JW8605
Polarization Extinction Ratio Meter

User manual（V210826）

2021.08

Content

1 Overview

1.1 Product overview

JW8605 polarization extinction ratio tester is used to detect the polarization extinction ratio (PER) of polarization-maintaining devices, the degree of polarization of light sources, the extinction ratio of polarization-maintaining fibers and other polarization-maintaining devices, it is a new generation of precision optical measuring instrument developed by Joinwit company with many years'experience in optical device testing. It can be used to measure the extinction ratio of polarization maintaining fiber, the extinction ratio of polarization maintaining device, the extinction ratio of polarization maintaining connector, the polarization degree of light source and the angle of polarization axis. The upper computer software has powerful functions and is easy to operate.

1.2 Product features

1. Up to 50 dB PER

2. Multi band options

3. degree of polarization on the same screen

4. Interchangeable interface FC/SC/LC

5. Simultaneous channel 1-4 measurements

6. Maximum Input Power + 5dBm

7. Support free space input, insertion loss, optical power, extinction ratio, optical axis angle

2 Technical specifications

Parameter	Technical specifications
Wavelength coverage	600~1100nm 1200~1630nm
Input Power Range	-55dBm~+10dBm
PER dynamic range	50dB
Input power range	+10~-5dBm：40dB +10~-5dBm：50dB +10~-15dBm：30dB +10~-15dBm：40dB +10~-25dBm：20dB +10~-25dBm：30dB
PER resolution ratio	<10dB：0.001dB ≥10dB：0.01dB
PER accuracy	PER≤2dB：≤±0.1dB PER<30dB：＜±0.3dB PER≥30dB：＜±1.0dB
Polarization Angle resolution	0.11°
Accuracy of polarization Angle	＜±0.45°
measuring speed	0.25s
Connector type	FC/PC (support SC/LC interface, Optional bare fiber adapter)
communication interface	RS232
AC Input	220V，50Hz
Warm-up time	15min
operating temperature	+10～+40℃
Storage temperature	-15～+70℃
Weight	4kg

Dimension	235*104*300 mm

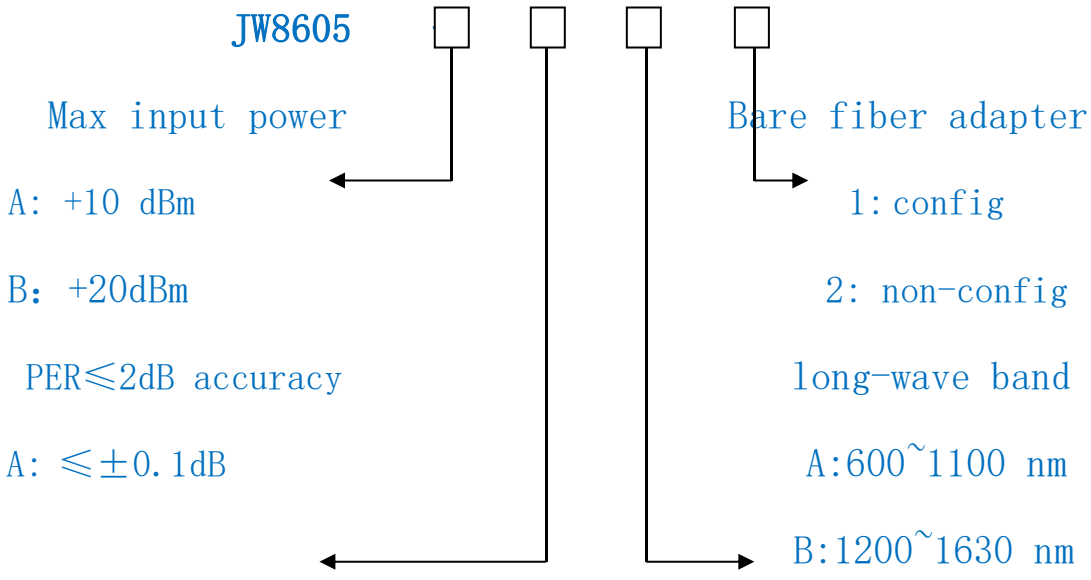
NOTES:

1) the wavelength range is 600 ~ 1100nm/1200 ~ 1630nm, other wavelength bands can be customized.
2) customizable if higher input power is available.
3) please consult our company for Type B related details.

3 Configurations

1	JW8605 main device	1	pc
2	Cotton swab	1	pack
3	Power line	1	pc
4	RS232-USB connecting line	1	pc
5	User manual	1	pc
6	Inspection report	1	pc
7	Certification	1	pc
8	SC/LC interface（optional）	1	pc

4 Type selecting



5 Overall Appearance

5.1 overall appearance

JW8605 Polarization extinction ratio tester adopts advanced aluminum case. The overall appearance is shown in Figure 5-1.

Figure 5-1 JW8605 overall appearance

5.2 Front panel appearance

JW8605 front panel appearance see figure 5-2.

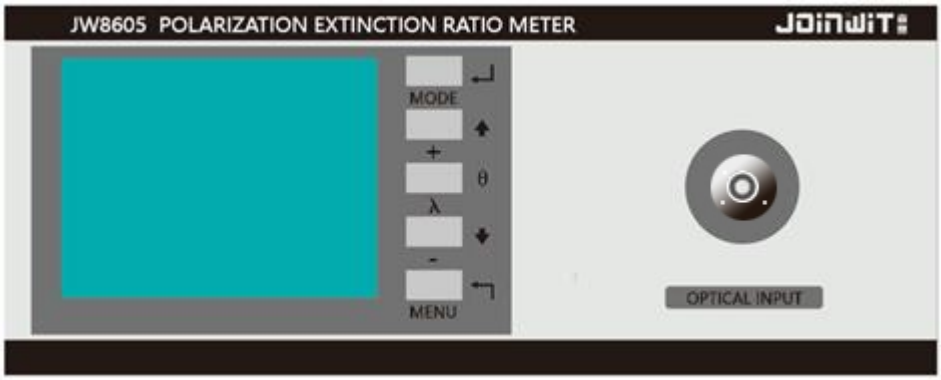


Figure 5-2 front panel appearance

5.3 Back panel appearance

JW8605 back panel see figure 5-3.

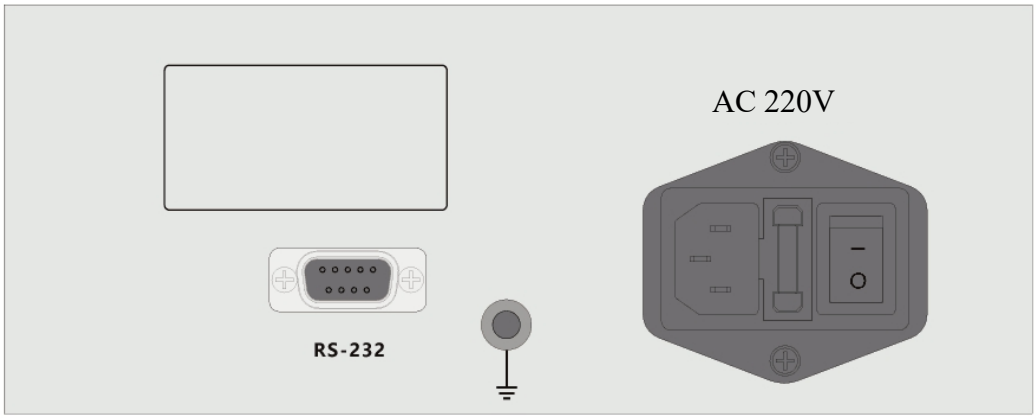


Figure 5-3 back panel appearance

6 Functional descriptions

JW8605 polarization extinction ratio tester uses high performance Danish keys and TFT color screen as display, font display clear, no overlap, can be set through the panel keys, operation, testing, as shown in figure 6-1.

Figure 6-1 button area

List 6-1 button instructions

NO.	Button name	function
1	MODE/↵	Switch between automatic mode, manual mode and PDL mode;
2	+/ ⇧	Automatic Mode: for moving the selection bar up; Manual mode: for forward rotation when the selection bar is placed in UP DOWN or for increasing the value when the selection bar is placed in STEP; PDL mode: used to move the selection bar up or to add values when the number is selected in red;
3	λ / θ	Automatic Mode: Short Press Switch Wavelength; Long press to open the maximum PER/clear operation; Manual mode: used to switch the Selection Bar Position; PDL mode: to select the location of the Bar, “start” , “stop” and “time parameter setting” , after the completion of the time parameter changes, press again to confirm the parameter changes; IL mode: short press switching wavelength;
4	-/⇩	Automatic Mode: for moving the selection bar down; Manual mode: for reverse rotation when the selection bar is placed in UP DOWN or for step reduction when the selection bar is placed in STEP; PDL mode: used to move the selection bar down or to reduce the value when the number is red;

		IL mode: short press record REF value, zeroing IL.
5	MENU/ ↰	Automatic Mode: For the relative angle of the REF function, long press to restore the initial angle zero;

7 use instruction

Turn on 220V AC, turn on the back panel power switch, the display screen will show the start-up interface, 15 minutes after the heat will be measured light into the light detection port.

7.1 auto test mode

The instrument boot MODE is auto test MODE by default, or you can switch to auto test MODE by pressing the MODE button. The test interface is shown in figure 7-1. The position of the selection bar can be adjusted by pressing ⇧ ⇩ key, and the display data can be switched. After the status of non-measurement signal is maintained for 10 Min, the system is standby, and the system is restored automatically after the measurement signal is connected.

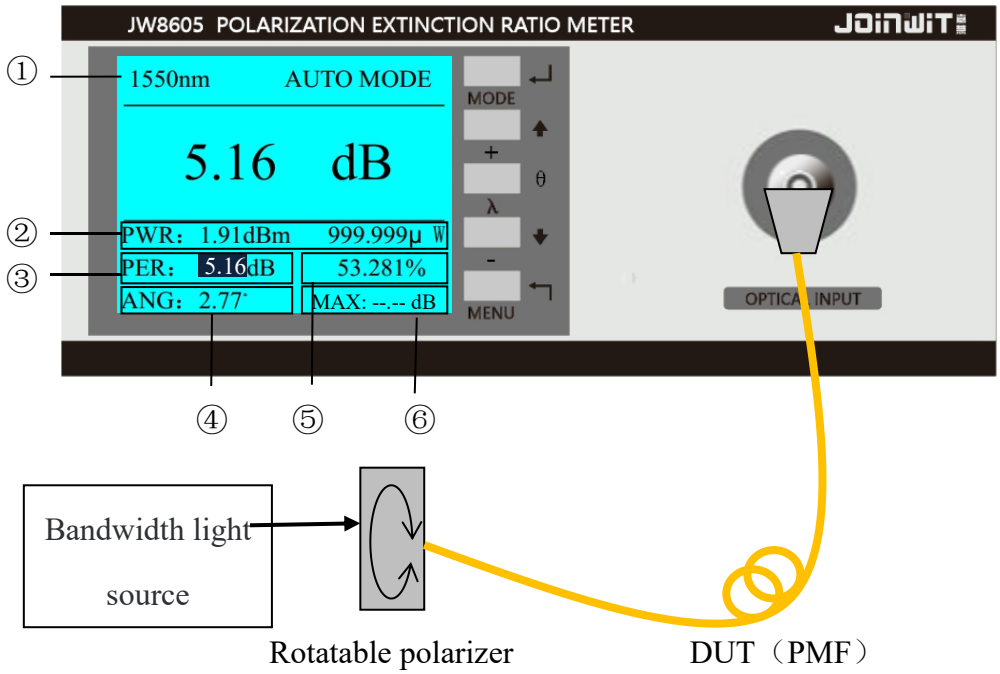


Figure 7-1 auto test interface diagram

① wavelength ② OPM ③ extinction ratio ④ Optical axis angle

⑤ degree of polarization

⑥ maximum PER

Multiple wavelengths can be calibrated within the selected wavelength range.

Test Method 1: As shown in figure 6-1, measure the polarization-maintaining Fiber and measure the maximum PER with a 360 degree rotation polarizer.

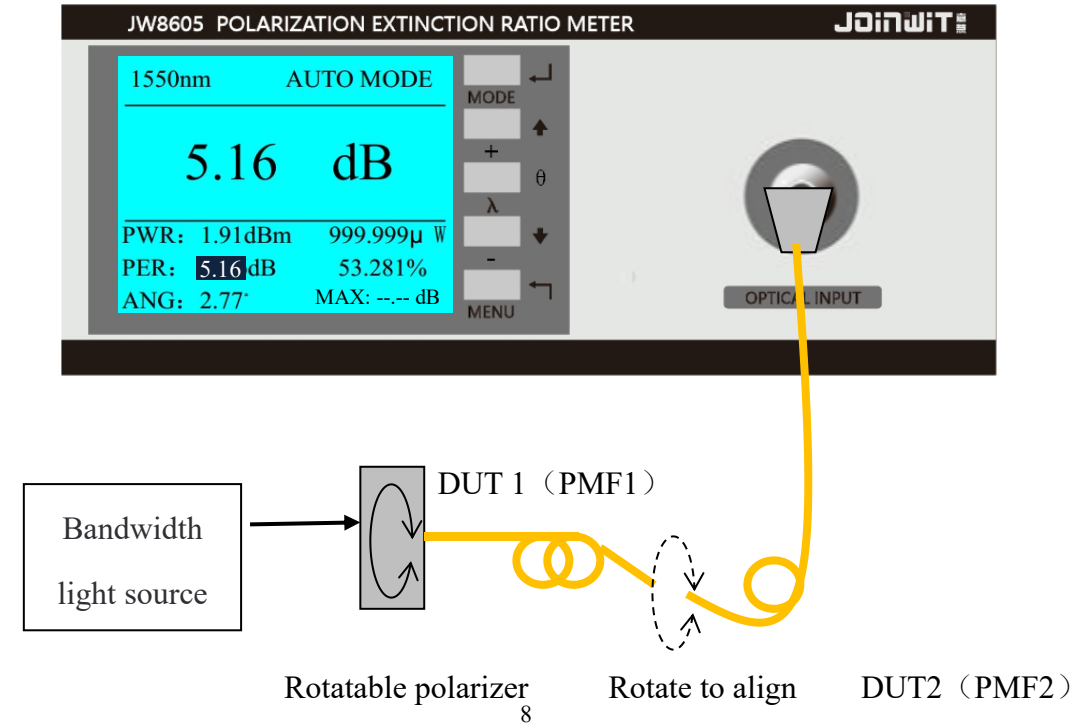


Figure 7-2 PMF Alignment diagram

Test Method 2: As shown in figure 7-2, align the polarization axes of the two polarization maintaining fibers, align the PMF1 and the polarization axes of the polarizer according to figure 7-1, connect the PMF2, rotate the PMF2, measure the maximum PER value.

Key Function 1: Through the ⇧ ⇩ key, the display content of "numerical amplification area" is switched. The five display contents are power value dBm， mW/uW， PER value dB, degree of polarization% , optical axis angle value ° .

Key Function 2: The device has the initial zero angle, the default state of "optical axis angle value" from the initial zero calculation. Short Press "Menu" button to set the current measured angle value as a reference angle zero, long press "Menu" to restore the initial angle zero.

Key Function 3: Short Press λ / θ key to switch wavelength, long press to turn on Max PER measurement, Max PER measurement for current device under test, long press λ / θ to reset Max PER.

7.2 manual test mode

Switch to manual test MODE with the MODE button, and the test interface is shown in figure 7-3. You can set the angle and step values (0.11,1.10,11.00) by pressing the keys.

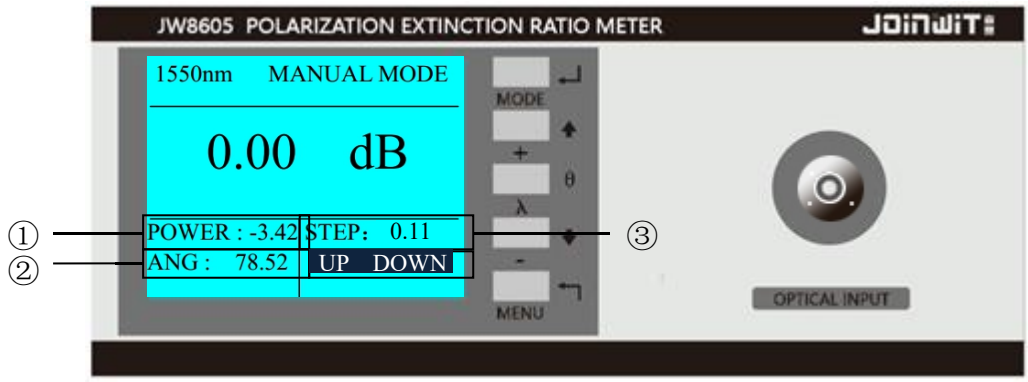


Figure 7-3 manual test interface diagram

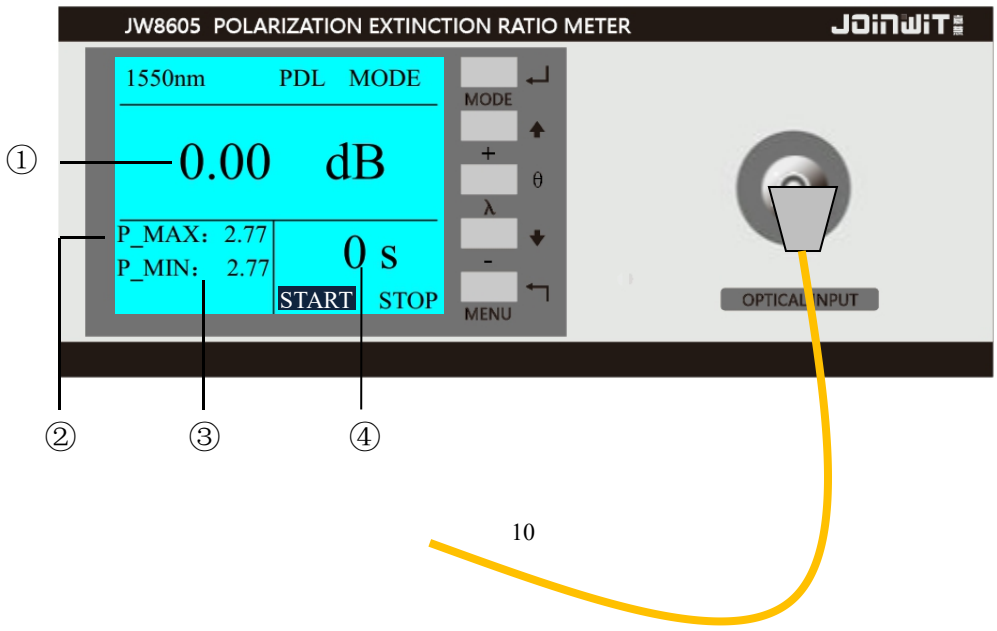
① power ②Optical axis angle ③ step-by-step

Set Step: Short Press " λ / θ " Key, switch cursor step position, short press ⇧ ⇩key switch step value.

Manual rotation motor: Cursor in the "UP Down" position, short press ⇧ key, motor according to the set number of forward rotation, Short press ⇩ key for reverse rotation.

7.3 PDL test mode

Switch to the PDL test mode with the MODE button, and the test interface is shown in figure 7-4. The time parameter (0 ~ 1200s) and start and stop operation can be set by pressing the key.



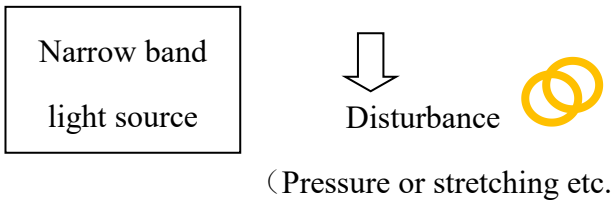


Figure 7-4 PDL test interface diagram

① PDL ② maximum power ③ minimum power ④ time parameter

Modify time parameter: Short Press ⇧ ⇩ key switch "time parameter" , "start" and "stop" , cursor stop at "time parameter" , Short Press “ λ / θ ” Key, cursor color turns red, short press ⇧ ⇩ key increase or decrease time parameter, after the modification, simply press “ λ / θ ” . When the time parameter is 0, the test function is off, and the real-time measurement value is displayed on the screen.

START/STOP test: When the cursor is at the "start" , press the “ λ / θ ” Key to start the test, set the countdown time to start, stop the test after the end of the test, during the test, press the “ λ / θ ” key to stop the test.

Test method: As shown in figure 7-4, the PDL of LD and polarization-maintaining fiber is measured. After some time, the maximum PDL is DUT PDL.

7.4 PER&IL test mode

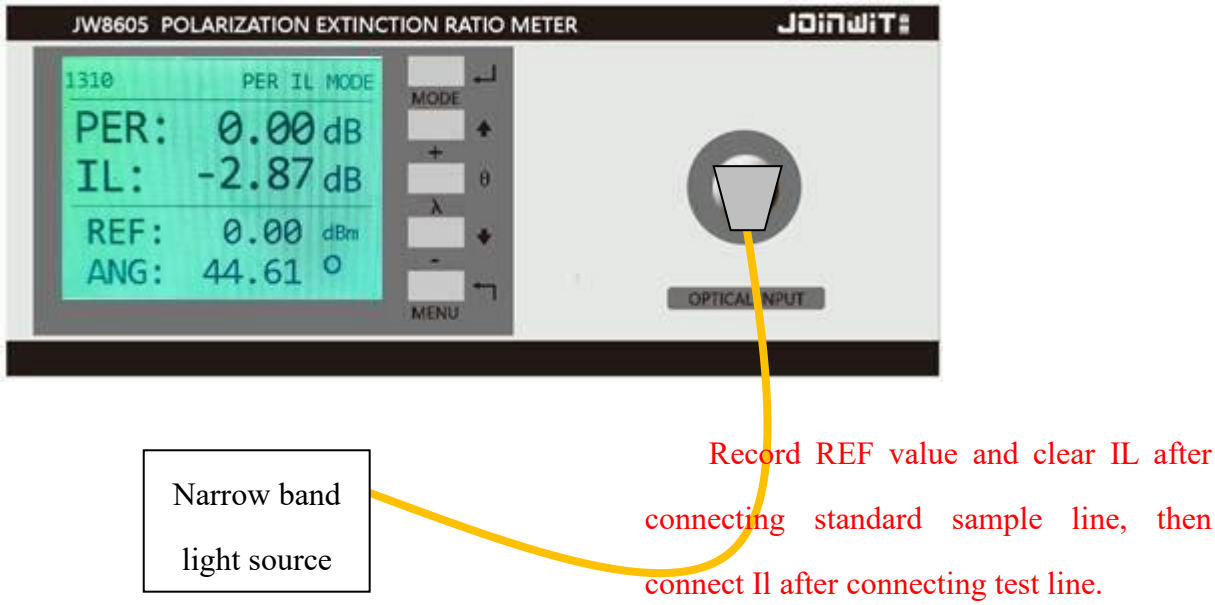


Figure 7-5 PER&IL Schematic diagram of test interface

Switch to PER & IL test mode with the MODE button, and the test interface is shown in figure 7-5. This interface can test both PER and IL at same time.

Test method: as shown in Figure 7-5, IL test first access to a standard line, short "λ/θ" record REF value, IL value zero. Then replace the piece under test also access, the value shown in the IL is the current line under test and standard line between the insertion loss.

7.5 software instruction

Connect the Instrument Power Cord and USB-RS232 serial port cable, open the power switch on the instrument back panel, open the PC software as shown in figure 7-5 connect serial port, Click "login" .

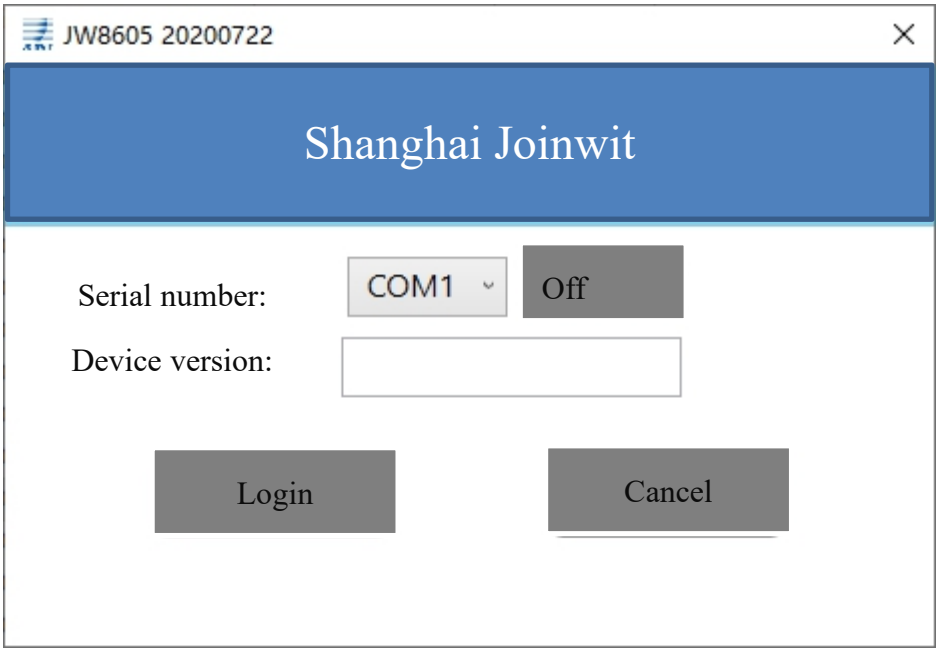


Figure 7-5 login interface

As shown in Figure 7-6, click "Login" after filling in the basic information as required.

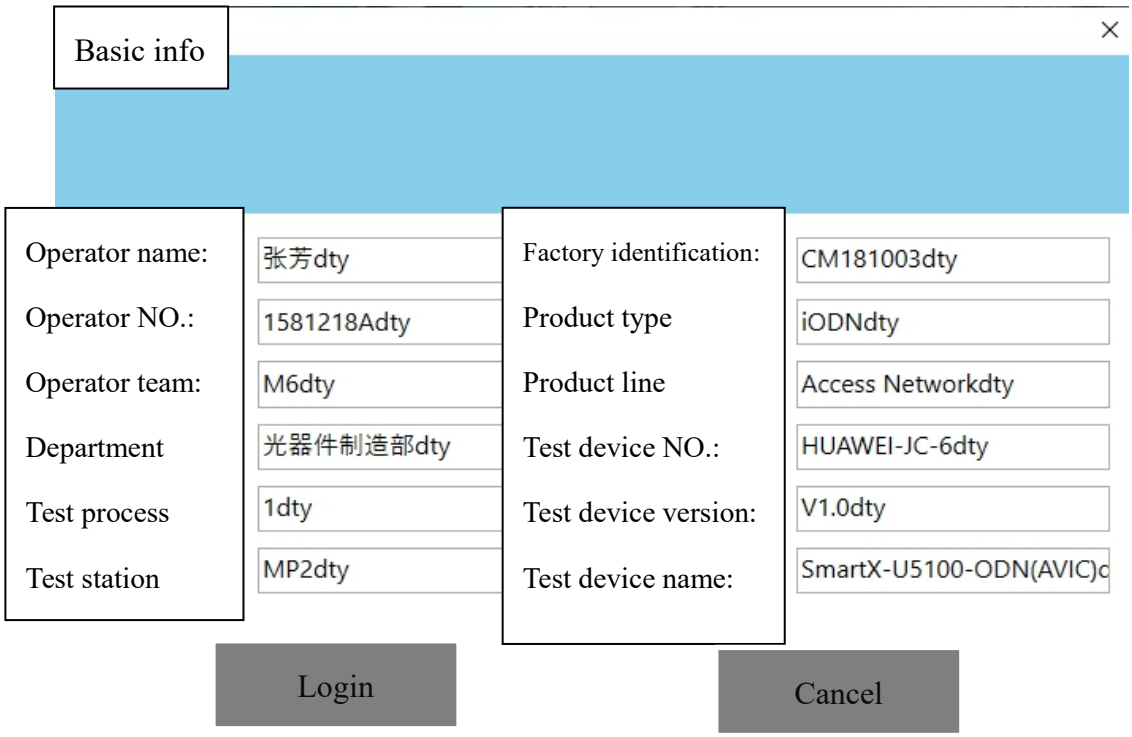


Figure 7-6 basic info interface

7.5.1 user settings

As shown in figure 7-7, user can add or delete a threshold after you select a mouse (note that this step black dots are not selected) , can enter or change the threshold name according to the requirement, also can set the upper and lower limits, black dots select the threshold setting you want to use and click **save**.

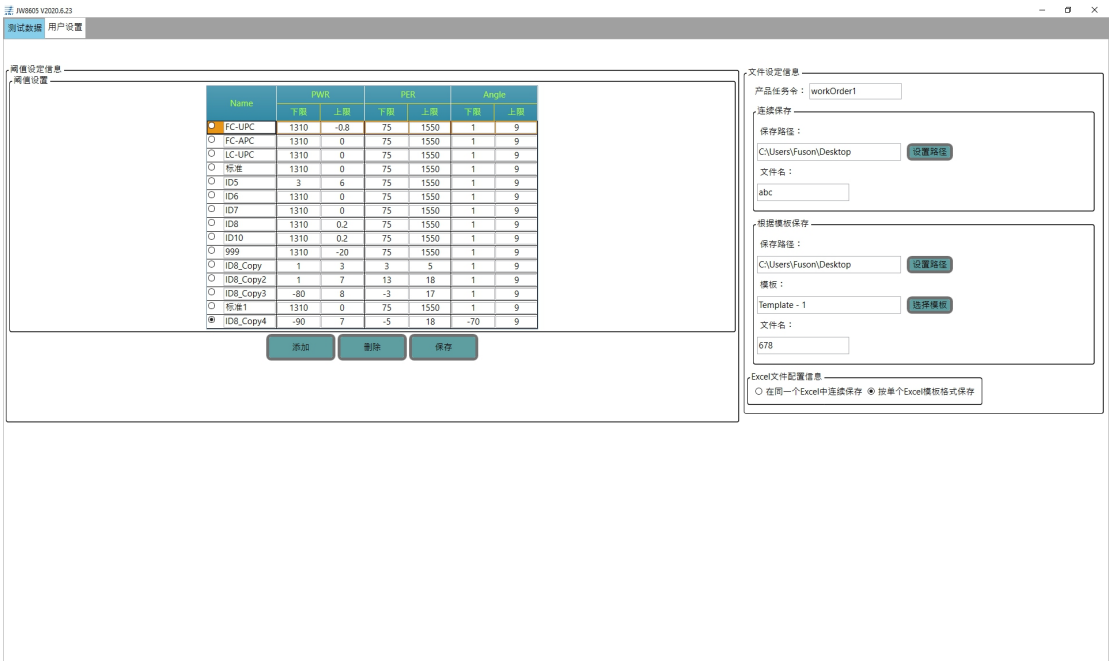


Figure 7-7 user setup interface

Users can choose to save data continuously or according to the template, choose the file Save Path and file name or the template used.

Set the parameters or read the input power of the instrument through the bottom right corner, or set the test time.

7.5.2 test data

Choose the wavelength and test mode according to the requirement.

7.5.2.1 automatic test mode

Enter the SN code (can only be a number) , can choose the SN change step, users can use the keyboard **Enter** key or small keyboard plus sign key test operation, in the

right interface display. You can zoom in with a mouse click on different parameters, "set" sets the angle, "Ref" sets the current angle as a reference value, and "CLR" sets the maximum PER zeroing. Click **read** to display the test data saved in the settings file on the right.

Figure 7-8 auto test interface

7.5.2.2 manual test mode

Input step to forward and reverse control as shown in figure 7-9.

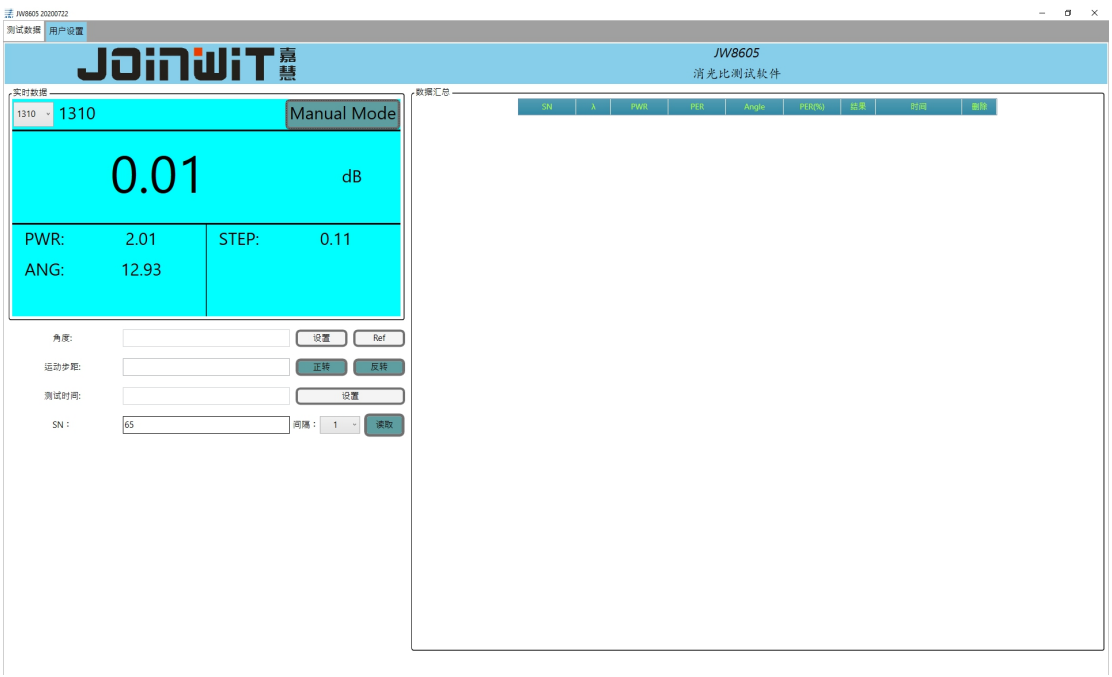


Figure 7-9 manual test interface

7.5.2.3 PDL test mode

Enter a test time and click "set" to start or stop a PDL test as shown in figure 7-10.

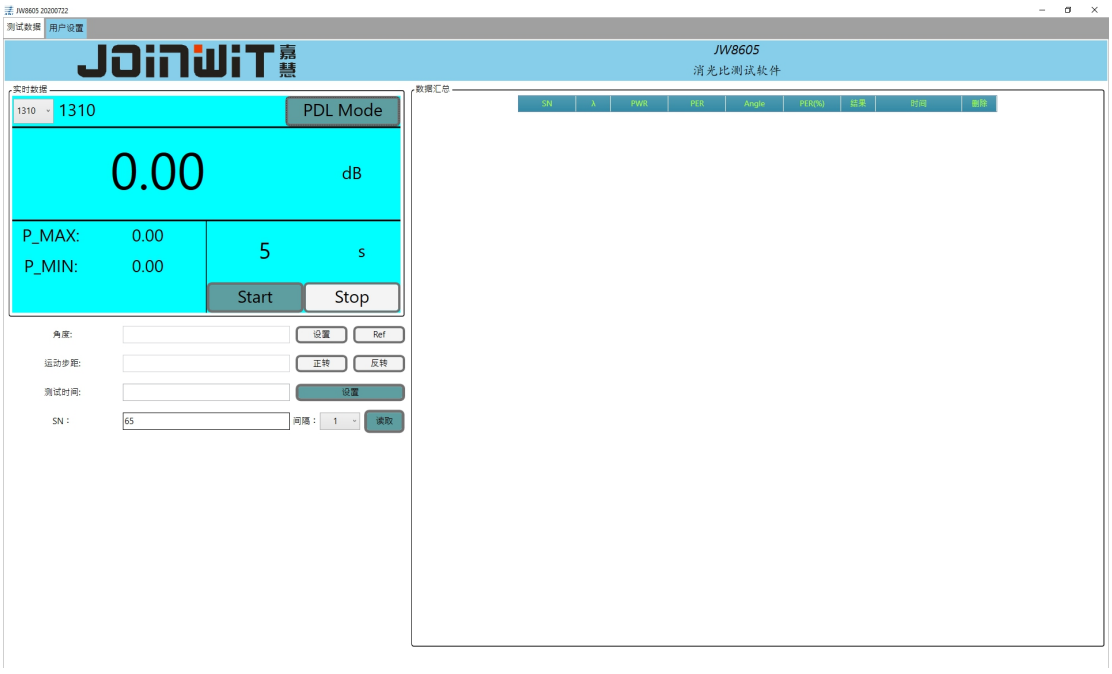


Figure 7-10 PDL test interface

8 Maintenance

1) the tester should work without obvious vibration. Keep the output end face clean. If there is any dirt or damage, the output flange should be turned down. Use dust-free paper or cleaning cloth and anhydrous alcohol to clean the end face.

2) when the equipment is not in use, please put on the dustproof cap.

3) be careful about plugging and unplugging the light connector.

4) handle and handle with care to prevent equipment from falling and bumping.

9 Warranty

We do not recommend users repair JW8605 by themselves.

*** Warranty period of the instrument is within 18 months from the date of shipment.**

1) Shanghai Joinwit Company will provide its product promise, and the warranty period is valid within 18 months from the date of shipment. When the purchased product was found to have quality problems during this period, Shanghai Joinwit Company will make appropriate repairs or replacements.

2) If a problem occurs during the use of the instrument, the solution based on the common failure indication cannot be resolved. Please contact the company's marketing or after-sales personnel. Users are not allowed to open the chassis without authorization; otherwise they will not provide warranty service.

3) For quality failure due to production defects, the manufacturer is responsible for free repair or replacement of the meter. This guarantee is only applicable to the normal use of the meter and no one is damaged or improperly used.

*** Warranty of JW8605 does not include wearing parts and problems/faults caused by the following reasons:**

4) Unauthorized repair or modification of the instrument

5) Improper use, negligent use, accident, etc.

Appendix I

Warranty Registration Card

Serial Number: _____

Model Number: _____

Date of Purchase: _____

Company Name:_____

Company Address:_____

TEL: _____ FAX:_____

E-mail:_____

(Please keep this contact, cut the link and send it on this basis) - - - - - - - - - - - - -

(Please cut along the dotted line and send back to us)

Product number: ----------

Product Serial Number: ----------

Purchase date: ----------

User name: ----------

Telephone / Fax: ----------

Address: ----------

Postal Code: E - mail: ----------

Note: The user, please within one month after the purchase, this part of the company sent back to the party as valid.

Appendix II

Warranty notice

1. During the warranty period, the user can present this warranty card and invoice or receipt (photocopy) in the event of a malfunction in using this product under normal conditions, and can enjoy unpaid maintenance services.

2. In the following cases, it is necessary to pay for repairs, and charge certain materials, maintenance fees and shipping charges as appropriate;

1) Failure occurred when the product is used under normal conditions, but it has exceeded the warranty period.

2) The warranty card is not presented. The warranty card is missing, altered or missing.

3) Use under abnormal conditions, such as man-made damage, or under abnormal conditions such as high temperature, high pressure, and humidity, pay for maintenance normally depending on the damage.

4) Failure and damage caused by non-product quality problems.

5) Faults and damages that are not caused by the instructions and precautions in the manual.

3. The following circumstances, the company will not be maintained:

1) Unauthorized repair or modification of the instrument without the consent of the company.

2) Products not produced and sold by the company.

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