

RADIO PERFORMANCE TEST REPORT

Test Report No. : OT-259-RWD-009

Reception No. : 2508002872

Applicant : Nelna inc.

Address : #402, 16 Pildong-ro, Jung-gu, Seoul, Republic of Korea

Manufacturer : Shenzhen Shelink Technology Co., LTD

Address : Room 407, Kyoto Pavilion., No.2058, Cuizhu Road, Cuida Community, Cuizhu Street, Luohu District, Shenzhen, Guangdong, China

Type of Equipment : Nelna Pencil for iPad

Model Name : NA-P01

Multiple Model Name : -

Serial Part Number : N/A

Total page of Report : 23 pages (including this page)

Date of Incoming : August 20, 2025

Date of issue : September 16, 2025

SUMMARY

The equipment complies with the standard;

Specified Low Power Radio Equipment Article 2 Paragraph 1 Item (19).

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

This test report is not associated with the accreditation granted by the Korean Laboratory Accreditation Scheme (KOLAS).

유수민



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OTC-TRF-RF-001(0)

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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-259-RWD-009	September 16, 2025	Initial Release	All

1. APPLICANT AND MANUFACTURER INFORMATION

- . Applicant : Nelna inc.
- . Address : #402, 16 Pildong-ro, Jung-gu, Seoul, Republic of Korea
- . Manufacturer : Shenzhen Shelink Technology Co., LTD
- . Address : Room 407, Kyoto Pavilion., No.2058, Cuizhu Road, Cuida Community, Cuizhu Street, Luohu District, Shenzhen, Guangdong, China
- . Factory : Shenzhen Sostar Electronic Co., Ltd.
- . Address : 702/7F, JinLi Industrial Park No.3, 10 JiHua Road. Bantian Street, Longgang, Shenzhen, Guangdong, China

2. GENERAL INFORMATION

2.1 Test standards and results

Requirement	Result
Frequency Tolerance	Pass
Occupied Bandwidth	Pass
Antenna Power & Antenna Power Tolerance	Pass
Transmitter Spurious Emissions	Pass
Collateral Emission	Pass
Interference prevention function	Pass

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Purpose of the test

To determine whether the equipment under test fulfills the RF requirements of the standards stated in section 2.1.

2.4 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-20122/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

3. EUT (Equipment Under Test)

3.1 Identification of the EUT

- Equipment : Nelna Pencil for iPad
- Model Name : NA-P01
- Brand Name : nelna
- Serial number : N/A
- Manufacturer : Shenzhen Shelink Technology Co., LTD

3.2 Product Description

The Nelna inc., Model NA-P01 (referred to as the EUT in this report) is a Nelna Pencil for iPad. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	Nelna Pencil for iPad
Temperature Range	-10 °C ~ 40 °C
OPERATING FREQUENCY	2 402 MHz ~ 2 480 MHz
MODULATION TYPE	GFSK for 1 Mbps
RF OUTPUT POWER	1.00 mW
ANTENNA TYPE	PCB Antenna
ANTENNA GAIN	-0.76 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	24 MHz

3.3 Alternative type(s)/model(s); also covered by this test report.

- None

4. EUT MODIFICATIONS

- None

5. Frequency Tolerance

5.1 Operating environment

Temperature : 24 °C
Relative humidity : 47 % R.H.

5.2 Test Setup

The EUT was operated in CW carrier mode (unmodulated). The frequency was measured by the use of the frequency counter capability of a CW Microwave Frequency Counter

5.3 Measurement uncertainty

The uncertainty for Frequency is $\pm 13\,205.68$ Hz.

5.4 Test Method

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.5 Test Date

August 20, 2025 ~ August 27, 2025

5.6 Test Data for 1 Mbps

Voltage	Nominal TX Frequency	Deviation from Nominal Frequency		Limit (ppm)
		Hz	ppm	
DC 3.70 V (Normal)	LOW (2 402 MHz)	-42 108	-17.53	± 50.00
	HIGH (2 480 MHz)	-42 342	-17.07	
DC 3.33 V (Low)	LOW (2 402 MHz)	-41 874	-17.43	
	HIGH (2 480 MHz)	-42 264	-17.04	
DC 4.07 V (High)	LOW (2 402 MHz)	-40 858	-17.01	
	HIGH (2 480 MHz)	-42 030	-16.95	

6. Occupied Bandwidth

6.1 Operating environment

Temperature : 24 °C
Relative humidity : 47 % R.H.

6.2 Test Setup

The EUT was operated in continuous transmit mode (modulated). For occupied bandwidth measurement the internal occupied bandwidth measurement capability of Spectrum Analyzer was used. The bandwidth for 99 % power was measured.

6.3 Measurement uncertainty

The uncertainty for Occupied Channel Bandwidth is $\pm 5\,929.54$ Hz.

6.4 Test Method

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

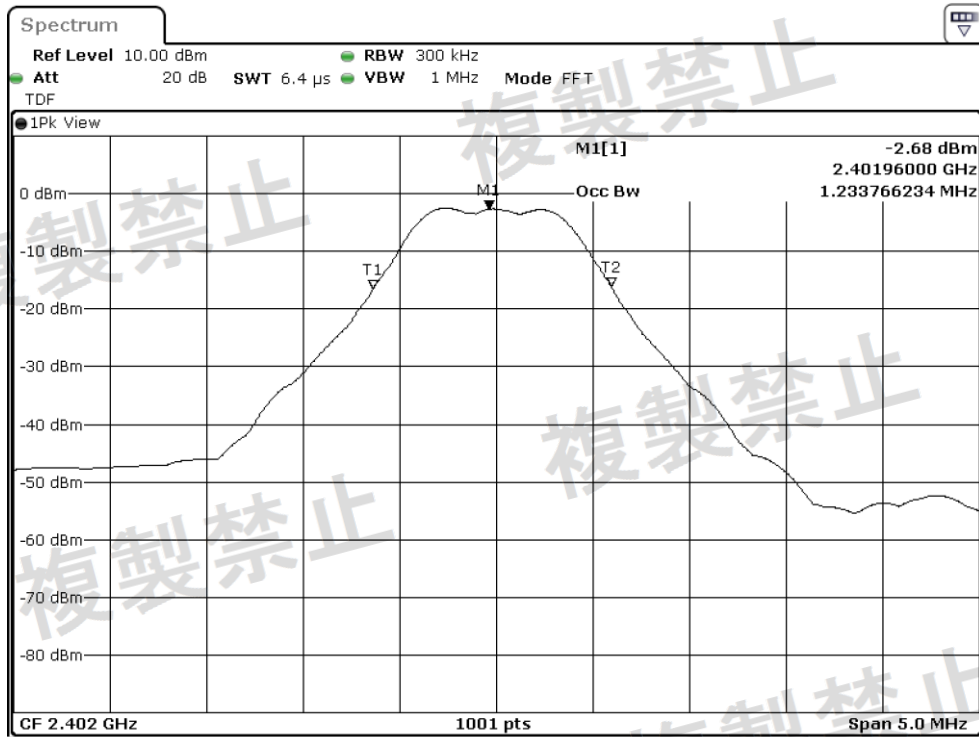
6.5 Test Date

August 20, 2025 ~ August 27, 2025

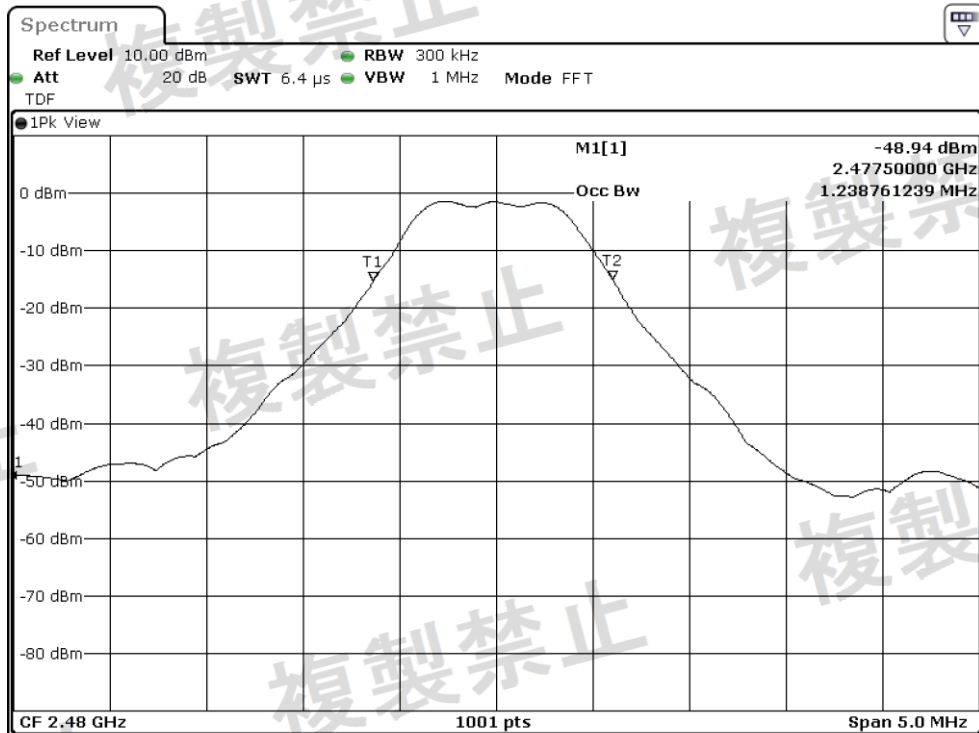
6.6 Test data for 1 Mbps

Voltage	Nominal TX Frequency	Occupied Bandwidth (MHz)	Limit (MHz)
DC 3.70 V (Normal)	LOW (2 402 MHz)	1.23	≤ 26.00
	HIGH (2 480 MHz)	1.24	
DC 3.33 V (Low)	LOW (2 402 MHz)	1.23	
	HIGH (2 480 MHz)	1.24	
DC 4.07 V (High)	LOW (2 402 MHz)	1.23	
	HIGH (2 480 MHz)	1.24	

Plots of measurement data



LOW



HIGH

7. Antenna Power & Antenna Power Tolerance

7.1 Operating environment

Temperature : 24 °C
Relative humidity : 47 % R.H.

7.2 Test Setup

The EUT was operated in continuous transmit mode (modulated). The power meter was connected to IF output.
The external attenuation was corrected by the power meter's correction capability.

7.3 Measurement uncertainty

The uncertainty for Antenna Power is ± 0.90 dB.

7.4 Test Method

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

7.5 Test Date

August 20, 2025 ~ August 27, 2025

7.6 Test data for 1 Mbps

Frequency	Power Voltage	Power Value (mW)	Power Value (dBm)	E.I.R.P (dBm)	Rated output (mW)	Deviation (%)	Deviation average value(%)	Limit (mW)
LOW (2 402 MHz)	DC 3.70 V	0.58	-2.37	-3.13	1.0	-42.06	-36.11	10.00
	DC 3.33 V	0.58	-2.40	-3.16		-42.46		
	DC 4.07 V	0.57	-2.41	-3.17		-42.59		
HIGH (2 480 MHz)	DC 3.70 V	0.70	-1.54	-2.30		-29.85		
	DC 3.33 V	0.70	-1.54	-2.30		-29.85		
	DC 4.07 V	0.70	-1.54	-2.30		-29.85		

8. Transmitter Spurious Emissions

8.1 Operating environment

Temperature : 24 °C
Relative humidity : 47 % R.H.

8.2 Test Setup

Measurement frequency range acc. to Ordinance Regulation Radio Equipment (2008-04) from 30 MHz to 5 times the carrier frequency; measurement performed in the range 30 MHz to 12.5 GHz.

The EUT was operated in continuous transmit mode (modulated).

Cable losses and external attenuators were regarded by the use of a transducer factor.

8.3 Measurement uncertainty

Conducted spurious emissions of transmitter, 30 MHz ~ 40 GHz : ± 1.40 dB

8.4 Test Method

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

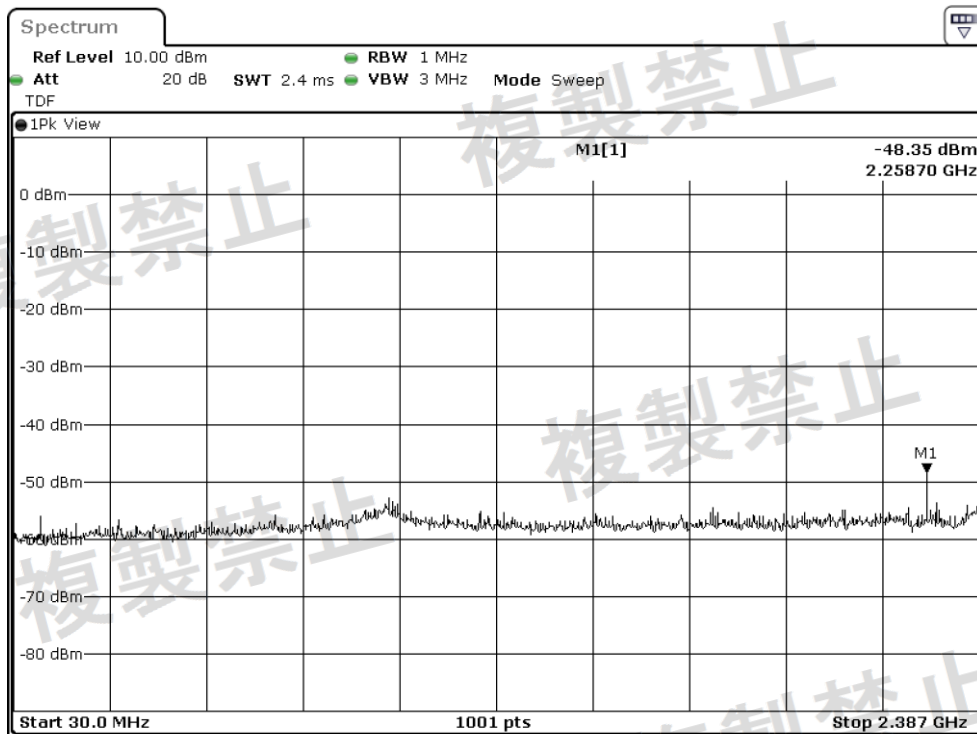
8.5 Test Date

August 20, 2025 ~ August 27, 2025

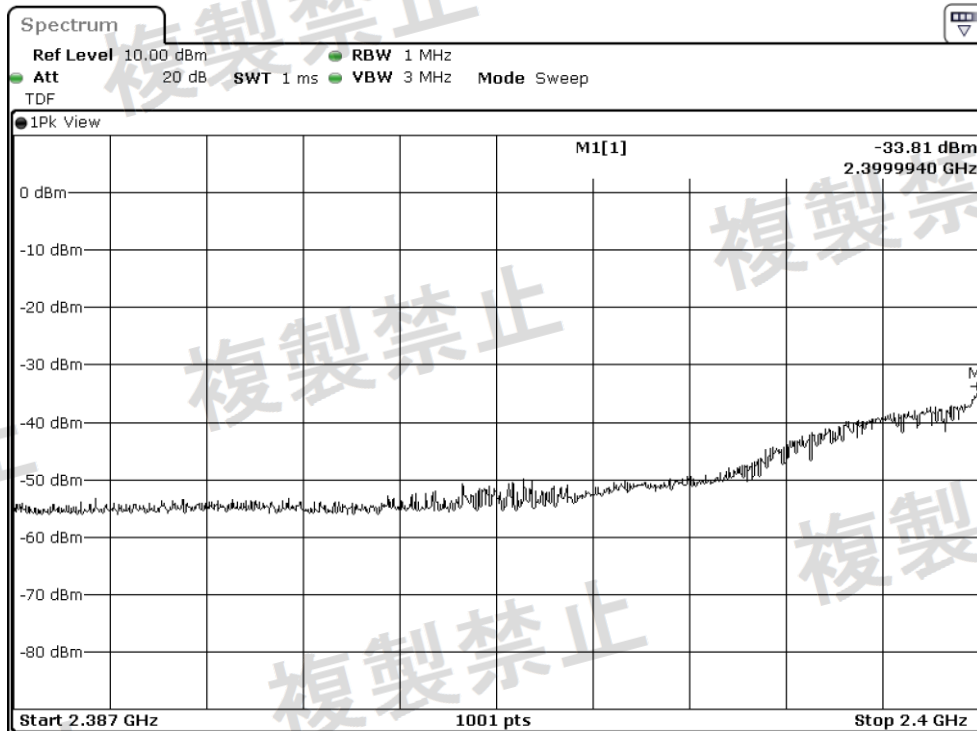
8.6 Test data for 1 Mbps

Frequency	Power Voltage	Frequency (MHz)	Measured Level(dBm)	RBW Converted Value(dB)	Total (dBm/MHz)	Total (uW/MHz)	Limit (uW/MHz)
LOW (2 402 MHz)	DC 3.70 V	2 258.70	-48.35	-	-48.35	0.014 6	2.5
		2 399.99	-33.81	-	-33.81	0.415 9	25.0
		2 496.49	-45.36	-	-45.36	0.029 1	25.0
		9 606.50	-41.22	-	-41.22	0.075 5	2.5
	DC 3.33 V	2 305.80	-42.81	-	-42.81	0.052 4	2.5
		2 399.99	-34.07	-	-34.07	0.391 7	25.0
		2 495.10	-48.20	-	-48.20	0.015 1	25.0
		9 606.50	-41.15	-	-41.15	0.076 7	2.5
	DC 4.07 V	2 305.80	-42.87	-	-42.87	0.051 6	2.5
		2 399.99	-34.05	-	-34.05	0.393 6	25.0
		2 496.43	-48.30	-	-48.30	0.014 8	25.0
		9 606.50	-41.05	-	-41.05	0.078 5	2.5
HIGH (2 480 MHz)	DC 3.70 V	2 385.80	-40.34	-	-40.34	0.092 5	2.5
		2 387.28	-52.37	-	-52.37	0.005 8	25.0
		2 483.56	-47.06	-	-47.06	0.019 7	25.0
		2 571.50	-36.95	-	-36.95	0.201 8	2.5
	DC 3.33 V	2 385.80	-40.31	-	-40.31	0.093 1	2.5
		2 387.18	-52.33	-	-52.33	0.005 8	25.0
		2 483.58	-46.51	-	-46.51	0.022 3	25.0
		2 571.50	-38.09	-	-38.09	0.155 2	2.5
	DC 4.07 V	2 383.50	-49.04	-	-49.04	0.012 5	2.5
		2 387.07	-52.24	-	-52.24	0.006 0	25.0
		2 483.53	-47.19	-	-47.19	0.019 1	25.0
		9 916.50	-39.09	-	-39.09	0.123 3	2.5

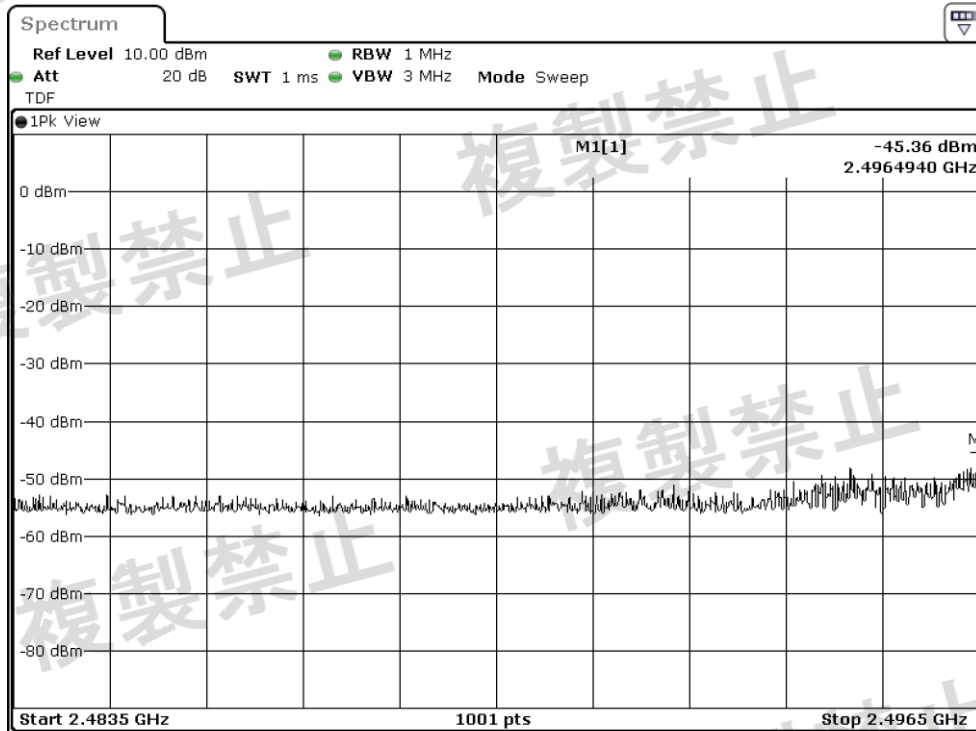
Plots of measurement data



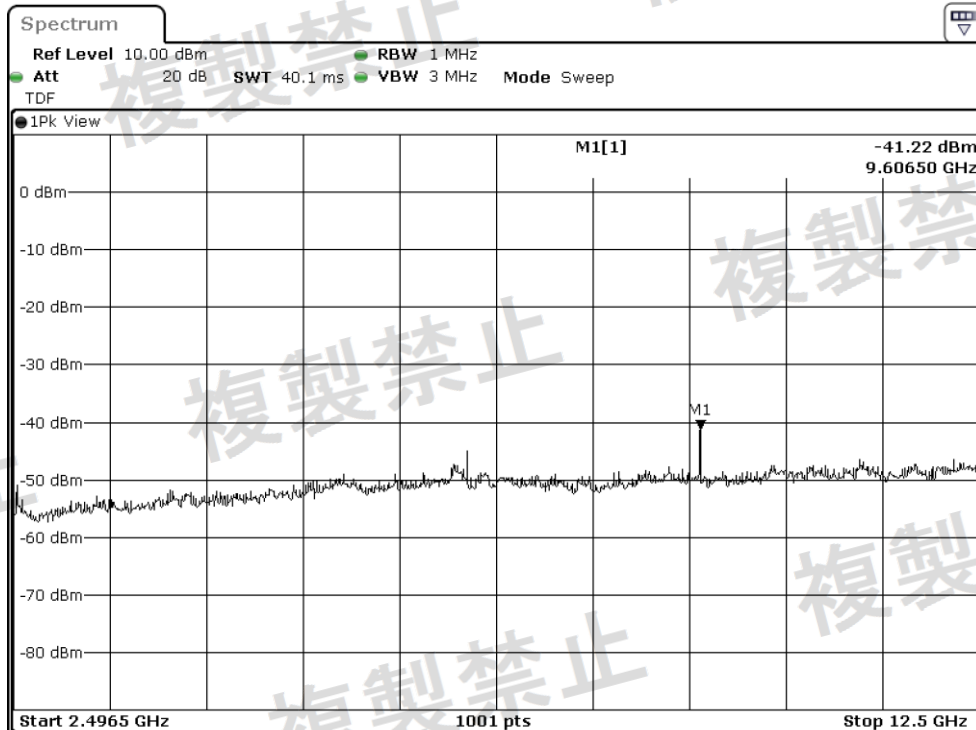
LOW (30 MHz ~ 2 387 MHz)



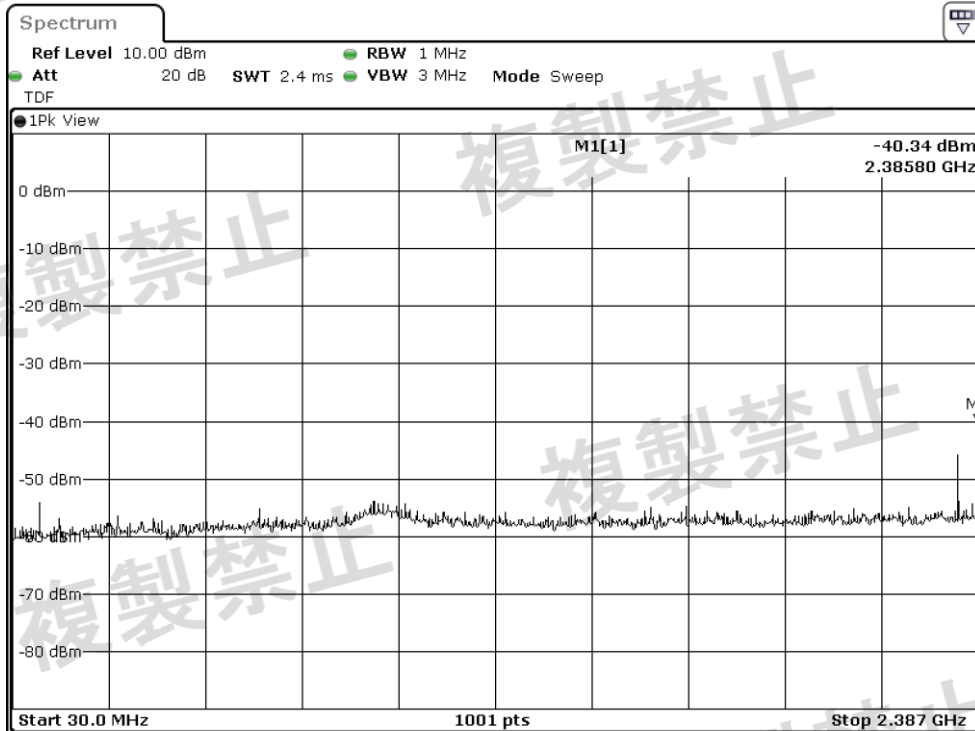
LOW (2 387 MHz ~ 2 400 MHz)



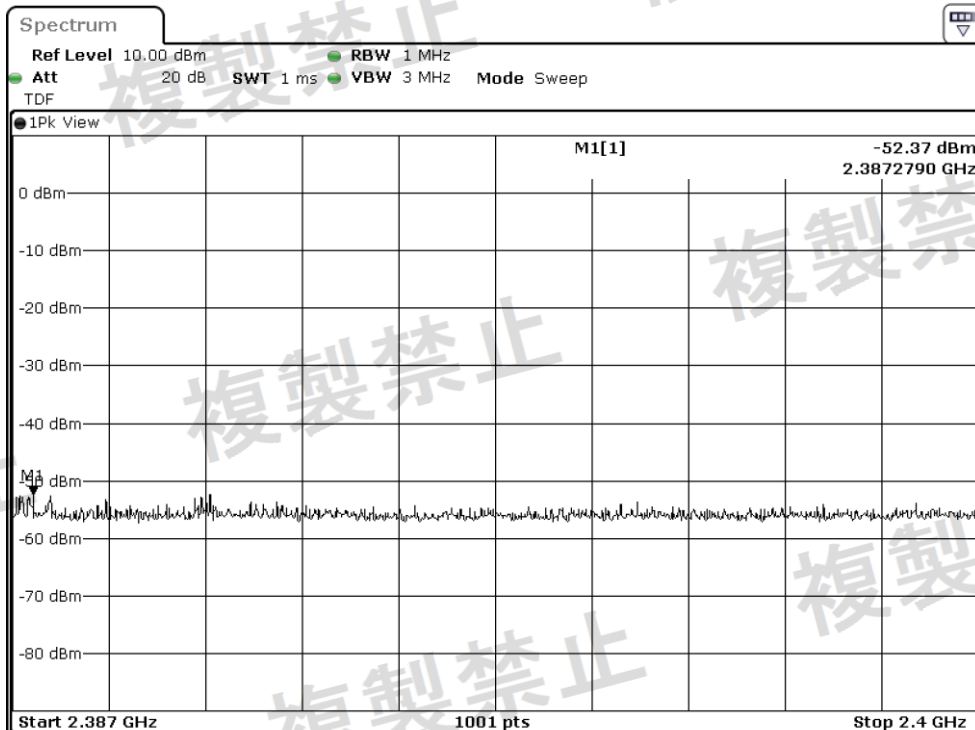
LOW (2 483.5 MHz ~ 2 496.5 MHz)



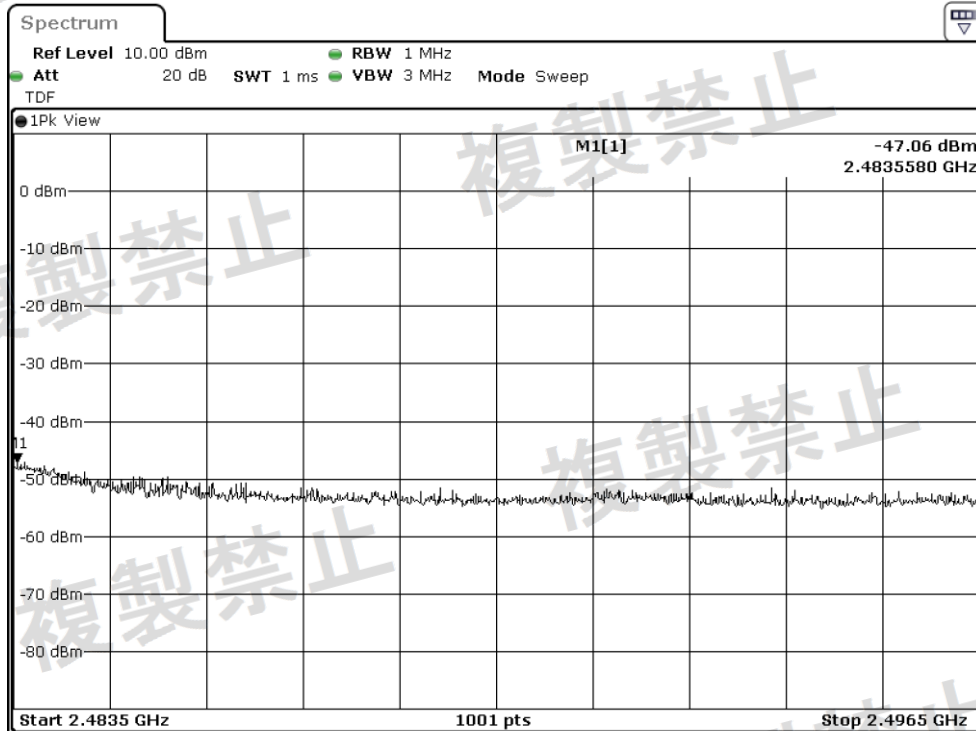
LOW (2 496.5 MHz ~ 12.5 GHz)



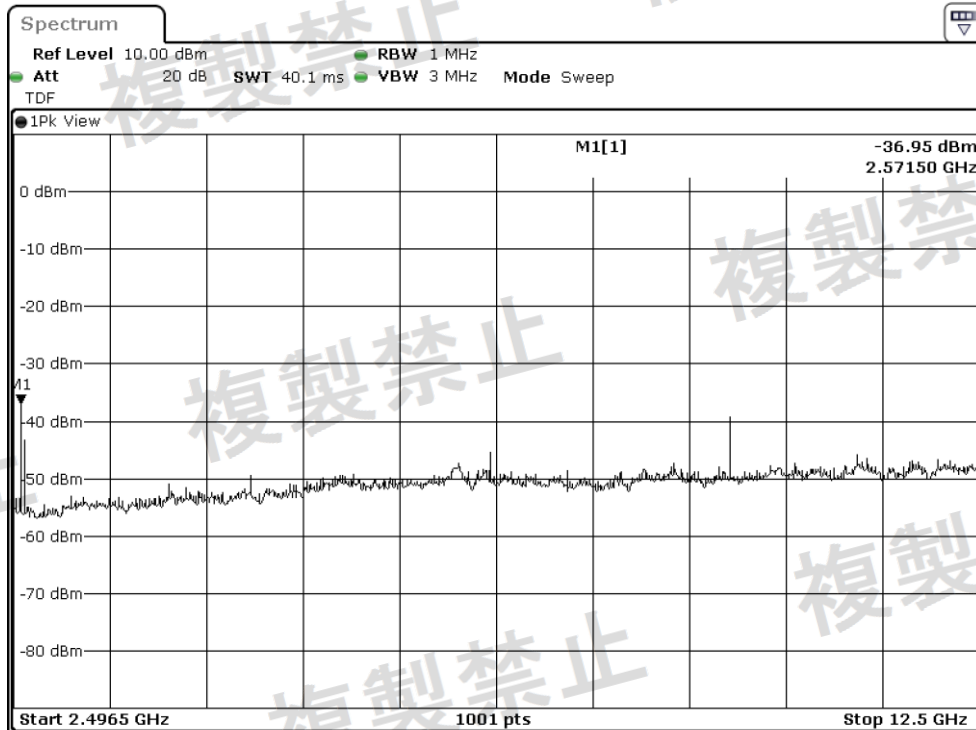
HIGH (30 MHz ~ 2 387 MHz)



HIGH (2 387 MHz ~ 2 400 MHz)



HIGH (2 483.5 MHz ~ 2 496.5 MHz)



HIGH (2 496.5 MHz ~ 12.5 GHz)

9. Collateral Emission

9.1 Operating environment

Temperature : 24 °C
Relative humidity : 47 % R.H.

9.2 Test Setup

Measurement frequency range acc. to Ordinance Regulation Radio Equipment (2008-04) from 30 MHz to 5 times the carrier frequency; measurement performed in the range 30 MHz to 12.5 GHz.

The EUT was operated in continuous receive mode (modulated).

Cable losses and external attenuators were regarded by the use of a transducer factor.

9.3 Measurement uncertainty

Conducted spurious emissions of transmitter, 30 MHz ~ 40 GHz : ± 1.40 dB

9.4 Test Method

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

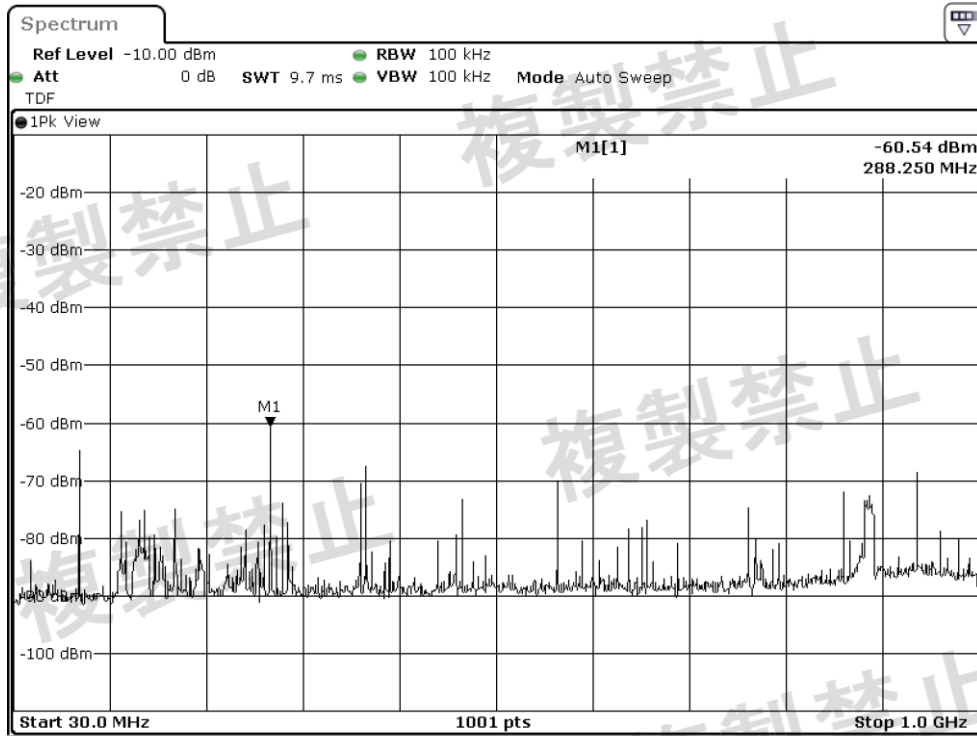
9.5 Test Date

August 20, 2025 ~ August 27, 2025

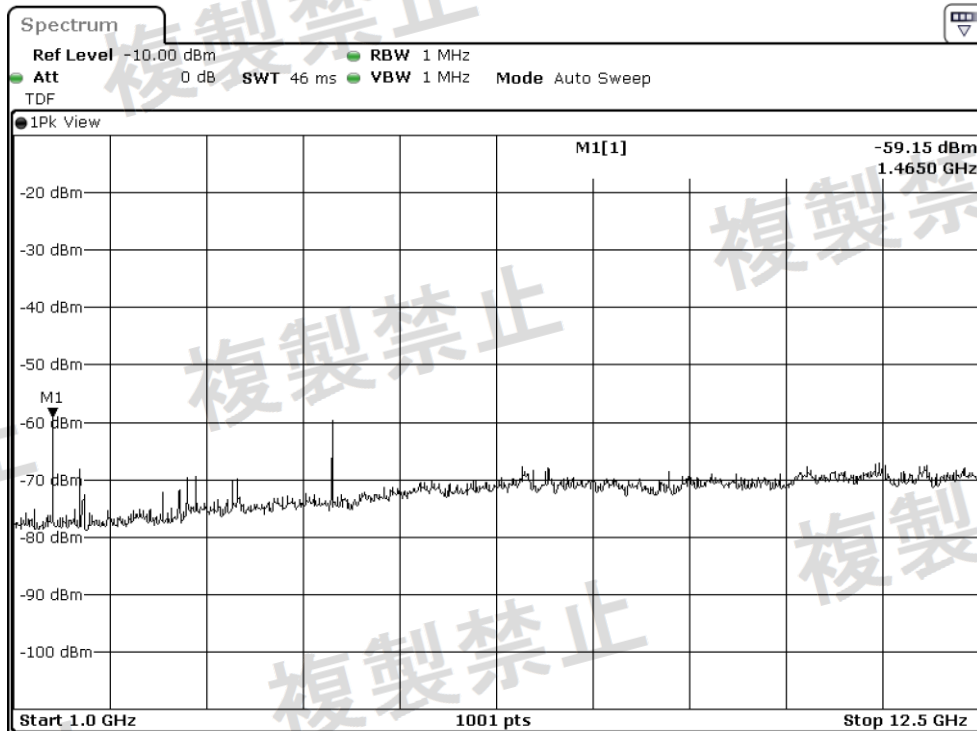
9.6 Test data for 1 Mbps

Frequency	Power Voltage	Frequency (MHz)	Measured Level(dBm)	Total (dBm)	Total (nW)	Limit (nW)
LOW (2 402 MHz)	DC 3.70 V	228.25	-60.54	-60.54	0.883 1	4.0
		1 465.00	-59.15	-59.15	1.216 2	20.0
	DC 3.33 V	143.86	-64.83	-64.83	0.328 9	4.0
		4 797.00	-61.52	-61.52	0.704 7	20.0
	DC 4.07 V	239.80	-64.03	-64.03	0.395 4	4.0
		4 797.00	-61.29	-61.29	0.743 0	20.0
HIGH (2 480 MHz)	DC 3.70 V	239.80	-64.00	-64.00	0.398 1	4.0
		2 476.00	-59.74	-59.74	1.061 7	20.0
	DC 3.33 V	96.38	-64.91	-64.91	0.322 8	4.0
		2 407.00	-59.81	-59.81	1.044 7	20.0
	DC 4.07 V	143.86	-58.98	-58.98	1.264 7	4.0
		4 958.00	-61.23	-61.23	0.753 4	20.0

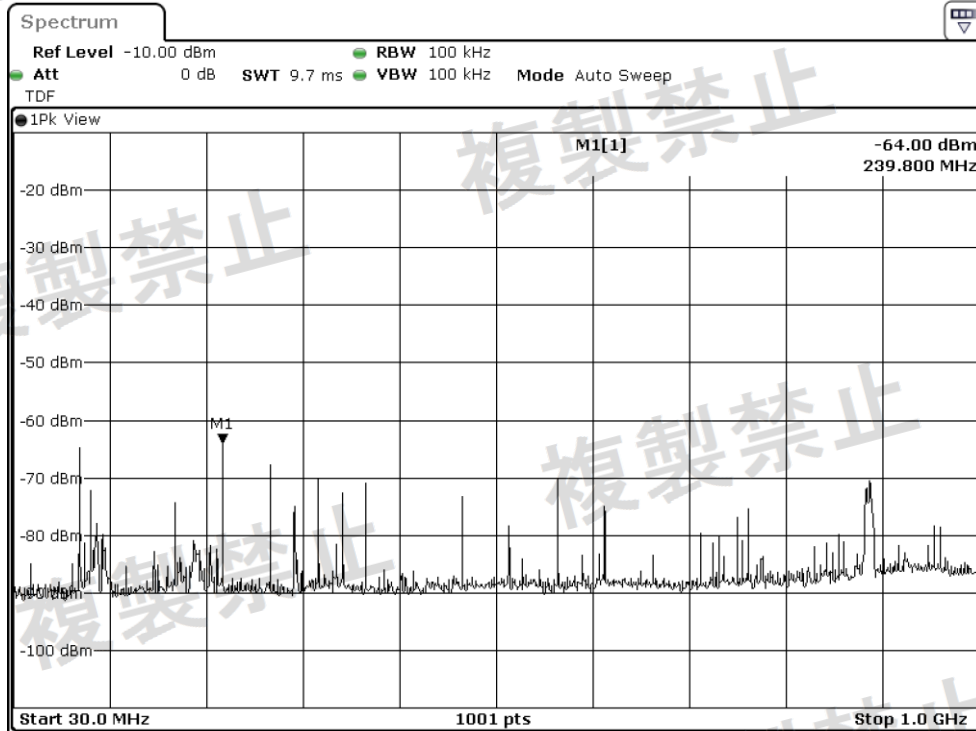
Plots of measurement data



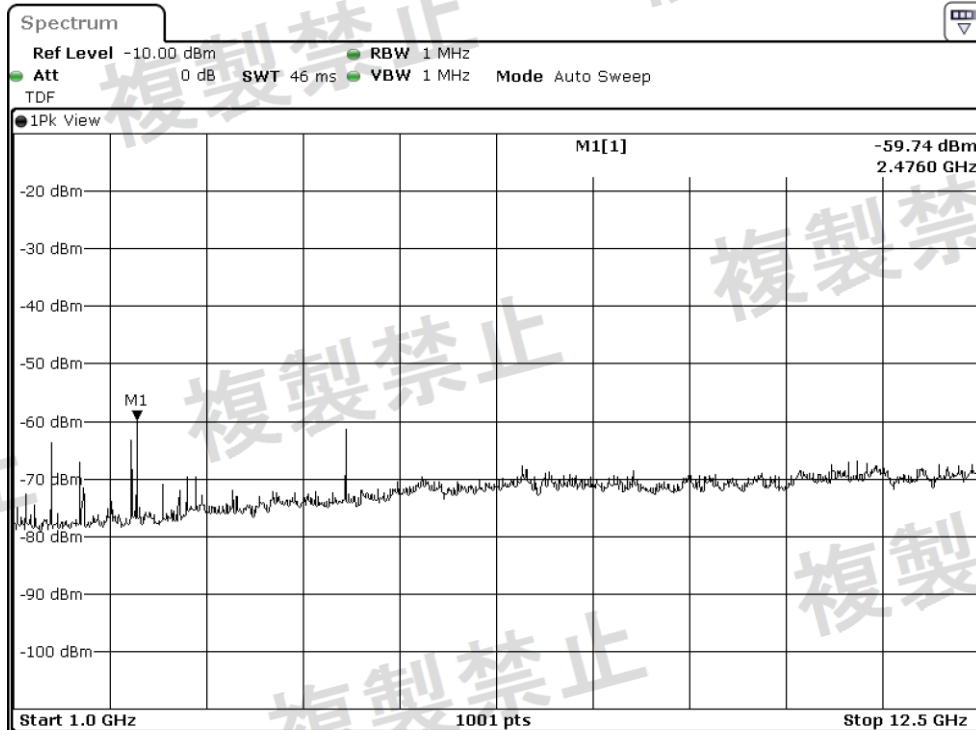
LOW (30 MHz ~ 1 GHz)



LOW (1 GHz ~ 12.5 GHz)



HIGH (30 MHz ~ 1 GHz)



HIGH (1 GHz ~ 12.5 GHz)

10. Interference prevention function

10.1 Operating environment

Temperature : 24 °C
Relative humidity : 47 % R.H.

10.2 Test Date

August 20, 2025 ~ August 27, 2025

10.3 Test Data

Test Voltage	2 402 MHz	2 480 MHz
DC 3.70 V	PASS	PASS
DC 3.33 V	PASS	PASS
DC 4.07 V	PASS	PASS

10.4 Limit

Radio equipment used mainly on the same premises and automatically transmits or receives identification code
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11. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)	Remarks
FSV40-N	Rohde & Schwarz	Signal Analyzer	102165	Jan. 13, 2025 (1Y)	24-2 paragraph 「ハ」
NRP-Z81	Rohde & Schwarz	Wide band sensor	104811	Jan. 15, 2025 (1Y)	
SMB100A	Rohde & Schwarz	Signal Generator	177648	Jan. 13, 2025 (1Y)	
53152A	HP	CW Microwave Frequency Counter	US39270295	Jul. 04, 2025 (1Y)	
1205DD	INTERACT	DC Power Supply (DC 12 V 5 A)	00191103	Jan. 13, 2025 (1Y)	

All test equipment used is calibrated on a regular basis.

Article 24-2, Paragraph 4, Item 2 of the Radio Law

(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)

APPENDIX I - TEST SET-UP PHOTO

