

Trace.Net
OTDR Test Management Software
User's guide

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Section 1: General Information

Introduction

Trace.Net is a Windows®-based application designed to view, analyze, edit, and print trace files saved with Noyes Mini & Handheld OTDRs.

Note: Trace.Net is not licensed software; you are free to copy it as needed. Please check our web site at www.AFLtele.com ([click on Software](#)) for software updates and additional application information.

This User's guide contains detailed information about Trace.Net tools and commands and assumes you have a working knowledge of your computer and standard Windows menus & commands. For help with any of these techniques, please see your Windows documentation.

If you have any questions about your Noyes OTDR and Trace.Net software, or if you need technical or sales support, please contact Noyes Customer Service.

Contacting Noyes Customer Service

You may contact Noyes Customer Service between 8 a.m. and 5 p.m., United States Eastern Time, as follows:

Phone: 800-321-5298 (North America) • 603-528-7780

Fax: 603-528-2025

Web: www.AFLtele.com (click on Products > [Noyes Test & Inspection](#))

E-mail: NOYTechSupport@afltele.com

System Requirements

To use Trace.Net application, you need the following hardware and software:

- A PC with a 1GHz (or faster) processor and an 800 x 600 (or larger) display
- A CD or DVD drive if installing from CD
- At least 256 megabytes (MB) of RAM
- A Windows® compatible pointing device (mouse, trackball, etc.)
- MS Windows® 2000, XP or Vista

Installing Trace.Net

You can install Trace.Net from the supplied CD-ROM, or you can download it from our web site at www.AFLtele.com ([click on Software](#)).

Follow the steps below to install the Trace.Net software.

To install from the application CD-ROM:

1. Start Windows. If Windows is running, quit all applications.
2. Insert the Trace.Net CD into the CD-ROM drive. (Note: normally the D: drive.)
3. The Installer will display the [Welcome] screen.

Note: Note: If the Installer does not start automatically, from Windows do one of the following:

- Click on the [Start] button and select the [Run] command from the pop-up menu.
- The [Run] dialog box appears. On the [Open] command line, type [D:\setup.exe].

- Click on the [OK] button to start.

OR

- Double-click the My Computer icon on the desktop to open the My computer folder.
 - Double-click the CD-ROM icon.
 - Double-click [Setup] or [Setup.exe]
4. When the Installer [Welcome] screen is displayed, click on the [Next] button to continue.
 5. Follow the on-screen instructions.
 6. When the Installer displays the [Complete] screen, click on the [Finish] button.

To download from the web:

1. From the www.AFLtele.com web site, select the following:
Software > Trace.Net Software > click on the download link.
2. Follow the on-screen instructions. The software will download to your computer's hard drive.
3. Once downloaded, double-click on the [Trace_Net] or [Trace_Net.exe] file.
4. When the Installer [Welcome] screen is displayed, click on the [Next] button to continue.
5. Follow the on-screen instructions.
6. When the Installer displays the [Complete] screen, click on the [Finish] button.

Starting Trace.Net

Follow the steps below to start the Trace.Net application:

1. In Windows, click on the [Start] button.
2. From the [Start] pop-up menu, select the [Programs] menu.
3. Locate the Noyes Test & Inspection folder.
4. Click on the Trace.Net shortcut.

If you have installed the Trace.Net application in a folder other than Noyes Test & Inspection, choose that folder from the Start > Programs menu.

Note: To see filename extensions that show fiber type and wavelength (m85, m13, s13, s15) when browsing for trace files, perform the following steps:

5. From Windows (not Trace.Net), open the folder containing trace files.
6. Open the [View] dialog box by clicking on Tools > Folder Options > View.
7. In the [Advanced Settings] window, remove the check next to the [Hide file extensions for known file types] option.
8. Repeat steps 1- 3 for other folders containing trace files.

Section 2: Trace.Net Screens and Menus

This section provides an overview of key features of the Trace.Net software.

Main Screen

The Trace.Net main screen is divided into several sections. Each section contains a specific type of information (refer to Figure 2-1). The table below gives a summary of the [Main] screen features.

Ref #	Feature	Description
1	Menu bar	Displays the available pull down menus.
2	Toolbar	Contains several icons for quick access to menu commands. Click on an icon to execute the associated command.
3	Zoom window	Shows the current trace view relative to the entire trace.
4	Cursor measurement	This section displays the following information: A and B cursor locations, distance from A to B, selected loss method, plus (depending on the selected loss method) insertion loss, and reflectance.
5	OTDR/Text data	This section displays OTDR setup parameters or Text data when the corresponding tab [Trace info] or [Text info] is selected.
6	[Trace Info] tab	Click on this tab to display OTDR setup parameters stored in the selected trace file.

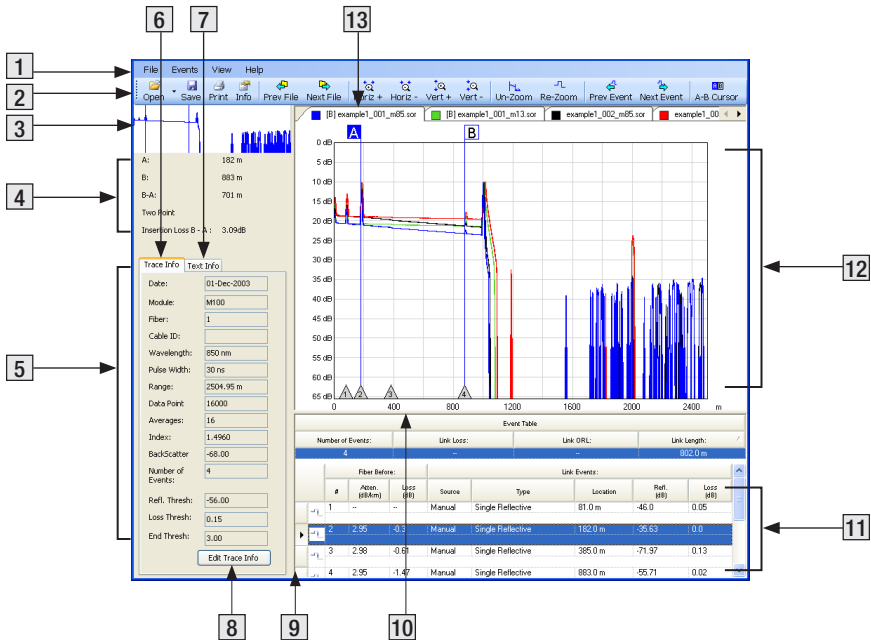
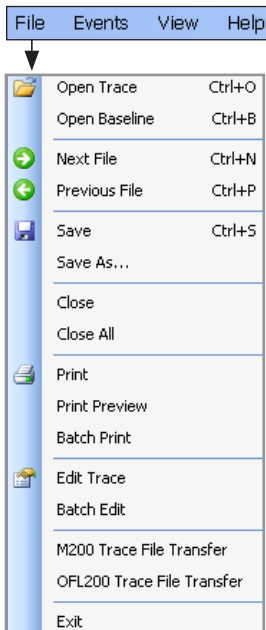


Figure 2-1: Trace.Net Main Screen.

7	[Text Info] tab	Click on this tab to display text information stored in the selected trace file.
8	[Edit Trace Info] button	Click on this button to display the [Edit Trace Information] screen, which allows editing of the Trace & Text info for the selected trace file.
9	Vertical split bar	This bar allows resizing of the [Trace graph] and [Event table] window vertically. Drag the Vertical bar to the left or right to decrease or increase the [Trace graph] and [Event table] window.
10	Horizontal split bar	This bar allows resizing of the [Trace graph] and [Event table] window horizontally. Drag the Horizontal bar up or down to increase or decrease the [Trace graph] and [Event table] window.
11	[Event table] window	Displays saved events in a table format.
12	[Trace graph] window	Shows a graph of the currently selected trace. Up to four traces (dual trace with dual baseline) can be displayed in the [Trace graph] window.
13	Tab of the currently selected trace file	If several trace files are opened, click the desired trace tab to display the corresponding trace graph.

Menu Bar



The Menu Bar located at the top of the Trace.Net Main Screen (see Figure 2-1) displays the available pull down menus. Each menu contains various commands. When a menu is selected, it displays a list of commands indicating a task associated with each command.

File Menu

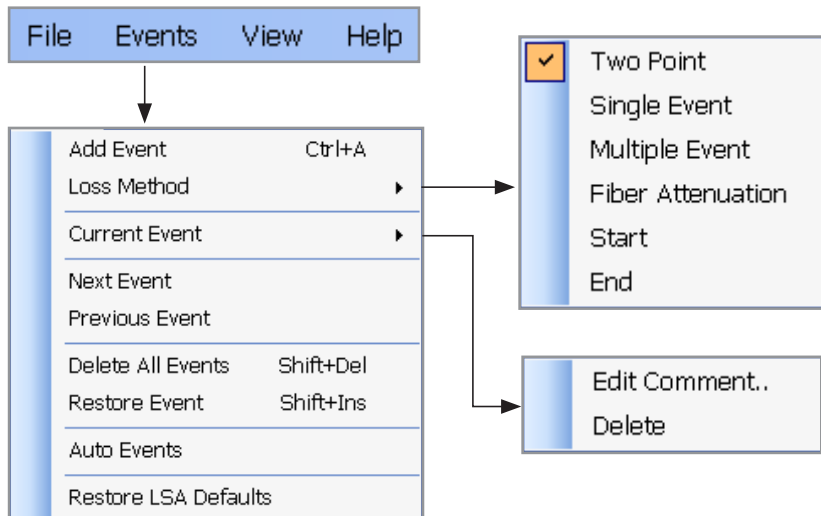
The File pull down menu contains all the commands you need to open, save, print, edit, and close trace files. The table below gives a summary of the available File Menu commands and their associated functions.

Command	Function
Open Trace Ctrl+O	Depending on the selected option (Single-wavelength or Dual-wavelength), open a single trace file or a trace file pair.
Open Baseline Ctrl+B	Depending on the selected option (Single-wavelength or Dual-wavelength), open a single trace file or a trace file pair as a baseline.

Command		Function
Next File	Ctrl+N	Open the next (alphanumerical) file or pair in the current folder.
Previous File	Ctrl+P	Open the previous (alphanumerical) file or pair in the current folder.
Save	Ctrl+S	Save a trace file that already exists with its original name.
Save As...		Save an existing trace file under a new name and preserve the original file.
Close		Depending on the selected option for closing files, close selected files after automatically saving changes, or prompt the user to confirm saving.
Close All		Close all open trace & baseline files.
Print		Print the currently displayed trace.
Print Preview		Preview an OTDR Trace Report before printing.
Batch Print		Allows printing of all or selected trace files in the current folder.
Edit Trace		Allows editing of trace text information and certain setup parameters.
Batch Edit		Use to edit text or set up field(s) in one or more trace pairs.
M200 Trace File Transfer		Allows transferring files from/to M200 OTDR.
OFL200 Trace File Transfer		Allows transferring files from OFL200 OTDR.
Exit		Close opened trace files and exit Trace.Net.

Events Menu

The Events pull down menu contains all the commands you will need to select loss methods, add new events, and review or delete saved events.

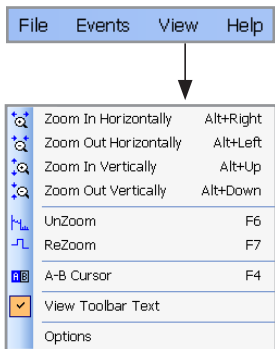


The table below gives a summary of the available Events menu commands and associated functions.

Command	Function
Add Event Ctrl+A	Add an event using the selected Loss Method at the active cursor location.
Loss Method	Used to select the desired Loss Measurement Method.
Current Event: <ul style="list-style-type: none"> • Edit Comment • Delete 	<p>Open a dialog box for adding and/or editing comments for the current event. The maximum comment length is 94 characters.</p> <p>Delete the current event.</p>
Next Event	Display the next event.
Previous Event	Display the previous event.
Delete All Events Shift+Del	Delete all saved events in the selected trace.
Restore Event Shift+Ins	Restore the last event that was deleted.
Auto Events	Generate an event table.
Restore LSA Defaults	Restore LSA line lengths to the default values.

View Menu

The View pull down menu contains all the commands you will need to magnify or reduce the display of any area in the [Trace graph] window, switch the active cursor, turn the Toolbar text on/off, and set up options. The table below gives a summary of the available View menu commands and associated functions.



Command	Function
Zoom In Horizontally Alt+Right	Magnify or reduce the display of any area in the [Trace graph] window
Zoom out Horizontally Alt+Left	
Zoom In Vertically Alt+Up	
Zoom out Vertically Alt+Down	
Un-Zoom F6	
Re-Zoom F7	
A-B Cursor F4	Switch the active cursor
View Toolbar Text	Turn the Toolbar text on or off
Options	Use to select the appearance of traces and how they are opened/closed/saved. Also, use this command to choose how to download Trace.net updates. See Figure 2-2 for details.

Number of recently open files to be displayed under [File] menu

Turn Information Screen On/Off

Options to open and close files

Options to save changed files

Available distance units

Color Options to display single-mode traces

Options to display grid lines in Trace Window

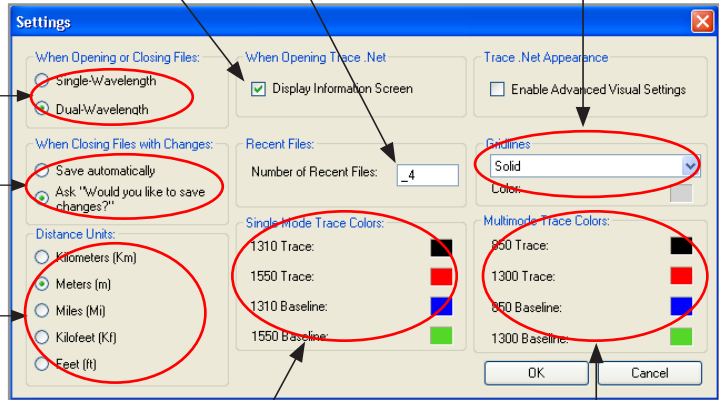













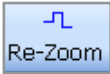


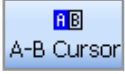
Figure 2-2: Options Dialog Box.

Toolbar

Several of the most commonly used commands can be accessed from the Toolbar. Click on a toolbar icon to execute the corresponding command.

 Open	Locate and open the desired trace file.
 Save	Save a trace file that already exists with its original name.
 Print	Print the displayed trace file.
 Info	Open the Edit Trace Information dialog box.
 Prev File	Open the previous file (trace file pair) in the current folder.

 Next File	Open the next file (trace file pair) in the current folder.
 Horiz +	Zoom in horizontally around the active cursor.
 Horiz -	Zoom out horizontally around the active cursor.
 Vert +	Zoom in vertically from the trace level at the active cursor.
 Vert -	Zoom out vertically from the trace level at the active cursor.

 Un-Zoom	Display the trace view at 100%.
 Re-Zoom	Zoom to the previous zoom level around the active cursor.
 Prev Event	Select the previous event.
 Next Event	Select the next event.
 A-B Cursor	Switch the active cursor.

Trace Graph Window

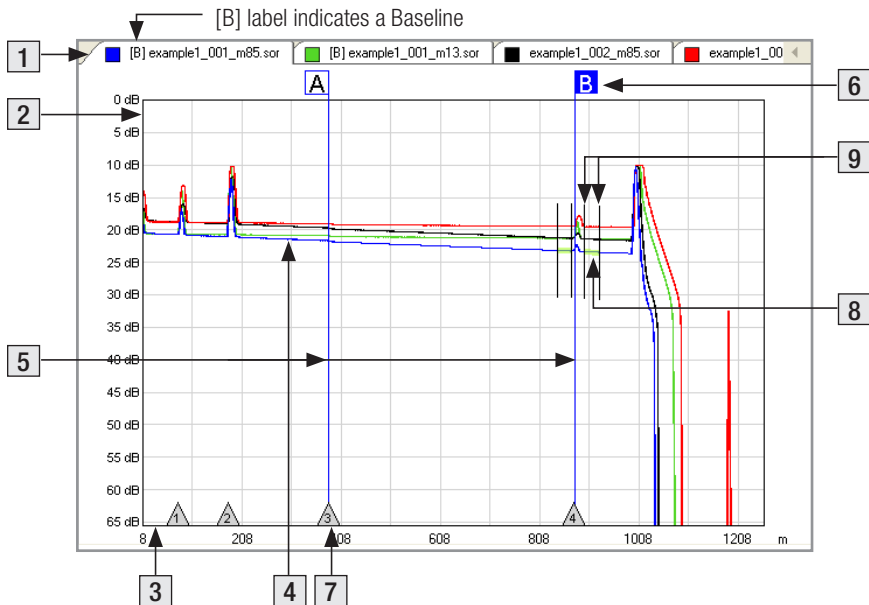


Figure 2-3: Trace Graph Window.

The [Trace graph] window displays OTDR test results in a graph format; up to four traces (a trace pair and a baseline pair) can be displayed. The major features of the [Trace graph] window are explained below.

#	Feature	Description
1	Trace [Tab]	Displays the name and color of the open trace file. If several trace files are opened, click the desired trace [Tab] to display the trace graph.
2	Vertical axis	Shows Insertion loss in dB.
3	Horizontal axis	Shows distance in user-selected units.
4	Trace	This is a graph of insertion loss vs. distance.
5	Cursors A and B	Used to measure insertion loss, power level, reflectance, attenuation, and distance. To make a cursor active, click on the cursor line or label, or click on the Toolbar Cursor icon to toggle between A and B cursors. To move the active cursor, position the mouse pointer on a cursor, then click-and-drag along the trace graph. Also, you may use the Left and Right keyboard arrow keys.
6	Cursor label	To move the active cursor, position the mouse pointer on a cursor or a cursor label, then click-and-drag along the trace graph.
7	Event mark	Indicates the location and the number of a saved event. Events are listed in numerical order.
8	LSA lines	Available for certain loss measurement methods. Used for calculating insertion loss, trace level, and attenuation.
9	LSA line boundaries	Near and Far LSA line boundaries for each LSA line segment. Used to control length and position (relative to trace segment) of LSA line.

Event Table Window

The [Event table] window allows you to view test data associated with the trace displayed in the [Trace graph] window. If several trace files are opened, click the desired trace [Tab] located on top of the [Trace graph] window to display the [Event table] of the desired trace. Using the [Events] menu, you may add or delete trace events and edit comments.

The screenshot shows the 'Event Table' window. At the top, a yellow bar contains the title 'Event Table'. Below it, a summary row displays 'Number of Events: 4', 'Link Loss: --', 'Link ORL: --', and 'Link Length: 802.0 m'. A second summary row shows 'Fiber Before: --' and 'Link Events: --'. The main data table has columns: '#', 'Atten. (dB/km)', 'Loss (dB)', 'Source', 'Type', 'Location', 'Ref. (dB)', and 'Loss (dB)'. Four rows of data are shown, with the third row highlighted in blue. Callouts 1-9 point to: 1. Title bar, 2. Number of Events, 3. Atten. (dB/km), 4. Loss (dB), 5. Source, 6. Type, 7. Location, 8. Ref. (dB), and 9. Loss (dB) in the data table.

#	Atten. (dB/km)	Loss (dB)	Source	Type	Location	Ref. (dB)	Loss (dB)
1	--	--	Manual	Single Reflective	81.0 m	-46.0	0.05
2	2.95	-0.3	Manual	Single Reflective	182.0 m	-35.63	0.0
3	2.98	-0.61	Manual	Single Reflective	385.0 m	-71.97	0.13
4	2.95	-1.47	Manual	Single Reflective	883.0 m	-55.71	0.02

Figure 2-4: Event Table Window.

Features of the [Event table] window are explained below.

Ref #	Feature	Description
1	Overall data row	This row displays the summary trace data: number of saved events, link loss, link ORL, and link length.
2	Event number	This column displays the number of the saved event in numerical / position order.
3	Atten.(dB/km)	This column displays the lead-in fiber attenuation. The dB/km measurement is the slope of the fiber leading to the event Note: When the length of the fiber being measured is insufficient, the dB/km measurement is displayed followed by an asterisk [*] symbol. An asterisk [*] symbol indicates, "Section is too short to ensure an accurate fiber attenuation (dB/ km) measurement." The required minimum distance is dependent on wavelength: 1550 nm = 2630 m, 1310 nm = 1470 m, 1300 nm = 960 m, and 850 nm = 185 m.
4	Loss (dB)	This column displays the Insertion loss in (dB) of the fiber segment before the event.
5	Source	This column indicates how the event is added: <ul style="list-style-type: none">• manually - added by operator• automatically - event table is generated by OTDR software
6	Type	This column indicates the event type based on the selected loss method.

7	Location	This column displays the distance from the OTDR or the end of the launch cable to the event.
8	Refl. (dB)	Displays the Reflectance in (dB) for each reflective event
9	Loss (dB)	Displays the Insertion loss in (dB) for each event.

Keyboard Shortcuts

Available Trace.Net keyboard shortcuts:

Open Trace...	Ctrl+O
Open Baseline...	Ctrl+B
Next File	Ctrl+N
Prev File	Ctrl+P
Save	Ctrl+S
Add Event	Ctrl+A
Delete All Events	Shift+Del
Restore Event	Shift+Ins

Move Active Cursor	Left / Right Arrows
Zoom in Horizontally	Alt+Right
Zoom out Horizontally	Alt+Left
Zoom in Vertically	Alt+Up
Zoom out Vertically	Alt+Down
Un-Zoom	F6
Re-Zoom	F7
A-B Cursor	F4

Section 3: Transferring Trace Files to a PC

Traces Saved with M200 OTDR

Trace files saved with an M200 OTDR are transferred to a PC using a USB cable. To transfer files from your M200 to a PC using a USB cable, perform the following:

1. Connect your M200 to a PC using a type A to Mini USB B cable. Make sure the mini-plug is fully seated in your M200.
2. On your PC, open the Trace.net software.
3. From the Trace.net File menu, select [M200 Trace File Transfer] to open the [M200 Trace Transfer] window (see Figure 3-1).
4. Select source Drive > Folder, and then select traces as required.

For multiple trace selection, perform the following:

- Click on the first trace to be added to highlight it.
 - Hold the Shift key to scroll down to the last trace you wish to select, and then click on it.
5. Select destination Drive > Folder.
 6. 'Drag and drop' files into the destination folder.

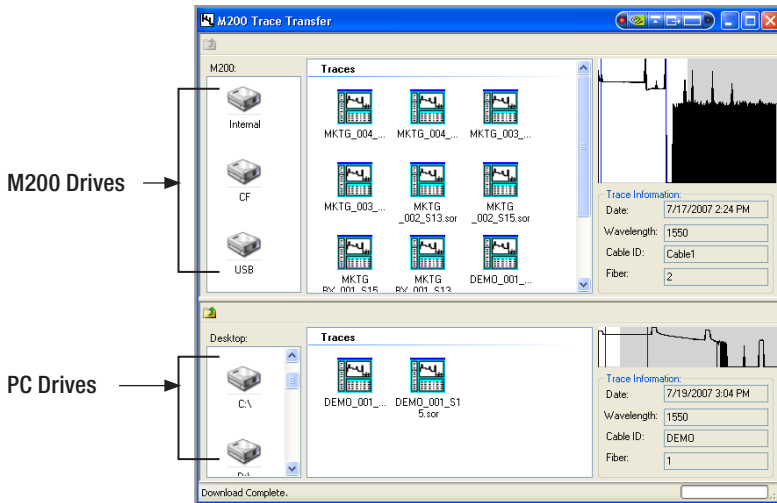


Figure 3-1: M200 Trace File Transfer

Traces Saved with M600 or M100 OTDR

Trace files saved with M600 or M100 OTDR are transferred to a PC using the supplied ImageMate™ USB 2.0 Reader/Writer and CompactFlash™ memory card.

Transferring Traces

To transfer trace files to a PC perform the following steps.

1. Connect the supplied ImageMate USB Reader/Writer to a USB 2.0 port on your PC while Windows® is running.
2. Windows will automatically recognize the ImageMate Reader/Writer and display it as [Removable Disk] in the [My Computer] folder.
3. Insert the CompactFlash card with saved test data in the ImageMate Reader/Writer.
4. Double-click on the [Removable Disk] icon to display saved trace files.
5. Using Windows commands, copy the desired trace files to your PC.

Important: To avoid data loss or malfunctions of your computer or ImageMate Reader/Writer, it is important to use Windows [Eject] and [Unplug] commands before physically removing CompactFlash™ memory card and ImageMate Reader/Writer. Refer to the following sections for details.

Removing CompactFlash™ Memory Card

Perform the following steps before removing a CompactFlash™ memory card from the ImageMate Reader/Writer:


1. Double-click on the [My Computer] icon to open the [My Computer] folder.

2. Right click on the [Removable Disk] icon.
3. From the pop-up menu, select the [Eject] command.
4. Pull the CompactFlash memory card out of the ImageMate USB Reader/Writer.

Disconnecting ImageMate USB Reader/Writer

You don't need to shut down your computer to disconnect the ImageMate USB Reader/ Writer, but you should never remove the device from the USB port without first reading the steps below. If a drive window is open, or the ImageMate Reader/ Writer is active, close any associated windows before attempting to remove the Reader/ Writer.

Use the [Add/Remove Hardware] command in Control Panel or [Safe to Remove Hardware] hotplug icon in the notification area of the taskbar to safely remove the ImageMate Reader/ Writer before unplugging. The notification area is on the right side of the taskbar where you usually see the current time displayed.

1. In the notification area, left click the Safely Remove Hardware icon -  .
2. Then left click the [Safely Remove Device...] message.
3. When Windows notifies you that it is safe to do so, unplug the Reader/ Writer from your computer.


Traces Saved with OFL 250 OTDR

Trace files saved with an OFL 250 OTDR are transferred to a PC using a USB cable.

To transfer files, perform the following:

1. Connect your OFL 250 to a PC using a type A to Mini USB B cable. Make sure the mini-plug is fully seated in your OFL 250.
2. Press the [USB] soft key on the OFL 250.
3. On your PC, open My Computer. A new removable drive named [OFL] should appear under My Computer.
4. Copy the [Results] folder to your PC.

Note:

Before removing the USB cable connecting your OFL 250 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 (?)] message, where '?' is the drive letter assigned to your OFL 250.

Traces Saved with OFL 200 OTDR

Trace files saved with an OFL 200 OTDR are transferred to a PC using the Trace.Net software. File selection and transfer are done via the [Transfer Files from OFL 200] dialog box, which is accessed from the Trace.Net [File] menu.

OFL 200 File Transfer Dialog Box

The [Transfer Files from OFL 200] dialog box allows you to perform the following tasks:

- Select all or multiple trace files for transferring to a PC.
- Remove all or multiple trace files from the transfer list.
- Rename trace files to be transferred.
- Renumber trace files to be transferred.
- Add information required for traces identification

The table below and Figure 3-1 describe the [Transfer Files to OFL 200] dialog box features.

Ref	Feature	Description
1	[Files on OFL 200] window	Displays a list of trace files saved with an OFL 200 OTDR. Note: If trace files are not displayed, select the appropriate Serial Port, and then click on the [Retry] button.
2	[Port] pull down list	Click on the [Down arrow] button to select the appropriate Serial Port.

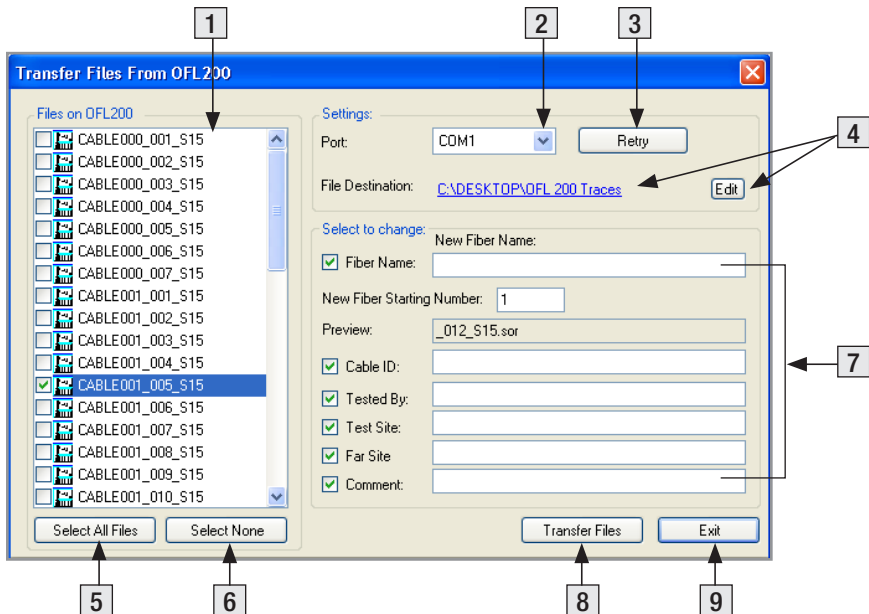


Figure 3-2: OFL 200 File Transfer Dialog Box.

3	[Retry] button	After the appropriate Serial Port is selected, click on this button to display a list of trace files in the [Files on OFL 200] window.
4	[File Destination] field	This field displays the destination folder on your PC. If needed, you may change destination by clicking [Edit].
5	[Select All] button	Allows selecting all trace files displayed in the [Files on OFL 200] window. Note: To select or deselect files individually, click on the check box of the desired file.
6	[Select None] button	Allows deselecting all files.
7	[File Name] [New Fiber Starting Number] [[Cable ID] [Tested By] [Test Site] [Far Site] [Comment]	Check these boxes and use the corresponding text editable fields, if you need to perform the following: <ul style="list-style-type: none"> • Rename trace files to be transferred. • Renumber trace files to be transferred. • Add information required for traces identification
8	[Transfer Files] button	Click on this button to start transferring.
9	[Exit] button	Click on this button to close the [Transfer Files to OFL 200] dialog box.

Transferring Traces

To transfer trace files from the OFL 200 OTDR to your PC:

1. Turn the OFL 200 OTDR on.
2. Connect the OFL 200 to your PC using the supplied serial cable.
3. You should see the [Remote] soft key label on the OFL 200 display. Press the [Remote] soft key on the OFL 200.
4. Open the Trace.Net software.
5. From the Trace.Net [File] menu, select the [OFL 200 Trace File Transfer] command to display the [Transfer Files From OFL 200] dialog box (see Figure 3-1).
6. From the displayed list, select the files to be transferred. Refer to the section titled “OFL 200 File Transfer Dialog Box” for details.
7. Click on the [Transfer Files] button to start.
8. While transfer is in progress, you will see a transfer progress bar.
 - If needed, you may stop transferring at any time by clicking on the [Cancel] button.
9. When done, click on the [Exit] button.

Section 4: Managing Trace Files

Single Trace or Trace Pair

Trace.Net offers two options for opening and closing trace files. Depending on the selected option, a trace file or trace files in wavelength pairs (dual-wavelength trace file pair) may be opened and closed within the current folder.

If the Single-wavelength option is enabled, then trace files will be opened and closed one-at-a-time. If the Dual-wavelength option is enabled, then trace files will be opened and closed in wavelength pairs (files with the same name, fiber number, and fiber type but different wavelengths).

For example:

If a folder contains files named “fiber_001_M85.sor” (multimode, 850 nm) and “fiber-001_M13.sor” (multimode, 1300 nm)”, and in the file open dialog box the “fiber_001_M85.sor” file is selected for opening, then Trace.Net will automatically open both files. It doesn’t matter which file in a pair is selected first.

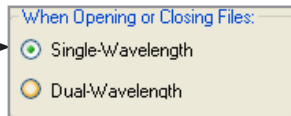
In addition to the current trace or pair, Trace.Net allows you to open a baseline trace or pair for comparison with the current trace. If a dual trace pair and a dual baseline trace pair are opened, a total of four traces can be displayed at one time.

Opening Trace Files

Opening a Single Trace

1. From the [View] pull down menu, select the [Options] command to display the [Options] dialog box.
2. Select the [Single-wavelength] option, and then click on the [OK] button.

Select to open a single trace file

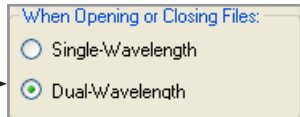


3. There are two ways to open a single trace file:
 - From the [File] pull down menu, select the [Open Trace] command
 - or
 - Click the [Open] icon on the Toolbar
4. When the [Open Trace] window is displayed, locate the drive and directory containing trace files.
5. From the displayed list of files, select the trace file you want to open.
6. Click on the [Open] button to open the file.

Opening a Trace Pair

1. From the [View] pull down menu, select the [Options] command to display the [Options] dialog box.
2. Select the [Dual-wavelength] option, and then click on the [OK] button.

Select to open trace files in
wavelength pairs



3. There are two ways to open a trace pair:
 - From the [File] pull down menu, select the [Open Trace] command
 - or
 - Click the [Open] icon on the Toolbar
4. When the [Open Trace] window is displayed, locate the drive and directory containing trace files.
5. From the displayed list of files, select the trace file you want to open.
6. Click on the [Open] button to open the file.

Opening Previous or Next Traces

After you open a single trace or trace pair, you may use the [Prev File] and [Next File] commands to display the previous or next trace or trace pair of the same fiber type (MM or SM) in the current folder.

There are three ways to display the previous or following trace or trace pair:

- From the [File] pull down menu, select the [Next File] or [Previous File] command.
- Click the [Next File] or [Prev File] icon on the Toolbar.
- Use the shortcuts: [Ctrl+N] - next trace; [Ctrl+P] - previous trace.

Comparing Traces with a Baseline Trace

Trace.Net allows you to open a baseline trace or trace pair for comparison to another trace or trace pair. If a dual baseline trace pair and a dual trace pair are opened, a total of four traces can be displayed at one time.

1. From the [View] pull down menu, select the [Options] command to display the [Options] dialog box. From this dialog box, select Single-wavelength (or Dual-wavelength) option, and then choose [OK].
2. From the [File] pull down menu, select the [Open Baseline] command.
 - When the [Open Baseline Trace] window is displayed, locate the drive and directory containing trace files.
 - From the displayed list of files, select the trace file you want to open.

- Click on the [Open] button to open the file.
3. From the [File] pull down menu, select the [Open Trace] command.
- When the [Open Trace] window is displayed, locate the drive and directory containing trace files.
 - From the displayed list of files, select the trace file you want to open.
 - Click on the [Open] button to open the file.

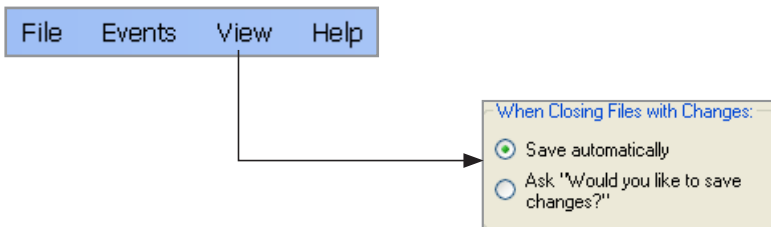
Closing Files with Changes

Two options are available for closing trace files with changes: [Save Automatically] and [Ask "Would you like to save changes?"].

[Save Automatically] option	[Ask "Would you Like to save changes?"] option
If a trace file has been edited and not saved, it will be saved automatically before closing.	If a trace file has been edited and not saved, a dialog box will appear prompting you to save changes before closing.

To specify how trace files will be closed perform the following steps.

1. From the [View] pull down menu, select the [Options] command to display the [Options] dialog box.
2. Select the desired option, then click on the [OK] button.



Section 5: Analyzing Traces

Moving Cursors and Zooming

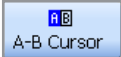
The [A] and [B] cursors may be positioned to measure the insertion loss, power level (if applicable), reflectance (if applicable), attenuation (if applicable), and distance between any two points on a trace.

To make cursor positioning easier, Trace.Net provides tools and commands for viewing different parts of a trace graph at various magnifications. [Zoom In] and [Zoom Out] commands let you magnify or reduce the display of any area in the [Trace graph] window.

Trace.Net zooms horizontally around the active cursor and vertically from the trace level at the active cursor.

Selecting the Active Cursor

To make a cursor active, do one of the following:

- In the [Trace graph] window, click on the desired cursor line or label.
- From the Toolbar, click on the [Cursor] button  to toggle between cursors.
- From the [View] pull down menu, select the [A-B Cursor] command to toggle between cursors.
- Press the [F4] key on your keyboard to toggle between cursors.

Once the active cursor is selected, it can be moved along the trace graph.

Moving the Active Cursor

To move the active cursor, do one of the following:

- Position the mouse pointer on a cursor line or cursor label, then click-and-drag along the trace graph.
- Use the [Left] and [Right] keyboard arrow keys.

Note: The [A] cursor cannot be moved beyond the [B] cursor location, and vice versa.

- Click on an event in the event table, the active cursor will jump to that event on the trace graph.

Zoom In and Out of a Trace

You can magnify or reduce the trace display performing one of the following:

- From the Toolbar, click on the corresponding Zoom button.



Zoom in horizontally around the active cursor.



Zoom out horizontally around the active cursor.










Zoom in vertically from the trace level at the active cursor.



Zoom out vertically from the trace level at the active cursor.

Note: Each click magnifies the view to the next preset percentage until the limit of magnification is reached.

- From the Menu bar, select the [View] pull down menu, and then choose the desired Zoom command.

	Zoom In Horizontally	Alt+Right
	Zoom Out Horizontally	Alt+Left
	Zoom In Vertically	Alt+Up
	Zoom Out Vertically	Alt+Down
	UnZoom	F6
	ReZoom	F7
	A-B Cursor	F4

Un-zoom and Re-zoom the Trace Display

In the zoomed view, Trace.Net always displays the active cursor area. The [Un-zoom] and [Re-zoom] commands allow you to display different areas of a trace graph at the same level of magnification. If you need to view a different point of the trace, move the active cursor, un-zoom and then re-zoom. Trace.Net will display the new position of the active cursor at the previous zoom level.

Perform the following steps:

- In the [Trace graph] window, use the [Zoom In] and [Zoom Out] commands to set the desired level of magnification.
- Click on the [Un-zoom] button to display the trace view at 100%.
- Relocate the active cursor as needed (or toggle between A and B cursors).
- Click on the [Re-zoom] button to display the new cursor location at the previous zoom level.

Note: When you toggle between [A] and [B] cursors in the magnified view, the view changes to display area around the selected cursor at the same magnification level.

Selecting Loss Method

For analyzing traces and adding events, Trace.Net offers various Loss methods. The following table gives a summary of the available methods.

Loss Method (and applications)	Measured parameters	# of cursors	# of LSA lines*
Two Point (general purpose)	Insertion loss between any 2 points of a trace	2	0
Single Event (used to analyze connections, splices, faults, etc.)	Location, Reflectance, Insertion loss of any Reflective or Non-Reflective event	1	2
Multiple Event (used if two or more events are too close to use other methods)	Location and combined Insertion loss of multiple events	2	2
Fiber Attenuation (used to measure dB/km of fiber between events)	Attenuation per km ratio of any segment of a trace with no events	2	0
Start - No Launch Cable (used to set start of fiber level)	Starting location and level of a trace	1	1
End - No Receive Cable (Used to set end of fiber level)	Location, Reflectance, and Trace level of the fiber end	1	1

* LSA Line - least squared approximation segment line. Used to reduce the effects of noise and dead zone while calculating insertion loss, trace level, and attenuation.

To select the desired Loss method perform the following:

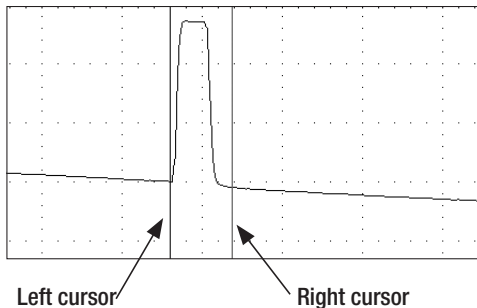
1. From the Menu bar, choose the [Events] pull down menu.
2. Choose the [Loss Method] command to display a list of the available options.
3. Select the desired Loss method.

Positioning Cursors Correctly

Depending on the selected Loss Method, you will need to position cursors and adjust LSA lines (if applicable) properly. The following graphs illustrate position of cursors and LSA lines for the available Loss methods.

Two Point Loss Method

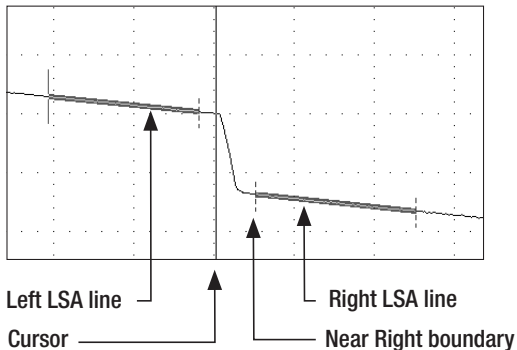
4. Position the left cursor at the start of the event.
5. Position the right cursor beyond the event where the trace returns to a constant slope.
6. Read the insertion loss measurement displayed in the [Cursor measurement] window.



Single Event Loss Method

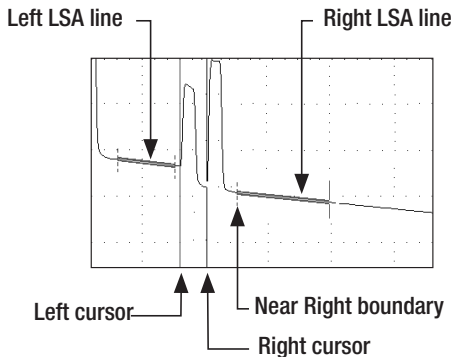
Position a cursor at the start of the event.

1. If required, adjust the right LSA line so the Near Right boundary is located beyond the event where the trace returns to a constant slope.
2. Read the insertion loss measurement displayed in the [Cursor measurement] window.
or
3. From the [Events] pull down menu, choose the [Add Event] command to save.



Multiple Event Loss Method

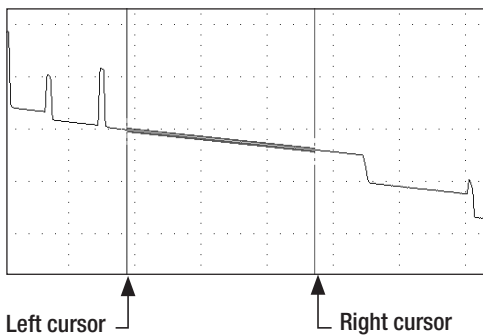
1. Position the left cursor at the start of the first event.
2. Position the right cursor at the start of the last event.
3. If required, adjust the right LSA line so the Near Right boundary is located beyond the event where the trace returns to a constant slope.
4. Read the insertion loss measurement displayed in the [Cursor measurement] window.
or
5. From the [Events] pull down menu, choose the [Add Event] command to save.



Fiber Attenuation Loss Method

This method is used just for analyzing a trace.

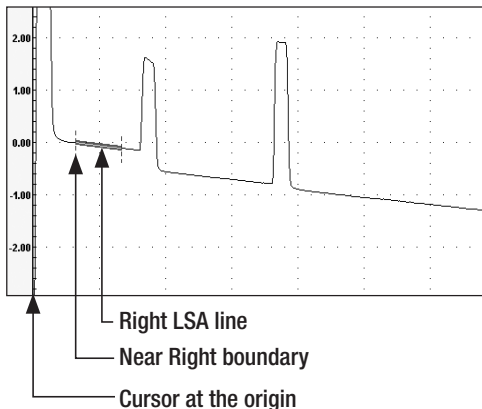
1. Position left and right cursors on the trace as needed.
2. Read the insertion loss (dB/km) measurement displayed in the [Cursor measurement] window.



Start (No Launch Cable) Loss Method

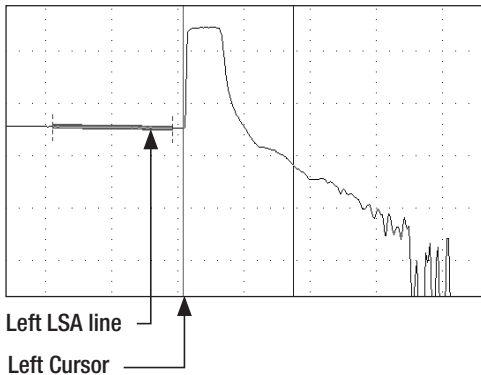
Position the left cursor at the beginning of the trace (0 meters).

1. If required, adjust the right LSA line so the Near Right boundary is located beyond the reflection where the trace returns to a constant slope.
2. Read the trace level measurement displayed in the [Cursor measurement] window.
or
3. From the [Events] pull down menu, choose the [Add Event] command to save.



End (No Receive Cable) Loss Method

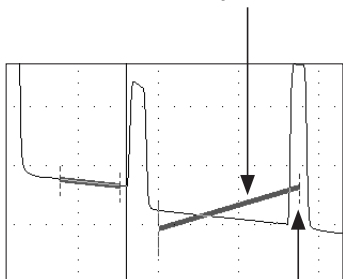
1. Position the Left cursor at the start of the Far-end reflection.
2. If required, adjust the left LSA line.
3. Read the trace level measurement displayed in the [Cursor measurement] window.
or
4. From the [Events] pull down menu, choose the [Add Event] command to save.



Adjusting LSA Lines

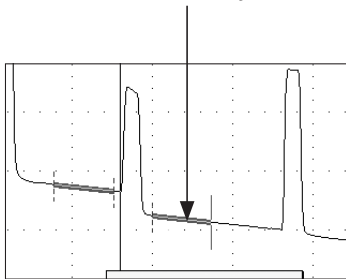
If events of a trace are located very close to each other, you may have to adjust the LSA Lines. The graphs below illustrate an example of the right LSA line before and after the adjustment.

LSA Line before the adjustment



LSA boundary line

LSA Line after the adjustment



To adjust LSA lines, position the mouse pointer over an LSA line boundary, then click and drag to the desired location.

Note: if you need to restore the original LSA lines lengths values, choose the [Restore LSA Defaults] command from the [Events] pull down menu.

Adding Manual Events

To add manual events, perform the following steps:

1. Select the desired Loss method.

Note: Event type displayed in the Event Table will match the currently selected loss method.

2. Move the active cursor to the event to be added.
3. From the [Events] pull down menu, select the [Add Event] command.
4. The [Add New Event] dialog box opens displaying the event data that will be added to the [Event table] and allowing you to add a comment.

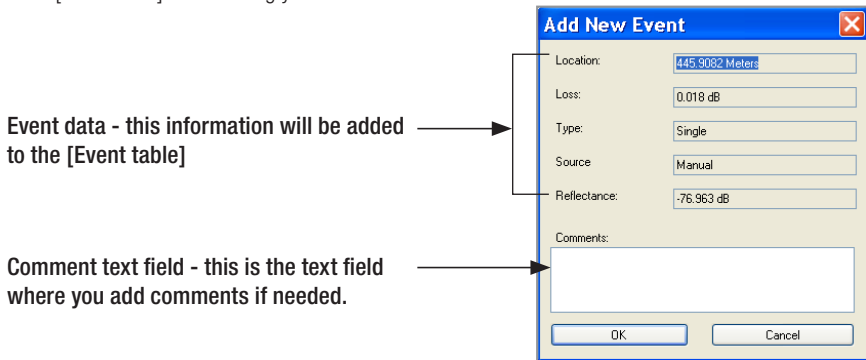


Figure 5-1: Add Event Dialog Box.

5. Type a comment in the Comment text field (maximum 94 characters) if needed.
6. Choose OK to save. Trace.Net automatically places an event mark in the [Trace graph] window and event data in the [Event table] window.

Editing Comments

To edit a comment, do one of the following:

1. In the [Event Table], select the desired event by clicking on it.
 - From the [Events] pull down menu, select the [Current Event] > [Edit Comment...] command to display the [Edit Event] dialog box.
 - Edit comments as needed.
 - Click on the [OK] button to save changes.or
1. In the [Event Table], select the desired event by clicking on it.
2. Right-click the selected event, to display a submenu.
 - From the displayed submenu, select the [Edit Event] command to display the [Edit Event] dialog box.
 - Edit comments as needed.
 - Click on the [OK] button to save changes.


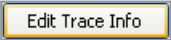
Deleting Events

1. To delete an event, do one of the following:
2. In the [Event table], select the desired event by clicking on it.
 - From the [Events] pull down menu, select the [Current Event] > [Delete] commandor
3. In the [Event table], select the desired event by clicking on it.
 - Right-click the selected event, to display a submenu.
 - From the displayed submenu, select the [Delete Event] command.

Editing Trace Information

Editing a Single Trace

Trace.Net allows you to edit trace information and certain setup parameters. This is done in the [Edit Trace Information] dialog box.

1. There are three ways to display the [Edit Trace Information] dialog box.
 - From the [File] pull down menu, select the [Edit Trace] command.
 - From the Toolbar, click on the [Info]  button.
 - Click on the  button.
2. When the [Edit Trace Information] dialog box is displayed, edit text fields as required.
3. Choose [OK] to save changes.
4. Refer to the following description and Figure 5-2 for details.

Ref #	[Edit Trace Info.] dialog box feature	Description
1	[Text Info] section	This section contains text fields where you enter the information you need to identify a trace.
2	Date field	Click on the [Down arrow] button at the end of the Date field to display a pop-up calendar and edit test date as needed.
3	Fiber number field	Allows you to change the fiber number.

4	Group index	Allows you to change the Group index value.
5	BackScatter coefficient	Allows you to change the BackScatter coefficient value.
6	Reflectance threshold	Allows you to change the Reflectance threshold value.

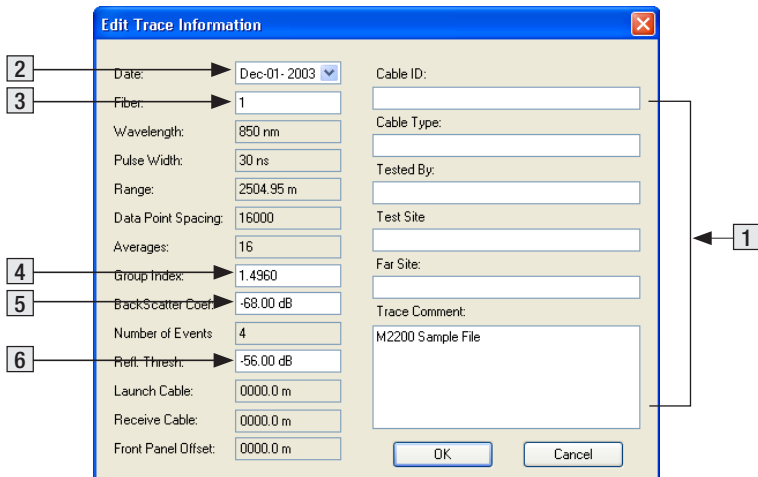


Figure 5-2: Edit Trace Information Dialog Box.

Batch Editing

The Batch editing feature allows you to edit all or selected test properties (such as fiber name, fiber number, test site data, and comments) in multiple trace files in the current folder. This is done in the [Batch Editor] dialog box. The [Batch Editor] dialog box consists of several windows and control buttons. The table below gives a summary of the [Batch Editor] dialog box features (see Figure 5-3).

Ref #	Feature	Description
1	[Drive] window	Allows you to navigate to the desired folder
2	[Files in Folder] window	Displays all trace files in the currently selected folder
3	[Files to Edit] window	Displays all trace files added to the batch edit list
4	[Add File] button	Adds a single trace or multiple traces to the batch edit list
5	[Add All Files] button	Allows you to add all traces in the folder to the batch edit list
6	[Remove File] button	Allows you to remove a single trace or multiple traces from the batch edit list
7	[Remove All Files] button	Allows you to remove all traces from the batch edit list
8	Properties check boxes	Select corresponding check boxes to activate editable text fields
9	Text editable fields	This section contains text fields where you enter all information you need to identify traces
10	[Clear All] button	Removes all text from the text fields section
11	[Process Traces] button	Click on this button to complete changes
12	[Exit] button	Closes the [Batch Editor] dialog box

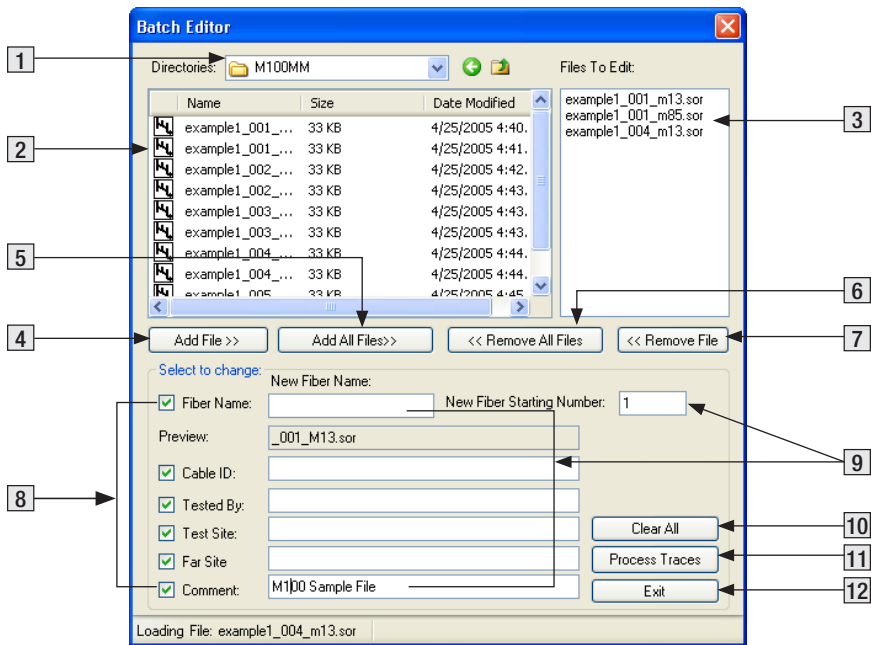


Figure 5-3: Batch Edit Dialog Box.

To edit all or selected files, perform the following:

1. From the [File] pull down menu, select the [Batch Edit] command to access the [Batch Editor] dialog box.
2. In the [Folders/Files] window, locate and select the desired folder.
3. Double-click on the selected folder to open it.
4. All trace files in the open folder will be displayed.
5. From the displayed list, add the desired traces to the 'Files to Edit' list, which will be displayed in the [Files to Edit] window. Use the [Add File] or [Add All Files] buttons for adding trace files.

To add trace files in the current folder to the batch edit list individually:

- Double-click the desired trace name listed in the [Folders/Files] window. The trace name added to the batch edit list will appear in the [Files to Edit] window.
- Or, click on the desired trace name listed in the [Folders/Files] window, then click on the [Add File] button. The trace name added to the batch edit list will appear in the [Files to Edit] window.

To add a group of traces in the current folder to the batch edit list:

- Click on the first trace to be added to highlight it.
- Hold the Shift key to scroll down to the last trace you wish to add to the batch edit list.
- Click on the [Add File] button. The trace names of the selected files will appear in the [Files to Edit] window.

To add all trace files in the current folder to the batch edit list:

- Click on the [Add All Files] button. The added trace names will appear in the [Files to Edit] window.
6. If you need to remove trace files from the batch edit list displayed in the [Files to Edit] window, use the [Remove File] or [Remove All] buttons.

To remove trace files from the batch edit list individually:

- Double-click the desired trace name displayed in the [Files to Edit] window. The trace name listed in the [Files to Edit] window will be removed.
- Or, click on the desired trace name displayed in the [Files to Edit] window, then click on the [Remove File] button. The trace name listed in the [Files to Edit] window will be removed.

To remove a group of traces from the batch edit list:

- Click on the desired traces to be removed to highlight.
- Click on the [Remove File] button. The trace names listed in the [Files to Edit] window will be removed.


To remove all trace files from the batch list:

- Click on the [Remove All] button. All trace names listed in the [Files to Edit] window will be removed.
7. To activate editable text fields, select corresponding check boxes.
8. Edit text fields as needed.
9. Choose [Process Traces] to complete changes.

Section 6: Printing Trace Reports

Printing a Single Trace Report

There are two ways to print a single trace currently displayed in the [Trace graph] window:

- Click on the Toolbar Print  icon.
- Or, from the [File] menu, select the [Print] command. The [Print] dialog box will be displayed (see Figure 6-1).

The [Print] dialog box, allows you to select a printer and set up the printing options.

1. Click on the [Down arrow] button at the end of the [Name] pull down list to display the available printers.
2. From the displayed list, select the desired printer.

Note: If you have a PDF printer installed, you may select it for producing trace reports (single trace or active trace of open pair of traces) in the PDF file format.

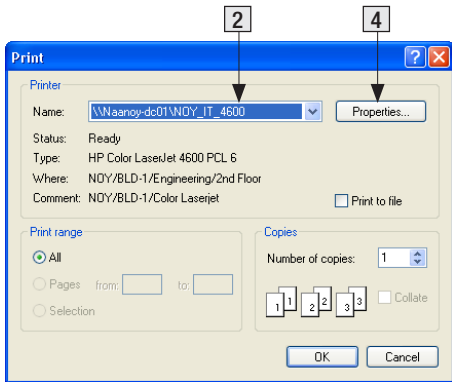


Figure 6-1: Print Setup Dialog Box.

3. If needed, you may click on the [Properties] button to display the [Printing Preferences] dialog box and change settings that affect the way documents are printed.
4. When all settings are complete, click on the [OK] button to print a single trace report.

Printing Multiple Trace Reports - Batch Printing

For printing multiple trace reports, Trace.Net provides a Batch Print feature, which simplifies printing operations by allowing multiple trace files to be printed simultaneously. Using the [Batch Print] command, all trace files that require printing can be selected and processed at once. This is done in the [Batch Printing] dialog box.

Batch Print Dialog Box

The table below gives a summary of the [Batch Print] dialog box features (refer to Figure 6-2).

Ref #	Feature	Description
1	Directories window	Allows you to navigate to the desired folder
2	[Folders / Files] window	Displays folders / files in the currently selected folder
3	[Files to Print] window	Displays all trace files added to the print list
4	[Trace Preview] window	Allows you to view the selected trace graph
5	[Cover Page] check box	Check this box if you prefer to print a cover page
6	[Setup Cover Page] button	Allows you to access the [Cover Page Setup] dialog box and add necessary information to the cover page
7	[Add File] button	Adds a single trace or multiple traces to the print list
8	[Add All] button	Allows you to add all traces to the print list
9	[Remove File] button	Removes a single trace or multiple traces from the print list
10	[Remove All] button	Allows you to remove all traces from the print list
11	[Zoom] arrow buttons	Allows you to set up a zoom level for all traces in the print list

12	[Print Files] button	Sends the created batch print job to a printer
13	[Exit] button	Closes the [Batch Printing] dialog box

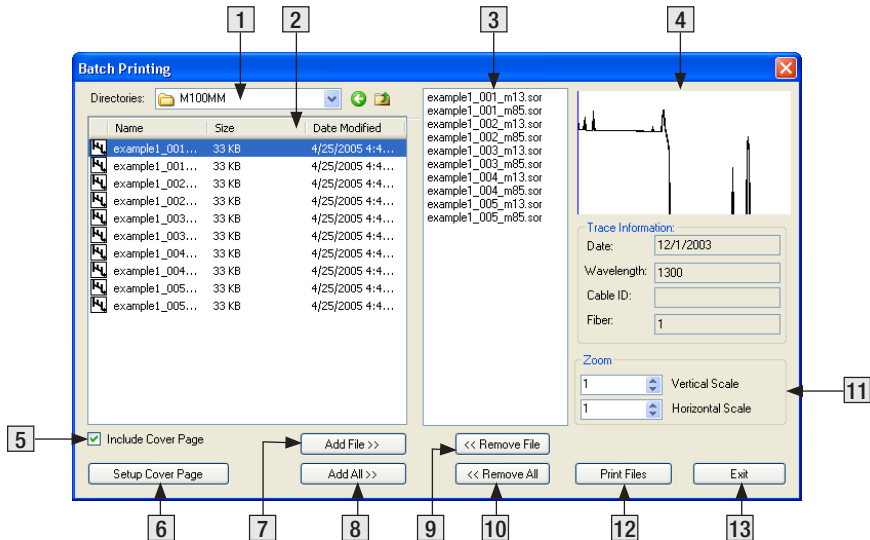


Figure 6-2: Batch Print Dialog Box.

Selecting Traces for Batch Print

1. From the [File] menu, select the [Batch Print] command to access the [Batch Print] dialog box (refer to Figure 6-2).
2. Locate and select the desired folder.
3. Double-click on the selected folder to open it.
4. All trace files in the open folder will be displayed in the [Folders / Files] window.
5. If you need to view a trace graph before adding a trace file to the print list, it is displayed in the [Trace Preview] window. Click on the desired trace name listed in the [Folders / Files] window to display the selected trace graph in the [Trace Preview] window.
6. From the [Folders / Files] window, add the desired traces to the print list, which will be displayed in the [Files to Print] window. Use the [Add File] or [Add All] buttons for adding trace files.

To add trace files in the current folder to the print list individually:

- Double-click the desired trace name listed in the [Folders / Files] window. The trace name added to the print list will appear in the [Files to Print] window.
- Or, click on the desired trace name listed in the [Files in Folder] window, then click on the [Add File] button. The trace name added to the print list will appear in the [Files to Print] window.

To add a group of trace files in the current folder to the print list:

- Click on the first trace to be added to highlight it.

- Hold the Shift key to scroll down to the last trace you wish to add to the batch print list.
- Click on the [Add File] button. The trace names of the selected files will appear in the [Files to Print] window.

To add all trace files in the current folder to the print list:

- Click on the [Add All] button. The added trace names will appear in the [Files to Print] window.
7. You may set horizontal and vertical zoom level for all trace files in the current folder. The zoom level you set for one trace applies to all traces in the current folder.
 - Use the [Zoom] arrow buttons to set horizontal and vertical zoom level.
 8. If you need to remove trace files from the print list displayed in the [Files to Print] window, use the [Remove File] or [Remove All] buttons.

To remove trace files from the print list individually:

- Double-click the desired trace name displayed in the [Files to Print] window. The trace name listed in the [Files to Print] window will be removed.
- Or, click on the desired trace name displayed in the [Files to Print] window, then click on the [Remove File] button. The trace name listed in the [Files to Print] window will be removed.

To remove all trace files from the print list displayed in the [Files to Print] window:

- Click on the [Remove All] button. All trace names listed in the [Files to Print] window will be removed.

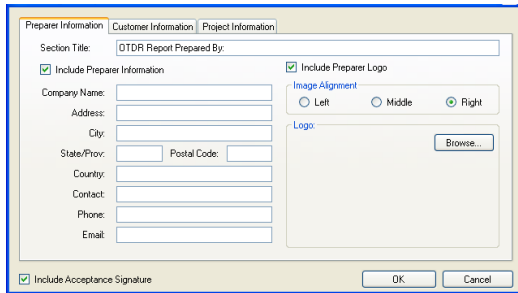
9. To create a Cover page for trace reports, click on the [Setup Cover Page] button (refer to the section titled “Creating a Cover Page” for more information).
10. To print a Cover Page in addition to trace reports, verify that the [Include Cover Page] check box is selected.
11. When all settings are complete, click on the [Print Files] button to send the batch print job to a printer.

Creating a Cover Page for your Batch Print Job

Trace.Net allows you to create a cover page for your Batch Print Report. To create a cover page, perform the following steps.

1. From the [File] menu, select the [Batch Print] command to access the [Batch Printing] dialog box (refer to Figure 6-2).
2. To print a cover page in addition to trace reports, verify that the [Include Cover Page] check box is selected.
3. Create a batch print list (refer to the section titled “Selecting Traces for Batch Printing”).
4. Click on the [Setup Cover Page] button to access the [Cover Page Setup] dialog box.
5. The [Cover Page Setup] dialog box contains several pages as follows:

Preparer Information page
This page contains text fields where you enter Preparer company name and address.



The screenshot shows the 'Preparer Information' tab of a dialog box. It features several input fields for company details, two checked checkboxes for including preparer information and logo, radio buttons for image alignment (Right is selected), and a 'Browse...' button for the logo. At the bottom, there is a checked checkbox for 'Include Acceptance Signature' and 'OK' and 'Cancel' buttons.

Section Title:	OTDR Report Prepared By:
<input checked="" type="checkbox"/> Include Preparer Information	<input checked="" type="checkbox"/> Include Preparer Logo
Company Name: <input type="text"/>	Image Alignment: <input type="radio"/> Left <input type="radio"/> Middle <input checked="" type="radio"/> Right
Address: <input type="text"/>	Logo: <input type="button" value="Browse..."/>
City: <input type="text"/>	
State/Prov: <input type="text"/> Postal Code: <input type="text"/>	
Country: <input type="text"/>	
Contact: <input type="text"/>	
Phone: <input type="text"/>	
Email: <input type="text"/>	
<input checked="" type="checkbox"/> Include Acceptance Signature	<input type="button" value="OK"/> <input type="button" value="Cancel"/>

Company Information page

This page contains text fields where you enter Customer company name and address.

The screenshot shows a dialog box with three tabs: 'Preparer Information', 'Customer Information' (selected), and 'Project Information'. The 'Customer Information' tab contains the following fields and options:

- Section Title: Prepared For: [Text Field]
- Include Customer Information
- Include Customer Logo
- Company Name: [Text Field]
- Address: [Text Field]
- City: [Text Field]
- State/Prov: [Text Field] Postal Code: [Text Field]
- Country: [Text Field]
- Contact: [Text Field]
- Phone: [Text Field]
- Email: [Text Field]
- Image Alignment: Left Middle Right
- Logo: [Text Field] [Browse...]
- Include Acceptance Signature
- [OK] [Cancel]

Project Information page

This page contains text fields where you enter all information you need to identify your project.

The screenshot shows the same dialog box with the 'Project Information' tab selected. The 'Customer Information' tab is also visible. The 'Project Information' tab contains the following fields and options:

- Include Contact(PO) Number: [Text Field]
- Include Award Date: Thursday, July 12, 2007 [Dropdown]
- Include Test Phase: [Text Field]
- Include Project Manager: [Text Field]
- Job Description: [Text Field]
- Prepared By: [Text Field]
- Include Test Site: [Text Field]
- Include Fair Site: [Text Field]
- Cable ID: [Text Field]
- Include Acceptance Signature
- [OK] [Cancel]

- When you finish entering all the necessary information, click on the [OK] button to return to the [Batch Printing] dialog box.

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