



Appendix B for BT LE 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





B.1 Frequency Error

Test Result

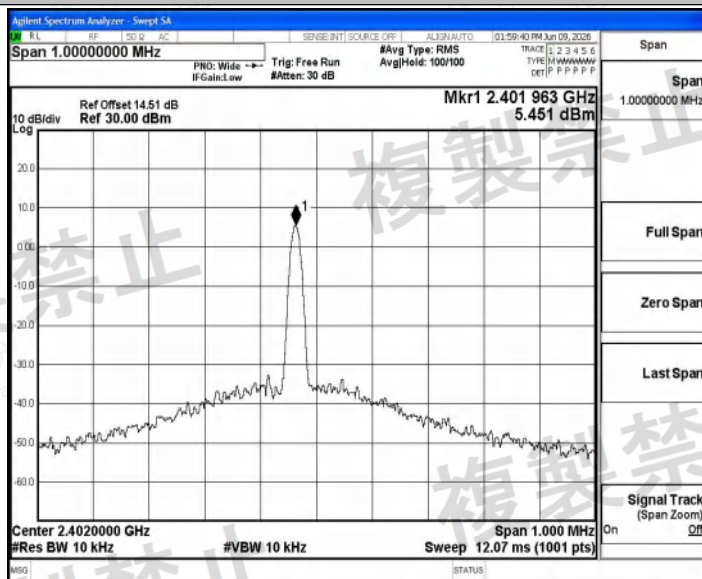
TestCondition	TestMode	Antenna	Frequency [MHz]	Test Frequency [MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2402	2401.963	-15.40383	±50	PASS
			2440	2439.962	-15.57377	±50	PASS
			2480	2479.961	-15.72581	±50	PASS



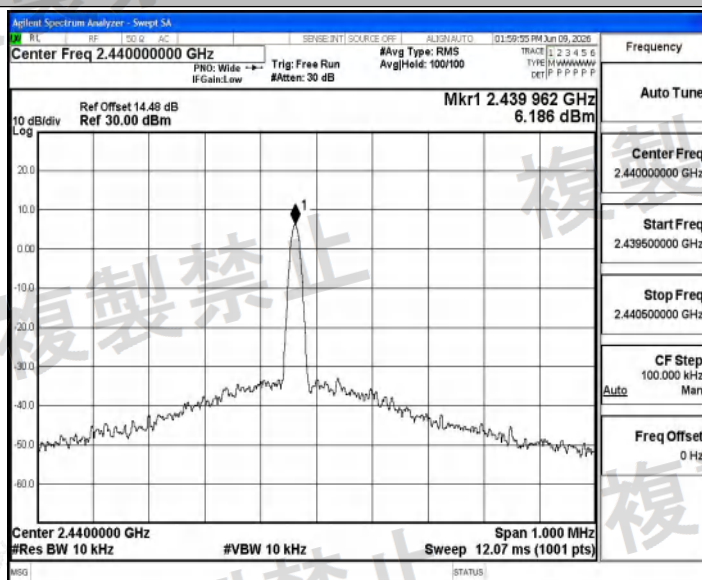


Test Graphs

NTNV_Ant1_2402

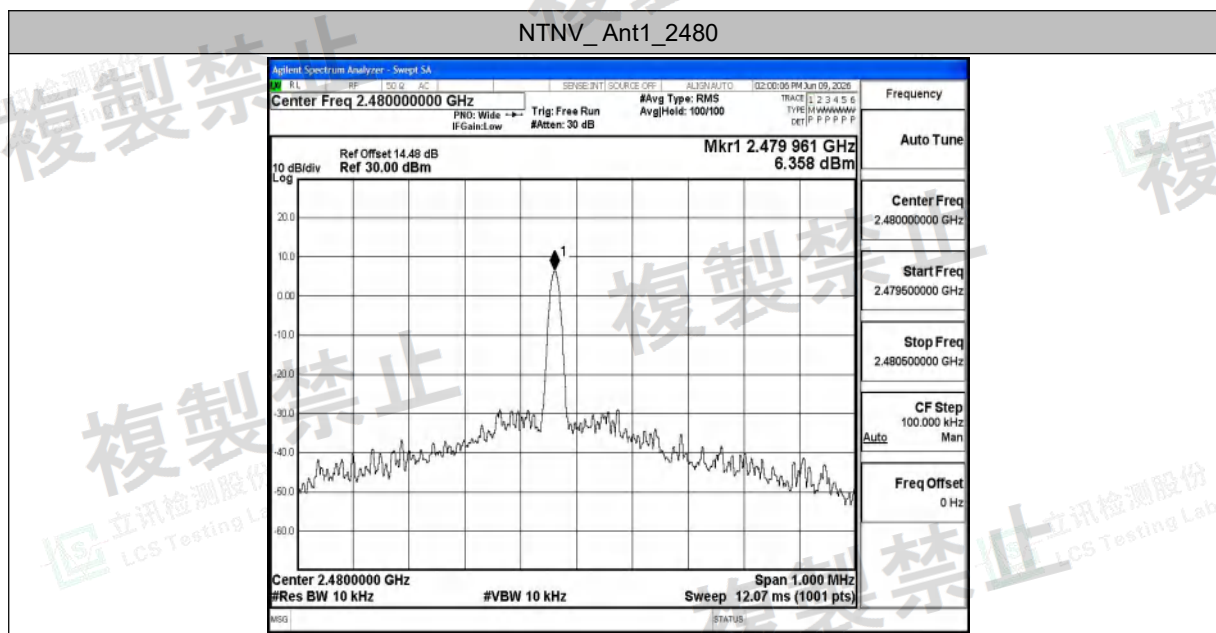


NTNV_Ant1_2440





NTNV_Ant1_2480





B.2 Antenna Power & EIRP

Test Result

Antenna Power							
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [dBm]	Result [mW]	Limit [mW]	Verdict
NTNV	BLE_1M	Ant1	2402	5.68	3.6983	≤10	PASS
			2440	6.56	4.5290	≤10	PASS
			2480	6.71	4.6881	≤10	PASS
	BLE_2M	Ant1	2402	5.78	3.7844	≤10	PASS
			2440	6.65	4.6238	≤10	PASS
			2480	6.81	4.7973	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency[MHz]	Power (mW)	Rated Power (mW)	Result (%)	Limit (%)	Verdict
NTNV	BLE_1M	Ant1	2402	3.6983	5.0	-26.03	+20	PASS
			2440	4.5290	5.0	-9.42	+20	PASS
			2480	4.6881	5.0	-6.24	+20	PASS
	BLE_2M	Ant1	2402	3.7844	5.0	-24.31	+20	PASS
			2440	4.6238	5.0	-7.52	+20	PASS
			2480	4.7973	5.0	-4.05	+20	PASS

EIRP								
TestCondition	TestMode	Antenna	Frequency[MHz]	Measured Power (dBm/MHz)	Antenna gain (dBi)	EIRP (dBm)	Limit (dBm)	Verdict
NTNV	BLE_1M	Ant1	2402	5.68	3.06	8.74	≤12.14	PASS
			2440	6.56	3.06	9.62	≤12.14	PASS
			2480	6.71	3.06	9.77	≤12.14	PASS
	BLE_2M	Ant1	2402	5.78	3.06	8.84	≤12.14	PASS
			2440	6.65	3.06	9.71	≤12.14	PASS
			2480	6.81	3.06	9.87	≤12.14	PASS





B.3 Occupied Bandwidth

Test Result

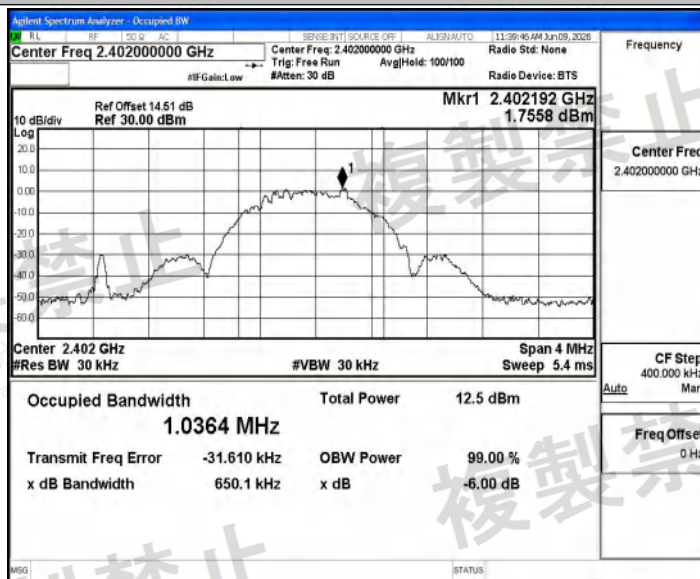
TestCondition	TestMode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	1.036	≤26	PASS
			2440	1.042	≤26	PASS
			2480	1.035	≤26	PASS
	BLE_2M	Ant1	2402	2.061	≤26	PASS
			2440	2.059	≤26	PASS
			2480	2.067	≤26	PASS



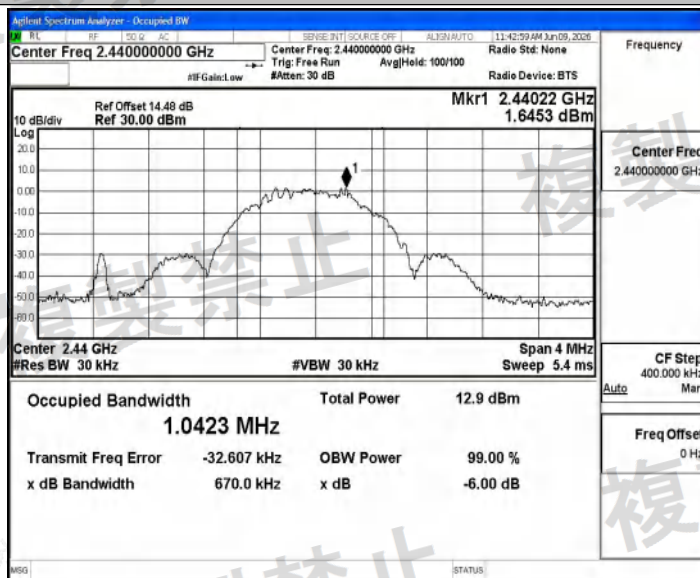


Test Graphs

NTNV_BLE_1M_Ant1_2402

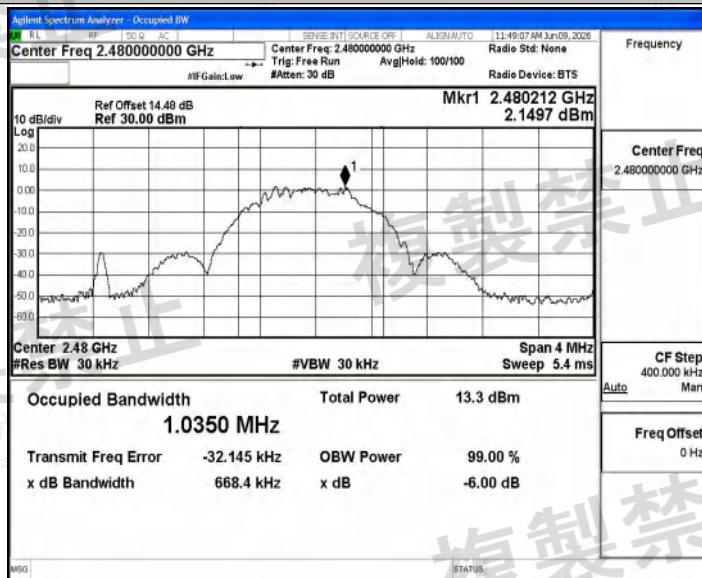


NTNV_BLE_1M_Ant1_2440

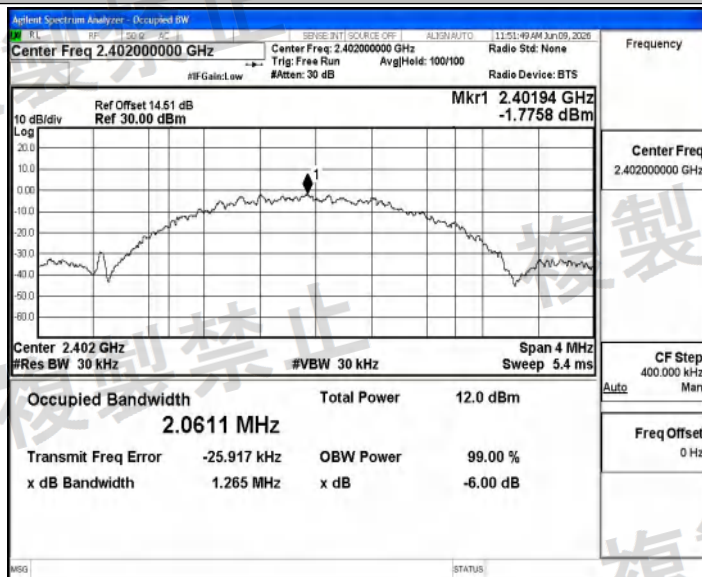




NTNV_BLE_1M_Ant1_2480

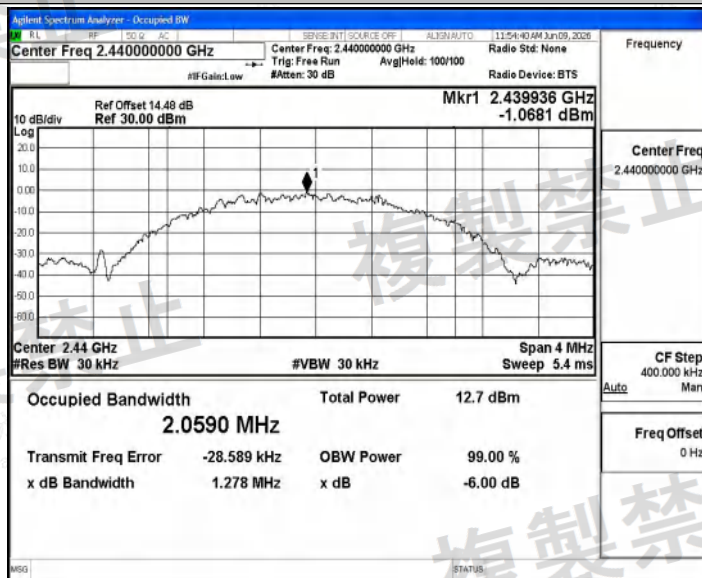


NTNV_BLE_2M_Ant1_2402

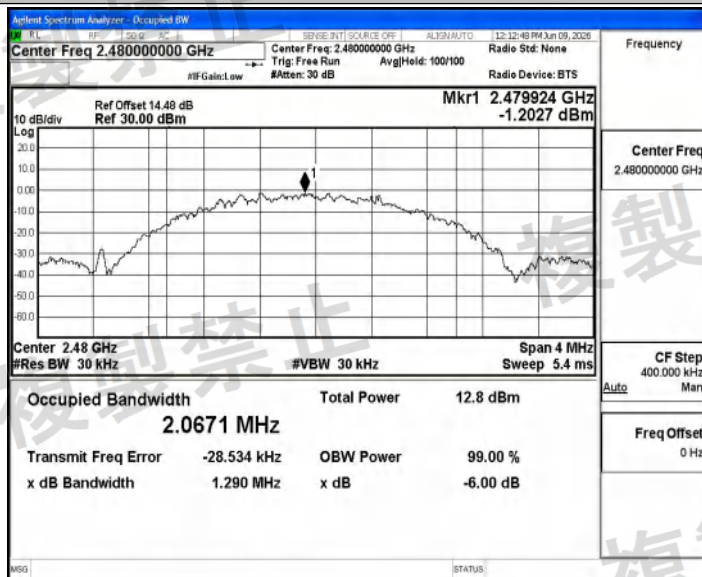




NTNV_BLE_2M_Ant1_2440



NTNV_BLE_2M_Ant1_2480





B.4 Spread Bandwidth

Test Result

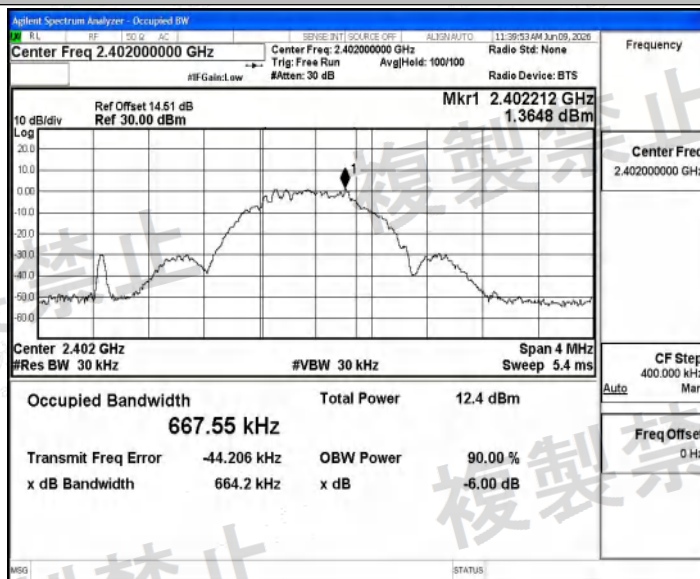
TestCondition	TestMode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	0.668	---	PASS
			2440	0.668	---	PASS
			2480	0.668	---	PASS
	BLE_2M	Ant1	2402	1.348	---	PASS
			2440	1.357	---	PASS
			2480	1.365	---	PASS



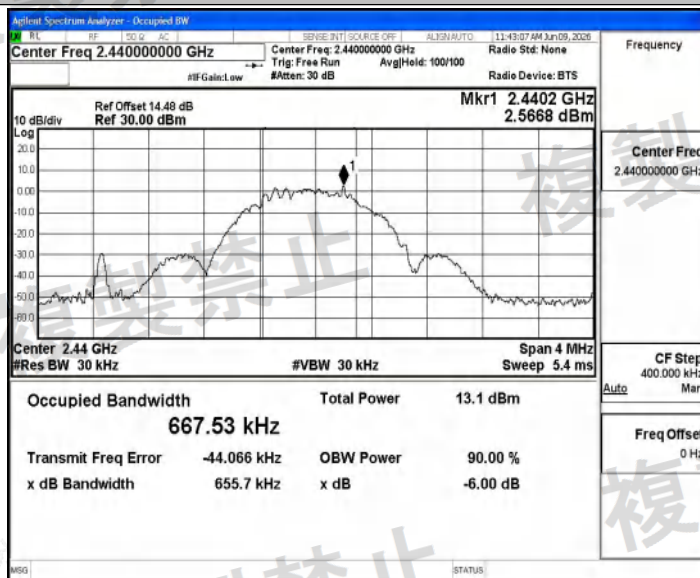


Test Graphs

NTNV_BLE_1M_Ant1_2402

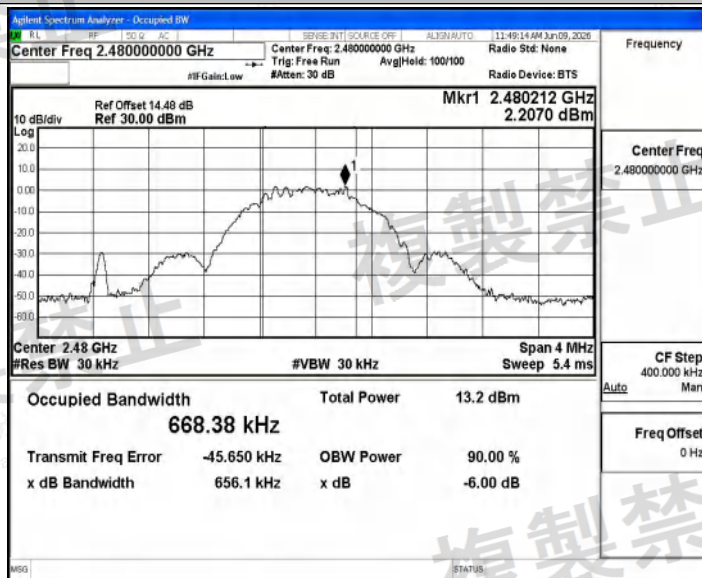


NTNV_BLE_1M_Ant1_2440

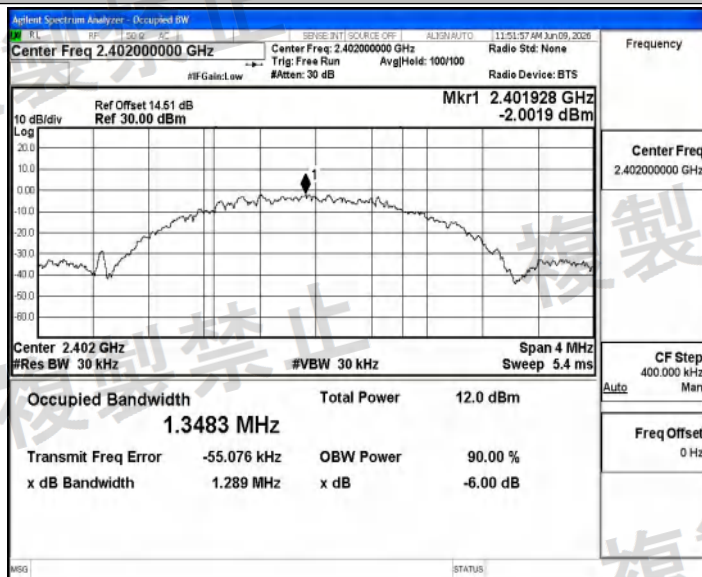




NTNV_BLE_1M_Ant1_2480

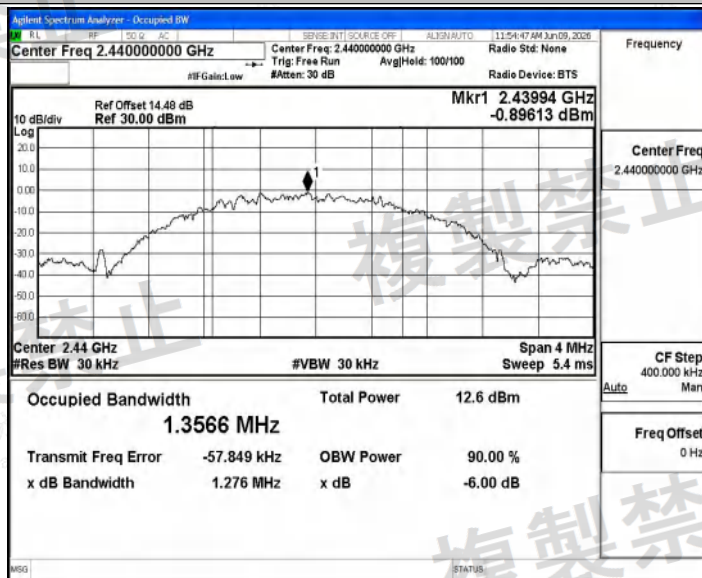


NTNV_BLE_2M_Ant1_2402

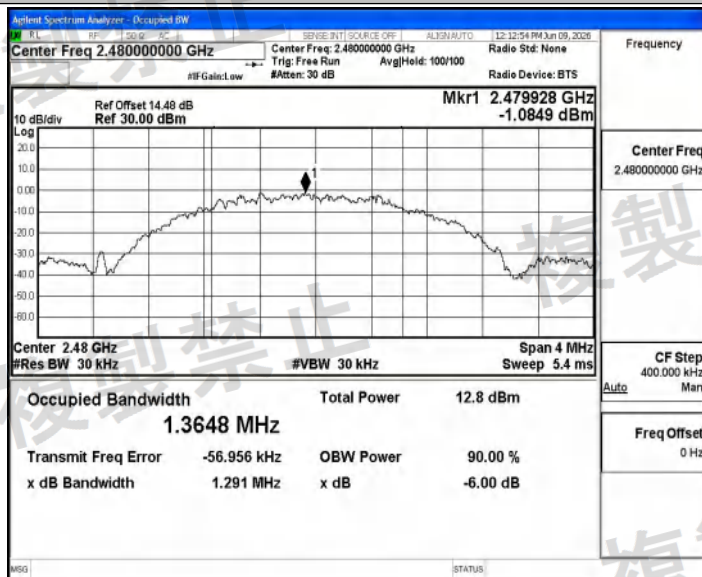




NTNV_BLE_2M_Ant1_2440



NTNV_BLE_2M_Ant1_2480





B.5 Spurious Emission of TX

Test Result

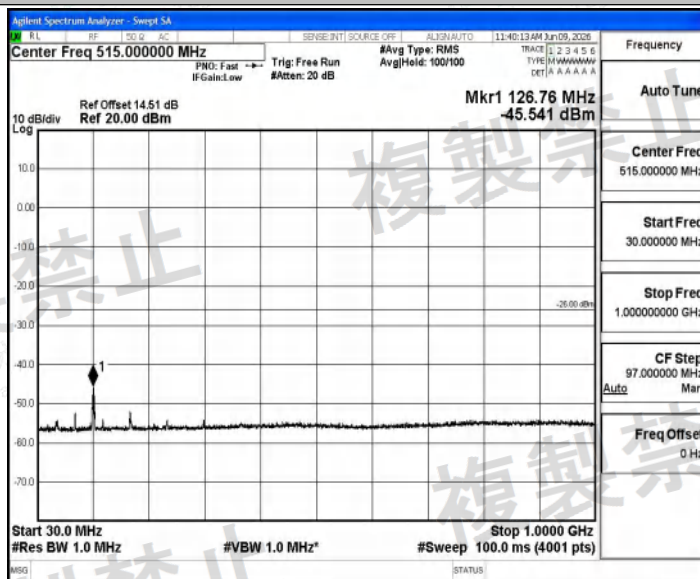
TestCondition	TestMode	Antenna	Frequency [MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	-45.54	≤-26	0.02793	≤2.5	PASS
				1000~2387	-44.94	≤-26	0.03206	≤2.5	PASS
				2387~2400	-30.22	≤-16	0.95060	≤25	PASS
				2483.5~2496.5	-43.25	≤-16	0.04732	≤25	PASS
				2496.5~13000	-39.15	≤-26	0.12162	≤2.5	PASS
			2440	30~1000	-45.03	≤-26	0.03141	≤2.5	PASS
				1000~2387	-48.38	≤-26	0.01452	≤2.5	PASS
				2387~2400	-41.97	≤-16	0.06353	≤25	PASS
				2483.5~2496.5	-42.34	≤-16	0.05834	≤25	PASS
				2496.5~13000	-38.97	≤-26	0.12677	≤2.5	PASS
			2480	30~1000	-45.49	≤-26	0.02825	≤2.5	PASS
				1000~2387	-47.22	≤-26	0.01897	≤2.5	PASS
				2387~2400	-43.46	≤-16	0.04508	≤25	PASS
				2483.5~2496.5	-39.18	≤-16	0.12078	≤25	PASS
				2496.5~13000	-39.68	≤-26	0.10765	≤2.5	PASS
	BLE_2M	Ant1	2402	30~1000	-46.20	≤-26	0.02399	≤2.5	PASS
				1000~2387	-45.09	≤-26	0.03097	≤2.5	PASS
				2387~2400	-19.15	≤-16	12.16186	≤25	PASS
				2483.5~2496.5	-43.34	≤-16	0.04634	≤25	PASS
				2496.5~13000	-39.37	≤-26	0.11561	≤2.5	PASS
			2440	30~1000	-40.41	≤-26	0.09099	≤2.5	PASS
				1000~2387	-49.02	≤-26	0.01253	≤2.5	PASS
				2387~2400	-42.18	≤-16	0.06053	≤25	PASS
				2483.5~2496.5	-41.69	≤-16	0.06776	≤25	PASS
				2496.5~13000	-39.51	≤-26	0.11194	≤2.5	PASS
			2480	30~1000	-46.02	≤-26	0.02500	≤2.5	PASS
				1000~2387	-46.85	≤-26	0.02065	≤2.5	PASS
				2387~2400	-43.32	≤-16	0.04656	≤25	PASS
				2483.5~2496.5	-40.49	≤-16	0.08933	≤25	PASS
				2496.5~13000	-39.52	≤-26	0.11169	≤2.5	PASS



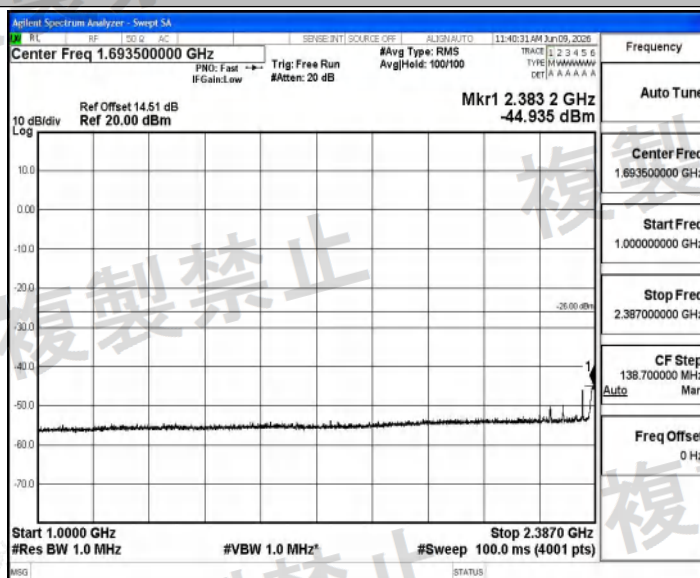


Test Graphs

NTNV_BLE_1M_Ant1_2402_30~1000

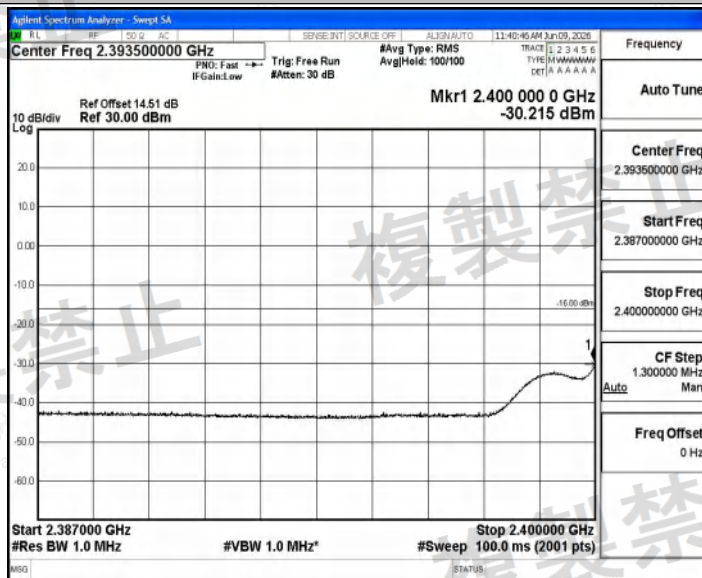


NTNV_BLE_1M_Ant1_2402_1000~2387

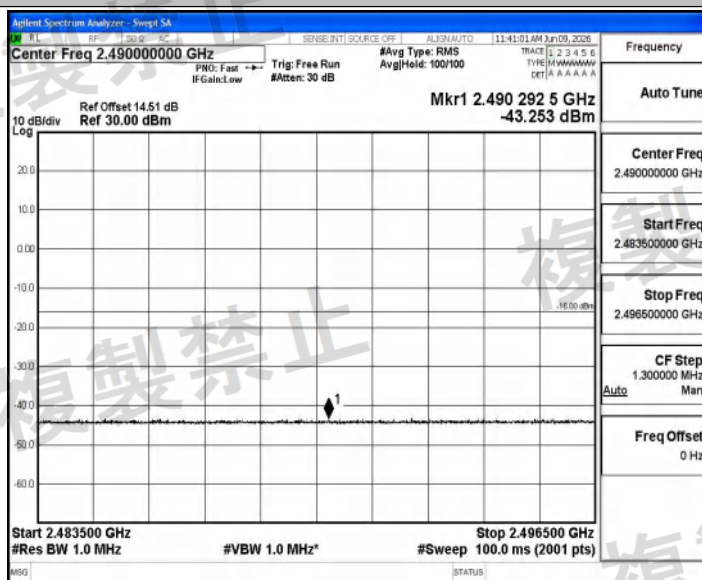




NTNV_BLE_1M_Ant1_2402_2387~2400

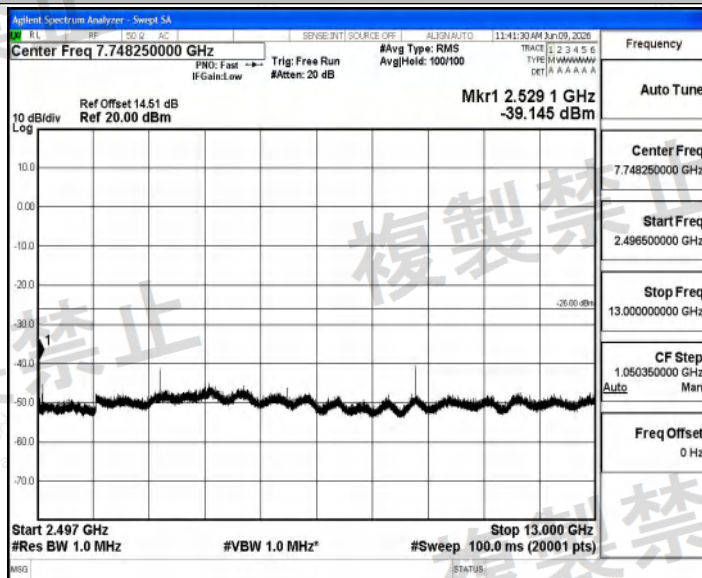


NTNV_BLE_1M_Ant1_2402_2483.5~2496.5

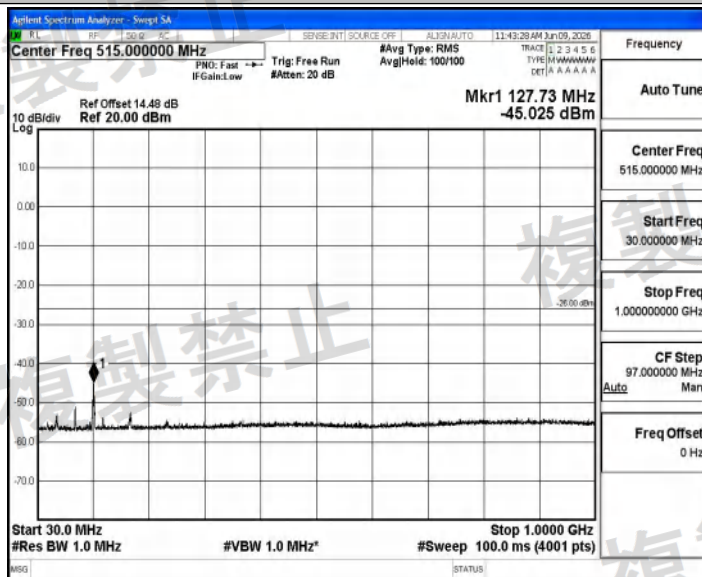




NTNV_BLE_1M_Ant1_2402_2496.5~13000

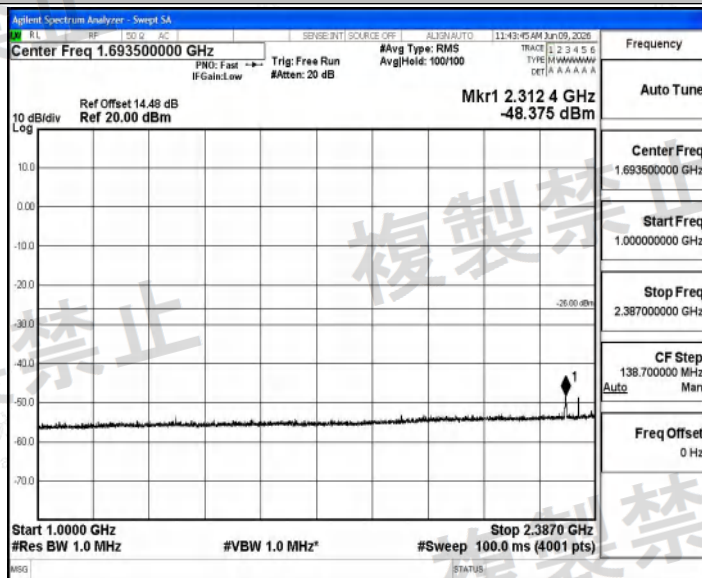


NTNV_BLE_1M_Ant1_2440_30~1000

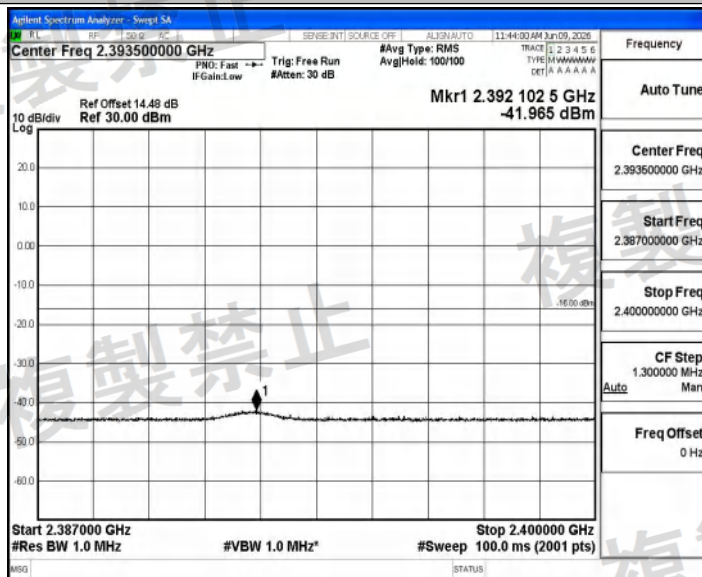




NTNV_BLE_1M_Ant1_2440_1000~2387

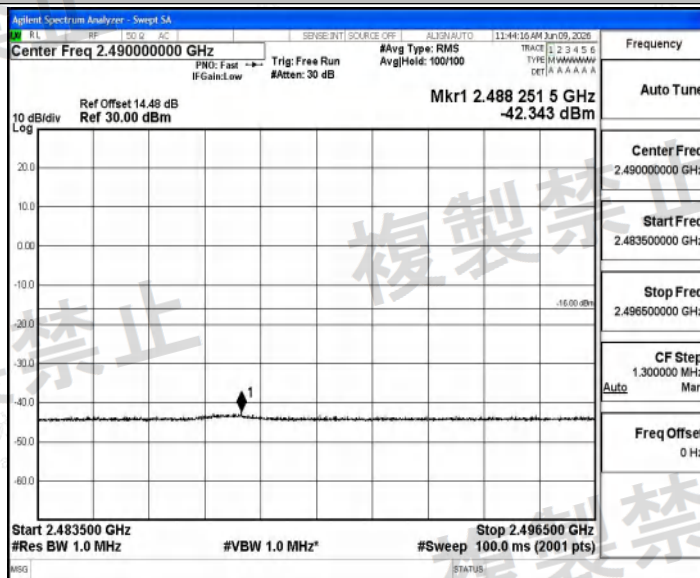


NTNV_BLE_1M_Ant1_2440_2387~2400

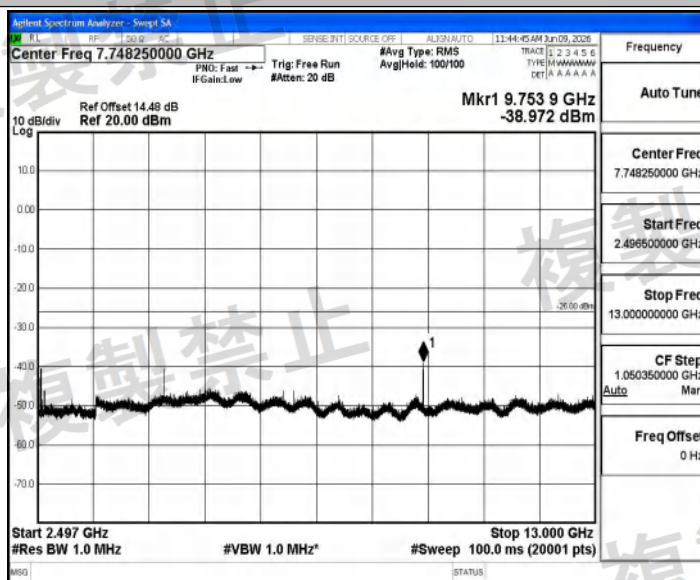




NTNV_BLE_1M_Ant1_2440_2483.5~2496.5

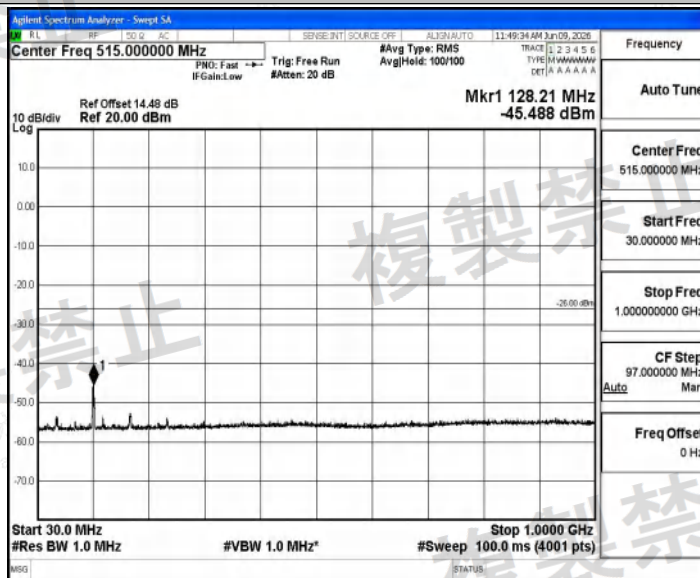


NTNV_BLE_1M_Ant1_2440_2496.5~13000

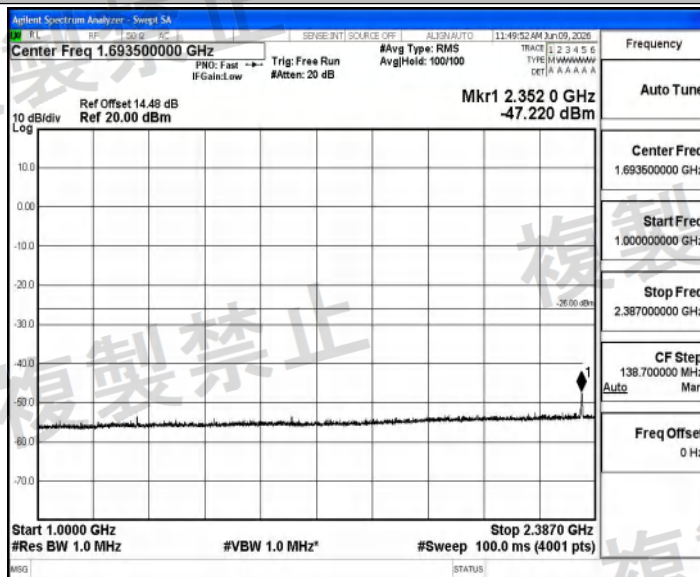




NTNV_BLE_1M_Ant1_2480_30~1000

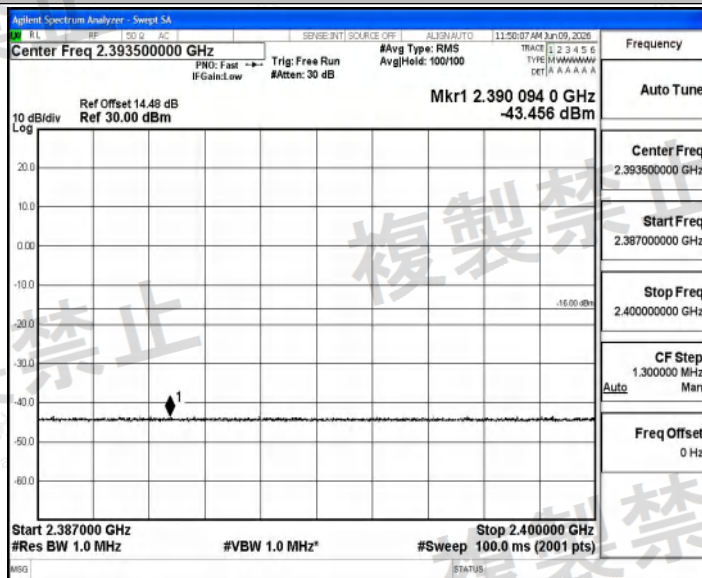


NTNV_BLE_1M_Ant1_2480_1000~2387

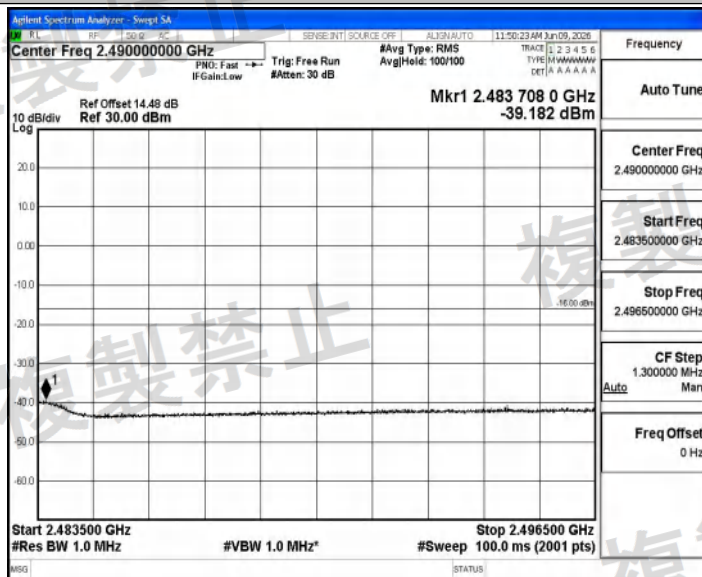




NTNV_BLE_1M_Ant1_2480_2387~2400

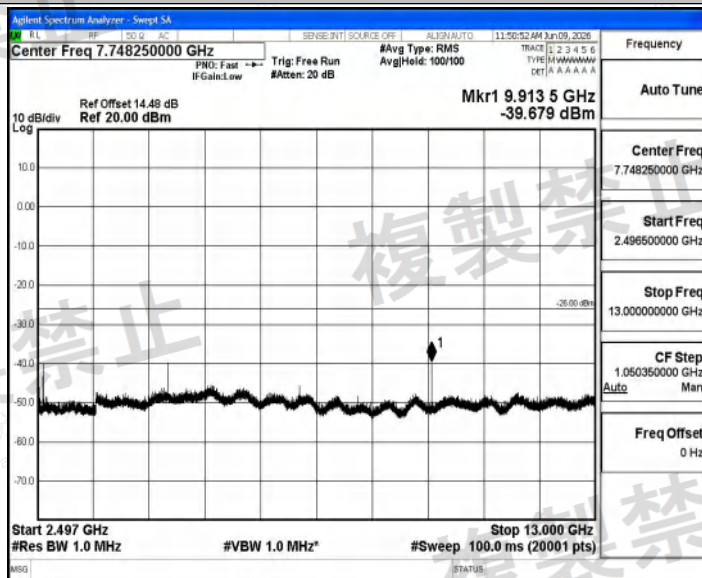


NTNV_BLE_1M_Ant1_2480_2483.5~2496.5

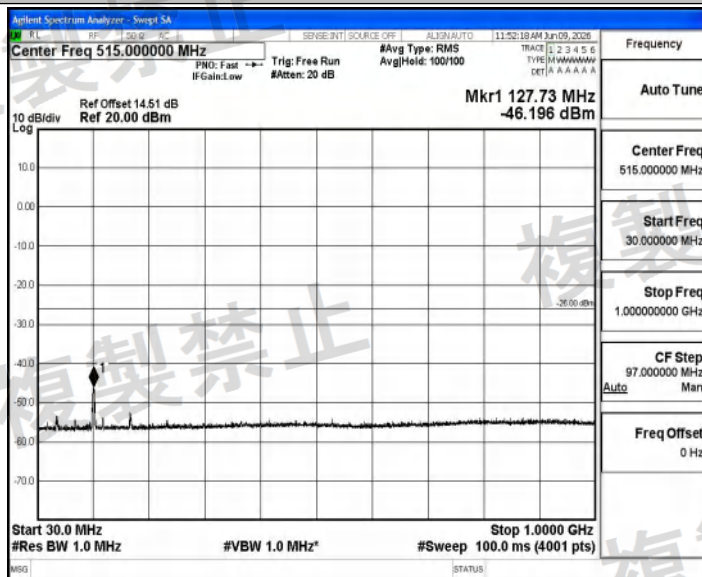




NTNV_BLE_1M_Ant1_2480_2496.5~13000

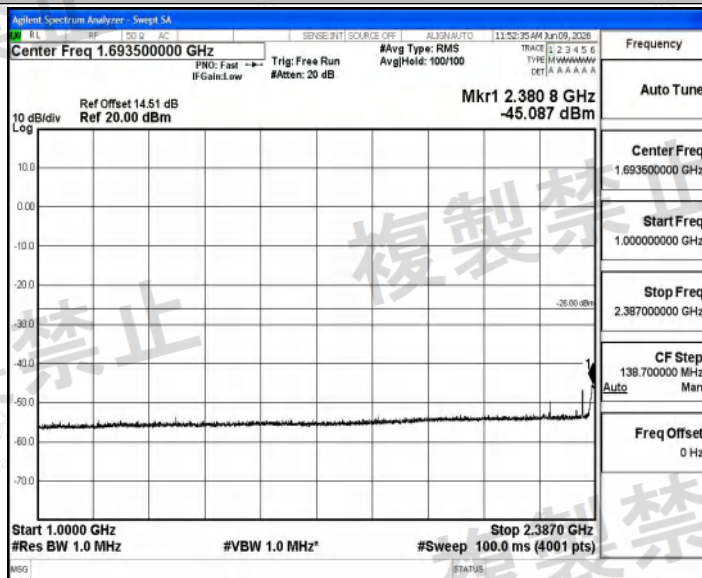


NTNV_BLE_2M_Ant1_2402_30~1000

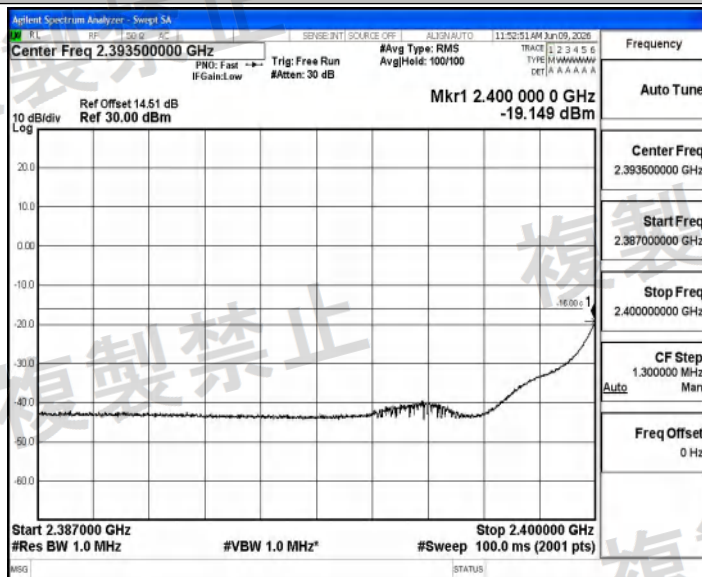




NTNV_BLE_2M_Ant1_2402_1000~2387

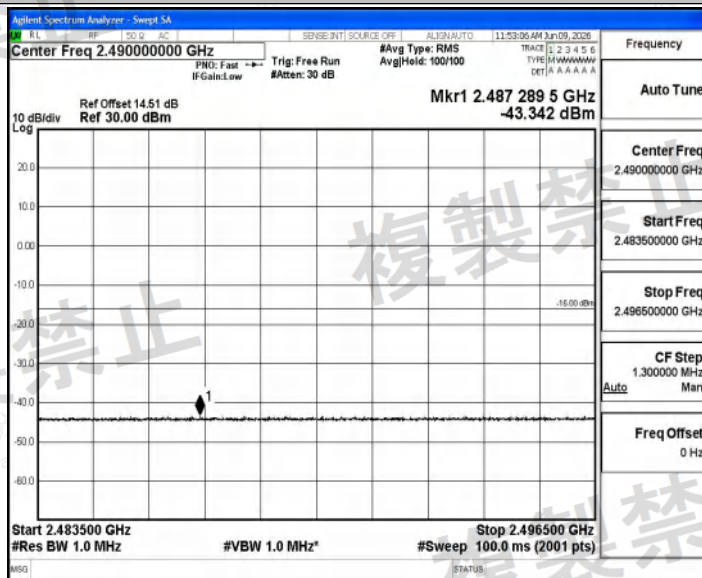


NTNV_BLE_2M_Ant1_2402_2387~2400

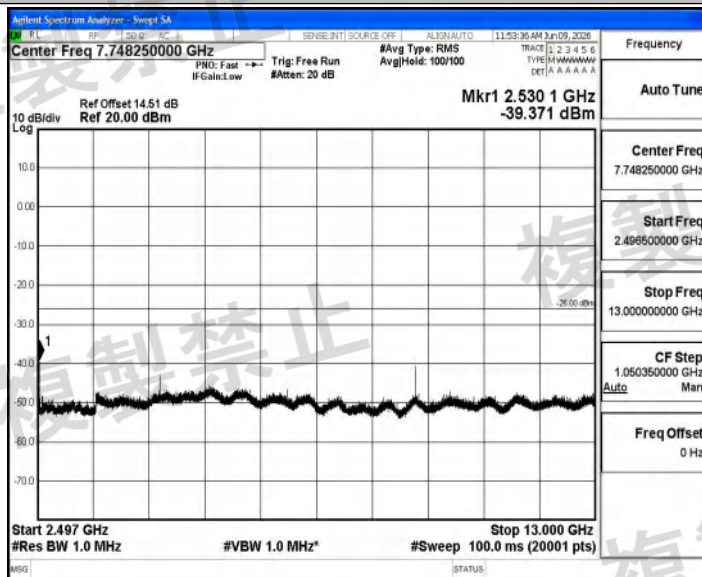




NTNV_BLE_2M_Ant1_2402_2483.5~2496.5

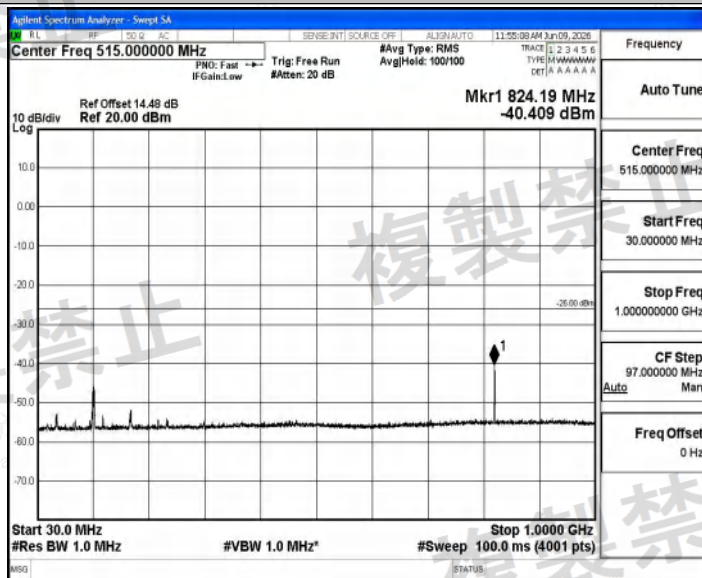


NTNV_BLE_2M_Ant1_2402_2496.5~13000

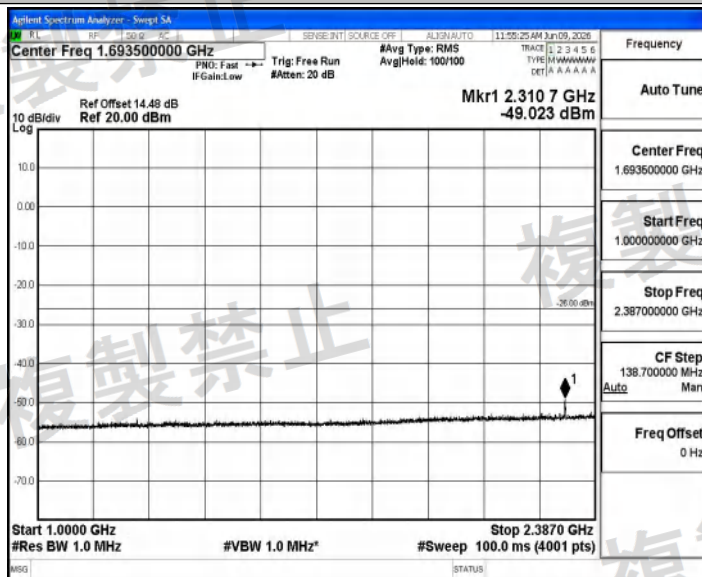




NTNV_BLE_2M_Ant1_2440_30~1000

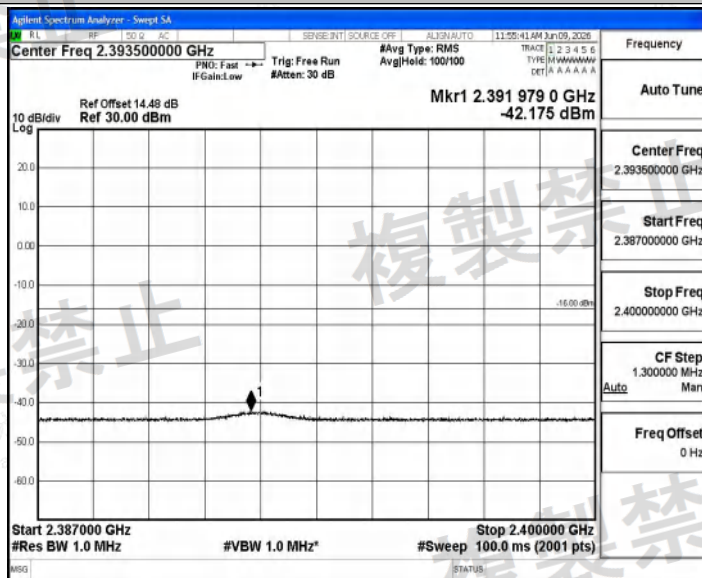


NTNV_BLE_2M_Ant1_2440_1000~2387

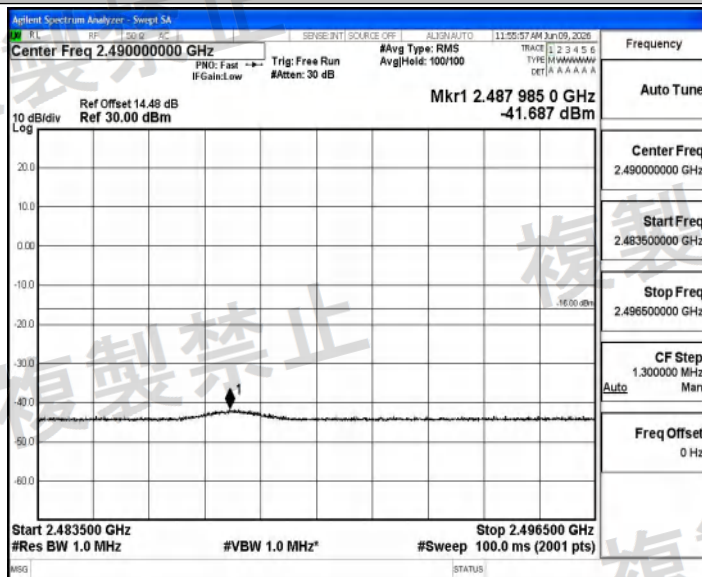




NTNV_BLE_2M_Ant1_2440_2387~2400

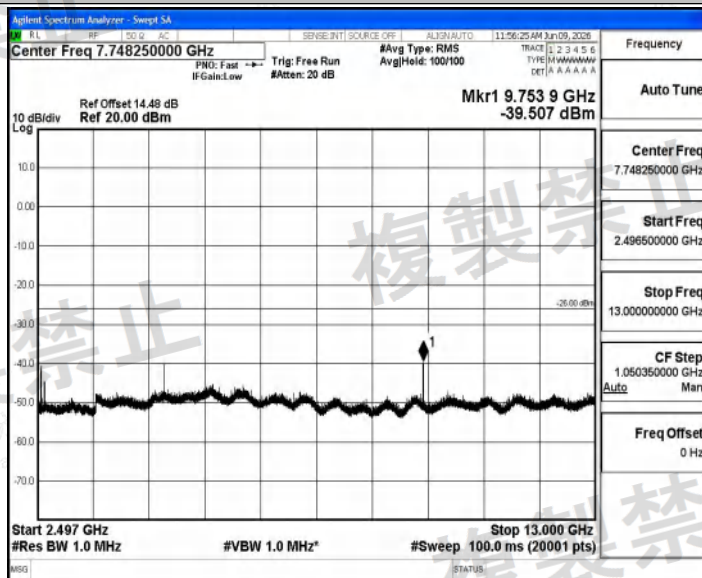


NTNV_BLE_2M_Ant1_2440_2483.5~2496.5

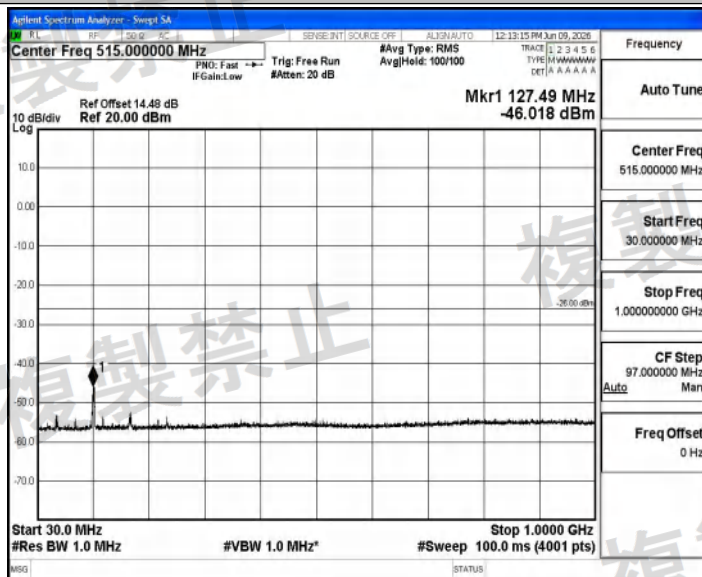




NTNV_BLE_2M_Ant1_2440_2496.5~13000

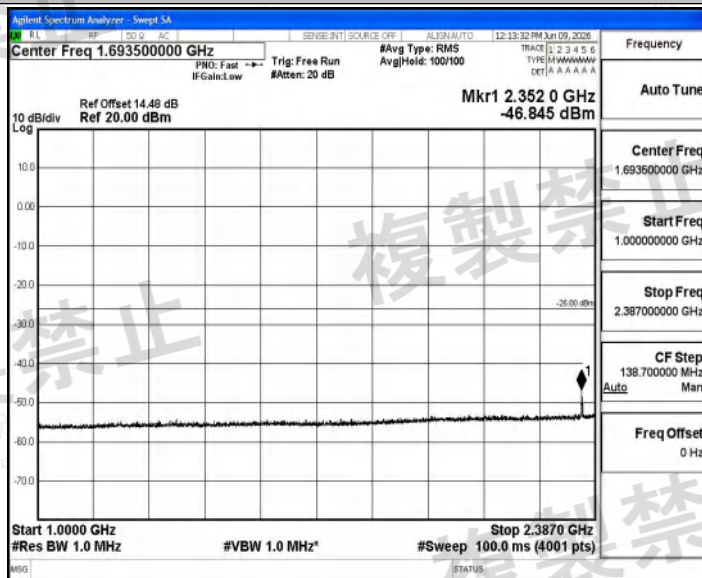


NTNV_BLE_2M_Ant1_2480_30~1000

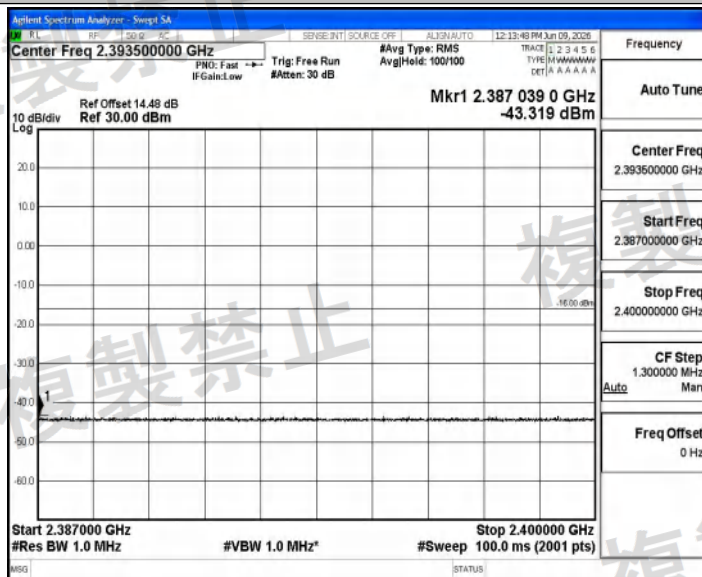




NTNV_BLE_2M_Ant1_2480_1000~2387

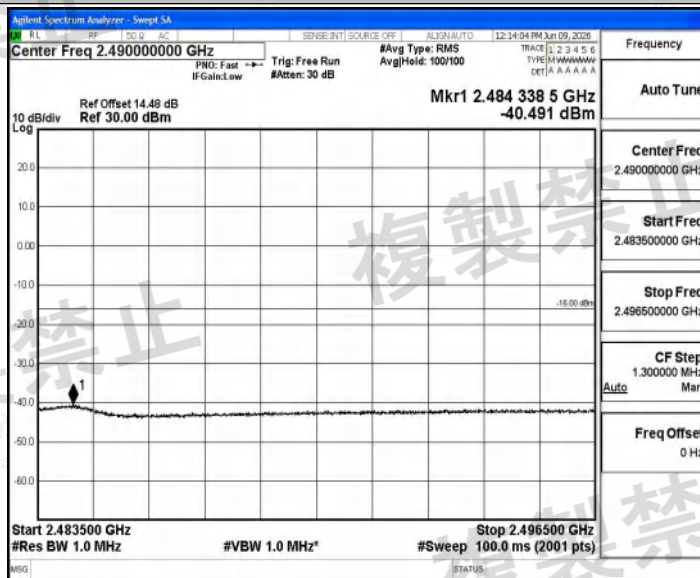


NTNV_BLE_2M_Ant1_2480_2387~2400

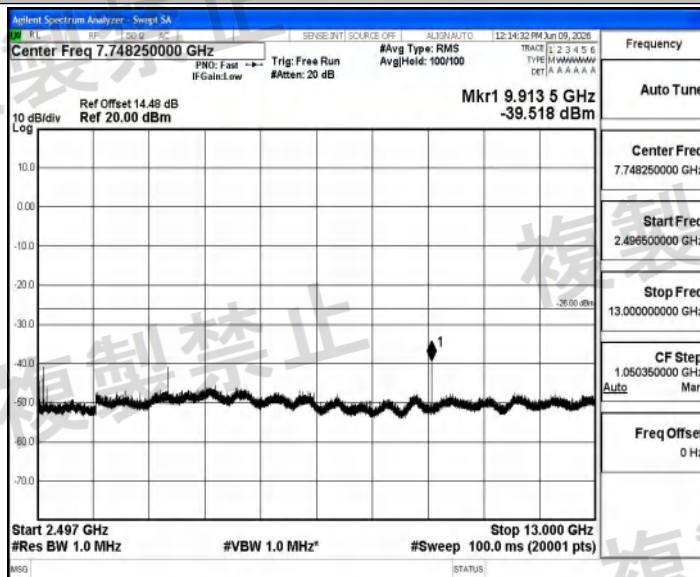




NTNV_BLE_2M_Ant1_2480_2483.5~2496.5



NTNV_BLE_2M_Ant1_2480_2496.5~13000





B.6 Spurious Emission of RX

Test Result

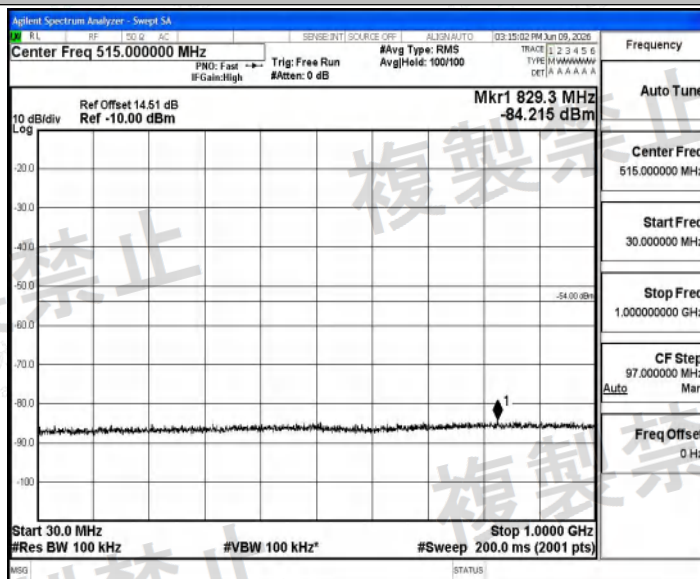
TestCondition	TestMode	Antenna	Frequency [MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	-84.22	≤-54	0.00378	≤4	PASS
				1000~12500	-67.27	≤-47	0.18750	≤20	PASS
			2440	30~1000	-84.23	≤-54	0.00378	≤4	PASS
				1000~12500	-67.04	≤-47	0.19770	≤20	PASS
			2480	30~1000	-83.6	≤-54	0.00437	≤4	PASS
				1000~12500	-66.78	≤-47	0.20989	≤20	PASS
	BLE_2M	Ant1	2402	30~1000	-84.22	≤-54	0.00378	≤4	PASS
				1000~12500	-67.29	≤-47	0.18664	≤20	PASS
			2440	30~1000	-83	≤-54	0.00501	≤4	PASS
				1000~12500	-66.72	≤-47	0.21281	≤20	PASS
			2480	30~1000	-84.24	≤-54	0.00377	≤4	PASS
				1000~12500	-66.8	≤-47	0.20893	≤20	PASS



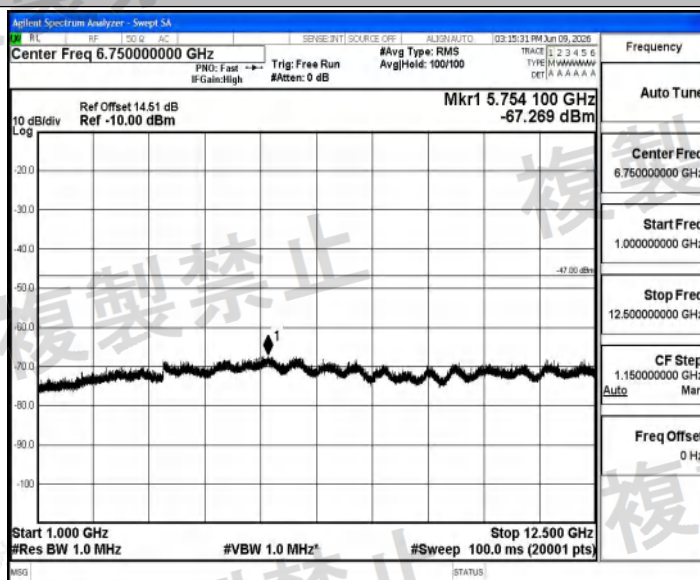


Test Graphs

NTNV_BLE_1M_Ant1_2402_30~1000

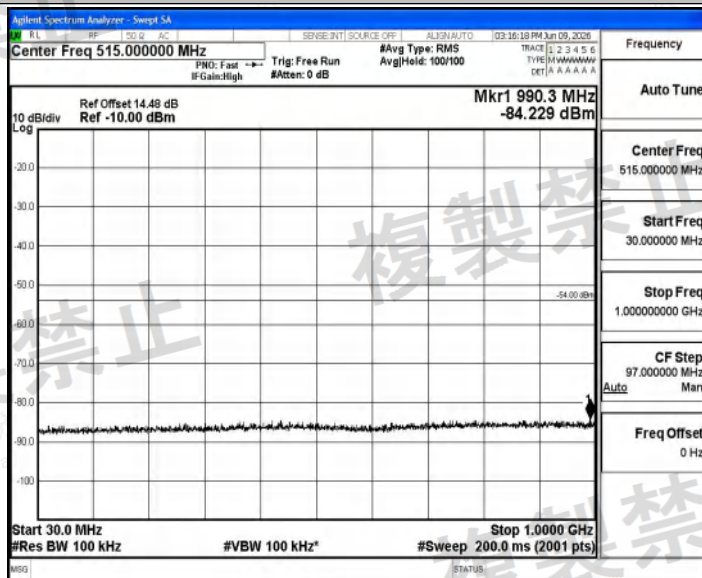


NTNV_BLE_1M_Ant1_2402_1000~12500

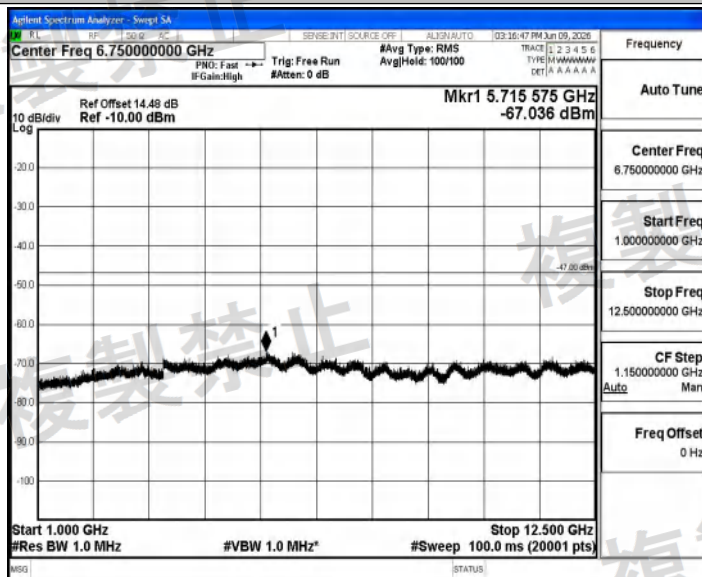




NTNV_BLE_1M_Ant1_2440_30~1000

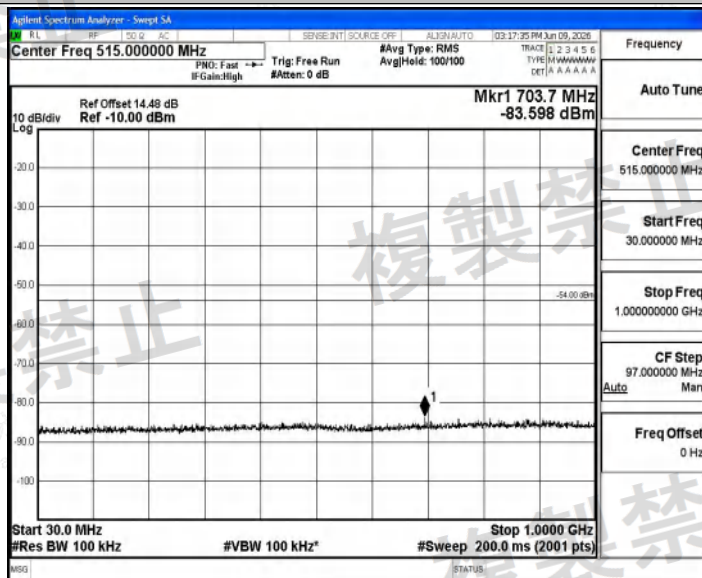


NTNV_BLE_1M_Ant1_2440_1000~12500

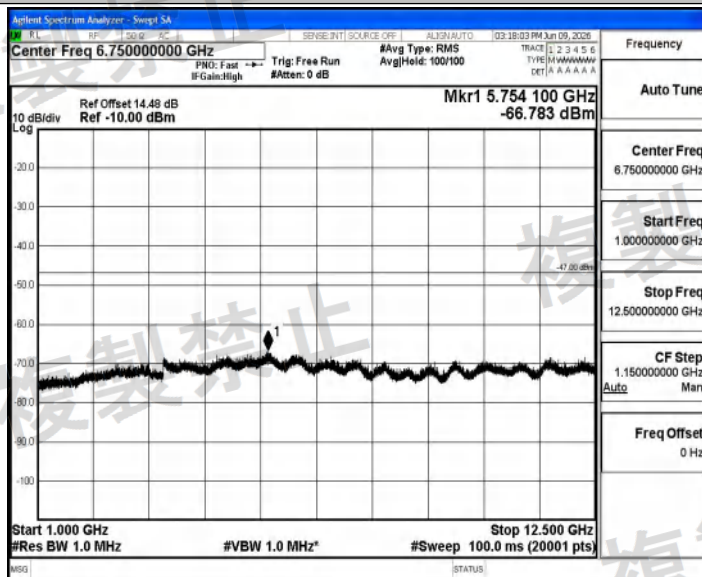




NTNV_BLE_1M_Ant1_2480_30~1000

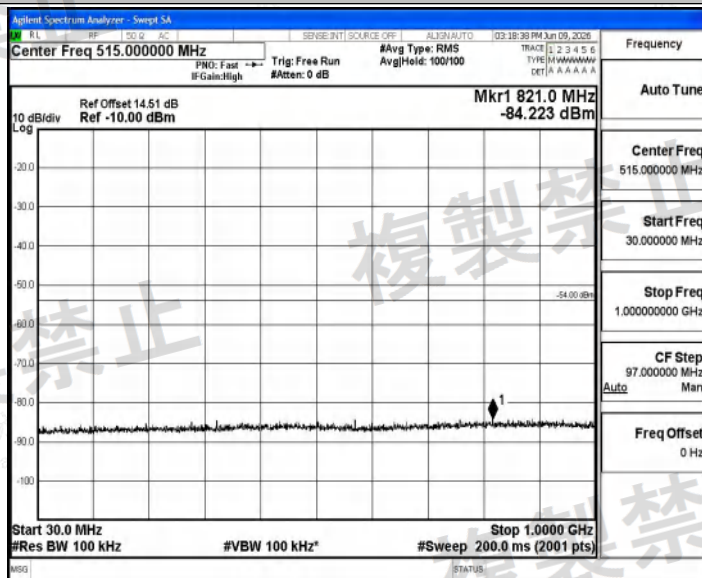


NTNV_BLE_1M_Ant1_2480_1000~12500

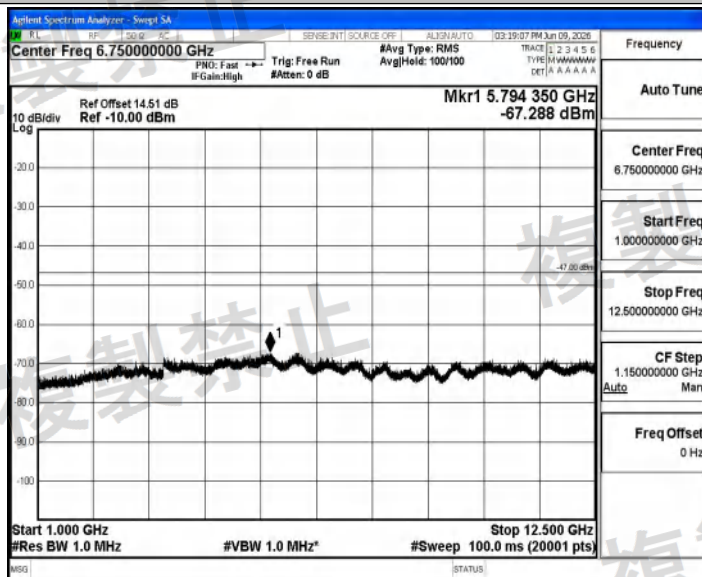




NTNV_BLE_2M_Ant1_2402_30~1000

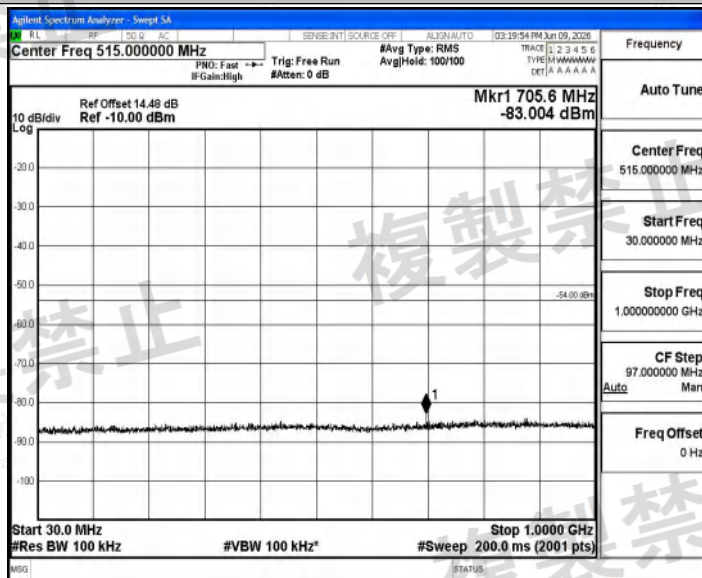


NTNV_BLE_2M_Ant1_2402_1000~12500

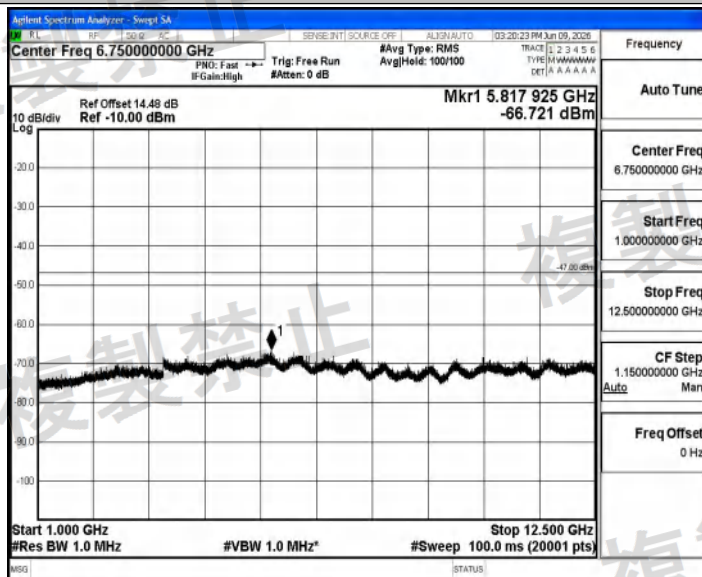




NTNV_BLE_2M_Ant1_2440_30~1000

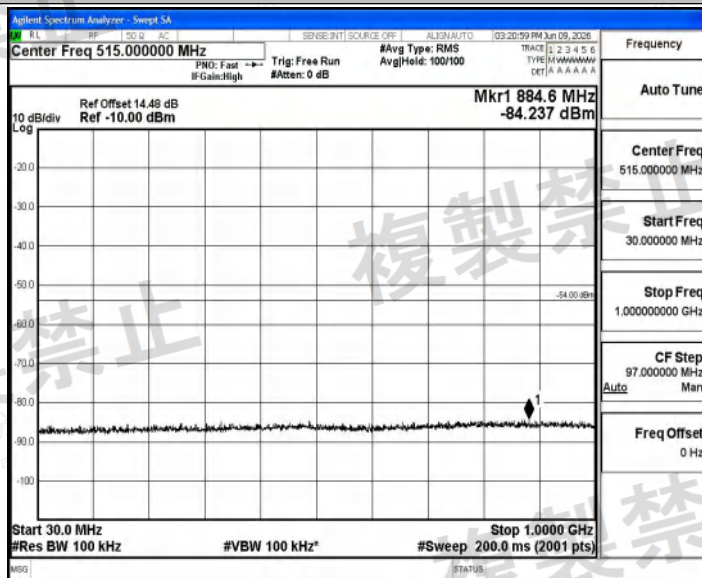


NTNV_BLE_2M_Ant1_2440_1000~12500





NTNV_BLE_2M_Ant1_2480_30~1000



NTNV_BLE_2M_Ant1_2480_1000~12500

