



Appendix B for BT LE Test Data

Product Name: POWER UNIT CONTROLLER

Test Model: Omnibase

Environmental Conditions

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





B.1 Frequency Error

Test Result

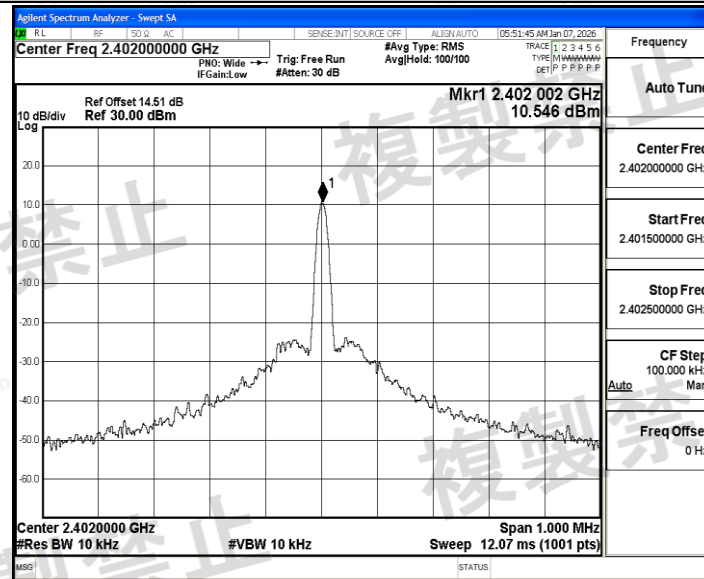
TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2402	0.83264	±50	PASS
			2440	0.40984	±50	PASS
			2480	0.40323	±50	PASS



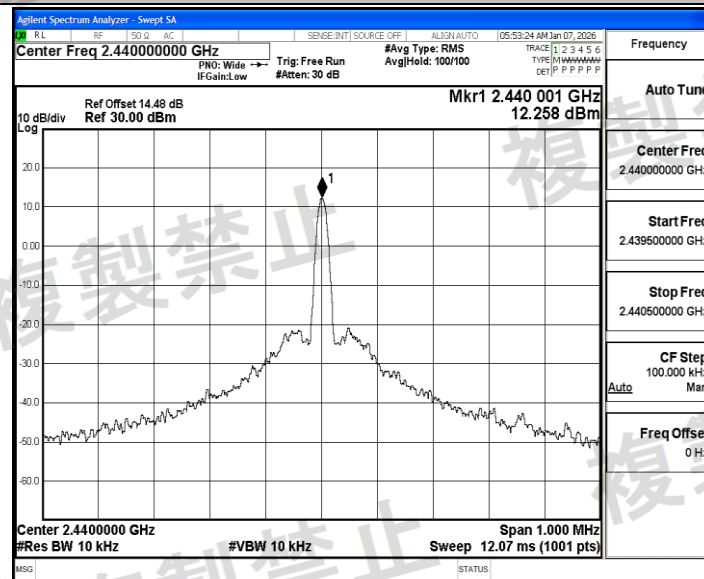


Test Graphs

NTNV_Ant1_2402

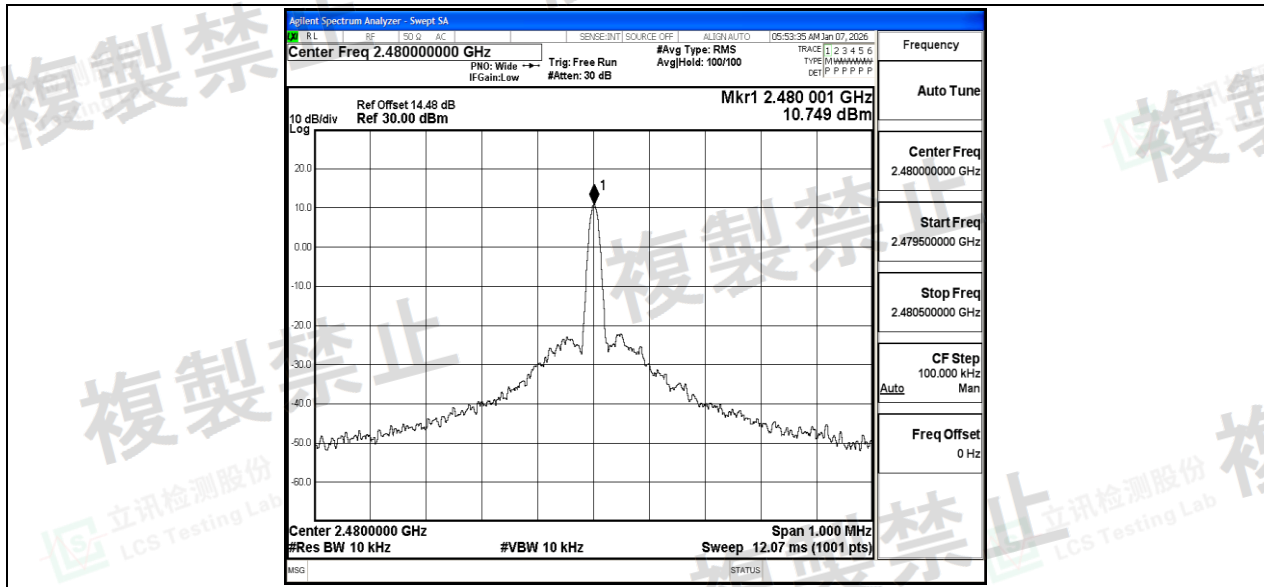


NTNV_Ant1_2440



NTNV_Ant1_2480







B.2 Antenna Power

Test Result

Antenna Power							
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [dBm]	Result [mW]	Limit [mW]	Verdict
NTNV	BLE_1M	Ant1	2402	-0.07	0.9840	≤10	PASS
			2440	-0.44	0.9036	≤10	PASS
			2480	-0.76	0.8395	≤10	PASS
NTNV	BLE_2M	Ant1	2402	-0.79	0.8337	≤10	PASS
			2440	-0.38	0.9162	≤10	PASS
			2480	-0.76	0.8395	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency[MHz]	Power (mW)	Rated Power (mW)	Result (%)	Limit (%)	Verdict
NTNV	BLE_1M	Ant1	2402	0.9840	1.0	-1.60	+20	PASS
			2440	0.9036	1.0	-9.64	+20	PASS
			2480	0.8395	1.0	-16.05	+20	PASS
NTNV	BLE_2M	Ant1	2402	0.8337	1.0	-16.63	+20	PASS
			2440	0.9162	1.0	-8.38	+20	PASS
			2480	0.8395	1.0	-16.05	+20	PASS



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B.3 Occupied Bandwidth

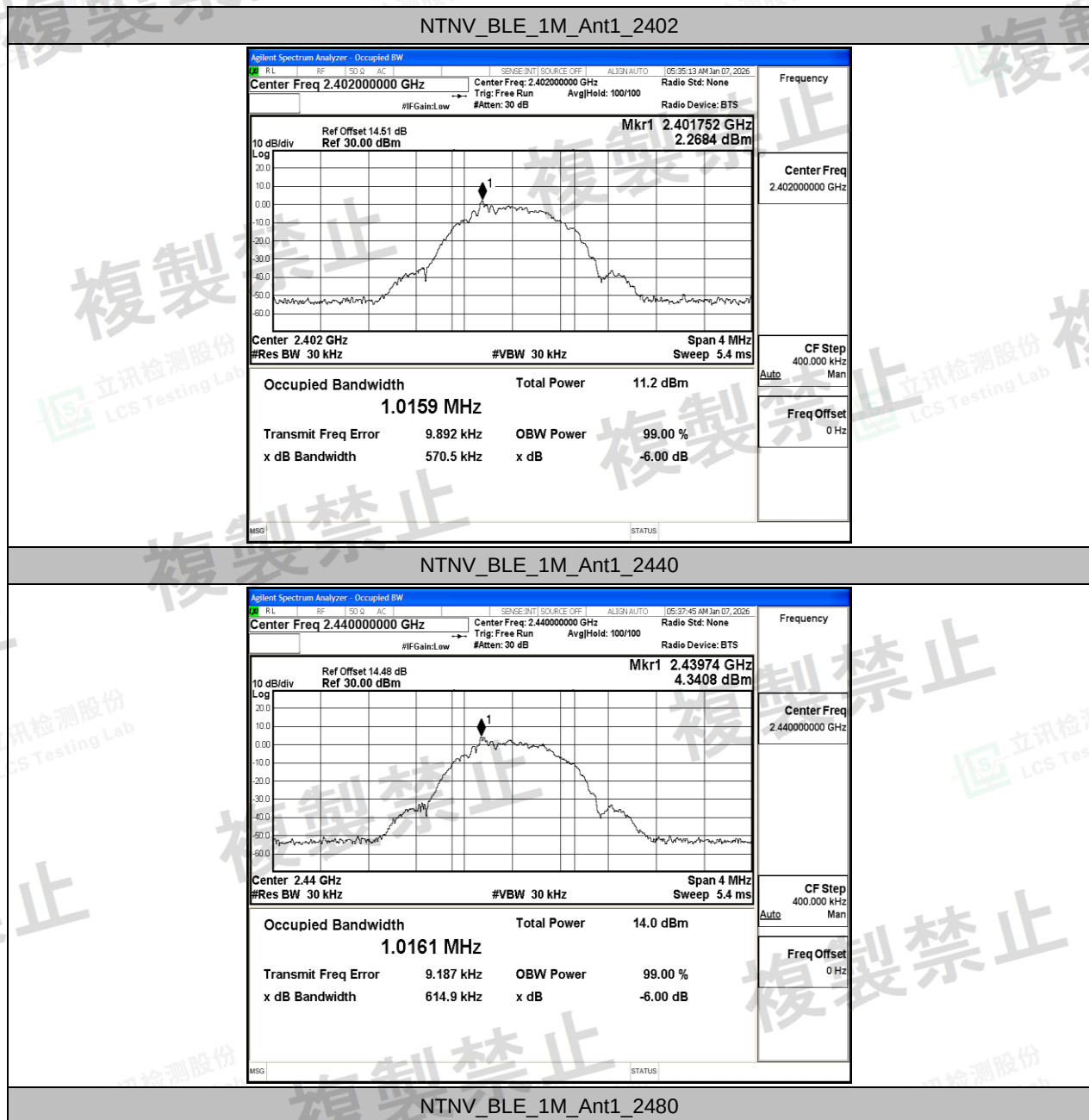
Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	1.016	≤26	PASS
			2440	1.016	≤26	PASS
			2480	1.020	≤26	PASS
	BLE_2M	Ant1	2402	2.024	≤26	PASS
			2440	2.021	≤26	PASS
			2480	2.034	≤26	PASS





Test Graphs

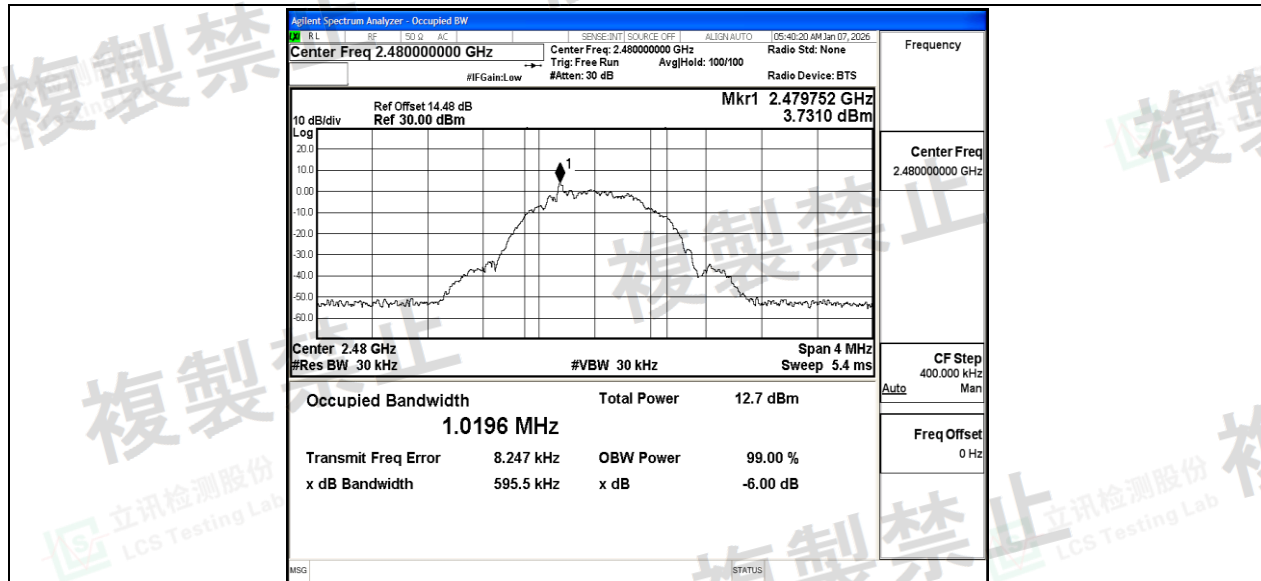


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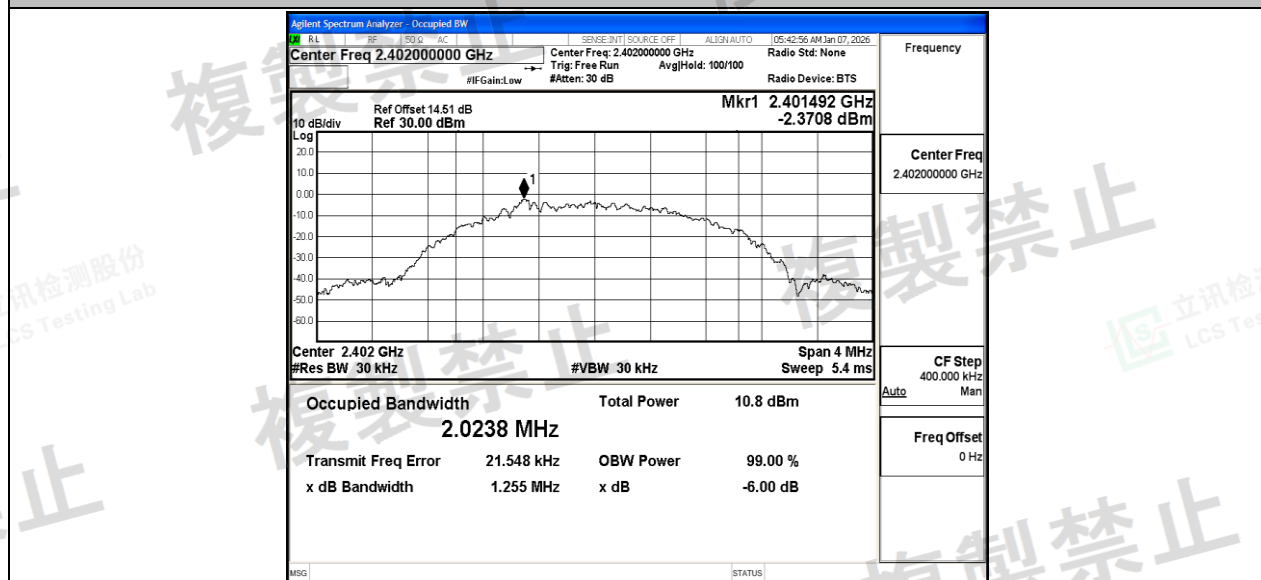
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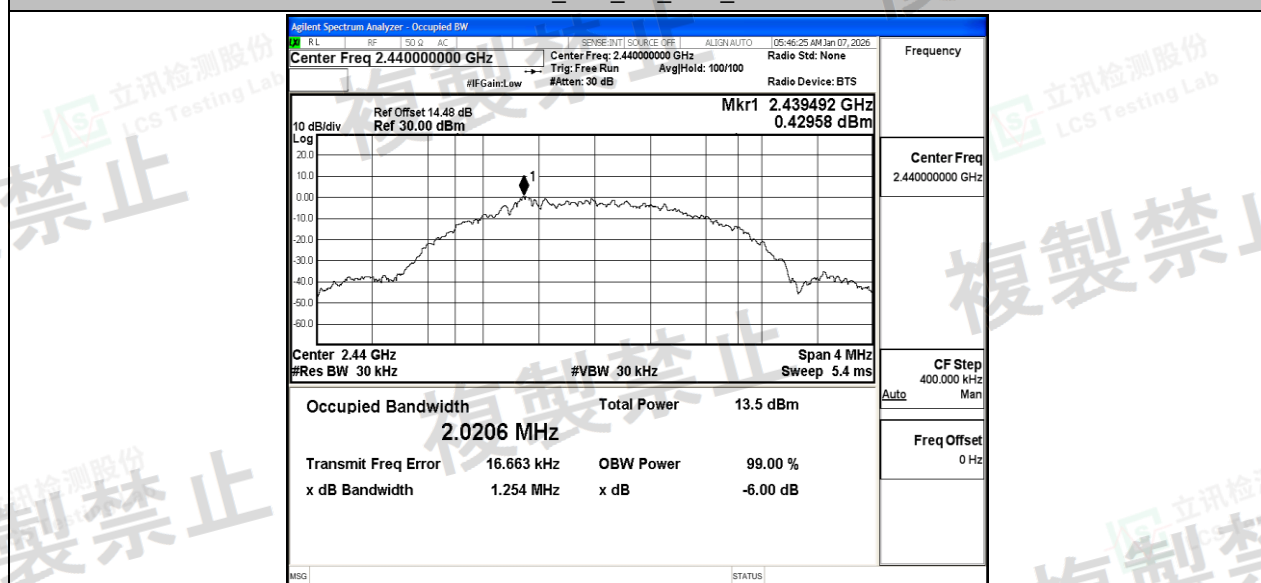
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NTNV_BLE_2M_Ant1_2402



NTNV_BLE_2M_Ant1_2440

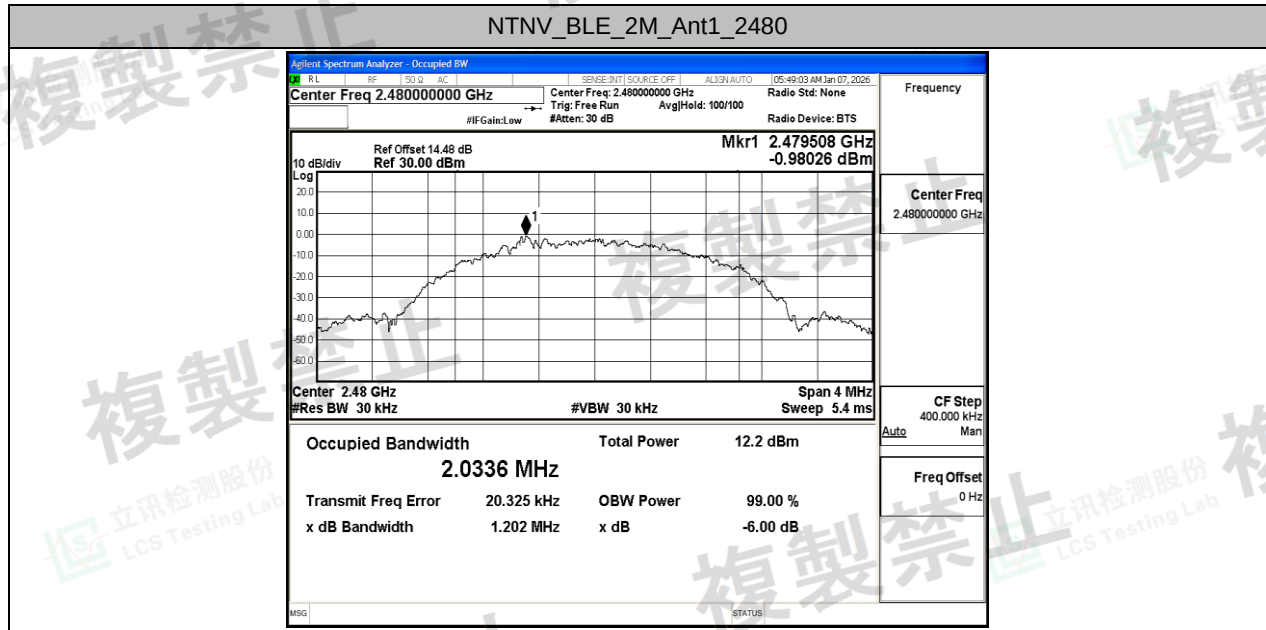


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B.4 Spread Bandwidth

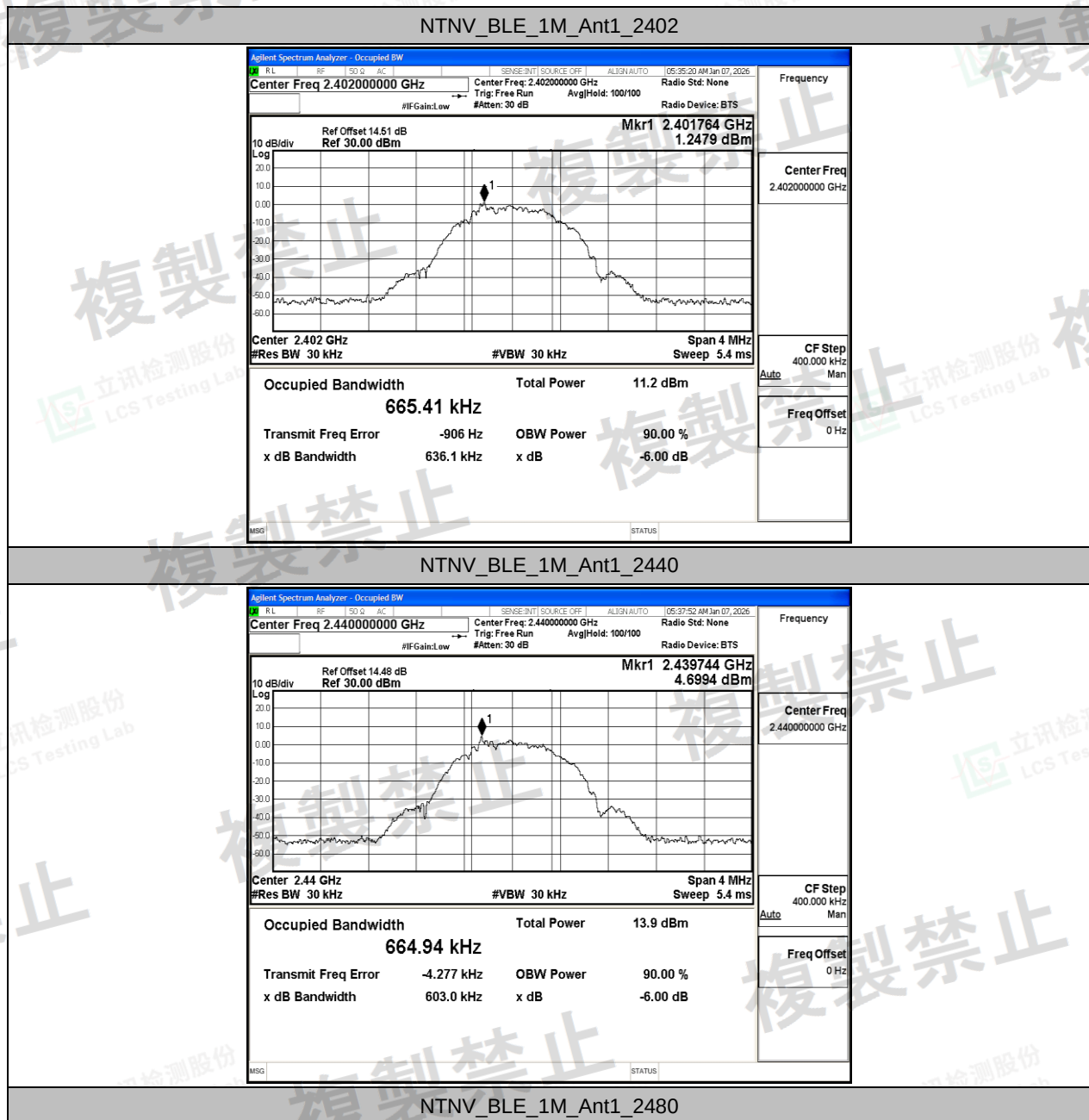
Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	0.665	---	PASS
			2440	0.665	---	PASS
			2480	0.663	---	PASS
	BLE_2M	Ant1	2402	1.334	---	PASS
			2440	1.344	---	PASS
			2480	1.335	---	PASS





Test Graphs

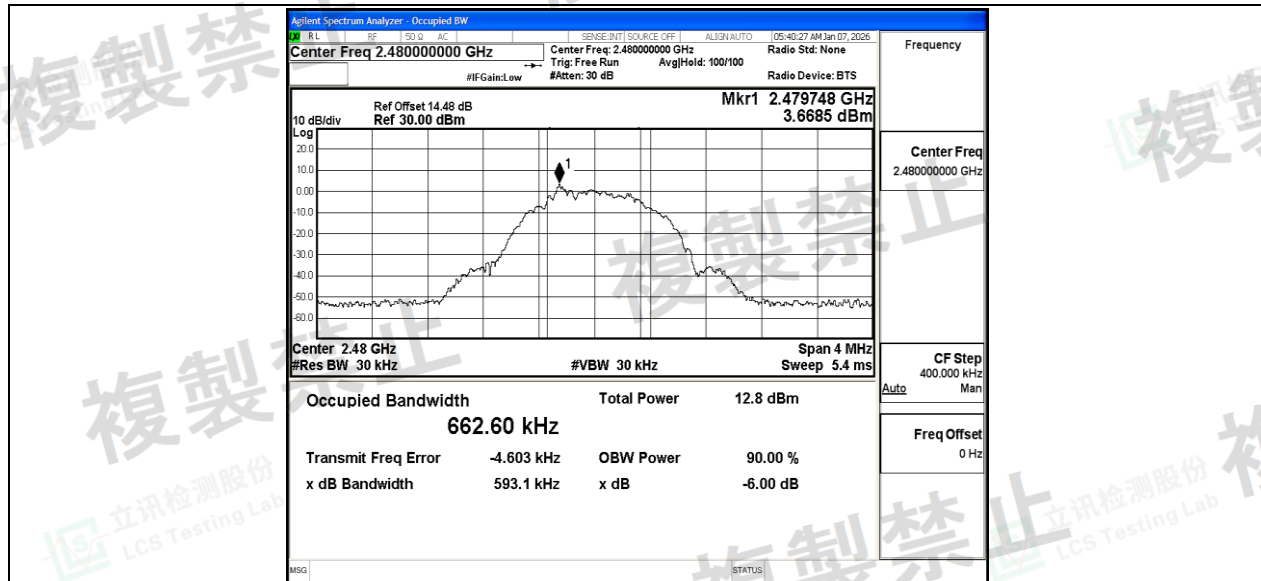


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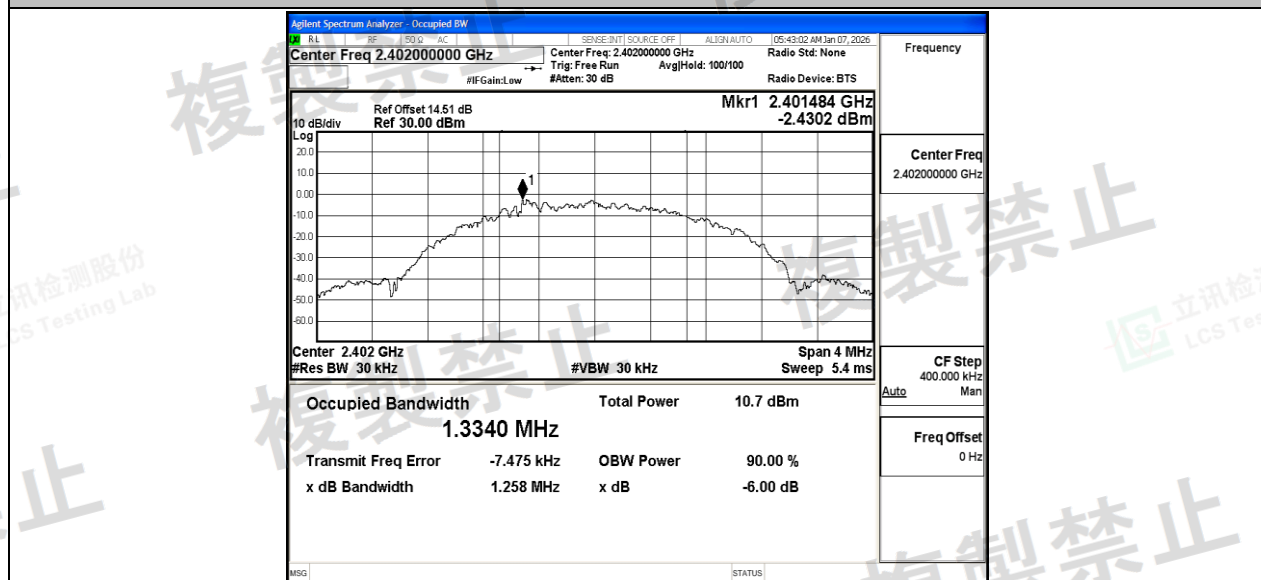
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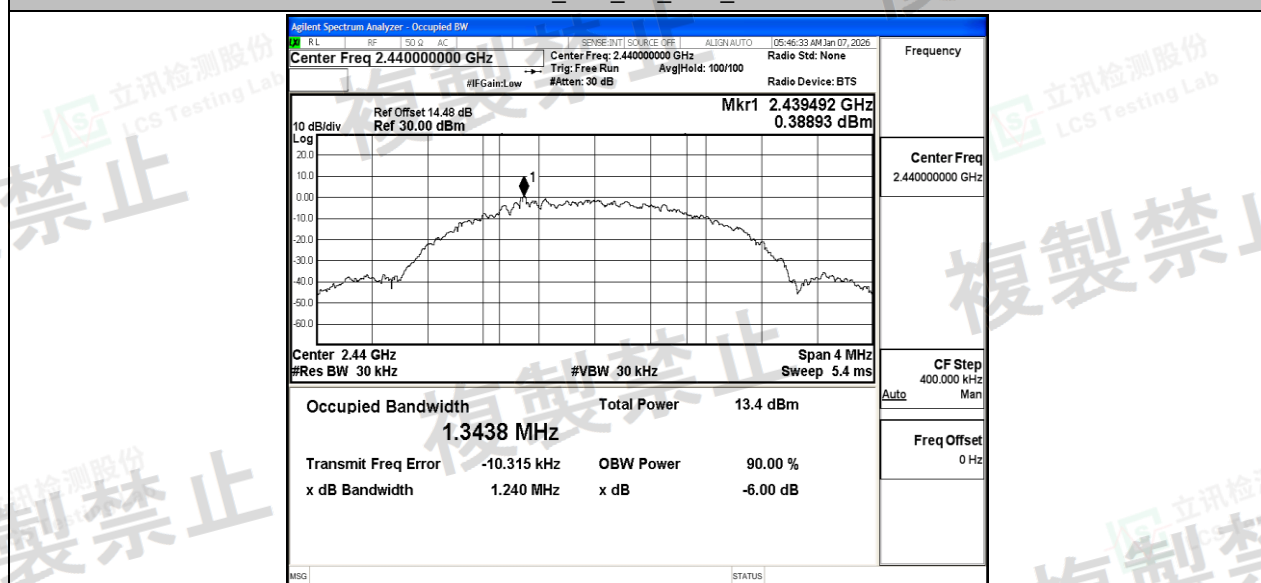
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NTNV_BLE_2M_Ant1_2402



NTNV_BLE_2M_Ant1_2440

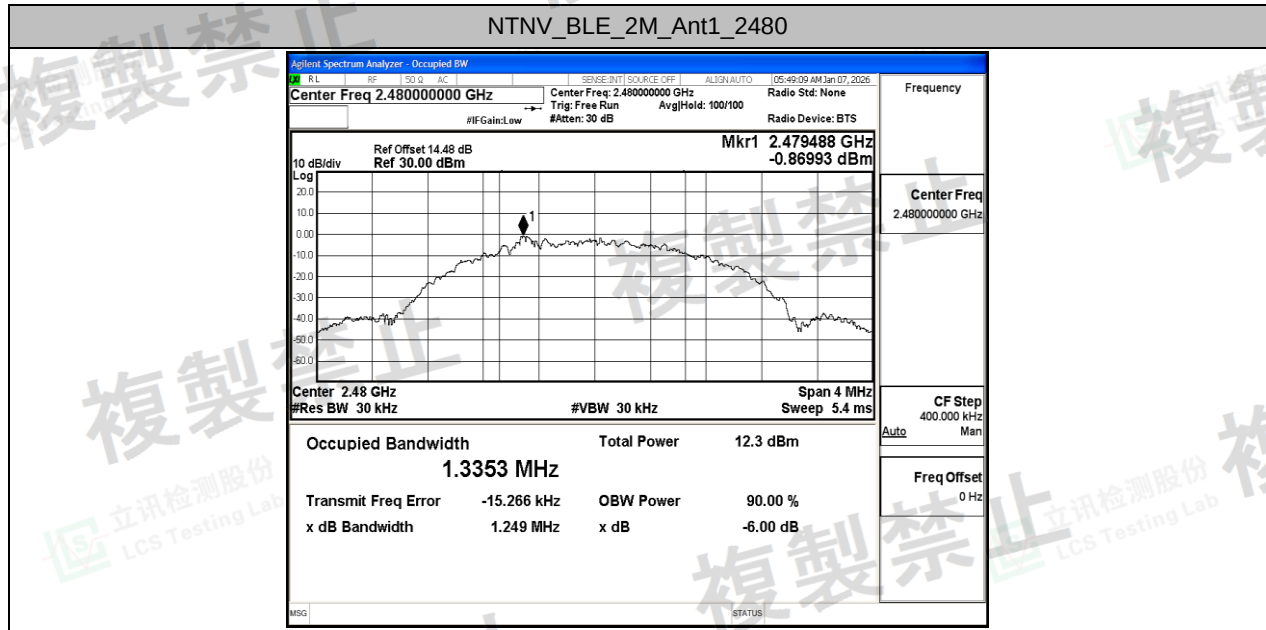


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B.5 Spurious Emission of TX

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	-53.70	≤-26	0.00427	≤2.5	PASS
				1000~2387	-52.54	≤-26	0.00557	≤2.5	PASS
				2387~2400	-38.08	≤-16	0.15560	≤25	PASS
				2483.5~2496.5	-43.50	≤-16	0.04467	≤25	PASS
				2496.5~13000	-45.54	≤-26	0.02793	≤2.5	PASS
			2440	30~1000	-53.96	≤-26	0.00402	≤2.5	PASS
				1000~2387	-52.68	≤-26	0.00540	≤2.5	PASS
				2387~2400	-43.51	≤-16	0.04457	≤25	PASS
				2483.5~2496.5	-43.45	≤-16	0.04519	≤25	PASS
				2496.5~13000	-45.08	≤-26	0.03105	≤2.5	PASS
			2480	30~1000	-53.98	≤-26	0.00400	≤2.5	PASS
				1000~2387	-52.88	≤-26	0.00515	≤2.5	PASS
				2387~2400	-43.61	≤-16	0.04355	≤25	PASS
				2483.5~2496.5	-43.39	≤-16	0.04581	≤25	PASS
				2496.5~13000	-44.99	≤-26	0.03170	≤2.5	PASS
	BLE_2M	Ant1	2402	30~1000	-53.68	≤-26	0.00429	≤2.5	PASS
				1000~2387	-52.59	≤-26	0.00551	≤2.5	PASS
				2387~2400	-22.83	≤-16	5.21195	≤25	PASS
				2483.5~2496.5	-43.39	≤-16	0.04581	≤25	PASS
				2496.5~13000	-45.66	≤-26	0.02716	≤2.5	PASS
			2440	30~1000	-53.89	≤-26	0.00408	≤2.5	PASS
				1000~2387	-52.80	≤-26	0.00525	≤2.5	PASS
				2387~2400	-43.45	≤-16	0.04519	≤25	PASS
				2483.5~2496.5	-43.35	≤-16	0.04624	≤25	PASS
				2496.5~13000	-44.81	≤-26	0.03304	≤2.5	PASS
			2480	30~1000	-53.82	≤-26	0.00415	≤2.5	PASS
				1000~2387	-52.32	≤-26	0.00586	≤2.5	PASS
				2387~2400	-43.46	≤-16	0.04508	≤25	PASS
				2483.5~2496.5	-43.26	≤-16	0.04721	≤25	PASS
				2496.5~13000	-45.15	≤-26	0.03055	≤2.5	PASS



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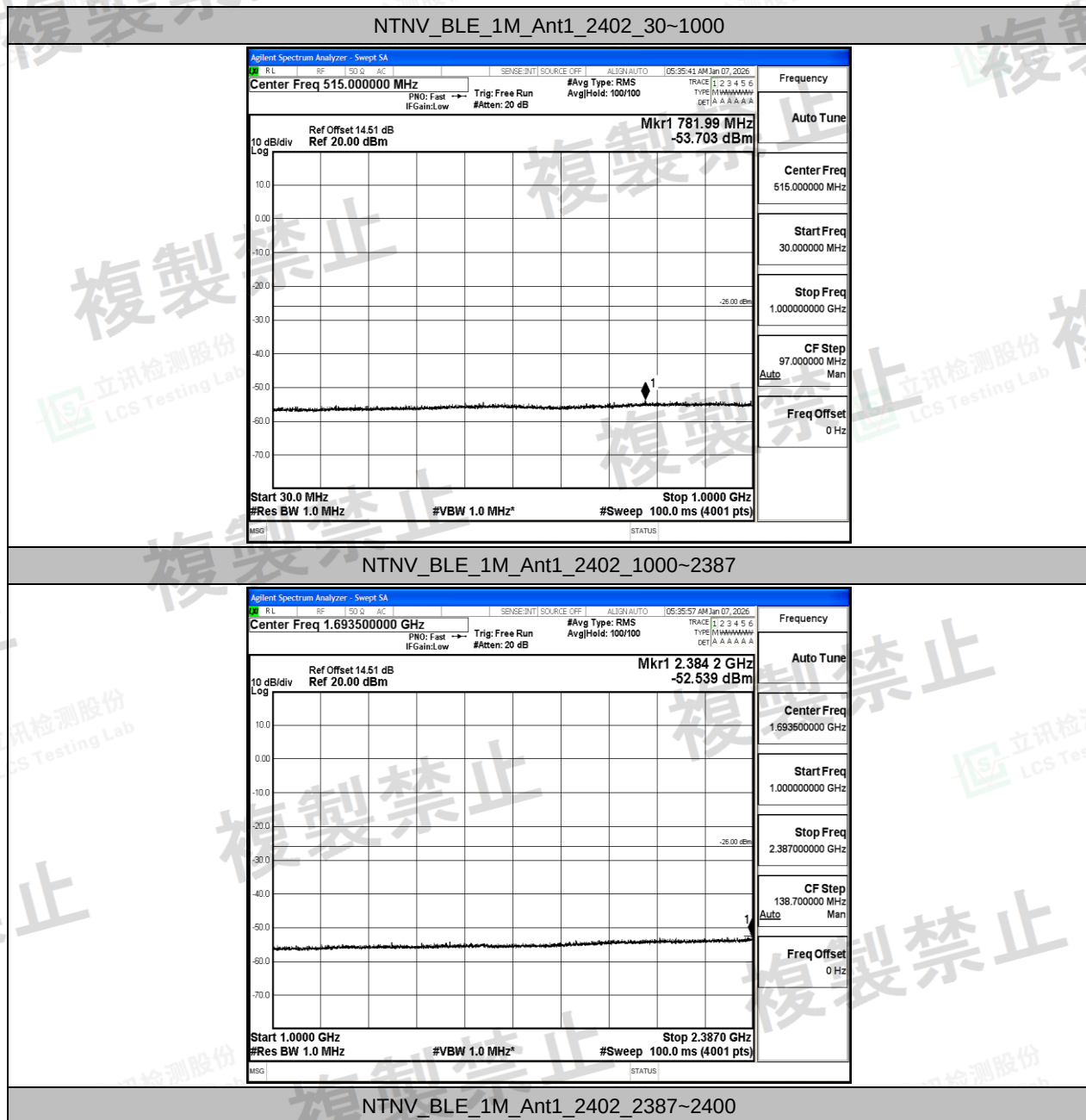
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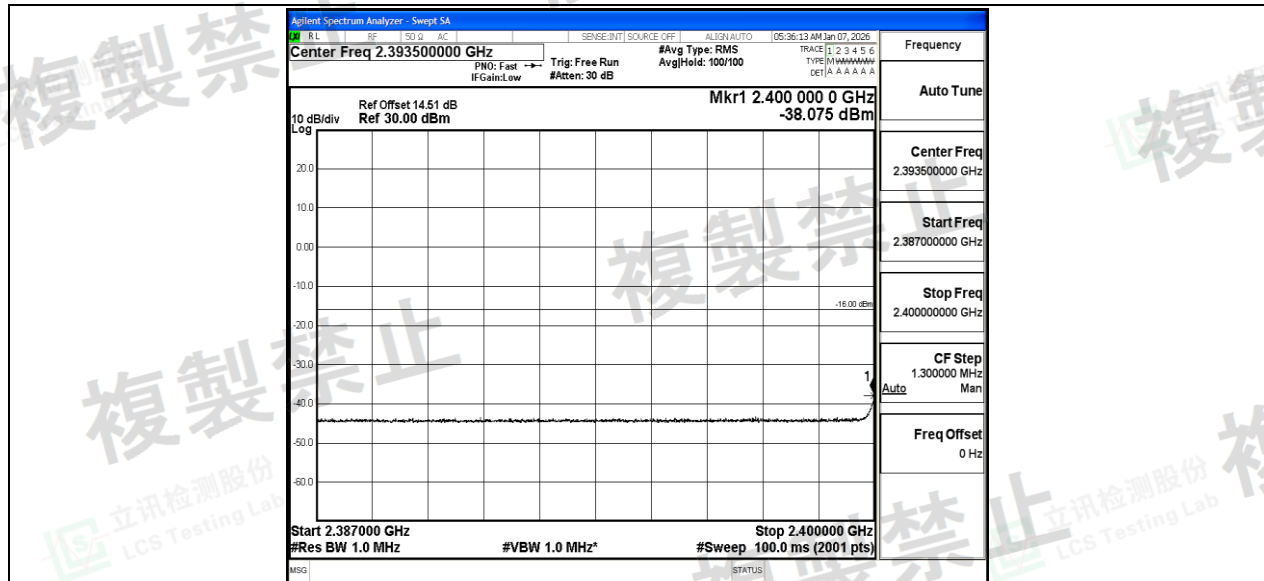
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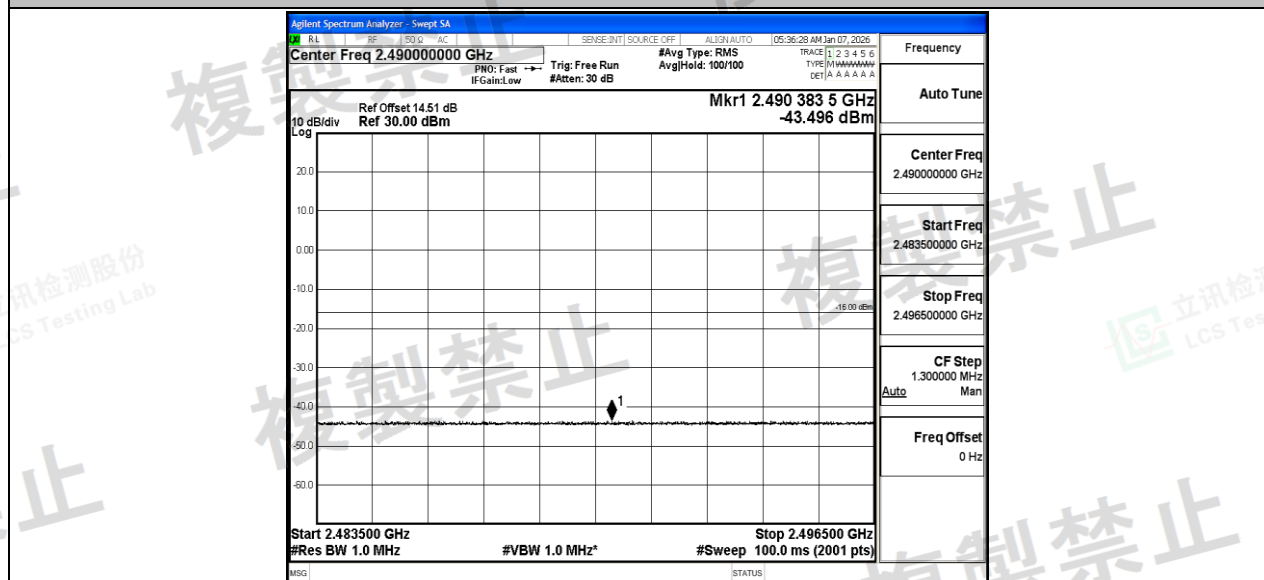


Test Graphs

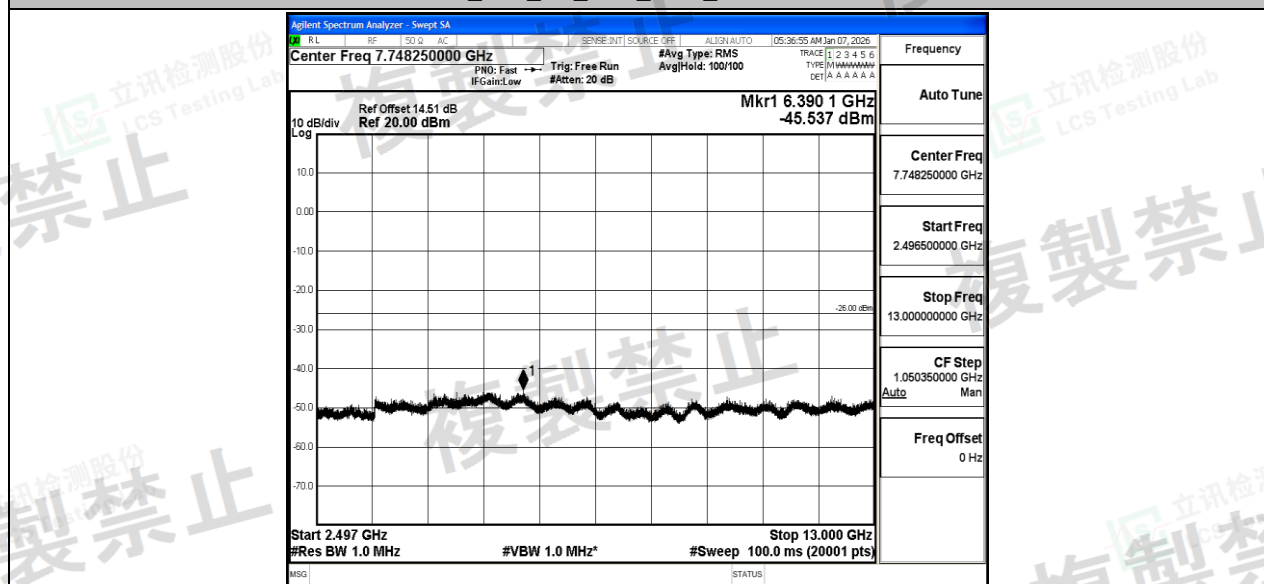




NTNV_BLE_1M_Ant1_2402_2483.5~2496.5



NTNV_BLE_1M_Ant1_2402_2496.5~13000



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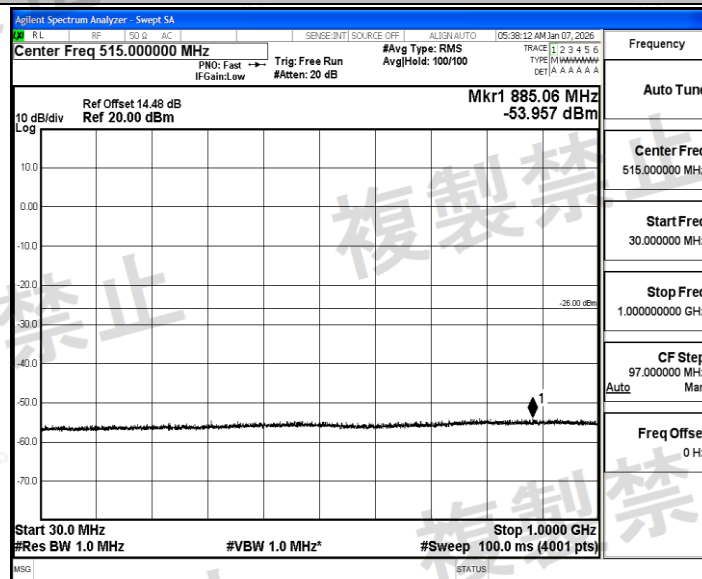
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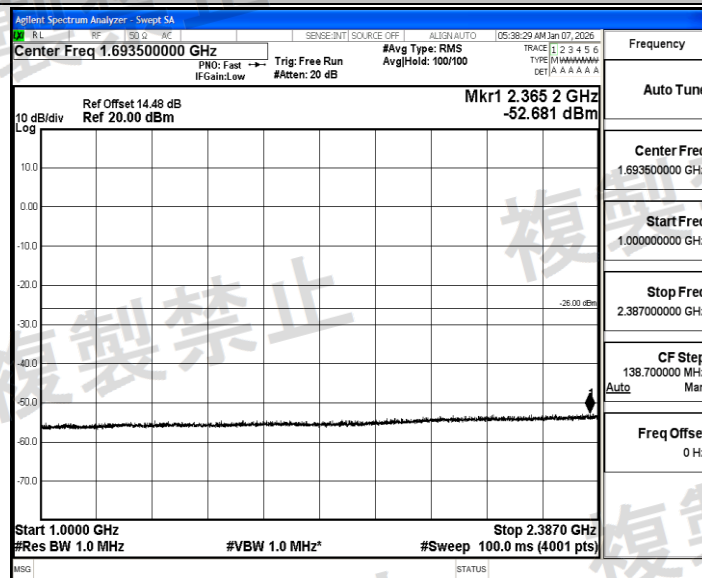
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NTNV_BLE_1M_Ant1_2440_30~1000



NTNV_BLE_1M_Ant1_2440_1000~2387



NTNV_BLE_1M_Ant1_2440_2387~2400

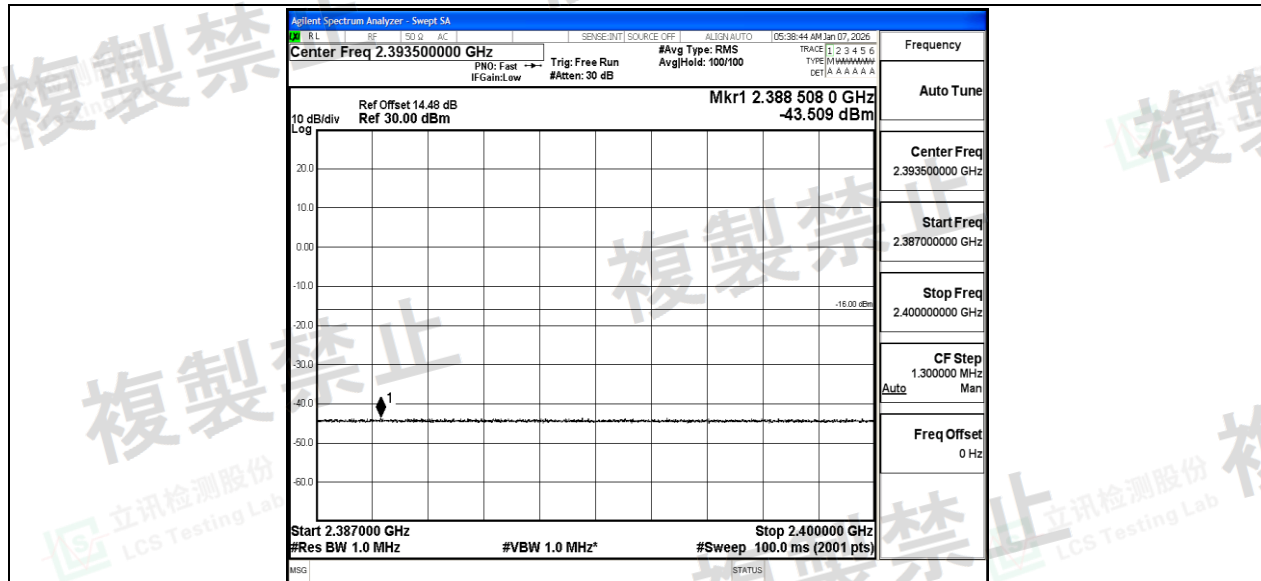


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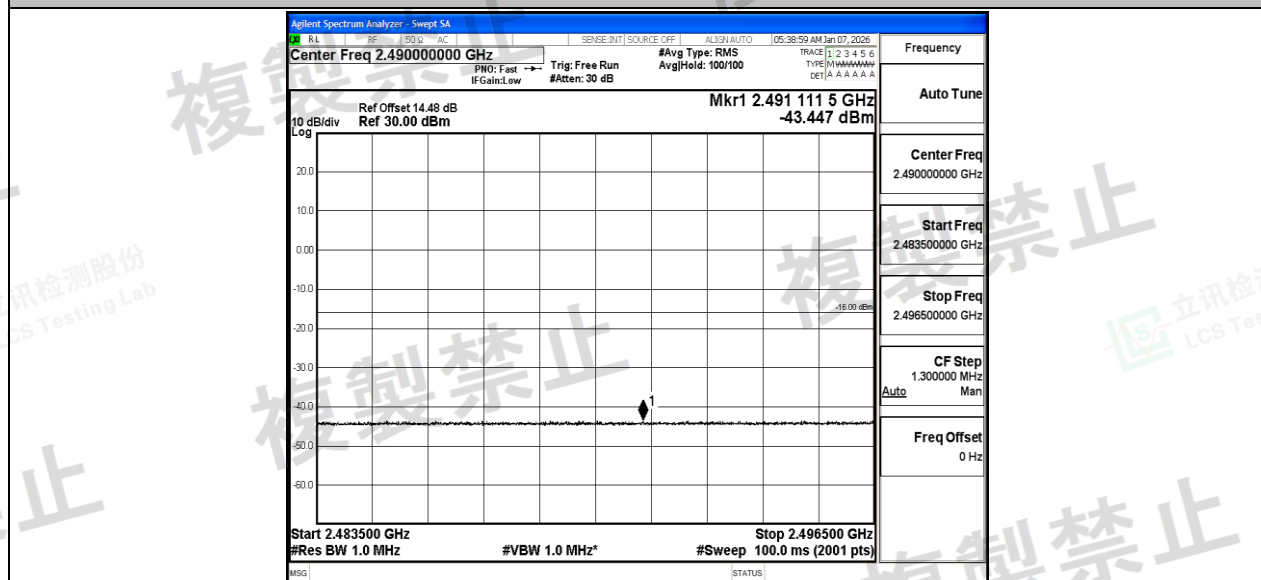
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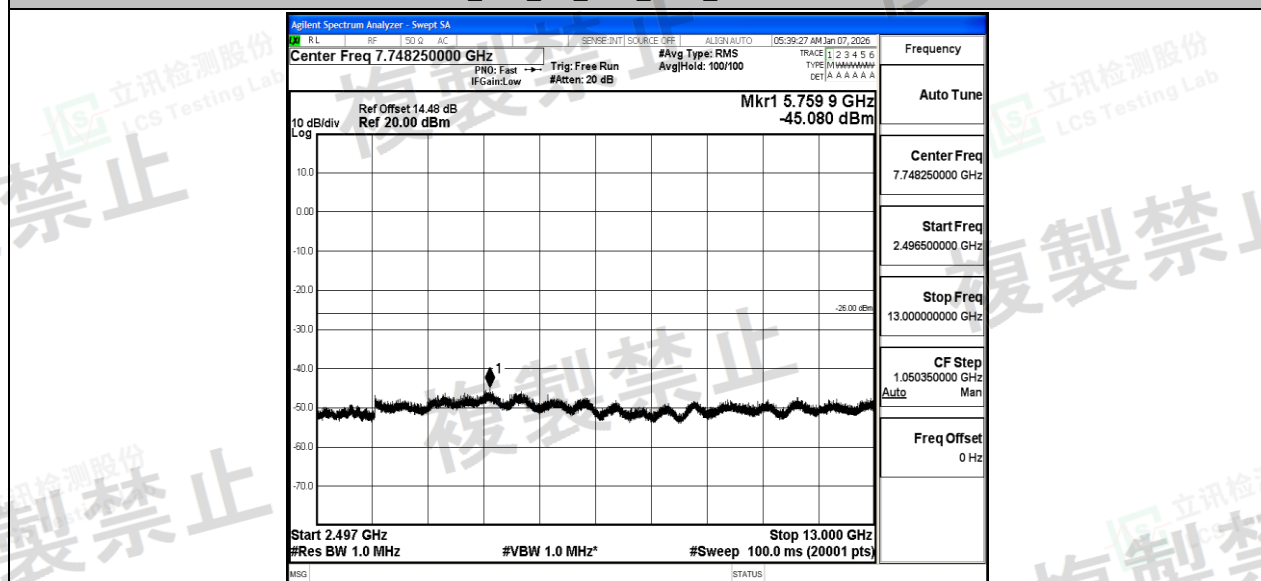
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NTNV_BLE_1M_Ant1_2440_2483.5~2496.5



NTNV_BLE_1M_Ant1_2440_2496.5~13000



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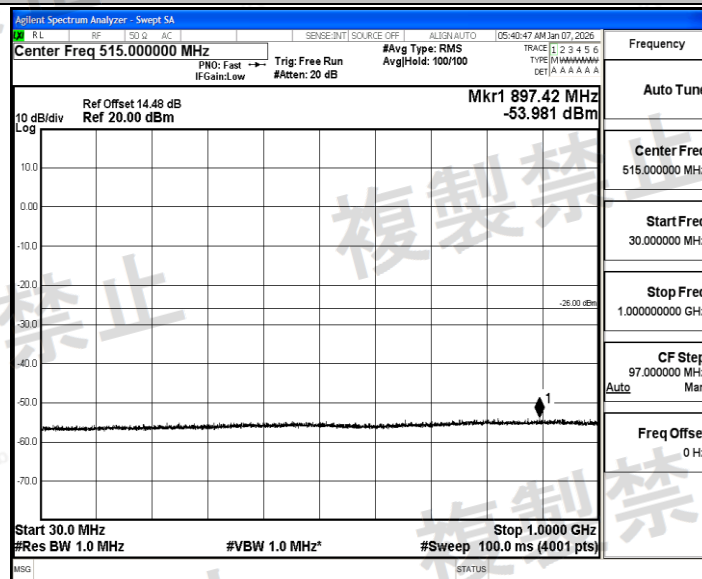
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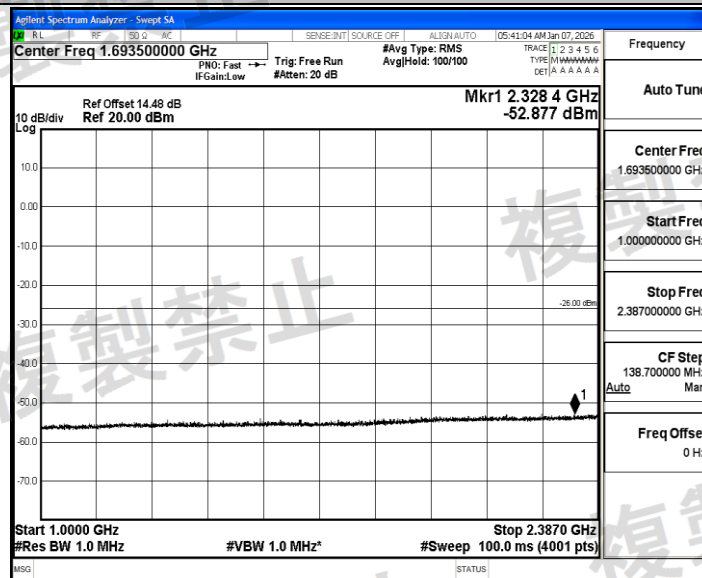
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NTNV_BLE_1M_Ant1_2480_30~1000



NTNV_BLE_1M_Ant1_2480_1000~2387



NTNV_BLE_1M_Ant1_2480_2387~2400

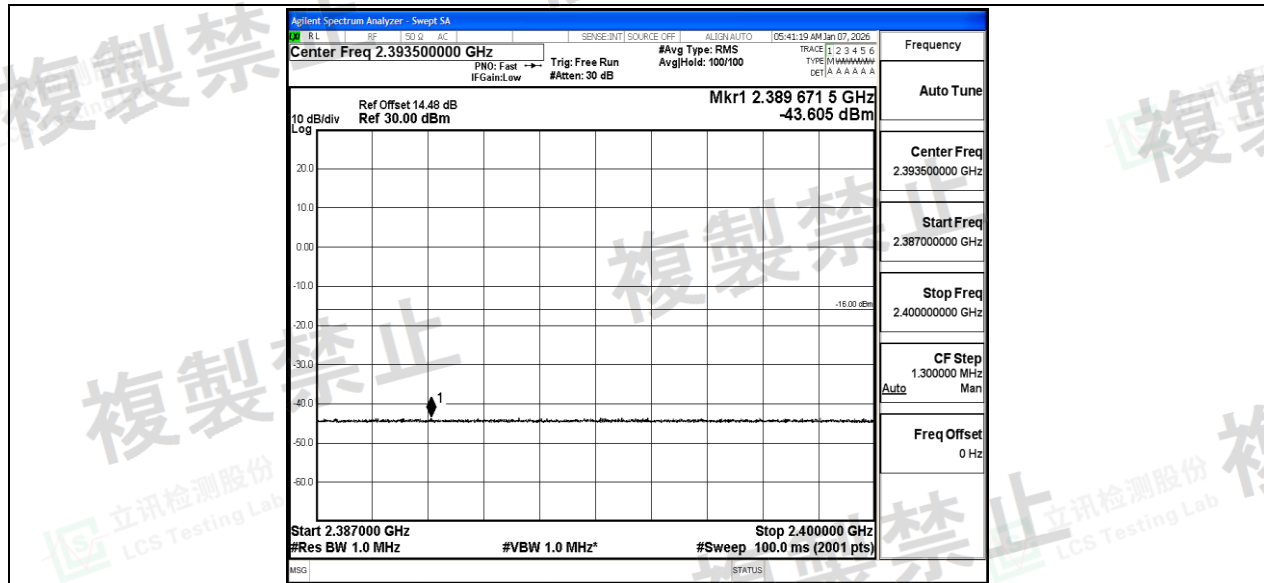


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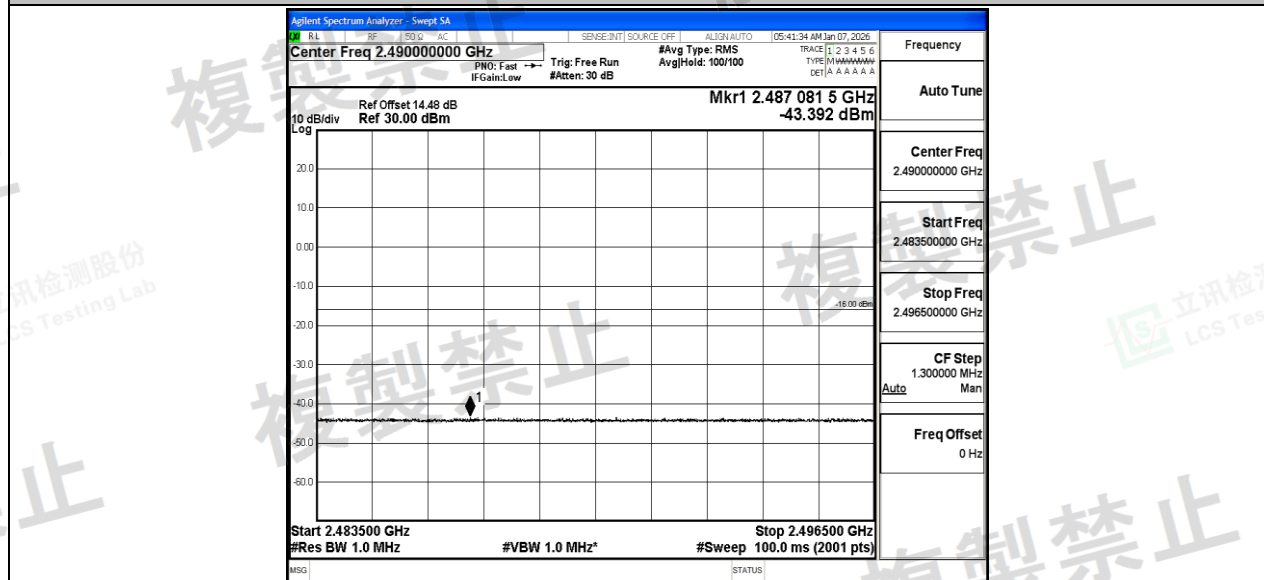
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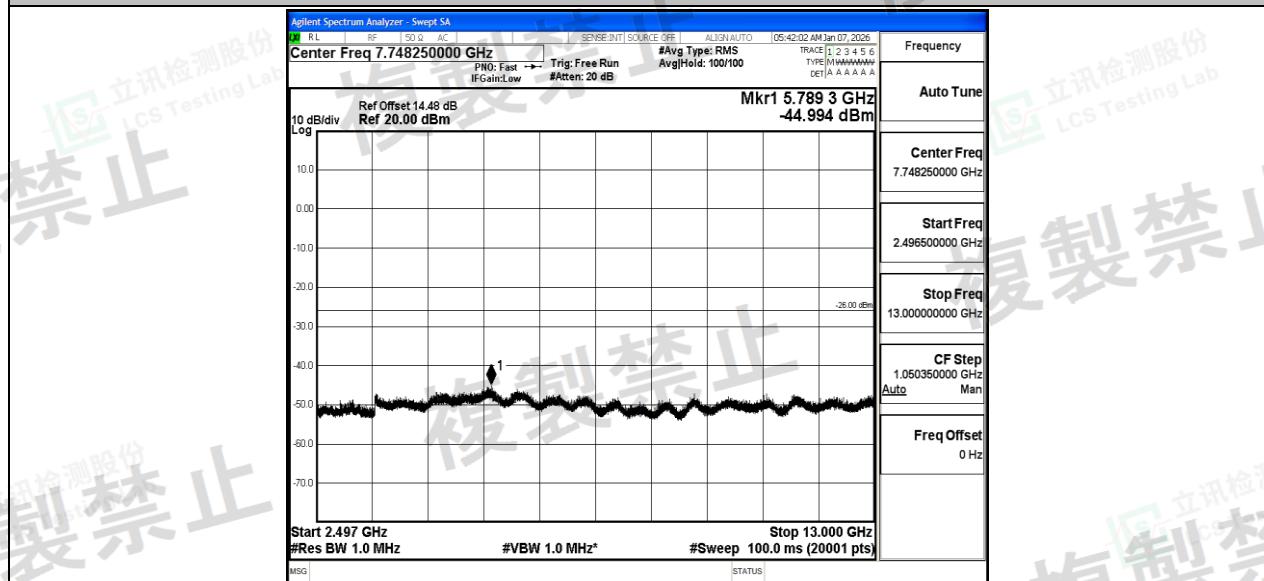
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NTNV_BLE_1M_Ant1_2480_2483.5~2496.5



NTNV_BLE_1M_Ant1_2480_2496.5~13000



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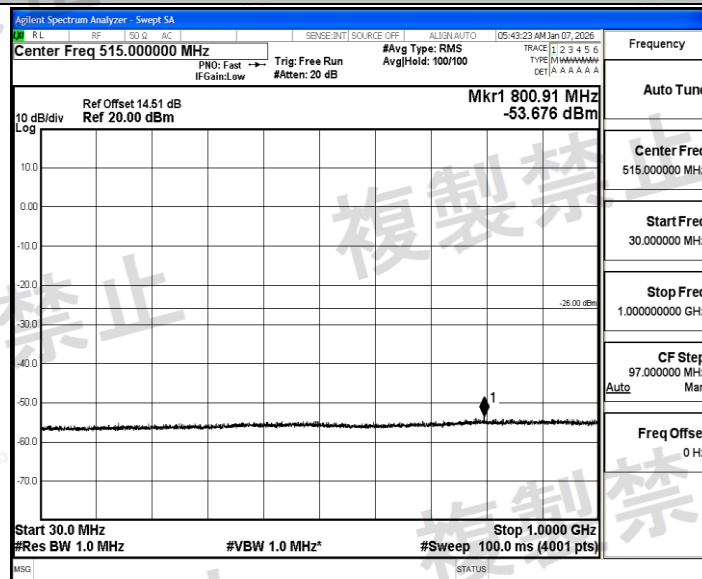
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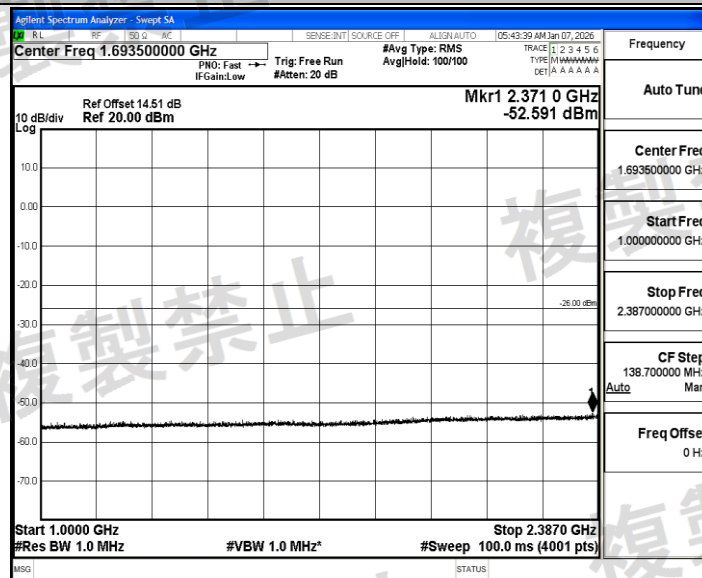
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NTNV_BLE_2M_Ant1_2402_30~1000



NTNV_BLE_2M_Ant1_2402_1000~2387



NTNV_BLE_2M_Ant1_2402_2387~2400

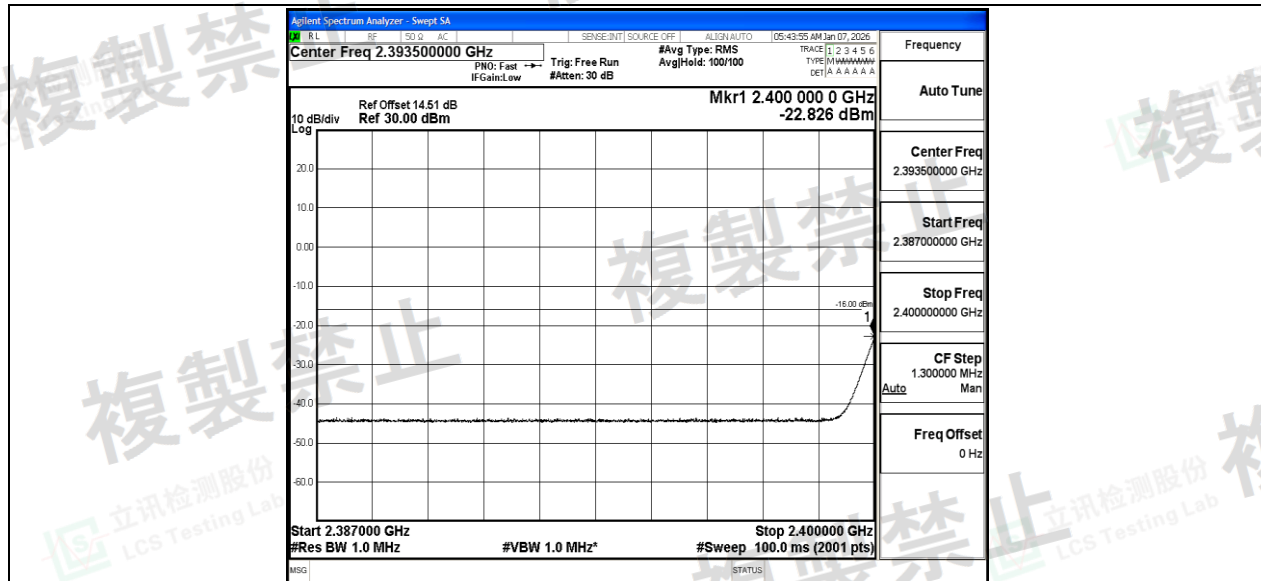


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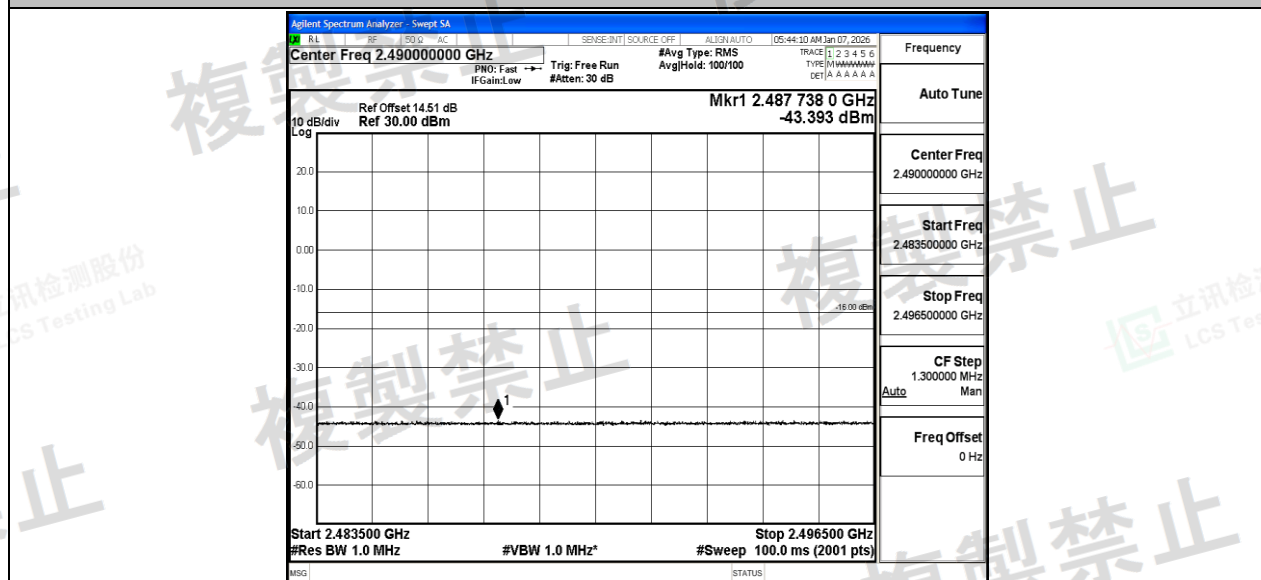
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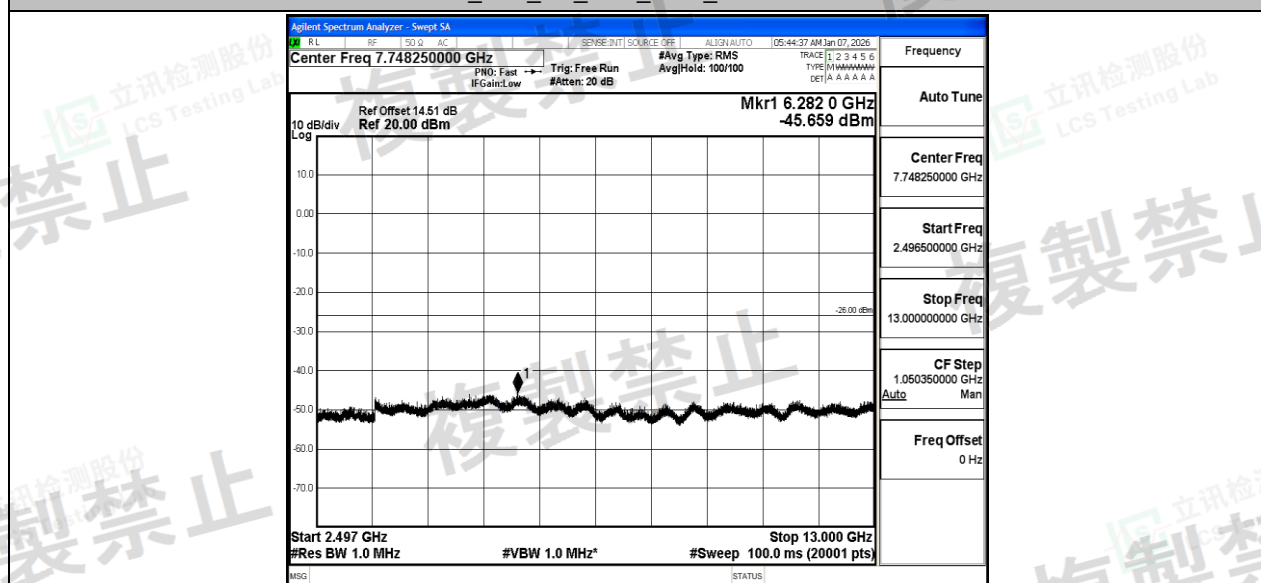
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NTNV_BLE_2M_Ant1_2402_2483.5~2496.5



NTNV_BLE_2M_Ant1_2402_2496.5~13000



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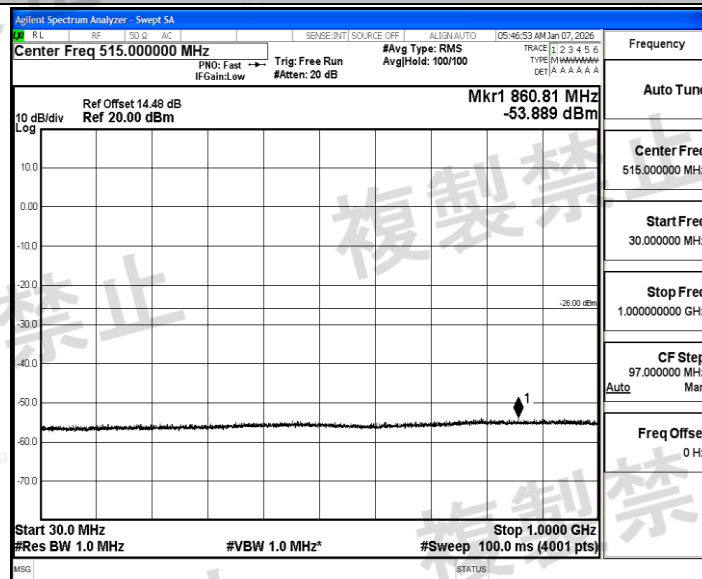
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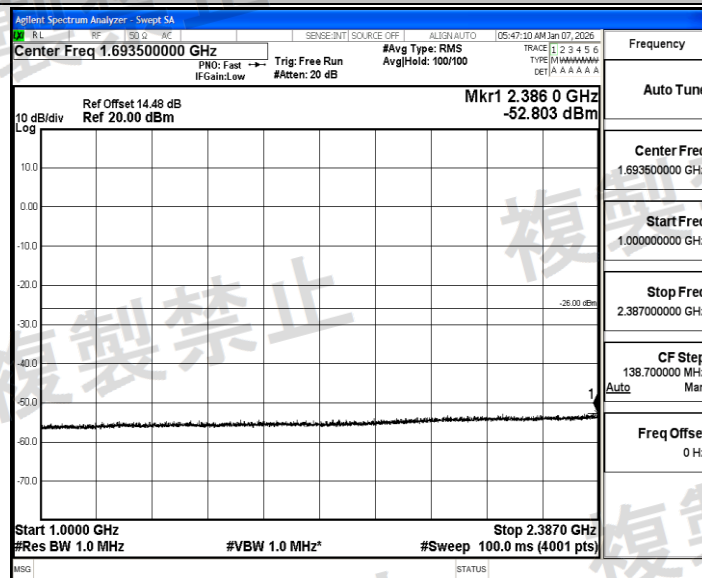
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NTNV_BLE_2M_Ant1_2440_30~1000



NTNV_BLE_2M_Ant1_2440_1000~2387



NTNV_BLE_2M_Ant1_2440_2387~2400

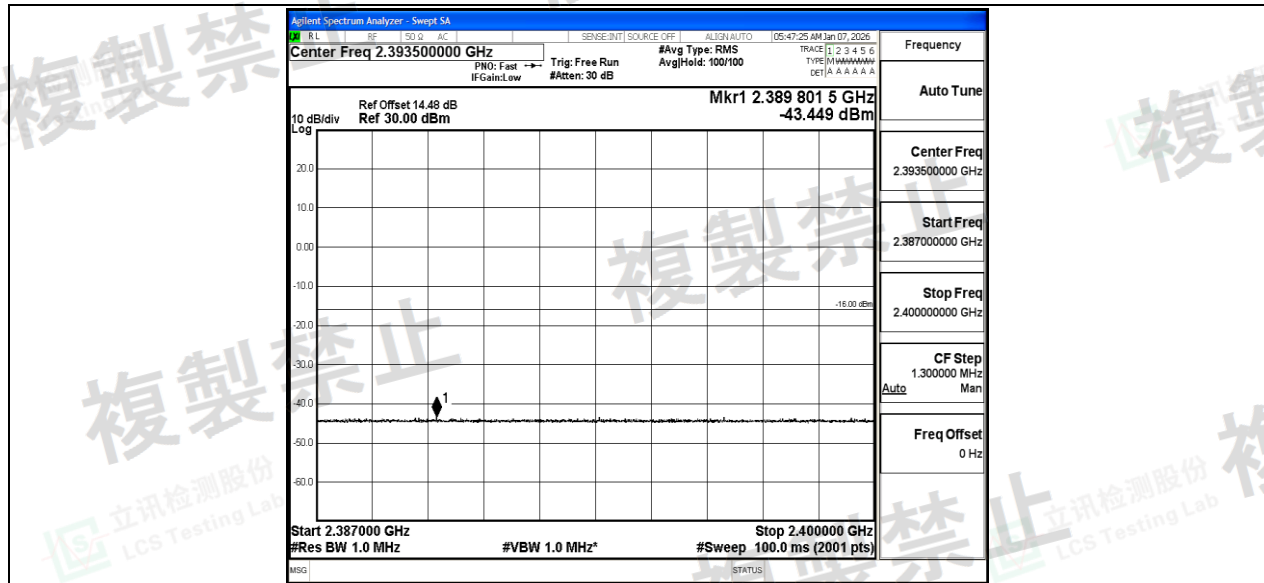


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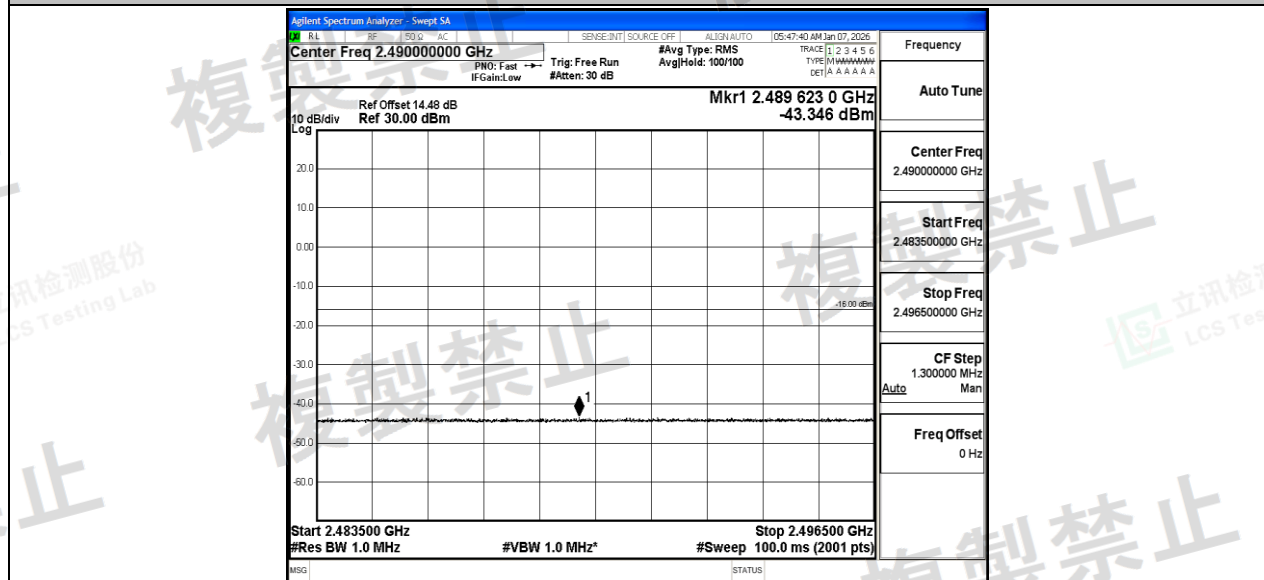
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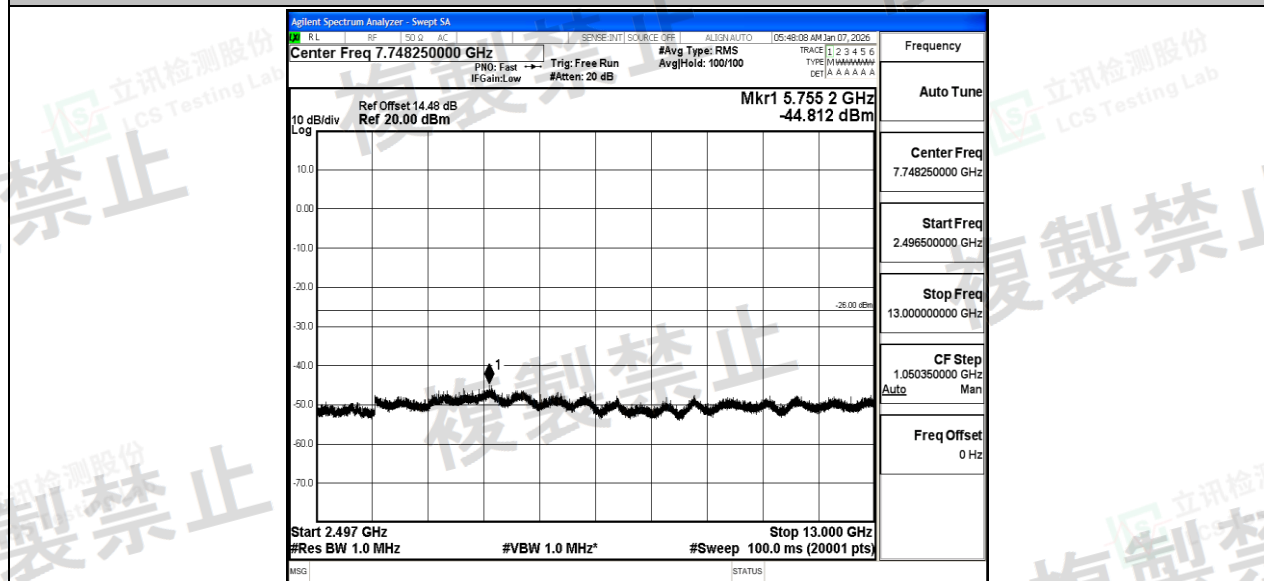
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NTNV_BLE_2M_Ant1_2440_2483.5~2496.5



NTNV_BLE_2M_Ant1_2440_2496.5~13000



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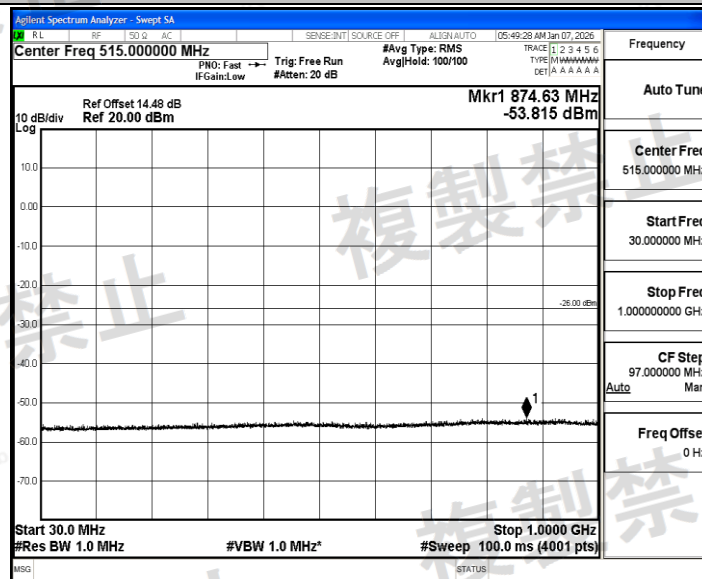
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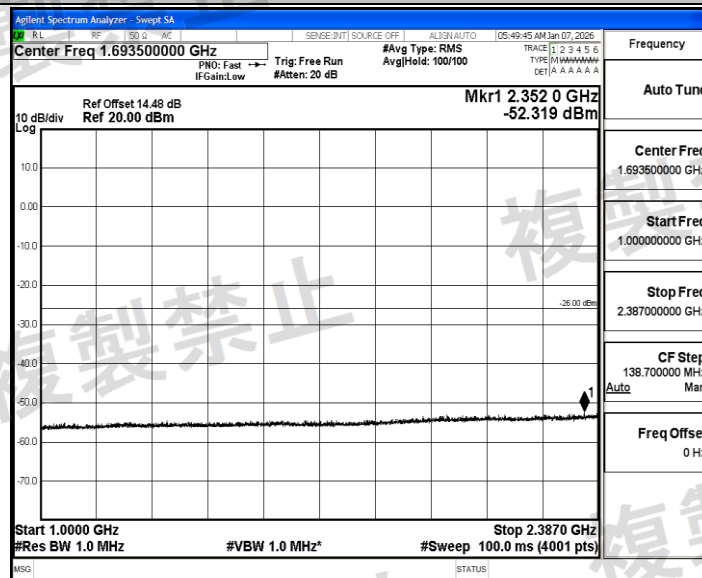
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NTNV_BLE_2M_Ant1_2480_30~1000



NTNV_BLE_2M_Ant1_2480_1000~2387



NTNV_BLE_2M_Ant1_2480_2387~2400

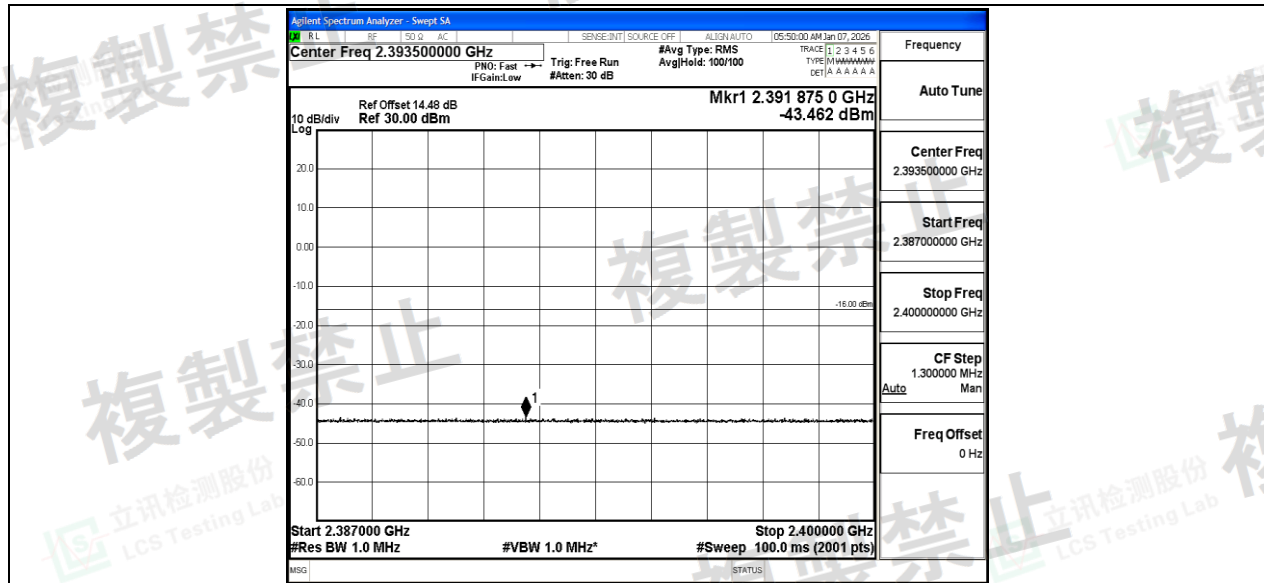


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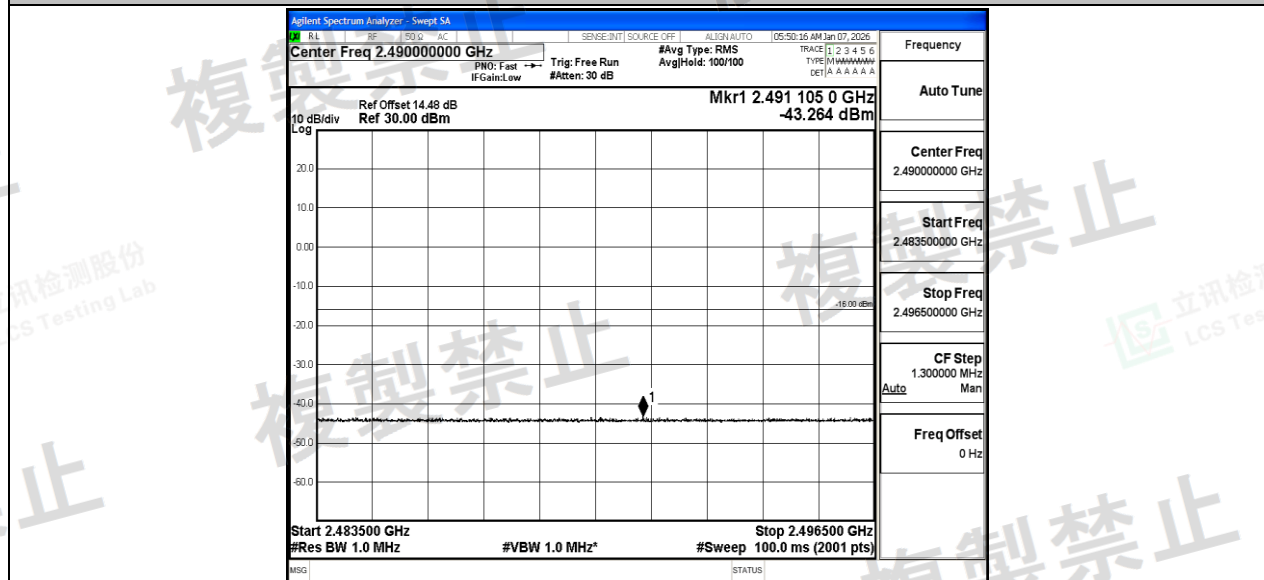
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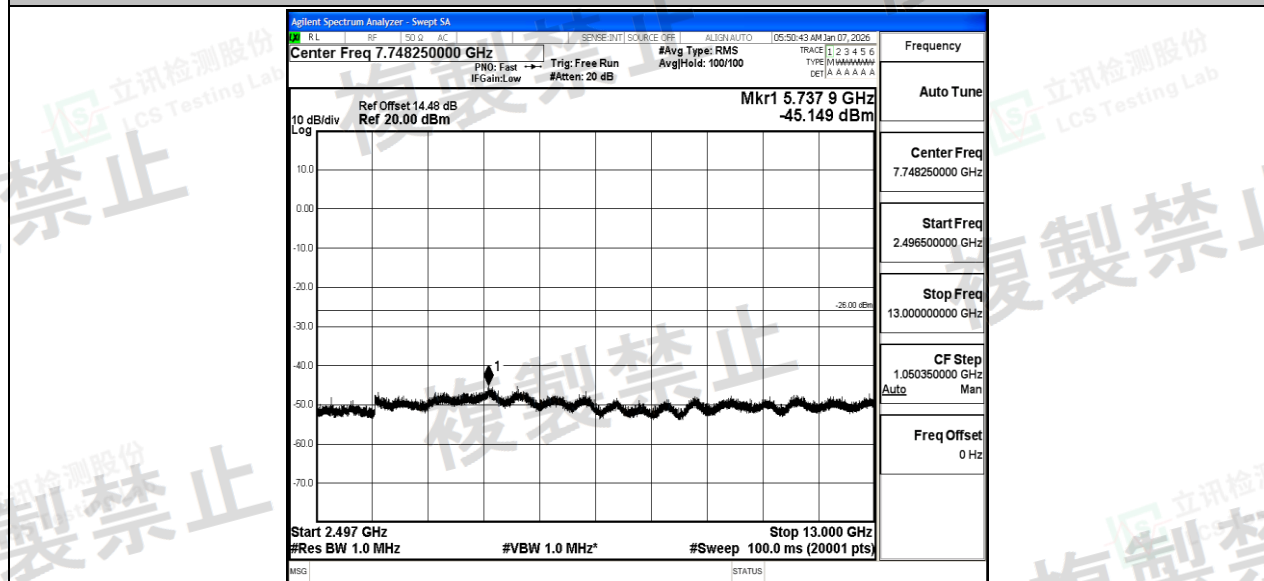
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NTNV_BLE_2M_Ant1_2480_2483.5~2496.5



NTNV_BLE_2M_Ant1_2480_2496.5~13000



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B.6 Spurious Emission of RX

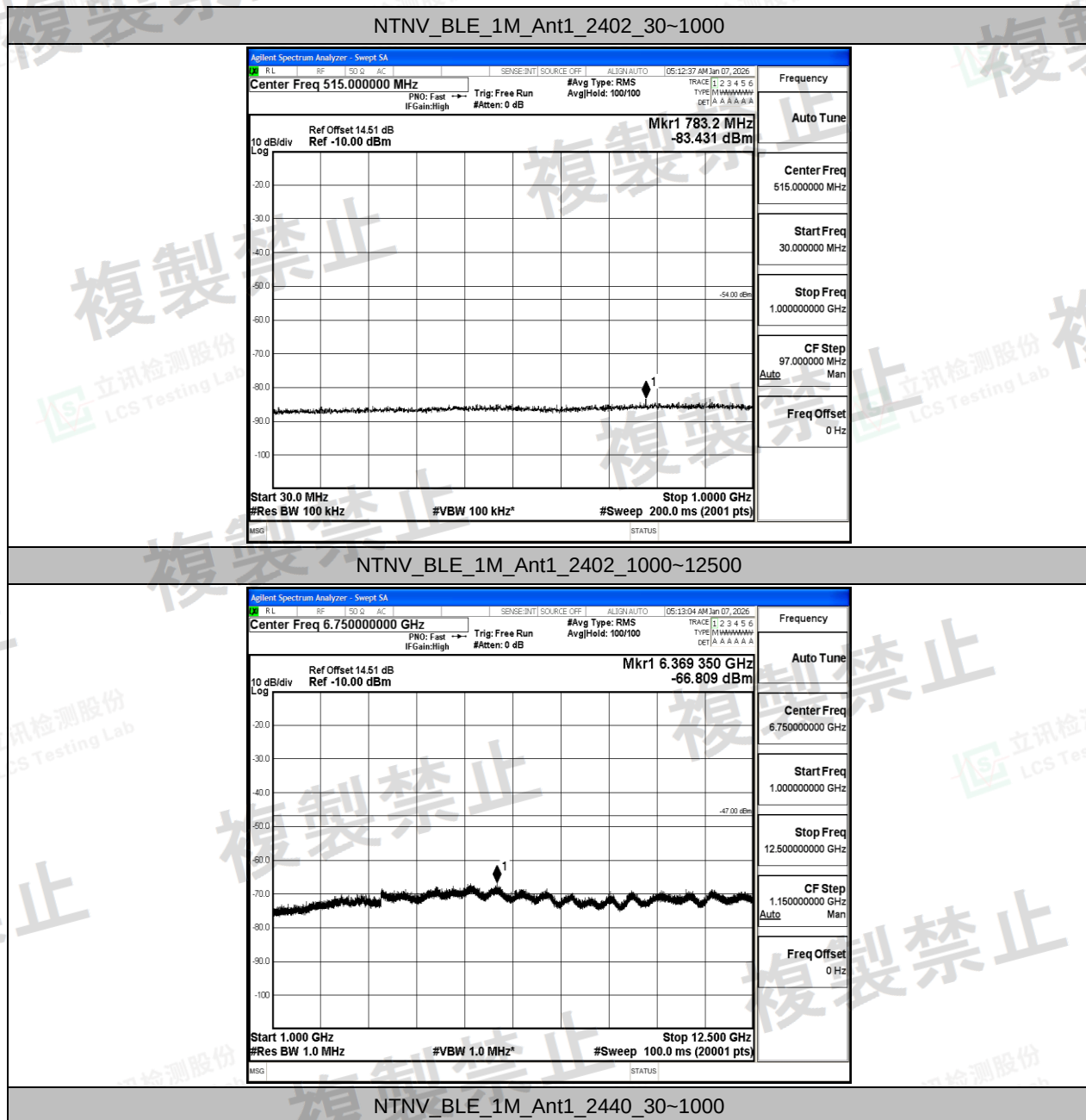
Test Result

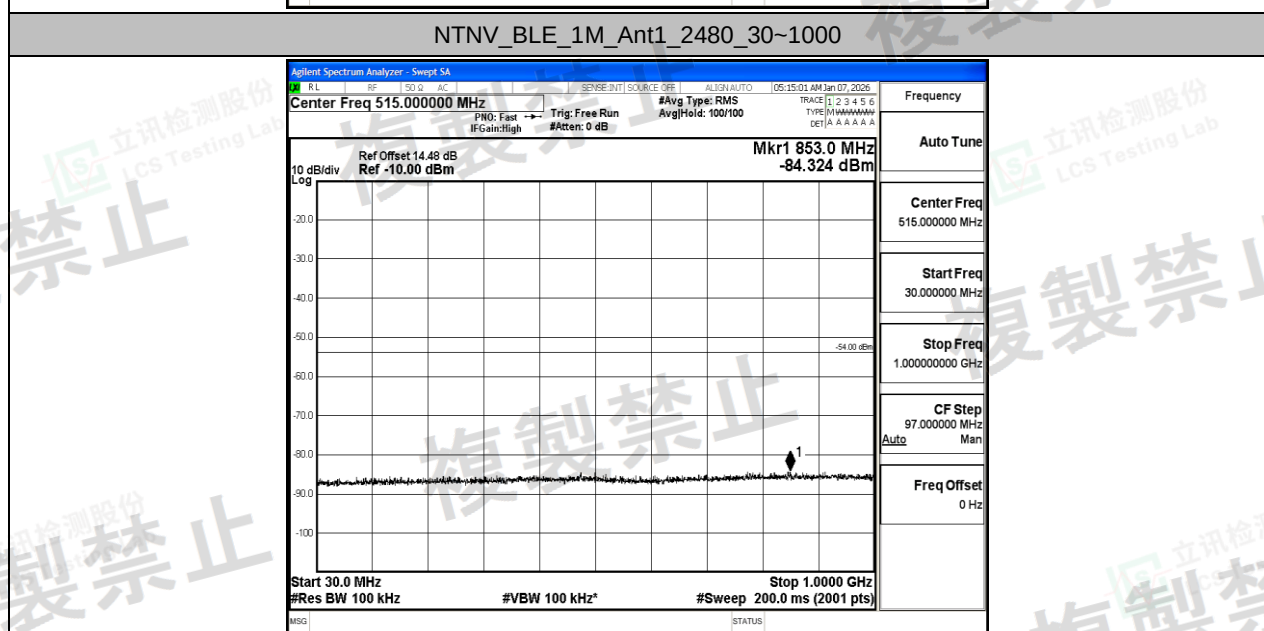
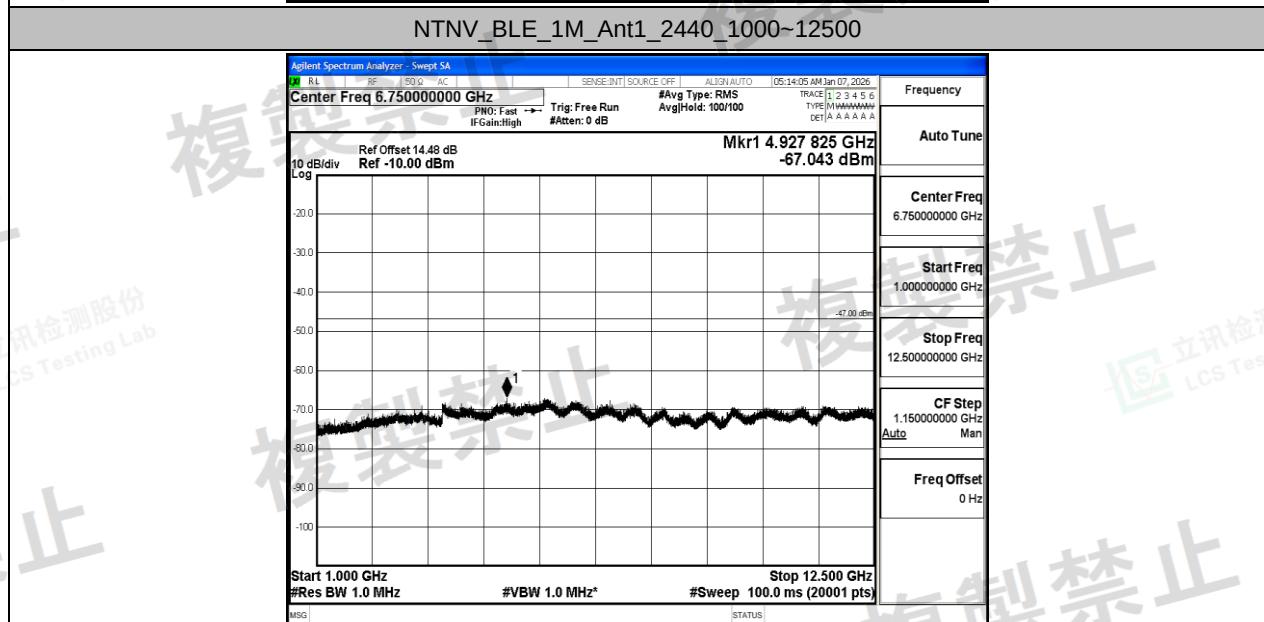
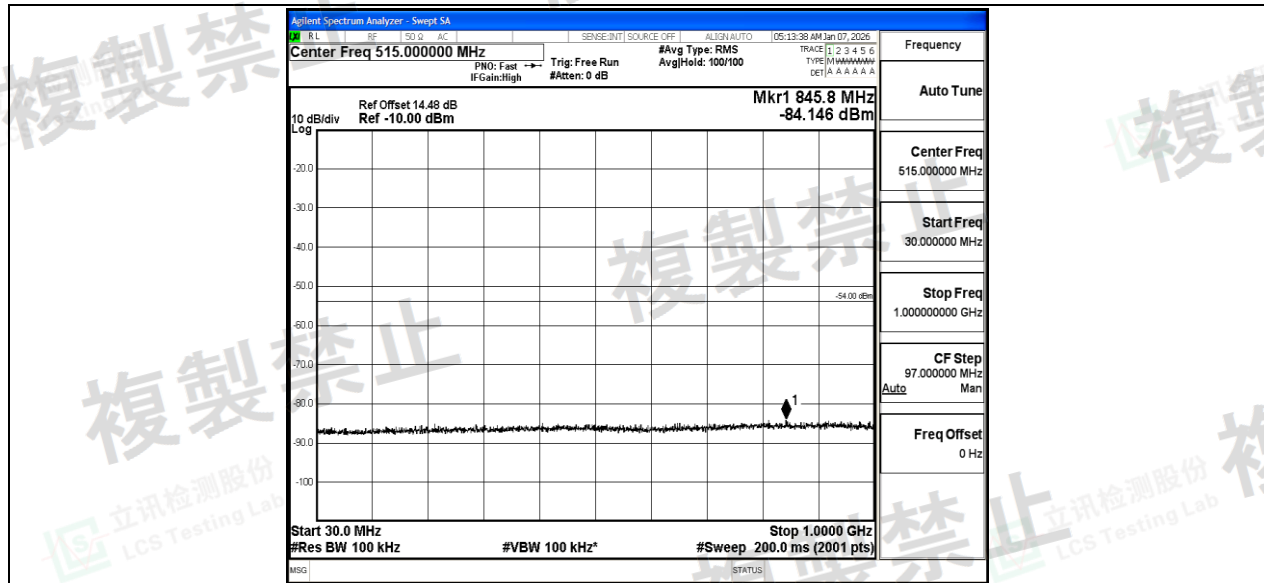
TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	-83.43	≤-54	0.00454	≤4	PASS
				1000~12500	-66.81	≤-47	0.20845	≤20	PASS
			2440	30~1000	-84.15	≤-54	0.00385	≤4	PASS
				1000~12500	-67.04	≤-47	0.19770	≤20	PASS
			2480	30~1000	-84.32	≤-54	0.00370	≤4	PASS
				1000~12500	-66.84	≤-47	0.20701	≤20	PASS
	BLE_2M	Ant1	2402	30~1000	-83.88	≤-54	0.00409	≤4	PASS
				1000~12500	-66.96	≤-47	0.20137	≤20	PASS
			2440	30~1000	-84.15	≤-54	0.00385	≤4	PASS
				1000~12500	-66.89	≤-47	0.20464	≤20	PASS
			2480	30~1000	-84.07	≤-54	0.00392	≤4	PASS
				1000~12500	-66.72	≤-47	0.21281	≤20	PASS





Test Graphs



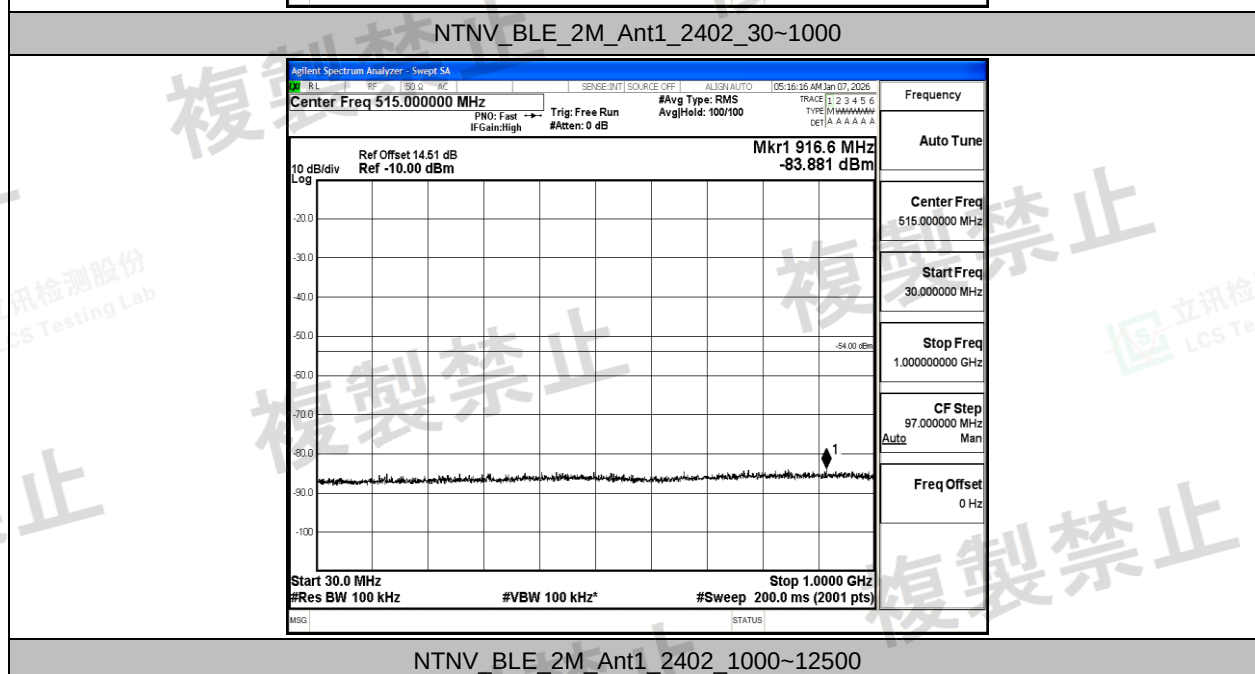
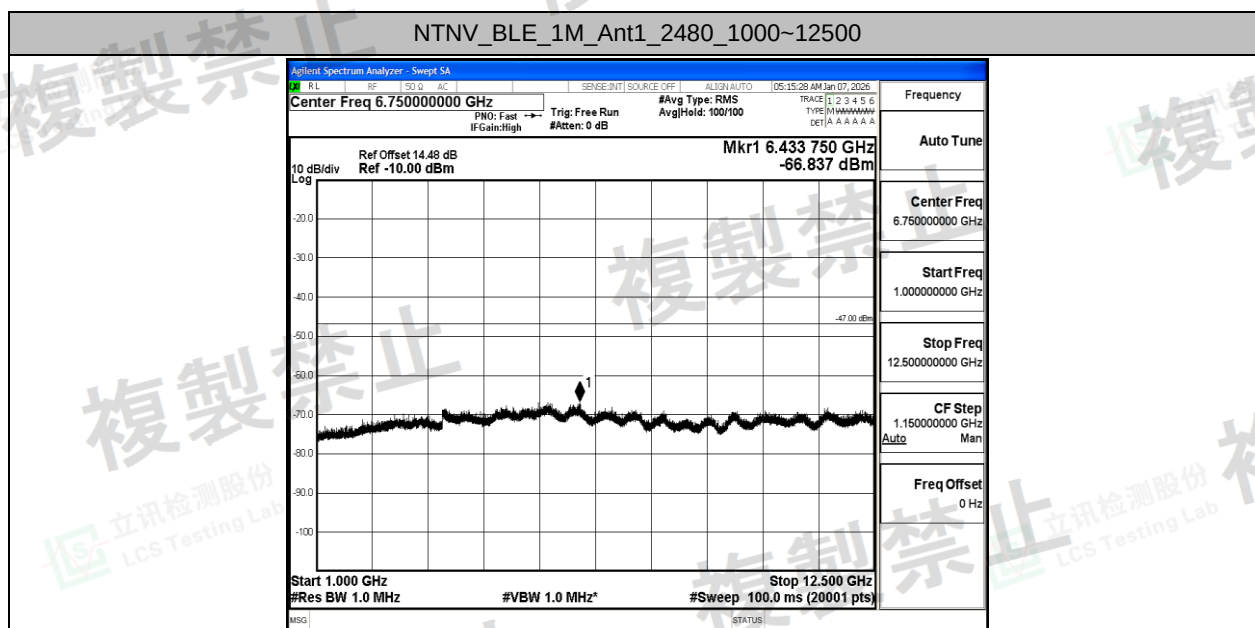


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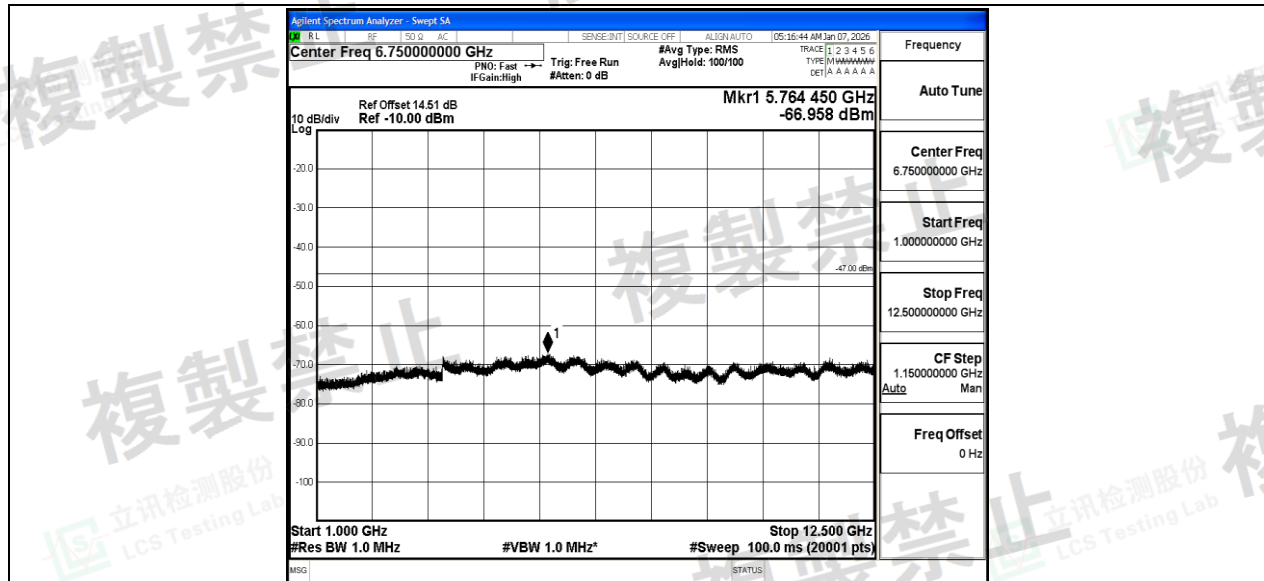
Add: Room 101/201, Building A, and Room 101/301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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

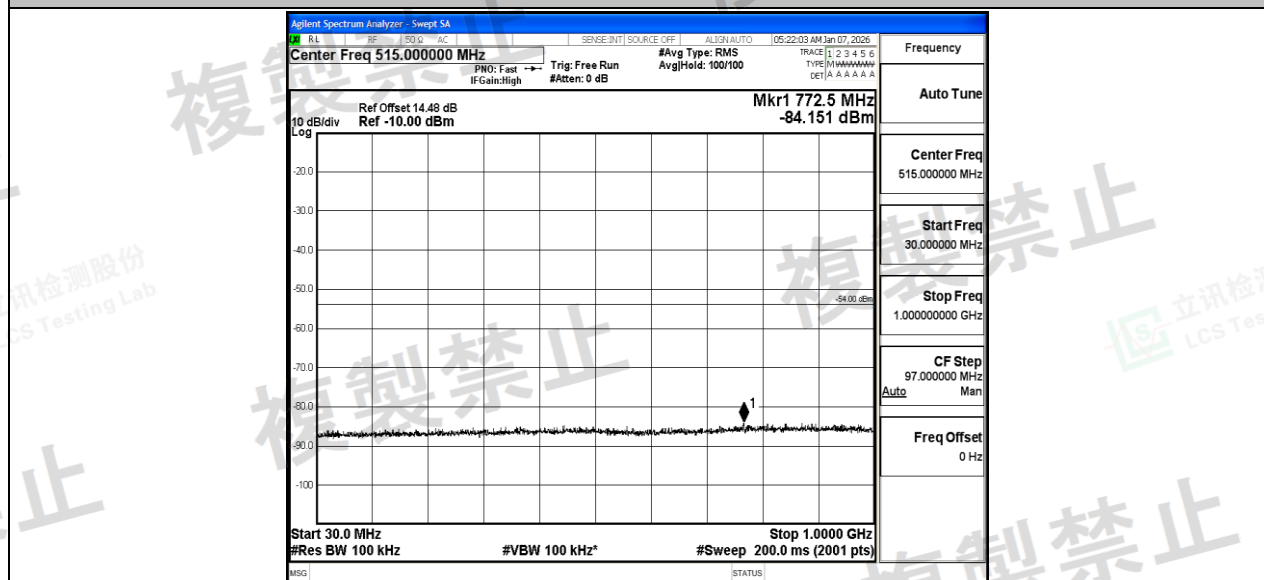
Scan code to check authenticity



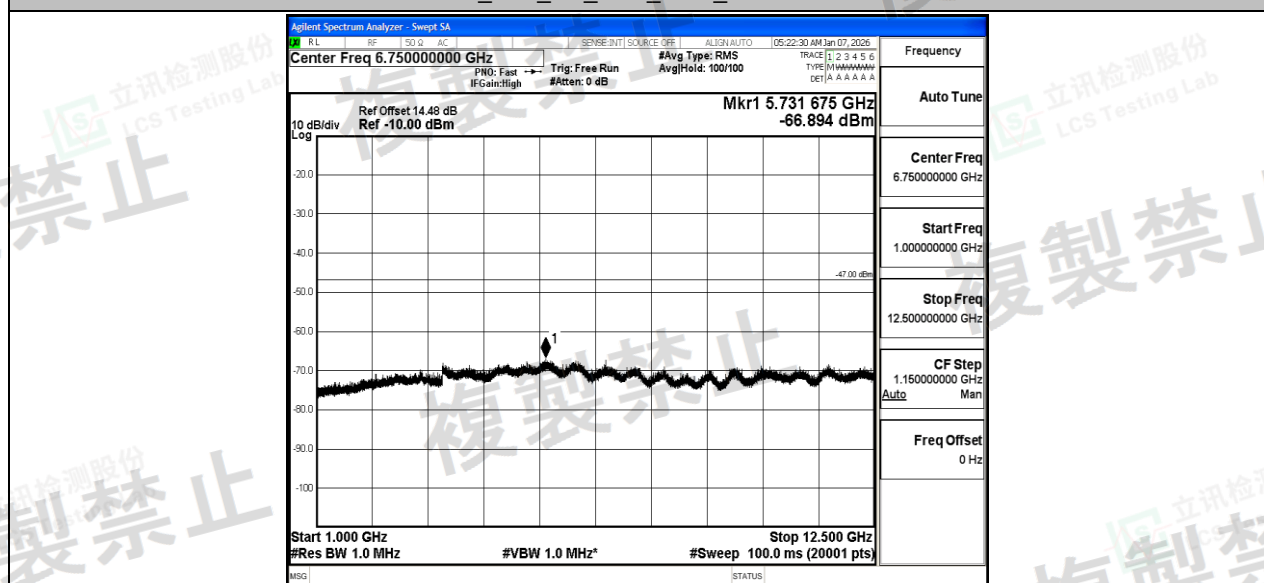
Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: Room 101/201, Building A, and Room 101/301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing
Subdistrict, Bao'an District, Shenzhen, Guangdong, China
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NTNV_BLE_2M_Ant1_2440_30~1000



NTNV_BLE_2M_Ant1_2440_1000~12500



Shenzhen LCS Compliance Testing Laboratory Ltd.

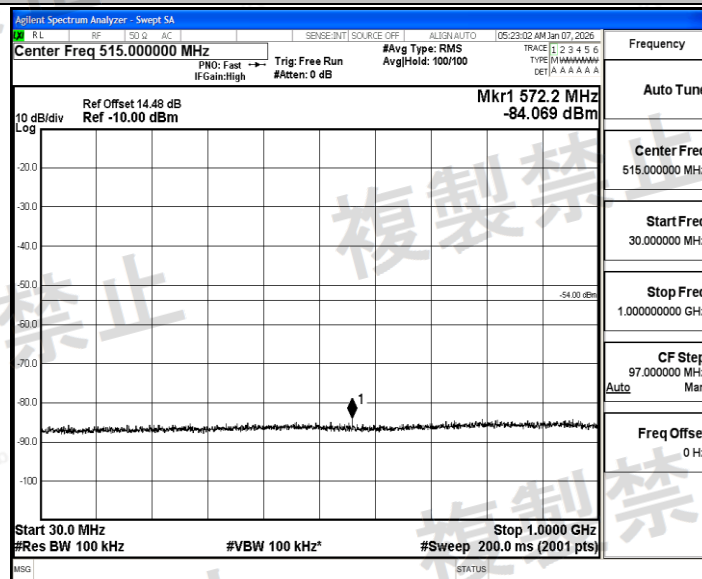
Add: Room 101/201, Building A, and Room 101/301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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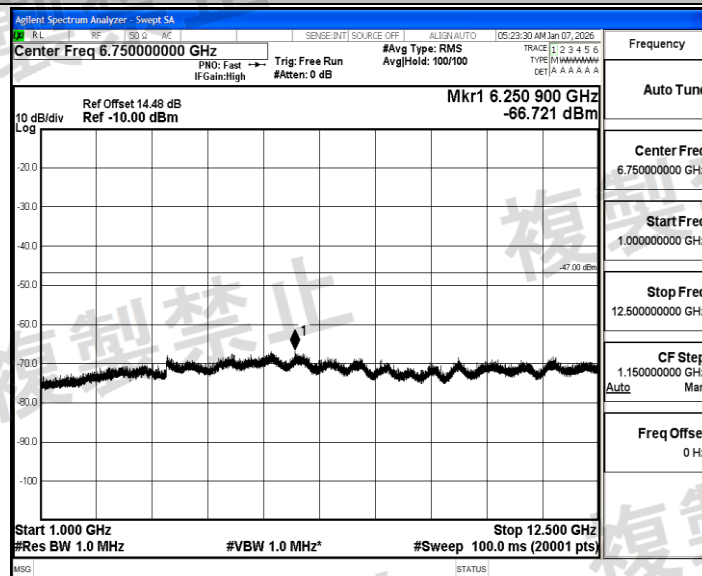
Scan code to check authenticity



NTNV_BLE_2M_Ant1_2480_30~1000



NTNV_BLE_2M_Ant1_2480_1000~12500



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