

Test and Measurement Division

FSH4View

Software for FSH4 Spectrum Analyzers

Users Manual

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Table of Contents

Title	Page
Installing FSH4View	1
Installing the FSH4View SoftwareRunning the FSH4View Software	1
Running the FSH4View Software	1
Connecting the Spectrum Analyzer	1
Using FSH4View	3
Using Online Help	3
Instrument Screens	4
Sweeps	
Instrument Datasets	6
Cable Models	7
Limit Lines	
Transducer Factors	
Channel Tables	
Standards	
Limit Tables	12
Enter Operator NameSynchronize Instrument with PC	13
Synchronize Instrument with PC	13
Creating a Test Report Documenting Screens Displaying an Instrument Screen on the PC	14
Documenting Screens.	16
Inserting Screens into a Document	10
Analyzing Sweeps	1 / 1 Q
Analyzing Sweeps Displaying Sweeps on the PC Changing Sweep Settings Zooming In and Out on a Trace	10 1Q
Changing Sweeps on the Te	21
Zooming In and Out on a Trace	21
Conving Sweeps between Sweep Windows	22
Copying Sweeps between Sweep Windows Exporting Sweep Data to Other Programs	22
Transferring Instrument Datasets	23
Saving Datasets to the PC	23
Uploading Datasets to the Instrument	24
Uploading Datasets to the Instrument	26
Uploading Cable Models to the Instrument	26

Editing Cable Models	27
Using Limit Lines	
Uploading Limit Lines to the Instrument	
Editing Limit Lines	
Using Transducer Factors	
Uploading Transducer Factors to the Instrument	
Editing Transducer Factors	31
Using Channel Tables	32
Uploading Channel Tables to the Instrument	32
Editing Channel Tables	33
Using Standards	
Uploading Standards to the Instrument	34
Editing Standards	
Printing Windows	36
Printing a Window	
Printing Multiple Windows on a Page	36
Saving to a File	38

Chapter 1 Installing FSH4View

Installing the FSH4View Software

The software offers you simple mouse-controlled tools to work with your Spectrum Analyzer.

The setup program installs the software on PC's running Windows To install the software, insert the CD ROM into the CD ROM drive and choose **Setup.exe**.

The setup program starts up and prompts you for information to complete the installation.

Running the FSH4View Software

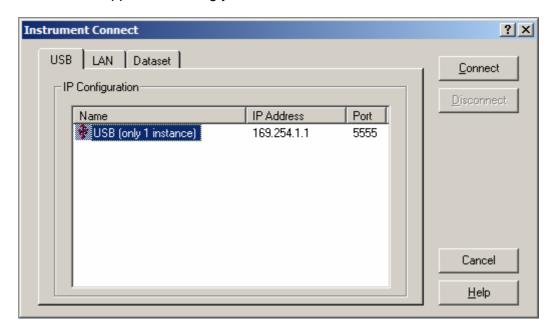


Connecting the Spectrum Analyzer

The program communicates with your spectrum analyzer via USB or Ethernet (LAN).

During startup (except for the first time), the program automatically tries to make a connection with the instrument according to the last valid connection.

If automatic connection is not successful, the dialog box shown below appears, allowing you to make a connection.



- Select **USB** or **LAN** as instrument connection to the PC. The Dataset tab is used to view datasets on the PC.
- 2 Select USB (only 1 instance) or the desired LAN configuration from the list.

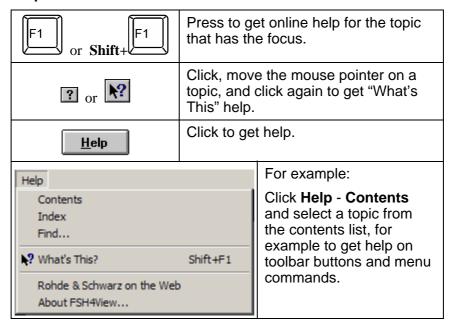
Tip

- Click Add to define and add a new LAN configuration to the list.
- Click Edit to edit a LAN configuration from the list.
- Click Remove to delete a LAN configuration from the list.
- 3 Click Connect to establish a connection with the instrument.

Chapter 2 Using FSH4View

Using Online Help

The FSH4View software offers you access to online help by using the **F1** key, a **Help** button, "**What's This?**" help, or the **Help** menu:



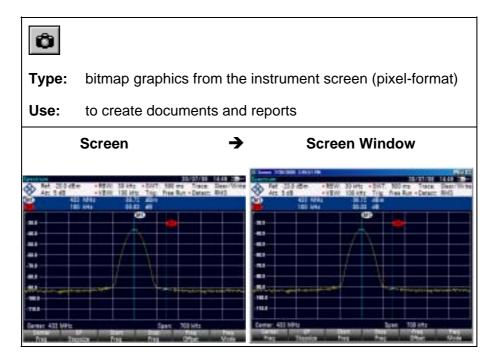
Note

To show help items on a help page, do one of the following:

- move the mouse pointer (changes to th over a help item);
- press Tab (changes the background of a help item).

Data Types

Instrument Screens



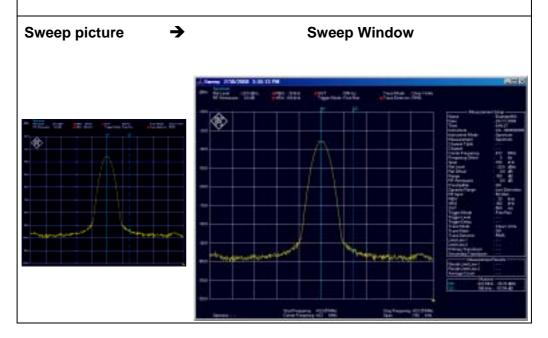
Refer to Documenting Screens.

Sweeps



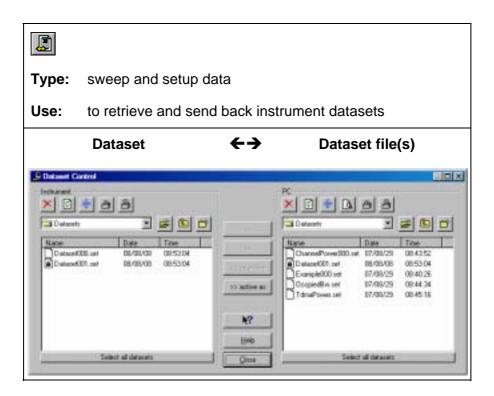
Type: numerical trace points to generate graphs

Use: to analyze by means of zooming or export to spreadsheets



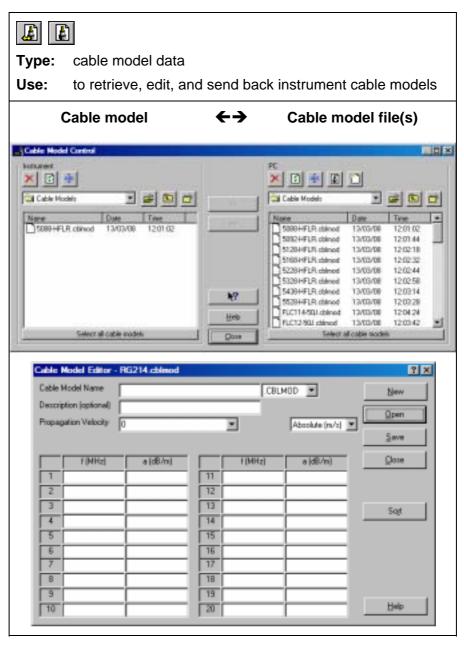
Refer to Analyzing Sweeps.

Instrument Datasets



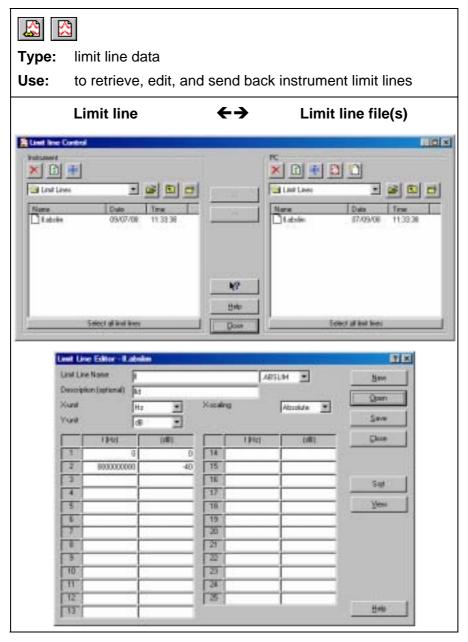
Refer to Transferring Instrument Datasets.

Cable Models



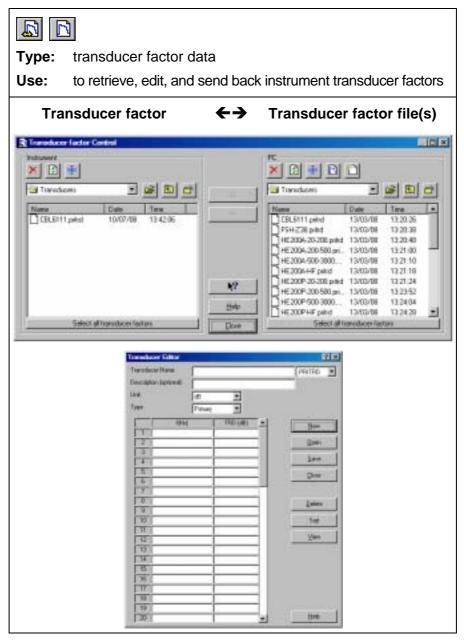
Refer to Using Cable Models for Distance To Fault.

Limit Lines



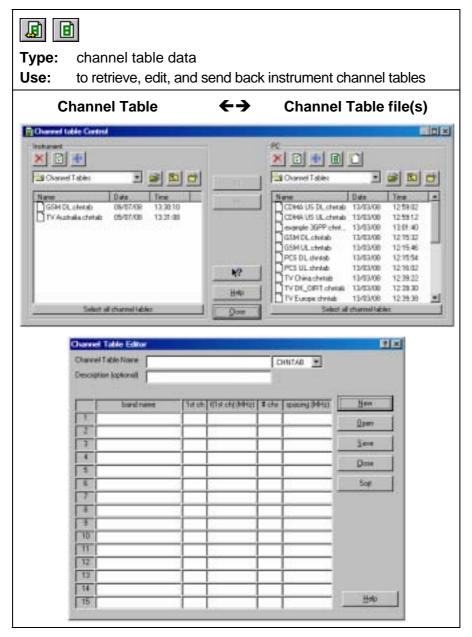
Refer to Using Limit Lines for pass/fail testing.

Transducer Factors



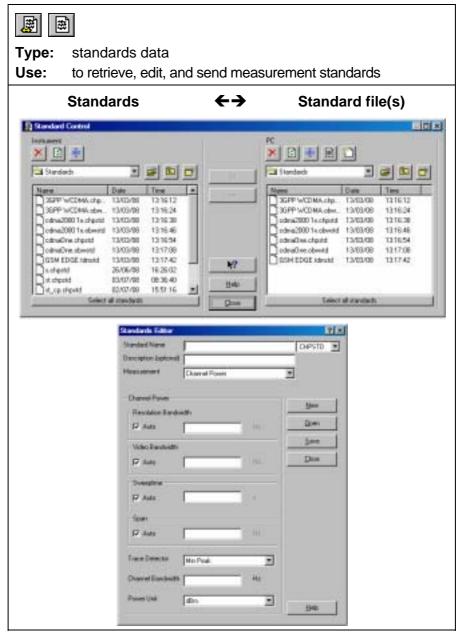
Refer to Using Transducer Factors to correct sweep points.

Channel Tables



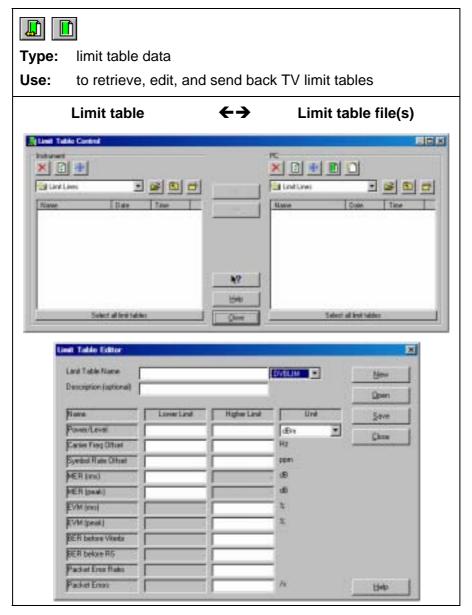
Refer to Using Channel Tables to define channel numbers for certain frequency bands that you can select in the spectrum analyzer.

Standards



Refer to Using Standards to select or define measurement standards, e.g. for telecommunication, that you can send to the spectrum analyzer.

Limit Tables



Refer to Using Limit Lines for using TV limit tables.

Enter Operator Name

- 1 Select Options Operator. As a result, the Operator dialog box appears.
- **2** Tye a name as operator. This name will appear on sweep windows for example.

Synchronize Instrument with PC

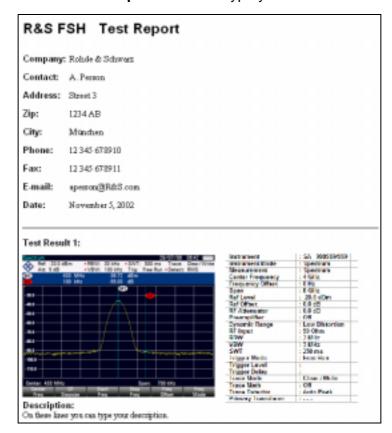
Click to synchronize date and time of the connected instrument with the date and time of the PC.

Creating a Test Report

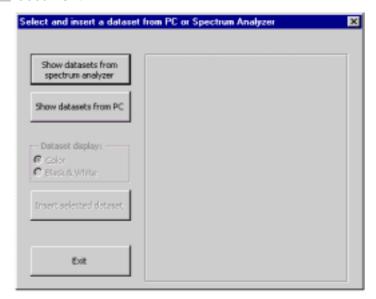
Choose from Start - Programs – FSH4View to create a test report.

As a result, Word is started and the required macros are loaded. Select **Enable Macros** when requested.

- 2 Click predefined fields (Company, Contact, ...) and type your text.
- Click to insert the active instrument screen in black & white or color . As a result, FSH4View is started, a connection is made, and the active screen is pasted into the document at the position of the mouse cursor.
- 4 Click the **Description** field and type your text.



Click to select and insert dataset pictures into your document.



- Click to show the list of dataset names stored in the connected spectrum analyzer and select a dataset from the list.
- 6.2 Click to select and show the dataset files stored in a PC folder (directory).
- 7 Click Color or Black & White to insert datasets in color or Black & White respectively.
- Click to paste the selected dataset into the document at the position of the mouse cursor. Notice that you can also double click a dataset name from the list.

You can paste other dataset pictures by clicking the mouse cursor at new positions in your document.

- g Click to close the dialog box.
- 10 Click to print your test report.
- 11 Click to save your test report.

Documenting Screens

Displaying an Instrument Screen on the PC

Click to display the **active** Spectrum Analyzer screen in a screen window.



Each Spectrum Analyzer screen appears in a separate screen window. To change the window to your preference:

- 2 Select View View Measurement Setup to view or hide the measurement settings data.
- 3 Select View View Description and type a description in the text box below the window (max. 10 lines).
- 4 Select **Options Description** to change the number of characters on a description line.
- 5 Select **Options Colors** to display a window in colors or black & white (greyscale).

Inserting Screens into a Document

1 Click on the screen window you want to insert.

Tip

To avoid losing resolution because of copying to the clipboard, choose **Window – Default Size**.

- 2 Click to copy the window to the clipboard.
- **3** Switch to a wordprocessor.
- 4 Open or create a document and place the cursor where you want to insert the window.
- 5 Select **Edit Paste** to insert the screen window into the document.
- 6 Click to save your document.

Note

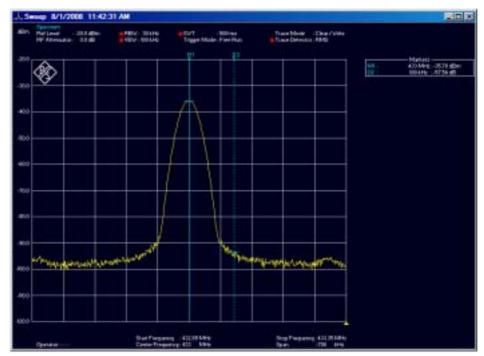
In the same way, you can insert sweep windows into a document.

Analyzing Sweeps

You can read numerical trace samples from the Spectrum Analyzer and display these samples in a sweep window. Up to four sweeps can be displayed in a window.

Displaying Sweeps on the PC

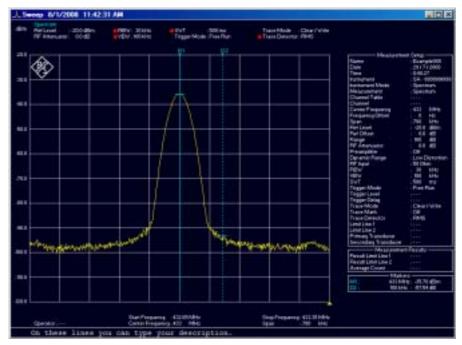
Click to display the active sweep and/or measurement from the instrument.



To change a sweep window to your preference, various view and select features are available. However, not all features are available in all instrument modes.

- 2 Select View View Description and type a description in the text box below the window (max. 10 lines).
- 3 Select View View Measurement Setup to show or hide the measurement settings data.
- 4 Select View View Measurement Results to show or hide the measurement result data.

- 5 Select View View Display Line to show or hide the horizontal display line from the instrument.
- 6 Choose **Select Markers** to select 1 up to 6 vertical markers. As a result, the Select Markers dialog box pops up allowing you to select or deselect the markers and X/Y-values you want to view in the sweep window.
- 7 Select **Options Colors** to change window colors.
- **8** Select **Options Description** to change the number of characters on a description line.
- 9 To change window titles, select Options Titles.

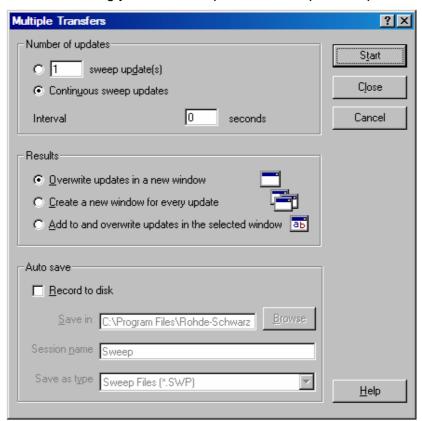


For information about the data in the Measurement Setup (or Measurement Results) block, select **Help – Index – Measurement Setup** (or **Measurement Results**), or refer to the settings on the spectrum analyzer (see operation manual).

Tip

To change Sweep Settings, place the mouse cursor on the Trace or Status block and double click the left mouse button.

Click to read sweeps repeatedly. A dialog box appears allowing you to select options for multiple sweep transfers.



- **11** Choose **Continuous sweep updates** to read sweeps continuously.
- 12 Choose Add to and overwrite updates in the selected window to add a second sweep in the window, which will be overwritten continuously by the newly read sweep.
- 13 Enable Record to disk to automatically save read sweeps onto disk. Click ? to get further What's This help.
- 14 Start Click to read and display sweeps repeatedly.
- Click or press **Esc** to stop reading new sweeps.

Changing Sweep Settings

Select **Options – Sweep Settings**, or double click in the trace or status block. As a result, a dialog box pops up allowing you to:

- change the unit and range of the sweep in the active window;
- view the memory trace (if available from the instrument memory);
- view the upper/lower limit line from the instrument or select a new upper/lower limit line from file.



Sets the range, unit, and grid of the active sweep to default values.

It does not reset limit line selections.

For more information, click the 11 help.

Zooming In and Out on a Trace

Drag with the mouse in the graph to select and zoom in on the part of the trace you want to enlarge or use the following buttons:



Click to zoom in on a trace.

Use the scroll bars to select the part you want to view.



Click to zoom out on a trace (undoes one 'zoom in' step).



Click to reset zooming (undoes all 'zoom in' steps).

Copying Sweeps between Sweep Windows

To be able to do this you need at least two sweep windows (source and destination).

- 1 If there are multiple sweeps in the sweep window, click on the sweep you want to copy (to make it the active sweep).
- 2 Select Edit Copy Sweep to copy the sweep to the other sweep window. If there are multiple sweep windows, the Windows Selection dialog box pops up first.

You can also use the Windows 'drag & drop' feature:

- position the mouse pointer on the sweep in the source window and keep the left mouse button pressed;
- move (drag) the mouse pointer (and underlying sweep) into the destination window;
- release the left mouse button (drop).

Dropping a sweep on the FshView background creates a new sweep window.

Exporting Sweep Data to Other Programs

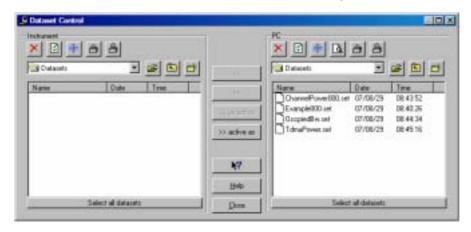
- 1 Click on the sweep you want to insert.
- 2 Select **Edit Copy Data** to copy the sweep data to the clipboard.
- **3** Switch to a spreadsheet program (e.g. Excel) or wordprocessor (e.g. Word).
- **4** Open or create a worksheet or a document and place the cursor where you want to insert the data.
- **5** Select **Edit Paste** to insert the data from the clipboard.
- 6 Click to save your spreadsheet or document.

You can also use the Windows 'drag & drop' feature:

- start up a spreadsheet or wordprocessor program;
- drag the desired sweep onto a worksheet or document, or onto its program button on the Windows taskbar;
- drop the sweep data on the worksheet or document.

Transferring Instrument Datasets

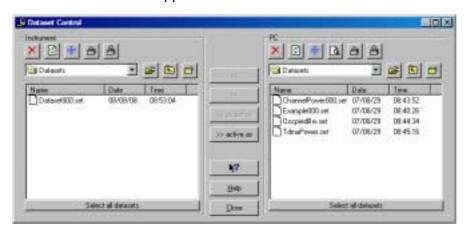
Click to transfer datasets to and from the instrument. As a result, the Dataset Control dialog box pops up.



Saving Datasets to the PC

First, save a dataset in the instrument (default DATASET000.set) by pressing the buttons **Save**, **F1**, and **F1** on the instrument.

Click to refresh the **Instrument** list. As a result, the datasets appear in the instrument frame list.



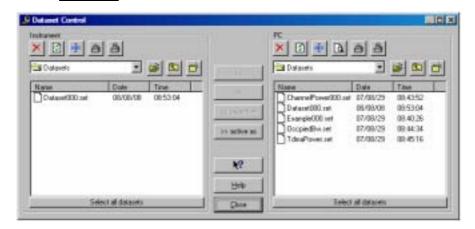
3 Select DATASET000.set from the Instrument list.



4 Select a subdirectory from the **PC** frame where to store the dataset file(s).

Notice that the default directory is \FSH4View\Datasets.

5 Click to transfer the selected dataset to the PC.



- 6 Select DATASET000.set from the PC list.
- 7 Click to preview the selected dataset in a window or double click on the name.
 - Click to close the preview window.

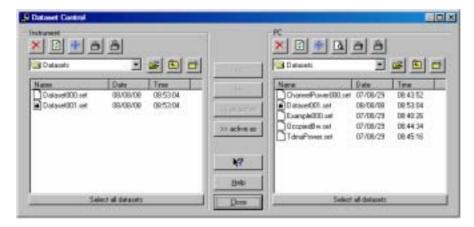
Uploading Datasets to the Instrument

- 8 Click and rename the selected dataset into DATASET001.set for example.
- 9 Click to lock the selected dataset; see lock sign in front of the name.

Note

A locked dataset cannot be deleted in the instrument.

Click to transfer the selected dataset to the instrument.

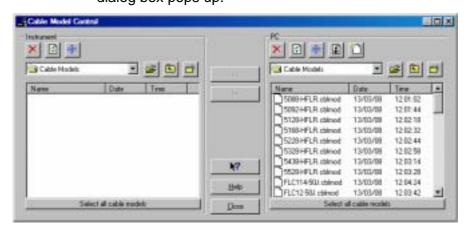


- **11** Select *DATASET000.set*, for example, from the **Instrument** list. Press the **Ctrl** button to select more files.
- Click to delete the selected dataset. As a result, a dialog box pops up for confirmation. Press the **Shift** button to select more files.
- 13 Yes Click to confirm the delete action.
- 14 Click to close the Dataset Control dialog box.

Using Cable Models for Distance To Fault

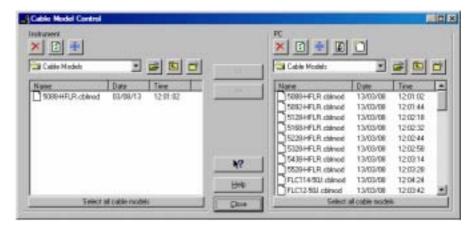
Transferring cable models to the instrument is possible only if DTF is available in the instrument.

Click to transfer cable models to and from the instrument. As a result, the Cable Model Control dialog box pops up.



Uploading Cable Models to the Instrument

- 2 Select **5088-HFLR.cblmod** from the **PC** list, for example. Press the **Ctrl** button to select more files.
- Click to transfer the selected cable model to the instrument.



FSH4View Users Manual

Editing Cable Models

4 Select 5088-HFLR.cblmod from the PC list.

Click to edit the selected cable model file. As a result, the Cable Model Editor dialog box pops up.

6 Change the cable model characteristics to your preference.

Click to save the changes. As a result, a dialog box pops up allowing you to browse for a different folder, if you want to.

Notice that the default folder is:

\FSH4View\Cable Models

8 OK Click to save to file.

9 Click to close the Cable Model Editor dialog box.

Tips

Click to create a new cable model file.

Click to delete the selected cable model file. Press the **Shift** button to select more files.

Select all cable models

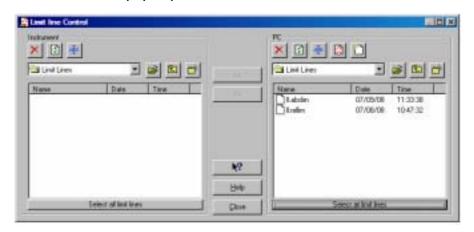
Click to select all cable models from the list.

Click to transfer the selected cable models from the instrument to the PC folder.

Click to close the Cable Model Control dialog box.

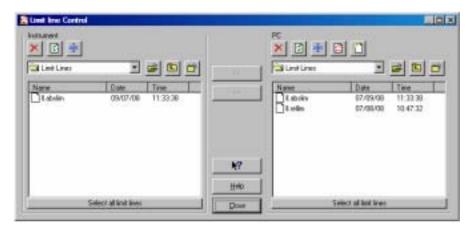
Using Limit Lines

Click to transfer limit lines to and from the instrument. As a result, the Limit Lines Control dialog box pops up.



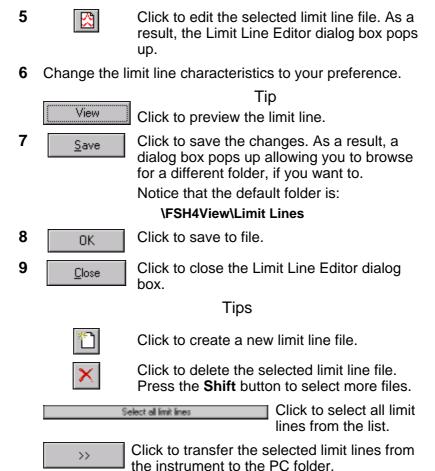
Uploading Limit Lines to the Instrument

- 2 Select *II.abslim* from the PC list, for example. Press the Ctrl button to select more files.
- Click to transfer the selected limit line to the instrument.



Editing Limit Lines

4 Select *II.abslim* from the PC list.



Controlling and editing Limit Tables works in the same way as 'Using Limit Lines' by clicking the limit table buttons and .

Click to close the Limit Line Control dialog

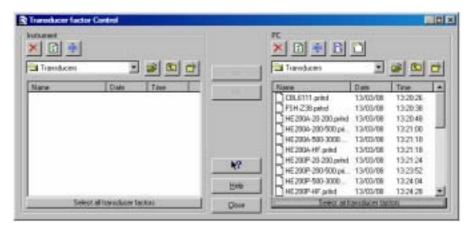
Close

box.

10

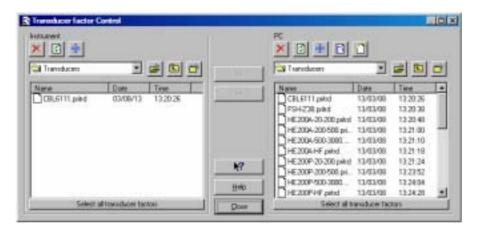
Using Transducer Factors

Click to transfer transducer factors to and from the instrument. As a result, the Transducer Control dialog box pops up.



Uploading Transducer Factors to the Instrument

- 2 Select CBL6111.pritrd from the PC list, for example. Press the Ctrl button to select more files.
- Click to transfer the selected transducer factor to the instrument.



Editing Transducer Factors

Select CBL6111.pritrd from the PC list.

5 Click to edit the selected transducer factor file. As a result, the Transducer Editor dialog box pops up. **6** Change the transducer factor characteristics to your preference. Tip View Click to preview the transducer factor. 7 Click to save the changes. As a result, a Save dialog box pops up allowing you to browse for a different folder, if you want to. Notice that the default folder is: \FSH4View\Transducer Factors 8 Click to save to file. 0K 9 Click to close the Transducer Editor dialog Close box. Tips Click to create a new transducer factor file. Click to delete the selected transducer factor file. Press the **Shift** button to select more files. Click to select all Select all transducer factors transducer factors from the list.

Click to transfer the selected transducer

factors from the instrument to the PC folder.

Click to close the Transducer Control dialog

>>

Close

box.

10

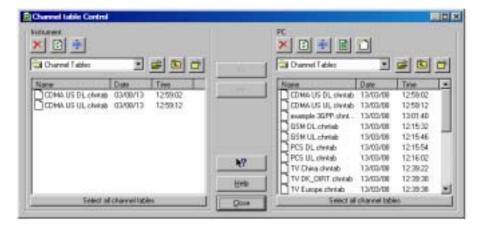
Using Channel Tables

Click to transfer channel tables to and from the instrument. As a result, the Channel Table Control dialog box pops up.



Uploading Channel Tables to the Instrument

- 2 Select CDMA US DL.chntab and CDMA US UL.chntab from the PC list, for example. Press the Ctrl button to select more files.
- Click to transfer the selected channel table to the instrument.



Editing Channel Tables

4 Select CDMA US DL.chntab from the PC list.

Click to edit the selected channel table file.
As a result, the Channel Table Editor dialog box pops up.

6 Change the channel table characteristics to your preference.

Click to save the changes. As a result, a dialog box pops up allowing you to browse for a different folder, if you want to.

Notice that the default folder is:

\FSH4View\Channel Tables

8 OK Click to save to file.

9 Click to close the Channel Table dialog box.

Tips

Click to create a new channel table file.

Click to delete the selected channel table file.
Press the **Shift** button to select more files.

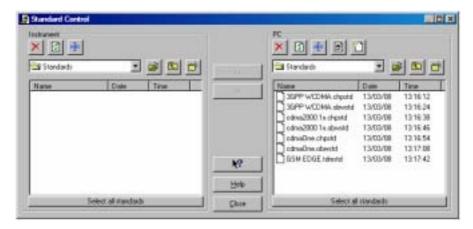
Click to select all channel tables channel tables from the list.

Click to transfer the selected channel tables from the instrument to the PC folder.

Click to close the Channel Table Control dialog box.

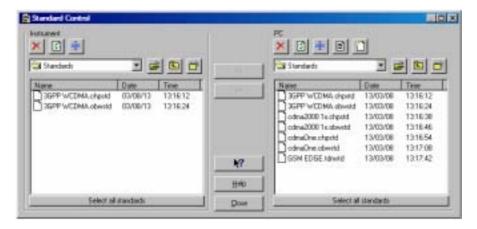
Using Standards

Click to transfer measurement standards, e.g. for telecommunication, to and from the instrument. As a result, the Standards Control dialog box pops up.



Uploading Standards to the Instrument

- 2 Select 3GPP WCDMA.chpstd and 3GPP WCDMA.obwstd from the PC list, for example. Press the Ctrl button to select more files.
- Click to transfer the selected standard to the instrument.



Editing Standards

4 Select 3GPP WCDMA.chpstd from the PC list.

Click to edit the selected standard file. As a result, the Standards Editor dialog box pops up.

6 Change the standard characteristics to your preference.

Click to save the changes. As a result, a dialog box pops up allowing you to browse for a different folder, if you want to.

Notice that the default folder is: \FSH4View\Standards

8 OK Click to save to file.

9 Click to close the Standards dialog box.

Tips

Click to create a new standard file.

Click to delete the selected standard file. Press the **Shift** button to select more files.

Select all standards

Click to select all standards standards from the list.

Click to transfer the selected standards from the instrument to the PC folder.

Click to close the Standards Control dialog box.

Printing Windows

Printing a Window

- 1 Click on the window you want to print.
- 2 Click to print the window.

Printing Multiple Windows on a Page

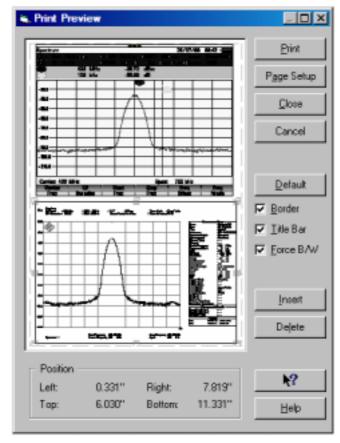
The Print Preview function enables you to preview a combination of windows on a page before printing.

- 3 Click on the window you want to print.
- 4 Click to preview the window on the page in the Print Preview window.



5 Check **Border** to add a border around the active window.

- 6 Check **Title Bar** to add the title of the active window.
- 7 Check Force B/W to switch from color to black & white (grey scale).
- Click to add more windows on a page. A dialog box appears allowing you to select another window.



9 Print Click to start printing.

To change printer settings, select File - Print Setup.

Saving to a File

You can save one window to a file.

- 1 Click on the window you want to save.
- 2 Click to save to file. As a result, the File Save dialog box appears.
- 3 Enter a name for the file in the File name box.
- 4 Enter a file extension (file format) in the **Save as type** box.

The following file formats are supported:

- BMP, PCX, PNG, WMF for saving graphical screen or sweep window data
- ◆ CSV, TXT for saving numerical sweep data (ASCII)
- SWP, SET for saving to Rohde & Schwarz data formats:
 - o SWP for sweep data
 - SET for measurement datasets
- CBLMOD for saving cable model data
- ◆ CHNTAB for saving channel table data
- ABSLIM, RELLIM for saving absolute, relative limit line data
- OBWSTD, CHPSTD, TDMSTD, CTNSTD, DVBSTD for saving occupied bandwidth, channel power, TDMA power, carrier to noise, DVB T/H Receiver standards data
- PRITRD, SECTRD, ISOTRD for saving primary, secondary, isotropic antenna transducer factor data
- ◆ DVBLIM for saving limit table data
- 5 Save Click to save to file.

For more information on file formats and other file formats (instrument data oriented, for example for cable models and limit lines), select **Index - File Formats** from the **Help** menu.

6 Click to open from file. As a result, the File Open dialog box appears.

Index

A	
ABSLIM file	18
В	
Bitmap-graphicsBMP file	
C	
Cable Model	27 38 32 33 38 38 22 19 20 14 38
D	
Dataset	15 18 19 26 17 22 38

FSH View Users Manual

E	
Excel	22
F	
File openingFile saving	
G	
GraphicsGreyscale	
H	
Help	3
1	
Installing Instrument Cable Model Instrument Channel Table Instrument Dataset Instrument Limit Line Instrument Limit Table Instrument Screen Instrument Standards Instrument Transducer Factor ISOTRD file	768124, 1611
L	
LAN Limit Line Limit Line Editor Limit Table Lower limit line	8, 28 29 12, 29
M	
Markers Measurement Result data Measurement Setup data	18
FSH View Users Manual	40

Memory trace	37
0	
OBWSTD fileOnline HelpOpen from file	3
P	
PCX file PNG file Print Preview Print Setup Printing a Window Printing Multiple Windows Printing Windows Print-Preview Window PRITRD file	38 36 36 36 36
R	
Record to disk Reference trace RELLIM file Running the FSH4Report Software Running the FSH4View Software	21 38 1
S	
Saving to a File Screen Screen Picture Screen Window SECTRD file SET file Show Datasets Spreadsheet Standard Editor Standards Sweep	4, 161638152235 .11, 34
Sweeh	5, 10

SWP file	38
Т	
TDMSTD file Test Report Titles Transducer Editor Transducer Factor TXT file	15 31 9, 30
U	
Upper limit lineUSB	
V	
View limit line View transducer factor	_
W	
What's This help Window Print Preview Screen WMF file Word Dataset Picture Screen Picture	36 16 38
Wordprocessor	17, 22
Z	
Zooming	21