

Optical Power Meter With VFL

User Manual

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1. Summary

Optical Power Meter, a new generation of high-performance optical network test meter, with the characteristics of excellent performance and fast filed-test, has adopted the latest laser exploration and processing technology. It is a compositive optical power meter aimed at optical network maintenance, equipment research and development.

It can be used to test optical power within the range of 800~1600nm wave length, with the unit as μ W,dB and dBm. Its display resolution level and test accuracy are high. There are 850nm, 980nm, 1300nm, 1310nm, 1550nm, 1490nm six kinds of wavelength calibration points. It can be used for linearity and non- linearity test and it can display both direct and relative test of optical power. Meanwhile it also has storage, page up/down functions for the test figure. The instrument is small, light and easy to carry with large LCD screen. It can be widely used in the test of LAN, wide-area network, metropolitan network, CATV net or long-distance fiber net and other situations. It can be used to distinguish the fiber, to test fiber loss accurately, to check the fiber continuity and to help to evaluate the transmission quality of fiber chain with the laser source.

2. Functions

- 2.1 Multi-wavelength precise measurement
- 2.2 Absolute power measurement of dBm or μW
- 2.3 Relative power measurement of dB
- 2.4 Real-time clock function, display the current time. It can record the test time
- 2.5 Enable to memorize and manage 255 groups of measured data
- 2.6 Low voltage warning display
- 2.7 3 minutes automatic shutoff
- 2.8 Applicable to versatile adapters (FC,ST, SC)
- 2.9 Portable, large LCD display
- 2.10 LED backlight display
- 2.11 Back light automatic off after 60 seconds
- 2.12 Communicate with the management software through USB connector,It can calibrate the meter,upload test results etc.
- 2.13 Through USB connector. It can charge the meter
- 2.14 Visual Fault Locator Function

3. Specifications

3.1 Wavelength range (nm): 800~1600;

3.2 Detector type: InGaAs;

3.3 Measurement range(dBm):-50~+26 or -70~+10;

3.4 Uncertainty:±5%;

3.5 Resolution:

Linearity display: 0.1%; Logarithm display 0.01 dBm

3.6 Communication: USB mode

Virtual serial port baud rate: 19200

3.7 Operating temperature ():0~+40

3.8 Storage temperature ():-10~+60

3.9 Auto shutdown duration (min):3 (When the auto shutdown function is open, this function is default after next turned on)

3.10 Battery-hold duration (h): no less than 30

Battery: 3.7V 1150mAh rechargeable lithium battery

3.11 Low voltage warning:≤3.2V

Auto shut off when less than 3.0V

3.12 Weight (g):260

3.13 Dimensions (L*W*H, mm): 175 × 79 × 40

3.14 Visual Fault Locator

Wavelength: 650nm±10nm

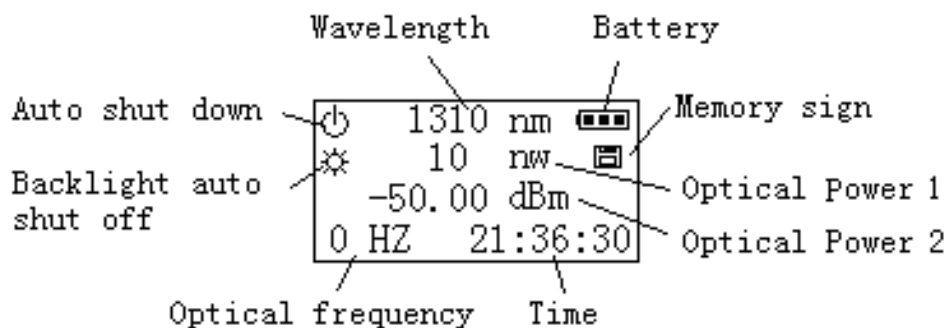
Light source: FP-LD laser

Output power: 1mW, 3mW, 5mW, 10mW,
15 mW ,20 mW (optional)

Connector: 2.5mm universal adapter

Working mode: CW or 2Hz modulation

4. Layout



Pic1 : LCD Display



Pic2: Apperance

5. Operation

1. On/Off

Press "⏻" button to turn on or turn off the tester.

Auto-off function: Press "⏻" button for more than 3 seconds, and the auto-off mark ⏻ will appear in the LCD, this means the auto-off function is working; If there's

no operation on the tester, it will shut off automatically after three minutes.

Close the Auto-off function: Press "⏻" button for more than three seconds, and when the mark ⏻ disappears from the LCD, the auto-off function was closed.

2. Backlight:

System defaults that backlight is on and backlight auto shut off function opens. The LCD shows ☀. Press this key to control the backlight on or off.

Close backlight auto shut off function :In the backlight auto shut off using mode, press ☀ button for more than 3 seconds, the ☀ sign disappeared, then backlight auto shut off function was closed.

Open backlight auto shut off function :In the backlight auto shut off not used mode, press ☀ button for more than 3 seconds, the ☀ sign appeared, then backlight auto shut off function was opened.

3. Select optical power measurements mode


System default the absolute optical power measurements, optical power 1 shows the linear power value (xW), optical power 2 Logarithmic power value (dBm),. Press

dBm/▲ key to switch to the relative power measurement mode. At this time, the optical power 1 the relative power (dBm). optical power 2 shows logarithm value (Db).


4. Select wave length

You can choose one kind of four wave length, namely 850nm, 980nm, 1300nm, 1310nm, 1490nm and 1550nm, by pressing this $\lambda/\blacktriangledown$ key and the wave length which is chosen will be displayed in the top right corner of the LCD screen.



5. Save the current test figure

You can save the current test figure when you press the **F/save** key and there is the  sign displayed in the top left corner, when the sign disappear, means the data been saved. The system can save 255 groups result. The first stored figure will be replaced by the last one if the stored figures exceed 255 groups.

6. Browse the saved records

Press the **F/save** button more than 3 seconds ; it will display checking sign  on the LCD. It indicates the system is in the reading status. The latest storage data will be displayed in the LCD. Press it again to get back to the normal state. In the checking data mode, press the "dBm/▲" key to browse the front page; press " $\lambda/\blacktriangledown$ " key to browse the next page.

7. The low voltage indication function

The LCD will display the  sign when the battery voltage is under 3.0 V. If you do not charge it now, it will be auto off after short time working. Charge the tester until the battery display . Or the charger's LED turns off from red.

8. Time adjusting

Press “dBm/▲” button and “λ/▼” button, and lift up the two keys simultaneously to get into the time adjusting state. Press “dBm/▲” button to choose time you want to adjust, press “λ/▼” button to adjust chosen time. Press “F/SAVE” button, and lift up the two keys simultaneously to set the time and quit to the normal state.

9. Visual Fault Locator function


Press “VFL” key, the VFL indicator is on, the locator output 650nm red laser. Press the “VFL” key again, the locator and indicator are blinking at the same time, the frequency is about 2Hz, which is convenient to check line faults.

Press the “VFL” key the third time, then the VFL indicator is off, and the locator laser is off..

6. Maintenance

1. Please keep the sensor surface clean, do not use the dirty or nonstandard adapter tie-in, do not insert into the port which is poorly polished, otherwise, it will damage the sensor end.
2. Please operate carefully to replace adapter for different linkers. The spare adapter should be stored hermetically to avoid the dust.
3. Please cover the dustproof cover to keep the interface clean when the optical power meter is not used. Please do not put the sensor in the air, or something of test error will be caused because of the dust.
4. Please clean the sensor end regularly.
5. In order to make the service time of battery as long as possible. Please take out the battery if it is not used for long.

7. Charge battery

During the operation, if the low battery power mark  appears, please turn off the tester, and charge the battery.

The tester adopts 1150mAh rechargeable Li-con battery. In order to protect the tester and ensure the accuracy of the testing results, Please do not operate the tester when charging.

8. Faults & Solutions

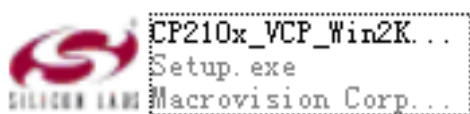
Faults	Reason	Solution.
LCD display is dark.	Low voltage.	Recharge battery.
Big error for test result.	Sensor's surface is dirty.	Clean sensor.
There is nothing displayed when switch on.	The battery is under voltage/other reason.	Switch on it again or recharge battery.

9. Usage of Management Software

Please copy Optical Power Meter management software V1.2.exe file and CP210x_VCP_Win2K_XP_S2K3 setup.exe file to PC from CD

9.1 Installation of Driver

Double click icon



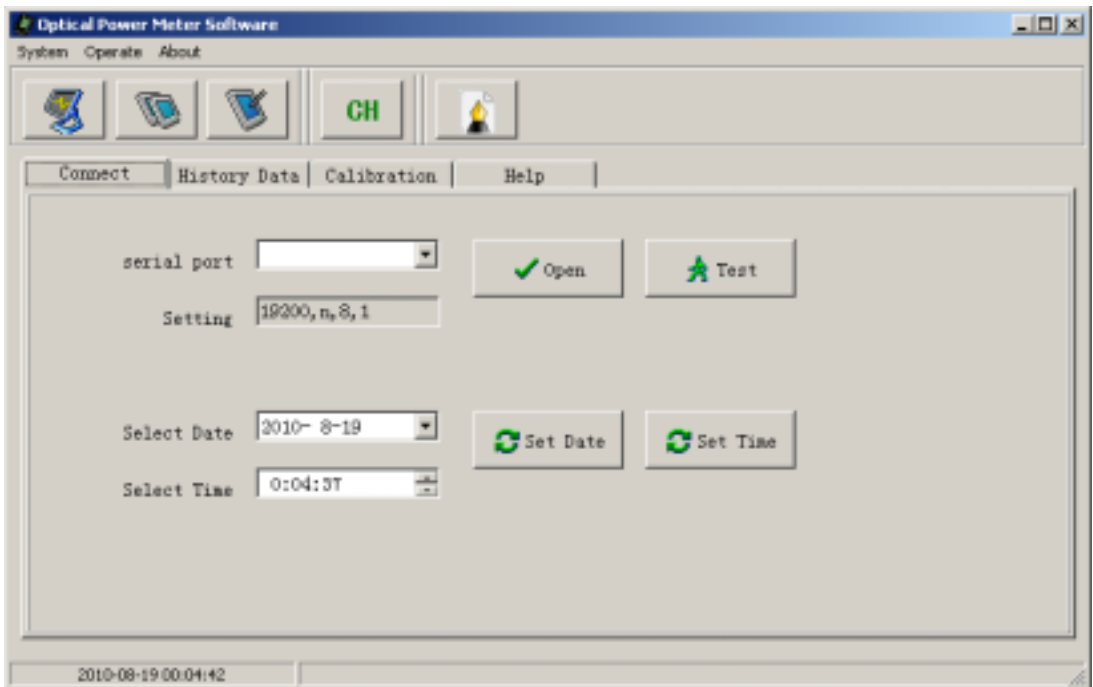
(CP210x_VCP_Win2K_XP_S2K3 setup.exe), starts to install the Driver , you can operate as the instructions.

9.2 Usage of the Management Software

Connect Optical Power meter with PC via USB cable, power on the meter.

Then double click the “Optical Power Meter management software V1.2.exe”, which display as following:

9.2.1 Connect power meter



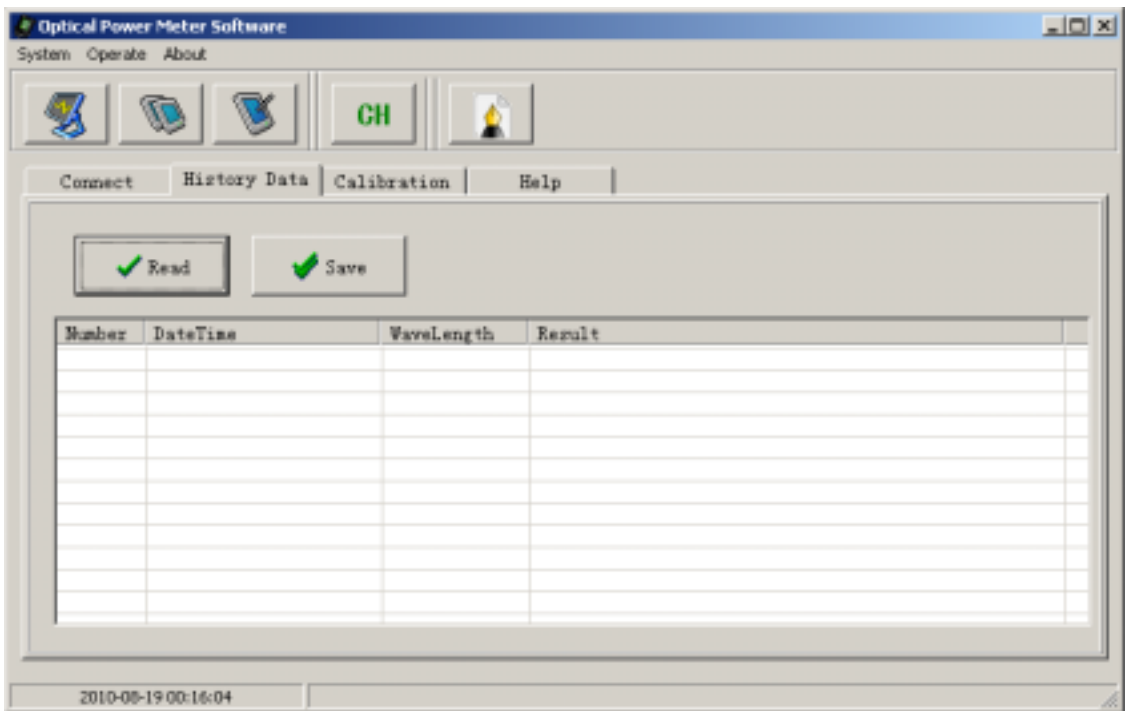
Select Virtual serial port, often choose the serial port 3.

Click "open" icon to open the com3, then you can click "test" icon on the soft to test the connection of them. if they connects successfully, the software will prompt: successful connection.

Select current date,and the click "set date" icon to set the Optical Power Meter's real date.

Select current time,and the click "set time" icon to set the Optical Power Meter's real time.

9.2.2 Read history data



Click “Read” icon, 255 groups test results will be displayed automatically. Click “Save” icon, which can save the record to EXCEL table for the convenience of management and transmission.

9.2.3 Calibrate power meter

Note: You can use “data calibration” in the software when the tester needs to be calibrated. You do not need to use it during the normal test.



1310nm wavelength calibrate example:

Use a standard optical power meter test the value of a stability laser source on 1310 wavelength (such as **-05.60dBm**). Record test results.

Remove the standard optical power meter, connect laser source to the optical power meter which to be calibrated. Select 1310nm wavelength. Behind the text box at a wavelength of 1310 input **-05.60** (Please enter in strict accordance with the format), click “calibration” icon. If calibrated successfully, the software will prompt: successful. Otherwise, please try again.

Other wavelengths calibrate is the same operation.