



Appendix A for BT 2LE Test Data

Product Name: Smart Track Card

Test Model: 400-KF005

Environmental Conditions

Temperature:	23.2° C
Relative Humidity:	54.8%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Luo
Supervised by:	Nick Peng



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A.1 Frequency Error

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2402	0.41632	±50	PASS
			2440	0.40984	±50	PASS
			2480	0.40323	±50	PASS



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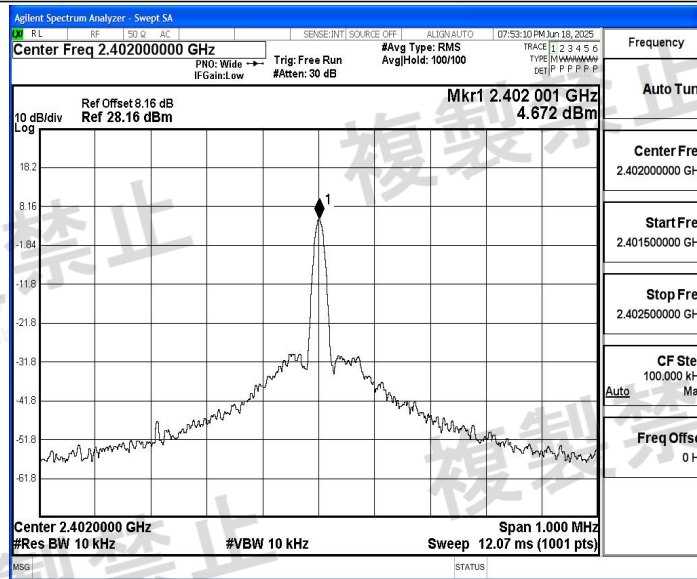
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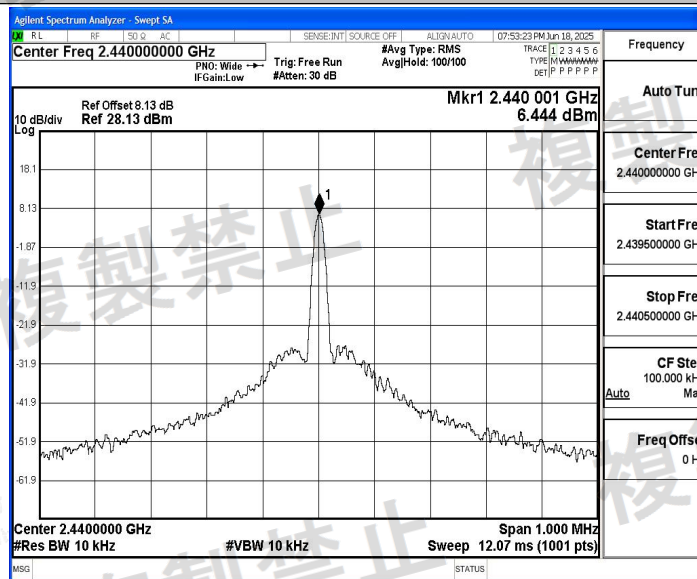


Test Graphs

NTNV_Ant1_2402



NTNV_Ant1_2440



NTNV_Ant1_2480

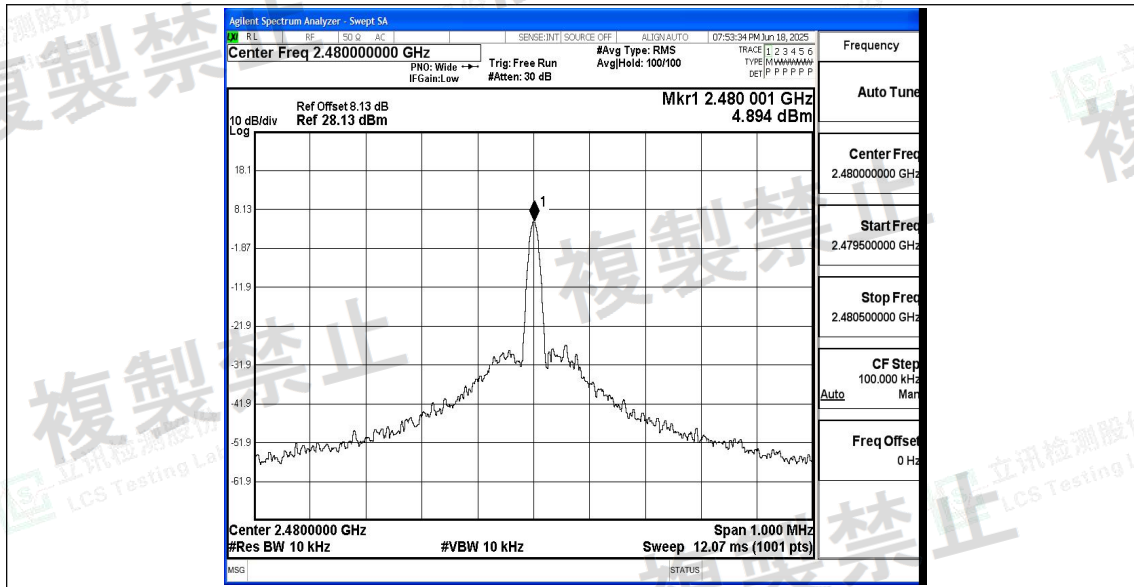


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A.2 Antenna Power & EIRP

Test Result

Antenna Power							
TestCondition	TestMode	Antenna	Frequency [MHz]	Result [dBm]	Result [mW]	Limit [mW]	Verdict
NTNV	BLE_2M	Ant1	2402	-0.47	0.90	≤10	PASS
			2440	-0.08	0.98	≤10	PASS
			2480	-1.51	0.71	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency [MHz]	Power (mW)	RatedPower (mW)	Result (%)	Limit (%)	Verdict
NTNV	BLE_2M	Ant1	2402	0.90	1.0	-10.00	+20	PASS
			2440	0.98	1.0	-2.00	+20	PASS
			2480	0.71	1.0	-29.00	+20	PASS

EIRP							
TestMode	Antenna	Frequency [MHz]	Measured Power [dBm]	Antenna gain [dBi]	EIRP [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	2402	-0.47	2.12	1.65	≤12.14	PASS
		2440	-0.08	2.12	2.04	≤12.14	PASS
		2480	-1.51	2.12	0.61	≤12.14	PASS





A.3 Occupied Bandwidth

Test Result

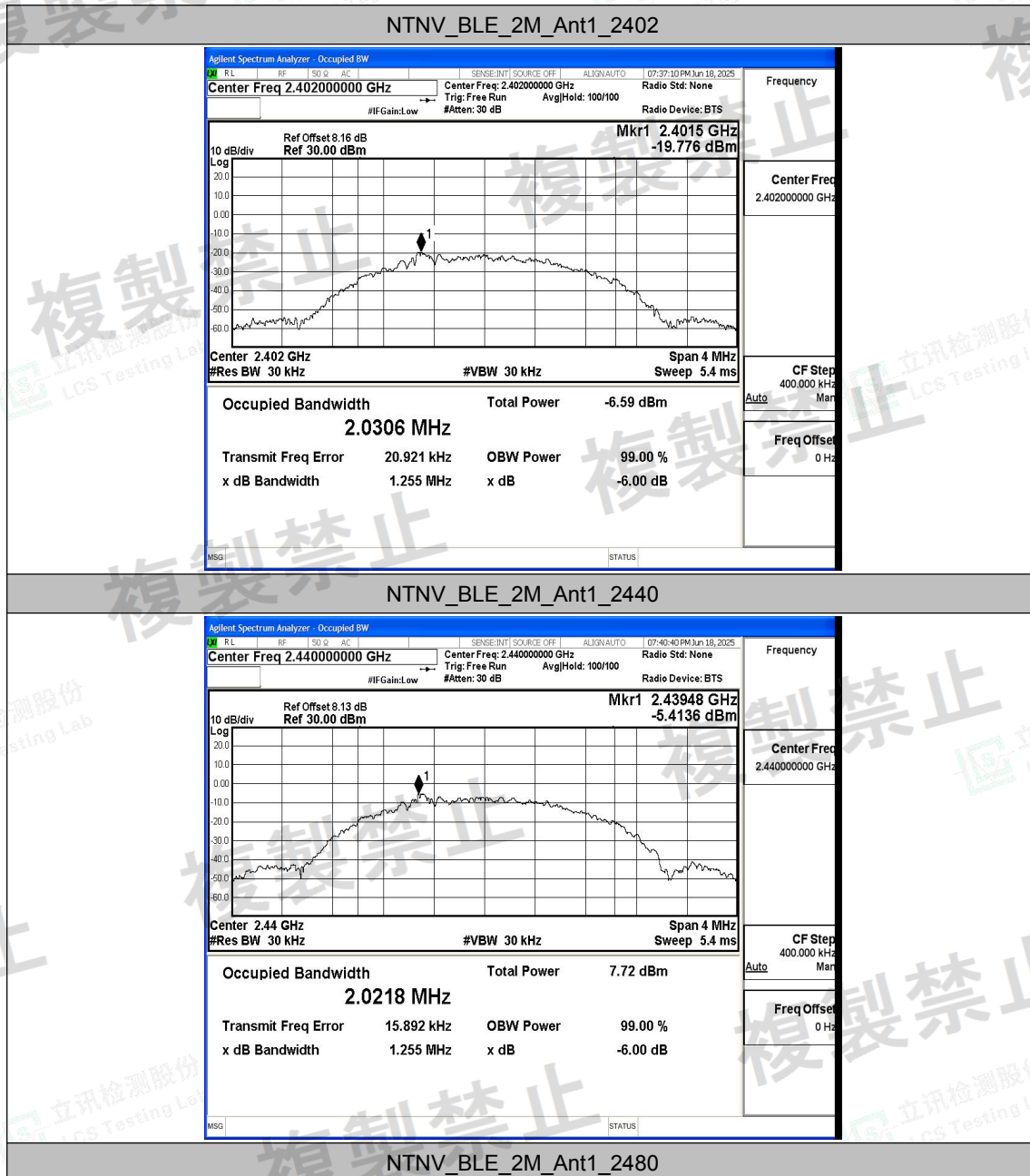
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
	BLE_2M	Ant1	2402	2.031	≤26	PASS
			2440	2.022	≤26	PASS
			2480	2.036	≤26	PASS



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Test Graphs

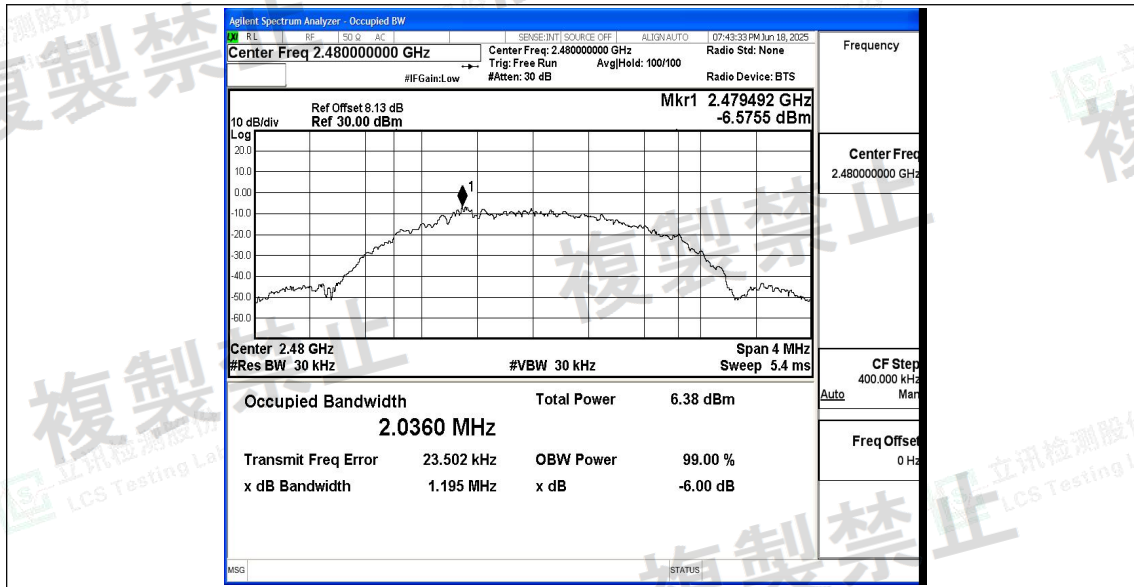


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A.4 Spread Bandwidth

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
	BLE_2M	Ant1	2402	1.337	---	PASS
			2440	1.332	---	PASS
			2480	1.344	---	PASS



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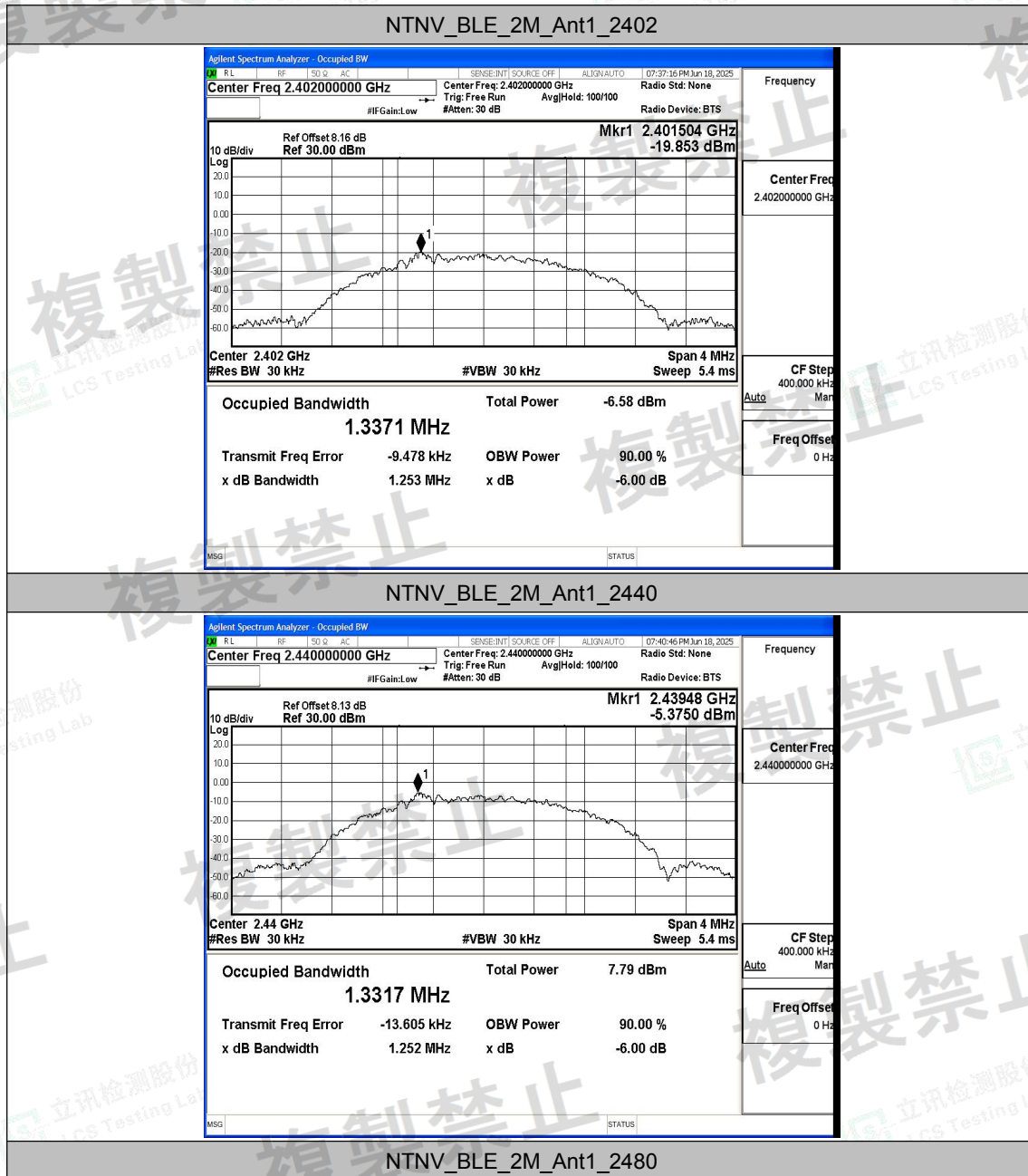
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Test Graphs

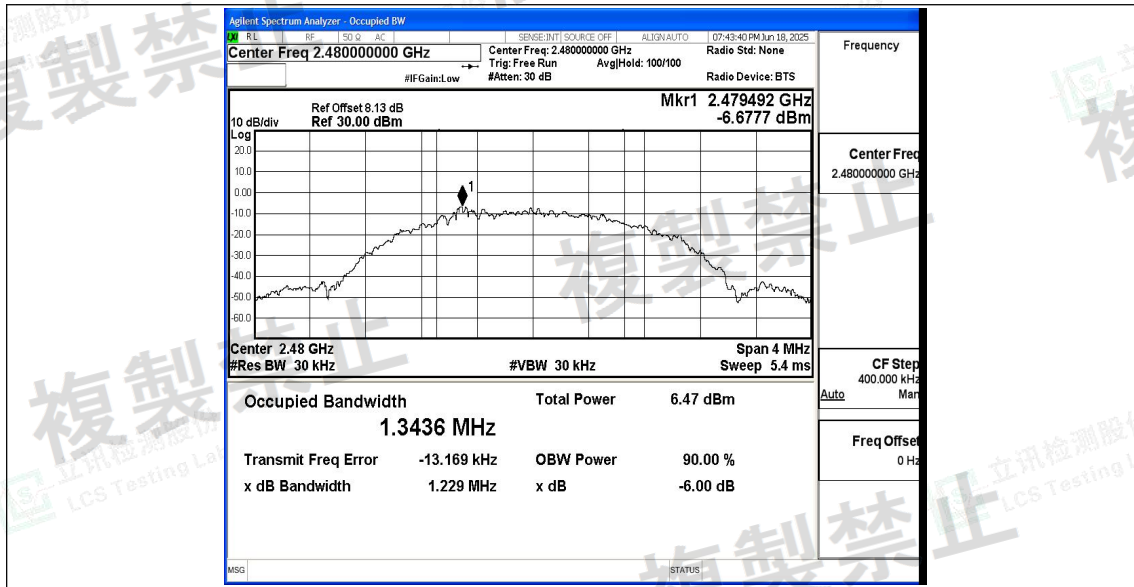


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A.5 Spurious Emission of TX

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	BLE_2M	Ant1	2402	30~1000	-60.21	≤-26	0.00095	≤2.5	PASS
				1000~2387	-58.85	≤-26	0.00130	≤2.5	PASS
				2387~2400	-39.67	≤-16	0.10789	≤25	PASS
				2483.5~2496.5	-49.61	≤-16	0.01094	≤25	PASS
				2496.5~13000	-51.95	≤-26	0.00638	≤2.5	PASS
			2440	30~1000	-60.03	≤-26	0.00099	≤2.5	PASS
				1000~2387	-58.68	≤-26	0.00136	≤2.5	PASS
				2387~2400	-49.51	≤-16	0.01119	≤25	PASS
				2483.5~2496.5	-49.57	≤-16	0.01104	≤25	PASS
				2496.5~13000	-51.66	≤-26	0.00682	≤2.5	PASS
			2480	30~1000	-60.03	≤-26	0.00099	≤2.5	PASS
				1000~2387	-58.66	≤-26	0.00136	≤2.5	PASS
				2387~2400	-49.71	≤-16	0.01069	≤25	PASS
				2483.5~2496.5	-49.46	≤-16	0.01132	≤25	PASS
				2496.5~13000	-51.47	≤-26	0.00713	≤2.5	PASS



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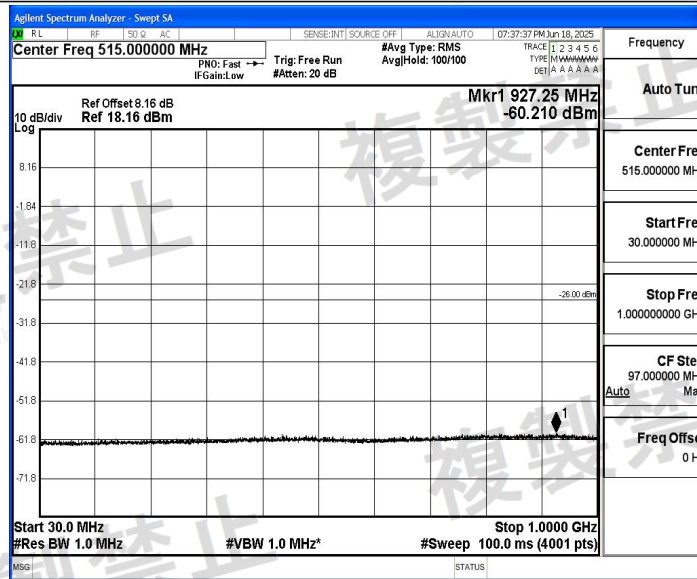
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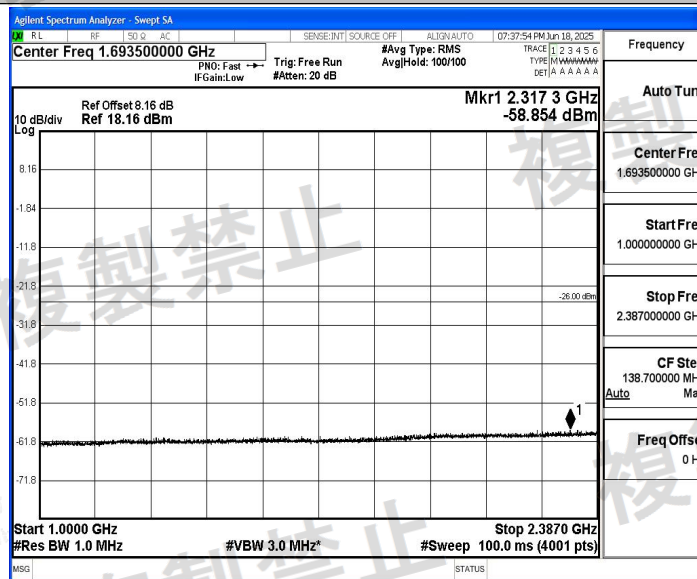


Test Graphs

NTNV_BLE_2M_Ant1_2402_30~1000



NTNV_BLE_2M_Ant1_2402_1000~2387



NTNV_BLE_2M_Ant1_2402_2387~2400

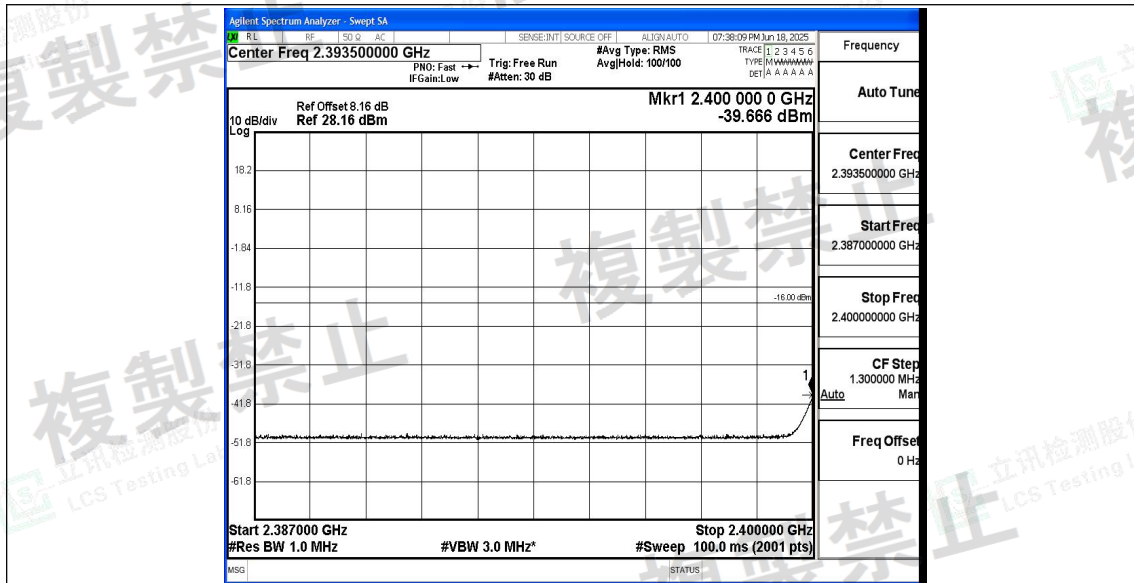


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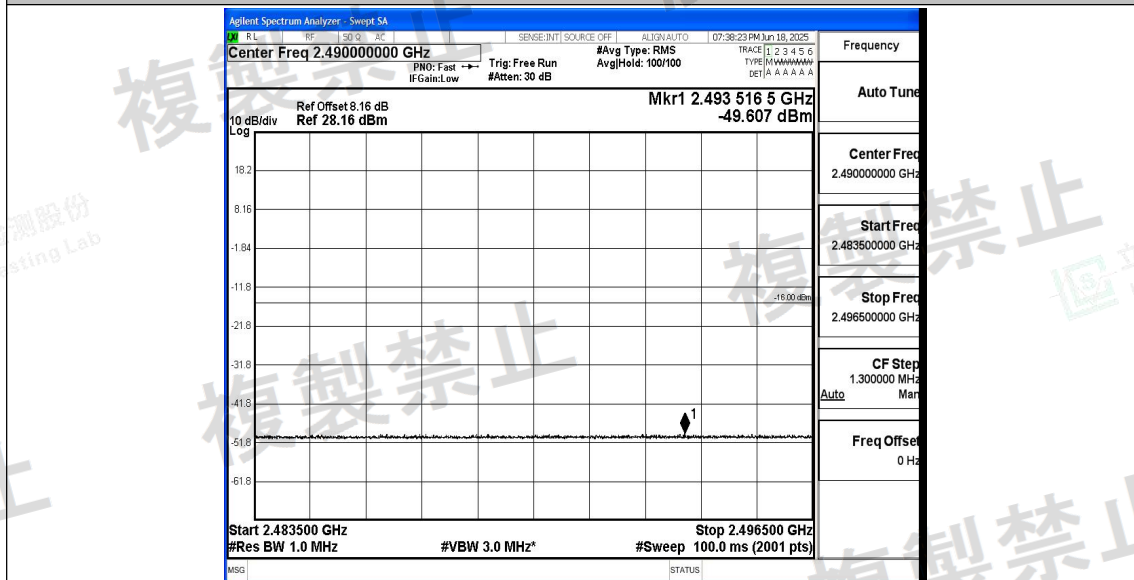
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NTNV_BLE_2M_Ant1_2402_2483.5~2496.5



NTNV_BLE_2M_Ant1_2402_2496.5~13000

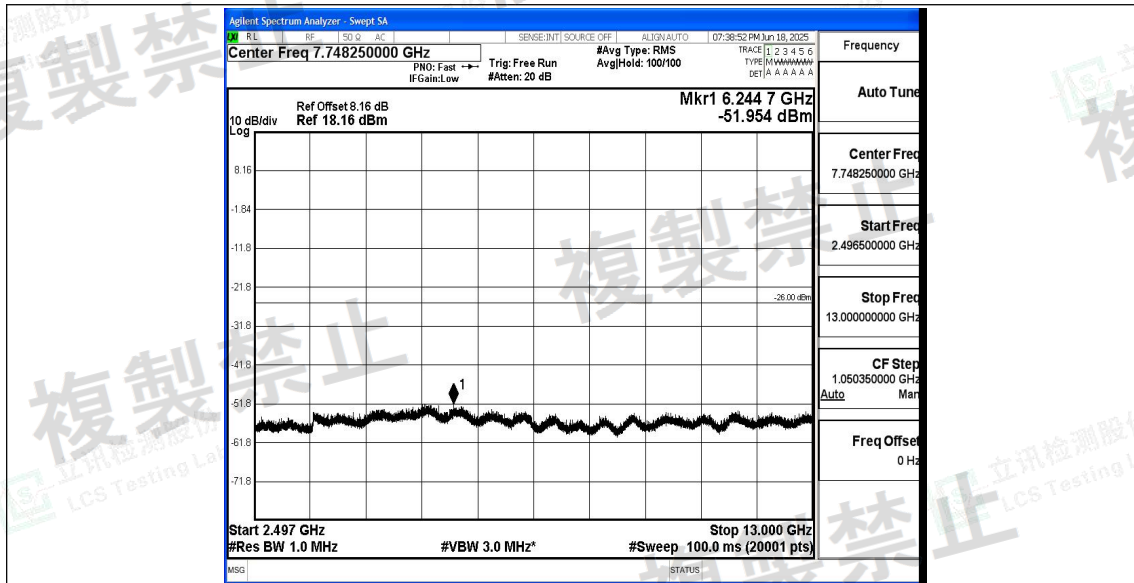


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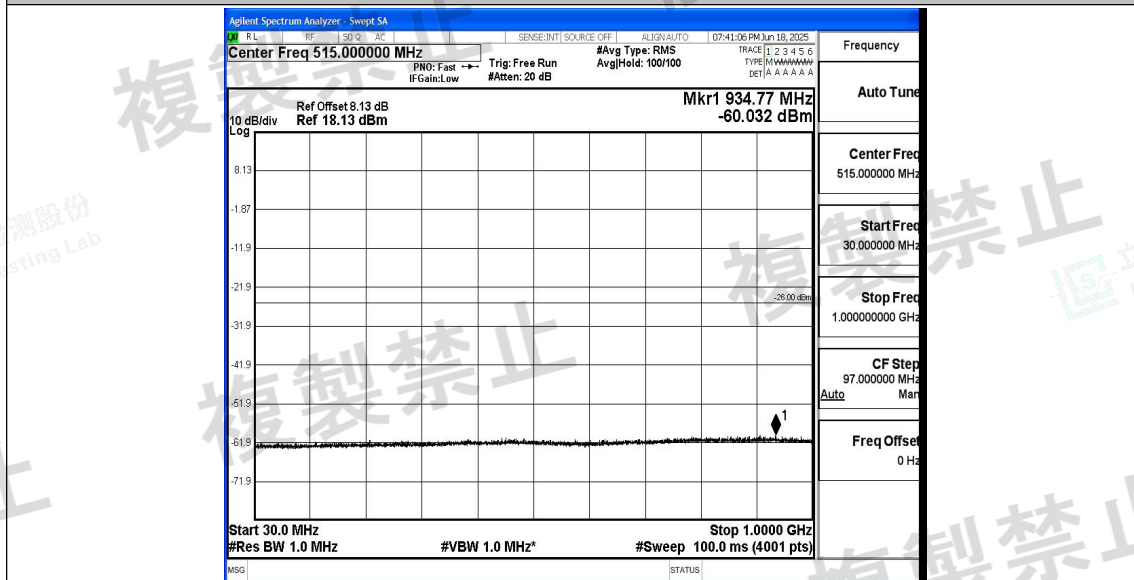
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NTNV_BLE_2M_Ant1_2440_30~1000



NTNV_BLE_2M_Ant1_2440_1000~2387

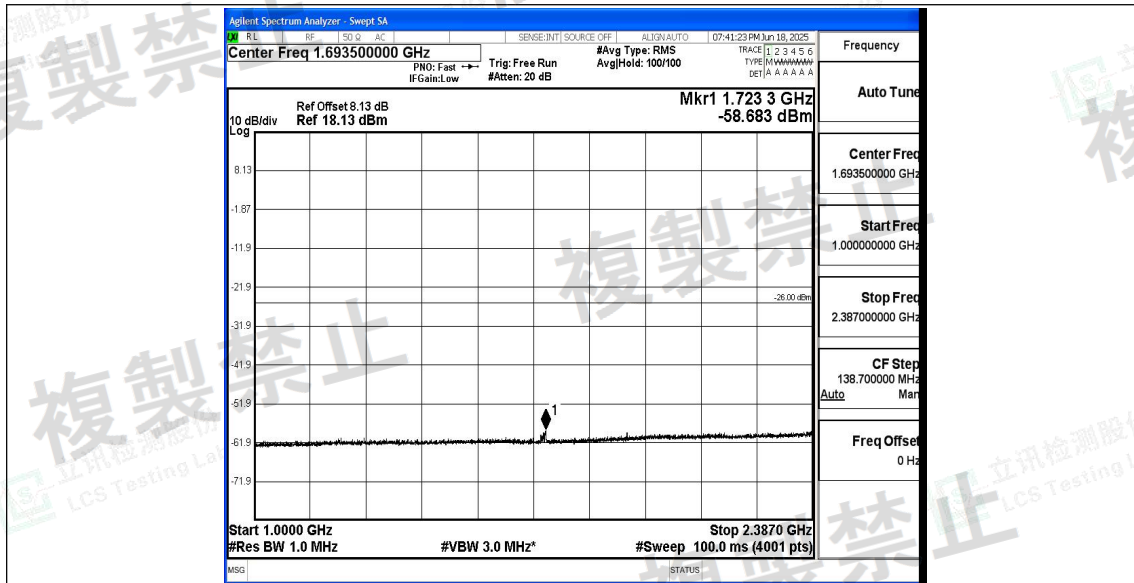


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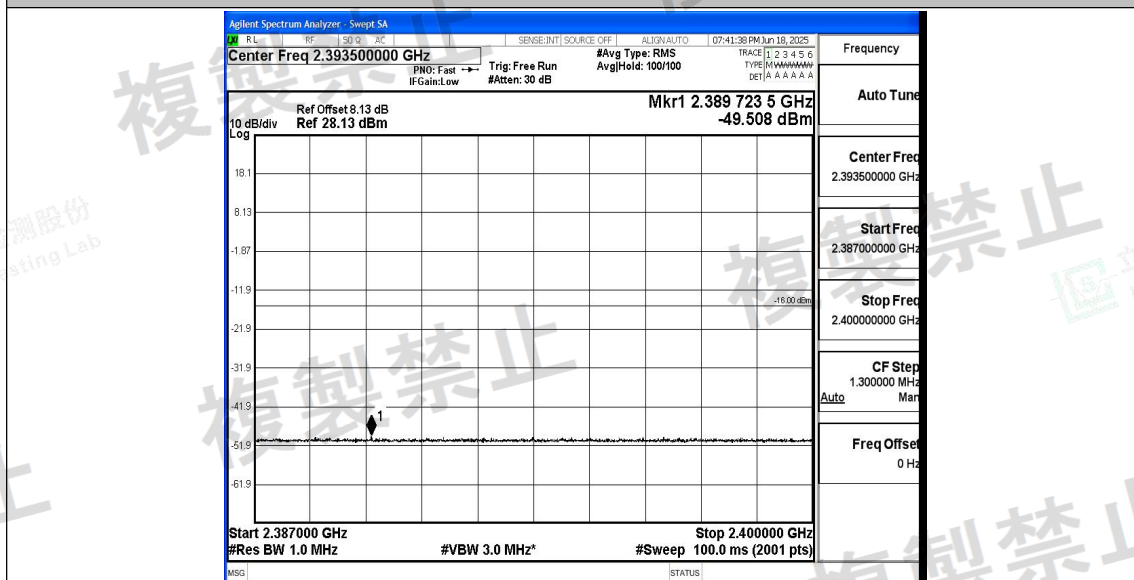
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NTNV_BLE_2M_Ant1_2440_2387~2400



NTNV_BLE_2M_Ant1_2440_2483.5~2496.5

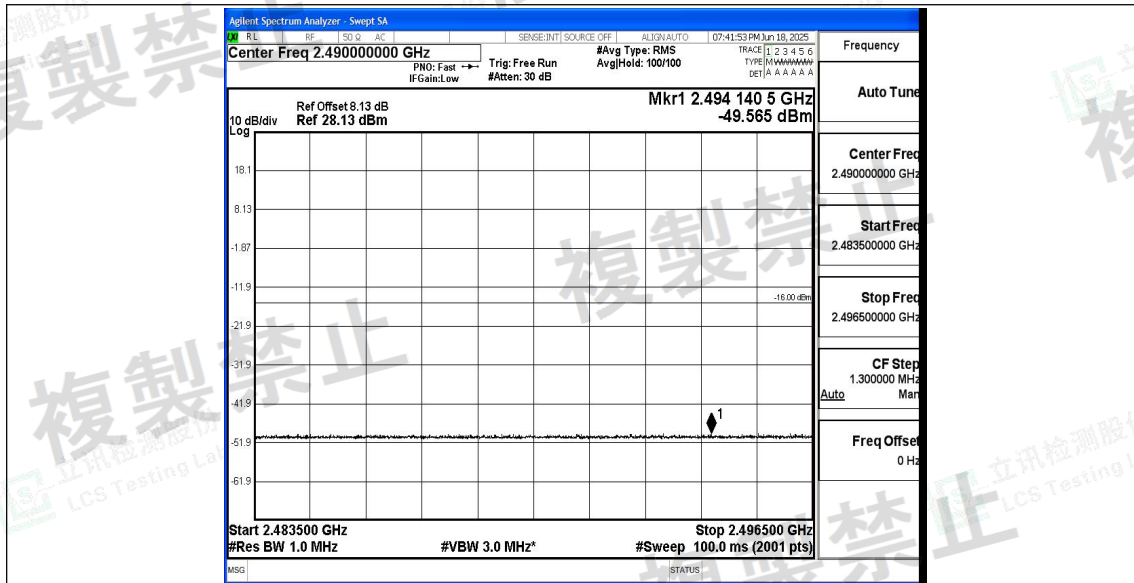


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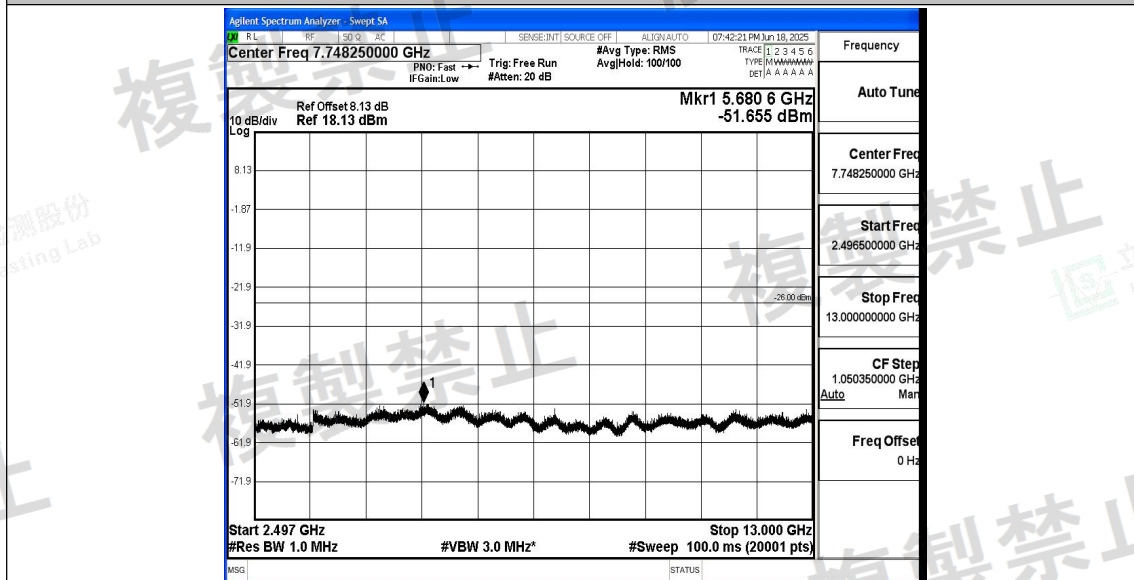
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NTNV_BLE_2M_Ant1_2440_2496.5~13000



NTNV_BLE_2M_Ant1_2480_30~1000

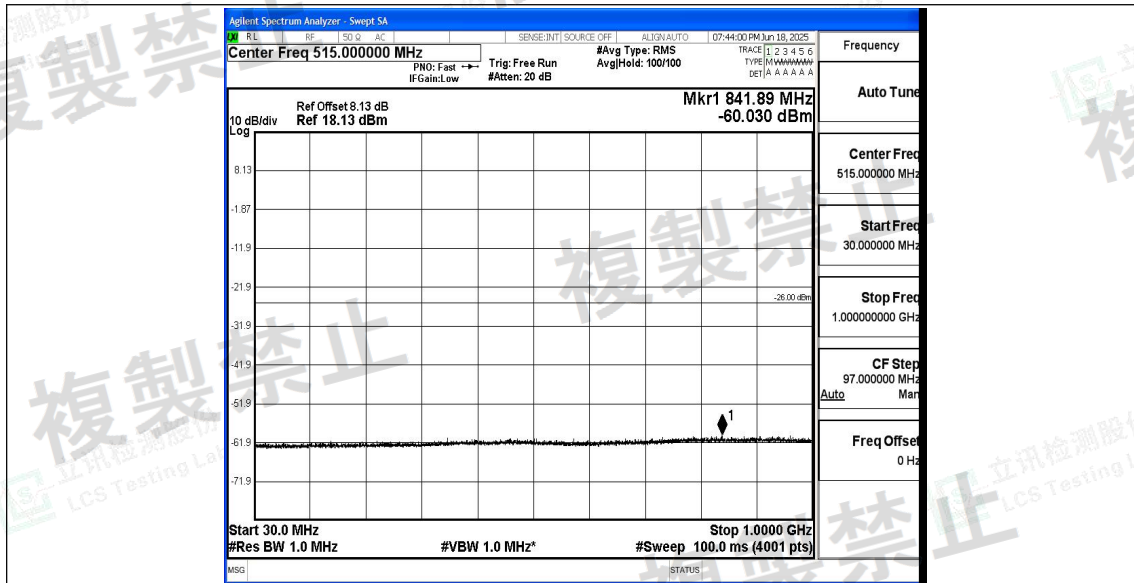


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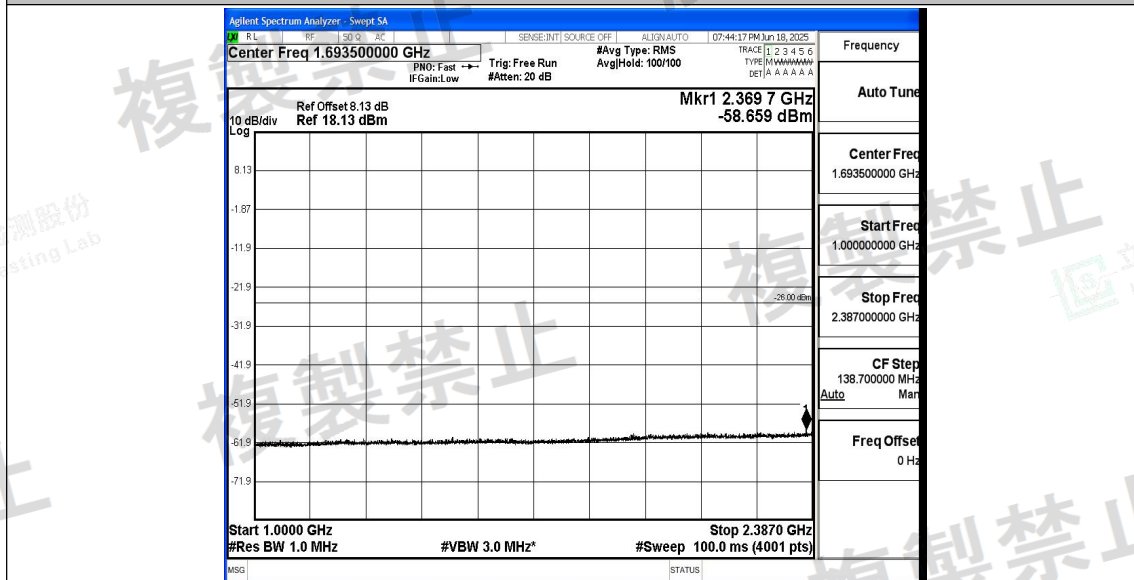
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NTNV_BLE_2M_Ant1_2480_1000~2387



NTNV_BLE_2M_Ant1_2480_2387~2400

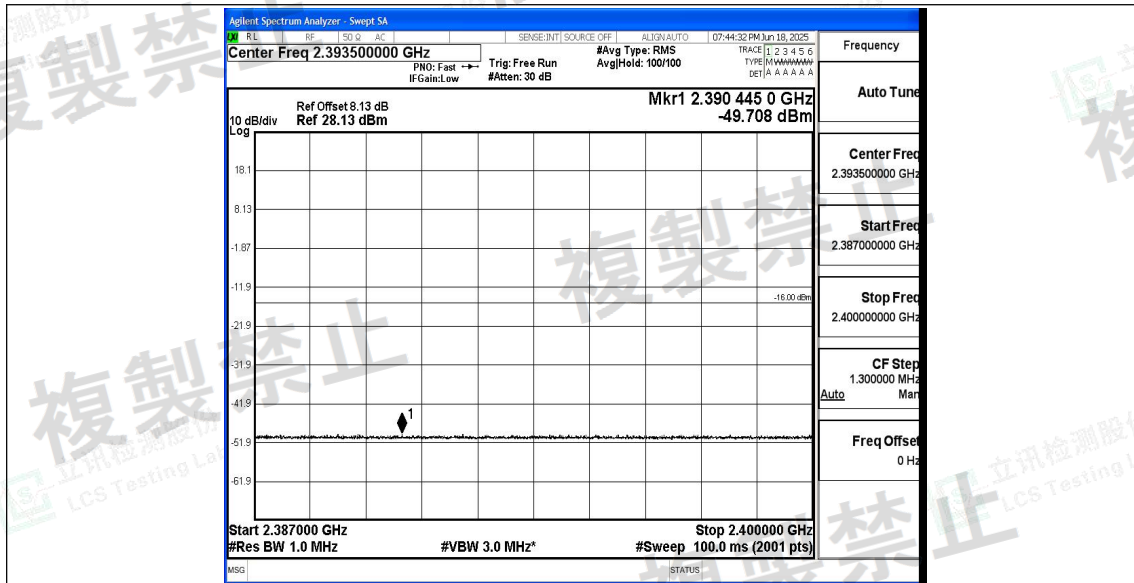


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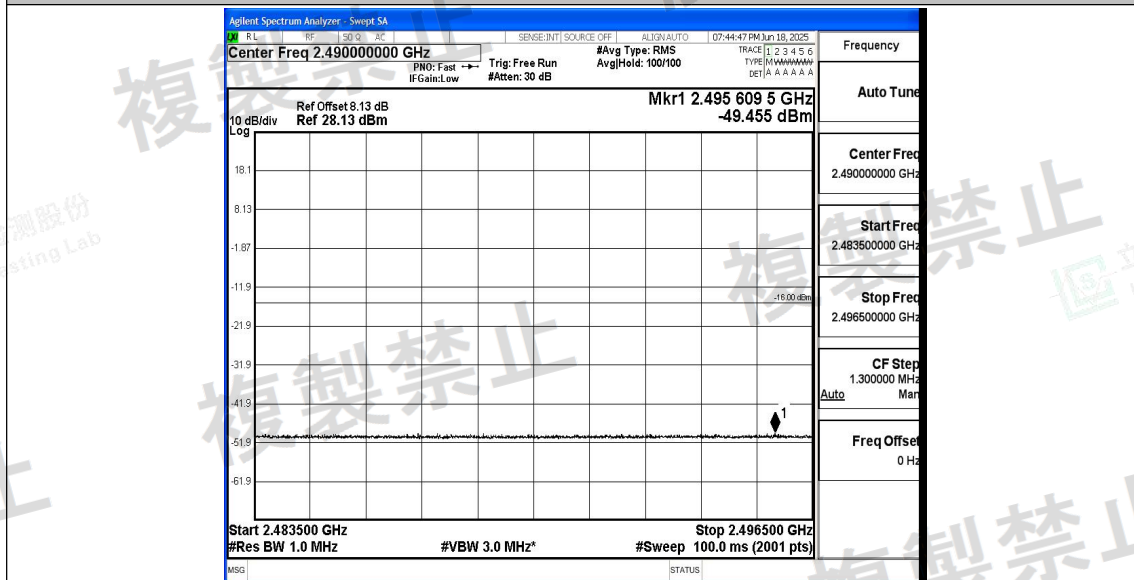
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NTNV_BLE_2M_Ant1_2480_2483.5~2496.5



NTNV_BLE_2M_Ant1_2480_2496.5~13000

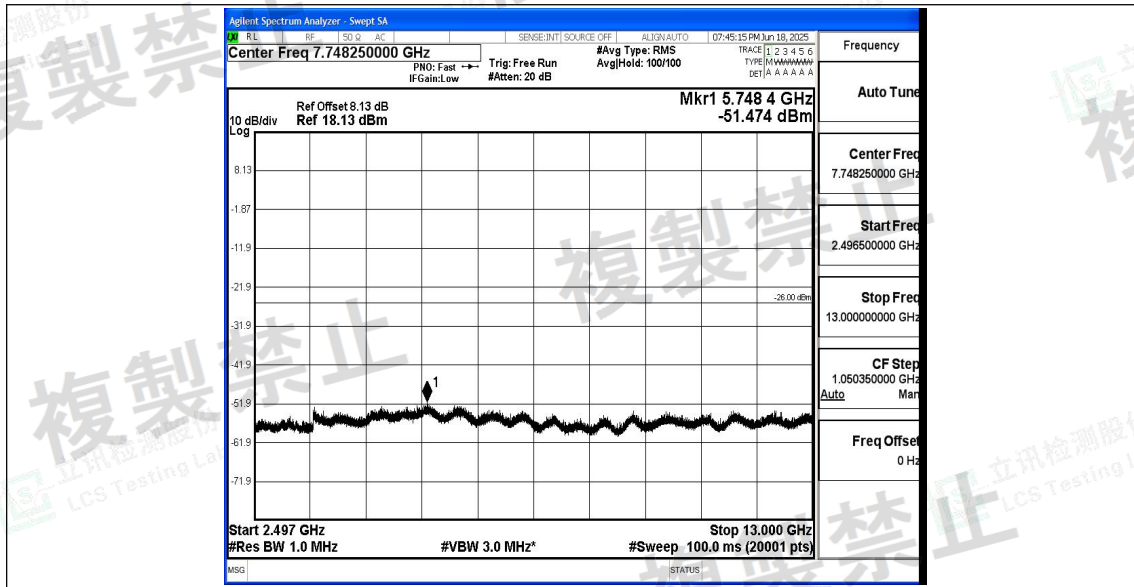


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A.6 Spurious Emission of RX

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	BLE_2M	Ant1	2402	30~1000	-89.64	≤-54	0.00109	≤4	PASS
				1000~12500	-73.26	≤-47	0.04721	≤20	PASS
			2440	30~1000	-89.7	≤-54	0.00107	≤4	PASS
				1000~12500	-73.02	≤-47	0.04989	≤20	PASS
			2480	30~1000	-89.55	≤-54	0.00111	≤4	PASS
				1000~12500	-73.08	≤-47	0.04920	≤20	PASS



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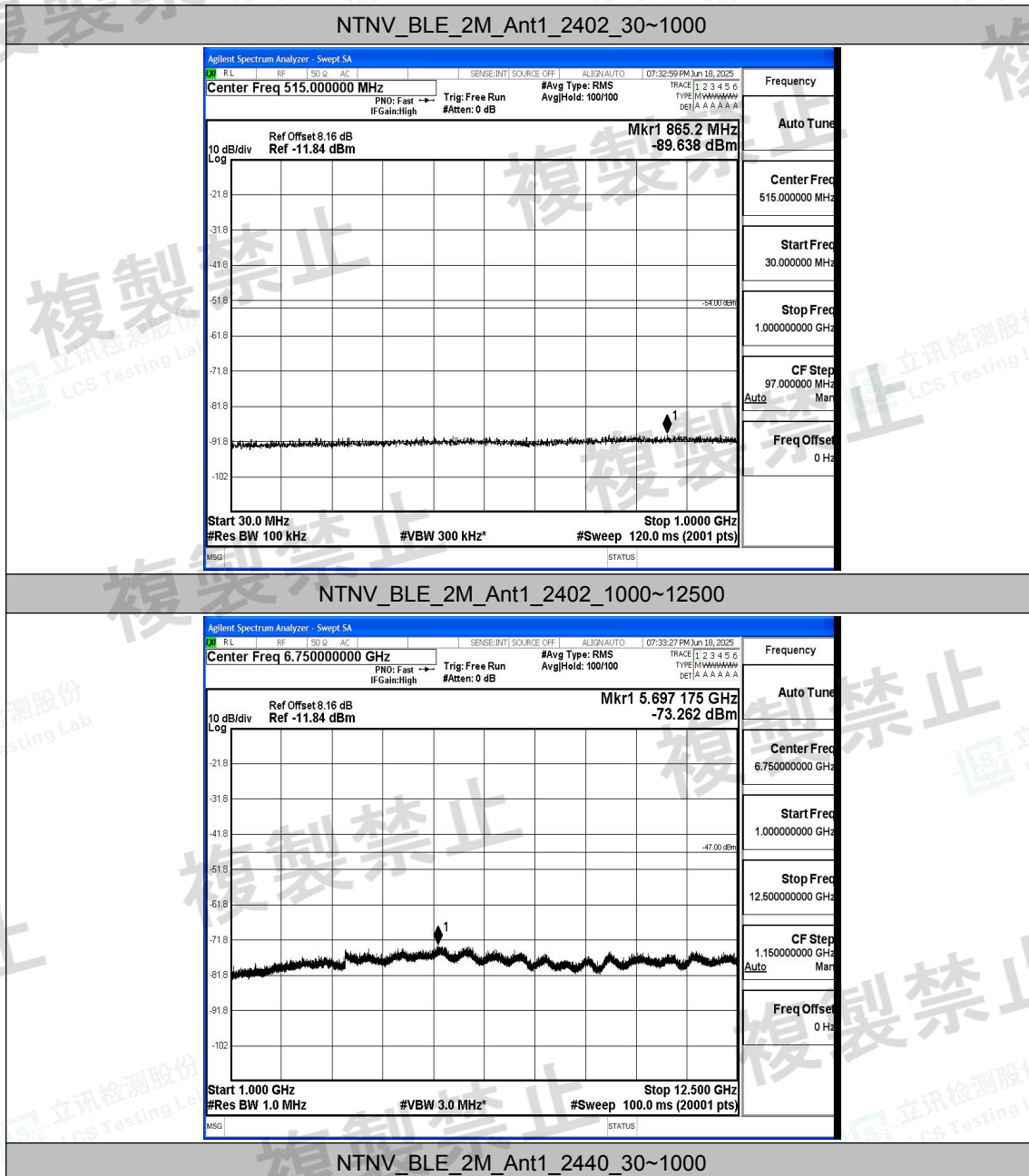
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Test Graphs

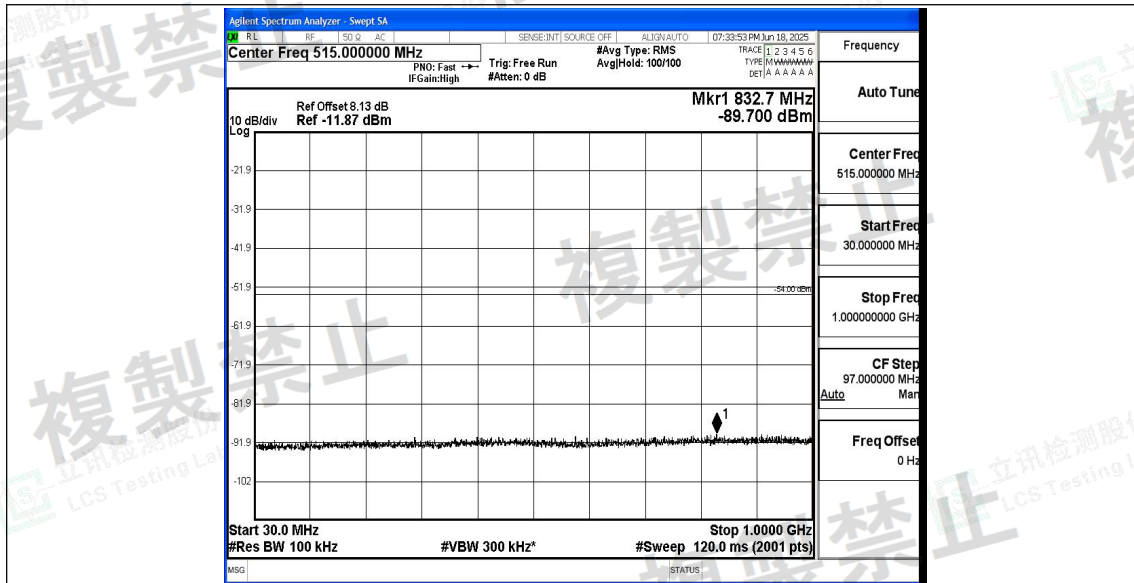


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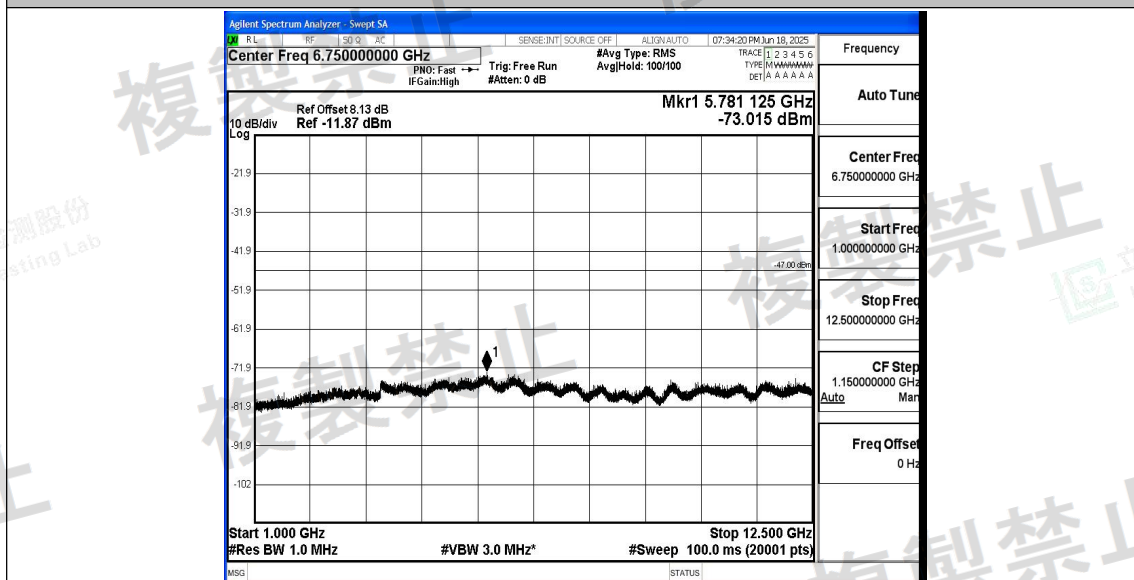
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NTNV_BLE_2M_Ant1_2440_1000~12500



NTNV_BLE_2M_Ant1_2480_30~1000

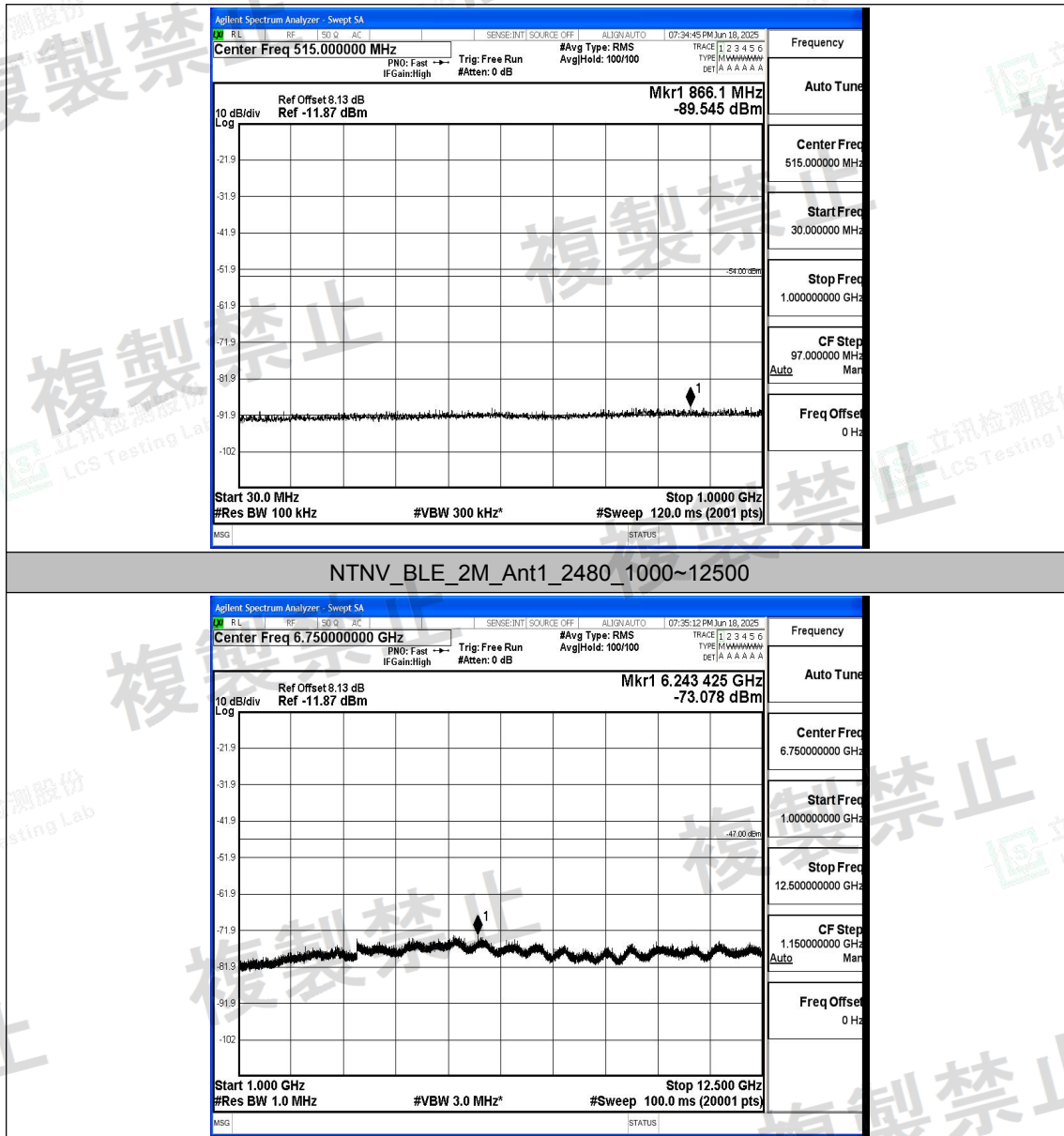


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