

TEST REPORT

Report number : KR25-SRT0003

Issue date : 2025-03-26

Applicant : DREAMUS COMPANY
311, Gangnam-daero, Seocho-gu, Seoul,
Republic of Korea
TEL : 02-6240-9118
FAX : 02-3019-7576

Equipment under test (EUT) : PS10

Model name : PPR61

Date of test : 2025-02-24 ~ 2024-03-24

Test place : Eurofins KCTL Co., Ltd.
65 Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea

Test results : PASS

The results in this report are applicable only to the equipment tested.

This report shall not be re-produced except in full without the written approval of **Eurofins KCTL Co.,Ltd.**
Eurofins KCTL Co., Ltd. is in compliance with KS Q ISO 17025.

Tested by;

Minky Kim

Approved by;

Hyeonsu Jang

1. Summary of Test

1. Purpose of test

Ordinance on Technical Standards Conformity Certification of Specified Radio Equipment
2.4GHz Band wide band low power data communication System

2. Standards

Certification Ordinance Article 2 Clause 1 Item19

1) Test Methods

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

2) Deviation from standards

None

3. List of applied test to the EUT

Article 88 Appendix 43	Classification of EUT	Condition	Result
3	Frequency Tolerance	Conducted	PASS
4	Occupied Bandwidth	Conducted	PASS
4	Spread Bandwidth	Conducted	PASS
5	Unwanted (Spurious) Emission Strength	Conducted	PASS
6	RF Output Power Tolerance	Conducted	PASS
7	Secondary Emitted Radio Wave Strength	Conducted	PASS
13	Time of occupancy hopping frequency	Conducted	PASS
13	Spreading Factor	Conducted	PASS
12	Interference Prevention Function	Conducted	PASS

Note.

1. The worst-case data rates are below :

BDR packet type : DH-5

EDR packet Type : 3DH-5

1) Test set up

Table-Top

2) Modification to the EUT by laborator

None

1. Test Information

1. Applicant

DREAMUS COMPANY

311, Gangnam-daero, Seocho-gu, Seoul, Republic of Korea

2. Equipment under test

PS10

3. Model number

PPR61

4. Serial number

TP-54

5. Size

(W) 75.4 x (D) 17.3 x (H) 149.45

6. Terminal limitation

-10°C to 50°C

7. RF Specification Frequency range

2402-2480MHz

8. Number of RF Channels

79 Channels

9. Modulation method

FHSS(GFSK, $\pi/4$ -DQPSK, 8DPSK)

10. Data rate

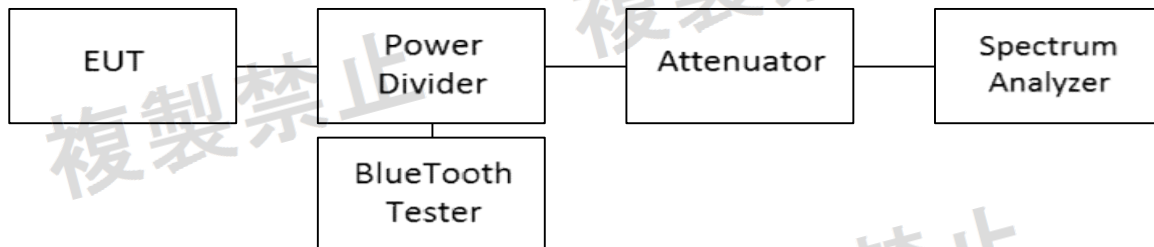
1, 2, 3Mbps

11. Variation of the family model(s)

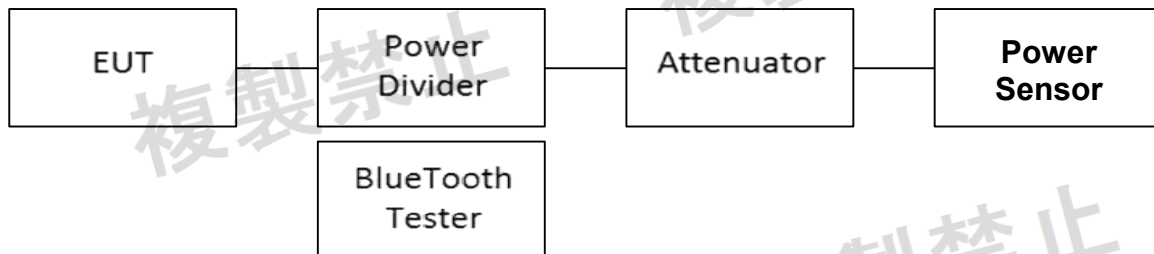
None

2. Configuration of equipment

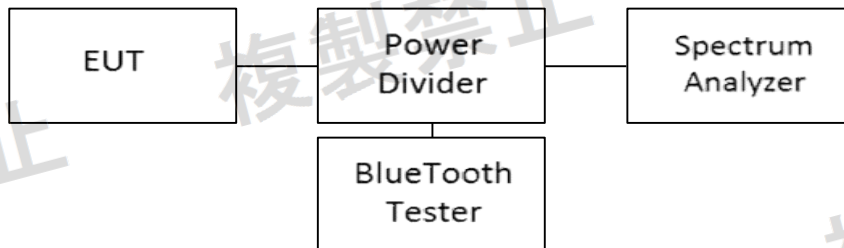
1. Occupied Bandwidth, Spread bandwidth, Unwanted(Spurious) emission strength, Time of occupancy hopping frequency, Frequency tolerance



2. RF output power tolerance



3. Secondary emitted radio wave strength



3. Test results (Rated voltage)

S/N : TP-54

Environment of test room	Date of test	2025-02-24	2025-02-25	2025-03-24
	Temperature	24 °C	25 °C	23 °C
	Humidity	51 %	52 %	51 %

Peak Antenna Gain	-2.48	dBi
Declaration Output Power	0.50	mW/MHz
Declaration Output Power	-3.01	dBm/MHz
E.I.R.P.	-5.49	dBm/MHz
Input Power Voltage	3.80	VDC

Tested Circuit Insertion Loss	0	dB
Frequency equal to the Transmission rate	1	MHz
Transmission Time	ON TIME	2.880 ms
	OFF TIME	0.871 ms
	Ratio	0.768
Packet Type (Mode)	DH5	mode
Transmit Speed	1	MHz

Using TDF and offset function in Spectrum Analyzer.

Measurement of plots are included Loss value.

(Att : 10dB + Cable loss + Power Divider + EUT cable: 0.5dB)

Test category ;	2.4GHz Band Low-Power Data Communication System (Bluetooth+BDR [GFSK])
The reason why the tests are performed only at rated voltage :	The fluctuation of input voltage to the circuit of the radio part of the equipment to be tested is identified as being less than ± 1 % when input voltage from an external supply into the equipment fluctuates ± 10 %.

Measurement Frequency	MHz	2402	2441	2480	Result	Limit	Note
Channel Number	Ch.	0	39	78	---	---	
Frequency Measurements	MHz	2402.000	2441.000	2480.000	---	---	
Frequency Tolerance	ppm	0.021	0.020	0.020	PASS	$\pm 50 \times 10^{-6}$ (50ppm)	
Occupied Bandwidth	MHz	---	78.22	---	PASS	83.5MHz or below	
Spread Bandwidth	MHz	---	70.53	---	---	---	
RF Output Power	mW/MHz	---	0.209	---	PASS	3mW/MHz or below	
RF Output Power Tolerance	%	---	-58.24	---	PASS	+20 %	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	---	0.427	PASS	2.5uW/MHz or below	
		MHz	---	2279.900	---	---	
	2387 to 2400MHz	uW/MHz	---	1.6904	PASS	25uW/MHz or below	
		MHz	---	2399.994	---	---	
	2483.5 to 2496.5MHz	uW/MHz	---	0.5395	PASS	25uW/MHz or below	
		MHz	---	2487.636	---	---	
	2496.5 to 12500MHz	uW/MHz	---	1.1749	PASS	2.5uW/MHz or below	
		MHz	---	9606.500	---	---	
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	---	0.1637	PASS	4nW or below	
		MHz	---	833.810	---	---	
	1000 to 12500MHz	nW	---	0.0359	PASS	20nW or below	
		MHz	---	11012.000	---	---	
Time of occupancy hopping frequency	sec	---	0.0029	---	PASS	0.4sec or below	
	sec	---	0.2417	---	PASS	0.4sec or below	0.4sec×Spread rate
Spreading Factor	---	---	70.5295	---	PASS	5 or more	
Interference Prevention Function	Good				PASS		

4. Measurement equipment list

USE	Equipment	Company	Model No.	Serial No.	Calibrated by	Cal. Method	Cal. Due	Cal. Date
X	Spectrum analyzer	R & S	FSV30	100806	HCT	(c)	2024.07.01	2025.07.01
X	Spectrum analyzer	R & S	FSW26	101353	HCT	(c)	2024.07.01	2025.07.01
X	DC Power Supply	AGILENT	E3632A	MY40004791	HCT	(c)	2024.07.01	2025.07.01
X	Signal generator	R & S	SMB100A	176206	HCT	(c)	2025.01.17	2026.01.17
X	Attenuator	API Inmet	40AH2W-10	13	HCT	(c)	2024.04.30	2025.04.30
X	Attenuator	HP	8491A	29738	HCT	(c)	2024.10.10	2025.10.10
X	Bluetooth Tester	TESCOM	TC-3000B	3000B640056	HCT	(c)	2025.01.16	2026.01.16
X	Power Divider	AeroFlex/ Weinschel, Inc	1580-1	PE430	HCT	(c)	2024.06.24	2025.06.24
X	Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-Bb	HCT	(c)	2024.04.24	2025.04.24

Note1: "X" used equipment.

Note2: The validity of measurement equipment is one year from the first day of the following month of the calibration date.

Note3: a) : Calibration conducted by the National Institute of Information and Communications Technology~ NICT~ or a designated calibration agency under Article 102-18 paragraph (1)~ TELECOM Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc~.

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)~ TELECOM Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc~.

d) : Calibration conducted by using other equipment that listed above from a) to c)

5. Uncertainty

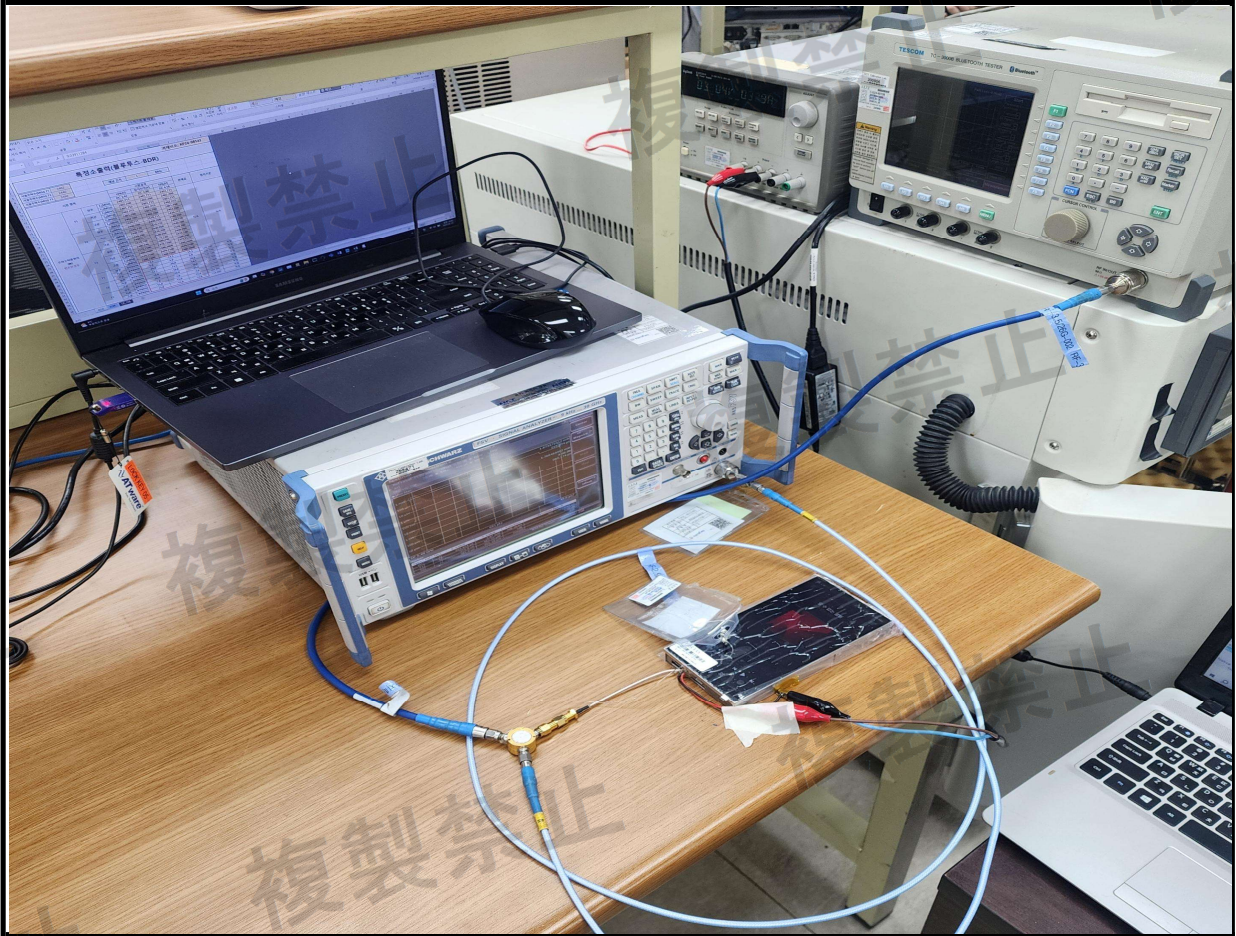
About uncertainty of measured value

Parameter	Uncertainty
Total RF power conducted	$\pm 0.9\text{dB}$
Spurious emissions conducted	$\pm 2.0\text{dB}$
Temperature	$\pm 1.0^\circ\text{C}$
Humidity	$\pm 3.8\%$

Judge	Measured value and standard limit value	
PASS	Standard limit value Case1 Even if it takes uncertainty into consideration, a standard limit value is fulfilled.	
	Case2 Although measured value is in a standard limit value, a limit value won't be fulfilled if uncertainty is taken into consideration.	
FAIL	Case3 Although measured value exceeds a standard limit value, a limit value will be fulfilled if uncertainty is taken into consideration.	
	Case4 Even if it takes uncertainty into consideration, a standard limit value isn't fulfilled.	

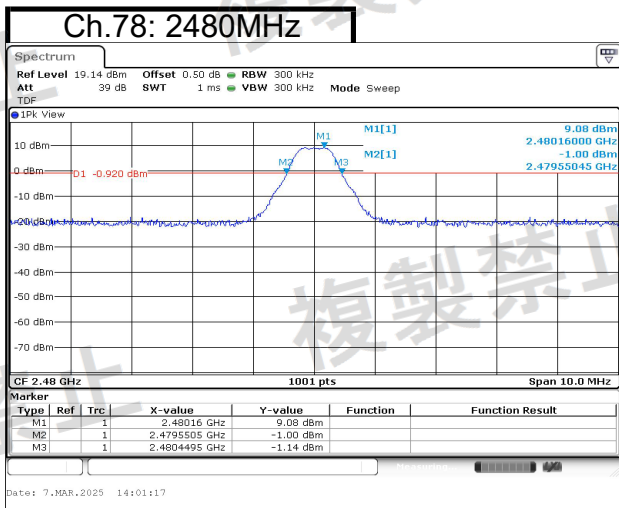
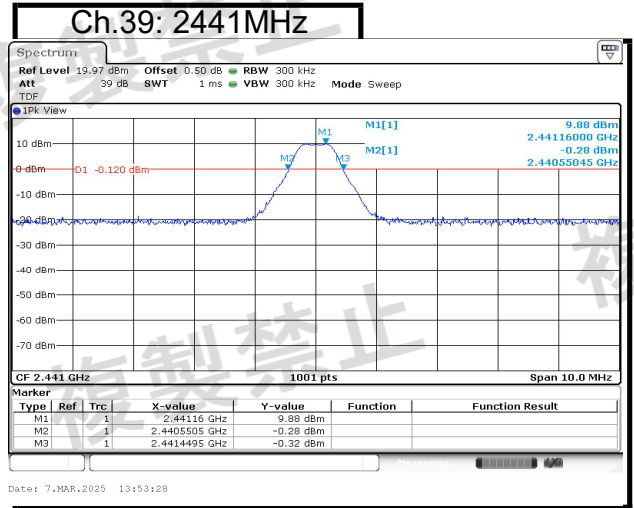
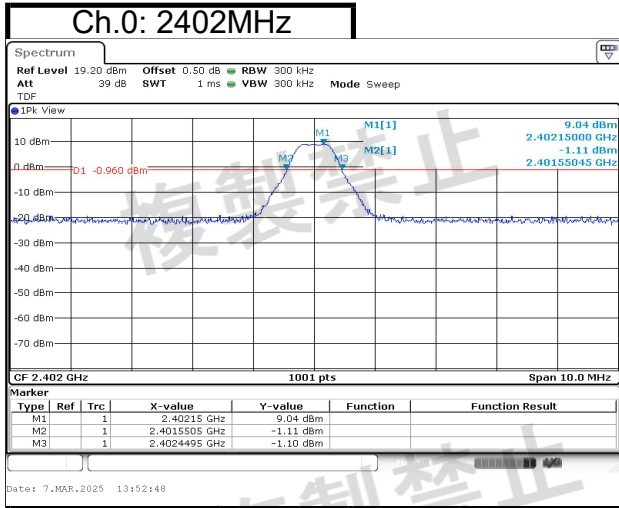
6. Photographs

Conducted Measurement Photo



7. Test chart

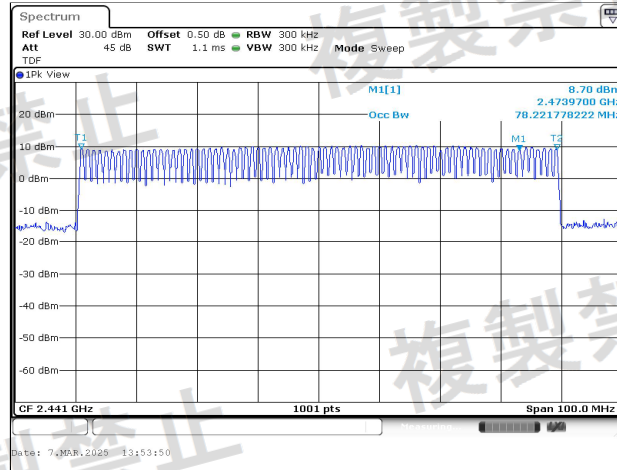
7.1 Frequency tolerance (Rated voltage)



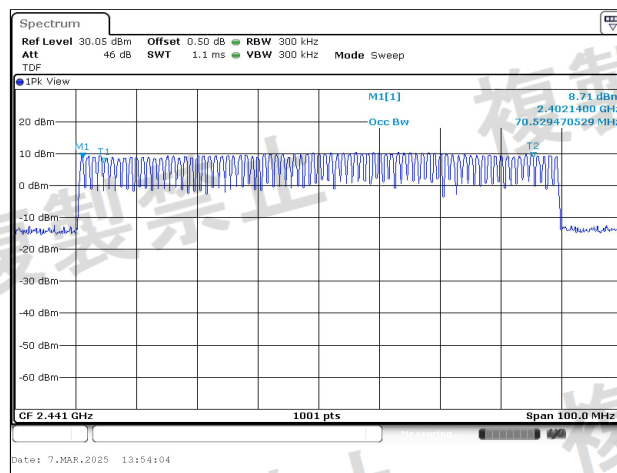
7. Test chart

7.2 Occupied bandwidth / Spread bandwidth (Rated voltage)

Occupied bandwidth

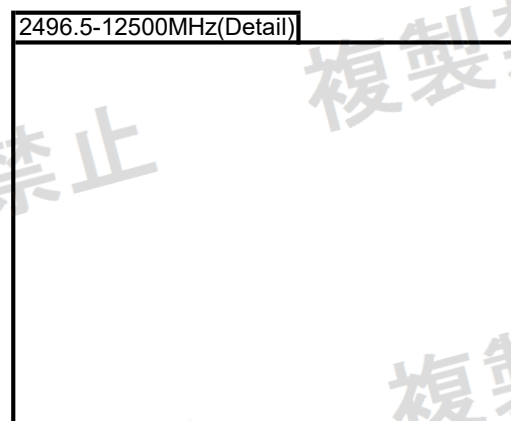
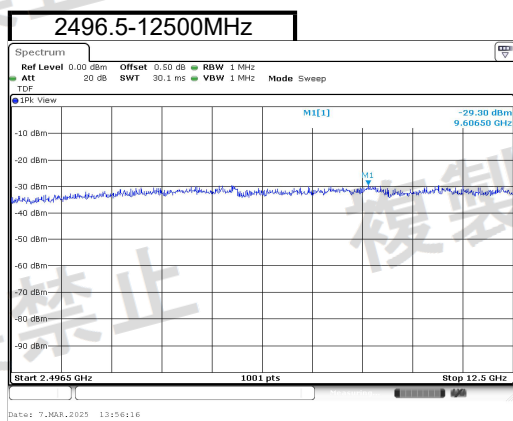
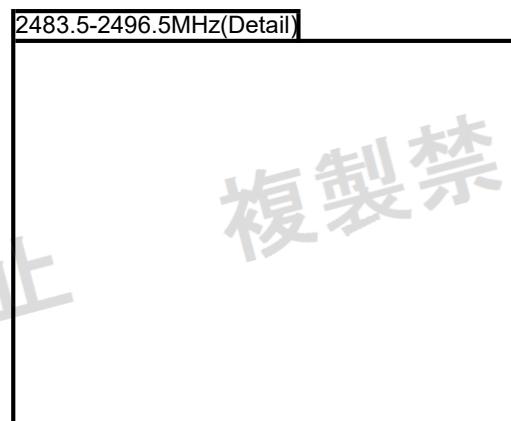
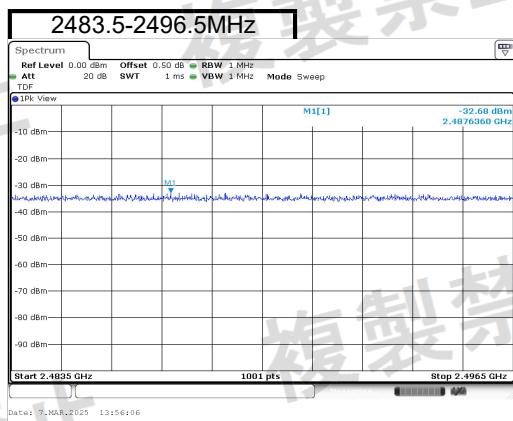
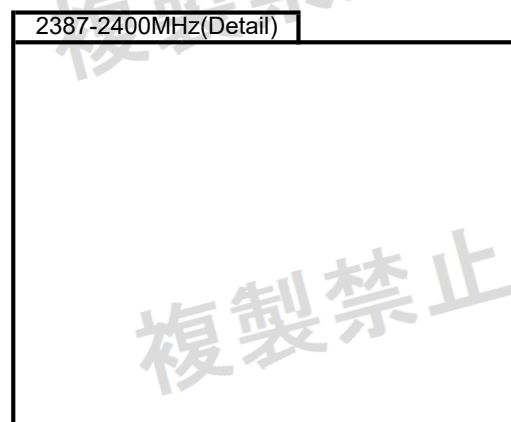
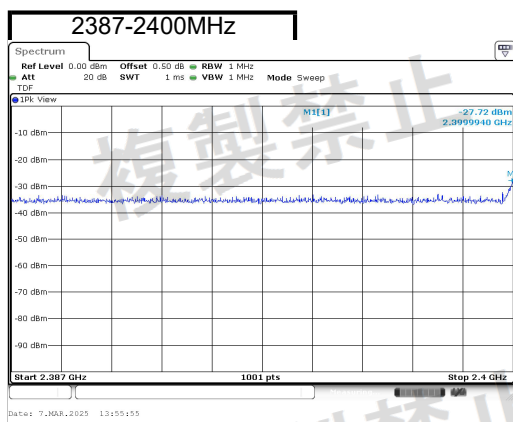
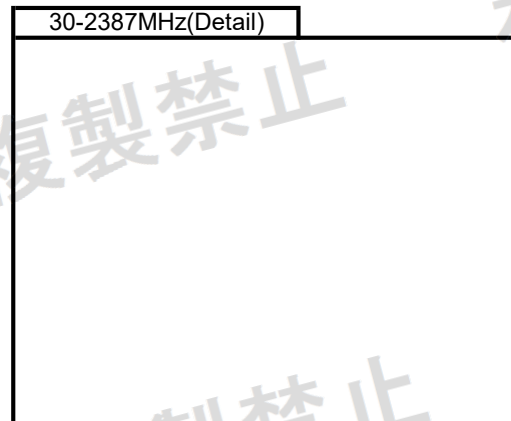
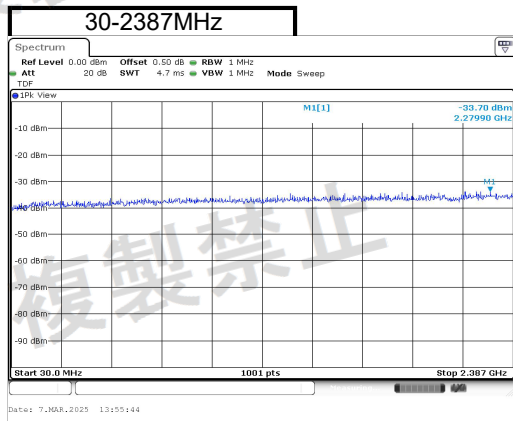


Spread bandwidth

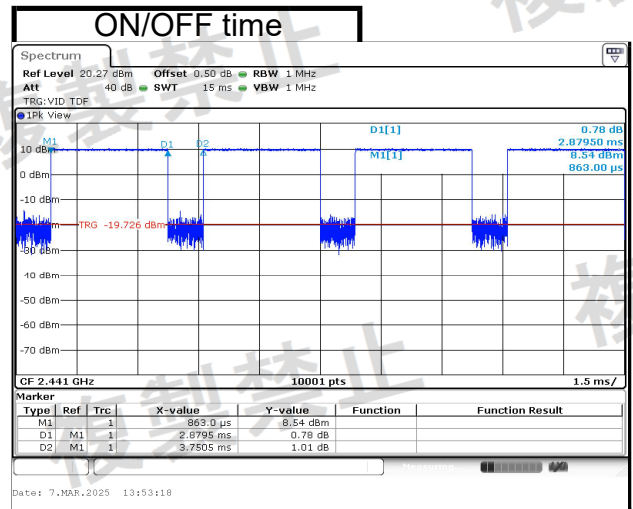
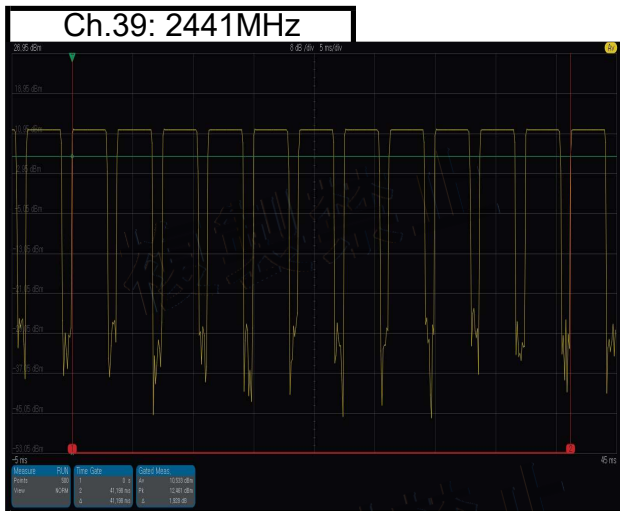


7. Test chart

7.3 Unwanted(Spurious) emission strength (Rated voltage)

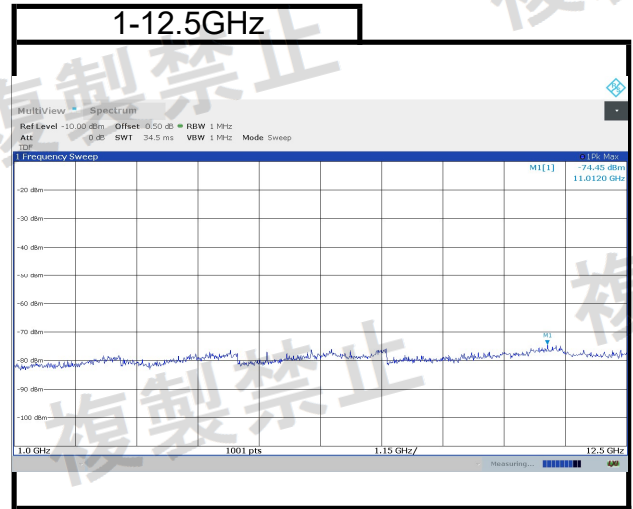
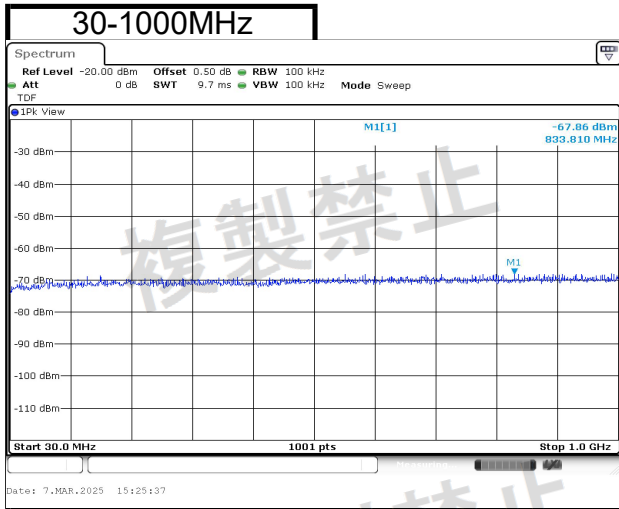


7.4 RF output power tolerance (Rated voltage)



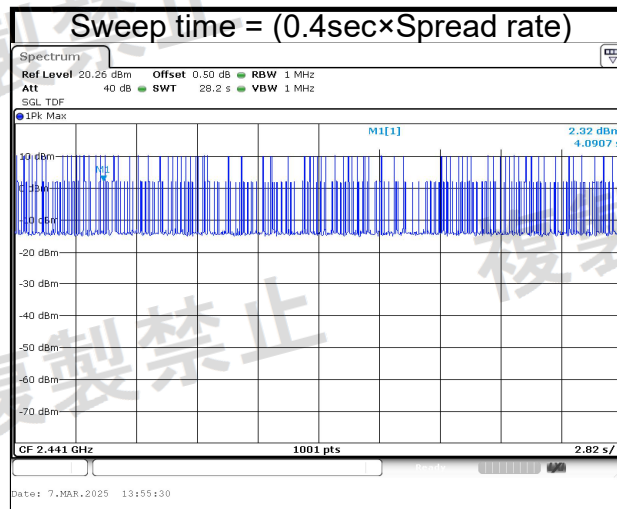
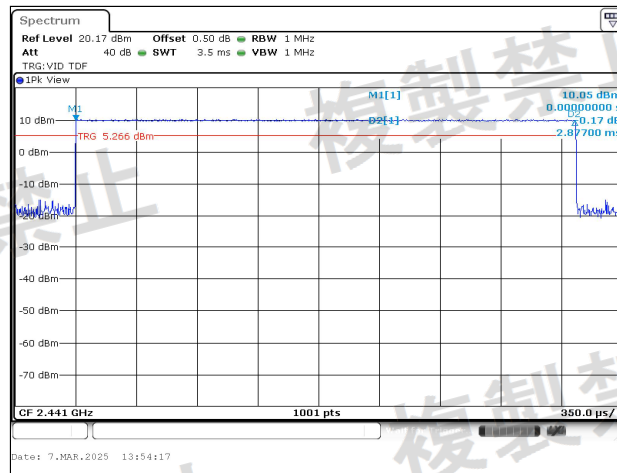
7. Test chart

7.5 Secondary emitted radio wave strength (Rated voltage)



7. Test chart

7.6 Time of occupancy hopping frequency (Rated voltage)



3. Test results (Rated voltage)

S/N : TP-54

Environment of test room	Date of test	2025-02-24	2025-02-25	2025-03-24
	Temperature	24 °C	25 °C	23 °C
	Humidity	51 %	52 %	51 %

Peak Antenna Gain	-2.48	dBi
Declaration Output Power	0.30	mW/MHz
Declaration Output Power	-5.23	dBm/MHz
E.I.R.P.	-7.70	dBm/MHz
Input Power Voltage	3.80	VDC

Tested Circuit Insertion Loss	0	dB
Frequency equal to the Transmission rate	1	MHz
Transmission Time	ON TIME	2.886 ms
	OFF TIME	0.865 ms
	Ratio	0.769
Packet Type (Mode)	3DH5	mode
Transmit Speed	1	MHz

Using TDF and offset function in Spectrum Analyzer.

Measurement of plots are included Loss value.

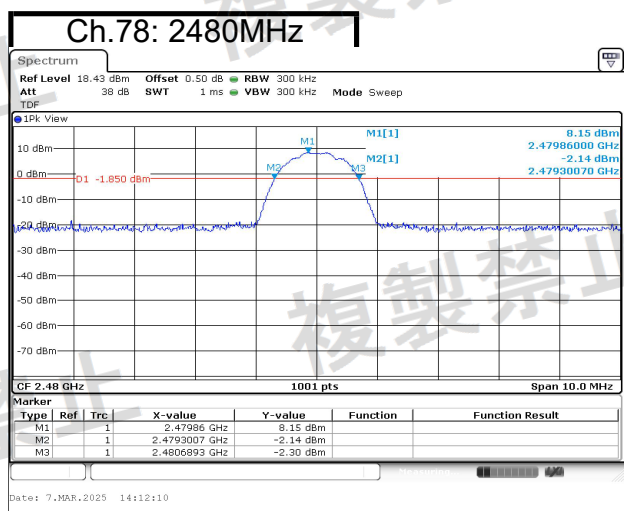
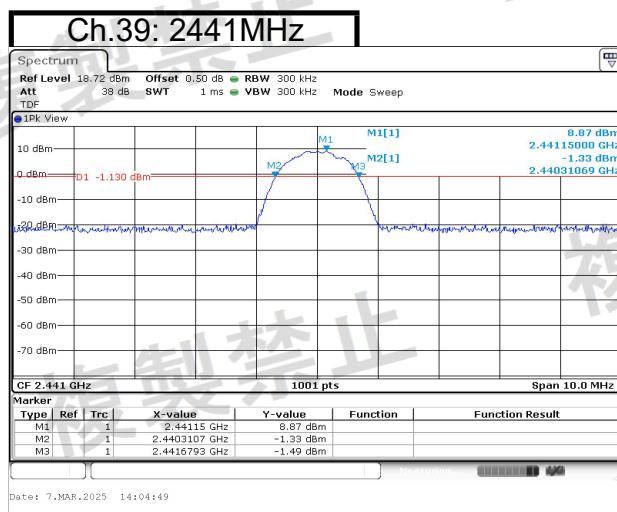
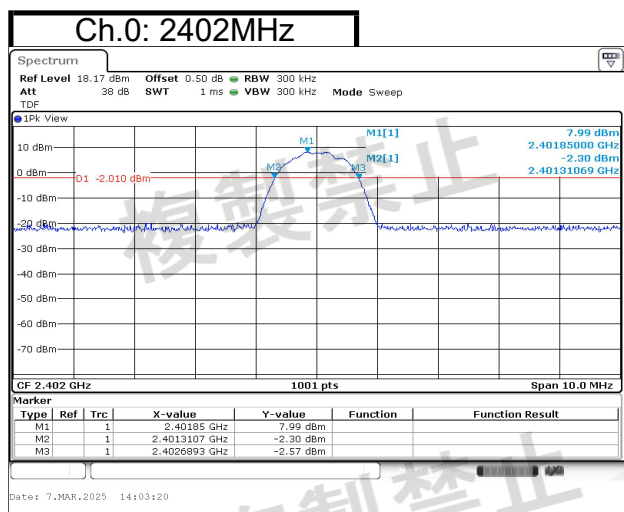
(Att : 10dB + Cable loss + Power Divider + EUT cable: 0.5dB c

Test category ;	2.4GHz Band Low-Power Data Communication System (Bluetooth+EDR [8DPSK])
The reason why the tests are performed only at rated voltage :	The fluctuation of input voltage to the circuit of the radio part of the equipment to be tested is identified as being less than ± 1 % when input voltage from an external supply into the equipment fluctuates ± 10 %.

Measurement Frequency	MHz	2402	2441	2480	Result	Limit	Note
Channel Number	Ch.	0	39	78	---	---	
Frequency Measurements	MHz	2402.000	2440.995	2479.995	---	---	
Frequency Tolerance	ppm	0.000	-2.048	-2.016	PASS	$\pm 50 \times 10^{-6}$ (50ppm)	
Occupied Bandwidth	MHz	---	78.42	---	PASS	83.5MHz or below	
Spread Bandwidth	MHz	---	71.03	---	----		
RF Output Power	mW/MHz	---	0.123	---	PASS	3mW/MHz or below	
RF Output Power Tolerance	%	---	-58.96	---	PASS	+20 %	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	---	0.432	---	PASS	2.5uW/MHz or below
		MHz	---	2053.800	---	----	
	2387 to 2400MHz	uW/MHz	---	4.217	---	PASS	25uW/MHz or below
		MHz	---	2399.981	---	----	
	2483.5 to 2496.5MHz	uW/MHz	---	0.558	---	PASS	25uW/MHz or below
		MHz	---	2496.455	---	----	
	2496.5 to 12500MHz	uW/MHz	---	1.306	---	PASS	2.5uW/MHz or below
		MHz	---	8867.500	---	----	
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	---	0.200	---	PASS	4nW or below
		MHz	---	942.340	---	----	
	1000 to 12500MHz	nW	---	0.032	---	PASS	20nW or below
		MHz	---	11035.000	---	----	
Time of occupancy hopping frequency	sec	---	0.0029	---	PASS	0.4sec or below	
	sec	---	0.2365	---	PASS	0.4sec or below	0.4sec×Spread rate
Spreading Factor	---		71.0290		PASS	5 or more	
Interference Prevention Function			Good		PASS		

7. Test chart

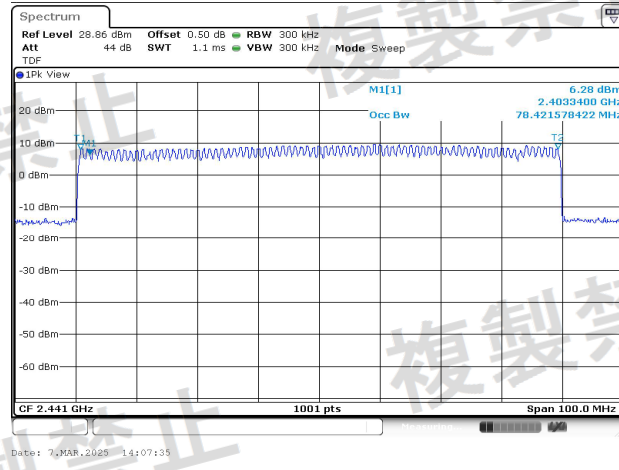
7.1 Frequency tolerance (Rated voltage)



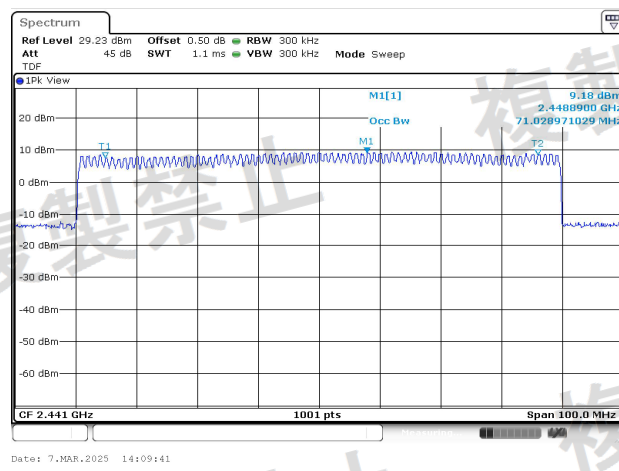
7. Test chart

7.2 Occupied bandwidth / Spread bandwidth (Rated voltage)

Occupied bandwidth

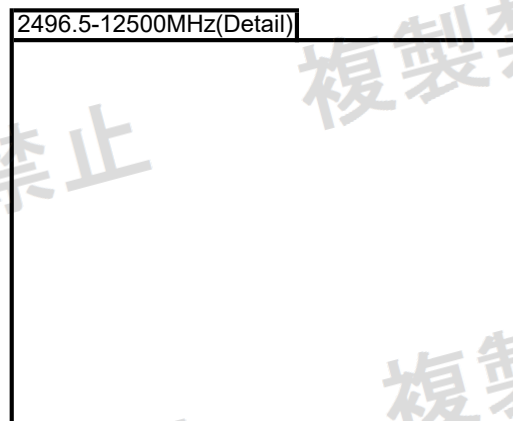
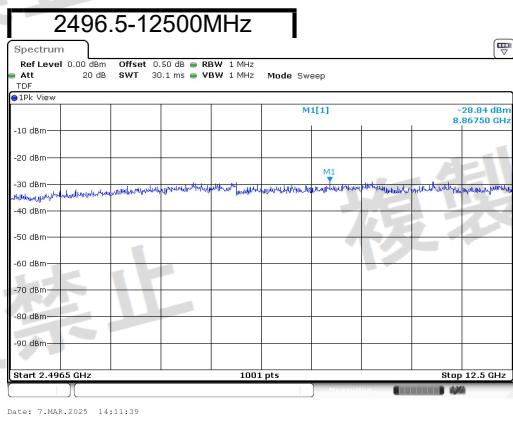
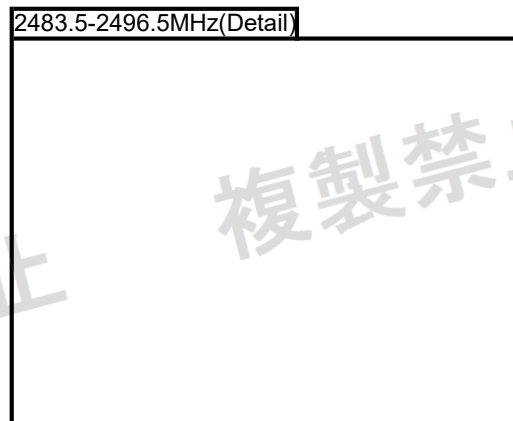
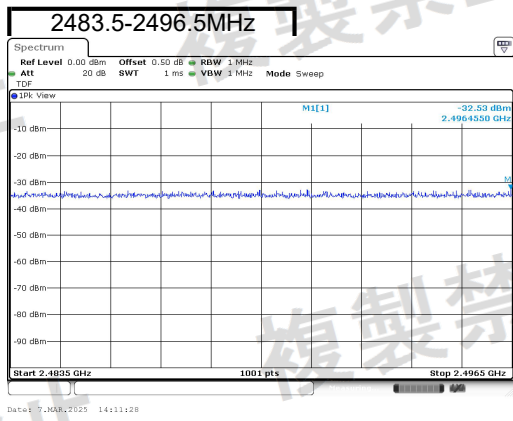
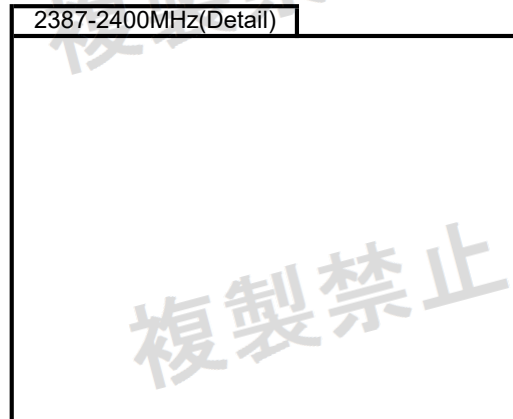
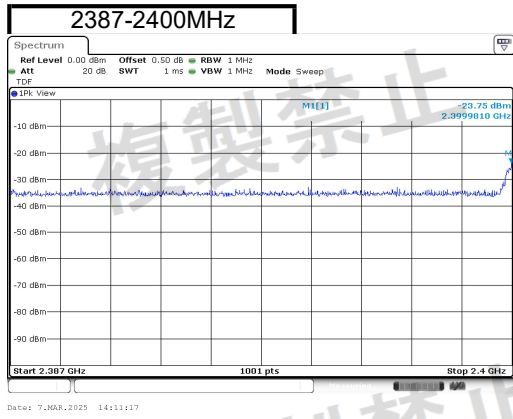
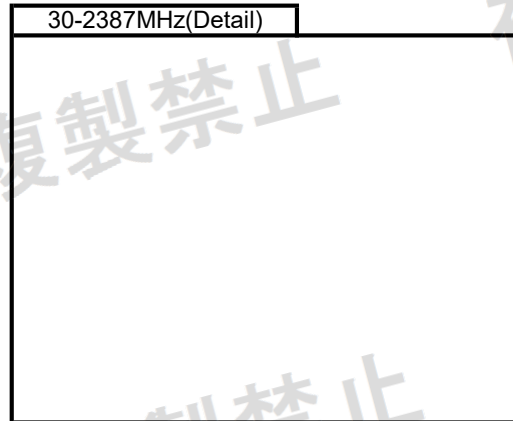
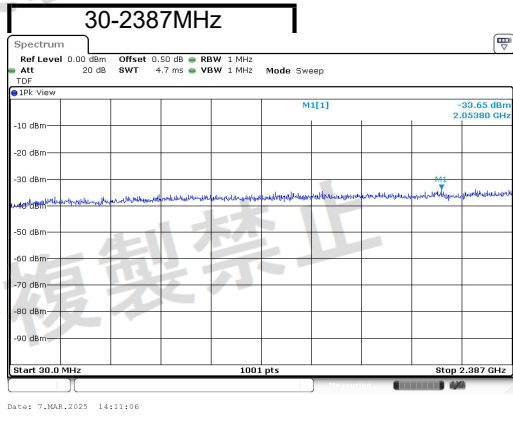


Spread bandwidth



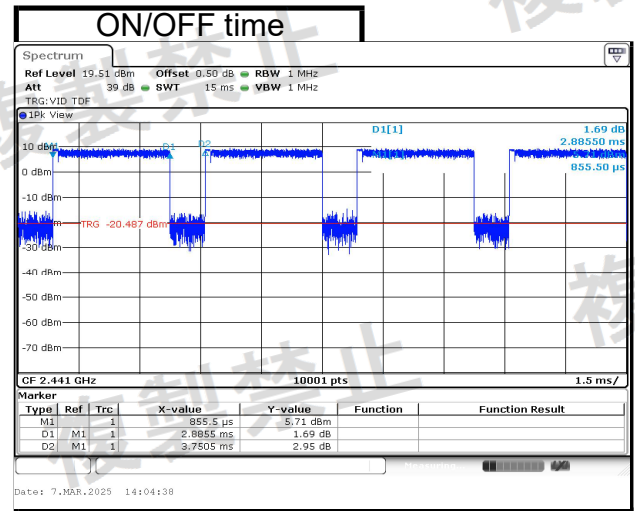
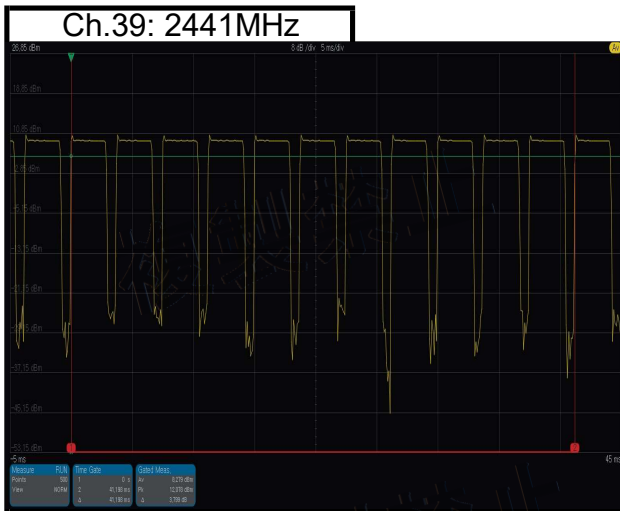
7. Test chart

7.3 Unwanted(Spurious) emission strength (Rated voltage)



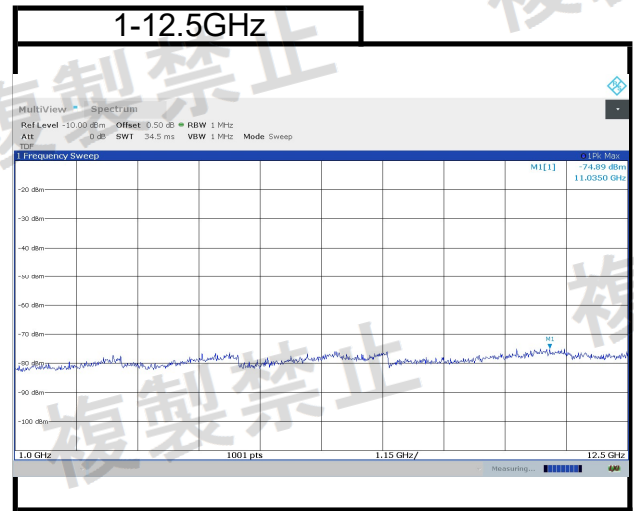
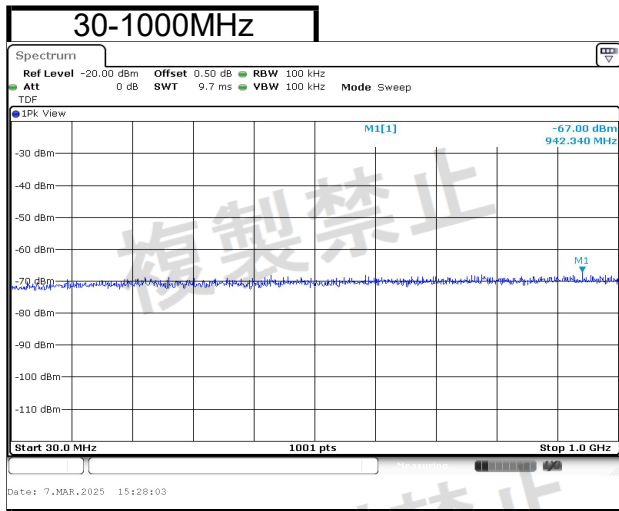
7. Test chart

7.4 RF output power tolerance (Rated voltage)



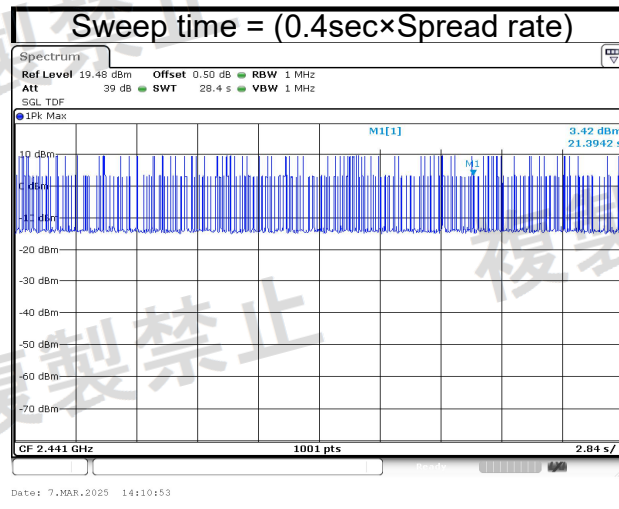
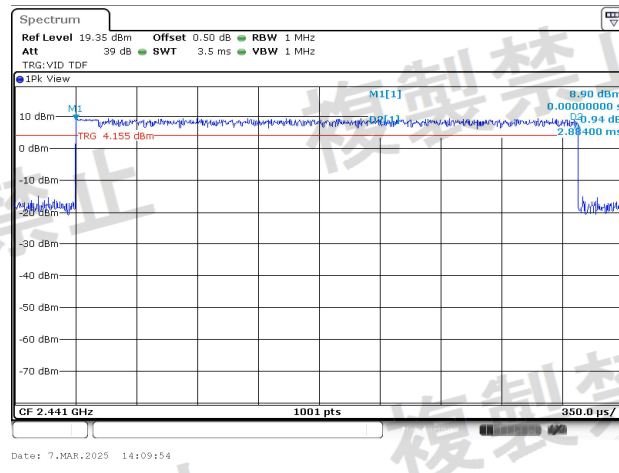
7. Test chart

7.5 Secondary emitted radio wave strength (Rated voltage)



7. Test chart

7.6 Time of occupancy hopping frequency (Rated voltage)



3. Test results (Rated voltage)

S/N : TP-54

Environment of test room	Date of test	2025-02-24	2025-02-25	2025-03-24
	Temperature	24 °C	25 °C	23 °C
	Humidity	51 %	52 %	51 %

Peak Antenna Gain	-2.48	dBi
Declaration Output Power	0.70	mW/MHz
Declaration Output Power	-1.55	dBm/MHz
E.I.R.P.	-4.03	dBm/MHz
Input Power Voltage	3.80	VDC

Tested Circuit Insertion Loss		0	dB
Frequency equal to the Transmission rate		1	MHz
Transmission Time	ON TIME	2.881	ms
	OFF TIME	0.870	ms
	Ratio	0.768	
Packet Type (Mode)		DH5	mode
Transmit Speed		1	MHz

Using TDF and offset function in Spectrum Analyzer.
Measurement of plots are included Loss value.

(Att : 10dB + Cable loss + Power Divider + EUT cable: 0.5dB c

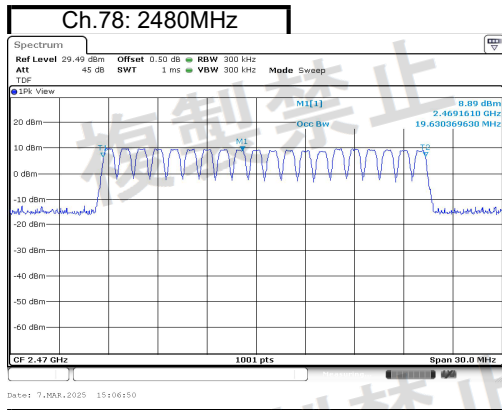
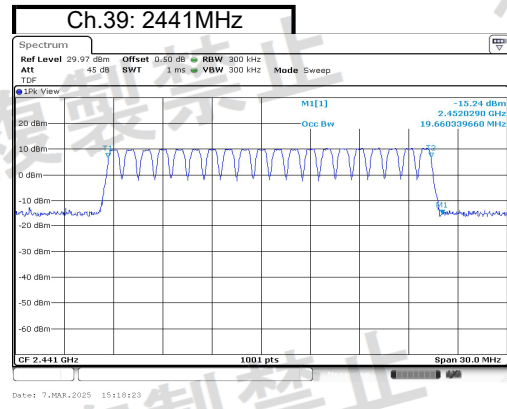
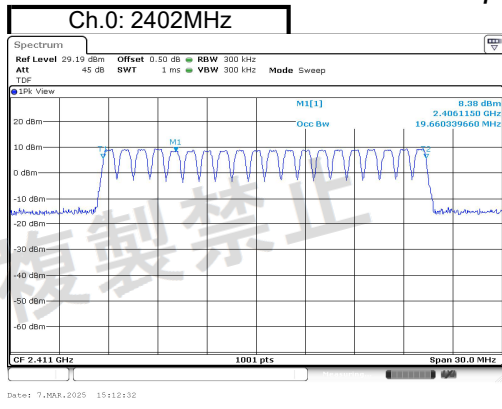
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The reason why the tests are performed only at rated voltage :	The fluctuation of input voltage to the circuit of the radio part of the equipment to be tested is identified as being less than ± 1 % when input voltage from an external supply into the equipment fluctuates ± 10 %.

Measurement Frequency		MHz	2402	2441	2480	Result	Limit	Note
Channel Number		Ch.	0	39	78	---	---	
Frequency Measurements		MHz	---	---	---	---	---	
Frequency Tolerance		ppm	---	---	---	---	±50×10 ⁻⁶ (50ppm)	
Occupied Bandwidth		MHz	19.66	19.66	19.63	PASS	83.5MHz or below	
Spread Bandwidth		MHz	18.43	18.01	18.07	-----		
RF Output Power		mW/MHz	---	0.714	---	PASS	3mW/MHz or below	
RF Output Power Tolerance		%	---	2.00	---	PASS	+20 %	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.456	0.374	0.409	PASS	2.5uW/MHz or below	
		MHz	2190.400	2261.000	1987.900	-----		
	2387 to 2400MHz	uW/MHz	1.936	0.435	0.480	PASS	25uW/MHz or below	
		MHz	2399.994	2392.786	2394.344	-----		
	2483.5 to 2496.5MHz	uW/MHz	0.525	0.635	0.545	PASS	25uW/MHz or below	
		MHz	2493.052	2492.156	2486.636	-----		
	2496.5 to 12500MHz	uW/MHz	1.247	1.400	1.455	PASS	2.5uW/MHz or below	
		MHz	6568.500	9117.500	9466.500	-----		
Time of occupancy hopping frequency		sec	0.0029	0.0029	0.0029	PASS	0.4sec or below	0.4sec×Spread rate
		sec	0.2445	0.2445	0.1928	PASS	0.4sec or below	
Spreading Factor		---	18.4316	18.0120	18.0719	PASS	5 or more	
Interference Prevention Function			Good			PASS		

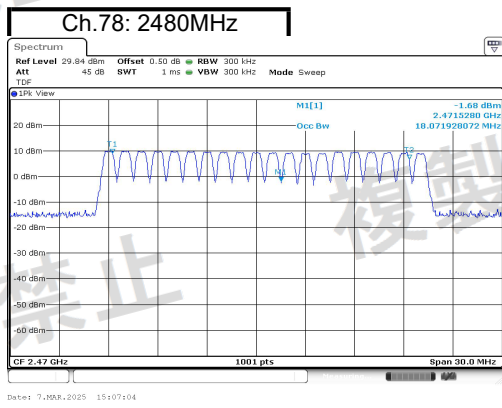
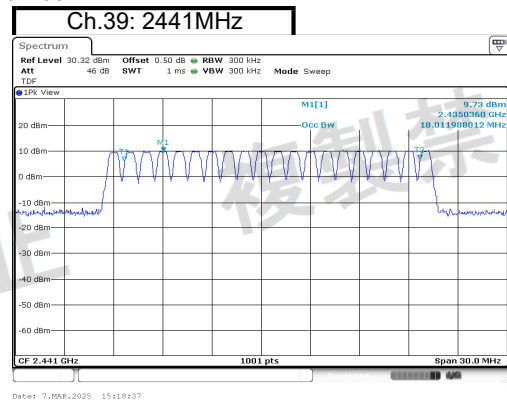
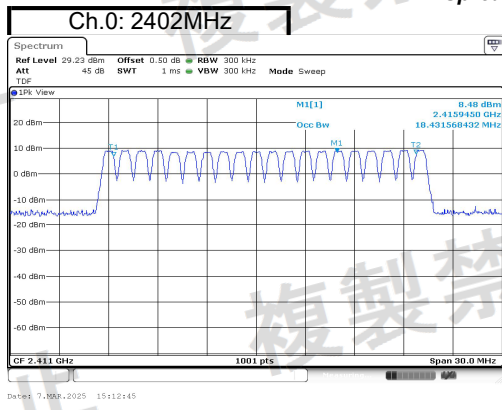
9. Test chart

9.1 Occupied bandwidth / Spread bandwidth (Rated voltage)

Occupied bandwidth

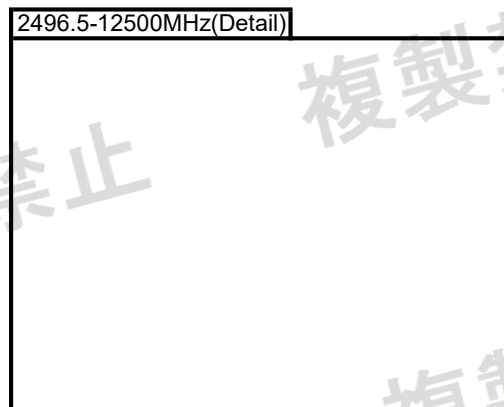
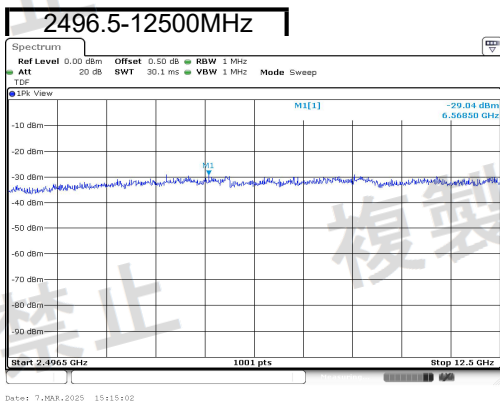
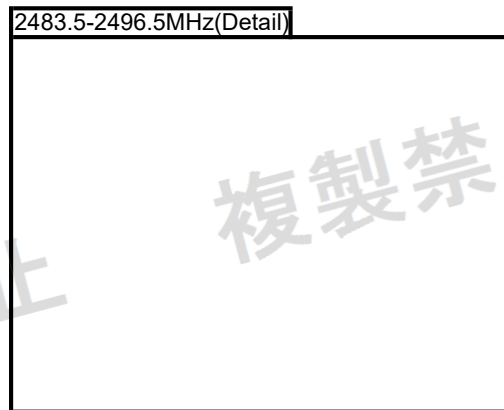
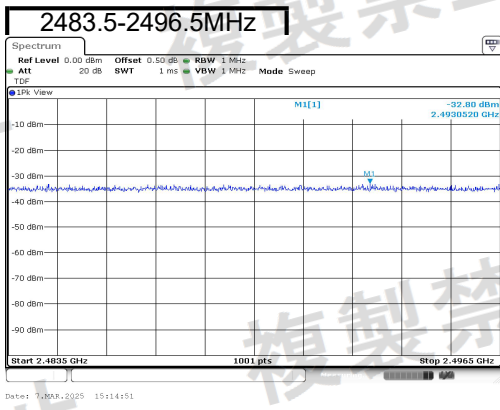
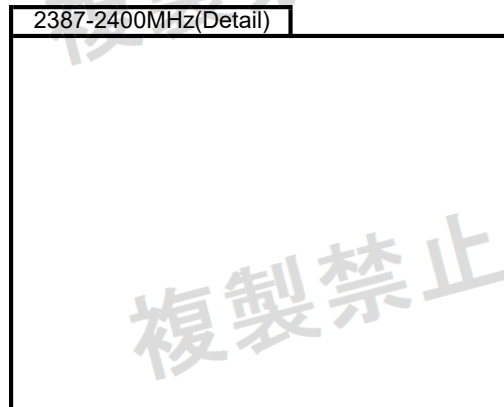
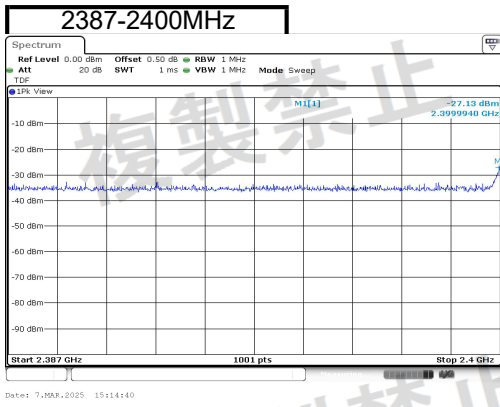
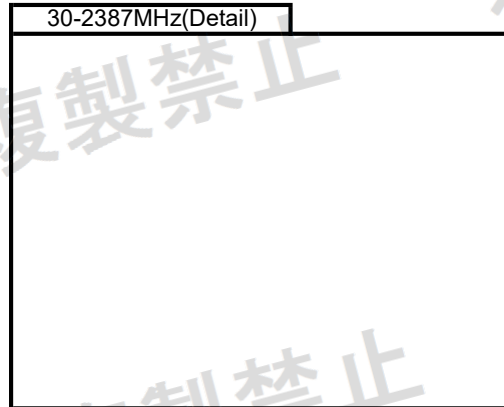
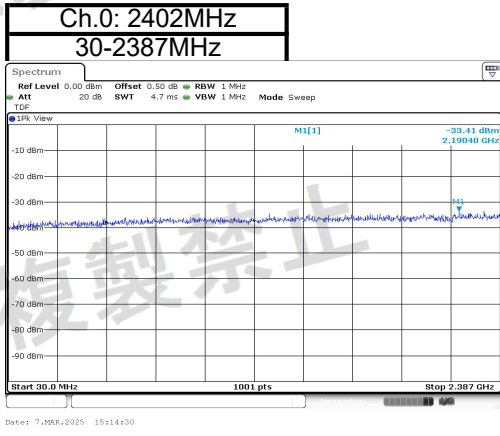


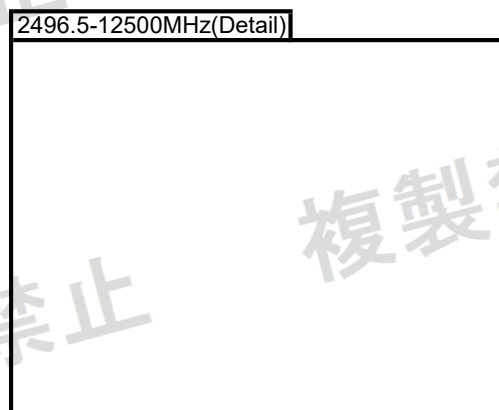
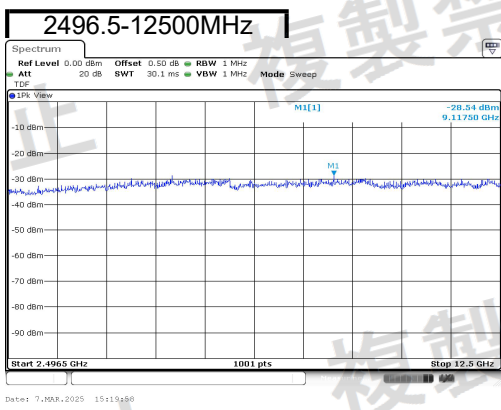
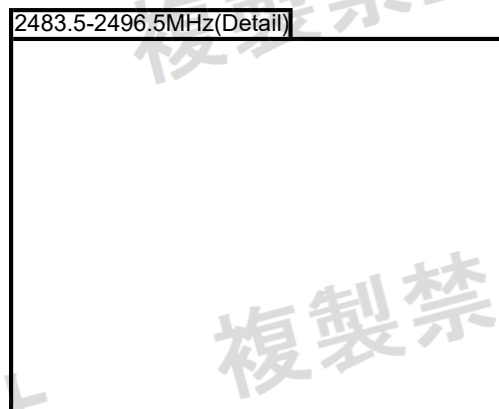
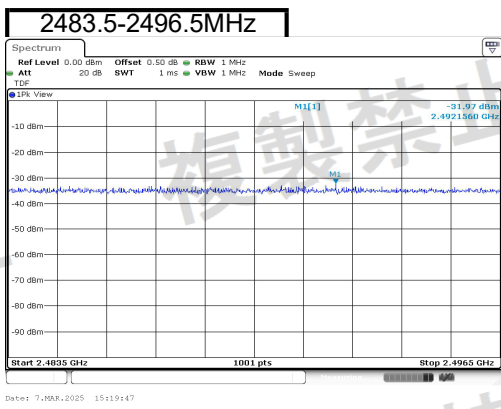
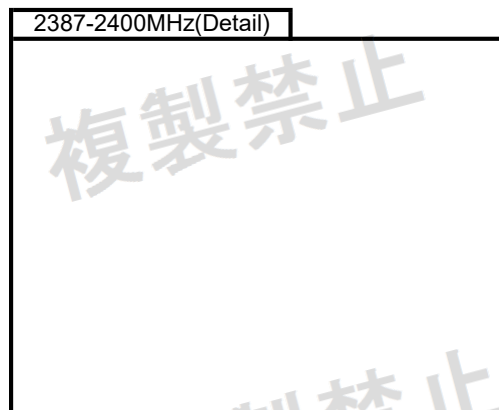
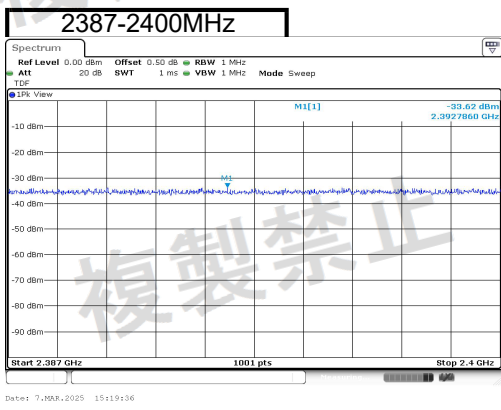
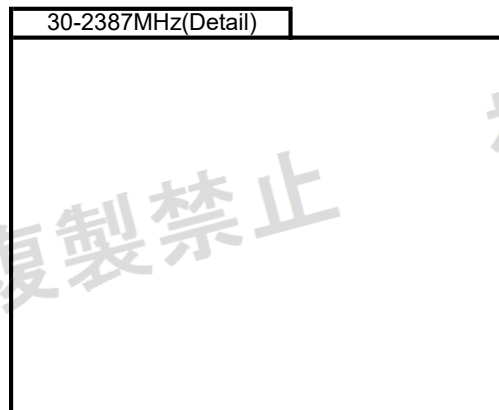
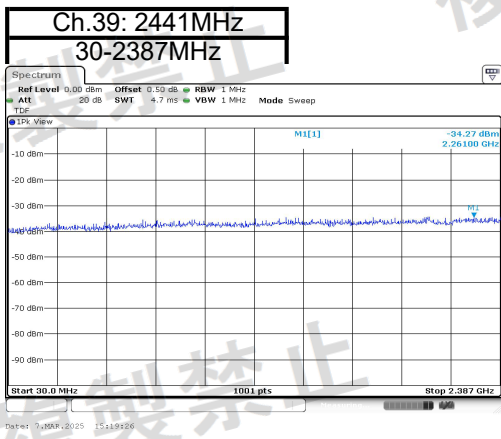
Spread bandwidth

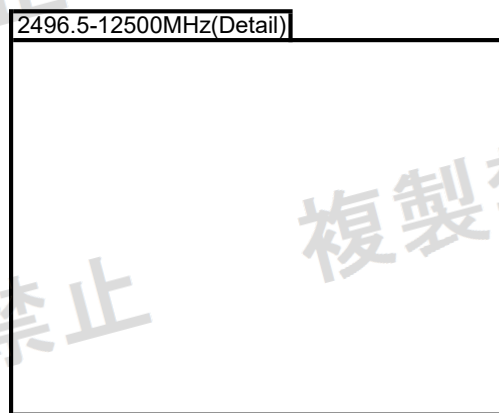
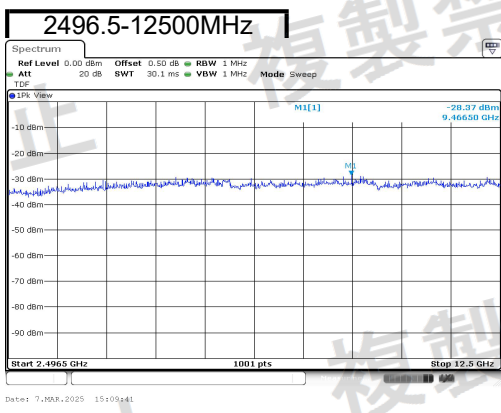
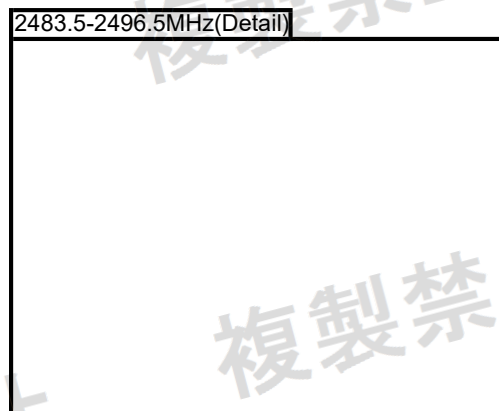
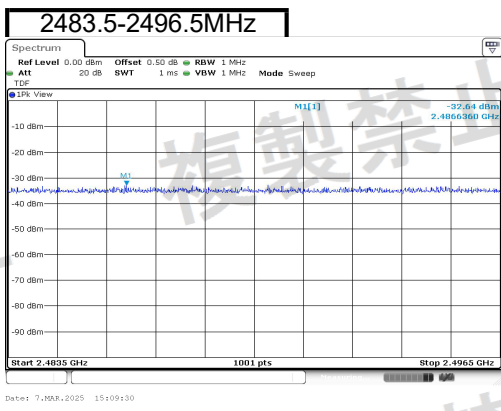
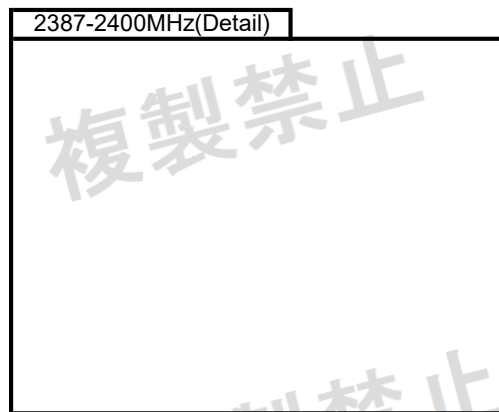
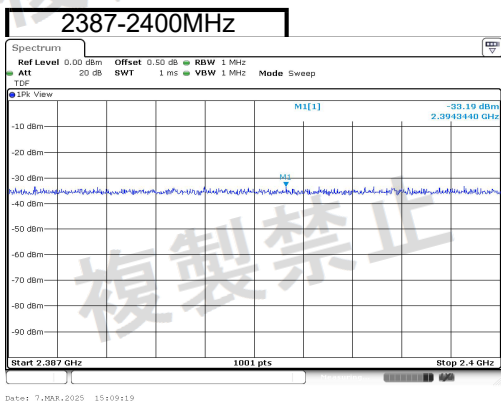
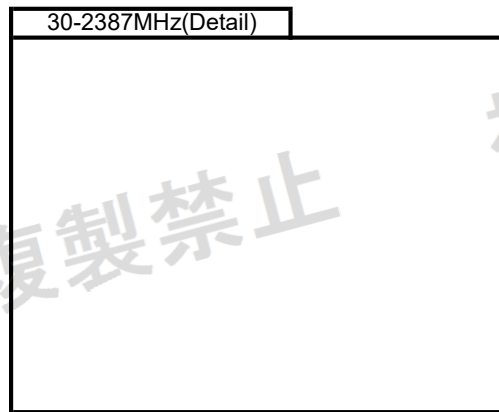
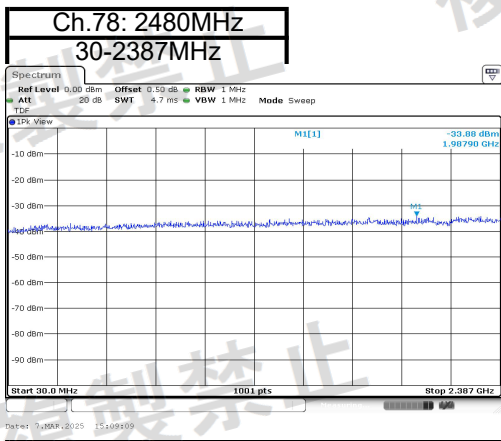


9. Test chart

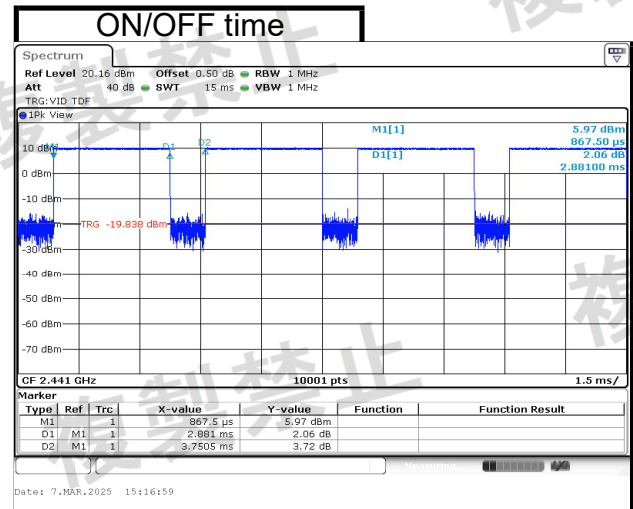
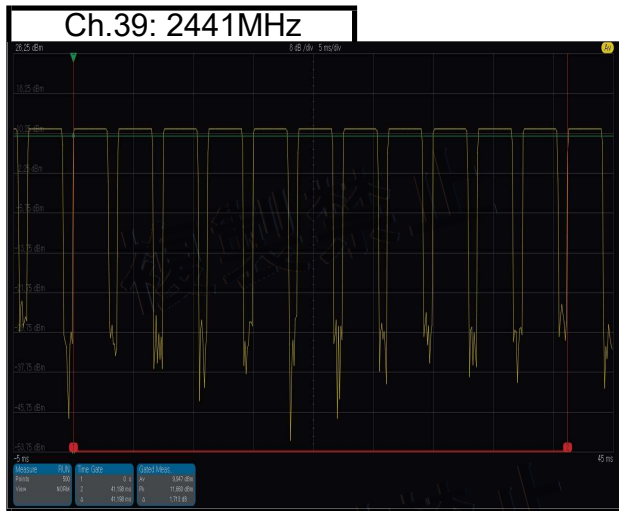
9.2 Unwanted(Spurious) emission strength (Rated voltage)





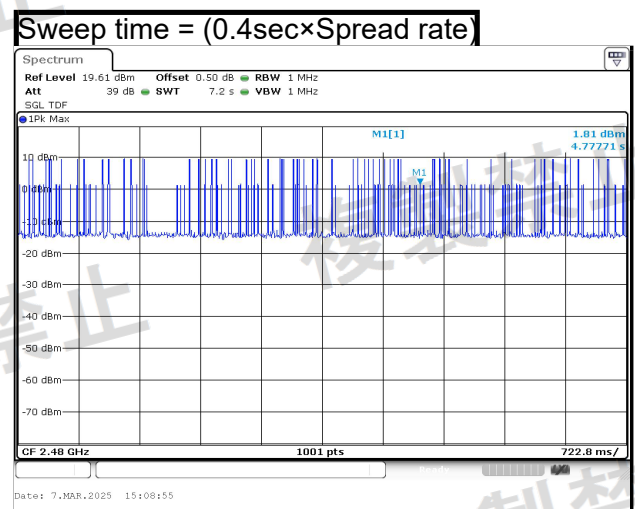
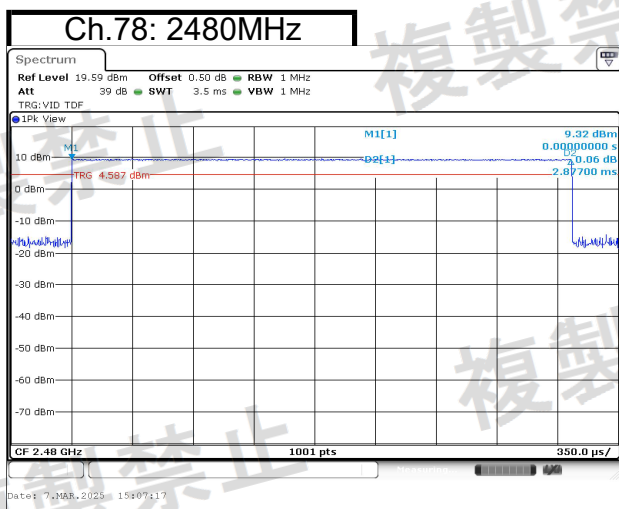
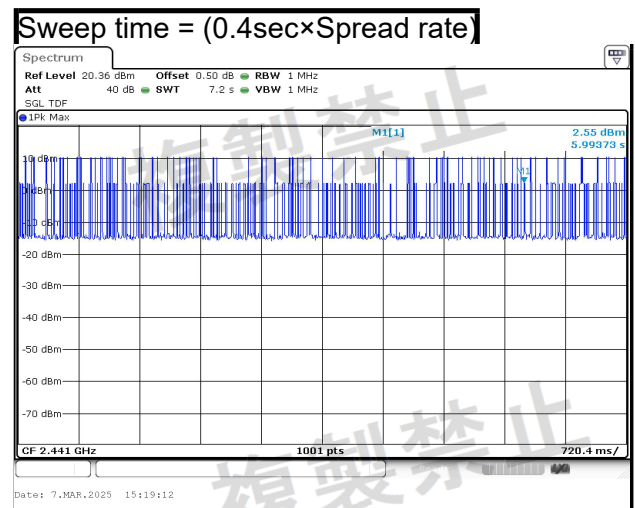
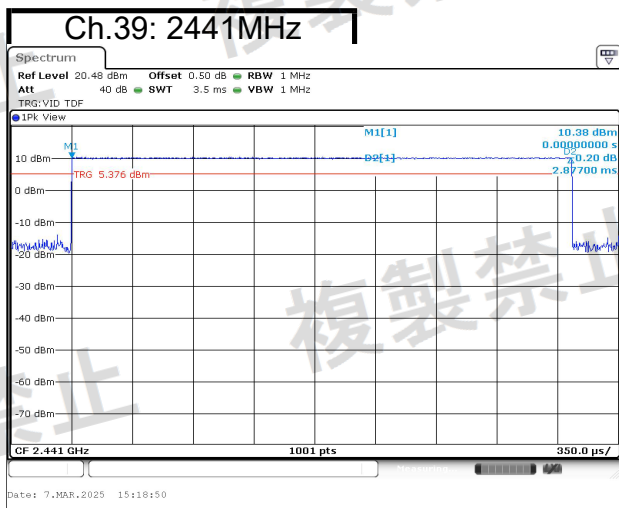
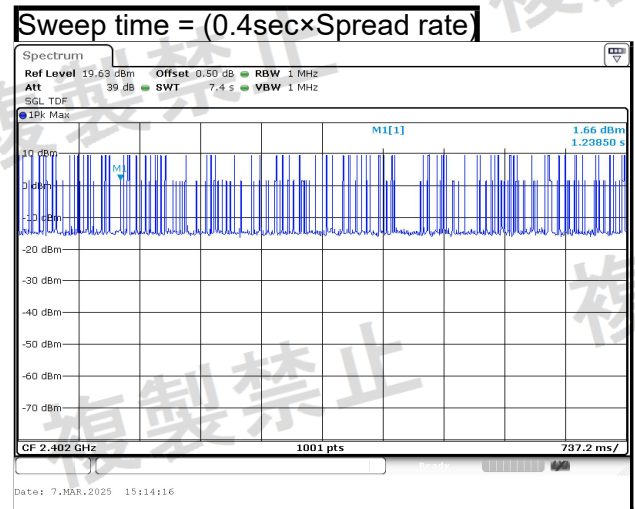
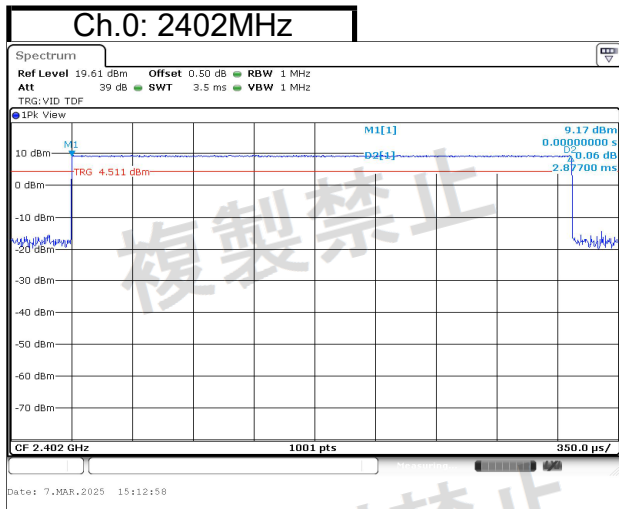


9.3 RF output power tolerance (Rated voltage)



9. Test chart

9.4 Time of occupancy hopping frequency (Rated voltage)



3. Test results (Rated voltage)

S/N : TP-54

Environment of test room	Date of test	2025-02-24	2025-02-25	2025-03-24
	Temperature	24 °C	25 °C	23 °C
	Humidity	51 %	52 %	51 %

Peak Antenna Gain	-2.48	dBi
Declaration Output Power	0.50	mW/MHz
Declaration Output Power	-3.01	dBm/MHz
E.I.R.P.	-5.49	dBm/MHz
Input Power Voltage	3.80	VDC

Tested Circuit Insertion Loss		0	dB
Frequency equal to the Transmission rate		1	MHz
Transmission Time	ON TIME	2.884	ms
	OFF TIME	0.865	ms
	Ratio	0.769	
Packet Type (Mode)		DH5	mode
Transmit Speed		1	MHz

Using TDF and offset function in Spectrum Analyzer.
Measurement of plots are included Loss value.

(Att : 10dB + Cable loss + Power Divider + EUT cable: 0.5dB offset)

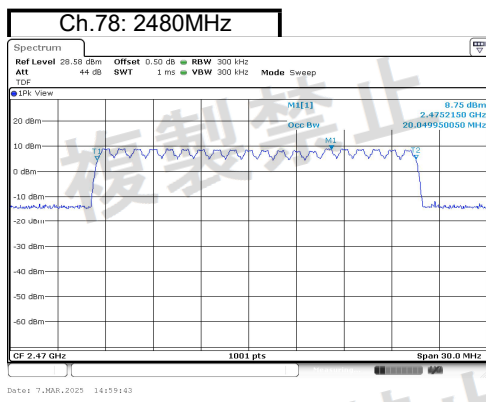
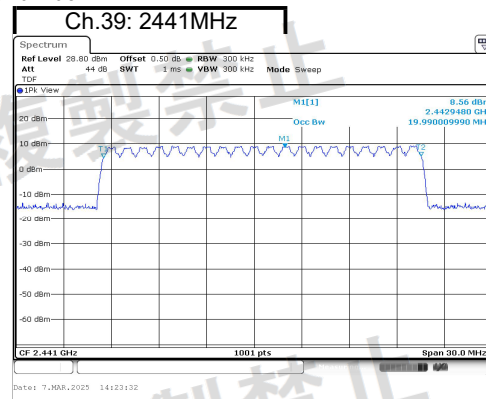
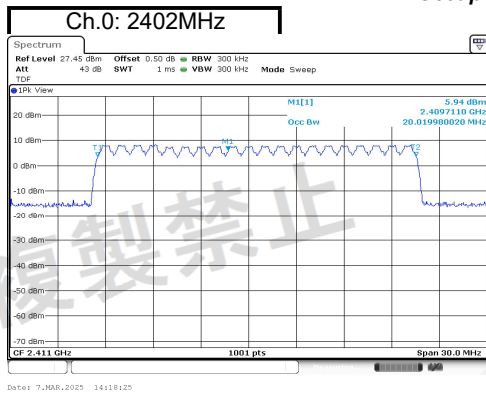
Test category ;	2.4GHz Band Low-Power Data Communication System (Bluetooth+EDR [8DPSK]*AFH)
The reason why the tests are performed only at rated voltage :	The fluctuation of input voltage to the circuit of the radio part of the equipment to be tested is identified as being less than $\pm 1\%$ when input voltage from an external supply into the equipment fluctuates $\pm 10\%$.

Measurement Frequency	MHz	2402	2441	2480	Result	Limit	Note
Channel Number	Ch.	0	39	78	---	---	
Frequency Measurements	MHz	---	---	---	---	---	
Frequency Tolerance	ppm	---	---	---	---	$\pm 50 \times 10^{-6}$ (50ppm)	
Occupied Bandwidth	MHz	20.02	19.99	20.05	PASS	83.5MHz or below	
Spread Bandwidth	MHz	18.37	18.19	18.31	---	---	
RF Output Power	mW/MHz	---	0.423	---	PASS	3mW/MHz or below	
RF Output Power Tolerance	%	---	-15.36	---	PASS	+20 %	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.428	0.474	0.412	PASS	2.5uW/MHz or below
		MHz	1759.500	2211.600	2230.400	---	
	2387 to 2400MHz	uW/MHz	6.561	0.519	0.474	PASS	25uW/MHz or below
		MHz	2399.994	2390.929	2387.760	---	
	2483.5 to 2496.5MHz	uW/MHz	0.582	0.525	0.497	PASS	25uW/MHz or below
		MHz	2484.156	2486.753	2489.351	---	
	2496.5 to 12500MHz	uW/MHz	1.297	1.303	1.164	PASS	2.5uW/MHz or below
		MHz	10666.500	6918.500	6728.500	---	
Time of occupancy hopping frequency	sec	0.0029	0.0031	0.0029	PASS	0.4sec or below	
	sec	0.2307	0.2569	0.2567	PASS	0.4sec or below	0.4sec×Spread rate
Spreading Factor		---	18.3716	18.1918	18.3117	PASS	5 or more
Interference Prevention Function		Good			PASS		

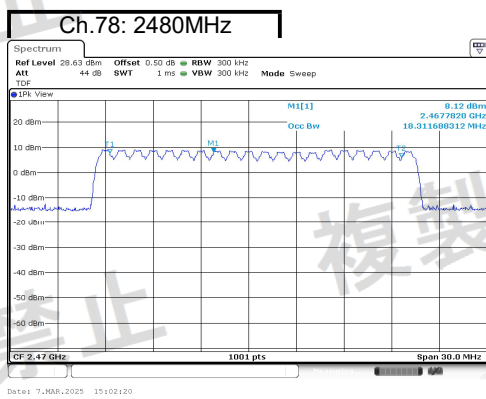
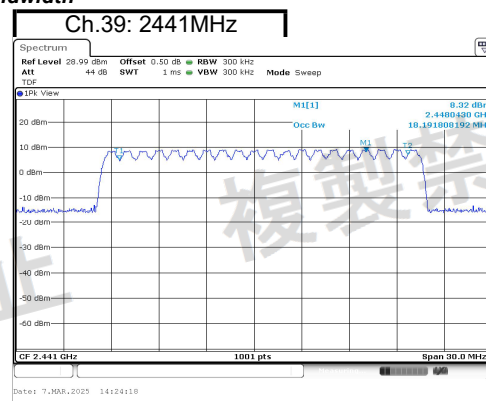
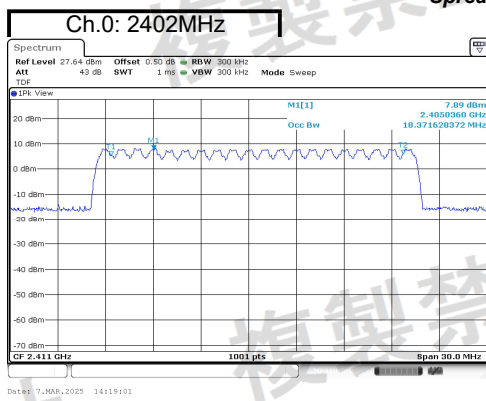
9. Test chart

9.1 Occupied bandwidth / Spread bandwidth (Rated voltage)

Occupied bandwidth

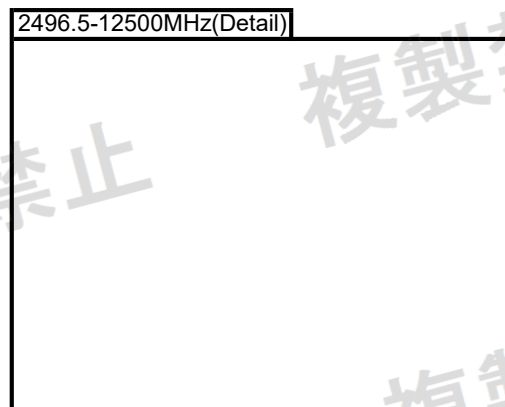
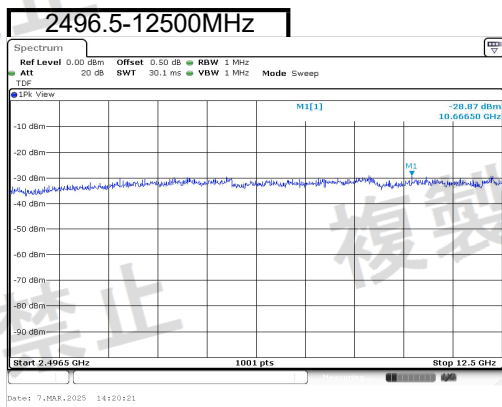
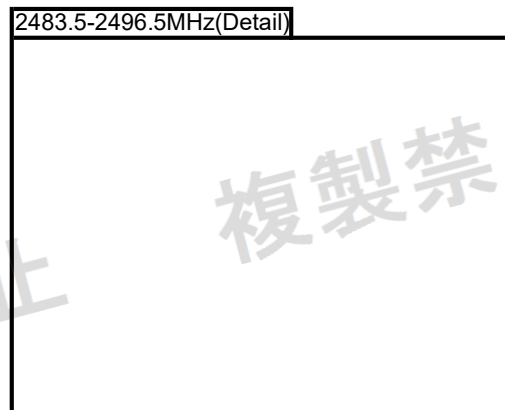
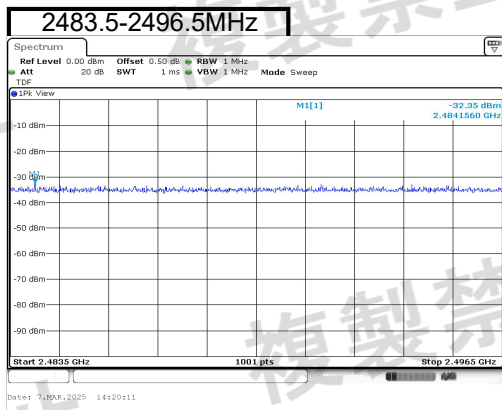
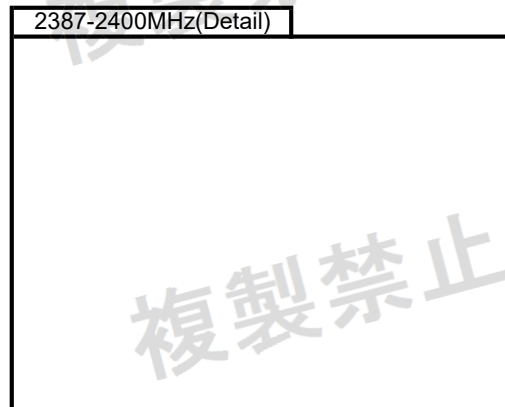
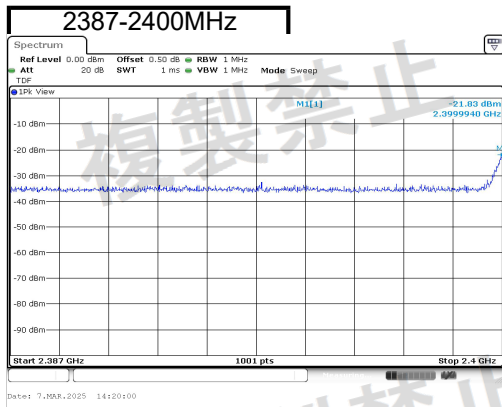
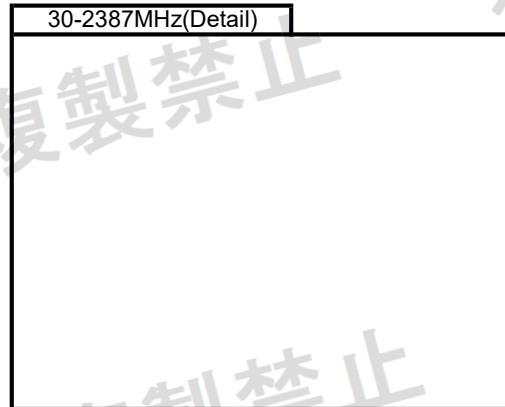
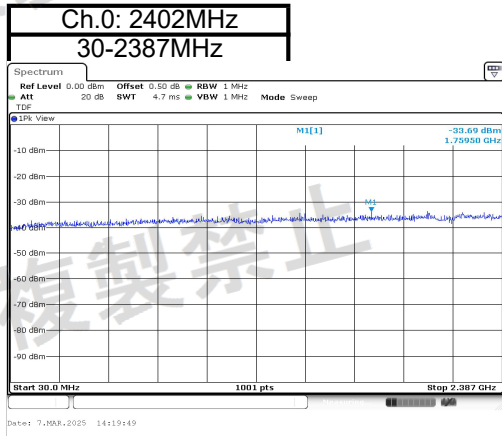


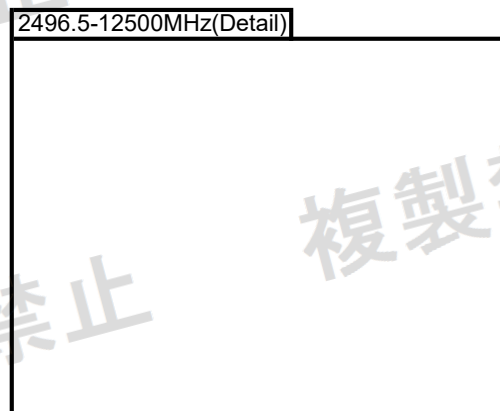
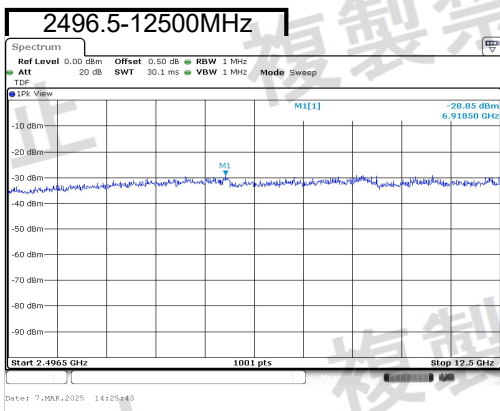
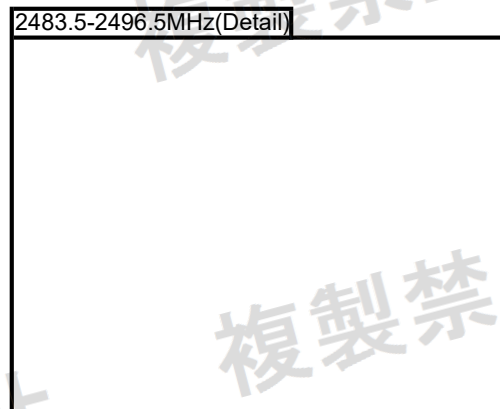
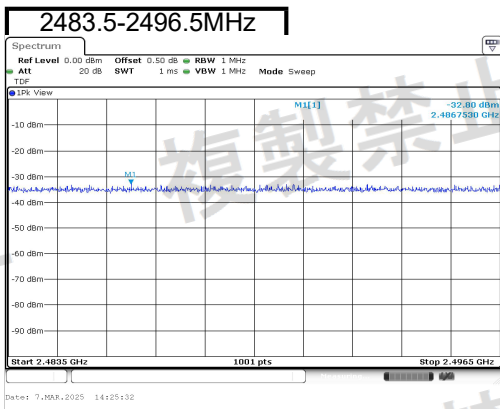
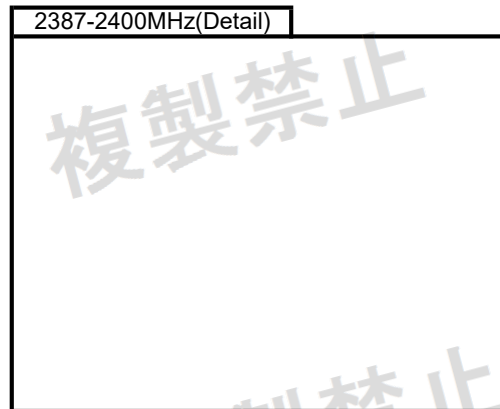
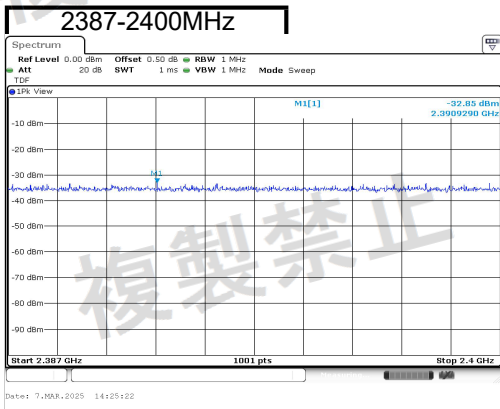
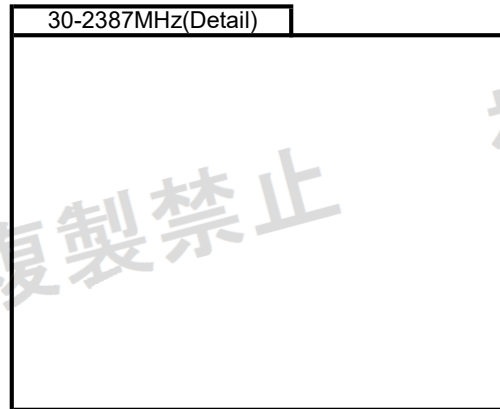
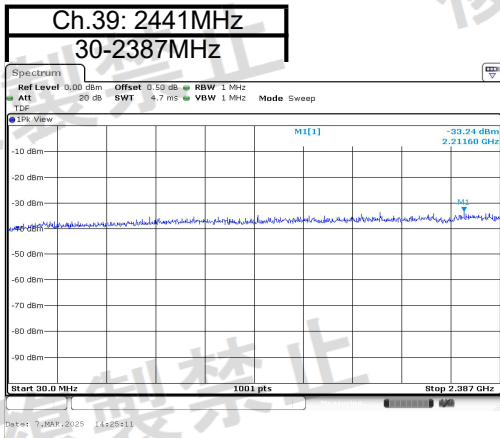
Spread bandwidth

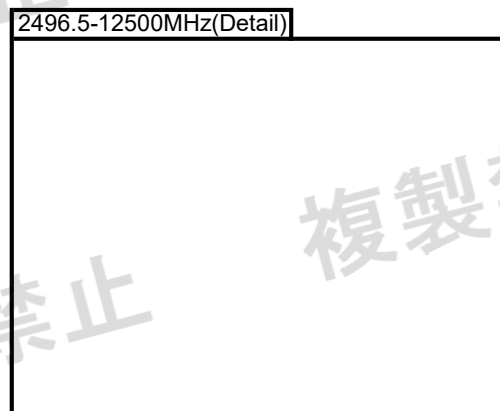
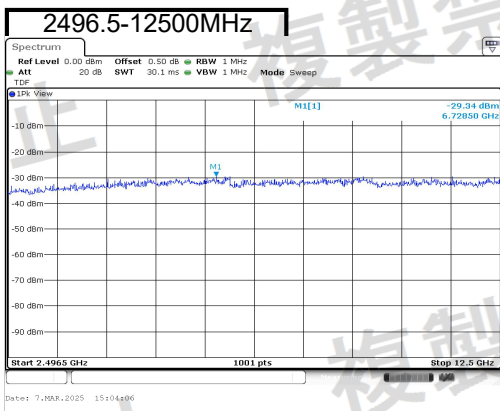
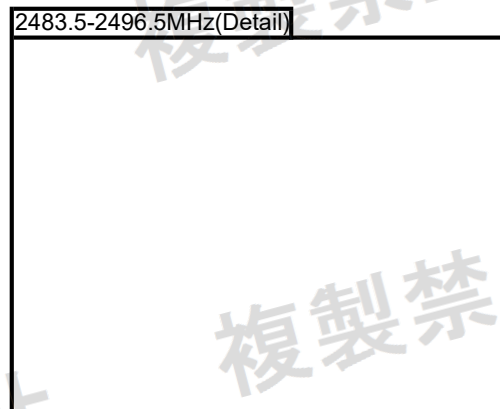
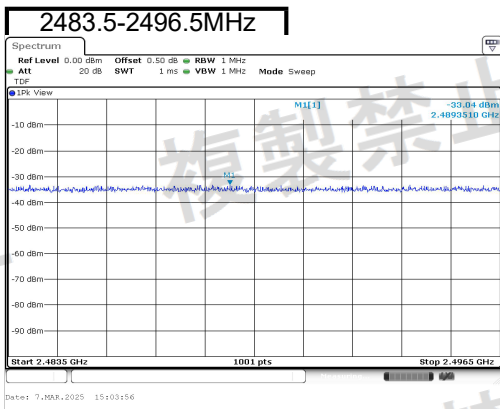
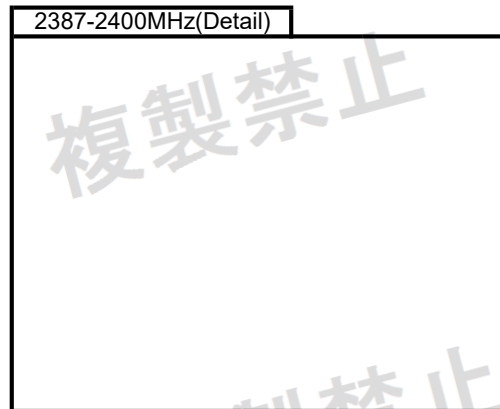
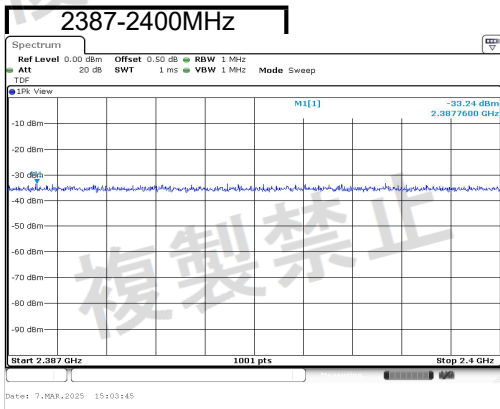
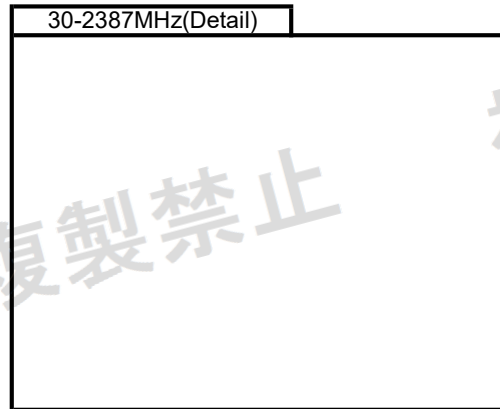
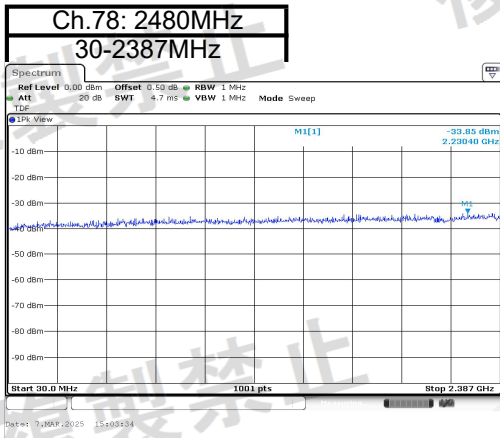


9. Test chart

9.2 Unwanted(Spurious) emission strength (Rated voltage)

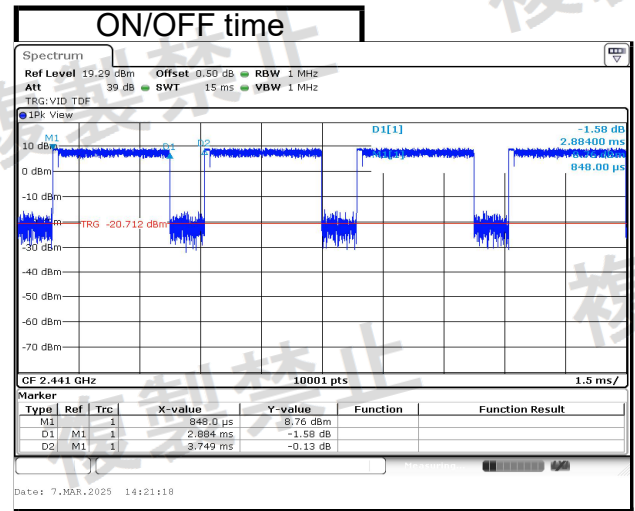
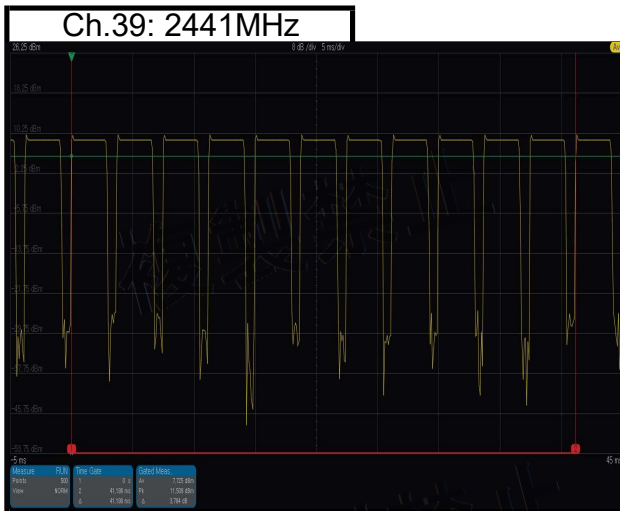






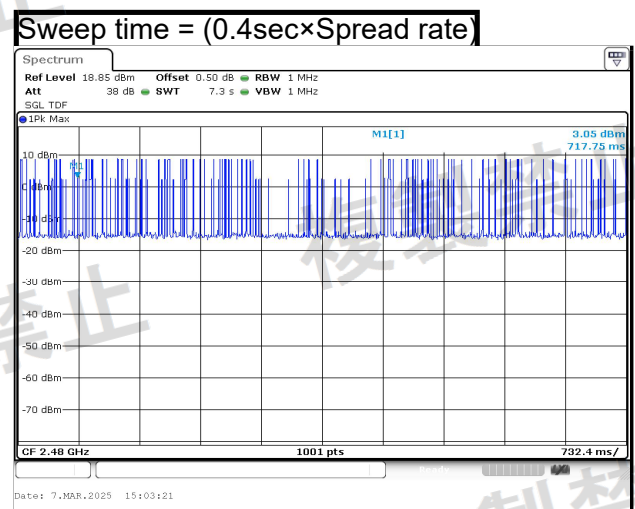
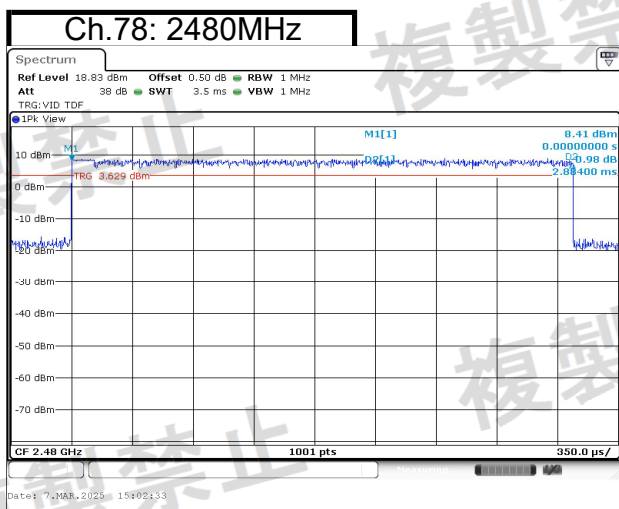
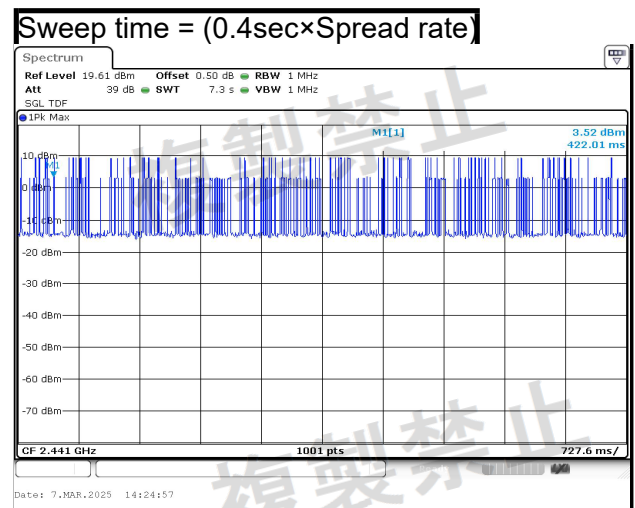
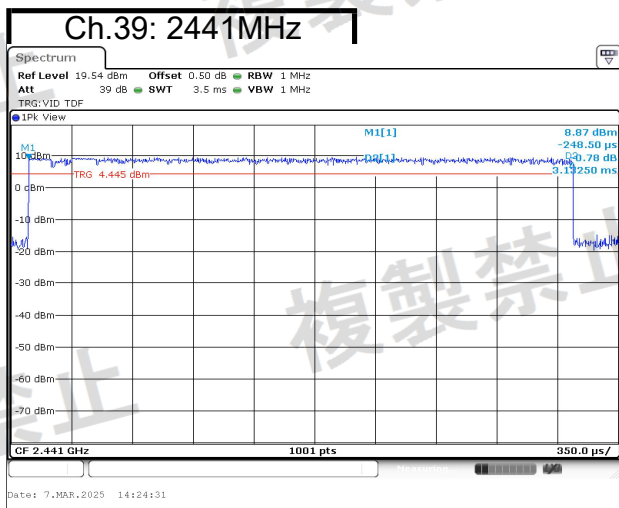
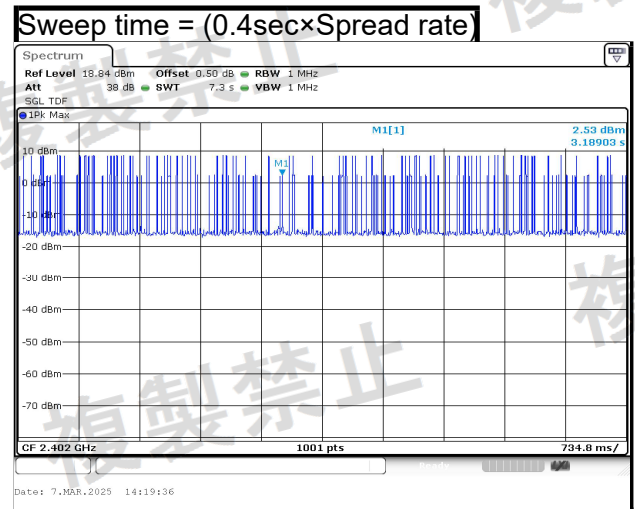
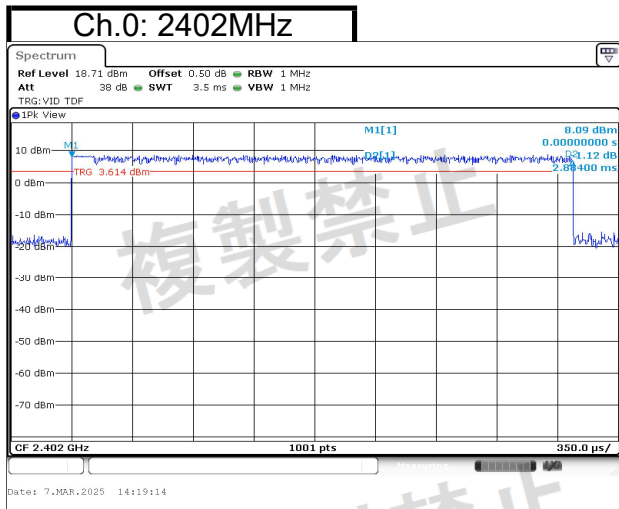
9. Test chart

9.3 RF output power tolerance (Rated voltage)



9. Test chart

9.4 Time of occupancy hopping frequency (Rated voltage)



10. Laboratory description

1. Location

Name: Eurofins KCTL Inc.

65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea

Telephone Number: +82 70 5008 1021

Facsimile Number: +82 505 299 8311

2. Accreditation and Registration

1) FCC

Site Designation No.: KR0040

Site Registration No.: 687132

2) VCCI

Registration No.: R-20080, G-20078, C-20059, T-20056

3) Industry Canada

Registration No.: 8035A

Test Site No.: 8035A-2

4) KOLAS

Registration No.: KT231