ShinewayTech®
Dependable Partner for Future Networks

OTDR Trace Manager Software

User's Manual

CONTENTS

1. Introduction

Thank you for choosing Shineway Technologies.

OTDR Trace Manager software is a special application developed for OTDR. It allows the previously stored measurement records in the instrument to be uploaded to a PC to be displayed, saved or printed. Users are provided with convenient data management function, including editing, browsing, saving, backup, printing and ASCII format output.

2. Software installation

2.1 Computer system requirement

Requirements for operating system and hardware:

- Operating System: Microsoft Windows 98/2000/xp/VISTA/WIN7/ WIN8/ WIN10
- Internal memory: 64MB or above
- Hard disk: 40 MB or above (Space available)
- CD-ROM driver: 8 speed or above
- 9 pin series port or USB port

2.2 Software installation

1) Start Windows
2) Exit all other running applications, if windows is currently running
3) Insert the installation disk into CD-ROM, choose to enter into the Trace Manager file
4) Double click setup.exe to install
5) Follow the instructions of installation wizard step by step till installation completed

3. Software GUI

3.1 GUI

After installation of OTDR Trace Manager software, click run, and the GUI will be as follows:

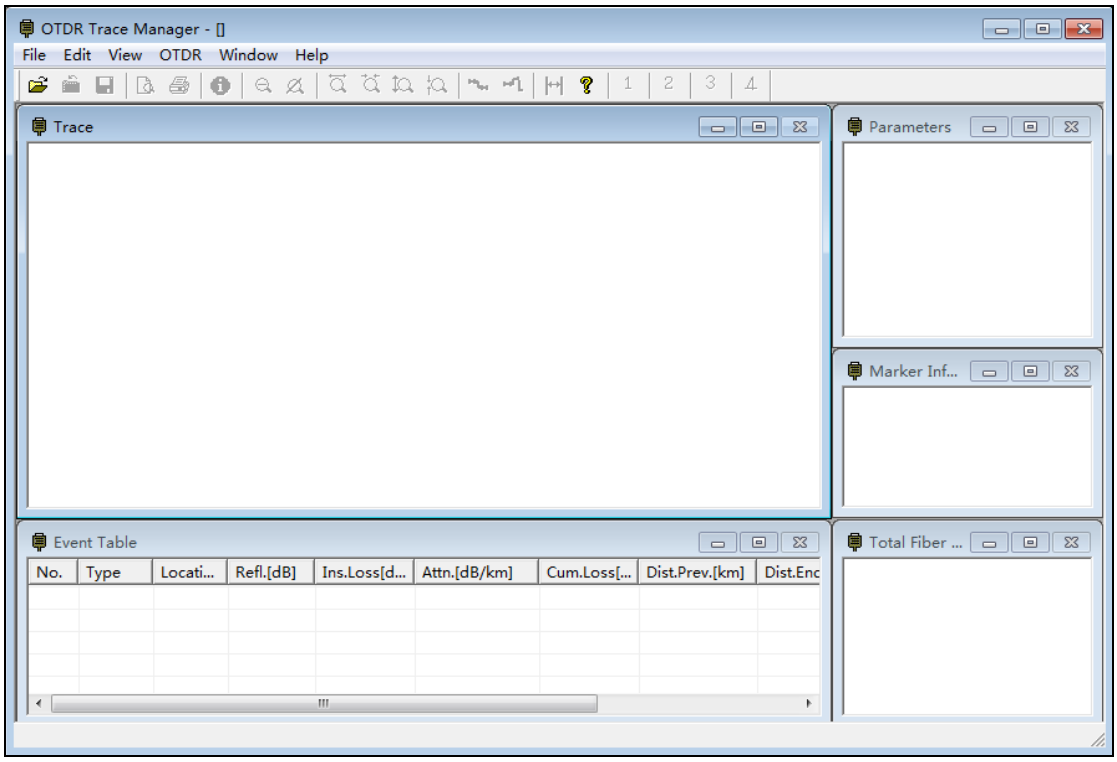


Figure 3.1

Contents of GUI: menu, tool bar, trace display window (spectral line), events list window (Events Table), measurement and analysis parameter window (Parameter Sheet), fiber information window (fiber section information), information window of fiber chain. (information of fiber chain) and status bar.

3.2 Menu, tool bar and status bar

Main GUI of OTDR Trace Manager software is as in Figure 3.1. The menu bar includes: file, edit, view, window and help five items.

Tool bar is right below menu bar. Use mouse pointer to highlight menu bar and operation reference will pop up. To display tool bar or not is controllable. Click "show toolbar" of menu "view" and tool bar display will switch between on and off. Tool bar is actually shortcut keys to complex operation. All the functions on tool bar can be realized through menu operation, however in a more complicated way. The tool bar operation is much easier and more convenient.

Status bar is at the very bottom of GUI, to display information or reference of the current menu or tool bar application. Status bar is a briefing of the current menu application or the function of tool bar. Users can have a basic understanding of the current application.

3.2.1 File

Menu "File" is as in Figure 3.2. Functions can be realized under "file" menu: upload trace file, open file, save opened file, ASCII format output, printing configuration, printing preview, printing, batch print preview, batch print, batch edit and exit application.

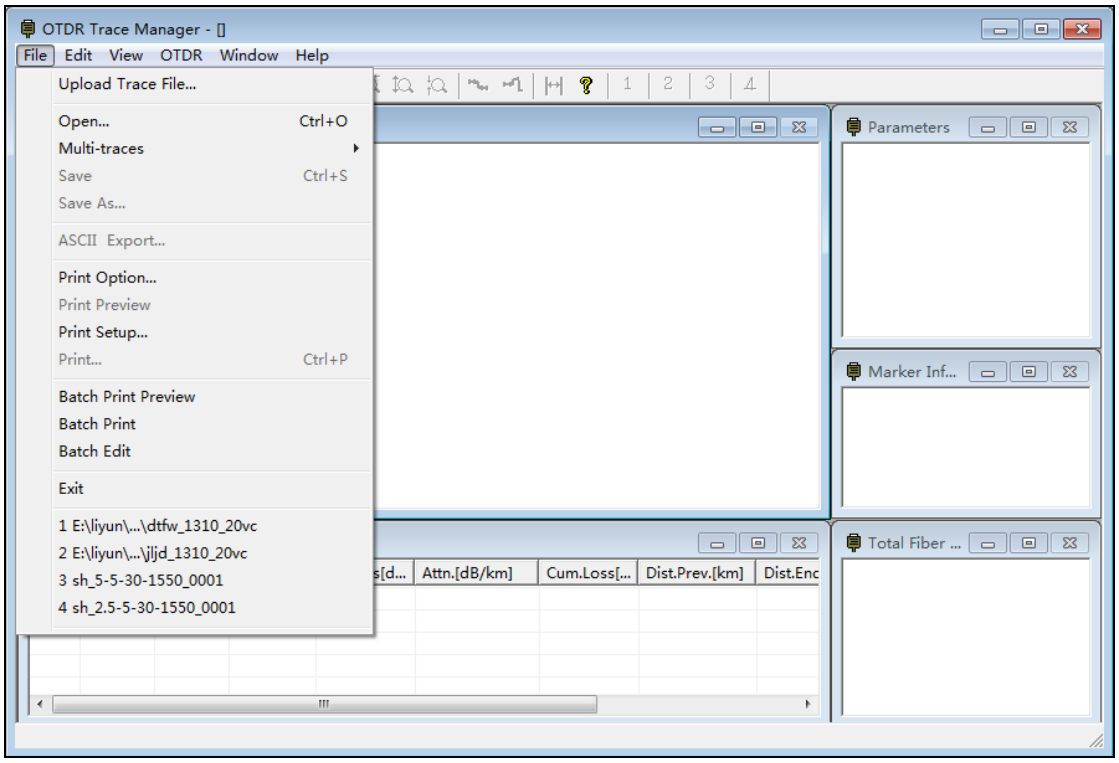


Figure 3.2

3.2.2 Edit

"Edit" menu is as in Figure 3.3. Users can edit events list through "edit" menu: add event, delete event and edit information of optic fiber. Information of optic fiber is explanatory text relating to trace file that users type in. For each measurement, users can save measurement trace with palmOTDR. This software has provided users an interface for text input. For each trace file, users can input relating information (No. of cable, No. of fiber, type of fiber, beginning of fiber, end of fiber, manufacturer and measuring people). With this information, users can identify the corresponding relations between trace file and fiber chain.

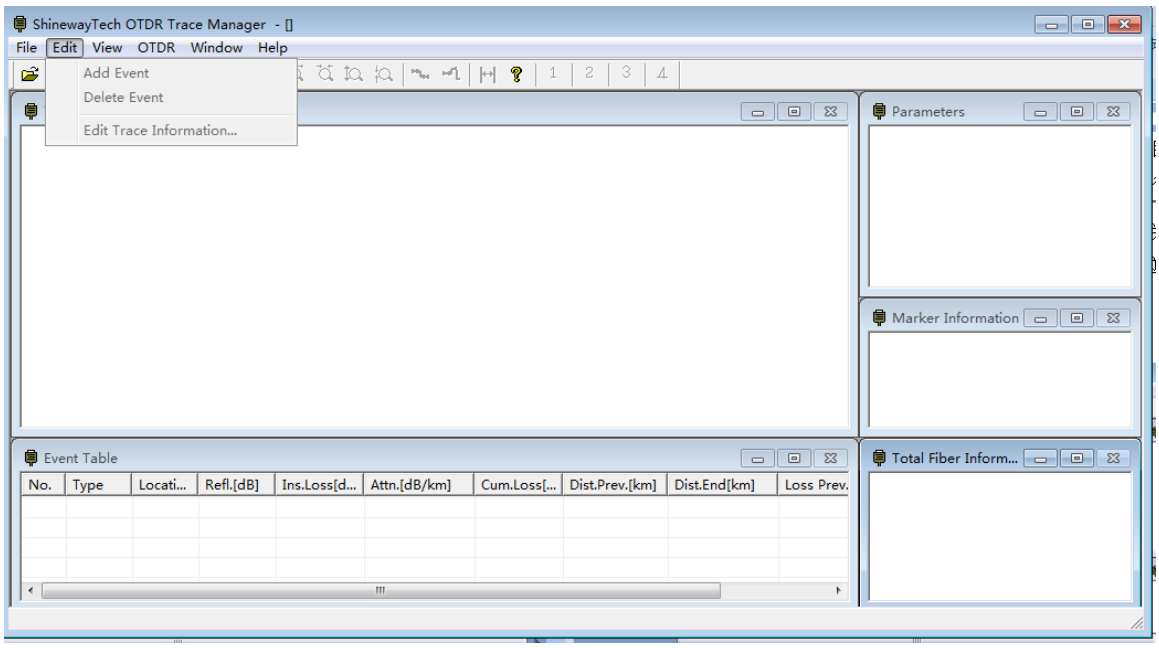


Figure 3.3

3.2.3View

"View" menu is as shown in Figure 3.4. This menu is to control on and off of tool bar, status bar, marker operation, trace display: zoom in and out horizontally and vertically, and the display style of trace. A trace is composed of many dots. If users need to review details of trace, they can zoom in and out trace horizontally and vertically.

Trace display style refers to: trace can be displayed in dots or line; parting line displays or not; parting line can help users to read numbers vertically or horizontally; event status bar displays or not, with which users can know type of events easily.

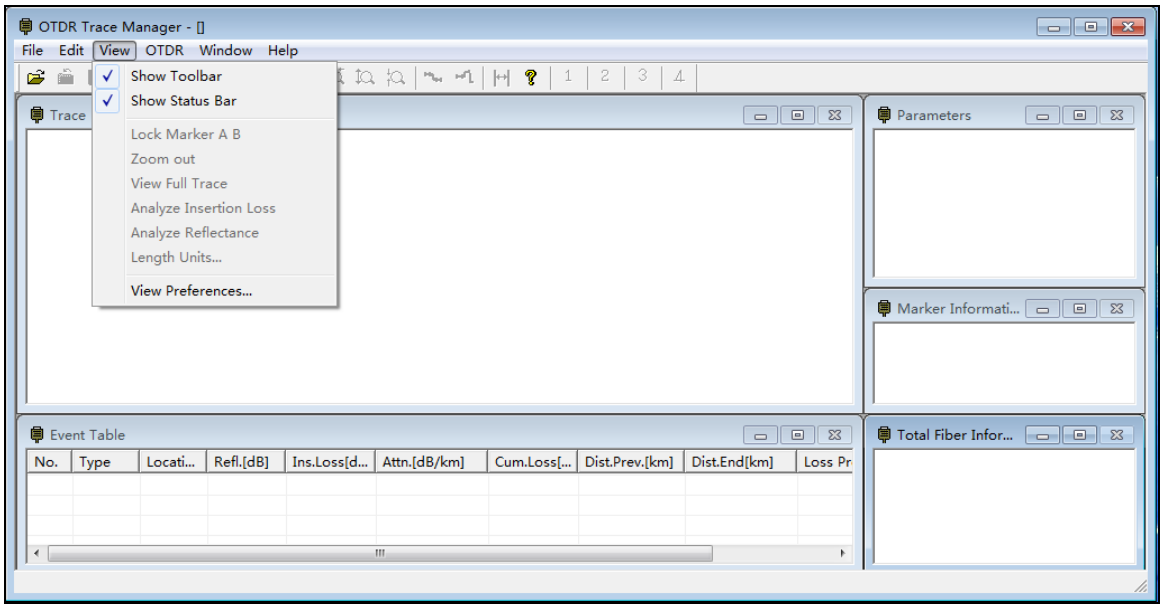


Figure 3.4

3.2.4 OTDR

"OTDR" menu is as shown in Figure 3.5-1. This menu is to control reanalyze events and pass/fail threshold .

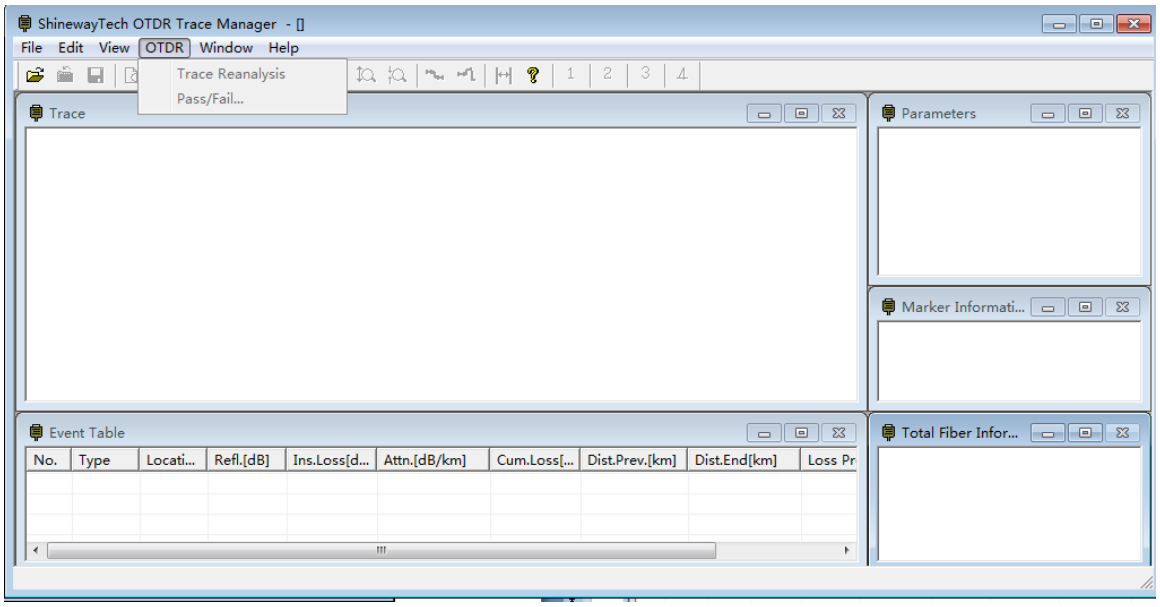


Figure 3.5-1

If users need to change some parameters to suit for the fact requirement, they can click "Trace Reanalysis" and then resetting the parameters, as shown in Figure 3.5-2:

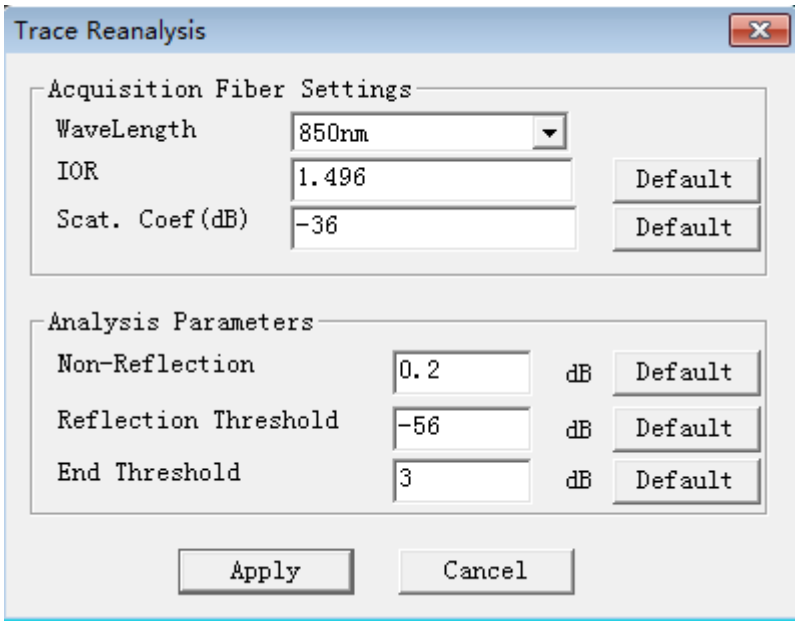


Figure 3.5-2

Pass/Fail threshold: Users can set up pass/fail threshold to analyze whether the relevant parameters in the trace information overload. If it is beyond the threshold, it will be displayed in red to alarm users. The Pass/Fail threshold is shown in in Figure 3.5-3.

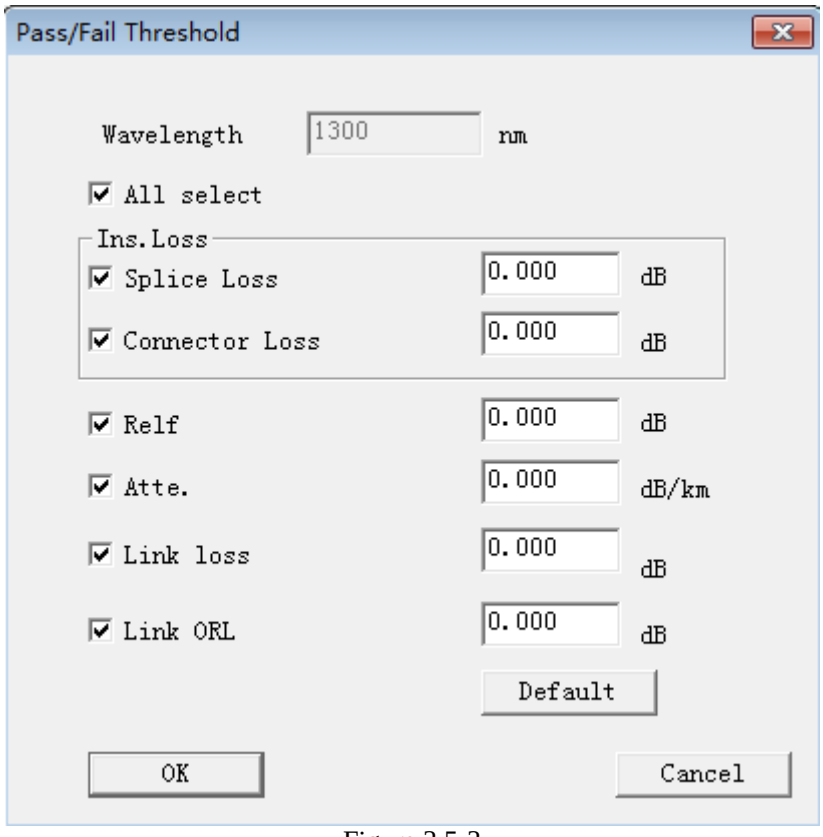


Figure 3.5-3

3.2.5 Window

"Window" menu is as in Figure 3.6. This menu is mainly designed to control the display of sub windows in Figure 3.6 (Trace window, events table window, parameter window, information of fiber chain). Tile function can display sub windows in a layout as in Figure 3.6. Other sub menus take selected window as current active window.

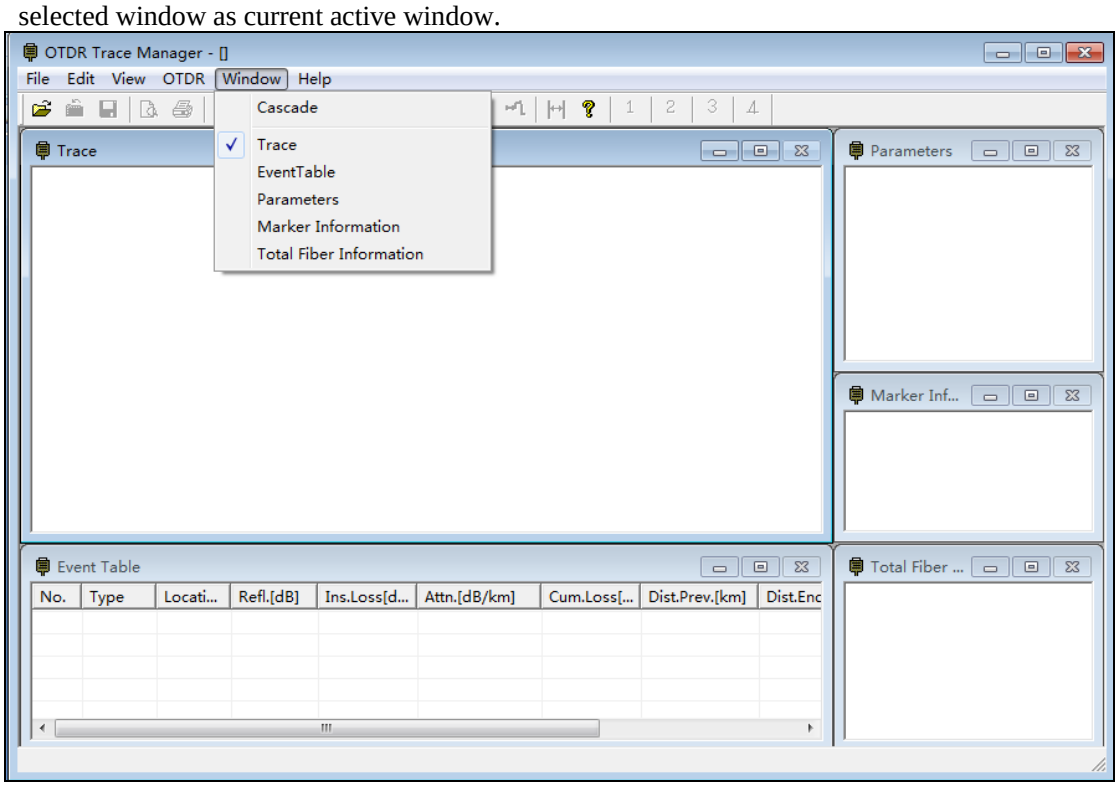


Figure 3.6

3.2.6 Help

"Help" menu is as in Figure 3.7. This menu displays the version of the software.

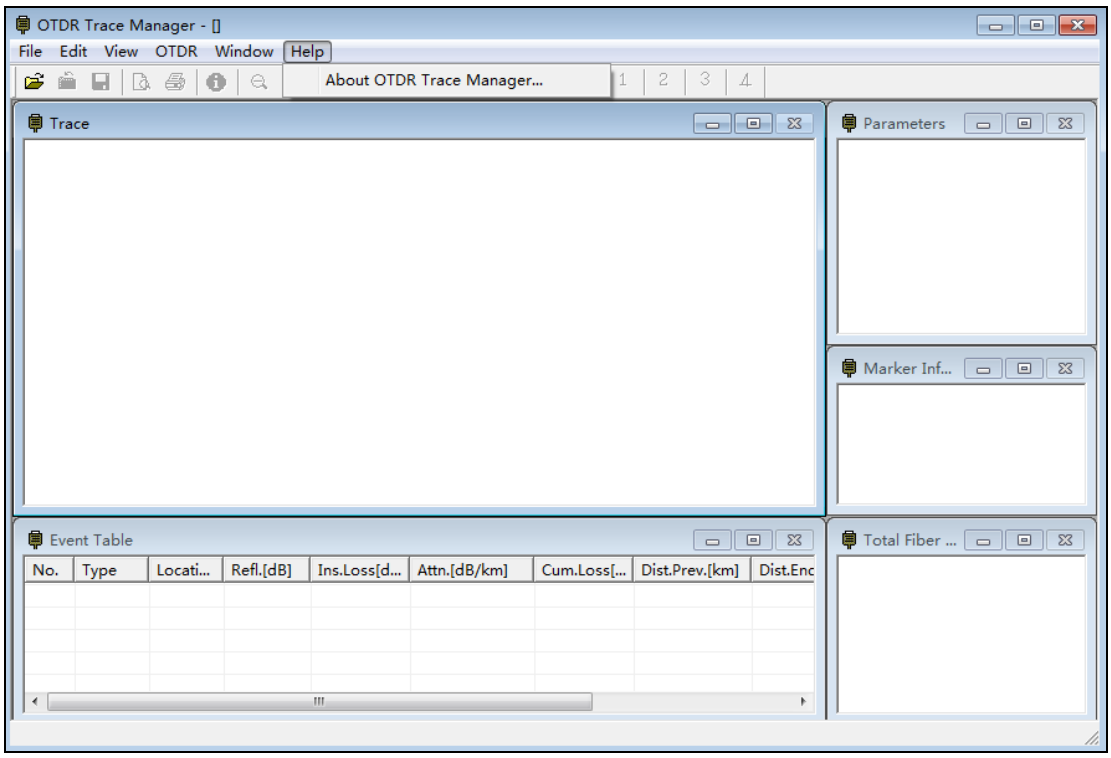

OTDR Trace Manager - []
File Edit View OTDR Window Help
About OTDR Trace Manager...
1 2 3 4
Trace
Parameters
Marker Inf...
Event Table
No. Type Locati... Refl.[dB] Ins.Loss[d... Attn.[dB/km] Cum.Loss[... Dist.Prev.[km] Dist.Enc
Total Fiber ...

Figure 3.7

3.3 Information sub window

3.3.1 Trace display window

Click "Open…" under "File" menu to open a trace file, and trace curve will display in the trace display window, as in Figure 3.8. The x-axis stands for distance (unit: km); y-axis stands for backward scatter power (Unit: dB). There are A, B two markers, and click either one to activate it. Use mouse pointer to click and drag marker to move the marker, and position information will change accordingly. By moving marker, horizontal distance and vertical power can be read manually. Zoom in and out of trace actually depends on the activation of marker. In the following figure, the straight line stands for normal optic fiber, and peaks are reflection events in fiber chain. The sudden descend at the end of trace stands for the end of optic fiber. After the end, it's noise. The very bottom of the figure is event property signal which explains the event type.

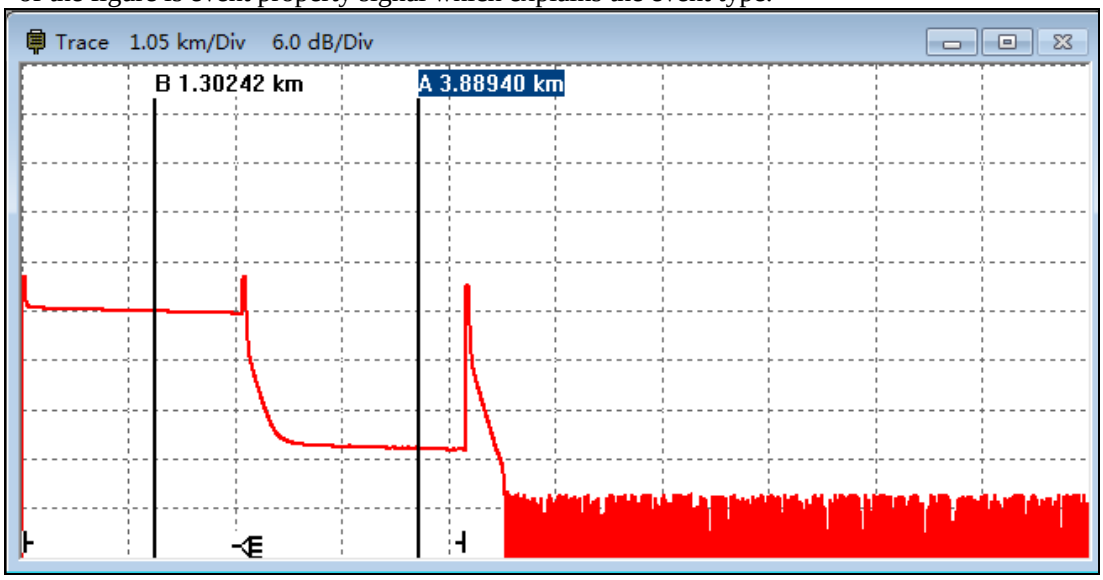
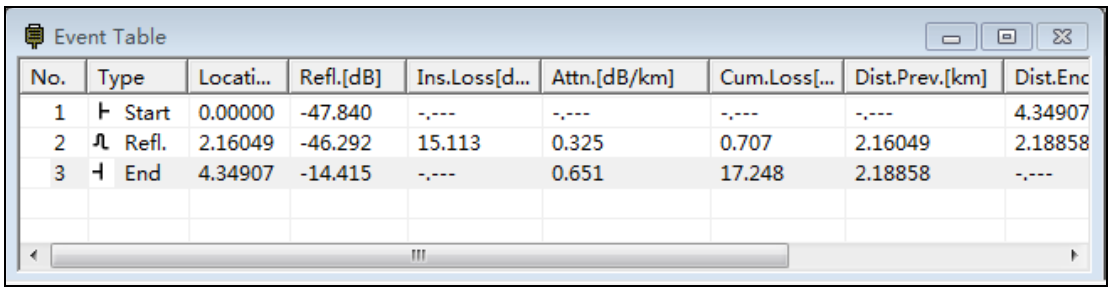


Figure 3.8

3.3.2 Events list window

Trace data collected by palmOTDR will be processed automatically and analysis results display in event list, as in Figure 3.9.



No.	Type	Locati...	Refl.[dB]	Ins.Loss[d...	Attn.[dB/km]	Cum.Loss[...	Dist.Prev.[km]	Dist.Enc
1	Start	0.00000	-47.840	-.---	-.---	-.---	-.---	4.34907
2	Refl.	2.16049	-46.292	15.113	0.325	0.707	2.16049	2.18858
3	End	4.34907	-14.415	-.---	0.651	17.248	2.18858	-.---

Figure 3.9

Introduction of items in events list: No.: sequence of event happened in optic fiber chain; Type: beginning, end, reflection and non reflection event; Distance: distance from OTDR to event point; Reflection value: value of reflection event; Insertion loss: vertical decline of dB; Attenuation coefficient: Value of attenuation per kilometer between current event point and previous event point in optic fiber chain;

Cumulative loss: dB value of loss from 0km to current event point;

Dist. Prev.[km]: the distance from the previous event;

Dist. End. [km]: distance from the end event;

Comment: Notify other detail of the event.

3.3.3 Parameter window

Parameter window displays measure environment of current displayed trace, including measurement parameters and analysis parameters. Measurement includes range, pulse width, average time and wave length. Analysis parameter includes IOR, scattering coefficient, end threshold, non reflection threshold, reflection threshold and samp.dist. For meanings of those parameters, please refer to *User's manual for palmOTDR*. Parameter window is as in Figure3.10.

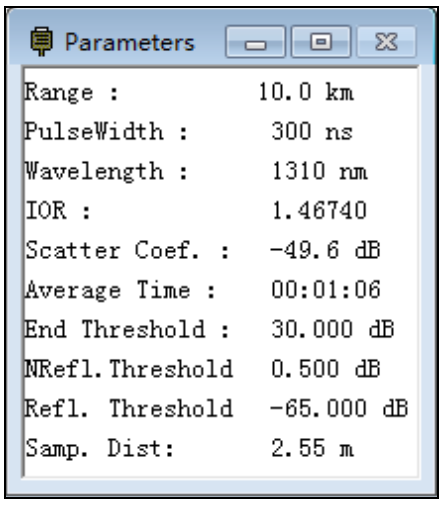


Figure 3.10

3.3.4 Information window of fiber section

This window is as in Figure3.10. It displays the distance between marker A and B, attenuation coefficient, and loss information. Two points loss is the difference of vertical power between marker A and B. two points attenuation is two points loss of marker A and B divided by horizontal distance of marker A and B.

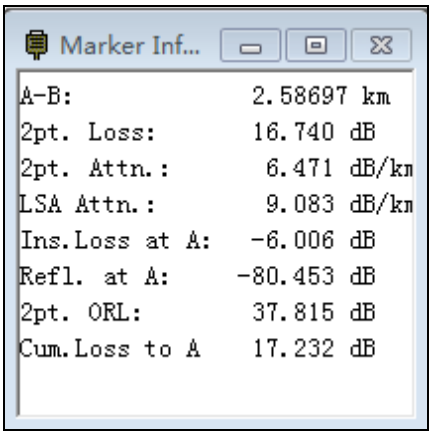


Figure 3.11

3.3.5 Information window of fiber chain

Information window of fiber chain is as in Figure 3.12. Contents display here are: date of

measurement, length of fiber chain, loss of fiber, attenuation, and events number of fiber.

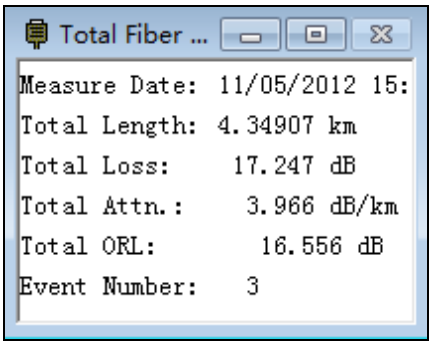


Figure 3.12

4. Software functions

4.1 Upload trace data

Saved traces can be uploaded to PC via serial port cable or USB cable.

- Upload traces through USB interface cable:

  1. Connect PC and palmOTDR with USB interface cable;
  2. Power on palmOTDR;
  3. Click "Computer" on PC, find the "removable disk" and click it then enter into the "trace" document folder which saved measurement traces, you can freely copy, paste or delete them.

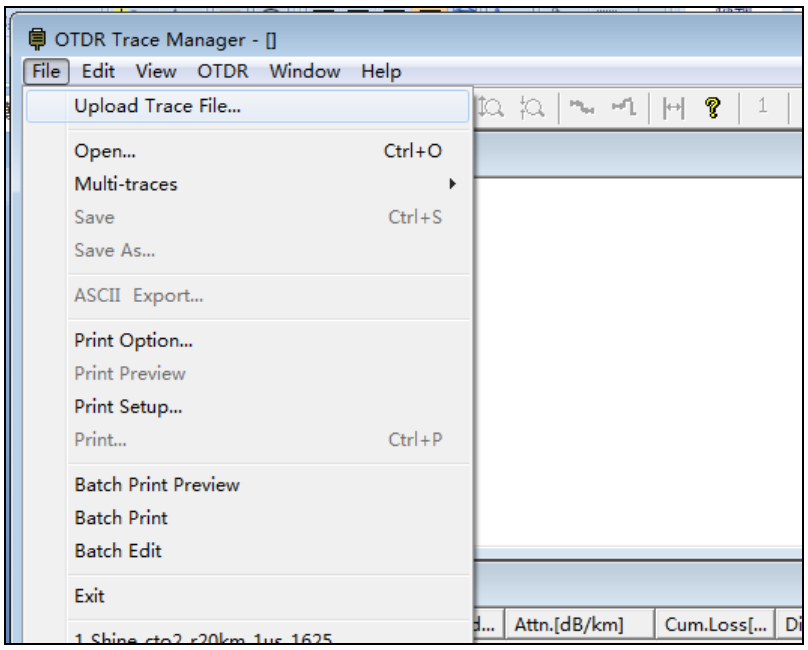
- Upload with RS232(or USB) interface cable(suit for below V6.07 of instrument software version, at the same time you must install USB driver on your PC when you want to upload via USB interface cable.):

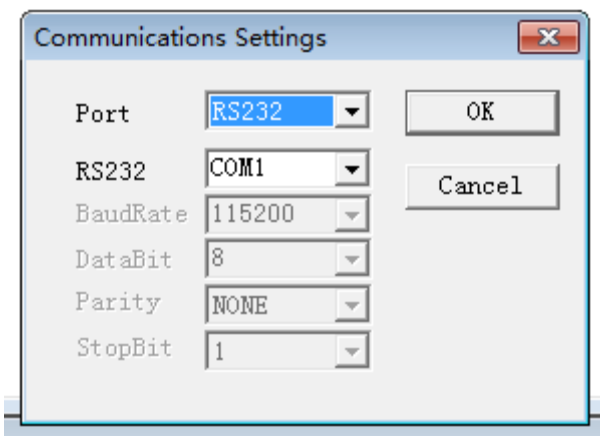
  1. Install the software, and run
  2. Power off palmOTDR

3. Connect palmOTDR to PC through RS232(or USB) interface cable

4. Power on the instrument, and run OTDR Trace Manager software. Under menu "file", select "Upload trace file…", interface will be as in Figure4.1, choose communication port(USB/RS232), and click "OK", choose the saved position of traces, and then start uploading data.

Note:





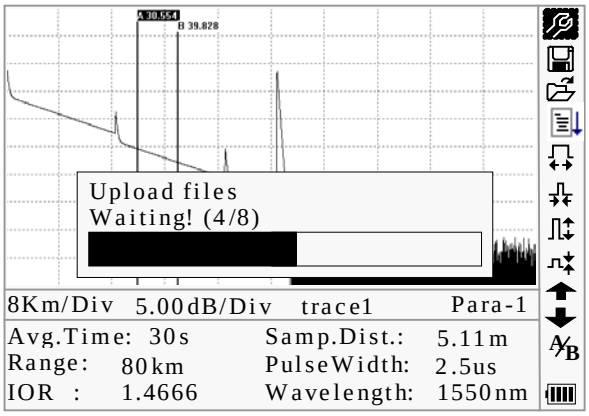
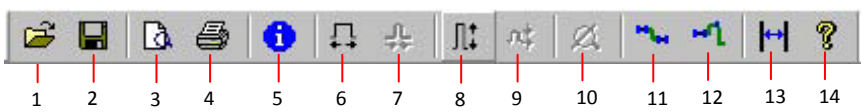


Figure4.1.

4.2 Browse Traces

4.2.1 Tool bar



Move mouse pointer to tool bar, and reference of buttons will pop up. Their functions are:

1. Open file
2. Save file
3. Printing preview
4. Printing
5. Edit information of optic fiber
6. Zoom in trace horizontally
7. Zoom out trace horizontally
8. Zoom in trace vertically
9. Zoom out trace vertically
10. Full screen
11. Analyze insertion loss（the five-point measurement to test the Insertion loss）
12. Analyze reflectance
13. Lock marker A and B
14. Display version

4.2.2 Open trace file

Select "Open trace file…"under "File" menu, and choose the trace file to be reviewed, as shown in Figure 4.2. If the layout of sub windows is irregular, select "Tile" under "Window" menu, and the sub windows will automatically rearrange as shown in the following figure.

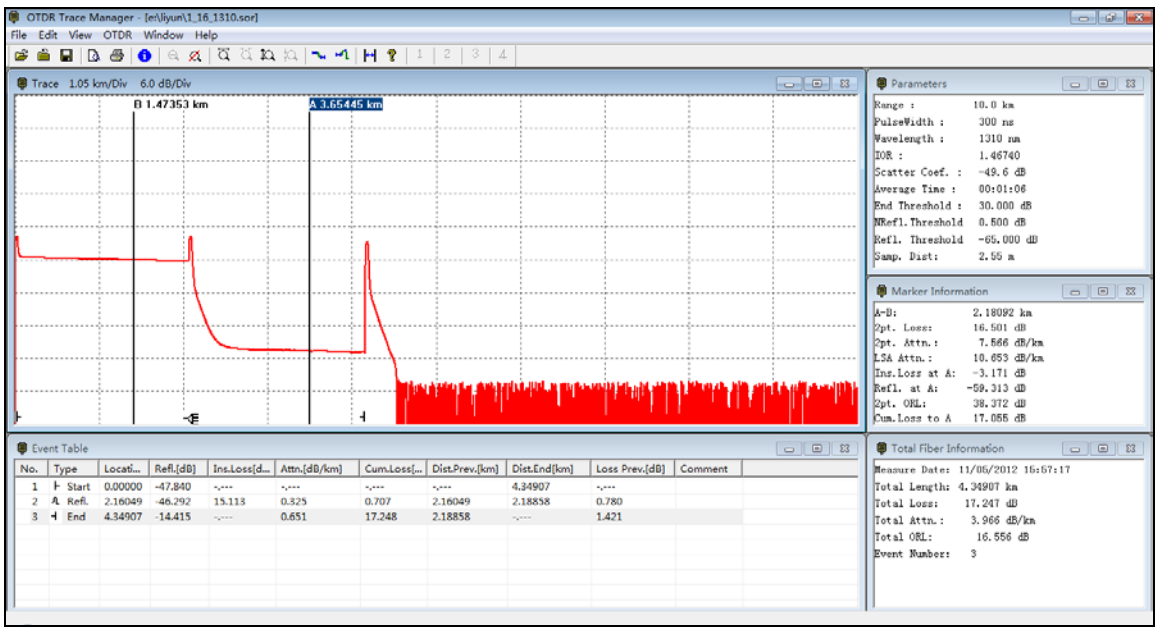


Figure 4.2

4.2.3 Zoom in and out of trace

As shown in Figure4.2, trace curve displays in trace window. Users can proceed on the following operations of trace so as to review details of it.

First, Drag marker to trace detail to be reviewed, then:

Zoom in trace horizontally: Select "Zoom in trace horizontally" on "window" menu or click  on the tool bar.

Zoom out trace horizontally: Select "Zoom out trace horizontally" on "Window" menu or click  on tool bar

Zoom in trace vertically: Select "Zoom in trace vertically" on "Window" menu or click  on the tool bar

Zoom out trace vertically: Select "Zoom out trace vertically" on "Window" menu or click  on the tool bar.

Full screen: Select "Full screen" on "Window" menu or click  on the tool bar

Note: *1）Zoom in or out of trace all centers on the activated marker.*

2）The software supports floating menu operation, right click mouse on Spectral line window, operations can be performed will display. In this way, zoom in and out of trace can also be realized.

4.2.4 Review trace information

Trace information includes: trace measurement parameter, analysis parameter, information of fiber section, information of whole fiber chain, and events list.

4.2.4.1 Trace parameter

As shown in Figure4.3, measurement parameter and analysis parameters display in parameter window.

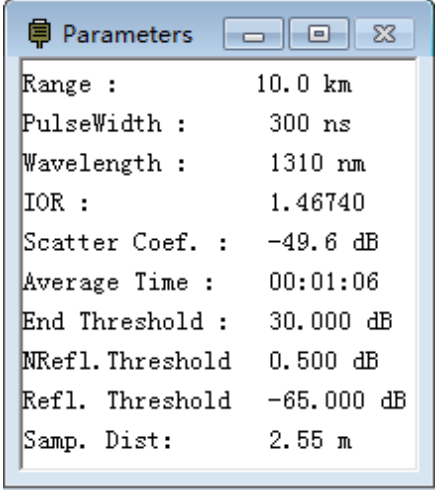


Figure 4.3

4.2.4.2 Information of fiber section

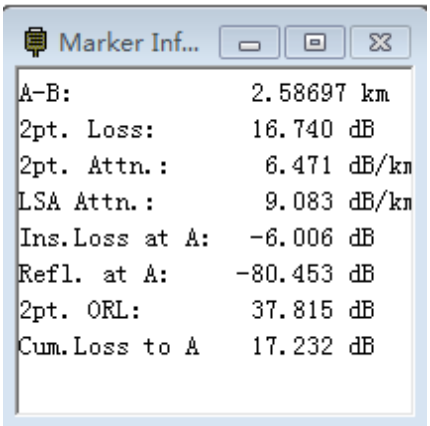


Figure 4.4

Distance between marker A and B should be considered as one section of optic fiber. Its information is as in Figure4.4.

4.2.2.3 Information of whole fiber chain

Distance from beginning to end should be considered as a fiber chain, as in Figure4.5.

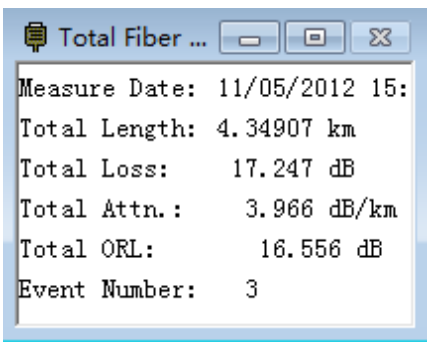


Figure 4.5

4.2.2.4 Review events list

The trace curve is declining at a fixed slope. Any sudden peak or descend should be considered as an event. palmOTDR process measured data automatically and create events list, as shown in Figure 4.6.

For details relating to events list, please refer to chapter 3.3.2 events list window.

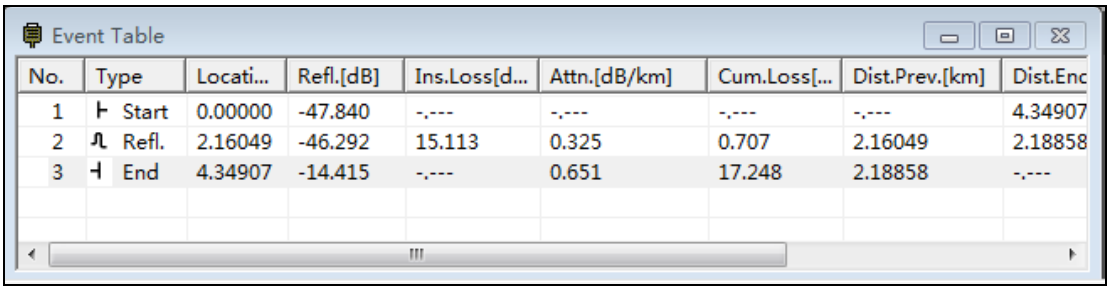


Figure 4.6

4.3 Save trace

Users can save opened trace file as other file. Click "save trace file" under "File" menu to save trace with old file name. Click[save as …] under [File] menu to save trace with a new file name.

4.4 ASCII format output

The format of OTDR Trace Manager software file is not open to the public, therefore, no third party software can open a OTDR trace file. OTDR Trace Manager software provides a third party software interface. Data can be exported in ASCII format, then users can use a third party application to open and review the data.

Select "ASCII format output" under "File" menu, as in Figure4.7. information and format can be selected, press "Enter" to choose save path and file name.

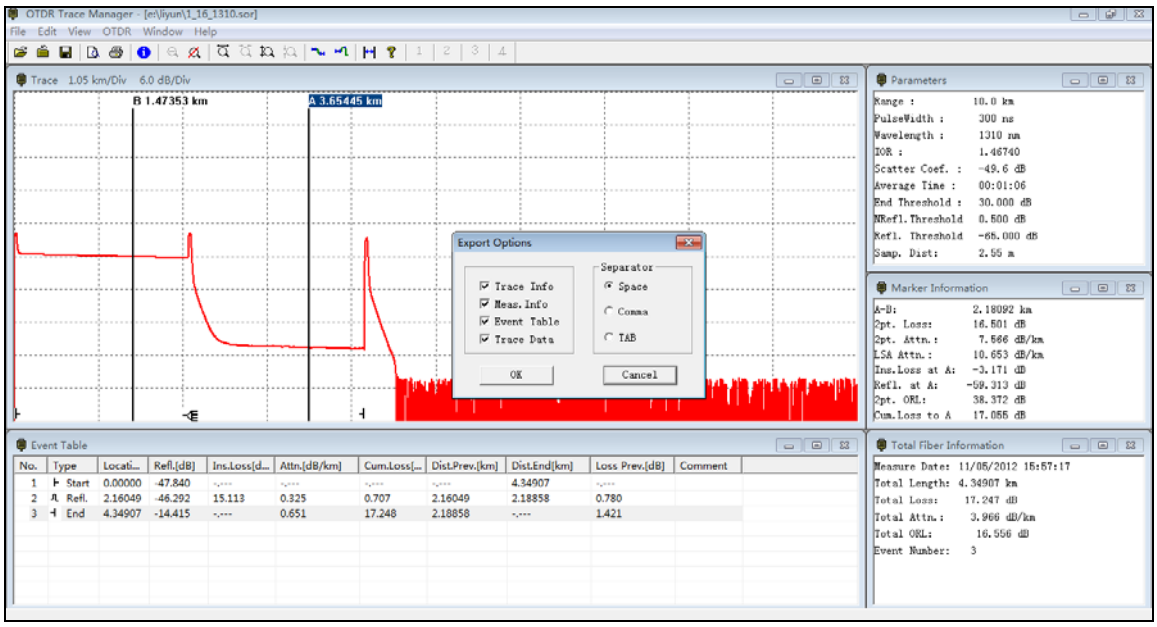


Figure4.7

4.5 Edit information of optic fiber

Select "Edit information of optic fiber" under "edit" menu, or click  to start editing information of optic fiber, as shown in Figure 4.8. Information of optic fiber is a description of measurement trace displayed in trace window. Users input relevant information for efficient management and mark of measurement files. Upon completion of editing, press "Enter" to confirm.

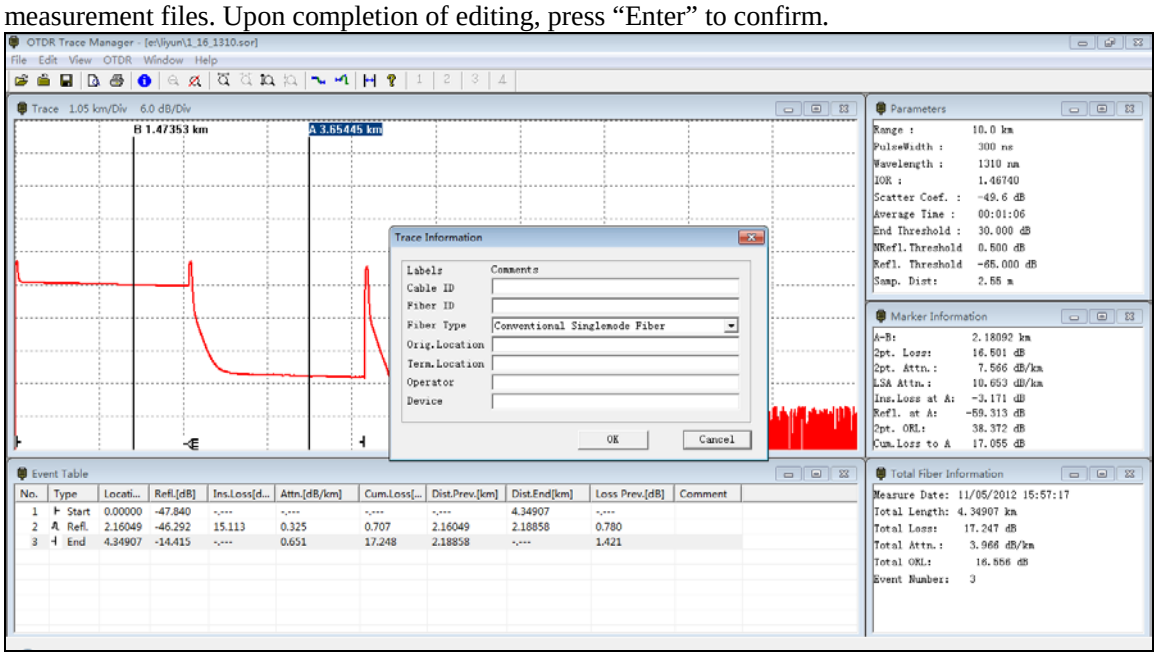


Figure 4.8

4.6 Revise events list

The situation of field measurement is ever changing, therefore, palmOTDR analysis software can not guarantee every analysis is correct. The software provides an interface for users to revise events list, for example add event and delete events.

4.6.1 Add event

If a event on measurement trace is not listed in events list, due inaccuracies caused by all kinds of reasons (poor SNR, inadequate parameter configuration, or bugs of the software itself). In this case, user can use the function of "add event", to manually add this event into events list. First, click this button "  " to enable five-spot; Second, move the marker and the 4 point to the right position; Third, click the "Add Event", which is in the "Edit" , as in Figure 4.9; And then, all the information of this event are calculated by the software, and then press OK to add new event.

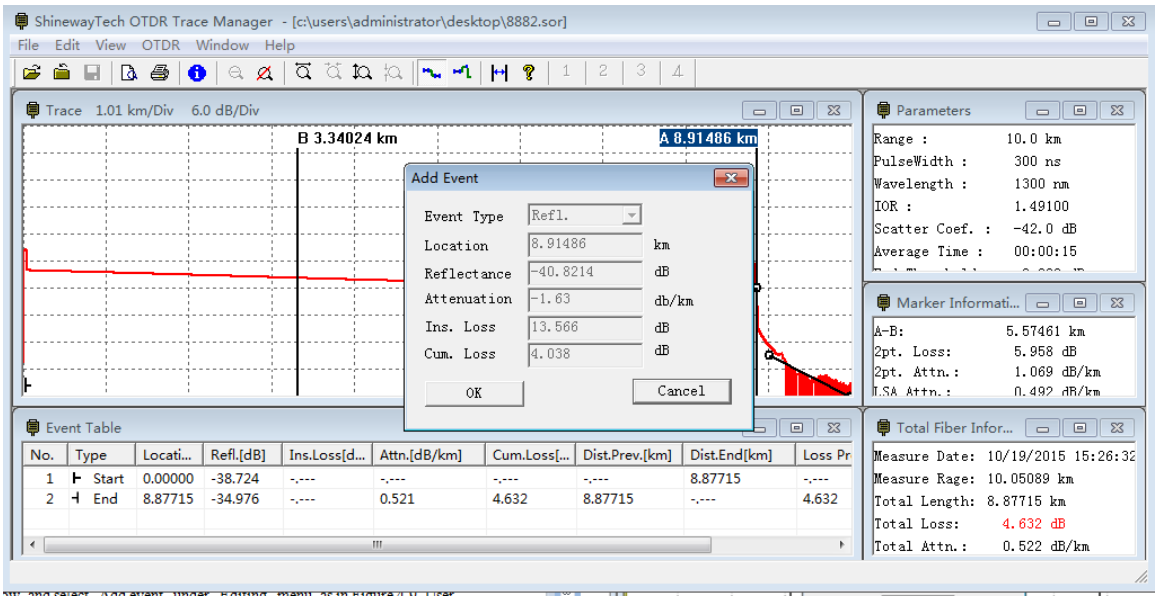


Figure 4.9

4.6.2 Delete event

If an event is not on the measurement trace is listed in events list, due inaccuracies caused by all kinds

of reasons (poor SNR, inadequate parameter configuration, or bugs of the software itself). In this case, user can use the function of "delete event", to manually delete this event from events list. Highlight the event to be deleted, and then select "Delete event" under "Editing" menu. User chooses the type of event, and type in event features, then press "Enter" to add event to events list. Or, right click on events to be deleted, a floating menu pops up, as in Figure 4.10. The revision can also be realized.

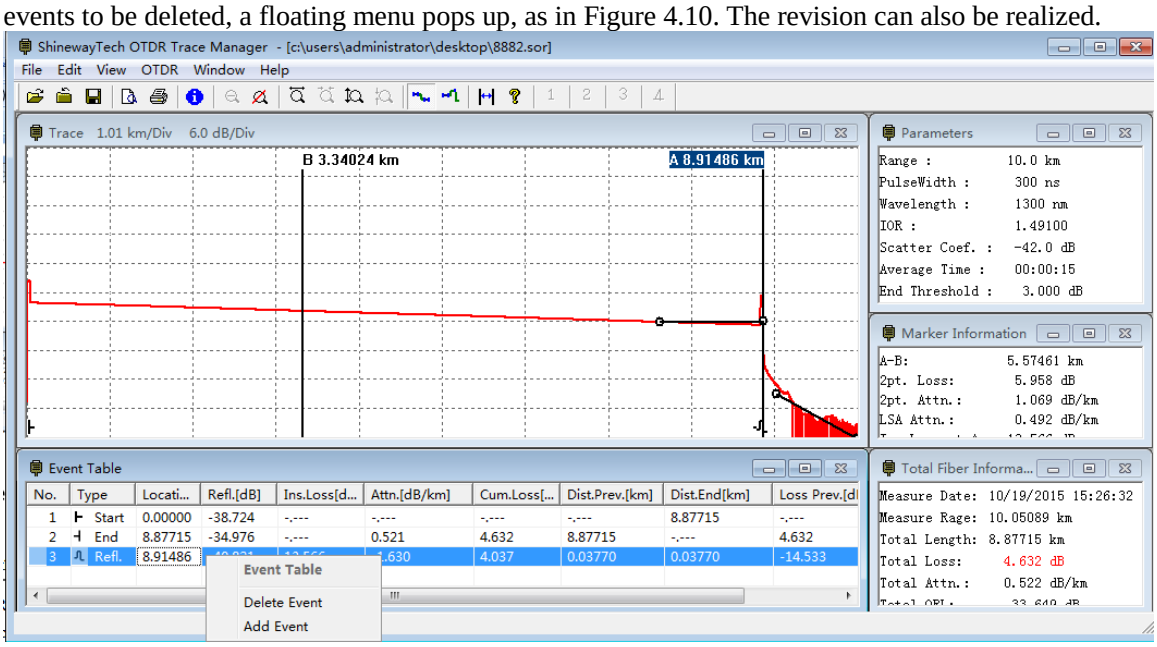


Figure 4.10

4.7 Printing

4.7.1 Printing options

Select "Printing options…" under "File menu", as shown in Figure4.11, users can select contents to be printed.

Note: The Multi Trace is that the number the the trace in one paper.

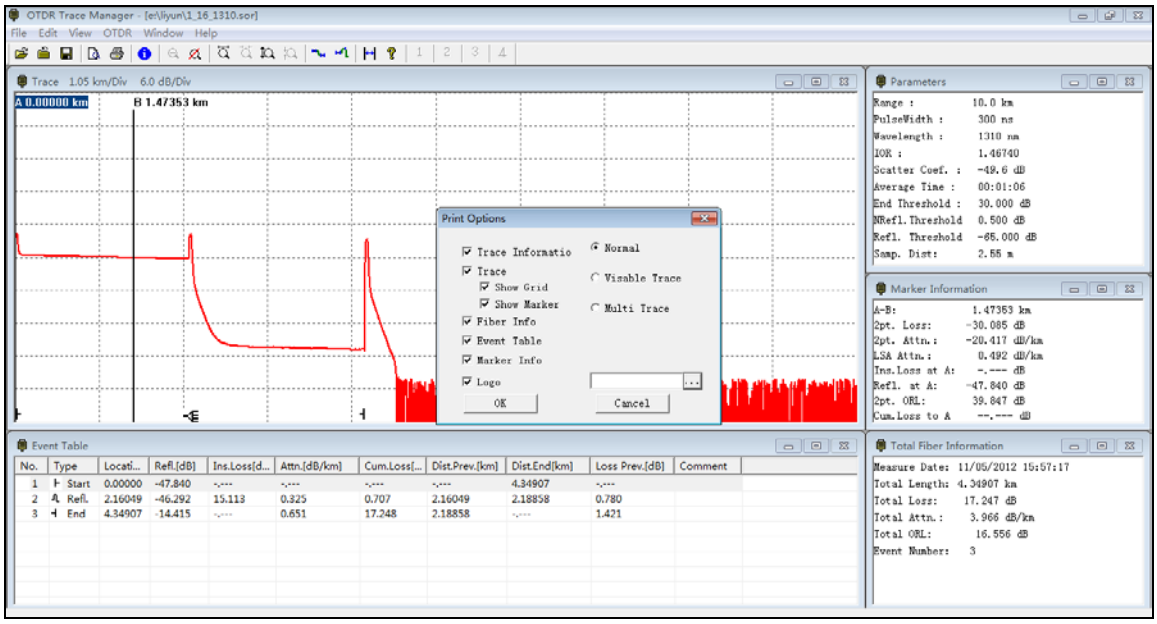


Figure 4.11

4.7.2 Printing setup

Select "Printing setup" under "File" menu, as shown in Figure4.12, users can select printer, printing paper, and printing direction.

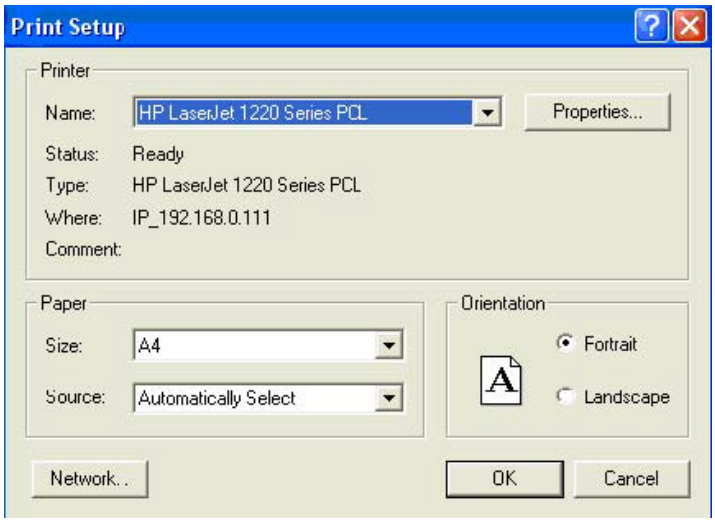


Figure 4.12

4.7.3 Printing preview

Users can preview before printing to check if printing is good. Select "printing preview" under "file"

menu or click  on tool bar, as shown in Figure 4.13.

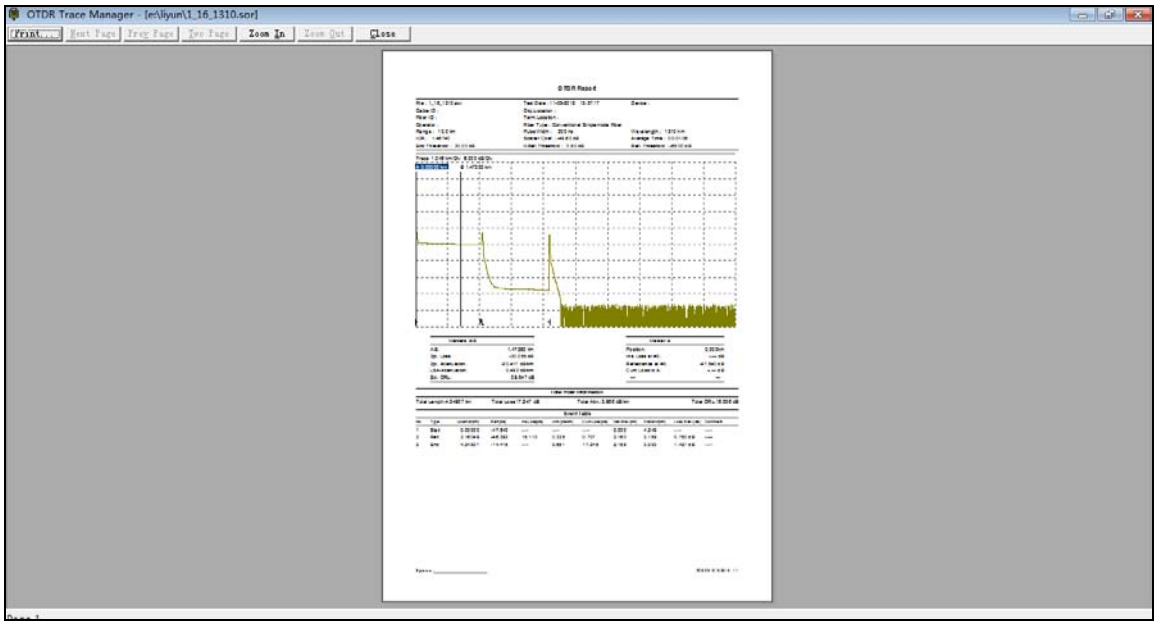


Figure 4.13

4.7.4 Printing

Printer is correctly installed on Windows. Select "Printing" under "file" menu, or click  on tool bar, then click "OK".

4.7.5 Batch edit

OTDR Trace Manager has Batch-edit function. According to different demand, users can edit trace information of several trace files in one fold one time. Select "Batch Edit" under "file" menu, as in Figure 4.15.

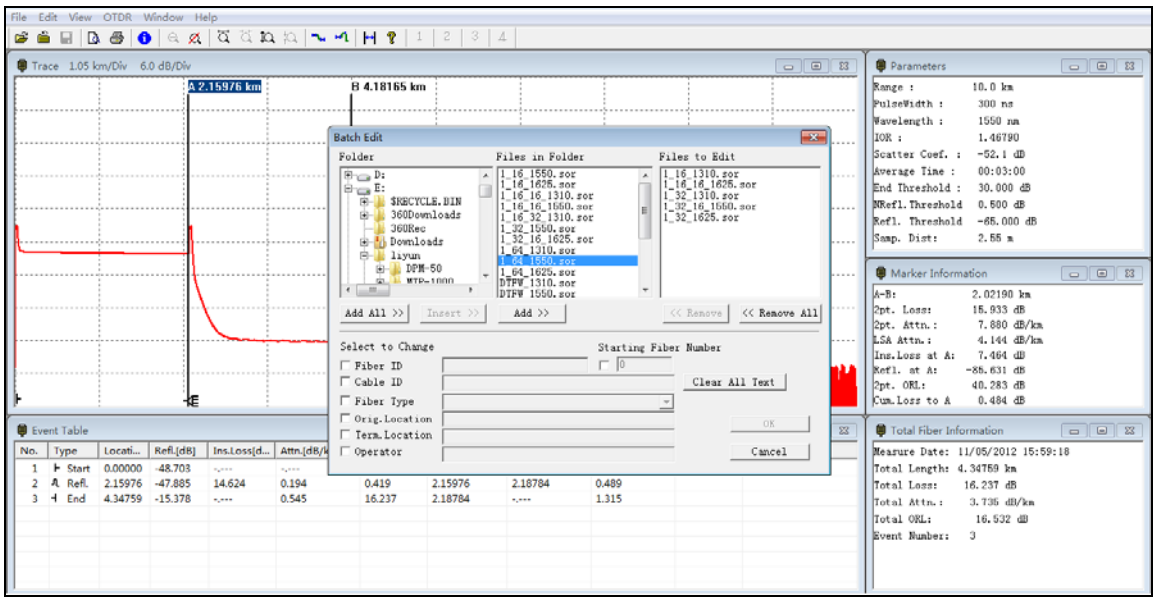


Figure 4.15

4.7.6 Batch print

OTDR Trace Manager has Batch-print function. According to different demand, users can print several trace files in one fold at one time. Select "Batch Print" under "file" menu, as shown in Figure 4.16.

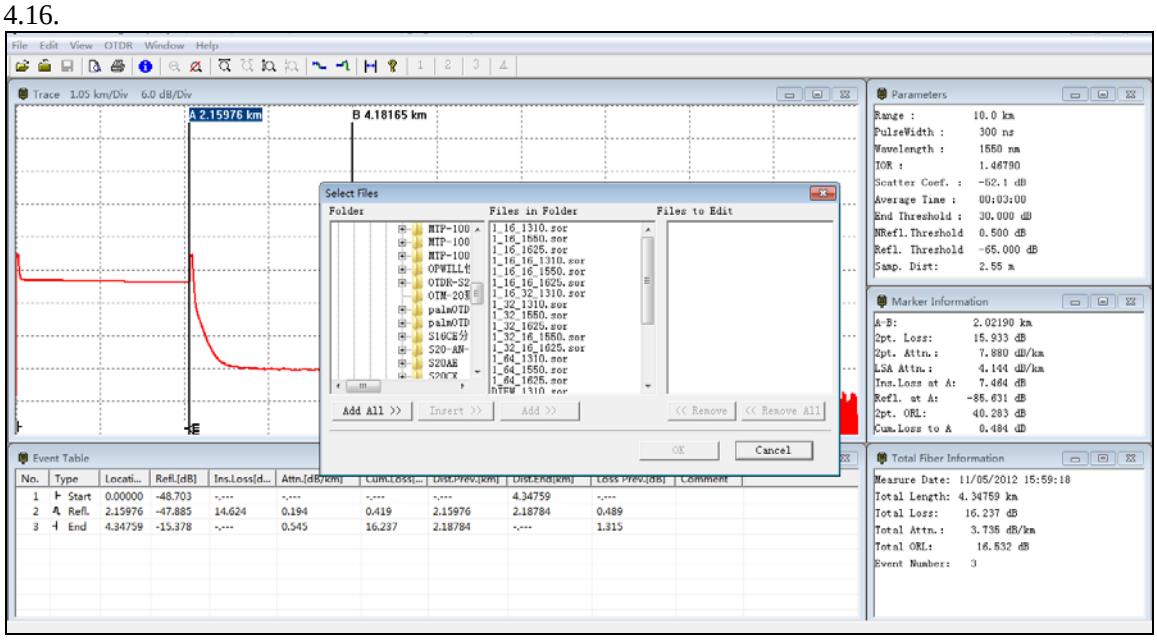


Figure 4.16

4.7.7 Batch print preview

Users can preview before batch print to check if printing is good. Select "batch print preview" under "file" menu, as shown in Figure 4.17.

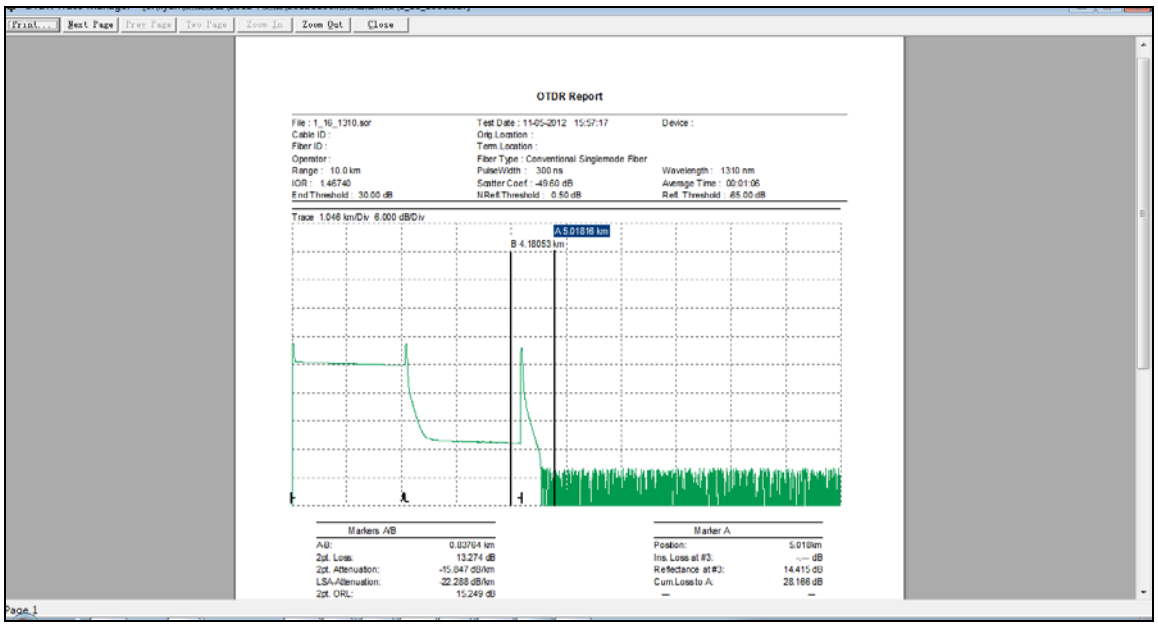


Figure 4.17

4.8 Exit software

Press "Exit" under "File" menu. as shown in Figure 4.18.

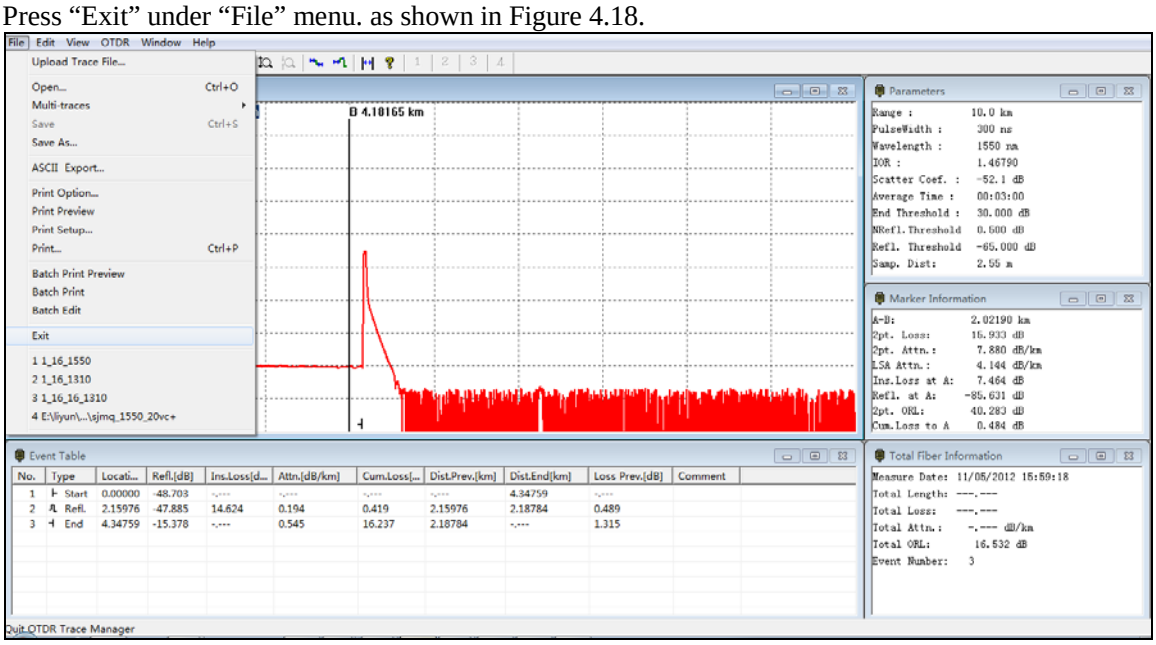


Figure 4.18

5. Contacting Customer Service

Please check our web site **(www.shinewaytech.com)** for updates to this manual and additional application information. If you need technical or sales support, please contact local **Shineway Technologies** Customer Service.

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