FI-SERIES LIVE FIBER IDENTIFIER

Compact live fiber identifier with integrated optical power meter

USER MANUAL

ZP-PKG-0535
REV 1

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Trademarks JDSU is a trademark of JDSU in the United States and other countries.

FCC Information Electronic test equipment is exempt from Part 15 compliance (FCC) in the United States.

European Union Electronic test equipment is subject to the EMC Directive in the European Union. The EN61326 standard prescribes both emission and immunity requirements for laboratory, measurement, and control equipment. This unit has been tested and found to comply with the limits for a Class A digital device.

Independent Laboratory Testing This unit has undergone extensive testing according to the European Union Directive and Standards.

TABLE OF CONTENTS

Chapter 1 **OVERVIEW** 4–6

- FI-Series Live Fiber Identifier (LFI) 4
- Features and Components 5
- Specifications 6

Chapter 2 **OPERATION** 7–11

- Live Fiber Identifier (LFI) 7
- Optical Power Meter (OPM) 8
  - Controls 8
  - Display Indicators 8
  - Absolute Power 9
  - System Power Measurement 9
  - Relative Power 10
  - Reference Measurement 10
- Replacing Batteries 11

Chapter 3 **SOFTWARE** 12–14

- Software Installation 12
- Hardware Recognition 13
- USB Optical Power Meter Software 13
  - Software Menus 13
  - Software Controls 14
  - Reports 14

OVERVIEW

1

FI-SERIES LIVE FIBER IDENTIFIER (LFI)

The **FI-Series Live Fiber Identifier** is a compact portable device that integrates **live fiber identification and optical power measurement** capabilities into a single tool. This versatile tool can be used to determine live or dark optical signals on a fiber cable without disrupting network traffic. The device will also display, store and recall optical power measurements for each of the wavelengths chosen by the user. The stored measurement data can be exported onto a PC with a simple USB connection. In addition, the device is also compatible with FiberChek2 software for integrated inspection and testing capabilities.

Live Fiber Identifier (LFI)

Power Meter (OPM)

FI-Series Live Fiber Identifier Features and Components

LFI Specifications

Dimensions	216 x 60 x 38 mm (8.5 x 2.35 x 1.5 inch)
Weight	135 g (4.8 oz) with two AA alkaline batteries
Detection sensitivity (typical)	–20 dBm @ 1310 nm, –30 dBm @ 1550 nm
Insertion loss (typical)	1310 nm: < .2 dB, 1550 nm: < 2 dB
Detected wavelengths	850 to 1700 nm
Detected tones	270 Hz, 330 Hz, 1kHz, 2 kHz
Standard cable diameter range	250 µm – 3 mm

OPM Specifications (VP-60)

Dimensions	171 x 42 x 25 mm (6.8 x 1.7 x 1.4 inch)
Weight	100 g (3.5 oz) with two AA alkaline batteries
Connector input	1.25 mm and 2.5 mm available
Measurement types	dB, dBm
Detectable optical power range	–65 dBm to +10 dBm
Max. permitted input level	+23 dBm
Intrinsic uncertainty[1]	± 0.20 dB (± 5%)
Linearity[1]	± 0.06 dB (-50 dBm to +5dBm)
Standard wavelength settings	850, 980, 1300, 1310, 1490, 1550, 1625 nm
Wavelength and modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz
1300, 1310, 1490, 1550, 1625 nm	–60 to +10 dBm
850, 980 nm	–55 to +10 dBm

[1] *Under the following reference conditions:–20 dBm (CW), 1300nm ± 1nm, 23°C ± 3K, 45 to 75% rel. humidity, 9 to 50µm fiber*

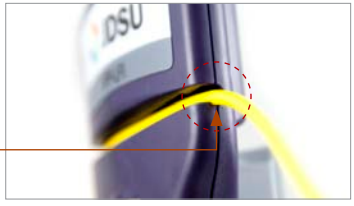
General Specifications

Power source	2 x AA alkaline batteries
Wavelength range	780 to 1800 nm
Battery life	> 70 hours
USB type	2.0
Screen size (W x H)	3.7 cm x 3.05 cm
Storage temperature	–20 to 70° C
Operating temperature	0 to 50° C

OPERATION

2

LIVE FIBER IDENTIFIER (LFI)



1. Turn power ON.
2. Insert fiber into **Alignment Groove**.
3. Pull the **Safe-latch Trigger** down until you hear a clicking sound to ensure **Ambient Light Shield** is securely engaged.
4. If traffic is present, an audible tone will sound and the device will display **"TRAFFIC"** on the top part of the screen.

OPTICAL POWER METER (OPM)

Note: *The LFI head can be removed by turning the* ***LFI Release/Attach Screw*** *located below the* ***Alignment Groove****.*

LFI Release/Attach Screw

Power Meter Controls

dB/dBm - Switches between absolute and relative power level display

λ - Selects available wavelengths or AUTO wavelength detect ON

- *Press and hold for 2 seconds to set a reference value ("REF" will flash when set)*

Power - Turns Power ON/OFF

- *Press and hold for 2 seconds to activate* ***PERM*** *(permanent on) mode*

RECALL - Press to retrieve stored OPM readings for the wavelength selected on the device. When in RECALL mode, the recalled reading values will be displayed on the screen and the corresponding memory number (i.e., MEM001) will be flashing. Use the up (Λ) and down (V) arrows to scroll through recalled readings.

STORE - Press to store optical power measurement reading on the device. The device will store up to 100 readings. Each stored value will be assigned a memory number (i.e., MEM001) that is located on the lower left corner of the display.

To erase stored readings on the device, press and hold both STORE and RECALL together for 2 seconds. An audible tone will confirm that the readings have been erased and the area in the lower-left corner will be cleared.

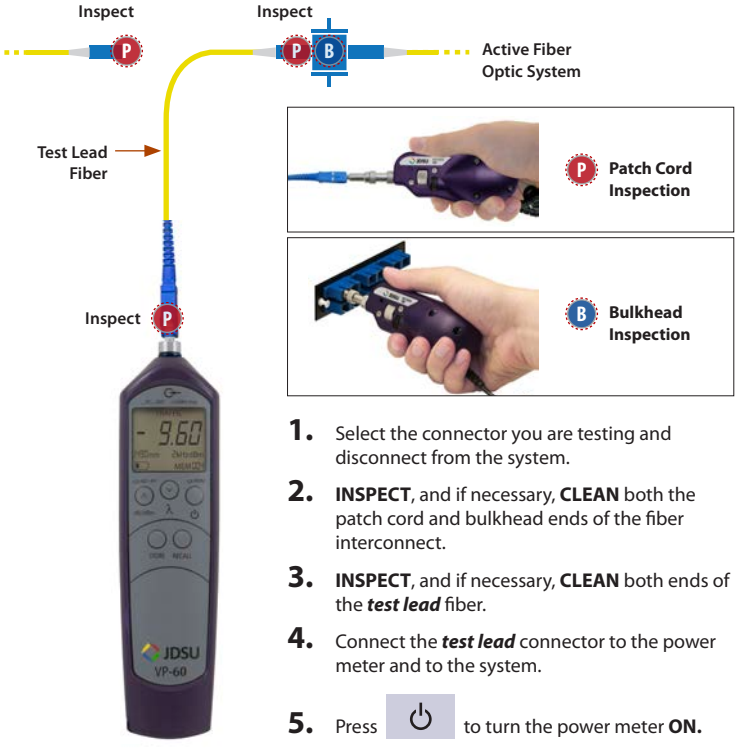
Display Indicators

TRAFFIC	Indicates optical signal traffic over fiber cable
-9.60 dBm	Current power level (also displays in dB)
LO	Too low for power level range
HI	Too high for power level range
AU	Automatic wavelength detected
1490nm	Selected wavelength setting
Battery Image	Battery power level
MEM004	Indicates number of stored readings
"MEM004"	Flashing - indicates stored reading being displayed
2kHz	Modulation tone

Absolute Power

The **absolute power level** *(system power measurement)* is the amount of optical power present in the system, measured in **dBm.** The source of this power is the transmitter or transceiver sending information through the system. This test determines whether the signal has enough power to operate the receiver or transceiver at the end of the link.

System Power Measurement



1. Select the connector you are testing and disconnect from the system.
2. **INSPECT**, and if necessary, **CLEAN** both the patch cord and bulkhead ends of the fiber interconnect.
3. **INSPECT**, and if necessary, **CLEAN** both ends of the ***test lead*** fiber.
4. Connect the ***test lead*** connector to the power meter and to the system.
5. Press ⏻ to turn the power meter **ON.**
6. Press λ to select wavelength.
7. Press **dB/dBm** to select **dBm.**
8. The optical power measurement is displayed on the power meter display.
9. Press **STORE** to save reading onto the device *(the saved number will flash once on the display).*

Relative Power

Acquiring **attenuation measurements** *(optical link loss)* on optical components or fiber optic links *(e.g., fiber connectors, cable assemblies, installed fiber optic links)* is done by measuring the **relative power level (dB)** at the far end of the link or device under test.

Relative power level *(attenuation measurement)* is the amount of power lost *(attenuated)* by the optical link being tested, measured in **dB.** The source of this power is typically a handheld optical light source. This test determines whether the optical link is constructed properly, either as a qualification test or when troubleshooting the network.

To measure attenuation, you must:

1. Get a **reference measurement**
2. Get an **attenuation measurement**

Note: *Loss is equal to the reference measurement minus the attenuation measurement.*

Reference Measurement

1. **INSPECT**, and if necessary, **CLEAN** both the ends of ***reference fiber 1***.
2. Connect the optical light source (OLS) to the power meter using ***reference fiber 1***.
3. Press ⏻ to turn both the power meter and light source (OLS) **ON.**
4. Press λ to select wavelength.
5. Press and hold **dB/dBm** on the optical power meter.

   REF *flashes briefly on the power meter indicate that the reference level is saved.*

   Note: **DO NOT** *disconnect the* ***reference fiber*** *from the light source (OLS).*
6. Press **STORE** to save reading onto the device *(the saved number will flash once on the display).*

Battery Replacement

Press the latch on the back cover plate and pull down to remove and obtain access to two AA batteries.

Note: *The LFI head must be removed to access the battery compartment.*

SOFTWARE

3

Software Installation

The following installation process will install FiberChek2, FiberChek2 – QuickView, and a USB Power Meter software application.

System Requirements
(Minimum)
- 50 MB of hard drive space for software

1. Insert the software installation disk into your CD drive.
2. Follow the setup wizard for FiberChek2:
   - At the *Welcome* screen click **NEXT>** to continue.
   - At the *Licence Agreement*, select **"I Accept the Agreement"**, then **NEXT>**.
   - At *Destination Location*, click **NEXT>**.
   - At *Select Components*, **check all that apply** then **NEXT>**.

     Note: *Recommend selecting FiberChek2 and FiberChek2-QuickView if using a digital microscope.*

     Select JDSU USB Power Meter Software to install the dedicated Optical Power meter software program.
   - At *Select Additional Tasks*, check **"Create a Desktop Icon"**, then **NEXT>**.
   - Select **Install**.
   - At the *Information* screen, click **NEXT>** to continue.
   - At the *Completing Wizard* screen, click **Finish** to complete the installation.

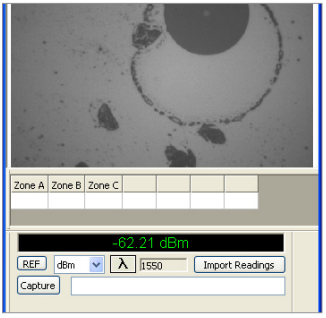
Hardware Recognition

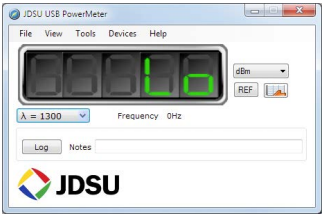
Use the included USB cable to connect to a PC/laptop. The device will be automatically recognized and function as an Optical Power Meter.

USB Optical Power Meter Software

As a power meter, this device can be used in conjunction with applications that are included on the installation disk (FiberChek2 and USB Power Meter). Both programs display the optical power readings from the OPM.

- **FiberChek2 and FiberChek2 – QuickView** are both programs that integrate OPM functionality with fiber end-face inspection, analysis and archiving. Using these programs also requires a JDSU digital microscope. Further information on these programs can be found in the FiberChek2 user manual.
- **The JDSU USB Power Meter** software is a stand-alone OPM program with dedicated OPM functionality

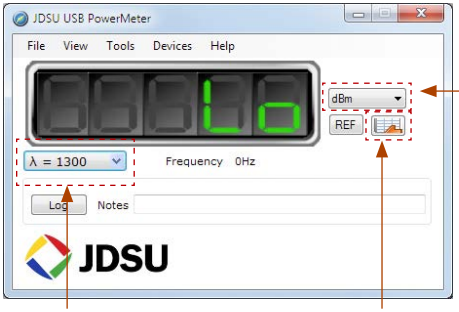




Software Menus

File > Exit	Close JDSU USB Power Meter Program
View	Select the desired power measurement (dB, dBm, mW) ***Note:*** *This can also be selected from in the software drop-down menu.*
Tools > Options	Opens the Options menu
Tools > Log	Select various features associated with logging information
Tools > Import	Imports saved values that are stored on the OPM to a report log
Open Log	Opens Log records saved by user
Start Logging	Starts automatic logging based on user established intervals
End Logging	End automatic logging
Devices	Displays information on the connected OPM
Help > About	Provides software and firmware version

Software Controls



Select Measurement Type

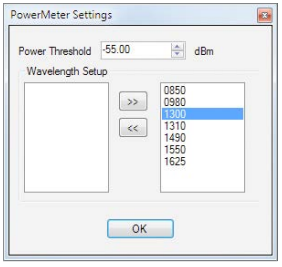
Users can define the list of wavelengths

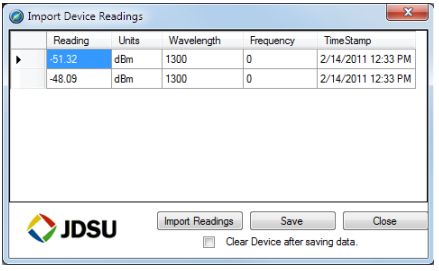
Select Wavelength

Users can define the list of wavelengths

Import Saved Values

Imports saved values that are stored on the Optical Power Meter to a report log (also done by selecting Tools > Import).





Wavelength Setup

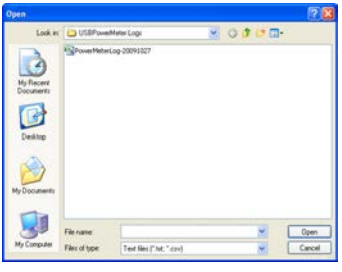
Use the << and >> arrows to select the wavelengths you want to appear on the OPM by moving them to the box on the right hand side.

Power Threshold

Sets the level at which the TRAFFIC indicator appears when used as an LFI.

Reports

Archived logs can be opened by either browsing to the defined path or by selecting:



Tools > Log > Open Log

The default path is:

C:\Documents and Settings\All Users\Documents\Westover Scientific\FiberChek2\Archive\USBPowerMeterLogs

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February 2011

ZP-PKG-0535
REV 1