Test and Measurement Division

FSH View

Software for FSH Spectrum Analyzers

Users Manual

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Chapter 1
Installing FSH View

Installing the FSH View Software

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

The setup program installs the FSH View software on PC's running Windows 98, ME (Millennium Edition), NT 4, 2000, and XP.

To install FSH View, insert the CD ROM into the CD ROM drive and choose **Install FSH View**.

To install FSH View from floppy after you created floppies from the CD ROM, insert the first floppy in the appropriate floppy disk drive and run **Setup.exe**.

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

Running the FSH View Software

Choose from **Start - Programs - FSH View - FSH View** to run the FSH View software.

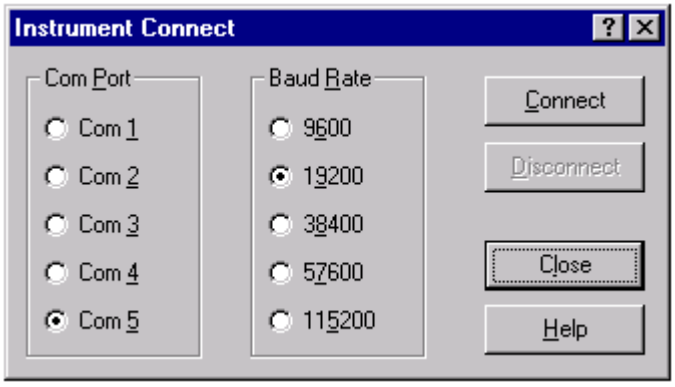
Choose from **Start - Programs - FSH View - FSH Report** to create a test report in Word.

Connecting the Spectrum Analyzer

The FSH View software communicates with your Spectrum Analyzer via the optically isolated RS-232 adapter/cable connected to a COM port of the PC (see Appendix).

During startup (except for the first time), the FSH View software 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.



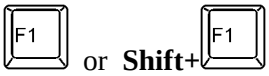
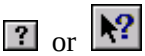
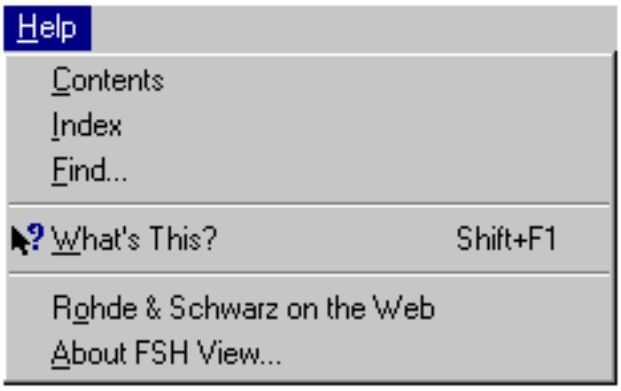
1. Select the **Com Port** that connects the instrument to the PC.
2. Select the desired **Baud Rate**.

   FSH View will automatically select a lower baud rate if connection cannot be established at the selected baud rate.
3. Click **Connect** to establish a connection with the instrument.

Chapter 2
Using FSH View

Using Online Help

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

	Press to get online help for the topic that has the focus.
	Click, move the mouse pointer on a topic, and click again to get "What's This" help.
	Click to get help.
	For example: Click **Help** - **Contents** and select a topic from the contents list.

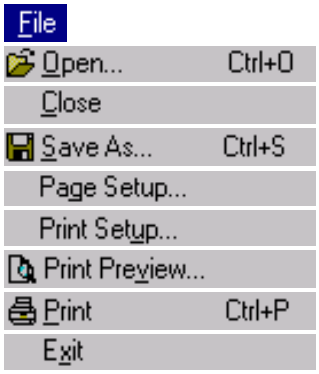
Note

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

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

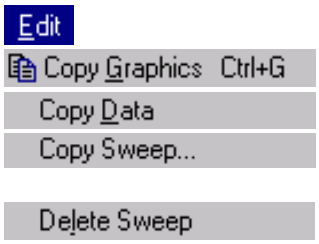
Introducing the FSH View Software

Menu Commands



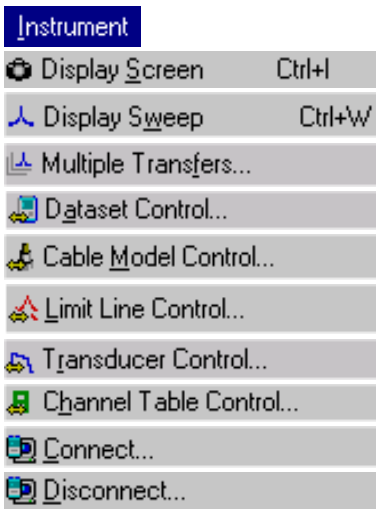
File menu commands:

Opens a file
Closes the active window
Saves window(s) to a file
Allows you to configure a page
Allows you to setup a printer
Previews the page (multiple windows)
Prints the page
Exits the FSH View software



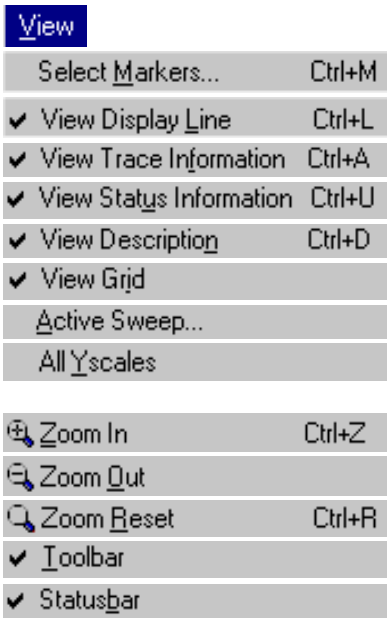
Edit menu commands:

Copies window bitmap data to clipboard
Copies numerical sweep data to clipboard
Copies the active window sweep into another identical sweep window
Deletes the active window sweep



Instrument menu commands:

Displays the active screen
Displays the active sweep
Displays multiple sweeps
Allows you to transfer datasets
Allows you to transfer cable models
Allows you to transfer limit lines
Allows you to transfer transducer factors
Allows you to transfer channel tables
Connects the instrument
Disconnects the instrument

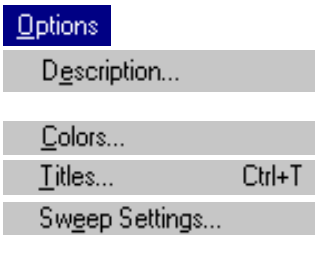


View menu commands:

Select Markers... Ctrl+M	Selects sweep markers + data
View Display Line Ctrl+L	Shows/hides the display line
View Trace Information Ctrl+A	Shows/hides sweep trace data
View Status Information Ctrl+U	Shows/hides sweep status data
View Description Ctrl+D	Shows/hides the description
View Grid	Shows/hides the sweep grid
Active Sweep...	Selects the active sweep
All Yscales	Selects all Y-scales or only the Y-scale of the active sweep
Zoom In Ctrl+Z	Zooms in on the window trace(s)
Zoom Out	Zooms out on the window trace(s)
Zoom Reset Ctrl+R	Undoes all previous zoom steps
Toolbar	Shows/hides the tool bar
Statusbar	Shows/hides the status bar

Tools menu commands:

Cable Model Editor...	Allows you to edit cable model data
Limit Line Editor...	Allows you to edit limit line data
Transducer Editor...	Allows you to edit transducer factor data
Channel Table Editor...	Allows you to edit channel table data

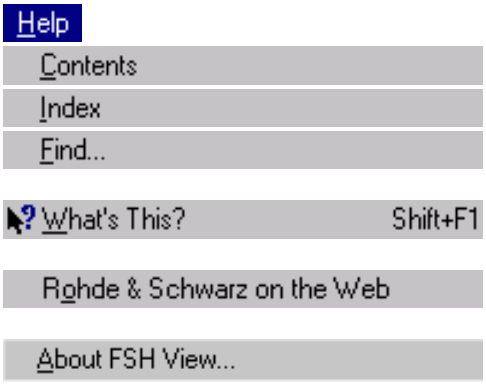


Options menu commands:

Description...	Allows you to change the number of text characters on a description line
Colors...	Allows you to change window colors
Titles... Ctrl+T	Allows you to change window titles
Sweep Settings...	Allows you to change active sweep settings

Window menu commands:

Cascade	Arranges windows in a cascading pattern
Tile Horizontal	Arranges windows one above another
Tile Vertical	Arranges windows side by side
Auto Tile	Automatically arranges windows
Arrange Icons	Automatically arranges icons (minimized windows)
Default Size	Sets the active window to its initial height and width
Close	Closes the active window
Close All	Closes all windows



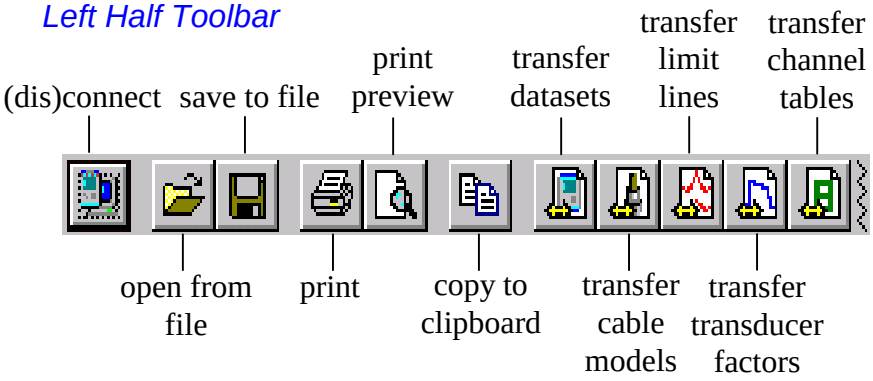
Help menu commands:

Contents	Shows online help contents
Index	Shows online help index
Find...	Enables you to find text in the online help
What's This?	Enables the “What’s This?” help information
Rohde & Schwarz on the Web	Activates the Rohde & Schwarz web site
About FSH View...	Shows information about the FSH View software

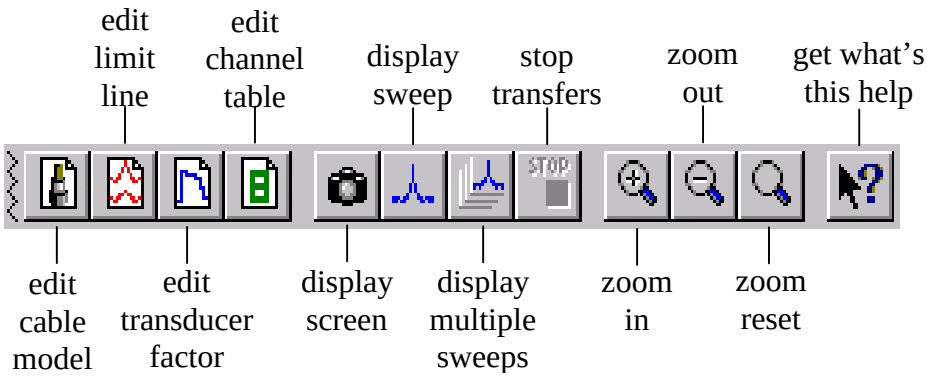
Toolbar Buttons

By clicking the buttons on the toolbar, you can transfer data directly from/to the Spectrum Analyzer or process the data.

Left Half Toolbar



Right Half Toolbar

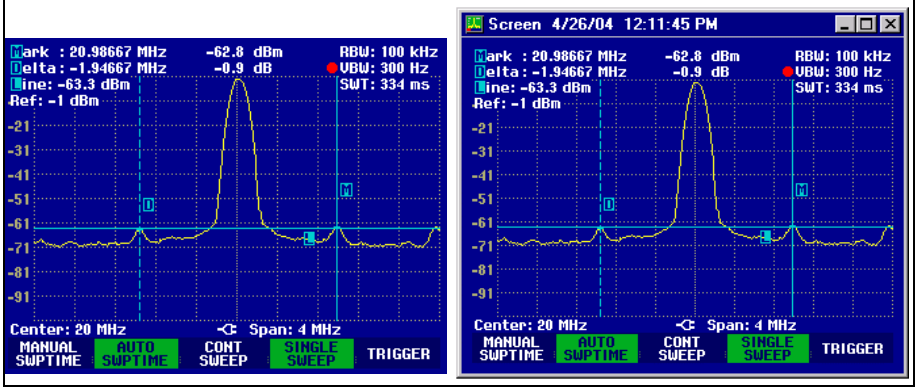


Instrument Screens

Type: bitmap graphics from the instrument screen (pixel-format)

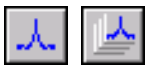
Use: to create documents and reports

Screen ➔ **Screen Window**



Refer to Documenting Screens.

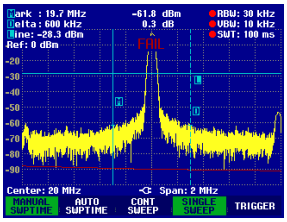
Sweeps

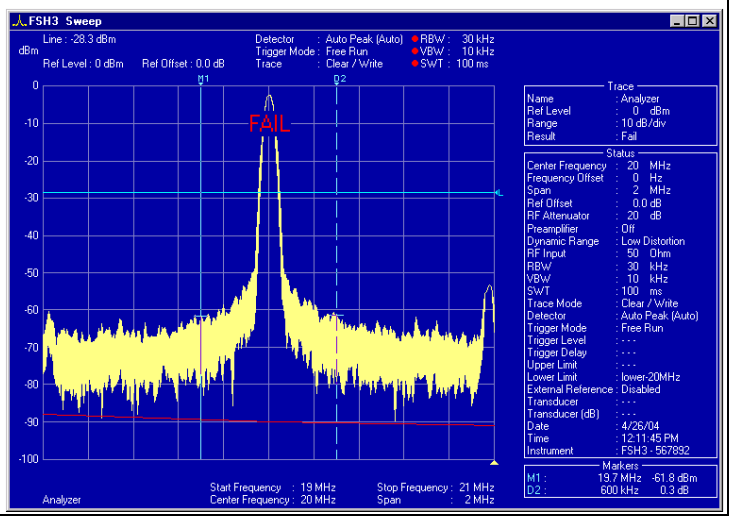


Type: numerical trace points to generate graphs

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

Sweep on instrument ➔ **Sweep Window**





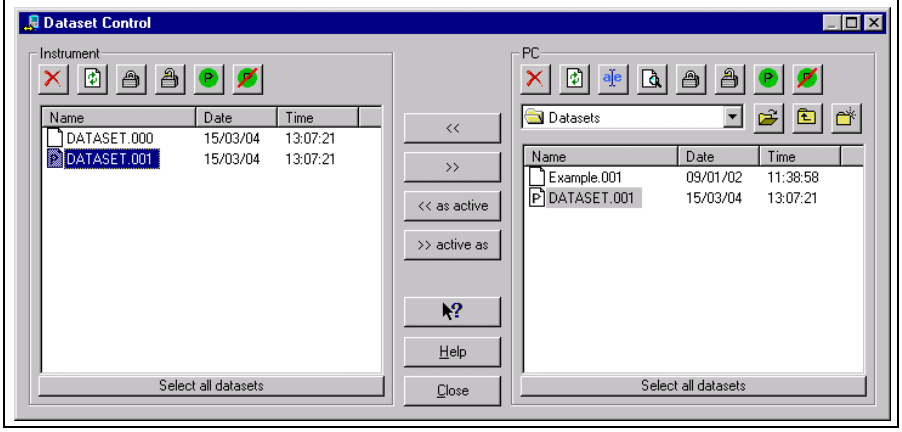
Refer to Analyzing Sweeps.

Instrument Datasets

Type: sweep and setup data

Use: to retrieve and send back instrument datasets

Dataset ←→ **Dataset file(s)**



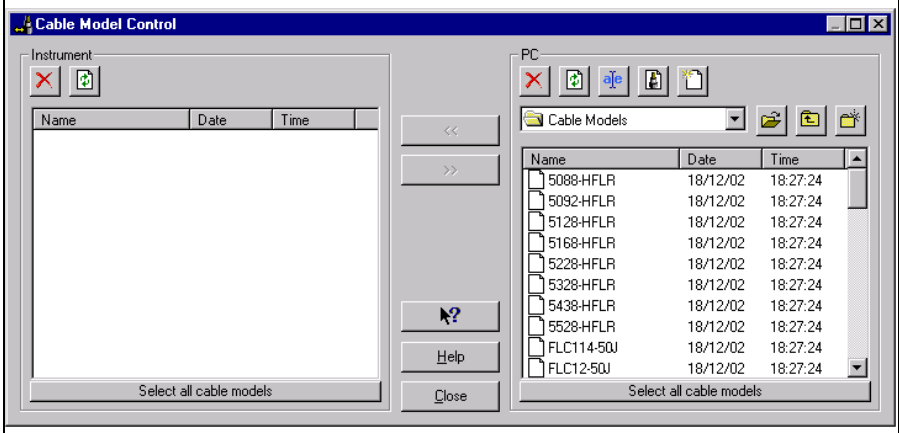
Refer to Transferring Instrument Datasets.

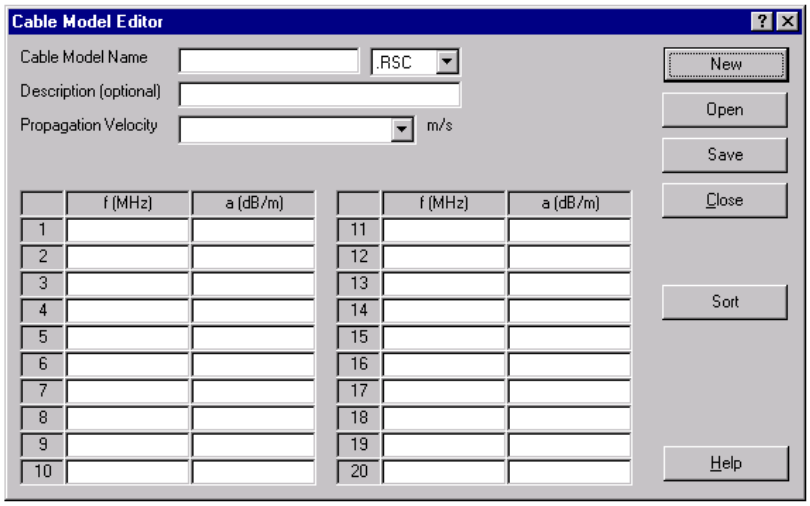
Cable Models

Type: cable model data

Use: to retrieve, edit, and send back instrument cable models

Cable model ←→ **Cable model file(s)**





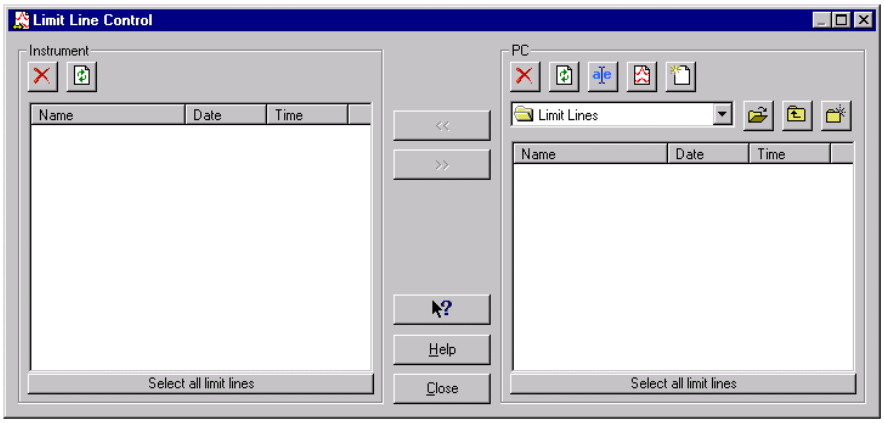
Refer to Using Cable Models for Distance To Fault.

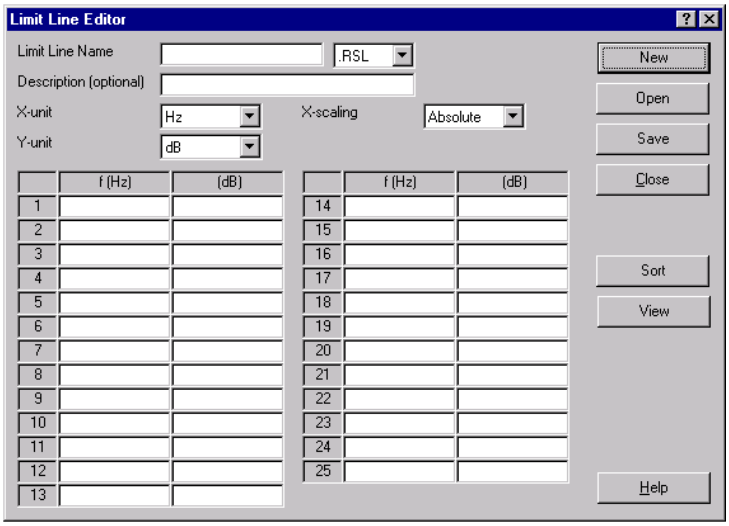
Limit Lines

Type: limit line data

Use: to retrieve, edit, and send back instrument limit lines

Limit line ←→ **Limit line file(s)**





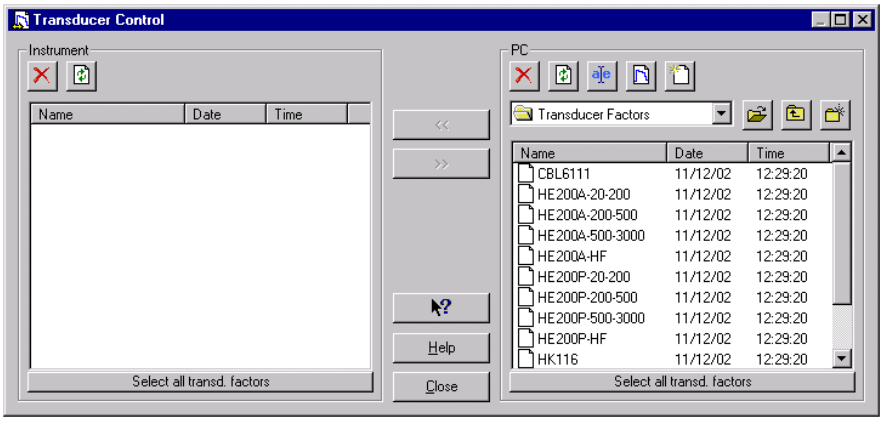
Refer to Using Limit Lines for pass/fail testing.

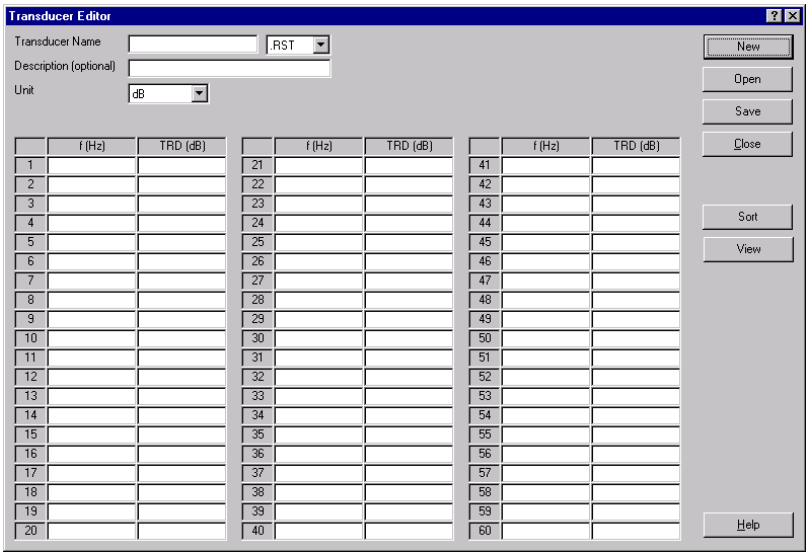
Transducer Factors

Type: transducer factor data

Use: to retrieve, edit, and send back instrument transducer factors

Transducer factor ←→ **Transducer factor file(s)**





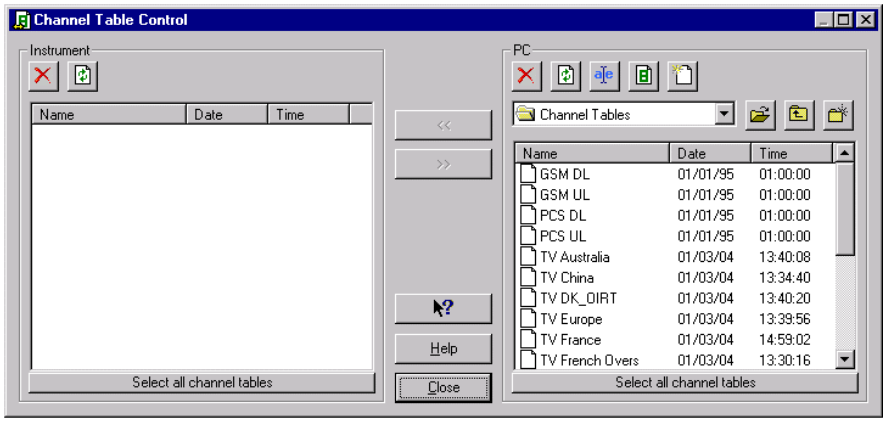
Refer to Using Transducer Factors to correct sweep points.

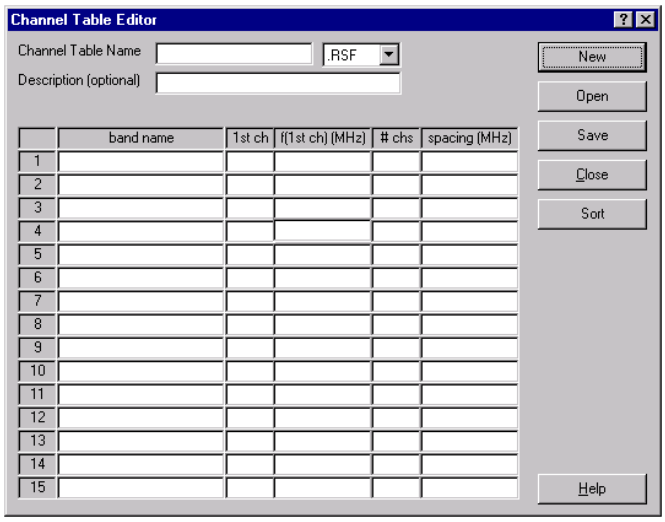
Channel Tables

Type: channel table data

Use: to retrieve, edit, and send back instrument channel tables

Channel Table ←→ **Channel Table file(s)**





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

Creating a Test Report

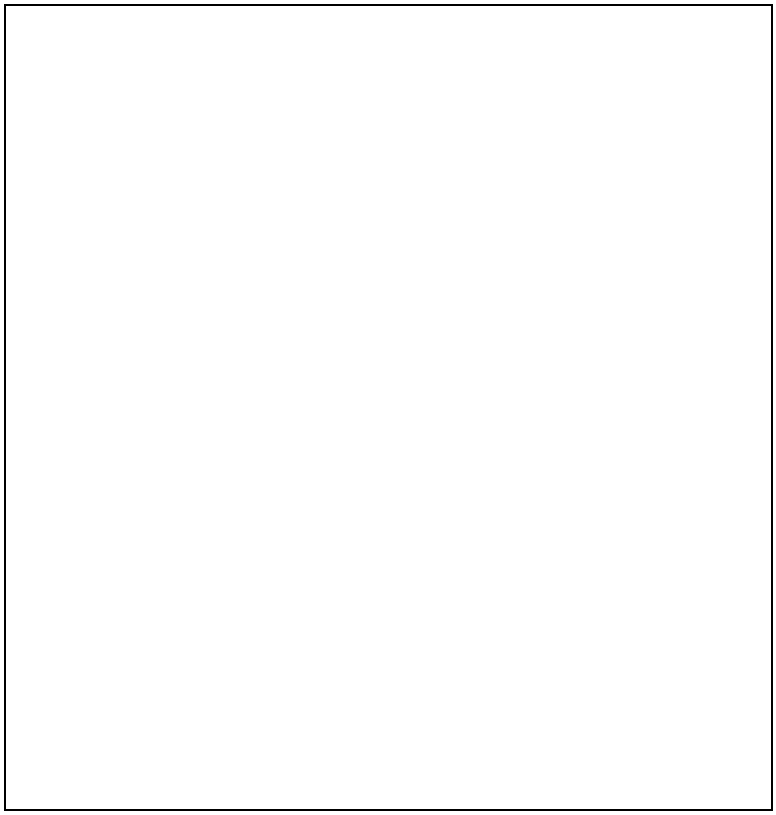
1 Choose from Start - Programs – FSH View to create a test report.

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.

3 Click to insert the active instrument screen in black & white or color . As a result, FSH View 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.



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

2 Select **View – View Status Information** to view or hide the status block.

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

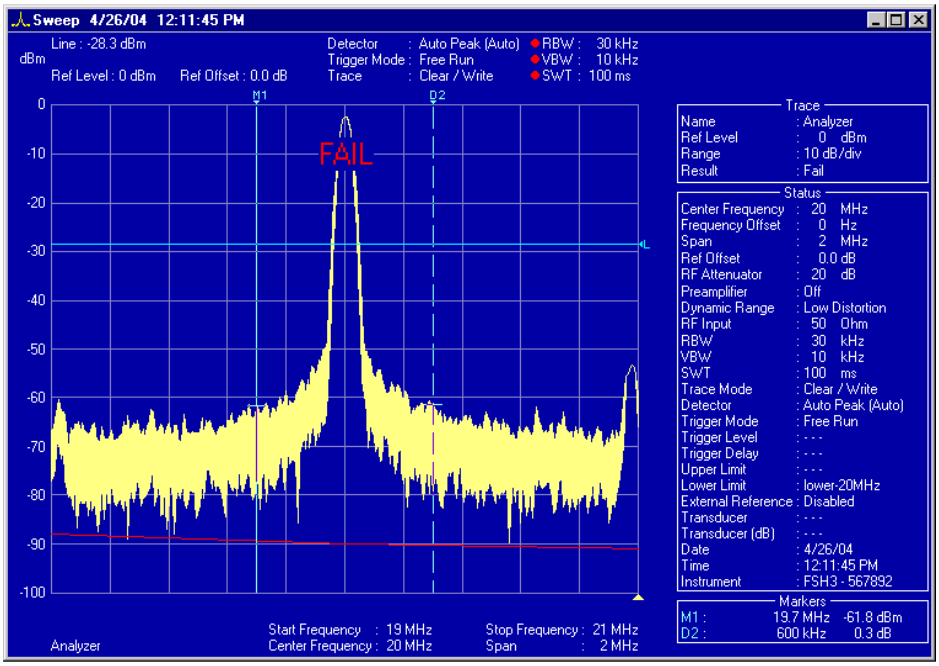
In the same way, you can insert sweep windows into a document.

Analyzing Sweeps

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

Displaying Sweeps on the PC

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



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

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 Trace Information** to show or hide the trace block.

4 Select **View – View Status Information** to show or hide the status block.

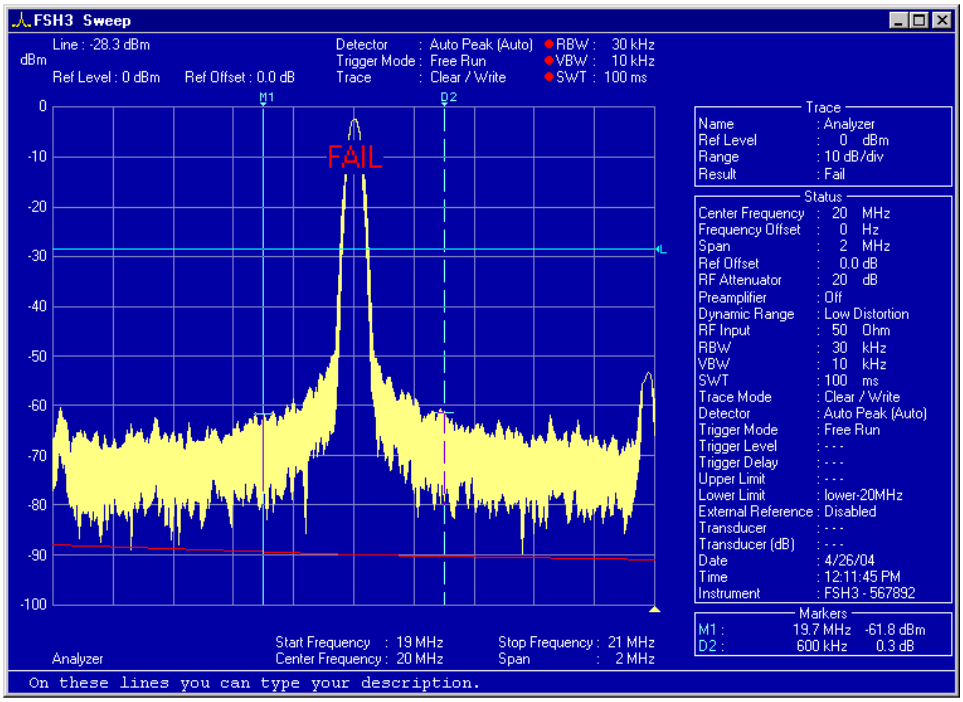
5 Select **View – View Display Line** to show or hide the horizontal display line from the instrument.

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.

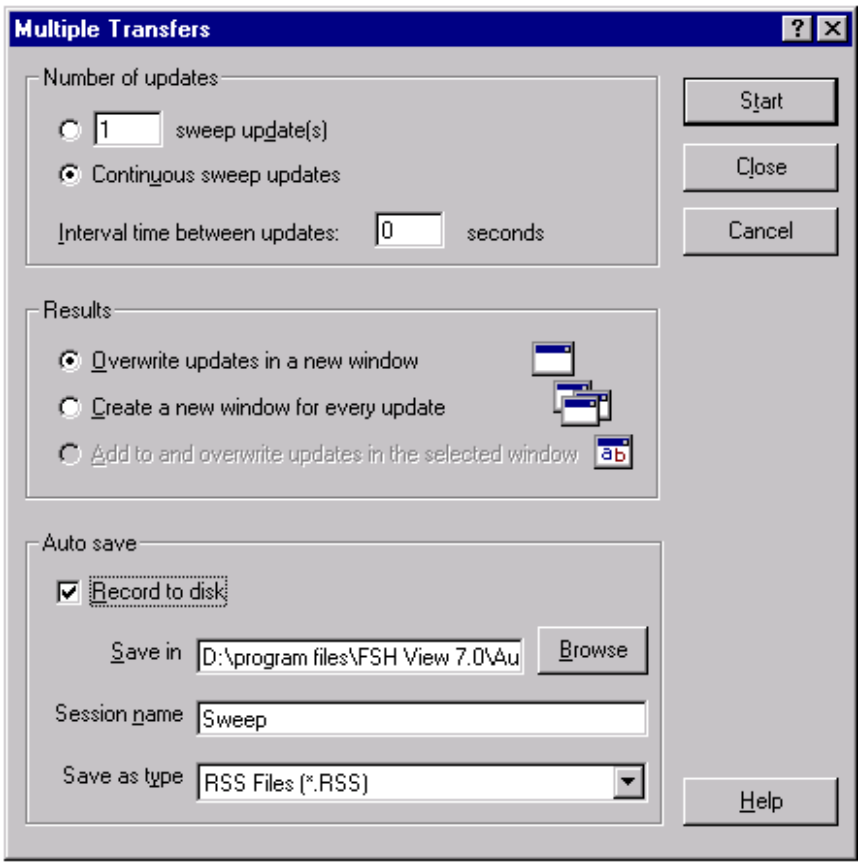
9 To change window titles, select **Options - Titles**.



Tip

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

10 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

Click to read and display sweeps repeatedly.

15

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 reference 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.

For more information, click the ? 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.

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).

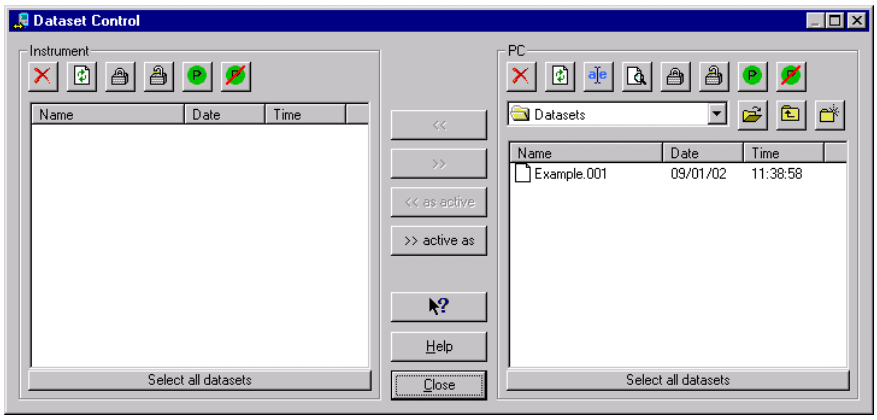
Click to reset zooming (undoes all 'zoom in' steps).

Inserting Sweep Data into a Spreadsheet

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.
4. Open or create a worksheet and place the cursor where you want to insert the data.
5. Select **Edit - Paste** to insert the data into the worksheet with the numerical readings arranged in columns.
6. Click to save your spreadsheet.

Transferring Instrument Datasets

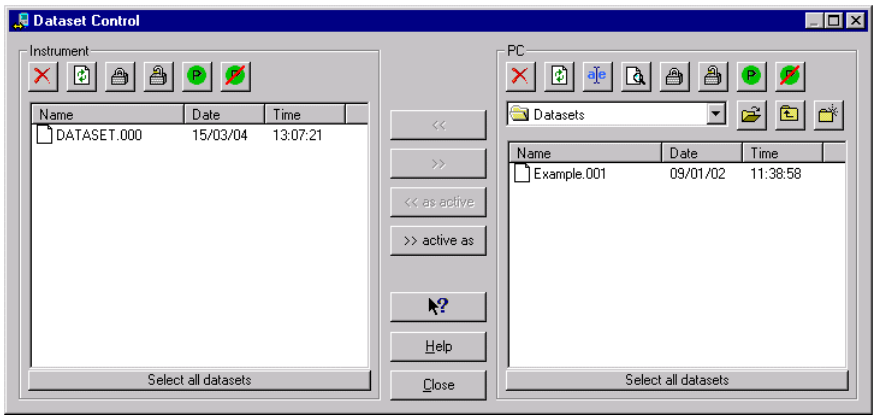
1 Click to transfer datasets to and from the instrument. As a result, the Dataset Control dialog box pops up.



Saving Datasets to the PC

First, save a dataset in the instrument (default DATASET.000) by pressing the buttons **Save**, **F1**, and **F1** on the instrument.

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



3 Select ***DATASET.000*** from the **Instrument** list.

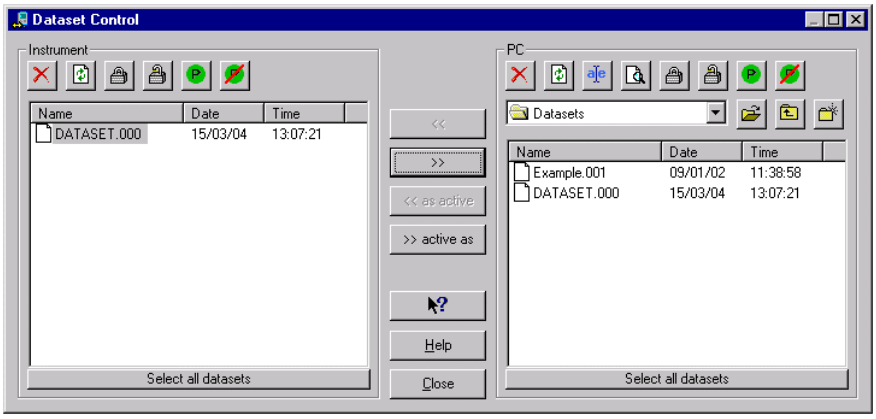
Click to select all datasets from the list.

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

Notice that the default directory is **\FSH View\Datasets**.

5

Click to transfer the selected dataset to the PC.



6 Select ***DATASET.000*** 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 DATASET.001 for example.

9

Click to lock the selected dataset; see lock sign in front of the name.

Note

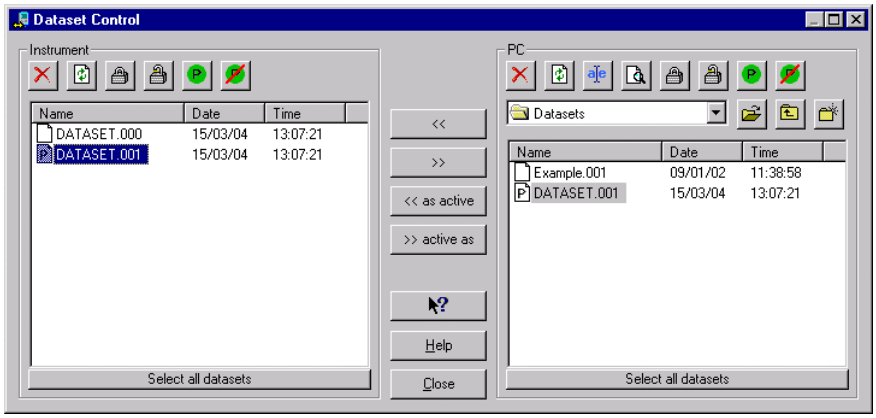
A locked dataset cannot be deleted in the instrument.

10 Click to make the selected dataset the preset dataset; see preset sign in front of the name.

Note

*A preset dataset is automatically locked (*preset *property overrules* locked *property).*

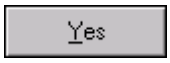
11 Click to transfer the selected dataset to the instrument.



12 Select the locked ***DATASET.001***, for example, from the **Instrument** list.

Using FSH View, you can delete locked datasets in the instrument.

13 Click to delete the selected dataset. As a result, a dialog box pops up for confirmation.

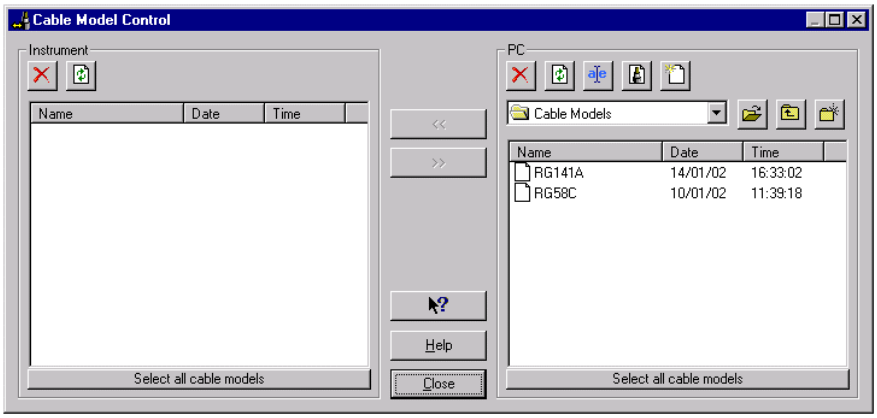
14  Click to confirm the delete action.

15 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.

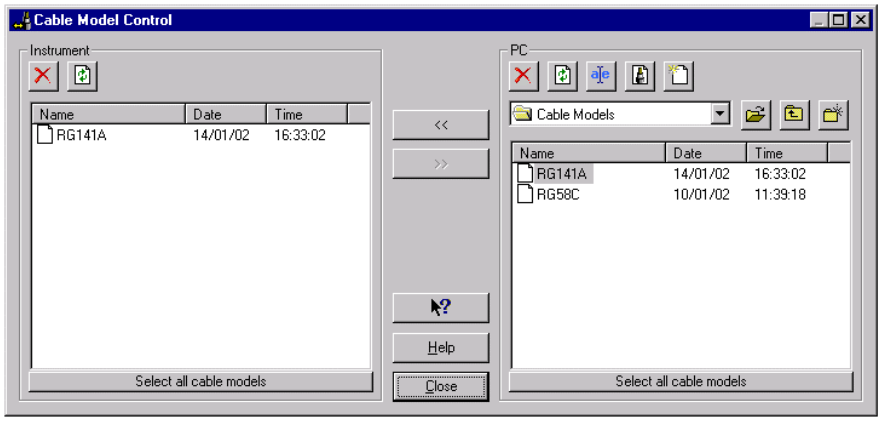
1 Click to transfer cable models to and from the instrument. As a result, the Cable Model Control dialog box pops up.



Uploading Cable Models to the Instrument

2 Select ***RG141A*** from the **PC** list, for example.

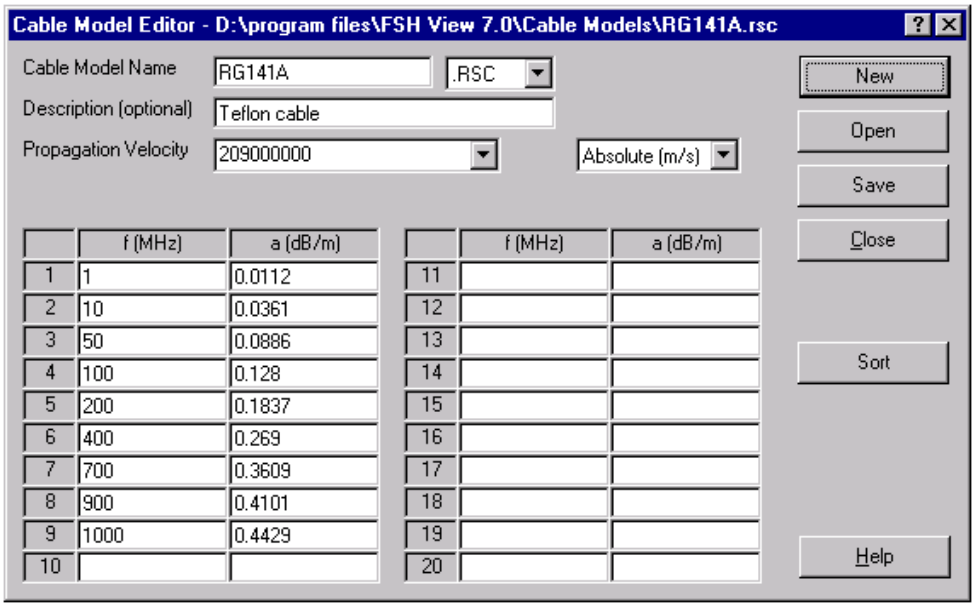
3 Click to transfer the selected cable model to the instrument.



Editing Cable Models

4 Select ***RG141A*** from the **PC** list.

5 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.

7 Change the **Cable Model Name** to RG141B, for example.

8

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:

\FSH View\Cable Models

9

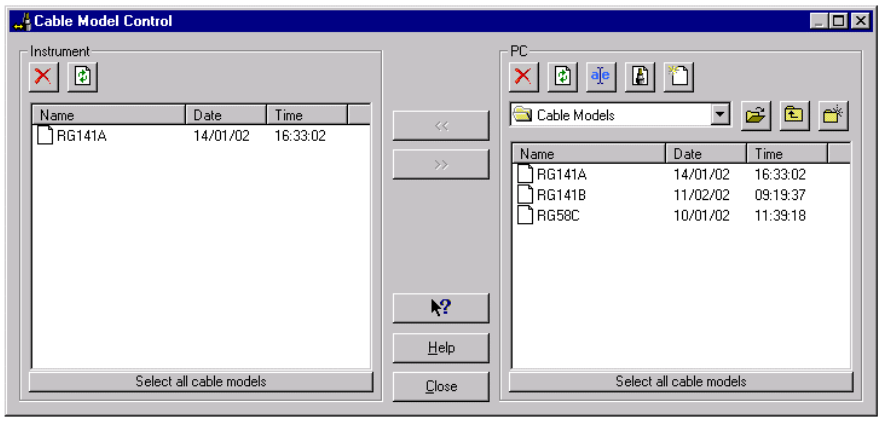
Click to save to file.

10

Click to close the Cable Model Editor dialog box.

Tip

Click to create a new cable model file.



11 Select ***RG141A*** from the **PC** list, for example.

12 Click to delete the selected cable model file.

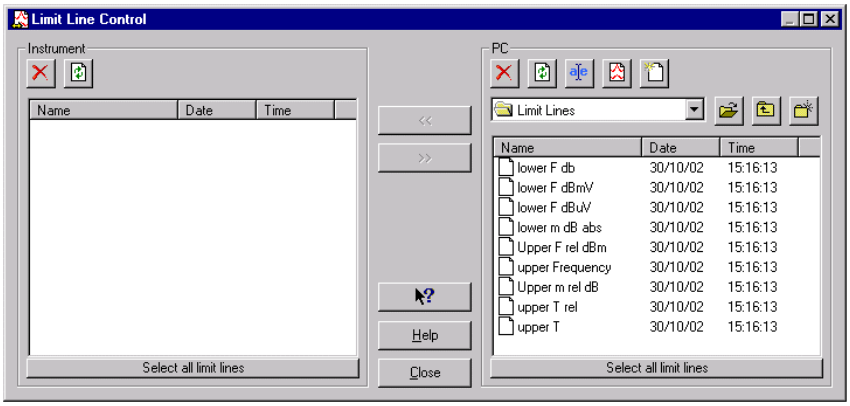
13 Click to select all cable models from the list.

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

15 Click to close the Cable Model Control dialog box.

Using Limit Lines

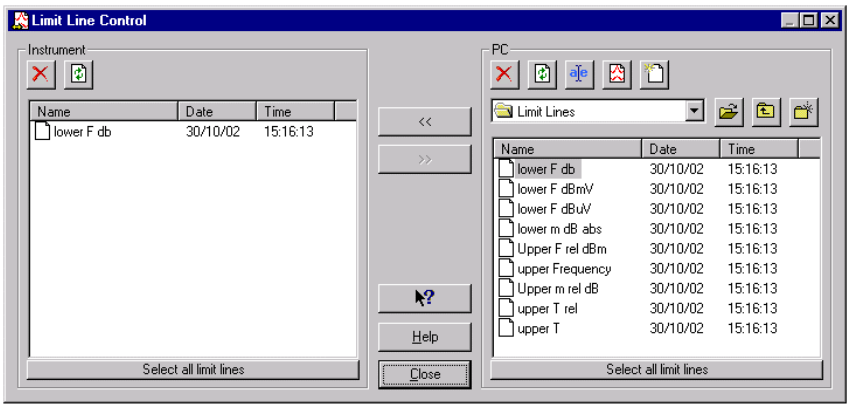
1 Click to transfer limit lines to and from the instrument. As a result, the Limit Lines Control dialog box pops up.



Uploading Limit Lines to the Instrument

2 Select ***lower F db*** from the **PC** list, for example.

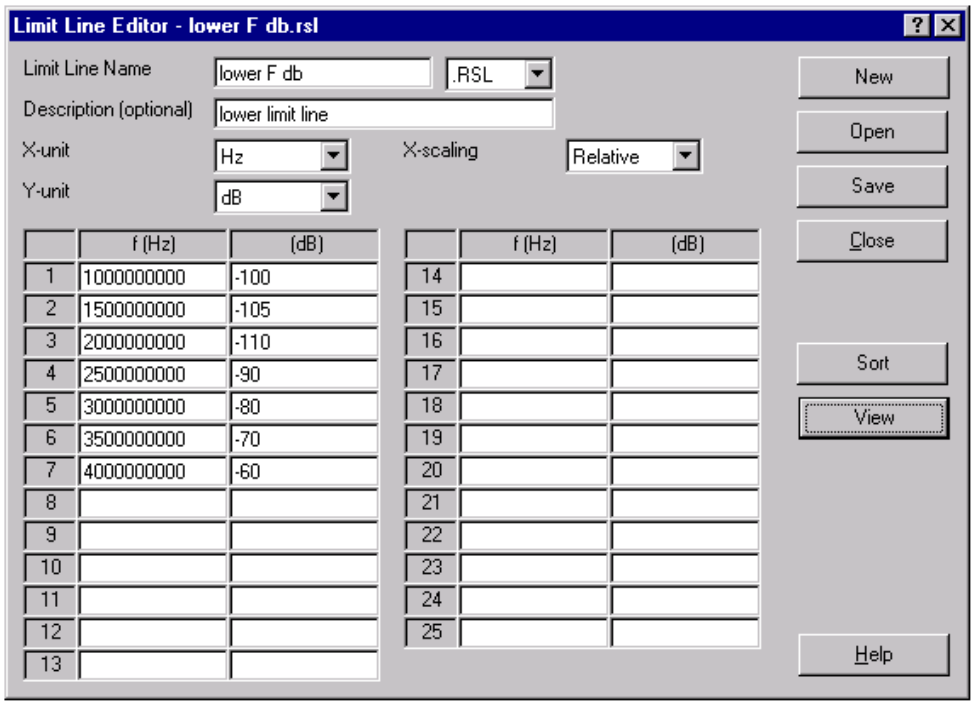
3 Click to transfer the selected limit line to the instrument.



Editing Limit Lines

4 Select ***lower F db*** from the **PC** list.

5 Click to edit the selected limit line file. As a result, the Limit Line Editor dialog box pops up.



6 Change the limit line characteristics to your preference.

Tip

View Click to preview the limit line.

7 Change the **Limit Line Name** to ***lowlimit F db***, for example.

8 Save 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:

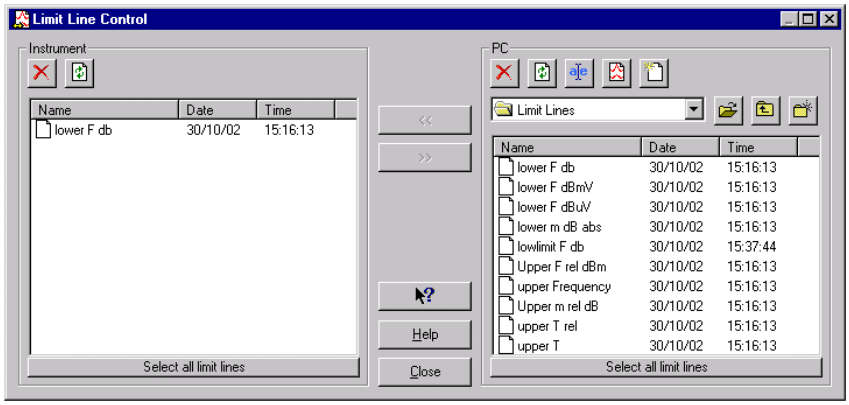
\FSH View\Limit Lines

9 OK Click to save to file.

10 Close Click to close the Limit Line Editor dialog box.

Tip

Click to create a new limit line file.



11 Select ***lower F db*** from the **PC** list, for example.

12 Click to delete the selected limit line file.

13

Click to select all limit lines from the list.

14

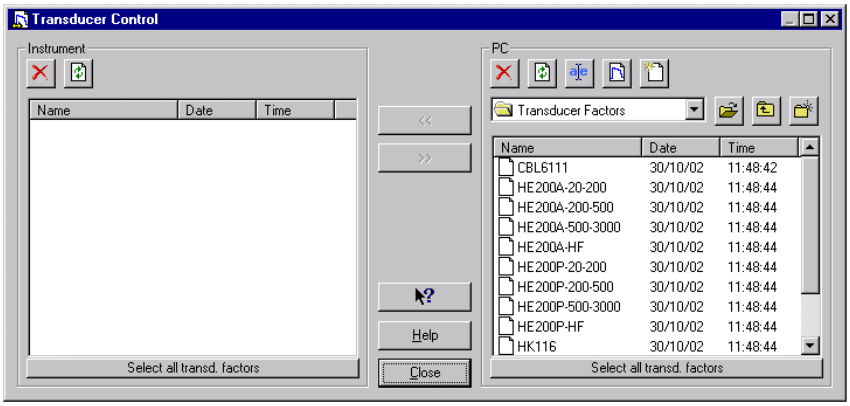
Click to transfer the selected limit lines from the instrument to the PC folder.

15

Click to close the Limit Line Control dialog box.

Using Transducer Factors

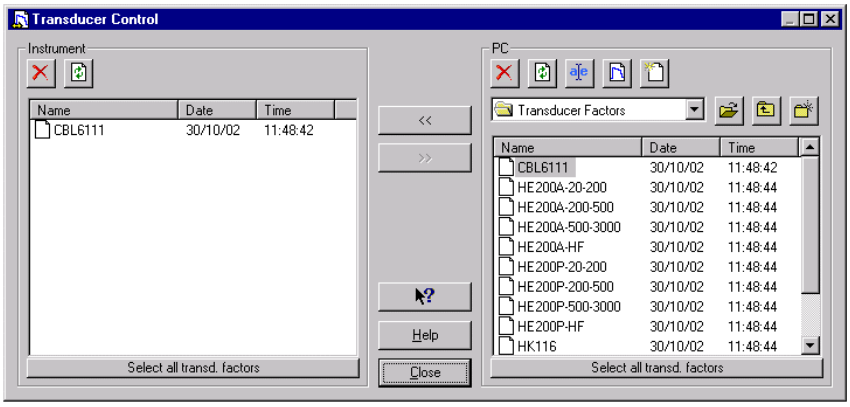
1 Click to transfer transducer factors to and from the instrument. As a result, the Transducer Control dialog box pops up.



Uploading Transducer Factors to the Instrument

2 Select ***CBL6111*** from the **PC** list, for example.

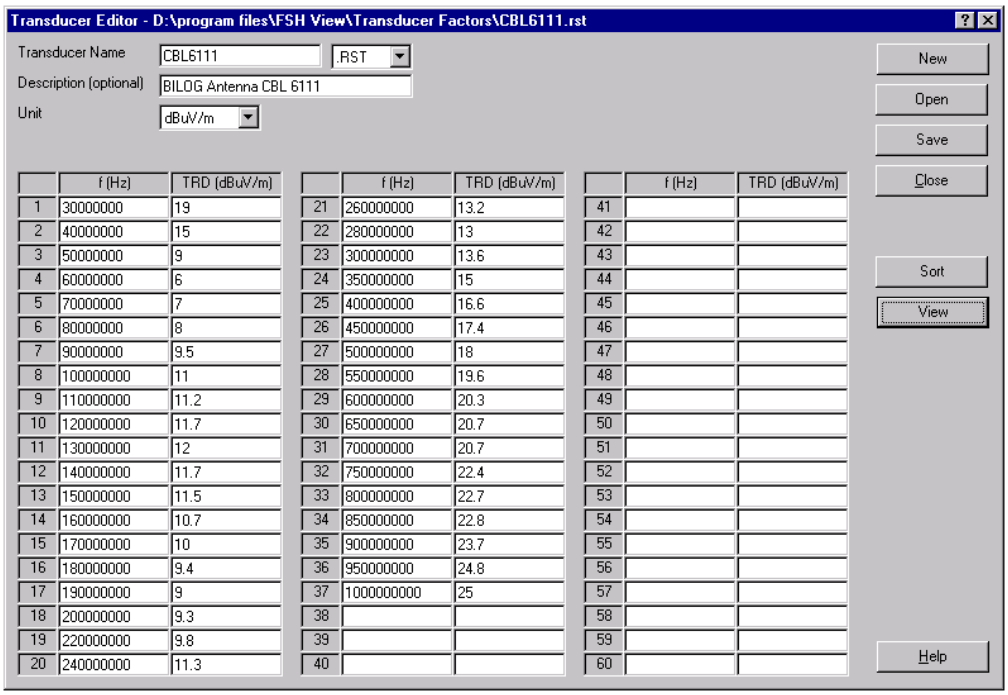
3 Click to transfer the selected transducer factor to the instrument.



Editing Transducer Factors

4 Select ***CBL6111*** from the **PC** list.

5 Click to edit the selected transducer factor file. As a result, the Transducer Editor dialog box pops up.



	f (Hz)	TRD (dBuV/m)		f (Hz)	TRD (dBuV/m)		f (Hz)	TRD (dBuV/m)
1	30000000	19	21	260000000	13.2	41		
2	40000000	15	22	280000000	13	42		
3	50000000	9	23	300000000	13.6	43		
4	60000000	6	24	350000000	15	44		
5	70000000	7	25	400000000	16.6	45		
6	80000000	8	26	450000000	17.4	46		
7	90000000	9.5	27	500000000	18	47		
8	100000000	11	28	550000000	19.6	48		
9	110000000	11.2	29	600000000	20.3	49		
10	120000000	11.7	30	650000000	20.7	50		
11	130000000	12	31	700000000	20.7	51		
12	140000000	11.7	32	750000000	22.4	52		
13	150000000	11.5	33	800000000	22.7	53		
14	160000000	10.7	34	850000000	22.8	54		
15	170000000	10	35	900000000	23.7	55		
16	180000000	9.4	36	950000000	24.8	56		
17	190000000	9	37	1000000000	25	57		
18	200000000	9.3	38			58		
19	220000000	9.8	39			59		
20	240000000	11.3	40			60		

6 Change the transducer factor characteristics to your preference.

Tip

View Click to preview the transducer factor.

7 Change the **Transducer Name** to ***CBL6111A***, for example.

8 Save 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:

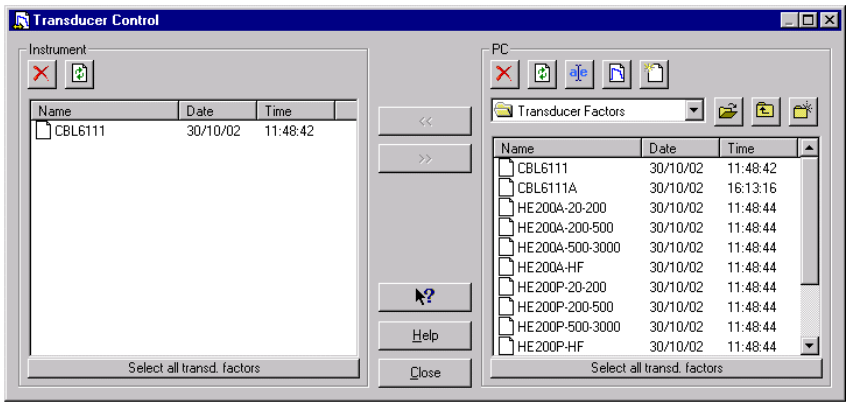
\FSH View\Transducer Factors

9 OK Click to save to file.

10 Close Click to close the Transducer Editor dialog box.

Tip

Click to create a new transducer factor file.



11 Select ***CBL6111*** from the **PC** list, for example.

12 Click to delete the selected transducer factor file.

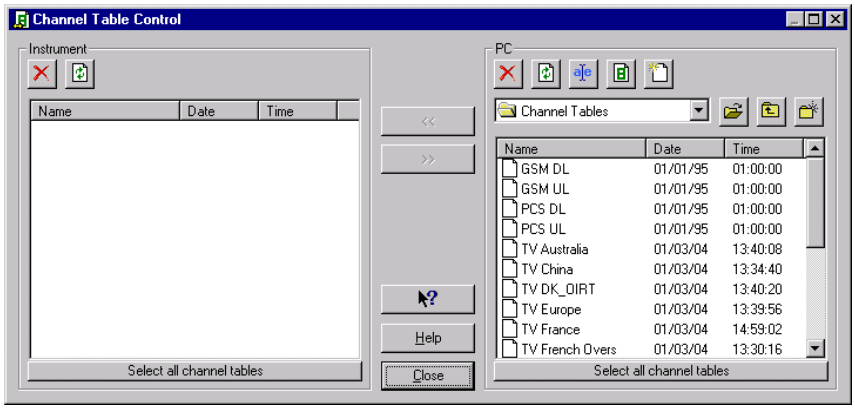
13 Select all transd. factors Click to select all transducer factors from the list.

14 >> Click to transfer the selected transducer factors from the instrument to the PC folder.

15 Close Click to close the Transducer Control dialog box.

Using Channel Tables

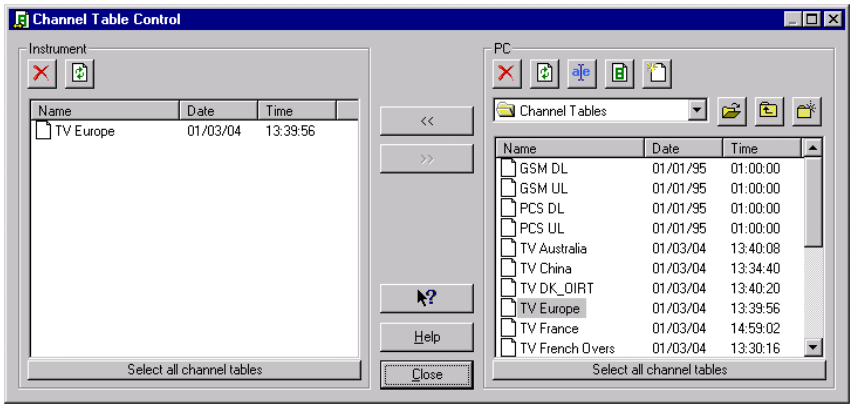
1 Click to transfer channel tables to and from the instrument. As a result, the Channel Table Control dialog box pops up.



Uploading Channel Tables to the Instrument

2 Select ***TV Europe*** from the **PC** list, for example.

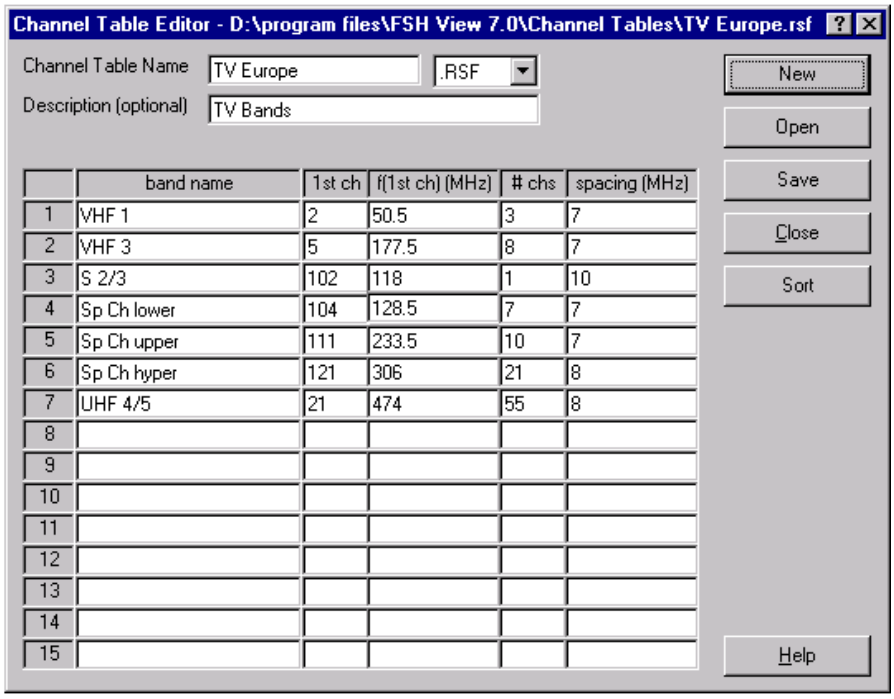
3 Click to transfer the selected channel table to the instrument.



Editing Channel Tables

4 Select ***TV Europe*** from the **PC** list.

5 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.

7 Change the **Channel Table Name** to ***TV Europe2***, for example.

8

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:

\FSH View\Channel Tables

9

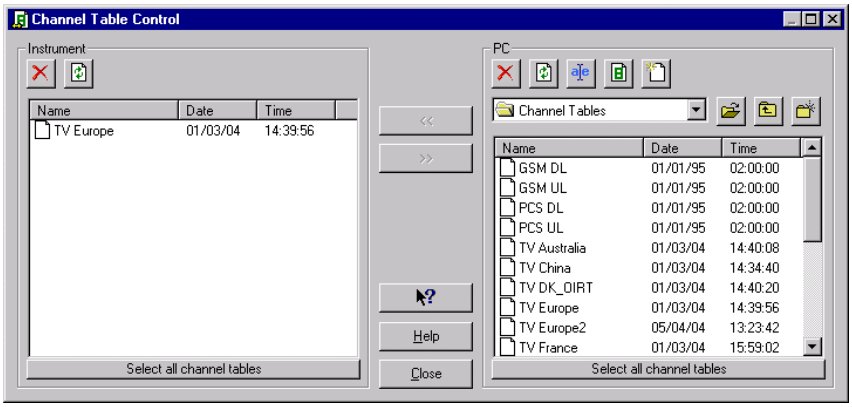
Click to save to file.

10

Click to close the Channel Table dialog box.

Tip

Click to create a new channel table file.



11 Select ***TV Europe*** from the **PC** list, for example.

12 Click to delete the selected channel table file.

13

Click to select all channel tables from the list.

14

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

15

Click to close the Channel Table Control dialog box.

Printing Windows

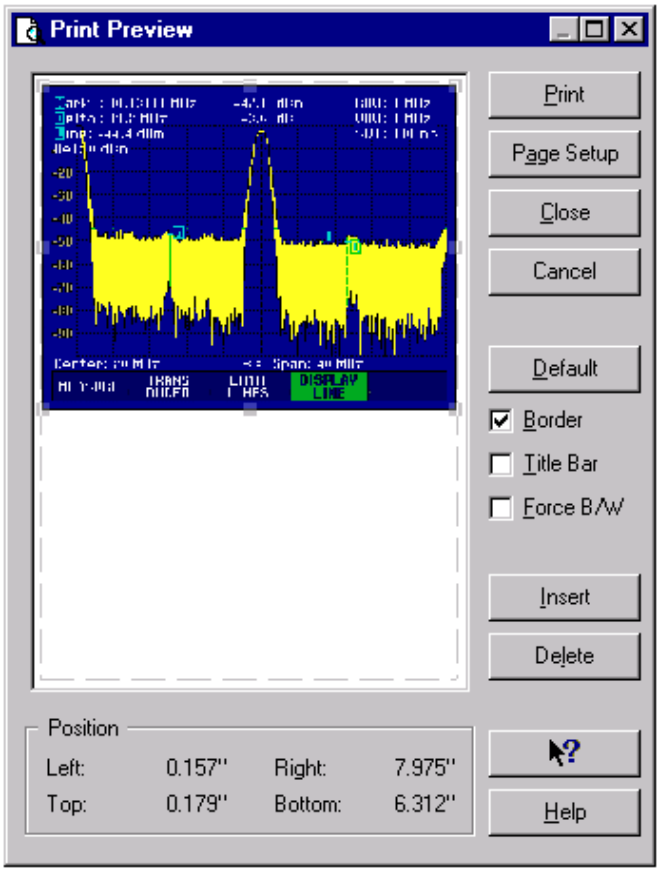
Printing a Window

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.



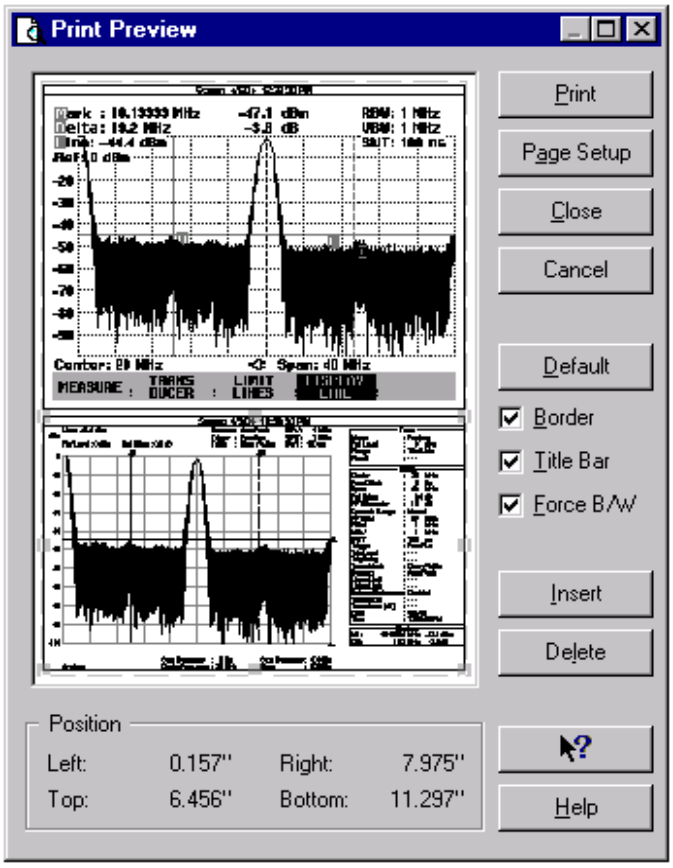
5 Check **Border** to add a border around the active window.

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).

8

Click to add more windows on a page. A dialog box appears allowing you to select another window.



9

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 a graphical bitmap of a screen or sweep window
   - **CSV**, **TXT** for saving numerical sweep data (ASCII)
   - **RSC**, **RSD**, **RSF**, **RSL**, **RSS, RST** for saving to Rohde & Schwarz data formats:
     - **RSC** for Cable models
     - **RSD** for Datasets (sweep + settings)
     - **RSF** for Frequency Channel Tables
     - **RSL** for Limit lines
     - **RSS** for Sweeps
     - **RST** for Transducer factors
5.

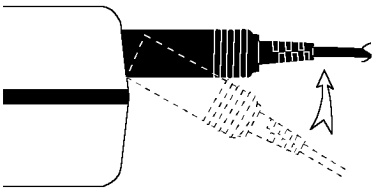
Click to save to file.

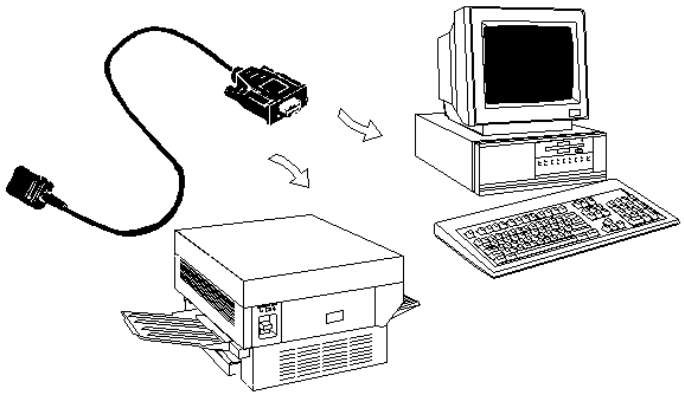
For more information on file formats, select **Index** - **File Formats** from the **Help** menu.

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

Appendix A
Optically Isolated RS-232 Interface (optional)

Interface Connections





Interface Specifications

Type of interface:

RS-232 / EIA-232-D, optically isolated

States:

- SPACE = 0 Light
- MARK = 1 No light

Wavelength = 800 nm

RXD signal levels:

- SPACE = +10V to +4V Max. input = +15V
- MARK = -4V to -10V Min. input = -15V

Other signal levels:

- SPACE = +12V to +7V Max. input = +15V
- MARK = -7V to -12V Min. input = -15V

Handshake method:

XON/XOFF, software handshake only

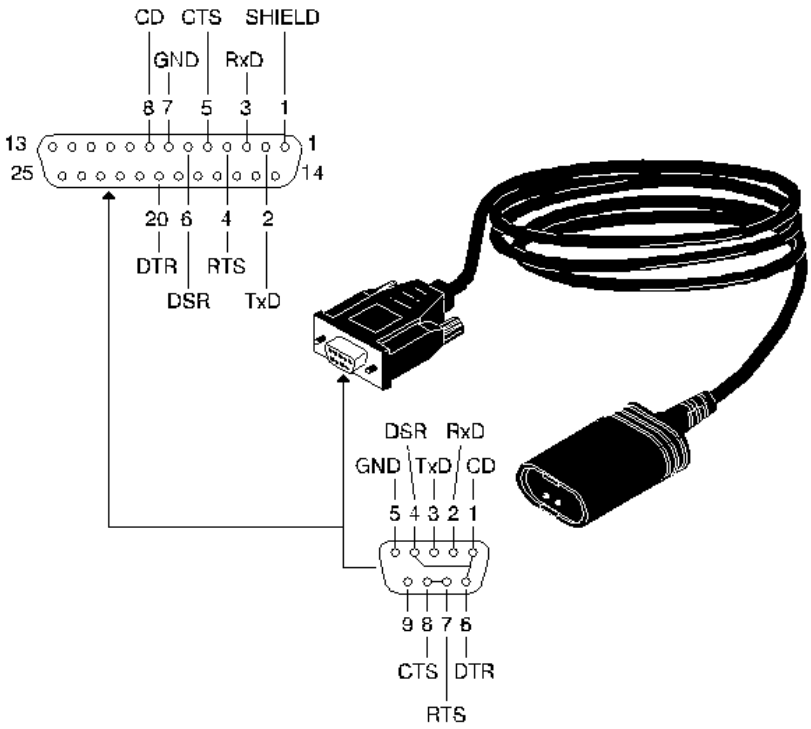
Environmental:

- Meets requirements of MIL-T-28800D Type III, Class 3
- Temperature: Operating = 0 °C to +50 °C
  Storage = -20 °C to +70 °C

Mechanical:

- Cable length = 1.5 m
- Weight = 0.14 kg

Interface Cable



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