

Test report No: 6252093.50

TEST REPORT

Radio Spectrum Matters (RF)

Identification of item tested	Battery Pack
Trademark	FESTOOL
Model and /or type reference	BP 18 Li 4,0 HPC-ASI BP 18 TBX 4 C-ASI
Features	18 Vdc
Applicant's name / address	Nanjing Chervon Industry Co., Ltd. 529 Jiang-jun Rd., Jiangning Economic & Technical Development Zone, Nanjing, Jiangsu 211106 P.R. China.
Test method requested, standard	Article 2, Paragraph 1, Item 19 ARIB STD-T66 V3.8 MIC Notice No.88 Appendix No.43
Verdict Summary	IN COMPLIANCE
Prepared by (name / position & signature)	Adrian Shi Technical Supervisor 
Approved by (name / position & signature)	Lei Chen Senior Project Manager 
Date of issue	2026-02-28
Report template No	TRF_STDT66_RF03 V1.2

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
5. The information provided by the customer in this report may affect the validity of the results, the test lab is not responsible for it.
6. This report will not be used for social proof function in China market.

UNCERTAINTY

For all measurements where guidance for the calculation of the instrumentation uncertainty of a measurement is specified in the product standard, the measurement instrumentation uncertainty has been calculated and applied in accordance with these standards.

Uncertainties have been calculated according to the Dekra internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%. Refer to the Annex 1 for further information.

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to calculate the uncertainty associated with the measurement result, unless the specification, standard or customer have special requirements.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	45% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☒ Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.			
☐ Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.			
Decimal separator used in this report	☒	Comma (,)	☐ Point (.)

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable

N/M : Not Measured

DOCUMENT HISTORY

Report nr.	Date	Description
6252093.50	2026-02-28	First release.

REMARKS AND COMMENTS

The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).

The test results relate only to the samples tested.

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According to the manufacturer, all models differ only in battery cell, and the schematic design and other aspects are the same.

We selected BP 18 TBX 4 C-ASI for testing, and the test results are also applicable to other models.

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Description of the item	Battery Pack
Model / Type number	BP 18 Li 4,0 HPC-ASI BP 18 TBX 4 C-ASI
Trademark	FESTOOL
Manufacturer	Nanjing Chervon Industry Co., Ltd. 529 Jiang-jun Rd., Jiangning Economic & Technical Development Zone, Nanjing, Jiangsu 211106 P.R. China.

Mode of Operation	Bluetooth BLE
Operating frequency range(s)	2402~2480 MHz
Type of Modulation	GFSK
PHYs	☒ LE 1M ☒ LE 2M ☐ LE Coded S=2/8
Data Rate	☒ 1 Mbps ☒ 2 Mbps ☐ 500/125 Kbps
Antenna type	PCB Antenna
Antenna gain	-7.3 dBi
Number of channel	40
Declared power	1 mW

Note: Antenna information was provided from applicant.

Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	DC:					
	☒	Battery: 18 Vdc					
Mounting position	☒	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☐	Other:					

Intended use of the Equipment Under Test (EUT)
The product is Battery Pack which supports BLE function.

1.2 Test date

Test Location	DEKRA Testing and Certification (Shanghai) Ltd. Building 6, No. 1050, Xingxian Road, Jiading District, Shanghai, China
Date of receipt of test item	2025-12-12
Date (s) of performance of tests	2025-12-12 to 2026-02-28

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Operating mode	Operating mode description	Used for methods	
		Conducted	Radiated
1	Transmitting	☒	☐
2	Receiving	☒	☐
Supplemental information: ---			

2.2 Support / Auxiliary equipment / unit / software for the EUT

The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment / unit / software	Type / Version	Manufacturer	Supplied by
Telnet	/	Nordic	Applicant
Laptop	Latitude 5488	DELL	DEKRA
Supplemental information: ---			

2.3 Power supply voltage fluctuation test

Voltage Fluctuation Test	Normal Voltage	High Voltage (Normal Voltage +10%)	Low Voltage (Normal Voltage -10%)
Input to EUT	DC 18V	DC 19.8V	DC 16.2V
Input voltage to the RF chip	DC 3.3V	DC 3.3V	DC 3.3V
Deviation (%)	/		

Note:

Changing the supply voltage of the EUT will not change the voltage of the RF module. During the input supply voltage to the EUT from the external power source is varied by +/- 10%, if output voltage had been confirmed that the fluctuation of power supply to the RF deviation of EUT (excluding power source) is equal to or less than +/-1%. Exempt extremely high and low supply voltage condition test, EUT only operated in normal voltage to test all regulations.

2.4 Test Configuration / Block diagram used for tests

Refer to Annex 3.

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
ARIB STD-T66 V3.8	2024	Second Generation Low Power Data Communication System/Wireless LAN System

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

3.3 Overview of results

Test Item – ARIB STD-T66			
Requirement – Test case	Basic standard(s)	Verdict	Remark
Output Power and Output Power Tolerance	ARIB STD-T66	PASS	---
Occupied Bandwidth	ARIB STD-T66	PASS	---
Transmission Radiation Angle Width	ARIB STD-T66	N/A	See 1)
Frequency Error	ARIB STD-T66	PASS	---
Transmitter Spurious Emissions	ARIB STD-T66	PASS	---
Receiver Spurious Emissions	ARIB STD-T66	PASS	---
Interference Prevention Function Measurement	ARIB STD-T66	PASS	---
Carrier Sense Measurement	ARIB STD-T66	PASS	---
<u>Supplementary information:</u>			
1) This test item only apply to antenna gain > 2.14 dBi			

3.4 Measurement procedure

The EUT was controlled by USB Cable provided by applicant which connected to laptop. After connected, run the software “Bluetool” supplied by manufacturer to control the EUT work in required test mode as below table.

Mode	Modulation	Data Rate	Channel Number	Frequency (MHz)
BLE	GFSK	1Mbps	00	2402
			19	2440
			39	2480
		2Mbps	00	2402
			19	2440
			39	2480

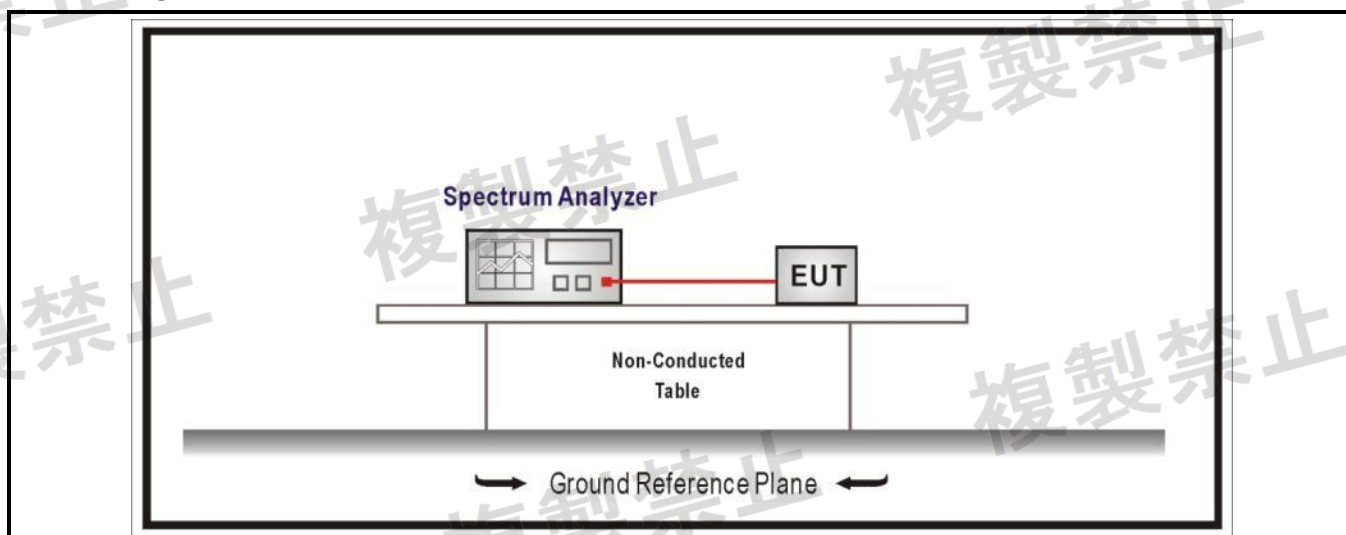
4 TEST RESULTS

4.1	Output Power and Output Power Tolerance	VERDICT: PASS
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Limit

Standard		ARIB STD-T66
Output Power		
☐	Channel Power of DSSS, the limit should $\leq$ 10mW/MHz	
☐	Channel Power of FHSS, the limit should $\leq$ 3mW/MHz	
☐	Channel Power of OFDM	
	☐	Nominal Bandwidth = 20MHz, the limit should $\leq$ 10mW/MHz
	☐	Nominal Bandwidth = 40MHz, the limit should $\leq$ 5mW/MHz
☒	Channel Power of other situation, the limit should $\leq$ 10mW	
E.I.R.P		
☒	Undirected: 12.14dBm or less	
☐	Driectional: 22.14dBm or less	
Output Power Tolerance		
☒	$\leq$ 20%	

Test Configuration



Performed measurements

Port under test	Antenna port	
Test method applied	☒	Conducted measurement
	☐	Radiated measurement
Test setup	Refer to the Annex 3 for test setup photo(s).	
Operating mode(s) used	Mode 1	
Remark	---	

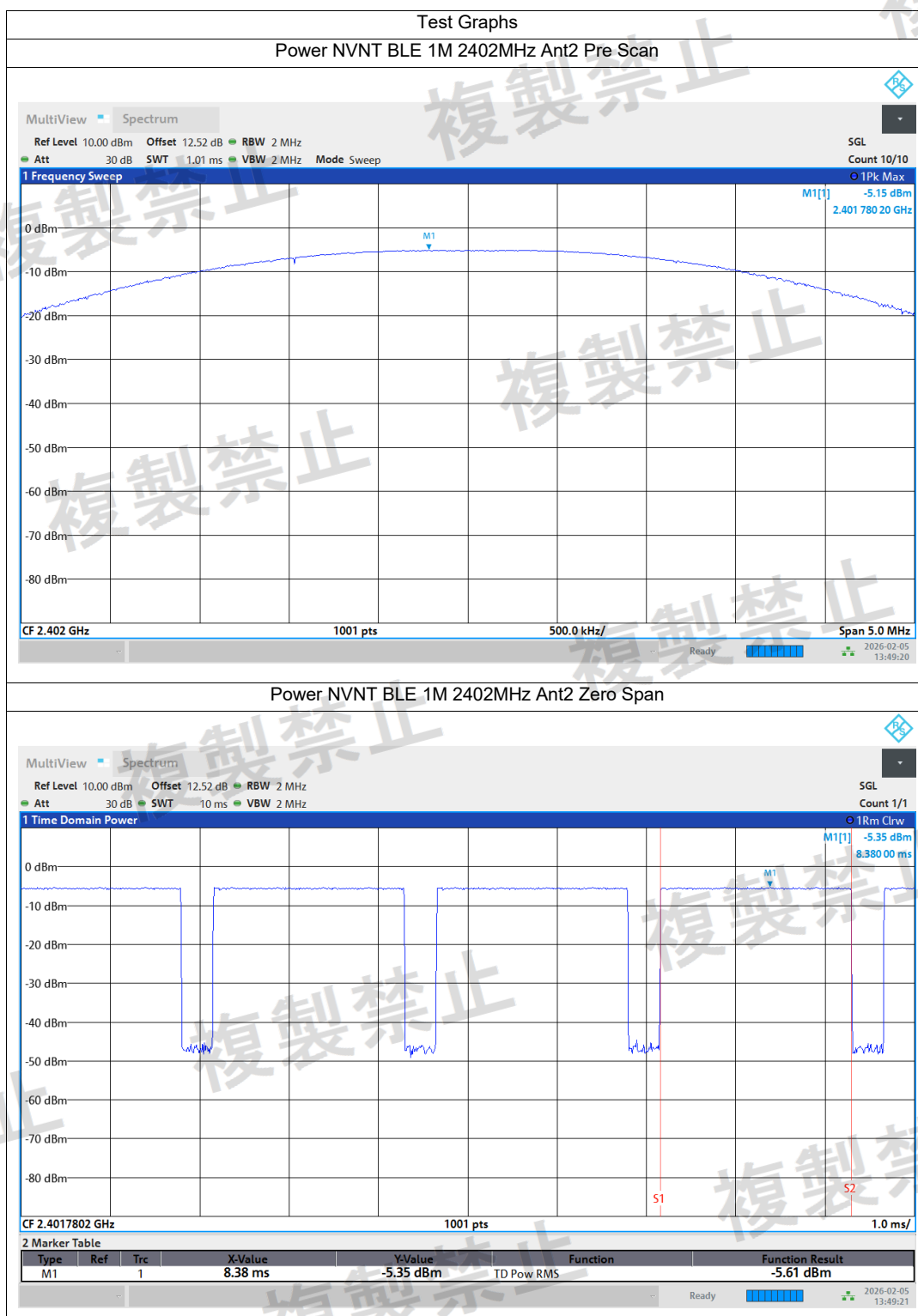
Results

Mode	CH.	Test Freq. (MHz)	Power (dBm)	Antenna Power (mW)	Limit (mW)	Declared Power (mW)	Tolerance (%)	Limit (%)	Result
BLE 1Mbps	00	2402	-5.61	0.27	≤ 10	1	-73	≤ 20	Pass
	19	2440	-5.76	0.27	≤ 10	1	-73	≤ 20	Pass
	39	2480	-6.12	0.24	≤ 10	1	-76	≤ 20	Pass
BLE 2Mbps	00	2402	-7.03	0.20	≤ 10	1	-80	≤ 20	Pass
	19	2440	-7.01	0.20	≤ 10	1	-80	≤ 20	Pass
	39	2480	-6.99	0.20	≤ 10	1	-80	≤ 20	Pass

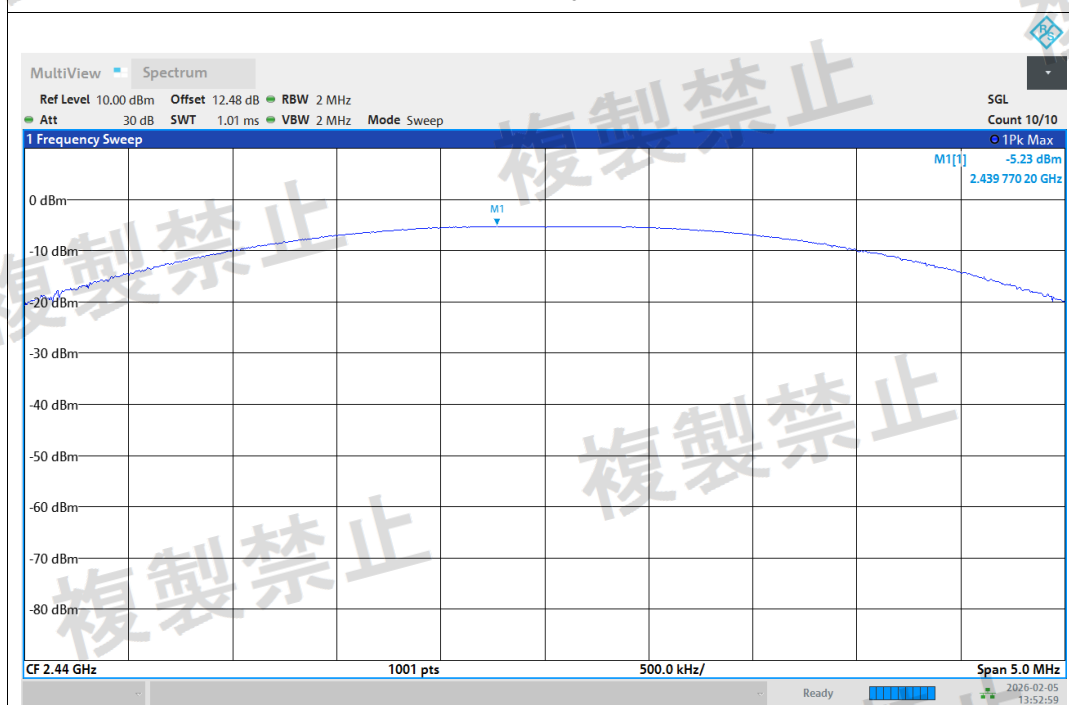
Note: Deviation = (Antenna Power - Declared Power) / Declared Power * 100%

Mode	CH.	Test Freq. (MHz)	Power (dBm)	Gain (dBi)	E.I.R.P (dBm)	Limit (dBm)	Result
BLE 1Mbps	00	2402	-5.61	-7.3	-12.91	≤ 12.14	Pass
	19	2440	-5.76	-7.3	-13.06	≤ 12.14	Pass
	39	2480	-6.12	-7.3	-13.42	≤ 12.14	Pass
BLE 2Mbps	00	2402	-7.03	-7.3	-14.33	≤ 12.14	Pass
	19	2440	-7.01	-7.3	-14.31	≤ 12.14	Pass
	39	2480	-6.99	-7.3	-14.29	≤ 12.14	Pass

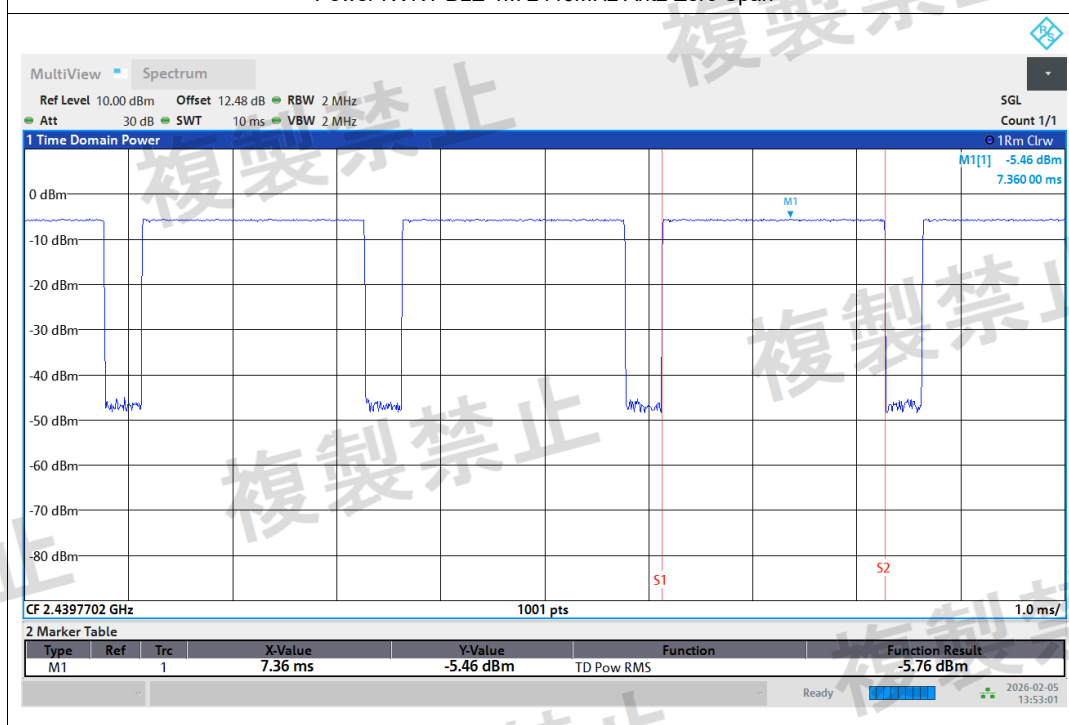
Output Power and Output Power Tolerance



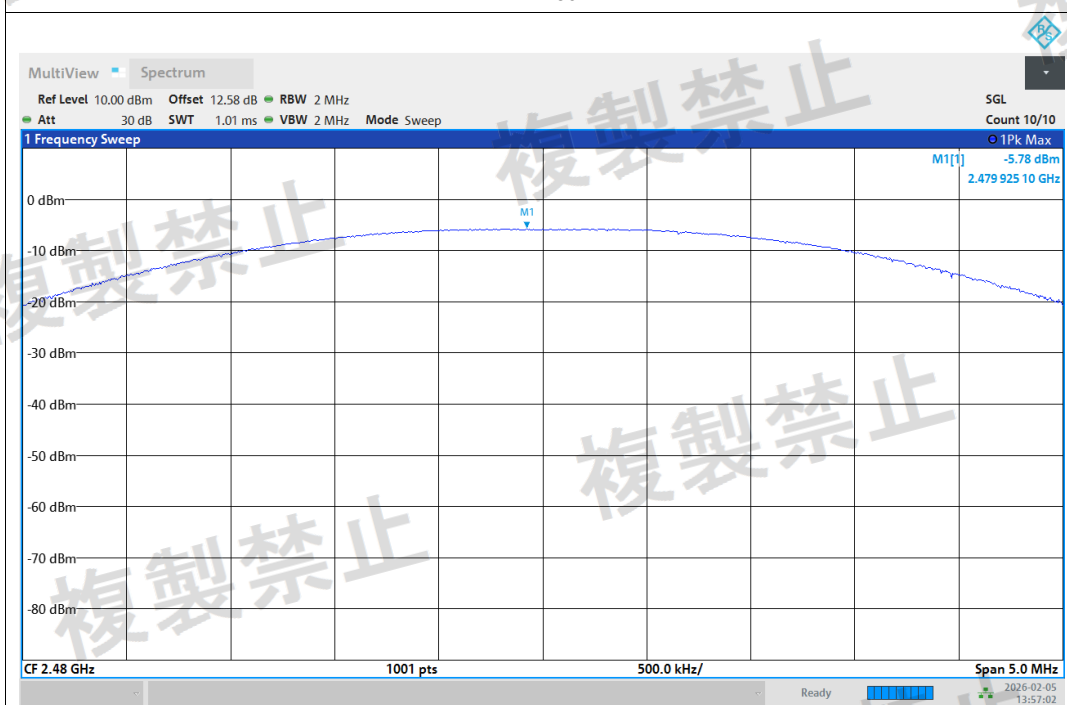
Power NVNT BLE 1M 2440MHz Ant2 Pre Scan



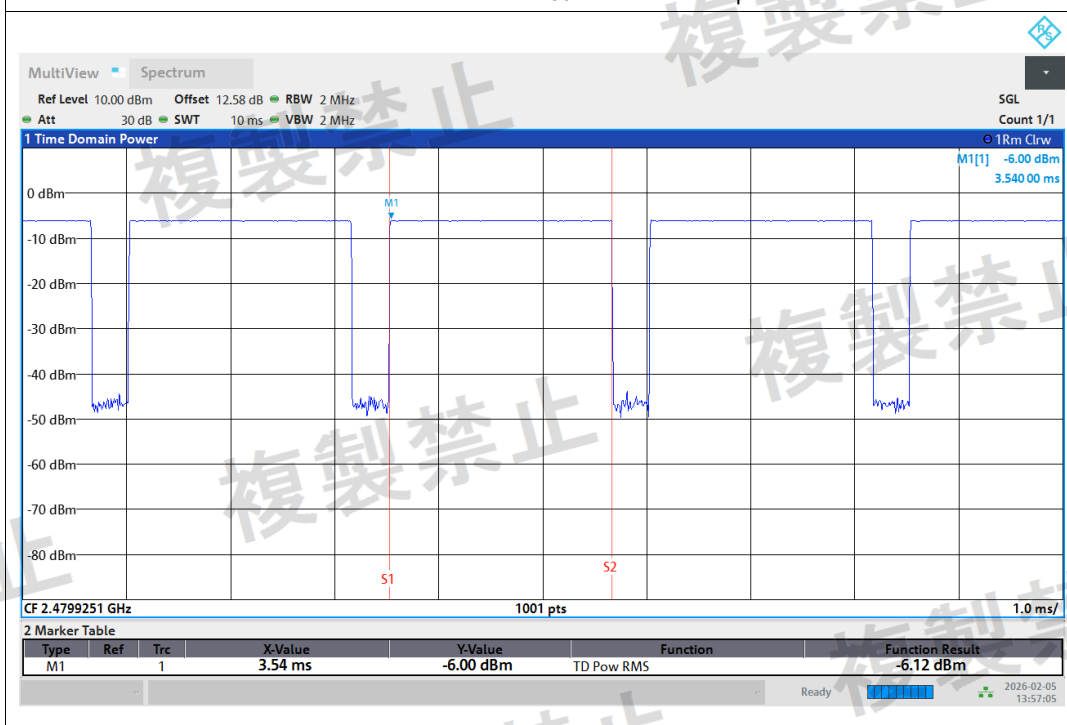
Power NVNT BLE 1M 2440MHz Ant2 Zero Span



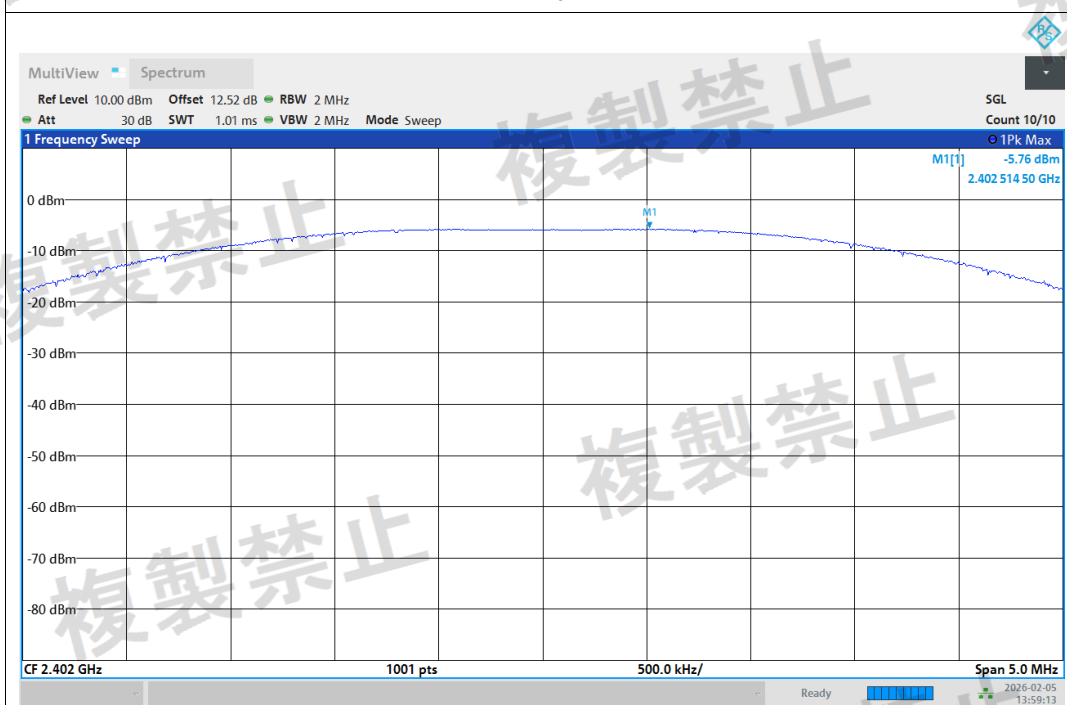
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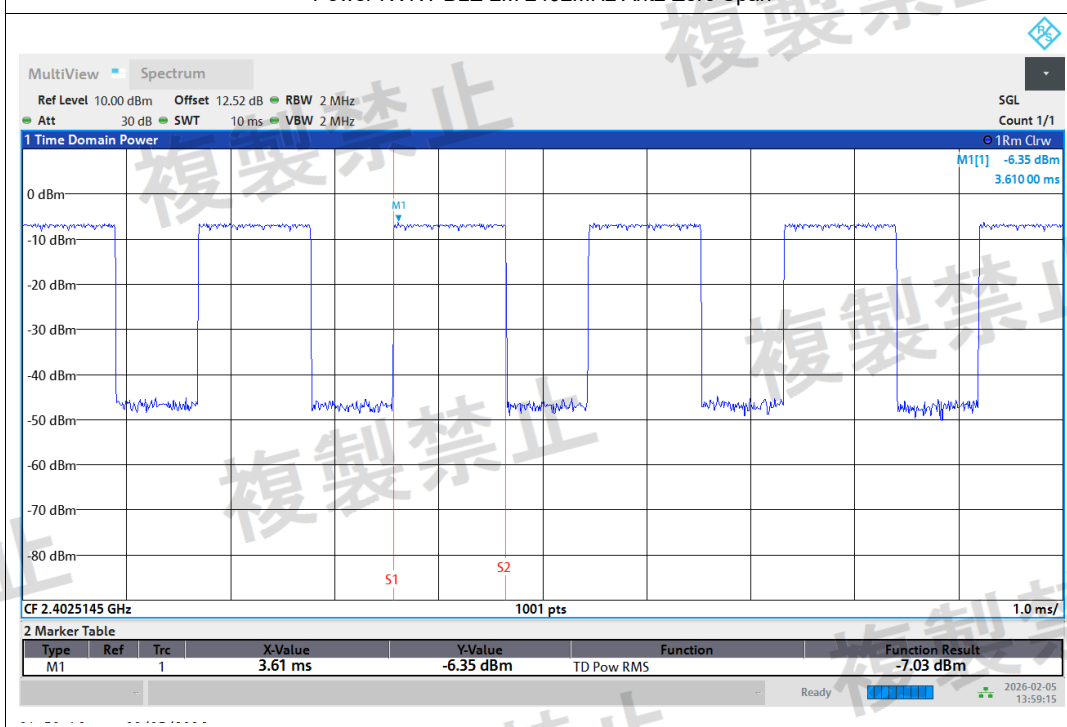
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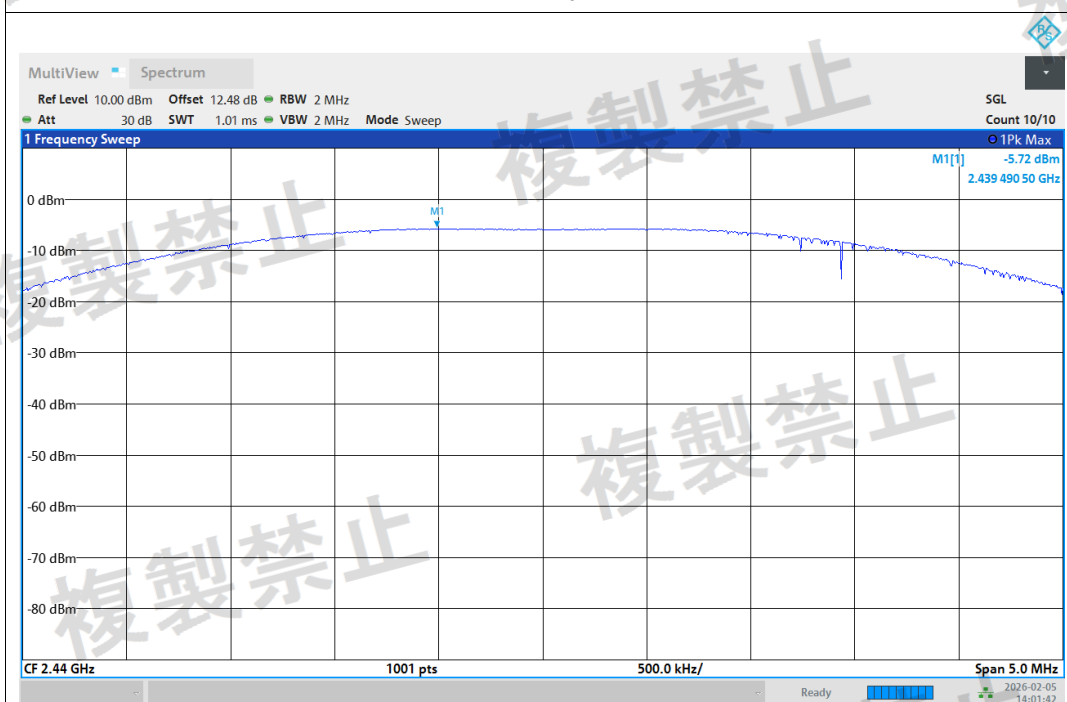
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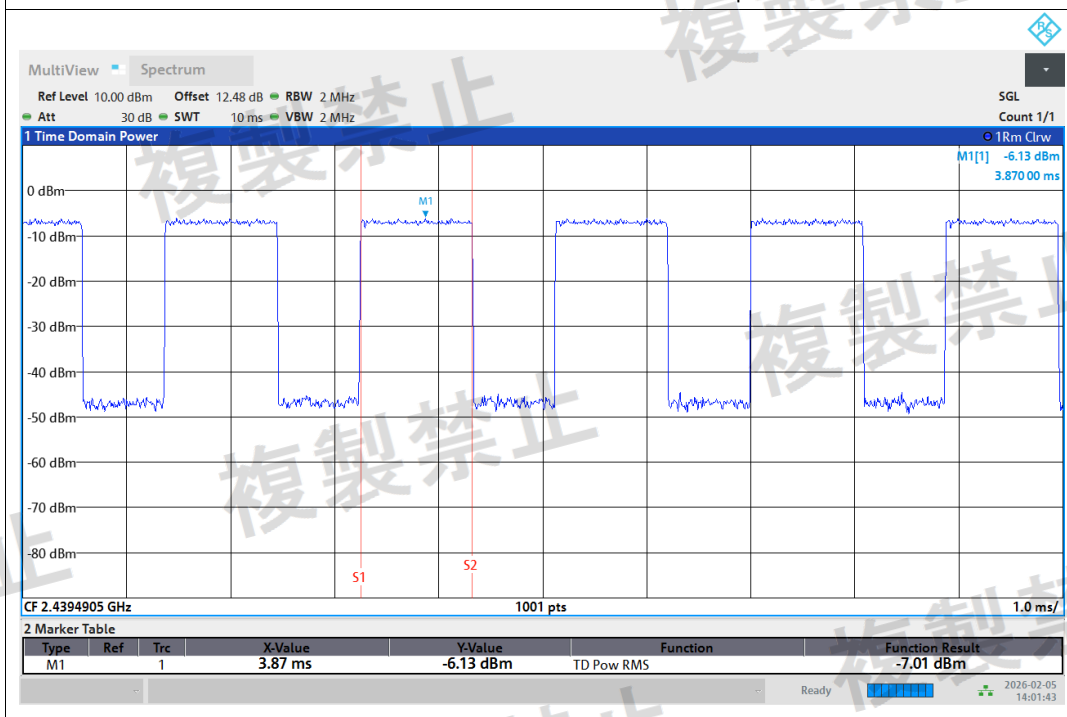
Power NVNT BLE 2M 2402MHz Ant2 Zero Span



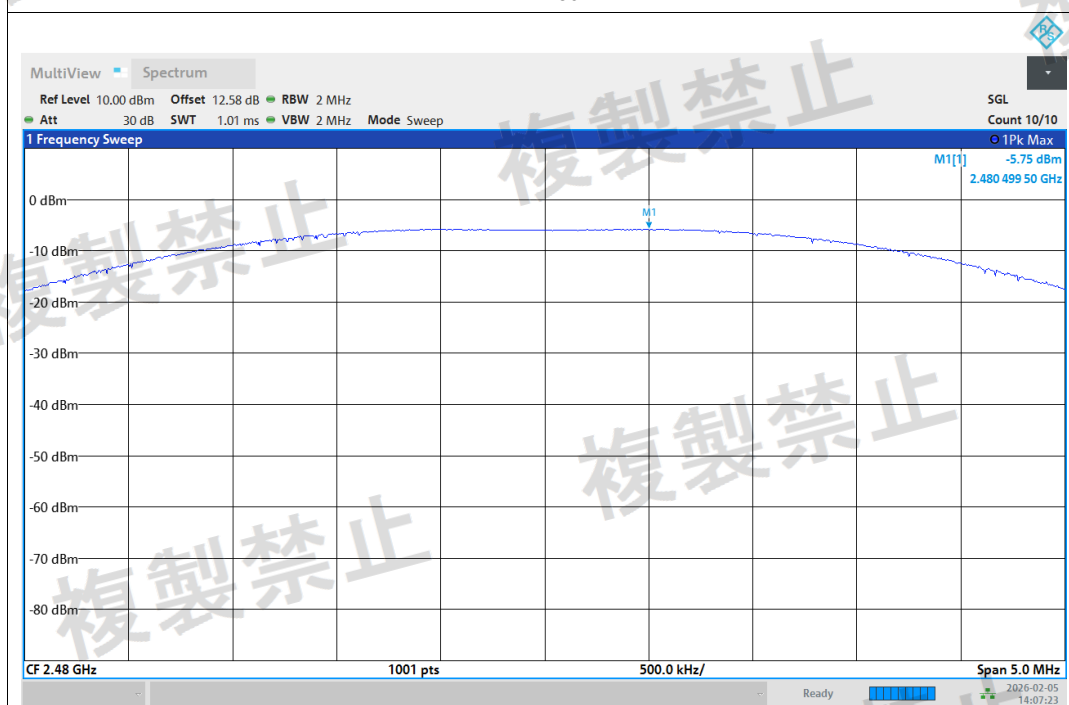
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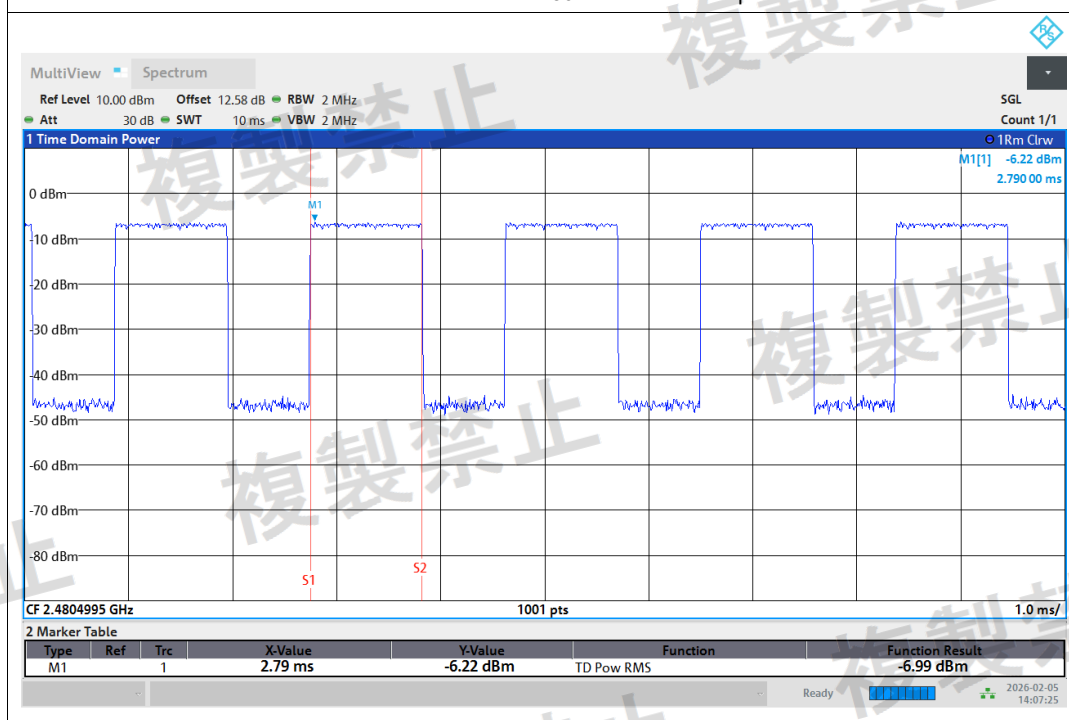
Power NVNT BLE 2M 2440MHz Ant2 Zero Span



Power NVNT BLE 2M 2480MHz Ant2 Pre Scan



Power NVNT BLE 2M 2480MHz Ant2 Zero Span

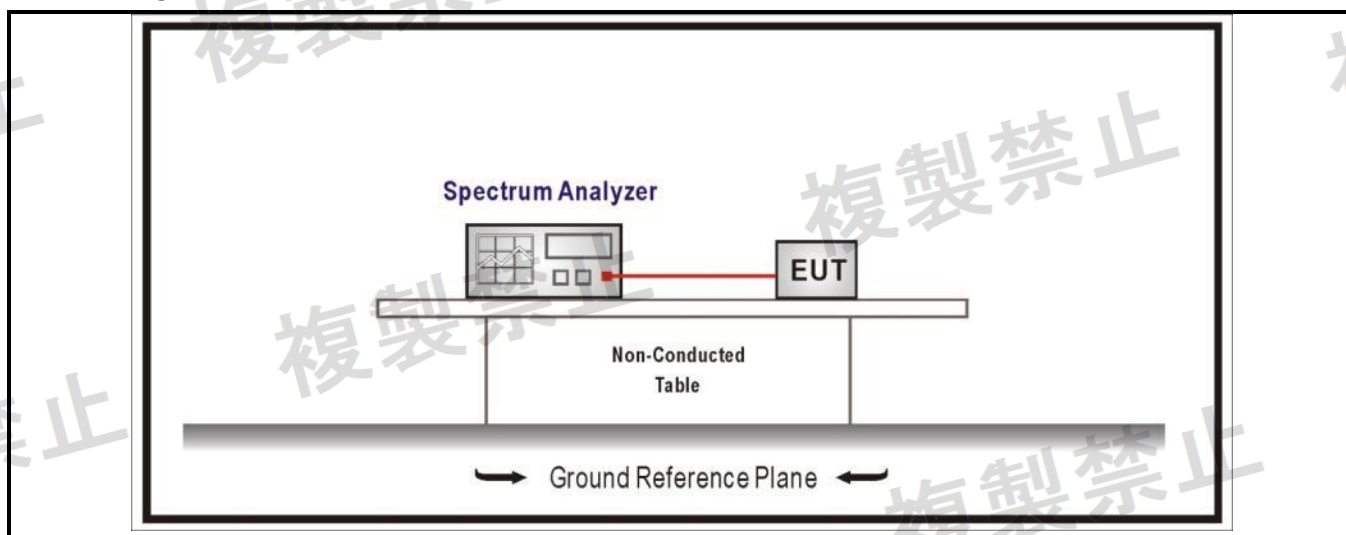


4.2	Occupied Bandwidth	VERDICT: PASS
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Limit

Standard		ARIB STD-T66
☐	Channel Power of DSSS, the limit should $\leq$ 26MHz	
☐	Channel Power of FHSS, the limit should $\leq$ 83.5MHz	
☐	Channel Power of OFDM	
☐	Nominal Bandwidth=20MHz, the limit should $\leq$ 26MHz	
☐	Nominal Bandwidth=40MHz, the limit should $\leq$ 38MHz	
☒	Channel Power of other situation, the limit should $\leq$ 26MHz	

Test Configuration



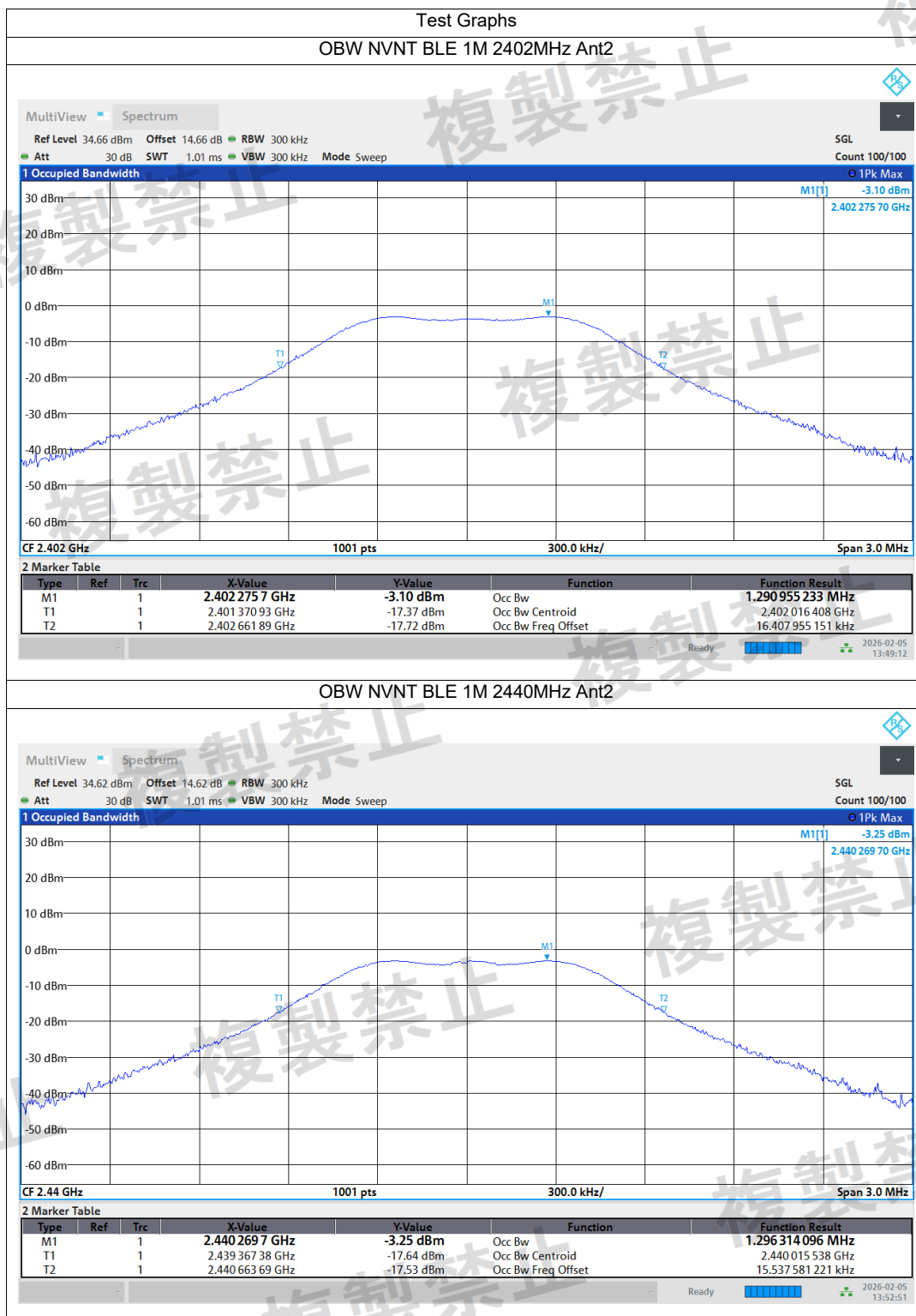
Performed measurements

Port under test	Antenna port	
Test method applied	☒	Conducted measurement
	☐	Radiated measurement
Test setup	Refer to the Annex 3 for test setup photo(s).	
Operating mode(s) used	Mode 1	
Remark	---	

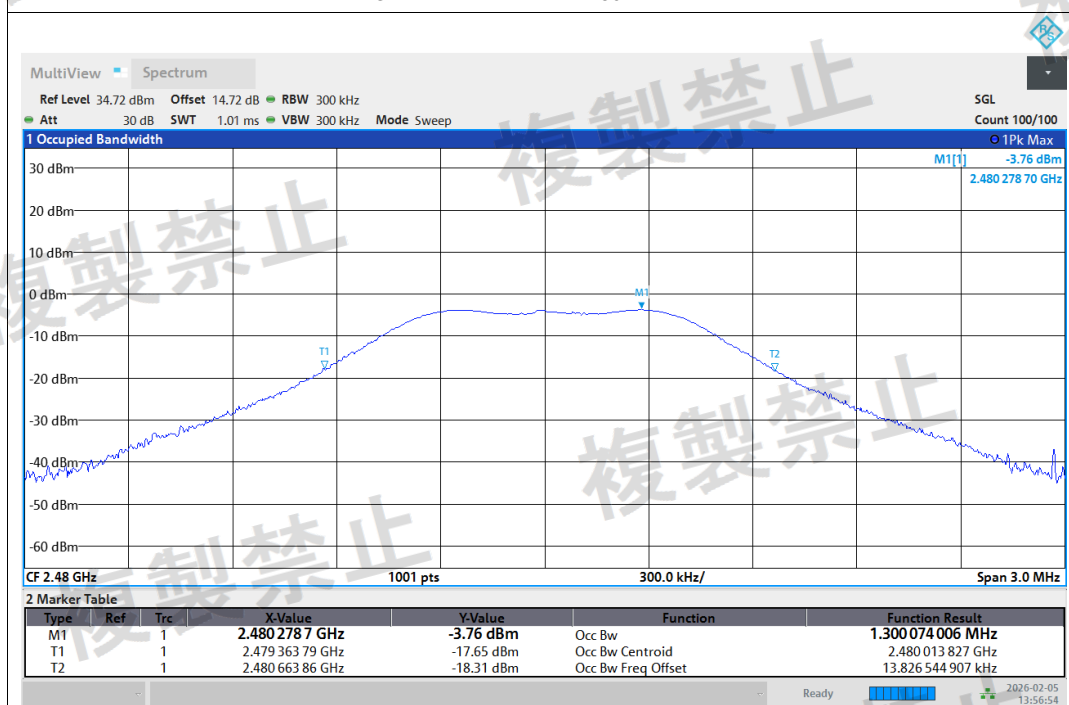
Results

Mode	CH.	Test Freq. (MHz)	99% OBW (MHz)	Limit (MHz)	Result
BLE 1Mbps	00	2402	1.291	≤ 26	Pass
	19	2440	1.296	≤ 26	Pass
	39	2480	1.300	≤ 26	Pass
BLE 2Mbps	00	2402	2.143	≤ 26	Pass
	19	2440	2.153	≤ 26	Pass
	39	2480	2.152	≤ 26	Pass

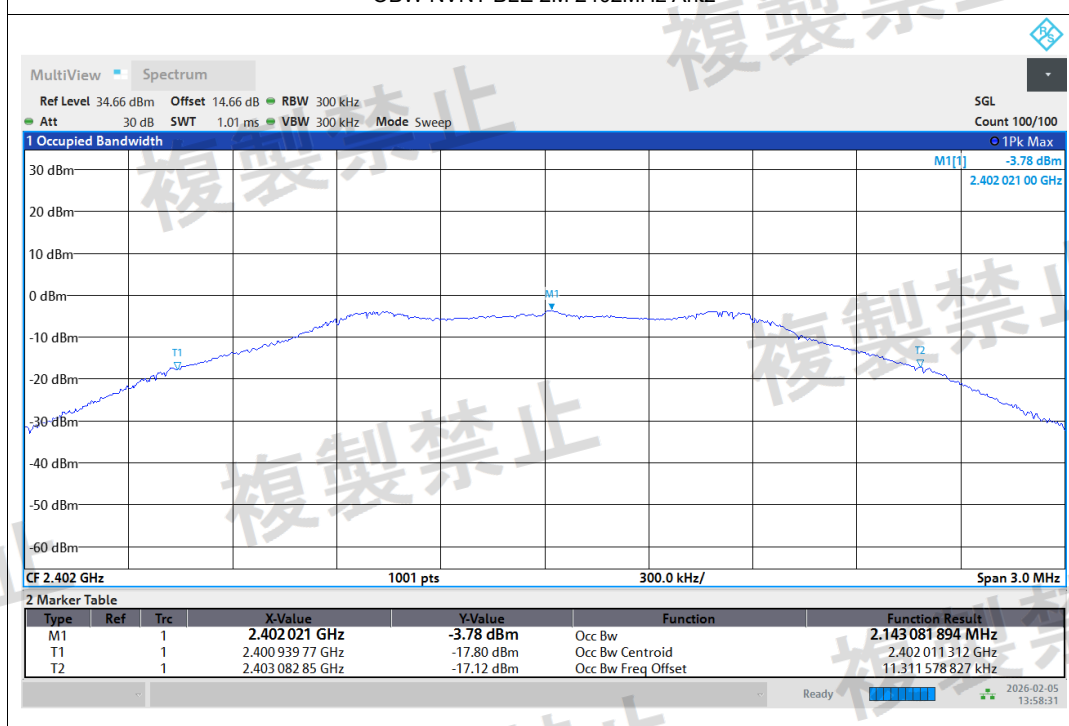
Occupied Bandwidth



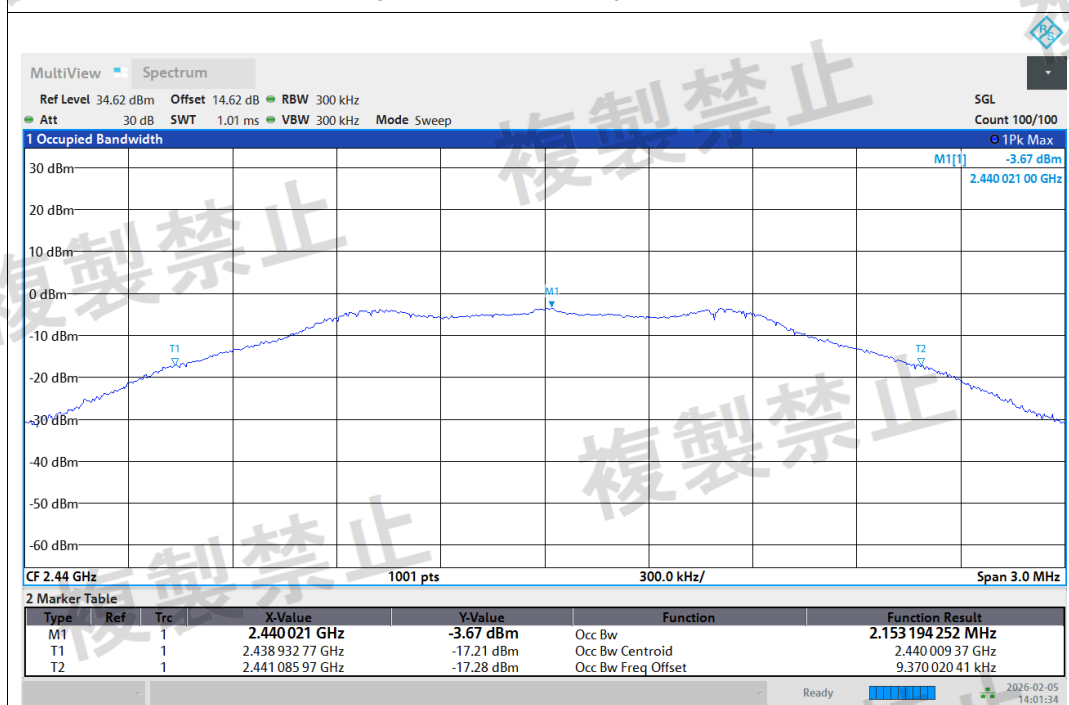
OBW NVNT BLE 1M 2480MHz Ant2



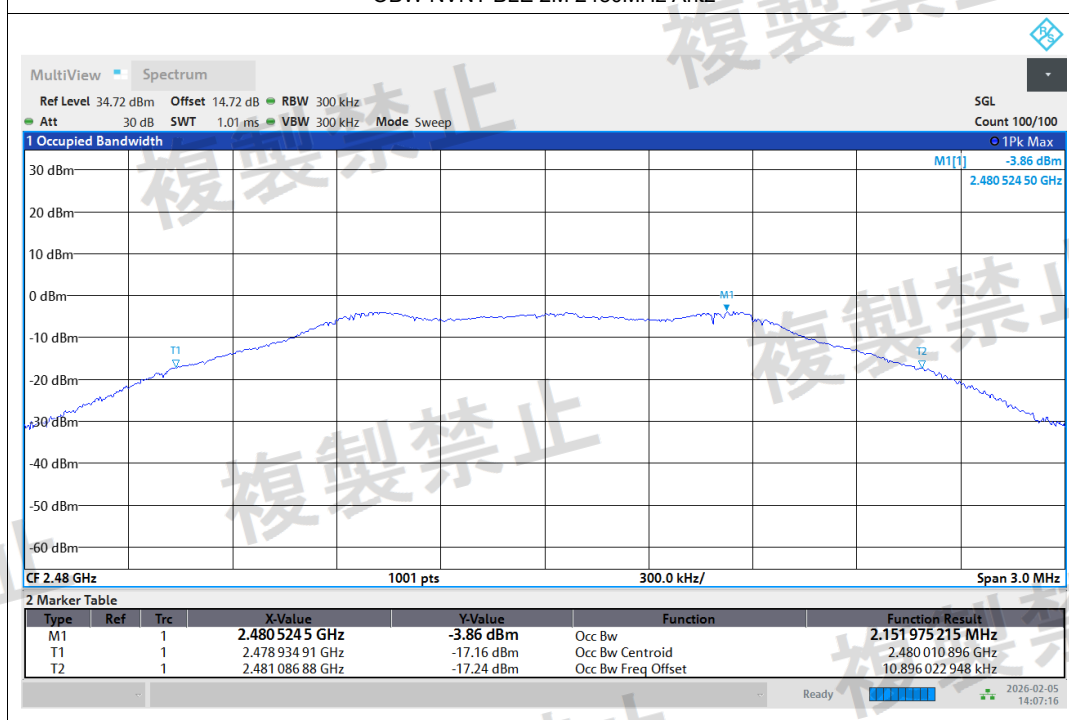
OBW NVNT BLE 2M 2402MHz Ant2



OBW NVNT BLE 2M 2440MHz Ant2



OBW NVNT BLE 2M 2480MHz Ant2

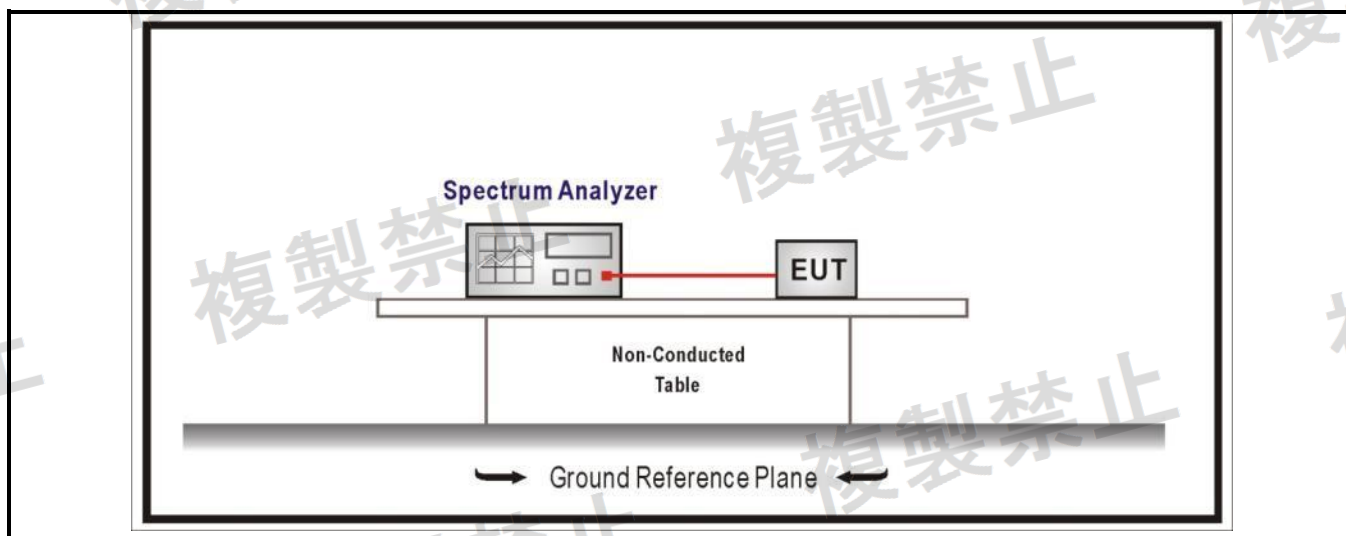


4.3	Frequency Error	VERDICT: PASS
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Limit

Standard	ARIB STD-T66
$\leq \pm 50\text{ppm}$	

Test Configuration



Performed measurements

Port under test	Antenna port	
Test method applied	☒	Conducted measurement
	☐	Radiated measurement
Test setup	Refer to the Annex 3 for test setup photo(s).	
Operating mode(s) used	Mode 1	
Remark	---	

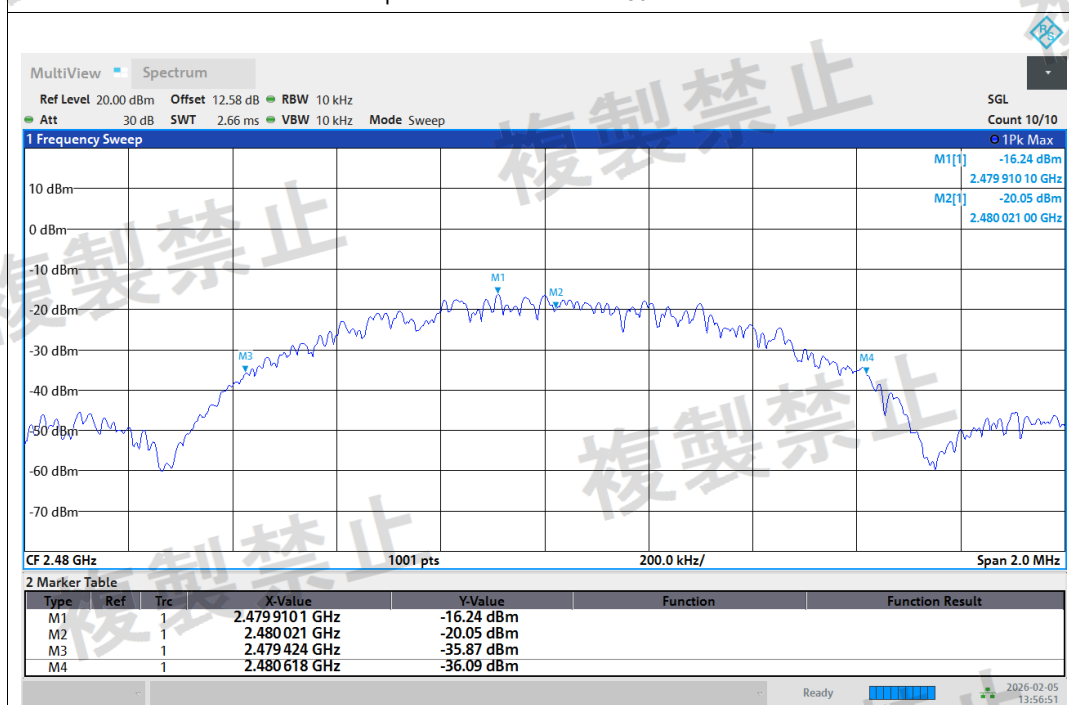
Results

Mode	CH.	Test Freq. (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Result
BLE 1Mbps	00	2402	19000	7.91	19000	$\leq \pm 50$	PASS
	19	2440	15000	6.15	15000	$\leq \pm 50$	PASS
	39	2480	21000	8.47	21000	$\leq \pm 50$	PASS
BLE 2Mbps	00	2402	-2000	-0.83	-2000	$\leq \pm 50$	PASS
	19	2440	22000	9.02	22000	$\leq \pm 50$	PASS
	39	2480	20000	8.06	20000	$\leq \pm 50$	PASS

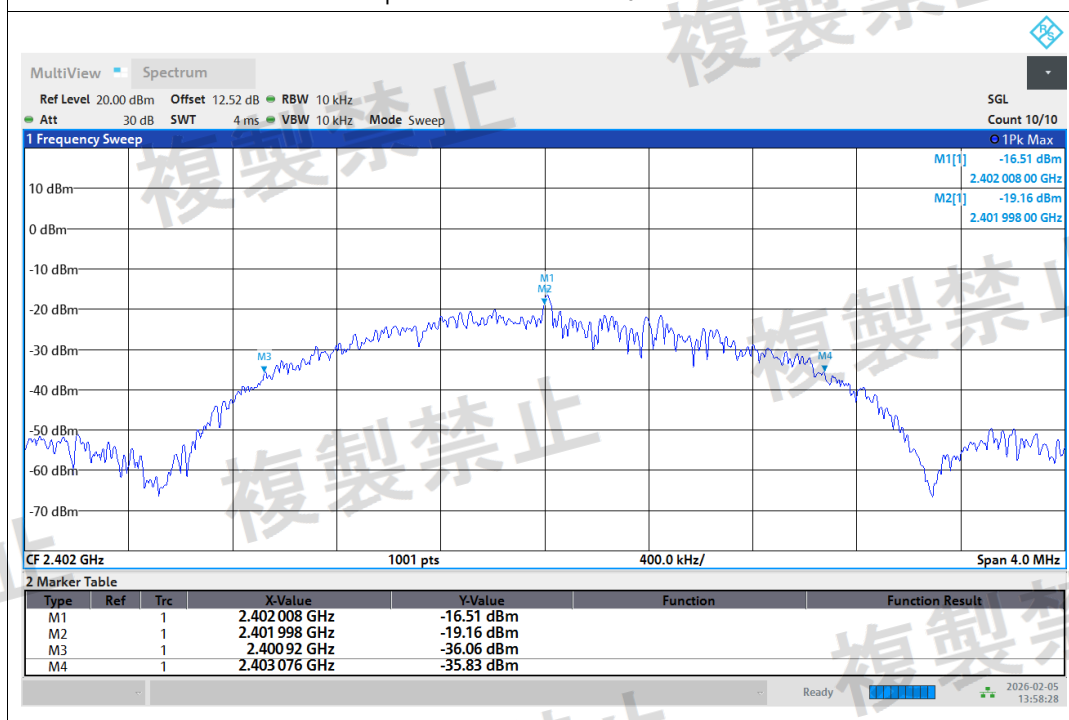
Frequency Error



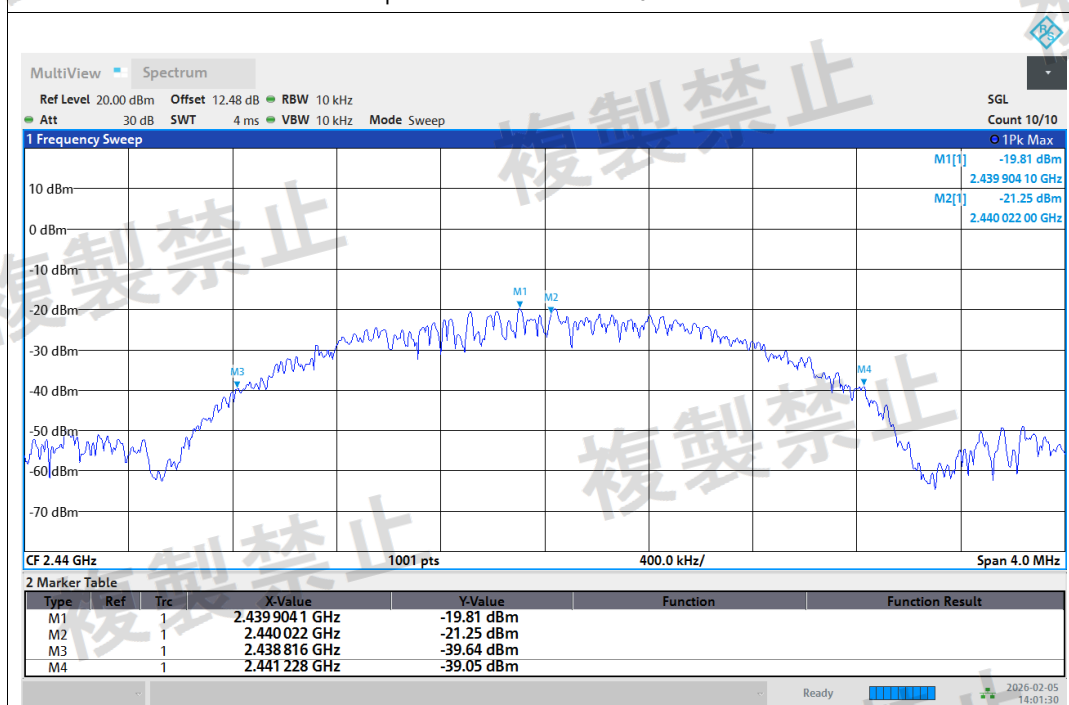
Freq. Error NVNT BLE 1M 2480MHz Ant2



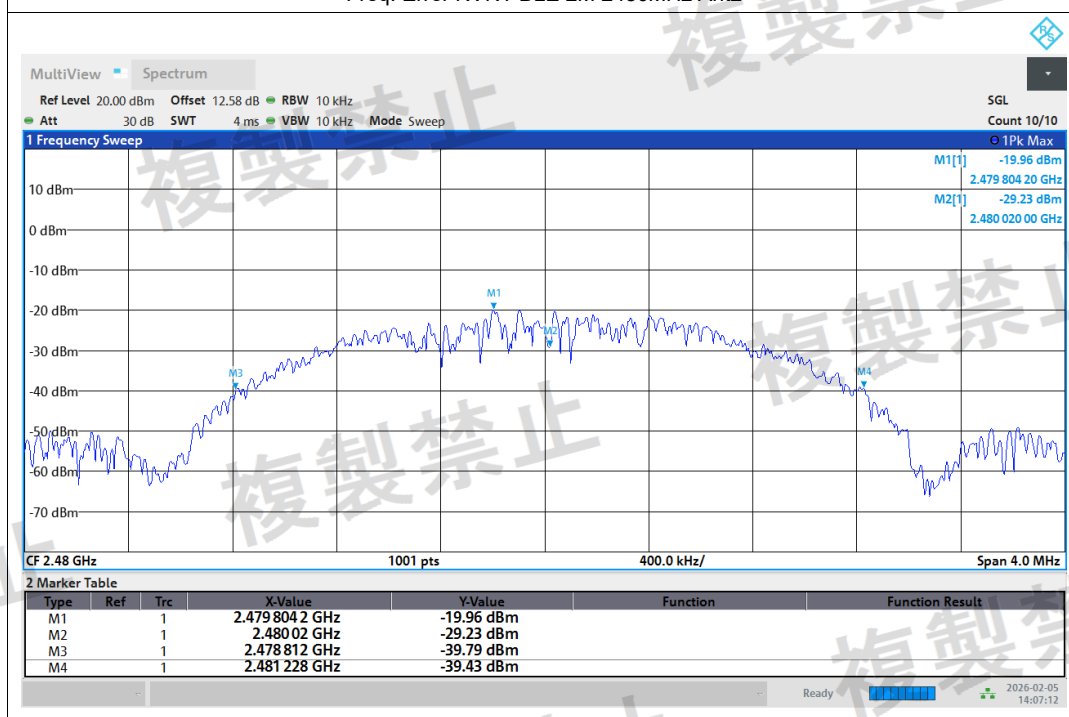
Freq. Error NVNT BLE 2M 2402MHz Ant2



Freq. Error NVNT BLE 2M 2440MHz Ant2



Freq. Error NVNT BLE 2M 2480MHz Ant2

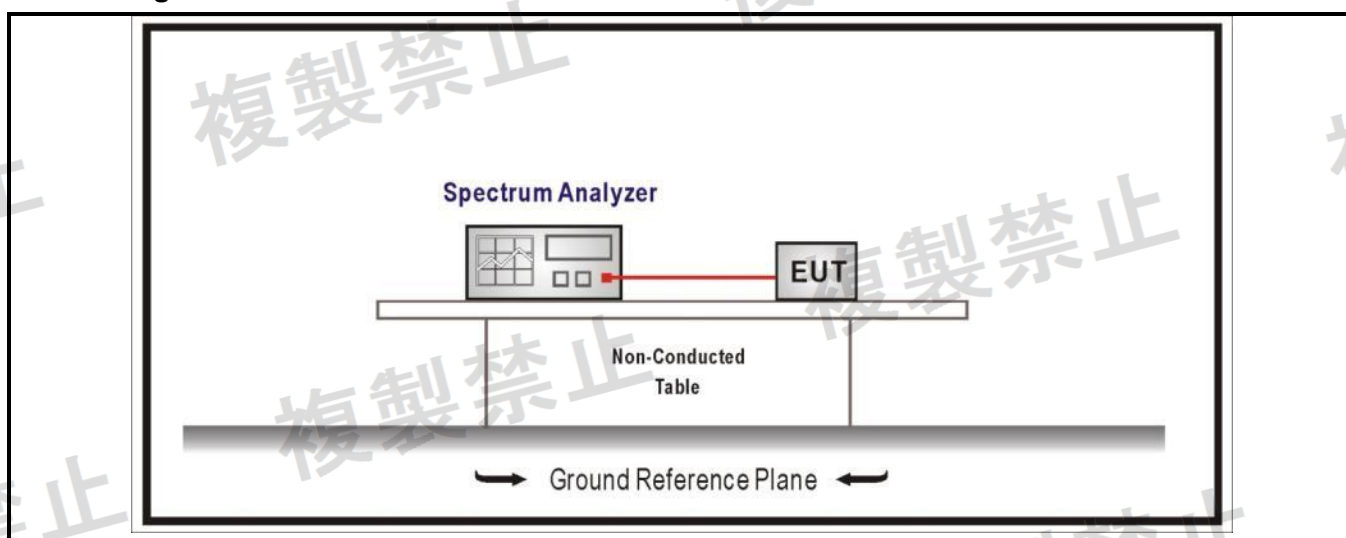


4.4 Transmitter Spurious Emission	VERDICT: PASS
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Limit

Standard	ARIB STD-T66
$\leq 0.25\mu\text{W}$ for 30 – 1000 MHz $\leq 2.5\mu\text{W}$ for 1000 – 2387 MHz $\leq 25\mu\text{W}$ for 2387 – 2400 MHz $\leq 25\mu\text{W}$ for 2483.5 – 2496.5 MHz $\leq 2.5\mu\text{W}$ for 2496.5 – 12500 MHz	

Test Configuration



Performed measurements

Port under test	Antenna port	
Test method applied	☒	Conducted measurement
	☐	Radiated measurement
Test setup	Refer to the Annex 3 for test setup photo(s).	
Operating mode(s) used	Mode 1	
Remark	---	

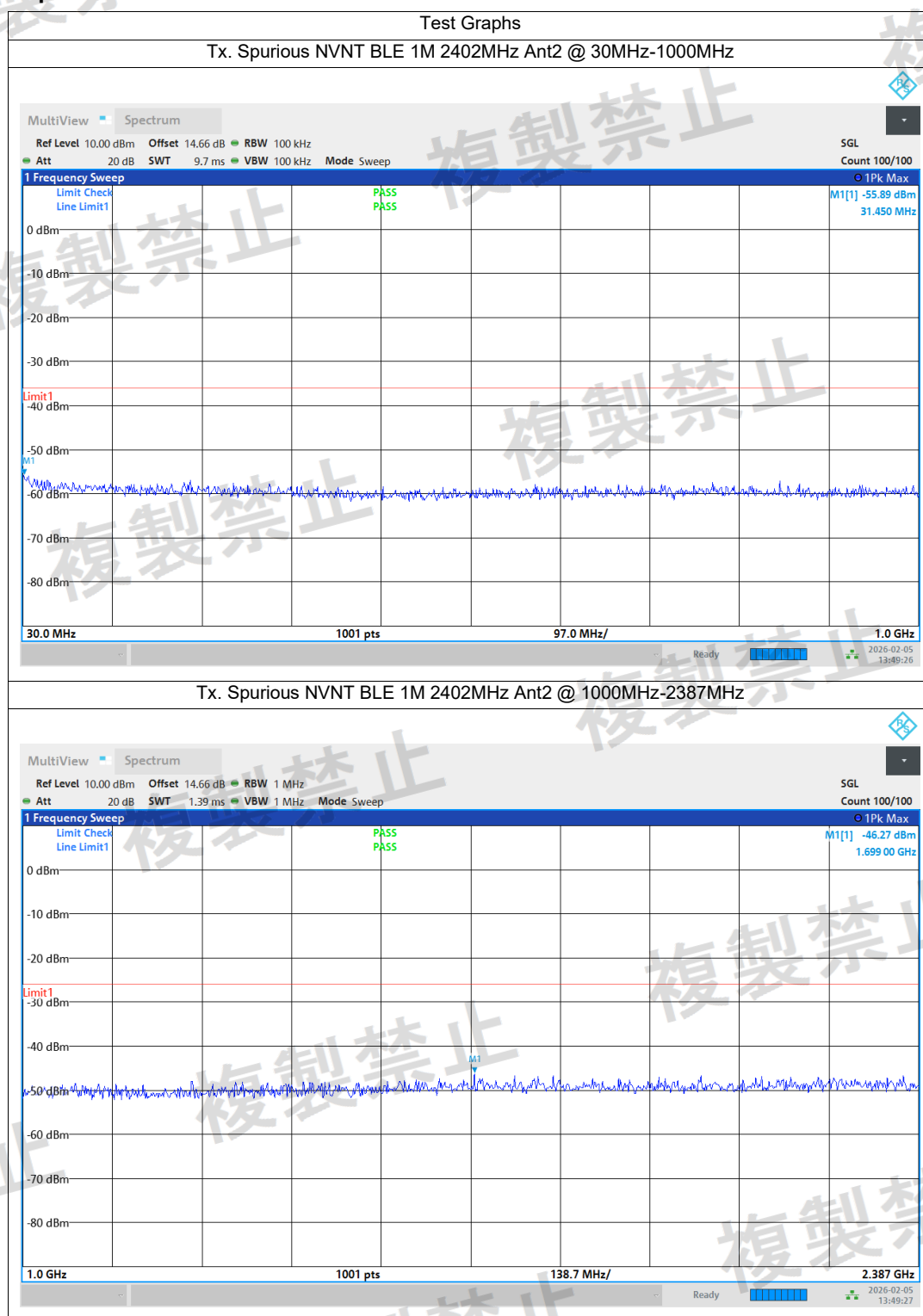
Results

Mode	CH.	Test Freq. (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Limit (dBm)	Result
BLE 1Mbps	00	2402	30-1000	31.45	-45.89	-36	Pass
			1000-2387	1699	-46.27	-26	Pass
			2387-2400	2399.97	-35.61	-16	Pass
			2483.5-2496.5	2495.35	-46.38	-16	Pass
			2496.5-13000	6950.5	-40.27	-26	Pass
	19	2440	30-1000	30.48	-45.17	-36	Pass
			1000-2387	2340.6	-45.68	-26	Pass
			2387-2400	2391.05	-46.35	-16	Pass
			2483.5-2496.5	2484.35	-46.33	-16	Pass
			2496.5-13000	7244.5	-39.8	-26	Pass
	39	2480	30-1000	32.42	-44.31	-36	Pass
			1000-2387	2362.8	-46.01	-26	Pass
			2387-2400	2397.76	-46.53	-16	Pass
			2483.5-2496.5	2484.17	-42.96	-16	Pass
			2496.5-13000	7265.5	-39.84	-26	Pass
BLE 1Mbps	00	2402	30-1000	31.45	-45.89	-36	Pass
			1000-2387	1699	-46.27	-26	Pass
			2387-2400	2399.97	-35.61	-16	Pass
			2483.5-2496.5	2495.35	-46.38	-16	Pass
			2496.5-13000	6950.5	-40.27	-26	Pass
	19	2440	30-1000	30.48	-45.17	-36	Pass
			1000-2387	2340.6	-45.68	-26	Pass
			2387-2400	2391.05	-46.35	-16	Pass
			2483.5-2496.5	2484.35	-46.33	-16	Pass
			2496.5-13000	7244.5	-39.8	-26	Pass
	39	2480	30-1000	32.42	-44.31	-36	Pass
			1000-2387	2362.8	-46.01	-26	Pass
			2387-2400	2397.76	-46.53	-16	Pass
			2483.5-2496.5	2484.17	-42.96	-16	Pass
			2496.5-13000	7265.5	-39.84	-26	Pass

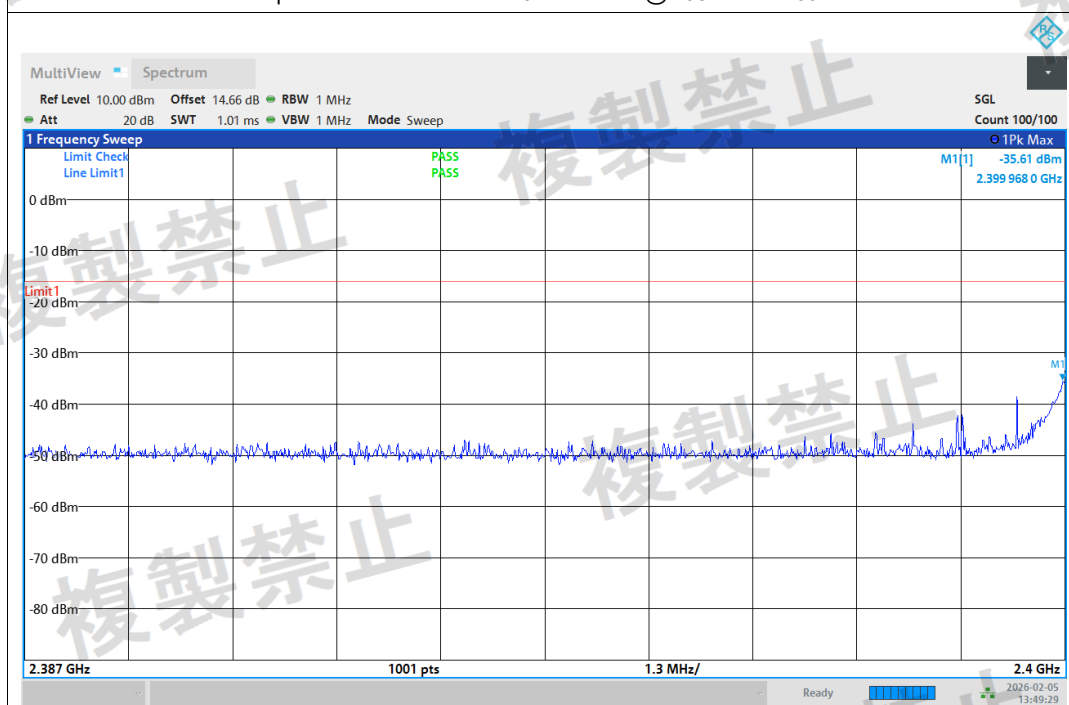
Mode	CH.	Test Freq. (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Limit (dBm)	Result
BLE 2Mbps	00	2402	30-1000	730.12	-40.25	-36	Pass
			1000-2387	2378	-45.81	-26	Pass
			2387-2400	2399.99	-24.71	-16	Pass
			2483.5-2496.5	2493.95	-46.32	-16	Pass
			2496.5-13000	7485.5	-40.93	-26	Pass

BLE 2Mbps	19	2440	30-1000	36.3	-44.65	-36	Pass
			1000-2387	2249.1	-46.24	-26	Pass
			2387-2400	2392.97	-46.91	-16	Pass
			2483.5-2496.5	2488.56	-46.45	-16	Pass
			2496.5-13000	7244.5	-40.74	-26	Pass
	39	2480	30-1000	703.96	-26.53	-36	Pass
			1000-2387	1518.9	-46.17	-26	Pass
			2387-2400	2388.07	-46.51	-16	Pass
			2483.5-2496.5	2484.18	-42.62	-16	Pass
			2496.5-13000	7496.5	-39.57	-26	Pass
	00	2402	30-1000	730.12	-40.25	-36	Pass
			1000-2387	2378	-45.81	-26	Pass
			2387-2400	2399.99	-24.71	-16	Pass
			2483.5-2496.5	2493.95	-46.32	-16	Pass
			2496.5-13000	7485.5	-40.93	-26	Pass
	19	2440	30-1000	36.3	-44.65	-36	Pass
			1000-2387	2249.1	-46.24	-26	Pass
			2387-2400	2392.97	-46.91	-16	Pass
			2483.5-2496.5	2488.56	-46.45	-16	Pass
			2496.5-13000	7244.5	-40.74	-26	Pass
	39	2480	30-1000	703.96	-26.53	-36	Pass
			1000-2387	1518.9	-46.17	-26	Pass
			2387-2400	2388.07	-46.51	-16	Pass
			2483.5-2496.5	2484.18	-42.62	-16	Pass
			2496.5-13000	7496.5	-39.57	-26	Pass

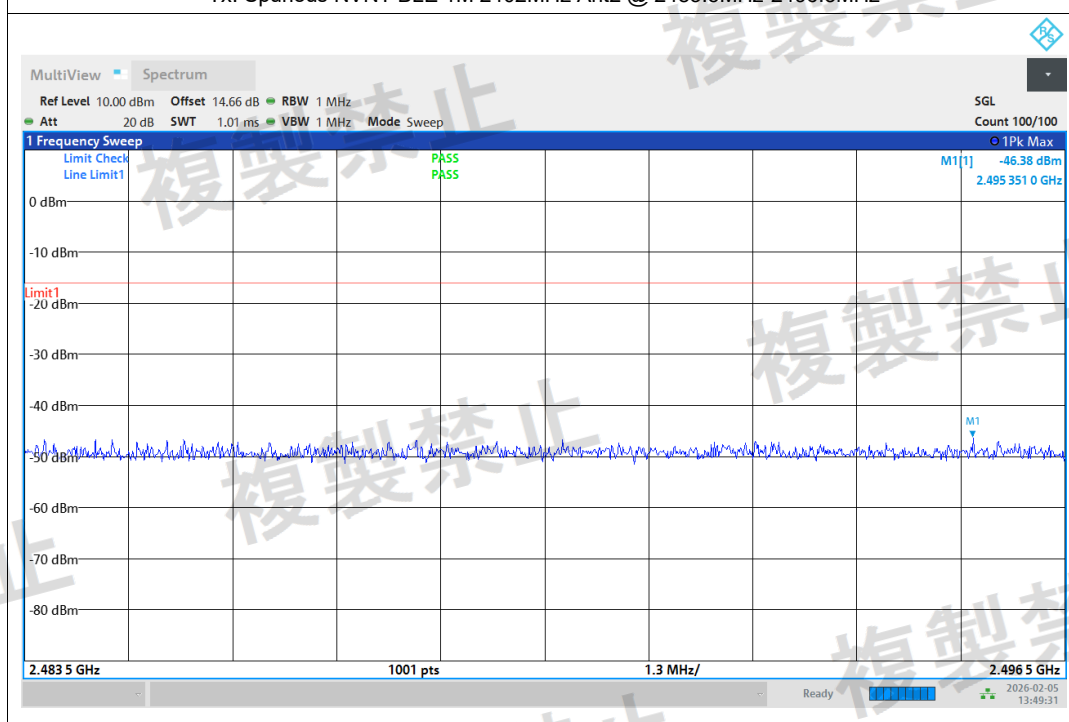
Transmitter Spurious Emission



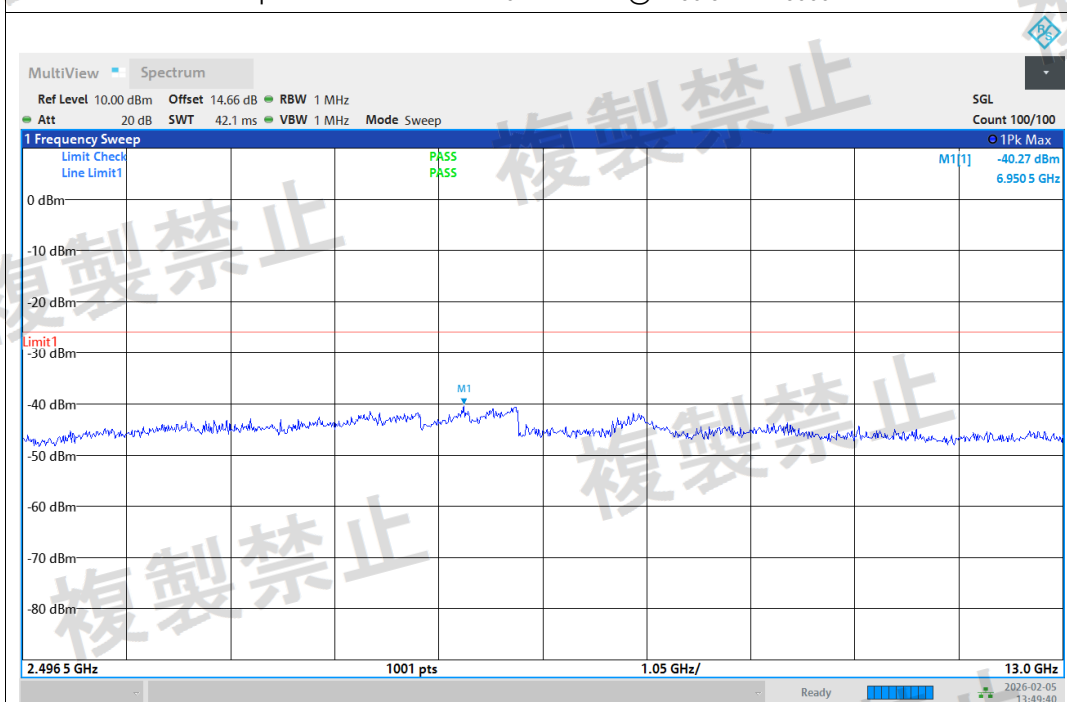
Tx. Spurious NVNT BLE 1M 2402MHz Ant2 @ 2387MHz-2400MHz



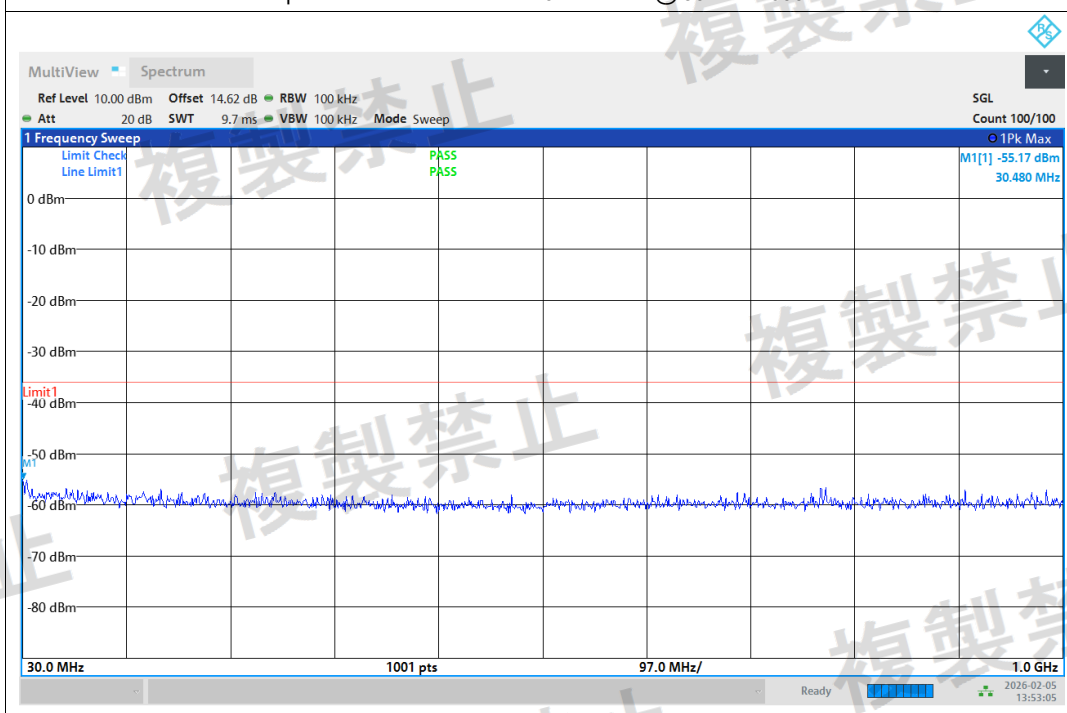
Tx. Spurious NVNT BLE 1M 2402MHz Ant2 @ 2483.5MHz-2496.5MHz



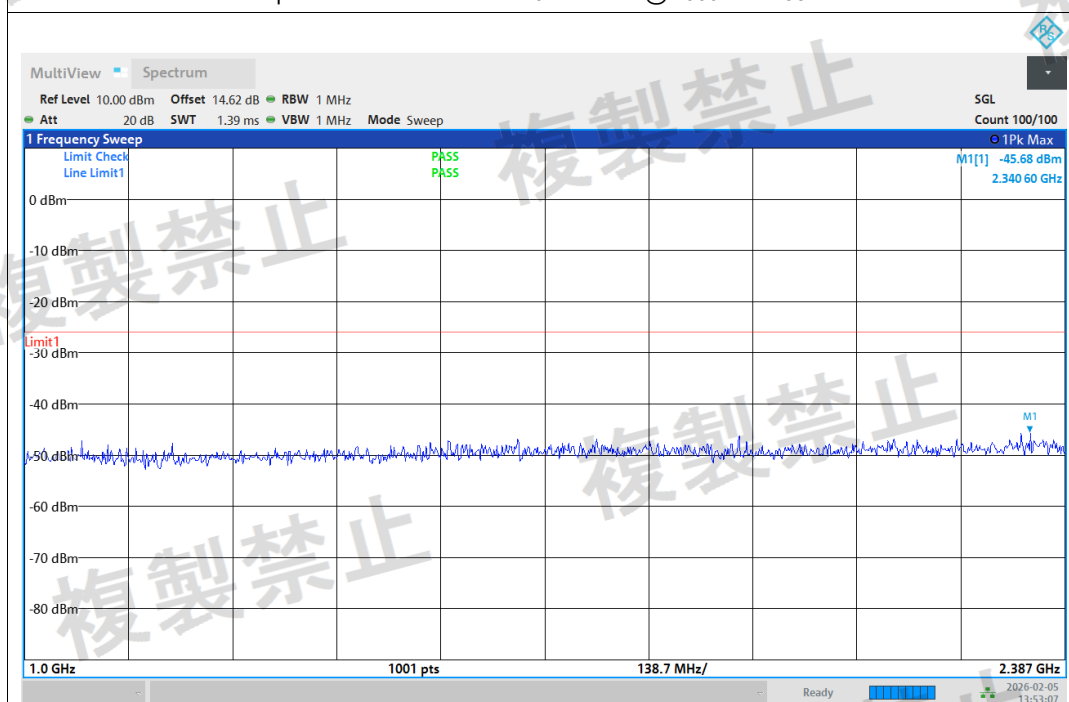
Tx. Spurious NVNT BLE 1M 2402MHz Ant2 @ 2496.5MHz-13000MHz



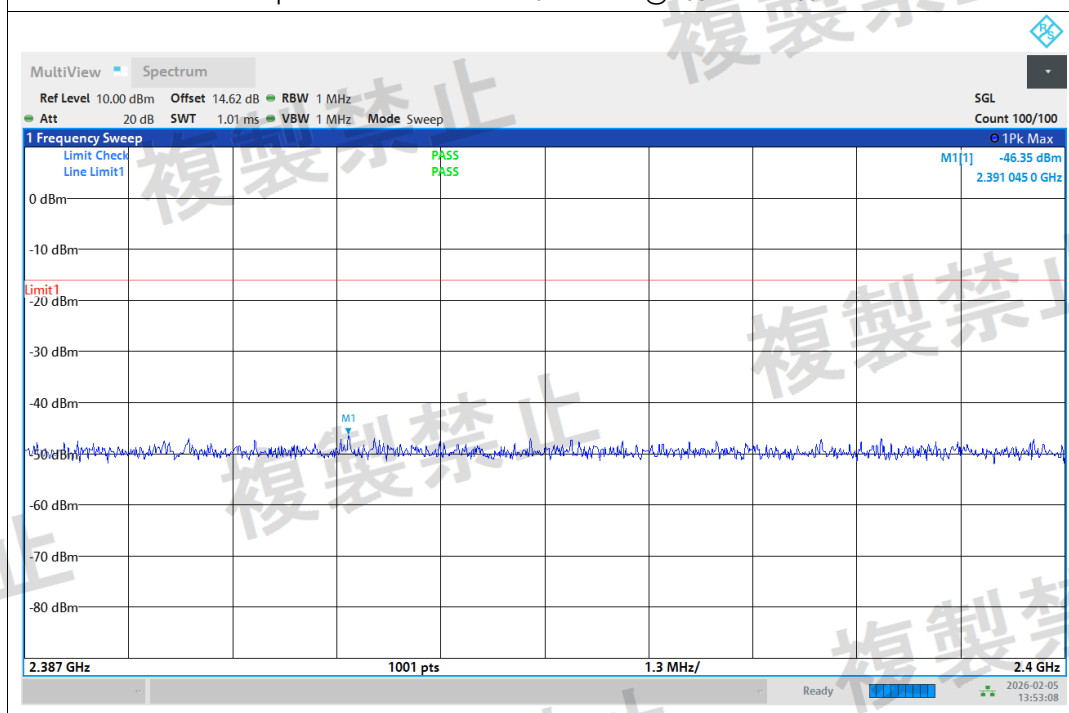
Tx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 30MHz-1000MHz



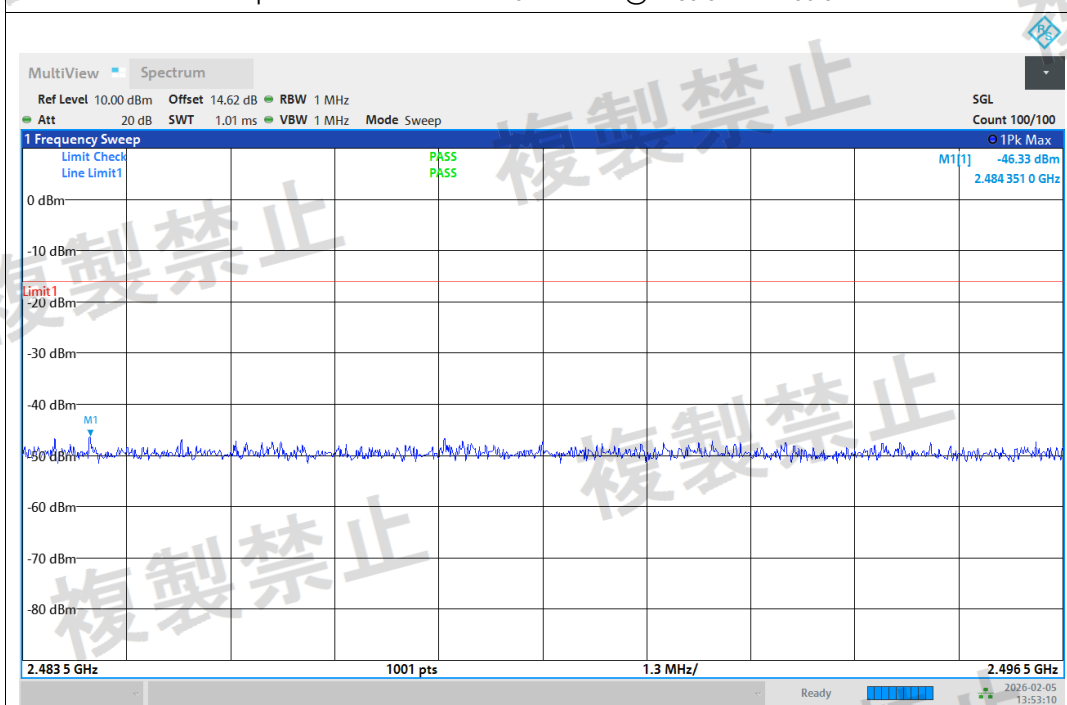
Tx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 1000MHz-2387MHz



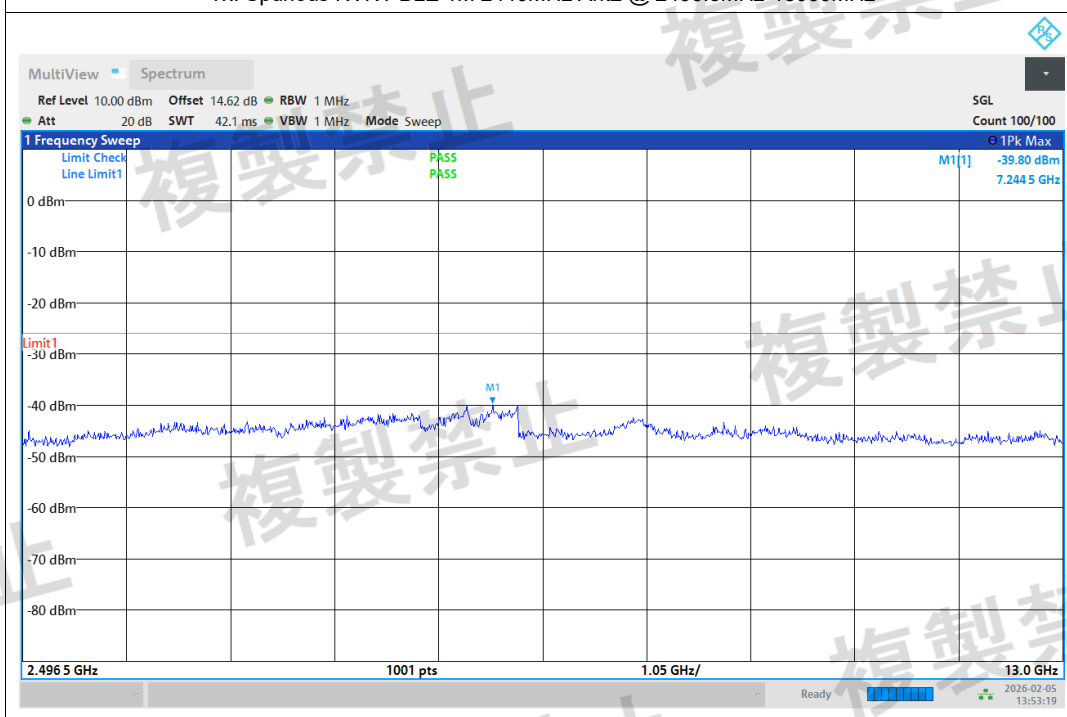
Tx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 2387MHz-2400MHz



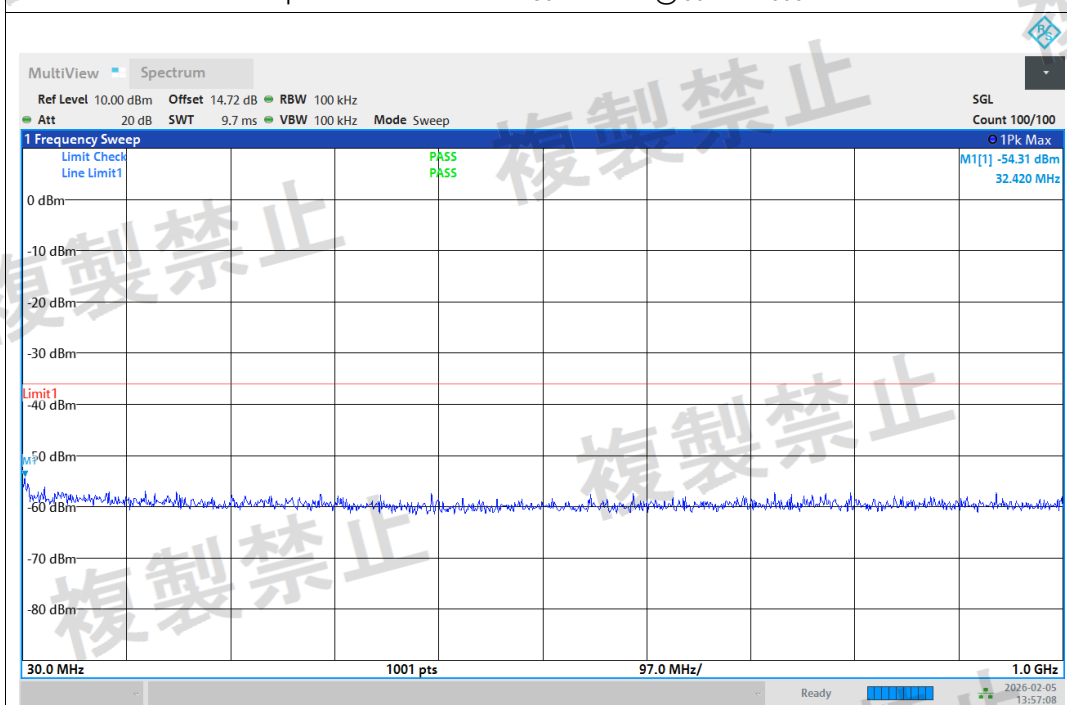
Tx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 2483.5MHz-2496.5MHz



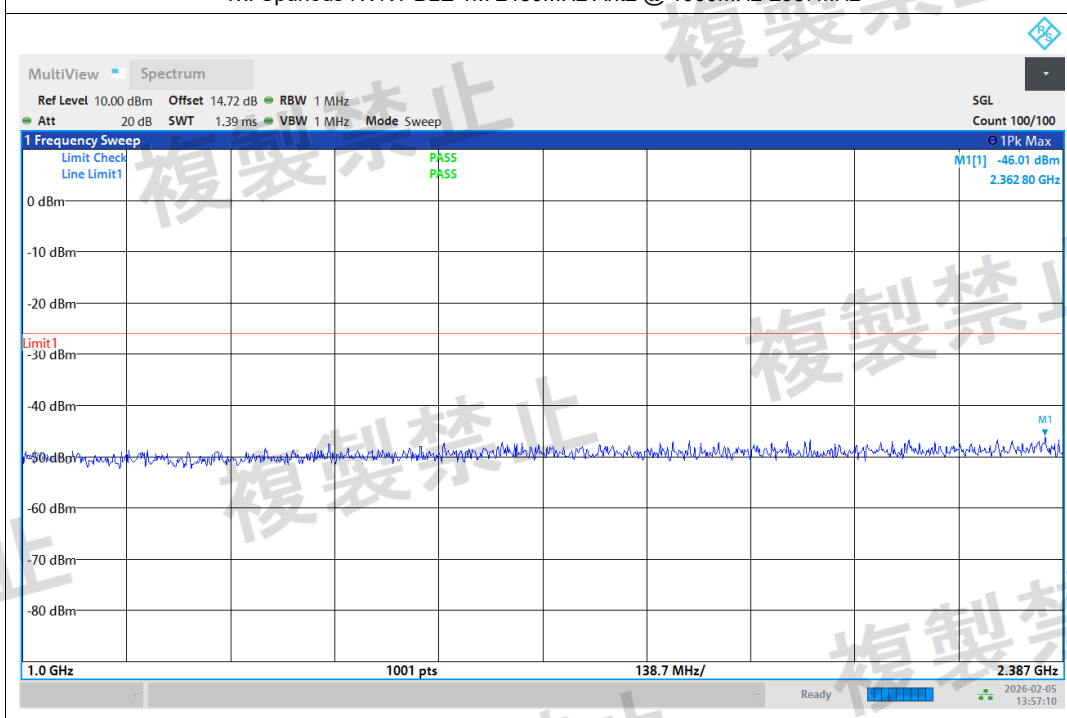
Tx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 2496.5MHz-13000MHz



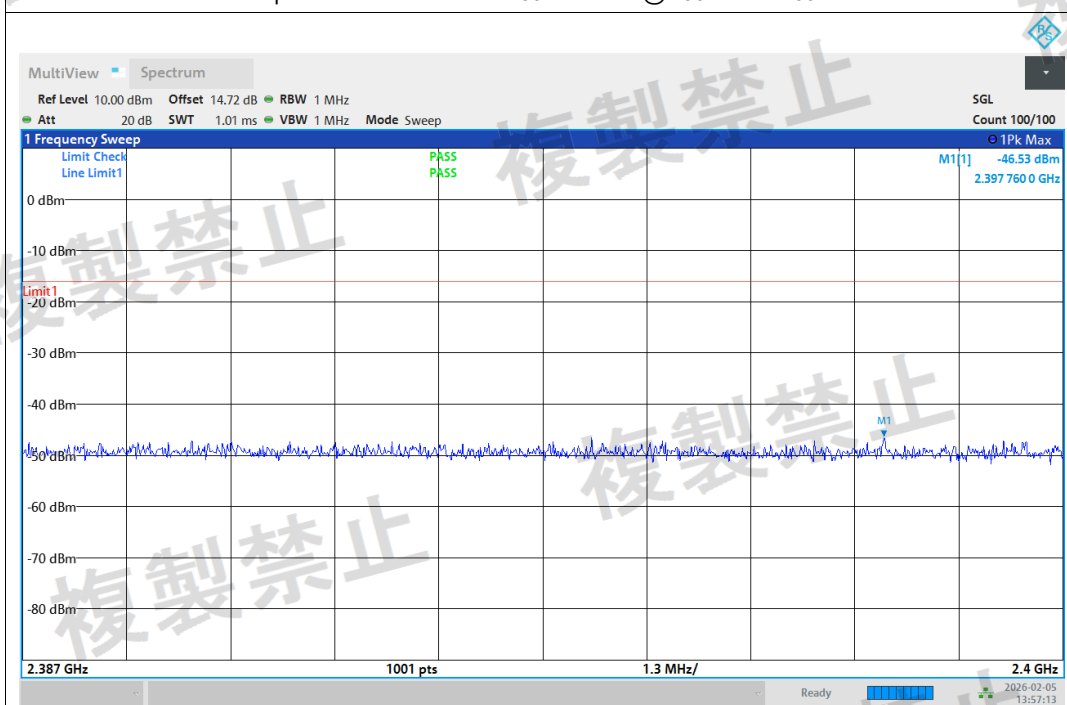
Tx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 30MHz-1000MHz



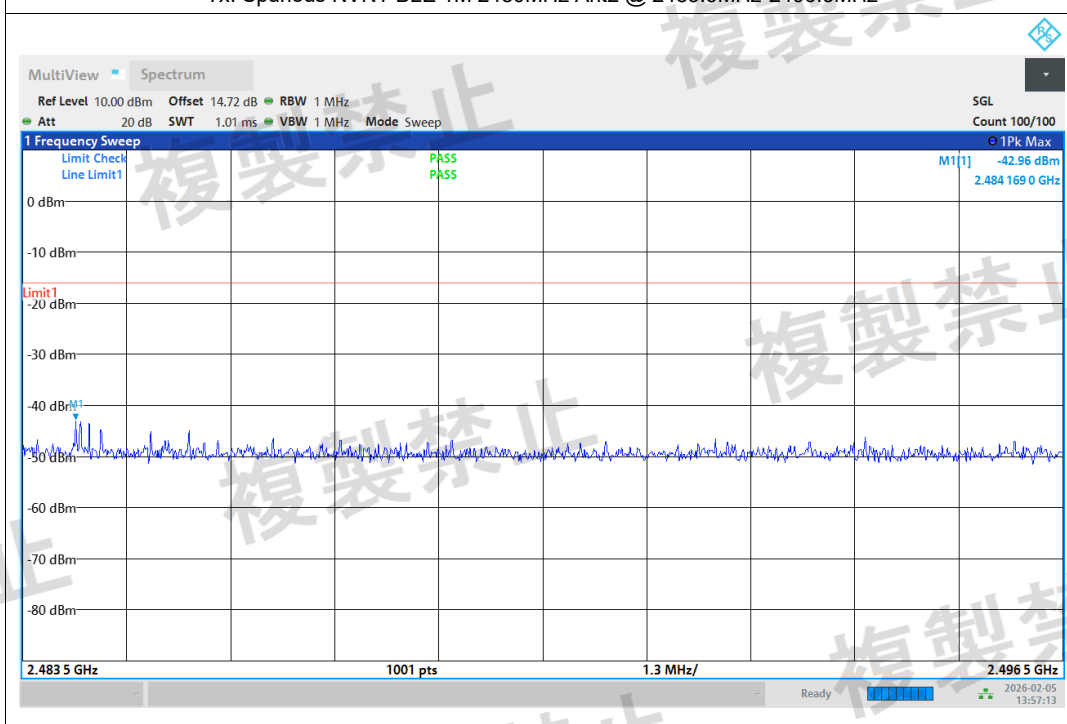
Tx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 1000MHz-2387MHz



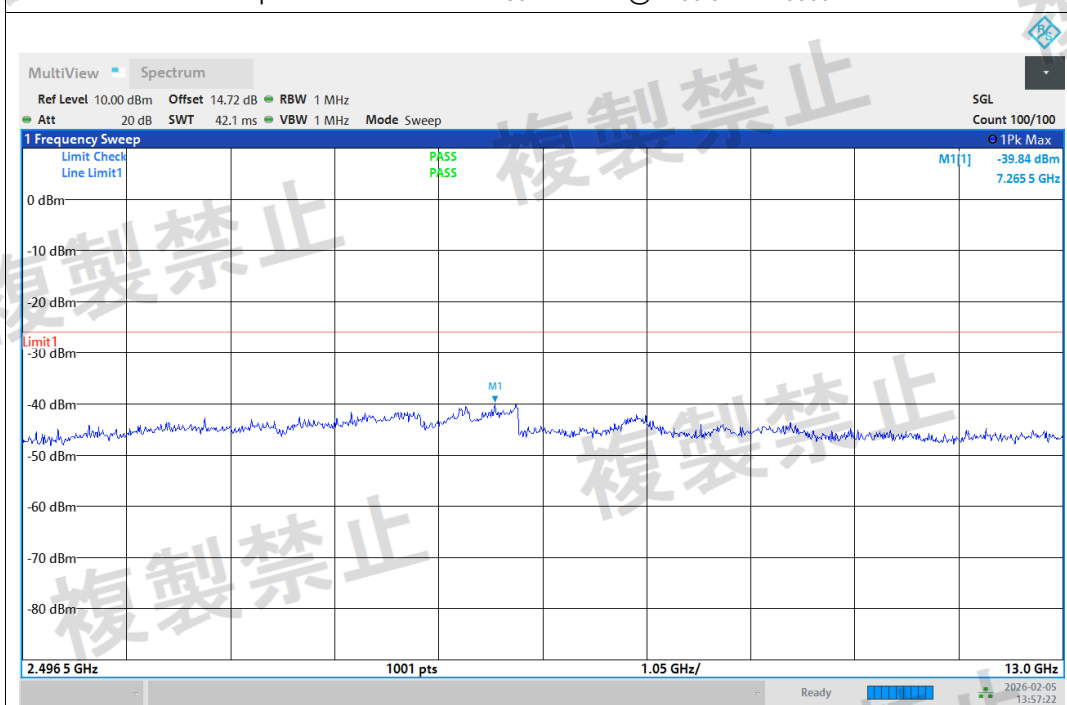
Tx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 2387MHz-2400MHz



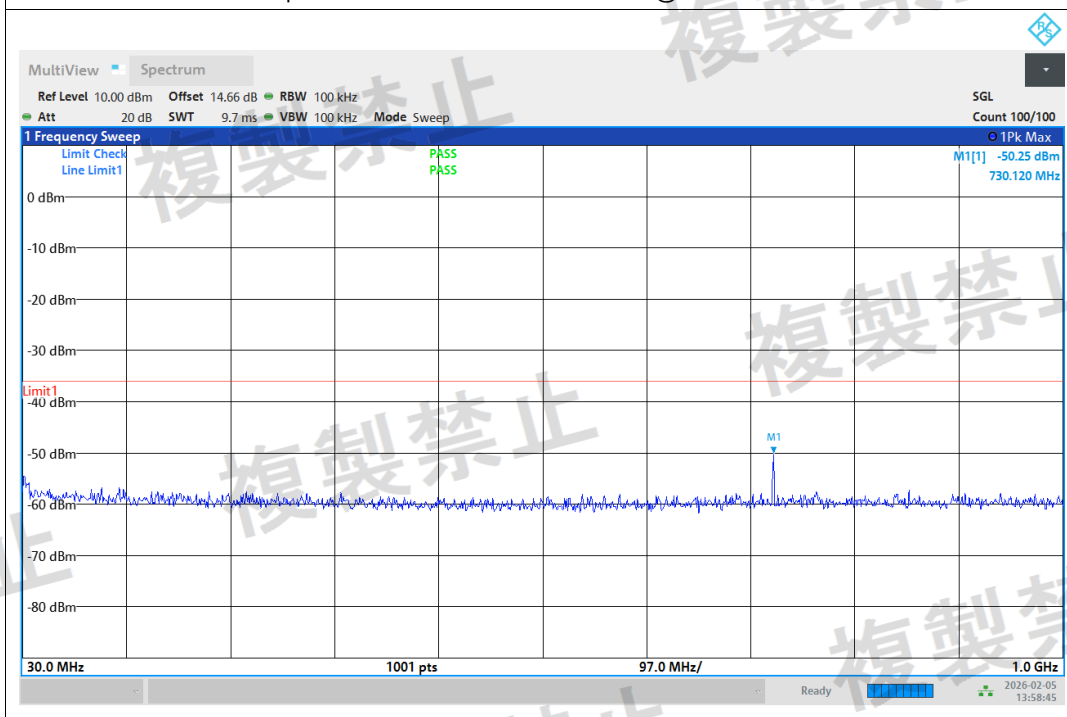
Tx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 2483.5MHz-2496.5MHz



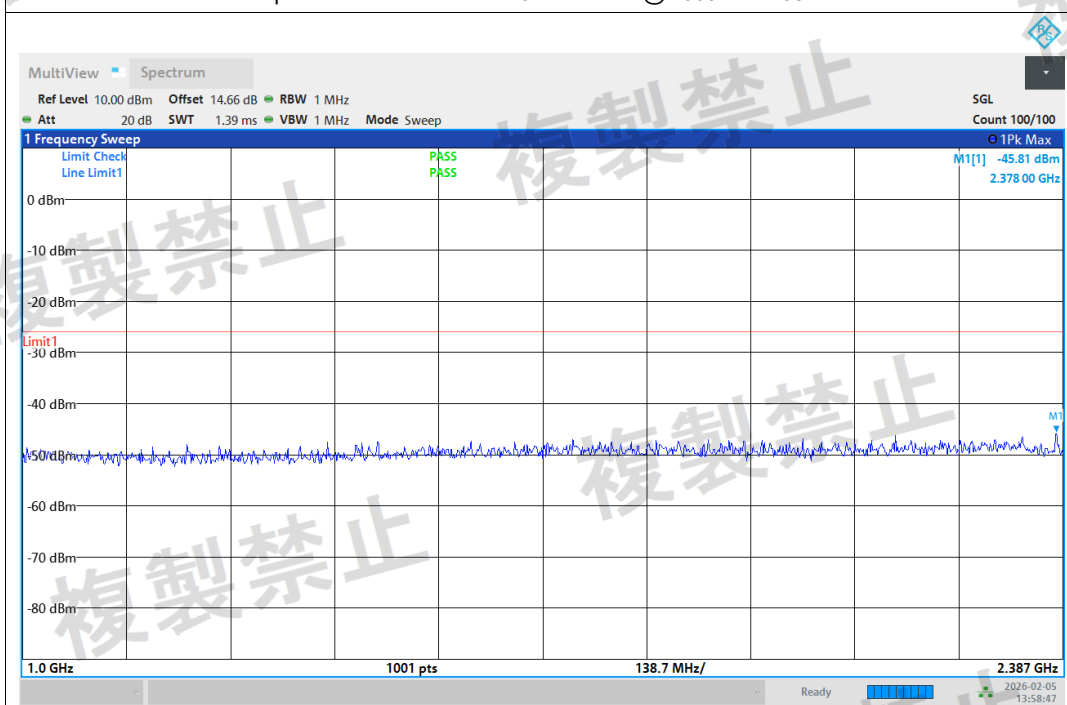
Tx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 2496.5MHz-13000MHz



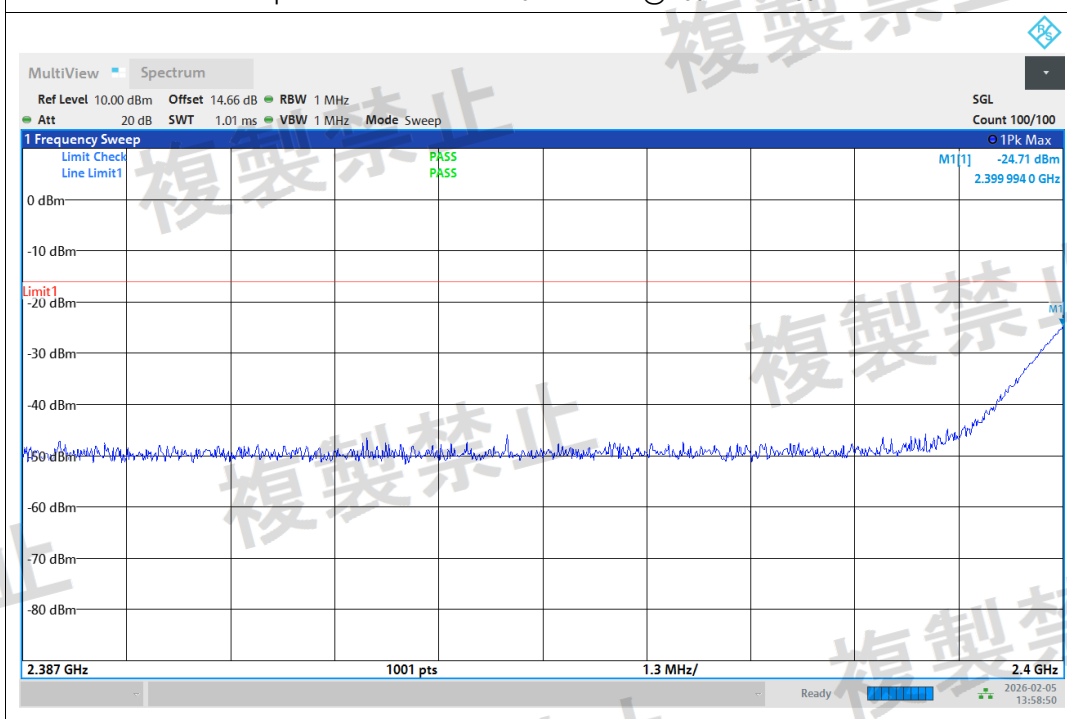
Tx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 30MHz-1000MHz



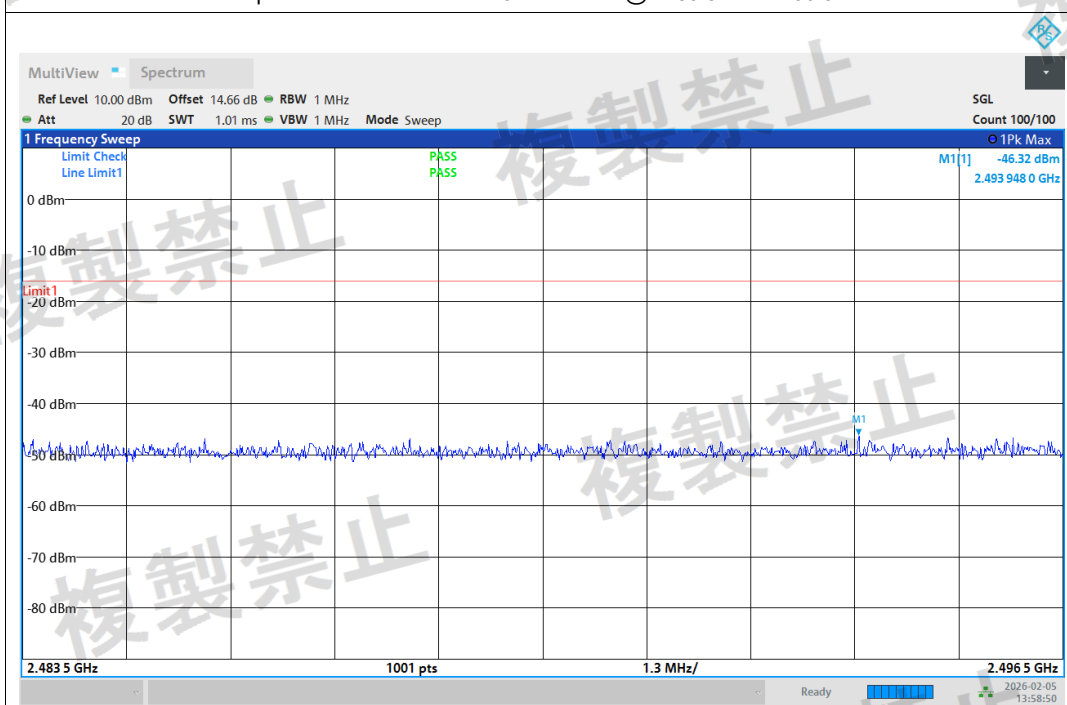
Tx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 1000MHz-2387MHz



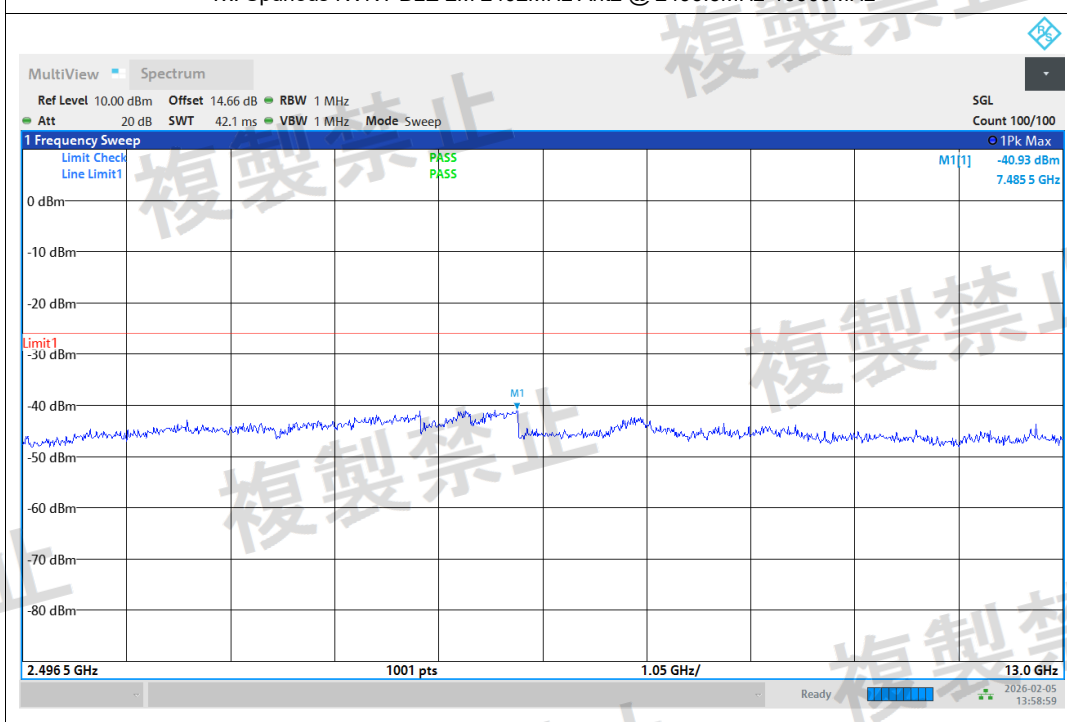
Tx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 2387MHz-2400MHz



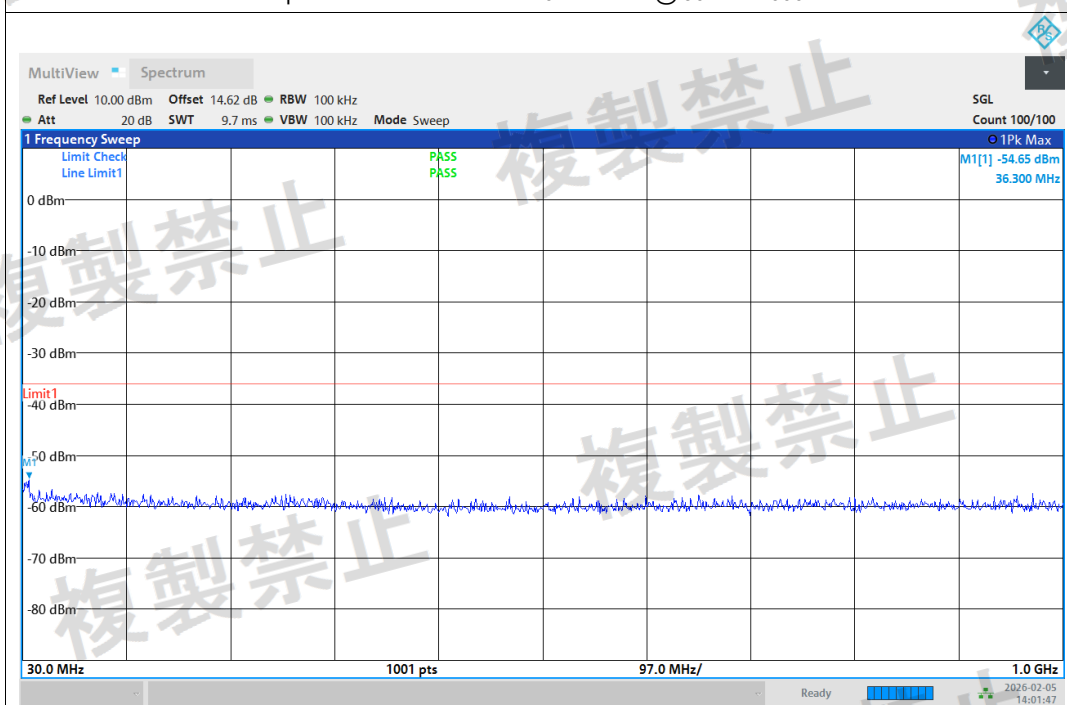
Tx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 2483.5MHz-2496.5MHz



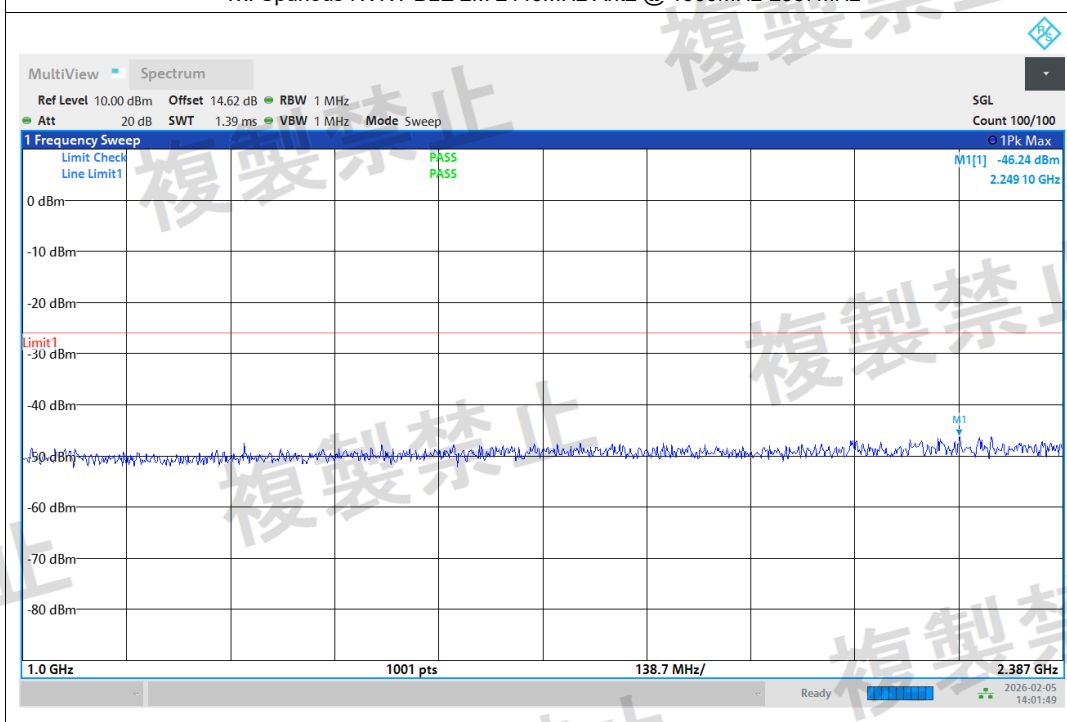
Tx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 2496.5MHz-13000MHz



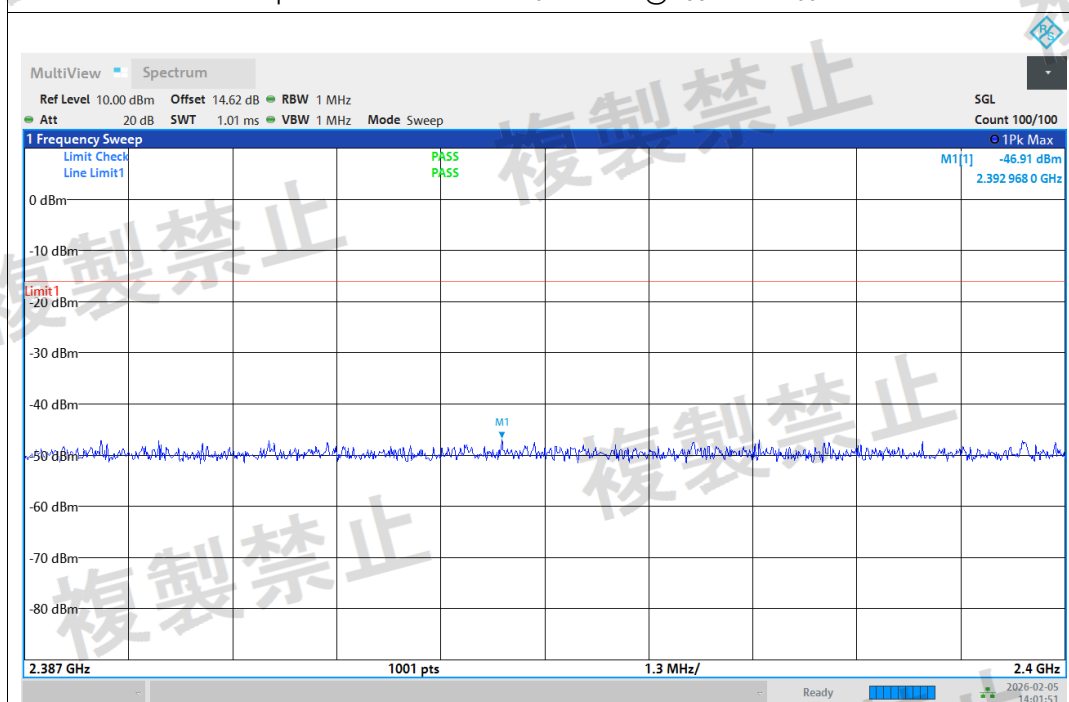
Tx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 30MHz-1000MHz



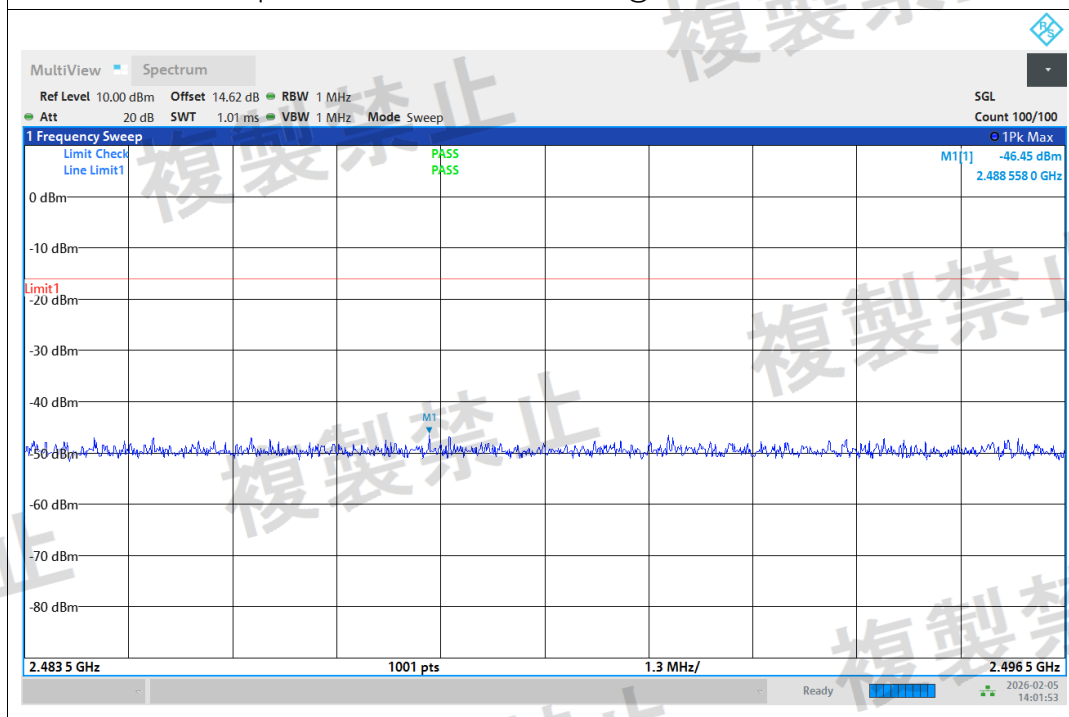
Tx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 1000MHz-2387MHz



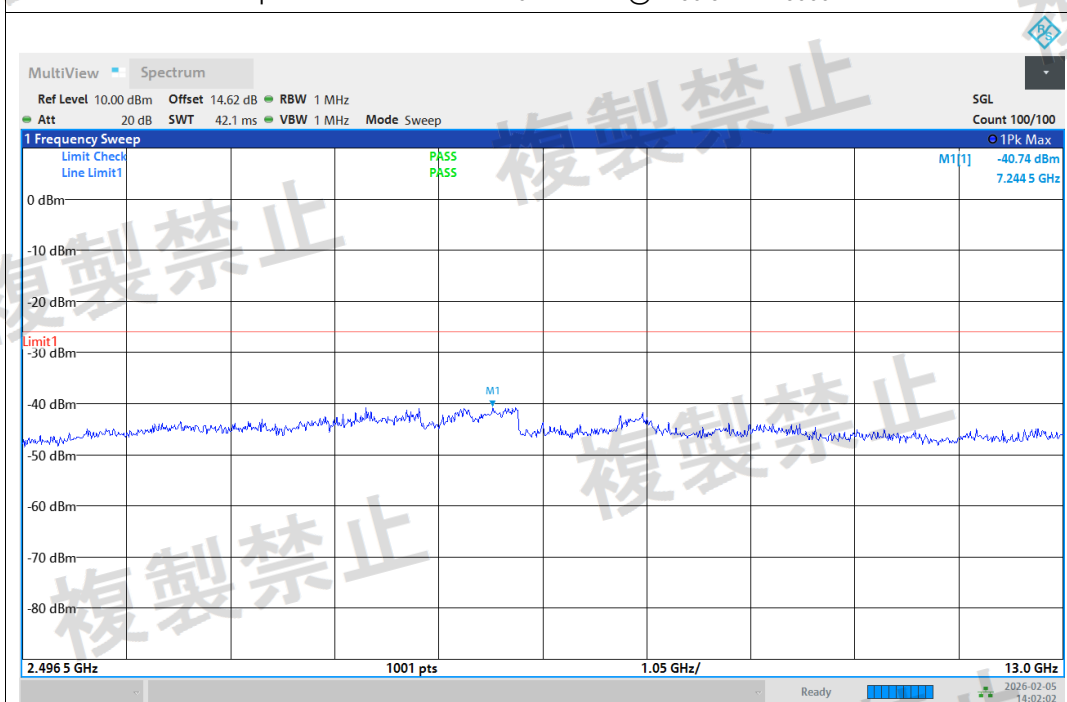
Tx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 2387MHz-2400MHz



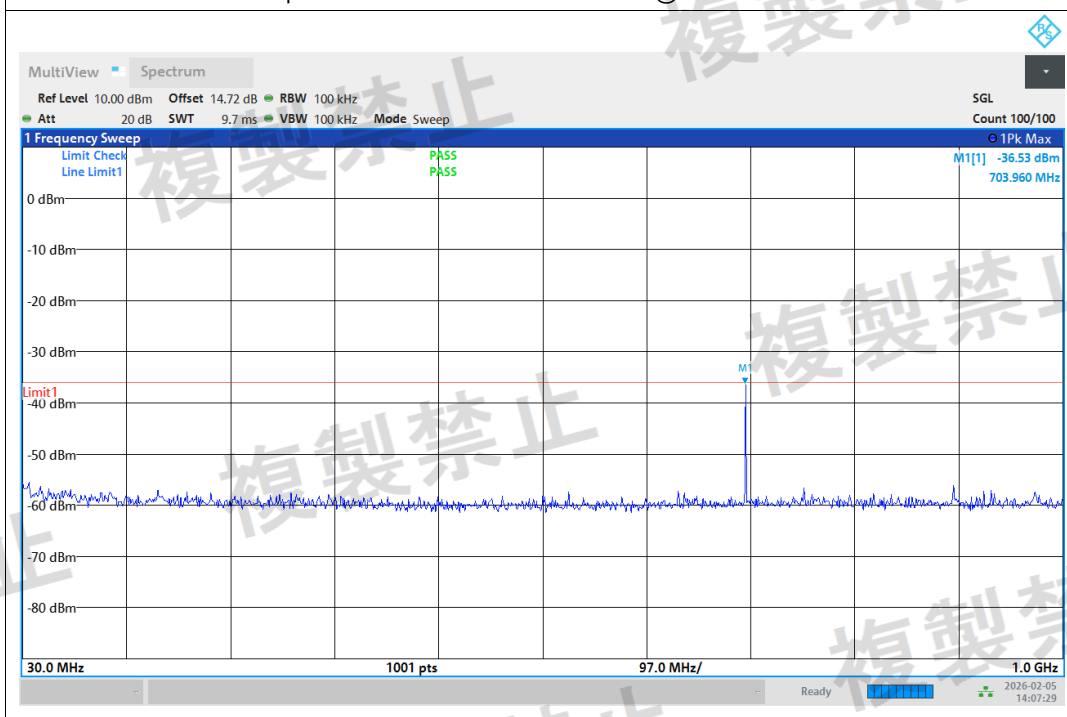
Tx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 2483.5MHz-2496.5MHz



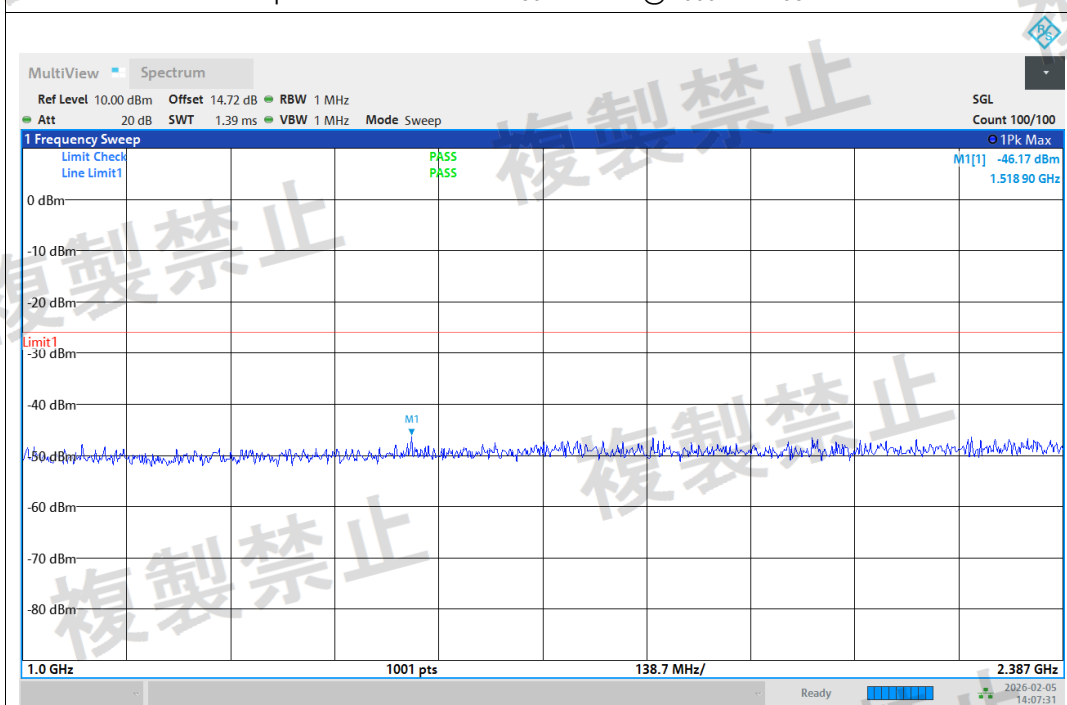
Tx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 2496.5MHz-13000MHz



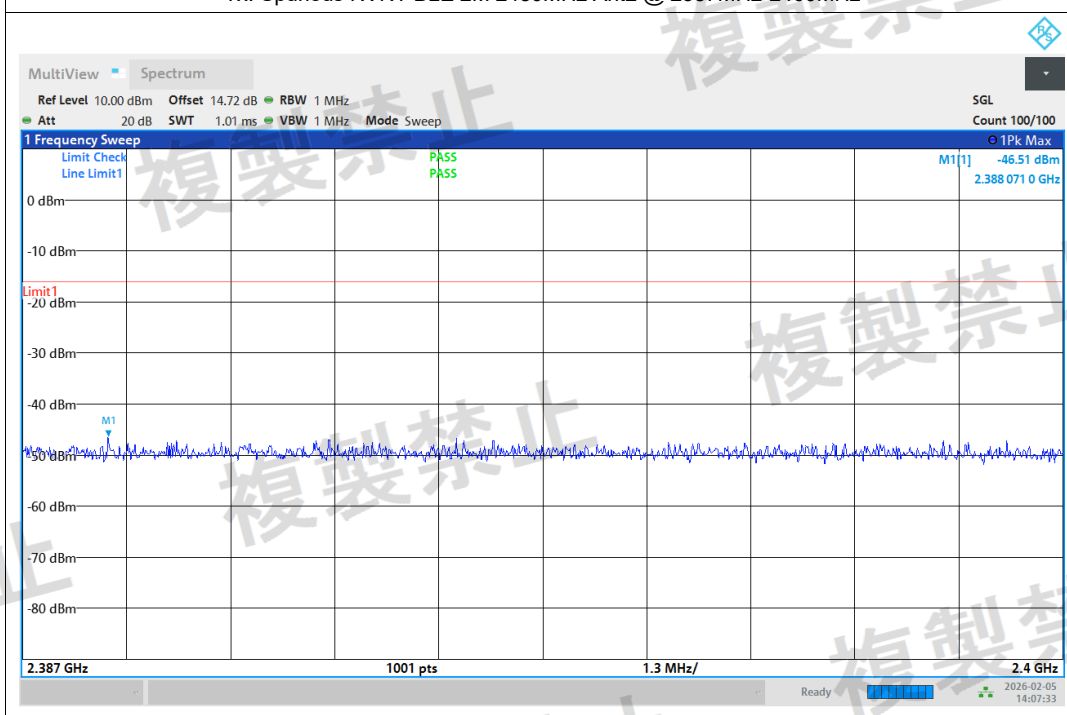
Tx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 30MHz-1000MHz



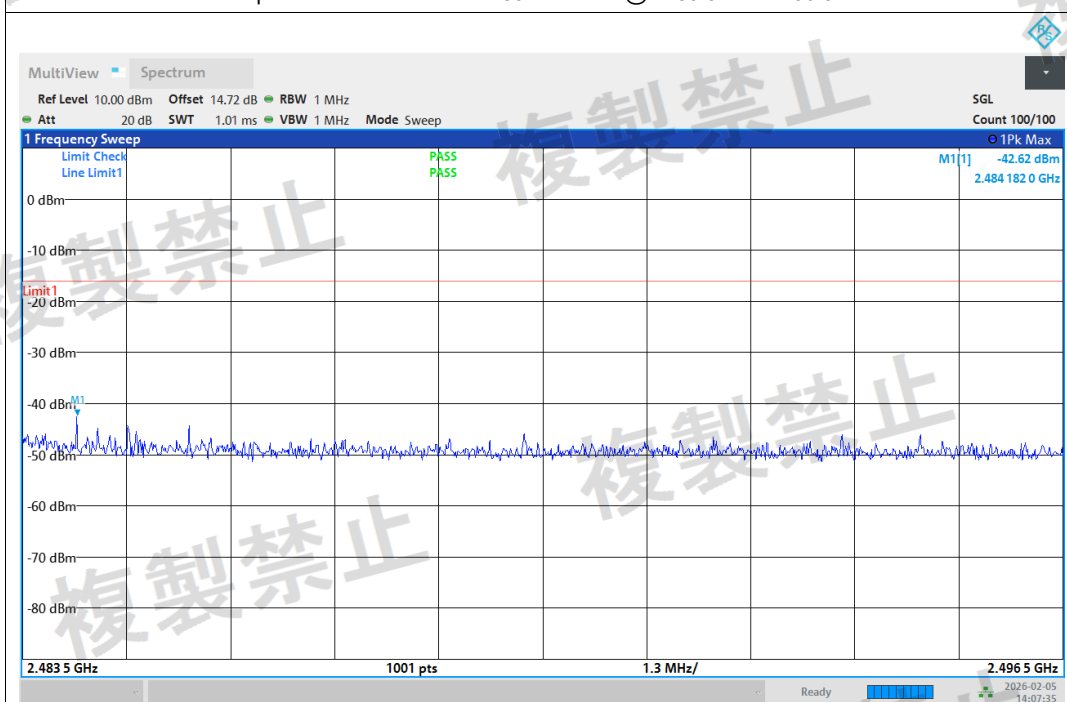
Tx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 1000MHz-2387MHz



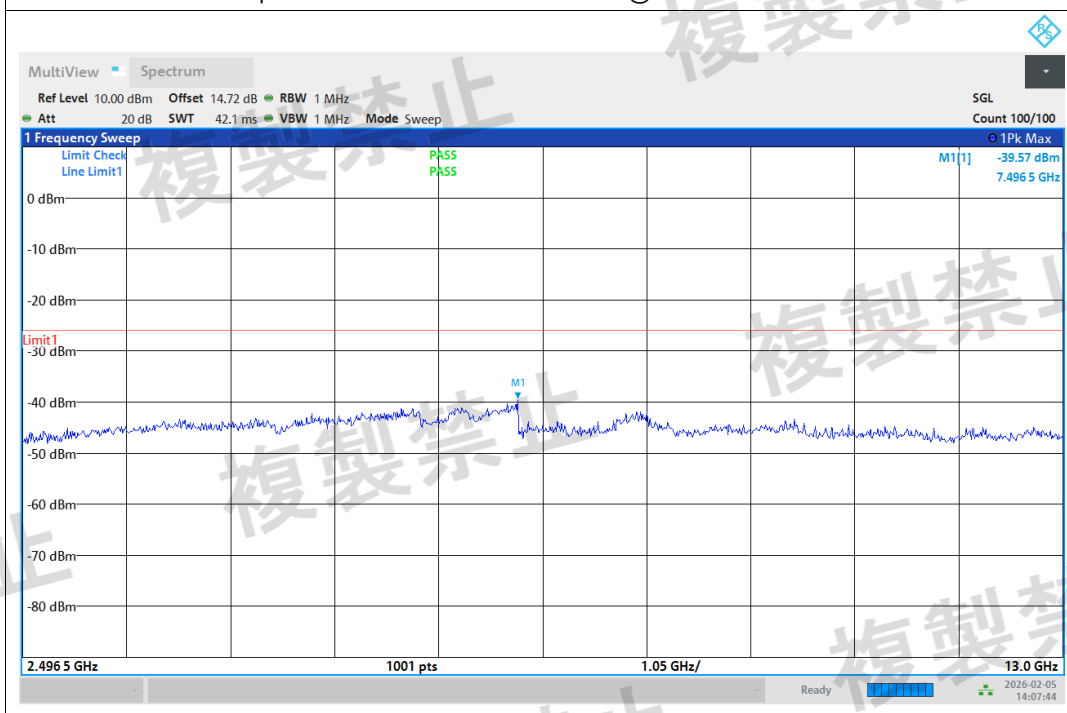
Tx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 2387MHz-2400MHz



Tx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 2483.5MHz-2496.5MHz



Tx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 2496.5MHz-13000MHz

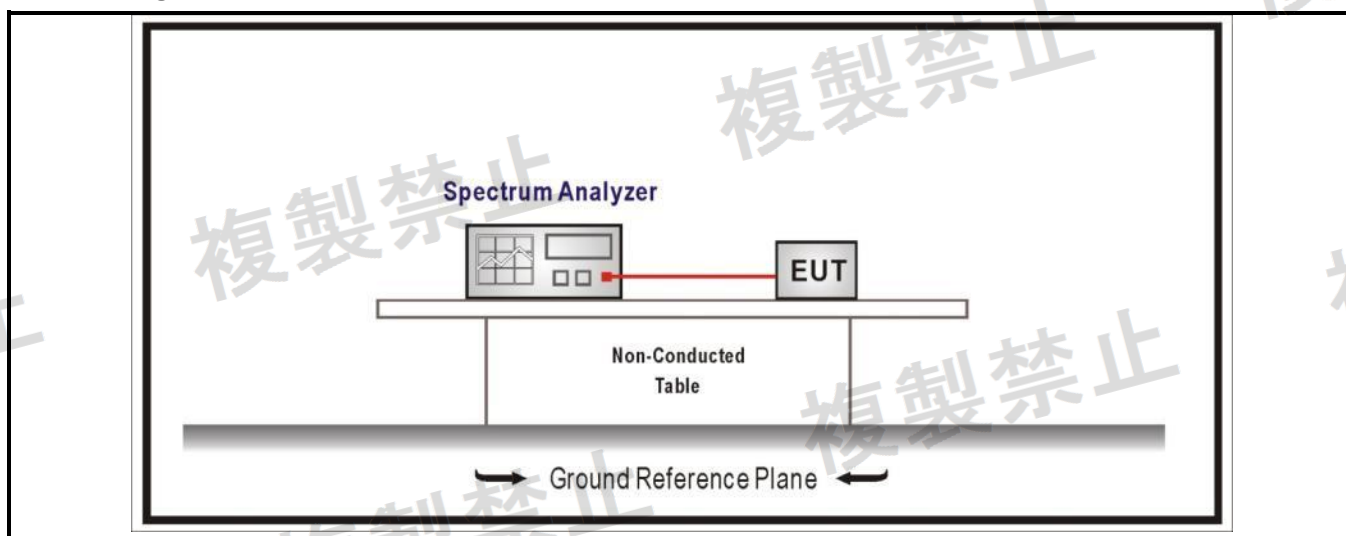


4.5	Receiver Spurious Emission	VERDICT: PASS
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Limit

Standard	ARIB STD-T66
<= 4nW for 30 – 1000 MHz	
<= 20nW for 1000 – 12750 MHz	

Test Configuration



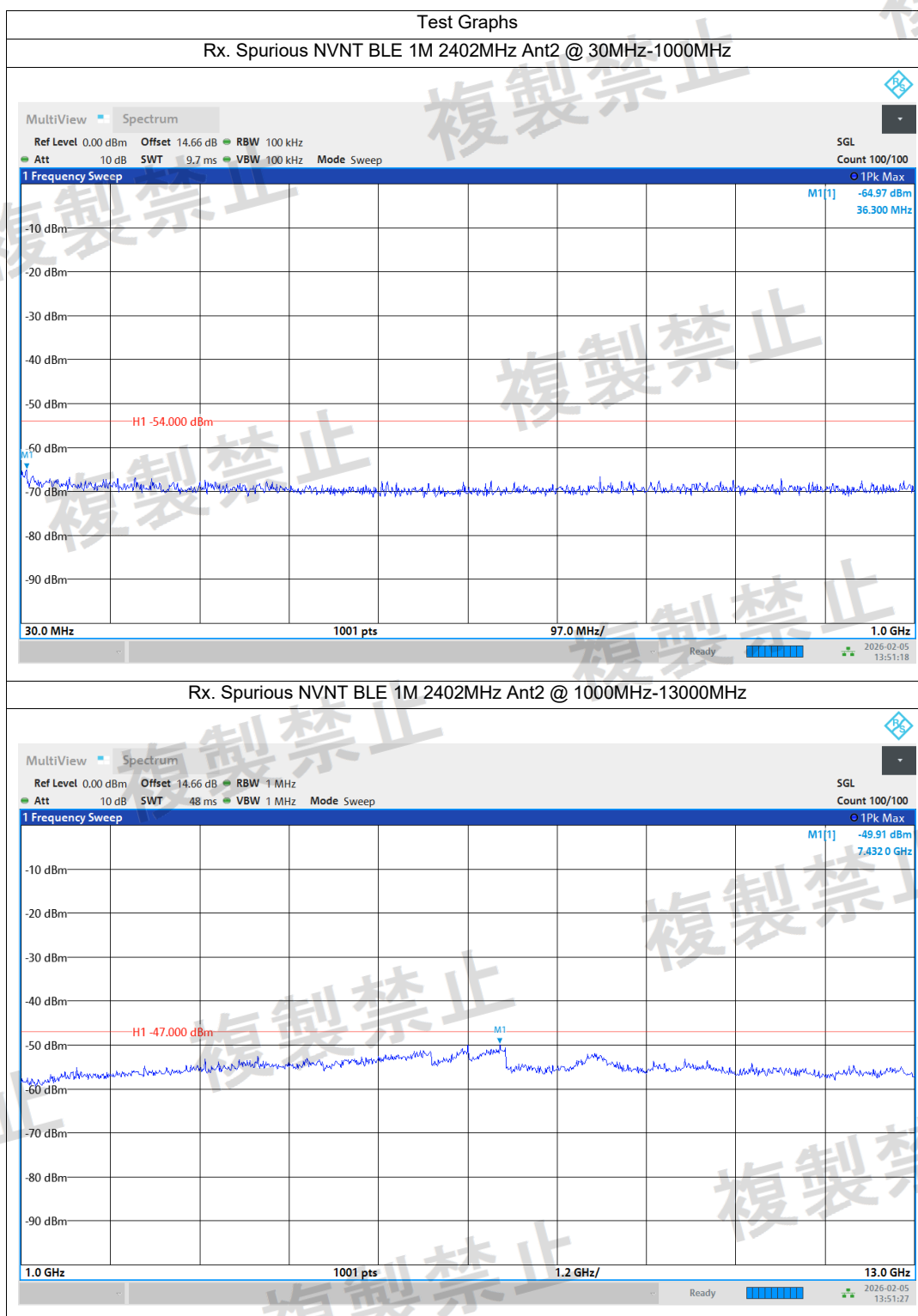
Performed measurements

Port under test	Antenna port	
Test method applied	☒	Conducted measurement
	☐	Radiated measurement
Test setup	Refer to the Annex 3 for test setup photo(s).	
Operating mode(s) used	Mode 2	
Remark	---	

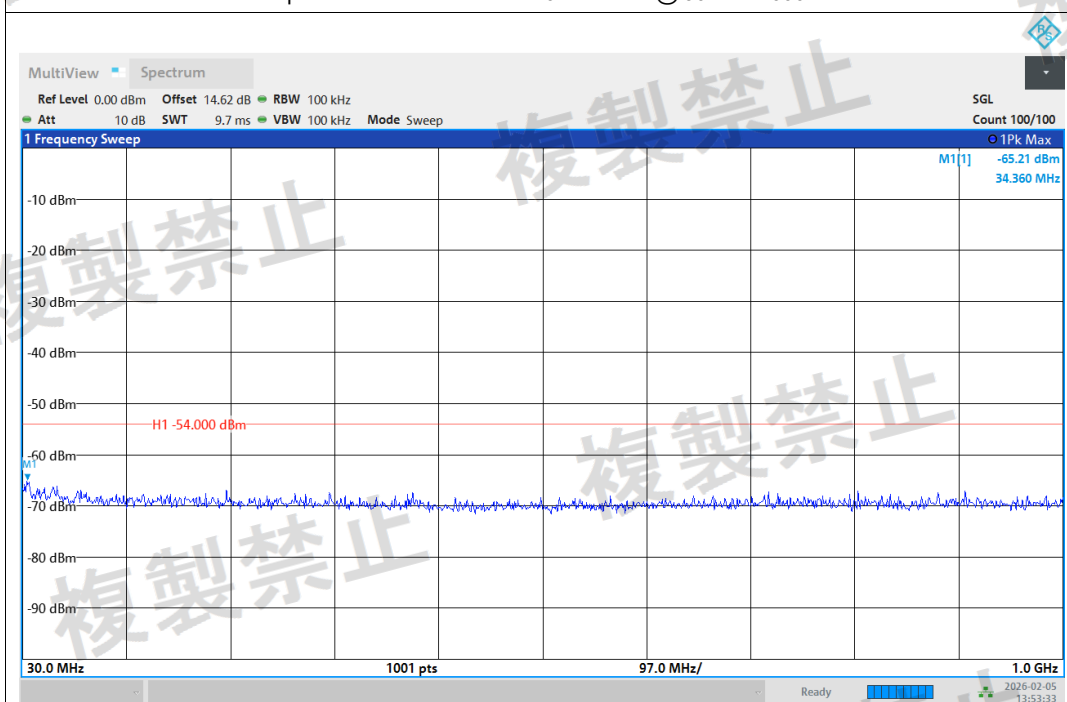
Results

Mode	CH.	Test Freq. (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Limit (dBm)	Result
BLE 1Mbps	00	2402	30-1000	36.3	-64.97	-54	Pass
			1000-13000	7432	-49.91	-47	Pass
	19	2440	30-1000	34.36	-65.21	-54	Pass
			1000-13000	7456	-49.57	-47	Pass
	39	2480	30-1000	35.33	-64.62	-54	Pass
			1000-13000	7444	-50.28	-47	Pass
BLE 2Mbps	00	2402	30-1000	728.19	-63.79	-54	Pass
			1000-13000	7432	-49.32	-47	Pass
	19	2440	30-1000	35.33	-65	-54	Pass
			1000-13000	5777	-50.22	-47	Pass
	39	2480	30-1000	703.96	-62.5	-54	Pass
			1000-13000	7336	-49.9	-47	Pass

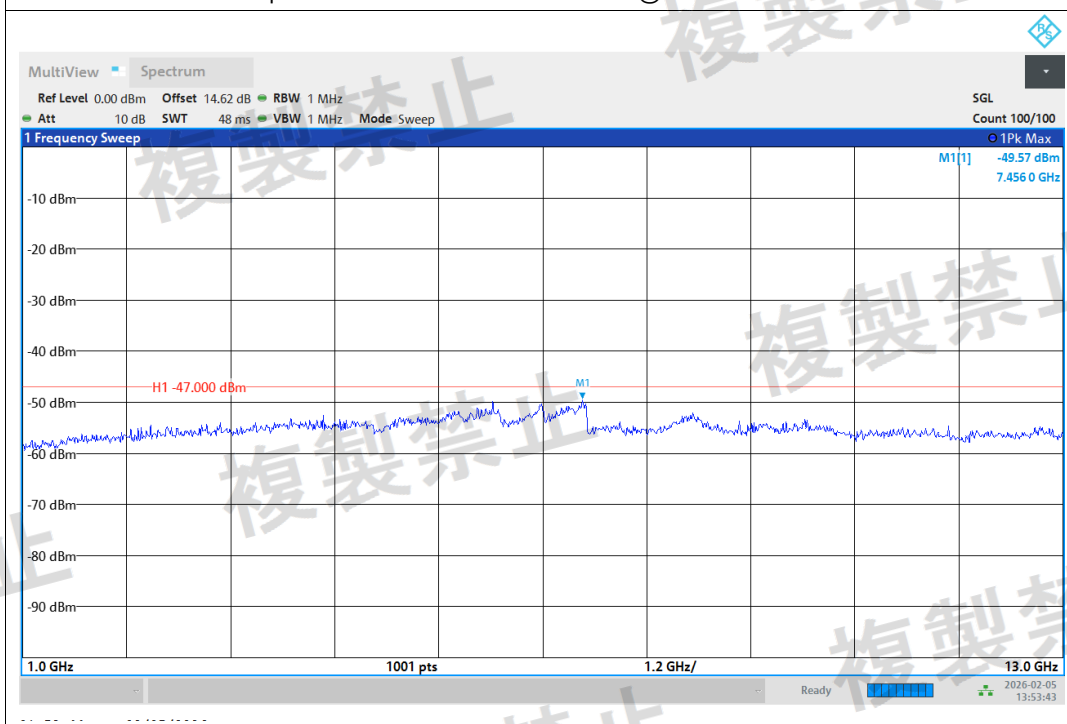
Receiver Spurious Emission



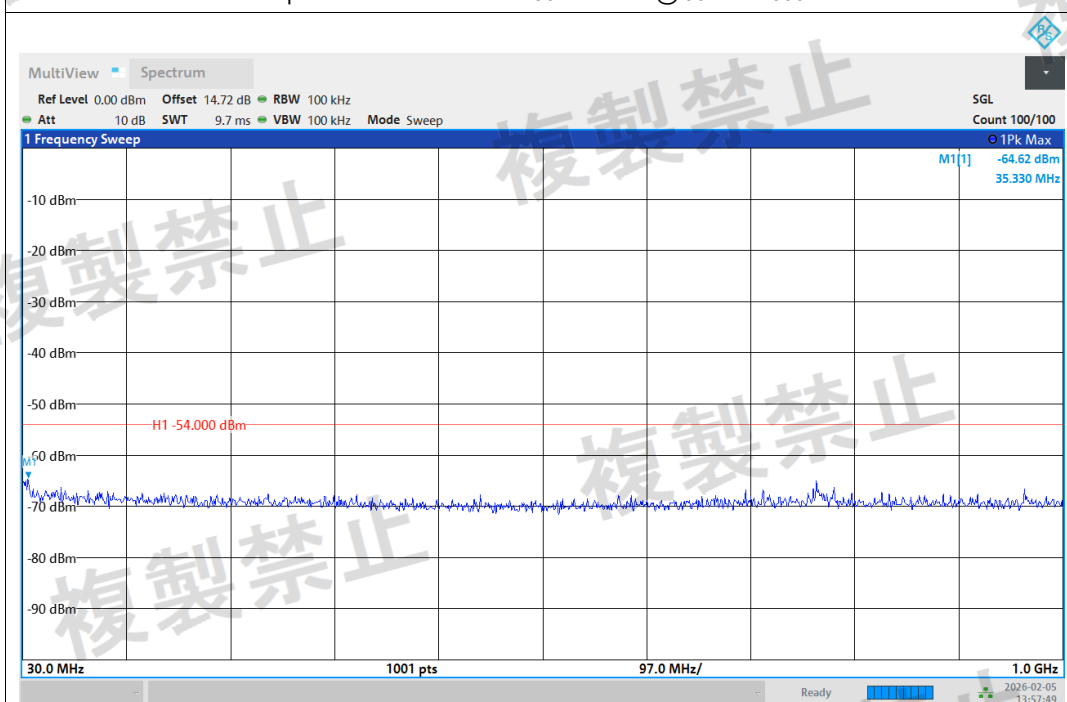
Rx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 30MHz-1000MHz



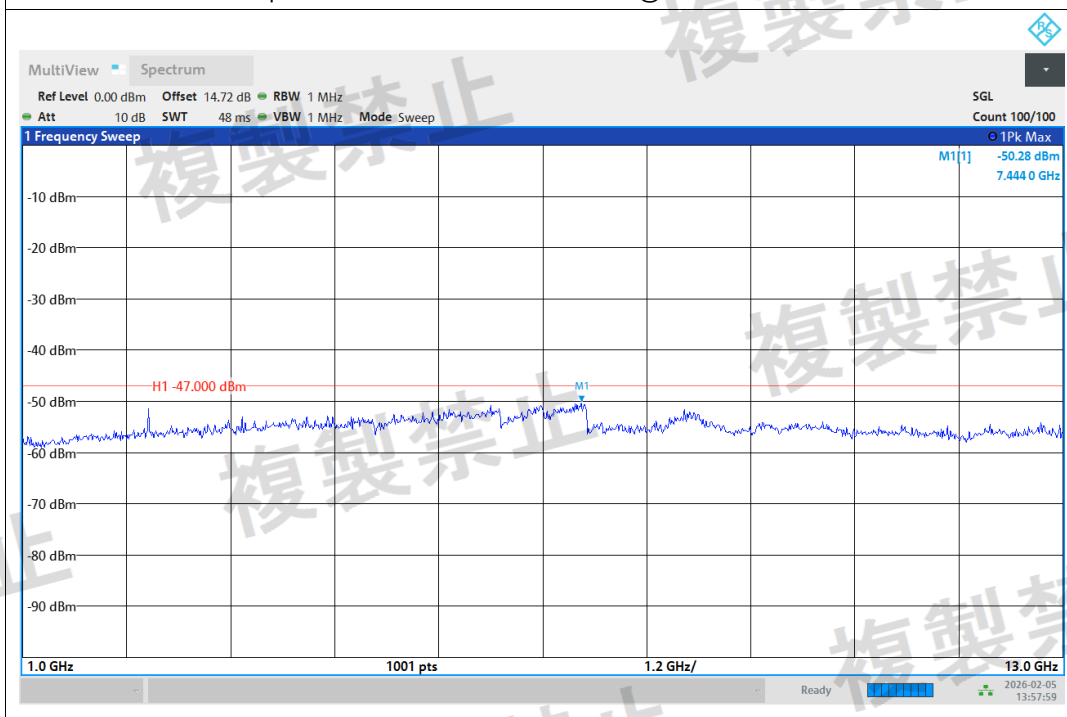
Rx. Spurious NVNT BLE 1M 2440MHz Ant2 @ 1000MHz-13000MHz



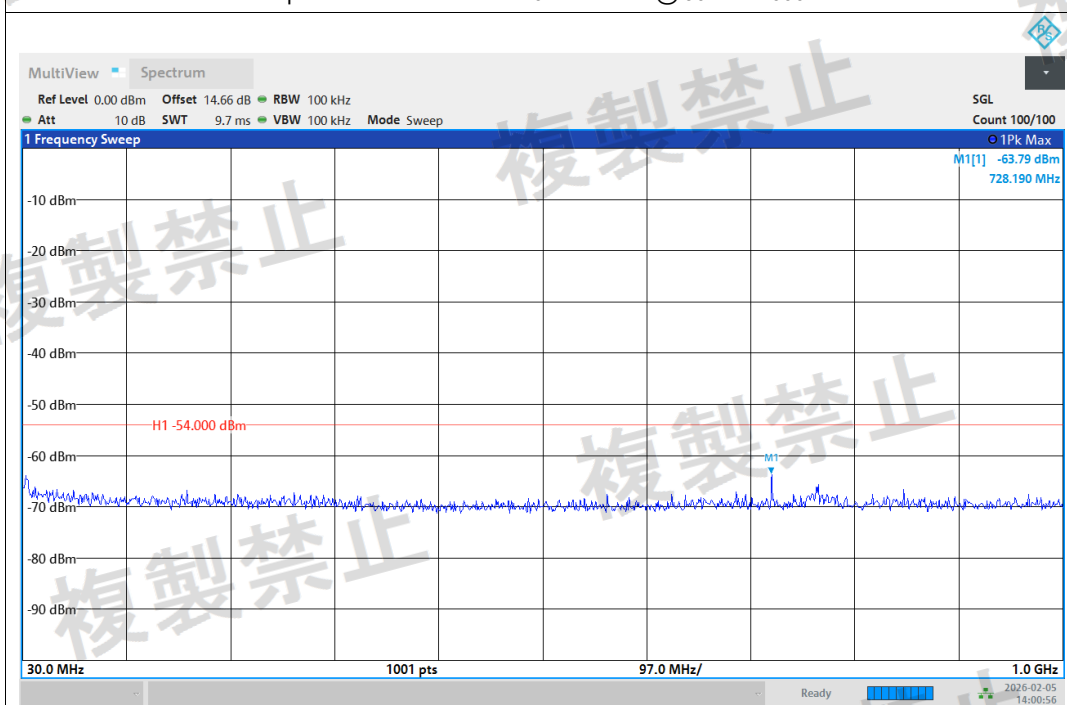
Rx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 30MHz-1000MHz



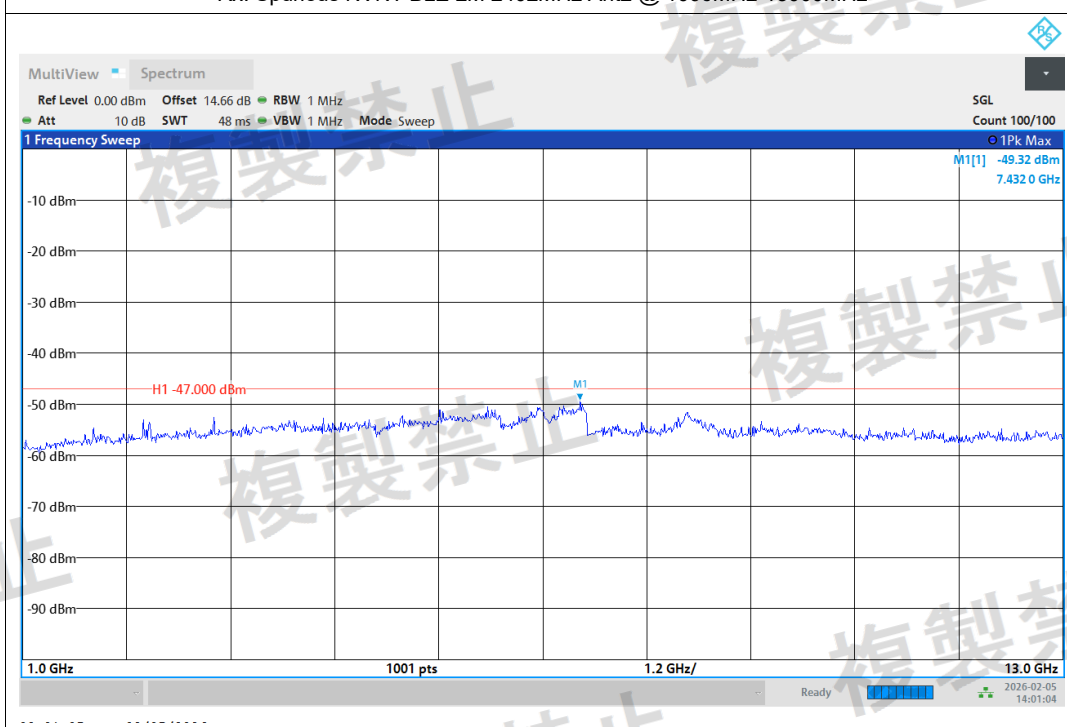
Rx. Spurious NVNT BLE 1M 2480MHz Ant2 @ 1000MHz-13000MHz



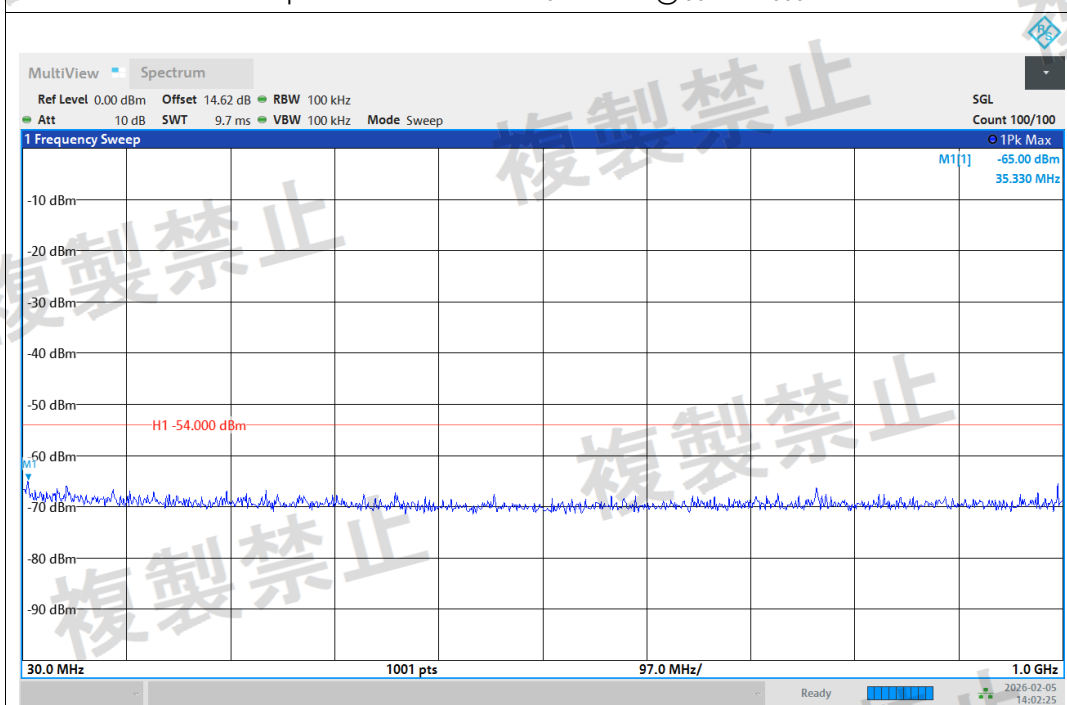
Rx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 30MHz-1000MHz



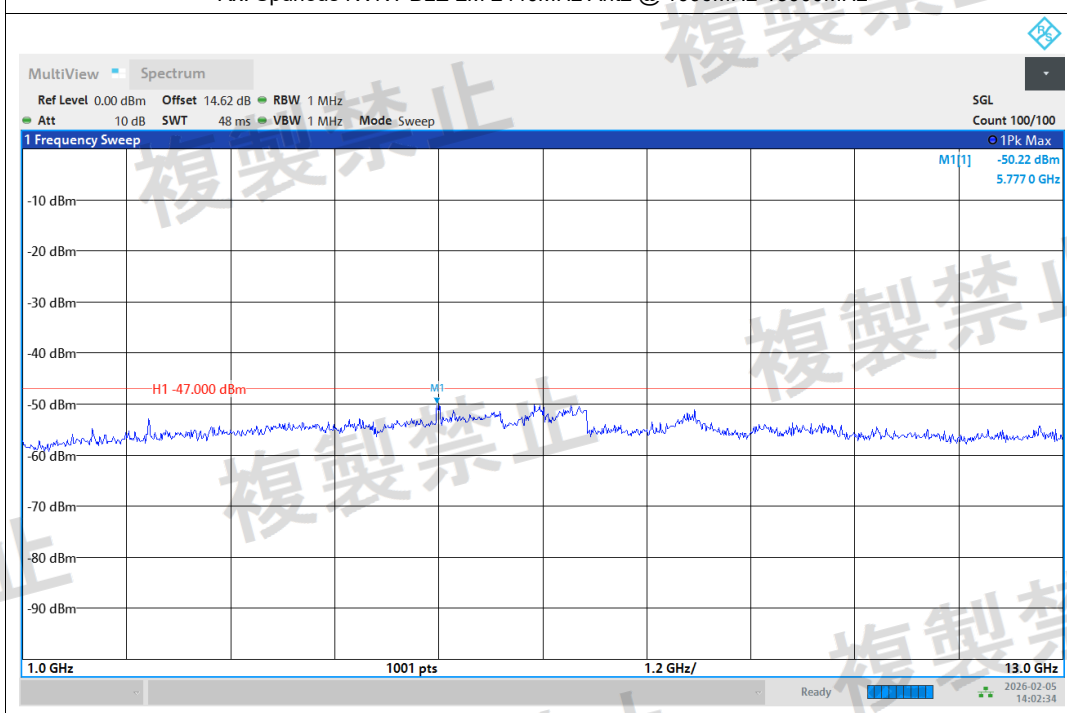
Rx. Spurious NVNT BLE 2M 2402MHz Ant2 @ 1000MHz-13000MHz



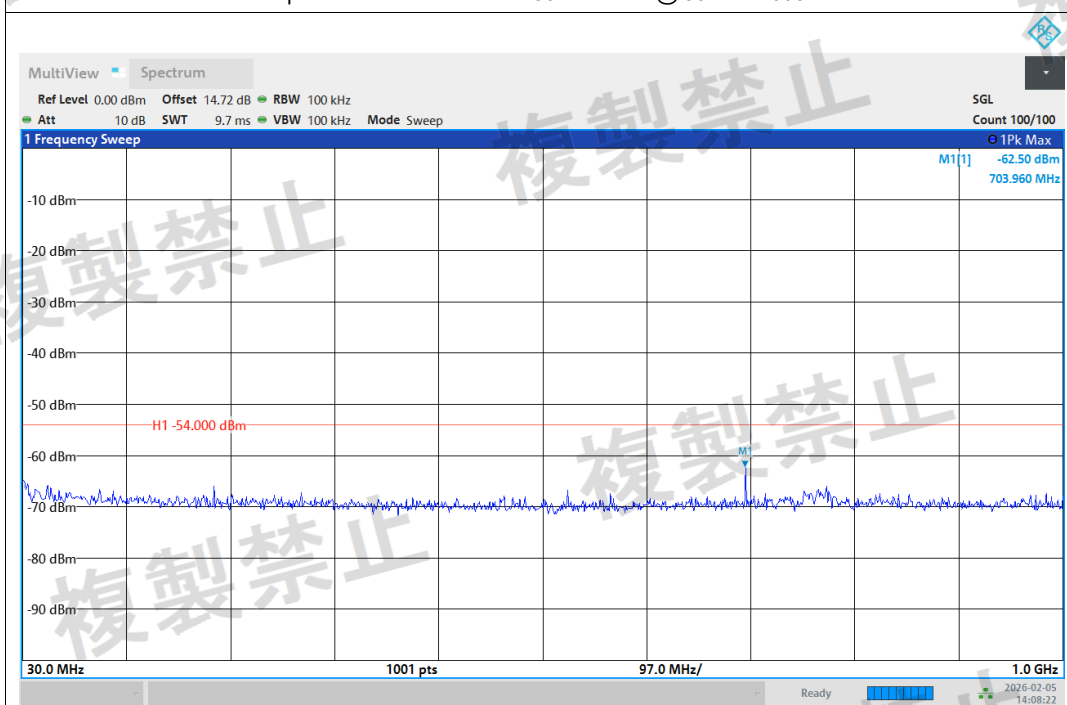
Rx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 30MHz-1000MHz



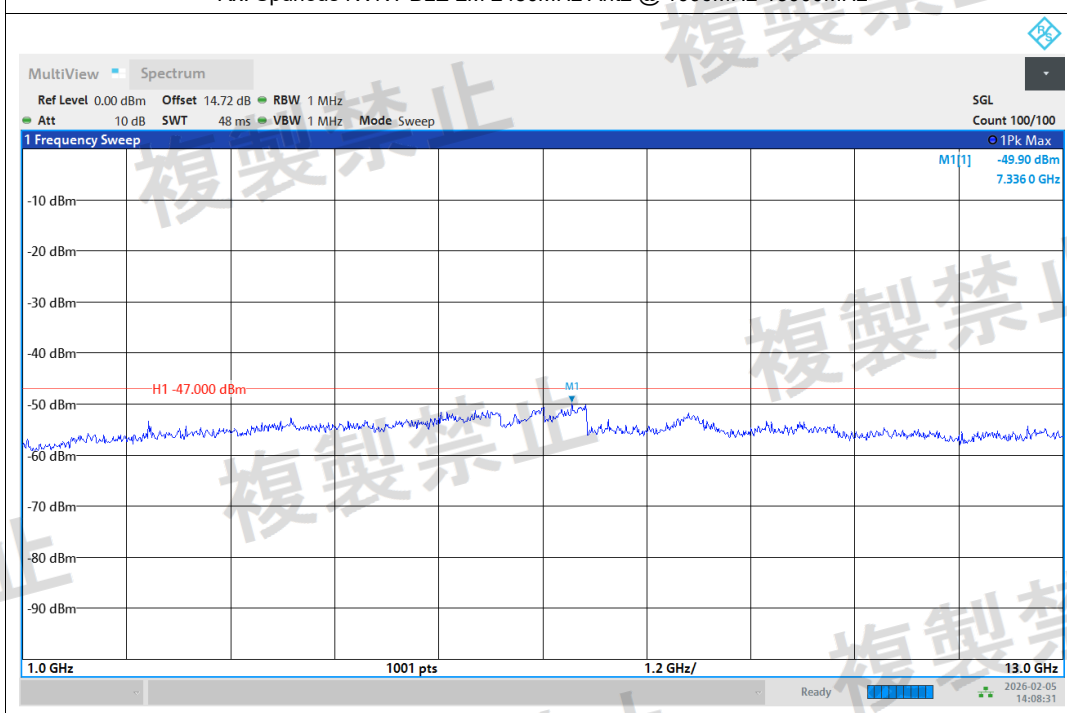
Rx. Spurious NVNT BLE 2M 2440MHz Ant2 @ 1000MHz-13000MHz



Rx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 30MHz-1000MHz



Rx. Spurious NVNT BLE 2M 2480MHz Ant2 @ 1000MHz-13000MHz



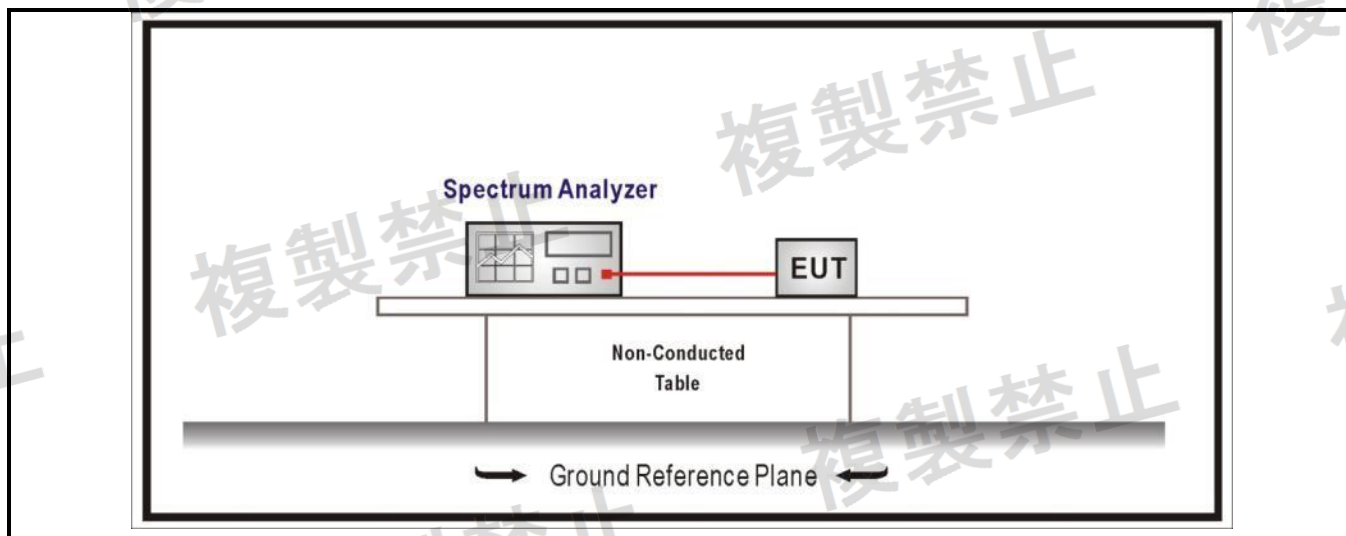
4.6 Interference Prevention Function Measurement

VERDICT: PASS

Limit

Standard	ARIB STD-T66
Identifying code length 48bit	

Test Configuration



Performed measurements

Port under test	Antenna port	
Test method applied	☒	Conducted measurement
	☐	Radiated measurement
Test setup	Refer to the Annex 3 for test setup photo(s).	
Operating mode(s) used	Mode 1	
Remark	---	

Results

EUT MAC Address: 00E012345678

[2022-11-10 18:20:50.621]# SEND HEX>

01 09 10 00

[2022-11-10 18:20:50.677]# RECV HEX>

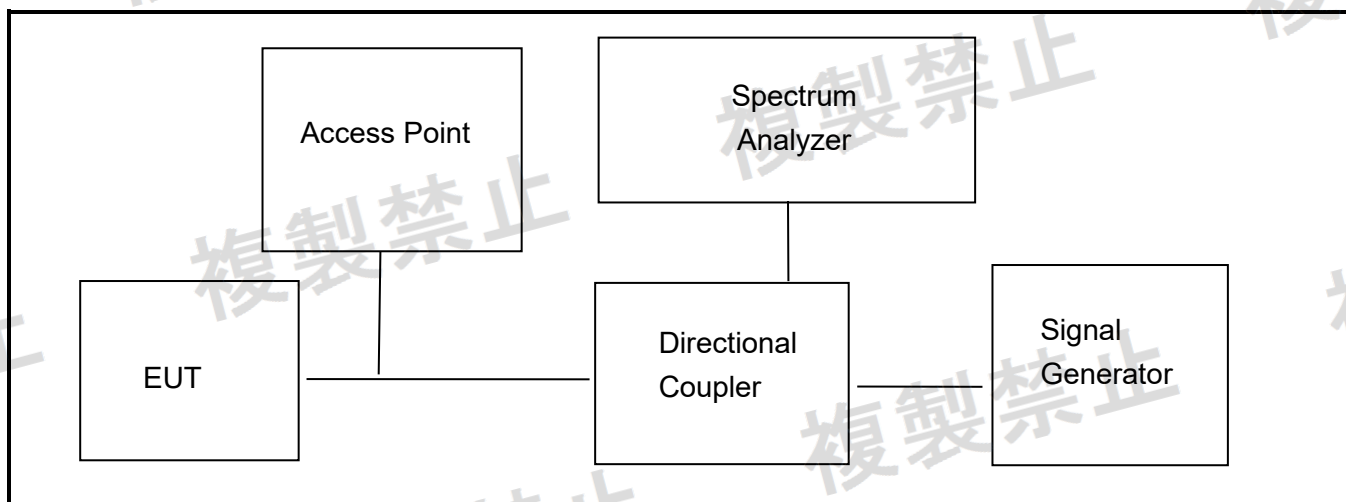
04 0E 0A 02 09 10 00 78 56 34 12 E0 00

4.7	Carrier Sense Measurement	VERDICT: PASS
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Limit

Standard	ARIB STD-T66
The EUT shall have the interference prevention capability to transmit or to receive the identification automatically, so that sender and receiver shall exclude other equipment.	

Test Configuration



Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency Carrier Sense Measurement. 1.Link EUT and Access Point to Directional Coupler input port. 2.Link Signal Generator and Spectrum Analyzer to test port and output port in the Directional Coupler separately. 3.A positive Peak Detector function in Spectrum Analyzer must be used. 4.Set the Span to Zero. 5.Press the Signal Generator on and it will output the Carrier Signal. When the Link breaks off, wait a minute and press the Signal Generator off. After a while, reset the Link and done the tes
--

5 CONFORMING THE STRUCTURE THAT IS DIFFICULT TO OPEN

The Radio Equipment:	
☐	Use Special Screw
☐	Metal Shielding is Soldered
☐	Use Ball Grid Array (BGA)
☒	RF module/Chip Pins > 20
☐	RF module/Chip Pins distance < 1.5 mm

The high-frequency section and modulation section (except for the antenna system) are not capable of being opened easily.

6 IDENTIFICATION OF THE EQUIPMENT UNDER TEST

Remark: The test setup photo and EUT Photo please see appendix.

ANNEX 1 – MEASUREMENT UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Test item	Uncertainty
Output Power and Output Power Tolerance	0.16 dB
Spread Bandwidth and Spread Factor	1.3 ppm
Occupied Bandwidth	0.16 dB
Frequency Error	1.3 ppm
Transmitter Spurious Emissions	0.16 dB
Receiver Spurious Emissions	0.16 dB
Interference Prevention Function Measurement	/
Carrier Sense Measurement	/

ANNEX 2 – USED EQUIPMENT

Equipment Name	Manufacturer	Type/Model	Serial Number	Last Cal Date	Cal Due date	Calibration Body	Calibration Method
Vector signal generator	ROHDE & SCHWARZ	SMM100A	101780	2025/10/27	2026/10/26	CEPREI	c
Open switch and control platform	ROHDE & SCHWARZ	OSP150	100856	2025/10/27	2026/10/26	CEPREI	c
Signal & Spectrum Analyzer	ROHDE & SCHWARZ	FSV3044	101287	2025/10/27	2026/10/26	CEPREI	c
Wireless Connectivity Tester	ROHDE & SCHWARZ	CMW270	102651	2025/10/27	2026/10/26	CEPREI	c
Signal Generator	ROHDE & SCHWARZ	SMB100A	183222	2025/10/27	2026/10/26	CEPREI	c
DC Power Supply	apc	ADC-0800100-15	D222120022	2025/10/27	2026/10/26	CEPREI	c
AC Power Supply	apc	KDF-11005GS	F322120041	2026/01/05	2027/01/04	CEPREI	c
Temperature & Humidity Chamber	HESON	HS-225B	CDW230301-01	2025/10/27	2026/10/26	CEPREI	c
Software	MWRFtest	MTS 8310	2.0.0.0	N/A	N/A	N/A	N/A

Note:

1. CEPREI: CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

2. Calibration Method:

a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1)

b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)

c) Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)

d) Calibration conducted by using measuring instruments and other equipment listed in the right column of Table No. 3 attached hereto, which shall have been given any of calibration, etc. listed above from a) to c)

--- END ---