

JAPAN MIC TEST REPORT

Project No. : DST-26R-0106

Test Report No. : DST-26R-0106

Applicant : **QUDELIX, Inc.**
B-1316, 190 Soha-ro, Gwangmyeong-si, Gyeonggi-do, 14322, Republic of Korea

Manufacturer : **KDT CO., LTD.**
Rm.413, #121, Dongtan-daero 23-gil, Hwaseong-si, Gyeonggi-do,
Republic of Korea

Product name : BLUETOOTH DAC/AMP

Model name : **Qudelix-5K Plus**
(Please see P6 for all the model numbers)

Date of receipt : June 22, 2026

Date of issue : September 29 , 2026

Test Result : PASS ☒ FAIL ☐

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 DSTech Co., Ltd.

This test report is prepared according to the requirements of ISO / IEC 17025

Tested by : 최재영
Jaeyoung, Choi / Testing Engineer

Reviewed by: 김정태
Jungtae, Kim/ Chief Engineer

DSTech Co., Ltd.

Revision History of Report

Rev.	Revisions	Effect page	Reviewed by	Date
-	Initial issue	All	Jungtae, Kim	September 29, 2026

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1 Summary of Test

Purpose of test:

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

Standards:

Certification Ordinance Article 2 Clause 1 Item 19

Test Methods:

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

List of applied test to the EUT

No	Classification of EUT	Condition	Result
1	Frequency Tolerance	Conducted	PASS
2	Occupied Bandwidth	Conducted	PASS
3	Spread Bandwidth	Conducted	PASS
4	Transmitter spurious emissions	Conducted	PASS
5	Antenna power	Conducted	PASS
6	Receiver spurious emissions	Conducted	PASS
7	Dwell time	Conducted	PASS
8	Anti-Interference	Conducted	PASS

2 Facilities and accreditations

2.1. Facilities

25, 2565beon-gil, jungbu-daero, Yangji-eup, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17162
TEL : 82-31-336-1798, FAX : 82-31-336-3451

2.2 Certified

KOLAS: Registration No.: KT838
VCCI Site Registration No.: R-20066, T-20042, C-20043, G-20069
RRA: Registration No.: KR 0168

2.2. List of test and measurement instruments

USE	Equipment	Company	Model No.	Serial No.	Cal. Date	Cal. Interval	Calibrated by
X	SIGNAL ANALYZER	ROHDE&SCHWARZ	FSV13	101496	2026.06.10	1 year	HCT Co.,Ltd.
	UNIVERSAL COUNTER	Agilent	53131A	KR01206279	2026.06.13	1 year	HCT Co.,Ltd.
	SYNTHESIZED SIGNAL GENERATOR	ANRITSU	68367C	#012926	2026.06.10	1 year	HCT Co.,Ltd.
	MODULATION ANALYZER	H.P	8901B	3005A02533	2026.06.10	1 year	HCT Co.,Ltd.
	SIGNAL GENERATOR	Agilent	E4438C	MY47271725	2026.06.10	1 year	HCT Co.,Ltd.
	15 MHz FUNCTION/ARBITRARY WAVEFORM GENERATOR	H.P	33120A	US36024435	2026.06.09	1 year	HCT Co.,Ltd.
X	Hygro/Thermo Graph	CAS	T004	-	2026.08.14	1 year	HCT Co.,Ltd.
X	Attenuator (10dB)	Agilent	8493C	16219	2026.01.05	1 year	HCT Co.,Ltd.
	Attenuator (20dB)	Agilent	8491B	27488	2026.01.05	1 year	HCT Co.,Ltd.
X	DC Power supply	Agilent	E3632A	MY51290213	2026.09.10	1 year	HCT Co.,Ltd.

c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated

3 EUT(Equipment Under Test) Information

Product: BLUETOOTH DAC/AMP
Model: Qudelix-5K Plus
Serial number: None (prototype)

Model differences:

Model name	Difference	Tested (checked)
Qudelix-5k Plus	Original	☒

Note: All the differences were compared with the test sample

Technical data:

Operating frequency range:*	2402 MHz ~ 2480 MHz			
Type of modulation:	GFSK, $\pi/4$ -DQPSK, 8-DPSK			
Type of emission:	F1D, G1D			
Type of Antenna	PCB antenna : 2.87 dBi @ 2430 MHz			
RF output power:	BDR/EDR mode F1D,G1D: 0.00031(Normal)-0.00125(AFH) W/MHz BLE mode - LE (1 Mbps) GFSK modulation (F1D): 0.00950 W - LE (2 Mbps) GFSK modulation (F1D): 0.00125 W			
Number of Channels:	79 channels (channel spacing: 1 MHz) / 40 channels (channel spacing 2 MHz)			
Power source:**	Nominal:	Voltage (normal):	Extreme upper Voltage:	Extreme lower Voltage:
	DC 3.70 V	DC 3.70 V	DC 4.07 V	DC 3.33 V
S/W Version	Software: 1.0			
H/W Version	Hardware: 4.0			
Connection to PSTN:	No			

Note: * The test were performed at each voltage(battery input terminal)

I/O port	Type	Q'ty	Remark
USB	USB	1	Service Port

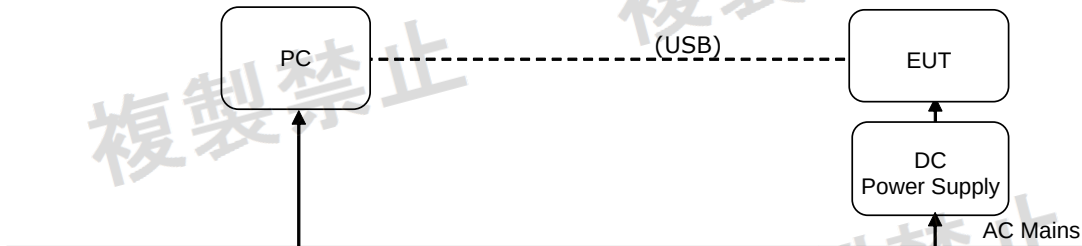
EUT Modifications

- None

4 Test and measurement conditions

4.1. Test configuration (arrangement of EUT)

The measurements were taken in continuous transmitting/receiving mode using the TEST MODE.



The measurements were taken in TEST MODE provided by the applicant for controlling the EUT.

- Test software installed in the EUT: QUALCOMM Blue Test v4.0.7

4.2. Description of support units (accessory equipment)

The following support units or accessories were used to form a representative test configuration during the tests.

#	Equipment	Manufacturer	Model No.	Serial No.
1	Desktop PC	-	-	-

4.3. Interconnection and I/O cables

The following support units or accessories were used to form a representative test configuration during the tests.

#	Start		End		Cable	
	Name	I/O port	Name	I/O port	length (m)	shielded (Y/N)
1	EUT	DC IN	DC power supply	DC OUT	1.2	N
2	DC power supply	AC IN	AC mains	AC mains	1.8	N

- Note:**
- 1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
 - 2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4. Measurement Uncertainty (U)

Refer to Measurement Results (The confidence level is 95 %, $k = 2$)

4.5. Test Date

Date Tested	July 20, 2026 – September 28, 2026
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5 Measurement results (BDR/EDR)

5.1. Frequency tolerance

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.1.1 Test Data

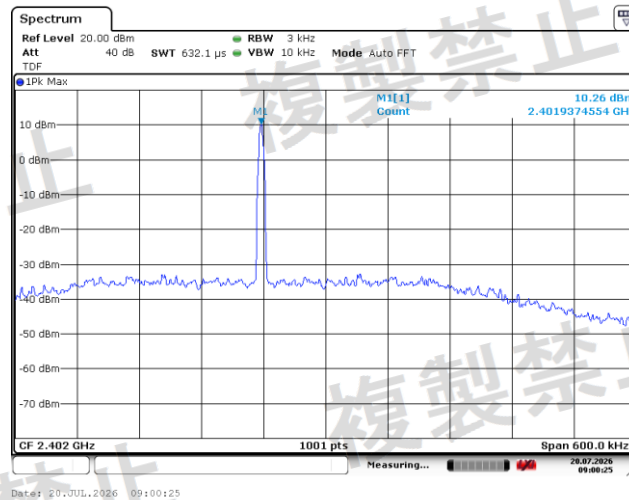
PASS

Test Conditions (Conducted)					
Temperature: (25 ± 3) °C			TEST RESULTS		
Rel. Humidity: (53 ± 3) % R.H.			Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Basic					
Low Frequency: 2402 MHz	V _{MAX}	DC 4.07 V	2.4019377900	-25.90	± 50
	V _{NOM}	DC 3.70 V	2.4019374554	-26.04	
	V _{MIN}	DC 3.33 V	2.4019372051	-26.14	
Middle Frequency: 2441 MHz	V _{MAX}	DC 4.07 V	2.4409359781	-26.23	
	V _{NOM}	DC 3.70 V	2.4409358918	-26.26	
	V _{MIN}	DC 3.33 V	2.4409358220	-26.29	
High Frequency: 2480 MHz	V _{MAX}	DC 4.07 V	2.4799346212	-26.36	
	V _{NOM}	DC 3.70 V	2.4799344772	-26.42	
	V _{MIN}	DC 3.33 V	2.4799344197	-26.44	
EDR					
Low Frequency: 2402 MHz	V _{MAX}	DC 4.07 V	2.4019368572	-26.29	± 50
	V _{NOM}	DC 3.70 V	2.4019366932	-26.36	
	V _{MIN}	DC 3.33 V	2.4019365746	-26.41	
Middle Frequency: 2441 MHz	V _{MAX}	DC 4.07 V	2.4409358723	-26.27	
	V _{NOM}	DC 3.70 V	2.4409358048	-26.30	
	V _{MIN}	DC 3.33 V	2.4409357837	-26.31	
High Frequency: 2480 MHz	V _{MAX}	DC 4.07 V	2.4799347774	-26.30	
	V _{NOM}	DC 3.70 V	2.4799347539	-26.31	
	V _{MIN}	DC 3.33 V	2.4799347417	-26.31	
Measurement uncertainty: ± 2 × 10 ⁻⁷					

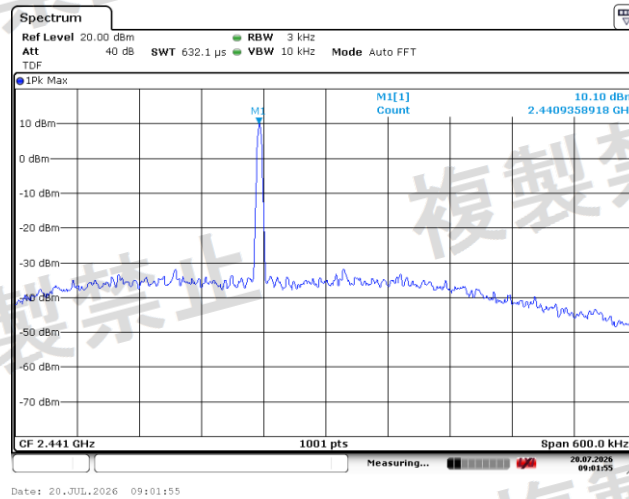
5.1.2 Test Plot (Normal Voltage)

Basic

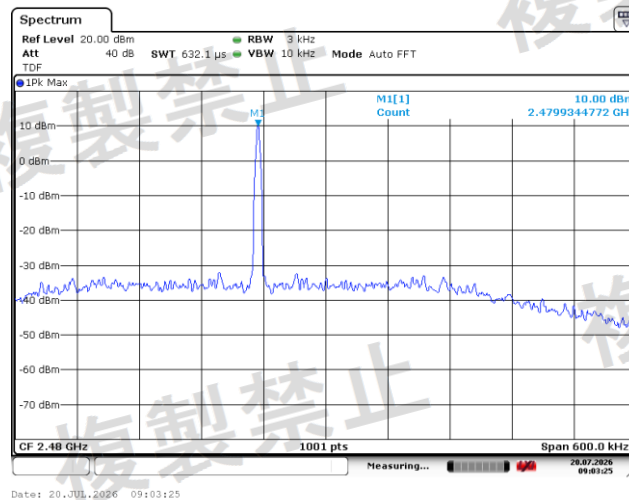
Low Channel
(2402 MHz)



Middle Channel
(2441 MHz)

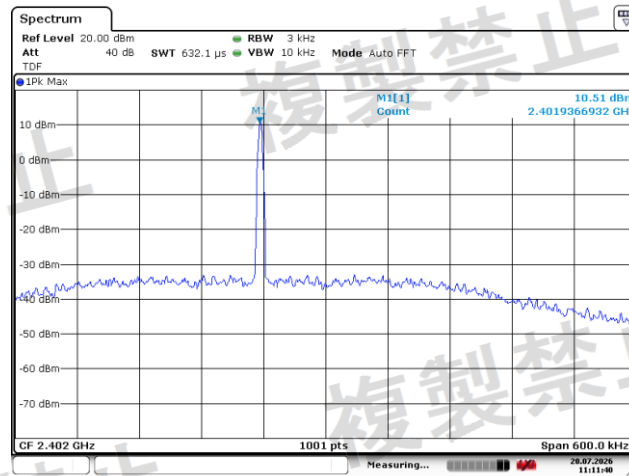


High Channel
(2480 MHz)

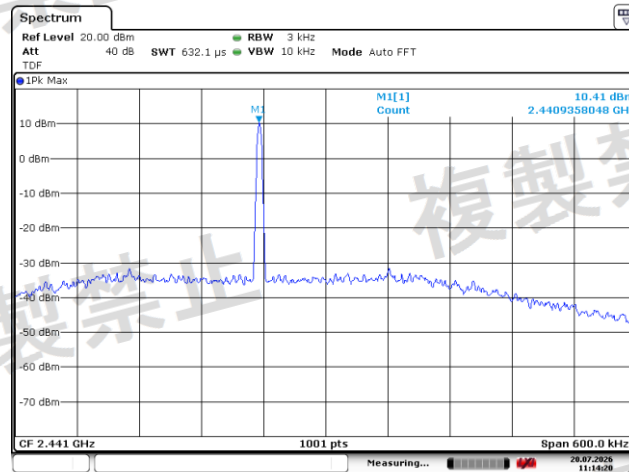


EDR

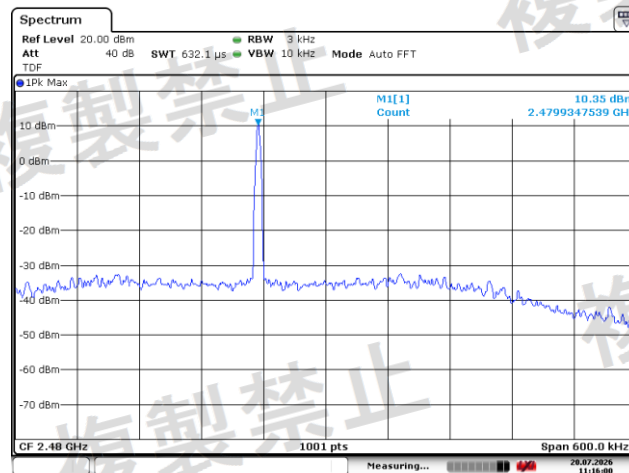
Low Channel
(2402 MHz)



Middle Channel
(2441 MHz)



High Channel
(2480 MHz)



5.2. Occupied bandwidth (99%) and Spreading bandwidth (90%)

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5.2.1 Test Data

PASS

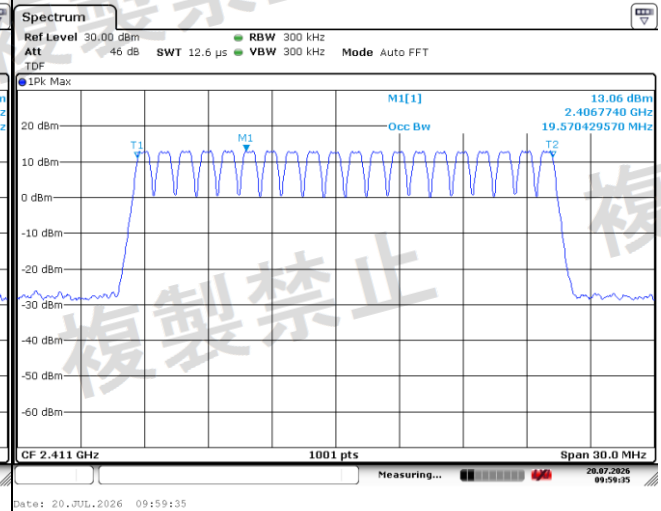
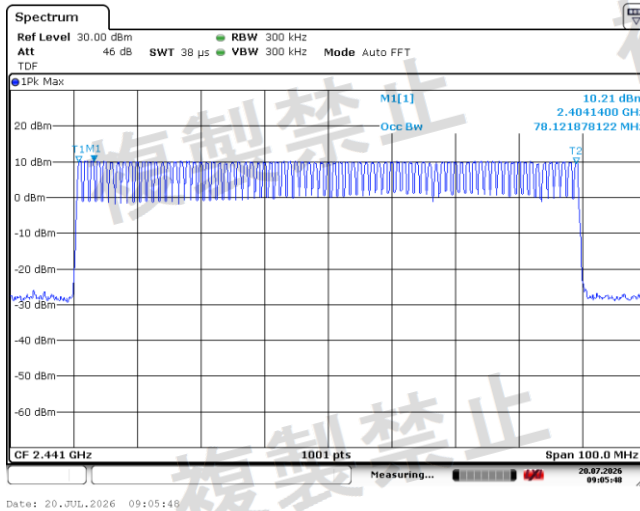
Test Conditions (Conducted)					
Temperature: (25 ± 3) °C			TEST RESULTS		
Rel. Humidity: (53 ± 3) % R.H.			Occupied bandwidth (MHz)	Spreading bandwidth (MHz)	Limit
Basic, GFSK modulation					
Normal hopping	V _{MAX}	DC 4.07 V	78.22	72.03	83.5 MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.12	72.13	
	V _{MIN}	DC 3.33 V	78.22	72.13	
AFH	V _{MAX}	DC 4.07 V	19.57	18.19	
	V _{NOM}	DC 3.70 V	19.57	18.13	
	V _{MIN}	DC 3.33 V	19.57	18.04	
EDR, π/4-DQPSK modulation					
Normal hopping	V _{MAX}	DC 4.07 V	78.12	71.53	83.5 MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.12	71.13	
	V _{MIN}	DC 3.33 V	78.12	71.53	
AFH	V _{MAX}	DC 4.07 V	19.96	18.19	
	V _{NOM}	DC 3.70 V	19.96	18.22	
	V _{MIN}	DC 3.33 V	19.93	18.19	
EDR, 8DPSK modulation					
Normal hopping	V _{MAX}	DC 4.07 V	78.42	71.53	83.5 MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.42	71.43	
	V _{MIN}	DC 3.33 V	78.32	71.43	
AFH	V _{MAX}	DC 4.07 V	19.96	18.22	
	V _{NOM}	DC 3.70 V	19.93	18.22	
	V _{MIN}	DC 3.33 V	19.96	18.22	
Measurement uncertainty: ± 3 × 10 ⁻⁴					

5.2.2 Test Plot (Normal Voltage)

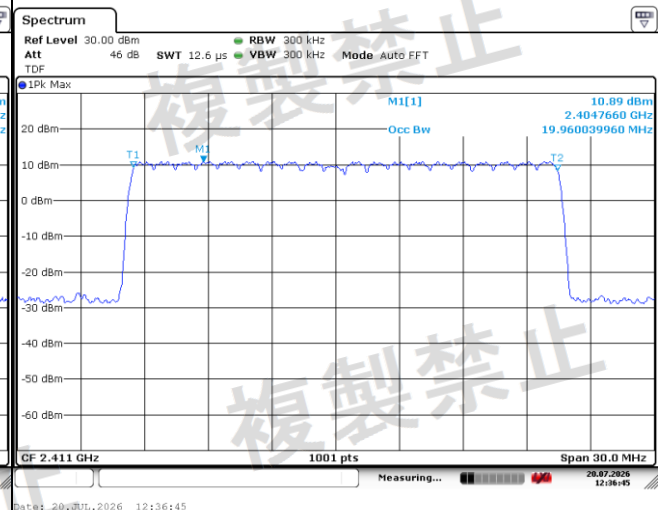
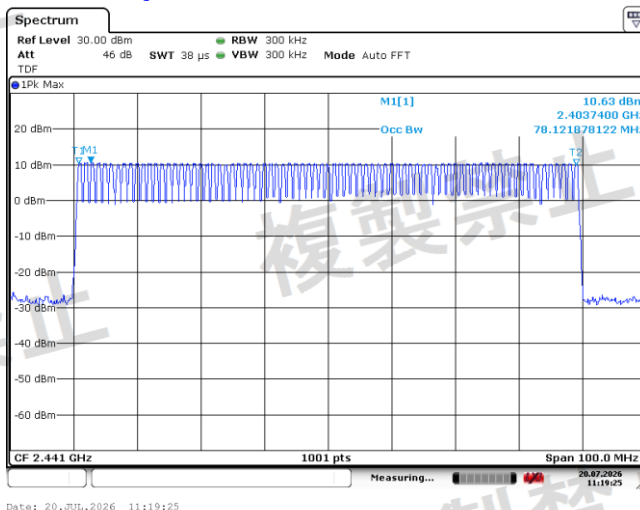
Occupied bandwidth (99%)

Normal Hopping,
Basic, GFSK modulation

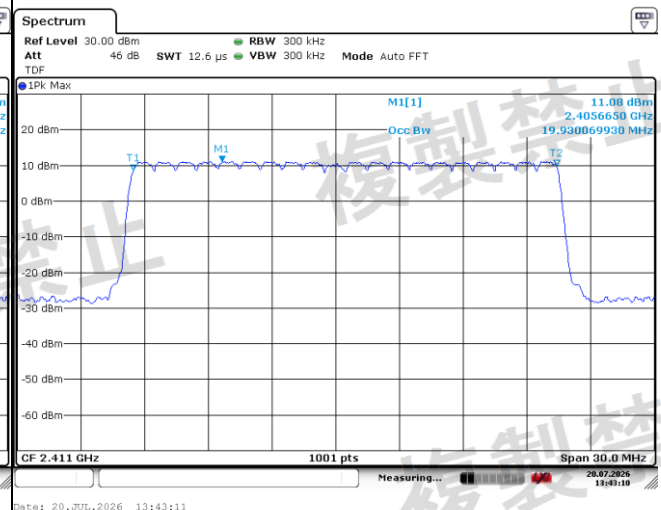
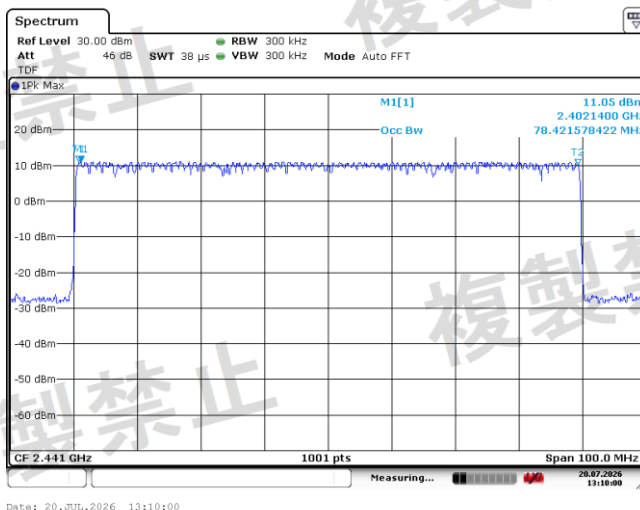
AFH



EDR, $\pi/4$ -DQPSK modulation



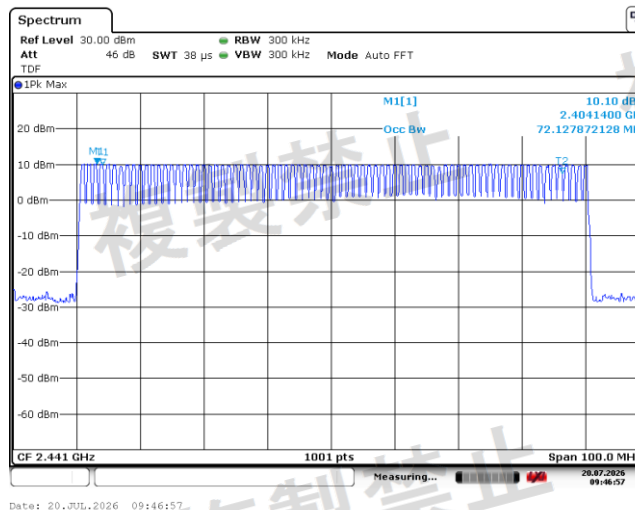
EDR, 8DPSK modulation



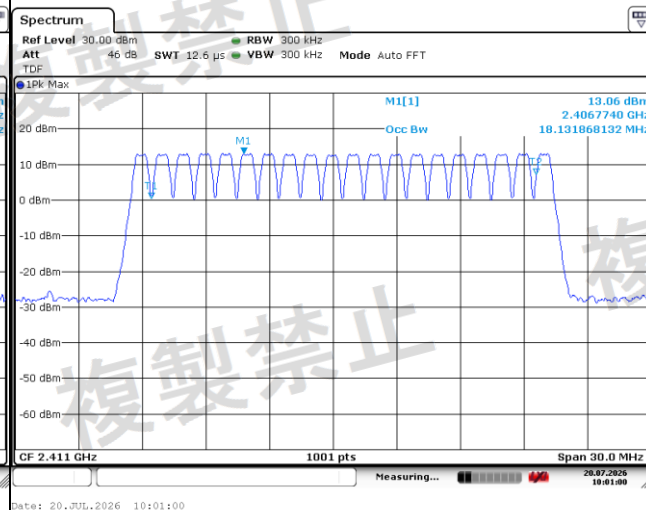
Spreading bandwidth (90 %)

Normal Hopping

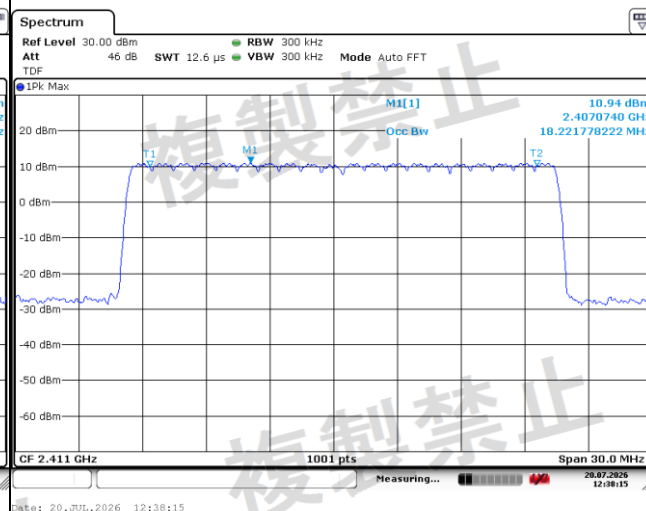
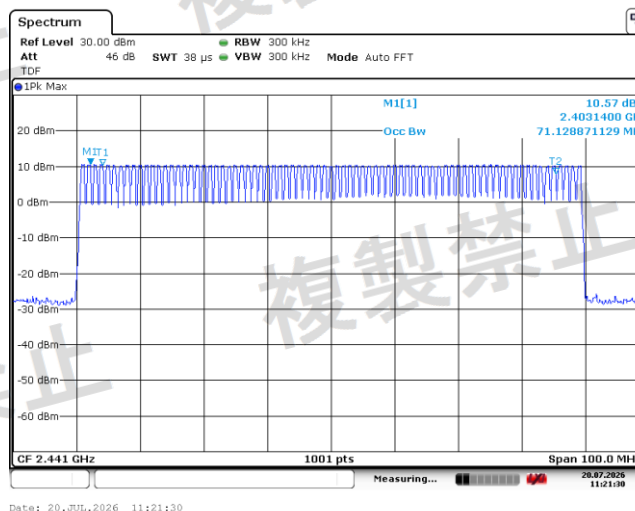
Basic, GFSK modulation



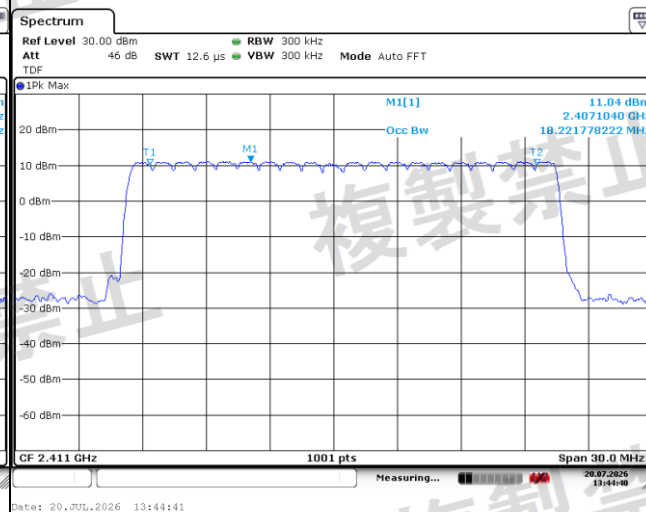
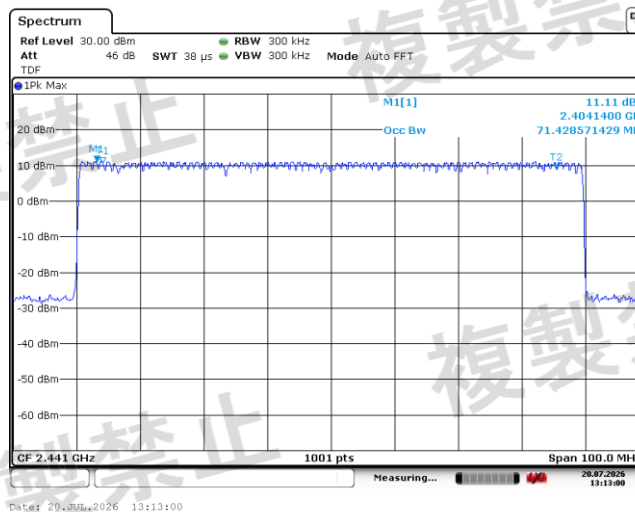
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



5.3. Antenna power

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5.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):		F1D,G1D: 0.00031(Normal)-0.00125(AFH) W/MHz				
Temperature: (25 ± 3) °C		TEST RESULTS				
Rel. Humidity: (52 ± 3) % R.H.		Measured (dBm)	Antenna Power (mW/MHz) (NOTE1)	Tolerance (%) (NOTE2)	Measured EIRP (dBm/MHz) (NOTE3)	Limit
Basic, GFSK modulation						
Normal hopping	V _{MAX} DC 3.3 V	9.78	0.30	-1.99	-2.36	(Antenna Power)
	V _{NOM} DC 3.0 V	9.78	0.30	-1.91	-2.36	3 mW/MHz or less
	V _{MIN} DC 2.7 V	9.75	0.30	-2.58	-2.36	(tolerance)
AFH	V _{MAX} DC 3.3 V	9.87	1.23	-1.49	3.77	+20 % and -80 %
	V _{NOM} DC 3.0 V	9.83	1.22	-2.07	3.73	(EIRP)
	V _{MIN} DC 2.7 V	9.87	1.24	-0.67	3.80	6.91 dBm/MHz or less
EDR, π/4-DQPSK modulation						
Normal hopping	V _{MAX} DC 3.3 V	10.26	0.34	10.48	-1.82	(Antenna Power)
	V _{NOM} DC 3.0 V	10.29	0.35	11.87	-1.69	3 mW/MHz or less
	V _{MIN} DC 2.7 V	10.29	0.34	11.24	-1.82	(tolerance)
AFH	V _{MAX} DC 3.3 V	10.17	1.32	5.27	4.08	+20 % and -80 %
	V _{NOM} DC 3.0 V	9.95	1.25	-0.10	3.84	(EIRP)
	V _{MIN} DC 2.7 V	10.27	1.35	7.72	4.17	6.91 dBm/MHz or less
EDR, 8DPSK modulation						
Normal hopping	V _{MAX} DC 3.3 V	10.32	0.35	11.90	-1.69	(Antenna Power)
	V _{NOM} DC 3.0 V	9.97	0.32	3.38	-2.08	3 mW/MHz or less
	V _{MIN} DC 2.7 V	10.07	0.33	5.78	-1.94	(tolerance)
AFH	V _{MAX} DC 3.3 V	10.26	1.34	7.33	4.14	+20 % and -80 %
	V _{NOM} DC 3.0 V	10.22	1.33	6.35	4.11	(EIRP)
	V _{MIN} DC 2.7 V	10.29	1.35	8.08	4.17	6.91 dBm/MHz or less
Measurement uncertainty: ± 1.0 dB						

** Measured value (dBm) is the average output power of the transmitter; spectrum analyzer reading and corrected for the cable loss and the Attenuator. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the spectrum analyzer. Antenna Power is measured by spectrum analyzer.

NOTE 1: Antenna power = Measured value (mW) / Spreading bandwidth (MHz) / Burst Ratio(ON Time/(ON Time + OFF Time))

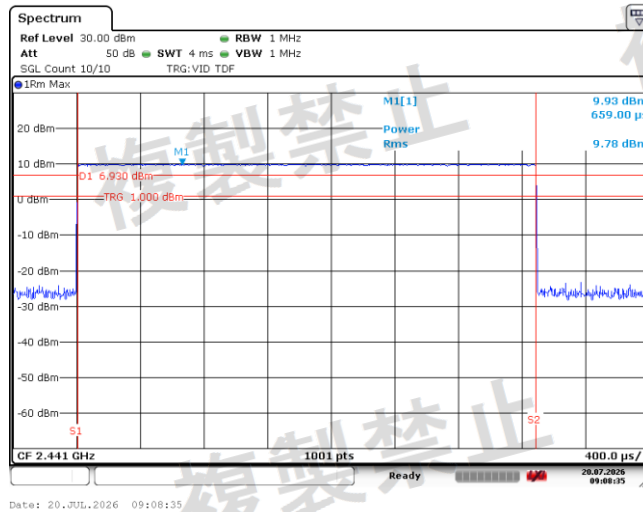
NOTE 2: Tolerance (%) in normal mode = 100 × (Antenna power (mW/MHz) - Declared power (mW/MHz)) / Declared power (mW/MHz)

NOTE 3: Measured EIRP(dBm/MHz) = Antenna Power(dBm/MHz) + Antenna Peak Gain(dBi) [Antenna Peak Gain(dBi) = 2.87 dBi]

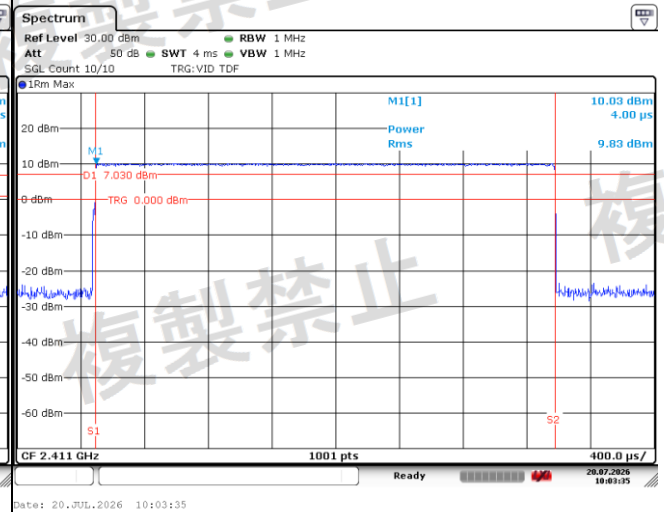
5.3.2 Test Plot (Normal Voltage)

Normal Hopping

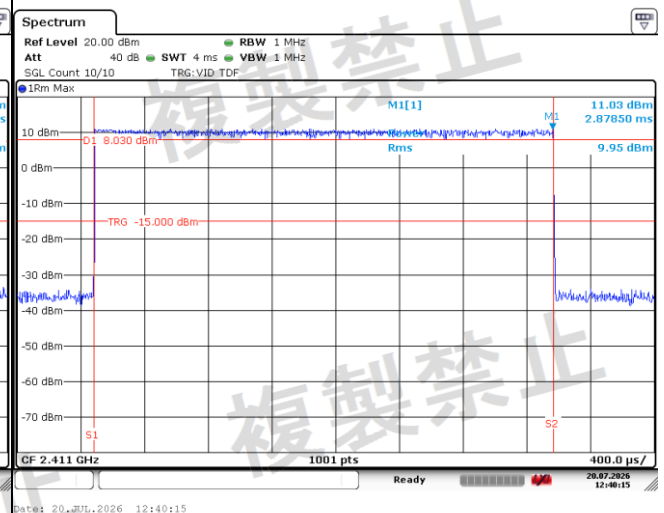
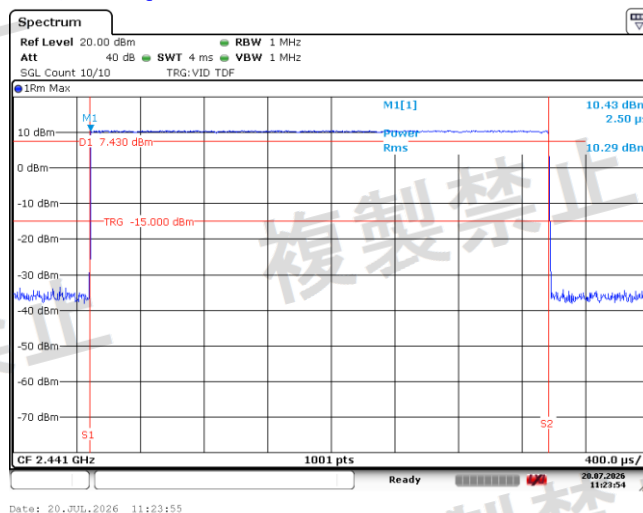
Basic, GFSK modulation



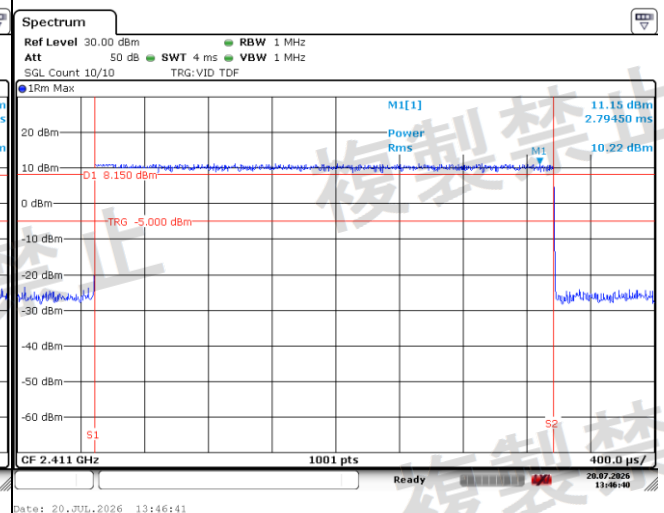
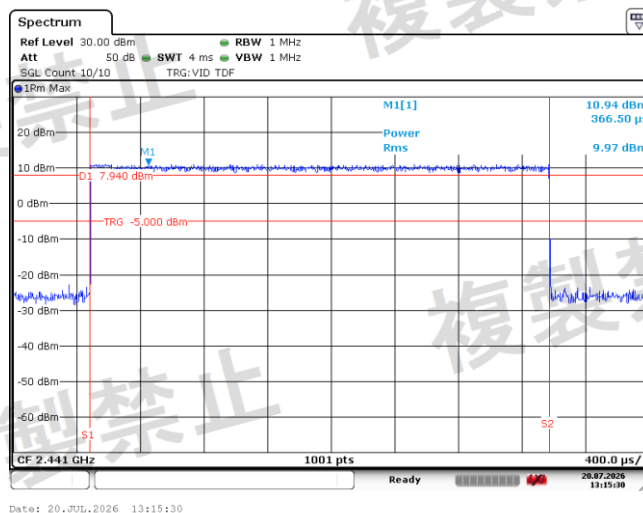
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



5.4. Dwell time & Burst Ratio

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5.4.1 Test Data

PASS

Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Number of Transmission per 3 sec	Spreading Bandiwdth Factor (NOTE1)	Dwell Time(sec) (NOTE2)	Limit
Basic, GFSK modulation						
Normal hopping	V _{MAX}	DC 4.07 V	8	72.03	0.28	0.4 seconds or less
	V _{NOM}	DC 3.70 V	8	72.13	0.28	
	V _{MIN}	DC 3.33 V	8	72.13	0.28	
AFH	V _{MAX}	DC 4.07 V	40	18.19	0.28	
	V _{NOM}	DC 3.70 V	38	18.13	0.28	
	V _{MIN}	DC 3.33 V	37	18.04	0.27	
EDR, π/4-DQPSK modulation						
Normal hopping	V _{MAX}	DC 4.07 V	8	71.53	0.28	0.4 seconds or less
	V _{NOM}	DC 3.70 V	8	71.13	0.28	
	V _{MIN}	DC 3.33 V	8	71.53	0.28	
AFH	V _{MAX}	DC 4.07 V	37	18.19	0.28	
	V _{NOM}	DC 3.70 V	37	18.22	0.28	
	V _{MIN}	DC 3.33 V	36	18.19	0.28	
EDR, 8DPSK modulation						
Normal hopping	V _{MAX}	DC 4.07 V	8	71.53	0.28	0.4 seconds or less
	V _{NOM}	DC 3.70 V	8	71.43	0.28	
	V _{MIN}	DC 3.33 V	8	71.43	0.28	
AFH	V _{MAX}	DC 4.07 V	37	18.22	0.28	
	V _{NOM}	DC 3.70 V	38	18.22	0.28	
	V _{MIN}	DC 3.33 V	40	18.22	0.28	

**According to MIC Notice No. 88 Appendix 43 (Japan Radio Law), the cumulative Dwell Time (Time of Occupancy) for Bluetooth FHSS systems must be calculated using the integrated multiplication method as defined below.

NOTE 1: Spreading Bandwidth Factor := Spreading bandwidth (MHz) / 1(=Data rate) (Mbps)

NOTE 2: Result Dwell Time(sec) = 0.4 * Spreading Bandwidth Factor / (Number of hopping Channel) * Burst ratio

- Normal hopping : Result Dwell Time(sec) = 0.4 * (Spreading Bandwidth Factor / 79) * Burst ratio

- AFH : Result Dwell Time(sec) = 0.4 * (Spreading Bandwidth Factor / 20) * Burst ratio

5.4.2 Test Data

PASS

Test Conditions (Conducted)					
Temperature: (25 ± 3) °C			TEST RESULTS		
Rel. Humidity: (53 ± 3) % R.H.			ON Time (ms)	Periods (ms)	Burst Ratio
Basic, GFSK modulation					
Normal hopping	V _{MAX}	DC 4.07 V	2.88	3.75	0.77
	V _{NOM}	DC 3.70 V	2.88	3.77	0.76
	V _{MIN}	DC 3.33 V	2.88	3.77	0.76
AFH	V _{MAX}	DC 4.07 V	2.87	3.76	0.76
	V _{NOM}	DC 3.70 V	2.87	3.76	0.76
	V _{MIN}	DC 3.33 V	2.87	3.76	0.76
EDR, π/4-DQPSK modulation					
Normal hopping	V _{MAX}	DC 4.07 V	2.88	3.76	0.77
	V _{NOM}	DC 3.70 V	2.88	3.76	0.77
	V _{MIN}	DC 3.33 V	2.88	3.76	0.77
AFH	V _{MAX}	DC 4.07 V	2.88	3.75	0.77
	V _{NOM}	DC 3.70 V	2.88	3.75	0.77
	V _{MIN}	DC 3.33 V	2.88	3.75	0.77
EDR, 8DPSK modulation					
Normal hopping	V _{MAX}	DC 4.07 V	2.88	3.76	0.77
	V _{NOM}	DC 3.70 V	2.88	3.76	0.77
	V _{MIN}	DC 3.33 V	2.88	3.76	0.77
AFH	V _{MAX}	DC 4.07 V	2.87	3.74	0.77
	V _{NOM}	DC 3.70 V	2.87	3.74	0.77
	V _{MIN}	DC 3.33 V	2.87	3.74	0.77

Measurement uncertainty: ± 1.0 dB

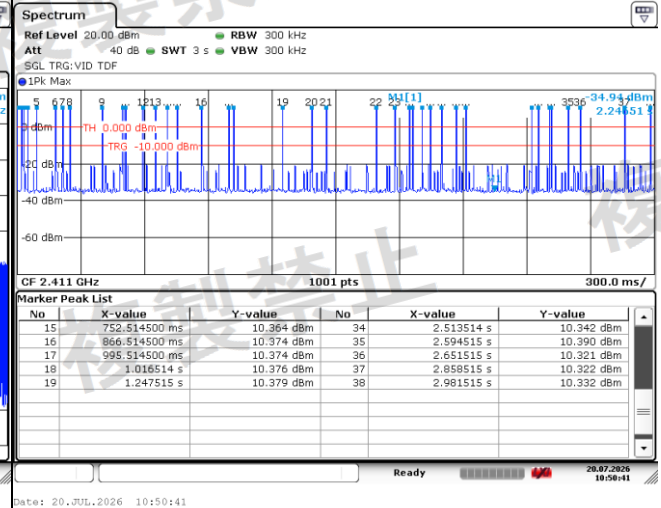
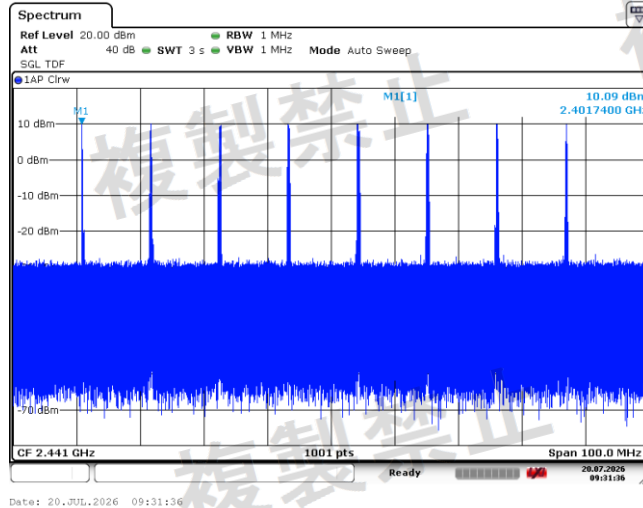
5.4.3 Test Plot (Normal Voltage)

Basic, GFSK modulation

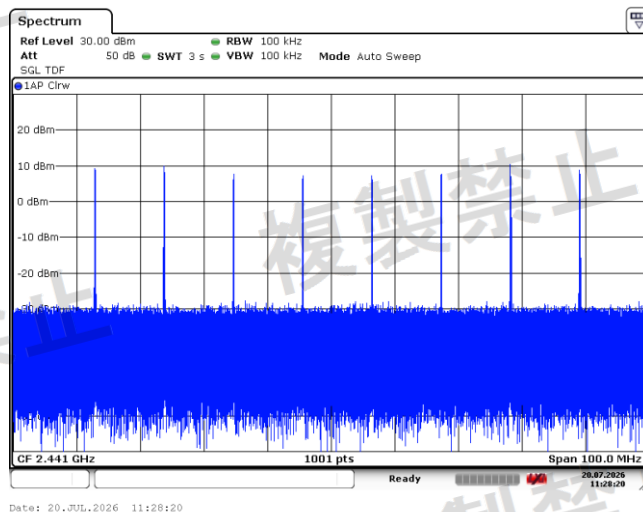
Normal Hopping

Hopping number

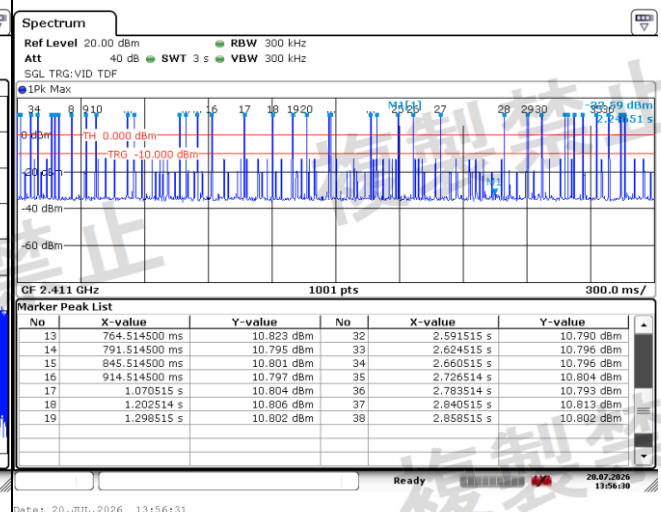
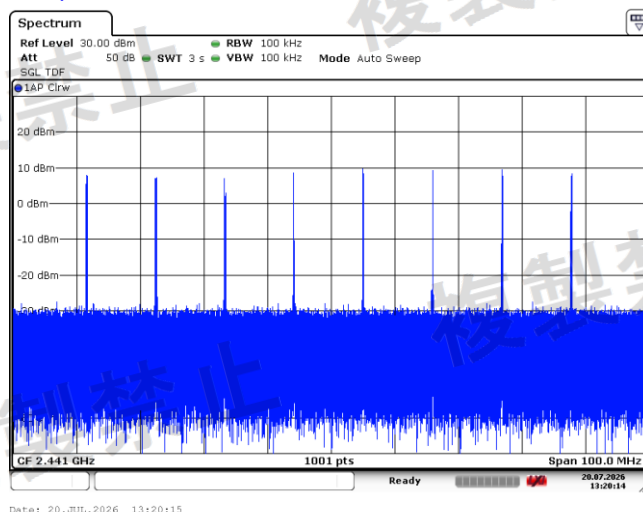
AFH



EDR, $\pi/4$ -DQPSK



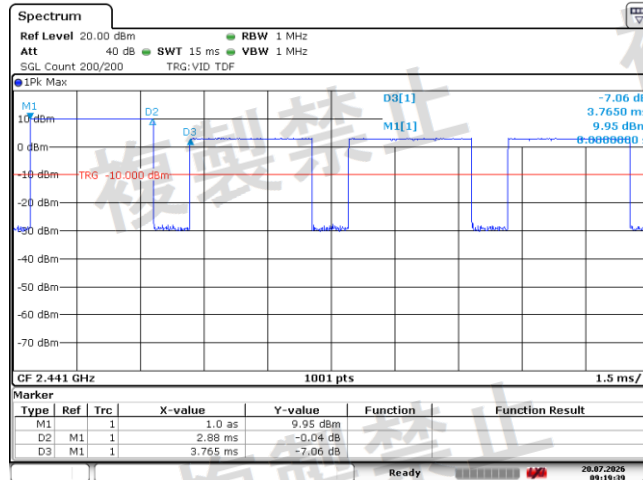
EDR, 8DPSK



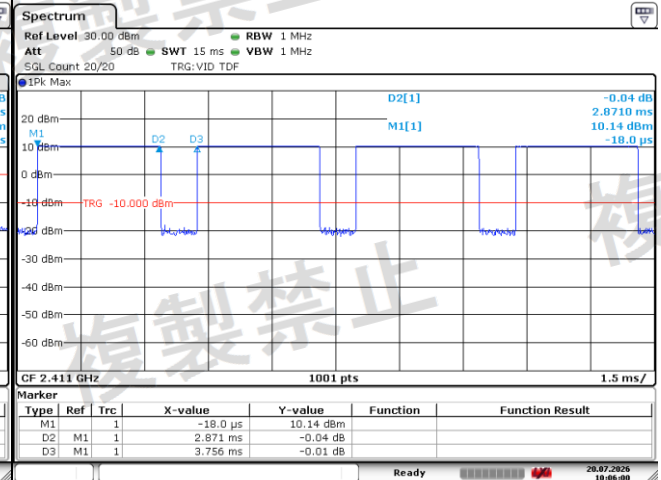
Basic, GFSK modulation

Normal Hopping

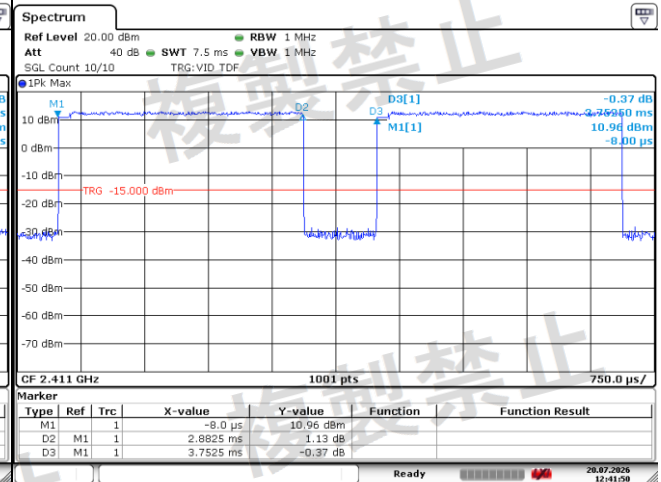
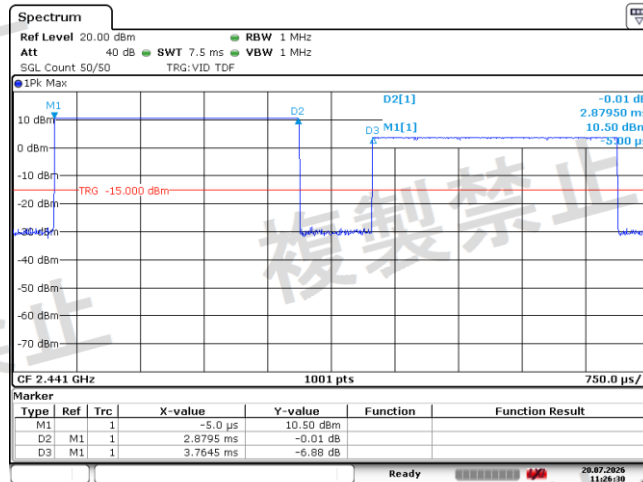
ON/OFF TIME



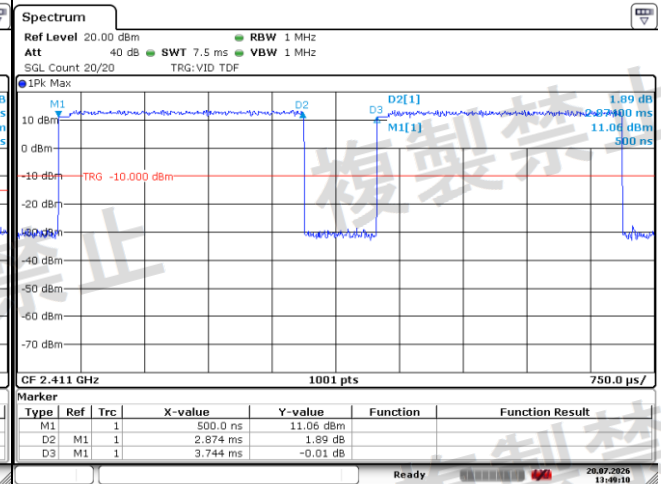
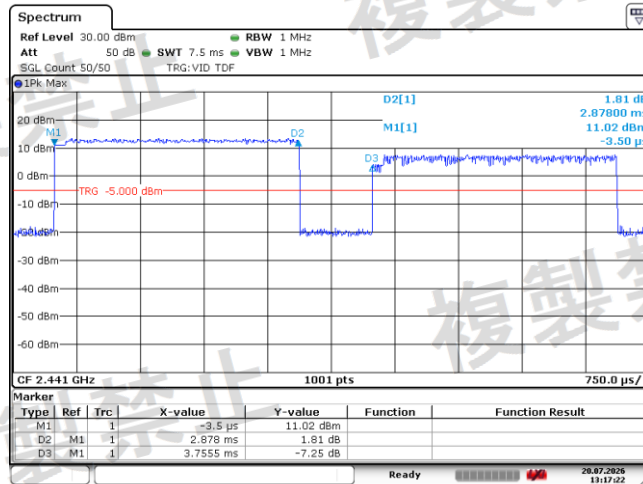
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



5.5. Transmitter spurious emissions

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.5.1 Test Data

PASS

Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured frequency	Measured Value	Measured Value (NOTE1)	Limit
Basic, GFSK modulation			(MHz)	(dBm/MHz)	(μW/MHz)	
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1239.10	-40.48	0.09	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1229.70	-40.34	0.09	
	V _{MIN}	DC 3.33 V	1225.00	-40.32	0.09	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2399.99	-27.12	1.94	25 μW/MHz(≒ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-26.65	2.16	
	V _{MIN}	DC 3.33 V	2399.99	-26.40	2.29	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2483.53	-41.53	0.07	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	2483.51	-41.55	0.07	
	V _{MIN}	DC 3.33 V	2484.18	-41.81	0.07	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7418.50	-33.29	0.47	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7418.50	-33.07	0.49	
	V _{MIN}	DC 3.33 V	7408.50	-33.12	0.49	
Basic, GFSK modulation [AFH]						
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1208.50	-40.44	0.09	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1210.90	-40.31	0.09	
	V _{MIN}	DC 3.33 V	1210.90	-40.05	0.10	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2399.99	-25.86	2.59	25 μW/MHz(≒ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-25.88	2.58	
	V _{MIN}	DC 3.33 V	2399.99	-26.20	2.40	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2483.51	-43.22	0.05	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	2484.42	-43.27	0.05	
	V _{MIN}	DC 3.33 V	2483.51	-44.42	0.04	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7418.50	-32.79	0.53	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7418.50	-32.96	0.51	
	V _{MIN}	DC 3.33 V	7418.50	-32.70	0.54	

NOTE 1: Measured Value (μW/MHz) = 10³(Measured Value (dBm/MHz)/10) * 10⁻³

EDR, $\pi/4$ -DQPSK modulation

30 MHz ~ 2387 MHz	V_{MAX}	DC 4.07 V	1234.40	-39.73	0.11	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V_{NOM}	DC 3.70 V	1213.20	-39.62	0.11	
	V_{MIN}	DC 3.33 V	1239.10	-39.68	0.11	
2387 MHz ~ 2400 MHz	V_{MAX}	DC 4.07 V	2399.99	-26.82	2.08	25 μ W/MHz($\approx$ -16 dBm) or less
	V_{NOM}	DC 3.70 V	2399.99	-25.77	2.65	
	V_{MIN}	DC 3.33 V	2399.99	-26.41	2.29	
2483.5 ~ 2496.5 MHz	V_{MAX}	DC 4.07 V	2484.30	-42.71	0.05	25 μ W/MHz($\approx$ -16 dBm) or less
	V_{NOM}	DC 3.70 V	2483.81	-44.64	0.03	
	V_{MIN}	DC 3.33 V	2483.51	-44.91	0.03	
2496.5 ~ 12500 MHz	V_{MAX}	DC 4.07 V	7408.50	-33.15	0.48	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V_{NOM}	DC 3.70 V	7398.50	-32.95	0.51	
	V_{MIN}	DC 3.33 V	7418.50	-32.93	0.51	

EDR, $\pi/4$ -DQPSK modulation [AFH]

30 MHz ~ 2387 MHz	V_{MAX}	DC 4.07 V	1210.90	-38.76	0.13	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V_{NOM}	DC 3.70 V	1208.50	-38.37	0.15	
	V_{MIN}	DC 3.33 V	1206.10	-38.08	0.16	
2387 MHz ~ 2400 MHz	V_{MAX}	DC 4.07 V	2399.99	-20.11	9.75	25 μ W/MHz($\approx$ -16 dBm) or less
	V_{NOM}	DC 3.70 V	2399.99	-21.59	6.93	
	V_{MIN}	DC 3.33 V	2399.99	-20.50	8.91	
2483.5 ~ 2496.5 MHz	V_{MAX}	DC 4.07 V	2483.51	-45.48	0.03	25 μ W/MHz($\approx$ -16 dBm) or less
	V_{NOM}	DC 3.70 V	2483.51	-43.44	0.05	
	V_{MIN}	DC 3.33 V	2483.65	-44.15	0.04	
2496.5 ~ 12500 MHz	V_{MAX}	DC 4.07 V	7408.50	-32.78	0.53	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V_{NOM}	DC 3.70 V	7408.50	-32.44	0.57	
	V_{MIN}	DC 3.33 V	7418.50	-32.50	0.56	

NOTE 1: Measured Value (μ W/MHz) = $10^{(Measured Value (dBm/MHz)/10)} * 10^{-3}$

EDR, 8DPSK modulation

30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1234.40	-38.54	0.14	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1239.10	-38.00	0.16	
	V _{MIN}	DC 3.33 V	1236.80	-37.99	0.16	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2399.99	-21.88	6.49	25 μ W/MHz($\approx$ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-21.06	7.83	
	V _{MIN}	DC 3.33 V	2399.99	-22.87	5.16	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2485.40	-42.91	0.05	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	2485.53	-42.85	0.05	
	V _{MIN}	DC 3.33 V	2484.07	-42.56	0.06	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7378.50	-31.23	0.75	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7408.50	-31.37	0.73	
	V _{MIN}	DC 3.33 V	7418.50	-31.06	0.78	

EDR, 8DPSK modulation [AFH]

30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1210.90	-38.75	0.13	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1210.90	-38.53	0.14	
	V _{MIN}	DC 3.33 V	1208.50	-38.25	0.15	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2399.99	-21.58	6.95	25 μ W/MHz($\approx$ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-22.09	6.18	
	V _{MIN}	DC 3.33 V	2399.99	-21.32	7.38	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2485.40	-43.37	0.05	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	2484.75	-41.34	0.07	
	V _{MIN}	DC 3.33 V	2484.17	-43.39	0.05	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7398.50	-33.66	0.43	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7418.50	-33.63	0.43	
	V _{MIN}	DC 3.33 V	7388.50	-33.21	0.48	

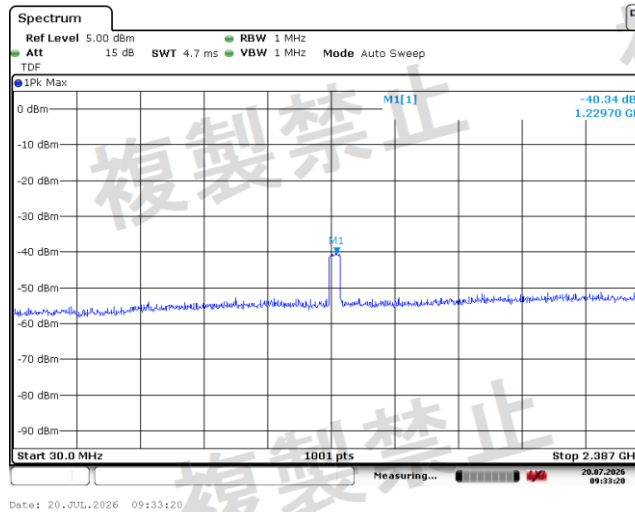
Measurement uncertainty: ± 2.20

NOTE 1: Measured Value (μ W/MHz) = $10^{(Measured Value (dBm/MHz)/10)} \times 10^{-3}$

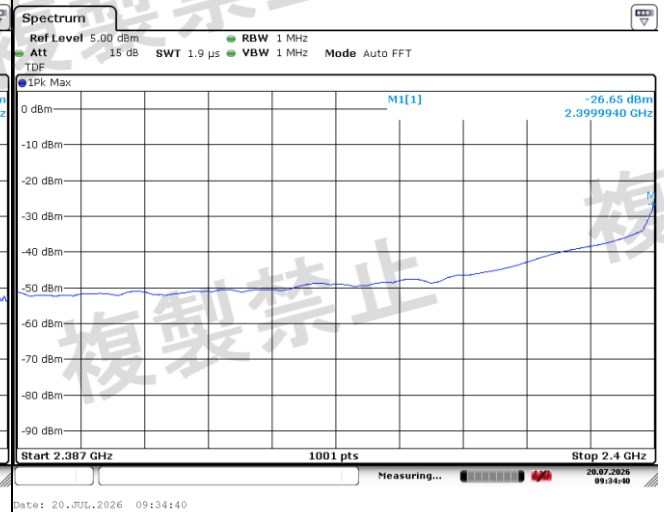
5.5.2 Test Plot (Normal Voltage)

Transmitter spurious emissions - (Basic, GFSK modulation)

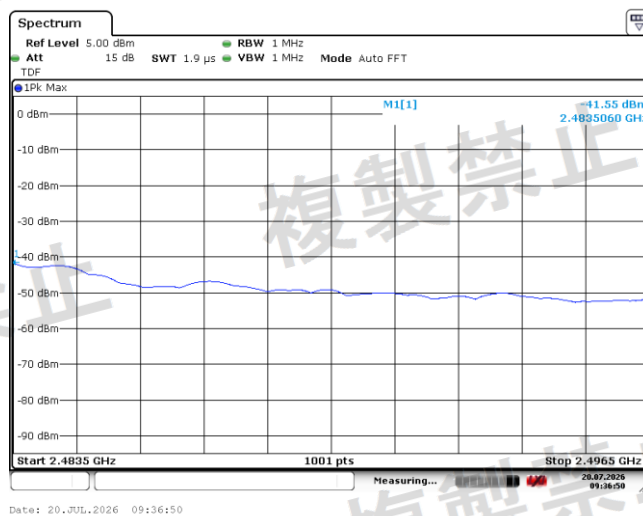
30 ~ 2387 MHz



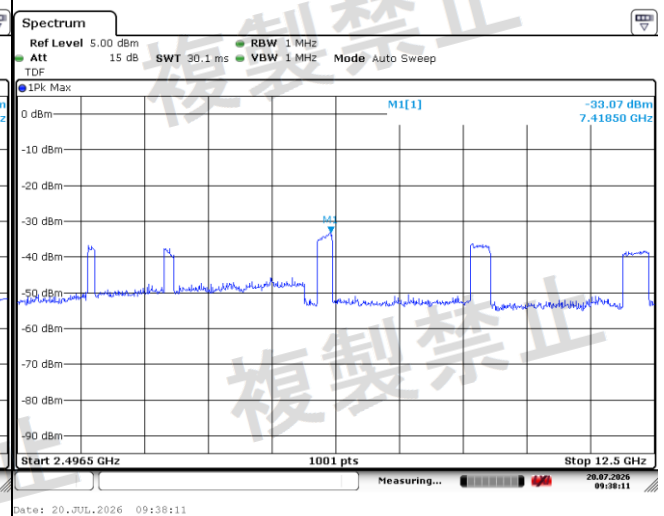
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

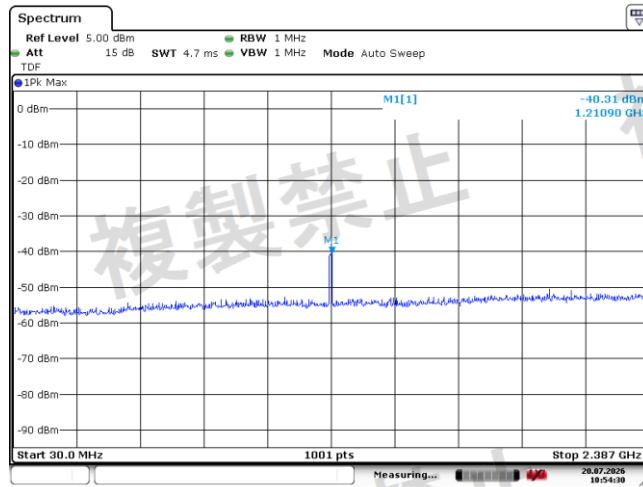


2496.5 ~ 12500 MHz



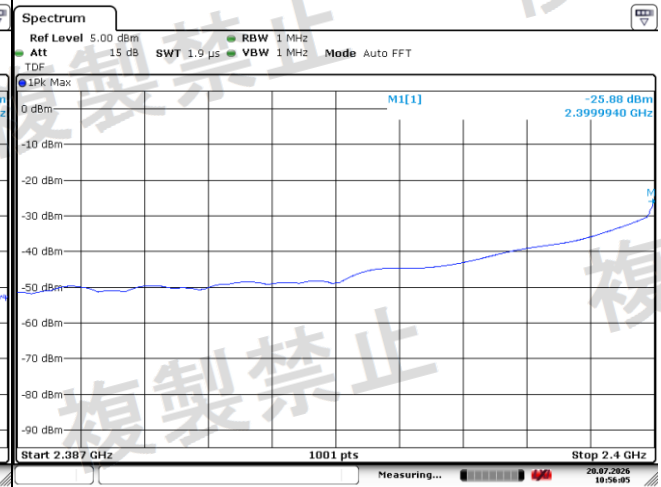
Transmitter spurious emissions - (Basic, GFSK modulation[AFH])

30 ~ 2387 MHz



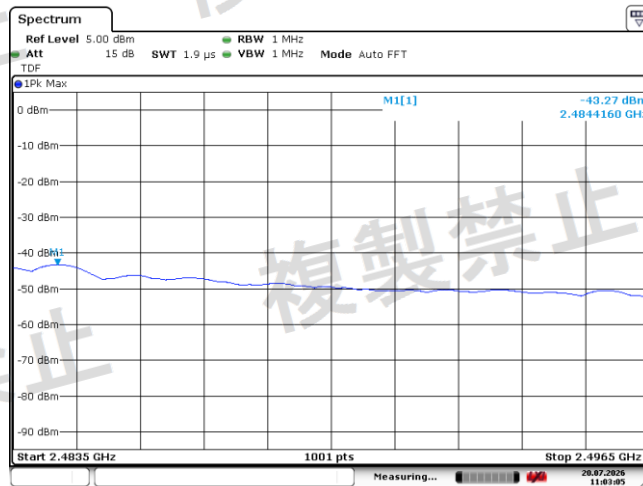
Date: 20.JUL.2026 10:54:30

2387 ~ 2400 MHz



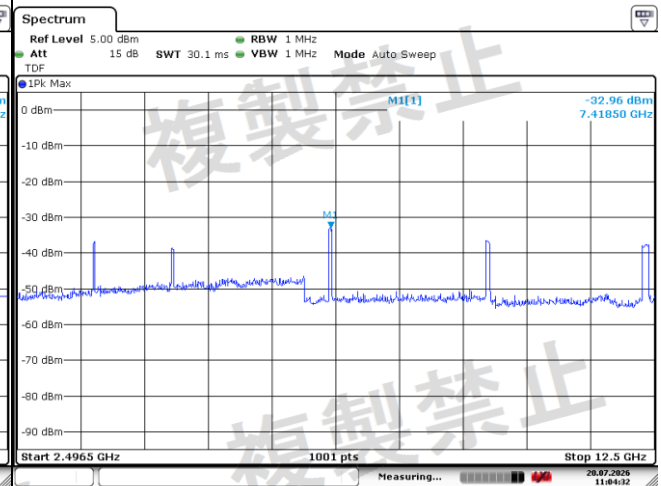
Date: 20.JUL.2026 10:56:05

2483.5 ~ 2496.5 MHz



Date: 20.JUL.2026 11:03:06

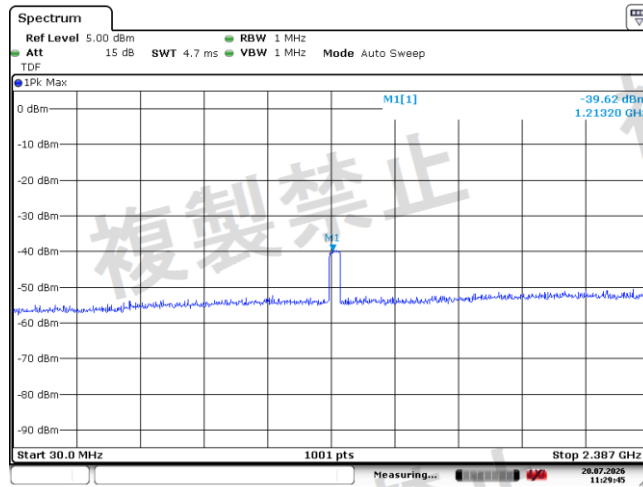
2496.5 ~ 12500 MHz



Date: 20.JUL.2026 11:04:33

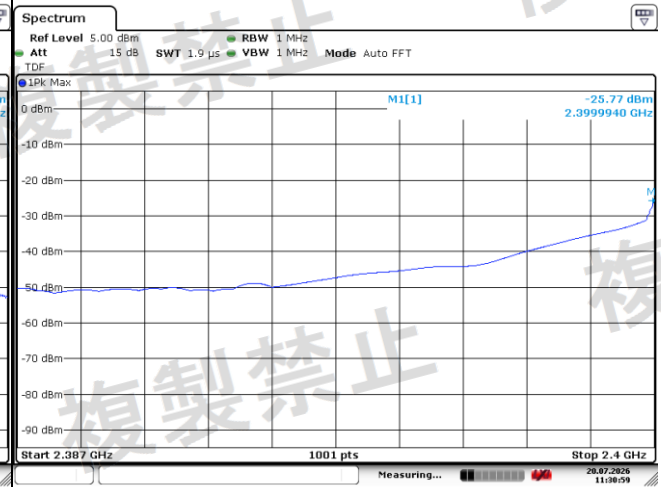
Transmitter spurious emissions - (EDR, $\pi/4$ -DQPSK modulation)

30 ~ 2387 MHz



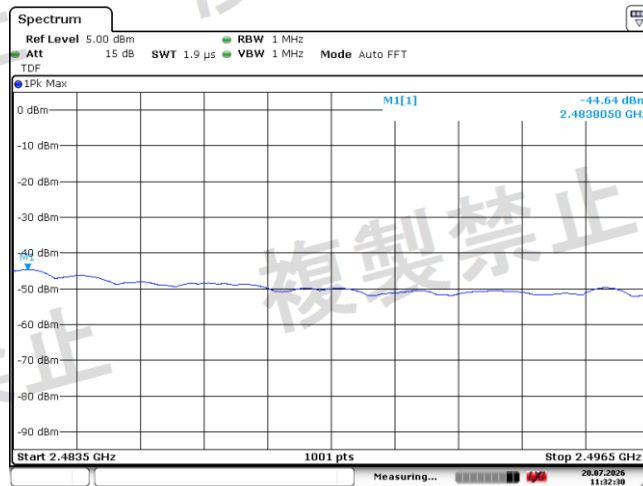
Date: 20.JUL.2026 11:29:45

2387 ~ 2400 MHz



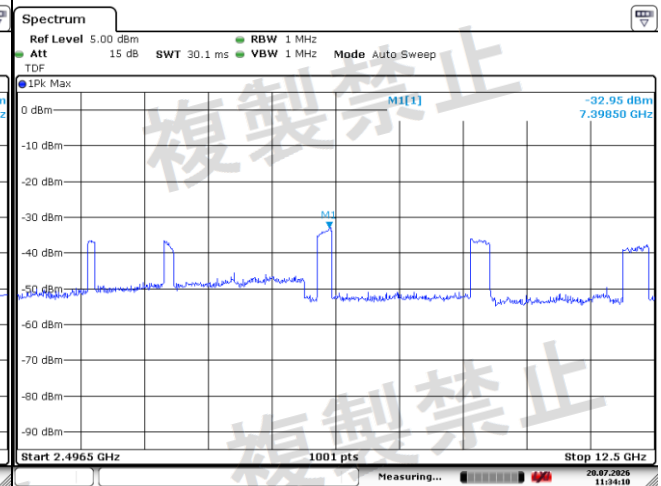
Date: 20.JUL.2026 11:31:00

2483.5 ~ 2496.5 MHz



Date: 20.JUL.2026 11:32:30

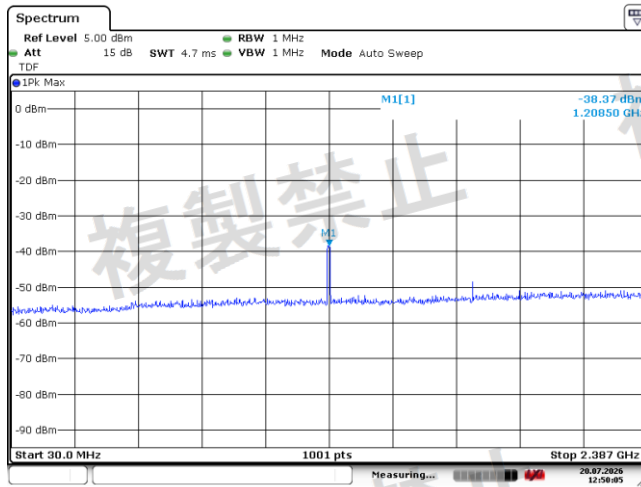
2496.5 ~ 12500 MHz



Date: 20.JUL.2026 11:34:10

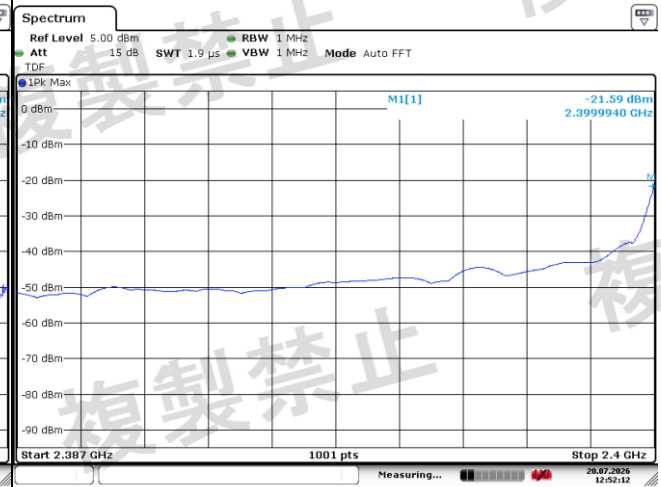
Transmitter spurious emissions - (EDR, $\pi/4$ -DQPSK modulation [AFH])

30 ~ 2387 MHz



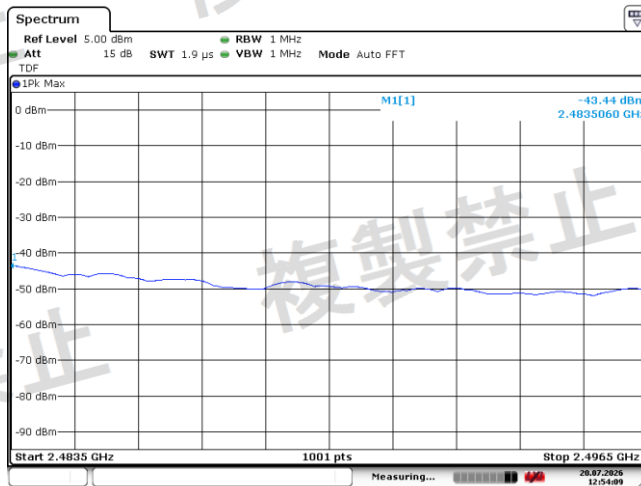
Date: 20.JUL.2026 12:50:05

2387 ~ 2400 MHz



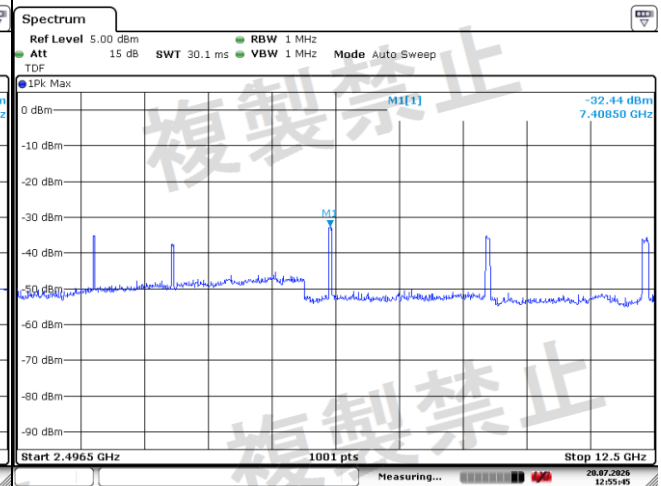
Date: 20.JUL.2026 12:52:12

2483.5 ~ 2496.5 MHz



Date: 20.JUL.2026 12:54:10

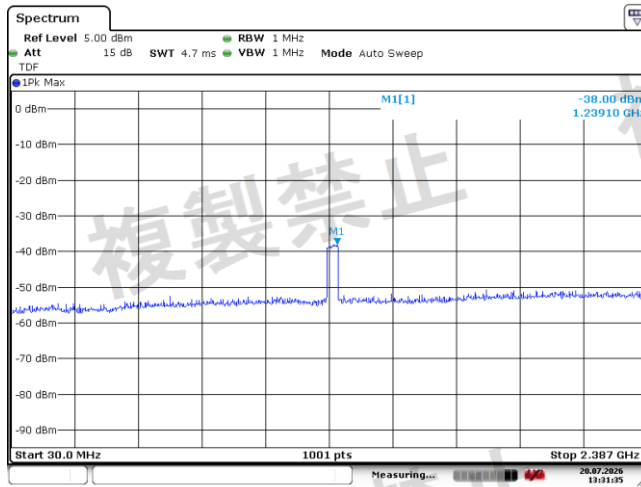
2496.5 ~ 12500 MHz



Date: 20.JUL.2026 12:55:46

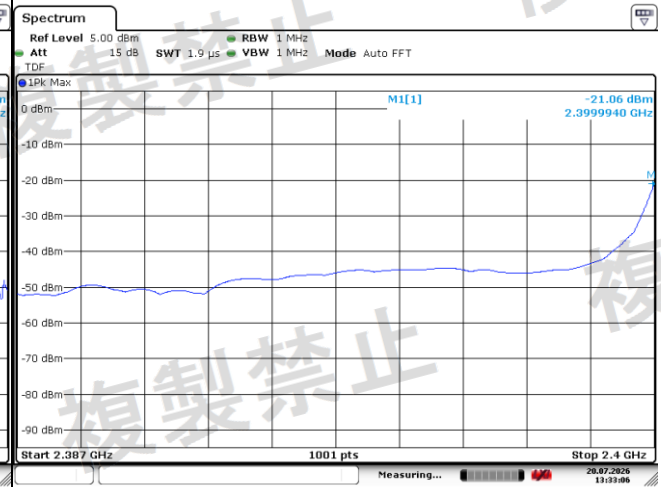
Transmitter spurious emissions - (EDR, 8DPSK modulation)

30 ~ 2387 MHz



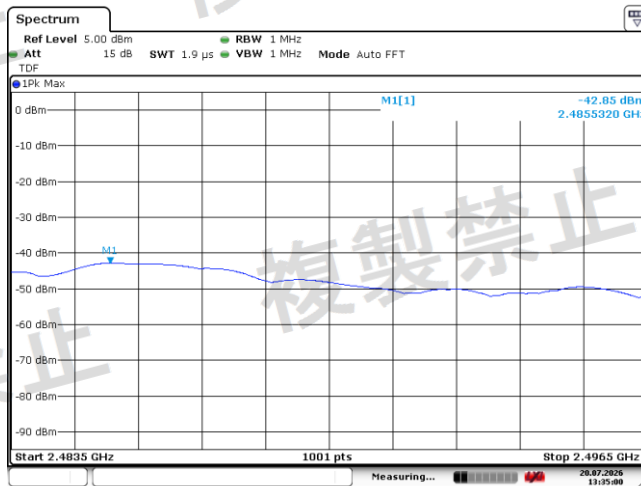
Date: 20.JUL.2026 13:31:35

2387 ~ 2400 MHz



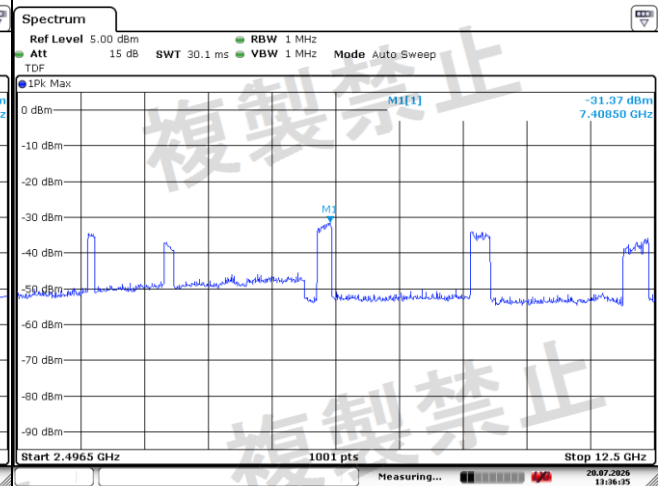
Date: 20.JUL.2026 13:33:06

2483.5 ~ 2496.5 MHz



Date: 20.JUL.2026 13:35:01

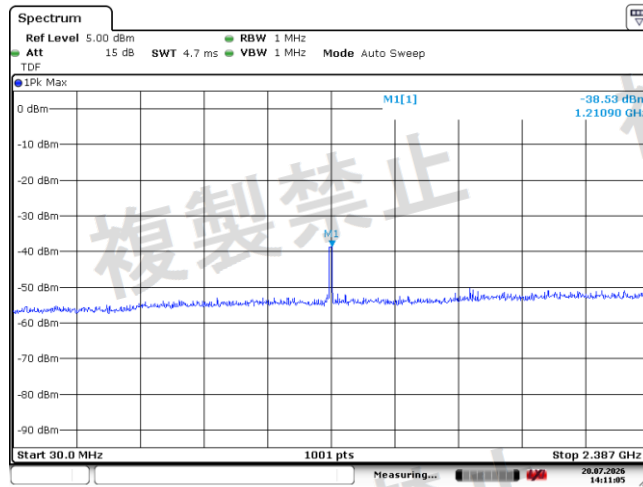
2496.5 ~ 12500 MHz



Date: 20.JUL.2026 13:36:35

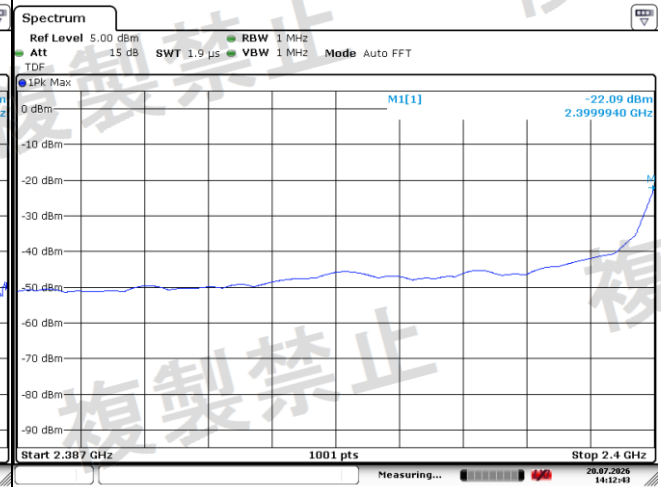
Transmitter spurious emissions - (EDR, 8DPSK modulation [AFH])

30 ~ 2387 MHz



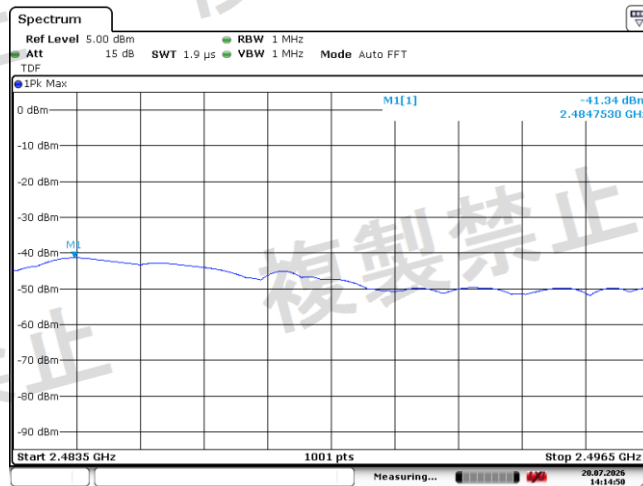
Date: 20.JUL.2026 14:11:05

2387 ~ 2400 MHz



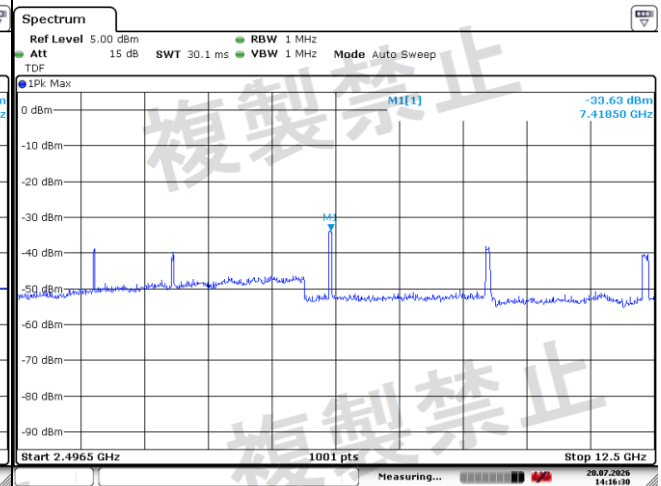
Date: 20.JUL.2026 14:12:44

2483.5 ~ 2496.5 MHz



Date: 20.JUL.2026 14:14:50

2496.5 ~ 12500 MHz



Date: 20.JUL.2026 14:16:30

5.6. Receiver spurious emissions

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.6.1 Test Data

PASS

Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured frequency	Measured Value	Measured Value	Limit
Basic, GFSK modulation			(MHz)	(dBm/MHz)	(nW/MHz)	
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.15	0.002	4 nW(≒ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-86.89	0.002	
	V _{MIN}	DC 3.33 V	399.69	-86.77	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6532.00	-72.08	0.062	20 nW(≒ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6474.00	-72.26	0.059	
	V _{MIN}	DC 3.33 V	6336.00	-72.09	0.062	
Basic, GFSK modulation [AFH]						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.30	0.002	4 nW(≒ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-87.05	0.002	
	V _{MIN}	DC 3.33 V	399.69	-88.00	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6509.00	-72.43	0.057	20 nW(≒ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6509.00	-72.86	0.052	
	V _{MIN}	DC 3.33 V	6543.00	-72.08	0.062	
EDR, π/4-DQPSK modulation						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-86.64	0.002	4 nW(≒ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-86.77	0.002	
	V _{MIN}	DC 3.33 V	399.69	-87.33	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	5302.00	-72.35	0.058	20 nW(≒ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6601.00	-72.88	0.052	
	V _{MIN}	DC 3.33 V	6486.00	-72.46	0.057	
EDR, π/4-DQPSK modulation [AFH]						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.59	0.002	4 nW(≒ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-87.32	0.002	
	V _{MIN}	DC 3.33 V	399.69	-86.01	0.003	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6532.00	-72.50	0.056	20 nW(≒ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	5452.00	-72.21	0.060	
	V _{MIN}	DC 3.33 V	6589.00	-71.63	0.069	

NOTE 1: Measured Value (nW/MHz)= : 10⁶(Measured Value (dBm/MHz)/10) * 10⁶

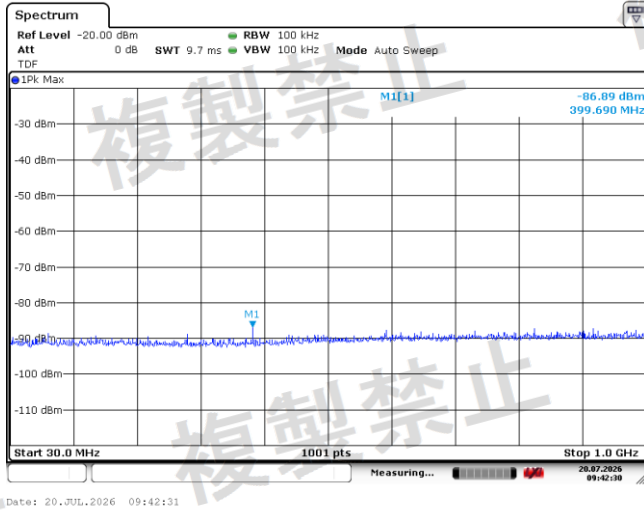
EDR, 8DPSK modulation						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.46	0.002	4 nW(≒ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-87.67	0.002	
	V _{MIN}	DC 3.33 V	399.69	-86.86	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	5636.00	-72.50	0.056	20 nW(≒ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	5360.00	-73.00	0.050	
	V _{MIN}	DC 3.33 V	6681.00	-72.26	0.059	
EDR, 8DPSK modulation [AFH]						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.34	0.002	4 nW(≒ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-86.54	0.002	
	V _{MIN}	DC 3.33 V	399.69	-86.84	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6077.00	-72.20	0.060	20 nW(≒ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6171.00	-72.52	0.056	
	V _{MIN}	DC 3.33 V	6969.00	-72.50	0.056	

NOTE 1: Measured Value (nW/MHz)= : 10⁶(Measured Value (dBm/MHz)/10) * 10⁻⁶

5.6.2 Test Plot (Normal Voltage)

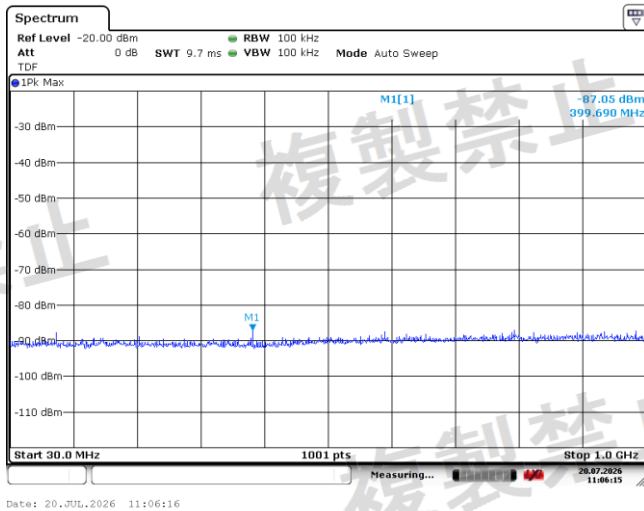
Receiver spurious emissions - Basic, GFSK modulation

30 ~ 1000 MHz

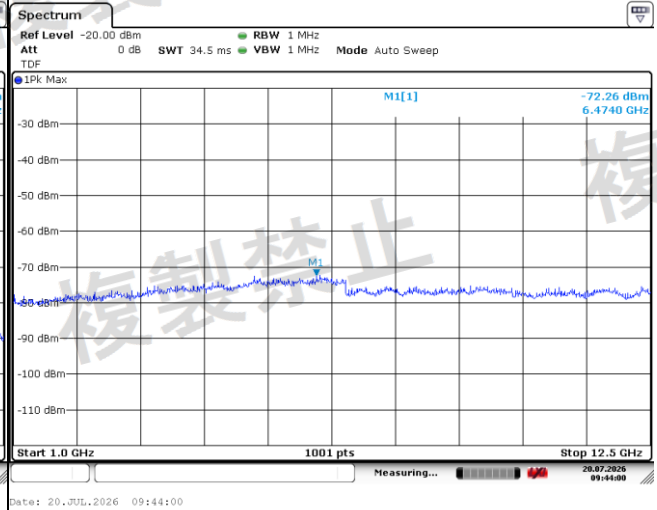


Basic, GFSK modulation [AFH]

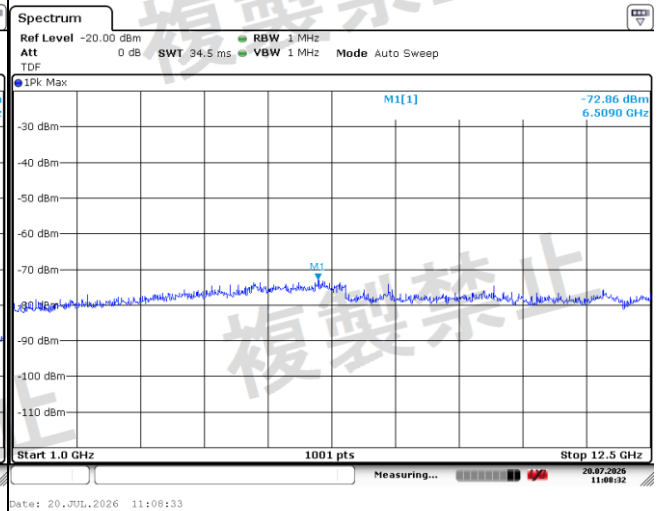
30 ~ 1000 MHz



1000 ~ 12500 MHz

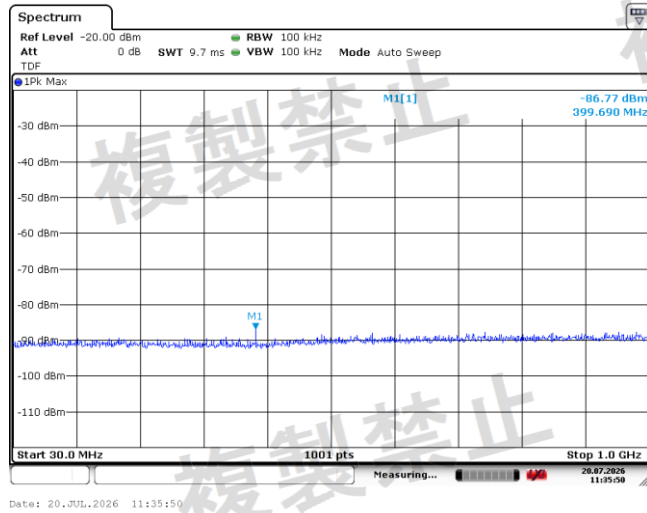


1000 ~ 12500 MHz



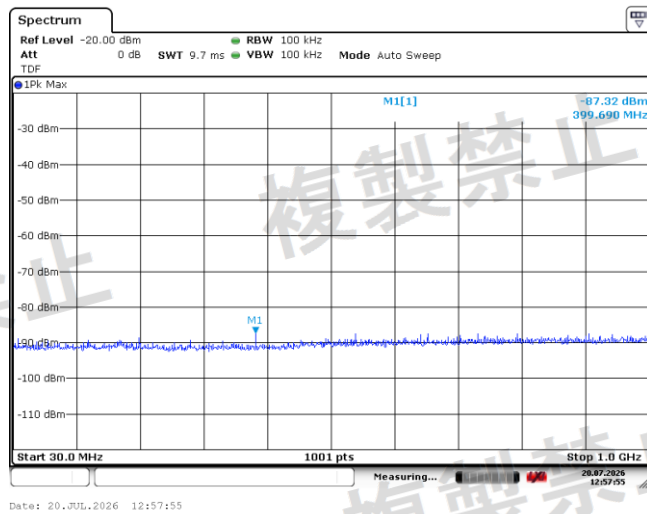
Receiver spurious emissions - EDR, $\pi/4$ -DQPSK modulation

30 ~ 1000 MHz

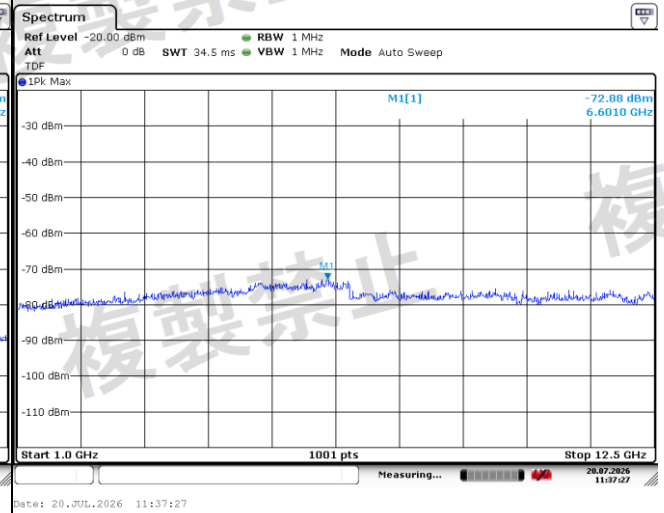


EDR, $\pi/4$ -DQPSK modulation [AFH]

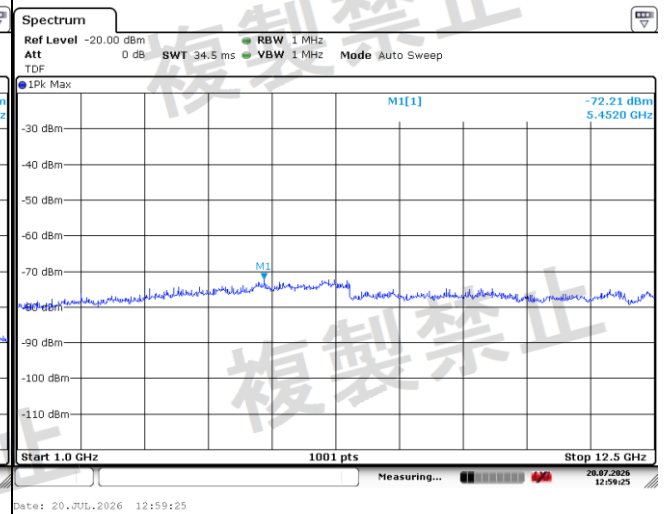
30 ~ 1000 MHz



1000 ~ 12500 MHz

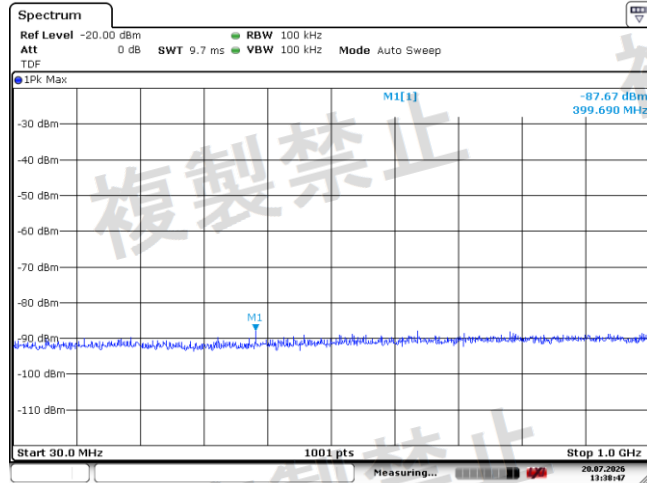


1000 ~ 12500 MHz



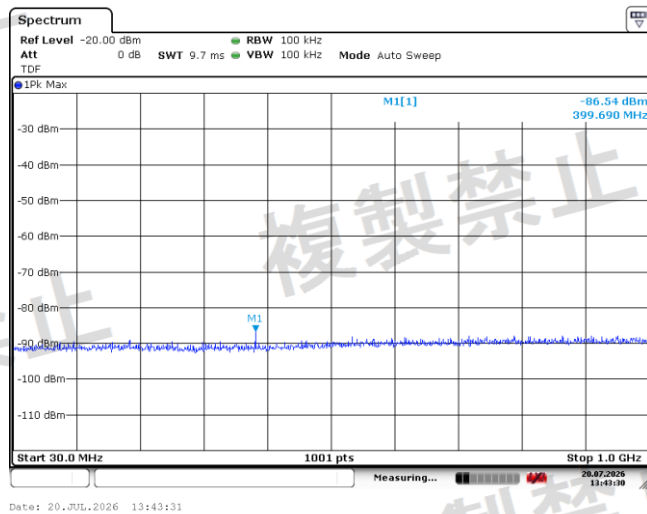
Receiver spurious emissions - EDR, 8DPSK modulation

30 ~ 1000 MHz

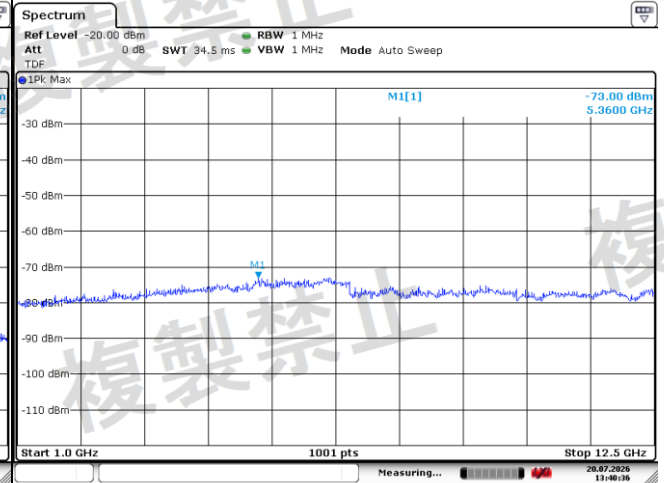


EDR, 8DPSK modulation [AFH]

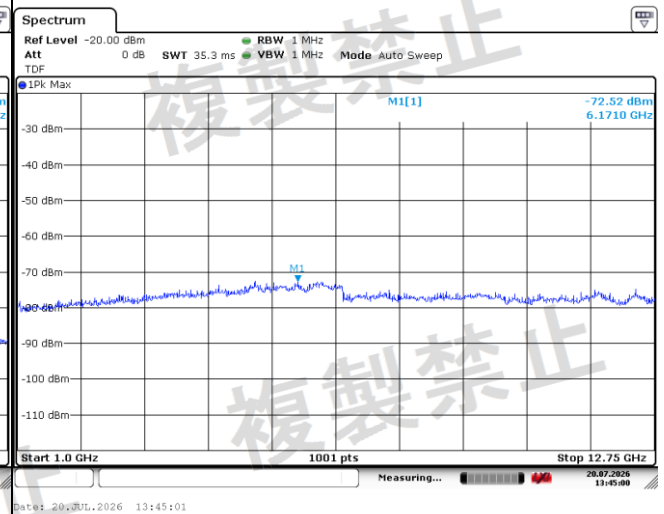
30 ~ 1000 MHz



1000 ~ 12500 MHz



1000 ~ 12500 MHz



5.7. Anti-Interference

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5.7.1 Test Data

PASS

Test Conditions (Conducted)	
Temperature: (25 ± 3) °C	TEST RESULTS
Rel. Humidity: (53 ± 3) % R.H.	PASS

6 Measurement results (LE 1Mbps)

6.1. Frequency tolerance

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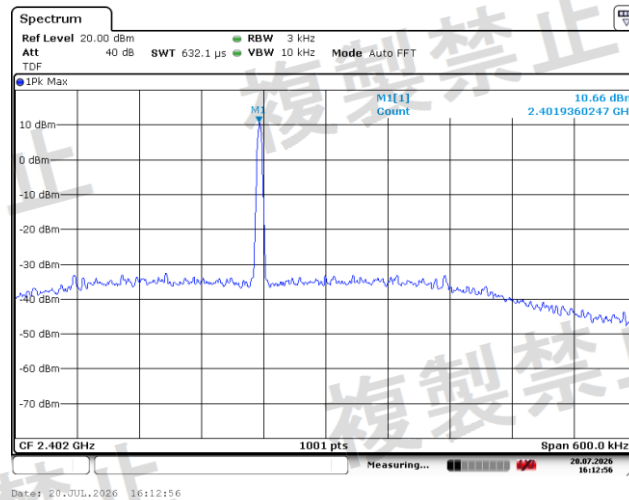
6.1.1 Test Data

PASS

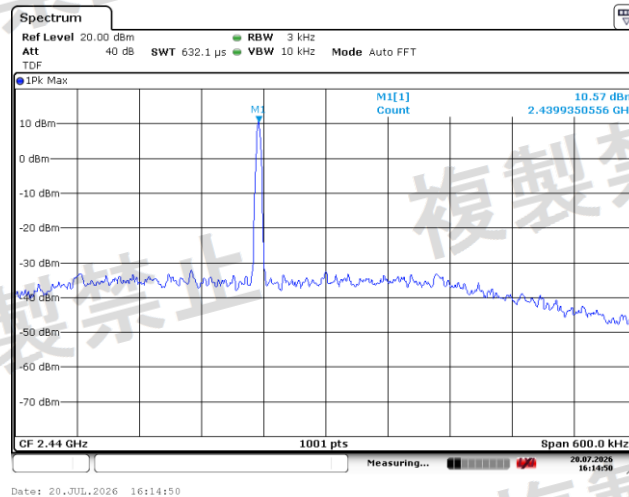
Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (53 ± 3) % R.H.		Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low Frequency: 2402 MHz	V _{MAX} DC 4.07 V	2.4019360250	-26.63	± 50
	V _{NOM} DC 3.70 V	2.4019360247	-26.63	
	V _{MIN} DC 3.33 V	2.4019360233	-26.63	
Middle Frequency: 2440 MHz	V _{MAX} DC 4.07 V	2.4399350618	-26.61	
	V _{NOM} DC 3.70 V	2.4399350556	-26.62	
	V _{MIN} DC 3.33 V	2.4399350502	-26.62	
High Frequency: 2480 MHz	V _{MAX} DC 4.07 V	2.4799340160	-26.61	
	V _{NOM} DC 3.70 V	2.4799340086	-26.61	
	V _{MIN} DC 3.33 V	2.4799340020	-26.61	
Measurement uncertainty: ± 2 × 10 ⁻⁷				

6.1.2 Test Plot (Normal Voltage)

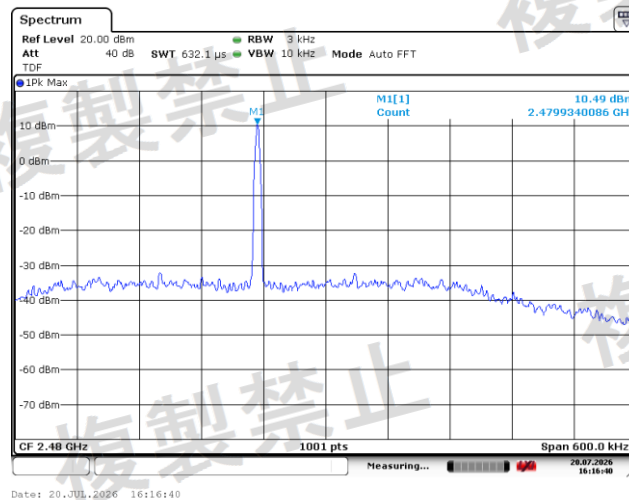
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



6.2. Occupied bandwidth (99%)

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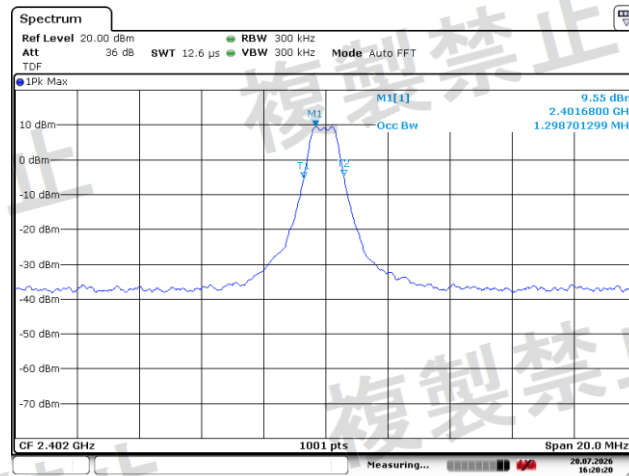
6.2.1 Test Data

PASS

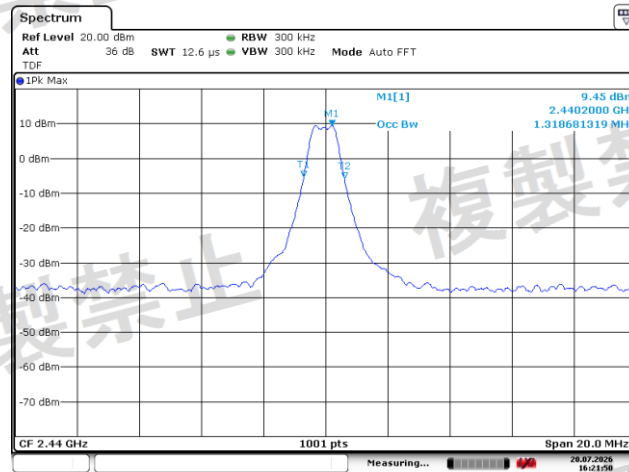
Test Conditions (Conducted)				
Temperature:		(25 ± 3) °C	TEST RESULTS	
Rel. Humidity:		(53 ± 3) % R.H.	Occupied bandwidth (MHz)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.07 V	1.30	26 MHz or below
	V _{NOM}	DC 3.70 V	1.30	
	V _{MIN}	DC 3.33 V	1.30	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.07 V	1.30	
	V _{NOM}	DC 3.70 V	1.32	
	V _{MIN}	DC 3.33 V	1.30	
High Frequency: 2480 MHz	V _{MAX}	DC 4.07 V	1.30	
	V _{NOM}	DC 3.70 V	1.30	
	V _{MIN}	DC 3.33 V	1.30	
Measurement uncertainty: ± 3 × 10 ⁻⁴				

6.2.2 Test Plot (Normal Voltage)

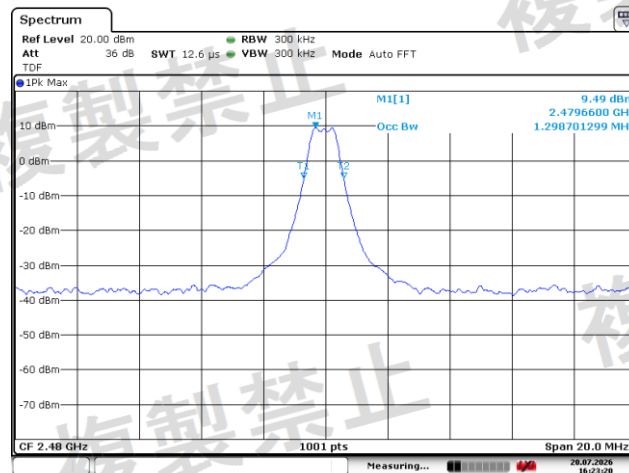
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



6.3. Antenna power

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6.3.1 Test Data

PASS

Test Conditions (Conducted)							
RF output power (declared):			F1D: 0.0095 W				
Temperature: (25 ± 3) °C			TEST RESULTS				
Rel. Humidity: (53 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW)	Tolerance (%) (NOTE1)	Maesured EIRP (dBm) (NOTE2)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.07 V	9.16	8.24	-13.25	12.03	(Antenna Power) 10 mW or less
	V _{NOM}	DC 3.70 V	9.18	8.28	-12.85	12.05	
	V _{MIN}	DC 3.33 V	9.17	8.26	-13.05	12.04	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.07 V	9.05	8.04	-15.42	11.92	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	9.03	8.00	-15.81	11.90	
	V _{MIN}	DC 3.33 V	9.01	7.96	-16.19	11.88	
High Frequency: 2480 MHz	V _{MAX}	DC 4.07 V	8.90	7.76	-18.29	11.77	(EIRP) 12.14 dBm or less
	V _{NOM}	DC 3.70 V	8.92	7.80	-17.91	11.79	
	V _{MIN}	DC 3.33 V	8.91	7.78	-18.10	11.78	
Measurement uncertainty: ± 1.0 dB							

** Measured value (dBm) is the average output power of the transmitter; spectrum analyzer reading and corrected for the cable loss and the Attenuator. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the spectrum analyzer. Antenna Power is measured by spectrum analyzer.

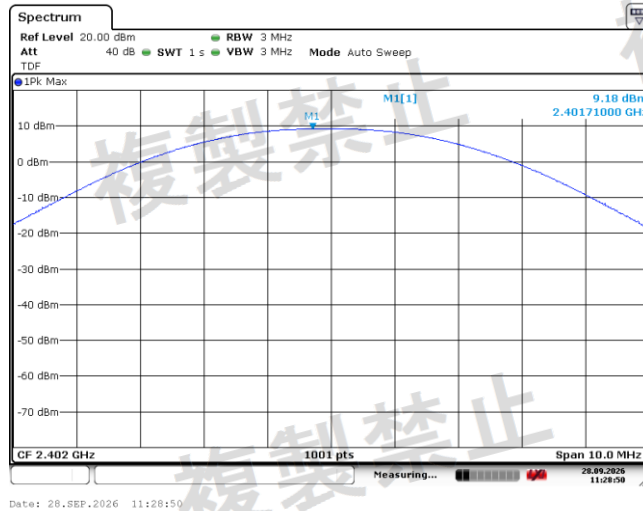
NOTE 1: Tolerance (%) in normal mode = $100 \times (\text{Antenna power (mW)} - \text{Declared power (mW)}) / \text{Declared power (mW)}$

NOTE 2: EIRP(dBm) = Antenna Power(dBm) + Antenna Peak Gain(dBi) [Antenna Peak Gain(dBi) = 2.87 dBi]

6.3.2 Test Plot (Normal Voltage)

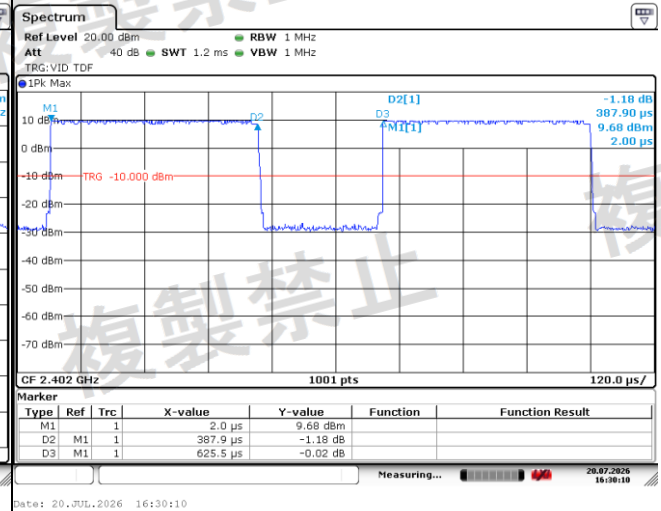
Measured

2402 MHz

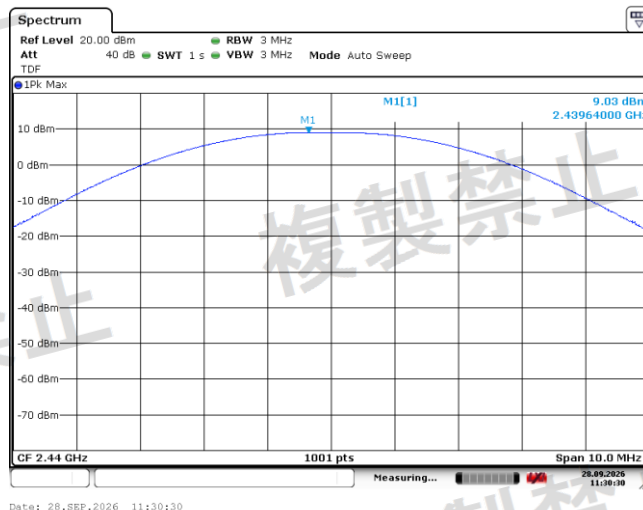


On/ Off Time

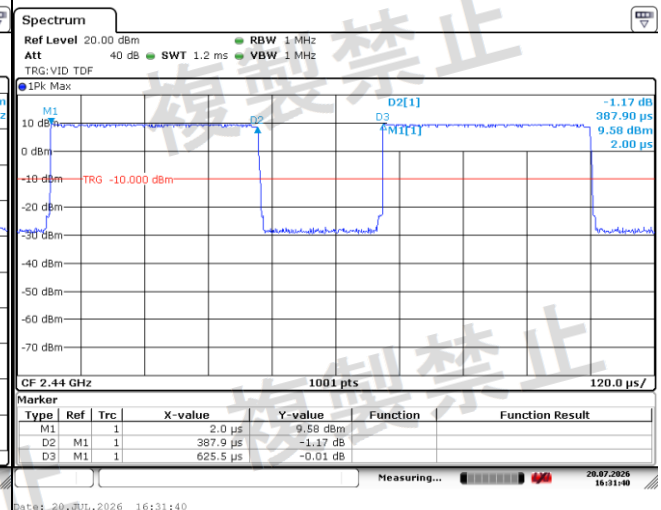
2402 MHz



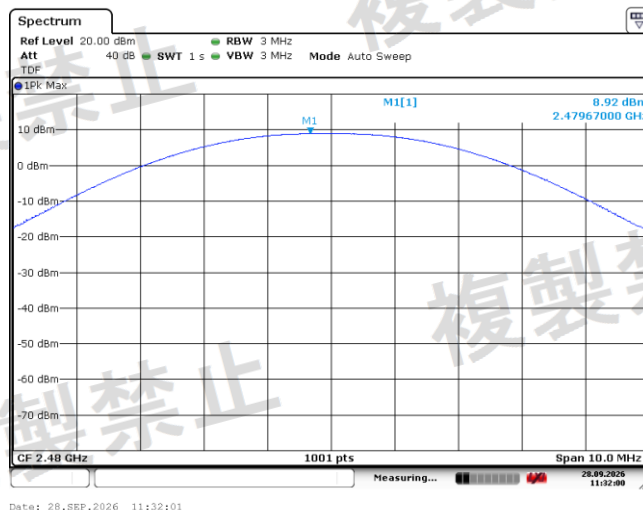
2440 MHz



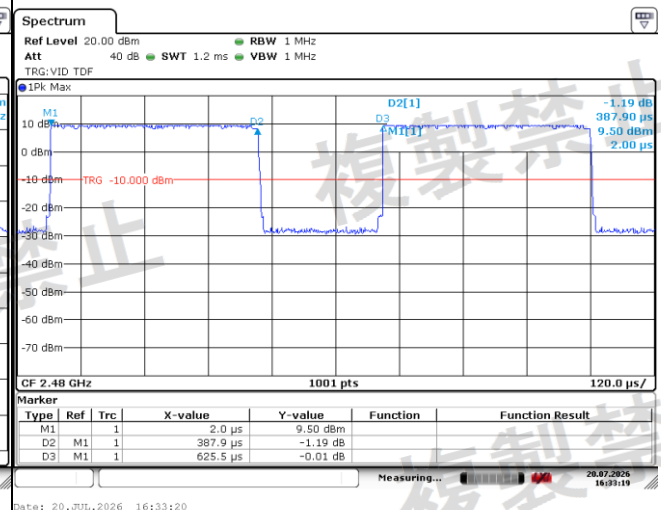
2440 MHz



2480 MHz



2480 MHz



6.4. Transmitter spurious emissions

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6.4.1 Test Data

PASS

Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured frequency	Measured Value	Measured Value (NOTE1)	Limit
Low Frequency: 2402 MHz			(MHz)	(dBm/MHz)	(μW/MHz)	
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1201.40	-41.74	0.07	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1201.40	-41.31	0.07	
	V _{MIN}	DC 3.33 V	1199.10	-41.15	0.08	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2399.99	-21.18	7.62	25 μW/MHz(≒ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-21.78	6.64	
	V _{MIN}	DC 3.33 V	2399.99	-21.54	7.01	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2489.53	-50.15	0.01	
	V _{NOM}	DC 3.70 V	2490.88	-49.78	0.01	
	V _{MIN}	DC 3.33 V	2488.23	-50.77	0.01	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7208.50	-37.04	0.20	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7208.50	-37.24	0.19	
	V _{MIN}	DC 3.33 V	7208.50	-37.08	0.20	
Middle Frequency: 2440 MHz						
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1220.30	-41.23	0.08	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1220.30	-41.42	0.07	
	V _{MIN}	DC 3.33 V	1220.30	-41.48	0.07	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2387.01	-50.32	0.01	25 μW/MHz(≒ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2387.90	-50.39	0.01	
	V _{MIN}	DC 3.33 V	2391.89	-50.37	0.01	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2495.40	-50.65	0.01	
	V _{NOM}	DC 3.70 V	2483.51	-50.80	0.01	
	V _{MIN}	DC 3.33 V	2486.14	-50.58	0.01	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7318.50	-36.30	0.23	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7318.50	-36.34	0.23	
	V _{MIN}	DC 3.33 V	7318.50	-36.20	0.24	

NOTE 1: Measured Value (μW/MHz) = 10³ × (Measured Value (dBm/MHz) / 10) × 10⁻³

High Frequency: 2480 MHz

30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1241.50	-41.11	0.08	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1241.50	-41.45	0.07	
	V _{MIN}	DC 3.33 V	1239.10	-41.05	0.08	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2397.42	-50.15	0.01	25 μ W/MHz($\approx$ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2389.27	-50.37	0.01	
	V _{MIN}	DC 3.33 V	2394.59	-51.13	0.01	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2483.51	-32.25	0.60	
	V _{NOM}	DC 3.70 V	2483.51	-32.21	0.60	
	V _{MIN}	DC 3.33 V	2483.51	-32.18	0.61	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7438.50	-35.74	0.27	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7438.50	-35.73	0.27	
	V _{MIN}	DC 3.33 V	7438.50	-35.81	0.26	

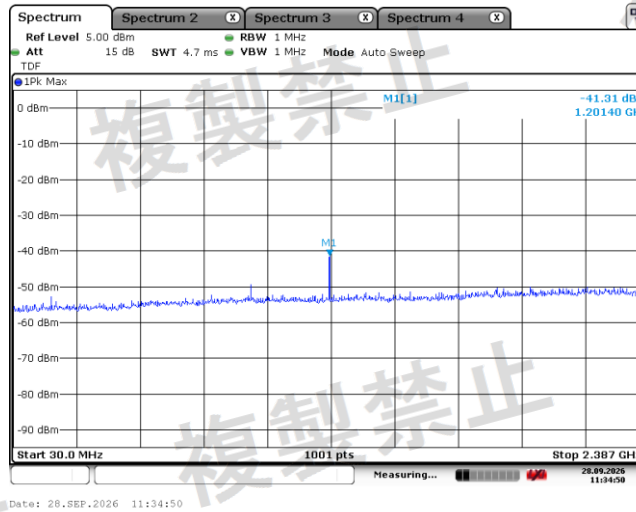
NOTE 1: Measured Value (μ W/MHz) = : $10^{(Measured Value (dBm/MHz)/10)} * 10^{-3}$

6.4.2 Test Plot (Normal Voltage)

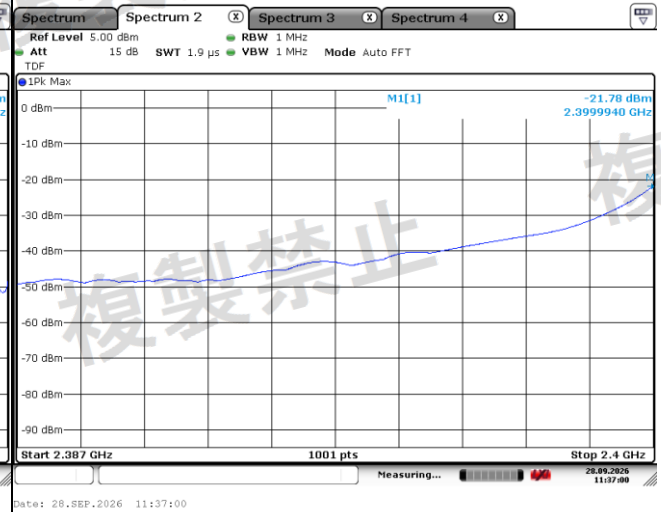
Transmitter spurious emissions

Low Channel (2402 MHz)

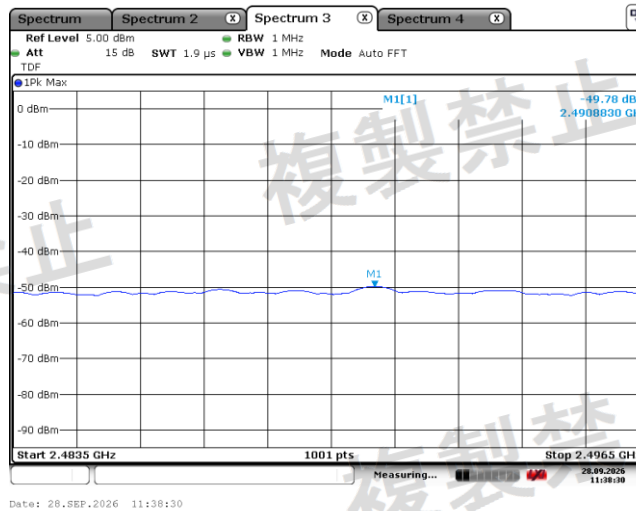
30 ~ 2387 MHz



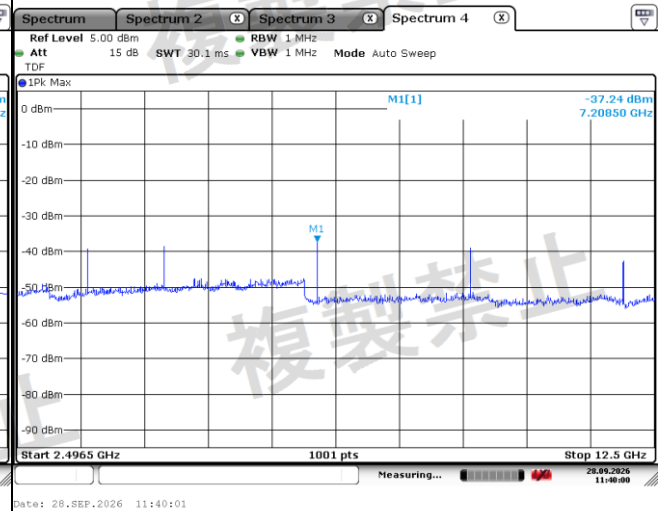
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



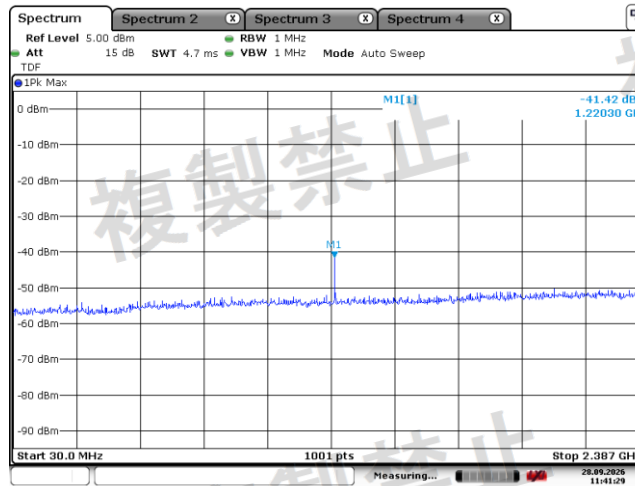
2496.5 ~ 12500 MHz



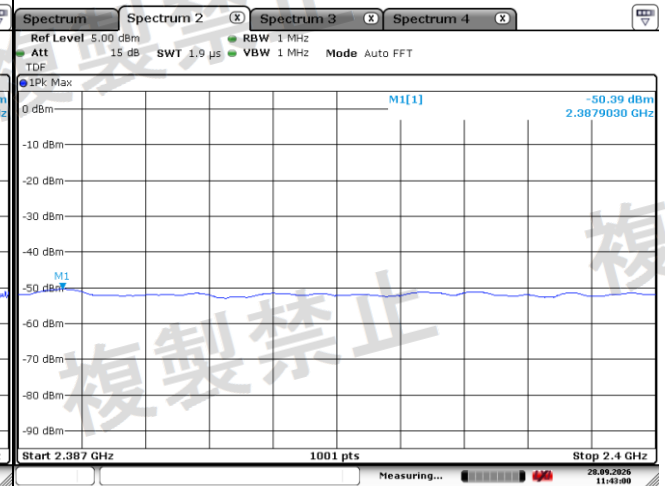
Transmitter spurious emissions

Middle Channel (2440 MHz)

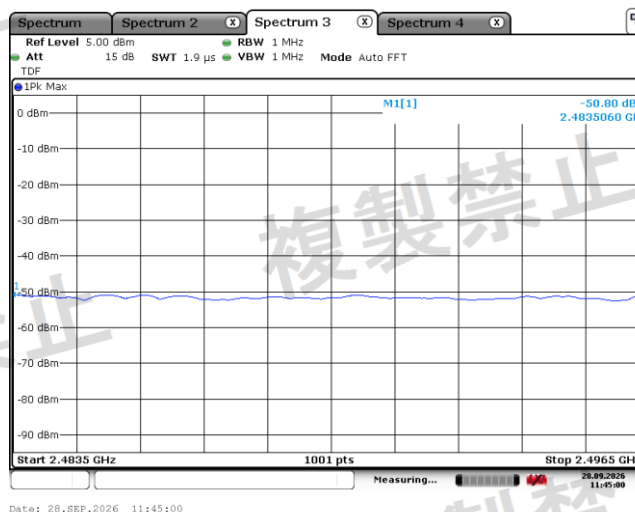
30 ~ 2387 MHz



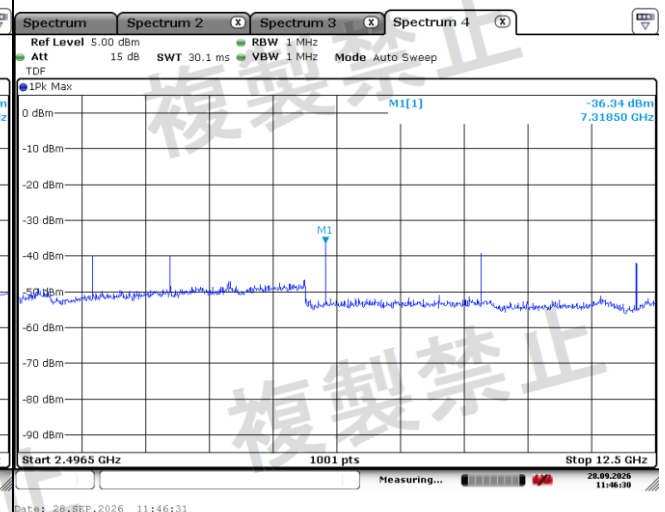
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



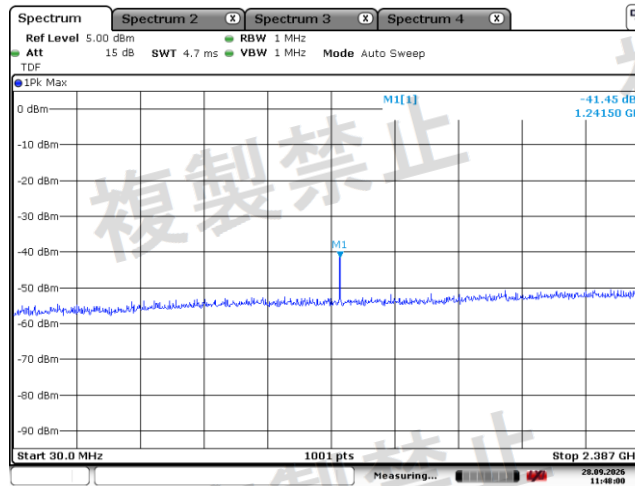
2496.5 ~ 12500 MHz



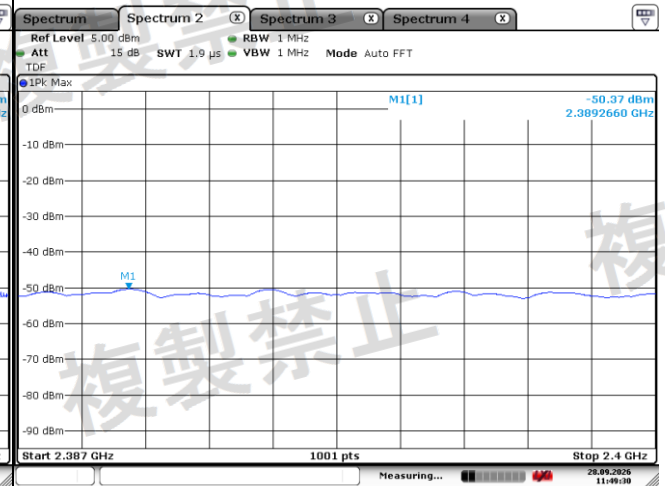
Transmitter spurious emissions

High Channel (2480 MHz)

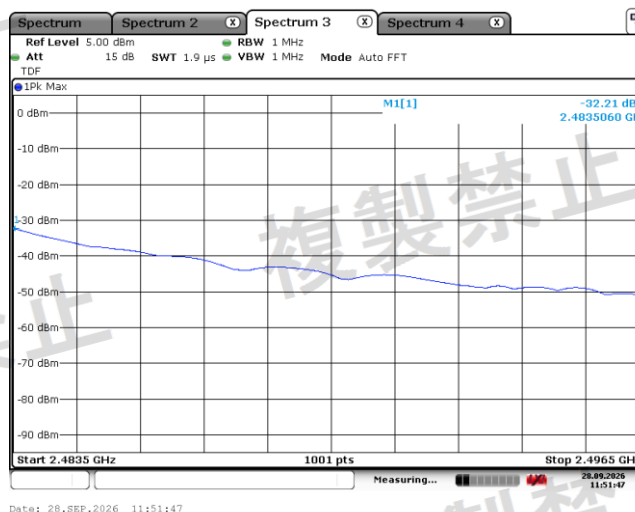
30 ~ 2387 MHz



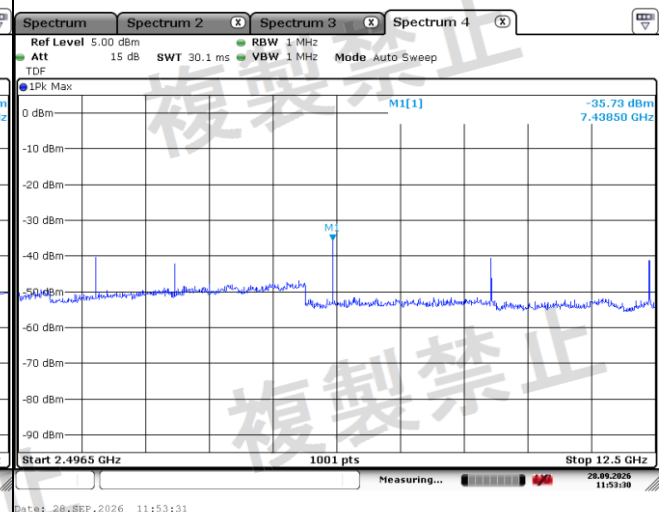
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



6.5. Receiver spurious emissions

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6.5.1 Test Data

PASS

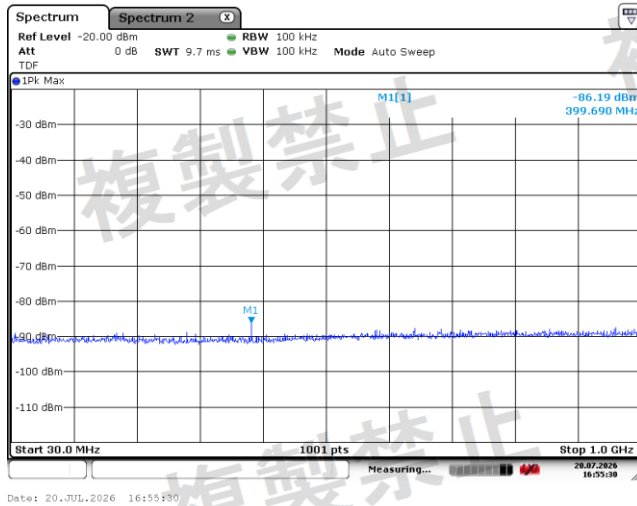
Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured frequency	Measured Value	Measured Value	Limit
Low Frequency: 2402 MHz			(MHz)	(dBm/MHz)	(nW/MHz)	
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-86.99	0.002	4 nW(≐ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-86.19	0.002	
	V _{MIN}	DC 3.33 V	399.69	-87.38	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6130.00	-72.68	0.054	20 nW(≐ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6980.00	-72.45	0.057	
	V _{MIN}	DC 3.33 V	6704.00	-72.66	0.054	
Middle Frequency: 2440 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.25	0.002	4 nW(≐ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-85.91	0.002	
	V _{MIN}	DC 3.33 V	399.69	-87.15	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6681.00	-71.97	0.064	20 nW(≐ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6578.00	-72.90	0.051	
	V _{MIN}	DC 3.33 V	6543.00	-72.65	0.054	
High Frequency: 2480 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.59	0.002	4 nW(≐ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-87.46	0.002	
	V _{MIN}	DC 3.33 V	399.69	-86.03	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6681.00	-72.30	0.059	20 nW(≐ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6681.00	-72.30	0.059	
	V _{MIN}	DC 3.33 V	6589.00	-72.37	0.058	

NOTE 1: Measured Value (nW/MHz) = 10⁶ (Measured Value (dBm/MHz) / 10) * 10⁻⁶

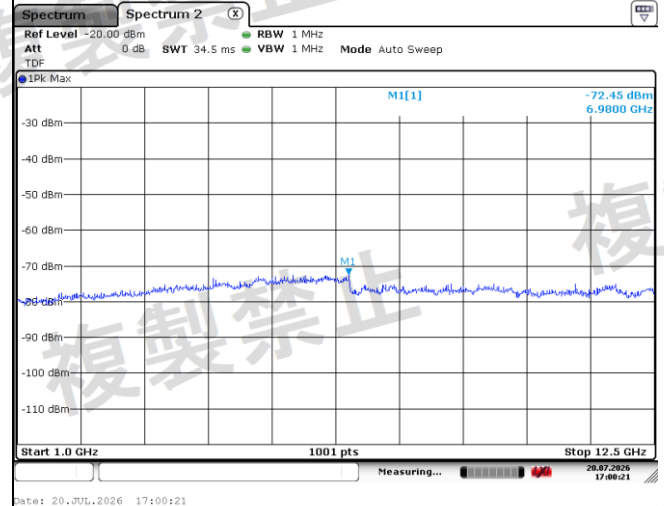
6.5.2 Test Plot (Normal Voltage)

Receiver spurious emissions

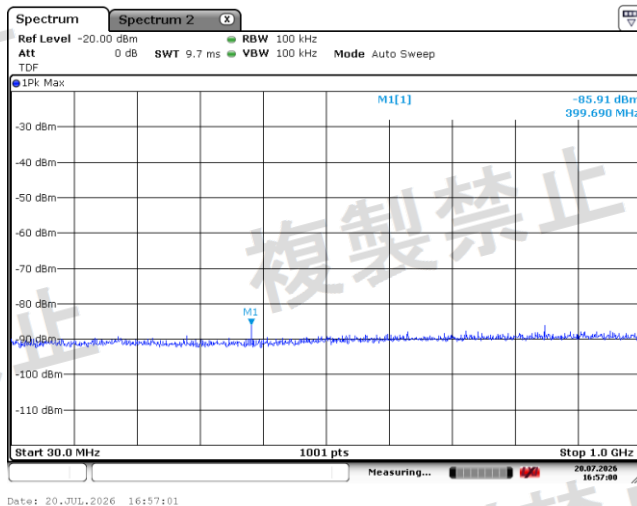
Low Channel (2402 MHz), 30 ~ 1000 MHz



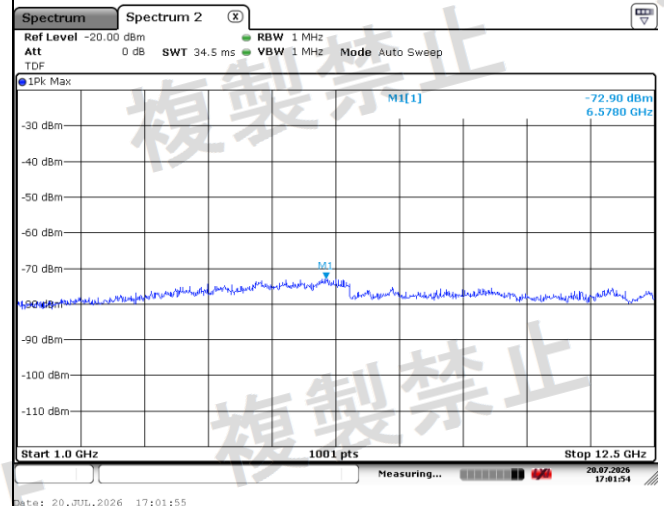
1000 ~ 12500 MHz



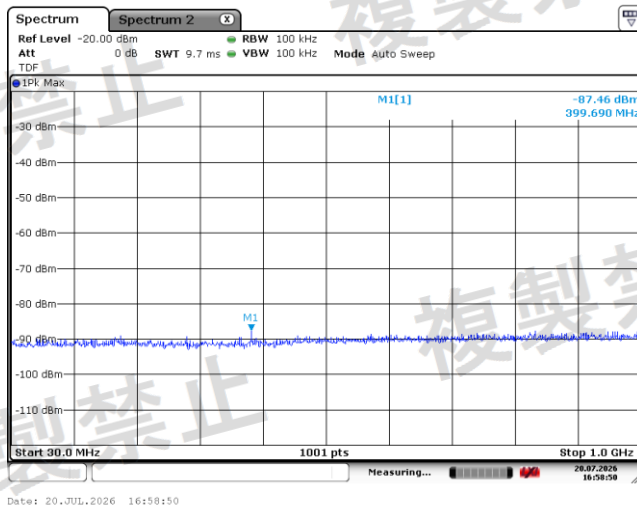
Middle Channel (2440 MHz), 10 ~ 1000 MHz



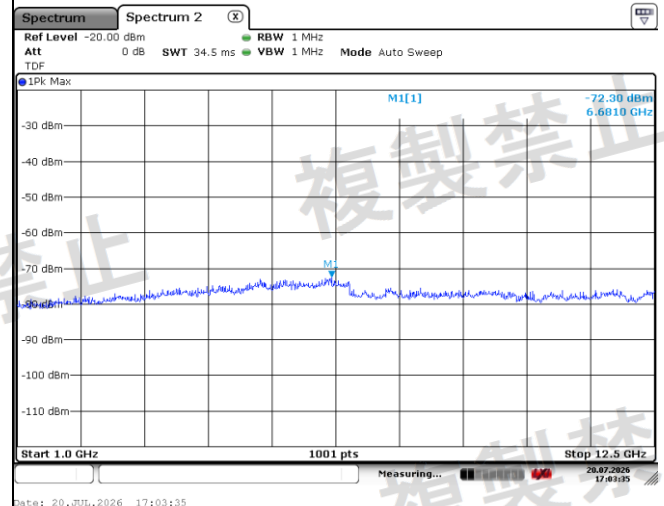
1000 ~ 12500 MHz



High Channel (2480 MHz), 10 ~ 1000 MHz



1000 ~ 12500 MHz



6.6. Anti-Interference

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6.6.1 Test Data

PASS

Test Conditions (Conducted)	
Temperature: (25 ± 3) °C	TEST RESULTS
Rel. Humidity: (53 ± 3) % R.H.	PASS

7 Measurement results (LE 2Mbps)

7.1. Frequency tolerance

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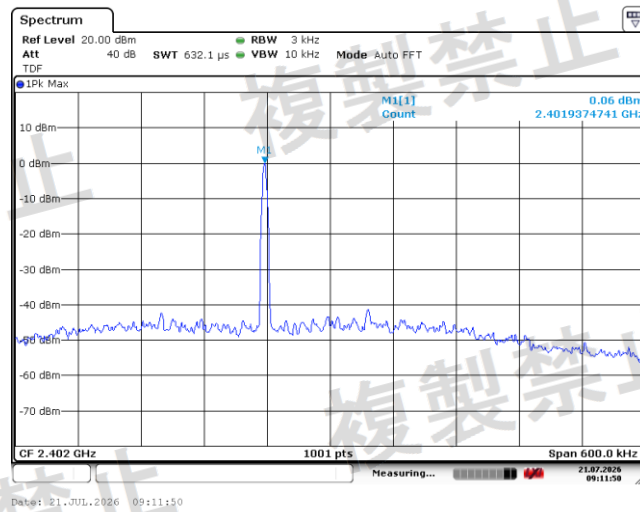
7.1.1 Test Data

PASS

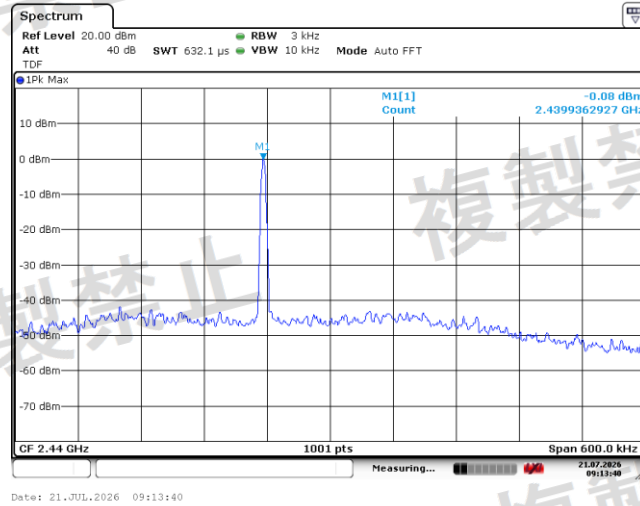
Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (53 ± 3) % R.H.		Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low Frequency: 2402 MHz	V _{MAX} DC 4.07 V	2.4019375275	-26.01	± 50
	V _{NOM} DC 3.70 V	2.4019374741	-26.03	
	V _{MIN} DC 3.33 V	2.4019374102	-26.06	
Middle Frequency: 2440 MHz	V _{MAX} DC 4.07 V	2.4399363246	-26.10	
	V _{NOM} DC 3.70 V	2.4399362927	-26.11	
	V _{MIN} DC 3.33 V	2.4399362526	-26.13	
High Frequency: 2480 MHz	V _{MAX} DC 4.07 V	2.4799351210	-26.16	
	V _{NOM} DC 3.70 V	2.4799351019	-26.17	
	V _{MIN} DC 3.33 V	2.4799350287	-26.20	
Measurement uncertainty: ± 2 × 10 ⁻⁷				

7.1.2 Test Plot (Normal Voltage)

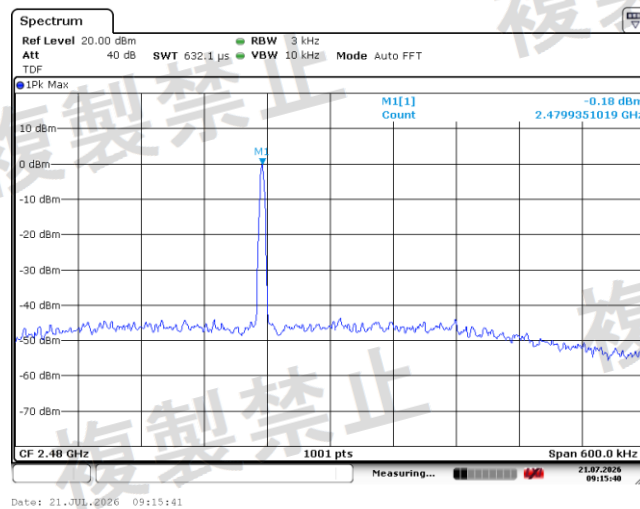
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



7.2. Occupied bandwidth (99%)

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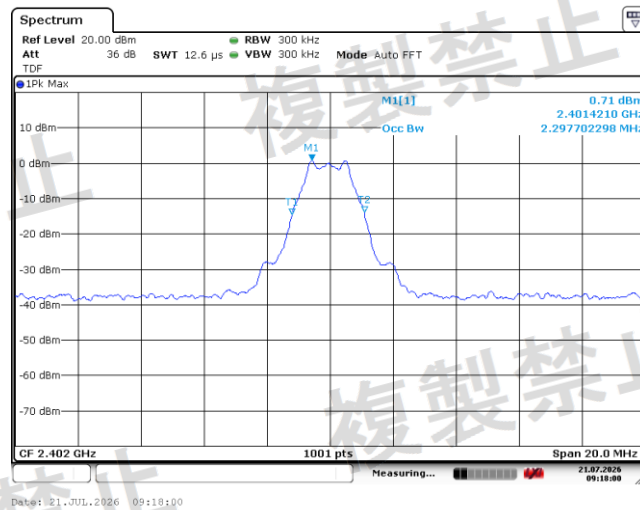
7.2.1 Test Data

PASS

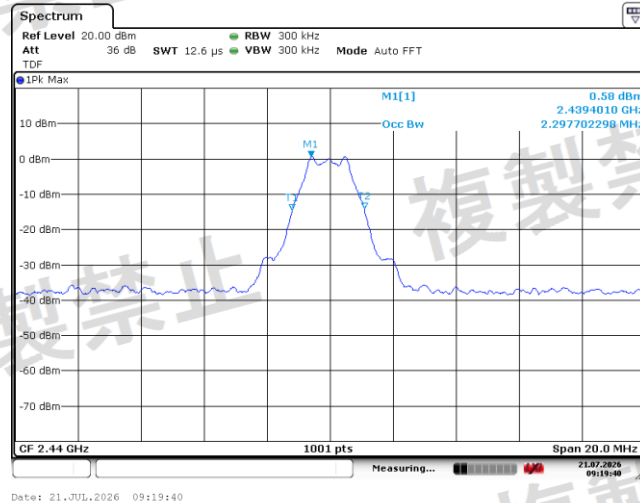
Test Conditions (Conducted)				
Temperature:		(25 ± 3) °C	TEST RESULTS	
Rel. Humidity:		(53 ± 3) % R.H.	Occupied bandwidth (MHz)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.07 V	2.30	26 MHz or below
	V _{NOM}	DC 3.70 V	2.30	
	V _{MIN}	DC 3.33 V	2.32	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.07 V	2.30	
	V _{NOM}	DC 3.70 V	2.30	
	V _{MIN}	DC 3.33 V	2.30	
High Frequency: 2480 MHz	V _{MAX}	DC 4.07 V	2.30	
	V _{NOM}	DC 3.70 V	2.32	
	V _{MIN}	DC 3.33 V	2.30	
Measurement uncertainty: ± 3 × 10 ⁻⁴				

7.2.2 Test Plot (Normal Voltage)

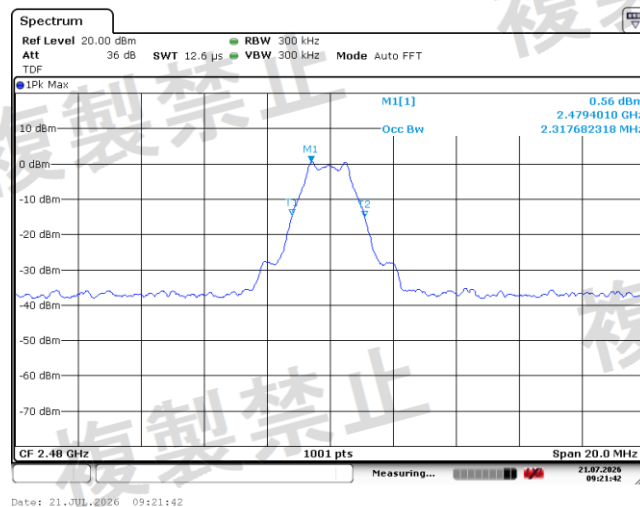
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



7.3. Antenna power

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7.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D: 0.00125 W			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW)	Tolerance (%) (NOTE1)	EIRP (dBm) (NOTE2)
Low Frequency: 2402 MHz	V _{MAX}	DC 4.07 V	1.17	1.309	4.73	4.04
	V _{NOM}	DC 3.70 V	1.22	1.324	5.95	4.09
	V _{MIN}	DC 3.33 V	1.11	1.291	3.30	3.98
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.07 V	1.05	1.274	1.88	3.92
	V _{NOM}	DC 3.70 V	1.06	1.276	2.12	3.93
	V _{MIN}	DC 3.33 V	1.07	1.279	2.35	3.94
High Frequency: 2480 MHz	V _{MAX}	DC 4.07 V	0.93	1.239	-0.90	3.80
	V _{NOM}	DC 3.70 V	0.94	1.242	-0.67	3.81
	V _{MIN}	DC 3.33 V	0.99	1.256	0.48	3.86
Measurement uncertainty: ± 1.0 dB						

** Measured value (dBm) is the average output power of the transmitter; spectrum analyzer reading and corrected for the cable loss and the Attenuator. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the spectrum analyzer. Antenna Power is measured by spectrum analyzer.

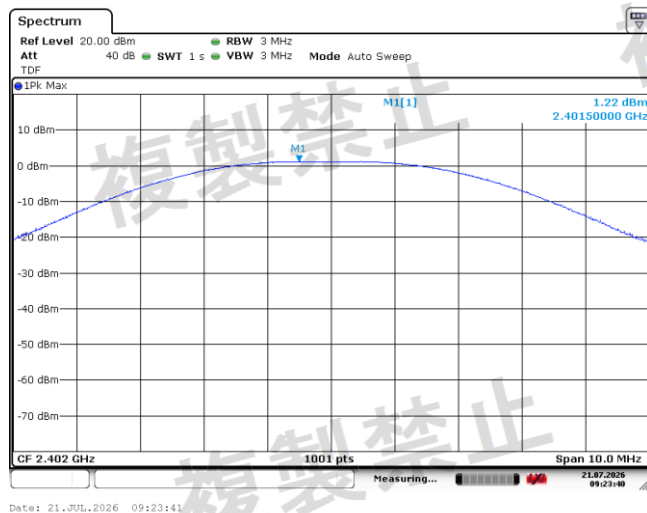
NOTE 1: Tolerance (%) in normal mode = $100 \times (\text{Antenna power (mW)} - \text{Declared power (mW)}) / \text{Declared power (mW)}$

NOTE 2: EIRP(dBm) = Antenna Power(dBm) + Antenna Peak Gain(dBi) **[Antenna Peak Gain(dBi) = 2.87 dBi]**

7.3.2 Test Plot (Normal Voltage)

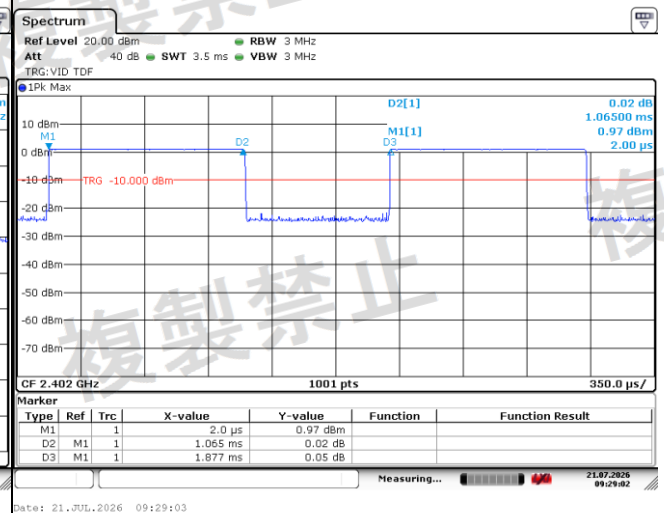
Measured

2402 MHz

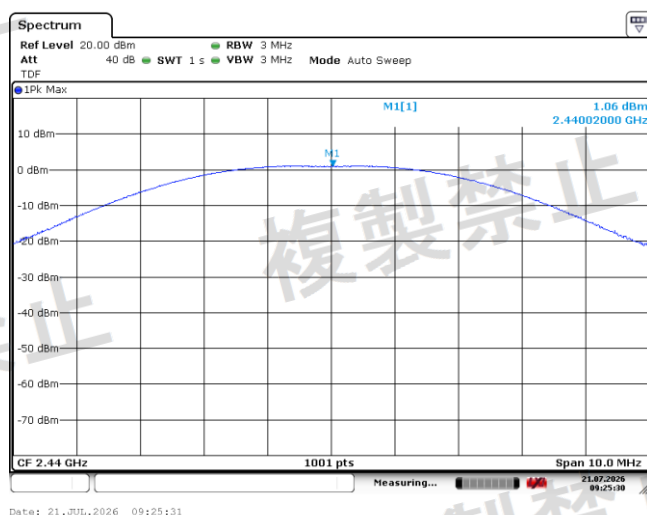


On/ Off Time

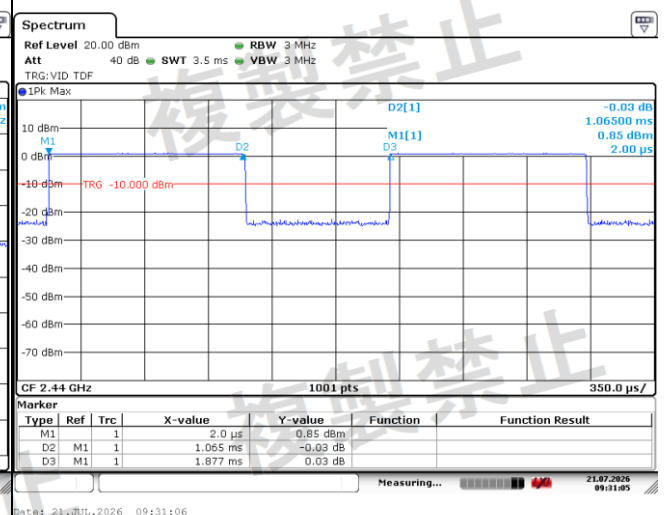
2402 MHz



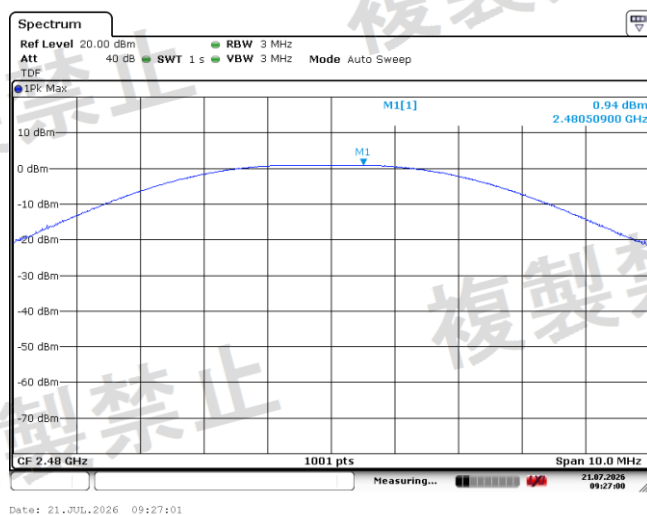
2440 MHz



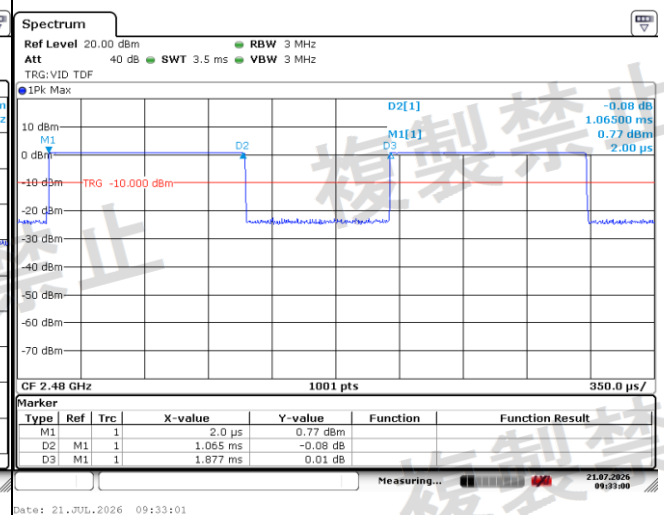
2440 MHz



2480 MHz



2480 MHz



7.4. Transmitter spurious emissions

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7.4.1 Test Data

PASS

Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured frequency	Measured Value	Measured Value (NOTE1)	Limit
Low Frequency: 2402 MHz			(MHz)	(dBm/MHz)	(μW/MHz)	
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1201.40	-48.23	0.015	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1201.40	-48.21	0.015	
	V _{MIN}	DC 3.33 V	1199.10	-48.31	0.015	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2399.99	-19.02	12.531	25 μW/MHz(≒ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-18.92	12.823	
	V _{MIN}	DC 3.33 V	2399.99	-18.94	12.764	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2492.90	-56.70	0.002	
	V _{NOM}	DC 3.70 V	2493.36	-57.12	0.002	
	V _{MIN}	DC 3.33 V	2496.49	-56.58	0.002	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	4800.50	-43.58	0.044	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	4800.50	-43.20	0.048	
	V _{MIN}	DC 3.33 V	4800.50	-43.31	0.047	
Middle Frequency: 2440 MHz						
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1220.30	-48.15	0.015	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1220.30	-48.37	0.015	
	V _{MIN}	DC 3.33 V	1220.30	-48.13	0.015	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2389.34	-57.01	0.002	25 μW/MHz(≒ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2393.34	-56.31	0.002	
	V _{MIN}	DC 3.33 V	2397.05	-56.14	0.002	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2485.77	-57.00	0.002	
	V _{NOM}	DC 3.70 V	2484.23	-57.05	0.002	
	V _{MIN}	DC 3.33 V	2491.22	-57.13	0.002	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7318.50	-43.57	0.044	2.5 μW/MHz(≒ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7318.50	-43.63	0.043	
	V _{MIN}	DC 3.33 V	7318.50	-43.84	0.041	

NOTE 1: Measured Value (μW/MHz) = 10³ × (Measured Value (dBm/MHz) / 10) × 10⁻³

High Frequency: 2480 MHz

30 MHz ~ 2387 MHz	V _{MAX}	DC 4.07 V	1241.50	-48.22	0.015	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	1241.50	-48.20	0.015	
	V _{MIN}	DC 3.33 V	1239.10	-47.95	0.016	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.07 V	2388.31	-57.31	0.002	25 μ W/MHz($\approx$ -16 dBm) or less
	V _{NOM}	DC 3.70 V	2391.44	-56.55	0.002	
	V _{MIN}	DC 3.33 V	2393.77	-57.65	0.002	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.07 V	2483.51	-39.89	0.103	
	V _{NOM}	DC 3.70 V	2483.51	-39.63	0.109	
	V _{MIN}	DC 3.33 V	2483.51	-39.83	0.104	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.07 V	7438.50	-42.57	0.055	2.5 μ W/MHz($\approx$ -26 dBm) or less
	V _{NOM}	DC 3.70 V	7438.50	-42.57	0.055	
	V _{MIN}	DC 3.33 V	7438.50	-42.53	0.056	

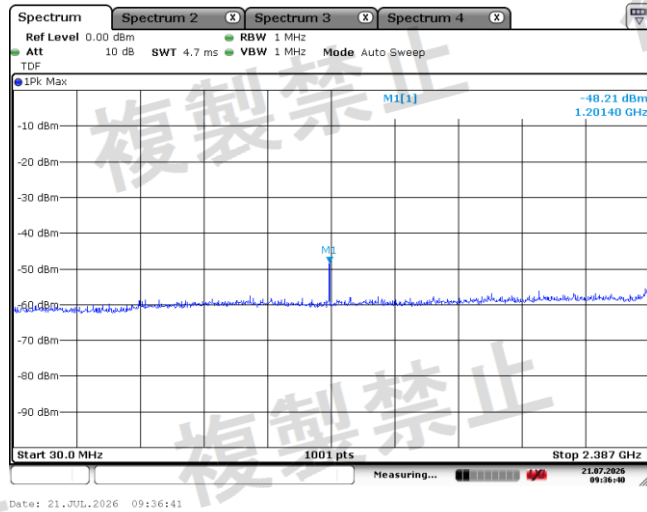
NOTE 1: Measured Value (μ W/MHz) = : $10^{(Measured Value (dBm/MHz)/10)} * 10^{-3}$

7.4.2 Test Plot (Normal Voltage)

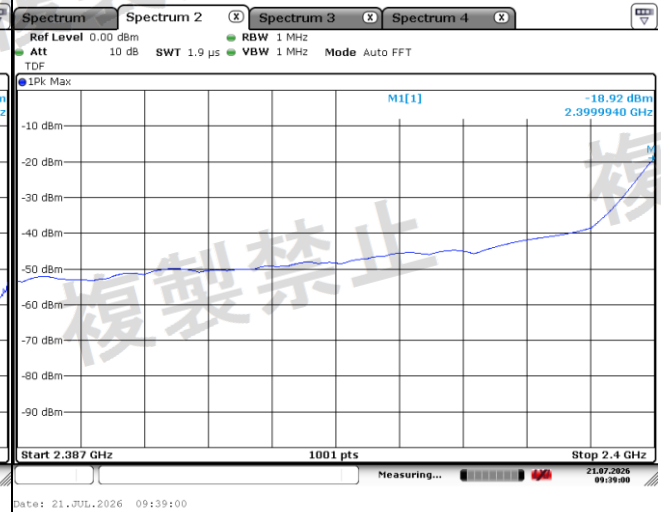
Transmitter spurious emissions

Low Channel (2402 MHz)

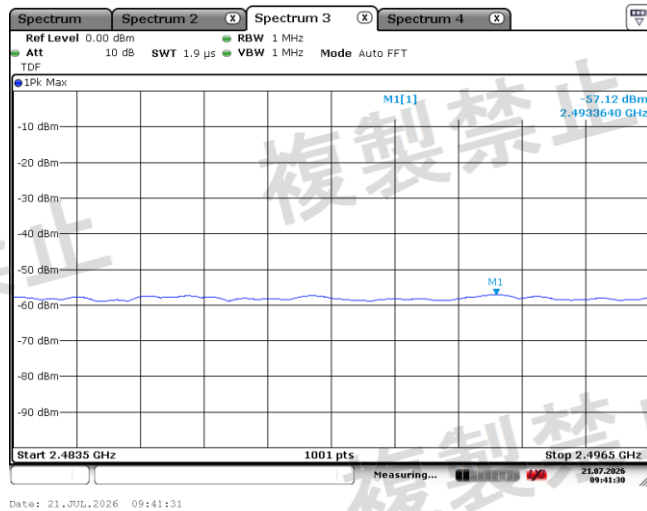
30 ~ 2387 MHz



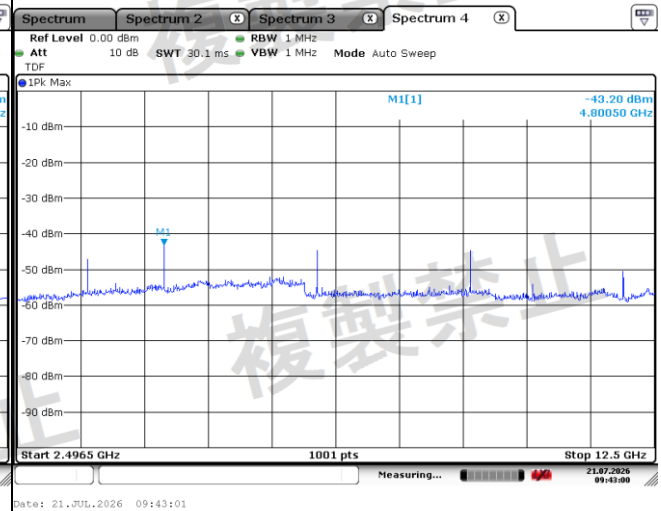
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



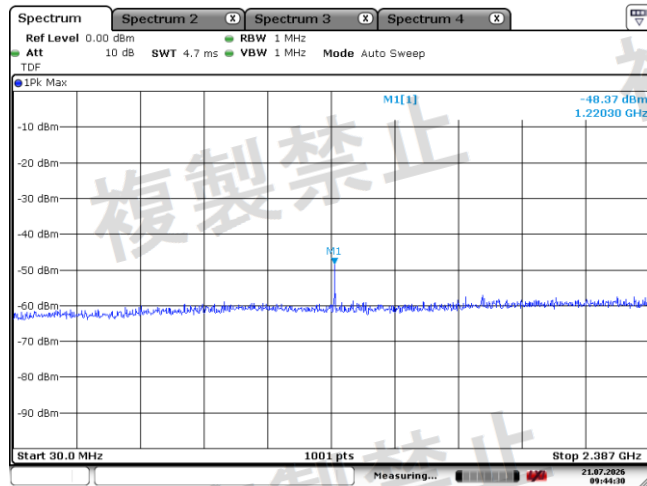
2496.5 ~ 12500 MHz



Transmitter spurious emissions

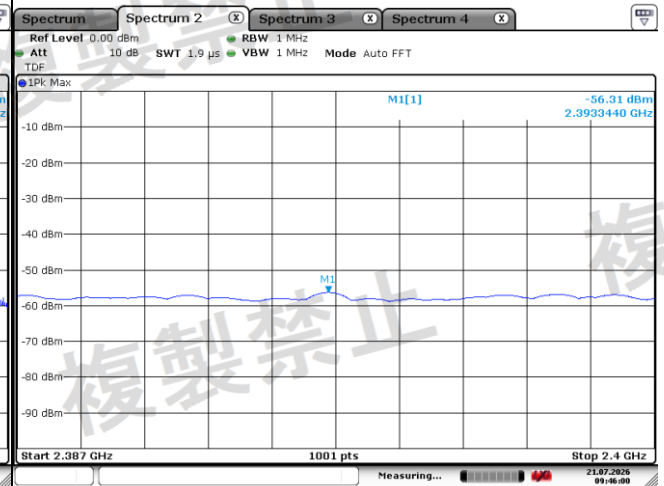
Middle Channel (2440 MHz)

30 ~ 2387 MHz



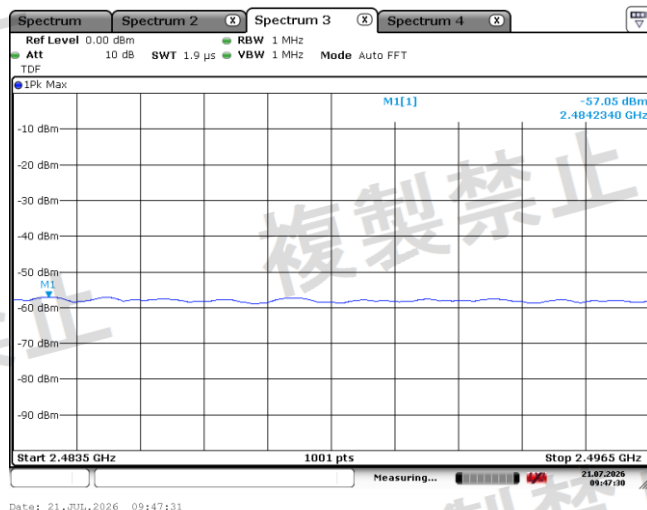
Date: 21.JUL.2026 09:44:31

2387 ~ 2400 MHz



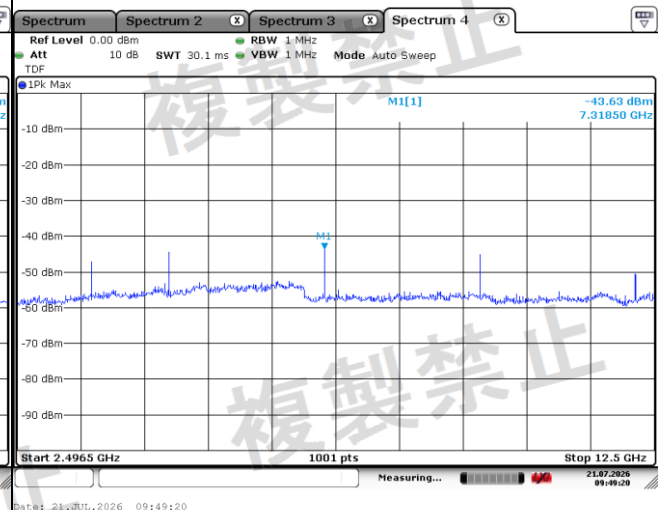
Date: 21.JUL.2026 09:46:00

2483.5 ~ 2496.5 MHz



Date: 21.JUL.2026 09:47:31

2496.5 ~ 12500 MHz

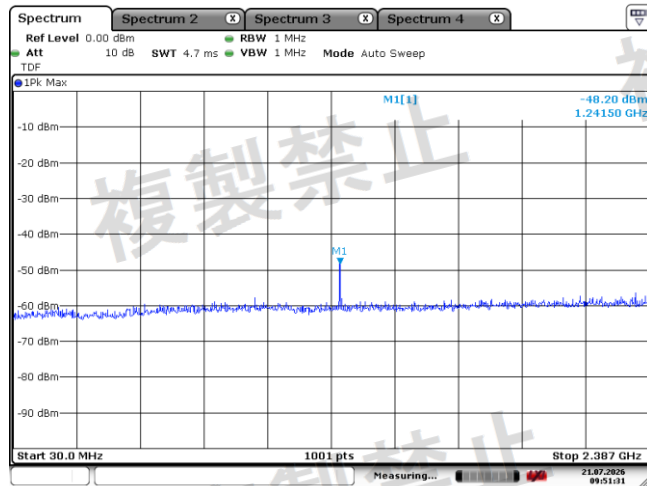


Date: 21.JUL.2026 09:49:20

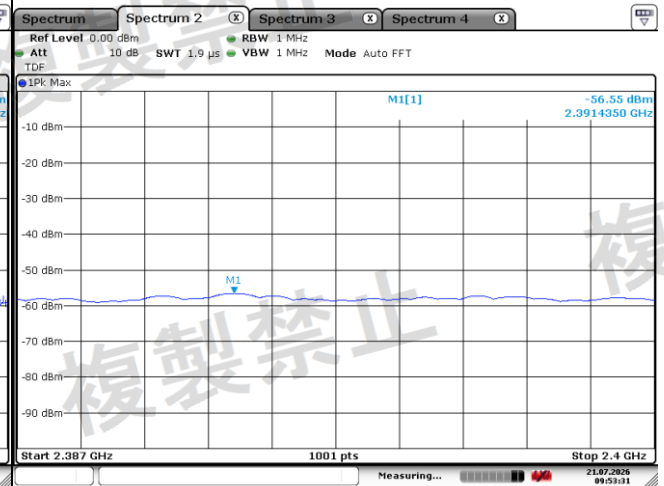
Transmitter spurious emissions

High Channel (2480 MHz)

30 ~ 2387 MHz



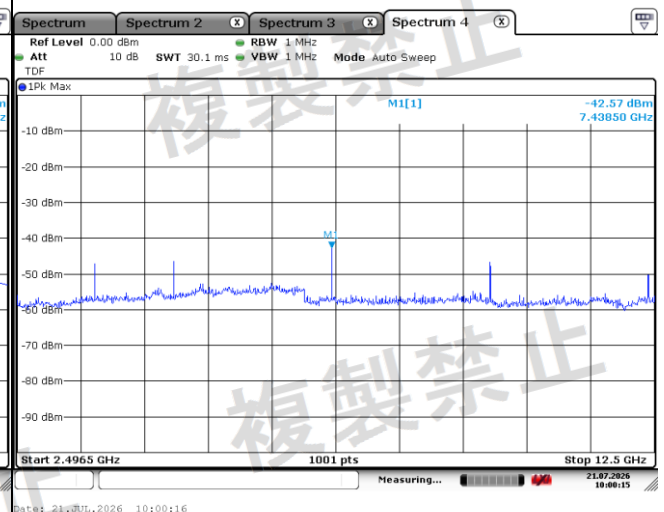
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



7.5. Receiver spurious emissions

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7.5.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (53 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Low Frequency: 2402 MHz		(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX} DC 4.07 V	399.69	-87.35	4 nW(≐ -53.98 dBm) or less
	V _{NOM} DC 3.70 V	399.69	-86.78	
	V _{MIN} DC 3.33 V	399.69	-87.56	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.07 V	6589.00	-72.29	20 nW(≐ -46.99 dBm) or less
	V _{NOM} DC 3.70 V	6509.00	-71.93	
	V _{MIN} DC 3.33 V	6497.00	-72.68	
Middle Frequency: 2440 MHz				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.07 V	399.69	-87.12	4 nW(≐ -53.98 dBm) or less
	V _{NOM} DC 3.70 V	399.69	-87.12	
	V _{MIN} DC 3.33 V	399.69	-87.29	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.07 V	6543.00	-72.29	20 nW(≐ -46.99 dBm) or less
	V _{NOM} DC 3.70 V	5348.00	-72.55	
	V _{MIN} DC 3.33 V	6130.00	-72.65	
High Frequency: 2480 MHz				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.07 V	399.69	-86.71	4 nW(≐ -53.98 dBm) or less
	V _{NOM} DC 3.70 V	399.69	-87.33	
	V _{MIN} DC 3.33 V	399.69	-86.97	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.07 V	6555.00	-72.60	20 nW(≐ -46.99 dBm) or less
	V _{NOM} DC 3.70 V	6624.00	-71.97	
	V _{MIN} DC 3.33 V	5417.00	-71.95	

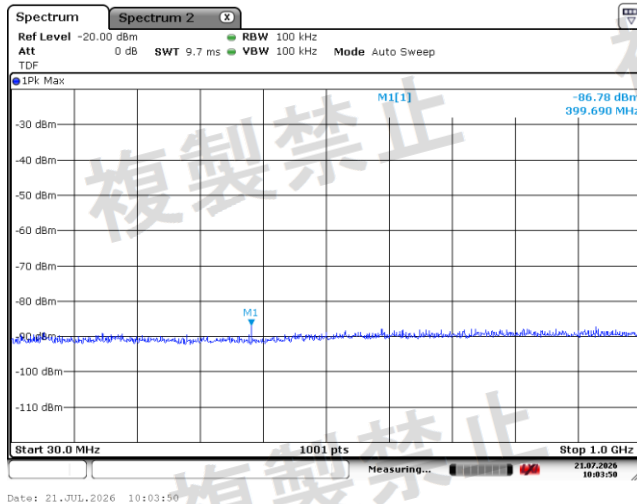
Test Conditions (Conducted)						
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (53 ± 3) % R.H.			Measured frequency	Measured Value	Measured Value	Limit
Low Frequency: 2402 MHz			(MHz)	(dBm/MHz)	(nW/MHz)	
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.35	0.002	4 nW(≐ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-86.78	0.002	
	V _{MIN}	DC 3.33 V	399.69	-87.56	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6589.00	-72.29	0.059	20 nW(≐ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6509.00	-71.93	0.064	
	V _{MIN}	DC 3.33 V	6497.00	-72.68	0.054	
Middle Frequency: 2440 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-87.12	0.002	4 nW(≐ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-87.12	0.002	
	V _{MIN}	DC 3.33 V	399.69	-87.29	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6543.00	-72.29	0.059	20 nW(≐ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	5348.00	-72.55	0.056	
	V _{MIN}	DC 3.33 V	6130.00	-72.65	0.054	
High Frequency: 2480 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.07 V	399.69	-86.71	0.002	4 nW(≐ -53.98 dBm) or less
	V _{NOM}	DC 3.70 V	399.69	-87.33	0.002	
	V _{MIN}	DC 3.33 V	399.69	-86.97	0.002	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.07 V	6555.00	-72.60	0.055	20 nW(≐ -46.99 dBm) or less
	V _{NOM}	DC 3.70 V	6624.00	-71.97	0.064	
	V _{MIN}	DC 3.33 V	5417.00	-71.95	0.064	

NOTE 1: Measured Value (nW/MHz)= : 10⁶(Measured Value (dBm/MHz)/10) * 10⁻⁶

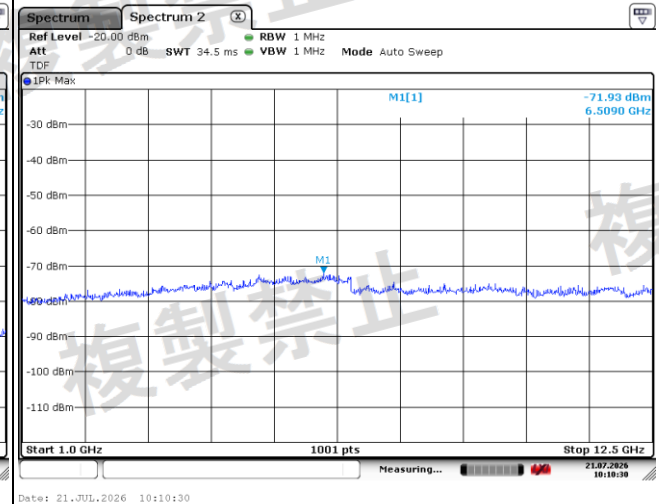
7.5.2 Test Plot (Normal Voltage)

Receiver spurious emissions

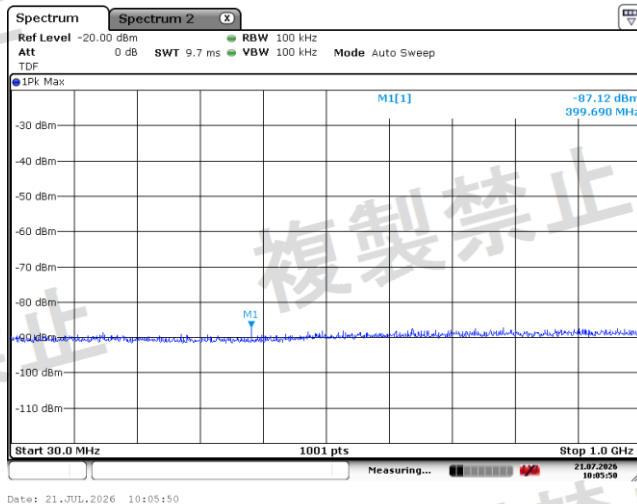
Low Channel (2402 MHz), 30 ~ 1000 MHz



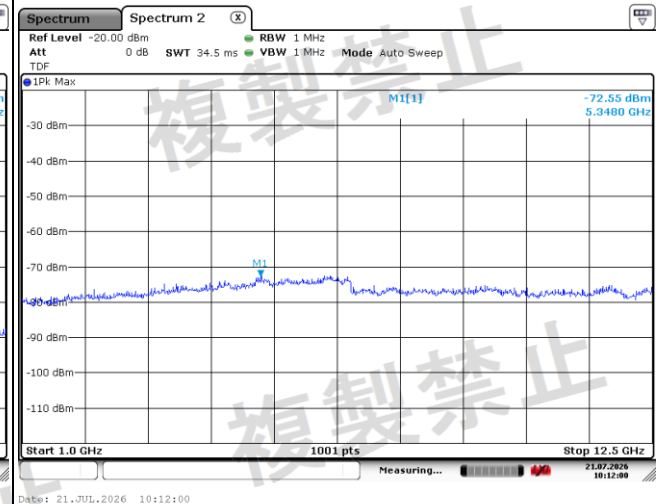
1000 ~ 12500 MHz



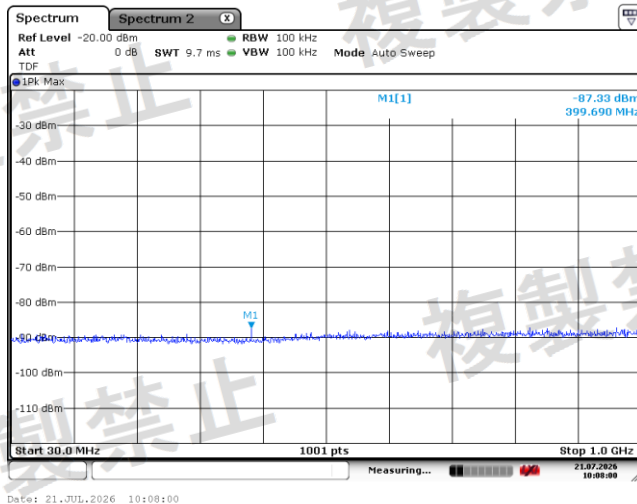
Middle Channel (2440 MHz), 10 ~ 1000 MHz



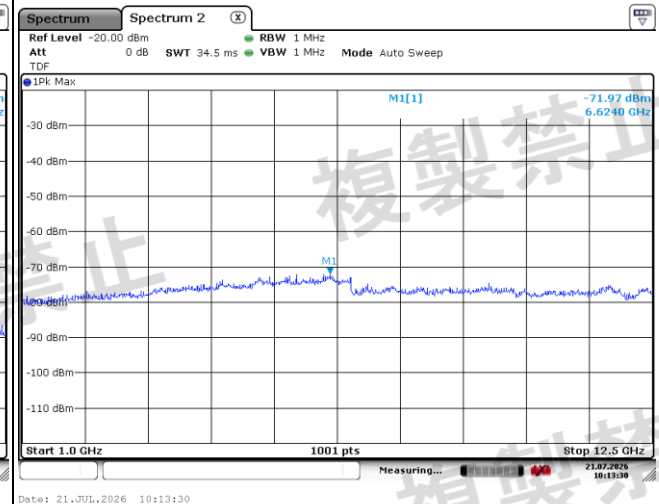
1000 ~ 12500 MHz



High Channel (2480 MHz), 10 ~ 1000 MHz



1000 ~ 12500 MHz



7.6. Anti-Interference

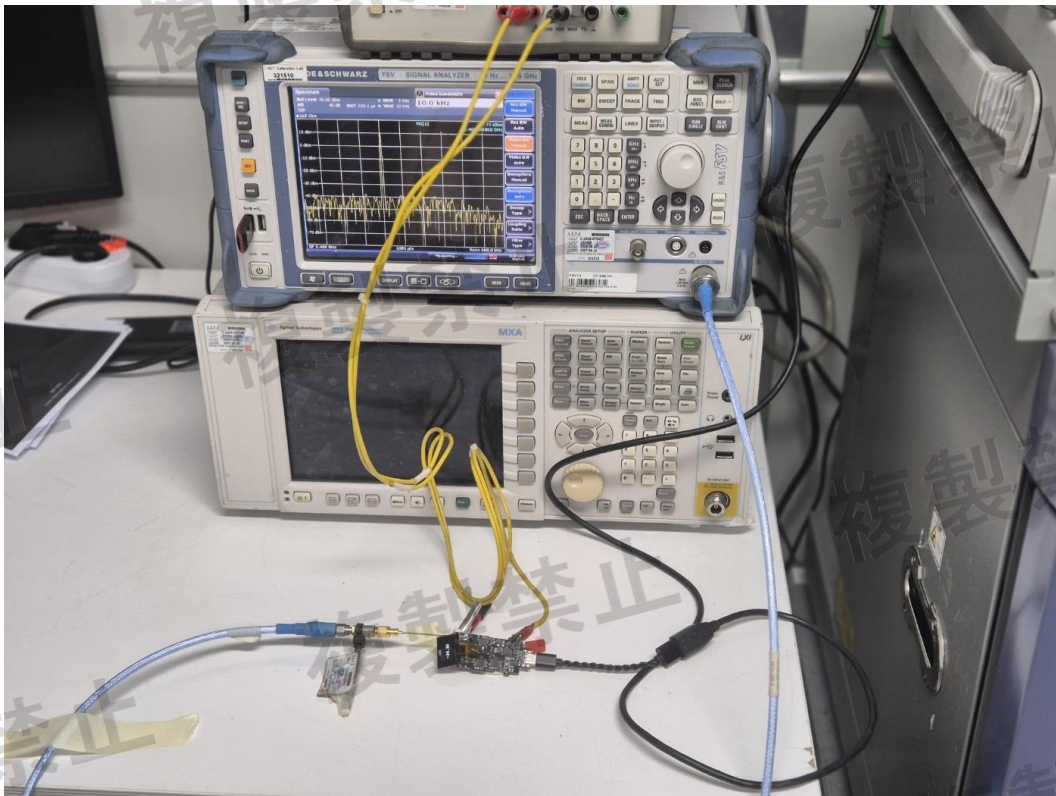
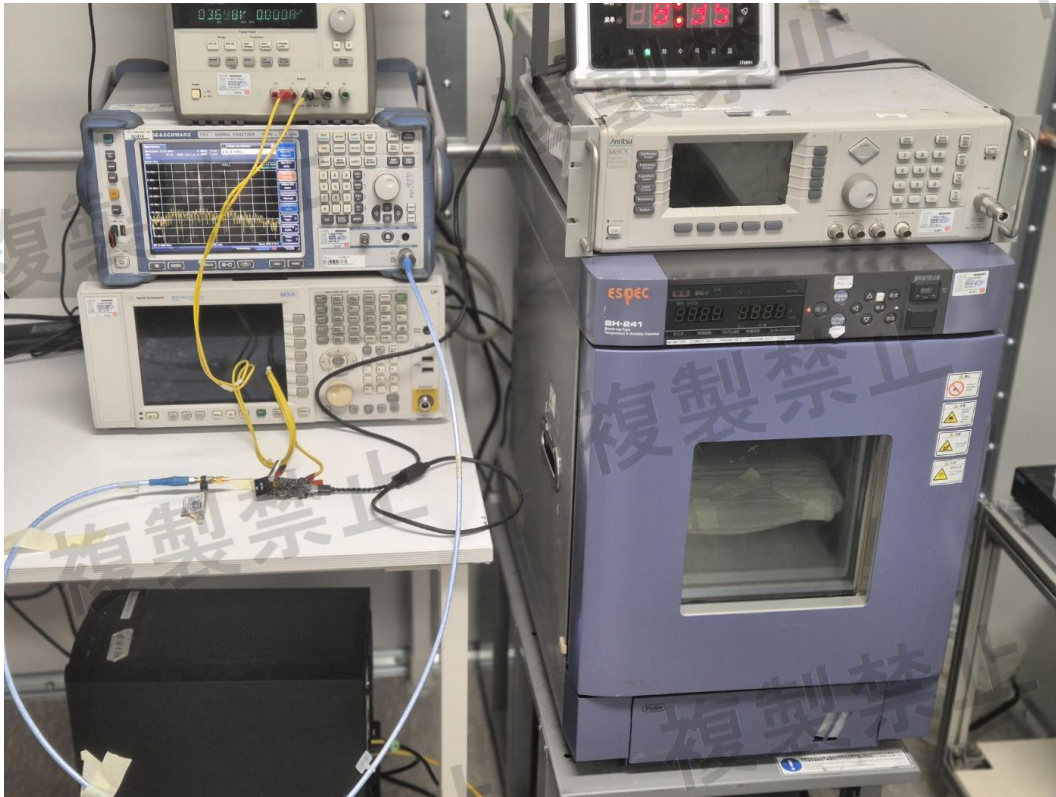
Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

7.6.1 Test Data

PASS

Test Conditions (Conducted)	
Temperature: (25 ± 3) °C	TEST RESULTS
Rel. Humidity: (53 ± 3) % R.H.	PASS

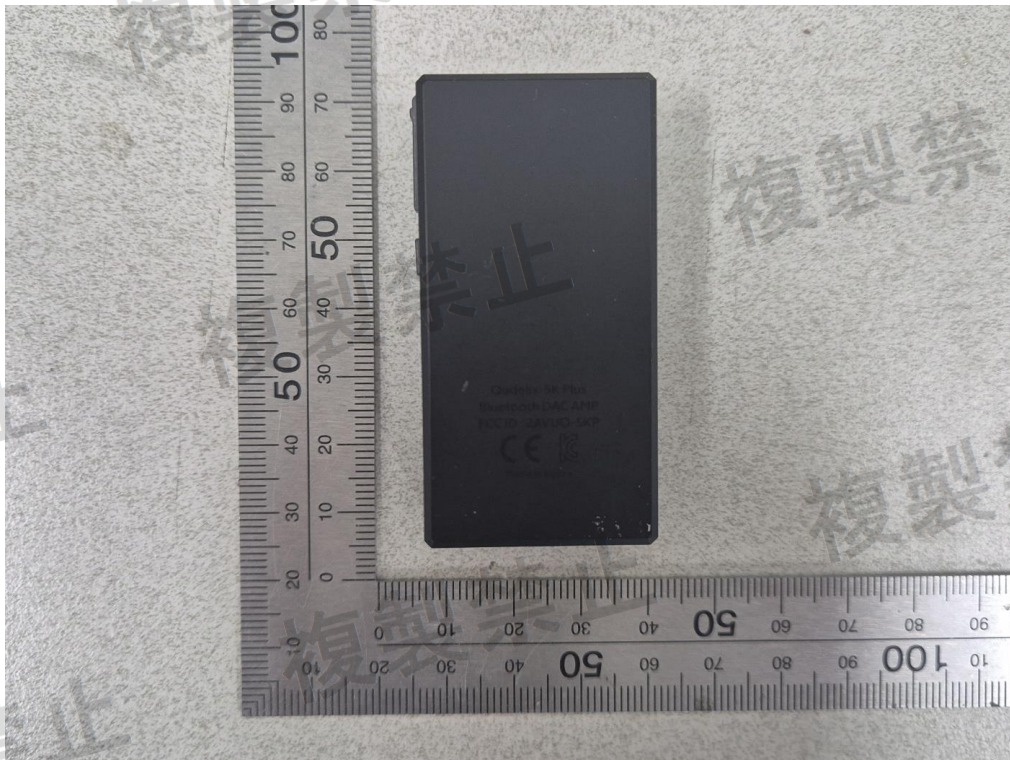
8 Photographs of the test setup



9 Photographs of EUT



Top



Bottom