

OFL280 FlexTester

User Guide

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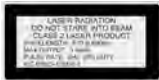
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Safety Information



WARNING! Use of procedures or adjustments other than those specified herein may result in hazardous radiation exposure.

1310/1550 nm OTDR/OLS port 1310/1490/1550 nm OTDR/OLS port 1310/1550/1625 nm OTDR/OLS port 1310/1550/1625 nm/Live Fiber filter/PON meter OTDR/OLS port	This is a CLASS I LASER output 
VFL port	This is a CLASS II LASER output. Do not stare into beam 



WARNING! Use only the specified AC adapter. Use of another type of AC adapter can damage the instrument and create the danger of fire and electrical shock.



WARNING! To avoid the danger of fire and electrical shock:

- Never use a voltage that is different from that for which the AC adapter is rated.
- Do not plug the unit into a power outlet that is shared by other devices.

- Never modify the power cord or excessively bend, twist, or pull it.
- Do not allow the power cord to become damaged. Do not place heavy objects on the power cord or expose it to heat.
- Never touch the AC adapter while your hands are wet.
- Should the power cord become seriously damaged (internal wiring exposed or shorted), contact the manufacturer to request servicing.



CAUTION! Do not run any tests or perform functions that activate an OFL280 laser unless fiber is attached to the corresponding OTDR port.



CAUTION! To avoid serious eye injury, never look directly into the optical outputs of fiber optic network equipment, test equipment, patch cords, or test jumpers. Refer to your company's safety procedures when working with optical systems.

NOTICE: An OFL280 contains no user serviceable parts. Except for changing batteries and cleaning optical ports, this instrument must be returned to Noyes or authorized agents for repair and calibration.

IMPORTANT: Proper care in handling should be taken when using any precision optical test equipment. Scratched or contaminated optical connectors can impact the performance of the instrument. It is important to keep the dust caps in place when the unit is not being used.

General Information

This user's guide provides operating instructions for testing fiber optic networks with the OFL280 FlexTester and assumes that you have basic knowledge about testing fiber optic networks. The purpose of this user's guide is to explain how to use and maintain your OFL280 FlexTester. Please check our web site at **www.AFLtele.com/go/Noyes** for updates to this manual, software updates, and additional application information. If you have any questions about your OFL280 and recommended accessories, or if you need technical or sales support, please contact Noyes Customer Service.

Contacting Customer Service

You may call Noyes Customer Service between 8 AM and 5 PM, United States Eastern Time.

Phone 800-321-5298

603-528-7780

Fax 603-528-2025

Mail: NoyesTechSupport@afltele.com

Recommended Accessories

Fiber optic test jumpers are required to connect an OFL280 to the fiber under test. Test jumpers must have the same core and cladding size as the fiber under test. The connector at one end of the test cable must mate with the appropriate optical port on the OFL280. The connector on the other end must mate with the fiber optic link under test.

Launch and Receive cables are required to measure the insertion loss and reflectance of the near-end and far-end connectors respectively, on the fiber link being tested. Noyes Fiber Rings may be used as Launch and Receive cables. Fiber Rings with a variety of lengths and connector styles are available from AFL Telecommunications. The table below helps in selecting right test jumpers or cables for a test.

To do the following	Use the following accessories to connect OTDR to the fiber under test	Use the following accessories to terminate far-end of the fiber under test
<ul style="list-style-type: none">• Fault locate - find a break• Measure link length	Test Jumper (1-2m typical)	None
<ul style="list-style-type: none">• Measure near-end connector loss• Measure near-end connector reflectance	Launch cable *	None
<ul style="list-style-type: none">• Measure near-end connector loss and reflectance• Measure far-end connector loss and reflectance• Measure end to end link loss and return loss	Launch cable *	Receive cable *

* Such as Noyes 150 m Fiber Ring.

OFL280 Features

Hardware Features

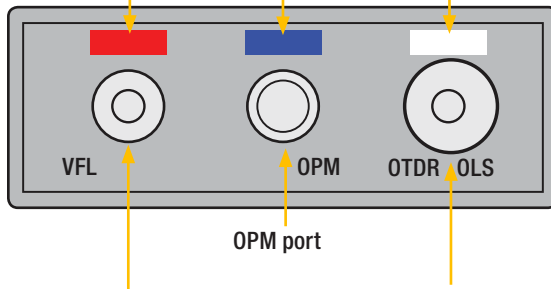
Top Panel (Test Ports)

Red colored bar indicates the **VFL test port**

Blue colored bar indicates the **OPM test port** - Input for the standard optical power meter

OTDR/OLS test port

Silver bar - UPC ferrule
Green bar - APC ferrule

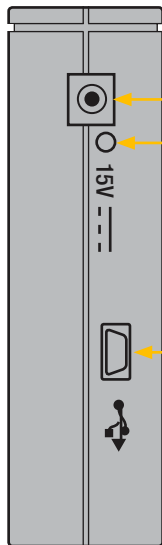


**VFL port - This is a CLASS II LASER output.
Do not stare into beam!**

The visual fault locator (VFL) port is a 650 nm (red) laser.

OTDR/OLS port
This is a CLASS I LASER output
and input for FTTx PON meter
(OFL280-103 model only)

Side Panel (USB and Power Ports)



Power port - This is the interface for the AC power adapter/charger.

AC/Charger indicator - When ON, indicates that an AC adapter is connected to the OFL280.

- Red light - rechargeable battery is charging.
- Green light - rechargeable battery is fully charged.

USB function port - Allows connection to a PC for transferring stored test results.

Front Panel (Keys & Display)

The OFL280 front panel contains keys, indicator, and a display. The use of the [Power], [Menu], [Test], [Back], [Save], and [VFL] keys are fixed. The use of the soft function keys and arrow keys depend on which menu or editor submenu they are displayed.

Function of each key is explained in the section titled 'Using OFL280 Keys'.

Display - Used to show the setup menus, test results, and saved files information

Soft function keys

Back key

Menu key

Power key

Left & Right Tab keys

Arrow keys

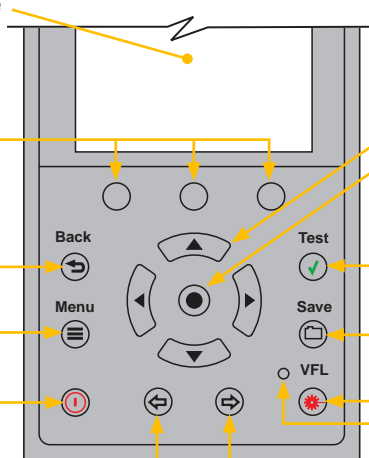
Select key

Test key

Save key






VFL key






VFL Indicator - Illuminates when the VFL port is active



Using OFL280 Keys

The use of each key is summarized in the table below.

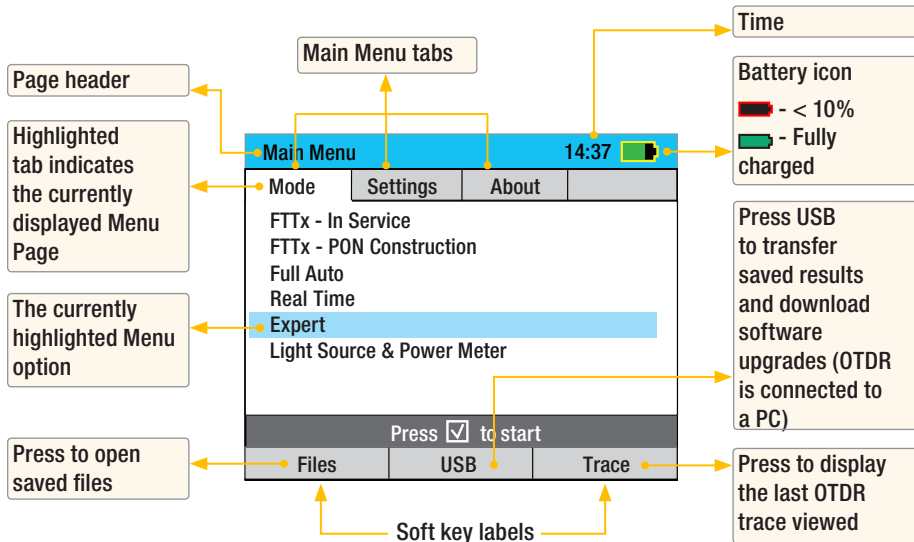
Key Symbol	Key Name	Key Function
	Power	Press and hold (~ 1 sec.) to turn the OFL280 on or off.
	VFL laser	Visual Fault Locator (red laser) ON - Press and hold (approx. 1 sec.) LED will flash ON - Press and hold (approx. 2 sec.) LED will be solid OFF - Press and hold (approx. 1 sec.) LED should be OFF
	Menu	Press to access the Main Menu.
	Left and Right Tab keys	Press to display the next/previous available Menu Tab or Test View Tab.
	Arrow (Navigation) keys	The arrow keys provide several functions: <ul style="list-style-type: none">• Main Menu: these keys are used to navigate menus and change setup parameters.• Trace Page: in the Zoom mode these keys are used to adjust zoom. In the Move mode, Left and Right keys are used to move cursors.

	Select (A/B)	<p>This key provides several functions:</p> <ul style="list-style-type: none"> • Main Menu: press this key to display a submenu (if available). • Trace Page: press this key to toggle the active cursor between A and B
	Back	<p>Press once to return the previous page.</p> <p>Press one or more times, depending on which menu or editor submenu is displayed, to return to the Main Menu.</p>
	Test	<p>Press to start or stop a test.</p>
	Save	<p>This key provides several functions:</p> <ul style="list-style-type: none"> • Save the currently displayed test results • Set current folder • Set current file name • Review results
	Soft function keys	<p>The label shown above each key on the display indicates the current use of each function key. Press to activate the current function.</p>

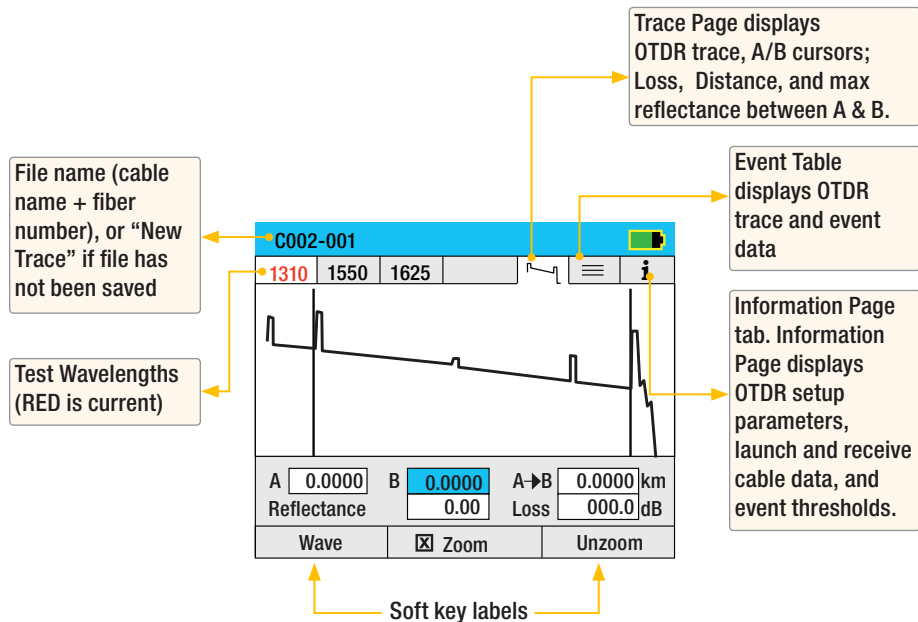
Display Features

Main Menu Page

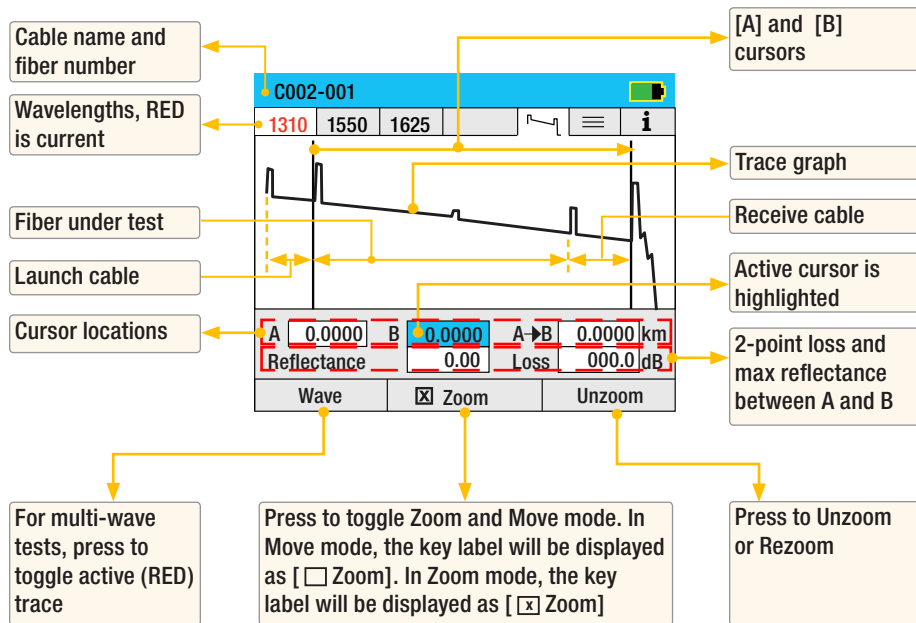
Main Menu for OFL280-103 model



Trace Page

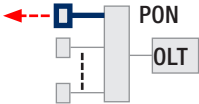
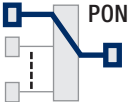



Trace Page (continued)



OFL280 Settings

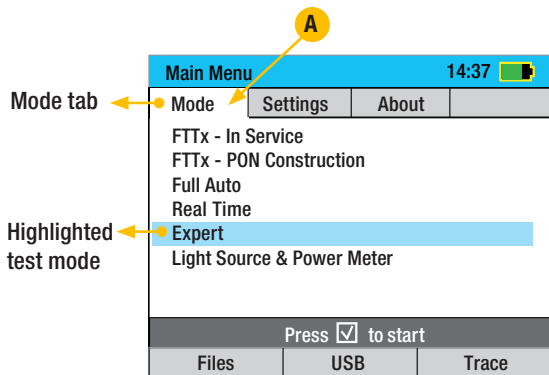
OTDR Modes


Test Mode	Network	Applications	Setup
FTTx – In Service		PON power meter Customer fiber fault location (fiber may be live or dark)	Auto
FTTx – PON Construction		End-to-end loss Splitter loss Feeder fiber fault location	Semi-Auto
Full Auto	Long-haul Metro Access 	Fault location End-to-end loss Connection loss & reflection Splice loss	Auto
Real Time	Any	Short range fault location First connector check Fusion splice check Mechanical splice tuning	Semi-Auto
Expert	Any	For experienced users	Manual or Semi-auto

Light Source and Power Meter Mode

Test Mode	Application
SOURCE	Measure end-to-end loss or trace fibers using the tone feature and a Noyes Optical Fiber Identifier (OFI)
METER	Measure optical power or fiber loss

Selecting a Test Mode



1. Press the Menu key to display the Main menu. The Mode menu page **A** is displayed by default.
2. Use ▲▼ keys to highlight the desired Test Mode.
3. Press the Select -  key to display a settings submenu for the highlighted Test Mode. From this submenu:

Use ▲▼ keys to highlight the desired setup parameter.

Use ◀▶ keys to set/change the highlighted parameter.

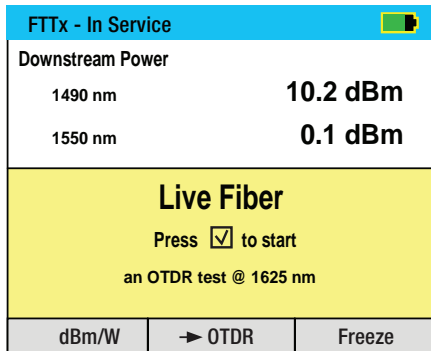
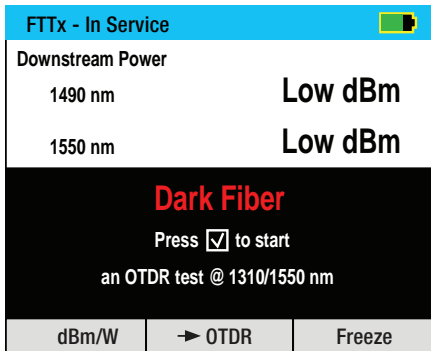
Understanding OTDR Test Parameters

Parameter	Description
Range	<p>The [Range] parameter determines the distance range of the full (unzoomed) trace. It also determines the distance between data points in the trace: the longer the range, the wider the data point spacing. We recommend selecting the shortest distance range that is longer than the fiber under test. For example, to test a fiber that is 1.5 km long, select the 2.5 km range.</p> <p>Available [Range] values: 250 m, 500 m, 1, 1.5, 3, 6, 15, 30, 60, 120, 240 km</p>
Pulse	<p>The OFL280 can operate using different pulse widths. Short pulse widths provide the shortest event and attenuation dead zones. Long pulse widths provide the range needed to test long fibers.</p> <p>Available [Pulse] values: 5, 10, 30, 100, 300 ns, 1, 3, 10 μs.</p>
Averaging	<p>The [Averaging] parameter determines the duration of a timed test and the number of trace averages performed. The longer the test the smoother the trace.</p> <p>Available [Averaging] values: 5, 10, 30, 60, 90, 180 sec.</p>
Resolution	<p>Available: [Normal] or [High].</p> <p>Set to [High] to see events that are close together; set to [Normal] for longer range.</p>


FTTx - In Service Test Mode Settings

In the FTTx – In Service mode (available only in the OFL280-103 model) the first page displays received FTTx PON power at 1490 and 1550 nm.

On dark fibers users can test at 1310/1550 nm. On live fibers users can test only at 1625 nm. To see OTDR settings, press the [→OTDR] key. To return to the PON power meter page, press the [Power Meter←] key.



In all other modes, if users try to test a live fiber, a warning message is displayed and users are not allowed to continue the test.

- If a live fiber is detected, the 'Live Fiber' screen is displayed (OFL 280-103 only). Press the  - Test key to continue testing at 1625 nm
- If a live fiber is not detected, an OFL280-103 OTDR will continue testing at the selected wavelengths.

FTTx - PON Construction Test Mode Settings


In this test mode, the user may select the desired test wavelength(s) and set the [Range] and [PON] parameters.

1. From the Mode menu, display the FTTx - PON Construction page.
2. Use ▲▼ keys to highlight the desired test setup parameter to set.
3. Use ◀▶ keys to set/change the highlighted parameter.

Use ◀▶ keys to select a single wavelength, dual or triple (if applicable) wavelengths.

Use ◀▶ keys to set the [Range] parameter to a value that is greater than the longest end-to-end distance in the PON from central office to a customer .

Use ◀▶ keys to set the [PON] parameter to a value that corresponds to the split ratio of the PON you are testing.
* You may set the PON (ratio) to a higher value to make smooth trace.


FTTx - PON Construction 			
Test	Event	Fiber	Cables
Wavelength	1310/1550/1625 nm		
Range	250 m		
PON	1x32		
Press <input checked="" type="checkbox"/> to start			
Files		Trace	

Full Auto Mode Settings

In this test mode, the user may select the desired test wavelength(s) while the [Range], [Pulse], [Averaging], and [Resolution] parameters are set by the OFL280.

1. From the Mode menu, display the Full Auto page.
2. Use ◀▶ keys to select a single wavelength or dual or triple (if applicable) wavelengths.

Use ◀▶ keys to select the desired single wavelength or dual and triple (if applicable) wavelengths.

Full Auto 				
Test	Event	Fiber	Cables	
Wavelength		1310/1550/1625 nm		
Press <input checked="" type="checkbox"/> to start				
Files			Trace	

Real Time Mode Settings


In the Real Time test mode, the user may set the [Auto Setup] parameter to [Off] or [By Range].

- **[Off]:** Setting the [Auto Setup] parameter to [Off], allows the user to set the [Range], [Pulse], and [Resolution] parameters.
 - **[By Range]:** Setting the [Auto Setup] option to [By Range], allows the user to set the [Range] and [Resolution] parameters while the [Pulse] parameter is set by OFL280.
1. From the Mode menu, display the Real Time page.
 2. Use ▲▼ keys to highlight the desired setup parameter.
 3. Use ◀▶ keys to set/change the highlighted parameter.

Set the desired single test wavelength.

If set to [By Range], set [Range] and [Resolution] while the OFL280 sets the [Pulse] parameter.

If set to [Off], set [Range], [Pulse], and [Resolution] parameters.

Real Time 			
Test	Event	Fiber	Cables
Wavelength	1550 nm		
Auto Setup	By Range		
Range	250 m		
Pulse	10 ns		
Resolution	Normal		
Press <input checked="" type="checkbox"/> to start			
Files		Trace	

Expert Mode Settings

In the Expert test mode, the user may set the [Auto Setup] parameter to [Off] or [By Range].


- **[Off]:** Setting the [Auto Setup] parameter to [Off], allows the user to set the [Range], [Pulse], [Averaging], and [Resolution] parameters.
- **[By Range]:** Setting the [Auto Setup] option to [By Range], allows the user to set the [Range], [Averaging], and [Resolution] parameters while the [Pulse] parameter is set by the OFL280.

1. From the Mode menu, display the Expert mode page.
2. Use ▲▼ keys to highlight the desired test setup parameter.
3. Use ◀▶ keys to set/change the highlighted parameter.

Choose a single wavelength or dual or triple (if applicable) wavelengths.

If set to [By Range], set [Range], [Averaging], and [Resolution] while the OFL280 sets the [Pulse] parameter.

If set to [Off], set [Range], [Pulse], [Averaging], and [Resolution] parameters.

Expert 			
Test	Event	Fiber	Cables
Wavelength	1310/1550/1625 nm		
Auto Setup	By Range		
Range	250 m		
Pulse	10 ns		
Averaging	30 sec		
Resolution	Normal		
Press <input checked="" type="checkbox"/> to start			
Files		Trace	

Events Menu Settings

Events settings are available in the FTTx - In Service, FTTx - PON Construction, Full Auto, and Expert test modes.

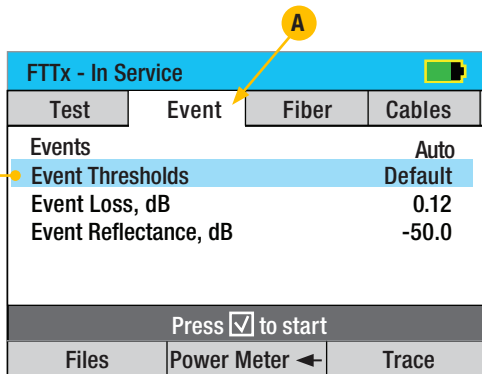
FTTx - In Service mode

In the FTTx - In Service test mode the [Event] parameter is set to [Auto] by default.

1. From the FTTx - In Service test mode page, display the Event menu **A** using $\leftarrow \rightarrow$ keys .
2. Use $\blacktriangle \blacktriangledown$ keys to highlight the desired setup parameter.
3. Use $\blacktriangleleft \blacktriangleright$ keys to set/change the highlighted parameter.

This parameter may be set to

- [Default] - OFL 280 sets [Event Loss] and [Event Reflectance].
- [User] - [Event Loss] and [Event Reflectance] are set by the user.



FTTx - In Service			
Test	Event	Fiber	Cables
Events			Auto
Event Thresholds			Default
Event Loss, dB			0.12
Event Reflectance, dB			-50.0
Press <input checked="" type="checkbox"/> to start			
Files	Power Meter \leftarrow	Trace	


FTTx - PON Construction mode

In the FTTx - PON Construction test mode the [Event] parameter is set to [Auto] by default.

1. From the FTTx - PON Construction test mode page, display the Event menu **A** using $\leftarrow \rightarrow$ keys.
2. Use $\blacktriangle \blacktriangledown$ keys to highlight the desired setup parameter.
3. Use $\blacktriangleleft \blacktriangleright$ keys to set/change the highlighted parameter.

This parameter may be set to

- [PON Default] - OFL 280 sets [Event Loss] and [Event Reflectance].
- [PON User] - [Event Loss] and [Event Reflectance] are set by the user.

FTTx - PON Construction			
Test	Event	Fiber	Cables
Events	Auto		
Event Thresholds	PON Default		
Event Loss, dB	0.10		
Event Reflectance, dB	-50.2		
Press <input checked="" type="checkbox"/> to start			
Files			Trace


Full Auto mode

In the Full Auto mode the [Event] parameter may be set to [Auto] or [Off]. If set to [Auto], the user may perform the following settings:

1. From the Full Auto test mode page, display the Event menu **A** using $\leftarrow \rightarrow$ keys.
2. Use $\blacktriangle \blacktriangledown$ keys to highlight the desired setup parameter.
3. Use $\blacktriangleleft \blacktriangleright$ keys to set/change the highlighted parameter.

This parameter may be set to

- [Default] - OFL 280 sets [Event Loss] and [Event Reflectance].
- [User] - [Event Loss] and [Event Reflectance] are set by the user.

Full Auto			
Test	Event	Fiber	Cables
Events			Auto
Event Thresholds			Default
End Loss, dB			3.0
Event Loss, dB			0.10
Event Reflectance, dB			-50.0
Press <input checked="" type="checkbox"/> to start			
Files			Trace

Expert mode

In the Expert mode the [Event] parameter may be set to [Auto] or [Off]. If set to [Auto], the user may perform the following settings:

From the Expert test mode page, display the Event menu **A** using $\leftarrow \rightarrow$ keys.

1. Use $\blacktriangle \blacktriangledown$ keys to highlight the desired setup parameter.
2. Use $\blacktriangleleft \blacktriangleright$ keys to set/change the highlighted parameter.

This parameter may be set to

- [Default] - OFL 280 sets [Event Loss] and [Event Reflectance].
- [User] - [Event Loss] and [Event Reflectance] are set by the user.
- [PON Default] - OFL 280 sets [Event Loss] and [Event Reflectance]. Allows the user perform PON Construction tests using default settings.
- [PON User] - [Event Loss] and [Event Reflectance] are set by the user. Allows the user perform PON Construction tests using manual settings.

Expert	
Test	Event
Events	Auto
Event Thresholds	Default
End Loss, dB	3.0
Event Loss, dB	0.10
Event Reflectance, dB	-50.0
Press <input checked="" type="checkbox"/> to start	
Files	Trace

Fiber Settings








The Fiber menu page allows selecting the Fiber Type between default - [SMF-28e] and [User]


- [SMF-28e] - sets the default Index (Group Index of Refraction) and BC (Backscatter Coefficient) values to those of SMF-28e type fiber
- [User] - allows entering user selectable Index (Group Index of Refraction) and BC (Backscatter Coefficient) values

Notes:

- Using the default Index and BC values is generally recommended.
- Enter the [User] Index and BC values only if you know the specifications of the particular fiber you are testing and these specifications are significantly different from the default SMF-28e numbers.

To Set Fiber Parameters

1. From the current OTDR test mode menu, use   keys to display the Fiber menu page .
2. Use   keys to highlight the desired parameter to set.
3. Use   keys to change the highlighted parameter.

Expert			
			
Test	Event	Fiber	Cables
Fiber Type		SMF-28e	
Index@1310		1.4677	
BC@1310, dB		-79.6	
Index @1550		1.4682	
BC@1550, dB		-82.0	
Index @1625		1.4690	
BC@1625, dB		-83.0	
Press <input checked="" type="checkbox"/> to start			
Files			Trace

Cables Menu Settings

Note: Launch and Receive cables are required to measure the insertion loss and reflectance of the near-end and far-end connectors respectively, on the fiber link being tested. See section titled “Recommended Accessories” for details.

Launch Cable (Launch Cord) - test cable used to connect an OTDR to the near end of the link under test that is long enough to allow the OTDR to measure the loss of the first connection under the test

Receive Cable (Tail Cord) - A test cable used to terminate the far end of the link under test that is long enough for the OTDR to measure the loss of the last connection


To set Launch/Receive Cable parameter:

1. From the current OTDR test mode menu, use keys to display the Cables menu page **A**.
2. Use keys to highlight the desired setup parameter.
3. Use keys to set/change the highlighted parameter.

This parameter may be set to

- Default - 150 m fiber ring.
- User - length set by the user.
- None - no Launch/Receive cable.

If set to User, set the [Launch Length]/[Receive Length] parameter.

Expert 

Test	Event	Fiber	Cables
Launch Cable			User
Launch Length			100.0 m
Receive Cable			Default
Receive Length			150.0 m

Press ☒ to start

Files		Trace
-------	--	-------

General Settings

The General Settings page contains [Language], [Date & Time], and [Distance] settings.

- [Language] - allows selecting a language from a list of available languages
 - [Date & Time] - provides time & date setup functions
 - [Distance Units] - distance units of measurement setting impact how new and saved traces are displayed. Changes made to distance units will impact currently viewed results and future tests.
1. From the Main menu, display the Settings page **A** using $\leftarrow \rightarrow$ keys.
 2. Using use $\blacktriangle \blacktriangledown$ keys navigate up/down the list to highlight the desired setup parameter.

Press **ⓘ** to display submenu

- Use $\blacktriangle \blacktriangledown$ keys to highlight the desired language
- Press Set when done

Press **ⓘ** to display submenu

- Use $\blacktriangle \blacktriangledown$ keys to highlight the desired setup parameter
- Use $\blacktriangleleft \blacktriangleright$ keys to set/change date/time
- Press Set when done

Use $\blacktriangleleft \blacktriangleright$ keys to change units

A

Main Menu		14:37	
Mode	Settings	About	
Language...			
Date & Time...			
Distance Units		Meters	
Press <input checked="" type="checkbox"/> to start			
Files	USB	Trace	

Light Source & Power Meter Settings

Light Source Operation

After enabling the Light Source & Optical Power Meter test mode or turning the [Laser] option On, let the laser stabilize for approximately five minutes.

1. Use ▲▼ keys to highlight the desired light source setup parameter.
2. Use ◀▶ keys to change the highlighted parameter.

Turn the current light source laser on or off.

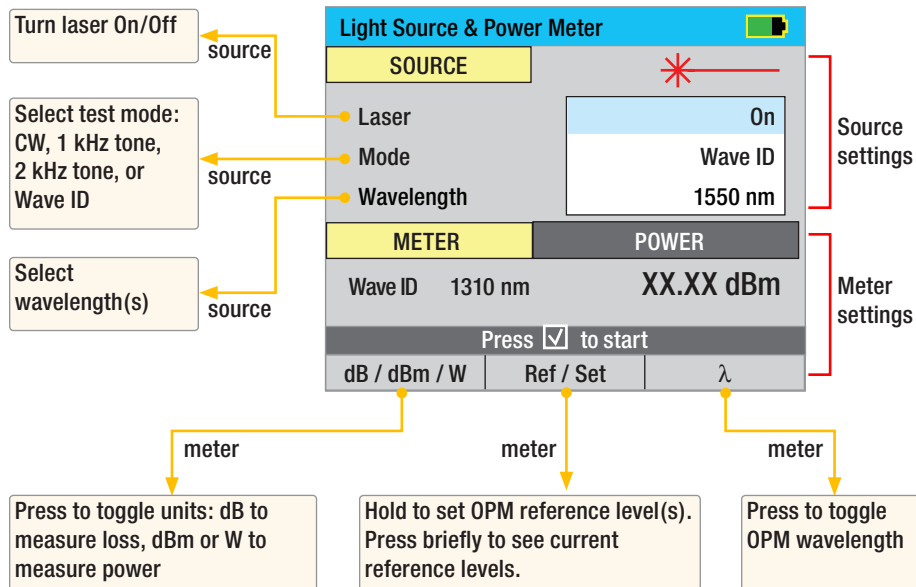
Set up the light source for CW (continuous wave), 1 kHz or 2 kHz tone, or Wave ID operation.

Set up the light source for the desired wavelength operation.

Optical Power Meter Operation

1. Press the [Ref/Set] soft key to see the Reference value (in dBm) for several seconds, then display will return to dB mode.
2. To set a new OPM reference level, hold the [Ref/Set] key until you see REFERENCE [SAVED]. This takes about one second.
3. When you release the [Ref/Set] soft key, the unit should display a loss value of about 0.0 dB.
4. You can sample and hold live POWER or LOSS readings by pressing the Test key. While a held value is shown you will see POWER [STOPPED] or LOSS [STOPPED].
5. Press the Test key again to return to the live data view.

Use ▲▼ to navigate source menu
Use ◀▶ to change source menu items



Running Tests and Viewing Results



Starting and Stopping Tests

To Start a Test

- Press the  - Test key

Note: After an OTDR test is started, it may take several seconds for the first results to appear and depending on setup, tens of seconds or even several minutes for tests to complete.

To Stop a Test

- Press the  - Test key. If pressed before trace appears, it will stop the test and display the setup menu. If pressed after trace appears, it will stop the test and show the partially completed trace.
- Press the  Back key. The OFL280 stops the test and displays the setup menu.

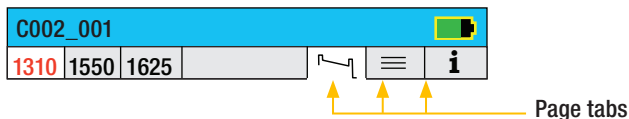
How can I tell if a test is running?


The OFL280 Page header will display the Test in Progress icon.






Test Viewer Pages

The OFL280 test results can be displayed in one of three different Views or Pages. Each Page presents a different view of the current or saved test. Each Page is identified by the corresponding tab as illustrated below.



To display the desired Page for viewing, use Left and Right Tab keys  

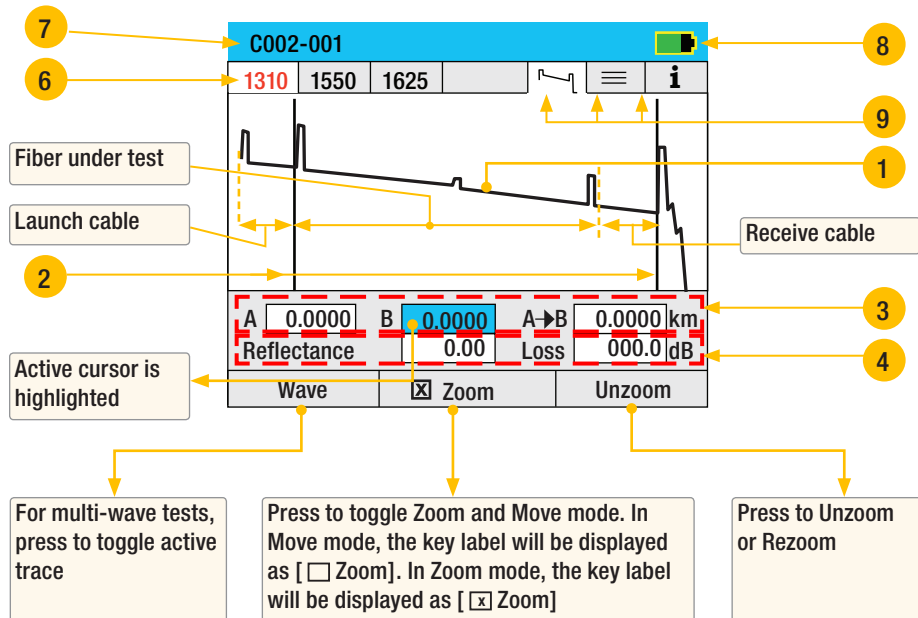
Test Viewer Pages Description

Tab	Name	Description
	Trace	Displays OTDR trace, A/B cursors, Loss and Distance between A and B cursors, and max reflectance between A and B locations.
	Event	Displays OTDR trace and for each detected event: location (in current distance units), type, reflectance (dB), and insertion loss (dB). Press ▲▼ to jump to next / previous event.
	Information	Displays test settings, test cable lengths, fiber parameters, and event thresholds.





Refer to sections titled “ Trace Page Feature”, “Zoom Adjust”, “Event Table Page Features”, and “Information Page Features” for details.

Trace Page Features

The illustration below and table on the next page describe the Trace Page features (example trace below includes a launch and receive cable).



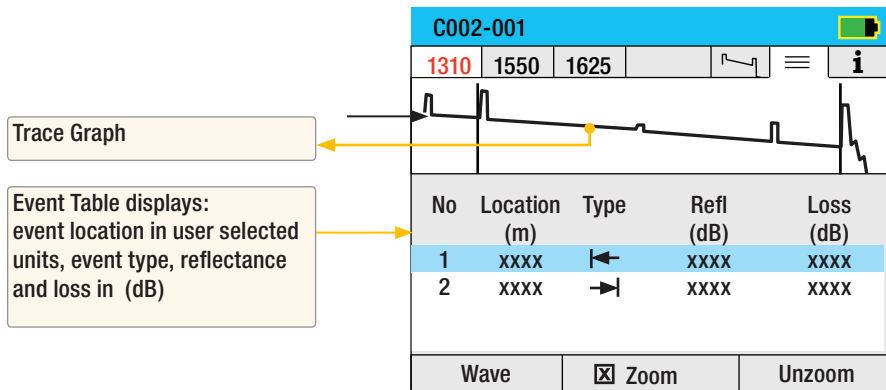
Trace Page Features Description

Ref	Feature	Description
1	Trace	This is a graph of insertion loss vs. distance. The vertical axis shows loss in dB. The horizontal axis shows distance in user-selected Distance units.
2	Cursors	Used to measure loss, and distance. The active cursor can be moved by pressing the ◀ ▶ keys. Press Select -  key to toggle between cursors.
3	Cursor data row	This row displays cursor locations, and distance from A to B in user-selected distance units.
4	Test data row	This row displays 2-point loss and max reflectance between A and B
6	Wavelength field	Displays test wavelengths of the currently displayed trace. For the multiple wavelengths test, press the [Wave] soft key to toggle between the available test results. Note: the currently displayed wavelength is RED
7	File name field	Displays file name of the currently displayed trace (cable name and fiber number). If a trace is not saved, will display the [New Trace] label.
8	Battery indicator	Displays estimated battery charge as follows:  all green - 100%  partially green - <100%  all black - <10%
9	Page icons	The Highlight box around an icon indicates the active view.

Event Table Page Features







Event Table is always generated if testing in the FTTx - In Service and FTTx - PON Construction test mode and optionally generated if testing in the Full Auto and Expert test mode.

1. In the FTTx - In Service and FTTx - PON Construction modes, [Events] are set to [Auto] by default.
2. In the Full Auto and Expert modes, set Events to [Auto].



Continued on the next page

Event Icons and Types

Icon	Event Type	Description
	Start	The start of the fiber under test.
	End	The end of the fiber under test.
	Reflective Event	An event with measurable loss and reflectance, typically caused by a connection or mechanical splice.
	Non-Reflective Event	An event with measurable loss but very small or unmeasurable reflectance, typically caused by a splice or bend in the fiber.
	Gainer	An event with 'negative loss,' which can occur in OTDR traces where two fibers with very different backscatter coefficients are spliced or connected. Normally a gainer will be seen as a normal (positive loss) event when tested from the other end of the fiber. The true loss of the event causing the gainer is approximately equal to the average of its loss measured from each end of the fiber under test.
	Multiple Event	An event table entry that accounts for two or more physical (real) events that are too close together to be measured separately by the OTDR, for example the start and end of a short jumper. The loss of a multiple event is the sum of the losses of the physical events that comprise it.

Information Page Features

The information page displays how the test was created.

- From the test viewer, use $\leftarrow \rightarrow$ keys to display Information page **A**.
- Use $\blacktriangle \blacktriangledown$ keys to highlight the desired setup parameter.

Use $\blacktriangle \blacktriangledown$ keys to change the highlighted setup parameter.

You may change these parameters to correct locations in the Event Table after the test is complete

These fields show the current test data

For multiple wavelengths tests, press to toggle the displayed test results

C002-001			
1310	1550	1625	
Launch Cable 150.0 m			
Receive Cable 150.0 m			
Group Index of Refraction 1.46770			
Backscatter Coefficient -77.0 dB			
Event Thresholds...			
Mode	Expert	Pulse Width	100 ns
Range	3000.0 m	Time	10 sec
		Averages	856 sec
Wave			

Event Thresholds	
Group	Default
End Loss (dB)	3.0
Event Loss (dB)	0.10
Event Reflectance (dB)	-50.0
Recalc Events	

- Press \bullet to display submenu **B**
- Use $\blacktriangle \blacktriangledown$ keys to highlight the desired language
- Use $\blacktriangle \blacktriangledown$ keys to change the highlighted parameter
- When done, press [Recalc Events] **C** to recalculate the Event Table

Saving and Reviewing Test Results

File Manager System

The OFL280 File Manager system consists of four pages as follows:

Page Name	Description
Jobs	Lists the Jobs (folders) stored in the OFL280 internal memory. Use to open or delete the highlighted job.
Cables	Lists the Cables (folders) in the currently open Job folder. Use to open or delete the highlighted cable.
Traces	Lists the OTDR trace (SOR) files in the currently open Cable folder. Use to open (view) or delete the highlighted trace file.
Save As	Lists the current job, the current cable, and the fiber number that will be used the next time a group of traces is saved. Use to save the 'new' trace(s) created by the most recent test, or the trace(s) most recently opened (recalled from memory).

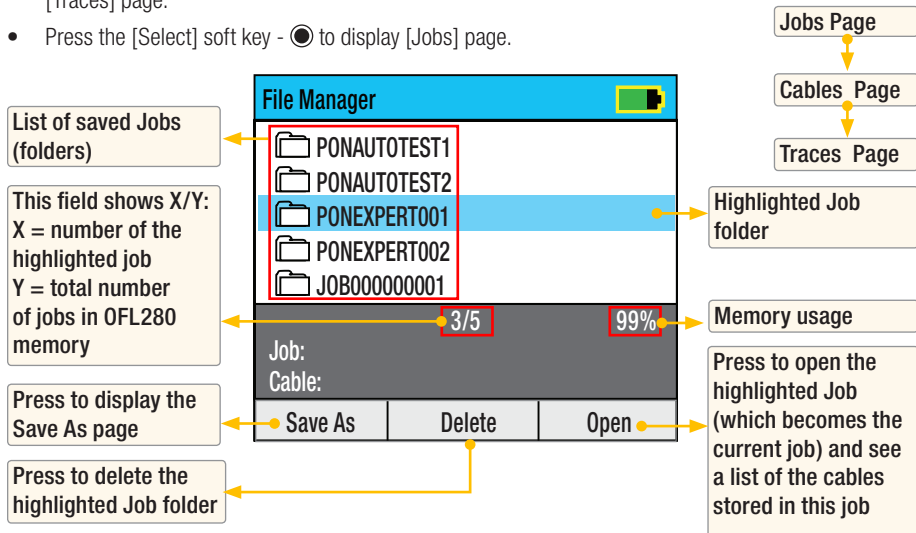
To display File Manager, press the [Files] soft key on the Main Menu page or when it appears.

Continued on the next page

File Manager – Jobs Page

Depending on the prior settings, the File Manager may be displayed as [Jobs], [Cables], or [Traces] page. To display [Jobs] page (top level menu page in the OFL280 File Manager):

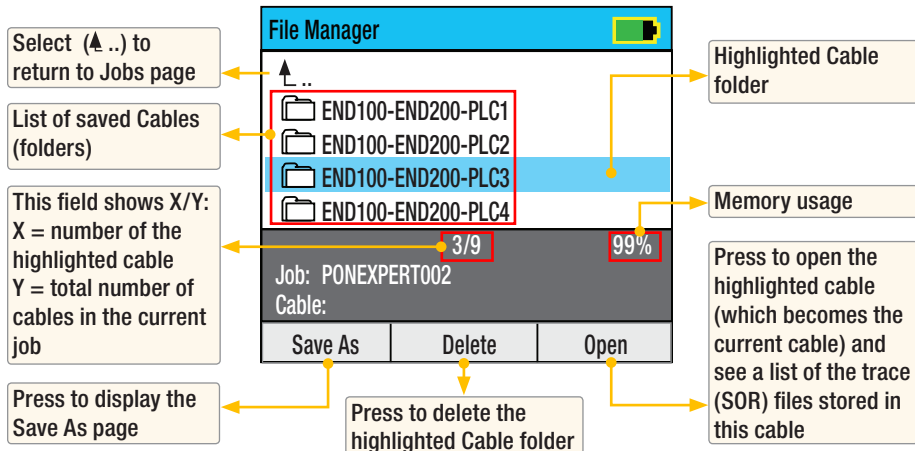
- Press the [Files] soft key.
- If the [Cables]/[Traces] page is displayed, highlight the (⬅ ..) symbol at the top of the [Cables]/[Traces] page.
- Press the [Select] soft key - ● to display [Jobs] page.



File Manager – Cables Page



Depending on the prior settings, the File Manager may be displayed as [Jobs], [Cables], or [Traces] page. To display [Cables] page perform the following.

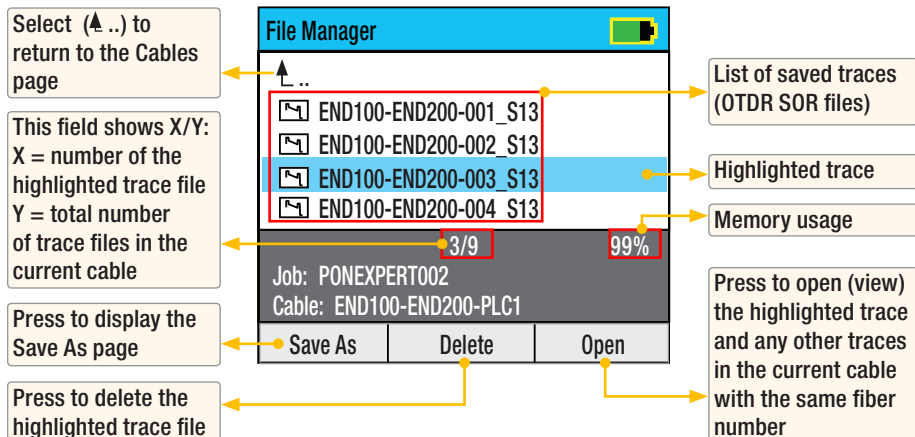
- Press the [Files] soft key.
- If the [Jobs] page is displayed, highlight the desired job, and then press [Select] - ● to display the [Cables] page.
- If the [Traces] page is displayed, highlight the (▲ ..) symbol at the top of the [Traces] page, and then press [Select] - ● to display the [Cables] page.



File Manager – Traces Page

Depending on the prior settings, the File Manager may be displayed as [Jobs], [Cables], or [Traces] page.

- Press the [Files] soft key.
- If the [Jobs] page is displayed, highlight the desired job, and then press [Select] -  to display the [Cables] page.
- From the [Cables] page, highlight the desired cable, and then press [Select] -  to display the [Cables] page.



File Manager – Save As Page

The [Save As] page allows the user to save current test results and create new Jobs/Cables as needed. This page allows the user to review and change test IDs each time test results are saved.

1. To display the [Save As] page, press the [Save] key or the [Save As] soft key when it appears.
2. When the [Save As] page is displayed, use ◀▶ keys to highlight any character position within the Job/End1/End2/Cable name fields and Fiber number field.
3. Use ▲▼ keys to change the highlighted character.

The diagram illustrates the 'Save As' screen layout and its components:

- Currently highlighted character:** Points to the blue cursor in the 'Job:' field.
- Job name:** Points to the text 'PONEXPERT002' in the 'Job:' field.
- Route (made up of the two end names):** Points to the 'End100' field.
- OFL280 location: End1 or End2:** Points to the 'OFL@End:' label.
- Fiber number auto-increments or set by user:** Points to the '1' in the 'Fiber:' field.
- Cable name:** Points to the 'PLC1' in the 'Cable:' field.
- Files:** Points to the 'Files' button at the bottom.
- Cancel:** Points to the 'Cancel' button at the bottom.
- Save:** Points to the 'Save' button at the bottom.
- Press to view current Job/Cable page:** Points to the 'Files' button.
- Press to return to the Main Menu:** Points to the 'Cancel' button.
- Press to save test results:** Points to the 'Save' button.

Save As	
Job:	PONEXPERT002
End1:	End100
End2:	End200
OFL@End:	1
Cable:	PLC1
Fiber:	002
Files Cancel Save	

If the Folder name is edited to a name that already exists, then pressing the [Save] (soft or hard) key will save the current test results in this folder and make this folder current.

If the Job/End1/End2/Cable name and Fiber number are edited to the name and number that already exist in the current folder, then pressing the [Save] key will cause the OFL280 to display “Overwrite file?”.

If the Job/End1/End2/Cable name is edited to a new name, then pressing the [Save] key will cause the OFL280 to create a new folder of this name.

When done, press the [Save] soft key.

Note: This is the only way to create new folders!

Creating New Cables (folders) Using the Save As Page

New Folders are created in the File Manager - [Save As] page. See section above ‘File Manager - Save As Page’.

Selecting a Cable as the Current Cable (folder)

4. Access the File Manager - [Cables] page.
5. Use ▲▼ keys to highlight the desired cable.
6. Press either [Select] key or [Open] soft key to make the highlighted cable current.

Saving Test Results

Test results are stored on the OFL280 Internal Drive. Results are saved as industry standard .SOR files, which can be viewed, printed, and analyzed on a PC using TRM software.

Save Results to an Existing Job/Cable

To save the currently displayed test results to an existing job/cable, perform the following steps:

1. Once a test is complete, press the [Save] key. The [Save As] page will be displayed.
2. From the displayed [Save As] page, press the [Save] key to save test results with the currently displayed Job/End1/End2/Cable name and Fiber number.

Saving Results to a New Job/Cable

To save test results to a new job/cable, use the File Manager - [Save As] page.

1. Once a test is complete, press the [Save] key to display the [Save As] page.
2. As needed, edit Job/End1/End2/Cable name and Fiber number as described in the section titled 'File Manager - Save As Page'.
3. When done, press either soft or hard [Save] key.

Opening Files (Reviewing Saved Results)

1. Access the File Manager - [Files] page.
2. Use ▲▼ keys to highlight the desired job/cable/trace.
3. Press the [Open] soft key to display test results.

Deleting Jobs/Cables/Traces

1. Access the File Manager.
2. Use ▲▼ keys to highlight the desired job/cable/trace.
3. Press the [Delete] soft key to delete the highlighted job/cable/trace.

Transferring Files to a PC via USB

To transfer files from your OFL280 to a PC using a USB cable, perform the following:

1. Connect your OFL280 to a PC using the supplied mini-USB to USB cable. Make sure the mini-plug is fully seated in your OFL280.
2. Press the USB soft key on the OFL280.
3. On your PC, open My Computer. A new removable drive named [OFL X:] will appear, where 'X:' is the drive letter assigned to your OFL280.
4. Under [OFL X:] you should see two folders: [RESULTS] and [SOFTWARE].
5. Copy the [RESULTS] folder to your PC.
6. Under [RESULTS] you will see: [TRACES]
7. Under [TRACES] you will see all of the folders containing traces.

Note:

Before removing the USB cable connecting your OFL280 to your PC, or pressing the [Cancel] soft key on the USB page, left click the Safely Remove Hardware icon in the Start bar of your PC, then left click the [Safely remove USB Mass Storage Device – Drive (X:)] message, where 'X' is the drive letter assigned to your OFL280.

Maintenance Tips

Cleaning

Clean Test Cables and FUT

It is important to keep connector end-faces on the launch and receive cables and those on the Fiber Under Test (FUT) clean, to ensure accurate measurements and operation.

IMPORTANT! Inspect optical connectors after cleaning to ensure cleaning was successful and to verify the end-face is not damaged (cracked, pitted, etc.).

CAUTION! Never view a live fiber. Laser radiation is harmful to eyes.

Follow your company's approved cleaning procedures.

Clean Optical Ports

CAUTION! Before conducting the following procedures be sure to have the OTDR turned OFF.

Cleaning the OTDR/OLS and VFL optical ports without removing adapters

AFL One-Click Cleaner method

- Remove the protective dust cover from the tip of the One-Click Cleaner.
- Insert the tip of the One-Click Cleaner into the optical port adapter and gently press the body of the One-Click Cleaner until an audible “click” is heard.
- Remove the One-Click Cleaner.

AFL FCC2 fluid and CCT stick method

- Lean a can of FCC2 back (30°), press the button on FCC2 to fill the well.
- Dip a CCT stick into the well of the FCC2 to dampen the tip with optical cleaning fluid.
- Place the damp tip over the ferrule to be cleaned.
- Rotate the tip clockwise 10 revolutions while applying varying pressure to create a gentle pumping action where the tip contacts the ferrule.
- Discard the CCT stick after using both tips.

Cleaning the optical ports with adapters removed

Removing connector adapters for cleaning and inspection

To access the OTDR Port

- Rotate the adapter base counterclockwise approximately four times.
- Pull the adapter directly out away from the universal adapter mount to expose the ferrule.

To access the VFL Port

- Unscrew the adapter counterclockwise and pull the adapter straight out to expose the ferrule.

To access the OPM Port

- Unscrew the adapter cap from the adapter cap mount.

Cleaning the Exposed Ferrule or the OPM port

Use lint-free optical cleaning wipes such as AFL FiberWipes and optical quality cleaning fluid such as AFL FCC2 connector cleaning fluid.

Note: if using isopropyl alcohol (IPA), be sure to use 99% pure IPA that has not been contaminated.

- 1 Dampen a portion of the wipe with the cleaning fluid.
- 2 Gently wipe the exposed ferrule (OPM port) starting with the wet section of the wipe and pulling it to the dry section.

Note: Starting with the wet cleaning and finishing in the dry improves cleaning action, reduces static buildup, and finishes with the end-face dry.

Cleaning the adapters

Method 1:

- 1 Insert a Cletop adapter cleaning stick into the sleeve of the adapter and rotate 10 times.
- 2 Remove.
- 3 After cleaning the adapter, replace the adapter over the ferrule; centering it onto the alignment pin.
- 4 Tighten the adapter base.

Method 2:

- 1 Use a can of filtered compressed air (held vertically), blow out any contaminants from the adapter.
- 2 After cleaning the adapter, replace the adapter over the ferrule; centering it onto the alignment pin.
- 3 Tighten the adapter base.

Recharging Batteries

You may charge the batteries while the OFL280 is switched on or off by attaching an AC power adapter.

- Plug the AC adapter/charger into a standard wall outlet.
- Connect the AC adapter/charger to the Power port located on the OFL280 side panel.
- The [AC/Charger] indicator on the side panel will turn on - Red.
- Charge batteries until the [AC/Charger] indicator turns Green.

Repair and Calibration

Unauthorized repair of the Noyes test equipment will void the warranty.

Calibration is recommended every 3 years. Noyes Calibration department is in compliance with ANSI/NCSL Z540-1, ISO 10012-1, MIL STD 45662A, ISO Guide 25 and traceability to the National Institute of Standards and Technology. Call Customer Service to obtain a Service Request (SR) Number before sending units in for calibration.

How to View Version Information

From the Main Menu, use [↵ ⇄] keys to open the [About...] menu and display the OFL280 software version number.

Note: It is helpful to have the OFL280 version number if you need to contact Noyes Customer Service or Technical Support.

Appendix C: Limited Warranty

Warranty

All AFL/Noyes test equipment products are warranted against defective material and workmanship for a period of (1) one year from the date of delivery to the end user. Extended warranties start at the end of the standard (1) one year warranty period. Any product that is found defective within the warranty period will, at the discretion of AFL/Noyes, be repaired or replaced. Warranty will be voided if the product has been repaired or altered by other than an authorized AFL/Noyes repair facility or which have been subject to misuse, negligence, or accident.

CE Information



These instruments have been designed and tested to comply with the relevant sections of any applicable specifications including full compliance with all essential requirements of all applicable EU Directives.

Returning Equipment

To return equipment, please contact Noyes to obtain additional information and a Service Request (S.R.) number. To allow us to serve you more efficiently, please include a brief description specifying the reasons for the return of the equipment.

AFL Telecommunications

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