

TealPrint User's Manual



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Description



TealPrint is a universal printing system for Palm OS that supports both graphics and native text. It provides stand-alone printing functionality for screen dumps, printing from the system text clipboard, and printing data from the system MemoPad, ToDo List, Datebook, and Address Book applications.

In addition, it provides an easy but flexible standard interface for printing from third-party applications who wish to add printing functionality to their programs.

The TealPrint system supports HotSync printing to any Windows-supported printer through a desktop PC. This is the preferable solution for most customers. It can also support direct connections to serial, parallel, and infrared printers with appropriate drivers and/or supported cable adapters. If you require a direct printing solution, please confirm that your printer is supported and test your connection before registering TealPrint.

Contents

This archive contains the following files:

Program files:

TEALPRNT.PRC	The TealPrint program file
TP_SPOOL.PRC	Universal spooling printer driver for HotSync printing
TP_GENE.PRC	Universal text-only direct serial/IR printer driver
PCSPOOL.EXE	HotSync printing PC-Spooling Manager
COURI_MD.PRC	Courier medium-sized bitmap printer font (fixed space)
ARIAL_MD.PRC	Arial medium-sized bitmap printer font (sans serif)
SETUP.EXE	Windows easy installer

Document files:

PRNTDOC.PDF	This document in Adobe Acrobat (PDF) format
PRNTDOC.HTM	This document in HTML format (sans images)
PRNTDOC.PRC	This document in TealDoc format
REGISTER.HTM	TealPoint Registration form in HTML format
REGISTER.TXT	TealPoint Registration form in text format

Installing



Use the Pilot installer to install the program file **TEALPRNT.PRC**. It will appear on the Palm Computing device after the next HotSync. This manual is also provided in this archive as the PalmPilot document **PRNTDOC.PRC**, which can be installed and viewed with our other application TealDoc.

The Palm installer appears as an icon on the left side of the Palm Desktop program. Instructions on how to use the Palm installer are in the Palm Handbook that came with your Pilot, PalmPilot, Visor or WorkPad.

You will also need to install an appropriate printer driver for the printer you wish to support. To support printing from your HotSync cradle to any Windows-supported printer, install **TP_SPOOL.PRC**. To use this option, you will also need **PCSPOOL.EXE**, the PC-side spooling manager, but it needs no special installation beforehand. See the section below under Using the Program for more detailed instructions on how to HotSync print.

Under Windows, you may optionally also use the easy installer program **SETUP.EXE**.

If you wish to print directly to a printer through a cable or IR link, you will need a driver that matches your particular printer. You do not need this additional driver for HotSync printing. A generic serial/infrared printer driver, **TP_GENE.PRC**, is provided for universal text-only printing. This driver supports any printer that accepts raw text for input, printing in that printer's native default font.

To print graphics, graphic with selectable fonts, or to print text on printers which do not support raw text, you will need an appropriate printer driver that matches both your printer and connection (eg, serial, or infrared). Drivers exist for Epson-FX compatible printers and HP PCL printers. Visit our website for a full list of drivers currently available.

Once you have graphic printing working, you may also wish to install some bitmap print fonts. These fonts can be fairly large memory-wise, and can only be used when printing text in graphics mode. Two fonts, Arial and Courier, are included in this package in medium sizes. Further instructions on how to select and use bitmap text fonts appear later on in this document.

Components

The TealPrint printing system consists of five major components, the TealPrint **Main Application**, **Printer Drivers**, **Bitmap Print Fonts**, **HotSync Spooling Manager**, and **Host Applications**.

TealPrint Main Application

The TealPrint main application appears as an icon on your applications launcher screen. It controls all print operations and communications with the printer drivers. It also offers many built-in printing tools such as screen dumps, printing from the clipboard, system profiling, and printing data from the four main Palm applications.

Printer Drivers

To communicate with individual printers, TealPrint uses printer-specific modules known as printer drivers. Printer drivers are actually small applications that know how to talk to a particular printer in its own digital language. While printer drivers appear as icons on the applications launcher screen, you rarely, if ever, need to run a printer driver directly.

When printing to a printer directly connected to your organizer through cable or infrared link, you need a driver which matches your printer. When HotSync printing, however, you should use the HotSync virtual printer driver **TP-Spool**.

HotSync Spooling Manager

When HotSync printing, TP-Spool doesn't actually communicate with your printer, but instead generates a file which is interpreted by the virtual printer engine in the HotSync Spooling Manager, **PCSPOOL.EXE**, which interprets the file on the PC and translates it into Windows calls and sends the information to your default Windows printer. The advantage to this approach is that all the features of Windows printers are fully supported, including color and graphics support, where applicable, and no special cabling is necessary.

Bitmap Print Fonts

TealPrint supports printing text, either as native printer fonts or as graphics sent to the printer. In the former mode, raw text is generated and word-wrapped by TealPrint and sent to the printer as simple text. The font and style of the text is left up to the printer, which typically uses a fixed-space font such as Courier, rendering text resembling the output of a typewriter.

Printing in graphics mode, however, allows TealPrint to render the text itself, giving the user more flexibility in the style and sizing of the text. The standard PalmPilot screen fonts are far too low resolution for most purposes, however, looking very jaggy when printed at reasonable sizes on at printer resolution. Bitmap Print fonts are higher resolution, allowing printing in graphics mode and better-looking results.

Host Applications.

While TealPrint offers many built-in printing functions, it really shines when directly supported by an external application. TealPhone, TealDoc, and TealPaint already offer direct TealPrint support, while the list of third-party applications which support TealPrint is constantly growing.

Interface

Main Screen



Run TealPrint by choosing it's icon from the Palm applications screen. The TealPrint main display screen shows the current configuration and offers universal tools for basic printing. It also allows one to set current modes, adjust basic print settings, and change driver-specific settings.

Modes

At the top of the main TealPrint screen, the following selections are adjustable:

Driver

Lets you set the current active printer driver, from the list of all currently installed printer drivers.

Paper

Lets you select paper sizes or change the default margins for all paper sizes supported by your printer. You may need to change this option when, say, printing an envelope or on odd-sized paper if the printing application does not provide this option.

Graphics Mode

Lets you select the current graphics printing mode, as defined by the printer driver. Typically, this setting is used to change graphic printing resolution or enable special printing modes such as color, transparency or photo printing. This option is not available if the printer or printer driver does not support graphics, and only affects printing in graphics mode.

Text Mode

Lets you select the current text printing mode, as defined by the printer driver. Typically, this is used to support printing with different internal printer fonts or for landscape text printing, if supported. If the current printer or printer driver does not support printing in a raw text mode, this option is not available. This option does not affect text printed in graphics mode.

Configure Options

Lower on the main screen, other configuration and print options are available.

About

Displays information about the active version of TealPrint.

Settings

Adjusts the current default graphic and text printing settings

Driver Info

Displays information about the active driver, if available.

Driver Settings

Allows setting of driver-specific options, like communications mode and speed.

Print Tools

Text

Brings up a text-editing screen that lets you enter, edit, and print some short text. Perfect for a quick note or label.

Clipboard

Prints any text "Copied" or "Cut" to the Palm text clipboard. Useful to print text from any program that supports cut and paste.

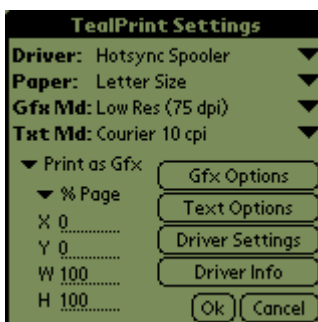
Screen-Grab

Allows dumping the PalmPilot display to the printer from within another program. Requires a printer and printer driver that supports graphics.

Data

Accesses controls for printing data from the Standard PalmPilot Datebook, Address Book, MemoPad, and To-Do List, applications and for printing several internal test images.

Settings Screen



The settings screen allows you to set various default options for printing text and graphics. These options affect the basic printing tools in TealPrint and apply to most other programs as well who print through the TealPrint interface. Programs that perform more task-specific printing tasks may choose to override some or all of these options with its own preferences or options.

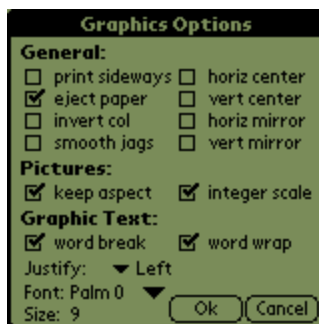
Print As Txt/Print as Gfx

This setting allows you to select whether the printer prints the incoming page in graphics mode or as native printer text. The latter is much faster for printing basic text documents, takes much less memory when printing, but limits you to the standard printer font and does not support graphics or most effects.

Print Size (X Y W H)

Lets you scale an image down from its default print size. Normally, TealPrint considers the full region on the paper within the margins to be printable. You can shrink this printable region, and any printed imagery or text will be resized to fit the new space. Note that when printing in graphics mode, the text will shrink to fit the new smaller space, remapping fonts if necessary. When printing as Text, the text will re-wrap to fit the smaller space but cannot scale down.

Gfx Options



The following special options are available when printing in graphics mode.

Print Sideways

Prints the image in Landscape mode (sideways) rather than portrait

Eject Paper

Sends a command to eject paper out of the printer after printing, if optional. Some printers, however, always automatically eject a page after printing.

Invert Colors

Prints the page as a black and white negative

Smooth Jaggies

Hello World
Hello World

Rounds the corners of line drawings or text to get rid of graphic "jaggies". This options slows printing considerably, however, and will darken or distort images with shading or dithering. Smoothing only functions on graphic text or

portions of an image that are black and white.

Horizontally Center

Centers a image or block of text horizontally on the page. To have an effect, the printable area has to be set to less than a full page width.

Vertically Center

Centers a image or block of text vertically on the page. To have an effect, the printable area has to be set to less than a full page height.

Keep Aspect

Normally, bitmap images are scaled vertically and horizontally to keep proper proportions. Without this option checked, the image will be stretched to fill all available space even if the image is stretched out of proportion.

Integer Scale

When this option is set, images are scaled to maintain constant pixel sizes, improving the look of line drawings and detailed images, even if images may print smaller than the total available area.

Word Break

When printing graphic text, this option forces line breaks to occur only on word boundaries. When this option is not checked, lines may wrap anywhere.

Word Wrap

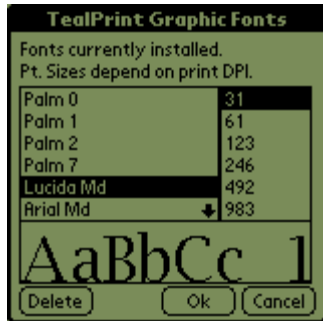
When printing graphic text, this option allows long lines to wrap to the next line. When not checked, long lines are truncated.

Justify

Centers or left or right-justifies graphic text.

Font

When printing text in graphics mode, TealPrint allows you to choose which bitmap font to use. Click on the drop-down triangle next to the font name to bring up the font selection screen.



Font Faces

Four standard Palm fonts are available (only three on Pre-III PalmPilots). However, these fonts are designed for the Palm screen and are small when printed. Installed TealPrint font files expand the choice of available fonts with higher resolution fonts designed for printing.

Font Size

Graphic fonts can be printed at some multiple of its minimum size, where each pixel of the font corresponds to a pixel of the printer output. Thus, when printed at its smallest size, a font appears at its highest resolution; the full resolution of the printer. When text is printed at a multiple of this base size it appears larger, but will show pixel "jaggies" when blown up too large. The "Smooth Jaggies" option can be used to reduce this effect, but looks better with some fonts than others.



Text Options

The following special options are available when printing in text mode.

Horizontally Center text

Centers a image or block of text horizontally on the page. To have an effect, the printable area has to be set to less than a full page width.

Vertically Center text

Centers a image or block of text vertically on the page. To have an effect, the printable area has to be set to less than a full page height.

Eject Paper after printing

Sends a command to eject paper out of the printer after printing, if optional. Some printers, however, always automatically eject a page after printing.

Wrap Long Lines

When printing graphic text, this option allows long lines to wrap to the next line. When not checked, long lines are truncated.

Break lines on word bounds

When printing graphic text, this option forces line breaks to occur only on word boundaries. When this option is not checked, lines may wrap anywhere.

Justify

Centers or left or right-justifies graphic text.

Driver Settings Screen



Printer driver options can vary from driver to driver. In general, here are some settings that tend to be present in drivers we offer:

Baud Rate

Set the speed and type of communication to the printer. Rates may be for serial or IrDA (Infrared) communication.

Send Slow

Slows the output of data through the serial port in discrete packets to avoid data loss associated with some serial-to-parallel adapter cables.

RTS/CTS handshaking

Enables hardware handshaking for serial communication

XON/XOFF handshaking

Enables software handshaking for serial communication

EVEN/ODD parity

Set bit parity for serial communication

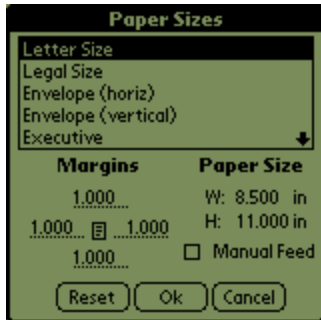
Show status

Shows printing communication status at the top of the current display. This may not be desirable running with program which dump the unbuffered contents of the current screen, as the status may appear in the printed image.

Beep status

Plays in intermittent "click" while printing to indicate printing is in progress

Paper Sizes



The Paper Sizes dialog, accessible from TealPrint's main screen by tapping the triangle next to "paper", lets you select the paper sizes and margins to be used for printing operations. The available paper sizes vary from printer driver to printer driver.

An additional option, **Manual Feed**, is present on this screen. When checked, this option causes a confirmation dialog to come up before each page is sent to the printer. This option is useful when sheets need to be manually fed into a printer, or when a printer needs a delay to reset back to its normal state between separate printing operations. This is sometimes necessary when printing via Infrared

to some printers to avoid lost pages which may otherwise be sent to the printer when it is not yet ready to print a new page.

HotSync Printing

HotSync printing allows one to print to any Windows-supported graphics printer by buffering printed information in the PalmPilot's memory, and sending it to the TealPrint Spooling Manager after a HotSync operation.

Most printing operations happen immediately when selected. HotSync printing is the exception. Similar to the way the standard 'mail' app that comes on the PalmPilot works, HotSync printing lets you print your pages on the PalmPilot first, sending them to the printer later only when you HotSync.

Steps

To print an image or document through the HotSync cradle:

1) Run Spooling Manager

First run the included program PCSPOOL.EXE. This program monitors the system HotSync folders and sends any incoming spooled print jobs to your Windows default printer. You can start this program before every print session, or even drag it to your Windows startup folder so that it's ready whenever you need to print. The program starts minimized on your task bar, and comes up automatically when it's time to print. It also features an optional "Print to Screen" mode that allows previewing of incoming print jobs without sending them to the printer, and a "Show Dialog" option that lets you select a printer and set print options before the job is sent to the printer. Both settings are available from the drop down 'FILE' menu, and remembered between spooling sessions.

2) Select the Spooling Print Driver on the Palm

On the Palm side, you will need to install the SPOOLING printer driver TP-SPOOL.PRC and select it as your current printer driver from within TealPrint. It supports a number of options including resolution and status display.

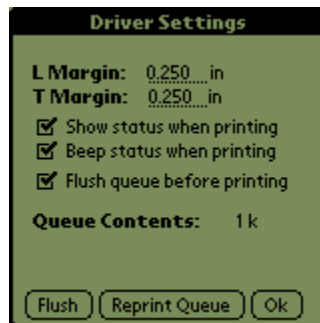
3) Print to Data Queue

With the spooling driver activated, run text and graphics print tasks. The driver saves the generated printed data in an internal buffer, or "queue".

4) HotSync

To send a queued print job to the printer, simply HotSync your palm device afterwards with PCSPool.EXE already running. Make sure that the Palm desktop settings are set backup Palm database files.

Queue Management



By default, the spooling driver clears the print queue before every print job. This means that you must HotSync after every print operation to send the last job to the printer. You can override this option by turning off the automatic "flush" option under TP-SPOOL's driver settings. Note that when you do this, you must remember to manually flush the queue when you are done to prevent reprinting the jobs left in the queue the next time you go to print a page. If you want to print another copy of our last print job, you can use the "Reprint Queue" button to tell the system to send last job in the queue to the printer again at the next HotSync.

Queued print jobs can take a fair amount of available free memory, particularly when printing graphics. Higher resolutions will require more memory as well. The TP-SPOOL print driver supports a number of different resolutions.

Graphics Resolution

For best results, set the Graphics Mode resolution to an even fraction of your printer's actual resolution. For instance, if your printer prints at 360 dpi, printing graphics at 90 or 180 dpi is recommended. For a 300 dpi printer, try the 75 or 150 dpi settings on the driver. For text, you can get the fastest and best-looking results with a minimum of memory usage by printing in raw text mode.

Grayscale

TealPrint supports printing color or grayscale images, dithering images to eight shades of gray in black and white printers. In order to print correctly, the images must be printed from a Palm running a version of the PalmOS that fully supports that color depth. For instance, OS 3.0 or higher is required to support 4-shade grayscale, and OS 3.3 is necessary for 16-shade grayscale. Any color device will already have OS 3.5 or higher and will print correctly in shades of gray.

Furthermore, the program generating the display must do so in the OS-approved manner. Some programs implement higher color modes by manipulating the graphics hardware directly. This allows them to function even under earlier versions of the PalmOS, but these screens cannot be screen dumped or otherwise printed. Note that some display "background" and "theme" utilities push the Palm into a grayscale mode. When running these programs, TealPrint may only print in black and white or may give unpredictable results depending on how the utilities are written.

Color

TealPrint supports color graphics printing from a color Palm to a color-compatible printer with a color-friendly printer driver. As color printing modes tend to be model-specific, most TealPrint graphics drivers are monochrome only, printing color graphics in shades of gray. The TealPrint PC Spooling driver and system, however, supports color fully in four color graphics modes.

Helpful Hints

1) The PC Spooler monitoring program *must* be running the first time you HotSync after printing for the queued data to be sent to the printer. (If you forget to run the program, you can always print again by choosing the 'Reprint Queue' button under the driver settings page of the TP-Spool printer driver, and then HotSyncing again, this time with the monitoring program running in the background on the PC.)

2) Note that the TP-Spool driver defaults to clearing the queue before each printing operation. If you want to perform multiple printing operations before HotSyncing, flush the queue manually and then turn off the automatic 'flush' setting in the TP-Spool print driver settings before printing. You should manually flush the queue after printing to free up the memory used and prevent the queued data from printing again later the next time you print.

Direct Printing

To use TealPrint directly with a printer, you'll need a proper adapter or cable to connect your PalmPilot to your printer if it does not support infrared communication.

Note: Please don't experiment with your own cables or adapters unless you know what you're doing. While creating your own cables may be pretty straightforward to someone with a technical background, don't rely solely on the information below if you're at all unsure about what will or will not work.

Infrared (IrDA) Printers

Printers that have a built-in IrDA port do not require any cabling. They do require a printer driver with an option to output signals from the Palm's IR port, and one that speaks a language the printer can understand. The generic text printer driver supports IR in three different connection speeds, and communicates with IR printers designed to be connected to Laptop PCs. Custom IR printers designed for specific devices like digital cameras may not work with the generic IrDA driver.

For printers without built-in IrDA support, you may be able to purchase an IR adapter. See "PC Parallel Printers" below for more information.

PC Serial Printers

Serial printers are generally easier to connect to your PalmPilot than Parallel printers, as the PalmPilot has a serial port in its base. As long as the serial printer can operate at a baud rate supported by your organizer, connection simply involves connecting the proper signals together. As PalmPilot HotSync connectors are not generally available, your best bet is to run a cable between your HotSync cradle and your printer, and simply print with your PalmPilot in the cradle. To do this, you need a converter that will connect the DB9-Female connector to your printer, routing the signals correctly. The exact wiring depends entirely on the printer.

You can also take advantage of an existing serial cable for your printer, which is designed to plug into the DB25-Male or DB9-Male serial cable at the back of your PC. If you have one of these, then all you need is a short DB9-to-DB9 Null modem cable to go in between the HotSync cradle and the printer cable. The null modem cable is necessary to swap the send a receive lines along the way, so that the PalmPilot looks like a PC, rather than a peripheral that plugs into a PC.

If you're lucky, you can find a null modem cable with two DB9 Male connectors. If not, you might need to also get one or two DB9 gender changers and/or DB9-to-DB25 serial adapters in addition to a null modem cable with different connectors. You probably won't find the complete cable at your local software store, but you can probably find it online at somewhere like www.cablewholesale.com, or you can make one yourself with about \$5 in parts. If you purchase a cable, be sure to check a wiring diagram for the cable first before purchasing it or hooking it up to your Palm.

Once you have a DB9M to DB9M null modem cable, plug in your HotSync cradle on one end and the cable that goes to your printer on the other.

In our tests with the DYMO EL60 Labelwriter, we've found that the following cable adapter pinout worked for us:

DB9M			DB9M		
RX	2	-----	3	TX	
TX	3	-----	2	RX	
GND	5	-----	5	GND	
DSR	6	-----	6	DSR	
RTS	7	-----	8	CTS	
CTS	8	-----	7	RTS	

Note that most null modem cables cross over DSR and DTR instead of connecting them straight across the way we have this cable wired up. As serial printers are not all that common, we check our website for up to date compatibility information as we get it. Other printers may be able to work with off-the-shelf null modem cables.

PC Parallel Printers

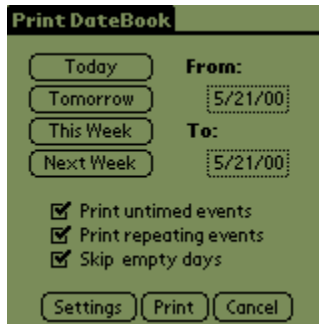
Most PC printers have parallel ports on them with a 36-pin Centronics connector. For these printers, your best bet is to buy an off-the-shelf serial-to-parallel adapter cable, such as the Greenwich Instruments GA945PP (\$49 at www.NWT.com), which will connect any PalmPilot except the Palm V, and Visor directly to a parallel printer.

Note that several similar adapters exist and will work. The Greenwich cable is nice in that it's both affordable and runs at 57600 baud. Some other cables are slower, operating at 38400 instead. A fancier, but more expensive solution is to get an Infrared adapter like the ActiSys ACT-IR 100M, Printer Adapter (\$110 at www.cyberguys.com), or Extended Systems JetEye. Designed to add an IR port to any Parallel printer, these devices are compatible with any PalmPilot with beaming capability, and even add a pass-through so you can keep your PC connected to the printer at the same time.

Printing data from the Standard applications

TealPrint supports printing from the four basic applications. You can access these tools from the "Data" button on the main screen.

Datebook



Allows you to print an agenda of items for any specified range of days. You can optionally hide untimed events, repeating events, or days without any events. Notes from datebook items are printed as well.

Address Book

Prints the full contents of any single address book entry, or prints a simplified phone list for all the entries in an entire category.

To-Do List

Prints all To-Do items, or all items within a selected category.

Memo Pad

Prints the full contents of a selected memo

System Info

Prints detailed system information including User, Processor, Operating system, memory heaps, and all installed files along with their size, properties, attributes, and version numbers.

Tests

Prints four various sequences designed to test special effects and features in the TealPrint's graphics and graphic-text subsystem.

Printing from TealPrint-friendly programs

The exact interface for printing from a TealPrint-friendly program can vary from program to program, but typically it goes something like this:

1. For direct printing, connect the Palm cable or bring its infrared port in range of the printer
2. Choose a 'Print' Option from the app's menu or control screen
3. Configure options in the TealPrint settings screen, including setting text/graphics print mode
4. Click 'Print'.
5. Keep the Palm connected until printing is complete

The contents of the settings screens may vary from app to app. For most apps, you can vary the size, rotation, and appearance of the output when printing in text mode, but programs may override some settings if they have specific formatting needs, such as printing labels for

established label sheets. Also, when printing in text mode, formatting and sizing are more restricted and may vary from printer to printer.

Printing data from non TealPrint-friendly programs

When programs have not been designed specifically with TealPrint in mind, printing may still be possible using some of TealPrint's print options.

For printing graphics, use the 'Print Screen' option in TealPrint. Functioning like a camera's timer feature, this lets you set an elapsed time to start. Once you set it in TealPrint, you have time to go to the other app and go to the screen you wish to print. This option dumps the screen to the printer as a graphic page.

To print other data, you can often use the 'Print Clipboard' option instead. Most programs typically have the ability to drag-select text and copy it to the system clipboard using a 'copy' menu item. Once you do this, you can either print it directly using the 'Print Clipboard' option in TealPrint, or paste it in the 'Print Text' screen first to allow you to do some editing first.

Aborting Printing

To abort a print operation from a properly-written driver, press and hold down any physical "hardware" button on the PalmPilot, such as the PAGE-UP scrolling button.

Using Graphic Fonts

When printing text in graphics mode, TealPrint has the ability to map the text to different fonts. Since the four built-in Palm fonts are designed for the small Palm screen, they lack resolution to print nicely smooth text when sent to the printer.

Fortunately, TealPrint supports installation of external fonts for graphics printing. Two medium-sized fonts, Arial and Courier, are included for this purpose. Install these .PRC files using the Palm Install Tool. Check the TealPoint website for font packs for other fonts and a full selection of font sizes. Actual printed font sizes are dependant on the resolution (DPI) of the graphics print mode being used.

Since bitmap fonts can take a large amount of memory, only one font size (measured in pixels) is included in each PRC file. This font will print in different measured sizes (measured in inches) depending on the resolution of your printer. The included fonts are designed to print at a reasonable size when printed at 200-360 dpi. TealPrint can scale up fonts to print at larger sizes, but when scaled up too high they tend to exhibit 'jaggies'.

Once you have installed an external bitmap font, you can select it as your preferred default font under the graphics settings page. Note that this font style and size only applies when it is not overridden by the printing application, and that the system may remap to a smaller font if you print a page at a scaled-down size.

Other font faces and sizes will be made available for download on our web site, subject to availability and our customer's needs.

Imbedding Images in Text

When printing text in graphics mode, TealPrint supports imbedding images into the text to create simple illustrated documents. There are two basic ways to do this without the need for a special page layout program.

TealNotes

TealPrint automatically recognizes tags embedded in text placed by our program TealNotes, and will print the corresponding text from the memopad, clipboard, or other applications with the images intact if printed in graphics mode.

TealPaint Tags

You can manually reference TealPaint images in text you print by inserting an HTML-like tag into the text. The tag refers to the image created in our graphics program TealPaint, stored in a TealPaint-format database stored elsewhere on the Palm. When you print the text containing the tag, the image will be inserted where the tag is. The tag follows the same format used by our document reader TealDoc, but must start at the beginning of a line of text. An example tag looks like:

```
< TEALPAINT SRC="Pictures" IMAGE=4 SX=0 SY=0 WIDTH=160 HEIGHT=160 >
```

where:

- SRC is the name of the image database file as it appears on the Palm. It is case sensitive. The default database name is "Pictures"
- IMAGE is the image number in the database to include (default is 0)
- SX,SY are the coordinates of the sub-rectangle to pull from the source image (default is 0,0, which indicates the upper left hand corner)
- WIDTH and HEIGHT are the size of the sub-rectangle to print. (default is 160x160, which is one full screen. Change this to print only a small portion of an image or to print an oversized one)

(Note that in this example, we placed an extra space between "<" and "TEALPAINT" to prevent TealDoc from interpreting this example as a valid tag in the doc version of this manual. In use, don't place a space there.)

In both examples, the image is printed using the same bitmap used to render the font. Because of this, the size of the images relative to the text depends on the size of the font used to render the text. For results which most closely match the screen, use actual Palm fonts in their smallest size for the graphic text font. If the output using this setting is too small, either set the printer's graphic mode to a lower resolution (if available) or scale up the whole image to get the desired size. The text may be "jaggier" than if you used a larger Palm font, but the images won't be dwarfed by the text.

Appendix A - Troubleshooting

I'm trying to HotSync print, but nothing happens when I HotSync

Make sure that you're running the PC-Spool monitoring program before you HotSync. If not, run it, choose "Reprint Queue" from the driver settings menu in TealPrint, and HotSync again.

I did that, and it still isn't doing anything.

Set your "custom" options in the HotSync program for the System conduit to "System: Palm

overrides Desktop". Then hotsync. If it still does nothing, un-minimize the spooling program and look at the file path where it's looking for your spooling file. Look for the file "TealPrint_Spool_File.PDB" in one of the backup folders and make sure it's getting copied back to your PC correctly by the Hotsync system.

The PC spooler shows the text/graphics on screen, but nothing goes to the printer.

Make sure the "print to screen only" checkbox in the menu is not checked.

I'm using a direct connection. I can't print at all

Make sure your printer is on and properly connected and that your printer driver settings match your cable and connection. If this still does not work, run the printer driver directly from the applications menu, and print a test page directly from the driver to check the connection and settings. If you are using a parallel printer converter cable, your serial settings must match what the cable was designed for.

It printed before. Now it doesn't

If you're running a parallel converter cable, try disconnecting the cable temporarily from both the printer AND the Palm and waiting a few seconds to let the converter circuitry reset.

Graphics are not showing up

Make sure you have your settings set to "Print as Graphics" and that your printer and printer driver both support graphics and are correct for each other.

All I get is graphic junk when sending graphics

Make sure your printer driver is correct for your printer, that your transfer speed set in the driver is correct.

When trying to hotsync print I run out of memory

When hotsync printing, the buffered data is dumped to a temporary file for transfer at the next hotsync. This file can be quite sizeable, especially for graphics printing. If printing text, try printing in text mode, which takes less space. Otherwise, you'll need to decrease the size of the page being printed, lower the resolution, or delete files and data off the Palm to free up more memory.

When printing raw text, most of the text is fine, but European characters are coming up as funny symbols.

Your printer may use a different character set for European characters. Check your printer driver settings. If it support different character sets, try switching to another character set. For example, PCL printers default to using the PC-8 font set, which contains most European characters, but some only in lower case.

I sometimes get junk or missing/wrong characters when printing through a serial or parallel connection.

Try printing using a "Send Slow" and/or hardware (CTS) handshaking driver options, if available.

When I try printing to an IR printer, the connection just times out

Make sure the printer driver is set up to communicate in Infrared rather than serial. Turn on status display in the driver settings, if available, to further diagnose the problem.

Sometimes, pages in the middle of a print job don't get printed or get printed incorrectly.

Check your cabling or connections to make sure it is handshaking properly with the Palm. In addition, some printers may require some recovery time between printing pages. If this is the case, set the "Manual Feed" option in the Paper select dialog.

Appendix B - Revision History

Version 1.60 May 4, 2001

- Buffered IR output in drivers for vastly improved printing speed
- Reduced memory usage for compatibility with Thoughtmanager

Version 1.55 April 5, 2001

- Added manual feed option to paper select dialog
- Added support for printing from large address books
- Added ability to seek to address entry with graffiti
- Fixed printing color text from programs using page objects
- Fixed crash printing from mangled datebook entries.
- Fixed crash selecting "Reset" option on paper select dialog
- Added "Pause between pages" option in PC Spooler
- Fixed gray backgrounds printing in color mode to some printers
- Added transparency to program icons for third party launchers which support color backgrounds
- Added InstantPrint launch code for easy printing call for application developers
- Added "All or nothing" printing flag for developers to print objects only if they fit entirely on screen
- Added "Offset_right" and "Offset_bottom" flags for developers to align objects by bottom or right edges
- Added support for "chars" size developers option when printing in text in graphics mode.

Version 1.41 10/21/00

- Added support for printing grayscale images and printing color images as grayscale
- Added support for color printing in TealPrint main program and HotSync Printing
- Added support for printing notes in datebook events.
- Added support for embedded TealNotes images in printed text.
- Added support for imbedding TealPaint images in text.
- Added option to print quick-reference phone list from phone category.
- Added version number to applications listed in System Info printout
- Defaulted drivers to "send slow" option off for faster printing
- Updated PC spooler to delete older spooling files to prevent unwanted double-printing
- Added Canon Bubblejet printer driver
- Added support for the Extended Systems JetEye Infrared adapter in 1.40 drivers
- Added "memory" to PC Spooler for screen position, size, and print options
- Made PC Spooler more robust to print errors returned from windows print subsystem
- Fixed crash printing data from very full address book
- Fixed rare crash listing address books with long entries
- Fixed memory leak

Version 1.22 5/29/00

- Added support for installation into Flash RAM
- Added *About* and *Register* drop down menus

Version 1.20 5/22/00 Initial Release

Appendix C - Credits

Manual by Vince Lee, Tex Tennison, and Diane Dybalski

Appendix D - Contact Info

TealPrint by TealPoint Software
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Please visit us at www.tealpoint.com, or email us at contact@tealpoint.com.

We look forward to hearing from you.

Appendix E - Registering

Currently, you may register by snail mail, electronically through our website at www.tealpoint.com with a credit card and a secured server, or through PalmGear HQ at 1-800-741-9070. For the first option, the enclosed registration form is provided for your convenience. You may use this form or simply send the following to the address above.

- Product Name
- E-Mail Address
- HotSync User ID (Pilot Name Required for Passkey generation. It can be found on the main screen of the HotSync application on the Pilot as "Welcome _____" or in the corner on a PalmIII or higher)
- Check (drawn off a US Bank) or Money Order for \$19.95 US to TealPoint Software

Appendix F - Disclaimer

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Thank you.