

TEST REPORT

Applicant Name: Astera LED Technology GmbH
Address: Schatzbogen 60, 81829 Munich, Germany
Report Number: 2501Z87387E-RF-07B

Test Standard (s)

Item 8 of Article 2 Paragraph 1

Sample Description

Product Type: QuikBeam
Model No.: AST-QUKBM-STD
Multiple Model(s) No.: AST-QUKBM
Trade Mark: ASTERA
Date Received: 2025-12-18
Issue Date: 2026-02-02

Test Result:

Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Ekko Wu

Ekko Wu
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.
This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Bay Area Compliance Laboratories Corp. (Shenzhen)

5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China
Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY	4
GENERAL INFORMATION.....	5
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	5
OBJECTIVE	5
TEST METHOD	5
MEASUREMENT UNCERTAINTY	5
TEST FACILITY	6
EUT TEST CONFIGURATION.....	7
DESCRIPTION OF TEST CONFIGURATION	7
EUT EXERCISE SOFTWARE	7
EQUIPMENT MODIFICATIONS	7
SUPPORT EQUIPMENT LIST AND DETAILS	7
EXTERNAL I/O CABLE.....	7
CONFIGURATION OF TEST SETUP	8
SUMMARY OF TEST RESULTS	9
TEST EQUIPMENT LIST	10
FREQUENCY ERROR	11
LIMIT	11
TEST PROCEDURE	11
TEST DATA	11
OCCUPIED BANDWIDTH	14
LIMIT	14
TEST PROCEDURE	14
TEST DATA	14
TRANSMITTER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY.....	17
LIMIT	17
TEST PROCEDURE	17
TEST DATA	17
ANTENNA OUTPUT POWER TOLERANCE.....	34
LIMIT	34
TEST PROCEDURE	34
TEST DATA	34
ADJACENT CHANNEL LEAKGE POWER.....	35
LIMIT	35
TEST PROCEDURE	35
TEST DATA	35
RECEIVER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY	38
LIMIT	38
TEST PROCEDURE	38
TEST DATA	38

TRANSMITTING TIME RESTRICTIONS.....	49
LIMIT	49
TEST PROCEDURE	49
TEST DATA	49
CARRIER SENSE CAPABILITY	52
LIMIT	52
TEST PROCEDURE	52
TEST DATA	52
INTERFERENCE PREVENTION FUNCTION.....	53
LIMIT	53
TEST PROCEDURE	53
TEST DATA	53
CONSTRUCTION PROTECTION CONFIRMATION	54
LIMIT	54
RESULT	54
EUT PHOTOGRAPHS.....	55
TEST SETUP PHOTOGRAPHS	56

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501Z87387E-RF-07B	Original Report	2026-02-02

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product		QuikBeam
Tested Model		AST-QUKBM-STD
Multiple Model(s)		AST-QUKBM
Technical Parameters	Modulation Type	GFSK
	Frequency Range	922.8-926.4MHz
	Rated Output Power	1.5mW
	Antenna Gain [#]	-2.02dBi (It is provided by the applicant)
Nominal Power Supply:		DC 10.9V from battery/DC 42.5-57V from POE++/DC 5V from USB Port
Sample serial number		3EDM-1 (Assigned by BACL, Shenzhen)
Sample/EUT Status		Good condition
Adapter Information		N/A
Note: The Multiple models are electrically identical with the test model except for model name and battery. Please refer to the declaration letter [#] for more detail, which was provided by manufacturer.		

Objective

The objective of the manufacturer is to demonstrate compliance with Radio Law of Japan item 8 of Article 2 Paragraph 1, rules and limits for this device including:

- Frequency Error
- Occupied Bandwidth
- Transmitter Spurious Emission and Unwanted Emission Intensity
- Antenna Output Power Tolerance
- Adjacent Channel Leakage Power
- Receiver Spurious Emission Strength
- Transmitting Time Restrictions
- Carrier Sense Capability
- Interference Prevention Function

Test Method

MIC Notice No.88 Appendix No.22-3

Measurement Uncertainty

Item	Expanded Measurement uncertainty
Occupied Channel Bandwidth	52.29kHz(k=1.96, 95% level of confidence)
Frequency Tolerance	81.235Hz(k=1.96, 95% level of confidence)
RF output power, conducted	1.57dB(k=1.96, 95% level of confidence)
Unwanted Emission,	2.48dB(k=1.96, 95% level of confidence)
Temperature	±0.4°C
Supply voltages	DC±0.4%;AC±1%
Humidity	±2%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

Each test item follows test standards and with no deviation.

EUT TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a testing engineering mode.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	922.8	10	924.8
1	923.0	11	925.0
2	923.2	12	925.2
3	923.4	13	925.4
4	923.6	14	925.6
5	923.8	15	925.8
6	924.0	16	926.0
7	924.2	17	926.2
8	924.4	18	926.4
9	924.6	/	/
Test on channel 0, 10 and 18.			

The EUT has the voltage regulator chip MP4583 which has a fluctuation of the output voltage to the RF circuit is less than $\pm 1\%$. So only test at the normal voltage.

EUT Exercise Software

Software “AsteraserialLogInstaller.msi”[#] was used and the power level is Default[#]. The software and power level was provided by the applicant.

Equipment Modifications

No modification was made to the EUT tested.

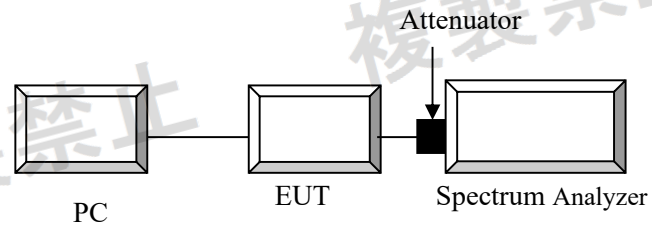
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	PC	DESKTOP-1630AQ3	Unknown
Unknown	Gateway	Unknown	Unknown

External I/O Cable

Cable Description	Length (m)	From/Port	To
Un-shielding Detachable USB Cable	1.0	EUT	PC

Configuration of Test Setup



SUMMARY OF TEST RESULTS

MIC Notice No.88 Appendix No.22-3 Article 2, Paragraph 1, Item 8	Description of Test	Result
1	Frequency Error	Compliant
2	Occupied Bandwidth	Compliant
3	Transmitter Spurious Emission and Unwanted Emission Intensity	Compliant
4	Antenna Output Power Tolerance	Compliant
5	Adjacent channel leakage power	Compliant
6	Receiver Spurious Emission and Unwanted Emission Intensity	Compliant
7	Transmitting Time Restrictions	Compliant
8	Carrier Sense Capability	Compliant
9	Interference Prevention Function	Compliant
10	Construction Protection Confirmation	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date	Calibration Authority	Calibration Method
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2025/09/01	2026/08/31	CCIC	c)
ANRITSU	Microwave peak power sensor	MA24418 A	12622	2025/09/01	2026/08/31	CCIC	c)
Keysight	MXG Vector Signal Generator	N5182B	MY53051503	2025/09/18	2026/09/17	CCIC	c)
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR	/	/
Fluke	Digital Multimeter	287	19000011	2025/04/29	2026/04/28	BACL Cal	c)
Unknown	RF Cable	Cable RF1	Cable RF1	2025/09/17	2026/09/16	BACL Cal	c)
Unknown	10dB Attenuator	Unknown	F-03-EM190	2025/06/26	2026/06/25	BACL SZ	d)
Unknown	Power Splitter	PD2	2000-600	2025/06/26	2026/06/25	BACL SZ	d)

Note: Calibration Method

a) Calibration conducted by the National Institute of Information and Communications Technology (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) ~Japan Calibration Service System~

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 other equipment that listed above from a) to c)

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

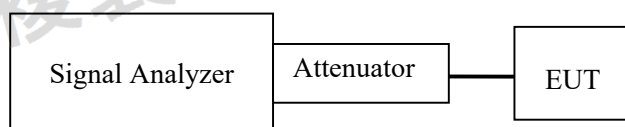
FREQUENCY ERROR

Limit

20 ppm or below

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- Set the application equipment (EUT) to the measurement frequency.
- The modulation state shall be “continuous carrier wave without modulation”.

Spectrum Analyzer Conditions

- Center Frequency: Frequency to be measured
- RBW: 3 kHz, VBW: 3 kHz
- Sweep time: Auto
- Log scale: 10dB/Div, Data points: 501points (400 points or more)
- Reference level: Enough level for maximum dynamic range
- Detection: Positive Peak,
- Sweep mode: Single sweep

If the EUT can't set at un-modulation mode, measure the 99% OBW.

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Cheeb Huang on 2026-01-30.

Test Result: Compliant

Test Mode: Transmitting (Modulation)

Test Voltage	F _c (MHz)	F _L (MHz)	F _H (MHz)	F ₀ (MHz)	Tolerance (ppm)	Limit (ppm)	Result
NV	922.8	922.75575	922.85875	922.80725	7.86	±20	Pass
NV	924.8	924.75625	924.85725	924.80675	7.30	±20	Pass
NV	926.4	926.35525	926.45775	926.4065	7.02	±20	Pass

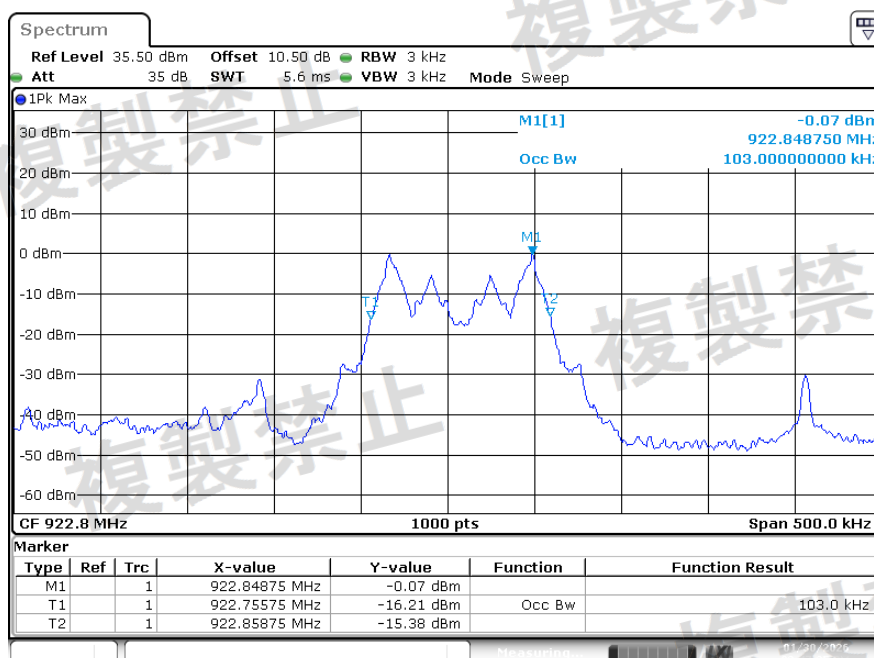
Note:

Tolerance = $(F_0 - F_c)/F_c \times 10^6$, where $F_0 = (F_L + F_H)/2$

F_L is the lower edge of the 99% OBW

F_H is the upper edge of the 99% OBW.

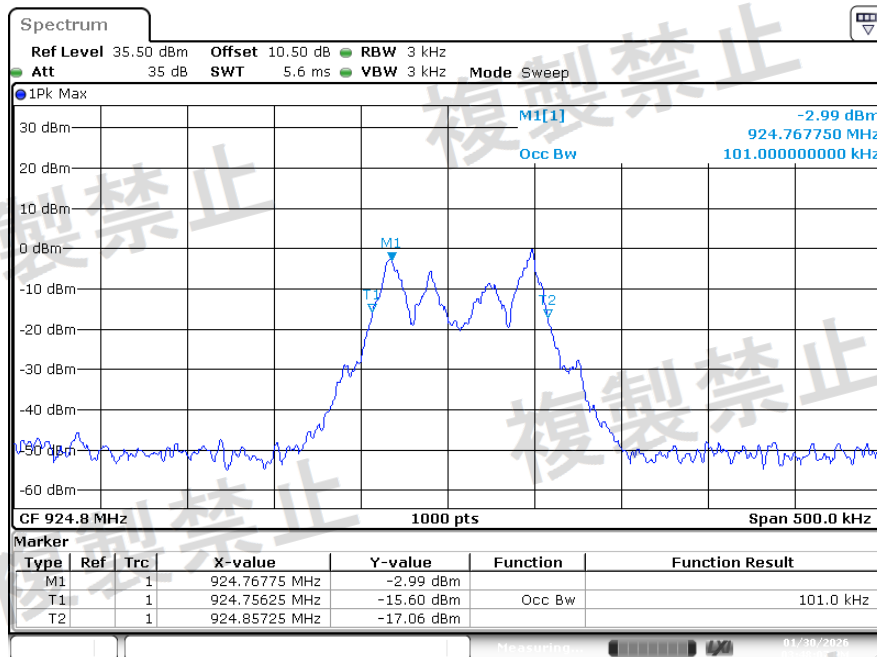
Low channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 30.JAN.2026 15:47:36

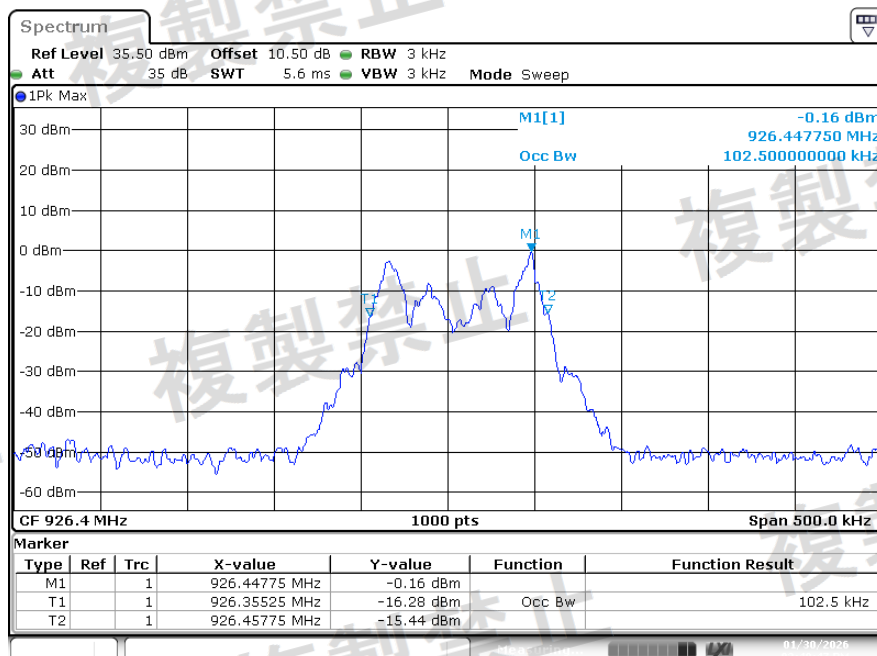
Middle Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 30.JAN.2026 15:48:07

High Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 30.JAN.2026 15:48:48

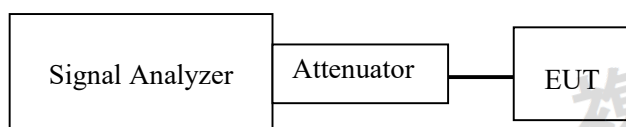
OCCUPIED BANDWIDTH

Limit

According to the regulation of the radio frequency equipment annex 2 clause 28, for low power radio frequency equipment , the limit of occupied bandwidth is: ≤ 200 kHz; ≤ 400 kHz; ≤ 600 kHz; ≤ 800 kHz; ≤ 1000 kHz.

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- Transmitting with modulation.

Spectrum Analyzer Conditions

- Center Frequency: Frequency to be measured
- Span: 2 to 3.5 times of the limit
- RBW: 1% of the limit
- VBW: Same as the RBW
- Sweep time: Auto, Marker: Marker Off
- Log scal : 10dB/Div, Data points : 501points (400 points or more)
- Reference level: Enough level for maximum dynamic range
- Detection: Positive Peak, Sweep mode: Continuous

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Cheeb Huang on 2026-01-30.

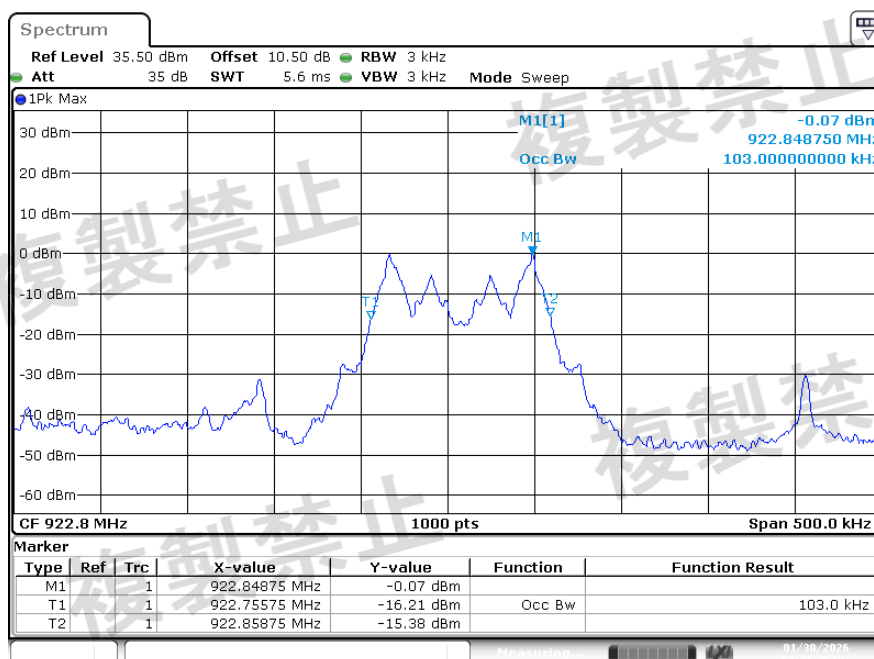
Test Result: Compliant

Test Mode: Transmitting

Frequency (MHz)	99% OBW (kHz)	Limit (kHz)	Result
922.8	103.00	<200	Pass
924.8	101.00		
926.4	102.50		

Please refer to the below plots for normal voltage test.

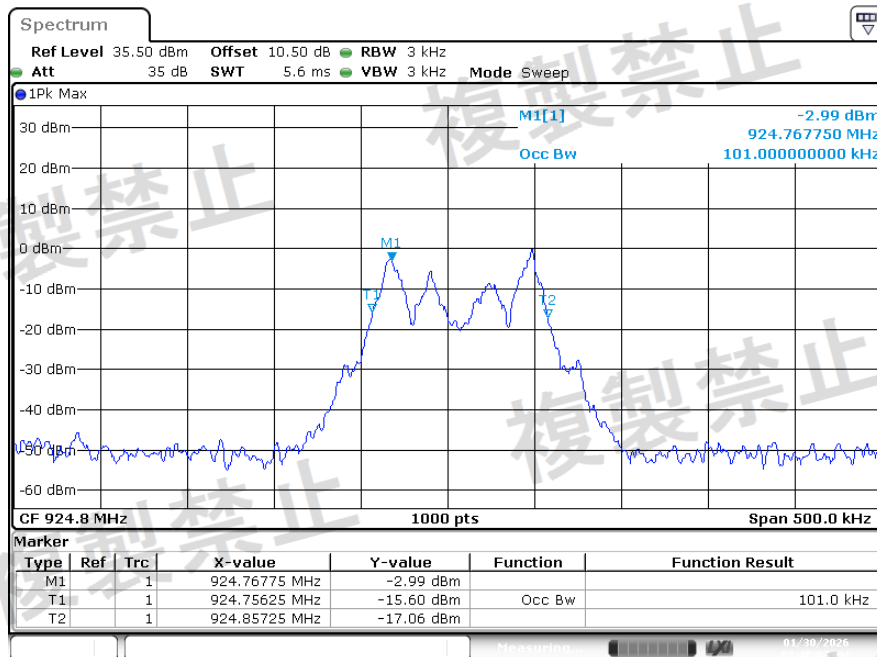
Low channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 30.JAN.2026 15:47:36

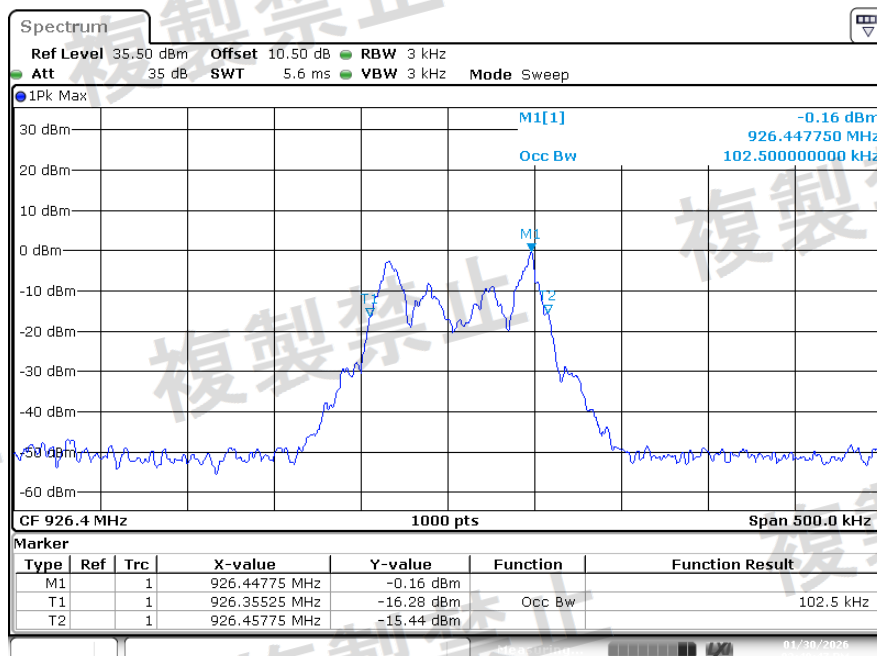
Middle Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 30.JAN.2026 15:48:07

High Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 30.JAN.2026 15:48:48

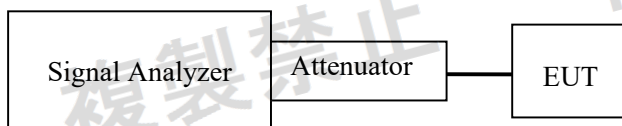
TRANSMITTER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY

Limit

Unwanted Emission Strength	≤710MHz : -36dBm/100kHz 710MHz<, ≤900MHz : -55dBm/1MHz 900MHz<, ≤915MHz : -55dBm/100kHz 915MHz<, ≤930MHz* : -36dBm/100kHz 930MHz<, ≤1000MHz : -55dBm/100kHz 1000MHz<, ≤1215MHz : -45dBm/1MHz 1215MHz< : -30dBm/1MHz
	*Unt channel 200kHz BW : except "200 + 100 x n kHz" from Cf *Unt channel 100kHz BW : except "100 + 50 x n kHz" from Cf

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- The modulation state shall be in continuously transmitting mode.

Spectrum Analyzer Conditions:

Frequency range: 30MHz-710MHz, RBW/VBW=100/100kHz
Frequency range: 710MHz-900MHz, RBW/VBW=1/1MHz
Frequency range: 900MHz-915MHz, RBW/VBW=100/100kHz
Frequency range: 915MHz-930MHz, RBW/VBW=100/100kHz
Frequency range: 930MHz-1000MHz, RBW/VBW=100/100kHz
Frequency range: 1000MHz-1215MHz, RBW/VBW=1/1MHz
Frequency range: 1215MHz-5GHz, RBW/VBW=1/1MHz

Test Data

Environmental Conditions

Temperature:	24.6~25.2 °C
Relative Humidity:	47~55 %
ATM Pressure:	100.2~101.1 kPa

The testing was performed by Cheeb Huang from 2026-01-09 to 2026-01-30.

Test Result: Compliant

Test Mode: Transmitting

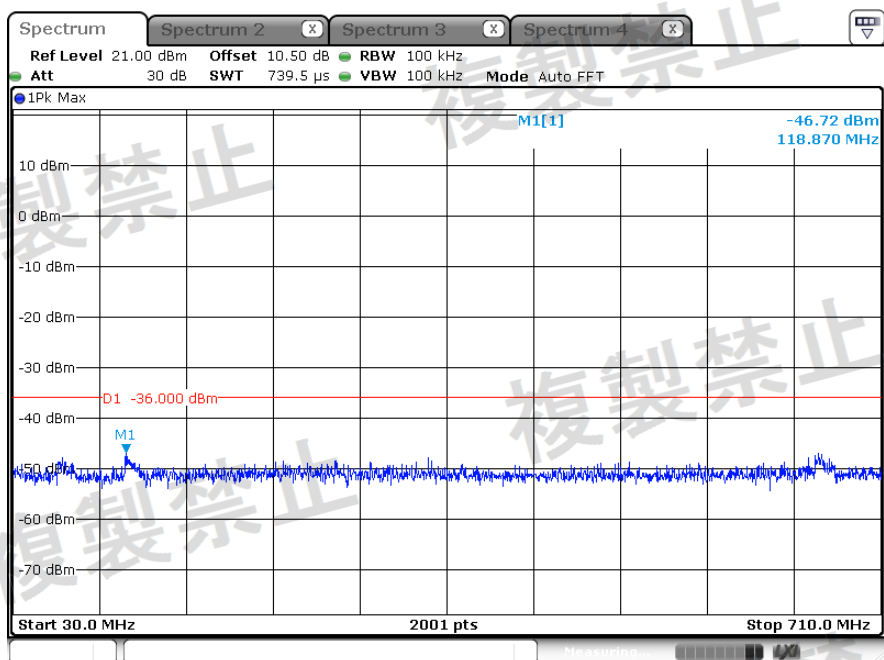
Normal Voltage

Channel	Test Band (RBW)	Frequency Range		Max.Emission Located(MHz)	Result (dBm/RBW)	Limit (dBm/RBW)	Verdict
		Start (MHz)	Stop (MHz)				
922.8MHz	Band I (100kHz)	30	710	118.8700	-46.72	-36	Pass
	Band II (1MHz)	710	900	888.0400	-56.45	-55	Pass
	Band III (100kHz)	900	915	902.0150	-60.35	-55	Pass
	Band IV (100kHz)*	915	922.5	922.4869	-36.40	-36	Pass
	Band V (100kHz)*	923.1	930	923.1017	-38.98	-36	Pass
	Band VI (100kHz)	930	1000	948.7760	-61.17	-55	Pass
	Band VII (1MHz)	1000	1215	1108.900	-54.87	-45	Pass
	Band VIII (1MHz)	1215	5000	1845.800	-41.34	-30	Pass
924.8MHz	Band I (100kHz)	30	710	663.6100	-57.27	-36	Pass
	Band II (1MHz)	710	900	896.8190	-58.88	-55	Pass
	Band III (100kHz)	900	915	914.6889	-60.88	-55	Pass
	Band IV (100kHz)*	915	924.5	924.4976	-42.07	-36	Pass
	Band V (100kHz)*	925.1	930	925.1012	-41.18	-36	Pass
	Band VI (100kHz)	930	1000	930.2270	-58.48	-55	Pass
	Band VII (1MHz)	1000	1215	1184.970	-53.36	-45	Pass
	Band VIII (1MHz)	1215	5000	2436.000	-39.75	-30	Pass
926.4MHz	Band I (100kHz)	30	710	228.9700	-56.63	-36	Pass
	Band II (1MHz)	710	900	893.9710	-58.64	-55	Pass
	Band III (100kHz)	900	915	900.3636	-59.81	-55	Pass
	Band IV (100kHz)*	915	926.1	926.0972	-42.14	-36	Pass
	Band V (100kHz)*	926.7	930	926.7140	-41.89	-36	Pass
	Band VI (100kHz)	930	1000	930.0170	-56.86	-55	Pass
	Band VII (1MHz)	1000	1215	1203.230	-52.54	-45	Pass
	Band VIII (1MHz)	1215	5000	1853.400	-44.32	-30	Pass

Note: * Unt Channel 200kHz BW: Except 200 + 100 x n kHz from the center frequency of radio channel, n=1

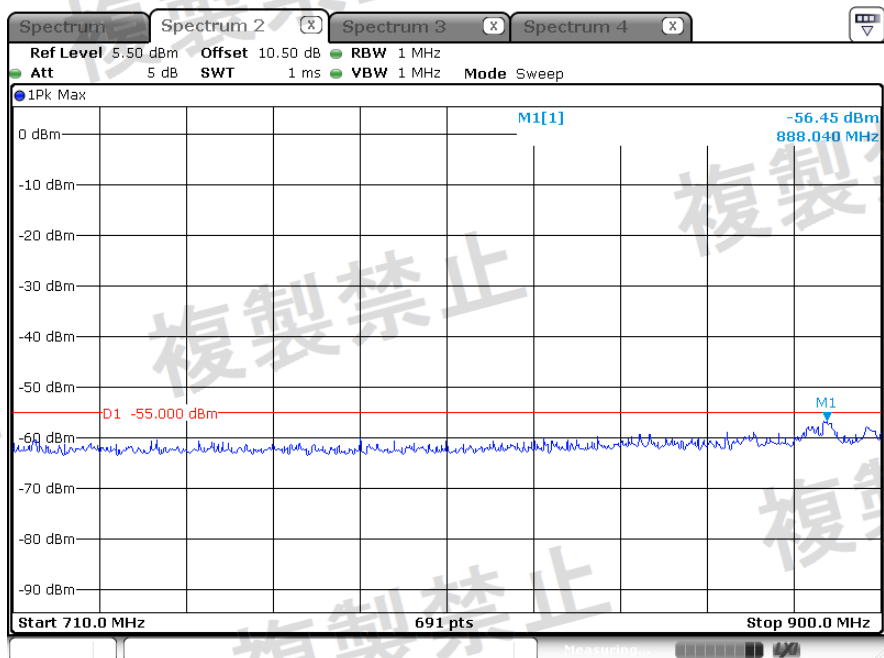
Low Channel:

30 MHz ~ 710 MHz



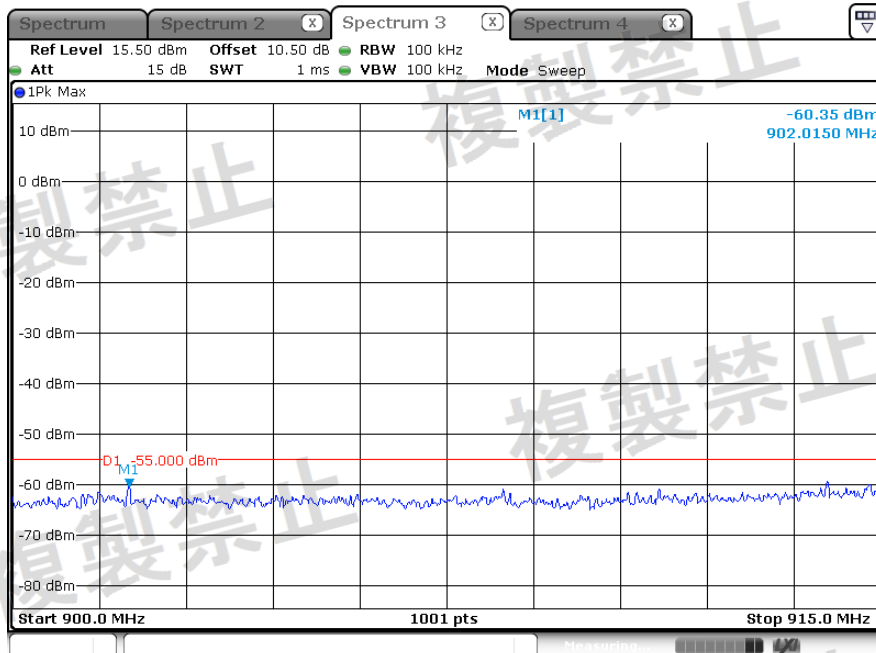
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 9.JAN.2026 11:27:23

710 MHz ~ 900 MHz



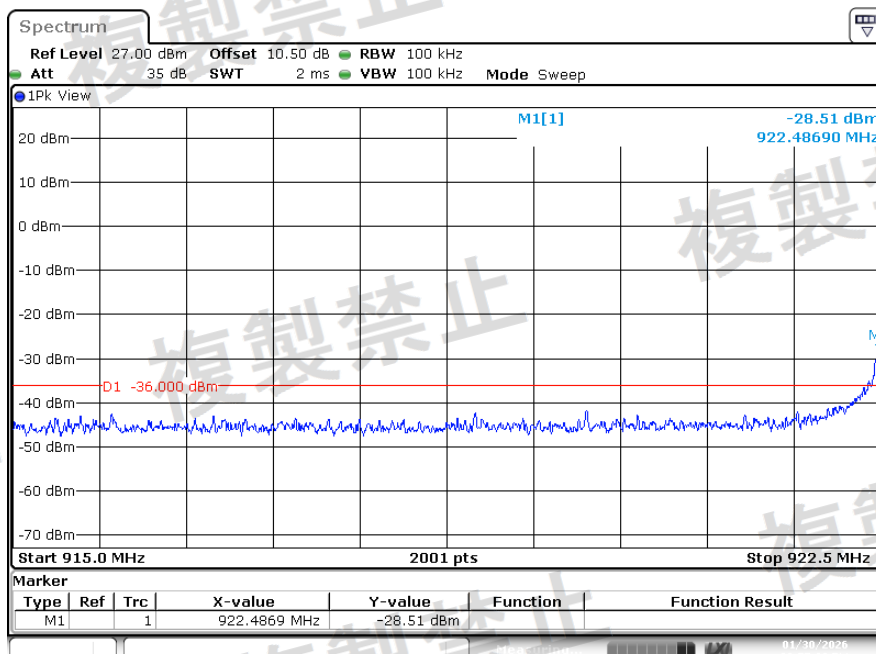
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 9.JAN.2026 11:27:54

900 MHz ~ 915 MHz

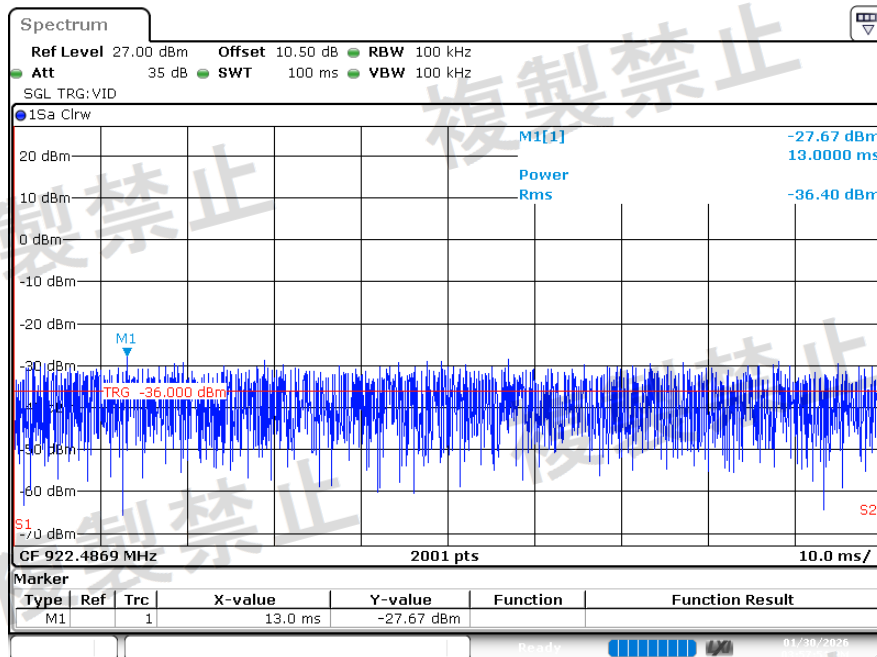


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 9.JAN.2026 11:28:20

915 MHz ~ 922.5MHz

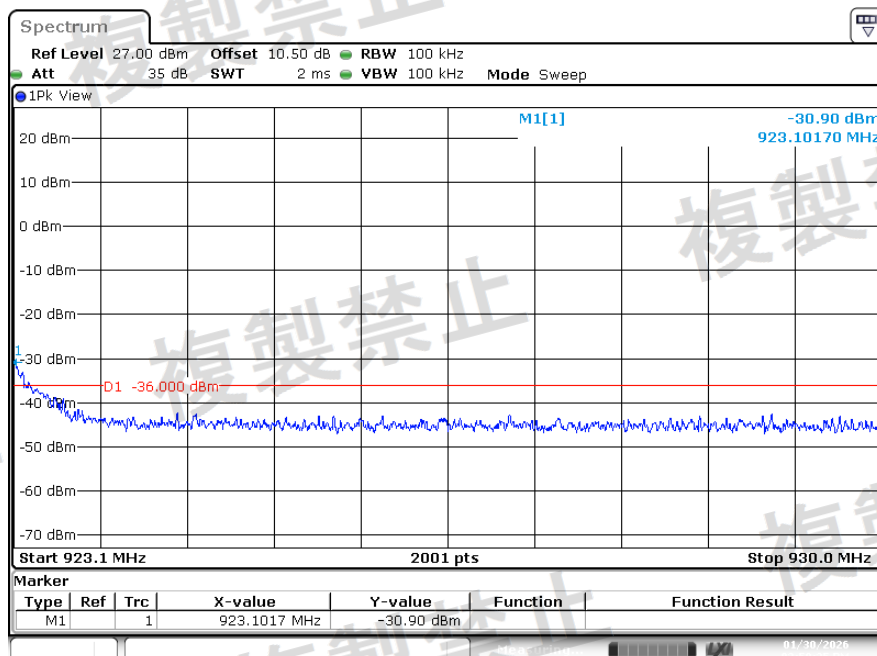


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:57:29

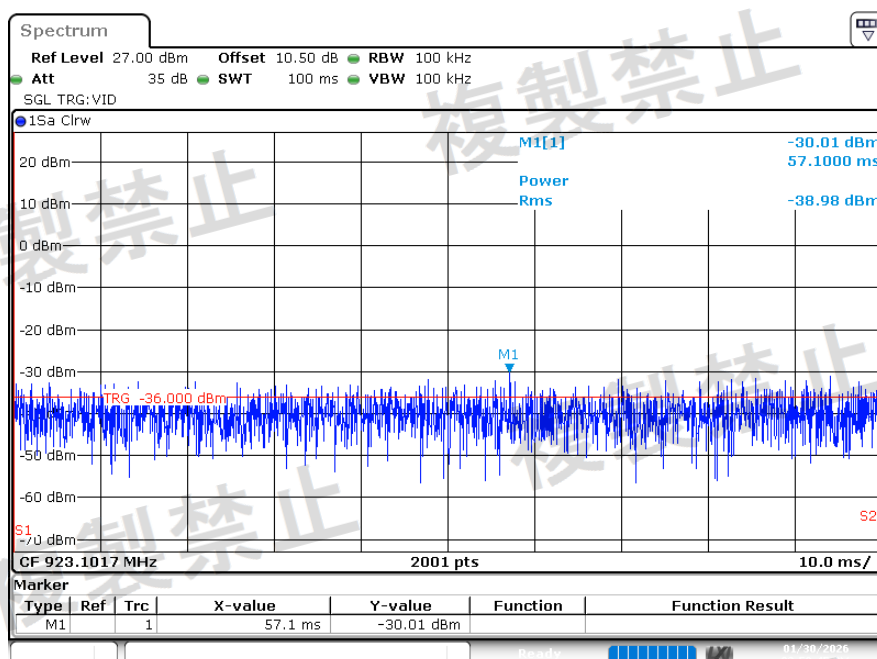


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:57:51

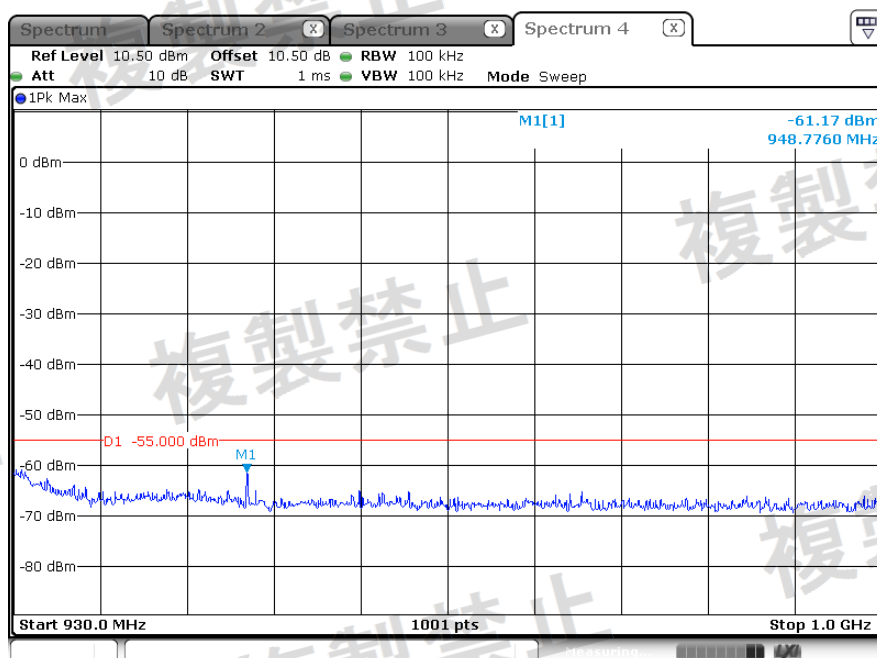
923.1 MHz ~ 930MHz



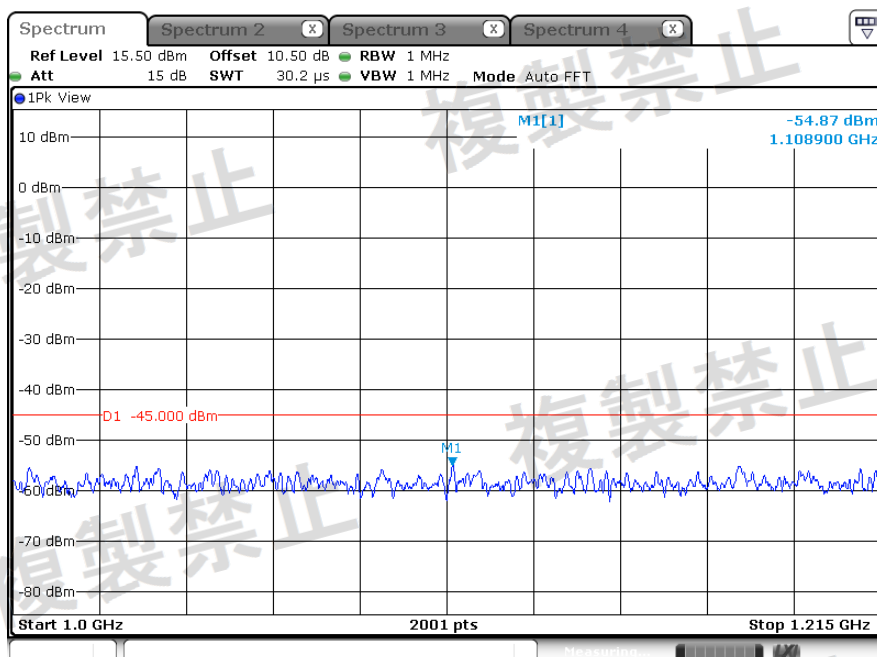
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:58:25



930 MHz ~ 1 GHz



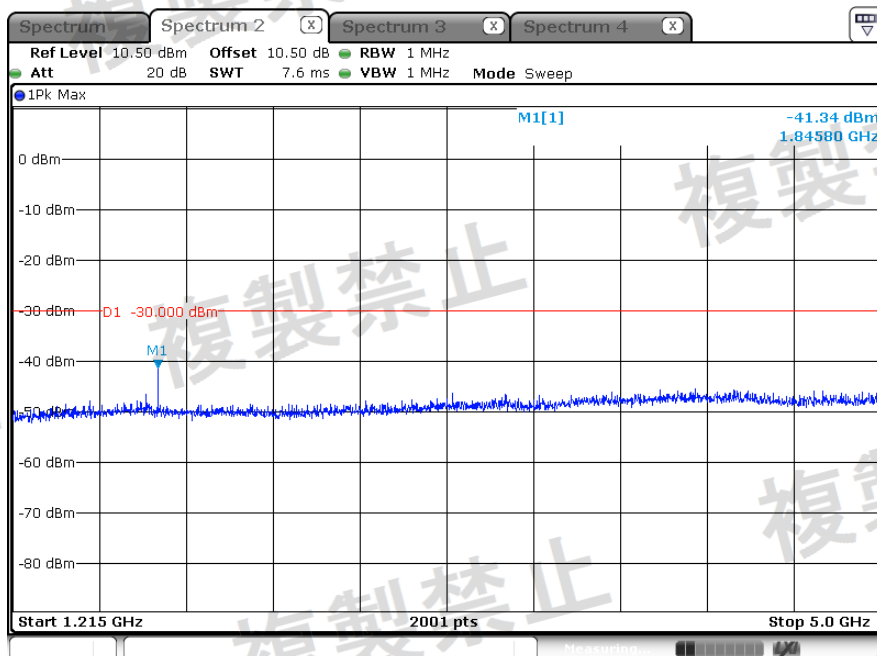
1 GHz ~ 1.215 GHz



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 9.JAN.2026 11:29:48

1.215 GHz ~ 5 GHz

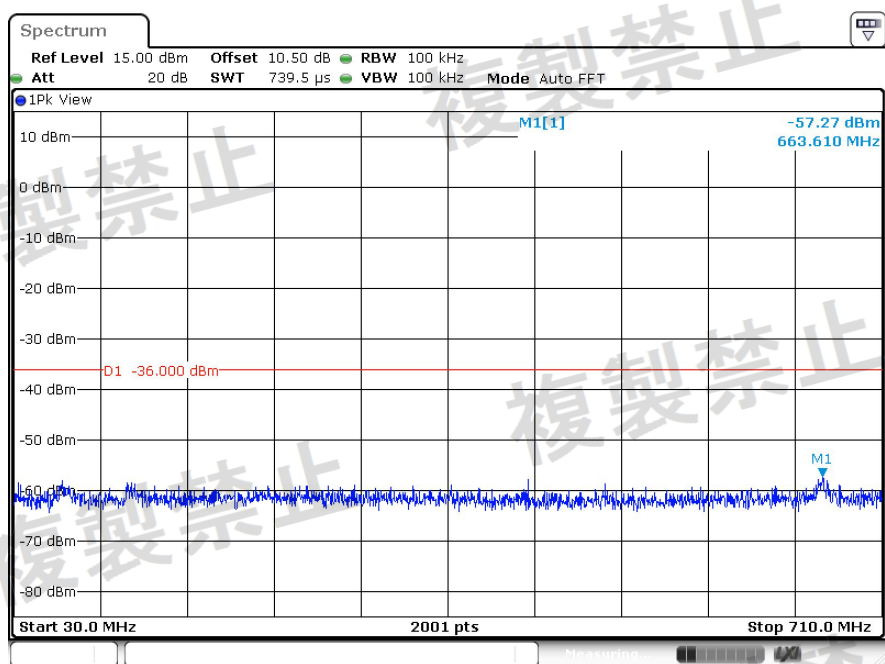


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 9.JAN.2026 11:30:08

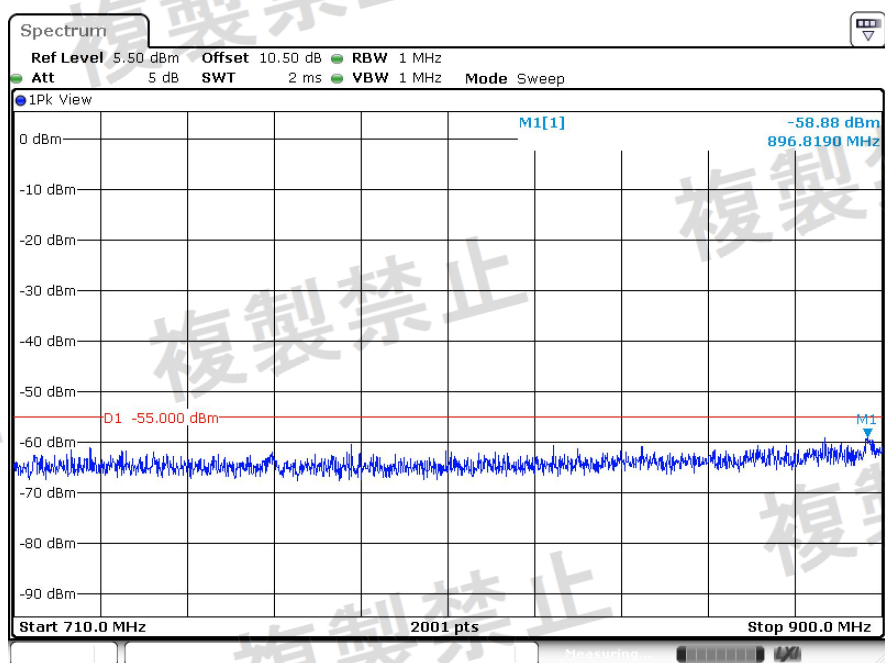
Middle Channel:

30 MHz ~ 710 MHz



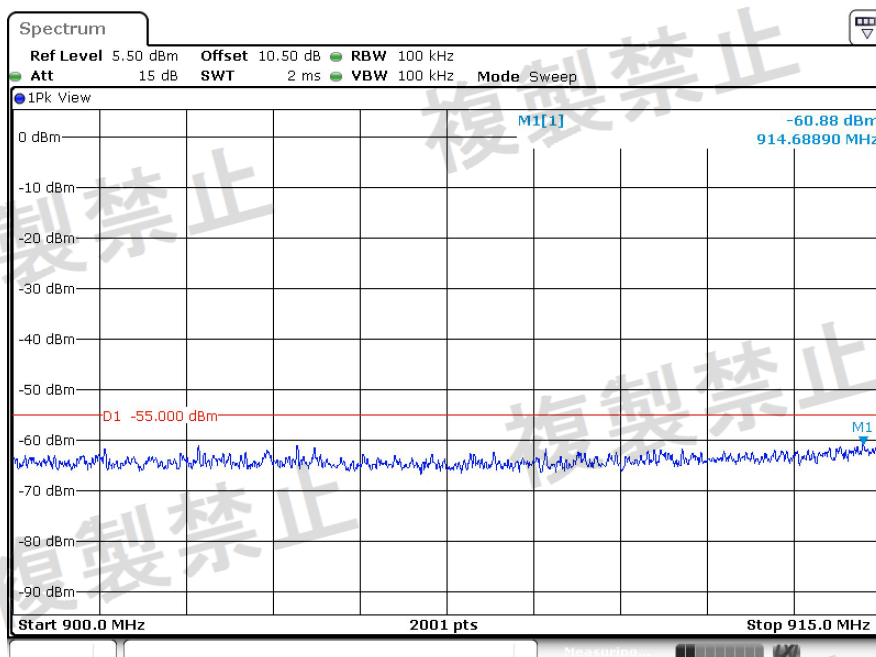
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:28:20

710 MHz ~ 900 MHz



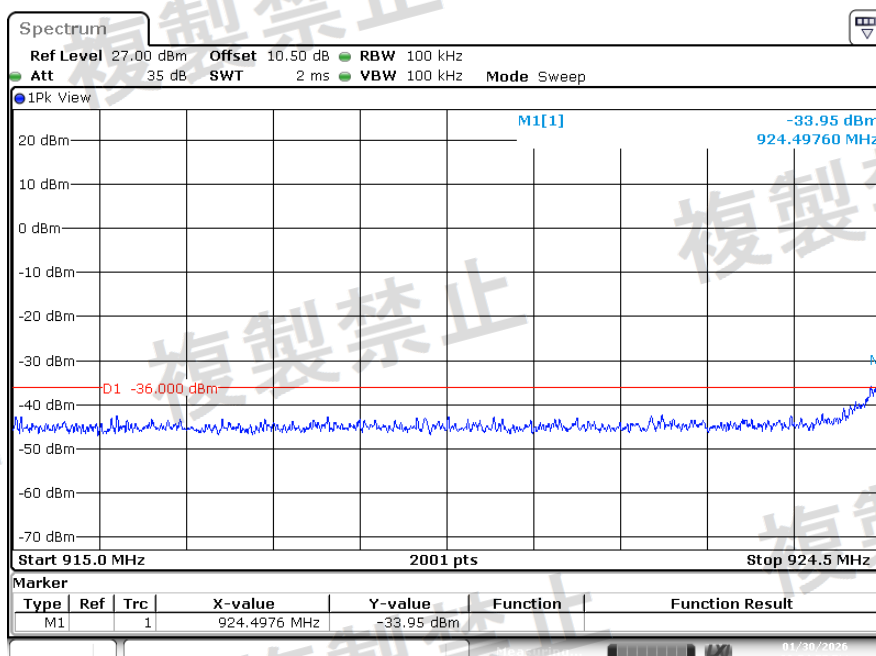
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:31:50

900 MHz ~ 915 MHz

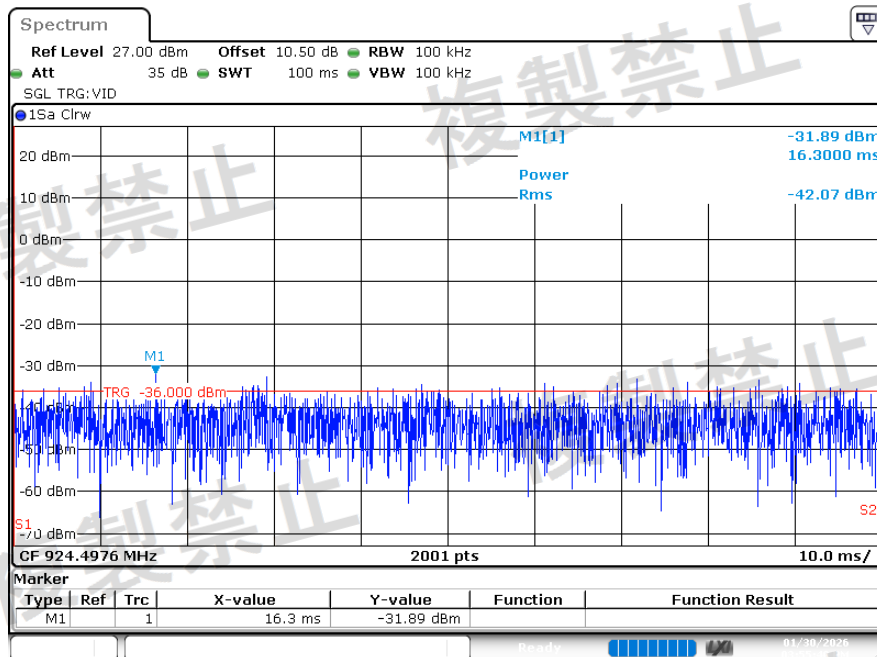


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:34:36

915 MHz ~ 924.5MHz

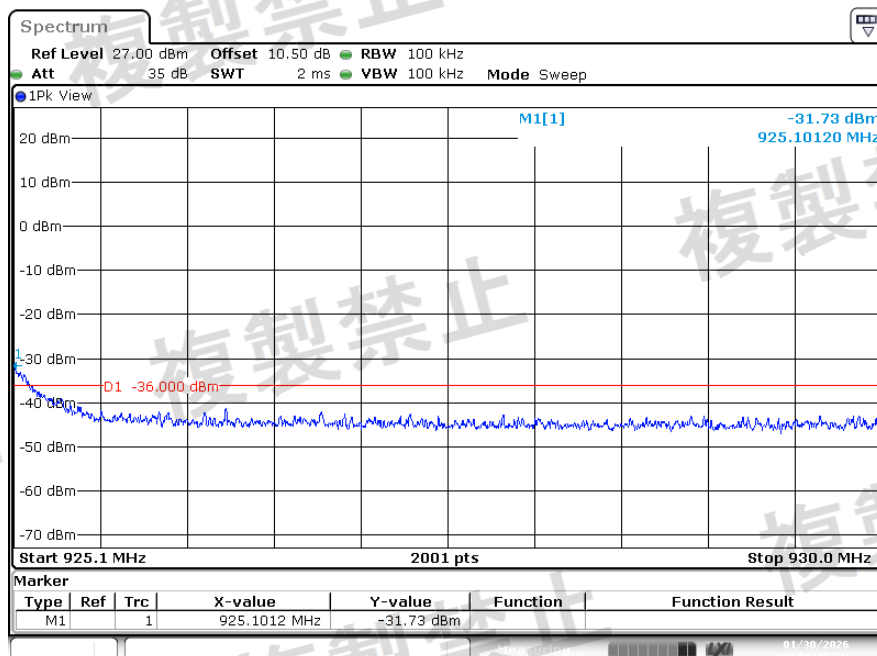


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:54:57

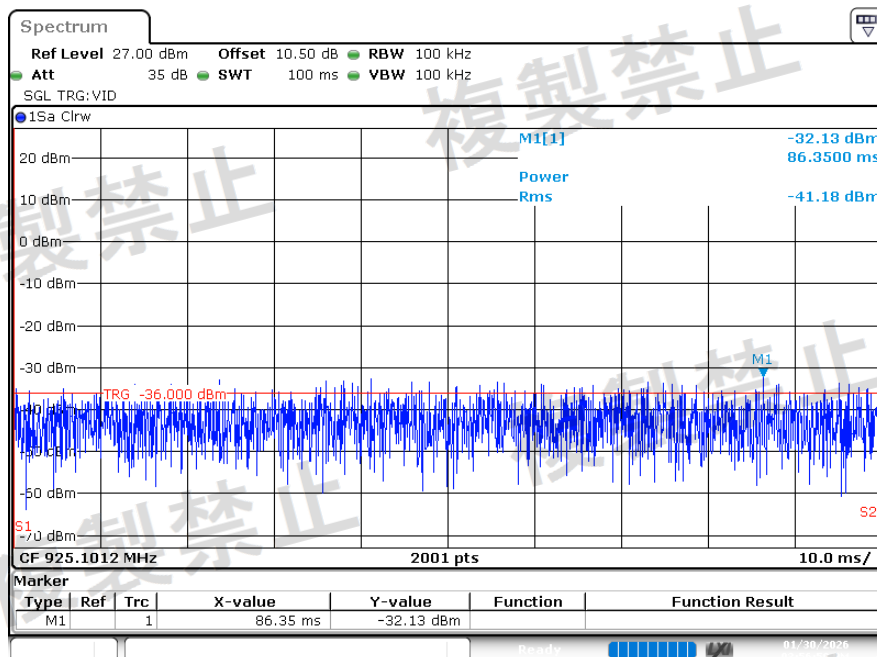


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:55:40

925.1 MHz ~ 930MHz

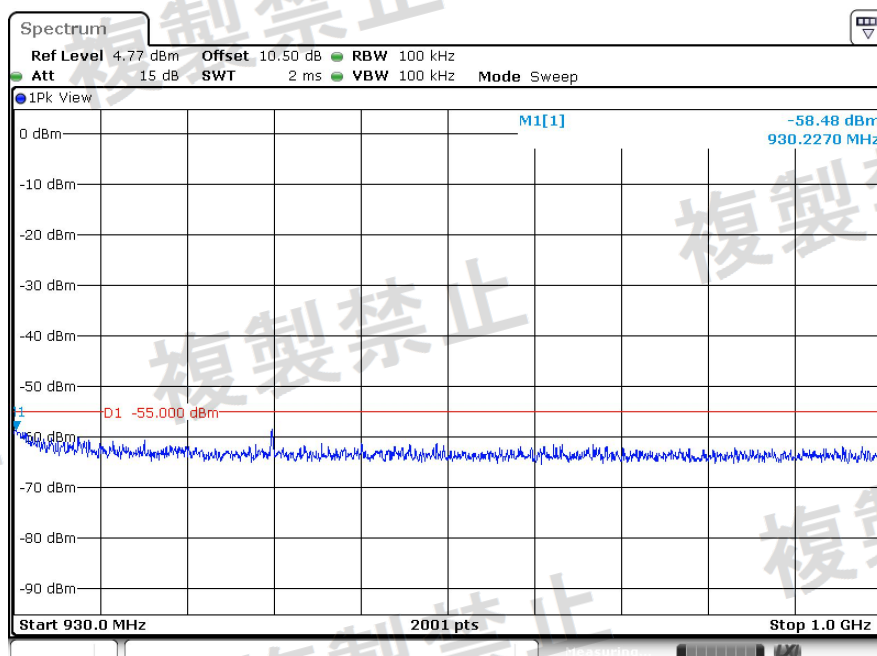


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:56:25



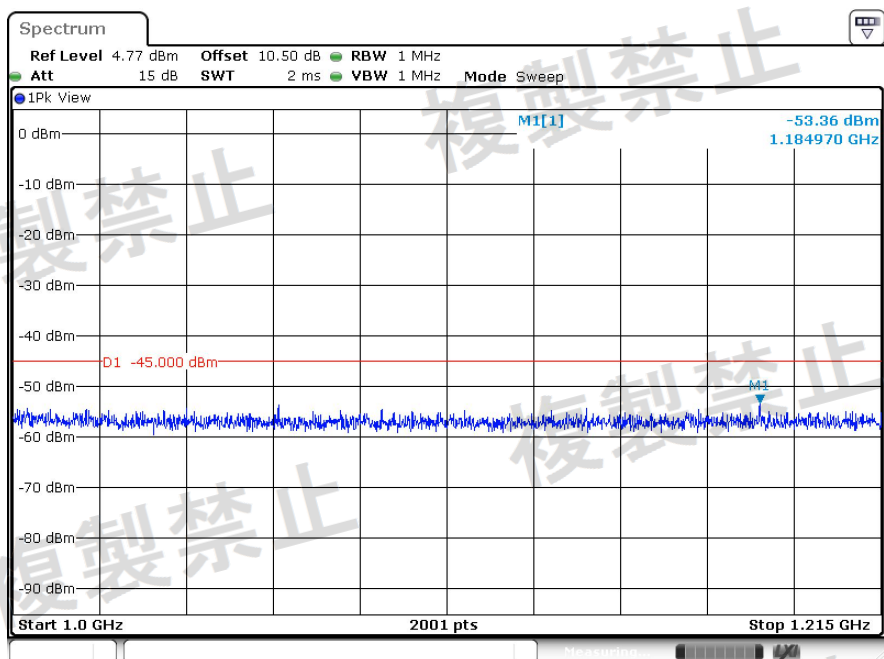
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:56:50

930 MHz ~ 1 GHz



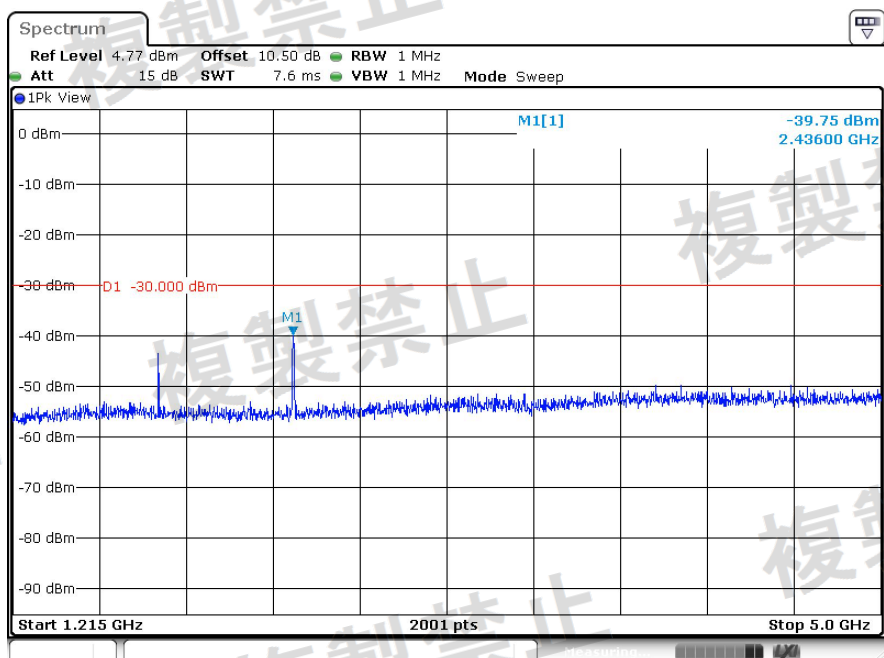
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:42:15

1 GHz ~ 1.215 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:43:07

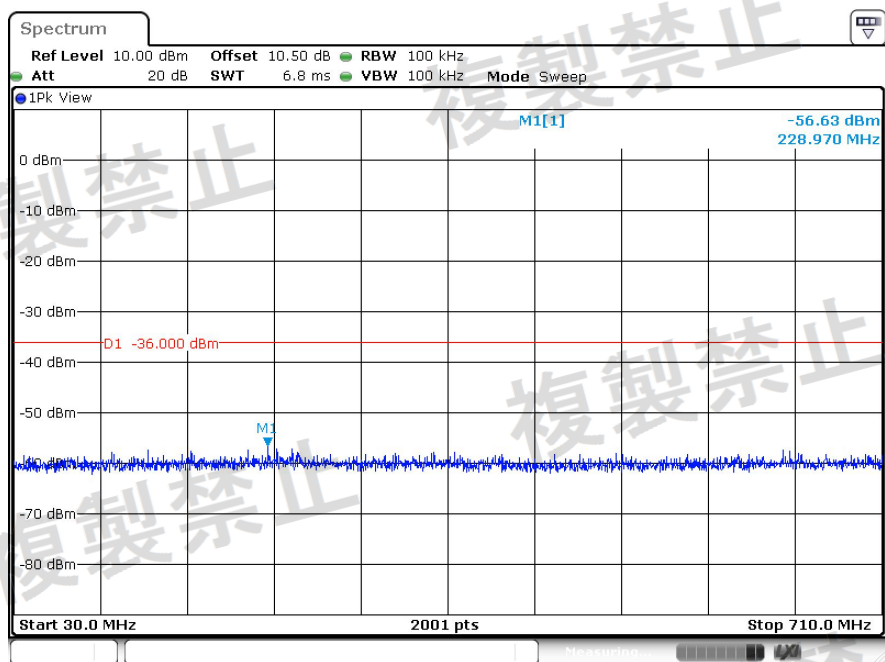
1.215 GHz ~ 5 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:44:05

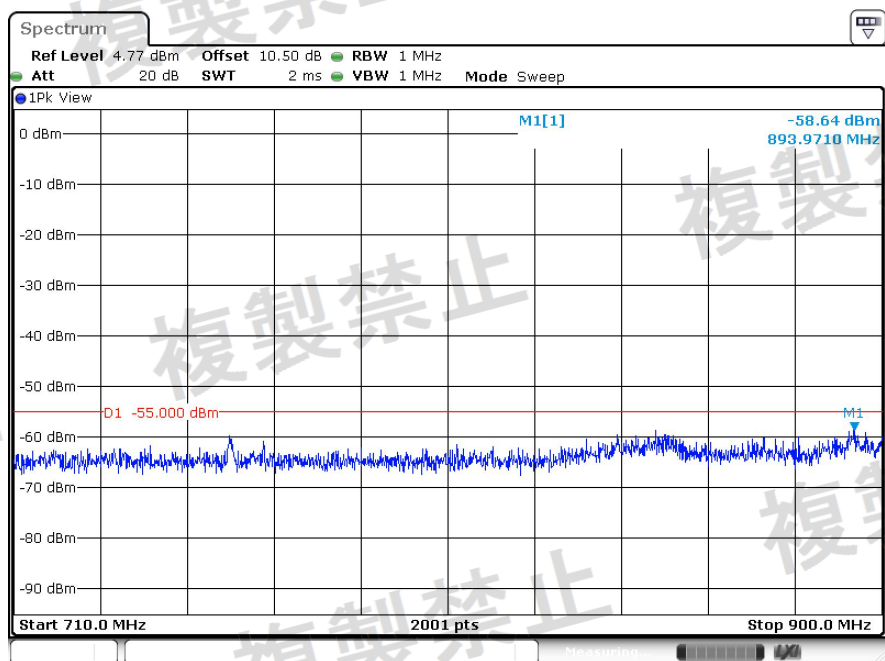
High Channel:

30 MHz ~ 710 MHz



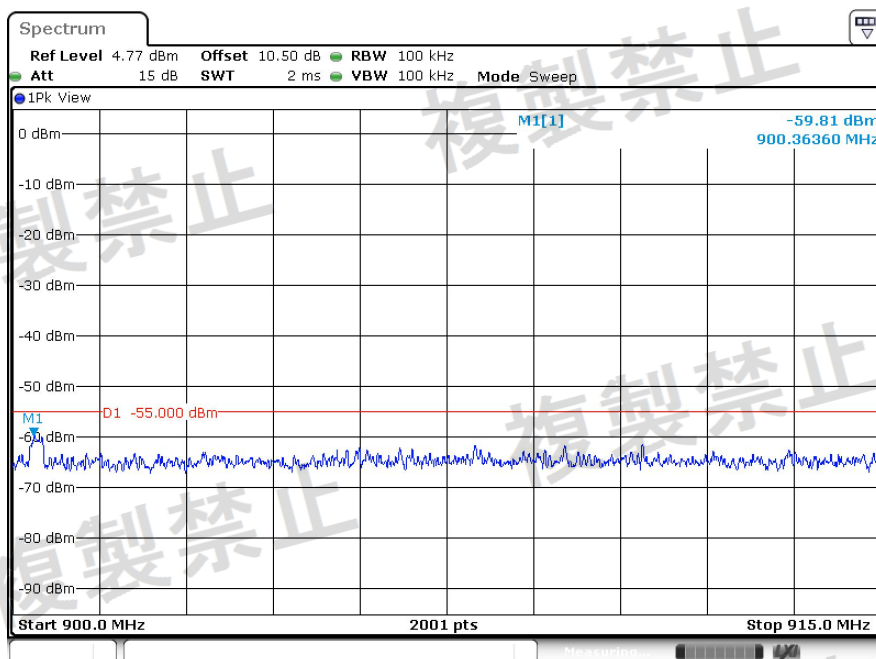
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:59:31

710 MHz ~ 900 MHz



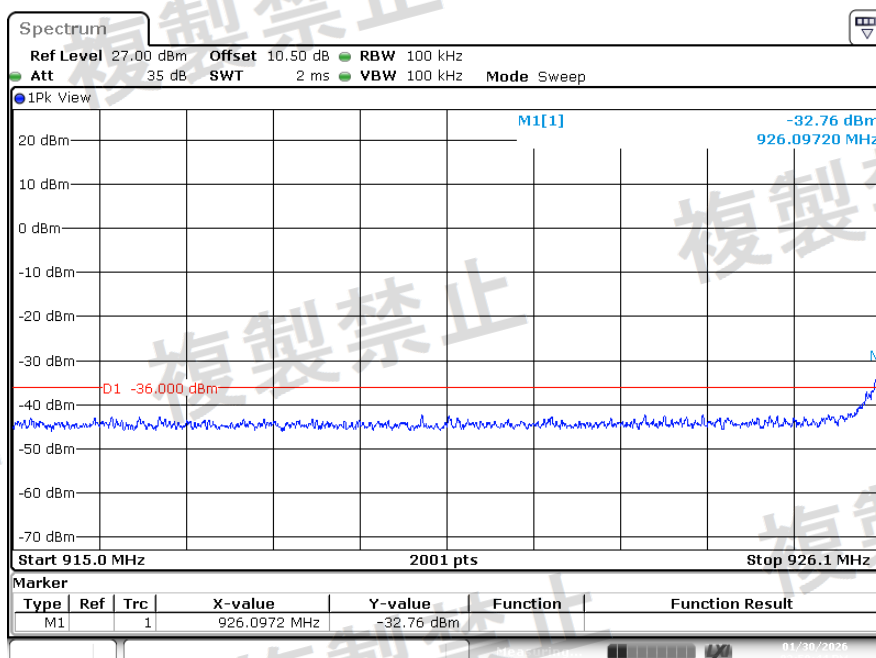
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:57:25

900 MHz ~ 915 MHz

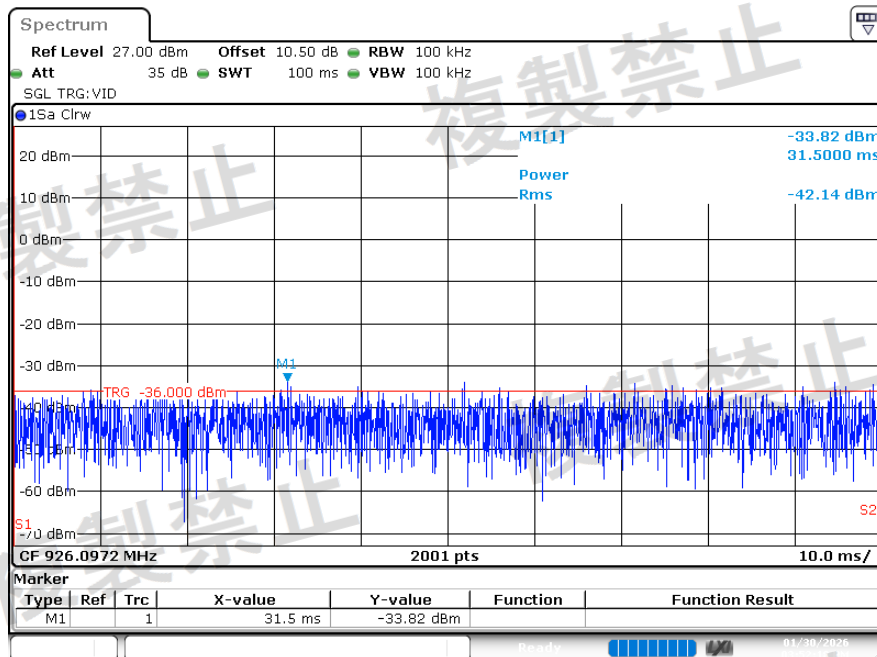


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:55:07

915 MHz ~ 926.1MHz

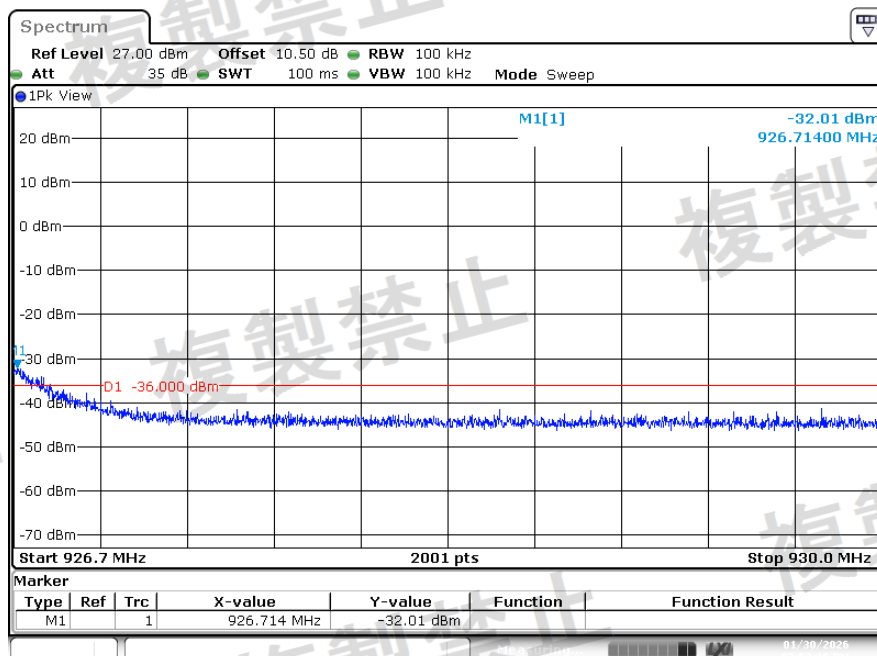


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:50:44



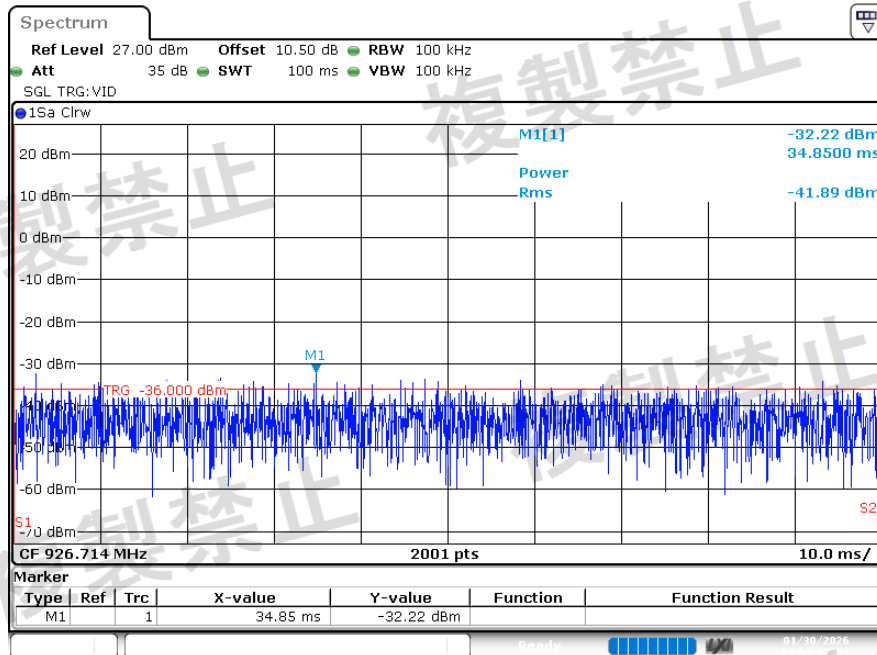
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:52:18

926.7 MHz ~ 930MHz

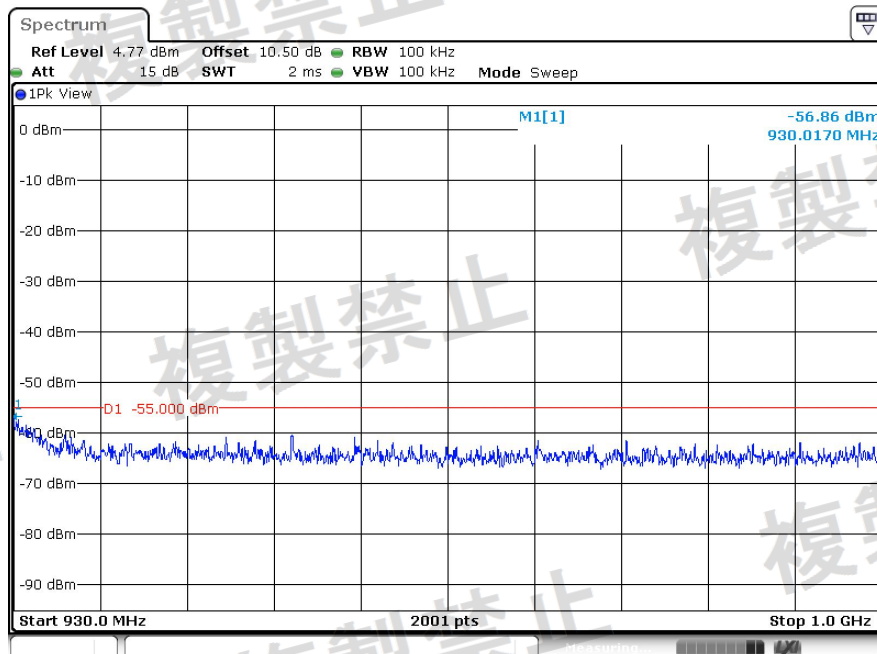


ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 30.JAN.2026 15:53:16

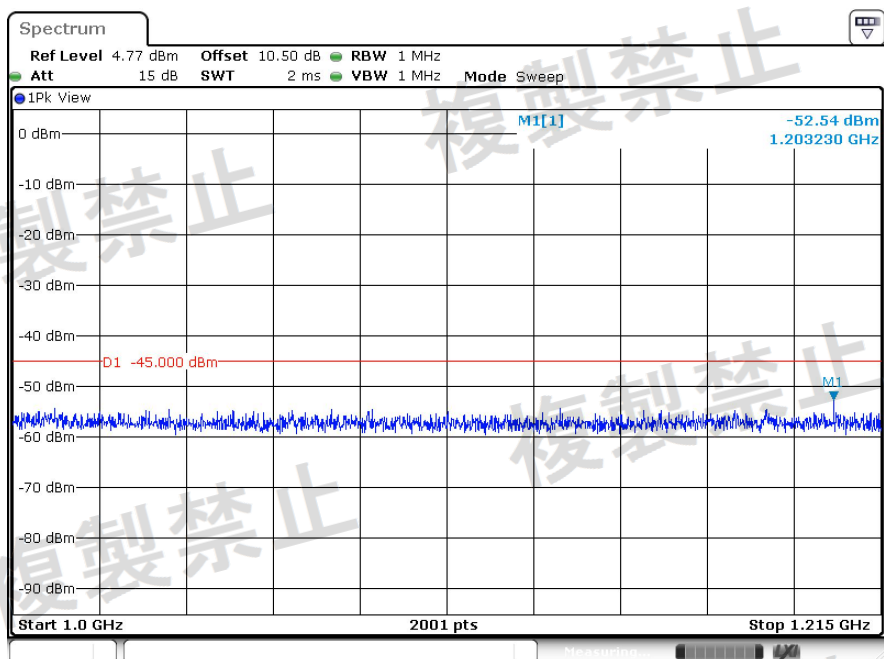
926.7 MHz ~ 930MHz



930 MHz ~ 1 GHz

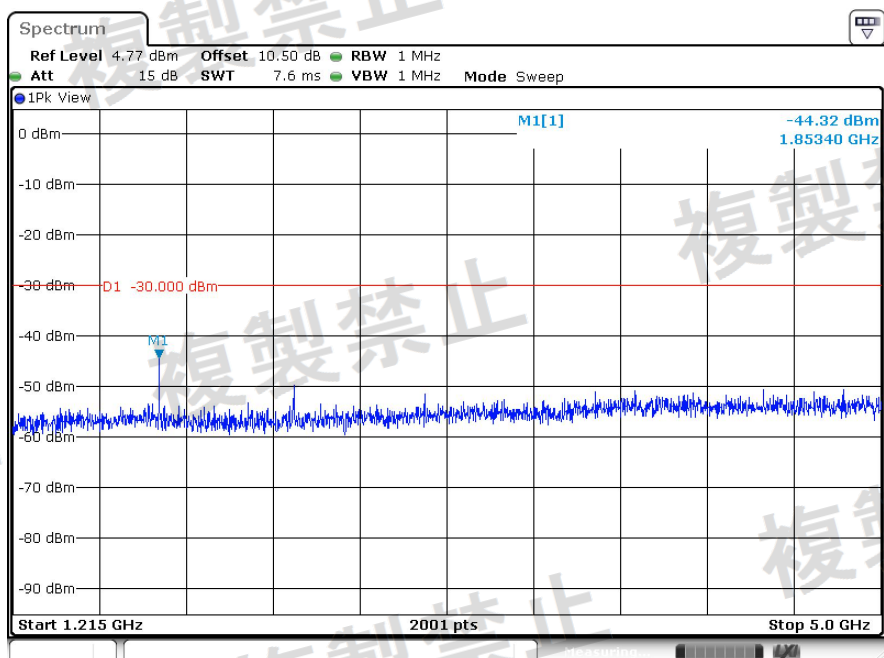


1 GHz ~ 1.215 GHz



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:46:26

1.215 GHz ~ 5 GHz



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 16:45:33

ANTENNA OUTPUT POWER TOLERANCE

Limit

The Output Power Tolerance must be within +20%, -80%.

The output power shall be less than 20 mW.

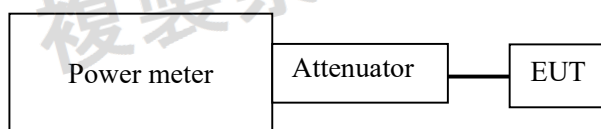
The EIRP Limit: 16dBm or less.

Antenna gain less than 3dBi.

Test Procedure

Step 1: Measure the total power by Power Meter in a state of hopping mode or non-hopping mode (with Average Sensor)

Step 2: Record the value in the report and Calculate the tolerance of the output power.



Test Data

Environmental Conditions

Temperature:	24.6~25.2 °C
Relative Humidity:	47~55 %
ATM Pressure:	100.2~101.1 kPa

The testing was performed by Cheeb Huang from 2026-01-09 to 2026-01-23.

Test Result: Compliant

Test Mode: Transmitting

Frequency	922.8MHz	924.8MHz	926.4MHz	Limit
Antenna Output Power (dBm)	0.75	0.73	0.70	13
Antenna Output Power (mW)	1.189	1.183	1.175	20
Rated output power	1.5	1.5	1.5	/
Tolerance (%)	-20.73	-21.13	-21.67	-80 ~ +20
EIRP(dBm)	-1.27	-1.29	-1.32	16

Note:

The antenna gain is -2.02dBi.

Antenna output power tolerance = (Antenna output power – Rated output power)/ Rated output power *100%

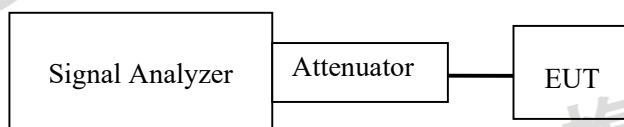
ADJACENT CHANNEL LEAKGE POWER

Limit

Adjacent channel $\leq$ -15dBm

Test Procedure

Measurement System Diagram



1. The EUT transmitting with maximum power level.
2. Measure the RRC filtered mean power.
3. Measure the RRC filtered mean power of the upper adjacent channels and the lower adjacent channels.

Test Data

Environmental Conditions

Temperature:	24.6 °C
Relative Humidity:	47 %
ATM Pressure:	100.2 kPa

The testing was performed by Cheeb Huang on 2026-01-09.

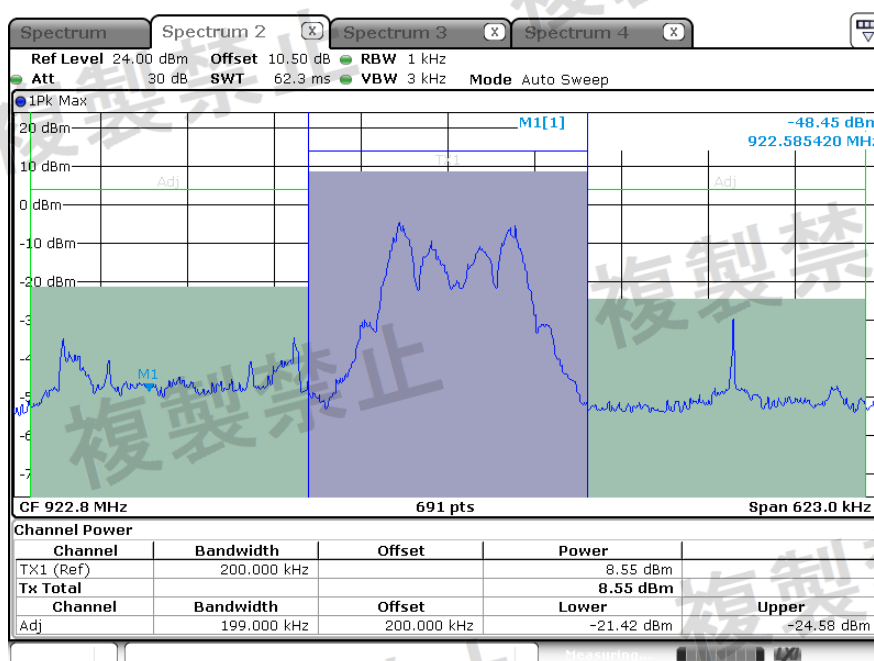
Test Result: Compliant

Test mode: Transmitting

Normal Voltage

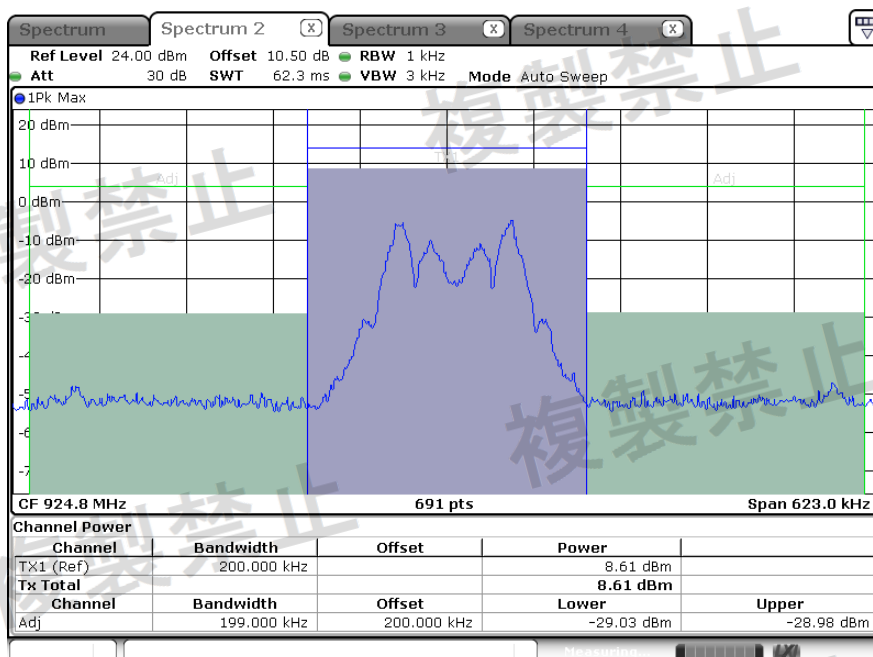
Frequency (MHz)	Adjacent Channel	Adjacent Channel (dBm)	Limit (dBm)
922.8	Lower	-21.42	-15
	Upper	-24.58	-15
924.8	Lower	-29.03	-15
	Upper	-28.98	-15
926.4	Lower	-30.32	-15
	Upper	-30.24	-15

Low Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 9.JAN.2026 11:14:09

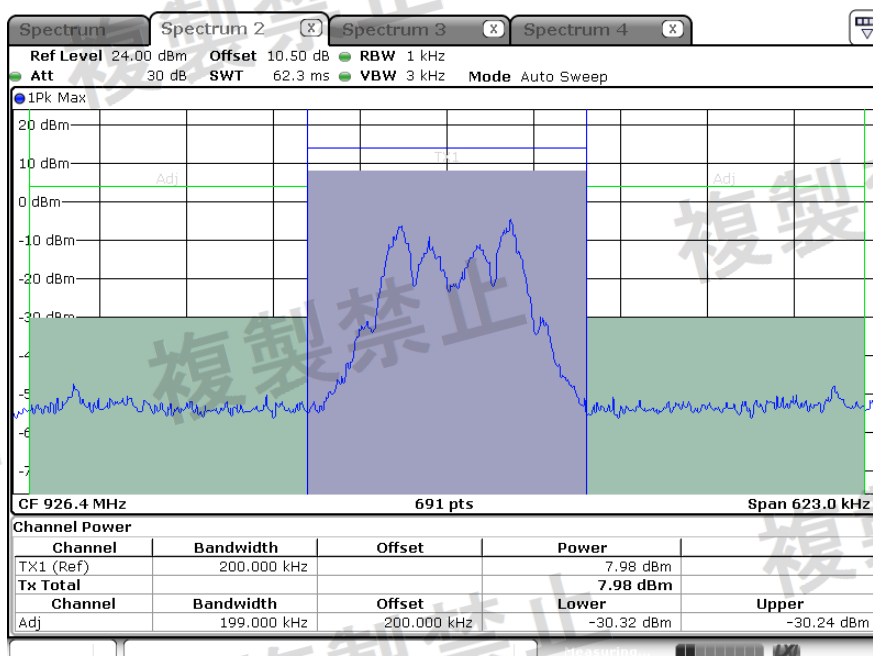
Middle Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 9.JAN.2026 11:44:42

High Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang

Date: 9.JAN.2026 11:42:34

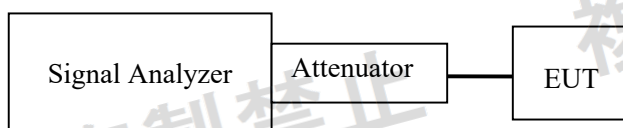
RECEIVER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY

Limit

Secondary Radiated Emission Strength	$\leq 710\text{MHz}$: -54dBm/100kHz 710MHz<, $\leq 900\text{MHz}$: -55dBm/1MHz 900MHz<, $\leq 915\text{MHz}$: -55dBm/100kHz 915MHz<, $\leq 930\text{MHz}$: -54dBm/100kHz 930MHz<, $\leq 1000\text{MHz}$: -55dBm/100kHz 1000MHz< : -47dBm/1MHz
--------------------------------------	---

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- The modulation state shall be “continuous receiving mode”.

Spectrum Analyzer Conditions

Frequency range: 30MHz-710MHz, RBW/VBW=100/100kHz
Frequency range: 710MHz-900MHz, RBW/VBW=1/1MHz
Frequency range: 900MHz-915MHz, RBW/VBW=100/100kHz
Frequency range: 915MHz-930MHz, RBW/VBW=100/100kHz
Frequency range: 930MHz-1000MHz, RBW/VBW=100/100kHz
Frequency range: 1000MHz-5000MHz, RBW/VBW=1/1MHz

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Cheeb Huang on 2026-01-23.

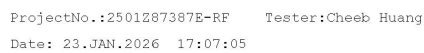
Test Result: Compliant

Test Mode: Receiving

Channel	Test Band (RBW)	Frequency Range		Max.Emission Located(MHz)	Result (dBm/RBW)	Limit (dBm/RBW)	Verdict
		Start (MHz)	Stop (MHz)				
922.8MHz	Band I (100kHz)	30	710	197.79	-63.61	-54	Pass
	Band II (1MHz)	710	900	855.59	-62.81	-55	Pass
	Band III (100kHz)	900	915	914.034	-70.66	-55	Pass
	Band IV (100kHz)	915	930	919.396	-71.98	-54	Pass
	Band V (100kHz)	930	1000	980.400	-71.46	-55	Pass
	Band VI (1MHz)	1000	5000	4476.1	-60.73	-47	Pass
924.8MHz	Band I (100kHz)	30	710	704.59	-62.41	-54	Pass
	Band II (1MHz)	710	900	898.49	-62.37	-55	Pass
	Band III (100kHz)	900	915	914.859	-72.21	-55	Pass
	Band IV (100kHz)	915	930	927.189	-72.33	-54	Pass
	Band V (100kHz)	930	1000	980.3	-71.37	-55	Pass
	Band VI (1MHz)	1000	5000	4285.1	-59.19	-47	Pass
926.4MHz	Band I (100kHz)	30	710	703.6	-59.08	-54	Pass
	Band II (1MHz)	710	900	853.67	-62.64	-55	Pass
	Band III (100kHz)	900	915	911.624	-72.81	-55	Pass
	Band IV (100kHz)	915	930	919.721	-72.93	-54	Pass
	Band V (100kHz)	930	1000	986.68	-71.33	-55	Pass
	Band VI (1MHz)	1000	5000	4366.1	-61.11	-47	Pass

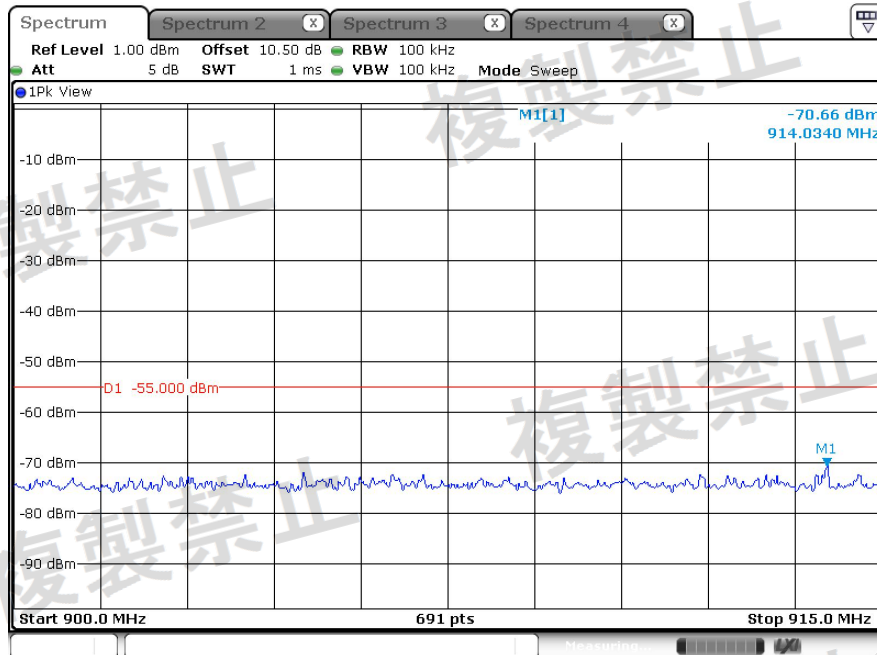
Please refer to the below plots for normal voltage test

30 MHz ~ 710 MHz



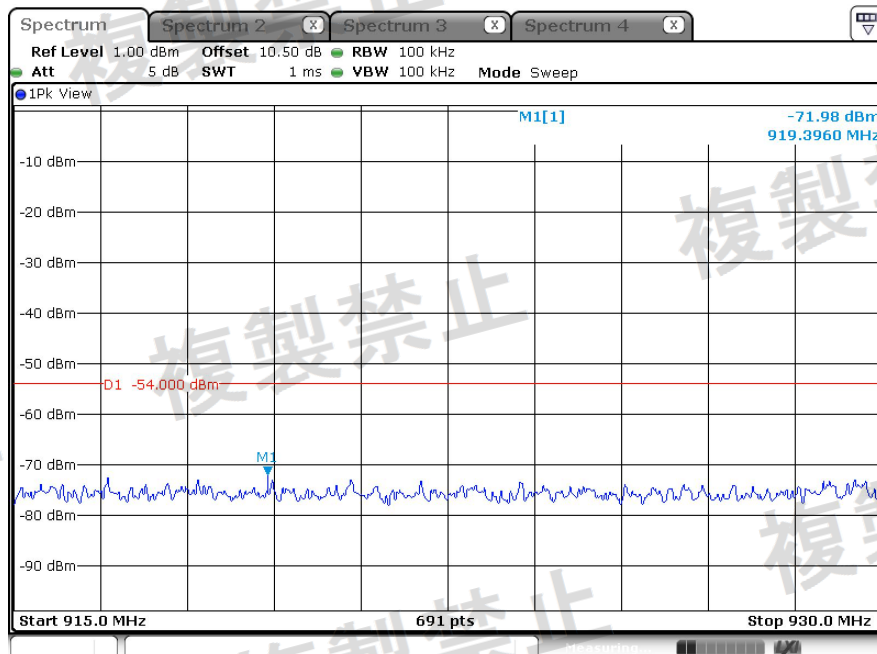
ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:08:30

900 MHz ~ 915MHz



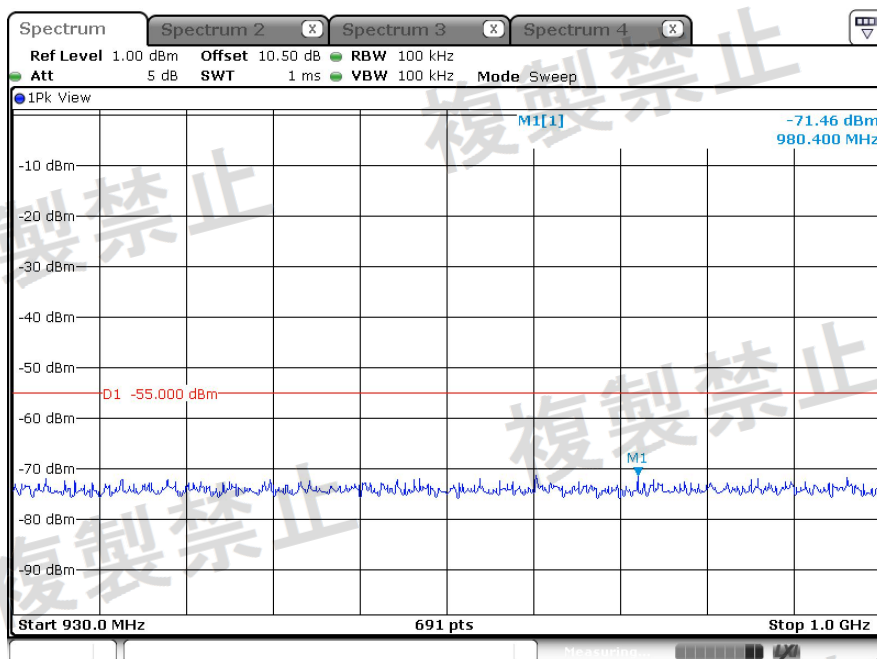
ProjectNo.:2501287387E-RF Tester:Cheeb Huang
 Date: 23.JAN.2026 17:10:16

915 MHz ~ 930 MHz



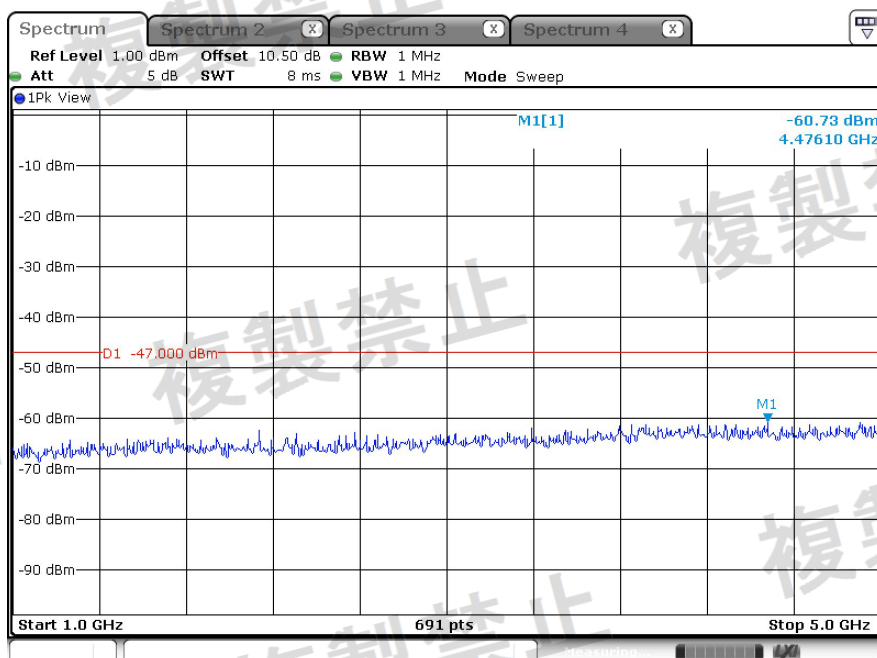
ProjectNo.:2501287387E-RF Tester:Cheeb Huang
 Date: 23.JAN.2026 17:11:59

930 MHz ~ 1 GHz

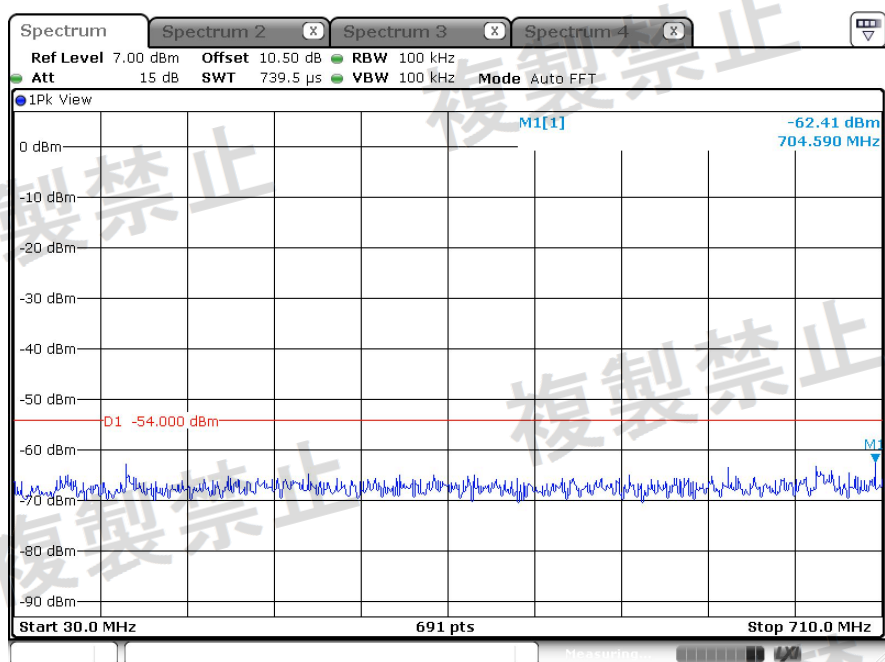


ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:13:58

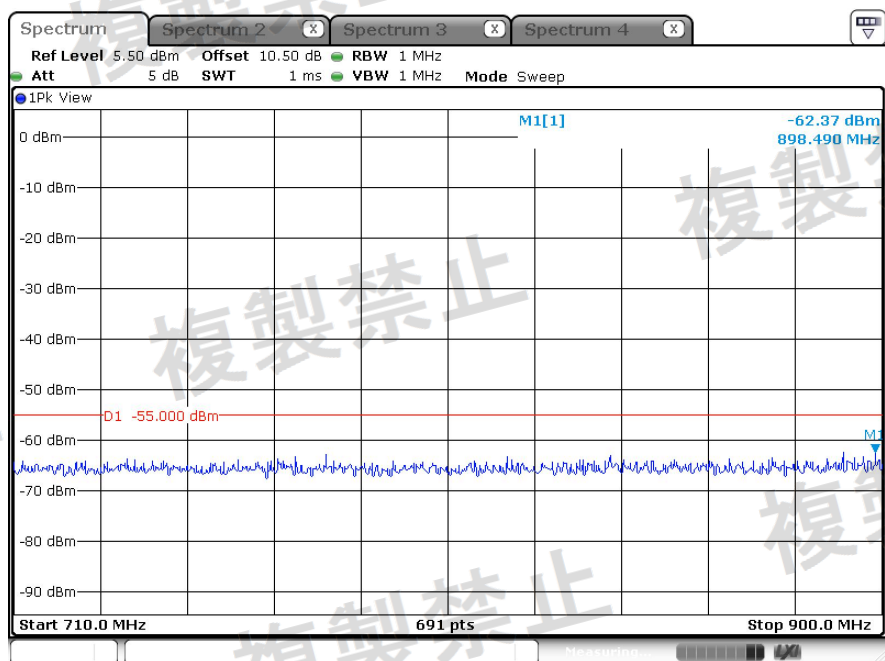
1 GHz ~ 5 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:15:10

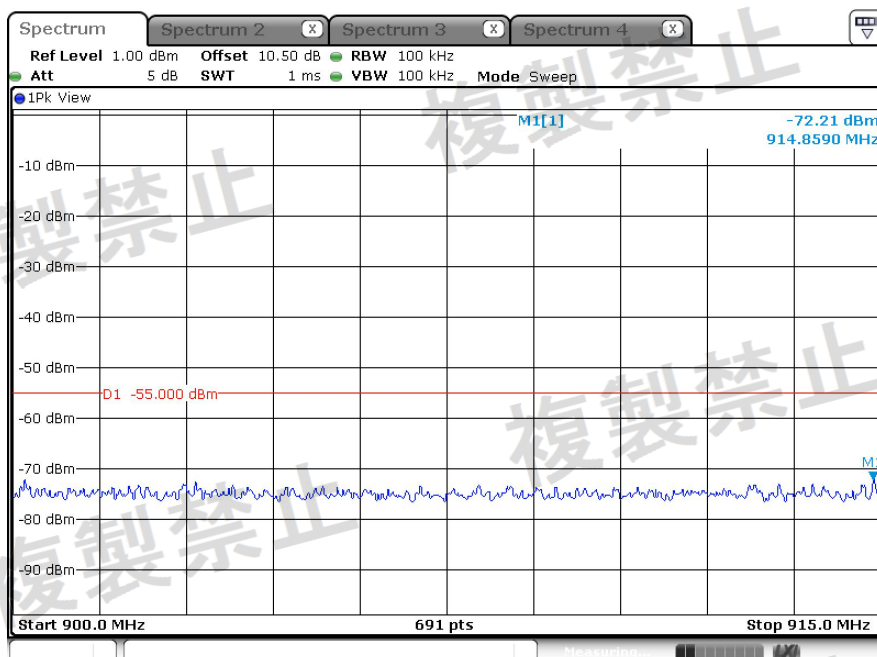
Middle Channel:**30 MHz ~ 710 MHz**

ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:07:17

710 MHz ~ 900 MHz

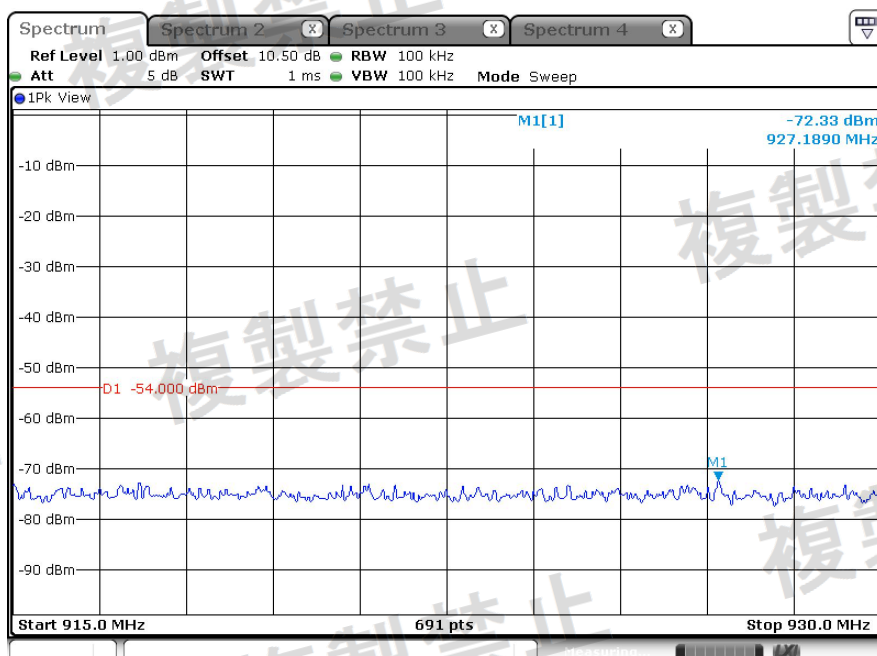
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:08:59

900 MHz ~ 915MHz



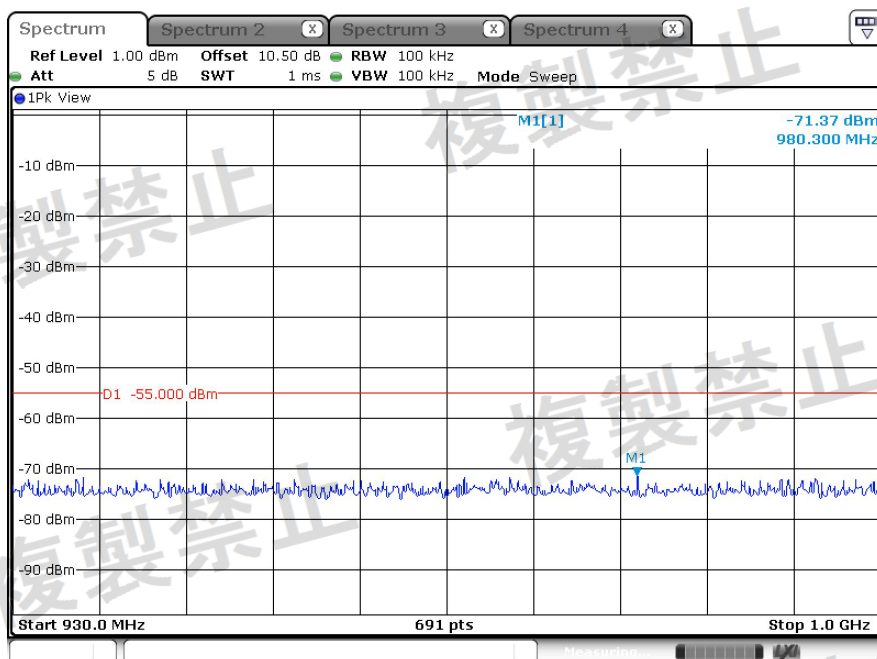
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:10:32

915 MHz ~ 930 MHz



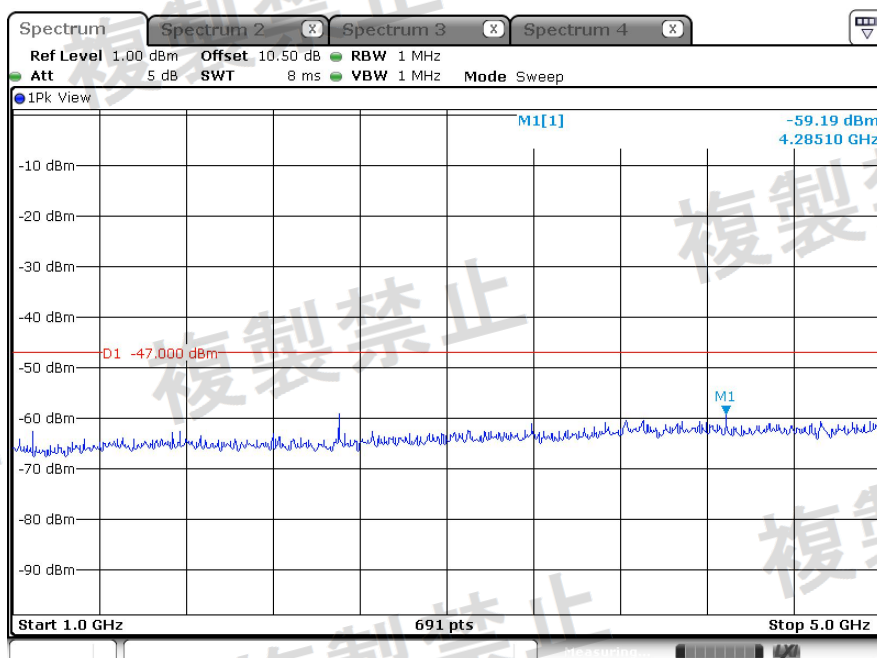
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:12:20

930 MHz ~ 1 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:14:10

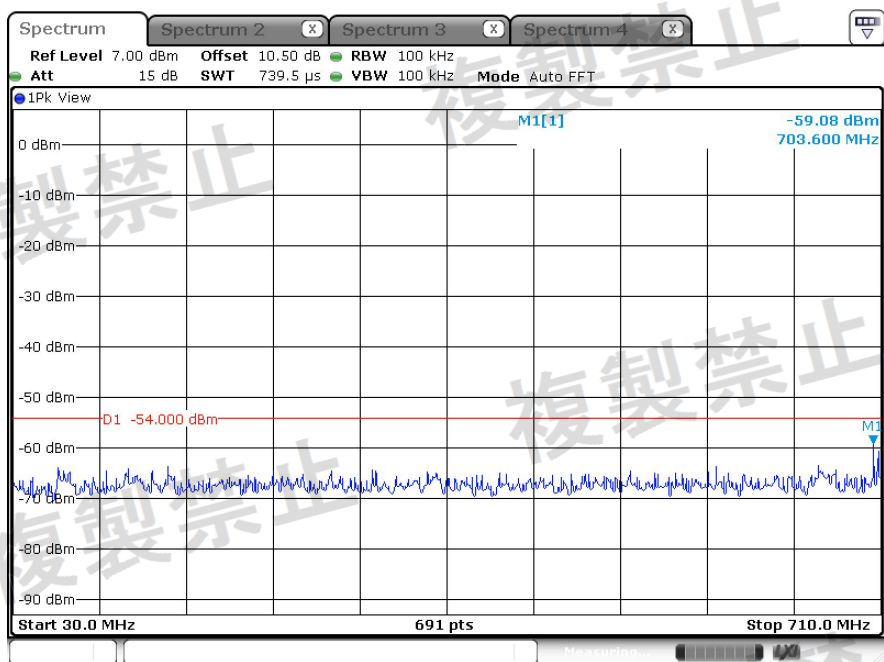
1 GHz ~ 5 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:15:24

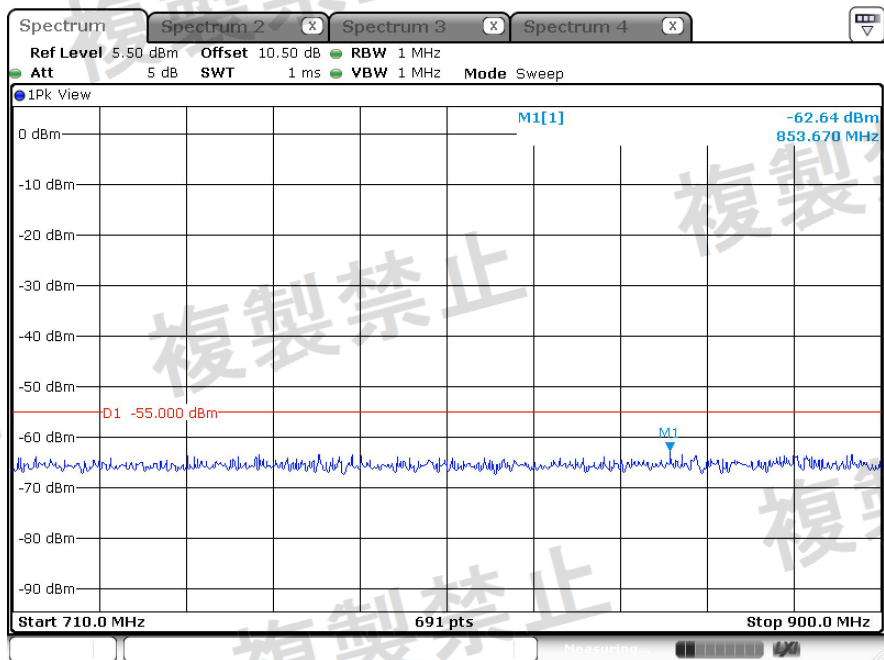
High Channel:

30 MHz ~ 710 MHz



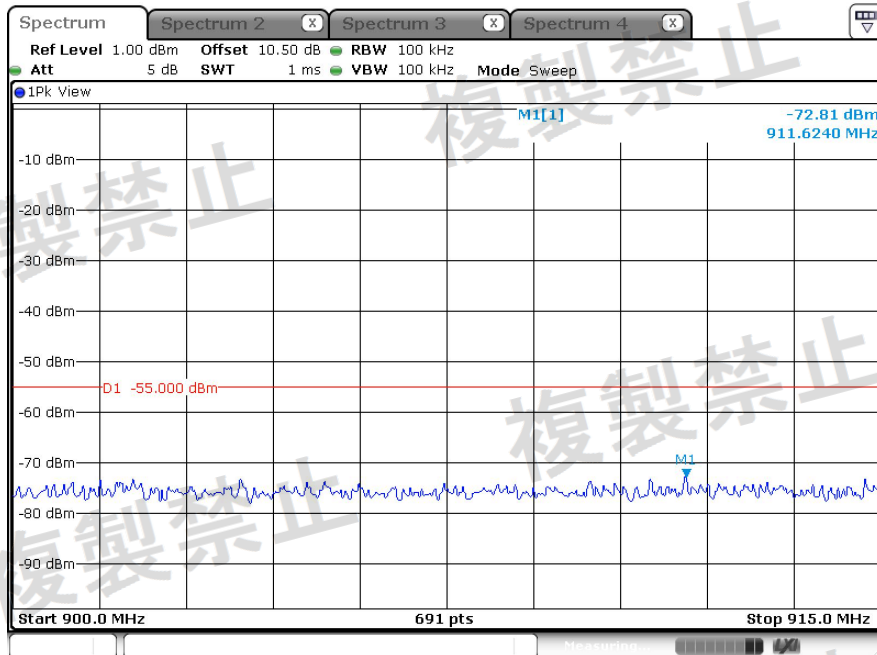
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:07:30

710 MHz ~ 900 MHz



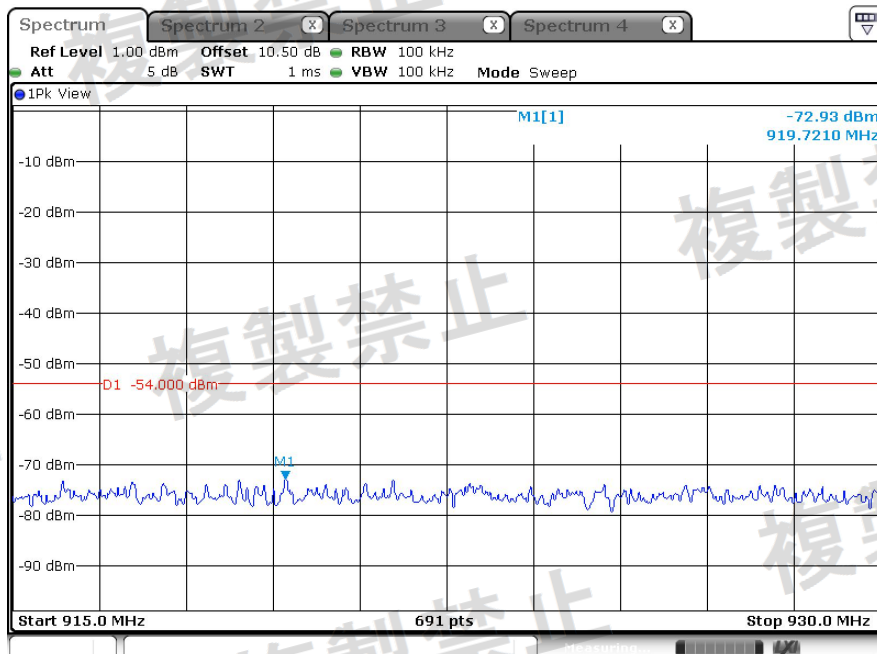
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:09:11

900 MHz ~ 915MHz



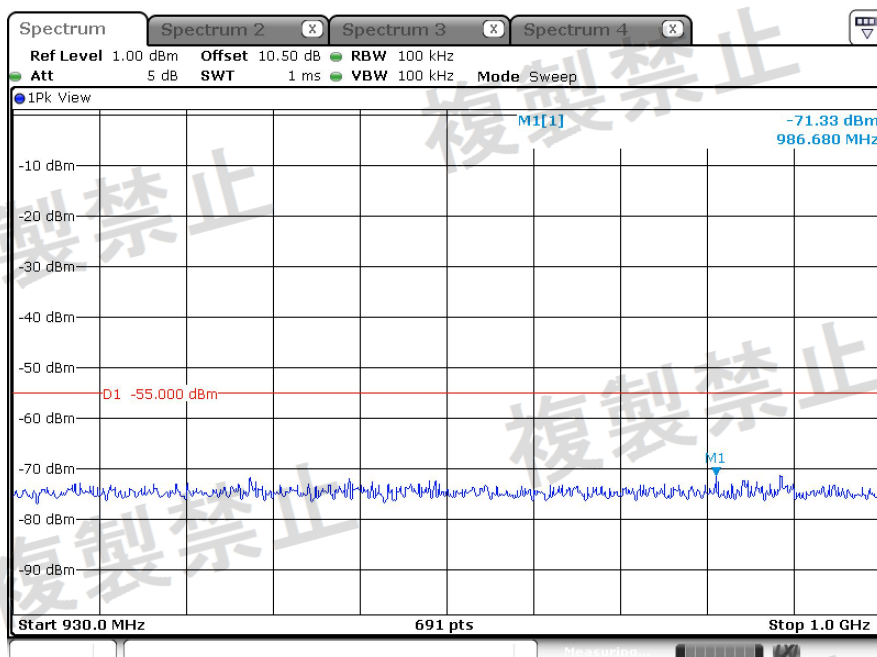
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:10:44

915 MHz ~ 930 MHz



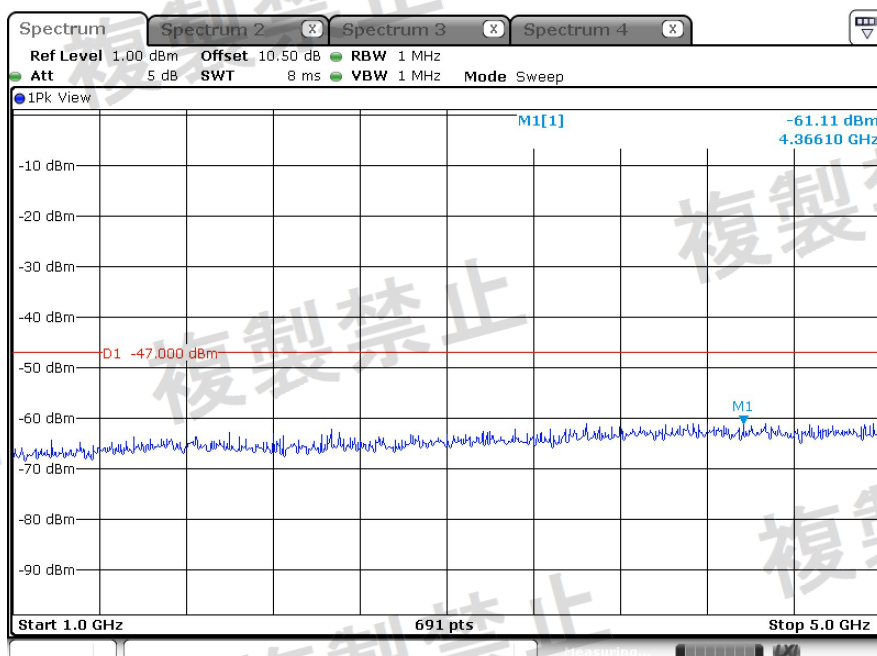
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:12:33

930 MHz ~ 1 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:14:20

1 GHz ~ 5 GHz



ProjectNo.:2501287387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 17:15:41

TRANSMITTING TIME RESTRICTIONS

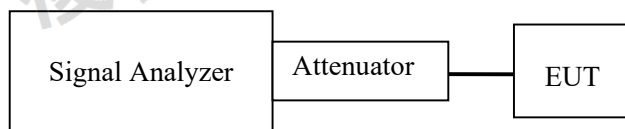
Limit

Frequency Range	Total transmission time	Transmission Time Restriction	Carrier Sensing Function *1
920.5~928.1MHz	Radio equipment : 360 sec. / hour or less	Transmission ON : within 0.4 sec. Transmission OFF : over 0.002 sec.	feeder input point Antenna power "20mW or less" : -80dBm Antenna power "more than 20mW" : -80dBm - (Antenna power - 20mW) Receive bandwidth : 200 x n kHz Judgment time : 128μs or more
	Radio equipment : 720 sec. / hour or less *2 each radio channel : 360 sec. / hour or less *2 (except Acknowledge)	Transmission ON : within 0.006 sec. Transmission OFF : --	

*2 In the case of using a plurality of radio channels by switching (the case where each radio channel does not use the same unit channel redundantly), the sum total of the transmission time per hour of the radio equipment is 720 seconds or less, and the sum of the transmission times per hour of each radio channel can be set to 360 seconds or less.

Test Procedure

Measurement System Diagram



Spectrum Analyzer Conditions

- Center Frequency: Frequency to be measured
- Span: 0 Hz
- RBW: 100 kHz
- VBW: 100 kHz
- Sweep time: 500ms
- Log scal : 10dB/Div, Data points : 501points (400 points or more)
- Reference level: Enough level for maximum dynamic range
- Detection: Positive Peak

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Cheeb Huang on 2026-01-23.

Test Mode: Transmitting

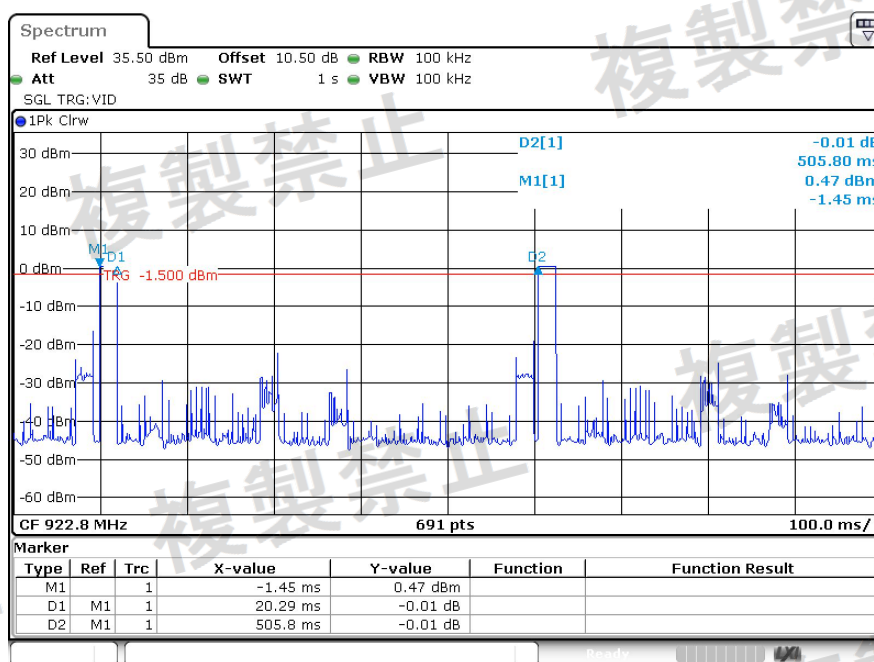
Test Result: Compliant

Frequency (MHz)	Transmission time (ms)	Limit (ms)	Suspend Time (ms)	Limit (ms)
922.8	20.29	<400	485.51	>2
924.8	20.29	<400	485.51	>2
926.4	20.29	<400	485.51	>2

Sum of emission time per arbitrary one hour

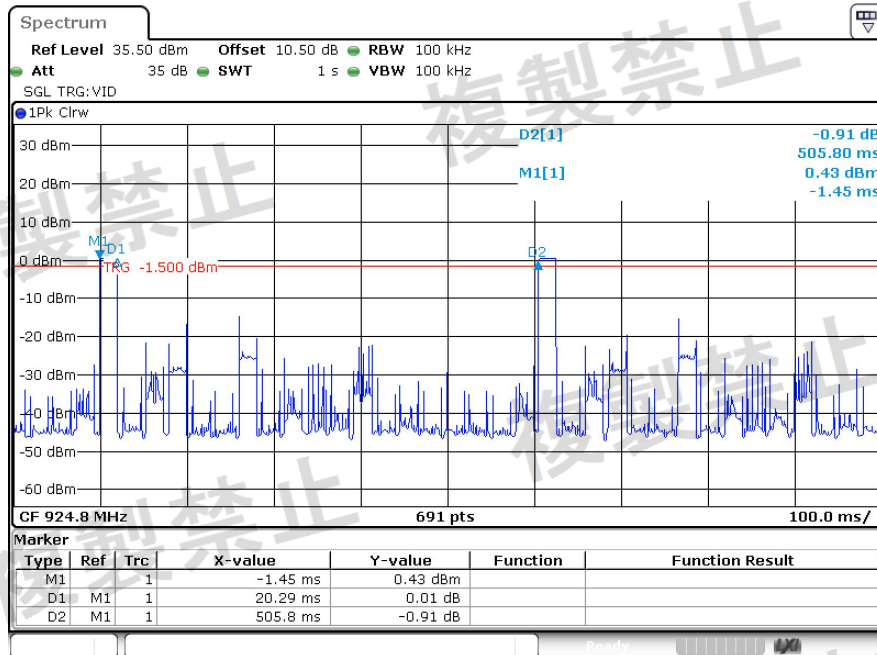
Frequency (MHz)	Transmission time (ms)	Cycle time (ms)	Calculated Transmission times per hour	Sum of emission time per arbitrary one hour (s)	Limit (s)	Sum of emission time per arbitrary one hour of the radio equipment (s)	Limit (s)
922.8	20.29	505.8	7117	144.404	360	144.404	720
924.8	20.29	505.8	7117	144.404	360	144.404	720
926.4	20.29	505.8	7117	144.404	360	144.404	720

Note: The manufacturer declared the EUT has a radio channel.

Low Channel

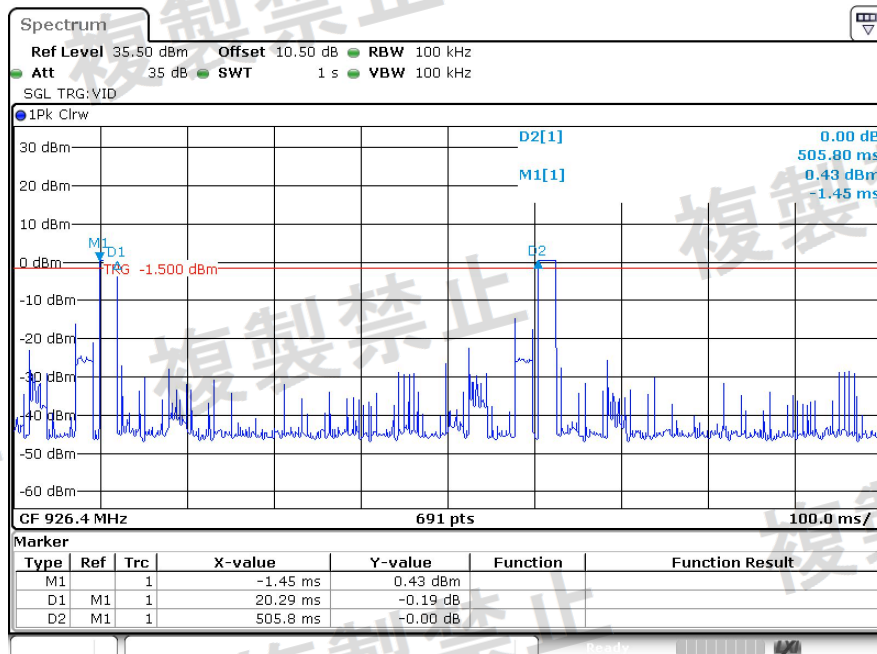
ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 15:55:41

Middle Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 15:56:42

High Channel



ProjectNo.:2501Z87387E-RF Tester:Cheeb Huang
Date: 23.JAN.2026 15:57:14

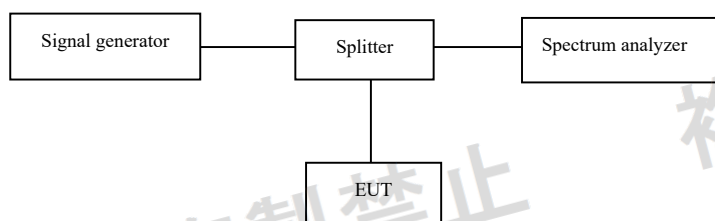
CARRIER SENSE CAPABILITY

Limit

EUT stop RF transmission signal after carrier inject to EUT.
Carrier sense time shall be 128 μ s or more.

Test Procedure

Measurement System Diagram



Conditions of Application Equipment (EUT)

- The EUT state shall be receiving.

Test Procedure

- SG adjusted the frequency as same as the EUT receiving channel and emitted the absence of modulation from SG and power level is above -80dBm.
- Turn off the RF signal of the SG.
- EUT have transmitted the maximum modulation signal and fixed channelize.
- Setting of SA: RBW/VBW=100/100 kHz, Span=300 kHz, trig=free run, Detect mode=positive peak
- SG RF signal on.
- EUT shall be stop the transmitted any signal and SG RF signal off, the EUT will be continuous Transmitted signal.

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Cheeb Huang on 2026-01-23.

Test Mode: Transmitting

Test Result: Compliant.

INTERFERENCE PREVENTION FUNCTION

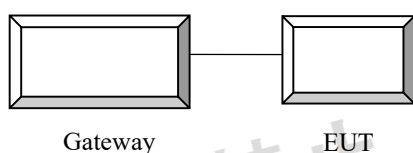
Limit

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.

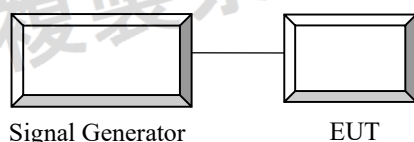
Test Procedure

Measurement System Diagram

Step 1:



Step 2:



In the case that the EUT has the function of automatically transmitting the identification code:

1. Transmit the predetermined identification codes from EUT
2. Check the transmitted identification codes with the demodulator.

In the case of receiving the identification codes:

1. Transmit the predetermined identification codes from the counterpart.
2. Check if communication is normal
3. Transmit the signal other than predetermined ID codes from the counterpart.
4. Check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

Test Data

Environmental Conditions

Temperature:	25.2 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Cheeb Huang on 2026-01-23.

Test Mode: Transmitting

Test Result: Good

CONSTRUCTION PROTECTION CONFIRMATION

Limit

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

Result

The EUT has screws which can't be opened easily, please see the EUT photos.

EUT PHOTOGRAPHS

Please refer to the attachment 2501Z87387E-RF-EXP External photo and 2501Z87387E-RF-INP Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501Z87387E-RFB-TSP Test Setup photo.

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