Thunder Bolt OTDR Operations Manual

The Solutionists®

Important

Please Note: If using AC power without battery installed, wait 30 seconds after pressing power-down button before disconnecting AC power cord from device or outlet. Do not attempt to remove/change style of OTDR port(s) nor open outer case of unit. Doing so will void warranty.

TABLE OF CONTENTS

Thunder Bolt OTDR Introduction

The FIS Thunder Bolt OTDR is a full-function Optical Time Domain Reflectometer (OTDR) designed for ease-of-use in a wide range of testing applications and environments. The unique, integrated
handle on the side of the OTDR provides the technician with a firm grasp during fiber testing and the unit's rubber corner bumpers protect it from shock.

The Thunder Bolt has a intuitive Graphical User Interface (GUI) and large, high-visibility command keys that make it easy to select between optical testing features and parameter settings. Remember to use an OTDR launch box between the connector under test and the OTDR adapter test port to extend the life of the OTDR port as well as to properly characterize the first connector under test.

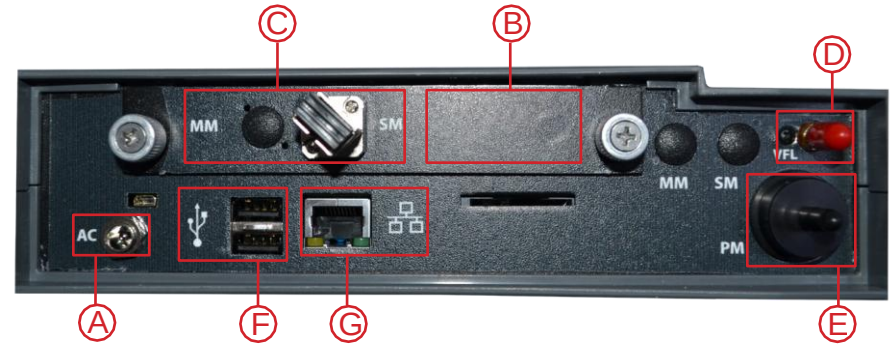
This unit provides outstanding value in optical testing performance. An optional video inspection probe is available which plugs into one of the two USB ports on the top of the unit. This OTDR can quickly and accurately verify breaks, fiber ends or highly reflective events such as a contaminated or dirty mated connector pair. The Gigabit Analyzer application quickly allows you to verify if a fiber run is a candidate for 1Gig and/or 10Gig data transmission. Made In The U.S.A.

Thunder Bolt Front Of Unit Tour

Main Screen	6.5” diagonal Color Screen.
1.) Power Button	Turns Unit On/Off
2.) PM/LS Button	Switches the Thunder Bolt unit over to the Power Meter app. Use this function if you would like to perform insertion loss tests.
3.) Probe Button	Switches the Thunder Bolt over to the Probe Scope app. Use this function if you would like to visually inspect the ferrule endface of a connector. To use, please connect the probe BEFORE powering on the unit. (Probe is Optional)
4.) VFL Button	Switches the Thunder Bolt over to the Visual Fault Locator app. Use this function to check your fiber for breaks, macro bends and continuity.
5.) OTDR Button	Switches the Thunder Bolt over to the OTDR app. Use this function to perform OTDR scans on your fiber.
6.) Soft Keys Buttons	Use these buttons to select the soft key functions shown next to them on the Thunder Bolt display.
7.) Auto/Man Button	This button toggles between auto and manual settings in the OTDR pulse width and range functions.
8.) Real Time Button	This button activates the real time scan feature in the OTDR application. When a real time scan is in process, pressing this button OR the TEST button will stop the scan.
9.) File Manager Button	This button opens the file management section of the OTDR. You may save, recall, copy and transfer files from this section.
10.) Settings Button	This button opens the general settings section of the unit.
11.) Help Button	This button opens the help section. This manual has been loaded on the unit to access at any time.

12.) Home Button	This button takes you back to the main menu screen where you may select an application to open.
13.) Numerical Key Pad	Use these buttons to enter numerical information into the OTDR.
14.) TEST Button	Use this button to activate or start most tests or scans on the Thunder Bolt
15.) Scroll Wheel	The scroll wheel is used to move cursors in OTDR app, navigate menus and select alpha-numeric characters from the on screen keyboard. Pressing the scroll wheel will select any function you have highlighted.
16.) ESC	This button takes you back to the previous screen, or cancels a dialog box.
17.) Directional Arrows	Use these arrows to navigate menu screens and dialog boxes, highlight characters from the on-screen keyboard, move the cursors or change the zoom in the OTDR application.

Thunder Bolt Top Of Unit Tour



A.) Power Adapter Port	Plug the AC Adapter into this port to either use the OTDR directly off of A/C power or to charge the battery.

B.) OTDR Module Panel	The Thunder Bolt has several interchangeable modules. The modules determine what wavelengths are available to be used with the OTDR, End-of Fiber and Gigabit Analyzer applications.
C.) OTDR Source Port(s)	Connect your fiber under test or pulse box to this port in order to perform an OTDR scan. Quad wavelength versions will have two OTDR ports, one marked Singlemode for 1310 / 1550nm and the other Multimode for 850nm / 1300nm.
D.) VFL Port	Connect your fiber to the 2.5mm universal VFL port in order to launch a red visible laser into your fiber for checking for breaks and continuity. 1.25mm adapter sold separately
E.) Power Meter Adapter	Connect your fiber to this port when using the Power Meter function. 2.5mm and 1.25mm universal adapter are available. SC adapter optional.
F.) USB Ports	Used for transferring data from the OTDR using a USB thumb drive. One of these ports can also be used to connect the inspection probe to the unit.
G.) RJ-45 Port	Used for upgrading firmware on the OTDR.

Thunder Bolt Back Of Unit

Battery Door	Open this door to access the battery compartment.
Kick Stand	Use the kick stand to recline the Thunder Bolt back 35° from the vetical.

Thunder Bolt OTDR
Universal Features and Settings

Main Menu	The first screen you see when the Thunder Bolt has booted up, contains an array of icons. One icon for each application or section of the Thunder Bolt. Highlight any of the icons using either the scroll wheel or the directional arrows and then press the center of the scroll wheel to launch the application.
Time / Date	A time and date stamp is recorded every time a scan or test is performed and saved. To change the Time or Date go to the System Setting tab in the System Setting application in the main menu. Use the numerical keypad to insert correct time. (refer to pg 23)
Screen Brightness	The screen brightness is user adjustable. To adjust the brightness go to the System Setting tab in the System Setting application.
Help Feature	The Thunder Bolt has an on-board help application which is activated by pressing the Help button on the front panel.
Distance Units	Select this feature in the system settings to change the unit of measurement (Kilometers, Meters, Feet, Kilo-Feet, Miles) for the Thunder Bolt.
Launch Box	Enter the distance of your launch reel into this feature in the OTDR settings. The OTDR will omit measuring this distance in the result/event table.

OTDR Application Review

Trace View Pane	
Reflected Power (Y-Axis)	Does not modify
Range / Distance (X-Axis)	Can be either automatically set by the OTDR or manually set by the user (see Soft Key options; **Pulse Width & Range**).
Trace	Zoom scale and View can be set by user (see **Zoom** and **View** in Soft Key Options section).
Cursors	The Thunder Bolt has an A and B cursor. The active cursor appears in "red" and will have cursor location and loss readings shown above it. The inactive cursor is shown in "blue". To switch between cursors **press the center of the scroll wheel**. To move the active cursor, turn the scroll wheel left or right.
Event Markers	Each event is identified by a number. Each marker corresponds to an Event Table event.
Zoom	You can expand the trace either horizontally or vertically in order to zoom in on a particular section of the trace. The left / right arrows zoom or expand the trace horizontally. The up / down arrows expand the trace vertically.

Cursor Marker Pane	
Cursor Location	Each cursor has a distance from the origin value next to it. The active cursor is highlighted
A - B	Distance between cursor A and cursor B along the trace line.
Loss Reading	This line shows the cursor based loss readings. The user can choose between 2-Point or 4-Point loss methods.
Avg. Loss	This reading shows the average dB per Kilometer Loss (dB/Km) of the fiber between the two cursors.

Scan Settings Pane	
λ	The wavelength the current trace was scanned at (ex. 1550nm)
Π	The pulse width the current trace was scanned at (ex. 50ns)
Ж	The range the current trace was scanned at (ex. 10Km)
€	The scan duration of the current trace was scanned at (ex. 10 sec)

Soft Key Options	
Wavelength	Press this soft key to call up a menu of available Wavelengths. Use the scroll wheel or the up / down arrows to highlight the wavelength you would like to use.

Distance Units	Select this feature to change the unit of measurement (Kilometers, Meters, Feet, Kilo-Feet, Miles) for the Thunder Bolt.
Pulse Width & Range	Press this soft key to call up a menu of available Pulse Widths & Ranges. Use the scroll wheel and arrows to highlight the desired Pulse Width, then press the right arrow to switch to the Range menu. Use the scroll wheel and arrows to highlight the desired Range. Press the Accept soft key to enter your selections.
Duration	Press this soft key to call up a menu of available scan Durations. Use the scroll wheel or the up / down arrows to highlight the duration you would like to use.
View From	Press this soft key to toggle through the View From options. • **Origin** - Displays standard trace with the origin on the far left side • **Cursor A** - Displays the trace with Cursor A fixed in the center of the display. The trace will scroll when you move Cursor A. • **Cursor B** - Displays the trace with Cursor B fixed in the center of the display. The trace will scroll when you move Cursor B.
Show/Hide Event Table	Toggle this soft key to call up the Event Table screen or hide it and bring up the A-B loss screen where you can use the cursors freely to manually measure sections of fiber. Cursors will only scroll to the recorded events when event table is displayed.

More	Press this key to see more soft key options.
Macrobend Test	Press this key to start the Macrobend Test and the OTDR will scan two wavelengths right after each other and overlay them when done. The user can then select the threshold of detection.
Header	Press this soft key to go to the Header information entry screen.
Loss Method	Press this soft key to toggle through the Loss Method options. • **2-Point** - Measures the loss between cursor A and B • **4-Point (LSA)** - Uses Least Squares Approximation method to determine loss. This procedure uses both main cursors and two minor cursors to determine the averaging areas used to determine the loss. The distance between the cursors can be manually set. The cursor distance can be locked so the averaging area size remains the same as you adjust the position relative to the event.
Lock Main Cursor	Press this soft key to toggle between Lock and Unlock the distance between Cursor A and B.
Lock Range Cursor	This function only works when you are in 4-point loss mode. It locks the distance between the major and minor cursors.

Save	Press this soft key to have the OTDR save your current trace using a file name the user creates. The trace will be saved in the current active save location.
Save As	Press this soft key to have the OTDR save your current trace using a file name the user creates. The user will be asked to specify a save location.
Open	Press this soft key to open the file explorer window that has all of the save locations on the OTDR. To open a saved file use either the scroll wheel or the directional arrows to highlight the folder you want to open. Press the Right Arrow to open and show the contents of the folder. Once you have found your file, Press the Open soft key or the center of the scroll wheel to open the trace.

Hard Key Options	
Test	Use this button to activate or start scans on the Thunder Bolt.
Auto/Man	This button toggles between auto setting and manual setting in the OTDR function. When in Auto mode the OTDR will set the pulse width and range settings automatically. In Manual mode wavelength, pulse width, range and duration are set by the user.
Real Time	This button activates the real time scan feature in the OTDR application. The user selects all of the scan parameters manually. When a real time scan is in process, pressing this button will stop the scan.

File Manager	This button opens the file management section of the OTDR. You may save, recall, copy and transfer files from this section. (see File Manager section for details of each function)
System Settings	This button opens the System Settings section of the OTDR. (see System Settings Section for details)
Help	This button opens the Help section. Where you are in the Thunder Bolt system will determine the initial help topics that will be displayed. You may also search the help files manually.
Home	This button takes you back to the main menu screen where you may select an OTDR application to open.
ESC	Goes back one screen

End to End Link Information:

Distance	The overall distance to the end event on the trace.
Loss	The overall loss value for the entire OTDR trace.
ORL	The optical return loss value for the entire OTDR trace
dB/Km*	Average loss per unit of measure

** Will display the unit of measurement that has been selected.*

Event Table Pane

Each row on the event table represents an event on the trace detected by the OTDR. The row numbers correspond to the event identification numbers seen on the trace. Each event has the following information:

Event Type Indicator	€ Reflective Event Ж Non-reflective Event П End Fiber Event ¥ Ghost Event
Location	Distance of the event from the OTDR or the end of the launch cable.
Loss	The optical loss of the event measured in dB. *All readings above the pass/fail threshold are highlighted in red.*
Ref.	The optical reflectance of the event measured in dB. *All readings above the pass/ fail threshold are highlighted in red.*
Cumm. Loss	The cumulative loss of the trace to this point.
Span	The distance between the current event and the previous event.

Event Detail Window

In this window a close up trace view of the highlighted event is shown with a description of the event written underneath.

Soft Key Options	
Trace	Press this soft key to return to the full trace view.
Insert	Press this soft key to insert an event into the event table.
Remove	Press this soft key to remove an event from the event table.
Edit	Press this soft key to edit the classification of the event.

File Manager Screen

Use either the scroll wheel or the directional arrows to navigate through the file system. To open a folder, highlight it and then press the right direction arrow.

Soft Key Options	
New Folder	Press this soft key to create a new folder in the Thunder Bolt's file. A Text Input window will appear for creating the folder name. Press the "Accept" soft key to enter the folder name and close the text window.
Select	Press this soft key to highlight a file.
***Move**	Press this soft key to move a file or folder to a new location. * See next page.
***Copy**	Press this soft key to copy a file or folder to a new location. * See next page.

Rename	Press this soft key to Rename a file or folder. A Text Input window will appear for creating the new file or folder name. Press the “Accept” soft key to enter the new name and close the text window.
More	Press this soft key to go to the next page.
Clear Selection	Press this soft key to clear (un-select) all selected items.

**Moving and Copying Files:*

Moving:

If you would like to move a file from one location to another, select the file (by choosing “Select” in the soft key menu, it will highlight the file), then select “Move” in the soft key menu. Now scroll and find the location you wish to move the file to and then select “Move to Here” in the soft key menu. The file now should no longer be at its original location and in the new location you have selected for it. (this is similar to a cut & paste process on a PC).

Copying:

This is similar to the moving process but the file will be copied to the new location and still remain in the original location.

OTDR Operations:

NOTE: OTDR will not function properly when attempting to test into LIVE traffic. Ensure fiber optic cable is "dark" before testing.**

OTDR Quick Start Guide

1. **Press** the **Power** button [] to turn on the OTDR unit.
2. **Highlight** the **OTDR** app icon and **Press** the center of the **Scroll Wheel** to select.
3. **Clean** OTDR port with FIS bulkhead & ferrule cleaner (P/N: F1-6715) inserting a connector.
4. **Clean** both connector ends of your **launch cable**.
5. **Attach** one end to the appropriate port on the OTDR.
6. **Connect** the **fiber under test** to the launch cable.
7. **Select** the desired **wavelength** using the soft-keys on the right-hand side of the screen.
8. **Press** the **TEST** button to initiate the **Auto Test** function.

   - The Auto Test function will automatically select the range, pulse width and duration for the scan.

OTDR Standard Operation

1. Highlight and select the **OTDR** app icon on the main menu screen.
2. Clean the **OTDR** port as well as the connector ends of your **launch cable**.
3. To manually set your **parameters**, use the soft keys on the right side of the screen, select the desired **wavelength, pulse width, range, and duration**. (To have parameters automatically set, select the hard key **AUTO/MAN** so it displays "**Automatic**" under pulse width & range. (duration will still need to be set manually)

4. If you are using a launch cable and wish to omit it on your fiber under test, push the "**Settings**" hard key (wrench & gear symbol) and scroll down to the "**Launch Box**" and **enter** the distance of the launch cable. The OTDR will **omit** this section of cable after the test and won't include it in the final link results.

5. Once this is complete push the OTDR hard key at the bottom of the screen to get back to the OTDR graph and begin your scan by pressing the green **TEST** button.

6. Once the scan has completed, you can view or hide the event table by **toggling** the corresponding soft key.

7. Use the rotary wheel to scroll through the different events on the trace. If you wish to use the A & B cursors press the soft key "Hide Event Table". You will now have free range to move the cursors, just depress the rotary wheel to toggle between A & B. (Whichever cursor is colored in red is the one you can control)

Saving or Opening a File

****NOTE:** a "minus" sign dictates that the folder is open, a "plus" sign means the folder is closed

1. To save a new trace once completed, select the **soft key** "**More**" until options for saving appear on the soft key menu.

2. Then select "**Save As**" which will bring you to the **File Manager** screen.

3. Select the folder you wish your file to be saved in by using the arrow keys (Up/down scrolls to different folders, left/right opens or closes the highlighted file folder).

4. Select "**Save**" and a text box will appear for you to name the file.

5. If you need to create a new folder select "**New Folder**" with the soft key command. A text box will appear for you to name it.

6. To open a file, make sure you are in the OTDR application, find and select the soft key option for "**Open**".

7. Use the arrow keys to locate/highlight the file you wish to open.

8. Then select the soft key "**Open**".

9. If you modify the opened file in any way, you will have the option to "Save" your changes. Either, select save from the soft

   key menu or before you can close the file the unit will ask you if you want to save changes.

   - *Please note: If changes are made to an existing file an asterisk (*) will appear next to the displayed file name in the upper left hand corner of the OTDR screen. Once you select "save" the asterisk will go away as the changes have been saved.*

Inserting/Editing/Removing an Event

When viewing a trace, make sure you have the event table displayed, select soft key "**More**" until you come to the soft key menu that includes: **Header, Insert Event, Remove Event, Edit Event**.

Insert: Select INSERT EVENT from soft key menu, choose placement type, then choose reflective or non-reflective…

- ***Non-Reflective:*** use the dial to place the A cursor just before the event. Once you push the dial button, the A cursor will be set and now you control the B cursor, place that at the end of the section you want to measure the event with. The unit should display the location of cursor A (start of event) as well as the measured loss between the two cursors. Select "**Accept**" and the event will populate in the event table.

- ***Reflective:*** Use the dial to position the A and B cursors the same way you would to measure a non-reflective event. However after this is completed, you must select the soft key option "Measurement" until reflectance is displayed, another B cursor will appear, use the dial to move it until you reach the highest point of the reflective "spike"(use the

arrow keys to zoom in and out if needed). You will notice this value change in the top left corner as you move the B cursor around. When you get it to the proper place, select "**Accept**".

Edit: While having the event table displayed, use the dial to scroll to the particular event you would like to edit. Then select "EDIT EVENT" from the soft key menu. (Use the arrow keys to zoom in or out if needed). Use the A & B cursors to re-measure an event as needed. When the cursors are placed in a satisfactory location, press "ACCEPT". The edited event information will populate in the event table.

Remove: While having the event table displayed use the dial to scroll to the particular event you want to remove, and select "REMOVE EVENT" from the soft key menu. The event will disappear from the event table and the events on the table will be automatically re-numbered.

Macrobend Detection

1. Open the OTDR application and select the "MORE" soft key to go to the next soft key menu.

2. Select "MACROBEND TEST" once you have the cable under test plugged in.

3. The unit will run an OTDR scan at the two wave lengths (850/1300 for Multimode, or 1310/1550 for singlemode). The scan will run at the parameters and averaging time that the user has selected on the previous soft key menu.

4. Once both scans are done, select the Macrobend threshold that you wish to use and the traces will be displayed with the ability to toggle between 1310, 1550 with the corresponding event tables.

Important OTDR Testing Considerations

- If the OTDR gives zeros or asterisks (*) for the values on the top of the screen…

  A. Clean and inspect the OTDR port as well as the connector plugged into it and re-scan

  B. Adjust the pulse width and range that was selected, and re-scan

  C. Make sure the correct wavelength and mode is selected then re-scan

  D. Check to ensure the unit is not plugged into LIVE traffic

- If the OTDR is improperly measuring the end of fiber location…

  A. Make sure you have a low reflection at the launch (OTDR port), if not, clean and re-scan

  B. Adjust your pulse width and/or range and re-scan

  C. Inspect and clean at the location where the OTDR is measuring the end of fiber.

  D. Make sure that you are accounting for the distance of your launch reel, if applicable.

  E. Check to ensure the unit is not plugged into LIVE traffic

Project Mode Operation

Project Mode allows the user to test many fibers in an easy and quick fashion. The user just needs to set up a file save matrix, parameters and the amount of cables/fibers they have to test. Once that is set up, just press test for each scan and it will auto- save or ask for you to verify before saving. Please use the arrow keys and/or rotary dial to navigate around the screen and make selections

1. Open “Project Mode” application.

2. Select the soft key that represents “New Project”, choose a name for your project. Highlight the DATA folder and press the right arrow key to open it -then select SAVE.

    A. You then will enter the name of the project when the virtual keyboard appears, when finished push the corresponding soft key to accept. Once you name the project, it will be displayed on the top of the screen.

3. Now, use the dial to highlight and select the “Folder” box, this will assign a file path for the traces once you begin testing, this will be the folder path the individual trace files will be located in once the project is complete.

    A. Again to access a folder, highlight it, then press right arrow key to open it

4. Then select the “File” box. This will allow you to name the files that will be included in the project, as well as select unique file paths (trace info) that will distinguish each trace from the other such as wavelength, fiber number, and/or cable number all the while being under the same base file name.

    A. For example, after you give a base name to the file (a base file name could include the location(s) of the current test), before you select “accept”, select the “Insert Trace Info” soft key. You will then see a variety of trace information labels.
    If you select <wavelength> 1310nm or 1550nm traces for example will be noted in the file name. If you are, for example, testing a number of fibers and you select <Fiber ID> it will automatically save and organize your files by wavelength and the number of each fiber (1,2,3….).

B. Also, if you are testing multiple cables, you can select <Cable ID> it will differentiate the wavelengths as well as the traces contained in cable 1 vs. cable 2(or however
many cables you are testing). Select how many fibers and how many different cables you are planning on testing and the unit will automatically populate and organize the file names as such.

C. This way, all files can be distinguished by wavelength, fiber and cable number.

Example: ABC{base file name}-1310nm{wavelength}-1 {cable ID} -3 {fiber ID}

Recommended: *When selecting different trace information into your file name, its recommended that you insert a dash (-) in between each selection, if you don't, all letters & numbers will be muddled together. Without the dash the file name will appear as abc1550nm11 vs. with a dash put in: abc-1550nm-1-1.*

5. Next, use the soft key "**add scan**" to add however many scans you wish to be shot on each fiber. If you have a QUAD (SM/MM) unit, make sure you go into the project mode settings to switch over to the appropriate mode of testing you will be doing so the correct wavelengths appear for each scan.

   A. If you wish to **remove a scan** make sure you highlight with the rotary wheel the wavelength you want to remove THEN select "remove scan"

6. Once you have the satisfactory number of scans set up, now you can either customize your parameters for each one or you can leave in the "x" marked under "AUTO" and it will automatically set parameters for you.

7. If you wish to set them manually, you can unmark the "x" for AUTO and then use the dial to select the particular parameter and use the dial or arrow keys to highlight the pulse width, range and duration and scroll through the various parameter options.
8. Before you start your first scan, select the "x" under confirm if you want to inspect the trace before it saves. If the trace seems satisfactory to you, select "accept" and the unit will save the file according to the saving matrix you had set up

earlier and automatically start scanning in the next wavelength on the same fiber.

A. If the trace is unsatisfactory still choose accept and when the scan is completed you can select “jump to scan” to retake the scan. It will then overwrite the old, unsatisfactory file.

B. If you choose to leave “Confirm” **unmarked**, the OTDR will automatically save the completed scan and move on to the next scan without you being able to confirm or evaluate it.

9. Once all scans on a single fiber are complete, the unit will wait for you to switch to the next fiber. Once you do, push the green TEST button to start the scan(s) on the next fiber.

10. Once all scans of all fibers are completed you can go back and view any scan you wish. When viewing the Trace screen, select the soft key for “Jump to Scan”, then a small box will appear and you can select the scan#, fiber# and cable# to view. Then select “Accept”.

Gigabit Analyzer Application

1. Highlight the Gigabit Analyzer application icon on the main menu.

2. Using the soft arrow key, select the fiber type that will be tested.

3. Select the type of test you wish to conduct (1 Gig or 10 Gig).

4. Within 5 seconds, the results are displayed (Distance, Attenuation, Reflection).

5. Record pass/fail results.

Do not attempt to test on LIVE traffic

NOTE: This application is not an Ethernet tester, it does not send packets of data through the fiber, rather it evaluates the selected cable and compares the results to the manufacturer’s specifications to determine if PHYSICALLY the cable can handle a 1 or 10 gig signal.

OTDR Line Checker

1. Clean and connect your fiber under test and plug into the OTDR port.
2. Use the soft keys to select fiber type and launch distance* if applicable.
3. Push “TEST”, record results. Link Checker only operated at 1550nm.
4. Enter distance of launch cable if applicable (Max. 1000m)

Please Note: DO NOT attempt to test into LIVE traffic

Line Checker Testing Considerations:

- If Link checker is displaying asterisks (*) for the values or status wheel never stops spinning:
    A. Clean the OTDR port and the connector plugged into it
    B. Make sure you are plugged in the “SM” OTDR port
    C. Make sure you are testing Singlemode cable
    D. Check to ensure the unit is not plugged into LIVE traffic
- If the Link Checker is displaying a distance that is believed to be *incorrect:*
    A. Clean the OTDR port and connector plugged into it
    B. Make sure you are testing single mode cable
    C. Open the OTDR app and run a scan to determine the location of the issue
        - Clean and inspect at that location of the cable

USB Inspection Probe

The FIS USB inspection probe (P/N: F1-DI1000) is an add on option that can be used with the ThunderBolt. The probe will plug into one of the USB ports on the top of the unit.

To activate the probe, plug it into the unit BEFORE powering it on. It will then appear on the main menu screen to be used. When selected the main display will be used to view the connector end face in 400x magnification.

Date & Time Settings

Date:

1. To change the date and time format, please select the system settings app on the main menu or the hard key to the left of the main display.

2. Use the rotary wheel to highlight the “DATE”. Push the rotary wheel to change the date

3. A calendar will appear, use the wheel and soft keys to select the correct date, once the correct date is highlighted, push the wheel or select “accept” on the appropriate soft key.

4. To change the date format, have date highlighted, then select soft key option “change format”.

5. A small box will appear on screen, choose the format you wish to have.

Time:

1. Highlight “TIME” in system settings, push the rotary wheel. Enter the correct time with the numeric keypad on the unit.
2. To change format, select soft key option “Change Format”

3. Select between military time (24-hour) format and standard AM/PM format.

To correctly get AM or PM on time display, first set the time in 24-hour format, then change it to AM/PM format.

Power Meter Operation

1. Press the hard key “PM/LS” to access the power meter application.
2. When you enter the application the screen will show a very low power value in dBm (decibels per milliwatt). If you want to measure live power over a fiber, just plug in the end of fiber and read the dBm results.
3. If you wish to measure relative loss of the cable in dB (decibels) you must first perform a reference.
4. For best results, use a 2 meter patch cord and clean all connector endfaces and adapters.
5. Turn on the light source you will be using and let it run 1-2 minutes to stabilize its light emission.
6. Connect each end of the patch cord to the light source and power meter.
7. A power value will be displayed (i.e. -6.58dBm), at this time, select the soft key labeled “Zero”.
8. The value on the display should have changed to about 0.00 dB and now you are ready to test the cable under test.
9. Disconnect from the power meter side ONLY, never disconnect from light source as it will ruin the reference you just took.
10. Now, connect the cable under test to the end of the reference cord and then connect the other end into the power meter.
11. You should now be measuring the relative loss of the cable in dB.

Two reference cord method:

- If you wish to use two reference cords, mate the two together to take your reference (zero), then disconnect in the middle and add the cable under test in between.
- You can now view the loss of the entire cable end to end in one single test

Notes:

Notes:

161 Clear Road
Oriskany, NY 13424

Ph: 315.736.2206 Toll Free: 1.800.5000.FIS(347) Fax: 315.736.2285

www.fiberinstrumentsales.com email: info@fiberinstrumentsales.com