

TEST REPORT

Report number : KR25-SRT0001-A

Issue date : 2025-01-23

Applicant : HOIMYUNG ICT Corporation
1203, 8th Daeryungtechnotown, 96,
Gamasan-ro, Geumcheon-gu, Seoul, Republic of Ko
TEL : 010-5421-7555
FAX : 02-6958-3530

Equipment under test (EUT) : Telematics mangement Terminal

Model name : DTM-02L

Date of test : 24.11.12 ~ 24.11.19

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.,Ltc**
Eurofins KCTL Co., Ltd. is in compliance with KS Q ISO 17025.

Tested by;



Hyesom Shin

Approved by;



Heeusu Ahn

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
1	Voltage fluctuation	Conducted	PASS
3	Frequency Tolerance	Conducted	PASS
4	Occupied Bandwidth	Conducted	PASS
4	Spread Bandwidth	Conducted	N/A
5	Unwanted (Spurious) Emission Strength	Conducted	PASS
6	RF Output Power Tolerance	Conducted	PASS
7	Secondary Emitted Radio Wave Strength	Conducted	PASS
8	Carrier Sensing Function (1)	Conducted	N/A
9	Carrier Sensing Function (2)	Conducted	N/A
10	Carrier Sensing Function (3)	Conducted	N/A
11	Transmit Frequency Switching Function	Conducted	N/A
12	Absolute Gain of Transmission Antenna	Conducted	N/A
13	Angle Width of Principal Radiation from Transmission Antenna	Conducted	N/A
14	Interference Prevention Function	Conducted	PASS
15	Hopping frequency dwell time	Conducted	N/A

1) Test set up

Table-Top

2) Modification to the EUT by laboratory

None

1. Test Information

1. Applicant

HOIMYUNG ICT Corporation

1203, 8th Daeryungtechnotown, 96, Gamasan-ro, Geumcheon-gu, Seoul, Republic of Korea

2. Equipment under test

Telematics mangement Terminal

3. Model number

DTM-02L

4. Serial number

N/A

5. Size

(W) 117.7 x (D) 117.7 x (H)47.5

6. Terminal limitation

-30°C to 70°C

7. RF Specification Frequency range

2402-2480MHz

8. Number of RF Channels

40 Channels

9. Modulation method

GFSK

10. Data rate

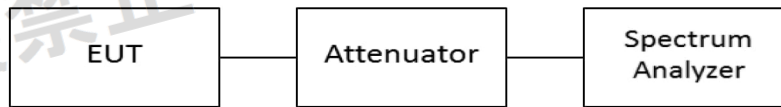
1, 2Mbps

10. Variation of the family model(s)

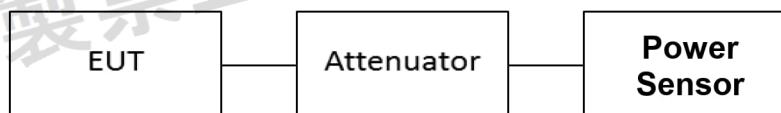
None

2. Configuration of equipment

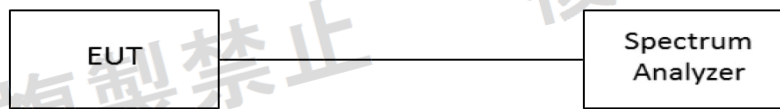
1. Frequency tolerance, Occupied Bandwidth, Unwanted(Spurious) emission strength



2. RF output power tolerance



3. Secondary emitted radio wave strength



3. Test results (Rated voltage)

S/N : N/A

Environment of test room	Date of test	2024-11-12	2024-11-19
	Temperature	21 °C	22 °C
	Humidity	51 %	53 %

Peak Antenna Gain	3.50	dBi
Declaration Output Power	1.80	mW
Declaration Output Power	2.55	dBm
E.I.R.P.	6.05	dBm
Input Power Voltage	12.0	VDC

Tested Circit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.39	ms
	OFF TIME (0.1sec or more)	0.24	ms
	Ratio	0.619	%
Packet Type (Mode)		37 Packet	mode
Transmit Speed		1	MHz

Using TDF and offset function in Spectrum Analyzer.
Measurement of plots are included Loss value.
(Att : 10dB + Cable loss + EUT cable: 0.5dB offset)

Test category :	2.4GHz Band Low-Power Data Communication System (GFSK/0-39ch)
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Measurement Frequency		MHz	2402	2440	2480	Result	Limit	Note
Channel Number		Ch.	0	19	39	---	---	
Frequency Measurements		MHz	2401.995	2439.995	2479.995	---	---	
Frequency Tolerance		ppm	-2.080	-2.047	-2.014	PASS	±50×10 ⁻⁶ (50ppm)	
Occupied Bandwidth		MHz	1.08	1.08	1.08	PASS	26MHz or below	
RF Output Power		mW	1.98	2.02	1.92	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	10.155	12.461	6.415		+20%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.026	0.027	0.023	PASS	2.5uW/MHz or below	
		MHz	2275.200	2312.800	2352.900	----		
	2387 to 2400MHz	uW/MHz	1.875	0.021	0.021	PASS	25uW/MHz or below	
		MHz	2399.994	2388.357	2399.643	----		
	2483.5 to 2496.5MHz	uW/MHz	0.021	0.020	0.427	PASS	25uW/MHz or below	
		MHz	2494.766	2487.052	2483.675	----		
	2496.5 to 12500MHz	uW/MHz	0.044	0.055	0.048	PASS	2.5uW/MHz or below	
		MHz	6199.500	6908.500	7438.500	----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.018	0.008	0.010	PASS	4nW or below	
		MHz	903.580	890.010	774.700	----		
	1000 to 12500MHz	nW	0.272	0.157	0.253	PASS	20nW or below	
		MHz	3453.000	3430.000	3418.000	----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			----	*1	
Angular width of the main radiation of the transmitting antenna			-			----	*1	

*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz

3. Test results (-10% voltage)

S/N : N/A

Environment of test room	Date of test	2024-11-12	2024-11-19
	Temperature	21 °C	22 °C
	Humidity	51 %	53 %

Peak Antenna Gain	3.50	dBi
Declaration Output Power	1.80	mW
Declaration Output Power	2.55	dBm
E.I.R.P.	6.05	dBm
Input Power Voltage	10.8	VDC

Tested Circit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.39	ms
	OFF TIME (0.1sec or more)	0.24	ms
	Ratio	0.6190	%
Packet Type (Mode)		37 Packet	mode
Transmit Speed		1	MHz

Using TDF and offset function in Spectrum Analyzer.
Measurement of plots are included Loss value.
(Att : 10dB + Cable loss + EUT cable: 0.5dB offset)

Test category :	2.4GHz Band Low-Power Data Communication System (GFSK/0-39ch)
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Measurement Frequency		MHz	2402	2440	2480	Result	Limit	Note
Channel Number		Ch.	0	19	39	---	---	
Frequency Measurements		MHz	2401.995	2439.995	2479.995	---	---	
Frequency Tolerance		ppm	-2.080	-2.047	-2.014	PASS	±50×10 ⁻⁶ (50ppm)	
Occupied Bandwidth		MHz	1.07	1.08	1.08	PASS	26MHz or below	
RF Output Power		mW	1.97	2.02	1.92	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	9.649	12.461	6.415		+20%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.033	0.023	0.026	PASS	2.5uW/MHz or below	
		MHz	2275.200	2312.800	2352.900	----		
	2387 to 2400MHz	uW/MHz	1.884	0.019	0.021	PASS	25uW/MHz or below	
		MHz	2399.981	2392.448	2399.643	----		
	2483.5 to 2496.5MHz	uW/MHz	0.022	0.019	0.461	PASS	25uW/MHz or below	
		MHz	2494.649	2487.844	2483.506	----		
	2496.5 to 12500MHz	uW/MHz	0.047	0.048	0.045	PASS	2.5uW/MHz or below	
		MHz	6898.500	6608.500	6678.500	----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.010	0.010	0.012	PASS	4nW or below	
		MHz	774.700	773.730	774.700	----		
	1000 to 12500MHz	nW	0.253	0.292	0.421	PASS	20nW or below	
		MHz	3418.000	3418.000	3476.000	----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			----	*1	
Angular width of the main radiation of the transmitting antenna			-			----	*1	

*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz

3. Test results (+10% voltage)

S/N : N/A

Environment of test room	Date of test	2024-11-12	2024-11-19
	Temperature	21 °C	22 °C
	Humidity	51 %	53 %

Peak Antenna Gain	3.50	dBi
Declaration Output Power	1.80	mW
Declaration Output Power	2.55	dBm
E.I.R.P.	6.05	dBm
Input Power Voltage	13.2	VDC

Tested Circit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.39	ms
	OFF TIME (0.1sec or more)	0.24	ms
	Ratio	0.6190	%
Packet Type (Mode)		37 Packet	mode
Transmit Speed		1	MHz

Using TDF and offset function in Spectrum Analyzer.
Measurement of plots are included Loss value.
(Att : 10dB + Cable loss + EUT cable: 0.5dB offset)

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Measurement Frequency		MHz	2402	2440	2480	Result	Limit	Note
Channel Number		Ch.	0	19	39	---	---	
Frequency Measurements		MHz	2401.995	2439.995	2479.995	---	---	
Frequency Tolerance		ppm	-2.080	-2.047	-2.014	PASS	±50×10 ⁻⁶ (50ppm)	
Occupied Bandwidth		MHz	1.08	1.08	1.08	PASS	26MHz or below	
RF Output Power		mW	1.97	2.02	1.92	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	9.649	12.461	6.415		+20%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.029	0.028	0.025	PASS	2.5uW/MHz or below	
		MHz	2272.800	2312.800	2286.900	----		
	2387 to 2400MHz	uW/MHz	1.936	0.019	0.024	PASS	25uW/MHz or below	
		MHz	2399.994	2392.682	2396.643	----		
	2483.5 to 2496.5MHz	uW/MHz	0.021	0.022	0.463	PASS	25uW/MHz or below	
		MHz	2485.169	2486.974	2483.636	----		
	2496.5 to 12500MHz	uW/MHz	0.045	0.057	0.055	PASS	2.5uW/MHz or below	
		MHz	11145.500	6648.500	6688.500	----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.010	0.012	0.011	PASS	4nW or below	
		MHz	774.700	777.610	775.670	----		
	1000 to 12500MHz	nW	0.210	0.256	0.304	PASS	20nW or below	
		MHz	3418.000	3487.000	3418.000	----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			----	*1	
Angular width of the main radiation of the transmitting antenna			-			----	*1	

*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz

複製禁止

4. Measurement equipment list

USE	Equipment	Company	Model No.	Serial No.	Calibrated by	Cal. Method	Cal. Due	Cal. Date
X	Spectrum analyzer	R&S	FSV40-N	101462	HCT	(c)	2025.10.10	2024.10.10
X	DC Power Supply	AGILENT	E3632A	MY40001543	HCT	(c)	2025.04.24	2024.04.24
X	Signal generator	R & S	SMB100A	176206	HCT	(c)	2025.01.18	2024.01.18
X	Attenuator	API Inmet	40AH2W-10	11	HCT	(c)	2025.04.30	2024.04.30
X	Attenuator	R & S	DNF	0005	HCT	(c)	2025.01.18	2024.01.18
X	Power Sensor	R & S	NRP-Z81	1137.9009.02-106224-tg	HCT	(c)	2025.07.01	2024.07.01

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～.

Cal.Method ... 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	$\pm 1.9\text{dB}$
Temperature	$\pm 1.0^{\circ}\text{C}$
Humidity	$\pm 3.3\%$

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

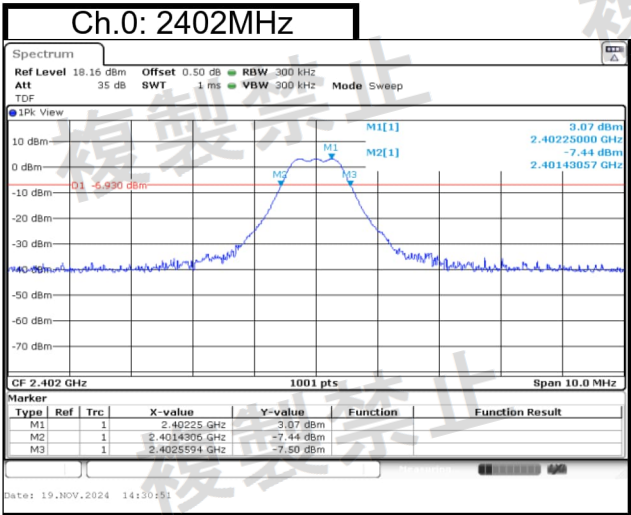
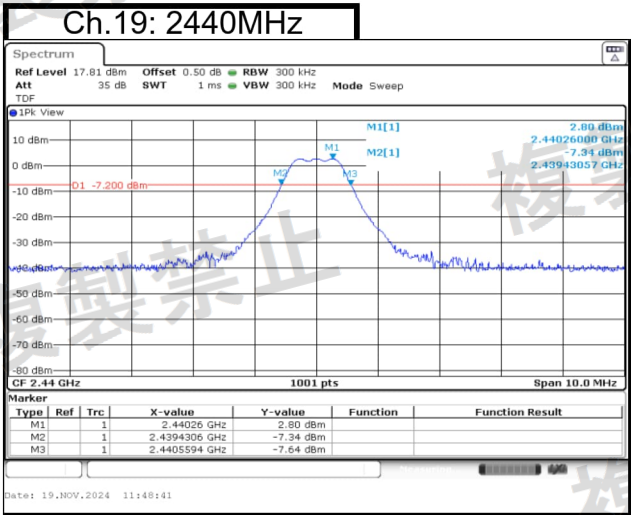
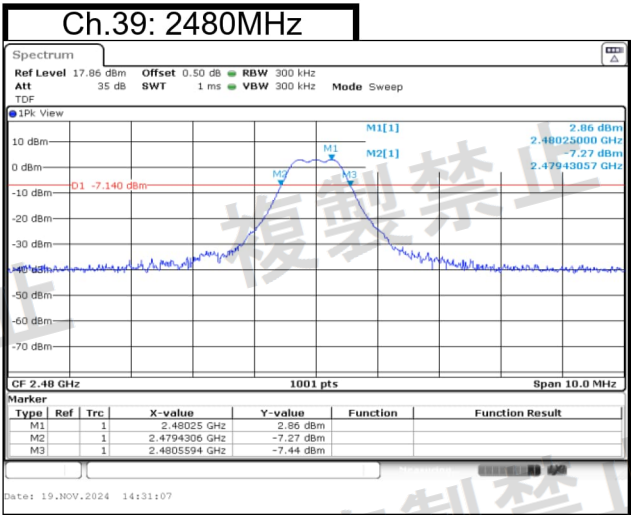
6. Photographs

Conducted Measurement Photo



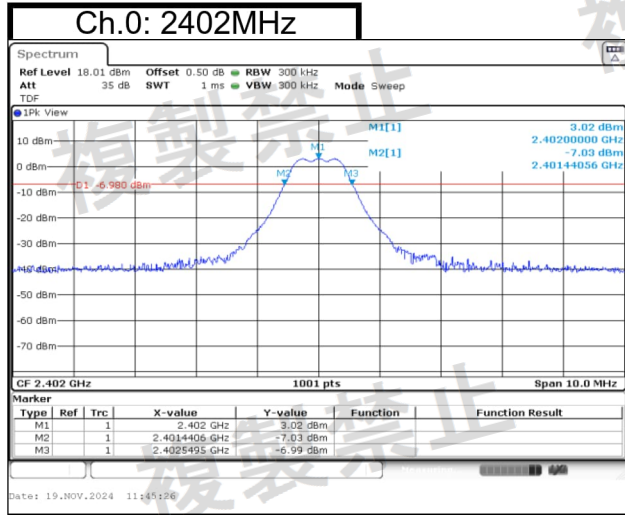
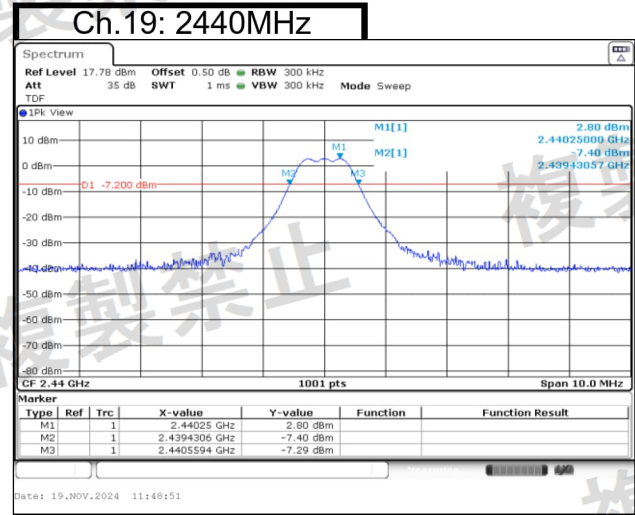
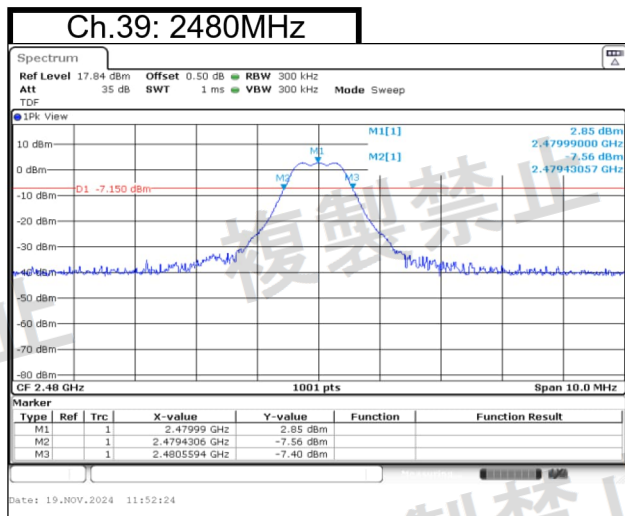
7. Test chart

7.1 Frequency tolerance (Rated voltage)



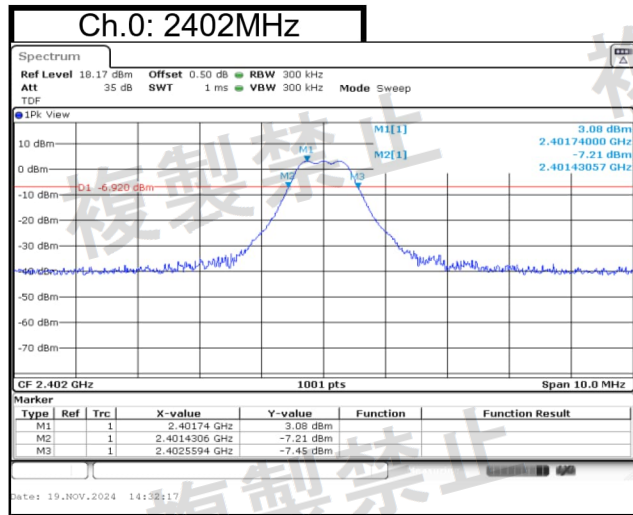
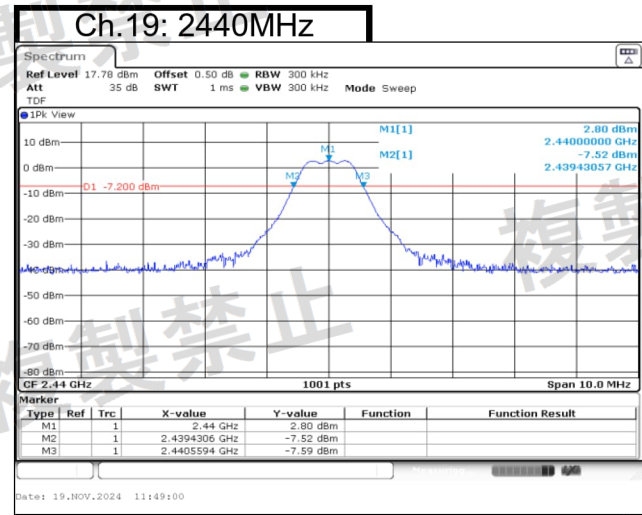
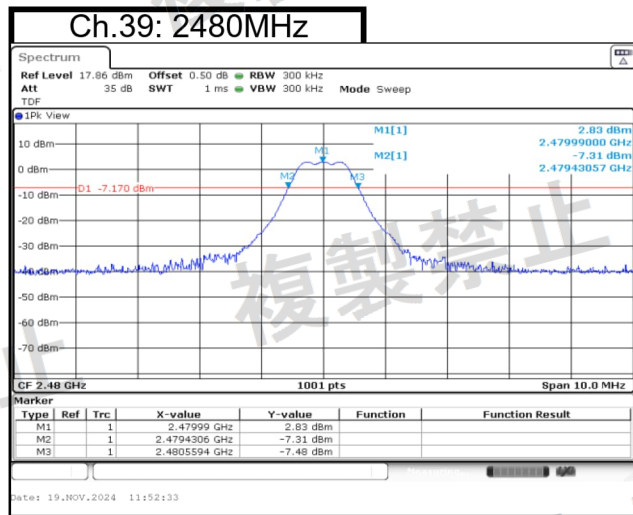
7. Test chart

7.1 Frequency tolerance (-10% voltage)



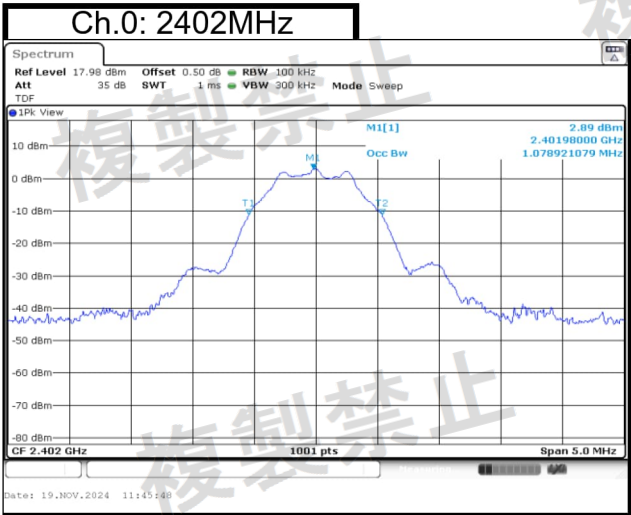
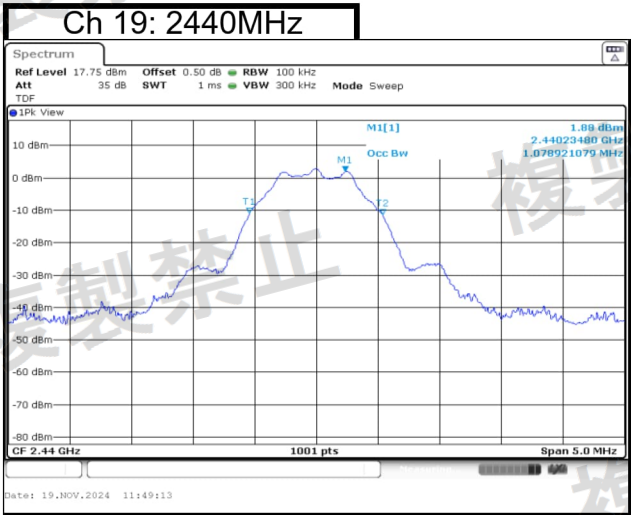
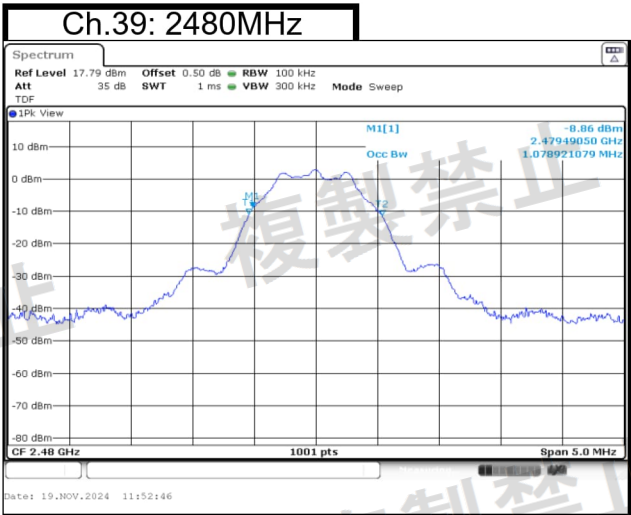
7. Test chart

7.1 Frequency tolerance (+10% voltage)



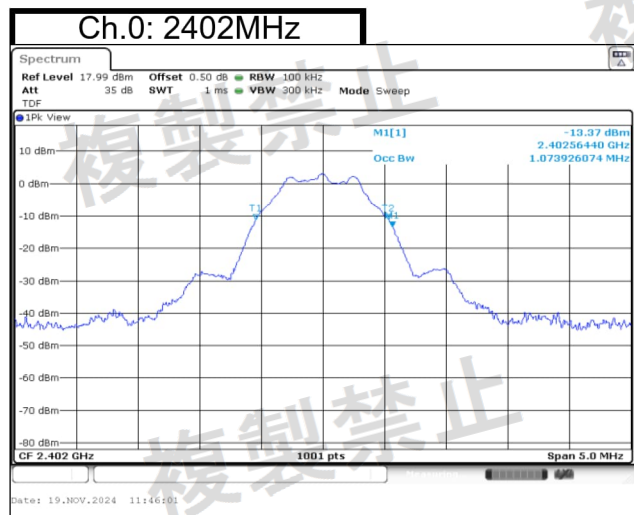
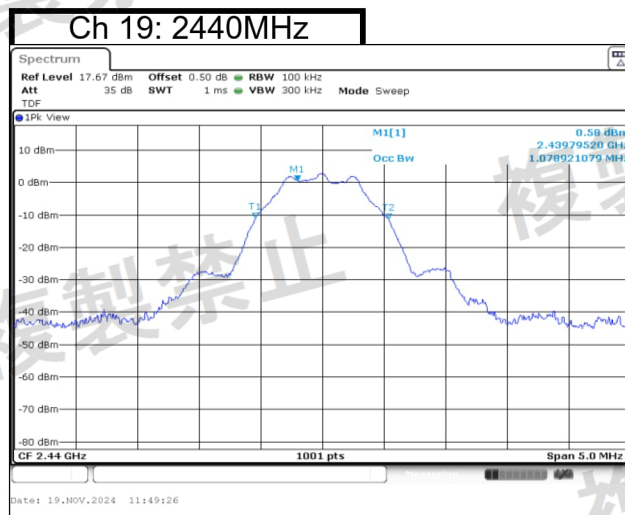
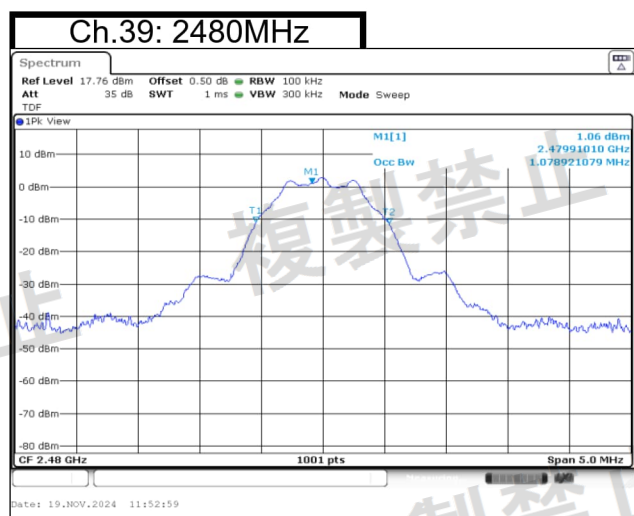
7. Test chart

7.2 Occupied bandwidth (Rated voltage)



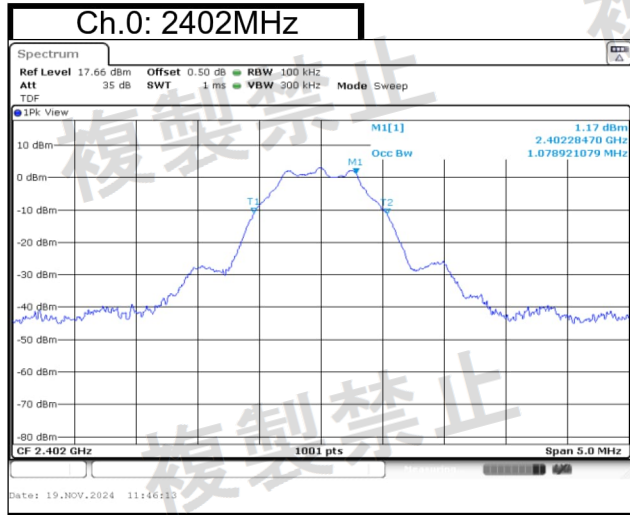
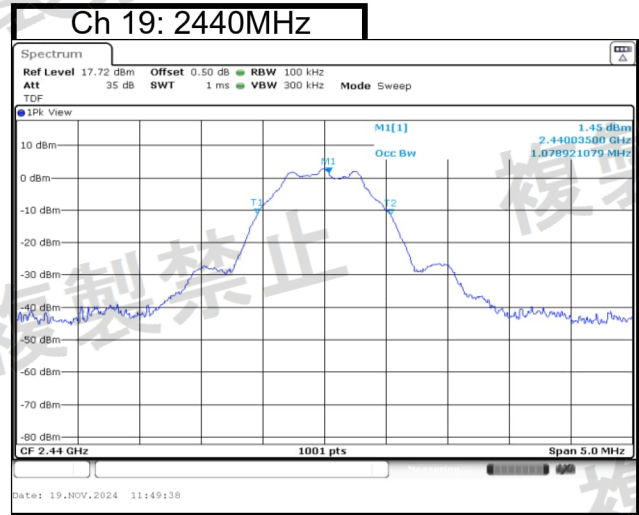
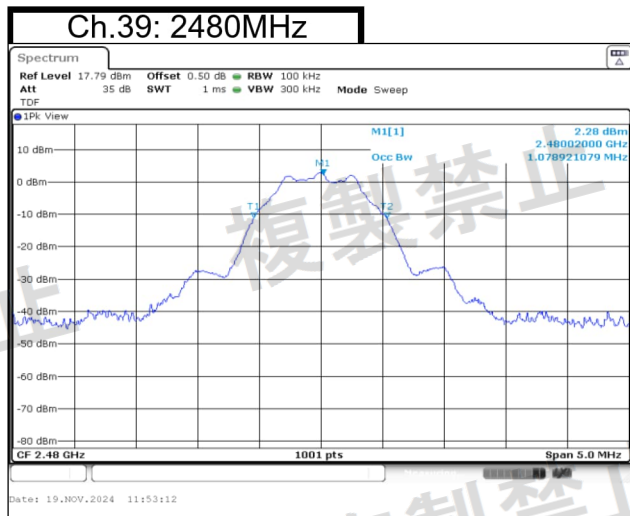
7. Test chart

7.2 Occupied bandwidth (-10% voltage)



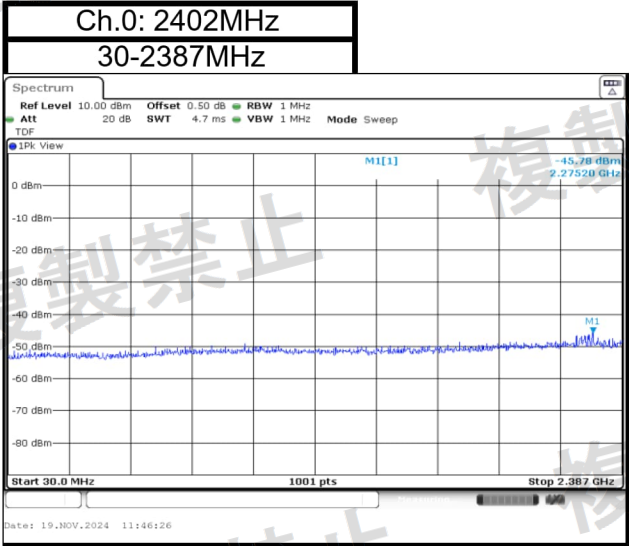
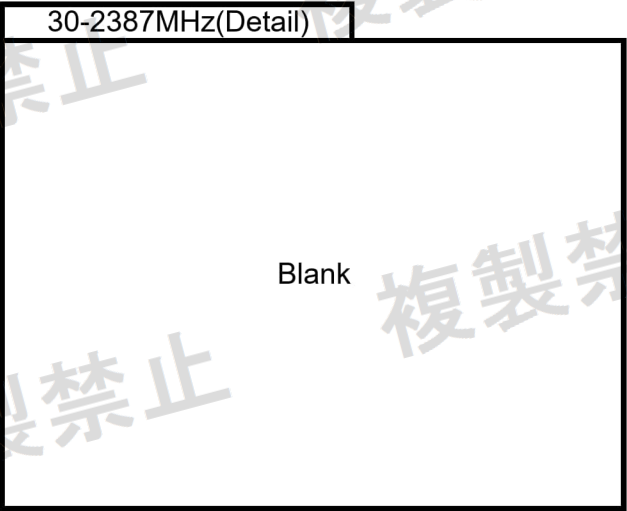
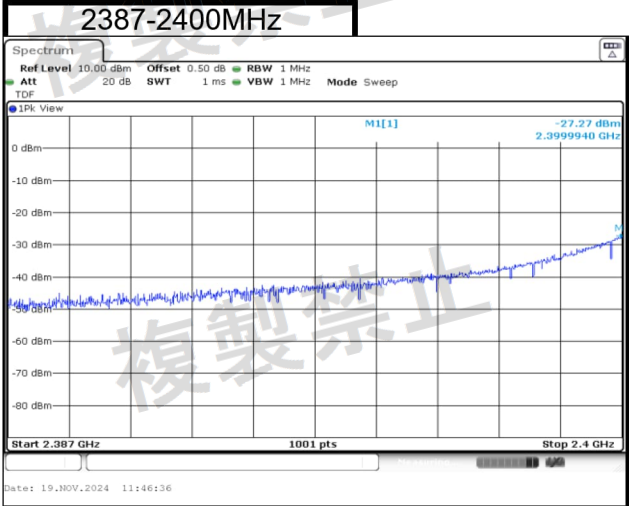
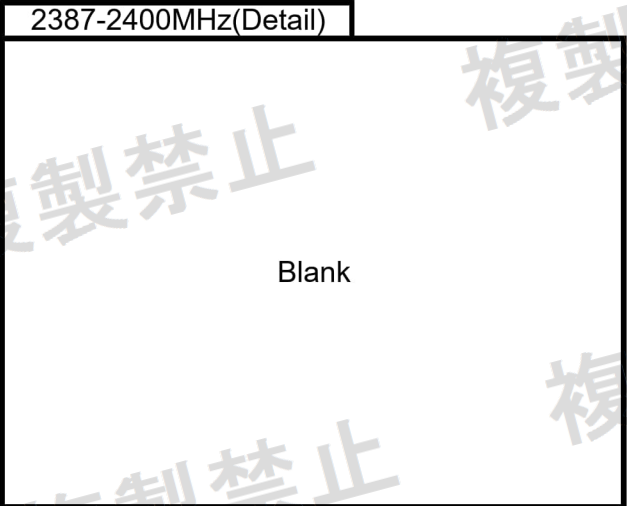
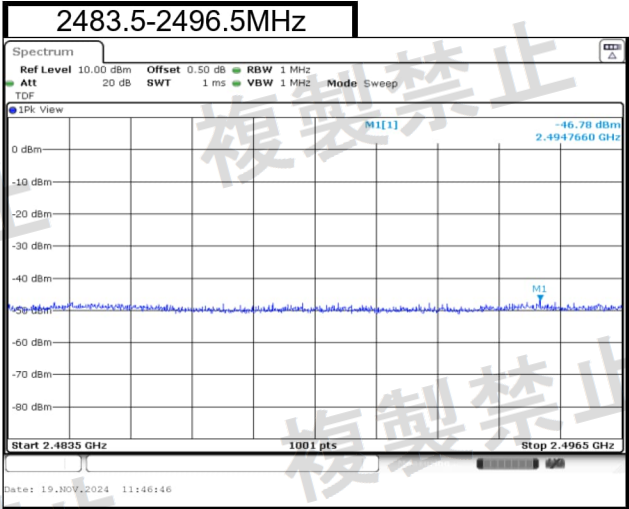
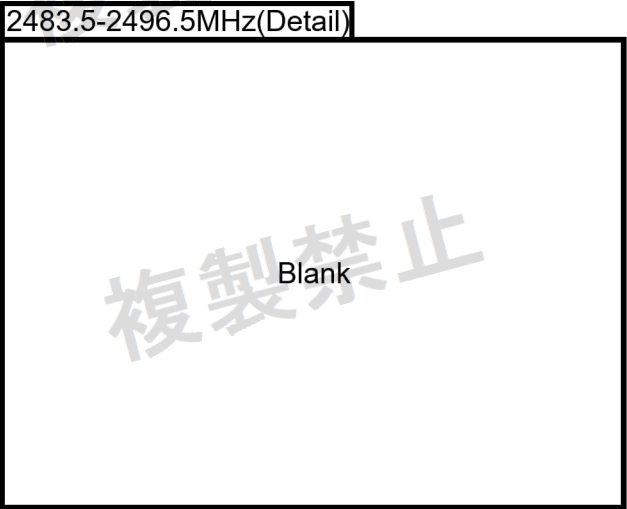
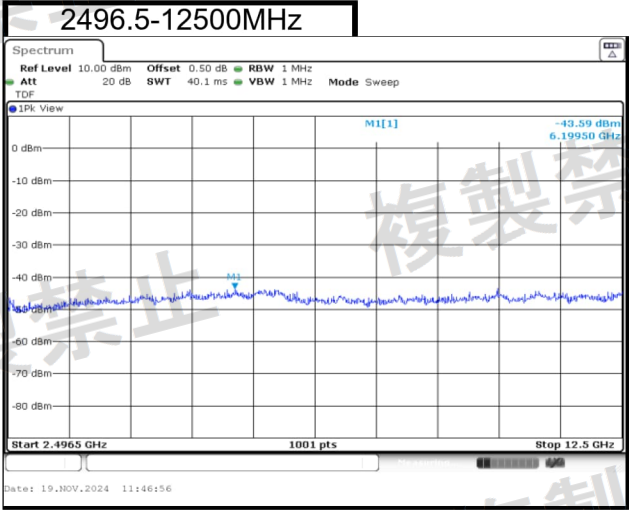
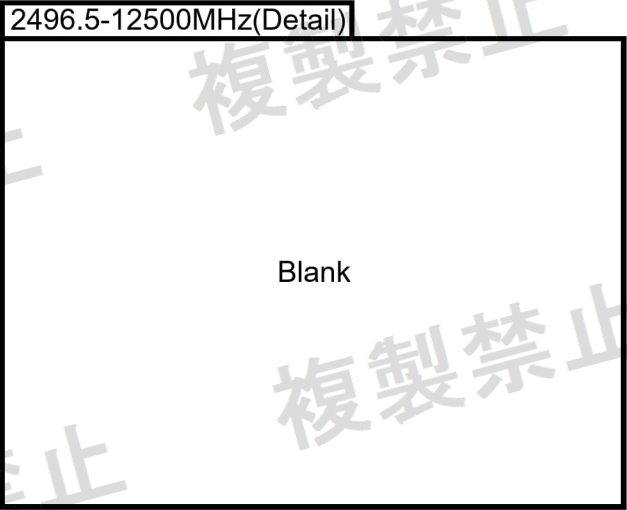
7. Test chart

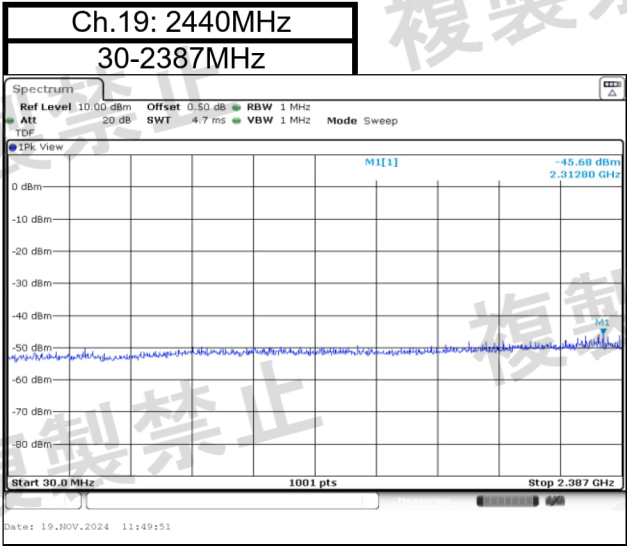
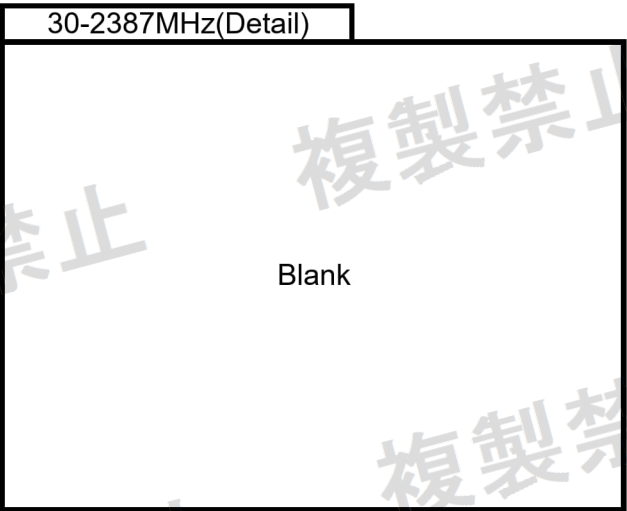
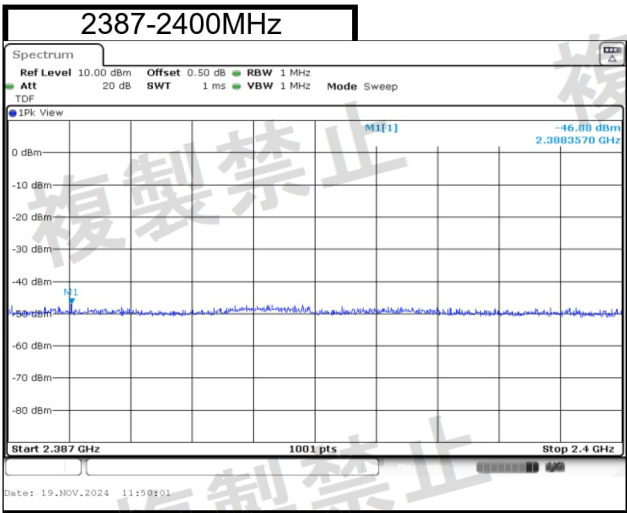
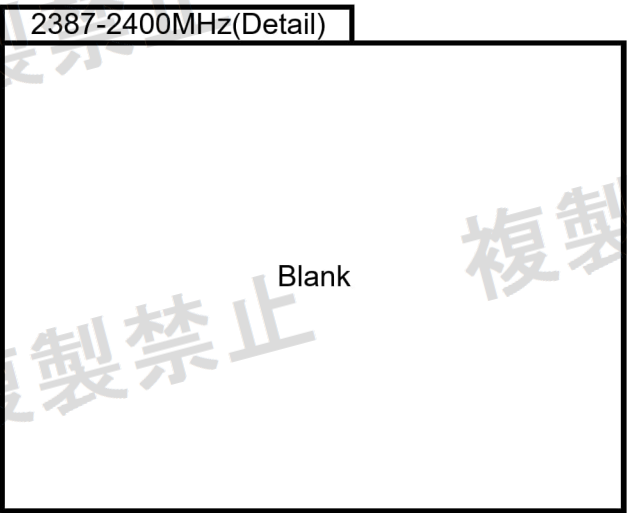
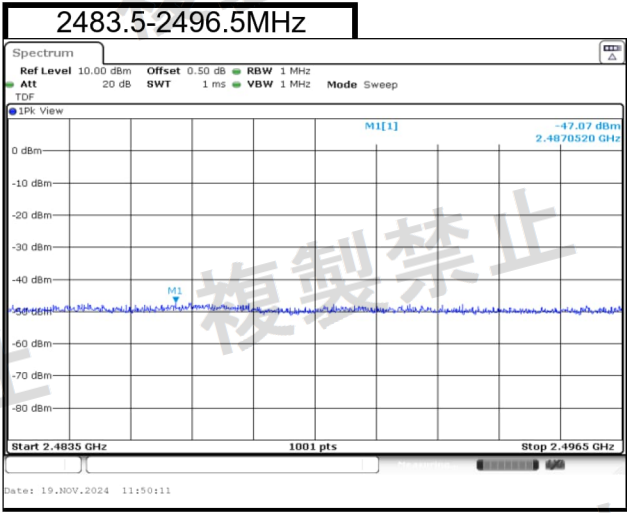
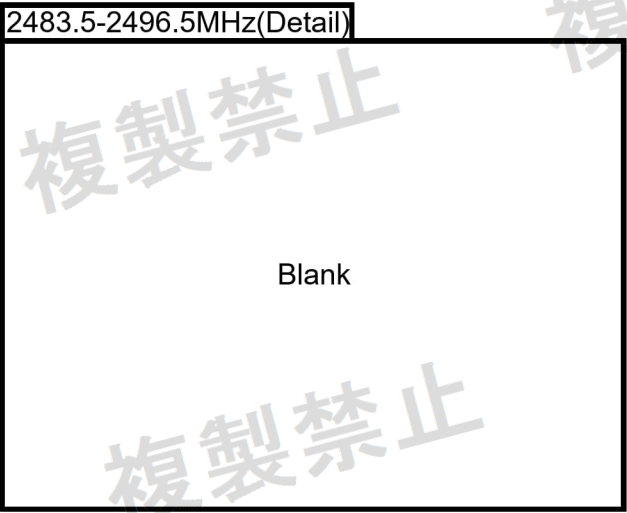
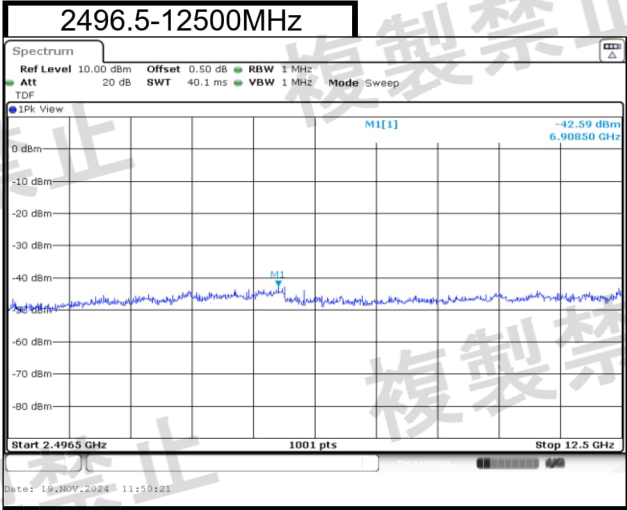
7.2 Occupied bandwidth (+10% voltage)

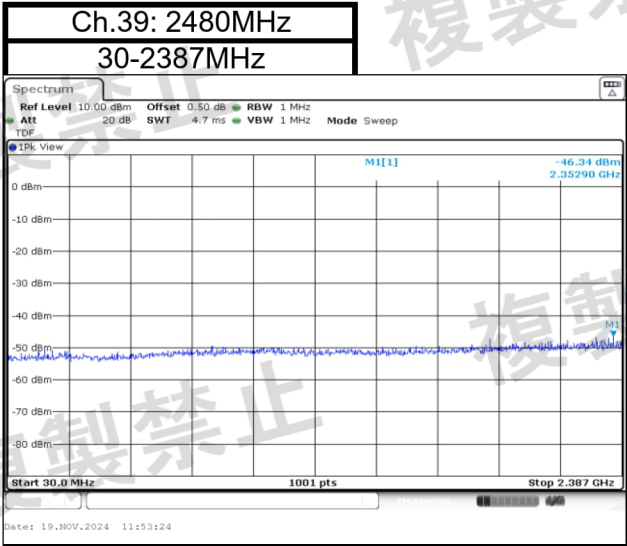
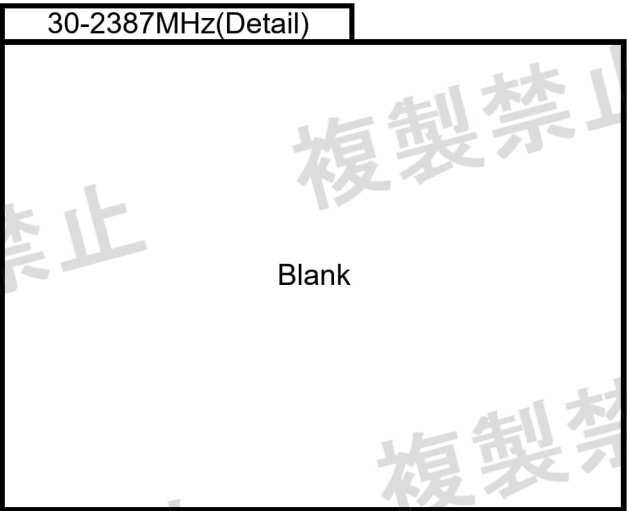
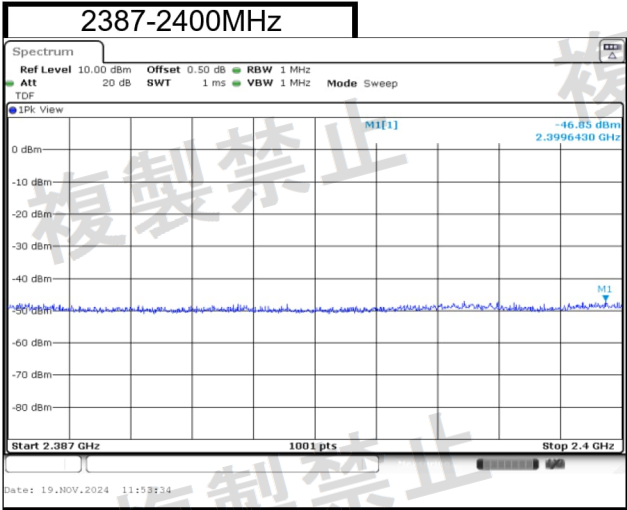
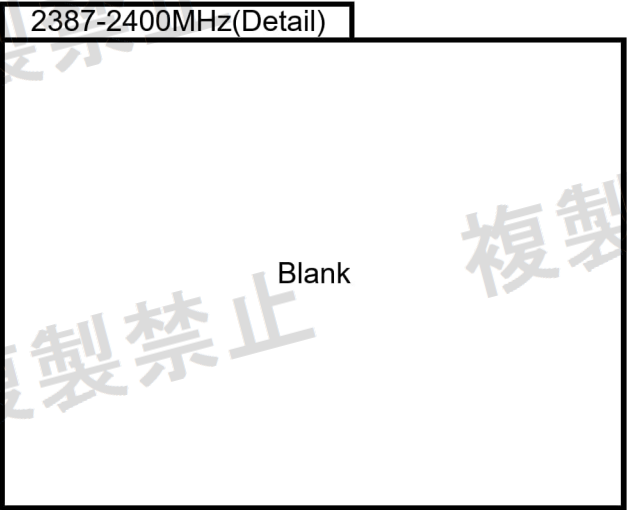
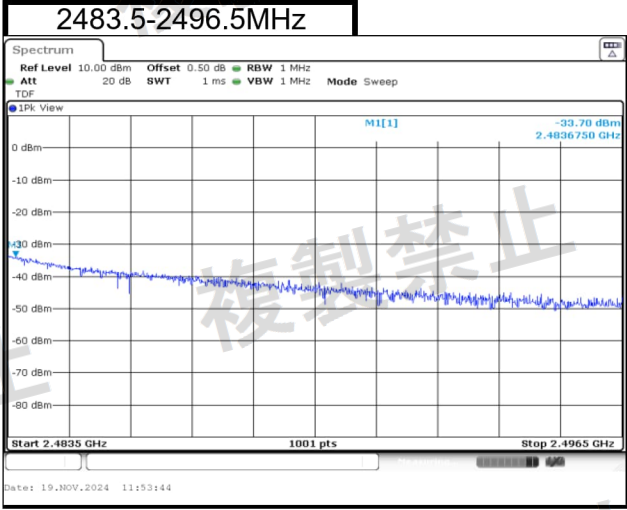
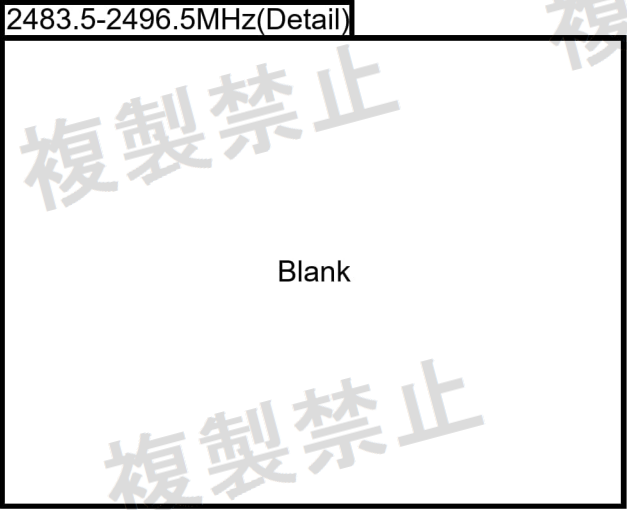
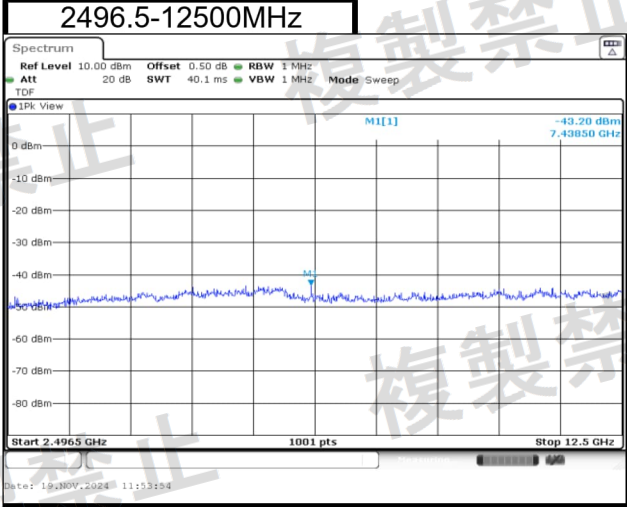


7. Test chart

7.3 Unwanted(Spurious) emission strength (Rated voltage)

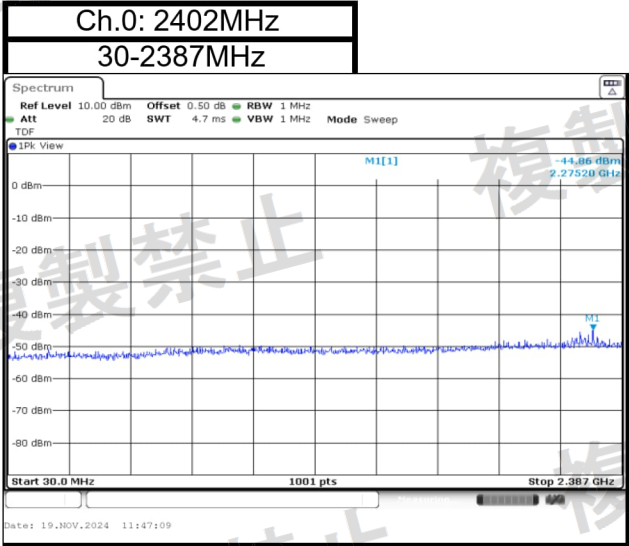
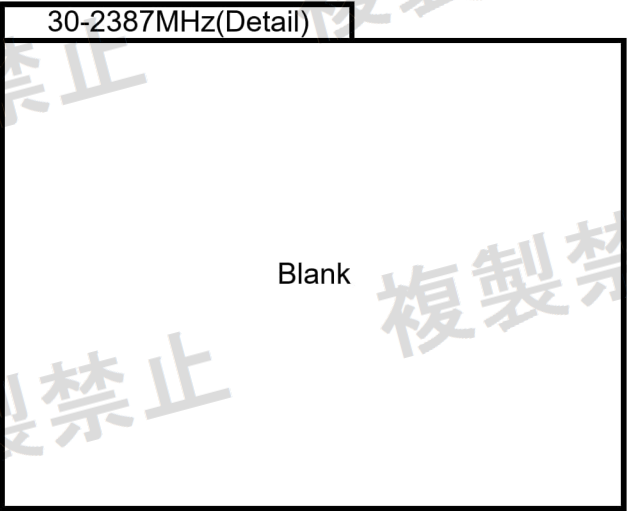
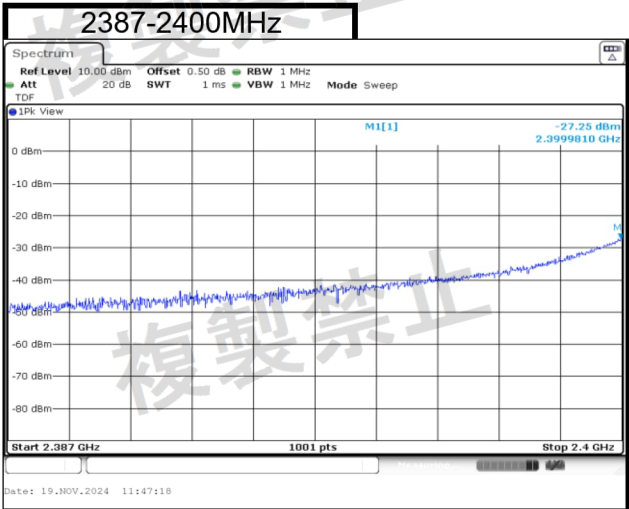
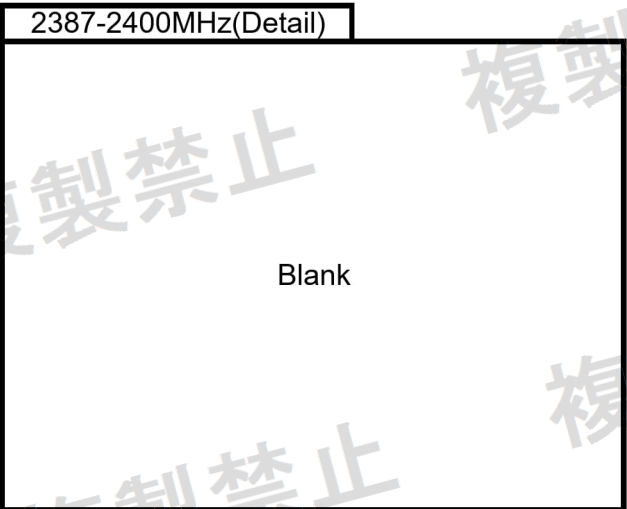
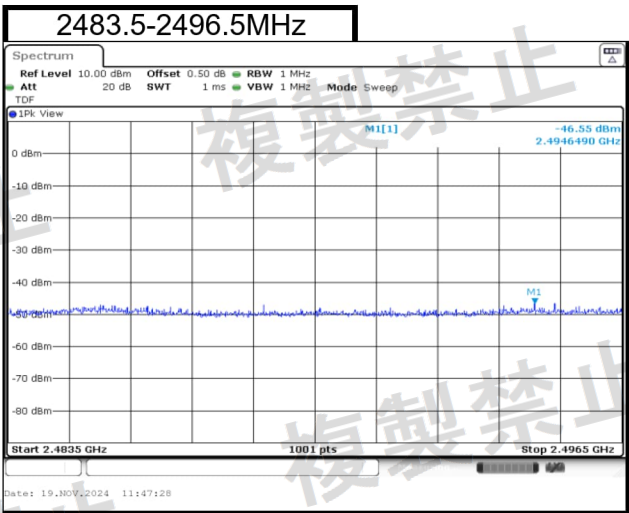
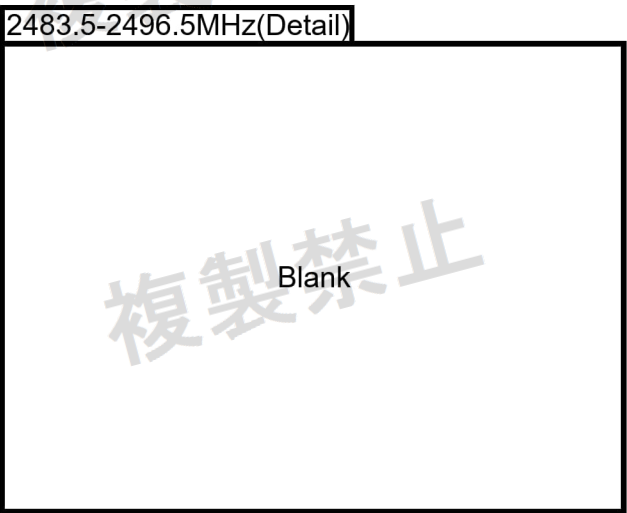
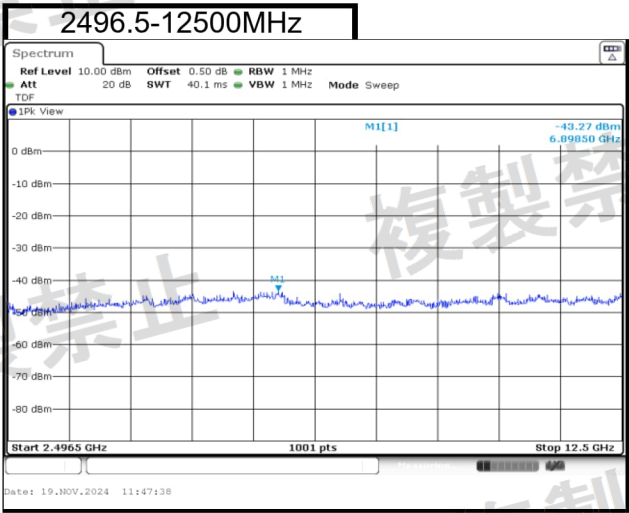


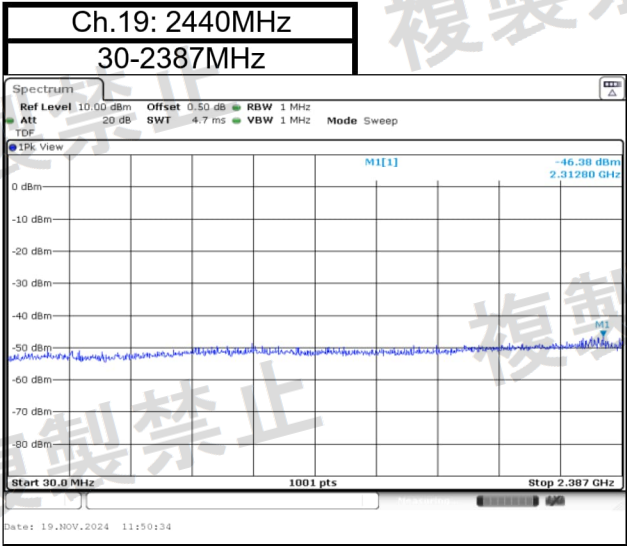
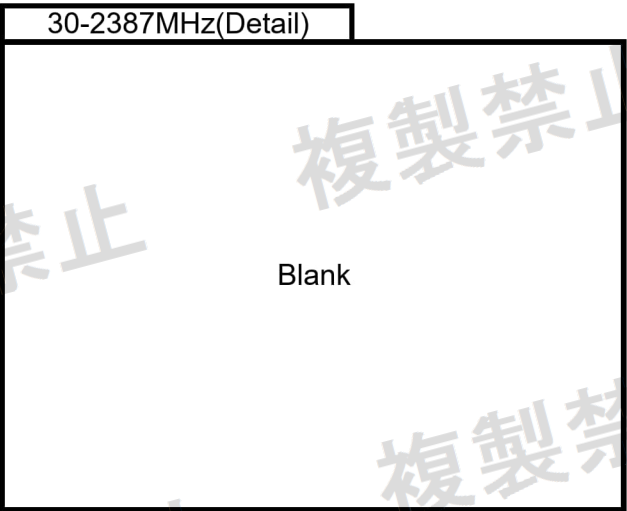
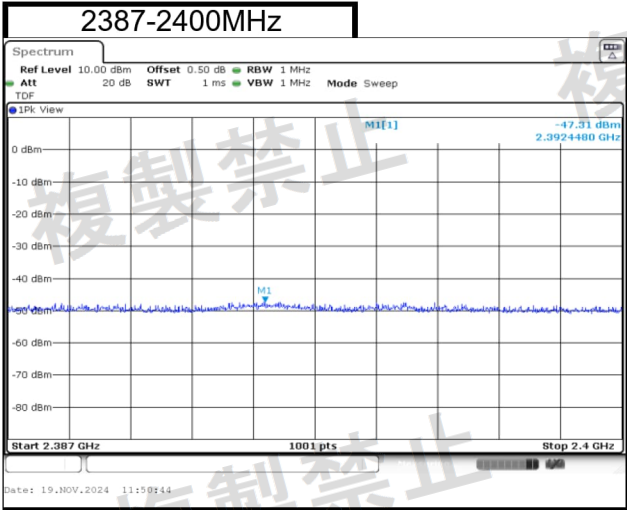
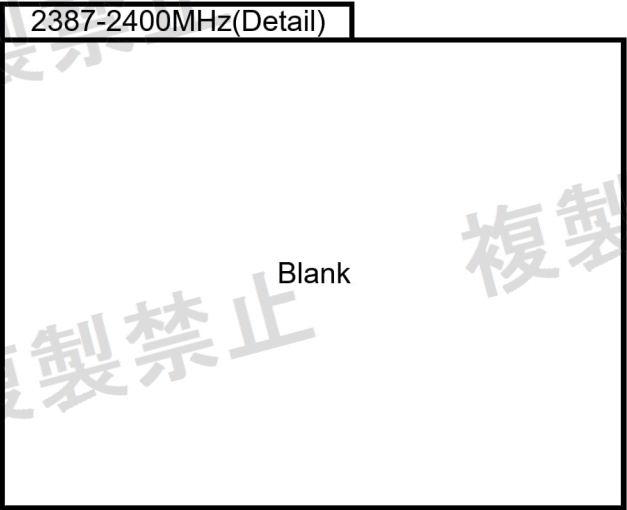
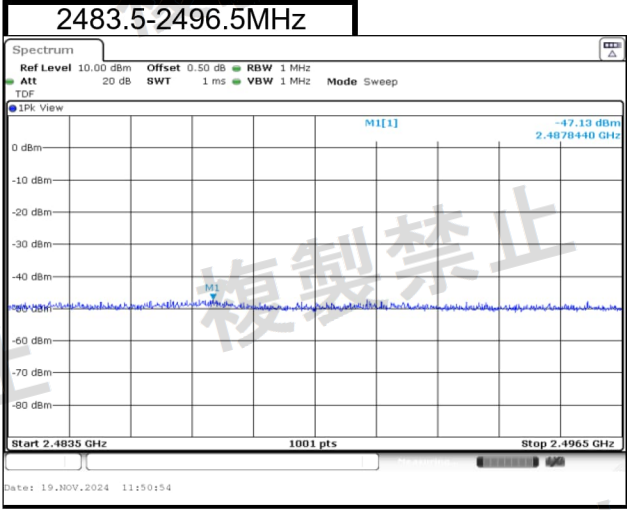
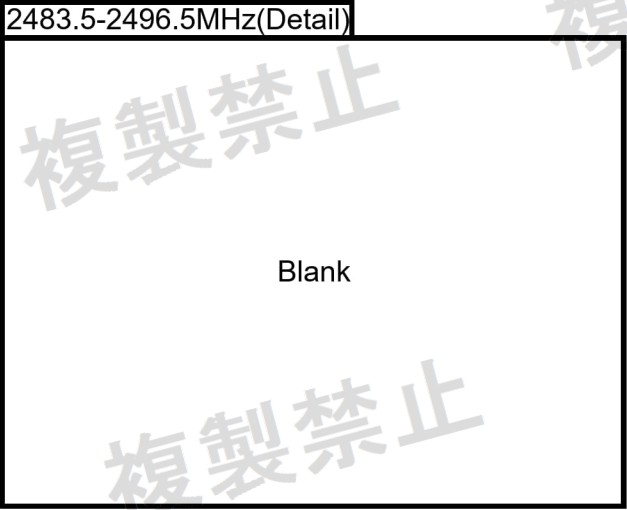
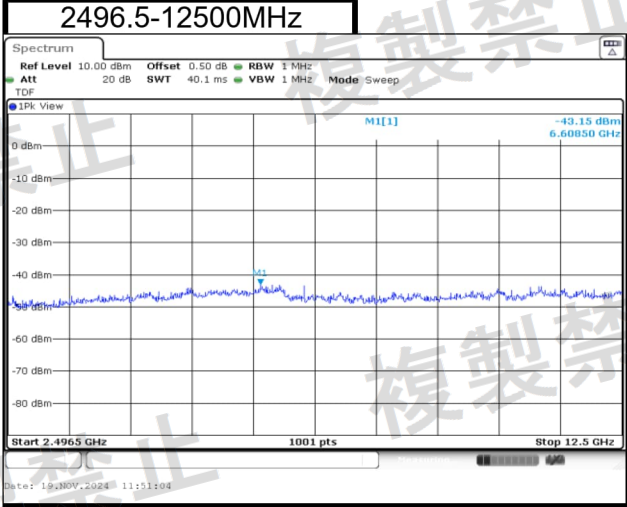


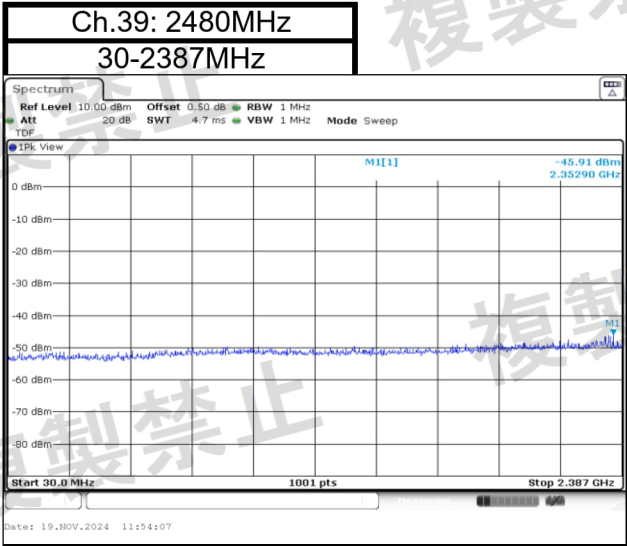
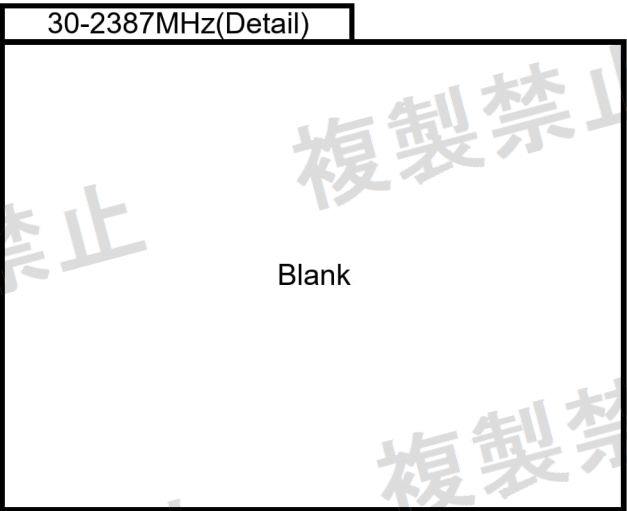
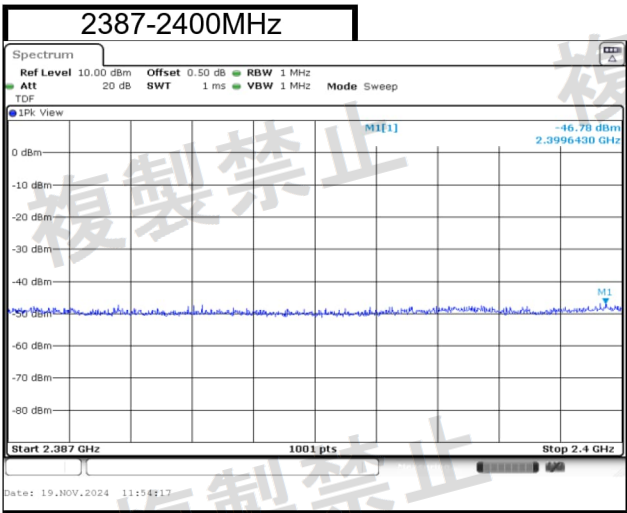
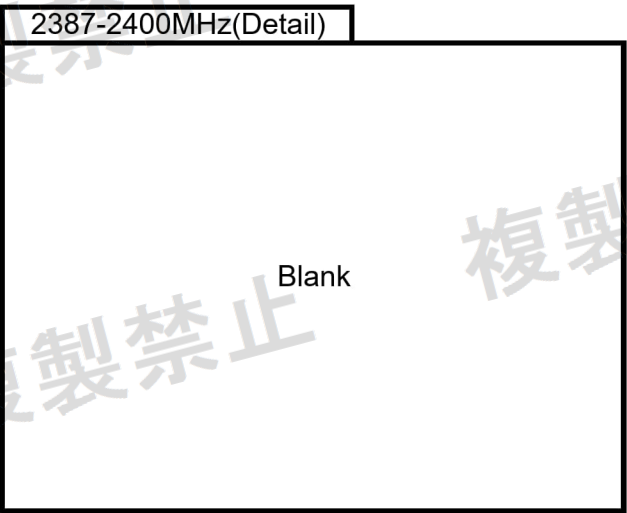
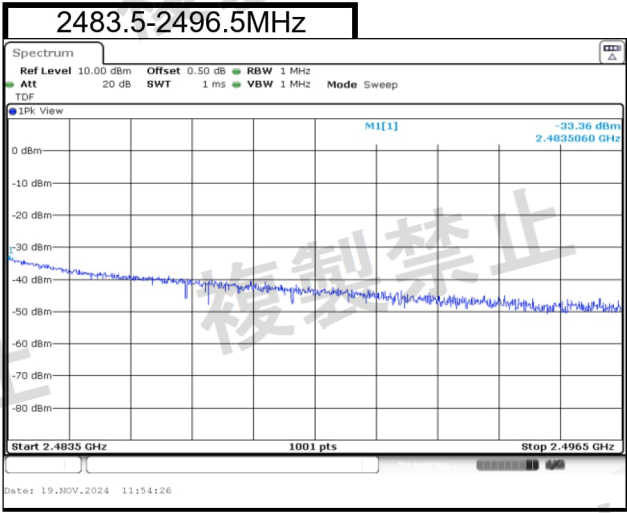
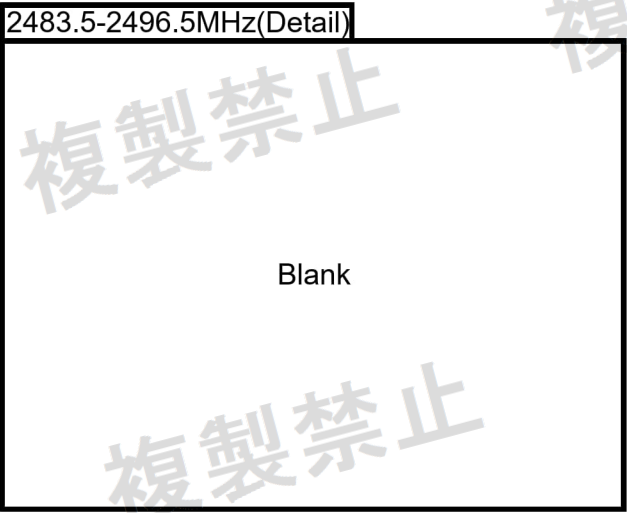
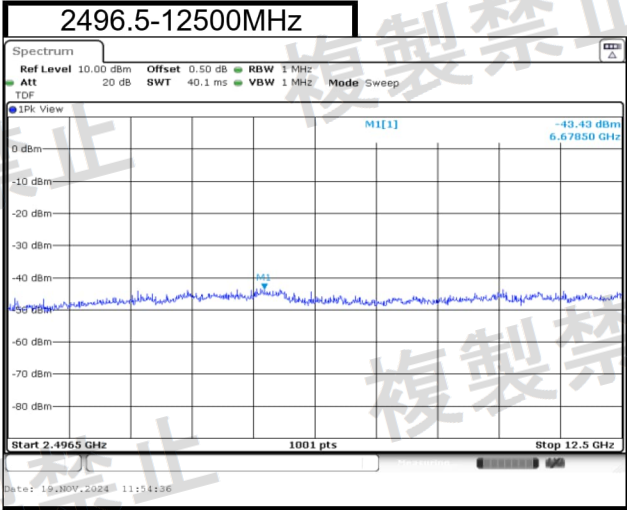


7. Test chart

7.3 Unwanted(Spurious) emission strength (-10% voltage)

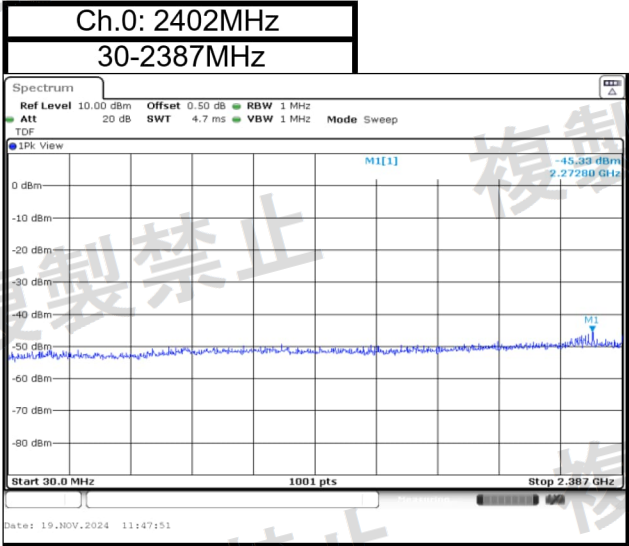
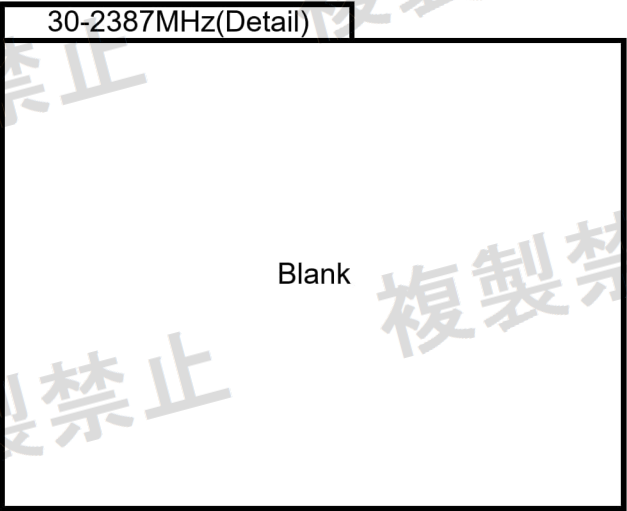
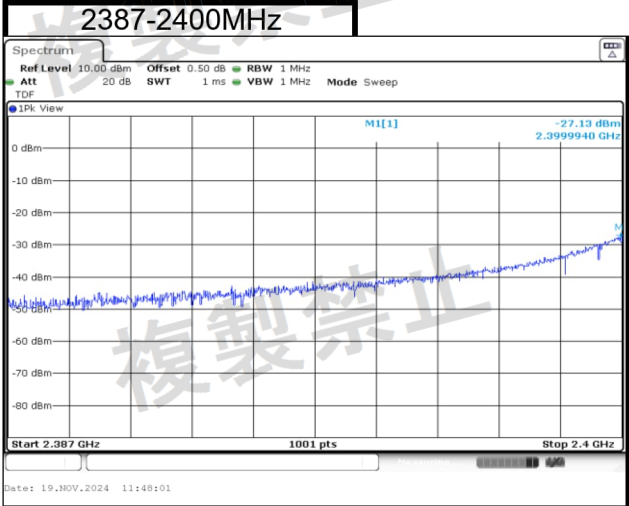
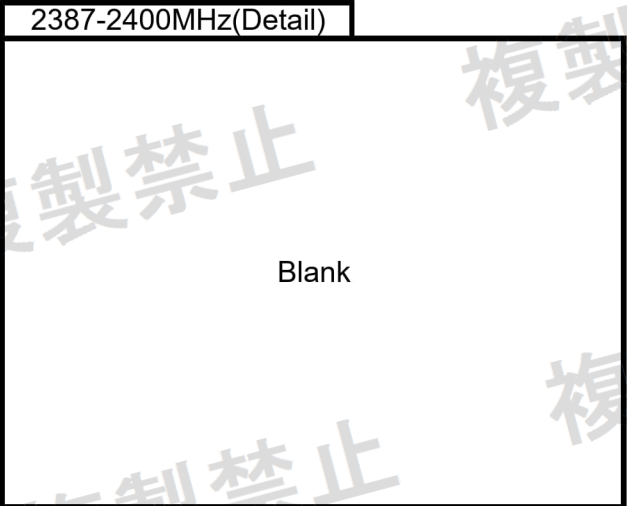
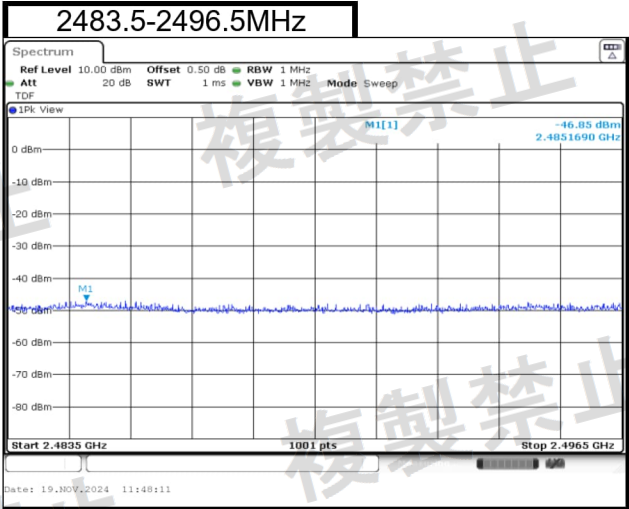
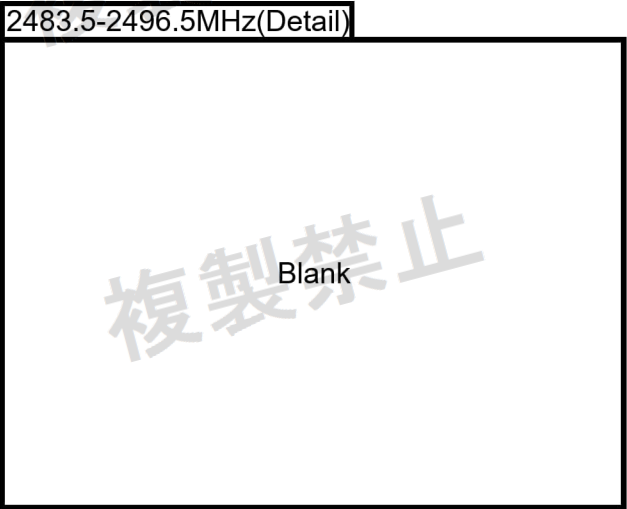
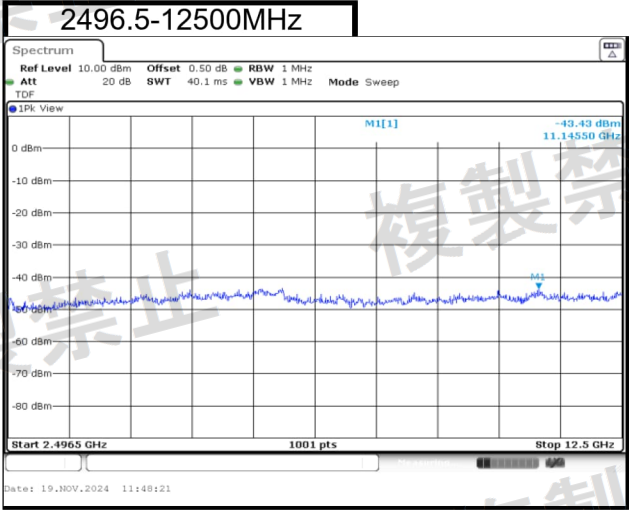
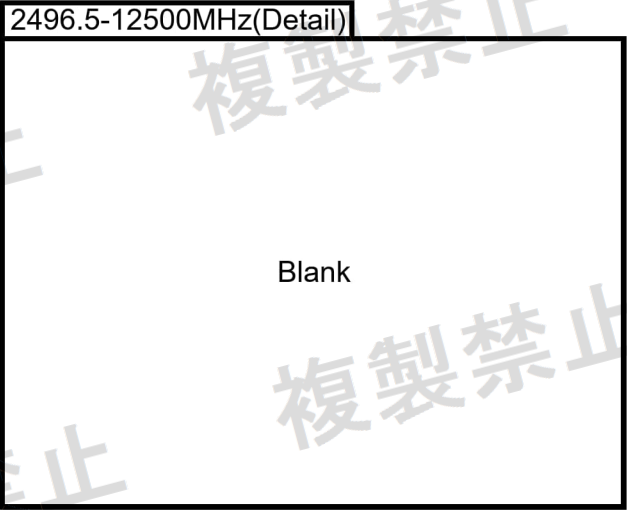


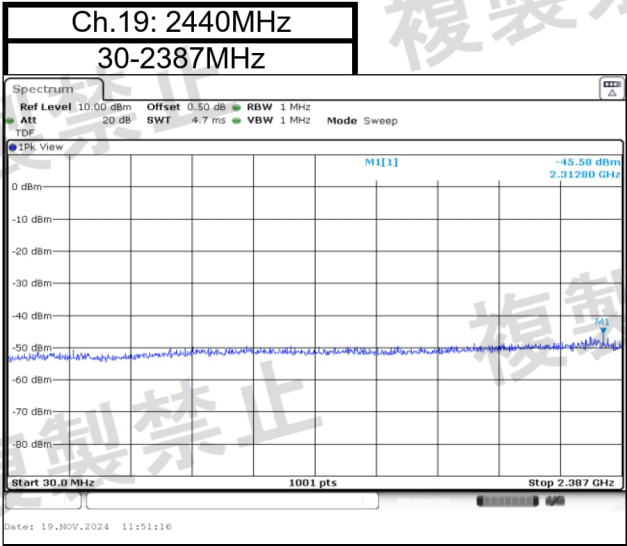
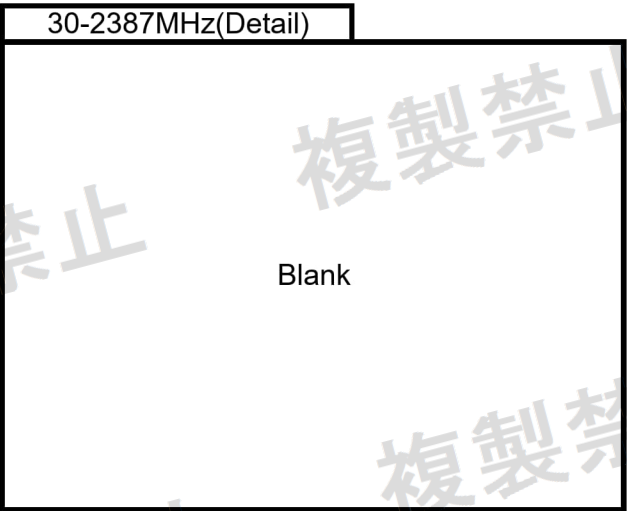
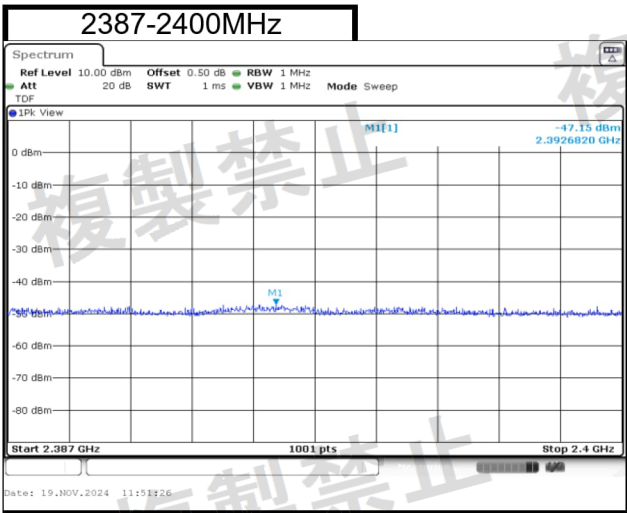
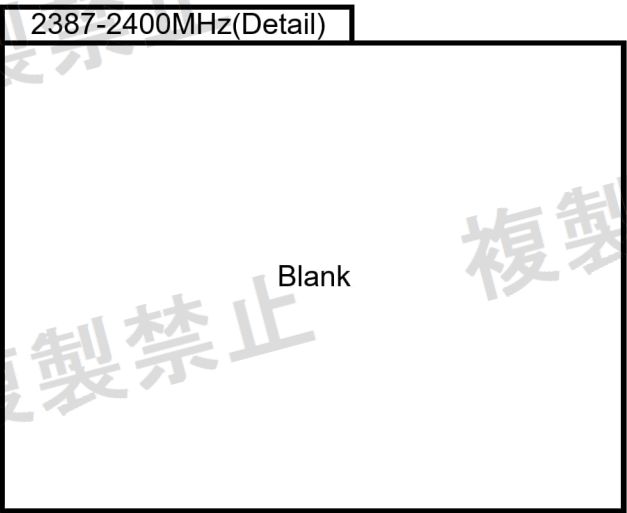
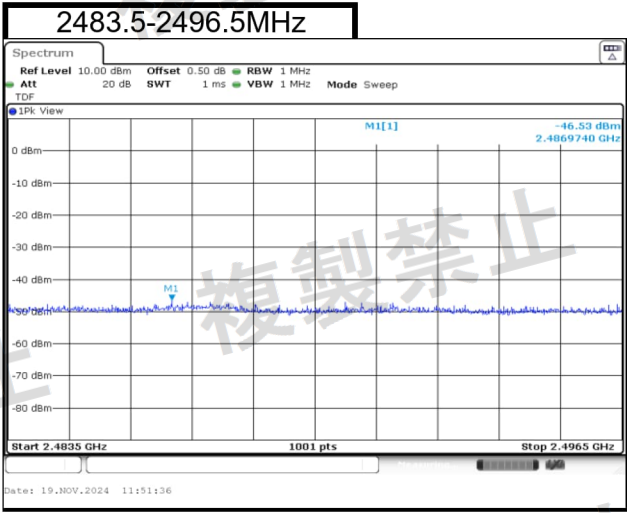
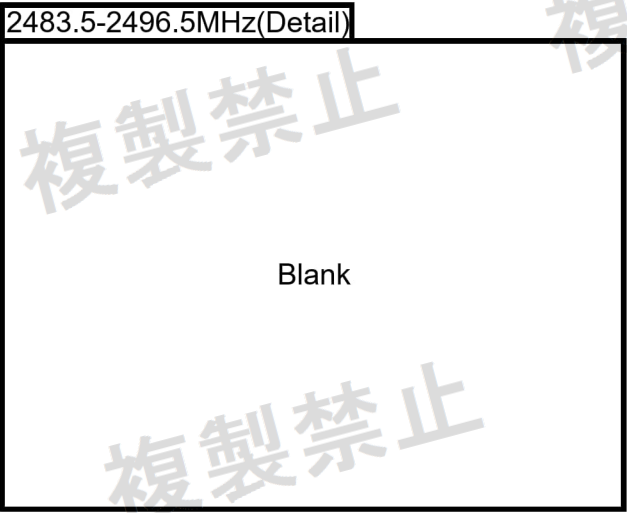
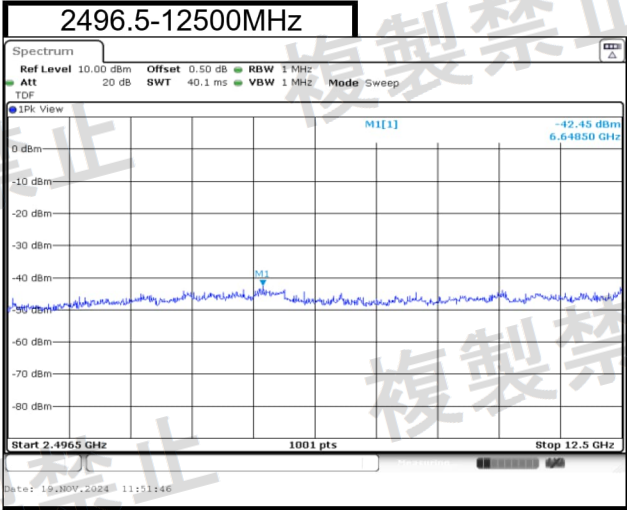


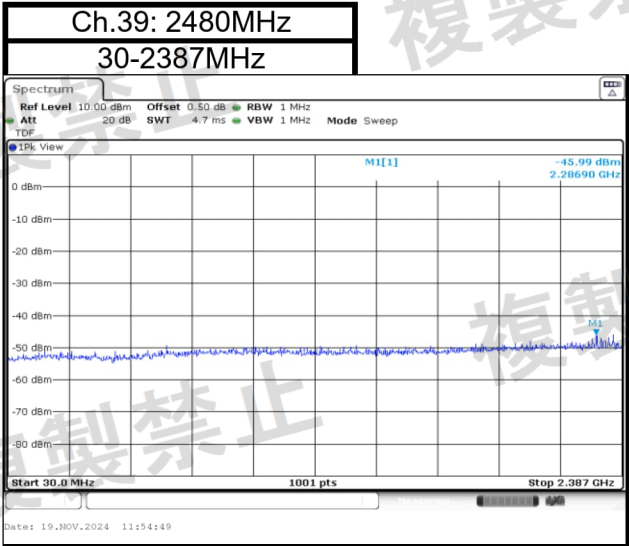
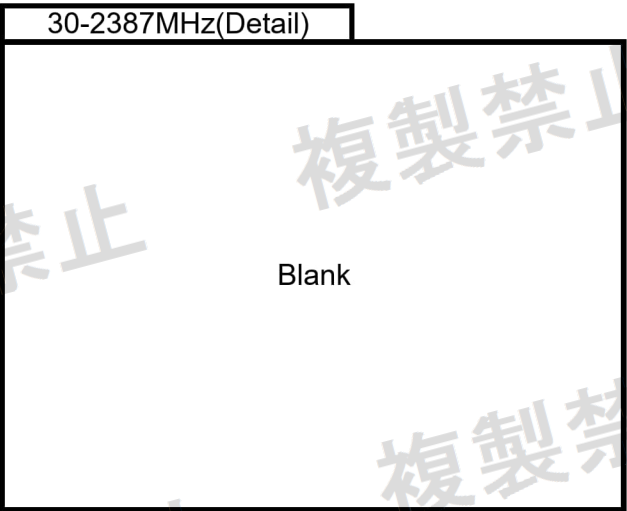
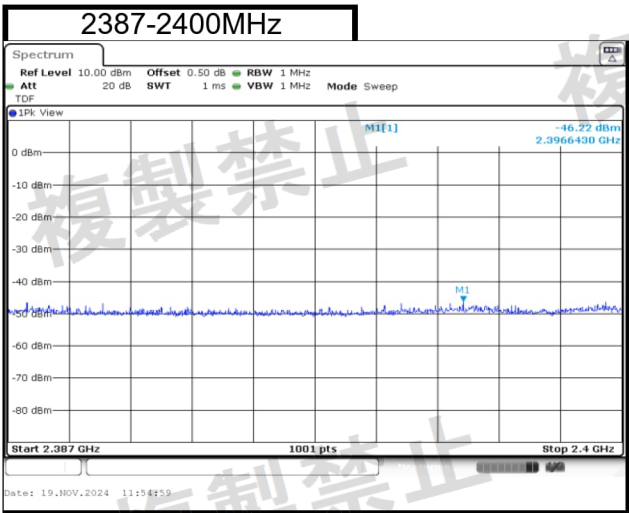
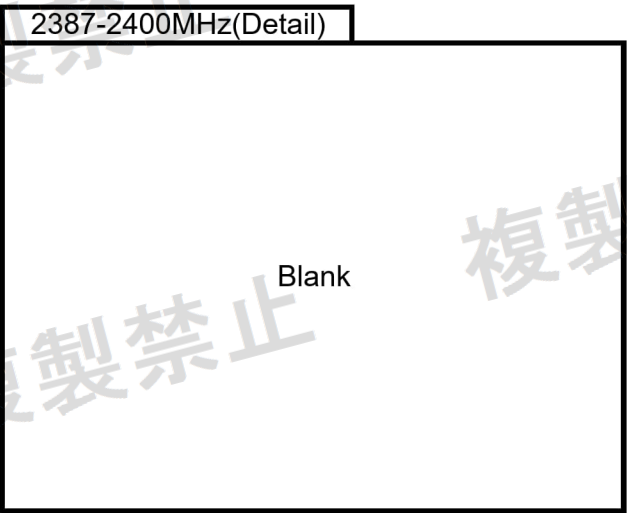
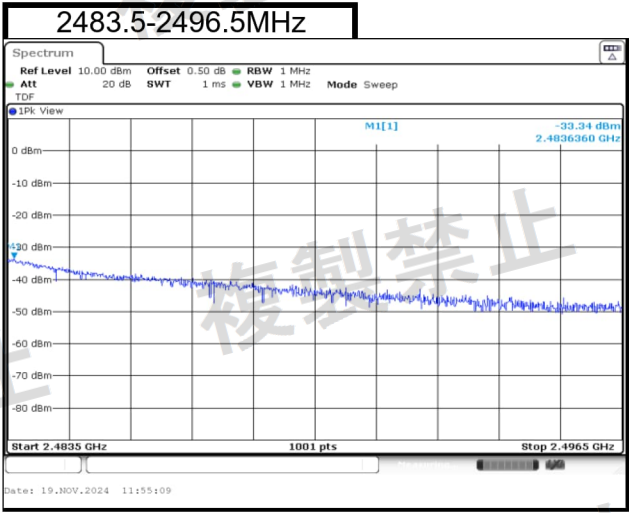
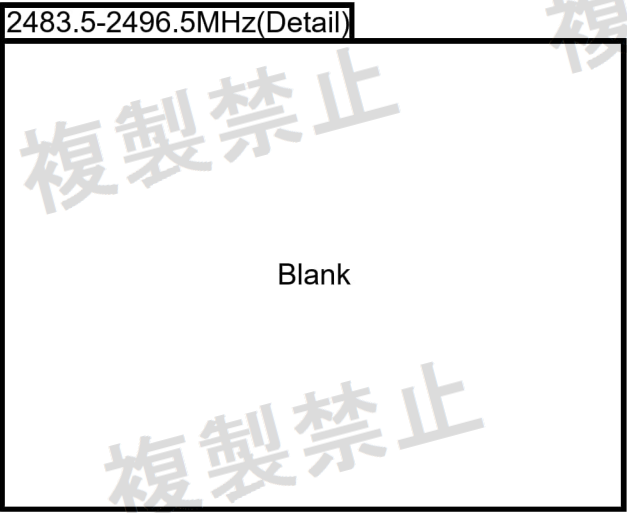
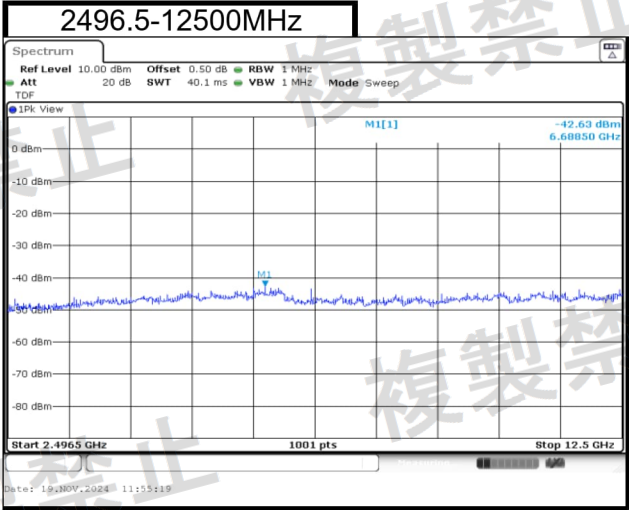


7. Test chart

7.3 Unwanted(Spurious) emission strength (+10% voltage)

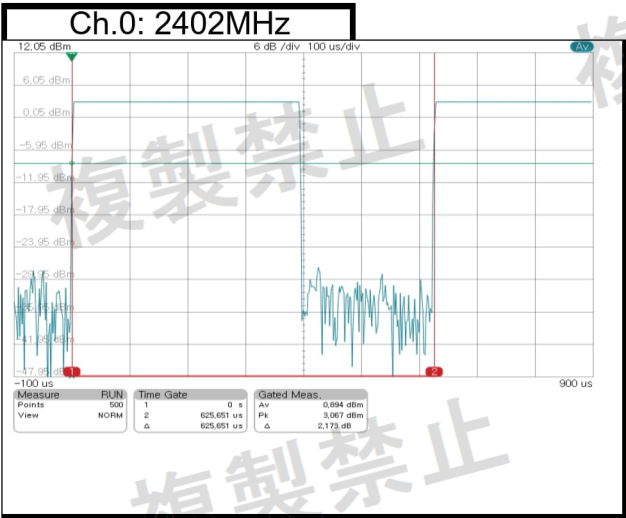
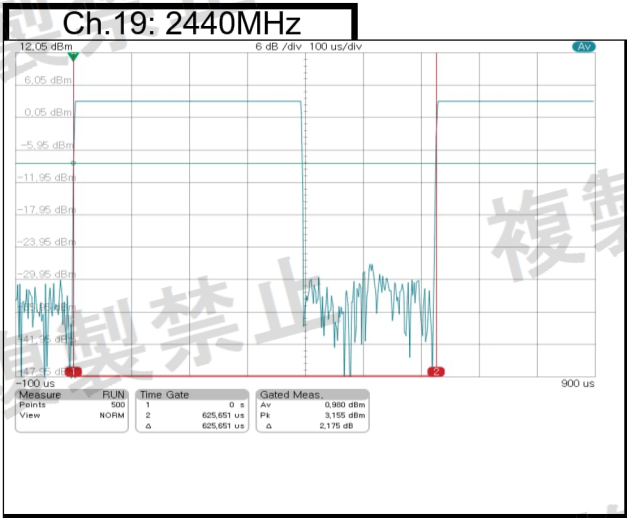
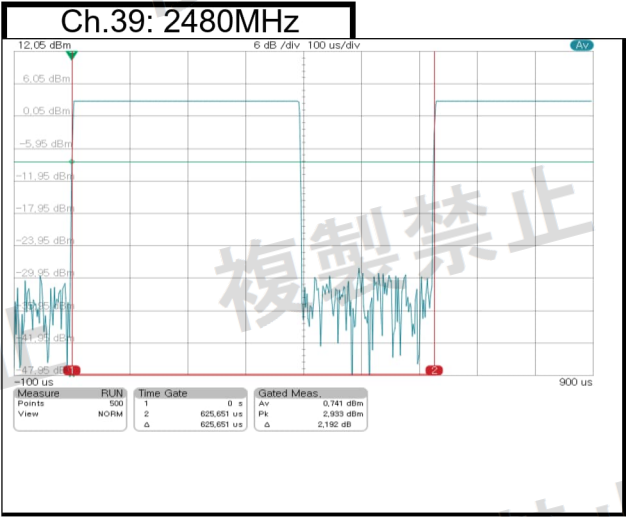
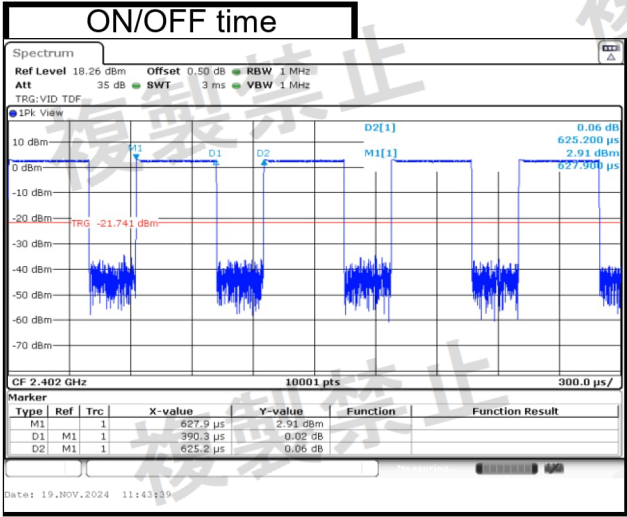






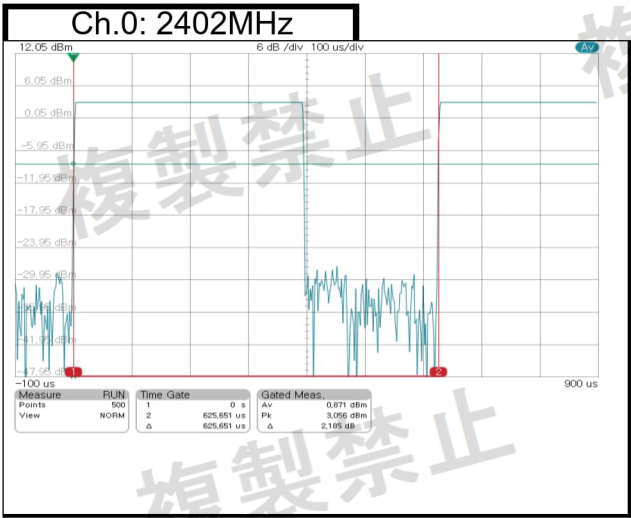
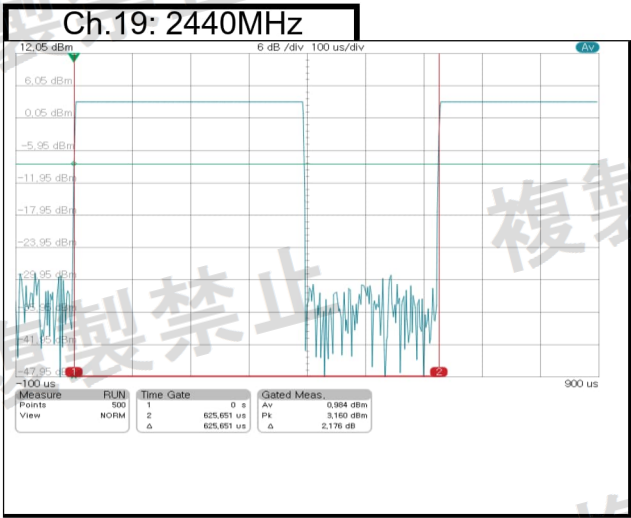
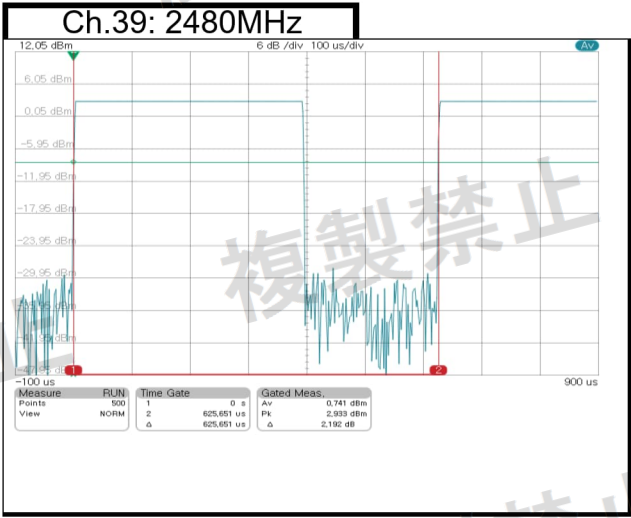
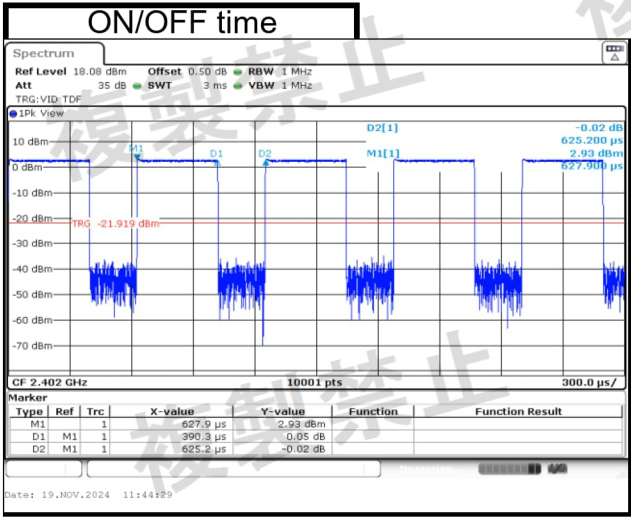
7. Test chart

7.4 RF output power tolerance (Rated voltage)



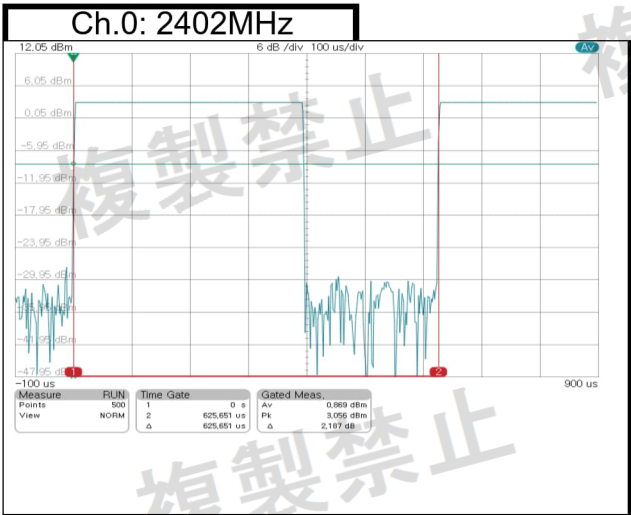
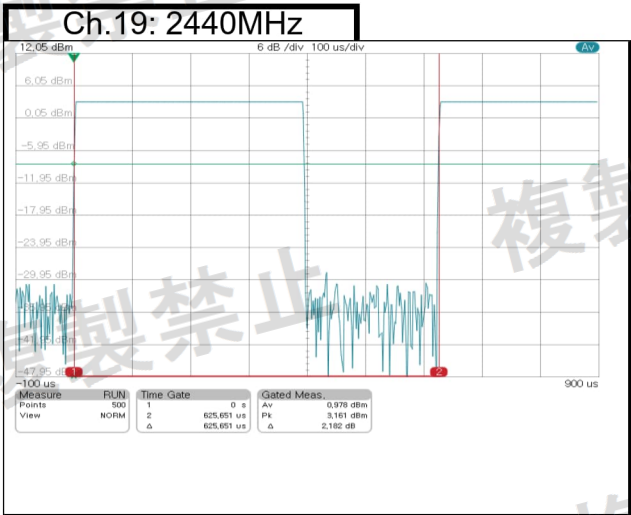
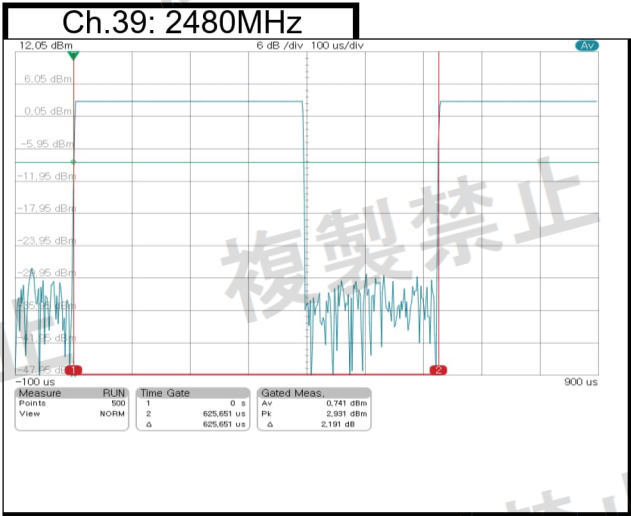
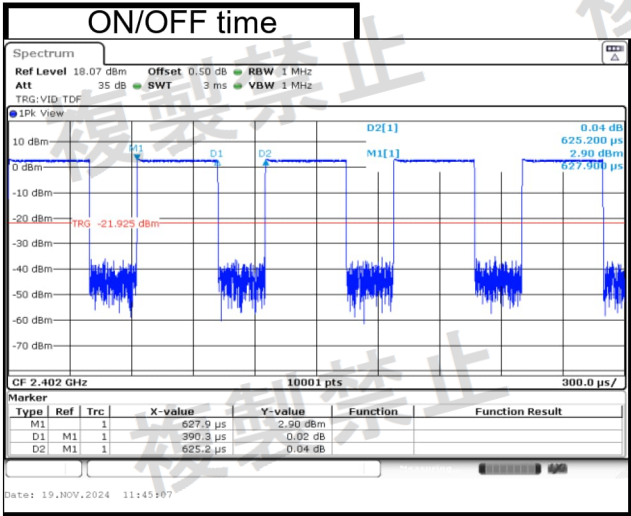
7. Test chart

7.4 RF output power tolerance (-10% voltage)



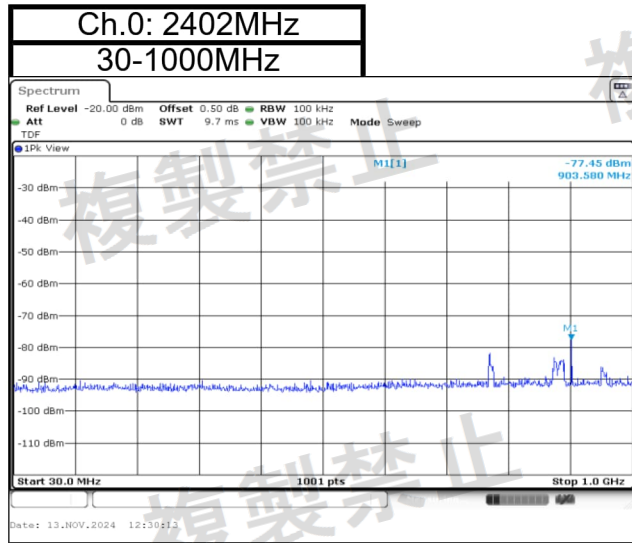
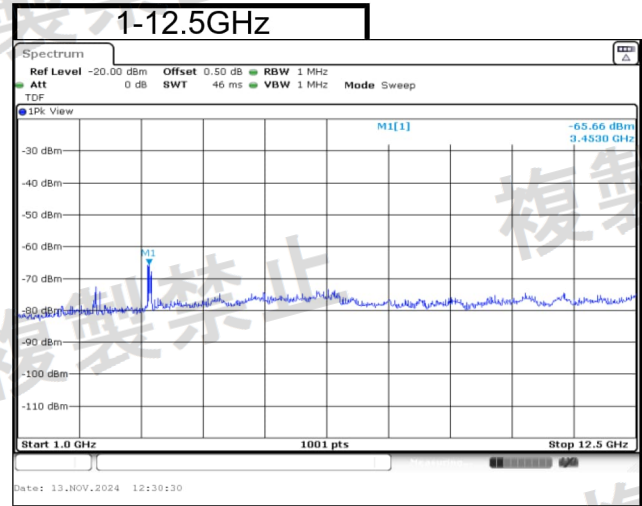
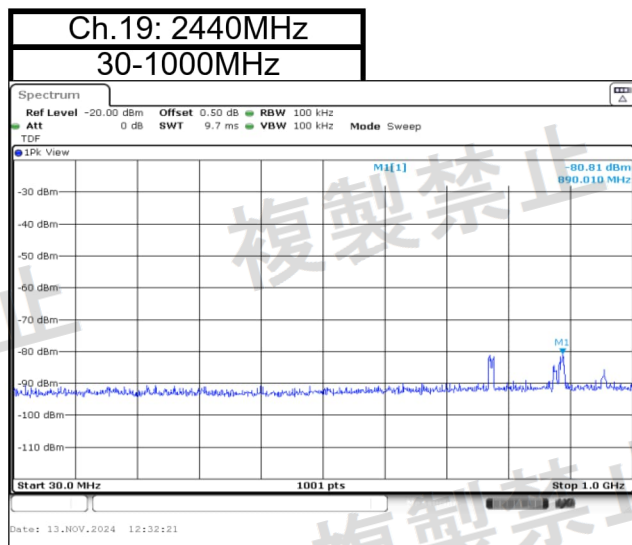
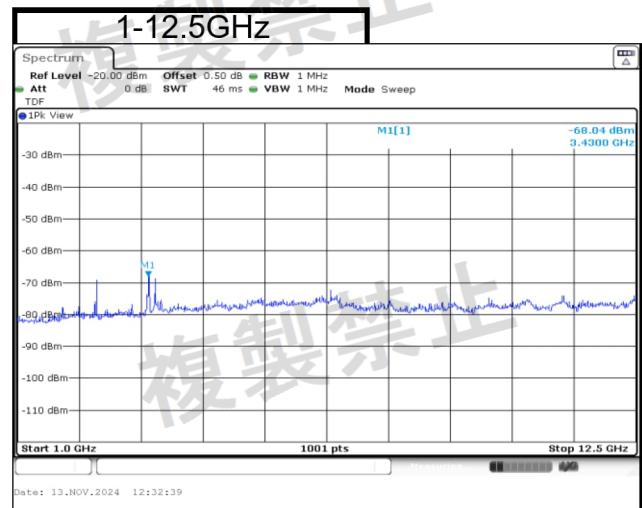
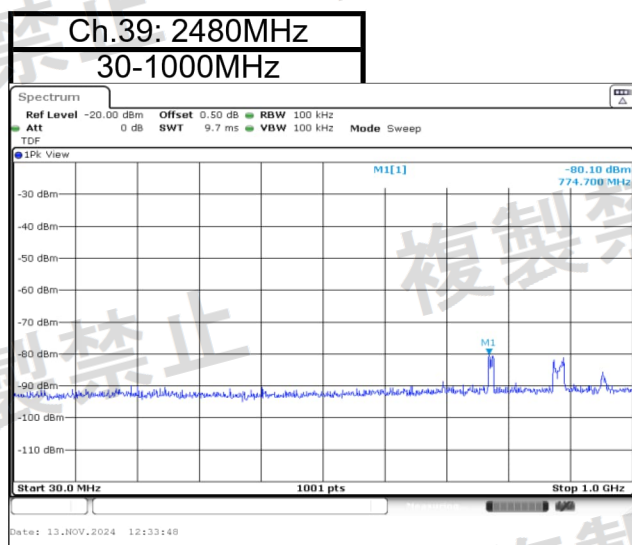
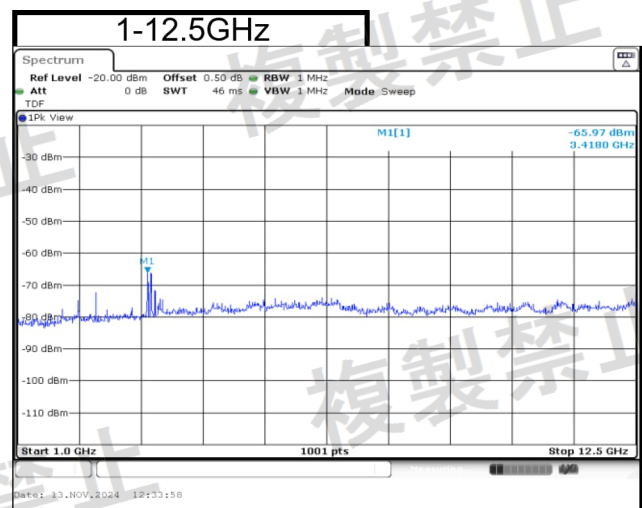
7. Test chart

7.4 RF output power tolerance (+10% voltage)



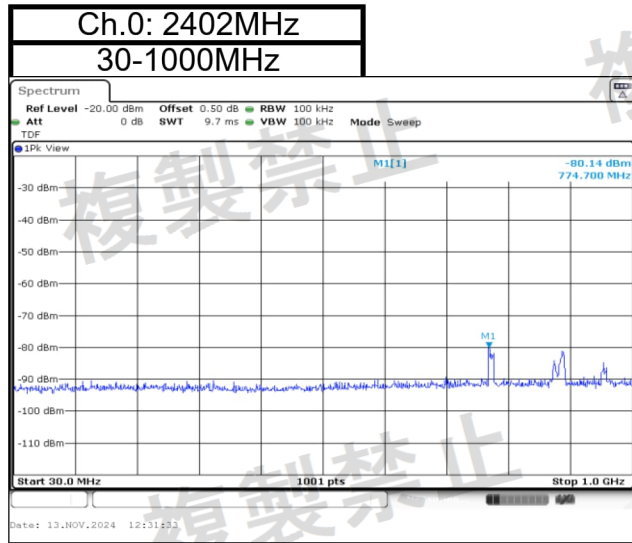
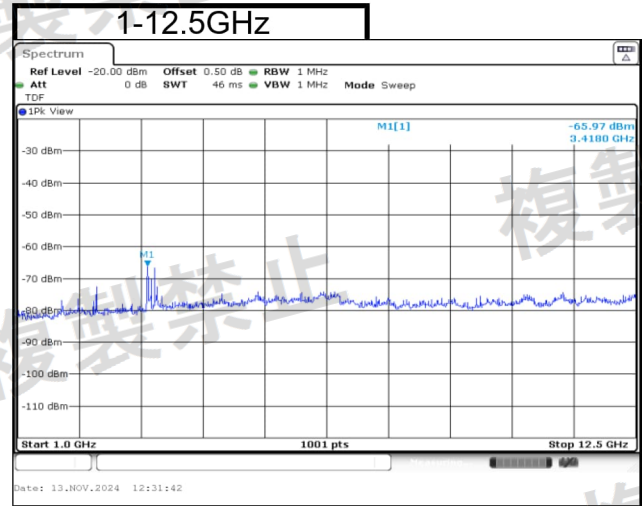
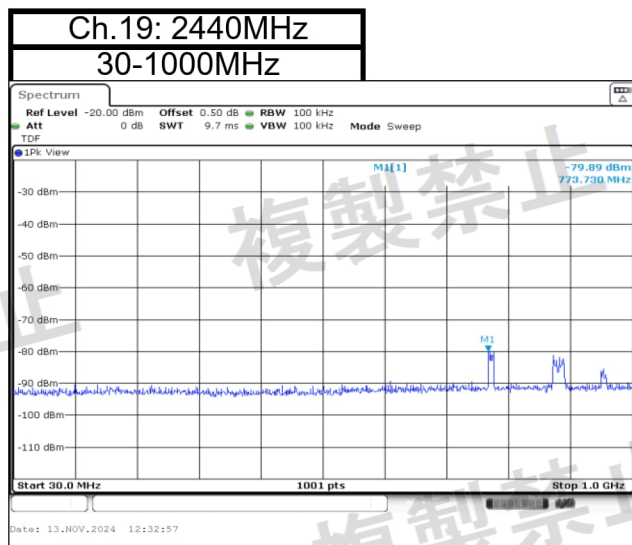
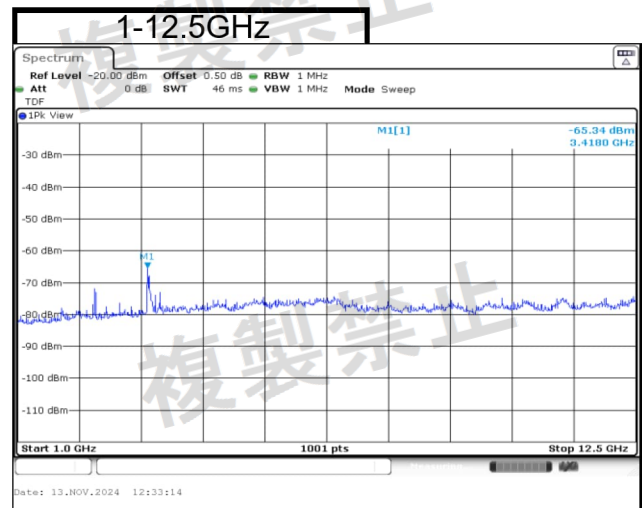
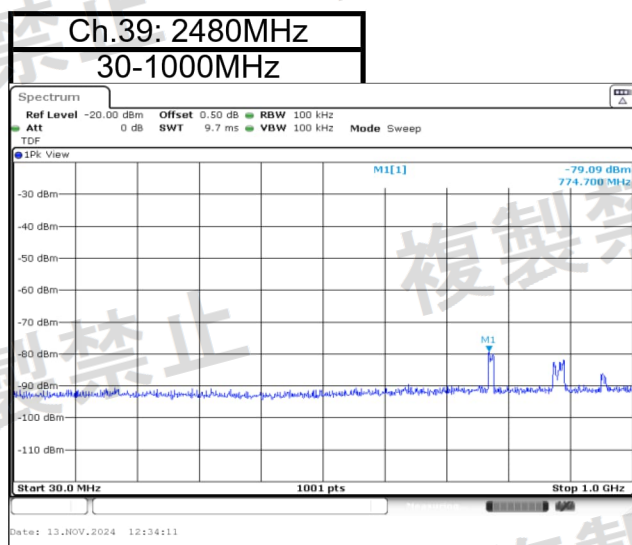
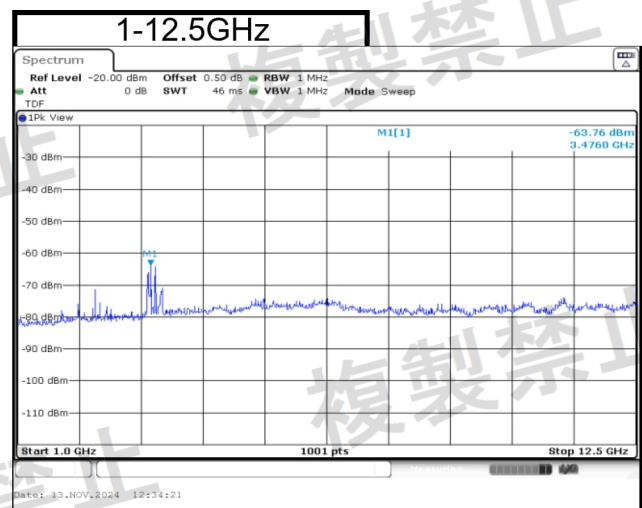
7. Test chart

7.5 Secondary emitted radio wave strength (Rated voltage)



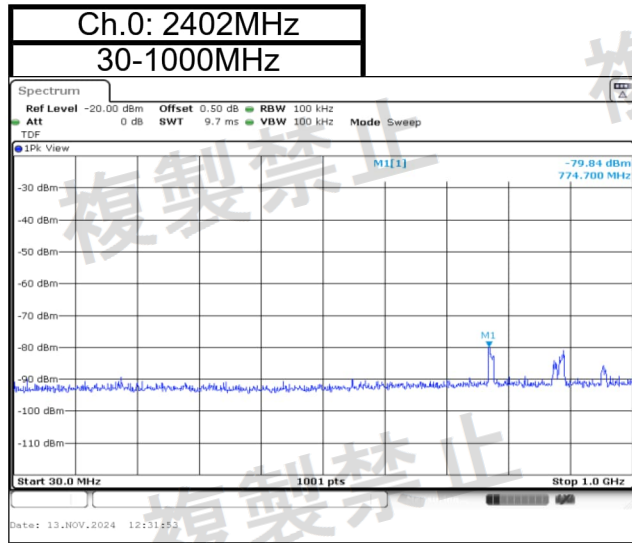
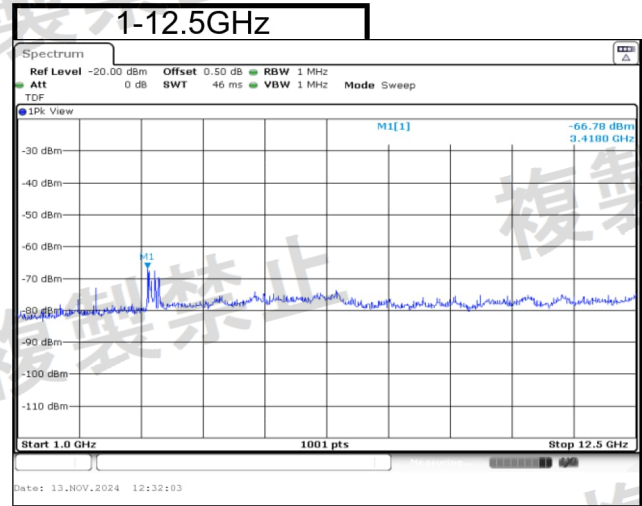
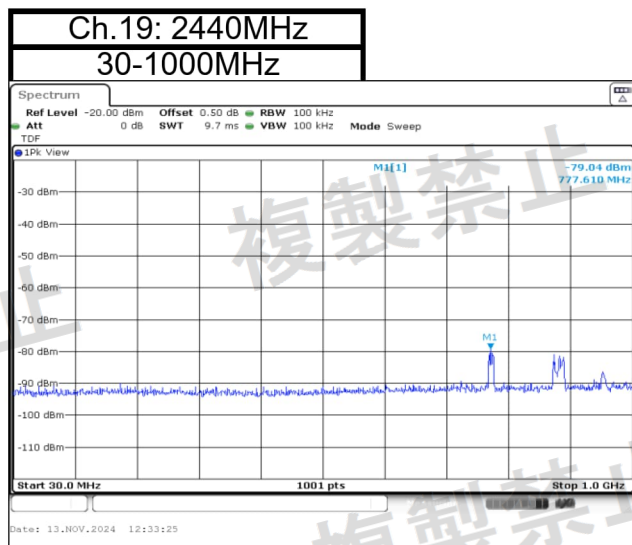
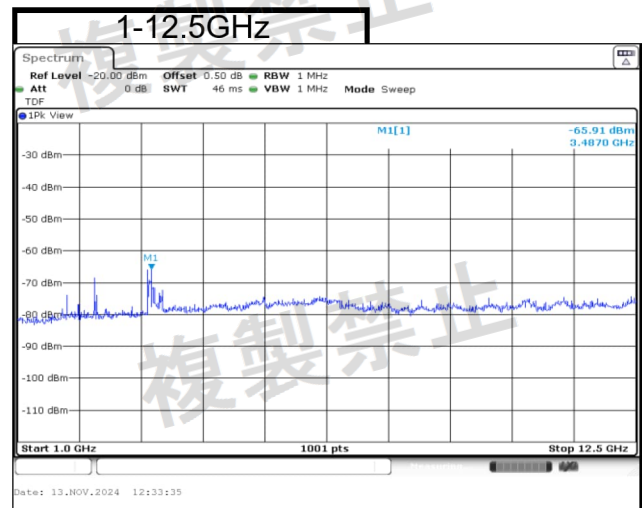
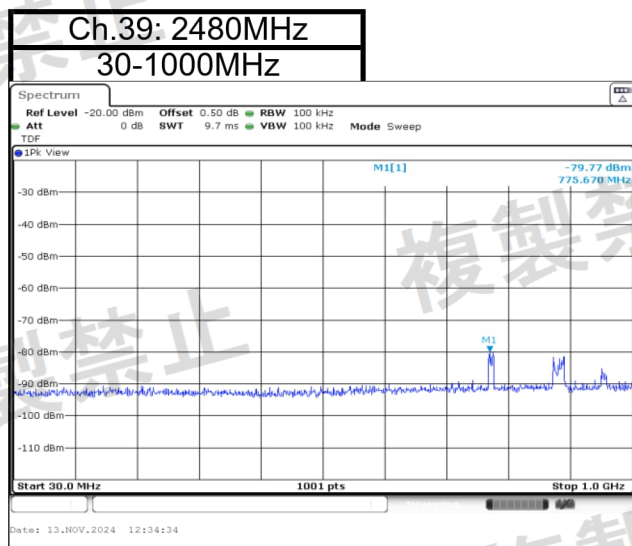
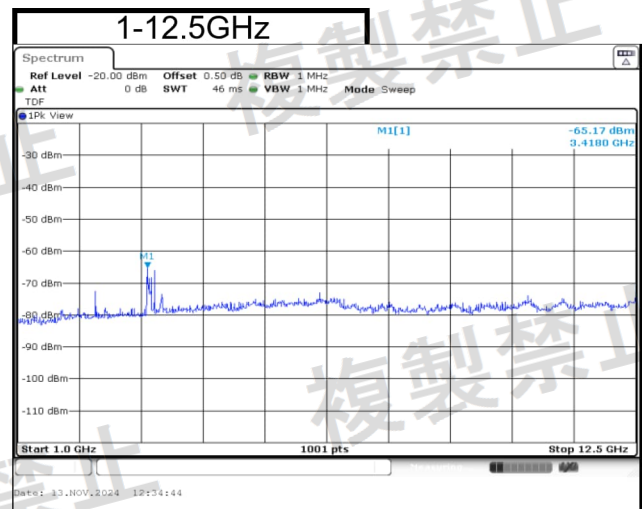
7. Test chart

7.5 Secondary emitted radio wave strength (-10% voltage)



7. Test chart

7.5 Secondary emitted radio wave strength (+10% voltage)



8. Test results (Rated voltage)

S/N : N/A

Environment of test room	Date of test	2024-11-12	2024-11-19
	Temperature	21 °C	22 °C
	Humidity	51 %	53 %

Peak Antenna Gain	3.50	dBi
Declaration Output Power	1.80	mW
Declaration Output Power	2.55	dBm
E.I.R.P.	6.05	dBm
Input Power Voltage	12.0	VDC

Tested Circuit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.21	ms
	OFF TIME (0.1sec or more)	0.42	ms
	Ratio	0.3333	%
Packet Type (Mode)		37 Packet	mode
Transmit Speed		2	MHz

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

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

Test category :	2.4GHz Band Low-Power Data Communication System (GFSK/0-39ch)
-----------------	---

Measurement Frequency		MHz	2402	2440	2480	Result	Limit	Note
Channel Number		Ch.	0	19	39	---	---	
Frequency Measurements		MHz	2401.985	2439.990	2479.985	---	---	
Frequency Tolerance		ppm	-6.239	-4.094	-6.042	PASS	$\pm 50 \times 10^{-6}$ (50ppm)	
Occupied Bandwidth		MHz	2.08	2.09	2.09	PASS	26MHz or below	
RF Output Power		mW	1.92	1.97	1.87	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	6.622	9.610	3.956		+20%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.029	0.026	0.027	PASS	2.5uW/MHz or below	
		MHz	2275.200	2312.800	2350.500	----		
	2387 to 2400MHz	uW/MHz	14.791	0.022	0.021	PASS	25uW/MHz or below	
		MHz	2399.994	2392.968	2399.175	----		
	2483.5 to 2496.5MHz	uW/MHz	0.018	0.019	0.522	PASS	25uW/MHz or below	
		MHz	2485.870	2487.338	2483.584	----		
	2496.5 to 12500MHz	uW/MHz	0.043	0.050	0.051	PASS	2.5uW/MHz or below	
		MHz	10496.500	6608.500	7438.500	----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.009	0.012	0.010	PASS	4nW or below	
		MHz	890.980	774.700	775.670	----		
	1000 to 12500MHz	nW	0.514	0.293	0.577	PASS	20nW or below	
		MHz	3453.000	3476.000	3545.000	----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			----	*1	
Angular width of the main radiation of the transmitting antenna			-			----	*1	

*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz

8. Test results (-10% voltage)

S/N : N/A

Environment of test room	Date of test	2024-11-12	2024-11-19
	Temperature	21 °C	22 °C
	Humidity	51 %	53 %

Peak Antenna Gain	3.50	dBi
Declaration Output Power	1.80	mW
Declaration Output Power	2.55	dBm
E.I.R.P.	6.05	dBm
Input Power Voltage	10.8	VDC

Tested Circuit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.2	ms
	OFF TIME (0.1sec or more)	0.43	ms
	Ratio	0.3175	%
Packet Type (Mode)		37 Packet	mode
Transmit Speed		2	MHz

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

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

Test category :	2.4GHz Band Low-Power Data Communication System (GFSK/0-39ch)
-----------------	---

Measurement Frequency		MHz	2402	2440	2480	Result	Limit	Note
Channel Number		Ch.	0	19	39	---	---	
Frequency Measurements		MHz	2401.990	2439.990	2479.985	---	---	
Frequency Tolerance		ppm	-4.159	-4.094	-6.042	PASS	±50×10 ⁻⁶ (50ppm)	
Occupied Bandwidth		MHz	2.08	2.09	2.09	PASS	26MHz or below	
RF Output Power		mW	2.02	2.07	1.96	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	11.954	15.090	9.154		+20%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.022	0.026	0.024	PASS	2.5uW/MHz or below	
		MHz	2275.200	2312.800	2319.900	-----		
	2387 to 2400MHz	uW/MHz	14.723	0.021	0.021	PASS	25uW/MHz or below	
		MHz	2399.994	2389.838	2390.448	-----		
	2483.5 to 2496.5MHz	uW/MHz	0.018	0.019	0.542	PASS	25uW/MHz or below	
		MHz	2488.299	2491.104	2483.688	-----		
	2496.5 to 12500MHz	uW/MHz	0.054	0.051	0.048	PASS	2.5uW/MHz or below	
		MHz	6878.500	6698.500	5389.500	-----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.009	0.012	0.011	PASS	4nW or below	
		MHz	890.980	775.670	774.700	-----		
	1000 to 12500MHz	nW	0.414	0.701	0.240	PASS	20nW or below	
		MHz	3545.000	3545.000	3487.000	-----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			-----	*1	
Angular width of the main radiation of the transmitting antenna			-			-----	*1	

*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz

8. Test results (+10% voltage)

S/N : N/A

Environment of test room	Date of test	2024-11-12	2024-11-19
	Temperature	21 °C	22 °C
	Humidity	51 %	53 %

Peak Antenna Gain	3.50	dBi
Declaration Output Power	1.80	mW
Declaration Output Power	2.55	dBm
E.I.R.P.	6.05	dBm
Input Power Voltage	13.2	VDC

Tested Circuit Insertion Loss		0	dB
Frequency equal to the Transmission rate		-	MHz
Transmission Time	ON TIME (1sec or less)	0.2	ms
	OFF TIME (0.1sec or more)	0.43	ms
	Ratio	0.3175	%
Packet Type (Mode)		37 Packet	mode
Transmit Speed		2	MHz

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

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

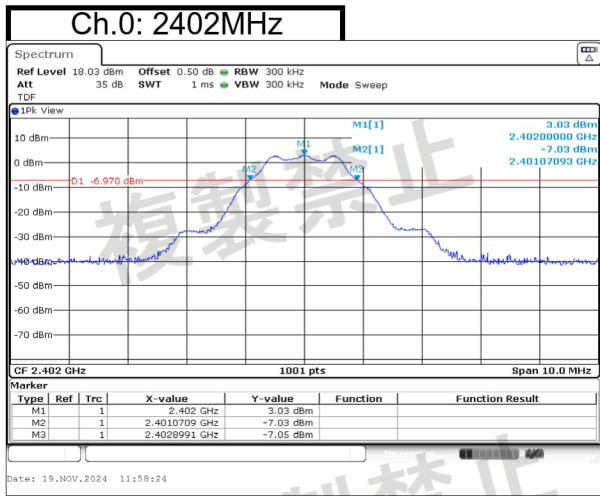
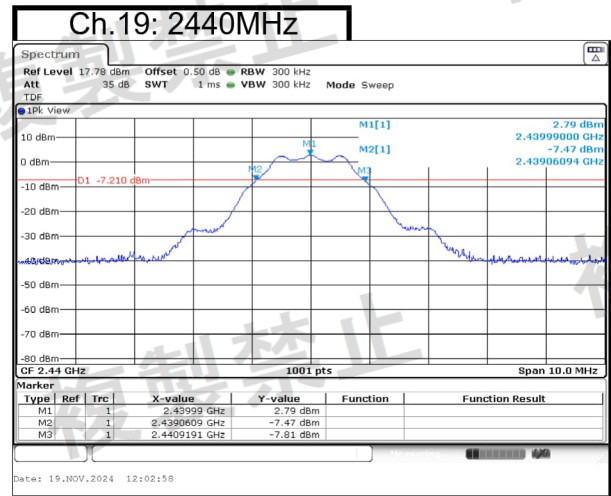
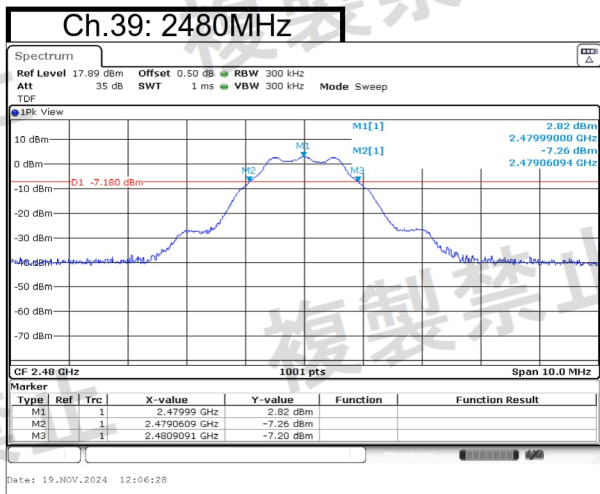
Test category :	2.4GHz Band Low-Power Data Communication System (GFSK/0-39ch)
-----------------	---

Measurement Frequency		MHz	2402	2440	2480	Result	Limit	Note
Channel Number		Ch.	0	19	39	---	---	
Frequency Measurements		MHz	2401.980	2439.990	2479.985	---	---	
Frequency Tolerance		ppm	-8.318	-4.094	-6.042	PASS	$\pm 50 \times 10^{-6}$ (50ppm)	
Occupied Bandwidth		MHz	2.08	2.09	2.09	PASS	26MHz or below	
RF Output Power		mW	2.02	2.07	1.96	PASS	10mW/MHz or below	
RF Output Power Tolerance		%	11.954	15.090	9.154		+20%	
Unwanted (Spurious) Emission Strength	30 to 2387MHz	uW/MHz	0.028	0.024	0.020	PASS	2.5uW/MHz or below	
		MHz	2275.200	2312.800	2352.900	----		
	2387 to 2400MHz	uW/MHz	15.171	0.021	0.024	PASS	25uW/MHz or below	
		MHz	2399.994	2388.045	2399.916	----		
	2483.5 to 2496.5MHz	uW/MHz	0.018	0.019	0.513	PASS	25uW/MHz or below	
		MHz	2494.662	2487.805	2483.571	----		
	2496.5 to 12500MHz	uW/MHz	0.045	0.054	0.052	PASS	2.5uW/MHz or below	
		MHz	6958.500	6608.500	7438.500	----		
Secondary Emitted Radio Wave Strength	30 to 1000MHz	nW	0.012	0.013	0.007	PASS	4nW or below	
		MHz	775.670	774.700	773.730	----		
	1000 to 12500MHz	nW	0.355	0.263	0.200	PASS	20nW or below	
		MHz	3487.000	3487.000	3476.000	----		
Interference Prevention Function			Good			PASS		
Transmitting antenna absolute gain			-			----	*1	
Angular width of the main radiation of the transmitting antenna			-			----	*1	

*1 Measurement only if the E.I.R.P. exceeds 12.14dBm/MHz

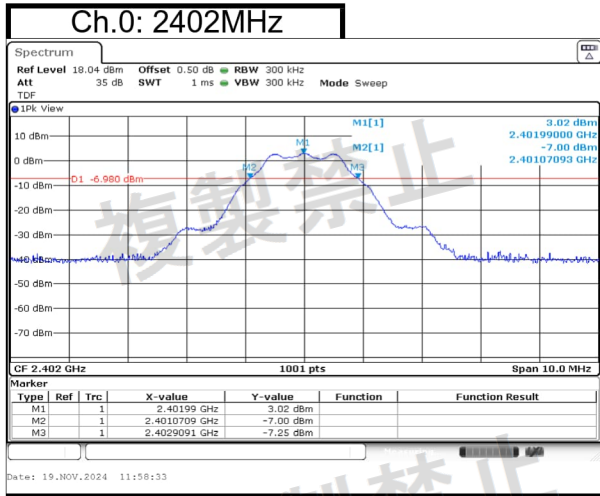
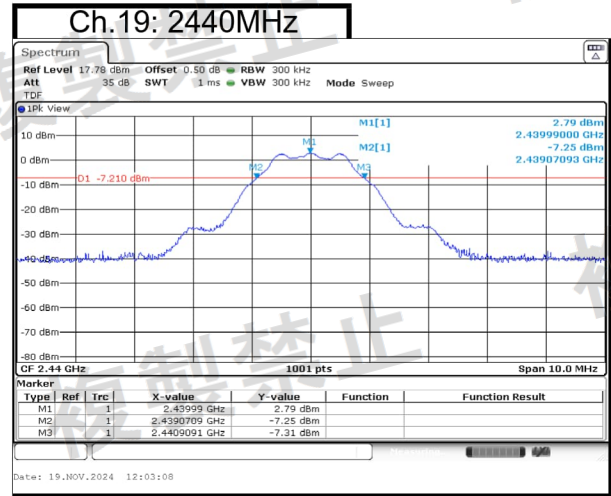
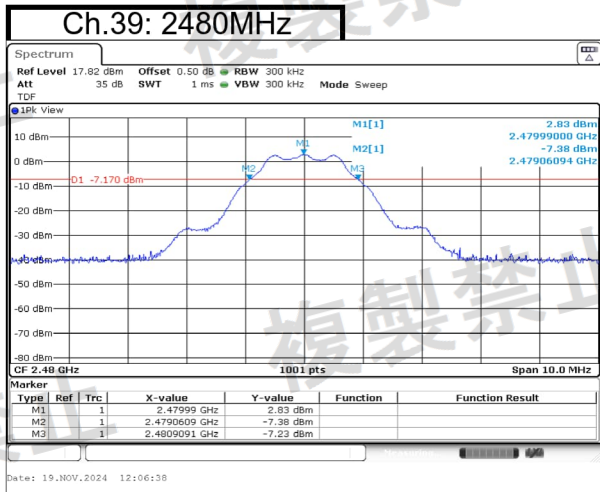
9. Test chart

9.1 Frequency tolerance (Rated voltage)



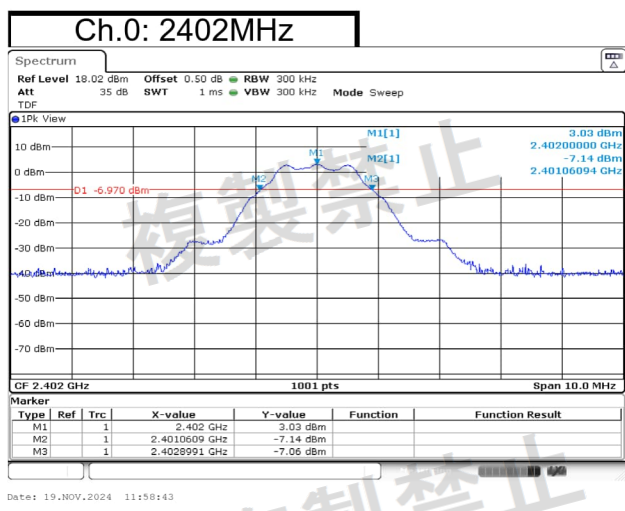
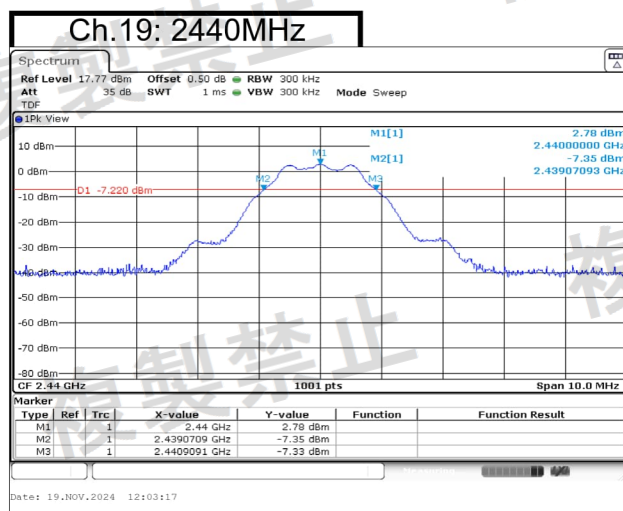
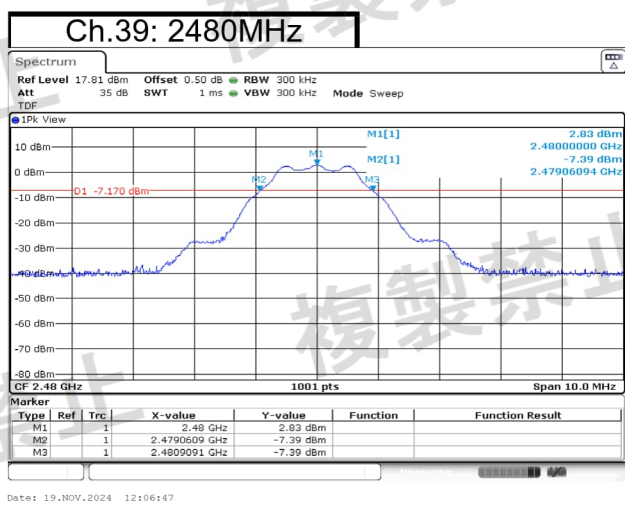
9. Test chart

9.1 Frequency tolerance (-10% voltage)



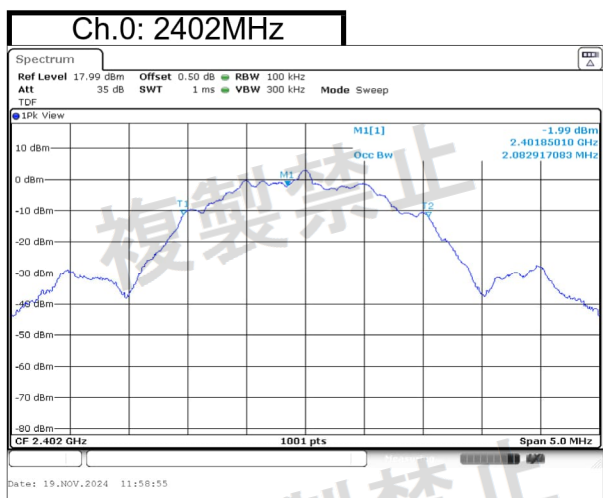
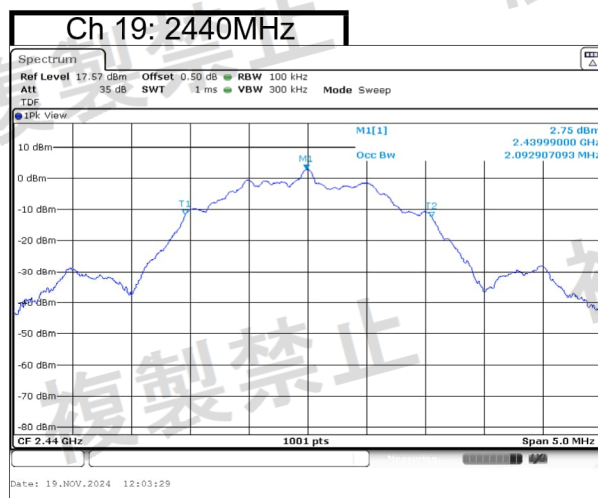
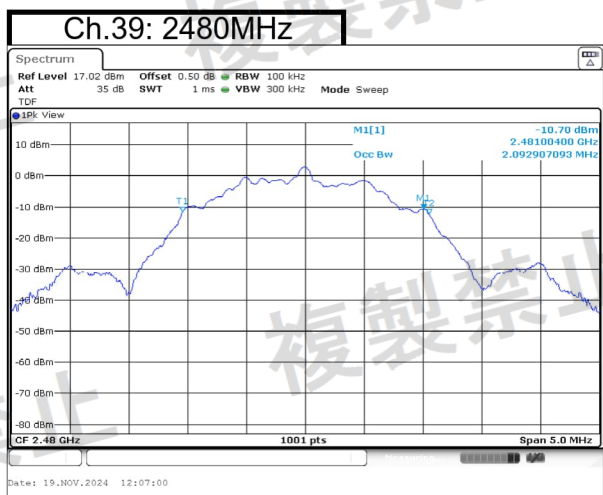
9. Test chart

9.1 Frequency tolerance (+10% voltage)



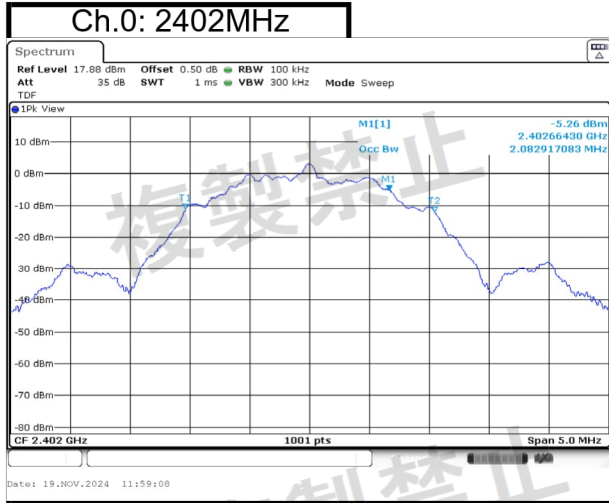
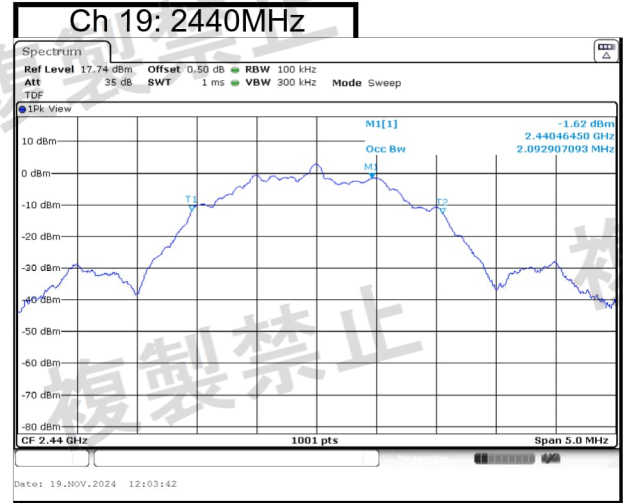
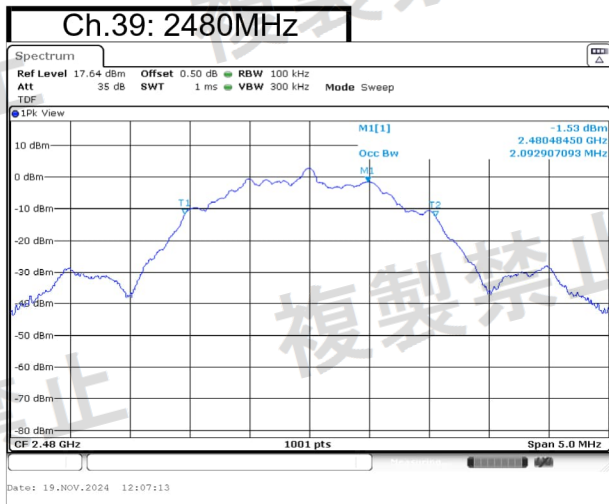
9. Test chart

9.2 Occupied bandwidth (Rated voltage)



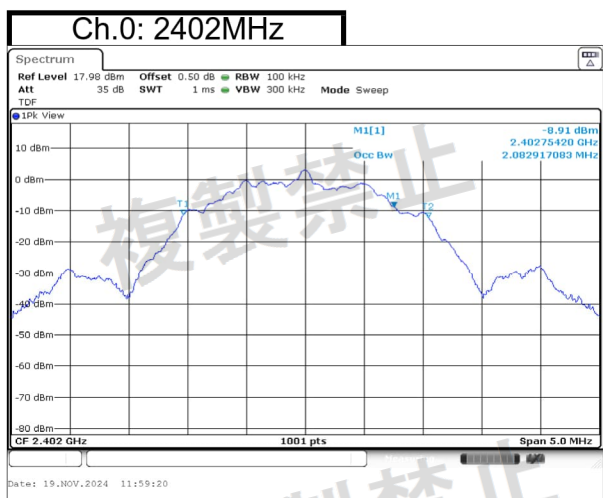
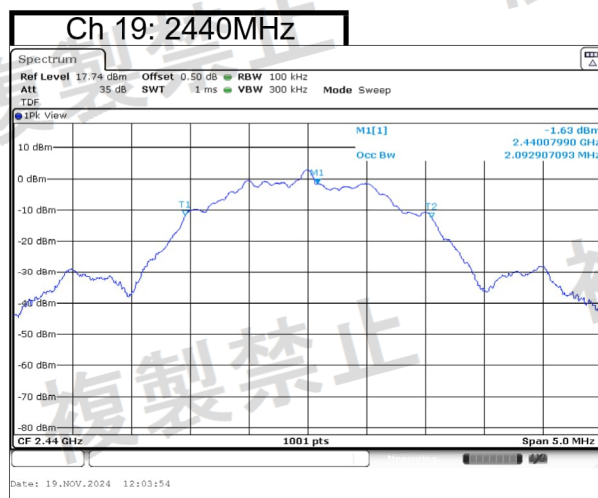
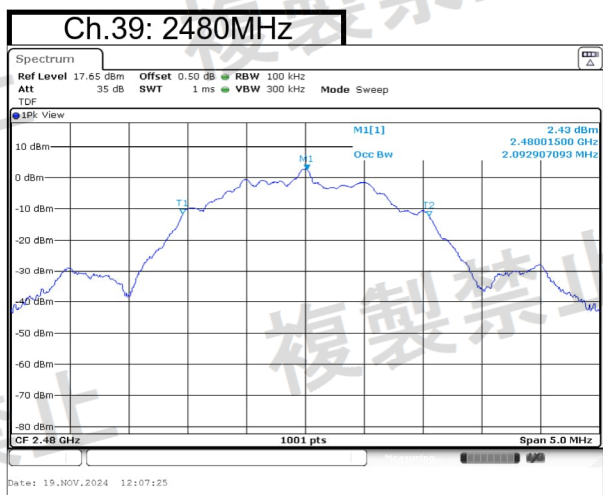
9. Test chart

9.2 Occupied bandwidth (-10% voltage)



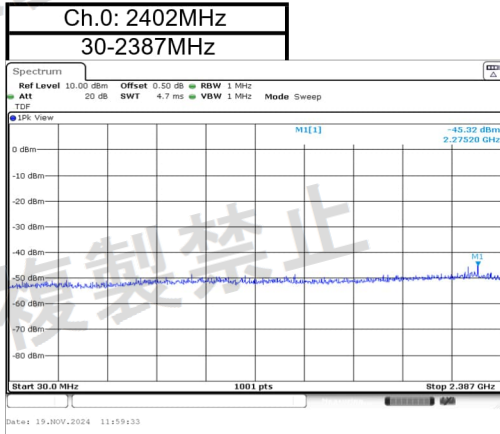
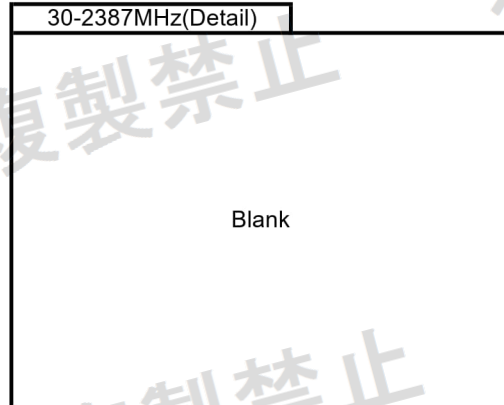
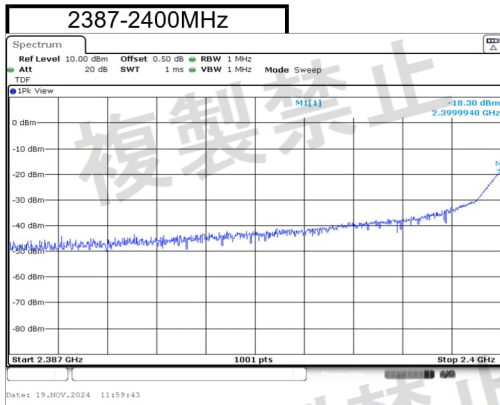
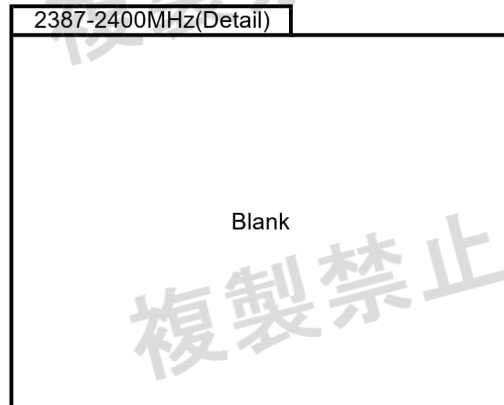
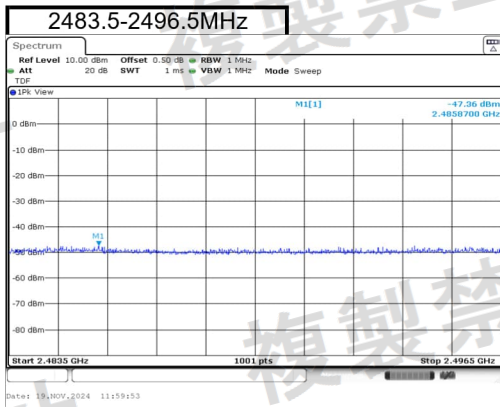
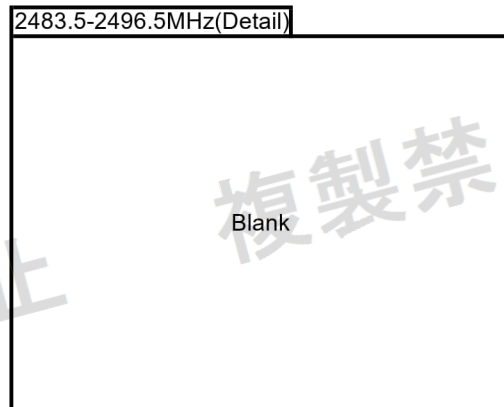
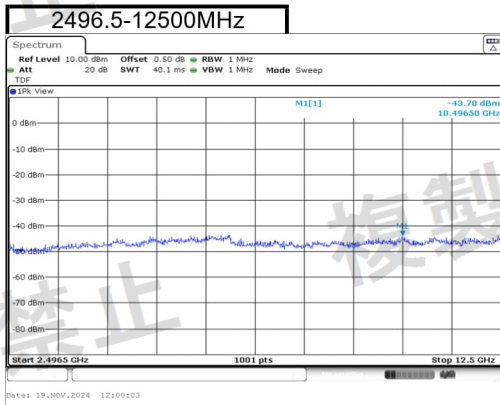
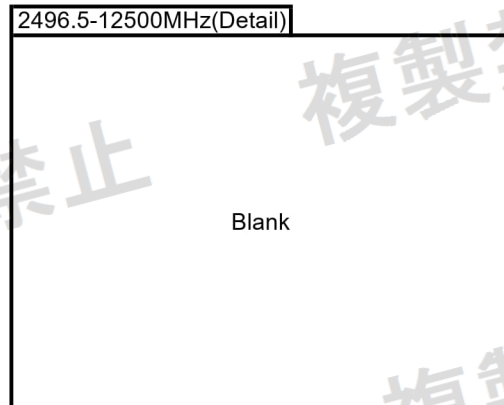
9. Test chart

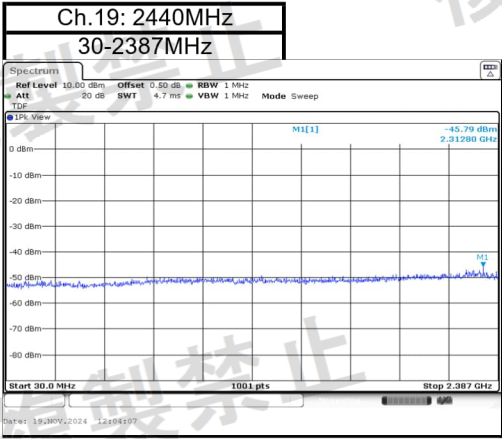
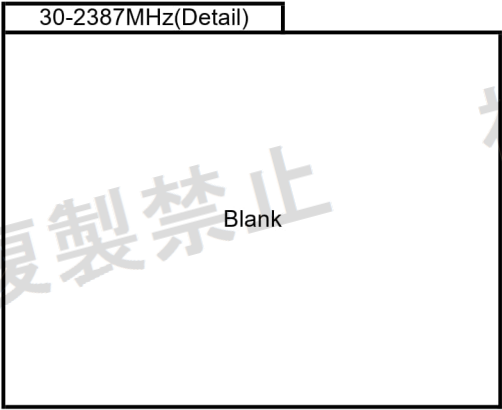
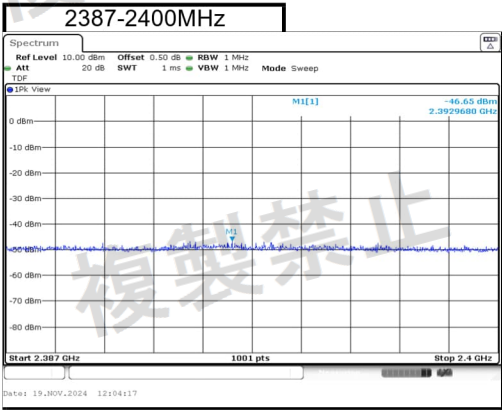
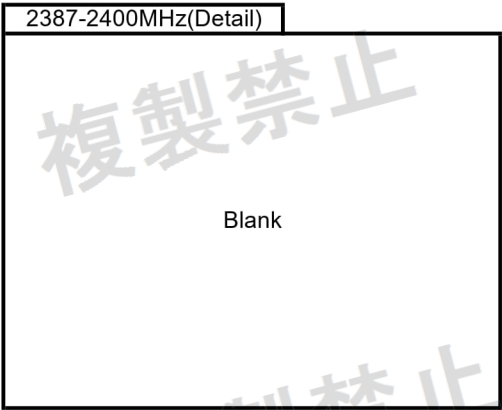
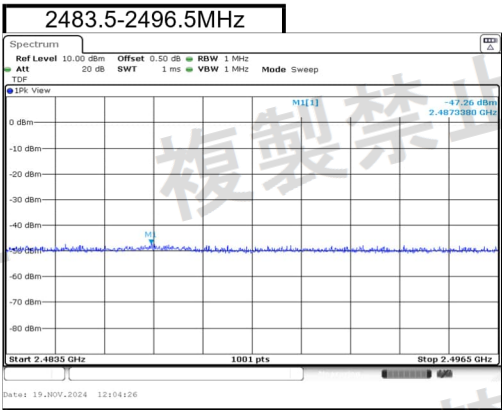
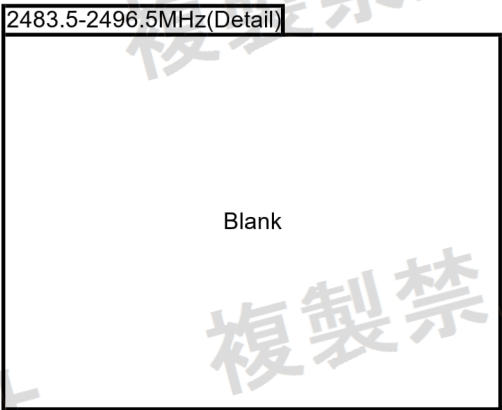
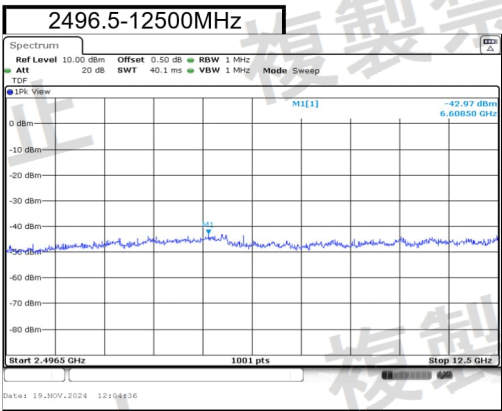
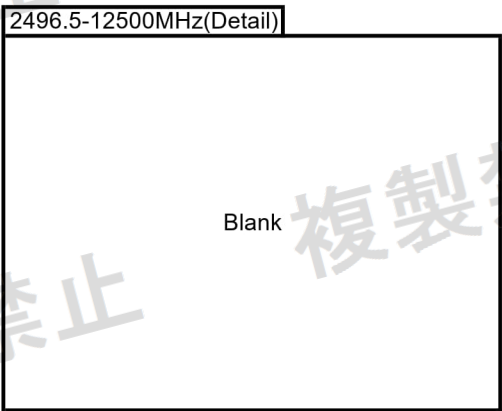
9.2 Occupied bandwidth (+10% voltage)

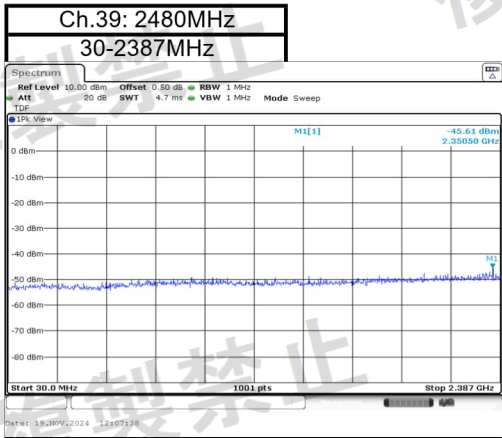
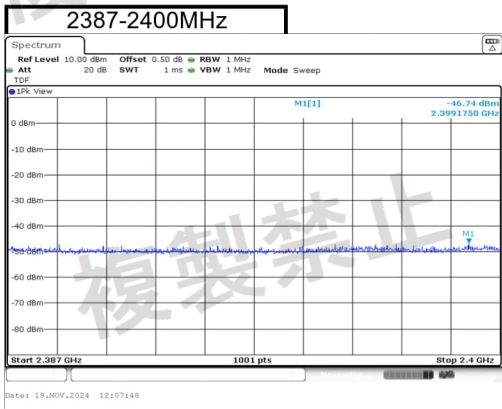
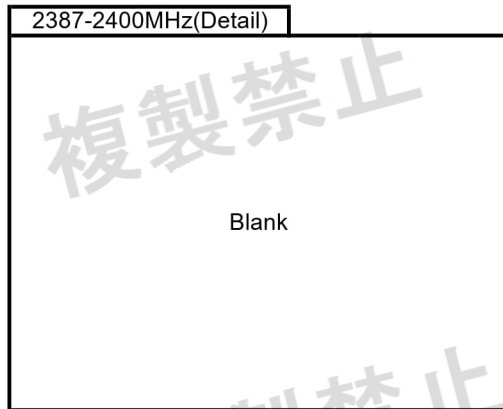
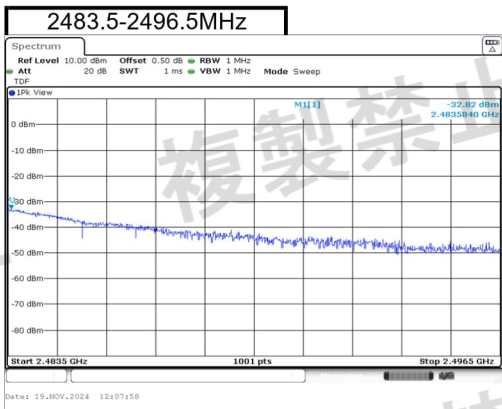
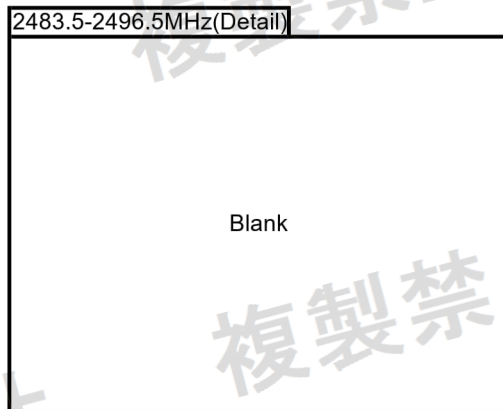
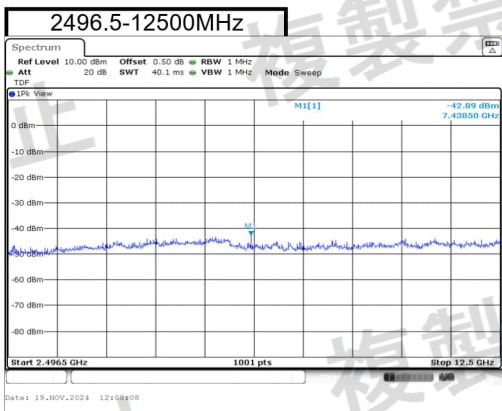
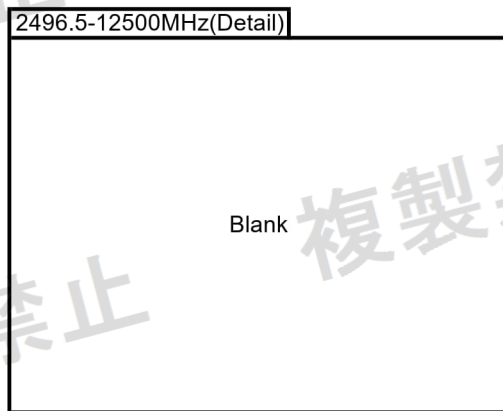


9. Test chart

9.3 Unwanted(Spurious) emission strength (Rated voltage)

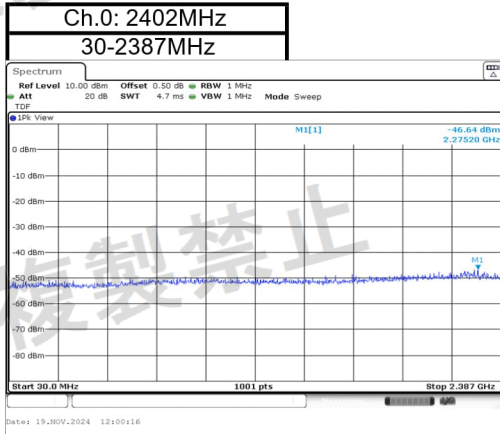
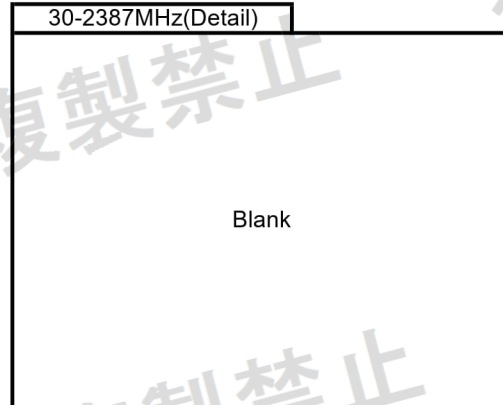
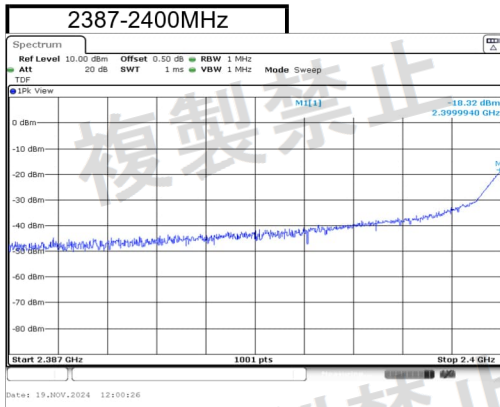
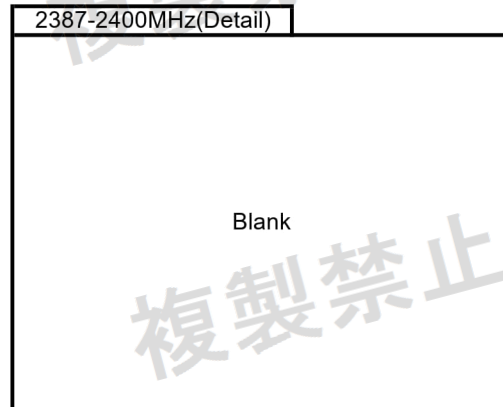
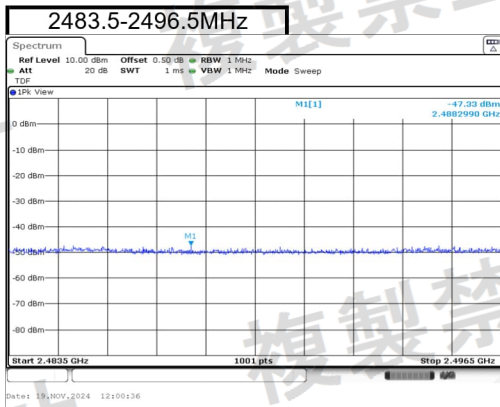
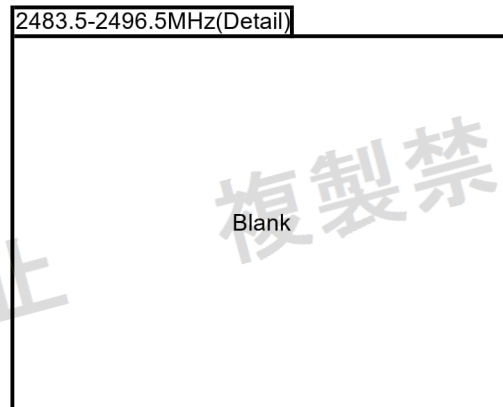
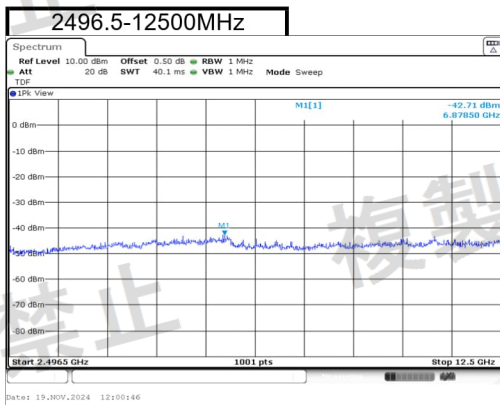
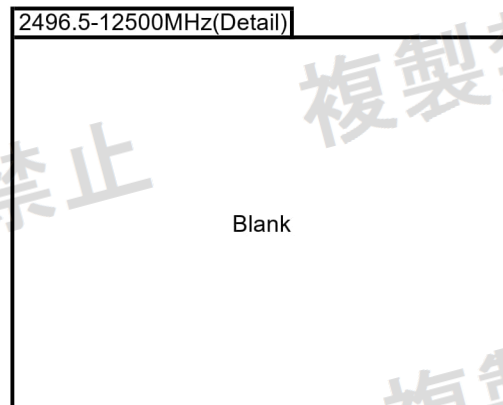


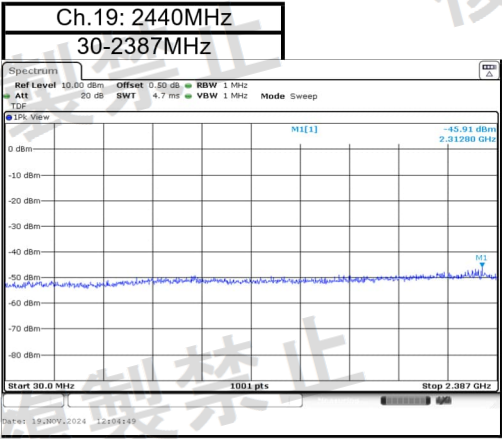
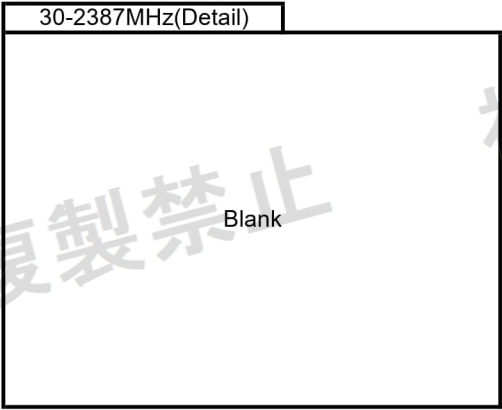
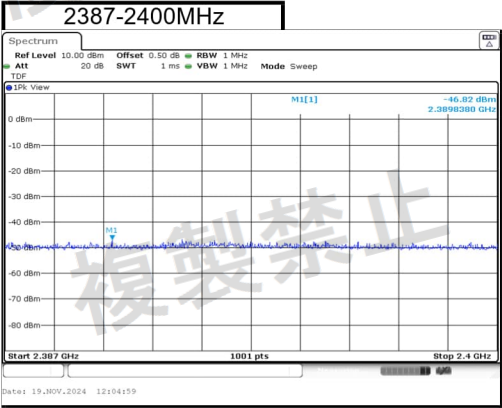
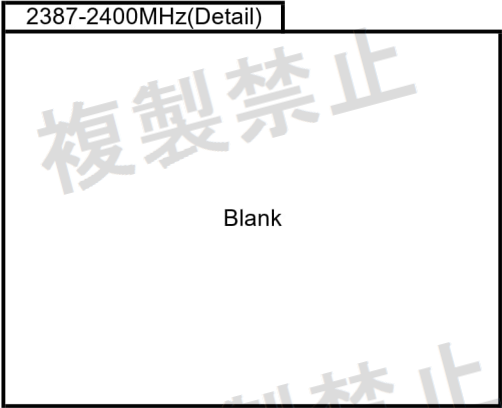
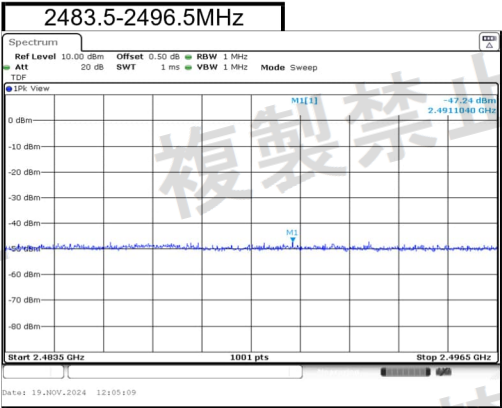
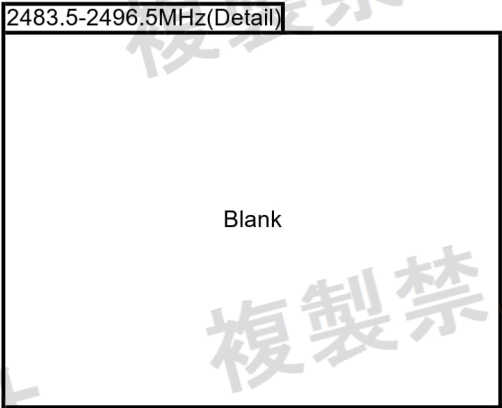
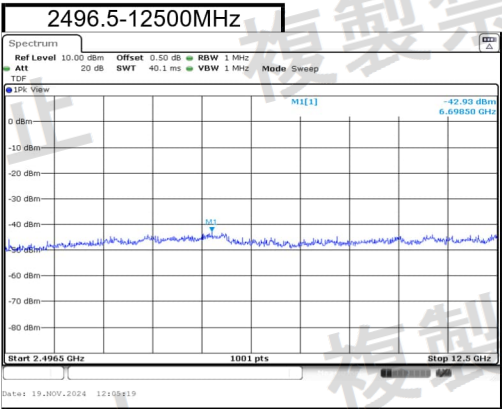
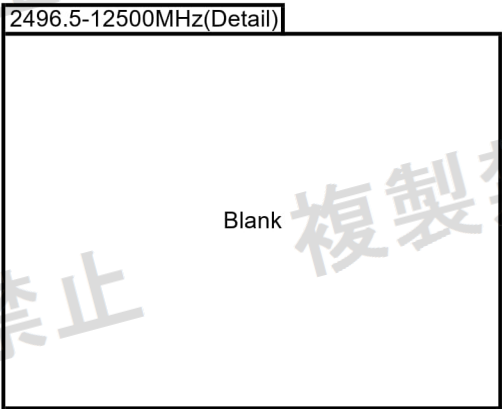


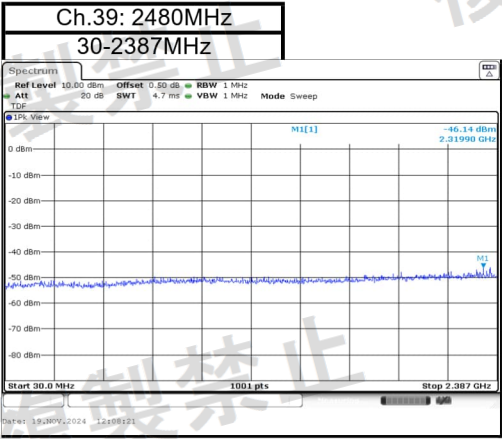
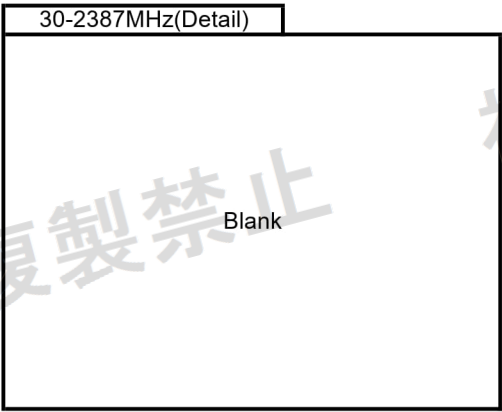
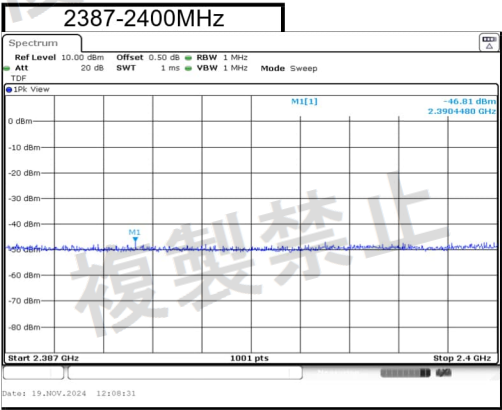
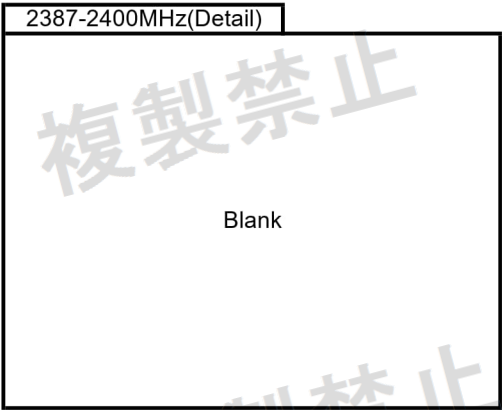
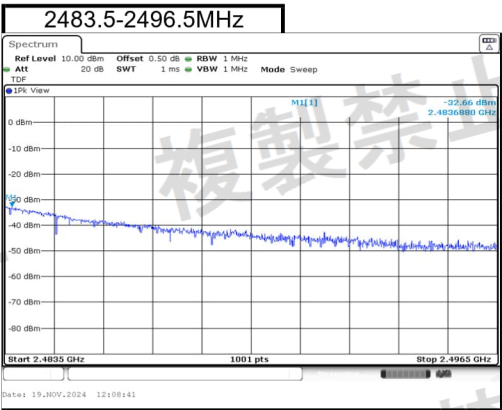
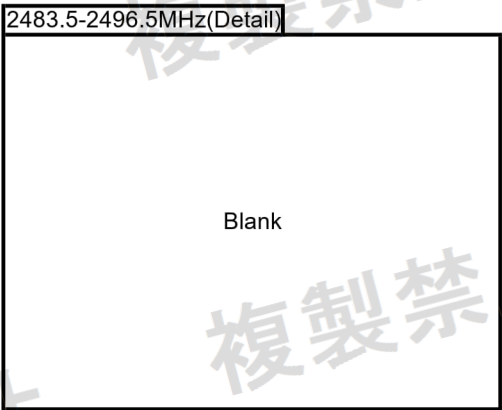
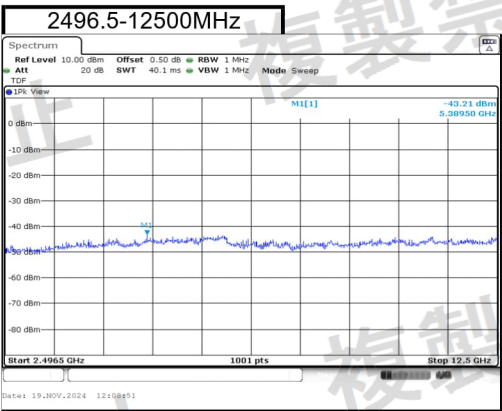
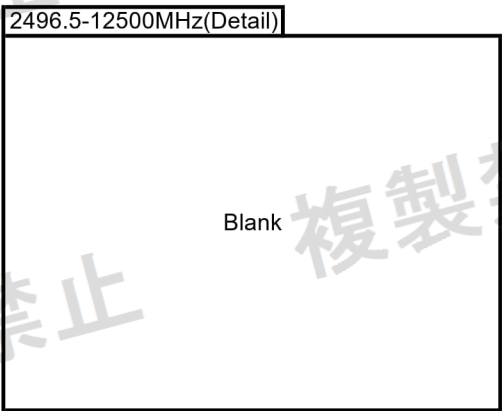


9. Test chart

9.3 Unwanted(Spurious) emission strength (-10% voltage)

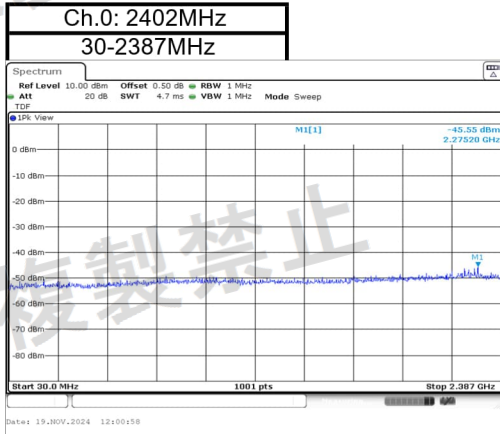
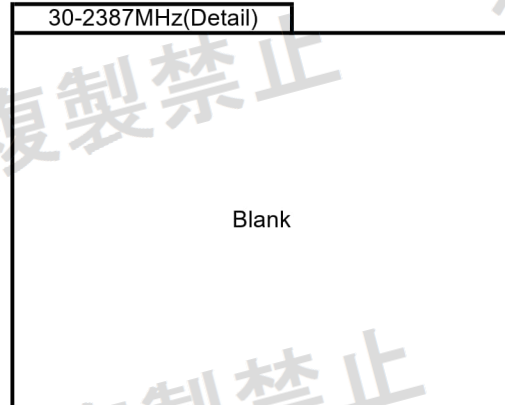
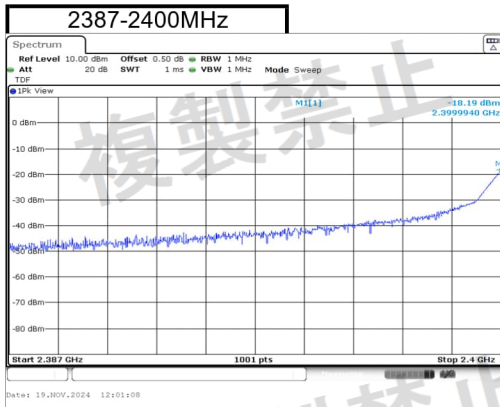
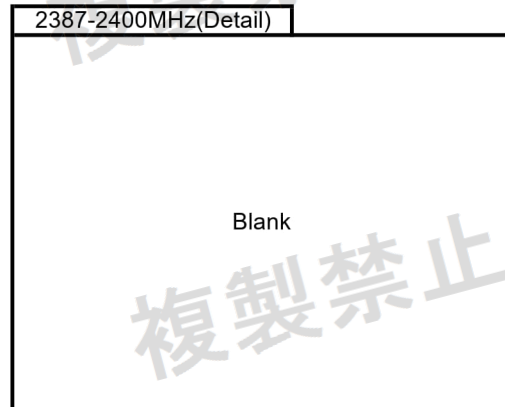
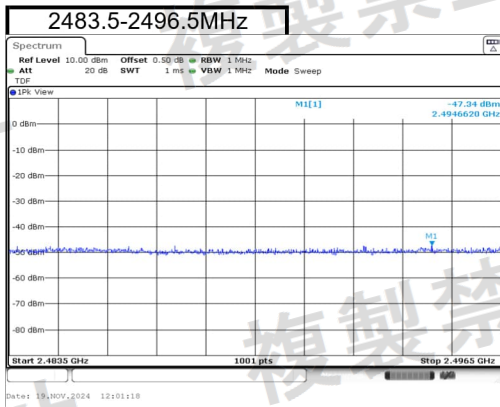
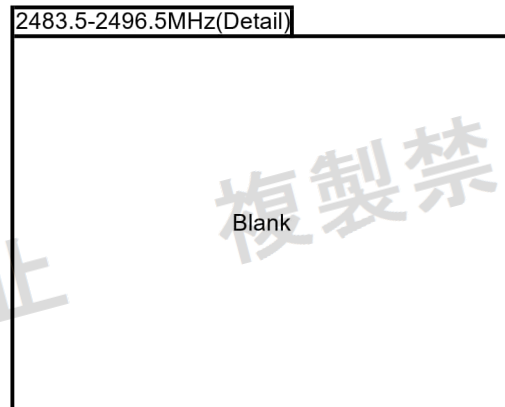
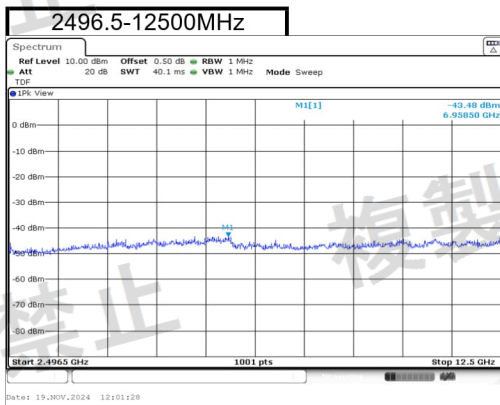
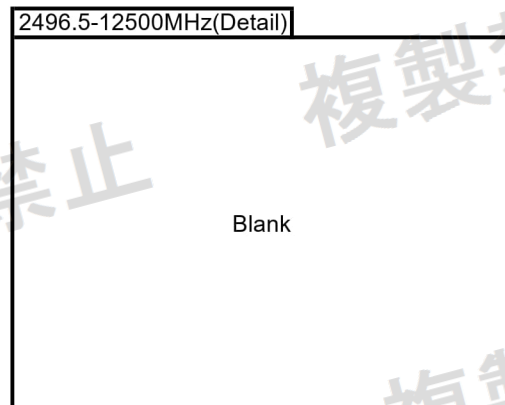


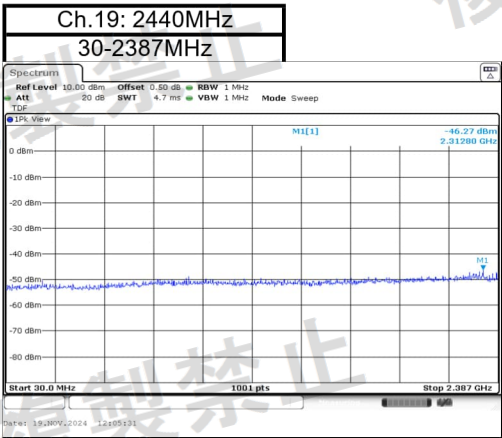
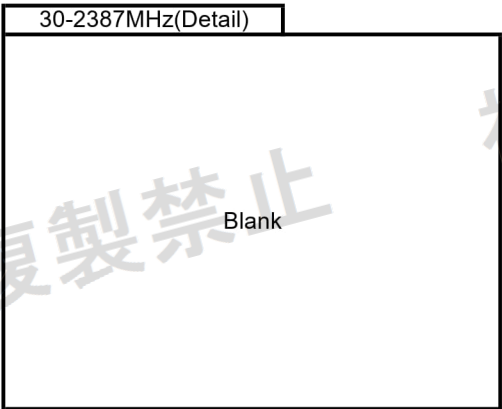
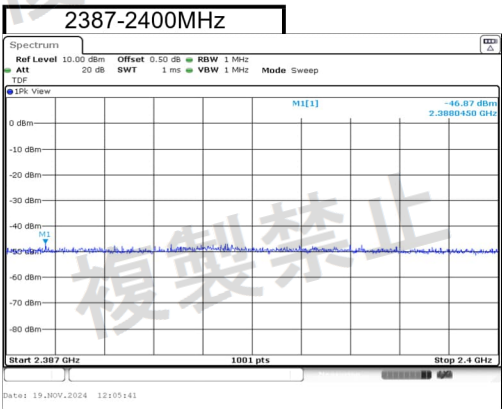
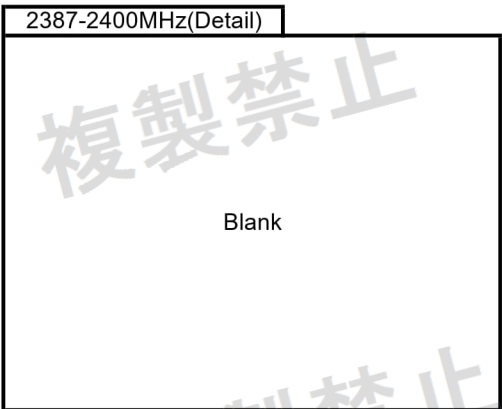
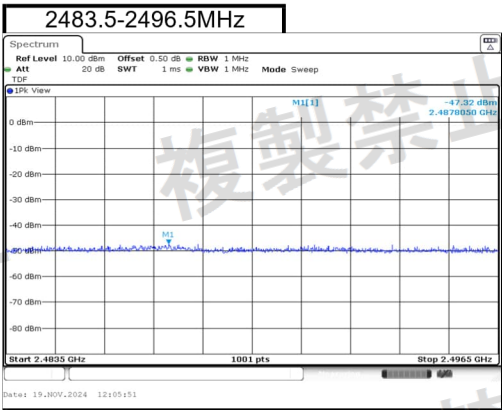
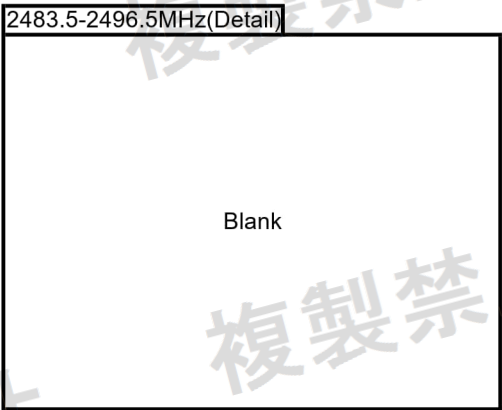
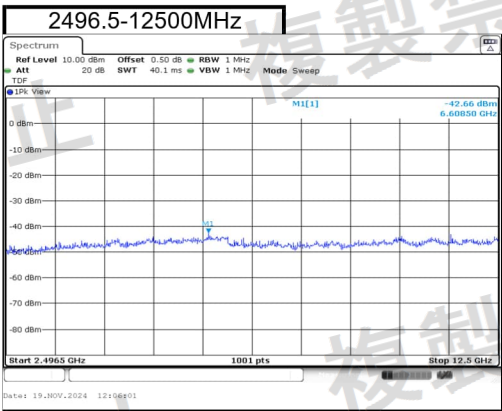
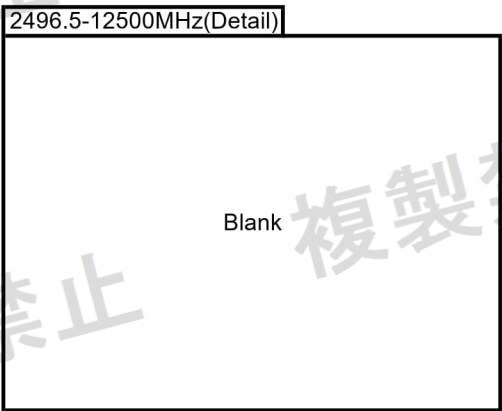


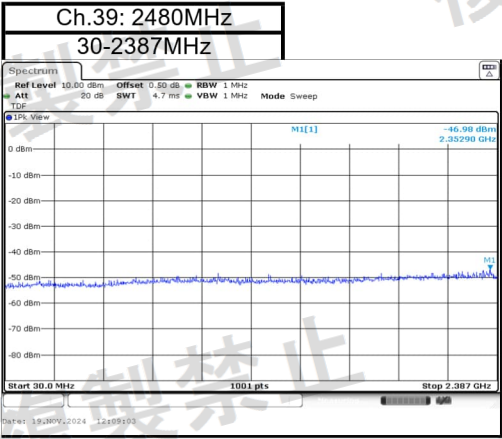
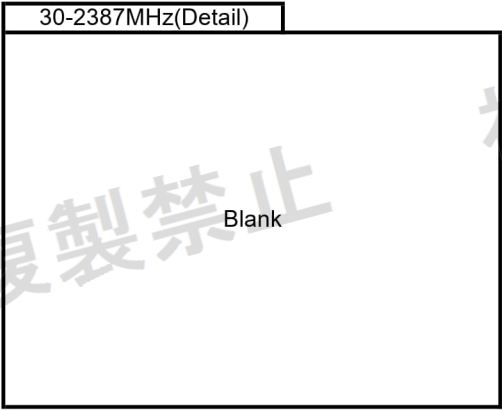
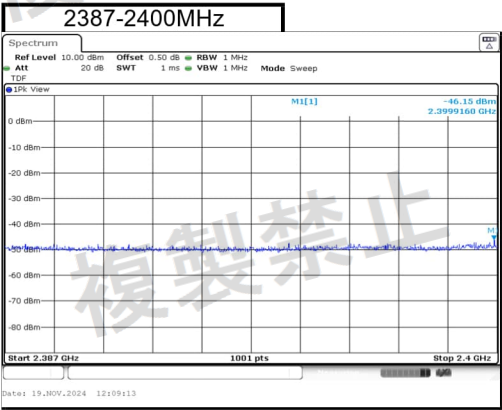
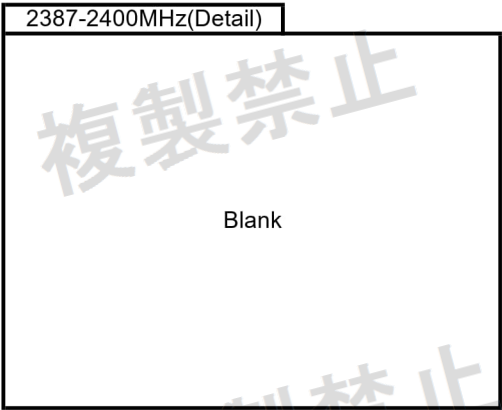
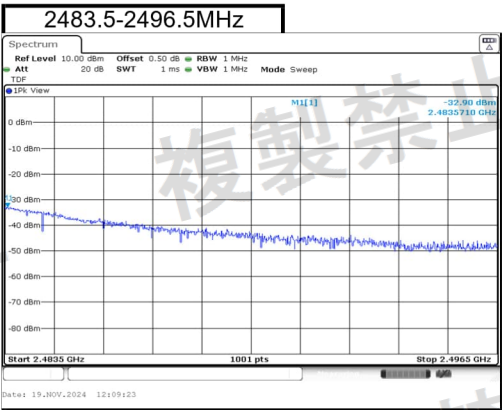
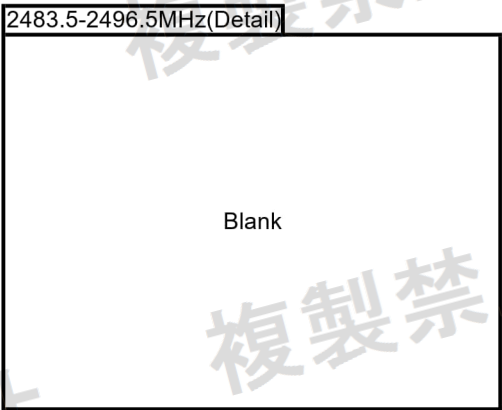
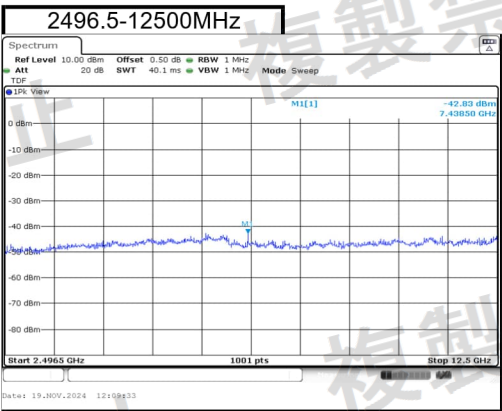
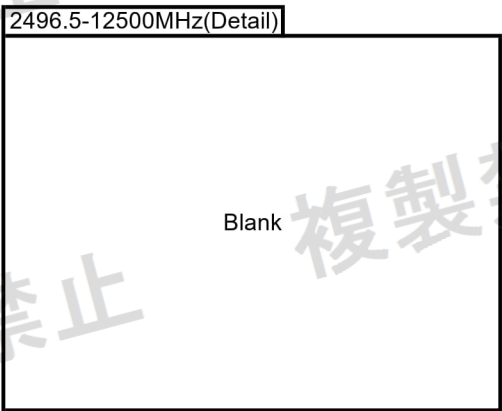


9. Test chart

9.3 Unwanted(Spurious) emission strength (+10% voltage)

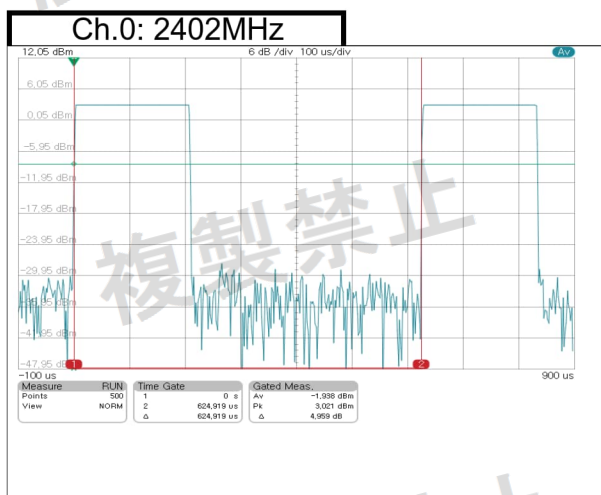
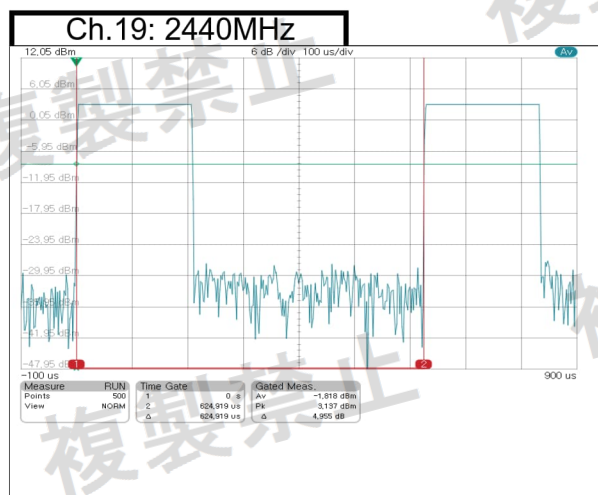
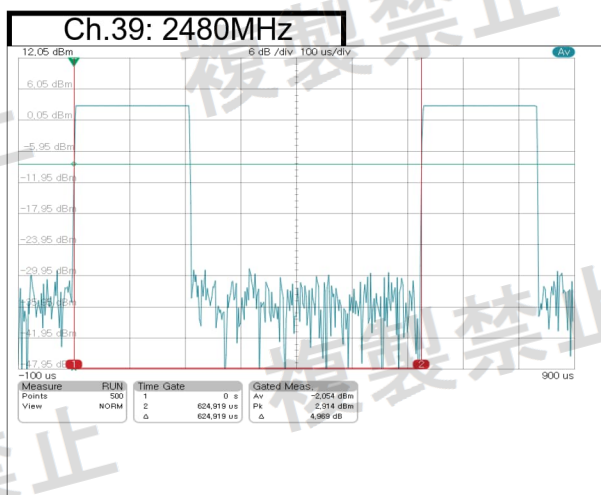
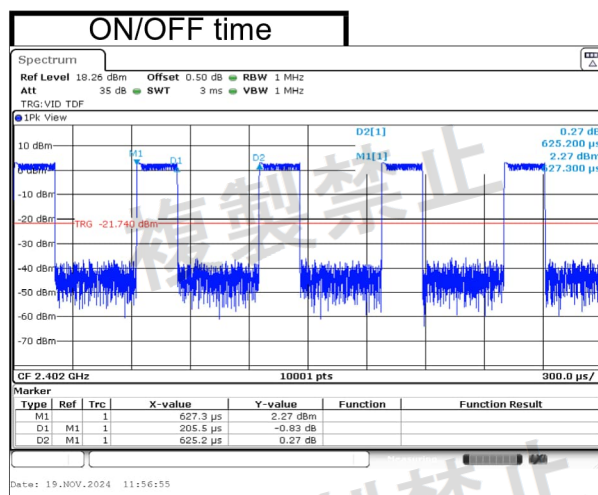






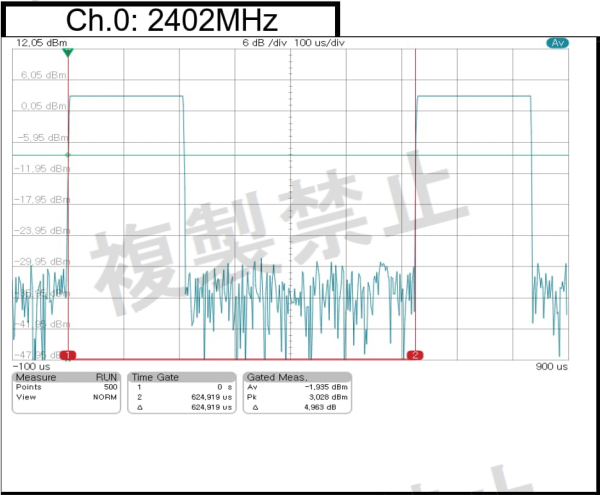
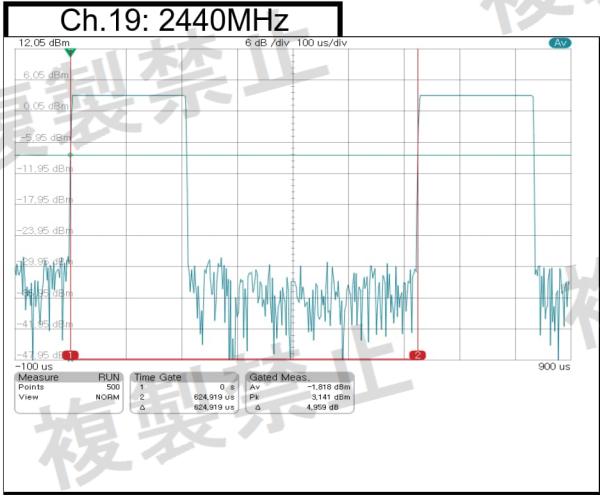
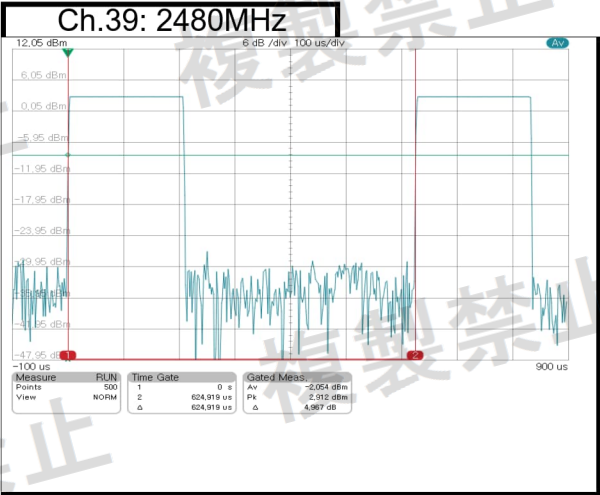
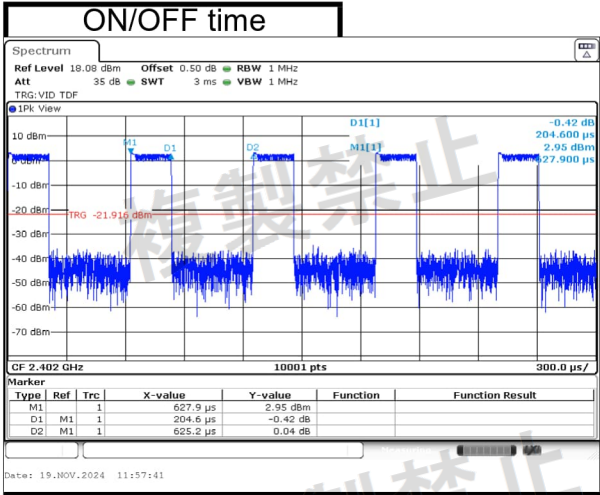
9. Test chart

9.4 RF output power tolerance (Rated voltage)



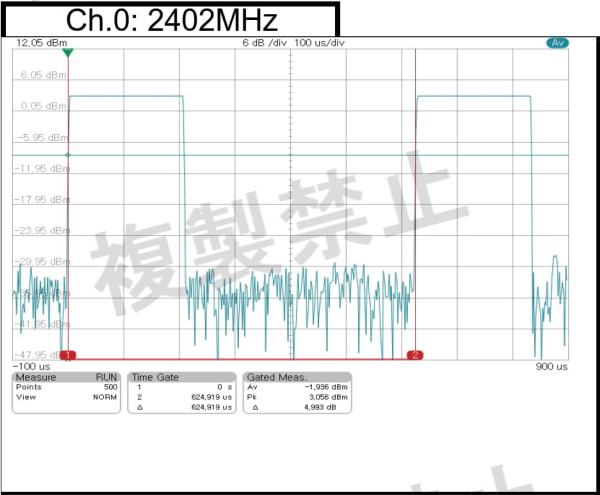
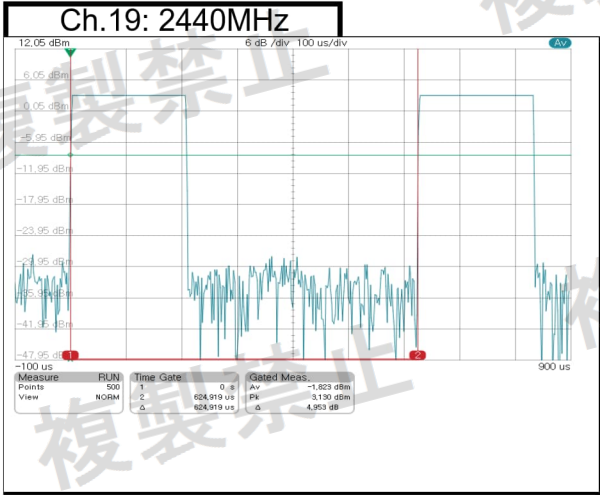
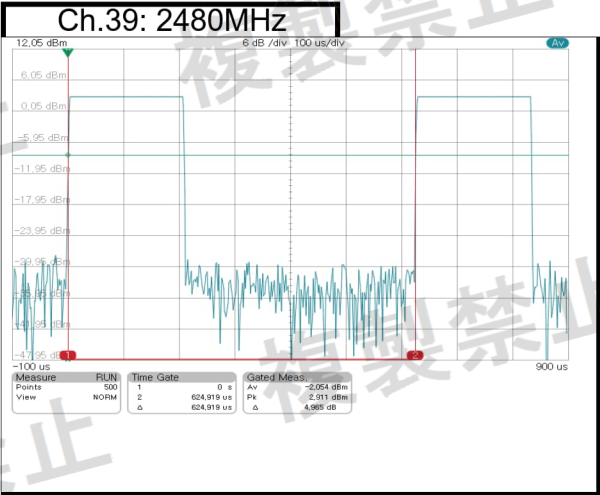
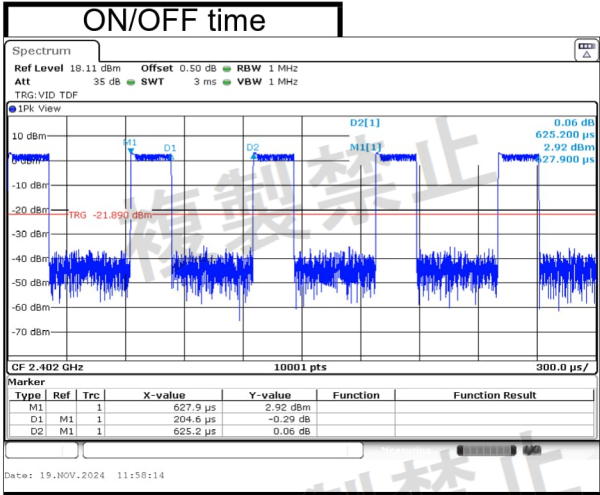
9. Test chart

9.4 RF output power tolerance (-10% voltage)



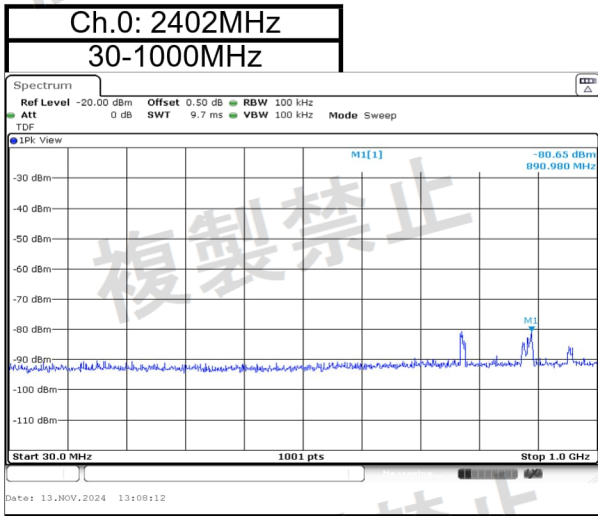
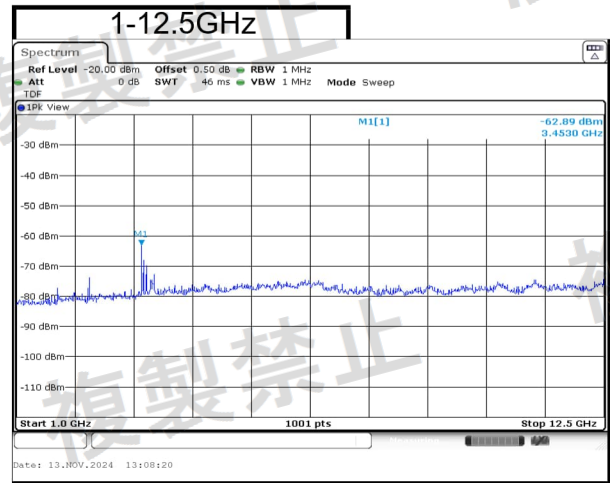
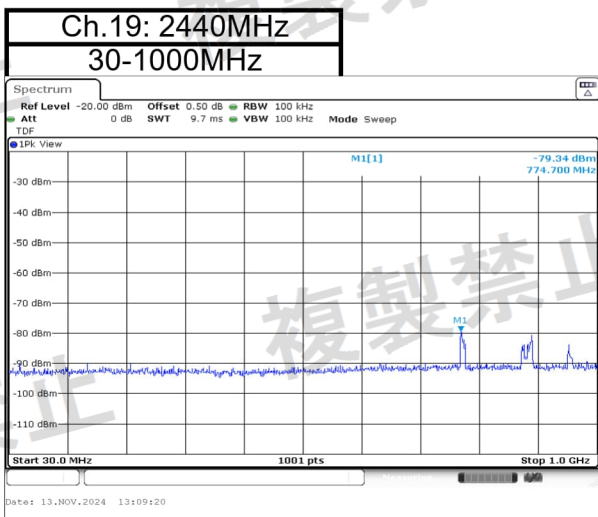
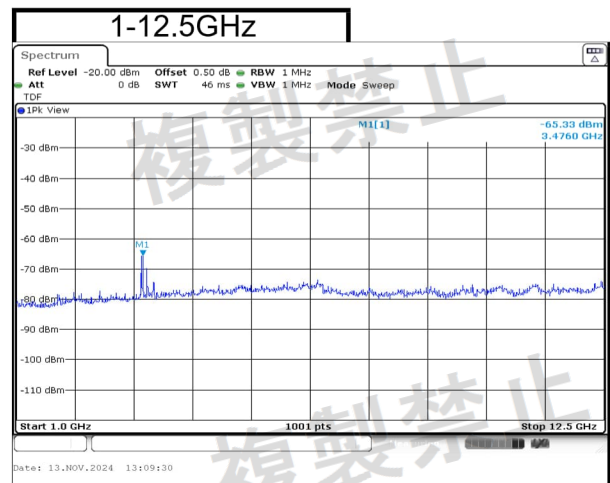
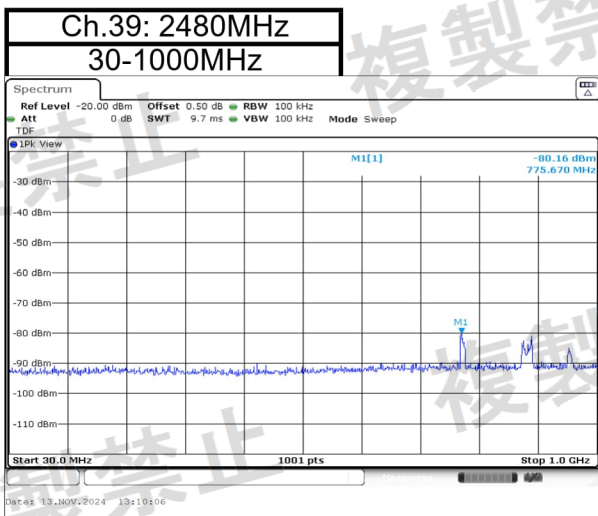
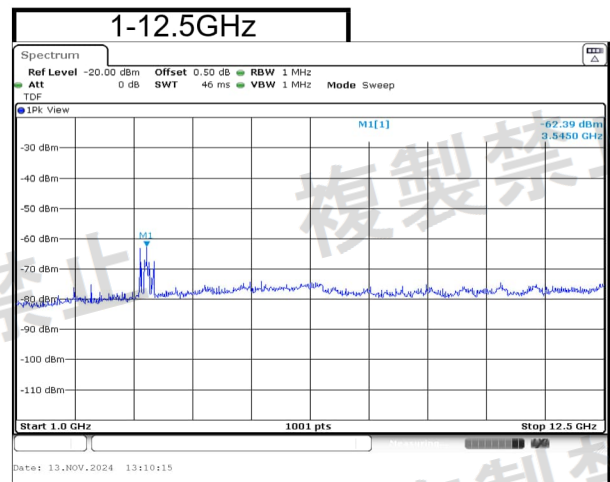
9. Test chart

9.4 RF output power tolerance (+10% voltage)



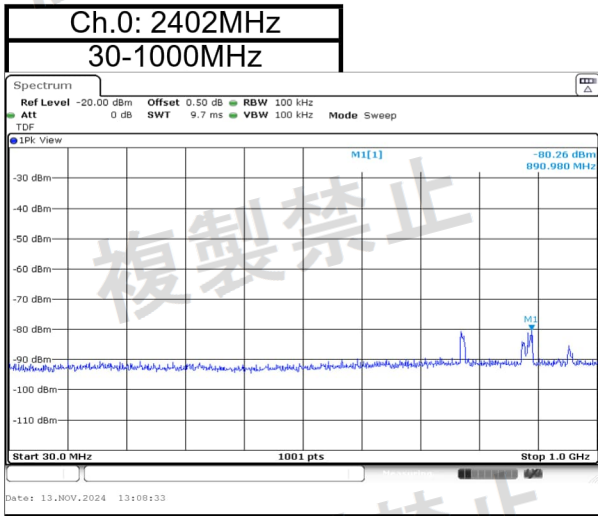
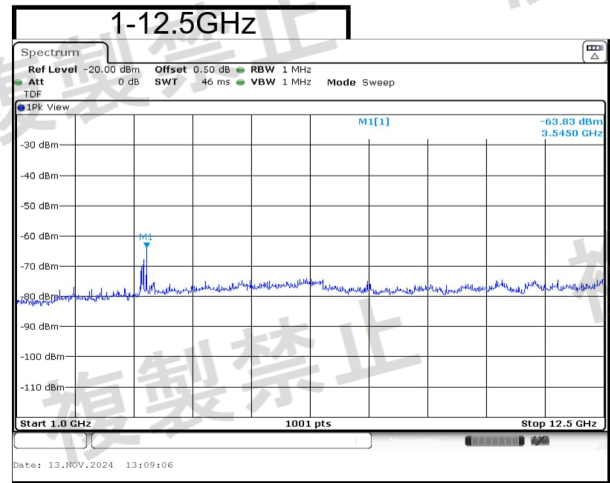
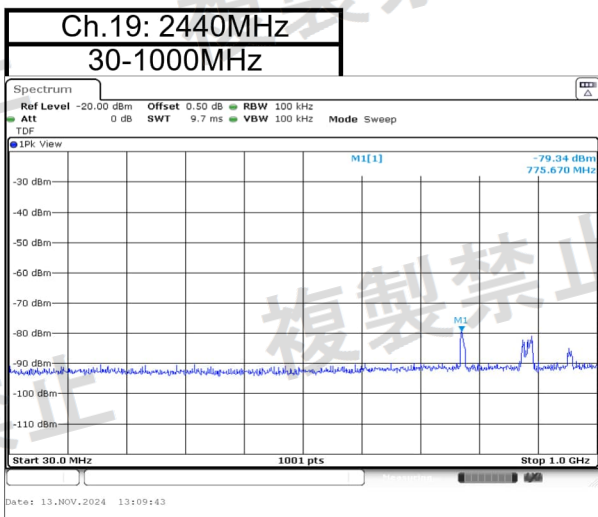
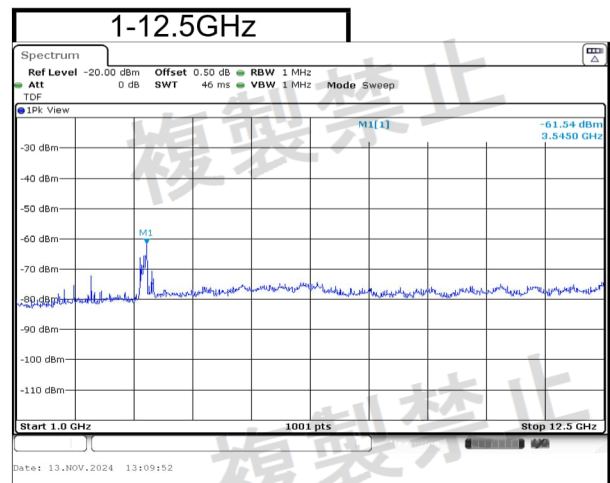
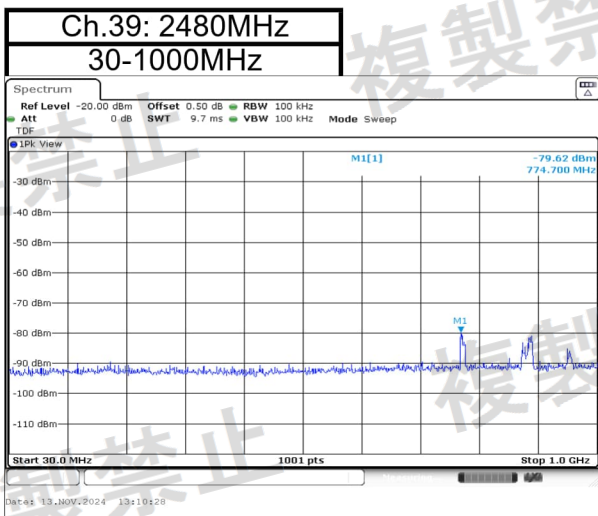
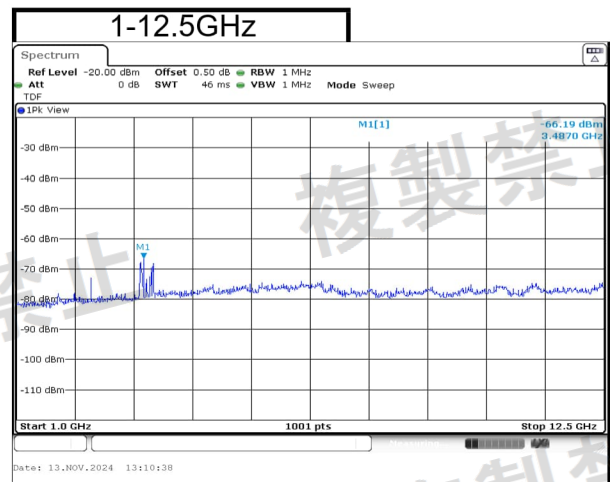
9. Test chart

9.5 Secondary emitted radio wave strength (Rated voltage)



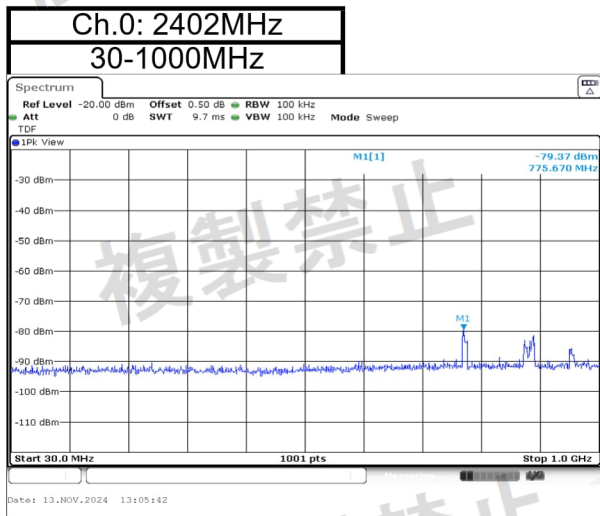
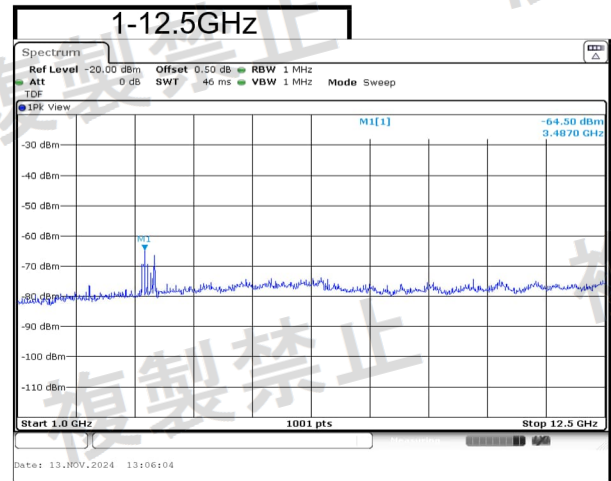
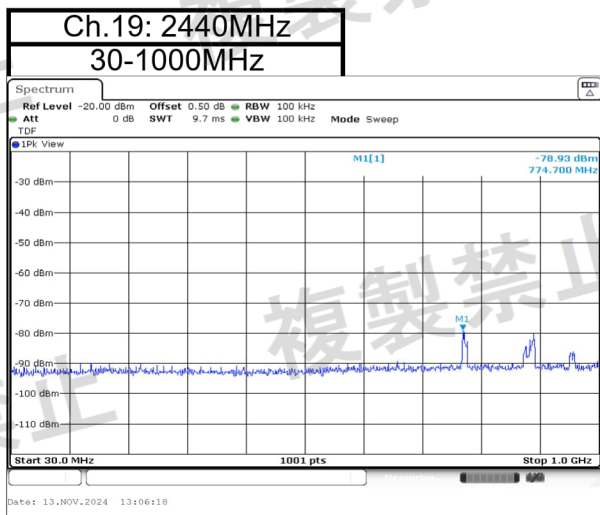
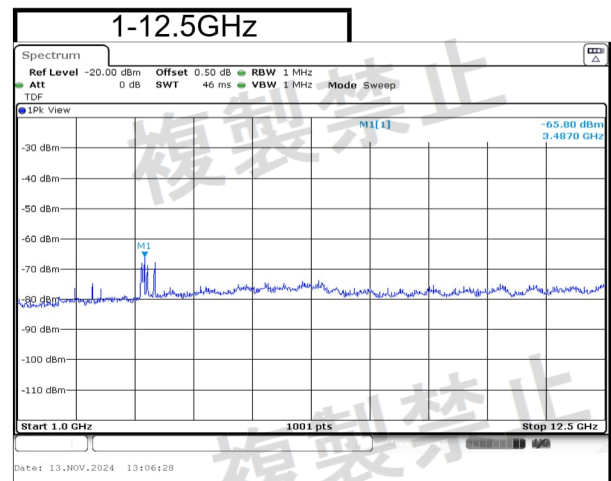
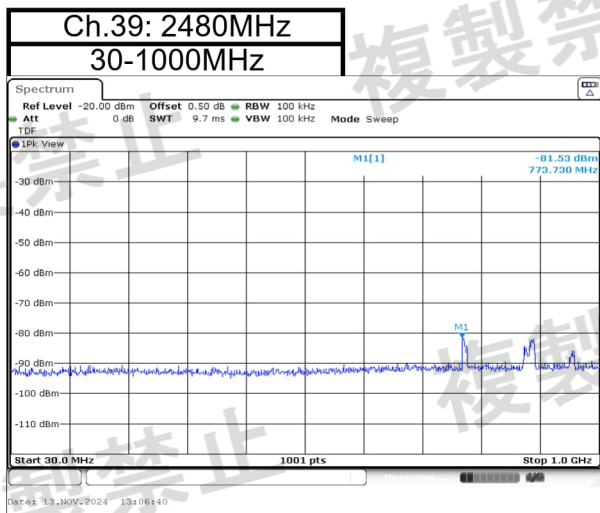
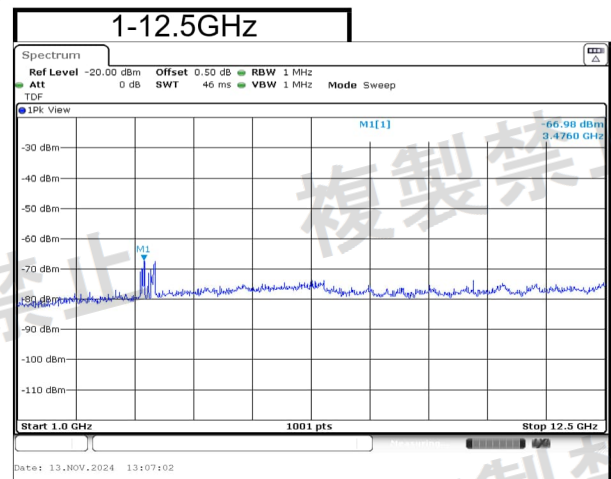
9. Test chart

9.5 Secondary emitted radio wave strength (-10% voltage)



9. Test chart

9.5 Secondary emitted radio wave strength (+10% voltage)



10. Laboratory description

1. Location

Name: Eurofins KCTL CO.,Ltd.

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

Telephone Number: +82 31 285 0894

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