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Explanation

The content of this manual is subject to Joinwit's explanation.

Contents

i. overview ----------1

ii. Technical Specifications ----------2

iii. Technical Specifications ----------3

iv. Instrument Introduction ----------4-5

v. Instructions for Use ----------5-19

vi. Troubleshooting ----------19

vii. Care and Maintenance ----------19-20

viii. Quality Assurance ----------20

Attachment 1 Product Warranty Card ----------21

Attachment 2 Warranty Conditions ----------22

i、Overview

JW3209 is the company highly cost-effective optical multimeter. It's the integration of power meter and light source. JW3209 has the function of recording, storing and uploading the data tested by the instrument. They are widely used in the fiber-optic line project construction, testing and maintenance, such as digital data network, telecommunication network and cable television.

Features:

- Easy mode switching function
- Stable Output light
- Automatic switching function of the internal source wavelength
- Detection of the frequency light
- USB data communication storage, uploading and for power supply
- Data Storage is up to 1000
- Providing the real-time data reading to be embedded in system

Applications:

- Maintenance of telecommunication project
- CATV project maintenance
- Digital data network project maintenance
- Teaching and research in optical communications
- Other fiber-optic projects

ii、Technical Specifications①

Instrument model / parameters	JW3209A	JW3209C
Power meter		
Calibration wavelength(nm)	850、1300、 1310、1490、1550、1625	
Testing range(dBm)	-70～+6	-50～+26
Display resolution(dB)	0.01	
Uncertainty(dB)	≤±0.25	
linearity(dB)	≤±0.1	
Frequency indentification range	＜10K	
Source		
Working wavelenght（nm）	1310/1550(customizable)	
Typical Output Power(dBm)	-5(customizable)	
Stability（dB,30min,20℃）	≤0.1dB	
Modulation frequency (Hz)	CW,270Hz，1KHz，2KHz	
Other parts		
Power supply	3*AA 1.5Vbattery / Mini USB 5Vadapter	
Auto-off time (min)	10	
Battery continuous operation time②(h)	Source ON≥50,source off≥200	
Communication Interface	Mini USB	
Working temperature（℃）	-10～+60	
Storage temperature（℃）	-25～+70	
size(mm)	175×90×44.5	
weight(g, not including battery)	265	

Notes： 650 optional red light mode

① ：Tested in T=23±2℃

② ：Battery operating time is tested when the backlight is off, otherwise the working time will be shorter

iii、Standard Configaration

1. JW3209 instrument----------1pc
2. instructions----------1copy
3. Data disc----------1pc
4. Mini USB data cable----------1pc
5. 5V USB adapter----------1pc
6. 1.5V Alkaline Battery----------3pcs
7. Cleaning Swabs----------1pack
8. Soft Oxford cloth pack ----------1pc
9. certificate----------1pc

iV、Instrument Introduction

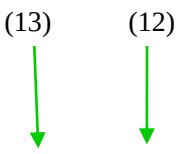


图 4-1

	Function Introduction
①	⏻ ： Turn on or off the meter
②	λ ： Switching wavelength under test
③	☼ ： Turn on or off the backlight
④	SAVE AUTO ： data testing storage\Viewing; automatic switching of source wavelength
⑤	DEL ： delete the current data record
⑥	UNITS LASER ： unit change;turn on or off the source output
⑦	REF ZERO ： relative value measurement;system is set to zero
⑧	CW ： change the source output frequency
⑨	MODE ： change the instrument function mode

⑩	Meter display window
⑪	Mini USB interface: data communication interface;adapter power supply interface
⑫	Laser source output port
⑬	Power meter testing input port

V、Instructions for Use

When powered by dry battery, the bottom left corner of the instrument screen will display Auto-off sign after turning on; if no other operations within 10mins, the instrument will be off automatically, short press "⏻" the auto-off will be cancelled.

When using external USB adapter for power supply, the instrument will have no auto-off function. (image 5-1)

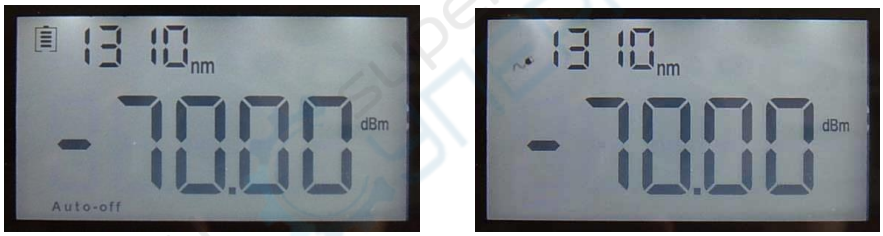


Image 5-1

After turning on, the instrument comes into "power meter mode" automatically (image 5-2), **we can press "MODE" button to come to "source mode"** (image 5-3)。

These two measurement modes can be used individually or simultaneously.

Image 5-2

image 5-3

1. Power meter mode

(1) λ : Sequentially switching to the meter internal tested wavelength

(2) UNITS/LASER : change among dBm、dB、XW in turn (image5-4)

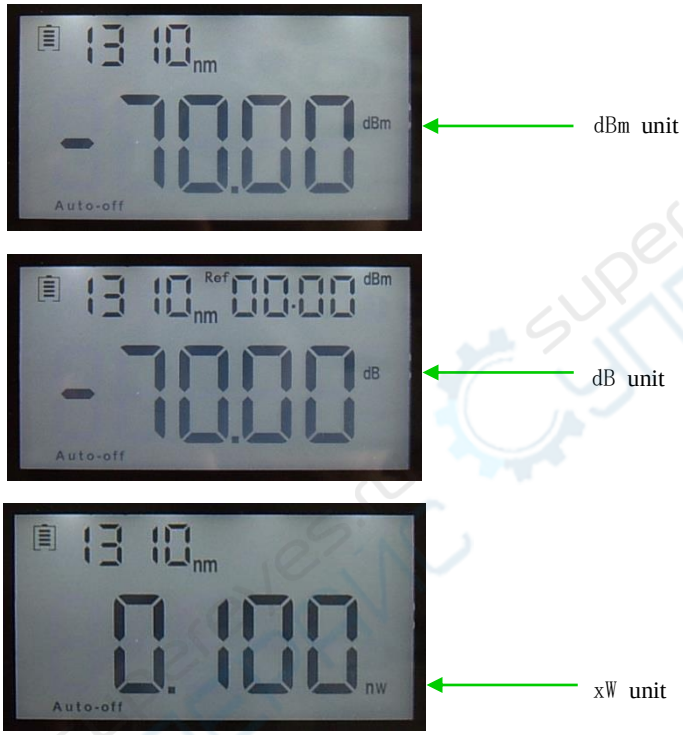


Image 5-4

(3) REF/ZERO :

① Short press REF/ZERO button, start REF function.

When the current tested value is set or changed to reference value, the instrument comes to relative power measurement, and the top right corner of the screen will show “Ref”

And the set dBm value。(image 5-5)

The relation of Relative power value, absolute power value and reference value: Relative power value = absolute power value - reference value.

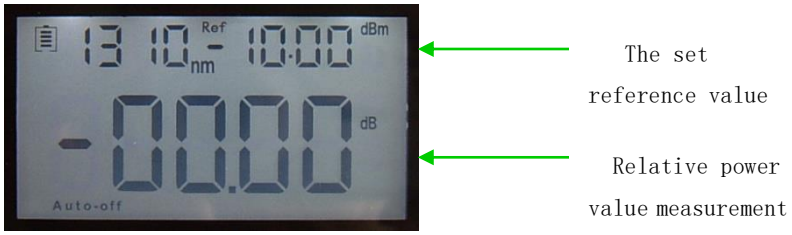


Image 5-5

③ Long press REF/ZERO button for about 5 seconds,ZERO function will be started

When the meter needs “System Zero”, the dust cap of the power meter detecting port must be tightened to ensure no light input. And then long press this button for about 5 seconds to have the automatic “System Zero” and the previous screen. (image 5-6)

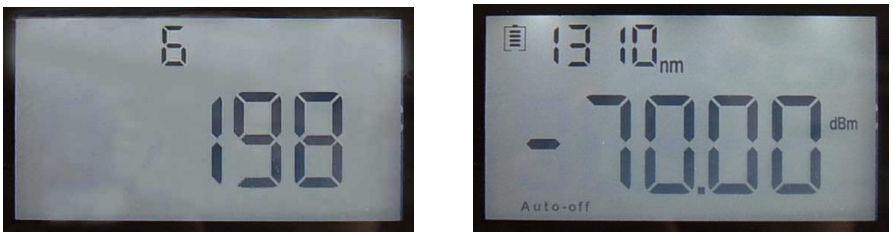


Image 5-6

(4) SAVE/AUTO:

Press the button under power meter mode, SAVE function will respond.

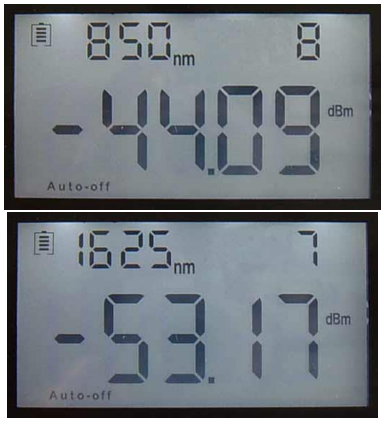
Data storage: short press the button to save the current test data, press SAVE/AUTO button for once, the screen will show storage serial number, press again to confirm saving and exit. (image 5-7)

Current data needing storage(wavelength 、 dBmpower value)

Storage serial number

Image 5-7

Date View: long press SAVE/AUTO button, comes to data view interface, then short press SAVE/AUTO button, we can have a reverse look at the data recording. Again long press SAVE/AUTO button to exit. (image 5-8)



.....

8

Reverse View

1

Image 5-8

(5) DEL button:

Delete data: in the data view status, press DEL button to delete the current record.

2. Source mode

(1) λ button: Sequentially switching to the meter internal source wavelength.

(2) UNITS/LASER button: turn on or off the laser output in the source . (image 5-9)

Image 5-9

(3) CW button: After turning on the laser in the source module, press the button to come to 0HZ, 270HZ, 1000HZ, 2000HZ in turn. (image 5-10)

Image 5-10

(4) SAVE/AUTO button: in the source mode, open or close the automatic following switching function of the source output wavelength. (image 5-11)

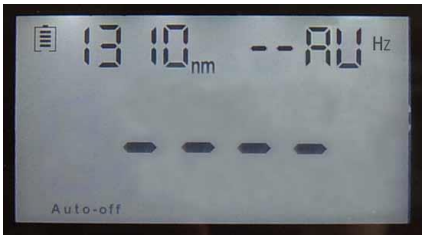


图 5-11

Short press SAVE AUTO button, the meter top right corner displays”--AU”to indicate this function is started. Meanwhile, the laser output wavelength in the source module will be switched automatically according to the change of the same wavelength in the power meter module.

For example: the meter internal source module has 1310/1490/1550 wavelength, the test wavelength in the power meter module is 850/1300/1310/1490/1550/1625. If the test wavelength in the power meter module is switched to 1550nm, the laser output wavelength in the meter source module will be changed to 1550nm automatically; On the contrary, when the test wavelength in the power meter module is different from the output wavelength in the source module, the source module cannot follow automatically to change the wavelength, and also no optical power output.

3. Backlight control function

With the instrument on,press “ ” button to open or close the backlight.

4. Battery power display

(1) if the battery icon becomes “empty”, it means the battery is to be exhausted and reminds the user to replace the battery in time. (image 5-12)

(2) The user can use the attached USB adapter for power supply through Mini USB interface. (image 5-13)

Image 5-12

Image 5-13

5. Frequency light detection

In the power meter mode, when the power meter detecting port receives the frequency light input signal and it’s tested under the absolute optical power unit, the top right corner of the screen will show HZ sign, indicating the current light signal frequency is ***HZ.（image 5-14）

Image 5-14

Notes: When using the frequency detection function, A type optical power meter only detects frequency with the power range more than -40dBm; C type power meter detects

frequency with the power range more than -20dBm.

6. Power meter calibration mode

In the power meter mode, press "💡" and "MODE", at the same time, "U-01" will appear on the screen top right corner, indicating that the meter has come to power value calibration mode. Press "UNITS/LASER" and "REF/ZERO" to increase or decrease the absolute optical power value. When the adjusted value is what you need, you can press "SAVE/AUTO" to save the current calibration value. After "----" appears on the screen, it means the calibration is ok and then press "MODE" to exit. (image 5-15)

Image 5-15

For example: take the 1310 wavelength calibration for an example:

① Select a high-stability 1310nm source, and then connect it to one end of patch cord. The other end of the patch cord is inserted to the detecting port of the standard power meter and tightens it. Choose 1310nm wavelength in the standard power meter, and read the absolute optical power value, for example, we can set it for A.

② Removed from the detecting port of the standard optical power meter, patch cord is inserted to the detecting port of the calibrated instrument power meter. Then change the wavelength in the calibrated optical power meter to 1310nm. Press "UNITS/LASER" and "REF/ZERO" to increase or decrease the absolute optical power value displayed on the calibrated instrument screen. When the absolute optical power value on the calibrated instrument is A, press "SAVE/AUTO" to save the current calibration value. "----" on the screen indicates that the calibration is done.

③ Other wavelength calibration is just like 1310nm wavelength, after calibration, press "MODE" to exit.

Note: All the meters have a rigorous calibration check in the factory. So the users are better not to use this function to avoid the meter measurement deviation!

7. Date communication

Note: Before data communications, make sure the drivers and application software

are successfully installed.

7.1 Install driver

Running the CD-ROM on the computer to find the “driver” installation file, image 5-16。

Image 5-16

Double-click the icon, image 5-17 appears

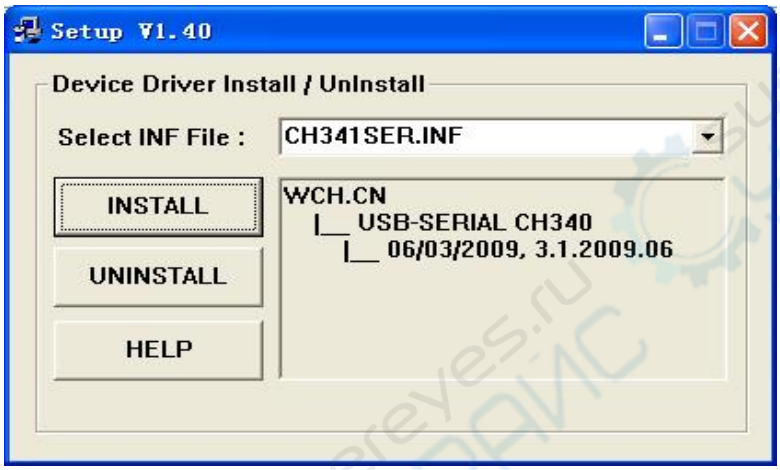


Image 5-17

click “INSTALL”, After a moment, image 5-18 appears.

Image 5-18

Click “OK” and exit the installation interface. Driver installation has not been completed at this time, please continue the operation below.

Connect the instrument and the computer by USB data cord. Then open the instrument to appear image.

Image 5-19

Click Next to appear image 5-20。

Image 5-20

After a moment,image 5-21 appears.

Image 5-21

Click Finish, driver installation is completed.

Please check that if the driver is installed to avoid the communication problem between the instrument and the computer Open device manager (right-click My Computer to select properties. Then select the hardware tab on the system properties interface. And then to click the device manager button), in the port (COM and LPT) column, you can see the selected box in the image 5-22 which indicates the successful installation; If no selected box below the port(COM and LPT), as in the image 5-23, it means installation failure and reinstalling is needed.

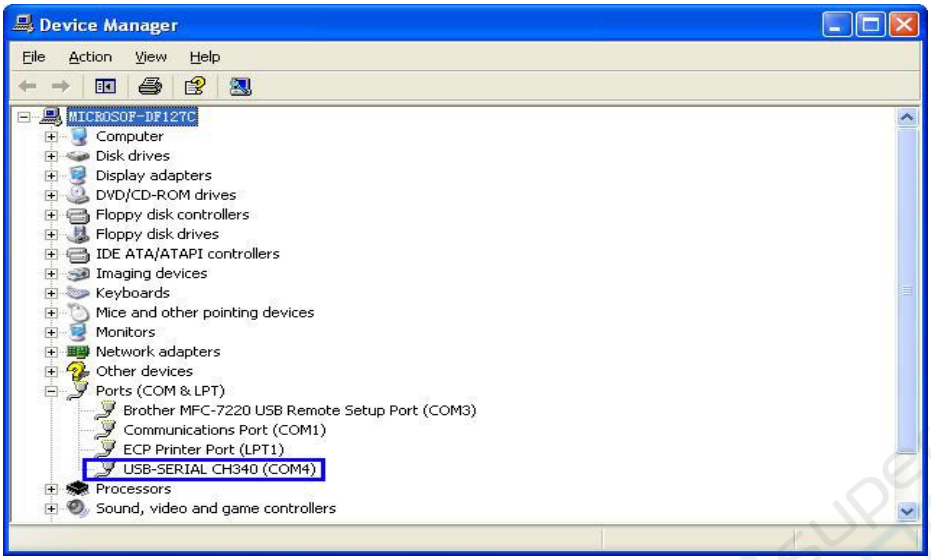


Image 5-22

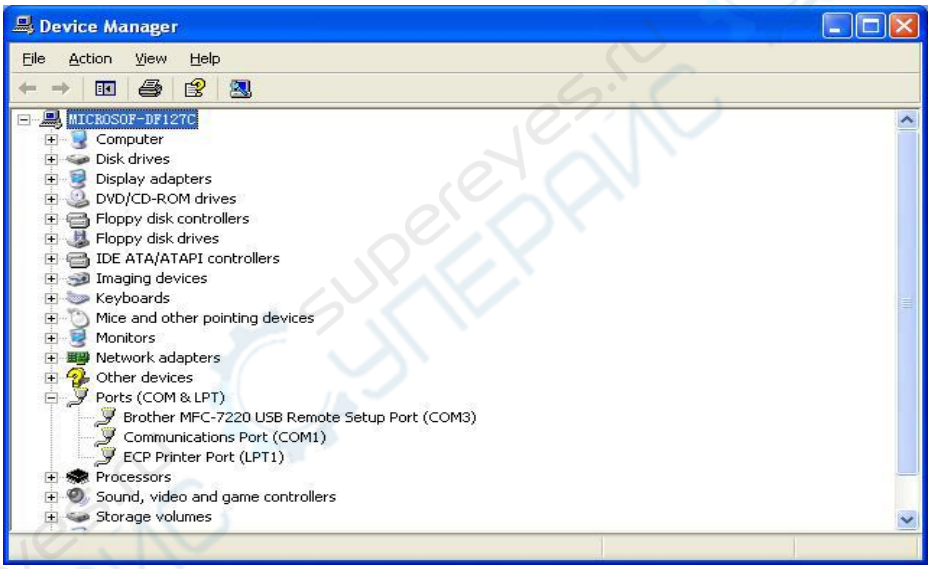


Image 5-23

After the successful driver installation, you can turn off the instrument and disconnect the USB.

7.2 Instruction for the Software Use

(1)Open the PC software to show the image 5-24.

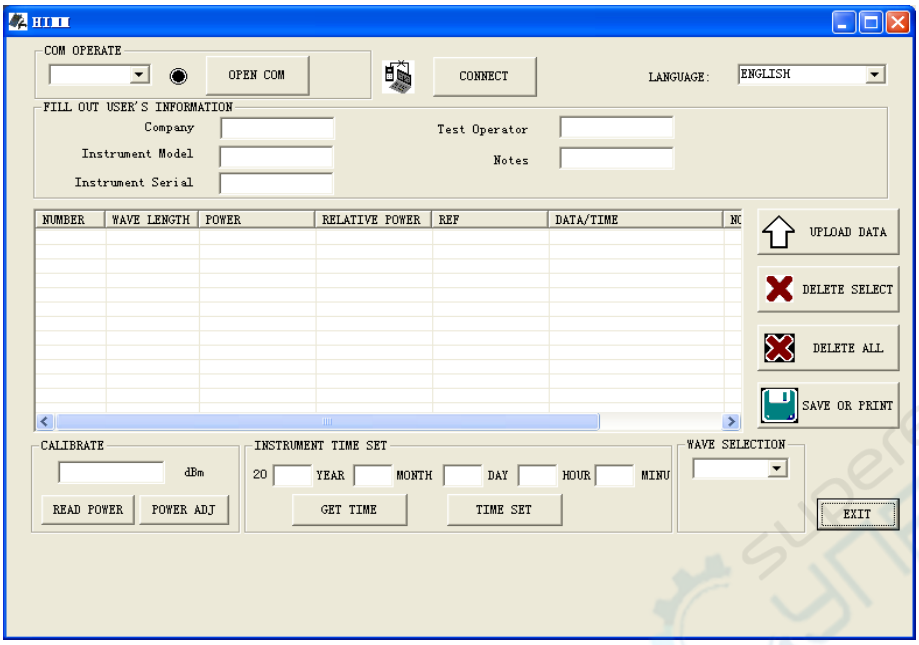


Image 5-24

The instrument is connected to the computer by a USB cable and in the state of being switched on.

In the port(COM and LPT) column, you can see the port used by the instrument is "COM4" (image 5-25)

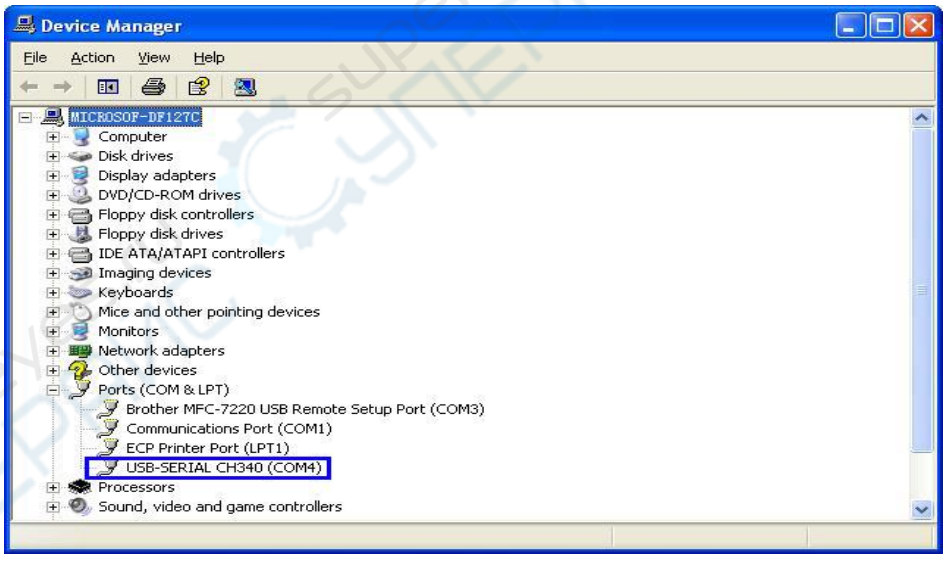


Image 5-25

So when to select the software port, you can click the drop-down menu to choose "COM4".(image 5-26)

Image 5-26

After port selection, click the “Open Com“button, and then click “Connect” button.(image 5-27)

When the successful connection box appears, click OK to finish connection. And now you can start the communication between the instrument and computer。(image5-28)

Image 5-27

Image 5-28

(2) The data processing function use

First, fill in the basic information, including the testing person, instrument type and so on.。(Image 5-29)

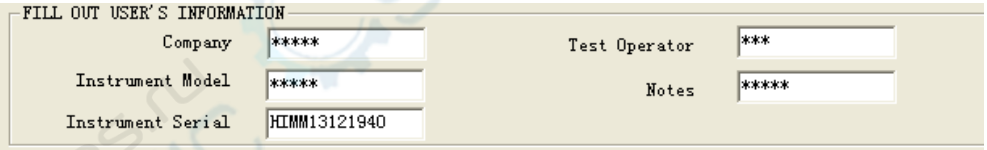


Image 5-29

Then click “Upload Data “button, the data saved in the instrument can be uploaded to the computer and are displayed in the data area.(image 5-30)

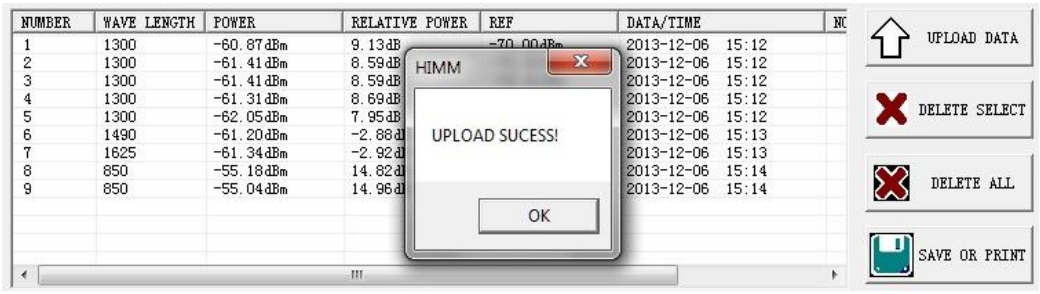


Image 5-30

You can process the data in the data display area, including delete, save and print.

Choose the data needing process; click the “Delete Select” button to delete the selected data, as in the image 5-31 and 5-32, and also the corresponding data stored in the meter are also deleted.

Image 5-31

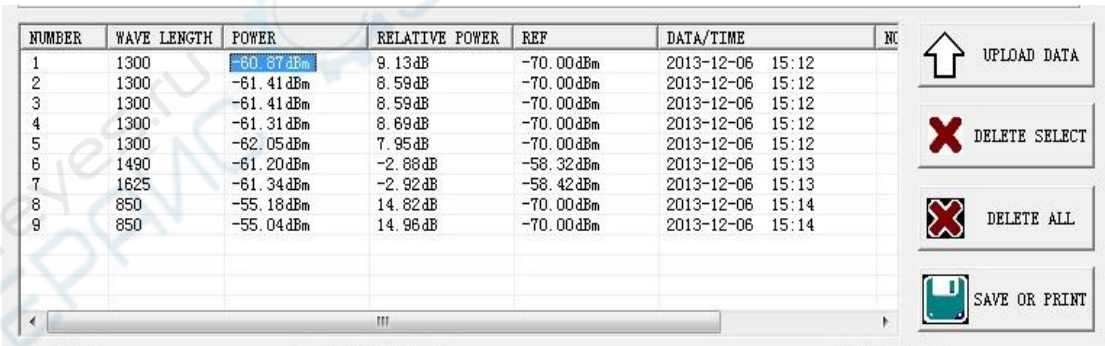


Image 5-32

Click the “Delete all” button to appear the “Delete all” box in the image 5-33, click OK to delete all the data and also empty the stored data in the meter. If you click Cancel, the situation is just the opposite.

Image 5-33

Click the "Save or Print" button to appear the sheet in the image 5-34. The sheet can be edited, saved, printed and etc.

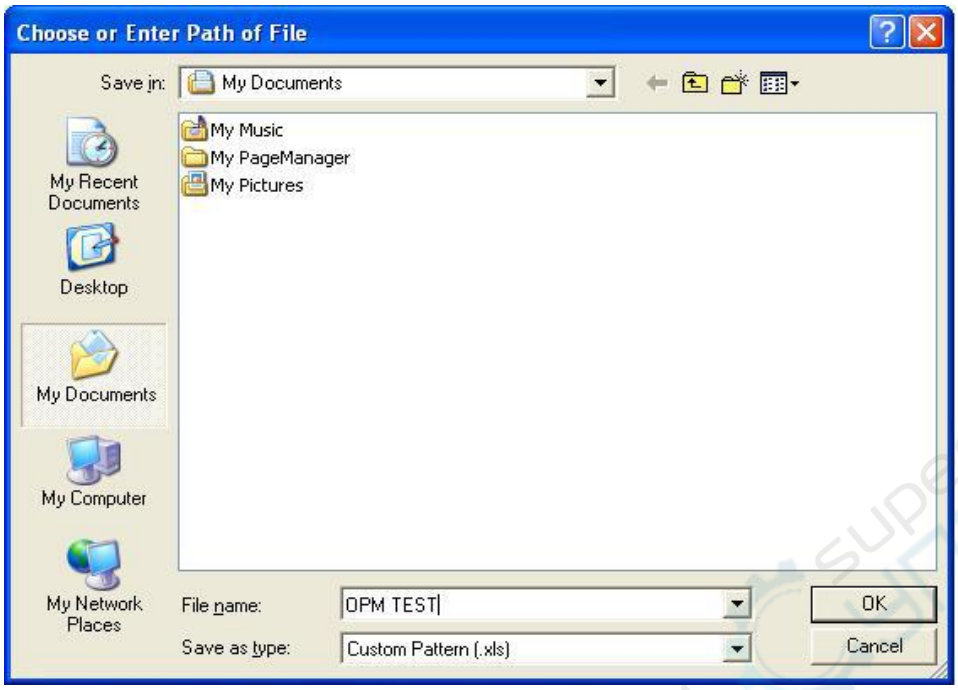
Click button to appear save box in the image 5-35. You can operate the file name, save path, etc.

Test Report

Company: *****
Test Operator: *****
Instrument Model: *****
Notes: ***
Instrument Serial Number: HIMM13121940

NUMBER	WAVE LENGTH	POWER	Relative POWER	REF	DATA/TIME	NOTE
1	1300	-60.87dBm	9.13dB	-70.00dBm	2013/12/6 15:12	
2	1300	-61.41dBm	8.59dB	-70.00dBm	2013/12/6 15:12	
3	1300	-61.41dBm	8.59dB	-70.00dBm	2013/12/6 15:12	
4	1300	-61.31dBm	8.69dB	-70.00dBm	2013/12/6 15:12	
5	1490	-61.20dBm	-2.88dB	-58.32dBm	2013/12/6 15:13	
6	1625	-61.34dBm	-2.92dB	-58.42dBm	2013/12/6 15:13	
7	850	-55.18dBm	14.82dB	-70.00dBm	2013/12/6 15:14	
8	850	-55.04dBm	14.96dB	-70.00dBm	2013/12/6 15:14	

Image 5-34



ima ge 5-35

(3) Power reading and calibration

Click the “Power Read” button, the current absolute optical power value, tested in the instrument power meter module, will appear in the empty box;

Click the “Wave Selection” drop-down box to select the current test wavelength in the instrument power meter module;

When the absolute optical power value in the instrument power meter module needs calibration, first to choose the needed wavelength in the “Wave Selection”, and then to fill in the absolute optical power value in the blank edit box. Next to click the “Power ADJ” button is ok. (image 5-36)

Image 5-36

(4)Time setting

When you need to set the time on the meter, you can click the “Get Time” button. Then the system will appear the current time automatically (image 5-37); Now you click the “Time Set” button to appear the dialogue box and then click OK. (Image 5-38)

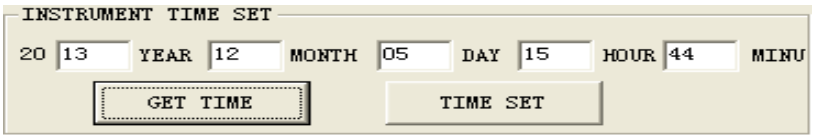


Image 5-37

Image 5-38

(5)Close Software

Click the “Exit”button is OK.

vi、Troubleshooting

Fault Situations	Possible Cause	Solutions
Weak or no LCD display after the instrument turning on	① Low battery	① change battery
Unstable source output power	① The internal source connection port is severely polluted ② If the proper patch cord port is connected with the source port	① Using the special cotton swab to clean the port ② Using the correct patch cord port
Large optical power meter test error	① The internal source detecting port is severely polluted	① Using the special cotton swabs to clean the port
The instrument can’t be turned on after the USB adapter connection	① Mini USB cable is damaged ② USB adapter is damaged	① Change Mini USB cable ② Change to 5V USB adapter
Others		please contact the company after-sales or technicians to solve

vii、Care and Maintenance

1. Keep the sensor port clean from pollution; not use dirty and non-standard fiber-optic adapter connector; not to be inserted to the badly-polished port. Otherwise the sensor port can be damaged and the whole system performance will be affected.
2. Insist on the use of one fiber-optic adapter as possible.
3. Once the instrument is not used, cover it with dust cap to keep the port clean

and to avoid measurement deviation due to the long exposure to the air.

4. Carefully insert or remove the optical adapter connector to avoid port scratches.

5. Clean the optical adapter connector regularly and use the special cleaning swab to wipe around it gently.

viii、Quality Assurance

To repair JW3209 by yourself is not advised.

1. Instrument warranty is within 18 months against shipment.

Joinwit Company promises 18 months product warranty against shipment. If the product has quality problem within warranty time, it will be properly repaired or changed. But in any case, the company responsibility is within the product purchase price.

2. If the instrument has problems in the use, please see the solutions in the troubleshooting. Then again the problem remains, please contact the company marketing department and the agents around instead of opening the instrument by yourself.

3. If the quality failure appears, the instrument will be repaired or replaced for free. This promise is only valid in the condition that the instrument is properly used and has no damage.

JW3209 warranty does not cover the problem or failure caused by the following reasons:

(1)To make unauthorized repair or modification to the instrument

(2)The instrument is improperly or negligently used or due to the accident, etc.

Warranty Registration Card

For every Joinwit product, it has a warranty registration card. Please send it to the company together with the purchase invoice copy after filling in so that we can have a root record of your instrument after the future maintenance, technological innovation, calibration and so on.

Attachment1 Product Warranty Card

Joinwit Optoelectronic Tech, Co., Ltd

Product warranty card

Product model：_____

Product serial number：_____

purchase date：_____

User name：_____

Tel：_____ **Fax：**_____

Address：_____

Zip code：_____ **E——mail:**_____

Stamp：

（Please keep this part.Cut down the below part and send is to us）……

（Cut along the dotted line and send it back to our company）

Paroduct model：_____

prduct serial number：_____

purchase date：_____

User name：_____

Tel：_____ **Fax：**_____

Address：_____

Zip code： **E——mail:**

_____ _____

Note：Please send it to us within one month after buying,otherwise it’s not valid

Attachment2 Warranty Conditions

Joinwit Optoelectronic Tech, Co., Ltd

Warranty conditions

warranty：
Within 18 months after buying date

Warranty terms：

i. In the warranty period, if the product failure occurs under normal use, the user can produce this warranty card and invoice or receipt (copy) to enjoy free repair service.

ii. In the following situations, the repair is charged. A certain material fee, maintenance fee and freight occur:

1、 The product failure occurs under normal use, but not within the warranty period.

2、 Not produce this warranty card or the warranty card is missed, altered or unclear filling in.

3、 Using under non-normal conditions, such as man-made damage, high temperature, pressure, humidity. Normally a certain maintenance fee is charged based on different situations.

4、 Failure or damage caused not by the product quality problem.

5、If the user doesn't operate the instrument according to the instructions and written precautions, then the failure or damage occurs.

iii. Our company will not repair the instrument in the following circumstances:

1、 Make unauthorized repair or modifications to the instrument.

2、 The product is not manufactured or sold by our company.

（Please keep this part.Cut down the below part and send it to us）
（Cut along the dotted line and send it back to our company）

TEL：021-51591648
FAX：021-51591519
HTTP：www.joinwit.com
E-mail: joinwit@joinwit.com