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GRANDWAY OPTICAL INSTRUMENTS SERIES

# *User's Guide to the FHS2Q01/02F*

## *Quad-wavelength Laser Source*

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## 1 Introduction

FHS2Q series Quad-wavelength Laser Source offers accurate & stable output optical power. The Quad-wavelength is provided by 2 output ports. FHS2Q01 offers 850nm/1300nm/1310nm/1550 output wavelength. FHS2Q02 offers 1310nm/1490nm/1550nm/1625nm output wavelength.  
Executive Standard: EN60825-1:2007

### Features:

- Easy-to-use, straight forward operation
- Eye-catching handheld package
- LCD backlight for easy operation in darker environments
- Rechargeable battery inside
- Three-year warranty and recommended calibration interval.

## **2.Warranty**

### **One Year Limited Warranty**

**Grandway** products are warranted against the defective components and workmanship for a period of one year 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: +86-21-67756460/61/62  
E-mail: [overseas@grandway.com.cn](mailto:overseas@grandway.com.cn)  
Website: [www.grandway.com.cn](http://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 *FHS2Q01/02F* are as follows:

- Main unit(including battery)
- Quality Check Report
- DC 6V Adapter
- Carrying Case
- User's Guide

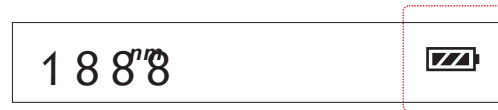
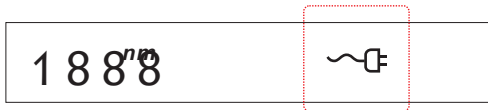
#### **Checking for damage in transit**

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.

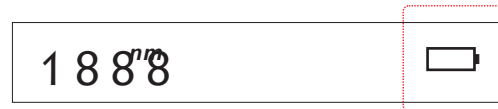
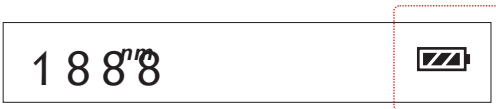


## 4.2 Power Supply

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 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 . Please change the battery or recharge it



## 5 Operation

### 5.1 Display and controls

#### 5.1.1 Front(Panel Board)



No.	Key	Function
1		Switches Instrument on/off. Long keypress while powering on to activate the instrument without Auto-off function.
2		Switch between Single Mode and Multimode
3		Modulated Wavelength Shifting Key: Switches modulated wavelength and continuous wavelength.
4		Wavelength Shifting Key: Switches working wavelength between 850nm,1300nm,1310nm and 1550nm.
5		SINGLE: Auto-wavelength recognition is off. TWIN: Auto-wavelength recognition is on.
6		Switches backlighting on/off.

### 5.1.2 Back & top

850nm, 1300nm  
( FHS2Q01F )  
1490nm, 1625nm  
( FHS2Q02F )



1310nm, 1550nm

Battery Plate  
(including 2 units of AA recharging batteries)

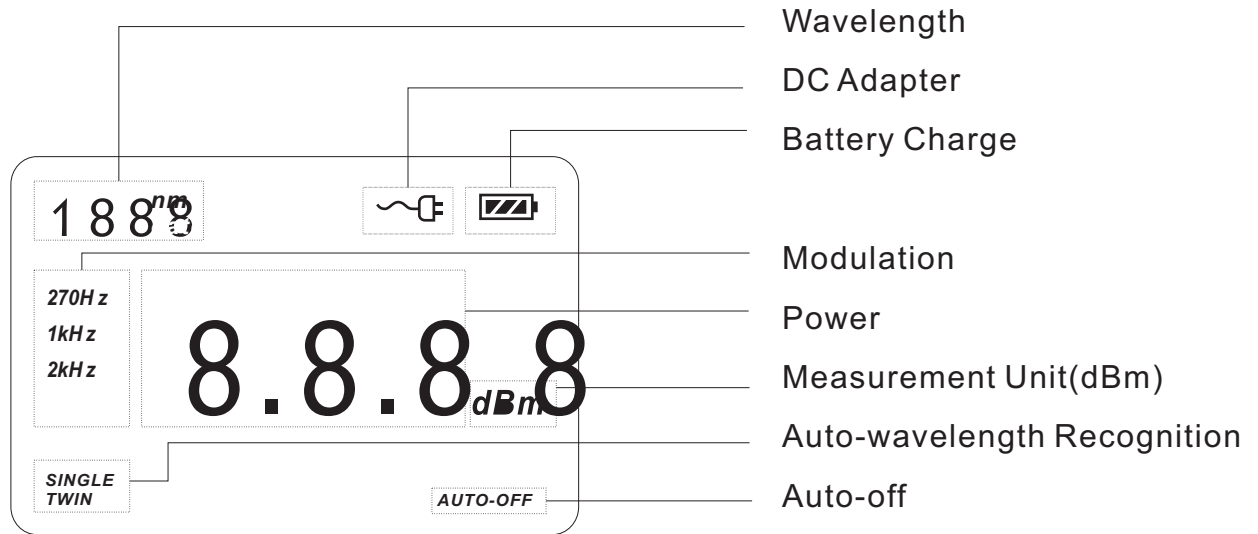
DC 6v power input

Charging Signal light (Red light blinking means charging, Green light means charging finish).

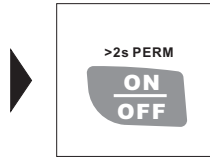
Standard Accessories:

FC/PC, SC/PC interchangeable connector, Manual, Carrying Bag, and Battery, Worldwide compatible AC/DC adapter, Test Report

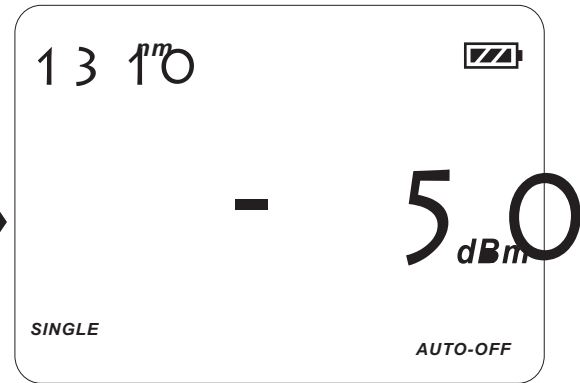
### 5.1.3 LCD



## 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.





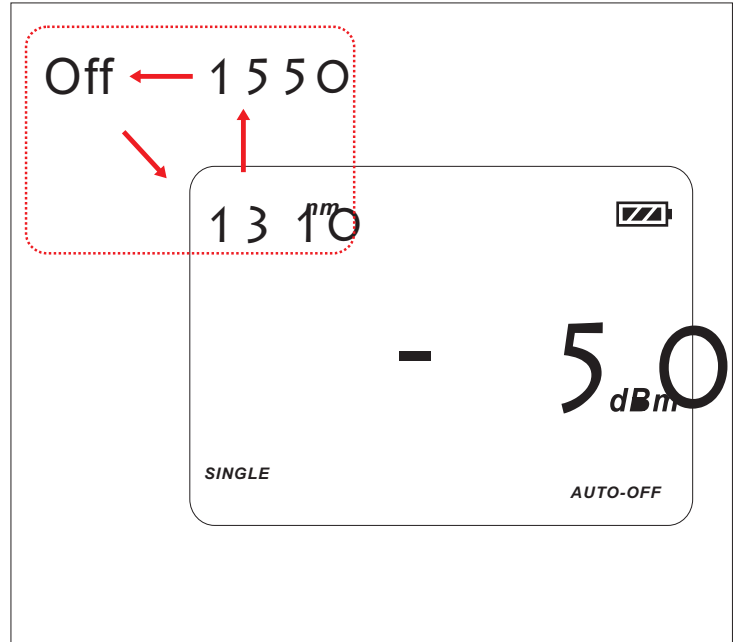
### **Note:** Auto-off function

- 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.

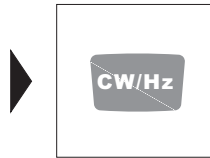
## 5.3 Switching the wavelengths

### 5.3.1 Switching the wavelengths in the in the "Singlemode"

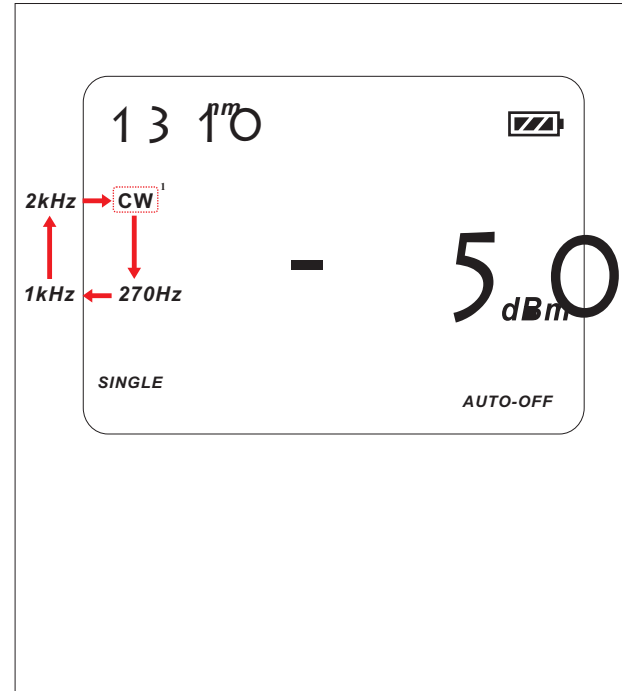
Press the  to "Multimode", then Press  Key to switch the wavelength between 1310nm, 1550nm and Off.



## 5.4 Frequency Output

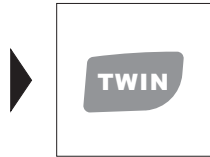


The instrument defaults to CW when it switch on. When it is set to CW, there is no frequency on display.  
Press the "CW/Hz" Key to select the output among 270Hz, 1kHz and 2kHz.



1. "CW" is not displayed on the LCD

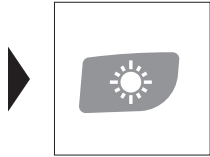
## 5.5 Auto-wavelength Recognition



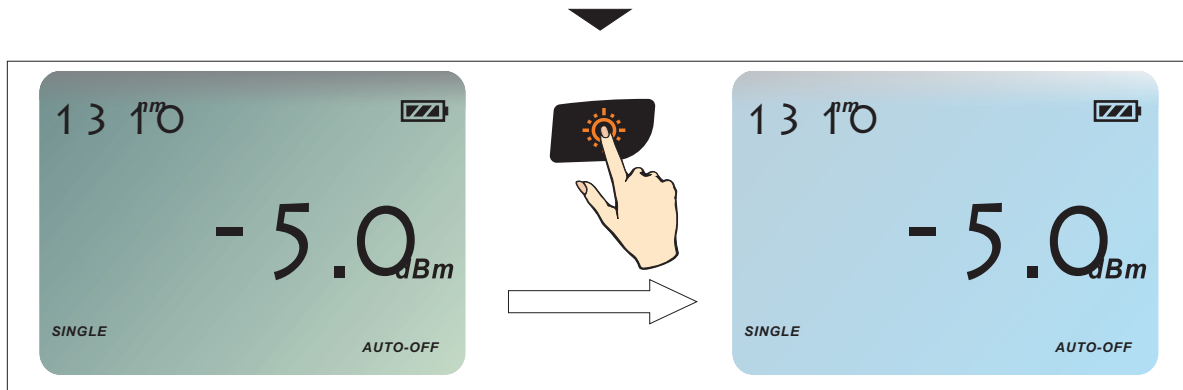
Press the "TWIN" Key to tun on and off the auto-wavelength recognition function.



## 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 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	FHS2Q01F	FHS2Q02F
Output wavelength (nm)	850/1300/1310/1550	1310/1490/1550/1625
Laser	Class I	
Spectral Width	3nm typical value	
Stability (15 min preheat @ 25°C)	±0.05dB/15min	±0.1dB/5hr
CW output power	-5dBm±0.5dB	
Modulated Wavelength	270Hz, 1kHz, 2kHz	
Available Connector	FC/PC, SC/PC Interchangeable connectors	
Power	2 units of AA recharging batteries	
AC Adapter	2Input: AC 100-240V 50/60HZ Output:DC 6V/1A	

## General Specifications

<b>Operation Temperature</b>	-10°C~+50°C
<b>Storage Temperature</b>	-20°C~+70°C
<b>Humidity</b>	<90%
<b>Size(H×W×D)</b>	160mm×76mm×45mm
<b>Weight</b>	0.27 kg(including batteries)

## **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 our Service Center for calibration once a year.

## 8 Trouble shooting

Malfunction Type	Possible Cause	Recommended solution	Remarks
Failure to turn on/off	No power input	Plug in battery or AC	DIY Available
	Battery exhausted	Charge battery	DIY Available
	Reverse-installed battery	Re-install battery	DIY Available
(Still doesn't work)		Return to factory	
On&off disorder	Low battery	Charge battery or use AC power supply	DIY Available
Inaccurate measurement	Contaminated connector	Swab the dust by using an alcohol-impregnated thin cotton swab	DIY Available
	Connector unfitted	Re-install the connector	DIY Available
Error display	Humid environment	Try later while it is not too humid	DIY Available
	Magnetic field environment	Stay far away from magnetic field	DIY Available
	Metal dust environment	May cause damage on mainboard	Return to factory
	Humid environment	Try later while it is not too humid	DIY Available
On&off failure	Keypad short circuit	Replace keypad	Return to factory

**Warm advice:**This test instrument is available for single-mode optical fiber measurement only.