JAPAN MIC

TEST REPORT

For

SHANGHAI SENSOL INTERACTIVE CO., Ltd.

Room 1018, Building 2, Lane 1518, Jinshajiang Road Putuo District, Shanghai, China

Tested Model: RS03

Report Type:	**Product Type:**
Original Report	SMART TRAINING REFORMER

Report Number:	2507W27648E-RF-01
Report Date:	2025-08-29
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REPORT REVISION HISTORY

Number of Revision	Report No.	Version	Issue Date	Description
0	2507W27648E-RF-01	Original Report	2025-08-29	Initial Release

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

Product Name:	SMART TRAINING REFORMER
Test Model:	RS03
Multiple Model(s):	RS03PRO
Power Supply:	AC 100V, 60Hz
RF output power:	GFSK: 0.006mW/MHz; π/4-DQPSK: 0.006mW/MHz; 8DPSK: 0.006mW/MHz
RF Function:	Classic BT
Operating Band/Frequency:	2402-2480MHz
Channel Separation:	1MHz
Modulation Type:	GFSK, π/4-DQPSK, 8DPSK
Emission Type:	F1D
★ Maximum Antenna Gain:	3 dBi
EUT Received Status:	Good
Note: 1. *The maximum antenna gain is provided by the manufacturer.* *2. The test model is identify with the series model except for the model name, please refer to declaration letter for more detail.* *3. All measurement and test data in this report was gathered from production sample serial number: 3814-3 (Assigned by the BACL (Fujian). The EUT supplied by the applicant was received on 2025-08-13.)*	

Objective

The objective of this current document is to demonstrate the EUT, as equipment type in Certification Ordinance Article 2-1-19 of Specific Radio Equipment Specified in Article 38-2-2 Paragraph 1 Item 1of the Radio Low, compliant with Article 49-20 of Radio equipment regulations.

Test Methodology

All measurements contained in this report were conducted with technical regulations of MIC Notice No.88 of 2004, Appendix No.43 (latest version: MIC Notice No.365 of 2020).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Fujian) to collect test data is located on the Unit 302, No. 902, Meifeng South Road, Tong'an District, Xiamen City.

Measurement Uncertainty

Item	U_{lab} = 2 u_c (y) （Confidence of 95%）
Occupied Bandwidth	2%
Spreading bandwidth	2%
Frequency Error	0.085×10^{6}
Transmitter Conducted Power(Conducted RF power)	±1.49 dB
Conducted Spurious Emission	±2.92 dB
Duty Cycle	1%
Temperature	1℃
Humidity	5%
Voltage (AC, ＜10kHz)	1%

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

EUT TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in engineering mode, which was provided by manufacturer. 79 channels are provided as below table:

Channel	Frequency(MHz)
0	2402
1	2403
…	…
…	…
39	2441
…	…
…	…
77	2479
78	2480

For lowest, middle and highest channel, EUT was tested with channel 0, 39 and 78.

Test Voltage (V_{AC})	RF System Voltage (V_{DC})
90	3.301
100	3.301
110	3.302

The EUT has a power manage chip: SG2375A33P, the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than ±1%. Exempt extremely high and low supply voltage condition tests, EUT only operated in normal voltage to test all regulations.

★EUT Exercise Software

The ' **BK32xx RF Test_V1.8.2** ' command was used during test, which was provided by manufacturer. The maximum power level was configured by the software as below table:

Test Modes	Power Level Setting		
	Low Channel	Middle Channel	High Channel
GFSK	1	1	1
π/4-DQPSK	1	1	1
8DPSK	1	1	1

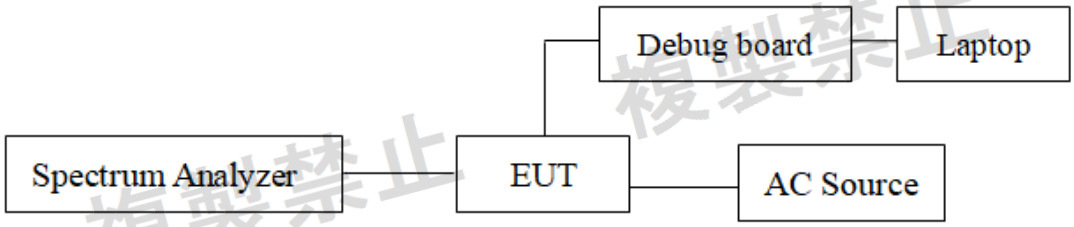
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Unknown	Debug board	Unknown	Unknown
Lenovo	Laptop	T480	PF1P5K4F

Support Cable List and Details

Cable Description	Length (m)	From / Port	To
Power cable	0.5	EUT	AC Source
Dupont cable	0.1	EUT	Debug board
USB cable	1	Debug board	Laptop

Configuration of Test Setup



TEST EQUIPMENT LIST

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date	Calibration Agency	Calibration Method Note
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	122920	2025/02/20	2026/02/19	BACL Metrology	C
Microwave Analog Signal Generator	Agilent	N5183A	MY47420335	2025/02/20	2026/02/19	BACL Metrology	C
Spectrum Analyzer	Rohde & Schwarz	FSU	100405	2025/02/20	2026/02/19	BACL Metrology	C
USB Wideband Power Sensor	Boonton	55318	8934	2024/09/19	2025/09/18	BACL Metrology	C
2 Way power divider	narda	4426LB-2	01661	Each time	N/A	BACL (Fujian)	D
Coaxial Cable	Lianxun	RF113	Unknow	Each time	N/A	BACL (Fujian)	D
Multimeter	Deli	DL8490	23930192	2025/2/20	2026/2/19	BACL Metrology	C
AC power source	WACP	ES-CPF-SD45-600	EO20230629001	2025/02/20	2026/02/19	BACL Metrology	C

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

Note:

A. Calibration conducted by the National Institute of Information and Communications Technology (NICT) (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1).

B. Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992).

C. Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

D. Calibration conducted by using measuring instruments and other equipment which shall have been given any of calibration, etc. listed above from a) to c)

SUMMARY OF TEST RESULTS

MIC Notice No.88 Appendix No.43 Article 2, Paragraph 1, Item 19	Description of Test	Result
1	Frequency Error	Compliant
2	Occupied Bandwidth and Spreading Bandwidth	Compliant
3	Transmitter Spurious Emission and Unwanted Emission Intensity	Compliant
4	Antenna Output Power and Output Power Tolerance	Compliant
5	Receiver Spurious Emission and Unwanted Emission Intensity	Compliant
6	Carrier sense capability (1)	Not Applicable (See Note 4)
7	Carrier sense capability (2)	Not Applicable (See Note 1)
8	Carrier sense capability (3)	Not Applicable (See Note 2)
9	Transmission frequency switching function	Not Applicable (See Note 4)
10	Transmission Antenna Gain	Not Applicable (See Note 3)
11	Transmission Radiation Angle Width	Not Applicable (See Note 3)
12	Interference Prevention Function	Compliant
13	Frequency Hopping Dwell Time	Compliant
14	Construction Protection Confirmation	Compliant

Note:

Note 1: Only required for OBW between 26MHz and 40MHz with OFDM modulation type.
Note 2: Only required for outdoor use radio control of model airplanes.
Note 3: This test item was not required for the output power less than 6.91 dBm/MHz (E.I.R.P)
Note 4: Only required for device with "compensating for the reduction of EIRP with output power" function.

FREQUENCY ERROR

Limit

The Tolerance of frequency should be ±50 ppm.

Test Procedure

Set the EUT to the measurement frequency without modulation.
Setting of SA is following as: Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
Record the peak spot frequency.

If the EUT can`t set at un-modulation mode, measure the 10dBc center frequency.

Test Data

Test Mode:	Transmitting	**Test Date:**	2025-08-20
Temperature:	24.9℃	**ATM Pressure**:	100.3kPa
Humidity:	62%	**Test Engineer:**	Apollo Luo

Test Result: Compliant

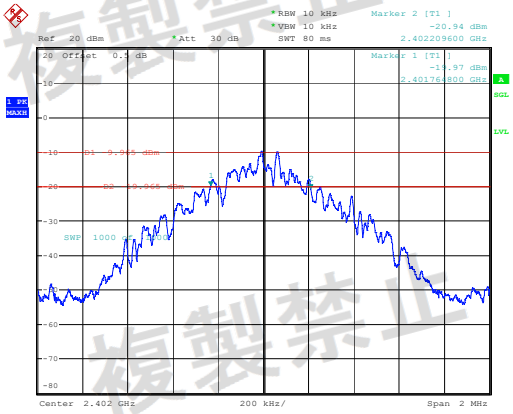
Test Condition	Mode	Channel	Fc (MHz)	F_L (MHz)	F_H (MHz)	F_0 (MHz)	Result (ppm)	Limit (ppm)
NV	GFSK	Low	2402	2401.765	2402.210	2401.987	-5.412	± 50
		Middle	2441	2440.765	2441.210	2440.987	-5.326	
		High	2480	2479.765	2480.210	2479.987	-5.242	
	π/4 DQPSK	Low	2402	2401.446	2402.565	2402.005	2.082	
		Middle	2441	2440.446	2441.565	2441.005	2.048	
		High	2480	2479.446	2480.565	2480.005	2.016	
	8DPSK	Low	2402	2401.474	2402.558	2402.016	6.661	
		Middle	2441	2440.474	2441.560	2441.017	6.964	
		High	2480	2479.474	2480.558	2480.016	6.452	

Note:

Tolerance = $(F_0 - Fc)/Fc*10^6$, where $F_0 = (F_L+F_H)/2$
F_L is the lower edge of the 10dBc center frequency
F_H is the upper edge of the 10dBc center frequency

Please refer to the plots for normal voltage test:

GFSK_Low Channel



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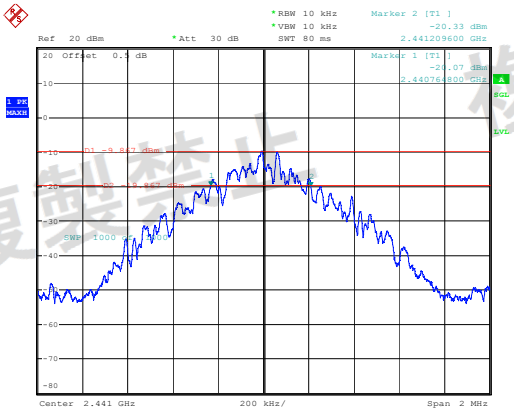
GFSK_Middle Channel



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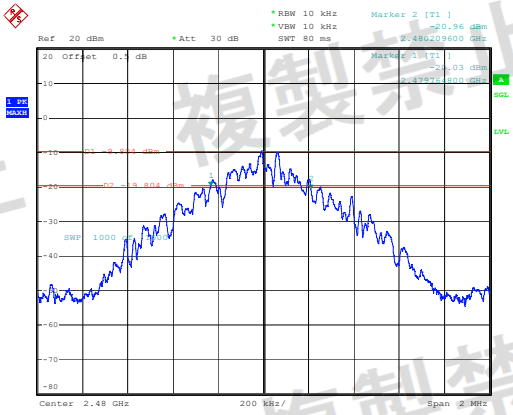
GFSK_High Channel



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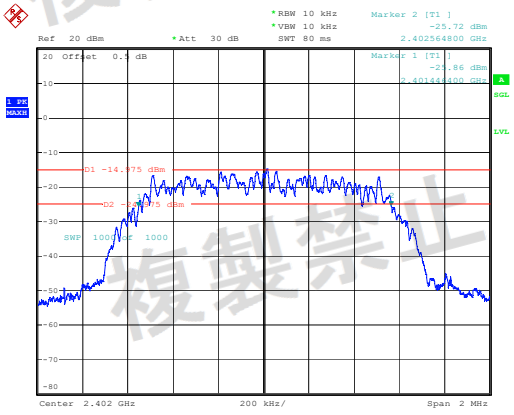
π/4-DQPSK _Low Channel



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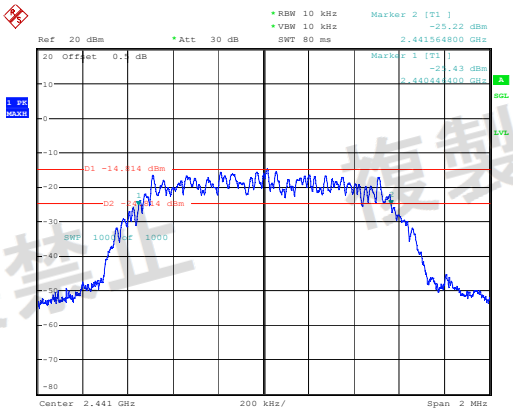
π/4-DQPSK_Middle Channel



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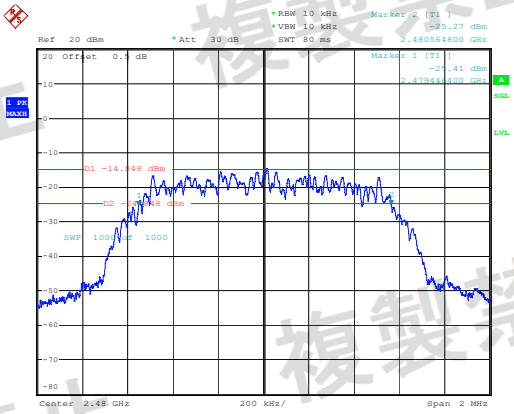
π/4-DQPSK High Channel



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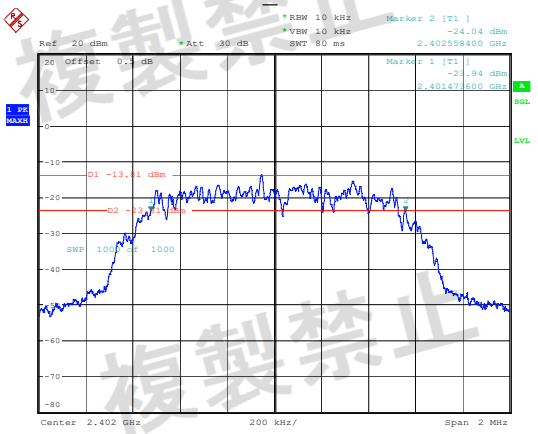
Date: 20.AUG.2025 16:07:57

8DPSK_Low Channel



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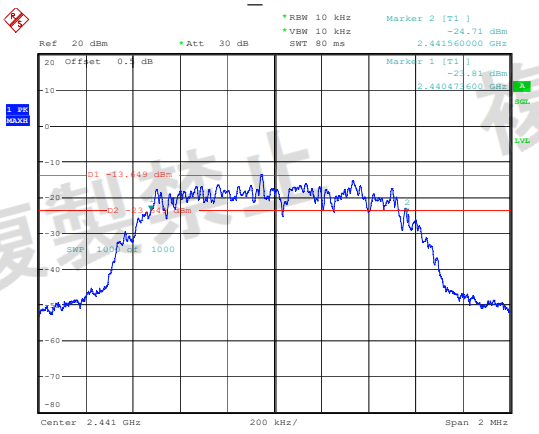
8DPSK_Middle Channel



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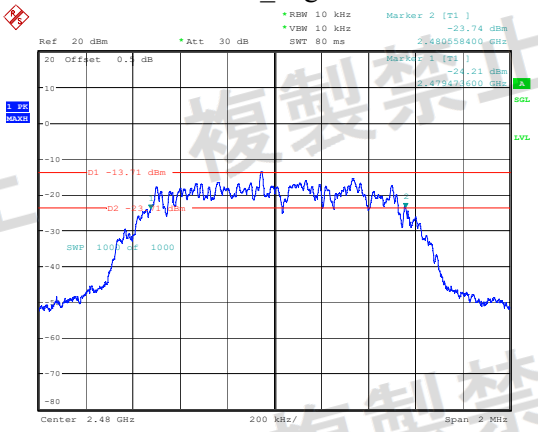
Date: 20.AUG.2025 16:11:42

8DPSK_High Channel



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:13:29

OCCUPIED BANDWIDTH AND SPREADING BANDWIDTH

Limit

- Occupied bandwidth: ≤ 83.5 MHz
- Spread Bandwidth: ≥ 500 kHz, Spread factor ≥ 5.

Test Procedure

❖ Conditions of Application Equipment (EUT)
- The modulation state shall be "continuous frequency-hopping mode" by spread spectrum.

❖ Spectrum Analyzer Conditions
- RBW: 300 kHz
- VBW: 300 kHz
- Sweep time: Auto, Marker: Marker Off
- Log scale : 10dB/Div, Data points : 400 points or more
- Detection: Positive Peak, Sweep mode: Continuous

Test Data

Test Mode:	Transmitting	**Test Date:**	2025-08-20
Temperature:	24.9℃	**ATM Pressure**:	100.3kPa
Humidity:	62%	**Test Engineer:**	Apollo Luo

Test Result: Compliant

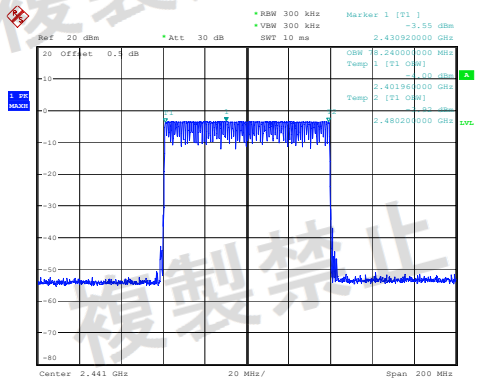
Test Condition: NV

Test Condition	Mode	Occupied bandwidth (MHz)		Spreading bandwidth (MHz)		Spreading factor		Result
		Measured	Limit	Measured	Limit	Measured	Limit	
NV	GFSK	78.240	≤ 83.5	71.520	≥ 0.5	71.520	≥5	Pass
	π/4-DQPSK	78.400	≤ 83.5	71.360	≥ 0.5	71.360	≥5	Pass
	8DPSK	78.400	≤ 83.5	71.360	≥ 0.5	71.360	≥5	Pass

Note:
Spread Factor=Spread Bandwidth/modulation rate. The modulation rate: MR=1.

Please refer to the below plots for normal voltage test:

GFSK Occupied Bandwidth



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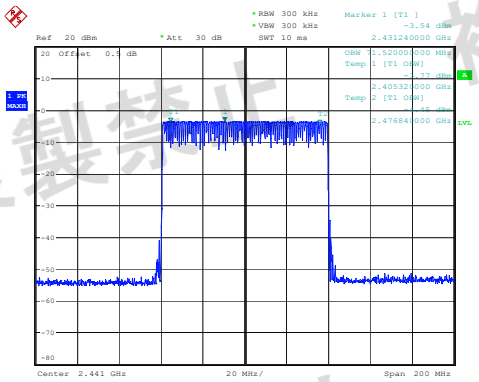
GFSK Spread Bandwidth



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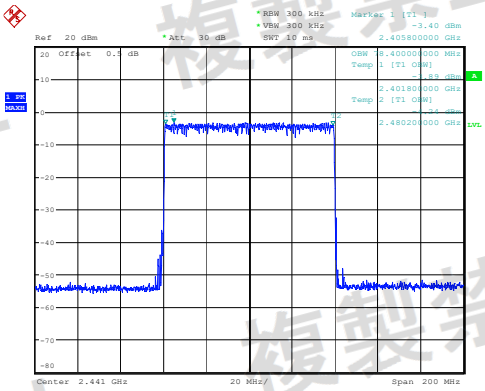
π/4-DQPSK Occupied Bandwidth



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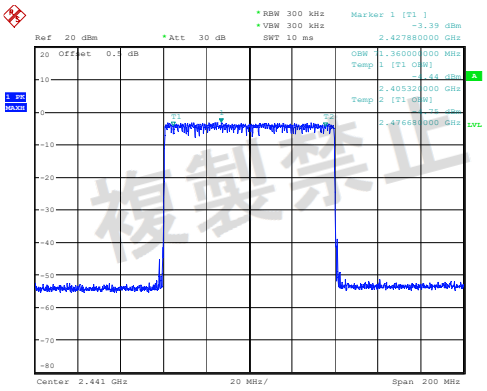
π/4-DQPSK Spread Bandwidth



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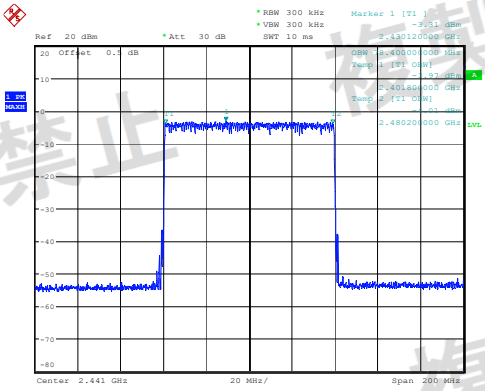
8DPSK Occupied Bandwidth



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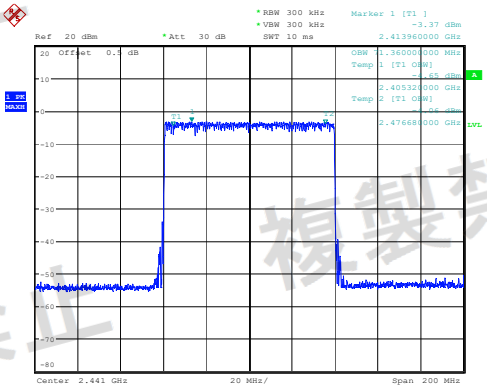
Date: 20.AUG.2025 16:53:29

8DPSK Spread Bandwidth



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:55:49

TRANSMITTER SPURIOUS EMISSION STRENGTH AND UNWANTED EMISSION INTENSITY

Limit

- f < 1000 MHz: ≤ 0.25μW/100kHz
- f < 2387 MHz, f > 2496.5 MHz: ≤ 2.5μW/MHz
- 2387 MHz ≤ f ≤ 2400 MHz; 2483.5 MHz < f ≤ 2496.5 MHz: ≤ 25μW/MHz

Test Procedure

❖ Conditions of Application Equipment (EUT)

- The modulation state shall be in continuously transmitting mode.

❖ Spectrum Analyzer Conditions

Step1:

- Setting of SA start 30MHz and stop frequency 1000MHz, RB: 100kHz/VB: 100kHz, Sweep time: Auto. Sweep mode: continuous sweep .Detect mode: Positive peak/Trace mode: max hold. Then to mark peak. reading value + cable loss shall be less than 0.25μW/100kHz.
- Setting of SA start 1000MHz and stop frequency 2387MHz, RBW: 1MHz/VBW: 1MHz, Sweep time: Auto. Sweep mode: continuous sweep .Detect mode: Positive peak/Trace mode: max hold. Then to mark peak. Reading value + cable loss shall be less than 2.5μW/MHz.
- Setting of SA start 2387MHz and stop frequency 2400MHz, RBW: 1MHz/VBW: 1MHz, Sweep time: Auto. Sweep mode: continuous sweep .Detect mode: Positive peak/Trace mode: max hold. Then to mark peak. Reading value + cable loss shall be less than 25μW/MHz.
- Setting of SA start 2483.5MHz and stop frequency 2496.5MHz, RBW: 1MHz/VBW: 1MHz, Sweep time: Auto. Sweep mode: continuous sweep .Detect mode: Positive peak/Trace mode: max hold. Then to mark peak. Reading value + cable loss shall be less than 25μW/MHz.
- Setting of SA start 2496.5MHz and stop frequency 12500MHz, RBW: 1MHz/VBW: 1MHz, Sweep time: Auto. Sweep mode: continuous sweep .Detect mode: Positive peak/Trace mode: max hold. Then to mark peak. Reading value + cable loss shall be less than 2.5μW/MHz.

Step 2:

- Center frequency: Searched Frequency
- Span: 0Hz
- RBW: 1MHz(Above 1GHz), 100 kHz(30MHz-1GHz). VBW: Same as RBW.
- Sweep time: Auto(Minimum time to ensure measurement accuracy. *In case of burst wave, one burst shall be included per data point) Data points: 400 points or more. Sweep mode: Single Sweep.
- Detection Mode: Sample

Test Data

Test Mode:	Transmitting	Test Date:	2025-08-21
Temperature:	23.8℃	ATM Pressure:	100.5kPa
Humidity:	57%	Test Engineer:	Apollo Luo

Test Condition	Mode		Test Band (RBW)	Measurements			Limit (μW/RBW)	Result
				Frequency	Reading			
				(MHz)	(dBm/RBW)	(μW/RBW)		
NV	GFSK	Lowest Channel	Band I (100kHz)	769.88	-53.17	0.005	0.25	PASS
			Band II (1MHz)	2301.61	-48.88	0.013	2.5	PASS
			Band III (1MHz)	2399.99	-26.26	2.366	25	PASS
			Band IV (1MHz)	2491.67	-48.11	0.015	25	PASS
			Band V (1MHz)	4804.61	-40.78	0.084	2.5	PASS
		Middle Channel	Band I (100kHz)	581.51	-52.95	0.005	0.25	PASS
			Band II (1MHz)	2313.42	-48.18	0.015	2.5	PASS
			Band III (1MHz)	2393.64	-48.42	0.014	25	PASS
			Band IV (1MHz)	2488.85	-47.44	0.018	25	PASS
			Band V (1MHz)	4879.72	-40.22	0.095	2.5	PASS
		Highest Channel	Band I (100kHz)	95.54	-53.08	0.005	0.25	PASS
			Band II (1MHz)	1814.98	-49.35	0.012	2.5	PASS
			Band III (1MHz)	2397.42	-48.50	0.014	25	PASS
			Band IV (1MHz)	2483.55	-35.67	0.271	25	PASS
			Band V (1MHz)	4959.82	-41.05	0.079	2.5	PASS
	π/4 DQPSK	Lowest Channel	Band I (100kHz)	579.57	-53.20	0.005	0.25	PASS
			Band II (1MHz)	1871.91	-48.96	0.013	2.5	PASS
			Band III (1MHz)	2400.00	-24.34	3.681	25	PASS
			Band IV (1MHz)	2495.48	-46.41	0.023	25	PASS
			Band V (1MHz)	4804.61	-40.56	0.088	2.5	PASS
		Middle Channel	Band I (100kHz)	665.02	-53.43	0.005	0.25	PASS
			Band II (1MHz)	1725.43	-48.05	0.016	2.5	PASS
			Band III (1MHz)	2387.59	-47.89	0.016	25	PASS
			Band IV (1MHz)	2493.44	-47.61	0.017	25	PASS
			Band V (1MHz)	4879.72	-39.19	0.121	2.5	PASS
		Highest Channel	Band I (100kHz)	587.34	-53.45	0.005	0.25	PASS
			Band II (1MHz)	2370.34	-48.86	0.013	2.5	PASS
			Band III (1MHz)	2397.06	-48.57	0.014	25	PASS
			Band IV (1MHz)	2483.59	-33.93	0.405	25	PASS
			Band V (1MHz)	4959.82	-39.91	0.102	2.5	PASS

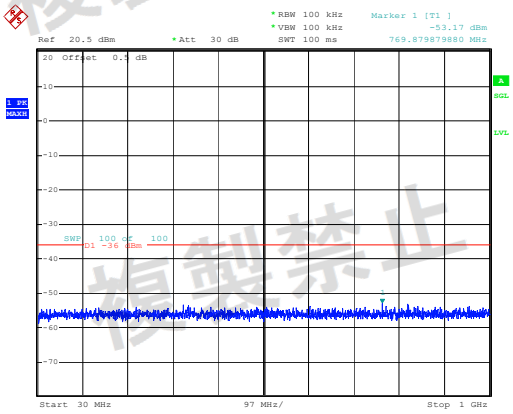
Test Condition	Mode		Test Band (RBW)	Measurements			Limit (μW/RBW)	Result
				Frequency	Reading			
				(MHz)	(dBm/RBW)	(μW/RBW)		
NV	8DPSK	Lowest Channel	Band I (100kHz)	385.86	-53.36	0.005	0.25	PASS
			Band II (1MHz)	2284.26	-48.94	0.013	2.5	PASS
			Band III (1MHz)	2399.93	-24.83	3.289	25	PASS
			Band IV (1MHz)	2496.28	-47.88	0.016	25	PASS
			Band V (1MHz)	4804.61	-39.62	0.109	2.5	PASS
		Middle Channel	Band I (100kHz)	819.40	-53.47	0.004	0.25	PASS
			Band II (1MHz)	1941.33	-46.12	0.024	2.5	PASS
			Band III (1MHz)	2393.21	-48.18	0.015	25	PASS
			Band IV (1MHz)	2493.57	-47.00	0.020	25	PASS
			Band V (1MHz)	4879.72	-39.18	0.121	2.5	PASS
		Highest Channel	Band I (100kHz)	506.75	-53.01	0.005	0.25	PASS
			Band II (1MHz)	2032.96	-48.96	0.013	2.5	PASS
			Band III (1MHz)	2395.84	-48.61	0.014	25	PASS
			Band IV (1MHz)	2483.55	-34.15	0.385	25	PASS
			Band V (1MHz)	4959.82	-40.33	0.093	2.5	PASS

Note:
Band I: 30MHz~1000MHz
Band II: 1000MHz~2387MHz
Band III: 2387MHz~2400MHz
Band IV: 2483.5MHz~2496.5MHz
Band V: 2496.5MHz~12500MHz

Please refer to the below plots for normal voltage test.

GFSK:

Low Channel



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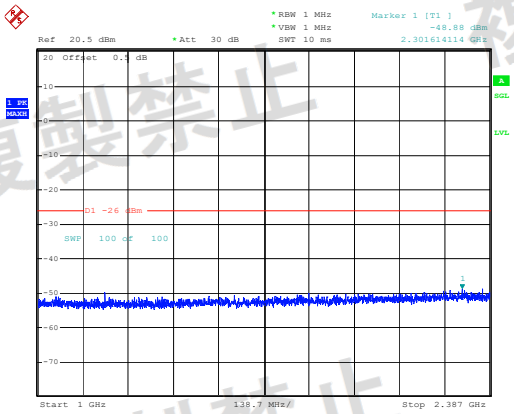

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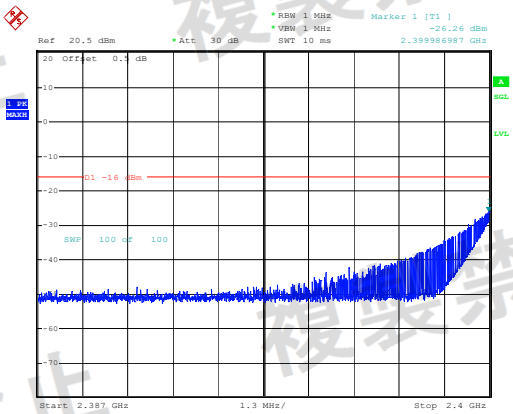

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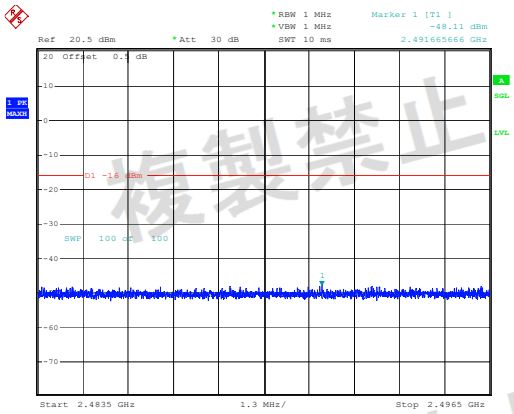

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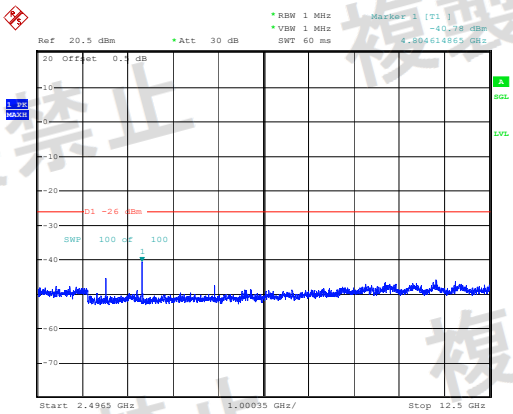
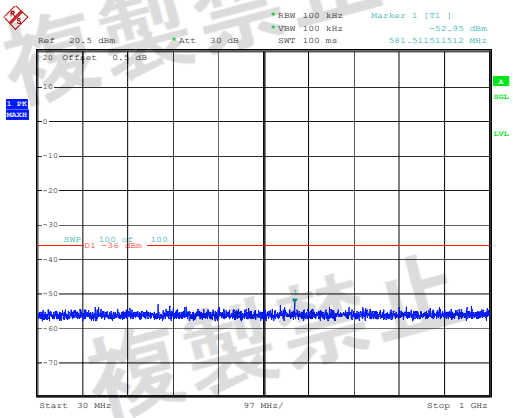


ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 21.AUG.2025 09:53:00

Middle Channel



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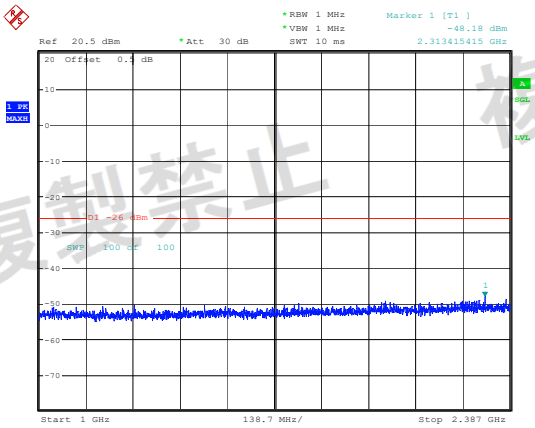

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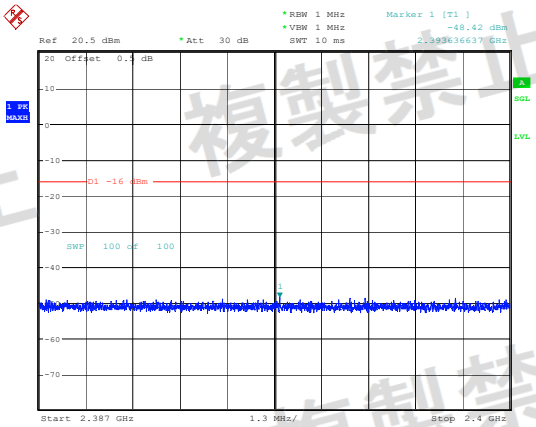

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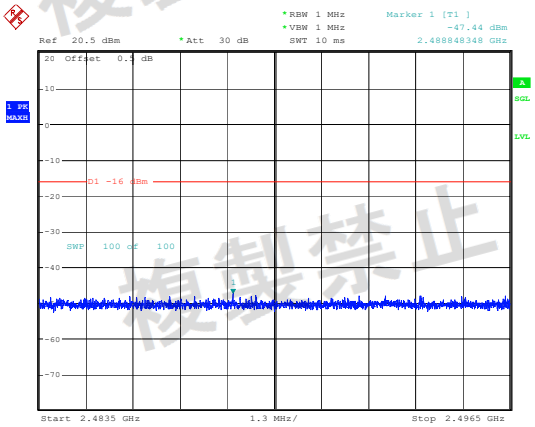

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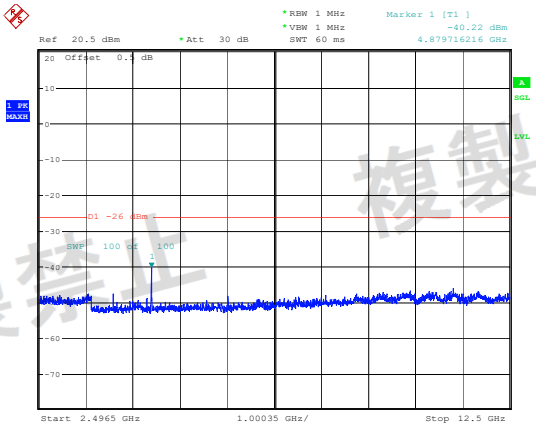

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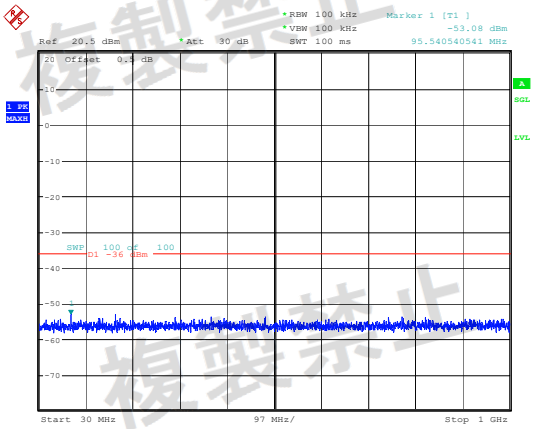
Date: 21.AUG.2025 09:54:37

High Channel



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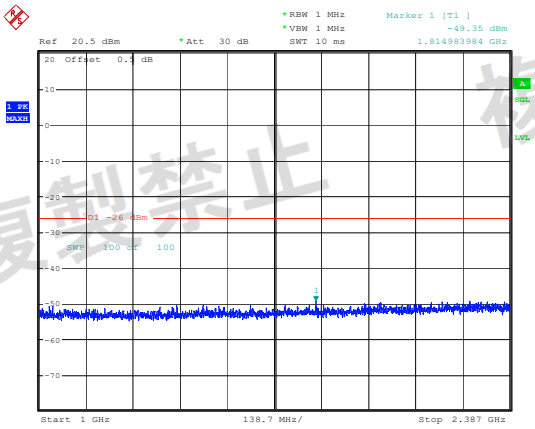

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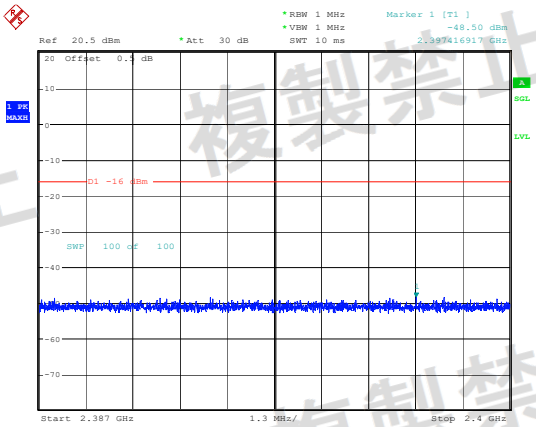

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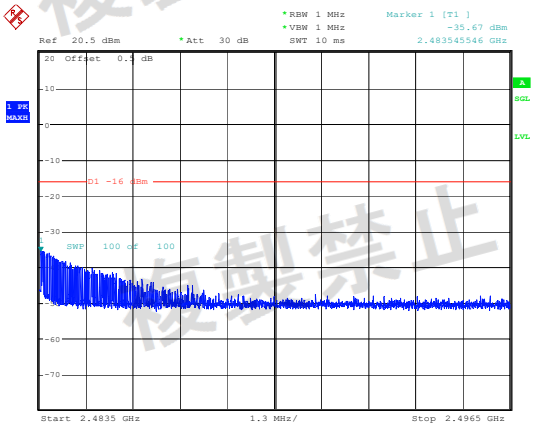

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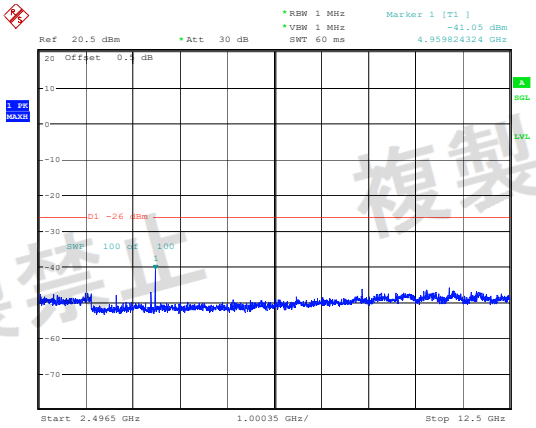

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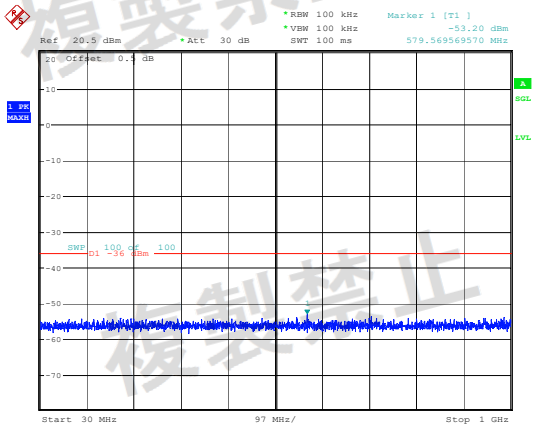
Date: 21.AUG.2025 09:56:09

π/4-DQPSK:

Low Channel



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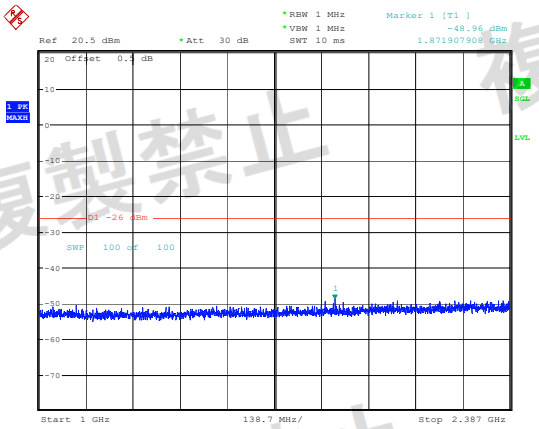

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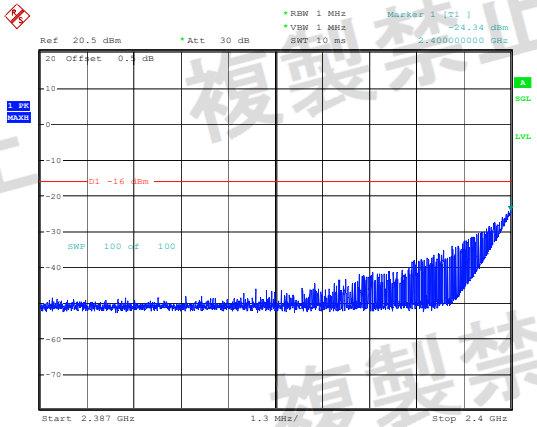

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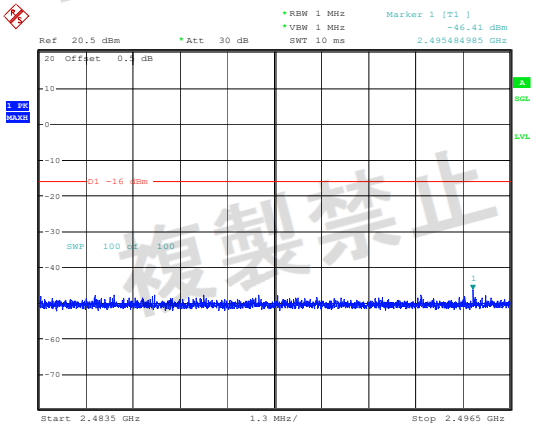

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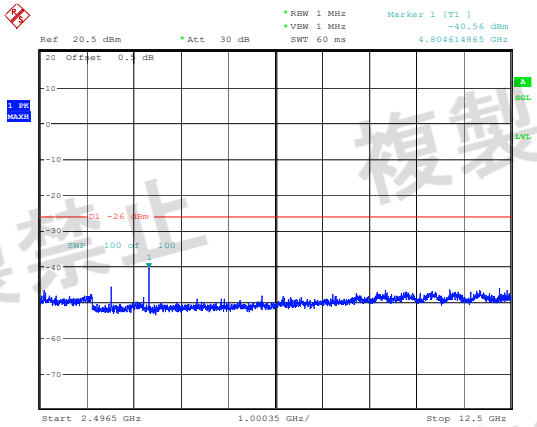

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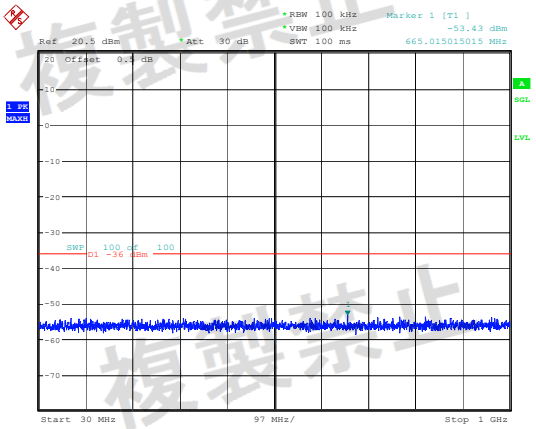
Date: 21.AUG.2025 09:57:40

Middle Channel



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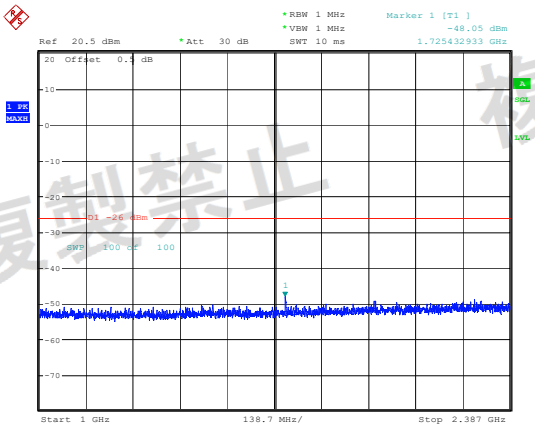

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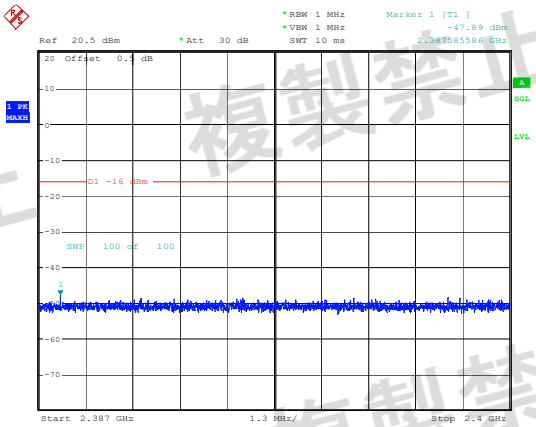

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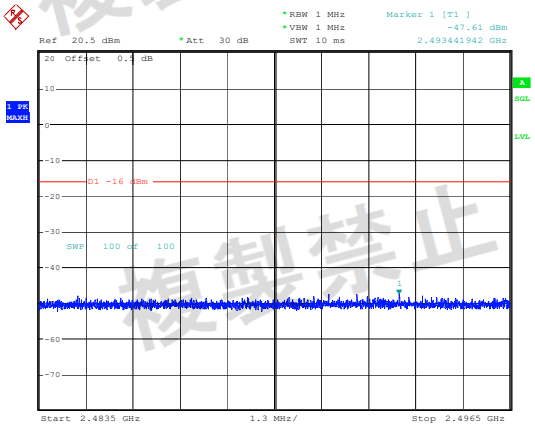

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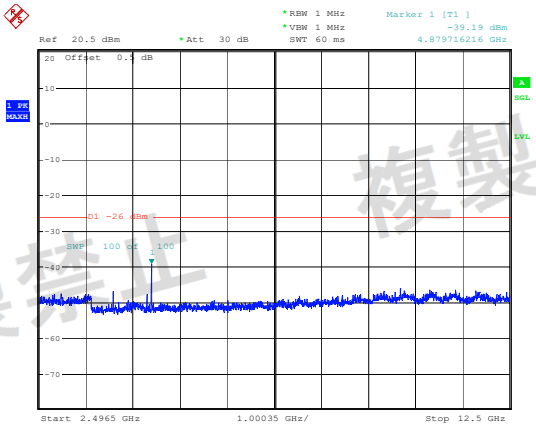

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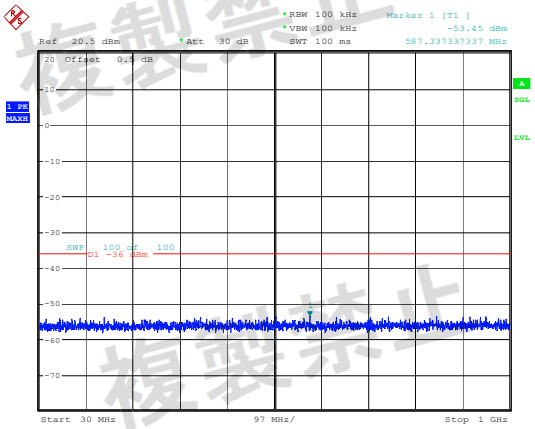
High Channel



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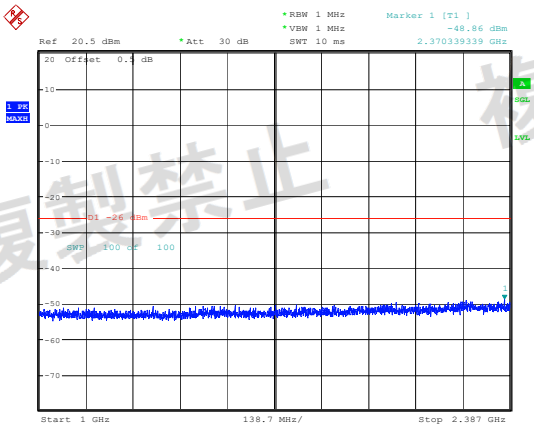

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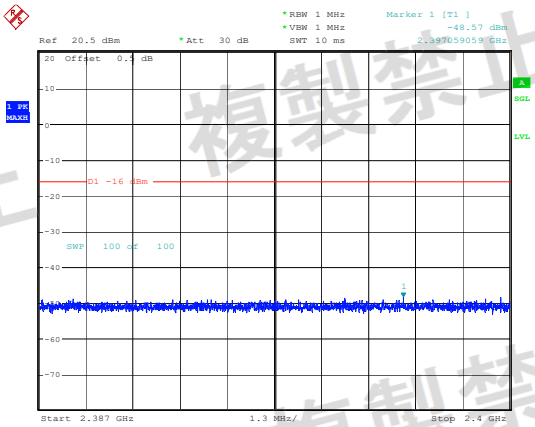

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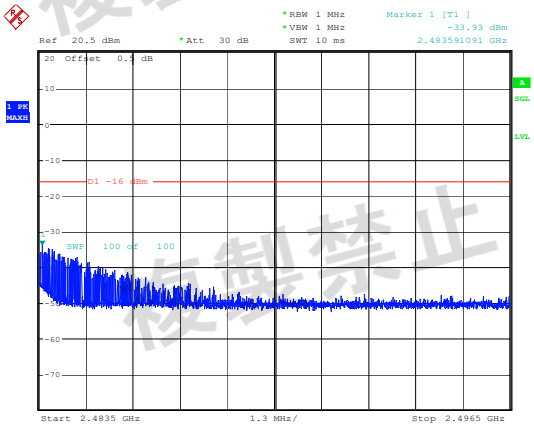

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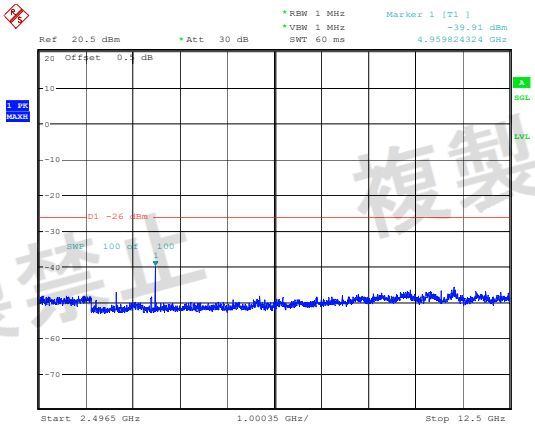

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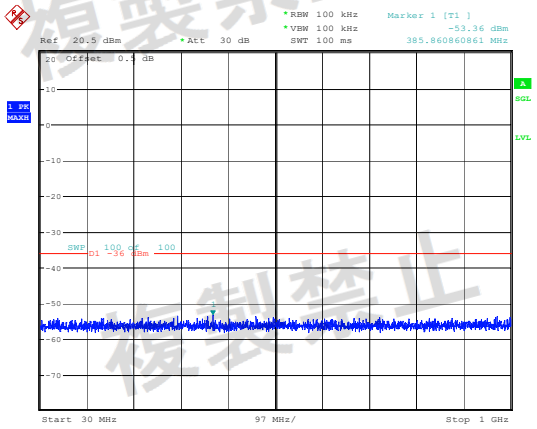
8DPSK:

Low Channel



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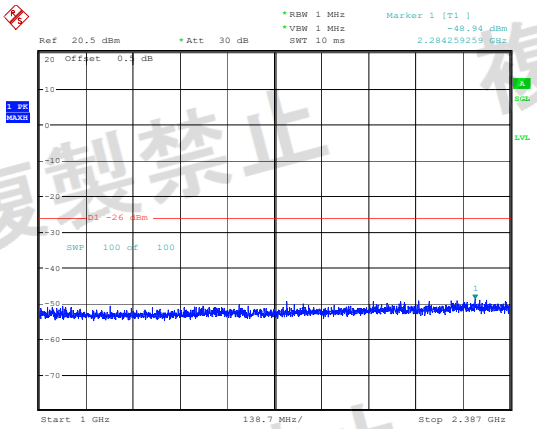

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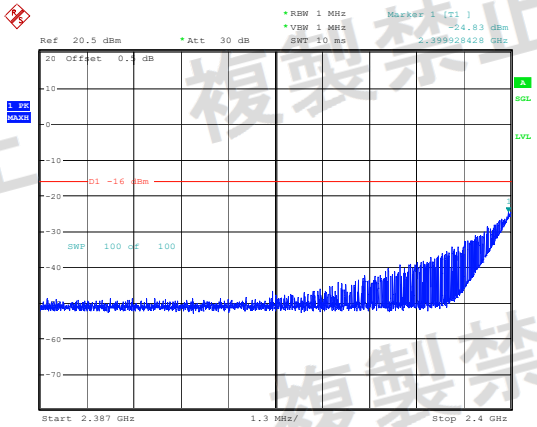

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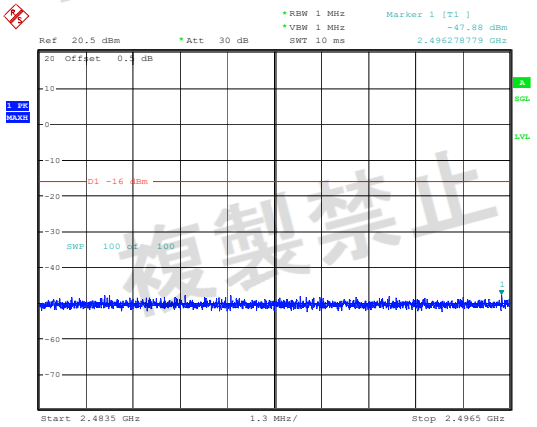

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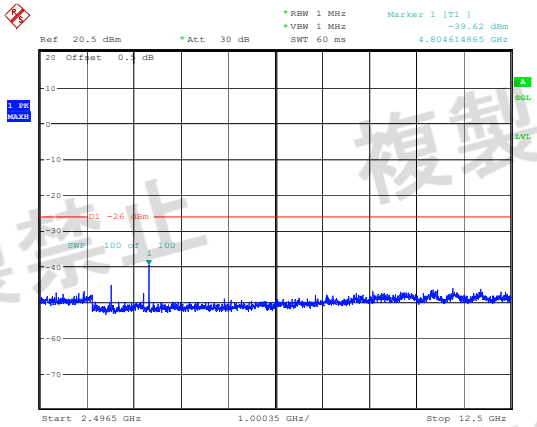

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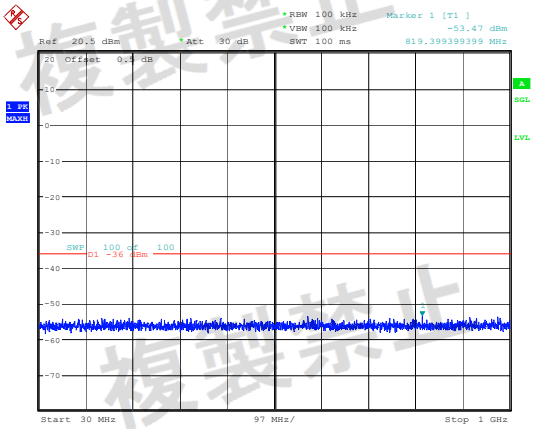
Date: 21.AUG.2025 10:02:22

Middle Channel



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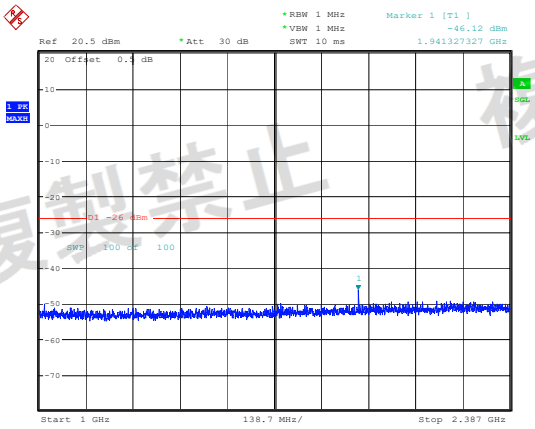

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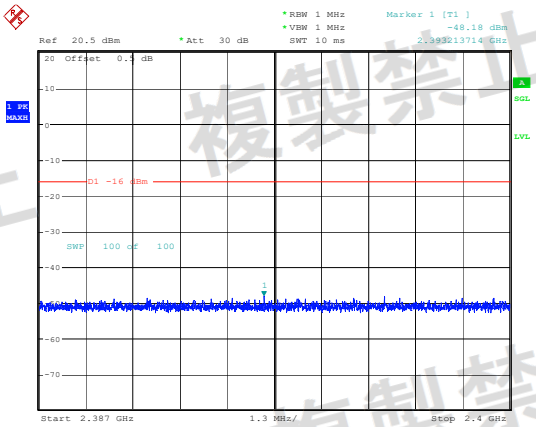

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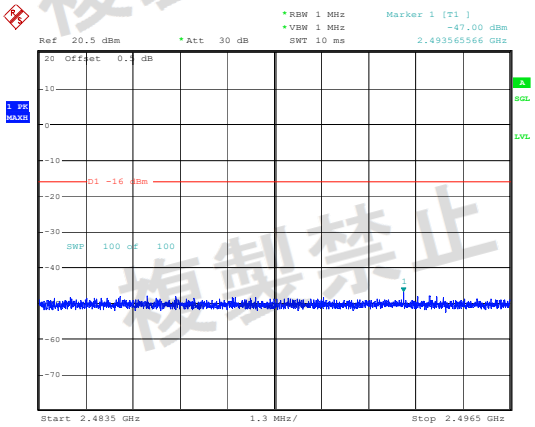

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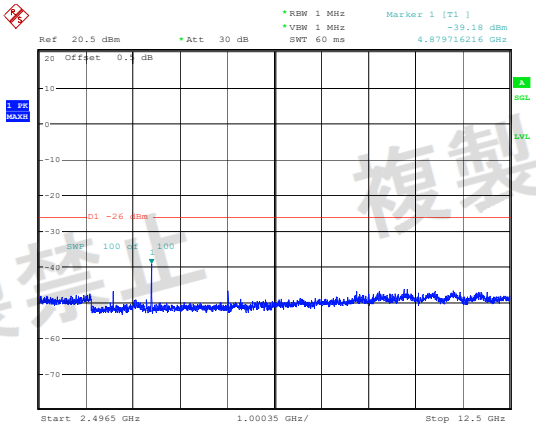

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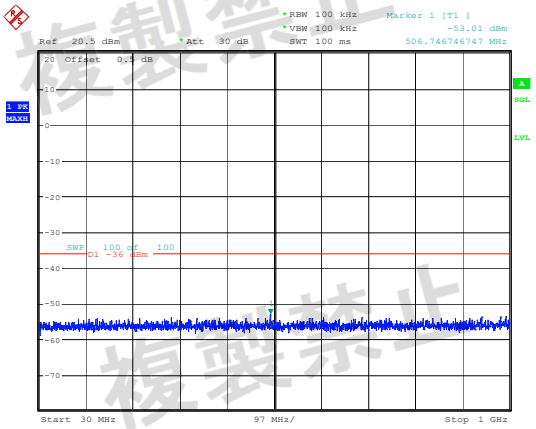
High Channel



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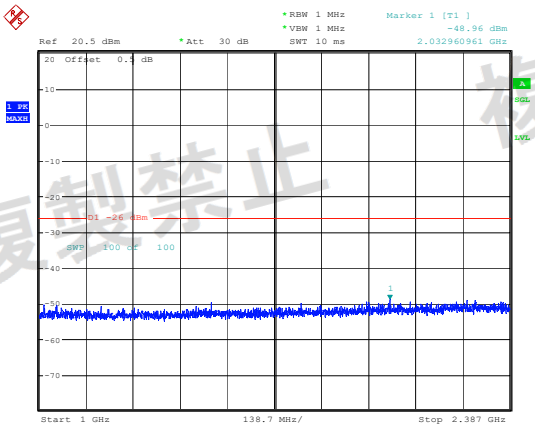

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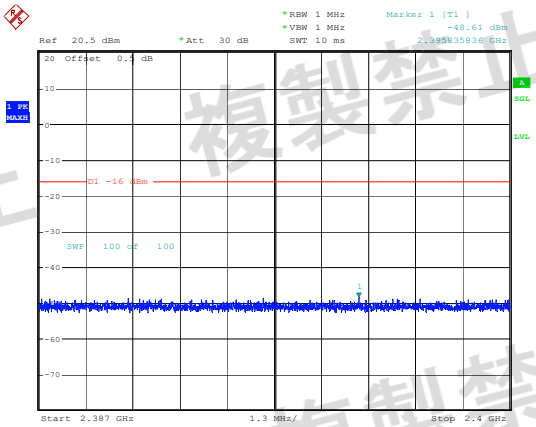

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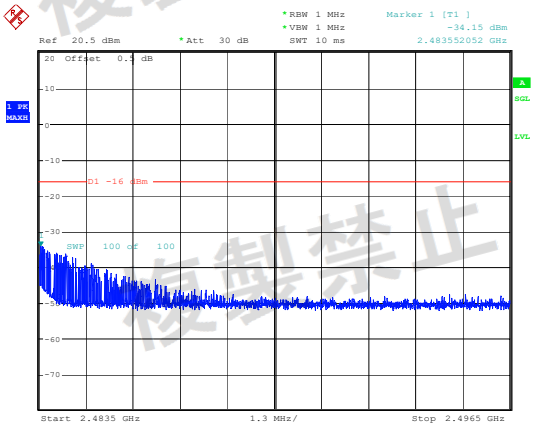

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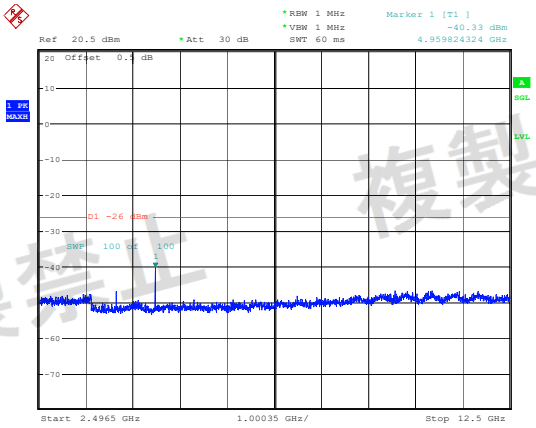


ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 21.AUG.2025 10:05:26

ANTENNA OUTPUT POWER AND ANTENNA POWER TOLERANCE

Limit

- ≤ 3 mW /MHz
- The Output Power Tolerance must be within +20% ~ -80%.
- EIRP ≤ 6.91dBm/MHz

Test Procedure

For FHSS UUT:
Step 1: Connect the UUT to the power meter in a state of hopping mode.
Step 2: Set the power meter to trace average across the pulse on period, record the reading level on power meter.
Step 3: Calculate the mean power per 1MHz by dividing the reading level by spread bandwidth. Output Power Density (mW/MHz) = Conducted power (mW) / Spread Bandwidth (MHz)

Test Data

Test Mode:	Transmitting	**Test Date:**	2025-08-20
Temperature:	24.9℃	**ATM Pressure**:	100.3kPa
Humidity:	62%	**Test Engineer:**	Apollo Luo

Test Result: Compliant

Declared Power:

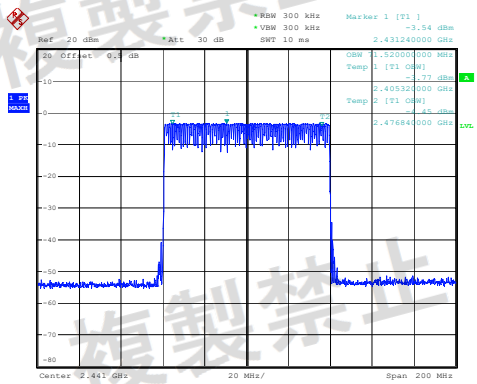
Mode	Antenna gain (dBi)	Declared power (mW/MHz)
GFSK	3	0.006
π/4-DQPSK		0.006
8DPSK		0.006

Output power

Test Condition	Mode	Conducted power (dBm)	Spread bandwidth (MHz)	Output power (mW/MHz)		Power tolerance (%)		EIRP (dBm/MHz)	
				Result	Limit	Result	Limit	Result	Limit
NV	GFSK	-4.19	71.520	0.005	≤ 3	-16.67	-80~ +20	-20.01	≤ 6.91
	π/4-DQPSK	-4.20	71.360	0.005		-16.67		-20.01	
	8DPSK	-4.20	71.360	0.005		-16.67		-20.01	

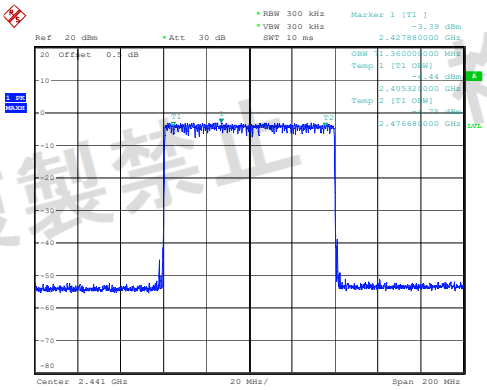
Note:
1) Output power(mW) = 10^{Conducted power(dBm) / 10}
2) Output power (mW/MHz) = Conducted power (mW) /Spread Bandwidth (MHz)
*3) Output Power Tolerance = (Output power -Declared Power)/ Declared Power*100%*
4) EIRP(dBm) = Antenna output power(dBm) + Antenna gain.

GFSK Spread Bandwidth



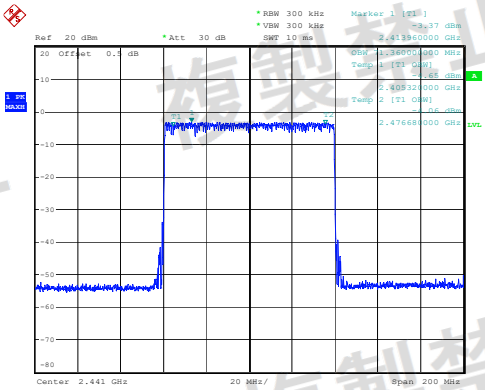
ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:32:00

π/4-DQPSK Spread Bandwidth



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:41:49

8DPSK Spread Bandwidth



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:55:49

RECEIVER SPURIOUS EMISSION AND UNWANTED EMISSION INTENSITY

Limit

- ≤ 4 nW (30 MHz ≤ f ≤ 1000 MHz)
- ≤ 20 nW (1 GHz ≤ f ≤ 12.5 GHz)

Test Procedure

❖ Conditions of Application Equipment (EUT)

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

❖ Spectrum Analyzer Conditions

- Start Frequency: Start Frequency of frequency range to measure (30MHz or 1GHz)
- Stop Frequency: Stop Frequency of frequency range to measure (1GHz or 12.5GHz)
- Span: AUTO (Measurement Range)
- RBW: 100 kHz, VBW: 100 kHz for Frequency < 1 GHz
- RBW: 1MHz, VBW: 1MHz for Frequency > 1 GHz
- Sweep time: AUTO or more
- Sweep mode: Auto Sweep
- Detection: Positive Peak
- Reference Level: Enough level for maximum dynamic range

Test Data

Test Mode:	Receiving	**Test Date:**	2025-08-21
Temperature:	23.8℃	**ATM Pressure**:	100.5kPa
Humidity:	57%	**Test Engineer:**	Apollo Luo

Test Result: Compliant, please see the below tables and plots

Test Condition	Mode		Test Band (RBW)	Result (dBm)			Limit (nW)	Result
				Frequency	Reading			
				(MHz)	(dBm)	(nW)		
NV	GFSK	Lowest Channel	Band I (100kHz)	129.47	-74.13	0.04	4	PASS
			Band II (1MHz)	10803.18	-67.49	0.18	20	PASS
		Middle Channel	Band I (100kHz)	993.21	-73.87	0.04	4	PASS
			Band II (1MHz)	10317.88	-66.73	0.21	20	PASS
		Highest Channel	Band I (100kHz)	568.01	-73.90	0.04	4	PASS
			Band II (1MHz)	3389.70	-67.28	0.19	20	PASS

Test Condition	Mode		Test Band (RBW)	Result (dBm)			Limit (nW)	Result
				Frequency	Reading			
				(MHz)	(dBm)	(nW)		
NV	π/4 DQPSK	Lowest Channel	Band I (100kHz)	660.45	-73.64	0.04	4	PASS
			Band II (1MHz)	11345.40	-65.48	0.28	20	PASS
		Middle Channel	Band I (100kHz)	580.43	-73.84	0.04	4	PASS
			Band II (1MHz)	11328.73	-67.34	0.18	20	PASS
		Highest Channel	Band I (100kHz)	908.00	-74.15	0.04	4	PASS
			Band II (1MHz)	2687.63	-66.91	0.20	20	PASS
	8DPSK	Lowest Channel	Band I (100kHz)	389.77	-74.18	0.04	4	PASS
			Band II (1MHz)	11853.13	-67.03	0.20	20	PASS
		Middle Channel	Band I (100kHz)	510.00	-74.10	0.04	4	PASS
			Band II (1MHz)	11305.15	-67.58	0.17	20	PASS
		Highest Channel	Band I (100kHz)	649.05	-74.19	0.04	4	PASS
			Band II (1MHz)	11262.60	-67.15	0.19	20	PASS

Note:

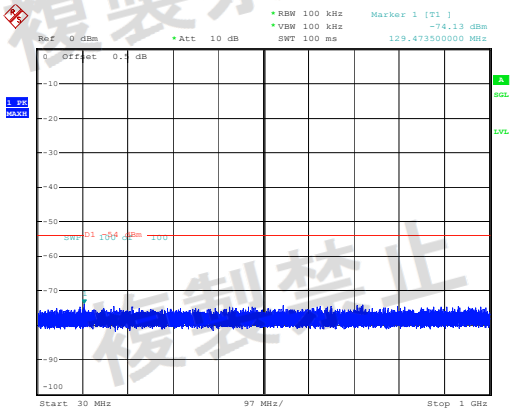
Band I: 30MHz~1000MHz

Band II: 1000MHz~12500MHz

Please refer to the below plots for normal voltage test.

GFSK:

Low Channel



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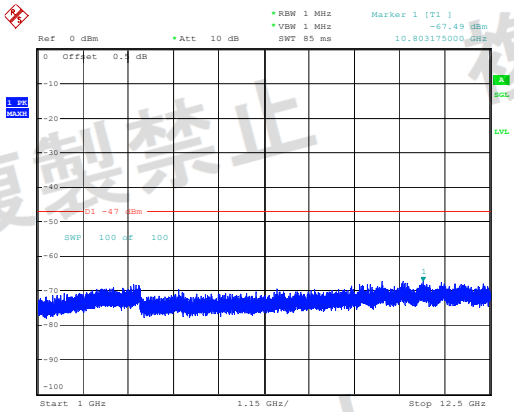

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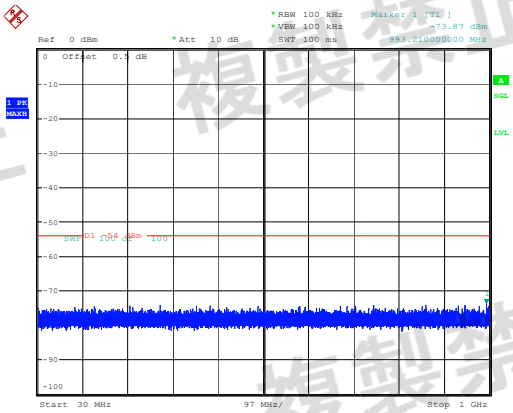
Middle Channel



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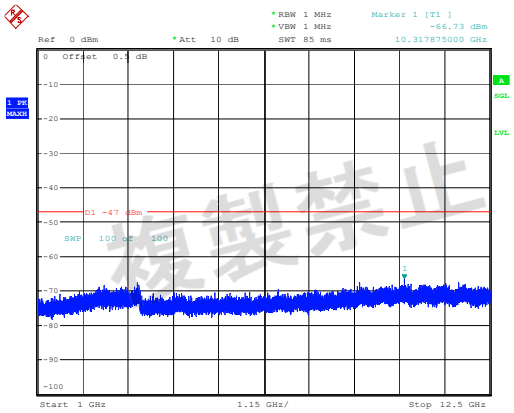

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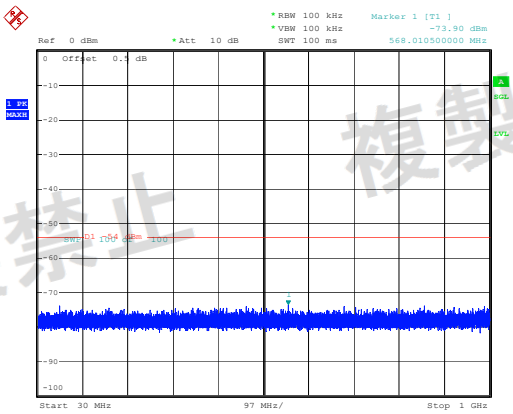
High Channel



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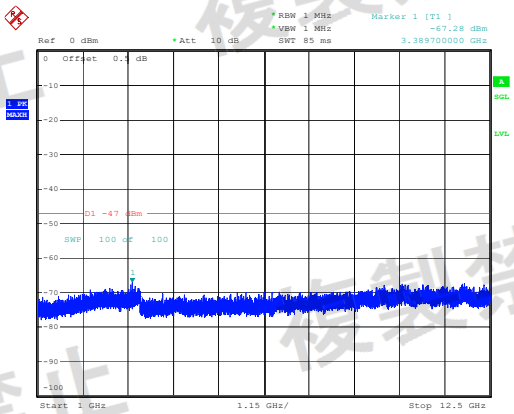

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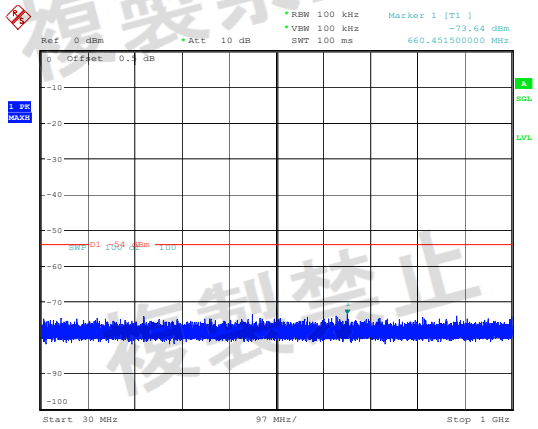
Date: 21.AUG.2025 10:41:46

π/4-DQPSK:

Low Channel



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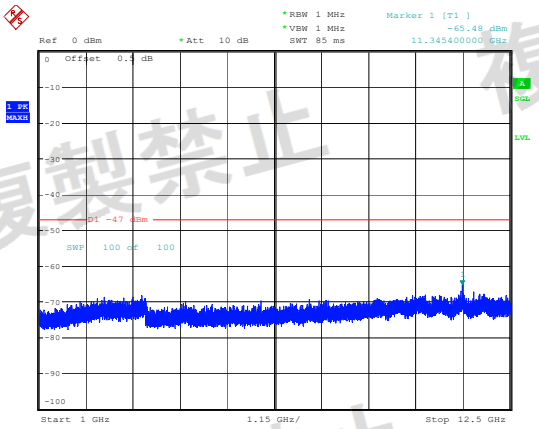

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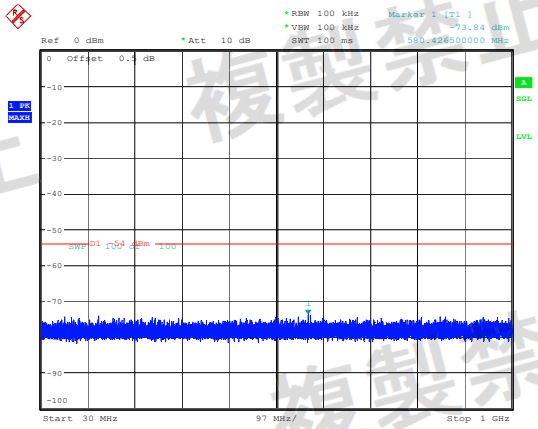
Date: 21.AUG.2025 10:19:55

Middle Channel



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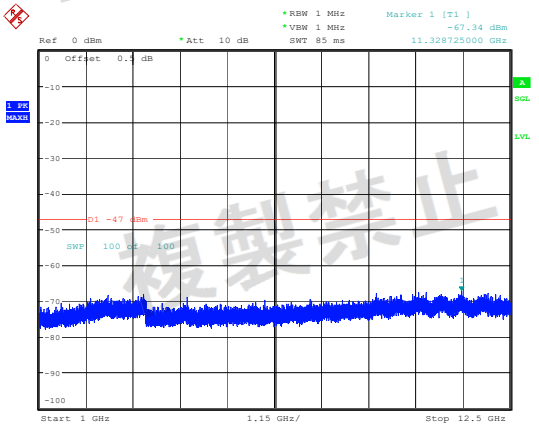

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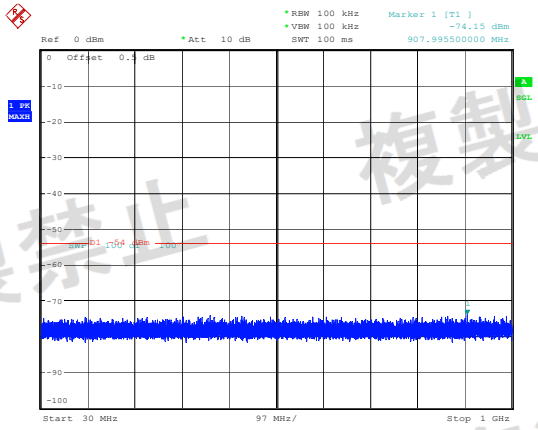
High Channel



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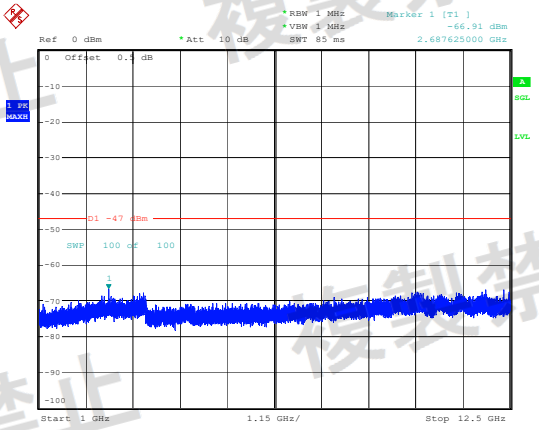

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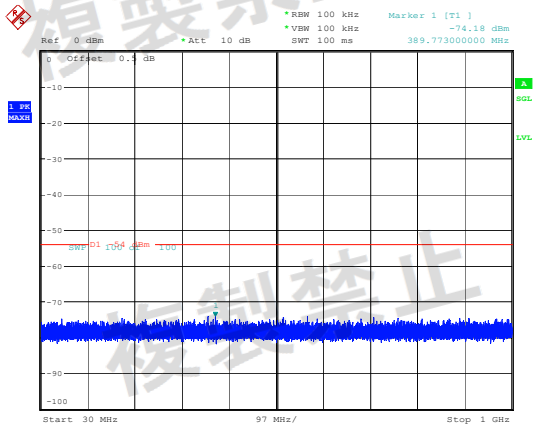
8DPSK:

Low Channel



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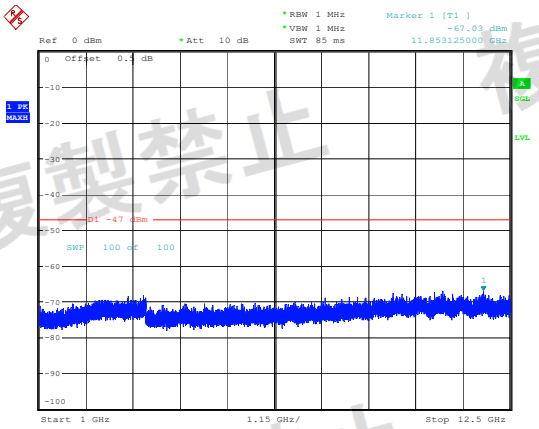

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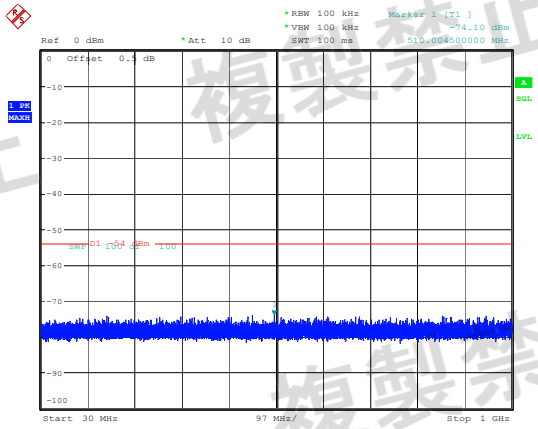
Middle Channel



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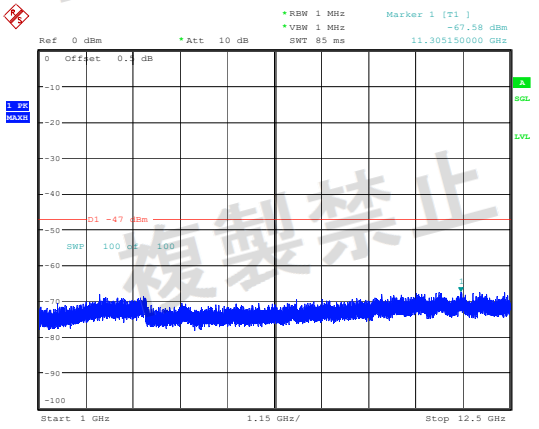

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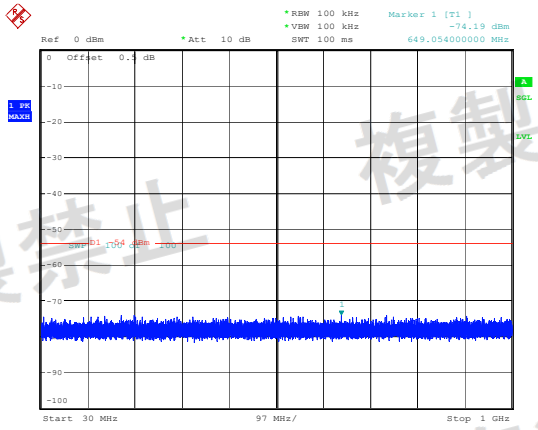
High Channel



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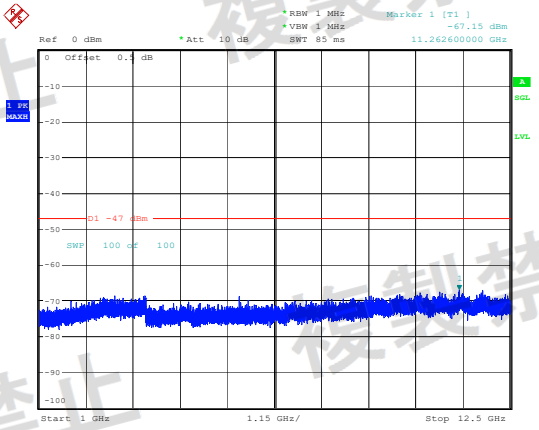

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Date: 21.AUG.2025 10:28:04

INTERFERENCE PREVENTION FUNCTION

Requirement

Article 6-2.3 of Regulations for Enforcement of the radio law

A wireless device used mainly in the same premises to automatically transmit or receive identification codes.

Article 1.8 of MPT Ministerial Notice No. 424 of 1994 (the last revision: Notice No. 374 of Nov. 10, 2023)

48 bits or more. However, for radio of the following frequencies, the requirement is 19 bits or more:

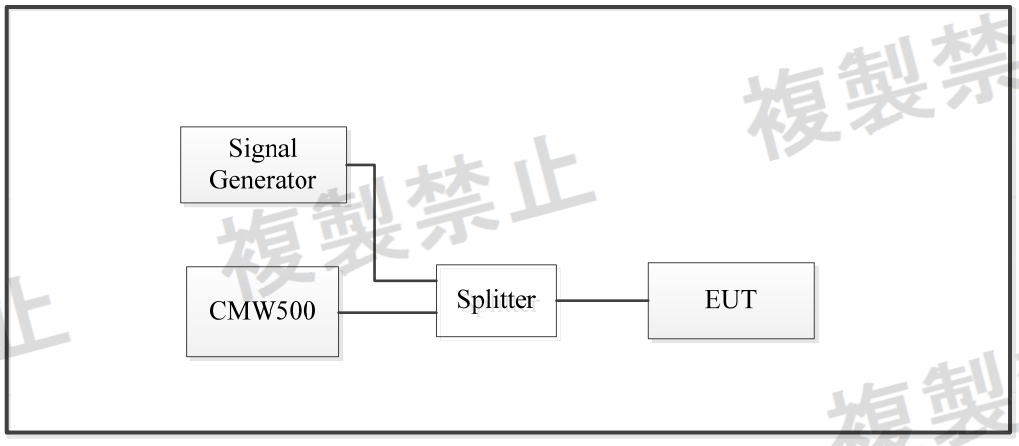
(1) 5150-5250MHz; 5470-5730MHz; 5925-6425MHz;
(2) 24.77-25.23GHz;
(3) 57-66GHz.

Test Procedure

In the case that the EUT has the function of automatically transmitting the identification code:
1. Transmit the predetermined identification codes from EUT
2. Check the transmitted identification codes with the demodulator.

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

Test Setup Block Diagram



Measurement Result

Test Mode:	Transmitting	**Test Date:**	2025-08-20
Temperature:	24.9℃	**ATM Pressure:**	100.3kPa
Humidity:	62%	**Test Engineer:**	Apollo Luo

Test Result: Good

FREQUENCY HOPPING DWELL TIME

Applicable Standard

According to Radio Law Radio Equipment Regulations Article 49-20, frequency dwell time is 0.4 seconds or below.

Test Procedure

❖ Conditions of Application Equipment (EUT)

- Set the application equipment (EUT) to the measurement frequency.
- The modulation state shall be “continuous (burst) transmission mode”. If impossible, it shall be “continuous frequency-hopping mode”.

Test Data

Test Mode:	Transmitting	**Test Date:**	2025-08-20~2025-08-21
Temperature:	23.8~24.9℃	**ATM Pressure:**	100.3~100.5kPa
Humidity:	57~62%	**Test Engineer:**	Apollo Luo

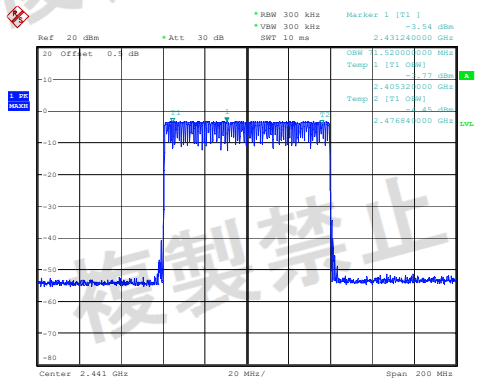
Test Result: Compliant

Mode	Packet Type	Spreading bandwidth	Ton (ms)	Observed Period (s)	Hopping Number In Observed Period	Result (s)	Limit(s)
GFSK	DH1	71.520	0.396	28.608	337	0.13	≤0.4
	DH3	71.040	1.663	28.416	152	0.25	
	DH5	71.360	2.936	28.544	99	0.29	
π/4-DQPSK	2DH1	71.360	0.380	28.544	336	0.13	
	2DH3	70.880	1.663	28.352	153	0.25	
	2DH5	71.200	2.944	28.480	99	0.29	
8DPSK	3DH1	71.360	0.380	28.544	336	0.13	
	3DH3	71.360	1.670	28.544	153	0.26	
	3DH5	71.200	2.944	28.480	99	0.29	

Note:
*1, Dwell time = Time per one hopping (Ton) * hopping number;*
*2, Observed Period (s) = Spreading bandwidth * 0.4s*

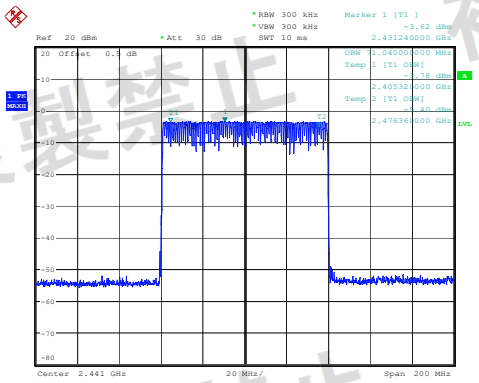
Spread Bandwidth

GFSK DH1



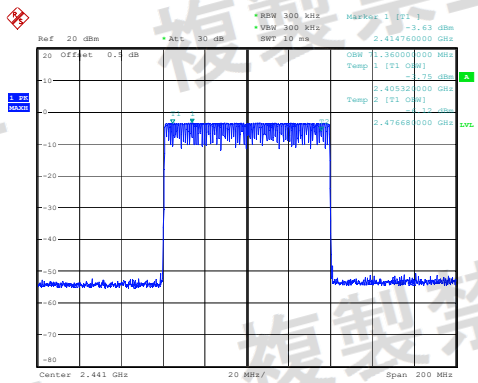
ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:32:00

GFSK DH3



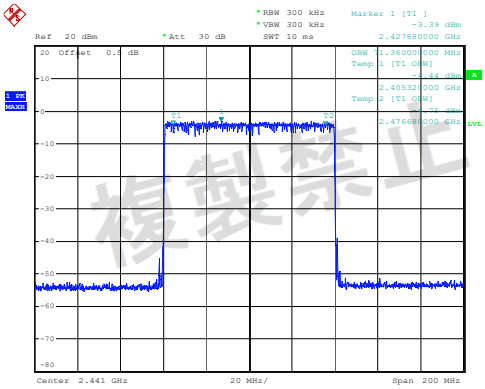
ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:35:02

GFSK DH5



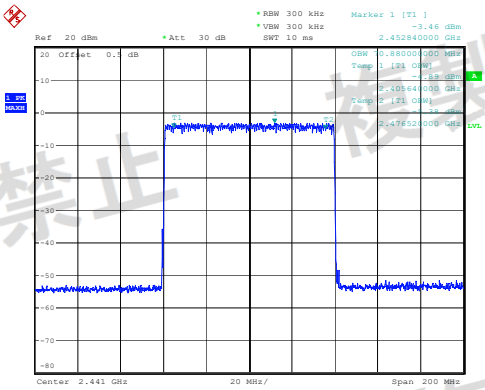
ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:37:54

π/4-DQPSK 2DH1



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:41:49

π/4-DQPSK 2DH3



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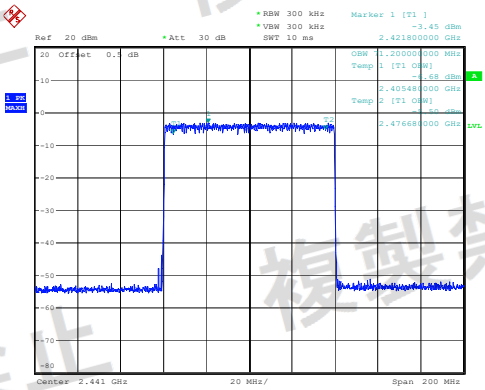
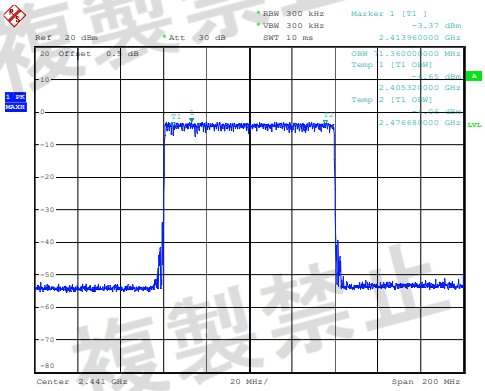
Date: 20.AUG.2025 16:46:39

π/4-DQPSK 2DH5



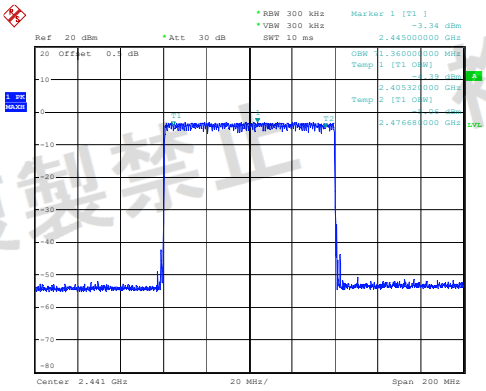
ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:49:25

8DPSK 3DH1



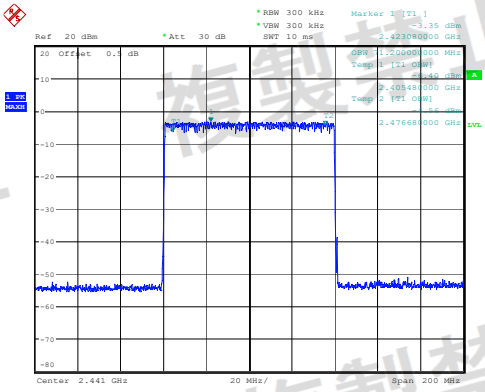
ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:55:49

8DPSK 3DH3



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 20.AUG.2025 16:59:33

8DPSK 3DH5



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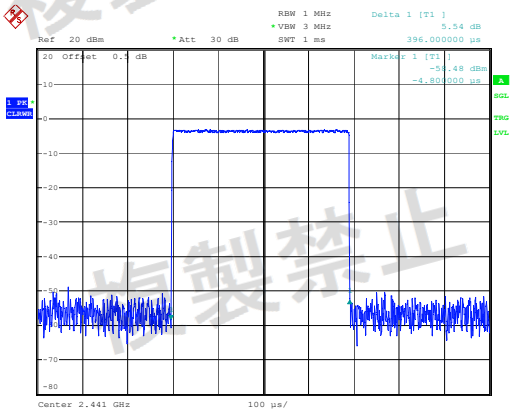
Pulse Ton

GFSK_Middle_DH1



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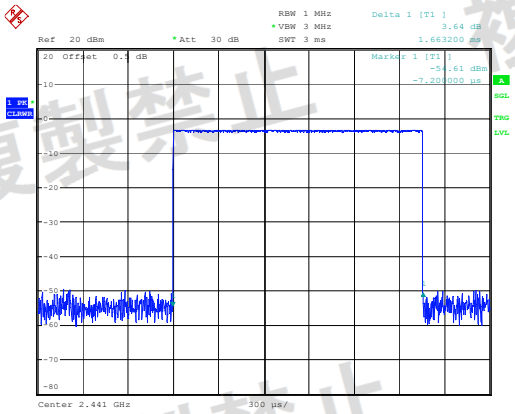

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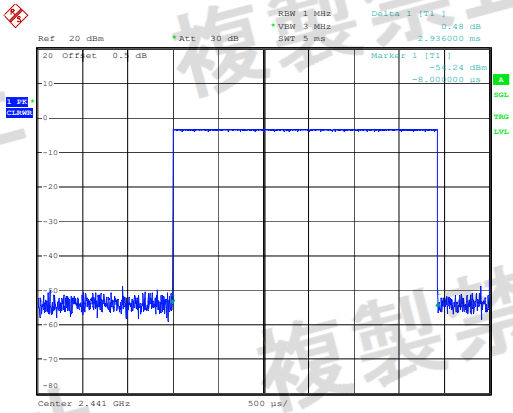

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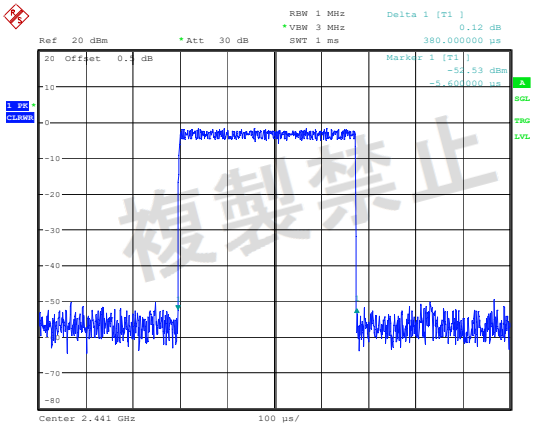

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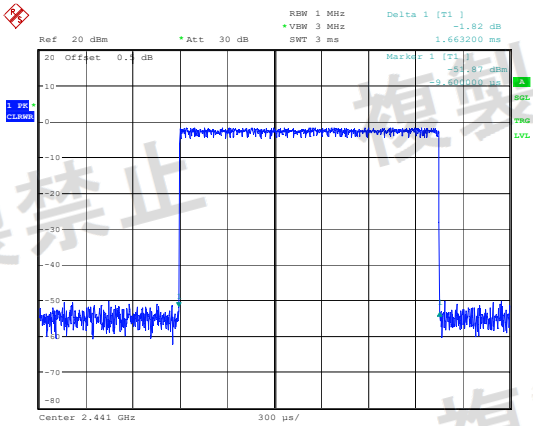

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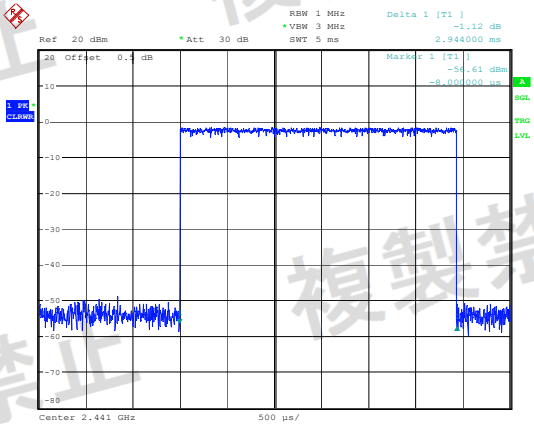

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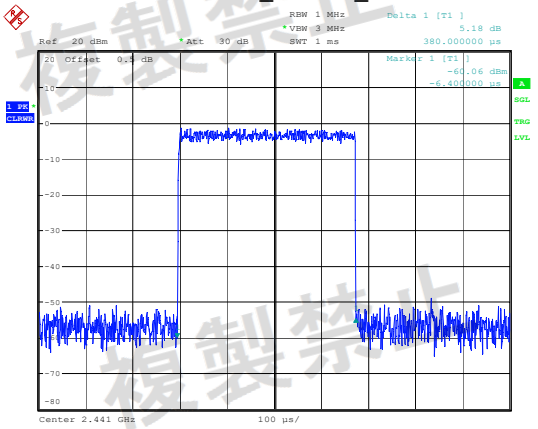
8DPSK_Middle_3DH1



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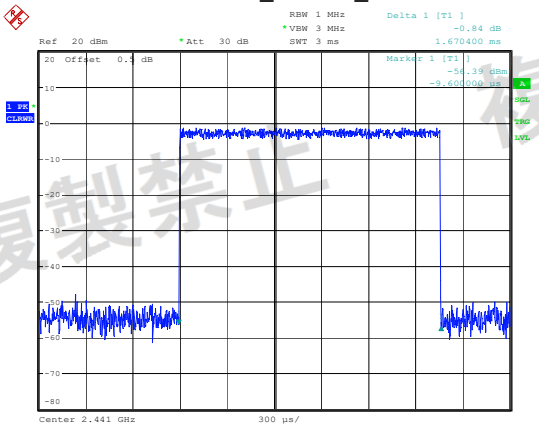

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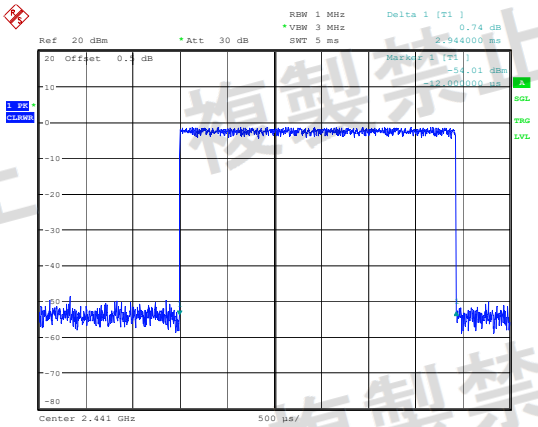
8DPSK_Middle_3DH5



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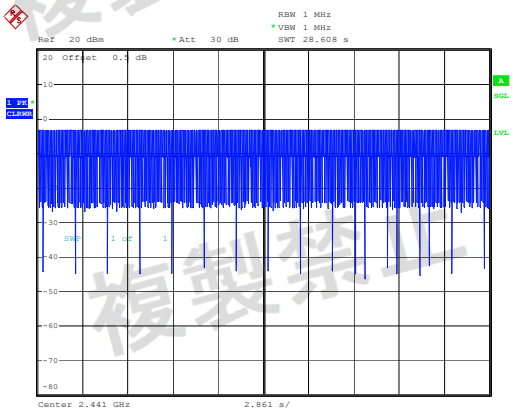
Date: 21.AUG.2025 09:41:02

Hops Number In Observed Period

GFSK DH1



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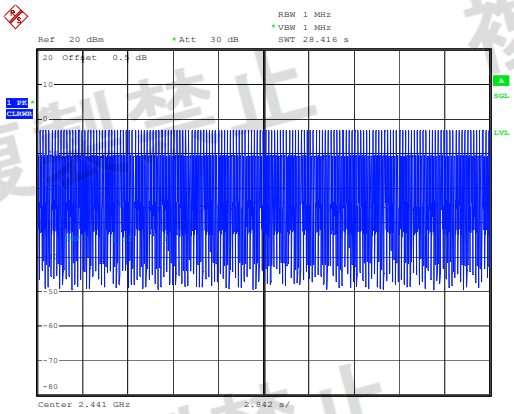
GFSK DH3



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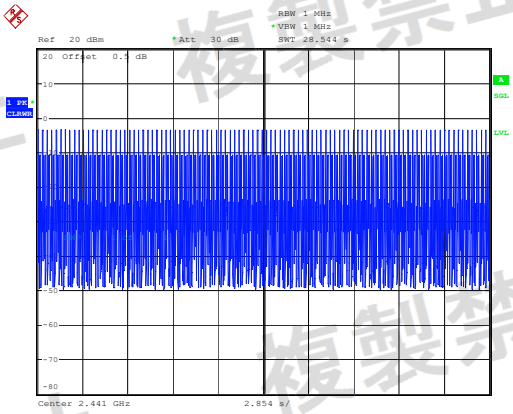
GFSK DH5



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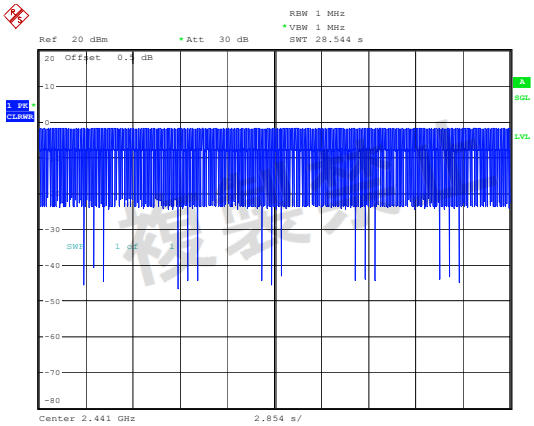

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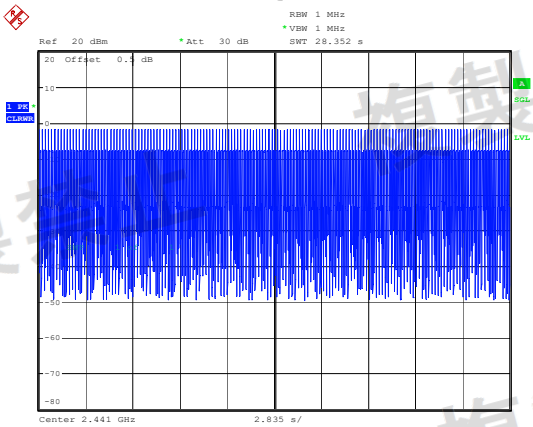

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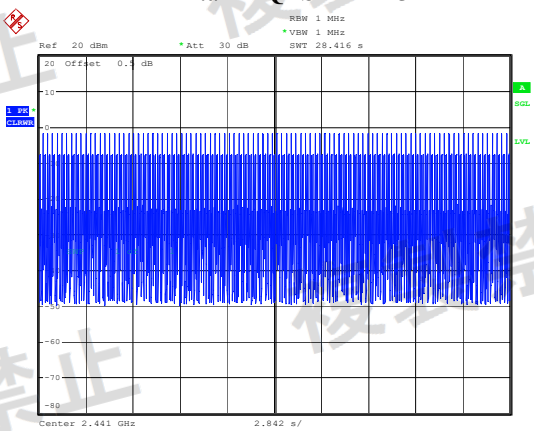

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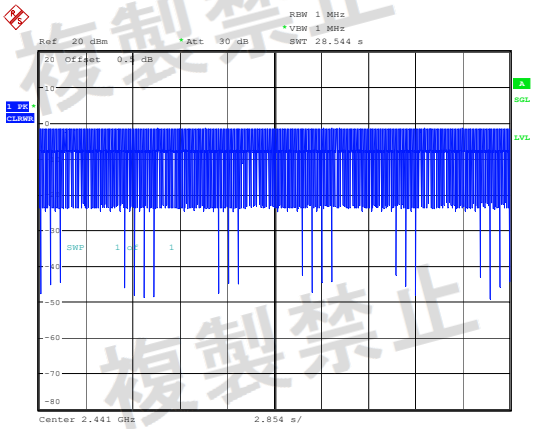
8DPSK 3DH1



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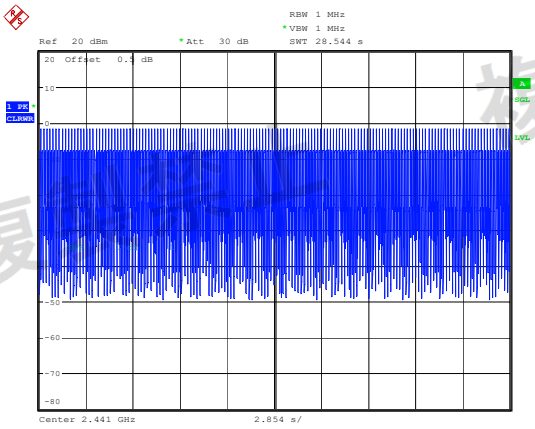

ProjectNo.:2507W27648E-RF Tester:Apollo Luo
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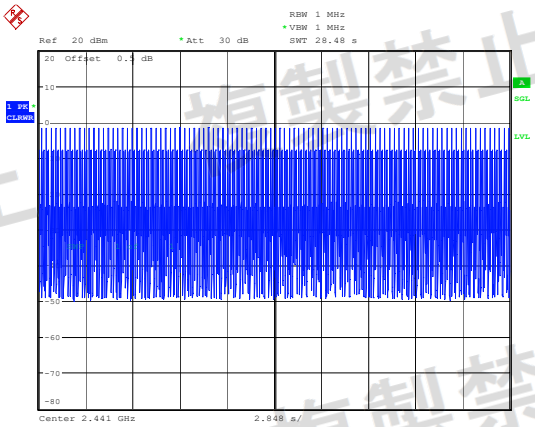
8DPSK 3DH5



ProjectNo.:2507W27648E-RF Tester:Apollo Luo
Date: 21.AUG.2025 09:41:35

CONSTRUCTION PROTECTION CONFIRMATION

Limit

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

Confirmation Result

Compliant, the RF part(include antenna) was covered by EUT case with screws, it can`t be opened easily. Please refer the EUT photo.

EXHIBIT A – EUT PHOTOGRAPHS

Please refer to the attachment 2507W27648E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2507W27648E-RF-INP EUT INTERNAL PHOTOGRAPHS.

EXHIBIT B – TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2507W27648E-RF-TSP TEST SETUP PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Fujian) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".

2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Fujian).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

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