

TEST REPORT

Report No. : **CTC2026313301**

Applicant : **Trangjan Technology Group(Dongguan)Co., Ltd**

Address..... : 3rd&4th F, No. 3 bulding, Times Thingking, Luwu Sanlian Road, Changping Town, Dongguan, Guangdong, 523570, China

Manufacturer..... : Trangjan Technology Group(Dongguan)Co., Ltd

Address..... : 3rd&4th F, No. 3 bulding, Times Thingking, Luwu Sanlian Road, Changping Town, Dongguan, Guangdong, 523570, China

Product Name : **Wallet**

Trade Mark : /

Model/Type reference : K02

Listed Model(s) : P06, P17, P15

Standard : **Article 2, Paragraph 1, Item 19**

Test Report Form No : CTC-TR-073_A5

Master TRF : Dated 2026-06-01

Date of receipt of test sample..... : Jun. 25, 2026

Date of testing..... : Jun. 26, 2026 ~ Jul. 30, 2026

Date of issue..... : Jul. 30, 2026

Result..... : **PASS**

Compiled by:
(Printed name + signature) Lucy Lan

Supervised by:
(Printed name + signature) Eric Zhang

Approved by:
(Printed name + signature) Totti Zhao

Lucy Lan

Eric Zhang

Totti Zhao

This test report may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CTC. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to CTC within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.

Table of Contents

Page

1. SUMMARY.....	3
1.1. TEST STANDARDS	3
1.2. REPORT VERSION.....	3
1.3. TEST DESCRIPTION.....	3
1.4. TEST FACILITY	4
1.5. MEASUREMENT UNCERTAINTY.....	5
2. GENERAL INFORMATION	6
2.1. ENVIRONMENTAL CONDITIONS.....	6
2.2. CLIENT INFORMATION.....	6
2.3. GENERAL DESCRIPTION OF EUT	7
2.4. DESCRIPTION OF TEST MODES	8
2.5. MEASUREMENT INSTRUMENTS LIST	9
3. TEST CONDITIONS AND RESULTS	10
3.1. FREQUENCY ERROR.....	10
3.2. ANTENNA POWER	13
3.3. OCCUPIED BANDWIDTH	14
3.4. TRANSMITTER SPURIOUS EMISSION STRENGTH AND UNWANTED EMISSION INTENSITY	17
3.5. RECEIVER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY.....	28
3.6. CONSTRUCTION PROTECTION CONFIRMATION METHOD	33
3.7. INTERFERENCE PREVENTION FUNCTION.....	34
3.8. CONDITION FOR VOLTAGE STABILIZATION	35
3.9. TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH) MEASUREMENT	36

1. SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[Test method which is equal to Appendix No.43 of MIC Notification No 88.](#)

1.2. Report version

Revised No.	Report No.	Date of issue	Description
01	CTC2026313301	Jul. 30, 2026	Original

1.3. Test Description

MIC Notice No.88 Appendix No.43 Article 2, Paragraph 1, Item 19 Rules Section	Test Item	Result	Note
3	Frequency Error	Pass	
4	Occupied Bandwidth	Pass	
5	Transmitter Spurious Emission and Unwanted Emission Intensity	Pass	
6	Antenna Output Power and Output Power Tolerance	Pass	
7	Receiver Spurious Emission and Unwanted Emission Intensity	Pass	
8	Radio Interference Prevention Capability	Pass	
9	Frequency Hopping Dwell Time	N/A ^{Note 1}	Note 1
12	Transmission Radiation Angle Width (3dB Beamwidth)	N/A ^{Note 3}	Note 3
Note 1	Carrier Sense Capability	N/A ^{Note 2}	Note 2
Note 2	Construction Protection Confirmation	Pass	

N/A^{Note 1}: Testing is only required for FHSS system devices

N/A^{Note 2}: Testing is only required OFDM system with occupied frequency bandwidth below 40MHz and exceed 26MHz.

N/A^{Note 3}: Required when the design value of Rated +Antenna gain exceeds 12.14 dBm.

1.4. Test Facility

Address of the test laboratory

CTC Laboratories, Inc.

Add: Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Lanqing 1st Road, Luhuhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with TR100028-1 [2] and shall correspond to an expansion factor (coverage factor) $K=1.96$ or $K=2$ (which provide confidence levels of respectively 95% and 95.5% in the case where the distributions characterizing the actual measurement uncertainties are normal.

Parameter	Uncertainty
Frequency Error	$\pm 1.9\%$
Antenna Power	$\pm 0.743\text{dB}$
Occupied Bandwidth	$\pm 0.0196\%$
Spread Bandwidth	$\pm 0.0196\%$
Transmitter Spurious Emission Strength and Unwanted Emission Intensity	30MHz-1GHz: $\pm 0.746\text{dB}$ 1GHz-13GHz: $\pm 1.328\text{dB}$
Receiver Spurious Emission and Unwanted Emission Intensity	30MHz-1GHz: $\pm 0.746\text{dB}$ 1GHz-26GHz: $\pm 1.328\text{dB}$

2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Voltage	Normal Voltage	DC 5V
	High Voltage	DC 5.50V
	Low Voltage	DC 4.50V
Other	Normal Temperature/T _{nor}	23°C
	Relative Humidity	57 %
	Air Pressure	101kPa

2.2. Client Information

Applicant:	Trangjan Technology Group(Dongguan)Co., Ltd
Address:	3rd&4th F, No. 3 bulding, Times Thingking, Luwu Sanlian Road, Changping Town, Dongguan, Guangdong, 523570, China
Manufacturer:	Trangjan Technology Group(Dongguan)Co., Ltd
Address:	3rd&4th F, No. 3 bulding, Times Thingking, Luwu Sanlian Road, Changping Town, Dongguan, Guangdong, 523570, China

2.3. General Description of EUT

Product Name:	Wallet
Trade Mark:	/
Model/Type reference:	K02
Listed Model(s):	P06, P17, P15
Model Different:	The model name and appearance color are different.
Sample ID:	CTC-GC260604-006-S001
Power supply:	Capacity:400mAh 3.7V Input:5V/0.5A
Hardware version:	/
Firmware version:	/
BLE	
Modulation:	GFSK (1Mbps, 2Mbps)
Operation frequency:	2402MHz~2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	On-board antenna
Antenna gain:	2.2dBi

2.4. Description of Test Modes

The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2404
⋮	⋮
18	2438
19	2440
20	2442
⋮	⋮
38	2478
39	2480

Note: These channels with bold were be selected for testing.

2.5. Measurement Instruments List

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until	Cal. By	
1	Spectrum Analyzer	R&S	FSV40-N	101654	2025/12/13	2026/12/12	CCIC	C
2	digital oscilloscope	Tektronix	TDS3032B	C010354	2025/10/23	2026/10/22	CCIC	C
3	RF Cable	HUBER+SUHNER	SUCOFLEX101PE	/	2025/12/13	2026/12/12	CCIC	C
Test Software								
Name		Manufacturer			Serial No.			
Tonscend		JS1120-3			V3.3.38			

Note: 1. Applicable to Article 24-2, Paragraph 4, Item 2(c) of the Radio Law: Calibration conducted in foreign countries, which is equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)

2. Full name of CCIC: CCIC (Shenzhen) Metrology & Testing Service Co.,Ltd

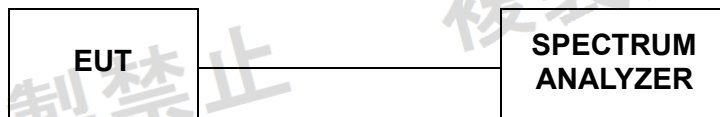
3. TEST CONDITIONS AND RESULTS

3.1. Frequency Error

LIMIT

±50ppm

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: Non-modulation

Spectrum Condition:

Frequency: test frequency

Span: Show the entire waveform

RBW: 10 KHz

VBW: 10 KHz

Sweep time: Auto

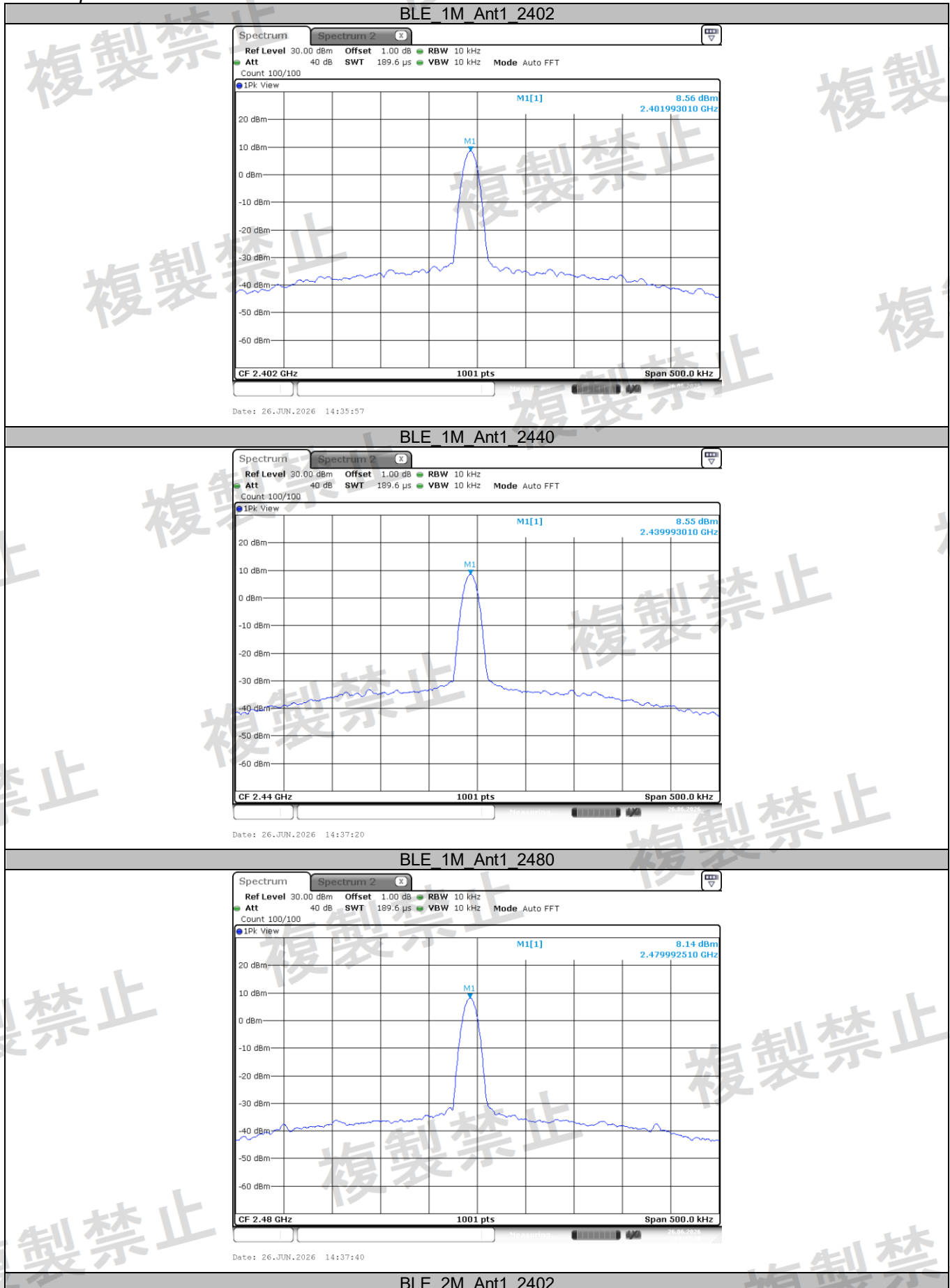
Detector mode: Positive peak

Indication mode: Max hold

TEST RESULTS

DC 5V						
TestMode	Antenna	Freq (MHz)	Read [MHz]	Result[ppm]	Limit[ppm]	Verdict
BLE_1M	Ant1	2402	2401.99301	-2.91008	±50	PASS
		2440	2439.99301	-2.86475	±50	PASS
		2480	2479.99251	-3.02016	±50	PASS
BLE_2M	Ant1	2402	2401.99301	-2.91008	±50	PASS
		2440	2439.99301	-2.86475	±50	PASS
		2480	2479.99251	-3.02016	±50	PASS

Test plot as follows:



CTC Laboratories, Inc.

Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Langing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

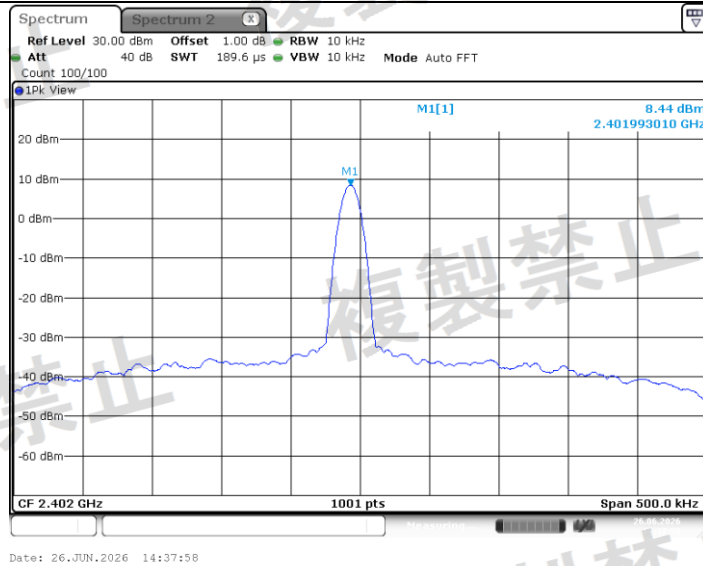
Tel.: (86)755-27521059

Fax: (86)755-27521011

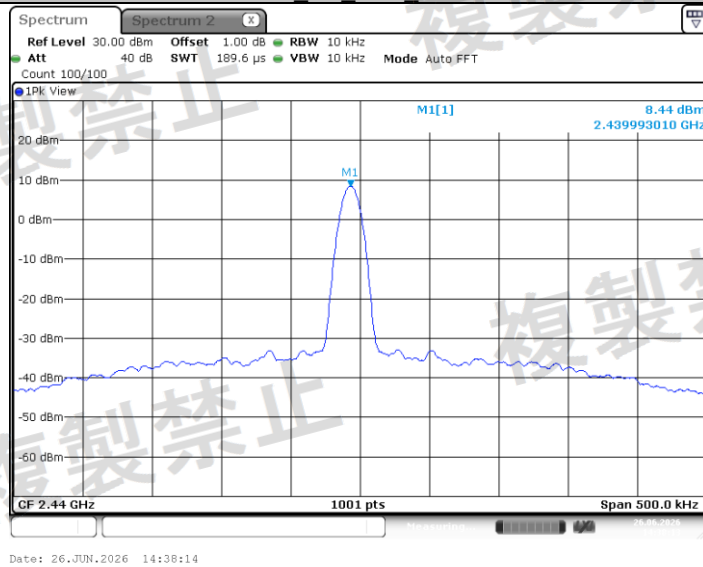
Http://www.sz-ctc.org.cn

TRF No: CTC-TR-073_A5

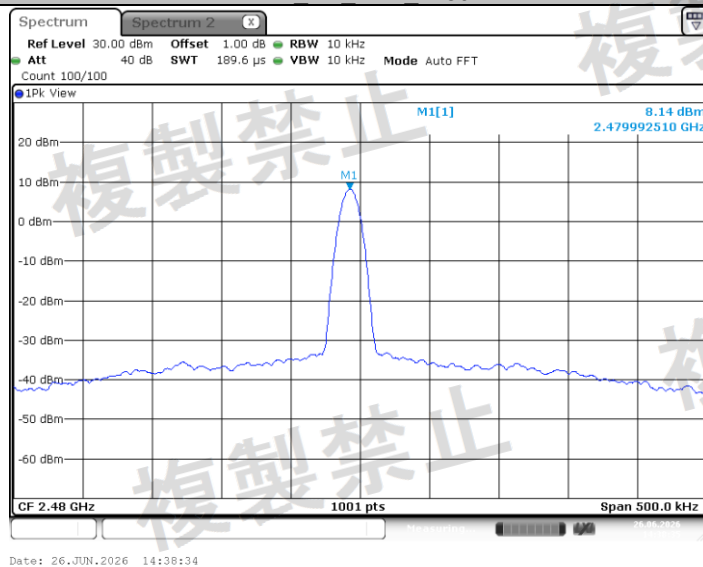
Master TRF : Dated 2026-06-01



BLE 2M Ant1 2440



BLE 2M Ant1 2480



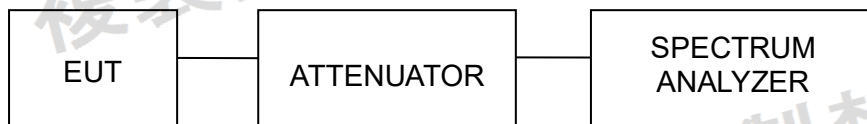
3.2. Antenna Power

LIMIT

- ≤ 3 mW (FHSS from 2402-2480 MHz)
- ≤ 5 mW (OFDM(26MHz<Occupied Bandwidth <40MHz) from 2400-2483.5 MHz)
- ≤ 10 mW (other from 2400-2483.5 MHz)

The Output Power Tolerance must be within +20%

TEST CONFIGURATION



TEST PROCEDURE

Step 1:

Connect the UUT to the spectrum analyzer as TEST CONFIGURATION and use the following settings:

- Centre Frequency: The center frequency of the channel under test.
- RBW > OBW
- VBW=RBW
- Span: 2 Times of occupied bandwidth
- Detector: Peak
- Trace Mode: Max Hold

Step 2:

When the trace is complete, find the peak value of the power envelope and record the frequency.

TEST RESULTS

DC 5V									
Test Mode	Channel	Power (mW)	Limit (mW)	EIRP (dBm)	Limit (dBm)	RatedPower (mW)	Tolerance (%)	Limit (%)	Verdict
BLE_1M	2402	5.7943	10	9.83	12.14	6	-3.43	+20	PASS
	2440	5.5208	10	9.62	12.14	6	-7.99		
	2480	5.8345	10	9.86	12.14	6	-2.76		
BLE_2M	2402	3.4995	10	7.64	12.14	4	-12.51	+20	PASS
	2440	3.3343	10	7.43	12.14	4	-16.64		
	2480	3.5237	10	7.67	12.14	4	-11.91		

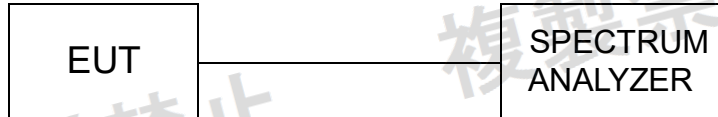
- Antenna Gain=2.2dBi

3.3. Occupied Bandwidth

LIMIT

- Occupied bandwidth: FH $\leq$ 83.5 MHz; OFDM $\leq$ 40MHz; DS $\leq$ 26 MHz

TEST CONFIGURATION



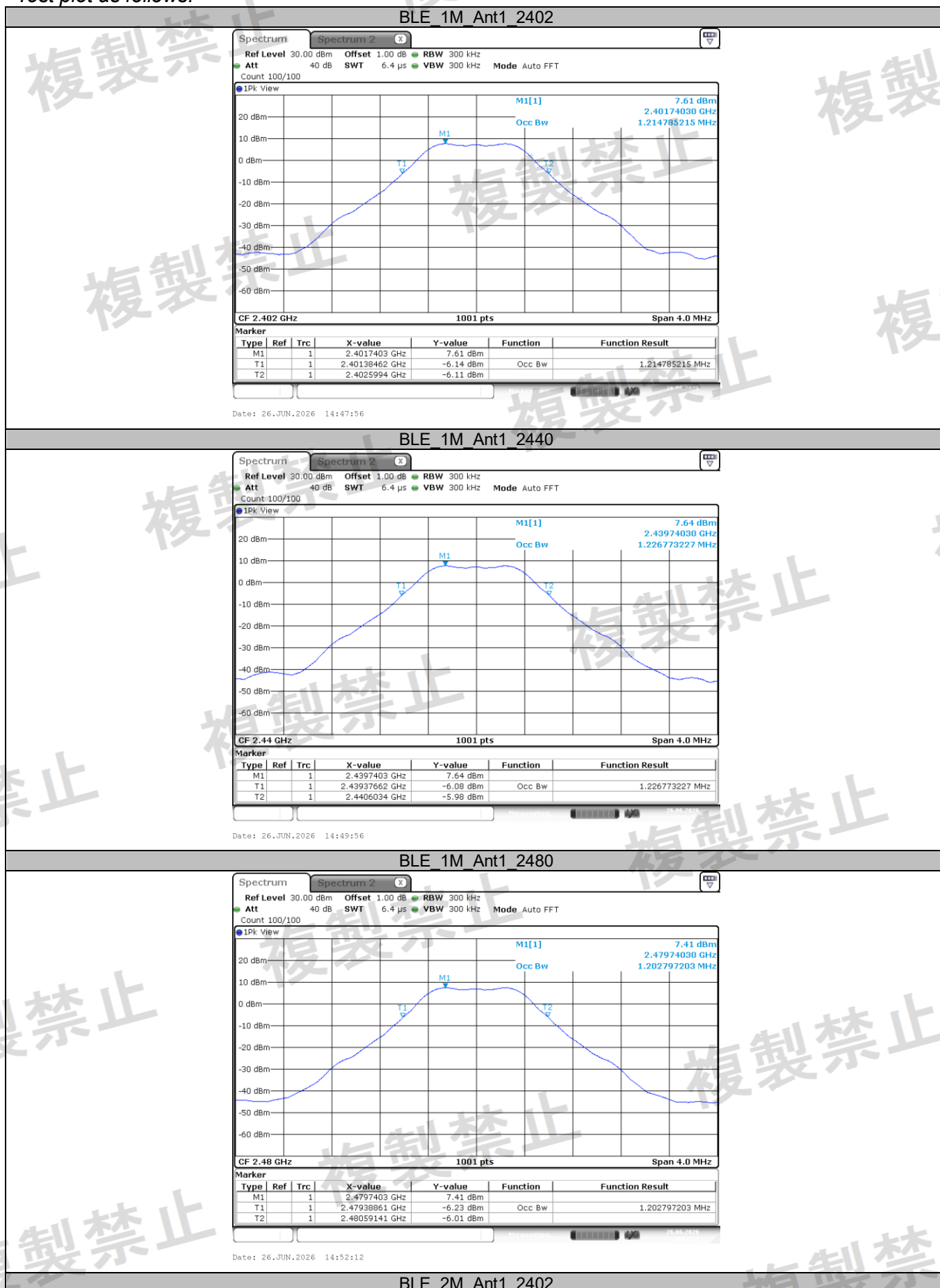
TEST PROCEDURE

1. Setting of SA is following as follow:
 RBW: 300 kHz
 VBW: 300 kHz
 Sweep time: Auto
 Sweep Mode: Continuous sweep
 Detect mode: Positive peak
 Trace mode: Max hold
2. EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 99% of occupied bandwidth to measure occupied bandwidth.

TEST RESULTS

DC 5V				
TestMode	Channel	Result [MHz]	Limit [MHz]	Verdict
BLE_1M	2402	1.215	≤ 26	PASS
	2440	1.227		
	2480	1.203		
BLE_2M	2402	2.146	≤ 26	PASS
	2440	2.130		
	2480	2.130		

Test plot as follows:



CTC Laboratories, Inc.

Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Langqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

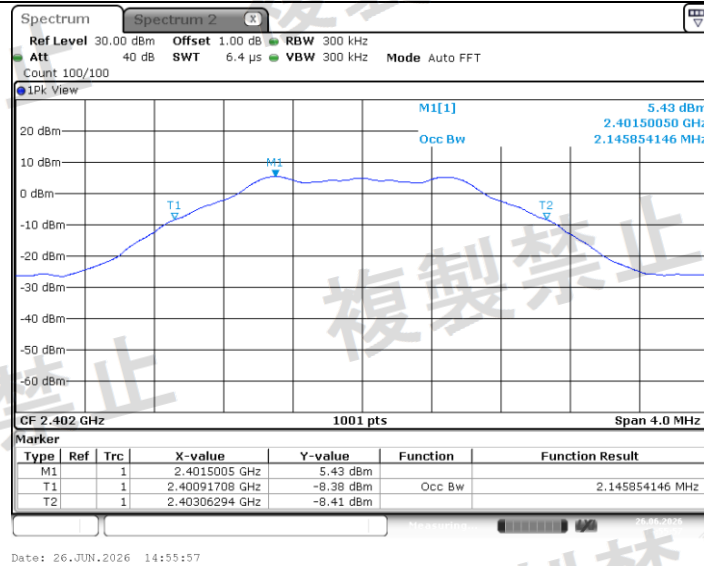
Tel.: (86)755-27521059

Fax: (86)755-27521011

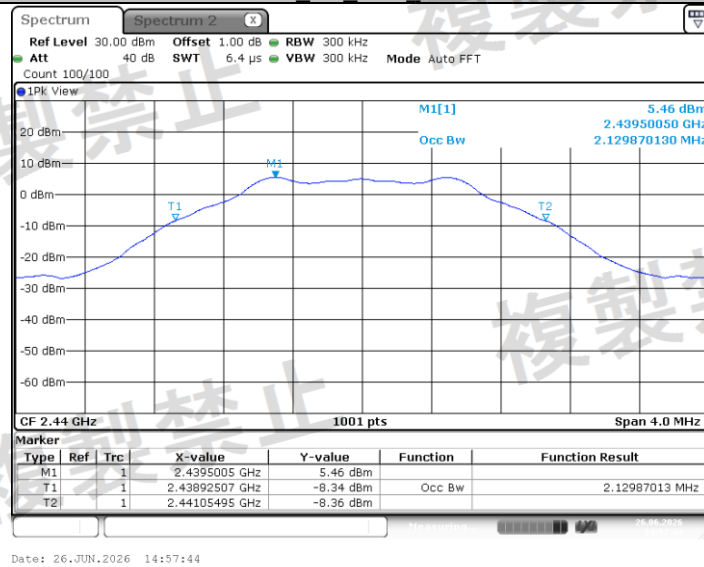
Http://www.sz-ctc.org.cn

TRF No: CTC-TR-073_A5

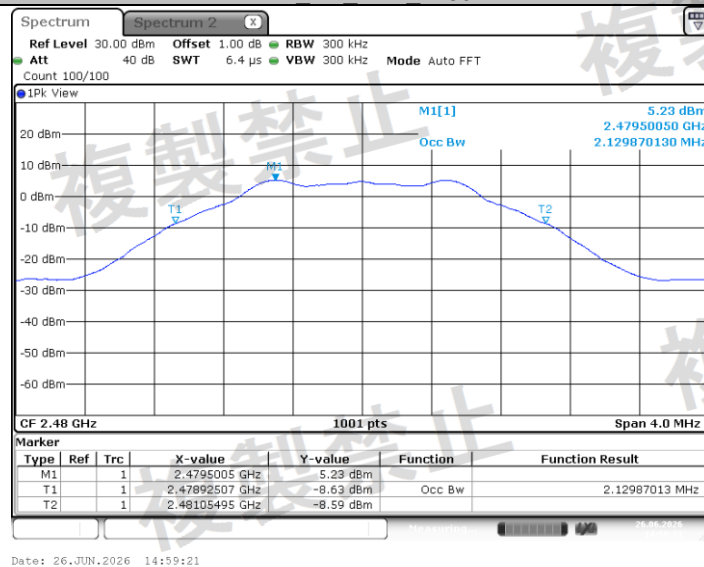
Master TRF : Dated 2026-06-01



BLE 2M Ant1 2440



BLE 2M Ant1 2480



3.4. Transmitter Spurious Emission Strength and Unwanted Emission Intensity

LIMIT

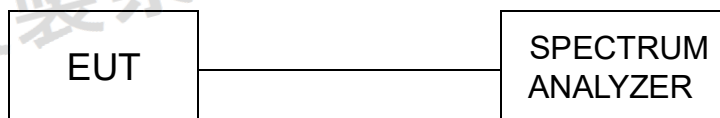
30MHz to 2387MHz: 2.5 μ W/MHz or less

2387MH to 2400MHz: 25 μ W/MHz or less

2483.5MH to 2496.5MHz: 25 μ W/MHz or less

Over 2496.5 MHz: 2.5 μ W/MHz or less

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

Spectrum Condition:

Frequency: 30MHz-12.5GHz

RBW: 100KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)

VBW: 100KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)

Step1:

Sweep time: Auto

Detector mode: Positive peak

Indication mode: Max hold

Step2:

Failed frequency & Span 0

Sweep time: Auto

Detector mode: Rms

Indication mode: Max hold

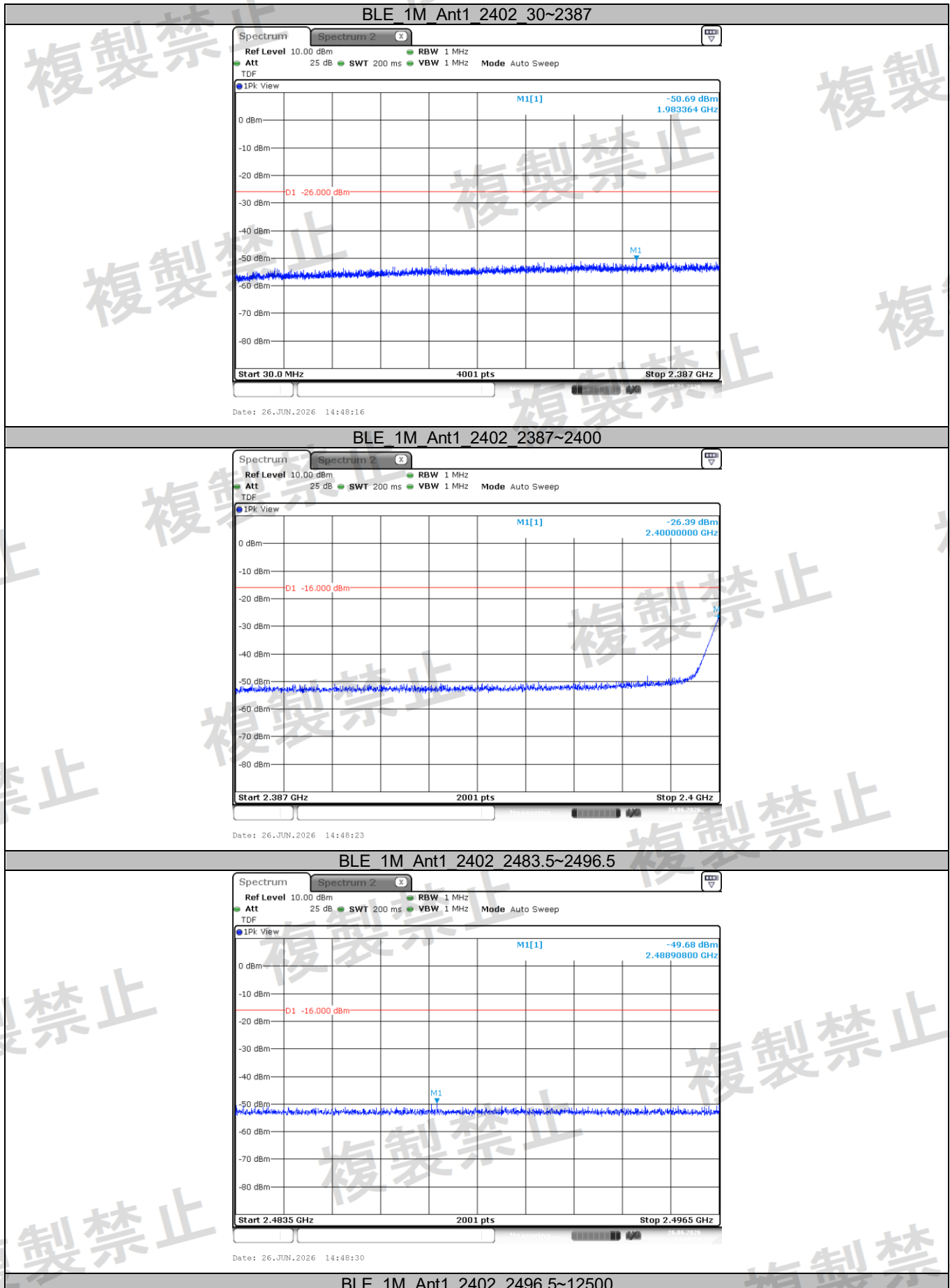
TEST RESULTS**Measurement Data:**

TestMode	Antenna	Freq (MHz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
BLE_1M	Ant1	2402	30~2387	1983.36	-50.69	≤-26	0.00853	≤2.5	PASS
			2387~2400	2400.00	-26.39	≤-16	2.29615	≤25	PASS
			2483.5~2496.5	2488.91	-49.68	≤-16	0.01076	≤25	PASS
			2496.5~12500	4804.31	-45.76	≤-26	0.02655	≤2.5	PASS
		2440	30~2387	2098.27	-49.59	≤-26	0.01099	≤2.5	PASS
			2387~2400	2397.60	-50.59	≤-16	0.00873	≤25	PASS
			2483.5~2496.5	2485.34	-50.06	≤-16	0.00986	≤25	PASS
			2496.5~12500	4879.33	-46.63	≤-26	0.02173	≤2.5	PASS
		2480	30~2387	1631.58	-50.38	≤-26	0.00916	≤2.5	PASS
			2387~2400	2394.90	-51.01	≤-16	0.00793	≤25	PASS
			2483.5~2496.5	2483.51	-48.71	≤-16	0.01346	≤25	PASS
			2496.5~12500	4959.36	-45.93	≤-26	0.02553	≤2.5	PASS
BLE_2M	Ant1	2402	30~2387	2163.09	-51.12	≤-26	0.00773	≤2.5	PASS
			2387~2400	2400	-16.58	≤-16	21.97860	≤25	See table below
			2483.5~2496.5	2488.64	-50.40	≤-16	0.00912	≤25	PASS
			2496.5~12500	4802.81	-48.26	≤-26	0.01493	≤2.5	PASS
		2440	30~2387	1309.85	-51.12	≤-26	0.00773	≤2.5	PASS
			2387~2400	2391.21	-49.51	≤-16	0.01119	≤25	PASS
			2483.5~2496.5	2487.95	-50.27	≤-16	0.00940	≤25	PASS
			2496.5~12500	4878.83	-49.64	≤-26	0.01086	≤2.5	PASS
		2480	30~2387	2290.36	-50.60	≤-26	0.00871	≤2.5	PASS
			2387~2400	2393.18	-50.46	≤-16	0.00899	≤25	PASS
			2483.5~2496.5	2483.53	-46.30	≤-16	0.02344	≤25	PASS
			2496.5~12500	4958.86	-48.43	≤-26	0.01435	≤2.5	PASS

Test Result Step2

TestMode	Antenna	Freq (MHz)	Freq. [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
BLE_2M	Ant1	2402	2400.00	-20.62	≤-16	8.66962	≤25	PASS

Test plot as follows:

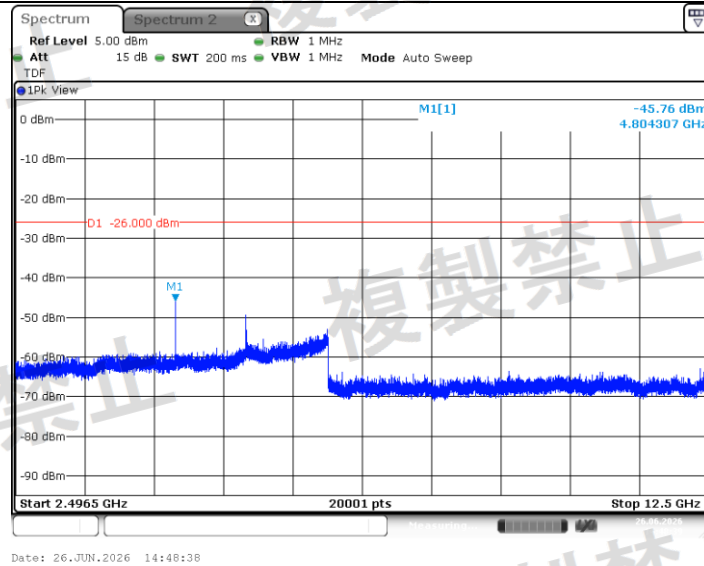


CTC Laboratories, Inc.

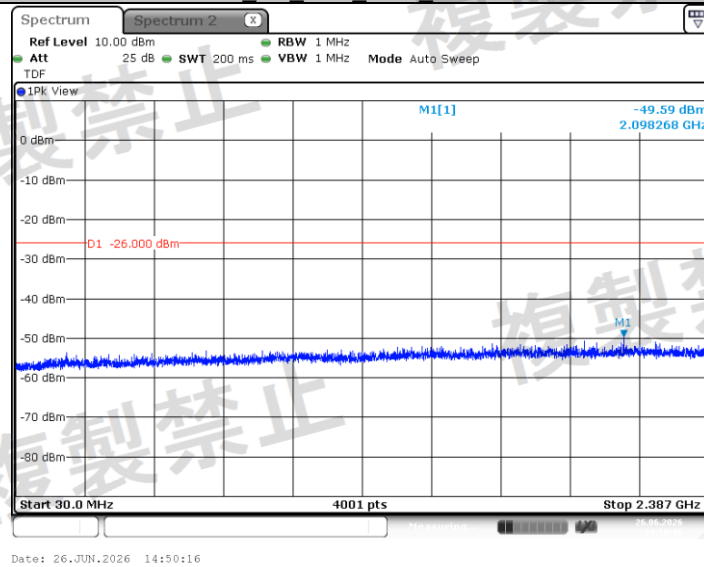
Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Langqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-073_A5

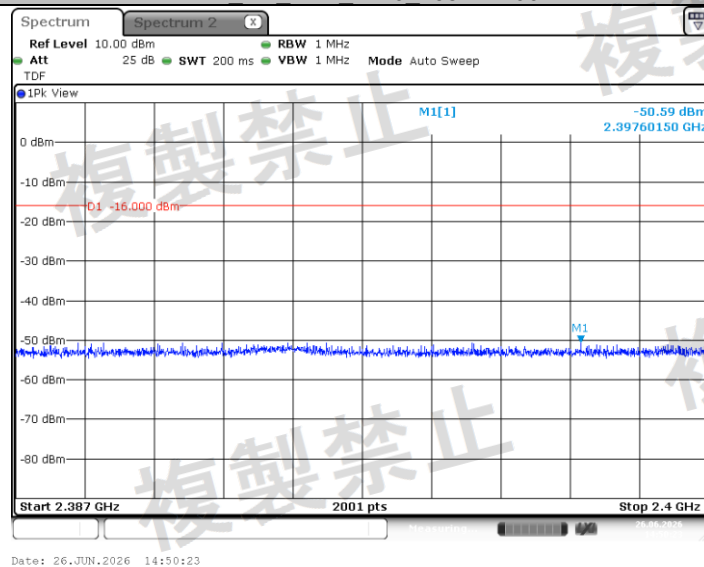
Master TRF : Dated 2026-06-01



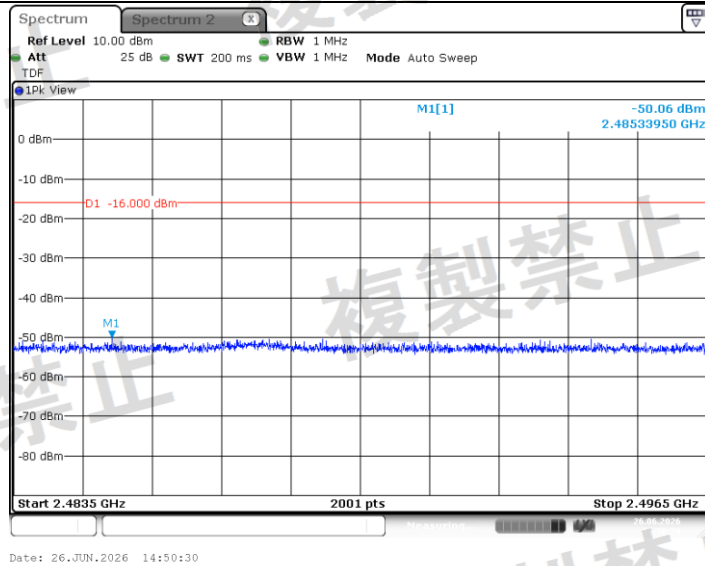
BLE 1M Ant1 2440 30~2387



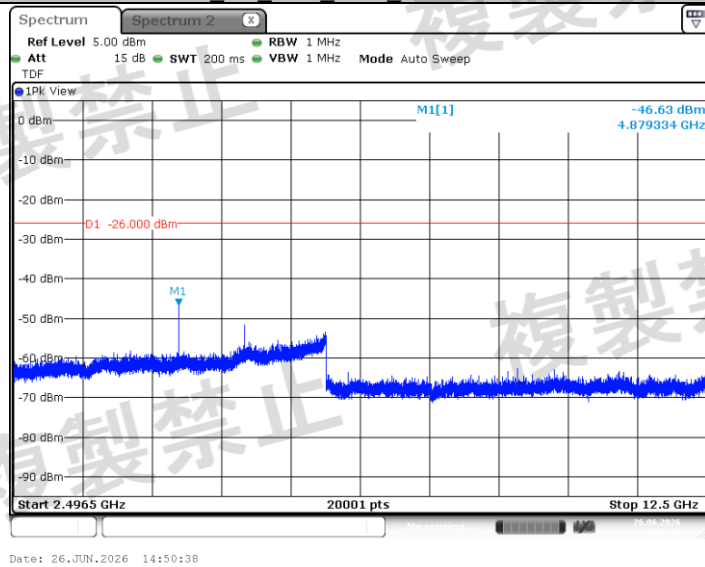
BLE 1M Ant1 2440 2387~2400



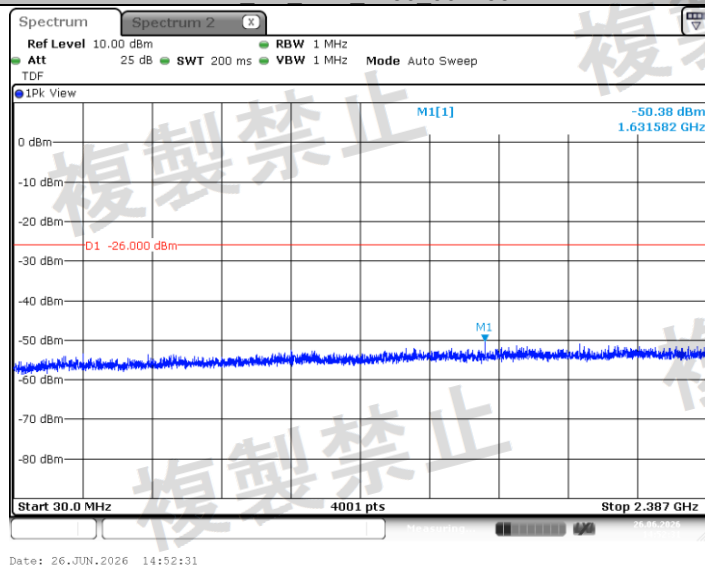
BLE 1M Ant1 2440 2483.5~2496.5



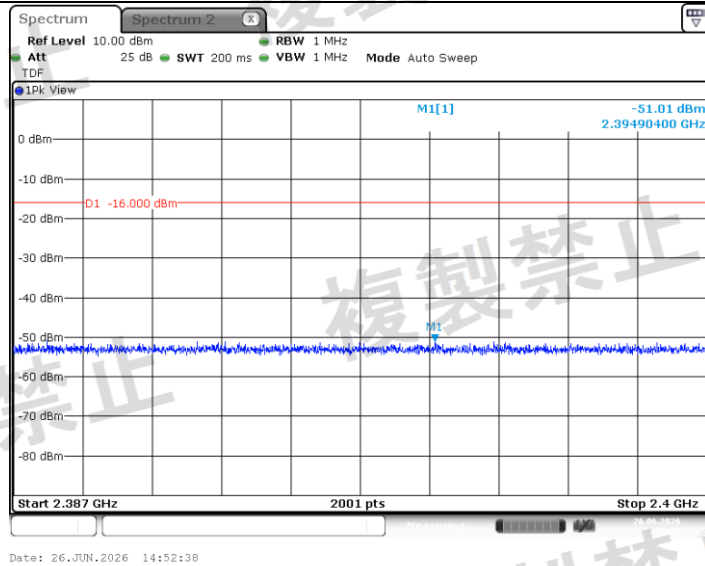
BLE 1M Ant1 2440 2496.5~12500



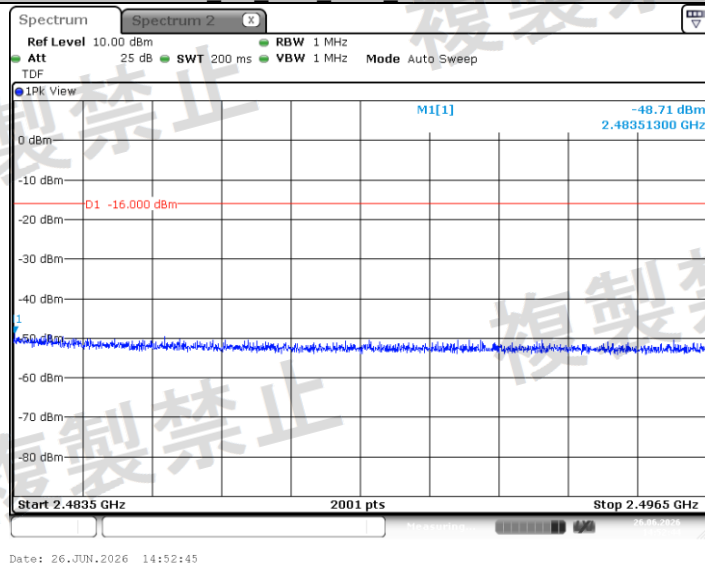
BLE 1M Ant1 2480 30~2387



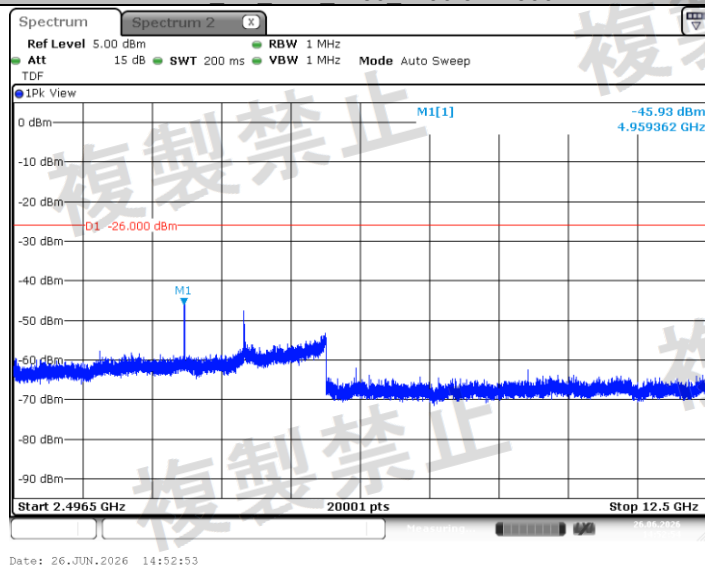
BLE 1M Ant1 2480 2387~2400



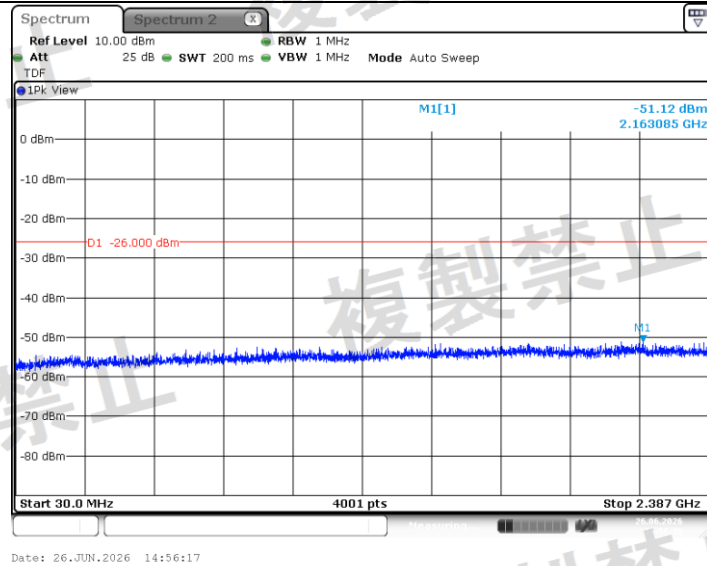
BLE 1M Ant1 2480 2483.5~2496.5



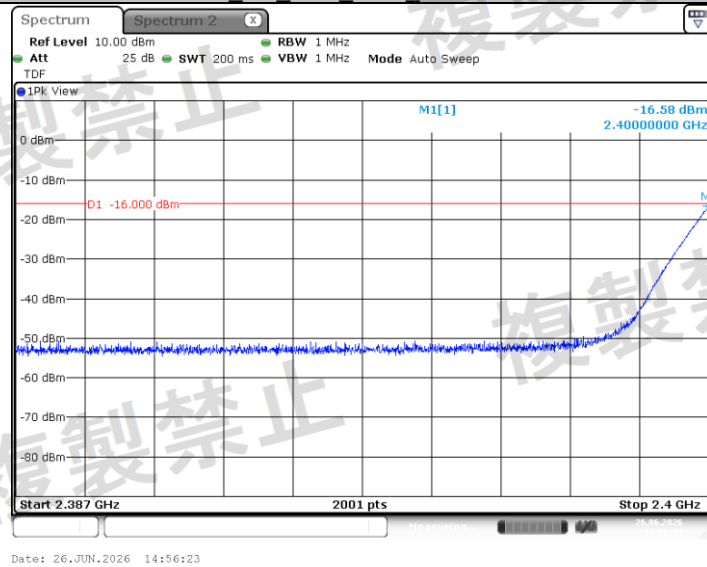
BLE 1M Ant1 2480 2496.5~12500



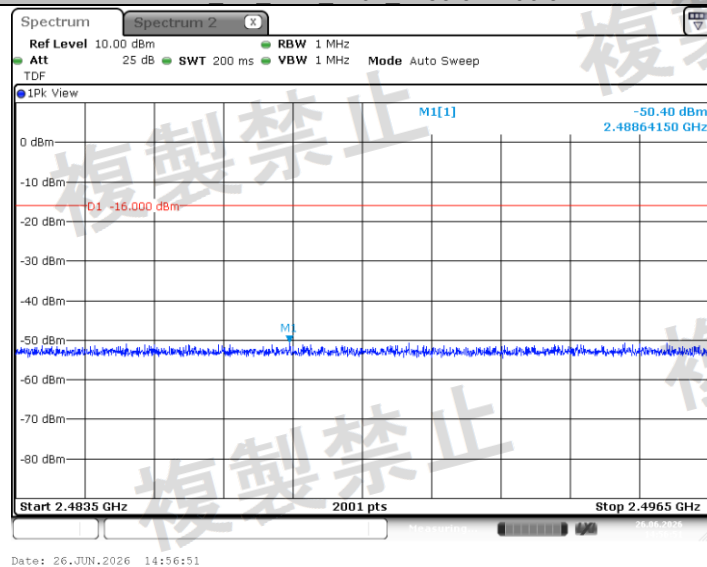
BLE 2M Ant1 2402 30~2387



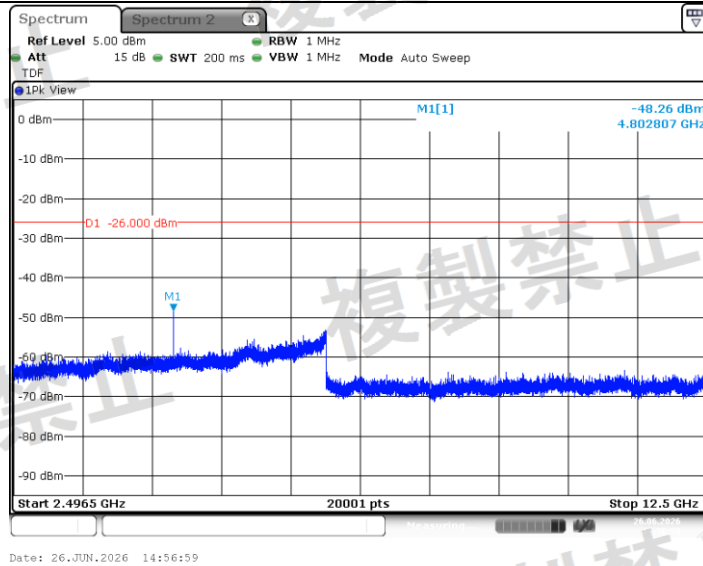
BLE 2M Ant1 2402 2387~2400



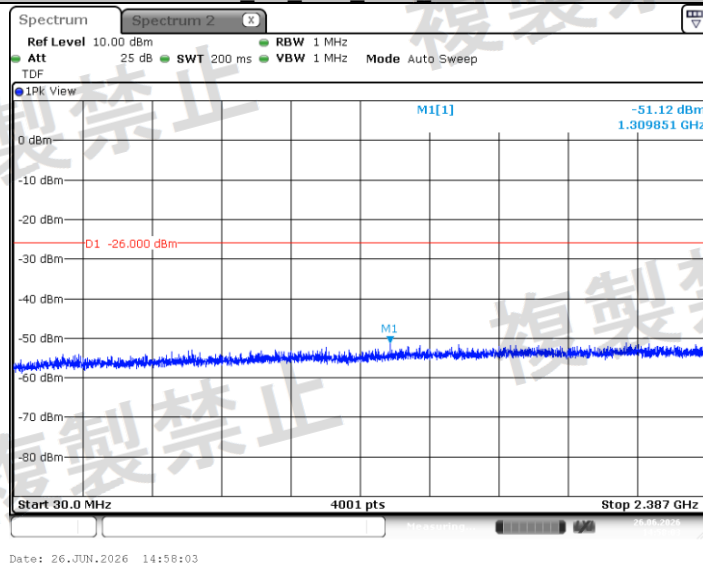
BLE 2M Ant1 2402 2483.5~2496.5



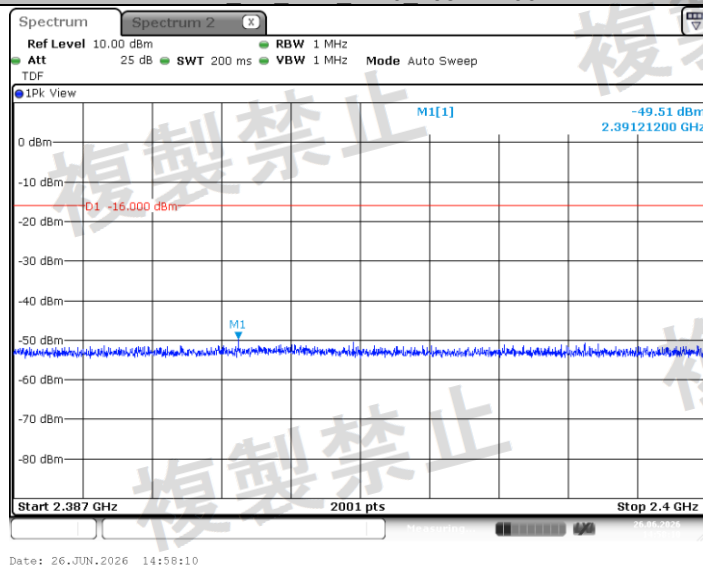
BLE 2M Ant1 2402 2496.5~12500



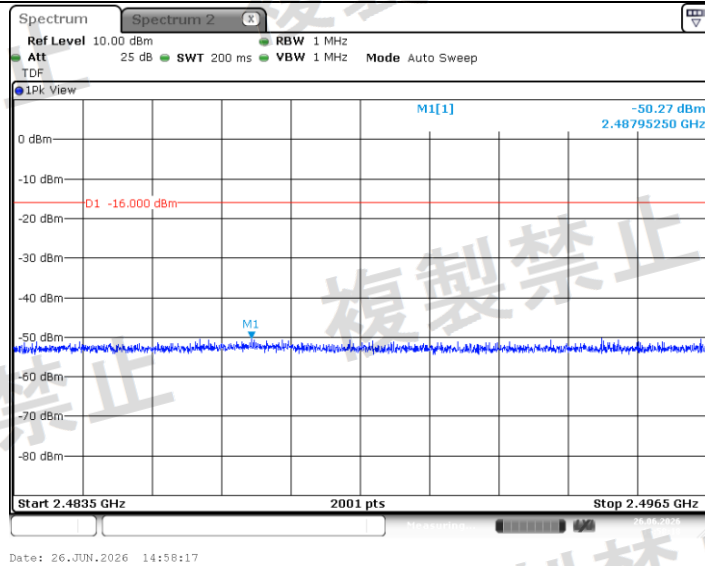
BLE 2M Ant1 2440 30~2387



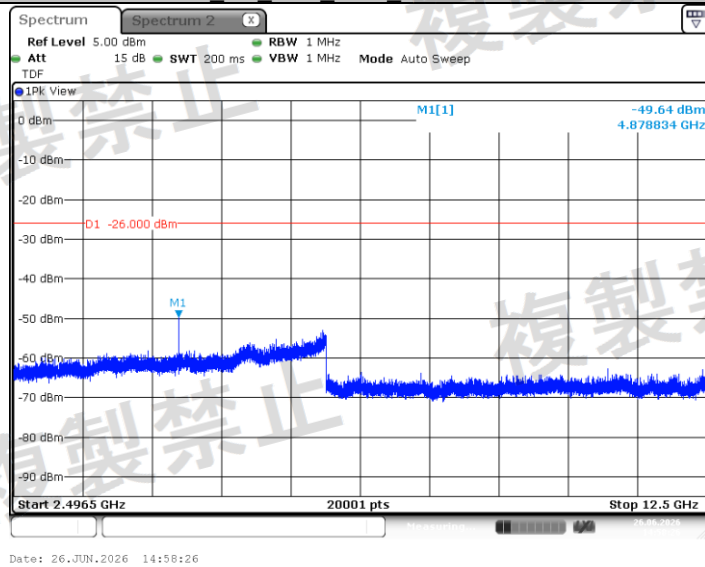
BLE 2M Ant1 2440 2387~2400



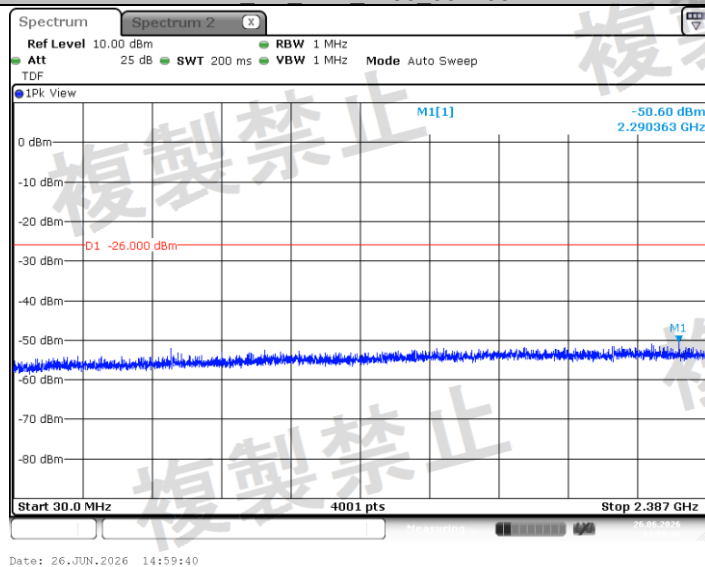
BLE 2M Ant1 2440 2483.5~2496.5



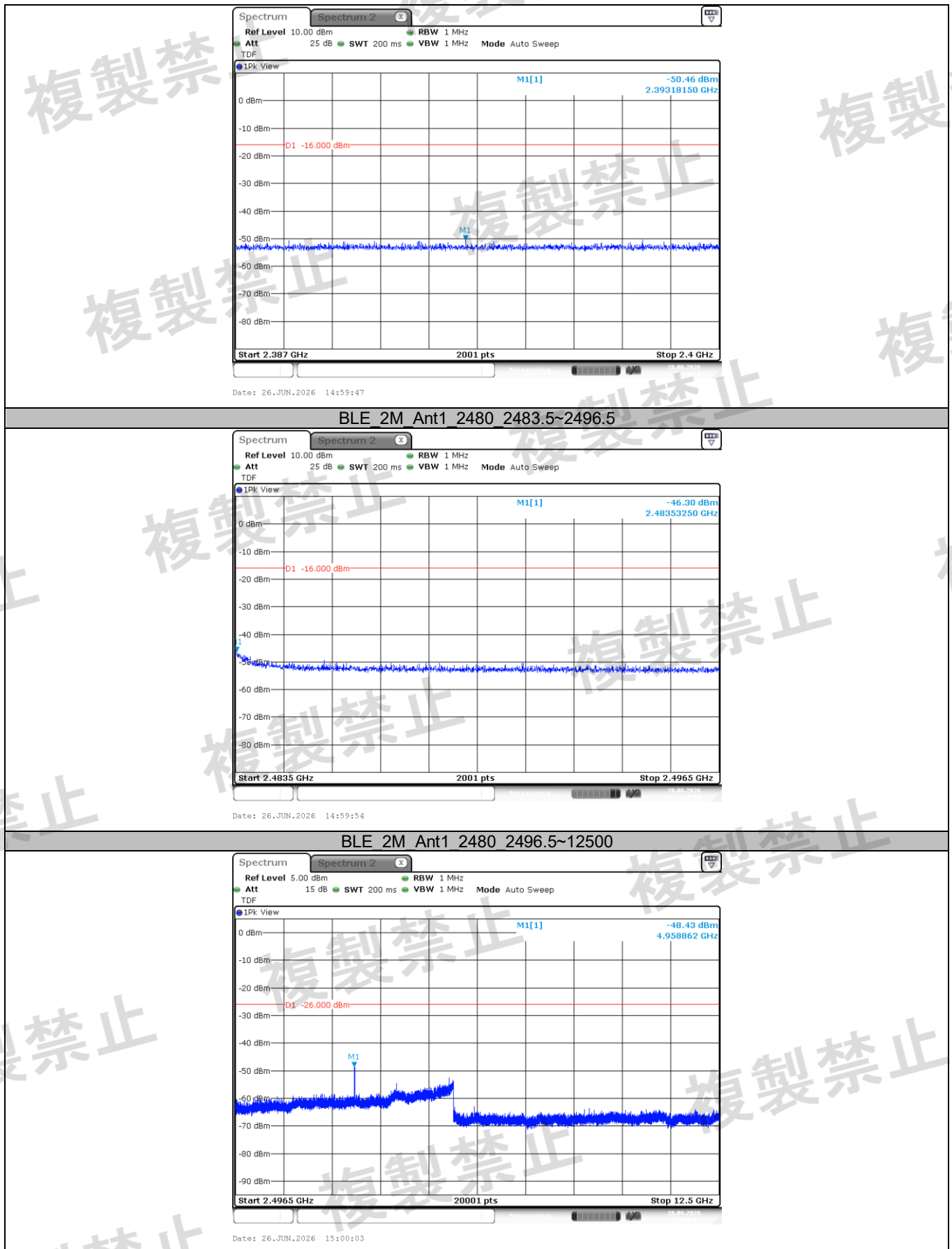
BLE 2M Ant1 2440 2496.5~12500



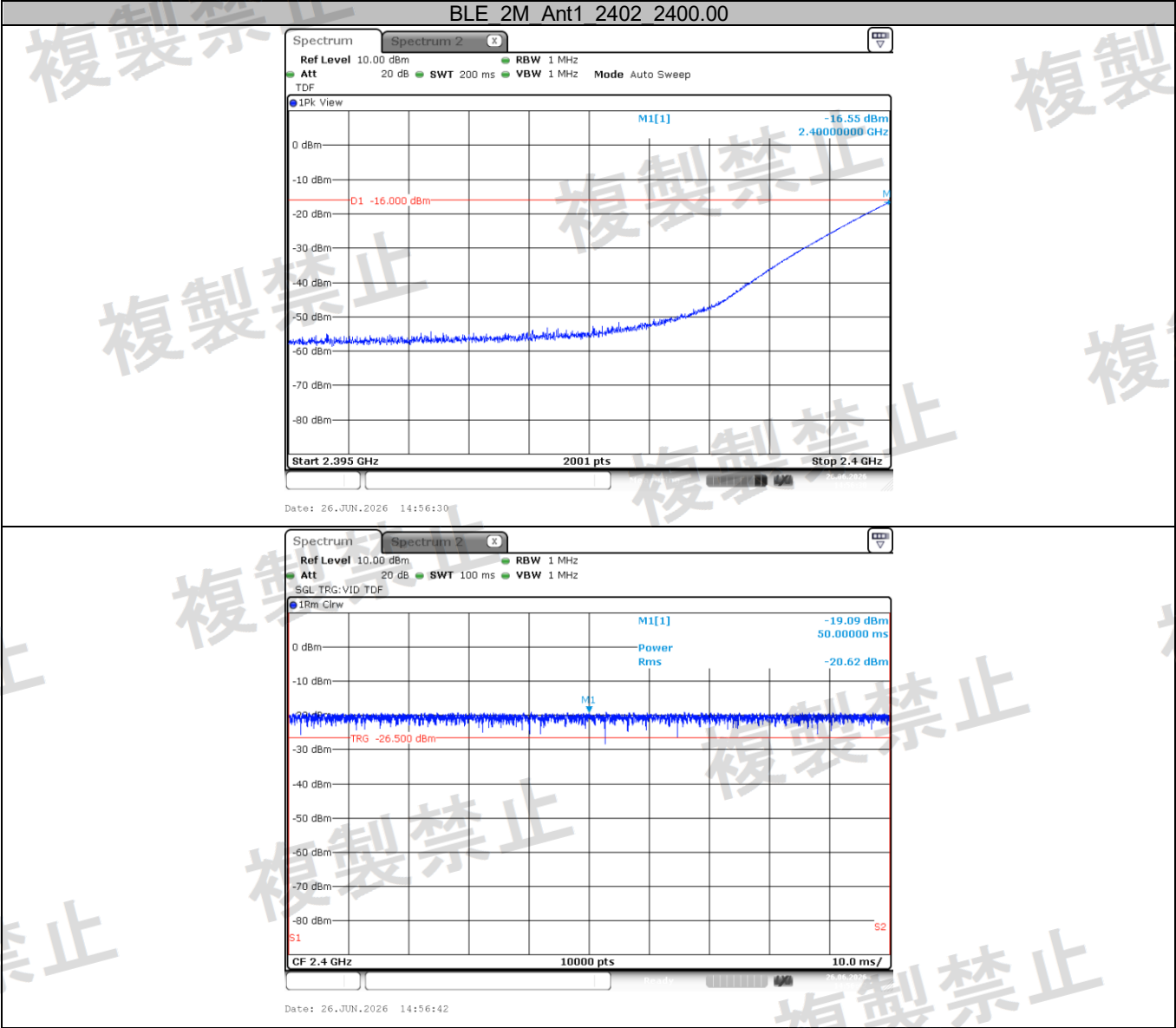
BLE 2M Ant1 2480 30~2387



BLE 2M Ant1 2480 2387~2400



Test Graphs Step2



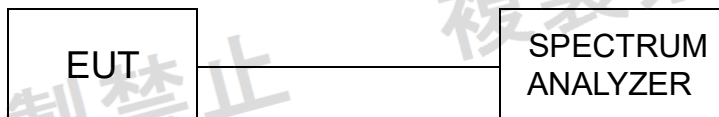
3.5. Receiver Spurious Emission and Unwanted Emission Intensity

LIMIT

Below 1GHz: 4.0nW or less

Above 1GHz: 20nW or less

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

Spectrum Condition:

Frequency: 30MHz-12.5GHz

RBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)

VBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)

Sweep time: Auto

Detector mode: Positive peak

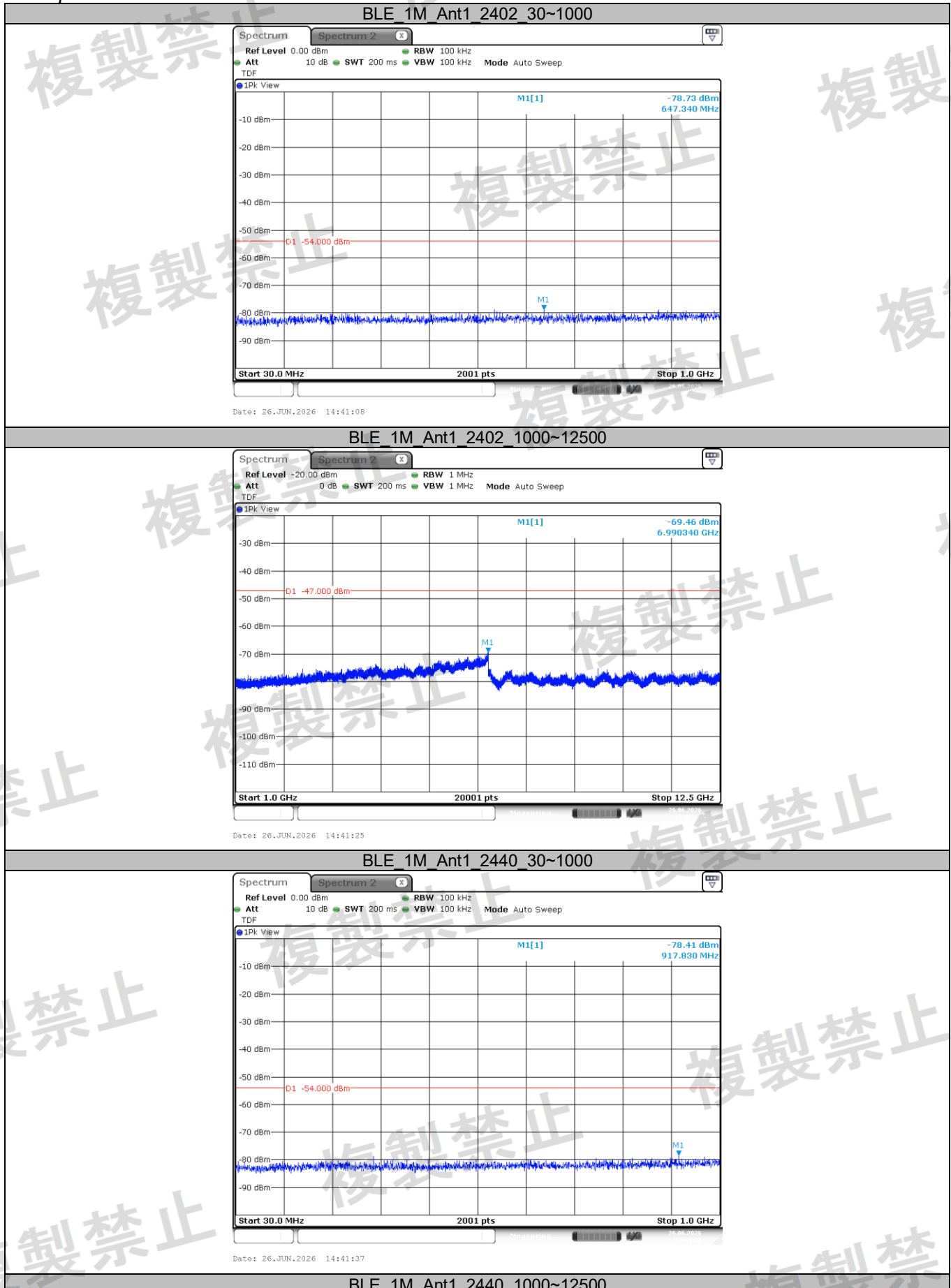
Indication mode: Max hold

TEST RESULTS

Measurement Data:

Test Mode	Antenna	Freq (MHz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Result [nW/MHz]	Limit [nW/MHz]	Verdict
BLE_1M	Ant1	2402	30~1000	647.34	-78.73	≤-54	0.01340	≤4	PASS
			1000~12500	6990.34	-69.46	≤-47	0.11324	≤20	PASS
		2440	30~1000	917.83	-78.41	≤-54	0.01442	≤4	PASS
			1000~12500	2438.87	-67.88	≤-47	0.16293	≤20	PASS
		2480	30~1000	976.49	-79.05	≤-54	0.01245	≤4	PASS
			1000~12500	6987.46	-69.39	≤-47	0.11508	≤20	PASS
BLE_2M	Ant1	2402	30~1000	994.91	-78.70	≤-54	0.01349	≤4	PASS
			1000~12500	5828.32	-68.04	≤-47	0.15704	≤20	PASS
		2440	30~1000	959.04	-78.30	≤-54	0.01479	≤4	PASS
			1000~12500	2438.29	-67.37	≤-47	0.18323	≤20	PASS
		2480	30~1000	964.37	-78.18	≤-54	0.01521	≤4	PASS
			1000~12500	2440.59	-67.56	≤-47	0.17539	≤20	PASS

Test plot as follows:



CTC Laboratories, Inc.

Room 107, 108, 207, 208 of Building A, Room 101 of Building B, No.7, Langqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

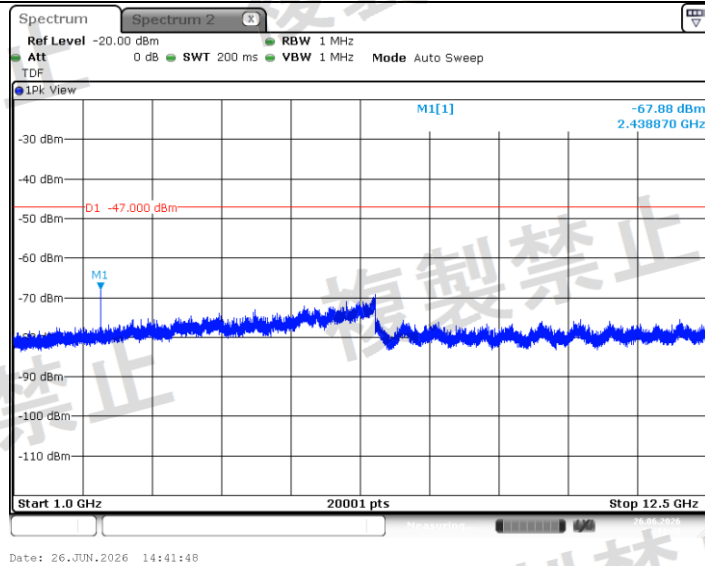
Tel.: (86)755-27521059

Fax: (86)755-27521011

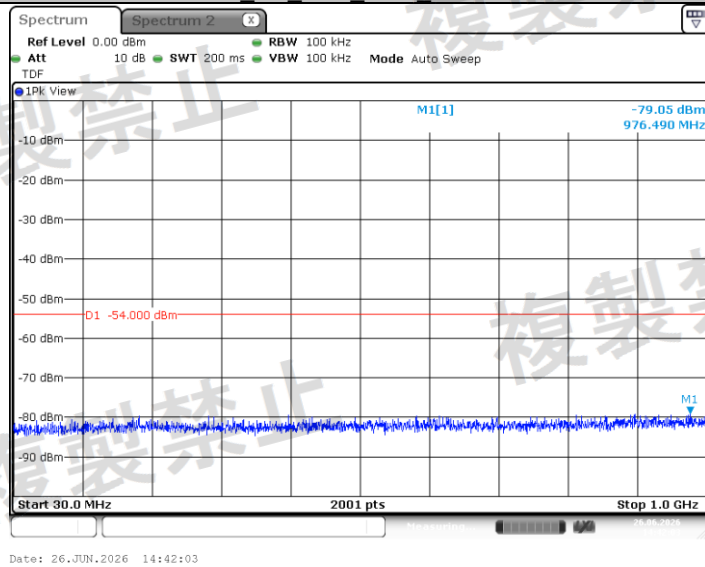
Http://www.sz-ctc.org.cn

TRF No: CTC-TR-073_A5

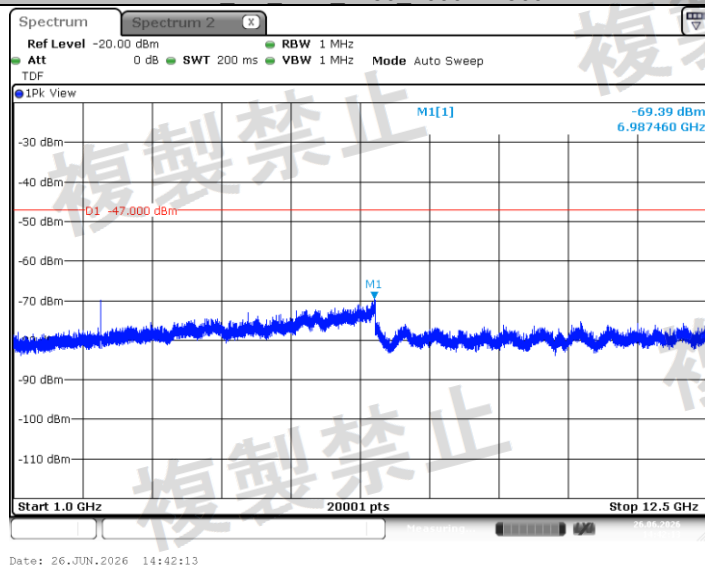
Master TRF : Dated 2026-06-01



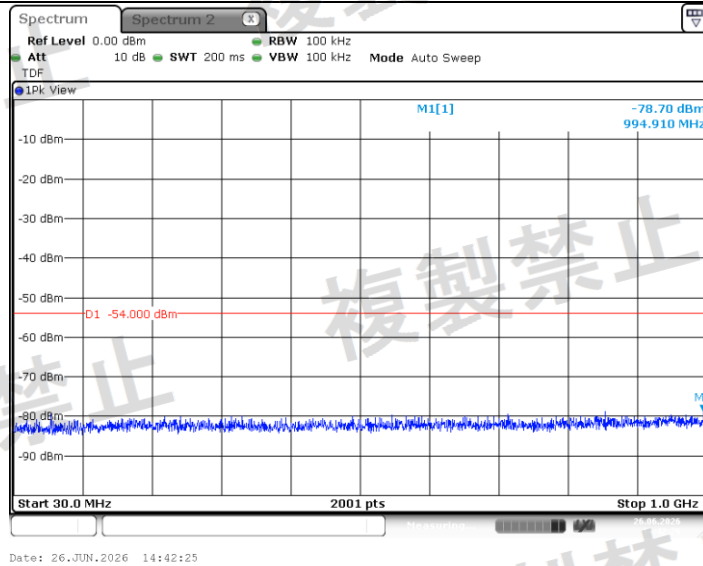
BLE 1M Ant1 2480 30~1000



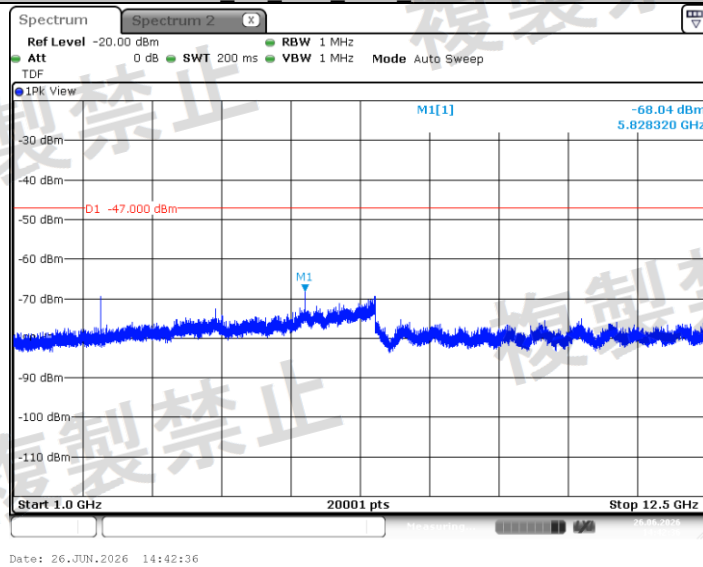
BLE 1M Ant1 2480 1000~12500



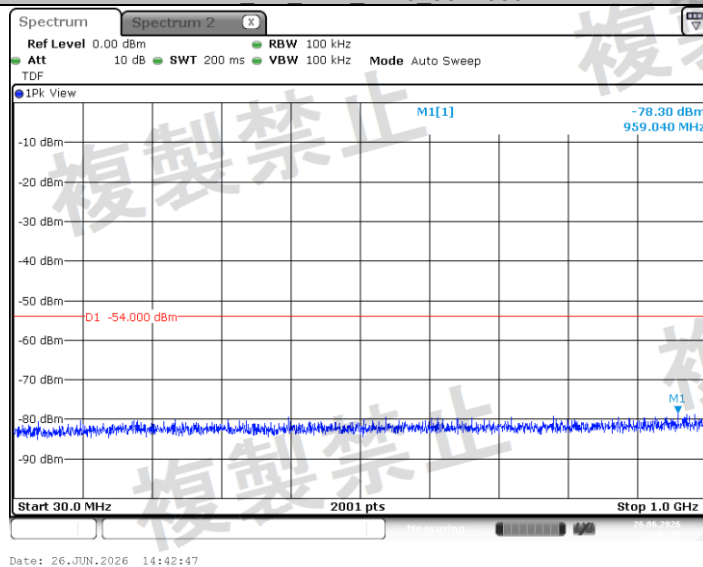
BLE 2M Ant1 2402 30~1000



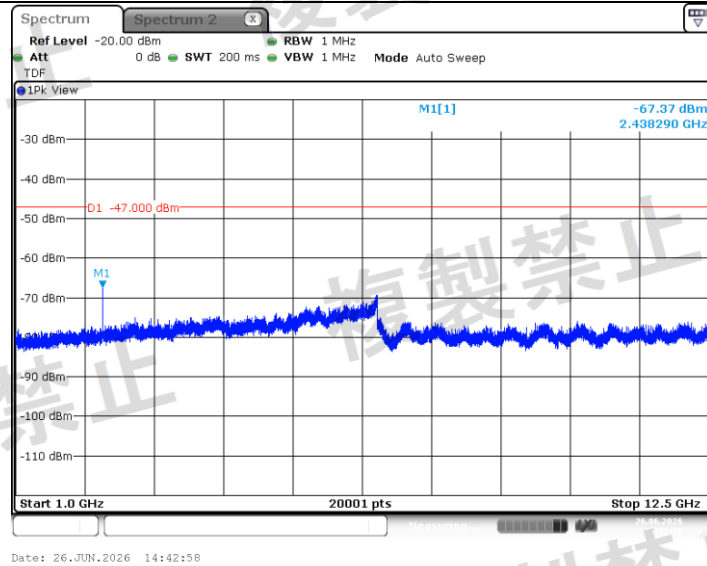
BLE 2M Ant1 2402 1000~12500



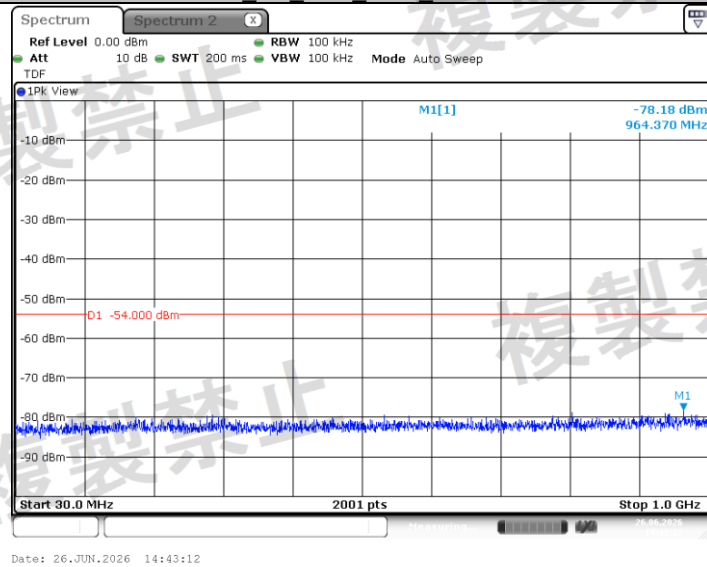
BLE 2M Ant1 2440 30~1000



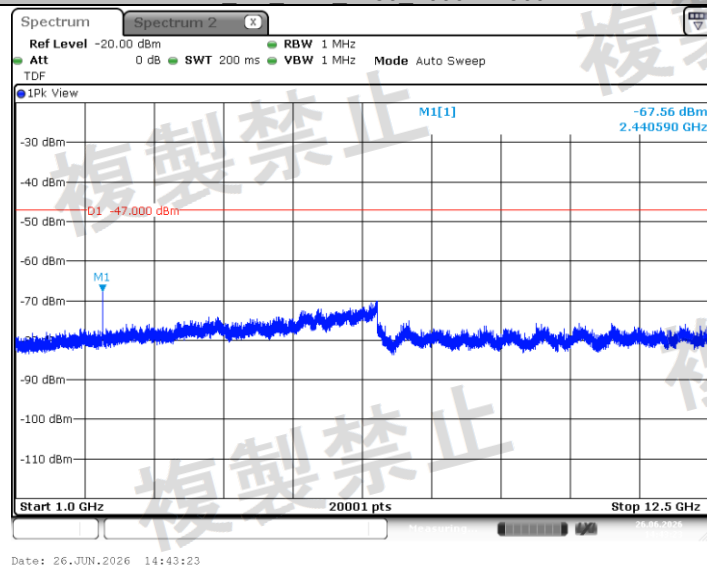
BLE 2M Ant1 2440 1000~12500



BLE 2M Ant1 2480 30~1000



BLE 2M Ant1 2480 1000~12500



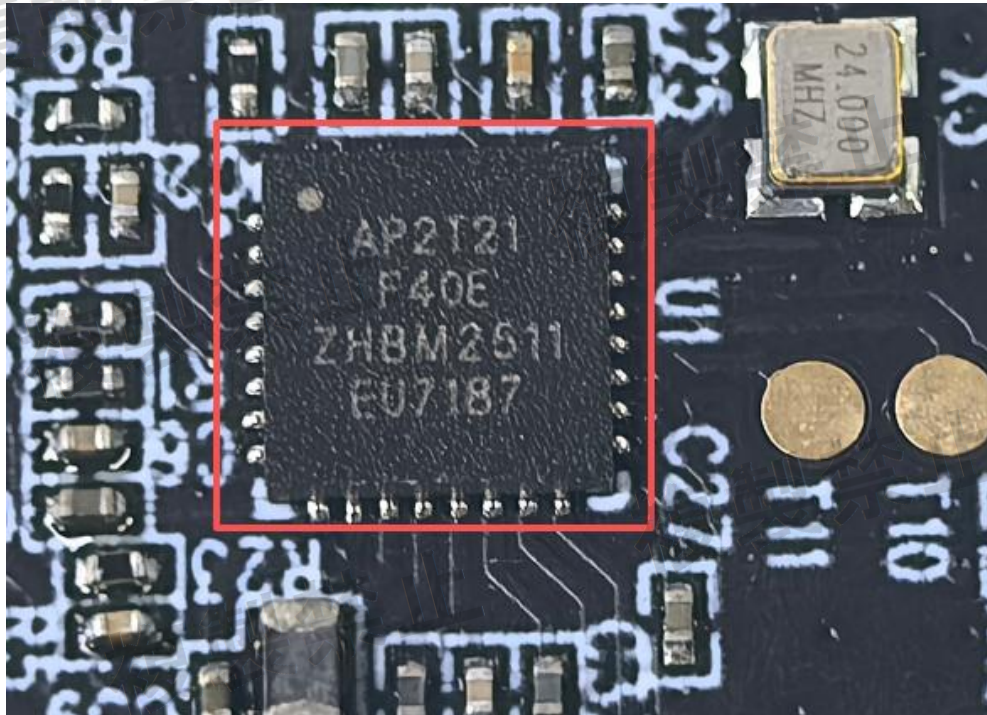
3.6. Construction protection confirmation method

Requirement

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

Confirmation method

RF and Modulation part are mounted on PCB with surface mount technology and there is no any adjustable part on PCB.



3.7. Interference Prevention Function

Module apply DSSS technique, in which the message signal is used to modulate a bit sequence known as the Pseudo Noise (PN) code; this PN code consists of pulses of a much shorter duration (larger bandwidth) than the pulse duration of the message signal, therefore the modulation by the message signal has the effect of chopping up the pulses of the message signal and thereby resulting in a signal which has a bandwidth nearly as large as that of the PN sequence. In this context the duration of the pulse of the PN code is referred to as the chip duration and the smaller this value, the larger the bandwidth of the resultant DSSS signal and the more immune to interference the resultant signal becomes.

TEST PROCEDURE

1. Power on the EUT
2. open "FMN" APP, Search the EUT

We can get the information as follows:

5E:27:4E:04:63:37

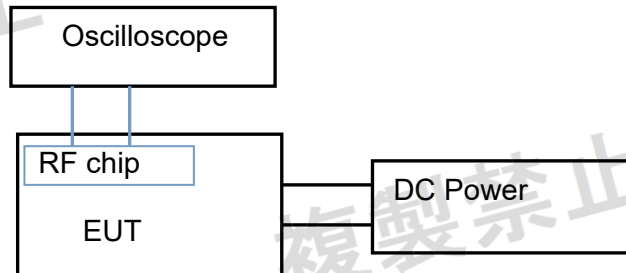
TEST RESULTS



3.8. Condition for Voltage Stabilization

- In the case of a characteristic test in the technical regulations conformity certification, the power supply supplies the voltage rating
- Other cases
The power supply supplies the voltage rating and the rating. However, when it can be confirmed that the change of the input voltage to the wireless part circuit of the testing machine is 1% or less when the input voltage to the testing machine from the external source changes at 10%, examines it only by the voltage rating.

TEST CONFIGURATION



TEST PROCEDURE

1. Use the DC power supplies the EUT, set the output power 5V.
2. Connect the RF module power input ports to the Oscilloscope, record the voltage value.
3. Set respectively the DC power output 4.5V and 5.50V, record the Oscilloscope's voltage values.

EUT supply power	RF module input power	Tolerance (%)
5V	3.7V	-
5.50V	3.7V	0
4.50V	3.7V	0

Conclusion: when the input voltage to EUT from the external source changes at 10%, the change of the input voltage to RF circuit of EUT is less 1%, another test item only need to test for normal condition.

3.9. Transmission Radiation Angle Width (3DB Beamwidth) Measurement

LIMIT

Item	Limits
	(See Article 49-20, Item1-f of the Ordinance Regulating Radio Equipment)
3dB antenna beam width	$360/A$ (if $A < 1$; then $A = 1$) $A = \{ \text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM} \}$

MEASURING INSTRUMENTS AND SETTING

Please refer to section 5 in this report. The following table is the setting of the spectrum analyzer.

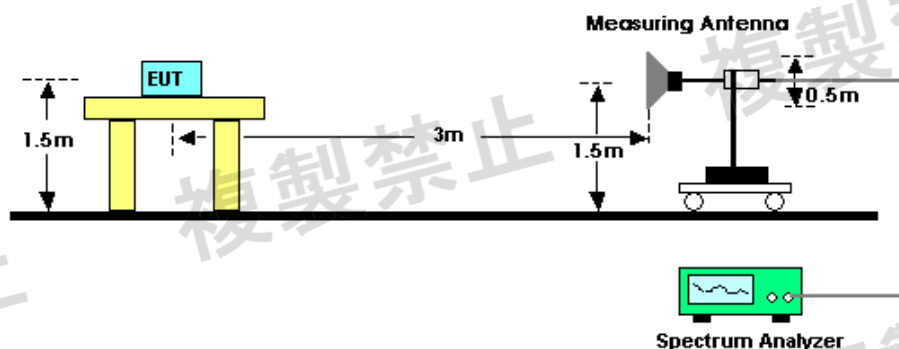
Spectrum Parameter	Setting
Attenuation	Auto
Span	0 MHz
RBW	1 MHz
VBW	1 kHz
Y scale	5 dB
Detector	Peak
Trace	Max Hold

TEST PROCEDURES

Test method which surpass to Clause 22 of Annex No.43 of MIC Notification No.88.

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of measuring antenna. The output level at the spectrum analyzer is read as "E".
5. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below $360/A$ (If $A < 1$; then $A = 1$).
 $A = \{ \text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM} \}$ or
 $A = \{ \text{EIRP Power [mW]} / 4.9 \text{ for FH} \}$

TEST SETUP



TEST RESULT OF TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH)

Not necessary.

*****THE END OF REPORT*****