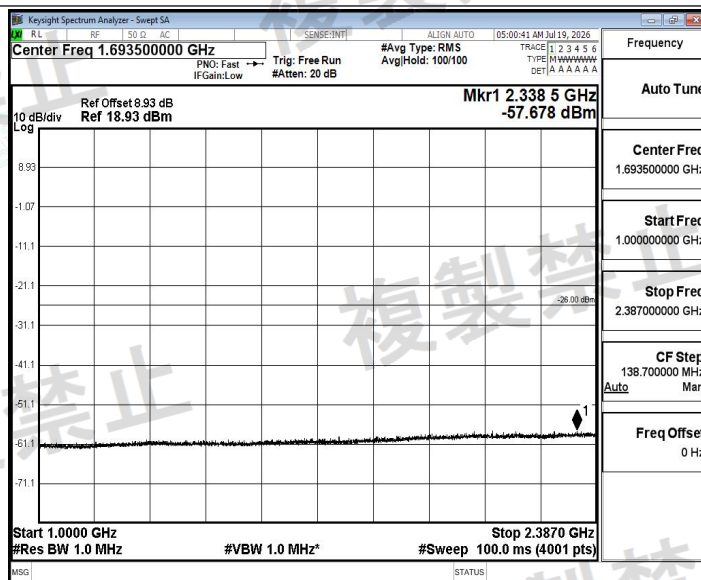
NTNV_DH5_Ant1_2441_2496.5~13000



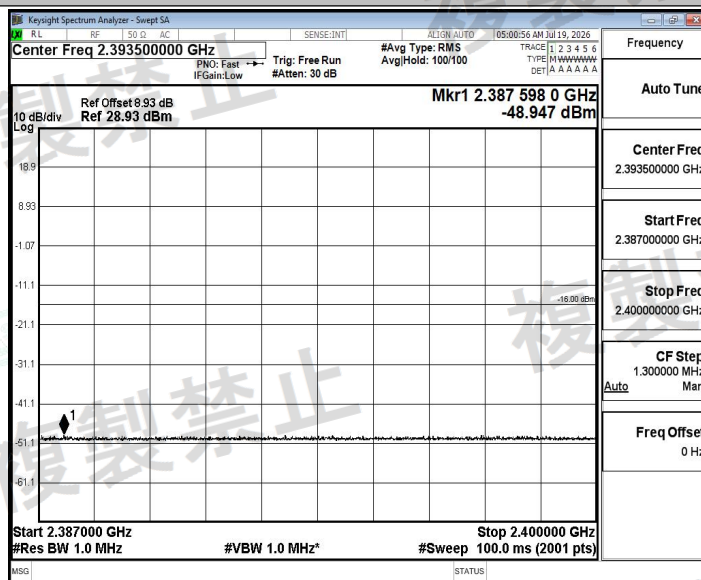
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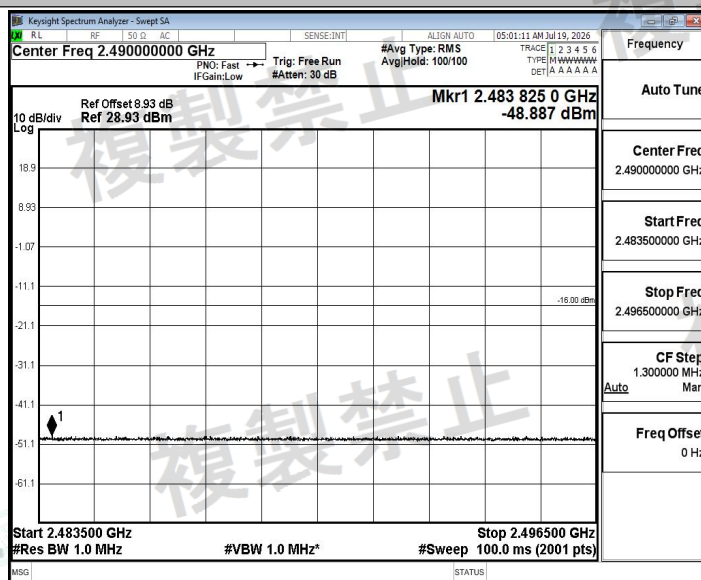
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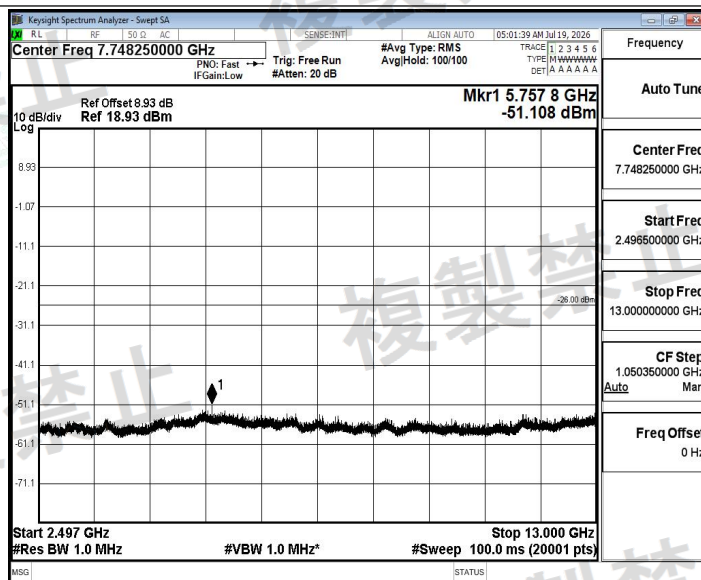
NTNV_DH5_Ant1_2480_2387~2400



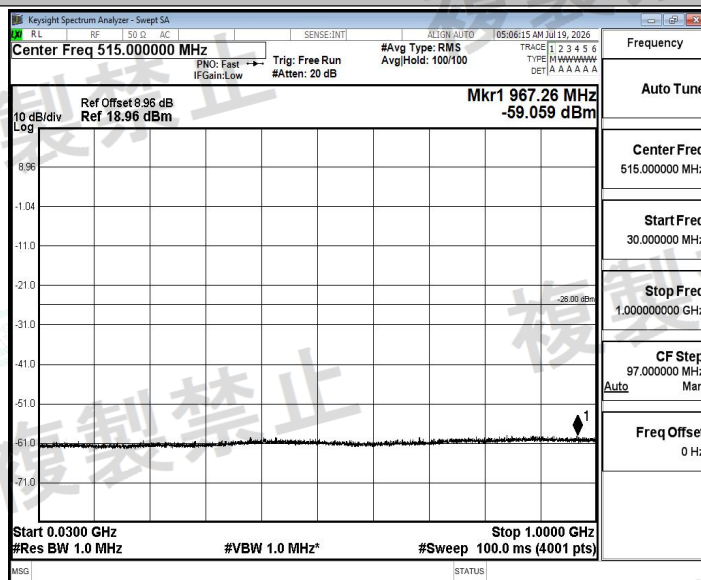
NTNV_DH5_Ant1_2480_2483.5~2496.5



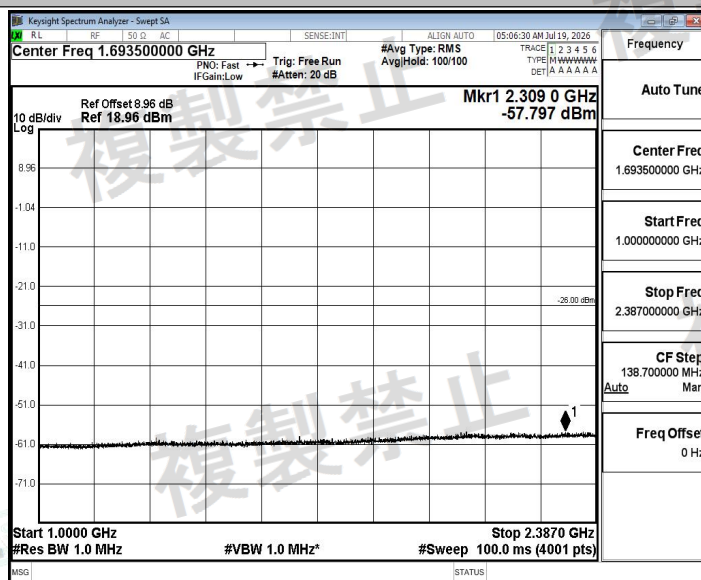
NTNV_DH5_Ant1_2480_2496.5~13000



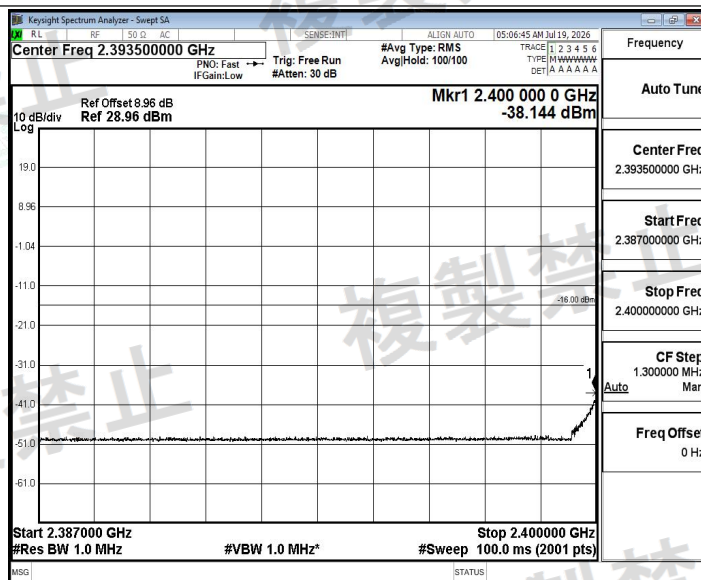
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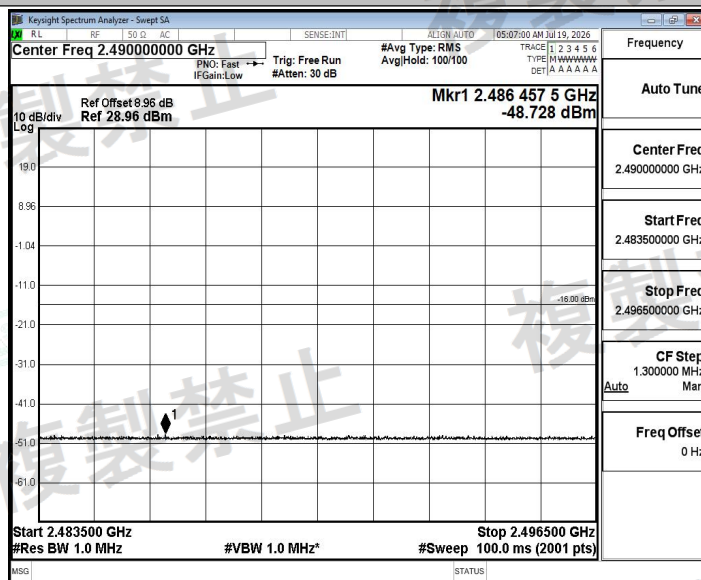
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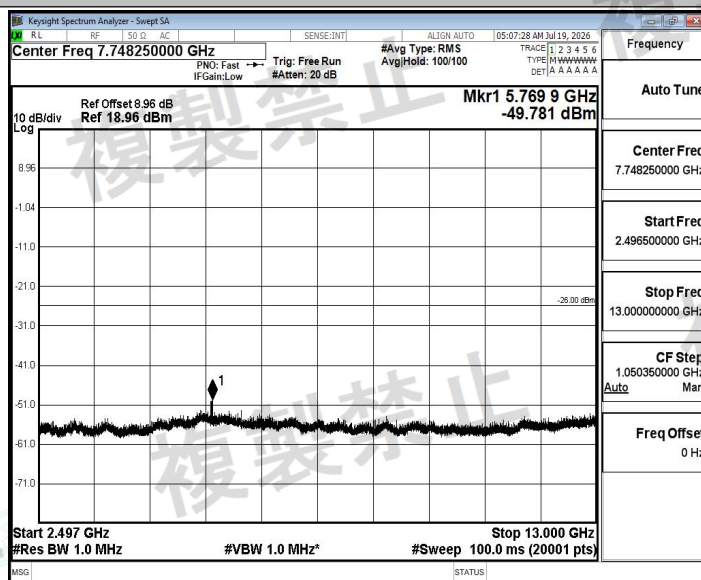
NTNV_2DH5_Ant1_2402_2387~2400



NTNV_2DH5_Ant1_2402_2483.5~2496.5



NTNV_2DH5_Ant1_2402_2496.5~13000



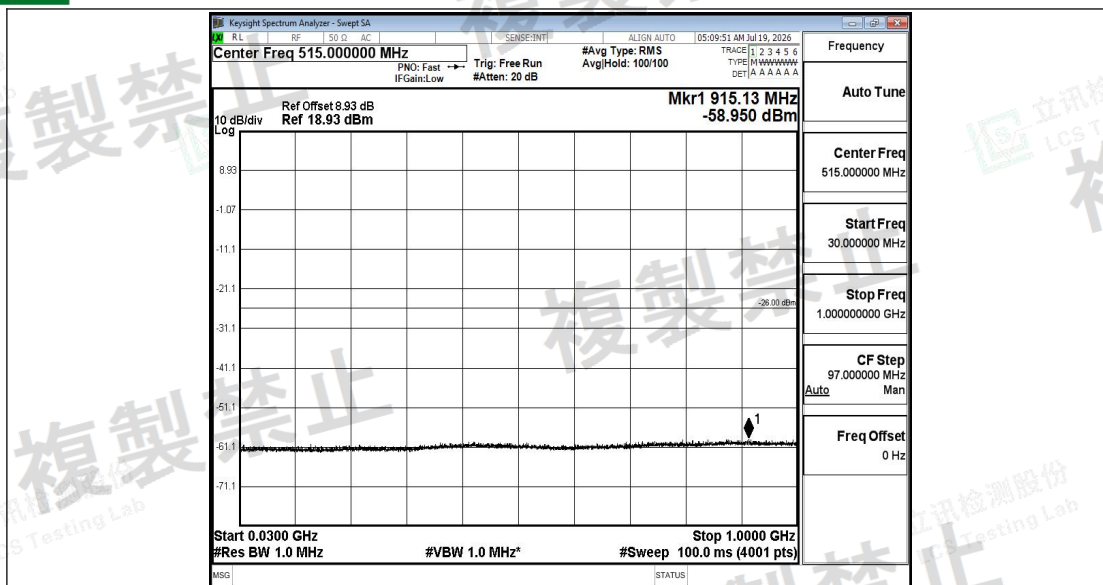
NTNV_2DH5_Ant1_2441_30~1000

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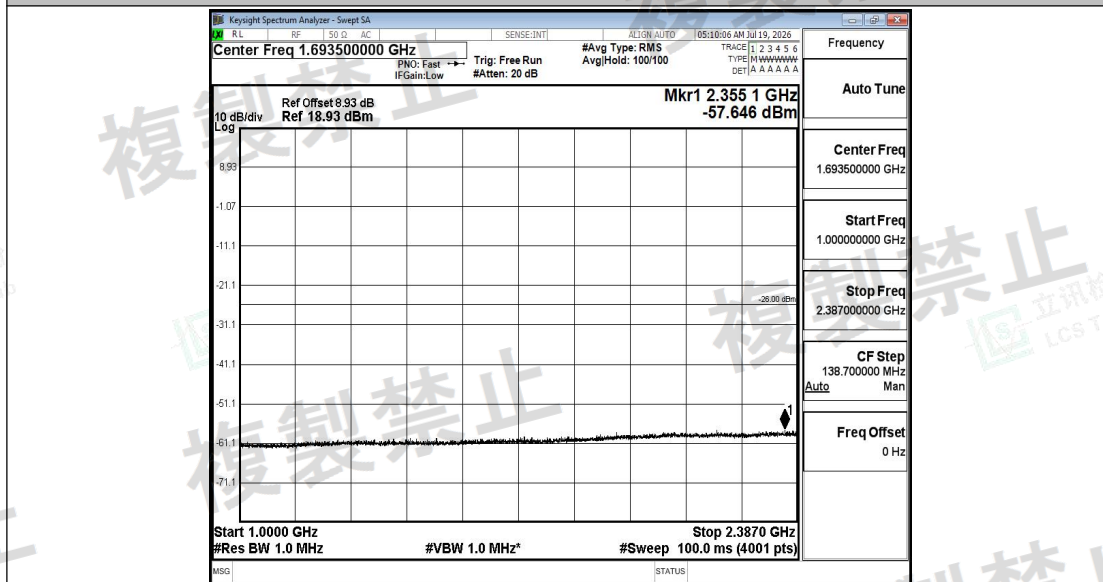
Add: Room 101/201, Building A, and Room 101/301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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

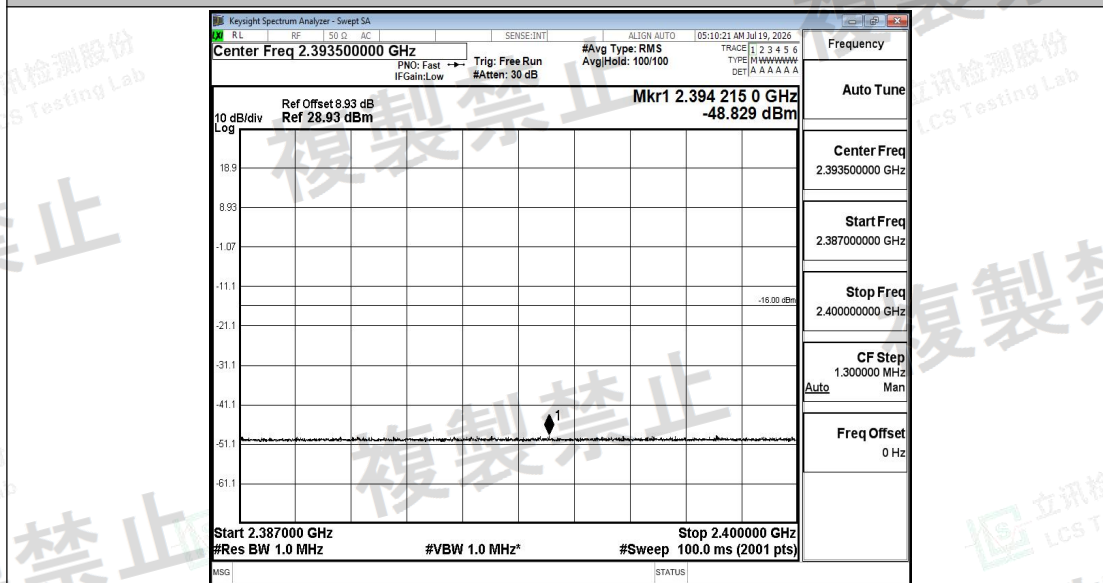
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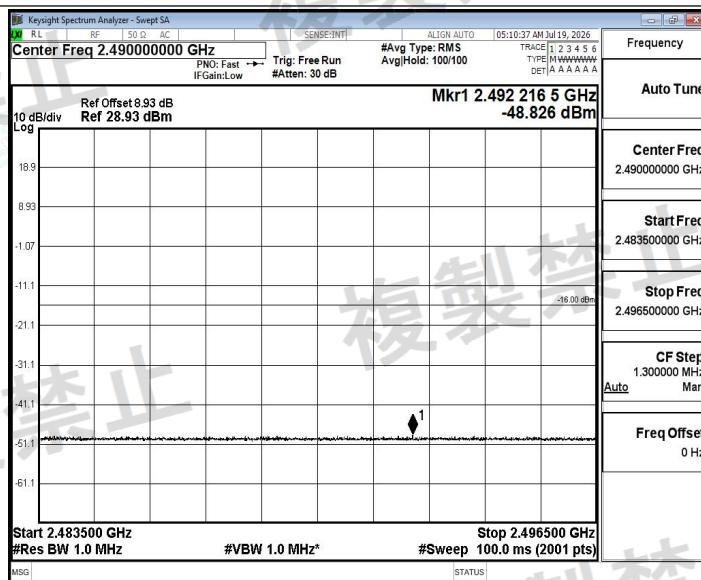
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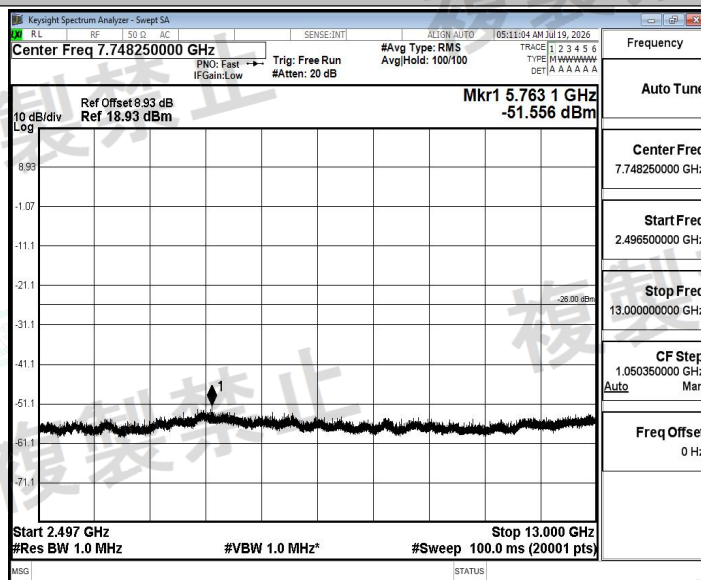
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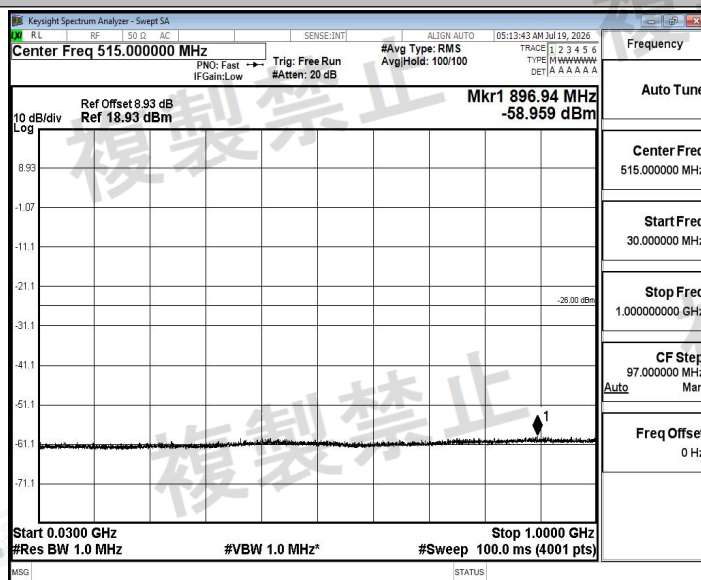
NTNV_2DH5_Ant1_2441_2483.5~2496.5



NTNV_2DH5_Ant1_2441_2496.5~13000



NTNV_2DH5_Ant1_2480_30~1000



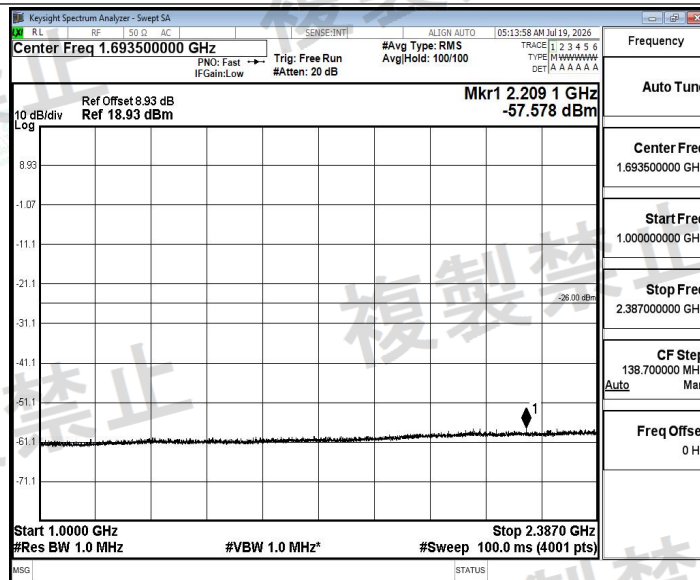
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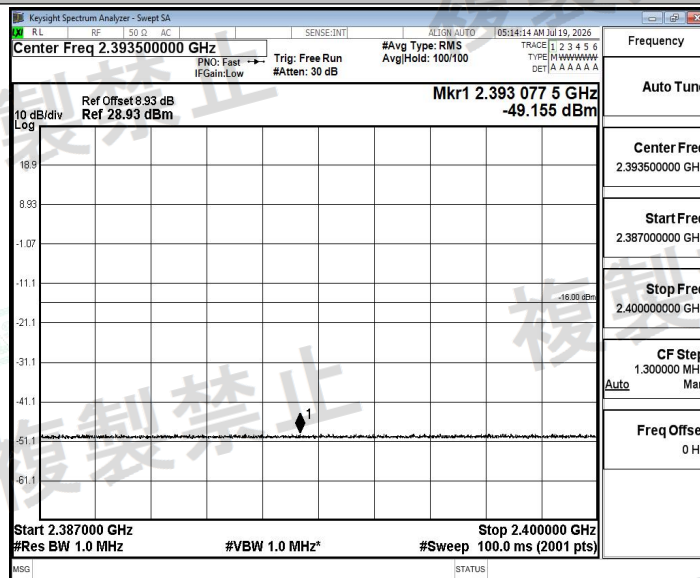
Add: Room 101/201, Building A, and Room 101/301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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

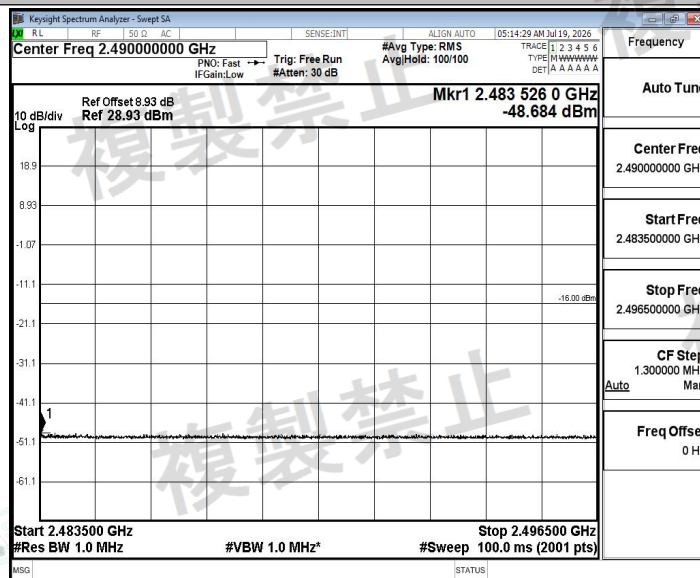
Scan code to check authenticity



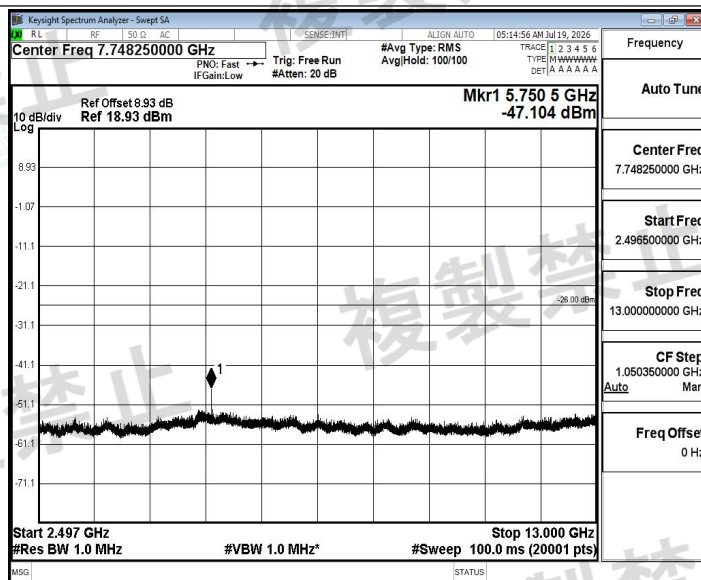
NTNV_2DH5_Ant1_2480_2387~2400



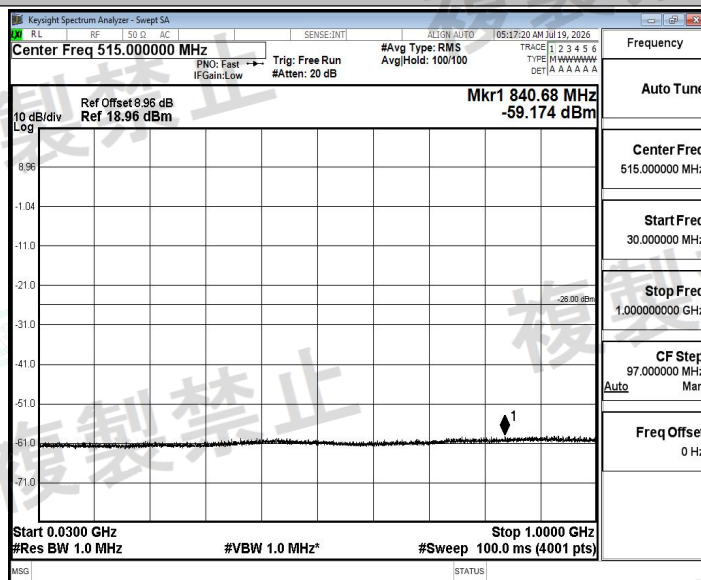
NTNV_2DH5_Ant1_2480_2483.5~2496.5



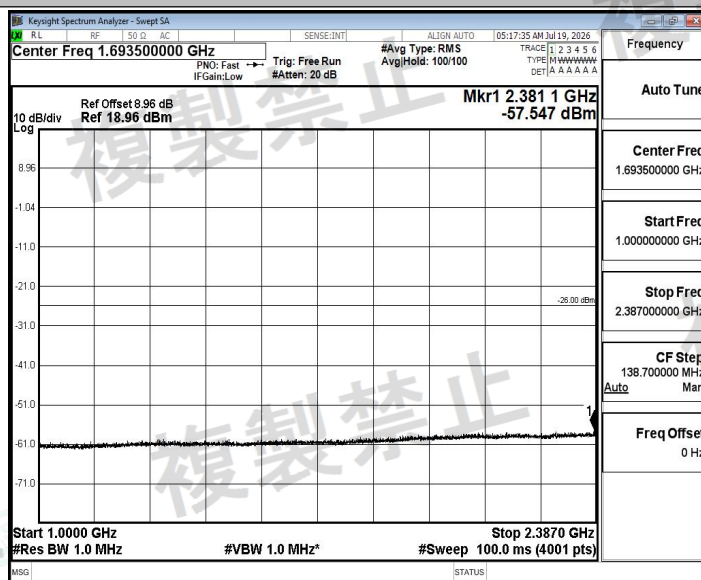
NTNV_2DH5_Ant1_2480_2496.5~13000



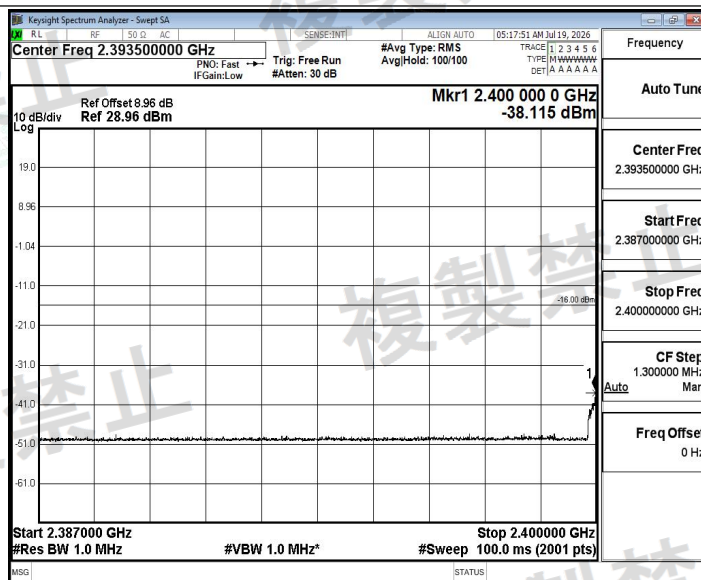
NTNV_3DH5_Ant1_2402_30~1000



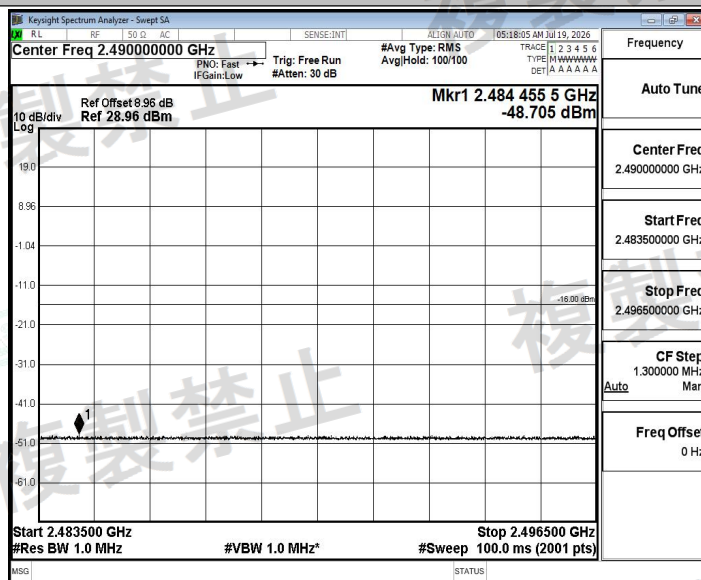
NTNV_3DH5_Ant1_2402_1000~2387



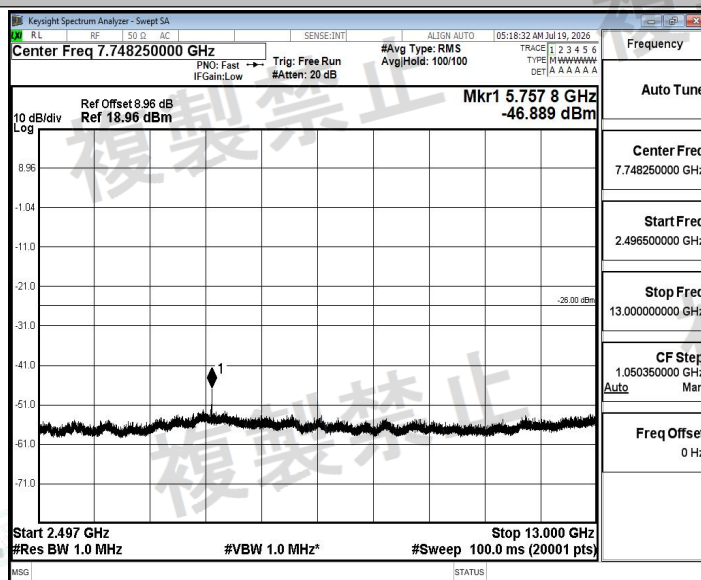
NTNV_3DH5_Ant1_2402_2387~2400



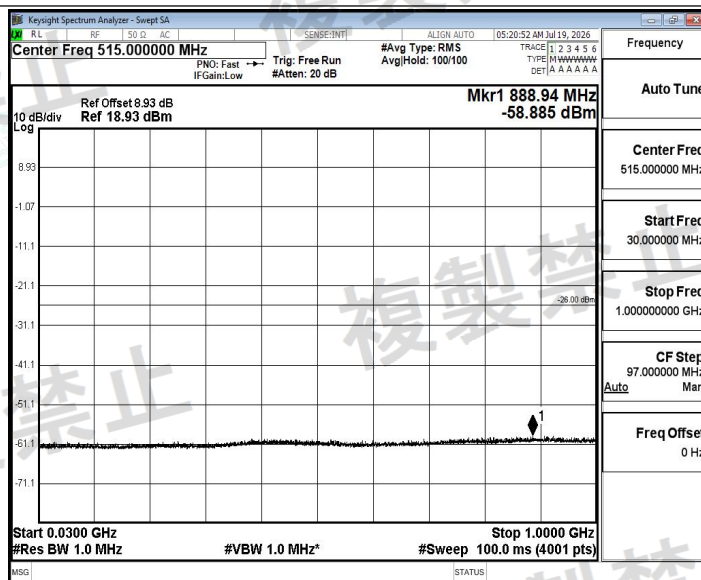
NTNV_3DH5_Ant1_2402_2483.5~2496.5



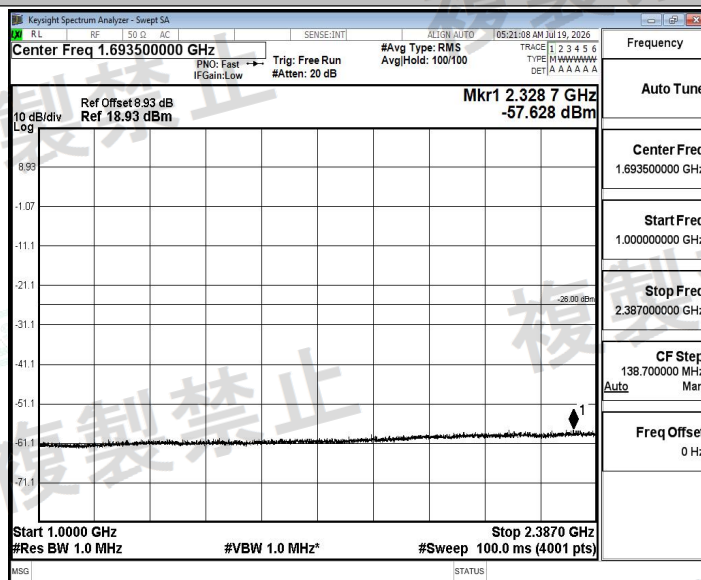
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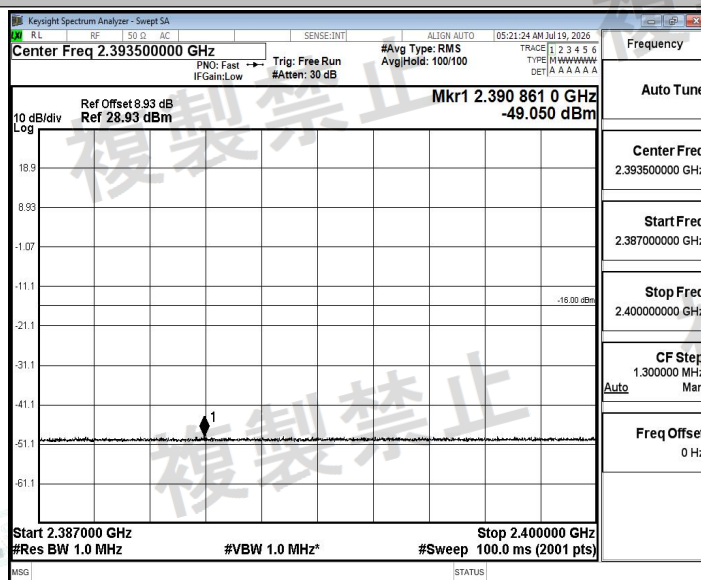
NTNV_3DH5_Ant1_2441_30~1000



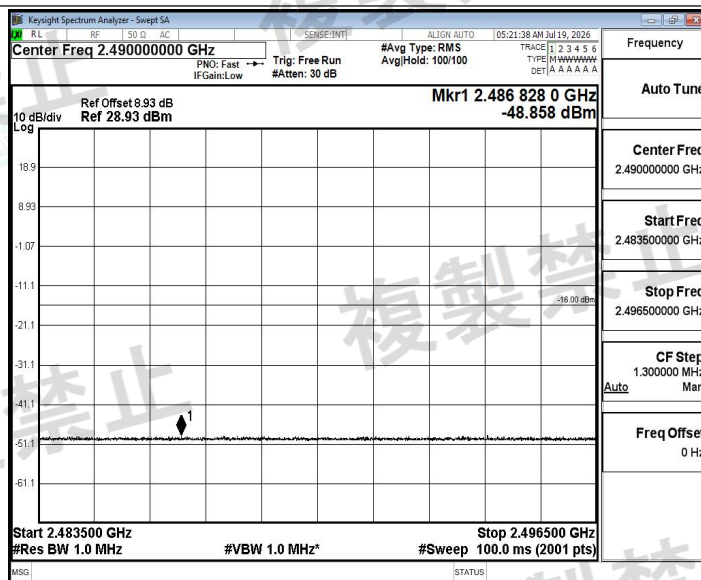
NTNV_3DH5_Ant1_2441_1000~2387



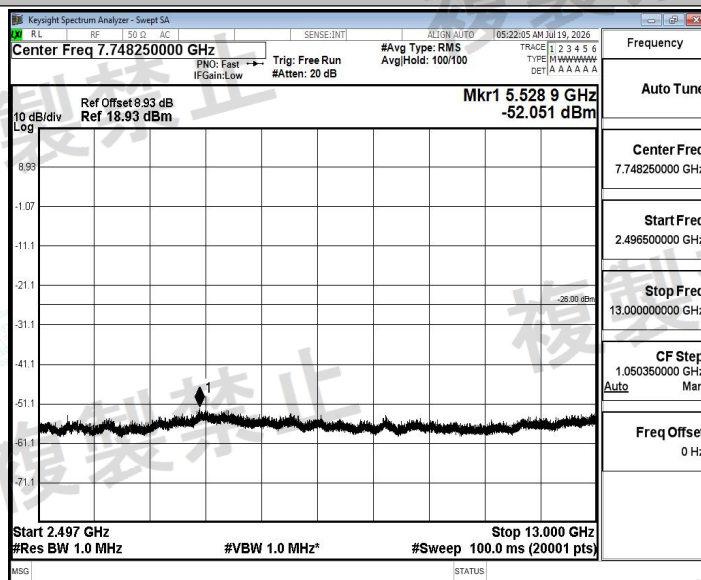
NTNV_3DH5_Ant1_2441_2387~2400



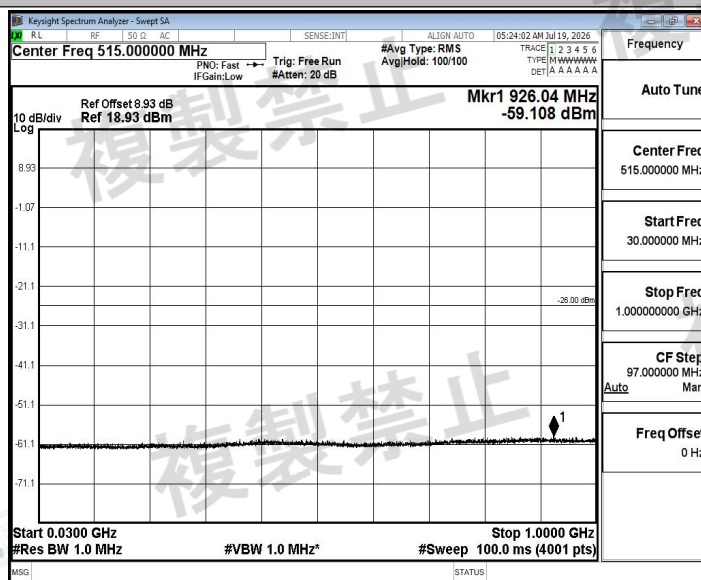
NTNV_3DH5_Ant1_2441_2483.5~2496.5



NTNV_3DH5_Ant1_2441_2496.5~13000



NTNV_3DH5_Ant1_2480_30~1000



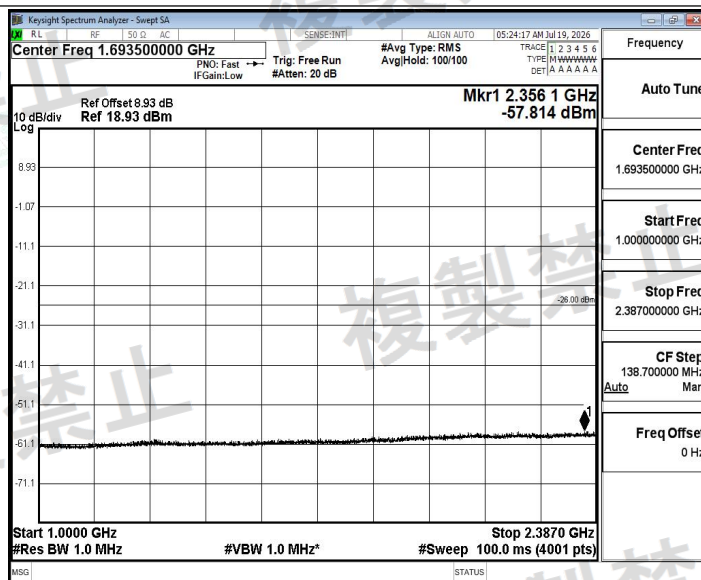
NTNV_3DH5_Ant1_2480_1000~2387

Shenzhen LCS Compliance Testing Laboratory Ltd.

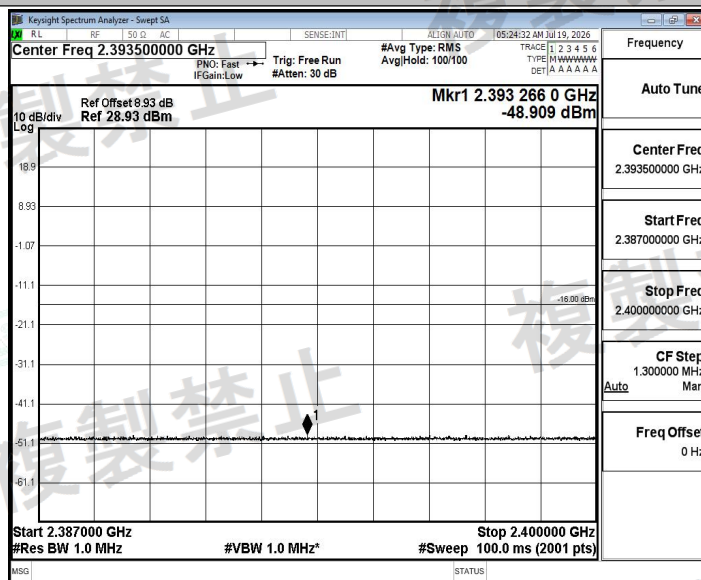
Add: Room 101/201, Building A, and Room 101/301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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

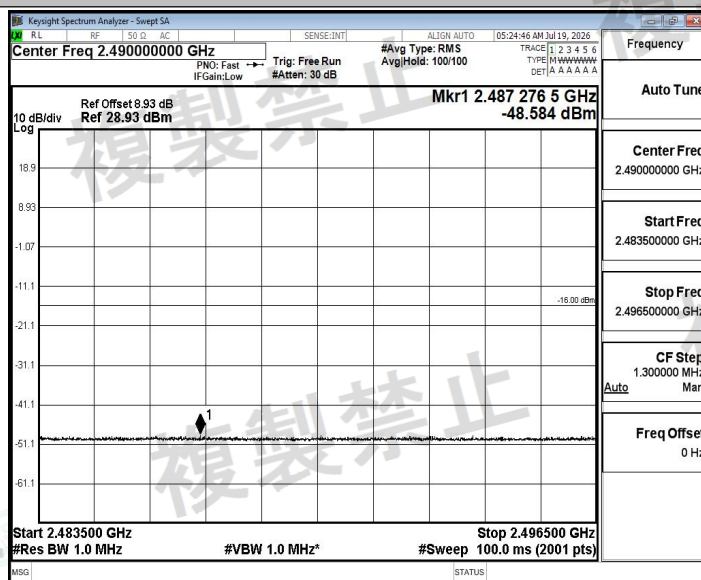
Scan code to check authenticity



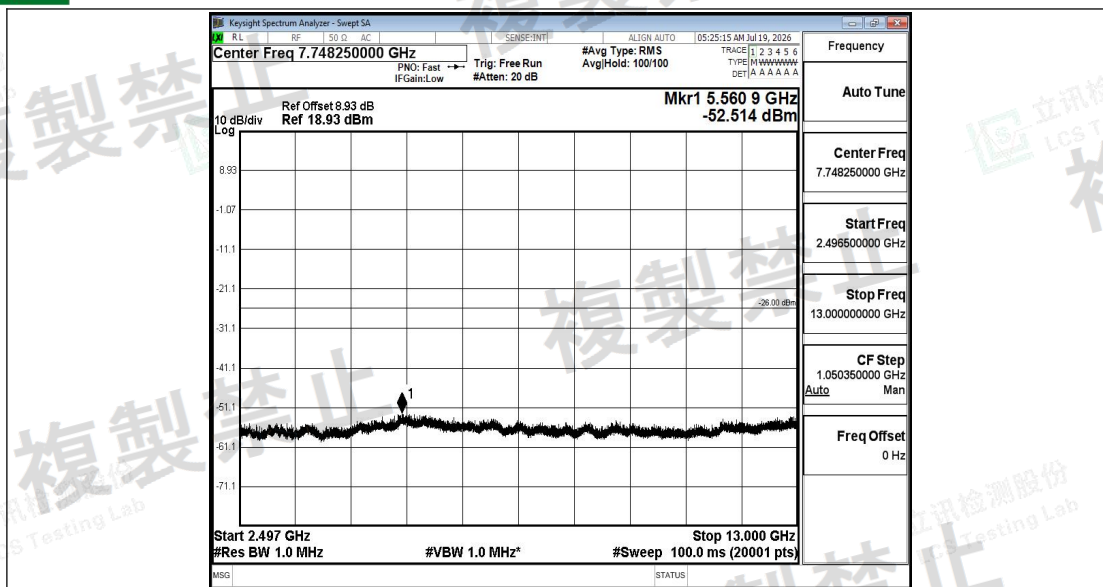
NTNV_3DH5_Ant1_2480_2387~2400



NTNV_3DH5_Ant1_2480_2483.5~2496.5



NTNV_3DH5_Ant1_2480_2496.5~13000





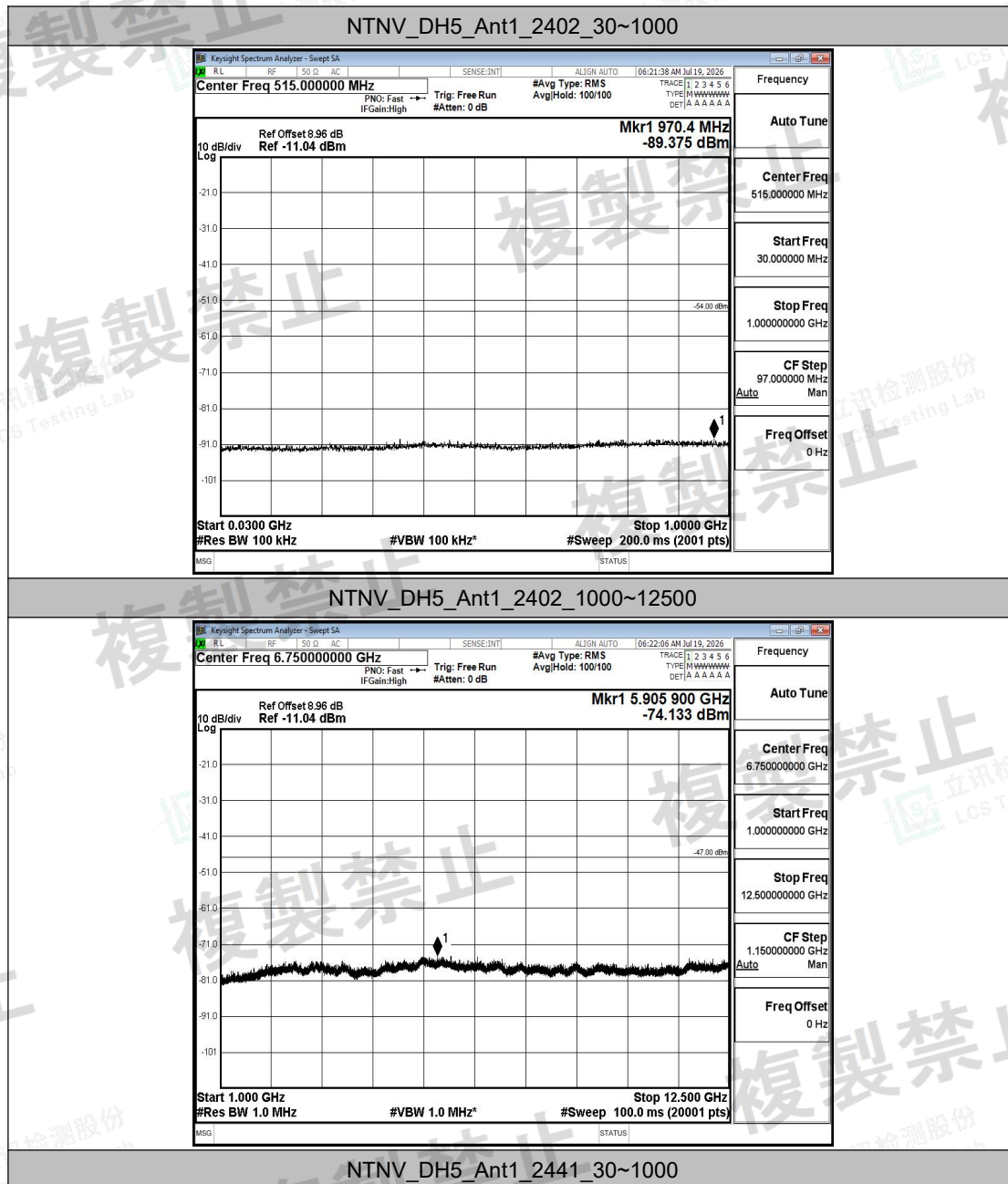
A.6 Spurious Emission of RX

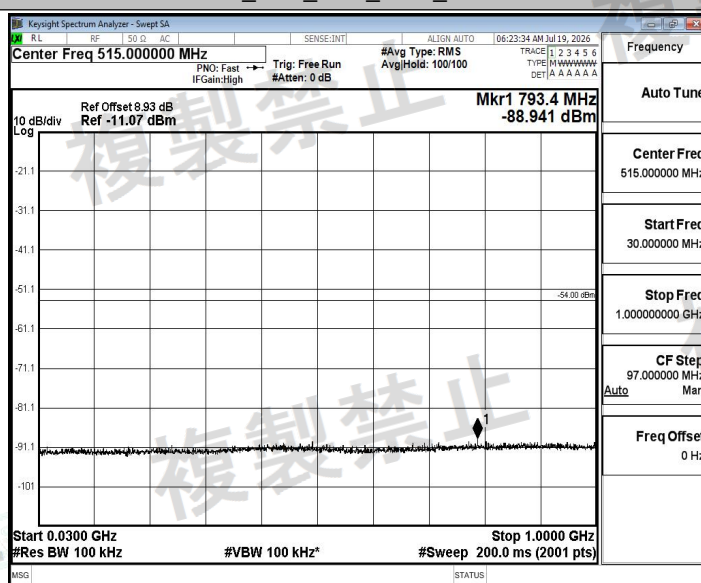
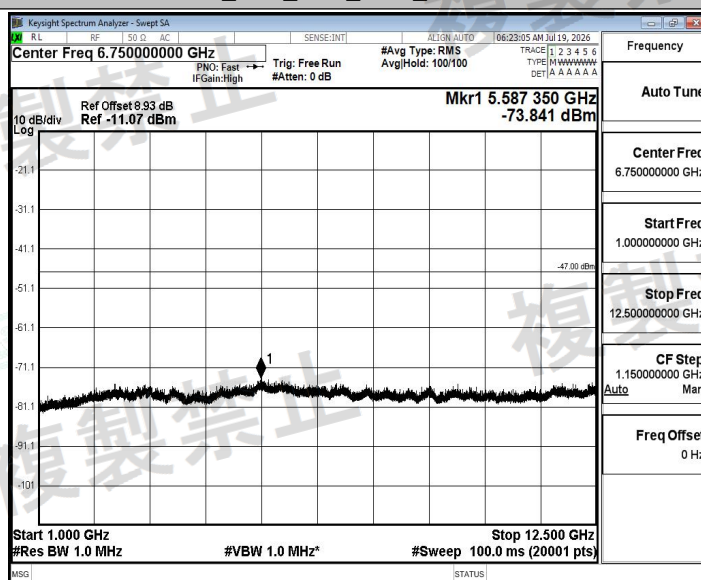
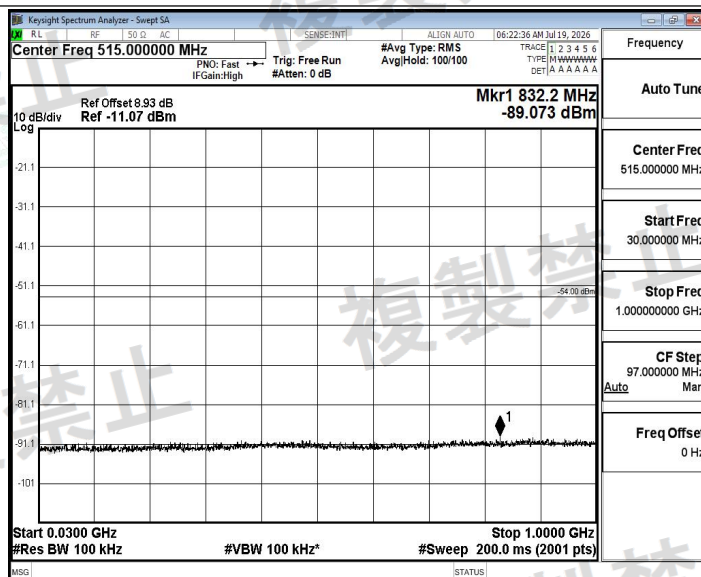
Test Result

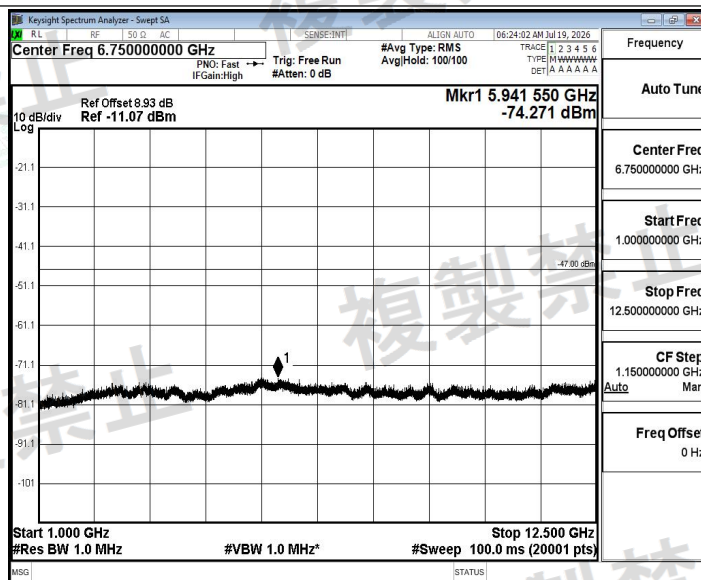
Test Condition	Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-89.38	≤-54	0.00115	≤4	PASS
				1000~12500	-74.13	≤-47	0.03864	≤20	PASS
			2441	30~1000	-89.07	≤-54	0.00124	≤4	PASS
				1000~12500	-73.84	≤-47	0.04130	≤20	PASS
			2480	30~1000	-88.94	≤-54	0.00128	≤4	PASS
				1000~12500	-74.27	≤-47	0.03741	≤20	PASS
	2DH5	Ant1	2402	30~1000	-89.53	≤-54	0.00111	≤4	PASS
				1000~12500	-73.85	≤-47	0.04121	≤20	PASS
			2441	30~1000	-88.89	≤-54	0.00129	≤4	PASS
				1000~12500	-67.4	≤-47	0.18197	≤20	PASS
			2480	30~1000	-85.4	≤-54	0.00288	≤4	PASS
				1000~12500	-68.71	≤-47	0.13459	≤20	PASS
	3DH5	Ant1	2402	30~1000	-74.44	≤-54	0.03597	≤4	PASS
				1000~12500	-70.79	≤-47	0.08337	≤20	PASS
			2441	30~1000	-89.27	≤-54	0.00118	≤4	PASS
				1000~12500	-72	≤-47	0.06310	≤20	PASS
			2480	30~1000	-89.11	≤-54	0.00123	≤4	PASS
				1000~12500	-74.24	≤-47	0.03767	≤20	PASS



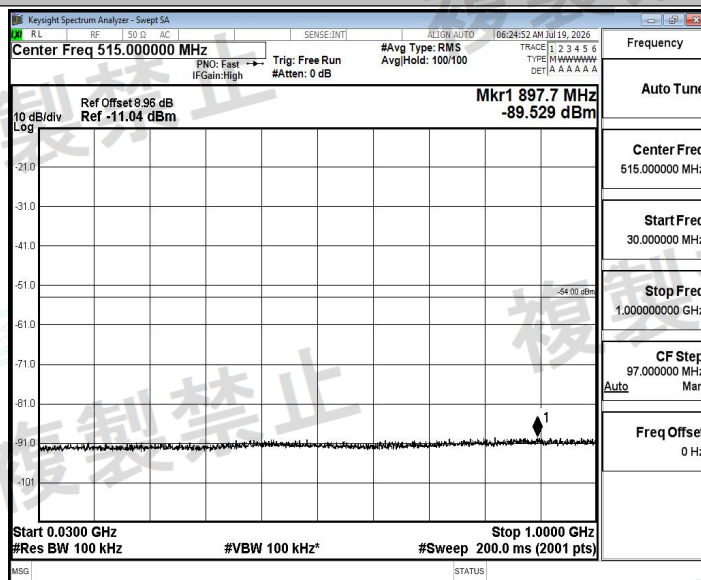
Test Graphs



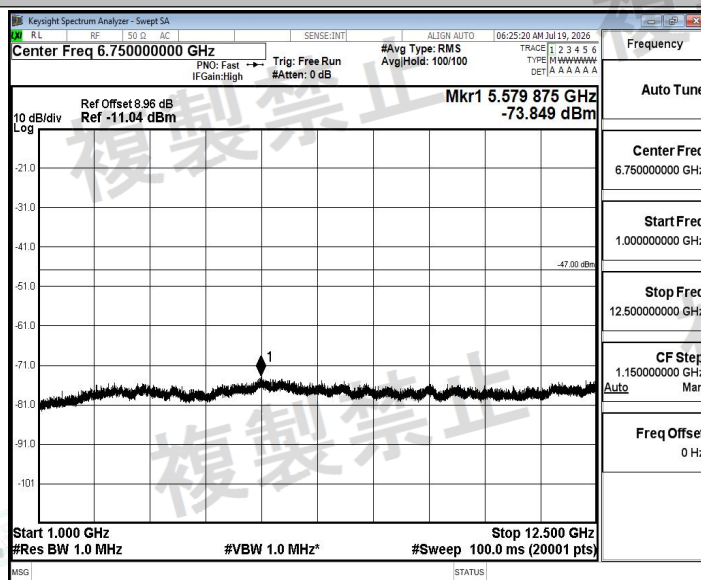




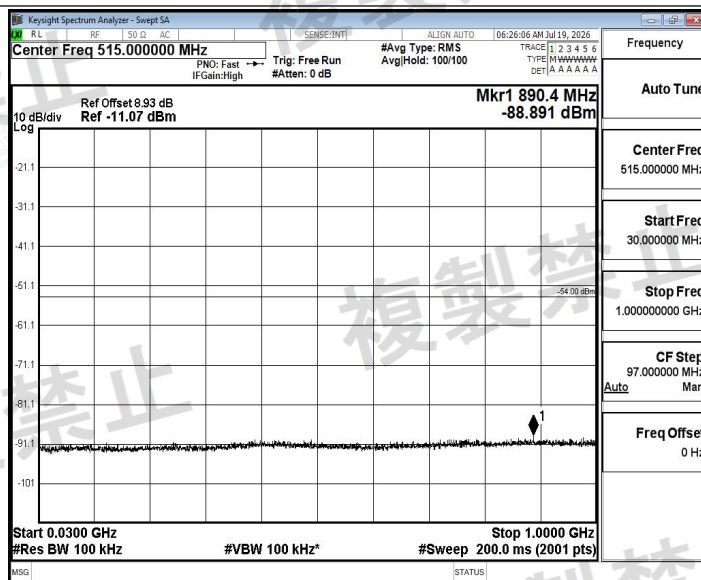
NTNV_2DH5_Ant1_2402_30~1000



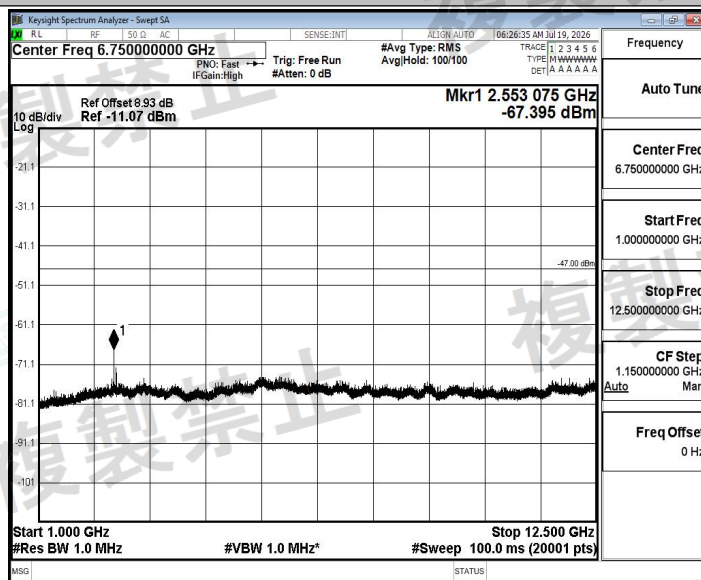
NTNV_2DH5_Ant1_2402_1000~12500



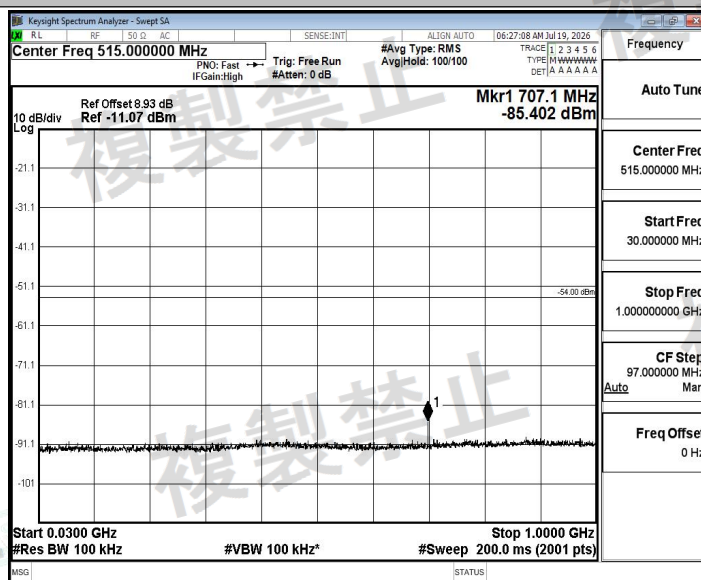
NTNV_2DH5_Ant1_2441_30~1000



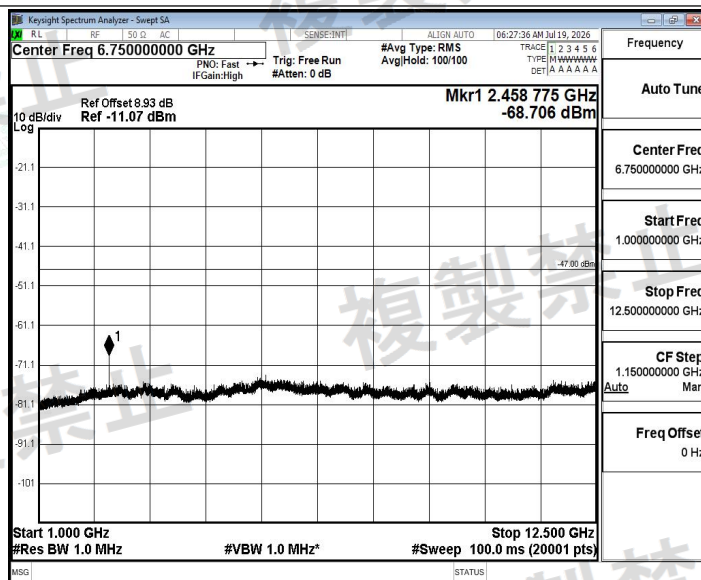
NTNV_2DH5_Ant1_2441_1000~12500



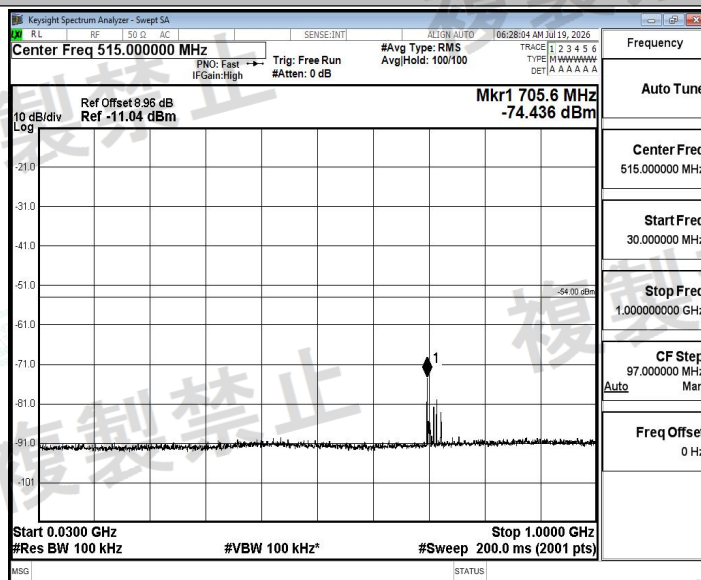
NTNV_2DH5_Ant1_2480_30~1000



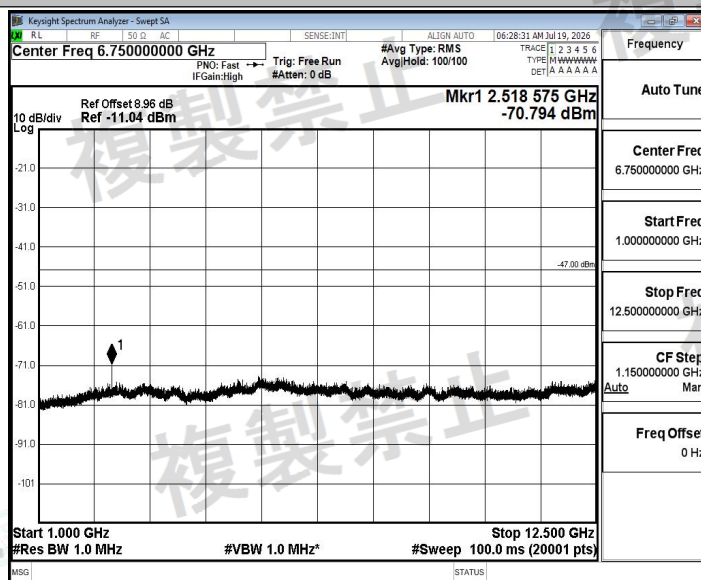
NTNV_2DH5_Ant1_2480_1000~12500



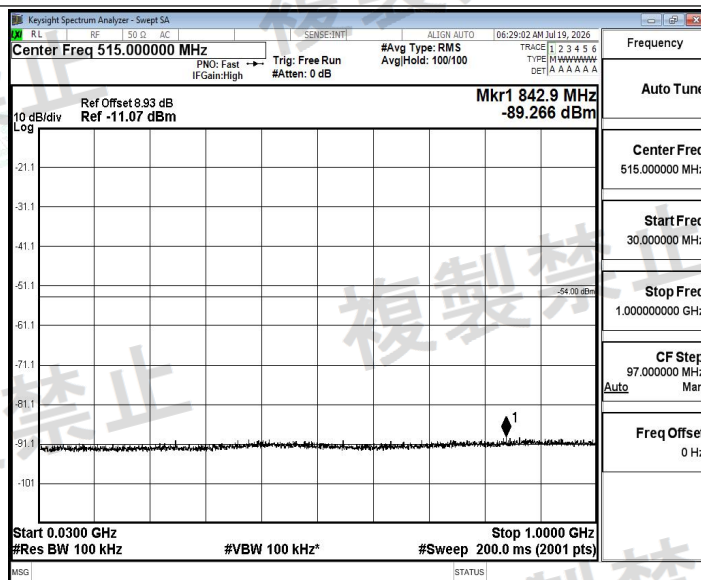
NTNV_3DH5_Ant1_2402_30~1000



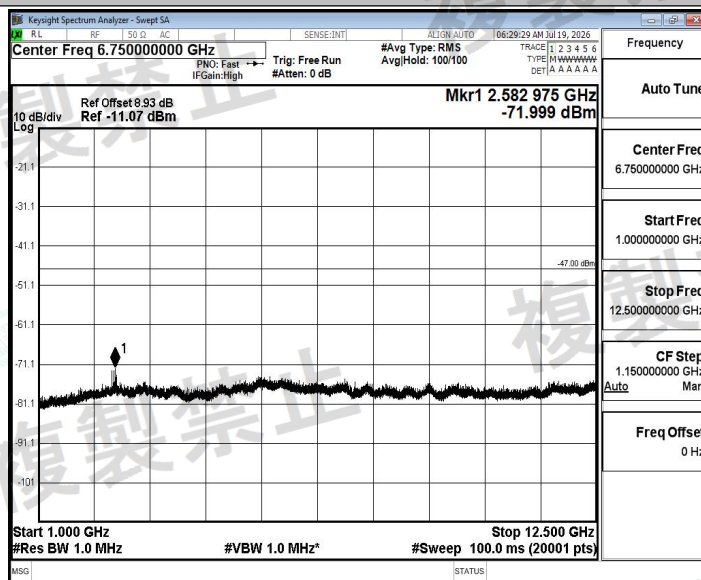
NTNV_3DH5_Ant1_2402_1000~12500



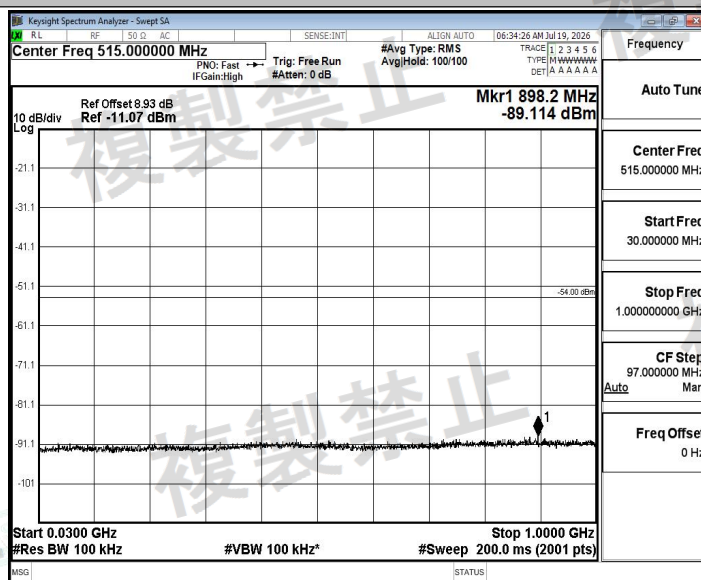
NTNV_3DH5_Ant1_2441_30~1000



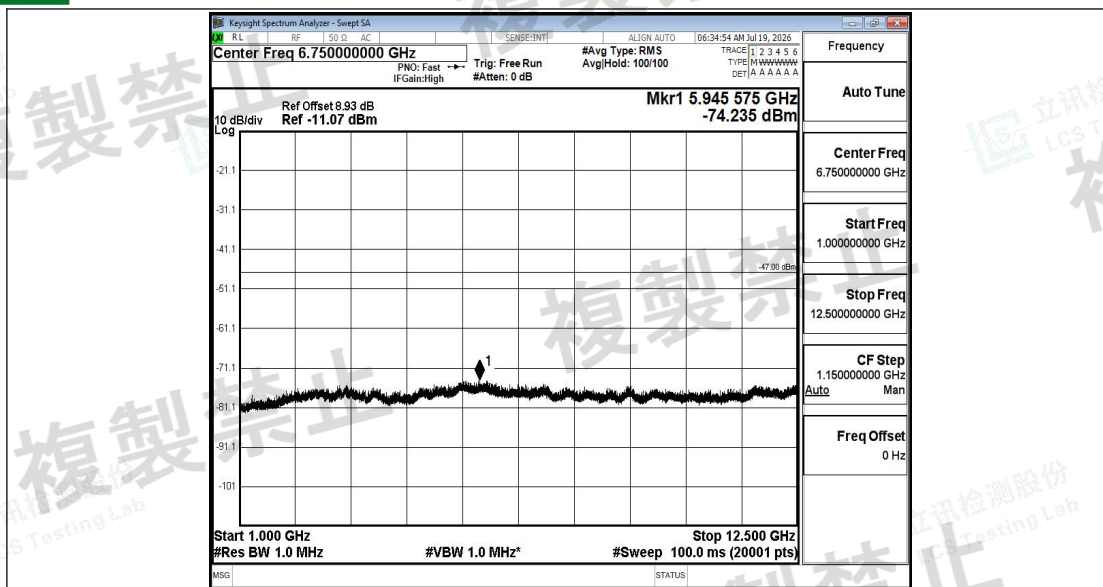
NTNV_3DH5_Ant1_2441_1000~12500



NTNV_3DH5_Ant1_2480_30~1000



NTNV_3DH5_Ant1_2480_1000~12500





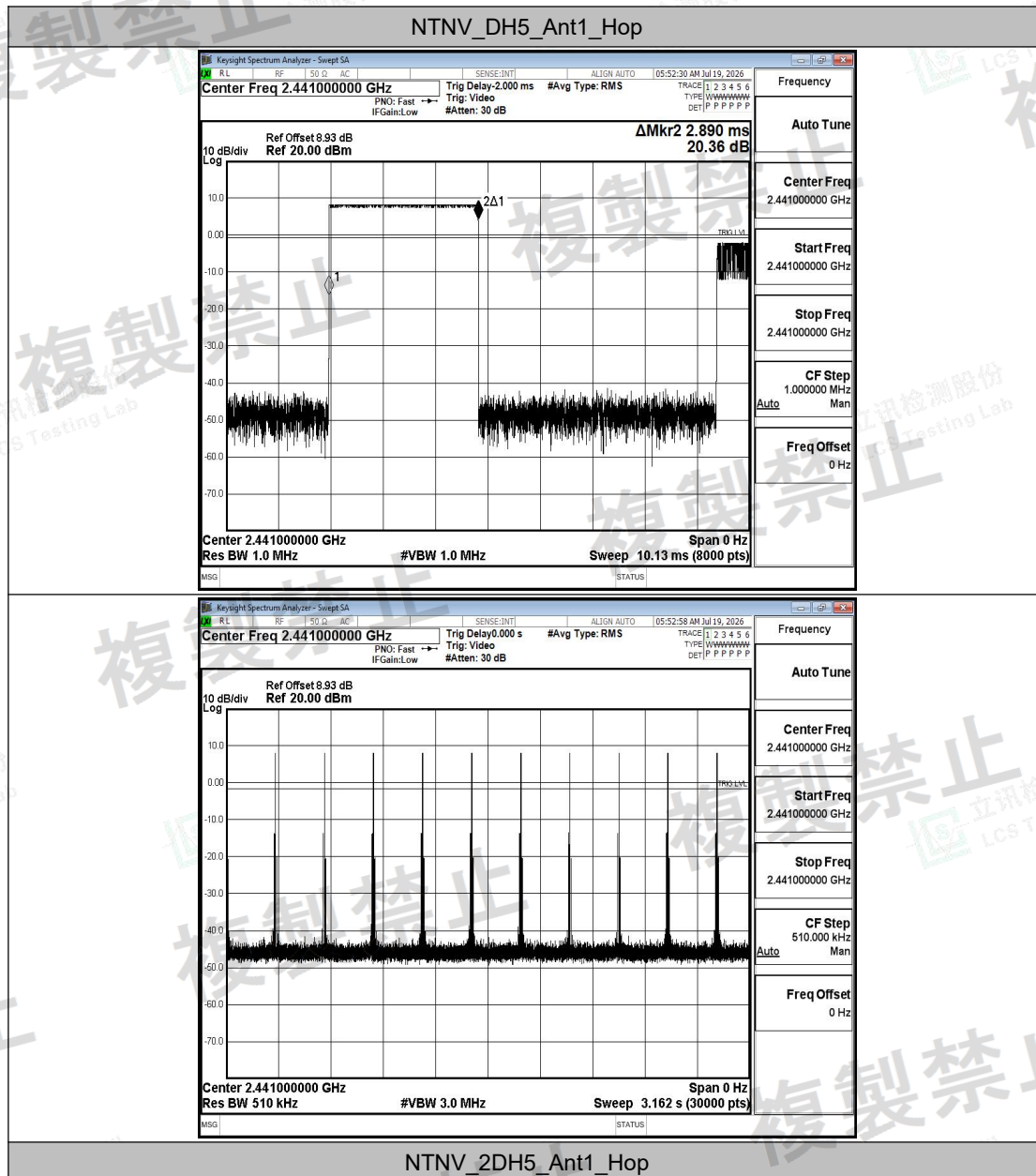
A.7 Dwell Time

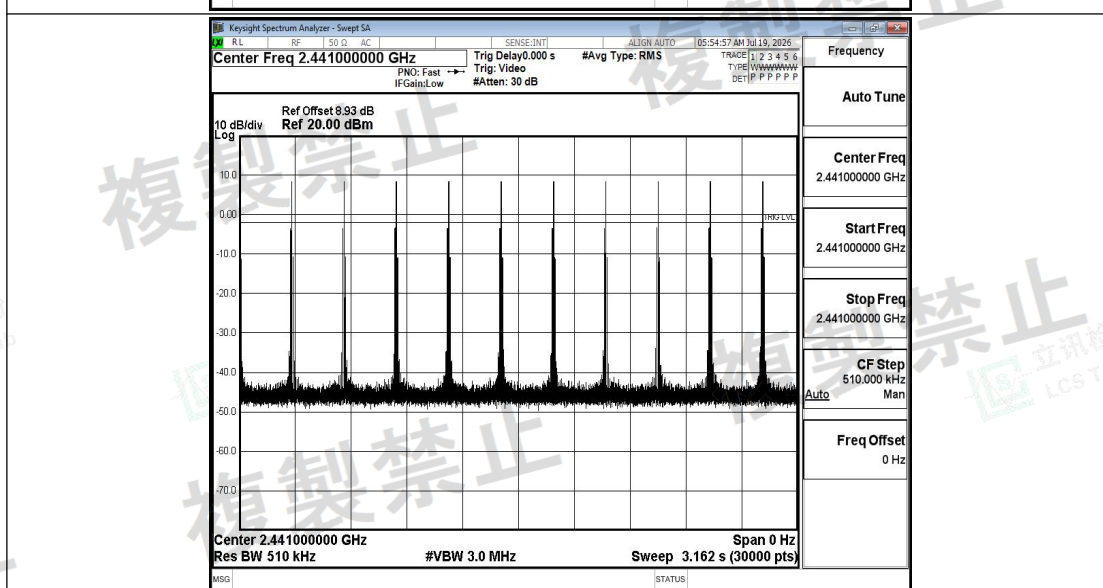
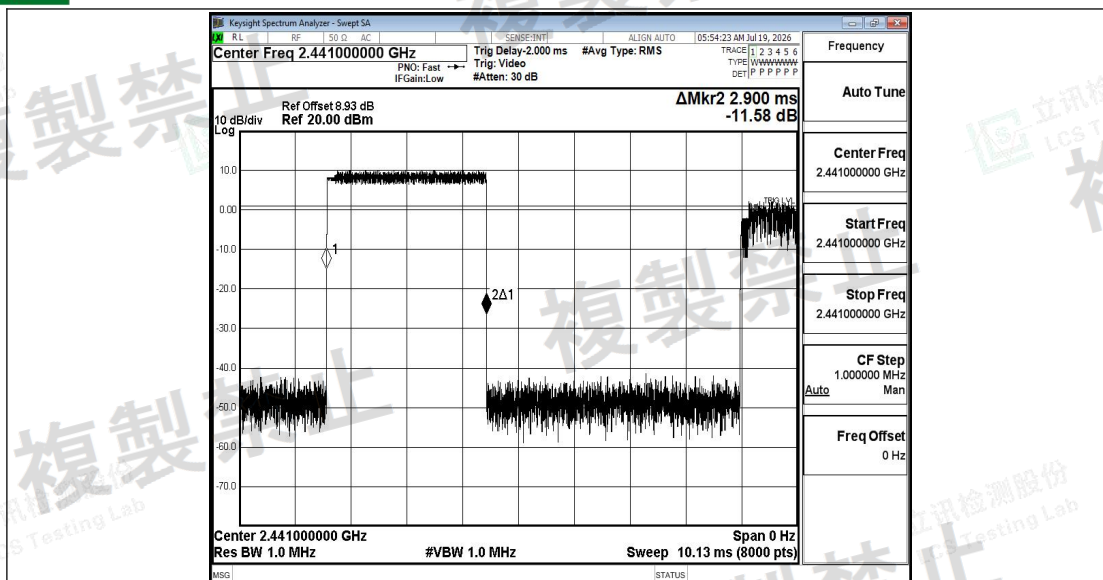
Test Result

Test Condition	Test Mode	Antenna	Frequency [MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit [s]	Verdict
NTNV	DH5	Ant1	Hop	2.89	110	0.318	≤0.4	PASS
	2DH5	Ant1	Hop	2.90	110	0.319	≤0.4	PASS
	3DH5	Ant1	Hop	2.90	110	0.319	≤0.4	PASS



Test Graphs





NTNV_3DH5_Ant1_Hop

