TEST REPORT

Reference No.	:	WTX26X03069663W
Applicant	:	Shenzhen Lamzu Electronic Technology Co.,Ltd
Address	:	Building 301, Lushi Industrial Building, Zone 28, Dalang Community, Xin'an Street, Bao'an District, Shenzhen
Manufacturer	:	The same as Applicant
Address	:	The same as Applicant
Product Name	:	8K Dongle
Model No.	:	Startrail
Standards	:	Item 19 of Article 2 Paragraph 1
Date of Receipt sample	:	2026-03-19
Date of Test	:	2026-03-25 to 2026-04-09
Date of Issue	:	2026-04-13
Test Report Form No.	:	WTX_Item 19_2_1W
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

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Tested by:

Gala Wang/Project Engineer

Approved by:

Jason Su/Manager

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Report version

Version No.	Date of issue	Description
Rev.00	2026-04-13	Original
/	/	/

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	8K Dongle
Trade Name:	LAMZU
Model No.:	Startrail
Rated Voltage:	5V
Device Category:	Portable Device
Hardware version:	V0.5
Software version:	1.0.0.4
Note: The sample information is provided by the customer.	

Technical Characteristics of EUT	
Frequency Range:	2402-2478MHz
Rated Output Power:	1mW
Type of Modulation:	GFSK
Quantity of Channels	77
Channel Separation:	1MHz
Type of Antenna:	Built-in Antenna
Antenna Gain:	2.31dBi
Note: 1: The Antenna Gain is provided by the customer and can affect the validity of results. *2: The data provided by the customer and can affect the validity of results.*	

Channel list:

SRD	
Channel	Frequency (MHz)
01	2402
02	2403
⋮	⋮
39	2440
⋮	⋮
76	2477
77	2478

1.2 Test Standards

The tests were performed according to following standards:

Article 2 paragraph 1 item 19: Low power data communications system in the 2.4GHz band.

MIC Notice No.88 Appendix No.43: Test Method for Radio Equipment specified in Article 2 paragraph 1 item 19 of Regulations for Certification

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with test method for radio equipment specified in MIC public notice 88:2004, annex 43 for certification.

1.4 Test Facility

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx/Rx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	Transmitting	2402MHz/2440MHz/2478MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Type-C Cable	1.80	Shielded	With Ferrite

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	100-14IBD	PF0F4ABV

1.6 Test Conditions

Supply Voltage				
	EUT supply power V	module input power V	Rated module power V	Tolerance (%)
Normal	5.00	3.3	3.3	
+10%	5.50	3.3	3.3	0
-10%	4.50	3.3	3.3	0
Others				
Temperature (°C)		20-25		
Relative humidity		51 %.		
ATM Pressure:		1019 mbar		
Note 1: When the input voltage is reduced or increased by 10%, the regulator voltage changes of less than 1%. So the following test items are conducted in the normal voltage.				

1.7 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	9kHz-6GHz	±0.57dB
Frequency Tolerance	9kHz-6GHz	±1×10-7
Spreading Bandwidth	9kHz-6GHz	±3%
Occupied Bandwidth	9kHz-6GHz	±0.015MHz
Transmitter Spurious Emissions	9kHz-25GHz	±2.76dB

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1.8 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
MXG Vector Signal Generator	Agilent	N5182A	MY47420108	2026-02-06	2027-02-05
Power Sensor	Keysight Technologies	U2021XA	MY55160007	2026-02-06	2027-02-05
Power Sensor	Agilent	U2021XA	MY54240001	2026-02-06	2027-02-05
MXA Signal Analyzer	Agilent	N9020A	US47140102	2026-03-25	2027-03-24
Signal Generator	Agilent	83752A	3610A01453	2026-02-06	2027-02-05
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2026-02-05	2027-02-04
Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2026-02-05	2027-02-04
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	1201.0002k 50-148650-FB	2026-03-25	2027-03-24
RF ATTENUATOR	FEIYANG	N-JK	/	2026-02-06	2027-02-05

Remark:

(a) Calibration conducted by the National institute of information and communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph in JRL.

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

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

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

The calibration corresponds to c described above.

From JRL Article 24-2, paragraph 4, Item 2

Notice: calibration duration for above equipments is 1 year

1.9 Calibration Information

GUANGZHOU LISAI METROLOGY & TEST CO. ,LTD.
No.8.South Street Shi ji institute Guangzhou.Guangdong.China

2. SUMMARY OF TEST RESULTS

TELEC RULES	DESCRIPTION OF TEST	RESULT
Item 19	RF Output Power	Compliant
Item 19	Frequency Tolerance	Compliant
Item 19	Occupied Bandwidth	Compliant
Item 19	Transmitter Spurious Emissions	Compliant
Item 19	Receiver Spurious Emissions	Compliant
Item 19	Interference Prevention Function	Compliant

N/A: not applicable.

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3. RF OUTPUT POWER

3.1 Standard Applicable

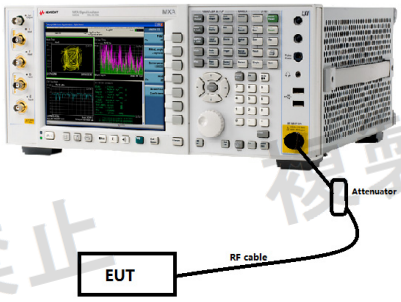
According to Item 19 of Article 2 Paragraph 1, the antenna power of the transmitter shall be one of the items below.

(1) The antenna power of the transmitting equipment which uses the frequency hopping method (including a combination of the frequency hopping method and direct spread method or a combination of the frequency hopping method and OFDM), and that uses emissions of a frequency from 2,427 MHz to 2,470.75 MHz shall provide a mean power within a bandwidth of 1 MHz of 3mW or less in the case of modulation using a standard coding test signal with the same transmission rate as that of the modulation signal.

(2) The antenna power of the transmitting equipment which uses OFDM or the spread spectrum method and does not conform to (1) above shall provide the mean power within a bandwidth of 1 MHz of 10 mW or less for the 20MHz system and 5 mW for the 40MHz system in the case of modulation using a standard coding test signal with the same transmission rate as that of the modulation signal.

(3) The antenna power of the transmitting equipment other than that stated in (1)and (2) above shall be 10 mW or less. and the maximum permit tolerance is +20%, no lower limit.

3.2 Test Setup Block Diagram



3.3 Test Procedure

Refer to Schedule 43: Wireless Equipment Test Methods published in Certification Regulations, Article 2-1(19)

3.4 Summary of Test Results/Plots

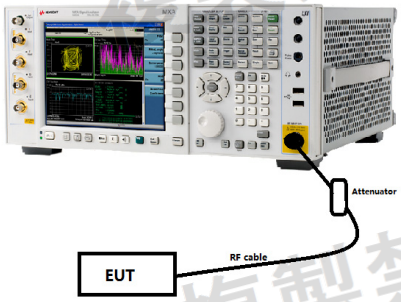
Please refer to Appendix A

4. FREQUENCY TOLERANCE

4.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1, the maximum permit tolerance of frequency is 50ppm.

4.2 Test Setup Block Diagram



4.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW, VBW=10KHz, Span = 1MHz.
4 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided emission is repetitive in nature.
5. Repeat above procedures until all frequency measured was complete.

4.4 Summary of Test Results/Plots

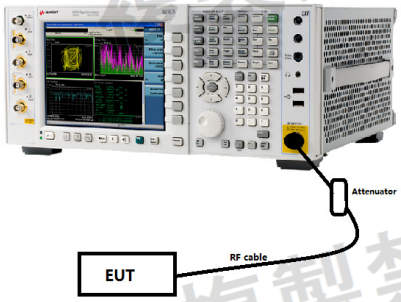
Please refer to Appendix B

5. OCCUPIED BANDWIDTH

5.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1.

5.2 Test Setup Block Diagram



5.3 Test Procedure

(1) Set up the spectrum analyzer as the follows:
Center frequency: Test frequency
Sweep bandwidth: 2 to 3.5 times of allowance
Resoluble bandwidth: less than 3% of allowance
Video bandwidth: Equivalent to resoluble bandwidth
Sweep time: Minimum time by which measuring accuracy is assured (In case of burst wave, 1 burst shall be contained per 1 sample)
Sampling points: More than 400 points
Sweep mode : Continuous sweeping
Detection mode: Positive peak
Display mode: Maximum holding

(2) Repeat the sweeping till no change was observed on the display and enter all values of data point to the computer as array variable.

(3) About all data, convert dB value to antilogarithm of electric power dimension.

(4) Add up the electric power of all data and record it as “Sum total of electric power”.

(5) Adding up data in order from the lowest frequency to upper frequencies, look for a limit point where the value reaches to 0.5% (5% in case of diffusion bandwidth) of “Sum total of electric power”. Convert the limit point to frequency and record as “Lowest limit frequency”.

(6) Adding up data in order from the highest frequency to lower frequencies, look for a limit point

where the value reaches to 0.5% (5% in case of diffusion bandwidth) of “Sum total of electric power”. Convert the limit point to frequency and record as “Highest limit frequency”.

(7) Repeat above procedures until all frequency measured was complete.

5.4 Summary of Test Results/Plots

Please refer to Appendix C

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6. TRANSMITTER SPURIOUS EMISSIONS

6.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1. The transmitter spurious emissions shall not exceeded the following limit:

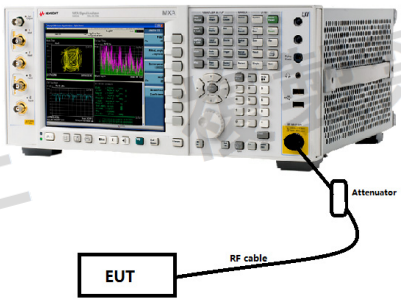
(1) Below 2387MHz : 2.5μW/MHz

(2) 2387 to 2400MHz : 25μW/MHz

(3) 2483.5 through 2496.5MHz : 25μW/MHz

(4) Over 2496.5MHz : 2.5μW/MHz

6.2 Test Setup Block Diagram



6.3 Test Procedure

(1) A spectrumIn case of conducted measurements, the radio device shall be connected to the measuring equipment via a suitable attenuator.

(2) The measurement equipment shall be set for peak hold mode of operation.

(3) the transmitter shall be operated at the highest output power, or, in the case of equipment able to operate at more than one power level, at the lowest and highest output powers;

(4) The resolution bandwidth shall be set to 100kHz from 10MHz to 1GHz, the resolution bandwidth shall be set to 1MHz above 1GHz , and the sweep time shall be set to auto mode, to ensure all major modulation products are captured.

(5) When the searched result is less than the specified limit, the maximum one shall be recorded, when the result is more than the specified limit, all measured values shall be recorded.

(5) This measurement shall be repeated with the transmitter in standby mode where applicable.

(6) Repeat above procedures until all frequency measured was complete.

6.4 Summary of Test Results/Plots

Please refer to Appendix D

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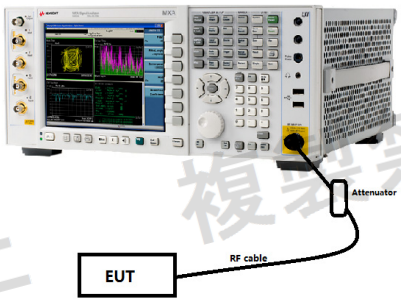
7. RECEIVER SPURIOUS EMISSIONS

7.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1. The receiver spurious emissions shall not exceeded the following limit:
(1) Below 1GHz : 4nW
(2) 1GHz or higher : 20nW

7.2 Test Setup Block Diagram



7.3 Test Procedure

(1) A spectrum In case of conducted measurements, the radio device shall be connected to the measuring equipment via a suitable attenuator.

(2) The measurement equipment shall be set for peak hold mode of operation.

(3) the transmitter shall be operated at the receiving mode.

(4) The resolution bandwidth shall be set to 100kHz from 10MHz to 1GHz, the resolution bandwidth shall be set to 1MHz above 1GHz , and the sweep time shall be set to auto mode, to ensure all major modulation products are captured.

(5) When the searched result is less than the specified limit, the maximum one shall be recorded, when the result is
more than the specified limit, all measured values shall be recorded.

(5) This measurement shall be repeated with the transmitter in standby mode where applicable.

(6) Repeat above procedures until all frequency measured was complete.

7.4 Summary of Test Results/Plots

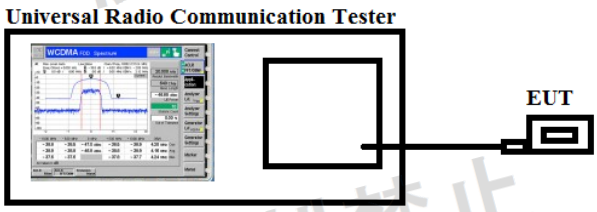
Please refer to Appendix E

8. INTERFERENCE PREVENTION FUNCTION

8.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1. The device shall have the function of automatic transmission or reception of identification code.

8.2 Test Setup Block Diagram



8.3 Test Procedure

1. Set the EUT in the usual operation condition

2. The radio equipment with automatic transmitting function of identification code

A. Transmit the assigned identification code from the radio equipment.
B. Confirm the identification code received by the demodulator.

3. The radio equipment with automatic receiving function of identification code

A. Transmit the assigned identification code from the opposite equipment.
B. Confirm that the usual communication is available.
C. Transmit the identification code distinct from the assigned one from the opposite equipment.
D. Confirm that the radio equipment is stopped or an indication is displayed as the identification code is different.

4. The identification function shall be recorded with “Good” or “No”.

8.4 Summary of Test Results/Plots

Please refer to Appendix F

APPENDIX SUMMARY

Project No.	WTX26X03069663W	Test Engineer	Timi Huang
Start date	2026/3/25	Finish date	2026/3/25
Temperature	22.4℃	Humidity	51%
RF specifications	SRD-2.4G		

APPENDIX	Description of Test Item	Result
A	RF Output Power	Compliant
B	Frequency Tolerance	Compliant
C	Occupied Bandwidth	Compliant
D	Transmitter Spurious Emissions	Compliant
E	Receiver Spurious Emissions	Compliant
F	Interference Prevention Function	Compliant

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APPENDIX A

RF OUTPUT POWER

➢ RF Output Power:

Mode	Test Channel	Measure Value (dBm)	Limit (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
2.4G-SRD	Low	-0.90	10	2.31	1.41	12.14	Pass
	Middle	-0.86	10	2.31	1.45	12.14	Pass
	High	-0.69	10	2.31	1.62	12.14	Pass

➢ RF Output Power Tolerance

Mode	Test Channel	Output Power (mW)	Rated Output Power (mW)	Tolerance (%)	Limit (%)	Result
2.4G-SRD	Low	0.813	1	-18.717	≤+20%	Pass
	Middle	0.820	1	-17.965	≤+20%	Pass
	High	0.853	1	-14.690	≤+20%	Pass

APPENDIX B

FREQUENCY TOLERANCE

Mode	Test Frequency (MHz)	Reading Value (MHz)	Tolerance (ppm)	Limit (ppm)	Result
2.4G-SRD	2402	2401.994	-2.4979	±50	Pass
	2440	2439.994	-2.4590	±50	Pass
	2478	2477.994	-2.4213	±50	Pass

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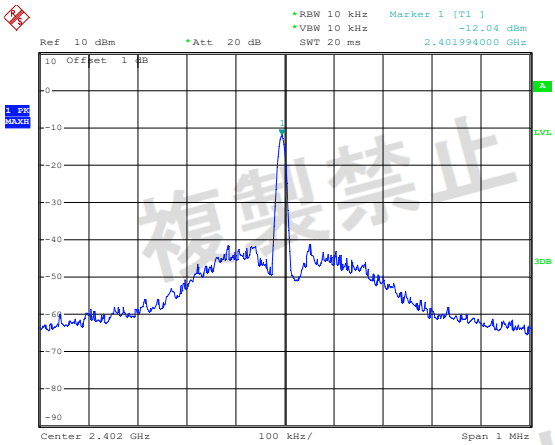
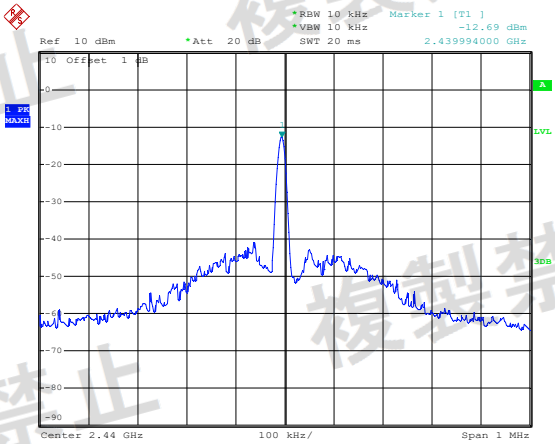
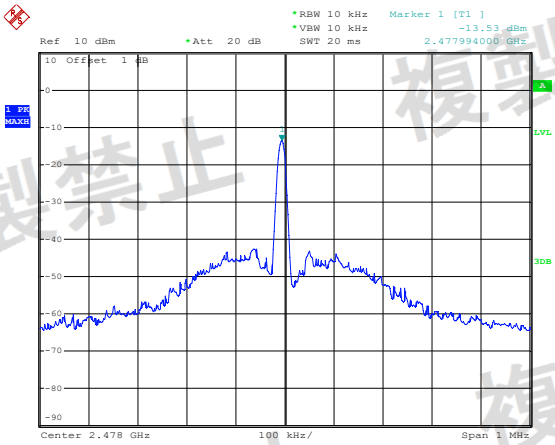
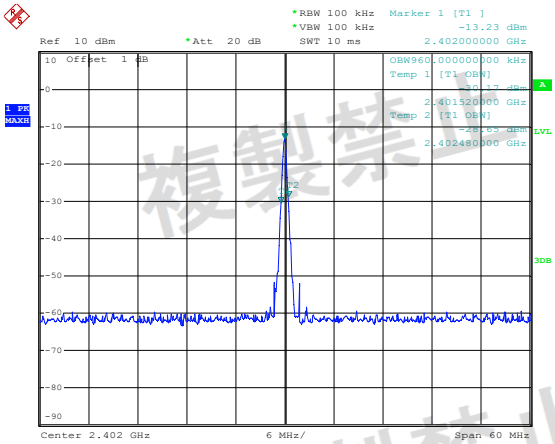
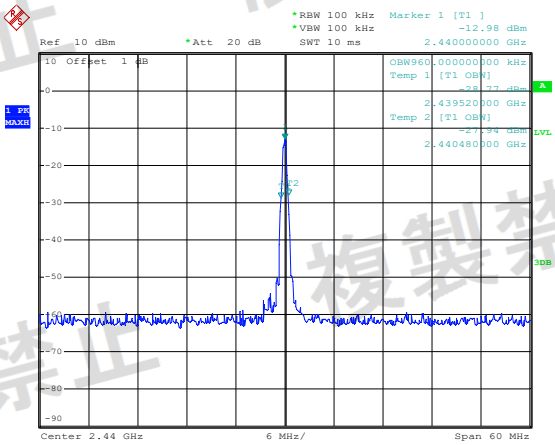
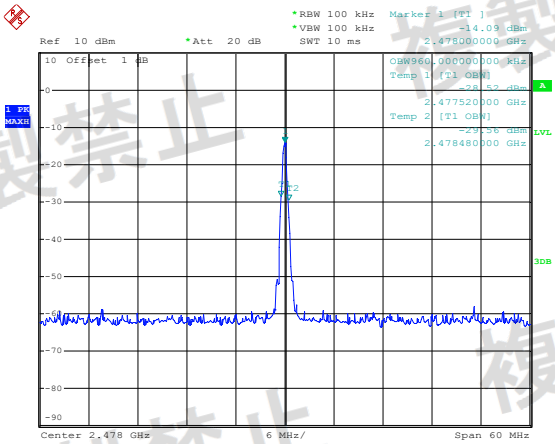
Low	 Date: 25.MAR.2026 10:36:21
Middle	 Date: 25.MAR.2026 10:35:59
High	 Date: 25.MAR.2026 10:35:22

APPENDIX C

OCCUPIED BANDWIDTH

Mode	Channel	99% Emission bandwidth		Result
		Reading Value (MHz)	Limit (MHz)	
2.4G-SRD	Low	0.960	<26	Pass
	Middle	0.960	<26	Pass
	High	0.960	<26	Pass

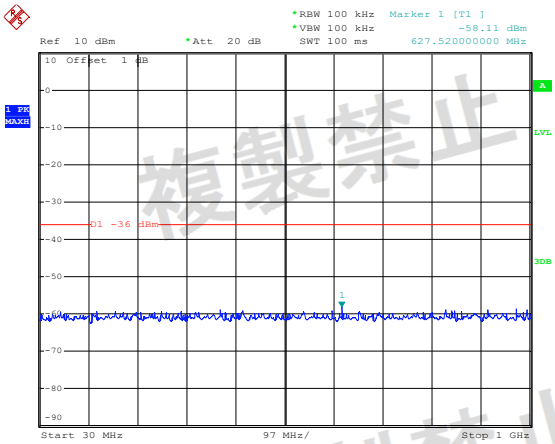
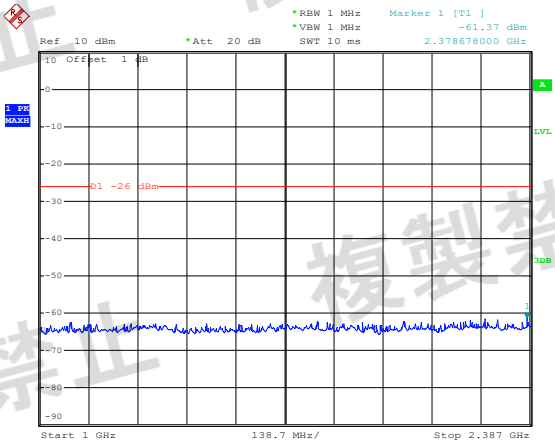
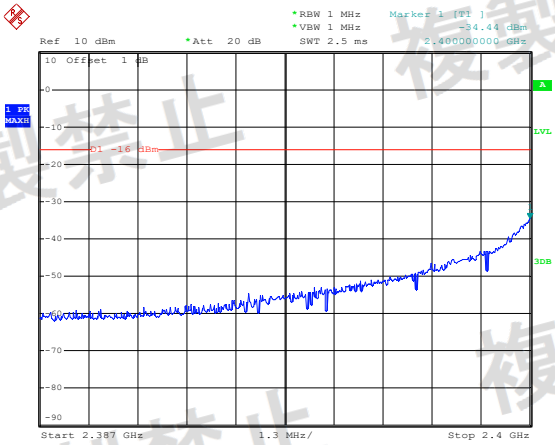
99% Emission bandwidth	
Low	 Date: 25.MAR.2026 10:37:21
Middle	 Date: 25.MAR.2026 10:38:06
High	 Date: 25.MAR.2026 10:38:19

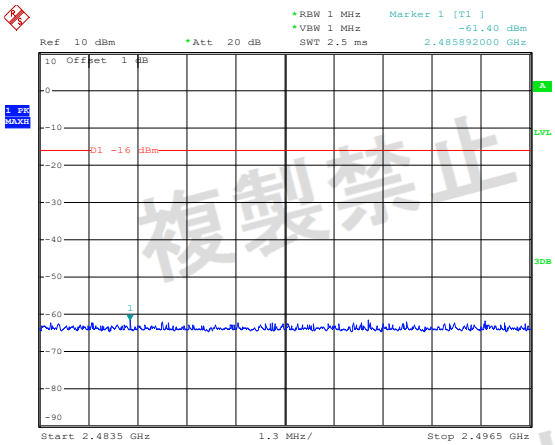
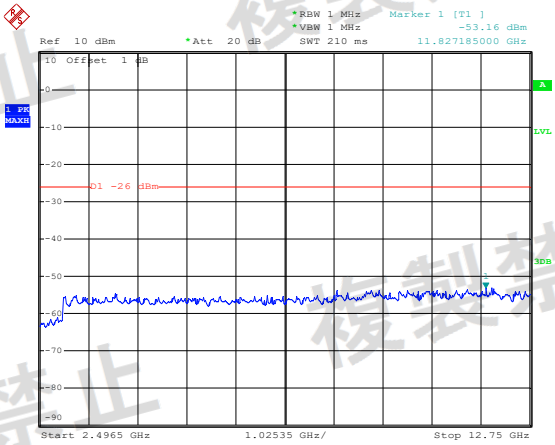
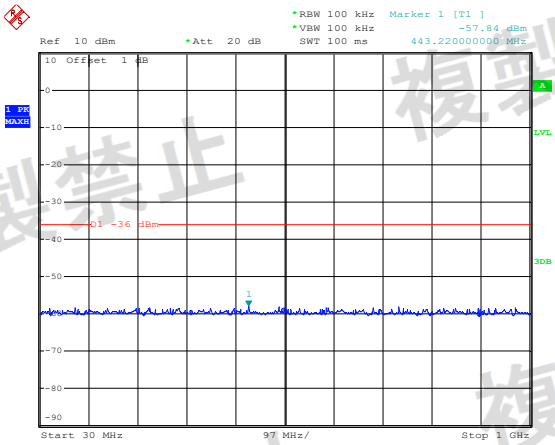
APPENDIX D

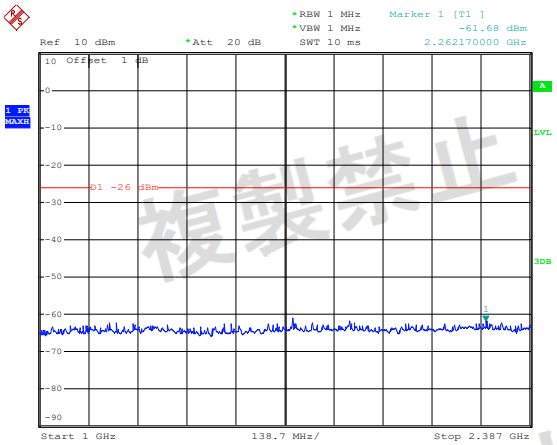
TRANSMITTER SPURIOUS EMISSIONS

Mode	Channel	Frequency Range (MHz)	Freq. (MHz)	Reading Value	Result (μW/MHz)	Limit (μW/MHz)	Result
2.4G-SRD	Low	30-1000	627.520	-58.11dBm/100kHz	0.01550	2.5	Pass
		1000-2387	2378.678	-61.37dBm/MHz	0.00073	2.5	Pass
		2387-2400	2400.000	-34.44dBm/MHz	0.35975	25	Pass
		2483.5-2496.5	2485.892	-61.40dBm/MHz	0.00072	25	Pass
		2496.5-127500	11827.185	-53.16dBm/MHz	0.00483	2.5	Pass
	Middle	30-1000	443.220	-57.84dBm/100kHz	0.01640	2.5	Pass
		1000-2387	2262.170	-61.68dBm/MHz	0.00068	2.5	Pass
		2387-2400	2397.556	-61.44dBm/MHz	0.00072	25	Pass
		2483.5-2496.5	2485.372	-60.66dBm/MHz	0.00086	25	Pass
		2496.5-127500	9427.866	-53.64dBm/MHz	0.00433	2.5	Pass
	High	30-1000	299.660	-58.05dBm/100kHz	0.01570	2.5	Pass
		1000-2387	1932.064	-61.11dBm/MHz	0.00077	2.5	Pass
		2387-2400	2397.400	-61.44dBm/MHz	0.00072	25	Pass
		2483.5-2496.5	2485.970	-58.42dBm/MHz	0.00144	25	Pass
		2496.5-127500	12401.381	-51.93dBm/MHz	0.00641	2.5	Pass

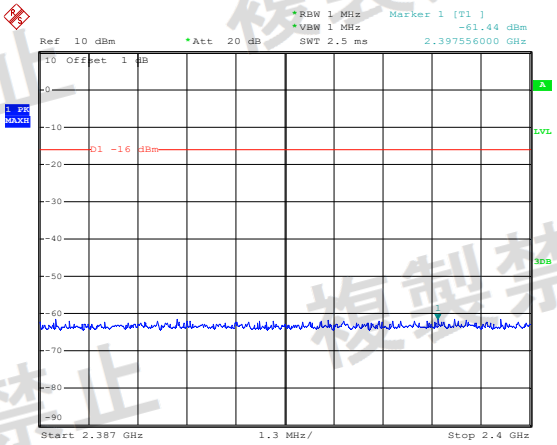
2.5μW/MHz=-26dBm/MHz, 25μW/MHz=-16dBm/MHz 2.5μW/MHz=-36dBm/100kHz,

Low	 Date: 25.MAR.2026 10:47:30
	 Date: 25.MAR.2026 10:49:28
	 Date: 25.MAR.2026 10:54:45

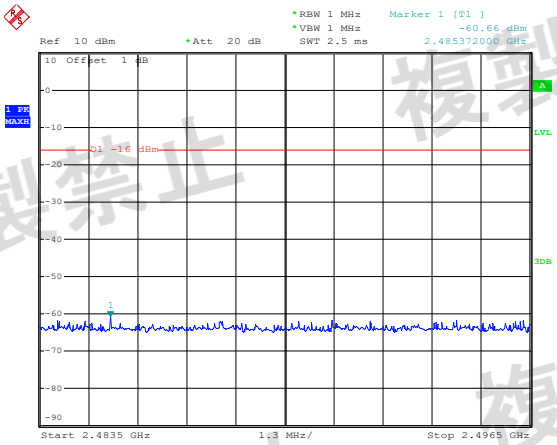
	 Date: 25.MAR.2026 10:55:10
	 Date: 25.MAR.2026 10:55:33
Middle	 Date: 25.MAR.2026 10:45:23



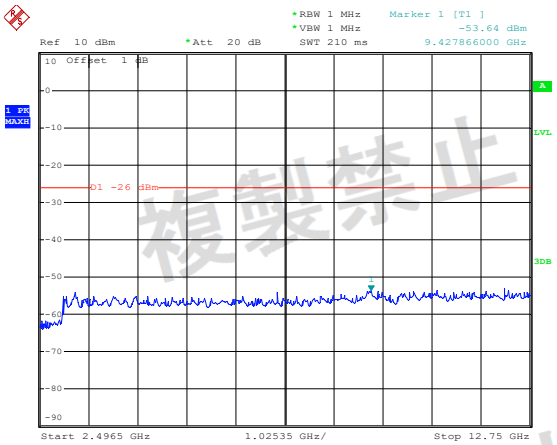
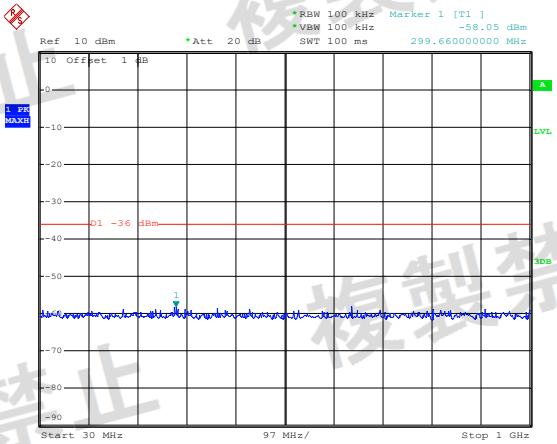
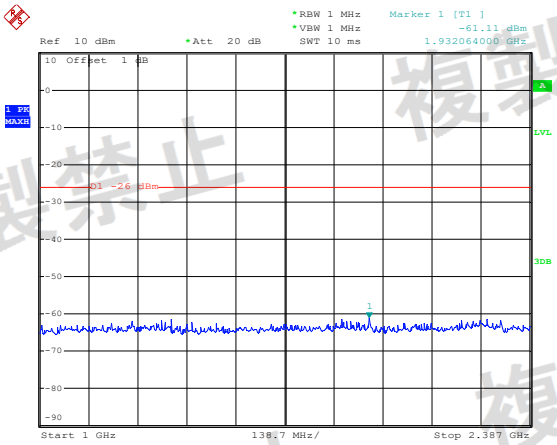
Date: 25.MAR.2026 10:45:53

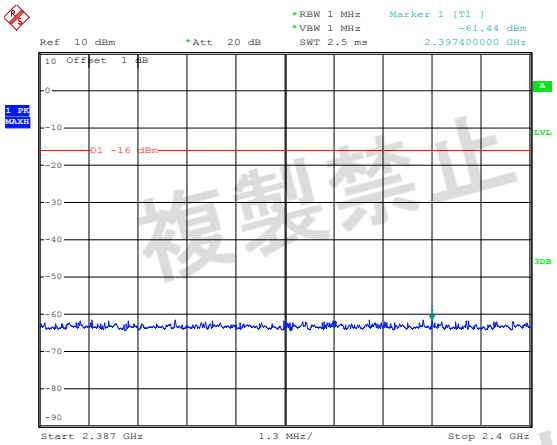


Date: 25.MAR.2026 10:46:07

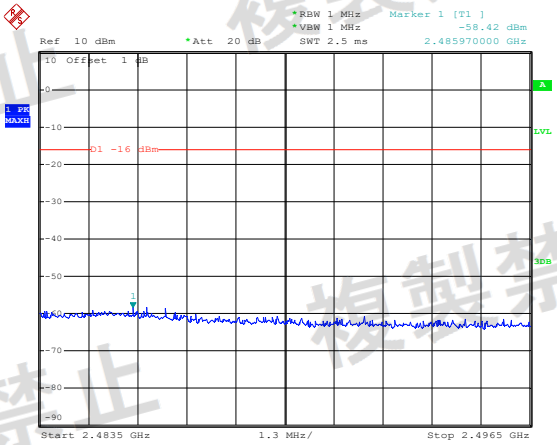


Date: 25.MAR.2026 10:46:29

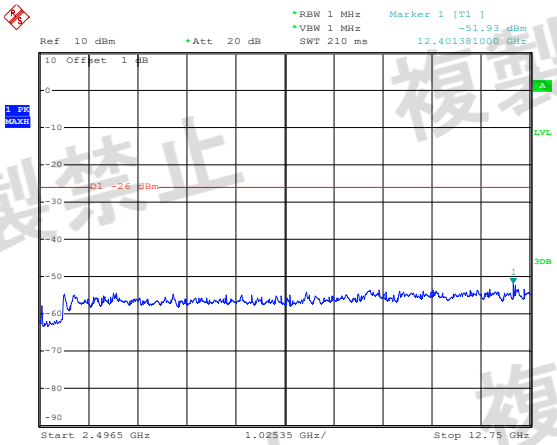
	 Date: 25.MAR.2026 10:46:50
High	 Date: 25.MAR.2026 10:39:14
	 Date: 25.MAR.2026 10:39:42



Date: 25.MAR.2026 10:40:10



Date: 25.MAR.2026 10:40:35



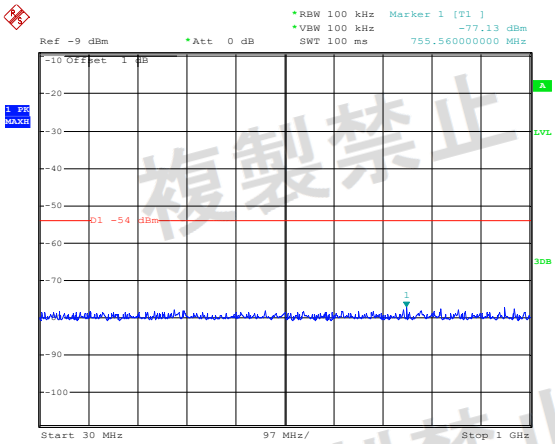
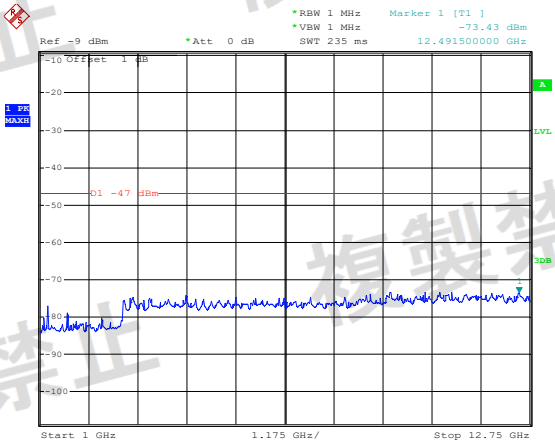
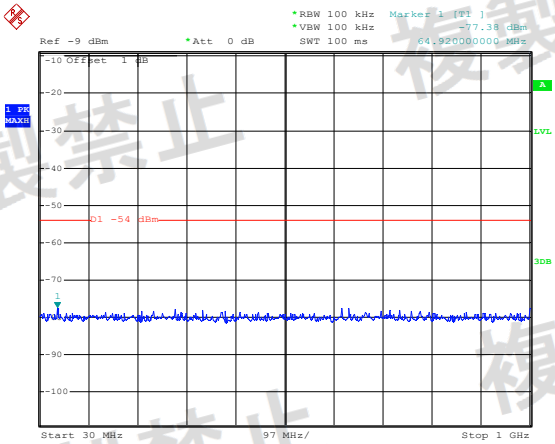
Date: 25.MAR.2026 10:42:07

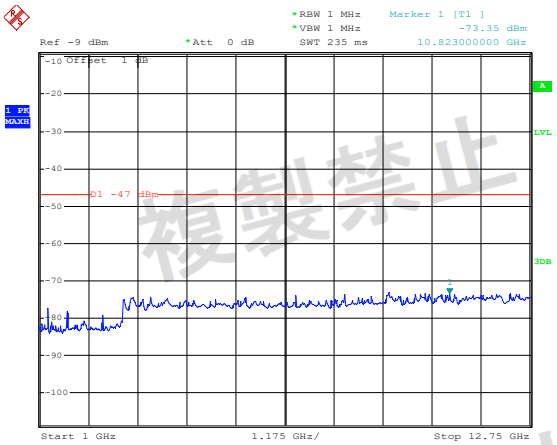
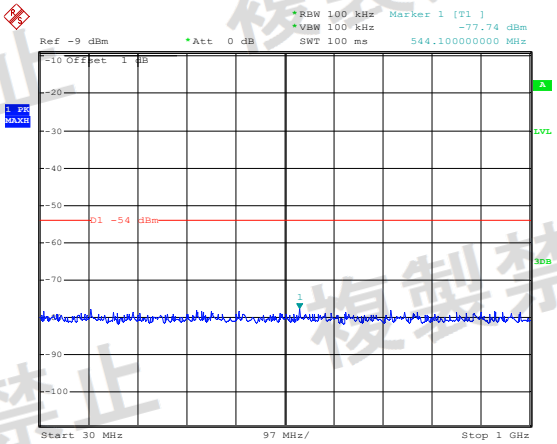
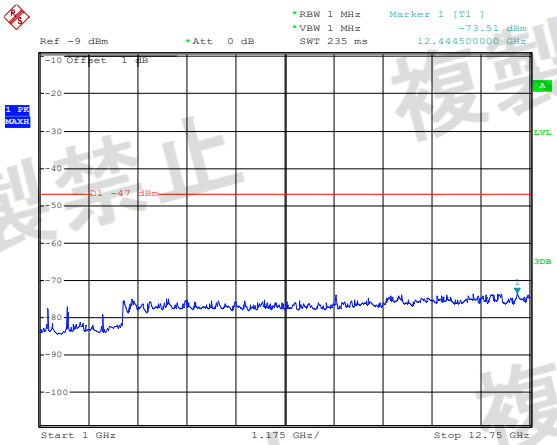
APPENDIX E

➢ **RECEIVER SPURIOUS EMISSIONS**

Mode	Channel	Frequency Range (MHz)	Freq. (MHz)	Reading Value	Result (nW)	Limit (nW)	Result
2.4G-SRD	Low	30-1000	755.560	-77.13dBm/100kHz	0.02	4	Pass
		1000-12750	12491.500	-73.43dBm/MHz	0.05	20	Pass
	Middle	30-1000	64.920	-77.38dBm/100kHz	0.02	4	Pass
		1000-12750	10823.000	-73.35dBm/MHz	0.05	20	Pass
	High	30-1000	544.100	-77.74dBm/100kHz	0.02	4	Pass
		1000-12750	12444.500	-73.51dBm/MHz	0.04	20	Pass

4nW/100kHz=-54dBm/100kHz 20nW/MHz=-47dBm/MHz

Low	 Date: 25.MAR.2026 10:56:17
	 Date: 25.MAR.2026 10:57:33
Middle	 Date: 25.MAR.2026 10:58:29

	 Date: 25.MAR.2026 10:58:11
High	 Date: 25.MAR.2026 10:58:41
	 Date: 25.MAR.2026 10:59:24

APPENDIX F

➢ INTERFERENCE PREVENTION FUNCTION

Test Item	Test Result
Transmitting Function of Identification Code	Good
Receiving Function of Identification Code	Good

Identification Code	PREAMBLE		BASE		PREFIX	LENGTH	PAYLOAD	CRC
	0xAA	0xAA	0xA4	0xA3	0xC4	0x01	0x55	0x94

APPENDIX PHOTOGRAPHS

Please refer to "ANNEX"

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

複製禁止