

SAFETY INFORMATION

Laser safety

The provisions contained in two standards define the safety procedures to be observed both by users and by manufacturers when utilizing laser products:

- EN 60825-1: 2001 - Safety of laser products – Part 1: Classification of products, requirements and user guidelines.
- FDA 21 CFR § 1040.10 - Performance standards for light-emitting products - Laser products.

Due to the range of possible wavelengths, power values and injection characteristics of a laser beam, the risks inherent in its usage vary. The laser classes form groups representing different safety thresholds.

- VFL option: Laser Class 2.

Due to the reduced dimensions of the optical modules, it is not possible to attach the required warning labels to them. In line with the provisions of Article 5.1 of the EN 60825-1 standard, the laser class identification labels are shown below:

Ref. standard	EN 60825-1, Edition 1.2, 2001-08	FDA21CFR§1040.10
Class 2	LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT	<div style="background-color: black; color: white; padding: 2px; text-align: center;">CAUTION</div> <div style="text-align: center;"> LASER RADIATION - DO NOT STARE INTO BEAM <hr style="width: 80%; margin: 0 auto;"/> CLASS II LASER PRODUCT </div>

The user must take the necessary precautions concerning the optical outputs of the instrument and follow the manufacturer’s instructions.

AC/DC power supply safety



Always use the proper adaptable plug to connect the power supply to an electrical outlet. VIAVI is not responsible for direct or indirect damage including damage to persons or property if the power supply is not use correctly. For assistance using one of the VIAVI supplied adapters (your specific regional adapter may not be available) please refer to the user manual.

INSPECT BEFORE YOU CONNECT

Before connecting a fiber to the test instrument, inspect and clean the instrument bulkhead and the fiber jumper connectors.

- 1 Use a fiber microscope (such as P5000i or FiberChek) to verify the connector quality. Follow this simple “INSPECT BEFORE YOU CONNECT” process
- 2 Use appropriate cleaning material (e.g. IBC™ cleaner, cotton swab, etc...) and re-inspect to confirm.
- 3 Carefully align the connector and test port prior to mating both



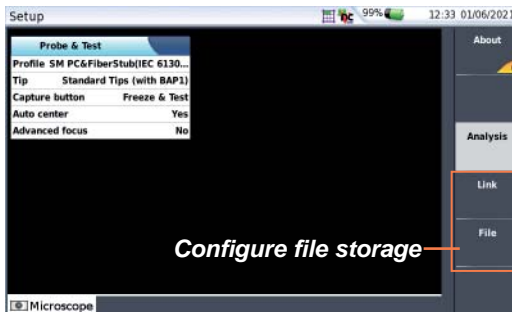
Never force the connector ferrule or insert it with an angle into the test port adapter. Mechanical stress may permanently damage the ceramic sleeve of the adapter or the end face of the connector.

USING A P5000i WITH THE SmartOTDR

- 1 Connect the Microscope to the SmartOTDR USB port.
- 2 On the **Home** page, select the **Microscope** icon
- 3 Use the Focus control button of the Microscope to adjust the focus

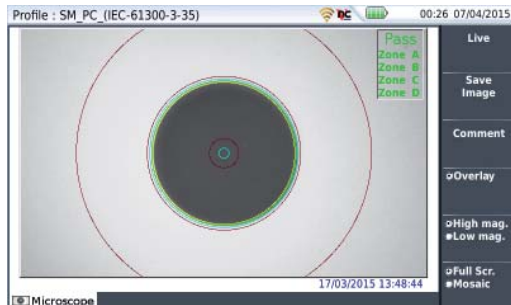


- 4 Press **SETUP** and configure the test of the connector.



Display information about the microscope & current test result displayed

- 5 Press **RESULTS** to return to Results page, and press **Test** (or press on the Quick Capture button on the probe), to launch the test of the connector.



A summary of test results is displayed.

Zones: A - Core / B - Cladding / C - Epoxy / D - Ferrule.

SmartOTDR OVERVIEW



1 5" HVT Capacitive Screen

2 Charge indicator

3 On indicator

4 File

5 Setup

6 Start/Stop

7 Testing indicator

8 On/Off

9 Home

10 Cancel

11 Direction & validation keys

12 Results

13 Buzzer

14 AC/DC Input

15 Mini USB port

16 VFL connector

17 USB ports (2)

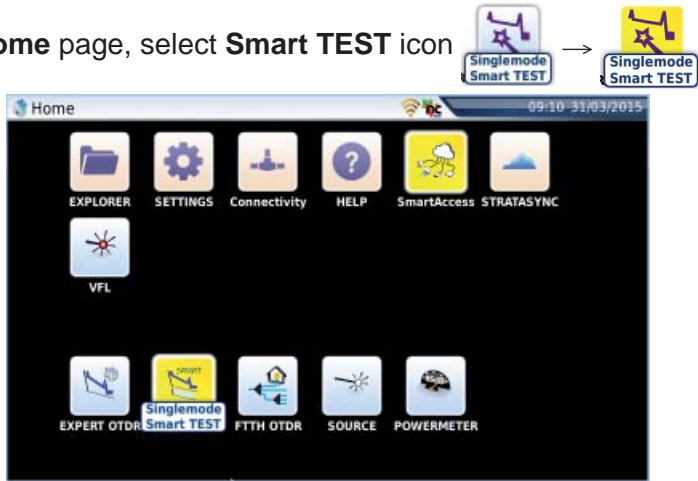
18 OTDR port/continuous light source / power meter

19 OTDR live port

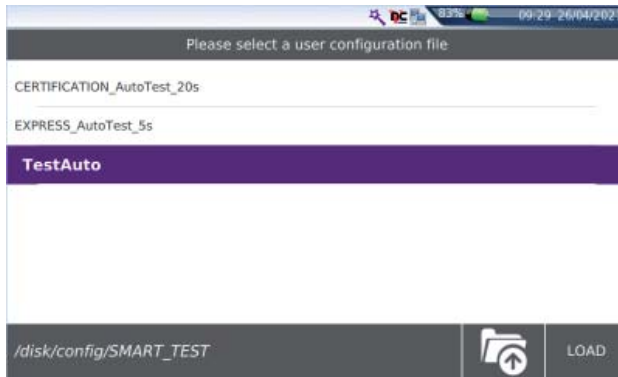
20 WIFI / Bluetooth options

CONFIGURING AN OTDR TEST IN SMART TEST MODE

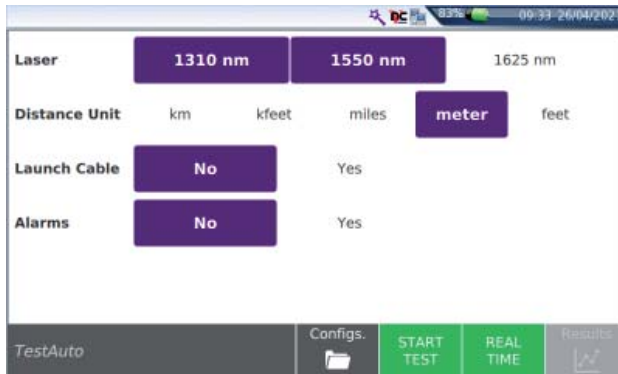
1 On the Home page, select **Smart TEST** icon



2 Select the configuration file corresponding to your application and press **LOAD** key.



3 If necessary, modify some parameters before starting the measurement.



PERFORMING AN OTDR TEST IN SMART TEST MODE

1 From the previous configuration screen, press

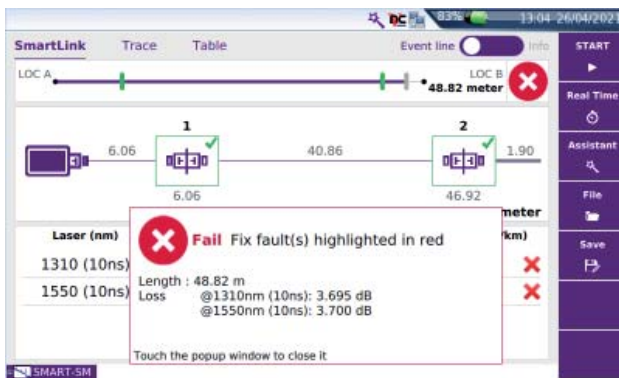
START TEST

The measurement starts:




- **Step1:** Test port connection health check
- **Step2:** OTDR measurement



2 At the end of the test, the Smart Link view is displayed, with a pop up window indicating global test results (loss, length at each wavelength, and alarm status).



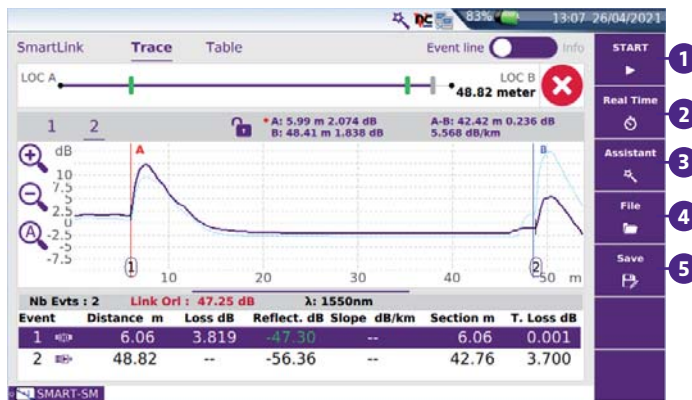
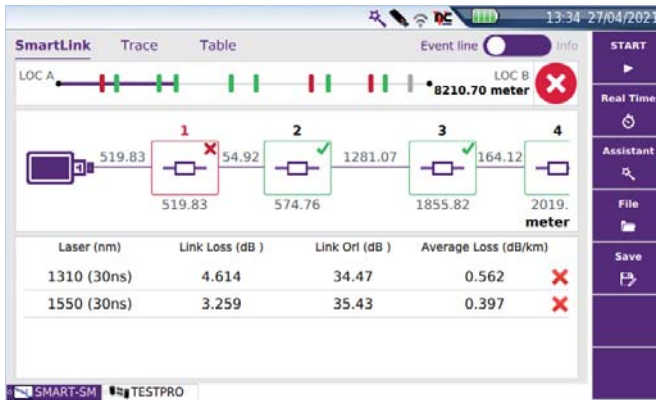
The pop up window displays:

- the icon  if no alarm thresholds are defined.
- the icon  if no event exceeds the alarm thresholds.
- the icon  if at least one event exceeds the alarm thresholds.

Touch the popup window to close it, and get access to the detailed Smart-Link map view.



RESULTS DISPLAY IN SMART TEST MODE

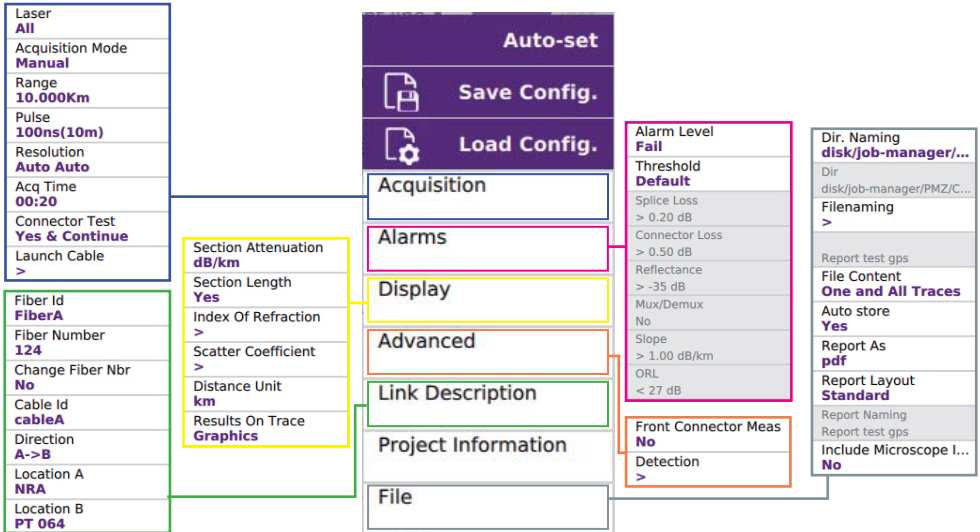
1 Click on the tabs **Trace** to display the result trace:



- 1 **Start:** press to perform a new measurement.
- 2 **Real Time:** press to perform a new measurement in Real Time.
- 3 **Assistant:** press to return to Setup Information page (see “Configuring a test in Smart Test Mode”, page 5).
- 4 **File:** press to open the File Explorer.
- 5 **Save:** press to save the results (.sor and .pdf formats).

CONFIGURING A TEST / CREATING A SMART CONFIG. IN EXPERT MODE

- 1 On the **Home** page, select **Expert OTDR** icon  → .
- 2 From the **Results** page, press  to configure the OTDR parameters.



The configuration menu is shown with the following options and their corresponding highlighted boxes:

- Auto-set** (purple box)
- Save Config.** (purple box)
- Load Config.** (purple box)
- Acquisition** (white box)
- Alarms** (pink box)
- Display** (yellow box)
- Advanced** (orange box)
- Link Description** (green box)
- Project Information** (white box)
- File** (white box)

Parameter lists on the left side:




- Laser**: All
- Acquisition Mode**: Manual
- Range**: 10.000Km
- Pulse**: 100ns(10m)
- Resolution**: Auto Auto
- Acq Time**: 00:20
- Connector Test**: Yes & Continue
- Launch Cable**: >
- Fiber Id**: FiberA
- Fiber Number**: 124
- Change Fiber Nbr**: No
- Cable Id**: cableA
- Direction**: A->B
- Location A**: NRA
- Location B**: PT 064

Parameter lists on the right side:

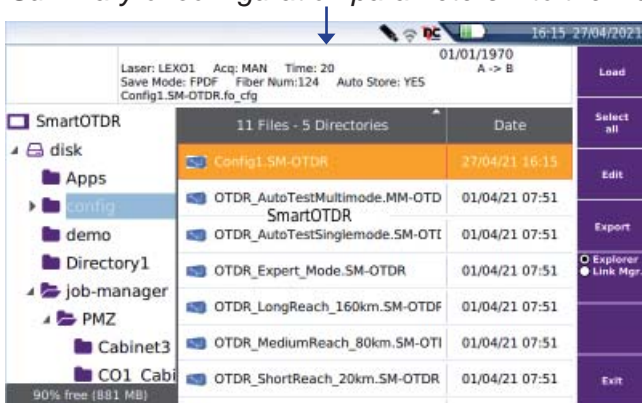
- Alarm Level**: Fail
- Threshold**: Default
 - Splice Loss > 0.20 dB
 - Connector Loss > 0.50 dB
 - Reflectance > -35 dB
 - Mux/Demux No
 - Slope > 1.00 dB/km
 - ORL < 27 dB
- Dir. Naming**: disk/job-manager/...
 - Dir: disk/job-manager/PMZ/C/...
 - File Content: One and All Traces
 - Report test gps
 - Auto store: Yes
 - Report As: pdf
 - Report Layout: Standard
 - Report Naming: Report test gps
 - Include Microscope I...: No
- Front Connector Meas**: No
 - Detection: >

Other highlighted options in the middle:

- Section Attenuation dB/km**: Yes
- Section Length**: >
- Index Of Refraction**: >
- Scatter Coefficient**: >
- Distance Unit**: km
- Results On Trace**: Graphics

- 3 To create a configuration, when all parameters are configured according to your test needs, press  **Save Config.** to save the current configuration.
- 4 Type a file name in the edition keypad and press  to validate.
- 5 Press  to access the configuration file.

Summary of configuration parameters into the file



The screenshot shows a file explorer interface with the following details:

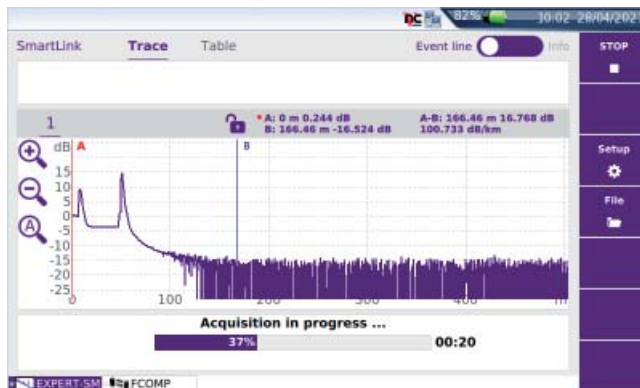
- Header:** Laser: LEXO1, Acq: MAN, Time: 20, 01/01/1970, A->B
- Save Info:** Save Mode: FPDF, Fiber Num:124, Auto Store: YES, Config1.SM-OTDR.fo_cfg
- File List:**

File Name	Date
Config1.SM-OTDR	27/04/21 16:15
OTDR_AutoTestMultimode.MM-OTD SmartOTDR	01/04/21 07:51
OTDR_AutoTestSinglemode.SM-OTI	01/04/21 07:51
OTDR_Expert_Mode.SM-OTDR	01/04/21 07:51
OTDR_LongReach_160km.SM-OTDF	01/04/21 07:51
OTDR_MediumReach_80km.SM-OTI	01/04/21 07:51
OTDR_ShortReach_20km.SM-OTDR	01/04/21 07:51
- Navigation:** Load, Select all, Edit, Export, Explorer, Link Mgr., Exit

PERFORMING AN OTDR TEST IN EXPERT MODE

1 Once the OTDR is configured, press **START** to launch the measurement.

- **Step1:** Test port connection health check
- **Step2:** OTDR measurement



2 At the end of test, the OTDR trace(s) or SmartLink View is displayed.



1 **Start:** press to perform a new measurement in Expert mode

2 **Real Time:** press to perform a new measurement in Real Time.

3 **Setup:** press to return to OTDR parameters (see “Configuring a Test / Creating a Smart config. in Expert MODE”, page 8).

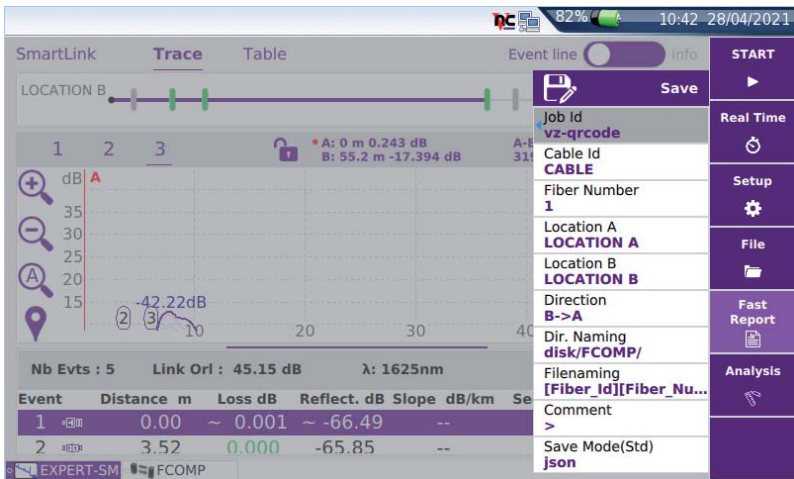
4 **File:** press to open the File Explorer.

5 **Fast Report:** Press to save the results (.sor, .txt, .json and .pdf formats).

6 **Analysis:** press to access to manual measurements: Loss / ORL / Reflectance / Slope.

SAVING THE OTDR RESULTS IN EXPERT MODE


1 In the Results screen, press




2 Press on the relevant section to edit the Job ID, Cable Id and Fiber Number.

3 Enter the location name for each fiber extremity.

4 Select the test direction. For bi-directional OTDR tests, don't forget to change the direction.


5 Press **Dir. naming** and enter the directory path where the results will be saved in, or tap on key  to revert to the current directory previously selected in the file explorer.

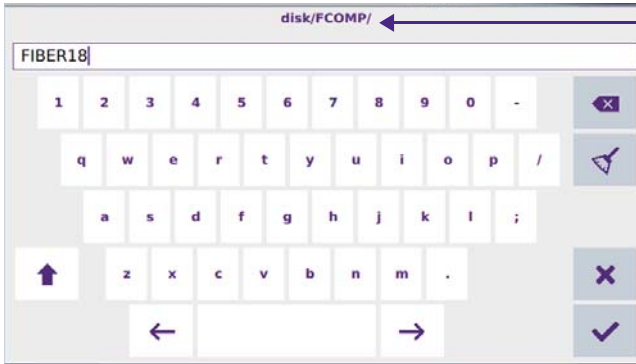
6 Press **Filenaming** and enter a file name, or tap on key  to apply the default auto filenaming.

7 In the **Save Mode** parameter, set **Yes** to desired format: **txt file**, **pdf file** (for report) and **json file** (report(s) saved in addition to the .sor file).

If all parameters are set to **No**, only the .sor (or .msor) file will be saved.

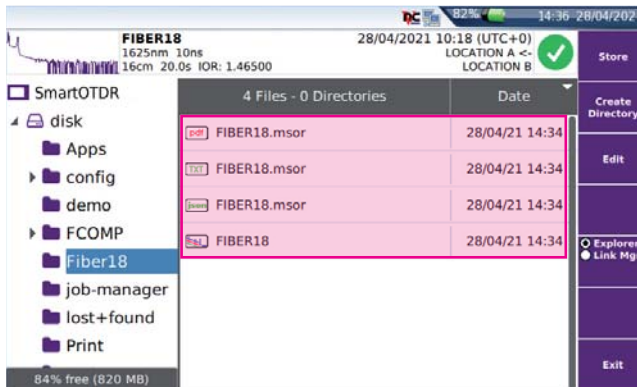
8 Once all paramaters are configured, press **Save**.

- 9 In the edition keyboard, enter a filename (if different from the one set in Filenaming) and press  to validate.



Press on the directory to open the edition keyboard and enter a new directory path

- 10 Press  to display the file Explorer.



All the files and reports are saved and available in the defined directory.

TECHNICAL ASSISTANCE

If you require technical assistance, call 1-844-GO-VAVI. For the latest TAC information, go to <http://www.viavisolutions.com/en/services-and-support/support/technical-assistance>.

