



OTU-5000 (E9E-COTU)

Optical Test Unit

**Rack-based optical test unit for RFTS
(Remote Fiber Test System)**

User Manual

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User Manual



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Manual

This guide is a product of OTU-5000's Technical Information Development Department. This manual gives you the main information to install, start and use the OTU-5000.

WEEE Directive Compliance

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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. In the European Union, all equipment and batteries purchased from Viavi after 2005-08-13 can be returned for disposal at the end of its useful life. Viavi will ensure that all waste equipment and batteries returned are

reused, recycled, or disposed of in an environmentally friendly manner, and in compliance with all applicable national and international waste legislation.

It is the responsibility of the equipment owner to return equipment and batteries to Viavi for appropriate disposal. If the equipment or battery was imported by a reseller whose name or logo is marked on the equipment or battery, then the owner should return the equipment or battery directly to the reseller.

Instructions for returning waste equipment and batteries to Viavi can be found in the Environmental section of Viavi's web site at www.viavisolutions.com. If you have questions concerning disposal of your equipment or batteries, contact Viavi's WEEE Program Management team..



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About This Guide

Topics discussed in this chapter are as follows:

- “Purpose and scope” on page x
- “Assumptions” on page x
- “Technical assistance” on page x
- “Recycling Information” on page x
- “Conventions” on page x

Purpose and scope

The purpose of this guide is to help you successfully use the SmartOTU features and capabilities. This guide includes task-based instructions that describe how to install, configure, use, and troubleshoot the SmartOTU. Additionally, this guide provides a complete description of Viavi's warranty, services, and repair information, including terms and conditions of the licensing agreement.

Assumptions

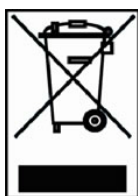
This guide is intended for novice, intermediate, and experienced users who want to use the SmartOTU effectively and efficiently. We are assuming that you have basic computer and mouse/track ball experience and are familiar with basic telecommunication concepts and terminology.

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 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. It 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 key-strokes.	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.

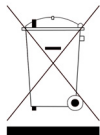


This symbol represents a risk of electrical shock.



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.

Description

This chapter describes the OTU-5000 Web interface.

Topics discussed in this chapter are as follows:

- [“Introduction” on page 2](#)
- [“OTU-5000 Setup” on page 3](#)
- [“Port view” on page 4](#)

Introduction

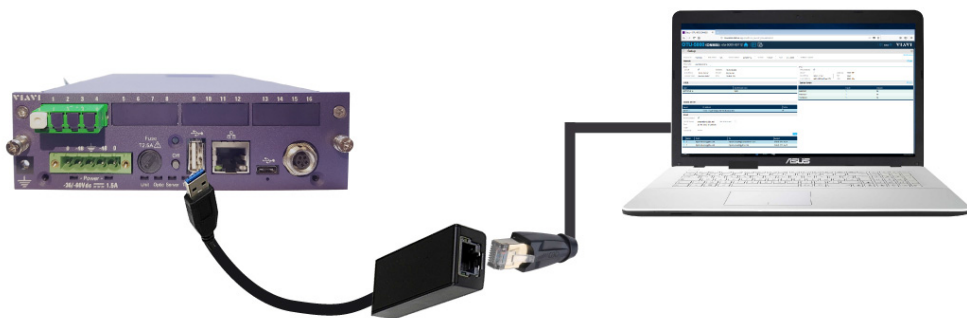
Before using the OTU-5000 Web interface web application, make sure your OTU-5000 is correctly installed (see the "Quick guide").

Local connection of the OTU-5000 through USB

To connect the OTU-5000 in local mode, connect it to the PC using an Ethernet adapter:

- 1 Connect the USB jack to the USB port on the OTU-5000.
- 2 Use an Ethernet cable and plug it to the Ethernet adapter and to the PC.

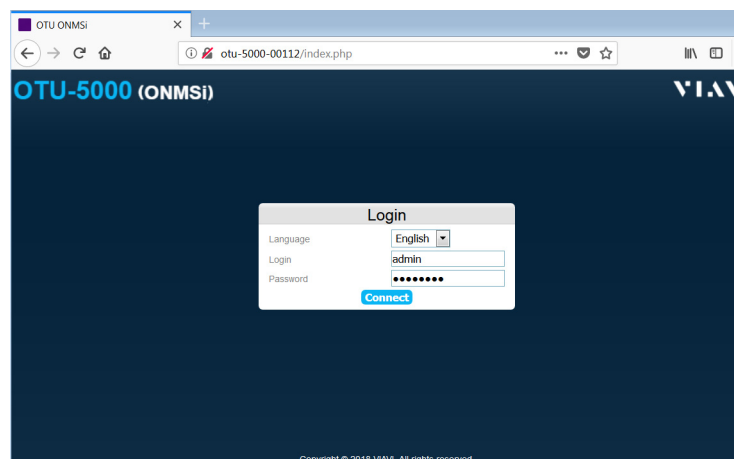
Figure 1 Local connection through USB



Connect to the OTU-5000 Web interface via your web browser (IE9 and higher, Chrome, Firefox) from your PC.

Open your web browser: fill your URL: `http://otu-5000-xxxx` where xxxx is the serial number of your OTU-5000 (your OTU-5000 Web interface is in DHCP mode by default) or `http://xxx.xxx.xxx.xxx` where xxx.xxx.xxx.xxx is the OTU-5000 IP address.

Figure 2 OTU-5000 Web interface Login page



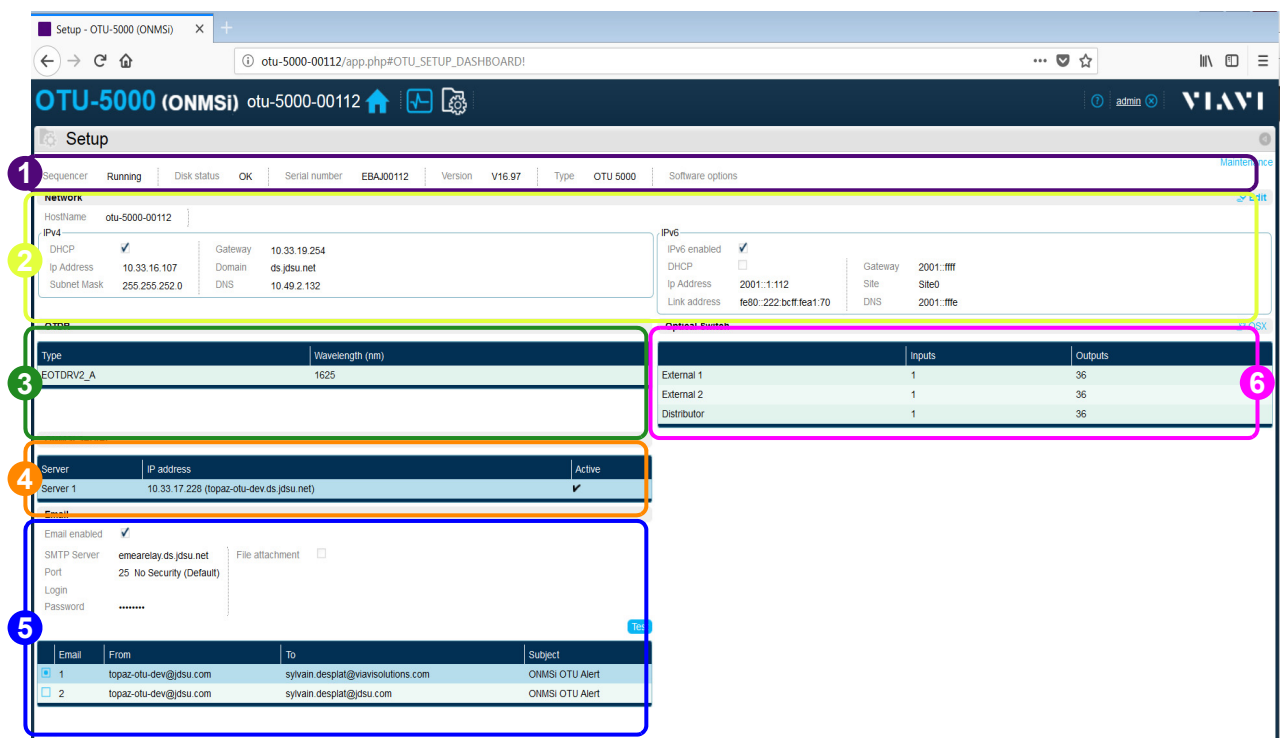
On the login page:

- 1 Select the language you wish to use, in the list.

- 2 Enter your Login: **admin**.
 - 3 Enter your Password: **password**.
 - 4 Click on **Connect**.
- The home page is displayed by default

OTU-5000 Setup

Figure 3 OTU-5000 Web interface configuration



- 1 **Status bar**, with:
 - The OTU-5000 sequencer: running or stopped.
 - The OTU-5000 Disk status: working or not
 - The OTU-5000 Serial Number
 - The current Web Interface version
 - The OTU-5000 type
 - The Software options list installed onto the OTU-5000 (peak monitoring, Dual O.S...)

- 2 **Network Settings**
Information on the Network configuration (Hostname, IPV4 or IPV6 configuration)

- 3 **OTDR**
Description of the OTDR type installed onto the OTU-5000

- 4 ONMSi Server**
Inform if the main ONMSi Server or the secondary one is active, and indicates on which the OTU-5000 is connected
- 5 Email**
Displays the list of the e-mails configured on the ONMSi for this OTU-5000. The **Test** button allows to test the sending of an e-mail and to check if it is received.
- 6 Optical Switch**
Displays a list of all the External and internal optical switches connected to the OTU-5000. Click on **OSX** to configure the OSX.

Quick access bar details

It offers a menu with the following actions:

 Reload the page and display the main screen (Setup view).



Display the main screen.




Selected tab menu: Port view or Setup view,

(Icon color changes from blue (unselected) to blue/light blue (hover) and white (current selected))




Help Icon: A menu pop-ups with Online help and About OTU-5000 choice menu. The first gives access to OTU-5000 Online Documentation and the second notifies the OTU-5000 version

Click on  to return to the main Screen (Monitoring view).



Edit user preferences.

Click on  for modifying login and password. Click on **Save** to confirm your selection.

 Quick Access for Viavi website.

Port view

The OTU-5000 monitoring view is divided into 2 parts:



- The Quick access bar provides shortcuts to the main screens:
 - monitoring view 
 - OTU-5000 Web interface Setup 
- The table lists all the ports on the OTU-5000, including the OSX-5000.

Figure 4 Monitoring view

OTU ONMSi otu-5000-00112

OTDR ports view

Port	Name	Monitored
1		
2	otu-5000-00112 OS(02)	✓
3		
4		
5		
6		
7		
8	otu-5000-00112 OS(08)	✓
9		
10		
11		
12		
13		

ONMSi link name

Ports

Port status: monitored (✓) or not

Configuration

This chapter describes the procedures for the OTU-5000 configuration.

Topics discussed in this chapter are as follows:

- [“Configuring the LAN” on page 8](#)
- [“External Optical switch configuration” on page 9](#)
- [“Changing the Login and password” on page 13](#)

Configuring the LAN

LAN settings are displayed in the Network Panel of the OTU-5000 Setup:

- hostname (used if DHCP enabled)
- DHCP enabled
- IP settings


1 Click on the icon  on the upper banner to access to the Network configuration:

Figure 5 Network configuration



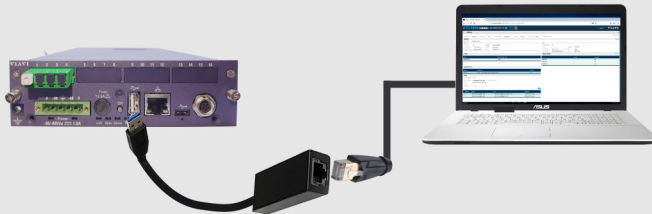
LAN setting edition

To change LAN settings:



NOTE

In local mode, your PC with the web browser must be connected on OTU-5000 USB port with Ethernet adapter.



- 1 In local mode: use the url: <http://192.168.1.1/> to connect to OTU-5000 application on your web browser
- 2 Click on **Edit** to configure Network Settings:
 - the OTU-5000 hostname (used when DHCP is enabled)
 - DHCP can be enabled/disabled
 - If DHCP is disabled, IP settings can be modified
- 3 Click on **Save** to save the settings.

Figure 6 Network settings

External Optical switch configuration



CAUTION

OSX-5000 can have 24 or 36 output ports.

Used with the OTU-5000, all the OSX-5000 must be equipped with the same ports number: either 24 ports or 36 ports for all OSX-5000.



CAUTION

Pre-requisites for OSX configuration: no monitoring setup on OSX.

If some links are monitored on OSX, power off the OSX from the OSX menu and reboot the OTU.

On the configuration menu, click on the **OSX > Edit**. The following page displays

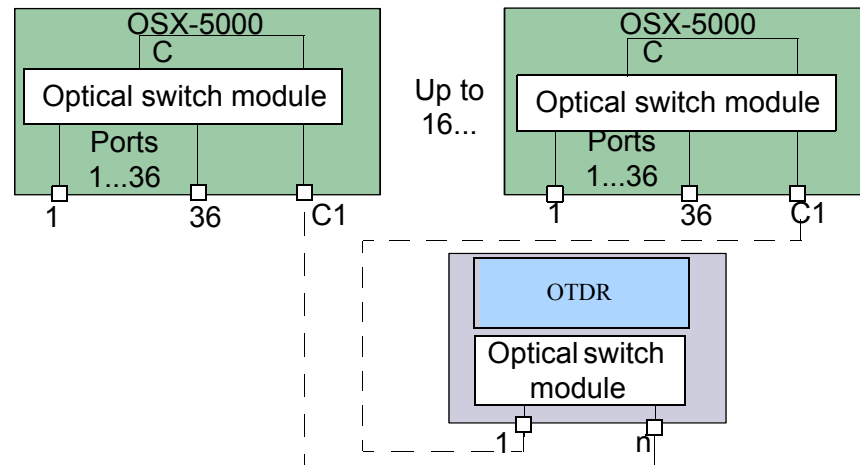
Figure 7 OSX-5000 Setup

The OSX-5000 can be configured differently:

- either all the OSX-5000 are in cascade mode (internal switch is the distributor)
- or one OSX-5000 is set as distributor and the other are in cascade.

OSX-5000 in cascade mode

Figure 8 OSX in cascade mode



- 1 Connect all the OSX-5000 that can be connected to the OTU-5000 before performing the configuration.
- 2 Follow the instructions displayed on the screen:
 - a Press **Power Off** button to add/remove OSX. OSX power supply is switched off. The button becomes **Power On**:

OSX connector

Power On

Set OSX address

1

Apply

Show OSX

1

Start
 - b Connect physically the OSX.
 - c Once all OSX are physically connected to the OTU-5000; press **Power On** button.
 - d Press **Settings** button onto the OSX-5000 front panel
The LED **Addr.** turns on, in solid green
 - e Enter the Address 1 for the first OSX-5000 plugged (the OSX-5000 connected to the OTU-5000)



The addresses must be consecutive! (1, 2, 3, 4...).

- f Press **APPLY** onto the *OSX Setup* page.
- 3 Once completed, and if the address has been successfully modified:
 - a green text confirm the address modification.
 - the LED **Addr.** blinks in green onto the OSX-5000
- 4 Press back the **Settings** button onto the OSX-5000 to complete the configuration for the first OSX-5000
- 5 Redo [step 2](#) to [4](#) for all the OSX-5000 to be configured.
- 6 Once all the OSX-5000 are configured, you must launch a scan to detect all the connected OSX-5000, clicking on **START** in the OSX Scan window.



NOTE

If the number of OSX-5000 detected is false, this may be due to a bad configuration of the addresses (example: two OSX-5000 have the same address).

To ensure that all OSX-5000 connected are configured with the good address:

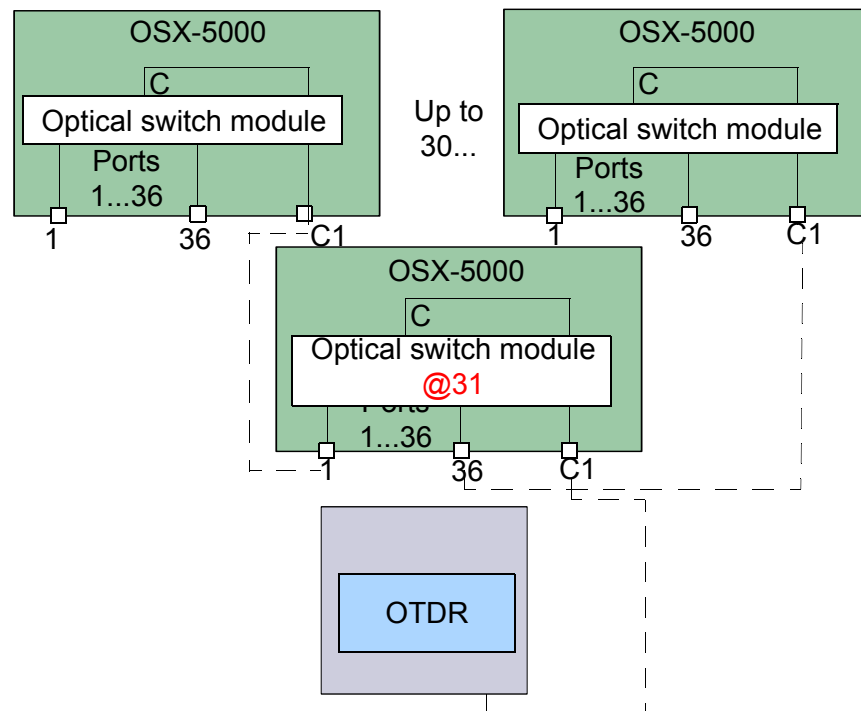
- a Enter the address of one OSX-5000 in the **External Switch Address** box
- b Click on **Blink the OSX**

The LED **Addr.** of the OSX-5000 with this address blinks in green for 20 seconds.

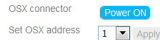
- 7 Close the OSX Setup window and apply the switch configuration.

OSX-5000 configuration with one OSX-5000 as multiplexer

Figure 9 OSX-5000 configuration with one multiplexer



This configuration is to be done when no internal switch is set into the OTU-5000.

- 1 Press Power Off button to add/remove OSX.
OSX power supply is switched off.
The button becomes **Power On**: 
- 2 Connect the first OSX-5000, which will be used as multiplexer for the others, to the OTU-5000 with the command cable.
- 3 Connect all the others OSX-5000.
- 4 Once all OSX are physically connected to the OTU-5000; press **Power On** button.

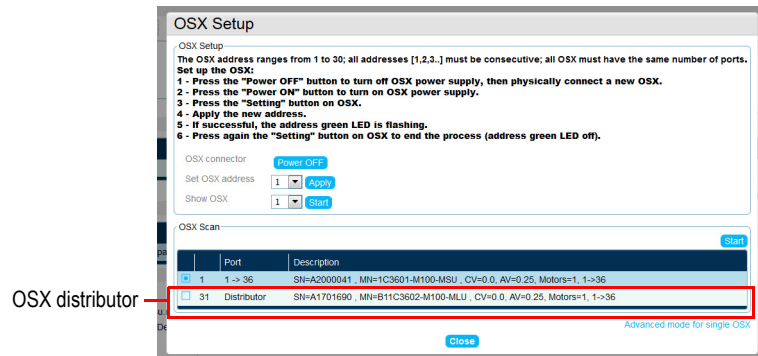
- 5 Press **Settings** button onto the OSX-5000 multiplexer front panel.
The LED **Addr.** turns on, in solid green.
- 6 Enter the **address 31** for the OSX-5000 multiplexer.
- 7 Click on **APPLY** onto the *OSX Setup* page.
- 8 Once completed, and if the address has been successfully modified:
 - a green text confirm the address modification.
 - the LED **Addr.** onto the OSX-5000 turns solid green
- 9 Press the **Settings** button again to complete the address modification for OSX-5000 multiplexer.
- 10 Follow step 2 to 4 from “OSX-5000 in cascade mode” on page 10 for the configuration of the following OSX-5000.



The first OSX-5000 set after the multiplexer will always have address 1.
The addresses must be consecutive! (1, 2, 3, 4...).

- 11 Once all the OSX-5000 are configured, you must launch a scan to detect all the connected OSXs, clicking on the button **SCAN** in the OSX Scan window.
- 12 Once scan is completed:
 - the OSX-5000 Address **31**, which represent the OSX-5000 multiplexer, its serial number and C/P data
 - the OSX-5000 with addresses **1,2, 3** etc., which represent all the OSX-5000 connected to this multiplexer one, their serial numbers and C/P data.

Figure 10 Scan results with one OSX-5000 set as distributor

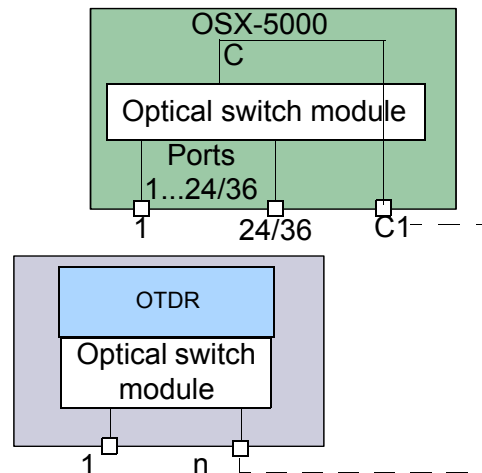


- 13 Close the OSX Setup window and apply the new switch configuration.

Advanced mode for a single External Switch

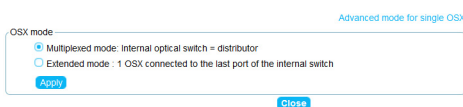
This command allows to connect one single OSX-5000 and the internal switch in two different ways:

Figure 11 Advanced mode for Single External Switch



1 Select the parameter **Advanced mode for a single OSX**.

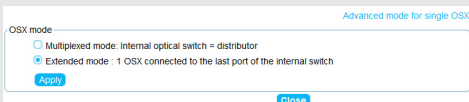
2 Select one of the following configurations:



The **Multiplexed** mode is to be used when it is planned to add other OSX-5000 in the future.

This mode allows to add more OSX-5000 without modifying the optical cabling of the first one.

The other ports «n-1» of the internal switch are consequently unused.



In **Extended** mode (**Default** mode), the last port of the internal switch is linked to the OSX. Only one OSX is then usable for this configuration, the other ports of the internal switch can be used only to connect fibers to be tested (the number of usable ports is then of 59: 23 ports on the internal switch + 36 on the OSX)

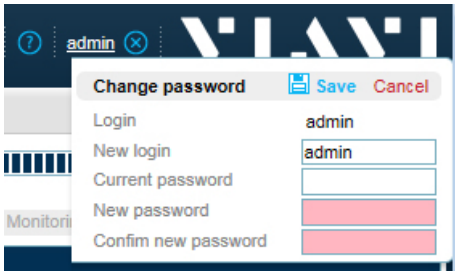
This mode can be selected if no other OSX-5000 is planned to be added in the future.

Click on **Apply** to validate the selected mode.

Changing the Login and password

- 1 From the top menu bar, click on user name
- 2 Click on **Edit** to modify your credentials.

Figure 12 User credentials



NOTE
If user credentials are lost, in OTU-5000 Local Mode, user credentials can be changed without giving the old password and current user login is retrieved.

Measurement on demand

This chapter describes how to start a measurement from the OTU-5000.

Topics discussed in this chapter are as follows:

- [“Measurement on a port” on page 16](#)

Measurement on a port

OTDR measurement can be used prior the addition of monitoring tests to check that fibers are correctly connected and spliced.



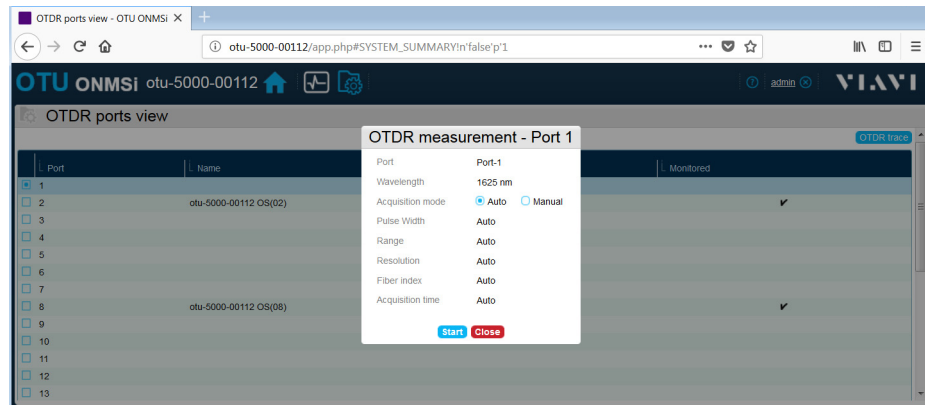
- 1 From the **Home** screen, click on the icon **Monitoring view** .
- 2 Select a monitored **Port** , without monitoring test
- 3 Click the button **OTDR Trace**.
- 4 Modify if necessary the OTDR parameters for the acquisition to be performed.

Figure 13 OTDR parameters for measurement on demand



- 5 Click on **Start** to launch the acquisition.
When the measurement is completed, the OTDR trace is displayed and a new measurement can be launched by clicking on OTDR measurement button.

Figure 14 OTDR Measurement result



Trace Viewer

This chapter describes the trace viewer on the OTU-5000.

Topics discussed in this chapter are as follows:

- [“OTDR trace color codes” on page 18](#)
- [“Overview” on page 18](#)
- [“Details on selected Trace” on page 20](#)

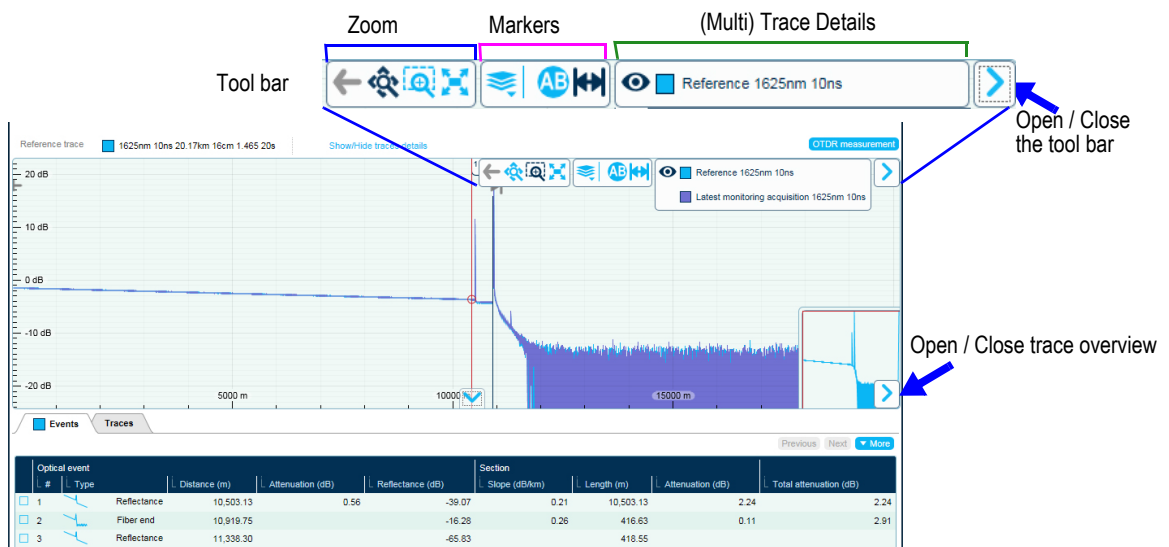
OTDR trace color codes

The color of the OTDR traces are different according to the type of trace:

- Light Blue: reference trace
- Dark blue: latest test
- Grey: Measurement on demand

Overview

Figure 15 Trace overview



Zoom

The Zoom tool bar allows to apply different zooms on trace:



Fit to content (zoom release)

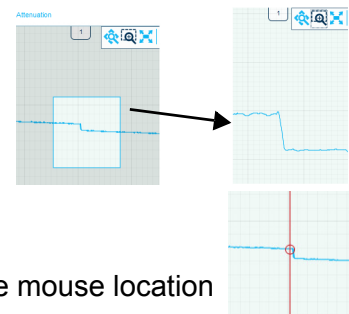


Fit to content (zoom release)



Pan and Zoom in/out with the mouse wheel

- With any zoom tool, zoom in or out around the mouse location



A & B markers

The markers tool bar allows to get details on markers A & B positions on trace.

Figure 16 Markers details

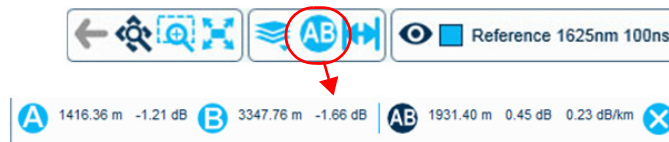


Table 1

A	A marker detail with distance from origin and level Can select this tool to place A marker to a new position then drag and drop
B	B marker detail with distance from origin and level Can select this tool to place B marker to a new position then drag and drop
AB	Distance, attenuation and slope between A and B markers

Multi trace

The multi-trace tool bar allows to change the active trace and to get details related to the selected trace.

Figure 17 Multi trace tool bar

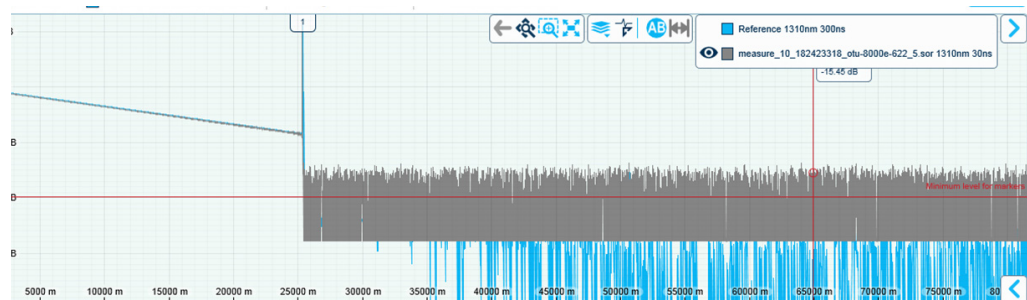


Table 2

	Events, results, acquisition details related to the selected trace Click in front of the to activate the blue trace
	Can change selected trace by clicking in front of the colored square

Multi trace details

- Click on the color square to change the color of the trace.

Figure 18 Change trace color



Details on selected Trace

Showing the events table



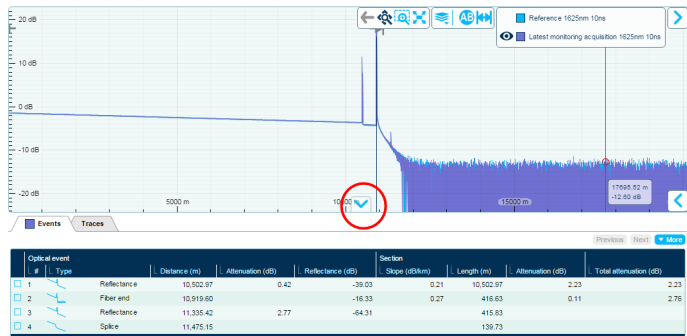
The Events table is accessible clicking on the icon  at the bottom of the trace (click on the icon  to hide the window).

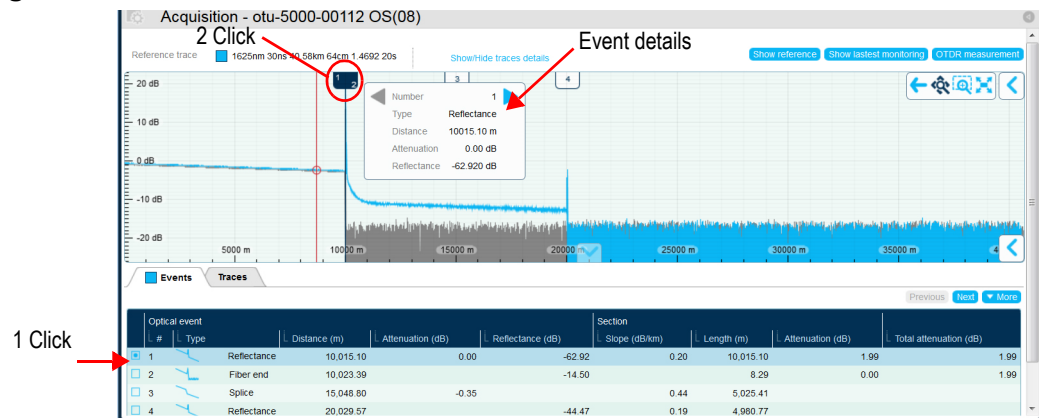
Figure 19 Show the details on selected trace



Displaying the events details

- 1 Click on one event into the table to display a cursor line onto the event on trace.
- 2 Click on the event number on the cursor line to display the event details.

Figure 20 Event details on trace

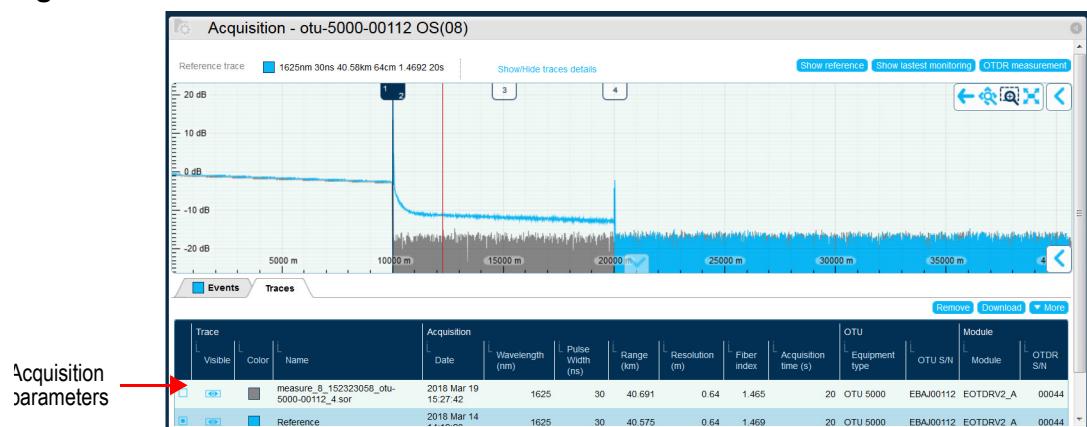


- Can get optical events detail from list, from box on the top
- When multiple events close, can move to the next event from the top box

Setup details

- To display the details on OTDR acquisition, click on the Traces tab.

Figure 21 Details on trace

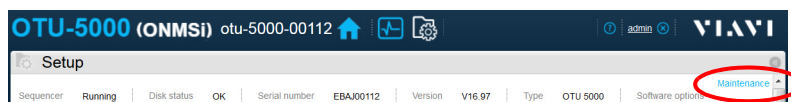


- All the acquisition parameters are displayed for all the traces on screen.

Maintenance

This chapter describes the maintenance procedures for the OTU-5000.

To access the maintenance, click on Maintenance link from the Setup screen:



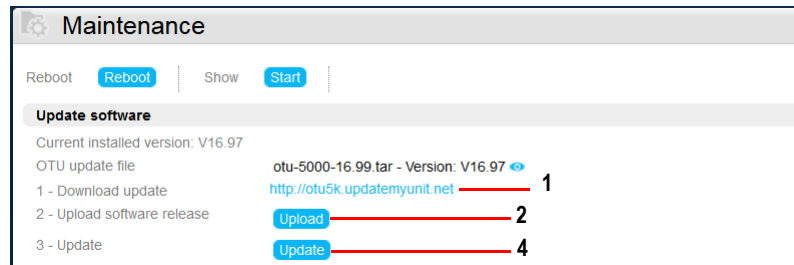
Topics discussed in this chapter are as follows:

- “Software update” on page 24
- “Adding a License” on page 24

Software update

- 1 From the Software update section of the **Maintenance** screen, download on your PC the new OTU-5000 release from Viavi <http://otu5k.updatemyunit.net> site.

Figure 22 Update software



- 2 Select the **Upload** button to upload the release from your PC to the OTU-5000. You are asked to select the release to upload to the OTU-5000 with the **Browse** button.
- 3 Select the release (of the form *.tar) and upload it.

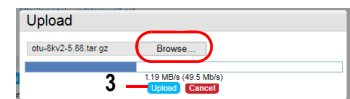
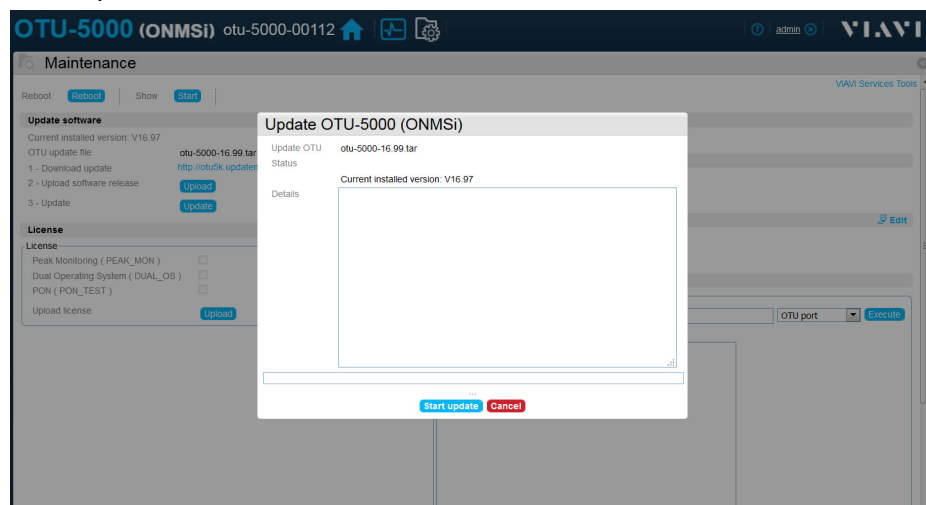


Figure 23 Update OTU-5000



- 4 When the upload is completed, close the upload dialog and select **Update** button. You are asked to start the update.
- 5 Select the **Start update** button. The OTU-5000 starts the update and will reboot at the end of the update.

Adding a License

Licenses are installed when the product is ordered.

They can also be added later if needed.

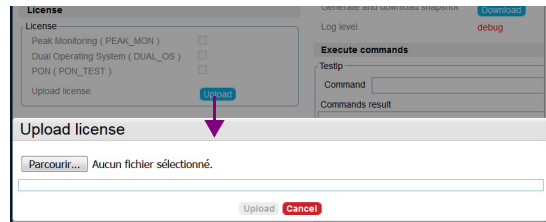
Current available license is:

- PEAK MONITORING FOR OTU-5000 (Ref: E9E-PEAK-MON)

If the license needs to be added by yourself, click on upload, to install the file provided by Viavi.

Please consult your sales representative to get it

Figure 24 Upload License file



Show OTU-5000

From the Maintenance screen, the user can make the LED **Status** blink onto the OTU-5000, in order to recognize which OTU-5000 is controlled by the Web Interface:

- 1 On the upper part of the screen, press **Start** button of the **Show OTU** zone.
The LED Status of the concerned OTU-5000 starts blinking.

Generate and download Snapshot

On the right of the Maintenance screen, click on **VIAMI Service Tools** to display more maintenance actions.

In the window Log files, click on **Download** button in order to generate a snapshot of all the OTU-5000 logs in order to send them to the VIAMI support.

Figure 25 Log files





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