User Manual

Tektronix

TDSPRT1
Enhanced Printing Application

071-0204-01

This document applies to software version 1.0.0
and above.

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Preface

The *TDSPRT1 Enhanced Printing Application* manual contains the following information:

- a brief description of the application
- installation instructions
- basic operation of the application
- an example that demonstrates how to use the application

Related Documentation

Your oscilloscope user manual provides operating instructions for general oscilloscope features.

Conventions

This manual uses the following conventions:

- This manual refers to the TDSPRT1 Enhanced Printing Application as either the Enhanced Printing Application or as the application.
- When steps require that you make a sequence of selections using front panel controls and menu buttons, an arrow (→) marks each transition between a front panel button and a menu, or between menus. Names that are for a main menu or side menu item are clearly indicated: Press VERTICAL MENU → Coupling (main) → DC (side) → Bandwidth (main) → 250 MHz (side).

Contacting Tektronix

Product Support	For application-oriented questions about a Tektronix measurement product, call toll free in North America: 1-800-TEK-WIDE (1-800-835-9433 ext. 2400) 6:00 a.m. – 5:00 p.m. Pacific time Or contact us by e-mail: tm_app_supp@tek.com For product support outside of North America, contact your local Tektronix distributor or sales office.
Service Support	Contact your local Tektronix distributor or sales office. Or visit our web site for a listing of worldwide service locations. http://www.tek.com
For other information	In North America: 1-800-TEK-WIDE (1-800-835-9433) An operator will direct your call.
To write us	Tektronix, Inc. P.O. Box 1000 Wilsonville, OR 97070-1000

Product Description

The TDSPRT1 Enhanced Printing Application lets you define specific parts of a data record, scaled to meet your needs, to send to a printer or to save to a print file. Since the prints are larger than the data displayed by the oscilloscope, the data is easier to read and analyze.

Compatibility

The Enhanced Printing Application is compatible with the following Tektronix oscilloscopes:

- All TDS 500D and 700D Digital Phosphor Oscilloscopes with Option 2M (8 MB record length and hard disk drive)
- TDS 700C Color Digitizing Oscilloscopes with Option 2M (8 MB record length and hard disk drive), firmware version 5.2e and up.

For a current list of compatible oscilloscopes, check the Tektronix, Inc. web site, http://www.tek.com/Measurement/ in the Support category.

Requirements and Restrictions

The TDSRTE1 Run-Time Environment must be installed on the oscilloscope to operate the Enhanced Printing Application.

This application only supports printers and formats that are compatible with the Tektronix oscilloscopes listed above.

This application only prints data being viewed in the Normal non-persistent display modes.

Product Updates

You can find information about this and other applications at the Tektronix, Inc. web site, http://www.tek.com/Measurement/ under the Support category. Check this site for application updates that you can download.

Accessories

There are no standard or optional accessories for this application.

Installation

The TDSPRT1 application is available from the Tektronix web site. To install the application, you will need to download it from the web site to a hard disk, copy it to a DOS-formatted floppy disk, and then install it on your oscilloscope.

To copy the application from the Tektronix web site, follow these steps:

1. Access the Tektronix web site at http://www.tek.com/.
2. Select the Measurement web page.
3. Click the Support category.
4. Click the Application Support Files item. This takes you to an FTP site.
5. Click the TDS/THS Files Area item. This takes you to the application files specific to these oscilloscopes.
6. Scroll through the files to the TDSPRT1 application, and download it to your hard disk drive.
7. If necessary, unzip the file.
8. Copy the application from the hard disk drive to a DOS-formatted floppy disk.

NOTE. *The Enhanced Printing Application requires the TDSRTE1 Run-Time Environment to be installed on the oscilloscope. If you have not already installed the TDSRTE1, you should do so now.*

To install the application on your oscilloscope, follow these steps:

1. Power off the oscilloscope.

NOTE. *More information about the application or installation is located in a Readme.txt file on the Tektronix web site. You should read the Readme.txt file before you continue.*

If you do not have access to the Tektronix web site, more information about the application or installation is located in a Readme.txt file on the floppy disk. You should insert the floppy disk into a DOS-based personal computer and read the Readme.txt file before you continue.

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2. Insert the disk in the floppy disk drive and power on the oscilloscope.

After performing the power-up self-test, the oscilloscope automatically begins the installation procedure.

As the application loads from the disk, the oscilloscope displays a clock icon to indicate that it is busy. Also, the floppy disk drive LED is on, indicating activity. If the clock icon continues to display after the floppy disk LED has gone out, a problem has occurred with the installation. Repeat the above procedure. If the problem persists, contact your Tektronix representative.

When the installation is complete, an Installation Complete message displays.

3. Remove the floppy disk and cycle power to the oscilloscope.

Downloading Updates from the Web

If there is an update for this application, it will be available from the Tektronix web site. To install an application update, you will need to download it from the web site to a hard disk, copy it to a DOS-formatted floppy disk, and then install it on your oscilloscope.

***NOTE**. Additional information about changes to the application or installation is located in a Readme.txt file on the web site. You should read the file before you continue.*

Functional Overview

This section describes how to use the Enhanced Printing Application and includes an example that demonstrates how to use the features.

Starting the Application

You can start the application at any time. To do so, refer to Figure 1 and follow these steps:

You can start the Enhanced Printing Application at any time after it has been installed in the oscilloscope. To start the application, follow these steps:

1. Press SETUP → Select Application (main).
2. Use the general purpose (GP) knob to select hd0, and then press SELECT.
3. Use the GP knob to select TDSPRT1.APP title, as shown in Figure 1, and press Activate Application (side).

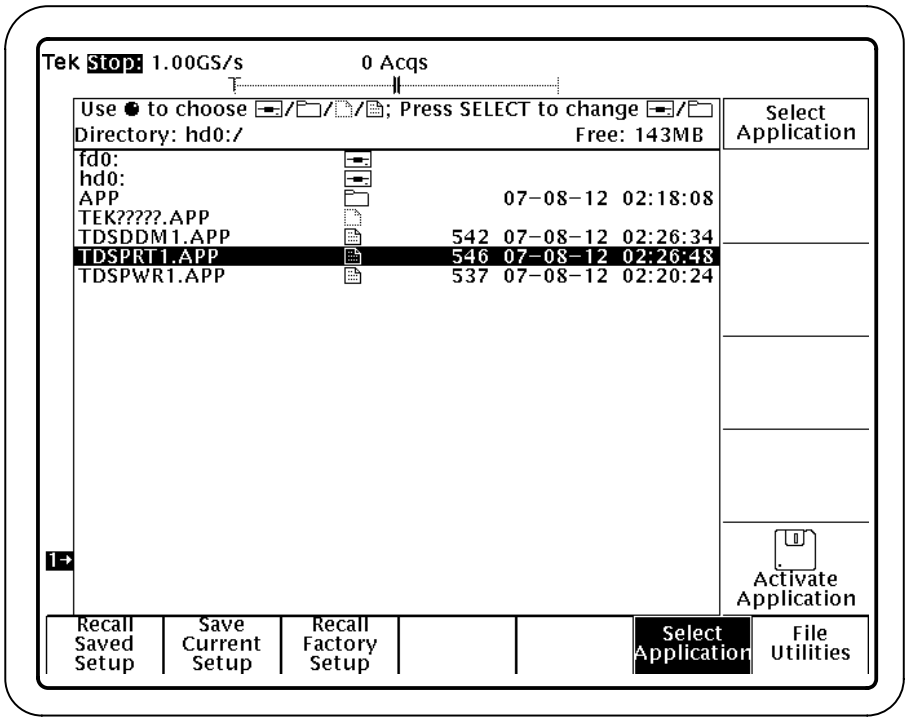

Figure 1: Starting the application

Using the Local Help

The application includes local help information about enhanced printing which does not identify or explain individual controls.

To display the local help, follow these steps:

1. Press Utility (main) → Help (side).
2. Use the side menu buttons to navigate through the help.

Using Other Functions

You can switch between the Enhanced Printing Application and other oscilloscope functions. To access primary oscilloscope functions, press the desired front panel control. To return to the application, push the SHIFT then the APPLICATION front-panel menu buttons as shown in Figure 2.

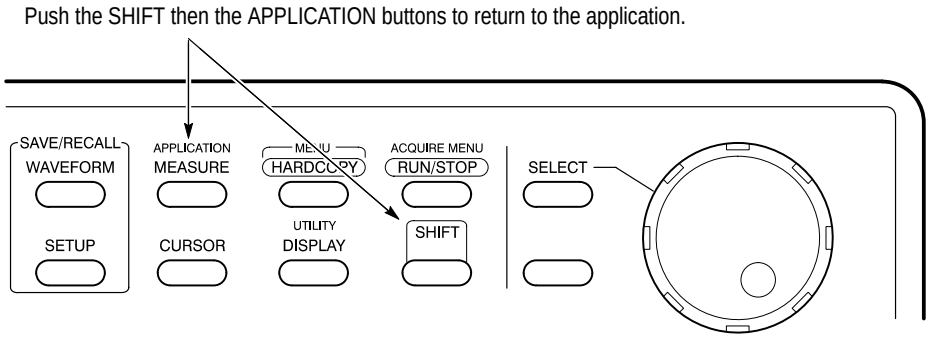

Figure 2: Returning to the application

Setting Up the Application

To use the Enhanced Printing application, you must set up the oscilloscope to display data on the screen at a scale that gives clear resolution. When you see some interesting data, you can start the application, or, if it is already running, press the SHIFT then the APPLICATION front-panel menu buttons.

To set up the Enhanced Printing application, refer to Figures 3 and 4, and follow these steps:

1. Press View (main). Figure 3 shows the View menu.

   You can use the View menu to define which part of the data record to print.

2. Press Expanse (side). In the Expanse menu item, you can select Record to print the entire data record or Cursor to print the data between the two cursors.

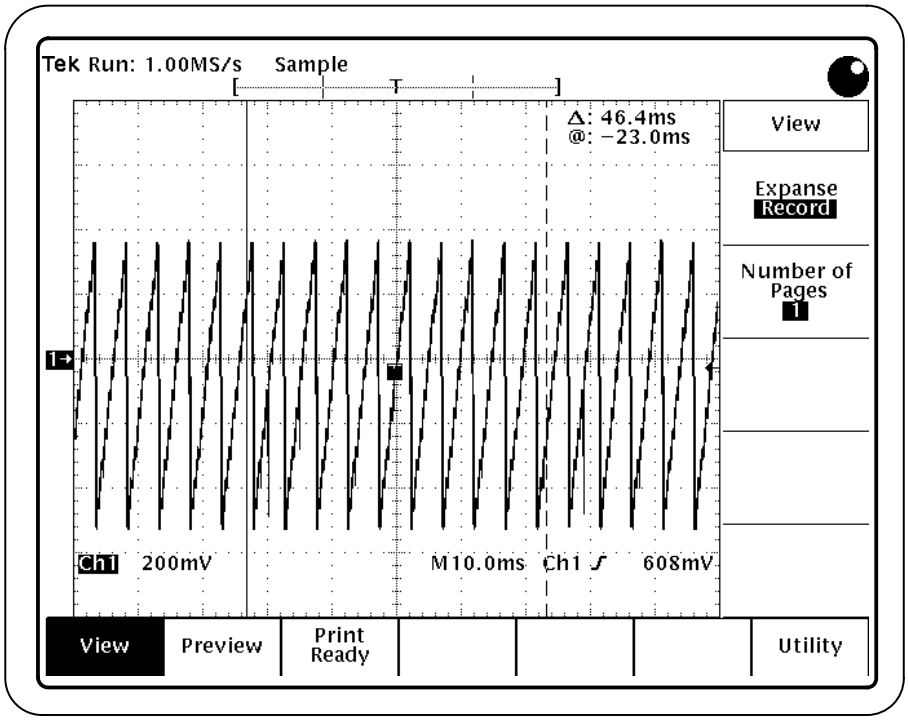

Figure 3: View menu

NOTE. *Use the number of pages selection to attain a desirable resolution. You do not have to send all these pages to a printer or print file.*

More pages increases the magnification of data printed on each page and fewer pages decreases the magnification. The range of pages is 1 to 2,000 and will vary depending on the available scale factors and selected record length.

3. Press Number of Pages (side). In the Number of Pages menu item, you can define how many pages on which you want to print the data.

4. Press Preview (main). Figure 4 shows data in the Preview menu.

   You can use the Preview menu to view the data as it will actually be printed on each page and to designate which pages to print. The Preview menu displays the number of pages defined in the View menu.

NOTE. *Vertical settings can be adjusted in the Preview menu. Horizontal setting changes made while in the Preview menu will NOT be included in the data sent to a printer or saved to a print file.*

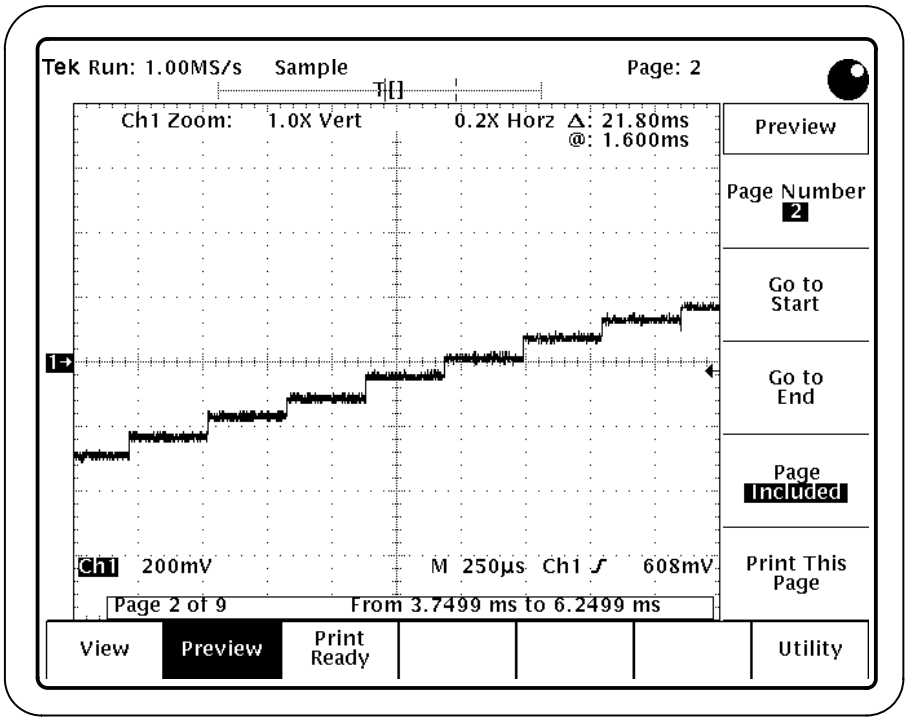

Figure 4: Preview menu

5. Turn the General Purpose knob or use the keypad to select different pages. The Preview menu contains several menu items you can use as you look through the data.

You can press Go To Start or Go To End (side) to preview the first or last page of the data or to switch between those two pages.

You can press Page Included or Excluded (side) to designate if the page being displayed will or will not be included when sent to a printer or saved to a print file.

You can press Print this Page (side) to immediately print the page being viewed.

Using the Application

To use the Enhanced Printing application, follow these steps:

1. Press Print Ready (main). Figure 5 shows the Print menu.

   You can use the Print menu to print the pages included in the Preview menu or to save those pages to a print file. A cancel function is also available.

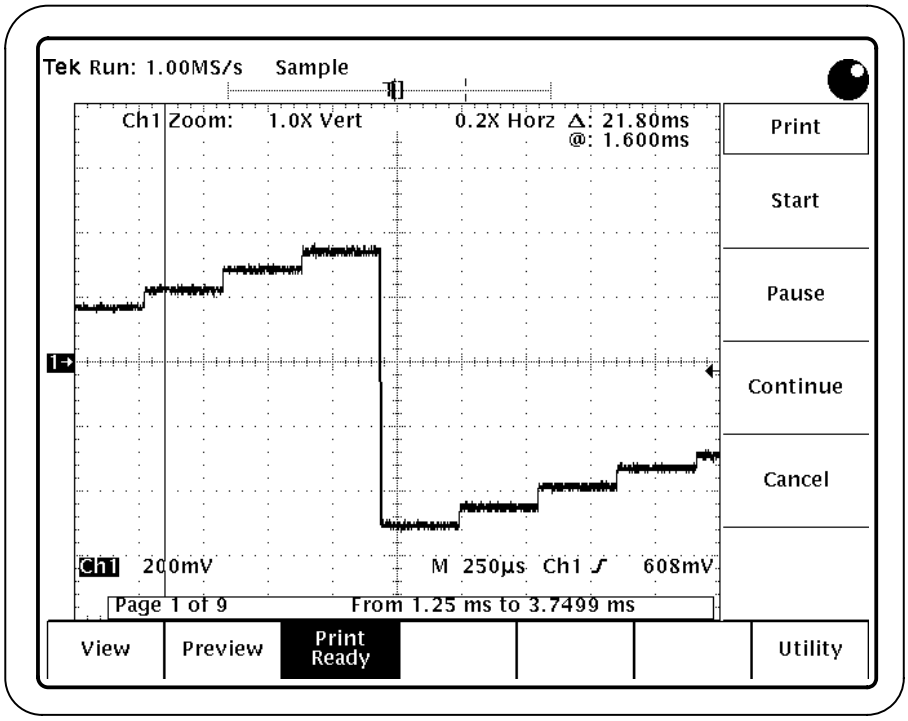

Figure 5: Print menu

2. Press Start (side). You can send the data to a printer or save it to a print file. Each page of data displays as it is being sent to a printer or to a print file. The Print menu contains several menu items you can use as you print or save the data.

   You can press Pause (side) to interrupt the operation. The Pause menu item displays for about two seconds between pages of data.

   You can press Continue (side) to restart the operation following a pause.

   You can press Cancel (side) to stop the operation. The Cancel menu item displays for about two seconds between pages of data.

When you send the data to a print file, the application creates an individual file for each page. You can define the file names in the Hardcopy Setup menu. Refer to your oscilloscope user manual for details on the Hardcopy function.

Application Example

This is an example of how to use the Enhanced Printing Application.

The scenario is that a hard disk drive appears to have a sector that loses bits of data or contains bad data. To determine if this is the problem, you could use your oscilloscope and this application to magnify, view, and analyze the suspect data.

In this example, data about 75 microseconds after the sector trigger appears to be suspicious. After finding the area, you can start the application, as described on page 5. In the View menu, you can use the cursors to define a range of data to examine more closely (Expanse Cursors menu item).

Figure 6 shows a range of data between two cursors. However, the data needs greater resolution to be readable.

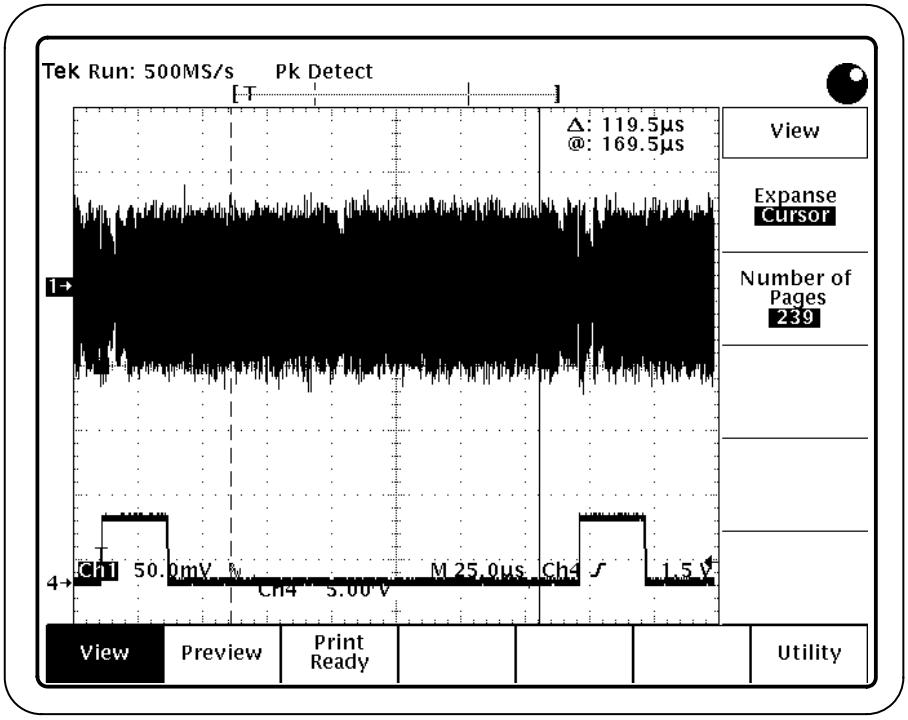

Figure 6: Expanse Cursors used to define a range of data

You can press the Number of Pages menu item until an appropriate selection is found to adequately increase the resolution. In this example, it is 239 pages.

***NOTE**. Use the Number of Pages item to attain a desirable resolution. You do not need to send all of the pages to a printer or print file.*

As you page through the data in the Preview menu, you find a page that contains interesting data and designate it to be sent to a printer or saved in a print file. Figure 7 shows a page designated to be included.

***NOTE**. Vertical settings can be adjusted in the Preview menu. Horizontal setting changes made while in the Preview menu will NOT be included in the data sent to a printer or saved to a print file.*

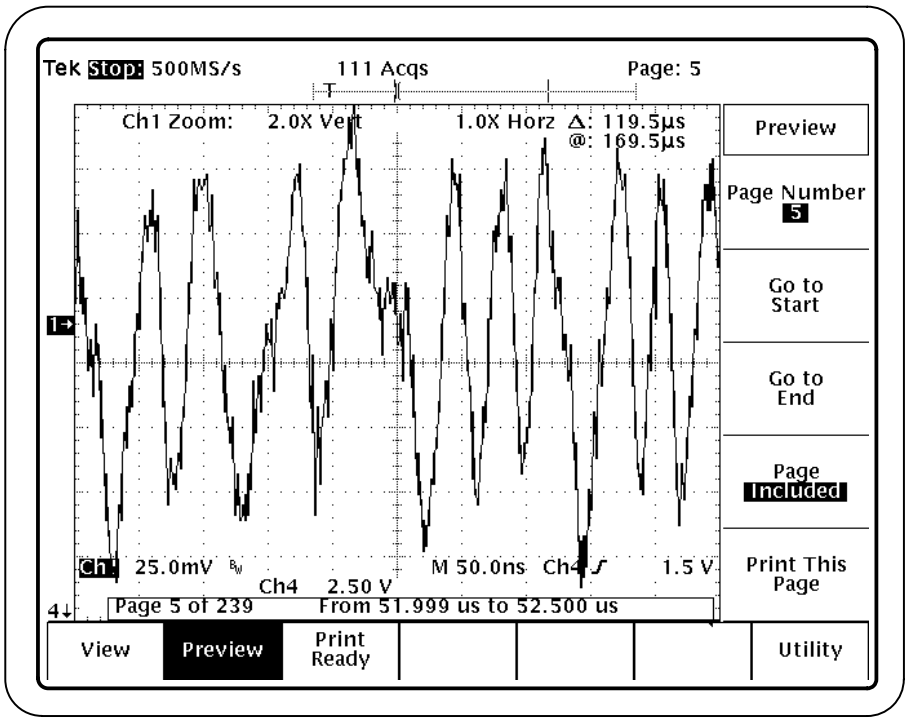

Figure 7: An included page

The next few pages do not contain interesting data and are designated to not be sent to a printer or saved in a print file by using the Page Excluded (side) item.

After paging through the data and determining which pages to include or exclude, you can send the data to a printer or save it in a print file.

Exiting the Application

To exit the application, press File Utility (main) → Exit (side).