Products: FSE, FSIQ, FSP, FSU, FSQ, ZVR, ZVC, ZVA, ZVB, ESIB, ESPI, ESCI, FSMR, FSUP, SMIQ, ABFS

GPIBShot

Taking Screenshots

Via IEC/IEEE Bus

GPIBShot is a program for taking and storing screenshots from the Rohde & Schwarz FSx, ESx, ZVx and SMIQ instrument families. Screenshots and trace data can be displayed directly on the PC, stored on the hard disk, or floppy drive and saved to the clipboard.

Contents

1 Overview

GPIBShot is a program for taking and storing screenshots from the Rohde & Schwarz FSx, ESx, ZVx and SMIQ instrument families. Screenshots and trace data can be displayed directly on the PC, stored on the hard disk, or floppy drive and saved to the clipboard.

The program supports data exchange with Mircosoft Word® and Microsoft Excel®.

*) For the CMU and CMD instrument families, refer to the corresponding Application Notes (for CMU: 1MA45, for CMD: 1CM30) to copy hardcopies to your PC.

2 Software Features

GPIBShot is used for taking screenshots from Rohde & Schwarz instruments via the IEC/IEEE bus. The software offers:

- GPIB address selection to access the instrument (for instruments supported refer to section 7 – Supported devices)

- The "HARDCOPY" function from the instrument; a screenshot formatted as a WMF file, displayed, and stored:
  - as a file with date and time
  - in the clipboard
  - in Microsoft Word.

- The "READ TRACE DATA" function from the instrument; numeric trace data, displayed, and stored:
  - as a file with date and time
  - in the clipboard
  - in Microsoft Excel.

- Printing: the screenshot can be sent directly to a printer.

- Plotter simulation if the device does not support the hardcopy function (only for R&S approved devices).

- Run GPIBShot directly from the Microsoft Windows® command line to save time, and use GPIBShot with other software as command-line called utility.

3 Hardware and Software Requirements

Hardware Requirements

The software runs on a PC with the following features:

- CPU: 486, Pentium or better

- RAM: 16 Mbyte or more

- Monitor: VGA colour monitor

- IEEE bus: IEC/IEEE-bus interface Rohde & Schwarz IEEE 488.2 bus interface PS-B4, 1006.6207.04 or National Instruments GPIB

Software Requirements

- Microsoft 32-bit operating system (Windows 95 / 98 / NT 4.0 / 2000 / ME)

- GPIB (IEEE-bus) driver installed

4 Connecting the Computer and Instrument

Connect the computer on which GPIBShot is to run to the instruments from which you want to make screenshots. Several instruments can be connected at the same time, such as an FSP Spectrum Analyzer and a ZVR Network Analyzer. Selection is via the instrument's IEC/IEEE-bus address. Make sure that the addresses are unambiguously specified; an address can not be assigned twice.

5 Installing the Software/Parameter Settings

Presettings and Installation

The Microsoft Installer is used to install GPIBShot.

It is not neccessary to install the Microsoft Installer under Windows 2000, or if you have already installed software with the Microsoft Installer.

To Install MS Installer:

- under Windows 95 and Windows 98: run InstMSIA. EXE

- under Windows NT: run InstMSIW.EXE

Start SETUP.MSI to install the program.

During installation, program files are copied to a directory of your choice. An icon is created in your start menu for running GPIBShot.
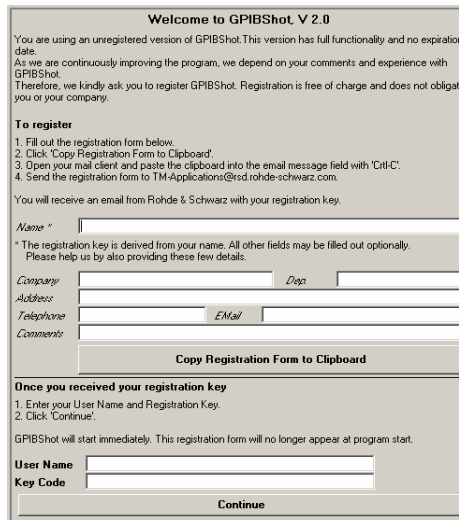
Instrument Parameters

Except for the HARDCOPY settings, the program does not modify any parameters on the instrument. You can use any instrument settings with which you wish to create the screenshot.

6   Operating the Software

Getting started

1.   Start GPIBShot.EXE. If you are using GPIBShot for the first time, the following window will appear:

2.   Please follow the instructions on the screen. After clicking "Continue" or entering Name and Key, the user interface will appear:
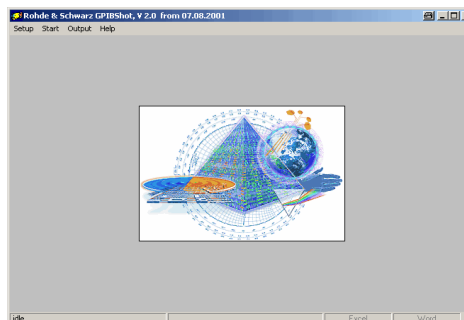
Basic setup

Before you can use GPIBShot, you must configure the program to match your setup.

The software settings are made in the Setup menu:

Choose "**Search instruments"** to display a list of connected instruments. A box with the search results will pop up. Click the green LED of the instrument you want to use.

You can also select the address of the instrument to hardcopy from "**Address**". If you have previously selected "**Search instruments**", you see a list of connected instruments with firmware versions. If GPIBShot finds an unknown device, it will be shaded.

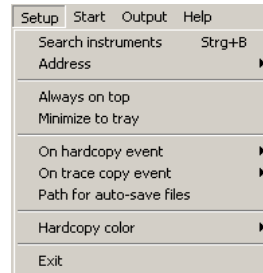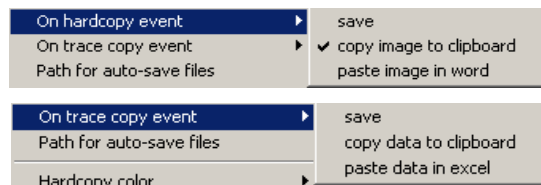With the next 2 menu items you select the actions to perform automatically when getting hardcopies or trace data:

- "**Save**" saves the hardcopy / trace data to disk (the path is selected via **"Path for auto-save files"**).

- "**Copy .. to clipboard**" copies the hardcopy / trace data to the PC clipboard.

- "**Paste .. in word / excel"** pastes the recorder data at the current cursor position in Word / Excel. If numeric data are pasted in Excel, the cursor will move one position right in order to make multiple-data paste-in possible.

Use **"Path for auto-save files"**, to select the directory for saving trace data and screen copies.

Use **"Hardcopy color"** to select "b/w" for black-and-white- or "color" for colored hardcopies.

All basic setups, such as window position or selected menu items, are saved when GPIBShot is closed and re-loaded at the next startup.

Making Hardcopies / Reading Trace Data

Run GPIBShot from the Start menu.
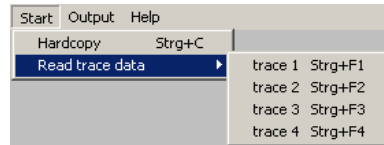
To create hardcopy of the current screen of the selected instrument, select **"Start - Hardcopy"**. The following operations are performed:

- A screencopy of the instrument is displayed on your PC screen.

- If selected, the file "HARDCOPY-<*date*, *time*>.WMF" is created in your current selected directory.

- If selected, graphics are transferred to the clipboard. Use CRTL+V to insert the graphics directly into any other application (eg word processing).

- If selected, the hardcopy is auto-pasted in word. The right field in the status bar gets dark when the grafic is pasted, and stays gray if no action was done.

To create trace data, select **"Start - Read trace data"**. The following operations are performed:
- The numeric trace data is read from the instrument and displayed on your PC screen.

- If selected, the file "TRACE-<data, time>.TXT" is created in your current selected directory.

- If selected, trace data is transferred to the clipboard.

- If selected, the trace-data is auto-pasted in excel. The left field in the status bar gets dark when the grafic is pasted, and stays gray if no action was done.

NOTES:
- If non-active traces are read, the software and/or the analyzer might crash. In this case please restart GPIBShot.

- The function Read Trace Data assumes a one-to-one X/Y relation. So, trace data such as trellis or eye diagrams cause produce results.

- The function Read Trace Data does not work with SMIQ.

The traces are displayed and stored as shown below:

Device	Mode	Display	Saving
FSx ESx	analyzer	normal trace	X-value : Y- value
	dig. demod., 1D	normal trace	X- value: Y- value
	dig. demod., 2D	vectors with decision points	X- value: I : Q
	dig. demod., symbol table	symbols, represented as bits, separated with points	1 symbol per line, bit-display
ZVx	1D-display (e.g. phase,...)	as on display	X- value: Y- value
	2D-display (e.g. smith)	as IQ display	X- value: Y- value

*) for some display types such as trellis,...., displaying results is not possible

The X-value can be frequency or time, with ZVR also level.

Printing hardcopies / Storing data

Store or print data from the output menu.

- "**Output – Print Hardcopy"** outputs the graphics to a printer connected to the computer. The copy fills only 3/4 of the page to leave space for some notes on the printout. A border is added to the picture.

- **"Output – Save hardcopy / trace data"** opens a standard dialog window to select the path and name of the file to store the hardcopy / trace data.

Note

- By copying graphics from the clipboard, the vector information from the WMF file may be lost, depending on the application you want to paste. You can always use the file stored on your harddisk to get the data in vector graphic (WMF) format.

- Only the default Windows printer can be used. To switch over to another printer, you have to select this printer as "default printer" in your Windows setup.

- When making colored hardcopies, the default color settings of the instrument may result in poor output; the marker for example may not be visible. Use B/W or set up the following colors in order to get better results:
  TRACE: "RED"
  MARKER: "RED"
  All other colors can be set to DEFAULT.

- The stored data in the user directory (trace data and hardcopies) are not deleted automatically. Please delete them when they are no longer used in order to save disk space.

Command-Line Operation

To speed up frequently used commands (e.g. taking screenshots only from one instrument), you can pass the command via the command line to GPIBShot. The following commands are available:

```
/{Number between 1 and 31}    set IEEE address
/COLOR                        switch to color mode
/BW                           switch to b/w mode
/SCREEN                       take a screen shot
/TRACE{1..4}                  read out trace data
/HIDE                         supress trace display on PC
/SHOW                         shows window again
/END                          terminates the program
/NAME=<name>                  specify the name of the file to generate
```

All combinations ot the commands are possible. The command line is parsed serial.

Example: Calling "GPIBSHOT.EXE /HIDE /20 /COLOR /NAME=IMG1 /SCREEN /NAME=DAT1 /TRACE2 /END" takes a colored hardcopy, stored as "IMG1.WMF", and stores the data of trace 2 with the filename "DAT1.TXT" of IEEE device 20 without displaying the graphical user interface.

7   Additional Information

Please contact **TM-Applications@rsd.rohde-schwarz.com** for comments and further suggestions.

8 Supported devices

EMI Test Receiver		
ESPI	1142.8007.xx	all firmware versions
ESIB	1088.7490.xx	Firmware >= 2.02
ESCI	1166.5950.xx	
Spectrum Analyzer		
FSEx	Various	firmware >= 1.65
FSP	1093.4495.xx	all firmware versions
FSU	1129.9003.xx	
FSUP	1166.3505.xx	Phase noise meas. system
FSQ	1155.5001.xx	
FSMR	1166.3311.xx	
Signal Analyzer		
FSIQ	1119.500x.xx	firmware >= 1.9
Vector Network Analyzer		
ZVx	various	firmware >= 1.3
Vector Signal Generator		
SMIQ0x	various	firmware >= 5.10
Baseband Fading Simulator		
ABFS	1114.8506.02	

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