4000 V2 Optical Test Platform

Modular Test Platform designed for the installation, turn-up and maintenance of fiber optic networks

User Manual

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User Manual

Viavi Solutions
1-844-GO-VIAVI
www.viavisolutions.com

Notice

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Ordering information

This guide is a product of VIAVI's Technical Information Development Department, issued as part of the User Manual.

Product Regulatory Compliance

California Proposition 65

California Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986, was enacted in November 1986 with the aim of protecting individuals

in the state of California and the state's drinking water and environment from excessive exposure to chemicals known to the state to cause cancer, birth defects or other reproductive harm.

For the VIAVI position statement on the use of Proposition 65 chemicals in VIAVI products, see the Hazardous Substance Control section of VIAVI's Standards and Policies web page.

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

EU WEEE and Battery Directives

This product, and the batteries used to power the product, should not be disposed of as unsorted municipal waste and should be collected separately and disposed of according to your national regulations.

VIAVI has established a take-back processes in compliance with the EU Waste Electrical and Electronic Equipment (WEEE) Directive, 2012/19/EU, and the EU Battery Directive, 2006/66/EC.

Instructions for returning waste equipment and batteries to JDSU can be found in the WEEE section of VIAVI's Standards and Policies web page.

If you have questions concerning disposal of your equipment or batteries, contact VIAVI's WEEE Program Management team at WEEE.EMEA@VIAVISolutions.com.

EU REACH

Article 33 of EU REACH regulation (EC) No 1907/2006 requires article suppliers to provide information if a listed Substances of Very High Concern (SVHC) is present in an article above a certain threshold.

For information on the presence of REACH SVHCs in VIAVI products, see the Hazardous Substance Control section of VIAVI's Standards and Policies web page.

EU CE Marking Directives (LV, EMC, RoHS, RE)

This product conforms with all applicable CE marking directives. Please see EU Declaration of Conformity for details.

Contents

About This Guide

The 4000 V2 Platform of VIAVI provides a portable, modular platform designed for the installation, turn-up and maintenance of fiber optic networks.

The topics discussed in this chapter are as follows:

Purpose and scope

The purpose of this guide is to help you successfully use the 4000 V2 Platform features and capabilities. This guide includes task-based instructions that describe how to install, configure, use, and troubleshoot the 4000 V2 Platform.

Additionally, this guide provides a complete description of VIAVI's warranty, services, and repair information, including terms and conditions of the licensing agreement.

Assumptions

This guide is intended for novice, intermediate, and experienced users who want to use the 4000 V2 Platform effectively and efficiently. We are assuming that you have basic computer and mouse/track ball experience and are familiar with basic telecommunication concepts and terminology.

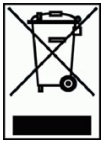
Technical assistance

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.

Recycling Information

VIAVI recommends that customers dispose of their instruments and peripherals in an environnmentally sound manner. Potential methods include reuse of parts or whole products and recycling of products components, and/or materials.

Waste Electrical and electronic Equipment (WEEE) Directive



In the European Union, this label indicates that this product should not be disposed of with household waste. Il should be deposited at an appropriate facility to enable recovery and recycling.

Conventions

This guide uses naming conventions and symbols, as described in the following tables.

Table 1 Typographical conventions

Description	Example
User interface actions appear in this **typeface**.	On the Status bar, click **Start**.
Buttons or switches that you press on a unit appear in this **TYPEFACE**.	Press the **ON** switch
Code and output messages appear in this `typeface`.	`All results okay`
Text you must type exactly as shown appears in this **`typeface`**.	Type: **`a:\set.exe`** in the dialog box
Variables appear in this ***typeface***.	Type the new ***hostname***.
Book references appear in this ***typeface***	Refer to ***Newton's Telecom Dictionary***
A vertical bar | means "or": only one option can appear in a single command.	`platform [a|b|e]`
Square brackets [ ] indicate an optional argument.	`login [platform name]`
Slanted brackets < > group required arguments.	`<password>`

Table 2 Keyboard and menu conventions

Description	Example
A plus sign + indicates simultaneous keystrokes.	Press **Ctrl+s**
A comma indicates consecutive key strokes.	Press **Alt+f,s**
A slanted bracket indicates choosing a submenu from menu.	On the menu bar, click **Start > Program Files**.

Table 3 Symbol conventions

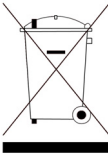
	**This symbol represents a general hazard.**
	**This symbol represents a risk of electrical shock.**
	**NOTE** This symbol represents a Note indicating related information or tip.
	**This symbol, located on the equipment or its packaging indicates that the equipment must not be disposed of in a land-fill site or as municipal waste, and should be disposed of according to your national regulations.**

Table 4 Safety definitions

	**WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	**CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

1

Safety information

This chapter gives the main information on the safety conditions when using the 4000 V2 Platform

AC/DC and battery important safety instructions

In conformance with the recommendations of standard EN 61010, the instrument should be operated within the manufacturer's guidelines. Failure to do so may compromise the protection offered by the instruments design.

The 4000 V2 Platform is supplied with a Lithium Ion rechargeable battery.

Do not use any mains adapter or battery other than those supplied with the instrument, or supplied by VIAVI as an option for this instrument.

- Batteries supplied by VIAVI incorporate protection means.

If another adapter or battery is used, it may damage the 4000 V2 Platform itself. Using the product with batteries other than those supplied by the manufacturer of the 4000 V2 Platform may entail risks of fire or explosion.

The battery may explode, leak or catch fire:

- if it is exposed to high temperature or fire
- if it is opened or dismantled.

- The Lithium Ion battery is designed for maximum safety. In particular, each cell is provided with a safety valve to prevent excessive internal pressure in the event of overcharging or exposure to very high temperatures.
- If you do not intend to use the platform for several weeks, it is advisable to remove the battery in order to prolong its useful life, and to recharge it fully before using it again.
- In case of communication problems with the battery, informed to the user, the battery charging information is no more actualized.
  Restart the equipment to restore the communication with battery.

Other basic safety precautions are as follows:

- Do not use AC/Adapter/Charger outdoors or in wet or damp locations
- Connect the AC/Adapter/Charger to the correct mains voltage, as indicated on the ratings label.
- Do not allow anything to rest on the power cord, and do not locate the product where people can walk on the power cord.
- Avoid using this product during an electrical storm. There may be a remote risk of electric chock from lightning.

- Do not use this product in the vicinity of a gas leak or in any explosive environment.
- Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous, high voltage points and other hazards. Contact qualified service personnel for all service.

Precautions relating to optical connections

- The normal operating life of an optical connector is usually of the order of a few hundred manipulations. It is then advisable to manipulate the optical connections of the Platform as rarely as possible.
- The proper operation of the instrument and its accuracy of measurement are dependent on the cleanliness of the environment and the optical connectors as well as the care taken in its manipulation.
- The optical connectors must therefore be clean and dust-free. If the optical connection is not being used, protect the connections of 4000 V2 Platform using the protective caps.

As an example, the results of measurements made with connectors that have not been cleaned will display an error of the order of 10% for all measurements. This error is additional to other errors inherent in the measurement process and due, for example, to the quality of the fiber (circularity and concentricity), the means of connection (axis alignment, distance between fiber faces, quality of fiber faces) and propagation modes.

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.

Laser classes

Standards IEC 60825-1:2014 and FDA21CFR§1040.10:

- VFL option: Class 2

Warning labels for the laser classes

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:

Reference standard	IEC 60825-1:2014	FDA21CFR§1040.10
Class 1		
Class 1M		
Class 2		

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

Measurements on optical fibers are difficult to execute and the precision of the results obtained depends largely on the precautions taken by the user.

2

4000 V2 Platform Overview

This chapter provides a general description of the 4000 V2 Platform.

Topics discussed in this chapter include the following:

Unpacking the instrument

1 Remove the 4000 V2 Platform and its accessories from the packing case.

2 Check that the module and accessories ordered are all there.

If any part is missing or damaged please contact your local VIAVI agent.

The 4000 V2 Platform is delivered as standard with:

Table 1 Elements delivered on standard with the 4000 V2 Platform

A Getting Started Manual
A Li-Polymer battery, set into the equipment and which must be charged before use
A mains adapter with one power cord for a given country (configured at the time of order)

About the 4000 V2 Platform

The architecture of the 4000 V2 Platform is made of one Platform, to which one or two modules can be added to perform tests on fiber networks.

The modules that can be fitted to the 4000 V2 Platform are interchangeable in the field and different kinds of module are usable:

- OTDR Modules
- CWDM Analyzer Modules (C-OSA)

The 4000 V2 Platform employs multi-tasking for the simultaneous performance of several operations:

- acquisitions
- modifications of parameters
- trace analysis
- report management

It also allows to use simultaneously several functions:

- Power Meter
- Scope
- OTDR measurements...

Main features

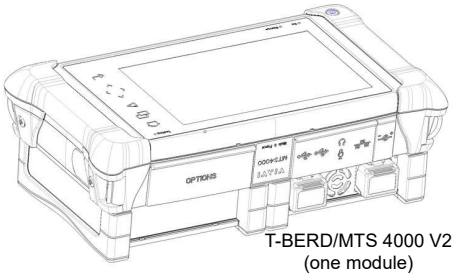
The 4000 V2 Platform is equipped with the following elements:

- A 9 inches TFT color touchscreen, high visibility
- RJ45 plug for Ethernet interface
- Two USB 2.0 host connectors for Microscope, USB memory stick, mouse, keyboard...
- An audio jack to connect a headset
- A connection socket for the mains adapter providing the 12 V power supply and used to charge the battery.
- LED indicators for Charge, On status and Test
- A Li-Polymer battery
- A module interchangeable in the field: OTDR, or C-OSA.
- Built-in Power Meter, VFL and/or Talkset (options)

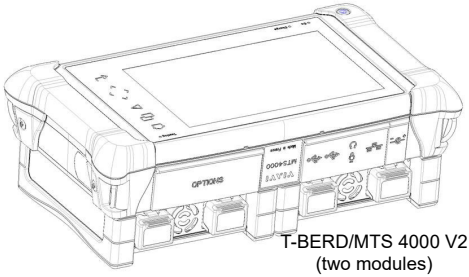
With the 4000 V2 Platform, the user can:

- Open and/or transfer files to a PC via a USB memory stick, USB cable or Bluetooth (option)
- Generate pdf reports
- Open all user documentations included into the 4000 V2 Platform
- Update the 4000 V2 Platform firmware
- Remote the screen of the 4000 V2 Platform onto a PC and issue commands from the keyboard of the PC
- ...

Fig. 1 4000 V2 Platform and module(s)



T-BERD/MTS 4000 V2
(one module)



T-BERD/MTS 4000 V2
(two modules)

Fig. 2 4000 V2 Platform: Front view

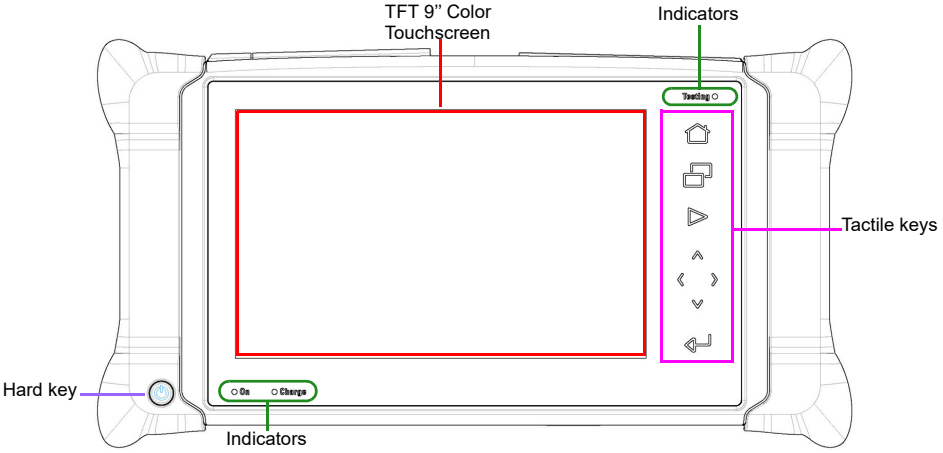
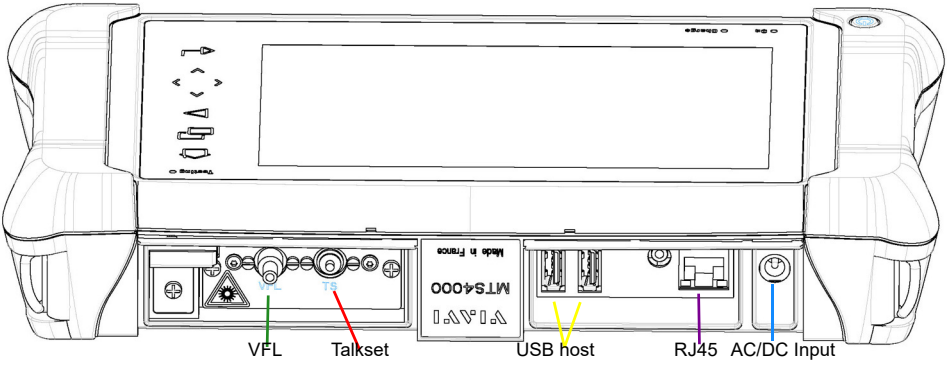


Fig. 3 4000 V2 Platform: Connectors View



Hard keys and Indicators

Front panel tactile and hard keys

Hard key	Function
	Main on/off switch

Tactile keys	
	The **Home** tactile key gives access to: • selection of the different measurement or functions • the settings of the instrument • the help page
	This button calls up the Results/Setup/File page: click once and select the page wished from the list: • In the file page, you can choose the storage medium (internal memory, USB key) and manage files; with facilities for classifying them in directories and sub-directories. • In the Setup page, you can configure the measurement . This menu depends on the function in use. • In the Results page, you can display the results page of the selected function (e.g. with OTDR module: reflectometry trace and table). 
	Starts and stops the measurement.
	Direction keys used to navigate on screen: – on the Results page, they are used to move the cursors or modify the zoom factor. – on the set-up pages, they are used to scroll through the menus, the central button serving to select or confirm the parameter chosen.
	Validation/Enter key

NOTE

All these functions, except **HOME**, depend on the modules used and the measurements made: refer to the user manuals of the corresponding modules of the 4000 V2 Platform.

The 6 buttons are available clicking on the upper banner of the screen.

A key **Export** is also available, allowing to generate a screenshot of the current displayed screen, in pdf,. It is saved in the directory `Report`, created automatically at screenshot generation.

Figure 4 Buttons on the upper banner

Front panel indicators

The 4000 V2 Platform is equipped with three indicators, lit into a different color according to the status of the unit.

Table 2 Indicators Status

On indicator	
On *Blinking green*	The instrument, though connected to an external power source, is switched off.
On *Solid green*	The instrument is operating, either by battery or on an external power supply.
Charge indicator	
Charge *Solid green*	The instrument is connected to an external power source and the battery is fully charged.
Charge *Solid red*	The instrument is connected to an external power source, and the battery is on charge.
Testing indicator	
Testing *Solid red*	At least one function is in measurement phase (for example, the laser emission pilot for an OTDR measurement)

Power Supply

The 4000 V2 Platform may operate with

- the Li-Polymer battery, already set into the equipment on delivery.
- an AC adapter/charger, via a power cable on which has been set the correct country adaptable plug.

Fig. 5 4000 V2 Platform power supply

3

Starting up

This chapter explains the operations to be carried out before using the 4000 V2 Platform.

The topics discussed in this chapter are as follows:

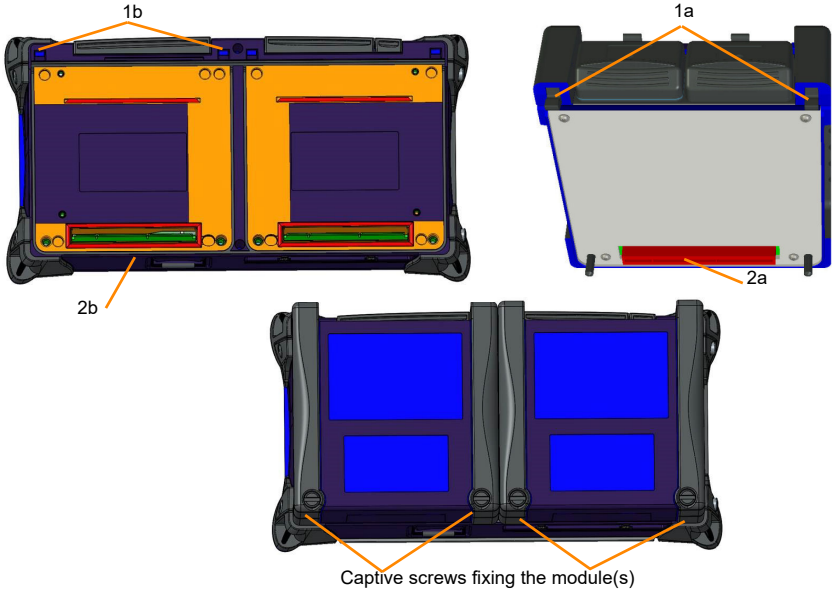
Fitting and removing a module

The 4000 V2 Platform must be switched off, and if it is operating on the mains, its supply cable must be unplugged.

Fitting a module

- Turn the instrument face down on the work surface.
- Set the two notches on the module part (1a) into the two holes provided for that purpose on the Base (1b).
- Make flush the 2 connections (2a & 2b), on module and base.
- Once positioned, fix the module to the base screwing the 2 screws fixing the receptacle.
- Repeat the same process for the other module if 2 small modules are to be used.

Fig. 6 Fixing the module to the base



Removing a module

1. Unscrew the two captive fixing screws of the module completely (up to the stop).
2. Remove the two slots of the module from their housing onto the base.
3. Carefully slide the module out of its slot.

Setting the 4000 V2 Platform into the glove

The glove for the 4000 V2 Platform is furnished on option with the instrument.

This glove has been designed to fit to the equipment, and to easily get access to all the commands of the product (interface, modules, connectors).

To set the 4000 V2 Platform in the glove, take care of the sense of insertion: the screen must face the front of the glove. Refer to Figure 7.
Once in the glove, the 4000 V2 Platform can be set to the «standing» position, using the stay on the back of the glove.

Fig. 7 Platform View in the glove

Charging the battery[1]

CAUTION

Upon reception of the product, the battery of the T-BERD/MTS-4000 V2 Platform must be fully charged, no later than 6 months after its purchase.

If the product is unused for a long period, the battery needs also to be periodically fully recharged, with a period not longer than 12 months.

The battery supplied with the 4000 V2 Platform must be fully charged before use.

A **Lithium Ion type** battery, 6 cells or 9 cells, is installed in the battery compartment.

Connecting the mains adapter

Use only the mains adapter supplied with the 4000 V2 Platform. The adapter for some other electronic device may appear to be identical, but entails a risk of damage to the 4000 V2 Platform.

1 At the top of the 4000 V2 Platform, lift up the power supply socket protector and plug in the mains adapter.

2 Connect the adapter to the mains.
The **On** indicator lamp starts to blink in green.

First use of the battery

At the delivery, the battery is already set into the Platform, but its charge level is not «recognized» by the equipment.

The icon  is displayed on the upper banner of the screen.

To get a valid indication of the battery, and be able to use correctly the Platform:

1 Charge fully the battery

2 Once fully charged, discharge the battery by keeping the Platform switched on, but not plugged to mains.

3 The battery can then be charged, and the Platform used simultaneously.

1.if the 4000 V2 Platform is equipped with a battery.

Charging

If the instrument is fitted with a battery, on connection to the mains:

- if the user does not press **On**, the battery will start the charge. In this case, the **Charge** indicator will be lit in red.
- when the user presses the **On** key, the instrument starts up and the battery will charge during use (**Charge** indicator in solid red).

Once the battery is fully charged, the **Charge** indicator lamp is solid green.

When the **Charge** indicator is blinking red, this mean the power supply is not compatible with the battery used. Charge is disabled.

It is essential to wait until charging is complete to ensure maximum independent operating time, which may otherwise be considerably reduced.

Voltage must be superior to 14V to correctly charge the 9 cells battery (11V).

Only the 6 cells battery can be charged using the cigarette lighter adapter (provided on option). When this adapter is used with a 9 cells battery, the equipment can be used but the battery will not be charged (except if the vehicle is started).

Battery charge level display

When the battery is installed in the instrument, its charge level is displayed in the top right-hand corner of the screen and also as a charge percentage. Example: 

.

- When the battery charge level drops below 10%, a warning is displayed next to the icon. Example: 

When the level becomes too low, the instrument switches off automatically after saving the current configuration.

In the table below is a summary of the battery icon according to the charge level:

Table 3 Color of the battery Icon according to charge level

Icon	Charge level
	From 100% to 70%
	From 70% to 40%

Table 3 Color of the battery Icon according to charge level

	From 40% to 10%
	From 10% to 0%

Switching the 4000 V2 Platform on and off

The mains adapter is used not only for charging the battery (if the battery is installed), but also for operating the 4000 V2 Platform on the mains, if a mains socket is at hand, to save the battery.

Switching on the 4000 V2 Platform

1 Press the **ON/OFF** key.

If the Platform is powered to mains, the battery will charge.

The **On** indicator pass from blinking to solid green.

The VIAVI logo appears on the screen briefly, then an auto test is carried out.

The equipment is ready to be used once all the applications are installed.

NOTE

It is possible to switch over from battery to mains operation, or vice versa, without loss of data.

The module cannot be swapped when the unit is ON or AC powered

In the event of an unexpected mains power cut, if there is no battery, the current results and configuration will not be saved. Next time the instrument is switched on, it will return to its initial configuration.

Switching off the 4000 V2 Platform

While the 4000 V2 Platform is operating, press the **ON/OFF** button to switch it off.

Disconnect the jack connector of the AC/DC power supply before disconnecting the AC/DC mains

NOTE

When the instrument is switched off using the **ON/OFF** button, current results and configuration are saved. Next time the **ON/OFF** key is pressed, they are recalled.

Resetting the 4000 V2 Platform

If the 4000 V2 Platform freezes, prolonged pressure (about 4 s.) on the **ON/OFF** key will reset the instrument.

First start: configuring your regional settings

Once the 4000 V2 Platform is switched on, the first screen displayed allows to configure the regional settings.

Those settings will be kept in memory and automatically applied on the instrument each time it is restarted.

Fig. 8 Regional Settings

1 Click on **Language** and select the language to be used for the equipment.

2 Click on **Date** and enter the current date, using the numeric keypad displayed using the menu key **Edit Number**.

3 Click on **Time** and enter the current time, using the numeric keyboard displayed using the menu key **Edit Number**.

The date and time are displayed on the upper right side of the screen.

4 Click on **UTC offset (hours)** and define the offset, using the numeric keyboard displayed using the menu key **Edit Number**.

5 Click on **Date Time Format** and configure the following parameters:

- **Date format**: select one of the option **dd/mm/yy** or **mm/dd/yy**.
- **Time format**: select one of the option **24 hour clock** or **12 hour clock.**

Once all parameters have been defined, press **Exit** menu key to return to **System Settings** page.

4

Configuring the 4000 V2 Platform

This chapter describes the operations for configuring the instrument.

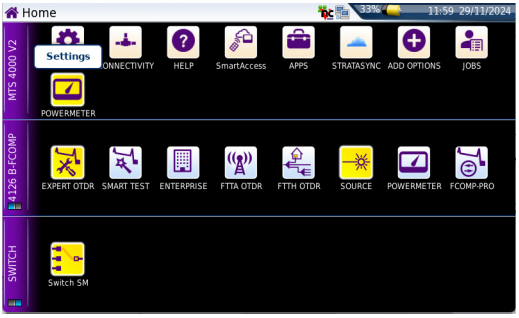
The topics discussed in this chapter are as follows:

Displaying the System Settings screen

To display the **System Settings** screen, you must:

1 Press the **HOME** key to reach the **Home** page.

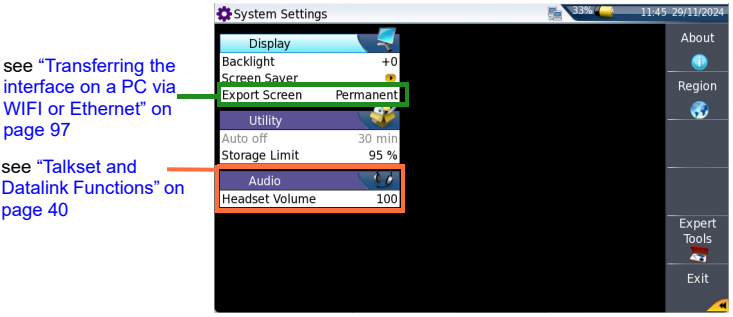
Fig. 9 Home page



2 Activate the **Settings** icon 

to open the **System Settings** screen.

Fig. 10 System Settings page



NOTE

If you are in the Regional Settings page, and you press **Exit**, then the **System Settings** page automatically displays.

Defining the screen parameters of the 4000 V2 Platform

In the **System Settings** page, the following parameters can be defined:

Backlight

1 Click on **Backlight**

2 Define the backlight level of the screen, using the left and right direction keys, or clicking on **Edit Number** softkey and using the keypad displayed.
- Min backlight level: -5
- Max backlight level: +5

If the 4000 V2 Platform is operating on battery, it is advisable to choose a minimum lighting level, acceptable for the user, to keep endurance as long as possible.

Screen Saver

Click on **Screen Saver** if you wish to activate a screen saver to the equipment, to extend the life of the battery, in case the 4000 V2 Platform is not used for some time.

Instead of the normal screen, a small animated picture of the 4000 V2 Platform is displayed on the blackened screen.

To configure the screen saver:

1 Click on **Delay** and select the time of inactivity before the screen saver starts: **60s**, **3 min**, **5 min**.
The parameter **No** deactivates the screen saver function.

Defining the «Utility» parameters

Defining the Automatic shutdown of the 4000 V2 Platform

The automatic shutdown function switches off the 4000 V2 Platform automatically if no operation has been performed and no key actuated for a period selected from this menu. Work in progress is automatically saved.

The function for automatically switching off the 4000 V2 Platform is available only on battery operation, to save the battery.

1 In the **Utility** box, click on **Auto off** parameter.

2 Choose a time after which the 4000 V2 Platform will be switched off automatically, if no action has been done for that period: **5**, **10** or **30 minutes**.

Select **No** if the 4000 V2 Platform must not be switched off, even if there is inactivity on the equipment.

Defining the Storage Limit

In the **Storage Limit** parameter, define the percentage of the maximum storage size, using the numeric keyboard displayed via the menu key **Edit Number**..

5

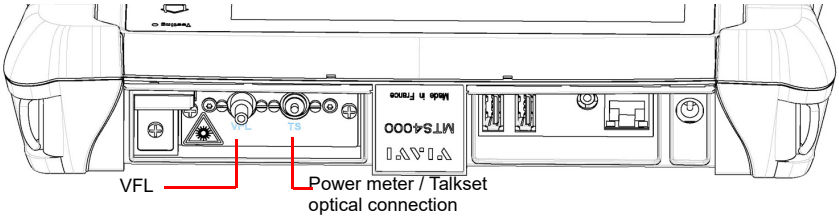
Power meter, VFL (Visual Fault Locator) & Talkset

A variety of built-in optical options are available when ordering. See references in Chapter 12 “Options and accessories”, for details.

The topics discussed in this chapter are as follows:

Connection to the power meter, VFL and Talkset

Figure 11 Optical connectors



The type of optical connector used for the power meter is UPP (Universal Push Pull), which is compatible with all diameter 2.5 mm connectors (FC, SC, ST, DIN, E2000, etc.)

Configuring the Power meter

To activate the function:

1 Press the **HOME** button

2 Select the power meter icon in the section of the Platform.
The icon turns yellow 

.

The effect of this action will to be to bring the power meter into use.

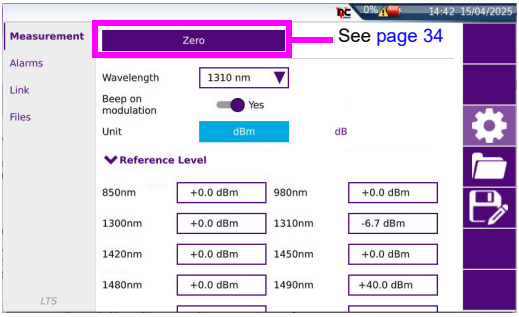
The measurement parameters can be accessed with the **SETUP** key.

Configuring the Measurement parameters

1 From the results page, press the **Setup** menu key .

2 Click on **Measurement** to configure the measurement parameters.

Figure 12 Configuration of power measurement



- **Wavelength** Select wavelength:
  Auto: the wavelength of the input signal will be automatically detected and selected to perform the measurement:
  850 to 1650 nm: measurement performed at specified wavelength.
  User: enter the wavelength in the text box.
- **Beep on modulation**
  Select if a sound must be heard when a modulation occurs (**Yes** / **No**)
- **Unit** Unit of power displayed:
  dBm for displaying absolute power
  dB for displaying a result relative to a reference (link loss)
- **Reference level** Select the reference value for the wavelength selected. First click on the wavelength, and click on the text box to enter the value on the numeric keyboard. This reference is also automatically available, in the **Results** page, using the **Standard Ref.** key.
- **Attenuator compensation**
  Choice of level to be applied to the wavelength chosen for measurement to compensate for the loss due to the external attenuator (+XX.XX dB). First click on the wavelength, and click on the text box to enter the value on the numeric keyboard**.**

Configuring the Alarms parameters

Press **Alarms** to configure the Alarms parameters.

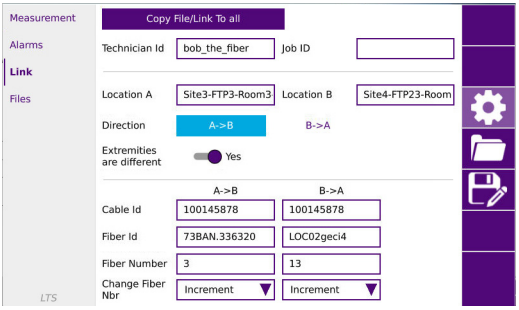
Figure 13 Configuration of power meter alarms

- **Alarm** select **Yes** to activate the Alarm function: any result below the lower threshold or above the upper threshold will be displayed in red on the Results page.
- **Min and max thresholds**
  Choice of lower and upper thresholds for each available wavelength, from -60 to +40 dBm.

Configuring the Link parameters

Press **Link** to configure the Link parameters.

Figure 14 Link parameters



The information entered in the **Link** window concerns the editing and/or the modifications of the cable and fiber parameters. When a trace is recalled without recall of the configuration, the parameters of this trace will be present only in its signature.

Link description parameters are recorded in the results files as they are of use for analytics including post processing.

- **Technician Id** Click on the text box to enter the name of the operator carrying out the measurement.
- **Job Id** Click on the text box to enter a description of the measurement to be performed.
- **Location A** The name of the Location A of the link may be entered here, using the onscreen keyboard.
- **Location B** The name of the Location B of the link may be entered here, using the onscreen keyboard.
- **Direction** The direction shows if the acquisition has been made from the origin to extremity (A->B) or from the extremity to origin (B->A). Changing direction in the trace simplifies post-processing e.g. for manual bi-directional analysis.
- **Extremities are different**
  In some cases, it is interesting to save different information for the origin and the extremity of the cable.Select **Yes** if the extremities are different.

  In this case, the following parameters are different for each location
- **Cable Id** This parameter allows to enter an identification of the cable, using the onscreen keyboard.
- **Fiber Id** Select the parameter **Fiber Id** and enter a name for the fiber, using the onscreen keyboard.
- **Fiber Number** Select the parameter **Fiber Number** and modify the parameter using the left and right direction keys.

  The fiber number can be automatically incremented/decremented at each new file save if it has been configured in the File Setup page (see “Configuring the Files parameters” on page 30).
- **Change Fiber Nbr**

  Increment: the fiber number is automatically incremented at each new file-save.

  Decrementt: he fiber number is automatically decremented at each new file-save

  User defined: Use **Edit Number** softkey to enter the increment/decrement value for fiber number.

  Note: to decrement the number, enter the sign «-» before the number.
  Example: -1. / Min: -999 / Max: 999 / Auto: 0

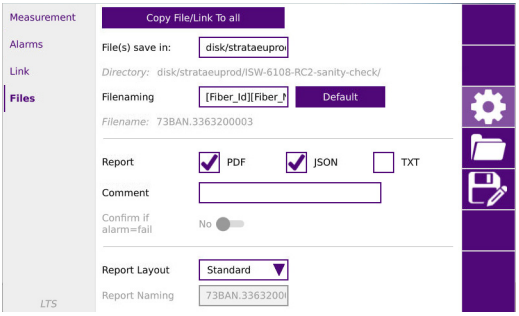
  No: the Fiber number must not automatically modified.

Configuring the Files parameters

The storage parameters must be also configured, in order to define how and where the results will be saved in the file system of the equipment.

1 Press **Files** to configure the file saving and the report generation.

Figure 15 Report parameters

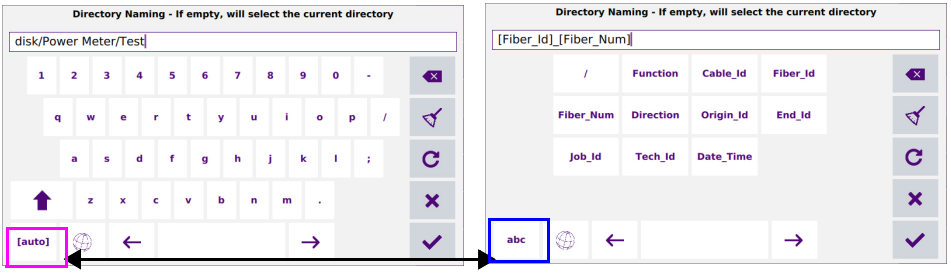


- **File(s) save in** Click on the text box to display the keyboard and define the directory for files saving

  In the onscreen keyboard, select the pre-defined parameters available or, press **abc** key to enter a name manually for the directory. Then, press **Enter** to validate.

  Example: `disk/PowerMeter/Test`

Figure 16 Directory - Onscreen keyboard



or

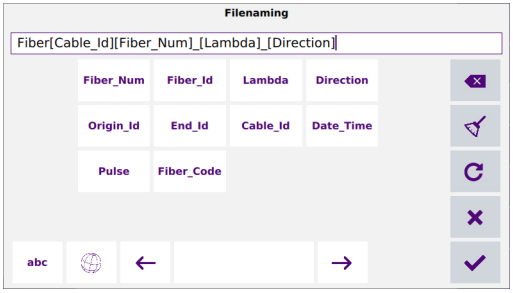
Click on or leave the box empty to select the Current Directory for file saving.

Press to validate.

- ***Directory*** This field displays the directory selected/created into which the file(s) will be saved.
- **Filenaming** Select **Filenaming** parameter and click on the text box to modify the name of the file for the result trace.

  Use the onscreen keyboard to view and select the pre-defined parameters available or, press **abc** key to enter a name manually for the file. Then, press **Enter** to validate.

Figure 17 Filenaming - Keyboard (auto)



or

Click on to apply the name by default to the file:

`Fiber[Cable_Id][Fiber_Num]_[Lambda]_[Direction]`

The name of the file is displayed in grey under **Filenaming** parameter

- **Report** Select the report format to be generated:

  PDF select to generate a report in a pdf file.

  JSON: select **to** generate json file(s) compatible with VIAVI test process automation (job manager and StrataSync cloud data management system).

  TXT: select to generate a txt file of the results.

  If all parameters are defined with **No**, only the .sor (or .msor/.csor) file will be saved.
- **Comment** click on Comment text box to enter a specific comment to the project

- **Report Layout** This parameter allows to define the report page setting and is available exclusively if a **pdf file** has been defined in the **Report As** parameter.:

  Standard: in multi-traces display, one pdf report page is generated for each trace.

  Consolidated: in multi-traces display, one pdf report page is generated for all traces
- **Report naming** If **Consolidated** is defined for **Report Layout**, select **Report naming** parameter and click on the text box to modify the name of the report file for the result trace.

  Using the onscreen keyboard, enter a name manually for the file and press  to validate.

  If no name is entered, the report name by defaut applies: `Report_SM/MM-OTDR`.

Activating the Source function

The Source function is an option chosen at the time of order and incorporated in the factory.

To activate the function:

1 Press the **HOME** button.

2 Click on the icon **Source** in the Platform section.
The icon turns yellow 

.

LTS Results page

The LTS results page is split into two sections:

- the upper section corresponds to the light source activation and settings
- the lower section corresponds to the power meter measurement results and settings.

Result page of the Power meter

The power level measured by the power meter and its measurement unit are displayed in large characters, together with:

- the mode of transmission of the measured signal: continuous wave (CW) or modulated wave (available frequency 270Hz, 330Hz, 1KHz, or 2KHz, VIAVI Auto).
- the wavelength of the measured signal.
- the reference level expressed in dB.
- the level of Attenuation Compensation.

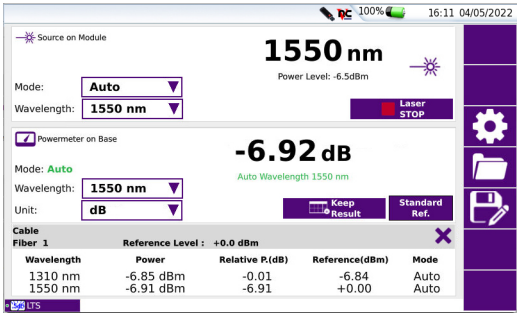
Table of results

For one and the same fiber, the power meter displays a table of all the different tested wavelengths. The table shows the power level measured in dBm, the relative power (in dB) and the reference level in dBm (if units = dB), together with the mode.

- A measurement result is displayed in the table when the **Keep Result** icon is pressed 

.
- The key  deletes the values in the table.
- If the Alarm function has been activated, any result that exceeds the setup thresholds appears in red in the table. Else results are shown in green.
- When the instrument is switched off, results present in the table are kept.

Figure 18 Results and commands of the power meter



Results of the powermeter

Keys of the power meter

When the Powermeter results page is displayed the following settings are available:

Mode	Information about the received signal modulation: CW, Auto
Wavelength	Selection of the wavelength to be measured.
Unit	Choice of the unit (dB, dBm or Watts)

The following action keys are available:

Standard Ref.	Keep the current power level value and set it as the reference value, in order to measure the insertion loss of a link. This reference value is dis-played under the measurement result until a new reference is performed.
Keep Result	Keep the power level value displayed in the table below.
	Deletes all the results/values displayed in the table.

Combo PM/OTDR

If the ExpertOTDR mode is activated at the same time as the Powermeter, a menu key **Combo PM/OTDR** function becomes available in the control bar.

It allows to combine in the test report power levels and OTDR results. If there is no light, you can use the standard port/wavelength of the OTDR. If there is light, you must use a filtered wavelength/in-service port.

Performing a power level measurement

1. Connect the fiber under test to the test port (see "Connection to the power meter, VFL and Talkset" page 26).
2. On the power meter results page section, select the measurement unit: dBm or Watts.
3. The power level is displayed in real time when there is light. To keep the displayed value, press on **Keep Result** icon. The value is then displayed in the table (but not saved yet) - see "Table of results" page 33.

Performing an insertion loss measurement

A combo light source and power meter is often used to perform an insertion loss measurement. Few steps must be carried out to get a reliable and accurate loss measurement.

Setting the zero value of the power meter

1. Close the protective cap of the OTDR port (so no light can be seen by the power meter photodetector).

2 In the Setup menu, press **Zero**.

It is important to set the zero of the power meter especially to get accurate results, as the noise from the germanium photodiode may fluctuate over time and with temperature variations.

3 Wait until the dialog box `Offset nulling completed` is displayed.

4 Hit any key to continue.

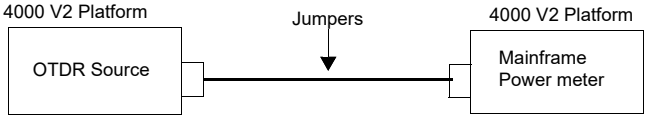
Performing a reference

Using two equipment, with an OTDR module including a laser source option and a Power meter option, an insertion loss measurement in continuous wave can be performed.

Side by side reference

Both units are connected together which requires to have them at the same location.

Figure 19 Side by side reference - 1 jumper reference



NOTE

The reference can be performed with one 4000 V2 Platform at one side and one 2000 Platform at the other side.

1 Before connecting fiber/jumper, use appropriate cleaning tool to clean connector end-faces.

2 Connect the reference/graded jumper from the light source directly to the power meter.

3 Activate the OTDR light source, on equipment (1)

a Press the **HOME** key.

b Select the source icon. It turns yellow to show it is active 

.

c In the **Results** page, press **Laser START**.

d Select the **Twintest** mode in the list.

4 Activate the power metern on equipment (2), from the Base-unit

a Press the **HOME** key

b Select the Power Meter icon. It turns yellow to show it is active 

.

c In the **Results** page, press **Standard Ref.** for each wavelength.

The actual power level is set as the new reference level for the selected wavelength. Then, the displayed value is around 00.00 dB.

The reference levels are stored and entered in the setup fields.

Measurements on the fiber under test

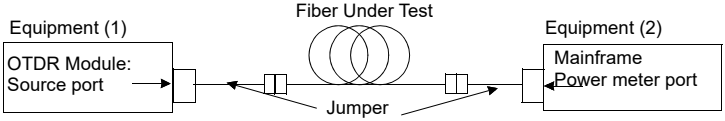
Once the references have been performed on both units:

After a Side by side reference, always keep the jumper connected to the equipment (1) the light Source and connect another graded jumper to the Power meter port, equipment (2).

1 Connect the jumpers to the fiber under test using the appropriate method (ex. keying mechanism for FC/PC types).

2 On equipment (1) press **Laser START**.

Figure 20 Measurement of the fiber under test



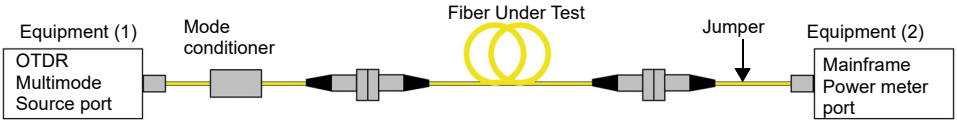
Measurement using a mode conditioner

To perform an Insertion Loss measurement with a Source that is compliant to IEC 61280-4-1 Ed2 Standard on encircled flux, it is recommended to use a mode conditioner

after the OTDR Source port.
The light source and the mode conditioner has to be referenced together using the side-by-side 1-jumper reference method (see “Side by side reference” on page 35):

1. Connect the Multimode source (1) to the mode conditioner
2. Connect the Powermeter port (2) to the jumper
3. Connect extremities of the mode conditioner and jumper to the fiber under test using the appropriate method (ex. keying mechanism for FC/PC types).

Figure 21 Measurement of the Insertion Loss with a mode conditioner



4. On equipment (1) select **Laser START** to activate the light source.

Storing and reloading results

Report Setup

Press on **Setup** softkey, then **Report**.

File(s) save in	set the directory where the file(s) will be saved.
File naming	set the name of the file(s) by using pre-defined tags / fields previously set in **Link** or by entering directly a name.
Report As	Set the format of the report. Choice between .txt, .pdf and .json.

Storing results

In order to save the results of a measurement, press **Save**.The file name displayed is per the Report file naming setting. Tou can edit/change it in the keyboard if needed.

- A proprietary file is always saved. It allows to re-load results in the instrument. It is saved with the extension .lts.
- The other files format are per the **Report As** setting.

- Note that the ".txt" format is equivalent to a .csv and can be opened with a spreadsheet program, on a computer, where all measurement results can be easily retrieved and the table format customized.

Loading results

In order to load previous power level measurements, go to the file Explorer, select a file  with the extension «.Lts» and press **Load** > **View trace(s)**.

VFL Function

VFL connector

The type of optical connector used for the VFL source is UPP (Universal Push Pull), which is compatible with all diameter 2.5 mm connectors (FC, SC, ST, DIN, E2000, etc.)

See Figure 11 on page 26 to visualize the VFL connector.

Visual Fault Locator function (VFL)

This function is used to emit a red light signal of frequency 1 Hz or in continuous mode into a fiber to detect any defects in the dead zone of the reflectometer, or to identify it. This function is suitable for short fibers (length < 5 km) or the first few meters of a long fiber.

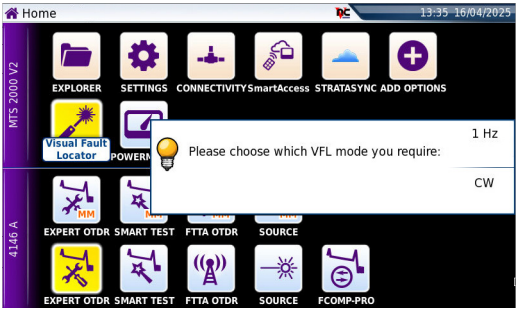
NOTE
Identification is facilitated by the blinking of light in the fiber.

To emit a light signal into a fiber:

1. Connect the fiber to the VFL port on the connectors panel.
2. Press the **HOME** key and activate the VFL 

.
3. In the dialog box, select the signal mode of the VFL: 1Hz or CW (Continuous). The icons  display on the upper banner of the screen.

Figure 22 VFL - signal selection



NOTE

Press **CANCEL** button on the Platform to deactivate the VFL.

Talkset and Datalink Functions

The Talkset option enables two operators at opposite ends of an optical link:

- To communicate along the fiber.
- To transfer data along the fiber.

Each end of the optical link must be provided with a 4000 V2 Platform equipped with the Talkset option.

NOTE

It is possible to use the Talkset of the 4000 V2 Platform and to carry out measurements at the same time, on a different fiber.

NOTE

It is possible to use the Data transfer feature while using the optical telephone of the 4000 V2 Platform. Nevertheless, the data transfer speed will be slightly decreased.

Talkset configuration

The talkset configuration is set in the **System Settings** screen, in the **Channel** box (see "Adjusting volume level" on page 42).

Connections

At each end of the fiber:

1 Connect the fiber to the Talkset port of the 4000 V2 Platform, either directly or through jumpers.

NOTE

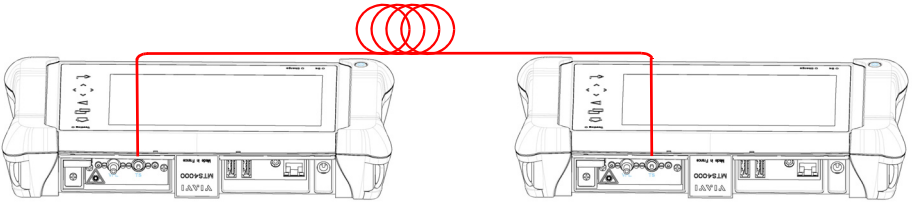
The Talkset option is delivered with a FC adapter mounted on standard on the talkset connector.

In addition to the FC adapter, a SC adapter is also delivered with the Talkset option.

VIAVI recommends you to use the following connections:

- PC Fiber Connection (APC is not recommended)
- SC or FC connection (UPP is supplied but not recommended)

Figure 23 Installation for Talkset use



2 A headset (with earphones and a microphone) supplied with the option may also be plugged into the 4000 V2 Audio jack.

NOTE
Data transfer uses the same fiber as the optical telephone

Establishing communication

On the caller 4000 V2 Platform, press the **HOME** button, then validate the **desired function:**

- **Talkset** 

(Optical Telephone): used to communicate via the fiber.
- **Datalink** 

: used to transfer data, perform OEO measurements or remote screen using the fiber.

If the remote instrument is ready to receive (on standby), the Talkset/Datalink icon turns yellow, beeps are emitted, and

- the icon  appears at the top of the screen: telephone communication can now take place.
- the icon  appears at the top of the screen: data transfer can now take place.

If the remote instrument is not ready to receive, the icon does not change color and a message is emitted.

NOTE
The talkset icon is displayed on the top banner as long as communication remains established, letting the user know that the connection is working. When communication is established, the headset is automatically enabled if plugged in. However, the loud speaker must be correctly configured in the setup menu to work accordingly

NOTE
Data transfer varies according to the type of application you use. For Fiber Optics for example, you can use the explorer. The distant 4000 V2 Platform will be shown just like a disk and all file and directory features can be used from and to that disk.

Remote screen function via Optical Datalink

This enables an operator at one end of an optical link to take control over another 4000 V2 Platform connected at the other end, using the fiber.

NOTE

Each end of the optical link must be provided with a 4000 V2 Platform equipped with the Talkset option.

Establishing communication

1 On the caller 4000 V2 Platform, press the **HOME** button, then select and confirm the **Optical Datalink** option:

– If the remote instrument is ready to receive (on standby), the **Optical Datalink** icon turns yellow, beeps are emitted, and the icon appears at the top of the screen: data transfer, remote screen or oeo measurements can now take place.

– If the remote instrument is not ready to receive, the **Optical Datalink** icon does not change color and a message is emitted.

2 Click next on **Connectivity**

3 In the connectivity screen, click on **Switch to remote screen**.

Your screen is now fully replaced by the distant screen, and everything you do on your 4000 V2 Platform is in fact done on the distant 4000 V2 Platform.

An icon appears in the top banner of the 4000 V2 Platform.

A slight normal color degradation may be seen on the 4000 V2 Platform controlling a distant instrument.

Adjusting volume level

The sound is transmitted to the earphones of the headset and, if this function has been activated, to the speaker in the 4000 V2 Platform. To activate the base loudspeaker and adjust the volume:

1 Press the **HOME** key.

2 Validate **Settings** icon to reach the **System Settings** page.

3 Under the Audio box, adjust **Headset Volume** (from 0 to 100).

End of a VNC session

In order to end a VNC session, you can:

1 Return to the **Connectivity** page and click on **Return to local screen**. (Recommended solution)

or

Deactivate the **Optical Datalink** function on either 4000 V2 Platform connected.

A short sound is emitted to indicate the disconnection is done, and the icon **Optical Datalink** turns inactive.

2 Disconnect the fiber

NOTE

The VNC icon in the top banner of the screen lets you know at all times whether you are in a VNC session or not.

Disconnection

When communication is over:

1 Deactivate the **Talkset/Datalink** function on one of the 4000 V2 Platform.

This deactivation can be done by either 4000 V2 Platform.Then, the fiber used can be disconnected safely.

6

Microscope application

The microscope application is a hot-plug feature enabled when connecting a VIAVI fiber inspection microscope to a VIAVI instrument that supports optical fiber testing.

The topics discussed in this chapter are as follows:

Microscope Overview

A probe microscope enables verification that optical fiber connectors are sufficiently defect-free and suitable for service.

The P5000i Digital Probe Microscope and the FiberChek Probe Microscope are portable handheld microscopes used to view and inspect both the bulkhead (female) and patch cord (male) sides of fiber optic connectors as well as other optical devices like trans-ceivers.

The P5000i probe and the FiberChek probe require an FBPT inspection tip. An FBPP barrel assembly may also be required depending upon the tip.

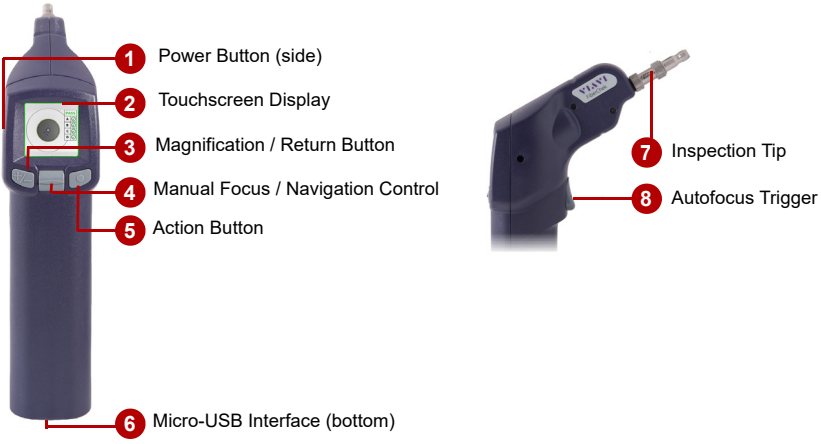
The P5000i probe is connected to the instrument with a USB-A connector.

The FiberChek is connected to the instrument with a micro-USB connector or via WIFI.

Figure 24 P5000i Probe components

Before using the P5000i scope, ensure that the Bluetooth option on the host instrument has never been activated after starting the instrument. If it has been activated, stop and restart the instrument before using the P5000i probe.

Fig. 25 FiberChek Probe Overview



Connecting the microscope

P5000i probe USB connection

1. Plug the P5000i probe into a USB port from the SmartOTDR.
2. Touch the Home button
3. Launch the Microscope application 

.
More than one application may be active on the unit (e.g. both inspection and OTDR)
4. Connect the probe with the fiber being inspected using the appropriate tip.

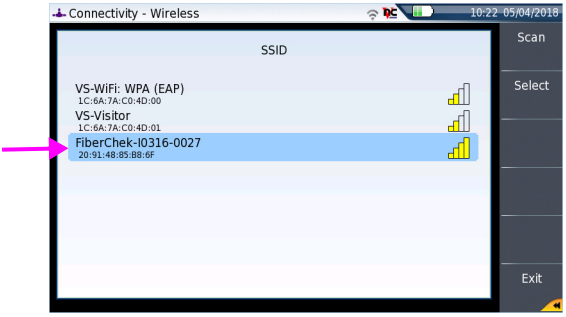
FiberChek probe WIFI connection

1. Turn on the microscope.
2. Enable the WIFI connection on the microscope.
3. On the unit, press the **HOME** button.
4. Touch **Connectivity** > **Wireless**.

5 Verify that **WLAN Mode** = **Wireless Client**

6 Touch **SCAN SSID** to locate the microscope.

Fig. 26 Microscope FiberChek detected via WIFI



7 Touch the FiberChek SSID.

8 Touch **Select**.
The FiberChek SSID will appear under Configuration.

9 Touch **Connect SSID**.
The WIFI icon will change if the connection is successful.

10 Return to the **Home** page.

11 Launch the **Microscope** application 

.
More than one application may be active on the instrument (e.g., both inspection and OTDR).

12 Connect the probe to the fiber being inspected using the appropriate tip.

FiberChek probe USB Connection

1 Connect the micro-USB end of a micro-USB-to-USB-A cable to the micro-USB port on the FiberChek probe.

2 Plug the USB-A end of the cable into a USB port on the instrument.

Figure 27 USB connection of the FiberChek probe

3 Touch the **Home** button.

4 Launch the **Microscope** application 

.

More than one application may be active on the instrument (e.g., both inspection and OTDR).

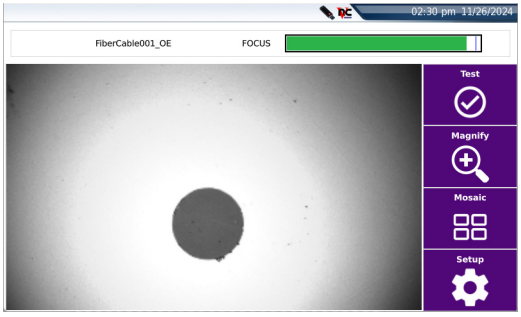
5 Connect the probe to the fiber being inspected using the appropriate tip.

Configuring the microscope

Test Setup

1 Connect a fiber to the probe inspection tip.

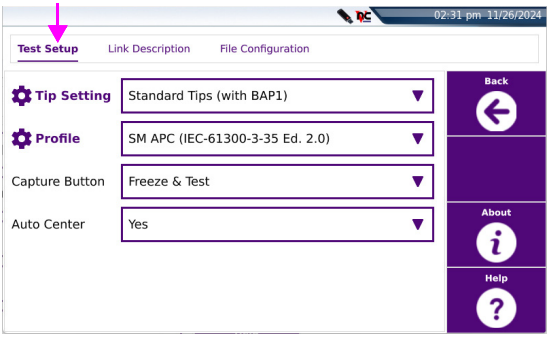
Figure 28 Scope Live view



2 Touch the **Setup** softkey

3 Touch the **Test Setup** link

Figure 29 P5000i Scope Setup

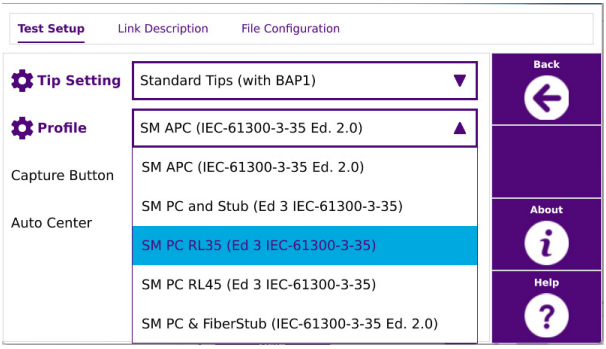


NOTE

From the Setup screens, press **About** key to display the microscope information (Scope type / Serial Number / Firmware version).

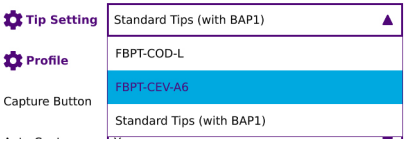
1 Touch the **Profile** dropdown box and select the Profile to be used for automated end face image analysis.

Figure 30 Profiles' List



The profile contains the failure criteria used during automated assessment of the end face image.

2 Touch the **Tip Setting** dropdown box and select the Tip Setting to be used to illuminate the fiber end face.



Only tip settings that are valid for the selected profile will be displayed.

- It is important to select the appropriate tip setting for the inspection tip connected to the probe
- The tip setting changes how the fiber end face is illuminated. The objective is to provide enough illumination to expose defects, while not providing too much illumination such that there is a lack contrast between the end face and a defect.

3 Touch the **Capture Button** dropdown box to change the operation of the **Test** softkey and probe capture button/trigger.

Freeze & Test: the live end face image is captured, and an automated profiled-based analysis is performed

Freeze image: the live end face image is captured

4 Touch the **Auto Center** dropdown box to change automated image centering

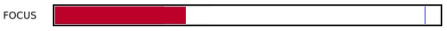
Yes: the end face image is automatically centered within the image view window

No: automated image centering is disabled

5 Touch the **Advanced Focus** dropdown box to change Focus meter appearance

Yes: meter is Green when the image is sufficiently in focus for automated analysis.

Red when the image focus is too low.

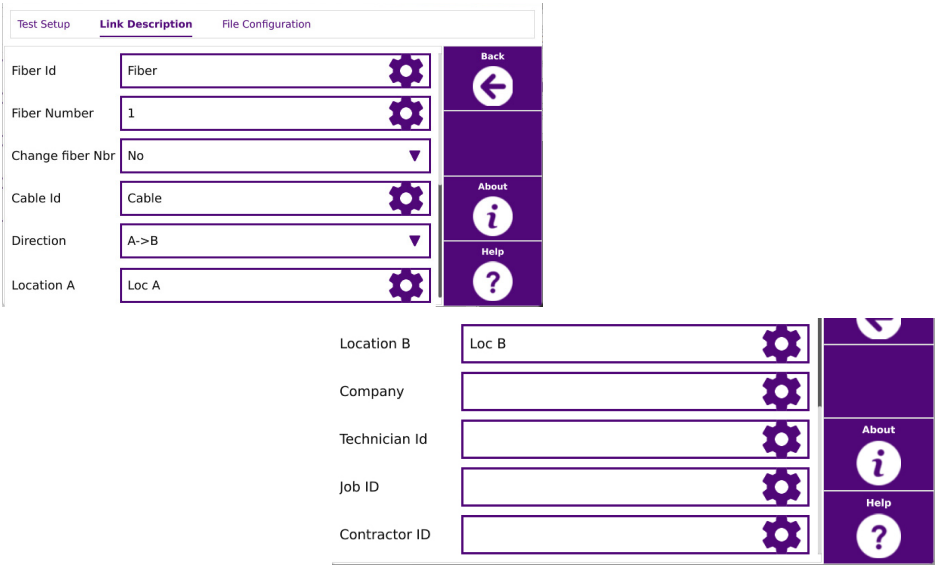


No: indication of focus level via colors is disabled

Link Description

1. Launch the microscope application and connect a fiber to the probe inspection tip.
2. Touch the **Setup** softkey.
3. Touch the **Link Description** link.

Figure 31 Link configuration



4. Touch the **Fiber Id** setup icon to change the name used to identify the fiber under test.

   An alphanumeric keypad is displayed to facilitate creation of a new name

5 Touch the **Fiber Number** setup icon to change the number used to identify the fiber under test.

An numeric keypad is displayed to facilitate changing the fiber number.

6 Touch the **Change Fiber Nbr** to enable automatic fiber number updating:

No: the fiber number is not updated automatically.

Increment: the fiber number is automatically incremented by 1 after saving a test result.

Decrement: the fiber number is automatically decremented by 1 after saving a test result.

User Defined: the fiber number is automatically updated as defined by the user. A setup field appears when **User Defined** is selected.
Touching the setup icon opens a keypad where the update value is entered.

A minus sign ("**-**") before the value indicates automated decrementing, whereas no sign indicates automated incrementing by the value entered.

7 Touch the **Cable Id** set up icon to change the name used to identify the cable under test.

A combination of **Cable Id**, **Fiber Id**, and **Fiber Number** is typically sufficient to uniquely identify the fiber under test.

8 Touch the **Direction** dropdown box to identify the direction from which the test is performed:

A -> B: from the origin to the extremity.

B -> A: from the extremity to the origin.

9 Touch the **Location A** setup icon to change the name of location A (origin).

10 Touch the **Location B** setup icon to change the name of location B (extremity).

11 Touch the **Company** setup icon to change the name of the company performing the test.

12 Touch the **Technician ID** icon to change the name of the individual performing the test.

13 Touch the **Job ID** icon to change the name of the job used to identify a group of tests.

14 Touch the **Contractor ID** to change the name of the contractor performing the test.

These descriptors are listed in the header of a PDF report when a test result is saved.

Figure 32 Header of the PDF report

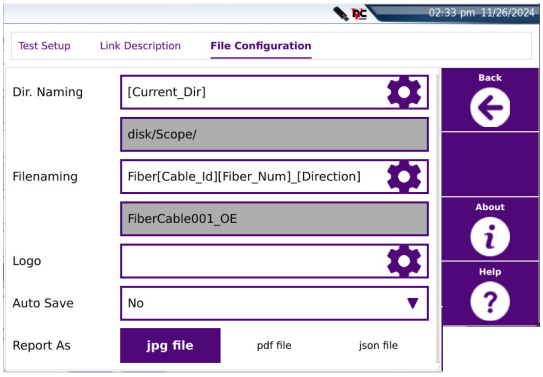
FOpros

Cable ID	FOcable-16B	**Pass**
Fiber ID	Rack4-Enclosure2 96	
Direction	A->B	
Location A	Building_D5	
Location B	Building_D2	
Technician Id	ea001	
Job ID	Job211222	
Probe	FBP-P5000i S/N 1486070078	
Test date	21/12/2022 17:13 (UTC+0)	
Profile	SM UPC (IEC 61300-3-35 2.0)	
Comment	SC/UPC Connector	

File configuration

1. Launch the microscope application and connect a fiber to the probe inspection tip.
2. Touch the **Setup** softkey
3. Touch the **File Configuration** link

Figure 33 File configuration



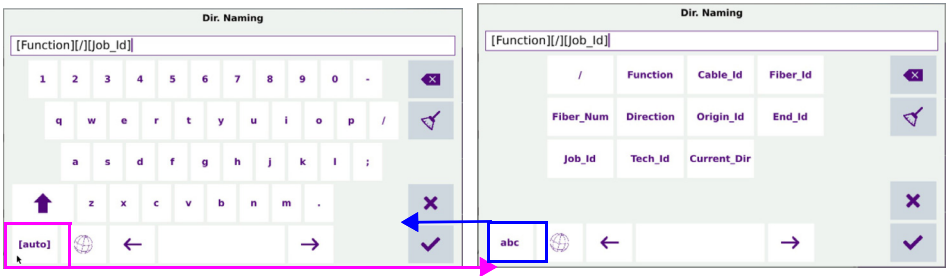
4. Touch the **Dir. Naming** setup icon to change the directory where test results will be saved on the instrument.

   An alphanumeric keypad is displayed to facilitate the creation of a new directory name.

Touch the **"[auto]"** key to expose a list of useful recommendations like **Function** / **Job_Id** or **Current_Dir**.

The directory name after making changes is indicated in the gray box immediately below **Dir. Naming**.

Fig. 34 Directory - Edition keypad



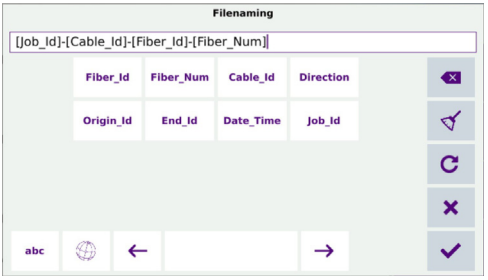
5 Touch the **Filenaming** setup icon to change the default file name scheme for individual test results

An alphanumeric keypad is displayed to facilitate the creation of a file naming scheme.

Touch the **"[auto]"** key to expose a list of useful recommendations like **Cable_Id**, **Fiber_Id**, **Fiber_Num**, and **Date_Time** to derive a unique naming scheme. Separating naming elements with a **"-"** character makes it easier to read the file name.

The file naming scheme after making changes is indicated in the gray box immediately below **File naming**.

Figure 35 Filenaming - Edition keypad (auto)



6 Touch the **Logo** setup icon to add a custom logo to test reports

- **a** Copy a logo file in JPG format to a USB flash drive.
- **b** Plug the USB drive into the instrument.
- **c** Navigate to the USB drive.
- **d** Select the logo file.
- **e** Touch **Load**.

7 Touch the **Auto Save** dropdown box to automatically save a test result:
Yes Always: test result always saved.
Yes on Pass: test result saved only if the test result is a Pass.
No: automatic saving is disabled.

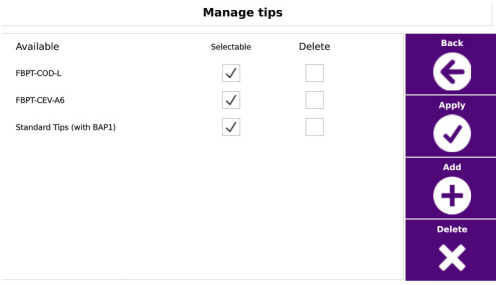
8 Touch **Report As** file formats to define how test results are saved:
Format options: **JPG** (default), **PDF**, **JSON**.
More than one format may be selected.

Tip and Profile Management

1 Touch the setup icon next to **Tip Setting** to manage tip settings.

2 Touch the check boxes next to the tip setting name to define what settings will appear in the **Tip Setting** dropdown box.

Figure 36 Manage tips



3 Touch **Apply**.

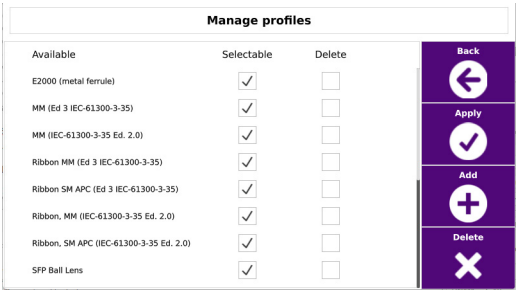
4 Touch the **Add** softkey to add a new tip setting:

- **a** Copy the new tip setting onto a USB flash drive.
- **b** Plug the USB drive into the instrument.
- **c** Navigate to the USB drive.
- **d** Select the tip setting file.
- **e** Touch **Load**.

5 Touch the setup icon next to **Profile** to manage profiles.

6 Touch the check box **Selectable** to define what profiles will appear in the **Profiles** dropdown box

Figure 37 Manage Profiles



7 Touch the **Add** softkey to add a new profile:

- **a** Copy the new profile onto a USB flash drive.
- **b** Plug the USB drive into the instrument.
- **c** Navigate to the USB drive.
- **d** Select the profile file.
- **e** Touch **Load**.

To delete a profile from the list:

1 Select the **Delete** case of the profile(s) concerned and press **Delete** softkey.

2 Confirm the deletion clicking **Yes**.
The profiles deleted are then no more available.

Using the microscope

Running an automated test

1 Launch the microscope application.

2 Connect a fiber to the probe inspection tip.

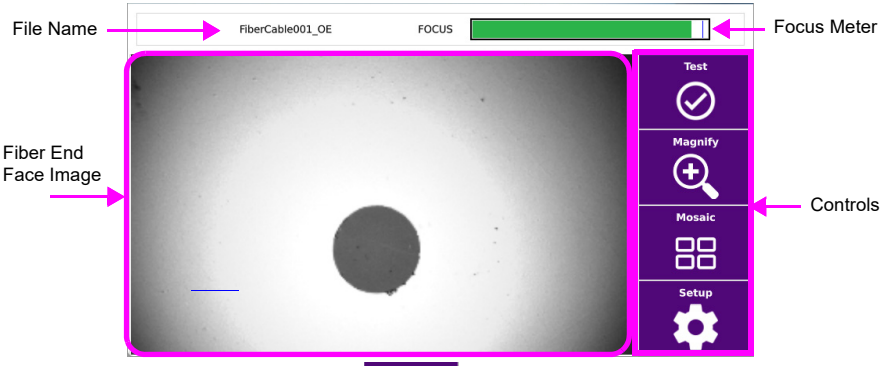
3 Focus the end face image:

Use the focus control wheel if a P5000i microscope or the autofocus trigger if a FiberChek microscope.

The focus meter will indicate the focus level.

The focus meter will be green if **Advanced Focus** = **Yes** and the focus level is sufficient for automated analysis.

Figure 38 Example of the result using the P5000i scope



4 Touch the **Test** softkey 

or press the test button on the microscope

The **Test** softkey will be accessible if the **Capture Button** setting = **Freeze & Test**.

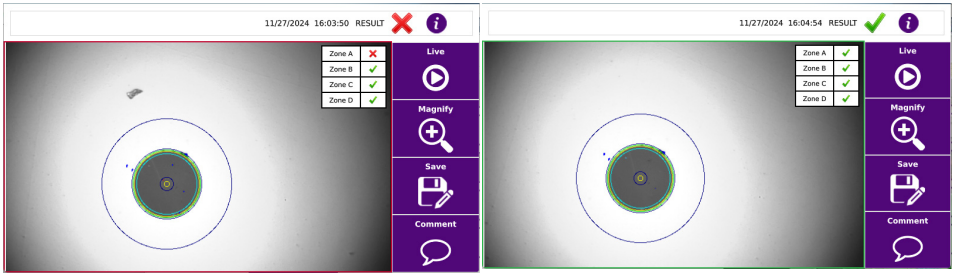
The **Freeze** softkey 

will be accessible if the **Capture Button** setting = **Freeze image**.

5 View the end face image and note the test result:

- **Pass**: green ✓ next to result, image outlined in green, green ✓ per zone.
- **Fail**: red ✗ next to result, image outlined in red, red ✗ next to failing zones.

Figure 39 Scope Test results

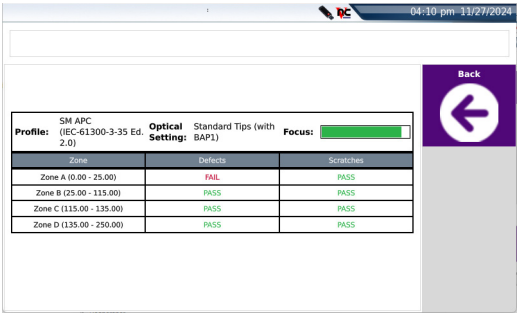


6 Touch the zone information box to hide the box and the overlays.

Touch the overlays icon  to unhide the zone information box and the overlays.

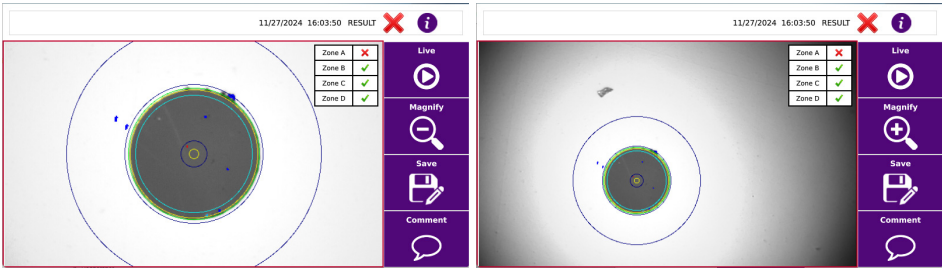
7 Touch the information icon  to view additional test result details.

Figure 40 Additional test results details



8 Touch the Magnify softkey to toggle between low and high magnification image views

Figure 41 Magnified images



9 Touch the **Comment** softkey 

to add a note to a saved test result:

- An alphanumeric keypad is displayed to facilitate adding a comment.
- The comment will appear on the bottom left corner of the image and on reports.

10 Touch the **Live** softkey 

to exit the tested or captured image view.

11 Touch the **Save** softkey 

to save the test result:

- Touching the softkey is unnecessary if **Auto Save** = "**Yes Always**" or **Auto Save** ="**Yes on Pass**" and the result is a pass.
  Enabling **Change Fiber Nbr** (not equal to "**No**") is recommended if **Auto Save** is set to **Yes**.
  The file name with an extension will appear in the top information bar when the save operation is complete.
- Touching the **Save** key opens an alphanumeric keypad to facilitate creating the file name.

12 Touch the **Live** softkey to return to fiber inspection.

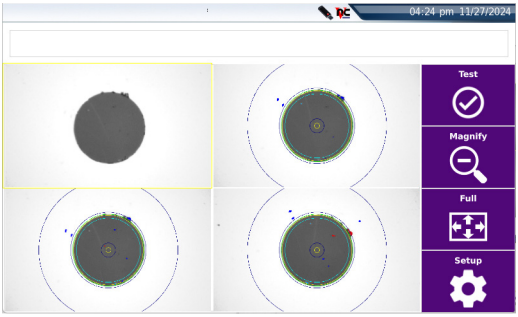
Viewing prior images (Mosaic Mode)

1 Touch the **Mosaic** softkey 

.

- Up to four end face images are displayed.
- Top left is the current Live view.
- The three most recent images are displayed in order of acquisition: top right, bottom left, bottom right.

Figure 42 Mosaic mode



2 Touch the **Magnify** softkey to toggle between low and high magnification image views.

3 Touch an image to select it.
A yellow outline will appear around the selected image.

4 Touch the **Full** softkey 

to return to a single-image, full screen view.

5 Touch **Test** or **Setup** softkeys if the Live (top left) image is selected.

6 Touch the **Save** or **Comment** softkeys if a non-live image is selected.

Accessing online help

1 Touch the **Help** softkey 

located on several setup screens to find a link and QR code for online help.

Online help includes videos, posters, and product information.

7

Connectivity

This chapter describes the different ways to access to the 4000 V2 Platform interface or content using different connection modes.

Topics described in this chapter are as follows:

Establishing connection

Via Bluetooth

The Bluetooth interface allows interface and file transfers.

It is an option that must be installed at the factory, and it is available with the WIFI option.

The product is approved in accordance to R&TTE directive concerning transmitter module marked by CE0678. It is manufactured by MITSUMI and it is an OEM product.

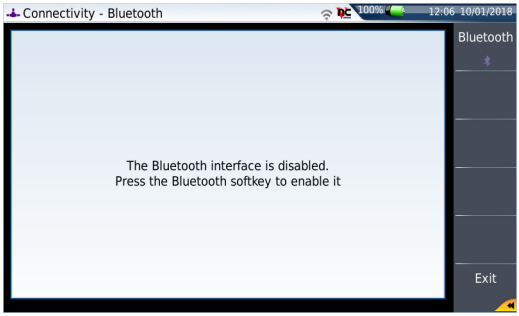
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This device contains FCC-ID: POOWML-C40.

Pairing the Platform with a device

1 On the **Home** page, press **Connectivity** key

2 Under **Connectivity** page, select **Bluetooth**
The following screen displays

Fig. 43 Bluetooth disabled



3 Press the menu key **Bluetooth** 

to enable the Bluetooth interface.

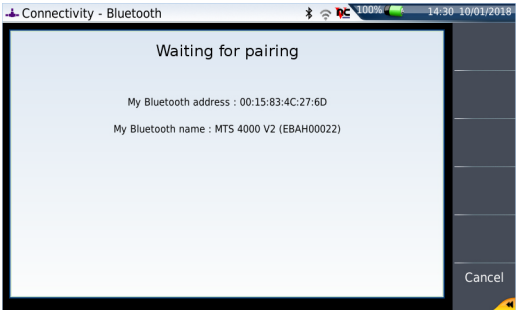
The icon is displayed on the upper banner of the screen

The Paired Bluetooth Devices screen appears

4 Press the **Become Pairable** soft key to wait for another device to initiate the connection to the 4000 V2 Platform.

A screen as the following one displays:

Fig. 44 Waiting for pairing



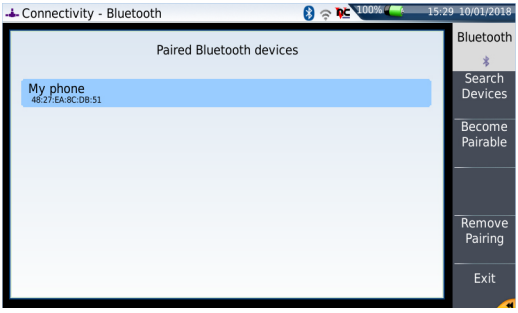
5 Activate Bluetooth on the equipment which need to be paired with the Platform

6 If you are asked to, validate a pairing code on the equipment.

7 In this case, validate the pairing code on both equipments.

Both equipment are now paired:

Fig. 45 Platform paired with one equipment



The icon has a blue background when paired with a device , versus no background when not paired .

Searching new devices to be paired with the Platform

1 If the desired device is not displayed on the screen, or if no devices are detected, press the **Search Devices** soft key.

The 4000 V2 Platform is searching for the devices which could be used via Bluetooth with the equipment.

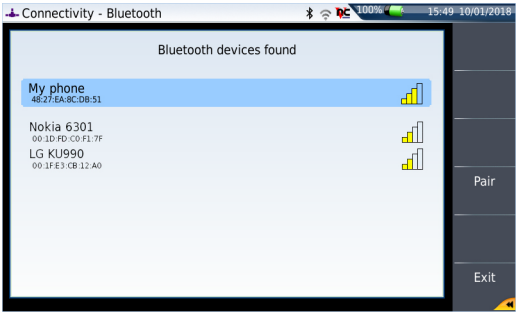
REMINDER

You may need to activate bluetooth on the other device to allow pairing.

A bargraph is displayed during research .

Once the research is completed, a list of the available devices is displayed, with the level of detection of the 4000 V2 Platform

Fig. 46 List of devices found



a Select the device to be paired with the Platform

It will be underlined in blue.

b Push the **Pair** key to connect the device to the Platform

2 If prompted, enter a pairing code. The code must be identical on the 4000 V2 Platform and the device.

3 Once the bluetooth device and the Platform are paired, a screen is displayed with the description of the device (see Figure 45 on page 65).

The icon has a blue background when paired with a device , versus no background when not paired .

You can now go to the file explorer and transfer files from the 4000 V2 Platform toward the bluetooth device and vice versa (see “Transferring files via Bluetooth” on page 93).

Removing the Pairing

To remove the pairing between the two equipments

1 From the Home page, press **Connectivity > Bluetooth**.

2 Push the **Remove pairing** key

The icon on the upper banner of the screen becomes  showing the Platform is no more connected to a bluetooth device, but the Bluetooth option is still active.

To deactivate the bluetooth onto the Platform, press **Bluetooth** menu key to disable the interface.

Via Wifi

The WIFI application is available on option with the 4000 V2 Platform, ref E10WIFI.

Configuring the WIFI access

1 Restart the 4000 V2 Platform, pressing **On** button.

2 On the **Home** page, press **Connectivity** 

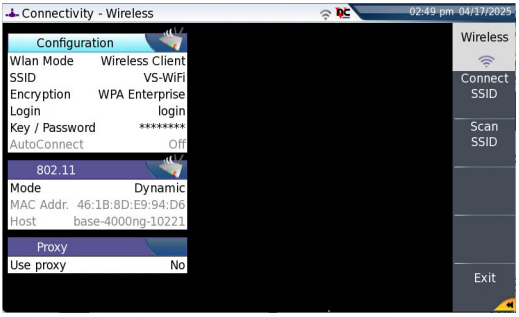
.
The **Connectivity** page opens.

3 In the new page, select the **WIFI** icon 

.

4 Press **Wireless** menu key to enable the Wifi interface.
The WIFI **Setup** screen displays.
The icon  is displayed on the upper banner.

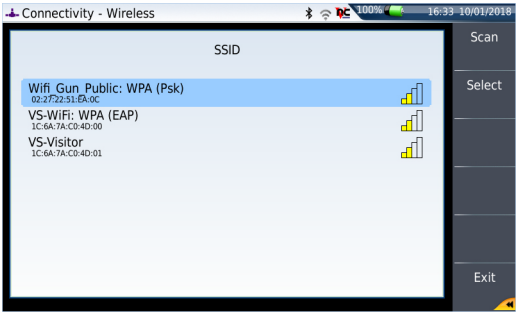
Fig. 47 WIFI Setup screen



5 Press **Scan SSID** menu key to scan for Service Set Identifiers (SSIDs) in the area.

6 Wait for the list of SSIDs to be displayed.

Fig. 48 List of SSIDs found



7 Select the desired network to connect to.

8 Press **Select** menu key to validated the connection.
The display goes back to Setup screen.
The **SSID** parameter is automatically configured with the one selected.

9 In **Encryption** parameter, select the type of encryption wished: **None**, **WEP Static**, **WPA Personal**, **WPA Enterprise**.

10 According to encryption type selected, enter **Login** (if any needed) and **Key/ Password**.

NOTE
Login and Password are kept in memory, even if the WIFI is deactivated or the 4000 V2 Platform switch off and restarted.

11 In the **AutoConnect** parameter, select if the connection to SSID selected must be done automatically (**On**) or not (**Off**).

Connection to SSID

Once configuration is valid, connect the 4000 V2 Platform to the Wireless network:

1 In the Setup screen, press **Connect SSID** menu key.

or

If **AutoConnect** is defined to **On**, the connection is launched automatically.

Once association of Platform with SSID is established, the icon  becomes  to indicate the connection is active.

Configuring the WIFI mode to which the Platform is connected

To work on WIFI with the Platform, configure the **802.11** parameter on the WIFI Setup screen.

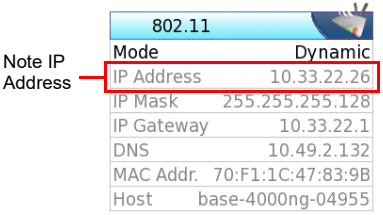
1 Select the mode of connection:

- **Config 1 to 4** static mode enabling input of the configuration of 4 sites. If this parameter is selected, the following parameters must be entered:
  - – Site Name the user can enter the name of the site in the Edit menu.
  - – IP Address IP address of the 4000 V2 Platform
  - – IP Mask address of the mask of the sub-network
  - – IP Gateway IP address of the machine enabling access outside the sub-network.
  - – DNS (Domain Name Server) IP address of the machine providing the IP address on the basis of the name
  - – Domain name name of the local network to which the 4000 V2 Platform is connected.

- **Dynamic** in this mode, which requires a DHCP server, the 4000 V2 Platform requests an IP address from this server which will be allocated dynamically if dynamic host configuration is activated on the local network.
  After selecting this mode or after power-on, the 4000 V2 Platform tries to establish a connection to obtain an address from a DHCP server. If for any reason, this process fails, the 4000 V2 Platform reverses to static IP address mode with User1 IP address.

Note the IP address of the Platform, to be able to remote screen on PC or to transfer files.

Fig. 49 WIFI connection in Dynamic mode



2 Configure the **Proxy** dialog box:
In the **Use proxy** parameter
- Select **No** if no proxy is used.
- Select **Manual** to enter manually the **Proxy address**
- Select **Auto** and enter the **Pac address**.

Creating a network from the 4000 V2 Platform

A WIFI network can be created from the 4000 V2 Platform, in order to associate it to a Smartphone or Tablet.

1 From the **Home** page, press **Connectivity** > **Wireless 802.11**.

2 On the **Setup** screen, select the Wlan Mode for WIFI connection: **Ad-hoc (IBSS)** or **AP Master.**

3 Press **Create Network** menu key and wait for the network creation.

The network creation on platform is completed once the dialog box is no more displayed.

4 On the Smart device, open the Wifi setup age.

5 Check the Platform has been detected (SSID identifier displayed in the list of WIFI networks found)

6 Click on this SSID and follow the instruction on your Smart Device to link it to the Platform.

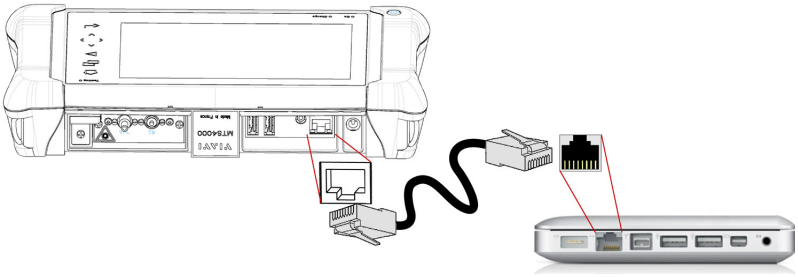
Via Ethernet

The connection between 4000 V2 Platform and the PC can be done directly, or via a local network.

Connecting the 4000 V2 Platform and the PC

1 Connect the 4000 V2 Platform to the PC via an Ethernet cable, using the USB Ethernet - adapter and an Ethernet cable.

Fig. 50 Connection 4000 V2 Platform and PC



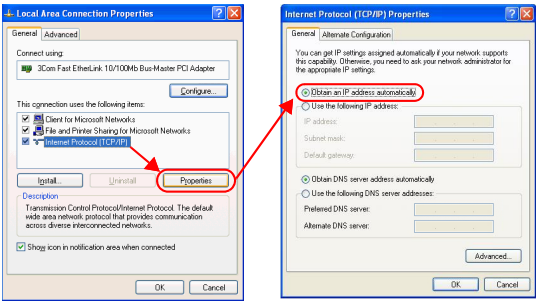
2 Make sure the network configuration onto the PC is set to the **Dynamic** mode:

- **a** Click on **Start** > **Control Panel**.
- **b** Double click on **Network Connection**.
- **c** Double click on **Local Area Connection**.
- **d** In the dialog box, click on **Properties**.
- **e** Check the parameter **Internet Protocol (TCP/IP)** is selected (◉) and click once on it (underlined in blue)

f Click on **Properties** button.

g On the tab **General**, check the parameter **Obtain an IP address automatically** is selected (◉); if not, click to select it.

Fig. 51 Internet Protocol



h Click on **Ok** and close all the dialog boxes opened onto the PC.

Configuring the 4000 V2 Platform via Ethernet

1 In the **Home** page, validate the **Connectivity** icon.

2 In the connectivity page, validate the **Ethernet** icon 

.

3 In the **I/O Interfaces** box, configure the following parameters:

Ethernet > Mode

Parameters of the local Ethernet network to which the 4000 V2 Platform is connected:

- **Config 1 to 4** static mode enabling input of the configuration of 4 sites. If this parameter is selected, the following parameters must be entered:
  - Site Name — the user can enter the name of the site in the Edit menu.
  - IP Address — IP address of the 4000 V2 Platform
  - IP Mask — address of the mask of the sub-network
  - IP Gateway — IP address of the machine enabling access outside the sub-network.
  - DNS[1] — IP address of the machine providing the IP address on the basis of the name

– Domain name — name of the local network to which the 4000 V2 Platform is connected.

- **Dynamic** — in this mode, which requires a DHCP server, the 4000 V2 Platform requests an IP address from this server which will be allocated dynamically if dynamic host configuration is activated on the local network.
  After selecting this mode or after power-on, the 4000 V2 Platform tries to establish a connection to obtain an address from a DHCP server. If for any reason, this process fails, the 4000 V2 Platform reverses to static IP address mode with User1 IP address.

NOTE
Once the 4000 V2 Platform is connected to the network, the icon , indicating the connection is working, displays for few seconds.

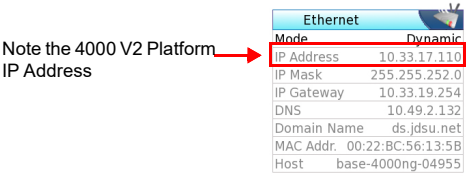
Proxy > Use proxy

1 Select **No** if no proxy is used.

2 If **Manual** has been selected, enter the **Proxy Address**.

3 If **Auto** has been selected, enter the **Pac Address**.

Fig. 52 Example of configuration for I/O Interfaces box



4 Note the IP Address.

5 Wait about 10 seconds the connection is established.

The 4000 V2 Platform Interface can now be transferred onto the PC, or the internal memory or USB key contents can be transferred on PC.

1.Domain Name Server

Via Cloud Storage

Principle and prerequisites of the Cloud Storage

The Cloud storage defined the outsourcing of data on distant servers, which avoid the data storage on a local workstation.

The cloud storage onto a 4000 V2 Platform allows to transfer the files from the Platform toward a distant server and vice-versa.

Before configuring the Cloud Storage on Platform, you must first create an account on a Cloud Platform on internet.

The Cloud storage function onto the 4000 V2 Platform works exclusively with sites using the WebDav technology such as CloudSafe (https://secure.cloudsafe.com/pages/index.html) or Box (https://www.box.com/pricing/).

Once account is created, with WevDav configuration, you get the following information for connection:

- URL
- Login Name
- Login Password

Configuring and connecting to Cloud Storage on the 4000 V2 Platform

Configuring the 4000 V2 Platform

Once an account has been created on the Cloud site, configure the 4000 V2 Platform before establishing the connection:

Before configuring the Cloud Storage, make sure the configuration for Ethernet parameters and Proxy parameters are correctly configured.

See “Ethernet > Mode” on page 72 and “Proxy > Use proxy” on page 73.

1 On the **Home** page, press **Connectivity**.

2 In the **Connectivity** windows, press **Cloud/File Storage** 

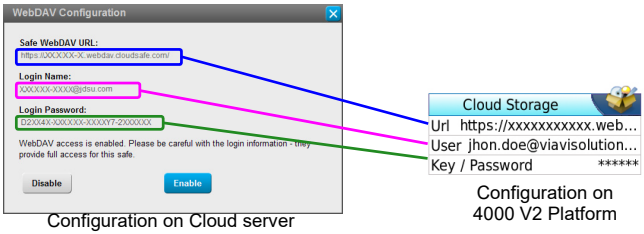
.
A new page opens

3 In the **Url** parameter, enter the URL define for the Cloud server created on internet

4 In the **User** parameter, enter your Login created on your account

5 In the **Key / Password**, enter the password attributed by the Cloud server.

Fig. 53 Example of configuration



Configuration on Cloud server (example with CloudSafe)

Configuration on 4000 V2 Platform

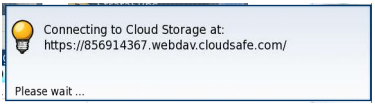
Connecting Cloud Storage

Once configuration has been established on the 4000 V2 Platform, it is ready to be connected with Cloud server:

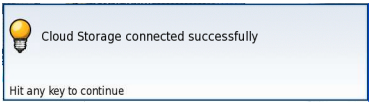
1 Select one parameter of the Cloud Storage window on 4000 V2 Platform

2 Press **Connect Cloud Storage** menu key 

.
The connection launches



3 Once connection is established, a message displays in the window



4 Press any key to continue, and start files transfer.

The icon  is displayed on the upper banner as long as the connection is active.

Disconnecting from Cloud storage

To disconnect the 4000 V2 Platform from Cloud storage:

1 Press **HOME** hard key.

2 Press **Connectivity** > **Cloud/File storage**.

3 Select a parameter of the **Cloud Storage** window.

4 Press **Disconnect Cloud Storage** menu key.

Remote Control

Smart Access Anywhere

The 4000 V2 Platform can be accessible to any network test locations, using a specific function: **Smart Access Anywhere**.

This function allows one distant user, on a PC, to transfer the Platform Interface and work on 4000 V2 Platform or to access the internal memory / USB memory stick contents on the PC and perform files transfer from 4000 V2 Platform to PC and vice-versa.

This feature does not need any license code if the user wants assistance from a VIAVI person located within the VIAVI network.

This feature requires a license code into the unit if the user wants any other assistance/ support (“company A” willing to be remotely controlled by “company A or B”).

The license **SAA-2K-L2** is used for SmartAccessAnywhere using Ethernet, wifi hostpot connection, or USB / Wifi connection through 3G smartphone

The 4000 V2 Platform can be used in combination with a PC in order to transfer the Platform Interface onto a PC, or to access the internal memory or USB memory stick contents on the PC.

Connection modes

Different kinds of connection are available to access to a distant 4000 V2 Platform.

According to the connection type used, specific requirements are mandatory.

Ethernet or WIFI connection

1 Using the Ethernet connection, no specific requirement is needed. The platform is directly connected to Internet via an Ethernet Cable.

Fig. 54 Ethernet connection

2 The WIFI connection can be used to access to 4000 V2 Platform from any location.

This connection is available exclusively if the **WIFI option is installed onto the** 4000 V2 Platform which will be seen remotely.

Fig. 55 WIFI connection

USB/WIFI connection via Smartphone (Tethering)

To access to a 4000 V2 Platform remotely, the connection between the unit and the VIAVI application can be established via a USB cable or WIFI, and through a Smartphone, having Internet Sharing capability via USB or WIFI.

1 To establish connection between 4000 V2 Platform and Smartphone using USB, connect the USB cable on 4000 V2 Platform and on Smartphone connector.

Fig. 56 USB connection through Smartphone

2 To establish connection between the 4000 V2 Platform and Smartphone using WIFI, the **WIFI option must be installed onto the** 4000 V2 Platform.

Fig. 57 WIFI connection through Smartphone

Pre-requisite for using the Smart Access Anywhere Application

To access to a 4000 V2 Platform from any locations, specific requirements are mandatory:

- a license installed on 4000 V2 Platform which will be accessible from any locations.
- an Ethernet connection (the Platform must have an IP address - see “Ethernet > Mode” on page 72) and, if the network uses a proxy, this proxy must be configured (see “Proxy > Use proxy” on page 73).
- the VIAVI application, downloaded for free at the address «`http://smartaccess.updatemyunit.net`».
- port 22 (SSH) or 443 (HTTS) output opened
- according to connection mode selected:
  - the WIFI option installed on 4000 V2 Platform
  - a USB cable to connect 4000 V2 Platform with Smartphone
  - a Smartphone from given list and having appropriate basic subscription for internet connection sharing

Downloading the VIAVI application on PC

The VIAVI application **Smart Access Anywhere** must be downloaded on the PC which will be connected to the 4000 V2 Platform remotely.

NOTE

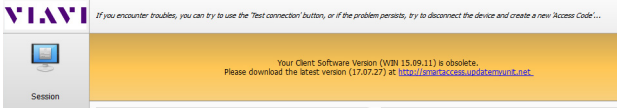
It is not necessary to have administrator privileges to install the VIAVI application on PC. This application is just saved on PC.

1. On PC, open an internet explorer and type the following address: `http://smartaccess.updatemyunit.net`
2. Click on the link **SmartAccessAnywhere_Vxx.xx.xx.zip**
3. Select **Save** in the dialog box.
4. Open the directory into which has been save the zip file and unzip files into a directory
5. Open the directory and double click on **SmartAccessAnywhere.exe**
   The Smart Access Anywhere application opens:

Fig. 58 Smart Access Anywhere: Connection page

If the software version is not the last one available, a message displays, on the upper part of the screen to indicate the latest version available can be downloaded at the address: http://smartaccess.updatemyunit.net.

Fig. 59 Warning message of a new version available



Downloading the VIAVI application on Tablet/ Smartphone

The VIAVI application **Smart Access Anywhere** can be downloaded on a Smartphone or tablet which will be connected to the 4000 V2 Platform remotely.

NOTE

It is not necessary to have administrator privileges to install the application. This application is just saved on the smartphone or tablet.

1 On Smart device, open an internet explorer page and type the following address: `http://smartaccess.updatemyunit.net`

2 Click on the link **SmartAccessAnywhere_Vxx.xx.xx.apk**
The downloading starts.
Some security messages can be displayed.

3 Follow the process on the Smart device to confirm the installation of the application on the instrument.

4 Once the installation is completed, the icon appears on Tablet/Smartphone.

5 Click on the icon to launch the SmartAccess Anywhere application.

Launching the SmartAccess Anywhere application

Once connection is configured, the SmartAccess Anywhere application can be launched

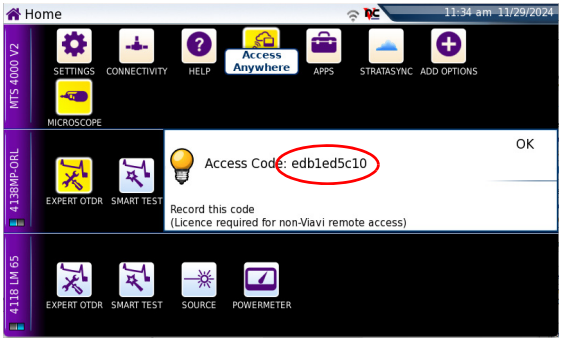
On 4000 V2 Platform

1 On the **Home** page, select the **SmartAccess** icon 

As soon as the icon is selected, the 4000 V2 Platform begins to connect to SmartAccessAnywhere Server.

2 Once connection is established with the server, the 4000 V2 Platform displays a message with the code to be used to access to the equipment remotely.

Fig. 60 Access code displayed



3 Note this access code and transfer it to the distant user, who will access the unit remotely.

4 Press **OK** to hide the message.

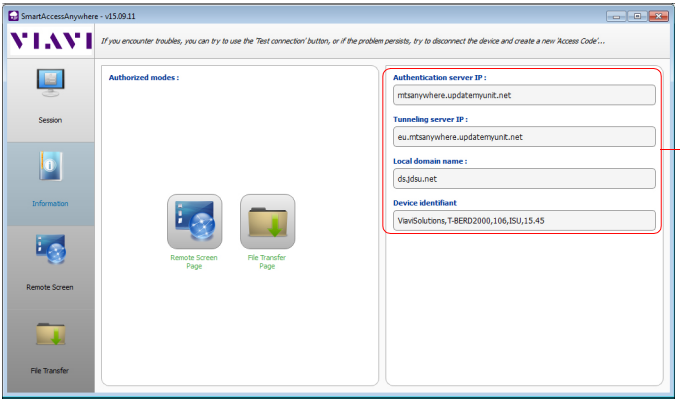
On the distant PC

1 On the PC of the distant user, once the application is launched, enter the Access Number on the upper part of the screen.

2 Click on **Connect** to validate 

The following screen displays:

Fig. 61 Smart Access Anywhere: Home page



After remote upgrade or reboot, please wait for more than 2 minutes before re-starting the link between the PC and the unit with SmartAccessAnywhere.

Using Remote screen and File Transfer applications

Once the Introduction page is displayed, the user can work on distant 4000 V2 Platform:

- transfer the interface to work on the unit (perform acquisition, configure the equipment...)
- transfer files from the equipment toward the PC, and vice-versa.

Transferring the interface onto the PC/Smartphone/Tablet

To display the remote 4000 V2 Platform onto the PC:

1 On the Introduction page, click on 

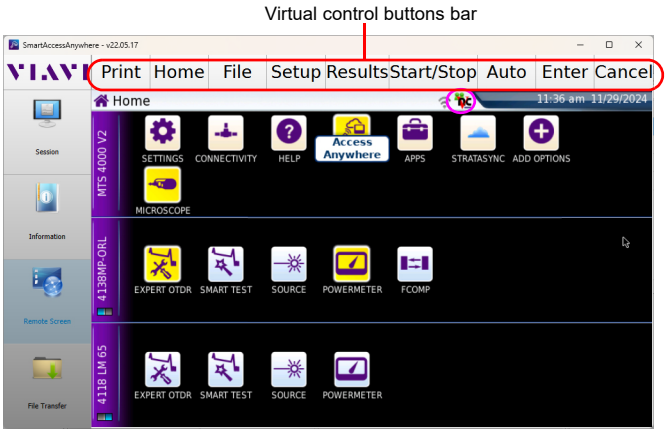
.

or

On the left menu, click on 

The current screen of the 4000 V2 Platform displays:

Fig. 62 Smart Access Anywhere: Remote screen



The VNC icon on the upper banner of the unit indicates the remote screen is active.

2 On the upper part of the screen, the virtual control buttons bar is permanently displayed and allows to emulate hard keys.

You may click on any of these buttons to obtain exactly the same results than using the hard keys on the front panel of the 4000 V2 Platform.

3 You can use keyboard mouse of the PC to control the 4000 V2 Platform (see “Equivalence between the keyboard and 4000 V2 Platform” on page 99).

Transferring files

To work on files (onto PC and onto unit):

1 On the Introduction page, click on 

.

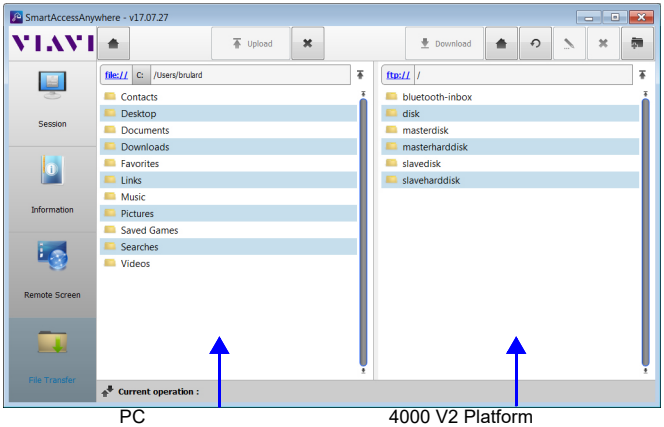
or

On the left menu, click on 

.

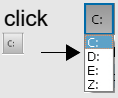
The file Explorer on PC and the one of the 4000 V2 Platform displays:

Fig. 63 File Transfer page



2 Double-click on one directory/storage media to display the contents (directories / sub-directories / files)

Navigation buttons

	Return to the Home directory
click 	Select the PC drive in the list
	Access to parent directory

Transferring files from PC to 4000 V2 Platform

1 On the 4000 V2 Platform explorer, select the storage media, and if wished the (sub-)directory into which file will be transferred.

2 On the PC file explorer, select the file to be transferred

3 Click on the button **Upload** 

.
At the bottom of the screen, a new banner displays with information on file transfer:

Fig. 64 Information on file transfer

1: location of the uploaded file on PC	3: level of transferred data
2: location of the file on 4000 V2 Platform once transfer is completed	4: bar graph of the transfer in progress

Only one file can be uploaded from PC to 4000 V2 Platform at the same time.

Once transfer is completed, the banner disappears and the transferred file is underlined in blue on 4000 V2 Platform explorer.

Transferring files from 4000 V2 Platform to PC

1 On the PC explorer, select the storage media, and if wished the (sub-)directory into which file will be transferred.

2 On the file explorer of the 4000 V2 Platform, select the file to be transferred.

3 Click on the button **Download** 

.
A dialog box open, allowing to modify the location on PC of the file.

4 Select the directory into which file will be saved.

5 Press **Save** to start the transfer
Under both file explorers, a new banner displays with information on file transfer (see Figure 63 on page 85).

Once transfer is completed, the banner disappears and the transferred file is underlined in blue on PC explorer.

Working with files and directories on 4000 V2 Platform

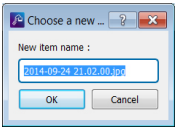
Renaming file or directory

1 Select a file/directory stored on the 4000 V2 Platform hard disk or USB key.

2 Click on  .

3 In the new dialog box opened, enter a new name for the file/directory, **keeping the file extension**.

4 Press **OK** to validate.

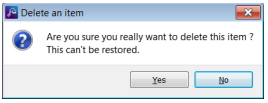


Deleting file

1 Select a file stored on the T-BERD/MTS-4000 V2 hard disk or USB key.

2 Click on  .

3 In the new dialog box opened, press **Yes** to confirm the deletion (or **No** to keep the file).



Creating a new directory

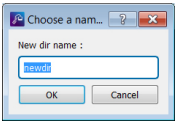
1 Select the storage and, if wished, the directory into which the new directory will be stored.

2 Click on  .

3 In the new dialog box opened, enter a name for the new directory (*newdir* is given by default).

4 Press **OK** to validate.

The new directory is automatically created at the location selected.



Connection information and settings

Displaying session information

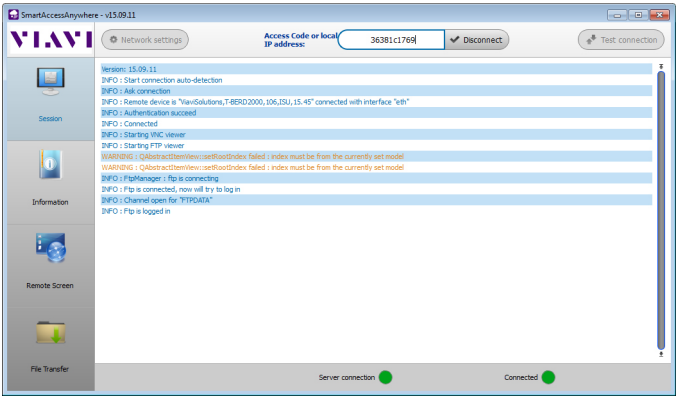
At any time during application use, the information about the session in progress can be displayed.

1 Press **Session** menu key on left of the screen 

.

A screen as the following one displays:

Fig. 65 Session page



This page gives information on connection «in real time».

Modifying connection settings

To modify the settings for connection to internet:

1 Press **Session** menu key on left of the screen 

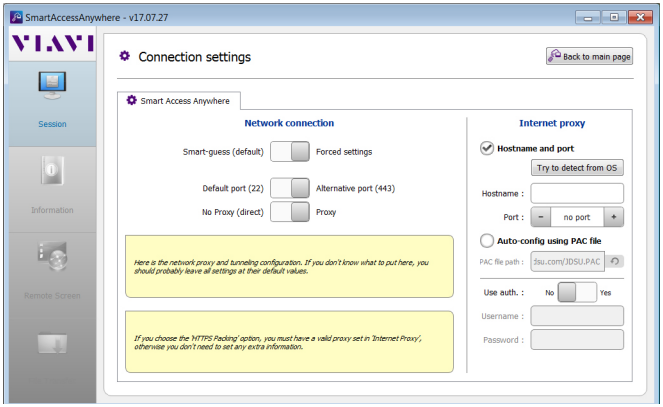
.

2 Disconnect from application pressing 

3 On the session screen (see Figure 65 on page 88), press button 

.
The following screen displays:

Fig. 66 Connection settings



By default, the connection is defined to **Smart-guess (default)**.

4 To modify the current parameters, select **Forced settings**.

The parameters for Port configurations turn automatically active.

5 Modify, if necessary, the port used: **Default port (22)** is selected by default

6 Select **Alternative port (443)** if necessary

7 If the parameter **Alternative port (443)** is selected, you can defined if the proxy is used or not in the following parameter.

The **Internet proxy** configuration is available exclusively if the port selected is **Alternative port (443)** and if the **Proxy** is selected.

It is recommended to configure parameters of connection with your local network administrator, if the default parameters need to be modified.

8 Once configuration is completed, press Back to main page.

The **Home** page displays (see Figure 61 on page 83).

Testing connection

Before entering the Access code to activate the application, the connection to internet can be tested from displayed screen.

1 Open the Smart Access Anywhere application on PC

2 Press 

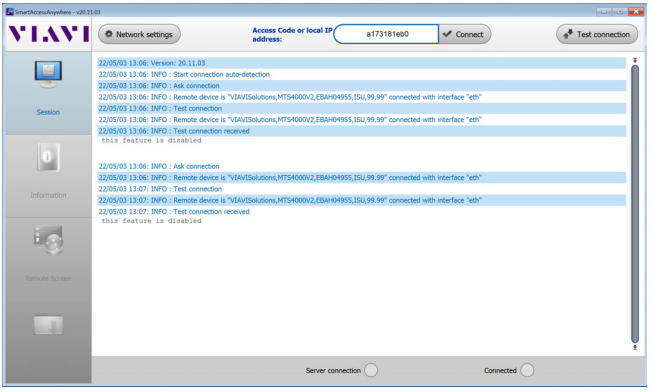
button
The test is automatically launched

3 Press 

to display logs in real time.
Once completed, the results for connection display:

4 If connection is valid, enter the access code and establish connection (see “Launching the SmartAccess Anywhere application” on page 81 - “On the distant PC” on page 82).

Fig. 67 Test results



M2M Link option

If the option SmartAccess Anywhere is available on the Platform, the function M2M Link is also available 

.

This option allows to transfer data, perform OEO measurements or remote screen between two 4000 V2 Platforms using the Ethernet network.

Establishing connection between two 4000 V2 Platforms

To make two platforms communicate via Ethernet, specific conditions and actions are required.

Before establishing the connection:

- An Internet connection must be established, with any kind of connection; Ethernet, WIFI...
- The distant Platform must be connected to Smart Access function (see "Launching the SmartAccess Anywhere application" on page 81).
- The SmartAccess code of the distant platform must be known by the operator on local one.

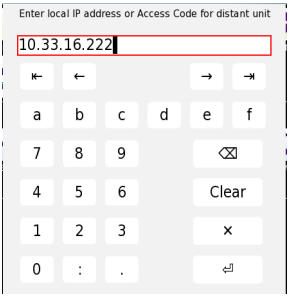
To establish the connection:

1 Validate the **M2M Link** icon on local Platform 

A numeric keypad automatically displays.

2 Enter the access code for the distant platform in the numeric keypad.

Fig. 68 Entering the Access Code



3 Press **Enter** to validate.

Wait for the connection to be established.

Once connection is valid:

– a message displays on local Platform and on distant platform to confirm the connection.

– the **M2M Link** function turns active on distant Platform.

– the icon displays on the upper banner, on each Platform.

Both platforms are ready to exchange data, perform OEO measurements or remote screen.

Remote screen function via M2M Link

This enables an operator at one end to take control over another 4000 V2 Platform connected at the other end, using the Ethernet network.

VNC configuration

Before it can be remote-controlled, the 4000 V2 Platform must be configured as explained in "Configuring the 4000 V2 Platform via Ethernet" on page 72.

Establishing communication

1 On the caller 4000 V2 Platform, press the **HOME** button, then select and confirm the **M2M** option:
   – If the remote instrument is ready to receive (on standby), the **M2M Link** icon turns yellow, and the icon appears at the top of the screen: data transfer, remote screen or oeo measurements can now take place.
   – If the remote instrument is not ready to receive, the **M2M Link** icon does not change color and a message is emitted.

2 Click next on **Connectivity**.

3 In the connectivity screen, click on **Switch to remote screen**.

   Your screen is now fully replaced by the distant screen, and everything you do on your 4000 V2 Platform is in fact done on the distant 4000 V2 Platform.

   An icon appears in the top banner of the 4000 V2 Platform.

A slight normal color degradation may be seen on the 4000 V2 Platform controlling a distant instrument.

End of a VNC session

In order to end a VNC session, you can:

1 Return to the **Connectivity** page and click on **Return to local screen**. (Recommended solution)

   or

   Deactivate the **M2M Link** function on either 4000 V2 Platform connected.

   A dialog box displays, asking the confirmation of the disconnection.

Press **Yes** to stop the connection between the 2 Platforms.

NOTE

The VNC icon in the top banner of the screen lets you know at all times whether you are in a VNC session or not.

Data Transfer between two Platforms

Once the connection is established between the 2 Platforms via **M2M Link** option, the files can be transfered from the master Platform to the slave one.

1. Open the **File Explorer** on the distant Platform
2. Select on the local disk or harddisk or USB key, the file(s) or directory to be imported in the local platform
3. Select the **Slavedisk**
4. Select if necessary a directory
5. Press **Edit** > **Copy** to copy the file(s)/directory on the Platform.

Data Transfer

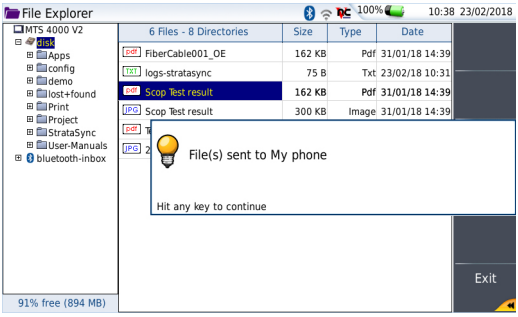
The 4000 V2 Platform enables to transfer files, from or toward the product using Wifi, Bluetooth or Ethernet connection.

Transferring files via Bluetooth

Once the connection has been established with a bluetooth device:

1. On the **Home** page, press **File Explorer** key to go in the File Explorer.
2. Select the file(s) to be transferred from the Platform toward the PC.
3. Push **Export** > **Send by Bluetooth** menu keys.
   A confirmation message displays once the transfer is completed.

Fig. 69 Confirmation of files sending



You can also transfer file(s) from the bluetooth device toward the Platform.

In this case, the files received will be stored in a storage media created automatically on the Platform: *bluetooth-inbox*.

WARNING

The files stored in bluetooth-inbox will be lost once the 4000 V2 Platform is switched off. Copy/Paste the files to keep toward another storage media (disk, usb key...).

Transferring files to/from a PC via WIFI or Ethernet

Once connection is established between the Platform and the PC:

1 On the PC, use an FTP client, and access to internal memory via an internet explorer (I.E, Mozilla Firefox...) or Windows Explorer.

2 In the address bar, type the following address (`10.33.22.68` being the IP address of the 4000 V2 Platform defined when the connection was configured):

`ftp://mts4000:JDSU@10.33.22.68/disk/`
This allows to access to internal memory.

`ftp://mts4000:JDSU@10.33.22.68/usbflash/`
This allows to access to the contents of the USB memory stick connected to the 4000 V2 Platform.

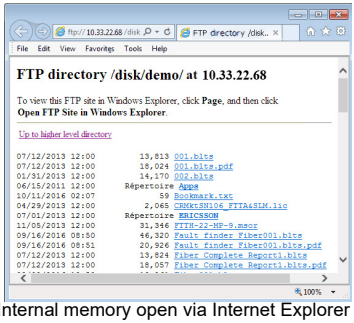
3 If an identification is required, enter:

– User name: mts4000

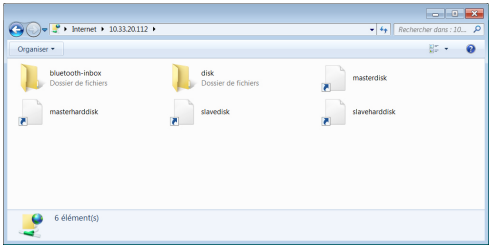
– Password: JDSU

The PC then displays the contents of the internal memory or of the USB memory stick from the 4000 V2 Platform.

Fig. 70 Internal memory of the 4000 V2 Platform



Internal memory open via Internet Explorer



Internal memory open via Windows Explorer

4 If internal memory of the Platform is accessible via Internet Explorer (or any other explorer), right click on one file and click on **Save target as...** to transfer file onto the PC.

If internal memory of the Platform is accessible via Windows Explorer, select one / several files and click on **Copy**, then click on **Paste** on PC to transfer file(s).

Transferring files using Cloud Storage

Once connection between 4000 V2 Platform and cloud storage server is successfully established (see “Configuring and connecting to Cloud Storage on the 4000 V2 Platform” on page 74), the files can be transferred from one Platform to the other.

1 Press **HOME** hard key.

2 Press **Explorer** on the **Home** page

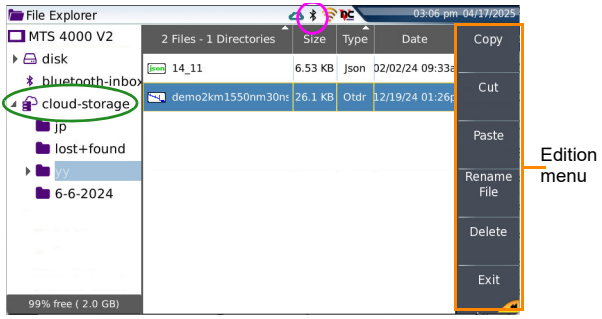
In the **Explorer** page, a new storage media is available: **cloud-storage.**

The cloud-storage media is not available when File Explorer is opened from a FO application.

3 Transfer the files from the disk or USB memory stick of the 4000 V2 Platform toward the cloud storage or vice-versa:

- **a** Select the file(s) to be transferred
- **b** Press the **Edit** > **Copy** or **Cut** menu keys
- **c** Select the storage media (and the directory) into which files must be copied.
- **d** Press **Paste** menu key

Fig. 71 File Explorer with cloud storage



The cloud storage is automatically disconnected once the 4000 V2 Platform is switched off. Reconnect from the System Settings page of the 4000 V2 Platform after the Platform restart.

VNC

The 4000 V2 Platform can be used in combination with a PC in order to transfer the Platform Interface onto a PC, or to access the internal memory or USB memory stick contents on the PC.

The transfer of the interface can be done using a VNC window on PC.

For an intensive use of the deport screen or when it is used via a WAN network, it is strongly recommended to use a dedicated VNC client. The VNC clients recommended are Tight VNC (V 1.2.9 or later) and Real VNC (V 4.1.1 or later).

Transferring the interface on a PC via WIFI or Ethernet

Once the connection is established between the 4000 V2 Platform and the PC, proceed as follow:

1 Open Internet Explorer on the PC.

2 First check the **Export screen** function is enable on the Platform:

a On the **Home** page, press **Settings** icon.

b In the **System settings** page, configure the **Export screen** function

Fig. 72 Export Screen configuration

Export screen = **Session** or **Permanent** must be confirmed in both cases, in the Interface E/S window.

– **No**: the screen cannot be remote on to a PC or on to another 4000 V2 Platform.

– **Session**: the Remote screen function is inactive once the 4000 V2 Platform is switched off.

– **Permanent**: the Remote screen function is still active when the 4000 V2 Platform is switched off and restarted.

– **Permanent with password**
Same function as the Permanent mode, with an access to the equipment via VNC protected by a password: `42000`

3 Considering `10.33.22.68` is the IP Address of the 4000 V2 Platform (as shown Figure 49 on page 70), open, a VNC viewer installed on the pc and enter the address:

`10.33.22.68`

4 Press **Enter** to validate.

The screen of the 4000 V2 Platform appears offset on your PC.

Fig. 73 VNC window

See “Virtual control buttons bar” on page 98 and “Equivalence between the keyboard and 4000 V2 Platform” on page 99 to get information on the deported screen use.

NOTE

Once Remote screen is accessible via VNC, the icon displays on the upper banner of the screen until the connection is cut or the 4000 V2 Platform is switched off.

Virtual control buttons bar

It is possible to emulate hard keys with Virtual Control buttons. This virtual control buttons bar is especially useful when the 4000 V2 Platform screen is exported on a remote PC. To display those buttons, click once on the top of the screen in the status bar, at the same location as date and time.

Export	Home	File	Setup	Results	Start/Stop	Script	Cancel

The virtual control buttons bar is displayed during a few seconds. You may click on any of these buttons to obtain exactly the same results than using the hard keys on the front panel of the 4000 V2 Platform.

Equivalence between the keyboard and 4000 V2 Platform

The PC keyboard can replaced all the buttons and keys of the 4000 V2 Platform except the **ON/OFF** button**:**

- The menu keys to the right of the screen are replaced by the function keys **F1** to **F6**.
- The buttons below the screen are equivalent to **Ctrl +** a letter (see table below).
- The direction keys have the same function on the external keyboard and on the 4000 V2 Platform.

Function on the 4000 V2 Platform	External keyboard
HOME	Ctrl + H
SET-UP	Ctrl + U
FILE	Ctrl + F
RESULTS	Ctrl + R
START/STOP	Ctrl + S
EXPORT	Ctrl + P[a]
REBOOT the instrument	Ctrl + Q
Menu keys 1 to 6 (from top to bottom)	F1 → F6
Validate a selection	Entrée/Enter
Deselect a function on the Home page	Escape/Echap.

a. The Export function is available exclusively on the virtual control buttons bar (see "Virtual control buttons bar" on page 98).

NOTE

Those equivalences are also valid with a keyboard directly connected to the 4000 V2 Platform via one USB port.

Stratasync

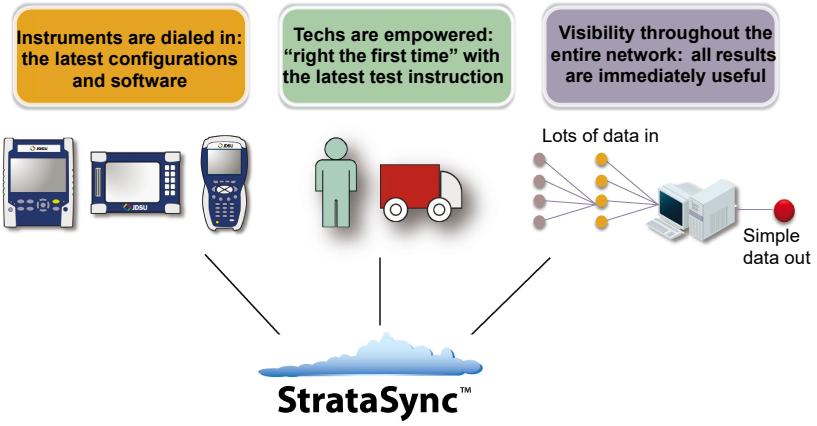
Principle and prerequisites of the Stratasync

Stratasync is a new solution that provides network operators with an agile and centralized way to manage and analyze data from thousands of deployed VIAVI test instruments directly from the cloud. StrataSync is a hosted, cloud-based software application that provides VIAVI instrument asset, configuration, and test-date management.

StrataSync improves technician and instrument efficiency. StrataSync allows to:

- Manages and tracks test instruments
- Collects and analyzes results from the entire network
- Informs and trains the workforce

Fig. 74 Principle of the Stratasync application



Pre-requisites for using the Stratasync with the 4000 V2 Platform

The user must have subscribed to Stratasync, and by consequence, he must have acquired an **account Identifier** and a **password**.

The Ethernet and Proxy parameters must have been correctly configured in the System Settings page of the 4000 V2 Platform (see "Ethernet > Mode" on page 72 and "Proxy >

Use proxy" on page 73).

Configuring and synchronizing the 4000 V2 Platform

The 4000 V2 Platform can be configured to be synchronized with the Stratasync.

1 On the **Home** page, press **Connectivity**.

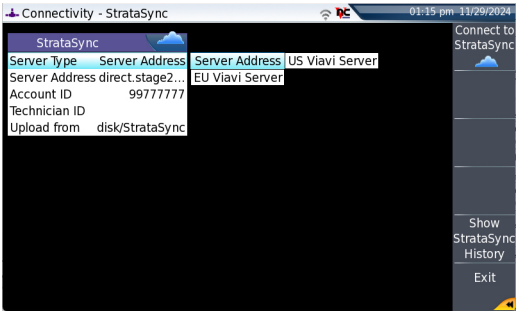
2 Check the configuration of the **Ethernet** and **Proxy** parameters (see "Configuring the 4000 V2 Platform via Ethernet" on page 72

3 In the **Connectivity** windows, press **Stratasync** StrataSync.

4 Configure the Stratasync parameters:

- **a** In the **Server Type** parameter, the **Viavi Server** is selected by default and it is recommended to keep this parameter.
  However, the user can select if necessary the **Server Name** parameter and enter the name in the following parameter.
- **b** In the **Account ID** parameter, enter the same identifier as the one used to access to Stratasync.
- **c** The **Technician ID** parameter is automatically fulfilled after synchronization (if it has been defined by the administrator of the Stratasync)
- **d** To upload the files from a directory onto the 4000 V2 Platform toward Stratasync, select the parameter **Upload from** and press right arrow key to enter the directory path (example: `disk/Stratasync`). The directory Stratasync is defined by default.

Fig. 75 Stratasync configuration



Connecting the 4000 V2 Platform to Stratasync

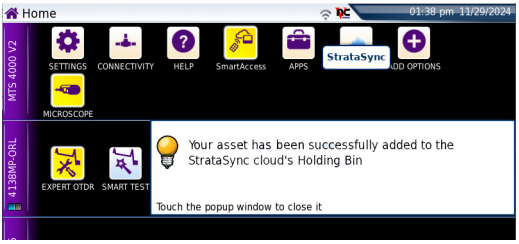
Once 4000 V2 Platform is configured in the **Stratasync setup** page:

1 In **Home** page, press Stratasync icon 

.
The synchronization with Stratasync starts
The icon  displays on the upper banner of the 4000 V2 Platform during synchronization.
Once the icon is no more displayed, this mean that the synchronization is completed.

2 For the first synchronization only, a message displays on the 4000 V2 Platform to indicate the addition of the equipment in Stratasync.

Fig. 76 First synchronization - Message on 4000 V2 Platform



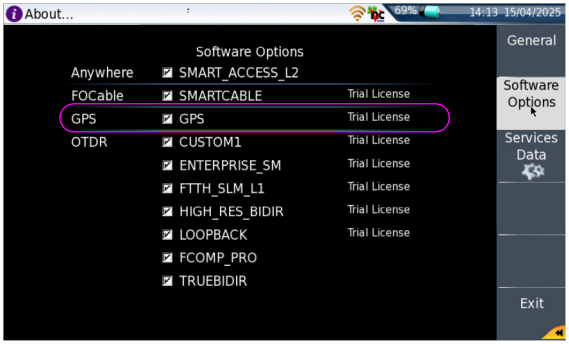
The 4000 V2 Platform is now available in Stratasync.

Including Geolocation data into test files and reports

Pre-requisite

Your 4000 V2 Platform must have the GPS software license enabled to be able to include geolocation data into test files and reports. To check which software licenses are enabled on your unit, press **Home** > **Settings** > **About** > **Software Options**.

Fig. 77 GPS in Software option page



Geolocation data can be included into test files via VIAVI Mobile Tech application.

VIAVI Mobile Tech Application

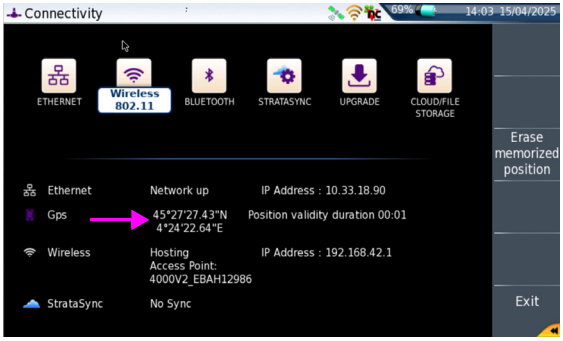
1. Connect your Platform to VMT application installed on your smart device.
2. When the equipment is connected, a green satellite icon is displayed after a few seconds at the top of the platform screen. GPS coordinates will then be automatically indicated into the files & .pdf reports.
3. To disable geolocation data, press **Home** > **Connectivity** > **Erase memorized position**, disconnect your Platform from VMT or leave VMT application.

NOTE

It is not possible to reload a sor trace, save it, or generate a report with integrated GPS coordinates afterward.

To check the GPS coordinates, press **Home** > **Connectivity**.

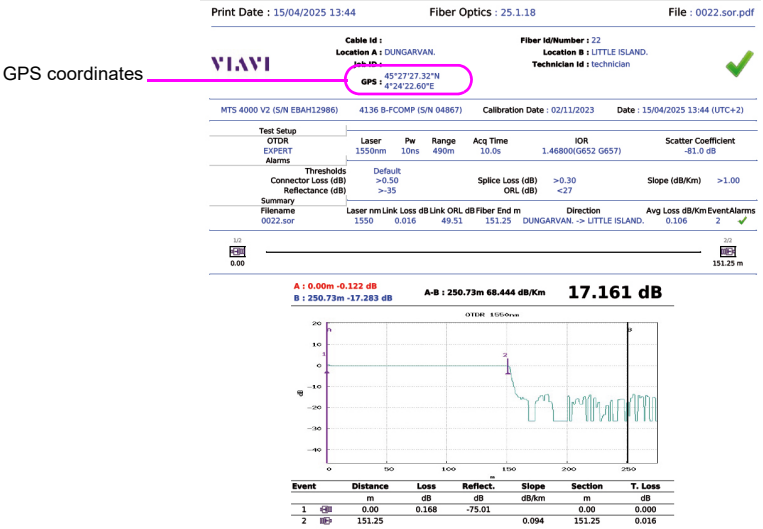
Figure 78 GPS coordinates in Connectivity screen



GPS coordinates in PDF report

If a measurement has been performed with the GPS option active, the pdf report will indicate the GPS coordinates on the header of the report.

Fig. 79 PDF Report with GPS coordinates



8

Applications

Several desktop applications are provided to you, thanks to the integration of free software released under the free licences (GPL, LGPL, BSB or other). Their purpose is to bring more functionality to the 4000 V2 Platform. **VIAVI doesn't provide any warranty or support regarding these free software.**

To access desktop applications, press the button **HOME**, and the soft key **APPS**.

The topics discussed in this chapter are as follows:

PDF Reader

The simplest way to open a pdf file is to press the Multi-views key and select **File** to open the Explorer.. Look for your file and then select **Load** >**Confirm Load** to load the corresponding file. The file opens automatically in the PDF viewer.

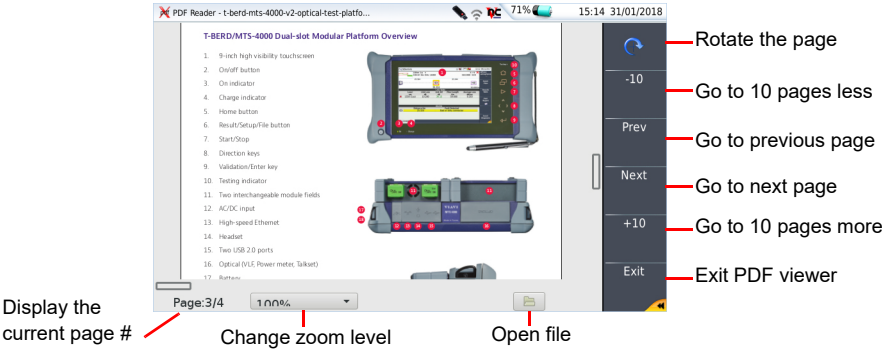
Another way used to open a pdf document is to press **Home** > **APPS** and select the **PDF Reader** icon.

The PDF Reader opens but without document. To open a PDF document, click on the icon  , and select a document in the file explorer dialog box.

Interacting with a PDF document

Once your document is open, you may browse through different pages very quickly, zoom to a particular level, rotate the page... All these features are available via buttons on the screen.

Figure 80 PDF Viewer Graphical User Interface



The buttons on the right are pressed using the functions keys of the 4000 V2 Platform, the touchscreen or via the mouse. The buttons on the bottom of the PDF viewer, may only be used with a mouse or a touchscreen.

Text Editor

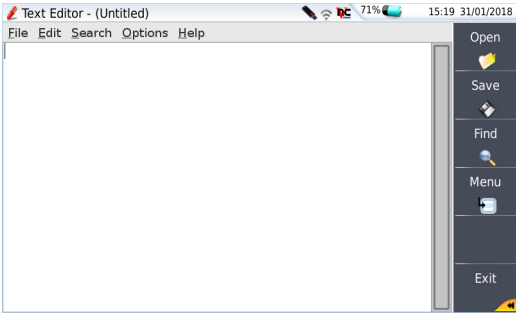
The Text Editor application allows to enter text on the 4000 V2 Platform and save it into a txt file

Text Editor page

To open the Text editor:

1. In the **Home** page, press the **APPS** key
2. In the **Application** screen, select the icon **Text Editor**.
   The icon is framed in white
3. Press **ENTER** to validate the selection and open the Text Editor application.
4. If the Platform is not connected to a pc via VNC or with an external keyboard, select Keyboard to display a keyboard at the bottom of the screen to enter the text.
   Connected to a PC or an external keyboard, enter the text using the keyboard (of the pc).

Figure 81 Text Editor application



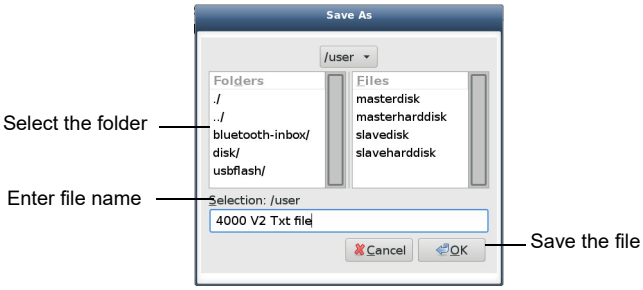
Saving the text in a file

Once the text is entered, you can save it in a file onto the 4000 V2 Platform.

1. Click on **Save** menu key.
2. In the new dialog box, select the folder in which the file must be saved

3 Enter a name for the file with the file extension (.txt or .csv if it must be opened with the 4000 V2 Platform).

Figure 82 Save file



4 Click on **Ok** to validate

The file is saved and still opened

- You can modify it and click on **Save** at any time
- If you modify the file and click on **Save as....**you can choose another folder and/ or another name

Press 

to exit the text editor and go back to the **Applications** page.

Press **HOME** to go back to the **Home** page, and keep the application active.

Calculator

A calculator can be displayed and used onto the 4000 V2 Platform.

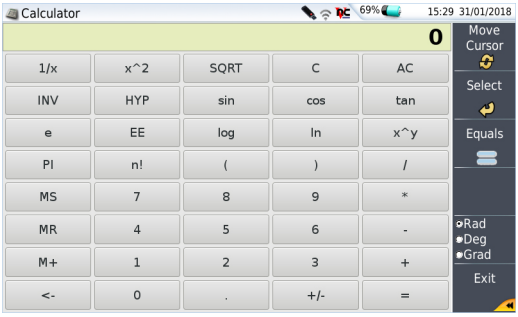
1 In the **Home** page, press the **APPS** key

2 In the **Application** screen, select the icon **Calculator**.

The icon is framed in white

3 Press **ENTER** to validate the selection and open the Calculator

Figure 83 Calculator



Press 

to exit the Calculator and go back to the Application page.

Press **HOME** button to go back to the **Home** page, and keep the **Calculator** application active.

File Explorer

This key allows to directly open the MTS/T-BERD 4000 explorer, where all the files are stored (traces, pdf files...).

The explanation about the explorer are available in Chapter 10 “File management” on page 135.

9

Job Manager option

This chapter describes to use the Job Manager application on the 4000 V2 Platform, if the license option has been purchased with the equipment, or acquired later.

Topics described in this chapter are as follows:

Principle of the Job Manager

The Job Manager option simplifies and automates your network test. The advantages of the Job Manager:

- Summarize reports
- Ensure specifications
- Reduce Typing
- Speed up testing

The different steps for Job Manager are:

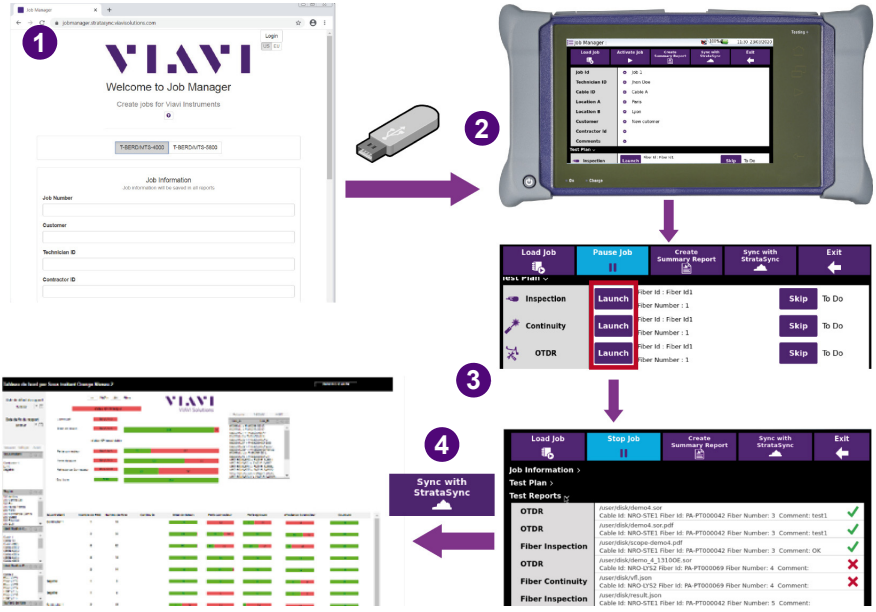
1 Create your test plan

2 Load it (job file) on the Platform

3 Run Test from the Job Manager application installed on Platform

4 Create a single, consolidated report, uploaded in Stratasync

Fig. 84 Job Manager process



Creating a test plan and loading it on the Platform

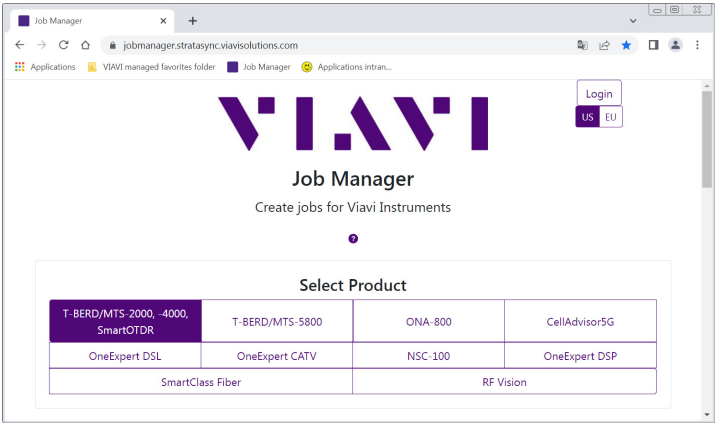
Pre-requisites

It is strongly recommended to use Google Chrome to create the test plan/ / job scenario.

1 In Google Chrome, enter the following address: https://jobmanager.strata-sync.viavisolutions.com/.

2 Select the product T-BERD/MTS-4000.

Fig. 85 Job Manager Home page - select T-BERD/MTS-4000



Creating a test plan

The Job file creation is divided into two parts:

- the Job Information
- the Test Plan

Job Information

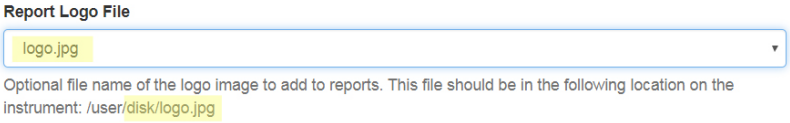
The **Job information** window allows to configure the job with parameters which will be used for all reports!:

1 Select T-BERD/MTS-4000 to create the job file for the 4000 Platform.

2 Enter the Job information for:

- Job Number
- Customer
- Technician ID
- Contractor ID
- Location A and Location B
- Cable ID

3 If necessary, select the logo file (`logo.jpg` or `logo.png`) which must be saved in the directory `disk` of the Platform, and named `logo`. This logo will be added to the generated reports.



NOTE

The Job Information parameters can be entered/modified, from the Job Manager screen of the Platform: see “Modifying the Job Information from Platform” on page 129.

Configuring the Test Plan

In the Test Plan window:

Click on **Add Test** or **Add Multiple Tests** to add one or several tests to the Job manager.

Adding one single Test

Click on **Add test** to add one test or several test one by one to the job file

In the window select the kind of test to be performed:

- Fiber Inspection
- Fiber Continuity
- OTDR
- Bidirectional IL/ORL
- FCOMP-PRO
- Manual Step

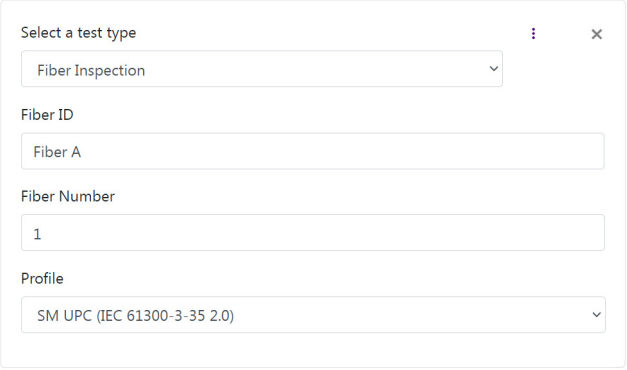
CAUTION

If a parameter is not defined in the Test Plan of the web interface, it will be defined with the parameter defined in the Setup of the Platform.

Fiber Inspection

1 Select the test type **Fiber Inspection**:

Fig. 86 Fiber Inspection test configuration



2 Enter the Fiber ID

3 Enter the Fiber Number.

4 Select the Profile to be used for the test: **SM UPC** / **SM APC** / **MM** / **SM PC & Fiber-Stub / Ribbon, SM APC**.

Click on ⋮ to reduce the window.

Click on Add Test to add a new test (fiber inspection or any other one)

Fiber Continuity

1 Select the test type **Fiber Continuity**.

Fig. 87 Fiber continuity test configuration

2 Define the **Fiber Number**.

3 Enter the **Fiber Id**entification.

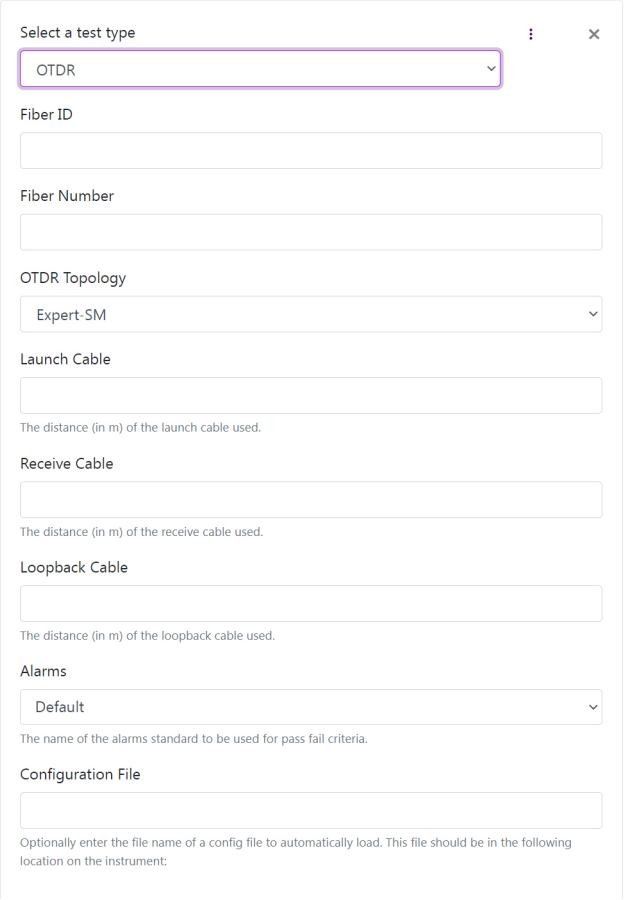
Click on ⋮ to reduce the window.

Click on Add Test to add a new test (fiber continuity or any other one)

OTDR

1 Select the test type **OTDR**.

Fig. 88 OTDR Test configuration



2 Enter the **Fiber Id**entification.

3 Define the **Fiber Number**.

4 Select the **OTDR Topology** to be used for otdr acquisition and available on the Platform:

– Expert-SM

- Expert-P2P
- Expert-PON
- Expert-MM
- SmartTest-SM
- SmartTest-MM
- FTTA-SM
- FTTA-MM
- FTTH
- Loopback
- Enterprise-SM
- Enterprise-MM
- bidirOtdr

5 Whatever is the **OTDR topology** selected, enter the distance (in m) of:

- the **Launch Cable**
- the **Receive Cable**
- the **Loopback Cable**

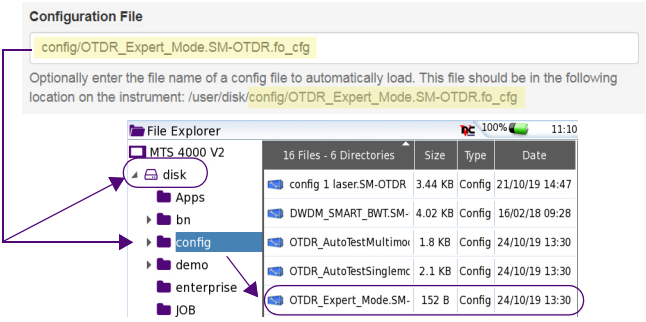
6 Define the **Alarms** thresholds to be defined for the acquisition:

- Default
- TIA-568-3 / TIA-568-3 RL35
- ISO/IEC 11801 (2002) / (2010)
- ISO/IEC 14763-3 (2006) / (2014)
- G697/G.98x PON
- G697/IEEE PON
- User

For each value of thresholds, refer to Module User Manual.

7 To apply a pre-defined configuration, available in a configuration file saved on the 4000 Platform `disk`, enter the path of the configuration file (with its extension `.fo_cfg`) in the **Configuration File** field.

Fig. 89 Configuration file



Click on ⋮ to reduce the window.

Click on Add Test to add a new test (otdr or any other one).

Bidirectional IL/ORL

1 Select the test type **Bidirectional IL/ORL**.

Fig. 90 Bidirectional Test configuration

2 Enter the **Fiber Id**entification.

3 Define the **Fiber Number**.

4 Define the **Fiber Type**.

5 Select the **Measurement Sequence**: **IL + ORL** or **IL**.

6 To apply a pre-defined configuration, available in a configuration file saved on the 4000 Platform `disk`, enter the path of the configuration file (with its extension `.fo_cfg`) in the **Configuration File** field (see Figure 89 on page 119).

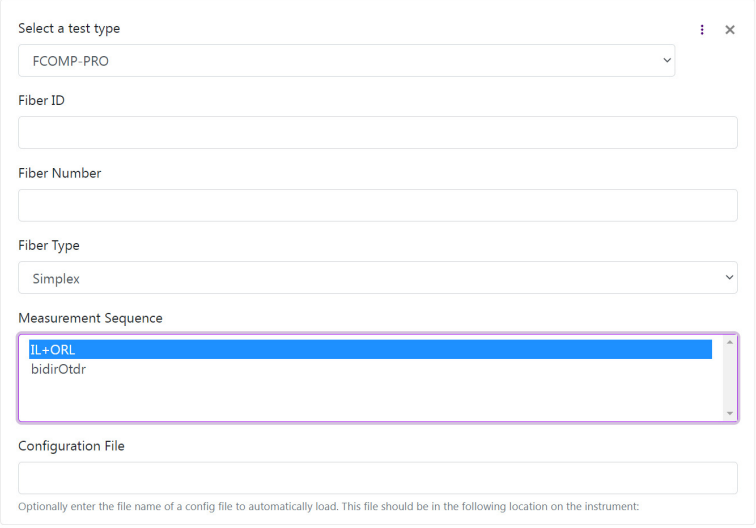
Click on ⋮ to reduce the window.

Click on Add Test to add a new test (Bidirectional IL/ORL or any other one).

FCOMP-PRO

1 Select the test type **FCOMP-PRO**.

Fig. 91 FCOMP-PRO test configuration



2 Enter the **Fiber Id**entification.

3 Define the **Fiber Number**.

4 Define the **Fiber Type**.

5 Select the **Measurement Sequence**: **IL + ORL** and / or **bidirectional OTDR**.

6 To apply a pre-defined configuration, available in a configuration file saved on the 4000 Platform `disk`, enter the path of the configuration file (with its extension `.fo_cfg`) in the **Configuration File** field (see Figure 89 on page 119).

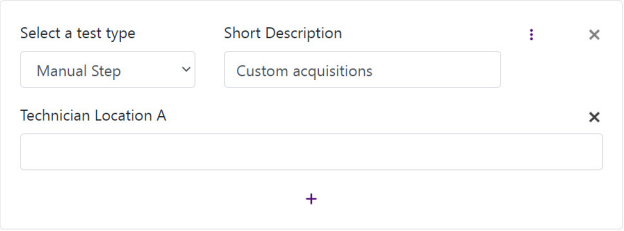
Click on ⋮ to reduce the window.

Click on Add Test to add a new test (Bidirectional IL/ORL or any other one).

Manual Step

1 Select the test type **Manual Step**.

Fig. 92 Manual Step test configuration



2 In Test Label, define an optional custom label for this test.

3 Click on **+** and define a new label..

4 Click again on **+** to add a second label.

5 Define each label.

Click on ⋮ to reduce the window.

Click on Add Test to add a new test (manual step or any other one)

Adding Multiple Tests

If several tests must be performed for different fibers, the Test Plan can be configured to automatically perform a series of tests for a series of fibers.

1 Click on **Add Multiple Tests**.

2 In the new window, two steps are required:

- Create and apply a Label list.
- Configure the test

Creating a Label List and loading it for Job Manager

1 Creating a label list:

a In the **Add Multiple Tests** window, click on the link Label List Template.

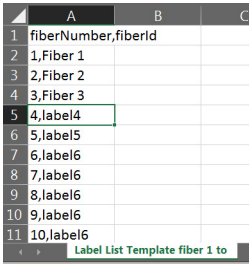
A csv file is loaded.

b Click on the file at the bottom of the Google Chrome window to open it on a spreadsheet program.

c Modify if wished:

- the first parameter, fiberNumber
- the second parameter **fiberId** «LabeIn» by another identification (example: Fiber 1, Fiber 2...)

d Save the .csv file on your PC.



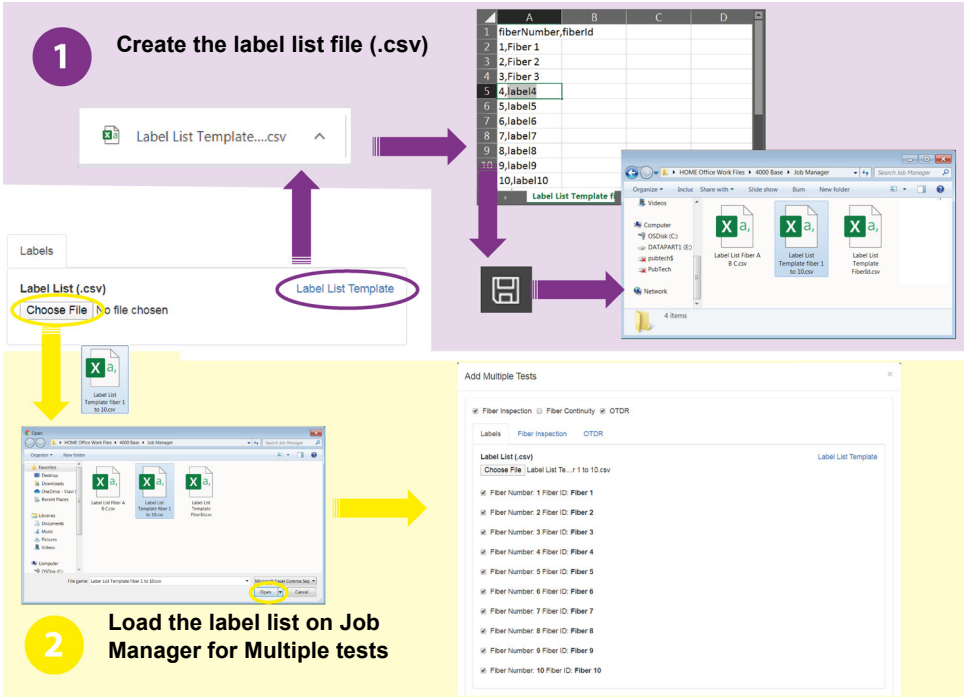
2 Loading the label list:

a In the **Add Multiple tests** window, click on **Choose File** button and select the csv file just created.

b Click on **Open** button in the dialog box.

c The series of Fibers, with their numbers and identification, displays.

Fig. 93 Label list



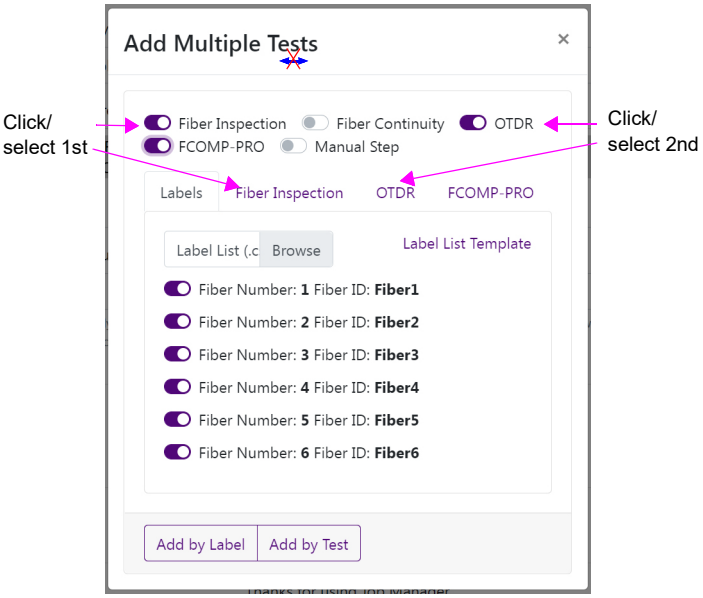
Selecting and configuring the tests

1 Select the tests to be performed: click on each test, **in the order in which they should be performed**.

NOTE

The order of the tests cannot be modified once tests are selected. You must deselect the tests and re select one by one, in the order in which they should be performed.

For example: select Fiber Inspection, then OTDR to perform first the fiber inspection, then the OTDR test of the fiber.



2 Configure the selected test:

- Fiber Inspection: see “Fiber Inspection” on page 115.
- Continuity: see “Fiber Continuity” on page 116.
- OTDR: see “OTDR” on page 116.
- FCOMP-PRO: see “FCOMP-PRO” on page 120
- Manual Step: see “Manual Step” on page 121

NOTE

As the **Fiber Number** and **Fiber ID** parameters are configured in the Label list, they are not configurable in the Multiple test window.

Adding the multiple tests plan to Job manager

Once Label List and Tests are configured, click on:

- **Add by Label**: the tests are performed according to the order of the label list.
- **Add by test**: the first test is performed for all labels, then the second test is performed for all labels...

Example of Multiple Tests plan for Job file:

- The Label list template loaded is configured with
  - fiberNumber**: 1**, **2**, **3**...**6**
  - fiberId: **Fiber 1**, **Fiber 2**, **Fiber 3**... **Fiber 6**

- The tests selected:
  - first test: **Fiber Inspection**
  - second test: **OTDR**

Press **Add by Label** =>

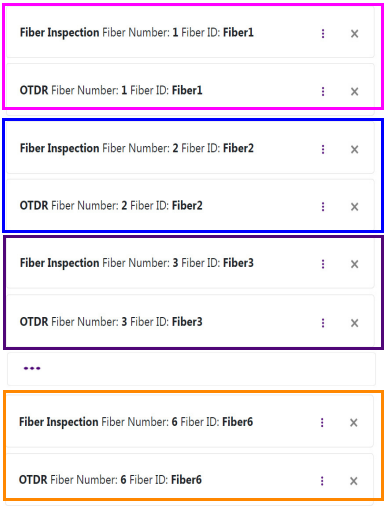
Tests for Label 1

Tests for Label 2

Tests for Label 3

...

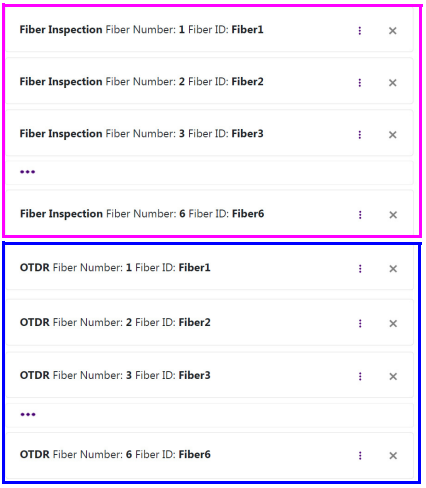
Tests for Label 6



Press **Add by Test** =>

Fiber Inspection test for Label 1, 2, 3...10

OTDR test for Label 1, 2, 3...10



Saving the Job Manager file and loading it on Platform

Once the Job Information and Test Plan are created, the Job file can be saved, in order to be loaded onto the Platform Job Manager application.

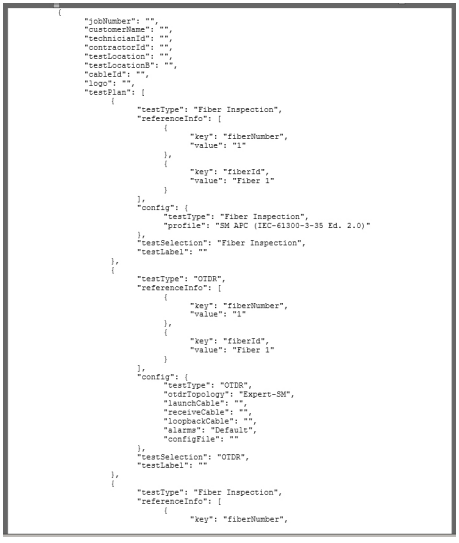
1 At the bottom of the Job Manager web page, click on **Save Job**.

The json file is automatically created and saved by default in the **Downloads** folder.

The filename of the json file is:

- `job_.job.json` if the Job Number parameter has not been defined.
- `job_3.job.json` if the Job Number has been defined with «3» (example)

The json file can be open on your computer via a word processing software:




```
{
    "jobNumber": "",
    "customerName": "",
    "technicianId": "",
    "contractorId": "",
    "testLocation": "",
    "testLocationB": "",
    "cableId": "",
    "logo": "",
    "testPlan": [
        {
            "testType": "Fiber Inspection",
            "referenceInfo": [
                {
                    "key": "fiberNumber",
                    "value": "1"
                },
                {
                    "key": "fiberId",
                    "value": "Fiber 1"
                }
            ],
            "config": {
                "testType": "Fiber Inspection",
                "profile": "SM APC (IEC-61300-3-35 Ed. 2.0)"
            },
            "testSelection": "Fiber Inspection",
            "testLabel": ""
        },
        {
            "testType": "OTDR",
            "referenceInfo": [
                {
                    "key": "fiberNumber",
                    "value": "1"
                },
                {
                    "key": "fiberId",
                    "value": "Fiber 1"
                }
            ],
            "config": {
                "testType": "OTDR",
                "otdrTopology": "Expert-SM",
                "launchCable": "",
                "receiveCable": "",
                "loopbackCable": "",
                "alarms": "Default",
                "configFile": ""
            },
            "testSelection": "OTDR",
            "testLabel": ""
        },
        {
            "testType": "Fiber Inspection",
            "referenceInfo": [
                {
                    "key": "fiberNumber",
```


Loading the json file on the Platform Job Manager

1 Save the json file on a USB key and connect the USB key to the Platform: see “Copy/Cut & Paste files/directories” on page 137.

2 Copy the json file on the Platform, in `disk/job-manager/`.

3 On the 4000 Platform, open the Job Manager page.

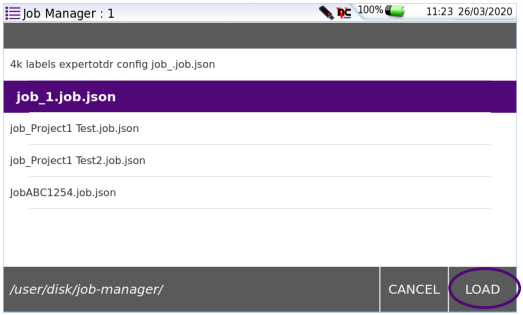
4 Click on 

Load Job.

5 Select the json file just saved in disk/job manager (highlighted in purple).

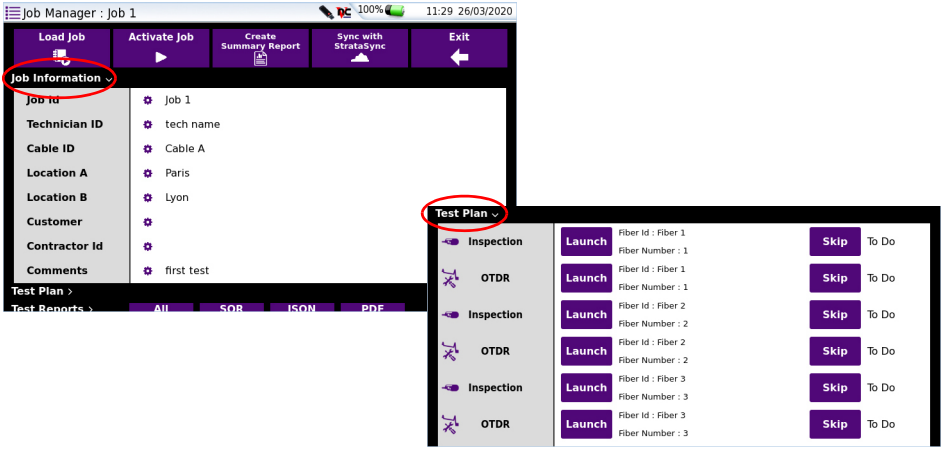
6 Click on LOAD.

Fig. 94 Loading the json file



Once loaded, the Job information and Test Plan displays.

Fig. 95 Job Information and Test Plan loaded on the Platform



Modifying the Job Information from Platform

The job file can be used as template. It can be created via the Web tool and then modified from the Platform.

The Plan Test is identical and the Job Information can then be modified at each new test, with a new Fiber number., a new cable Id..

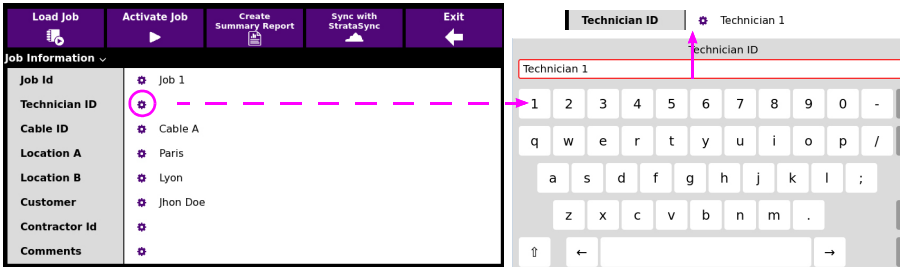
Once a job file is loaded, the Job Information can be added/modified on the Platform.

1 If the Job is activated, click on **Pause Job** to stop the job in progress.
The Job Information window displayed can be configured:

2 Click on one defined parameter or on the icon ⚙ to modify / add a parameter.

3 Enter/Modify the parameter in the edition keypad and press **Enter**.

Fig. 96 Modifying the Job Information



4 Press **Pause** key, which turns **Activate**, to re-activate the Job and perform the tests with the new information.

CAUTION

If the Job Information are entered on the Platform, before the json file is loaded, then the information will be lost at the json file loading, replaced by those entered on the Web tool.

The information are deleted if they were not entered in the Web tool.

Performing tests and generating reports

Launching the test from Test Plan

1 Once loaded, click on **Activate the Job** 

.
The key turns to **Pause Job** and is displayed in blue 

.
The tests can now be launched.

2 Press **Launch** key 

on the first test to be started.

NOTE

If a test is launched with the Job deactivated, a pop up message displays: `The job is not activated (Test results will not be recorded in the job).`

Press **Launch Test Anyway** to start the test without recording it to the job.

Press **Cancel Test** to cancel the test, and activate the job before launching it.

This will give access to the given function interface.

Press **Skip** 

on one test to skip the function, this with an optional **Comment** stating why.

NOTE

If a **Comment** is entered, it will be visible in the Summary report generated in pdf from the Job Manager screen: see “Summary Report” on page 133.

Fiber Inspection test

Once the **Launch** key is pressed, the **Scope** function is activated on the **Home** page, then the **Results** page (live image) displays and the scope is configured according to the parameters defined in the json file.

The Test can be launched.

Continuity test

Allows to check if the tests must continue or if a problem occurred.

1 Click on **Launch** 

on the continuity test.

2 Select **Pass** or **Fail** in the Continuity dialog box.

3 Add a **Comment** if necessary.

4 Press ✓ to validate the answer.

Fig. 97 Continuity Check

Press ✗ to cancel the test.

NOTE

If a **Comment** is entered, it will be visible in the Summary report generated in pdf from the Job Manager screen: see “Summary Report” on page 133.

OTDR test

Once the **Launch** key is pressed, the OTDR function (defined in the json file) is activated on the **Home** page, then the results page displays.

The Test can be launched, pressing **START/STOP** key, and the acquisition is performed according to the parameters defined in the json file.

Once acquisition is completed, a pop up window displays on OTDR results page allowing to return to Job Manager screen (answer **Yes**) or to stay on results page.

Manual Step

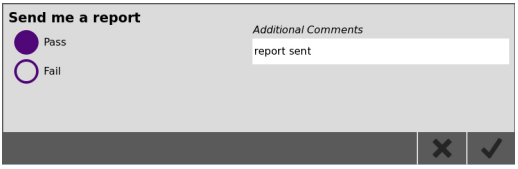
1 Click on **Launch** Launch on the continuity test.

2 Select **Pass** or **Fail** in the Manual Step dialog box.

3 Add a **Comment** if necessary.

4 Press ✓ to validate the answer.

Fig. 98 Manual Step



NOTE

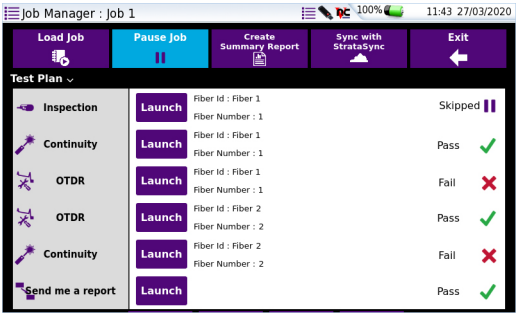
If a **Comment** is entered, it will be visible in the Summary report generated in pdf from the Job Manager screen: see “Summary Report” on page 133.

Tests Results in Job Manager

Once a test is performed, the Test Plan window displays the results with their status

- Pass ✓: the test is valid, all results on the otdr acquisition lie within the thresholds.
- Fail ✗ the test has failed, at least one result on the otdr acquisition is above the defined thresholds.
- Completed the otdr test has been performed, without defined alarm thresholds.
- Skipped ❚❚: the test has been skipped. It can be launch later.

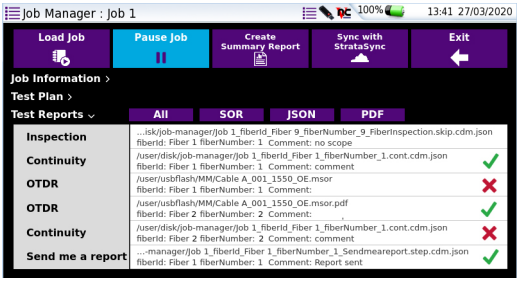
Fig. 99 Test Plan results in Job Manager



Displaying the Test Reports

Under the test Plan view, the **Test Reports** are displayed.

Fig. 100 Test Reports



- The OTDR test is generated in sor, and in pdf if a report is configured in Setup.
- The Fiber **Inspection**, **Continuity** and **Manual Step** functions are generated in json format.

Click on the kind of report to be displayed: **All** / **SOR** / **JSON** / **PDF**.

Other functions on Job Manager screen

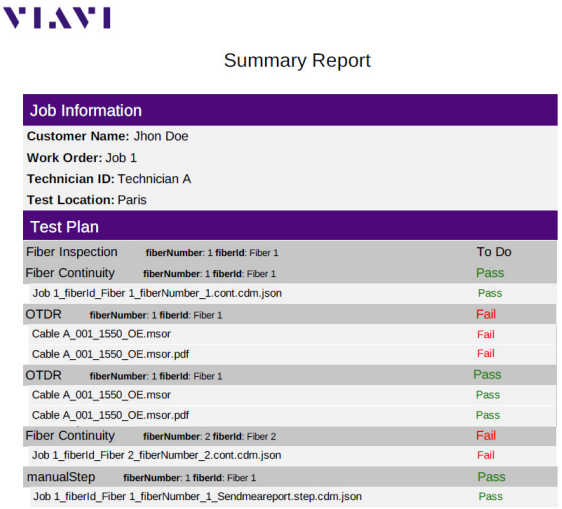
Summary Report

In the Job Manager screen, click on **Create Summary Report** in order to create a pdf report of all the functions of the Job: Job Information, test Plan and Test Report.

The report is saved in the **job-manager** directory.

The filename is the name of the Job entered in **Job Id** parameter. Example: if the Job Id is `Job1`, the file name is `Job1.pdf`.

Fig. 101 Summary Report



Summary Report

Job Information		
Customer Name: Jhon Doe		
Work Order: Job 1		
Technician ID: Technician A		
Test Location: Paris		
Test Plan		
Fiber Inspection	**fiberNumber**: 1 **fiberId**: Fiber 1	To Do
Fiber Continuity	**fiberNumber**: 1 **fiberId**: Fiber 1	Pass
Job 1_fiberId_Fiber 1_fiberNumber_1.cont.cdm.json		Pass
OTDR	**fiberNumber**: 1 **fiberId**: Fiber 1	Fail
Cable A_001_1550_OE.msor		Fail
Cable A_001_1550_OE.msor.pdf		Fail
OTDR	**fiberNumber**: 1 **fiberId**: Fiber 1	Pass
Cable A_001_1550_OE.msor		Pass
Cable A_001_1550_OE.msor.pdf		Pass
Fiber Continuity	**fiberNumber**: 2 **fiberId**: Fiber 2	Fail
Job 1_fiberId_Fiber 2_fiberNumber_2.cont.cdm.json		Fail
manualStep	**fiberNumber**: 1 **fiberId**: Fiber 1	Pass
Job 1_fiberId_Fiber 1_fiberNumber_1_Sendmeareport.step.cdm.json		Pass

Synchronization with Stratasync

In the Job Manager screen, press the key **Sync with Stratasync** 

in order to send results to Stratasync, once connection has been established: see “Stratasync” on page 100.

10

File management

The files management with the 4000 V2 Platform can be performed, whether a module is set onto the 4000 V2 Platform or not.

The topics discussed in this chapter are as follows:

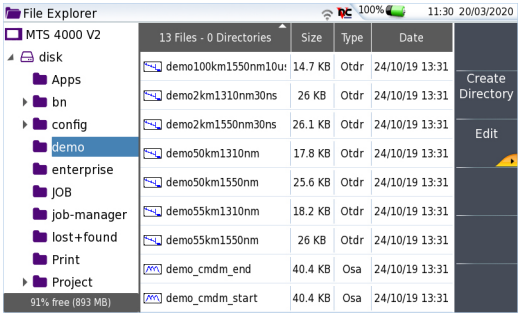
File Explorer Overview

To reach the File Explorer page

- On the **Home > APPS** page, select the **File Explorer** icon 

. The File Explorer page appears.

Figure 102 File Explorer page



Directories and Files selections

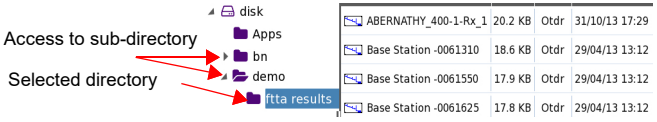
Directory selection

To select a directory from the explorer page:

1 Press on the directory that must be selected on the left of the screen.
The list of files the directory contains displays on the right side of the screen
The selected directory is underlined in blue

2 Click on the arrow at the left of the directory name, or press **Enter** key to display the sub-directories if any.

Figure 103 Directory selection



Files selection

To select one or several files from the explorer page:

1 Press on files that must be selected.

or

To select a list of files using the keys of the Platform:

a Select and validate the first file of the list (underlined in red)

b Set the cursor on the last file of the list (underlined in blue)

c Maintain the right direction key ▶ pushed until all the files are selected.

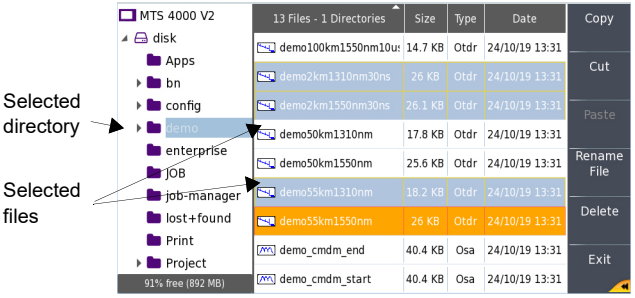
or

Click on **Select all** menu key to select all files into the directory.

NOTE

The last selected file is underlined in red and the previous one(s) selected is/ are underlined in blue.

Figure 104 Example of files selection



Directories & Files editing functions

Copy/Cut & Paste files/directories

To copy (cut) one or several files, or one directory, and paste them in another place:

1 Select the directory / the file(s) (see “Directories and Files selections” on page 136).

2 Press **Edit** menu key

3 Press **Copy** to keep the directory / file(s) to their initial location.
or
Press **Cut** to delete the directory / file(s) from their initial location

4 On the left of the screen, select the directory; or select the new storage media.

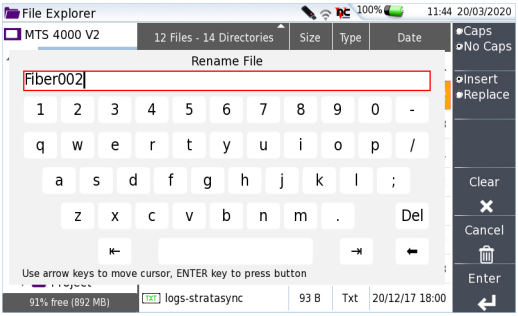
5 Click on **Paste** menu key.

Renaming a directory / file

1 Select the directory / file to be renamed (see "Directories and Files selections" on page 136).

2 Press **Edit** > **Rename Directory** or **Rename File.**
The Edition keypad displays.

Figure 105 Edition keypad for renaming file



3 Press **Clear** if you wish to delete the entire name

4 Enter a new name for the directory / file.

5 Click on **Enter** to validate the new name.

Deleting a directory / file

1 Select the directory or file(s) to be deleted (see "Directories and Files selections" on page 136).

2 Press **Edit** > **Delete.**
A confirmation dialog box displays.

3 Press **Yes** to delete the selected directory or file(s).
Press **No** to cancel the deletion.

Working with directories / files from the explorer

Creating a directory

To create a new directory from the explorer page:

1 Check the cursor is set on the left of the screen
2 Select the storage media into which the directory must be created
3 To create a sub-directory, select the directory into which it must be created.
4 Press the right menu key **Create Directory**.
The edition keypad displays
5 Enter a name for this directory
6 Press **Enter** key to validate the new directory

Opening files

Once a file is selected, press **Load** menu key.

Opening several files at the same time can be done exclusively with trace files (example: all OTDR trace files if a reference trace has been defined). Other type of files (PDF, TXT...) must be open one by one.

If different types of files have been selected in the Explorer, only the last one selected will open.

File Types

For files recognized by the 4000 V2 Platform, the types are symbolized by icons. E.g.

Icon	Type of FO file
	OTDR file (.SOR extension)
	Multi OTDR file (.MSOR extension)
	OSA file (.OSA extension)

Icon	Type of FO file
	Power Meter file (.LTS extension)

Icon	Type of file
	HTML file (.HTML extension)
	PDF File (.PDF extension)
	Text file (.TXT extension)
	License file (.LIC extension)
	CSV file (.CSV extension)
	JPEG / JPG file (.JPEG extension)
	PNG file (.PNG extension)
	XML file (.XML extension)

With the 4000 V2 Platform, you can open and load any kind of FO files (OTDR, OSA, LTS) even if the corresponding module is not set into the Platform.

NOTE
You can also sort files clicking on the column titles in the files list

Creating a screenshot

You can create captures of the displayed screen, directly from the 4000 V2 Platform, in a pdf file.

Taking a screenshot

Once the screenshot parameters are configured:

1 Reach the display which will be saved as a screenshot in a file.

2 If necessary, make modifications on this display (example: zoom on trace...)

3 Click on the upper banner of the screen and, in the virtual control buttons bar, press **Export** key

The icon displays until the end of process.

4 Press the **Multi-views** key and select **File** to find the PDF file in the PDF reader.

For trace results, the file is saved in the last directory selected.

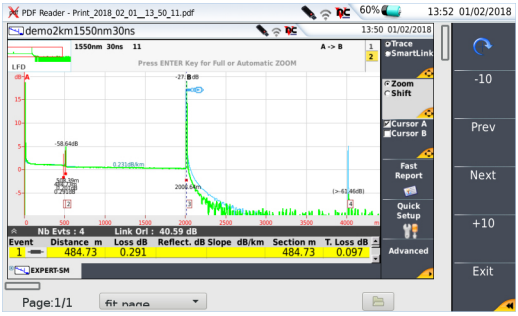
For other page open and used for a screenshot, the file is saved in the directory **Print** into the disk.

Name of the screenshots files

The screenshot is saved in a file, which is automatically named as follow:

- *Print_date (year/month/day)_time (hour/minute/second).pdf*

Figure 106 Example of screenshot, open in the PDF Reader of the 4000 V2 Platform



Merging pdf or txt files

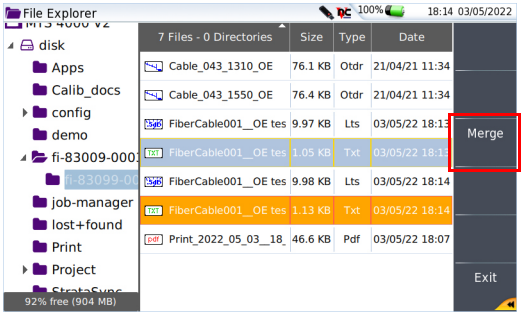
In the Explorer page, two pdf or txt files or more, generated via the results traces can be merged in one pdf file.

- The pdf files that can be merged are those generated via the **Fast Report** key on trace results page or via the **Export** key on the upper banner (or left and right arrow keys).
- The txt files that can be merged are those saved with the results trace (see OTDR Modules User Manual: E4100M02).

1 In the Explorer, select the two or more pdf or txt files generated

2 Press **Export > Merge** menu keys.

Figure 107 Files selection and Merge key



The icon is displayed during merging process.

After a few seconds, the files are merged in one pdf/txt file, which name by default is: *merged_year_month_date__hour_min_sec*.pdf

The file is automatically saved in the same directory as the one where files have been selected.
It gathers all results from pdf/txt files selected (and traces for pdf file), in one single pdf file of several pages (1 results screen per page, if the results table does not exceed one page).

NOTE

Once merged file is saved, it can be renamed in the Explorer (see “Renaming a directory / file” on page 138).

Storage media

For saving or recalling data, the 4000 V2 Platform offers a wide choice of media, both built-in and external.

Free space on selected media is clearly displayed at the bottom of the left panel.

Storage media built into the 4000 V2 Platform

The 4000 V2 Platform is delivered with an internal memory, which maximum capacity is of 8GB (with a minimum of about 1 Gb are available for data storage).

External USB storage media

The 4000 V2 Platform is equipped with 2 USB ports as standard. One of these can be used to connect an external storage medium, in particular a USB memory stick.

NOTE

Although two USB ports are present, it is not possible to use simultaneously more than one external USB storage medium.

USB memory stick connection

1 Insert the USB memory stick in one of the 4000 V2 Platform's USB port.

A sound is emitted to confirm the successful insertion and recognition of a USB memory stick.

Then, the icon  is displayed in the upper banner to inform the user the USB stick is ready to be used.

When a file is moved in the explorer of the Platform, the end of the move on the screen does not mean that writing of data into the memory is complete. Some data may still be in a writing process if the storage unit is removed prematurely.

USB memory stick disconnection

1 Before disconnecting the USB memory stick, always select a storage device different from usbflash (select disk for example) in the explorer.

2 Make sure you no longer have any running applications using the usbflash storage media.

3 The user must push the **EJECT USB** key, available in **File Explorer**.

The icon becomes  to indicate it can be removed safely. In this state, the USB stick cannot be used anymore

The USB memory stick can then be disconnected from the Platform USB port.

NOTE

The USB memory stick can also be removed using the **Expert Tools** > **Media Utilities** menu, accessible via the **System Settings** page.

See Chapter 13 “Maintenance & Troubleshooting” if any problem occurs with the USB memory stick

Abbreviations for storage media

The abbreviations used in the explorer for the different storage media are:

Abbreviation	Storage medium
disk	Internal flash memory
usbflash	USB memory stick
bluetooth-inbox	Bluetooth storage media (option)[a]
cloud-storage	Cloud storage media available on PC
slavedisk	Slavedisk of the Platform connected to this one via M2M Link or Datalink

a. The files stored in bluetooth-inbox are lost when the Platform is switched off.

11

Technical specifications

This chapter contains the technical specifications of the 4000 V2 Platform mainframe.

The topics discussed in this chapter are as follows:

Display

Indoor/Outdoor

- Backlight high visibility color screen
  - Size: 9 inches (7 inches display size)
  - Resolution: 800 x 480 pixels
- High visibility capacitive touchscreen for indoor and outdoor use.
- Use in altitude up to 4000 m

CAUTION

It is strongly recommended to work on the Platform in its glove when the product is used outdoor, in rainy weather.

CAUTION

AC/DC power supply must be used indoor!

The Platform battery charging must be performed indoor only!

Memory

- File Storage memory: 1Gb max
- Extended memory Option: SD card replaces the internal memory, 32Gb capacity.

Input/Output

- two USB 2.0 Host ports, for USB devices like microscope, memory key etc.
- one RJ 45 connector for Ethernet interface 10/100/1G
- headset (Jack Ø 2.5 mm)

Power supply

Battery

The instrument is supplied with one rechargeable Lithium Ion Smart batttery (10800 mV).

Battery charging time

If the battery is completely discharged, the time taken to recharge is:

Conditions of use	Charging time
The instrument is not in use (**Charge** indicator solid red)	approximately 3 hours
The instrument is used during charging (**On** indicator lit in fix green, **Charge** indicator lit in solid red)	about 9 hours

Endurance of the 4000 V2 Platform with battery

Measurement conditions:

- at +25 °C,
- at full battery capacity ,
- 4000 V2 Platform equipped with one OTDR module

Endurance

	Endurance
Conditions of use	**10800 mV battery**
According to Telcordia GR-196-CORE recommendation: Normal conditons, with normal backlight, 3 acquisition of 30 seconds per quarter of hour, auto off	up to 16 hours.
Under continuous acquisition, with high screen backlight, without any connection (USB, Ethernet...)	Up to 6h00

Power supply AC/DC adapter

	Standard Main Adapter
Input	100-240 V, 50-60 Hz
Output	15V DC 3.34 A max
Compliance	IEC 62368-1:2018

Supply or Power assigned in AC and in DC: 35 W

Dimensions - Weight

	Weight	
Mainframe with battery	1.6 kg	3.52 lbs
User interface module with a battery, one OTDR Module and one dummy module	2.1 kg	4.40 lbs
10800 mV battery	490 g	1.08 lbs
Dummy module	180 g	0.46 lbs
VFL/PM option	30 g	0.06 lbs

	Dimensions (mm) (H X W X D) Bumpers included	**Dimensions (mm) (H X W X D) W/o bumpers**
Without module	55.8 x 282 x 153	53.2 x 275 x 129
With 2 modules	92.4 x 282 x 153	85.8 x 275 x 129

Environment

Temperature

• Operating temperature range	-20°C to +50°C (-4°F to +122°F)
• Operation including all options (guaranteed specifications)	0° to +40°C (+32°F to +104°F)
• Storage (without battery)	-20°C to +60°C (-4°F to +140°F)

IEC 61010-1 Temperature range from 0° to 40°C.

Humidity

- 5 to 95% without condensation

Pollution degree

- Pollution degree: 2

VIAVI recommends that customers dispose of their instruments and peripherals in an environmentally sound manner.

EMI/ESD

- CE class A Compliant, according to EN 61326-1: 2013
- FCC 47-1 Part 15 Compliant

Overvoltage

Overvoltage category I

Drop test

In accordance with the Telcordia GR-196-CORE recommendations, the 4000 V2 Platform resists the following test:

- 6 impacts dropped from a height of 0.75 m on a pinwood floor of 5 cm thickness (1 impact on each of its 6 sides, with power off).

Shocks

The 4000 V2 Platform resists the following test:

- 3 shocks per axis along each of the 3 axes, with power off.
- Impacts of 15g, 1/2 sine, duration 11 ms, at 10 second intervals.

Bumps

The 4000 V2 Platform resists the following test:

- 1,000 bumps per axis along each of the 3 axes, with power off.
- Jolts of 15g, 1/2 sine, duration 6 ms, at 1 second intervals.

Vibration

The 4000 V2 Platform resists the following vibration tests:

- Complete test comprising 6 cycles along each of the x, y and z axes.
- One cycle of 5 to 500 Hz and back to 5 Hz with a sweep duration of one minute/ octave.
- 3 mm amplitude displacement test, for the range 5 Hz to 22 Hz.
- 3g acceleration test for the range 23 Hz to 500 Hz.

Flammability

Flammability rate: type V0, UL94.

The housing of the 4000 V2 Platform does not propagate fire.

IP Protection Index

Index of the IP protection for the Platform 4000, with 2 dummy modules and I/O doors closed: IP32

NOTE
For a higher classification, contact VIAVI.

Characteristics of the options

Power meter option

Specifications given for 25°C, after 20 minutes stabilization time and after zero setting.

- Wavelength range: 800 to 1650 nm in steps of 1 nm
- Calibrated wavelengths: 850 / 1310 / 1490 / 1550 / 1625 / 1650 nm[2]
- Accuracy at calibrated wavelengths: ± 0.2 dB (at -30 dBm)
- Input power range : -60 dBm to +10 dBm
- Maximum resolution: 0.01 dB / 0.01nW
- Measurement range:+5 to -50 dBm (-45 dBm from 800 to 1250 nm)
- Linearity within the measurement range: ± 0.2 dB
- Connector type: 2.5 mm Universal Push/Pull (UPP) (1.25 mm UPP adapter optional)

Talkset option

- Dynamic range: typically 32 dB at 25°C with a FC adapter (use a FC/PC connection exclusively).
- Laser, typical wavelength 1625 nm, class 1 (IEC 60825-1:2014 and FDA21 CFR Part 1040.10)
- Connector type: FC/PC

VFL option

- Wavelength: 635 nm or 650 nm
- Length of fiber: up to 5 km
- Class 2 laser (standards IEC 60825-1:2014 and FDA21 CFR Part 1040.10).
- Connector type: 2.5 mm UPP adapter (1.25 mm UPP adapter optional)

2.Specifications guaranteed to the calibrated wavelengths, except for 1650 nm

WIFI and Bluetooth Options

- WIFI 2.4 Ghz: standard IEEE802.11b/g/n
- Bluetooth Option V4.2

12

Options and accessories

This chapter shows the references of the options and accessories of the 4000 V2 Platform.

The topics discussed in this chapter are as follows:

References of options for the 4000 V2 Platform mainframe

Base Unit references	References
MTS-4000 V2 Platform, with High visibility Touchscreen[a]	EM4000HVT
T-BERD 4000 V2 Platform, with High visibility Touchscreen[a]	ETB4000HVT

a. Delivered with a battery (to be configured) and AC/DC Supply (to be configured)

Power Meter / Visual Fault Locator / Talk set Built-in Options	References
Optical Power Meter with 2.5 mm UPP connector	E40PM
Talk set option with power meter	E40TSPM
Optical Power Meter and VFL, with 2.5 mm UPP connectors	E40PMVFL

WIFI / Bluetooth Built-in Option	Reference
Wifi/Bluetooth Built-in option	E40WIFIBLU2

Spare Battery	Reference
Additional Li-Ion rechargeable battery	ELIION9C

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Maintenance & Troubleshooting

This chapter describes how to maintain your unit and identify and correct problems related to the 4000 V2 Platform.

The topics discussed in this chapter are as follows:

Maintenance procedure

Maintenance work on this instrument must only be undertaken by qualified personnel using suitable equipment.

In most cases, it is advisable to contact the nearest VIAVI Service Centre, which will undertake the appropriate troubleshooting and repair work.
The performance and technical complexity of the 4000 V2 Platform class this instrument in a new generation of equipment, for which VIAVI has laid down a maintenance policy based on the principle of standard module replacement.
In implementation of this policy, we have set up powerful card troubleshooting test resources in our factories and a rapid dispatch system operating between our factories and branches.
Only by this procedure can the high quality of the instrument continue to be ensured after repair work. This procedure also has the advantage of reducing repair costs and time.

In the interests of quality and efficiency, we strongly recommend adoption of the following procedure in the event of a fault, before any other steps are taken:

- Verify that the instrument is plugged in.
- Check the connections of any peripheral equipment to the Platform.
- If a fault is detected, or in case of doubt, it is advisable to contact the nearest VIAVI Service Centre, which will undertake the appropriate repair work.

Cleaning

Cleaning plates and housings

The front and rear plates and the housings may become tarnished with handling. To clean them, use only a rag moistened with soapy water.

Never use any product containing acetone, trichlorethylene, benzine or alcohol, as these will attack the printed markings.

Cleaning the screen

To clean the screen, use an antistatic product.

Cleaning the optical cable connector

- Use a non-fluffy type of paper, such as Joseph paper, soaked in isopropylic alcohol.
- Pay particular attention to the polished face of the fiber, rubbing it in a direction perpendicular to the axis of the fiber.

Cleaning the optical connections of the 4000 V2 Platform

- Squirt a highly volatile solvent (such as isopropylic alcohol) into the connector.
- Blow out the connector using a clean dry air supply from an aerosol can fitted with an extension.

NOTE

If your module has a universal connector, unscrew its adaptor to access the ferule.

Accessing to the 4000 V2 Platform information

On the 4000 V2 Platform, some screens allows to display information on different elements of the equipment.

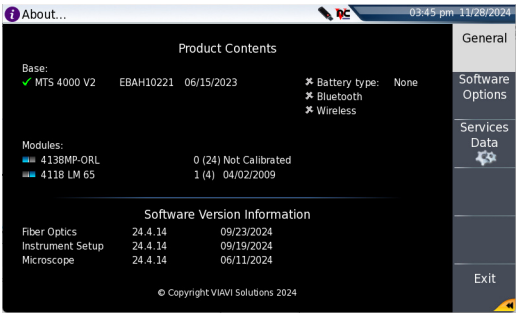
To display the information on the 4000 V2 Platform

1. On the **Home** page, validate **Settings** icon to reach the **System Settings** page.
2. On the right menu keys, press **About** to display the presentation screen of the 4000 V2 Platform.

General page

The **General** page is displayed by default, and allows to display the presentation screen, with all the information concerning the software versions, the hardware options and the module installed.

Fig. 108 General page



This page shows:

- The software version information
- The product contents: base, optical options, battery type, touchscreen used, module installed and date of calibration for modules and optical options.

  The options set into the 4000 V2 Platform are marked with a green tick.

NOTE

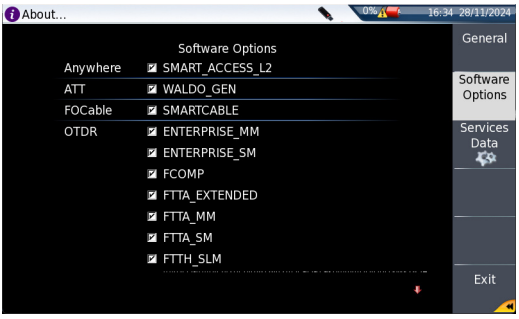
When the platform is returned to Services, a functional verification is done. The date of this verification is indicated on the screen.

Software options page

This page allows to visualize the software options available on the 4000 V2 Platform.

1 Once on the **About** screen, press **Software Options** menu key to display the list of software options available on your 4000 V2 Platform.

Fig. 109 Software Options page

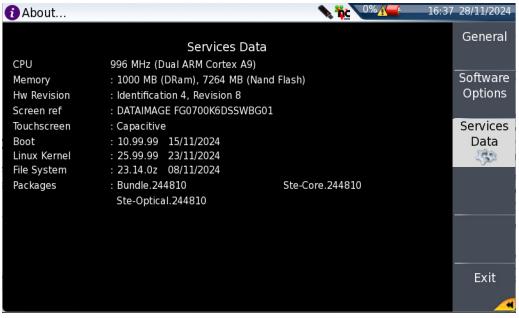


Services Data page

This page allows to display information about the elements inside the 4000 V2 Platform (CPU, Memory, hardware revision, screen reference...).

1 Once on the **About** screen, press **Services Data** menu key to display the list of elements contained on your 4000 V2 Platform.

Fig. 110 Services Data page



Accessing to the 4000 V2 Platform documentation

All documents necessary for the 4000 V2 Platform use are directly available onto the equipment.

To display the list of documents available for 4000 V2 Platform use:

1 Validate the **Help** icon 

on the **Home** page.

2 In the page, scan the QR Code to access to an online page dedicated to the 4000 V2 Platform documentation User manual, Getting Started Manual, Quick Card...

Fig. 111 Help page

Installing a new version of the software

When a new software version is loaded, there is a risk of re-initialization of the internal memory. Before installing the new software, it is therefore advisable to save the results in the memory, using the **Save** function called up by the **Multi-views** > **File** button.

Do not interrupt the installation process, as this could damage the instrument.

To avoid any interruption of the installation procedure, the 4000 V2 Platform must be operating on the mains: if the procedure is started while operating on battery, a message indicates that the instrument must be connected to the mains.

Downloading from Internet

When the software is obtained from the Internet, it must be saved on a storage medium before the software upgrade of the product can be carried out. To do this:

1 Open Internet Explorer

2 Enter the internet address `http://www.updatemyunit.net`, which will give access to the installation portals for all T-BERD/MTS from VIAVI.

3 Click on the link **T-BERD®/MTS-4000V2 Platform**.

A new page opens, displaying the current version available

4 According to your region, click on the one of the following icon to download the archive.


Download from European server


Download from North American server


Download from Singapore server

5 In the new dialog box displayed, click on **Save** to save the exe file on the PC.

6 Once completed, connect the USB memory stick to the PC and follow the instructions chapter "Installation from a USB memory stick" on page 163, from step 2.

Installation from VIAVI Server

The update can be performed directly onto the equipment, using the VIAVI server.

1 Connect the 4000 V2 Platform to a PC via an Ethernet cable or via WIFI.

2 Check on the **Ethernet** or **WIFI** setup page that the connection mode is defined to Automatic (**Home** > **Connectivity** > **Ethernet/WIFI** > **Mode**: **Dynamic**).

3 On the **Home** page, press **Connectivity** icon 

.

4 Press **Upgrade** icon 

.

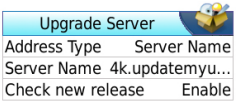
5 In the **Upgrade Server** box:

– On the line **Address Type**, select **VIAVI Server**

The address **4kv2.updatemyunit.net** is automatically displayed.

6 Select if the new release for 4000 V2 Platform must be automatically detected (**Enable**) or not (**Disable**). See "Checking new upgrade on VIAVI Server" on page 165.

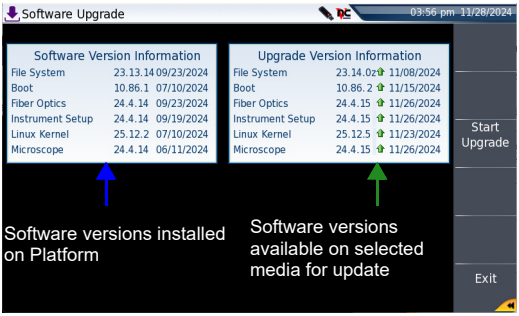
Fig. 112 Configuration of the VIAVI Server



7 Press **Software Upgrade > Upgrade via Ethernet**.
The message `Verify IP address of PC server` appears.

8 Click on **Continue**.
The list of the software versions available on the PC is displayed next to the versions installed on the 4000 V2 Platform.

Fig. 113 List of software versions (current and new)



Installation from another server

Before starting the software upgrade via Ethernet, make sure the IP address of the PC server.

The update can be performed directly onto the equipment, using an http address.

1 Connect the 4000 V2 Platform to a PC via an Ethernet link or via WIFI.

2 Check on the **Ethernet** or **WIFI** setup page that the connection mode is defined to Automatic (**Home** > **Connectivity** > **Ethernet** / **WIFI** > **Mode**: **Dynamic**).

3 On the **Home** page, press **Connectivity** icon 

.

4 Press **Upgrade** icon 

.

5 In the **Upgrade Server** box:

– On the line **Address Type**, select **Server Name** or **IP Address**.

– Enter the Server Name (if **Server Name** has been previously selected) or the Server Address (if **IP Address** has been previously selected)

6 Press **Software Upgrade > Upgrade via Ethernet**.
The message `Verify IP address of PC server` appears.

7 Click on **Continue**.

The list of the software versions available on the PC is displayed next to the versions installed on the 4000 V2 Platform (see Figure 113 on page 162).

Installation from a USB memory stick

You must be equipped with a USB memory stick with a minimum capacity of 128 Mo.

Before installing the upgrade, you must format the USB memory stick (see “Formatting the USB memory stick onto the 4000 V2 Platform” on page 173).

1 Once formatted, disconnect the USB memory stick from the 4000 V2 Platform using the key **Eject USB** in the **Media Utilities** page.

As for any media formatting, please note that all data present on the USB memory stick will be irremediably lost.

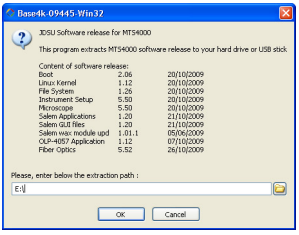
2 Connect the USB memory stick to the PC

3 Unzip the upgrade files on the PC and transfer it to the USB memory stick:

a Download and save on your PC the.exe upgrade file that you can get from the web (see “Downloading from Internet” on page 160).

b Once the transfer is completed, double click on the.exe file: A window will appear. Check that the folder is correct i.e. the USB memory stick driver is appearing in the line at the bottom of the dialog box then press OK. If not, click on the icon  in order to select the right USB drive.

Fig. 114 List of software update



c Press **OK** and wait for the end of loading.

4 Then remove the USB memory stick, using the appropriate procedure, from your PC

5 Insert the memory stick into one of the USB ports on the Platform.

> **NOTE**
> A bip is emitted each time the USB memory stick is inserted or removed from the USB port.

6 On the **Home** page, press **Connectivity** icon 

.

7 Press **Upgrade** icon 

.

8 Press **Software Upgrade > Upgrade from USB**..
The message Are you sure? is displayed

9 Click on **Confirm**.
The list of the software versions available on the USB stick is displayed next to the versions installed on the 4000 V2 Platform (see Figure 113 on page 162).

Launching the upgrade

Whatever is the method selected for upgrade (Server, USB key...) and once the list of the software versions available is displayed next to the versions installed on the 4000 V2 Platform (see Figure 113 on page 162), follow these instructions to launch the upgrade:

1 Click on **Show Prev choice** or **Show Next Choice** to display the previous and next versions available.

2 Click on **Confirm this Choice** to start the upgrade of the selected software(s).
or
Click on **Confirm All Choices** to upgrade all versions.

> **NOTE**
> The software versions list does not always appear (cf previous versions) as well as the **Previous / Next Choice** buttons and the **Confirm/Continue** key. In this case, the upgrading starts automatically.

Upgrading begins. The 4000 V2 Platform is automatically rebooted. Upgrading takes several minutes. Finally, the 4000 V2 Platform is automatically restarted.

During the upgrade, the Testing indicator is lit in red. Do not push any button or remove the USB memory stick while the indicator is lit. The USB stick can be removed if necessary once the Testing indicator is off.

Checking new upgrade on VIAVI Server

If the VIAVI Server is selected for upgrade (see Figure 112 on page 161), the parameter **Check new release** can be defined to automatically inform user of a new upgrade available for Platform.

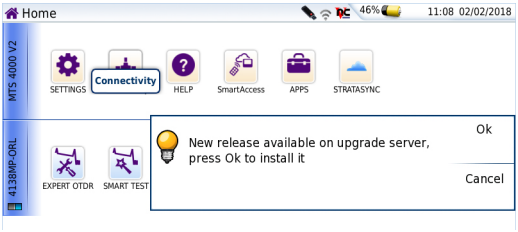
1 In the **Connectivity** screen, select **Upgrade** icon.

2 Check the **Address Type** is set to **VIAVI Server**.

3 Define the parameter **Check new release** to **Enable**.

If the parameter is set to **Enable**, a message displays, at any time, when one update is available on server.

Fig. 115 Checking new release

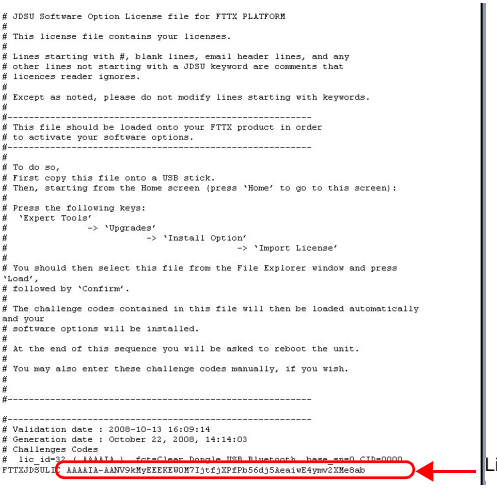


4 Press **Ok** to display the list of software versions available (see Figure 113 on page 162) and follow instructions “Launching the upgrade” on page 164.

Install Software License

This page allows to import the license to get a software option.

Fig. 116 Example of a License file (.lic)



To import the license, you can either enter

- Install the license from VIAVI Server
- import this file with a USB memory stick connected to the 4000 V2 Platform
- Enter manually the license code, given in the license file, (.lic file).

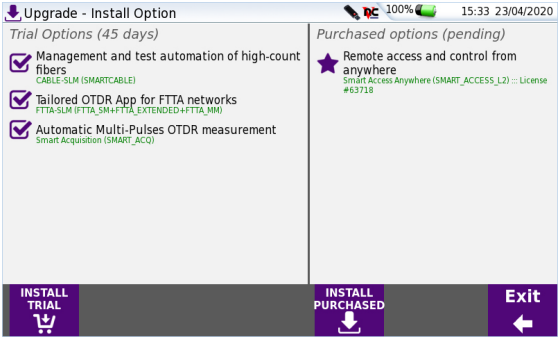
It is strongly recommended to perform the installation using the importation of License via a USB memory stick or the VIAVI Server..

Install options from VIAVI Server

1 In the **Home** page, click on **ADD OPTIONS** icon.

2 Click on **Install From Server** softkey.

Fig. 117 Install options from VIAVI Server



3 On the left part of the screen, select or deselect the options to be installed or not for 30 days trial.

4 In the right part, are displayed the purchasedl license(s) and that can be installed onto the Platform.

5 Click on **INSTALL TRIAL** to start the installation of the selected options.

6 Click on **INSTALL PURCHASED** to start the installation of the license(s) which have been purchased to VIAVI.

To display the list of installed options, from the **Home** page, click on **Settings** icon and press **About > Software Options** softkeys (see Figure 109 on page 159).

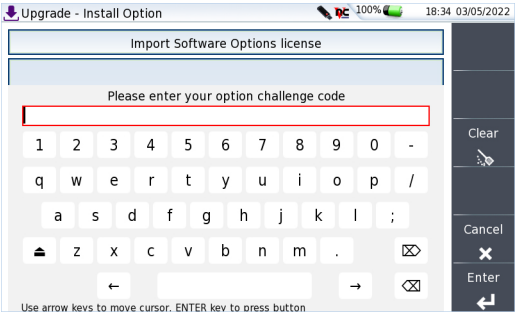
Enter Manually the License

1 In the **Home** page, click on **ADD OPTIONS** icon.

2 Press **Enter Challenge**
The edition keypad is displayed

3 Enter the challenge code of the option, set at the bottom of the file (see Figure 116 on page 166).

Fig. 118 Enter the License code



The license file can be opened via a word processing software such as Word...

The challenge code must be entered exactly as it is in the .lic file, paying attention to the lower-case and upper-case letters etc.

4 Press the **Enter** key to validate the code

Your software options will be installed

At the end of this sequence you will be asked to reboot the unit to apply the modifications, pushing the **Reboot** key. Confirm the reboot to restart the Platform.

Import the license from the USB memory stick

CAUTION

Any file linked to the license file (.lic) must be saved at the root of the USB key.

1 In the **Home** page, click on **ADD OPTIONS** icon

2 Press **Import License**.

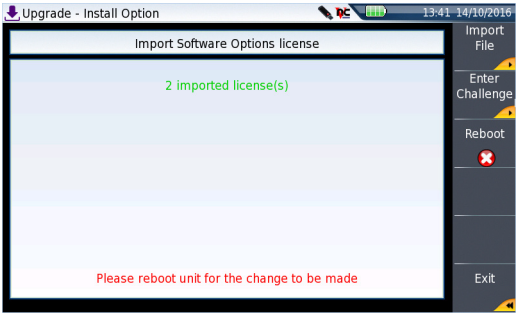
If the USB memory stick is not already connected to the Platform, a message asking the memory stick insertion is displayed. Confirm it once the stick is connected.

3 In the File Explorer, select the USB stick, then the license file (.lic) to be imported,

4 Click on **Load**

5 The challenge codes contained in this file will then be loaded automatically and your software options will be installed.

Fig. 119 License imported



6 At the end of this sequence you will be asked to reboot the unit to apply the modifications, pushing the **Reboot** key .

7 Confirm the reboot

Locking the 4000 V2 Platform

The 4000 V2 Platform can be locked at any time:

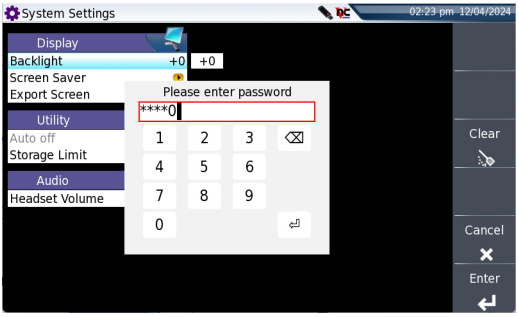
1 In the **HOME** page, click on **Settings** icon to open the **System Settings** page.

2 Click on **Expert Tools** > **Instrument Lock**

3 Confirm the 4000 V2 Platform locking by clicking on **Confirm** (or use the **Cancel** key to cancel the process).
The numeric keypad is displayed

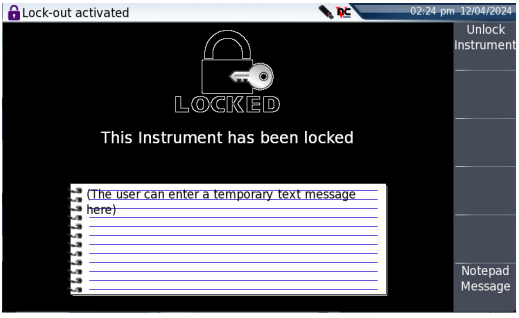
4 Enter the password to lock the instrument: `42000` with the numeric keypad displayed.

Fig. 120 Password



5 Click on **Enter**
The 4000 V2 Platform locking screen is displayed.

Fig. 121 Locking screen



Click on the **Notepad Message** key to add a message using the text edition.

Unlocking the 4000 V2 Platform

1 Once the locking screen is displayed, click on the key **Unlock Instrument**.

2 Press confirm to confirm the Platform must be unlocked.

3 Enter the password **42000** using the numeric keypad displayed and validate.

The screen automatically displays the **HOME** page.

Returning an instrument

When returning an instrument, it is essential to indicate the following minimum information:

- the type and serial number of the instrument (on the identification label) and the configuration code (under the bar code)
- a description of the fault found on the instrument.

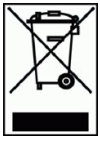
The returned instrument will then be repaired and calibrated.

Guarantee conditions

Any repair operation supervening within the guarantee period of the instrument will be carried out at the expense of VIAVI. However, for any sub-assembly upon which work has been carried out otherwise than by VIAVI Service Centers, the cost of a replacement sub-assembly will be invoiced.

Recycling Information

VIAVI recommends that customers dispose of their instruments and peripherals in an environmentally sound manner. Potential methods include reuse of parts or whole products and recycling of products components, and/or materials.



Waste Electrical and electronic Equipment (WEEE) Directive

In the European Union, this label indicates that this product should not be disposed of with household waste. Il should be deposited at an appropriate facility to enable recovery and recycling.

Troubleshooting

Interpreting alarms

Troubleshooting	Solution
Nothing happens when the **ON/OFF** key is pressed.	- Make sure that the battery is present or charged; or the mains adapter is properly connected (see “Connecting the mains adapter” on page 16).
Nothing happens on screen, whatever is the action done (menu key or hard key pressed...)	- The Platform must be rebooted. See “Resetting the 4000 V2 Platform” on page 19.
You are using the 4000 V2 Platform in the ordinary way when it suddenly switches off.	- Check the instrument is not configured to Auto off. See “Defining the Automatic shutdown of the 4000 V2 Platform” on page 24). - Check the battery charge level. See “Charging the battery” on page 16.
The battery refuses to charge (the **Charge** indicator does not go on when the instrument is connected to the mains and is not operating).	- There is no battery in the instrument. - The temperature level of the equipment does not allow the battery charging for safety reasons. Wait the equipment cools down. - The battery needs to be changed. See “Changing the battery” on page 173.
Error message when USB has been disconnected	- The USB disconnection has not been done properly (see “USB memory stick disconnection” on page 143) - The data transfer was not completed when USB key was disconnected.
No beep is emitted when the USB memory stick is connected	- A previous USB memory stick has not been properly disconnected (see page 143). - The USB memory stick is not detected by the 4000 V2 Platform: use another memory stick, or another storage media.
Error message when upgrade via Ethernet is confirmed	- Check the Server Name is correctly entered (see “Installation from another server” on page 162)
Error message when upgrade via USB key is confirmed	Check the USB key is correctly connected (see “USB memory stick connection” on page 143)
Error message when unlocking the instrument	- The password is not the correct one (see “Locking the 4000 V2 Platform” on page 169).

Formatting the USB memory stick onto the 4000 V2 Platform

If the USB icon  is displayed on the upper banner of the screen, when a USB memory stick is connected to the 4000 V2 Platform, this may means the memory stick must be formatted.

If the stick needs to be formatted, proceed as follows:

1. Insert the memory stick into one of the USB port on the top of the 4000 V2 Platform.
2. Press the **HOME** button
3. Validate the **Settings** icon to open the **System Settings** page.
4. On the right menu keys, successively select **Expert tools** > **Media utilities** > **Usbflash Format.**
5. Confirm your choice to actually format the USB memory stick.

As for any media formatting, please note that all data present on the USB memory stick will be irremediably lost.

Erase disk

To delete all the disk contents of the 4000 V2 Platform:

1. On the Home page, Press twice the **Settings** icon to open the **System Settings** page
2. Press **Expert Tools** > **Media Utilities**,
3. Select **Disk Erase** to delete all the disk contents into the 4000 V2 Platform.
   A confirmation must be validated before the deletion.

Changing the battery

If you meet problems during the Platform functioning, or if the battery does not charge anymore when plugged, this may require the battery to be replaced.

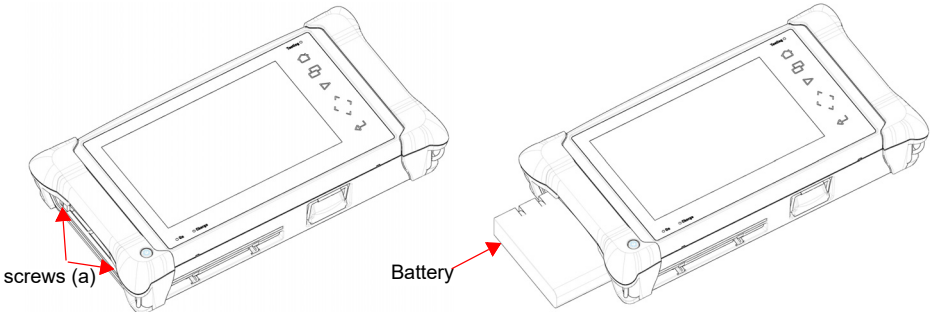
CAUTION

Battery is not interchangeable in the field. It must be replaced exclusively for maintenance purpose.

Accessing to the damaged battery

1. Switch off the instrument and disconnect the mains supply.
2. On the left side of the equipement, loosen the captive screws (a) at both sides using a Philips head screwdriver.
3. Remove the battery door, pulling with the help of the screws
4. Pull the battery to disconnect it from the base, taking care not to damage the connector into which it is plugged.

Figure 122 Battery seatings



Date and Time parameters will be lost when battery is disconnected.

Installing a new battery

1. Switch off the instrument and disconnect the mains supply.
2. On the left side of the equipment, loosen the captive screws (a) at both sides using a Philips head screwdriver.
3. Remove the battery door, pulling with the help of the screws.

4 Push the battery to connect it to the base, taking care not to damage the connector into which it is plugged.

5 Set back the battery door and tighten the captive screws at both sides.

When putting a battery back into its seating, make sure that its connector engages correctly with the one of the base and that the door is correctly closed.

Contact VIAVI local Sales Service to get a new battery.

Do not use any battery other than the one supplied with the instrument, or supplied by VIAVI.

General information on warranty

The warranties described herein shall apply to all commercially available VIAVI products. Any additional or different warranties shall apply only if agreed to by VIAVI in writing. These warranties are not transferable without the express written consent of VIAVI.

Hardware Warranty

VIAVI warrants that Hardware Product sold to customer shall, under normal use and service, be free from defects in materials and workmanship. Information regarding the specific warranty period for this product can be obtained by contacting your local VIAVI Customer Service Representative, or at our web site ***www.viavisolutions.com***. If installation services have been ordered, the warranty period shall begin on the earlier of (1) completion of installation, or (2) thirty (30) days after shipment to customer. If Installation Services have not been ordered, the warranty period shall begin upon shipment to Customer. Hereafter these periods of time shall be collectively referred to as the Initial Warranty Period.

VIAVI 's obligation and customer's sole remedy under this Hardware Warranty is limited to the repair or replacement, at VIAVI's option, of the defective product. VIAVI shall have no obligation to remedy any such defect if it can be shown: (a) that the Product was altered, repaired, or reworked by any party other than VIAVI without VIAVI's written consent; (b) that such defects were the result of customer's improper storage, mishandling, abuse, or misuse of Product; (c) that such defects were the result of customer's use of Product in conjunction with equipment electronically or mechanically incompatible

or of an inferior quality; or (d) that the defect was the result of damage by fire, explosion, power failure, or any act of nature.

VIAVI performed repairs shall be warranted from defective material and workmanship for a period of ninety (90) days, or until the end of the Initial Warranty Period, whichever is longer. Risk of loss or damage to Product returned to VIAVI for repair or replacement shall be borne by customer until delivery to VIAVI.

Upon delivery of such product, VIAVI shall assume the risk of loss or damage until that time that the product being repaired or replaced is returned and delivered to customer. Customer shall pay all transportation costs for equipment or software shipped to VIAVI for repair or replacement. VIAVI shall pay all transportation costs associated with returning repaired or replaced product to customer.

Warranty disclaimer

For hardware and/or services furnished by VIAVI, the foregoing warranties are in lieu of all other warrantees and conditions, express or implied. VIAVI specifically disclaims all other warranties, either express or implied, on any hardware, documentation or services including but not limited to warranties relating to quality, performance, noninfringement, merchantability or fitness for a particular purpose, as well as those arising from any course of dealing, usage or trade practice. under no circumstances will VIAVI be liable for any indirect or consequential damages related to breach of this warranty.

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English

VIAVI Solutions

North America:	**1.844.GO VIAVI / 1.844.468.4284**
Latin America	**+52 55 5543 6644**
EMEA	**+49 7121 862273**
APAC	**+1 512 201 6534**
All Other Regions:	**viavisolutions.com/contacts**
email	**TAC@viavisolutions.com**