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:

- IEC 60825-1: 2014 - 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 7.1 of the IEC 60825-1:2014 standard, the laser class identification labels are shown below:

Ref. standard	IEC 60825-1: 2014	FDA21CFR§1040.10
Class 2	LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT	**CAUTION** **LASER RADIATION - DO NOT STARE INTO BEAM** **CLASS II LASER PRODUCT**

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.**

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

INSPECT

IS IT CLEAN?

Inspect Before You Connect

CLEAN

NO   YES

CONNECT

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.
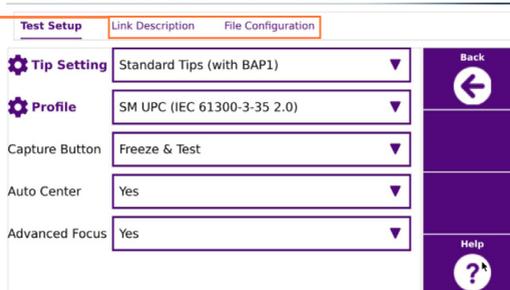
1 Connect the Microscope to the SmartOTDR USB port.

2 On the **Home** page, select the **Microscope** icon 🔬 **Fiber Microscope** .

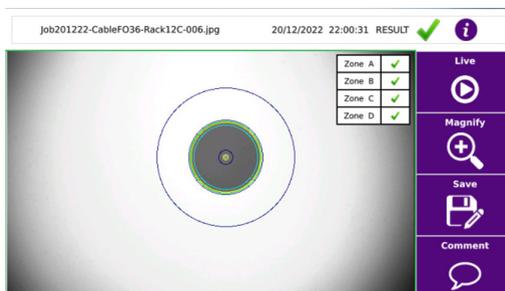**3** Use the Focus control button of the Microscope to adjust the focus.
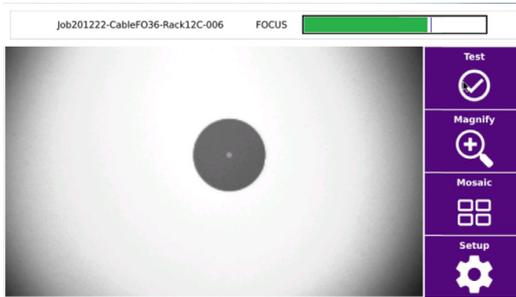
4 Press SETUP button or **Setup** key ⚙️ and configure the test of the connector.

Configure Link and File storage

5 Press RESULTS button or **Back** key ← to return to Results page, and press ⊘ (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	**11**	Direction & validation keys
2	Charge indicator	**12**	Results
3	On indicator	**13**	Buzzer
4	File	**14**	AC/DC Input
5	Setup	**15**	Mini USB port
6	Start/Stop	**16**	VFL connector
7	Testing indicator	**17**	USB ports (2)
8	On/Off	**18**	OTDR port/continuous light source / power meter
9	Home	**19**	OTDR live port
10	Cancel	**20**	WIFI / Bluetooth options

1 On the **Home** page, select **Smart TEST** icon → .
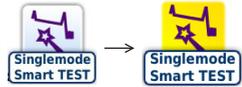
2 Select the configuration file corresponding to your application and press **LOAD** key.
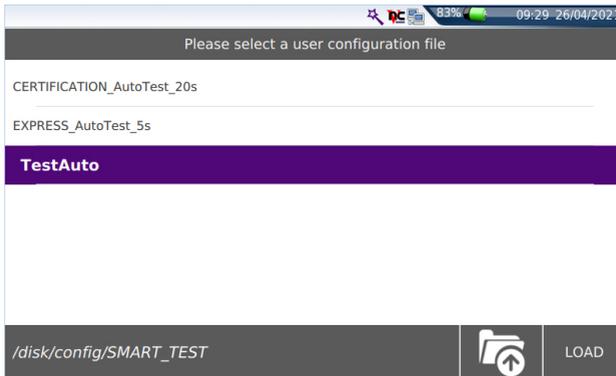
3 If necessary, modify some parameters before starting the measurement.
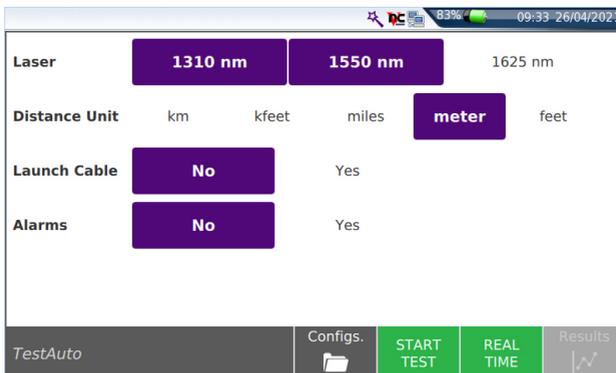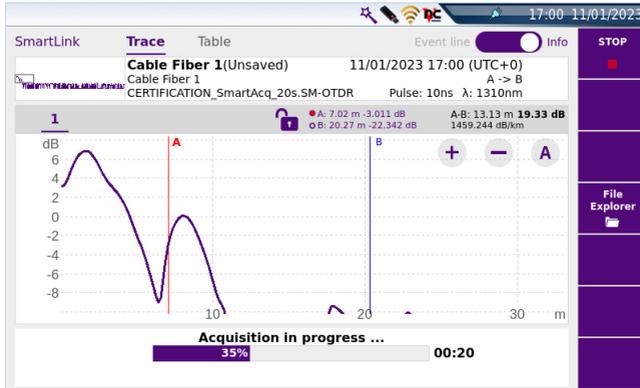
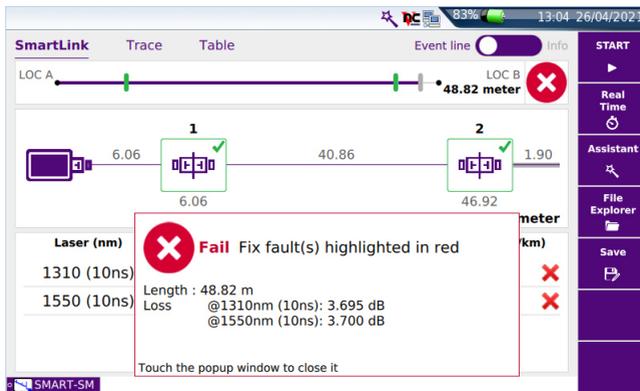**1** From the previous configuration screen, press START TEST .

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).
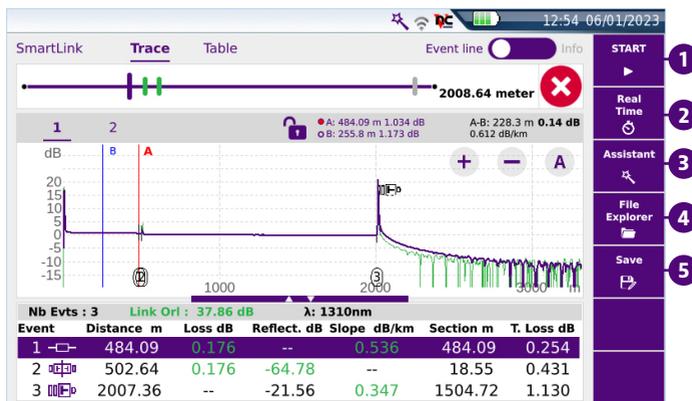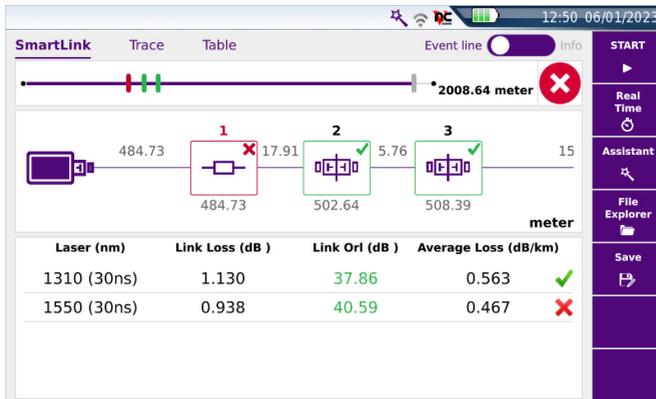

The pop up window displays:

- 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.

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 Explorer**: press to open the File Explorer.

5 **Save**: press to save the results (.sor and .pdf formats).

1 On the **Home** page, select **Expert OTDR** icon → .

2 From the **Results** page, press **Setup** to configure the OTDR parameters.

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

Section Attenuation
dB/km

Section Length
Yes

Index Of Refraction
>

Scatter Coefficient
>

Distance Unit
km

Results On Trace
All

Show Cursors
No

Auto-set

Save Config.

Load Config.

Acquisition

Alarms

Display

Advanced

Link Description

Project Information

Report

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

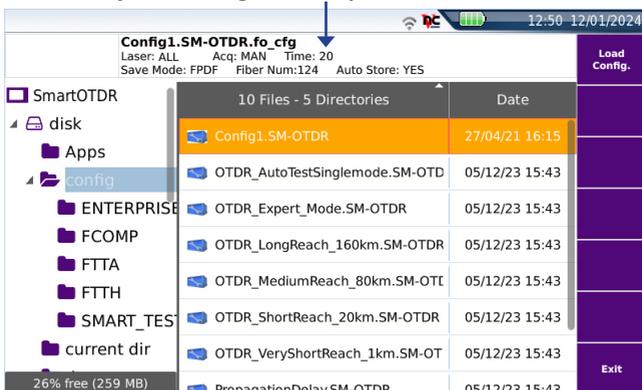Front Connector Meas
No

Detection
>

File(s) save in:
[Current_Dir]

Dir
disk/demo/

Filenaming
>

BERICHT OTDR

File Content
One and All Traces

Auto store
Yes

Report As
pdf

Report Layout
Standard

Report Naming
BERICHT OTDR

Include Microscope I...
No

3 To create a configuration, when all parameters are configured according to your test needs, press **Save Config.** [Save Config.] to save the current configuration.

4 Type a file name in the edition keypad and press ✓ to validate.

5 Press **File Explorer** [File Explorer] to access the configuration file.

Summary of configuration parameters into the file

	12:50 12/01/2024

Config1.SM-OTDR.fo_cfg
Laser: ALL   Acq: MAN   Time: 20
Save Mode: FPDF   Fiber Num:124   Auto Store: YES

Load Config.

SmartOTDR	10 Files - 5 Directories	Date
disk		
Apps	Config1.SM-OTDR	27/04/21 16:15
config	OTDR_AutoTestSinglemode.SM-OTD	05/12/23 15:43
ENTERPRISE	OTDR_Expert_Mode.SM-OTDR	05/12/23 15:43
FCOMP	OTDR_LongReach_160km.SM-OTDR	05/12/23 15:43
FTTA	OTDR_MediumReach_80km.SM-OTD	05/12/23 15:43
FTTH	OTDR_ShortReach_20km.SM-OTDR	05/12/23 15:43
SMART_TEST	OTDR_VeryShortReach_1km.SM-OT	05/12/23 15:43
current dir		
26% free (259 MB)	PropagationDelay.SM-OTDR	05/12/23 15:43

Exit

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

- **Step1**: Test port connection health check
- **Step2**: OTDR measurement
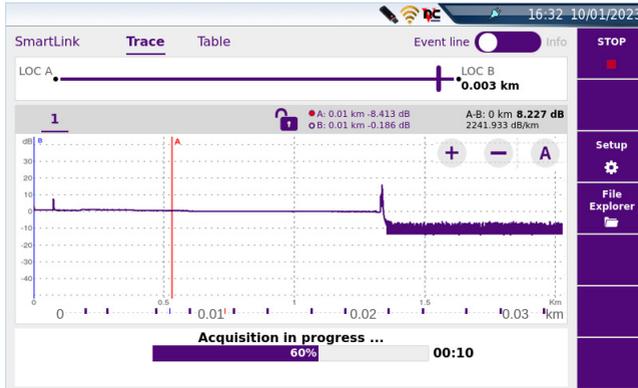
2 At the end of test, the OTDR trace(s) or SmartLink View is displayed.
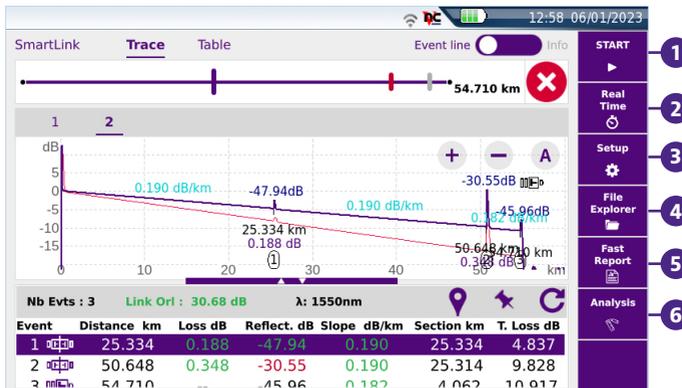
1 **Start**: press to perform a new measurement in Expert mode

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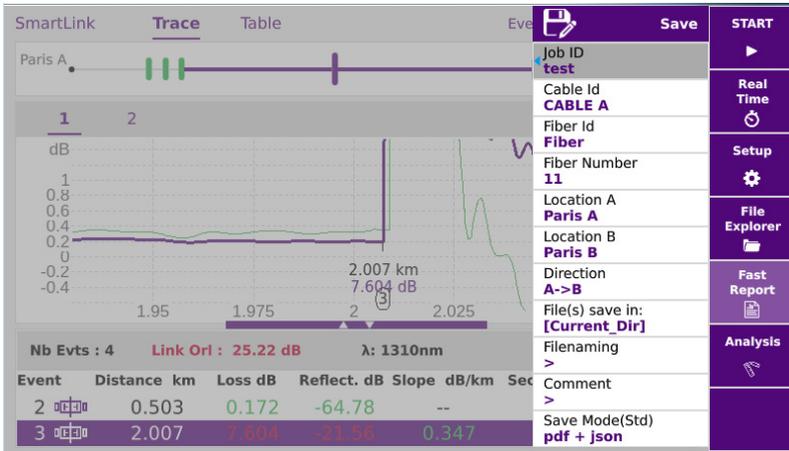
4 **File Explorer**: press to open the File Explorer.

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 **Fast Report** 🖹 .

2 Press on the relevant section to edit the **Job ID**, **Cable Id**, **Fiber 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 **C** to revert to the current directory previously selected in the file explorer.

6 Press **Filenaming** and enter a file name, or tap on key **C** to apply the default auto filenaming.
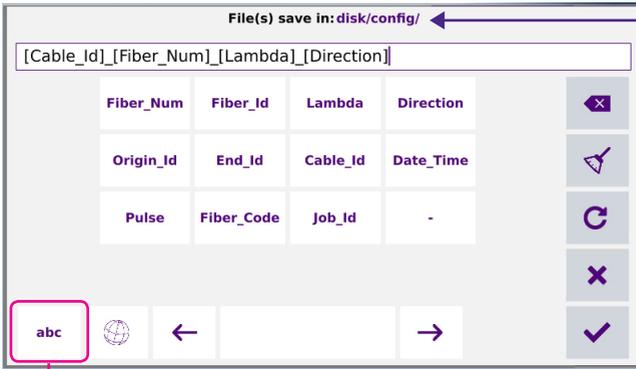
7 In the **Save Mode** parameter, set **Yes** to desired format: **txt file**, **pdf file** (for report) and **json file** (report(s) saved in addition to the .sor file).

   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.
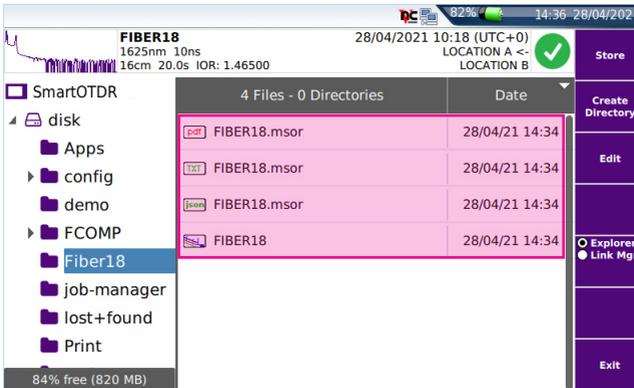
Press [auto] to enter filename with pre-defined parameters and press abc to manually enter the filename.

File(s) save in: disk/config/

[Cable_Id]_[Fiber_Num]_[Lambda]_[Direction]

Fiber_Num	Fiber_Id	Lambda	Direction
Origin_Id	End_Id	Cable_Id	Date_Time
Pulse	Fiber_Code	Job_Id	-

abc

1	2	3	4	5	6	7	8	9	0	-
q	w	e	r	t	y	u	i	o	p	/
a	s	d	f	g	h	j	k	l	;
z	x	c	v	b	n	m	.

10 Press **File Explorer** 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-VIAVI. For the latest TAC information, go to http://www.viavisolutions.com/en/services-and-support/support/technical-assistance.

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