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GRANDWAY OPTICAL INSTRUMENTS SERIES

User's Guide to the FHS2T01

Multi-wavelength Laser Source

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User's Guide to the FHS2T01

Dual-wavelength Laser Source

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1 Introduction

The FHS2T01 multi-wavelength laser source offers excellent stability, portability and facile adjustments for accurate optical fiber testing. Single output connector serves multi wavelengths, 1310nm,1490nm & 1550nm.

FHS2T01 can be used to test single mode optical fiber of long distance and local network. Also it can work with optical power meter to measure the loss of optical fiber.

2.Warranty

Three Years Limited Warranty

Grandway products are warranted against the defective components and workmanship for a period of three years from the date of delivery to the original customer. Any product found to be defective within the warranty period would be returned to **Grandway** authorized service center for repair, replacement and calibration.

Exclusions

The warranty on your equipment shall not apply to defects resulting from the following:

- Unauthorized repair or modification including battery replacement
- Misuse, negligence, or accident

Returning Product

To return product, you may contact Grandway to obtain additional information if necessary. To serve you better, please specify the reasons for the return.
All delivery and mails should be sent to the following address:

Grandway Customer Service
6F, Xin'an building No. 99 Tianzhou Road
Shanghai, 200233 P.R. China

Contact Us

Tel: +86-21-54451260/61/62/63
Fax: +86-21-54451266
E-mail: heyong@grandway.com.cn
or
overseas@grandway.com.cn
Website: www.grandway.com.cn

3 Safety Information

Warnings!

- Never look directly into optical outputs or a fiber while the equipment is on. Invisible laser beam may damage your eyes.
- Do not short-circuit the terminal of AC adapter / charger and the batteries. Excessive electrical current may cause personal injury due to fumes,electric shock or equipment damage.
- Connect DC power cord with the equipment and wall socket properly. While inserting the DC plug, make sure there is no dust or dirt on the terminals and both plugs are fully seated. Incomplete engagement may cause fuming, electric shock or equipment damage and may result in personal injury.
- Do not operate the equipment near hot objects, in hot environments, in dusty/ humid atmosphere or when condensation is present on the equipment. This may result in electric shock , product malfunction or poor performance.

4 Preparing for Operation

4.1 Unpacking the instrument

Packing material

We suggest that you keep the original packing material. Using the original packing material is your guarantee of protecting the instrument during transit.

Checking the package contents

The standard accessories of FHS2T01 are as follows:

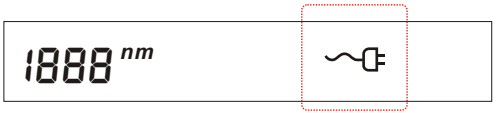
- Main unit(including battery)
- Quality Check Report
- DC 6V Adapter
- Carrying Case
- User's Guide
- Connectors(FC/PC,SC/PC,ST/PC)

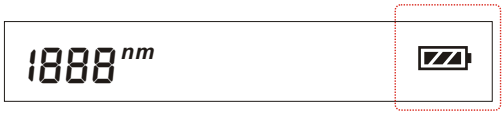
Checking for damage in transit

After unpacking the instrument, check to see whether it was damaged in transit. This is particularly likely if the outer casing is clearly damaged. If there is damage, do not attempt to operate the instrument or to repair it without authorization. Doing so can cause further damage and you may lose your warranty qualification.

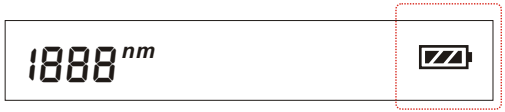
4.2 Power Supply

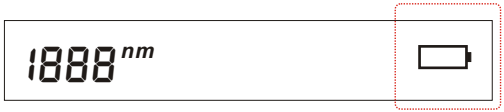
There are battery indicator and power plug on the screen to show the power supply. When you use the DC 6v charger, there is no battery indicator on the screen. When you do not connect the DC 6v charger, the adapter indicator will disappear on the screen.





When you use the battery, the battery indicator on the screen will show the remaining charge. An empty battery indicator means the power is almost out. When the battery charge is extremely low to supply the necessary power, the instrument will automatically switch off after several beeps of the buzzer. Please change the battery or recharge it





5 Operation

5.1 Display and controls

5.1.1 Front(Panel Board)

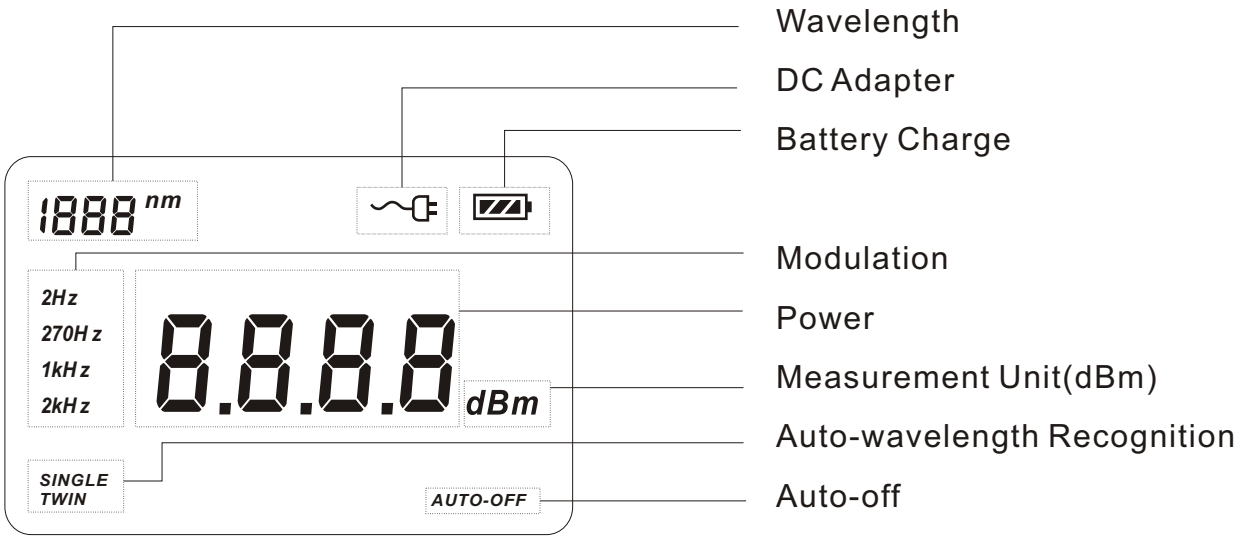


No.	Key	Function
1	λ	Wavelength Shifting Key: Switches working wavelength between 1310nm,1490nm and 1550nm.
2	CW/Hz	Modulated Wavelength Shifting Key: Switches modulated wavelength and continuous wavelength.
3	▲ ▼	Output Power Increase and Decrease: Increase or decrease output power by 0.1dB and the adjustable range is ±3dB.wavelength.
4	TWIN	SINGLE: Auto-wavelength recognition is off. TWIN: Auto-wavelength recognition is on.
5	☼	Switches backlighting on/off.
6	>2s PERM ON/OFF	Switches Instrument on/off. Long keypress while powering on to activate the instrument without Auto-off function.

5.1.2 Back & top


Connector
Battary Plate
(including 2 units of AA recharging batteries)
DC 6v power input

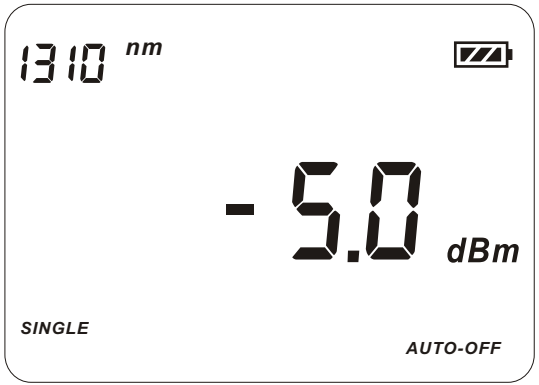
5.1.3 LCD


1888 nm
2Hz
270Hz
1kHz
2kHz
8.8.8.8
dBm
SINGLE
TWIN
AUTO-OFF
Wavelength
DC Adapter
Battery Charge
Modulation
Power
Measurement Unit(dBm)
Auto-wavelength Recognition
Auto-off

5.2 Turning the instrument on and off

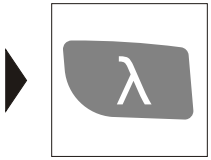


Press the “ON/OFF” key briefly.
The instrument powers on.(See the figure)
Press the “ON/OFF” key briefly again.
The instrument powers off.

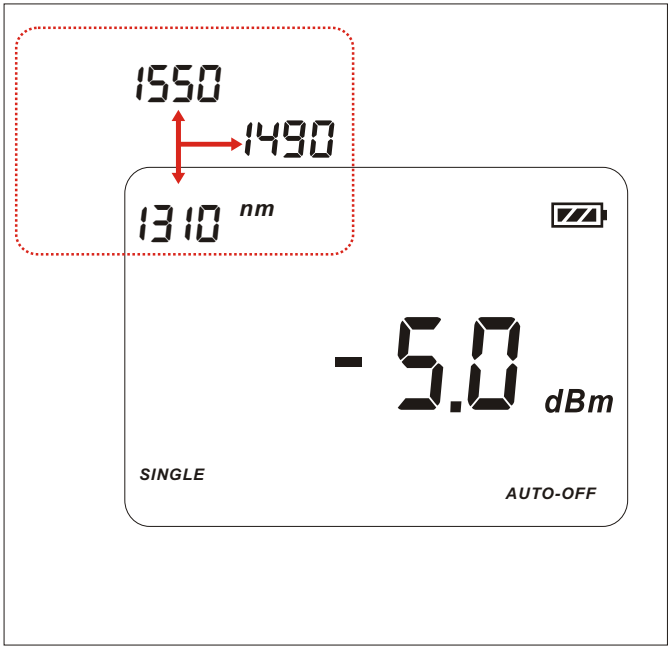


Note: Auto-off function
1 The instrument powers off automatically if no key press in 10 minutes.
2 Press the “ON/OFF” key for about 2 seconds to power on the instrument with "Auto-off" function deactivated.

5.3 Switching the wavelength



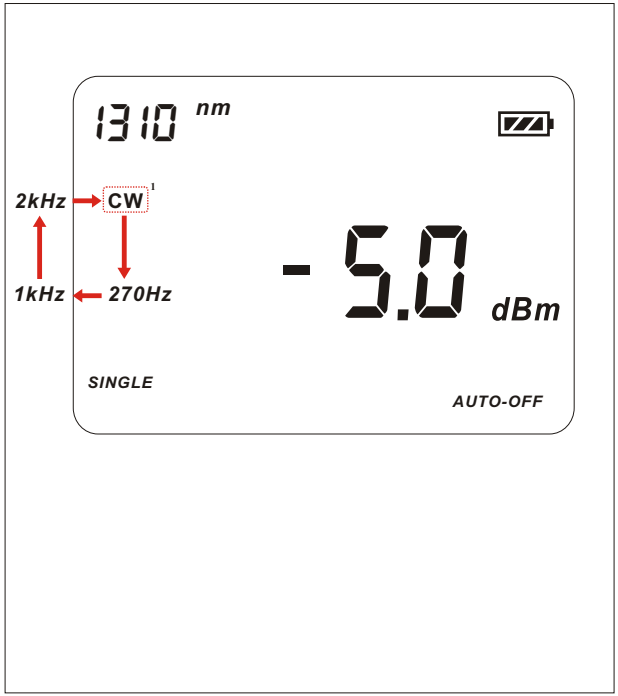
Press the “λ” Key to switch the wavelength between 1310nm,1490nm and 1550nm.



5.4 Frequency Output

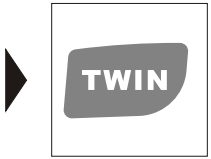


The instrument defaults to CW when it switch on. When it is set to CW, there is no frequency on display.
Press the "CW/Hz" Key to select the output among 270Hz, 1kHz and 2kHz.



1."CW" is not displayed on the LCD

5.5 Auto-wavelength Recognition



Press the "TWIN" Key to tun on and off the auto-wavelength recognition function.

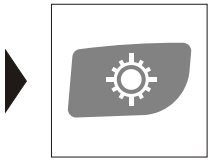
Note:

1) It is suggested to turn off the "TWIN" code when you do not use it. The optical power output of laser source will be fluctuated.

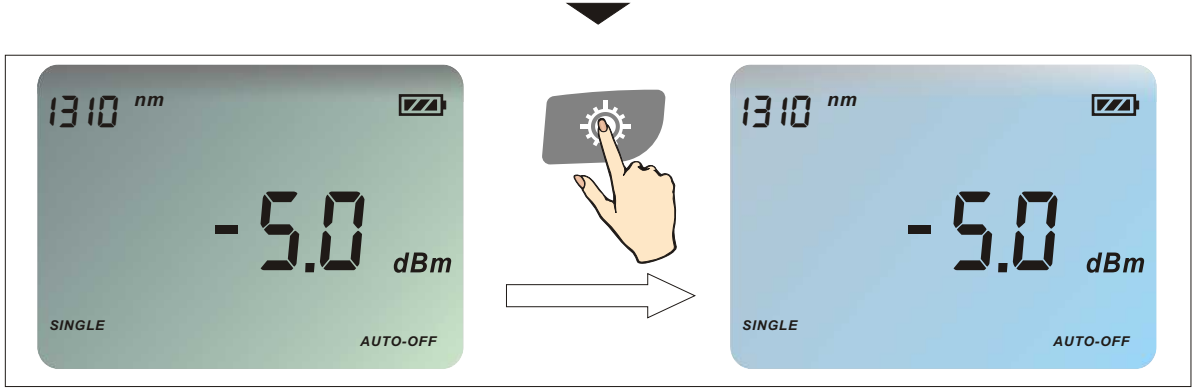
2) The function of "TWIN" and Modulation cannot work together. When the "TWIN" is on, modulation of laser source module is closed automatically.

3) Wavelength will be shifted automatically according to the recognition when the "TWIN" of power meter module is on. In another word, the modulated signal of 270Hz, 1kHz and 2kHz cannot be recognized and received at the moment.

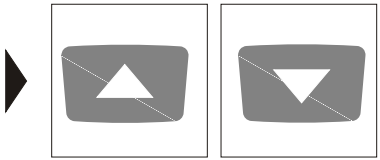
5.6 Switching backlighting of the LCD on and off



Press the backlighting Key to switch the backlighting of the LCD on and off.

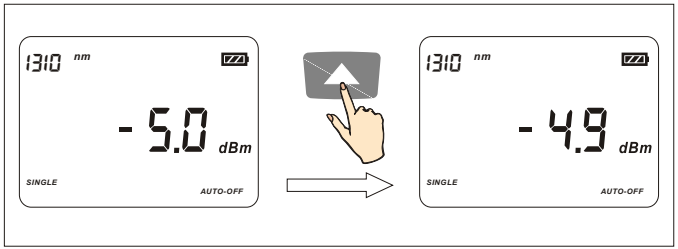


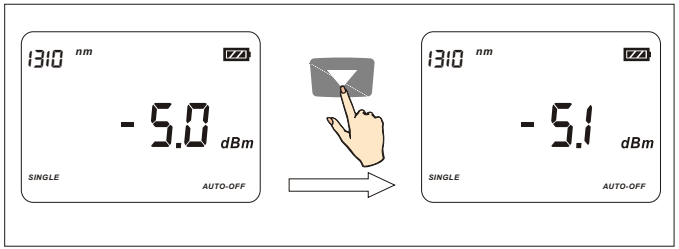
5.7 Setting the output power



Press the “ ” key to to increase the output power. The measurement range is from -2 dBm to -8 dBm. Each time you press it , the value increases by 0.1 dBm.

Press the “ ” key to decrease the output power. The measurement range is from -2 dBm to -8 dBm. Each time you press it, the value decreases by 0.1 dBm.





5.8 Connecting with Optical Power Meter

It can work with optical power meter to measure the loss of optical fiber accurately.



6 Specifications

Optical Specifications

Model	FHS2T01
Laser	Class I
Spectral Width	3nm typical value
Stability (15 min preheat @ 25℃)	±0.05dB/15min ±0.1dB/5hr @1310nm ±0.1dB/15min ±0.2dB/5hr @1490nm ±0.05dB/15min ±0.1dB/5hr @1550nm
CW output power	-5.0dBm±1dB
Modulated Wavelength	270Hz,1kHz,2kHz
Available Connector	FC/PC,SC/PC,ST/PC interchangeable connectors(APC is available at the time of ordering)
Power	2 units of AA recharging battaries

General Specifications

Operation Temperature	-10℃~+50℃
Storage Temperature	-20℃~+70℃
Humidity	<90%
Size(H×W×D)	160mm×76mm×45mm
Weight	0.26 kg(including batteries)

NOTE: Please be aware that Grandway will not be responsible for the damage caused by customer's improper usage of AC power supply, especially when the instrument is working by internal batteries. The working hours of instrument might show a difference under a different circumstances and batteries status

7 Maintenance

- Please disconnect the DC adapter/charger and cover the protective dust cap once you finish using.
- It is a good idea to clean the connector and the instrument when they get dirty through use. Optical cleaning pads and anhydrous alcohol is recommended. And please be careful not to get the detergent inside the instrument.
- To ensure the measurement accuracy, please send the instrument to Grandway Service Center for calibration once a year.

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