



Appendix B for BT LE Test Data

Product Name: Stage luminaire

Test Model: Omnibar 4

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

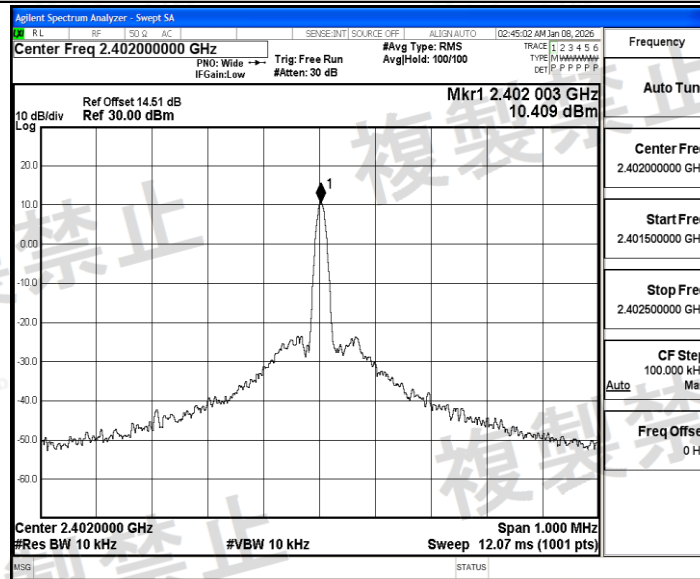
TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2402	1.24896	±50	PASS
			2440	0.81967	±50	PASS
			2480	0.80645	±50	PASS



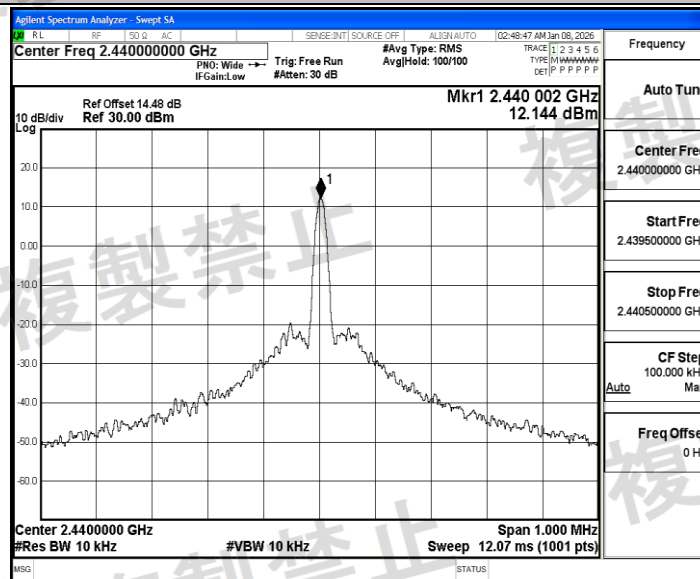


Test Graphs

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	0.01	1.0023	≤10	PASS
			2440	-0.40	0.9120	≤10	PASS
			2480	-0.67	0.8570	≤10	PASS
NTNV	BLE_2M	Ant1	2402	-0.74	0.8433	≤10	PASS
			2440	-0.30	0.9333	≤10	PASS
			2480	-0.67	0.8570	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency[MHz]	Power (mW)	Rated Power (mW)	Result (%)	Limit (%)	Verdict
NTNV	BLE_1M	Ant1	2402	1.0023	1	0.23	+20	PASS
			2440	0.9120	1	-8.80	+20	PASS
			2480	0.8570	1	-14.30	+20	PASS
NTNV	BLE_2M	Ant1	2402	0.8433	1	-15.67	+20	PASS
			2440	0.9333	1	-6.67	+20	PASS
			2480	0.8570	1	-14.30	+20	PASS





B.3 Occupied Bandwidth

Test Result

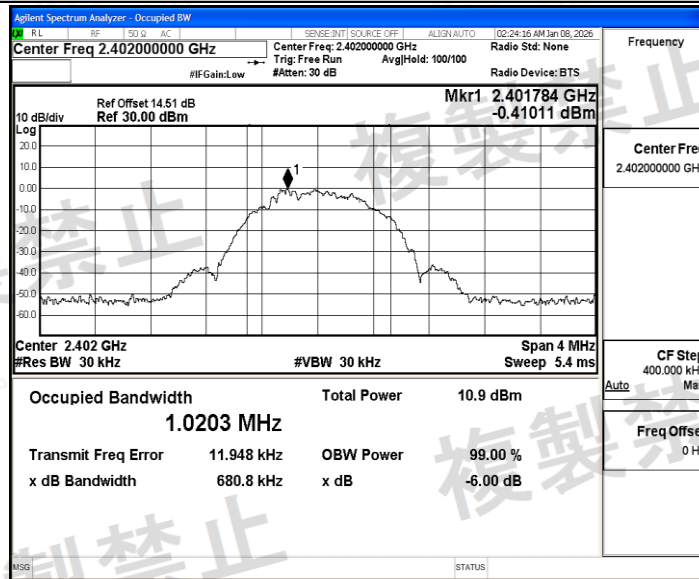
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	1.020	≤26	PASS
			2440	1.017	≤26	PASS
			2480	1.019	≤26	PASS
	BLE_2M	Ant1	2402	2.027	≤26	PASS
			2440	2.022	≤26	PASS
			2480	2.032	≤26	PASS



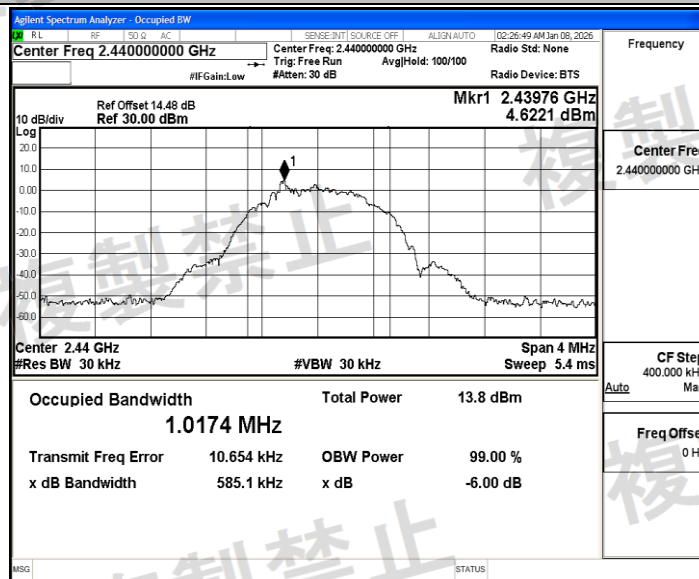


Test Graphs

NTNV_BLE_1M_Ant1_2402

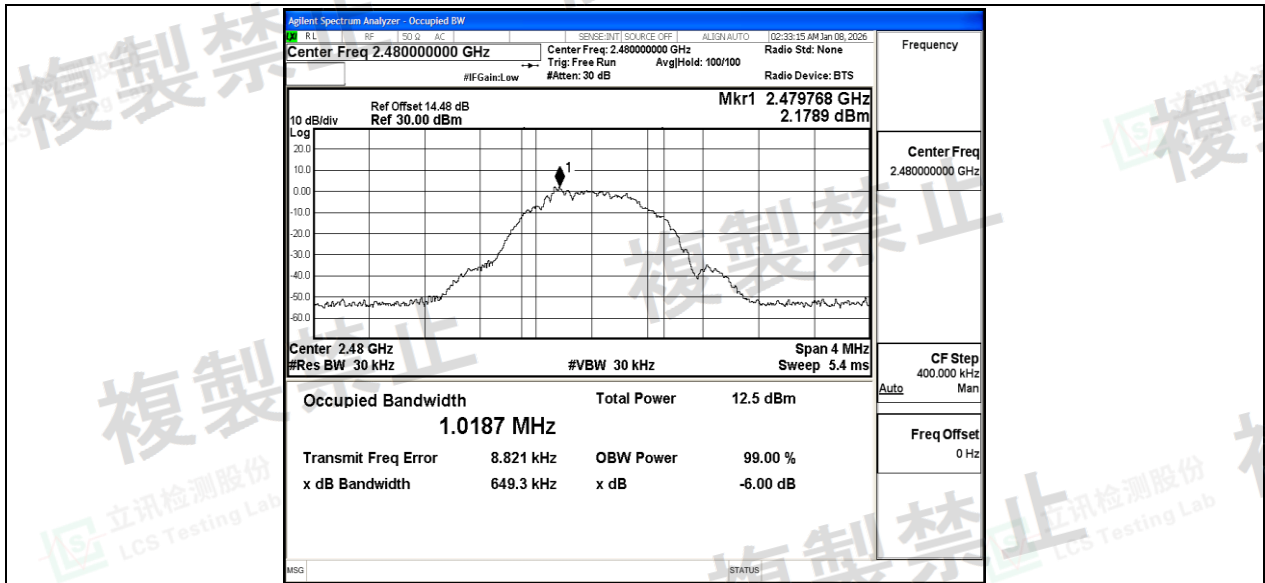


NTNV_BLE_1M_Ant1_2440

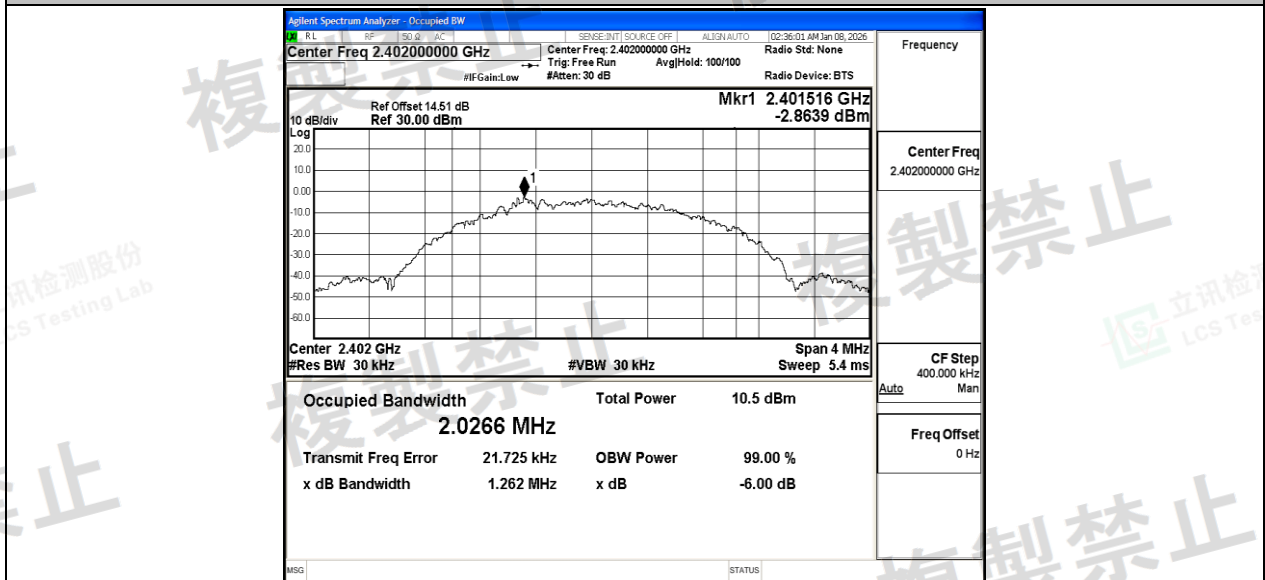


NTNV_BLE_1M_Ant1_2480

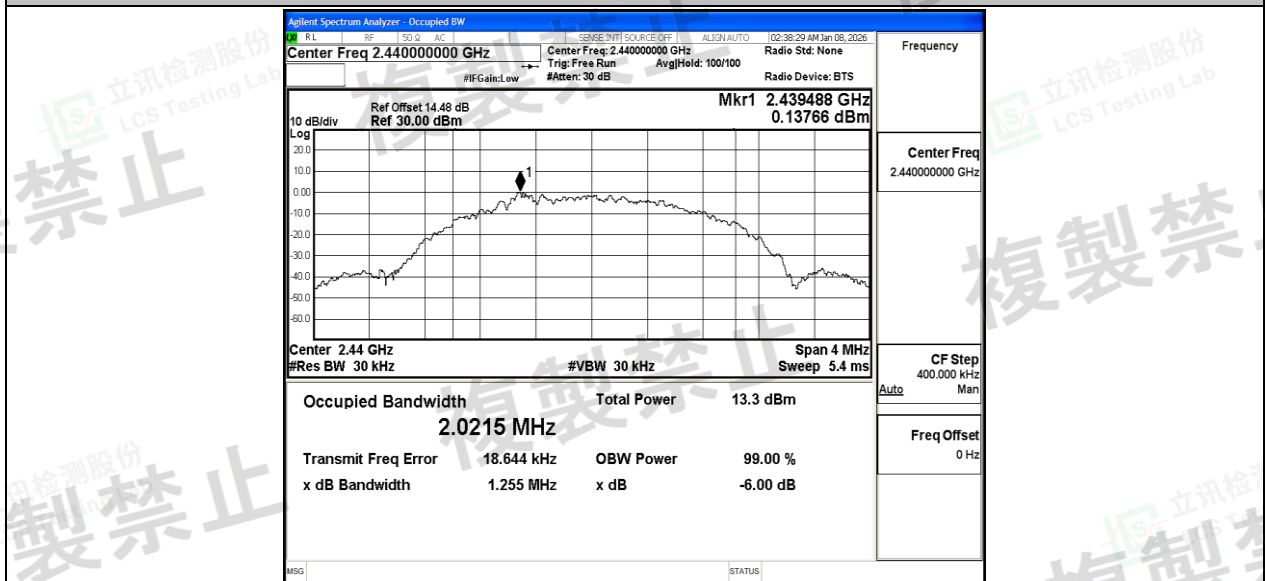


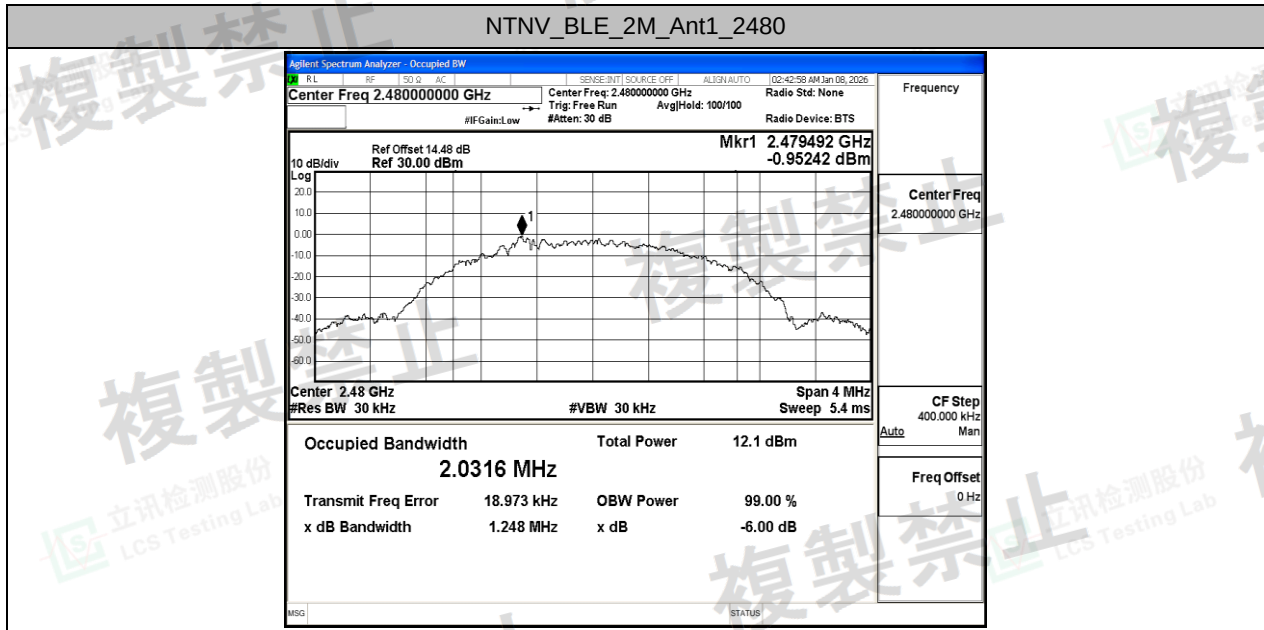


NTNV_BLE_2M_Ant1_2402



NTNV_BLE_2M_Ant1_2440







B.4 Spread Bandwidth

Test Result

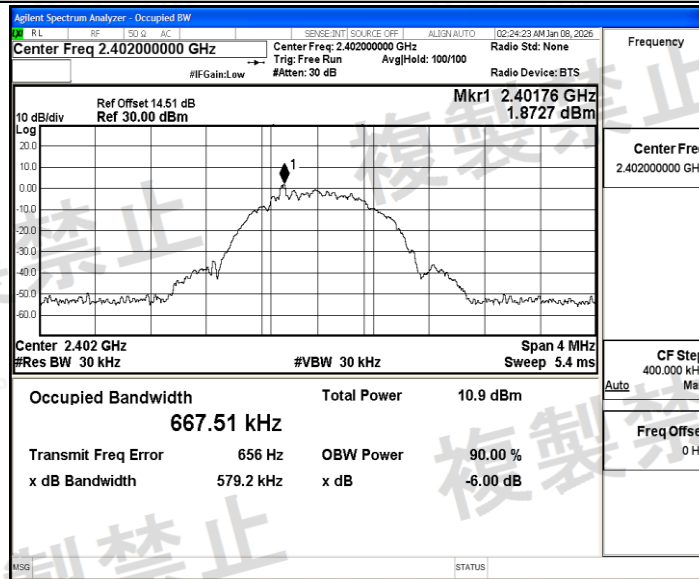
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	0.668	---	PASS
			2440	0.668	---	PASS
			2480	0.662	---	PASS
	BLE_2M	Ant1	2402	1.330	---	PASS
			2440	1.331	---	PASS
			2480	1.336	---	PASS



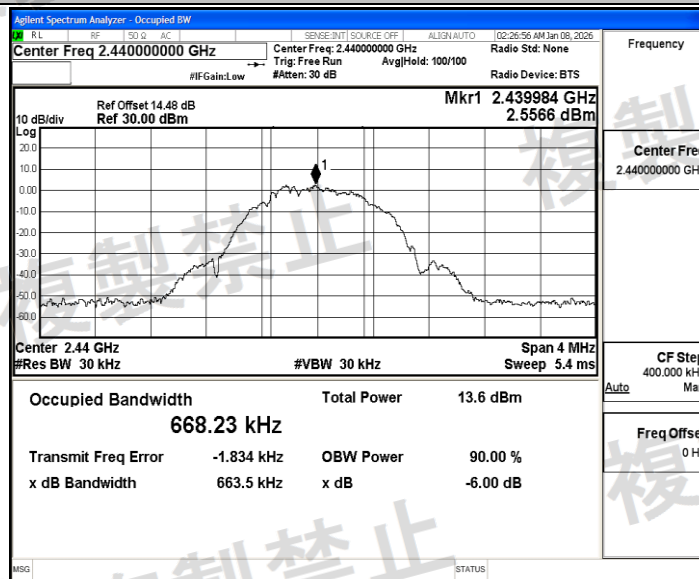


Test Graphs

NTNV_BLE_1M_Ant1_2402

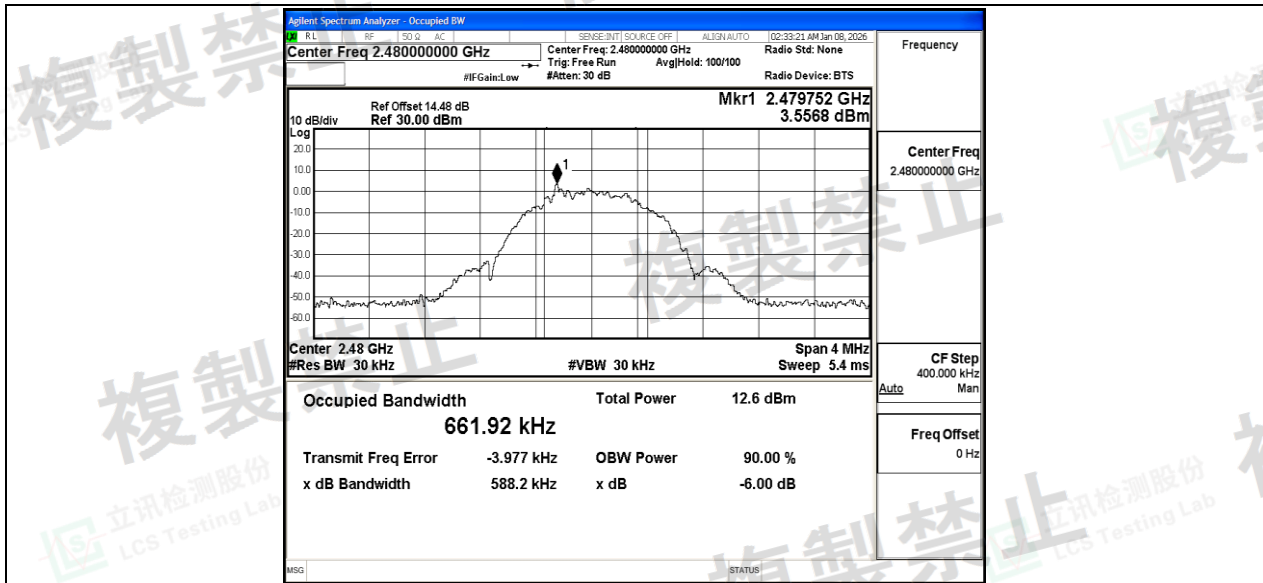


NTNV_BLE_1M_Ant1_2440

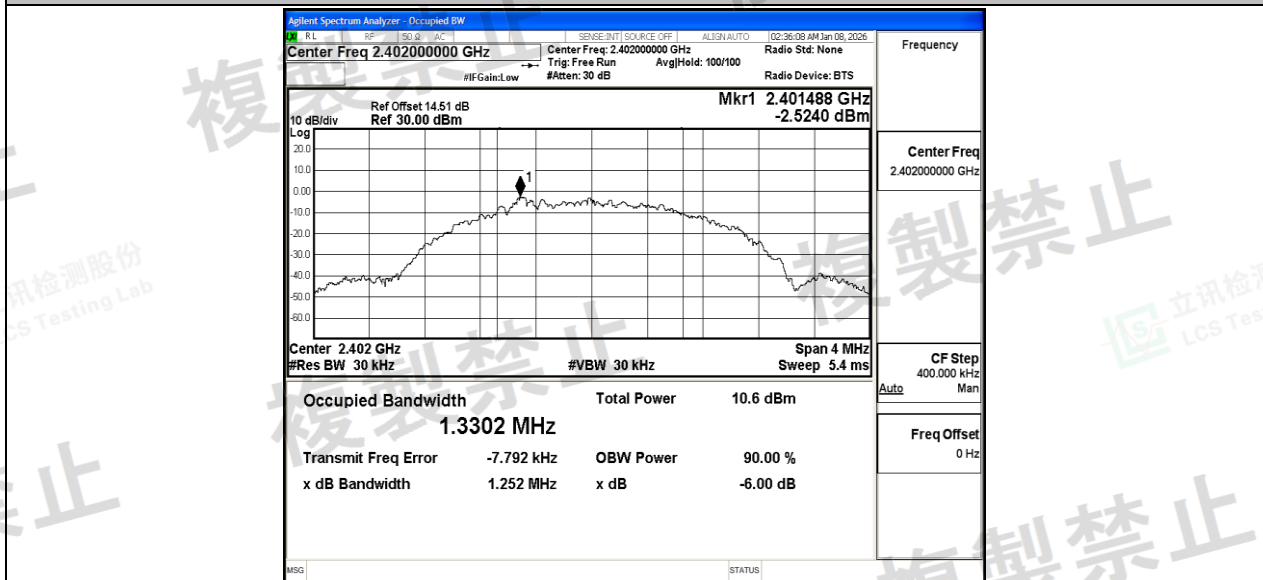


NTNV_BLE_1M_Ant1_2480

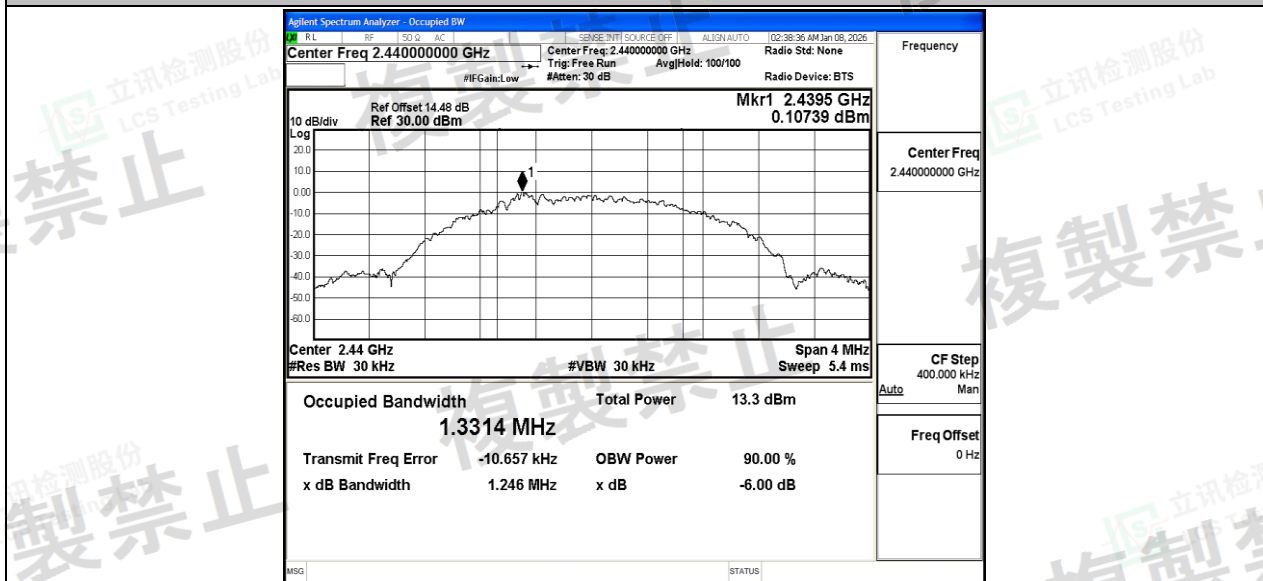


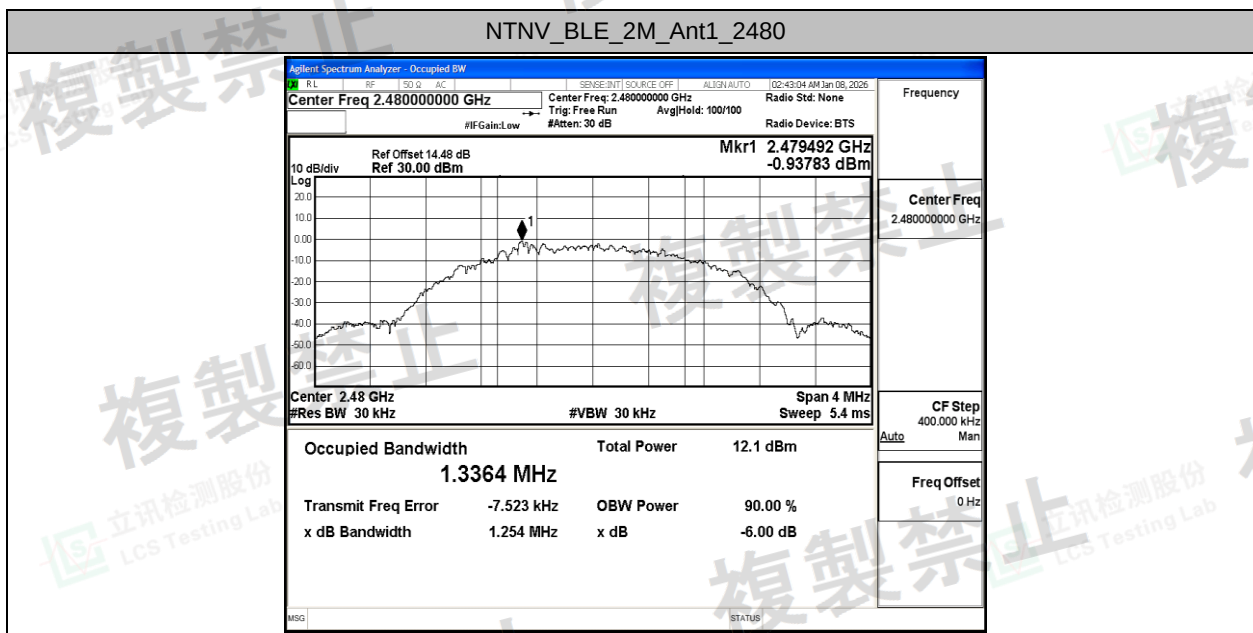


NTNV_BLE_2M_Ant1_2402



NTNV_BLE_2M_Ant1_2440







B.5 Spurious Emission of TX

Test Result

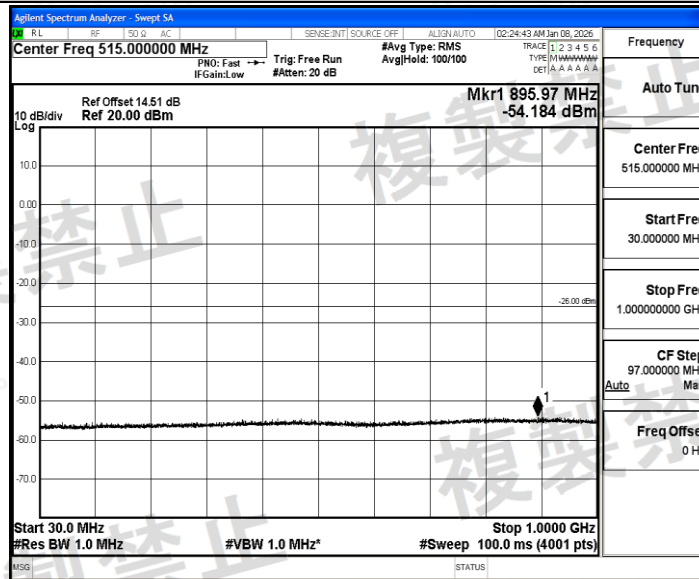
TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	-54.18	≤-26	0.00382	≤2.5	PASS
				1000~2387	-52.41	≤-26	0.00574	≤2.5	PASS
				2387~2400	-38.31	≤-16	0.14757	≤25	PASS
				2483.5~2496.5	-43.19	≤-16	0.04797	≤25	PASS
				2496.5~13000	-45.77	≤-26	0.02649	≤2.5	PASS
			2440	30~1000	-54.06	≤-26	0.00393	≤2.5	PASS
				1000~2387	-52.21	≤-26	0.00601	≤2.5	PASS
				2387~2400	-43.51	≤-16	0.04457	≤25	PASS
				2483.5~2496.5	-43.43	≤-16	0.04539	≤25	PASS
				2496.5~13000	-45.76	≤-26	0.02655	≤2.5	PASS
		2480		30~1000	-53.85	≤-26	0.00412	≤2.5	PASS
				1000~2387	-52.24	≤-26	0.00597	≤2.5	PASS
				2387~2400	-43.43	≤-16	0.04539	≤25	PASS
				2483.5~2496.5	-43.29	≤-16	0.04688	≤25	PASS
				2496.5~13000	-45.76	≤-26	0.02655	≤2.5	PASS
	BLE_2M	Ant1	2402	30~1000	-53.85	≤-26	0.00412	≤2.5	PASS
				1000~2387	-52.02	≤-26	0.00628	≤2.5	PASS
				2387~2400	-23.10	≤-16	4.89779	≤25	PASS
				2483.5~2496.5	-43.48	≤-16	0.04487	≤25	PASS
				2496.5~13000	-44.91	≤-26	0.03228	≤2.5	PASS
			2440	30~1000	-53.74	≤-26	0.00423	≤2.5	PASS
				1000~2387	-52.25	≤-26	0.00596	≤2.5	PASS
				2387~2400	-43.58	≤-16	0.04385	≤25	PASS
				2483.5~2496.5	-43.41	≤-16	0.04560	≤25	PASS
				2496.5~13000	-45.46	≤-26	0.02844	≤2.5	PASS
		2480		30~1000	-53.79	≤-26	0.00418	≤2.5	PASS
				1000~2387	-52.13	≤-26	0.00612	≤2.5	PASS
				2387~2400	-43.49	≤-16	0.04477	≤25	PASS
				2483.5~2496.5	-43.47	≤-16	0.04498	≤25	PASS
				2496.5~13000	-45.51	≤-26	0.02812	≤2.5	PASS



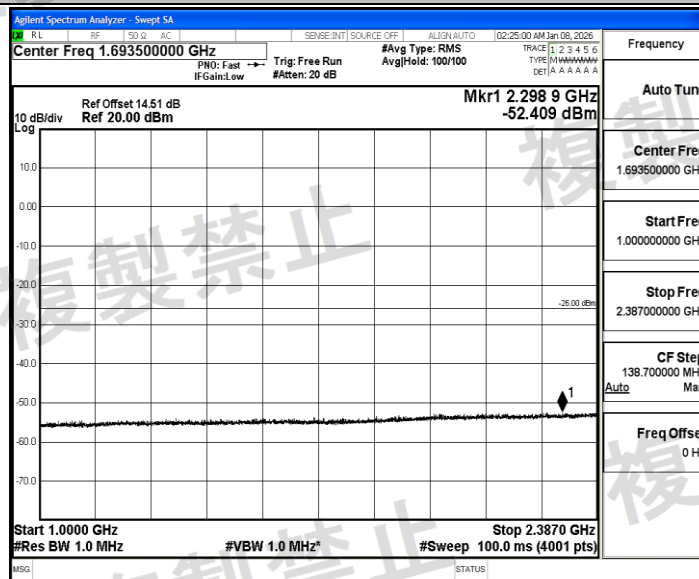


Test Graphs

NTNV_BLE_1M_Ant1_2402_30~1000

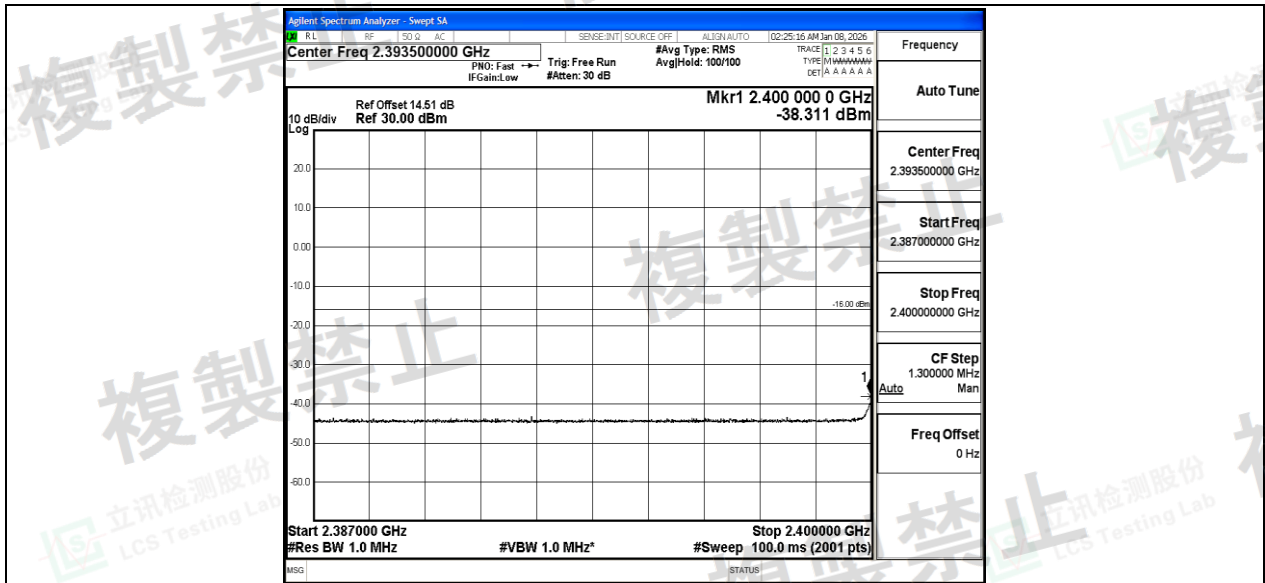


NTNV_BLE_1M_Ant1_2402_1000~2387

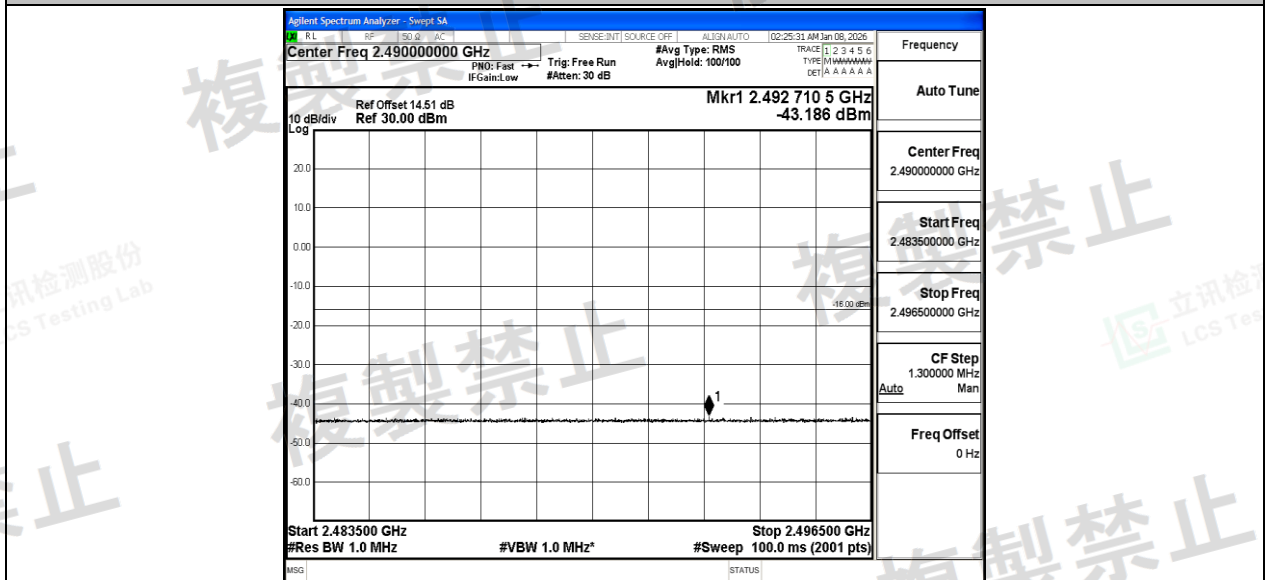


NTNV_BLE_1M_Ant1_2402_2387~2400

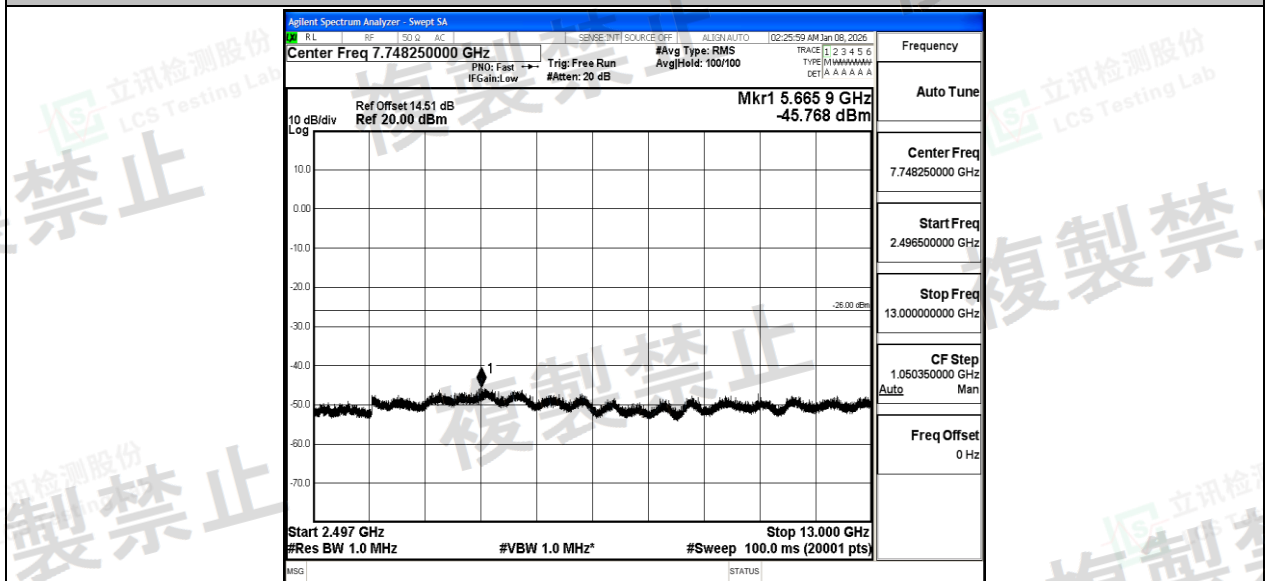




NTNV_BLE_1M_Ant1_2402_2483.5~2496.5

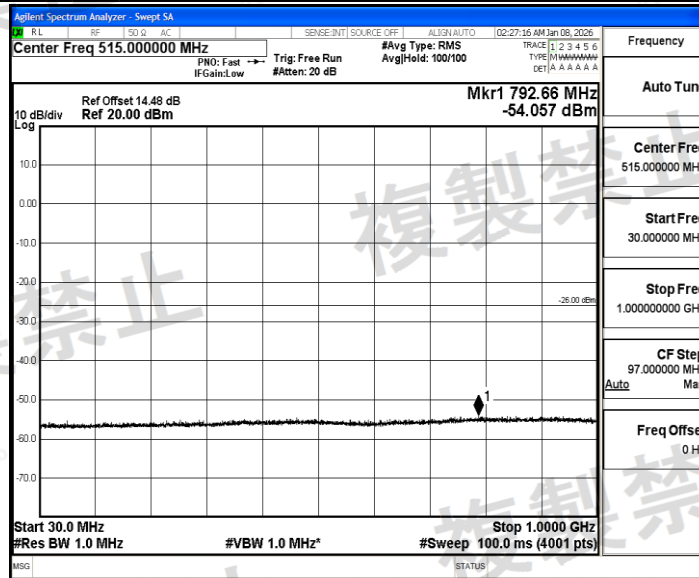


NTNV_BLE_1M_Ant1_2402_2496.5~13000

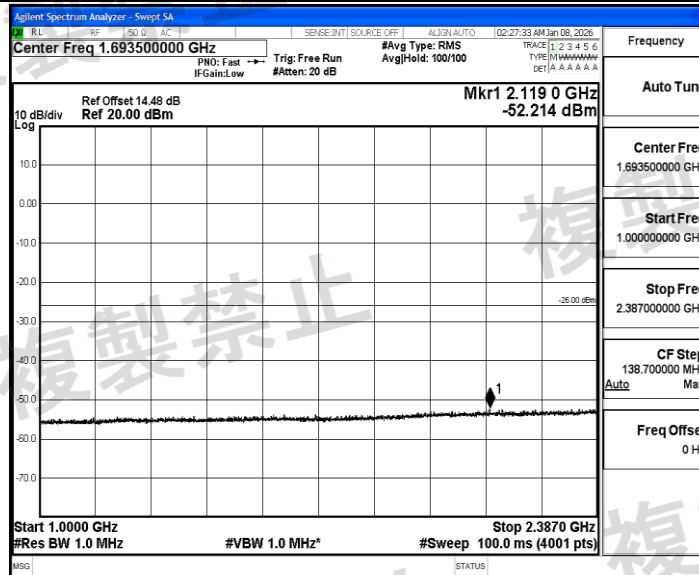




NTNV_BLE_1M_Ant1_2440_30~1000

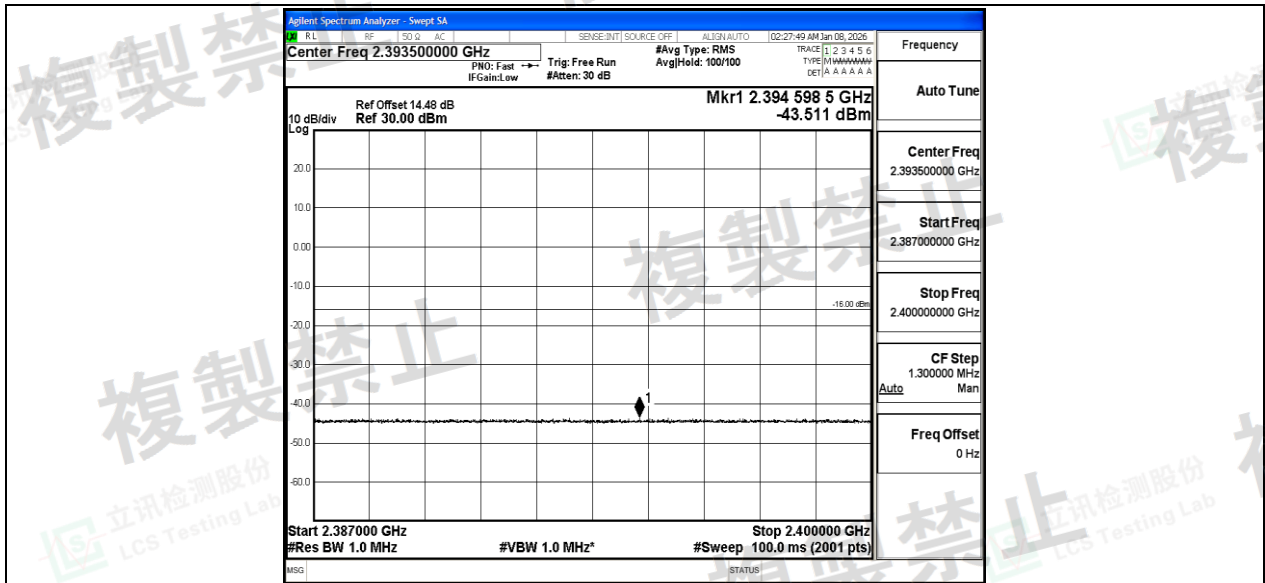


NTNV_BLE_1M_Ant1_2440_1000~2387

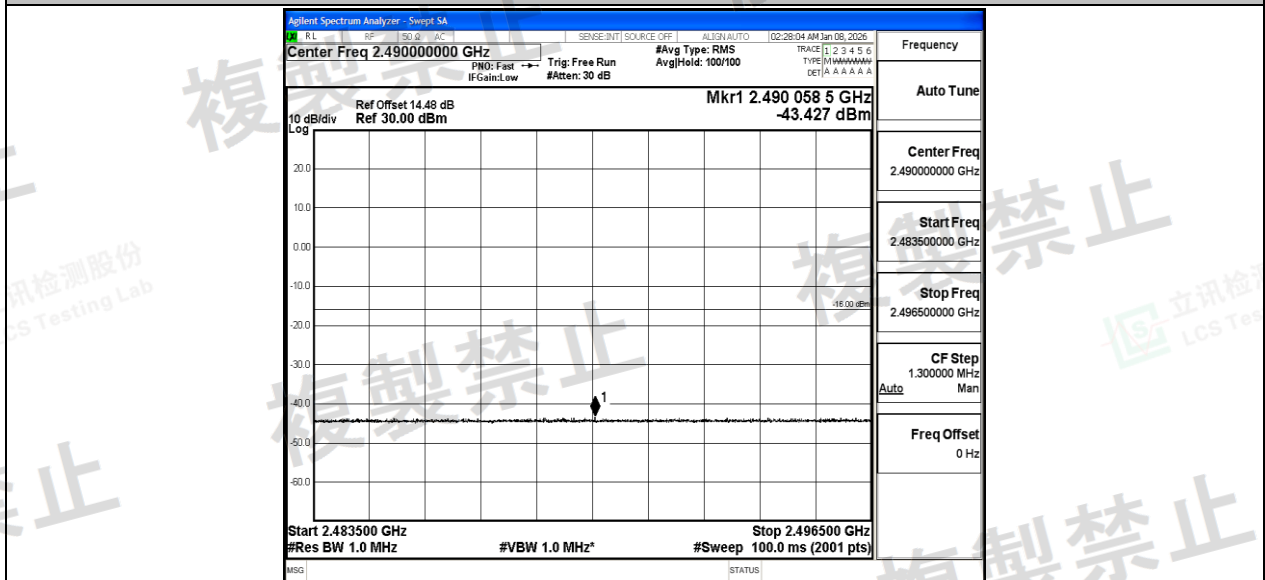


NTNV_BLE_1M_Ant1_2440_2387~2400

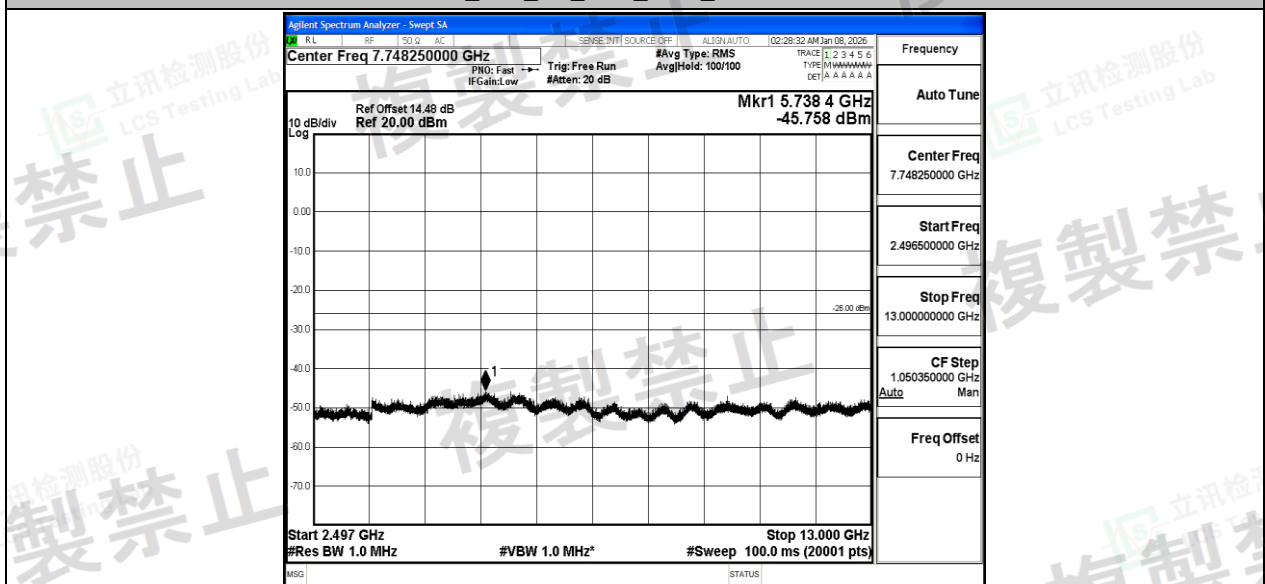




NTNV_BLE_1M_Ant1_2440_2483.5~2496.5

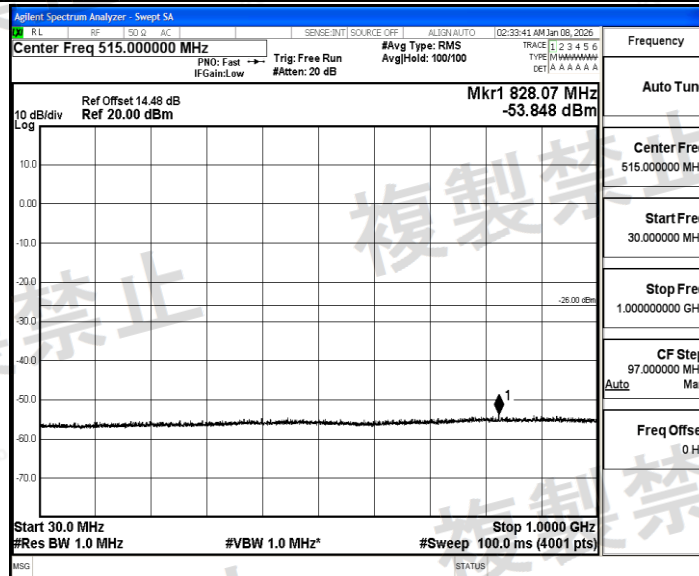


NTNV_BLE_1M_Ant1_2440_2496.5~13000

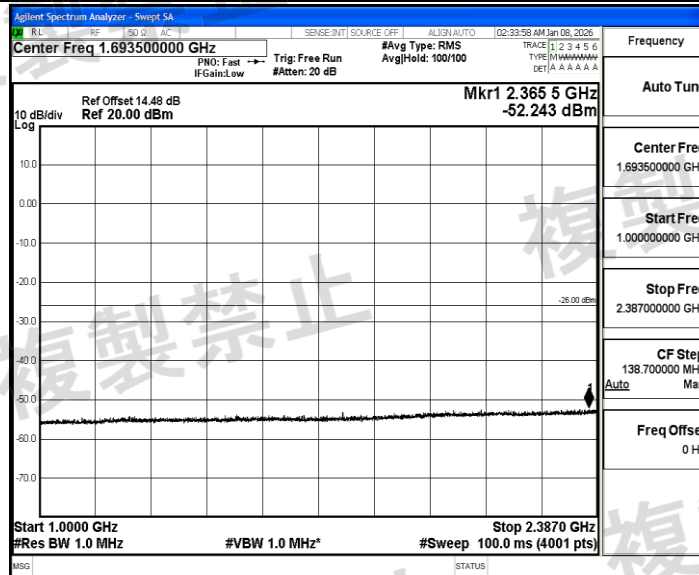




NTNV_BLE_1M_Ant1_2480_30~1000

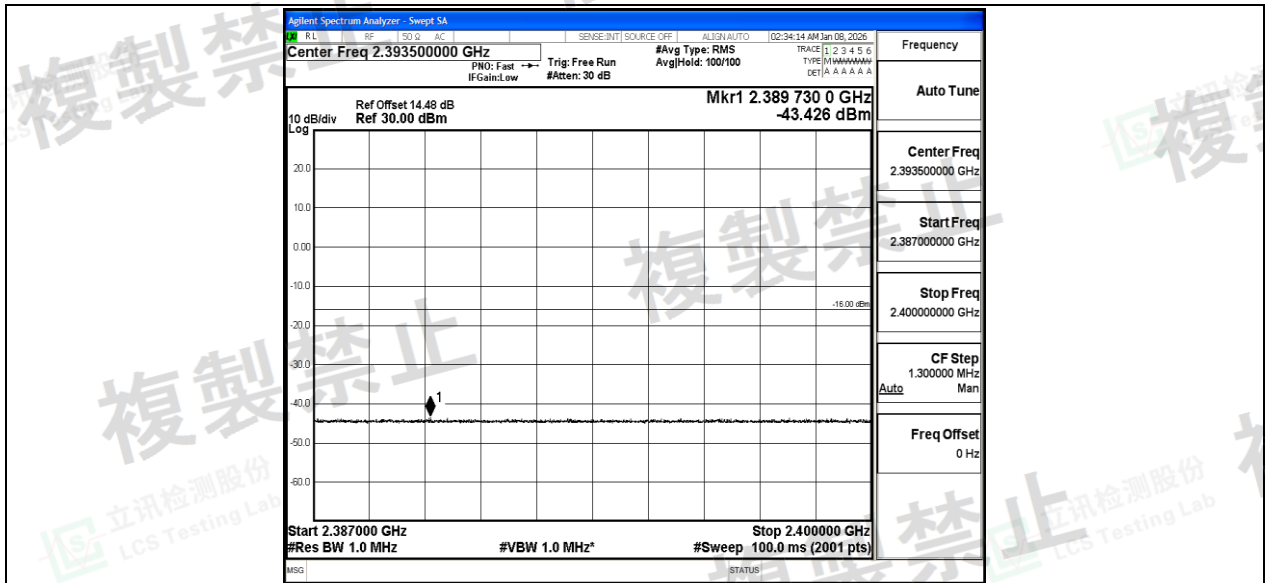


NTNV_BLE_1M_Ant1_2480_1000~2387

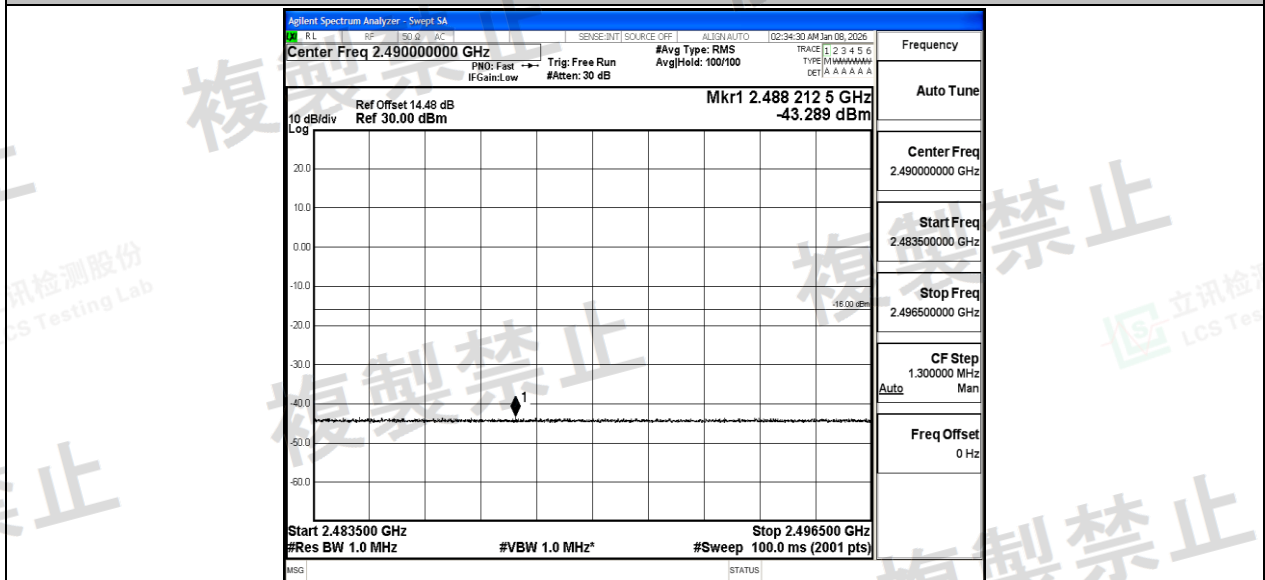


NTNV_BLE_1M_Ant1_2480_2387~2400

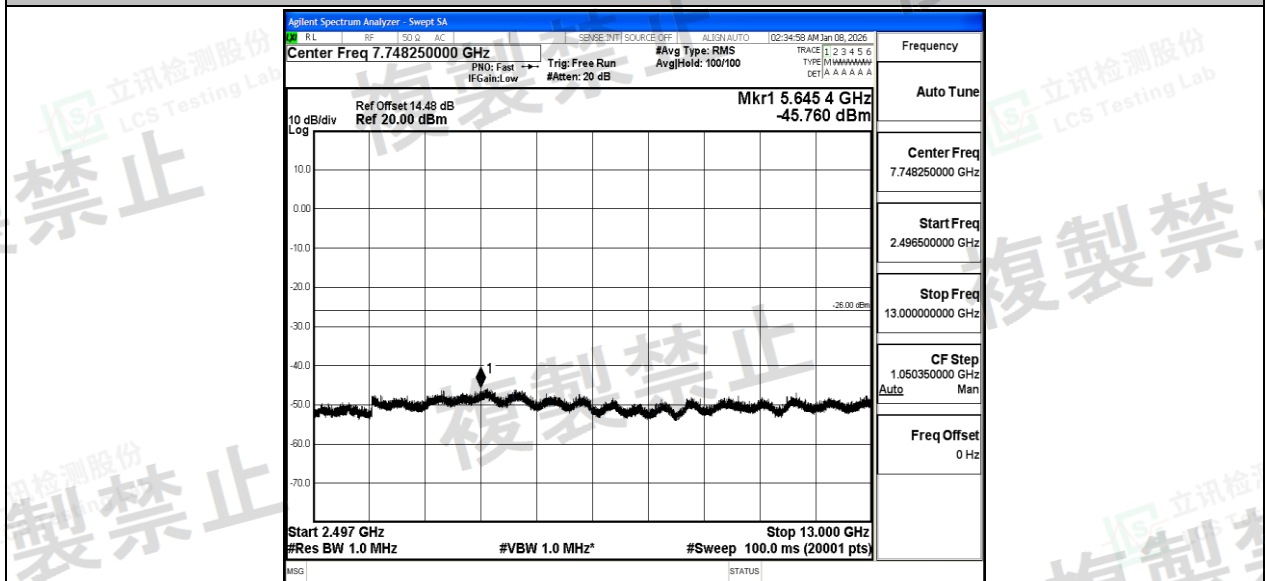




NTNV_BLE_1M_Ant1_2480_2483.5~2496.5

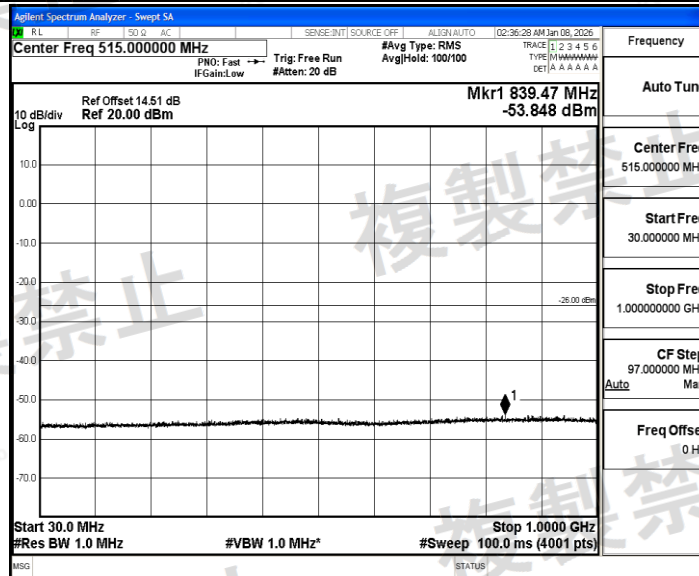


NTNV_BLE_1M_Ant1_2480_2496.5~13000

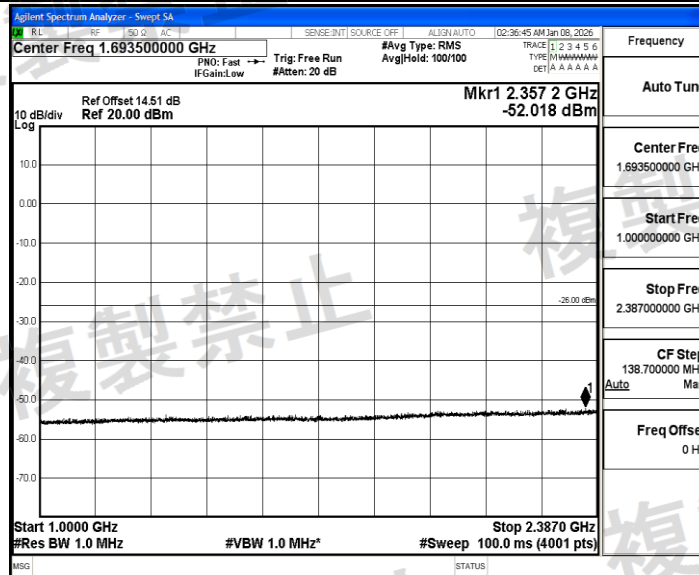




NTNV_BLE_2M_Ant1_2402_30~1000

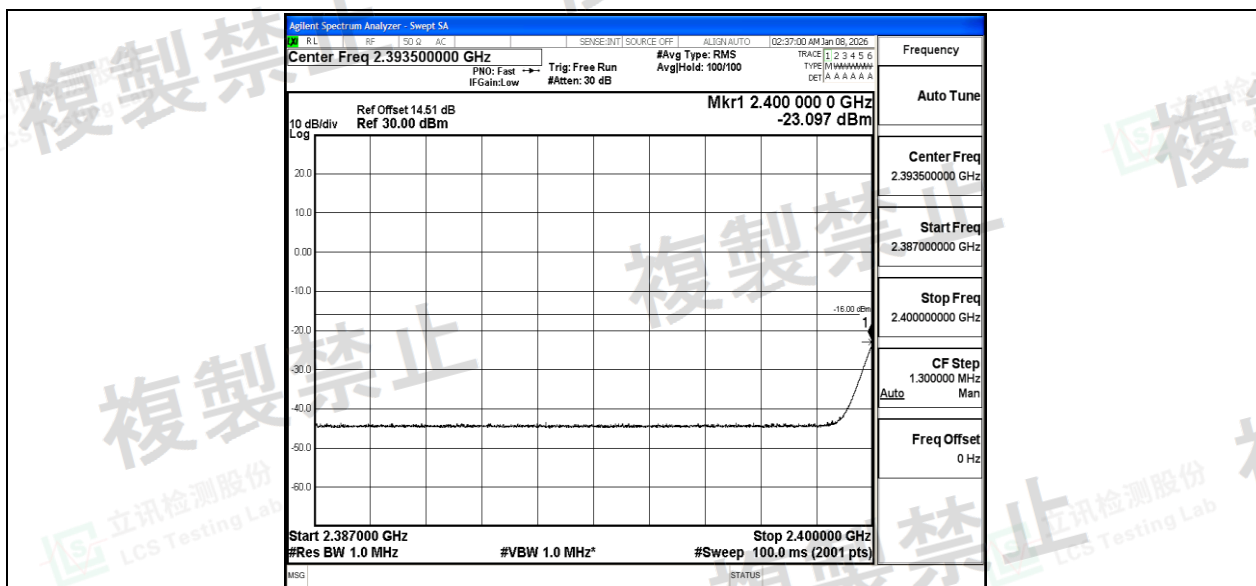


NTNV_BLE_2M_Ant1_2402_1000~2387

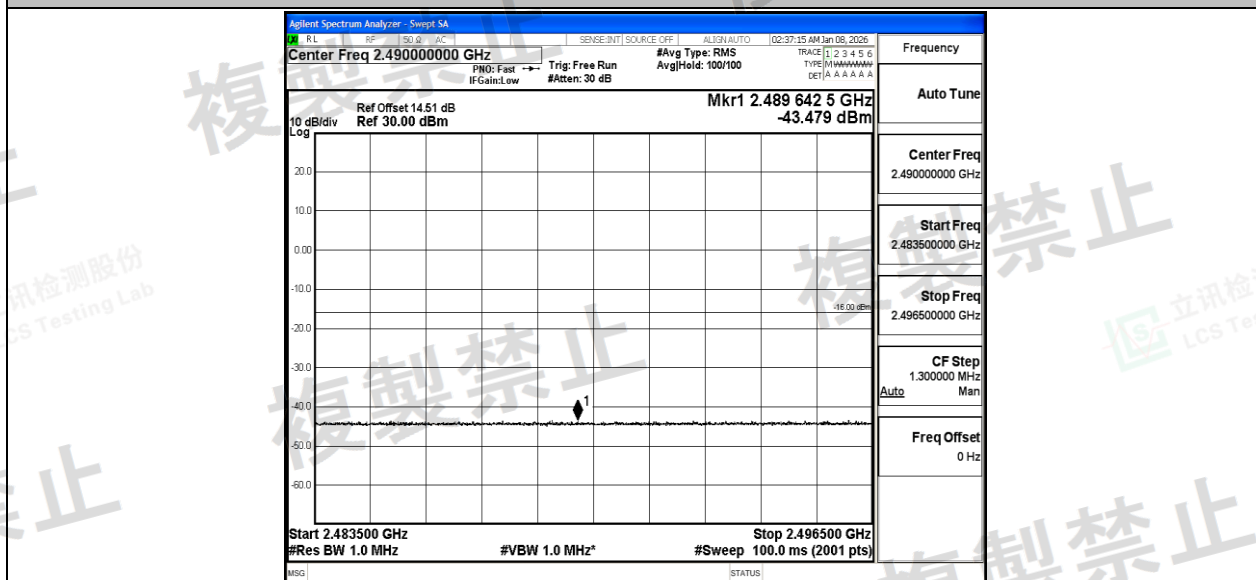


NTNV_BLE_2M_Ant1_2402_2387~2400

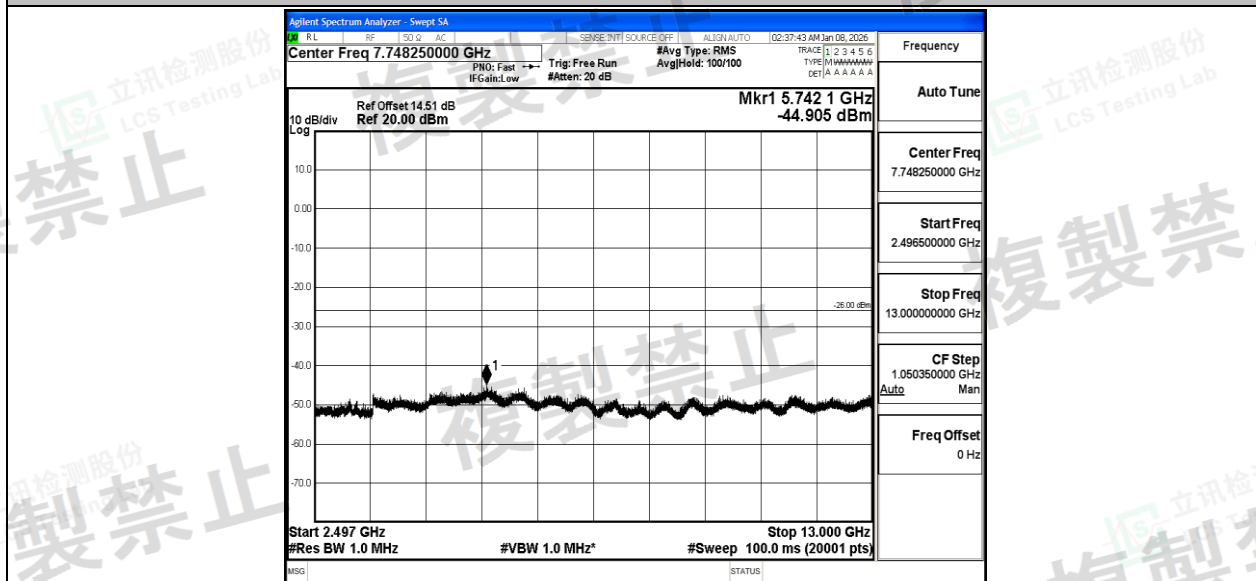




NTNV_BLE_2M_Ant1_2402_2483.5~2496.5

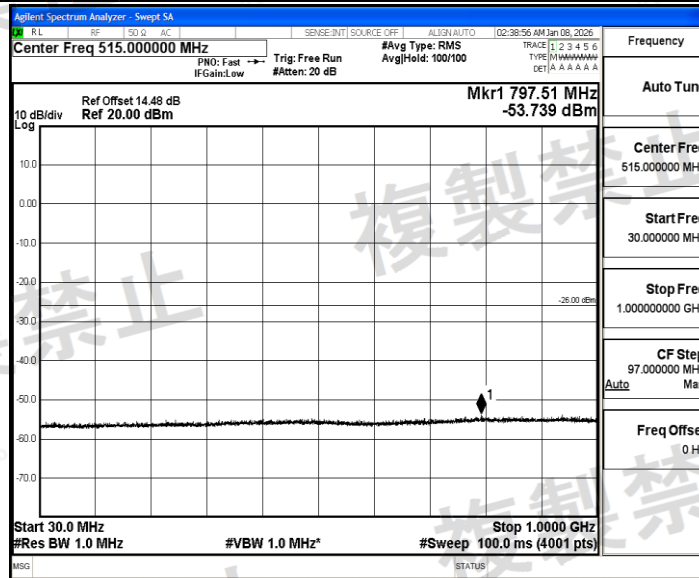


NTNV_BLE_2M_Ant1_2402_2496.5~13000

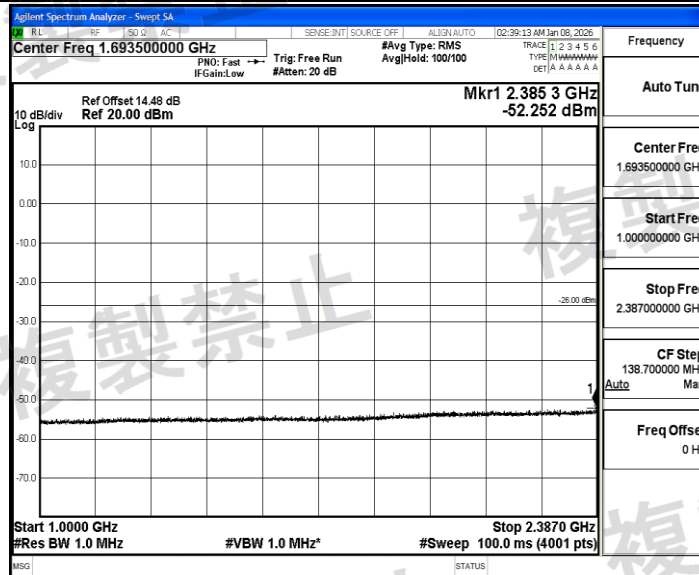




NTNV_BLE_2M_Ant1_2440_30~1000

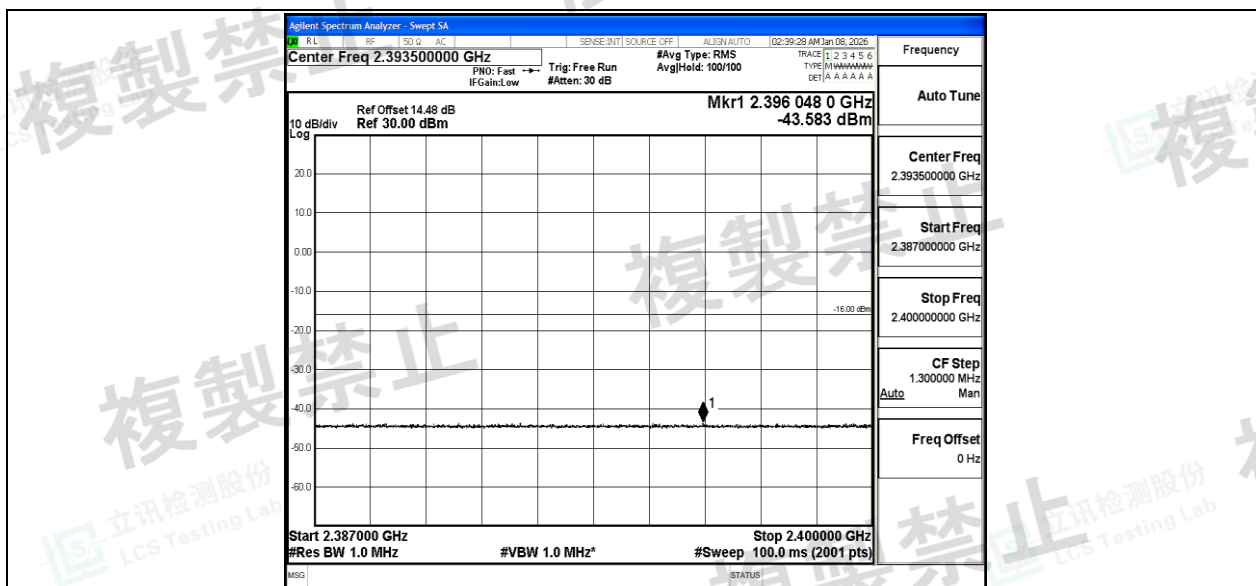


NTNV_BLE_2M_Ant1_2440_1000~2387

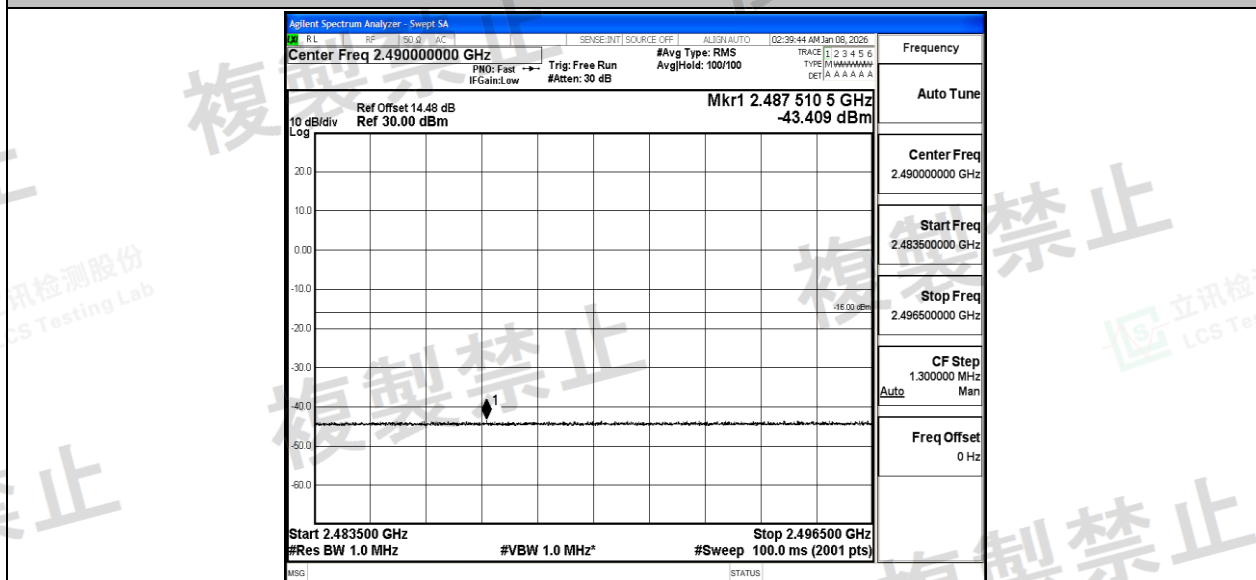


NTNV_BLE_2M_Ant1_2440_2387~2400

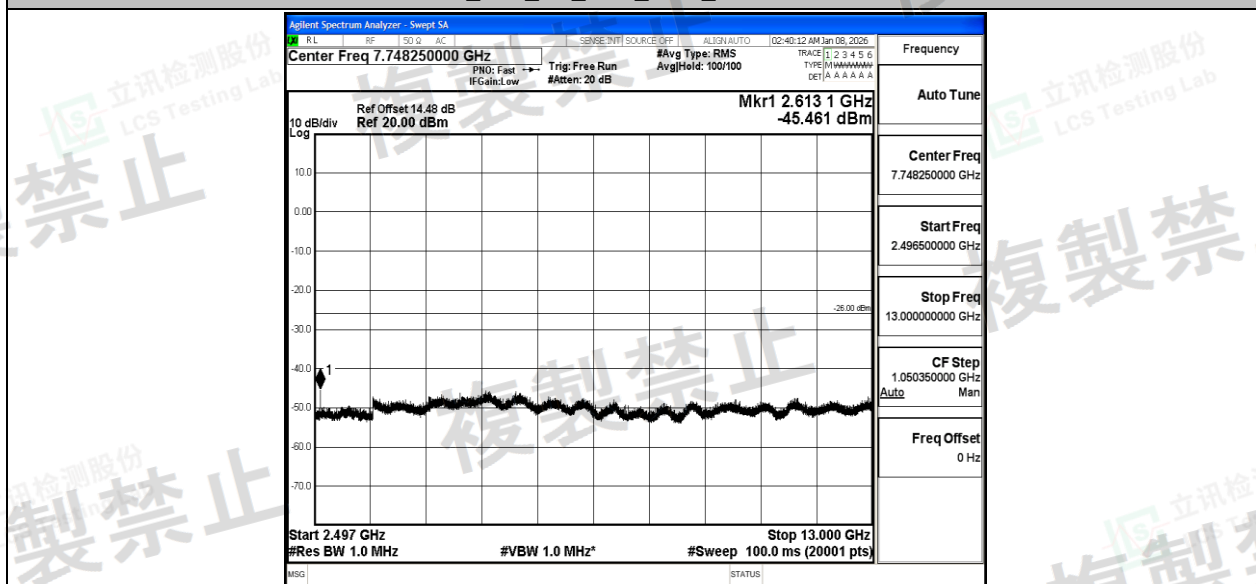




NTNV_BLE_2M_Ant1_2440_2483.5~2496.5

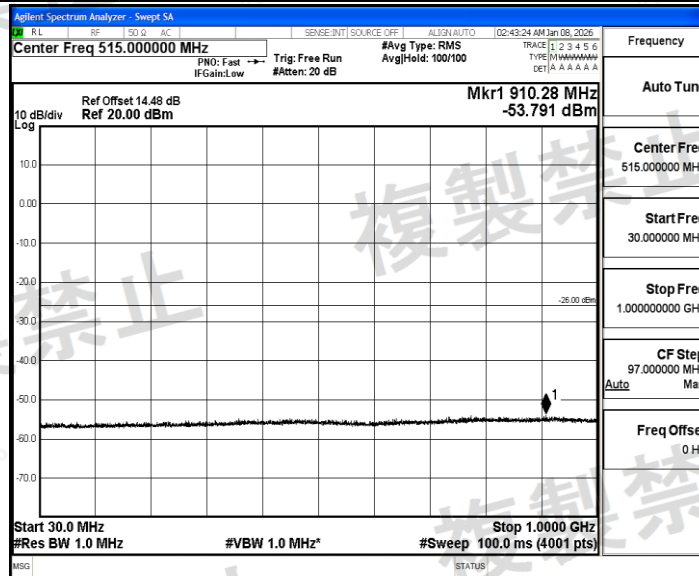


NTNV_BLE_2M_Ant1_2440_2496.5~13000

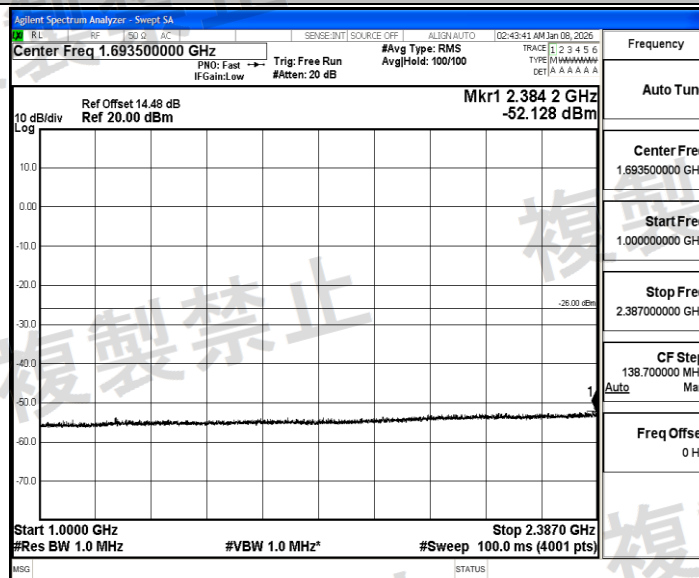




NTNV_BLE_2M_Ant1_2480_30~1000

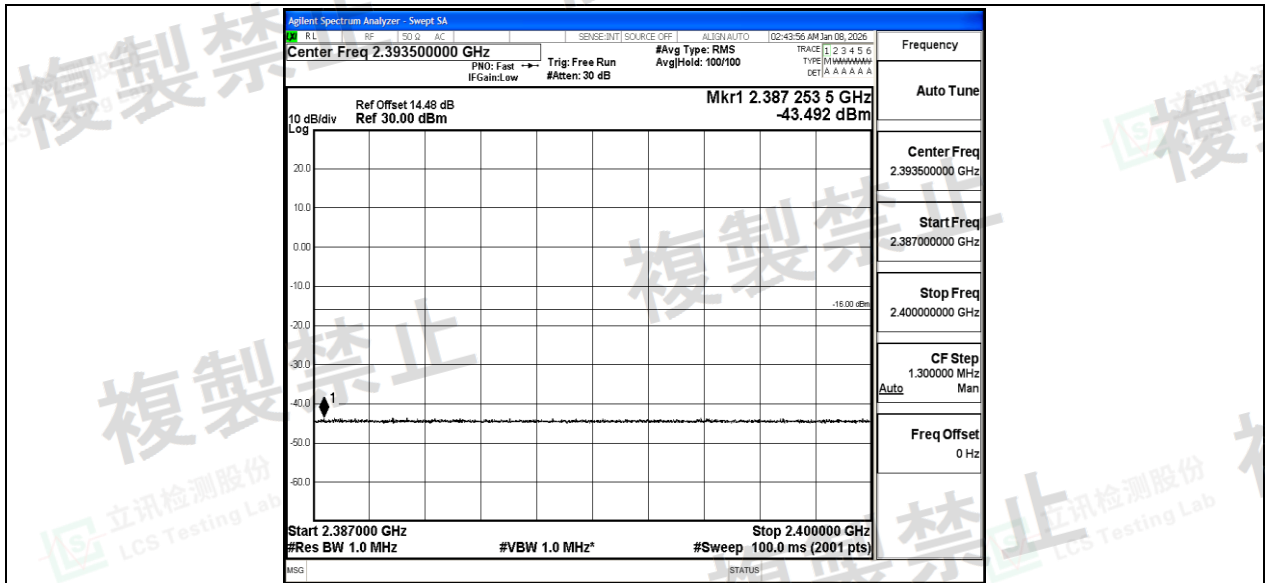


NTNV_BLE_2M_Ant1_2480_1000~2387

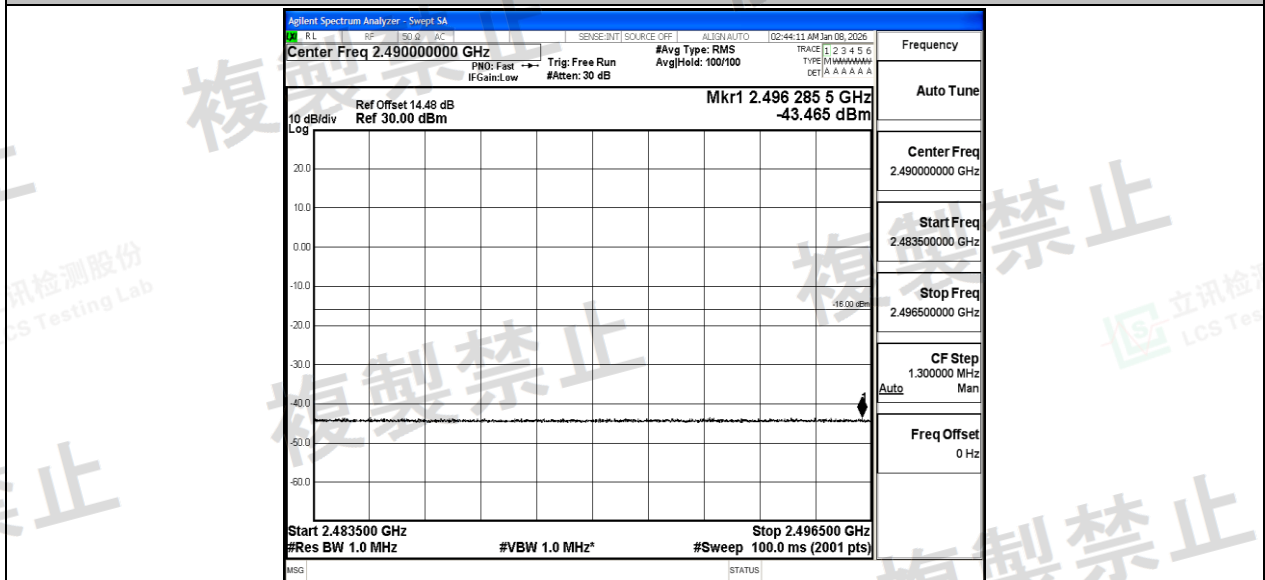


NTNV_BLE_2M_Ant1_2480_2387~2400

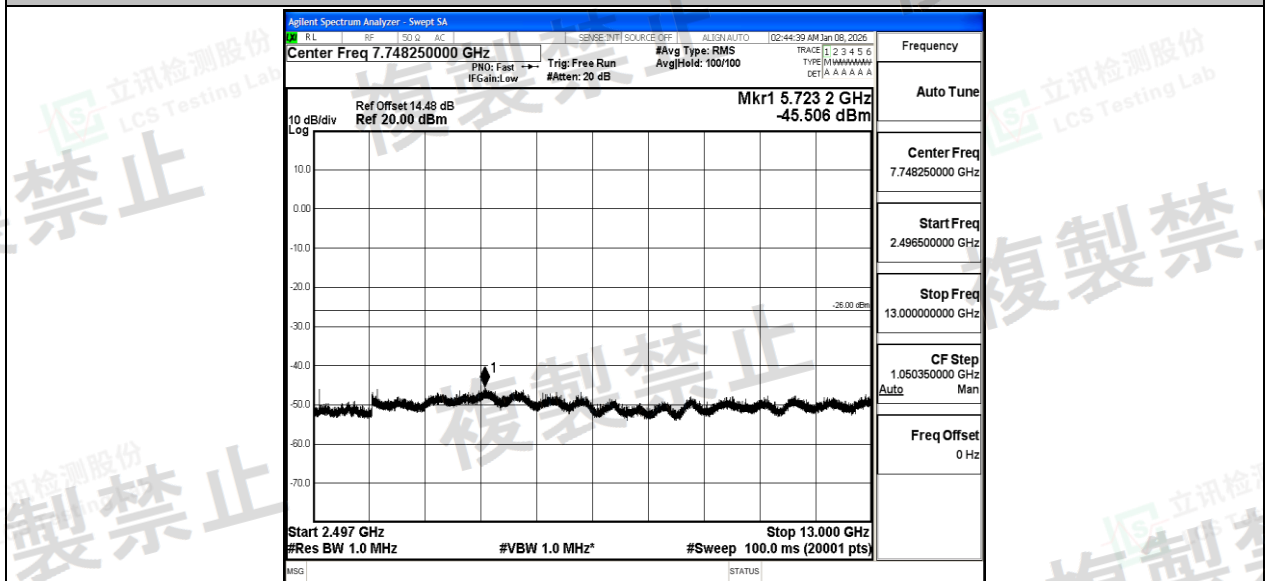




NTNV_BLE_2M_Ant1_2480_2483.5~2496.5



NTNV_BLE_2M_Ant1_2480_2496.5~13000





B.6 Spurious Emission of RX

Test Result

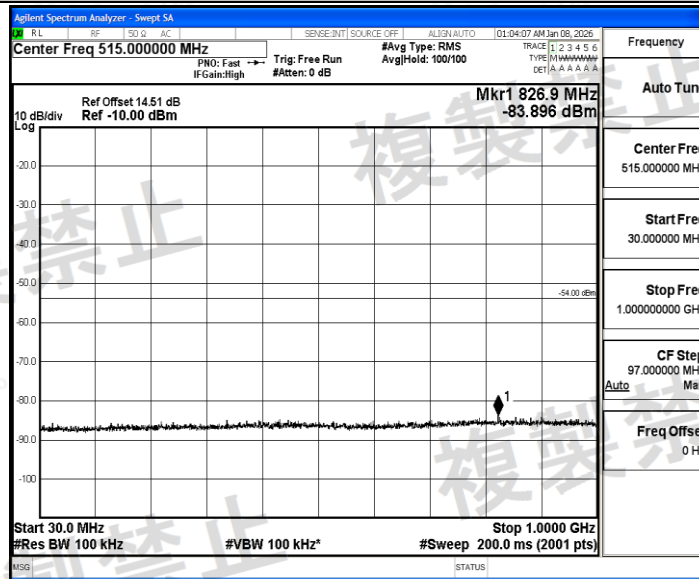
TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	-83.9	≤-54	0.00407	≤4	PASS
				1000~12500	-66.11	≤-47	0.24491	≤20	PASS
			2440	30~1000	-84.32	≤-54	0.00370	≤4	PASS
				1000~12500	-66.63	≤-47	0.21727	≤20	PASS
			2480	30~1000	-84.11	≤-54	0.00388	≤4	PASS
				1000~12500	-67.16	≤-47	0.19231	≤20	PASS
	BLE_2M	Ant1	2402	30~1000	-84.24	≤-54	0.00377	≤4	PASS
				1000~12500	-67.05	≤-47	0.19724	≤20	PASS
			2440	30~1000	-83.21	≤-54	0.00478	≤4	PASS
				1000~12500	-66.77	≤-47	0.21038	≤20	PASS
			2480	30~1000	-83.91	≤-54	0.00406	≤4	PASS
				1000~12500	-66.76	≤-47	0.21086	≤20	PASS



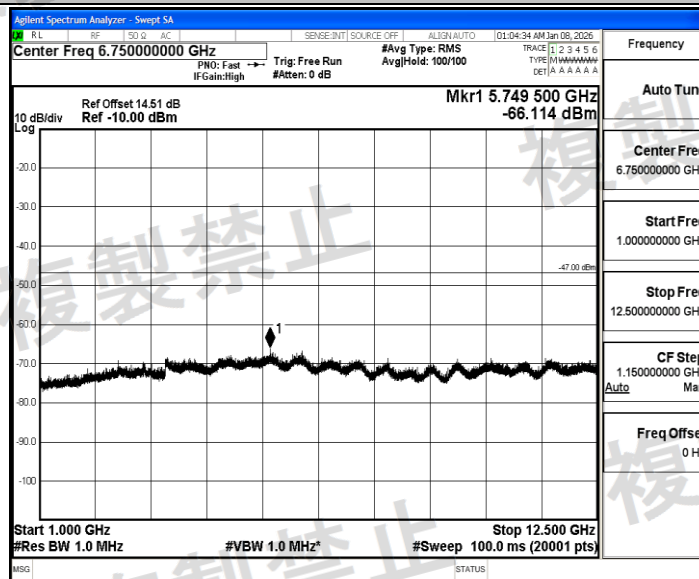


Test Graphs

NTNV_BLE_1M_Ant1_2402_30~1000

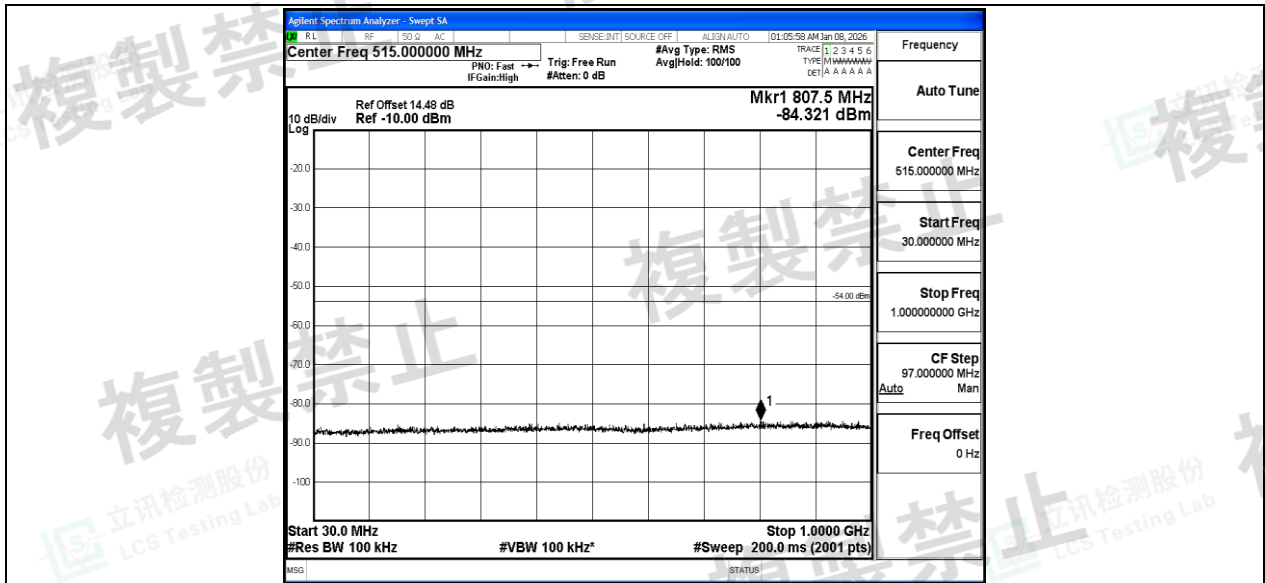


NTNV_BLE_1M_Ant1_2402_1000~12500

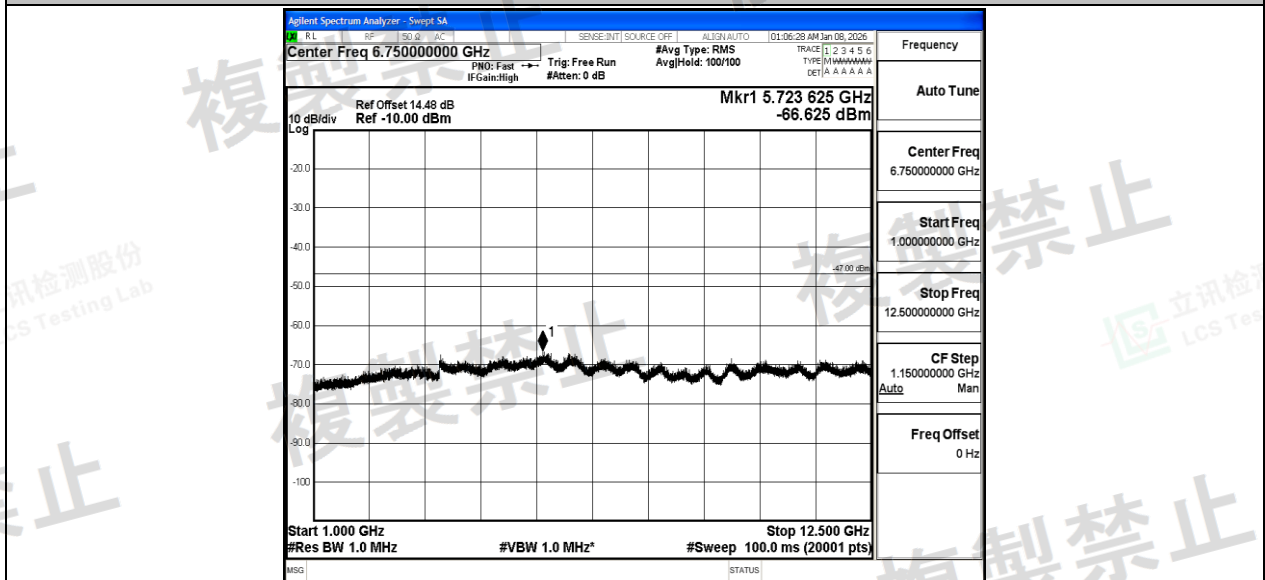


NTNV_BLE_1M_Ant1_2440_30~1000

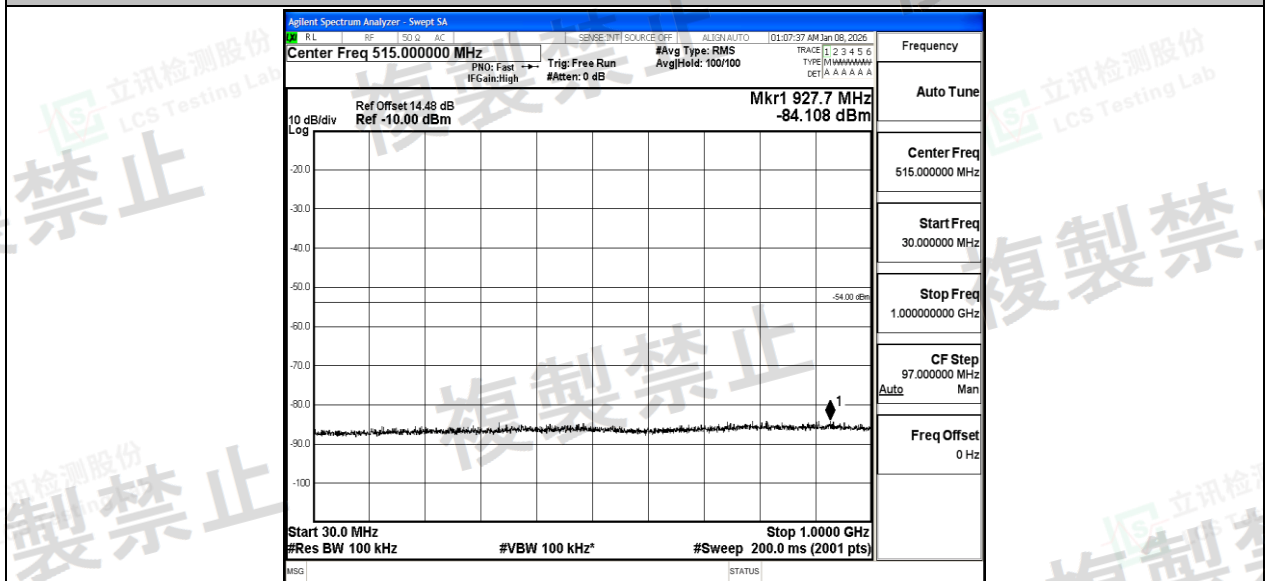




NTNV_BLE_1M_Ant1_2440_1000~12500

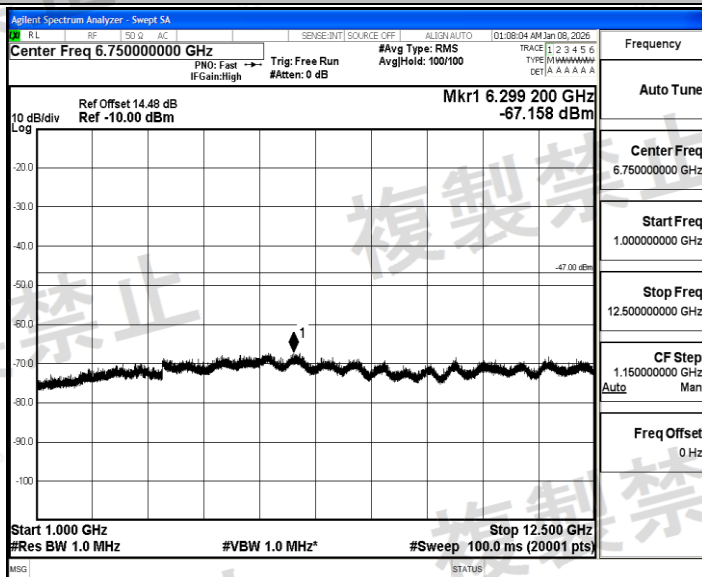


NTNV_BLE_1M_Ant1_2480_30~1000

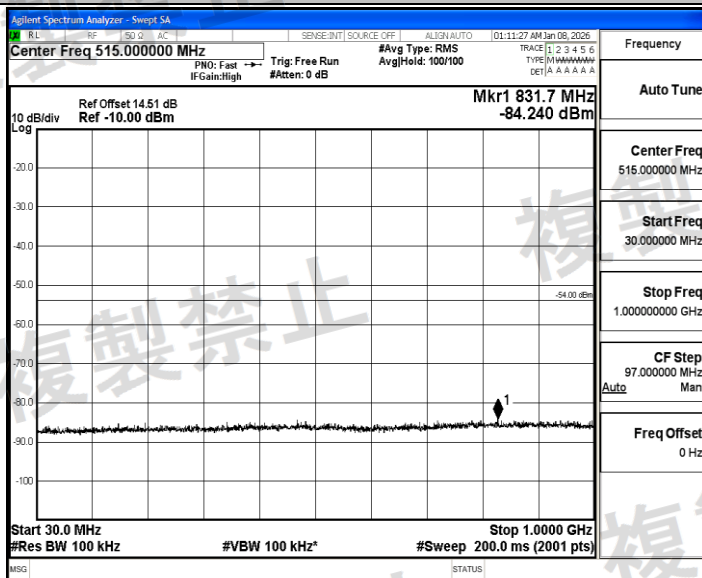




NTNV_BLE_1M_Ant1_2480_1000~12500

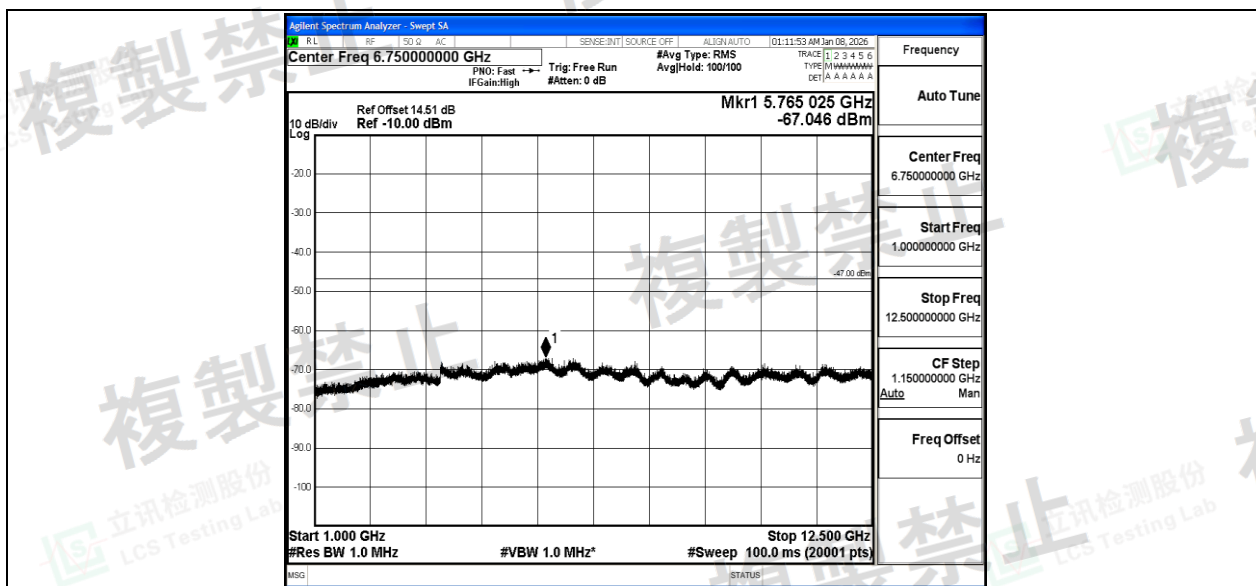


NTNV_BLE_2M_Ant1_2402_30~1000

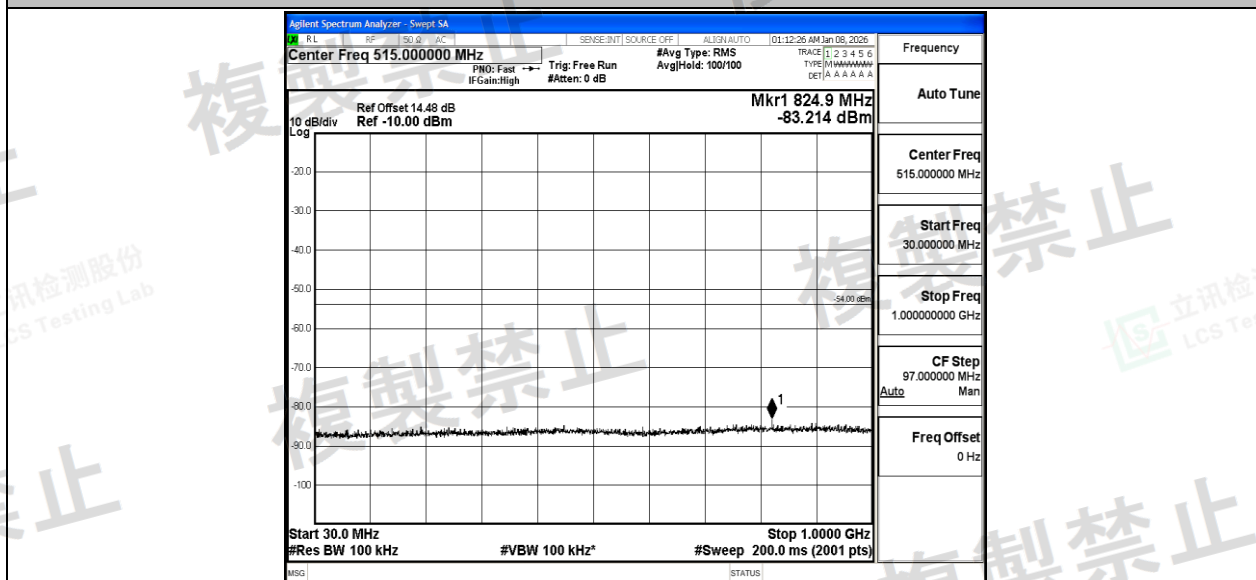


NTNV_BLE_2M_Ant1_2402_1000~12500

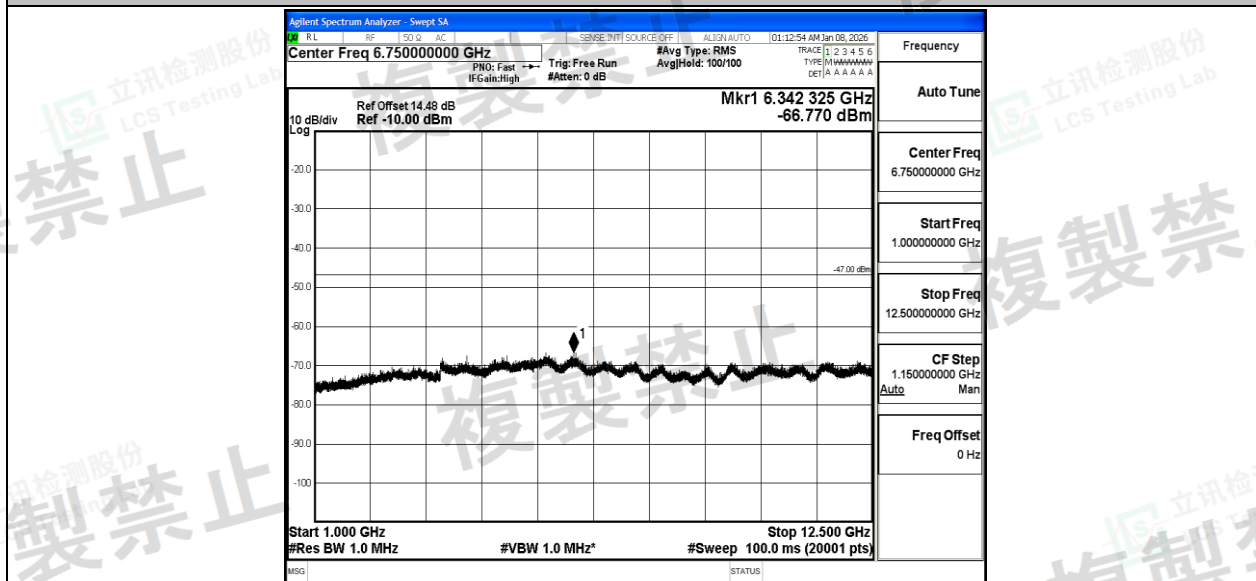




NTNV_BLE_2M_Ant1_2440_30~1000

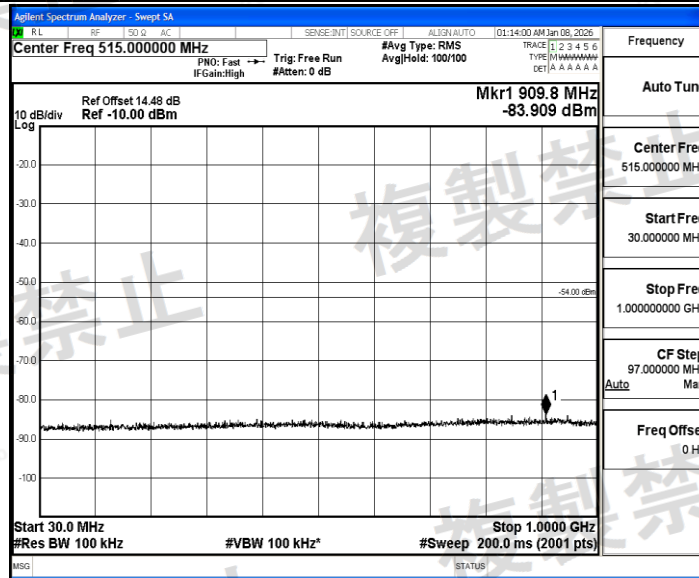


NTNV_BLE_2M_Ant1_2440_1000~12500





NTNV_BLE_2M_Ant1_2480_30~1000



NTNV_BLE_2M_Ant1_2480_1000~12500

